Environmental Assessment of the Alaskan Continental Shelf

Quarterly Reports of Principal Investigators
April - June 1977

Volume II

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

U.S. DEPARTMENT OF INTERIOR
Bureau of Land Management

Environmental Assessment of the Alaskan Continental Shelf

April-June quarterly reports from Principal Investigators participating in a multi-year program of environmental assessment related to petroleum development on the Alaskan Continental Shelf. The program is directed by the National Oceanic and Atmospheric Administration under the sponsorship of the Bureau of Land Management.

ENVIRONMENTAL RESEARCH LABORATORIES
Boulder, Colorado

October 1977

VOLUME II

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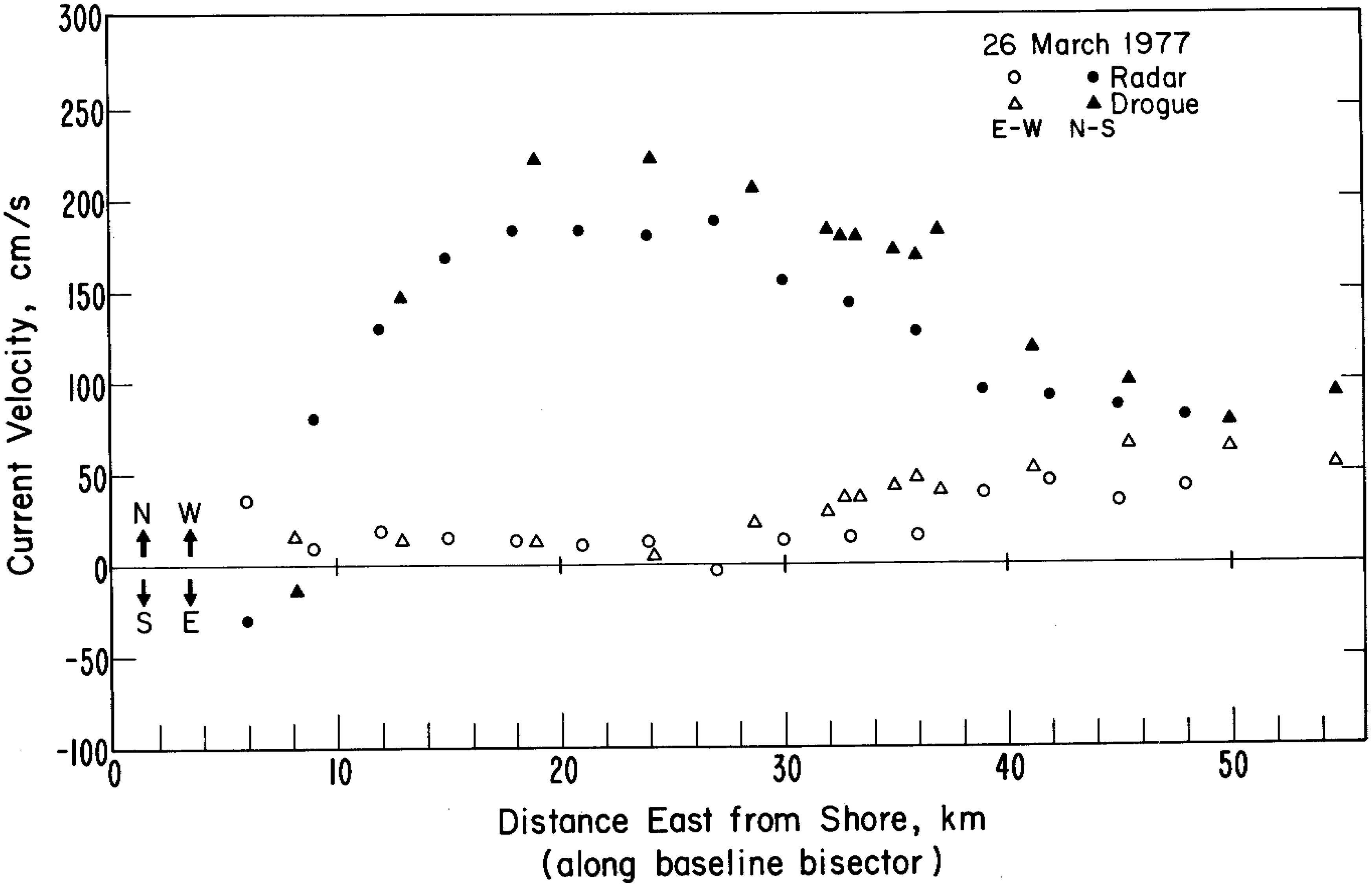
TRANSPORT

TRANSPORT

TRANSPORT


26 March 1977
Radar
Drogue
E-W N-S
Current Velocity, cm/s
300
250
200
150
100
50
0
-50
-100
N
W
S
E
0
10
20
30
40
50
Distance East from Shore, km
(along baseline bisector)

QUARTERLY REPORT

Proj. No. RW0000 R7120856
Research Unit: No. 48
Reporting Period: Mar. 31, 1977
July 1, 1977
No. of Pages: 1

Development and Operation of HF Ocean Current Mapping Radar Units

Principal Investigator: Donald E. Barrick

Submitted: July 1, 1977

1. ABSTRACT

Since the last report, the current sensing radar system was taken to the Miami, Florida area in March 1977, and the surface current data obtained by it were compared with simultaneous drifter current estimates. Comparisons are shown in the back of the report as a function of distance from shore located on a line midway between the two radars.

The comparisons show that the two agree favorably and any differences between the two cannot be attributed to either radar or drifter, since drifter measurements of surface currents with waves present is somewhat uncertain. Quantitative analysis shows a standard derivation between radar and drifter measurements in this plot of 25 cm/s (at least 10-15 cm/s of which has been found to be inconsistencies between consecutive drifter measurements).

After the completion of the Miami tests, the radars were returned to Boulder, some hardware and software changes were made, and the units were then shipped to Cook Inlet. The two site locations were Seldovia and Anchor Point, Alaska. They were operational around June 15 and have successfully taken observations up through the date of this report. In addition, 4 days of simultaneous comparisons with drifters in the area of coverage was accomplished and the preliminary results show a favorable comparison.

Since all personnel are in the field for this time period, and not available for a quarterly report, a special report will be submitted at a later date with more comprehensive results from the Alaska study. This will be in lieu of the regular quarterly report.

QUARTERLY REPORT

Contract No:

03-5-022-67, T.O. #3

Research Unit No.:

91

Reporting Period:

1 April - 30 June 1977

Number of Pages:

3

Current Measurements in Possible Dispersal Regions of the Beaufort Sea

Knut Aagaard

Department of Oceanography
University of Washington
Seattle, Washington 98195

6 July 1977

A77-11

I. Objectives

To provide long-term Eulerian time series of currents at selected locations on the shelf and slope of the Beaufort Sea, so as to describe and understand the circulation and dynamics; and in conjunction with the STD program, to examine the possible spreading into the Canadian Basin of waters modified on the Beaufort shelf.

II. Field Activities

See attached Preliminary Report, Cruise W27, Ref. M77-42.

III. Results, and IV. Preliminary Interpretation of Results

The current meters recovered in the spring had leaked through the external signal terminal. The entering sea water shorted the clock circuit and gave an erratic tape advance, making it impossible to interpret the sensor signals. In the new instruments deployed in the spring, we therefore removed the external terminal and inserted a plug with O-rings. We shall follow this procedure in future deployments also. The reason for the leak is probably the extreme changes in temperature that the instruments are subjected to during deployment, together with a mismatch of materials with different thermal expansion coefficients being used in the external terminal.

We are continuing analysis of the current record from Oliktok recovered last fall, with special emphasis on the strong low-frequency signals (cf. Annual Report). These appear to be driven by atmospheric events, but a good deal more work is required to clarify the issue.

V. Problems Encountered

None beyond those mentioned in III.

VI. Estimate of Funds Expended by Department of Oceanography, University of Washington to 31 May 1977.

TOTAL ALLOCATION (5/16/75-9/30/77):			$183,042
A.	Salaries, faculty and staff	$20,926	
B.	Benefits	2,477	
C.	Expendable Supplies & Equipment Floatation $2,000	23,764	
D.	Permanent Equipment Current meters $17,750	65,430	
E.	Travel	4,089	
F.	Computer	542	
G.	Other Direct Costs	15,969	
H.	Indirect Costs	9,166	
	TOTAL		142,363
	REMAINING BALANCE		40,679

University of Washington

Department of Oceanography

Seattle, Washington 98195

Preliminary Report

University of Washington Participation in NOAA Recovery/Deployment Phase of Cruise W27

Current Measurements in Possible Dispersal Regions of the Beaufort Sea

13 March - 5 April 1977

by

Clark Darnall

NOAA Contract 03-5-022-67, TA 3

Approved by:

Knut Aagaard, Research Associate Professor
Principal Investigator

Francis A. Richards, Professor
Associate Chairman for Research

REF: M77-42

CURRENT STUDIES ON BEAUFORT SEA SHELF

1. *Objectives*

To look at the time-dependent circulation and dynamics of the outer shelf and slope of the Beaufort Sea, by means of long-term Eulerian time-series current studies at selected locations, where the ice cover is not seasonally removed. Cruise W27 was a recovery/deployment phase of current meter studies.

2. *Narrative*

Mooring recovery phase

One mooring (deployed in Oct. 1976 and consisting of two current meters) was recovered. This was accomplished by:

(1) General area relocation (within 5 km) by use of the helicopter's GNS very low frequency navigational equipment.

(2) Precise mooring relocation by ranging and bearing on the mooring's acoustic transponding release. Upon satisfactory relocation, mooring was released, allowing flotation to lie against the underside of the ice cover.

(3) After further pinpointing of the mooring (within 100 m) a diving hole was cut through the ice, and divers secured a retrieval line to the mooring. The mooring was then recovered through the same hole.

Mooring deployment phase

Two moorings were deployed in the same general area (40-50 nm north of Lonely). The inshore mooring was deployed in 192 m with current meters at 78 m and 152 m. The mooring was equipped with a model 322 AMF acoustic transponder/release. The offshore mooring was in 1012 m with current meters at 92 m and 167 m. This mooring also was equipped with an acoustic transponder/release.

A prototype subsurface data retrieval, storage and telemetry system, developed by the Applied Physics Laboratory, University of Washington, was installed in the offshore mooring. This system will receive (via a 16 kHz acoustic telemetry link) current meter and temperature data, store this data, and upon interrogation commands from the surface, acoustically transmit (via a 50 kHz link) the data to a surface receiving unit. The storage capacity of the system would be greater than 1 year, thus allowing for data retrieval at various opportune times, without the necessity of recovering the entire mooring.

A physical description and location of the moorings is in Appendix A.

The report of events is as follows:

March 4, 1977 C. H. Darnall arrived Barrow to participate in the CTD phase of cruise W27 and to prepare for mooring recovery and deployment.

March 11, 1977 Anchors, flotation, and mooring lines (on reels) were transported to Lonely by NARL twin otter N127RL

March 12, 1977 Fred Karig and John Cushing arrived. We set up diving equipment. Due to last minute changes we had to order a diving air compressor from Seattle.

March 13, 1977 Weather: clear, temperature -28°C, winds calm. We had heater problems on N56RF.

1218 AST - Karig, Cushing and Darnall departed Barrow in helicopter N56RF (Barnhill and DeHart).

1340 - Landed 200 m mooring site, 71°28.7'N, 152°08.9'W. Picked up transponder reply on first interrogation, 7.30 km-152°M. Bow/stern indicator on bearing receiver malfunctioning; we therefore had an 180° bearing ambiguity. After 5 interrogations/landings, we narrowed the range down to 1.80 km. Returned to Lonely for fuel, return to Barrow.

1940 - Arrived Barrow. 3 hr. 15 min. total flight time.

March 14, 1977 The helicopter was down for progressive inspection. Air compressor had not arrived yet.

March 15, 1977 Weather: clear, temperature -28°C, wind 9 kt NE.

0815 AST - Karig, Cushing and Darnall departed Barrow in N56RF (Barnhill).

0916 - updated GNS at Lonely.

0955 - Arrived GNS position 71°30.1'N, 152°09.7'W. After 5 interrogation/landings we were able to fix mooring site to 500 m. We marked ice with dye, hopeful for recovery the next day.

1250 - Departed for Lonely/return to Barrow.

1440 - Arrived Barrow. 3 hr. 24 min. flight time. We picked up air compressor at Wien and filled diving tanks.

March 16-22, 1977 Weather: clear or high overcast, temperature -25°C to -30°C, chill factor -80°C to -95°C, wind 25-30 kt NE, no flying.

March 21, 1977 Weather: clear, temperature -25°C, wind 10 kt NE.

0933 AST - Karig, Cushing, Hunter (NARL expediter) and Darnall departed Barrow in N56RF (Barnhill, Neild). We had removed extra fuel bladder and loaded all recovery and diving gear (refueled at Lonely).

1232 - Arrived GNS position 71°30.2'N, 152°09.6'W, initial transponder range 1.57 km. After 5 interrogation/landings, we were within a range of 670 m. We set up the ADF beacon and returned to Lonely for fuel.

1244 - We released mooring.

1650 - Arrived at ADF beacon (we were able to pick up beacon at 13 nm out). GNS position 71°31.7'N, 152°10.0'W. We found that fixing and moving short distances was not as easy as anticipated. After 5 interrogation/landings we got the range down to 190 m. This was still out of the divers' range. Returned to Lonely.

1925 - Arrived Lonely. 3 hr. 59 min. flight time. We stayed the night at the Husky/PET-4 camp.

March 22, 1977 Weather: clear, temperature -24°C, winds calm. We encountered delays in borrowing Herman Nelson heater and getting fuel.

1038 AST - Karig, Cushing, Hunter, and Darnall departed Lonely in N56RF (Barnhill, Neild).

March 22 (cont'd)

1117 - Arrived ADF beacon. GNS position 71°30.9'N, 152°08.0'W. After 4 interrogation/landings, we had 3 holes (in a 40 m triangle) all ranging 110 m. This was the final position.

1450 - N56RF returned to Lonely for fuel leaving Karig, Cushing and Darnall to begin digging diving hole. The ice (as in almost all previous holes) was approximately 6 ft thick.

1645 - N56RF arrived. GNS position 71°31.7'N, 152°10.8'W. ADF beacon was still operating, but much weaker. We completed the diving hole to within 18 in. of bottom, hole size was 5 ft x 4 ft x 6 ft deep. As it was too late (and we were too tired) to begin diving/recovery, we returned to Lonely for fuel/return to Barrow.

2104 - Arrived Barrow. 3 hr. 35 min. flight time.

<u>March 23, 1977</u> Weather: clear, temperature -28°C, winds 4 kt NE. N56RF required short progressive inspection.

1020 AST - Karig, Cushing, Sharp (NARL expediter) and Darnall departed Barrow in N56RF (Barnhill). Refueled at Lonely.

1230 - Arrived GNS position 71°31.1'N, 152°10.9'W. ADF beacon was down. Transponder reply 100 m range. We completed the diving hole.

1400 - Cushing and Darnall began dive. The floats were sighted at approximately 10 m from dive hole. We secured retrieval line and took some photos of mooring. Approximate diving time 15 min.

1530 - Began recovery.

1625 - Upper current meter s.n. 1309 was brought out of water.

1700 - Lower current meter s.n. 1310 was brought out of water.

1715 - Recovery completed. We changed the batteries on the ADF beacon. We hoped to use the same hole for the deployment of the Lonely 200 m spring 1977 mooring. Returned to Lonely for fuel/return to Barrow.

1934 - Arrived Barrow. 3 hr. 25 min. flight time.

2020 - We opened the current meters and found a small amount of water in each meter. In each case, the meters had operated for only part of the mooring duration. The tapes were removed for shipment to Seattle.

<u>March 24, 1977</u> N56RF was down for rotor head change.

<u>March 25, 1977</u> The temperature was -36°C at Barrow, and -37°C at Lonely. This was below the NOAA helicopter flight cut-off temperature (-35°C). Don Uhrich and Bill Youngstrom arrived from Seattle. The APL data system was in route. In the afternoon the temperature was up to -32°C, clear, calm.

1410 AST - Cushing, Darnall departed Barrow in N56RF (Barnhill, DeHart). Refueled at Lonely.

1626 - Arrived GNS position 71°31.5'N, 152°09.4'W. ADF beacon was down. The retrieval hole had about 6 in. of ice in it. The depth was 194 m. This would be OK for shallow mooring deployment. We replaced batteries on the ADF beacon. On the return to Lonely we flew north to the approximate deep mooring site. There were no open or newly refrozen leads. Ice appeared to be 4-6 ft. thick. Refueled at Lonely/returned to Barrow

1956 - Arrived Barrow. 3 hr. 12 min. flight time.

<u>March 26, 1977</u> Temperature -37°C; no flying. The APL equipment arrived and Uhrich began checking it out.

<u>March 27, 1977</u> Temperature Barrow -36°C, Lonely -39°C; no flying.

March 28, 1977 Temperature Barrow -39°C, Lonely -38°C; by noon temperature was up to -30°C, weather clear, winds 10 kt. NE.

1312 AST - Karig, Cushing, Youngstrom and Darnall departed Barrow in N56RF (Barnhill). Refueled at Lonely.

1509 - Arrived GNS position 71°31.1'N, 152°11.3'W, depth 192 m. We began deployment of Lonely 200 m mooring spring 1977.

1840 - AMF release s.n. 602390, rec. no. 10 was in the water.

1900 - Current meter s.n. 1315 was in water.

1907 - Current meter s.n. 1014 was in water.

1915 - The mooring was cut loose. We picked up ADF beacon and returned to Lonely for fuel/returned to Barrow.

2155 - Arrived at Barrow. 4 hr. 25 min. flight time.

March 29, 1977 The APL electronics were not yet checking out OK. No flying.

March 30, 1977 The APL electronics still not ready. We will fly to deep mooring site to check ice condition and depth. Bill Moran of the NOAA flight operations will fly with us. Weather: high, thin overcast, temperature -30°C, wind 18 kt. NE.

0959 AST - Karig, Cushing, Youngstrom and Darnall departed in N56RF (Barnhill, Moran). Refueled at Lonely.

1400 - Arrived GNS position 71°33.1'N, 152°11.3'W. There were several refrozen leads (4-5 in. ice thickness) in the area. The depth was too shallow here (566 m). We followed a north running lead out to GNS position 71°37.1'N, 152°11.7'W, depth 957 m. This was close enough for now, as the ice might move some before we would be ready to deploy. Returned to Lonely for fuel/return to Barrow.

1450 - Arrived Barrow. 3 hr. 28 min. flight time.

March 31, 1977 The APL electronics were not ready; no flying.

April 1, 1977 APL electronics appear to be ready. We would pinpoint depth and mark site, for deployment the following day.

1350 AST - Weather: clear, temperature -28°C, winds 06 kt. NE. Cushing, Youngstrom and Darnall departed Barrow in N56RF (Barnhill, DeHart). Refueled at Lonely.

1706 - After several soundings, we pinpointed depth at 1000 m and marked the ice with dye. Returned to Lonely for fuel/returned to Barrow.

1920 - Arrived Barrow. 3 hr. 11 min. flight time.

April 2, 1977 APL electronics were ready. N56RF was loaded to capacity, and there was room for only 4 passengers plus pilot. Cushing returned to Seattle as he had other commitments. Weather: high, thin overcast, temperature -29°C, winds 07 kt. NE.

1013 AST - Karig, Youngstrom, Uhrich and Darnall departed Barrow in N56RF (Barnhill).

1236 - Arrived GNS position 71°40.5'N, 152°10.4'W, depth 1000 m. Before setting up deployment equipment, we lowered the APL unit to approximately 15 m. We were not able to receive any intelligent data. After trying various hydrophone depths, we decided to return to Barrow. Returned to Lonely for fuel/returned to Barrow.

1704 - Arrived Barrow. 3 hr. 30 min. flight time.

1900 - Upon close inspection, we found that the cable between the pressure hull and the 50 kHz transducer was cracked and had flooded the transducer. We were able to repair this, and planned for a test off Pt. Barrow the following day.

April 3, 1977 Weather: clear, temperature -28°C, winds 03 kt. NE. We checked out APL unit in the morning. Youngstrom had to return to Seattle.
1239 AST - Karig, Uhrich and Darnall departed Barrow in N56RF (Barnhill).
1246 - Arrived position 3 nm NW of NARL. APL unit appeared to work. Surface receiving unit had to be kept warm. Returned to Barrow.
1511 - Arrived Barrow. 15 min. flight time.

April 4, 1977 Weather: clear, temperature -25°C, winds 03 kt. SE.
0945 AST - Karig, Uhrich, Stewart (NARL expediter) and Darnall departed in N56RF (Barnhill). Refueled at Lonely.
1154 - Arrived GNS position 71°40.0'N, 152°10.1'W, depth 552 m. We checked APL unit; it appeared to work OK. We began to set up deployment equipment. Darnall and Stewart stayed at mooring site to dig hole, while Uhrich and Karig returned to Lonely in N56RF to pick up remaining equipment.
1530 - Deployment began.
1605 - AMF release s.n. 603063, rec. no. 9 in the water.
1705 - Current meter s.n. 1313 in the water.
1740 - APL unit in the water.
1755 - Current meter s.n. 1924 in the water.
1824 - Mooring cut loose. We checked APL unit and received data back. Returned to Lonely for fuel/returned to Barrow.
2115 - Arrived Barrow. 4 hr. 27 min. flight time.

April 5, 1977 Weather: clear, temperature -25°C, winds 05 kt. SE. Karig returned to Seattle.
0937 AST - Uhrich and Darnall departed Barrow in N56RF (Barnhill). Refueled at Lonely.
1136 - Arrived GNS position 71°40.3'N, 152°10.6'W. We interrogated APL unit. We received data; some was good, but the last of the transmission was garbled. This may be deciphered later in the lab. We also interrogated the AMF release It responded fine. We returned to Lonely for fuel/returned to Barrow.
1719 - Arrived Barrow. 3 hrs. 7 min. flight time.

April 6, 1977 Uhrich and Darnall packed up and returned to Seattle.

Ice conditions encountered in the recovery/deployment area were as follows:

March 13 - March 26, 1977 In Lonely area, the ice was solid, 5-6 ft. thick and heavily rafted/ridged. On March 27, the winds were out of the south, and some new leads open both at Barrow and at approximately 50 nm north of Lonely. During the rest of the cruise the winds were out of the NE and there was no new lead activity.

3. *Methods*

Deployment phase

The current meter moorings were designed and constructed at the Department of Oceanography, University of Washington, Seattle. The flotation was a combination of 28 in. O.R.E. steel spheres and 16 in. Viny plastic spheres distributed along the mooring. The current meters were Aanderaa model RCM-4.

The acoustic releases were AMF model 322. The mooring line was 1/2 in. diameter Nolaro using polyester fibers; it was premeasured, cut and loaded on aluminum reels with connecting links at all instrument and flotation points.

The deployment equipment consisted of a 10 ft. high A-frame, which holds the mooring line reel, and is used for an anchor first, vertical deployment mode. Mechanical brakes and a stopper controlled the descent speed, and allowed the insertion of instruments. All components of the deployment system are of light-weight materials and can be broken down for helicopter-borne operations.

Recovery phase

An AMF model 301 ranging and bearing command system was used for precise relocation of the AMF model 322 releases. The divers used Unisuits, double 80 cu. ft. aluminum tanks with independent Poseidon regulators on each tank. Each diver was connected to a common tether line, and used U.S. Navy Diving Procedures and line signals.

4. *Personnel*

C. H. Darnall	Oceanographer	University of Washington
F. Karig	Mechanical engineer	APL
J. Cushing	Diver	APL
B. Youngstrom	Engineer	APL
D. Uhrich	Electronics engineer	APL
Lt. M. Barnhill	Pilot	NOAA
R. DeHart	Mechanic	NOAA
B. Neild	Mechanic	NOAA

Acknowledgments

Mr. DeHart and Lt. Barnhill's assistance in getting our operations on the ice were greatly appreciated. The expediters and personnel of the NARL and flight operations were very helpful in the completion of our task.

APPENDIX A

Mooring locations:

Lonely 200 m mooring Fall 1976
71°30.1'N, 152°09.7'W

Lonely 200 m mooring Spring 1977
71°31.1'N, 152°11.0'W

Lonely 1000 m mooring Spring 1977
71°40.4'N, 152°10.4'W

QUARTERLY REPORT

Contract R7120846
R7120847

Research Unit #138

Reporting Period: 1 April - 30 June 1977

Number of Pages : 1

GULF OF ALASKA STUDY OF MESOSCALE OCEANOGRAPHIC PROCESSES (GAS-MOP)

Dr. S. P. Hayes

Dr. J. D. Schumacher

Pacific Marine Environmental Laboratory
National Oceanic and Atmospheric Administration
3711 - 15th Avenue N. E.
Seattle, Washington 98105

July 1, 1977

I. TASK OBJECTIVES

- Eulerian measurements of the velocity field at several positions and levels
- Measurements of the along- and cross-shelf sea surface slope
- Process study to understand the interrelations among the velocity field, the bottom pressure gradient, the density field, and the wind field in order to determine the dynamics of the circulation on the continental shelf.

II. FIELD OR LABORATORY ACTIVITIES

A. Cruises: See attached Cruise Reports (3).

B. Laboratory Activities: Alderbrook (Union, WA) physical oceanography and meteorological workshop, 17-19 May 1977. During this workshop results from this year's work was discussed. Additionally, plans for FY 78 were coordinated.

III. RESULTS

The new data sets are being processed and analyzed. *

* A scientific paper by Charnell, Muench and Mofjeld discussing circulation in Lower Cook Inlet is in preparation.

Date: 31 March 1977

To: Commanding Officer
NOAA Ship DISCOVERER

From: James Haslett
Chief Scientist
Pacific Marine Environmental Laboratory

Subj: Cruise Report RP4-DI-77A, Leg III

I. Introduction

Four projects were represented on this Leg. Since the weather was good for all portions of the Leg involving operations, all parties concerned at least had the opportunity to achieve outlined objectives. These objectives are generally stated on page 2 of the project instructions. This report consists of the Chief Scientist's brief report with attachments from the other scientists reporting on their work constituting the narrative portion. Additional attachments serve to summarize statistics and present sketches of the moored arrays.

II. Scientific Personnel

Name	Affiliation
Arthur Cooper	PMEL/PMC
Dick Feely	PMEL
Jane Fisher	PMEL
Jack Hampson	USGS
Mona Janopaul	PMEL
Rick Miller	PMEL
James Haslett	PMEL - Chief Scientist

III. Cruise Report - Chief Scientist

As stated in the introduction four groups including the Chief Scientist's were represented. The cruise reports presented by Feely, Miller and Hampson describe quite well what they hoped to accomplish and the degree of success they achieved. Respectively, they were studying suspended matter, sea level changes in response to atmospheric changes and changes in the water column, and possible "slumps" or "slumping" on the sea bottom.

The portions of the cruise I was concerned with, in addition to partitioning time for all, were the continuation of the continental shelf studies in the northeastern Gulf of Alaska, represented now by the newly deployed mooring 62K and the Kodiak Island Shelf Studies. The general objectives of these studies are to measure the currents at the mooring sites, identify possible responses to dynamic changes in the ocean or atmosphere, and generally describe the physical behavior of the water in these regions. The former ties in closely with the programs represented by Miller and Feely since they are in the general area off Icy Bay. Both moorings and CTD stations are utilized in the studies in this area. The moorings except for 62 and the CTD stations are discussed in the reports by Miller and Feely.

Six current meter arrays were scheduled to be recovered during the Kodiak Island operation with one being re-deployed (WGC-2) One array (k-4) was not recovered. Only the bottom meter on K-3 was recovered. Note that the station designation used in this report agrees with the tabular designation given in the Project Instructions, not those shown on the chartlett; namely, K-3 and K-4 are reversed. Detailes such as location, meter depths and tabulated in an attachment.

The CTD stations occupied on this portion of the Leg were closely spaced (5 Km) to allow the defining of possible fronts between different water masses or to identify structures along the line. These lines are summarized in a statistical attachment but briefly they are:

(1) Two lines through the old and new WGC-2 locations to identify a possible front between two different water masses;

(2) Lines across the upper and lower entrances to Shelikof Strait;

(3) Lines across Kennedy and Stevens Entrances at the Barren Islands;

(4) and, finally a line across the mouth of Cook Inlet

All of these stations were occupied. Counting these, the work in the north eastern Gulf of Alaska, and those to yet be taken in the KISS grid approximately 140 CTD stations will have been accupied. The analog data obtained indicate that the equipment functioned correctly; however, no conclusion can really be reached until the tapes are analyzed.

IV. Attachments

1. Cruise Report - Feely
2. Cruise Report - Miller
3. Cruise Report - Hampson
4. Moorings - categorized as recovery or deployment regardless of outcome.
5. CTD summary

V. Figures

Figures for WIST I and WIST II are included to ssist anyone who is attempting to recover them since they are "non-standard" compared to the mooring configuration usually used in these waters by PMEL.

Suspended Mater Studies - RP4-DI-77A-III - Dick Feely

I. Introduction

The primary objective of the suspended matter program during Leg III was to study the processes controlling resuspension and redistribution of bottom sediments in the study the processes controlling resuspension and redistribution of bottom sediments in the area southeast of Icy Bay. The data from this cruise, when completed, will provide baseline information for the Outer Continental Shelf Assessment Program.

II. Methods

Water samples were collected in 10 liter Top-Drop Niskin Bottles using the ship's Rosstte-CTD system. Nominal sampling depths included: surface, 10m, 20m, 40m, 60m, 80m, 100m, 150m, and 5m above the bottom. The water samples were filtered under vacuum through preweighted 0.4um Nuclepore filters for the determination of particulate carbon and nitrogen.

Litht scattering measurements were obtained using a PMEL nephelometer which is a replicate of the University of Washington nephelometer modified to provide real time measurement of forward light scattering. The nephelometer was interfaced into the ship's CTD system using the sound velocity channel (14-16KHz). Continous vertical profiles of forward light scattering were obtained in analog form on a Hewlet-Packard 7044A X-Y recorder. The signals from the CTD-Rosett system and the nephelometer were also simultaneously interfaced into the ship's data acquisition system. This resulted in computer listings of conductivity, temperature, depth, salinity, sigma T and light scattering for all of the stations.

III. Accomplishments

A preselected transect of eight stations was presented to the ship's officers at the beginning of the cruise which established the basic plan for the duration of the cruise. All of the stations were successfully occupied. Approximately 150 water samples provided 250 filters for subsequent laboratory analysis. At two stations, WIST I and WIST II, single arrays consisting of nephelometer mounted in the weight, two and four Aanderaa current meters, respectively, and one and three sediment traps,respectively, were deployed on 17 March 1977. The water depths at the locations of the arrays were 54 and 108 meters, respectively. In addition, within 500 meters of each array a 36 hour time series study of the variabitity of temperature, salinity and light scattering was conducted.

VI. Acknowledgements

I can only add my appreciation to that already expressed in the other component reports for the support received by all personnel on board ship to make this a successful operation. I do wish to echo Rick Miller in thanking Chief Sherrill and his crew, not only for the competent manner in which they handled the moorings, but for the CTD winch operation under uncomfortable conditions.

Sea Level Slope Study RP4-DI-77A, Leg III Rick Miller

I. Objectives

A continuing series of pressure gages, current meters and CTD measurements in two lines across the continental shelf in the vicinity of Icy Bay to detect changes in the sea level topography in response to atmospheric events and dynamic changes in the water column.

II. Accomplishments

A total of five moorings were recovered from two lines running off-shore. Each mooring consisted of a pressure temperature gage (PTG) mounted in parallel with a type 322 AMF acoustic release and a railroad wheel anchor. Two Aanderaa current meters on each mooring recorded current velocity and direction, as well as temperature and conductivity.

A sixth mooring consisting of an AMF release and a PTG failed to surface after the release had been fired. Recovery coordinates indicated that the buoy had been moved approximately one mile, probably by a trawling ship.

Three moorings were deployed in the same positions as those recovered on line one. Each consisted of an acoustic release and a PTG. The mooing at 250 meters freefalled when the lowering device pre-tripped due to immoderate sea conditions. When interrogated the acoustic release did not reply.

All three moorings deployed used a 28" alumunum sphere for subsurface flotation.

III. Summary of Moorings

Mooring	Action	Time	Day	Latitude	Longitude	Depth	Current Meters	PTG
SLS 16	Recovered	1920Z	15 Mar	60°01.3'	142°25.5'	50m	2	Yes
SLS 17	Recovered	1705Z	15 Mar	59°50.7'	142°33.3'	98.5m	2	Yes
SLS 18	Not Recovered							
SLS 19	Recovered	1812Z	17 Mar	59°46.5'	141°33.9'	51m	2	No
SLS 20	Recovered	0150Z	17 Mar	59°40.7'	141°41.8'	102m	2	Yes
SLS 21	Recovered	0119Z	16 Mar	59°20.3'	142°06.6'	251m	2	Yes
SLS 22	Deployed	0014Z	17 Mar	59°47.4'	141°39.5'	53m	0	Yes
SLS 23	Deployed	0240Z	18 Mar	59°40.6'	141°41.2'	103m	0	Yes
SLS 24 *	Deployed	0258Z	17 Mar	59°21.9'	142°09.7'	251m	0	Yes

* Did not respond to interrogation

IV. CTDs As part of the Sea Level Slope experiment, two lines of CTD casts were made in the Icy Bay area. Thise lines were approximately defined by the sixty recovered moorings, beginning at about the 50 meter contour and extending to the 1800 meter contour. Nine stations were taken on ine one with end points at 59°46.8'N, 141°32.7'W; 59°10.1'N, 142°23.9'W and seven stations on line two with end points at 60°01.3'N, 142°28.9'W; 59°20.2'N, 143°06.8'W.

I wish to give a special thanks to Chief Sherril and his crew.

Bottom Sampling Project - RP4-DI-77A, Leg III Jack Hampson

I. Introduction

This bottom sampling project is part of an ongoing study of geologic hazards to oil and gas development, and accumulation of baseline data to describe surficial geology of the continental shelf, Eastern Gulf of Alaska. This ongoing research is being conducted by the Eastern Gulf of Alaska Environmental Assesment Project, Marine Branch, Geological Survey. U.S. Dept. of Interior. The work is jointly funded by the Geological Survey and a contract with NOAA SCSEAP.

II. Primary Objectives

The primary objectives for bottom sampling on this cruise are:

1. To get a series of grab samples and cores traversing a region of apparent downhill sediment slumping south of Icy Bay, Alaska. These mud slides constitute a significant geologic hazard to any structures resting on the sea floor, such as drilling platforms or pipelines. The objective is to get samples both inside and outside the slump area in order to compare the structure, texture and any other identifying features between "slumped" and "unslumped" sediment masses. The samples will be used for:

   a. shipboard analysis of shear strength
   b. peparation of special samples for determining percentage of water content.
   c. lab analysis including X-Radiography, grain size determination and mineralology

The ultimate goal of these analysis is both to define existing slumps and to delineate regions of potential slumping.

2. The second objective is to collect sediment samples at any stations where time allows, in order to supplement baseline data on surficial geology of the area.

III. Accomplishments

Overall evaluation: Excellent. Data Collected: 28 Shipek grab samples
17 Benthos gravity cores
26 stations occupied

The original hope was for one set of cores transecting the slump area. We were able to get two transects, which greatly increases the statistical significance of comparisons between slumped and unslumped sediments. In addition to the new transect stations Q, R, S, T, the first transect of the slump was made more complete by the addition of station DD. Initial inspection indicates distinguishable differences between slumped and unslumped sediments. Further analysis will be conducted to bear this out.

Bottom Sampling Project continued

Several areas where baseline data was sparse have been filled in by sampling on this cruise. Samples were obtained at all but two of the originally scheduled ship's stations. Areas of sparse sampling in the 300-k800 meter depth range south of Icy Bay were filled in. Additional samples (stations U, V, W, X) were obtained at the mouth of Yakutat Sea Valley. This is an area of particular interest relative to sediment distribution due to it's role as a glacial valley during Pleistocene glaciation. It is another area where sample coverage had previously been sparse.

This cruise marks the successful initiation of shipboard engineering properties analysis in the Eastern Gulf of Alaska Project. It will serve to supply experience in suggestions for obtaining accurate shipboard measurements in the future.

Acknowledgements

I would like to commend the Survey Department and the uncomplaining winch operators. All watches were helpfull and they were there when I needed them. I would like to extend special thanks to LCDR Stewart McGee for his obliging assistance and determination that I be able to get done all the science I came to get done. Thanks to the Chief Scientist, Jim Hazlett, for his willingness to allow me the time I requested and to all the scientific personnel for their friendly support. Finally, I extend my gratitude and appreciation to Captain Miller, the officers and crew of DISCOVERER from whom I have cheerfully received all the assistance and support for which I asked.

Samples Summary

Station	Shipek	Grav. Core	Vane Shear Anal.	Station	Shipek	Grav. Core	Vane Shear Anal.
A	1	0	--	L	1	0	--
B	1	0	--	M	1	0	--
WIST B	1	0	--	N	1	1	Y
C	1	1	N+	O	-	-	--
C-Return	1	0	N	P	-	-	--
D	1	2	Y	Q	1	3	N
D-Return	2	2	Y	R	1	1	N
E	1	2	Y	S	1	1	N
F	1	0	--	T	1	1	--
G	1	*	--	U	1	0	--
H	2	0	--	V	1	0	--
I	1	0	--	W	1	0	--
J	1	0	--	X	1	0	--
K	1	1	Y				

+Core too soft
*2" of mud in barrel extruded into plastic sack.

Attachment 4A - Mooring Recovery

T. G. = Tide Gauge; RCM-4=Aanderaa Current Meter; A.R.= Acoustic Release

Mooring I.D.	Position	Depth (meters)	Instrument	Instr. Depth (meters or location)	Comments
62J	59°38.1' 142°06.1'	185	RCM-4	22	Lost - retaining band broken, althouth visible when recovery started
			RCM-4	52	
			RCM-4	102	
			RCM-4	175	Lost - wire possibly cut by bow-thruster
			A.R.	Anchor	Lost - wire possibly cut by bow-thruster, vinys lost also
WGC-2E	57°33.8' 150°49.3'	90	RCM-4	19	
			RCM-4	79	Leaked - rotor missing on recovery
			T.G.	89	
			A.R.	Anchor	
K-1	57°44.8' 154°43.7'	228	RCM-4	28	Leaked
			RCM-4	108	
			A.R.	Anchor	Vinys destroyed, probably imploded
K-2	58°37.2 153°05.0'	164	RCM-4	32	
			RCM-4	112	
			A.R.	Anchor	
K-3	58°45.3' 152°10.6'	120	RCM-4	21	Lost S.S. float and upper meter, time unknown
			RCM-4	101	No Rotor
			A.R.	Anchor	
K-4	59°01.9' 151°56.1'	198	RCM-4	20	Release responded; firing indicated. Rapid interrogation gave erratic results. Constant position of response suggests mooring not moving. Release possibly fouled or flotation destroyed.
			RCM-4	100	
			A.R.	Anchor	
K-5	56°33.2' 152°39.5'	95	RCM-4	23	
			RCM-4	83	
			A.R.	Anchor	

Attachment 4A - Mooring Recovery (continued)

Mooring I.D.	Position	Depth	Instrument	Instr. Depth (meters or location)	Comments
SLS-16	60°01.3' 142°25.5'	50	RCM-4 RCM-4 T.G. Release	Not Accessable Anchor Anchor	Not Accessible (N.A.) means at the time of writing this report on board. Severe corrosion on upper meter and all small parts.
SLS-17	59°50.7' 142°33.3'	98.5	RCM-4 RCM-4 T.G. A.R.	NA NA Anchor Anchor	Tape used up Tape used up - case corrosion
SLS-18	N.A.	N.A.	T.G. A.R.	N.A.	Not recovered. Ranging showed mooring to be about 1 mile from original position
SLS-19	54°46.5' 141°33.9'	51	RCM-4 RCM-4 A.R.	N.A. N.A. Anchor	Broken rotor All vinys lost due to wire corrosion
SLS-20	59°40.7' 141°41.8'	102	RCM-4 RCM-4 T.G. A.R.	N.A. N.A. Anchor Anchor	 Slight corrosion next to O-ring
SLS-2	59°20.3' 142°06.6'	251	RCM-4 RCM-4 T.G. A.R.	N.A. N.A. Anchor Anchor	Rotor missing; band broken, no tie-wrap Rotor missing; tape drive stopped Vinys inploded apparently

Attachment 4A - Mooring Recovery (continued)

Mooring I.D.	Position	Depth	Instrument	Instr. Depth (meters or location)	Comments
SLS-16	60°01.3' 142°25.5'	50	RCM-4 RCM-4 T.G. Release	Not Accessable Anchor Anchor	Not Accessible (N.A.) means at the time of writing this report on board. Severe corrosion on upper meter and all small parts.
SLS-17	59°50.7' 142°33.3'	98.5	RCM-4 RCM-4 T.G. A.R.	NA NA Anchor Anchor	Tape used up Tape used up - case corrosion
SLS-18	N.A.	N.A.	T.G. A.R.	N.A.	Not recovered. Ranging showed mooring to be about 1 mile from original position
SLS-19	54°46.5' 141°33.9'	51	RCM-4 RCM-4 A.R.	N.A. N.A. Anchor	Broken rotor All vinys lost due to wire corrosion
SLS-20	59°40.7' 141°41.8'	102	RCM-4 RCM-4 T.G. A.R.	N.A. N.A. Anchor Anchor	 Slight corrosion next to O-ring
SLS-2	59°20.3' 142°06.6'	251	RCM-4 RCM-4 T.G. A.R.	N.A. N.A. Anchor Anchor	Rotor missing; band broken, no tie-wrap Rotor missing; tape drive stopped Vinys inploded apparently

Attachment 5 - CTD Summary

A. Icy Bay Region

WIST Line - also included nephelometers and 2 - 36 hour time series at WIST I and WIST II.

WIST LINE	POSITION	
A	59°48.7'	141°31.5'
B (WIST I)	59°46.0'	141°34.8'
C	59°42.9'	141°38.3'
D (WIST II)	59°39.6'	141°42.0'
E	59°33.2'	141°50.7'
F	59°26.7'	141°59.5'
G	59°23.4'	142°04.0'
H (SLS-24)	59°20.2'	142°08.1'
I	59°11.2'	142°20.6'
62K	59°38.1'	142°06.1'
SLS (16-18) Line		
J (SLS 16)	60°01.2'	142°25.2'
K	59°55.2'	142°27.8'
L (SLS-17)	59°49.5'	142°31.3'
M	59°45.9'	142°36.4'
N (SLS-18)	59°42.1'	142°41.9'
O	59°33.2'	142°50.2'
P	59°22.9'	142°59.9'

B. Kodiak Lines - 5 Km spacing

IDENTIFICATION	POSITION				
	Beginning		Ending		No. of Stations
WGC-2 (line 1)	57°24.8'	150°20.2'	52°36.8'	150°59.0'	9
WGC-2 (line 2)	57°45'	151°17'	57°22'	152°12'	17
Lower Shelikof	57°39.2'	154°29.5'	57°50.6'	154°52.5'	7
Upper Shelikof	58°33.2'	152°49.1'	58°41.2'	153°20.5'	
Stevenson Entrance	58°40.0'	152°16.7'	58°50.6'	152°04.5'	5
Kennedy Entrance	58°59.5'	151°04.5'	59°04.5'	151°53.1'	3
Lower Cook Inlet	58°56.7'	153°09.7'	59°14.2'	152°04.4'	15

Figure 1
WIST I - Design Depth 50 Meters

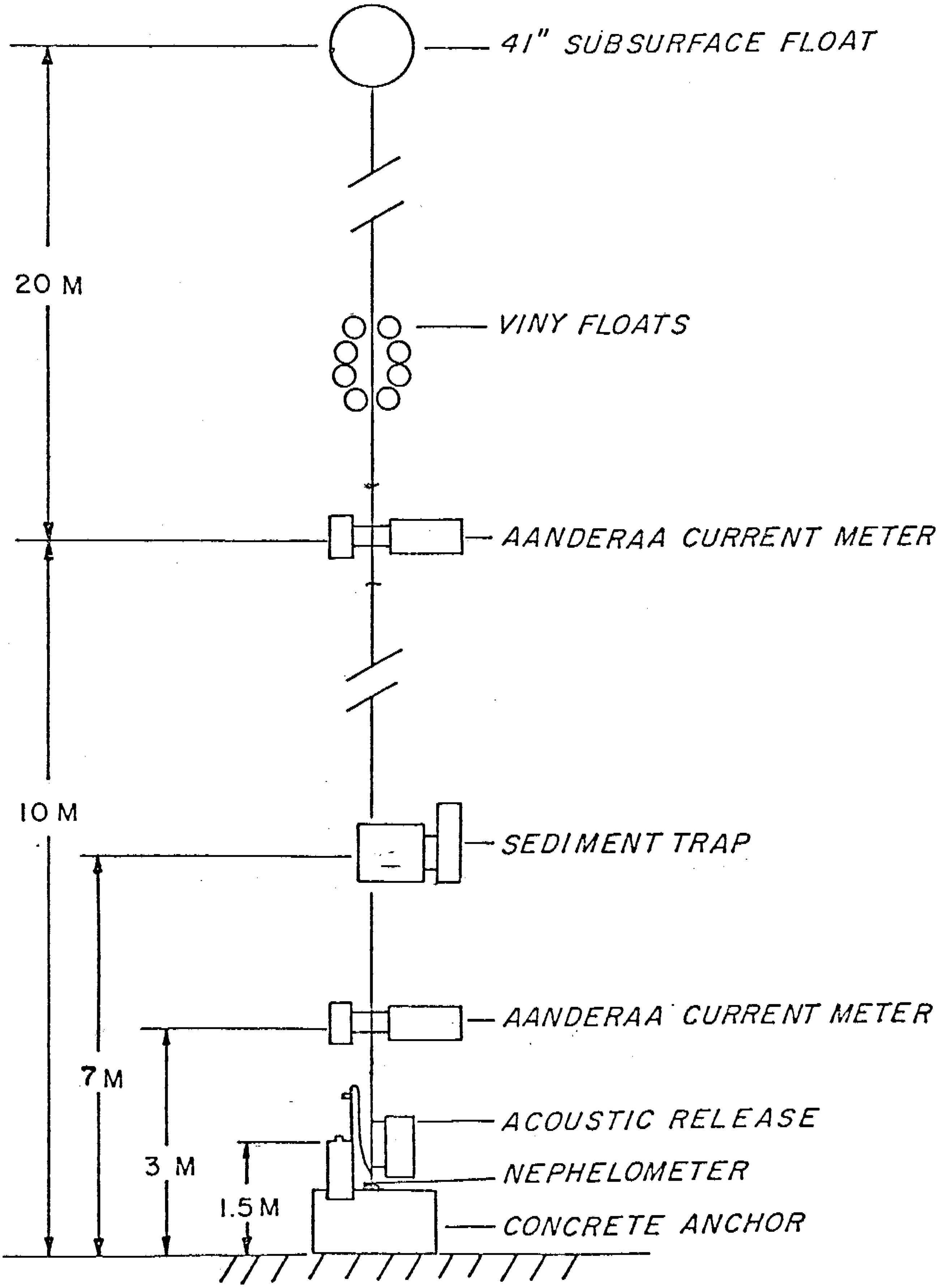
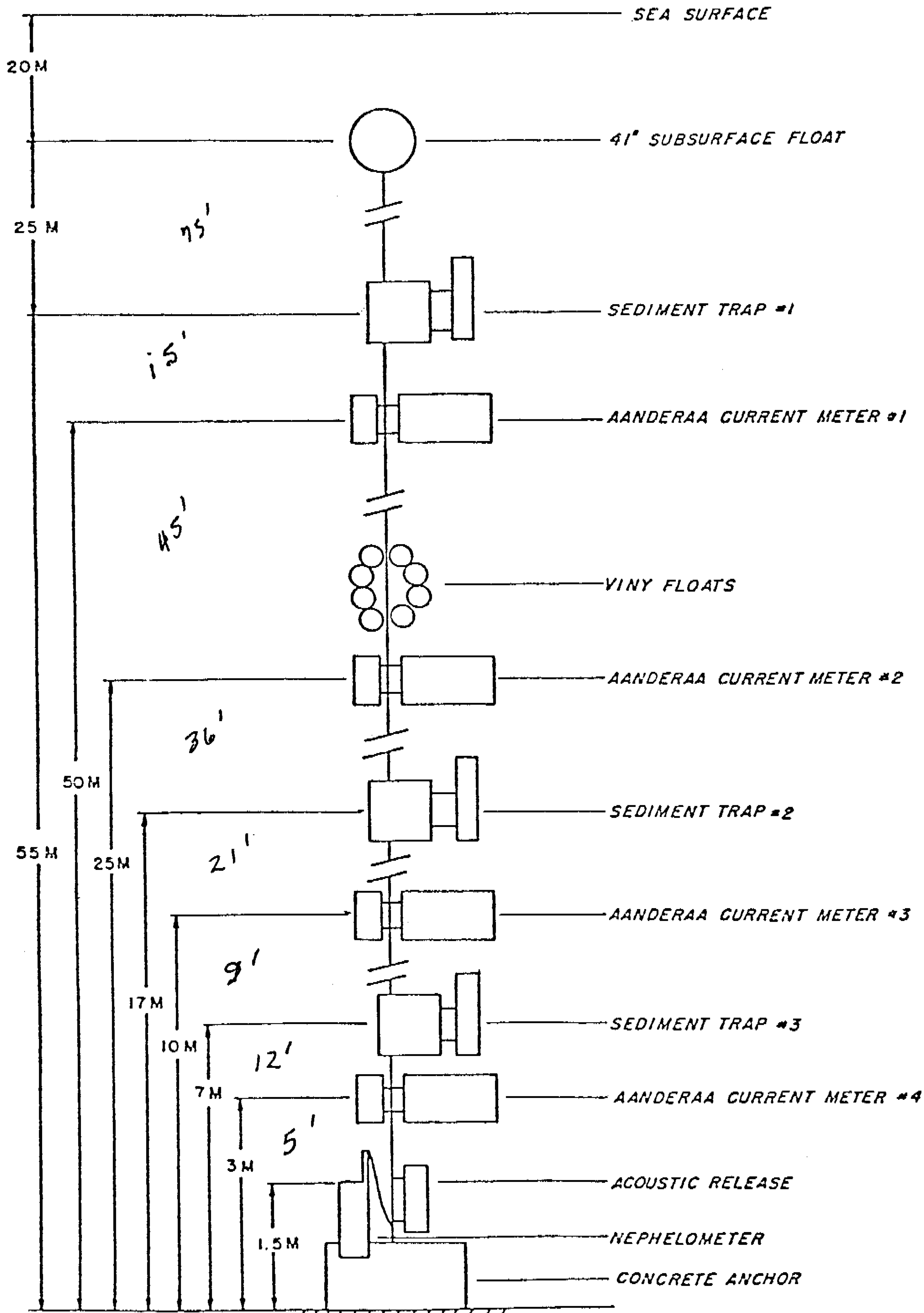


Figure 2
WIST II - Design Depth 100M



NOAA Ship MILLER FREEMAN

Cruise Report
RP-4-MF-77B Leg VII
5/23 - 6/11/77

Introduction

This cruise was made in support of the Outer Continental Shelf Environmental Assessment Program (OCSEAP) designed to study the circulation of water on the continental shelf areas of Alaska. Because it covered two diverse areas, Bristol Bay and the Icy Bay region, Leg VII was divided into two segments denoted as VIIA and VIIB in the following discussion.

The objectives of each of these segments were:

Leg VIIA:

(1) Deploy satellite-tracked free-drifting buoys to asses surface circulation in the Southern portion of Bristol Bay known as St. Georges Basin.

(2) Collect CTD and XBT data sufficient to delineate the frontal boundary between the well mixed coastal water of Bristol Bay and the two layered water typical of Bristol Bay Mid Shelf.

(3) Collect CTD data in nearshore areas to investigate the behavior of local river discharge and phenomena such as the high salinity anomoly in Kuskokwim Bay.

(4) Attempt to locate and, if possible recover, the current meter station BC-15B lost on a recovery attempt by the NOAA Ship DISCOVERER two weeks earlier.

Leg VIIB:

(1) Recover three current meter moorings and deploy one current meter mooring in the Icy Bay region.

(2) Collect CTD and Water samples for filtering of Suspended Sediments in the general area of the WIST arrays.

Personnel

The following scientific personnel were aboard to carry out the proposed program:

Leg VIIA.

(1) R. L. Charnell, Chief Scientist
(2) J. D. Schumacher
(3) D. J. Pashinski

Leg VIIB.

(1) D. J. Pashinski, Chief Scientist
(2) J. Fisher
(3) M. Pizzello

Accomplishments

Attachment A is a summary of stations occupied during the Bristol Bay portion of the cruise. The field program for the NOAA Ship MILLER FREEMAN was dependent upon the accomplishments of the NOAA Ship DISCOVERER during her cruise 26 April - 16 May, 1977. Because of the very profitable DISCOVERER cruise the scope of the MILLER FREEMAN CTD program was reduced from the original proposal so that more ship time could be directed to the effort in the Icy Bay region. Because of near ideal weather conditions over Bristol Bay at the time of the Leg VIIA effort the Bristol Bay portion of the project was highly successful.

Six free-drifting buoys were deployed in St. Georges Basin. These buoys, tracked by the Nimbus-6 satellite, were of the Richardson design produced by Polar Research Labs, drogued with a 2m x 10m window shade at a central depth of 15 meters below the surface. They were deployed buoy first, using the small waist crane and a release hook, followed by simply dropping the weighted drogue. At the time of release confirmation of their correct operation had been received. Special recognition in the successful deployment of these buoys is due for George Lapiene (OCSEAP, Juneau) for his herculean effort to ensure the delivery of the buoys to the NOAA Ship MILLER FREEMAN, dockside in Kodiak, AK. in spite of last minute delays in shipping schedules and a commercial air carrier strike.

Five XBT sections were made to delineate the character of the coastal/shelf water front in Bristol Bay. For each section shallow water XBTs were dropped at one nautical mile intervals. As expected the structure front was found in the proximity of the 50 meter isobath in all cases, and was extremely narrow; a transition from a two layer shelf water structure to a well mixed coastal water occurred in less than 10 nautical miles. This marks the first time for such a detailed investigation of this prominant feature of Bristol Bay.

These difficulties were overcome and the station was maintained. Again one current meter failed due to a battery problem without a large loss in data.

The full scale station grid was occuppied with CTD stations. The Icy Bay stations were occuppied twice, and the Cape Yakataga line was occuppied once. The full coverage of the area station grid allows the excellent data set to be maintained over another quarter.

During the fall of 1976 through out discussions on direction to take in OCSEAP near shore work the question of studying the fjords of the Alaskan coast continually arose. At that time other projects were receiving higher priority and the investigation of the fjords was shelved. This cruise provided a unique opportunity to obtain some exploratory CTD data in both Icy Bay and Yakutat Bay. These exploratory stations should reveal if the fjords have classical circulation patterns or an unknown dynamic control.

A line of 5 CTD stations were occuppied up the axis of Icy Bay to the limit of safe penatration. This line observed water column profiles across the entrance sill and in the first basin. The line occuppied a station on the sill separating the inner and outer basins and the last station was just into the inner basin. Preliminary view of the data suggests a classic esturine circulation with warm saline water coming in from offshore to replenish the basin bottom waters.

Within Yakutat Bay a line of 8 CTD stations were occuppied in the same plan as those in Icy Bay. Yakutat Bay is a two basin system similar to Icy Bay though the inner sill is not as shallow as the Icy Bay sill. The principal differences between the two bays is the volume of drifting ice. This leads to the question of surface water temperature and the possibility of a more intense circulation within Yakutat Bay.

Acknowledgments

This cruise was successful for a variety of conditions, including some we had no control over. In large measure the success was due to the ship and the professionalism of her entire complement. It has been a pleasure to work aboard the MILLER FREEMAN because she is so well appointed and has cooperative and enthusiastic personnel. Most important the officers show great adaptability in the face of ever changing scientific requirements. Thanks go to the entire ship for her part in making this a very successfull effort.

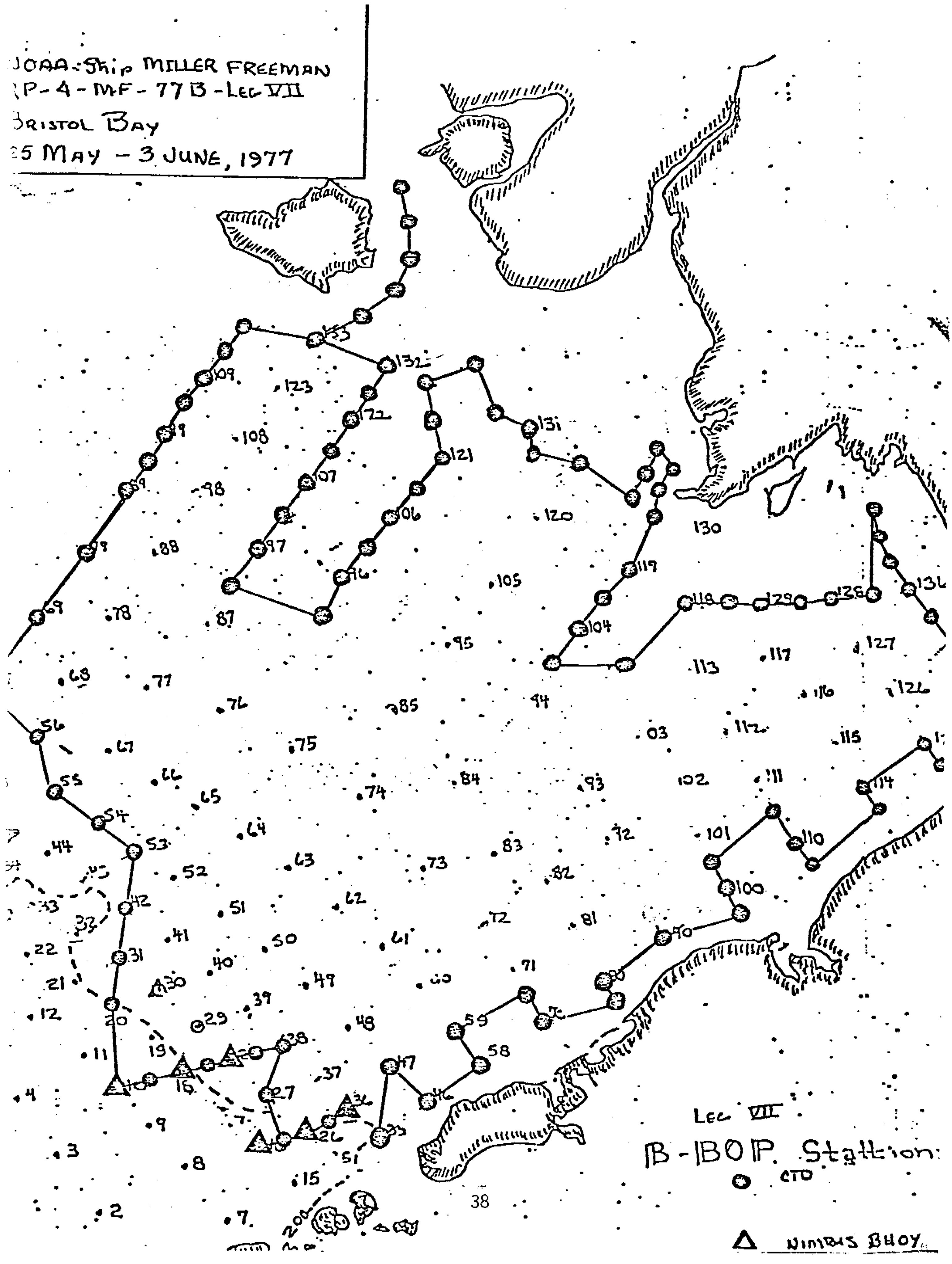
Nearshore excursions were made into Etolin Strait, Kuskokwim Bay, and Kulukak Bay to further examine the transition from open bay conditions to nearshore regimes. This included special investigations around the previously observed high salinity anomoly region of outer Kuskokwim Bay and a CTD section across the mouth of Kvichak Bay. This data when properly analysed should be valuable in quantifying the behavior of fresh water inputs to Bristol Bay.

Following the loss of current meter station BC-15B during the DISCOVERER cruise a listening schedule was established as each CTD station was occupied by the MILLER FREEMAN. It is known that the mean circulation in Bristol Bay is low so that should BC-15B be adrift, it probably would not have exited the area at the time of the MILLER FREEMAN cruise. There was no positive response to this effort, so the ship reoccupied the old site of BC-15B on the chance that it had not properly released. Again there was no response to the interogation, although the new station, BC-15C, could clearly be heard. It is clear that BC-15B has been lost after having been set adrift on the attempted recovery.

Attachment B is a summary of stations occuppied during the NEGOA, Icy Bay, portion of the cruise. This portion of the cruise was intended to primarily service three instrumented moorings in the near shore region off Icy Bay with a CTD program to fill periods when mooring work could not be scheduled. A generous allotment of cruise time was dedicated to this effort in the light of the highly variable weather in the Gulf of Alaska. With the excellent weather conditions of the Bristol Bay portion of the cruise carrying on into the Icy Bay effort all goals established were achieved with a considerable added benefit in extending our knowledge of the area into the esturine reaches of the coast.

Two moorings, WIST-1 and WIST-11 were succesfully recovered in the shallow water near the coast culminating a prototype experiment into Wave Induced Sediment Transport processes. Each mooring carried newly developed sediment traps, standard current meters, and nephelometers. Two of the four sediment traps operated correctly, a reasonable success figure for this stage in the development. One current meter failed due to a battery failure, however, indications are the failure occurred recently and little data loss was incurred. The nephelometer of WIST-11 failed to return with the mooring due to failure of the securing lanyard. Evidence indicates that the lanyard chaffed on the accoustic release to the point that the strength was reduced to less than that sufficient to lift the nephelometer.

The long term current monitoring station 62 was maintained with the successful recovery of 62K and subsequent deployment of 62L. The intitial location of the station was complicated by uncertainty in the geographic position due to discrepencies in the position data at the time of the previous deployment.


JOAA-Ship MILLER FREEMAN
RP-4-MF-77B-LEG VII
BRISTOL BAY
25 MAY - 3 JUNE, 1977
LEG VII
B-BOP Station
CTD
NIMBUS BUOY

ATTACHMENT A

STATION SUMMARY

MILLER FREEMAN CRUISE RP-4-MF-77B

LEG VII A 23 MAY - 5 JUNE , 1977

STATION NUMBER	GRID NUMBER	DATE/TIME GMT	LATITUDE N.	LONGITUDE W.	CAST DEPTH M	WATER DEPTH M
1*	36.0	146/0414	54-51.4	165-44.5	N.B. 0027	154
1	36.0	0426	54-51.4	165-44.5	148	154
2	36.1	0547	54-47.0	165-57.2	196	203
3	26.0	0722	54-42.0	166-10.3	280	298
3*	26.0	0752	54-42.1	166-09.8	N.B. 0056	298
4*	16.0	0937	54-37.0	166-42.3	N.B. 0544	411
4	16.0	0951	54-37.0	166-42.7	406	411
5	26.1	1125	54-38.8	166-27.3	350	353
6	27.0	1344	54-57.2	166-38.9	154	157
7	38.0	1556	55-17.0	166-28.9	138	141
8	38.1	1713	55-13.9	166-45.0	135	146
9*	28.0	1830	55-10.9	167-03.1	N.B. 0011	152
9	28.0	1836	55-10.8	167-03.1	146	152
10	28.1	1948	55-09.4	167-17.8	156	161
11*	18.0	2058	55-06.0	167-33.4	N.B. 0535	269
11	18.0	2108	55-06.0	167-33.7	260	269
12	18.1	2242	55-00.3	167-54.4	740	1372
13*	10.0	147/0038	54-53.3	168-15.6	N.B. 0503	2205
13	10.0	0050	54-53.2	168-15.8	751	2203
14	20.0	0517	55-29.8	168-19.4	294	294
15	31.0	0720	55-45.6	168-19.0	135	144
16	42.0	0925	56-07.9	168-12.9	157	157
17	53.0	1140	56-29.2	168-10.3	128	128
18	54.0	1330	56-38.7	168-36.0	106	113
19	55.0	1535	56-50.7	169-07.0	80	86
20	56.0	1742	57-10.9	169-18.1	70	75
21	57.0	1957	57-28.0	169-50.2	65	70
22	69.0	2245	57-40.0	169-17.9	60	68
--	XBT LINE	21 DROPS AT 1 NAUTICAL MILE INTERVALS				
23	79.0	148/0125	58-17.0	168-45.3	65	69
--	XBT LINE	19 DROPS AT 1 NAUTICAL MILE INTERVALS				
24	89.0	0350	58-39.1	168-20.7	50	55
--	XBT LINE	8 DROPS AT 1 NAUTICAL MILE INTERVALS				
25	99.1	0509	58-48.8	168-08.4	38	38
26	99.0	0630	58-58.8	167-55.9	40	44
27	109.1	0747	59-07.8	167-42.0	37	42
28	109.0	0914	59-18.0	167-29.0	33	38
29	124.1	1042	59-27.3	167-13.1	29	32
30	124.0	1201	59-35.6	167-02.9	29	32

31	133.6	148/2027	60-20.1	165-29.8	25	30
32	133.5	2328	60-09.9	165-24.5	18	22
33	133.4	149/0051	59-59.9	165-19.8	23	29
34	133.3	0246	59-50.3	165-30.8	25	31
35	133.2	0430	59-43.5	165-41.8	20	24
36	133.1	0924	59-35.6	165-57.2	24	27
37	133.0	1039	59-31.1	166-13.4	26	28
38	132.0	1303	59-22.4	165-27.0	16	20
39	132.1	1421	59-12.0	165-37.1	22	26
40	122.0	1534	59-03.0	165-49.3	27	31
41	122.1	1650	58-52.9	166-04.0	28	33
42	107.0	1817	58-42.8	166-19.4	36	40
43	107.1	1939	58-31.2	166-35.1	42	45
--	XBT	11 DROPS AT 1 NAUTICAL MILE INTERVALS				
44	97.0	2115	58-19.0	166-51.6	46	52
--	XBT	13 DROPS AT 1 NAUTICAL MILE INTERVALS				
45	97.1	2308	58-05.1	167-06.7	60	64
46	96.1	150/0217	57-55.5	166-07.7	59	63
--	XBT	12 DROPS AT 1 NAUTICAL MILE INTERVALS				
47	96.0	0354	58-10.0	165-55.8	46	50
--	XBT	4 DROPS AT 1 NAUTICAL MILE INTERVALS				
48	106.1	0515	58-20.0	165-39.7	41	48
49	106.0	0642	58-29.8	165-23.1	40	44
50	121.1	0813	58-40.0	165-05.1	38	40
51	121.0	0959	58-51.1	164-47.7	26	33
52	131.4	1153	59-06.3	164-51.0	24	27
53	131.3	1333	59-18.1	164-50.2	20	24
54	131.5	1530	59-23.9	164-19.8	19	23
55	131.1	1807	59-05.5	164-07.9	23	30
56	131.0	1941	59-02.1	163-48.1	22	27
57	120.2	2120	58-50.2	163-45.0	27	30
58	120.4	2306	58-47.5	163-16.6	25	27
59	120.5	151/0137	58-34.0	162-39.1	25	29
60	120.6	0300	58-44.7	162-35.7	34	38
61	120.7	0415	58-55.0	162-27.7	36	40
62	130.1	0515	58-46.7	162-16.1	26	31
63	130.2	0621	58-38.9	162-25.8	44	50
64	130.3	0712	58-30.1	162-22.8	40	46
65	119.0	0928	58-12.3	162-39.0	35	38
66	104.1	1132	58-02.2	162-56.0	40	42
67	104.0	1330	57-52.7	163-11.7	43	47
68	94.1	1540	57-37.5	163-30.9	45	49
69	BC-15	1841	57-38.0	162-44.9	43	48
70	118.0	2234	58-01.4	162-02.3	39	43
71	118.1	152/0023	58-00.9	161-36.3	52	56
72	129.0	0152	58-00.8	161-13.6	38	42
73	129.1	0318	58-01.9	160-47.9	38	42
74	128.0	0439	58-03.0	160-22.6	43	47
75	128.1	0602	58-05.2	159-56.6	41	48
76	128.2	0905	58-38.8	159-53.7	27	31
77	128.3	1032	58-29.6	159-44.8	28	32
78	128.4	1153	58-20.1	159-36.2	25	28
79	136.0	1327	58-05.8	159-31.4	43	47
80	136.1	1513	57-56.3	159-17.0	45	49

81	135.0	152/1646	57-44.9	158-58.9	41	48
82	135.1	1758	57-37.1	158-47.6	40	48
83	134.0	1906	57-30.1	158-37.5	38	46
84	134.4	2006	57-24.9	158-29.4	29	37
85	134.5	2310	57-03.6	159-08.8	33	36
86	125.0	153/0018	57-08.8	159-21.6	49	53
87	114.0	0252	56-55.2	159-56.9	53	57
88	114.1	0425	56-46.5	159-47.0	43	47
89	114.2	0949	56-26.2	160-31.1	43	47
90	110.0	1118	56-33.9	160-43.6	56	64
91	110.1	1314	56-44.9	160-57.4	62	70
92	101.1	1643	56-27.1	161-39.7	64	68
--	XBT	9 DROPS AT 1 NAUTICAL MILE INTERVALS				
93	101.2	1813	56-15.0	161-26.2	53	59
--	XBT	4 DROPS AT 1 NAUTICAL MILE INTERVALS				
94	101.3	1940	56-03.9	161-12.5	24	30
95	90.0	2234	56-58.5	162-10.0	51	60
96	80.0	154/0209	55-41.8	162-53.2	54	57
--	XBT	10 DROPS AT 1 NAUTICAL MILE INTERVALS				
97	80.1	0337	55-30.0	162-40.4	31	35
98	70.0	0648	55-26.1	163-32.0	69	73
99	70.1	0812	55-36.0	163-42.8	80	88
100	59.0	1112	55-22.7	164-31.4	92	102
101	58.0	1257	55-10.3	164-13.2	60	64
102	46.0	1532	54-56.4	164-50.1	75	79
103	37.0	1646	55-03.2	165-04.9	104	115
104	35.0	1918	54-42.3	165-21.9	166	176
--	XBT	5 DROPS AT 6 NAUTICAL MILE INTERVALS				

* Indicates the grid station at which a Nimbus Drift Buoy was deployed

BRISTOL BAY TOTALS

CTD CASTS -- 104

XBT DROPS -- 116

DISCRETE SURFACE SALINITIES -------------------- 216

DRIFT BUOY DEPLOYMENTS ------------------------- 6

Attachment B

Station Summary - Leg VII B

Sequence	Grid	Date/time	Latitude	Longitude	Cast Depth	Water Depth
1	I	159/0653	59-11.1	142-20.3	700	1682
2	H	0855	59-20.2	142-08.5	275	291
3	G	0951	59-23.3	142-04.3	195	209
4	F	1046	59-26.8	141-59.6	175	187
5	E	1152	59-33.3	141-50.5	160	165
6	D	1257	59-39.4	141-42.2	108	112
7	C	1340	59-42.7	141-38.4	76	80
8	B	1417	59-45.9	141-34.6	50	55
9	A	1452	59-48.9	141-30.9	24	29
10	62L	160/0216	59-38.5	142-07.0	181	185
11	P	0514	59-23.3	142-59.6	700	1573
12	O	0700	59-33.5	142-50.0	650	677
13	N	0836	59-40.7	142-42.6	320	329
14	M	0938	59-46.0	142-36.3	175	186
15	L	1025	59-49.6	142-31.0	125	137
16	K	1117	59-55.3	142-28.1	99	90
17	J	1212	60-01.4	142-25.5	53	45
18	IC-1	1505	59-47.9	141-39.3	40	446
19	IC-2	1544	59-51.5	141-36.4	29	32
20	IC-3	1627	59-55.7	141-32.9	64	70
21	IC-4	1840	59-58.0	141-25.3	16	20
22	IC-5	2042	59-59.2	141-22.5	42	46
23	A	161/0155	59-48.6	141-30.7	22	26
24	B	0234	59-45.8	141-34.1	51	60
25	C	0313	59-43.0	141-38.7	82	86
26	D	0359	59-39.6	141-42.2	117	121
27	E	0504	59-33.1	141-51.0	168	172
28	F	0604	59-27.1	141-59.6	189	193
29	G	0653	59-23.5	141-04.5	216	220
30	H	0750	59-19.9	142-09.2	450	464
31	I	0918	59-11.3	142-19.6	700	1829
32	YT-1	1600	59-34.9	140-09.8	21	25
33	YT-2	1645	59-39.3	140-04.8	149	153
34	YT-3	1731	59-42.6	139-57.4	113	117
35	YT-4	1818	59-45.6	139-49.9	64	68
36	YT-5	1910	59-48.0	139-42.5	38	42
37	YT-6	2009	59-53.3	139-40.8	22	26
38	YT-7	2151	59-56.4	139-35.1	245	252
39	YT-8	2252	59-58.7	139-33.5	70	87

Mooring Summary

WIST-I	*recovered*	*159/1530*	*59-45.6*	*141-36.9*
	2 - RMC-4 current meters *1 - Sediment trap* *1 - Nephelometer*			
WIST-II	*recovered*	*159/1710*	*59-39.2*	*141-41.6*
	4 - RCM-4 current meters *3 - Sediment traps*			
62K	*recovered*	*160/0003*	*59-38.7*	*142-07.2*
	4 - RCM-4 current meters			
62L	*deployed*	*160/0307*	*59-38.5*	*142-07.2*
	4 - RCM-4 current meters.			

UNIVERSITY OF WASHINGTON
DEPARTMENT OF OCEANOGRAPHY
SEATTLE, WASHINGTON 98195

Preliminary Report

University of Washington Participation in

NOAA Ship Discoverer Cruise RP-4-DI-77A, Leg V

Bristol Bay Oceanographic Processes

26 April - 16 May 1977

by

Richard B. Tripp

NOAA Contract 03-5-022-67, TA 4

Approved by: L. K. Coachman, Professor
Principal Investigator

Ref: 77-64

Francis Richards, Professor &
Associate Chairman for Research

BRISTOL BAY OCEANOGRAPHIC PROCESSES

1. *Objectives*

This study is a joint program with the Pacific Marine Environmental Laboratory (PMEL), ERL, NOAA to provide water mass circulation information over the eastern Bering Sea Shelf region for the Outer Continental Shelf Environmental Assessment Program (OCSEAP).

The Leg V portion of Cruise RP-4-DI-77A on the NOAA ship Discoverer was the seventh phase in the program directed towards accomplishing this research. The objectives of this cruise were:

1) The recovery of current meter and pressure gauge moorings in the Eastern Bering Sea, that were deployed in September 1976.

2) The deployment of nine current meter and pressure gauge moorings at selected sites in the Eastern Bering Sea to monitor the seasonal changes in the system. The recovery of those moorings is planned for September 1977.

3) The recovery and deployment of two current meter moorings between Kodiak and Unimak Pass for the NEGOA project

4) A series of C-T-D stations selected from the Bristol Bay Oceanographic Processes (B-BOP) program master grid with closer spaced stations normal to the coastline from Cape Sarechef to Port Moller.

5) A series of C-T-D stations to examine the features and reality of water density inversions revealed in data obtained from previous cruises. This information is necessary in order to fully examine the mixing processes.

6) Marine mammal observations as per project instructions.

7) Micro-nutrient sampling: i) to examine the nutrient concentration in the three distinct water types of the Bering Sea area and the possible variations across their boundaries; ii) to examine the feasibility of using nutrient concentration as a tracer for bottom currents in the Bering Sea area.

2. *Cruise Track and Narrative*

The NOAA ship Discoverer departed Kodiak, Alaska at 1800 GMT, 27 April 1977 and proceeded to the survey area (Figure 1).

C-T-D stations were occupied enroute and at the mooring retrieval and/or deployment sites. A summary of C-T-D stations accomplished can be found in attachment A.

1)	Station WGC-3C	Latitude 55°12.0'N, longitude 156°56.7'W. Released at 1716 GMT and recovered at 1756 GMT, 28 April 1977. This mooring consisted of current meters at 22 meters and 100 meters water depth.
	Station WGC-3D	Deployed at 1840 GMT, 28 April 1977 in 112.4 meters water depth. This mooring consists of current meters at 22 meters and 100 meters water depth. Other pertinent mooring deployment information can be found in attachment B.
2)	Station WGC-1E	Latitude 54°03.0'N, longitude 163°06.1'W. Released at 1809 GMT and recovered at 1856 GMT, 29 April 1977. This mooring consists of current meters at 19 meters and 77 meters water depth.
	Station WGC-1F	Deployed at 1930 GMT, 29 April 1977 in 88.3 meters water depth. This mooring consisted of current meters at 17 meters and 76 meters water depth.
3)	Station BC-13C	Latitude 55°47.2'N, longitude 165°23.8'W. Released at 0015 GMT and recovered at 0104 GMT, 1 May 1977. This mooring consisted of current meters at 22 meters and 96 meters and a pressure gauge at 107 meters water depth.
	Station BC-13D	Deployed at 0146 GMT, 1 May in 108 meters water depth. This mooring consists of current meters at 20 meters and 96 meters and a pressure gauge at 107 meters water depth.
4)	Station BC-17A	Latitude 56°34.0'N, longitude 167°33.3'W. Released at 1917 GMT and recovered at 2312 GMT, 1 May 1977. This mooring had been trawled and moved from the original deployment site. Hence, the three-hour search before finding the mooring. Instrumentation recovered showed some damage. There were deep gouge marks along the acoustic release support rod and lower current meter. The mooring was also minus viny floats, lower current meter rotor, and most of the upper current meter.
	Station BC-17B	Deployed at 2353 GMT, 1 May 1977 in 109 meters water depth. This mooring consists of current meters at 21 meters and 97 meters water depth.
5)	Station BC-16A	Deployed at 2029, 2 May 1977 in 50 meters water depth. This mooring consists of current meters at 20 meters and 38 meters water depth.
6)	Station BC-2D	Latitude 57°02.3'N, longitude 163°25.7'W. Released at 1858 GMT and recovered at 1935 GMT, 3 May 1977. This mooring consisted of current meters at 21 meters and 54 meters and a pressure gauge at 65 meters water depth.

Station BC-2E — Deployed at 2002 GMT, 3 May 1977 in 65 meters water depth. This mooring consists of current meters at 19 meters and 53 meters and a pressure gauge at 64 meters water depth.

7) Station BC-15B — Latitude 57°37.7'N, longitude 162°44.9'W. Released 0129 GMT, 4 May 1977 but not recovered. At the time of release there were 1-2 oktas of very broken first year ice (less than 10 meters across) in one quadrant. The signal strength of the acoustic release on interrogation indicated that the mooring should surface in open water. However, after firing, the mooring was not located. There are two possibilities. The mooring either had lost its buoyancy package and did not surface, or it had surfaced in or under the ice pack. If both floatation packages were still attached to the mooring, I think that the probability of the mooring being completely under one of the pieces of ice encountered quite low.

After four hours of unsuccessful searching through the broken ice we arrived at a point where the signal strength received from the release was strongest. This position was 0.2 nm away from the original release site. The ice had been drifting at a rate of approximately 1 knot which suggests: 1) that the mooring was not drifting with the ice; or 2) that the mooring did not surface.

Under the assumption that the mooring had surfaced, and was drifting with, or under the ice, we established contact with the mooring and positioned the ship near the ice pack. We drifted with a section of the ice pack until dawn. The net drift was approximately 10 nm (east and then northwest). No contact was made with the mooring which suggests that if the mooring was adrift, it was with a different section of the pack ice. We then proceeded to run a search pattern back towards the site where the signal strength was strongest and to the original release site. No contact was established at any point. During the latter part of leg V, when the ship was northwest of this area, we attempted to make contact with the mooring. However, no contact was ever established.

Station BC-15C — Deployed at 0624 GMT, 4 May 1977 in 44.6 meters water depth. This mooring consists of current meters at 18 meters and 33 meters and a pressure gauge at 44 meters water depth.

The ship then proceeded to run the hydrographic sections normal to the Alaska Peninsula. At 0755 GMT, 10 May 1977, we left the survey area and proceeded to Unalaska, Alaska to evacuate an injured engineer. At 2041 GMT, 10 May 1977 the evacuation was completed and we proceeded back to the survey area.

8) Station BC-19A — Deployed at 0322 GMT, 12 May 1977 in 33.5 meters water depth. This mooring consists of a current meter at 22 meters water depth.

9) Station BC-18A — Deployed at 1647 GMT, 12 May 1977 in 31.5 meters water depth. This mooring consists of a current meter at 20 meters water depth.

10) Station BC-9B — Latitude 59°13.0'N, longitude 167°42.0'W. Released at 2014 GMT and recovered at 2038 GMT, 12 May 1977. This mooring consisted of current meters at 23 meters and 33 meters and a pressure gauge at 39 meters water depth.

Station BC-9C — Deployed at 2122 GMT, 12 May 1977 in 40.5 meters water depth. This mooring consists of current meters at 23 meters and 33 meters and a pressure gauge at 39 meters water depth.

11) Station BC-4D — Latitude 58°36.6'N, longitude 168°21.7'W. Released at 0119 GMT and recovered at 0143 GMT, 13 May 1977. This mooring consisted of current meters at 20 meters and 48 meters and a pressure gauge at 54 meters water depth.

Station BC-4E — Deployed at 0208 GMT, 13 May 1977 in 55.1 meters water depth. This mooring consists of current meters at 20 meters and 48 meters water depth.

We continued with the C-T-D program, working our way towards Unimak Pass. At 1915 GMT, 14 May 1977, the NOAA ship Discoverer changed course for Unimak Pass, departed the survey area and proceeded to Kodiak, Alaska. At 1710 GMT, 16 May 1977, the ship was alongside the marginal pier, U.S. Coast Guard Base, Kodiak, Alaska. A total of 4135 nautical miles were logged on Leg V of this cruise.

3. *Methods*

Aanderaa RCM-4 current meters were employed on each mooring, set to record data (current speed and direction, temperature, conductivity and pressure) at a sampling interval of 30 minutes (PMEL) or 20 minutes (UW). The meters on BC-4E, BC-9C, BC-18A and BC-19A do not have a conductivity or pressure sensor.

An Aanderaa TG-2A or TG-3A pressure gauge was housed in an anchor well on moorings BC-2E, BC-4E, BC-9C, BC-13D and BC-15C. The sampling interval on the pressure gauges was either 15 or 30 minutes.

C-T-D casts were taken on each hydrographic station utilizing a Plessy Model 9040 Profiling System (S/N 6219 Casts 1-76; S/N 6201 Casts 77-235). Data were stored on 7-track magnetic tape for reduction ashore. In order to determine field correction factors for the conductivity and temperature sensors, a niston bottle was mounted on the rosette sampler 1 meter above the sensors.

The salinity samples collected were analyzed aboard ship on a Beckman Instruments Model RS-7B Portable Salinometer S/N 22486.

C-T-D casts were also taken in certain areas in an attempt to examine the features of any small density inversions which might be present in the water column. Previous data have shown the presence of small density inversions (vertical scale of 1-10 meters) on certain grid stations.

Three lowering rates were selected to examine the possible density inversions, and also to examine sensor response. These rates were 20 m/m, 30 m/m, and 40 m/m. One down-cast and one up-cast, at each of these rates, were recorded and plotted. The up-casts were taken solely to help establish the reality of any density inversions present in the data. Preliminary results indicate that: 1) some of the inversions are real; 2) there is considerable noise in the data at the 20 m/m lowering rate; and 3) a lowering rate of 30 m/m is quite acceptable for these shallow stations.

A total of 149 stations were occupied; 234 C-T-D casts (177 down, 57 up) were accomplished.

Micro-Nutrient Sampling Program

Water samples for micro-nutrient analysis were obtained on 103 stations on the C-T-D grid. The two primary objectives of the water sampling are as follows: 1) to examine the nutrient concentration in all three water types and the possible variations across their boundaries, 2) to examine the feasibility of using nutrient concentration as a tracer for bottom currents in the Bering Sea bay area.

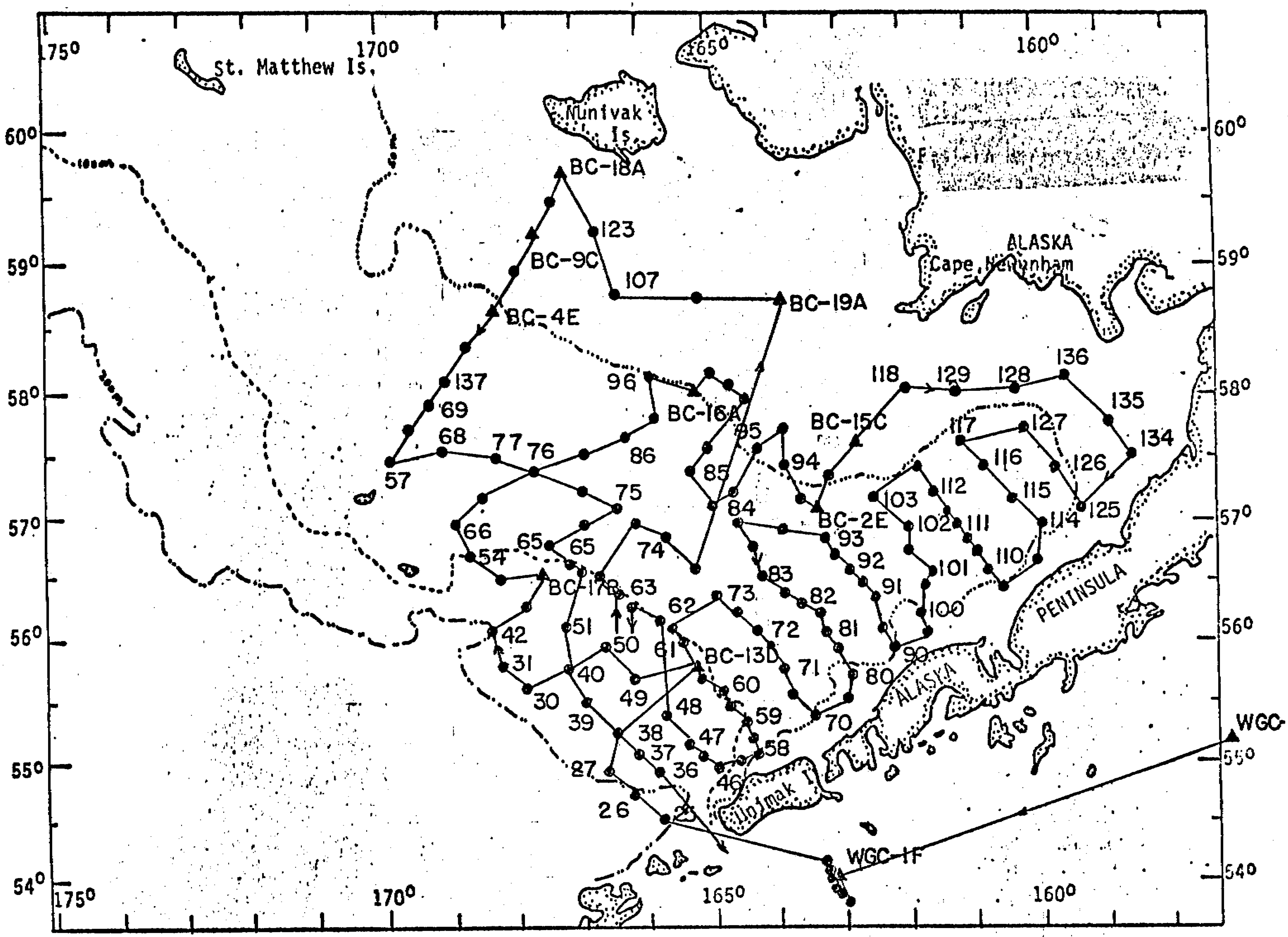
For the location of stations on which a micro-nutrient sample was obtained see attachment A. The micro-nutrient stations are labeled with an asterisk.

Note, both a bottom, minus five, and a 20 meter sample were collected at most of the 103 stations. However, if the depth of the water was less than 40 meters then only a bottom minus five sample was taken.

The nutrient samples were frozen and stored aboard NOAA ship Discoverer. Analysis of these samples will be undertaken by ENS Friend on the ship's return to Seattle.

4. *Personnel*

Richard B. Tripp	Principal Oceanographer	University of Washington, C/S
Steve Harding	Research Aide	University of Washington
LTJG Don Dreves	NOAA Corps	PMEL/ERL/NOAA
David Burch		PMEL/ERL/NOAA
Pat McGuire		NWAFC
ENS John D. Friend	NOAA Corps	NOAA Ship Discoverer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BC-9C
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BC-19A
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Attachment A

C-T-D Station Summary

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
1*	WGC-3D	1918	28/4	55-11.9	156-57.2	107	114
2	WGC-1E	1642	29/4	54-02.6	163-06.2	79	89
3*		2203	29/4	53-46.9	162-58.3	1500	1719
4		0005	30/4	53-51.1	163-02.5	70	1520
5		0100	30/4	53-51.1	163-02.5	1507	1520
6*		0322	30/4	53-55.7	163-07.0	1020	
7		0451	30/4	54-00.2	163-11.8	78	86
8		0542	30/4	54-04.9	163-16.9	72	78
9*		0633	30/4	54-09.7	163-21.9	69	78
10*	25	1349	30/4	54-29.0	165-47.0	393	402
11*	26	1553	30/4	54-41.7	166-10.7	273	285
12*	27	1807	30/4	54-56.7	166-38.3	144	151
13*	38	2015	30/4	55-17.0	166-28.4	127	135
14*	BC-13D	0217	1/5	55-47.2	165-23.3	100	107
15*	49	0504	1/5	55-39.1	166-12.6	115	124
16*	50	0704	1/5	55-52.8	166-41.3	125	131
17*	40	0912	1/5	55-45.0	167-17.8	125	134
18*	30	1126	1/5	55-36.8	167-54.2	128	135
19*	31	1318	1/5	55-48.9	168-19.0	132	141
20*	42	1514	1/5	56-08.3	168-17.7	154	163
21*	52	1716	1/5	56-20.2	167-45.1	125	132
22*	BC-17A	1854	1/5	56-33.9	167-34.0	100	108
23*	53	0202	2/5	56-29.4	168-10.4	117	122
24*	54	0342	2/5	56-38.9	168-35.5	102	109
25*	66	0602	2/5	56-55.0	168-58.3	79	86
26*	66.1	0745	2/5	57-08.2	167-37.9	67	73
27*	76	0936	2/5	57-21.0	167-16.1	65	70
28*	76.1	1156	2/5	57-30.2	166-47.0	62	68
29*	86	1354	2/5	57-39.2	166-18.4	59	66
30*	86.1	1542	2/5	57-49.0	165-46.8	52	61

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
31*	96	1740	2/5	58-09.7	165-55.5	40	49
32*	BC-16A	1951	2/5	57-59.9	165-16.0	45	50
33*	105.1	2219	2/5	58-09.2	164-57.6	35	39
34*	105.2	2359	2/5	58-04.2	164-36.5	36	44
35*	95.1	0144	3/5	57-55.5	164-25.8	34	39
36*	95	0314	3/5	57-45.0	164-42.4	43	51
37*	95.2	0448	3/5	57-33.0	165-00.4	55	62
38*	85	0623	3/5	57-20.9	165-18.7	58	67
39*	84.1	0756	3/5	57-07.9	164-58.2	60	67
40*	84.2	0939	3/5	57-21.1	164-38.0	55	63
41*	94.1	1130	3/5	57-34.0	164-16.2	49	54
42*	94.2	1325	3/5	57-43.5	163-44.3	44	48
43*	94	1524	3/5	57-24.2	163-49.4	46	56
44*	93.1	1713	3/5	57-08.0	163-31.0	55	64
45*	BC-2D	1841	3/5	57-02.2	163-25.0	58	65
46*	103.1	2200	3/5	57-19.2	163-05.1	48	53
47	BC-15B	0112	4/5	57-37.6	162-44.9	37	46
48*	118	2154	4/5	58-00.8	161-59.8	38	42
49*	129	0016	5/5	58-00.9	161-12.8	37	49
50*	128	0251	5/5	58-02.5	160-24.7	30	39
51*	136	0543	5/5	58-06.1	159-29.8	20	31
52*	135	0811	5/5	57-45.1	158-57.6	33	45
53*	134	1007	5/5	57-29.7	158-36.5	39	44
54*	125	1316	5/5	57-08.5	159-21.3	48	53
55*	126	1521	5/5	57-28.5	159-42.2	45	53
56*	127	1711	5/5	57-45.9	160-05.1	42	50
57*	117	2020	5/5	57-40.9	161-08.8	43	53
58	116	2221	5/5	57-28.0	160-40.0	55	60
59*	115	0023	6/5	57-11.1	160-20.8	58	62
60	114	0229	6/5	56-54.5	159-58.6	52	57
61	114.1	0356	6/5	56-38.3	160-00.9	35	42
62	114.2	)555	6/5	56-25.8	160-30.9	26	38
63	114.2U	0558	6/5	56-26.6	160-31.3	26	38
64	110	0718	6/5	56-34.1	160-42.8	50	60
65	110.1	0840	6/5	56-46.3	160-56.0	15	65

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
66	110.1	0918	6/5	56-47.2	160-54.5	56	65
67*	111	1040	6/5	56-56.7	161-10.8	66	68
68	111.1	1159	6/5	57-05.2	161-20.6	61	70
69	112	1311	6/5	57-14.1	161-32.3	46	56
70	112.1	1435	6/5	57-25.0	161-45.9	41	47
71	103	1706	6/5	57-13.6	162-31.7	43	53
72	102.1	1901	6/5	57-04.6	162-20.3	47	58
73	102	2036	6/5	56-57.3	161-59.3	42	53
74	101.1	2153	6/5	56-46.8	161-59.7	63	67
75*	101	2350	6/5	56-37.4	161-31.3	66	71
76	101U	0004	7/5	56-37.3	161-31.9	66	71
77	100.1	0128	7/5	56-26.1	161-39.4	51	58
78	100	0245	7/5	56-14.3	161-45.5	50	60
79	100.2	0440	7/5	56-03.5	161-40.9	35	44
80	90	0651	7/5	55-59.7	162-08.5	52	60
81	90.1	0812	7/5	56-09.6	162-18.7	68	76
82*	91	0930	7/5	56-18.0	162-27.3	64	74
83	91.1	1050	7/5	56-26.2	162-39.0	69	75
84	92	1212	7/5	56-34.9	162-50.6	70	76
85	92.1	1323	7/5	56-43.0	163-02.0	64	70
86	93	1511	7/5	56-53.5	163-12.2	60	66
87	93.2	1724	7/5	56-53.8	163-52.8	64	70
88	84	1947	7/5	56-54.7	164-36.3	61	69
89	83.1	2117	7/5	56-41.9	164-21.4	66	73
90	83	2244	7/5	56-29.3	164-08.1	75	79
91	82.1	0003	8/5	56-23.5	163-50.3	77	82
92	82	0120	8/5	56-19.7	163-32.5	78	82
93	81.1	0230	8/5	56-10.7	163-23.7	81	86
94	81	0333	8/5	56-03.1	163-14.8	78	85
95	80.1	0451	8/5	55-52.3	163-02.5	77	84
96	80	0608	8/5	55-42.5	162-52.0	47	57
97	80.2	0706	8/5	55-35.5	162-52.6	34	45
98*	70	0954	8/5	55-25.4	163-31.9	65	67
99*	70.1	1119	8/5	55-35.6	163-40.7	79	83
100*	71	1300	8/5	55-45.9	163-54.6	90	93

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
101*	71.1	1425	8/5	55-54.8	164-04.1	85	92
102*	72	1534	8/5	56-03.9	164-13.9	83	90
103*	72.1	1705	8/5	56-14.0	164-35.0	83	90
104*	73	1840	8/5	56-24.3	164-56.2	76	84
105	61.1	2155	8/5	56-03.8	165-39.9	91	98
106	61.1U	2203	8/5	56-03.7	165-40.0	91	98
107	61.1	2210	8/5	56-03.7	165-40.1	91	98
108	61.1U	2216	8/5	56-03.7	165-40.2	91	98
109*	61.1	2221	8/5	56-03.6	165-40.3	91	98
110	61.1U	2233	8/5	56-03.5	165-40.5	91	98
111	61	0006	9/5	55-54.6	165-24.1	93	99
112	61U	0014	9/5	55-54.5	165-24.3	93	99
113	61	0020	9/5	55-54.4	165-24.4	93	99
114	61U	0027	9/5	55-54.4	165-24.4	93	99
115	61	0033	9/5	55-54.3	165-24.8	93	99
116*	61U	0045	9/5	55-54.1	165-25.0	93	99
117	60.1	0211	9/5	55-46.7	165-07.5	93	100
118	60.1U	0220	9/5	55-46.7	165-07.6	93	100
119	60.1	0227	9/5	55-46.6	165-07.8	93	100
120	60.1U	0235	9/5	55-46.6	165-07.9	93	100
121*	60.1	0239	9/5	55-46.5	165-08.0	93	100
122	60.1U	0249	9/5	55-46.5	165-08.1	93	100
123	60	0413	9/5	55-40.3	164-50.0	92	99
124*	59.1	0531	9/5	55-30.9	164-42.0	93	101
125	59	0647	9/5	55-23.2	164-30.4	95	100
126*	58.1	0752	9/5	55-15.9	164-20.7	89	95
128	58	1713	9/5	55-09.9	164-12.9	52	59
129	58.2	1847	9/5	55-02.0	164-28.8	45	55
130*	46	2032	9/5	54-56.5	164-52.1	70	78
131	46.1	2143	9/5	55-02.5	165-04.8	102	109
132	47	2253	9/5	55-07.5	165-16.2	106	114
133*	48	0108	10/5	55-24.2	165-44.8	110	117
134	62	0501	10/5	56-10.0	165-53.9	94	101
135*	62U	0510	10/5	56-10.0	165-53.9	94	101

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
136	62	0517	10/5	56-10.1	165-53.9	94	101
137	62U	0523	10/5	56-10.1	165-53.9	94	101
138*	62	0528	10/5	56-10.0	165-54.0	94	101
139	62U	0539	10/5	56-10.1	165-54.0	94	101
140	62.1	0702	10/5	56-16.1	166-09.6	92	101
141	62.1U	0713	10/5	56-16.0	166-09.5	92	101
142	62.1	0721	10/5	56-16.0	166-09.4	90	101
143	62.1U	0730	10/5	56-16.0	166-09.4	90	101
144	62.1	0737	10/5	56-16.0	166-09.3	93	101
145*	62.1U	0748	10/5	56-16.0	166-09.2	93	101
146	63	0804	11/5	56-24.4	166-27.4	94	100
147	63U	0814	11/5	56-24.6	166-27.4	94	100
148	63	0826	11/5	56-24.9	166-27.4	94	100
149	63U	0834	11/5	56-25.2	166-27.5	94	100
150*	63	0843	11/5	56-25.3	166-27.4	92	100
151	63U	0853	11/5	56-25.6	166-27.6	92	100
152	63.1	0958	11/5	56-29.3	166-42.3	93	102
153	63.1U	1005	11/5	56-29.4	166-42.3	93	102
154	63.1	1010	11/5	56-29.5	166-42.3	93	102
155	63.1U	1015	11/5	56-29.6	166-42.3	93	102
156*	63.1	1020	11/5	56-29.6	166-42.3	93	102
157	63.1U	1030	11/5	56-29.8	166-42.2	93	102
158	74.1	1319	11/5	56-57.6	166-02.9	65	70
159	74.1U	1326	11/5	56-57.6	166-02.8	65	70
160	74.1	1333	11/5	56-57.6	166-02.6	65	70
161	74.1U	1339	11/5	56-57.6	166-02.5	65	70
162*	74.1	1345	11/5	56-57.5	166-02.5	65	70
163	74.1U	1355	11/5	56-57.5	166-02.3	65	70
164*	74	1517	11/5	56-49.5	165-39.7	69	74
165	74U	1527	11/5	56-49.5	165-39.6	69	74
166*	73.1	1659	11/5	56-36.8	165-16.6	68	76
167	73.1U	1709	11/5	56-36.8	165-16.7	68	76
168*	BC-19A	0344	12/5	58-42.2	163-53.0	23	33.5
169*	106.1	0646	12/5	58-42.2	165-04.9	25	34
170*	107	1002	12/5	58-43.1	166-19.1	29	38

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
171*	123	1319	12/5	59-14.3	166-38.5	21	29
172*	BC-18A	1702	12/5	59-39.8	167-07.4	20	31.5
173*	140-1	1816	12/5	59-28.9	167-22.8	20	31
174*	BC-9B	1953	12/5	59-13.1	167-42.1	32	39
175*	139.1	2259	12/5	58-57.4	167-59.5	33	42
176*	BC-4E	0229	13/5	58-36.5	168-21.7	46	55.1
177*	138.1	0413	13/5	58-22.2	168-40.3	60	66
178*	137	0553	13/5	58-08.0	169-00.9	62	69
179	137U	0605	13/5	58-08.0	169-01.1	62	69
180*	69	0733	13/5	57-54.0	169-19.2	57	65
181	69U	0745	13/5	57-53.9	169-19.3	57	65
182*	69.1	0907	13/5	57-41.2	169-35.9	59	69
183	69.1U	0917	13/5	57-41.2	169-35.9	59	69
184*	57	1042	13/5	57-28.1	169-49.5	57	67
185	57U	1053	13/5	57-28.2	169-49.3	57	67
186	68	1301	13/5	57-31.4	169-01.6	60	70
187	68U	1308	13/5	57-31.4	169-01.4	60	70
188*	77	1531	13/5	57-28.8	168-05.5	65	71
189	77U	1541	13/5	57-28.8	168-05.4	65	71
190	76	1810	13/5	57-20.9	167-15.8	60	69
191	76U	1817	13/5	57-20.9	167-15.8	60	69
192	76	1825	13/5	57-20.8	167-15.9	60	69
193	76U	1832	13/5	57-20.7	167-15.9	60	69
194*	76	1837	13/5	57-20.7	167-16.0	60	69
195	76U	1846	13/5	57-20.7	167-16.1	60	69
196*	75.1	2031	13/5	57-13.7	166-51.9	61	65
197	75.1U	2042	13/5	57-13.7	166-52.1	61	65
198*	75	2213	13/5	57-07.3	166-26.2	61	63
199	75U	2223	13/5	57-07.3	166-26.3	61	63
200	65.1	0014	14/5	56-56.2	166-57.6	68	75
201	65.1U	0022	14/5	56-56.3	166-57.7	68	75
202	65.1	0028	14/5	56-56.4	166-57.7	69	75
203	65.1U	0032	14/5	56-56.5	166-57.7	69	75
204*	65.1	0038	14/5	56-56.5	166-57.7	69	75
205	65.1U	0048	14/5	56-56.6	166-57.7	69	75

Attachment B

Mooring Deployment Summary

Mooring No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	Depth Meters	X Rate	Loran-C Y Rate	Z Rate	Receiver Channel No.
WGC-3D PMEL	1840	28/4	55-12.0	156-57.3	112.4	18574.41	33376.40	45005.93	10
WGC-1F PMEL	1930	29/4	54-03.8	163-05.8	88.3	18241.08	34394.46	47270.35	8
BC-13D PMEL	0146	1/5	55-47.1	165-23.1	108	18517.89	34474.73	48202.50	6
BC-17B PMEL	2353	1/5	56-36.2	167-41.2	109	18644.86	34727.53	49145.30	4
BC-16A PMEL	2029	2/5	57-59.2	165-15.8	50	18750.13	33742.03	48118.34	1
BC-2E PMEL	2002	3/5	57-02.5	163-26.0	65	18708.92	33803.54	47444.26	5
BC-15C PMEL	0624	4/5	57-39.0	162-41.4	45	18741.32	33463.16	47126.00	9
BC-19A UW	0322	12/5	58-42.6	163-52.8	33.5	18735.41	33171.08	47518.59	1
BC-18A UW	1647	12/5	59-40.1	167-07.5	31.5	18536.43	33028.70	48452.71	6
BC-9C UW	2122	12/5	59-12.0	167-43.2	40.5	18571.89	33414.47	48748.63	2
BC-4E UW	0208	13/5	58-36.6	168-21.7	55.1	18626.15	33893.57	49109.98	10

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
206	65	0240	14/5	56-45.9	167-29.5	84	91
207	65U	0246	14/5	56-45.9	167-29.3	84	91
208	65	0252	14/5	56-45.9	167-29.1	84	91
209	65U	0256	14/5	56-45.8	167-29.0	84	91
210*	65	0300	14/5	56-45.8	167-28.9	84	91
211	65U	0310	14/5	56-45.6	167-28.4	84	91
212	64.1	0409	14/5	56-39.9	167-13.7	93	100
213	64.1U	0417	14/5	56-39.8	167-13.6	93	100
214	64.1	0422	14/5	56-39.8	167-13.5	93	100
215	64.1U	0427	14/5	56-39.7	167-13.4	93	100
216*	64.1	0432	14/5	56-39.7	167-13.3	93	100
217	64.1U	0441	14/5	56-39.5	167-13.2	93	100
218	64	0538	14/5	56-35.0	166-58.3	95	100
219	64U	0544	14/5	56-34.9	166-58.3	95	100
220	64	0552	14/5	56-34.8	166-58.3	94	100
221	64U	0600	14/5	56-34.8	166-58.4	94	100
222*	64	0607	14/5	56-34.7	166-58.4	94	100
223	64U	0618	14/5	56-34.6	166-58.6	94	100
224*	51	0843	14/5	56-05.5	167-11.6	127	133
225	51U	0856	14/5	56-05.4	167-11.8	127	133
226	40	1050	14/5	55-43.8	167-18.2	130	135
227	40U	1100	14/5	55-43.9	167-18.3	130	135
228*	39	1247	14/5	55-30.3	166-52.0	129	136
229	39U	1259	14/5	55-30.4	166-52.0	129	136
230	38	1500	14/5	55-17.4	166-28.2	129	136
231	38U	1510	14/5	55-17.3	166-28.3	129	136
232*	37	1647	14/5	55-03.3	166-04.8	128	135
233	37U	1659	14/5	55-03.2	166-04.9	128	135
234*	36	1831	14/5	54-52.0	165-43.3	138	144
235	36U	1834	14/5	54-52.0	165-43.4	138	144

R.U. #140 not received

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Bristol Bay Oceanographic Processes (B-BOP)

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5 July 1977

Task Title: BRISTOL BAY OCEANOGRAPHIC PROCESSES (B-BOP)

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Reporting Period 1 April 1977 - 30 June 1977

I. Task Objectives:

1) Determine spatial and temporal variability in the velocity-field and obtain indications of spatial coherence at various length scales across Bristol Bay.
2) Determination of sea level perturbation time and length scales.
3) Examination of meteorological factors related to observed pulses in mean flow.
4) Characterization of temporal and spatial variability of hydrographic properties.

II. Field and Laboratory Activities:

A. Cruises: See attached cruise reports

B. Laboratory Activities: Meetings among PI's were held at Union, Washington on 17-19 May to coordinate plans for FY 77 and to discuss this year's work.

III. Results

Data from the winter 76-77 moorings are now being processed. CTD data from cruises RP-4-DI-77A, LEG V and RP-4-MF-77B, LEG VII of the OCSEAP Bering Sea Project are being processed.

The following scientific papers are in preparation:

1) Current Meter Observations in Bristol Bay, Alaska. Charnell, Mofjeld, Schumacher and Pearson.
2) "Observations and Formation of a Front in Bristol Bay, Alaska." Schumacher, Kinder, Pashinski and Charnell.
3) "Tidal Observations in Bristol Bay, Alaska". Pearson.

UNIVERSITY OF WASHINGTON
DEPARTMENT OF OCEANOGRAPHY
SEATTLE, WASHINGTON 98195

Preliminary Report

University of Washington Participation in

NOAA Ship Discoverer Cruise RP-4-DI-77A, Leg V

Bristol Bay Oceanographic Processes

26 April - 16 May 1977

by

Richard B. Tripp

NOAA Contract 03-5-022-67, TA 4

Approved by: ______________________
L. K. Coachman, Professor
Principal Investigator

Ref: 77-64

____
Francis Richards, Professor &
Associate Chairman for Research

BRISTOL BAY OCEANOGRAPHIC PROCESSES

1. *Objectives*

This study is a joint program with the Pacific Marine Environmental Laboratory (PMEL), ERL, NOAA to provide water mass circulation information over the eastern Bering Sea Shelf region for the Outer Continental Shelf Environmental Assessment Program (OCSEAP).

The Leg V portion of Cruise RP-4-DI-77A on the NOAA ship Discoverer was the seventh phase in the program directed towards accomplishing this research. The objectives of this cruise were:

1) The recovery of current meter and pressure gauge moorings in the Eastern Bering Sea, that were deployed in September 1976.

2) The deployment of nine current meter and pressure gauge moorings at selected sites in the Eastern Bering Sea to monitor the seasonal changes in the system. The recovery of those moorings is planned for September 1977.

3) The recovery and deployment of two current meter moorings between Kodiak and Unimak Pass for the NEGOA project

4) A series of C-T-D stations selected from the Bristol Bay Oceanographic Processes (B-BOP) program master grid with closer spaced stations normal to the coastline from Cape Sarechef to Port Moller.

5) A series of C-T-D stations to examine the features and reality of water density inversions revealed in data obtained from previous cruises. This information is necessary in order to fully examine the mixing processes.

6) Marine mammal observations as per project instructions.

7) Micro-nutrient sampling: i) to examine the nutrient concentration in the three distinct water types of the Bering Sea area and the possible variations across their boundaries; ii) to examine the feasibility of using nutrient concentration as a tracer for bottom currents in the Bering Sea area.

2. *Cruise Track and Narrative*

The NOAA ship Discoverer departed Kodiak, Alaska at 1800 GMT, 27 April 1977 and proceeded to the survey area (Figure 1).

C-T-D stations were occupied enroute and at the mooring retrieval and/or deployment sites. A summary of C-T-D stations accomplished can be found in attachment A.

1) Station WGC-3C — Latitude 55°12.0'N, longitude 156°56.7'W. Released at 1716 GMT and recovered at 1756 GMT, 28 April 1977. This mooring consisted of current meters at 22 meters and 100 meters water depth.

Station WGC-3D — Deployed at 1840 GMT, 28 April 1977 in 112.4 meters water depth. This mooring consists of current meters at 22 meters and 100 meters water depth. Other pertinent mooring deployment information can be found in attachment B.

2) Station WGC-1E — Latitude 54°03.0'N, longitude 163°06.1'W. Released at 1809 GMT and recovered at 1856 GMT, 29 April 1977. This mooring consists of current meters at 19 meters and 77 meters water depth.

Station WGC-1F — Deployed at 1930 GMT, 29 April 1977 in 88.3 meters water depth. This mooring consisted of current meters at 17 meters and 76 meters water depth.

3) Station BC-13C — Latitude 55°47.2'N, longitude 165°23.8'W. Released at 0015 GMT and recovered at 0104 GMT, 1 May 1977. This mooring consisted of current meters at 22 meters and 96 meters and a pressure gauge at 107 meters water depth.

Station BC-13D — Deployed at 0146 GMT, 1 May in 108 meters water depth. This mooring consists of current meters at 20 meters and 96 meters and a pressure gauge at 107 meters water depth.

4) Station BC-17A — Latitude 56°34.0'N, longitude 167°33.3'W. Released at 1917 GMT and recovered at 2312 GMT, 1 May 1977. This mooring had been trawled and moved from the original deployment site. Hence, the three-hour search before finding the mooring. Instrumentation recovered showed some damage. There were deep gouge marks along the acoustic release support rod and lower current meter. The mooring was also minus viny floats, lower current meter rotor, and most of the upper current meter.

Station BC-17B — Deployed at 2353 GMT, 1 May 1977 in 109 meters water depth. This mooring consists of current meters at 21 meters and 97 meters water depth.

5) Station BC-16A — Deployed at 2029, 2 May 1977 in 50 meters water depth. This mooring consists of current meters at 20 meters and 38 meters water depth.

6) Station BC-2D — Latitude 57°02.3'N, longitude 163°25.7'W. Released at 1858 GMT and recovered at 1935 GMT, 3 May 1977. This mooring consisted of current meters at 21 meters and 54 meters and a pressure gauge at 65 meters water depth.

Station BC-2E — Deployed at 2002 GMT, 3 May 1977 in 65 meters water depth. This mooring consists of current meters at 19 meters and 53 meters and a pressure gauge at 64 meters water depth.

7) Station BC-15B — Latitude 57°37.7'N, longitude 162°44.9'W. Released 0129 GMT, 4 May 1977 but not recovered. At the time of release there were 1-2 oktas of very broken first year ice (less than 10 meters across) in one quadrant. The signal strength of the acoustic release on interrogation indicated that the mooring should surface in open water. However, after firing, the mooring was not located. There are two possibilities. The mooring either had lost its buoyancy package and did not surface, or it had surfaced in or under the ice pack. If both floatation packages were still attached to the mooring, I think that the probability of the mooring being completely under one of the pieces of ice encountered quite low.

After four hours of unsuccessful searching through the broken ice we arrived at a point where the signal strength received from the release was strongest. This position was 0.2 nm away from the original release site. The ice had been drifting at a rate of approximately 1 knot which suggests: 1) that the mooring was not drifting with the ice; or 2) that the mooring did not surface.

Under the assumption that the mooring had surfaced, and was drifting with, or under the ice, we established contact with the mooring and positioned the ship near the ice pack. We drifted with a section of the ice pack until dawn. The net drift was approximately 10 nm (east and then northwest). No contact was made with the mooring which suggests that if the mooring was adrift, it was with a different section of the pack ice. We then proceeded to run a search pattern back towards the site where the signal strength was strongest and to the original release site. No contact was established at any point. During the latter part of leg V, when the ship was northwest of this area, we attempted to make contact with the mooring. However, no contact was ever established.

Station BC-15C — Deployed at 0624 GMT, 4 May 1977 in 44.6 meters water depth. This mooring consists of current meters at 18 meters and 33 meters and a pressure gauge at 44 meters water depth.

The ship then proceeded to run the hydrographic sections normal to the Alaska Peninsula. At 0755 GMT, 10 May 1977, we left the survey area and proceeded to Unalaska, Alaska to evacuate an injured engineer. At 2041 GMT, 10 May 1977 the evacuation was completed and we proceeded back to the survey area.

8) Station BC-19A — Deployed at 0322 GMT, 12 May 1977 in 33.5 meters water depth. This mooring consists of a current meter at 22 meters water depth.

9) Station BC-18A — Deployed at 1647 GMT, 12 May 1977 in 31.5 meters water depth. This mooring consists of a current meter at 20 meters water depth.

10) Station BC-9B — Latitude 59°13.0'N, longitude 167°42.0'W. Released at 2014 GMT and recovered at 2038 GMT, 12 May 1977. This mooring consisted of current meters at 23 meters and 33 meters and a pressure gauge at 39 meters water depth.

Station BC-9C — Deployed at 2122 GMT, 12 May 1977 in 40.5 meters water depth. This mooring consists of current meters at 23 meters and 33 meters and a pressure gauge at 39 meters water depth.

11) Station BC-4D — Latitude 58°36.6'N, longitude 168°21.7'W. Released at 0119 GMT and recovered at 0143 GMT, 13 May 1977. This mooring consisted of current meters at 20 meters and 48 meters and a pressure gauge at 54 meters water depth.

Station BC-4E — Deployed at 0208 GMT, 13 May 1977 in 55.1 meters water depth. This mooring consists of current meters at 20 meters and 48 meters water depth.

We continued with the C-T-D program, working our way towards Unimak Pass. At 1915 GMT, 14 May 1977, the NOAA ship Discoverer changed course for Unimak Pass, departed the survey area and proceeded to Kodiak, Alaska. At 1710 GMT, 16 May 1977, the ship was alongside the marginal pier, U.S. Coast Guard Base, Kodiak, Alaska. A total of 4135 nautical miles were logged on Leg V of this cruise.

3. *Methods*

Aanderaa RCM-4 current meters were employed on each mooring, set to record data (current speed and direction, temperature, conductivity and pressure) at a sampling interval of 30 minutes (PMEL) or 20 minutes (UW). The meters on BC-4E, BC-9C, BC-18A and BC-19A do not have a conductivity or pressure sensor.

An Aanderaa TG-2A or TG-3A pressure gauge was housed in an anchor well on moorings BC-2E, BC-4E, BC-9C, BC-13D and BC-15C. The sampling interval on the pressure gauges was either 15 or 30 minutes.

C-T-D casts were taken on each hydrographic station utilizing a Plessy Model 9040 Profiling System (S/N 6219 Casts 1-76; S/N 6201 Casts 77-235). Data were stored on 7-track magnetic tape for reduction ashore. In order to determine field correction factors for the conductivity and temperature sensors, a niston bottle was mounted on the rosette sampler 1 meter above the sensors.

The salinity samples collected were analyzed aboard ship on a Beckman Instruments Model RS-7B Portable Salinometer S/N 22486.

C-T-D casts were also taken in certain areas in an attempt to examine the features of any small density inversions which might be present in the water column. Previous data have shown the presence of small density inversions (vertical scale of 1-10 meters) on certain grid stations.

Three lowering rates were selected to examine the possible density inversions, and also to examine sensor response. These rates were 20 m/m, 30 m/m, and 40 m/m. One down-cast and one up-cast, at each of these rates, were recorded and plotted. The up-casts were taken solely to help establish the reality of any density inversions present in the data. Preliminary results indicate that: 1) some of the inversions are real; 2) there is considerable noise in the data at the 20 m/m lowering rate; and 3) a lowering rate of 30 m/m is quite acceptable for these shallow stations.

A total of 149 stations were occupied; 234 C-T-D casts (177 down, 57 up) were accomplished.

Micro-Nutrient Sampling Program

Water samples for micro-nutrient analysis were obtained on 103 stations on the C-T-D grid. The two primary objectives of the water sampling are as follows: 1) to examine the nutrient concentration in all three water types and the possible variations across their boundaries, 2) to examine the feasibility of using nutrient concentration as a tracer for bottom currents in the Bering Sea bay area.

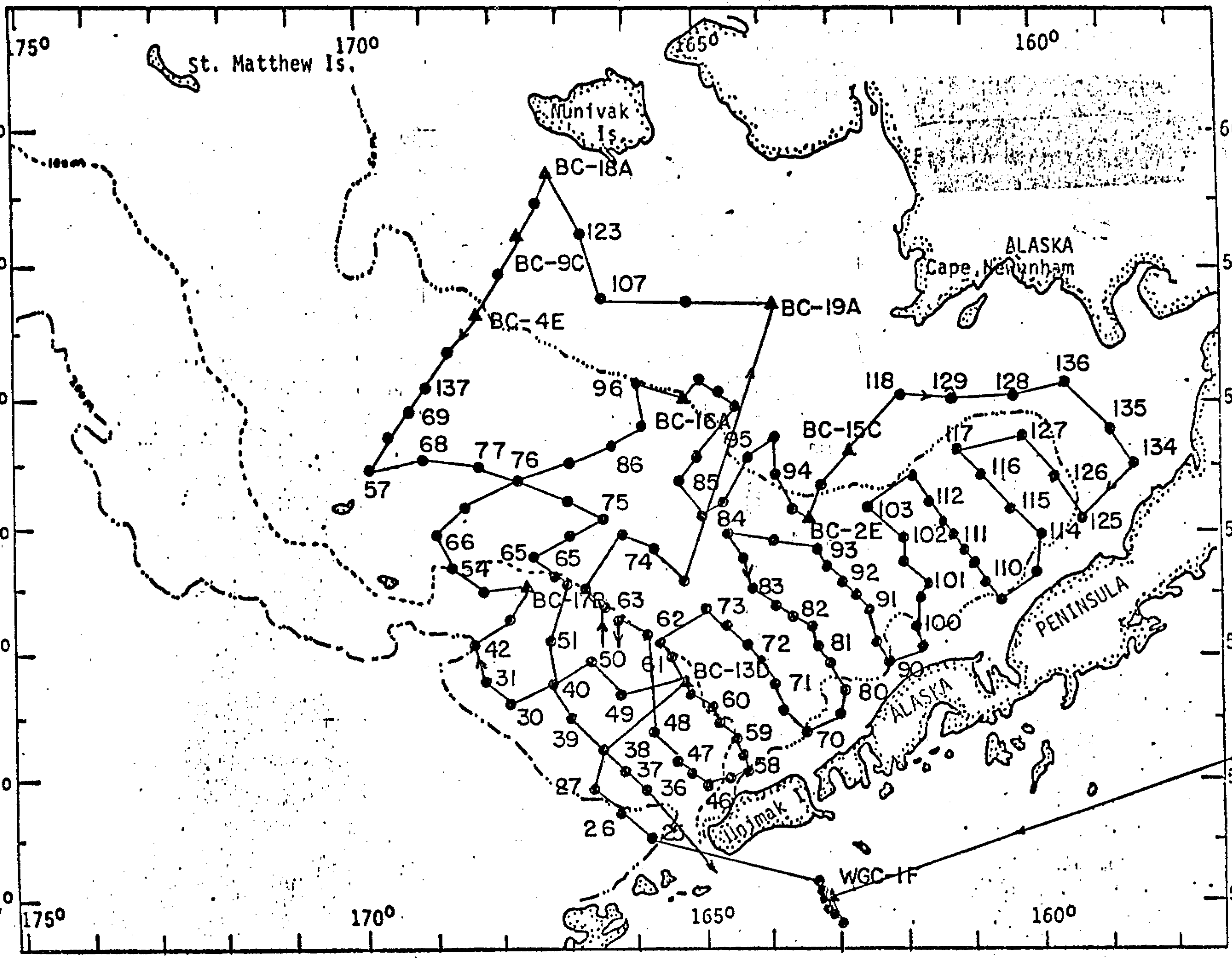
For the location of stations on which a micro-nutrient sample was obtained see attachment A. The micro-nutrient stations are labeled with an asterisk.

Note, both a bottom, minus five, and a 20 meter sample were collected at most of the 103 stations. However, if the depth of the water was less than 40 meters then only a bottom minus five sample was taken.

The nutrient samples were frozen and stored aboard NOAA ship Discoverer. Analysis of these samples will be undertaken by ENS Friend on the ship's return to Seattle.

4. *Personnel*

Richard B. Tripp	Principal Oceanographer	University of Washington, C/S
Steve Harding	Research Aide	University of Washington
LTJG Don Dreves	NOAA Corps	PMEL/ERL/NOAA
David Burch		PMEL/ERL/NOAA
Pat McGuire		NWAFC
ENS John D. Friend	NOAA Corps	NOAA Ship Discoverer


St. Matthew Is.
Nunivak Is.
ALASKA
Cape Newenham
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ALASKA
Unimak I.
BC-18A
BC-9C
BC-4E
BC-19A
BC-16A
BC-15C
BC-2E
BC-17B
BC-13D
WGC-1F
WG
175°
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Attachment A

C-T-D Station Summary

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
1*	WGC-3D	1918	28/4	55-11.9	156-57.2	107	114
2	WGC-1E	1642	29/4	54-02.6	163-06.2	79	89
3*		2203	29/4	53-46.9	162-58.3	1500	1719
4		0005	30/4	53-51.1	163-02.5	70	1520
5		0100	30/4	53-51.1	163-02.5	1507	1520
6*		0322	30/4	53-55.7	163-07.0	1020	
7		0451	30/4	54-00.2	163-11.8	78	86
8		0542	30/4	54-04.9	163-16.9	72	78
9*		0633	30/4	54-09.7	163-21.9	69	78
10*	25	1349	30/4	54-29.0	165-47.0	393	402
11*	26	1553	30/4	54-41.7	166-10.7	273	285
12*	27	1807	30/4	54-56.7	166-38.3	144	151
13*	38	2015	30/4	55-17.0	166-28.4	127	135
14*	BC-13D	0217	1/5	55-47.2	165-23.3	100	107
15*	49	0504	1/5	55-39.1	166-12.6	115	124
16*	50	0704	1/5	55-52.8	166-41.3	125	131
17*	40	0912	1/5	55-45.0	167-17.8	125	134
18*	30	1126	1/5	55-36.8	167-54.2	128	135
19*	31	1318	1/5	55-48.9	168-19.0	132	141
20*	42	1514	1/5	56-08.3	168-17.7	154	163
21*	52	1716	1/5	56-20.2	167-45.1	125	132
22*	BC-17A	1854	1/5	56-33.9	167-34.0	100	108
23*	53	0202	2/5	56-29.4	168-10.4	117	122
24*	54	0342	2/5	56-38.9	168-35.5	102	109
25*	66	0602	2/5	56-55.0	168-58.3	79	86
26*	66.1	0745	2/5	57-08.2	167-37.9	67	73
27*	76	0936	2/5	57-21.0	167-16.1	65	70
28*	76.1	1156	2/5	57-30.2	166-47.0	62	68
29*	86	1354	2/5	57-39.2	166-18.4	59	66
30*	86.1	1542	2/5	57-49.0	165-46.8	52	61

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
31*	96	1740	2/5	58-09.7	165-55.5	40	49
32*	BC-16A	1951	2/5	57-59.9	165-16.0	45	50
33*	105.1	2219	2/5	58-09.2	164-57.6	35	39
34*	105.2	2359	2/5	58-04.2	164-36.5	36	44
35*	95.1	0144	3/5	57-55.5	164-25.8	34	39
36*	95	0314	3/5	57-45.0	164-42.4	43	51
37*	95.2	0448	3/5	57-33.0	165-00.4	55	62
38*	85	0623	3/5	57-20.9	165-18.7	58	67
39*	84.1	0756	3/5	57-07.9	164-58.2	60	67
40*	84.2	0939	3/5	57-21.1	164-38.0	55	63
41*	94.1	1130	3/5	57-34.0	164-16.2	49	54
42*	94.2	1325	3/5	57-43.5	163-44.3	44	48
43*	94	1524	3/5	57-24.2	163-49.4	46	56
44*	93.1	1713	3/5	57-08.0	163-31.0	55	64
45*	BC-2D	1841	3/5	57-02.2	163-25.0	58	65
46*	103.1	2200	3/5	57-19.2	163-05.1	48	53
47	BC-15B	0112	4/5	57-37.6	162-44.9	37	46
48*	118	2154	4/5	58-00.8	161-59.8	38	42
49*	129	0016	5/5	58-00.9	161-12.8	37	49
50*	128	0251	5/5	58-02.5	160-24.7	30	39
51*	136	0543	5/5	58-06.1	159-29.8	20	31
52*	135	0811	5/5	57-45.1	158-57.6	33	45
53*	134	1007	5/5	57-29.7	158-36.5	39	44
54*	125	1316	5/5	57-08.5	159-21.3	48	53
55*	126	1521	5/5	57-28.5	159-42.2	45	53
56*	127	1711	5/5	57-45.9	160-05.1	42	50
57*	117	2020	5/5	57-40.9	161-08.8	43	53
58	116	2221	5/5	57-28.0	160-40.0	55	60
59*	115	0023	6/5	57-11.1	160-20.8	58	62
60	114	0229	6/5	56-54.5	159-58.6	52	57
61	114.1	0356	6/5	56-38.3	160-00.9	35	42
62	114.2	0555	6/5	56-25.8	160-30.9	26	38
63	114.2U	0558	6/5	56-26.6	160-31.3	26	38
64	110	0718	6/5	56-34.1	160-42.8	50	60
65	110.1	0840	6/5	56-46.3	160-56.0	15	65

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
66	110.1	0918	6/5	56-47.2	160-54.5	56	65
67*	111	1040	6/5	56-56.7	161-10.8	66	68
68	111.1	1159	6/5	57-05.2	161-20.6	61	70
69	112	1311	6/5	57-14.1	161-32.3	46	56
70	112.1	1435	6/5	57-25.0	161-45.9	41	47
71	103	1706	6/5	57-13.6	162-31.7	43	53
72	102.1	1901	6/5	57-04.6	162-20.3	47	58
73	102	2036	6/5	56-57.3	161-59.3	42	53
74	101.1	2153	6/5	56-46.8	161-59.7	63	67
75*	101	2350	6/5	56-37.4	161-31.3	66	71
76	101U	0004	7/5	56-37.3	161-31.9	66	71
77	100.1	0128	7/5	56-26.1	161-39.4	51	58
78	100	0245	7/5	56-14.3	161-45.5	50	60
79	100.2	0440	7/5	56-03.5	161-40.9	35	44
80	90	0651	7/5	55-59.7	162-08.5	52	60
81	90.1	0812	7/5	56-09.6	162-18.7	68	76
82*	91	0930	7/5	56-18.0	162-27.3	64	74
83	91.1	1050	7/5	56-26.2	162-39.0	69	75
84	92	1212	7/5	56-34.9	162-50.6	70	76
85	92.1	1323	7/5	56-43.0	163-02.0	64	70
86	93	1511	7/5	56-53.5	163-12.2	60	66
87	93.2	1724	7/5	56-53.8	163-52.8	64	70
88	84	1947	7/5	56-54.7	164-36.3	61	69
89	83.1	2117	7/5	56-41.9	164-21.4	66	73
90	83	2244	7/5	56-29.3	164-08.1	75	79
91	82.1	0003	8/5	56-23.5	163-50.3	77	82
92	82	0120	8/5	56-19.7	163-32.5	78	82
93	81.1	0230	8/5	56-10.7	163-23.7	81	86
94	81	0333	8/5	56-03.1	163-14.8	78	85
95	80.1	0451	8/5	55-52.3	163-02.5	77	84
96	80	0608	8/5	55-42.5	162-52.0	47	57
97	80.2	0706	8/5	55-35.5	162-52.6	34	45
98*	70	0954	8/5	55-25.4	163-31.9	65	67
99*	70.1	1119	8/5	55-35.6	163-40.7	79	83
100*	71	1300	8/5	55-45.9	163-54.6	90	93

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
101*	71.1	1425	8/5	55-54.8	164-04.1	85	92
102*	72	1534	8/5	56-03.9	164-13.9	83	90
103*	72.1	1705	8/5	56-14.0	164-35.0	83	90
104*	73	1840	8/5	56-24.3	164-56.2	76	84
105	61.1	2155	8/5	56-03.8	165-39.9	91	98
106	61.1U	2203	8/5	56-03.7	165-40.0	91	98
107	61.1	2210	8/5	56-03.7	165-40.1	91	98
108	61.1U	2216	8/5	56-03.7	165-40.2	91	98
109*	61.1	2221	8/5	56-03.6	165-40.3	91	98
110	61.1U	2233	8/5	56-03.5	165-40.5	91	98
111	61	0006	9/5	55-54.6	165-24.1	93	99
112	61U	0014	9/5	55-54.5	165-24.3	93	99
113	61	0020	9/5	55-54.4	165-24.4	93	99
114	61U	0027	9/5	55-54.4	165-24.4	93	99
115	61	0033	9/5	55-54.3	165-24.8	93	99
116*	61U	0045	9/5	55-54.1	165-25.0	93	99
117	60.1	0211	9/5	55-46.7	165-07.5	93	100
118	60.1U	0220	9/5	55-46.7	165-07.6	93	100
119	60.1	0227	9/5	55-46.6	165-07.8	93	100
120	60.1U	0235	9/5	55-46.6	165-07.9	93	100
121*	60.1	0239	9/5	55-46.5	165-08.0	93	100
122	60.1U	0249	9/5	55-46.5	165-08.1	93	100
123	60	0413	9/5	55-40.3	164-50.0	92	99
124*	59.1	0531	9/5	55-30.9	164-42.0	93	101
125	59	0647	9/5	55-23.2	164-30.4	95	100
126*	58.1	0752	9/5	55-15.9	164-20.7	89	95
128	58	1713	9/5	55-09.9	164-12.9	52	59
129	58.2	1847	9/5	55-02.0	164-28.8	45	55
130*	46	2032	9/5	54-56.5	164-52.1	70	78
131	46.1	2143	9/5	55-02.5	165-04.8	102	109
132	47	2253	9/5	55-07.5	165-16.2	106	114
133*	48	0108	10/5	55-24.2	165-44.8	110	117
134	62	0501	10/5	56-10.0	165-53.9	94	101
135*	62U	0510	10/5	56-10.0	165-53.9	94	101

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
136	62	0517	10/5	56-10.1	165-53.9	94	101
137	62U	0523	10/5	56-10.1	165-53.9	94	101
138*	62	0528	10/5	56-10.0	165-54.0	94	101
139	62U	0539	10/5	56-10.1	165-54.0	94	101
140	62.1	0702	10/5	56-16.1	166-09.6	92	101
141	62.1U	0713	10/5	56-16.0	166-09.5	92	101
142	62.1	0721	10/5	56-16.0	166-09.4	90	101
143	62.1U	0730	10/5	56-16.0	166-09.4	90	101
144	62.1	0737	10/5	56-16.0	166-09.3	93	101
145*	62.1U	0748	10/5	56-16.0	166-09.2	93	101
146	63	0804	11/5	56-24.4	166-27.4	94	100
147	63U	0814	11/5	56-24.6	166-27.4	94	100
148	63	0826	11/5	56-24.9	166-27.4	94	100
149	63U	0834	11/5	56-25.2	166-27.5	94	100
150*	63	0843	11/5	56-25.3	166-27.4	92	100
151	63U	0853	11/5	56-25.6	166-27.6	92	100
152	63.1	0958	11/5	56-29.3	166-42.3	93	102
153	63.1U	1005	11/5	56-29.4	166-42.3	93	102
154	63.1	1010	11/5	56-29.5	166-42.3	93	102
155	63.1U	1015	11/5	56-29.6	166-42.3	93	102
156*	63.1	1020	11/5	56-29.6	166-42.3	93	102
157	63.1U	1030	11/5	56-29.8	166-42.2	93	102
158	74.1	1319	11/5	56-57.6	166-02.9	65	70
159	74.1U	1326	11/5	56-57.6	166-02.8	65	70
160	74.1	1333	11/5	56-57.6	166-02.6	65	70
161	74.1U	1339	11/5	56-57.6	166-02.5	65	70
162*	74.1	1345	11/5	56-57.5	166-02.5	65	70
163	74.1U	1355	11/5	56-57.5	166-02.3	65	70
164*	74	1517	11/5	56-49.5	165-39.7	69	74
165	74U	1527	11/5	56-49.5	165-39.6	69	74
166*	73.1	1659	11/5	56-36.8	165-16.6	68	76
167	73.1U	1709	11/5	56-36.8	165-16.7	68	76
168*	BC-19A	0344	12/5	58-42.2	163-53.0	23	33.5
169*	106.1	0646	12/5	58-42.2	165-04.9	25	34
170*	107	1002	12/5	58-43.1	166-19.1	29	38

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
171*	123	1319	12/5	59-14.3	166-38.5	21	29
172*	BC-18A	1702	12/5	59-39.8	167-07.4	20	31.5
173*	140-1	1816	12/5	59-28.9	167-22.8	20	31
174*	BC-9B	1953	12/5	59-13.1	167-42.1	32	39
175*	139.1	2259	12/5	58-57.4	167-59.5	33	42
176*	BC-4E	0229	13/5	58-36.5	168-21.7	46	55.1
177*	138.1	0413	13/5	58-22.2	168-40.3	60	66
178*	137	0553	13/5	58-08.0	169-00.9	62	69
179	137U	0605	13/5	58-08.0	169-01.1	62	69
180*	69	0733	13/5	57-54.0	169-19.2	57	65
181	69U	0745	13/5	57-53.9	169-19.3	57	65
182*	69.1	0907	13/5	57-41.2	169-35.9	59	69
183	69.1U	0917	13/5	57-41.2	169-35.9	59	69
184*	57	1042	13/5	57-28.1	169-49.5	57	67
185	57U	1053	13/5	57-28.2	169-49.3	57	67
186	68	1301	13/5	57-31.4	169-01.6	60	70
187	68U	1308	13/5	57-31.4	169-01.4	60	70
188*	77	1531	13/5	57-28.8	168-05.5	65	71
189	77U	1541	13/5	57-28.8	168-05.4	65	71
190	76	1810	13/5	57-20.9	167-15.8	60	69
191	76U	1817	13/5	57-20.9	167-15.8	60	69
192	76	1825	13/5	57-20.8	167-15.9	60	69
193	76U	1832	13/5	57-20.7	167-15.9	50	69
194*	76	1837	13/5	57-20.7	167-16.0	60	69
195	76U	1846	13/5	57-20.7	167-16.1	60	69
196*	75.1	2031	13/5	57-13.7	166-51.9	61	65
197	75.1U	2042	13/5	57-13.7	166-52.1	61	65
198*	75	2213	13/5	57-07.3	166-26.2	61	63
199	75U	2223	13/5	57-07.3	166-26.3	61	63
200	65.1	0014	14/5	56-56.2	166-57.6	68	75
201	65.1U	0022	14/5	56-56.3	166-57.7	68	75
202	65.1	0028	14/5	56-56.4	166-57.7	69	75
203	65.1U	0032	14/5	56-56.5	166-57.7	69	75
204*	65.1	0038	14/5	56-56.5	166-57.7	69	75
205	65.1U	0048	14/5	56-56.6	166-57.7	69	75

Cast No.	Grid No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	CTD Depth M	Water Depth M
206	65	0240	14/5	56-45.9	167-29.5	84	91
207	65U	0246	14/5	56-45.9	167-29.3	84	91
208	65	0252	14/5	56-45.9	167-29.1	84	91
209	65U	0256	14/5	56-45.8	167-29.0	84	91
210*	65	0300	14/5	56-45.8	167-28.9	84	91
211	65U	0310	14/5	56-45.6	167-28.4	84	91
212	64.1	0409	14/5	56-39.9	167-13.7	93	100
213	64.1U	0417	14/5	56-39.8	167-13.6	93	100
214	64.1	0422	14/5	56-39.8	167-13.5	93	100
215	64.1U	0427	14/5	56-39.7	167-13.4	93	100
216*	64.1	0432	14/5	56-39.7	167-13.3	93	100
217	64.1U	0441	14/5	56-39.5	167-13.2	93	100
218	64	0538	14/5	56-35.0	166-58.3	95	100
219	64U	0544	14/5	56-34.9	166-58.3	95	100
220	64	0552	14/5	56-34.8	166-58.3	94	100
221	64U	0600	14/5	56-34.8	166-58.4	94	100
222*	64	0607	14/5	56-34.7	166-58.4	94	100
223	64U	0618	14/5	56-34.6	166-58.6	94	100
224*	51	0843	14/5	56-05.5	167-11.6	127	133
225	51U	0856	14/5	56-05.4	167-11.8	127	133
226	40	1050	14/5	55-43.8	167-18.2	130	135
227	40U	1100	14/5	55-43.9	167-18.3	130	135
228*	39	1247	14/5	55-30.3	166-52.0	129	136
229	39U	1259	14/5	55-30.4	166-52.0	129	136
230	38	1500	14/5	55-17.4	166-28.2	129	136
231	38U	1510	14/5	55-17.3	166-28.3	129	136
232*	37	1647	14/5	55-03.3	166-04.8	128	135
233	37U	1659	14/5	55-03.2	166-04.9	128	135
234*	36	1831	14/5	54-52.0	165-43.3	138	144
235	36U	1834	14/5	54-52.0	165-43.4	138	144

Attachment B

Mooring Deployment Summary

Mooring No.	Time GMT	Date GMT 1977	Latitude North	Longitude West	Depth Meters	X Rate	Loran-C Y Rate	Z Rate	Receiver Channel No.
WGC-3D PMEL	1840	28/4	55-12.0	156-57.3	112.4	18574.41	33376.40	45005.93	10
WGC-1F PMEL	1930	29/4	54-03.8	163-05.8	88.3	18241.08	34394.46	47270.35	8
BC-13D PMEL	0146	1/5	55-47.1	165-23.1	108	18517.89	34474.73	48202.50	6
BC-17B PMEL	2353	1/5	56-36.2	167-41.2	109	18644.86	34727.53	49145.30	4
BC-16A PMEL	2029	2/5	57-59.2	165-15.8	50	18750.13	33742.03	48118.34	1
BC-2E PMEL	2002	3/5	57-02.5	163-26.0	65	18708.92	33803.54	47444.26	5
BC-15C PMEL	0624	4/5	57-39.0	162-41.4	45	18741.32	33463.16	47126.00	9
BC-19A UW	0322	12/5	58-42.6	163-52.8	33.5	18735.41	33171.08	47518.59	1
BC-18A UW	1647	12/5	59-40.1	167-07.5	31.5	18536.43	33028.70	48452.71	6
BC-9C UW	2122	12/5	59-12.0	167-43.2	40.5	18571.89	33414.47	48748.63	2
BC-4E UW	0208	13/5	58-36.6	168-21.7	55.1	18626.15	33893.57	49109.98	10

NOAA Ship MILLER FREEMAN

Cruise Report
RP-4-MF-77B Leg VII
5/23 - 6/11/77

Introduction

This cruise was made in support of the Outer Continental Shelf Environmental Assessment Program (OCSEAP) designed to study the circulation of water on the continental shelf areas of Alaska. Because it covered two diverse areas, Bristol Bay and the Icy Bay region, Leg VII was divided into two segments denoted as VIIA and VIIB in the following discussion.

The objectives of each of these segments were:

Leg VIIA:

(1) Deploy satellite-tracked free-drifting buoys to asses surface circulation in the Southern portion of Bristol Bay known as St. Georges Basin.

(2) Collect CTD and XBT data sufficient to delineate the frontal boundary between the well mixed coastal water of Bristol Bay and the two layered water typical of Bristol Bay Mid Shelf.

(3) Collect CTD data in nearshore areas to investigate the behavior of local river discharge and phenomena such as the high salinity anomoly in Kuskokwim Bay.

(4) Attempt to locate and, if possible recover, the current meter station BC-15B lost on a recovery attempt by the NOAA Ship DISCOVERER two weeks earlier.

Leg VIIB:

(1) Recover three current meter moorings and deploy one current meter mooring in the Icy Bay region.

(2) Collect CTD and Water samples for filtering of Suspended Sediments in the general area of the WIST arrays.

Personnel

The following scientific personnel were aboard to carry out the proposed program:

Leg VIIA.

(1) R. L. Charnell, Chief Scientist
(2) J. D. Schumacher
(3) D. J. Pashinski

Leg VIIB.

(1) D. J. Pashinski, Chief Scientist
(2) J. Fisher
(3) M. Pizzello

Accomplishments

Attachment A is a summary of stations occupied during the Bristol Bay portion of the cruise. The field program for the NOAA Ship MILLER FREEMAN was dependent upon the accomplishments of the NOAA Ship DISCOVERER during her cruise 26 April - 16 May, 1977. Because of the very profitable DISCOVERER cruise the scope of the MILLER FREEMAN CTD program was reduced from the original proposal so that more ship time could be directed to the effort in the Icy Bay region. Because of near ideal weather conditions over Bristol Bay at the time of the Leg VIIA effort the Bristol Bay portion of the project was highly successful.

Six free-drifting buoys were deployed in St. Georges Basin. These buoys, tracked by the Nimbus-6 satellite, were of the Richardson design produced by Polar Research Labs, drogued with a 2m x 10m window shade at a central depth of 15 meters below the surface. They were deployed buoy first, using the small waist crane and a release hook, followed by simply dropping the weighted drogue. At the time of release confirmation of their correct operation had been received. Special recognition in the successful deployment of these buoys is due for George Lapiene (OCSEAP, Juneau) for his herculean effort to ensure the delivery of the buoys to the NOAA Ship MILLER FREEMAN, dockside in Kodiak, AK. in spite of last minute delays in shipping schedules and a commercial air carrier strike.

Five XBT sections were made to delineate the character of the coastal/shelf water front in Bristol Bay. For each section shallow water XBTs were dropped at one nautical mile intervals. As expected the structure front was found in the proximity of the 50 meter isobath in all cases, and was extremely narrow; a transition from a two layer shelf water structure to a well mixed coastal water occurred in less than 10 nautical miles. This marks the first time for such a detailed investigation of this prominant feature of Bristol Bay.

Nearshore excursions were made into Etolin Strait, Kuskokwim Bay, and Kulukak Bay to further examine the transition from open bay conditions to nearshore regimes. This included special investigations around the previously observed high salinity anomoly region of outer Kuskokwim Bay and a CTD section across the mouth of Kvichak Bay. This data when properly analysed should be valuable in quantifying the behavior of fresh water inputs to Bristol Bay.

Following the loss of current meter station BC-15B during the DISCOVERER cruise a listening schedule was established as each CTD station was occupied by the MILLER FREEMAN. It is known that the mean circulation in Bristol Bay is low so that should BC-15B be adrift, it probably would not have exited the area at the time of the MILLER FREEMAN cruise. There was no positive response to this effort, so the ship reoccupied the old site of BC-15B on the chance that it had not properly released. Again there was no response to the interogation, although the new station, BC-15C, could clearly be heard. It is clear that BC-15B has been lost after having been set adrift on the attempted recovery.

Attachment B is a summary of stations occuppied during the NEGOA, Icy Bay, portion of the cruise. This portion of the cruise was intended to primarily service three instrumented moorings in the near shore region off Icy Bay with a CTD program to fill periods when mooring work could not be scheduled. A generous allotment of cruise time was dedicated to this effort in the light of the highly variable weather in the Gulf of Alaska. With the excellent weather conditions of the Bristol Bay portion of the cruise carrying on into the Icy Bay effort all goals established were achieved with a considerable added benefit in extending our knowledge of the area into the esturine reaches of the coast.

Two moorings, WIST-1-and WIST-11 were succesfully recovered in the shallow water near the coast culminating a prototype experiment into Wave Induced Sediment Transport processes. Each mooring carried newly developed sediment traps, standard current meters, and nephelometers. Two of the four sediment traps operated correctly, a reasonable success figure for this stage in the development. One current meter failed due to a battery failure, however, indications are the failure occurred recently and little data loss was incurred. The nephelometer of WIST-11 failed to return with the mooring due to failure of the securing lanyard. Evidence indicates that the lanyard chaffed on the accoustic release to the point that the strength was reduced to less than that sufficient to lift the nephelometer.

The long term current monitoring station 62 was maintained with the successful recovery of 62K and subsequent deployment of 62L. The intitial location of the station was complicated by uncertainty in the geographic position due to discrepencies in the position data at the time of the previous deployment.

These difficulties were overcome and the station was maintained. Again one current meter failed due to a battery problem without a large loss in data.

The full scale station grid was occuppied with CTD stations. The Icy Bay stations were occuppied twice, and the Cape Yakataga line was occuppied once. The full coverage of the area station grid allows the excellent data set to be maintained over another quarter.

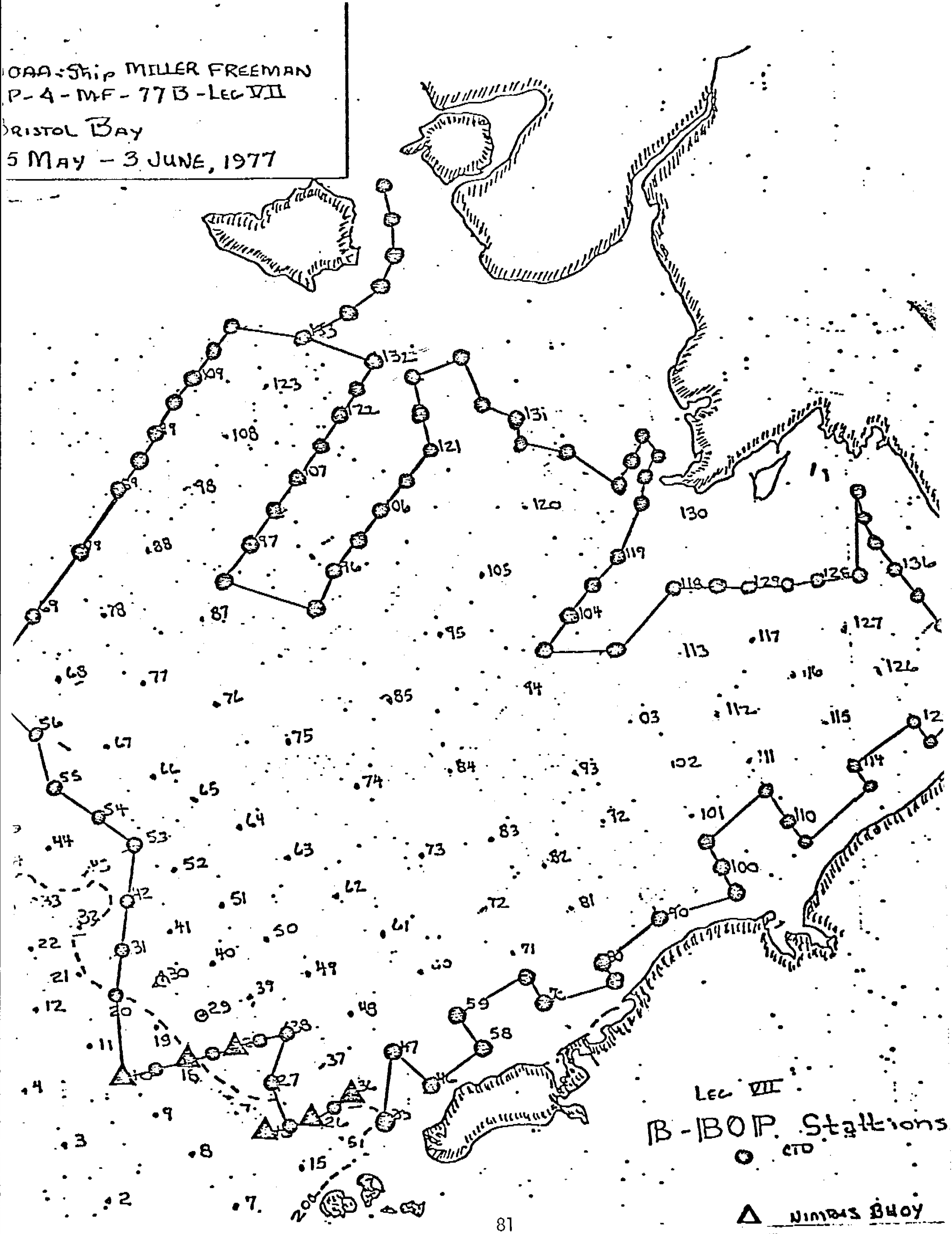
During the fall of 1976 through out discussions on direction to take in OCSEAP near shore work the question of studying the fjords of the Alaskan coast continually arose. At that time other projects were receiving higher priority and the investigation of the fjords was shelved. This cruise provided a unique opportunity to obtain some exploratory CTD data in both Icy Bay and Yakutat Bay. These exploratory stations should reveal if the fjords have classical circulation patterns or an unknown dynamic control.

A line of 5 CTD stations were occuppied up the axis of Icy Bay to the limit of safe penatration. This line observed water column profiles across the entrance sill and in the first basin. The line occuppied a station on the sill separating the inner and outer basins and the last station was just into the inner basin. Preliminary view of the data suggests a classic esturine circulation with warm saline water coming in from offshore to replenish the basin bottom waters.

Within Yakutat Bay a line of 8 CTD stations were occuppied in the same plan as those in Icy Bay. Yakutat Bay is a two basin system similar to Icy Bay though the inner sill is not as shallow as the Icy Bay sill. The principal differences between the two bays is the volume of drifting ice. This leads to the question of surface water temperature and the possibility of a more intense circulation within Yakutat Bay.

Acknowledgments

This cruise was successful for a variety of conditions, including some we had no control over. In large measure the success was due to the ship and the professionalism of her entire complement. It has been a pleasure to work aboard the MILLER FREEMAN because she is so well appointed and has cooperative and enthusiastic personnel. Most important the officers show great adaptability in the face of ever changing scientific requirements, Thanks go to the entire ship for her part in making this a very successfull effort.


OAA Ship MILLER FREEMAN
P-4-MF-77B-LEG VII
BRISTOL BAY
5 MAY - 3 JUNE, 1977
LEG VII
B-BOP Stations
CTD
NIMBUS BUOY

ATTACHMENT A

STATION SUMMARY

MILLER FREEMAN CRUISE RP-4-MF-77B

LEG VII A 23 MAY - 5 JUNE , 1977

STATION NUMBER	GRID NUMBER	DATE/TIME GMT	LATITUDE N.	LONGITUDE W.	CAST DEPTH M	WATER DEPTH M
1*	36.0	146/0414	54-51.4	165-44.5	N.B. 0027	154
1	36.0	0426	54-51.4	165-44.5	148	154
2	36.1	0547	54-47.0	165-57.2	196	203
3	26.0	0722	54-42.0	166-10.3	280	298
3*	26.0	0752	54-42.1	166-09.8	N.B. 0056	298
4*	16.0	0937	54-37.0	166-42.3	N.B. 0544	411
4	16.0	0951	54-37.0	166-42.7	406	411
5	26.1	1125	54-38.8	166-27.3	350	353
6	27.0	1344	54-57.2	166-38.9	154	157
7	38.0	1556	55-17.0	166-28.9	138	141
8	38.1	1713	55-13.9	166-45.0	135	146
9*	28.0	1830	55-10.9	167-03.1	N.B. 0011	152
9	28.0	1836	55-10.8	167-03.1	146	152
10	28.1	1948	55-09.4	167-17.8	156	161
11*	18.0	2058	55-06.0	167-33.4	N.B. 0535	269
11	18.0	2108	55-06.0	167-33.7	260	269
12	18.1	2242	55-00.3	167-54.4	740	1372
13*	10.0	147/0038	54-53.3	168-15.6	N.B. 0503	2205
13	10.0	0050	54-53.2	168-15.8	751	2203
14	20.0	0517	55-29.8	168-19.4	294	294
15	31.0	0720	55-45.6	168-19.0	135	144
16	42.0	0925	56-07.9	168-12.9	157	157
17	53.0	1140	56-29.2	168-10.3	128	128
18	54.0	1330	56-38.7	168-36.0	106	113
19	55.0	1535	56-50.7	169-07.0	80	86
20	56.0	1742	57-10.9	169-18.1	70	75
21	57.0	1957	57-28.0	169-50.2	65	70
22	69.0	2245	57-40.0	169-17.9	60	68
--	XBT LINE	21 DROPS AT 1 NAUTICAL MILE INTERVALS				
23	79.0	148/0125	58-17.0	168-45.3	65	69
--	XBT LINE	19 DROPS AT 1 NAUTICAL MILE INTERVALS				
24	89.0	0350	58-39.1	168-20.7	50	55
--	XBT LINE	8 DROPS AT 1 NAUTICAL MILE INTERVALS				
25	99.1	0509	58-48.8	168-08.4	38	38
26	99.0	0630	58-58.8	167-55.9	40	44
27	109.1	0747	59-07.8	167-42.0	37	42
28	109.0	0914	59-18.0	167-29.0	33	38
29	124.1	1042	59-27.3	167-13.1	29	32
30	124.0	1201	59-35.6	167-02.9	29	32

31	133.6	148/2027	60-20.1	165-29.8	25	30
32	133.5	2328	60-09.9	165-24.5	18	22
33	133.4	149/0051	59-59.9	165-19.8	23	29
34	133.3	0246	59-50.3	165-30.8	25	31
35	133.2	0430	59-43.5	165-41.8	20	24
36	133.1	0924	59-35.6	165-57.2	24	27
37	133.0	1039	59-31.1	166-13.4	26	28
38	132.0	1303	59-22.4	165-27.0	16	20
39	132.1	1421	59-12.0	165-37.1	22	26
40	122.0	1534	59-03.0	165-49.3	27	31
41	122.1	1650	58-52.9	166-04.0	28	33
42	107.0	1817	58-42.8	166-19.4	36	40
43	107.1	1939	58-31.2	166-35.1	42	45
--	XBT	11 DROPS AT 1 NAUTICAL MILE INTERVALS				
44	97.0	2115	58-19.0	166-51.6	46	52
--	XBT	13 DROPS AT 1 NAUTICAL MILE INTERVALS				
45	97.1	2308	58-05.1	167-06.7	60	64
46	96.1	150/0217	57-55.5	166-07.7	59	63
--	XBT	12 DROPS AT 1 NAUTICAL MILE INTERVALS				
47	96.0	0354	58-10.0	165-55.8	46	50
--	XBT	4 DROPS AT 1 NAUTICAL MILE INTERVALS				
48	106.1	0515	58-20.0	165-39.7	41	48
49	106.0	0642	58-29.8	165-23.1	40	44
50	121.1	0813	58-40.0	165-05.1	38	40
51	121.0	0959	58-51.1	164-47.7	26	33
52	131.4	1153	59-06.3	164-51.0	24	27
53	131.3	1333	59-18.1	164-50.2	20	24
54	131.5	1530	59-23.9	164-19.8	19	23
55	131.1	1807	59-05.5	164-07.9	23	30
56	131.0	1941	59-02.1	163-48.1	22	27
57	120.2	2120	58-50.2	163-45.0	27	30
58	120.4	2306	58-47.5	163-16.6	25	27
59	120.5	151/0137	58-34.0	162-39.1	25	29
60	120.6	0300	58-44.7	162-35.7	34	38
61	120.7	0415	58-55.0	162-27.7	36	40
62	130.1	0515	58-46.7	162-16.1	26	31
63	130.2	0621	58-38.9	162-25.8	44	50
64	130.3	0712	58-30.1	162-22.8	40	46
65	119.0	0928	58-12.3	162-39.0	35	38
66	104.1	1132	58-02.2	162-56.0	40	42
67	104.0	1330	57-52.7	163-11.7	43	47
68	94.1	1540	57-37.5	163-30.9	45	49
69	BC-15	1841	57-38.0	162-44.9	43	48
70	118.0	2234	58-01.4	162-02.3	39	43
71	118.1	152/0023	58-00.9	161-36.3	52	56
72	129.0	0152	58-00.8	161-13.6	38	42
73	129.1	0318	58-01.9	160-47.9	38	42
74	128.0	0439	58-03.0	160-22.6	43	47
75	128.1	0602	58-05.2	159-56.6	41	48
76	128.2	0905	58-38.8	159-53.7	27	31
77	128.3	1032	58-29.6	159-44.8	28	32
78	128.4	1153	58-20.1	159-36.2	25	28
79	136.0	1327	58-05.8	159-31.4	43	47
80	136.1	1513	57-56.3	159-17.0	45	49

81	135.0	152/1646	57-44.9	158-58.9	41	48
82	135.1	1758	57-37.1	158-47.6	40	48
83	134.0	1906	57-30.1	158-37.5	38	46
84	134.4	2006	57-24.9	158-29.4	29	37
85	134.5	2310	57-03.6	159-08.8	33	36
86	125.0	153/0018	57-08.8	159-21.6	49	53
87	114.0	0252	56-55.2	159-56.9	53	57
88	114.1	0425	56-46.5	159-47.0	43	47
89	114.2	0949	56-26.2	160-31.1	43	47
90	110.0	1118	56-33.9	160-43.6	56	64
91	110.1	1314	56-44.9	160-57.4	62	70
92	101.1	1643	56-27.1	161-39.7	64	68
--	XBT	9 DROPS AT 1 NAUTICAL MILE INTERVALS				
93	101.2	1813	56-15.0	161-26.2	53	59
--	XBT	4 DROPS AT 1 NAUTICAL MILE INTERVALS				
94	101.3	1940	56-03.9	161-12.5	24	30
95	90.0	2234	56-58.5	162-10.0	51	60
96	80.0	154/0209	55-41.8	162-53.2	54	57
--	XBT	10 DROPS AT 1 NAUTICAL MILE INTERVALS				
97	80.1	0337	55-30.0	162-40.4	31	35
98	70.0	0648	55-26.1	163-32.0	69	73
99	70.1	0812	55-36.0	163-42.8	80	88
100	59.0	1112	55-22.7	164-31.4	92	102
101	58.0	1257	55-10.3	164-13.2	60	64
102	46.0	1532	54-56.4	164-50.1	75	79
103	37.0	1646	55-03.2	165-04.9	104	115
104	35.0	1918	54-42.3	165-21.9	166	176
--	XBT	5 DROPS AT 6 NAUTICAL MILE INTERVALS				

* Indicates the grid station at which a Nimbus Drift Buoy was deployed

BRISTOL BAY TOTALS

CTD CASTS ---------------------------------- 104

XBT DROPS ---------------------------------- 116

DISCRETE SURFACE SALINITIES ------------------ 216

DRIFT BUOY DEPLOYMENTS ---------------------- 6

Attachment B

Station Summary - Leg VII B

Sequence	Grid	Date/time	Latitude	Longitude	Cast Depth	Water Depth
1	I	159/0653	59-11.1	142-20.3	700	1682
2	H	0855	59-20.2	142-08.5	275	291
3	G	0951	59-23.3	142-04.3	195	209
4	F	1046	59-26.8	141-59.6	175	187
5	E	1152	59-33.3	141-50.5	160	165
6	D	1257	59-39.4	141-42.2	108	112
7	C	1340	59-42.7	141-38.4	76	80
8	B	1417	59-45.9	141-34.6	50	55
9	A	1452	59-48.9	141-30.9	24	29
10	62L	160/0216	59-38.5	142-07.0	181	185
11	P	0514	59-23.3	142-59.6	700	1573
12	O	0700	59-33.5	142-50.0	650	677
13	N	0836	59-40.7	142-42.6	320	329
14	M	0938	59-46.0	142-36.3	175	186
15	L	1025	59-49.6	142-31.0	125	137
16	K	1117	59-55.3	142-28.1	99	90
17	J	1212	60-01.4	142-25.5	53	45
18	IC-1	1505	59-47.9	141-39.3	40	446
19	IC-2	1544	59-51.5	141-36.4	29	32
20	IC-3	1627	59-55.7	141-32.9	64	70
21	IC-4	1840	59-58.0	141-25.3	16	20
22	IC-5	2042	59-59.2	141-22.5	42	46
23	A	161/0155	59-48.6	141-30.7	22	26
24	B	0234	59-45.8	141-34.1	51	60
25	C	0313	59-43.0	141-38.7	82	86
26	D	0359	59-39.6	141-42.2	117	121
27	E	0504	59-33.1	141-51.0	168	172
28	F	0604	59-27.1	141-59.6	189	193
29	G	0653	59-23.5	141-04.5	216	220
30	H	0750	59-19.9	142-09.2	450	464
31	I	0918	59-11.3	142-19.6	700	1829
32	YT-1	1600	59-34.9	140-09.8	21	25
33	YT-2	1645	59-39.3	140-04.8	149	153
34	YT-3	1731	59-42.6	139-57.4	113	117
35	YT-4	1818	59-45.6	139-49.9	64	68
36	YT-5	1910	59-48.0	139-42.5	38	42
37	YT-6	2009	59-53.3	139-40.8	22	26
38	YT-7	2151	59-56.4	139-35.1	245	252
39	YT-8	2252	59-58.7	139-33.5	70	87

Mooring Summary

WIST-I	*recovered*	*159/1530*	*59-45.6*	*141-36.9*
	2 - RMC-4 current meters *1 - Sediment trap* *1 - Nephelometer*			
WIST-II	*recovered*	*159/1710*	*59-39.2*	*141-41.6*
	4 - RCM-4 current meters *3 - Sediment traps*			
62K	*recovered*	*160/0003*	*59-38.7*	*142-07.2*
	4 - RCM-4 current meters			
62L	*deployed*	*160/0307*	*59-38.5*	*142-07.2*
	4 - RCM-4 current meters.			

RU #141

Addendum to B-BOP Quarterly Report

Estimate of Funds Expended by the University of Washington to May 31, 1977

Total Allocation (5/16/75 - 9/30/77) ? We have not received our total FY 77 allocation as yet.

A.	Salaries-faculty, staff, students	63,739
B.		7,090
C.	Expendable Supplies and Equipment	10,687
D.	Permanent Equipment	67,020
E.	Travel	14,448
F.	Computer	4,539
G.	Other Direct Costs	39,949
H.	Indirect Costs	27,918
	Total Expenditures	$235,390

B-BOP Hydrographic Data Summary
April 1 - June 30 1977

DATES	STATIONS	CRUISE	REGION	REMARKS
26 Apr-16 May 77	226	Discoverer RP-4-DI-77A LEG V	Central Bristol Bay	169 down casts 57 up casts
23 May-11 June 77	104	Miller Freeman RP-4-MF-77B LEG VII	Perimeter Bristol Bay	near shore and slope

B-BOP Instrument Summary

DATE	LOCATION	INSTRUMENTS	DAYS	REMARKS
27 Sep 76	BC-2D 57-02.3	2 RCM-4	219	1 cm leaked
3 May 77	163-25.7	1 TG-2		
25 Sept 76	BC-4D 58-36.6	2 RCM-4	231	
13 May 77	168-21.7	1 TG-3		
24 Sep 76	BC-9B 59-13.0	2 RCM-4	231	
12 May 77	167-42.0	1 TG-3		
29 Sep 76	BC-13C 55-47.2	2 RCM-4	215	
1 May 77	165-13.8	1 TG-2		
26 Sept	BC-15B 57-37.7	2 RCM-4	220	Released but not recovered
4 May 77	162-44.9	1 TG-2		
21 Sep 76	BC-17A 56-34.0	2 RCM-4	N 222	Evidence of traweling Lower CM Lost
1 May 77	167-33.0			
3 May 76	BC-2E 57-02 163-26			

Cont. B-BOP Instrument Summary

13 May 77	BC-4E 58-36.6 168-21.7
12 May 77	BC-9C 59-12.0 167-43.2
1 May 77	BC-13D 55-47.1 165-23.1
4 May 77	BC-15C 57-39.0 162-41.4
2 May 77	BC-16A 57-59.2 165-15.8
6 May 77	BC-176 56-36.2 167-41.2
12 May 77	BC-18A 59-40.1 167-07.5
12 May 77	BC-19A 58-42.6 163-52.8

Addendum to N-COP Quartly Report

Estimate of Funds Expended by the University of Washington to May 31, 1977.

Total allocation (5/16/75 - 9/30/77). We have not received our total FY 77 allocation as yet.

A.	Salaries - faculty, staff, students	10,723
B.	Benifits	1,066
C.	Supplies	11,906
	1. *6 Instrument time code generators	2,010
D.	Permanent Equipment	19,811
E.	Travel	5,507
F.	Computer Services	8,255
G.	Other Direct Costs	5,412
H.	Indirect Costs	4,697
	Total Expenditures	$67,377

*Total Expendutures does not include this amount.

QUARTERLY REPORT

Contract No:

03-5-022-67, T.O. #1

Research Unit No.:

151

Reporting Period:

1 April - 30 June 1977

Number of Pages:

2

STD Measurements in Possible Dispersal Regions of the Beaufort Sea

Knut Aagaard

Department of Oceanography
University of Washington
Seattle, Washington 98195

6 July 1977

I. Objectives

To examine by means of STD measurements the possible sinking and spreading into the Canadian Basin of waters modified on the Beaufort shelf. Such sinking and spreading constitute an unexplored but possibly very important dispersal mechanism.

II. Field Activities

The March STD work concluded the field program of this contract. For details, see attached Preliminary Report, Cruise W27, Ref. M77-29.

III. Results, and IV. Preliminary Interpretation

Processing and analysis of the CTD data are continuing. The fall data tapes have been submitted, and the spring tapes will be completed shortly. The flooding of the shelf with dense off-shore water seen in the fall does not appear to have occurred this spring.

V. Problems Encountered

None.

VI. Estimate of Funds Expended to 31 May 1977

TOTAL ALLOCATION (5/16/75-9/30/77):		$142,627
A. Salaries - faculty and staff	$19,138	
B. Benefits	2,298	
C. Expendable supplies and equipment	3,726	
D. Permanent Equipment	23,209	
E. Travel	4,788	
F. Computer	2,924	
G. Other Direct Costs	24,555	
H. Indirect Costs	9,396	
TOTAL		90,034
REMAINING BALANCE		52,593

University of Washington

Department of Oceanography

Seattle, Washington 98195

Preliminary Report

University of Washington Participation in

NOAA UH-IH Helicopter CTD Survey W27

STD Measurements in Possible Dispersal Regions

of the Beaufort Sea

4 - 11 March 1977

by

Richard B. Tripp

NOAA Contract 03-5-022-67, TA 1

Research Unit No. 151

Approved by:

Knut Aagaard, Research Associate Professor
Principal Investigator

Francis A. Richards, Professor
Associate Chairman for Research

REF: M77-29

STD MEASUREMENTS IN BEAUFORT SEA

1. *Objectives*

To examine by means of STD measurements the possible sinking and spreading into the Canadian Basin of waters modified on the Beaufort Shelf. Cruise W27 is the second survey during this contract year in the examination of this possibly very important dispersal mechanism.

2. *Narrative*

Two sets of CTD stations, each consisting of two parallel lines normal to the coast, were occupied across the shelf. One set was off Lonely and the other off Oliktok. Station spacing was approximately five miles and parallel line spacing was fifteen miles. Pertinent CTD station information is listed in Appendix A.

The scenario of events is as follows:

March 4, 1977 Weather: cloudy, temperature -28°C, winds 015/10.
0903 AST - Tripp and Swift departed Barrow in helicopter N56RF (Barnhill and Winter) for the Lonely West section. There was some difficulty finding suitable ice. Most of the ice was rafted and > 6 ft.
1230 - After accomplishing two stations we departed for Lonely to refuel.
1450 - Departed Lonely for Station 3.
1850 - Landed at last site in this line. However, it was nearing total darkness and we had to abort the station.
2030 - Return to Barrow. A total of 5.6 hours of flight time were logged.

March 5, 1977 Weather: cloudy, light snow, temperature -28°C, winds 035/15.
0916 AST - Darnall and Swift departed Barrow in helicopter N56RF (Barnhill and Winter) for the Lonely East section.
1410 - Returned to Lonely to refuel after occupying Station 9. The fuel pump at the Husky camp was down and refueling was delayed for four hours.
2030 - Departed Lonely for Barrow. Severe icing conditions.
2110 - Returned to Lonely. A total of 3.7 hours of flight time were logged.

March 6, 1977 Bad weather: no flying was attempted.

March 7, 1977 Weather: clear; temperature -30°C, winds 090/16.
1145 AST - Darnall and Swift departed Lonely in helicopter N56RF (Barnhill and Winter) for Station 10 on the Lonely East section. After finishing the station, the heaters on the helicopter quit working. The radios became inoperative because of the cold.
1416 - Returned to Barrow. A total of 2.1 hours of flight time were logged.

March 8, 1977 No flying. Helicopter down for maintenance.

March 9, 1977 Weather: cloudy, temperature -27°C, winds calm.
0900 AST - Tripp and Darnall departed Barrow in helicopter N57RF (Feld and Winter) for Lonely.
1035 - Departed Lonely, after refueling, for the Oliktok West section.

March 9, 1977, cont'd.
1730 - Returned to Lonely for fuel after occupying Station 15.
1845 - Departed Lonely.
1935 - Returned to Barrow. A total of 5.7 hours of flight time were logged.

March 10, 1977 Weather: cloudy, temperature -28°C, winds 360/05.
0923 AST - Tripp and Darnall departed Barrow in helicopter N57RF (Feld and Winter) for Lonely.
1053 - Departed Lonely, after refueling, for the Oliktok East section.
1748 - Returned to Lonely for fuel after occupying Station 22.
1820 - Departed Lonely.
1920 - Returned to Barrow. A total of 6.1 hours of flight time were logged.

March 11, 1977 Weather: clear, temperature -32°C, wind 035/3.
0934 AST - Tripp, Darnall, and Lt. L. Ashim (U.S. Naval Postgraduate School) departed Barrow in helicopter N57RF (Feld and Winter) to complete the Lonely East section.
1350 - Returned to Lonely for fuel after occupying Station 25.

1450 - Departed Lonely.
1556 - Returned to Barrow. A total of 4.0 hours of flight time were logged.

During this time period, the ice was compact, quite broken and rafted. The winds were light and prevailed from the northeast. A few narrow leads were observed at the edge of the shelf. The refrozen leads were ∿ 3 ft thick and the rest of the ice > 5 ft thick. There were some pieces of multi-year ice throughout the area.

3. *Methods*

CTD casts were taken on each station utilizing a Plessy Model 9400 profiling system with a redesigned sensor package capable of permitting its deployment through an eight-inch auger hole. 110V power was supplied by a 2½ KW Onan portable generator. This operation worked quite satisfactorily out of the UH-IH helicopter. The data were stored on 7-track magnetic tape for reduction ashore. In order to determine field correction factors for the conductivity and temperature sensors, a water sample and temperature measurement were obtained from a Nansen bottle one meter above the sensors.

Salinity samples were analyzed at Barrow utilizing a Hytech Model 6220 portable salinometer S/N 4917.

4. *Personnel*

R. B. Tripp	Principal Oceanographer	University of Washington
C. H. Darnall	Oceanographer	University of Washington
J. Swift	Graduate Student	University of Washington
Lt. Mike Barnhill	Pilot N56RF	NOAA
R. DeHart	Mechanic N56RF	NOAA
Lt. Don Winter	Pilot N57RF	NOAA
G. Feld	Mechanic N57RF	NOAA

5. *Acknowledgments*

The NOAA personnel participated in every aspect of the operation. Lt. Barnhill, Mr. Feld and Mr. DeHart's "can-do" approach was greatly appreciated, and certainly helped in accomplishing the mission.

APPENDIX A

Consec. No.	Date/Time GMT March 1977	Latitude N	Longitude W	STD Depth M	Water Depth M
1	4-2158	71-22.0	152-57.6	83	84
2	2305	71-26.0	152-52.9	78	79
3	5-0154	71-30.1	152-43.3	6	74
4	0157	71-30.1	152-43.3	73	74
5	0247	71-34.4	152-38.0	126	127
6	0358	71-39.9	152-30.3	366	367
7	2059	71-13.1	152-17.0	26	27
8	2251	71-17.5	152-11.6	48	49
9	2341	71-22.5	152-06.1	83	84
10	7-2234	71-25.8	151.54.2	220	221
11	9-2347	70-55.4	150-07.3	25	26
12	10-0023	70-59.9	150-05.4	27	28
13	0102	71-04.0	150-03.6	39	40
14	0141	71-08.6	150-01.7	56	57
15	0253	71-14.4	149-59.3	540	>541
16	2208	70-52.3	149-24.5	28	29
17	2244	70-58.0	149-21.9	31	32
18	2328	71-01.8	149-19.5	37	38
19	11-0021	71-06.9	149-20.7	42	43
20	0104	71-12.5	149-14.8	81	324
21	0127	71-12.5	149-14.8	323	324
22	0210	71-16.7	149-12.2	529	>530
23	2112	71-35.8	151-44.7	547	>548
24	2212	71-31.5	151-53.0	547	>548
25	2308	71-26.0	151-59.1	198	199

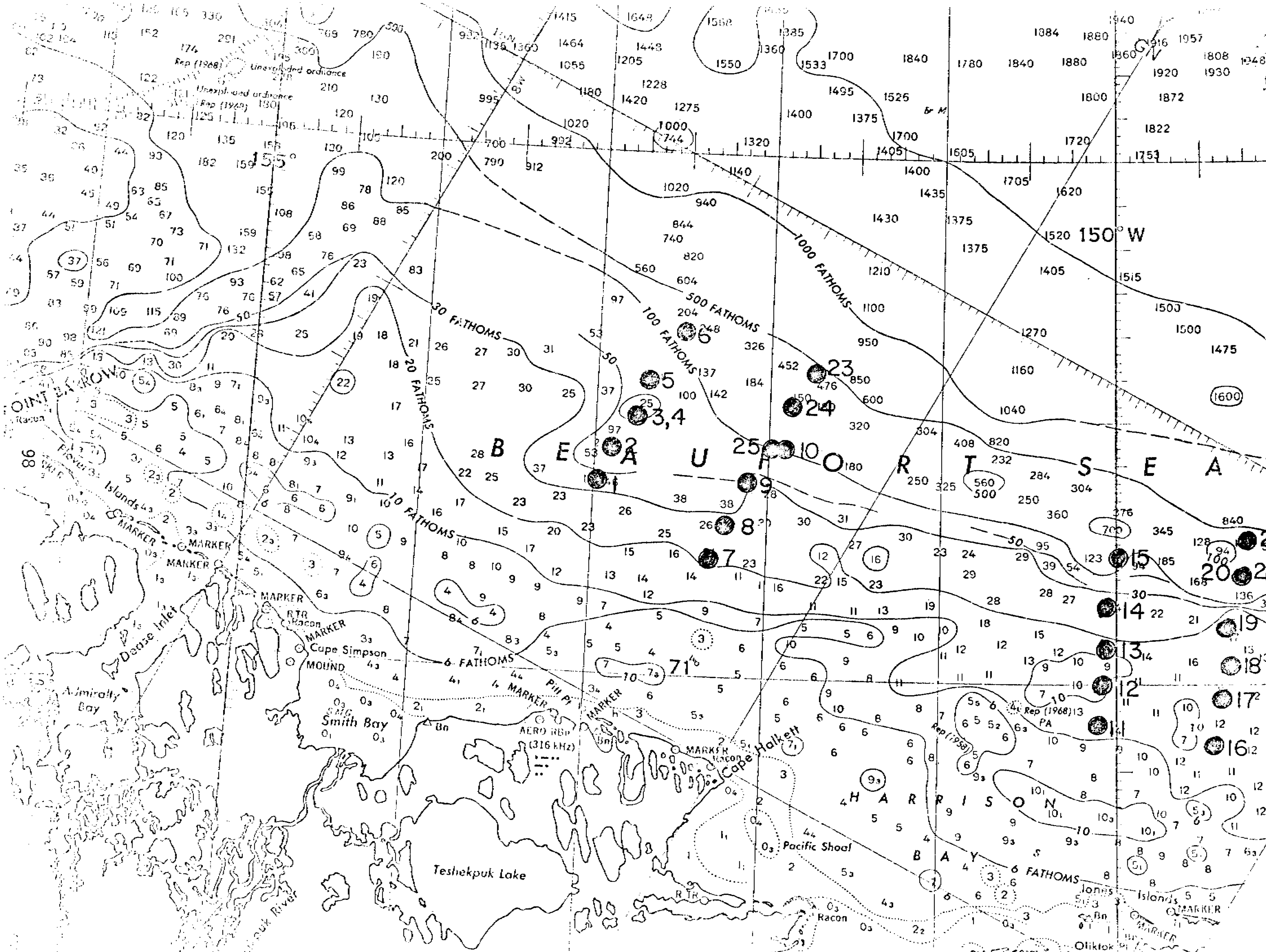

BEAUFORT SEA
150° W
155°
1000 FATHOMS
500 FATHOMS
100 FATHOMS
30 FATHOMS
20 FATHOMS
10 FATHOMS
6 FATHOMS
POINT BARROW
Plover Islands
Dease Inlet
Admiralty Bay
Cape Simpson
MOUND
Smith Bay
AERO RBn (316 kHz)
Pitt Pt
Cape Halkett
Teshekpuk Lake
Pacific Shoal
HARRISON BAY
Jones Islands
Oliktok
Unexploded ordnance
Rep (1968)
MARKER
Racon

Figure 1

Quarterly Report

Research Unit # 208
Reporting Period 4/1/77-6/30/77
Number of Pages: 9

YUKON DELTA COASTAL PROCESSES STUDY

William R. Dupré
Department of Geology
University of Houston
Houston, Texas 77004

6/22/77

QUARTERLY REPORT

I. Task Objectives

The overall objective of this project is to provide data on geologic processes active within the Yukon-Kuskokwim delta in order to aid in the evaluation of the potential impact of scheduled oil and gas exploration and possible production. In particular, attention has been focused on the following:

1) Study the processes along the Yukon-Kuskokwim delta shoreline (e.g., tides, waves, sea-ice, river input) in order to develop a coastal classification including morphology, coastal stability, and dominant direction of longshore transport of sediments. (Task D-4, B-2).

2) Study the hydrology and sediment input of the Yukon and Kuskokwim Rivers as they largely determine the sediment budget of the northern Bering Sea. (Task B-11, B-2).

3) Determine the type and extent of Quaternary faulting and volcanism in the region. (Task D-6).

4) Reconstruct the late Quaternary chronology of the delta complex in order to determine:

   a) frequency of major shifts in the course of the Yukon River.

   b) effects of river diversion on coastal stability.

   c) relative age of faulting and volcanism.

   d) frequency of major coastal storms as recorded in chenier-like sequences along the coast.

II. Field and Laboratory Schedule

A) Field Trip Schedule

N/A

B) Scientific Party

N/A

C) Methods

1) Textural analyses of beach and river sands by seiving and settling tube techniques: in progress.

2) Radiocarbon dating of wood and peat by Steve Robinson, U.S.G.S.: in progress.

3) Pollen analysis by Tom Ager, U.S.G.S.: in progress.

4) Interpretation of 1893 bathymetric maps, 1954 photos and topographic maps, 1973 aerial photos, and 1973-76 LANDSAT imagery to document changes in the shoreline and offshore bathymetry.

D) Sample localities

See Figure 1

E) Data Analysed

1) Number and type of samples collected.

N/A

2) Number and types of analyses

a) Textural analyses: 25 completed, 65 in progress

b) Radiocarbon dates: 5 completed, 8 in progress

c) Pollen analysis: 9 completed, 5 grab samples and 2 cores, in progress

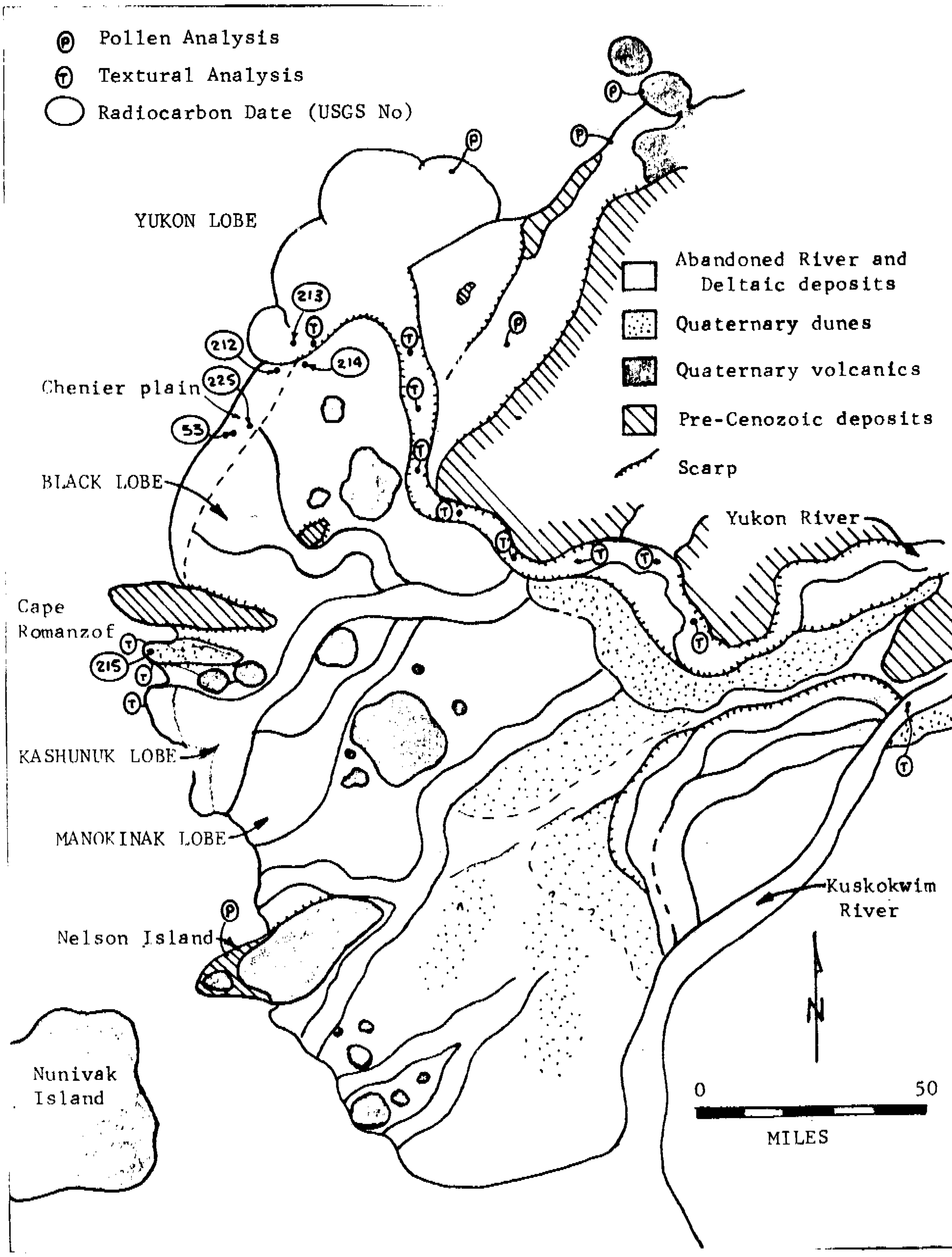


Figure 1: Location of pollen, textural, and radiocarbon camples completed this quarter.

F) Milestone Chart and Data Submission Schedules

1) See Figure 2

2) Two major changes have occurred since the submission of the last milestone chart. The field trip to observe breakup along the Yukon delta was cancelled because of serious illness. In addition, all sample analyses are behind schedule. Some of the problems encountered are discussed in another section of the report. I felt, however, that it was best to delay submitting grain size and pollen analyses until all were completed, thereby facilitating their interpretation. If requested, however, analyses will be sent as soon as completed.

III. Results

Most of the work remains in progress, although almost all of the shoreline changes have been documented, and most of the geologic mapping is completed. Samples of the documented shoreline changes are included in Figure 3. Completed radiocarbon dates are listed below in Table 1.

Project No.	USGS No.	Lat.	Long.	Date
II-7	213	62°41'	164°37'	600±70
7-13-3B	212	62°32'	164°52'	1430±50
II-9	225	62°18'	164°59'	1550±80
7-12-2B	214	62°37'	164°40'	2420±80
I-6	215	61°36'	166°10'	5070±60

Table 1: Radiocarbon dates by Steve Robinson, U.S.G.S., Menlo Park. See Figure 1 for location.

F) Milestone Chart and Data Submission Schedules

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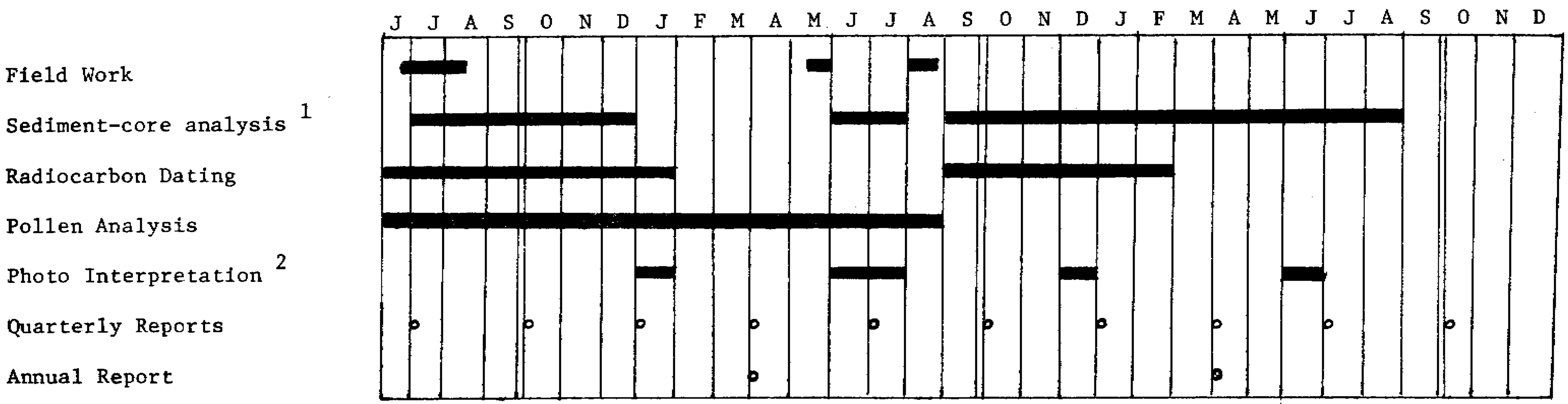
I-6	215	61°36'	166°10'	5070±60

Table 1: Radiocarbon dates by Steve Robinson, U.S.G.S., Menlo Park. See Figure 1 for location.

Figure 2: Activity/Milestone/Data Management Chart



Final Report	(Dec, 1979)
Draft EIS	(May, 1979)
Final EIS	(Sept, 1979)
Sale	(Dec, 1979)

1 Includes grain size, mineralogical analysis

2 Including LANDSAT imagery

IV. Interpretation of Results:

A. Shoreline Changes:

It has been previously stated by Shepard and Wanless (1973) that very little change has occurred along the Yukon delta in the past 75 years. This does not seem to be the case. Some areas of the delta are prograding at rates exceeding 30 meters per year (Fig. 3, A). The most rapid area of deposition is at the mouth of Kwikluak Pass, the main distributary (Fig. 3, B), as would be expected. Substantial changes have occurred in the location and configuration of barrier islands in the area (e.g., Sand Island, Fig. 3, C), with erosion rates locally exceeding 35 meters per year. Some areas of the mainland are also eroding at rates in excess of 17 meters per year (e.g. Punoarat Point on the north side of Angyoyararak Bay, Hooper Bay Quad, B-3). Elsewhere large areas of the shoreline have remained virtually unchanged since 1898. In short, there is an extreme variability in the rates of shoreline processes which can be documented in the area.

B. Radiocarbon dates:

Sample I-6 (5070 B.P) dates a peat layer above the dunes at Hooper Bay. These dunes (which are faulted locally), are thus older than 5,000 years, as previously suspected as the the basis of regional geologic relationships.

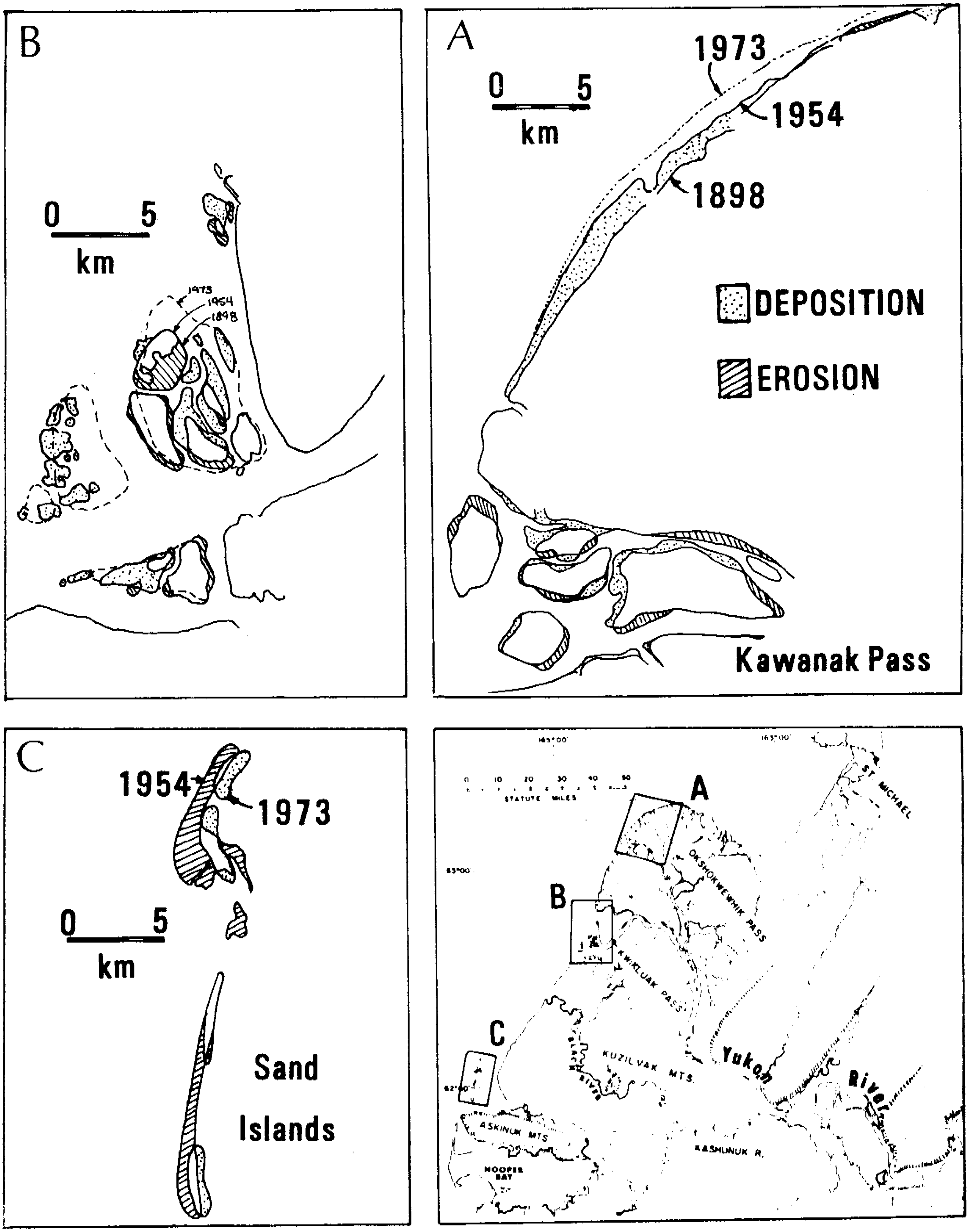


Figure 3: Selected examples of documented shoreline erosion (Dashed areas in A and B indicate net erosion, dotted areas, net deposition from 1898-1954).

Samples II-9 (1550 B.P.) and 7-13-3B (1430 B.P.) date a portion of the chenier plain south of the modern delta. Sample 7-12-2B (2420 B.P.) dates a part of the Black subdelta which clearly pre-dates the formation of the chenier plain. On the basis of these dates and others previously reported, it seems clear that the chenier plain dates from approximately 2,000 - 2,400 B.P. to the present. The Black River continued to be a major sediment contributor, at least as recently as 1,350 years B.P., (as previously reported), and continues to carry a significant amount of sediment during periods of major flood.

Sample II-7 (600 B.P.) dates a part of the modern delta. The inception of the modern delta postdates the age of the Black sub-delta, thus is younger than 2,400 B.P. Samples from the modern delta and the Kashunuk River suggest it may be as young as 1,200 years, but a slightly older age cannot be excluded at this point.

C. Textural data:

Grain size analyses from both the Yukon River and beaches along the coast show the bed load is remarkably well sorted, fine grained sand. Unfortunately, there seems to be a significant discrepancy between the analyses done by settling tube methods (U.S.G.S.), and those done by seive analyses (U of H).

Therefore the significance of the textural information remains somewhat unclear, and the data will not be submitted until the discrepencies are resolved.

V. Problems encountered/recommended changes:

The most serious problem this quarter was the cancellation of the field work during breakup due to illness. It is extremely important to observe breakup along the coast; hopefully funding for next year will include such a trip. The problem with the grain size analyses is in part a function of the two different techniques, but calibration of the settling tube may also be a problem. This will be verified shortly. Delays in sediment analysis have been numerous, mainly due to equipment failures, but no long-term problems are expected. Lately, it should be noted that the shoreline and much of the bathymetry shown on the most recent bathymetric map of the Yukon delta (16240, 6th Ed., 1976) is from 1898 charts, hence is woefully inadequate for modern navigation purposes.

VI. Estimate of Funds Expended:

A. Expended (incl travel advances) $6,808.95

B. Committed (incl. University overhead) $5,402.39

QUARTERLY REPORT

Research Unit #217
Reporting Period:
1 April - 30 June 1977

LAGRANGIAN SURFACE CURRENT OBSERVATIONS FOR OCSEAP - ALASKA

Principal Investigator: D.V. Hansen
Affiliation: Atlantic Oceanographic and
Meteorological Laboratories
NOAA, Miami, Florida

21 June 1977

I. Objective: To obtain and interpret Lagrangian surface current data in the Gulf of Alaska and Bering Sea.

II. Activities:

1. Work continued on development of automated buoy data processing capability. The system is now complete and a draft manuscript has been written (A. Herman and C. Cardwell) for an ERL Technical Memorandum describing the system. The system will now be used to build a graphical data archive of basic observations and derived properties for ease of presenting data for interpretation and flexibility in responding to requests from the Project Office.

2. Six buoys were deployed in the St. George Basin in mid May. After two weeks useable transmissions were being received from all buoys. The northern three buoys were moving northward in agreement with expectation, but the southern three buoys were moving westward, evidently contrary to the conventional wisdom for the region. All of these buoys were moving at relatively slow speeds, around 3 km/da.

3. The principal investigator participated in the physical oceanography workship at Alderbrook in May to report findings to date, and initiated arrangements for integration of drift buoy data with hydrographic data for the NEGOA region.

4. A proposal for expansion of the Lagrangian current observation project in FY 1978 has been completed.

III. Results: No new scientific results of consequence have emerged during this quarter.

IV. Interpretation of results: Not applicable.

V. Problems: Late transfer of funds created a severe lead time problem with equipment procurements. Only by air freighting the buoys to the ship was it possible to maintain the desired schedule. It was touch and go, but we made it, the buoys were deployed and are doing fine.

VI. Estimate of funds expended: As of the end of the reporting period the available funding will be about 85% expended. We should finish out the fiscal year about on schedule.

QUARTERLY REPORT

Contract #03-5-022-91

Research Unit #244

Reporting period: 1 April 1977-
30 June 1977

Number of Pages: 5

STUDY OF CLIMATIC EFFECTS ON FAST ICE EXTENT AND ITS SEASONAL DECAY ALONG THE BEAUFORT-CHUKCHI COASTS

Principal Investigator

R. G. Barry

Acting Director, Professor of Geography

Institute of Arctic and Alpine Research

University of Colorado

Boulder, Colorado 80309

30 June 1977

Summary of First Quarter Activities

A. Field and Lab Activities

1. Field trip schedule

J. Rogers and G. Wohl carried out aircraft and ground reconnaissance of fast ice conditions in the Kotzebue and Barrow areas on 3 - 15 June.

2. Personnel

Field work (June)

J. Rogers - Graduate Research Assistant, University of Colorado
G. Wohl - Graduate Research Assistant, University of Colorado

Office

R. G. Barry - P.I., University of Colorado
R. E. Moritz - Graduate Research Assistant, University of Colorado
J. Reynolds - Graduate Research Assistant, University of Colorado (¼ time from 1 June)
B. Warmerdan - Graduate Research Assistant, University of Colorado (½ time from 1 June)
C. Wright - Professional Research Assistant, University of Colorado (½ time from 1 June)

5. Data Analyzed

Office work during this quarter has concentrated on (a) synoptic climatological analysis, (b) preparation of ice maps for 1976, (c) preliminary examination of the possibilities for long-range forecasting of ice conditions.

(a) Synoptic climatological analysis

Moritz's M.A. thesis analyzing the climatic characteristics of the Beaufort Sea pressure pattern types was successfully defended and will be prepared for publication in the near future. An abstract is attached as Appendix 1.

(b) Ice maps

Maps of ice conditions for all three sectors of both Beaufort and Chukchi coasts in 1976 have been analyzed and drafted. Each map is accompanied by an interpretation of ice surface characteristics. As noted below, these will be submitted with the September report.

(c) Assessment of the possibilities for long-range forecasting of ice conditions.

The regression analysis of ice data and climatic parameters discussed in the 1977 Annual Report provides a starting point for this work (see Appendix 2, which is an Abstract submitted to the 1977 POAC Conference).

Among the factors which can be utilized for establishing long-range forecasts of meteorological and hydrological variables are: 1) persistence in anomalies of the variable through time; 2) cyclicities and periodicities in the time series of the variable. Both of these factors are being used to examine the long-range predictability of the break-up and decay of Beaufort Sea Ice. It has been shown in previous reports that the primary variable which can be used to determine the extent and decay of fast and pack ice is air temperature. Wind direction is also an important variable, but it is not as readily usable for long-range prediction schemes as is the controlling sea level pressure distribution. Wind direction is difficult to use since 12 (30° each) directional modes have been established for it, whereas pressure distribution in key areas which influence ice in the Beaufort Sea and air temperature need only to be specified in terms of normal, above normal or below normal.

The first step in the development of a forecasting scheme is to establish the persistence and periodicities of temperature and pressure at the key locations during the late spring and summer months. Barnett (1976), for example, has suggested a 5-year periodicity in the severity of summer ice conditions between Barrow and Prudhoe Bay. This needs to be tested with our temperature and pressure data, and if substantiated, incorporated into a forecasting scheme. Similarly, inspection of our results to date suggest that there is some persistence in the sign of anomaly of air temperature during the summer months. The bimodal distribution of Barrow temperatures (expressed in thawing degree days) suggests that if July is warmer than normal, August and September will also be above normal and considerable ice melt will ensue.

Observed relationships between climatic variables and ice decay which can be used for forecasting may be applied individually or as a group. The possible techniques can be expanded to incorporate contingency table or even the month-in-advance long-range forecasts of temperatures issued by the U.S. Weather Service. The important fact is that the primary climatological variables of importance to sea ice decay have been established and now methodologies may be developed for ice forecasting.

The possibilities of forecasting sea ice conditions along the Alaskan coasts have already been investigated by J. E. Walsh (pers. comm. 1977). Using 23 years of data and 12 areas along the coast he has determined the empirical orthogonal functions of pressure, temperature and ice extent which account for most of the variance in those variables. Three eigenvectors account for 88% of the variance in pressure, of which the primary eigenvector (51%) represents high pressure over Barter Island.

Three eigenvectors account for 71% of the variance in air temperature, of which the first eigenvector represents (42%) anomalously warm air over Barrow, Alaska. Four eigenvectors account for 75% of the variance in annual ice extent; the first eigenvector (35%) represents a summer mode in which there is no variance in the Bering Sea, but considerable ice extent variance in the Chukchi and Beaufort Sea. The second ice extent eigenvector represents the winter mode where all the variance in ice extent is in the Bering Sea (18% of total variance in this eigenvector).

Subsequent analysis of the pressure and temperature data revealed that they are characterized by only a low autocorrelation at a one month (or longer) lag. The ice extent eigenvector autocorrelations are only somewhat more encouraging out to 2 or 3 months lag. When employing only summertime data, Walsh still does not find encouraging results. Skill scores for the summer temperature data give the best results, especially in a narrow band of 6 to 8 months forecast interval. Walsh is working on another, areally independent, analysis before finalizing his conclusions. These findings are being used to guide our own work.

6. Data Submission Schedule

The Chuckchi sector maps for 1976 are completed as in our Annual Report (March 1977) schedule and Beaufort sector maps are in progress. It is thought to be preferable to submit all outstanding map products with their interpretations in the September Quarterly Report rather than submit drafted maps without the completed analyses.

B. Recommended Changes

It is recommended that future activities should include an attempt to compare Hunt and Naske's historical results on ice extent with past climatic data.

C. Estimate of Funds Expended

$25,000.

APPENDIX 1

SYNOPTIC CLIMATOLOGY OF THE BEAUFORT SEA COAST OF ALASKA

R. E. Moritz

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ABSTRACT

21 characteristic patterns (CP's) which recur frequently have been identified in the 1946-1974 time series of daily MSL atmospheric pressure fields over the sector 60°-80° N, 120°-170° W by applying an "objective" typing routine to NMC grid-point data. The most frequent pattern has high pressure in the Beaufort Sea-North Alaska region, lower pressure to the south, and zonally-oriented isobars over Northern Alaska. This pattern occurs most frequently (∿35% of days) during the cold season (October - May). The second most frequent pattern (CP2) has highest pressures in the south-southeast section of the study sector with a low to the northwest, causing southwesterly surface geostrophic flow over the region. This pattern has a frequency maximum in July-August. The 30-year mean monthly frequencies of the 21 CP's indicate definite seasonality in pattern occurrence. Winter is dominated by highs and ridges in the northern part of the sector and lows passing through the southern half of the area. Summer is primarily characterized by a northward extension of high pressure from the Pacific anticyclone which influences southern Alaska, and the frequent passage of low pressure systems over Central Alaska and northward along the west coast. A greater variety in daily pressure patterns is observed during summer than during winter.

Daily weather data from Barrow and Barter Island, Alaska have been stratified according to the pressure pattern type occuring on the corresponding day. Analysis of variance tests show highly-significant differences between the mean meteorological characteristics of the several CP's. These tests, carried out for each month separately, indicate large inter-CP differences with regard to daily maximum temperatures, daily temperature departures from normal, and daily mean wind speeds. Significant inter-CP differences were found in <u>some</u> months (notably July and August) for mean daily dew point depressions also. Chi-squared tests of association show highly significant associations between wind

direction categories and pressure pattern types (CP's). In general, good agreement was found between expected (from geostrophy) wind directions, from the CP maps, and the observed distribution of surface winds for all days classified with the given CP. It has been shown that the spatial pattern of sea-level pressure over the study sector accounts for an important component of the variation in daily weather along the Beaufort Sea Coast.

Examination of individual CP's and their weather characteristics has facilitated the identification of some probable physical causes for the observed weather data. For example, CP2, although predominantly a summer pattern, shows a secondary maximum frequency of occurrence in January. These occurrences are associated with large positive temperature departures at Barrow and Barter Island (mean of +13.5°C). This "seasonally anomalous" pattern brings Pacific low pressure systems into the Beaufort Sea region. CP2 is also associated with increased cloud cover, high wind speeds, decreased dew-point depressions, and southwesterly wind directions along the Beaufort Coast. All of these characteristics indicate a breakdown in the polar night radiative cooling process and associated vertical temperature inversion. The unstratified January temperature departure distribution for Barrow is very right-skewed, indicating that the infrequent but large positive departures associated with these processes are "balanced" by highly frequent but smaller negative departures. These negative values, in turn, are associated with CP's having low wind speeds and clearer skies, again pointing up the importance of the radiative processes.

During the summer season, the temperature departures along the coast are clearly associated with the direction of local airflow. This direction is, in turn, largely determined by the prevailing CP. The over-ice (northerly) winds bring lower-than-normal temperatures while winds off the strongly-heated tundra bring higher values. CP8, with a low pressure center near the Central Yukon-Alaska border region, is responsible for northerly winds at both Barrow and Barter Island, where mean daily temperature departures are -3.0°C under this pattern. CP2, on the other hand, brings a southerly component into the local airflow, and has mean departures of 1-1.5°C above normal.

A daily catalog of pressure pattern types has been developed for the entire period of study and weather characteristics for the two stations have been analyzed for each type and month in this framework. These data are to form the basis of links between observed coastal ice behaviour in the melt season, and atmospheric circulation processes over the region.

APPENDIX 2

A METEOROLOGICAL BASIS FOR LONG-RANGE FORECASTING OF SUMMER AND EARLY AUTUMN SEA ICE CONDITIONS IN THE BEAUFORT SEA

Jeffery C. Rogers; Institute of Arctic and Alpine Research, University of Colorado, Boulder, Colo. 80309.

A stepwise regression analysis of 23 years of meteorological and summer/autumn sea ice data from the Pt. Barrow to Prudhoe Bay sector and Canadian sector of the Beaufort Sea was used to determine the meteorological factors accounting for most of the variance in the ice severity (determined by the distance northward the pack ice retreated at a given time) during that period. One parameter, air temperature, was found to explain much of the variance in ice conditions during the summer although significant contribution to the total variance was made by cloud cover and wind speed and direction depending upon the lateness of the season. The statistical results for mid-September are interpreted as suggesting that winds work in conjunction with atmospheric heating to determine the ice severity, the former moving the ice only if/after sufficient heating and melting have taken place.

Based upon those results possible methods for long-range forecasting of summer/autumn sea ice conditions based upon expected air temperature conditions will be discussed. Such methods include persistence between monthly and seasonal anomalies of temperature in the Arctic and suspected two, three, and particularly five year cycles in temperature conditions. Since high correlations between summer temperatures and ice conditions can be shown to exist in many places in the Arctic, possible forecasting applications will be discussed for other seas in the Arctic.

NINTH QUARTERLY REPORT

TITLE: Mechanics of Origin of Pressure Ridges, Shear Ridges and Hummock Fields in Landfast Ice
R.U. #250

PERIOD: April 1, 1977-June 30, 1977

PRINCIPAL INVESTIGATORS: Lewis H. Shapiro, William D. Harrison, and Howard F. Bates, Geophysical Institute, University of Alaska

I. TASK OBJECTIVES: To determine the mechanics of origin of pressure ridges, shear ridges and hummock fields in landfast ice.

II. FIELD AND LABORATORY SCHEDULE: Field investigations.

III. RESULTS AND INTERPRETATION:

The study of the vibration of ice sheets as an indicator of increasing stress was continued. The application of control theory to the problem was investigated and the preliminary results indicate that this is a promising approach to the problem. A tide gauge and an array of stress transducers were installed at Barrow to acquire data during the period of active movements in late spring.

The beach ridges formed this year were less extensive than those of previous years. This was due to the lack of grounded features in the relatively thin ice sheet that formed this year, which permitted the ice to go out early. However, some field work was done on those ridges which did form.

An aspect of the study of the formation of beach ridges which has caused difficulty is the absence of an appropriate value for the effective friction between the advancing ice sheet and typical beach gravels. Calculations of the forces involved in the process, as we have observed it to occur, cannot be made without this parameter, and so a series of experiments were conducted at Barrow during this quarter to attempt to measure it. The experiments involved the use of a bulldozer to drag large blocks of ice up the beach from a starting point in a water depth of about 0.5 m for a distance of several meters over dry gravel. The weights of the blocks were calculated from measured dimensions and density determinations. The force required to move the blocks was measured with a dynamometer installed in the cable connecting the bulldozer with the blocks.

The data obtained are still being reduced. However, preliminary calculations indicate a range of values for the "coefficient of friction" of 0.2 to 0.7 depending upon the roughness of the ice and the gravel surface.

IV. PROBLEMS ENCOUNTERED: None.

V. ESTIMATED FUNDS EXPENDED: $10,000

Quarterly Report

Contract #03-5-022-55
Research Unit #258
Task Order # 5/8
Reporting Period 3/1-6/30/77
Number of Pages 103

MORPHOLOGY OF BEAUFORT, CHUKCHI AND BERING SEAS NEAR SHORE ICE CONDITIONS BY MEANS OF SATELLITE AND AERIAL REMOTE SENSING

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Geophysical Institute
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Fairbanks, Alaska 99701

June 30, 1977

OCS COORDINATION OFFICE

University of Alaska

Quarterly Report for Quarter Ending June 30, 1977

Project Title:	Morphology of Beaufort, Chukchi and Bering Seas Near Shore Ice Conditions by Means of Satellite and Aerial Remote Sensing.
Contract Number:	03-5-022-55
Task Order Number:	8
Principal Investigator:	W. J. Stringer

I. Task Objectives:

The objective of this study is to develop a comprehensive morphology of near shore ice conditions along the ice-frequented portions of the Beaufort, Chukchi and Bering Sea coasts of Alaska. This comprehensive morphology will include a synoptic picture of the development and decay of fast ice and related features, and in the absence of fast ice, the nature of other ice (pack ice, ice islands, hummock fields, etc.) which may occasion the near shore areas in other seasons. Special emphasis will be given to consideration of potential hazards to offshore facilities and operations created by dynamic ice events. Based on satellite observations available since 1972, a historical perspective of near shore ice dynamics will be developed to aid in determining the statistical rate of occurrence of ice hazards.

II. Field and Laboratory Schedule:

This project has no field schedule. All remote sensing aircraft data is to be provided by project management. Occasional field reconnaissance flights will be carried out on an unscheduled basis. The work does not involve laboratory activities. During this quarter our annual photographic reconnaissance of Beaufort Sea near shore ice conditions was performed. This information will be used in compiling Beaufort Sea near shore ice maps for the 1976-77 ice year.

III. Results:

Landsat band 7 hard copy at 1:500,000 scale has been used to complete preliminary near shore sea ice maps for the 1972-73, 1973-74, 1974-75 and 1975-76 ice seasons. This information is being used to update and complete the summary and morphology maps reported in our recent annual report.

In addition, mapping has been initiated in two map categories not previously reported: Stranded ice and melt season open water. The stranded ice maps show those areas (particularly in the Beaufort Sea) where formerly contiguous ice remains apparently fast although open water is found between the ice and the coast. The melt season open water maps document specifically the areas of first open water. This product is being prepared for use by OCS bird studies investigators. Copies of the updated synthesis maps as well as the stranded ice and open water maps will be included in our next quarterly report.

The major accomplishment this quarter was the completion of a study of the semi-permanent ice feature on Hanna's Shoal (162°W, 72°N). This report, included as Appendix A, describes in detail the mechanism of growth of piled ice around Hanna's Shoal. The study was undertaken to provide a prediction of ice behavior in the vicinity of man-made islands.

IV. Preliminary Interpretations:

Based on the Hanna's Shoal study it would appear possible that a number of man-made islands placed sufficiently far offshore to encounter moving ice during much of the ice season could create a semi-permanent ice field. This possibility and its implications will be considered in subsequent reports.

V. Plans For Next Reporting Period:

During this quarter our plans are to complete the updating of the synthesis maps and complete the open water and stranded ice maps underway at present. Other research and vacation will account for over half of our time during this quarter. Hence, productivity will reflect a less-than-full-time effort.

VI. Problems Encountered/Recommended Changes:

None

VII. Estimate of Funds Expanded:

60%

VIII. Appendices

(Appendix A, attached)

Growth and Decay of "Katie's Floeberg"

APPENDIX A

I. INTRODUCTION

The grounded ice feature located at 162°W 72°N on Hanna's Shoal in the Chukchi Sea approximately 160 km off the coast of Alaska (Figure 1) has been variously termed a "bergfield," (Toimil and Grantz, 1976) an "island of grounded sea ice" (Kovacs, Gow, and Dehn, 1976) and "Katie's Floeberg" (Stringer and Barrett, 1975a). All of these labels imply something about the structure and composition of the feature. To avoid making any such implications in this paper, the ice structure on Hanna's Shoal will be referred to as "the feature" or "the grounded ice feature."

In a previous paper (Stringer and Barrett, 1975b) the effects of the grounded ice feature on the pack ice moving past Hanna's Shoal was studied. It was found that at times, the pack ice moved past the feature in a uniform sheet, with only a polynya on the lee side of the feature to indicate its presence. At other times, the pack ice was seen to be divided into zones of ice moving at different velocities, separated by shear lines. In addition, no significant divergence of the pack ice around the feature was observed as the ice was forced past, indicating that the ice must have been undergoing significant piling in the vicinity of the feature. This piling was deduced to be the primary mechanism of growth of the feature. A correlation is shown between the ice piling, the weather and the growth and decay of the feature.

II. DATA SOURCES

The primary data source for studying the feature has been 1:1,000,000 and 1:500,000 scale imagery obtained from NASA's satellites, Landsat I and II. Landsat I (formerly ERTS-1) was launched on 25 July 1972 and the first cloud-free image of the feature on Hanna's Shoal was acquired by the satellite on 7 March 1973. The Landsat orbit is such that the general area of the feature is imaged once every 18 days. However, the overlap of succeeding days' images due to the nature of the satellites orbit allows the feature to be observed up to four days in succession. A second satellite, Landsat II, was launched on 22 January 1975, resulting in increased coverage. A total of more than 40 images have been obtained to date for the area, with the latest available image acquired on 28 August 1976. Thus four years of Landsat coverage was available.

Another major source of data was the NOAA-3 and NOAA-4 weather satellites, which daily obtain small-scale (approximately 1:5 million) images of the Arctic Ocean. The scale of these images was so small that their usefulness was restricted to determining if the feature was still in existence at any particular time. However, this was an especially important source of information for late fall because, normally, few Landsat images are obtained during this time due to cloud cover. Landsat imagery was not available for December and January because the sun was below the horizon throughout these months.

A third source of data was photography obtained by various investigators both on the feature itself and from low-flying aircraft. These include both color and black-and-white oblique photographs.

III. GROWTH AND DECAY CYCLES

The grounded ice feature on Hanna's Shoal has been observed on satellite imagery dating as far back as 1966 (Kovacs, Gow, and Dehn, 1976) and undergoes yearly growth and decay cycles. For the purpose of observing the detailed growth and decay cycles of the feature over long periods of time, Landsat imagery appears to be the best source of data due to its high resolution capability. For that reason Landsat imagery was considered to be the principal data source and thus, the growth and decay cycle of the feature beyond dates of Landsat data availability was not followed in detail.

1972 (See Figure 2)

The first Landsat image available of the area of Hanna's Shoal was acquired on 2 August 1972 (scene 1010-22133). This scene shows old pack ice covering approximately 60 percent of the area, including Hanna's Shoal. The remnants of what may be the feature can be seen, although it may just be remnants of old ice ridges in the pack. There are similar pieces seen elsewhere in the pack ice. An image obtained on 26 September, (scene 1065-22192) although partially obscured by clouds, also shows the area where the feature should have been. But the feature cannot be seen, so it seems to have completely disappeared in 1972 although it was observed earlier that year by Kovacs, et al. (1976).

1973 (See Figure 3)

The first available Landsat image showing the feature was obtained on 7 March 1973 (scene 1227-22203). It shows pack ice completely covering the ocean surface with the exception of a small polynya on the southeast side of the feature indicating ice movement in that direction. A plume of fog extending from the polynya southeastward suggests that the wind was responsible for the movement of the ice. The area just "upstream", on the northwest side, of the feature appeared to have been repeatedly broken up and refrozen and was in the form of a wedge. The feature at that time had a semi-elliptical shape approximately 9 km by 3 km with the major axis oriented approximately northeast-southwest (the feature was always observed to be oriented in this approximate direction throughout the years 1973-1976).

An image obtained the following day (scene 1228-22261) shows both the direction of ice motion and wind direction to have shifted, with the wind out of the northeast and ice moving to the southwest. The previous polynya had frozen and a new one formed. The wedge observed the previous day which had been attached to the feature had broken loose. The feature did not change in size or shape between March 7 and 8.

However, by 12 April (scene 1263-22203) the feature had nearly doubled in size, being 14.8 km long by 5.6 km wide, still oriented roughly northeast-southwest. The outline of the feature as it appeared on 8 March was still visible and indicated that most of the growth had occurred on the north and northeast sides of the feature. A fracture pattern differing in appearance from the wedge could be seen "upstream" from the feature. A second, much smaller (5.1 x 1.9 km) grounded feature appeared to the north of the larger one. It had the same general shape and orientation that the larger one did on 8 March. The polynyas on the southwest side of the features indicate ice movement from northeast to southwest. Trails of fresh ice in the pack indicate the previous directions of ice movement.

Both features had grown larger by 1 May (scene 1282-22261) - the larger one 20.4 km by 5.6 km and the smaller one 7.4 km by 3.7 km. The ice motion was from the northeast to the southwest. On 2 May (scene 1283-22315), the direction of ice motion had shifted to an east-to-west movement. The wedge-shaped extensions could again be seen in this scene.

One Landsat cycle later, on 19 May 1973 (scene 1300-22260) the pack ice, which was well-consolidated on 2 May, appeared fractured and broken. The direction of pack ice movement was approximately from the northeast, but was difficult to determine because little movement could be detected on the image; there were no open leads or polynyas large enough to make a positive determination. The northeastern end of the larger of the two features had broken off and thus the major dimension was decreased to 13.0 km but the minor dimension appeared to be 6.5 km wide, nearly a kilometer wider than in the previous image. The smaller feature was actually somewhat longer in this image then on 2 May, 9.3 km long by 3.7 km wide.

By 6 June (scene 1318-22255), the larger feature had decayed further. At that time, both features were nearly the same size, the "larger" one 9.3 km by 5.1 km and the "smaller" one 9.3 km by 4.6 km. The pack ice was even more decayed. A polynya on the western side of the features on 5 June (scene 1317-22200) indicated ice motion had been in that direction, but on 6 June open water on the eastern side indicated that the direction of ice motion had shifted 180° and was moving west to east. On 6 June the clouds cleared enough to reveal a small wedge of ice that had previously formed to the east but had broken off as the wind changed.

The last available image of 1973 was obtained on 2 September (scene 1406-22131) showing the feature much reduced in size: 2.8 km long by 1.9 km wide. The location of the smaller companion feature was off of the Landsat scene so that the existence of the smaller feature was not determined. The pack ice was a loose swirl pattern of unconsolidated ice. The direction of ice motion was indeterminate.

The feature may or may not have disappeared completely in 1973. This will be discussed more fully below.

1974 (See Figure 4)

The first available Landsat imagery in 1974 was an overlapping series from 19-23 March (scenes 1604-22090, 1605-22145, 1606-22203, and 1608-22320). On 19 March, the pack ice can be seen to have moved northwest to southeast creating a polynya on the southeast side of the feature. On 20 March the direction of ice motion shifted to the southwest as shown by the opening leads. The ice motion again shifted direction and on 21 March it was moving east to west as evidenced by the large polyna. It continued moving west through 23 March. The ice traveled, from 20 March to 23 March, approximately 15 km in a westerly direction. Adding to this the southwesterly movement from 19 to 20 March gives a total ice movement of approximately 18 km west southwest. The ice in the immediate northeast vicinity of the feature was very broken, consisting of old floes of varying size in a matrix of young and new ice.

One Landsat cycle later, 7 and 8 April, the feature appeared unchanged. However, close comparison of the 7 April and 8 April images (scenes 1623-22142 and 1624-22201, respectively) showed that the ice in the wedge adjacent to the eastern side of the feature had not moved whereas the rest of the ice had moved westward 2 to 5 km. Ice north of the shear line which was visible to the north of the feature had moved even more (Stringer and Barrett, 1975). The wedge had in fact consolidated with the rest of the feature as can be seen on 27 April (scene 1643-22252). The point of the wedge had been rounded off and close examination showed the faint outline of the feature as it appeared in earlier images. The open and refreezing leads in this scene indicate that the ice motion had been to the north, then shifted to the northwest. The feature was 14 km long by 6 km wide.

The 16 May scene (1662-22304) was almost completely covered by clouds, but the outline of the feature could be seen. Its dimensions at

The dimensions of the grounded ice feature did not significantly change through 5 July (scene 1712-22061), being 17 km long by 6 km wide on that date. Throughout the summer, the pack ice steadily decayed and was thin and broken and/or puddled by 5 July.

The 12 August image (scene 1750-22161) was the last date in 1974 in which the feature was visible on Landsat imagery. The feature was clearly visible, partially surrounded by remnants of unconsolidated pack ice and open water. The feature was 15 km long by 5.5 km wide, not having decayed or changed shape much since 16 May.

An image obtained on 4 October 1974 (scene 1803-22083) showed no trace of the feature. Although the scene was partially obscured by clouds, the area where the feature should have been was obscured by small cumulus clouds on the order of a kilometer in diameter. If the feature was still in existence, it would have to have been less than that size in order to be hidden under the clouds. The area appeared to be totally free of pack ice. The limit of the pack ice can be seen in the eastern corner of the image. On 22 October (scene 1821-22082) the pack ice covered the area, but no polynya (the most distinguishable characteristic of the feature) could be observed.

In an effort to pinpoint the day that the feature disappeared and to determine when it reappeared in 1974, NOAA 3 images acquired from September to November were examined. There were few available images due to cloud conditions.

The feature was still visible on the 6 September NOAA 3 image (Figure 5a). The pack ice was more than 100 km to the north, although a few floes were observed in the area of the feature. The next clear NOAA 3 image of the area was obtained on 4 October (Figure 5b). That image concurred with the Landsat image of the same date; the feature seemed to have disappeared. NOAA images obtained on 6 October and 13 October (Figure 5c) also revealed no feature. By 18 October (Figure 5d) thin pack ice seemed to be forming in the area. The 23 October NOAA 3 image (Figure 5e) and the 22 October Landsat image both showed newly formed ice in the area.

On 10 November, the date of the next NOAA 3 image (Figure 5f), a small polynya appeared at approximately 162° W latitude 72° N longitude. The pack ice in the area was quite dense. A lead which opened along the Chukchi Sea coastline indicated that the ice was in motion. The lead was about the same width as the apparent polynya and so seemed to confirm the existence of the polynya. Two NOAA images, 23 November (Figure 5g) and 25 November (Figure 5h), showed the polynya more clearly. Apparently the feature had started to reform by 10 November after disappearing sometime between 9 September and 4 October.

<u>1975</u> (See Figure 6)

The earliest 1975 Landsat image of the area of the feature was acquired 25 February (scene 1947-22031). At that time, the feature was already well-developed, being 21 km long by 9 km wide and oriented northeast-southwest, the same as for the previous two years. A polynya had formed on the eastern side of the feature but had refrozen by the time the image was acquired, indicating that the ice had moved approximately 10 km east. The characteristic wedge pattern was again seen on the west side of the feature.

On 15 March (scene 1965-22022) the ice was moving in a north-northwest direction, as shown by the open polynya on that side of the feature. The edge of the feature showed the jagged remains of the ice wedge seen on 25 February that had broken off as the pack ice moved away. These remains enlarged the feature to 23 km by 12 km.

The 2 April Landsat image (scene 1983-22013) showed a very pronounced wedge of fractured and ridged ice on the eastern side of the feature and a large polynya, mostly frozen over, on the western side, indicating ice motion was from east to west. However, at the time the image was acquired, a lead system had started to open to the north of the feature, with the ice to the north moving approximately northwest. On 3 April (scene 1984-22071) the major lead had widened considerably and a large pattern of fracture leads had opened. However, the wedge of piled ice was still intact. The feature remained the same size on both days, 21.5 km by 11 km.

Scene 2079-22082 obtained on 11 April showed the wedge of ice on the eastern side of the feature to have broken off, due to the change in direction of motion of the pack ice from an east to west movement to a northeast to southwest movement. The size and shape of the feature remained nearly unchanged (22 km by 10 km). The next day, scene 2080-22140, showed the ice motion to have shifted again, this time to a southwest to northeast movement, a shift of nearly 180°. The amount of movement in that direction was 1.0 to 1.5 kilometers.

Beginning on 29 April a four day series of overlapping images of the area of the feature was obtained. On 29 April (scene 2097-22081), the feature appeared essentially unchanged from the 12 April image with the exception of a narrow addition of ice on the northwest corner of the feature. A wedge of ice was seen forming again on the northwest side of the feature, with a corresponding polynya to the southeast, both the result of ice motion to the southeast. The ice had moved very little between this scene and the one obtained on 30 April (scene 2098-22135) with the result that the polynya had partially frozen. Some ice movement formed cracks in the polynya. Twenty-four hours later, the polynya had completely frozen, but a small lead on the west side of the feature indicated that the ice motion had changed to that direction (scene 2099-22194). On 2 May (scene 2100-22252) the ice had indeed moved west, opening a large polynya on that side of the feature.

The 17 May image (scene 2115-22075) showed little change in the dimensions of the feature. The pack ice was broken and decayed by this time.

The next available image, 17 August 1975 (scene 2207-22184), showed the feature very decayed and somewhat smaller in size, 20 km long but only 4 km wide. The pack ice was very decayed and had been moving from approximately northeast to southwest.

The next available image of the area was a NOAA 4 image acquired on 23 September 1975 (Figure 7) which showed new pack ice covering the area and a large polynya to the southwest of the feature. On 11 October, a Landsat scene (scene 2262-22240) showed the feature much reduced in size, 14 km by 7.5 km, but similar in shape to that seen in the early part of the summer. A refrozen polynya to the west indicated ice motion in that direction. The 11 October image was the last Landsat image for 1975. The feature apparently did not disappear in 1975.

1976 (See Figure 8)

The first available Landsat imagery of the area in 1976 was a series of four images acquired on 17, 18, 19 and 21 March (scenes 2420-

21583, 2421-22042, 2422-22100 and 2424-22212 respectively). The feature had undergone considerable decay since 11 October 1975 but had grown to its largest observed size yet, 27 km by 10 km. A small round core could be seen on the southwest tip of the feature, with large growth features to the north and east. A wedge shaped fracture pattern could be seen forming to the northwest on 18 March but the wedge had detached and moved southwest on the 19th indicating ice motion in that direction. By the 21st the ice had moved even further southwest, but a new lead had opened up to the south indicating a change of direction of ice movement.

On the 10 May Landsat image (scene 2474-21570), the feature was half out of the picture so its size could not be determined, but it was at least as large as in March. A polynya on the south side indicated ice motion in that direction.

On 16 June, (Landsat scene 2511-22015), the feature could be seen, being 30 km by 25 km in size, and in the shape of a teardrop, with the tip to the southwest. The pack ice was very decayed, with about 5 percent of the pack consisting of open water due to small holes in the ice. No ice motion was detectable.

On 23 July, (Landsat scene 2548-22063), the feature was approximately 6 km narrower than on 16 June, being 31 km long by 19 km wide. The pack ice consisted of decayed and loosely consolidated small floes. No ice motion was detectable: no polynyas or leads were seen.

By 28 August, (Landsat scene 2584-22053), the feature had decayed considerably, losing much of its material on the northwest and southeast sides. The long axis, as usual, was oriented approximately northeast-southwest. The feature itself was in the shape of a "T", with the length of the top of the "T" approximately 20 km, while the narrow part was only 10 km wide. The northwest-southeast dimension was 31 km with the top of the "T" contributing 8 km. The pack ice was mostly loose, small floes, with open water to the west.

The feature apparently did not disappear in 1976. NOAA 4 imagery showed its existence at least as late as 7 November (Figure 9). At that time pack ice covered the entire area surrounding the feature, but a large polynya several kilometers long revealed the feature's presence. The last NOAA image that showed the feature clearly was acquired on 28 October, and showed the feature nearly the same size as on the 28 August Landsat scene.

SUMMARY

The above sequences of NOAA and Landsat images show that the feature undergoes yearly growth and decay cycles. In March of 1973, it was shown that the direction of ice motion was in the same direction that the wind was blowing and hence winds were likely the major cause of ice motion, at least in the winter. Some years the feature seems to disappear completely.

IV. BARROW WEATHER VERSUS ICE MOTION

It is the hypothesis of this study that the process of growth and decay of the grounded ice feature is mostly dependent upon the weather conditions, especially the direction of the wind movement, at the location of the feature. The closest reliable and complete records of the weather in the area are collected at Barrow, Alaska. Since Barrow is over 100 km southeast of the location of the feature, the wind and weather conditions may not be the same at both locations.

Figure 10 was made in an attempt to correlate the direction of ice motion in the area surrounding the ice feature with the direction of the winds at Barrow. The direction of the ice motion was derived by observing polynyas and open leads on Landsat imagery on the dates shown.

Figure 10 shows that the direction of the ice motion was usually to the right of the wind vector. The average angle between the wind and the ice motion directions of all the values in Figure 10, with the exception of those of 10 and 11 April 1975 which were anomalous, was calculated to be 20°, with an average deviation of ± 19°. When only the angles of ice motion measured to the right of the wind direction are considered, the average value is 29°, with an average deviation of ± 13°. The latter situation may be more valid because the ice vectors to the left of the wind vectors occurred when the winds were low to moderately low in speed while the winds which occurred to the right of the ice motion were generally of higher speeds. Therefore, the ice vector at the grounded ice feature is usually approximately 29 degrees to the right of the wind vector at Barrow. In support of this, it has been found that the Coriolis acceleration causes the direction of ice motion to curve approximately 30° to the right of the wind direction (Zubou, 1945). Nansen observed (Zubov, 1945, p. 358), while drifting aboard a ship in the Arctic Ocean, that loose ice floes tended to move at an angle of 28° to the right of the wind direction. This is very close to the 29° observed on the Landsat images. Also, two Landsat images, 7 and 8 March 1973 (Figure 3a and 3b), show condensation trails extending from open polynyas, showing the direction of ice and wind motion simultaneously. The ice motion in these cases is 25° to 30° to the right of the wind direction.

The only amomalies are the vectors on the 10th and 11th of April 1975. On 10 April, the wind at Barrow was out of the southwest, pointing N 30° E. But the direction of ice motion was to the southwest, pointing N 215° E. On 11 April the situation was similar, with the wind vector pointing N 50° E and the ice vector N 190° E. The wind speeds on these two days were moderate (14-19 km/hr) and moderately low (7-13 km/hr), respectively. The polynya used to determine the direction of ice motion may have formed prior to the time the wind was blowing northeast, which would have put its formation time back on the 7th of April. But this seems unlikely, as the surface temperatures were in the range of -23°C to -26°C at the time, which would have meant that the polynya should have been frozen over more than it appears to be on 11 April. Except for this unexplained anomaly, the wind direction at Barrow is correlatable with the ice motion at the feature, which means that the wind direction at the feature is generally the same as at Barrow and probably determines the direction of motion of the pack ice at the feature.

Since it is assumed that the winds are the major cause of ice motion and that the wind direction at Barrow is usually the same as at the feature, the wind speed at Barrow may be correlatable with the velocity of the ice moving past the feature. The rate of ice movement at the feature is calculated by measuring the flow vectors at the feature and dividing by the time interval. Figure 11 shows the pack ice velocity at the ice feature plotted against the windspeed at Barrow for 1973 through 1976.

When the types of ice motion are delineated, a pattern begins to emerge. The motion of ice that is free-floating and loose, such as loose floes or pack ice that is apparently free of coastal effects because of an intervening shear line or lead, is Type I. Pack ice motion of this nature may have gained momentum previously or may be part of the Pacific Gyre. Type II is ice motion that is apparently affected by coastal friction and may be heading towards Bering Strait. This type of motion is predominant, and is generally slower than Type I. Type III motion is very slow, apparently because the ice is partially attached to the shore or otherwise impeded. In some cases, the ice moved only a few kilometers per day, despite winds averaging 10 to 15 knots for 24 hours or longer.

All three types of motion may be present at the same time. For example, during the period 7 to 8 April 1974, a shear line existed to the north of the feature. The ice north of the shear line moved at a rate of 17.8 cm/sec, the ice south of the feature, nearest the shore, moved only 3.9 cm/sec, while the ice between these two zones and obstructed by the feature, moved approximately 9.0 cm/sec. These form three zones with distinct boundaries, as indicated by the ice vectors in Figure 12.

Due to this complex relationship, measuring the windspeed at Barrow will not give the magnitude of ice drift at the feature. Other factors to be considered are coastal friction, ice surface roughness, and amount of open water or thin ice.

The ambient air temperature at the feature appears to be a major factor in determining the strength, and therefore the permanence, of new additions to the feature. There is no satisfactory way to correlate the temperature at Barrow with the temperature at the feature. However, since Barrow is on a point of land extending into the Arctic Ocean and the land surface to the south and east of Barrow has very little surface relief, and Barrow is at nearly the same latitude as the feature (Barrow

Table 1. ICE VECTORS

Point No.	Date	Ice Speed (cm/sec)	Ice Motion Direction	Average Wind Speed (km/hr)
1	21-22 August 72	24	SE to NW	10.4
2	7-8 March 73	4.6	N to S	7.4
3	11-12 April 73	2.3	N to S	5.3
4a	1-2 May 73	5.8	E to W	21.1
b		2.3		
5a	5-6 June 73	5.8	E to W	6.1
b		8.1		
6	30 May - 2 June 74	9.6	SE to NW	5.8
7a	20-21 March 74	6.5	E to W	14.4
b		8.7		
8a	7-8 April 74	17.8	E to W	18.9
b		3.9		
c		9.0		
9	21 March-7 April 74	3.7	E to W	13.4
10a	17-18 March 76	20.8	NNW to SSE	14.7
b		10.4		
11a	18-19 March 76	29.0	E to W	9.1
b		10.4		
12a	19-21 March 76	20.8	ENE to WSW	11.4
b		8.7		
13a	2-3 April 75	6.4	SE to NW	9.0
b		1.2		
14a	11-12 April 75	2.3	SW to NE	10.2
b		1.7		
15a	29-30 April 75	7.8	WSW to ENE	10.2
b		5.8		
16a	30 April-1 May 75	3.1	E to W	8.8
b		5.8		
17a	17-18 May 75	8.7	NE to SW	6.9
b		5.2		

is at 70°20'; the feature is at 72°00'), the temperatures at the two locations may be similar.

V. GROWTH MECHANISMS

In the section on growth and decay cycles, mention was made of wedges of ice that appeared to consist of pack ice that had fractured and then reconsolidated by freezing. It is now postulated that the formation of these wedges constitutes the principal growth mechanism of the feature.

The mechanism of formation of the wedges is more complex than simple fracturing and reconsolidation by freezing, and is illustrated in Figure 13. As the ice is forced past the feature, it piles up behind, i.e., "upstream" (with respect to the ice motion) of the feature (Stage I). Initially, the piled ice forms ridges oriented approximately parallel to the edge of the feature. As the ice piling continues, the ice pile expands upstream in a direction perpendicular to the effective cross section of the feature, where the effective cross section, X, is equal to Y tan ϕ, where X and Y are as shown in Figure 13, and ϕ is the angle between Y and the side of the wedge. The 12 April 1973 image (Figure 3c) shows this process. Long fracture lines extend upstream and piled ice can be seen adjacent to the feature.

At some point in the process of piling, shear ridges develop, extending upstream from the sides of the feature to a point where the ridges intersect, forming a wedge shape which effectively encloses the piled ice. In an attempt to determine when this occurs, the ratio, R, of the length, Y, (Figure 13) of the wedge to the cross section, X, of the feature was computed for those scenes for which the measurements could be made. Table 2 gives the dimensions and ratios for those

TABLE 2. ICE WEDGE DIMENSIONS

Year	Date	Cross Section X (km)	Length Y (km)	Y/X
1973	7 March	8	13	1.6
	1 May	9	22	2.4
	1 May	8	8	1.0
	2 May	9	21	2.3
	6 June	5	10	2.0
1974	8 April	9	18	2.0
	27 April	9	18	2.0
1975	2 April	15	28	1.9
	29 April	15	38	2.6
	11 October	13	10	0.77
1976	18 March	8	30	3.7
	18 March	14	38	2.7

scenes used. The minimum observed ratio was 0.77, which occurred on 11 October 1975. This indicates that the shear ridge formation occurs not long after the piling begins.

The development of the shear ridges does not halt the growth of the wedge. A previous study of the ice motion around the feature (Stringer and Barrett, 1975b) showed that the feature did not cause the pack ice to diverge significantly around it as the pack ice was forced past. Therefore compaction of the pack ice must occur in an amount proportional to the area of the polynya formed downstream of the feature. The total volume of ice compacted would be equal to the area of the polynya times the thickness of the pack ice. Some of the compaction would occur in the pack ice in the immediate vicinity of the wedge, depending upon the ice thickness, amount of open water, etc., while the remainder would occur along the shear ridges, resulting in piling and subsequent expansion of the wedge. This is Stage II of the growth mechanism.
An illustration of Stage II is contained in the sequence of images obtained during the late winter and spring of 1973 (Figure 3). The feature was comparatively small on 8 March 1973, but by 12 April had more than quadrupled in area.

It is unclear at this time whether Stage I or Stage II accounts for the majority of the feature's growth. The wedge seems to form soon after the ice movement commences and there are no sequences of images within a sufficiently short time frame to determine how much ice is piled before the wedge forms. The speed with which the ice moves past the feature is the primary factor affecting how soon the wedge forms. In the sequence of Landsat images obtained on 18, 19 and 21 March 1976, the ice was moving moderately fast, 20 to 30 cm/sec. In the 18 March scene, the ice had just started moving northeast to southwest. No wedge had formed by 19 March but ice piling was evident. By 21 March, however, a wedge had formed and substantial growth of the feature could be seen. The time between the 19 and 21 March images was too long to determine when the wedge formed. A close examination of the surface of the feature on the 12 April Landsat image revealed a concentric wedge-shaped pattern of growth. On the northeast end of the feature, Stage I fracture patterns and concommitant piling could be seen, indicated by the darker gray area. No definite wedges had yet formed.

By 1 May 1973, the length of the feature had nearly doubled. Again, the wedge pattern can be seen in the newly added ice. The direction of ice motion had changed by approximately 45°, from northeast on 12 April to almost due east on 1 May. A new, much larger growth wedge had formed on the eastern side of the feature.

Another example of the wedge forming process is illustrated on the 18 March 1976 image (scene 2421-22042). Three separate periods of growth can be seen here. The feature was originally a small oval of ice approximately 6 km in diameter. It was probably a remnant of the previous year's feature last seen on 11 October 1975 (see 1975 growth and decay cycle). Extending north-northeast of this oval core was a wedge pattern approximately 8 km long, the result of the first period of growth. The second period of growth was to the northeast, during which the feature doubled in length but did not change in width. During the third period of growth the feature increased in width but not in length. The third period of growth, towards the north and northwest, was still in progress at the time the image was obtained.

The building process probably does not continue indefinitely. At some point (Stage III), if the direction of ice motion has remained constant, the wedge would cease to grow and the ratio R would reach a maximum value R_{max}. This would be the result of the angle ϕ becoming small enough that the predominant process would change from a combination of shear and pressure ridging to a simple shearing motion. The value of R_{max} is a function of the ice conditions, such as thickness, uniformity, temperature and brittleness. R_{max} is probably also dependent on grounding of the newly formed shear ridges. The maximum R measured on the Landsat scenes was 3.7 on 18 March 1976. However, it is not clear that the ice formation measured was a true growth wedge. Another wedge measured on the same image gave an R of 2.7. A similar value of 2.6 was obtained for a wedge on 29 April 1975. The sequence of images of 1 and 2 May 1973 showed the length of the wedge actually decreasing. On 1 May the wedge had a ratio of 2.4 with pronounced shear boundaries. On the next day's image, the ratio was 2.3, yet the direction of ice motion had changed less than 20°. Therefore, it seems that the wedge had reached an R_{max} of 2.4 and a slight change in the direction of motion of the pack ice resulted in pieces of the wedge breaking off.

A somewhat different example of the Stage I and II processes is illustrated in the images obtained of the feature in the late winter and spring of 1974. The 20 March image showed the ice to have moved from east to west. There were numerous floes of various sizes frozen into a matrix of new ice immediately to the east and northeast of the feature. The ice movement towards the west caused that portion of the frozen matrix to the east of and in line with the feature to pile up on the eastern side. Some of the floes maintained their integrity, not breaking and piling. Despite the fact that the ratio of the length of the piled ice to the effective cross section of the feature was R = 1.0 (which is greater than the minimum of 0.77 observed above) no wedge formation was observed at that time. The 23 March image showed the piled ice to have consolidated and the wedge shape was finally apparent.

Comparing this sequence with that of 11 and 12 April 1973 shows the absence of the initial fracture patterns in 1974. Possibly the ice upstream of the feature in 1974 was much newer ice (except for the floes), and may have rafted and piled immediately around the older floes and ridge remnants and then reconsolidated without breaking them up. In 1973, the ice was thicker and more uniform upstream. This would account for the observation by Toimil and Grantz (in press) of the irregular and older appearance of the ridges in the feature in 1974 rather than the expected newer appearance of ridges formed that ice season.

The growth wedge does not always become permanently that affixed to the feature. Many of the images show the wedge forming and then later breaking loose due to shifts in the direction of the ice motion. The attachment of the growth wedge to the feature depends upon the winds, the temperature, and the length of time the direction of ice motion had remained constant. For example, during the 1974 sequence, the ice motion was from east to west consistently from 21 March until 8 April. Consequently, the wedge that had formed by 23 March was still in existence on 8 April and, despite a change in direction of motion, the wedge remained nearly intact on 27 April.

This is in contrast to several other examples, such as that of April 1975. On 2 April a large wedge had formed on the eastern edge of the feature. But by 12 April the wedge had broken loose and the ice motion had changed direction more than once. In this case, the ice motion changed from an easterly to a northeasterly direction, resulting in the shearing off of the wedge at the previous edge of the feature.

The above proposed method of growth is the major but not the only possible method. In order for this process to occur, relatively deep draft ice (thicker than first year sheet ice) must first become grounded on the shoal. Thus, the initial core of the feature would consist of remnants of multi-year ridges, floebergs, and possibly some ice islands, frozen to one another in a matrix of first year ice. Such deep draft features have been observed within the feature (Toimil and Grantz, in press; Kovacs, Gow, and Dehn, 1976). This type of growth probably accounts for only a small percentage of the total.

Another minor growth mechanism can be observed in the 15 March 1975 image (Figure 6b). In this scene, a polynya had frozen over prior to 15 March. When the ice resumed movement, a new polynya formed; but a narrow shelf of the new ice that had covered the older polynya remained attached to the feature, adding to the area of the feature. On 2 April 1975, only a small portion of this shelf still existed. This method, which adds only a small percentage of material to the feature, is of minor importance.

VI GROWTH AND DECAY AND THE WEATHER

A. Barrow Weather Data

As previously shown, the weather at Barrow is correlatable to ice motion at the feature and thus provides an approximation of the conditions at the feature. The primary source of weather data for Barrow was obtained by personnel at the National Weather Service Office located at the Wiley Post-Will Rogers Airport at Barrow, Alaska. This data is published monthly by the NOAA Environmental Data Service, Asheville, North Carolina. The data pertinent to this study, (wind speed, wind direction, and temperature) was recorded at three-hour intervals and compiled into daily averages. The wind speed and direction values are the vector sums of the eight daily three-hour observations, while the temperature values are averages of the eight daily observations and the wind direction is the direction from which the wind is coming.

In order to compare the weather data of the four years for which Landsat imagery of the feature was available, 1973 through 1976, the data for each year was plotted beginning approximately one month previous to the date of the first Landsat image to just after the last Landsat image of each year. Figures 14 through 17 show the weather data for the years 1973 through 1976, respectively.

Another source of weather data taken at Barrow, but compiled differently, was obtained from the USAF Air Weather Service headquartered in Asheville, N. C. The data gives the percentage frequency of wind direction and speed from hourly observations. This data averaged over all months for the years 1945 through 1968 is plotted in Figure 18. Figure 18a shows the percentage frequency of wind direction, Figure 18b shows the mean wind speed versus direction and Figure 18c shows the percentage frequency of wind speed.

As shown in Figure 18a, the winds at Barrow are predominantly out of the east and east-northeast. The numbers on the rose diagram give the percentages of the winds that occur within each of sixteen 22 1/2° divisions. The sum of east and east-northeast winds accounts for more than 30 percent of the total. A secondary peak occurs in the west with 5.6 percent of the winds from that direction.

Figure 18b shows that more than 60 percent of the wind speeds are in the range of 11 to 26 km/hr. Figure 18c compares the winds speeds and directions. The maximums and minimums in the wind speed frequency approximately correspond to the maximums and minimums in the wind direction frequency.

The data plotted in Figures 14 through 17 show the same distribution of maximums and minimums on a yearly basis. The predominant wind directions are east to northeast, and the winds are steady from these directions for periods of days at a time. The highest wind speeds are generally associated with these periods, although occassional high winds may come from other directions. The lowest wind speeds are generally associated with winds from other than the predominant directions.

B. General Features of Growth

Several general conclusions can be drawn regarding the location and orientation of the growth patterns of the feature. First, growth always starts very near 162°00'W 72°00'N, indicating that this is probably the shallowest point on Hanna's Shoal. Thus the ice would ground here first and form the "core" for further groundings and growth. In 1973, the first available images (7 and 8 March) showed the feature to be very small and located almost precisely at 162°00'W 72°00'N. Later images of 1973 showed the feature to have expanded from this point. First available images for 1974, 1975 and 1976 showed the feature already past the grounding stage of growth but the "core" could be seen clearly. This core was most vividly seen in the 17 thru 21 March 1976 series of images.

Another general characteristic of the growth pattern of the feature is that growth by the "ice wedge" mechanism detailed above always occurs within a narrow zone on the northeast side of the original core. This zone generally varies no more than from north-northeast to east-northeast, approximately 45 degrees. The narrow growth zone is largely due to the weather conditions, mostly the wind direction, and will be discussed more thoroughly below. However, there is another reason for part of this behaviour. On the 12 April 1973 image of the feature, a large section of ice on the southwest tip of the feature can be seen to have broken off. This seems to indicate that growth cannot occur on the southwest side of the feature. Possibly the water is too deep to ground any ice that may pile there, and thus any shelf of ice that forms there would break off rather easily.

C. Correlation of Barrow Weather and Growth of the Feature

Figures 14 through 17 show the weather conditions at Barrow and the dimensions of the grounded ice feature during the period from approximately one month prior to the first available Landsat scene of each year to just after the last available scene of that year for the years 1973 through 1976, respectively. This encompasses approximately eight months of each year.

The first available Landsat scene of the feature in 1973 was acquired on 7 March. At that time, the feature (Figure 14) was 9.3 km long, extending northeast-southwest, and 2.8 km wide. The preceding February was characterized by cold temperatures and winds averaging less than 16 km/hr from varying directions. The next available Landsat image was obtained on 11 April and showed the feature to be much larger -14.8 km by 5.6 km (only the larger feature is considered here). The temperatures during the period 7 March to 11 April warmed to near -18°C from a low near -40°C. The winds were almost steadily from the northeast to east and at speeds sometimes greater than 30 km/hr. The feature continued to increase in size through 1 May, when it reached its maximum observed size of 20.4 km by 5.6 km. Again the winds were mostly from the northeast, with some from the north and east. The wind speeds averaged near 16 km/hr while the temperatures were -15°C to-23°C. The feature had decreased in size by the 19th of May, to 13 km by 6.5 km. The winds during this time were more variable in direction and the temperatures were much warmer than earlier in the year.

The first clear Landsat scene of the feature in 1974 was obtained on 20 March. The length of the feature (oriented northeast-southwest) was 9.3 km and the width was 6.5 km (Figure 15). During the preceding three weeks the winds at Barrow shifted slowly from the southwest to the east and then to the northeast. The wind speed during this time varied from 3 to 15 km/hr and the temperatures ranged from -40°C to -19°C. Growth of the feature was slow. However, the next image on 7 April shows a dramatic growth. The feature had increased to 18 km in length with no apparent change in width. The winds during the interval 20 March to 7 April were mostly from the northeast and averaged greater than 15 km/hr. A drop in wind speed occurred for a few days when the winds shifted and became light and variable. The predominance of winds from the northeast at moderate speeds resulted in a northeastward extension of the feature. The temperatures during this period were near -20°C.

In 1975 the first Landsat scene of the feature was obtained on 25 February. At that time (Figure 16), the feature was already quite large, 21 km long by 9 km wide (same orientation as previous years). Since 9 February, the winds had been predominantly from the northeast with wind speeds averaging approximately 15 km/hr. The temperature hovered near -30°C. These conditions resulted in significant growth of the feature. By 15 March, the feature had increased to 23 km by 12 km, not a large increase considering that the weather conditions appeared to be favorable for growth. However, the exact size of the feature could not be determined because clouds partially obscured the scene. Between 15 March and 17 May, several images of the feature were acquired which showed little change in the feature. The formation of growth wedges occurred several times, only to become detached from the feature by a shift in the wind direction. These shifts, usually of 30 degrees or more, occurred only occasionally up through 2 April, but the windspeed was sufficient to cause the wedges to break loose. After 2 April, the shifts in wind direction occurred more frequently. Thus, conditions were not favorable for growth after 15 March and little growth occurred. The temperatures were quite low in 1975, being around -20°C to -30°C most of the time up until the end of April.

The feature did not disappear in 1975. On 11 October 1975 it could still be seen to measure 14 km by 7.5 km. By 18 March 1976 the part of the feature remaining from 1975 had shrunk to a small, nearly circular core, upon which the feature had rebuilt. Three distinct phases of growth could be seen, the first phase apparently building the feature toward the north, the second phase extending it more toward the east, and the third stage, still in progress, building the feature toward the north. The initial stage of building to the north required winds from the north-northwest since the direction of ice motion is generally 30° to the right of the wind direction. These winds are not seen in the weather data (Figure 17). What appears to be more likely is that the winds from the northeast and east in late February built the initial ice wedge only to have it modified by a sudden shift in the winds to the south and southwest. No evidence of building is seen that could be attributed to the steady west winds in early February. In early March the winds were out of the northeast and east and built the second extension of the feature. The winds shifted to the north to northwest for approximately a week and the third building stage resulted with the feature growing to 27 km by 10 km. Building of the feature continued and by 16 June 1976 it was 30 km by 25 km. During this time, the winds were predominantly from the east and northeast at speeds from 3 to 30 km/hr. The temperature gradually rose from -30°C to 0°C.

In summary, growth of the feature appears to occur when the winds are steady and of moderate speed, and the temperature is below -18°C. In addition, it was observed that growth via ice wedge formation never occurred in directions ranging from southeast to south to west. Apparently the shoals are too deep to allow grounding of the ice in these directions. When the winds were predominantly out of the east to north and averaging 11 to 16 km/hr, growth of the feature occurred in directions ranging from east to north. The resulting feature was always seen to be oriented with its long axis in a northeast-southwest direction, with the southeast tip of the feature at 162°00'W 72°00'N.

It is uncertain at what time during the winter the feature begins to grow. In 1973 and 1974, it was quite small in March, with much growth taking place later. In 1976, the core of the feature could be seen in mid-March with recent growth appearing to have occurred in February. However, in 1975, the feature was quite large by 25 February. Thus, growth probably begins in January or February, but may begin earlier. By the second week in May of each year, growth has virtually ceased. From that time until mid-Autumn, the feature decays.

D. Summer Decay of the Feature

The decay of the feature is a relatively simple process, which consists of melting and fracturing of the ice with large and small pieces of ice being broken off and carried away by wind and pack ice action. As shown by Figures 14 through 17, the decay process starts almost immediately after growth ceases, usually in mid-May, when the temperatures average -5°C to -10°C with the winds variable. In 1973, there was a sharp decline in length of the feature between 1 May and 19 May with a gradual decrease in the decay rate after that. For the other three years, decay proceeded more slowly until July or August. In 1974, the feature is believed to have disappeared completely, and may have done so in 1973 as well. In 1975, it did not disappear completely, and in 1976 the last available image, acquired on 28 August, showed the feature to be quite large but definitely decayed.

The winds during the summer and early autumn are generally of moderate speeds but with varying directions when compared to winds of winter and spring. With temperatures generally above freezing until mid-September, the feature steadily decays. Then the pack ice, which is usually gone from the area in late August and September, returns and begins to rebuild the feature. The feature being extant throughout the fall in 1975 may have been the result of the pack ice remaining in the area that year (see Figure 6m).

VIII SUMMARY AND CONCLUSIONS

The growth of the grounded ice feature that recurs each year on Hanna's Shoal appears to be almost totally dependent on the wind direction, wind speed, and the temperature at that location. The wind directions as measured at Barrow seemed to correlate very well with the direction of ice motion at Hanna's Shoal, the ice moving in a direction approximately 30° to the right of the prevailing winds (which were usually from the east or northeast). A slight correlation was seen between the wind speed and the amount of ice movement.

It was hypothesized that the primary mechanism of growth of the ice feature was the formation of wedges of piled ice bounded by shear ridges which consolidated with the main body of the feature. The growth occurred in three stages. Stage I consisted of the piling of ice on the upstream side of the feature. After the ice pile had reached a maximum size, distinct shear ridges formed, extending from the sides of the ice feature upstream where they came together, forming a wedge-shaped extension to the feature. Stage II continued with ice piling, with the shear ridges growing in length and breadth until the length of the wedge reached a maximum. During Stage III the wedge became consolidated to the feature by freezing and grounding of the piled ice. If the duration of Stage III was not sufficient to consolidate the growth wedge before the direction of ice motion changed, then the wedge broke free and no resultant growth occurred.

Finally, a correlation was shown between the weather, especially the wind direction, and the formation of the growth wedges. When the winds were predominantly from the east and northeast the feature built up in those directions resulting in an ellipse shape oriented with the long axis northeast-southwest. The southwest tip of the feature always occurred very near 162°00'W 72°00'N, indicating deep water and thus no ice grounding on the southwest side of the shoal. The feature generally continued to undergo growth until mid-May, when it began to decay. The decay of the feature was due to melting and fracturing with the loose pieces moved away by wind, ice and water currents. The feature decayed until it either disappeared or until mid-autumn when the temperatures dropped and the pack ice once more moved into the area. The mid-winter characteristics of the growth of the feature are not known due to the lack of data.

Thus, a typical cycle of growth and decay of the grounded ice feature may proceed as follows. If the feature was non-existent in the early-autumn, pack ice moving into the area of Hanna's Shoal would carry in deep-draft ice objects such as ice islands, floebergs, multi-year pressure ridges, etc. which would become grounded on the shoals. Other ice would become piled around these grounded pieces and freeze to them. As the pack ice became thicker, pressure ridges and hummock fields would form upstream of this nucleus and growth would commence. Ice wedges would form, and either consolidate to the feature and thus enlarge it, or break free and drift away. The time at which ice wedges first form is not known, but it is probably as soon as the pack ice becomes a uniform sheet. The ice wedges would continue to form until the pack ice became too fractured to form shear ridges, sometime in mid-spring, when the feature would begin to decay. The warming temperatures would cause the ice to melt and weaken and the moving pack ice would break off pieces of ice and carry them away. This ablation would probably occur until the feature either completely disappeared or the pack ice reformed, sometime in mid-autumn. The cycle would then begin again.

The correlation between ice motion at Hanna's Shoal and the winds at Barrow seem quite good. The observed average deviation of the ice motion 30° to the right of the wind direction has been observed by others in pack ice. However, the correlation of wind speed with ice velocity was not very good because too many unknown factors enter in, such as the density, strength, and uniformity of the pack ice and the ambient air temperature. These factors cannot be determined from Landsat imagery.

The correlation of growth (not amount of growth) with wind direction, speed and stability as well as temperature, appears to be quite good. When the winds are steady out of the east to north directions, in the range of 7 to 25 km/hr in speed, and the temperatures are below -18°C, formation of the ice wedges was seen to occur. Growth was not observed to the southwest. In addition, growth was inhibited by variable winds, and decay was seen to occur once the temperatures rose above -5°C.

Finally, the introduction discussed the various terms used by different authors to describe the feature. As a result of this study, none of them seem adequate. The feature is not a floeberg, it is not an island of grounded sea ice, and it is not a berg field. The feature is a composite of all of the above. It has been seen to consist of floebergs, ice islands, pressure and shear ridges, hummock fields and very small areas of flat ice (Kovacs, et al., 1976; Toimil and Grantz, 1976). Thus the terms "grounded ice feature" or "island of grounded ice" seem more appropriate.

ACKNOWLEDGEMENTS

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Zubou, N. N., (1945), Arctic Sea Ice, Translated by Naval Oceanographic Office and American Meteorological Society under contract to Air Force Cambridge Res. Center, 1963, Pub. by Naval Electronics Laboratory (San Diego), p. 491.

Figure Captions

Figure 1: Location of ice feature grounded on Hanna's Shoal in the Chukchi Sea. Arrow shows predominant direction of ice motion.

Figure 2: 1972 Landsat scenes of vicinity of Hanna's Shoal: a) scene 1010-22133, 2 August 1972; b) scene 1065-22192, 26 September 1972.

Figure 3: 1973 Landsat scenes of vicinity of Hanna's Shoal: a) scene 1227-22203, 7 March, b) scene 1228-22261, 8 March, c) scene 1263-22203, 12 April, d) scene 1282-22261, 1 May e) scene 1283-22315, 2 May, f) scene 1300-22260, 19 May, g) scene 1318-22255, 6 June, h) scene 1317-22200, 5 June, i) scene 1406-22131, 2 September.

Figure 4: 1974 Landsat scenes of vicinity of Hanna's Shoal: a) scene 1604-22090, 19 March, b) scene 1605-22145, 20 March, c) scene 1606-22203, 21 March, d) scene 1608-22320, 23 March, e) scene 1623-22142, 7 April, f) scene 1624-22201, 8 April, g) scene 1643-22252, 27 April, h) scene 1662-22304, 16 May, i) scene 1712-22061, 5 July, j) scene 1750-22161, 12 August, k) scene 1803-22083, 4 October, 1) scene 1821-22082, 22 October.

Figure 5: Fall NOAA images of the vicinity of Hanna's Shoal: a) image 3808, 6 September 1974, b) image 4117, 4 October 1974, c) image 4229, 13 October 1974, d) image 4291, 18 October 1974, e) image 4353, 23 October 1974, f) image 4576, 10 November 1974, g) image 4737, 23 November 1974, h) image 4761, 25 November 1974.

Figure 6: 1975 Landsat scenes of vicinity of Hanna's Shoal: a) scene 1947-22031, 25 February, b) scene 1965-22022, 15 March, c) scene 1983-22013, 2 April, d) scene 1984-22071, 3 April, e) scene 2079-22082, 11 April, f) scene 2080-22140, 12 April, g) scene 2097-22081, 29 April, h) scene 2098-22135, 30 April, i) scene 2099-22194, 1 May, j) scene 2100-22252, 2 May, k) scene 2115-22075, 17 May, 1) scene 2207-22184, 17 August, m) scene 2262-22240, 11 October.

Figure 7: NOAA image 3909, 23 September 1975, of vicinity of Hanna's Shoal.

Figure 8: 1976 Landsat scenes of vicinity of Hanna's Shoal: a) scene 2420-21583, 17 March, b) scene 2421-22042, 18 March, c) scene 2422-22100, 19 March, d) scene 2424-22212, 21 March, e) scene 2474-21570, 10 May, f) scene 2511-22015, 16 June, g) scene 2548-22063, 23 July, h) scene 2584-22053, 28 August.

Figure 9: NOAA image 956, 14 October 1976, of the vicinity of Hanna's Shoal.

Figure 10: Barrow wind directions (solid arrows) and pack ice directions (dashed arrows). Number above wind arrow gives direction from which the wind was blowing in degrees east of north. Angle between solid and dashed arrows gives direction of pack ice motion relative to the wind. The date is given beneath the arrows as well as the wind speed: L = low, 0-6 km/hr; ML = moderately low, 7-13 km/hr; M = moderate, 14-19 km/hr; MH = moderate high, 20-26 km/hr; H = high, over 26 km/hr.

Figure 11: Wind speeds measured at Barrow versus pack ice motion as determined from Landsat imagery. Solid symbols indicate summer data (post ice-decay, usually after May 1). Open symbols indicate data for periods when the pack ice was observed to be mostly intact. Type I motion is indicated by circles, Type II is indicated by triangles, and Type III is indicated by squares. Reference numbersespond to those in Table 1.

Figure 12: Ice vectors around the grounded ice feature during the 24-hour period, 7 April - 8 April 1974. Note the distinct shear line north of the feature.

Figure 13: Idealized model of growth mechanism of grounded ice feature. The main body of the feature may be 5 to 25 kilometers ~~wind~~. wide

Figure 14: 1973 Barrow weather data and concurrent dimensions of the grounded ice feature. Dates shown are dates of Landsat images.

Figure 15: 1974 Barrow weather data and concurrent dimensions of the grounded ice feature. Dates shown are dates of Landsat images.

Figure 16: 1975 Barrow weather data and concurrent dimensions of the grounded ice feature. Dates shown are dates of Landsat images.

Figure 17: 1976 Barrow weather data and concurrent dimensions of the grounded ice feature. Dates shown are dates of Landsat images.

Figure 18: a) Rose diagram of percent wind direction at Barrow - numbers are the percent wind direction, b) Histogram showing percent frequency of wind speed versus the actual wind speed at Barrow, c) Rose diagram of average wind speed versus wind direction - numbers are the wind speeds in km/hr.


168°
160°
152°
74°
70°
66°
CHUKCHI
SEA
Point Barrow
Cape Lisburne
ALASKA

Fig. 1

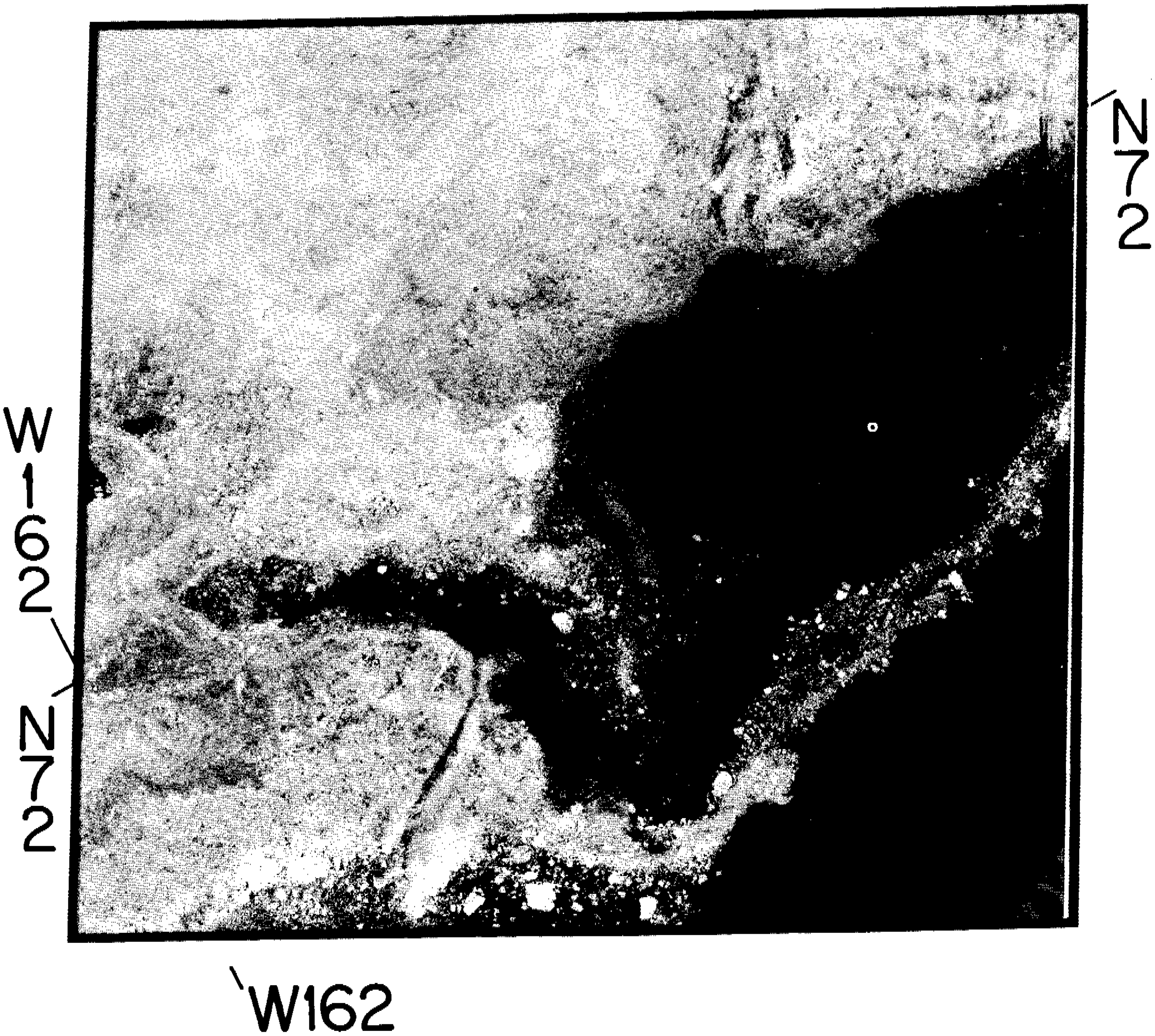


Fig. 2a

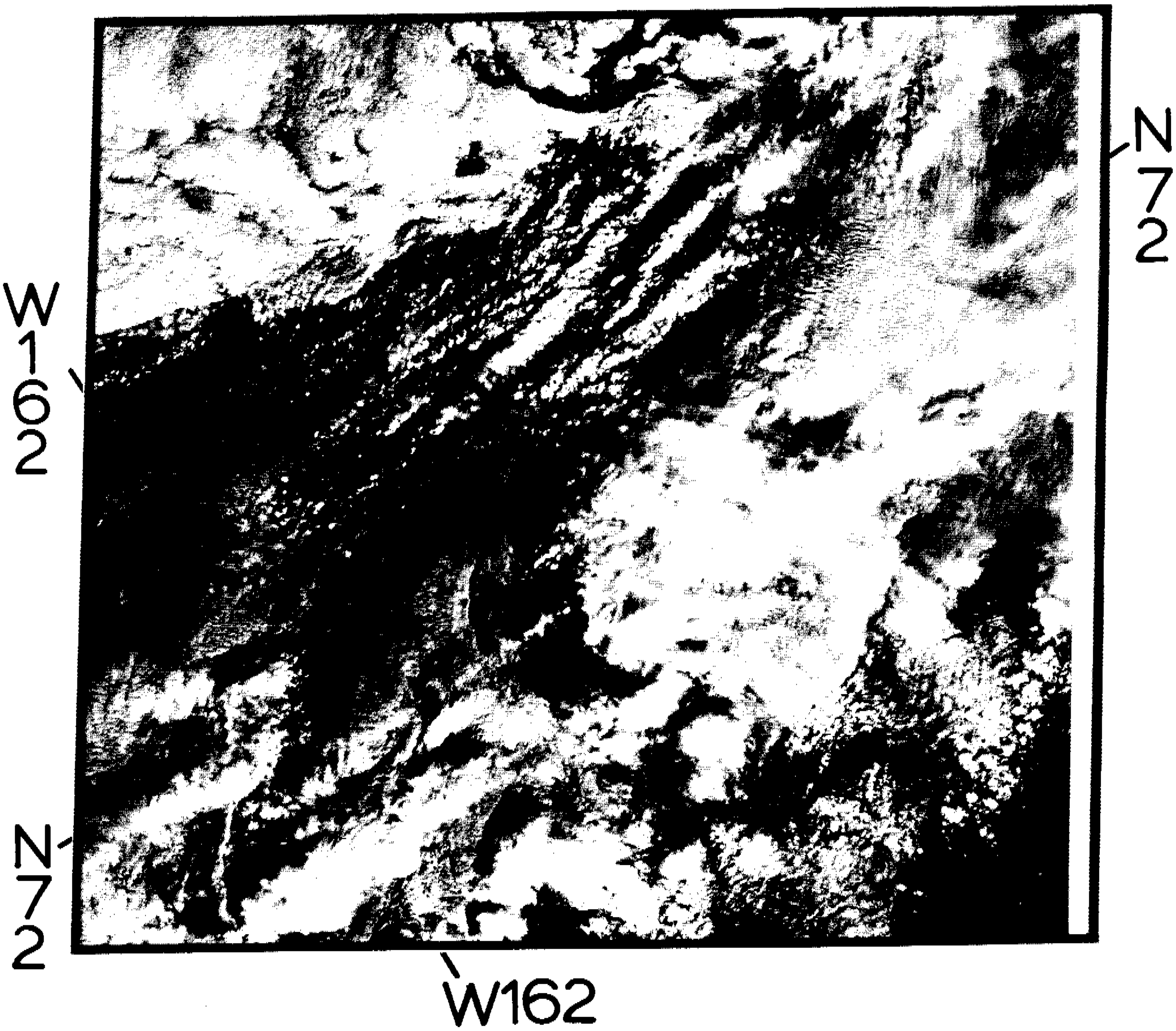


Fig. 2b

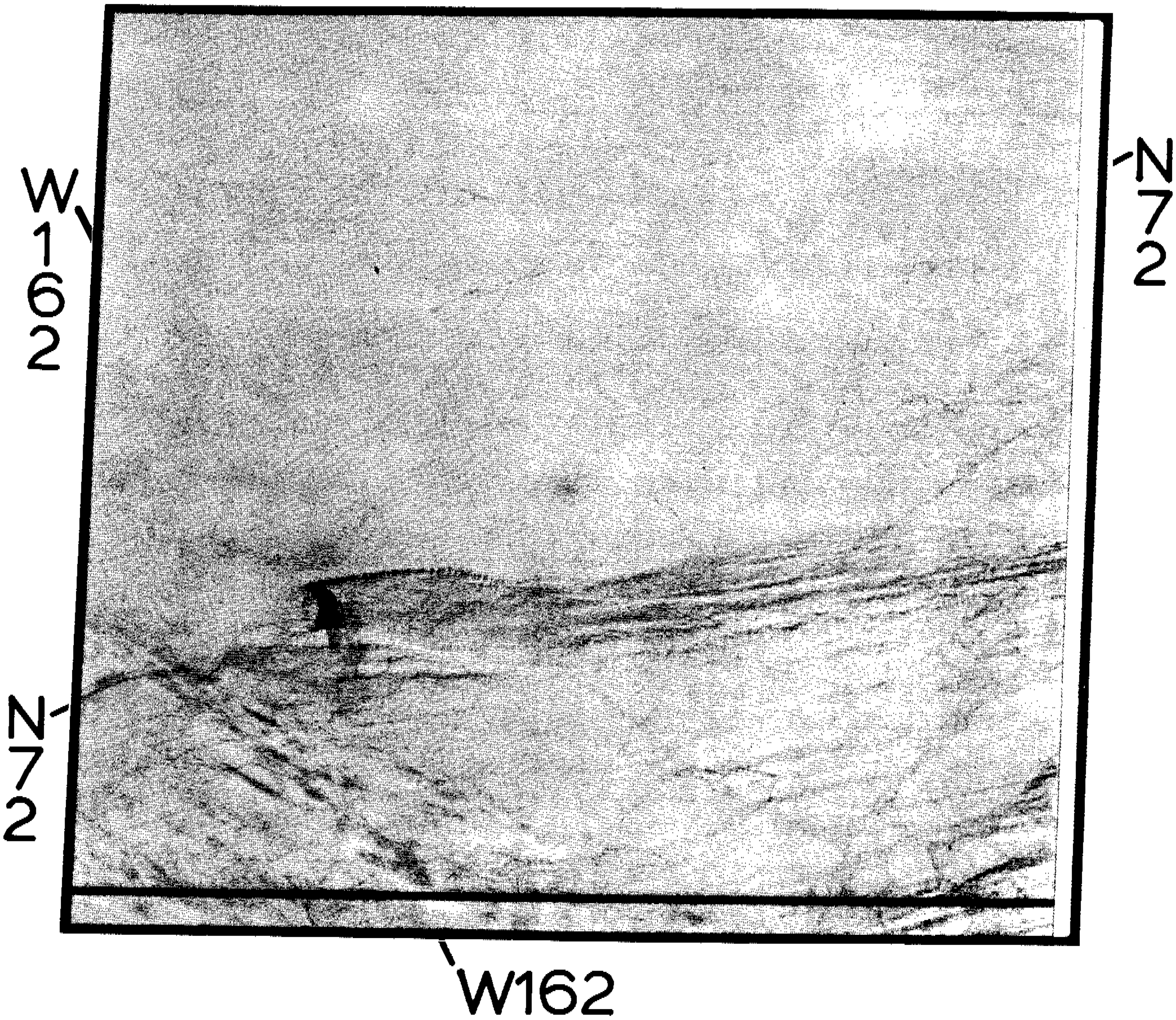


Fig. 3a

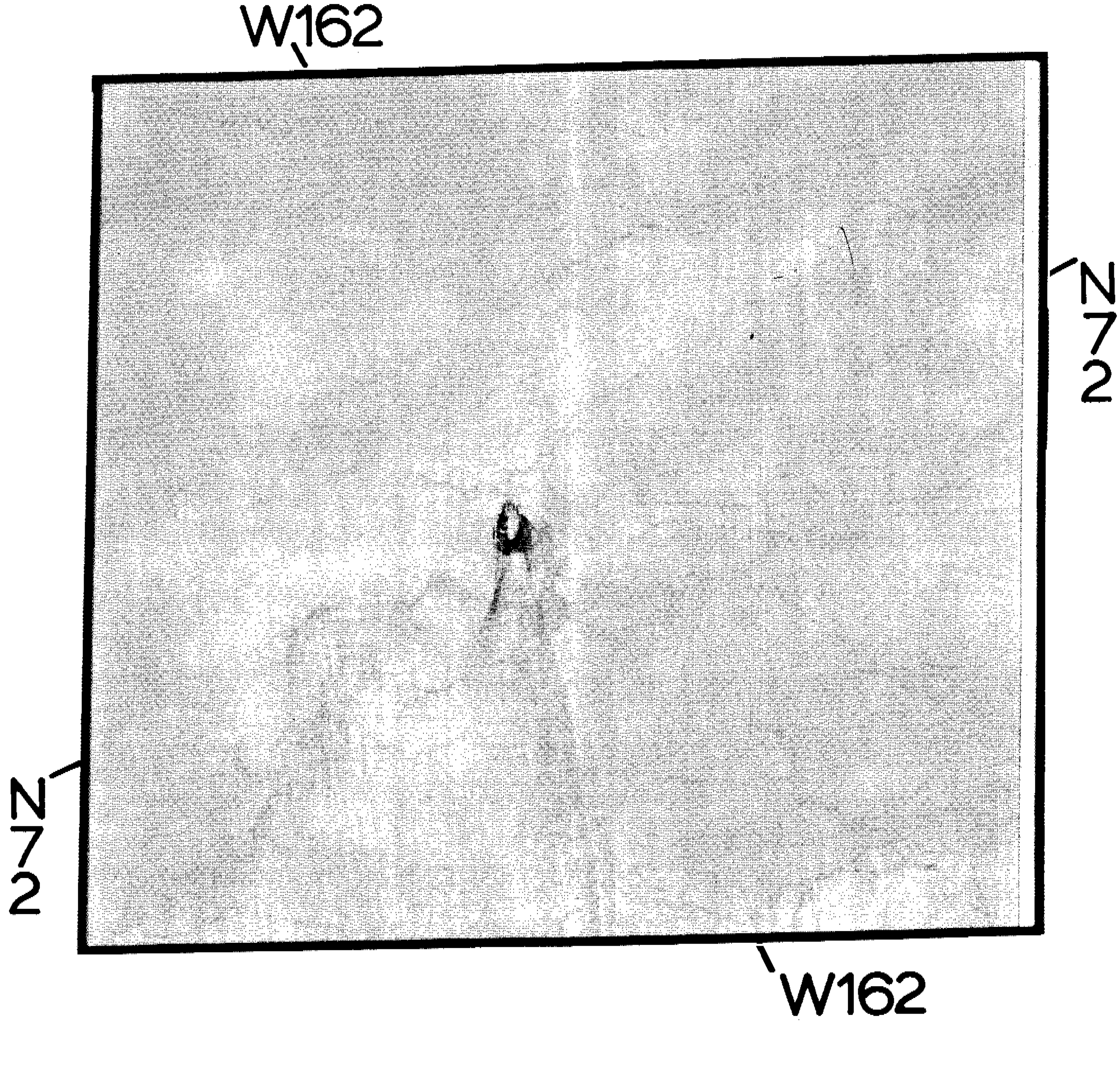


Fig. 3b

Fig. 3c

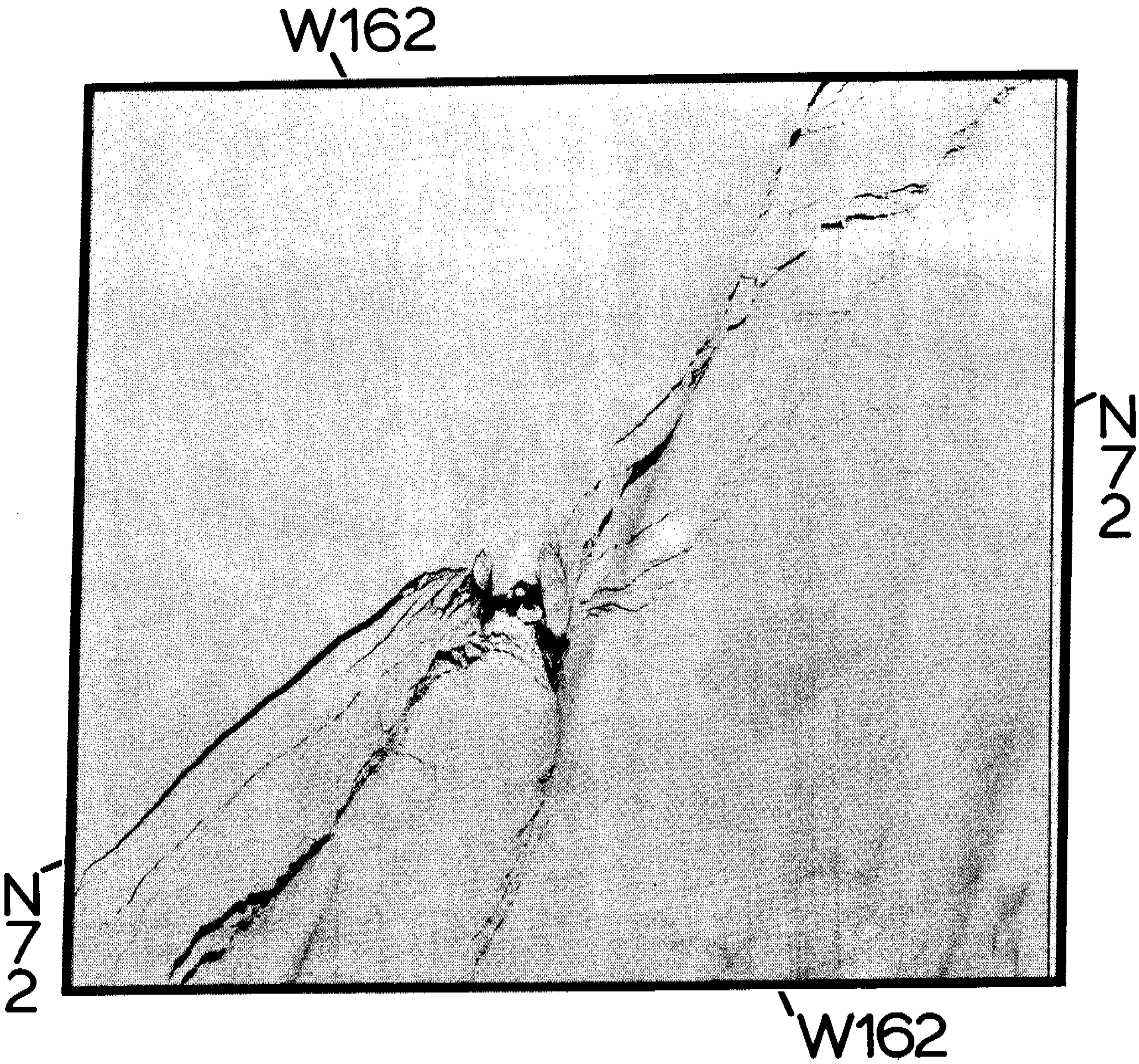


Fig. 3d

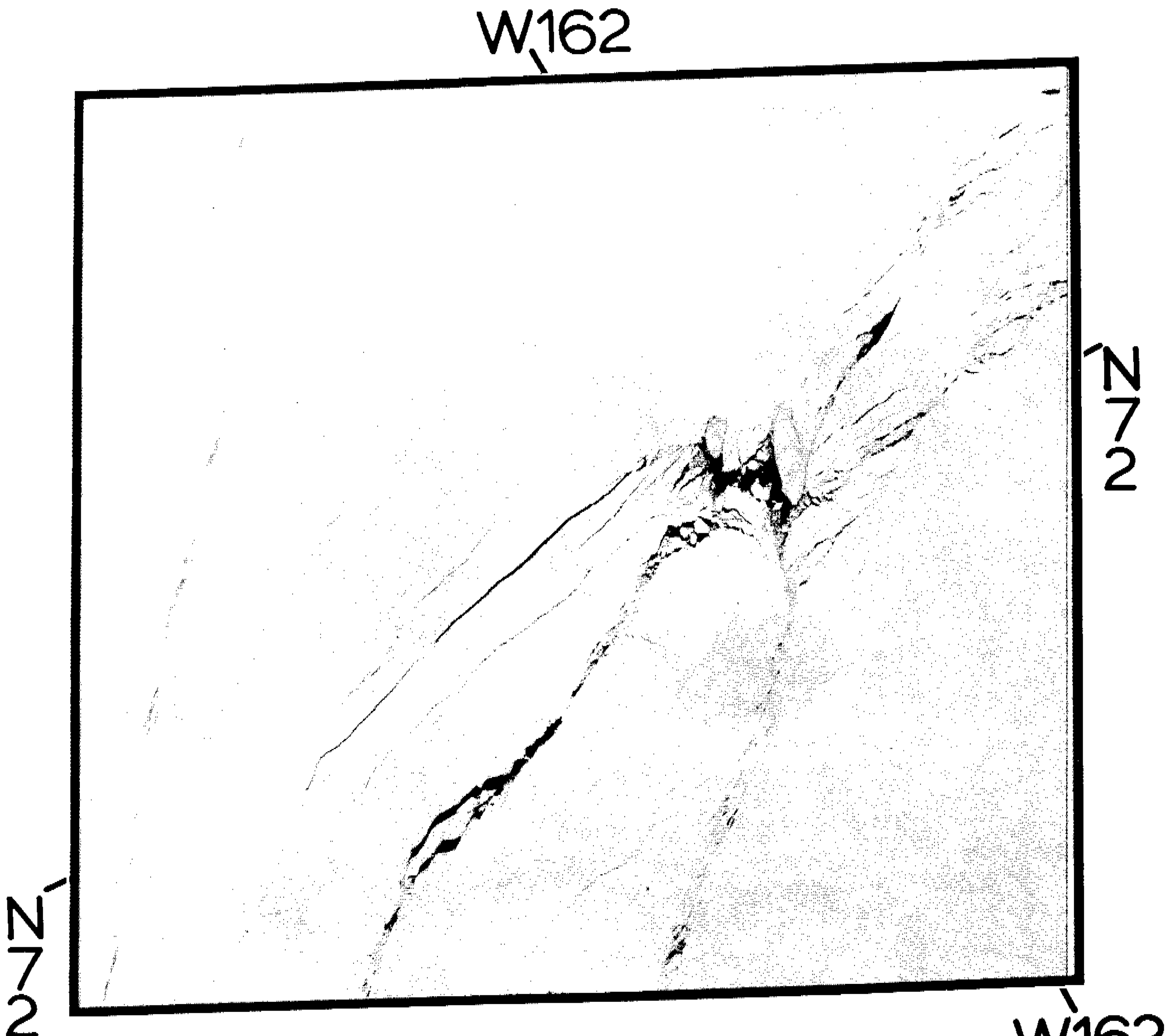
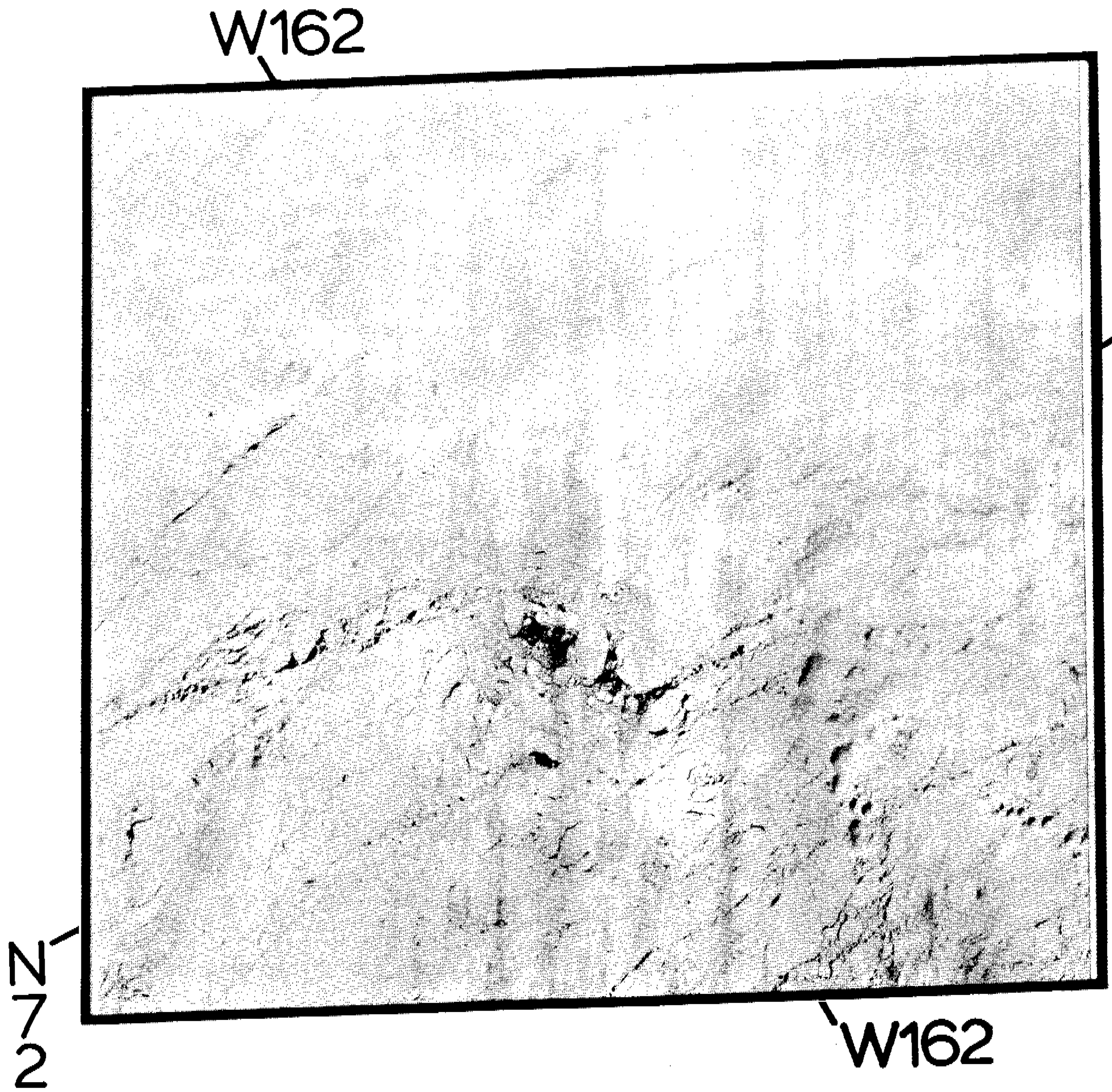


Fig. 3e



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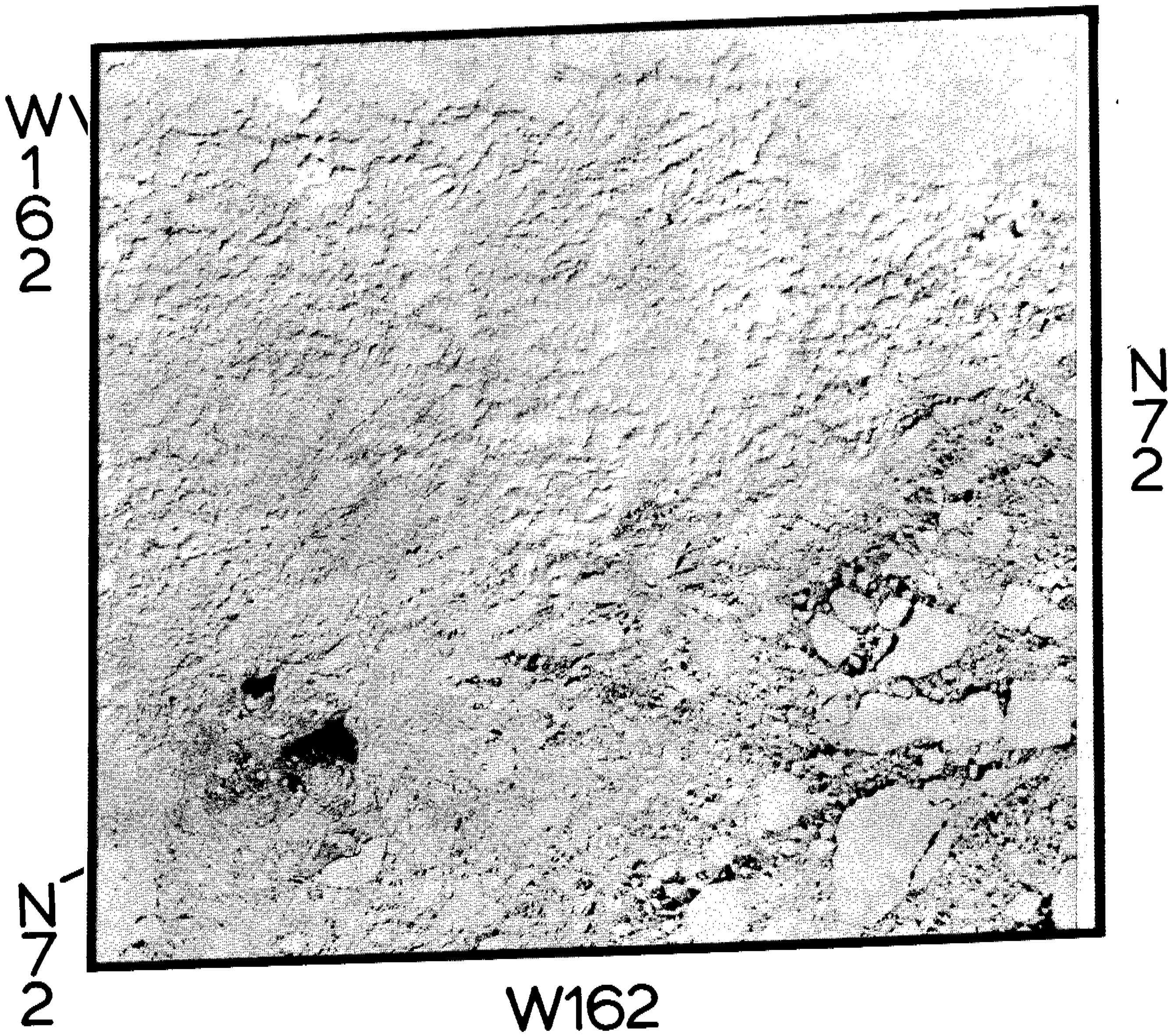


Fig. 3g

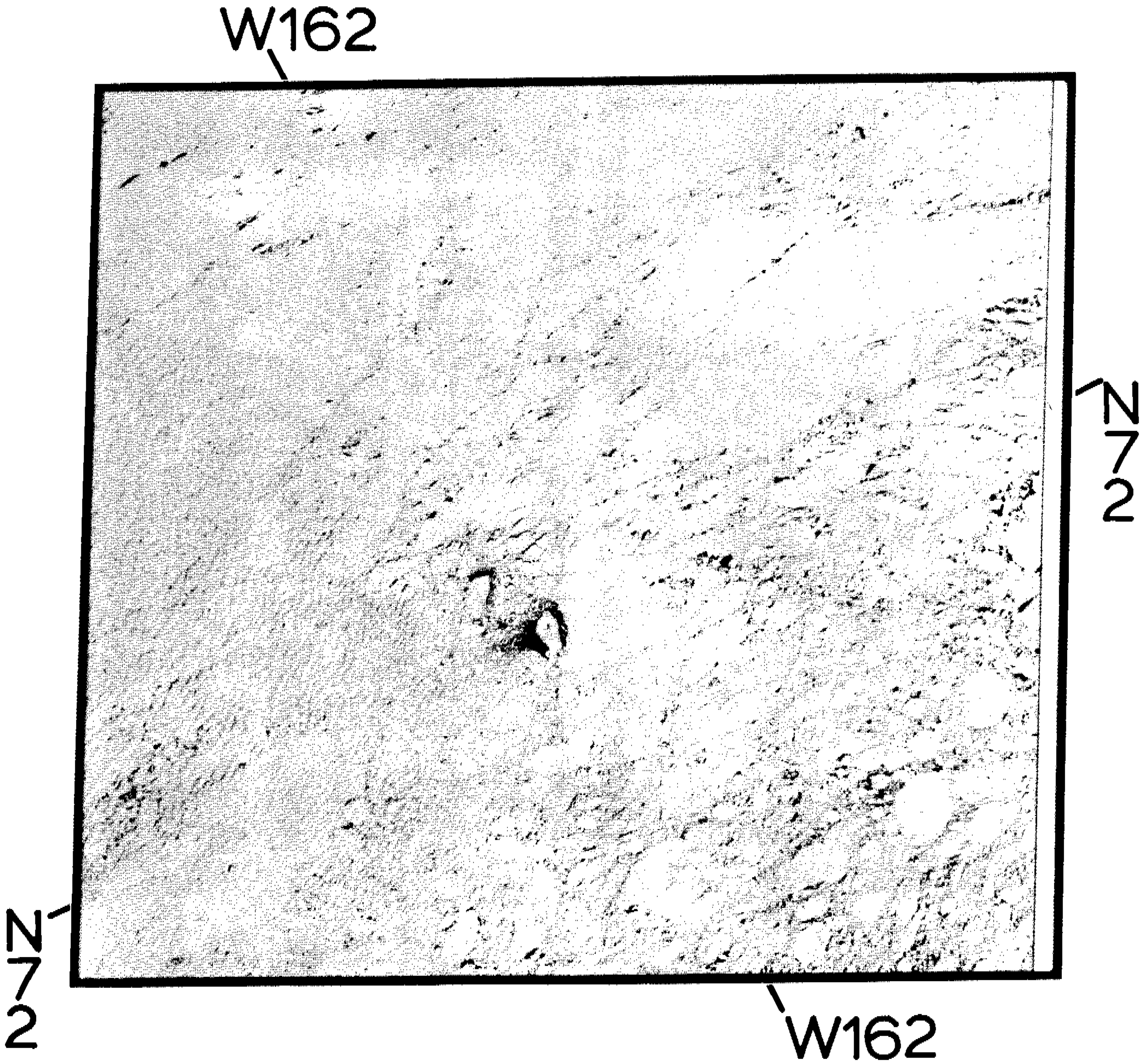
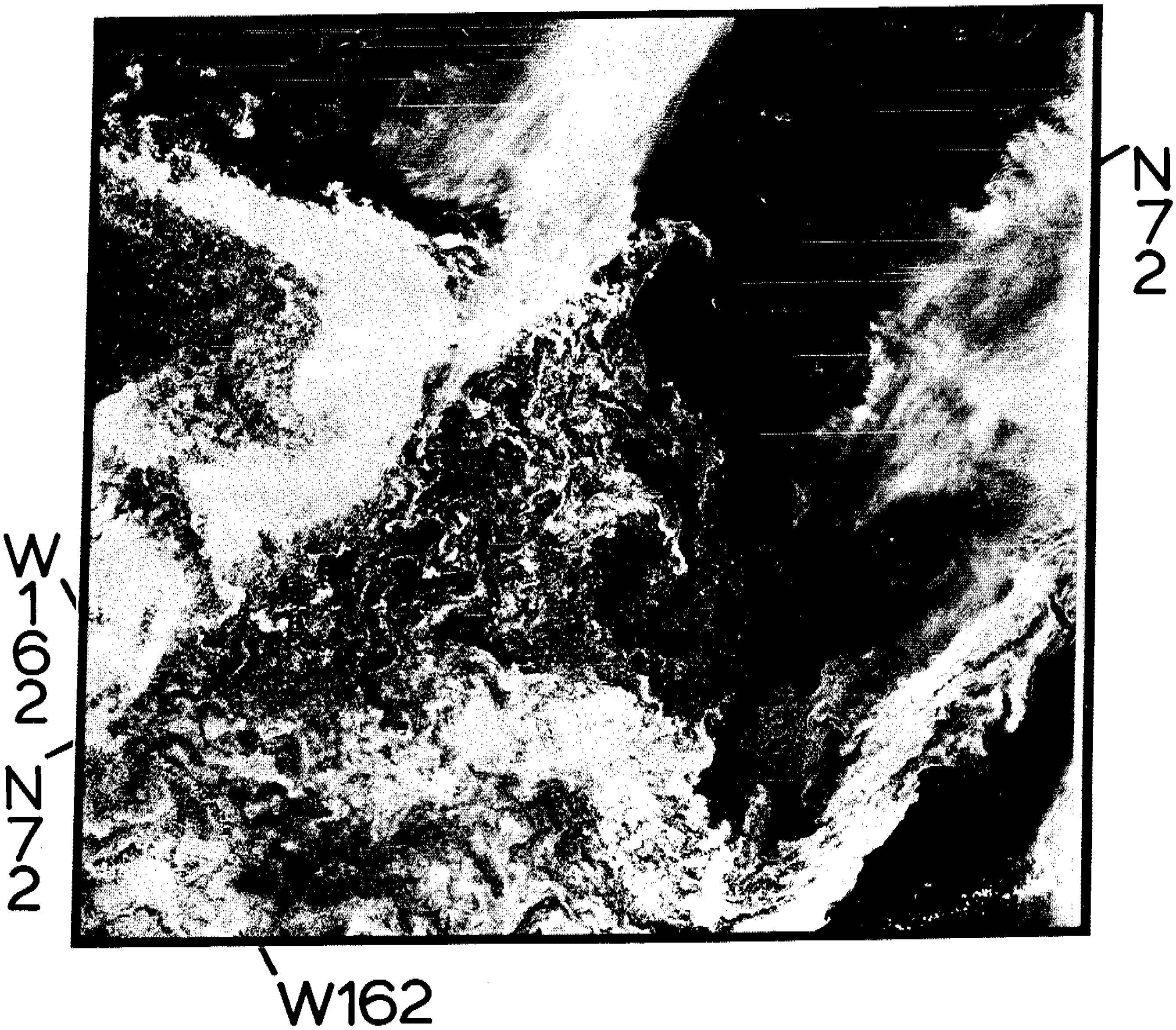


Fig. 3h



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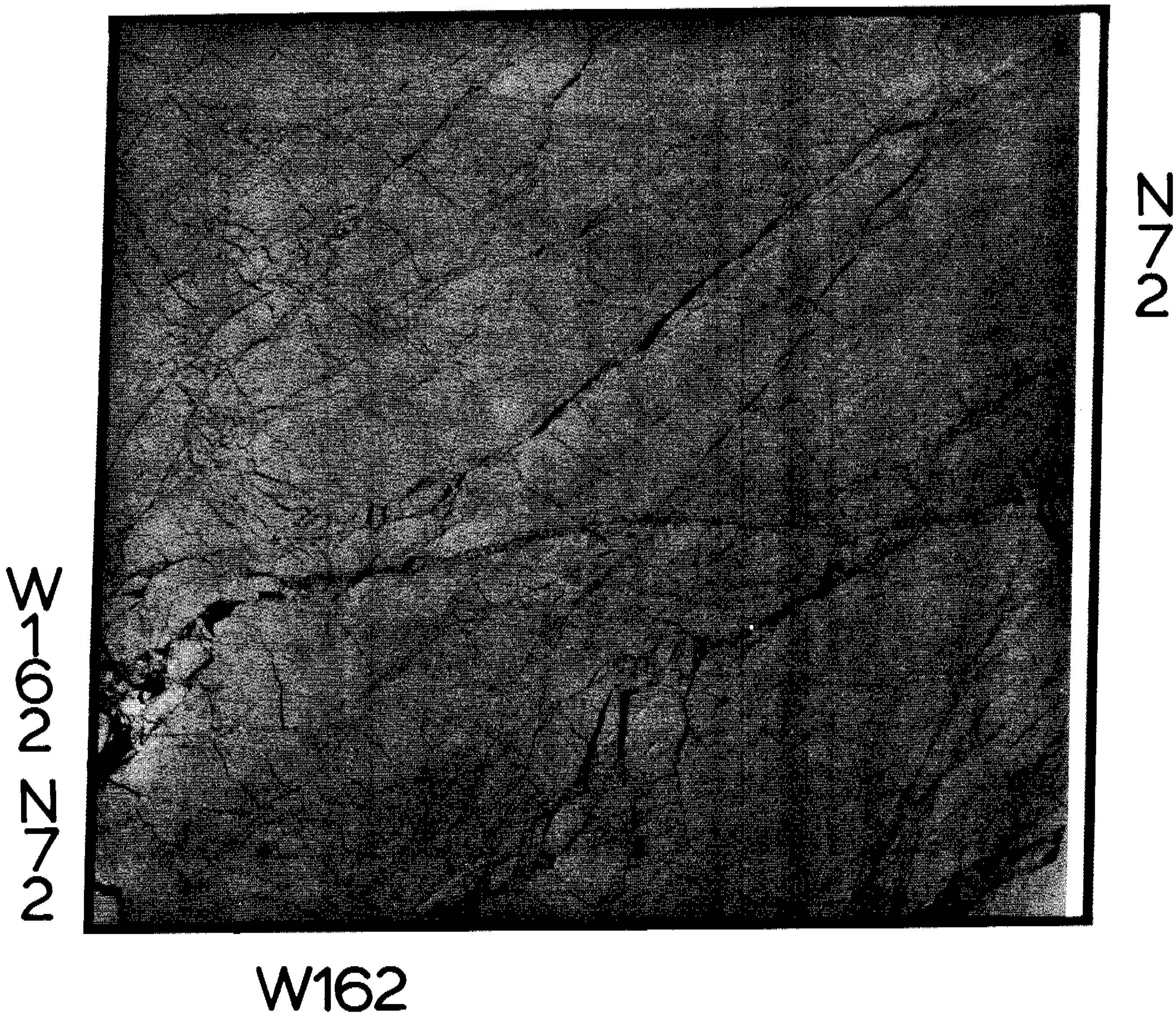
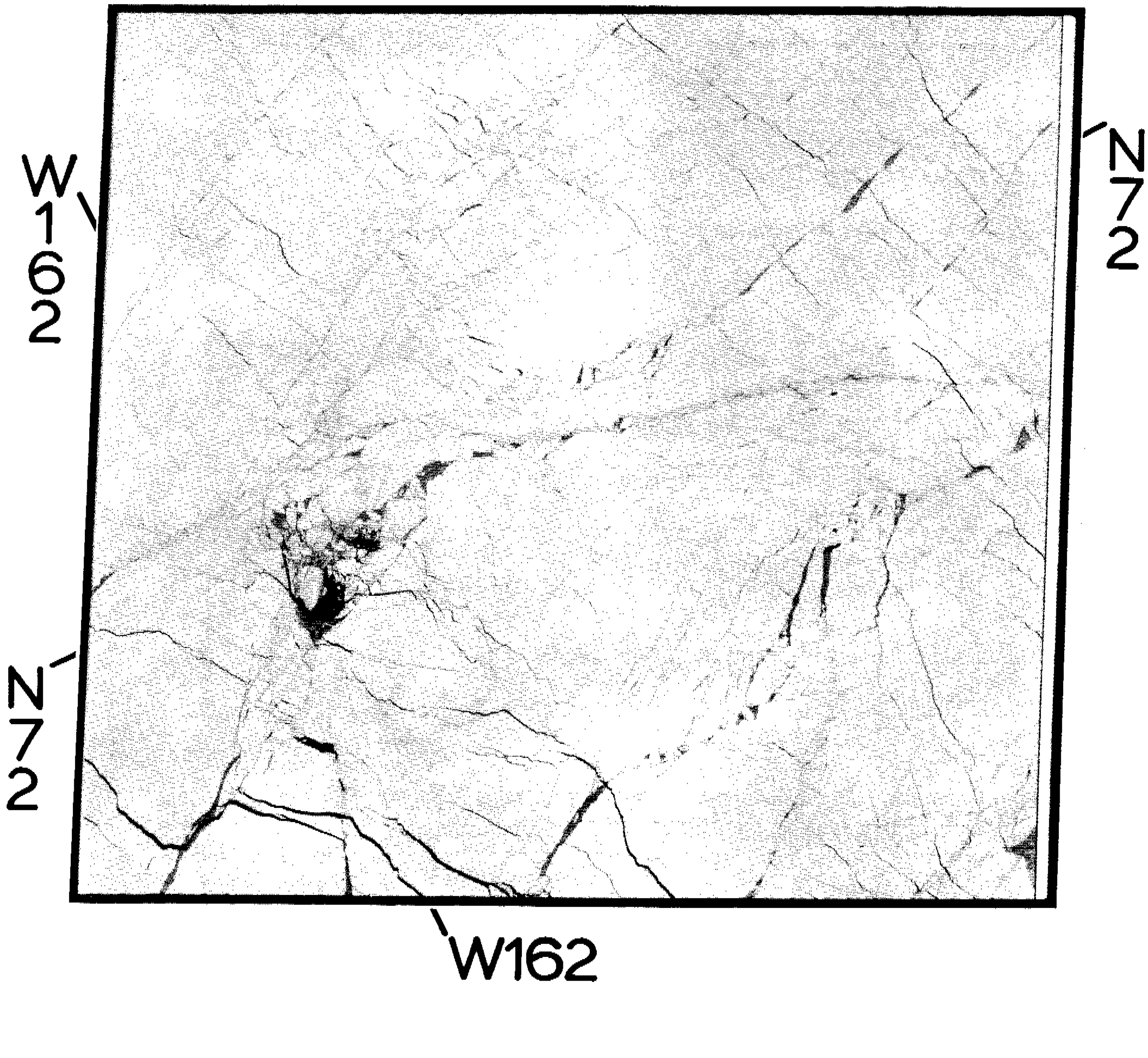


Fig. 4a



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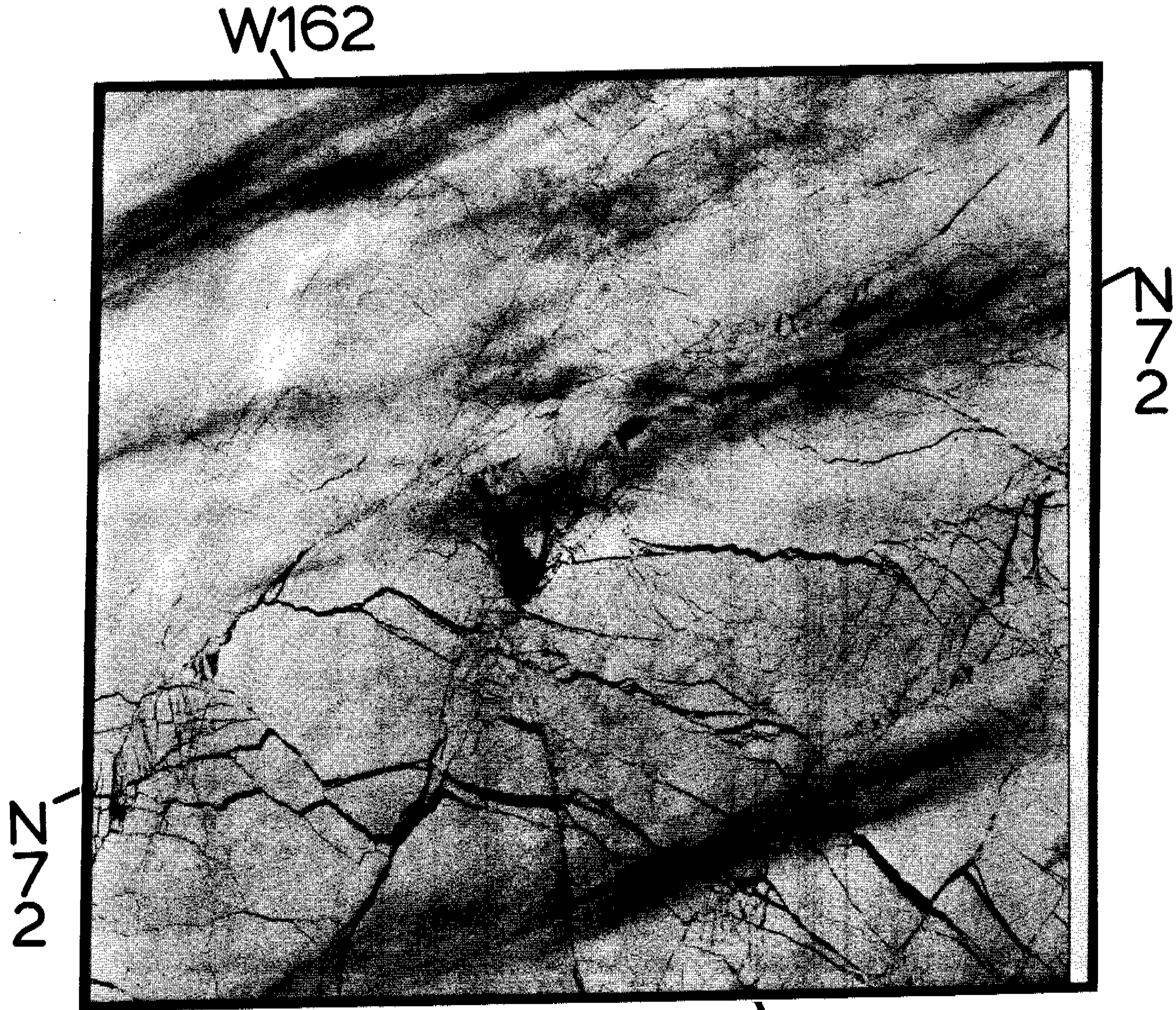

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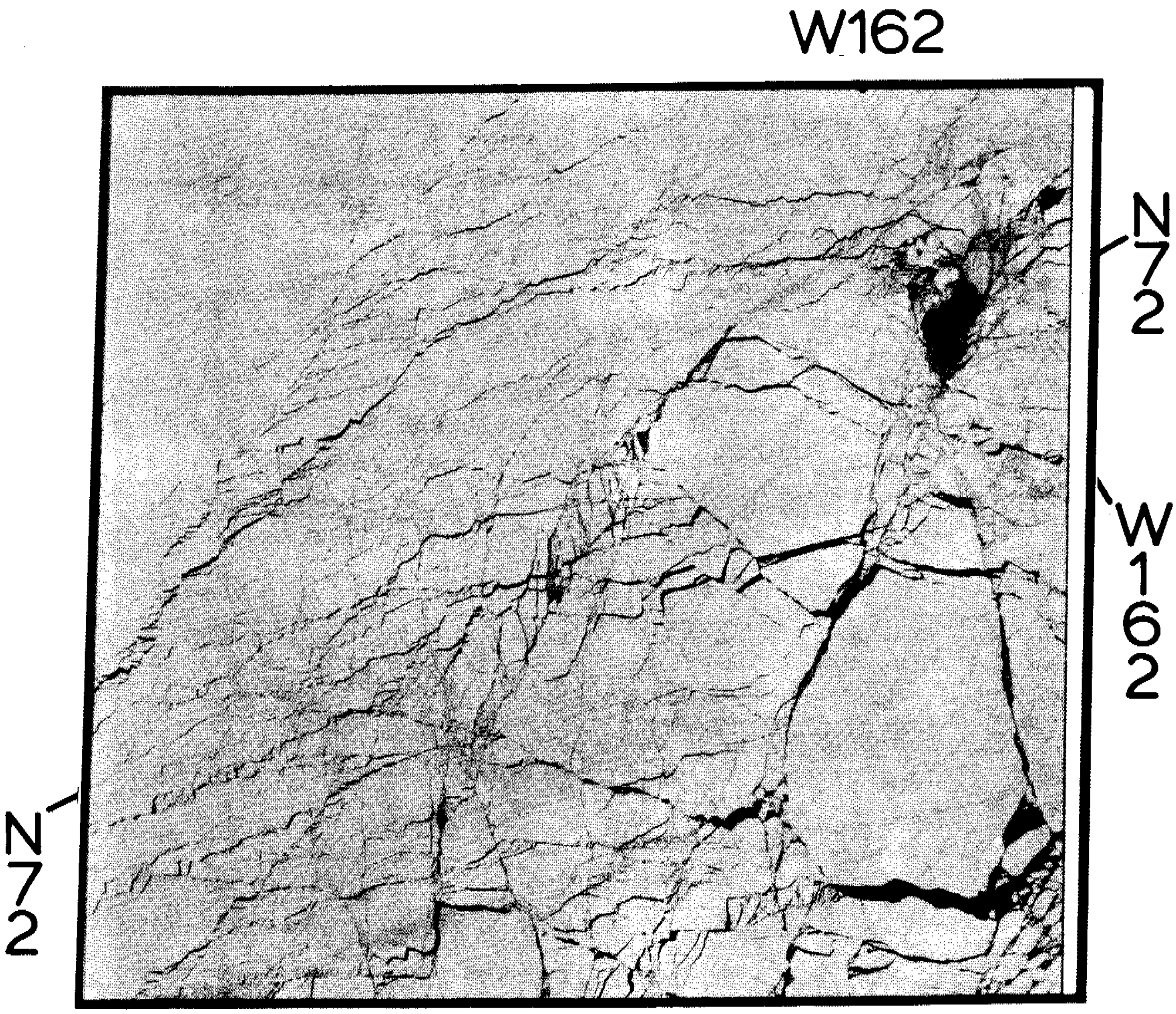

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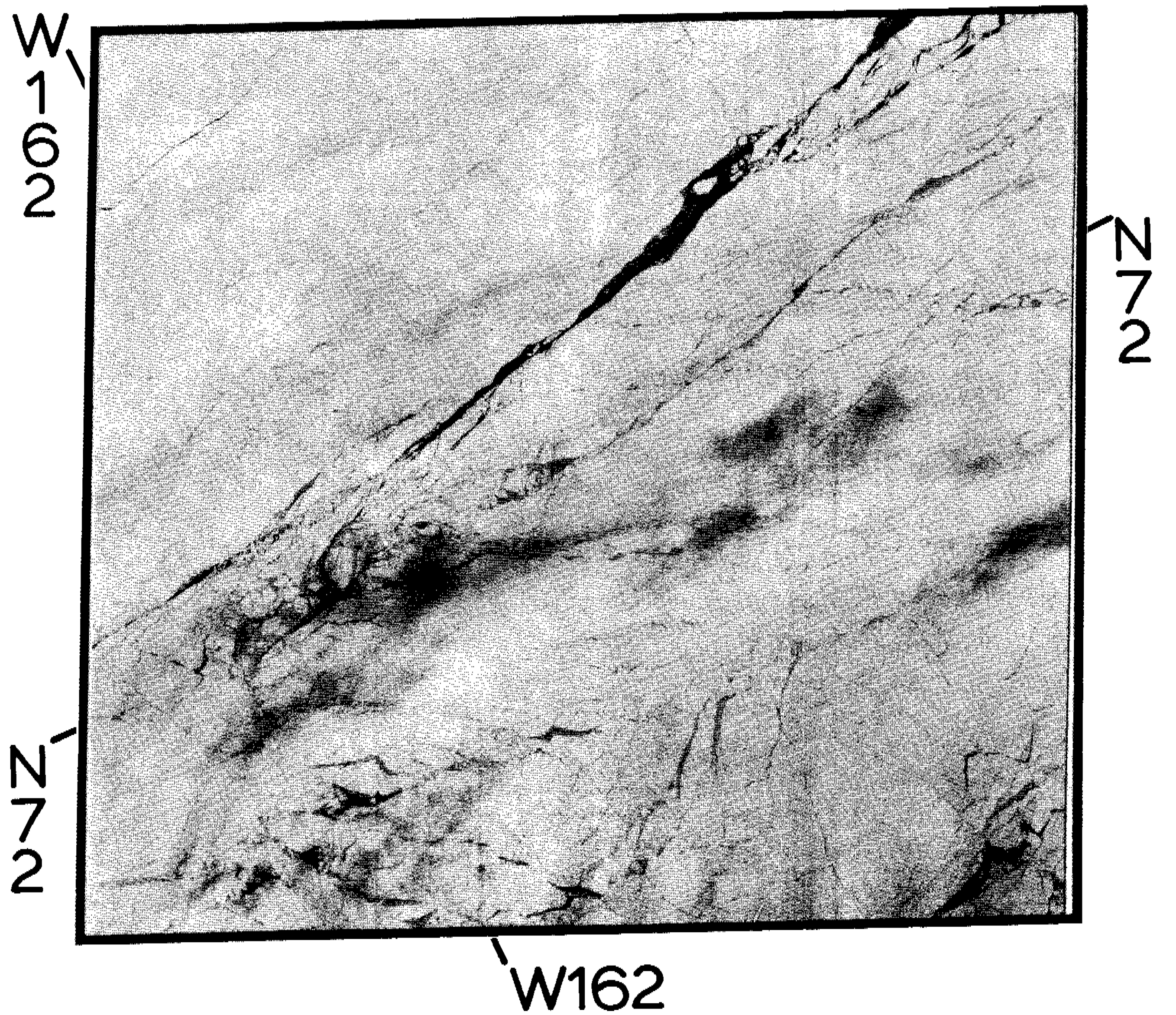

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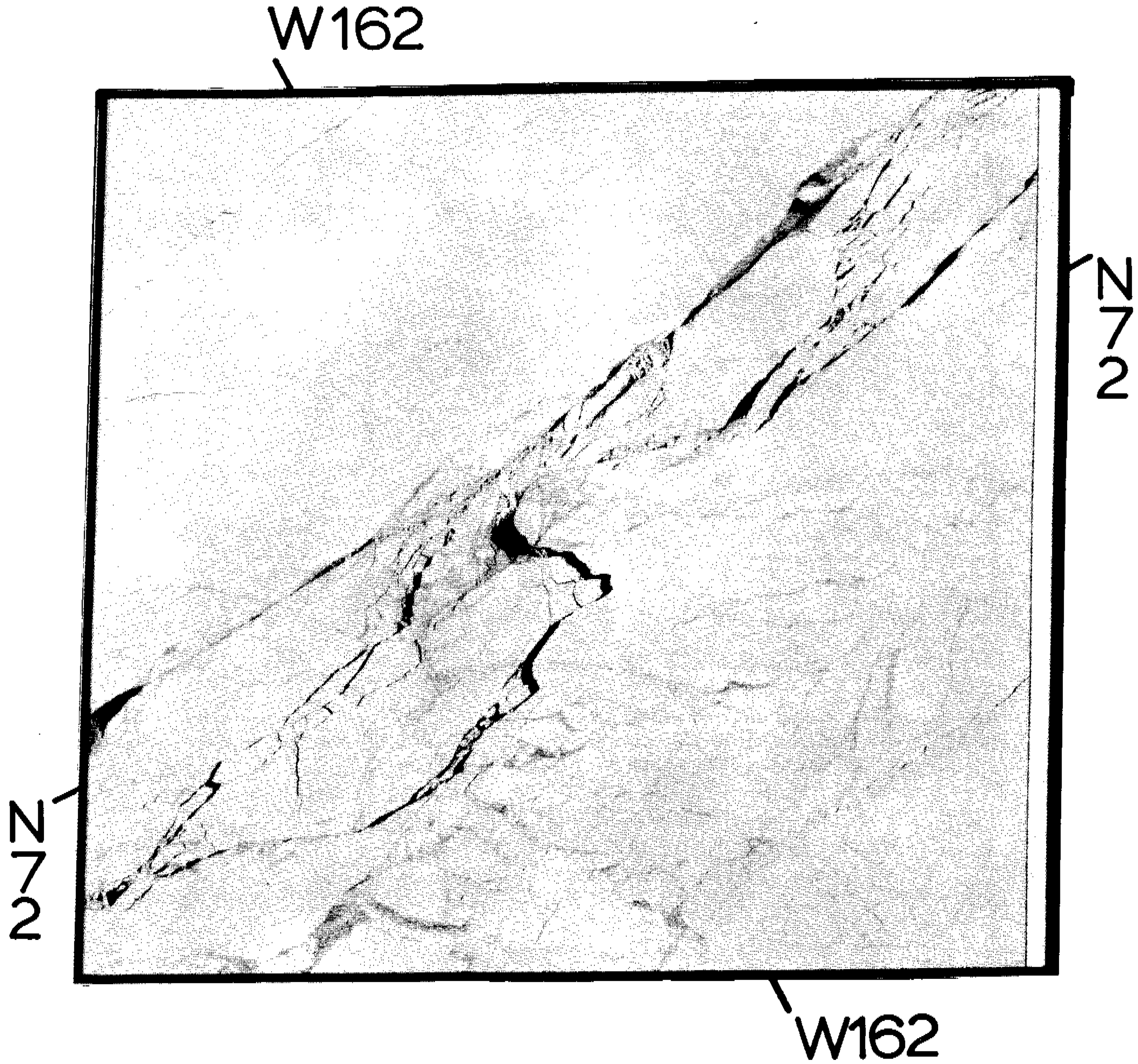

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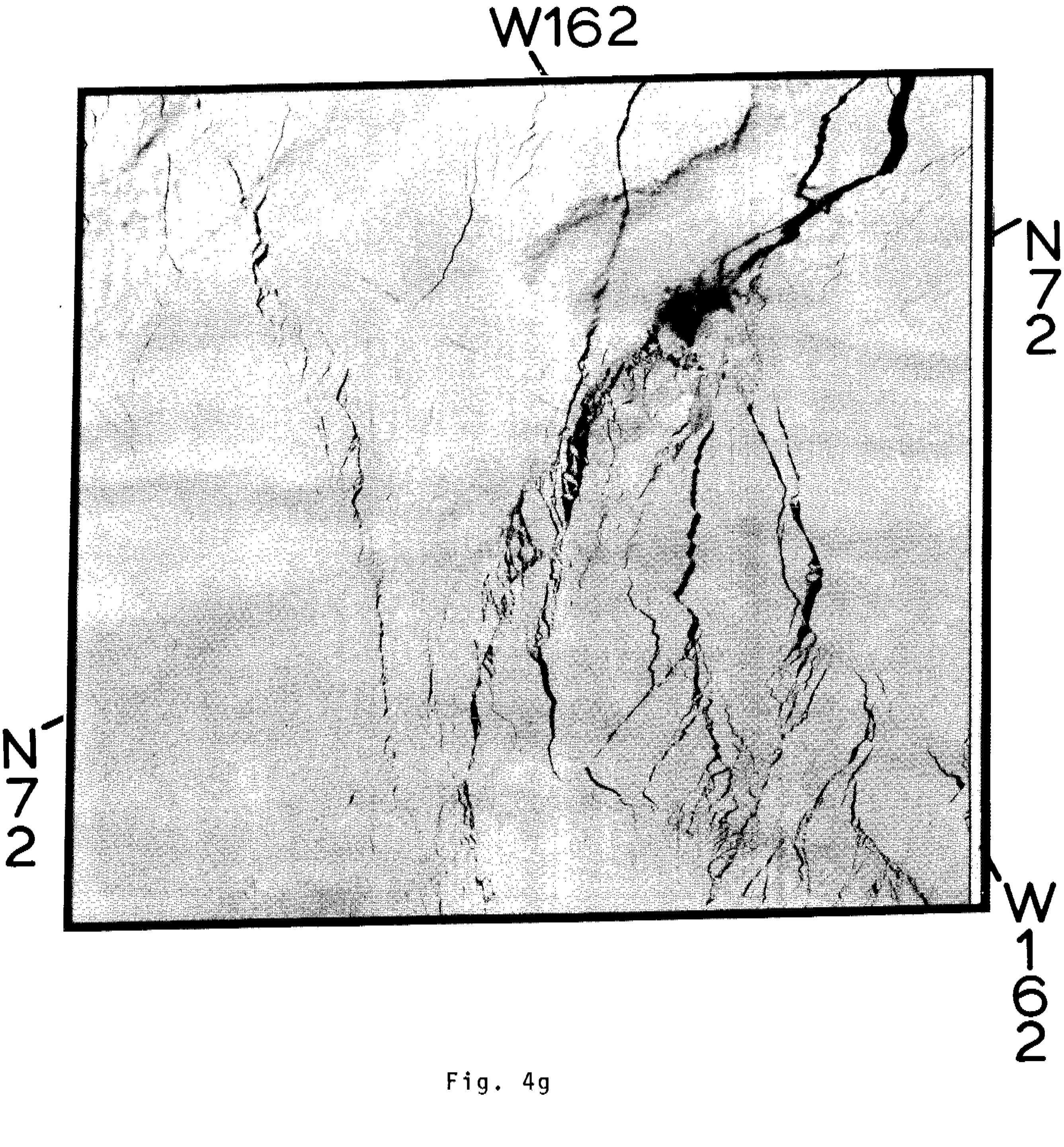

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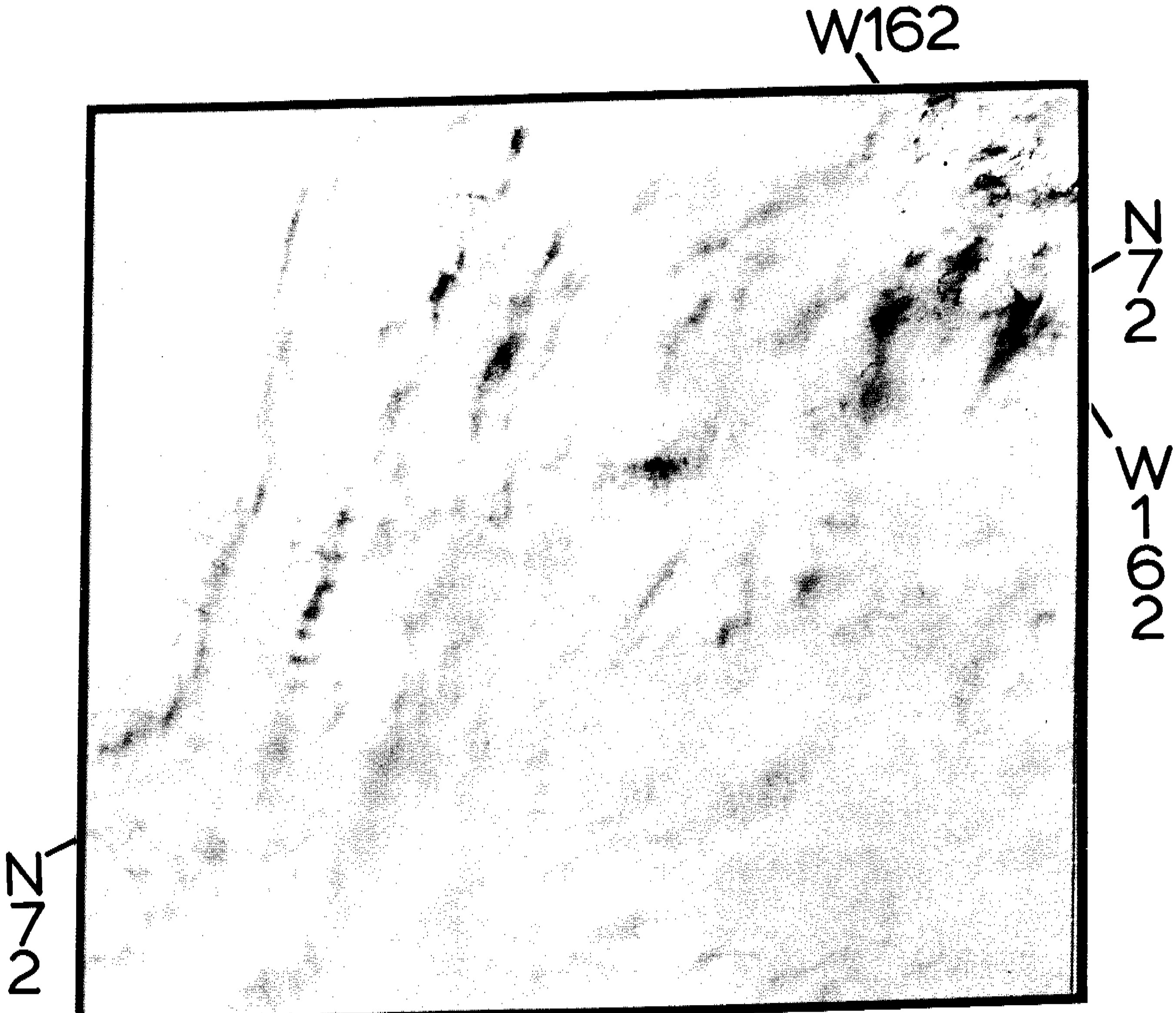

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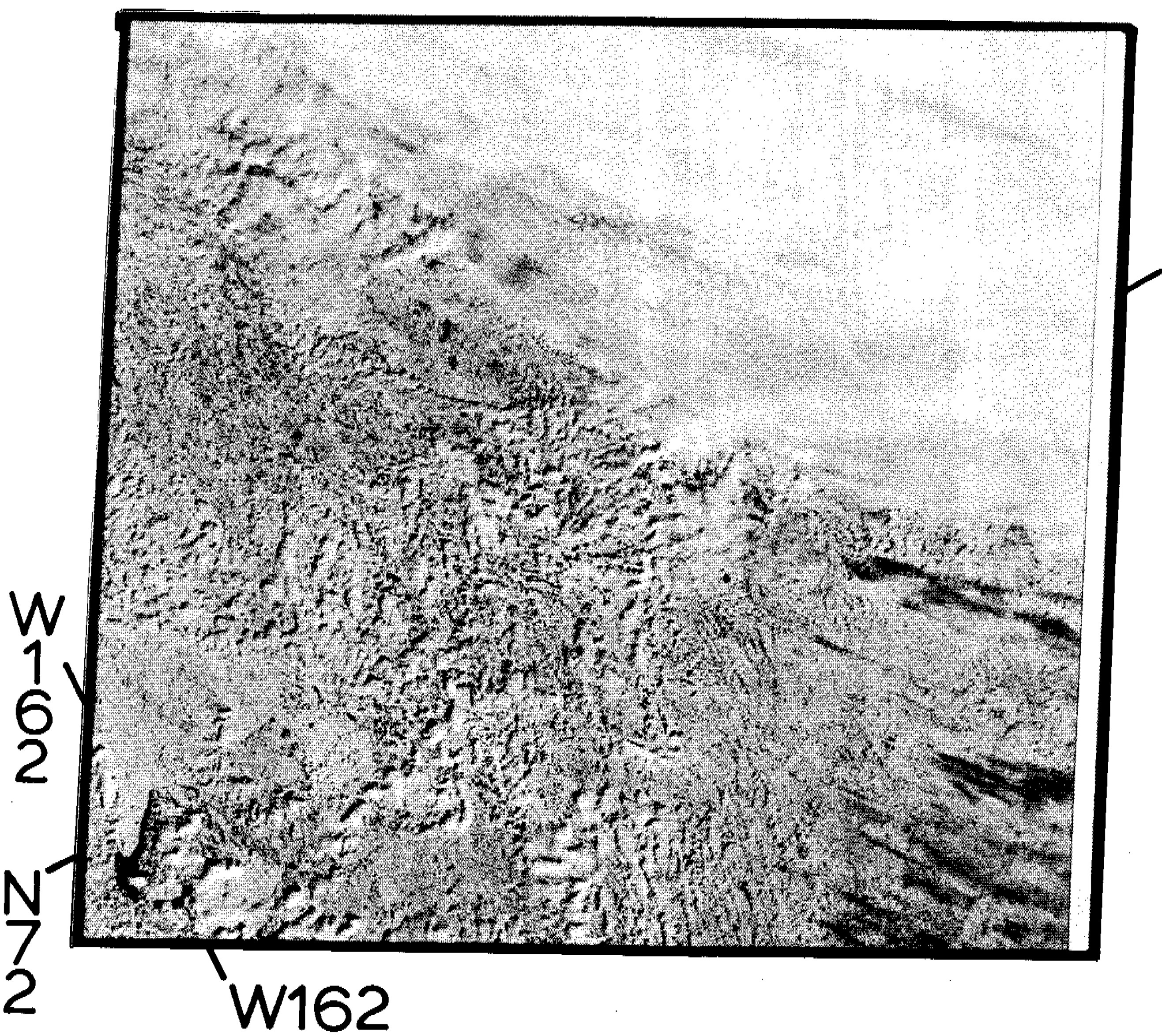

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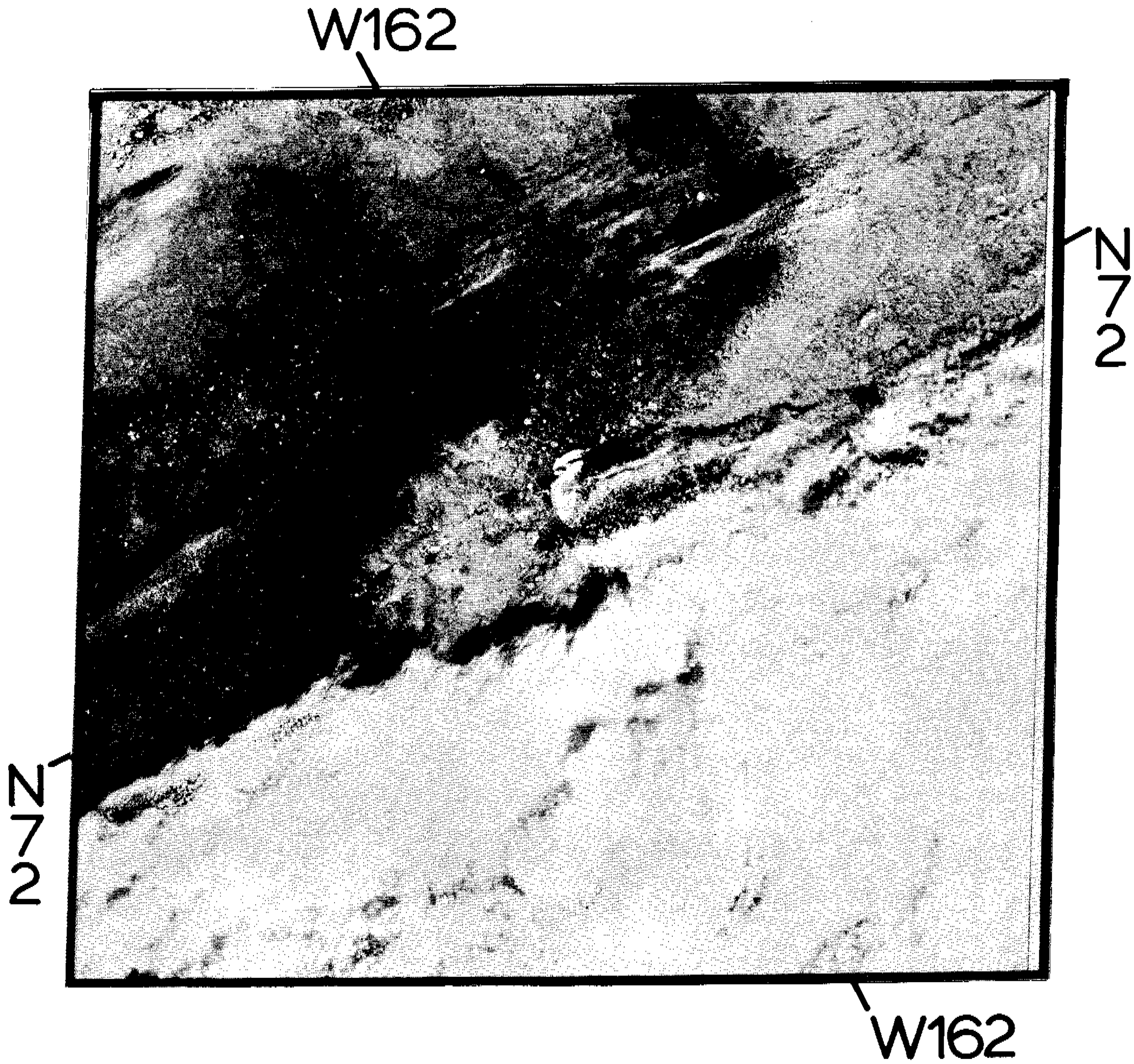

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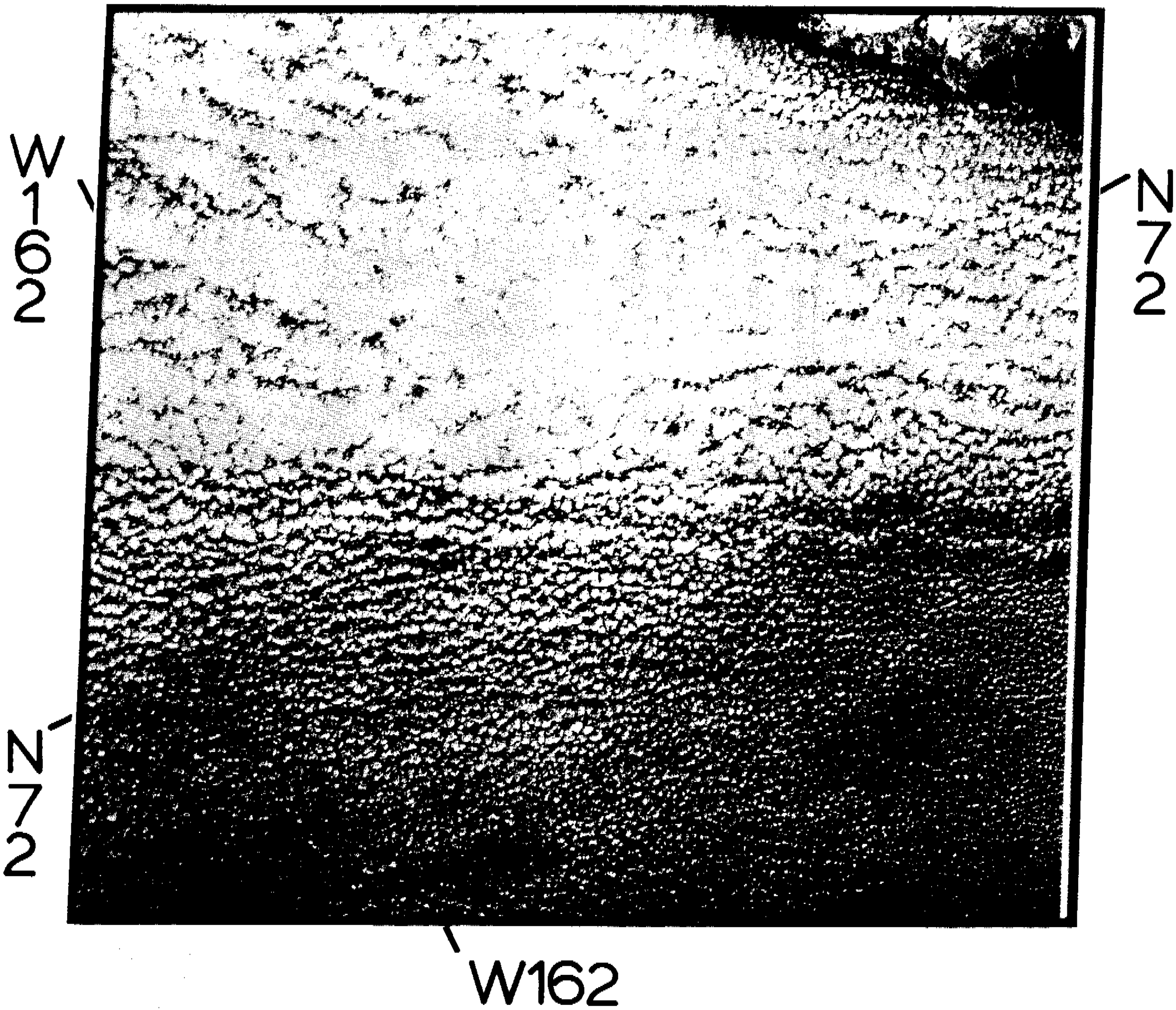

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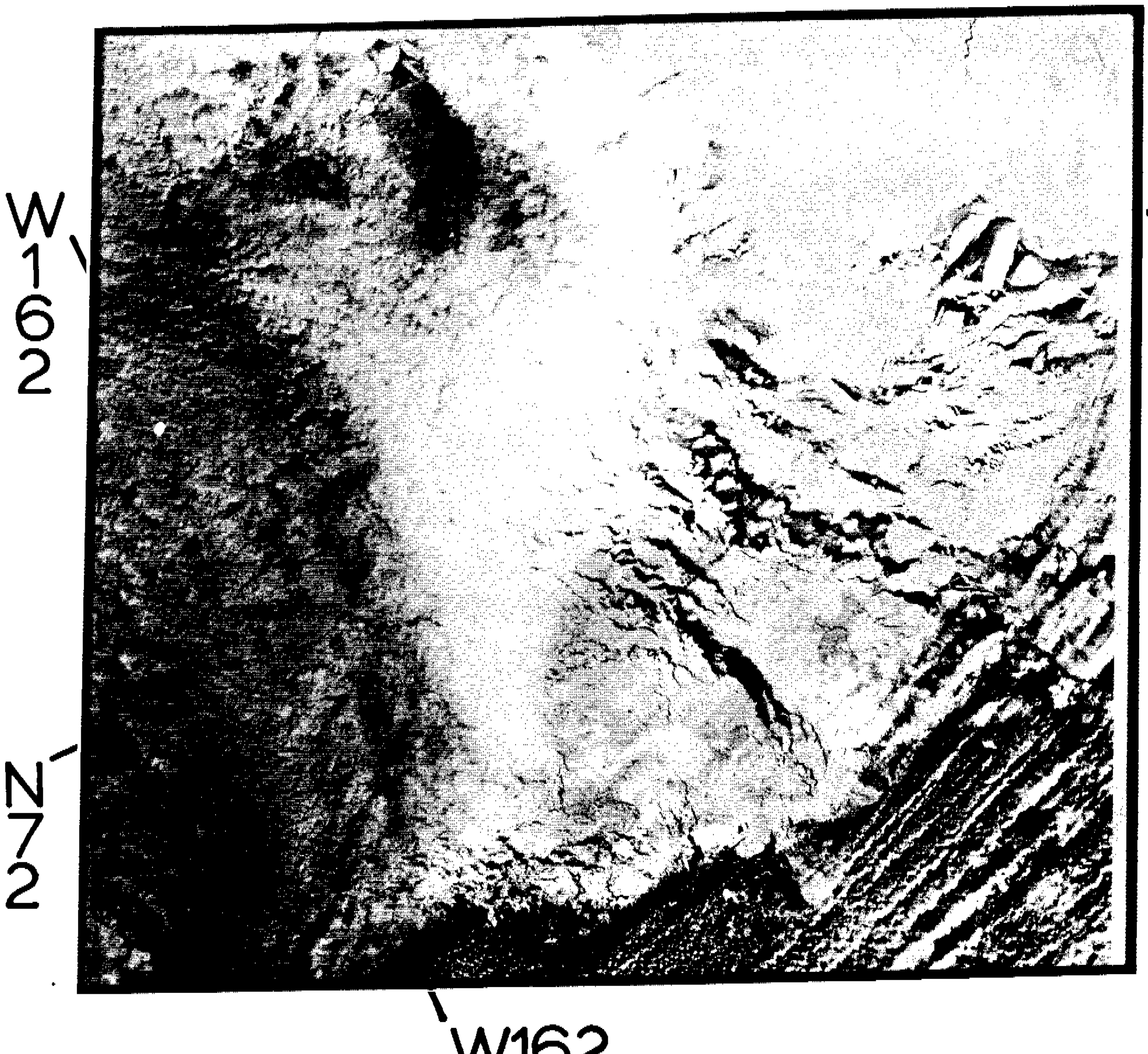
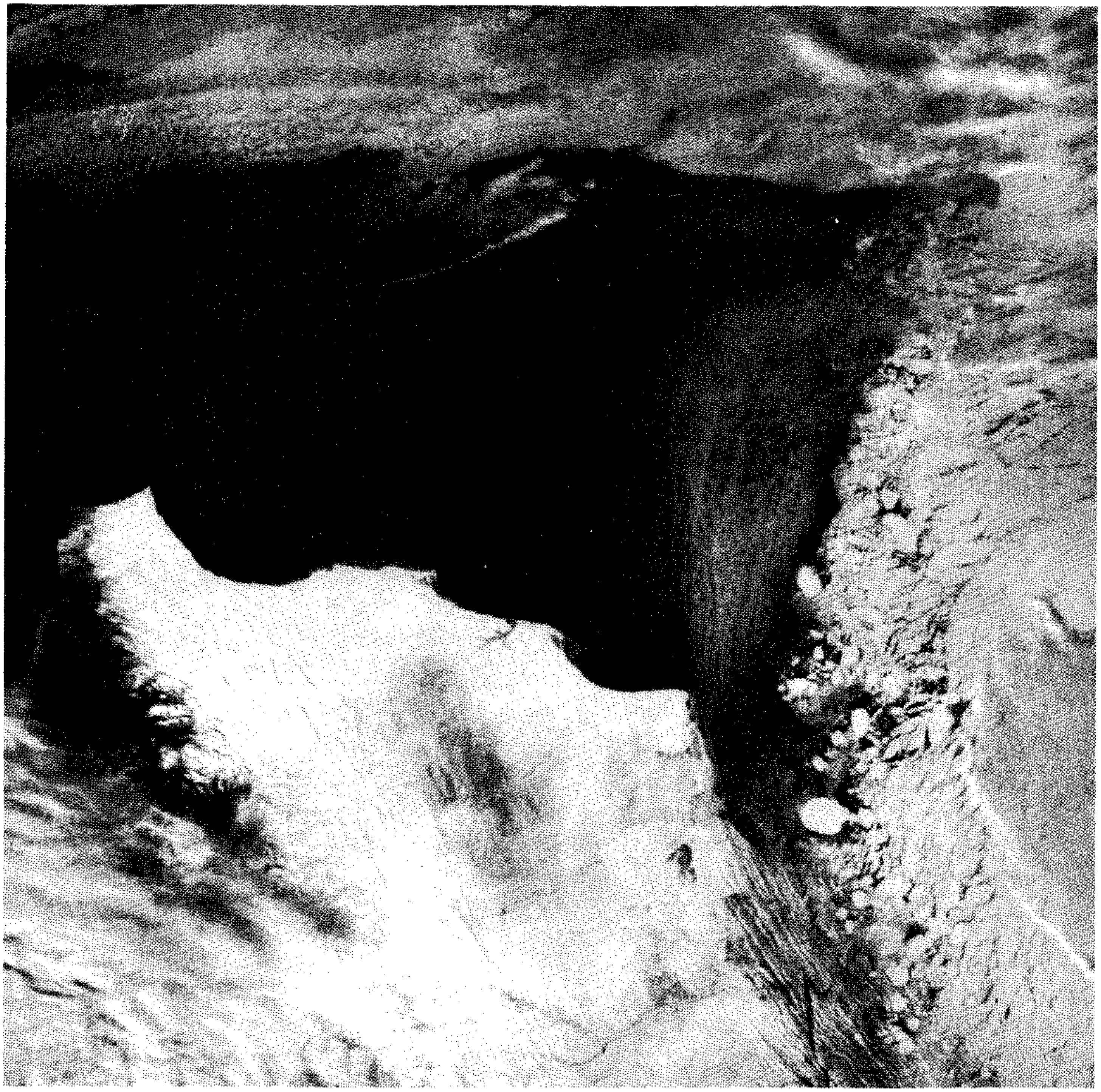


Fig. 41

Fig. 5a



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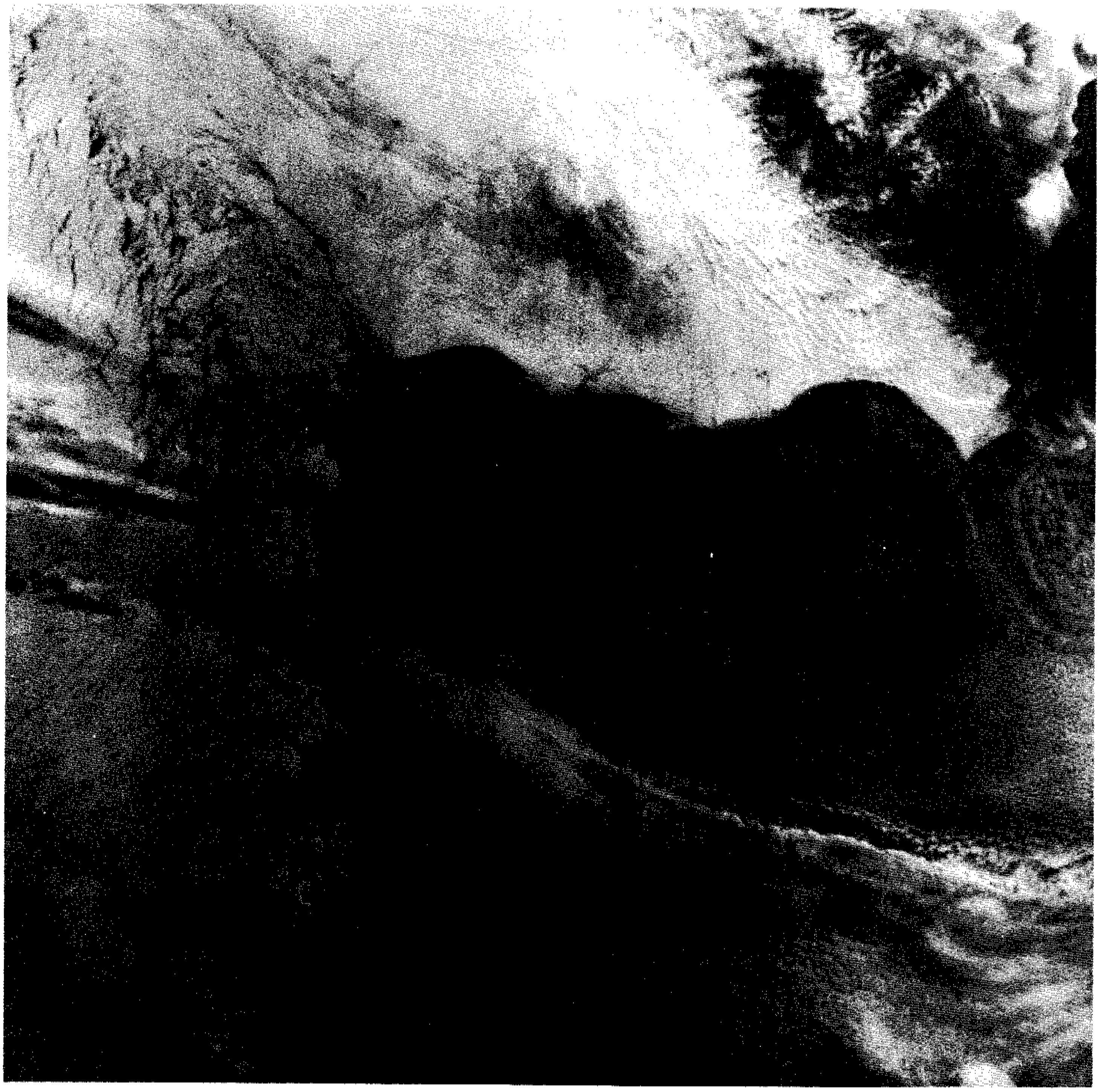


Fig. 5c

Fig. 5d

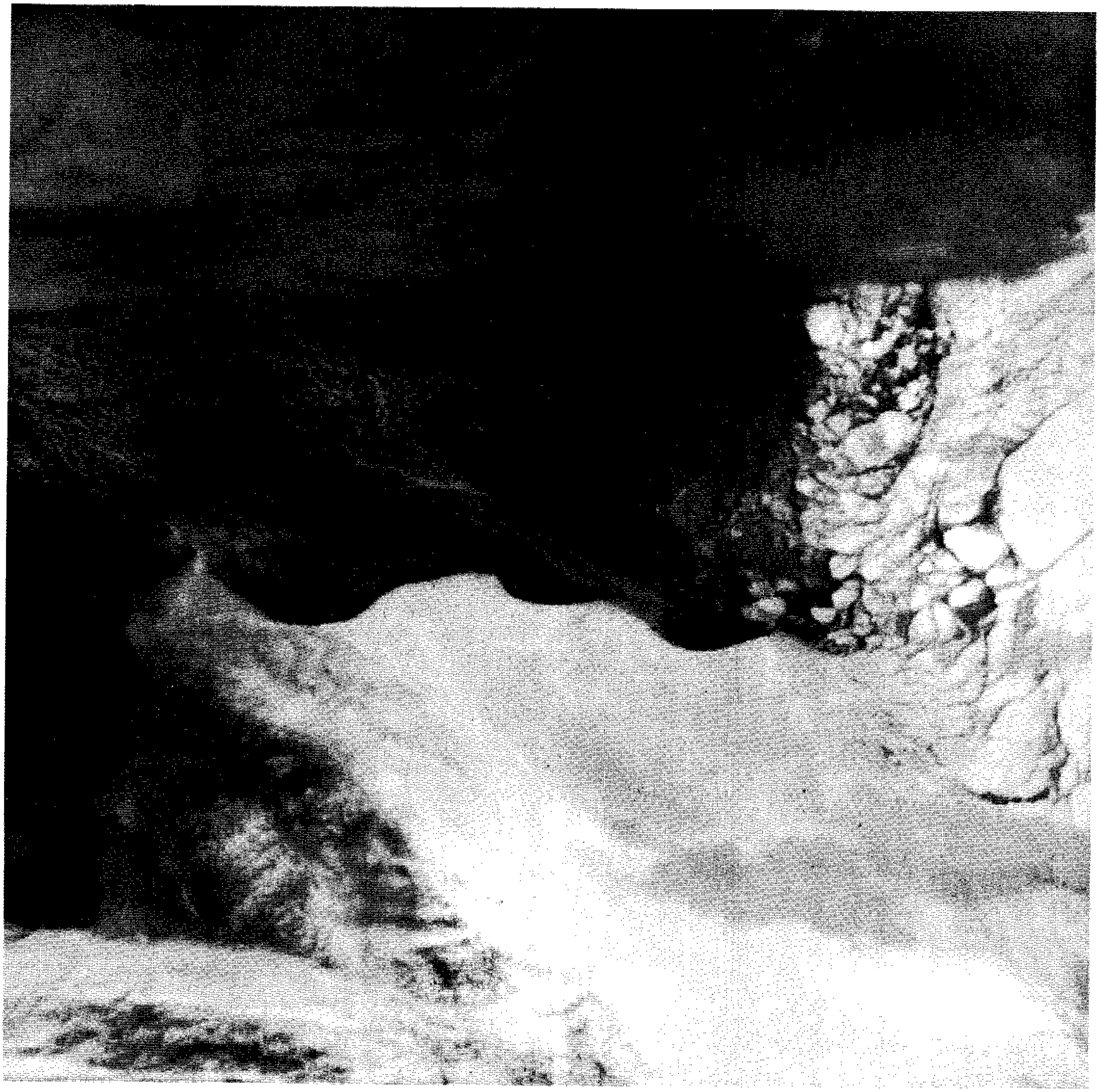
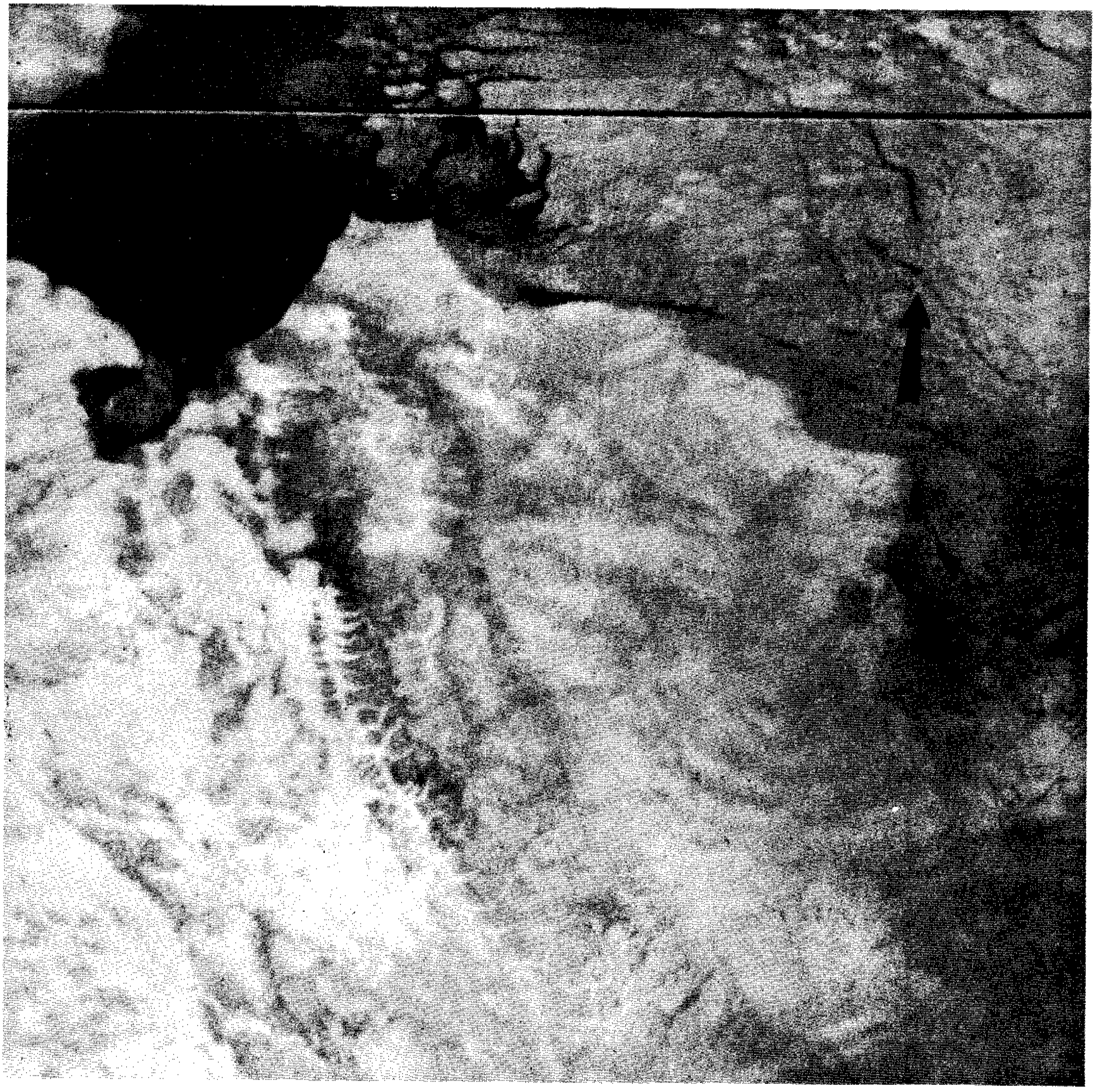


Fig. 5e

Fig. 5f

Fig. 5g



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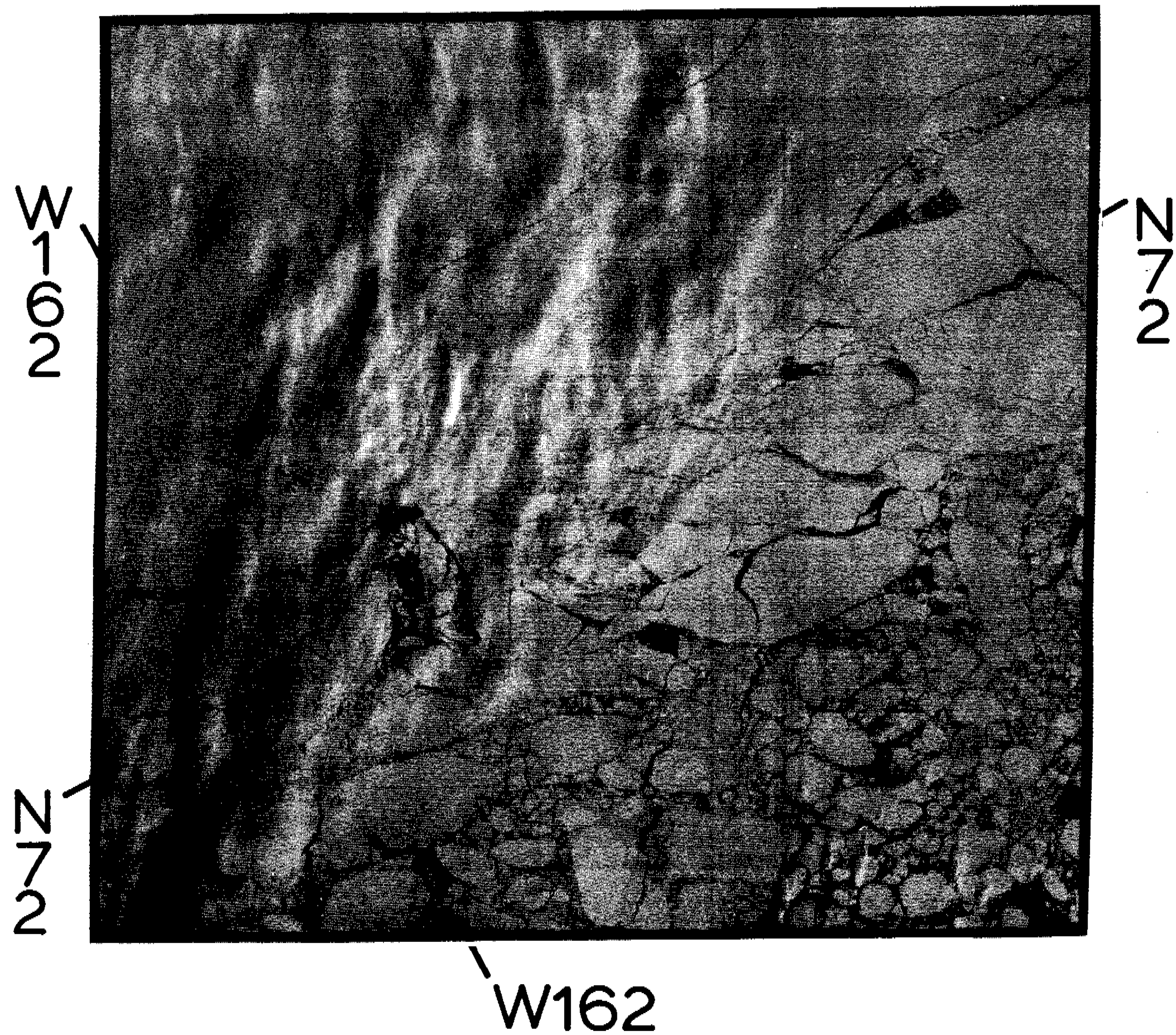
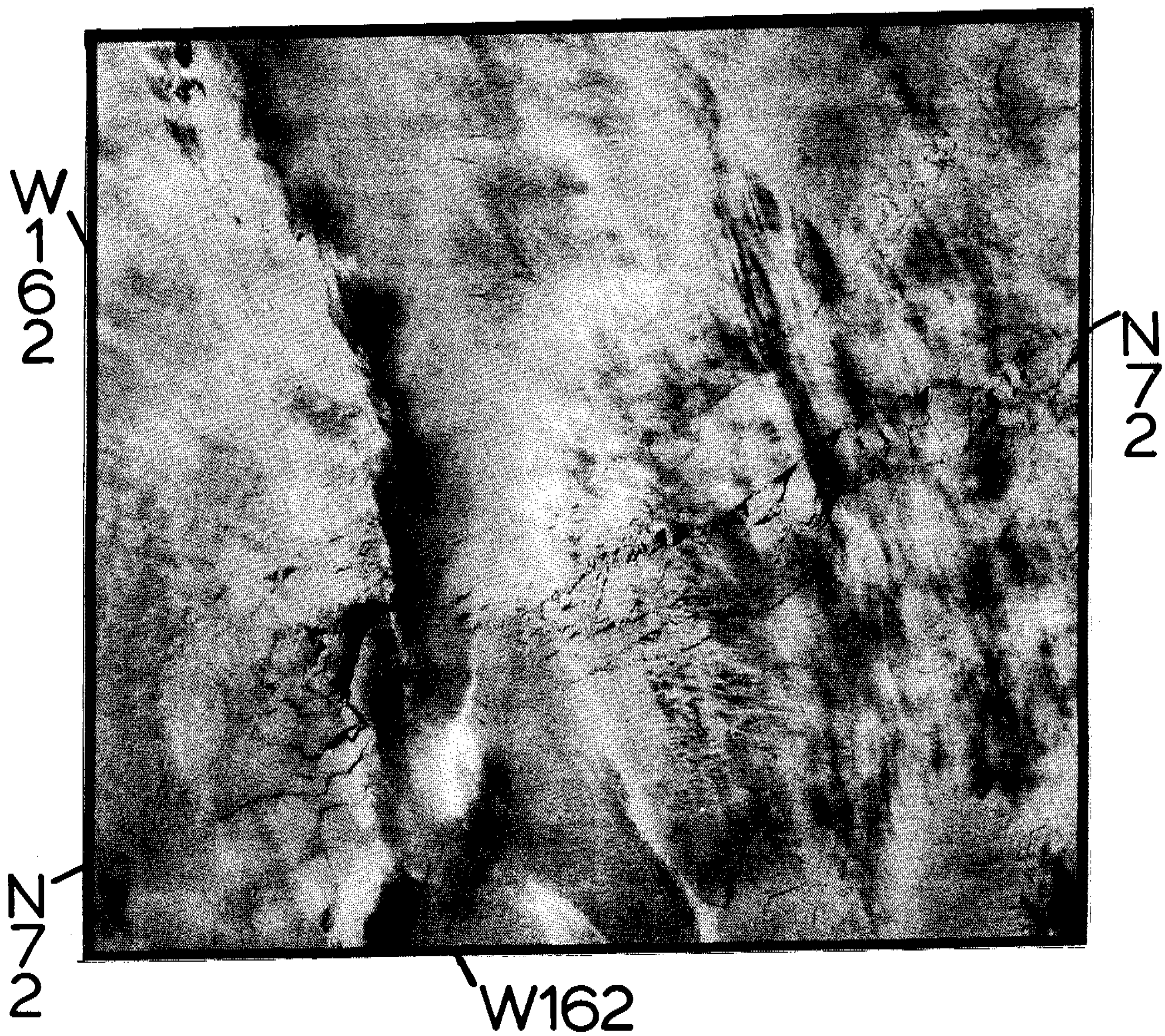


Fig. 6a



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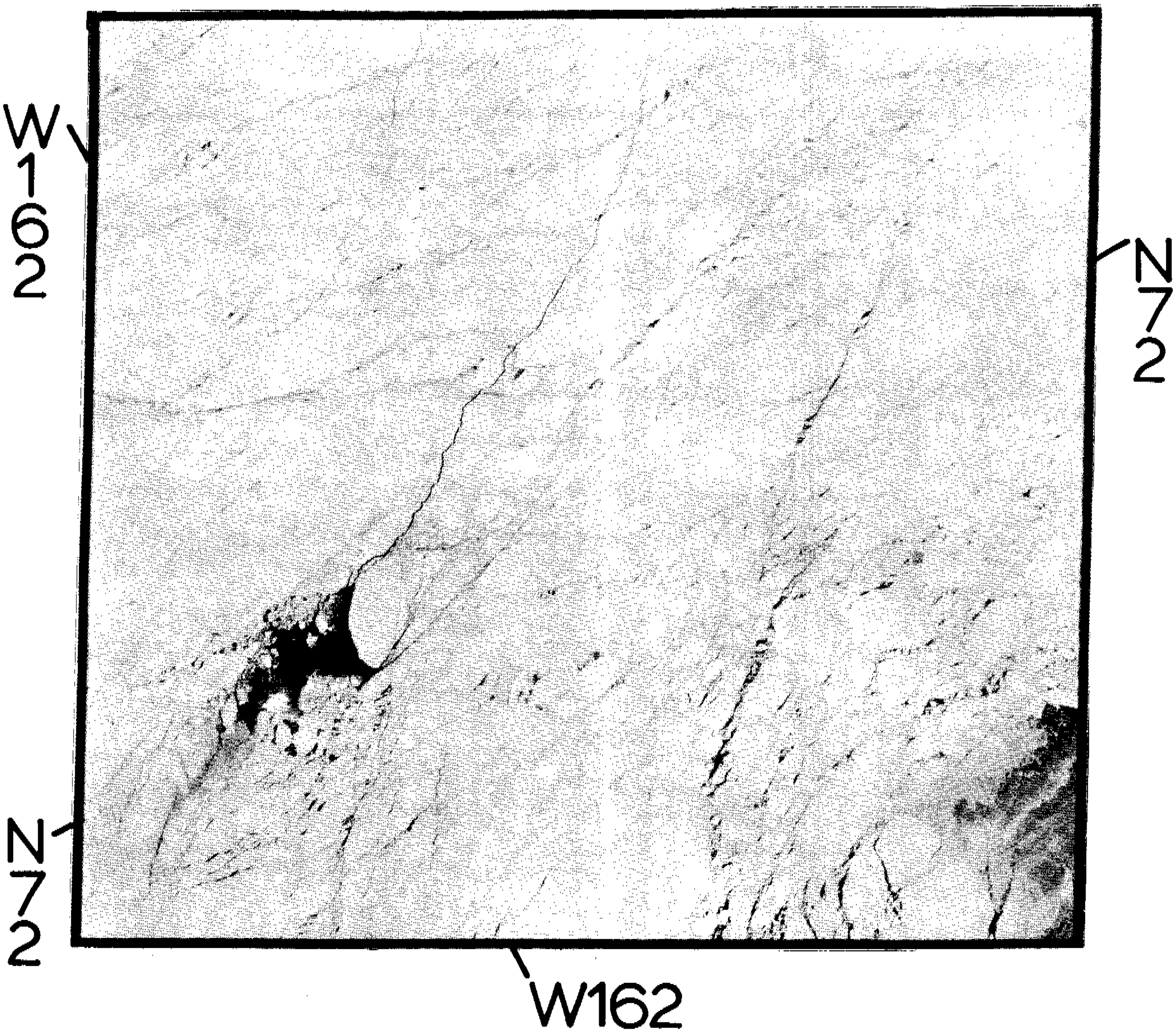

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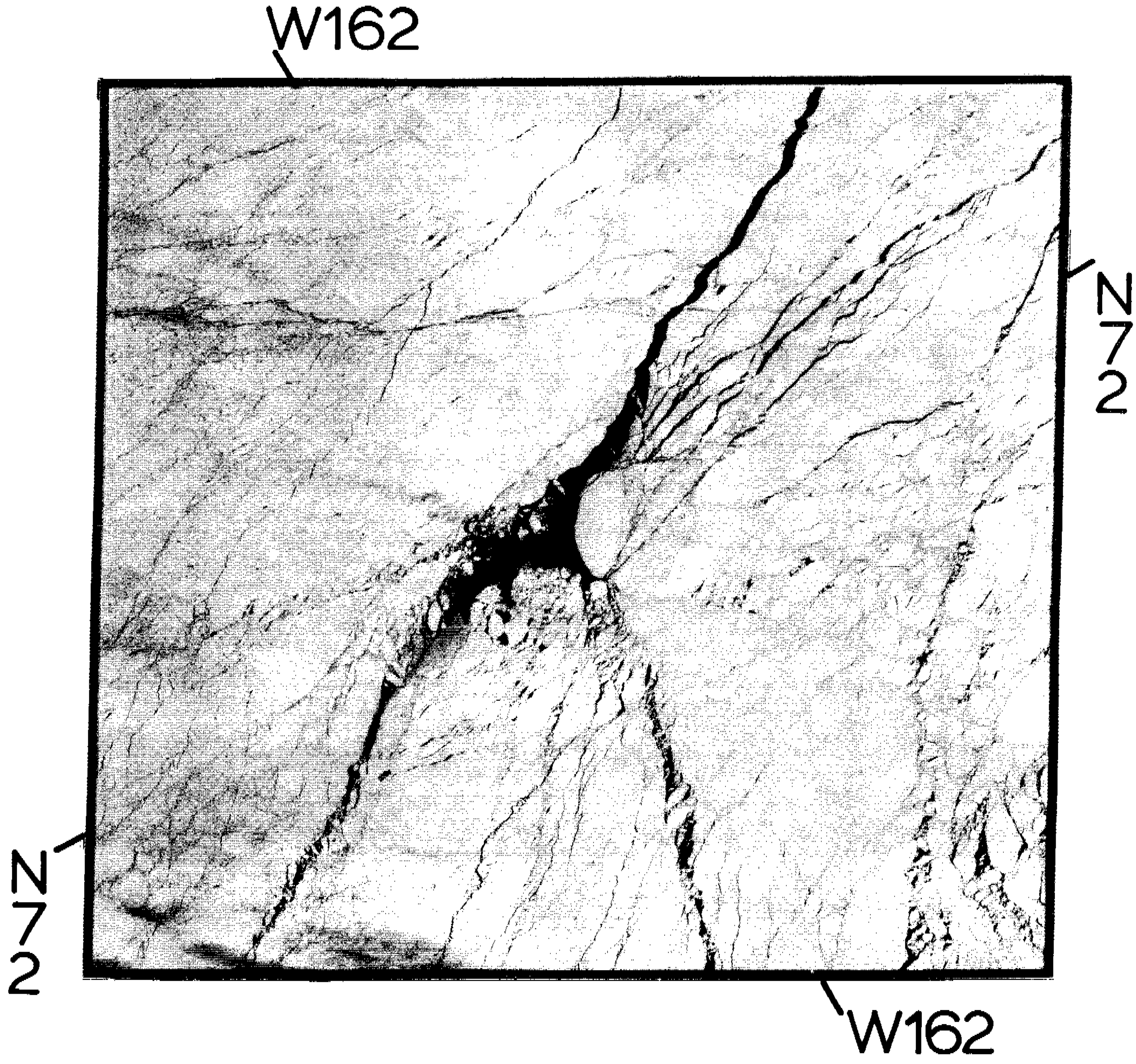

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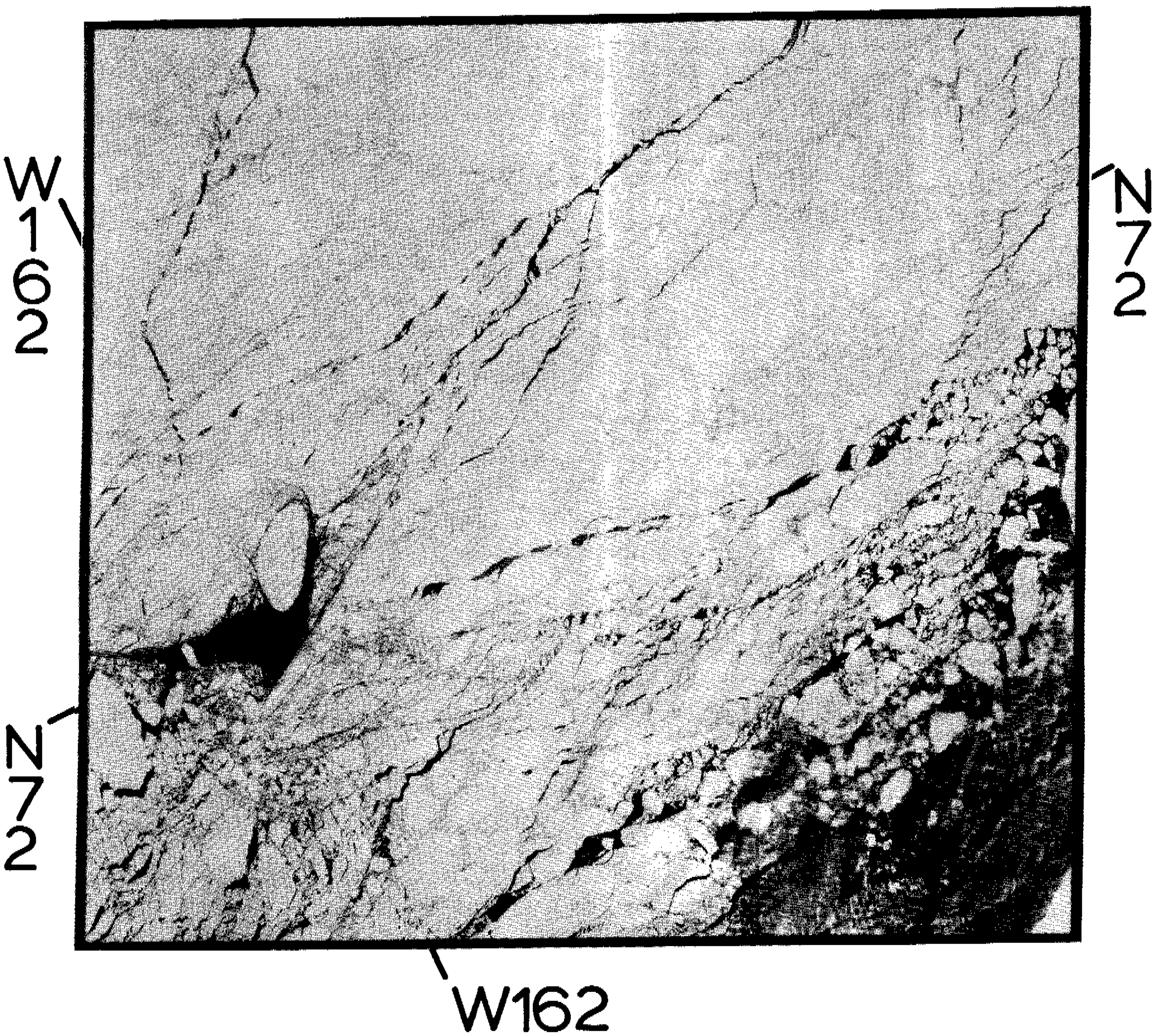

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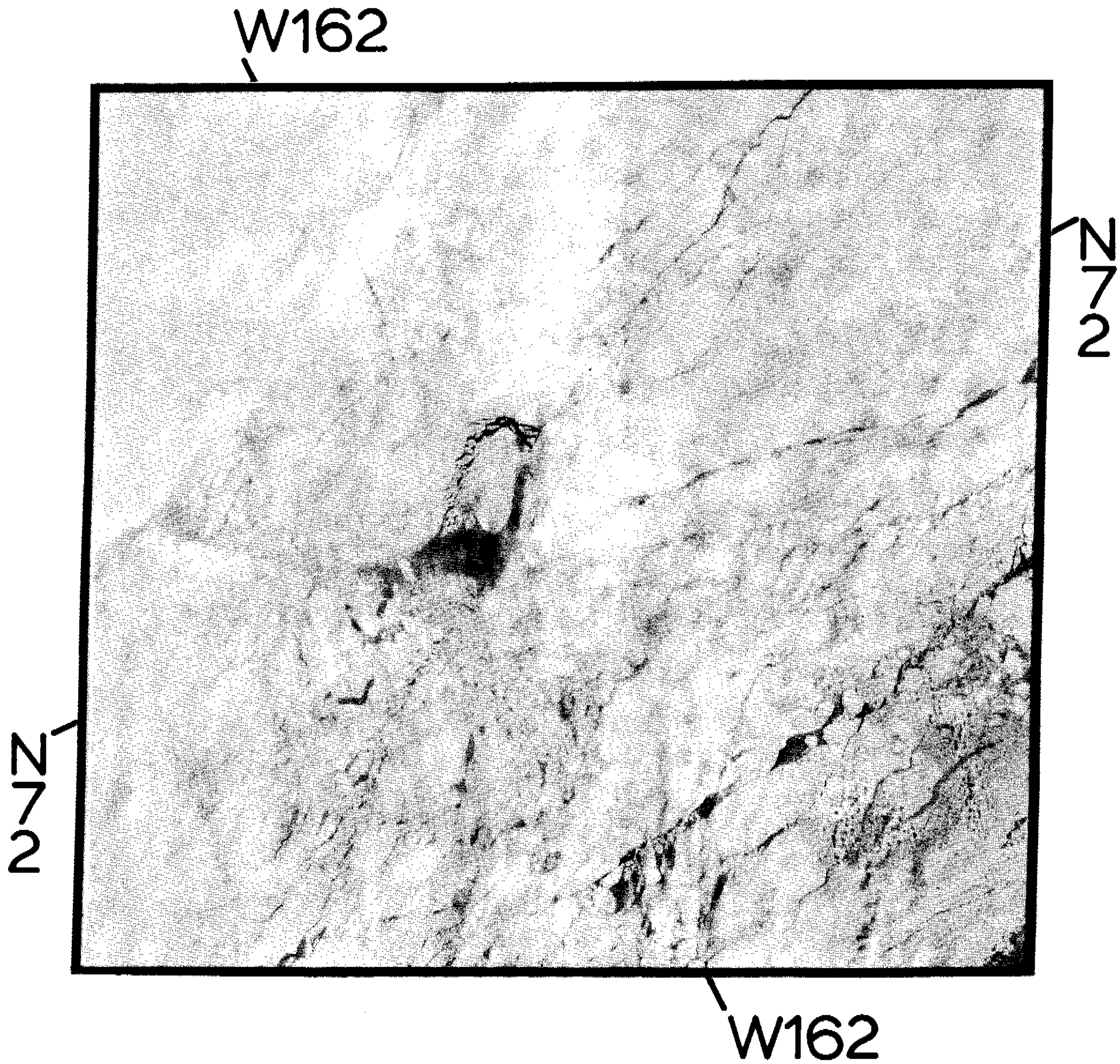

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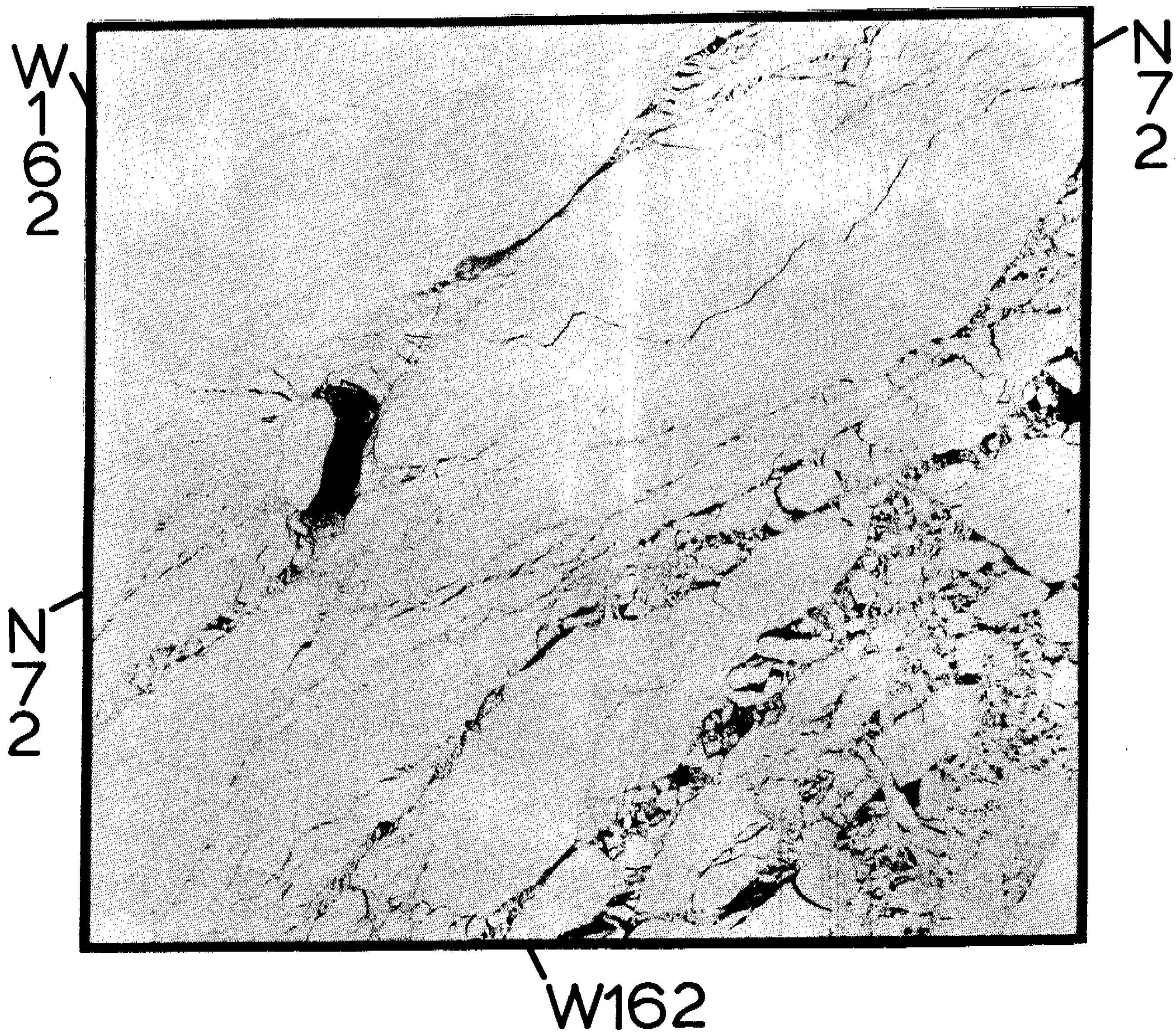

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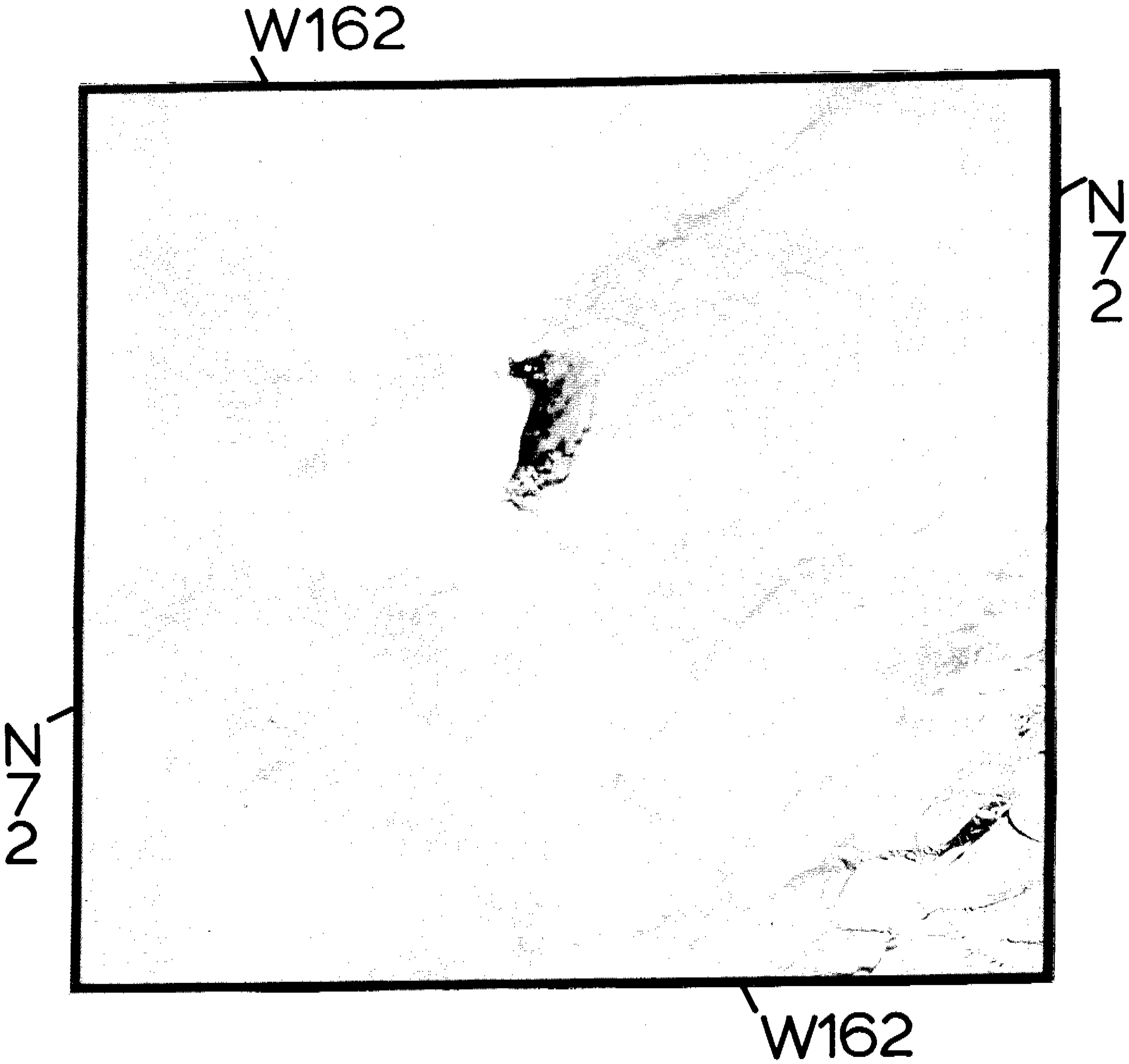

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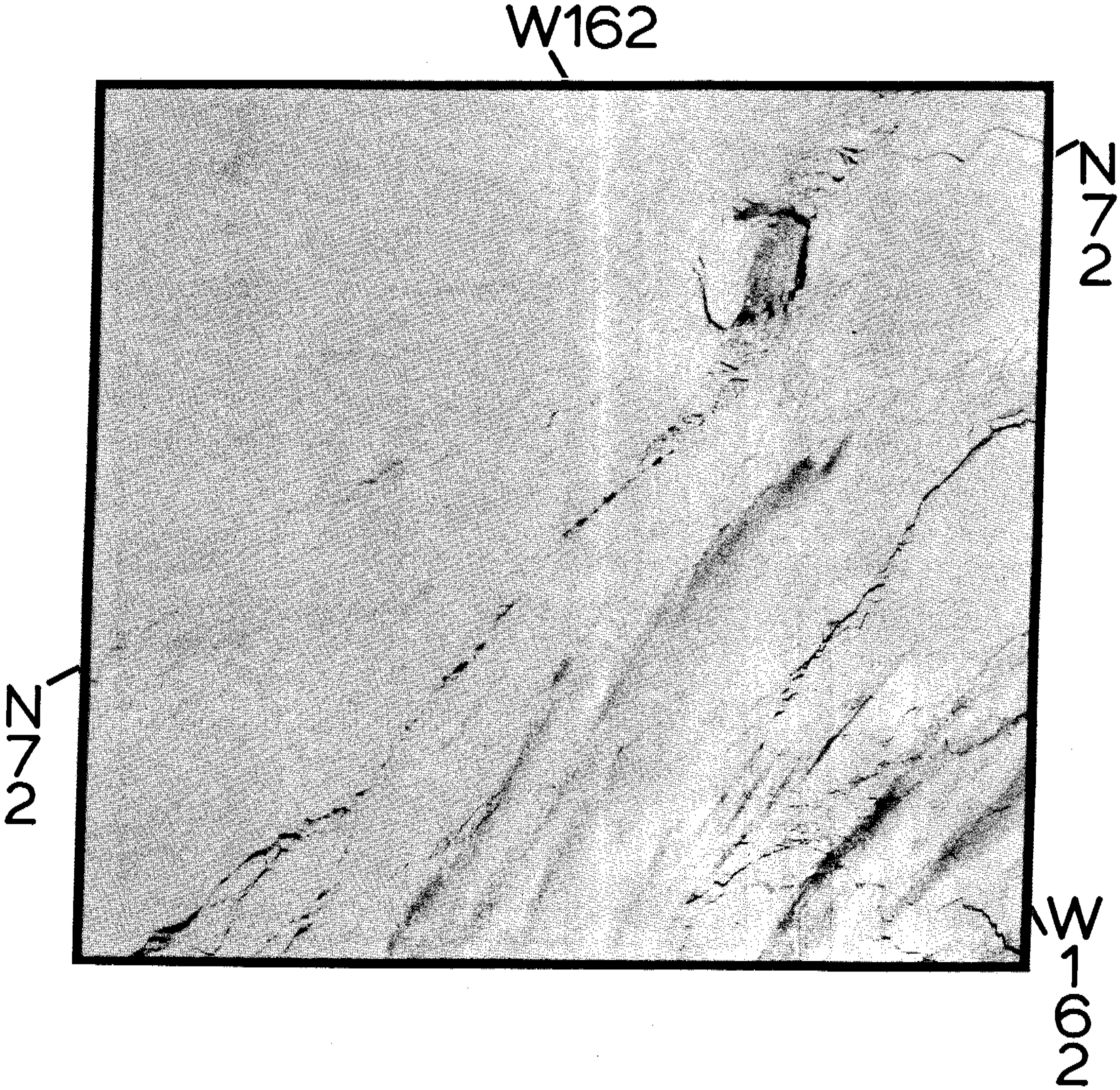


Fig. 6i

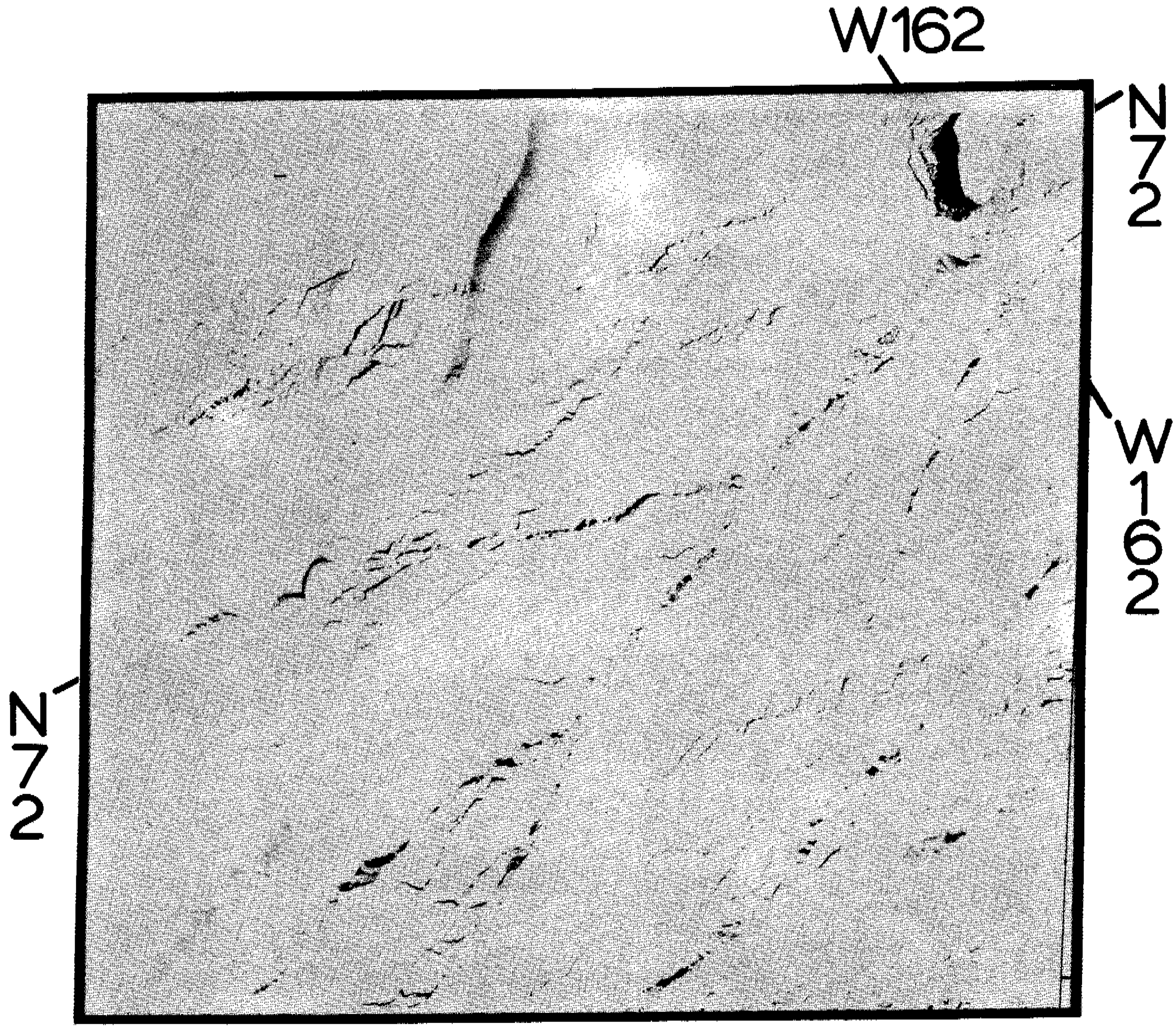
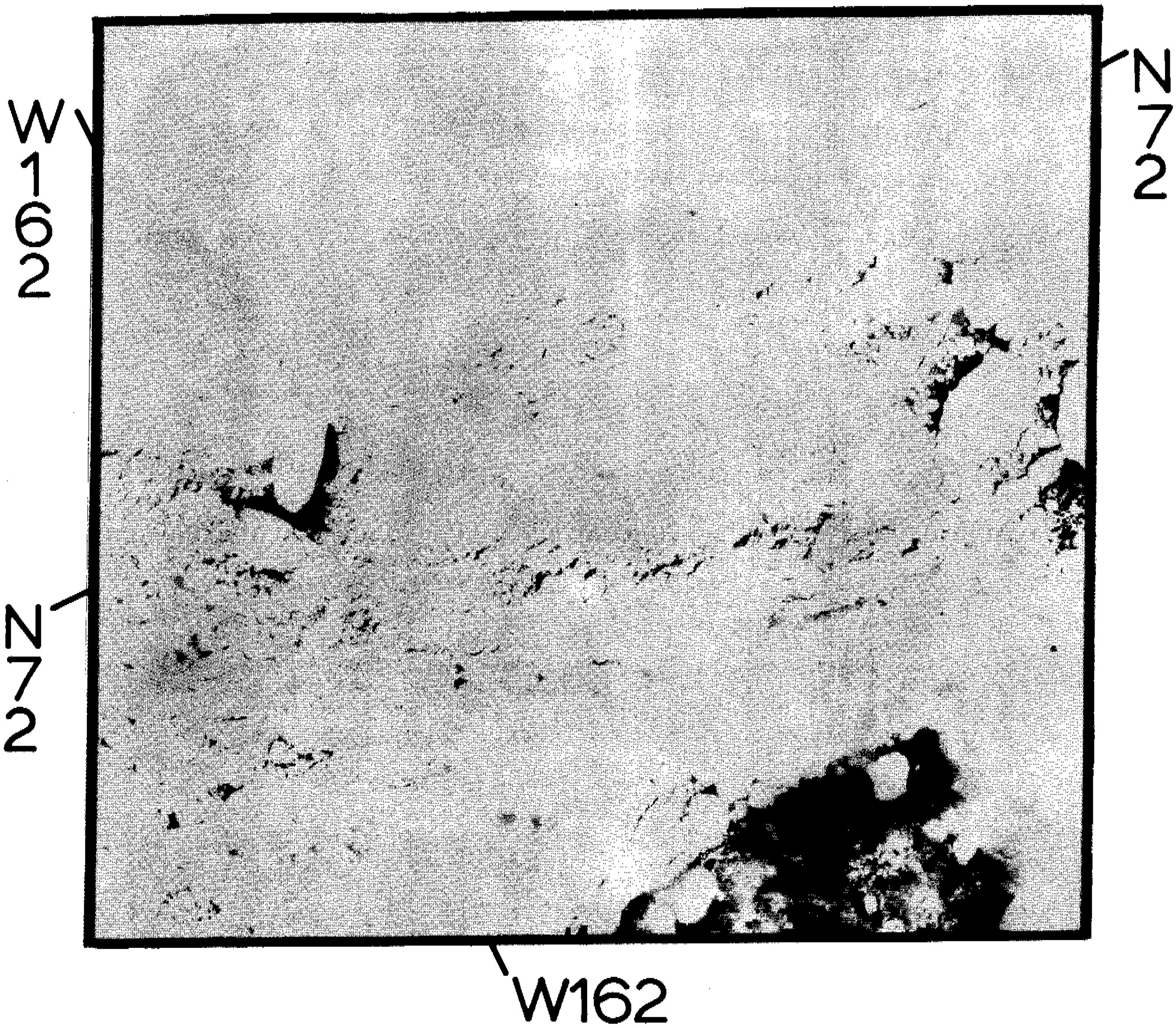


Fig. 6j



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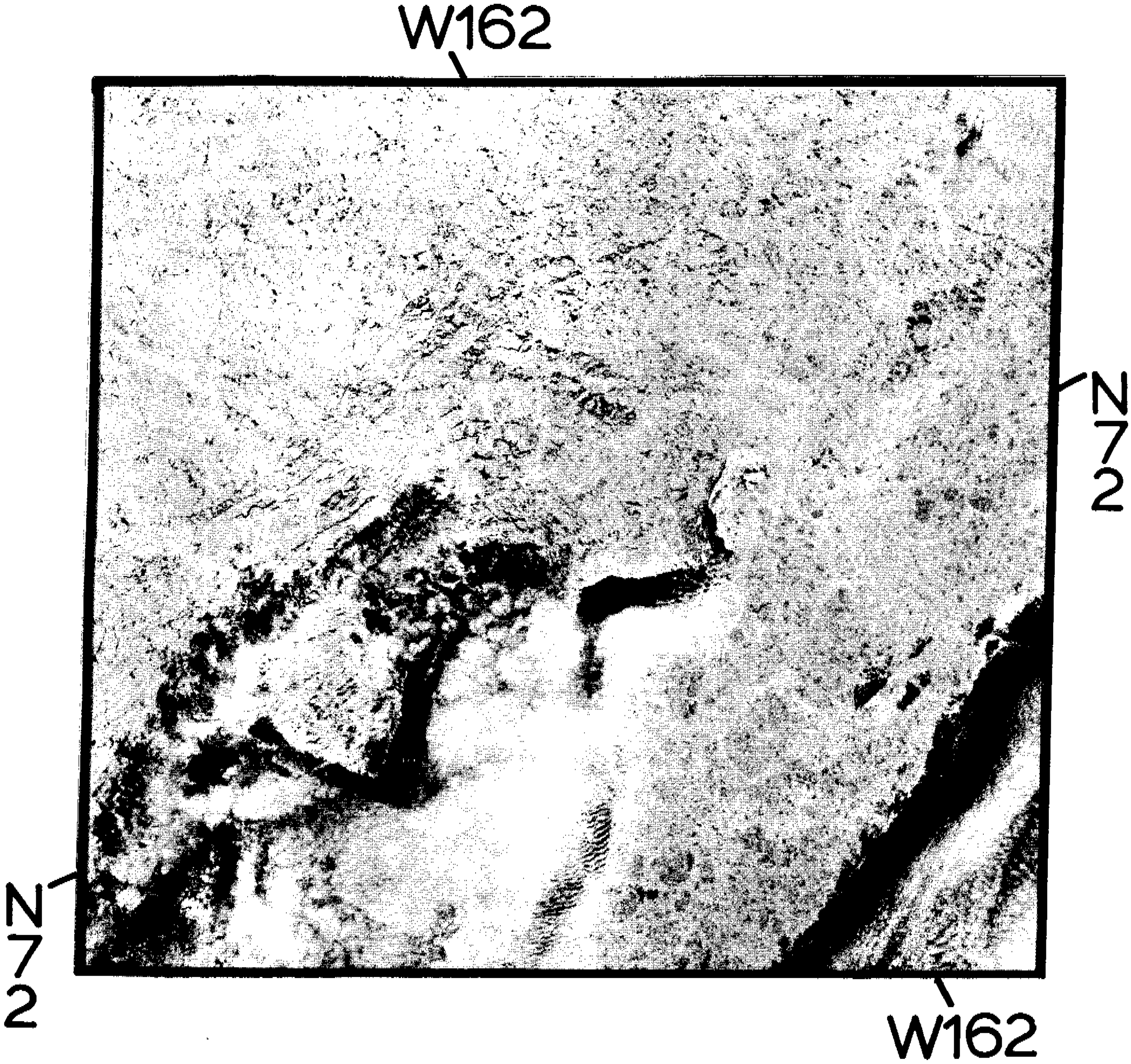
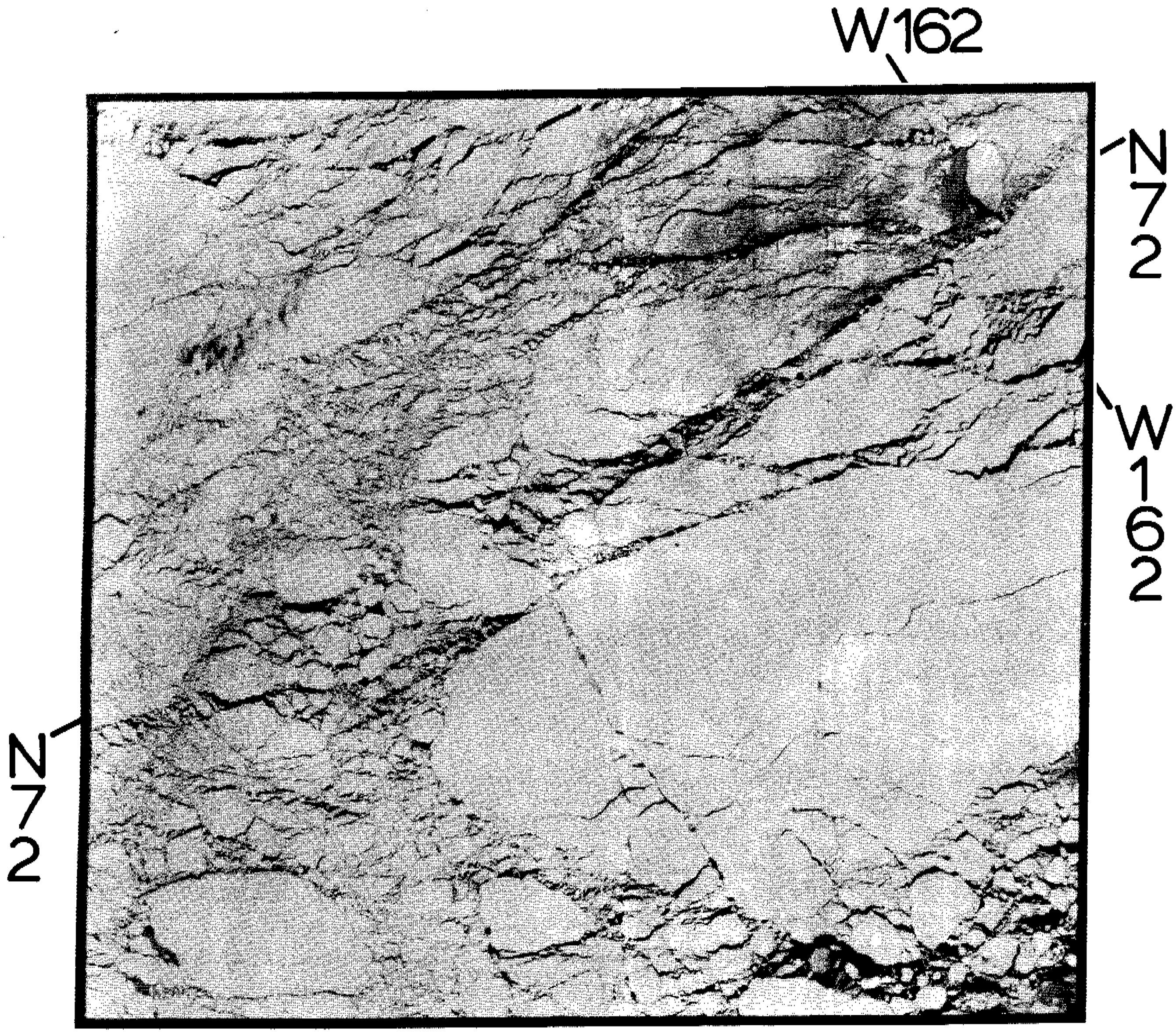


Fig. 61



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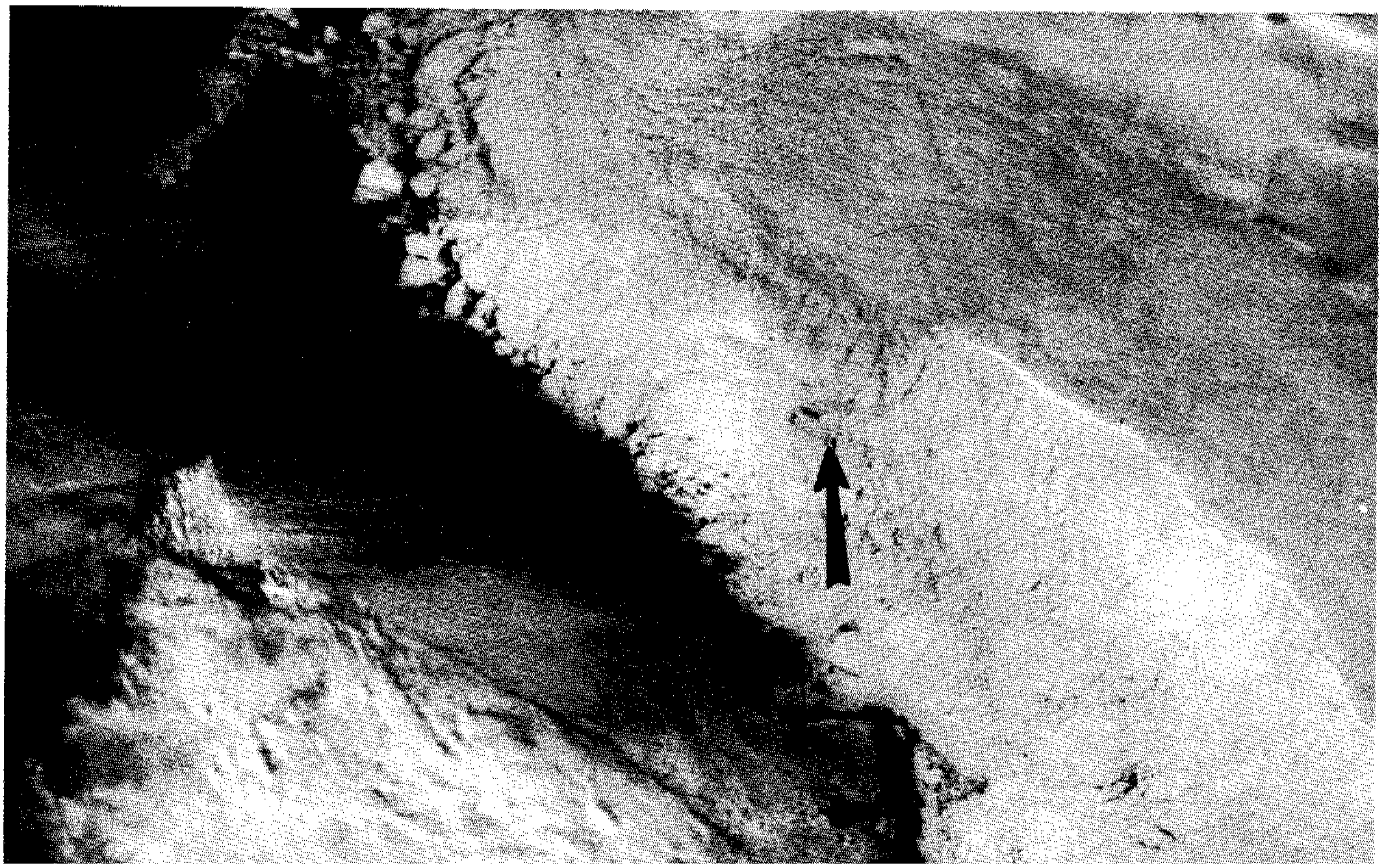


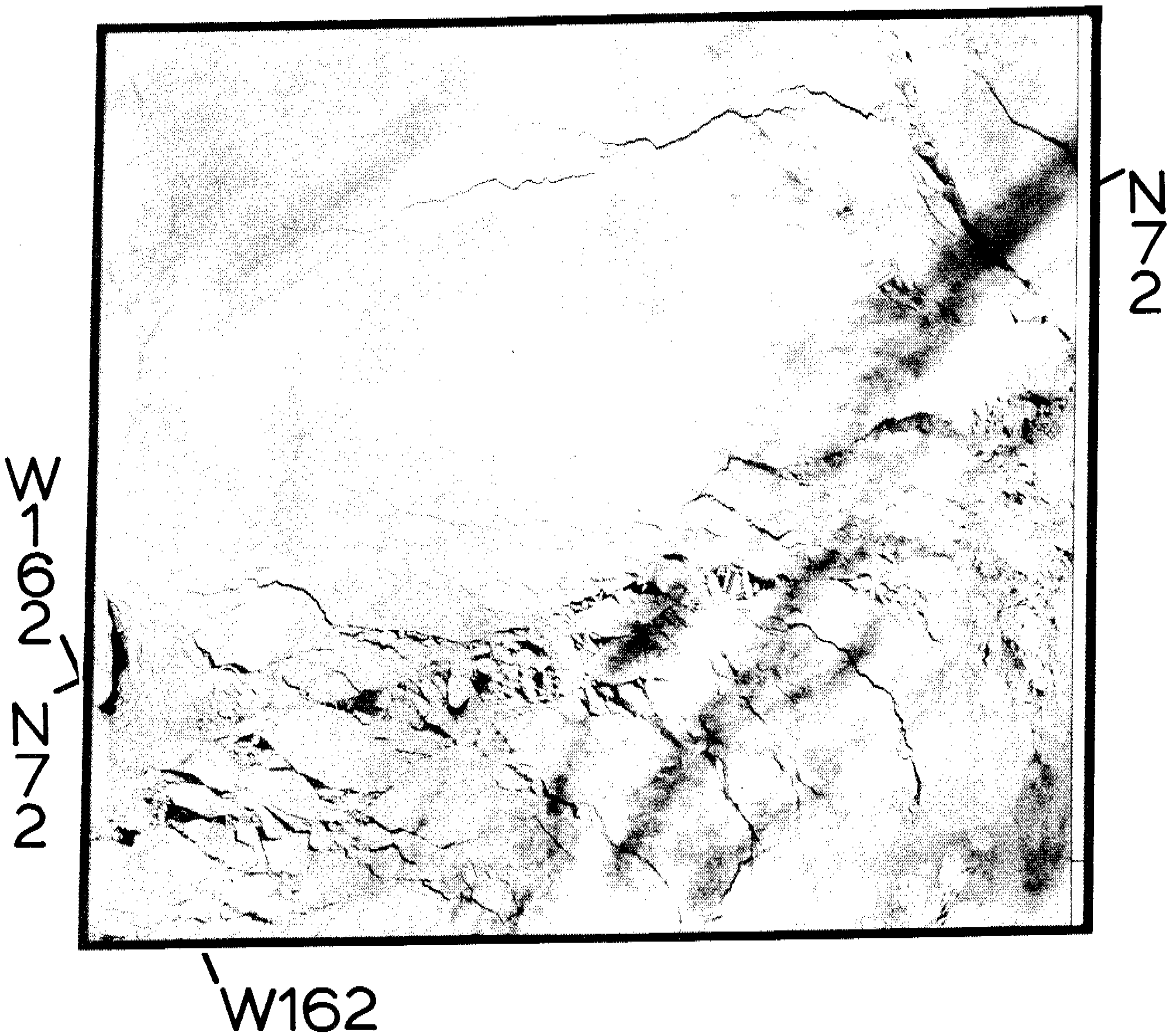


Fig. 8 a

Fig. 8b

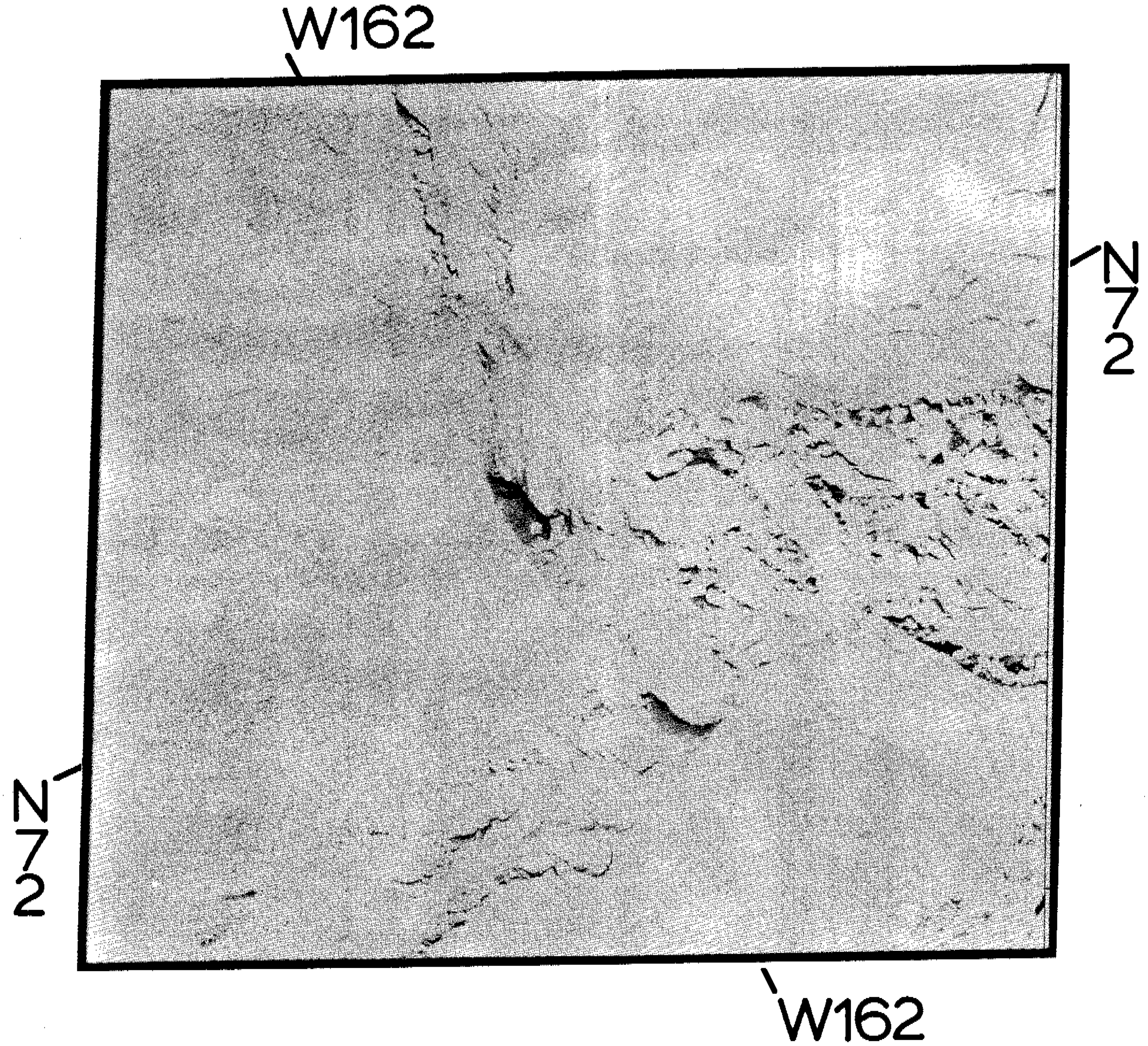


Fig. 8c

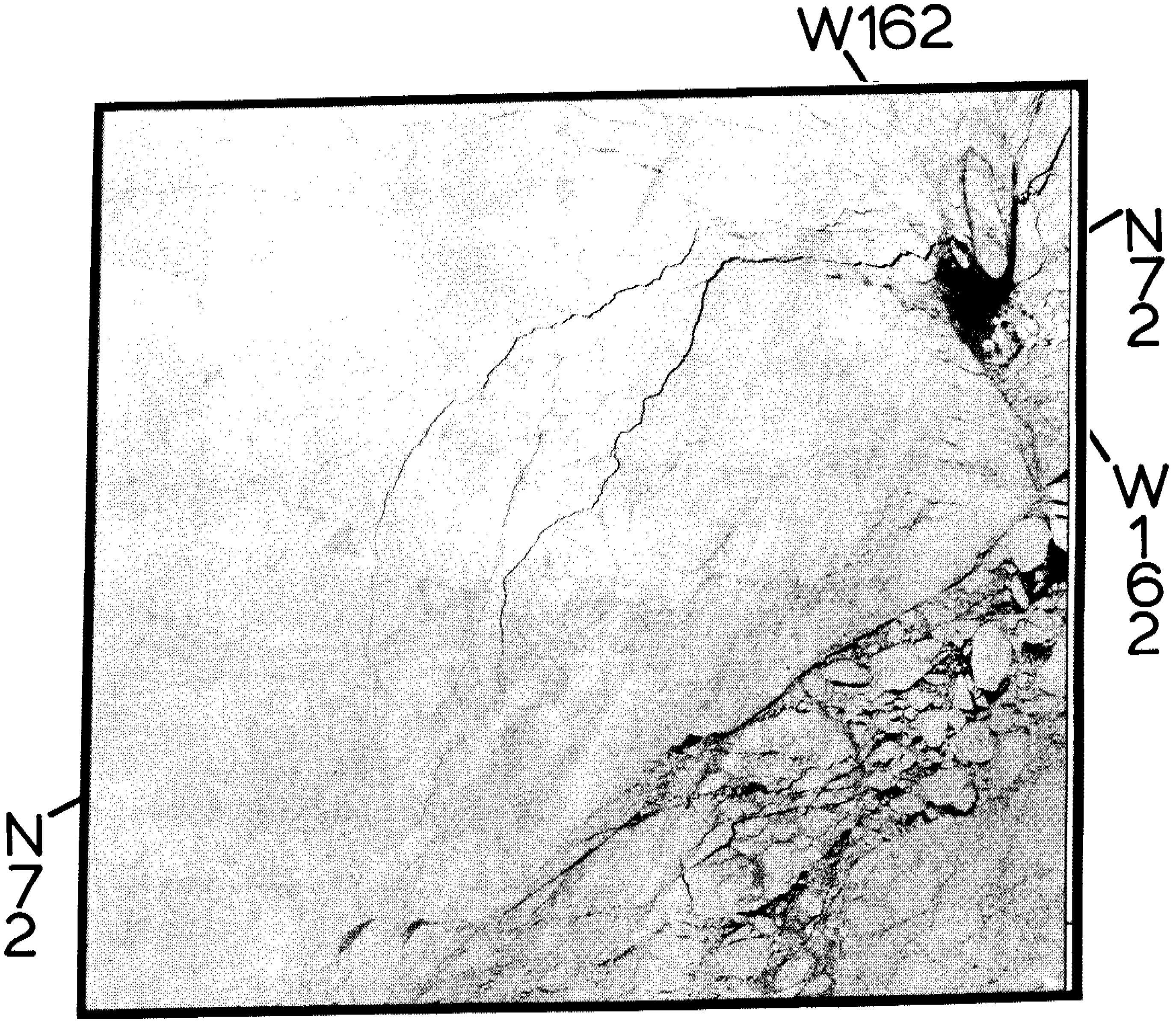


Fig. 8d

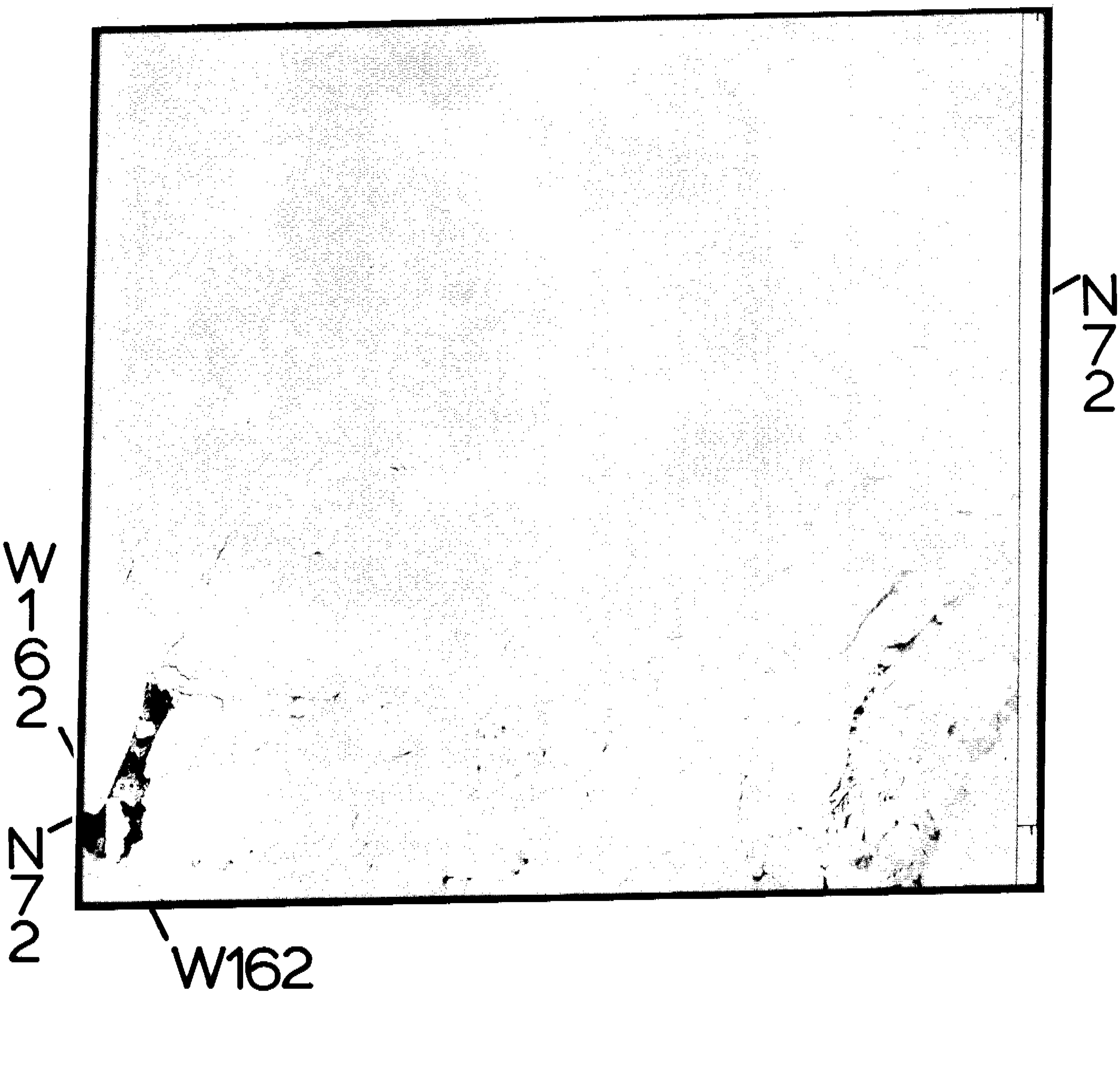


Fig. 8e

Fig. 8f

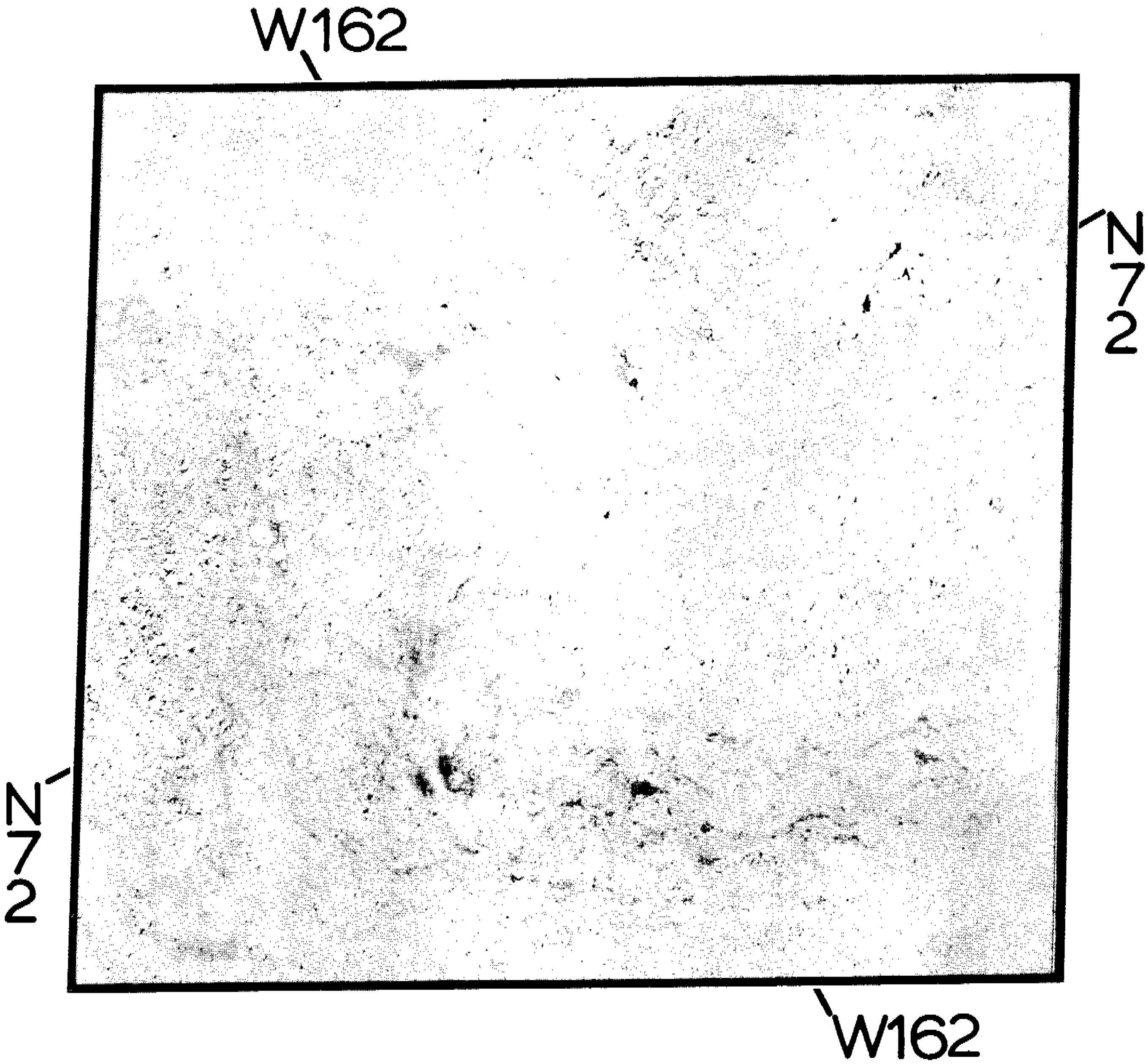


Fig. 8g

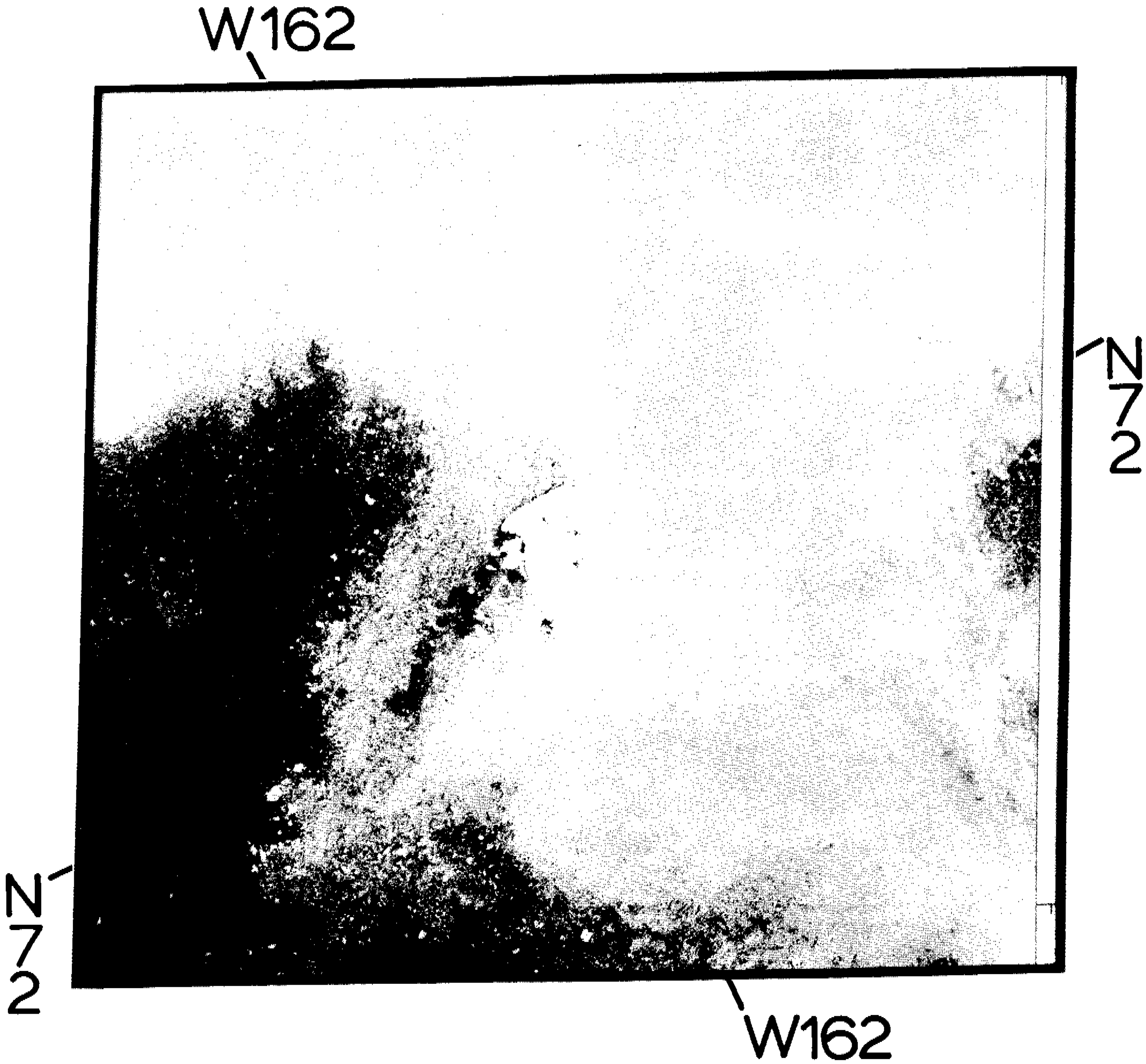


Fig. 8h

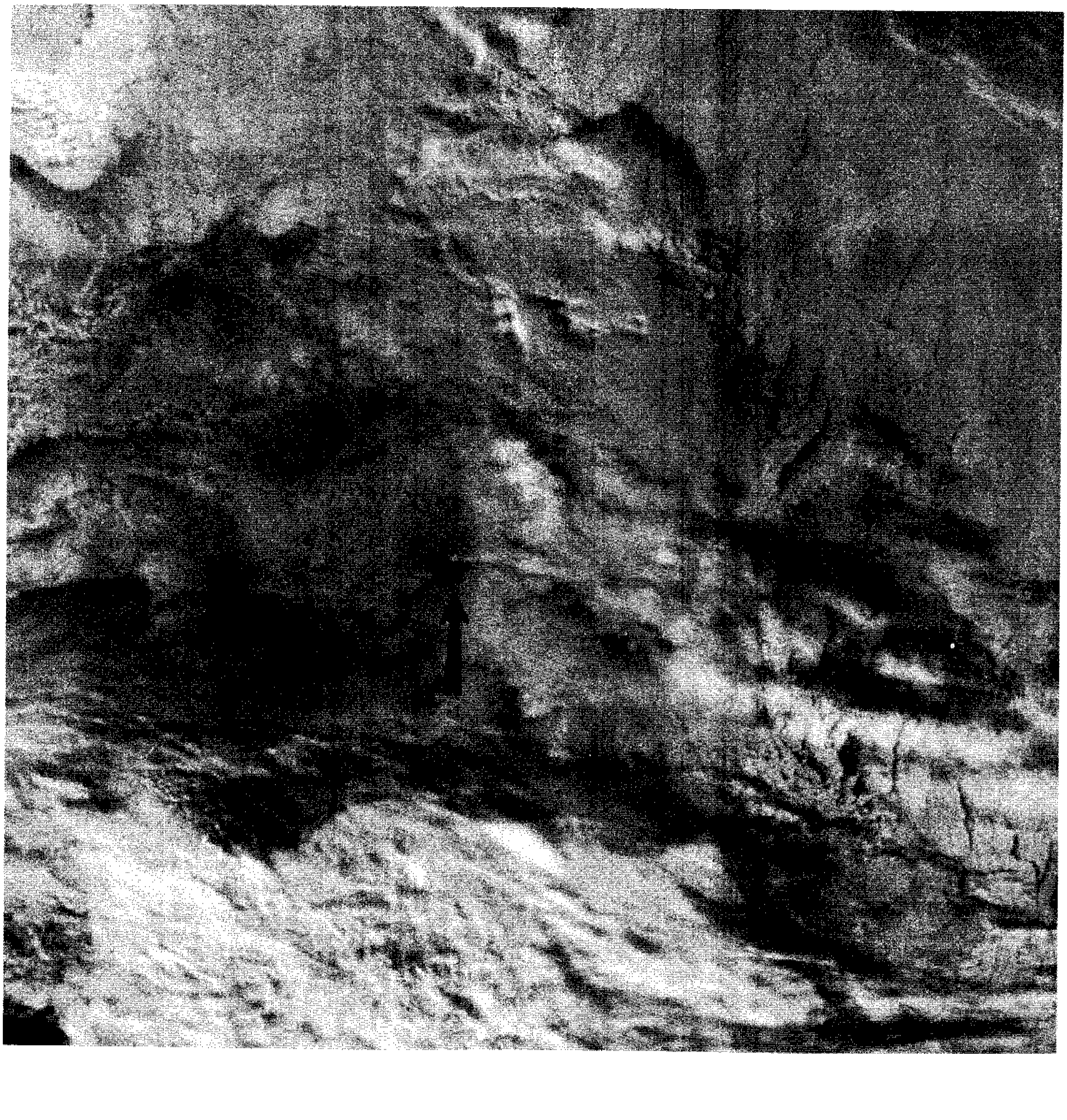
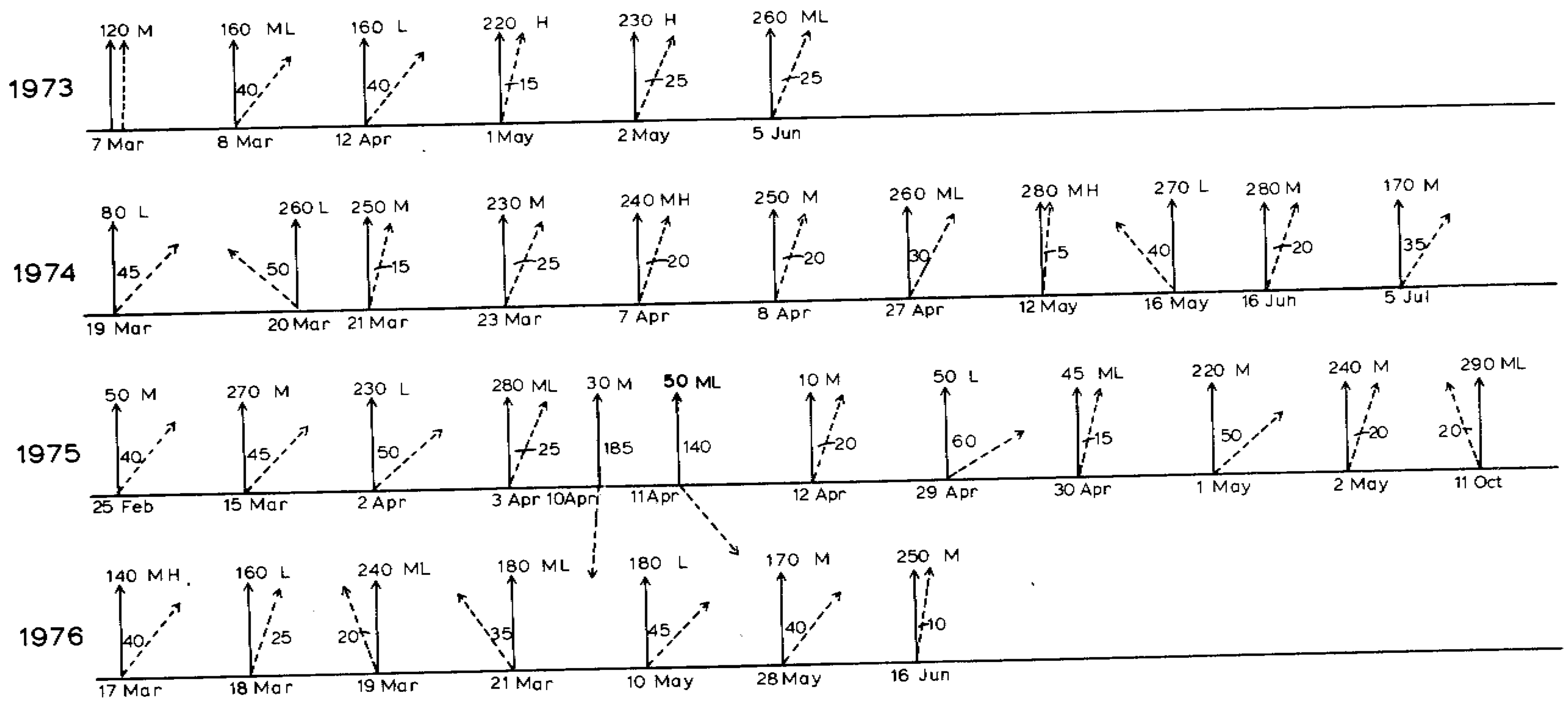


Fig. 9



1973
120 M
7 Mar
160 ML
40
8 Mar
160 L
40
12 Apr
220 H
15
1 May
230 H
25
2 May
260 ML
25
5 Jun
1974
80 L
45
19 Mar
260 L
50
20 Mar
250 M
15
21 Mar
230 M
25
23 Mar
240 MH
20
7 Apr
250 M
20
8 Apr
260 ML
30
27 Apr
280 MH
5
12 May
270 L
40
16 May
280 M
20
16 Jun
170 M
35
5 Jul
1975
50 M
40
25 Feb
270 M
45
15 Mar
230 L
50
2 Apr
280 ML
25
3 Apr
30 M
185
10Apr
50 ML
140
11Apr
10 M
20
12 Apr
50 L
60
29 Apr
45 ML
15
30 Apr
220 M
50
1 May
240 M
20
2 May
290 ML
20
11 Oct
1976
140 MH
40
17 Mar
160 L
25
18 Mar
240 ML
20
19 Mar
180 ML
35
21 Mar
180 L
45
10 May
170 M
40
28May
250 M
10
16 Jun

Fig. 10

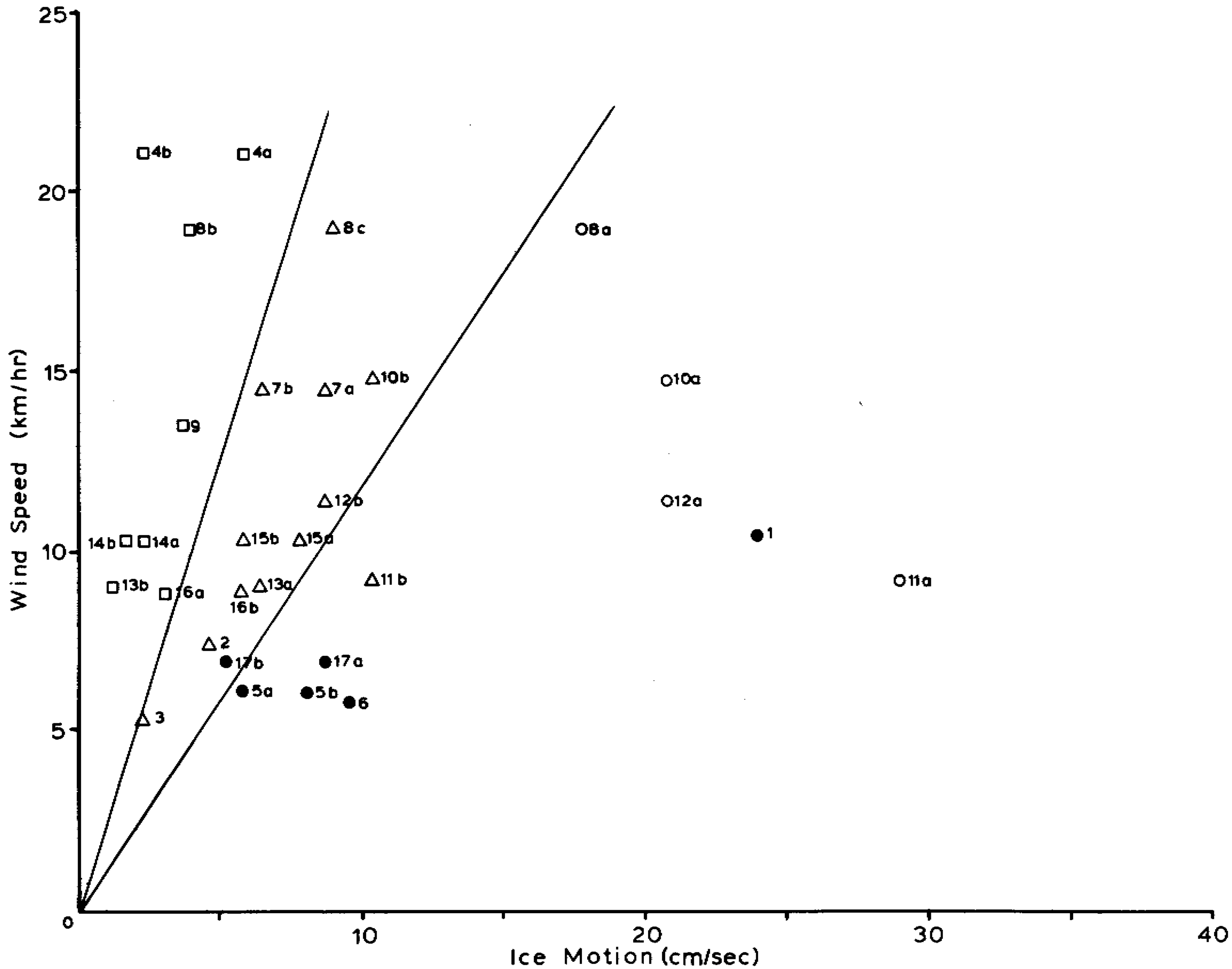

Wind Speed (km/hr)
Ice Motion (cm/sec)
0
5
10
15
20
25
10
20
30
40
4b
4a
8b
8c
8a
7b
7a
10b
10a
9
12b
12a
1
14b
14a
15b
15a
13b
16a
13a
16b
11 b
11a
2
17b
17a
5a
5b
6
3

Fig. 11

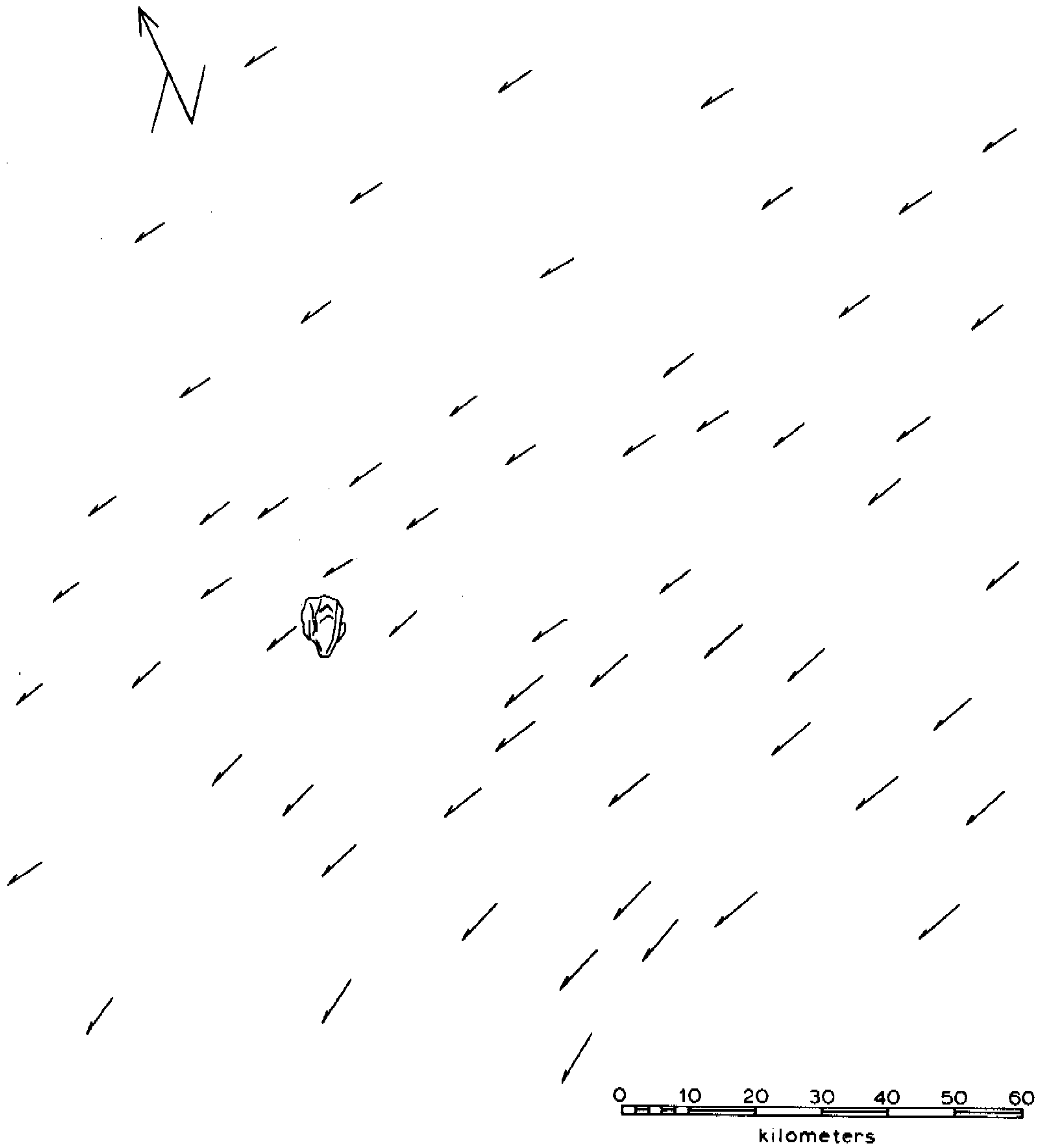


Fig. 12

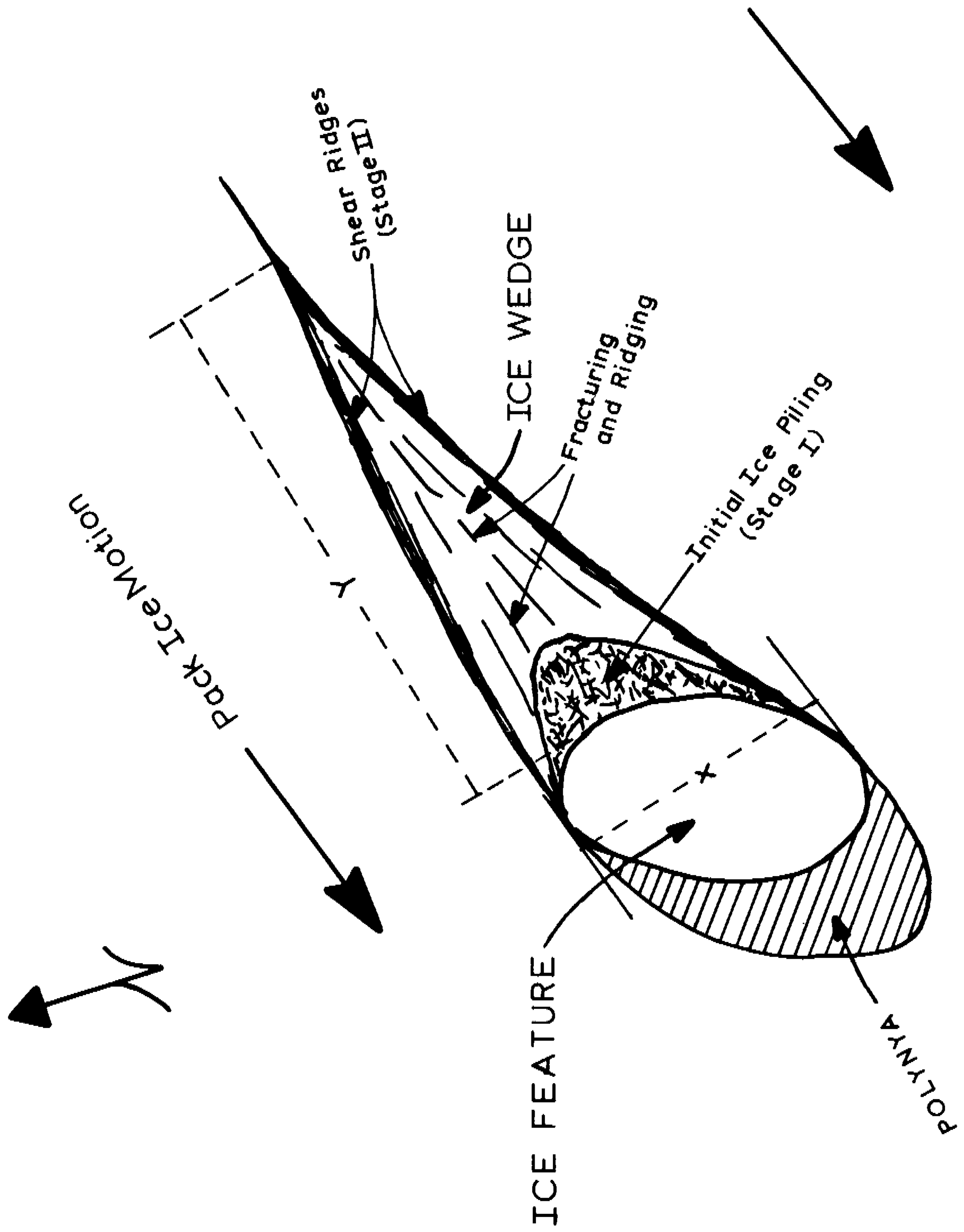

Shear Ridges (Stage II)
ICE WEDGE
Fracturing and Ridging
Initial Ice Piling (Stage I)
Pack Ice Motion
Y
X
ICE FEATURE
POLYNYA

Fig. 13

1973

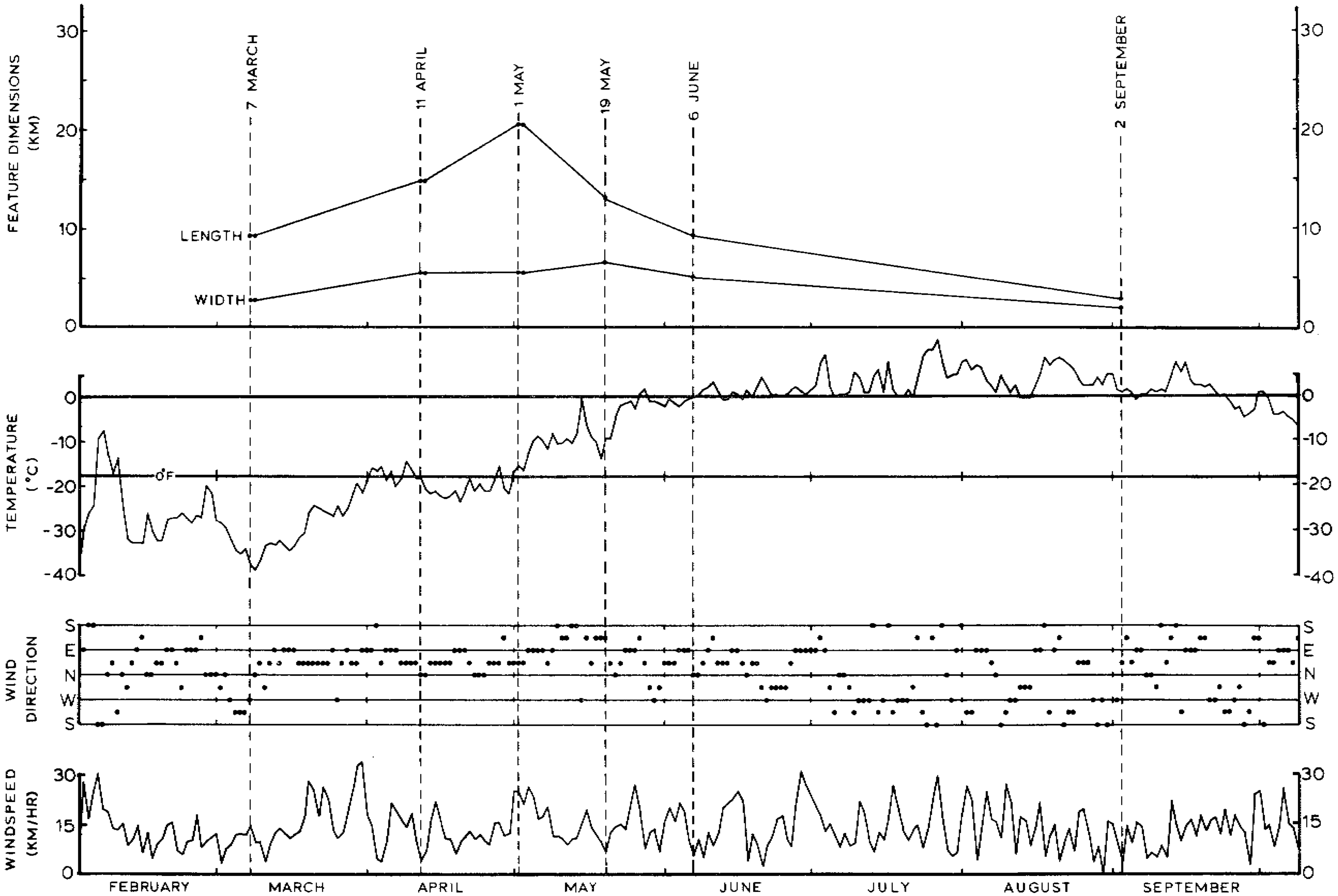

FEATURE DIMENSIONS (KM)
LENGTH
WIDTH
7 MARCH
11 APRIL
1 MAY
19 MAY
6 JUNE
2 SEPTEMBER
TEMPERATURE (°C)
0°F
WIND DIRECTION
S
E
N
W
S
WINDSPEED (KM/HR)
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER

Fig. 14

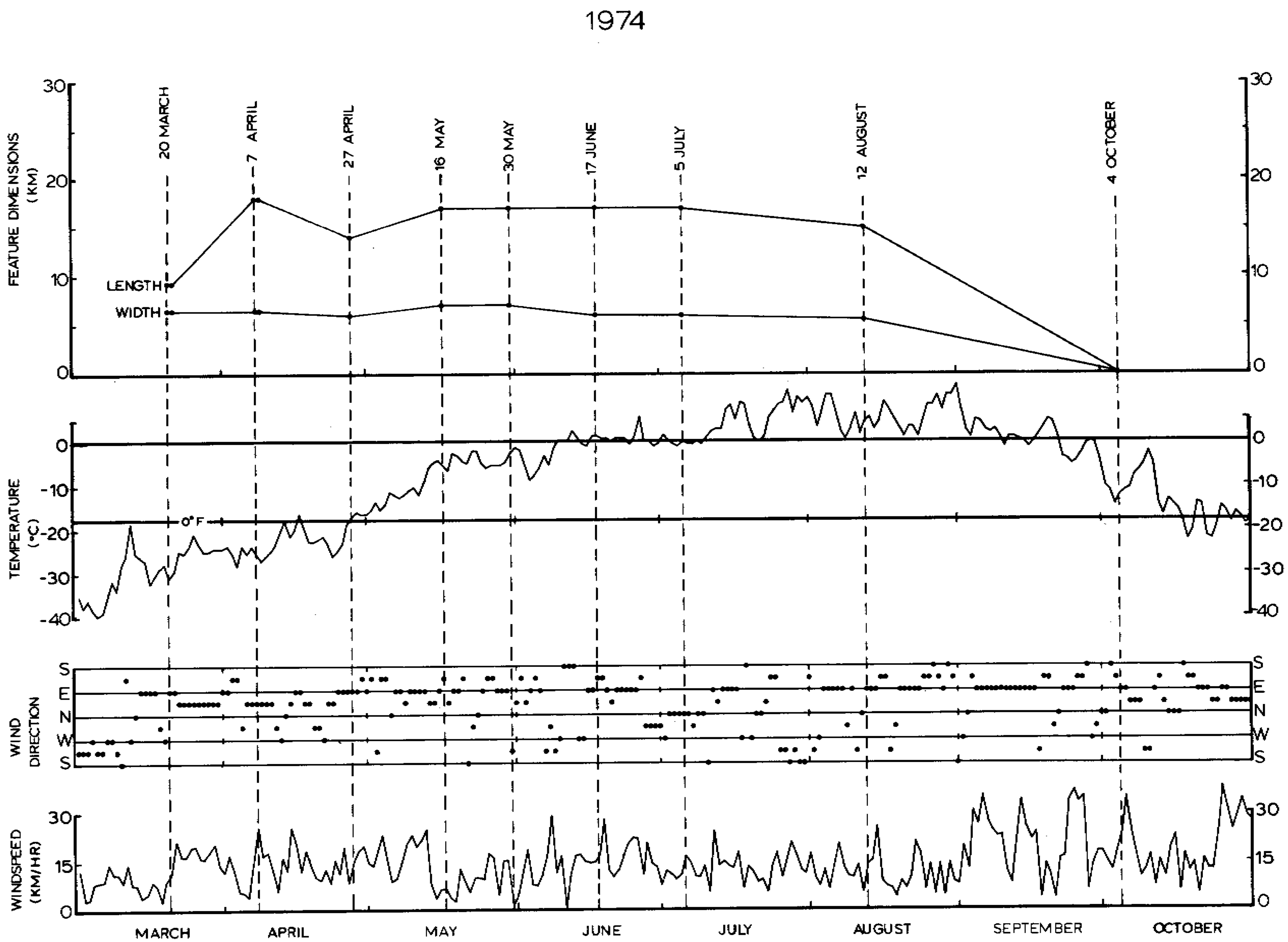

1974
FEATURE DIMENSIONS (KM)
LENGTH
WIDTH
20 MARCH
7 APRIL
27 APRIL
16 MAY
30 MAY
17 JUNE
5 JULY
12 AUGUST
4 OCTOBER
30
20
10
0
TEMPERATURE (°C)
0°F
0
-10
-20
-30
-40
WIND DIRECTION
S
E
N
W
S
WINDSPEED (KM/HR)
30
15
0
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

Fig. 15

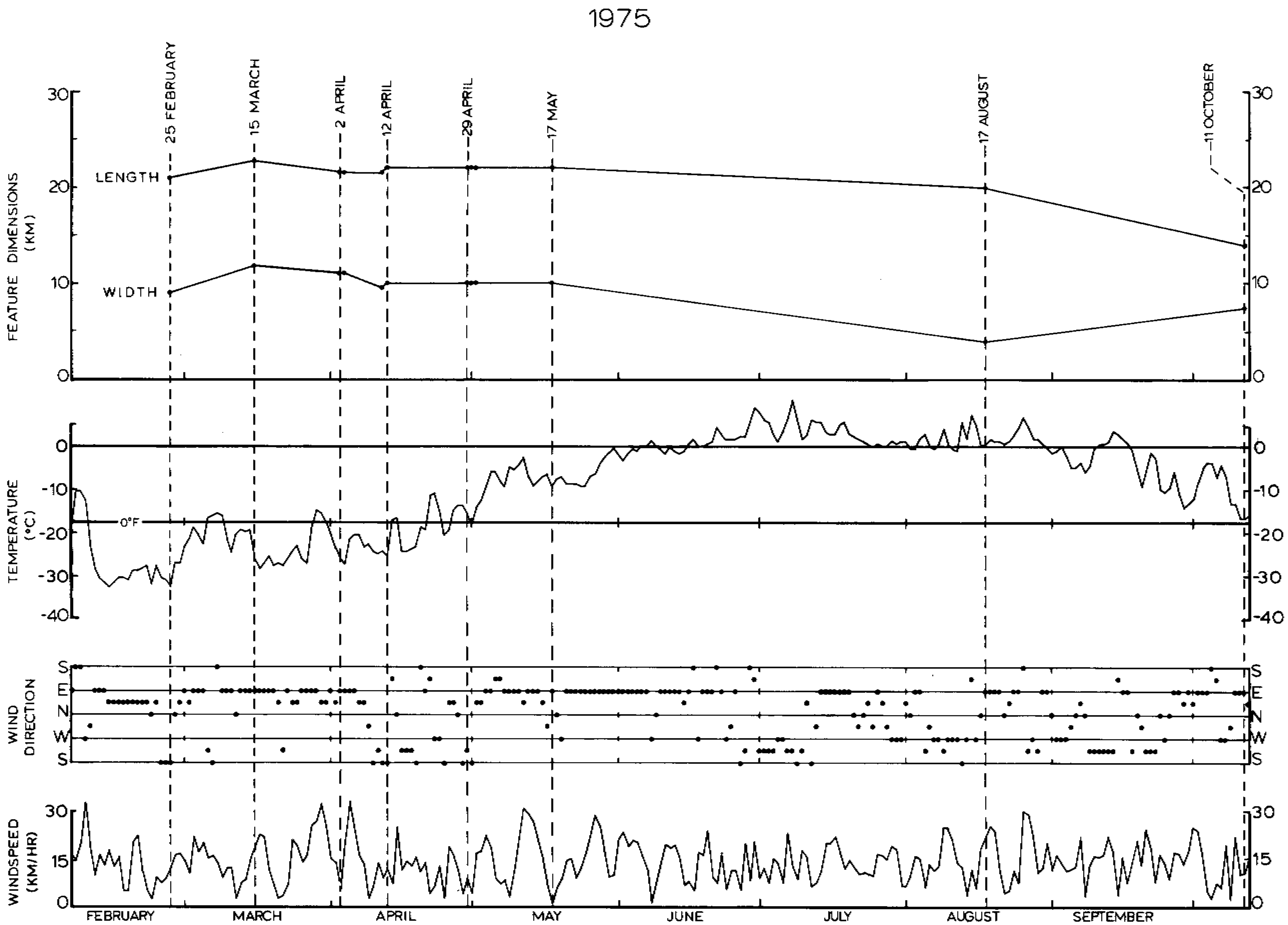

1975
25 FEBRUARY
15 MARCH
2 APRIL
12 APRIL
29 APRIL
17 MAY
17 AUGUST
11 OCTOBER
FEATURE DIMENSIONS (KM)
LENGTH
WIDTH
TEMPERATURE (°C)
0°F
WIND DIRECTION
S
E
N
W
S
WINDSPEED (KM/HR)
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER

Fig. 16

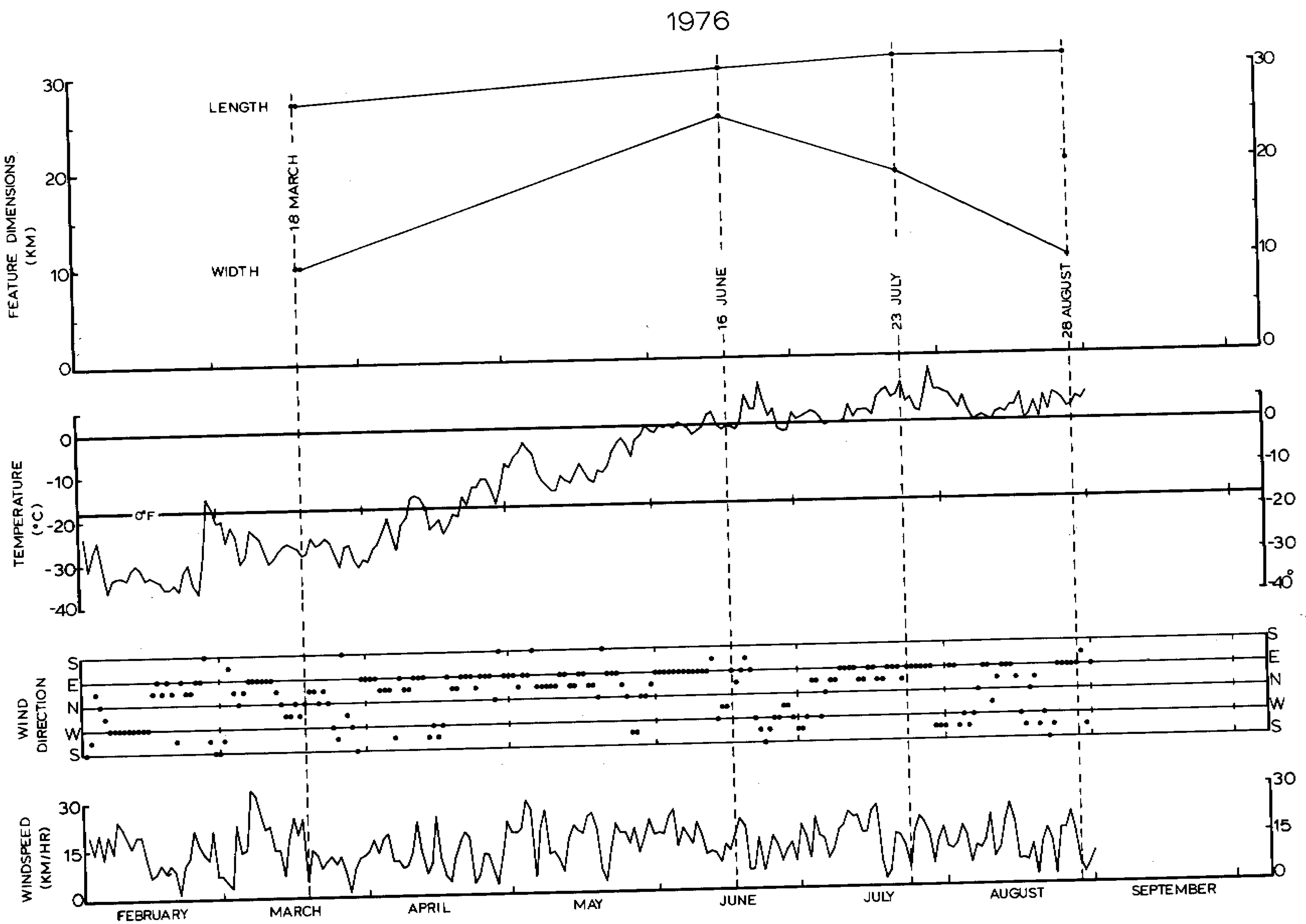
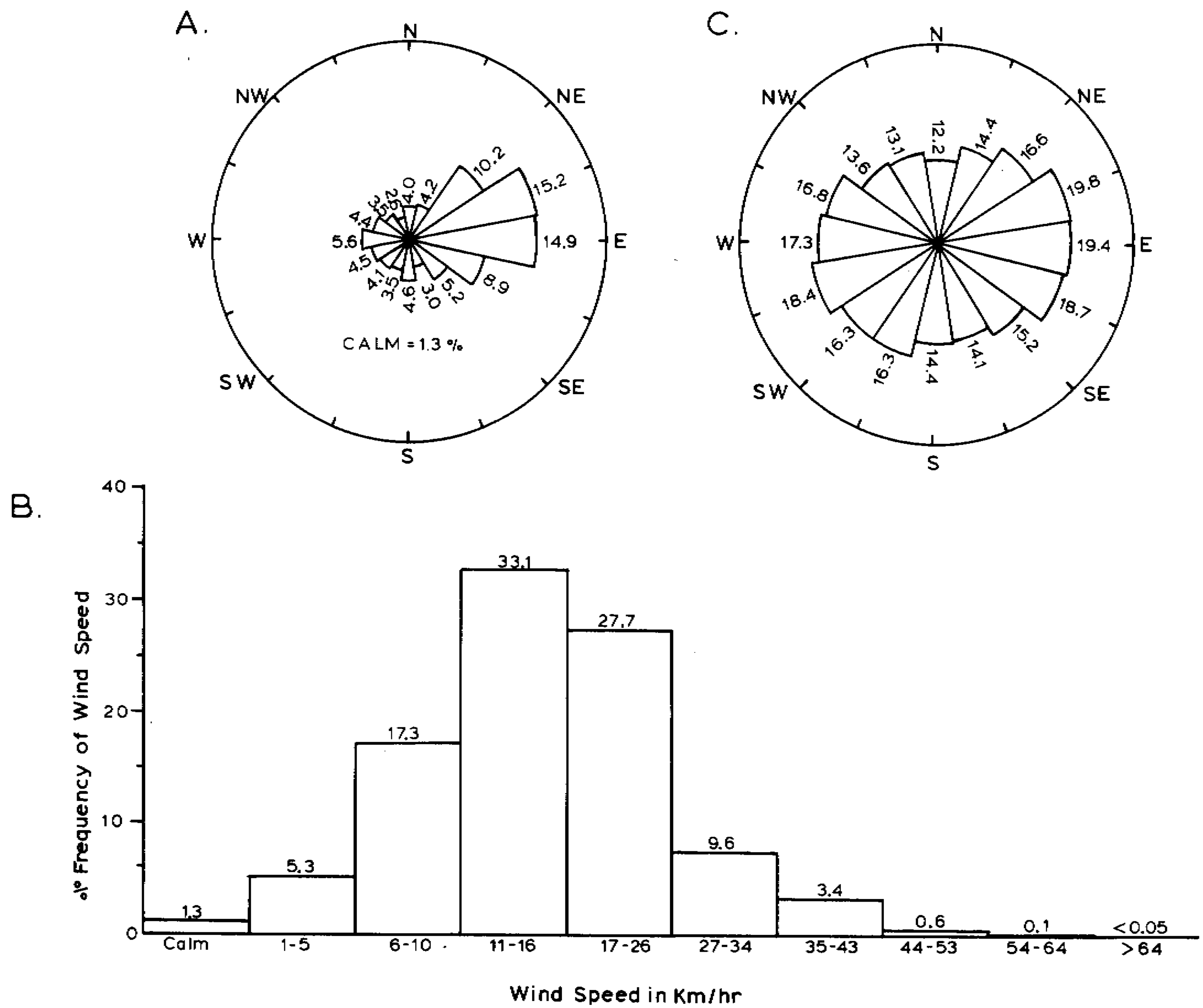

1976
LENGTH
WIDTH
FEATURE DIMENSIONS (KM)
18 MARCH
16 JUNE
23 JULY
28 AUGUST
TEMPERATURE (°C)
0°F
WIND DIRECTION
WINDSPEED (KM/HR)
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER

Fig. 17



A.
N
NE
E
SE
S
SW
W
NW
10.2
15.2
14.9
8.9
5.2
3.0
4.6
3.5
4.1
4.5
5.6
4.4
4.0
4.2
CALM = 1.3 %
C.
12.2
14.4
16.6
19.8
19.4
18.7
15.2
14.1
14.4
16.3
16.3
18.4
17.3
16.8
13.6
13.1
B.
% Frequency of Wind Speed
0
10
20
30
40
1.3
5.3
17.3
33.1
27.7
9.6
3.4
0.6
0.1
<0.05
Calm
1-5
6-10
11-16
17-26
27-34
35-43
44-53
54-64
>64
Wind Speed in Km/hr

Fig. 18

OCS Coordination Office
University of Alaska

Quarterly Report for Period Ending June 30, 1977

Project Title: Experimental Measurements of Sea Ice Failure Stresses Near Grounded Structures
Research Unit #259

Contract No.: 03-5-022-55

T No.: 7

Principal Investigators: W. M. Sackinger, R. D. Nelson

I. Task Objectives

The objectives of this study are to measure, in-situ, the stresses generated in a sea ice sheet as it fails in the vicinity of a static obstacle, and the rate of movement of the ice sheet during this process.

II. Field or Laboratory Activities

During the past quarter, the array of three transducers which was deployed on March 12, 1977, near Barrow, continued to transmit ice stress data reliably to the recorders on the shoreline. No technical problems with the telemetry link, the data acquisition equipment, or the recording equipment were encountered. A reconnaissance visit to the site was made on April 13, 1977, and the direction and location of the tension cracks which formed on March 16-18, 1977, (described in the 1977 Annual Report) were confirmed. A more complete description of the crack pattern was made during that visit. An additional reconnaissance was made on May 29, 1977, to check for possible thawing near the site. No evidence of thaw was noted, and no recent crack patterns were observed. It was decided to continue to acquire data throughout the beginning of breakup, until the transducers had clearly decoupled from the ice.

III. Results

Throughout April, May, and the first half of June, ice stress events occurred every few days, depending upon the intensity and direction of the wind. The open lead was generally located approximately three miles offshore, as indicated by radar and aerial reconnaissance, so there was very little relative ice motion near the site of ice stress transducer emplacement. All three transducers generally indicated each ice stress event, but at different magnitudes because of their location relative to the grounded ice ridge. Most of the events were tension events, because of the wind direction, and the site location. Ice tension seemed generally to increase with time constraints occasionally as short as one hour, but more commonly over several hours, followed by decay over several hours or even days. On June 11, a massive movement of the pack ice towards the shoreline produced extensive ice thrusting, buckling, and ridgebuilding. The telemetry system recorded this event up to the moment of damage of each transducer, as was expected. Data collection then terminated.

IV. Preliminary Interpretation of Results

It appears that a tensile stress is the most common condition, and that tensile stresses greater than 100 psi can be sustained under some conditions without crack formation. Stresses occur frequently near grounded obstacles. The many stress events must be examined in more detail, in conjunction with the wind records, the ice movement data from the ice dynamics radar, and related SLAR and satellite imagery, before additional conclusions can be drawn.

V. Problems Encountered/Recommended Changes

No problems were encountered during this quarter. Because of the substantial quantity of useful data on ice tensile and compressive stresses near the grounded pressure ridge which was obtained during this quarter, it is recommended that this research program be extended until December 31, 1977, to allow complete and thorough analysis of the data in the final report.

VI. Estimate of Funds Expended

$98,778.

QUARTERLY REPORT

Contract No. 03-5-022-55 or 261

Reporting Period
April 1, 1977 to July 1, 1977

Beaufort Sea, Chukchi Sea, and
Bering Strait Baseline Ice Study

William R. Hunt

and

Claus-M. Naske

July 1, 1977

Quarterly Report

Beaufort Sea, Chukchi Sea, and
Bering Strait Baseline Ice Study

I. Task Objectives:

The investigators are finishing work on a data supplement to the charts which show seasonal navigational conditions in the western Arctic from 1870 to 1970. This supplement presents all pertinent ice information and navigational information found in ships' logs.

II. Field Activities:

The investigators concluded their data collecting showing seasonal navigational conditions from 1870 to 1970 in April of 1977. Since that time, they have transcribed U. S. Coast Guard Navigational data from microfilm.

III. Results:

The investigators completed a number of maps which show the historic variations in ice conditions over a 100 year period. At the present, a draftsman is completing the task of transferring the rest of the collected navigational data to maps.

The investigators have completed the data appendix for the final report, and are working on the narrative part accompanying the final report.

The investigators will deliver the final report some time early in the fall of 1977 before the October 1, 1977 deadline.

The accompanying sample shows the kind of data the investigators have extracted from the archives and microfilm.

Arnold Liebes' diary of his trip to the Arctic on schooner Herman

June 3, 1917

Small ice around, soon reached the ice flow. Could see it. Lawrence Is. 15 mi. ahead. Ice moved in at 9:30 p.m.

July 20, 1917

"Passed floating pieces of small ice." Passed quite a bit of scattering ice. The ice here is pure white and deep green, being part of arctic pack.

July 21, 1917

Small pices of floating ice.

Summary ofCruise of the <u>Arctic</u>, 1923
Left S. F. May 12

<u>June 10, 1923</u>

Struck the first ice, about 45 miles S. of St. Lawrence Island--but had no difficulty working through it. (made previous trips in 1912 and 1917). At St. Lawrnece heard that 4 a.m. schooners from Nome had been seized by the Russians at East Cape.

<u>June 15, 1923</u>

Left--worked considerable ice--arrived at Little Diomede Island, June 16.

<u>July 8, 1923</u>

Pt. Lay--very heavy ice conditions

<u>July 15, 1923</u>

H. Kiebes and Co. trading station at Icy Cape

<u>July 23, 1923</u>

arrived at their trading station at Wainwright

<u>July 25, 1923</u>

caught in ice.

Arnold Liebes diary of his trip to the Arctic on the schooner "Arctic"

June 13, 1923

5 a.m. fog lifted and we started for the Deer Camp about 20 miles around the Island, work light ice all the way.

June 14, 1923

Some ice moving by with the current

June 16, 1923

Anchored off village at Little Diomede some pices of ice passing us from time to time traveling with the current.
trading trip-random ice observations

At East Cape June 17, 1923

Swenson's Schooner Chukotch tied up along side us, Capt. Weeden and Trader Holden for dinner. At 7 p.m. Gasdaroff and other Russian arrived from village and Jake went back with them to see Karieff about trading licence.

June 18, 1923

Can't get permit. Little young ice on water

NORTHWIND - 1954

August 2, 1954

0000 anchored off Wales Alaska in co. with USS Burton Island
0235 depart c/ 315°T
0320 Fairway Rock ⇒ 248°T; 12 miles c/c 000°T
0600 c/c 009°T
0800 66°27' 168°3'
0843 crossed arctic circle (66°32'/168°/08')
0950 c/c 320°T
1035 c/c 012°T
1150 c/c 009°T
1200 67°00' 167°49'
1800 c/c 320°T
2000 68°14' 168°04' with Pt. Hope ⇒ 070°T at 2.7 miles c/c 035°T

August 3, 1954

0000 underway enroute Pt. Barrow
0100 Cape Lisburne ⇒ 140°T; 9 miles c/c '045°T
0800 69°52' 164° 13'
1200 70°22' 162°32'
1314 with Icy Cape ⇒ 163°T; 14 miles c/c 066°T
1853 Pt. Trondhiln Radar ⇒ 156°T; 6 miles c/c 060°T
2000 71°07' 158°25' c/c 070°T
2006 Entered first field of scattered block and brach ice at 71°11'N 158°15'W
2020 Maneuvering at VCS
2306 Anchored and stopped at Barrow

August 4, 1954

0000 Barrow
0800 Barrow
0855 Up 76 airborne ice reconnaissance flight
1200 Barrow
1340 depart
1313 VCS
1400 c/ 040°T
1440 Radar beam Pt. Barrow spit ⇒ 169°T c/c 090°T
1456 with Pt. Barrow Spit ⇒ 219°T c/c 105°T
1815 VCS basic course 105°T maneuvering through broken ice.
1915 stopped on edge of a giant floe awaiting resutls of ice reconnaissance
1925 UP 76 airborne
1945 underway in a northeasterly direction. UP 76 airborne ______ Burton Island made good course 122°T dist. 5.5 miles
2000 68°14' 168°04'
2005 steering VCS in a northeasterly direction made good course 093 T dist. 22.2 miles.

August 5, 1954

0000 underway in Beaufort Sea enroute to Barter Is. c/105°T made good a course of 109°T 33 mile operated on VCS

August 5, 1954 - continued

0400-0800 underway made good course 056°T, 21 miles
0800 70°59' 151°04'
0800-1200 made good a course of 101°T, 24.5 miles
1200 70°55' 149° 45'
1200-1600 made good course 115°T, 32 miles
1600-1800 underway as before
1800-2000 underway made no progress this watch, stuck in giant floe.
2000 70°29' 147° 06' c/c 090°T
2200 c/c 115°T
(2000-2400) made good course 115°T, 32 miles

August 6, 1954

0000 underway c/115°T USS Burton Island on Station astern
0128 westerly < 500 yards
0140 lying to east fog and poor visibility
0000-0400 made good course 119°T, 15 miles
0400 lying to as before
0402 underway on basic course 115°T maneuvering through ice on VCS
0400-0800 made good course 135°T 3 miles
0800 70°20' 145° 45'
0900 stopped
0927 underway on VCS
0800-1200 made good course of 130°T, 10 miles
1200 70°11' 145°15'
1200-1600 made good course 090°T, 20 miles
1615 VCS standing into Barter Island
1634 lying to off Barter Island
1703 underway enroute to Banks Isalnd c/050°T
1750 c/c 125°T
1810 stopped by giant floe awaiting ice recon.
1921 underway basic course 125°T
2000 70°11' 143°12' stopped
2001 underway VCS
2332 ________200 yds stopped
2000-2400 made good course of 124°T, 26.3 miles

August 7, 1954

0000 lying to in Beaufort Sea enroute to Herschel Island, USS Benton off to starboard bow 1 miles
0800 lyingto as before 69°58' 142°13'
0925 underway c/c 090°T
0945 c/c 115°T
1121 VCS
8000-1200 made good course of 135°T, 8.4 miles
1200 69° 52' 141°50'
1533 Demarcation Point = 180°T, 2.7 miles c/c 090°T
1200-1600 Made good course of 130°T, 18.7 miles
1600-1800 made good course 089°T, 10 miles
1800-2000 made good course 085°T, 3 miles
2000 69° 44' 140°37'

August 7, 1954 - continued

2100 lying to in ice floe, fog, visibility < 300 yds.

2000-2400 made good course of 017°T, 1.5 miles

August 8, 1954

0000 lying to ice floe off Clarence Lagoon, Canada

0123 underway VCS

0000-0400 made good course of 076°T, 13 miles

0400-0800 made good course 100°T, 22 miles

0800 60°45' 138°56'

0800-1200 made good course 065°T, 20 miles

1200 69°57' 137° 56' c/ 073°T

1300 took station 2000 yds astern of Burton Island

1800-2000 made good course 073°T, 26 miles

2000 70°28' 133°11

2000-2400 made good course 073°T, 51.6 miles

August 9, 1954

0000 underway to Banks Island with USS B.I.

0100 Depart station (USSBI) c/090°T enroute to oceanographer station through the Amundsen Gulf. Proceeding end of B.I.

0420 arrived at Station "1" off Observation Pt., vessel lying to for study.

0521 completed oceanographic study c/ 037°T to station "2"

0800 71°11' 127° 02'

1000 arrived at Station 2, drifting

1125 completed study underway basic course 037°T

1200 71°25' 126°30'

1358 Cape Kellet ⇛ 345°T, 23 miles c/c/ 320°T

1410 Cape Kellet ⇛ 350°T, 12 miles c/c/ 280°T

1434 all stop at oceanographer station 3.

1556 completed ob resumed course 035°T

1650 lying to at observation station "4" - 2 miles south of Cape Kellet

1815 anchored in Thesiger Bay Station 5 Cape Kallet bearing 294°T, 5000 yds

2000 Cape Kellet, Banks Island NWT

August 10, 1954

0000 anchored Thesiger Bay, off Banks Is. Canada, Cape Kellet ⇛ 292°T

0600 underway on course 120°T enroute Sachs Harbor left tang. of Cape Kallet ⇛ 271°T, left tang. of Sachs Harbor entrance ⇛ 074°T

0800 Sachs Harbor

1200 Sachs Harbor

1410 depart VCS

1440 c/ 220°T

1520 left tang. of Cape Kellet ⇛ 335°T c/c 310°T

1620 Cape Kellet ⇛ 086°T, 5 miles c/c 010°T

2000 72°38' 125°45'

2000-2400 Made good course of 008°T, 3.7 miles

August 11, 1954

0000 underway to Cape Prince Alfred c/010°T

August 11, 1954 - continued

0120 steering VCS in ice pack.
0330 made good course 036°T,
0730 made good course 26 miles on course 353°T
0800 74°03', 125°12'
0800-1200 made goo 0 miles on this watch
1200 74°02', 125°02'
1200-1600 made good course 306°T, 3.7 miles
1800-2000 made good course 7 miles on 020°T
2000 74°17', 125°15'
2253 stopped laying to
2000-2400 made good 2 miles on course 000°T

August 12, 1954

0000 lying to in Beaufort off Banks Is., Cape Pr. Alfred - 044°T, 13 miles dist.
0800 74°19', 125°08'
1200 74°19', 125°08'
1600 underway on VCS in a northerly direction
1600-1800 made good course 036°T, 2 miles
1952 lying to
1800-2000 made good course 290°T, 2 miles
2000 74°20', 125°16'

August 13, 1954

0000 lying to, Cape Pr. Alfred - 057°T, 12.5 miles
0602 VCS maneuvering in ice attempting to make good a northern course around Cape Pr. Alfred
0730 Made good 3 miles on course/ 349°T
0800 74°24', 125°20'
0800-1200 made good course 054°T, 2.0 miles
1200 74°26', 125°15'
1200-1600 made good a course of 087°T, 5,600 yds.
1645 underway VCS
1600-1800 made good course 090°T, 1.7 miles
1915 c/090°T
2000 74°28', 124°38'
2114 anchored off Cape Pr. Alfred ⩧ 164°T, R Tan Gov. Isl. ⩧ 224°T L. Tan Gov. Is. 196.5"
2229 depart VC along northwest shore of Banks Island enroute to Cape Wrottesly made good course 061°T, 6 miles

August 14, 1954

0000 underway in McClure Straits VC made good 080°T
0000-0400 made good a course of 086°T, 38 miles port ice about 3 miles from shore
0442 stopped
0540 underway VCS from Cape Wrottesly
0730 made good 15.2 miles, port ice 3 miles from shore (in open water follow 100 fathom curve)
0800-1200 made good course 120°T, 26 miles
1246 anchored in entrance to Mery Bay, table mt. on Island ⩧ 161°T

August 14, 1954 continued:

1200-1600 made good course 154°T 4.1 miles?
1600 anchored as before
2000 Mery Bay, Banks Island

August 15, 1954

0000 Mery Bay
0800 Mery Bay
1200 Mery Bay
1515 depart VCS (to avoid heavy ice being carried into harbor by the current and wind)
1525 stopped, lying to
1802 VCS maneuvering into ice to collect oceanographic data
1930 made good 9 miles around Bark Point to the east
2000 74°18', 118°26'
2030 stopped
2035 VCS
2000-2400 made good a course of 099°T, 29 miles

August 16, 1954

0000 lying to off Rodd Head 74°08', 116°45'
0130 VCS USS Burton Island station, 1 mile starboard beam
0000-0400 made good course 304°T at 15.4 miles
0535 stopped, lying to 3 miles off Cape Vesez Hamilton
0730 made good 14 miles, on course 294°T
0800 74°22', 117°54'
1025 lying to off Rodd Head, Banks Island made good course of 125°T, 16.0 miles
1200 74°16', 117°33'
1328 VCS to make good course of 290°T
1200-1600 made good a course of 282°T, 13.5 miles
1600-1800 made good a course of 235°T, 8.5 miles
1801 all stop, commence drifting Oceanograph Station 12
1907 underway VCS maneuvering in ice enrout Carlton Bay
1900 made good 10 miles, on course 141°T
2000 74°18', 118°55'
2059 lying to 2.0 miles off Providence Point
2000-2400 MGC 124°T, 3.0 miles

August 17, 1954

0000 lying to in McClure Strait, mouth of Mery Bay w/Providence Point - 159°T
0314 underway at VCS to clear ice pack drifting
0400 underway lying to as before
0639 VCS standing into Mery Bay
0737 stop lying to off Mery Bay
0800 74°14' 119° 08'
1200 74°14' 119° 07'
2000 74°14' 119° 10'

August 18, 1954

0000 lying to off Mery Bay
0139 underway VCS enroute to Rodd Head, MGC 071°T, 11.7 miles
0400 underway maneuvering in heavy ice.
0730 stop drifting off Rodd Head, 500 yds, MG dist. 15 miles
0800 74"16' 117" 35'
0907 Maneuvering on VCS to maintain position
1200 74°16' 117" 36'
1518 underway VCS for good anchorage
1542 anchored 500 yds from beach
2000 Rodd Head, Banks Island
2315 anchor let go
2340 anchor dropped

August 19, 1954

0000 anchored
0800 Rodd Head, Banks Island
1200 74"16' 117"31'
1220 depart
1221 UCS maintain position
2000 74°16' 117°36'

August 20, 1954

0000 lying to
0255 UCS enroute Cape Sanlom
0400 underway, maneuvering in ice
0715 all stop, commence drifting, 1 mile off Cape Sanlom
0400-0800 MGC 137°T, 23 miles
0800 73°55' 116"23'
1030 underway maneuvering to position
0800-1200 MGC 070°T, 5 miles
1200 73°55' 116°24', 2240 yds off Cape Sanlom
1830 VCS maintain position
1847 1500 yds off Cape Sanlom stopped
2000 73°55' 116°26'

August 21, 1954

0000 underway in NW direction to Cape Sanlom
0045 lying to 1300 yds off Cape
0000-0400 MGC 316°T, 25 miles
0800 73°55' 116°24'
1200 73°55' 116°24'
1310 VCS maneuvering to maintain position
1400 set basic course 134°T enroute Russell, Pt. Banks Island
1535 stop
1555 underway basic course 134°T MGC 135°T, 6.5 miles
1600-1800 MGC 131°T 11.0 miles
1945 c/c 180°T rounding Russell Pt in Pr. of Wales St. MGC 137°T, 13.8 miles
2000 73°31' 115°12'
2022 VCS
2012 VCS
2052 anchor Knight Harbor, Banks Island 3000 yds from land

August 22, 1954

0000 Maintain ____ Knight Harbor
0615 underway to maintain position maneuvering in ice
0800 73°28' 115°21'
1200 73"26' 115"26'
1704 depart base course 227°T VS making for an anchor approx. 8 miles to southwest
1600-1800 MGC 227°T, 7.5 miles
1820 stop lying to 1800 yds offshore, approx. 8 miles SW of Knights Harbor awaiting favorable ice conditions for transporting to shore.
2000 73°22' 115°43'

August 23, 1954

0000 lying 13 miles south of Russell Pt., Banks Is.
0645 underway c/245°T maneuvering
0709 stop drifting 11 miles SW Knights Harbor 2000 yds offshore
0730 MGC 245°T, 2 miles
0800 73°20' 115° 51'
1200 73°21' 115° 51'
1545 depart VCS maneuver to avoid ice, dragging a net over stern
1723 secured dragging net
1800 stopped maneuvering around medium floe of polar ice
1815 Holding bow of vessel in contact with floe scientist testing it.
1940 vessel backed clear of floe
1945 c/ 058°T standing out P. of Wales Strait to Viscount Melville Ld.
2000 73°12' 115°58'
2230 western edge Peel Pt. ≑ 160°3 3 miles, c/c 090°T
2315 Peel Point = 190°T, 2.5 miles c/c 136°T MGC 058°T, 21.2 miles

August 24, 1954

0000 Viscoutn Melville Ld. off Peel Pt. to point east of Collinsin Inlet, Victoria Island c/136°T
0145 Barnard Pt.= 149°T 10.0 miles c/c 100°T
0610 c/c 076°T
0730 MGC
0800 73" 10' 109°19'
1027 VCS
0800-1200 MGC 071°T, 37.2 miles
1200 73°18' 107° 46'
1242 VCS
1302 Basic course 270°T
1315 VC along base
1200-1600 MGC 270°T, 3.8 miles, 180°T 8.5 miles, 300°T 7.0 miles 322°T 11.0 miles
1655 stopped Oceangr. station No. 11
1742 c/ 220°T enroute to Wynnaitt Bay
1800-2000 MG VC in ice
2000 73°13' 109° 43'
2120 anchor closest pt. of land - 171°T 3,500 yds. Wynnaitt Bay, Victoria
2000-2400 MGC 220°T, 19 miles

August 25, 1954

0000 anchored Wynnaitt Bay, Victoria Isl.
0407 depart VCS to new anchorage inshore
0425 anchored 2000 yds offshore
0800 Wynnaitt Bay, Victoria Isl. NWT
1140 depart C 074°T
1200 73°06' 109°56'
1433 c/c 291°T
1700 stop lying to Oceanography station 19
1732 VCS
1600-1800 MGC 287°T, 14 miles
1800 maneuvering in ice, VCS
1930 MGC 310°T, 13.8 miles
2000 73°28' 110°54'
2023 stopped Oceanography station #20
2047 c/ 195°T
2000-2400 MGC 298°T 7.6 013°T 3.1 200°T 11.8

August 26, 1954

0000 c/195°
0030 VCS
0200 stopped O.C. Station 21
0240 Completed underway c/316°T
0320 c/c 212°T
0535 c/c 355°T maneuvering about in ice of medium sized floes
0716 changed basic course c/326°T
0730 MGC 316°T 13.5 miles 355°T 11.3, 236°T, 2.1
0800 73°04' 112°23'
1003 anchored Barnard Pt = RT 225°T LT 112° (5900) (3720)
MGC 263°T, 14.2 miles
1200 Barnard Pt. Victoria
2000 Barnard Pt.

August 27, 1954

0000 anchored heavy fog Collinson Inlet
0800 Barnard Pt.
1200 Barnard Pt.
2000 Barnard Pt.
2113 drifting ______ VCS
2173 drifting 700 yds. off Barnard Pt.
2337 VCS drifting

August 28, 1954

0000 4,000 yds off Barnard Pt. (Beach)
0800 Barnard Pt.
0927 VCS to maintain position
0800-1200 MGC 285°T, 17 miles
1222 anchored RT Barnard Pt. = 251° closest pt of land - 185° 2,050 yds.
2000 Barnard Pt.

August 29, 1954

0000 Barnard Pt.
0800 Barnard Pt.
1200 Barnard Pt.
2000 Barnard Pt.

August 30, 1954

0000 anchored in Collinson Inlet off Barnard Pt.
0800 Barnard Pt.
1200 Barnard Pt.
2000 Parnard Pt.

August 31, 1954

0000 Barnard Pt.
0609 VCS to maintain position, 3 1/2 miles off B P.
0800 Barnard Pt.
0935 anchored off Barnard Pt.
1200 Barnard Pt.
1205 depart base course 315°T enroute Pr. of Wales St.
1600 MGC 306°T, 40 miles
1600 underway as before maneuvering in heavy ice.
1620-2000 MGC 330°T, 4.8 miles
2000 73°22' 114°08'
2000-2400 MGC 277°T, 2.6 miles in heavy ice.

September 1, 1954

0000 underway in heavy ice base course 300°T
0400 underway maneuvering in heavy ice
0400-0800 MGC 350°T, 2 miles
0800 73°24' 114° 22'
0800-1200 MG 3,200 yds
1200 73°24' 114°22'
1205 ice demolition disturbance? illegible
1347 demolition charge detonated by team on ice 1200 yds from ship
1440 underway VCS pr. of Wales St., MGC 280°T, 500 yds. thru heavy ice 80/10th
1600 maneuvering in heavy ice 10/10th concentration
1645 Northwind and Burton Island following ice channel broken by USS Benton Island
1928 Stopped, maneuvered alongside Benton Island-Moored made Pr. of Wales St. off Resetts Point (5 miles south)
1600-2000 MGC 276°T, 12.4 miles
2000 73°26' 115°05'
2018 underway VCS to Prince Royal Island-Pr. of Wales St.
200-2400 MGC 236°T, 18 miles

September 2, 1954

0000 Base Course 235°T

September 2, 1954 continued

0300 c/c 222°T, MGC 230°T, 22 miles, light ice conditions
0500 VCS to Pr. Royal anchorage
0557 anchored-SW of largest and southern Pr. Royal Is. LTan 061°T, RTan 077°T, 1875 yds, MBC 220°T, 9.5 miles.
0800 Princess Royal Island, Pr. of Wales St.
1200 Princess Royal Is.
2000 Prince Royal

September 3, 1954

0400 anchor dragging due to large ice floes maneuvering to clear ice.
0500 ice clear
0510 anchor dragging set of giant ice floes maneuvering to clear.
0540 clear
0800 Princess Royal
1200 Princess Royal
2000 Pr. Royal

September 4, 1954

0000 Prince Royal Is., 2950 yds from land
0702 underway to keep ice from fouling anchor chain
0737 stop closest pt of land now 4030 yds
0800 Princess Royal
1200 Pr. Royal
1607 underway VCS closing on Princess Royal Island
1625 anchored PRI = 055°T, 0800 yds
2000 Pr. Royal Island

September 5, 1954

0000 anchored closest land 2980 yds in Pr. of Wales St.
0800 Prince Royal Island
1200 Prince Royal-Pr. of Wales
1214 depart VCS close to Pr. Royal Island
1223 stopped
1305 underway base course 216°T
1314 took station 1000 yds astern of NMCS Labrador, maneuvering in ice
1404 moored, with Lab.
2000 72°40' 118°30'

September 6, 1954

0000 moored - 13 miles NW of Princess Royal Island
0017 departed VCS maneuvering in ice.
0116 ice coverage slight c/223°T enroute south of Burton Bay
0400 MGC 224°T, 29 miles
0516 stopped oceangraph station
0536 depart c/ 111°T
0630 oceanograph station #25
0658 c/ 110°T
0400-0800 MGC 220°T, 17.5, MGC 111°T, 14.4 miles
0800 71°57', 119°10'

September 6, 1954

0810 stopped oceangr. station #26
0835 VCS
0947 c/ 225°T enroute Cape Lambton
0800-1200 MGC, 222°T, 30.7 miles
1200 71°34' 120°17'
1320 c/c 238°T
1602 c/c 251°T
1627 VC approching Wilson Head
1721 app. Cape Lambton
1830 lying to Oceang. station off Cape L.
1855 depart
1935 lying to O.S.#28
1600-2000 MGC 261°T, 19 miles
2000 70°59', 123°17'
2114 O.C.S.#29
2206 underway 208°T
2320 OCS #30

September 7, 1954

0000 Lying to OCS #30, Amundsen Gulf
0005 underway c/ 208°T
0132 lying to OCS #31
0224 underway c/ 346°T enroute Sachs Harbor
0800 71°49' 125°24'
0920 VCS approaching anchorage
0940 anchored Cape Kellet = 272.5° T
1200 Sachs Harbor
2000 Sachs Harbor
2000 depart VCS
2030 c/ 270°T
2150 Cape Kellet = 001°T, five miles c/c 316°T

September 8, 1954

0000 underway in Beaufort Sea c/316°T
0107 c/c 325°T
0720 VCS along pack ice boundary
0800 73°31' 130°14'
0805 c/c 091°T
0830 VCS enroute Gore Island
0800-1200 MGC 114°T, 28 miles
1200 73°17' 128° 12'
1200 maneuvering to follow edge of pack ice
1515 c/c 201°T
1200-1600 MGC 226°T, 14.5 miles
1603 c/c 136°T
1730 c/c 041°T
1845 c/c 090°T upon reaching ice pack
1852 maneuvering for VC through ice.

September 8, 1954, continued

1600-2000 MGC 090°T, 27.3 miles
2000 73°12' 127°07'
2000 VCS in an attempt to avoid ice
2138 MGC 179°T
2208 c/c 134°T
2250 c/c 090°T
2330 MG 20 miles in a southeasterly direction

September 9, 1954

0000 underway in Beaufort 090°T
0020 with Mick (sic) Point = 104°T, 5 miles c/c 000°T
0735 Maneuvering VCS
0800 Gore Islands
0853 anchored off G.I.'s large island RT107°T, LT 082°T, 5,800 yds
small island RT 172°T LT 142°T, 3100 yds.
0800-1200 MGC o34°T 4.2 miles
1200 Gore Islands
1543 depart c/ 311°T to new anchorage south of Gore Islands
1553 maneuvering about Base course to avoid scattered ice floes
1604 VCS
1735 anchored 74°20' 125°12' with SW gore Island = 038°T, 5.2 miles
2000 Gore Islands
2205 depart VC
2325 set base course 179°T enroute to OCS at 73° 54.9' 125° 42.0'

September 10, 1954

0000 underway on course 181°T
0127 c/c 231°T lying to OCS #33 (73°50' 125°25'
0400 c/ 140°T enroute to Norway Island
0509 anchored Norway Island RT 137° LT 115, closest point 3700 yds
0520 OCS #34 73° 124°53'
0800 Norway Island, Banks Is NWT
1155 depart toward southwest on VCS
1200 73°40' 124°53'
1205 c/ 230°T
1330 c/c 211°T
1355 c/c 262°T
1435 stop-drifting
1510 USS Burton Island rendevous (?)
1612 enroute VCS to Barter Island via Cape Kellet
1700 c/ 180°T
2211 72°30' 126°01' c/c 190°T

September 11, 1954

0000 enroute Barter Island via Cape Kellet c/ 170°T
0100 c/c 240°T
0300 lying to rend. with HMSC Labrador
0535 depart 209°T
0800 71°28' 127°43'

September 11, 1954 continued

1115 c/c 259°T
1125 c/c 128°T
1138 c/c 180°T
1200 70°43' 128°58'
1220 c/c 090°T
1247 stop 8 miles west of Ballie Islands
1315 underway c/258°T
1934 stppped
1944 underway
2000 70°22' 132°52'

September 12, 1954

0000 c/ 258°T
0115 reduced speed due to small ice floes
0143 further reduced speed
0143 reduced speed
0200 c/c 234°T to avoid heavy ice
0422 c/c 270°T
0607 increased speed
0800 69°58' 138°13'
0820 c/c 320°T
1130 MGC 270°T, 35 miles
1200 69°56'139°54'
1443 Entered waters of ten. of Alaska 65°51' 141°00'
1530 c/ 305°T
1200-1600 MGC 262°T 36 miles
1913 c/c 269°T
1934 c/c 244°T
2000 70°14' 143°10'
2030 c/c 270°T
2047 VCS
2122 anchorage off Barter Island

September 13, 1954

0000 Barter Island
0138 depart c/314°T
0155 stopped maneuvering to stay 4000 yds from beach
0800 Barter Isalnd
1200 anchor BI
2000 Barter Island

September 14, 1954

0800 Barter Island
1200 Barter Island
2000 Barter Island
2017 depart VCS to pick up boat
2133 underway for Icy Cape c/292°T
2145 VC to navigate through ice broken ice?
2232 c/ 292°T

September 15, 1954

0000 enroute by Cape c/ 292°T
0710 c/c 283°T
0800 71°07' 151°07'
1200 71°19' 153°49'
1445 c/c 301°T
1500 c/c 271°T
1533 c/c 240°T
2000 71°12' 158°09'

September 16, 1954

0000 enroute Icy Cape c/ 240°T
0545 VCS
0751 anchored off Icy Cape 13,000 yards from radar screen
0800 Icy Cape
1200 Icy Cape
2000 Icy Cape

September 17, 1954

0800 Icy Cape
1200 Icy Cape
2000 Icy Cape

September 18, 1954

0000 closest land = 211°T, 18000 yds
8000 Icy Cape
1200 Icy Cape
2000 Icy Cape

September 19, 1954

0800 Icy Cape
1200 Icy Cape
1757 Depart c/327°T
1855 Rader target = 181°T, 12 miles c/c 270°T
1907 Rader T. (by cape) = 173°T c/c 245°T
2000 70°28' 162° 23'
2030 Icy Cape (Radar) = 106°T, 17 miles c/c 226°T

September 20, 1954

0000 enroute Cape Pr. of Wales c/226°T
0411 c/c 203°T
0721 c/c 188°T
0800 68°18' 167°32'
1015 c/c 257°T
1024 c/c 188°T
1200 67°22' 167°52'
1300 c/c 192°T
1825 Noy Pat____ Place passed at 67°03' 168°03'
1814 c/c 192°T
1831 c/c 198°T

September 20, 1954 continued

1900 VCS
1958 anchored off Little Diomede, RT 097°T LT 011°T closes pt of land 059°T, 900 yds.
2000 Little Diomede
2246 depart VCS enroute Wales
2248 c/ 110°T
2314 c/ 115°

September 21, 1954

0030 c/c 090°T
0100 VCS approaching Wales
0115 anchored off Cape Pr. of Wales, closest land 5000 yds
0800 Wales
1130 depart c/184°T
1200 Wales
1427 With King Island ≑ 090°T 15 miles, c/c 180°T
2000 63°53' 168°17'
2207 NE Cape of St. Lawrence Island - 232°T, 122 miles, c/c 177°T

end

NINTH QUARTERLY REPORT

TITLE: *In-Situ* Measurements of the Mechanical Properties of Sea Ice RU 265

PERIOD: April 1, 1977-June 30, 1977

PRINCIPAL INVESTIGATORS: Lewis H. Shapiro and Richard D. Nelson,
Geophysical Institute, University of Alaska

I. TASK OBJECTIVE: To develop hardware and procedures for conducting *in-situ* measurements of the mechanical properties of sea ice.

II. SCHEDULE: Field work at Barrow, Alaska.

III. RESULTS AND INTERPRETATION:

Most of the past quarter was devoted to field work at Barrow. Tests were run to determine elastic and viscoelastic properties of the ice, as well as uniaxial compressive strength. The data have not been reduced as yet, although the work is in progress.

IV. PROBLEMS ENCOUNTERED:

Approximately two weeks were lost due to problems in the power supply to the work site.

V. ESTIMATED FUNDS EXPENDED: $25,000

Q U A R T E R L Y   R E P O R T

Contract # 03-5-022-55, task 10
Research Unit # 267
Reporting Period, April 1, 1977 to
June 30, 1977
Number of Pages: 7

OPERATION OF AN ALASKAN FACILITY

FOR APPLICATIONS OF REMOTE-SENSING DATA TO OCS STUDIES

Albert E. Belon
Geophysical Institute
University of Alaska

June 30, 1977

OPERATION OF AN ALASKAN FACILITY

FOR APPLICATIONS OF REMOTE-SENSING DATA TO OCS STUDIES

Principal Investigator: Albert E. Belon
Affiliation: Geophysical Institute, University of Alaska
Contract: NOAA # 03-5-022-55
Research Unit: # 267
Reporting Period: April 1 to June 30, 1977

I. TASK OBJECTIVES

The primary objective of the project is to assemble available remote-sensing data of the Alaskan outer continental shelf and to assist other OCS investigators in the analysis and interpretation of these data to provide a comprehensive assessment of the development and decay of fast ice, coastal geomorphology, sediment plumes and offshore suspended sediment patterns along the Alaskan coast from Yakutat to Demarcation Bay.

II. LABORATORY ACTIVITIES

A. Operation of the Remote-Sensing Data Library

We continued to search periodically for new Landsat imagery of the Alaskan coastal zone entered into the EROS Data Center (EDC) data base. As a result 378 cloud-free Landsat scenes were selected and ordered from EDC at a total cost of $5488. These data products, which are gradually received from EDC, complete our files of Landsat data from the launch of the first satellite, July 26, 1972. Until March 1977 we had purchased the selected Landsat scenes in the following formats, commonly used by OCS principal investigators:

- 70mm positive transparencies of multispectral scanner (MSS) spectral band 4, 5 and 7

- 70mm negative transparency of MSS, spectral band 5

- 9½ inch print of MSS, spectral band 6

After March 1977, the EDC price for Landsat data products having increased by an average of 166%, we reduced our routine purchase of selected Landsat scenes to two formats:

- 70mm positive transparency of MSS, spectral band 5

- 9½ inch print of MSS, spectral band 6

Other formats are ordered on a case-by-case basis and at the request of individual OCS investigators.

We continued to receive and catalog daily copies of NOAA satellite imagery of Alaska in both the visible and infrared spectral bands under a standing order with the NOAA/NESS Fairbanks Satellite Data Acquisition Station. 273 NOAA scenes at a total cost of $2866 were acquired in 10" positive transparency format during the reporting period.

We received and catalogued 17 runs (50 ft) of side-looking radar (SLAR) imagery acquired by a U.S. Army Mohawk aircraft on April 16 to 22, 1977 for NOAA/OCSEAP. The data provide complete coverage of the Beaufort and Chukchi Sea shelves prior to the break-up period. The imagery is of superb quality- the best so far obtained of these areas. A catalog and map of the recent SLAR data coverage have been distributed to OCS investigators in Arctic Project Bulletin No. 14, and are reproduced here as an appendix.

B. Operation and Maintenance of Data Processing Facilities

Much effort was expended during the reporting period in consolidating the remote-sensing data library and some of the optical data processing laboratory with the geophysical data archives of the Geophysical Institute. This consolidation offers significant benefits to the OCSEAP program:

1) it provides substantially increased quarters for the remote-sensing data library and segregated, controlled-illumination space for the operation of optical data analysis instruments.

2) it provides more work space for the increasing number of investigators who utilize our facilities to analyse the file copies of remote-sensing data.

3) it exposes and makes available to OCS investigators other forms of geophysical data (seismic, meteorological, magnetic etc.) acquired by the Geophysical Institute over many years.

4) it locates the remote-sensing data library on the same floor and adjacent to the Geophysical Institute library, which contains books, periodicals, reports and maps relevant to the OCSEAP.

5) it locates the remote-sensing data library on the same floor and adjacent to the OCSEAP Arctic Project Office, thus providing easier access to Arctic Project Office personnel and visitors.

6) it frees the previous location of the library, which was adjacent to the photographic laboratories of the Geophysical Institute, for an expansion of these laboratories in anticipation of the acceptance by NOAA/OCSEAP of our proposal to undertake the volume processing of airborne remote-sensing data to be acquired by NARL with NOAA/OCSEAP support.

In connection with the latter point, we have located and secured approval for transfer of the following equipment from government laboratories in Alaska, Nevada and Mississippi:

1. KC-6 aerial camera (9" focal length) value $120,000
2. KC-1B aerial camera (9" focal length) value $ 10,000
3. KS-72 aerial camera (5" focal length) value $ 25,000
4. I^2S multispectral camera (6" focal length) value $ 10,000
5. Versamat continuous processor (5" to 9½" film or paper)value $30,000
6. LogEtronic SP1070B strip printer (5" to 9½" film)value $25,000
7. LogEtronic Mark III step and repeat printer (5" to 9½" film)value $35,00
8. Omega B+W and color enlarger (10"x10" film) value $ 10,000

Arrangements for shipping of this equipment to Alaska are now being made by Ted Flescher, logistics coordinator of the Arctic Project Office. Upon receipt, the first four items of equipment will be tested and shipped to NARL (Barrow) for installation in their C-117 remote-sensing aircraft along with the SLAR and laser profilometer provided by CRREL; the second four items of equipment will be installed in the new photographic laboratory for processing the NARL-acquired airborne remote-sensing data.

We are confident that the availability of this equipment, and the combined expertise and facilities of NARL and the Geophysical Institute will provide a good local capability for a remote-sensing data acquisition responsive to OCS needs and at relatively small cost to NOAA/OCSEAP.

Although the move to new quarters occupied a substantial portion of the staff time devoted to the project, care was taken to avoid disrupting the activities of OCS investigators who utilized our facilities, and in particular all the data analysis equipment and light tables were kept operational, except during brief periods while they were being moved.

C. Development of Data Analysis and Interpretation Techniques

Work continued, within the available financial resources of the project, on the conversion of existing computer programs for the digital analysis of Landsat data. A classification program consisting of a spectral clustering program (isoclass) and a maximum likelihood program, is now implemented on the University of Alaska Honeywell 66/40 time-sharing computer, but is currently limited to operate on relatively small areas (10x10 miles) at full ground resolution (80 meters). Eventually the capabilities of the program should be expanded to cover much larger areas. In the meantime we are working on conversion of another computer program which will allow the geometric correction of digital Landsat data to produce map-based classified data on our digital image recorder or computer print-outs.

Arrangements have been made, at no cost to OCSEAP, for a visit of Mr. James McCord, chief of the photographic laboratories of the EROS Data Center. During his one week visit in July, Mr. McCord will conduct seminars and training sessions for photographic laboratory personnel and OCS investigators in the latest techniques for photographic enhancement of Landsat imagery and aerial photography (contrast stretching, edge enhancement, color-reconstitution etc.). In preparation for his visit, Mr. McCord has been experimenting with new techniques for the enhancement of enhanced Landsat images of Arctic Alaska, including a February 1977 low-contrast image of the Beaufort Sea. Mr. McCord is excited about the excellent results which he has obtained so far and he is looking forward to communicating them to us during his visit.

D. Assistance to OCS Investigators

During the last quarterly period most OCS investigators were heavily involved in field projects and, for that reason, individual requests for assistance decreased somewhat from the previous quarter. Nevertheless 40 OCS investigators made extensive use of our services and facilities ranging from data searches and orders to operation of data analysis equipment.

Data purchases by OCS investigators totalled $1246 for orders placed to the EROS Data Center, $36 for orders placed to NOAA/NESS, $180 for orders placed to National Ocean Survey, and several hundred dollars in work orders for urgent or custom reproduction of selected data, principally SLAR data. In addition many investigators performed analyses of library copies of data archived in our facilities.

Dr. William Stringer (RU #257), Dr. Jan Cannon (RU #99), Drs. John Burns and Lewis Shapiro (RU #230, 232, 248 and 249), Dr. Wilford Weeks (RU #88) and Dr. Thomas Royer (RU #289) continued to be frequent and heavy users of our data and facilities.

Three examples of the range of assistance that we provide to OCS investigators are illustrated by current requests from three OCS users located outside Alaska. In connection with his field activities in the Beaufort and Chukchi Seas and the Bering Strait, Dr. Weeks (RU #88) needed continuous update of sea-ice imagery during the entire spring season. We are scanning incoming NOAA satellite, Landsat, and airborne imagery for applicability to his projects, order reproductions, and mail him the selected data, in most cases within two weeks after data acquisition, so that he is able to adjust his field program in accordance with his knowledge of synoptic sea-ice conditions provided by remote-sensing data.

Similarly, Dr. George Hunt (RU #83) needed historical remote-sensing data of sea-ice temperatures and sea-ice edge position in the vicinity of the Pribilof Islands, as well as near real-time similar data for the planning of his field program and ship cruises during the May to SEptember 1977 period. In cooperation with RU #289 (for sea-surface temperature interpretation), we have provided him the historical remote-sensing data for his analyses, and we are currently providing him similar data on a one-two week delay basis during his field program.

Dr. Pete Myers (RU #172) needs accurate and detailed information on bird habitat in the region south of Barrow, to extend his very detailed field mapping over a small area to a larger area. We are working with him on a new technique for computer-aided ecosystem mapping utilizing both the multispectral and multitemporal digital data from the Landsat satellite.

III. RESULTS

A catalog of SLAR data of the Beaufort and Chukchi Seas acquired during April 1977 was prepared and distributed to all OCS investigators in May 1977 through the NOAA/OCSEAP Arctic Project Bulletin No. 14. It is reproduced here as an appendix.

Work is proceeding on a major catalog of all remote-sensing data (satellite and aircraft) acquired during winter and spring 1977. This catalog will be updated through June 30, 1977 and will be distributed to all OCS investigators in late June/early August.

Equipment, including aerial cameras and photographic processing systems, have been acquired and a new photographic processing laboratory is being established in anticipation of the implementation of an OCSEAP/NARL airborne remote-sensing data acquisition program.

The remote-sensing and geophysical data archives of the Geophysical Institute have been consolidated into larger quarters, thus providing better facilities and services to OCS investigators.

IV. PRELIMINARY INTERPRETATION OF RESULTS

The project's function is to provide remote-sensing data and technical support to the other OCSEAP projects. Therefore disciplinary data interpretations are normally reported by the individual user projects.

V. PROBLEMS ENCOUNTERED/RECOMMENDED CHANGES

A proposed amendment to the project (RU #267) was submitted to OCSEAP in February, 1977 at the request of the OCSEAP Arctic Project Office. A companion proposal was also submitted by the Naval Arctic Research Laboratory (NARL). Both proposals related to the acquisition and photographic processing of remote-sensing data by a C-117 NARL aircraft. To date OCSEAP has not responded to these two proposals which requested a starting date of March 1, 1977. As a result the opportunity of acquiring all-weather remote-sensing data of the Beaufort and Chukchi Seas during the important 1977 spring break-up of sea-ice has been missed. We fear that any further delays will cause the open water (summer) season to be missed as well.

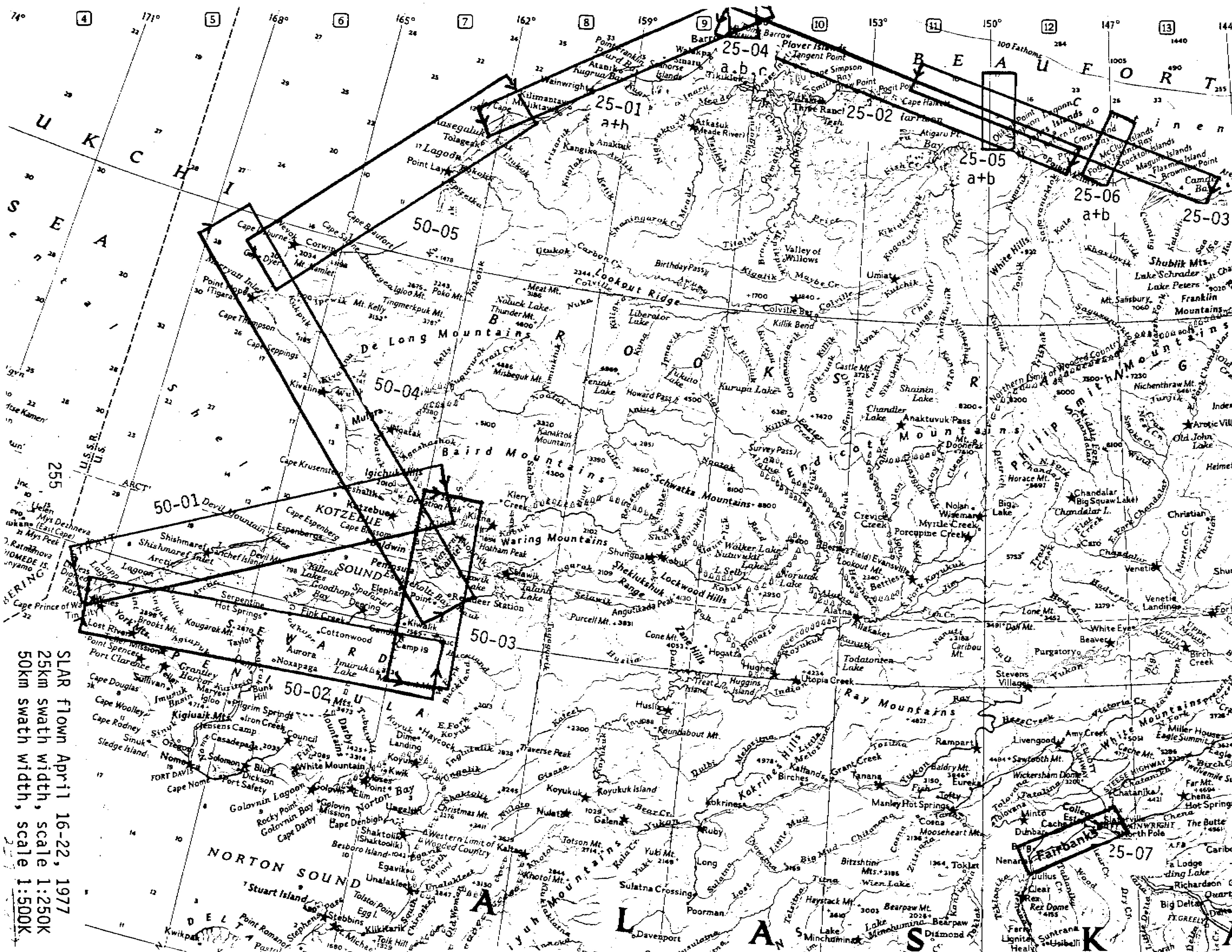
VI. ESTIMATE OF FUNDS EXPENDED

The estimated expenses of the project during the reporting period were approximately $26,000.

Project: Outer Continental Shelf Energy Program
Location: Beaufort and Chukchi Seas
Aircraft: Mohawk OV-1
Flight Line: Between points indicated (see map)
Instrument: Motorola Side Looking Radar
X-Band (3.5 cm) Real Aperture
Dual Antenna Mode

Date	Run	Flight Line	Range Swath	Lineal Ft of Film	Direction Of View*	Quality
4-22-77	25-01a	Icy Cape - Barrow	25 km	5'	SE	very good
4-19-77	25-01b	Icy Cape - Peard Bay	25 km	4'	SE	very good
4-20-77	25-02	Barrow - Sag River	25 km	6'	S	very good
4-20-77	25-03	Camden Bay - N. of Harrison Bay	25 km	4'	S	very good
4-22-77	25-04a	Barrow transect	25 km	2'	NE	very good
4-22-77	25-04b	Barrow transect	25 km	2'	SW	very good
4-22-77	25-04c	Barrow transect	25 km	2'	NE	very good
4-20-77	25-05a	Oliktok transect	25 km	2'	NE	very good
4-20-77	25-05b	Oliktok transect	25 km	2'	SW	very good
4-20-77	25-06a	Tigvariak Is. northeast over ice	25 km	2'	E	very good
4-20-77	25-06b	Tigvariak Is. northeast over ice	25 km	2'	W	very good
4-16-77	25-07	Nenana - Fairbanks	25 km	2'	NW	very good
4-19-77	50-01	Wales - Hotham Inlet	50 km	3'	SE	very good
4-19-77	50-02	Wales - Granite Mountain	50 km	3'	N	very good
4-19-77	50-03	Granite Mountain - Kiana Hills	50 km	2'	E	very good
4-19-77	50-04	Elephant Point - Point Hope	50 km	3'	NE	very good
4-19-77	50-05	Cape Lisburne - Icy Cape	50 km	4'	SE	very good

* transverse to flight path



SLAR flown April 16-22, 1977
25km swath width, scale 1:250K
50km swath width, scale 1:500K

Quarterly Report

Contract #03-5-022-56
Task Order #19
Research Unit #289
Reporting Period 4/1/77 - 6/30/77

MESOSCALE CURRENTS AND WATER MASSES IN THE GULF OF ALASKA

Thomas C. Royer
Principal Investigator
Institute of Marine Science
University of Alaska
Fairbanks, Alaska 99701

June 30, 1977

Quarterly Report for Quarter Ending 30 June 1977

Project Title: Mesoscale Currents and Water Masses in the Gulf of Alaska

Task Order Number: 19

Principal Investigator: Thomas C. Royer

I. Task Objectives

To continue gathering hydrographic data over the continental shelf region of the Gulf of Alaska in the eastern portion (GASSE), Western portion (GASSO) and the Kodiak Island (KISS) region. To continue the analysis of these acquired data. To archive the NOAA IR satellite data for the Alaskan coastline.

II. Field Activities

The Seward and Cook Inlet station lines were completed and the current meter array at IMS 9 (58°41'N, 148°21.6'W) was recovered using the NOAA ship, *Miller Freeman*. We are continuing to receive and monitor the NOAA satellite data.

III. Results

The data from EB-03 from 1972 to the present are now available in a graphic format. These data include wind speed and direction, atmospheric pressure, water temperature, air temperature and relative humidity. These data are being compared with weather data from Middleton Island to give estimates of the proper wind field for the region. We have also provided about 60 satellite photos to other OCS Principal Investigators.

III. Results(continued)

The current meter data for IMS 9 from November through March indicate that the general flow during this time was southwestward. That is, the position demonstrates flow from the Alaska Stream. This was predicted from the previous data, since reversals seem to primarily occur only in the late summer (July-October). We are attempting to evaluate the important mechanisms for this flow alteration; wind stress and fresh water runoff. An important result from our recent work is that dynamic height and sea level are closely related and that the dynamic height is locally controlled. This means that the shelf circulation near Seward could be driven by the fresh water runoff out of Prince William Sound. The phasing of seasonal sea level changes between Yakutat and Seward suggest that this could be the reason for the flow reversal off Seward.

The principal investigator attended the physical oceanography meeting at Alderbrook, Washington and conferred with the staff at the OCSEAP office in Juneau.

IV. Problems Encountered

We have uncovered some severe problems with the noise levels of hydrographic data gathered aboard NOAA ships. We initially believed that the large errors were due to the salinity determinations. The errors in depth are of the order of meters and are depth dependent. The noise levels in the NOAA ship gathered data are more than 10 times the noise levels in the non-NOAA ship gathered data (*Moana Wave* and *Acona*). It is now believed that the problem is due to an impedence mismatch in the CTD system. This is a result of the NOAA ships using larger cable than the other vessels. The problem has been passed on to PMC via the Juneau project office.

IV. Problems Encountered (continued)

Problems were encountered on the *Miller Freeman* due to 1000m depth restriction on the CTD which we were not informed of until after the ship sailed. There also seemed to be a communication problem between the project representative and the officiers on the *Miller Freeman*. Since the Principal Investigator is responsible for the data collection and quality, his recommendations or those of his representative should supersede all others except where the safety of the ship or its personnel are involved.

QUARTERLY REPORT

Contract No. 03-5-022-56
Research Unit No. 347
Reporting Period: April 1, 1977
through June 30, 1977
Number of Pages: 1

MARINE CLIMATOLOGY OF THE GULF OF ALASKA AND THE BERING AND BEAUFORT SEAS

James L. Wise

Arctic Environmental Information and Data Center
University of Alaska

June 20, 1977

June 20, 1977

QUARTERLY REPORT

For the Period Ending June 30, 1977

I. Task Objectives:

To determine and publish the knowledge of the climatological conditions of that portion of Alaska that is important to OCS development.

II. Field and Laboratory Activities:

This portion of the project has no field or laboratory activities. It is a joint project with the National Climatic Center (NCC) in Asheville, North Carolina. AEIDC responsibilities are to provide extremes of all weather elements, information on coastal damage resulting from wind generated storm flooding, check analysis work done at NCC, and through our graphics department, prepare materials for publication.

III. Results:

The final product of this research project is the publication of the "Climatic Atlas of the Outer Continental Shelf Waters and Coastal Regions of Alaska." The atlas has three volumes, Volume I, Gulf of Alaska; Volume II, Bering Sea; and Volume III, Chukchi and Beaufort Seas. The table of contents and areas covered in each of the three volumes is as shown in the annual report of March 1977.

Preparation of all three volumes for printing is complete and the material will be turned over to the Government Printing Office in Boulder, Colorado for printing by the end of the quarter or shortly thereafter. Selection of the printer and schedule for printing are not known at this time.

IV. N/A

V. N/A

OCS COORDINATION OFFICE

University of Alaska

ESTIMATE OF FUNDS EXPENDED

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56

TASK ORDER NUMBER: 25

PRINCIPAL INVESTIGATOR: Mr. James L. Wise

Period July 1, 1975 - June 30, 1977 (24 months)

	Total Budget	Expended	Remaining
Salaries & Wages	57,286	58,761	(1,475)
Staff Benefits	10,284	10,486	(184)
Equipment	-0-	-0-	-0-
Travel	2,045	1,335	710
Other	6,126	5,144	982
Total Direct	75,741	75,708	33
Indirect	30,147	30,545	(398)
Task Order Total	105,888	106,253*	(365)

*Preliminary cost data, not yet fully processed.

Quarterly Report

Contract No. N/A
Research Unit No: 347
Reporting Period: April 1, 1977 through June 30, 1977
Number of Pages: 2

"Marine Climatology of the Gulf of Alaska and the Bering and Beaufort Seas"
Climatic Atlases (3)

Principal Investigators

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June 24, 1977

Quarterly Report

I. Task Objectives

To compile and publish a descriptive climatology of that portion of the Alaskan waters and coastal areas that are important to resource development of the outer continental shelf (OCS).

II. Field and Laboratory Activities

This project has no field or laboratory activities. It is a joint effort by the AEIDC and the NCC to produce a climatic atlas for each of three Alaskan marine and coastal areas: the Gulf of Alaska (50°-65°N, 130°-165°W); the Bering Sea (50°-65°N, 155°-180°W); and the Beaufort Sea (65°-75°N, 140°-180°W).

NCC is to provide monthly climatological analyses in the form of 360 isopleth charts and some 10K statistical graphs. The analyses are to be based on 600,000 surface marine observations and two million (3-hourly) observations for 49 (selected) coastal stations contained in NCC's digital data base. AEIDC is to provide extremes of all weather elements and information on coastal damage resulting from wind generated weather elements, check analysis work done by NCC, and prepare all materials for publication. (AEIDC will provide an independent quarterly report).

III. Results

NCC's work is complete. All material NCC was to provide for use in the three atlases have been mailed to AEIDC for printing preparation. NCC's Principal Investigator, Bill Brower, visited Anchorage the week of April 3 to assist AEIDC in the editing of their draft work of NCC's input. Remaining work, which is the responsibility of AEIDC, is scheduled for completion with the publication of the atlas during the last quarter of FY-77 (AEIDC will provide an independent report).

IV. Preliminary Interpretation of Results

The U.S. Navy Marine Climatic Atlas of the World, Vol. II, North Pacific Ocean (1959), one of eight volumes in a series of atlases of the world which is currently being updated by the Navy, has had wide acceptance as an authoritative reference for large-scale operational planning and research.

2.

The present study will provide three atlases to represent the total of the Alaskan waters in greater detail and each will be based on more than 20 years of additional data. Also, as marine data are typically sparse in the near coastal zone, a zone of sharp gradients and complex climate, data for the 49 coastal stations were included. Such a combination should provide the best possible climatological picture for the coastal waters of Alaska.

V. Problems Encountered

A computer-visual inventory of the digital surface marine data file disclosed a sparcity of data north of 60° latitude. To permit a better climatic description of the Bering and Beaufort Seas, marine observations were digitized from manuscript forms archived at NCC for the period 7/73-12/74 and digital data for 22 additional coastal stations held in NCC's file were combined with data of the 27 stations orginally selected. However, as there were little data available in NCC's digital file for the land and marine area east of Barter Island, the Beaufort Sea Atlas will contain only a limited climatic description of the Mackenzie Bay area.

VI. Estimate of Funds Expended

All of the $10K funded to NCC for FY-77 have been expended; and as NCC's work is complete, additional funds will not be required.

QUARTERLY REPORT

Contract No.: R7120848

Research No.: 367

Reporting Period:
1 April - 31 July 1977

Number of Pages: 6

COASTAL METEOROLOGY

R. Michael Reynolds

Pacific Marine Environmental Laboratory

3 July 1977

Task Title: Coastal Meteorology

PI: R. Michael Reynolds
NOAA/PMEL
3711 15th Avenue N. E.
Seattle, WA 98105

Reporting Period 1 April - 31 July 1977

I. Task Objectives

A. Verify a mesoscale numerical model of atmospheric flow in the Yakutat - Icy Bay region.

B. Confirm the model by comparing its results to measured data from a variety of sources, e. g. data buoys, NWS weather stations, and remote land stations deployed by PMEL.

C. Produce a high quality data set during a wintertime period both for model verification and for further understanding of details in land-ocean interaction.

D. Relate observed weather conditions in Bristol Bay and the Aleutians to analytical models of air modification.

II. Field and Laboratory Activities

A. Cruises: none

B. Field Experiments: The two remote meteorological stations which were installed at Pt. Riou and Pt. Manby have been maintained by NWS personnel in Yakutat. The data seems of reasonable quality, and the instruments are functioning well.

C. Laboratory Activities

1. A meeting of OCSEAP PIs was held at Alderbrook Inn, Union, Washington on 17-19 May 1977. Mr. Reynolds attended.

2. Data from Norton Sound has been reduced and archived. This data will be useful in our predictions of the distance for offshore adjustment of the atmospheric boundary layer.

3. Data from various shore met stations is being reduced and intercompared.

4. The modified Lavoie numerical model is being tested in a series of classical problems with known analytical solutions (wheat field, antarctic katabatic winds, ice edge, etc.).

5. The reduced data tapes from the Yakutat aircraft study have been received from the National Center for Atmospheric Research. Work now is aimed at estimating data quality and parameterizing each flight for input to the model.

III. Results

A. An intercomparison of winds measured at various sites is shown in Fig. 1. The scatter is considerable and a predominant offshore flow near the coast is apparent.

B. A simple two dimensional model of thermodynamic entrainment has been developed. This simple model should help interpret the modification of the offshore flow by heat flux. Figure 2 is an example of the application of the model to a series of radiosondes taken in February 1975. The agreement of measured mixed layer height and temperature is reasonable, while the humidity is not. This model will be applied to the Norton Sound data, a much better set.

C. Aircraft data from one flight, February 1977, has been compared with a model run. The results, shown in Figures 3 and 4, show some agreement in the vicinity of Yakutat Bay, but a boundary problem on the West boundary propagates deep into the model. The boundary problem appears to be a serious one in meso-scale models. The Numerical Studies group of PMEL is actively working to improve this situation.

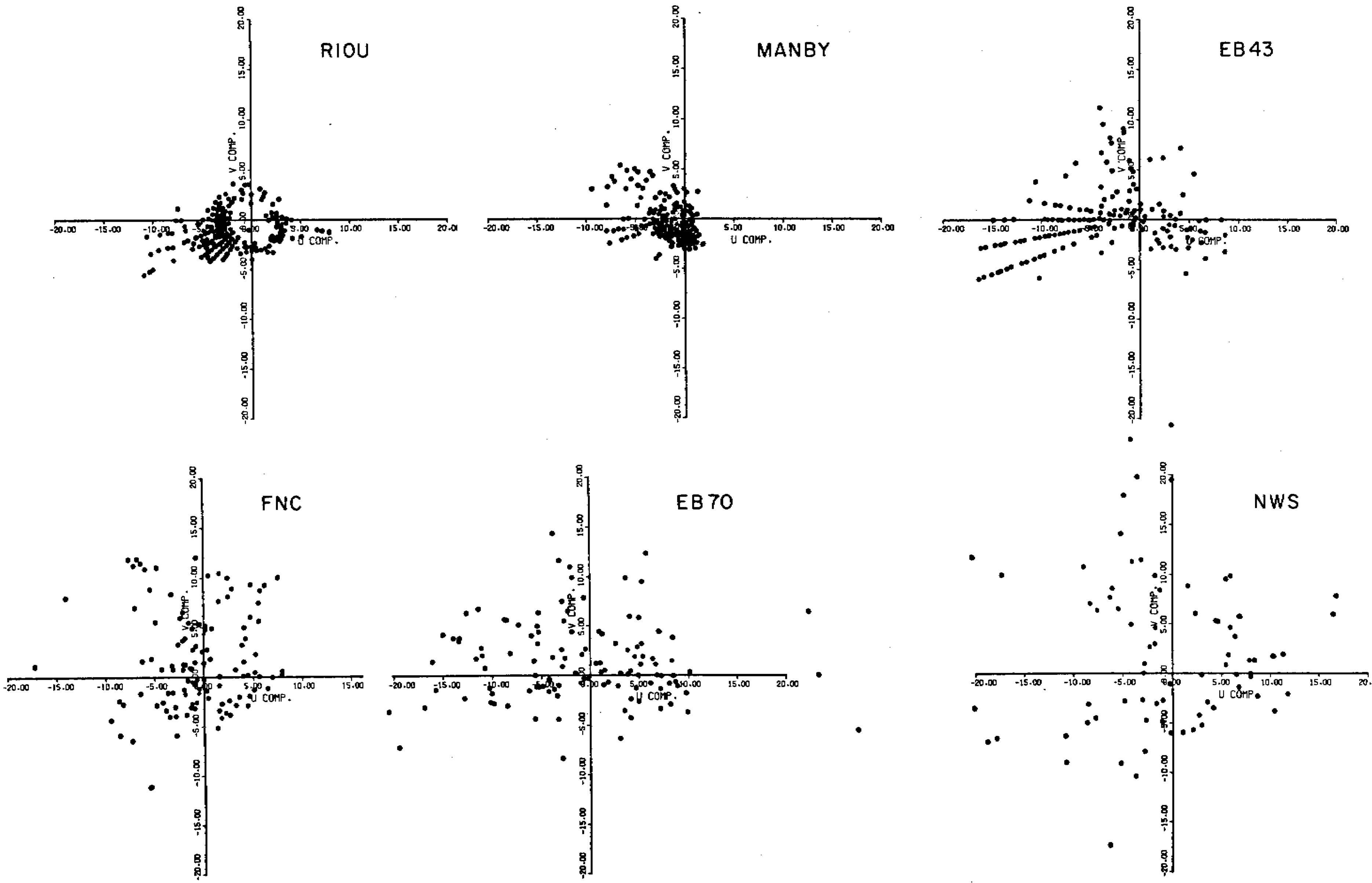


Figure 1. Intercomparison of March 1977 winds from various sources. Each dot represents the tip of a measured wind vector. Note strong offshore tendency for Riou, Manby, and even EB43 (20 km offshore).

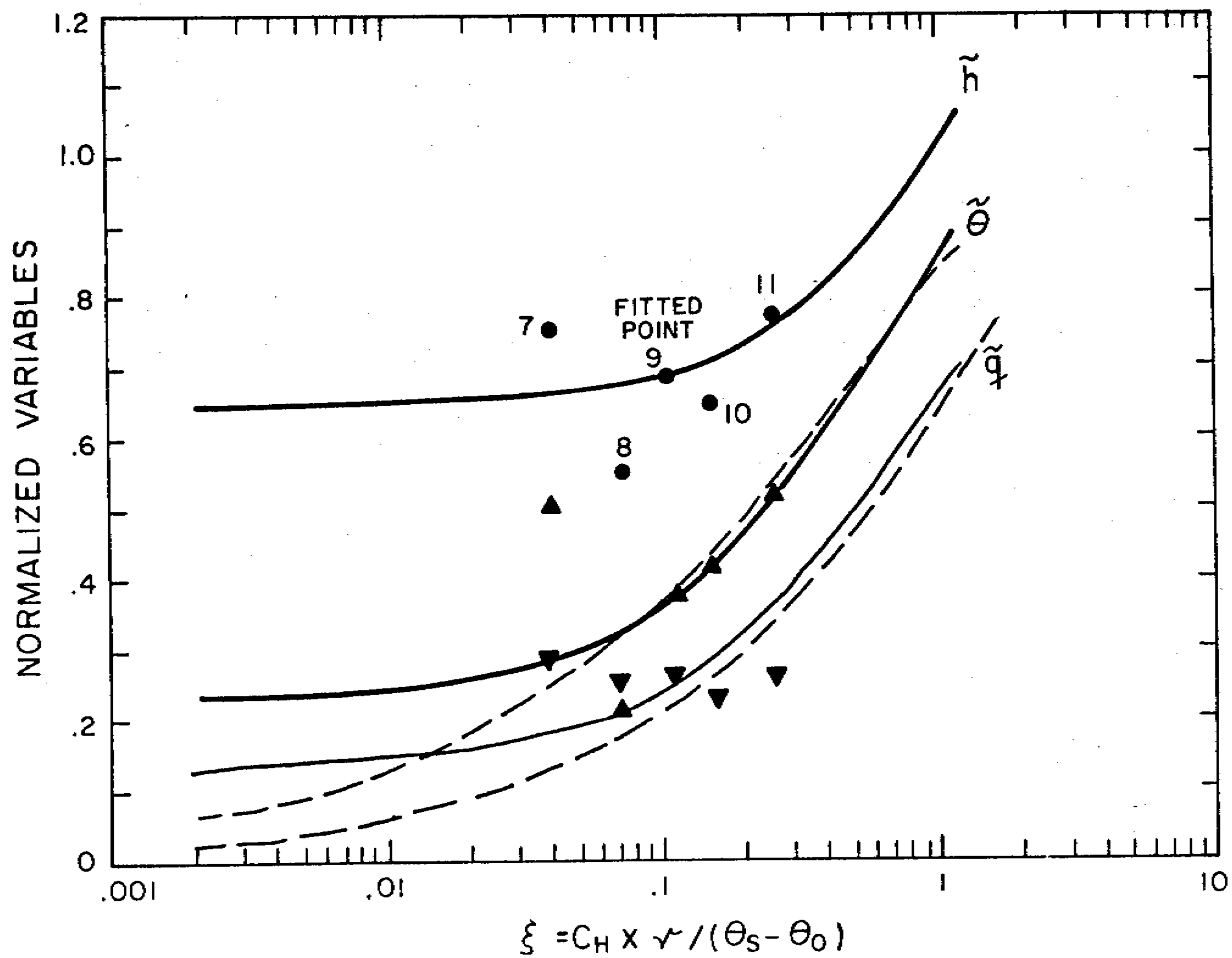


Figure 2. Comparison of data measured in February 1975 off the Malaspina Glacier to two models of offshore air modification. Solid line is the new numerical solution which includes entrainment of heat; dashed line is a simple analytic solution. Oscillation in $\tilde{h}$ and $\tilde{\theta}$ possibly indicates an inertia effect. For definitions of symbols used, see 1977 annual report.

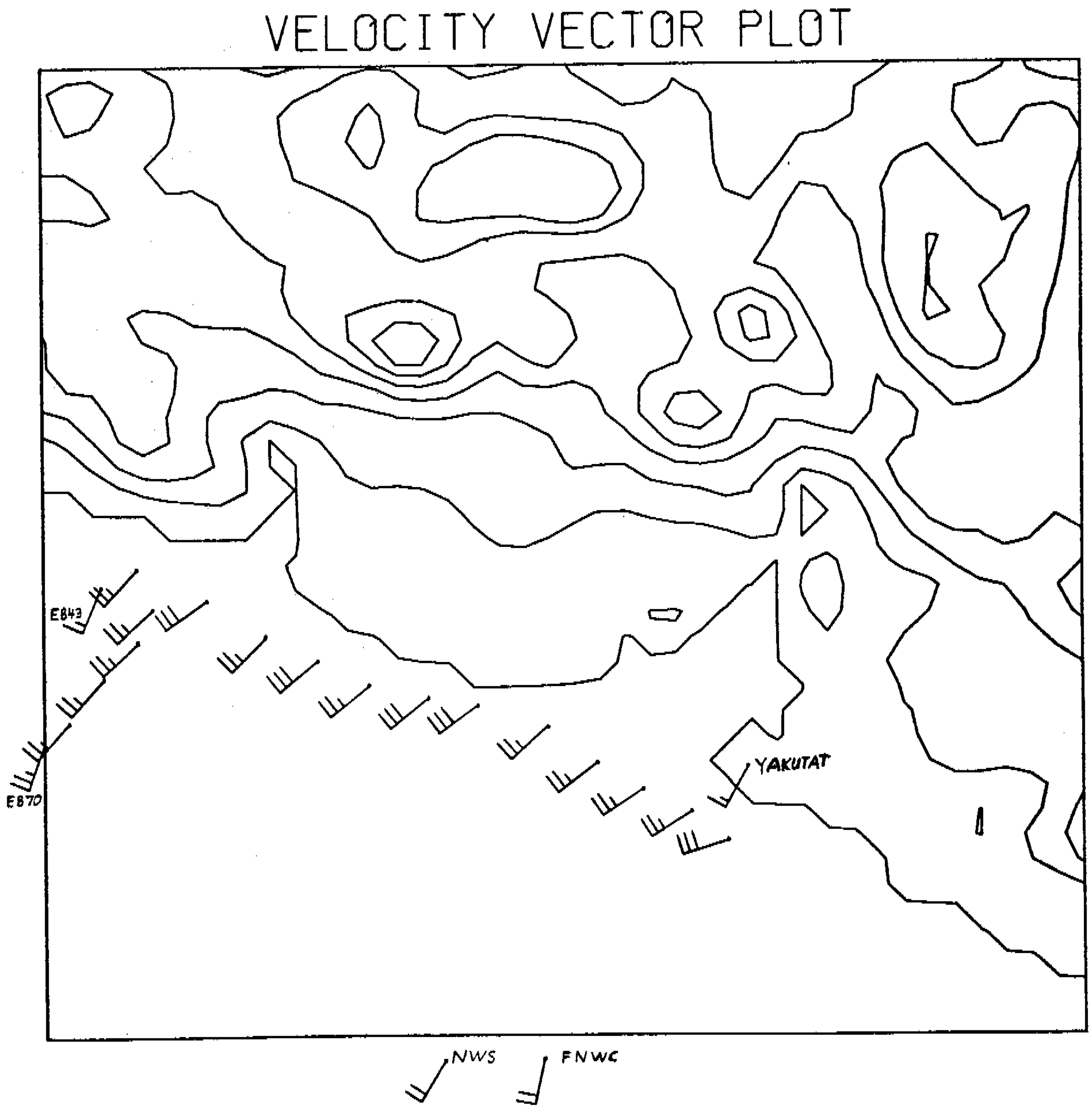


Figure 3. Measurements of surface winds taken by aircraft and surface stations, February 25, 1977. Surface winds computed by Navy (FNWC) and synoptic map interpretation (NWS) is also shown.

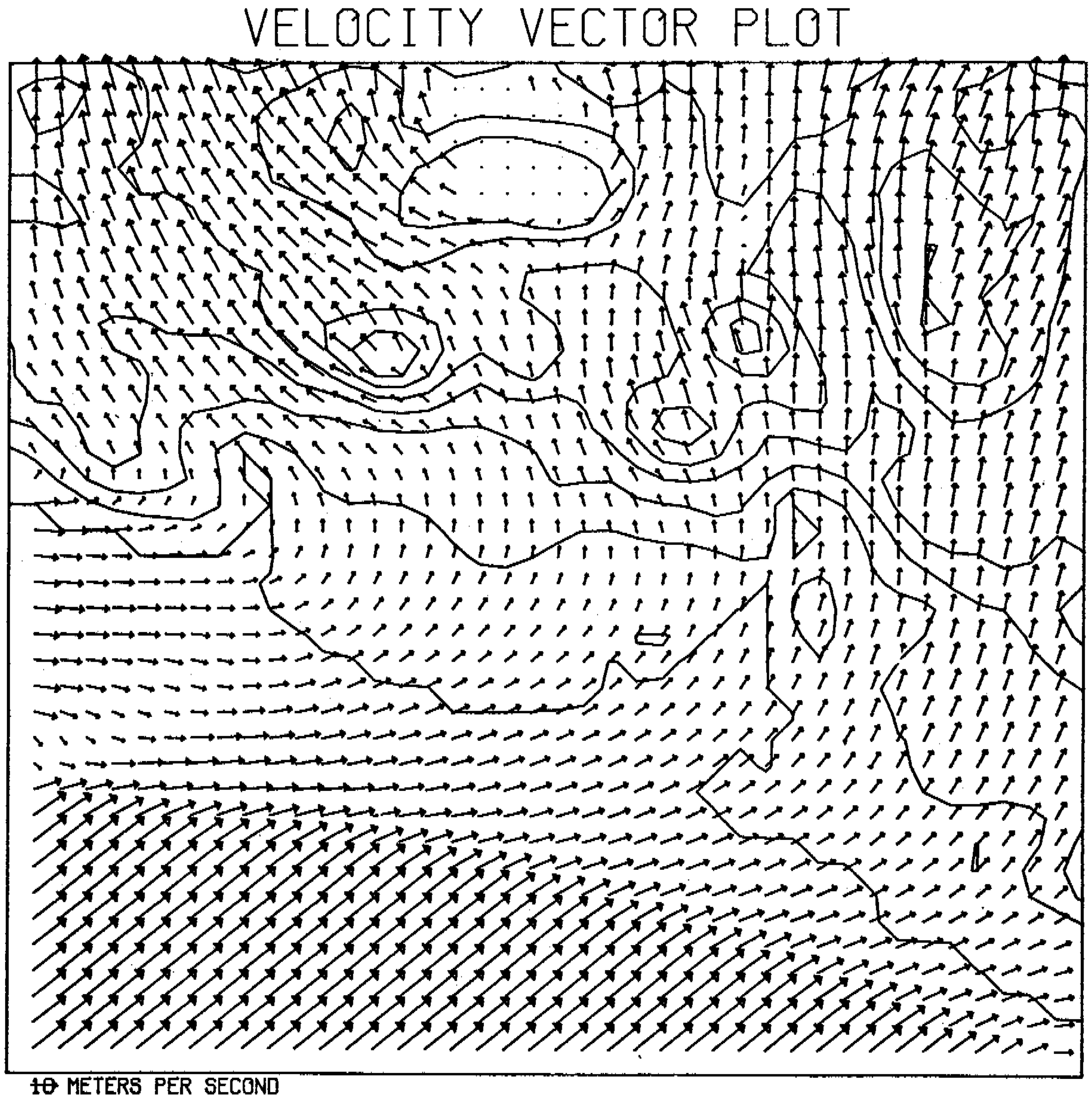


Figure 4. Numerical simulation of the winds for the February 25, 1977 case. Serious boundary problems are evident. Agreement around Yakutat is good.

FINAL REPORT

RADIOMETRIC SPECTRAL RESPONSE OF OIL FILMS

OCSEAP RESEARCH UNIT 399

P. M. Kuhn, L. P. Stearns
E. S. Salazar and B. J. Loupee
NOAA - APCL - R31
Boulder, Colorado 80302

30 July 1977

INTRODUCTION

This project proposed to investigate the effects of various IR spectral pass bands on the response of an infrared radiometer in the identification and extent of simulated oil spills on sea water at different water temperatures. An attempt was made to also determine such effects on simulated oil spills of different oil thicknesses.

The IR radiometer system employed was a single channel NOAA radiometer made up as a prototype unit from parts of the electronics of commercial manufacturers but with a NOAA designed optical train. Filters for the three spectral pass bands employed were manually changed for each experiment. In view of the necessarily limited funds remaining for this experiment after the Barrow IR imager deployment for the Arctic Project Office, three pass bands were investigated. The method followed in the research was that of observing the infrared signatures of four OCS furnished oil samples with respect to type, temperature and thickness in the three pass bands.

Prior to the laboratory experiment a modest literature review was conducted. After the archival search one of the better definitive studies on an airborne oil surveillance system was that of the Office of Naval Research (1975). The multi-sensor system described consisted of a SLAR (side-looking airborne radar), passive microwave imager, low light level TV and a multichannel IR line scanner similar to the NOAA-APCL IR imager. Reported total cost of instrumentation was $360,000. By way of contrast, the NOAA fixed field IR radiometer employed in this study has a total value of $\sim$ $6000. The Navy study involved deliberate

500 gallon spills in the eastern Pacific but without laboratory control. This study involved laboratory-simulated oil spills contained in limited size tanks by floating plastic containment rings. The NOAA imager, operating in the same IR pass bands as the referenced NOAA fixed field radiometer has a total value of ∿ $36000. It might have been used downstream in this study if further limited funding had been available. Both units have and will be flown on NASA jet aircraft for similar research in conjunction with NASA projects.

One may summarize, perhaps even in an introduction, by stating that to our knowledge no similar study as this involving fixed field radiometry in a precise laboratory calibration mode has come to our attention. The results directly applicable to the IR scanner show that the radiometer (or IR scanner) system can reliably detect and map oil spills as to extent and general oil type identification. Results on oil thickness determination were inconclusive. However, the overall results strongly suggest that a better base funded study with an IR sprectrometer or interferometer, such as possessed by NOAA-APCL, could produce more detailed results even extending into possible restrahlen IR signatures for specific oil types and possibly thicknesses. Preliminary results obtained so far show that there may well be characteristic oil-type absorption spectra initially only identifiable by an interferometer or spectrometer. This, then; would enable the proper choice of pass band filters for later used airborne IR imagery. However this would be a six to nine month study at a base cost minimum of $60,000. Such figures for an in-house project were arrived at after consultation with SRI whose figure, incidentally, was $120,000 for one year. From the point of view of physical oceanography, we suggest that it would be well worth while and urge its implementation as a dedicated project.

RADIOMETER CHARACTERISTICS

The radiometer employs a 100 Hz gold plated optical chopper system alternately directing the signal impinging on the detector from the reference Helmholtz cavity to the target. This results in an AC wave suitable for amplification and signal processing via the preamplifier and main frame electronics.

The equation reducing the radiometer observed output voltage to radiance (w cm^{-2} sr^{-1}) is (see symbol table)

$$N\uparrow_T = k\ (G[V_o + a_o + a_1T + a_2T^2] - V_E) + N_R \qquad (1)$$

The target radiance ideally is that radiance emitted directly from the oil or water surface. However this equation is general and does not involve surface emissivity. It is further assumed that the target fills the field of view (2° to 1/2 power points; 4.5° to the 95% power points) of the radiometer. $N\uparrow_T$ is a direct function of the spectral pass band employed (i.e. 10-12 μm, 8-14 μm, ...). The radiometer radiance minimum detectable signal (N.E.ΔN) is 7.0×10^{-7} w cm^{-2} sr^{-1}.

To convert radiance to calibrated equivalent black body temperature, T, we extract the target temperature from the Planck function in the expression for observed target radiance.

$$N\uparrow_T = B(\nu, T)\,\phi(\nu)\,\sigma(\nu)\,d\nu, \qquad (2)$$

where $N\uparrow_T$ in Eq. (1) and (2) are identical.

The radiometer minimum detectable temperature change is approximately $\pm$ .17C at a target temperature of 7C. This is directly related to the N.E.ΔN cited above.

Calibration is normally accomplished by determining the system transfer coefficient, k, after observing a known source of radiation.

LABORATORY OIL SLICK INFRARED SIGNATURES

EXPERIMENTAL SET-UP

To avoid oil-water mixing in this pilot project radiometric observations of the infrared oil signatures were conducted in the laboratory. Fig. 1 illustrates the experimental set-up. The blackened tray contains the "simulated" sea water, and two oil samples enclosed by floating plastic containment rings. One also sees the analog and digital data recording system as well as the modified single channel radiometer. The experimental tray and radiometer instrument platform appear in Fig. 2. In Fig. 3 a filter wheel radiometer (eight channels) is in position on the instrument platform. The platform is moved to scan the contained oil and water alternately. Radiometer output is available in real time via analog and digital output.

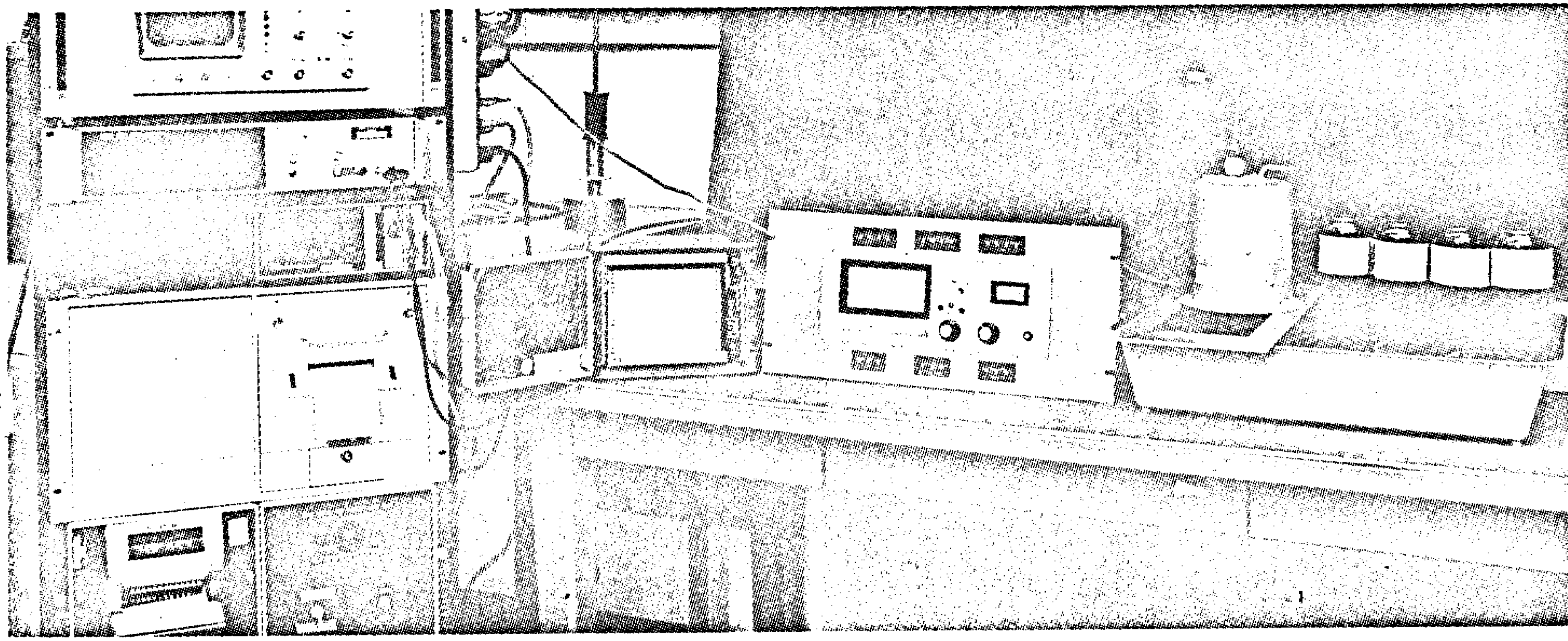


Fig. 1

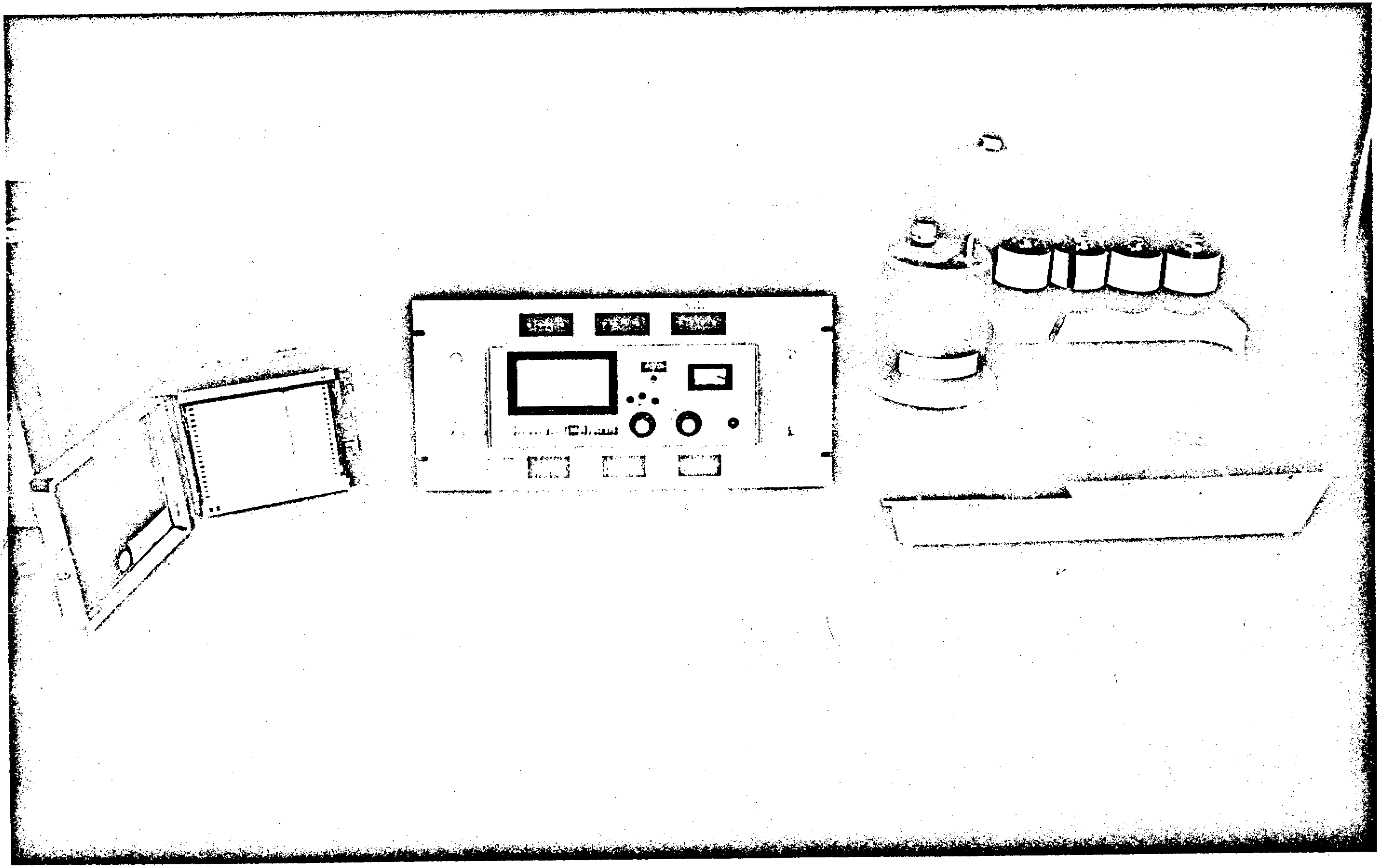


Fig. 2

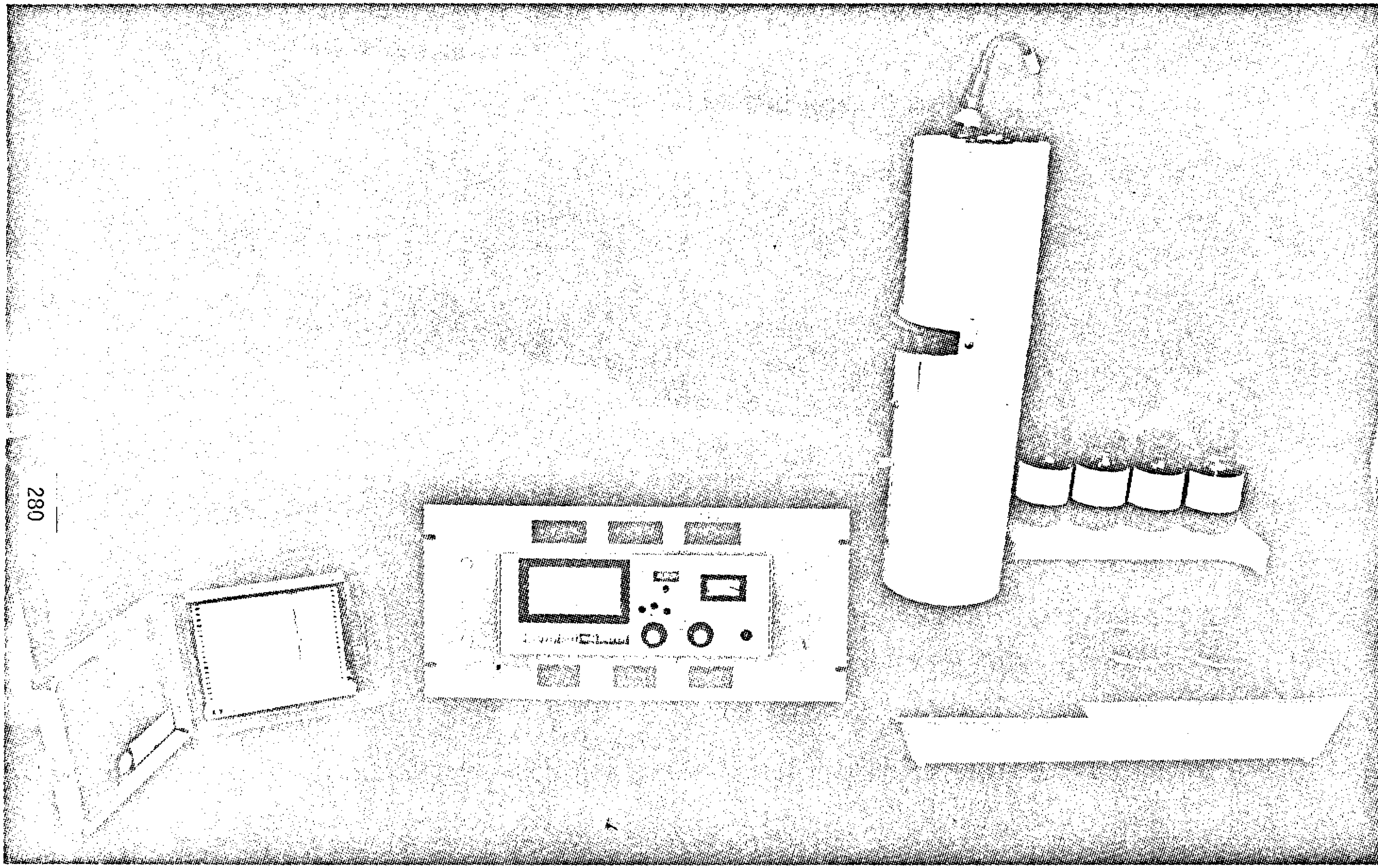


Fig. 3

Computer calibrations giving voltage output versus equivalent black body temperature (Eq. 2) are displayed in Figs. 4, 5,and 6. The labels indicate the spectral pass bands and voltage range.

To complete the relationship between voltage output and equivalent black body temperature (Figs. 4, 5, and 6) and equivalent black body temperature and radiance tables 1 and 2 are appended.

RESULTS

Four oil samples (Bunker-C, Kuwait Crude, Louisiana Crude and Fuel Oil No. 2) were temperature stabilized at room temperature ($\sim$ 20.0C) in containment rings over sea water at the same temperature for the radiometer scans. The equivalent black body temperature of the overhead laboratory ceiling averaged a steady 23.5C. This is important due to oil reflection of the ceiling (sky) radiance into the radiometer system.

To summarize the test method,four OCSEAP furnished oil samples were scanned over two widely separated "sea" temperatures in three spectral pass bands. Oil samples were scanned immediately following a synthetic spill of room temperature oil and 24 hours after the spill. In each case an observation termed the "delta factor" was the output of the tests. Simply put, the delta factor is the oil temperature minus the sea temperature. It is a measure of the temperature variation of different types of oil from the sea temperature and reflects the emissivity and thermal capacity of the oil on water.

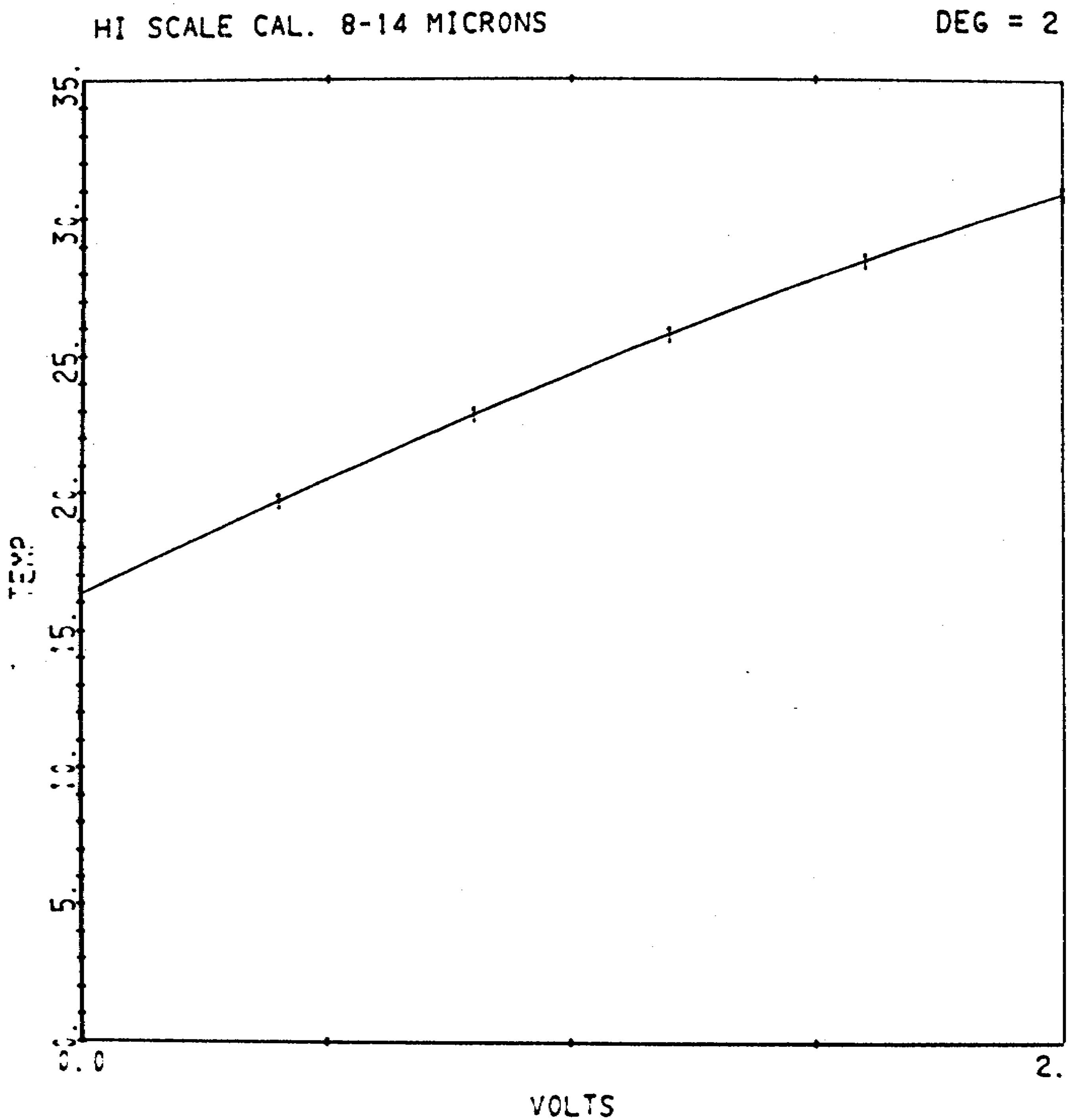


FIG. 4

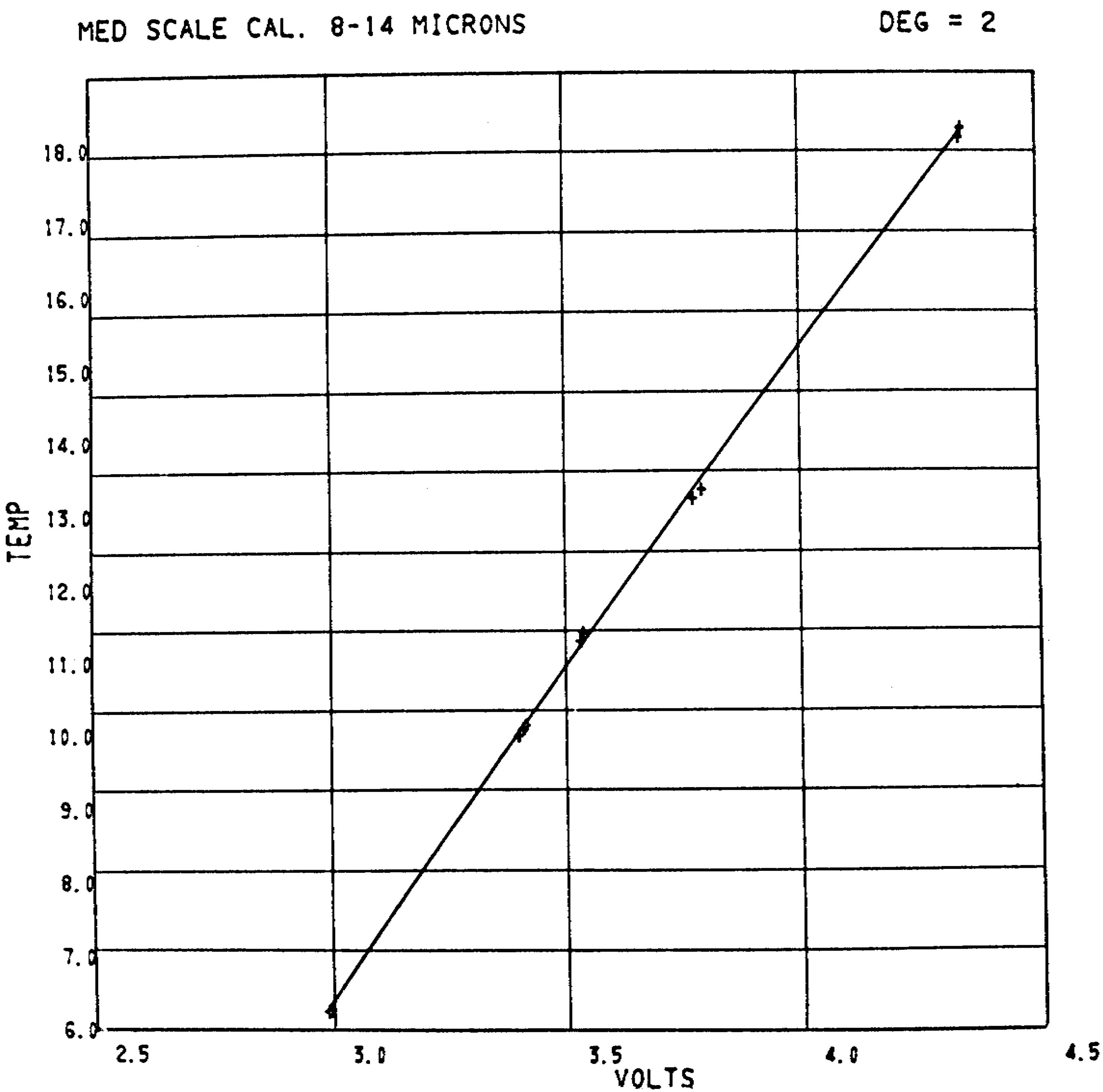

MED SCALE CAL. 8-14 MICRONS
DEG = 2
TEMP
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
2.5
3.0
3.5
4.0
4.5
VOLTS

FIG. 5

HI SCALE CAL. 10-12 MICRONS DEG = 2

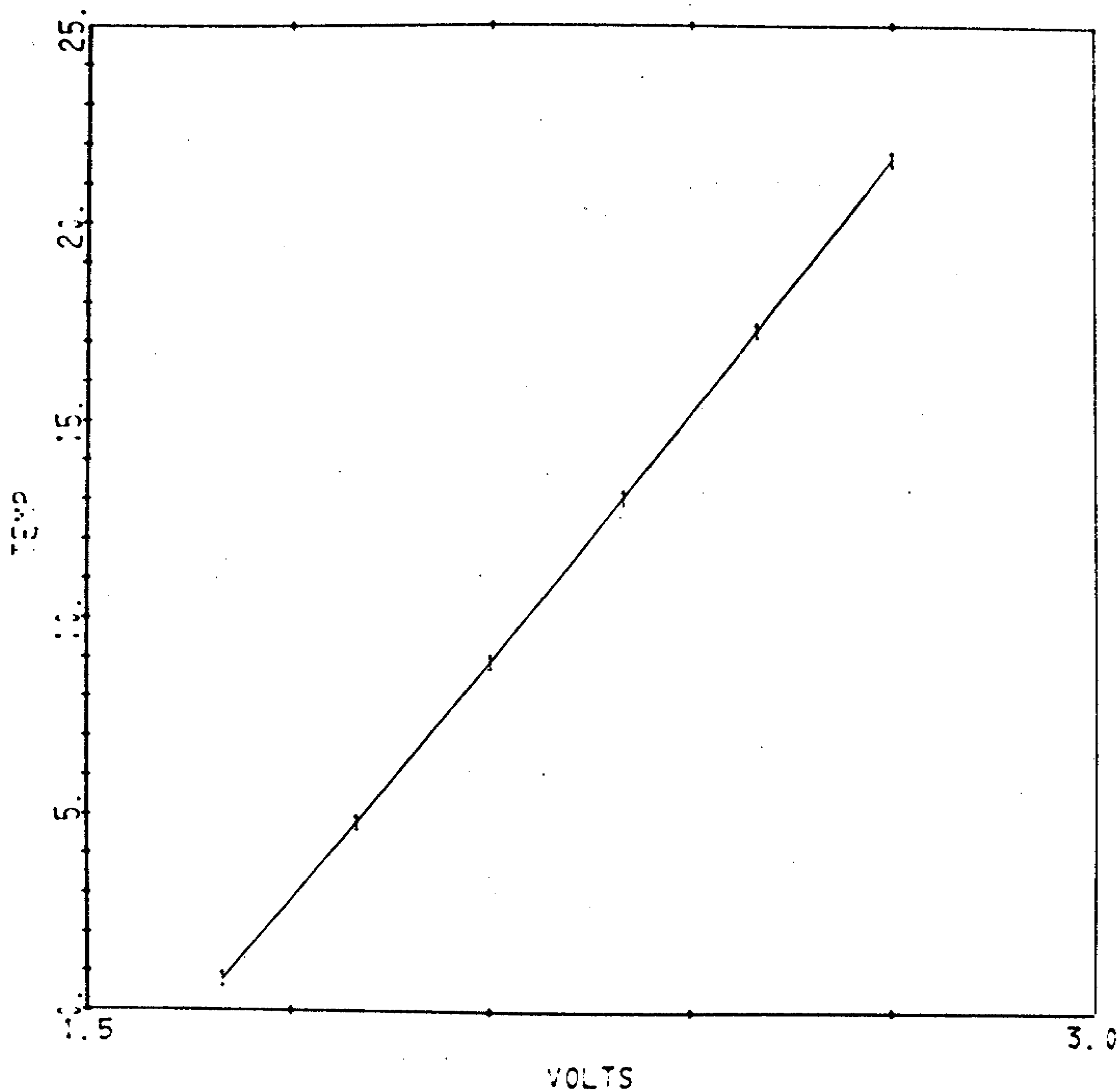
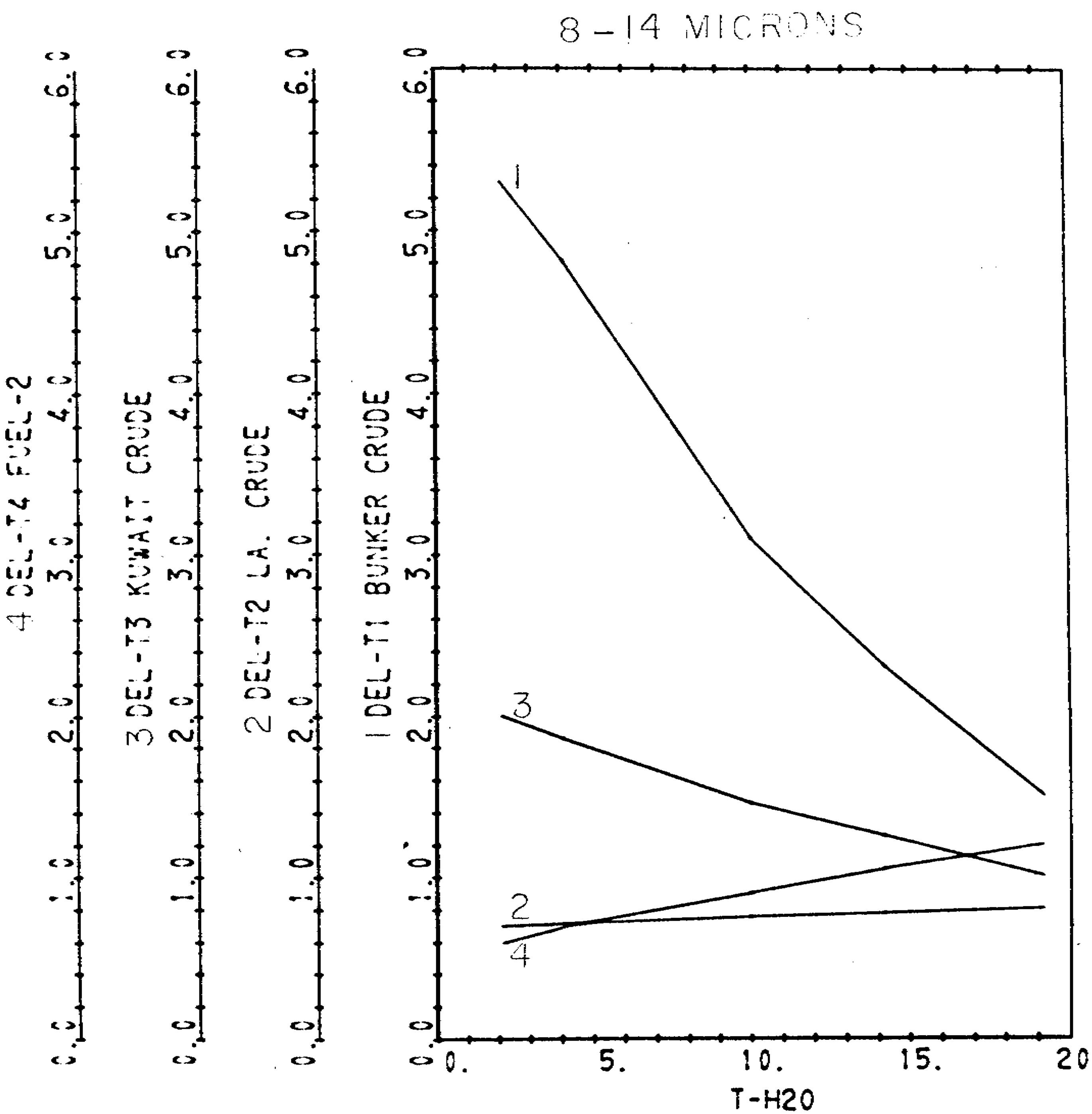


FIG. 6

Figure 7 displays the delta factor obtained in the 8-14 μm scans of the four types of oil. Singular is the large positive delta factor for Bunker-C oil over a "sea" surface of about 2C. Kuwait Crude also exhibits a moderately large factor at a "sea" temperature of 2C. The other two fuels do not evidence a significant change from water temperature especially when one realizes that real time observations at 1.0 km or more would mask delta factors that do not reach $\pm$ 1.0 degree. Reference to the same figure evidences the fact that a warm "sea" temperature of 19C results in an inconspicuous delta factor for Louisiana and Kuwait Crude and # 2 fuel oil. In fact, Bunker-C is only 1.6 C above the "sea" temperature. A 24 hr hold before a repeat scanning reduced the delta factor of the four oils even more.

Low-volatile-absorbing oil slicks such as formed by Bunker-C (heavy oil) display a delta factor much higher than the lighter more volatile oil type spills. This effect is certainly enhanced when the sea temperature becomes cold, approaching 2 to 4 C (Fig. 7). In fact the delta factor is 4 times as great for Bunker-C at 2C than at 19C. This effect is undoubtedly related to the higher absorptivity and thermal capacity of the heavy crudes over the lighter oils. To check this hypothesis, at least relative to absorptivity, the calculations from observations of the absorptivity (emissivity) over the 8-14 μm pass band are outlined.

Combs, Weickmann, Mader, and Tebo (1965) demonstrated a simple technique for determining the emissivity of various surfaces with a single-channel, fixed-field radiometer of an earlier type than


8-14 MICRONS
1 DEL-T1 BUNKER CRUDE
2 DEL-T2 LA. CRUDE
3 DEL-T3 KUWAIT CRUDE
4 DEL-T4 FUEL-2
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.
5.
10.
15.
20
T-H20
1
2
3
4
FIG. 7

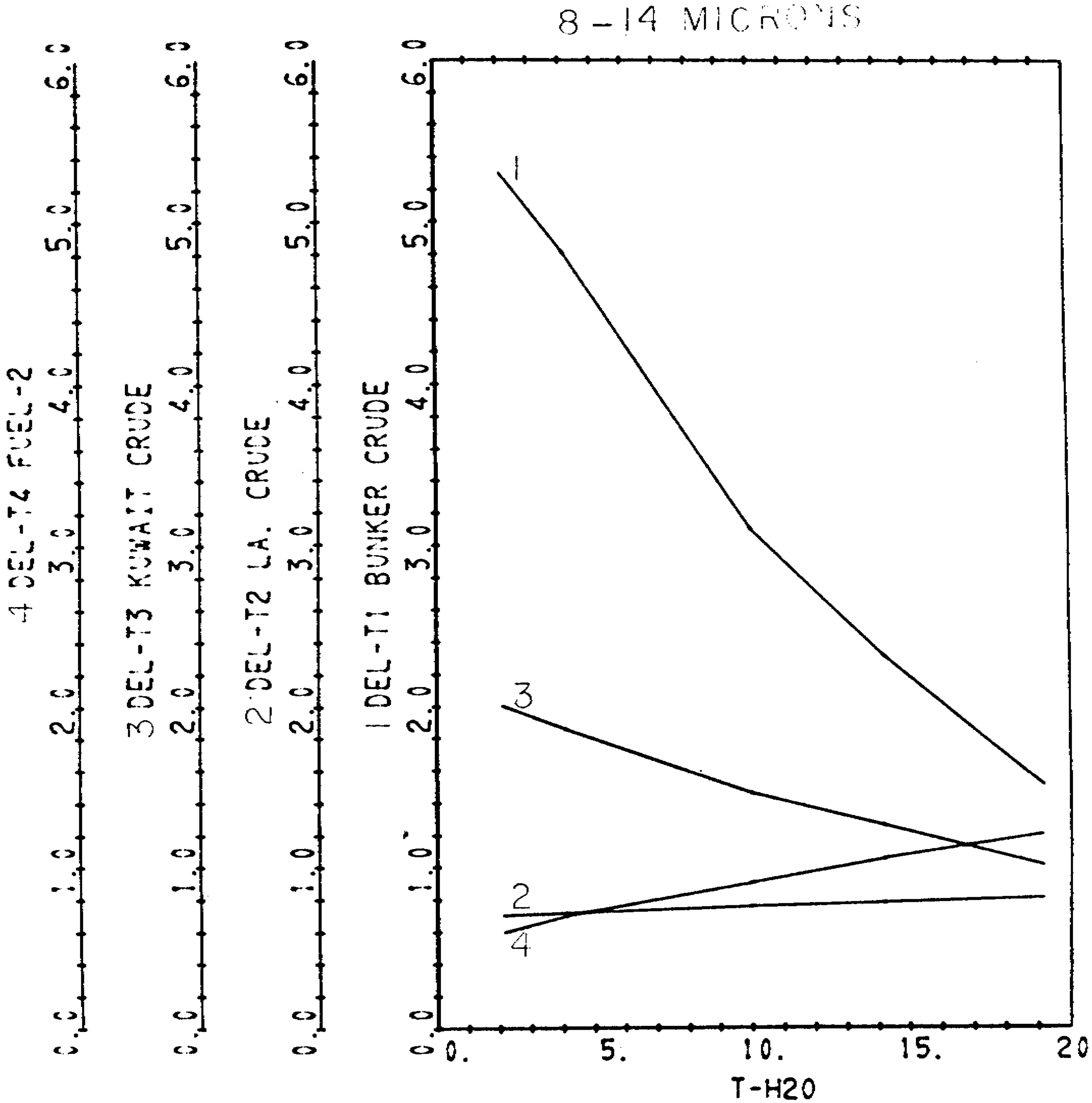

8-14 MICRONS
4 DEL-T4 FUEL-2
3 DEL-T3 KUWAIT CRUDE
2 DEL-T2 LA. CRUDE
1 DEL-T1 BUNKER CRUDE
0.0
1.0
2.0
3.0
4.0
5.0
6.0
0.
5.
10.
15.
20
T-H2O
1
2
3
4

FIG. 7

that employed in this research. If radiometer observations over the oil are conducted without an integrating hemisphere shield and then with the shield, the effects of reflection of upper hemisphere or sky radiation are eliminated and one may define the oil emissivity by,

$$\varepsilon_{\Delta\nu} = \frac{N_T\uparrow - N\downarrow}{N_o\uparrow - N\downarrow} \pm 0.15 \tag{3}$$

where $\Delta\nu$ covers the 8-14 μm pass band.

Observed temperatures averaged over several scans for insertion in Eq. 3 follow:

$N_T\uparrow$ = .0035143 (8.2 C black body temp.)

$N\downarrow$ = .0044632 (23.0 C black body temp.)

$N_o\uparrow$ = .0034906 (7.8 C black body temp.)

A solution of Eq. 3 with these inputs results in an emissivity for Bunker-C of .976 $\pm$ .02. A similar solution for "sea" water resulted in an emissivity over the 8-14 μm band of .945 $\pm$ 015. The random 1 σ error limit of .015 makes these results somewhat tentative. However if one considers a standard error of estimate defined as one σ divided by the square root of the 10 observations the emissivity values are significant.

In the 10-12 μm pass band (Fig. 8) at approximately 19C, the delta factor for all oils is identical resulting in no type differentiation. However, at 2C Bunker Crude and # 2 fuel display large delta factors suggesting that the 8-14 μm spectral range would be a satisfactory pass band for identification of Bunker-C and possibly Kuwait Crude while the

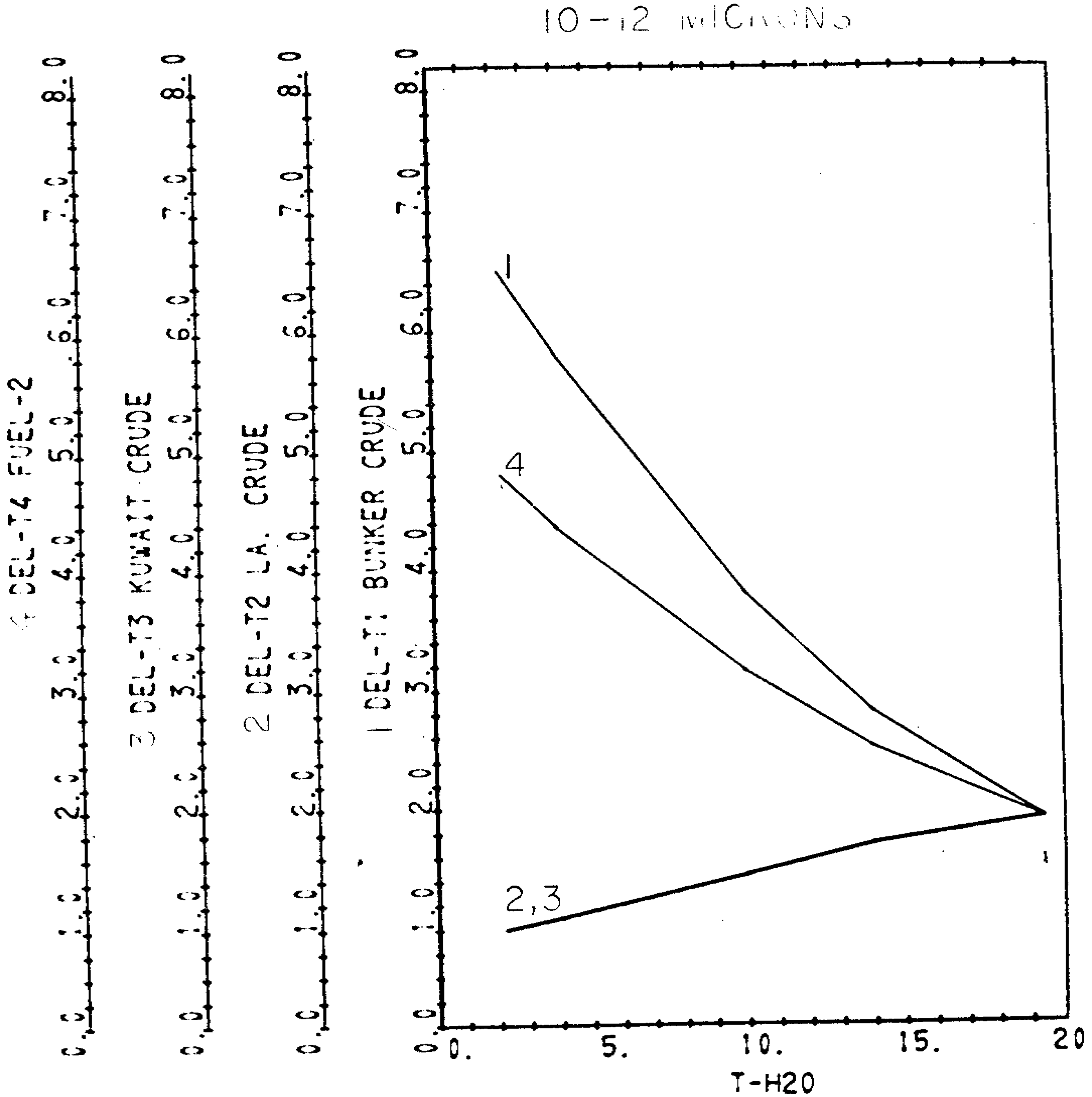

10-12 MICRONS
1 DEL-T1 BUNKER CRUDE
2 DEL-T2 LA. CRUDE
3 DEL-T3 KUWAIT CRUDE
4 DEL-T4 FUEL-2
1
4
2,3
0. 5. 10. 15. 20
T-H20

FIG. 8

10-12 μm band could be used for identification of # 2 as well as Bunker-C. Further review of these two figures suggest that it may be difficult to determine the extent of the Louisiana crude oil spill in view of the small delta factor at the 2C "sea" temperature.

Fig. 9 presenting results in the 10.5-11.5 μm band displays the largest delta factor again for both Bunker-C and # 2 fuel.

In some contrast to the Navy Report previously cited,our results do show a fair correlation of the radiometer delta factor with certain oil types in the two channels.

Figures 7 and 8 suggest that the 10 - 12 μm pass band better identifies Bunker-C and Fuel No. 2 at ∿ 2 C while the 8 - 14 μm band better identifies Bunker-C and Kuwait crude at ∿2 C. These same two figures clearly show that the 10 - 12 μm pass band is far superior to the 8 - 14 μm pass band in identifying a No. 2 fuel oil spill or slick. The results indicate a future more comprehensive and detailed interferometer or spectrometer study to determine the line structure of various oil types and thicknesses. This could possibly provide the pass bands or channels best suited to a particular oil type.

A singular feature (Fig. 9) became evident in the use of a "tighter" and cleaner pass band in the window region, namely 10.5 to 11.5 μm. This pass band increases the delta factor at a sea temperature of 2C suggesting strong emission in this band or a possible restrahlen effect. However, an interferometric laboratory search from 3.0 to 45.0 μm is again suggested for perhaps, 2C, 5C, 8C, 12C.

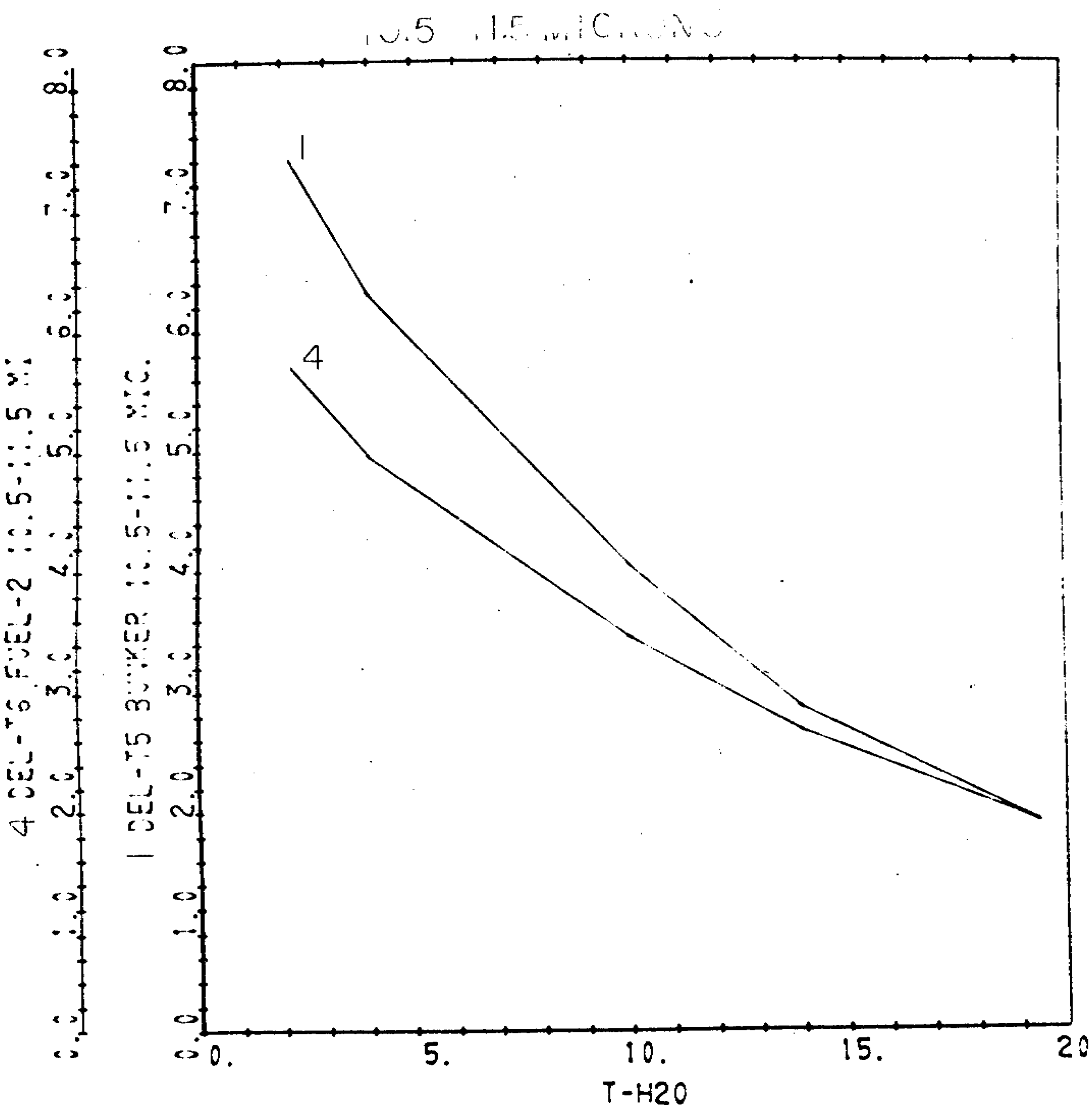


FIG. 9

Average thicknesses for the tests were 1 mm. Doubling and slightly exceeding the thicknesses (2 to 2.5 μm) resulted in virtually no change in the delta factor.

RESULTS SUMMARY

1. Laboratory tests indicate clearly that an oil spill area is easily distinguished as to extent from the non-contaminated sea. This is certainly not an original conclusion.
2. There is a strong suggestion that unique IR signatures can be found for various oil types to enable good oil type identification.
3. Time after spill does not change the results as to identification of oil type. Obviously surface diffusion at the far boundaries of a spill will change this conclusion. The samples of this research represented more the "core" of the spill in a time series. The core area did not produce IR signature changes with time under the conditions imposed.
4. A thickness change of from 1 mm to 2.5 mm did not affect the IR signatures appreciably.

RECOMMENDATIONS

1. It would be very promising to conduct spectrometer or interferometric passive IR signature identification of various oil types. This could be a precise laboratory experiment followed by sea tests. Adequate 60K to 100K funds for proper equipment and filters are required. Surely this test will eventually be accomplished.
2. Continue on a larger scale and with IR imagery oil slick extent observations in the mixing conditions of the sea on targets of

opportunity or on a small lake. Ground truth is essential in a thickness to extent relation.

3. Thickness observations do not appear overly productive and seem to be outweighed by extent and oil type identification research.

SYMBOL TABLE

a_o, a_1, a_2	quadratic coefficients for voltage correction based on the temperature effect on chopper blade
B	Planck function
G	radiometer electronics gain
k	system response factor (w cm^{-2} sr^{-1} $volt^{-1}$)
N	sky radiance
N_o	true black body radiance of oil interface under integrating sphere.
N_R	reference cavity radiance
N_T	oil target black body radiance without integrating sphere
V_E	temperature offset voltage
V_o	output voltage analog
ν	wave number
ϕ	transmission through lens and filter
σ	transmission through detector
ε	emissivity
$\Delta\nu$	spectral interval (wave)

REFERENCES

Development of a prototype airborne oil surveillance system,Final Report No. CG-D-90-75, Task No. 4204.4/1, U. S. Navy, Office of Research and Development, 1975.

Combs, A. C., H. K. Weickmann, C. Mader and A. Tebo: Application of Infrared Radiometers to Meteorology, J. Appl. Meteor., Vol. 4, No. 2, 1965.

FISCAL SECTION

Available Transfer Funds - OCSEAP TO APCL

CONVAIR 990 IMAGERY	3500
IR-UV LAB TEST	15000
	18500

Funds Expended by 9-30-76

CONVAIR 990 IMAGERY	3500
ALASKA (WELLER) IMAGERY OUT OF BARROW	9500
	13000

Funds Expended by 7-31-77

ON IR-UV 3500	3500
	16500

Actual Received from OCSEAP thru 9-30-76	12100
COST TO APCL	- 4100

FIGURE LEGEND

1. Laboratory set-up including oil spill in confinement trays, radiometer head and console, digital and analog recorders. The four sample containers of the OCS oil furnished for the experiment are shown in the right background.

2. Laboratory set-up to measure oil spill temperature including experimental tray described in Fig. 1, radiometer platform and recorder.

3. Same as Fig. 2 with 8 channel radiometer on platform.

4,5,6. Computer calibrations, voltage output versus black body temperature for selected ranges and spectral pass bands of radiometer.

7. Delta factor, 8 - 14 μm

8. Delta factor, 10 - 12 μm

9. Delta factor, 10.5 - 11.5 μm

TABLES

1. 8 - 14 μm black body tables

2. 9.5 - 11.5 μm black body tables

Table 1

STA: , DATE, CALCULATED, MM/YY PAGE

WAVE LENGTH REGION FROM 7.58 TO 15.38 MICRONS WITH FILTER = PRT-5 8-14

WAVE NUMBERS FROM 650.00 TO 1320.00 BY 10.00 BB CALIB RADIANT POWER FOR 0 LAYERS

PRESSURE	TEMP.	MIX RATIO	DELU	IRRADIANCE W/SQ CM	ANGLE	RADIANCE W/SQ CM SR	CO 2 GM/SQ CM	H2O GM/SQ CM

TEMP.	IRRADIANCE W/SQ CM	RADIANCE W/SQ CM SR	RADIANCE (NORMAL)
.0	0.	.0031468	.0000681
.2	0.	.0030577	.0000684
.4	0.	.0030687	.0000685
.6	0.	.0030796	.0000689
.8	0.	.0030905	.0000691
1.0	0.	.0031016	.0000693
1.2	0.	.0031127	.0000695
1.4	0.	.0031237	.0000698
1.6	0.	.0031348	.0000701
1.8	0.	.0031459	.0000703
2.0	0.	.0031571	.0000705
2.2	0.	.0031682	.0000708
2.4	0.	.0031794	.0000711
2.6	0.	.0031906	.0000713
2.8	0.	.0032018	.0000716
3.0	0.	.0032131	.0000718
3.2	0.	.0032244	.0000721
3.4	0.	.0032357	.0000723
3.6	0.	.0032470	.0000726
3.8	0.	.0032584	.0000729
4.0	0.	.0032697	.0000731
4.2	0.	.0032811	.0000734
4.4	0.	.0032926	.0000736
4.6	0.	.0033040	.0000739
4.8	0.	.0033155	.0000741
5.0	0.	.0033270	.0000744
5.2	0.	.0033385	.0000746
5.4	0.	.0033501	.0000749
5.6	0.	.0033616	.0000752
5.8	0.	.0033732	.0000754
6.0	0.	.0033849	.0000757
6.2	0.	.0033965	.0000759
6.4	0.	.0034082	.0000762
6.6	0.	.0034199	.0000765
6.8	0.	.0034316	.0000767
7.0	0.	.0034433	.0000770
7.2	0.	.0034551	.0000773
7.4	0.	.0034669	.0000775
7.6	0.	.0034787	.0000778
7.8	0.	.0034906	.0000780
8.0	0.	.0035024	.0000783
8.2	0.	.0035143	.0000786
8.4	0.	.0035262	.0000788
8.6	0.	.0035382	.0000791
8.8	0.	.0035501	.0000794
9.0	0.	.0035621	.0000796
9.2	0.	.0035741	.0000799
9.4	0.	.0035862	.0000802
9.6	0.	.0035982	.0000805
9.8	0.	.0036103	.0000807

STAT. DATE, CALCULATED,

WAVE LENGTH REGION FROM 7.58 TO 15.38 MICRONS WITH FILTER = PRT-5 8-14
WAVE NUMBERS FROM 650.00 TO 1320.00 BY 10.00

BB CALIB RADIANT POWER FOR 0 LAYERS

PRESSURE TEMP. MIX RATIO DELU IRRADIANCE W/SQ CM ANGLE RADIANCE W/SQ CM SR CO 2 GM/SQ CM H2O GM/SQ CM

TEMP.	IRRADIANCE W/SQ CM	RADIANCE W/SQ CM SR	RADIANCE (NORMAL)
10.0	0.	.0036225	.0000810
10.2	0.	.0036346	.0000813
10.4	0.	.0036468	.0000815
10.6	0.	.0036589	.0000818
10.8	0.	.0036712	.0000821
11.0	0.	.0036834	.0000824
11.2	0.	.0036957	.0000826
11.4	0.	.0037079	.0000829
11.6	0.	.0037203	.0000832
11.8	0.	.0037326	.0000835
12.0	0.	.0037450	.0000837
12.2	0.	.0037573	.0000840
12.4	0.	.0037698	.0000843
12.6	0.	.0037822	.0000846
12.8	0.	.0037946	.0000848
13.0	0.	.0038071	.0000851
13.2	0.	.0038196	.0000854
13.4	0.	.0038322	.0000857
13.6	0.	.0038447	.0000860
13.8	0.	.0038573	.0000862
14.0	0.	.0038699	.0000865
14.2	0.	.0038826	.0000868
14.4	0.	.0038952	.0000871
14.6	0.	.0039079	.0000874
14.8	0.	.0039206	.0000877
15.0	0.	.0039334	.0000879
15.2	0.	.0039461	.0000882
15.4	0.	.0039589	.0000885
15.6	0.	.0039717	.0000888
15.8	0.	.0039845	.0000891
16.0	0.	.0039974	.0000894
16.2	0.	.0040103	.0000897
16.4	0.	.0040232	.0000900
16.6	0.	.0040361	.0000902
16.8	0.	.0040491	.0000905
17.0	0.	.0040621	.0000908
17.2	0.	.0040751	.0000911
17.4	0.	.0040881	.0000914
17.6	0.	.0041012	.0000917
17.8	0.	.0041143	.0000920
18.0	0.	.0041274	.0000923
18.2	0.	.0041405	.0000925
18.4	0.	.0041537	.0000929
18.6	0.	.0041668	.0000932
18.8	0.	.0041800	.0000935
19.0	0.	.0041933	.0000938
19.2	0.	.0042065	.0000941
19.4	0.	.0042198	.0000944
19.6	0.	.0042331	.0000946
19.8	0.	.0042465	.0000949

Table I

STA :, DATE, CALCULATED, MM/

WAVE LENGTH REGION FROM 7.58 TO 15.38 MICRONS WITH FILTER = PRT-5 8-14
WAVE NUMBERS FROM 650.00 TO 1320.00 BY 10.00

BB CALIB RADIANT POWER FOR 0 LAYERS

PRESSURE | TEMP. | MIX RATIO | DELU | IRRADIANCE W/SQ CM | ANGLE | RADIANCE W/SQ CM SR | CO 2 GM/SQ CM | H2O GM/SQ CM

TEMP.	IRRADIANCE W/SQ CM	RADIANCE W/SQ CM SR	RADIANCE (NORMAL)
20.0	0.	.0042598	.0000952
20.2	0.	.0042732	.0000955
20.4	0.	.0042866	.0000958
20.6	0.	.0043000	.0000961
20.8	0.	.0043135	.0000964
21.0	0.	.0043270	.0000967
21.2	0.	.0043405	.0000970
21.4	0.	.0043540	.0000974
21.6	0.	.0043676	.0000977
21.8	0.	.0043812	.0000980
22.0	0.	.0043948	.0000983
22.2	0.	.0044084	.0000986
22.4	0.	.0044221	.0000989
22.6	0.	.0044358	.0000992
22.8	0.	.0044495	.0000995
23.0	0.	.0044632	.0000998
23.2	0.	.0044770	.0001001
23.4	0.	.0044908	.0001004
23.6	0.	.0045046	.0001007
23.8	0.	.0045184	.0001010
24.0	0.	.0045323	.0001013
24.2	0.	.0045462	.0001016
24.4	0.	.0045601	.0001020
24.6	0.	.0045740	.0001023
24.8	0.	.0045880	.0001025
25.0	0.	.0046020	.0001029
25.2	0.	.0046160	.0001032
25.4	0.	.0046300	.0001035
25.6	0.	.0046441	.0001038
25.8	0.	.0046582	.0001042
26.0	0.	.0046723	.0001045
26.2	0.	.0046864	.0001048
26.4	0.	.0047006	.0001051
26.6	0.	.0047148	.0001054
26.8	0.	.0047290	.0001057
27.0	0.	.0047432	.0001061
27.2	0.	.0047575	.0001064
27.4	0.	.0047718	.0001067
27.6	0.	.0047861	.0001070
27.8	0.	.0048004	.0001073
28.0	0.	.0048148	.0001077
28.2	0.	.0048292	.0001080
28.4	0.	.0048436	.0001083
28.6	0.	.0048580	.0001086
28.8	0.	.0048725	.0001089
29.0	0.	.0048870	.0001093
29.2	0.	.0049015	.0001096
29.4	0.	.0049160	.0001099
29.6	0.	.0049306	.0001102
29.8	0.	.0049452	.0001105

Table 2

STAT , DATE, CALC...ED, MM/ . 1

WAVE LENGTH REGION FROM 9.26 TO 11.90 MICRONS WITH FILTER = BELICKA + DET

WAVE NUMBERS FROM 840.00 TO 1080.00 BY 10.00 BB CALIB RADIANT POWER FOR 0 LAYERS

PRESSURE TEMP. MIX RATIO DELU IRRADIANCE W/SQ CM ANGLE RADIANCE W/SQ CM SR CO 2 GM/SQ CM H2O GM/SQ CM

TEMP.	IRRADIANCE W/SQ CM	RADIANCE W/SQ CM SR	RADIANCE (NORMAL)
.0	0.	.0006229	.0000670
.2	0.	.0006252	.0000673
.4	0.	.0006275	.0000675
.6	0.	.0006299	.0000678
.8	0.	.0006322	.0000680
1.0	0.	.0006345	.0000683
1.2	0.	.0006369	.0000685
1.4	0.	.0006392	.0000688
1.6	0.	.0006416	.0000690
1.8	0.	.0006440	.0000693
2.0	0.	.0006463	.0000695
2.2	0.	.0006487	.0000698
2.4	0.	.0006511	.0000700
2.6	0.	.0006535	.0000703
2.8	0.	.0006558	.0000706
3.0	0.	.0006582	.0000708
3.2	0.	.0006606	.0000711
3.4	0.	.0006630	.0000713
3.6	0.	.0006654	.0000716
3.8	0.	.0006679	.0000719
4.0	0.	.0006703	.0000721
4.2	0.	.0006727	.0000724
4.4	0.	.0006751	.0000726
4.6	0.	.0006776	.0000729
4.8	0.	.0006800	.0000732
5.0	0.	.0006824	.0000734
5.2	0.	.0006849	.0000737
5.4	0.	.0006874	.0000739
5.6	0.	.0006898	.0000742
5.8	0.	.0006923	.0000745
6.0	0.	.0006948	.0000747
6.2	0.	.0006972	.0000750
6.4	0.	.0006997	.0000753
6.6	0.	.0007022	.0000755
6.8	0.	.0007047	.0000758
7.0	0.	.0007072	.0000761
7.2	0.	.0007097	.0000764
7.4	0.	.0007122	.0000766
7.6	0.	.0007147	.0000769
7.8	0.	.0007173	.0000772
8.0	0.	.0007198	.0000774
8.2	0.	.0007223	.0000777
8.4	0.	.0007249	.0000780
8.6	0.	.0007274	.0000783
8.8	0.	.0007299	.0000785
9.0	0.	.0007325	.0000788
9.2	0.	.0007351	.0000791
9.4	0.	.0007376	.0000794
9.6	0.	.0007402	.0000796
9.8	0.	.0007428	.0000799

Table 2

STAT[illegible] DATE, [illegible]LCU[illegible]ED, M/Y. P[illegible]

WAVE LENGTH REGION FROM 9.26 TO 11.90 MICRONS WITH FILTER = BELICKA + DET

WAVE NUMBERS FROM 840.00 TO 1080.00 BY 10.00

BB CALIB RADIANT POWER FOR 0 LAYERS

PRESSURE	TEMP.	MIX RATIO	DELU	IRRADIANCE W/SQ CM	ANGLE	RADIANCE W/SQ CM SR	CO 2 GM/SQ CM	H2O GM/SQ CM

TEMP.	IRRADIANCE W/SQ CM	RADIANCE W/SQ CM SR	RADIANCE (NORMAL)
10.0	0.	.0007453	.0000802
10.2	0.	.0007479	.0000805
10.4	0.	.0007505	.0000807
10.6	0.	.0007531	.0000810
10.8	0.	.0007557	.0000813
11.0	0.	.0007583	.0000815
11.2	0.	.0007609	.0000819
11.4	0.	.0007636	.0000821
11.6	0.	.0007662	.0000824
11.8	0.	.0007688	.0000827
12.0	0.	.0007714	.0000830
12.2	0.	.0007741	.0000833
12.4	0.	.0007767	.0000836
12.6	0.	.0007794	.0000838
12.8	0.	.0007820	.0000841
13.0	0.	.0007847	.0000844
13.2	0.	.0007874	.0000847
13.4	0.	.0007900	.0000850
13.6	0.	.0007927	.0000853
13.8	0.	.0007954	.0000856
14.0	0.	.0007981	.0000859
14.2	0.	.0008008	.0000862
14.4	0.	.0008035	.0000864
14.6	0.	.0008062	.0000867
14.8	0.	.0008089	.0000870
15.0	0.	.0008116	.0000873
15.2	0.	.0008143	.0000876
15.4	0.	.0008171	.0000879
15.6	0.	.0008198	.0000882
15.8	0.	.0008225	.0000885
16.0	0.	.0008253	.0000888
16.2	0.	.0008280	.0000891
16.4	0.	.0008308	.0000894
16.6	0.	.0008335	.0000897
16.8	0.	.0008363	.0000900
17.0	0.	.0008391	.0000903
17.2	0.	.0008419	.0000906
17.4	0.	.0008446	.0000909
17.6	0.	.0008474	.0000912
17.8	0.	.0008502	.0000915
18.0	0.	.0008530	.0000918
18.2	0.	.0008558	.0000921
18.4	0.	.0008586	.0000924
18.6	0.	.0008614	.0000927
18.8	0.	.0008643	.0000930
19.0	0.	.0008671	.0000933
19.2	0.	.0008699	.0000936
19.4	0.	.0008727	.0000939
19.6	0.	.0008756	.0000942
19.8	0.	.0008784	.0000945

Table 2

STATIC DATE, .LOC. .D, /Y P.

WAVE LENGTH REGION FROM 9.26 TO 11.90 MICRONS WITH FILTER = BELICKA + DET
WAVE NUMBERS FROM 840.00 TO 1080.00 BY 10.00 BB CALIB RADIANT POWER FOR 0 LAYERS

PRESSURE	TEMP.	MIX RATIO	DELU	IRRADIANCE W/SQ CM	ANGLE	RADIANCE W/SQ CM SR	CO 2 GM/SQ CM	H2O GM/SQ CM

TEMP.	IRRADIANCE W/SQ CM	RADIANCE W/SQ CM SR	RADIANCE (NORMAL)
20.0	0.	.0008813	.0000948
20.2	0.	.0008841	.0000951
20.4	0.	.0008870	.0000954
20.6	0.	.0008899	.0000957
20.8	0.	.0008928	.0000960
21.0	0.	.0008956	.0000964
21.2	0.	.0008985	.0000967
21.4	0.	.0009014	.0000970
21.6	0.	.0009043	.0000973
21.8	0.	.0009072	.0000976
22.0	0.	.0009101	.0000979
22.2	0.	.0009130	.0000982
22.4	0.	.0009159	.0000985
22.6	0.	.0009189	.0000989
22.8	0.	.0009218	.0000992
23.0	0.	.0009247	.0000995
23.2	0.	.0009277	.0000998
23.4	0.	.0009306	.0001001
23.6	0.	.0009336	.0001004
23.8	0.	.0009365	.0001008
24.0	0.	.0009395	.0001011
24.2	0.	.0009425	.0001014
24.4	0.	.0009454	.0001017
24.6	0.	.0009484	.0001020
24.8	0.	.0009514	.0001024
25.0	0.	.0009544	.0001027
25.2	0.	.0009574	.0001030
25.4	0.	.0009604	.0001033
25.6	0.	.0009634	.0001036
25.8	0.	.0009664	.0001040
26.0	0.	.0009694	.0001043
26.2	0.	.0009724	.0001046
26.4	0.	.0009755	.0001049
26.6	0.	.0009785	.0001053
26.8	0.	.0009815	.0001056
27.0	0.	.0009846	.0001059
27.2	0.	.0009876	.0001063
27.4	0.	.0009907	.0001066
27.6	0.	.0009937	.0001069
27.8	0.	.0009968	.0001072
28.0	0.	.0009999	.0001076
28.2	0.	.0010030	.0001079
28.4	0.	.0010060	.0001082
28.6	0.	.0010091	.0001085
28.8	0.	.0010122	.0001089
29.0	0.	.0010153	.0001092
29.2	0.	.0010184	.0001095
29.4	0.	.0010215	.0001099
29.6	0.	.0010246	.0001102
29.8	0.	.0010278	.0001106

Modeling Algorithms for the Weathering of Oil in the Marine Environment

Quarterly Report

RU #499

1 February - 1 July 1977

by

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Center for Experiment Design and Data Analysis
Environmental Data Service
National Oceanic and Atmospheric Administration
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Date Submitted
July 1, 1977

I. Highlights of Quarter's Accomplishments

Drafts of the first two topical reports called for under RU #499, entitled "An Empirical Approach to the Interaction of Oil with Suspended Sediments" and "Spreading, Fractionation, and Evaporation of Surface Slicks," were finished. Both reports were submitted to Dr. Jerry Galt, P.I. of RU #140, and to our consultant in the field, Dr. R. L. Kolpack of the University of Southern California, for review.

As a major "customer" of data obtained by the NOAA-USCG Spilled Oil Research Team, along with RU #140, investigators from RU #499 participated in the Argo Merchant oil spill response, including co-editing the Preliminary Scientific Report released in April 1977, the Bouchard-65 oil spill in frozen Buzzard's Bay, Massachusetts, and the Ethel-H oil spill in the Hudson River in early March 1977. RU #499 investigators also spent two weeks in May and June with other Spilled Oil Research Team members in Santa Barbara, California, testing methods for rapid deployment of subsurface water sampling gear and in-the-field extraction and storage of such samples and training an additional seven SOR Team members.

II. Task Objectives

RU #499 has no regular milestones as such, but is required to submit five topical reports on related oil spill "weathering" processes during its first twelve months. During the first five months, covered by this report, drafts of the first two of the five topical reports have been finished, and they are currently under review by our "client," RU #140, headed by Dr. Jerry Galt, and by an outside expert, Dr. Ronald L. Kolpack of the University of Southern California. The two major processes that have been addressed in these reports are a) interactions with suspended sediments, and b) evaporation and other chemical fractionation processes at the surface.

III. Field or Laboratory Activities

RU #499 personnel have participated in and/or directed field activities of the Spilled Oil Research Team, including:

12/15/76 - 1/9/77. The Argo Merchant oil spill.

1/31/77 - 2/10/77. The Bouchard-65 oil spill in sea ice, Buzzard's Bay, Massachusetts.

2/5/77 - 2/7/77. The Ethel-H oil spill in freshwater ice, Hudson River, New York.

4/29/77 - 5/1/77. A mystery spill, Marathon, Florida.

5/15/77 - 5/19/77. Field experimentation on subsurface sampling under natural oil slicks, Santa Barbara Channel, California.

6/4/77 - 6/11/77. Training of seven new SOR Team personnel, using natural oil slicks, Santa Barbara Channel, California.

IV. Results

Data from the Argo Merchant experience were reported in a preliminary state in "The Argo Merchant Oil Spill. A Preliminary Scientific Report," Ed. by P. L. Grose and J. S. Mattson, U. S. Gov't. Printing Office, Washington, D. C., March 1977. The data collected at the Bouchard-65 and Ethel-H oil spills have been turned over to a MESA contractor, Arctec, Inc., and their report is not yet available. No data were obtained at the Florida spill.

Data obtained on 5/15-19/77, using sterile bag samplers, and extracting water samples in the field, were very encouraging for SOR Team purposes. Total hydrocarbon levels 1 m beneath natural seepage slicks (~ 1 cm thick) ranged from 60 to 85 parts per billion (ppb), while "background" values obtained several miles to the east of the slicks ranged from 15 to 25 ppb. Differences between pairs of simultaneously-taken samples were about 2ppb, with a maximum of 3ppb difference. Differences between replicate samples from the same bag were immeasurable except in one instance, where the difference between replicates was 2ppb.

The sampling techniques employed in the Santa Barbara Channel experiments have been incorporated into the standard operating plans for the SOR Team at future accidental spills.

V. Preliminary Interpretation of Results

These will not be presented at this time, as far as the weathering algorithms are concerned. The first modeling tests will not take place until August, after some time has been allowed for review of the proposed algorithms.

VI. Auxiliary Material

Oral presentations have been made on the Argo Merchant experience, as follows:

2/23/77. James S. Mattson addressed the OCS Advisory Board in Atlanta, Georgia.

3/28/77. James S. Mattson addressed the scientific community at Woods Hole, Massachusetts in an evening seminar, attended by about 250-300 people.

4/29/77. Elaine I. Chan and Peter L. Grose addressed the scientific community at a half-day seminar at Narragansett, Rhode Island, sponsored by the Environmental Protection Agency.

VII. Problems/Changes Recommended

The late approval of RU #499 (February 1, 1977) has extended the completion date of the first year's work (as initially proposed) to February 1, 1978.

VIII. Estimate of Funds Expended

Original Funds Allocated	$75,000
Expended to July 1, 1977	$30,000
Anticipated Expenditures by September 30, 1977	$45,900

QUARTERLY REPORT

Contract: 03-5-022-67T011
Research Unit: 519
Reporting Period: 1 April-30 June 1977
Number of Pages: 2

COASTAL METEOROLOGY OF THE ALASKAN ARCTIC COAST

Frank Carsey
Research Scientist
Polar Research Center
Division of Marine Resources
University of Washington
Seattle, Washington 98195

30 June 1977

I. Task Objectives

The objectives of this research are to measure local wind and pressure fields in the Prudhoe Bay area and to examine the data so taken for local effects due to orography and thermal differences, to prepare a pressure analysis for comparison with NWS regional analysis and to evaluate data sources for secondary source archived data. The underlying purpose for this work is to model from archived data nearshore winds and stability for estimating the air stress forcing on surface currents and sea ice.

II. Field and Laboratory Activities

A. Field Trip Schedule

A field trip was taken from 26 April to 2 June 1976.

B. Scientific Party

The scientific party was composed of F. D. Carsey and R. Andersen. Carsey spent one week and Andersen spent the entire period at the Prudhoe Bay OCS billet.

C. Methods, and D. Sample Localities

1. Atmosphere pressure and instrument space temperature were recorded at Prudhoe Bay, Happy Valley, Umiat, Narwhal Island and Oliktuk, Alaska for the entire period except for a few days lost to helicopter schedule difficulties. Atmospheric pressure was measured to 1/4 millibar with Weather Measure B211 microbarographs.

2. Winds and temperature at 10 m height were measured at Tolaktuvut Point at the mouth of the Colville, Cottle Island in Simpson Lagoon and Brownlow Point in the Beaufort Sea with MRI model 701 weather stations. A Climet weather station was installed on Narwhal Island.

E. Data Collected, 8 August - 2 September 1976

1. Atmospheric pressure, 5 sites

2. Wind speed and direction at 10 meters, 4 sites

III. Results

The data is now being reduced.

IV. Preliminary Interpretation of Results

None

V. Problems Encountered and Recommended Changes

NOAA helicopter support was exceptionally valuable.

VI. Estimate of Funds Expended

As of 1 July 1977, expenditures under this contract will come to $13,400 out of an allocation of $25,647.

QUARTERLY REPORT

CONTRACT 03-5-022-56

RESEARCH UNIT #526-77

REPORTING PERIOD 1 March 1977 to 30 June 1977

Characterization of the Nearshore Hydrodynamics of an Arctic Barrier Island-Lagoon System

PRINCIPAL INVESTIGATOR J. B. Matthews
Geophysical Institute
University of Alaska
Fairbanks, Alaska 99701

I. Task Objectives

A. To review estuarine lagoon hydrodynamics
B. Summarize knowledge of Simpson Lagoon
C. Produce numerical predictions of Simpson Lagoon circulation under various environmental conditions
D. Plan and execute a field program to verify the numerical model computations
E. Produce circulation, flow, flushing and water quality estimates for use by the ecological modeling group

II. Field and Laboratory Activities

Dr. Matthews and Dr. Murgall attended two OCSEAP-sponsored modeling workshops at the University of British Columbia, Vancouver B.C. as part of the planning and formulation of research strategy for this project. Our contribution to the ecological model, preliminary current estimates, appreciably modified the research plan for the first field season. Dr. Matthews attended the RV Alumiak Cruise-planning meeting in Seattle and reserved time for setting and retrieving instruments and taking oceanographic stations offshore of the Barrier Island of Simpson Lagoon. The first cruise of 5 days will be at the beginning of August or immediately after ice recession and the second cruise will be at the end of August. Plans have been coordinated with Dr. Murgall of Texas A & M, Dr. Paskansky of ONR, Dr. Carsey of University of Washington and Dr. Jayaweera at the University of Alaska as well as with the LGL research personnel a small protable deck-readout temperature and salinity sensor has been borrowed and three current meters and a tide gauge have been ordered for use in the field in summer 1977. Some program conversion and programming associated with the numerical modeling effort have been initiated. However funding was received too late to complete the proposed model runs before the field season. Preparation for the field season have been initiated.

III. Results

No results are availabe at this time

IV. Preliminary Interpretation of Results

Not applicable

V. Problems Encountered/Recommended Changes

Lateness in funding the project has caused the actual activities to be re-sequenced from that originally proposed. Great efforts have been made to conduct the field program but difficulty in obtaining equipment on time has been encountered. The modeling effort is not as far advanced as had been anticipated. It may be necessary to request a carry-over of funds to the next fiscal year starting 1 October 1977 although the need for this is not confirmed at this date.

QUARTERLY REPORT

Contract 03-5-022-56
Research Unit #529-77
Reporting Period 5/1/77-6/30/77
Number of Pages: 4

SEDIMENT CHARACTERISTICS, STABILITY, AND ORIGIN OF THE BARRIER ISLAND-LAGOON COMPLEX, NORTH ARCTIC ALASKA

A. S. Naidu - Principal Investigator

Assistant Professor in Marine Science
Institute of Marine Science
University of Alaska
Fairbanks, Alaska 99701

June 30, 1977

I. Task Objectives

A. To gather basic data on the grain size distributions of sediments of the barrier islands, coastal beaches and the Simpson Lagoon along the continental margin of the north arctic Alaska.

B. To gather baseline data on the concentrations of organic carbon, phosphorus, nitrogen and a few biologically "critical" heavy metals (e.g., Cu, Ni and Zn).

C. To define the long-term alongshore sediment transport directions.

D. To define the mineral characteristics, source, migratory pathways, and depositional sites of clay and sand-size sediment particles.

E. To assess the origin, development and stability of the barrier islands over the last three decades, through geomorphological and geological studies.

II. Field and Laboratory Activities

A. Field trip schedules.

Dr. Naidu has participated in two OCSEAP sponsored modelling workshops held at the University of British Columbia, Vancouver, Canada during the last one year as a precurser to the development of this project. These workshops were held in order to ensure the proper coordination and interfacing of the efforts of all principal investigators that most likely would be involved in the OCS barrier island-lagoon ecosystem study in the Alaskan arctic. During the second meeting, the geological field trip schedules and sediment sampling plans were presented by Dr. Naidu. It was decided that during the first two weeks of August 1977, ten days will be spent in collecting bottom sediment samples from the West Simpson Lagoon, extending from the Oliktok Point to the Milne Point. According to the current plans, five samples will be obtained along six equally-spaced longitudinal traverses extending from the mainland coast to the Jones Islands. To avoid any statistical bias a few random samples inbetween the traverses will also be collected. In order to test sampling precision, it has been planned to retrieve at least five replicate samples from a few sample locations.

During the third week of August, 1977, sediment samples will be collected from the two chains of barrier islands, extending from the Oliktok Point to Prudhoe Bay. Depending on the size of the islands, between 1 to 5 surficial sediment samples will be hand picked up from each of the islands. Presumably this sampling will be accomplished in 4 days, and would involve going from one island to another using float planes or a helicopter. During the last 3 days of the third week of August, 1977, it has been planned to collect fluvial sediment samples from the channel bottoms of the Canning and Putuligayuk Rivers. These samples will be collected at 10-mile intervals along the main channels and will extend up to 50 miles upstream from the river mouths. Again this sampling will be accomplished using either a fixed wing float plane or a helicopter. The logistic support for this field program will be provided by the LGL Co., Inc. (Texas), and the OCS Arctic Project Office.

Plans have been tentatively called for to emplace an array of graduated stakes on the seaward beach of the Pingok Island, to quantify the erosional-depositional pattern along that beach stretch for six weeks. The beach levels on this island will be monitored at least once in every week.

Steps have already been taken to obtain splits of vibro-core samples from Dr. Peter W. Barnes of the U.S. Geological Survey. Several core samples have been collected by Dr. Barnes from the continental margin of the North Slope of Alaska, and these samples should be suitable for our stratigraphic studies.

B. Laboratory activities.

No analysis has been conducted as yet, because funding of this study was formally approved only a week ago. However, a few laboratory and field supplies have either been ordered or procured during the last week.

C. Methods

Not applicable at this point of time.

III. Results

None obtained as yet.

IV. Preliminary Interpretation of Results

Not applicable at this point of time.

V. Problems Encountered/Recommended Changes

Because of the late funding of this program, it could be difficult to find a suitable graduate student to work on this project by the time the summer field season commences. The project has been funded effective from the 1st of May, 1977. However, no formal approval of the funding came through until June 2nd, 1977. Obviously, this would incur in some extension of the project beyond September 1977. With the exception of the above, no specific problems are anticipated at this point of time to accomplish the proposal objectives.

Quarterly Report

Contract #03-5-022-56
Research Unit #530
Task Order #34
Reporting Period 5/1 /77 - 6/30/77

THE ENVIRONMENTAL GEOLOGY AND GEOMORPHOLOGY OF THE BARRIER ISLAND - LAGOON SYSTEM ALONG THE BEAUFORT SEA COASTAL PLAIN FROM PRUDHOE BAY TO THE COVILLE RIVER

Dr. P. J. Cannon
University of Alaska
Fairbanks, Alaska 99701

June 30, 1977

QUARTERLY REPORT FOR QUARTER ENDING JUNE 30, 1977

Project Title: The Environmental Geology and Geomorphology of the Barrier Island - Lagoon System Along the Beaufort Sea Coastal Plain from Prudhoe Bay to the Coville River

Principal Investigator: Dr. P. Jan Cannon

I. Task Objectives

1. To determine the origin and evolution (geomorphic history) of the barrier islands and the coastal lagoons.

2. To determine the source(s) of the gravel size materials that make up the barrier islands.

3. To determine the stability of the barrier island - lagoon system in respect to natural processes and man induced effects.

4. To determine the magnitude of the geomorphological relationships between the barrier island - lagoon system and the landforms of the coastal plane such as the various streams, dune fields, ground patterns, thermokarst features, deltas, pingos, lugs, and lakes.

5. To construct a spatial and temporal model of the environmental geology of the region.

II. Activities

1. Obtained pre-break-up radar imagery of field area.

2. Performed search for existing remote sensing data of field area.

3. Made low-altitude reconnaissance flight of study area and adjacent coastal areas to observe the effects of break-up on the barrier islands.

III. Results

Gravel is brought from the near shore sea bottom and added to the islands by the effects of ice movement during break-up. The amount of gravel appears small but the process occurs along all of the seaward side of the islands.

The amount of debris brought down and deposited on the ice at the mouth of the rivers is considerably greater than heretofore suspected.

OCSEAP Research Unit #531

Oceanographic Processes in a Beaufort Sea Barrier Island-Lagoon System: Numerical Modeling and Current Measurements

Progress Report #1
20 July 1977

Principal Investigator: J. C. H. Mungall

Department of Oceanography
Texas A&M University
College Station, Texas 77843
(713) 845-1443

Introduction

The first month of the 1977 funding period has primarily been spent in ordering equipment for use during the August 1977 field season, in assembling needed parts, and in testing equipment. Numerical modeling experiments are scheduled to start in August. Due to the late start of the project, I have been fortunate in obtaining the modeling services of Dr. R. E. Whitaker for a month; this will speed up the production of modeling results, although it may not be possible to have the predictions for Simpson Lagoon ready before the end of the August 1977 field season.

August 1977 Field Season Preparations

a) A Beckman model RS5-3 in situ salinometer (modified to read down to -2°C) and associated conductivity cell has been ordered. Due to the 6-week delivery date, the salinometer is scheduled to reach Texas A&M a mere 5 days before we leave for Alaska. If necessary, we may have to pick up the salinometer from Cedar Grove, New Jersey.

b) Three ducted current meters have been ordered from General Oceanics, Miami. The current meters, which have been designed in cooperation with Dr. Shale Niskin of General Oceanics, are of a novel design aimed at obtaining current information which will be as free from wave-induced current rectification as possible. A mechanical system is used in which the clockwise and counter-clockwise rotation of two propellers are counted -- the duct containing the propellers being stabilized so that the duct will <u>not</u> rotate through 180° with the passage of a wave as is often the case when using a fin. Unlike the other common alternative, a vector averaging current meter, the meters are relatively inexpensive. The meters will be picked up in Miami.

c) A tripod for supporting the current meter string in shallow water - thus reducing contamination due to vertical movement - has been constructed and tested in a lake. Considerable care will have to be exercised when deploying and recovering the tripod in choppy, cold water. The associated hardware (rope, pulleys, etc.) has been purchased.

d) Miscellaneous equipment (poles for flags, navigation instruments, safety clothes,etc.) have been procured and prepared for shipping.

e) Two deck readout current meters have been checked and crated ready for shipment to Alaska. One will be shipped to Dr. J. B. Matthews for use at the start of his field season.

f) A composite chart of Simpson Lagoon is being prepared from the two charts of the region. Spare blue-line copies will be made available upon our arrival at Simpson Lagoon.

1977 Field Season Dates

Dr. Roy Hann (responsible for logistics) will be at Simpson Lagoon between the approximate dates of 4th August and 10th August, while C. Mungall and D. Horne will be present between the dates of 7th August and 25th August. A familiarization flight is planned for 8th August, during which hand-held aerial photos will be taken for planning and other purposes, probable entrances at the eastern end of the lagoon will be identified, and the LGL Pingok Island Camp will be visited so as to optimize hydrographic and biological measurement plans. Daily visits to the eastern end of the Lagoon will commence on the 9th of August. Three flights for the purpose of taking samples along the axis of Simpson Lagoon are provisionally planned for the dates of August 12th, 18th, and 24th. We hope that a biologist will be present.

Numerical Modeling

Numerical 3-dimensional modeling will be started at the beginning of August under the control of Dr. R. E. Whitaker. He will concentrate on the interior of Simpson Lagoon. J. C. H. Mungall will apply a second 3-dimensional model to the region surrounding and including Simpson Lagoon upon his return from Alaska.

Christian Mungall
20 July 1977

HAZARDS

HAZARDS

HAZARDS

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PROGRESS REPORT

July 1, 1977
Research Unit - 59

Coastal Morphology of the Northern Gulf of Alaska

Miles O. Hayes - Principal Investigator
Christopher H. Ruby - Co-investigator
Coastal Research Division
University of South Carolina
Columbia, S. C. 29208

Contract No. 03-5-022-82

Task Objectives

The major emphasis of this project falls under Task D-Y, which is to: evaluate present rates of change in coastal morphology, with particular emphasis on rates and patterns of man-induced changes and locate areas where coastal morphology is likely to be changed by man's activities; and evaluate the effect of these changes, if any. The relative susceptibility of different coastal areas will be evaluated.

I. Summary of objectives, conclusions and implications with respect to OCS oil and gas development.

This report details the coastal morphology of the Northern Gulf of Alaska. Recent shoreline changes, trends and hazards are discussed. Sediment types and transport directions are given for each subdivision within the coastal classification. Shoreline development of the different subdivisions is also detailed.

II. Introduction

This report will be expanded and included in a Final Report which will also include sections on Sedimentology and Oil Spill Vulnerability. The Final Report will be mailed before the end of this quarter.

III. Current state of knowledge

Discussed in the body of the report.

IV. Study area

Located in Figure 1 of the report.

V. Results

The results are discussed very briefly in a Conclusions section at the beginning of the report, and in greater detail in the body.

VI. Needs for further study

This will be discussed with the submission of our Final Report.

X. Summary of the 1st quarter operation

All emphasis has been placed on report writing and preparing for this summer's field work on the Beaufort Sea coast.

CONCLUSIONS

With regard to shoreline development for OCS related work, the following has been determined:

1) The entire study area, from Hinchinbrook Island to Dry Bay, is subject to severe storm generated waves and surges where the shoreline faces the open Gulf. The only protected areas are the fjords, Icy Bay and Yakutat Bay, and the western shore of Kayak Island, and the eastern shore of Wingham Island. Therefore, any development of these exposed shorelines will necessitate the determination of reasonable set-back lines with special attention to storm surge flooding.

2) The spits within the study area show dramatic historical changes, both erosional and depositional. Spit breaches by confined rivers behind them are common and unpredictable. Many of the spits are completely overwashed during storms and subject to storm surge flood or storm surge ebb breaching.

3) Erosion at the mouth of Icy Bay and downdrift (west) to Cape Yakataga is extreme (37 m/y maximum at Point Riou). This area should be avoided.

4) The shoreline immediately downdrift (west) of Cape Yakataga is relatively stable due to the protection and sheltering of the Cape to SE storm waves.

5) The inner eastern shoreline of Yakutat Bay has the most stable beaches within the study area. These shorelines are well protected from storm wave approach from directions other than the SW. They are generally composed of mature well-sorted pure gravels.

6) The inner eastern shoreline of Icy Bay is also protected from storm waves from directions other than the SW. Its beaches are less mature with considerably more sand. Additionally, the bay has a number of outwash streams depositing fan deltas which modify the shoreline and infill the bay. Sediment transported along Riou Spit also poses infilling problems for adjacent

downdrift shorelines. In general, the Moraine Harbor and shorelines to the Kettle Hole Delta are stable and should not be severely altered unless Riou Spit progrades enough to close Riou Bay (not predicted for at least 20 years).

7. The Yakutat Foreland beaches are mildly erosional but given adequate set-back lines, the area would be a preferred location for development.

8. Western shorelines of both Icy Bay and Yakutat Bay are subject to relatively high wave energies should be avoided.

INTRODUCTION

The northern Gulf coast of Alaska from Dry Bay to Hinchinbrook Island is an exceptionally dynamic area. Intense tectonic activity, large waves, strong tidal currents, high and variable winds and active glaciation interact to produce one of the most rugged, geologically resplendent and variable coastlines in the world. To provide various governmental agencies with critical environmental geologic and geomorphic information to permit sensible development of this area, field studies were begun in the summer of 1975. This report presents the results of these baseline studies, as they pertain to coastal morphology.

Fronting the Chugach and Elias mountains, the northern Gulf coast is manifest as a narrow coastal plain consisting primarily of glacial and fluvial deposits undergoing active modification by tectonic, aeolian and marine processes. This coastal plain varies in width from a mere ½ km in areas fronting the Robinson Mountains to as much as 40 km at the Yakutat Foreland. The primary geomorphic landforms are beach ridge plains developed downdrift of major outwash streams, sandurs and deltas with various forms developed by outwash streams and rapidly eroding glacial margins projecting into the Gulf. Additionally, two major highly modified glacial fjords (Icy Bay and Yakutat Bay), the Copper River Delta and a number of bedrock islands add to the complexity of the study area.

The numerous glaciers and their related drainage systems provide large volumes of sediment to the coastal zone. These glaciers and their outwash streams tend to be unstable even over short periods, and, to a large extent, this variability is responsible for much of the dynamics of the shoreline. Changes in glacial drainage as well as glacial retreat or advance result in rapid and dramatic shoreline responses. Numerous areas have undergone considerable deposition and/or severe erosion within the past few hundred years.

The gross orientation of the coastline is controlled by the Chugach and Elias mountains, which are an extension of the Cordilleran Mountain system. A traverse across these mountains from the Alaskan interior would cross several foldbelts of successively younger and less deformed rock and terminate in mildly deformed tertiary rocks at the coast (Henry, 1970). These coastal mountains, formed in response to the subduction of the Pacific Plate along this collision type coastline (Inman and Nordstrom, 1971) are still undergoing rapid uplift. Numerous fault systems and associated frequent earthquakes result in large ground displacements. A single earthquake in 1899 uplifted the head of Yakutat Bay 47 feet. The entire coastal zone has been subject to considerable modification resulting from this rapid tectonic activity.

Finally, the marine environment in the northern Gulf is extreme. Violent storms are common, especially during the fall and winter. These storms generate hurricane velocity winds with associated storm surges and wave heights. Gravel storm berms are common on gravel beaches. Storm debris lines are found in some areas many kilometers behind the normal active beachface. These marine processes (described in detail in an earlier report, Nummedal and Stephen, 1976) place a considerable limitation on any development along this stretch of coast.

The end result of these conditions is 1000 km of shoreline continuously changing in response to changing process parameters. Equilibrium beach forms are rare due to the rapid alteration of these process parameters and variations in the sediment supply. Events which on other shorelines might be considered catastrophic are not unusual in this area. This variability makes the area extremely interesting, but also rather difficult to quantify accurately or to develop predictive models for future development. Any development of this area will have to consider the possibility of extreme events (earthquakes, glacial surges or retreats, river course changes, extreme storms, seismic waves, etc.).

FIELD METHODS

To accomplish the study of such a large and remote area, special methods of data collection were employed by the members of the Coastal Research Division field team.

Major segments of geomorphologically similar shoreline were first studied between 1969 and 1971, under the sponsorship of ONR (Contract #N00014-67-0230-0001), at which time, 18 zonal sites were established (Fig. 1). These sites, representative of 18 shoreline types, were studied in detail at that time. Base maps were constructed detailing bedforms and bedform orientations, sediment size, shape and sorting characteristics. Samples were also selected for compositional analysis. During the summer of 1975, these zonals were revisited, and comparative studies were made.

Permanent profile sites were also set up during the 1969-1971 field seasons (Fig. 1). These profiles were measured in various representative environments to permit the delineation of depositional and erosional trends over a period of years. During the 1975 field season, the profile sites were relocated and measured to assess changes over that 6 year time period. They were also remeasured at the conclusion of the 1975 field season to determine shorter term variability.

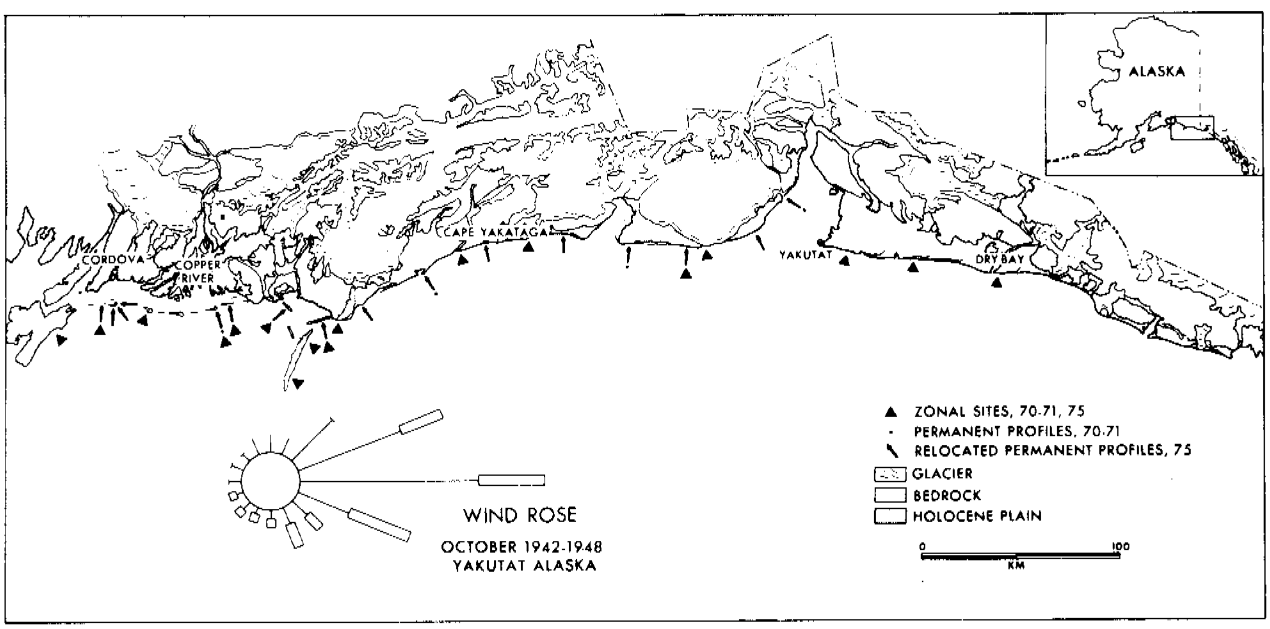


Fig. 1 Study area. Note distribution of Holocene coastal plain (max. width = 40 km). Wind rose for Yakutat shows dominance of easterly winds.

In order to assess regional trends in beach morphology and transitional beach forms from one environment to another, profiles were measured in 1975 at a 3 km interval on the shoreline between Dry Bay and Cape Yakataga. The location of these profiles is given in Figure 2. These profile sites consisted of a line transit of the active beachface, sketches of the beachface and back beach areas, and a tape recorded description of the site. In addition, sediment samples were collected.

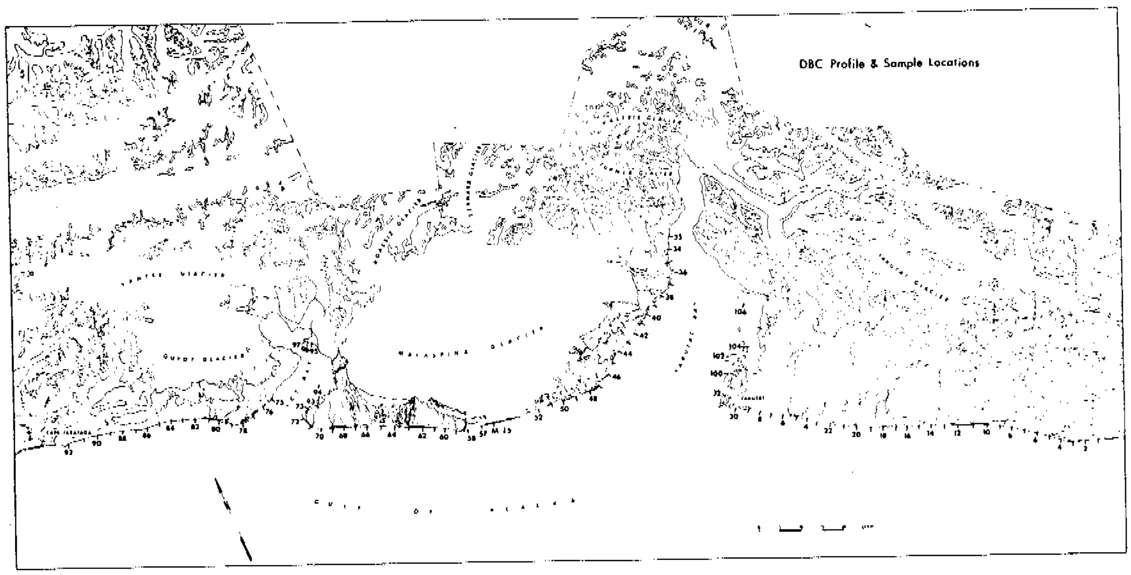


Fig. 2 Locations of DBC profile sites measured during the summer of 1975.

These sediment samples were collected at each of the 99 profile sites between Dry Bay and Cape Yakataga as well as the permanent profile sites. The samples were taken using a 15 cm coring tube employing the method illustrated in Figure 3. Where the sediments were too coarse to acquire a representative sample with the tube, photographs were taken using a standard scale. Selected samples were also taken in areas of special interest. In total, 401 core samples and 152 photo samples of the gravels were collected. All samples were analyzed at the sedimentology laboratory at the University of South Carolina. The results of the grain size analysis have been synthesized by computer to yield mean grain size, standard deviation, skewness parameters, kurtosis and graphs of grain size vs. weight percent and grain size vs. cumulative weight percent. The photo samples were visually analyzed for gravel sorting, relative grain size, gravel to sand ratio and roundness. The results of this synthesis were presented in our April 1977 Annual Report.

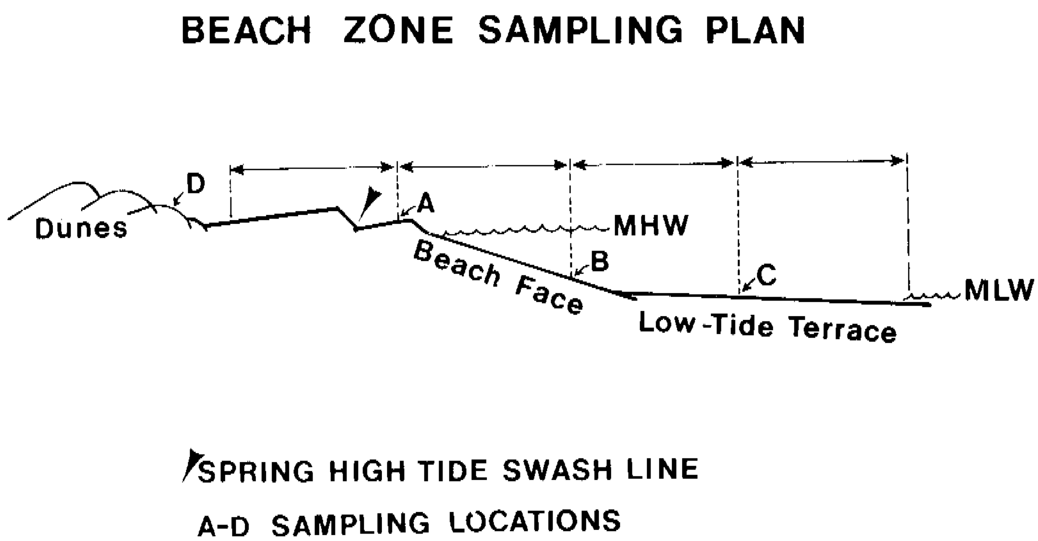


Fig. 3 Sediment sampling plan employed at profile sites. Samples A, B and C are taken on the active beachface. A dune sample (D) is taken on back-beach dunes, if present.

Approximately 10,000 ground and aerial photos were taken during the study. These photos have been compared to photos taken during the 1969-1971 studies and also compared with vertical photos from various sources. These comparative studies have permitted a more accurate delineation of erosional-depositional trends in the area.

Finally, process parameters were measured at a number of permanent and non-permanent stations in the Malaspina Foreland area. The analysis of these data in conjunction with a synthesis of weather data and SSMO data permitted the detailed discussion of the marine processes in the Nummedal and Stephen (1976) report.

COASTAL MORPHOLOGY

The primary purpose of this study has been to provide descriptive baseline data regarding the coastal morphology of the Gulf of Alaska shorelines. The division of the study area into the different geomorphic units is based on analysis of changes in the permanent profiles and zonal sites established during the 1969-1970 field seasons (Fig. 1) and on the more detailed profile network, process zonals and sampling done during the summer of 1975 (Fig. 2). In addition, aerial photographs from various sources have been used. In previous progress reports, and in a number of publications (Hayes *et al*. 1976; Stephen *et al*. 1976), a geomorphic classification was devised for the 300 km stretch of coastline between Cape Yakataga and Dry Bay. The classification which follows has been expanded to include the entire shoreline between Cape Hinchinbrook on Hinchinbrook Island and Dry Bay. This shoreline comprises 896 kms. Furthermore, the classification scheme described previously has been revised into a less complex form.

The coastal zone has been classified into three primary classes: *erosional, neutral* and *depositional*. These major classes are then subdivided into subclasses based on finer distinctions of morphology, recent history, sedimentology and active process parameters.

Of the total 896 kms of shoreline within the study area, neutral shorelines were the most common, representing 58% of that total. Erosional and depositional types were a distant second and third with 23% and 19% respectively. This classification is based on recent sedimentologic trends and geomorphic evidence and cannot consider such phenomenon as tectonic movements or long-term changes in glacial drainage, glacial retreat or surge. These processes are all common to the study area and are discussed as they apply; however, we are not in a position to predict future events with regard to these phenomena.

For the purposes of this classification, neutral shorelines are defined as those shores not subject to recent horizontal or vertical changes in a single direction (i.e. progradation or erosion). In some cases, changes of tens of meters take place on a random or cyclical basis as a response to random or seasonal changes in process parameters, without resulting in long term changes. Therefore, a classification of neutral does not necessitate stability. For example, most of the spits within the study area have been classified as neutral; however, dramatic short term changes can severely alter them.

Erosional shorelines are those sections of the coast undergoing continuous retreat. These trends are due to natural processes and are expected to continue. Retreat rates can be extremely rapid (estimated retreat rate for Point Riou is 37 m/y; Molnia, 1977).

Depositional shorelines are those which have shown a recent continuous positive horizontal and/or vertical growth. These areas are expected to continue to prograde unless their sediment sources are altered.

The five most abundant subclasses, representing 79% of the shoreline, are listed below in order of decreasing abundance. A complete inventory is given in Table 1.*

Coastal Subclass	Total km	% of total
1. Neutral shorelines of sand and gravel, downdrift of glacial outwash streams, eroding glacial deposits and, rarely, bedrock. Classification - NEUTRAL	225	25
2. Neutral embayment beaches of sand and gravel, and pure gravel. Classification - NEUTRAL	172.5	19
3a. Depositional barrier islands of fine sand fronting the Copper River Delta. Classification - DEPOSITIONAL	110	12
3b. Low erosional scarps in glacial deposits, bedrock or older beach deposits, also sediment starved beaches eroding by overwash. Classification - EROSIONAL	110	12
4. High to moderate erosional scarps in bedrock, often with pocket beaches and wave-cut platforms. Classification - EROSIONAL	100	11
	717.5	79%

* A set of 63,360 topographic maps has been included with this report. These maps have been used as a base to display the various coastal subclasses depicted in Table 1.

EROSIONAL SHORELINES

Representing 23% of the study area, these shorelines show a dominance of erosional morphology over depositional morphology. Scarps into bedrock and unconsolidated deposits are common as are overwash terraces and fans. In some areas, the erosion has cut off gravel roads. Heavily vegetated relict beach ridges are also being severely eroded in a number of places. The erosion of these shorelines is not considered to be a short term trend. It is caused, for the most part, by an inadequate source of sediment supply and is expected to continue unless that supply is altered. Rates of erosion in the area range to a maximum of 37 m/yr at Point Riou, which has receded 1.3 km in a 32 year period (Molnia, 1977). Most rates are considerably lower, especially where scarps are in bedrock. There are two subclasses within this class: 1) lower scarps in bedrock or unconsolidated deposits, and beaches eroding by overwash (subclass A1) and 2) high to moderately high scarps in bedrock (subclass A2).

Subclass A1 - Low erosional scarps and beaches eroding by overwash

Subclass A1 contains a variety of erosional shoreline types. Low scarps in bedrock and unconsolidated deposits make up the majority of the subclass, but it also accounts for sediment starved beaches generally migrating landward by overwash. These overwash terrace shorelines are usually found to be transitional forms between erosional and neutral areas. Inadequate sediment supply is primarily responsible for their form. The shoreline downdrift (west) of Icy Bay falls into Subclass A1. In order to understand the severe erosional problems on that shoreline, it is necessary to examine the recent patterns of glacial movement in the area. A detailed description is presented by Molnia (1977).

In 1794, the explorer Vancouver surveyed parts of the Gulf of Alaska. At that time, the Guyot Glacier, a lobe of the Malaspina Glacier system, projected out to sea occupying what is now Icy Bay. Just to the east of the Guyot Glacier, in the position of the present-day abandoned Yahtse River outwash, there was a large bay (Vancouver's Icy Bay). Tebenhof (1848), using data from Russian explorers between 1788 and 1807, agreed with Vancouver's Icy Bay position. This bay was infilled with glacial and alluvial deposits by 1837 (Belcher, 1843). Molnia (1977) calculated that 0.5 km^3 of sediment were required to fill that bay. This infilling was accomplished in about 30 years (from 1807 - 1838). Also, in 1837 when Belcher made his observations, the Guyot Glacier had receded, opening up part of the present Icy Bay. The glacier then advanced, and by 1887, it was more than 10 km seaward of the present (1977) shoreline (Setan-Karr, 1887). This last advance is probably responsible for the submerged terminal moraine at the mouth of Icy Bay. The ice front remained at that location until about 1904 (Tarr and Martin, 1914). Then the glacier began a very rapid retreat which continues today. The glacier has receded more than 40 km in the past 74 years. In 1913, Tarr and Martin named the developing bay, Icy Bay. Figure 4 from Molnia (1977) shows ice front positions since 1904. Calculation of the retreat rate for the 1904 and 1916 ice front positions indicates an extremely rapid rate of approximately 1.5 km/yr. The movements of the Guyot Glacier have resulted in drastic changes in the sediment supply to the adjacent beaches.

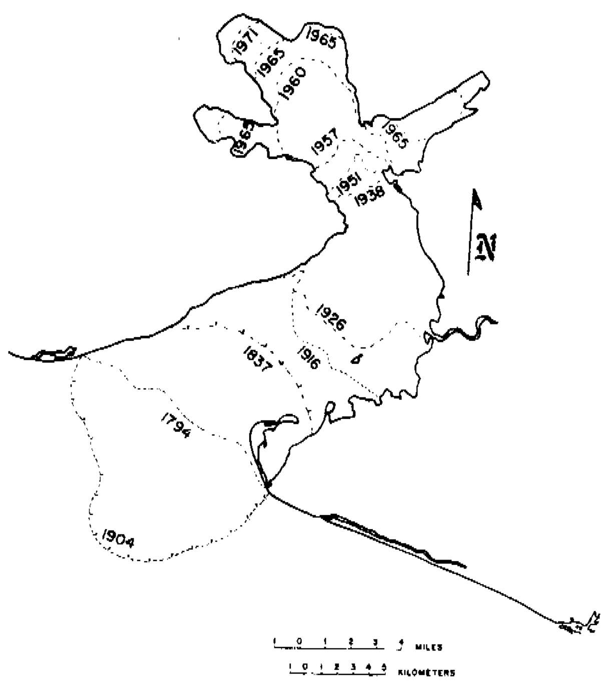


Fig. 4 Positions of the ice front of the Guyot Glacier, Icy Bay. (from Molnia, 1977; many ice front positions from unpublished files of A.S. Post).

In 1904, when the Guyot glacier fronted on the Gulf of Alaska, large volumes of sediment were supplied directly to the coast. Outwash streams were active on both sides of the glacier. Thus, to the west of the glacier, a beach ridge plain developed. Some of the relict beach ridges are still present. To the east of the glacier, a smaller outwash system was developed, just east of Point Riou. The retreat of the glacier into Icy Bay since 1904 has resulted in a loss of sediment to the adjacent shoreline. What we find today at Icy Cape, just west of Icy Bay, is an eroding scarp of basal till with a counterpart, Point Riou (Fig. 5), on the east side of the bay. The entire coastal section from Icy Cape to Cape Yakataga, except a very small area at Umbrella Reef, is now experiencing strong erosion. Heavily forested beach ridges are now being actively cut back (Fig. 6). The shoreline is littered with thousands of Sitka Spruce logs with root systmes intact, eroded from the beaches updrift. There are areas of broad overwash terraces and fans (Fig. 7) and, in places, gravel roads have been cut by the erosion (Fig. 8). The beach profiles are generally rather flat with concave-upward upper beachfaces and eroding scarps at the spring high tide swash line.

The profile locations measured in this area are shown in Figure 2. The profiles cover the coast from just west of Icy Cape, profile DBC-79, to just east of Cape Yakataga, profile DBC-92, including Point Riou, profile DBC-70. Five representative profiles are shown in Figure 9. Erosional scarps are present in all of them. Ridge-and-runnel systems were sometimes present; however, this may be a fair weather feature only. Analysis of internal structures in the scarps often shows plane beds overlain by dune cross beds, indicating an old beach ridge, developed during the period of progradation prior to the retreat of the glacier.

Figure 10 shows profile site DBC-79. There is a well-developed washover terrace at this location. The beachface is flat and featureless. At spring high tide, the waves break onto the small scarp on the upper beachface. This scarp exposes rooted muds which have been overridden by the sand fill and later exposed at the beach. During storms, sands and gravels are washed back over the scarp and out onto

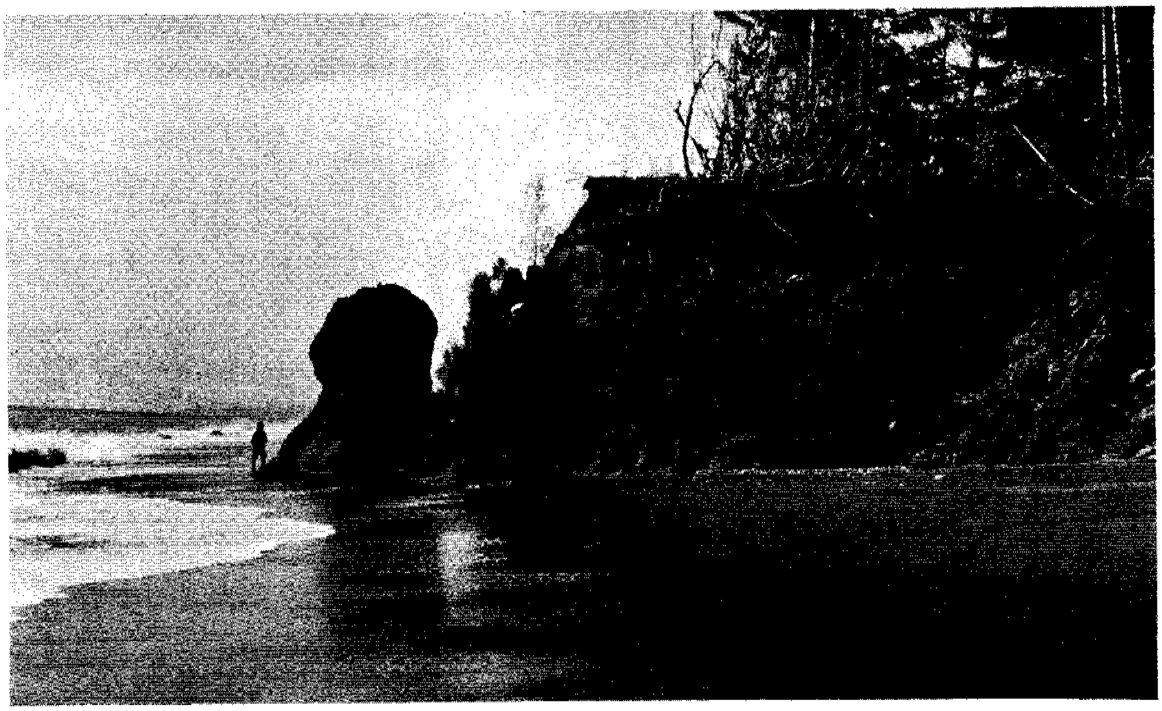


Fig. 5 Till scarp at Point Riou. This is a low tide photo; at high tide, the waves break directly on the scarp. Sand on the narrow beachface is partly locally derived, but most is bypassing to beaches downdrift.

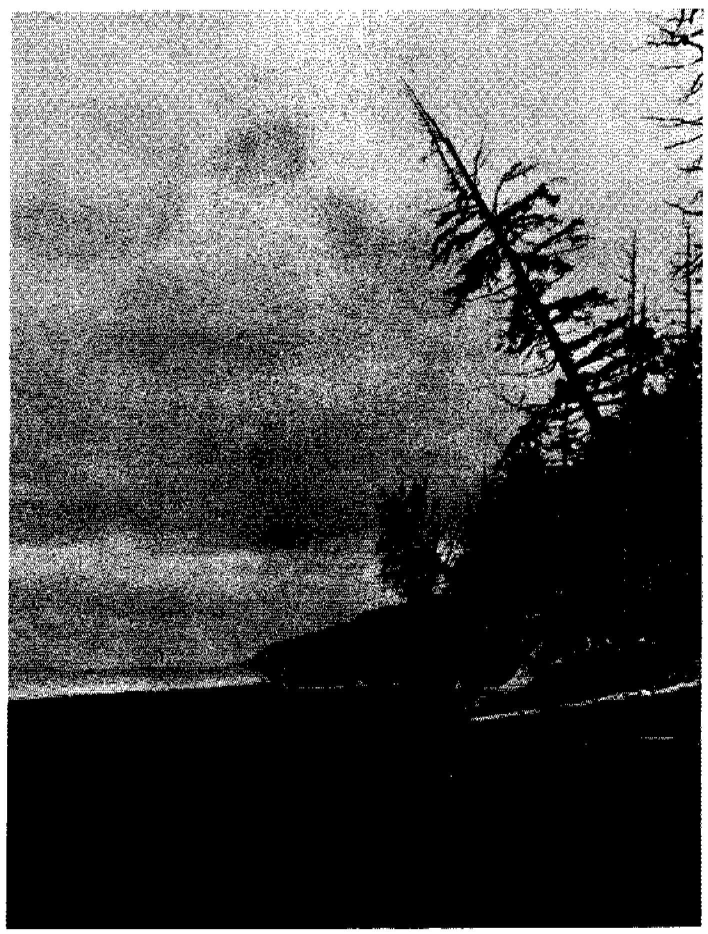


Fig. 6. Forested beach ridge being eroded near profile site DBC-89. The climax Sitka Spruce forest has been heavily salt-pruned by ocean spray. High tide waves break directly on scarp fronting forest. Sand and gravel beachface is relatively flat and featureless.

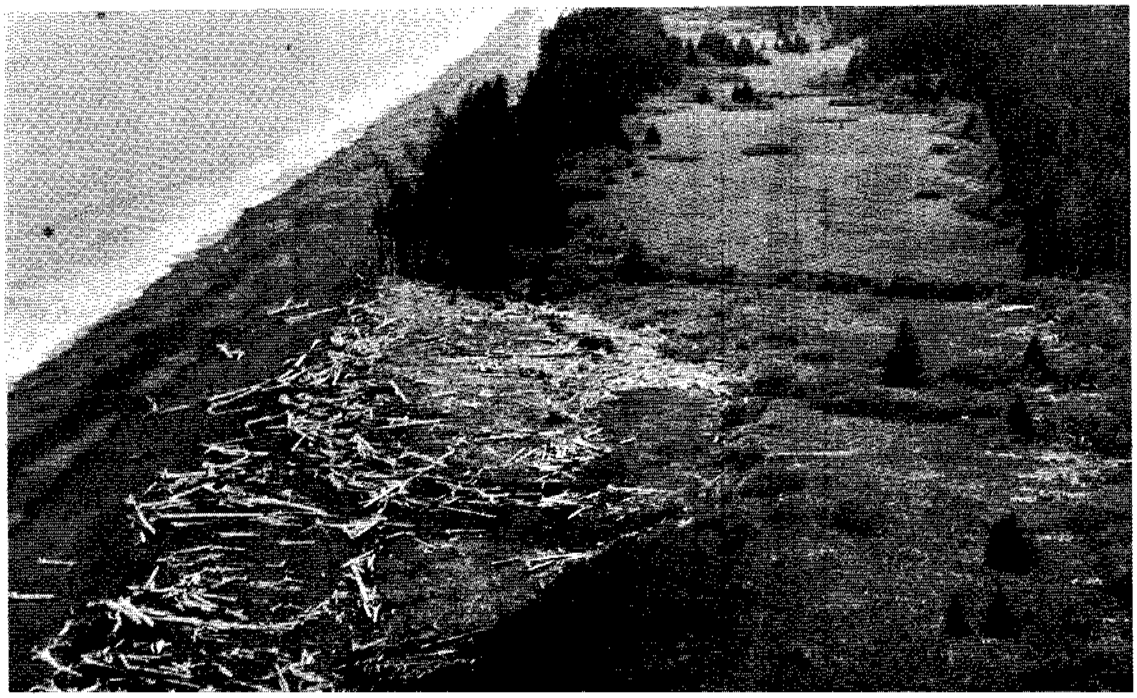


Fig. 7 Overwash fan at profile site DBC-89. The erosion along this stretch of shoreline has cut through a relict beach ridge (remnant is visible in the upper center of photo) and is now washing debris and overwash sediments into low inter-ridge swale. Note the narrow flat character of the beach.

Fig. 8 Gravel roads near the White River have been cut by the strong erosion along this shoreline. There is a sharp scarp down to the beachface, exposing sands and clays.

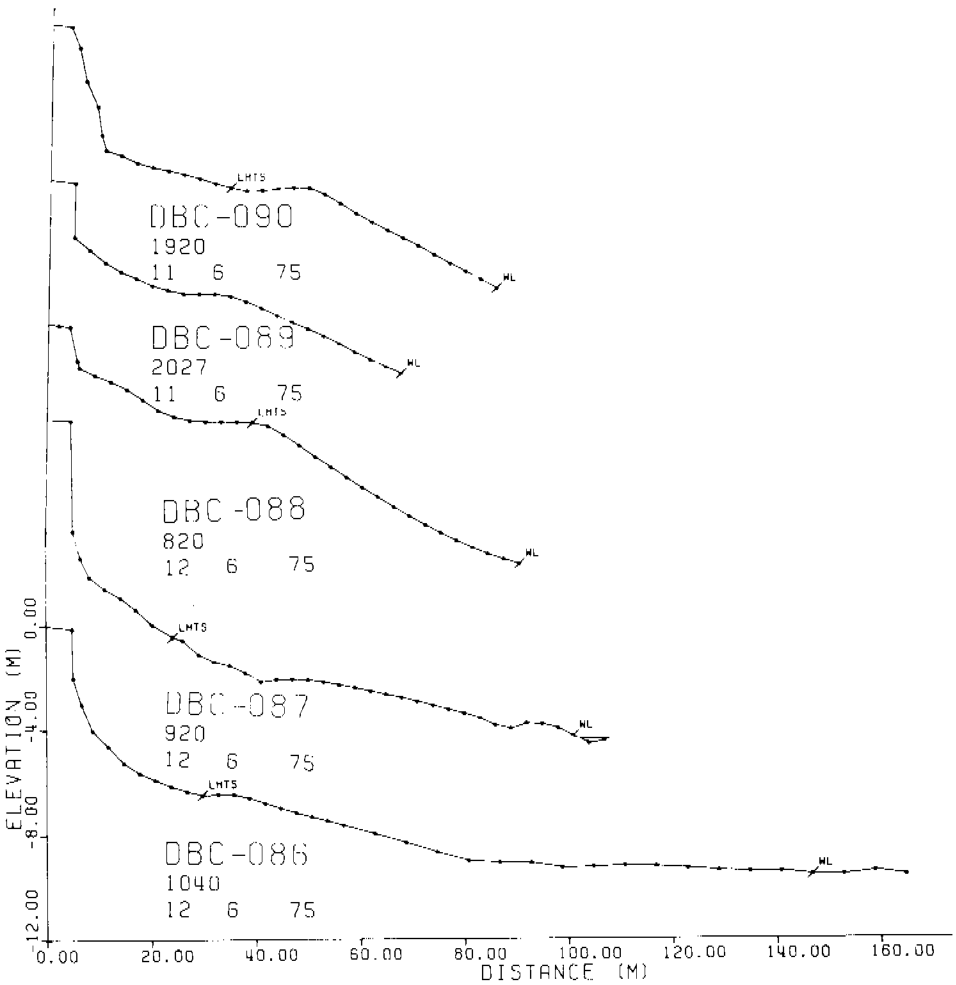
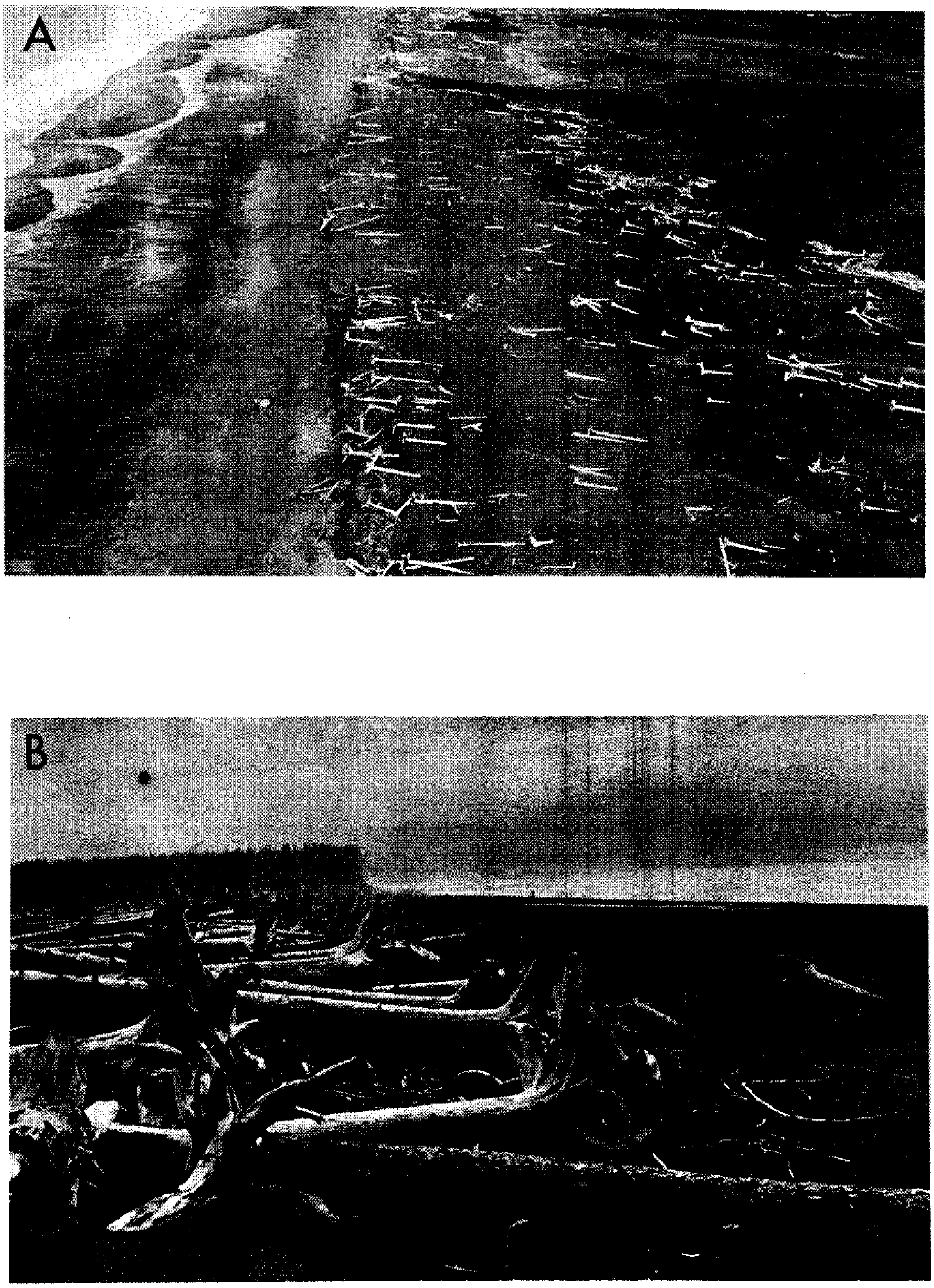


Fig. 9 Five representative profiles from the erosional shoreline downdrift of Icy Bay. Note the scarps and very flat beach faces.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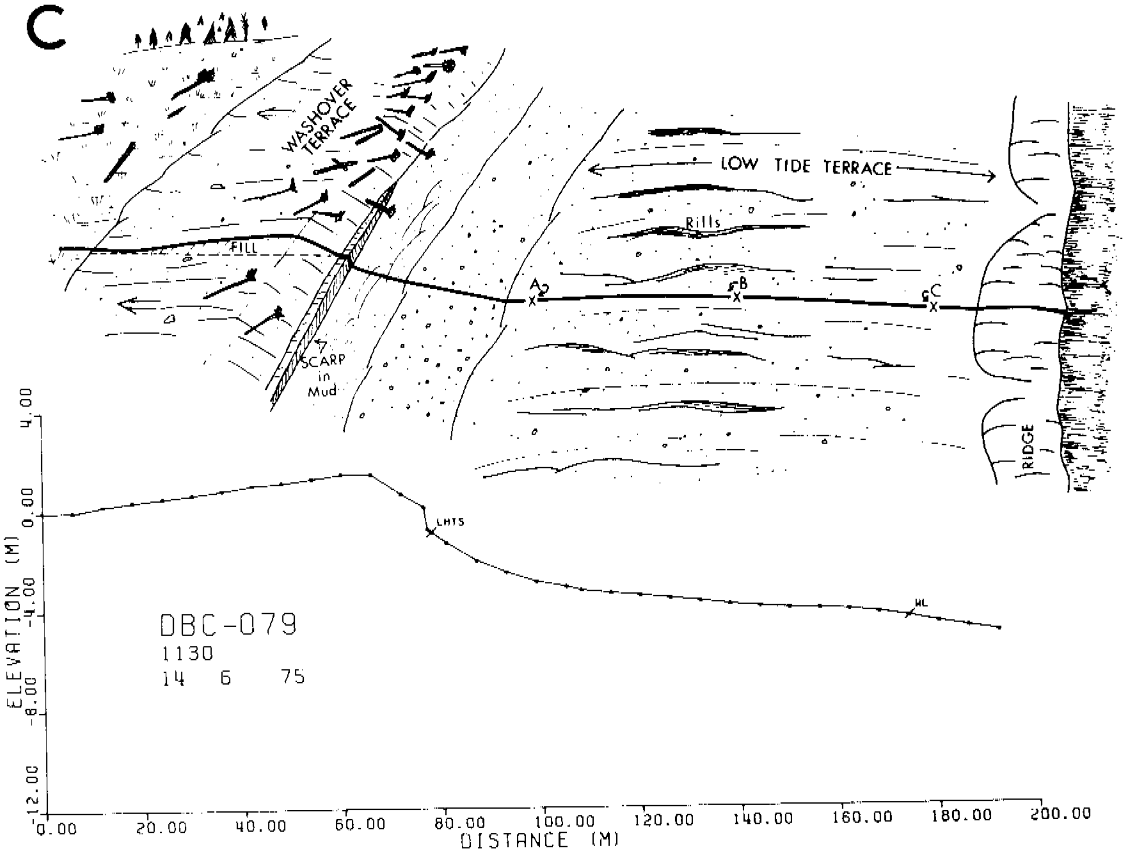

Fig. 10 Profile site DBC-79 just west of Icy Cape. A. Aerial view looking west showing the overwash terrace. The beachface is flat except for the low ridge-and-runnel at its base. Overwashed sand and gravel, covered with oriented logs makes up the terrace which migrates landward under the influence of storm waves. There is a small scarp just seaward of the terrace. B. Detail of the seaward edge of the overwash terrace showing highly oriented logs. Icy Cape is visible in the background. C. Beach sketch and computer plot of DBC-79.

the low vegetated flat behind the active beachface. Numerous Sitka Spruce logs with roots intact are oriented on the terrace. Washed up during storms, the root structure is grounded first; while the tapering tops are oriented in the direction of wave overwash. With an inadequate sediment supply, the overwash terrace will continue to migrate landward.

The entire coastal section from profile DBC-79 to DBC-92 is undergoing erosion. Figure 11 shows profile site DBC-87. The back beach area is a beach ridge heavily vegetated with Sitka Spruce trees. The scarp, slightly more than 4 m high, exposes planar bedded sands, dune crossbedding and smaller scale sets of rippled sands, all remnants of the relict beach ridge. The beach ridge had been developed directly on top of bedrock (the Robinson Mountains lie only 1 km behind the beach) which is now exposed on the beachface. This bedrock is the source for the gravels at the base of the scarp. Seaward of the gravel, there is a low ridge of sand perched on the bedrock. Further seaward, the bedrock is swept clean, and a boulder rampart lies about 30 m offshore. This profile is highly erosional. During storms, waves break directly on the scarp. The only depositional feature is the low sand ridge which is simply bypassing the sand to the beaches downdrift.

Figure 12 shows profile DBC-70. This profile was measured at the high erosional scarp at Point Riou. This scarp (Fig. 5) is composed of basal till and glacial margin lake muds overlain in places by fluvial sands and gravels. Comparison of aerial photographs indicates approximately 1.3 km of erosion has occurred since 1941 (average of 37 m/yr, Molnia, 1977). During one relatively small storm (max. wave height, 4 m), this scarp was observed calving large blocks of till, as the waves broke directly onto the scarp face. Later inspection revealed large mats of forest mosses hanging down over the scarp where the till blocks had been removed by the wave erosion (Fig. 13). We can only speculate as to the scale of erosion at this area during large winter storms. Overwash sands and gravels were observed on the top of the scarp, some 7 m above mean high water. As the till scarp at Point Riou erodes back, the beaches adjacent to the coast in front of the abandoned Yahtse


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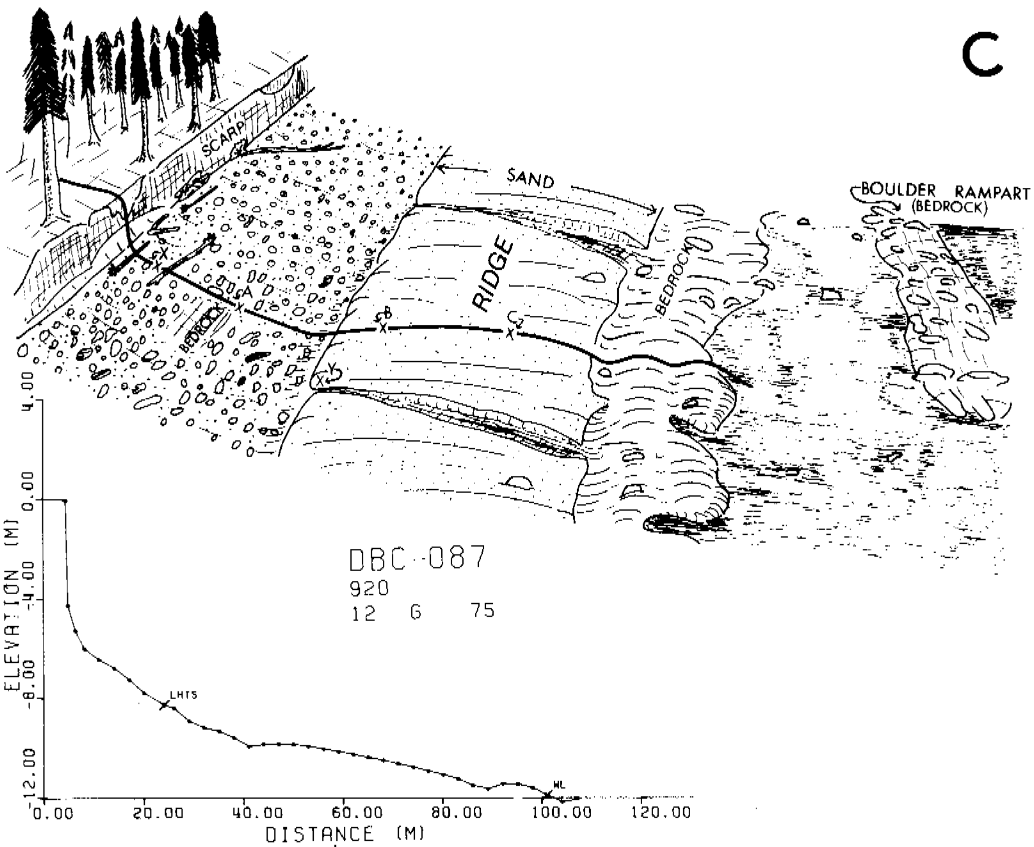


Fig. 11 Profile site DBC-87 an erosional shoreline (type A1). A. Aerial view looking west, with Cape Yakataga in background. Relict vegetated beach ridge is being cut back; trees are visible falling off scarp. Gravel upper beachface is perched on bedrock which is exposed on lower beachface, where a low sand ridge partly covers it. B. Detail of internal structures in scarp. Planar crossbeds at the base could be relict ridges, overlain by smaller scale ripple sets, which are capped by plane beds. C. Beach sketch and computer profile plot (LHTS - Last High Tide Swashline; WL - Water Line).

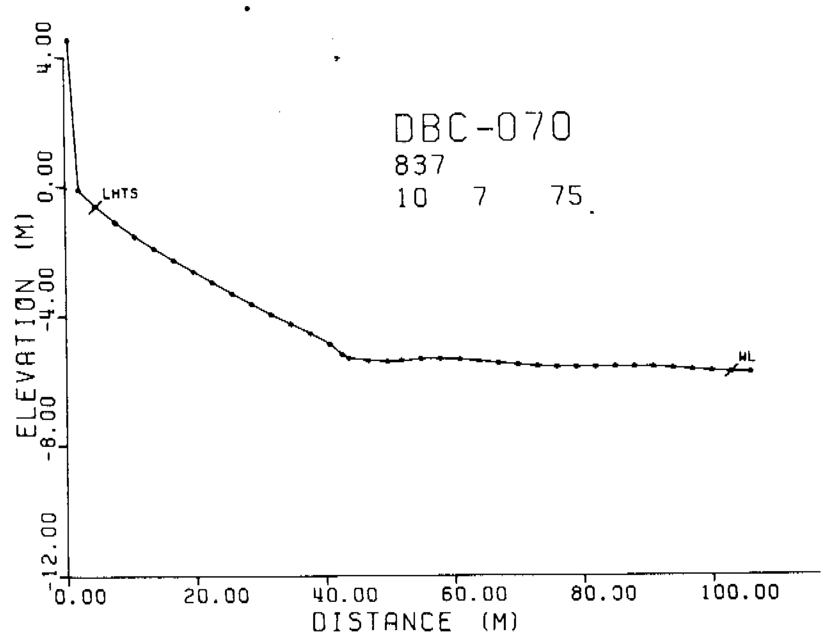


Fig. 12 Profile DBC-70. Note high vertical scarp behind the featureless profile. The wedge of sediment at the base of the scarp is composed of bypassing sand.

River outwash are also eroding back. The recent history of the Yahtse River is detailed in the section on Spit Analysis in this report. Briefly, the river source has been diverted, and the old spit has been migrating landward by overwash into the old river channel which was behind the spit. The old outlet for the Yahtse River on the Gulf has been completely closed. A permanent profile site, MAL-1, was lost because of the severe erosion.

There is only one minor exception to the erosional character of the beaches between Icy Bay and Cape Yakataga. Umbrella Reef is a projection of bedrock striking parallel to the shoreline about 24 km east of Cape Yakataga. During the 1969-1970 field work, a permanent profile station (YKG-3) was set up there. Fig. 14 shows a comparison of a profile measured on 2 March 1970 with one measured on 31 May 1975. They are remarkably similar. The primary difference is the position of a relatively large ridge at the base of the beach face, but ridges are ephemeral features, and, thus, cannot be used to make long term interpretations of shoreline behavior. The bedrock projection at YKG-3 acts as a natural breakwater, reducing the wave energy reaching the beach. This causes sediment to accumulate behind the reef. At present,

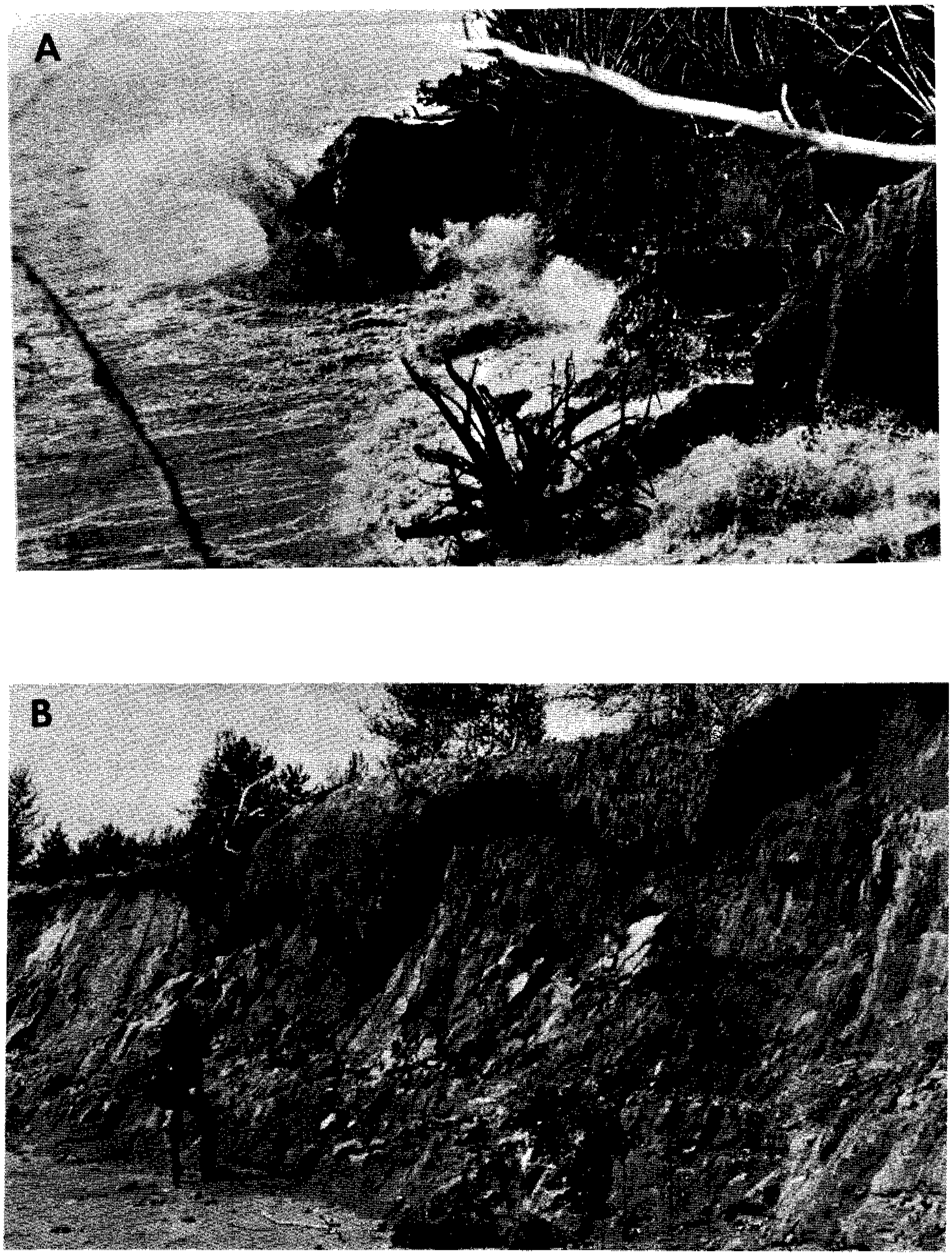


Fig. 13 Point Riou. A. Waves breaking on the scarp at high tide. B. Scarp at low tide showing overhanging forest mats where larger blocks of the till scarp have been removed.

there is a balance in the sediment budget for this area, resulting in local stability on an otherwise erosional shoreline. Enough sand is trapped behind Umbrella Reef to maintain the profile.

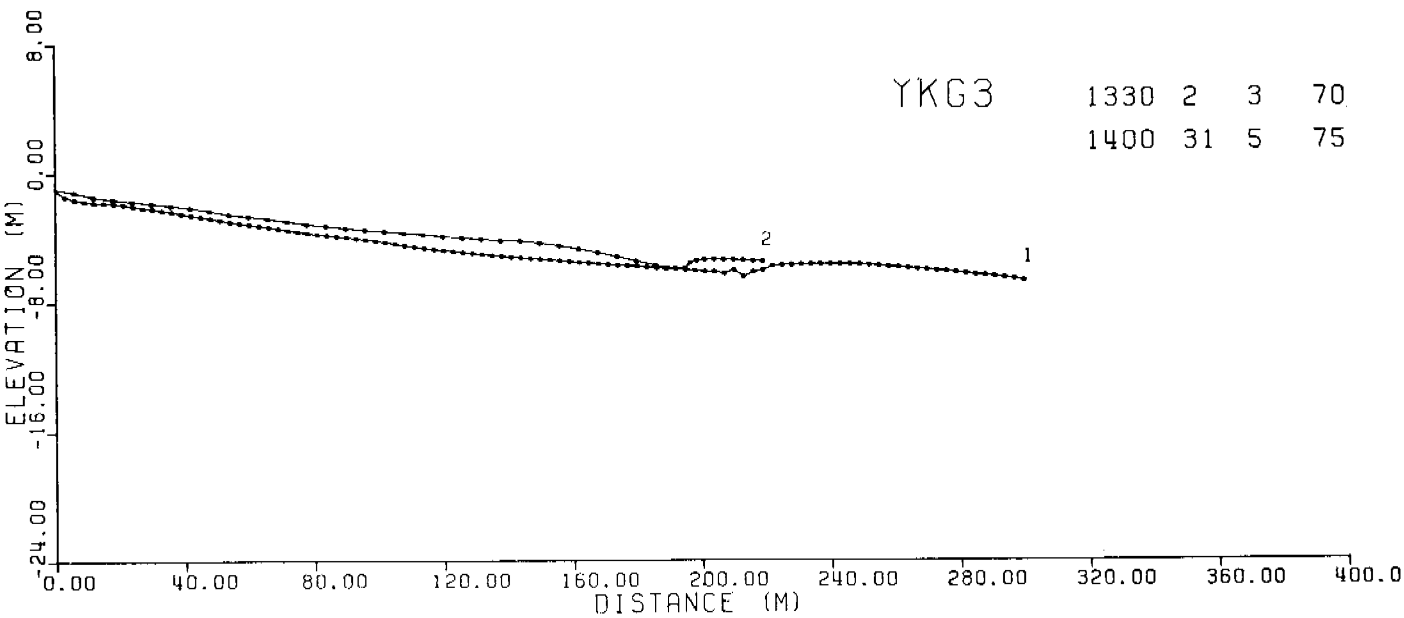


Fig. 14 Comparison of permanent profile YKG-3. Note that the profiles are very similar except for the position of a ridge-and-runnel at the toe of the beach. This profile remains relatively stable despite the adjacent erosion because of a natural bedrock breakwater which causes sand to accumulate behind it.

The beaches adjacent to Icy Bay demonstrate clearly the dramatic shoreline responses to changes in glacial position and drainage characteristics. The glaciers and their outwash systems are the primary sediment sources for the Gulf beaches. As the glaciers advance and retreat, the shoreline responds by deposition or erosion.

The shoreline fronting Sitkagi Bluffs has been classified as Al. Sitkagi Bluffs, located on the southernmost terminus of the Malaspina Glacier, is an eroding scarp of glacial till jutting into the Gulf of Alaska. At the Bluffs, the Malaspina Glacier is less than ½ km from the sea. Figure 15 shows the vegetated glacier, fronted by ice cliffs, glacial margin lakes and morainal deposits. The very narrow beach is composed of sediments ranging in size from sands to large erratics left by the retreating scarp.

Fig. 15 Actively eroding glacial margin of the Malaspina Glacier at Sitkagi Bluffs. The unvegetated glacier is visible in the background. Fronting that is a broad vegetated section ending in oblating ice cliffs with marginal lakes. The shoreline is extremely steep, composed of sediments ranging from sand to large erratics.

The glacier margin itself is extremely unstable. Although vegetated, ice collapse is evident everywhere. Vegetated sections are visible at various angles of tilt caused by the ablating ice cliffs. Glacial margin lakes repeatedly fill and empty, flooding surrounding areas. Kames and kame terraces are built and destroyed by the rapidly changing active processes. Fountains and short outwash streams dot the glacial margin, supplying abundant sediments. However, the position of the Bluffs (at a nodal point for sediment transport direction, see Nummedal and Stephen, 1976) causes this sediment to be rapidly transported away from the area, resulting in continued erosion.

The beaches just in front of this glacial terrain have the steepest profiles of the entire study area. Fig. 16 shows profile MAL-5. The beachface is so steep that it is difficult to see the change in slope between it and the till scarp just behind it. Beach material ranges from sand to erratics. Sorting is therefore extremely poor. The majority of the upper part of the beachface is covered by cob-

B

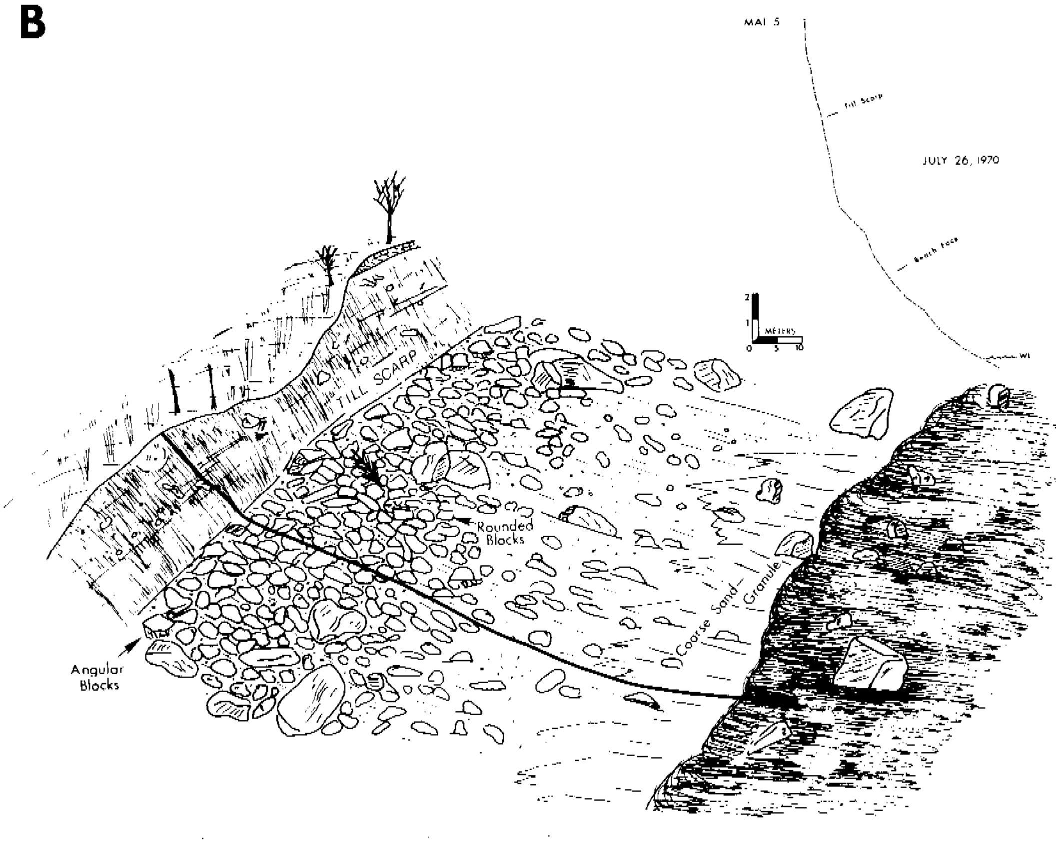


Fig. 16 Profile site MAL-5 located on Sitkagi Bluffs. A. Ground view of the beach face. Note the extremely poor sorting of the sediments ranging from sand to erratics. The till scarp is visible in the background. The boulders on the lower beachface show considerably better rounding than those just in front of the scarp. B. Beach sketch and plot of MAL-5. Note the extreme steepness of the plot.

bles and boulders. This very large grain size results in the extremely steep beachface. There is a pronounced increase in sediment rounding with increased distance from the scarp. The sediments lower on the beachface were probably eroded from the scarp at an earlier date and have, thus, been exposed to marine processes longer, which has resulted in a higher rounding value.

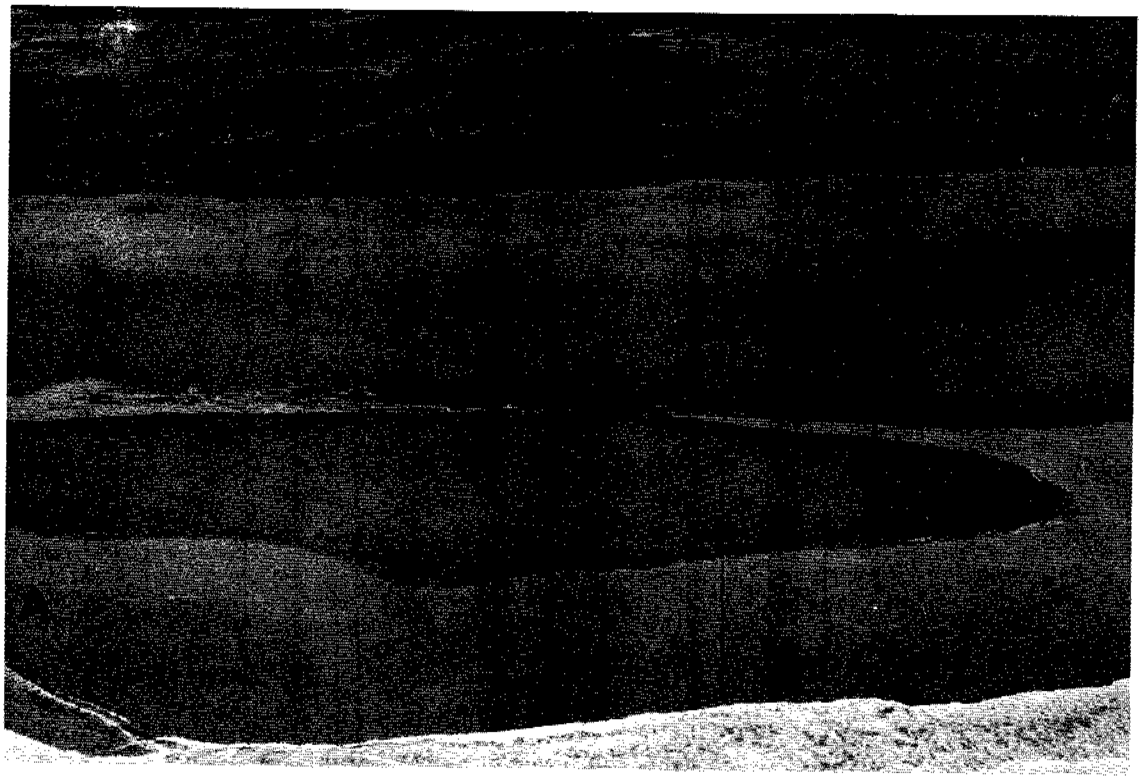
The third area classified as A1 is the shoreline on the western edge of the Yakutat Forelands from the Dangerous River inlet, west to the end of the Phipps Peninsula. In the April 77 Annual Report, an analysis of sediment samples was used to support the hypothesis that the Alsek River is the prime sediment supplier for the shorelines from Dry Bay to Yakutat Bay. There is a transition from slightly depositional beaches through neutral to erosional beaches with increasing distance from the Alsek River. The glaciers in the area have been retreating for some time. This, in conjunction with the relatively broad coastal plain in this area, modifies the sediment suite carried by the rivers to the coast. The outwash streams draining the glaciers usually have glacial margin lakes as sources. These lakes act as traps for coarse sediments. Additionally, the relatively long river length further removes coarse sediments. These streams therefore supply only sands to the coast. The broad beach ridge plain just west of Dry Bay (Fig. 17) is truncated to the west by the well-developed outwash of the Dangerous River. These two features indicate periods, in the past, of considerably greater sediment loads for these rivers.

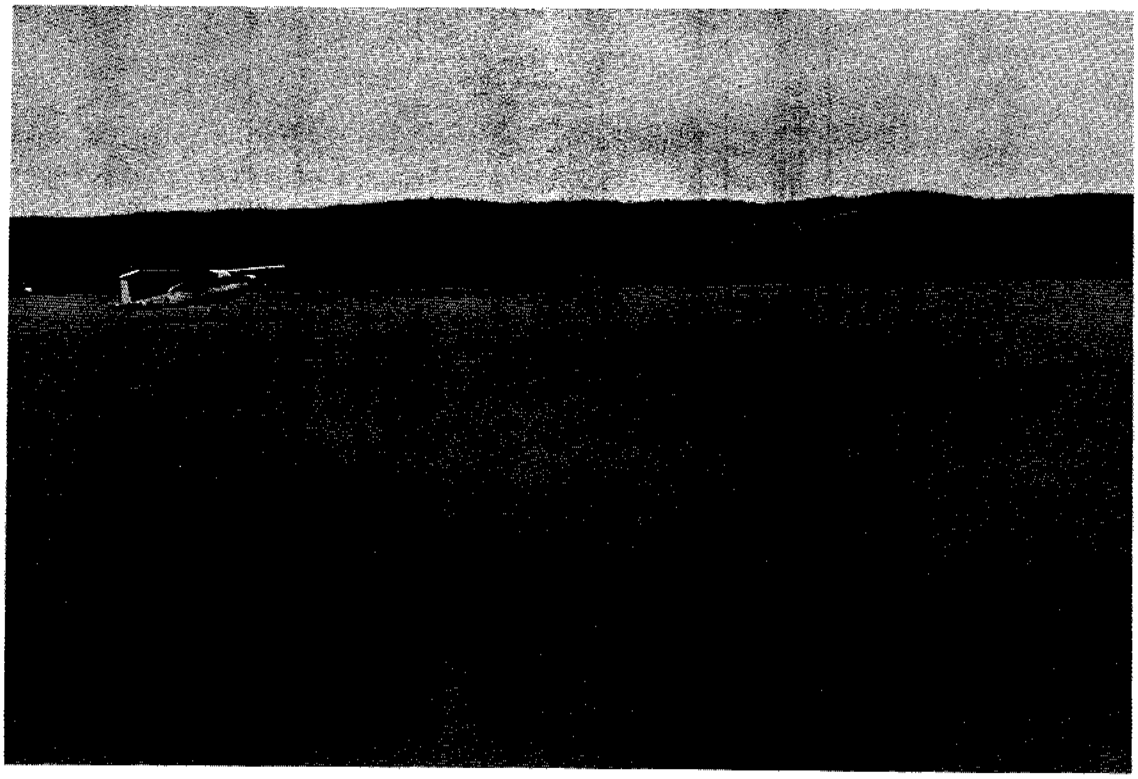
Presently, the Alsek River, flowing into Dry Bay, is the only river on the Yakutat Foreland which supplies enough sediment to maintain the beaches immediately downdrift. The beaches from Dry Bay to the Akwe River inlet show multiple ridge-and-runnel systems and well-developed berms. Dune fields and dune ridges are often found behind the beachface. The beaches are generally convex upward as a result of the depositional features. As the distance is increased from Dry Bay, the beaches become flatter and the berms become lower. Ridge-and-runnel systems are lower and less complex. Dunes are also less developed. These beaches are probably in equilibrium.

Fig. 17 Beach ridge plain downdrift of Dry Bay. Note the well-developed ridge and swale topography. The ridges, which are higher, are vegetated by climax Sitka Spruce forests. The intervening swales are marshy and covered mostly by grasses. The Yakutat Glacier is visible in the background with Harlequin Lake fronting it. The Dangerous River outwash plain truncates the beach ridge plain at the left of the photo.

Finally, from Blacksand Spit, just west of the Dangerous River, to Yakutat Bay, the beaches become erosional. The beachface is flat and featureless; scarps are often found at the spring high swash line. Where ridges are present, they are low and rarely found in multiple sets.

Figure 18 shows profile site DBC-21 located on Blacksand Spit. The back beach area is covered with low vegetated dunes and truncated by a sharp scarp. Old logs are exposed in this sand scarp. Spring high tide waves break onto the scarp, causing it to retreat. The active beachface is flat except for a low ridge-and-runnel at the base of the beach. These low ridges give this section of coast a characteristic rythmic topography (Fig. 19). The profiles further downdrift show similar erosional features. A permanent profile site established on the beach just in front of the Yakutat airport was lost due to this erosion sometime between 1971 and 1975.





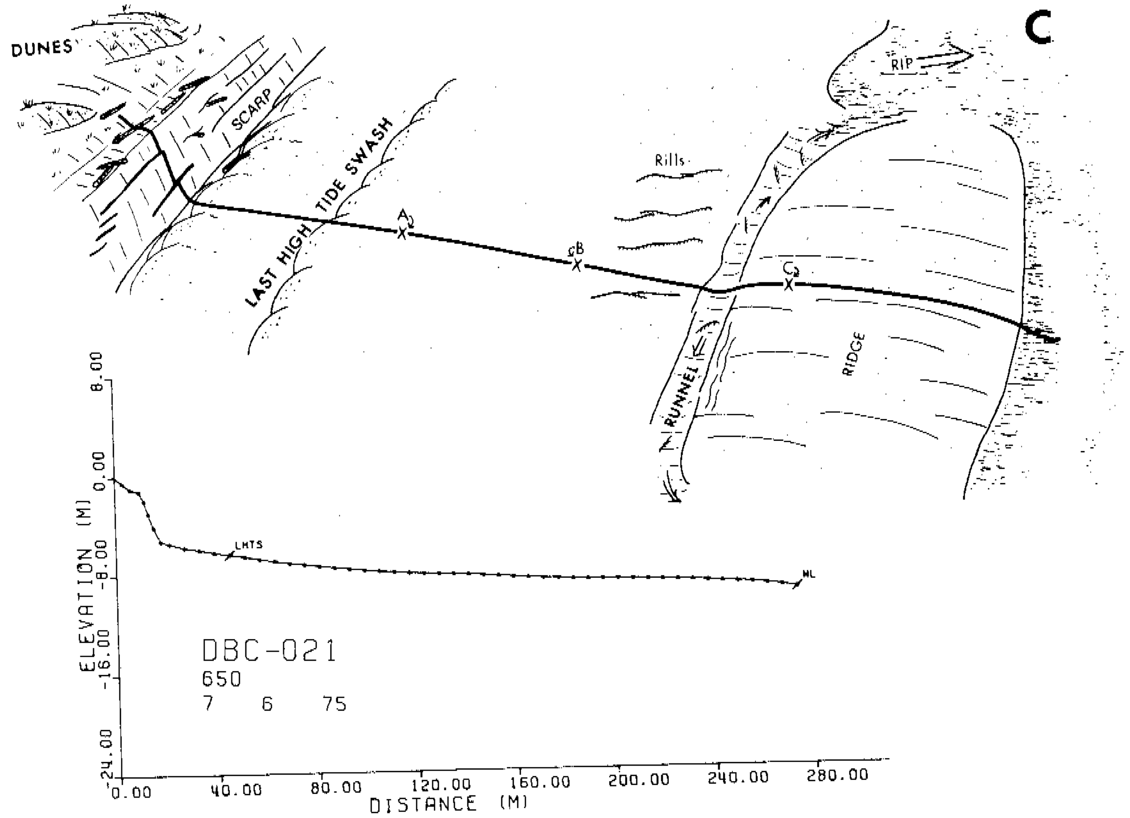


Fig. 18 Profile site DBC-21 on Blacksand Spit (type Al). A. Oblique aerial view landward. A ridge-and-runnel occupies the foreground. The "X"'s on the beachface are sample sites. There is a prominent scarp behind the active beachface. This scarp is backed by blow-out dunes, developed by bimodal wind direction (opposed winds). There is a large wash-through to the right on the photo. B. Ground view of DBC-21. Note flat character of beach and height of scarp. C. Beach sketch and computer plot of profile.

Fig. 19 Mildly erosional beaches on the Yakutat Foreland. The complex sets of ridge-and-runnels give the shoreline a rythmic topography. The vegetated plain behind the beach is being slowly cut back by the erosion along this shoreline.

There are a number of small areas on Hinchinbrook Island and Kayak Island which have also been classified as A1. For the most part, these two islands are uplifted bedrock with high sheer rock cliffs dropping to the sea. There are, however, a few places where the scarps are considerably lower. The majority of the shorelines on both of these islands are erosional. The distinction between A1 and A2 shorelines is made with regard to the height of the scarps or cliffs. The areas designated as A1 will generally have scarps no more than 10 m in height.

The Martin Islands are also classified under A1. They are located just south of the abandoned town of Katalla on the eastern margin of the Copper River Delta. They are characterized as low rock cliffs with gravel accumulations at their bases and a partial development of a wave cut bedrock platform. There are a number of small sea stacks and sea caves associated with them.

Subclass A2 - High to moderately high erosional scarps

Subclass A2 contains those shorelines which are characterized by high rock scarps often with well-developed pocket beaches and bedrock platforms. These high rock cliffs are found on Hinchinbrook Island, Kayak Island, Wingham Island and at Point Martin. All four areas have bedrock cliffs generally higher than 10 m. At Cape St. Elias, there is a near vertical drop of over 1600 feet to a broad rock platform at sea level.

Fig. 20 shows part of Kayak Island. There is a prominent cliff with considerable stabilized debris at its base. This area has been uplifted by a number of earthquakes. The Good Friday quake of 1964 uplifted the area about 2.5 m (Plafker, 1971). There are a number of uplifted storm swash lines, manifest as log accumulations on the back beach area. The present beachface has a log storm berm, mixed sand and gravel beachface and a broad wave cut platform of bedrock.

Hinchinbrook Island also falls primarily into Subclass A2. There are numerous pocket beaches at the base of sheer rock cliffs. These pocket beach locations are generally controlled by bedrock structure. Sediments in the pocket beaches range from sands to boulders. There is usually a fining of the sediments toward the middle of the pocket beaches. There are a number of rock platforms on Hinchinbrook Island. Waves wash across these platforms and break onto the cliffs behind them at high tide.

Fig. 20 Part of the western shore of Kayak Island. This area was uplifted 2.5 m by the 1964 Good Friday earthquake. The log lines indicate old storm swash areas prior to uplift. Behind the beach is a scarp in bedrock and Holocene deposits. A broad wave cut platform extends to the water. In the background, high vertical rock scarps are visible.

NEUTRAL SHORELINES

Shorelines have been defined as neutral if they do not show consistent horizontal or vertical changes in a single direction (i.e. consistent progradation or erosion). The shorelines of the study area are extremely active due to the intensity of the processes there. However, there are stretches of coastline that have shown very little change over the past 8 years. Additionally, they show no dominance of either depositional or erosional morphology. A classification of neutral does not require stability, it implies only that the changes are not consistent. Seasonal variation in process parameters cause periods of erosion and deposition on these shorelines. Storm surge, high waves, increased river discharge and numerous other factors can cause severe erosion and/or deposition; however, these random and cyclical changes are generally counter-acted within a relatively short period of time. Thus, for purposes of shoreline development, these areas are to be preferred, provided adequate set-back lines are adhered to, and provisions are made to avoid those areas particularly subject to large short term changes. Each subclass under this category will be considered in detail below. There are five subclasses with a neutral classification. These subclasses account for 58% of the total shoreline (Table 1).

Subclass B1 - Neutral shorelines downdrift of glacial outwash streams.

Subclass B1 is the single largest subclass, comprising 25% of the total shoreline. It includes most of the beaches formed downdrift of glacial outwash streams. It also includes beaches downdrift of eroding glacial deposits and rarely bedrock. These beaches can be very variable over short time periods, but generally show no consistent trend of either deposition or erosion.

The glacial outwash streams, so common to this area, are quite variable with regard to discharge, total length, number of distributaries, velocity, gradient and river pattern. Therefore, the size, composition, maturity and amount of sediment load is quite variable. This variability in the sediment supply results in morphological differences on adjacent beaches.

Where outwash streams have a high discharge, high sediment load ranging in size from sands to gravels, and have a well-defined single distributary mouth, a beach ridge plain generally develops downdrift; provided there is a relatively high value of net longshore sediment transport. Examples of this are the Alsek River, Kaliakh River, and Fountain Stream. Figure 17 shows the excellent development of the beach ridge plain downdrift of the Alsek River.

The beaches downdrift of these rivers have a distinctive morphology. They are composed of sands and gravels which generally decrease in size with increased distance from source. Concommitant with this fining is a reduction in beach slope and general beach complexity. They have an intermediate steepness and often well developed berms, especially near the mouths of the rivers. At river mouths, the beaches often exhibit multiple berms which are absent further downdrift. Fig. 21 shows profiles DBC-5, DBC-8 and DBC-11 from the Alsek River area and DBC-59 and

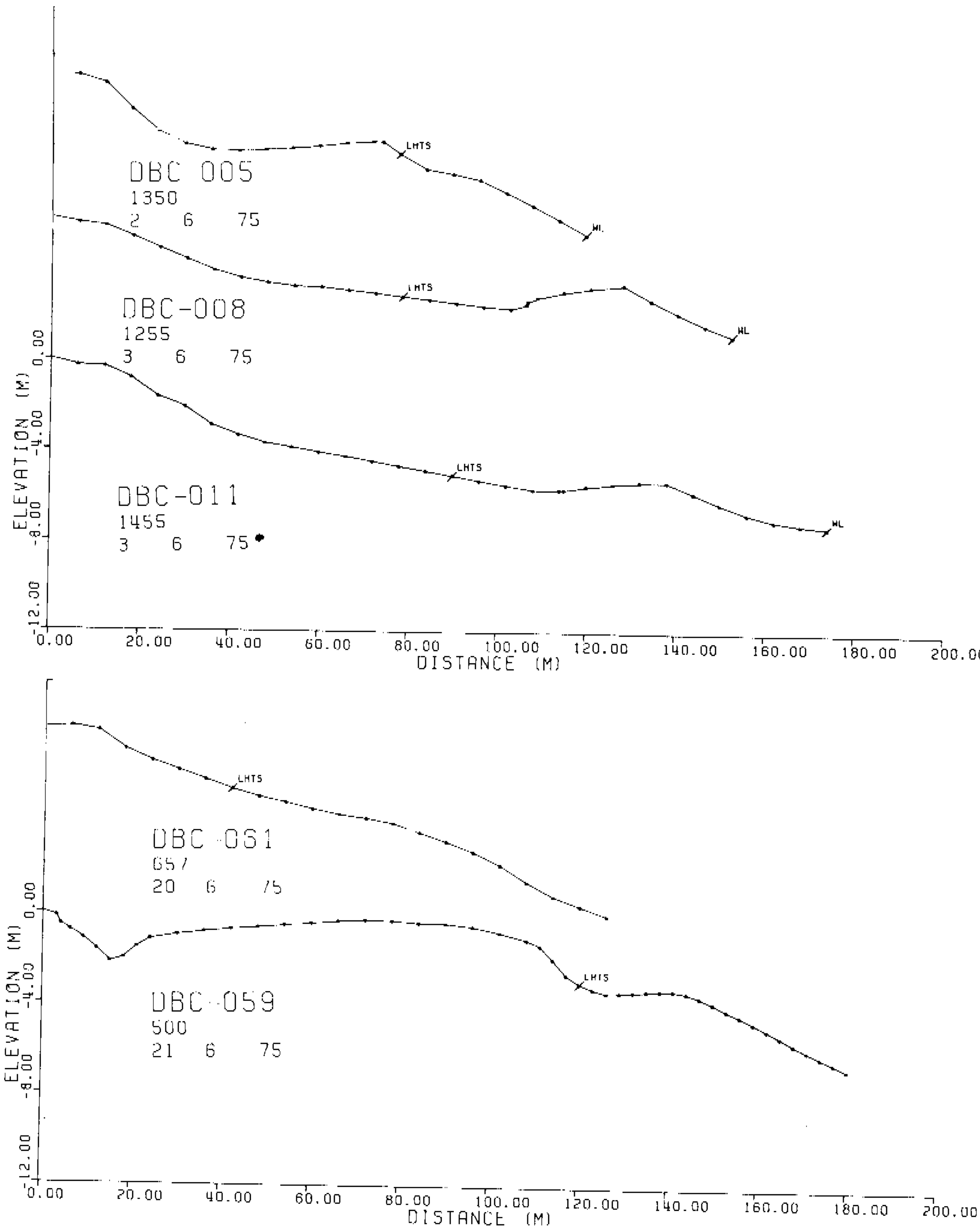


Fig. 21 Trends of profiles along the Yakutat Foreland downdrift of Dry Bay and along the Malaspina Foreland downdrift of Sitkagi Bluffs. DBC-5, 8, and 11 show a decrease in beach complexity, a trend to flatter profile with lower development of the berms. These changes are duplicated by profiles at DBC-59 and 61.

and DBC-61 from the Fountain Stream area. Note the reduction in beachface complexity and beach slope as the distance from the river mouth is increased (Refer to Fig. 2 for profile locations). Ridge-and-runnel systems are also common.

The beaches downdrift of Dry Bay have been discussed in the section under Erosional Shorelines. There is a trend from slightly depositional through neutral to erosional beaches as distnace from the sediment source (Alsek River) is increased. Fig. 22 shows profile site DBC-7, which is 14 km west of Dry Bay. This profile has a well developed spring berm with a neap berm on its lower face. Behind it, there is a large dry berm runnel, active only during spring tides. Further landward, the beachface slopes up onto a storm berm and then back onto a flat overwash area, active only during large storms. Overall, this profile appears to be slightly progradational. However, the storm overwash area behind the beachface attests to the vulnerability of this area to violent storms; thus, it has been given a neutral label. In addition, we have no data which indicate a present continuing trend of progradation. Furthermore, the Alsek River is probably carrying a constantly reducing sediment load, the result of glacial retreat, which will affect the adjacent beaches.

Fig. 23 shows profile site DBC-11, which is 12 km further downdrift. The berm is lower, and the berm runnel is smaller. The entire beachface is flatter than DBC-7. There is a storm accumulation of logs backed by a low dune ridge. Finally, Fig. 24 illustrates profile DBC-13. Note the very flat nature of the beachface. The profile is located on a protuberance between two low ridges. There is a prominent log accumulation on a very low storm berm.

The three profiles discussed above (DBC-7, DBC-11, and DBC-13) show some of the changes in beach morphology with increased distance from primary sediment source. In the April 77 Annual Report, this same area was used to show sedimentological changes resulting from increasing distance from source. Both of these studies support the Alsek River, discharging through Dry Bay, as the primary sediment source for the Yakutat Foreland area. The beaches immediately downdrift of Dry Bay dis-

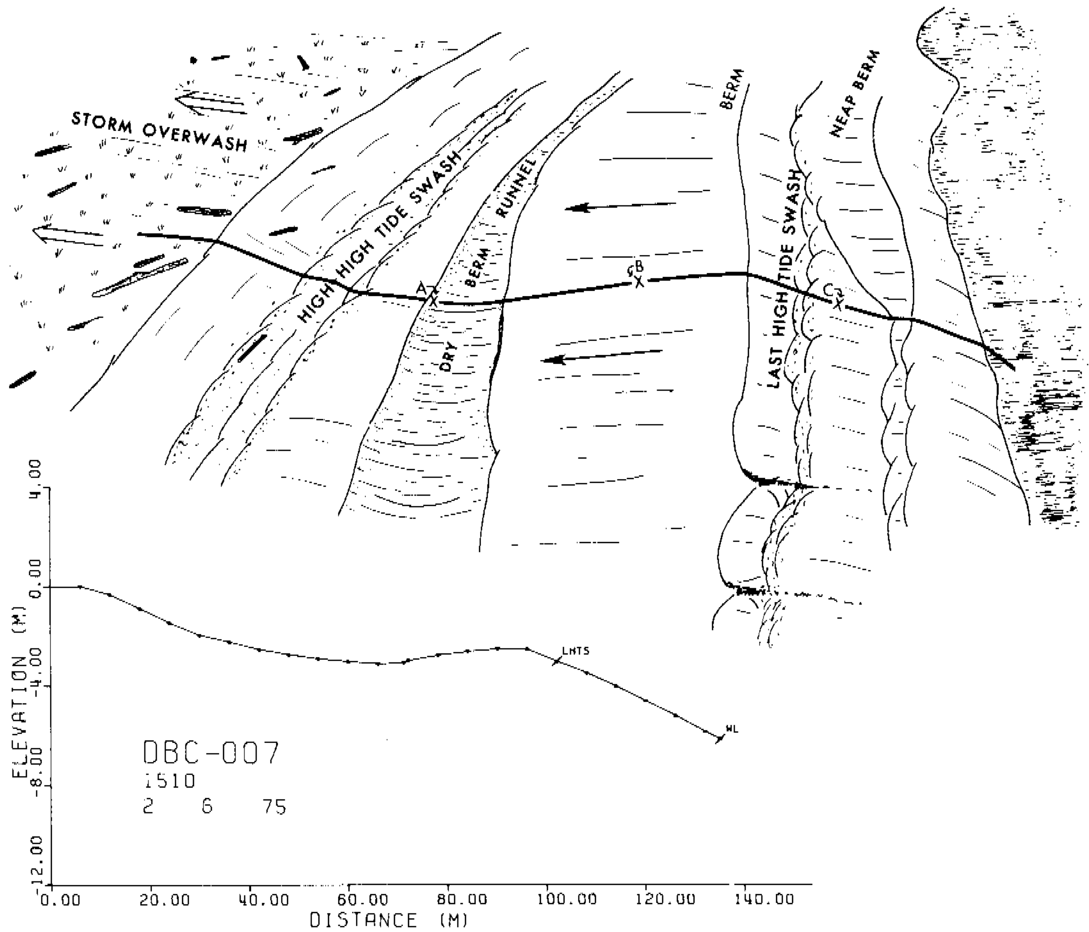
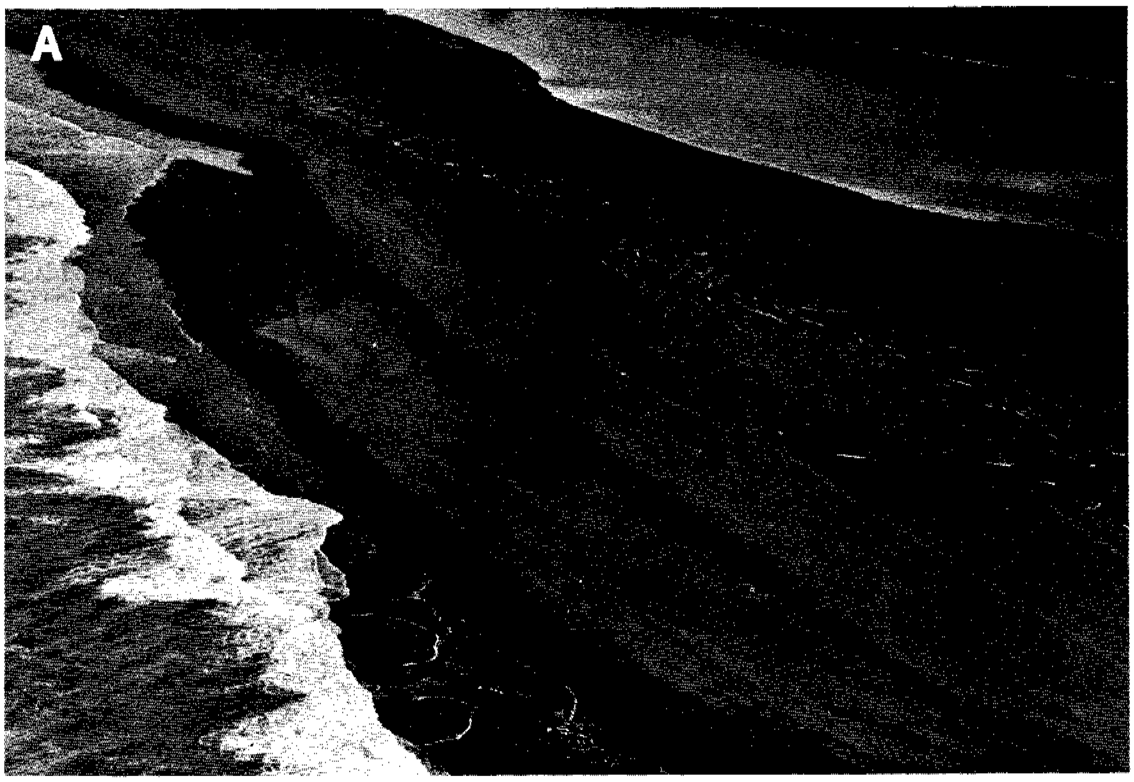


Fig. 22 Profile site DBC-7 downdrift of Dry Bay. This profile shows a high broad berm and berm runnel backed by a high overwash berm. The profile is convex upward indicative of progradation. At the bottom of the sketch is a computer plot of the profile.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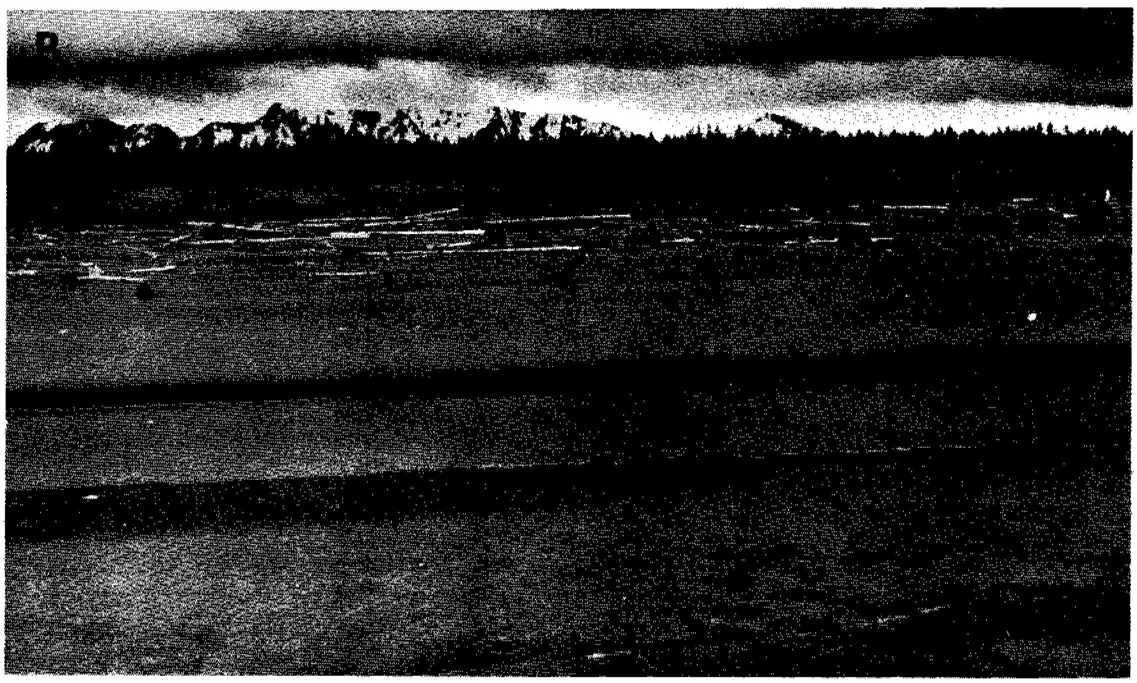


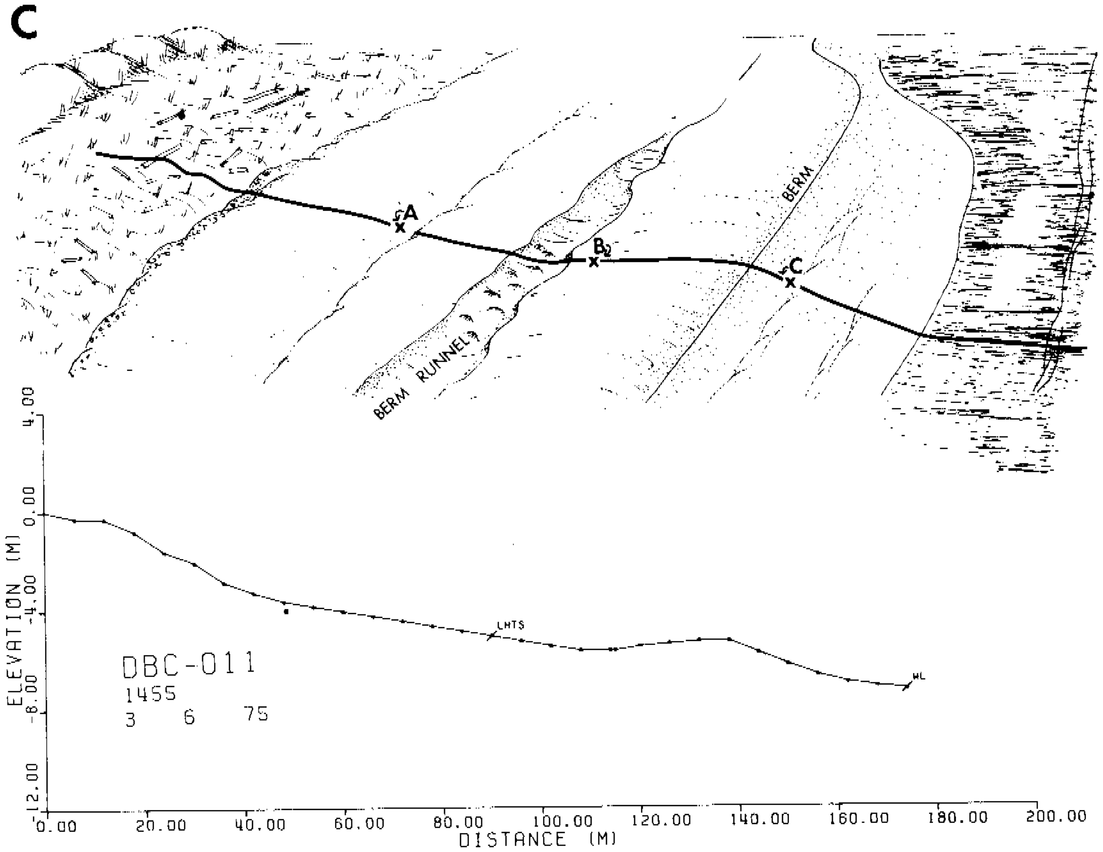
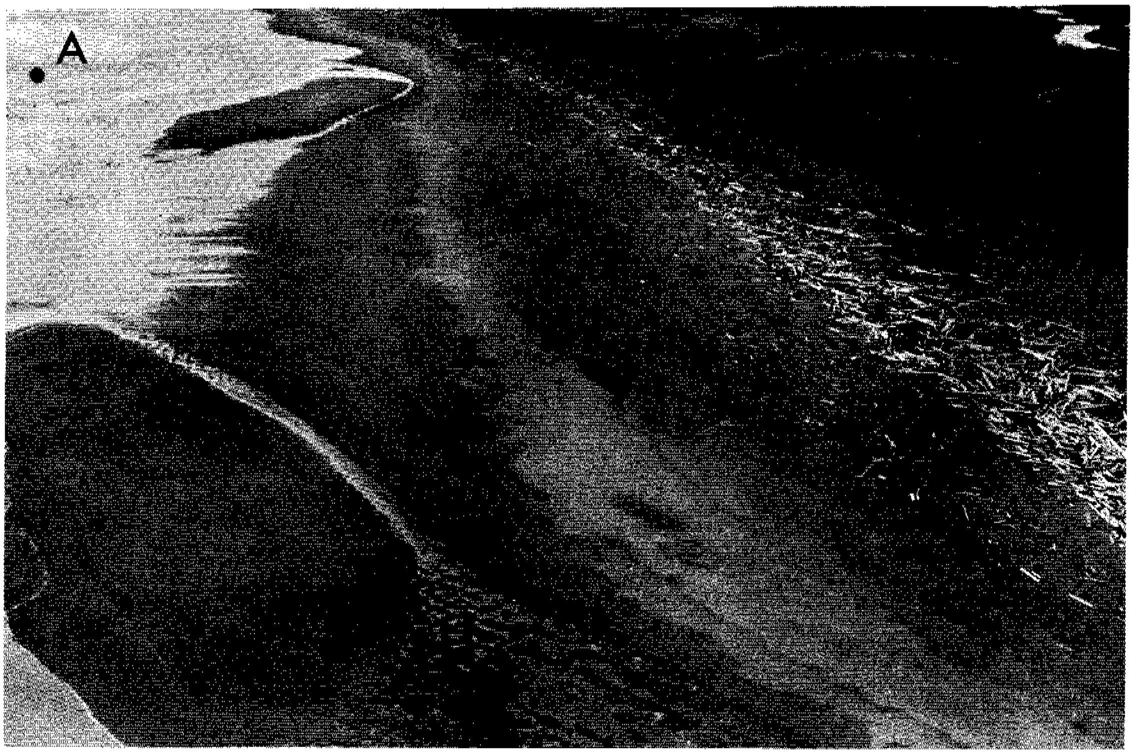


Fig. 23 Profile site DBC-11 located downdrift of Dry Bay. A. Aerial view looking west showing large low berm at the base of the beach. The berm was formed by the migration of a ridge onto the beachface. The Akwe River is visible behind the spit. A dune field has been developed behind the active beachface; dunes oriented NW-SE by the SE storm winds. B. Ground photo of the beachface. Dark linear feature across the center of the photo is the berm runnel. The storm swash of logs is visible with low dunes behind it. C. Beach sketch and computer plot of DBC-11.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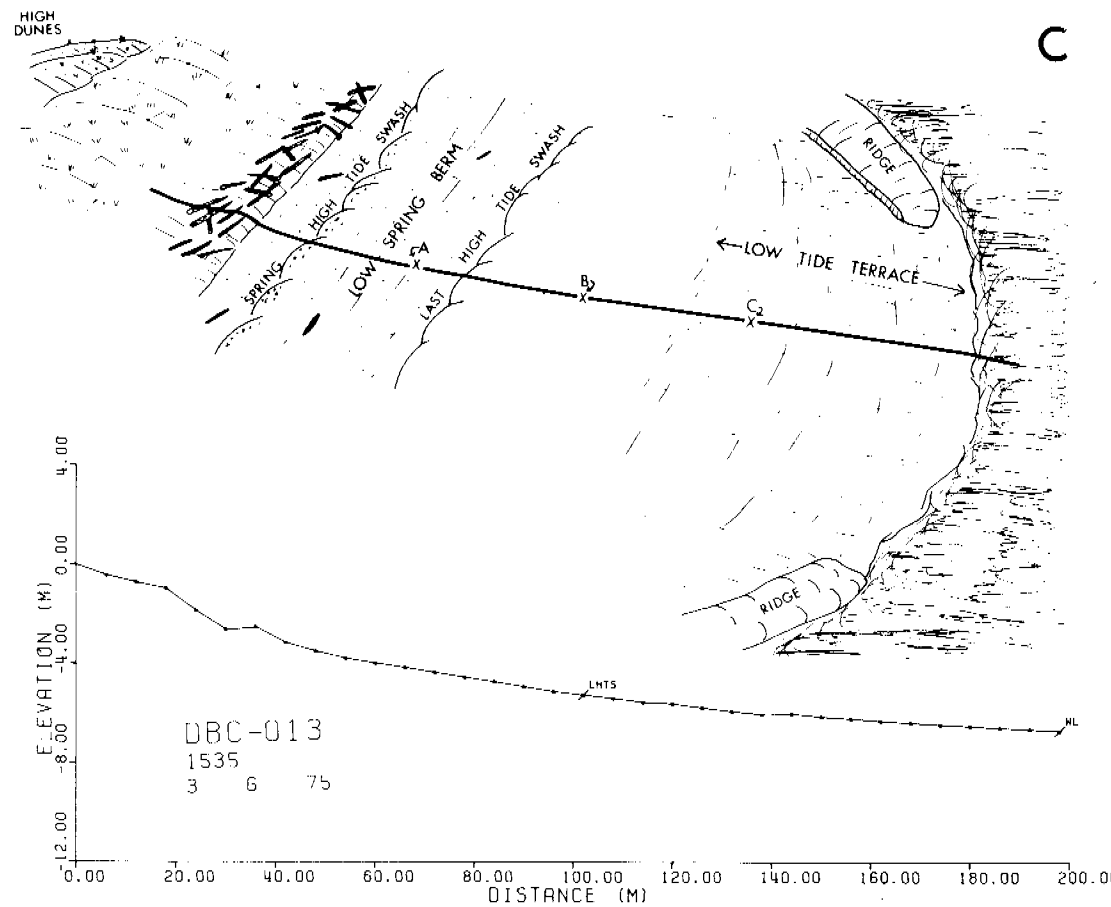

Fig. 24 Profile site DBC-13 downdrift of Dry Bay. A. Aerial view looking west. The profile was measured between the two ridges which form a broad beach protuberance. The beachface is very flat and featureless. A prominent storm swash of logs and aeolian sand is present behind the active beachface. A dune ridge is developed well behind the beach. B. Detail of the storm berm composed of logs carried in during storms and wind blown sand (wind-shadow dunes). C. Beach sketch and computer plot of DBC-13.

play many depositional features. These features become less developed as distance from Dry Bay is increased. Finally, the beaches become erosional in character from the Blacksand Spit to Yakutat Bay, as discussed in the section on Erosional Shorelines. These changes are very gradual, occurring over a 90 km stretch of coast. The exact location of the line between erosional and neutral shorelines is therefore somewhat subjective.

The east and west Malaspina Foreland is another major area of outwash stream coast classified Subclass B1. This includes the beaches downdrift of Yana, Manby, Alder, Fountain, Esker, Sudden, Oscar and Kame streams. It encompasses two primary areas: 1) from the western margin of Sitkagi Bluffs to the erosional shoreline fronting the abandoned Yahtse River and 2) from the pure gravel beaches downdrift (east) of the eastern margin of Sitkagi Bluffs to the Grand Wash. These streams carry an abundant sediment supply ranging in size from clay to gravels. The beaches adjacent to the streams usually have one or more berms and often a higher storm berm. Variability of beach slope is partly a function of sediment grain size which generally decreases with increased distance from source. Although some of these areas appear to be depositional, the very high wave energies and the unreliability of the outwash streams have prompted a neutral label. Short term variability on these beaches is great. Severe storms generating large waves can erode the beaches back many 10's of meters. Overwash of the numberous spits associated with the streams is also common.

Profile site DBC-47, located at the end of Manby Stream spit, is illustrated in Figure 25. The spit is completely overwashed during storms; thus, there is no vegetation. Landward of the stream is a climax Sitka Spruce forest with a log accumulation just in front of it. This is the result of severe winter storms which top and overwash the spit bringing the logs back to the landward side of the stream. The spit is built on a till or morainal platform. This platform is associated with an earlier position of the Malaspina Glacier. This implies that the coast has retreated from an earlier position further seaward. The platform is manifest as a


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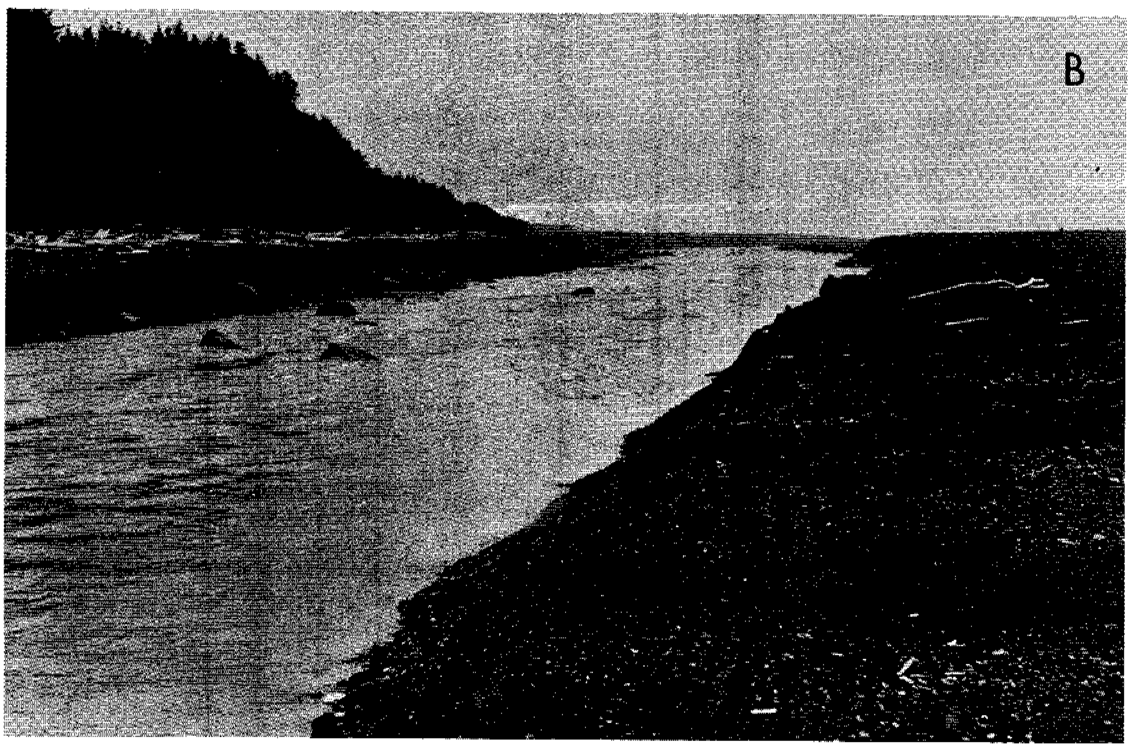
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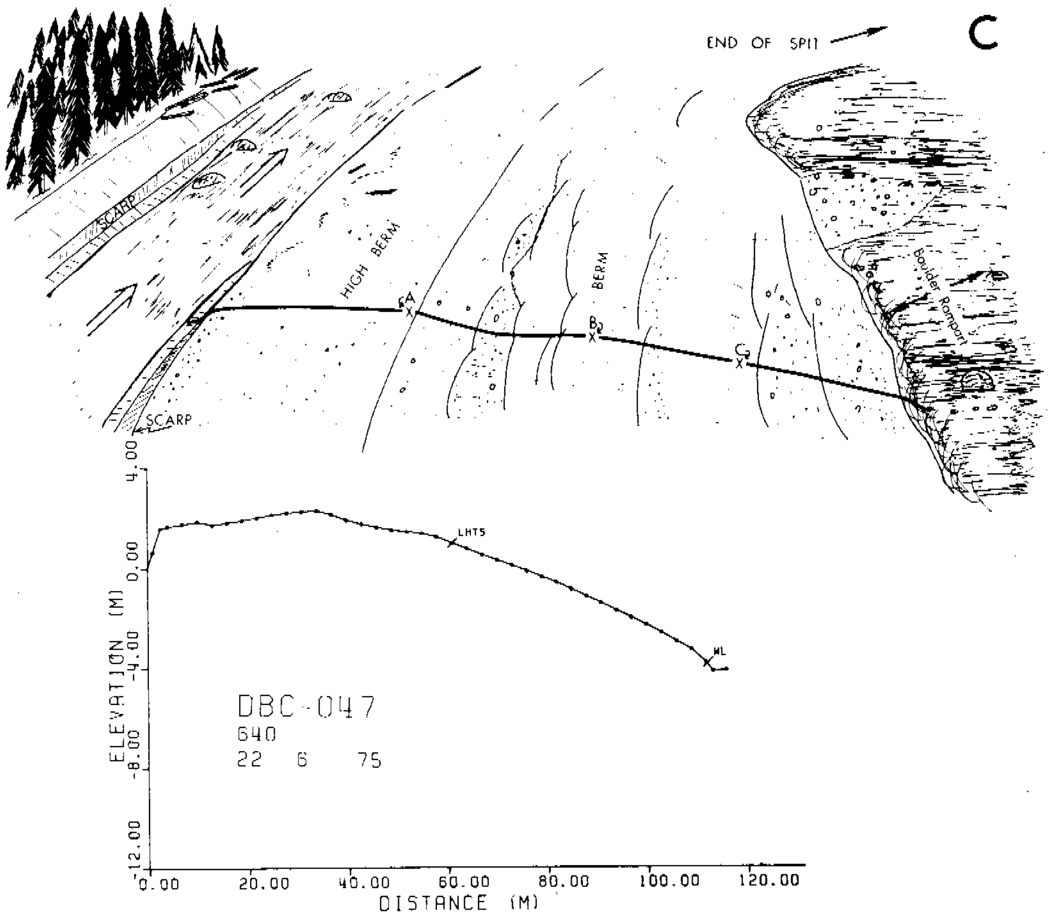


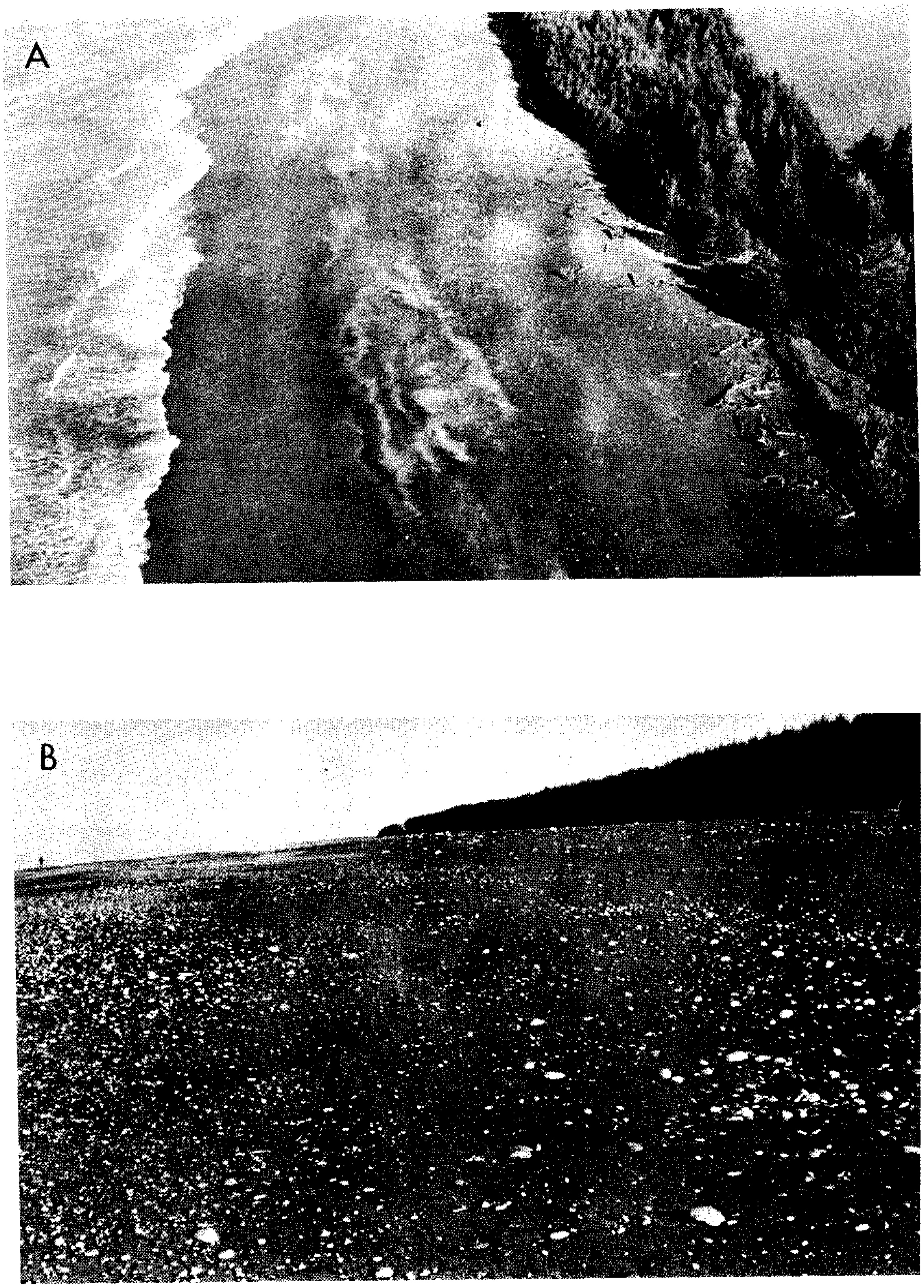
Fig. 25 Profile site DBC-47 on Manby Stream spit. A. Aerial view looking east. The boulder rampart is clearly visible jutting out from under the spit. Storm waves have swept the spit clean and washed a log debris line onto the beach landward of the stream. B. Ground view of large boulders in Manby Stream with a storm swash of logs on the landward side of the stream. C. Beach sketch and computer plot of DBC-47.

boulder rampart, which projects from under the spit. Additionally, large boulders are visible in Manby Stream. These were left by the Malaspina Glacier. Sands and gravels make up the spit which has a low broad berm and associated runnel and a higher berm which is formed during high spring tides. This two berm system, with the upper berm being active and often overwashed during higher tidal levels, is common at the ends of outwash stream spits.

Fig. 26 shows profile site DBC-57 located just west of Sitkagi Bluffs. The sediment source for this beach is the eroding glacial till at the Bluffs. The Malaspina Glacier is visible just behind the beachface. A narrow vegetated zone separates the glacier from the active beach. A small storm scarp has been cut into that zone. The active beacface is characterized by two broad low berms of sand and gravel. As the bluffs continue to erode back, the erosion will spread to this area, but presently, the beach appears to be neutral.

During the 1969-1971 field studies, two permanent profile sites were established on the Malaspina Foreland outwash beaches. Profile MAL-2 located just west of Fountain Stream and profile MAL-3, located on the Manby Stream spit, both show relatively strong progradation which may be misleading (Fig. 27). MAL-2 is only 3 km downdrift of Fountain Stream. This stream has a spit associated with it which is periodically breached during periods of high discharge (generally during the summer). When this happens, the breached spit migrates landward by wave overwash and then downdrift (see section on Spit Analysis). This causes rapid progradation as that package of sediment moves across a profile. The May 31, 1975 run of profile MAL-2 occurred just before a spit breach (July 4, 1975) which may account for its lower form when compared to the June 11, 1971 measurement of the profile.

Profile MAL-3 also shows progradation. This is, at least partly, due to storm activity. The March 1, 1970 profile was run just after a storm (Feb. 28, 1970); thus, part of the difference in the two profiles is due to storm erosion. Additionally, the profile is backed by a low vegetated area behind the storm berm. At some time between 1970 and 1975, a storm overwashed the spit 100 m to the west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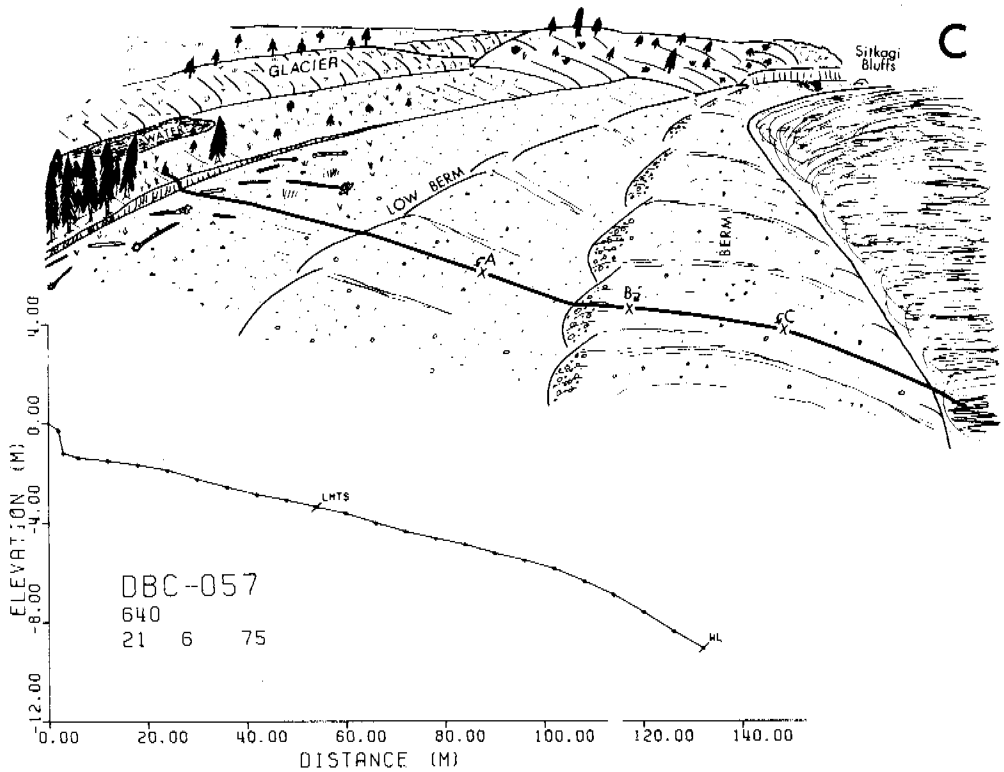


Fig. 26 Profile site DBC-57 on the Malaspina Foreland. A. Aerial view looking west. Note the broad convex upward shape of the beachface. A storm scarp is visible behind the active beachface. B. Ground view showing mixed sand and gravel beach sediment. C. Beach sketch with computer plot.

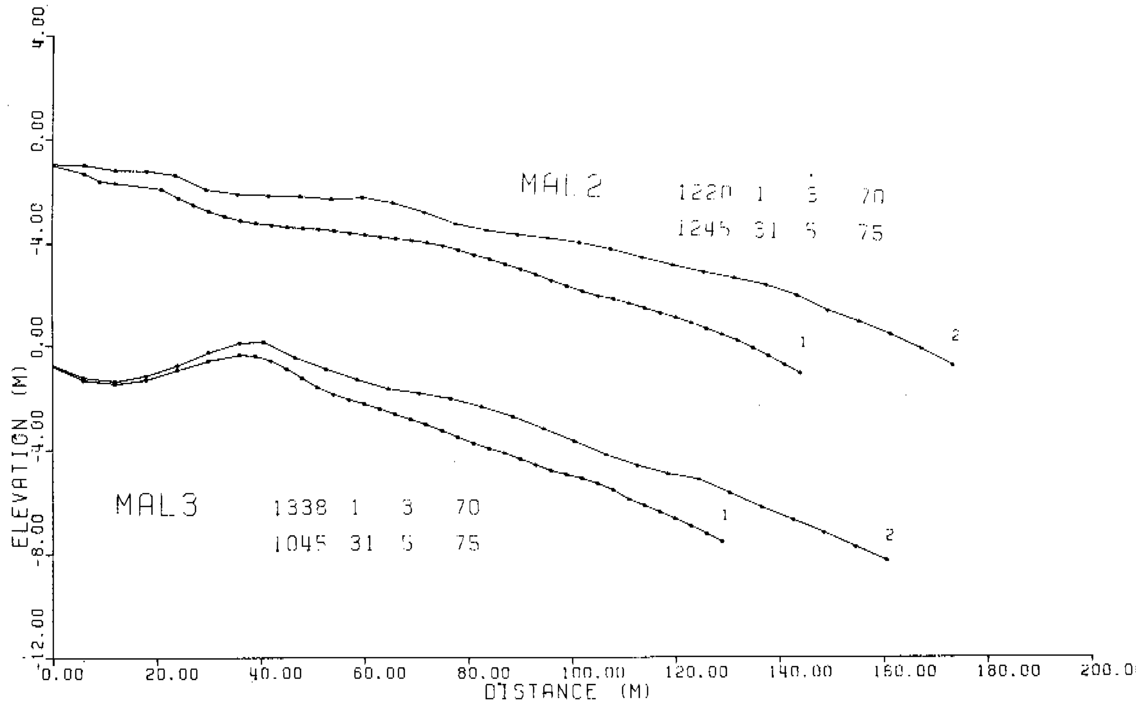


Fig. 27 Changes at permanent profile sites MAL-2 and MAL-3 located on the Malaspina Foreland. The profiles indicate a general progradation, but because of the dynamics of the area (see text), they have been labeled neutral.

of the profile. This resulted in a low, broad wash through channel stripped of vegetation. If the washover had occurred at the profile site, it would have washed it out.

Profiles MAL-2 and MAL-3 both appear depositional; however, this may be the result of the timing of profile measurements relative to storms (severe storms can erode as much as 50 m from the beachface, (Hayes, 1967; Hayes and Boothroyd, 1969). There are short term changes on these beaches which might be partly responsible for their depositional appearance. Finally, even where the depositional forms are manifest, there are sometimes equally strong erosional forms adjacent to them. The beaches have been labeled as neutral because of this potential variability.

The third area falling into Subclass B1 is the Bering Glacier Foreland. This area stretches from Cape Yakataga to Cape Suckling. There are four major outwash streams draining this area: 1) Duktoth River, 2) Kaliakh River, 3) Tsivat River, and 4) Seal River. These rivers have many similarities to the Malaspina Foreland streams. The Kaliakh is the largest. It has developed a large outwash fan and a broad beach ridge plain very similar to the beach ridge plain downdrift of the Alsek

River. The streams carry abundant sediment, ranging in size from clays to gravels. Beaches are composed of mixed sand and gravels. Multiple berms and storm berms are very common, as is rythmic topography (Fig. 28). Back beach areas usually have well developed dune fields and sometimes large dune ridges.

Fig. 28 Highly-developed rythmic beach topography on the Bering Glacier Foreland. The dunes behind the active beachface are strongly oriented NW-SE due to the SE storm wind direction. Also note the deflection of the outwash streams to the west (direction of dominant longshore sediment transport). Cape Suckling is visible in the background.

During the 1969-71 study, three permanent profiles were established in the Bering Foreland area. Fig. 29 shows two of these profiles: SEA-1 and YKG-2. The third profile, YKG-1, was located on the Tsivat River spit. Downdrift ends of spits are very unstable. Sometime between 1971 and 1975, the profile was lost, probably due to a winter storm. There are numerous logs on the beachface which would oscillate back and forth across the beach during a storm. It is likely that the profile markers were struck by one or more of these logs. The beach does not show erosional characteristics.

Profile SEA-1 is located downdrift of the Tashalick River on the western border of the Bering Foreland. Figure 29 shows that the storm berm has increased in height since 1970, but the remainder of the profile is almost identical in form from 1970 to 1975.

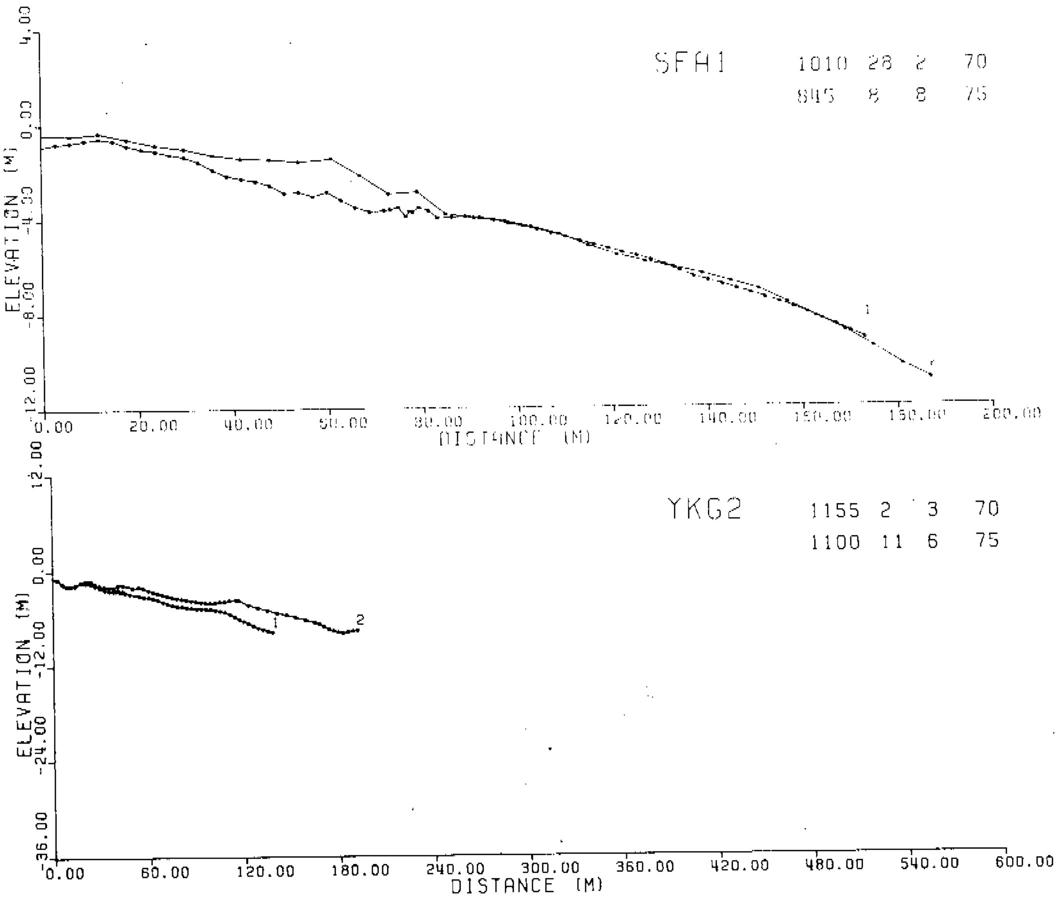


Fig. 29 Changes at permanent profiles SEA-1 and YKG-2, located on the Bering Foreland. SEA-1 shows a moderate vertical progradation of the storm berm but no change of the beachface. YKG-2 shows dramatic progradation which may be misleading given the position of the profile, near an active breach point on the Duktoth River spit.

Profile YKG-2 shows very pronounced progradation. This is probably misleading. The March 2, 1970 profile was run 4 days after a large storm and thus would show only a partial recovery from the erosion of that storm. The Duktoth River often breaches the spit just west of profile YKG-2. This causes short periods of deposition and erosion as the adjacent beaches adjust to the breach and then seal the breach with longshore movement of sand. There is no basis to assume that this profile will continue to prograde. The dynamics of the spit breakthroughs and storm activity can drastically alter this profile; thus, it is classed neutral.

The Bering Foreland is similar to the Malaspina Foreland. It has numerous outwash streams with their related spits and sand and gravel beaches. The area is more mature than the Malaspina. The glacial margin geomorphology indicates that the Bering Glacier has receded considerably more than the Malaspina Glacier, and the outwash plains are, therefore, considerably wider. The beaches are quite similar although the Bering beaches contain generally finer sediment and are not as steep, because of their greater distance from the source.

Subclass B2 - Neutral embayment beaches

The beaches on the eastern sides of Icy Bay and Yakutat Bay are generally stable. The Icy Bay shoreline is very young (see explanation under Erosional Shorelines) and therefore not as stable as the more mature Yakutat Bay shorelines. This is especially evident in the sediment types. The Yakutat Bay shores are composed of mostly well-sorted and rounded gravels; whereas the Icy Bay shorelines have considerable sand. Figure 30 demonstrates the maturing process. These three profiles were set up at the base of the Chaix Hills. This area is close to the head of the bay and thus has only recently been exposed. Analysis of aerial photos indicates that the area was still covered by the Tyndall Glacier in 1948. The profiles are one kilometer apart with DBC-97 being closest to the glacier and, thus, the most recently exposed. DBC-95 is the furthest from the glacier with DBC-96 in between. The tills, kames, outwashes and moraines of this area are composed of sediments ranging in size from clay to erratics. After they are exposed to marine activity, these sediments are selectively sorted by the waves and tidal currents. Profile DBC-97 has more sand than DBC-96 or DBC-95; the gravels are angular to subangular. Profile DBC-95 has gravels that are subangular to subround and considerably less sand than DBC-97 or DBC-96. This This increased gravel to sand ratio results in an increase in the beach slope from DBC-97 to DBC-95.

The beaches of Yakutat Bay (Fig. 31) all show very steep slopes. They often have vegetated storm berms, indicative of infrequent storms. They are composed of almost pure gravel. Yakutat Bay has been open longer than Icy Bay. The abandoned glacial terrain on the Yakutat Foreland is now covered by a climax Sitka Spruce

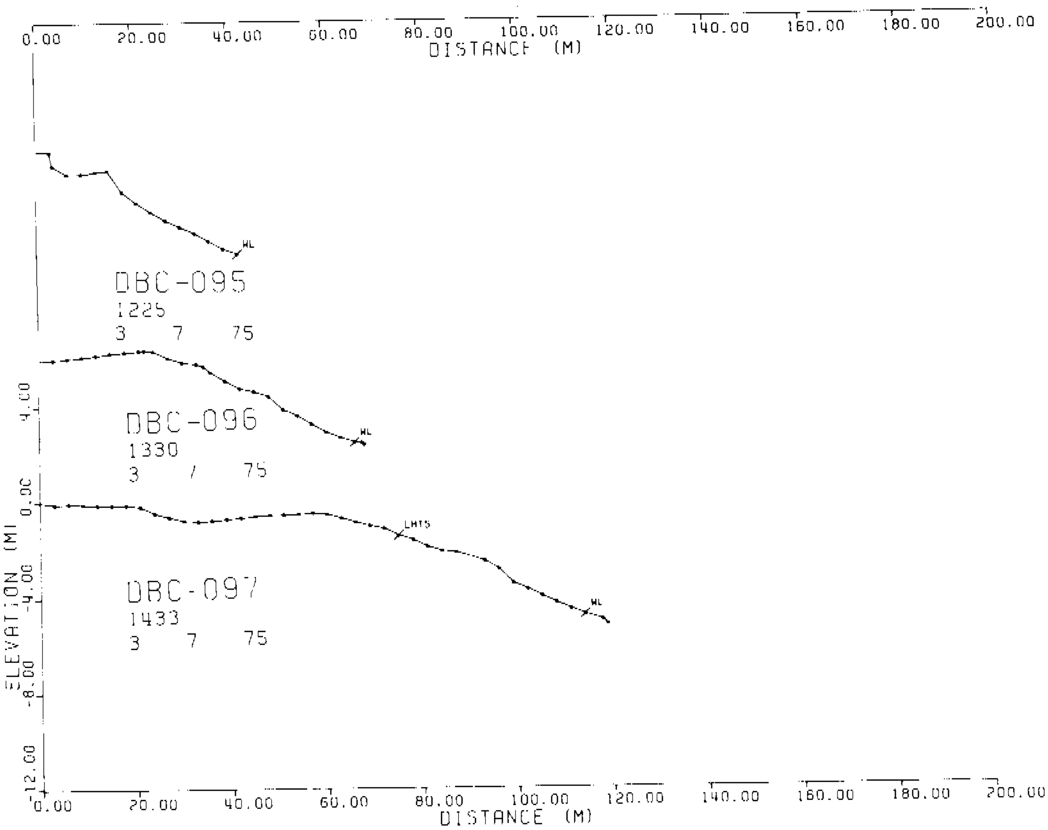


Fig. 30 Inner Icy Bay profiles. Note the change in beach slope from DBC-97 through DBC-95. This is partly the result of an increase in mean grain size from DBC-97 through DBC-95. The increase in the grain size is the result of long exposure to marine processes which selectively remove the finer sediments.

forest. Stagnant ice and associated features are not present, as they are on the east side of Icy Bay. The beaches on the inside east shoreline of Yakutat Bay, including the numerous islands appear to be the most stable in the study area. The Icy Bay shoreline is still being modified to resemble the Yakutat Bay shores; however, this process is slow, and the Icy Bay shorelines can be considered neutral within the framework of this classification.

Figure 32 shows profile site DBC-104, a typical mature beach inside of Yakutat Bay. The beachface is composed of pure well-sorted and rounded gravel formed into multiple cuspate berms. Behind these is a storm berm and a storm scarp with some overwashed gravels thrown on top of it. The profile is very short and steep with vegetation covering the back beach to the face of the scarp. There is often a small

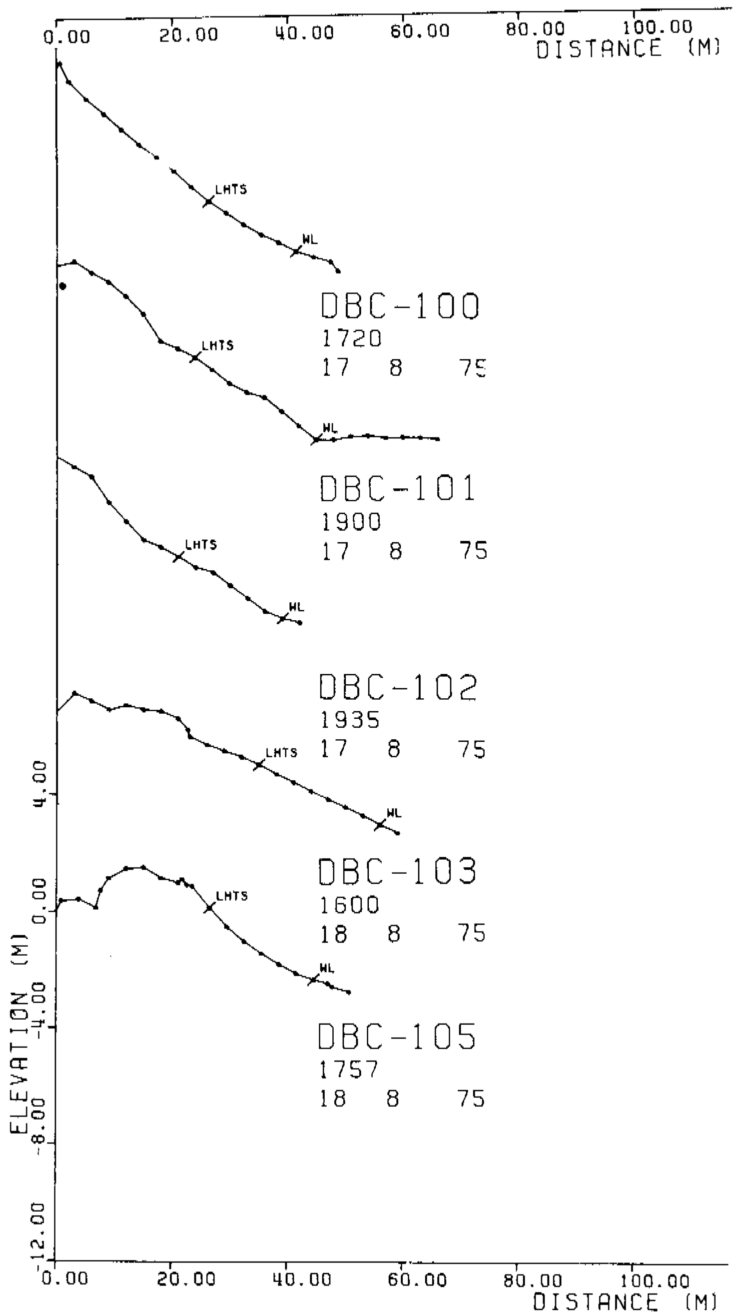


Fig. 31 Representative Yakutat Bay profiles. Note that they are all steep and short. They are composed of mostly mature gravels.

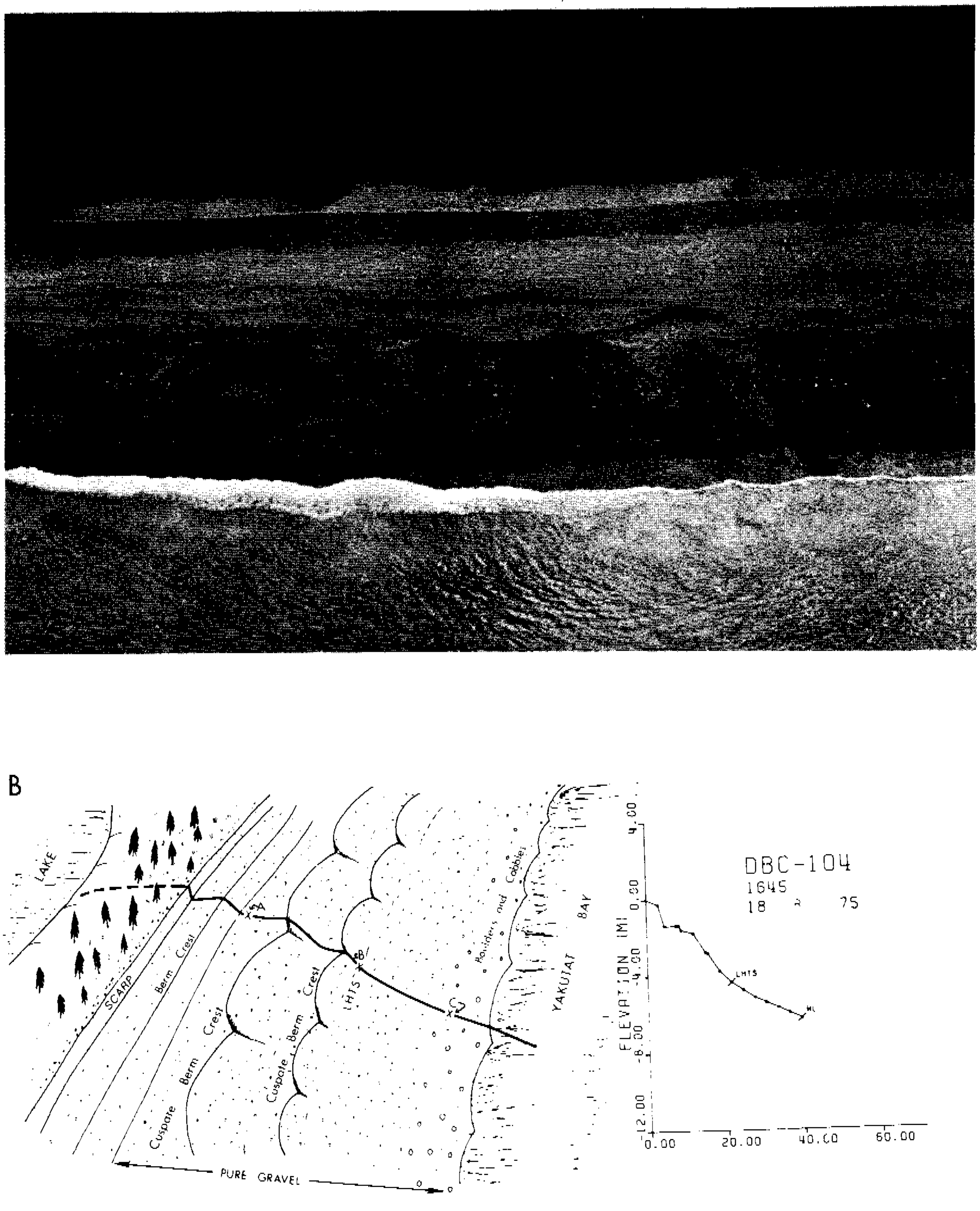


Fig 32 Profile site DBC-104 in Yakutat Bay. A. Aerial of gravel beach showing multiple cuspate beachface, backed by Sitka Spruce forest. B. Beach sketch and computer plot.

step at the toe of the beachface and less often a boulder cobble low tide terrace (Fig. 33).

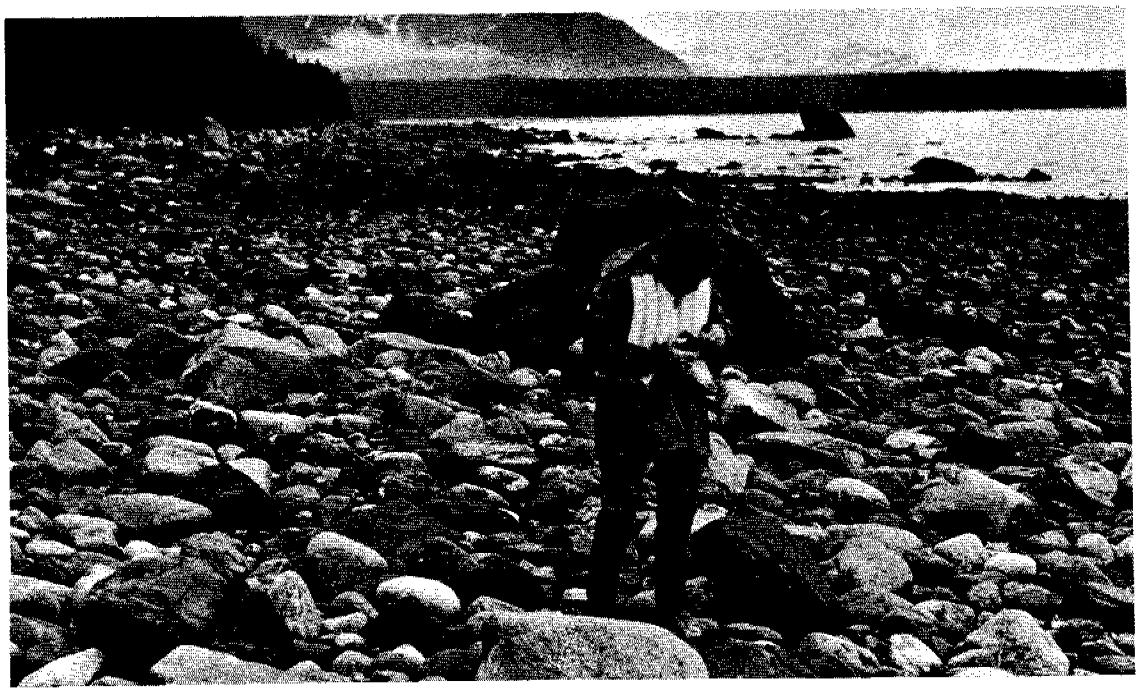


Fig. 33 Boulder-cobble low tide terrace at DBC-106. These terraces are common in Icy Bay and Yakutat Bay. They consist of reworked glacial sediments, from which much of the finer material has been removed.

The beaches within the bays are subject to considerably less marine energy than their counterparts on the exposed coast. Since most of the severe storm waves approach from the SE (Nummedal and Stephen, 1976), the waves reaching the inner eastern shorelines of Icy and Yakutat Bays are dramatically attenuated. Wave heights observed on these beaches rarely exceeded 50 cm. Furthermore, these shorelines are not subject to the variability introduced by outwash streams and their associated spits. These factors contribute to the relatively higher stability of the beaches.

<u>Subclass B3</u> - Neutral embayment high bedrock scarps

The moderate to high bedrock cliffs within the low energy environments of Icy Bay and Yakutat Bay comprise 7% of the study area and are designated neutral. These rock cliffs are found in the inner parts of the bays where the marine energy is the least. Since they are subject to such low energies, they have been given a neutral label. Their retreat rates are considerably slower than the exposed rock cliffs in Subclass A2. Wave cut platforms and pocket beaches are very unusual; most of these cliffs plunge nearly vertically into deeper water. Figure 34 shows the inner part of Icy Bay with the numerous glaciers and bedrock cliffs.

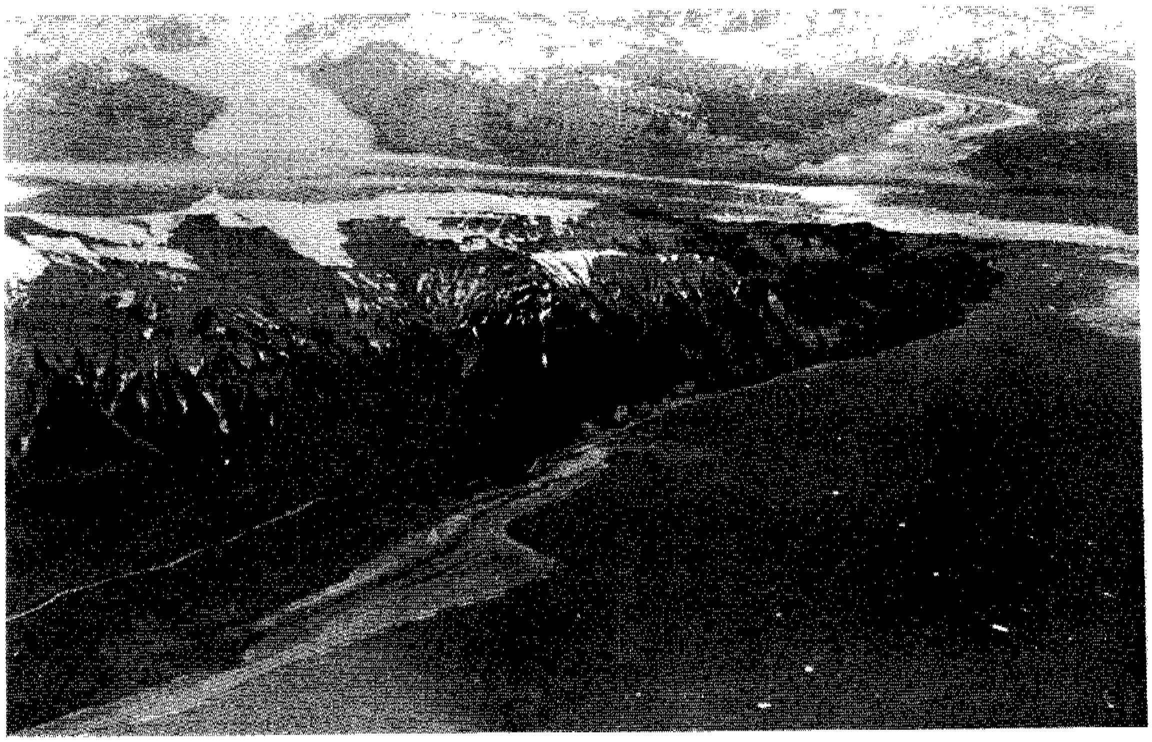


Fig. 34 Inner Icy Bay. Yahtse Glacier and Tyndall Glacier are visible at the upper left and right respectively. There is considerable drift ice and a long drift ice tongue in the bay. High bedrock cliffs occupy most of the shoreline within the inner bay. Claybluff Point, a depositional spit, is visible in the left foreground.

Subclass B4 - Neutral beaches with an equilibrium sediment supply

There are a number of beaches in the Controller Bay area which have remained relatively stable during the study period (1969-1975). These beaches are composed mostly of sand and have a sediment supply which maintains them in a state of equilibrium. Included in this subclass are: 1) Okalee Spit, 2) Kanak Island, 3) beaches on Katalla Bay and 4) two isolated areas on Hinchinbrook Island.

Permanent profile OK-1 was established on Okalee Spit during the 1969-1971 field studies. Figure 35 shows the profile as it appeared on 27 February 1970 and 24 June 1975. The primary difference in these profiles is the position of the ridge and runnel at the lower beachface. These ridge-and-runnel systems migrate up the beachface to weld to it or are removed by subsequent periods of erosive wave activity. Thus, they cannot be used to interpret longer term beach behavior. The spit receives sediment moving west around Cape Suckling. This sediment moves along the beach and is deposited at the end of the spit. The end progrades while the remainder of the spit remains relatively stable. Okalee Spit is protected by Wingham Island and Kayak Island from waves approaching from the west, SW or south; thus, the only waves of any size which can reach the spit are from the east or SE, which will move sediment along the spit to the west.

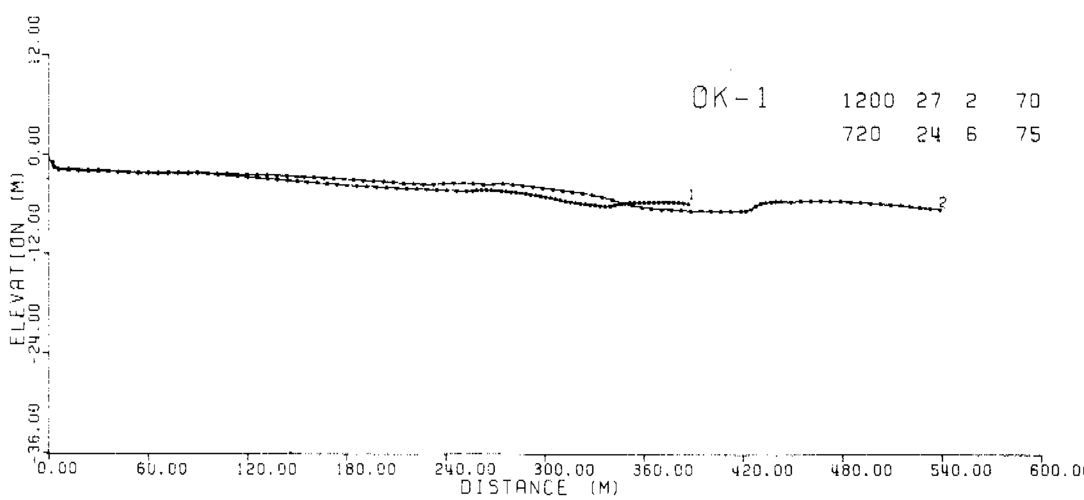


Fig. 35 Changes at permanent profile site OK-1. The primary change has been the position of a ridge at the base of the beachface. Most sediment at this profile is bypassing downdrift.

Kanak Island shares a number of similar features with Okalee Spit. They are both composed of fine sand, backed by low vegetated dunes, have very flat profiles and multiple ridge-and-runnel systems. Like Okalee Spit, Kanak Island is quite stable. In 1969, a permanent profile, KNK-1, was established on the island. Sometime between 1969 and 1975, the profile markers were lost. This loss was not due to erosion but probably from logs being washed onto the beach by storm waves. Analysis of aerial photos indicates that the island has not changed significantly despite the loss of the profile.

The beaches bordering Katalla Bay are in the same system as Kanak Island and Okalee Spit and thus have been included in Subclass B4. These beaches are also composed mostly of sand with some gravels from local erosion of bedrock scarps (Subclass A1).

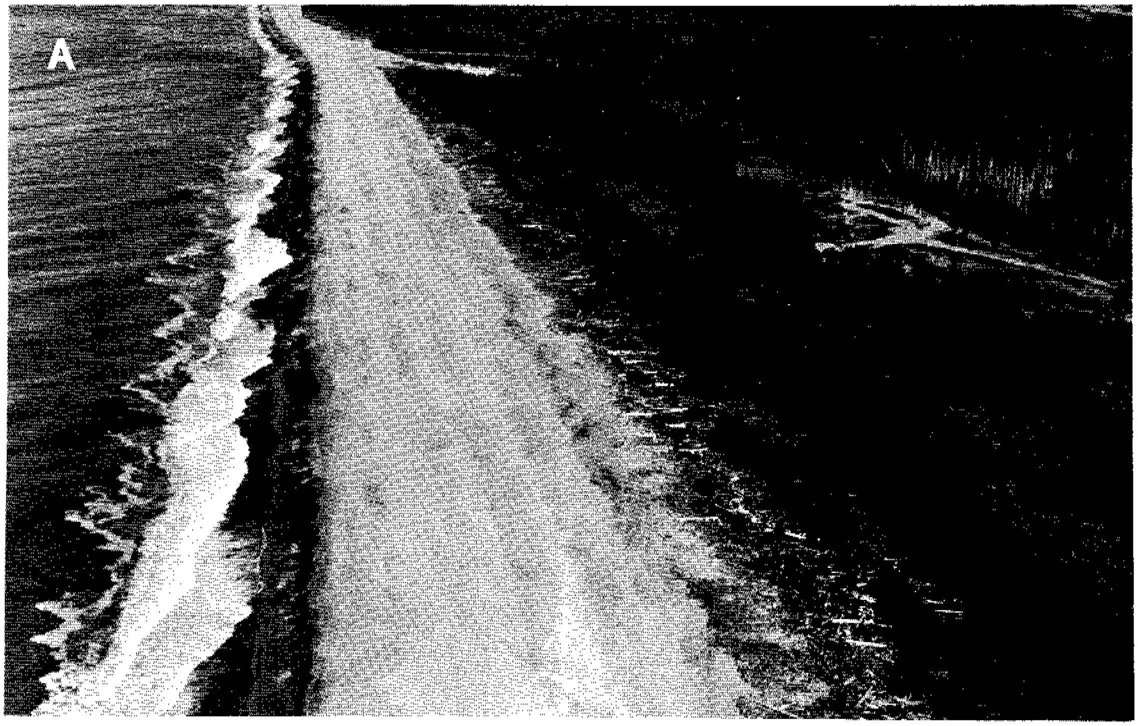
Finally, there are two short beaches on Hinchinbrook Island which are classed B4. One is downdrift of Hook Point and the other is downdrift of Point Steele. These beaches receive their sediment from adjacent eroding bedrock cliffs (Subclass A1) discussed earlier in this report. These beaches are composed mostly of sand with some locally derived gravels.

Subclass B5 - Neutral pure gravel beaches downdrift of eroding glacial margins

The pure gravel beaches immediately downdrift to the east of Sitkagi Bluffs are the only beaches classed as B5. Figure 36 illustrates profile site DBC-51. The beachface is composed of pure gravel, which is well rounded and sorted. There is a promonent development of multiple berms, the result of the diurnal inequality of the tides. These berms are often highly cuspate in character, depending upon wave approach direction. The backbeach area has a log storm swashline backed by low vegetation. This is backed by a climax forest.

Figure 37 shows profiles DBC-50, DBC-51 and DBC-52. These profiles are 3 km apart with DBC-52 closest to Sitkagi Bluffs, the source of the gravels on these beaches. There is a strong trend toward reduced beach slope with increased distance from sediment source. This is the result of the trend in gravel grain size.

DBC-52 is composed mostly of coarse gravels, cobbles and boulders which are subangular to subround. DBC-50 is composed of mixed gravels which are subround to well rounded. There appears to be a one to one relationship between grain size and beach slope. This same process is discussed in an earlier section of this report dealing with the inner shores of Yakutat and Icy Bays and is well supported in the literature (Shepard, 1973; Bagnold, 1940; Bascom, 1951). These profiles also support the well-known principle that grain size decreases with increased distance from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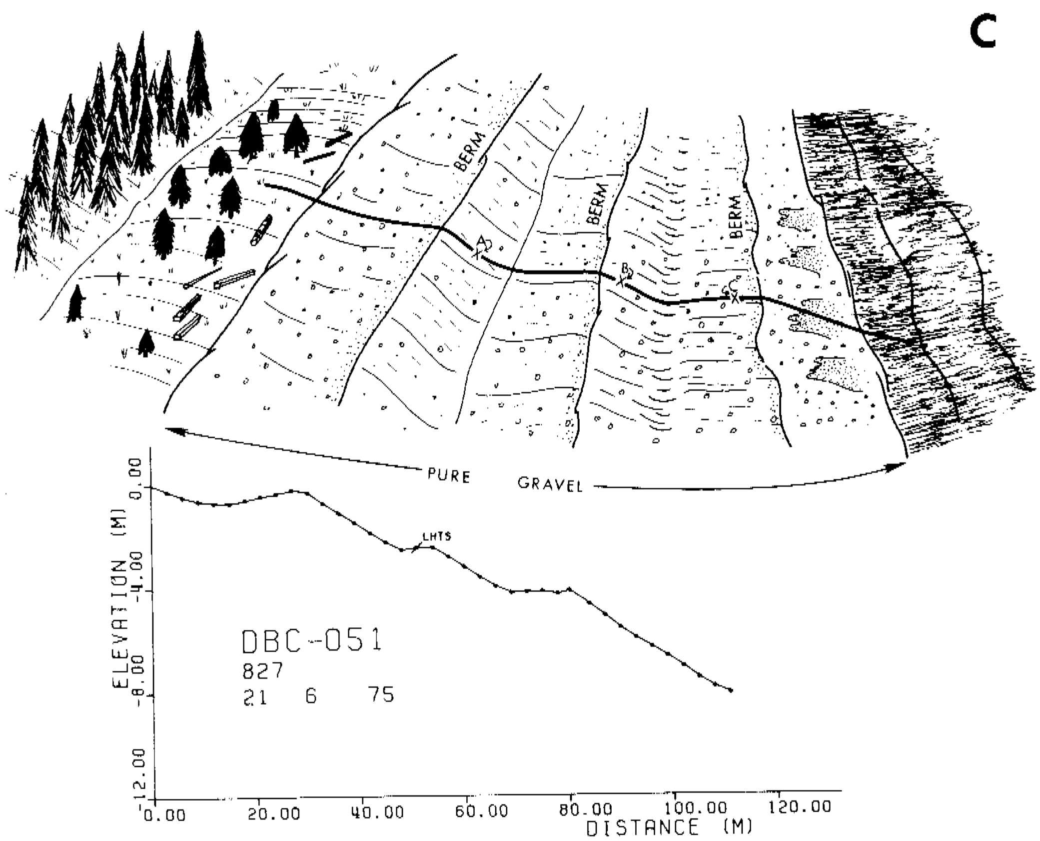


Fig. 36 Profile site DBC-51 on the east Malaspina Foreland. A. Aerial view looking west. Multiple gravel berms appear as lineations. Beach is backed by a vegetated storm overwash area, which is backed by a Sitka Spruce forests. B. Ground view of the nearly pure gravel beach face. C. Beach sketch and computer plot of DBC-51.

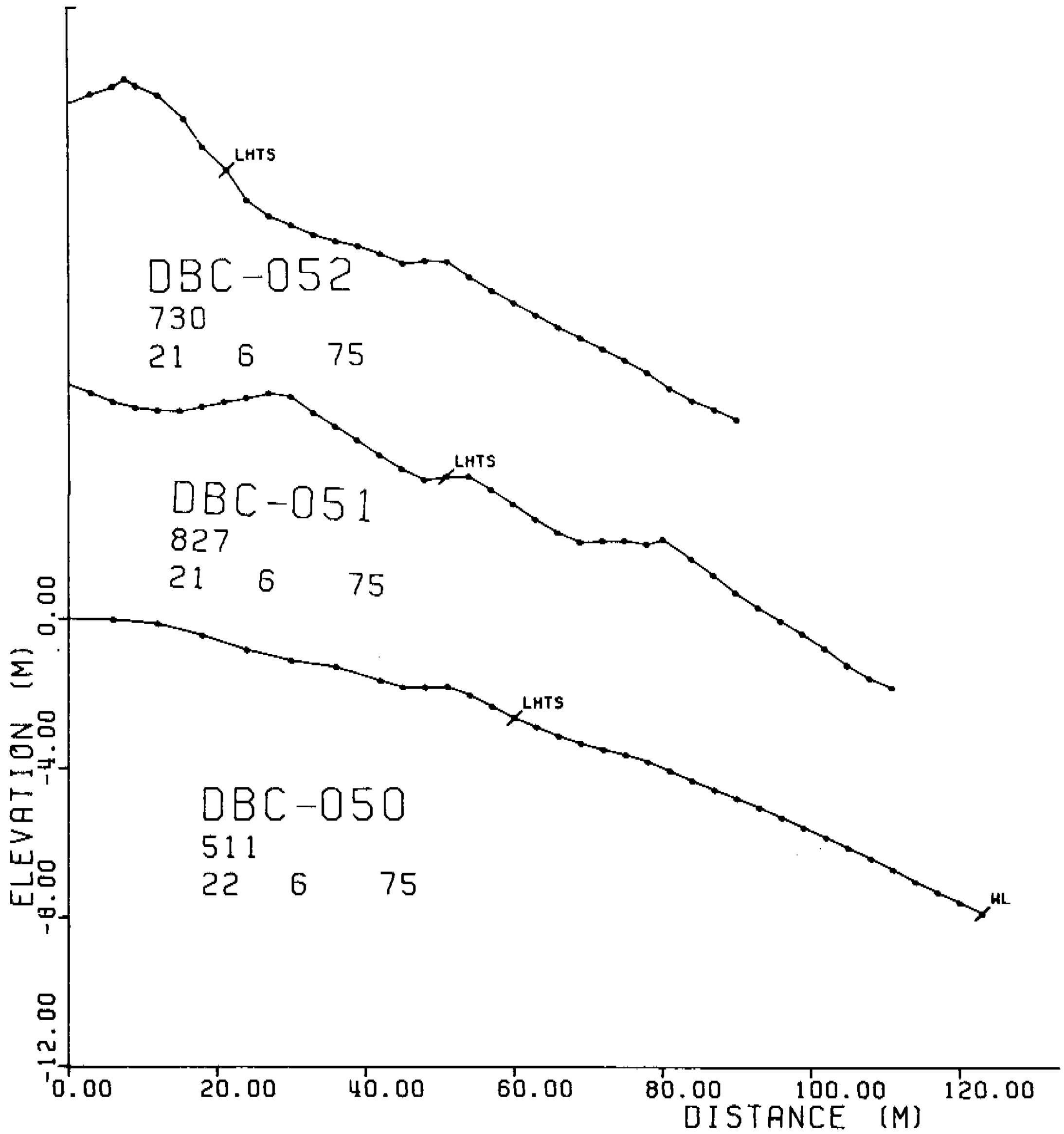


Fig. 37 Profiles immediately downdrift of Sitkagi Bluffs. DBC-52 is closest, followed by DBC-51, then DBC-50. Note the decrease in beach slope with distance. This is the result of a fining in the gravels on the beach with increased distance from source.

source (Bascom, 1951; Neate, 1967; Carr, 1969).

DEPOSITIONAL SHORELINES

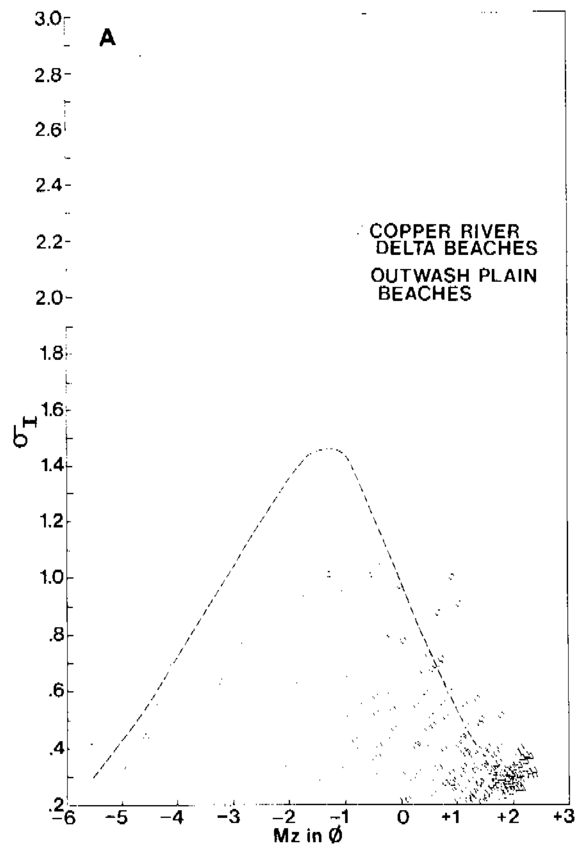
Depositional shorelines account for 19% of the study area. Most of them, 12%, are comprised of the Copper River Delta barrier islands. The remainder are smaller deltas and spits in the sheltered environments of Yakutat and Icy Bays. These areas all show a continuous progradation during the study period. This progradation is expected to continue.

Subclass C1 - Depositional barrier islands

The barrier islands of the Copper River Delta have undergone dramatic changes since 1969. These changes have occurred in response to recent tectonism and normal shoreline processes active along barrier island shorelines.

The sediments which make up the Copper River Delta are distinct when compared to those of the outwash plains. Most sediments which occur between Dry Bay and Hinchinbrook Island are supplied by braided outwash streams with glacial sources. The outwash streams introduce to the coast a variable and diverse sediment suite ranging in size from clay particles to very coarse gravels and cobbles. The Copper River Delta, on the other hand, is fed by the Copper River, whose sediments are considerably more mature. Copper River Delta sediment mean grain size is finer than outwash stream samples. They plot in the litharenite class of Folk's (1974) sandstone classification (Fig. 38). Compositionally, they are more mature with a greater percentage of quartz than the outwash stream samples (Fig. 39).

On March 28, 1964, the delta uplifted approximately 10 feet by the Good Friday Earthquake (Fig. 40). The uplift is still apparent today in the form of elevated storm swash log lines on Kayak Island (Fig. 20) and raised marshes and tidal flats behind the barrier islands. This uplift has accelerated and modified the local morphologic response to normal processes which act on the barrier system and initiated a dramatic reorientation and progradation of the delta barrier islands.



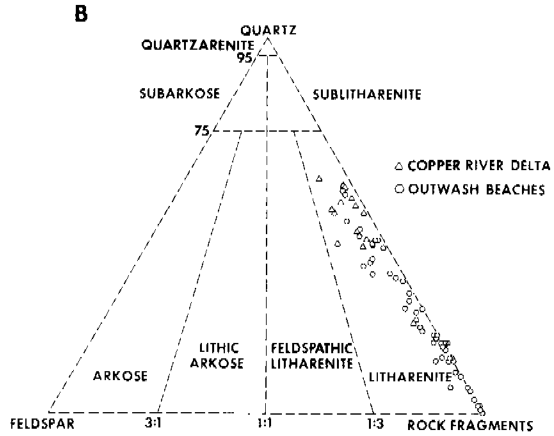


Fig. 38 A. Copper River delta sediment grain size parameters compared to outwash stream sediments. Note the finer size and better sorting of the Copper River delta sediments.
B. Compositional comparison of Copper River delta sediment with outwash stream sediments.

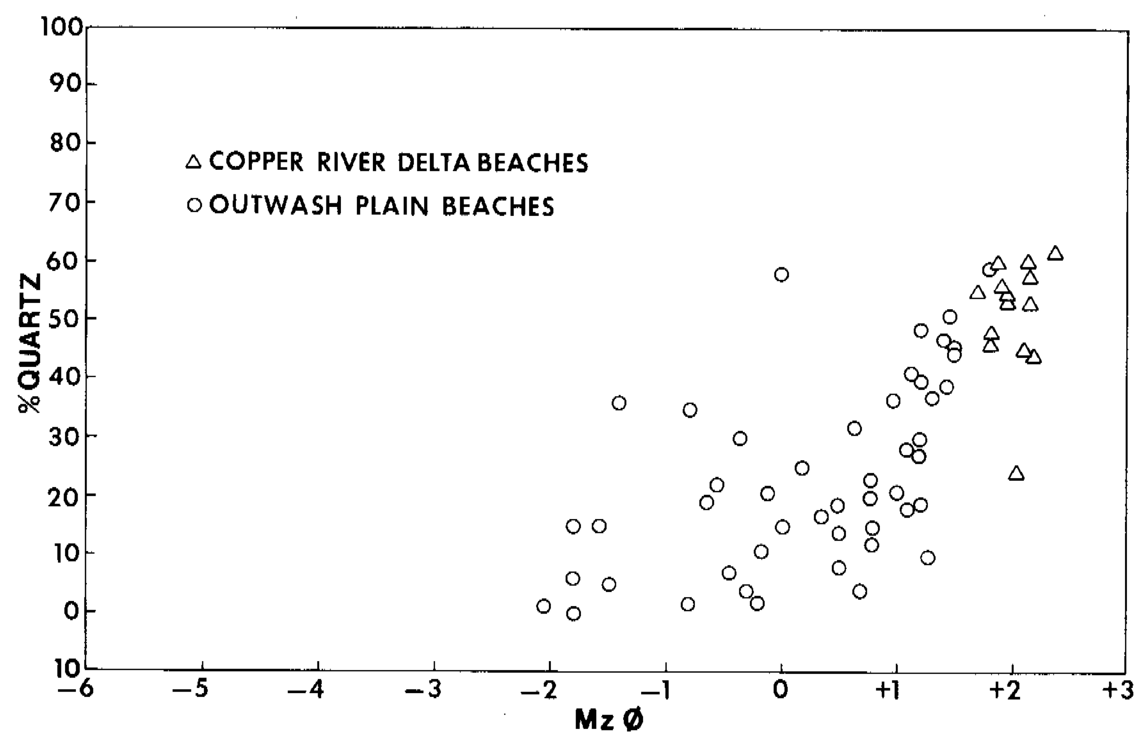


Fig. 39 Comparison of Copper River delta sediments with samples from outwash streams. Note the higher percentage of quartz for the Copper River samples.

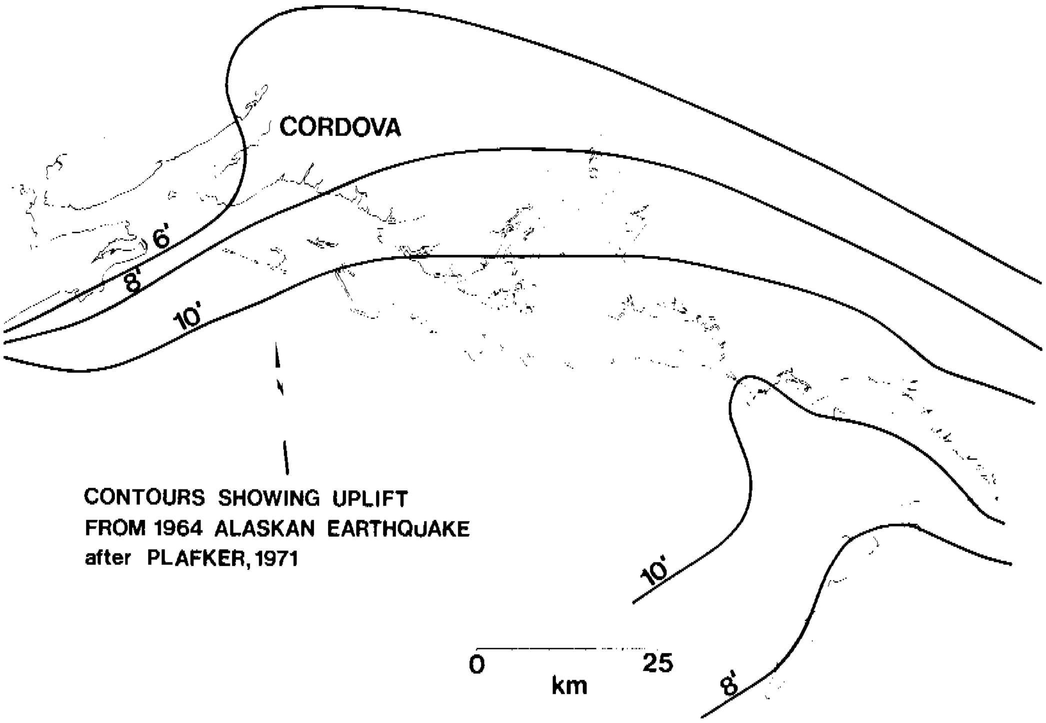


Fig. 40 Uplift contours from the Good Friday Earthquake of 1964.

The permanent profiles designated EG are located on Egg Island, which is the westernmost barrier on the delta. This island has been studied in detail. Egg Island is prograding along its bulbous eastern shorefront at the expense of the far eastern side which is severely erosional. It is also prograding by spit accretion along its western end (Fig. 41).

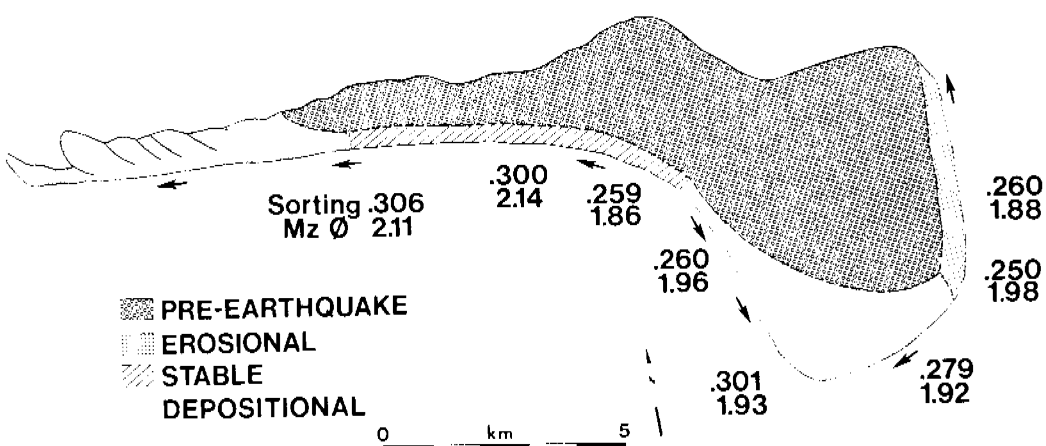


Fig. 41 General depositional-erosional model for Copper River Delta barrier islands. A major erosional area occurs at the east end of the island. Depositional areas are located just west of the inlet and on the western end of the island. The middle of the island is generally stable. Numbers are real values of sorting and mean size for Egg Island beach sampling stations. In general, sediments of the erosional and stable areas are slightly coarser than the sediments of the depositional areas.

Profile EG-1 is located on an erosional scarp adjacent to the inlet channel on the eastern end of the island (Fig. 42). Figure 43 shows that there has been large scale erosion at EG-1. The scarp has retreated 56 meters since 1970. Sediment eroded from EG-1 has been transported downdrift and deposited at profile EG-4. Over 400 meters of accretion have taken place since EG-4 was originally measured in 1970. The central portion of the island is relatively stable as indicated by profile EG-8. The western end of the island has prograded rapidly by spit accretion. Comparison of aerial photos taken in 1970 with those taken in 1975 indicate progradation on the order of 2 km. Egg Island has almost doubled in size since 1964 (Fig. 42).

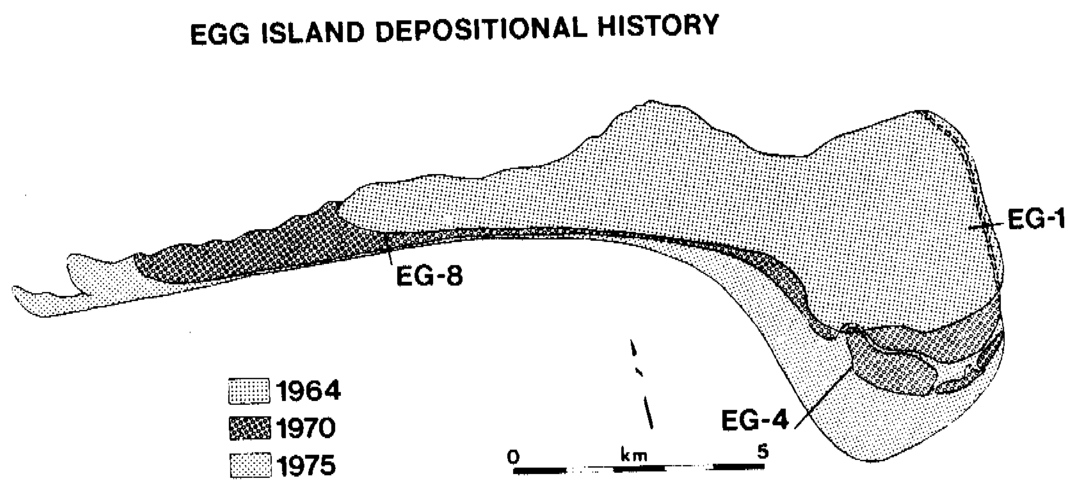


Fig. 42 Shoreline changes on Egg Island between 1964 and 1975. The 1964 shoreline was derived from vertical aerial photographs taken 10 days after the Good Friday Earthquake of 1964. Note the locations of permanent profiles EG-1, EG-4 and EG-8, established in February, 1970.

Permanent profile SOF-1 was originally located on the erosional inlet side of Softuk Island. This is approximately equivalent to the position of EG-1 on Egg Island. The erosion at SOF-1 was so severe that the profile has been lost. In general, Softuk Island is behaving in a manner similar to Egg Island, with a general progradation dominating the erosion which is localized at the updrift channel.

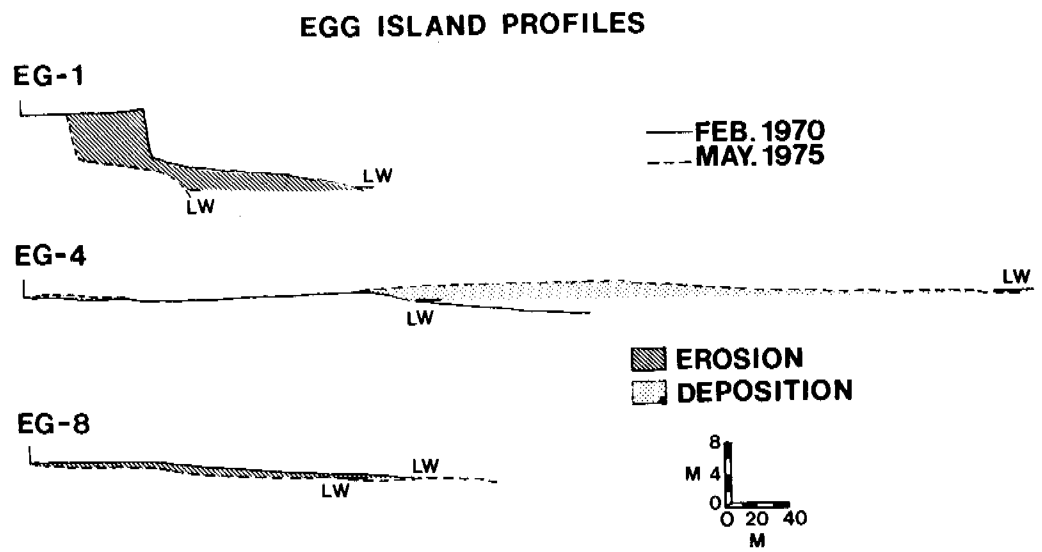


Fig. 43 Changes at three permanent beach profiles on Egg Island between February 1970 and May 1975. Scarp erosion of 56 m occurred at EG-1, and the shoreline prograded over 400 m at EG-4.

Permanent profile SR-1 is located east of the center of Strawberry Reef. This island is also responding in a manner similar to Egg Island, although at a slower rate. The gradual reduction to the east in the rate of morphologic readjustment corresponds to a similar reduction in tidal prism. Ebb tidal delta size magnitude of downdrift offset and inlet width, all decrease west to east (Fig. 44). Concomitant with the decrease in ebb-tidal delta size is a reduction in the intensity of wave refraction induced by the ebb delta shoals. This reduction causes a less concentrated area of progradation at the shoreline immediately downdrift of the ebb delta as on Egg Island. Instead, the entire shoreline of Strawberry Reef has prograded. Figure 45 shows the general upward progradation of profile SR-1 from Feb. 27, 1975 to May 26, 1975. Note also that it has prograded seaward approximately 60 meters.

Analysis of Figure 44 indicates a general progradation of the barrier islands on the Copper River Delta. These islands often have areas of deposition, erosion, and stability. The ebb tidal delta configuration and size is a strong controlling factor with regard to these areas and the intensity of the changes. The downdrift ends of the barriers generally prograde by spit accretion. For the most part, de-

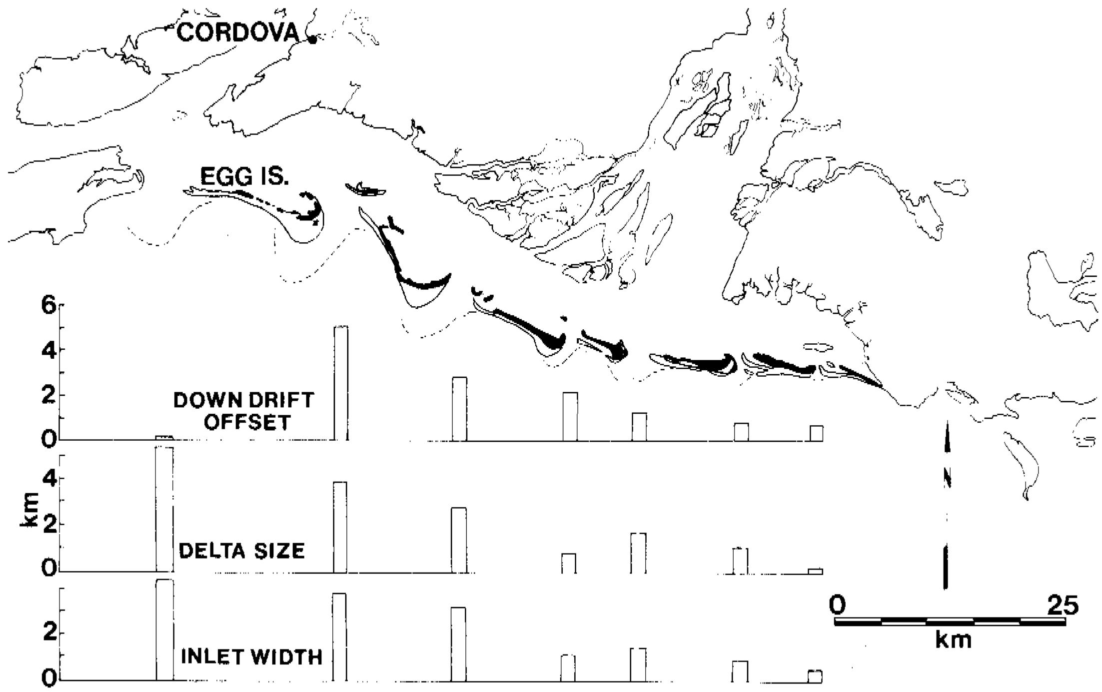


Fig. 44 Copper River Delta, Alaska. Lower graphs show a general increase in downdrift offset, ebb-tidal delta size, and inlet width in a westerly direction. Black shading shows island shape and size in 1959; outer line delineates shape in 1975, indicating that all the islands have prograded.

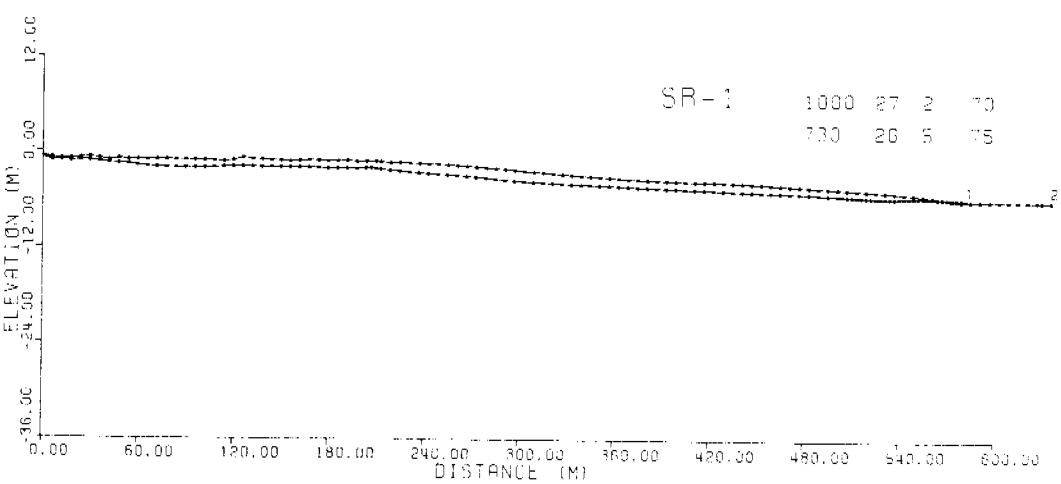


Fig. 45 Changes at permanent profile SR-1 on Strawberry Reef. There has been a general overall progradation of the profile site.

positional areas are considerably more widespread than the erosional areas.

Subclass C2 - Minor depositional fan deltas in neutral embayments

There are a number of small streams which empty into Icy Bay and Yakutat Bay. Because of the very low wave energies in the bays, these streams generally build small fan deltas into the deeper water. These deltas have steep foreslopes which tend to be unstable. Jon C. Boothroyd found a number of slump areas on the delta fronts, using a fathometer (Annual Report, April 1976). The Yana River and the Caetani River have built small fan deltas into the inner eastern shore of Icy Bay. Esker Stream and Calahonda Creek have built small deltas into Yakutat Bay. These deltas account for only 2.5% of the study area.

Subclass C3 - Major depositional deltas in neutral embayments.

There is one major delta prograding into Yakutat Bay. Kwik Stream has built a broad outwash fan (The Grand Wash) on the inner west side of the bay. Fronting this fan is a complex system of prograded spits. At this location, inside Yakutat Bay, there is little net longshore transport. As a result, spits prograde in two directions. Progradation here is rapid due to the heavy sediment load of sands and gravels carried by Kwik Stream. Extensive sediment plumes are developed at the mouth of the stream. The high sediment load of sand and gravel, lower wave energy in the sheltered Yakutat Bay area and the low values for net longshore transport result in a distinctive beach profile.

Profiles often have well developed berms, large ridges and high storm berms with overwash deposits behind them. They are generally convex upward, indicative of progradation and of intermediate steepness because of their sand and gravel sediments. Figure 46 shows profile site DBC-38 on one of the Kwik Stream outwash beaches. There are two primary berms on the lower beachface. Seaward, there is a very large ridge, covered with landward oriented megaripples. The ridge is migrating landward, eventually to weld to the beachface. The back beach is a broad

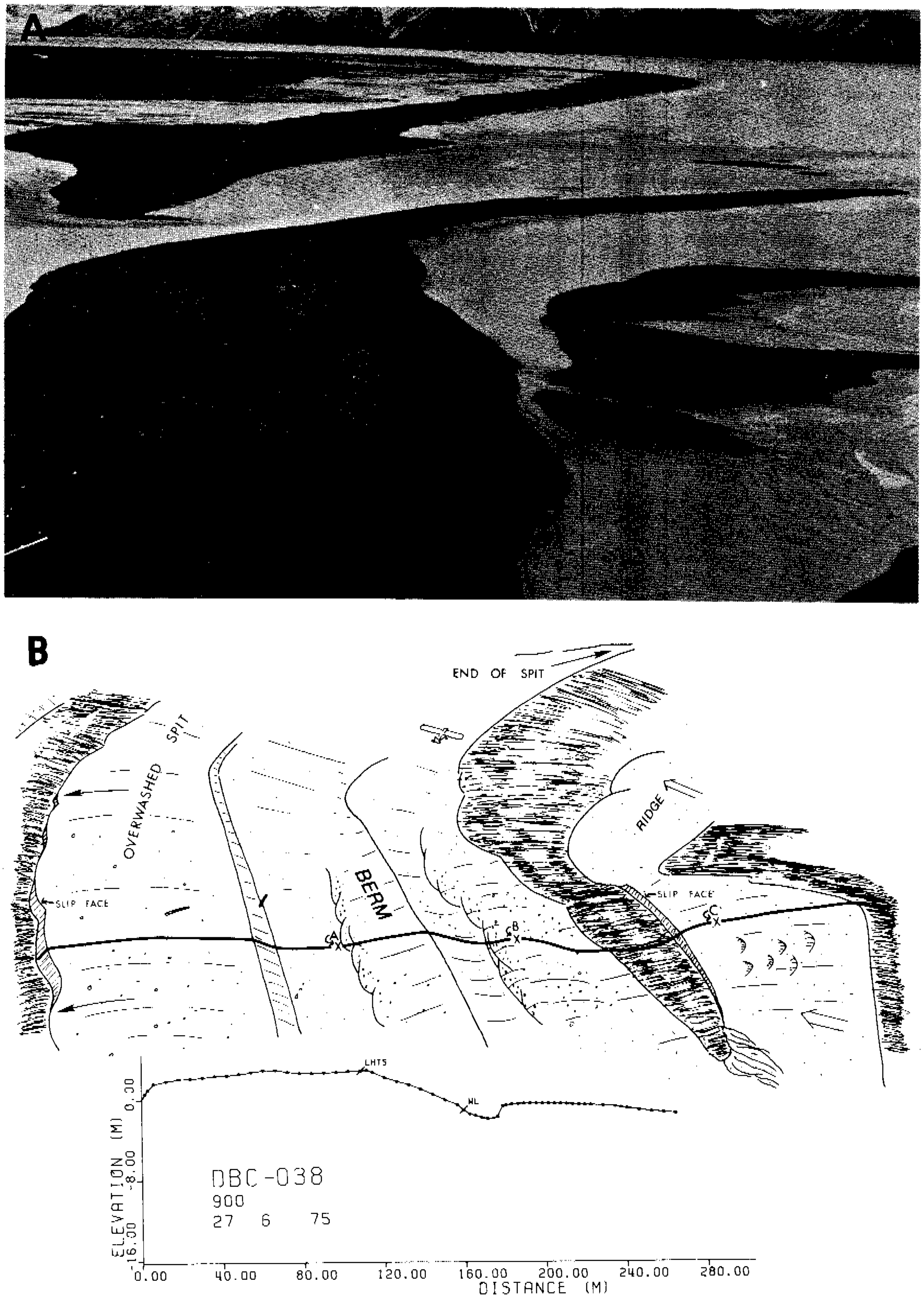


Fig. 46 Profile site DBC-38 on a Kwik Stream outwash spit. A. Oblique aerial showing a number of the spits associated with the Kwik Stream delta. Note that the spits prograde in two directions. DBC-38 is located on the spit in the foreground. There is a prominent ridge just off the lower beachface. The ridge has a slip face indicating strong landward migration. The spit has been swept clean by wave overwash. Inner Yakutat Bay is visible in the distance. B. Beach sketch and computer plot of DBC-38.

area of sand and gravel swept clean by occasional wave overwash. This is a highly progradational profile even though it is very close to the end of the spit.

A permanent profile, MAL-4, was established on a spit fronting the Grand Wash in 1969. Spits, throughout the study area, are very unstable. MAL-4 was lost sometime between 1971 and 1975 because of the continuous reorientation, progradation and breaching of the spits in that area. Visual analysis of the Grand Wash (Fig. 47) documents the complex migration of the Kwik Stream inlet and its associated confining spits. The large sediment volume of Kwik Stream causes rapid progradation of these spits. When the inlets breach the spits and begin to build new ones, large scale erosion of the old, breached spits can occur. Some combination of spit breaching, inlet migration, variation in sediment supply and marine coastal processes, has obliterated profile MAL-4. The Grand Wash area, in general, is progradational, as indicated by the system of relict spits. There are, however, areas of strong but short term erosion on this prograding delta.

Subclass C4 - Prograding sand spits in Icy Bay

There are two spits at the mouth to Icy Bay. Riou Spit (Fig. 48) is prograding into the bay from the eastern bay mouth while Claybluff Point (Fig. 49) is prograding from the western side. The sediment supply for these spits is the erosion of the till deposits at the mouth of Icy Bay. Molnia (1977) calculated an average growth rate for Riou Spit of 92 m/yr. It has grown to a length of 6.6 km since the bay opened in 1904.

Profile site DBC-72, located on Riou Spit, is illustrated in Figure 50. The profile shows well-developed berm and berm runnel and an offshore bar. There is a washover terrace covered with storm wave oriented logs. Behind the beach is a low vegetated flat which continues to the quiet waters of Riou Bay. Molnia (1977) predicts that the spit will continue to prograde and close Riou Bay within 20 years. The sediment moved along Riou Spit will then begin to fill in Moraine Harbor, the proposed site for harbor development in the Bay.

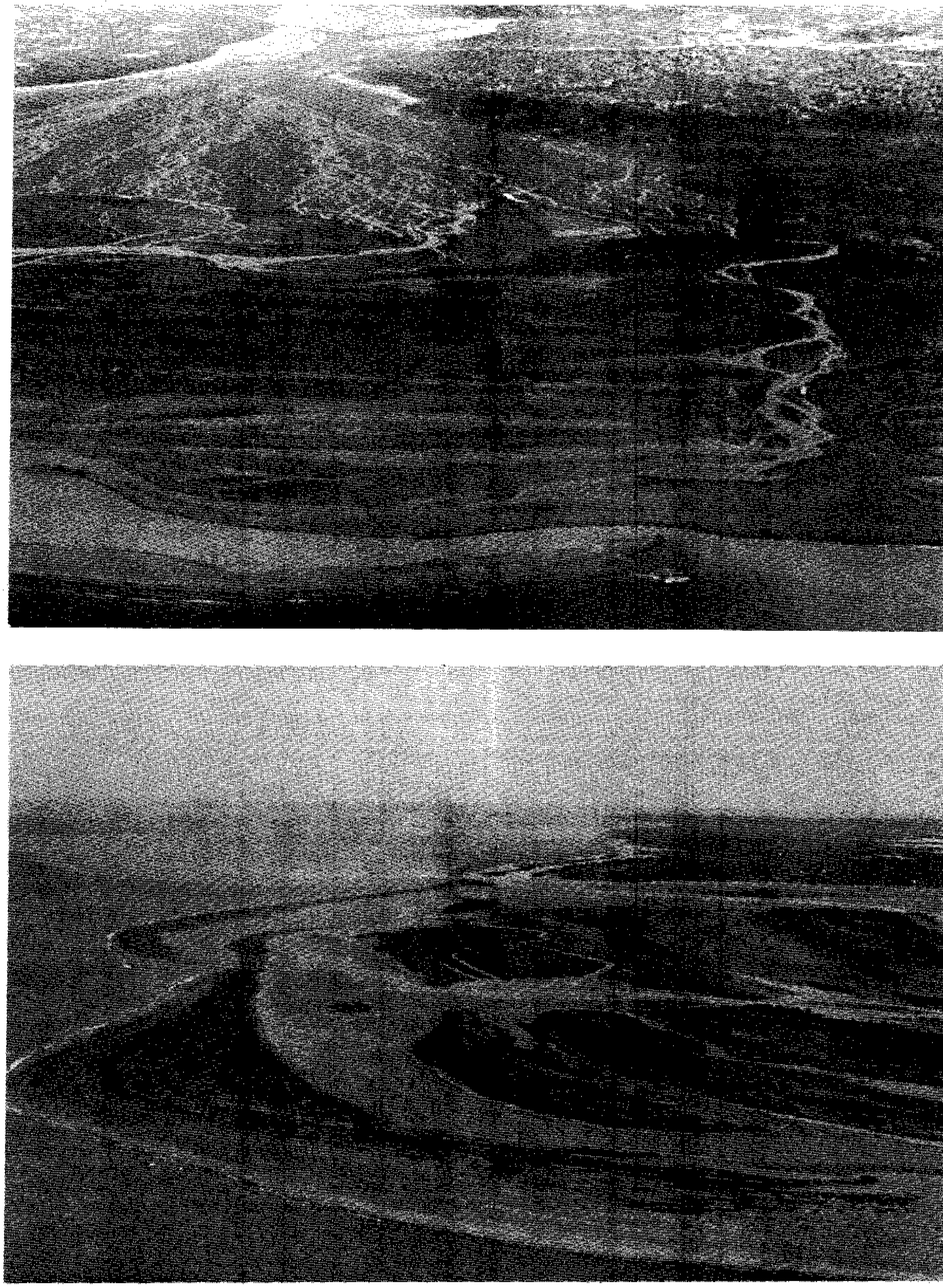


Fig. 47 Two views of the Kwik Stream outwash and the system of prograded spits fronting it. Note that the spits prograde in two opposed directions, the result a very low net longshore transport.

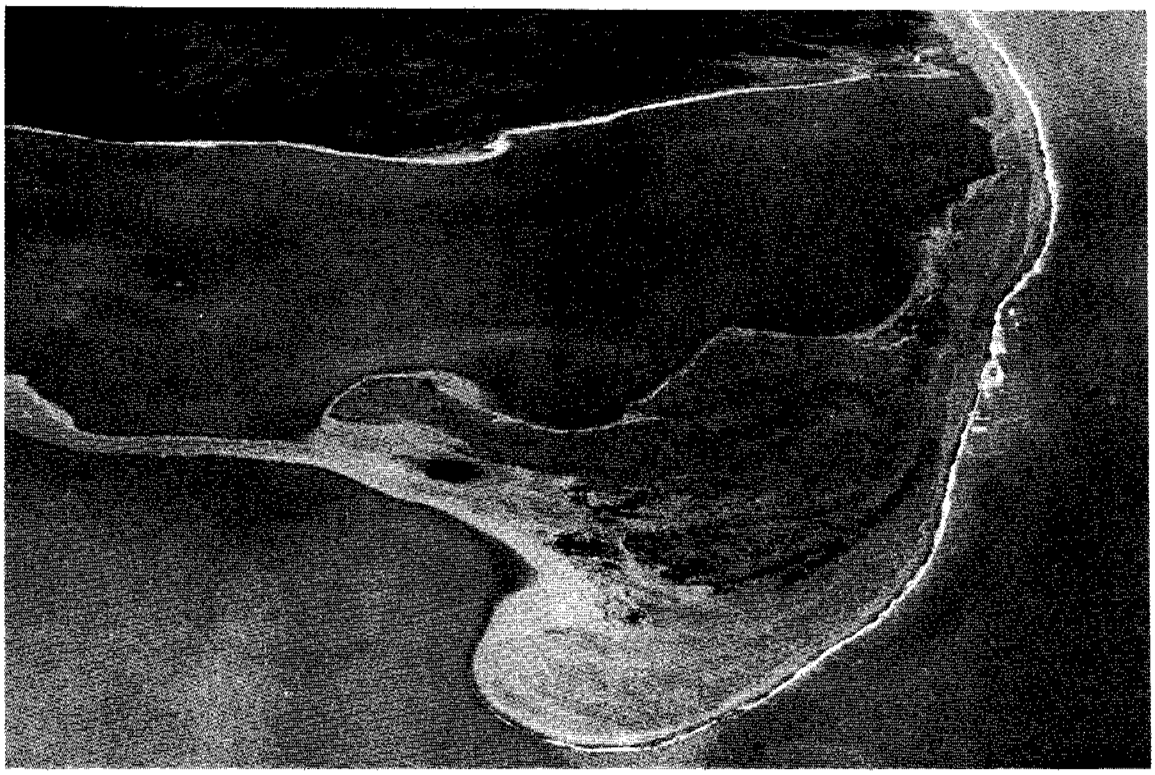


Fig. 48 Riou Spit on the eastern side of Icy Bay. This spit is presently prograding at approximately 92 m/y (Molnia, 1977).

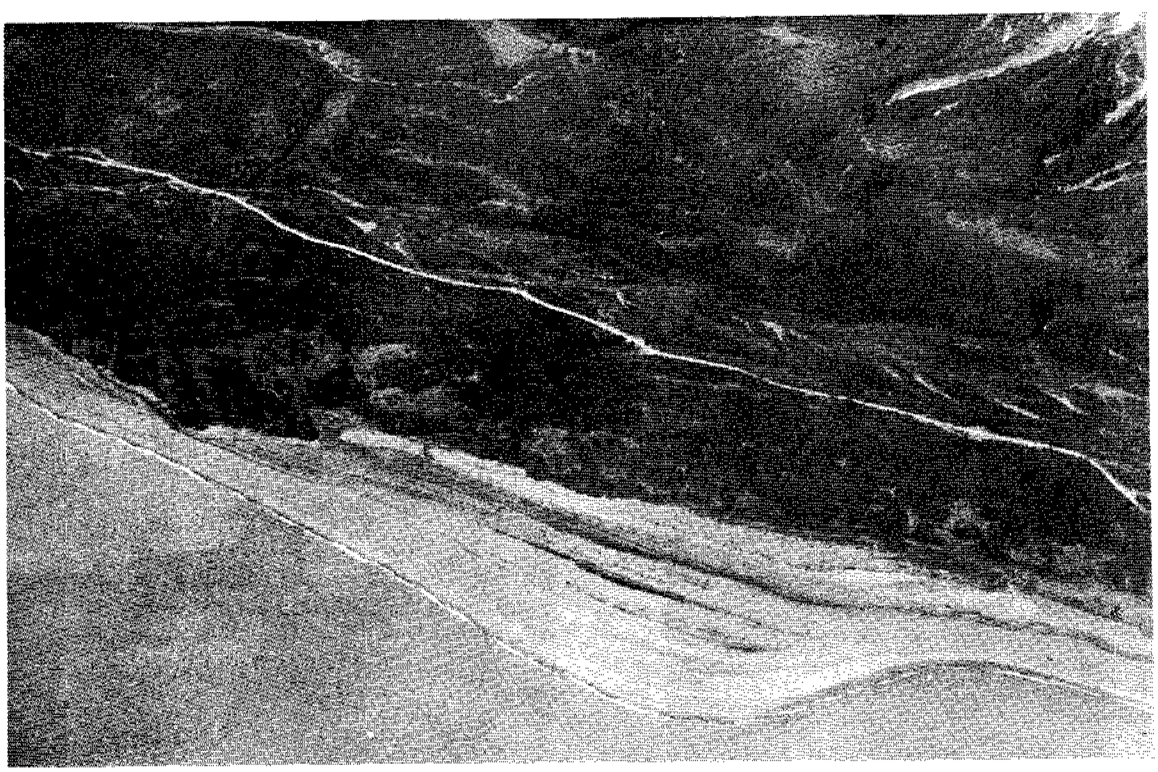


Fig. 49 Claybluff Point on the western side of Icy Bay. Note the set of prograded low beach ridges with intervening swales.

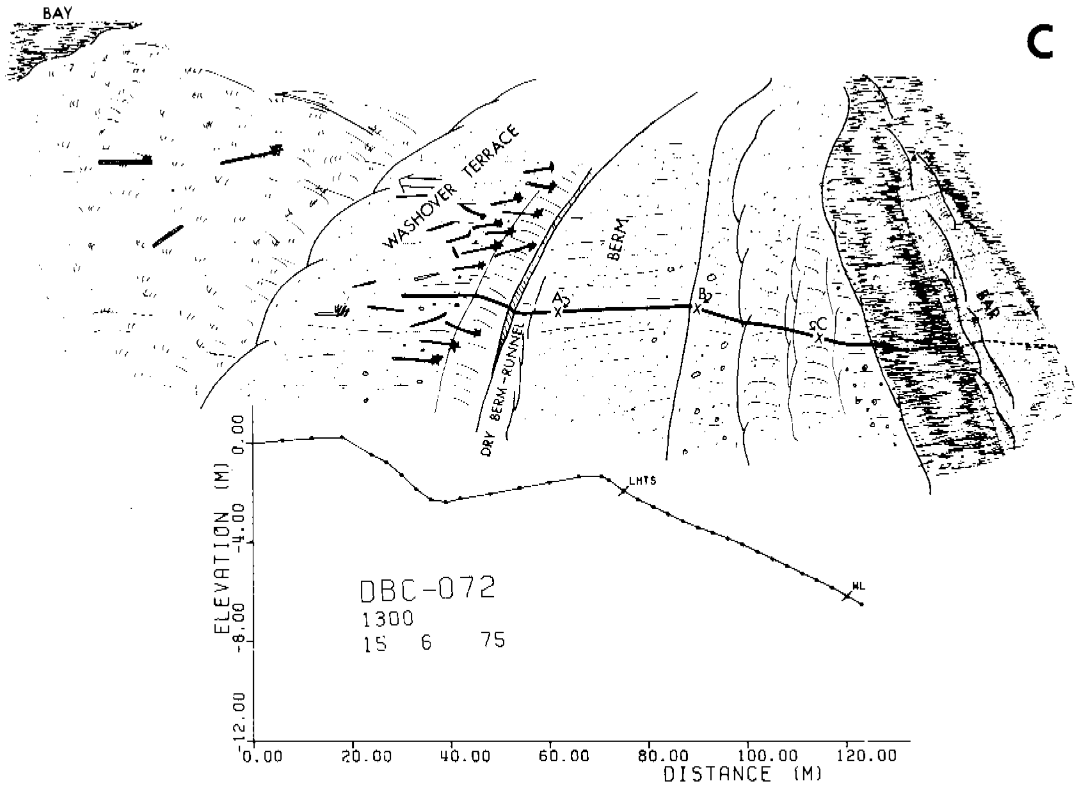


Fig. 50 Profile site DBC-72 on Riou Spit. A. Aerial view looking east toward Point Riou. The spit is extremely narrow in the distance and is often completely overwashed during storms. The profile shows a high depositional berm on the beachface and waves breaking on the off-shore bar. Back beach area is littered with logs and storm overwash sediments. B. Detail of the oriented logs on the storm berm, looking west toward Claybluff Point. Note the sheer bedrock cliff on opposite side of Icy Bay (type A2). C. Beach sketch and computer plot of profile DBC-72.

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TABLE 1

SHORELINE MORPHOLOGY - NORTHERN GULF OF ALASKA

Subclass (Description)	Total Shoreline (km)	% of total shoreline	Examples
CLASS A. EROSIONAL SHORELINES (23% of shoreline)			
A1. Low erosional scarps in glacial deposits,	110	12	Point Riou; Icy Cape and beaches immediately downdrift; old Yahtse River spit; Sitkagi Bluffs
A2. High to moderately high erosional scarps in bedrock; often with pocket beaches and wave cut platforms	100	11	Hinchinbrook Island, Kayak Is.
CLASS B. NEUTRAL SHORELINES (58% of shoreline)			
Subclass (Description)			
B1. Neutral shorelines of sand and gravel, downdrift of glacial outwash streams, eroding glacial deposits and rarely bedrock	225	25	Most of the Malaspina Foreland beaches; beaches downdrift of the Alsek River; most of the Bering Foreland beaches
B2. Neutral embayment beaches of sand and gravel or pure gravel	172.5	19	Eastern shore of Icy Bay; Eastern shore of Yakutat Bay
B3. Neutral embayments with high to moderately high bedrock scarps	64	7	Inner bay heads in Yakutat and Icy Bays
B4. Neutral beaches composed mostly of sand with an equilibrium sediment supply	53.5	6	Yakutat Foreland beaches; beaches fronting Controller Bay
B5. Neutral pure gravel beaches downdrift of actively eroding glacial margins	11.25	1	Beaches just east of Sitkagi Bluffs
CLASS C. DEPOSITIONAL SHORELINES (19% of shoreline)			
Subclass (Description)			
C1. Depositional barrier islands of fine sand fronting the Copper River Delta	110	12	Copper River Delta barriers
C2. Minor depositional fan deltas in neutral embayments	17.5	2.5	Deltas in Icy and Yakutat Bays
C3. Larger depositional deltas in neutral embayments	17.5	2.5	Kwik stream delta in Yakutat Bay
C4. Prograding spits of sand and gravel in Icy Bay.	13.75	2	Riou Spit; Clay Bluff Pt.
TOTAL	896.0	100	

QUARTERLY REPORT

Contract # 03-5-22-67, Task Order 6
Research Unit #87
Reporting Period: 1 April 1977 -
30 June 1977
Number of Pages: 3

THE INTERACTION OF OIL WITH SEA ICE IN THE BEAUFORT SEA

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University of Washington
Seattle, Washington 98195

20 June 1977

I. Task Objectives: To understand the small scale interaction of petroleum and sea ice in the Beaufort Sea. Our eventual aim is to predict how an oil spill or well blow-out would interact with the mobile pack ice of the Arctic Ocean.

II. Field or Laboratory Activities

II-1. Laboratory Activities: During the past quarter, we have rebuilt our existing oil-and-ice wave tank with a much more powerful paddle, which our tests show works very well in warm water. During the coming quarter, we plan to use this tank and paddle to carry out a series of experiments on oil dispersion in a field of nearly circular ice floes.

II-2. Field Activities: (Because our annual report was submitted before we left for our field trip to Prudhoe Bay, we will summarize that research here.)

A. Field Trip Schedule:

1. Dates: 13-29 March 1977
2. Aircraft: Bell 205 helicopters both supplied by NOAA and chartered from ERA Helicopters

B. Scientific Party

Seelye Martin, University of Washington, chief scientist.
Peter Kauffman, University of Washington, had responsibility for electronics and photographic equipment.
Thomas Grentell, University of Washington, assistant.

C. Methods: Sampled ice properties in the vicinity of Prudhoe Bay. We analyzed ice cores for their salinity, temperature, and crystal structure.

D. Sample Localities: See attached map.

E. Data Collected or Analyzed:

1. Numbers and types of sample/observations: 18 ice cores.

2. Number and types of analysis: we measured the temperature and salinity profiles of the ice cores as well as photographed their crystal structure.

3. Miles of trackline: 40 nautical miles.

III. Results: A formal data report will be submitted by 5 July 1977 to the OCSEAP project office.

IV. Preliminary Interpretation of Results:

The attached map shows the location of our ice core stations. The stations are identified by the numbers 1-19 and the letter N, where the stations originally numbered 15 and 16 were not occupied. The stations divide into three categories. First, we pulled 12 cores, numbered 1-12 on the chart, running approximately down the center of the channel between the barrier islands and the coast in an attempt to look at changes in ice structure as we moved up the wind fetch. From our preliminary analysis, we do not see specific fetch-related changes.

Second, we pulled three cores, numbers 17-19, off the mouth of the main channel of the Sagavanirktok River, where station 8 was also intended to be part of this array. The purpose of these stations was to look at the effect of river run-off on the sea ice. From our preliminary analysis, only the inner-most core, station 17, shows the influence of the river. This core consisted of about 0.5 m of sea ice overlying fresh water ice, which implies that the river continued to flow out under the ice after the sea ice began to grow. This observation also suggests that oil spilled in the Sagavanirktok River in the fall may also run out under the sea ice.

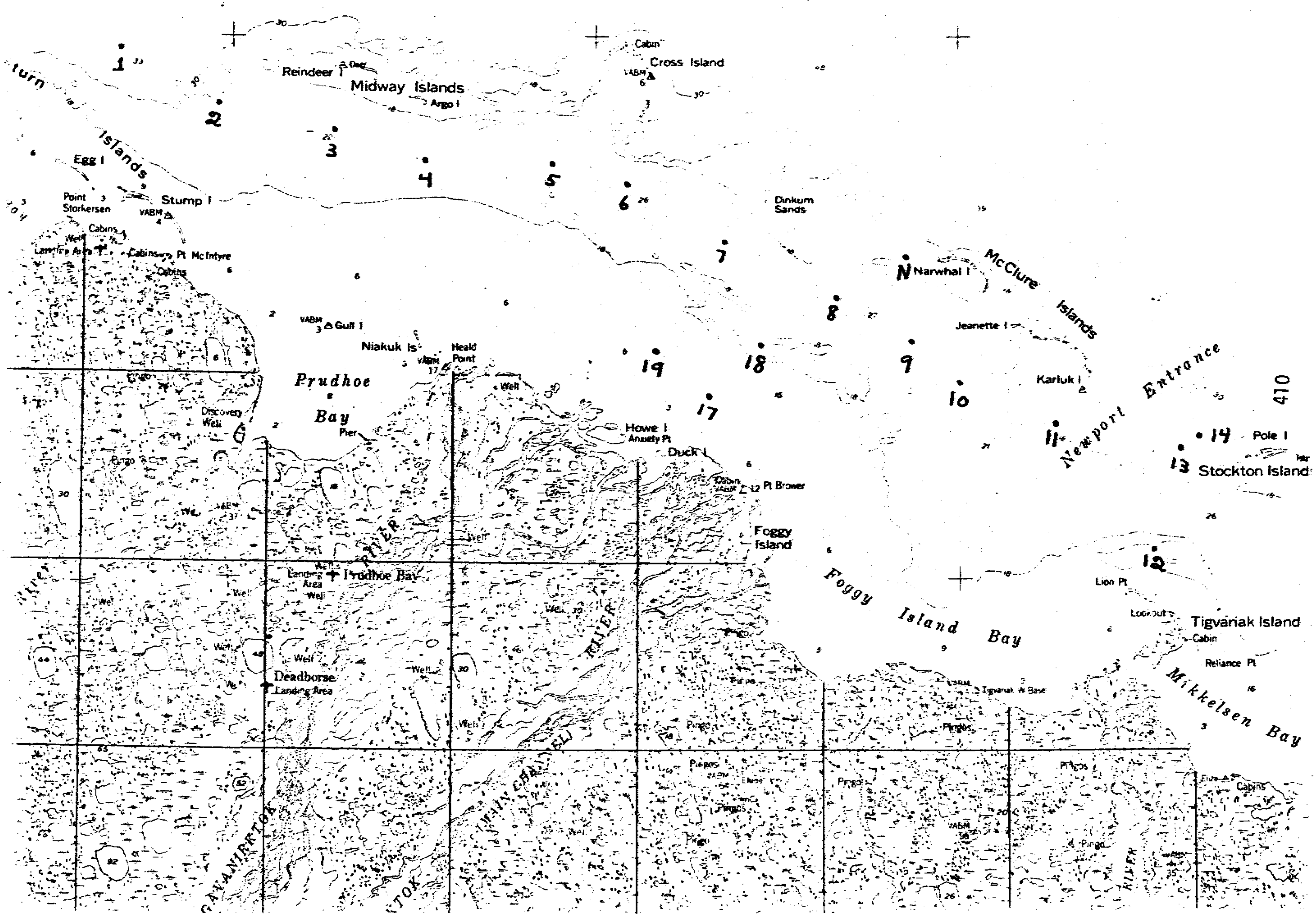
Third, we pulled a total of 10 cores from the stations 14, 15 and N, which are located in the passes between the barrier islands. The purpose of these cores was to see if the water flow through the passes organized the crystal structure of the ice into parallel platelets. The cores from N showed no such organization; however, in three cases at stations 14 and 15, the platelets were approximately parallel to the sides of the pass.

The ice also had some interesting small-scale features. Some of these were caused by the presence or absence of snow-cover. At stations 10 and 12, for example, the ice surface consisted of bare patches of ice which were approximately 5-15 m in diameter and set in a shallow snow field. At each site, the area of the patchy ice measured about 0.5 km in diameter. Our cores showed that the upper 0.3 m of this ice was very nearly fresh ice, so that the warm weather of the winter and the exposure to solar radiation had desalinated the upper part of the ice. At two other stations, where the snow cover was thin but still in existence, we observed large brine or air pockets in the upper part of the ice, which may also be a solar radiation effect. As previous field work has shown, these pockets can fill with oil released under the ice.

At all stations, we also observed many brine channels in the interior of the ice, extending up to a height of about 0.4 m from the ice surface. This was in spite of the cold weather during the traverse; further, there were many more channels than were observed by our traverse of last February. Again, the growth of these channels may be associated with the warm winter weather.

V. Problems Encountered/Recommended Changes: None.

VI. Estimate of Funds Expended: 70% expended.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Reindeer I
Midway Islands
Argo I
Egg I
Islands
Stump I
Point Storkersen
VABM
Cabins
Landing Area
Cabins Pt McIntyre
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Dinkum Sands
McClure Islands
Narwhal I
Jeanette I
Karluk I
VABM 3 Gull I
Niakuk Is
Heald Point
Prudhoe Bay
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Discovery Well
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Anxiety Pt
Duck I
Pt Brower
Foggy Island
Newport Entrance
Pole I
Stockton Island
Foggy Island Bay
Lion Pt
Lookout
Tigvariak Island
Cabin
Reliance Pt
Mikkelsen Bay
Pingo
Prudhoe Bay
Landing Area
Deadhorse
Landing Area
River
Pingos
Cabins

QUARTERLY REPORT

R.U. #88: Dynamics of Near-Shore Ice
P.O.: 01-5-022-1651
Reporting Period: April 1977-June 77
Number of Pages: 6

DYNAMICS OF NEAR - SHORE ICE

Principal Investigators: A. Kovacs
and W. F. Weeks

Cold Regions Research and Engineering Laboratory

Hanover, New Hampshire 03755

10 June 1977

I. Task Objectives

1. Narwhal Island

a. Collect quantitative information on the movements (velocities, directions, accelerations, and deformation rates) of the nearshore pack ice and the fast ice along the southern coast of the Beaufort Sea.

b. Make observations on major ice deformation features that occur near the edge of the fast/pack ice boundary.

c. Utilize an air-borne radar system for measuring variations in the thickness of sea ice.

d. Document the nature of the internal crystal structure of the fast ice in the vicinity of Narwhal Island.

2. Bering Strait

Obtain ice-lapse photographs of an X-band radar display of sea ice movement through the Bering Straits.

3. Remote Sensing

Continue analysis of SLAR imagery and laser profiles of the near-coastal sea ice.

II. Field and/or Laboratory Activities

1. Narwhal Island

During the complete time period covered by this report, the Narwhal Island program has been in the field. Some difficulties were encountered during installation of the equipment due to component failures and breaks in the communciations line connecting the two master units on Cross and Narwhal Islands. Once these difficulties were corrected, our systems have worked well and a large quantity of ice motion data has been collected. Project personnel in the field include A. J. Gow, J. Kelly, A. Kovacs, W. B. Tucker and W. Weeks. Satellite data (LANDSAT) was also selected so that we can make a retrospective study of ice conditions near Narwhal Island.

2. Bering Strait

Problems were encountered during the conversion of the radar unit from 15 KW to 50 KW. These include component failures due to variations in the site power supply, interference between the camera relays and the site radios, interference between the radar unit itself and the site radios, problems with the exposure settings and data box on the time-lapse camera. M. Frank visited Tin City and these problems are gradually being corrected. Preliminary examination of the imagery indicates striking ice motions through the Strait. Project personnel were M. Frank and W. Weeks.

3. Remote Sensing

Analysis of the laser records is continuing. Arrangements were made for the Fort Huachuka "Mohawk" to obtain SLAR imagery along the coast of the Chukchi and Beaufort Seas. These flights were completed in April and the resulting imagery is of excellent quality. Project personnel are S. Fungcharoen, W. Tucker, and W. Weeks.

III. Results (DB indicates available in data bank)

1. Published reports

a. Kovacs, A. (1976) Grounded ice in the fast ice zone along the Beaufort Sea coast of Alaska. CRREL Report 76-32, 21 pp (DB)

b. Kovacs, A. and Gow, A. J. (1976) Some characteristics of grounded floebergs near Prudhoe Bay, Alaska. CRREL Report 76-34, 10 pp (DB)

2. Reports Completed and In Press

   a. Weeks, W. F., Kovacs, A., Mock, S. J., Tucker, W. B., Hibler, W. D., and Gow, A. J. (1977) Studies of the movement of coastal sea ice near Prudhoe Bay, Alaska. Journal of Glaciology, Vol. 19, No. 81 (DB, available in xerox copy only).

   b. Kovacs, A. (1977) Sea ice thickness profiling and under-ice oil entrapment. Offshore Technology Conference (DB, available in xerox copy only).

   c. Schwarz, J., and Weeks, W. F (1977) Engineering properties of sea ice. Journal of Glaciology, Vol. 19, No. 81 (DB, available in xerox copy only).

   d. Gow, A. J. and Weeks, W. F. (1977) The internal structure of fast ice near Narwhal Island, Beaufort Sea, Alaska. CRREL Report.

   e. Sodhi, D. S. (1977) Ice arching and the drift of pack ice through restricted channels. CRREL Report.

3. Reports in Preparation

   a. Kovacs, A. (1977) The origin of rock debris found on sea ice north of Narwhal Island, Alaska. CRREL Report.

   b. Tucker, W. B., Weeks, W. F., Kovacs, A., and Gow, A. J., (1977) Near shore ice motion at Prudhoe Bay, Alaska. AIDJEX Sea Ice Symposium. (Abstract inclosed).

   c. Weeks, W. F., Tucker, W. B., Frank, M. and Fungcharoen, S. (1977) Characterization of the surface roughness and floe geometry of the sea ice over the continental shelves of the Beaufort and Chukchi Seas. AIDJEX Sea Ice Symposium. (Abstract inclosed).

d. Gow, A. J., and Weeks, W. F. (1977) Preferred crystal orientations in the fast ice along the margins of the Arctic Ocean. AIDJEX Sea Ice Symposium. (Abstract Inclosed)

IV. New Results

1. Narwhal Island

a. The fast ice around Narwhal Island shows more evidence of movement this year than last. Active cracks (up to 3 m wide) have developed just north of Narwhal and extensive fracturing can be found all throughout the "fast" ice. It is believed that a strong offshore wind might well take the fast ice out to sea with a flaw lead developing just north of the outer islands. Also there are very few grounded floebergs along the 18 m depth line that would help anchor the fast ice. The radar system shows many small motions in the offshore pack ice (a few hundred meters). However, as in 1976 there has been little net motion along the coast.

b. The lower two thirds of the fast ice in the vicinity of Narwhal Island shows the development of a strongly aligned fabric. It is now believed that the c-axes are oriented parallel to the prevalent current direction and that this type of ice will be found anywhere where fast ice thicknesses exceed $\approx$50 cm and there are appreciable currents. This oriented ice is expected to show major changes in its compressive strength as a function of orientation (by a factor of 3). Also this oriented ice absorbs the most oil of all the ice types studied by S. Martin. The observations of Russian investigators working in the Kara Sea are also in good agreement with our hypothesis of current control for the oriented fabric.

2. Bering Strait

a. The X-band radar unit at Tin City is now operating at 50 KW (as contrasted with 15 KW when it was initially installed).

b. Preliminary analysis of the radar images indicates extremely rapid ice movements through the Strait with all sorts of of complex interactions occurring between the ice floes.

3. Remote Sensing

The SLAR flights by the Fort Huachuka "Mohawk" have been completed. The resulting imagery is of a very high quality.

V. Estimate of Funds Expended (Figures as of 4 May 1977)

a. Carry-over 7T funds

1. Narwhal Island

Total	$1,229.29
Spent	1,229.29
Remainder	$ 00.00

2. Bering Strait

Total	$6,935.98
Spent	6,935.98
Remainder	$ 00.00

b. FY77 Funds

1. Narwhal Island

Total	$161,930.00
Spent	71,858.61
Remainder	$ 90,071.39

2. Bering Strait

Total	$75,335.00
Spent	23,756.07
Remainder	$51,578.93

3. Funds for Fort Huachuka Remote Sensing

Total	$22,735.00
Spent	22,735.00
Remainder	$ 00.00

Summary

Total Initial Funding (including FY7T Carryover)	$268,165.27
Funds Expended	126,514.95
Funds Remaining	$141,650.32

47% of funds expended

CHARACTERIZATION OF THE SURFACE ROUGHNESS AND FLOE GEOMETRY OF THE SEA ICE OVER THE CONTINENTAL SHELVES OF THE BEAUFORT AND CHUKCHI SEAS

by

W.F. Weeks, W.B. Tucker III, M. Frank
and S. Fungcharoen

Cold Regions Research and Engineering Laboratory
Hanover, N.H. 03755

ABSTRACT

Starting with the winter of 1975-76 and continuing until the present, remote sensing data have been collected that allow preliminary assessment of spatial and seasonal variations in roughness of the upper surface of the sea ice in the coastal zones of the Beaufort and Chukchi Seas. The primary instruments used were a laser profilometer and a X-band side-looking airborne radar (SLAR) system. Standard aerial photographs were also obtained along parts of the sample tracks. The replicate laser flights were made into the Chukchi Sea from land points at Point Lay, Wainwright, and Barrow. In the Beaufort Sea flights originated at Lonely, Cross Island (Prudhoe Bay), and Barter Island. At each site information was collected from the coast line to a turning point located 200 km offshore. Then the flight essentially retraced its course back to the coast allowing for a slight offset.

The heaviest ridging was found at Barter Island and there was a general decrease in the intensity of the ridging as one moved further west into the Chukchi Sea. The individual frequency profiles fell off in an exponential manner as ridge height increased. There was no decrease in frequency at low ridge heights as has been suggested from examining sonar profiles of the bottom

surface of sea ice. There was also a gradual decrease in ridging intensity as one moves away from the coast. This is clearly shown when comparisons are made between the number of ridges near the coast and the number of ridges found in the vicinity of the AIDJEX camps located further to the north. In fact SLAR imagery shows that the decrease in the area of ridged ice is gradual as one moves away from the coast and that there is no sharp demarcation to the so-called shear zone. The largest ridge sail observed was 6.4 m high. During the summer there was a decrease in the number of ridges and particularly in the frequency of the smaller ridges. Based on the present data, projections are made giving the frequencies of very large ridges as a function of location.

SLAR imagery is also used to study the size and shape of multiyear floes in the coastal zone. The most common shape was nearly circular. The largest length to width ration observed was just over 5. The distribution of floe diameters also showed an exponential drop off as floe size increased. The largest flow diameter observed was 3600 m.

NEAR SHORE ICE MOTION AT PRUDHOE BAY, ALASKA

by

W.B. Tucker III, W.F. Weeks, A. Kovacs and A.J. Gow
Cold Regions Research and Engineering Laboratory
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ABSTRACT

Shorefast and nearshore pack ice motions in the vicinity of Prudhoe Bay, Alaska have been monitored for the spring seasons (March-June) of 1976 and 1977. From the base camp on Narwhal Island, a barrier island 25 km northeast of Prudhoe Bay, a ranging laser was used to measure distances to targets located on the fast ice within a 7 km radius of the island. Net motion in the spring of 1976 was on the order of 1 m, generally perpendicular to the coast, and presumably caused by thermal expansion of the ice. Ice temperatures at several depths are being continuously monitored in 1977 and correlations will be made with the motions observed in the fast ice to verify this interpretation. In addition to these spring measurements, detailed strain triangles were surveyed in the fall of 1976 and again during the spring of 1977 to give a general picture of the net deformation occurring during a winter.

In addition, a radar ranging system, with master tracking units located on Narwhal and Cross Islands to provide a 20 km fixed baseline, was used to study the motions of transponders located on both the fast and pack ice at distances as large as 40 km to the north of the barrier islands. This system had a resolution of ±3m. The 1976 results showed short term pack ice motions of up to 2.7 km, but overall net motions in any direction were nonexistent. Also there was a systematic increase in the observed motions of the fast ice measured parallel to the coast as the distance from the shore to the measurement site increased.

The fast ice-pack ice boundary was found to be located in 30-35 m of water, rather than at the 18 m depth as has been observed at points further west.

Time series of the drift and significant deformation rates of the ice have been analyzed. Comparisons of these data with local meteorological variables (namely wind) gives no significant correlation. Spectral analysis of the fast ice motions shows peaks at 24 and 12 hours. The 24-hour cycle is attributed to the diurnal temperature cycle while the 12-hourly peak may be caused by the tidal cycle.

Comparisons between the pack ice and the fast ice motions, again demonstrated little significant correlations suggesting that pack ice motions have little impact on short term motions of the fast ice. The lack of correlation between all ice motion and local wind when the ice is in a tightly packed condition, suggests that models for predicting nearshore dynamics must be part of larger scale regional models that allow for the lateral transfer of stress through the ice.

PREFERRED CRYSTAL ORIENTATIONS IN THE FAST ICE ALONG THE MARGINS OF THE ARCTIC OCEAN

by

A.J. Gow and W.F. Weeks
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire 03755

Abstract

Field observations of the growth fabrics of the fast and near-fast ice along the coast of the Beaufort Sea in the vicinity of Cross and Narwhal Islands have shown that the orientations of the ice crystals in the ice sheet change systematically with depth. At the time these observations were made (March-April-May 1976, 1977) the ice studied was roughly 2 m in thickness. The characteristic orientations were as follows:

a) Upper layer - c-axes nearly random (the thickness of this layer ranges up to 25 cm and is largely controlled by the amount of slush present in the sea just prior to freeze-up).

b) Intermediate layer - c-axes randomly distributed in the horizontal plane (this layer develops from the overlying random orientation because in ice the direction of most rapid growth is in the basal (0001) plane).

c) Lower layer - c-axes strongly aligned in the horizontal plane. The structures of the upper and intermediate layers have commonly been observed in sea ice and were expected. The presence of the lower layer structure has been noted by Peyton and by Cherepanov in studies of near-coastal ice. However, little was known about the characteristics, extent, and origin of this fabric.

We found the c-axis horizontal and aligned fabric to always be discernable by 60 cm depth and in one case it was clearly developed by 15 cm; therefore, the majority of the ice column is composed of this type of ice. The degree of preferred orientation is striking with the standard deviation from the mean c-axis direction (as measured in the horizontal plane) commonly varying between 5^0 and 15^0 at depths of 160 cm. The mean c-axis direction remains constant throughout the lower layer, therefore, simplifying sampling; it is not necessary to obtain samples from the bottom of the sheet to determine mean c-axes directions. Invariably the strongest orientations were observed at the bottom of the ice sheet. The 19 sites that were sampled were spaced throughout an area with dimensions of 60 km (along the coast) by 25 km (off the coast). Samples were taken both seaward and landward of the barrier islands. Ice at all sites showed strong development of the aligned structure. In general the c-axes of the crystals were aligned parallel to the main coastline (roughly E-W). In the vicinity of islands the alignment roughly parallels the outlines of the islands. In narrow passes between islands c-axes are oriented parallel to the channel. We suggest that the c-axes orientation directions indicate the directions of the currents beneath the ice. The fabric develops via selective crystal growth with the favored crystals being those with their basal planes oriented normal to the direction of flow. The mechanics of this process are discussed in the paper. Both our observations as well as Cherepanov's observations on ice in the Kara Sea can be explained by this hypothesis. We believe that these aligned fabrics will occur in any fast ice area where the ice reaches thicknesses in excess of 50 cm and where there are appreciable currents.

The development of this type of preferred orientation causes the ice to assume properties similar to those of a giant single crystal even though the individual crystals that comprise the oriented ice mass do not show appreciable changes in size with depth. The effects of the development of this oriented structure are quite varied. The resulting ice shows variations of a factor of 3 in its compressive strength as a function of the orientation of the force; fast ice commonly has its maximum tensile strength oriented normal to the coast (i.e. it grows in the strongest possible orientation); and the oriented ice absorbs more oil than other ice types that have been studied.

QUARTERLY REPORT

Contract: 03-5-022-67
Research Unit: 98
Reporting Period: 1 Apr - 30 Jun 1977
Number of Pages: 3

DYNAMICS OF NEAR SHORE ICE

Norbert Untersteiner
Professor of Atmospheric Sciences and Geophysics
AIDJEX Project Director

Max D. Coon
AIDJEX Research Coordinator

Division of Marine Resources
University of Washington
Seattle, Washington 98195

I. TASK OBJECTIVES

The University of Washington under Task Order No. 5 of NOAA Contract 03-5-022-67 agreed to deploy ice buoys to gather data on ice movement and atmospheric conditions in the nearshore areas of the Beaufort and Chukchi Seas. In addition to this field program, the University agreed to process data and do model calculations.

II. FIELD AND LABORATORY ACTIVITIES

A. Field Trips Scheduled

None.

B. Scientific Party

None.

C. Methods

1. All buoys mentioned in this report are sampled by the Random Access Measurement System on board Nimbus VI satellite.

D. Sample Locations

The sites of the buoys at deployment and after drifting are as follows:

Buoy	Date	Lat.	Long.	Date	Lat.	Long.
1064	3/2	67.08°N	168.00°W	Expired 4/25	67.12°N	168.16°W
1035	3/2	68.83°N	168.98°W	6/16	70.55°N	167.89°W
1052	3/2	70.67°N	165.67°W	6/16	72.21°N	168.72°W
1617	3/7	72.33°N	166.00°W	6/16	73.42°N	173.91°W
1023	3/13	69.67°N	173.67°W	6/16	70.47°N	174.95°W
1305	3/13	70.92°N	173.75°W	Expired 5/3	71.16°N	174.36°W
0632	3/22	70.62°N	147.25°W	Expired 5/30	70.74°N	146.91°W
1601	3/22	70.83°N	147.00°W	6/16	70.52°N	147.26°W

E. Data Collected or Analyzed

1. The buoys mentioned in D above were tracked during this quarter.

2. Data from the first quarter of 1977 has been forwarded to the NOAA data bank.

III. RESULTS

As can be noted from the two positions for the buoys that are shown under II-D, there had been very little motion of the ice during this period. During the first few days when buoys were put out there was a rather large motion and there has been little subsequent motion.

IV. PRELIMINARY INTERPRETATION OF THE RESULTS

There has been no detailed analysis of the motion of the buoys. However, it is clear that there was no large transport of ice from the Chukchi to the Bering Sea during this period.

V. PROBLEMS ENCOUNTERED AND RECOMMENDED CHANGES

There have been no problems encountered during this quarter. It is recommended that OCSEAP consider retrieving Buoy 1601 near the end of its life (in early September) if it is still functional at that time. This is based on the premise that it will still be in the very nearshore area and it will be easy to retrieve.

VI. ESTIMATE OF FUNDS EXPENDED

As of May 31, 1977, actual expenditures under this contract totaled $210,854. The estimated obligations for June are anticipated to be approximately $14,073.

Quarterly Report

Contract #03-5-022-56
Research Unit #99
Task Order #6
Reporting Period 4/1/77 - 6/30/77
Number of Pages

THE ENVIRONMENTAL GEOLOGY AND GEOMORPHOLOGY OF THE GULF OF ALASKA COASTAL PLAIN AND THE COASTAL ZONE OF KOTZEBUE SOUND

Dr. P. Jan Cannon
Geology Department
University of Alaska
Fairbanks, Alaska 99701

June 30, 1977

QUARTERLY REPORT FOR QUARTER ENDING JUNE 30, 1977

Project Title:	The Environmental Geology and Geomorphology of the Coastal Zone of Kotzebue Sound
Contract Number:	03-5022-56
Task Order Number:	6
Principal Investigator:	Dr. P. Jan Cannon

I. Task Objectives

A. To produce three maps, with explanations, which will display certain baseline data necessary for an environmental assessment of the regions. The maps will be constructed from various types of remote sensing data.

1. Environmental geologic map of the entire forelands from Cape Prince of Wales to Cape Lisburne which will include the lowlands of the Kobuk Delta, the Noatak Delta, and the Kotzebue Moraine.

2. A coastal landforms map of the region identifying and describing important geomorphic features.

3. A map which indicates potential tectonic and geomorphic hazards.

B. To produce a report on the unique geologic setting of the Kobuk Delta indicating the possible effects (beneficial and adverse) of petroleum related development in the area.

C. Direct the acquisition of remote sensing data of the area for Cannon, Hayes and other investigators.

D. Construct a mosaic of the area of sequential LANDSAT data for Cannon, Hayes, and other investigators.

E. Construct an annotated mosaic of the area from SLAR imagery.

II. Activities

Made a field trip to Kotzebue Sound to study pre-break-up conditions in the coastal zone.

III. Results

Documented two important processes which are adding materials to the beach.

1. Mud flows and debris slides are adding materials to the beach zone prior•to break-up.

2. Gravel from the near shore sea bottom is pushed by ice movement towards and onto the beach.

IV. Preliminary Interpretation of Results

An important amount of materials are being added to the beach area by processes other than stream action. Materials taken from the sea bottom by ice action can be deposited in the beach zone. Some of these sea bottom materials (mostly gravels) are being picked up from places which are nearly three kilometers from shore.

V. Problems Encountered/Recommended Changes

The effects of freeze-up on the beach have not been fully studied. It is recommended that the effects of freeze-up be closely studied in the study area this coming September and October.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 6 R.U. NUMBER: 99

PRINCIPAL INVESTIGATOR: Dr. P. Jan Cannon

No environmental data are to be taken by this task order as indicated in the Data Management Plan. A schedule of submission is therefore not applicable[1].

NOTE: [1] Data Management Plan has been approved by M. Pelto; we await approval by the Contract Officer.

Contract no. - 01-50-22-2313
Research Unit no. - 105
Reporting period - 1 April 1977
30 June 1977
Number of pages - 8

Quarterly Report
to

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Arctic Projects Office
Fairbanks, Alaska

DELINEATION AND ENGINEERING CHARACTERISTICS OF PERMAFROST BENEATH THE BEAUFORT SEA

Principal Investigator:
P.V. Sellmann

Associate Investigators:
J. Brown
S. Blouin
E. Chamberlain
I. Iskandar
H. Ueda

June 30, 1977

CORPS OF ENGINEERS, U.S. ARMY
COLD REGIONS RESEARCH AND ENGINEERING LABORATORY
HANOVER, NEW HAMPSHIRE

I. TASK OBJECTIVES

The emphasis of this program is on quantifying the engineering characteristics of permafrost beneath the Beaufort Sea, and determining their relation to temperature, sediment type, ice content and chemical composition. These data will be used in conjunction with those from the other OCSEAP marine and subsea permafrost projects to develop a map portraying the occurrence and depth of permafrost under the Beaufort Sea. The drilling program is providing subsurface samples and other controls for the other programs. It is also designed to test drilling, sampling, and in-situ measurement techniques in this offshore setting where material types and ice conditions make acquisition of undisturbed samples extremely difficult.

Our current activities are being jointly undertaken with the USGS program RU204, and Dr. Robert Lewellen's ongoing ONR project that was previously based at Barrow. We are also working closely with the University of Alaska OCS projects.

II. FIELD OR LABORATORY ACTIVITIES

A. Ship or Field Trip Schedule:

Our 1977 field program in the Prudhoe Bay area was carried out during this quarter. The activities started at Prudhoe Bay on March 22 with mobilization of equipment for the spring drilling and sampling program. The first hole was started on 30 March and the last hole was completed on May 1, with demobilization and final field operations completed on May 5, 1977.

B. Scientific Party:

Project individuals in the field during the 1977 effort:

	Individual	Organization	Time	Activity
1.	Scott Blouin	USACRREL	23 March - 19 April	Probe Study
2.	Edwin Chamberlain	USACRREL	23 March - 5 May	Sample Logging, Processing and Thermal Logging
3.	Allan Delaney	USACRREL	21 March - 1 April	Mobilization
4.	Donald Garfield	USACRREL	23 March - 19 April	Probe Study
5.	Roger Hartz	USGS	15 April - 4 May	USGS Sample Logging and Analysis
6.	Dave Hopkins	USGS	29 March - 16 April	USGS Sample Logging, Analysis, and Interpretation
7.	Robert Lewellen	Contract-USGS	27 March - 5 May	Drilling and Sampling
8.	Vaughn Marshall	USGS	15 April - 6 May	Thermal Observations
9.	Fred Page*	USACRREL	10 April - 10 May	Sample Processing (Fairbanks)
10.	Paul Sellmann	USACRREL	21 March - 5 May	Drilling and Sampling and General Field Operations
11.	Herb Ueda	USACRREL	21 March - 5 May	Drilling and Sampling

* Jerry Brown and Fred Page visited the field activities on April 23; Page processed samples for chemical analyses in CRREL's Fairbanks lab (Ft. Wainwright).

C. Methods:

All laboratory, field, and sampling methods have previously been discussed in the 1976 Operational Report (Sellmann, et al., 1976),** as well as in quarterly OCSEAP progress reports under research unit 105. The only methods and procedures not covered to date are the techniques and equipment items employed for installing the larger diameter casing used this season, and details concerning the new probe equipment.

Installation of a large diameter, heavier-duty casing was intended to reduce casing failure problems and permit greater depth of penetration. The casing used was heavy-duty, flush-joined drive casing (3 3/4" I.D. and 4 1/2" O.D). This casing was driven with a McKiernan Model #5 air pile driving hammer. The hammer produced 1000 ft/lb blows at a maximum rate of 300 blows/min. at 100 psi. A removable guide rack was constructed for our drilling unit to center the hammer over the hole and permit safe and easy handling of the hammer. The hammer's air supply was provided by a 250-CFM, 100 psi Davey air compressor. The casing setting employing this equipment was a substantial improvement over last year's operation, since it was essentially trouble-free and considerably more efficient.

The probe equipment used this year was designed and developed at CRREL. The equipment was completely housed in a small 5 x 8½ ft building mounted on a heavy skid frame. The skids also acted as a parking pad for the large TD-25 tractor that provided reaction force for the static testing, thereby eliminating time-consuming anchor setting. The TD-25 also was used to move the probe rig between sites. Waste heat from an externally mounted diesel generator was used to heat the small house which contained equipment for electrical data acquisition. Static penetration resistance of the probe and external casing was continuously recorded as a function of depth on a X-YY recorder. Temperature data were obtained through the probe string after the sediment and probe rod came to equilibrium. This generally took about 5 to 6 hours, although usually the probe was left in the sediment overnight. If temperature data were not obtained, up to three probe resistance profiles, 12-13 meters deep, could be obtained in a day. Usually two sites were occupied per day, one of which was thermally logged. Additional details concerning the probe equipment and results will be covered in this year's operational report.

D. Sample Localities:

Five sites were selected for drilling and sampling in the Prudhoe Bay area. They were located in areas where obvious gaps in data existed from previous drilling activities. The locations of the holes PB 5-9 are shown in Figure 1. Additional data concerning the deep holes are provided in Table I.

The probe sites examined PH 1-27 are also shown on Figure 1. Their locations were selected in an attempt to obtained data from most of the geological and depositional settings in the Prudhoe Bay area. Additional detail concerning these sites is given in Table II.

** Sellmann, P.V., R.I. Lewellen, H.T. Ueda, E.J. Chamberlain, and S.E. Blouin, 1976, 1976 USACRREL-USGS Subsea Permafrost Program, Beaufort Sea, Alaska - Operational Report, USACRREL Special Report 76-12.

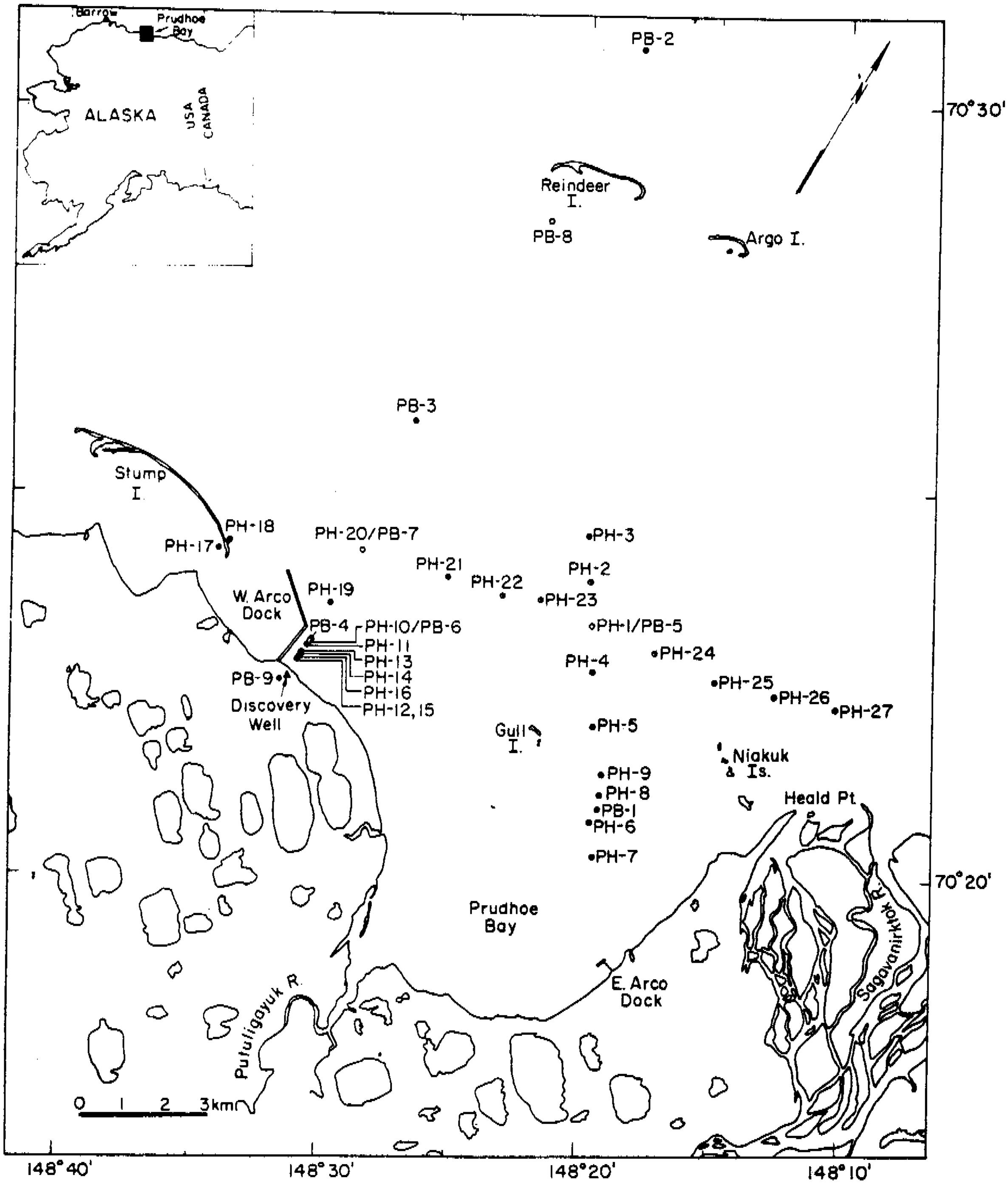


Figure 1. Map of site locations in Prudhoe Bay, Alaska. PB indicates location of drill holes (open circles were drilled during 1977 season, PB 5-9; closed holes during 1976 season, PB 1-4). PH indicates probe hole.

TABLE I

DATA FOR 1977 PRUDHOE BAY CRREL-USGS DRILL LOCATIONS

Hole	General Location	Longitude	Latitude	Ice Thickness (m)	Water Depth (m)	Hole Depth (from ice surface) (m)
PB-5	2.8 km NE of Gull Island	148°19.7'	70°23.3'	1.50	1.75	11.8
PB-6	1.0 km NE of Discovery Well	148°30.6'	70°23.05'	1.80	1.85	8.2
PB-6a	1.0 km NE of Discovery Well	148°30.6'	70°23.05'	1.80	1.85	30.6
PB-7	3.5 km NE of Discovery Well	148°28.5'	70°24.25'	1.81	2.86	68.0
PB-8	1.3 km SW of Reindeer Island	148°21.6'	70°28.5'	2.18	6.98	32.4
PB-9*	0.3 km SW of Discovery Well	148°31.6'	70°22.55'	land	land	19.1

* PB-9 was drilled and sampled by R&M Engineering and is on land.

TABLE II

DATA FOR 1977 PRUDHOE BAY CRREL PROBE LOCATIONS

Probe Hole	General Location	Longitude	Latitude	Ice thickness (m)	Water depth (m)	Maximum penetration (m)
PH-1	2.8 km NE of Gull Island	$148^{\circ}19.7'$	$70^{\circ}23.3'$	1.83	1.98	11.8
PH-2	3.7 km NE of Gull Island	$148^{\circ}19.8'$	$70^{\circ}23.85'$	1.83	3.15	12.3
PH-3	4.7 km NNE of Gull Island	$148^{\circ}19.85'$	$70^{\circ}24.4'$	1.52	3.23	12.9
PH-4	1.9 km NE of Gull Island	$148^{\circ}19.7'$	$70^{\circ}22.7'$	1.52	1.52	13.3
PH-5	1.4 km E of Gull Island	$148^{\circ}19.6'$	$70^{\circ}21.9'$	0.90	0.90	7.5
PH-6	3.3 km SSE of Gull Island	$148^{\circ}19.7'$	$70^{\circ}20.7'$	1.75	2.93	14.1
PH-7	2.6 km SSE of Gull Island	$148^{\circ}19.5'$	$70^{\circ}20.3'$	1.60	2.43	15.1
PH-8	2.6 km SE of Gull Island	$148^{\circ}19.3'$	$70^{\circ}21.2'$	1.50	1.69	10.3
PH-9	2.2 km SE of Gull Island	$148^{\circ}31.9'$	$70^{\circ}22.55'$	1.28	1.28	15.4
PH-10	1.0 km NE of Discovery Well	$148^{\circ}30.6'$	$70^{\circ}23.05'$	1.68	2.12	11.3
PH-11	0.8 km NE of Discovery Well	$148^{\circ}30.8'$	$70^{\circ}22.95'$	1.68	1.73	12.3
PH-12	0.5 km NE of Discovery Well	$148^{\circ}31'$	$70^{\circ}22.85'$	0.91	0.91	1.3
PH-13	.63 km NE of Discovery Well	$148^{\circ}30.9'$	$70^{\circ}22.95'$	1.56	1.56	8.4
PH-14	.57 km NE of Discovery Well	$148^{\circ}30.9'$	$70^{\circ}22.9'$	1.53	1.53	12.2
PH-15	0.5 km NE of Discovery Well	$148^{\circ}31'$	$70^{\circ}22.85'$	0.69	0.69	1.2

Table II (Cont'd)

Probe Hole	General Location	Longitude	Latitude	Ice thickness (m)	Water depth (m)	Maximum penetration (m)
PH-16	0.54 km NE of Discovery Well	$148^\circ 31'$	$70^\circ 22.87'$	1.35	1.35	9.9
PH-17	0.12 km inland from Stump Island	$148^\circ 34.1'$	$70^\circ 22.25'$	0.91	0.91	4.5
PH-18	0.12 km seaward from Stump Island	$148^\circ 33.7'$	$70^\circ 24.3'$	1.83	1.94	11.3
PH-19	2.0 km NE of Discovery Well	$148^\circ 29.75'$	$70^\circ 23.5'$	1.80	1.95	10.6
PH-20	3.5 km NE of Discovery Well	$148^\circ 28.5'$	$70^\circ 24.25'$	1.80	2.06	11.1
PH-21	4.2 km NW of Gull Island	$148^\circ 25.3'$	$70^\circ 23.9'$	1.70	1.88	8.3
PH-22	3.3 km NW of Gull Island	$148^\circ 23.2'$	$70^\circ 23.65'$	1.85	2.17	10.9
PH-23	3.2 km N of Gull Island	$148^\circ 21.7'$	$70^\circ 23.6'$	1.60	2.13	11.2
PH-24	3.2 km NW of Niakuk Island	$148^\circ 17.3'$	$70^\circ 22.9'$	1.80	2.03	10.7
PH-25	1.5 km N of Niakuk Island	$148^\circ 15'$	$70^\circ 22.6'$	1.80	2.00	11.6
PH-26	1.9 km NE of Niakuk Island	$148^\circ 12.7'$	$70^\circ 22.4'$	1.80	1.83	10.0
PH-27	2.5 km NE of Heald Point	$148^\circ 10.4'$	$70^\circ 22.2'$	1.65	1.89	14.6

E. Data Collected or Analyzed:

Drilling Program

The drilling effort provided wash samples or cores over a total of 170 meters of hole, a considerable amount of sample material for analysis. Samples were collected, logged, and distributed between USGS and CRREL, with samples available for almost the entire hole depth. Core samples were selected for 1) chemical analysis, 2) engineering property determinations, and 3) geological studies including paleontological and C-14 analysis. The cased holes were also thermally logged.

Chemical Properties

The chemical samples were subsampled from the primary cores at the drill sites and transported as soon as possible to the CRREL laboratory in Fairbanks for processing. Water extracts were obtained from the samples by centrifuging. The conductivity, alkalinity, and moisture content were determined. This permitted shipment of oven-dried samples and extracts to Hanover for further chemical analysis, including major ion determinations. More than 100 samples were processed.

Engineering Properties

Samples were selected in the field for laboratory strength, consolidation, and index property tests in Hanover. These tests will be initiated during the next quarter.

Geological Investigations

Each hole was logged in the field, based on examination of both the core and wash samples and the cores were photographed. Additional information was based on drilling response during the operation. Cores were subsampled for further examination at the USGS laboratory in Menlo Park. Core and wash samples were used to provide lithologic descriptions, determine depositional origin, and general age of the sediments. These results are reported by Hopkins (RU 204).

Thermal

The thermal observations made at the drill sites by the USGS personnel were initiated soon after each hole was completed, and measured sequentially until the equilibrium point was reached. Preliminary examination indicated that holes reached equilibrium in an orderly manner. The new casing and driving system permitted control of the drilling fluid and on no occasion was drilling required in advance of the casing. This eliminated fluid loss into the formation, which substantially slows restoration of thermal equilibrium. Most of the temperature gradients, even those obtained shortly after hole completion, were very smooth, with no indication of local disturbance due to drilling. The results of the deep thermal data will be reported by the USGS.

Additional shallow thermal data were obtained by CRREL from more than half of the probe sites. In most instances this information was obtained to depths great enough to determine annual bed temperatures and to indicate the trend of the gradient with depth. The results of the temperature data, along with the engineering probe data, will be discussed in future reports.

III and IV. RESULTS AND DISCUSSION

The 1977 drilling and probe programs were extremely productive and successful. Six holes were drilled and sampled in detail. Engineering properties and thermal data were obtained from the 27 probe holes. The general lithology of the holes was much the same as last year, with a fine-grained section starting at the seabed which overlies the coarser sands and gravels. In the deeper holes, fine-grained sediments were found in small layers and beds. In several beds, close-interval sampling yielded large quantities of organic material distributed at critical locations throughout the section. This material was in adequate quantity for dating purposes. The probe data are being used to interpolate the lithology between the drilled holes. Changes in lithology are very apparent from the probe records. The thermal probe data were compared with thermal data from similar locations occupied last year by both the USGS and CRREL, and gave very comparable results. Thermal data indicated permafrost was present in all the holes with bonded sediments found near the surface in several probe holes and at depth in drill hole PB-6.

Summary of the results of last year's work was covered in the RU 105 annual report. Laboratory and office analyses of the 1977 cores and some aspects of the chemical analyses have now been initiated. The chemical data from a preliminary examination of the conductivity data indicated uniform salinity with depth. Complete discussion of results will follow as analysis of the samples progresses.

Two papers were submitted for publication in the Third International Conference on Permafrost:

(1) Chamberlain, E.J., P.V. Sellmann, S.E. Blouin, D.M. Hopkins, and R.I. Lewellen, Engineering Properties of Subsea Permafrost in the Prudhoe Bay Region of the Beaufort Sea.

(2) Iskandar, I.K., T.E. Osterkamp, and W.D. Harrison, Chemistry of Interstitial Water from Subsea Permafrost Prudhoe Bay, Alaska.

V. PROBLEMS ENCOUNTERED/RECOMMENDED CHANGES

None.

VI. ESTIMATE OF FUNDS EXPENDED

It is projected that as of June 30, 60,000 of the FY77 funding remains unobligated.

Research Unit #204: Quarterly Report, April-May-June, 1977

OFFSHORE PERMAFROST STUDIES, BEAUFORT SEA

I. Abstract of Highlights

Four boreholes were completed offshore and one onshore in the Prudhoe Bay area. Engineering probes, using equipment developed by Scott Blouin and Don Garfield (CRREL) (R.U. 104) provided supplementary information on stratigraphy and geothermal temperatures at about 20 sites.

Borehole PB-5, a 12-meter hole on Gull Island Shoal, showed that the shoal is a constructional feature composed of silt and fine sand prograding westward, down-current from the mouth of the Sagavanirktok River. Information from this and from nearby probe holes established that the ancient thaw lake, of which Prudhoe Bay is a remnant, once extended approximately to the north edge of Gull Island Shoal.

Borehole PB-6, a 30-meter hole near the elbow of the new ARCO dock, penetrated permafrost at 29 meters. In this hole we recovered intact frozen cores for the first time.

Borehole PB-7. located near the site of Osterkamp and Harrison's borehole 3370, was driven to a depth of 68 meters, the greatest depth attained by any borehole in our program. We had expected to encounter ice-bonded permafrost at 50 meters, but the ground remained unfrozen to the bottom of the hole, although temperatures were as cold as -2.2, well below the freezing point of seawater.

A radiocarbon-date from a depth of 1.4 m below the sea bottom in borehole PB-2, driven in 1976 a few kilometers seaward from Reindeer Island, yielded the surprisingly great age of 18,000 ± 170 years (USGS-192). Other evidence leads us to believe that this date is anomalous and the enclosing sediments are actually only a few thousands of years old.

II. Task Objective: D-9

III. Field and Laboratory Activities

A. Field Activities

March 25-May 5. conduct Prudhoe Bay borehole program in cooperation with CRREL personnel (R.U. #104).

May 25-June 4: return to Prudhoe Bay for final logging of 1977 boreholes.

B. Scientific Party

D. M. Hopkins, geologist and P.I.

R. E. Lewellen, geologist and chief driller

Vaughn Marshall, geophysicist, geothermal studies

R. W. Hartz, geologist, log and sample core, driller's assistant, geothermal logging

Joyce Blueford, technician, prepare microfossil samples.

P. A. Smith, technician, core radiography, pick radiocarbon samples.

C. Methods of Analysis
   Core radiography
   Radiocarbon analysis
   Amino-acid racemization analysis
   Pebble roundness and lithology

D. Sample Localities
   Four offshore boreholes and one onshore borehole in Prudhoe Bay area. Precise locations given in Quarterly Report for R.U. 104.

E. Data collected or analyzed
   Completed identifications of all mollusks from 1976 boreholes samples; submitted most of the identifiable pelecypods for amino-acid analysis.

   Split subsamples from 1977 cores and cuttings for marine microfossil study. Washing and picking started.

   Several 1976 samples and one 1977 sample concentrated and submitted for radiocarbon dating.

   One 1976 radiocarbon analysis completed.

   Radiography of 1977 cores completed.

IV. and V. Results and Interpretation

A. A radiocarbon analysis for a bulk sample of organic sediment in the marine section of one of the 1976 boreholes, PB-2 (summary log attached) yielded an age estimate of 18,000 years ± 170 years (USGS-192). This sample is unexpectedly old. Pollen and foraminifera from this sample suggest an age no greater than 5,000 years, and the stratigraphic position suggests that an age of one or two thousand years is more probable.

   Pollen analysis of a sample from the same level in PB-2 showed that about 15% of the total pollen assemblage is redeposited Cretaceous pollen. Thus, contamination by Cretaceous coal is possible. Organic matter eroded from Pleistocene deposits in the coastal bluffs may also be present. However, if the sample were deposited 3,000 years ago, about 85% of dead carbon would be required to increase the apparent age to 18,000 years. At present, we are unable to explain satisfactorily the unexpectedly great age of the radiocarbon-dated sample from PB-2.

B. Four boreholes were completed offshore and one onshore in the Prudhoe Bay area. Engineering probes, using equipment developed by Scott Blouin and Don Garfield (CRREL) (R.U. #104) provided supplementary information on stratigraphy and geothermal temperatures at about 20 sites. Latitude and longitudes of the borehole sites is given in the Quarterly Report for R.U. #104. Summary logs of the four offshore boreholes are attached herewith. Thermal logs will be included in the next quarterly report.

Borehole PB-5, a 120 meter hole on Gull Island Shoal, showed that the shoal is a constructional feature composed of silt and fine sand prograding westward, down-current from the mouth of the Sagavanirktok River. Information from this and from nearby probe holes established that the ancient thaw lake, of which Prudhoe Bay is a remnant, once extended approximately to the north edge of Gull Island Shoal.

Borehole PB-6, a 30-meter hole near the elbow of the new ARCO dock, penetrated permafrost at 29 meters. In this hole we recovered intact frozen cores for the first time.

Borehole PB-7, located near the site of Osterkamp's and Harrison's borehole 3370, was driven to a depth of 68 meters, the greatest depth attained by any borehole in our program. We had expected to encounter ice-bonded permafrost at 50 meters, but the ground remained unfrozen to the bottom of the hole, although temperatures were as cold as -2.2, well below the freezing point of seawater.

Borehole PB-8 was located a short distance inland from Reindeer Island and driven to a depth of about 32.5 m. The principal objective here was to determine the relationships between barrier islands and the distribution of overconsolidated marine clay, and especially to compare the engineering characteristics of the marine silt and clay at this site with that encountered in borehole PB-2. Engineering parameters are being studied at CRREL (R.U. 104).

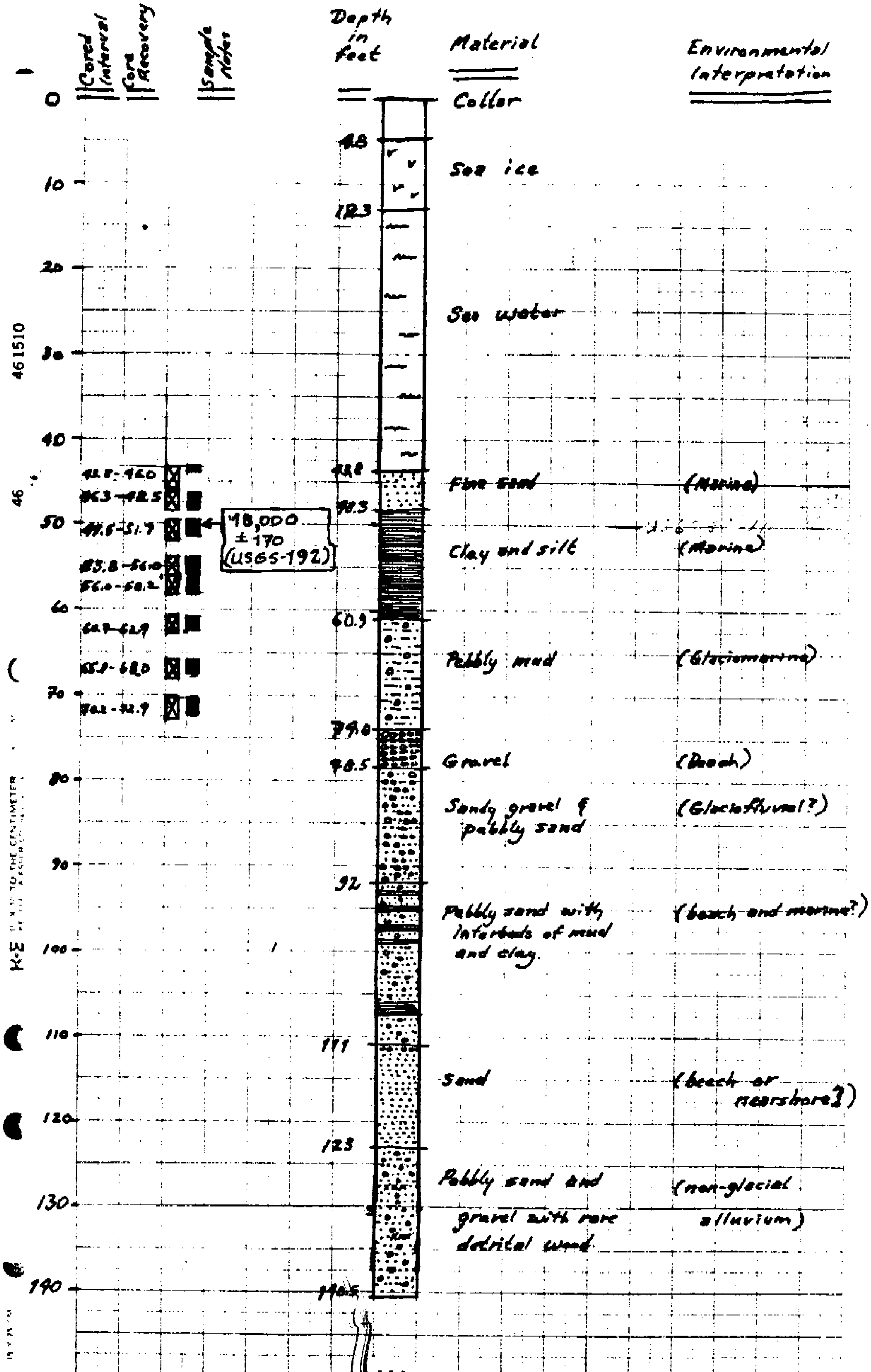
The borehole program this spring helped us to recognize evidence of rapid thermokarst subsidence at many sites, following initial submergence; the bottom has then become shallower at most sites, as a consequence of rapid deposition of silt and fine sand introduced from the Sagavanirktok River. The marine sediments are underlain by thin angular gravel containing ventifacts (wind-polished stones) which in turn is underlain by organic-rich sand which in borehole OH-3370 yielded a radiocarbon age of about 22,000 years. Thicker gravel, evidently of outwash origin, lies below; a second series of organic horizons begin at depths of about -30 m. Organic samples from this deeper organic horizon are being radiocarbon-dated at the present time.

C. An operational report on the spring, 1977 drilling program, prepared by R. E. Lewellen, is attached.

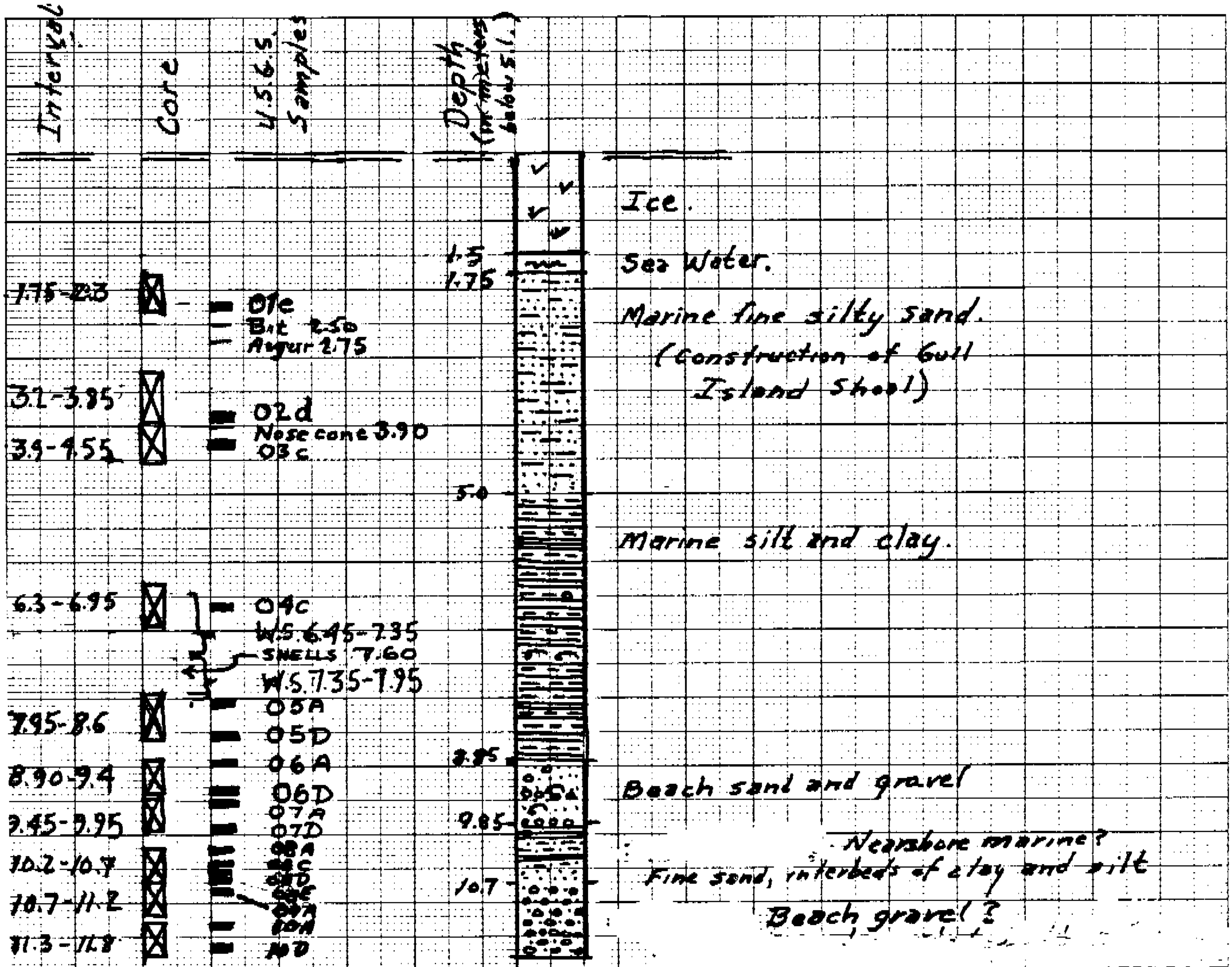
VI. Problems encountered and recommended changes: none.

VII. Estimate of funds expended to date: $115,000

BOREHOLE PB-2



BOREHOLE PB-5



Begun 3-30-77
Completed 4-2-77

Lat. ______
Long. ______

SUMMARY LOG: BOREHOLE PB-6/6A

Lat. ______
Long. ______

Core No.	Interval (Meters below sea level)	U.S.G.S. Samples
01	1.85-2.50	01-C, 01-G, 02A
02	2.66-3.20	03A, 03C
03	3.15-3.85	03E, 03H
04	3.85-4.50	04A, 04C, 04E
05	4.50-5.15	05C
06	5.15-5.60	06A
		W.S. 5.45-6.05
		W.S. 6.05-6.65
07	6.65-7.15	07C
		W.S. 6.9-7.5
08	7.75-8.20	
		W.S. 8.25-11.10
09	11.10-11.65	09C
		W.S. 12.0-14.2
10	14.15-14.70	
		W.S. 15.40-16.30
		W.S. 16.30-17.25
11	17.25-17.75	11A
		W.S. 18.45-19.40
		W.S. 19.45-20.30
12	20.30-20.85	
		W.S. 21.55-22.45
		W.S. 22.45-23.70
		W.S. 24.3-25.4
		W.S. 25.40-26.45
13	26.45-26.95	08A
		W.S. 27.7-28.6
		W.S. 28.6-29.5
14	29.55-30.10	14A, 14D
15	30.10-30.55	15A, 15A

Depth of Lithologic Change	Notes	Interpretation
	Ice	
1.80 / 1.85	Water	
1.85	Medium sand and thin beds of fine silty sand	Holocene Nearshore (?) sand
4.80	Pebble gravel, interbeds of pebbly sand.	Holocene Beach gravel
		Holocene Beach gravel ?
10.50	Fine sand grading down into clay	Holocene offshore and beach? or Holocene thaw lake?
11.40	Interbedded medium sand and coarse silty gravel	
14.15	Coarse, clean, well-rounded gravel; no organic remains	Late Wisconsinan glacial outwash
26.0	Gravel, possibly with plant remains	
29.0	Coarse pebbly sand, fine sand, and pebble gravel	Mid-Wisconsinan alluvium

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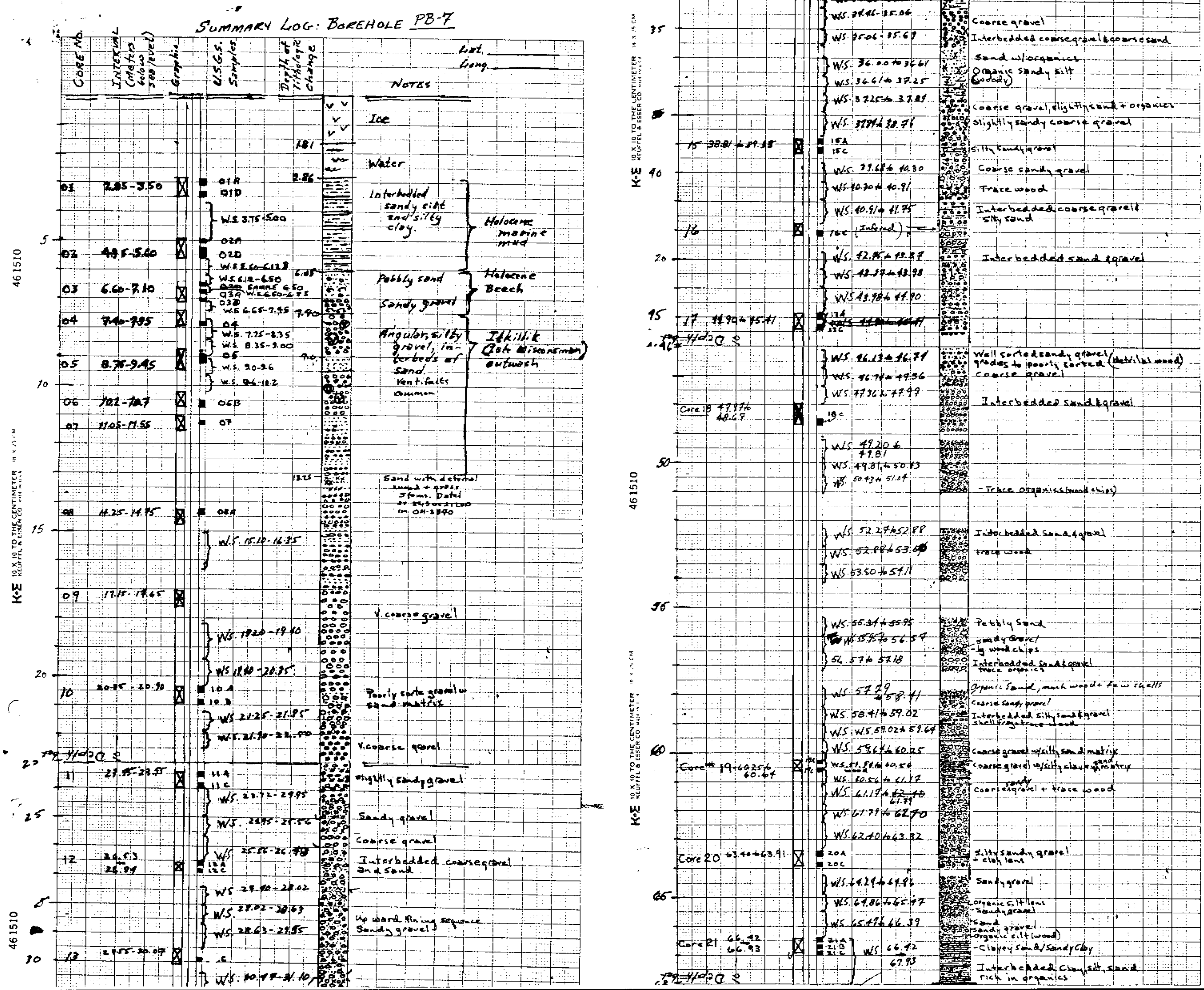
SUMMARY LOG: BOREHOLE PB-7
Lat.
Long.
CORE No.
INTERVAL (Meters below sea level)
Graphic
U.S.G.S. Samples
Depth of lithologic change
NOTES
Ice
Water
Interbedded sandy silt and silty clay.
Holocene marine mud
Pebbly sand
Holocene Beach
Sandy gravel
Angular, silty gravel, interbeds of sand. Ventifacts common
Itkillik (Late Wisconsinan) outwash
V. coarse gravel
Poorly sorted gravel w sand matrix
V. coarse gravel
Slightly sandy gravel
Sandy gravel
Coarse gravel
Interbedded coarse gravel and sand
Up ward fining sequence Sandy gravel
Organic sandy silt
Coarse gravel
Interbedded coarse gravel & coarse sand
Sand w/ organics
Organic sandy silt (woody)
Coarse gravel, slightly sand + organics
Slightly sandy coarse gravel
Silty sandy gravel
Coarse sandy gravel
Trace wood
Interbedded coarse gravel & silty sand
Interbedded sand & gravel
Well sorted sandy gravel grades to poorly sorted coarse gravel (detrital wood)
Interbedded sand & gravel
- Trace organics (wood chips)
Interbedded sand & gravel
Trace wood
Pebbly sand
Sandy gravel - lg wood chips
Interbedded sand & gravel trace organics
Organic sand, much wood + few shells
Coarse sandy gravel
Interbedded silty sand & gravel shell frags, trace wood
Coarse gravel w/ silty sand matrix
Coarse gravel w/ silty clayey sand matrix
Coarse sandy gravel + trace wood
Silty sandy gravel + clay lens
Sandy gravel
Organic silt lens
Sandy gravel
Sand
Sandy gravel
Organic silt (wood)
- Clayey sand / sandy clay
Interbedded clay, silt, sand rich in organics
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SUMMARY LOG: BOREHOLE PB-8

Lat. ______
Long. ______

Core No.	Interval (Metres below sea level)	U.S.G.S. Samples	Depth of lithologic change	Notes
				Ice
				Water
				Sea bed
Core 1	7.00 to 7.63	01A, 01B, 01C, 02A, 02B		Interbedded sandy clay and silty sand + trace organics
Core 2	7.63 to 8.49	02C, 03A, 03C		Shell fragments + organics
Core 3	8.49 to 9.13	03E, 04A		Clayey sand / silty sand
Core 4	9.13 to 9.84			Clayey sand / silty sand
Core 5	9.84 to 10.42			
Core 6	10.42 to 11.03			
Core 7	11.03 - 11.64	07A, 07C		shelly
Core 8	11.64 to 12.23			sandy silt; silty sand; clay lens
Core 9	12.23 to 12.89			sandy clay / silty sand
Core 10	12.89 - 13.50	10A, 10C, 11A	13.50	Sandy, silty clay
Core 11	13.45 to 14.08	11C, 12A, 12C		stiff clay + trace sand
Core 12	14.01 to 14.85			soft clay w/ trace shells
Core 13	15.03 to 15.64	13A, 13C		Soft clay, slightly peaty + slightly sandy
Core 14	15.64 to 16.27	14A, 15A		stiff clay + blk organic stringers; trace sand
Core 15	16.27 to 16.91	15C		plastic clay w/ interbedded organic clay + trace sand
Core 16	16.91 to 17.49	16A, 17A, 17C		stiff clay w/ interbed of oversaturated soft clay; stiff mottled clay w/ sand stringers @ bottom
Core 17	17.49 to 18.10	18A, 18C		stiff clay w/ sand interbeds @ 19.4 m. + pebbles + trace shells
Core 18	18.10 to 18.74	18E, 19A		
Core 19	18.74 to 19.37	19C, 19E		slightly sandy pebbly clay + shell frag; [Inferred]
Core 20	20.21 to 20.94	20A, 20A-1, 20C		Clayey sandy gravel to clayey coarse sand
		WS 20.21 to 21.13	21.2	Interbedded gravel, sand & clay
		WS 21.13 to 22.35		
		WS 22.35 to 23.26		upward fining gravel bed
		WS 23.26 to 24.48		Interbedded sand & clay; Sandy gravel; Trace organics
		WS 24.48 to 25.40		Interbedded sand & gravel
		WS 25.40 to 26.31		
Core 21	26.31 to 26.84	21A, 21C		slightly clayey sand
		WS 26.84 to 32.41		Coarse sandy gravel w/ sand interbeds
				Bottom @ 32.41 m (110')

Depth scale (m): 5, 10, 15, 20, 25, 30, 35

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QUARTERLY REPORT

Contract: RK6-6074
Research Unit: 205
Reporting Period: April through June, 1977
Number of Pages: 2 plus 3 attachments

GEOLOGIC PROCESSES AND HAZARDS OF THE BEAUFORT SEA SHELF AND COASTAL REGIONS

Peter Barnes

Erk Reimnitz

David Drake

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Menlo Park, California 94025

July 1, 1977

QUARTERLY REPORT - RU 205

I. Task Objectives

The primary goal of this project is to study the nature, distribution, stability and thickness of Holocene and older sediments, and their relationship to sources, dispersal mechanisms and bottom processes. Emphasis is placed on processes that are unique to the arctic environment where ice plays a dominant role. More detailed objectives are given in previous reports and in the report of Field Activities (II).

II. Field and Laboratory Activities

A. Ship and field trip schedule:

A field study was carried out across the eastern and central portions of the Colville River delta front platform during early May.

B. Scientific Party:

L. Toimil - U.S. Geological Survey, D. Mauer - U.S. Geological Survey

C. Methods:

The Oliktok DEW line site was used as a primary base of operations for the on-ice studies using snow machines and a two-man mobil camp to obtain ice thickness measurements, sediment samples, temperature and salinity observations, ice level data and other observations on the delta front. Work on the western delta was not completed due to numerous breakdowns of the snow machines.

D. Data collected and objectives.

Previous high resolution seismic profile surveys off major river distributaries on the inner shelf of the southern Beaufort Sea have revealed an apparent lack of Holocene sediment deposition. Off the Colville River, arctic Alaska's largest river system, almost no expression of a prograding delta system can be seen beyond the 2-m isobath. Recently we have speculated that this condition is likely related to under-ice processes which may play a significant role in the lighologic character, distribution, and removal of modern sediments. The objective of this study is to define such processes.

The nature of the contact between the bottom fast ice and the sea bed was examined at 19 stations established between the 0.25 and 2.0-m isobath. Ice and sediment cores within this zone were collected using a Test-lab ice corer. Subsamples of each sediment core were collected for further analysis. In addition each ice core was examined for inclusions of sediments, general character, and total thickness.

Eleven stations were occupied on the floating fast ice out to the 5-m isobath along with two established on the floating ice within the Colville and Kupigruak Channels. At these stations, water temperature and salinity were measured using a Beckman salinometer. Here also the general character and thickness of the ice were recorded.

On May 8th two ice-level recorders were placed on the ice to record vertical fluctuations of the ice canopy. The recorders consist of modified Stevens water level recorders. The recorders were located along the 3-m isobath west of Thetis Island and on the Colville channel. Both recorders were picked up just after river overflow on June 11-12 by Jim Helmrick.

Navigation during the ice operations was based primarily on a range-range Del Norte trisponder system allowing the location of each station to be determined within 10 m. Thus many of the stations established may be relocated and examined under summer conditions.

E. Scientific Laboratory Group

Peter Barnes	Project Chief	U.S.G.S. Office of Marine Geology
Erk Reimnitz	Principal Investigator	" " " " "
David Drake	" "	" " " " "
Larry Toimil	Co-Investigator	" " " " "
Doug Maurer	Assistant	" " " " "
David McDowell	"	" " " " "
Gene Gattung	"	" " " " "

F. Other Activities

Erk Reimnitz attended the Offshore Technology Conference in Houston where he presented a paper.

Peter Barnes attended the AAPG, SEPM annual meeting in Washington, D.C. where he presented a paper.

Considerable time and effort was expended this quarter geting ready for the upcoming field season and preparing a proposal for the OCSEAP program for the next fiscal year.

III. Results

See Attachments A, B, and C.

IV. Preliminary interpretation of results

See Attachments A, B, and C

Attachment A - A word of caution on the age of deep water ice gouges in the Beaufort Sea.

Attachment B - Diver observations on the inner Beaufort Shelf.

Attachment C - Preliminary results and observations on vibrocores taken on the Beaufort Sea inner shelf.

V. Problems Encountered

None of significance

VI. Estimate of Funds Expended

During the last quarter: OCSEAP - 6000$
USGS - 5000$

Attachment A

A word of caution on the age of deep water ice gouges in the Beaufort Sea.

E. Reimnitz, P. Barnes, L. Toimil & D. Maurer

The overwhelming number of workers presently concerned with ice gouging and ice hazards in the Beaufort Sea consider the seabed, or objects on the seabed at depths greater than about 45 m, to be safe from ice damage or reworking for thousands of years (Pelletier and Shearer, 1972; Kovacs, 1972; Kovacs and Mellor, 1974; Lewis, et al., 1976; Hnatiuk and Brown, 1977). There is some data to substantiate this assumption, but it is based mainly on the fact that no ice keels deeper than 45 to 50 m have been reported. Based on this observation, the gouges seen seaward of the 45-50 m on the Beaufort Sea shelf are thought to be relict, dating back to the time when sea level was lower. We have already pointed out some uncertainties and errors in this assumption (Reimnitz and Barnes, 1974).

Today the possibility of using submarine tankers, with terminals along the Arctic shelf edge, is considered a viable alternative to transport by pipeline (Tailor and Montgomery, 1977). Also, one must consider that the outer shelf of the Arctic will be developed at some time in the future. In order to protect ourselves from surprises, which could be very costly for industry and the marine environment, we may want to leave a question mark regarding the age of deep water gouges. In this note we outline the problems of old versus young gouges on the outer shelf.

In the annual report, one of us (Toimil) gave a brief discussion on ice gouging in the Chukchi Sea. In that sea, ice gouges occur in much more patchy pattern than in the Beaufort Sea, often being found associated with hydraulic bedforms due to strong currents. This is especially true for deep-water (30 to 60 m) regions, suggesting both ice and water were active geologic agents. If there were no active processes besides the ice reworking the sea floor, the 3000-5000 years since sealevel has been near its present position should have been sufficient to establish an equilibrium between process and result. In which case, numbers of gouges being added should equal those eliminated by sediment infilling and reworking by benthic organisms. Therefore, for a particular area and environment, the distribution and number of gouges should be rather uniform. We feel that the patchy gouge pattern together with the presence of ripple marks or sand waves indicates that even at 50 m depth in the Chukchi Sea gouging and reworking by currents is an ongoing process, while statistical calculations on the depth distribution of ice keels suggest these gouges to be hundreds of years old.

During the summer 1976, K. Aagaard (1977) recorded eastward current pulses of up to 55 cm/sec along the edge of the continental shelf at a depth of 100 m. According to Sundborg (1956), the critical erosion velocity for fine grained sand (.125 to .250 mm dia.) is around 38 cm/sec. Under current velocity of 1 knot (50 cm/sec) very fine sand is part of suspension load and medium grained sand (.250 to .500 mm) is just becoming entrained. He further shows that for grain sizes smaller than very fine sand the critical erosion velocity increases due to particle cohesion and increases sharply with consolidation.

Barnes and Reimnitz (1974) found muddy sand in the depth zone where Aagaard recorded 1 knot currents. Shear strength of these materials, as reported in our last quarterly report, is rather similar to that of muddy sand studied by divers on the inner shelf, and we do not consider these materials consolidated. It is very likely, therefore, that the observed currents along the shelf break will erode and transport sediment. If the rate of bottom reworking by benthic organisms, producing burrows, pits, mounds, and trails, at the same time dislodging grains of surface sediments, is anywhere near that reported from our diving observations (Attachment B, this report), then the shelf edge currents must surely transport sediment. Yet gouges are present which have not been eroded or infilled.

Reimnitz and Barnes (1974) using the side scan sonar techniques, have mapped ice gouges seaward to the 100 m isobath, and beyond. The microrelief and configuration of such gouges (Fig. 1) is not strikingly dissimilar from those on the central shelf. For these reasons we would not rule out the possibility that gouging along the shelf edge is a modern process and close with the advice that "more work is required."

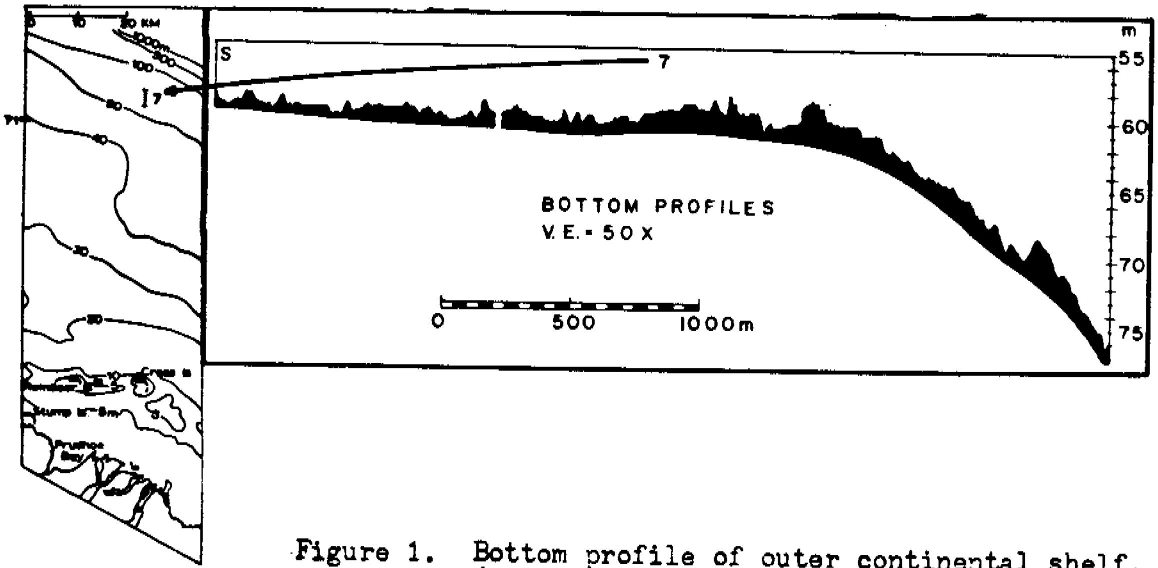

Figure 1. Bottom profile of outer continental shelf.
(After Reimnitz, et.al.,1972)

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Attachment B

DIVE SITE OBSERVATIONS IN THE BEAUFORT SEA, ALASKA, 1976

Erk Reimnitz, and Larry Toimil

Diving operations in the summer of 1976, Beaufort Sea, Alaska, covered various parts of the inner shelf from Flaxman Island to Long Island in widely varying environments (Fig. A). Three dive sites have already been compiled in our 1976 Annual Report, Attachment J, as dive sites 2, 3, and 4. Efforts were concentrated in areas where "anomalous materials", namely boulder patches and stiff, "over consolidated" silty clay, were thought to be present on the sea floor. These areas were located when side scan sonar showed a mottled pattern on the sea floor or seismic reflection records indicated thin Holocene sediments, where pre-holocene material might outcrop. Areas exposed to ice gouge activity and strong currents such as offshore shoals, the seaward side of barrier islands, and tidal inlets were also investigated.

These observations form a preliminary look at bottom types and processes on the inner shelf and should be of interest to investigators in marine geology and marine biology. They are arranged here in the form of diving notes along with side scan sonar and raytheon records taken to characterize the bottom morphology at the dive sites. Photographs, interstitial salinity samples, and insitu vane shear strength measurements were also taken at various sites. Interstitial salinity values were reported in the 1976 Annual Report, Attachment A, and vane shear values are compiled in Table I here along with short bottom descriptions at each dive site. Implications of the observations are discussed under the General Comments Section at the end of each set of dive notes.

TABLE I IN SITU SHEAR STRENGTH VALUES Dive sites are arranged in the table in order of location from west to east.

* - average of several readings
PSI = pounds per square inch
KN/M^2 - Kilo Newtons per square meter

Dive Site	Location	Water Depth (m)	SHEAR STRENGTH Peak PSI (KN/M^2)	Residual PSI (KN/M^2)	cm below sediment surface	Bottom description at point of measurement	Sediment description	Comments
72-1	70°35.6'N 149°27.1'W	12	1.55(10.69)	0.34(2.34)	5	Bioturbated flat bottom	Bioturbated mud	Soft to 10 cm stiffer below
			2.55(17.58)	0.55(3.79)	10			
76-18	70°33.2'N 149°11.0'W	11.5	1.38(9.52)	∙0.69(4.76)	2	Seaward foot of major shoal, between gouges	Muddy Sand	
72-2	70°33.12'N 149°11.5'W	5	0.23(1.59)	0.11(0.76)	2	Flat bottom on major shoal	Clean, medium-grained sand w/clam fragments	Intensely gouged
76-5	70°28.4'N 148°47.2'W	4.5	0.34(2.34)	0.34(2.34)	2	Undisturbed sediment near gouge	Muddy sand	Trough of gouge impenetrable with veins
			0.69(4.76)	0.46(3.17)	15	Flat bottom near gouge flank	Sandy, muddy gravel	
76-4	70°26.9'N 148°37.5'W	6.4	>1.38(>9.52)	1.03(7.10)	2	Flat bottom	Gray, cohesive mud	
			>1.38(>9.52)	>1.38(>9.52)	15		Very stiff, muddy, sandy gravel w/some shells	
76-6	70°26.9'N 148°30.5'W	8.5	0-0.34 (0-2.34)	0-0.34 (0-2.34)	2	Floor of gouge	Very soft surficial sediment underlain by fairly stiff layer	
			>1.38(>9.52)	0.69(4.76)	2	Flat bottom		
			1.03(7.10)	0.57(3.93)	2	Flat bottom		
76-7	70°28.1'N 148°24.0'W	8.5	1.03(7.10)	0.46(3.17)	2	Floor of gouge	Mud	Stiff boundary at 2.5 cm depth covered by fairly soft mud w/numerous clams
			0.69(4.76)	0.34(2.34)	2	Gouge trough		
			0.69(4.76)	0.46(3.17)	2	Gouge flank		
			0-0.34* (0-2.34)	0-0.34* (0-2.34)	2	Gouge flank		
			0.69(4.76)	0.23(1.59)	2	Flat bottom		
			>1.38(>9.52)	>1.38(>9.52)	5	Flat bottom		
76-3	70°24.2'N 148°31.5'W	3.0	1.03(7.10)	0.86(5.93)	2	Flat bottom	Fine, muddy sand	
			0.69(4.76)	0.46(3.17)	15			
75-1	70°19.8'N 148°23.5'W	2.5	0.54(3.72)	0.44(3.03)	8	Flat bottom	Fine, muddy sand	
76-2	70°24.0'N 148°17.3'W	3.1	1.15(7.93)	1.03(7.10)	2	Flat bottom	Slightly muddy medium-fine grained sand	
			>1.38(>9.52)	>1.38(>9.52)	15			
76-19	70°24.9'N 148°01.0'W	7.0	>1.38(>9.52)	>1.38(>9.52)	2	Rippled flat bottom	Muddy sand	Ripples of 15 cm wavelength
76-8	70°19.5'N 147°51.5'W	2.5	>1.38(>9.52	>1.38(>9.52)	2	Flat bottom with ripples	Muddy sand	Ripples of 15-20 cm wavelength, 1-2 cm high
			>1.38(>9.52)	>1.38(>9.52)	3	Flat bottom with ripples	Very stiff mud	
76-9	70°17.2'N 147°42.8'W	3	1.09(7.52)	0.69(4.76)	2	Ripple field-flat bottom	Muddy sand	Ripples of 20 cm wavelength. 2-3 cm height. Old, weathered gouges creating broad bottom undulations
			>1.38(>9.52)	>1.38(>9.52)	15			
			0.69(4.76)	0.46(3.17)	2	Exposed underlying gravel on flat bottom	Angular, pea-size gravel	
76-10	70°12.8'N 147°41.0'W	1.6	1.15(7.93)	0.92(6.34)	6.5	Flat bottom	Highly muddy, medium grained sand	
76-17	70°23.8'N 147°28.7'W	1.5	0.69(4.76)	0.46(3.17)	2	Flat bottom	Sand	
			<0.34(<2.34)	<0.34(<2.34)	2	Gouged flank and floor	Sand	
			1.38(9.52)	-	2	Flat bottom	Muddy sand	
			1.03(7.10)	0.71(4.90)	2	Flat bottom	Muddy sand	
			1.03(7.10)	0.71(4.90)	10		Pea-size gravel	
76-15	70°18.2'N 147°18.7'W	6	0.34(2.34)	0	2	High ground covered by worm tubes	Soft mud	Hummocky relief related to distribution of worm tube patches
			>1.38(>9.52)	>1.38(>9.52)	2	Depression between worm tube patches	Muddy sand	
76-14	70°14.7'N 147°10.5'W	5.5	>1.38(>9.52)	1.09(7.52)	2	Flat bottom	Sandy mud	Dive site is marked by exposure of firm gravel in depressions
76-11	70°10.3'N 147°01.0'W	4.5	>1.38(>9.52)	>1.38(>9.52)	2	Flat bottom with decayed ripple train	Sandy mud	Burrowing activity
76-12	70°10.8'N 146°03.4'W	2.5	>1.38(>9.52)	1.15(7.93)	2	Slightly undulating bottom	Sandy mud	Small scale relief from bioturbation

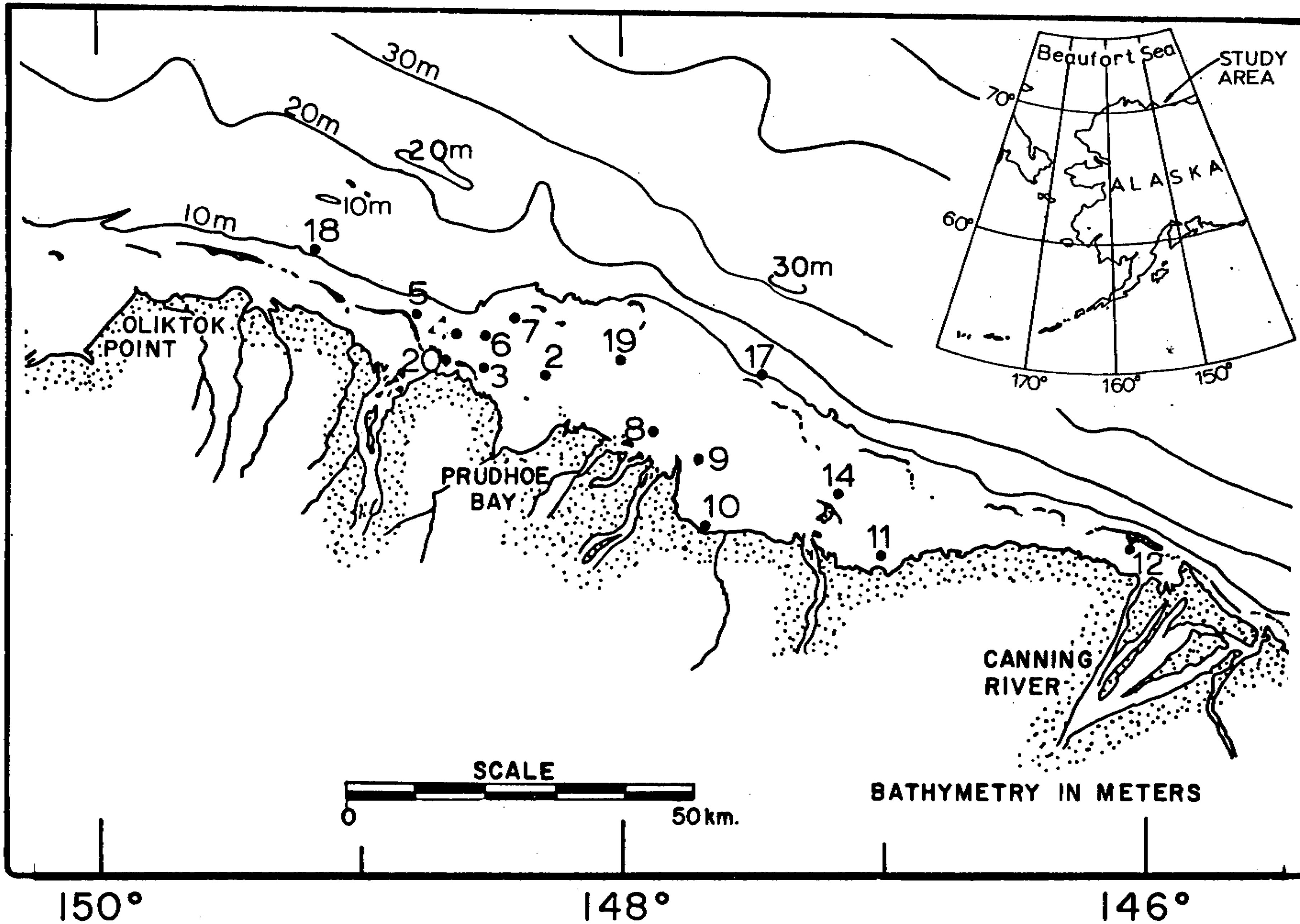


Figure A. Location map for 1976 dive sites 2 through 20. Dive sites 13, 15, and 16 were discussed in Attachment J, 1976 Annual Report as dive sites 4, 3, and 2; respectively.

Dive Site No. 76-2
Date: August 30, 1976
Visibility: 1.5 m
Depth: 3 m

Location: 70°24.0'N, 148°17.3'W
Divers: Reimnitz and Toimil
Length of bottom traverse: 200 m S-N
Currents: 10 to 15 cm/sec westerly
Supplementary data obtained: Sonographs, vane shear strength, pore water salinity.

Introduction

The dive site is located on the seaward side of the broad, subtle shoal separating Prudhoe Bay from the open ocean (Fig. 1). Seismic reflection records in this area suggest the possibility of a very shallow reflector, that may crop out in places. The side-scan sonar shows mottled bottom. Because large numbers of boulders (Flaxman Boulders) occur on the beach at Heald Point and on the tundra surface not far from this area, and because boulders, mostly submerged, occur around the nearby Niakuk Islands, this area of the sea floor warranted further study. A vibracore taken about 700 m west of the dive site showed about .5 m of medium-grained sand with abundant ripple structures overlying sandy mud. Coming into the area in preparation for the dive, a brief sonar survey was made of the bottom to be investigated. A portion of the record is shown in Figure 2. It suggests a flat bottom with randomly distributed patches 1 to 3 m in diameter, that produce relatively strong echoes. But the reflecting patches are not high enough above the bottom to produce sound shadows on the lee side. We feel certain that the originators of the echoes are on the bottom and not in the water column, because of the clean nature of the record in the water column. The wind was easterly at 8 to 10 knots, waves very small, and current weak toward the west.

Bottom Observations

Morphology.--Working down the anchor chain we found that our 35-lb high tensile Danforth Anchor was not digging in, but lying on the side. There are a number of areas along this stretch of the coast where the bottom is equally firm and poor holding ground. The sandy bottom was smooth, marked by a regular ripple train of 5 to 8 cm wavelength, with crests oriented NW to SE in keeping with surface waves on this day. But the ripples were not active at this time. In patches of 20 to 40 cm diameter, the otherwise regular ripple train was disrupted by bottom dwelling organisms which we did not see. We navigated by the ripple train, covering about 200 m along a northerly traverse. The number and spacing of patches of disrupted ripples was comparable to that seen on the side-scan sonar record, but their size was smaller.

Bottom Sediments.--The upper 2 cm along the diving traverse consisted of slightly muddy, medium to fine grained sand. No pebbles were found, but a few shell fragments (largely Astarte Borealis) were scattered about. The gloved fingers were unable to penetrate deeper than 2 cm, and the shear vane was pushed down 15 cm with difficulty, and at that depth went off scale during rotation (over a.52 N/M^2). The tip of the anchor fluke brought aboard a light grey, soft, but very cohesive mud, which must occur below the sand veneer.

Bottom Organisms.--Only a few of the soft bodied, spherical coelenterates were found, along with the ubiquitous large isopods, and a few scattered shell fragments, belonging largely to Astarte. No kelp, even unattached, was seen.

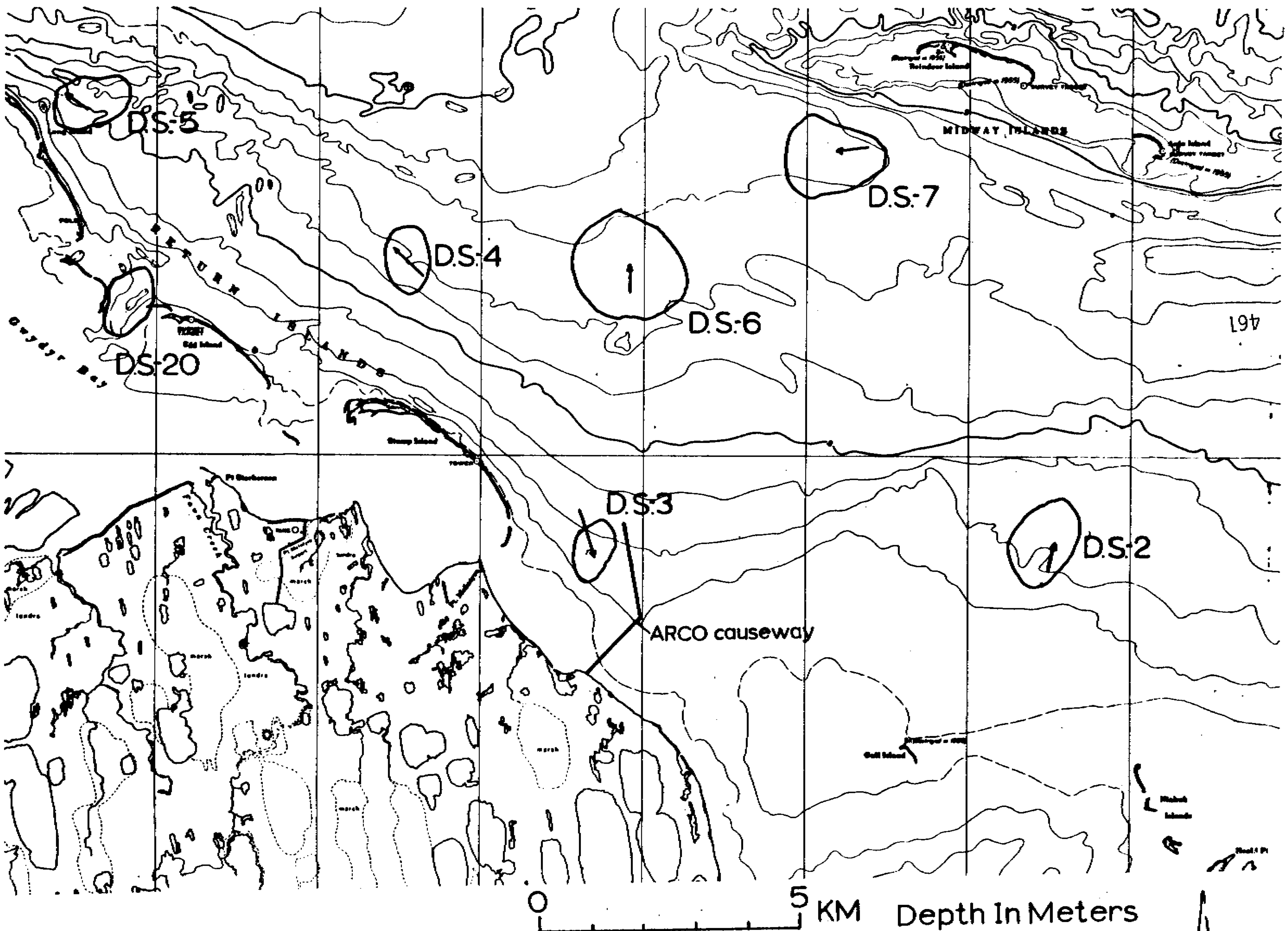


Figure 1. Location map showing dive sites 2 through 7 and 20; arrow shows direction of trackline.

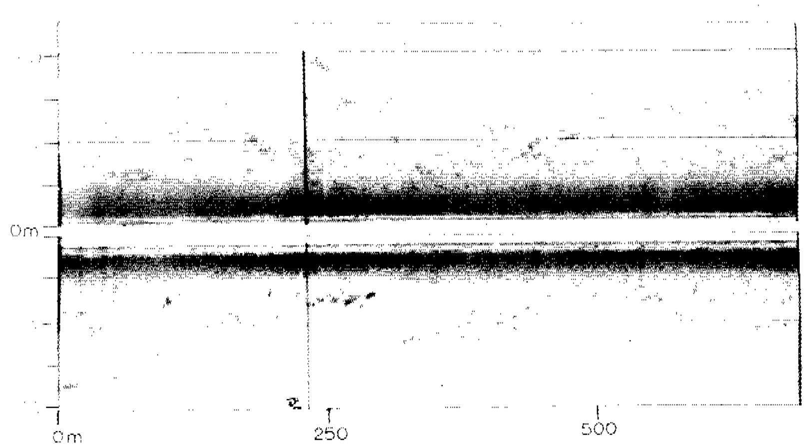


Figure 2. Side scan sonar record from dive site 76-2, showing strongly reflective patches having low relief (absence of sound shadow). Patchiness possibly due to disruption of a ripple field in bioturbated areas.

General Comments.--Since the patches of bioturbated, disrupted bottom seen in our diving traverse apparently were smaller than those seen on the sonographs, we found no good explanation for the mottled sonographs. Could the patchy record be an instrumentation problem? We believe it is not, since we use this instrument almost every day under many different conditions (even on this particular day at dive sites No. 3 and No. 4) and have not obtained similar, unexplained records of "Funny Bottom."

Dive Site No. 76-3

Date: August 31, 1976
Depth: 3 m
Visibility: less than 30 cm

Location: 70°24.2'N, 148°31.5'W
Divers: Reimnitz and Toimil
Length of Bottom Traverse: 450 m
Currents: None detected
Supplementary data obtained: pore water salinity, sonograph and fathogram, and vane shear strength

Introduction

During the winter 1975-76 Atlantic Richfield Company extended its existing gravel fill causeway by some 1.5 km in a northwesterly direction (Fig. 1) to facilitate the offloading of barges stranded outside of Prudhoe Bay by an early winter freeze-up. During the summer 1976 we ran a series of bathymetric and side-scan sonar surveys in the vicinity of the new causeway in an attempt to determine changes in bathymetry and coastal configurations since 1950. This dive site is located several hundred meters landward of the western tip of the new causeway (Fig. 1). Sonographs obtained over the site reveal a somewhat patchy bottom and what appear to be drag marks across the sea bed produced by the grounding of tugs and barges (Fig. 2). Visibility during the dive was poor, partly because tugs working in the area had stirred up mud which was caught in this area. After an initial trip to the bottom to collect bottom sediment and shear vane measurements, we were towed northward along the bottom by a skiff rowed along a line some one hundred meters to the west of the side-scan trackline.

Bottom Observations

Morphology.--The bottom was almost universally flat except for very small-scale relief of several cm due to burrowing activity of benthic organisms and the trails of isopods. We noted trails of ripples that might have trended northwest-southeast, but these were only visible if we observed in just the right direction. No ice gouges or drag mark depressions seen in the sonographs were encountered during the traverse.

Bottom Sediments.--Surficial sediments consisted of a very muddy fine sand, without a distinct transient surface layer of suspended materials. The shear vane penetrated the first 3 cm or so of sediment fairly easily, then hit a gritty, harder layer, broke through this second layer and reached a depth of 15 cm. At this depth a peak shear value of 0.69 PSI (4;76 KN/m^2) and a residual value of 0.46 PSI (3.17 KN/m^2) were recorded. At a depth of 2 cm within the sediment a peak value of 1.03 PSI (7.10 KN/m^2) and a residual value of 0.86 PSI (KN/m^2) appeared to be rather uniform throughout the traverse. A subangular quartz pebble about 4 cm in diameter was found along with several long clumps of organic matter which may have been deposited during spring flooding. These clumps did not appear numerous enough to account for the patchy pattern seen in sonographs of the area.

Bottom Organisms.--A number of pits, mounds and burrows indicating the presence of various types of benthic organism living within the sediments were noted during the traverse, but aside from isopods no organisms were observed.

General Comments

We swam a distance of some 450 m, thus obtaining a rather representative picture of the sea bed in this area. We found no obvious signs of increased depostion or erosion which may have taken place since the extension of the causeway.

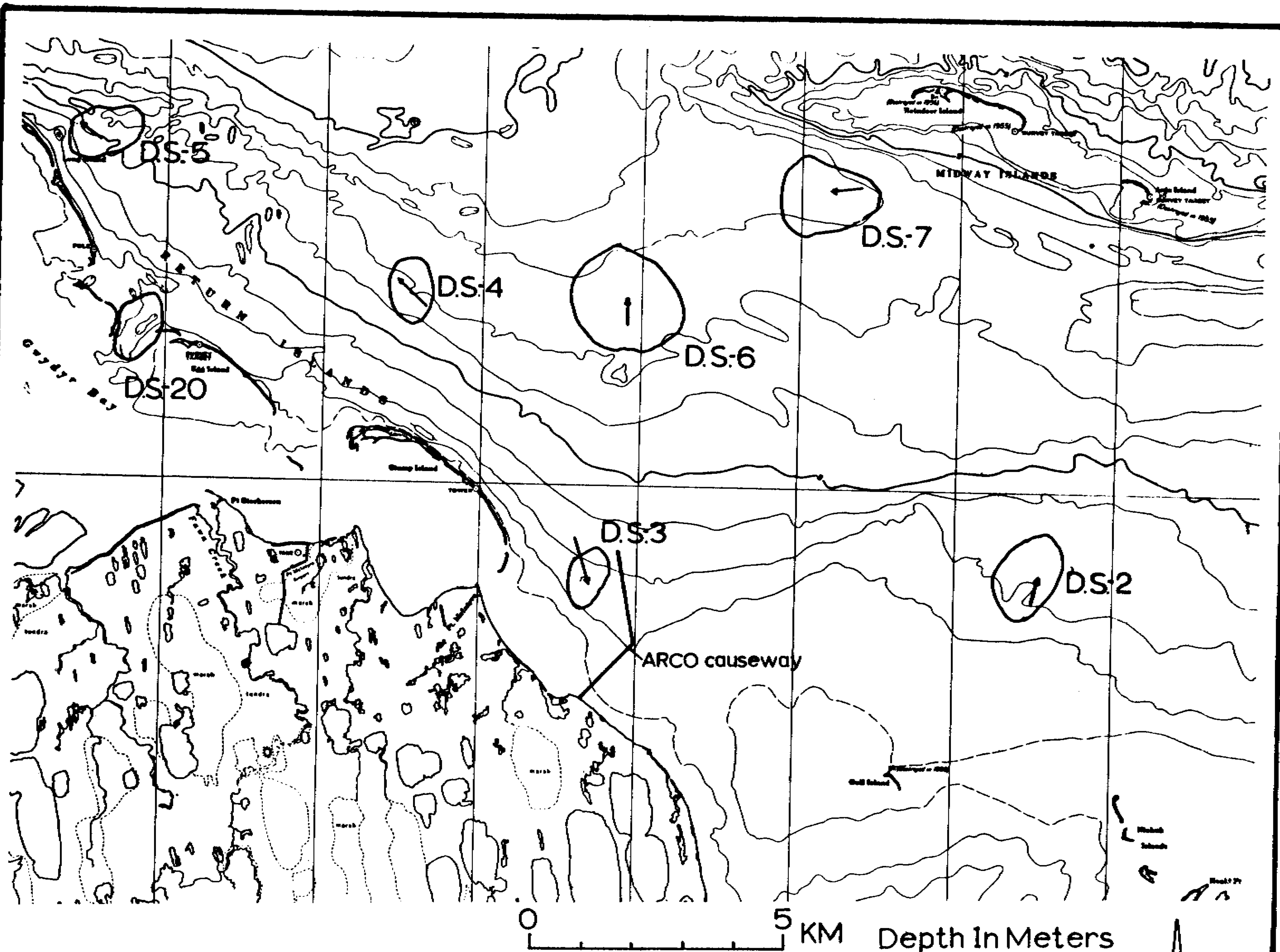


Figure 1. Location map showing dive sites 2 through 7 and 20; arrow shows direction of trackline.

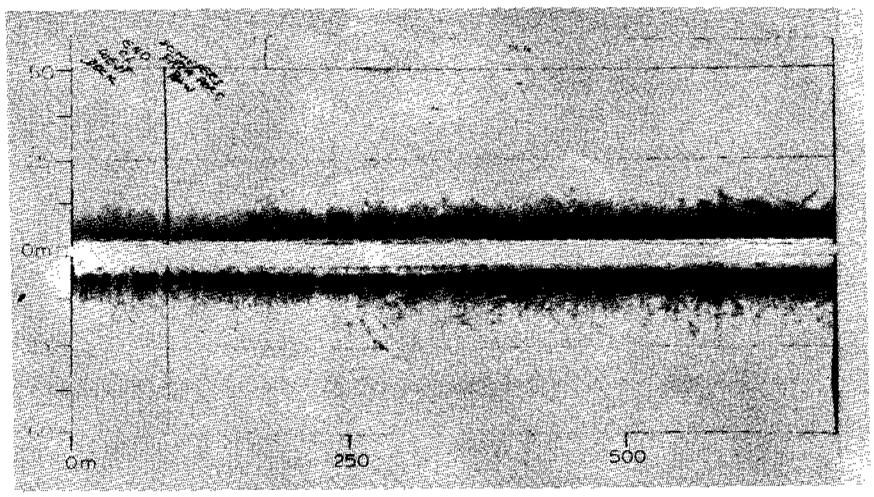


Figure 2. Side scan sonar record at dive site 76-3; patchy bottom and drag marks probably produced by tug activity in the area.

Dive Site No. 76-4
Date: August 30, 1976
Depth: 6.5 m
Visibility 20-30 cm in 1 m thick bottom layer, 1.5 to 2 m above.

Location: 70°26.9'N, 148°37.5'W
Divers: Erk Reimnitz and Larry Toimil
Length of bottom traverse: 150-200 m northward
Currents: about 1 knot or more to west
Supplementary data: Sonograph, on heading 300° mag., vane shear measurements, and pore water salinity.

Introduction

Coming into the area on a heading of about 300° mag. (Fig. 1) the side-scan sonar, was operated. Although known as an area of thin marine sediment cover, nothing of interest was seen to dive on. We therefore dropped a marker buoy where the side-scan sonar showed a multiple gouge (Fig. 2) expecting that older deposits might be exposed in the trough. When we anchored the boat, we realized the current was flowing at 1 knot or faster to the west. It carried numerous relatively large ice fragments past the boat. In the upper water column the visibility was about 1.5 m, but about 1 m from the bottom we penetrated a soupy layer with a visibility of 20 to 30 cm. There was no noticeable current. We relied solely on feel for observing larger features. Only tracks and trails were visible from a very short distance.

Bottom Observations

Morphology.--The gouge seen in the sonar records as multiple was observed as one gouge with pronounced flanking ridges and slight undulations adjacent to the gouge. Along the rest of the traverse the bottom was flat and featureless, lacking ripple marks as far as we could tell, but marked by numerous small tracks and trails from benthic organisms.

Bottom sediments.--Exposed in the ridge along the ice gouge was a firm, muddy pea-gravel with some shell fragments. The material on the gouge floor felt and looked like a muddy sand with a few shell fragments. The gouge floor was very firm, so that here no vane shear measurement could be made (indicator off scale). Running our hands through the bottom along the traverse northward from the gouge, we occasionally felt a firm gravelly layer at shallow depth below the sea floor. A large chunk of surface material, undisturbed, was brought aboard the boat by the anchor. The surface layer, 5 to 8 cm thick, was a cohesive, medium grey, firm, silty clay. This layer was underlain by muddy, sandy gravel, with a few shell fragments. The muddy gravel was very stiff, appearing almost dried out, and separated easily from the overlying layer along a parting crack.

Bottom Organisms.--Although numerous tracks and trails were observed with the face plate fight against the bottom, we only saw a few isopods, and a few small shrimp jumping out of the surface sediment as we agitated the bottom. One of the shell fragments in the subsurface gravelly unit belongs to the genus Astarte.

General Comments

Since the trough was not marked by accumulation of new, soft sediment, the gouge appeared very recent. Sedimentation rate in this area appears to be very low, similar to conditions inferred from observations at dive site 76-5, a few miles to the west, and to those made at 1972 dives, closer to Egg Island and the Kuparok Delta. The gravelly unit below the surficial mud is older, representing a different depositional environment than the present. The shell content suggests it may not represent the top of the Gubic Formation, since in this area shells

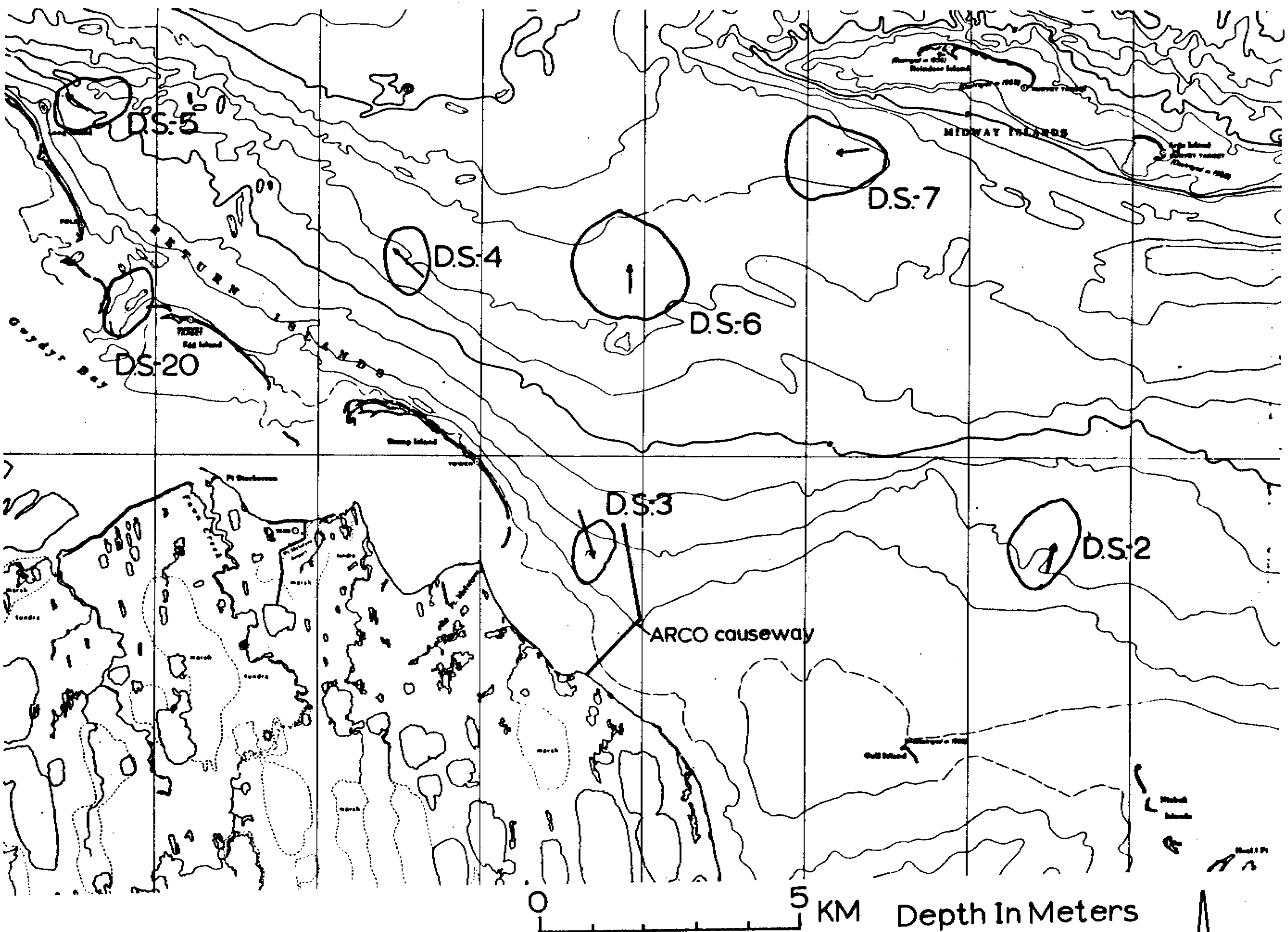


Figure 1. Location map showing dive sites 2 through 7 and 20; arrow shows direction of trackline.

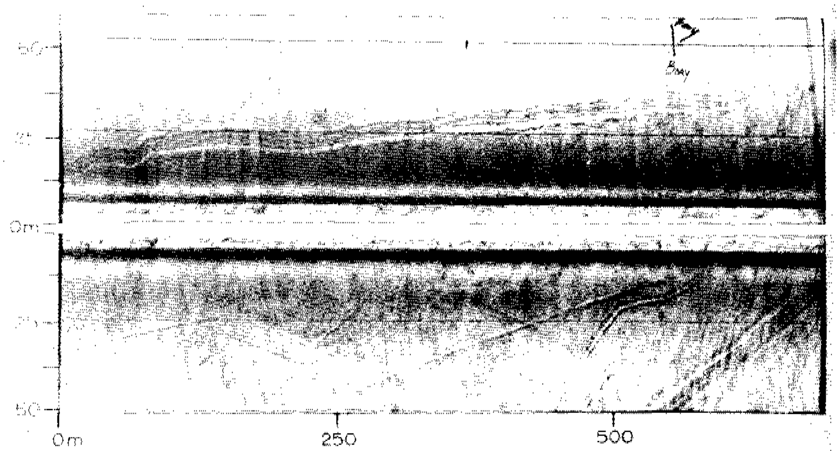


Figure 2. Side scan sonar record at dive site 76-4. Multiple gouge examined in dive runs parallel to record.

have not been found in coastal bluffs. The grain-size of the gravel fraction is similar to that found in modern beaches and barrier islands. A simple explanation for the stratigraphy, therefore, would be 8 cm of Holocene marine mud overlying the basal transgressive unit, representing the last sea level rise. The surface of the gravelly unit, occasionally felt along the traverse, is marked by some relief, or the overlying unit varies in thickness. This is easily explained in terms of occasional ice gouging. It could also be that the surficial unit is a transient deposit, occasionally reworked by strong currents, and the accumulated coarse clasts are incorporated into the underlying gravelly unit during such events.
A more satisfying interpretation awaits further data. Comparing diving observations under very poor visibility conditions with the sonar record showing numerous ice gouges, we learn that most of those groups are too subtle to be felt by the diver's hand.

Dive Site No. 76-5
Date: August 31, 1976
Visibility: 2 m
Currents: 10-15 cm/sec
Depth: 4.5 m

Location: 70°28.4'N, 148°47.2'W
Divers: Erk Reimnitz and Larry Toimil
Length of traverse: 275 m
Supplementary Data: Sonographs and fathograms, vane shear measurements, and pore water salinity

Introduction

This diving traverse parallels the eastern shore of Long Island some 900 m seaward of the beach. The traverse was within an area of relatively thin (0-5 m in thickness) Reimnitz et al. (1972) Holocene deposits. In an attempt to locate outcrops of pre-Holocene materials, side-scan sonar and bathymetric profiles were collected along the trackline shown in Figure 1. No such outcrops could be detected there. However, near the end of our survey line a small ridge was crossed followed by a well-defined ice gouge trending obliquely across the ship's track (Fig. 2). In the hope of finding older exposed deposits in the gouge trough, we dove on a buoy dropped near the gouge.

Bottom Observations

Bottom morphology.--The traverse began on a flat bottom devoid of measurable relief except for the small-scale microfeatures attributed to bottom-dwelling organisms; particularly the trails made by isopods. Soon faint ripples with crests trending predominantly southwest were detected. Signals from a skiff guided us in a northwesterly direction along our previous survey track. After swimming 80 to 100 m, we encountered a pothole-like depression having a diameter of about one meter and a depth of between 30-50 cm. A small levee rimmed the feature and an accumulation of fibrous organic debris was found concentrated along its bottom. It is doubtful that the depression was a product of strudle scour (Reimnitz et al. 1974) since its location is a considerable distance outside the region of normal river overflow. Rather, it appeared more likely the result of a small fragment of grounded ice working up and down in a seaway.

Continuing the traverse, we ran into the sharply defined linear ice gouge visible in both the sonograph and fathogram records shown in figure 2. The gouge trended NNW-SSE. It's maximum depth of incision was between 80 and 100 cm. A sharp ridge marked the northwest side of the gouge against which some organic debris including chunks of driftwood had accumulated. Reworking of the gouge surface by benthic organisms was very minor when compared to the surrounding sea bed. Surficial materials were predominantly of gravels along the interior of the gouge flank and were resting at the angle of repose. The ridge flank sloped at a comparatively low (10-15°) angle into the surrounding sea bed. In a number of places, aprons of disturbed sediments extended as much as 2 m away from the flanking ridge crest. The gouge trough was flat over distances of about one meter. The southwestern side of the gouge was poorly defined by an irregular ridge having relief of between 10 and 20 cm. The lack of measurable fill within the gouge trough together with the minor degree of reworking of the gouge flanks by benthic organisms when compared to that at the adjacent sea bed, lead us to believe that the gouge was formed rather recently.

Sediments.--Surficial sediments of the undisturbed sea floor consisted of 5 to 10 cm of very muddy sand underlain by a hard gravel pavement. The gravel, which we dug up and inspected in a number of places along the traverse contained numerous shell fragments which were all rather weathered and broken.

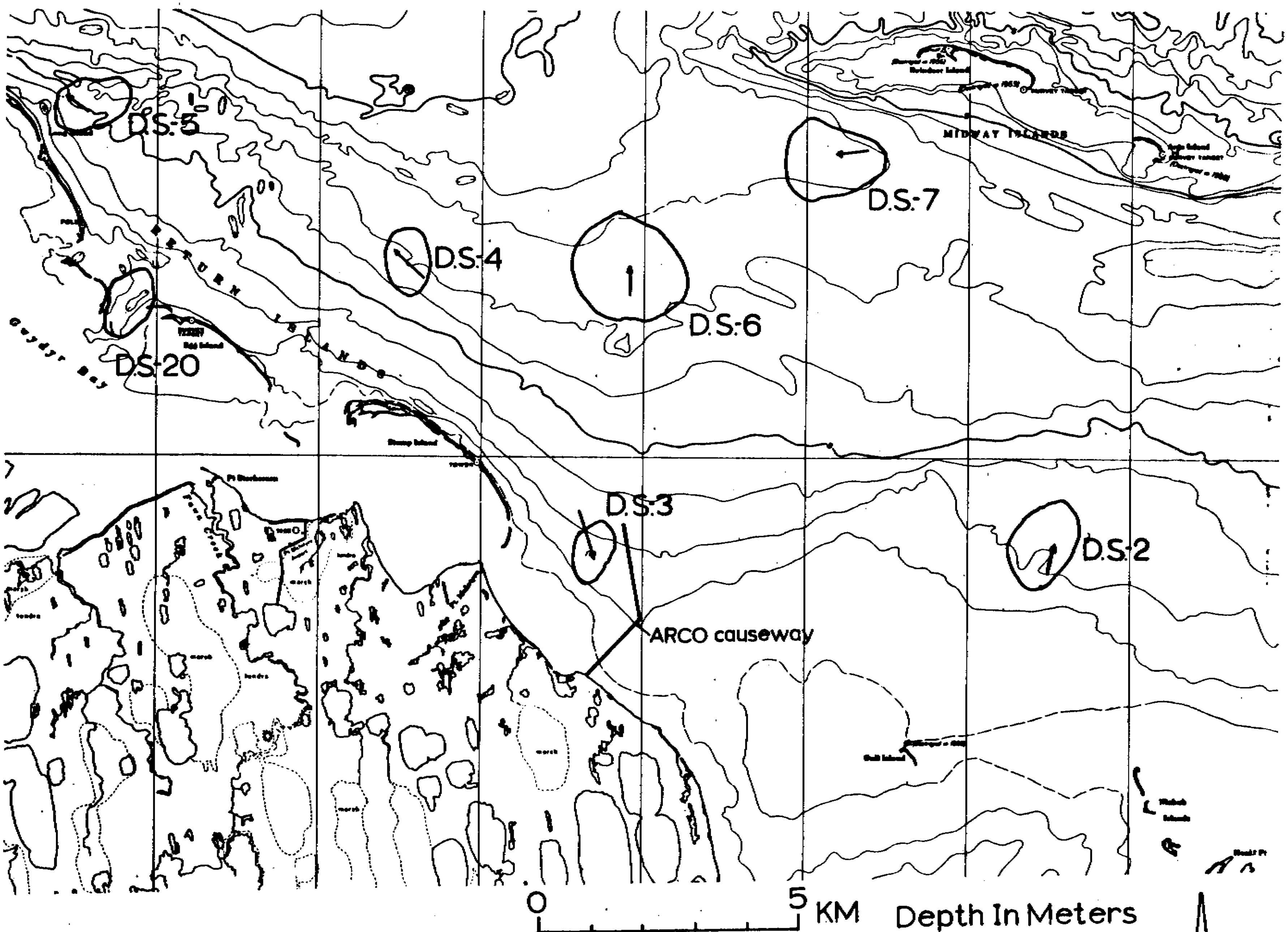


Figure 1. Location map showing dive sites 2 through 7 and 20; arrow shows direction of trackline.

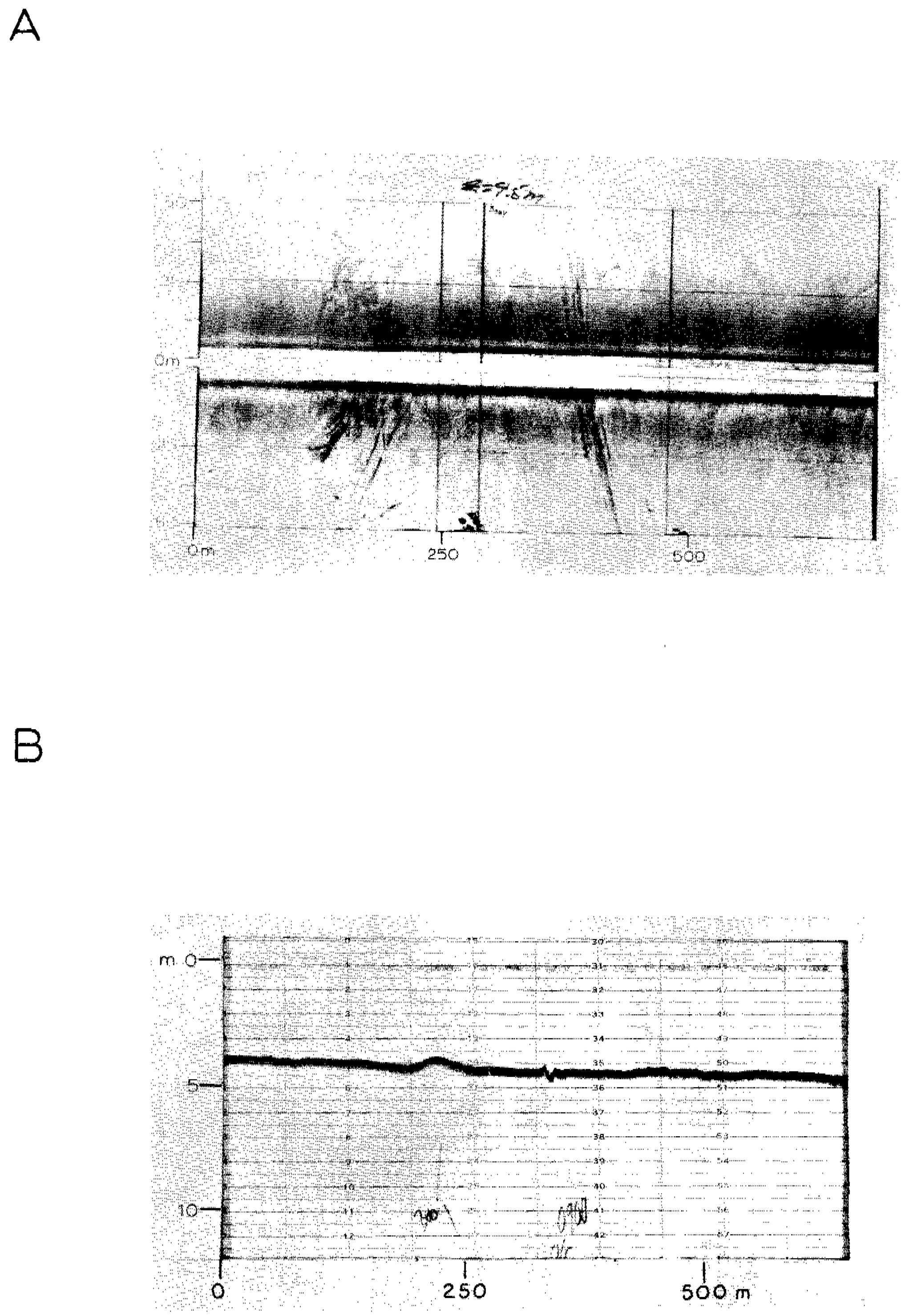


Figure 2. Side scan sonar (A) and raytheon record (B) at dive site 76-5, showing gouge width and associated relief.

Dive Site 76-5 cont.-

The gravel itself appeared similar in composition to that found along the islands and within the Gubic along the adjacent coast. One cobble-size sub-angular rock fragment was encountered. It lay on an undisturbed surface and was 15-20 cm in it's elongate dimension. The gravel covering the gouge flanks was underlain by as much as 20 cm of soft brownish mud. Very little mud was found on the ridge crest or within the intersticies of the exposed gravels. Shear-vane measurements were obtained on the northwest gouge flank and in an undisturbed area of the surrounding sea bed. Peak residual values from the gouge flank were 0.69 PSI (4.67 KN/M^2) and 0.46 PSI (3.17 KN/M^2) respectively. From the undisturbed sea bed no noticeable peak was recorded. The shear-vane rotated smoothly at a value of 0.34 PSI (2.34 KN/M^2). In the gouge trough the gravels formed a pavement so hard that we could not penetrate it with the shear vane.

Bottom Organisms: Along this traverse we made note of no benthic organisms.

General Comments

In the course of our summer field studies along the inner shelf we have often noted small, individual, grounded ice floes. With moderate currents running, these floes are recognizable by the presence of a well-defined leeward wake. We have, on a number of occasions measured surface currents of up to 2 knots in the vicinity of these grounded floes.

We have attempted to assess whether or not such current-driven floes exert sufficient lateral force on the sea bed to produce an ice gouge similar to the one described. To do so we have estimated the drag force generated by a current flowing against a hypothetical square ice floe 60 feet on a side and having a draft of 12 feet. The estimate is based on the analogy that the drag force on the ice is similar to that experienced by a flat plate immersed normal to a current field for which the total drag force, 'D', may be calculated by the equation ($Cp V^2/2$) (A) as shown by Daily and Harleman (1965). In the equation 'C' is a dimensionless drag coefficient which includes components of both frictional shear stress and the normal pressure distributed on the plate's surface to which we assigned the value of 1.2 (after Daily and Harleman, Table 15-2). The 'p' term is the density of the immersing fluid, 'V' the speed of the relative current field acting on the plate's surface (for which we used 0.82 ft/sec (1/2 knot), and 'A' is the area of the projection of the plate on a plane normal to 'V'. For the numberical values assigned, we found the total drag force generated to be the order of 10^4 lb f.

The ice gouge encountered during our diving traverse had an incision width of about 19.5 ft and an average incision depth of about 2.6 ft. The effective cohesion of the undisturbed surficial sediments adjacent to the gouge was 0.34 PSI. Applying these values to the equations for total bed resistance as presented by Kovacs and Mellor (1974, p. 197-151) we estimate that the plowing and sliding resistance of the sediments within the ice gouge described are also the order of 10^4 lb f, (in applying the equations of Kovacs and Mellor we found it convenient to use the English system of measure.) The numerical

Dive Site 76-5 cont.-

values of total bed resistance and the lateral force generated at the sea bed by the hypothetical ice floe are equal when the ice floe has been uplifted some 0.20 ft. above its equilibrium position. Although our calculations are based on extreme simplification of the parameters involved, they do indicate that under the influence of a moderate current field, individual relatively small ice floes can produce significant gouges. If so,long, linear gouges can form during the summer and may account for a significant number of the gouges observed on the inner shelf.

Dive Site No. 76-6
Date: August 31, 1976
Visibility: .5 m (transmissivity 60%)
Currents: none detected
Length of traverse: 100 m SW and 200 m NW (from boat)

Location: 70°26.9'N, 148°30.5'W
Depth: 8.5 m
Divers: Reimnitz and Toimil
Supplementary Data: 1 1/2 hours of side-scan sonar and fathometer with sub-bottom profile, vane shear measurements, and pore water salinity

Introduction

There are a few ice gouges in the general region, and one was picked as a likely site to study older materials cropping out. From the buoy drop site where the boat was anchored (Fig. 1), we first traversed about 100 m of bottom in a southwesterly direction and then about 200 m in a northwesterly direction. As at dive site 76-4, there is a turbid layer near the bottom, with visibility of .5 m, and in our observations we were largely dependent on feeling the surface. Our interest in this area is due to the fact that we have a vibrocore station and drill hole nearby, raising the need for knowledge of pore water salinity within the sediments and shear strength to relate to core-penetration rate.

Bottom Observations

Morphology.--Except for small tracks, trails, mounds and burrows, which were plentiful in the area, the bottom was rather featureless. Near the boat the gouge marked by the buoy was observed to be about 1.5 m wide, 60 to 80 cm deep, and U-shaped (Fig. 2). It lacked flanking ridges, as far as we could determine in the poor visibility. The materials on the gouge flanks were rather firm, and a soft layer had accumulated in the bottom. Several barely noticeable gouges were crossed, marked by slightly undulating bottom and linearity, largely smoothed over from age, and we were surprised to find that the sonar had recorded these gouges.

Sediments.--The bottom deposits consist of muddy sand, relatively soft in the upper 0 - 20 cm, and very frim below. The soft surficial layer varies in thickness along the traverse, ranging from zero to 15 or 20 cm. This unit was easily penetrated by the hand (see vane shear values in Table I). The underlying layer could not be penetrated by the gloved finger. The shear strength in this unit was measureable with the vane used (9.52 KN/M^2). Shell material was not noted, but a few pebbles serving as hold-fast for large fronds of brown kelp, were seen.

Organisms.--Because of the poor visibility it was difficult to learn much about the benthic life in this area. We passed an occasional frond of brown kelp, some of which were attached to a pebble, others in transit. Also we noted several coelenterates and a few hydroids. In several patches we observed 2-cm high, brownish, plant-like objects, protruding from the sediment surface. Abundant trails, tracks, mounds and burrows suggest that there is a rich benthic community thriving.

General comments.--This dive was made in an area that probably typifies one of the most uniform, and quiet, depositional environments of the inner Beaufort Sea shelf. Ice gouging occurs infrequently, deposition is slow, currents and waves rarely produce bedforms, and river overflow and accompanying strudel scour does not occur. Numerous benthic organisms make their living in the uppe 10 to 20 cm of sediments, reworking it frequently, and aid in eliminating

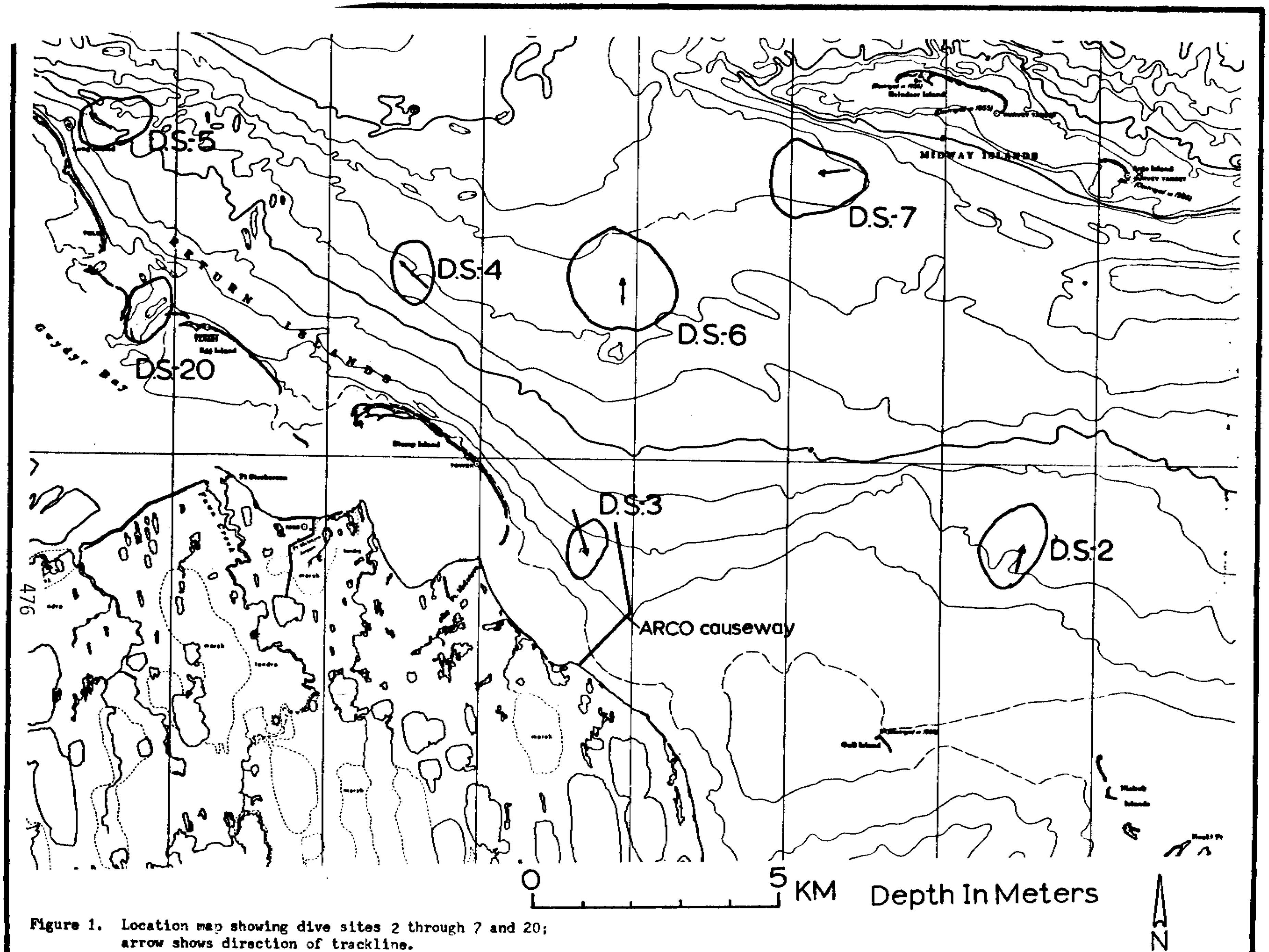
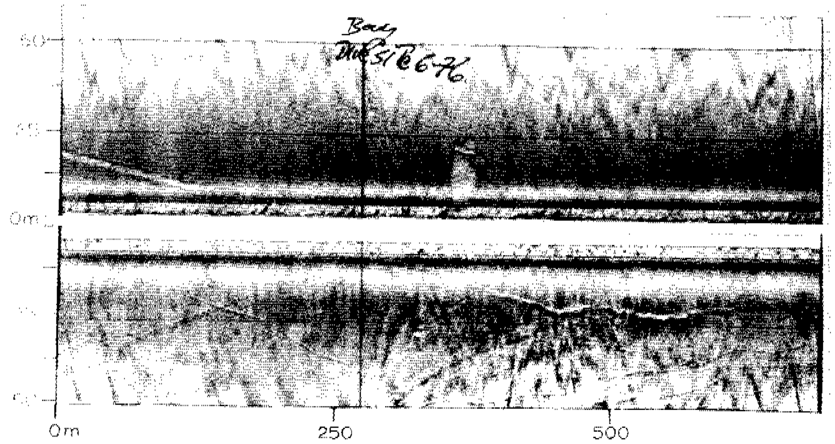


Figure 1. Location map showing dive sites 2 through 7 and 20; arrow shows direction of trackline.

A



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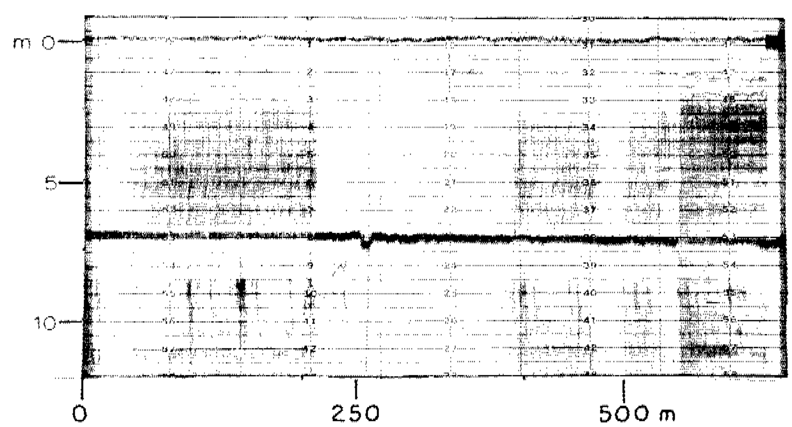


Figure 2. Side scan sonar (A) and sub bottom profiler (B) records from dive site 76-6, showing gouge dimensions. No sub-bottom is evident from the record.

relief caused by ice gouging. Drifting multiyear sea ice is by no means rare in Stefansson Sound. In fact in the average summer there are always a few scattered pieces transiting between Reindeer Island and Prudhoe Bay. Most of these enter the Sound through a wide passage east of Cross Island, and another one west of Narwhal Island. These two passages with 6 and 7 m depths respectively, are shallower than the dive site, and therefore filter out those pieces of ice that have sufficient draft for gouging the dive site. Thus only some ice pieces that have overturned after entering the Sound can accomplish gouging. We found no evidence for ice rafting on this dive. The few pebbles observed probably were dragged by kelp into the area during storms and strong currents, coming from the Boulder Patch (dive #2 Annual Report) in Foggy Bay and off the Sagavanirktok Delta.

Observations made on this dive, and compared to side-scan sonar records, will aid in the interpretation of similar records obtained over wide shelf areas of the Beaufort Sea.

Dive Site No. 76-7
Date: August 31, 1976
Visibility: 1.5 m
Currents: None detected on bottom approximately 25 cm/sec westward at surface
Depth: 8 m

Location: 148°2.40'W, 70°28.1'N
Divers: Erk Reimnitz and Larry Toimil
Length of traverse: 400 m northward
Supplementary Data: Site survey made with side-scan sonar and 7 kHz sub-bottom profiler vane shear measurements, and pore water salinity

Introduction

The dive site is located in an ice protected environment, sheltered by Reindeer and Argo Islands (Fig. 1). The setting is rather similar to that of dive site No. 76-6. A brief survey was made of the dive site with side scan sonar and 7 kHz sub-bottom profiler/fathometer (Fig. 2). A light easterly wind was blowing, causing a slightly choppy sea surface, and an easterly surface current estimated at about 25 cm/sec. The sonar survey showed numerous parallel gouges trending roughly E-W. The visibility was too poor for bottom photography. Bottom currents were not detected.

Bottom Observations

Morphology.--We traversed about 400 m of sea floor from the boat's anchor site, heading generally northward. Navigation was easy since east-west trending gouges were rather parallel and closely spaced. One of the gouges, about 8 m wide and 50 cm deep, had a relatively fresh appearance. We followed it for about 40 m westward. The crest of a flanking ridge occasionally was marked by irregular exposures of fresh appearing grey mud, differing from smooth, brownish ridge crests of the more subdued and older appearing gouges in this area. Several mounds of grey mud, 20 to 30 cm high, with rough micro-relief on their upper surfaces, but rounded overall shapes, were observed along the gouge floor but also along its flanking slope. Between the ice gouges the sea floor was smooth, except for micro-relief produced by a variety of bottom-dwelling organisms. Among these features were 1 cm large, open holes. Current-produced bedforms were absent.

Sediments.--The sediments covering the dive site were sandy mud. They were rather firm, yet softer than those felt at the last dive site. At shallow depth below the floor we could generally feel a somewhat firmer layer. Shells of Astarte were rather numerous within the surficial sediment. Concentrations of the shells were noted especially in the grey mud mounds along the gouge described earlier. Pebbles ranging from two up to eight cm in diameter, some of them sub-angular, but generally rounded similar to those found in local beaches, were seen along the traverse. These were spaced some 5 to 10 m apart. Some of the pebbles were just resting lightly on the sea floor, some were partly buried and still others completely covered by sediment. Vane shear measurements showed that the gouge flanks generally were softer than the gouge floors. The strength of a firm surface felt with the gloved hand along the traverse at shallow depth could not be measured with the available tool, as the pointer went off scale.

Organisms.--Very few organisms were seen along the traverse. Large brown kelp fronds, some of them attached to individual pebbles, were concentrated in small patches along the fresh-appearing gouge. Small hydroids and a few of the small plantlike features observed on the previous dive were protruding by several

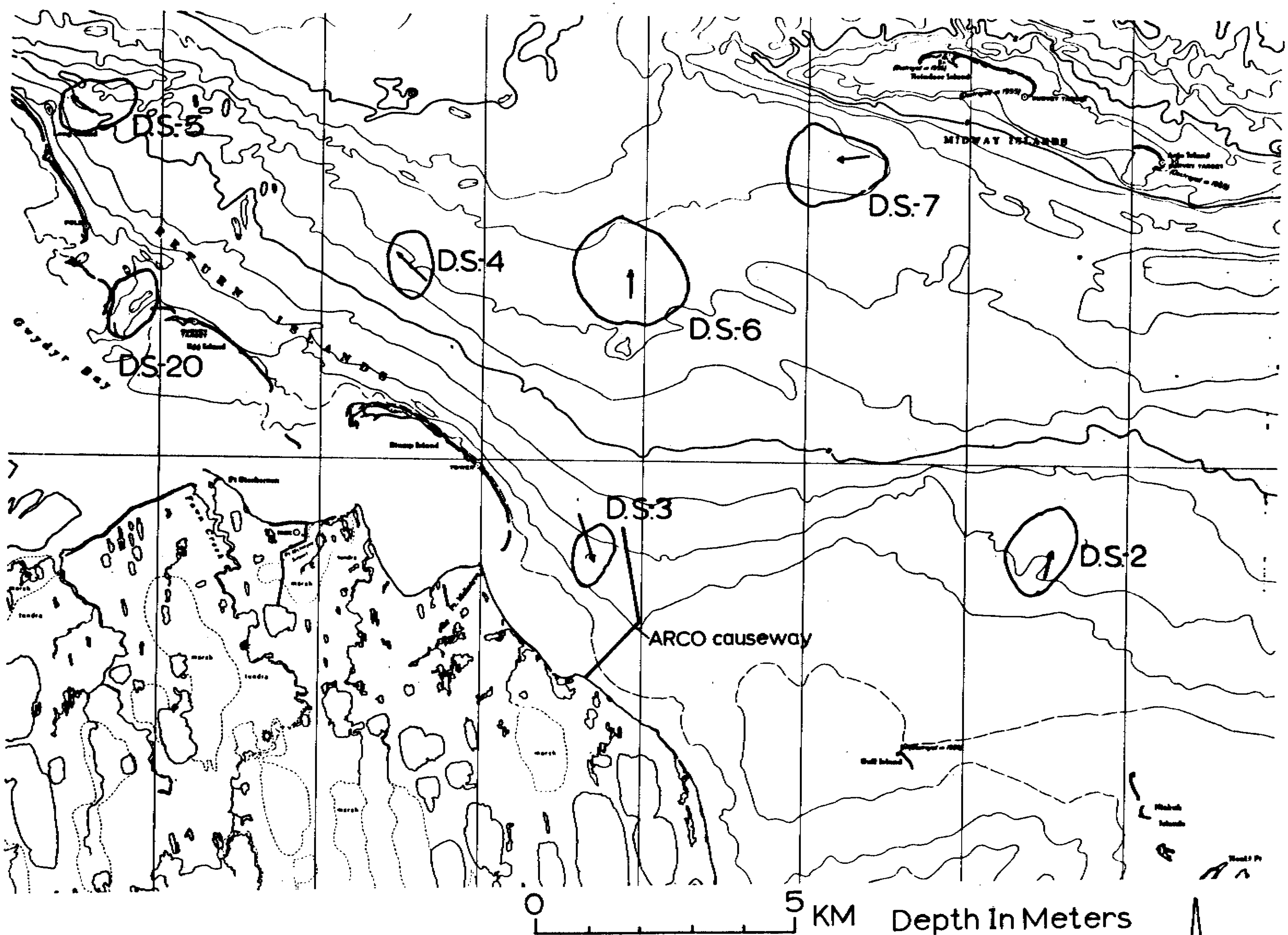


Figure 1. Location map showing dive sites 2 through 7 and 20; arrow shows direction of trackline.

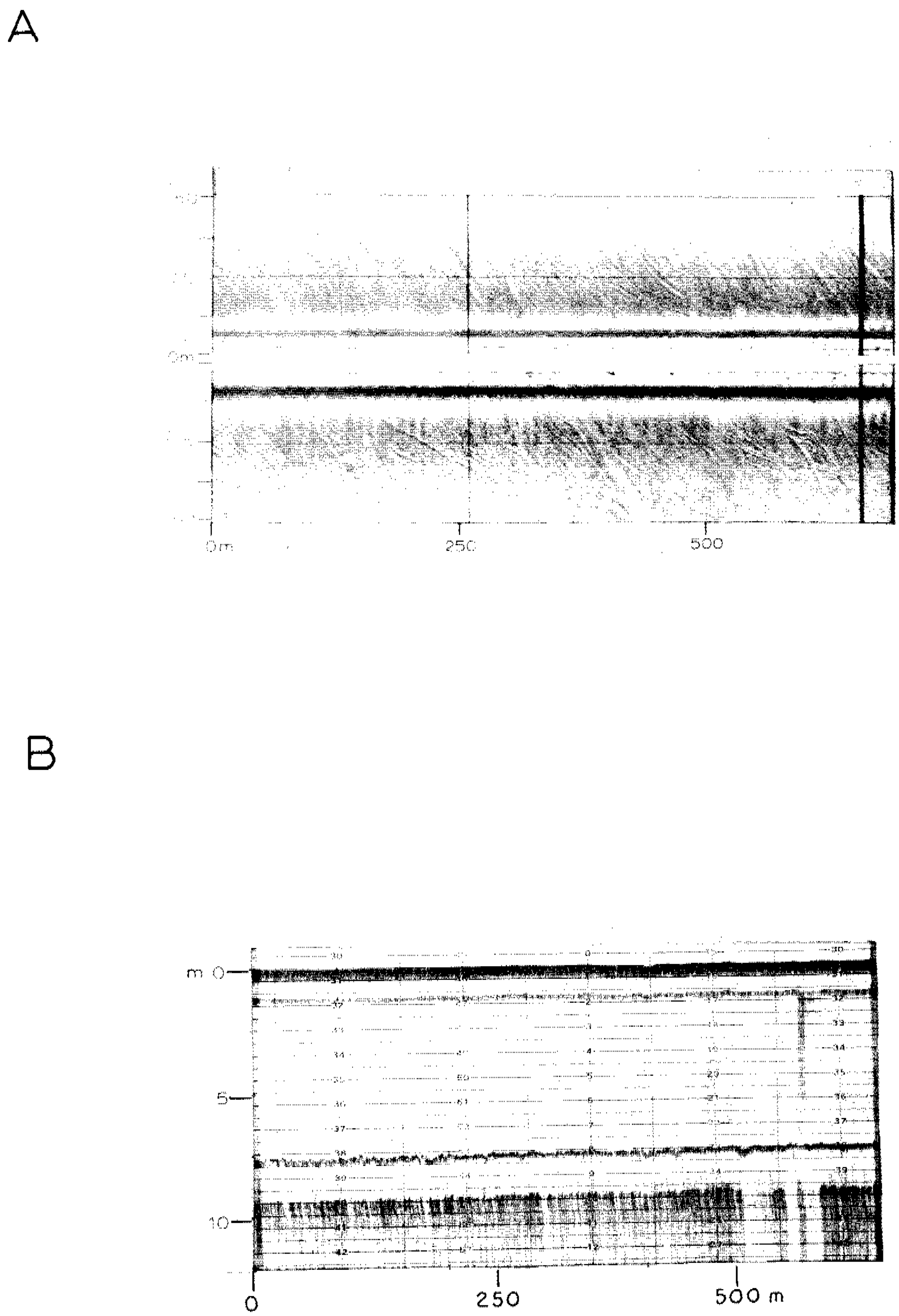


Figure 2. Side scan sonar (A) shows numerous parallel gouges at dive site 76-7. Raytheon record (B) shows their small relief.

Dive Site No. 76-8
Date: September 5th, 1976
Visibility: .8 m
Currents: insignificant
Length of traverse: 150 m

Location: 70°19.5'N, 147°51.5'W
Depth: 2.5 m
Divers: Reimnitz and Toimil
Supplementary Data: Sonograph, fathogram, water sample, vane shear measurement, pore water salinity.

Introduction

The dive site is located directly off the Sagavanirktok Delta, in only 2-m water depth (Fig. 1). At the time of the dive we had a light easterly wind, causing a small chop and weak westerly currents at the surface. Coming into the area we dropped a buoy where the side-scan sonar records showed highly mottled bottom, making this an interesting dive site. We swam for about 150 m across the type of bottom shown in Figure 2.

Bottom Observations

Morphology.-- Along the traverse the bottom was essentially flat and smooth, marked by small ripples. The ripples were oriented roughly N-S, parallel to the surface waves at the time of the dive. Their wave length was about 15 to 20 cm, and their height 2 cm, with steep sides facing westward. The regular ripple pattern was interrupted by 60 to 80 cm large patches, in which the ripple forms have been largely destroyed to completely elimnated by burrowing organisms.

Sediments.--The bottom sediments along the traverse consisted of a several centimeter thick layer of fine sand, underlain by a light grey, very firm mud. In the patches lacking ripple marks this firm, grey mud was apparently brought to the surface and mixed with sand by burrowing organisms. Small fragments of fibrous organic material were littering the bottom, oscillating back and forth with the wave activity. The surficial sand layer was too thin for obtaining vane shear measurements, and the underlying light grey mud was too firm to measure with the tool available.

Organisms.--The large isopods so common on this shallow shelf region were numerous at the dive site. Mounds and craters, apparently from the worm Arenicula, were widely scattered over the bottom. The presence of unidentified burrowing organisms was noted in the patches of destroyed ripple marks. Several pairs of eyes and parts of the head of what may have been a flounder-like fish were seen protruding from the sand.

General Comments

The very firm mud covered by several centimeters of fine mud suggest that sedimentation rates are very low at this site. This is in agreement with numerous other observations in this area, particularly with the occurrence of cobbles, large boulders, and rich bottom life in the "Boulder Patch" nearby (dive #2 Ann. Report). We have arrived at the same conclusion of very low sedimentation rates near other deltas along this coast (Reimnitz, et al., 1972, Barnes and Reimnitz, 1974). The small scale ripple marks, although not actively forming or migrating at the time of the dive, obviously were rather recent features because of the shallow water depth. Therefore the fate of bottom reworking by benthic organisms is very high in the patches where ripples were destroyed. We believe that the mottled nature of the side scan sonar records obtained across the dive site (Fig. 2) is related to the observed microrelief. The ripple train reflects less energy than patches of destroyed ripples and muddy, bioturbated sediments.

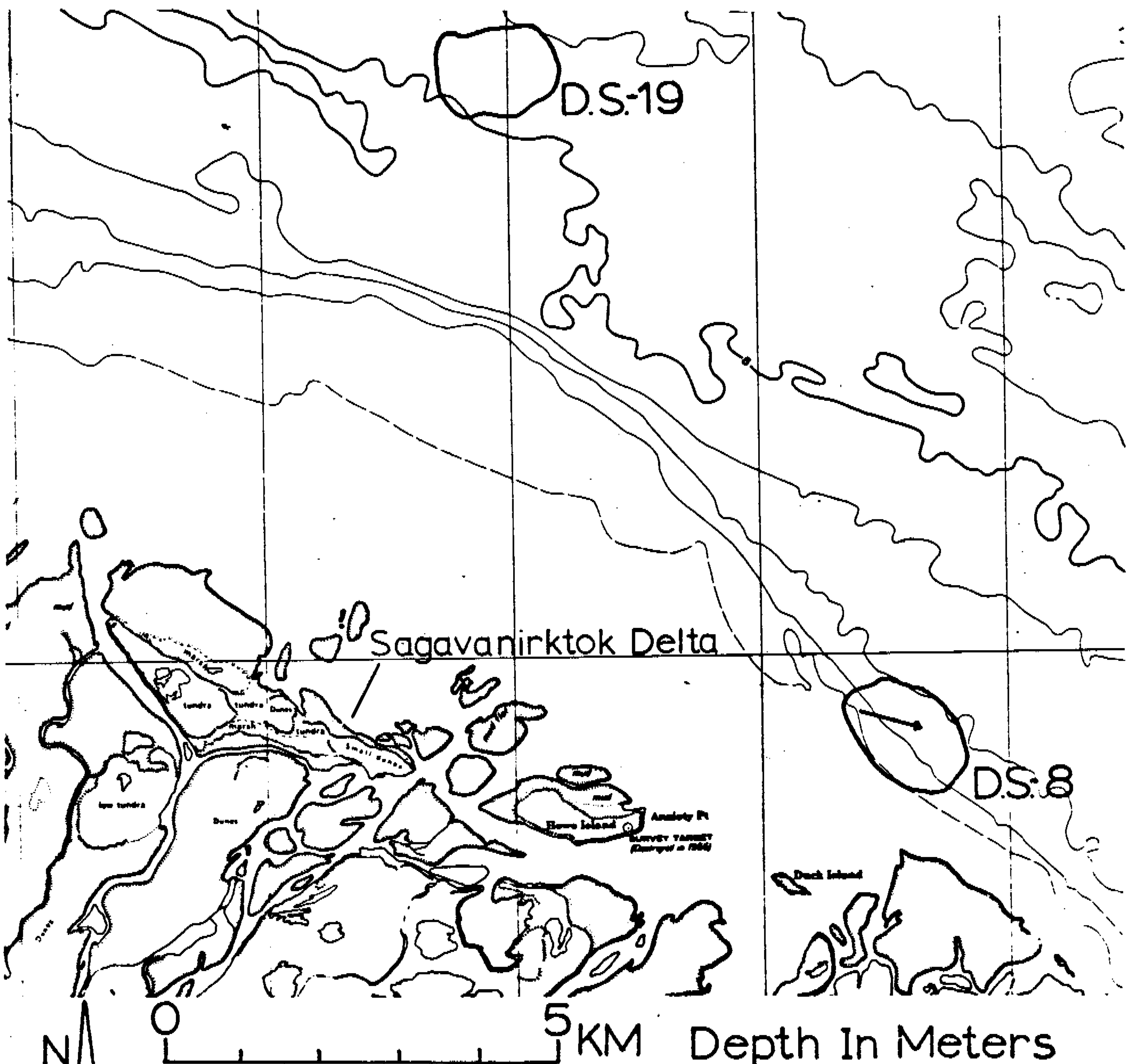
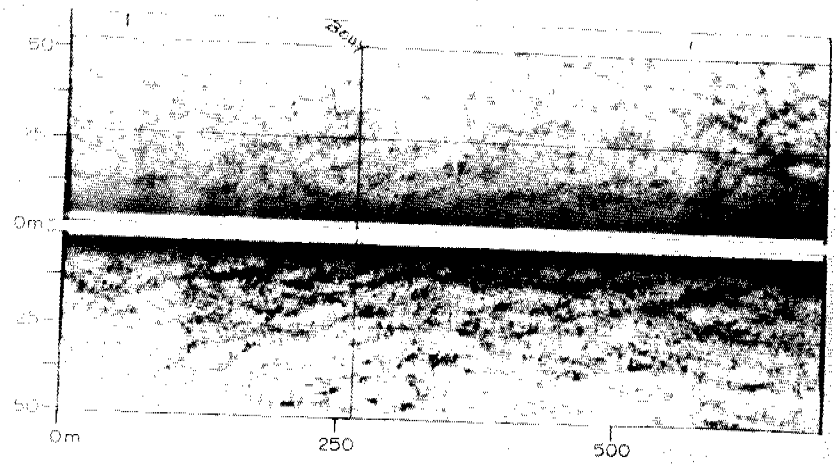


Figure 1. Location map showing dive site ~~12~~ 9. Arrow shows direction of trackline.

A



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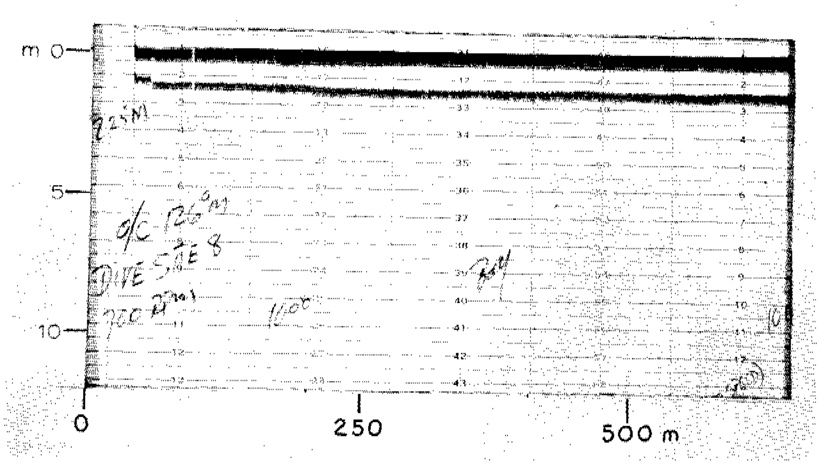


Figure 2. Side scan sonar (A) and raytheon (B) records at dive site 76-8. Mottled appearance of bottom and relatively flat bottom profile are explained by disruption of a ripple field in patches of bioturbation.

Dive Site No. 76-9

Date: September 5, 1976

Depth: 3 m

Visibility: 1.5 m

Currents: 25-50 cm/sec westward near bottom

Location: 70°17.2'N, 147°42.8'W

Divers: Reimnitz and Toimil

Length of traverse: 350 m

Supplementary date obtained: Vane shear measurements, porewater salinity determination, photographs. Sonographs, fathograms, and sub-bottom seismic records from previous surveys, and fathograms with sub-bottom profile from 1976.

Introduction

The wind during the day gradually shifted from SE to NE, increasing from about 8 knots to about 25 knots by the time of this dive. The sea was rather choppy, and the surface currents running northwestward past the Sagavanirktok Delta (Fig. 1). A survey done in 1972 with side scanning sonar (Fig. 2) had suggested the presence of non-homogeneous seafloor (funny bottom). Also, sesmic records of the same year indicate thinning of holocene sediments in this area; possibly exposing pre-holocene material. A few weeks before the dive we had a brief survey with subbottom profiler in preparing for collecting vibro-core #10, about 1 km from the dive site. On the day of the dive no side scan sonar survey was made because of the choppy sea. A 350 m long bottom traverse made under conditions of fair visibility provides a good impression of the nature of the sea floor in this area. The near-bottom currents, flowing swiftly (25 to 50 cm/sec) northwestward, resulted in movement of fine sand and aboundant organic matter.

Bottom Observations

Morphology.--The bottom was generally smooth, with a well developed ripple train. The ripples had an amplitude of 2 to 3 cm, a wavelength of about 15 cm, and were trending about Northwest-Southeast (Fig. 3). The ripple crests were slightly rounded off, and the bedforms obviously in a state of decay, as the current flow and grain movement was obliquely across the ripple train (Fig. 4). Several minor, irregular depressions were traversed (Fig. 5), and a few barely noticeable, subdued linear depressions probably representing old ice gouges were observed. Mounds and craters from the work Arenicula, tracks and trails, and other minute surface irregularities attributable to benthic activity were seen. There also were numerous drag marks (Fig. 3) produced by various objects moving along the bottom under the strong current flow.

Organisms.--Large isopods were numerous. In one place there was a large number of juveniles and two big ones in a small cluster. The presence of arenicula was seen in the cones and craters described above. Coelenterates (Fig. 3) were seen every few meters of distance covered, and numerous shells of small clams (Fig. 6). Small algae, and what appear to be hydroids, were attached to some of the pebbles along the traverse, other hydroids were protruding from the sediments. When one of these was dug up by hand we found it to be attached to a dolomite pebble. Figure 4 shows several of these organisms attached to a small angular cobble. We also saw a number of mollusk egg rings, up to 5 cm in diameter.

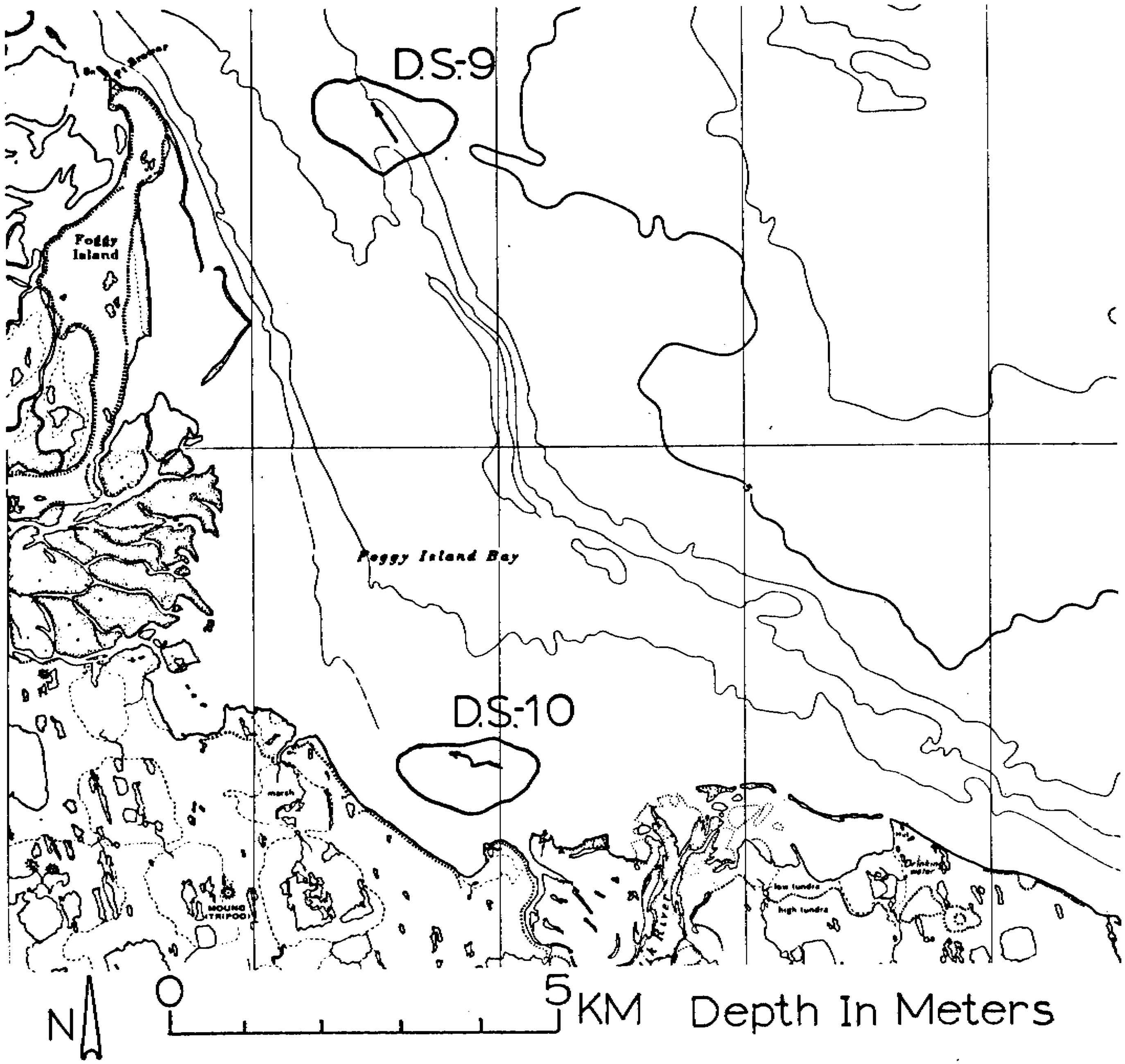


Figure 1. Location map showing dive sites 9 and 10;
arrow shows direction of trackline.

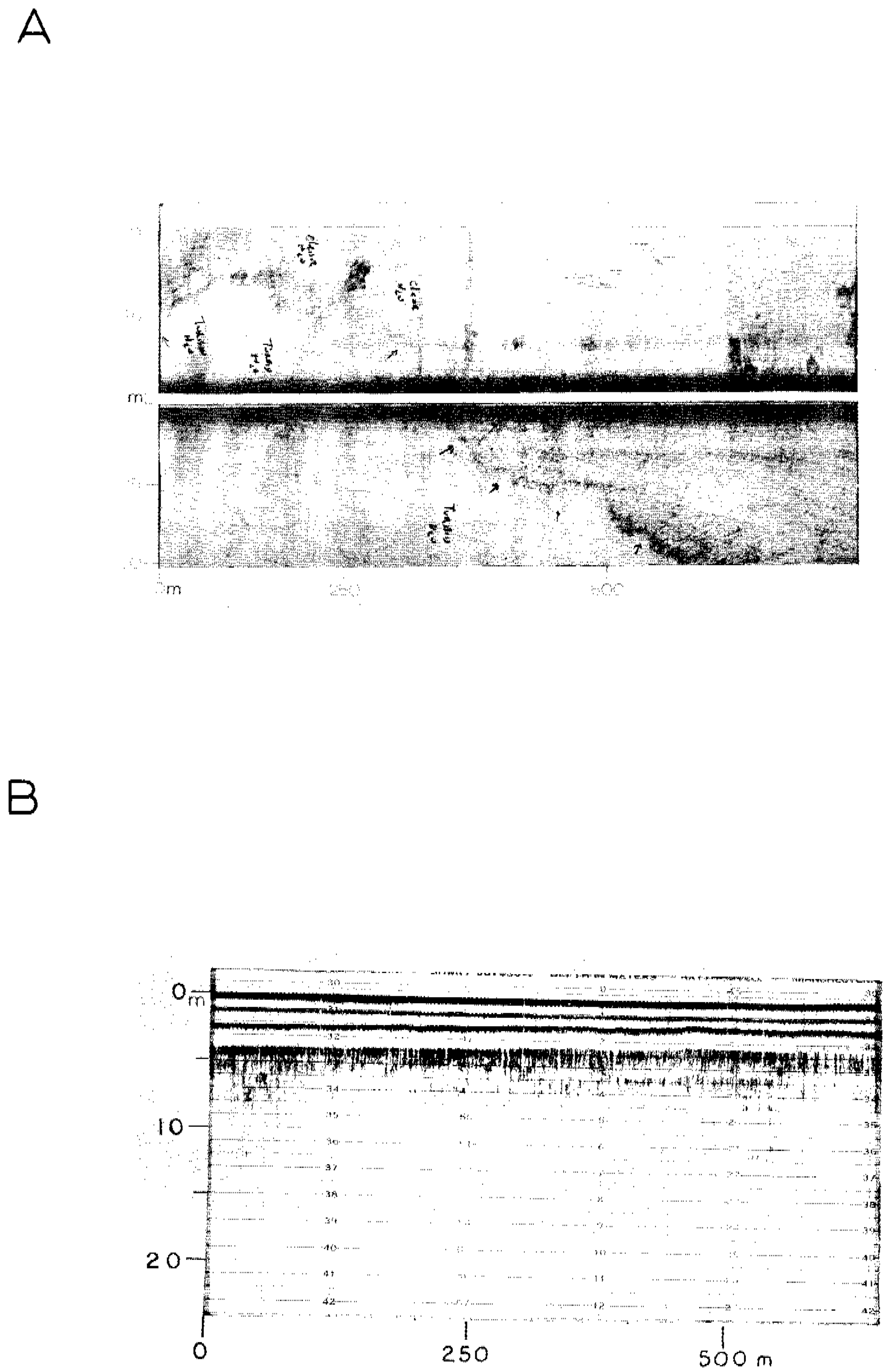


Figure 2. Side scan sonar (A) obtained near dive site 76-9 in 1972, and raytheon record (B) from vibrocore survey in 1976. Mottled sonograph record due to patchy distribution of gravels on otherwise sandy bottom. Note irregular sub-bottom profile nears surface at left side of record.

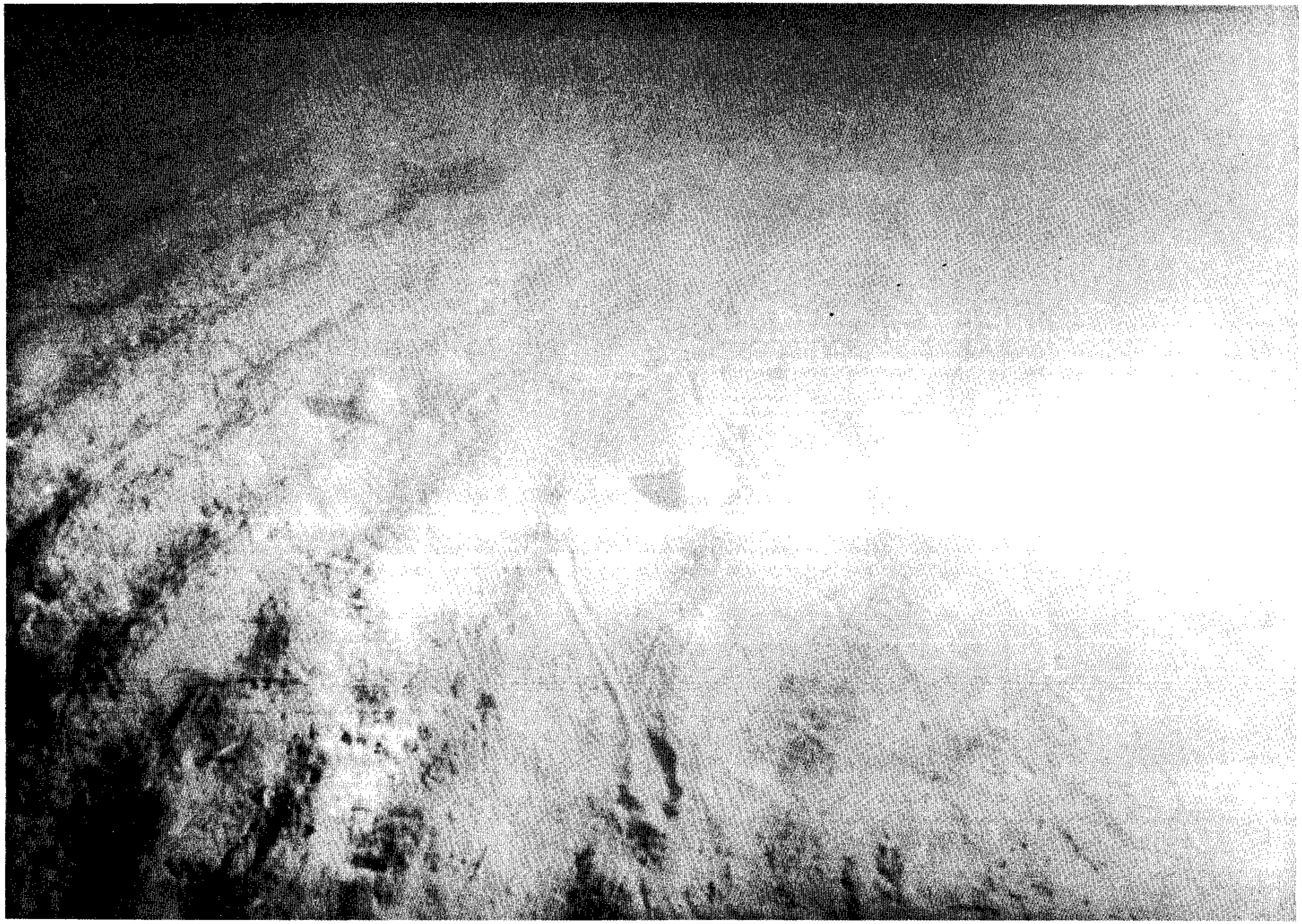


Figure 3. East-West trending ripples 2 to 3 cm high with about 15 cm wavelength.
Note drag marks and Coelenterates.

Figure 4. Sediment plume shows strong westerly current oblique to orientation of ripple train.

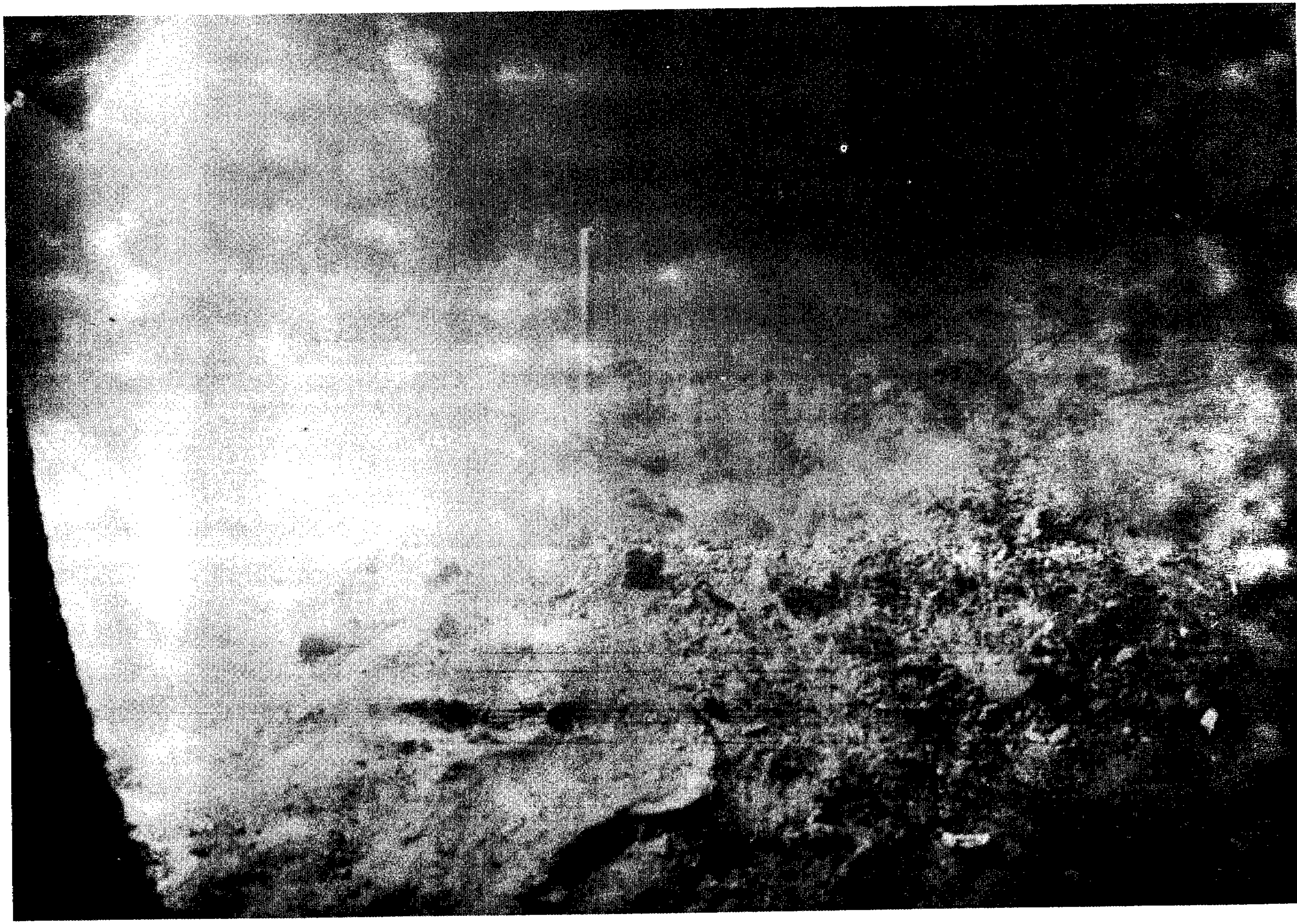
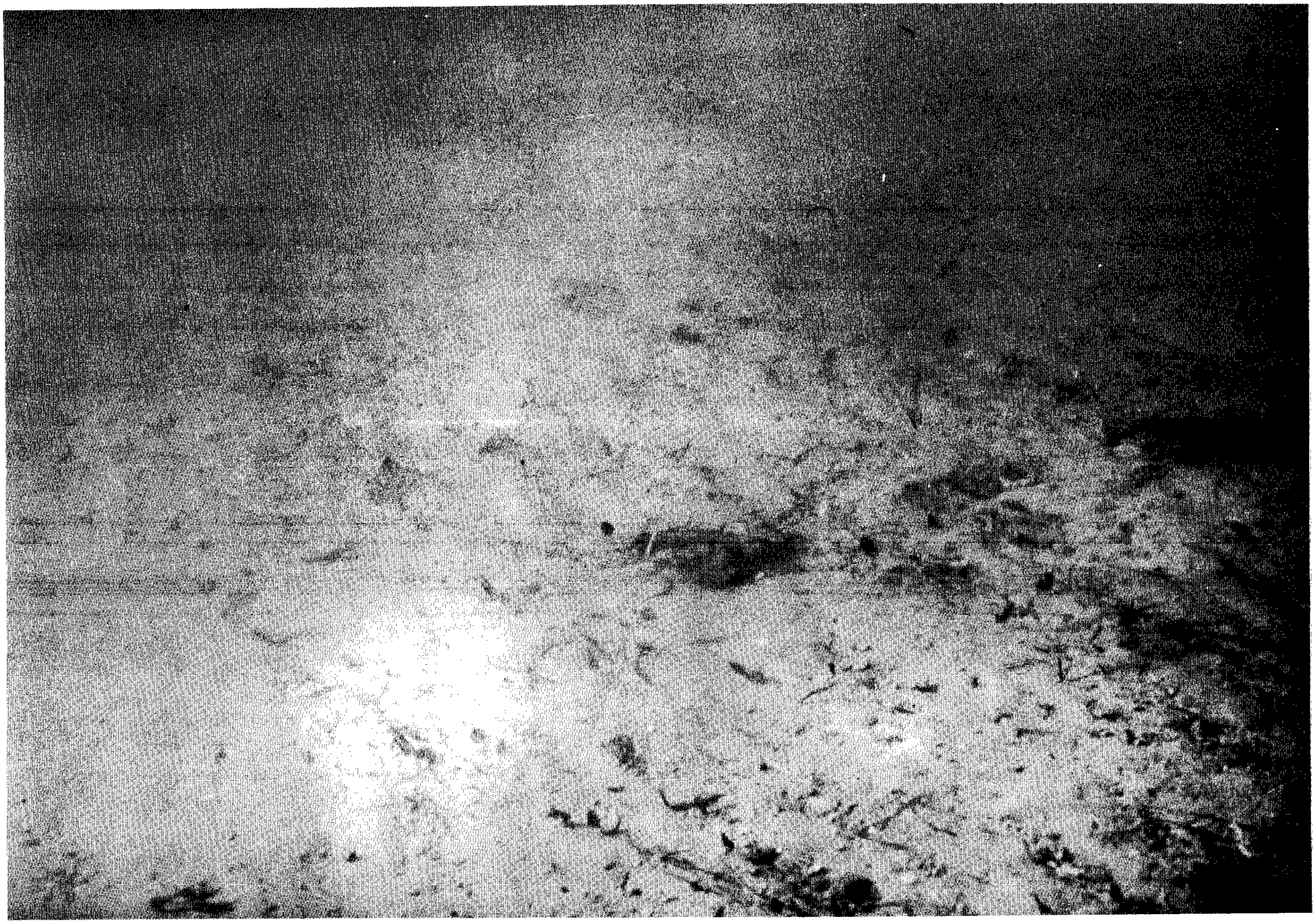


Figure 5. Gravel in a small depression is blanketed by a thin veneer of sand covering background of the picture.

Figure 6. Diver taking shear vane measurement in sandy sediment with numerous shell fragments.

Figure 7. One to one-half knot current causes orgainic material to streak westward across ripple train in long, current-parallel streamers.



Sediments.--Surficial sediments in general were a fine to medium grained sand with little admixtures of finer material. Along the first portion of the bottom traverse this sand was underlain by cohesive, rather soft, grey clay at 2 to 5 cm depth. There were a few scattered pebbles and small cobbles, subangular, on the surface. After the first 100 meters of traverse the sediments became increasingly gravely, blanketed by a thin veneer of sand, as shown around the flanks of a small depression in Figure 5. In a few instances gravel was seen in patches, up to 10 or 20 cm in diameter. Here individual clasts rarely were over 1 cm in diameter, and mostly much smaller. These pebbles were surprisingly angular, when compared to those seen in local beaches. They were generally brownish in color, and some had small marine organisms attached. Organic matter, consisting of algal remains, willow leaves, grassy material, and small twigs, was in rapid transit on the surface, often concentrated in current-parallel streaks one to several maters wide (Figure 7).

General Comments

The observations made during this dive are interesting for several reasons. Patchy distribution of gravel on a generally sandy bottom obviously is the cause for the mottled appearance of the sonographs obtained in this area. The stratigraphic relationship of cohesive mud to sandy gravel in the subsurface along the diving traverse is unclear. Vibrocore 10, collected about 1 km toward the delta from this dive site, is different again: lacking a surface sand layer, the upper section consists of sandy mud, with a thin layer of pebbles 10 cm down into the core. Drastic facies changes over short distances may be related to the fact that strudel scours do occur in this area (Reimnitz et. al, 1974) and sedimentation rates are very low.

When thinking about the large amounts of organic material transiting westward across the bottom at rates of at least 1/2 knot, one can not help but wonder where, downdrift, the trap may be where this material finds its resting place and becomes a deposit. We are unaware of such a place. Observations made at dive 13 in the tidal inlet east of Flaxman Island, about 70 km east of the present site, indicated that large amounts of organic matter are entering this long lagoon from the seaward side, perhaps originating partly at the Canning River, or still farther eastward. With dominant easterly winds during the open season, and the accompanying easterly currents, such materials may transit great distances in a single season. At Barrow this transport system is intercepted by Barrow Sea Valley.

When speculating further about the sonographic appearance of abundant organic matter moving in streaks (sonographs were not obtained at this time of strong bottom currents), it seems entirely possible that these streaks would not only be recorded, but that they might be arranged in patterns similar to the herringbone patters observed in Leffingwell Lagoon (Barnes,et.al,Part D, 1977).

On the previous day a current recorder installed at a water depth of 5.5 m north of the Sagavanirktok Delta showed nearbottom eastward flow velocities up to 48 cm/sec (about one knot) strong enough to produce current ripples. The ripples observed during the dive appeared to be oscillation ripples, not current ripples, and therefore apparently post-dated the strong eastward current from westerly winds of the previous day. It is clear that the minor bedforms produced from currents and waves in this area are very short-lived.

Dive Site No. 76-10

Date: September 5, 1976

Depth: 1.5 m

Visibility: 1 m

Currents: Wave Oscillation

Location: 70°12.8'N, 147°41.0'W

Divers: Erk Reimnitz and Larry Toimil

Length of traverse: 150 m

Supplementary data: Sonographs (1972), vane shear measurements and pore water salinity.

Introduction

For this dive the boat was anchored at the head of Foggy Island Bay about 1.6 n miles from shore (Fig. 1). At this location sonographs obtained on July 20, 1972, reveal a large area of "funny bottom" characterized by a scattering of strong signal returns from areas of the sea bed averaging about 2 meters in diameter (Fig. 2). The sonographs were collected just after the start of breakup, when much of the fast-ice on the inner shelf was still intact. From the records alone it is not possible to determine whether or not the pattern is real or an artifact caused by background noise or some characteristic of the water column. At the time of the survey, the sonar system was operating perfectly and no such pattern appeared on the records before entering the area circled in Figure 1. No detectable (>10 cm) vertical relief is associated with the pattern indicating that if the pattern is real it is more likely due to variation in the texture of surfacial sea bed deposits rather than morpholgic character of the sea bed itself.

Because of the choppy sea conditions we were unable to resurvey the area at the time of our dive. We went ahead with the dive hoping that the cause of the pattern seen in the 1972 sonographs could be identified by a close visual examination of the bottom.

Bottom Observations

Morphology.--The sea bed was found to be uniformly flat and covered with symmetrical oscillation ripples having a wavelength of about 8 cm and an amplitude of 1.5 cm. The ripples were sharp crested and had secondary ridges of small amplitude along the axis of their troughs. The presences of such secondary ridges is often an indication that the ripple field is not yet in equilibrium with the existing wave regime. This is likely the case here since as already noted (see Dive-Site 76-9) the wind had gradually shifted from SE to NE and steadily increased in speed throughout the morning and early afternoon. We noted only a slight accumulation of organic matter within the ripple troughs.

Nature of Sediments.--Surfacial sea bed sediments consisted of highly muddy medium grain sand, which included a few pebbles some up to 2 cm in diameter. These deposits were thixotropic. By pounding on the sediment surface with our fist, we were able to transmit visible shock waves for distances of perhaps 20 cm across the sea bed. On one occasion, we penetrated the sediment cover the full length of our gloves and by swimming forward were able to lift the surfacial unit almost as if it were a carpet.

Peak shear-strengths of 1.15 PSI (7.93 KN/M^2) and residual values of 0.92 PSI (6.34 KN/M^2) for sediments 6.5 cm below the sea bed were recorded near the end of the traverse.

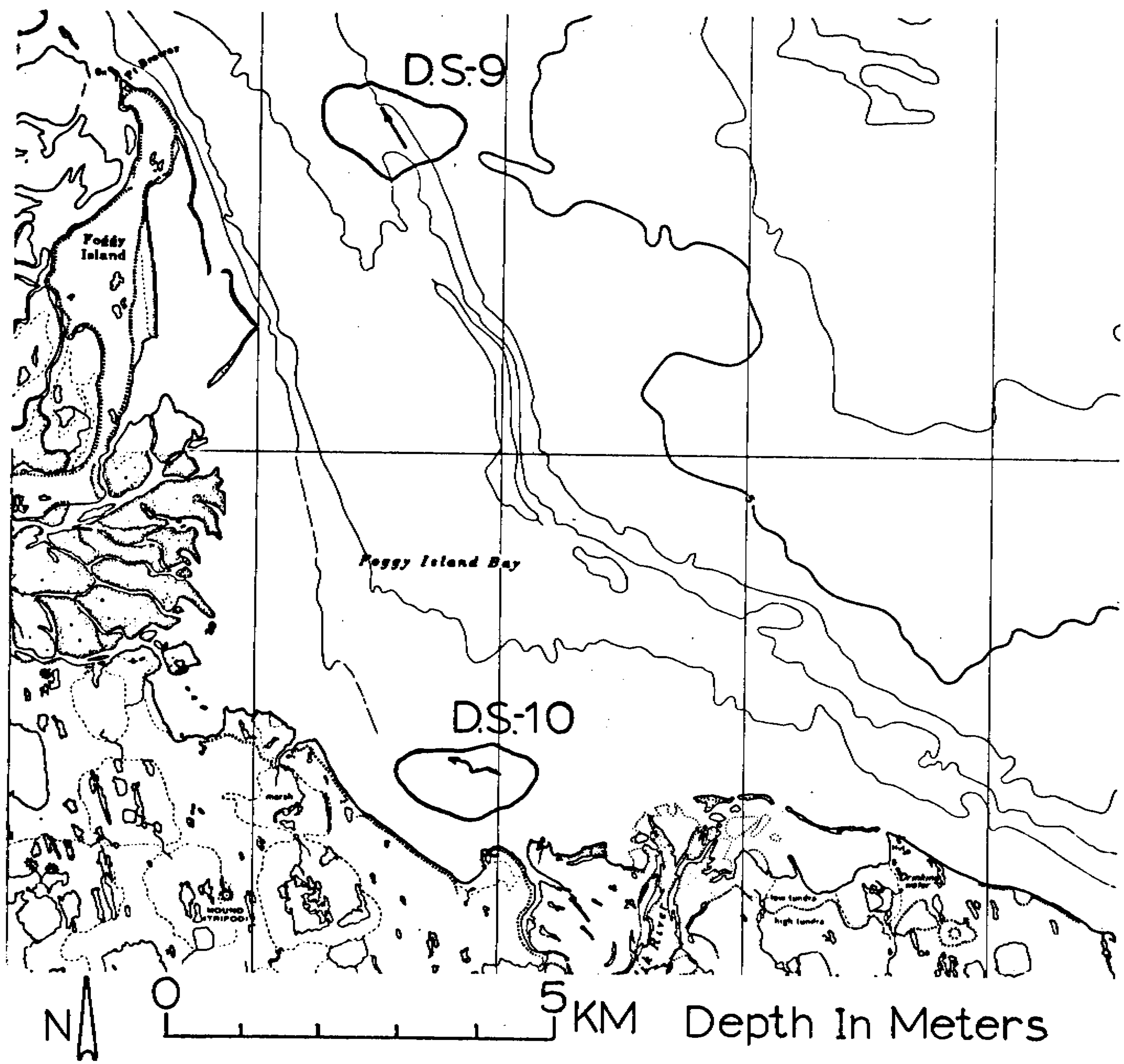


Figure 1. Location map showing dive sites 9 and 10; arrow shows direction of trackline.

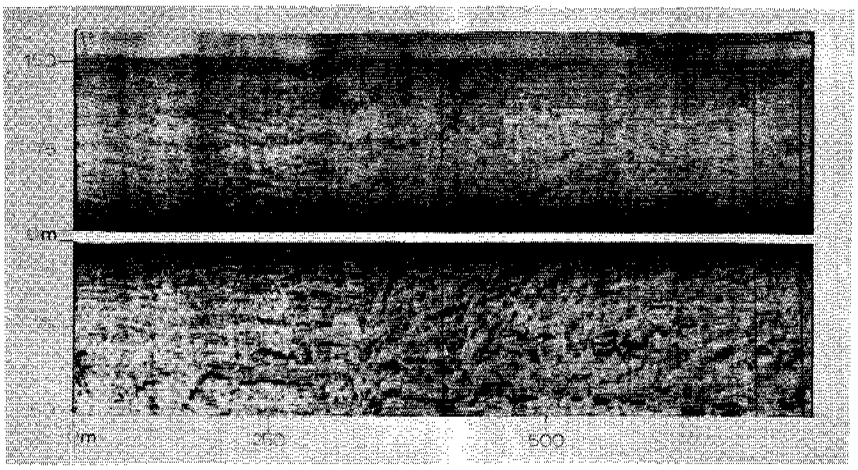


Figure 2. Side scan sonar record obtained in 1972 near dive site 76-10. Mottled bottom reflectors possibly due to under ice winnowing of bottom sediments.

centimeters from the sea floor, but were rather rare. Astarte shells, probably mainly empty, were common. In running the hand through the surface material, they were felt at a spacing of about one every 30 cm.

General Comments

Gouges produced by ice were rather common in the dive site area. Comments concerning availability of ice for gouging made for dive site No. 76-6 nearby would also seem to apply for this site. Grey mud was exposed in a ridge crest, at a somewhat irregular micro-scale, and the grey mud mounds found on the gouge floor and flank, probably are the result of sediment extrusion during the process of ice gouging. Such features have not been observed in areas unaffected by ice, and we do not know of any organisms in this region producing mounds 20 to 30 cm high. The possibility of mud extrusion occuring during ice impact is mentioned in our annual report dive site No. 4. Diving observations made during 1972 near the present site, suggested a process of gouge formation by plastic deformation of sediment, rather than by plowing and bulldozing. Very little is known about this process. An approximately 1-m long core obtained with a vibrocorer at station V-4 nearby does not contain massive layers of cohesive sediment suitable for extrusion under pressure.

The pebbles observed, some resting on the sediment surface, suggest ice rafting as a transport mechanism. Similar pebbles occur in abundance on Reindeer, Argo, and Cross Islands, from where they might be rafted during the breakup of the fast ice. During storms of previous summers we have estimated surface floor velocities of 2 to 4 knots (100 to 200 cm/sec) in this area. A current recording meter, deployed about 12 km east of the dive site at a water depth of 5.5 m, within 1 m of the bottom, operated for 52 days during the summer of 1976 including the period of this dive. Near-bottom flow velocities up to 53 cm/sec, sufficient to erode and transport fine sands, were recorded. Therefore the lack of current-produced bedforms at this dive site is surprising. We suspect that benthic organisms play an active role in modifying and shaping the micro-relief of the sea floor at this dive site.

Dive Site No. 76-11

Date: September 5, 1976
Depth: 4.5 m
Visibility: 1.0 m
transmissivity 75%

Location: 70°10.3'N 147°01.0'W
Divers: Erk Reimnitz and Larry Toimil
Length of traverse: 200 m westerly
Currents: very weak
Supplementary data obtained: shear vane measurements and pore water salinity determination. Side scanning sonar and fathometer survey of dive site.

Introduction

This dive was made late on the same day as the previous three dives. The wind was still from the NE, but had decreased to 20 knots. Thus it was rather choppy, but surface- and bottom currents were very weak. The side scan sonar record leading up to the anchor site for the dive (Fig. 2) is mottled, but we suspected that this appearance could be artificial. See Figure 1 for dive site location.

Bottom Observations

Morphology.--The bottom was smooth, except for a set of ill-defined, small ripples, in a advanced state of decay from abundant benthic activity and burrowing, and a few depressions of about 30 cm diameter and 5 cm depth. These depressions have irregular outlines with gently sloping sides. There were no signs of ice gouging or strudel scouring along the 200-m-long bottom traverse.

Sediments.--The bottom sediments consisted of a slightly sandy, very firm mud, with patches in which small, brown clam shells were scattered widely. Thick Astarte shells were rather common, and concentrations of these shells were seen especially in the bottoms of the small depressions described above. About five or ten pebbles, up to 3 cm in diameter, occasionally with attached hydroids, were seen along the bottom traverse. The bottom was so firm that the vane shear apparatus, with the vanes barely buried in the sediment, registered off-scale.

Organisms.--The bottom was highly disrupted by benthic activity producing tracks, trails, mounds and craters, small open holes, and highly irregular microrelief. Outside of a few isopods, coelenterates, hydroids, fairly abundant clam shells and a few snail shells, very few life forms were actually observed. It seems that the coelenterates prefer sandier substrate. A small, bush-like brown algae, about 10 cm high was occasionally observed, as were some large fronds of brown algae. Algal debris and fronds were especially common in the small depressions, but probably only few of them were actually attached to pebbles. There also were a few of the brownish, filiamentous algae seen in other dives.

General Comments

Bottom-inhomogenouities that clearly explain the mottled appearance of the sonar records were not found. But it did seem as if the number of small clams littering the surface was variable along the 200-m bottom traverse. Thus, the mottled sonar record may be due to variations in accoustic reflectivity of the bottom with variations in the number of exposed clam shells, but it may also be an artifact or related to reflections from a rough sea surface. The small depressions in the seafloor may have been produced from current- and wave-

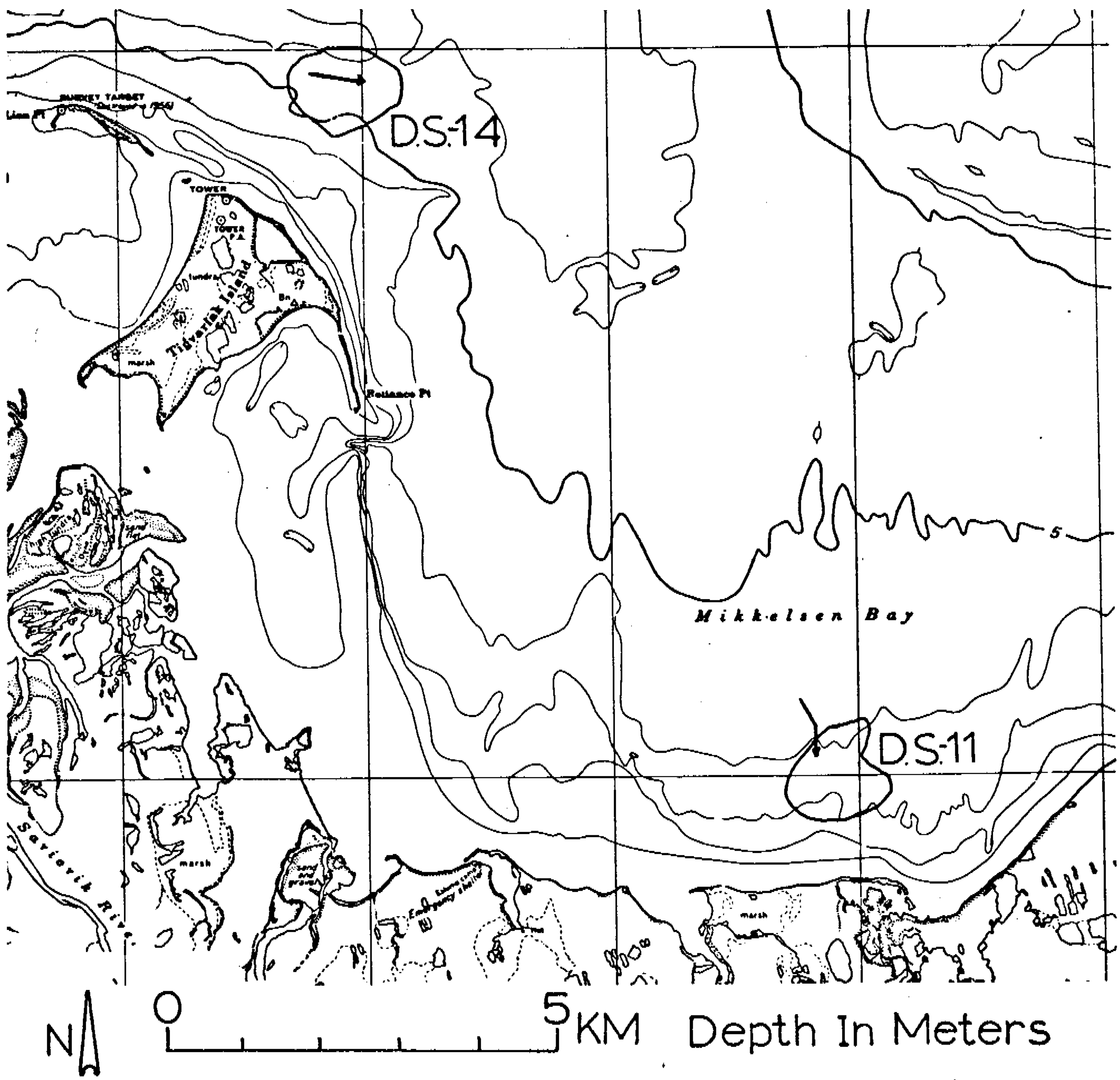
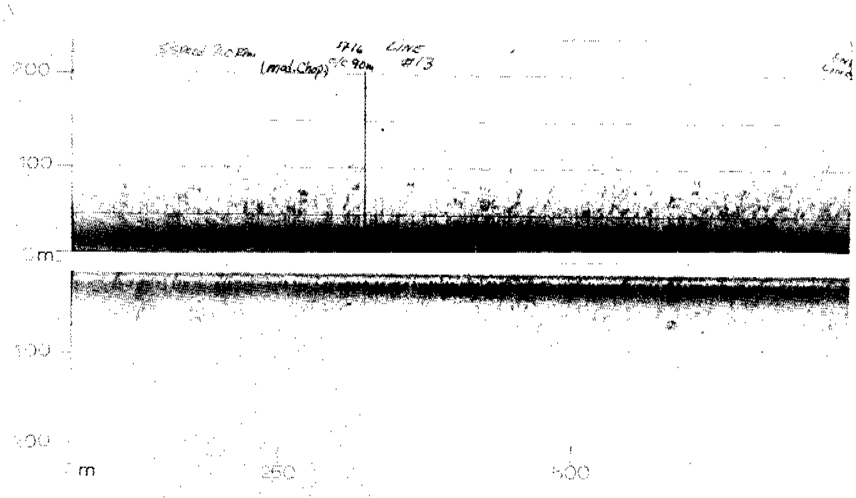


Figure 1. Location map showing dive sites 14 and 11; arrow shows direction of trackline.

A



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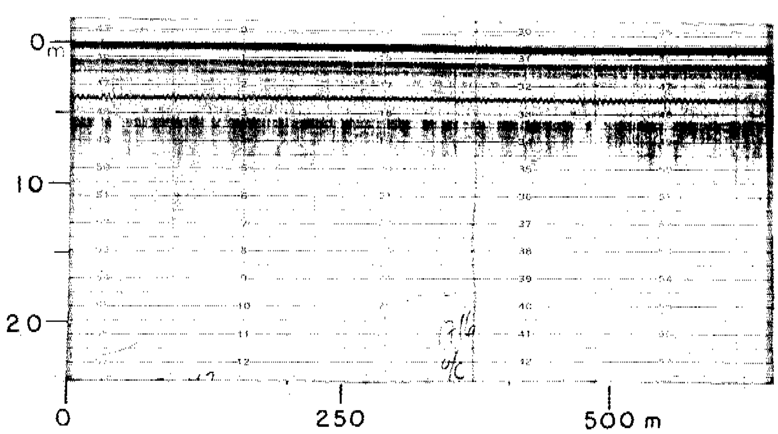


Figure 2. Side scan sonar (A) and raytheon record (B) at dive site 76-11. Mottled pattern possible due to patchy shell distributions or reflections from choppy sea surface.

induced motion of anchored kelp fronds. The firmness, or dense packing of bottom sediments suggests very low rates of sedimentation an interpretation that is supported by our regional surveys with high resolution seismic reflection techniques.

Dive Site No. 76-12

Date: September 6, 1976
Depth: 2.5-3 m
Visibility: 2 m
Currents: 10-15 cm/sec westward

Location: 70°10.8'N, 146°03.4'W
Divers: Erk Reimnitz and Larry Toimil
Length of traverse: 400 m southward
Supplementary data obtained: Photographs, vane shear measurements, pore water salinity. Sonographs, fathograms, and seismic records obtained nearby.

Introduction

Leffingwell Lagoon is separated from the open ocean by Flaxman Island (Fig. 1), an island known for the occurrence of large boulders on the beach, (Leffingwell, 1919), and for being eroded at rather high rates (Lewellen, 1970). Our own studies have shown that the Flaxman Boulders resting on the beach and in the swash zone around the island are weathered out of the bluffs exposing the Quaternary Gubic Formation, where they occur as scattered erratics in a finer matrix. We speculated that if the processes of erosion of Flaxman Island has been going on for a long time, and if the concentration of erratics in the older, larger island were as high as those in today's remanent stump, the lagoon floor should be littered with boulders in a wide halo around the island.

The side scanning sonar record along the south side of the island (Fig. 2) did indeed show what we interpreted as possible boulders. A buoy was dropped at a water depth of 2.6 m, as marked on the sonar record, in an area where numerous small point source reflectors are shown. The wind and sea were calm. Along the buoy anchor, the visibility was about 1.5 m, and bottom currents westward at an estimated 10 to 15 cm/sec.

Bottom Observations

Morphology.--The bottom along the traverse was generally smooth, with a suggestion of slight undulations, barely noticeable, possibly related to dragging ice in the distant past. Subangular to angular cobbles and boulders, up to 30 cm in diameter, where protruding from the sediment or resting on the surface (Figs. 3 and 4). Some of the boulders were sitting in slight depressions, marked by concentrations of pebbles and shells (Fig. 4). We also encountered a number of slabs of tundra, obviously resulting from local bluff erosion, and sticks of wood (Fig. 5). These tundra slabs are almost neutrally buoyant, and therefore probably in transit on windy days. The micro relief consisted of irregularities from intense benthic activity, which had eliminated any signs of ripple marks formed during storms and strong current flow.

Sediments.--The sediments that include the pebbles, cobbles boulders, tundra slabs, wood, and shell material consisted of muddy sand. The upper 3 to 4 cm of this sandy mud felt relatively soft and could be penetrated by the divers hand, but below that depth the hands could not penetrate (see shear vane readings).

Organisms.--Figure 6 shows evidence for large numbers of bottom dwelling and burrowing organisms, including Arenicola, large isopods, coelenterates, hydroids, and many others that we can not identify. Numerous puffs of suspended matter were ejected from the bottom within a 20 cm radius from where the diver's hand disturbed it. The isopods, found on most of our dives, here were seen to be living also within the sediments to a depth of perhaps 2 cm. Shells of

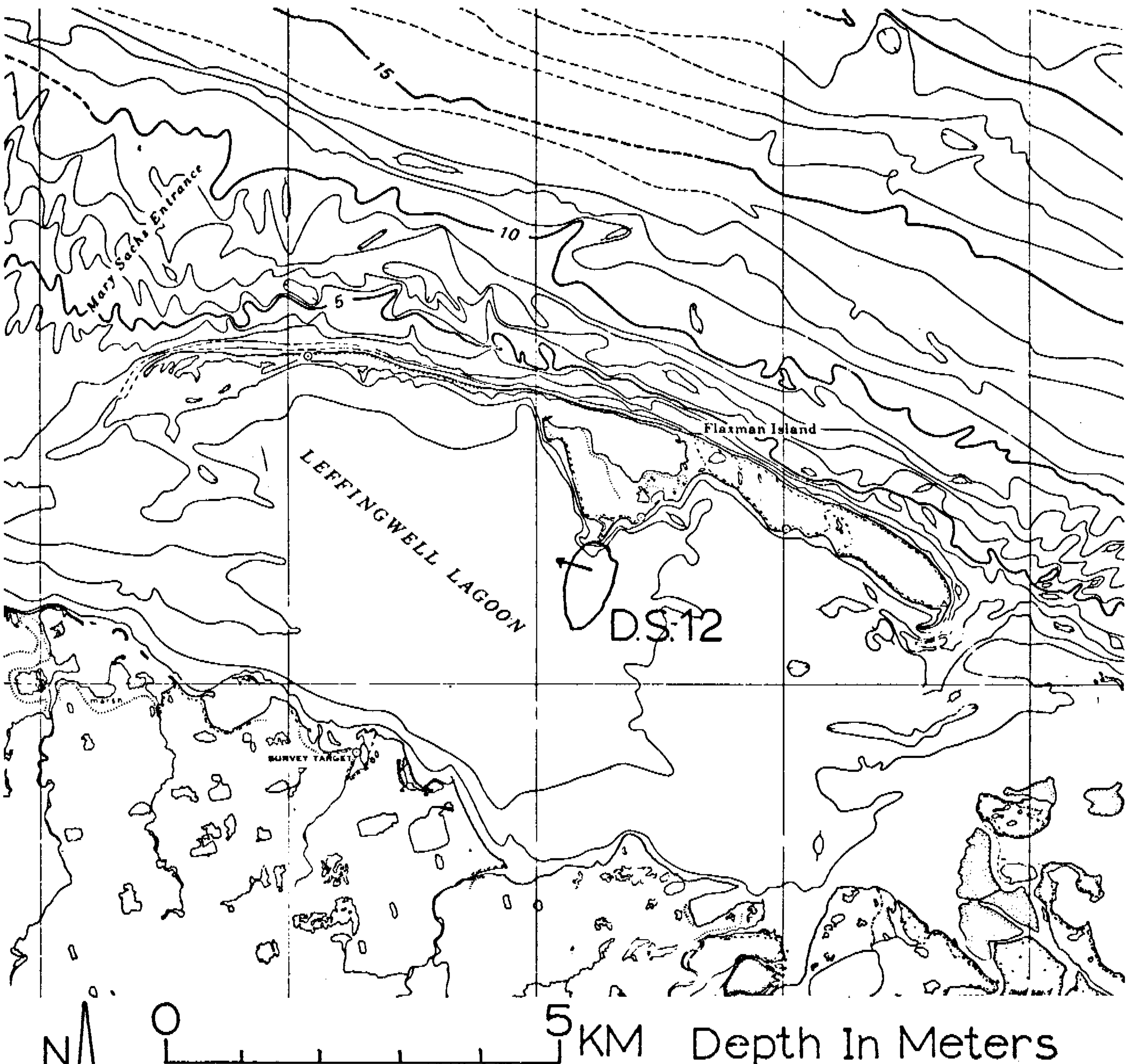
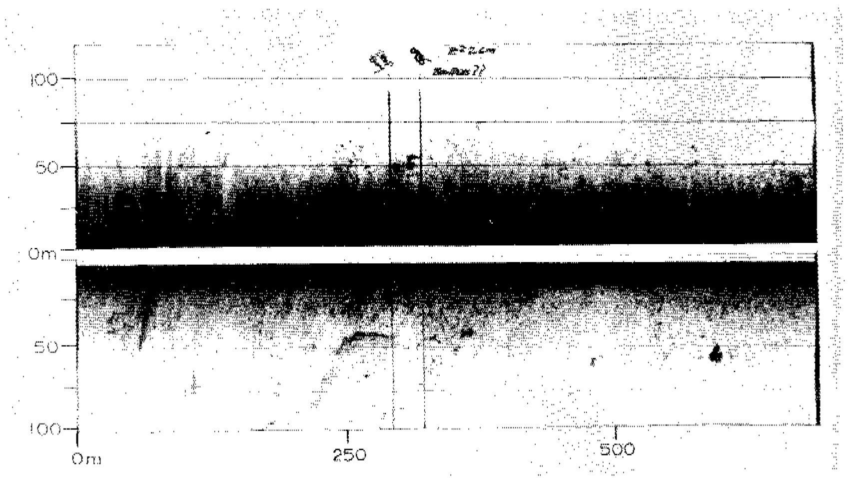


Figure 1. Location map showing dive site 12. Arrow shows direction of trackline.

A



B

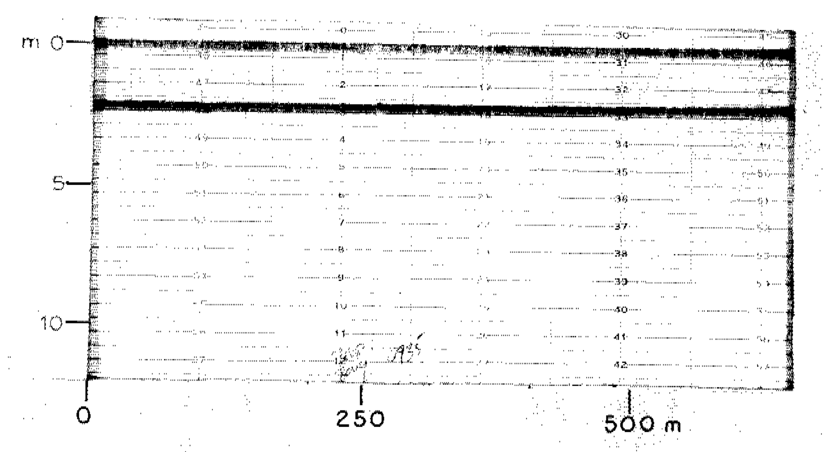


Figure 2. Boulders seen on dive 76-12 appear as dark spots on side scan sonar record (A) and give small relief to the raytheon record (B).

Figure 3. Boulder approximately 30 cm in diameter resting on sandy mud. Note lack of marine growth.

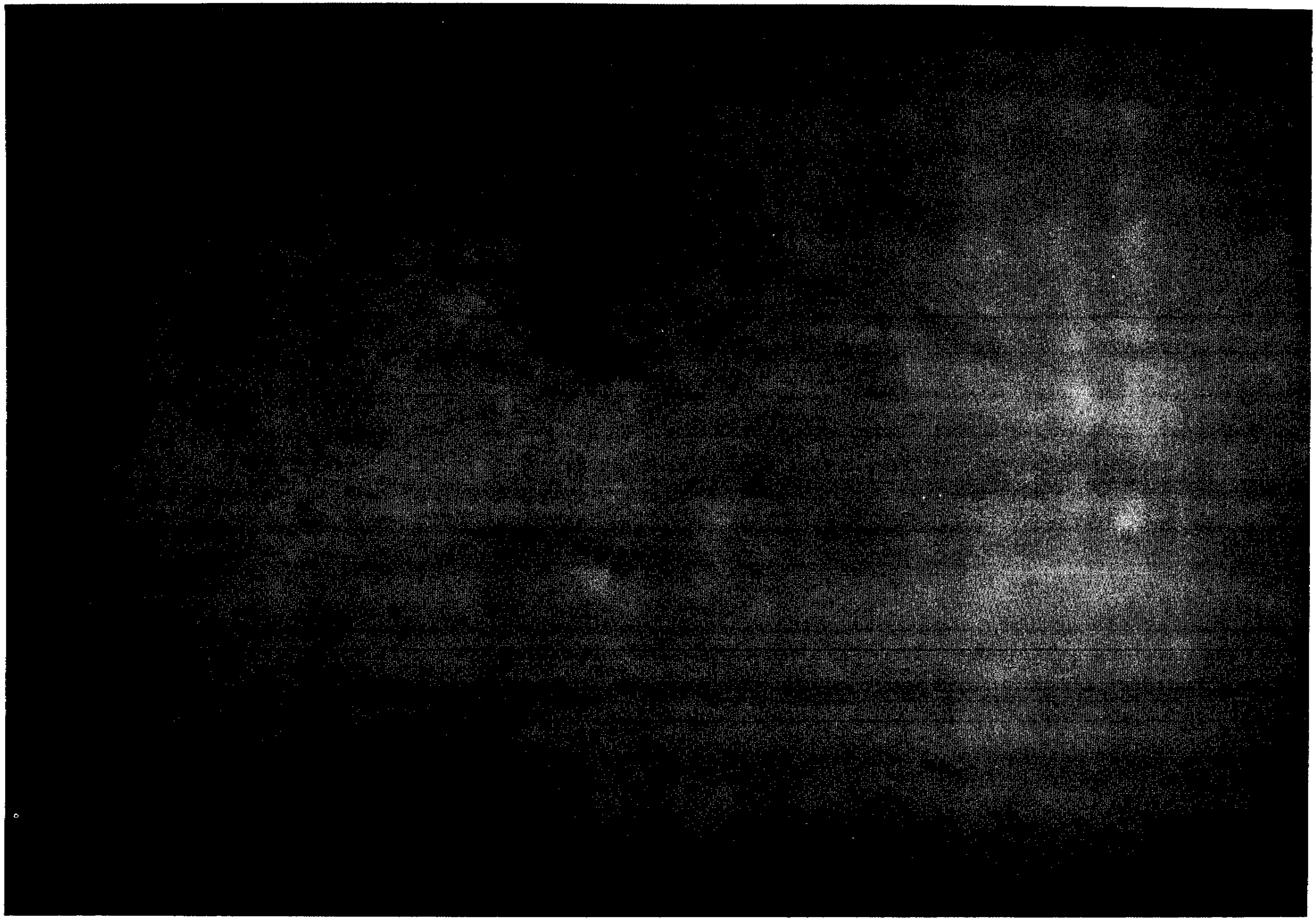


Figure 4. Boulder covered with marine growth resting in slight depression. Note concentration of pebbles and shells, and filamentous algae moving with current.

Figure 5. Large (40-50 cm long axis) tundra slab and stick of wood.

Figure 6. Abundant marine growth on bottom and attached to rocks.

astarte, cyrtodaria, and other clams and snails were seen, notably in the depressions surrounding cobbles and boulders (Fig. 4). When lifting cobbles, we noted that large numbers of small shrimp are living below these. Most of the large rocks had abundant marine growth (Figs. 4 and 6) but a few of them were bare of growth (Fig. 3). Brown kelp with large leaves was seen only rarely, but the brown filamentous type was rather common (Fig. 4), serving as a good current direction indicator.

General Comments

Cobbles and boulders not covered with large brown kelp as extensively as in the "Boulder Patch" (dive no. 3 Ann. Rep.) show up rather distinctly on side scan sonar records, as do the small depressions surrounding some of the boulders. These depressions, generally floored by pebbles and shell material, clearly are scour features formed under stormy conditions or strong current flow. We assume that under such conditions the general bottom would be characterized by ripple marks. But such bedforms are rapidly eliminated by biologic activity. This lagoon floor had a richer, and more variable benthic burrowing community than seen in any other dive along this coast. But how fast this community can eliminate other bedforms we do not know. We feel that ice rafting in general is not a very active process on this shelf (Reimnitz and Barnes, 1974, Barnes and Reimnitz, 1974). But cobbles bare of marine growth and lightly resting on the seafloor, as seen in figure 3, suggest that ice rafting from the beach is taking place. Lack of a scour depression around this cobble indicates that a major event producing scour depressions in this area has not occurred since this cobble was deposited. Our guess is that the cobble in Figure 3 has been in this place for several years, but this is only a feeling which we can not substantiate. From: a) the extent of the boulder halo surrounding Flaxman Island, b) the size of boulders, and c) a knowledge of the rate of bluff retreat by erosion, one could calculate the rate of sedimentation in this lagoon, assuming that the boulders do not move laterally. But this may not be a valid assumption, and we will refrain from making such calculations.

We believe that the boulder horizon, marking a beach and swash zone accumulation, extends for a long distance from Flaxman Island toward the mainland at increasing depth below the lagoon fill. But our high-resolution seismic reflection records in this lagoon have not permitted us to trace this horizon with any confidence.

Side scan sonar records obtained in the area in 1975 showed a herringbone-like pattern on the lagoon floor, which we interpreted to be the result of helical flow (Barnes, et.al., 1977, Part D). The 1976 work with sonar and diving did not allow us to shed additional light on the subject, except that the pattern is short-lived, and may be re-formed occasionally.

Dive Site No. 76-14
Date: September 8, 1976
Depth: 5.5 m
Visibility: 1.8 m
Currents: < 10 cm/sec

Location: 70°14.7'N,147°10.5'W
Divers: Reinmitz and Toimil
Length of Traverse: 150 m
Supplemental Data Obtained: Shear Vane measurements, bathymetric profiles and sonographs 1976 and 1973. Sub-bottom profiles 1973. Photographs 1976.

Introduction

In this and another recent report (Diving Notes from Three Beaufort Sea Sites, 1976 Annual Report, Attachment J) we describe regions of the seabed along the inner shelf which are characterized by concentrations of exposed boulders. We have classified these regions as lag deposits resulting from the erosion of small islands of the Gubic Formation. We have used Tigvariak Island, which has numerous boulders exposed within its retreating bluffs and swash zone, as a present day example of such an island. We have also described (dive site 76-9 of this report) the large amounts of organic materials sometimes observed in transit across the seabed and wondered about the fate of these materials. Observations made during this traverse located about 2 km north of Tigvariak Island (Fig. 1), and confirmed the presence of coarse lag deposits seaward of Tigvariak Island, and suggests a process in which bottom transport materials may be trapped and incorporated into a coherent deposit.

Bottom Observations

Morphology.-- Figure 2 shows photographs of the original side-scan sonar and bathymetric records obtained during our predive survey. The records are similar to those obtained in 1973 in the same region. The mottled texture of the seabed in the sonographs is very much like the pattern revealed in records obtained across the "Boulder Patch" (1976 Annual Report, Attachment J). The slight depression seen in the raytheon record is closed and somewhat circular in plain view.

Upon diving, the seabed was found to be essentially flat, devoid of major bed forms, and extensively bioturbated. The first of several very subtle, closed depressions was encountered after swimming some 20 or 30 m. The depressions ranged between 0.1 and 4.0 meter across and only around their perimeters was a drop in the seabed noticable, despite good visibility (about 2 m). The large accumulations of kelp (Fig. 3), The thickness of the accumulated, loose kelp was between 20-30 cm.

Swimming further south we found some of the larger depressions to be flanked by ledges 5-10 cm high composed of 2-3 cm thick beds of laminated organic materials in an advanced state of decay (Fig. 4). These thin outcropping beds could be peeled off by hand indicating some degree of compaction.

Sediments.-- Surficial sediments along the Traverse consisted of sandy, light brown muds. The thickness of the surficial muds was irregular and the unit was underlain by gravels. In some areas the muds were as much as 10 cm thick while on the floor of the depressions, gravels were exposed. Shear

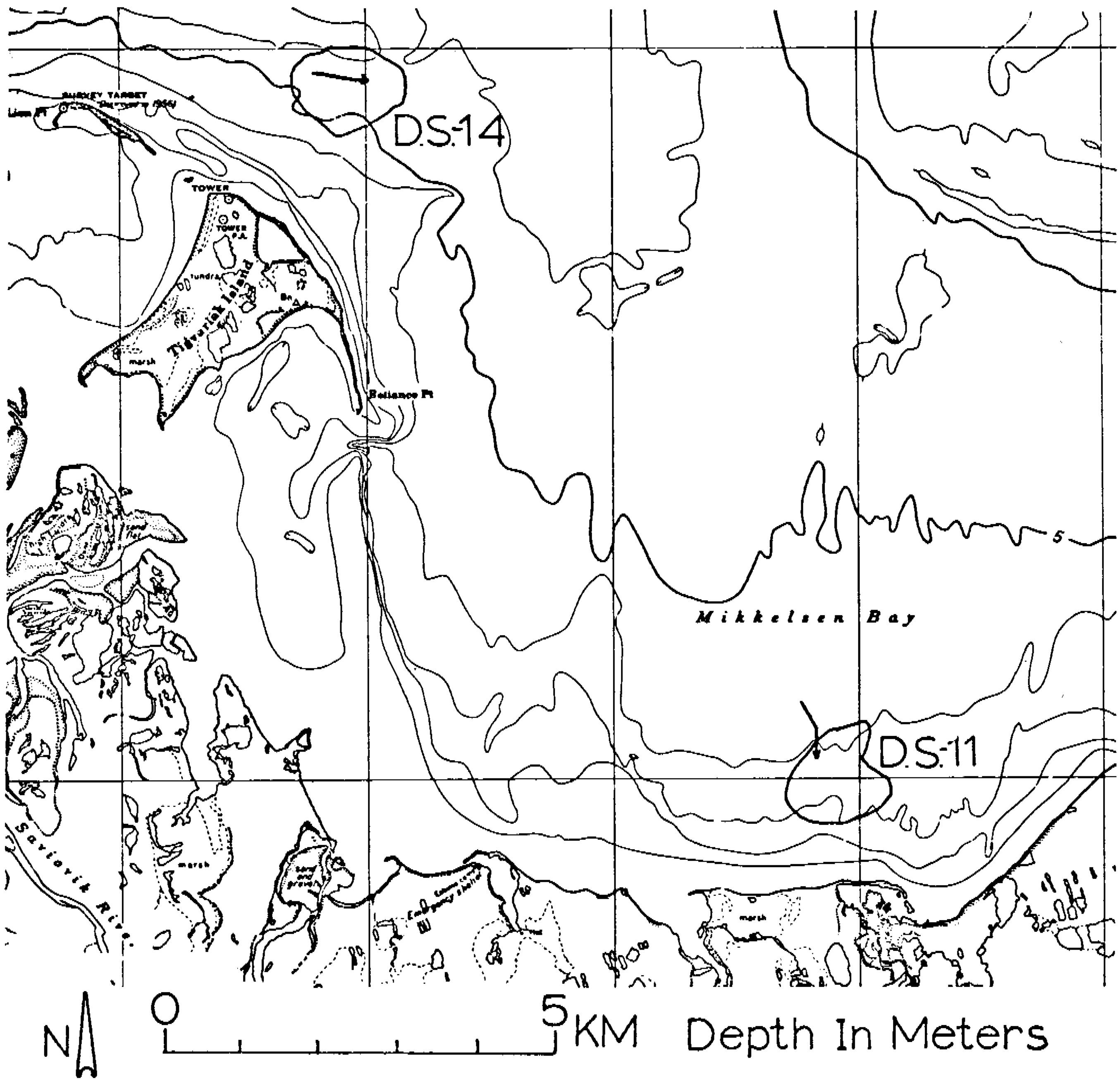
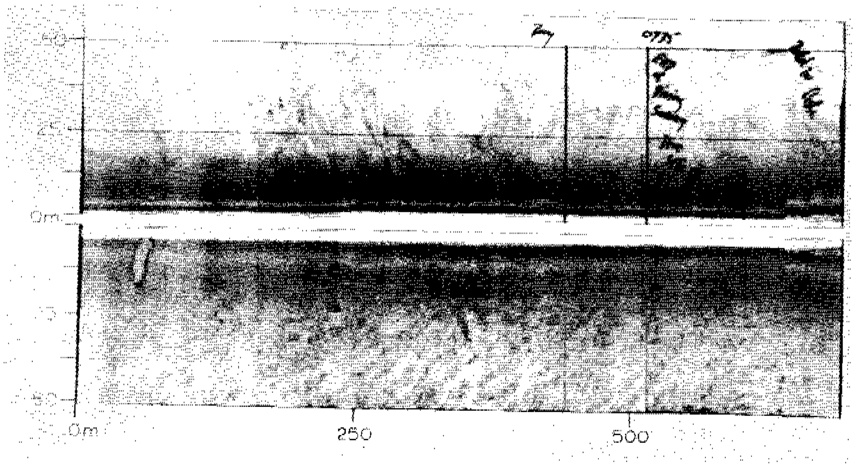


Figure 1. Location map showing dive sites 14 and 11; arrow shows direction of trackline.

A



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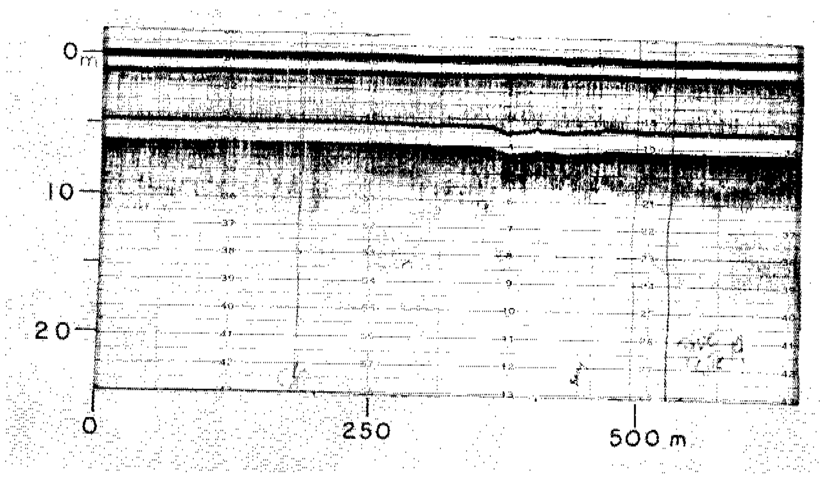


Figure 2. Side scan sonar (A) showing mottled seafloor and Raytheon record (B) showing relief of depressions and irregular sub-bottom beneath at dive site 76-14.

Figure 3. Kelp and other organic debris collected in a shallow depression. Thickness of the loose accumulation is 20 to 30 cm.

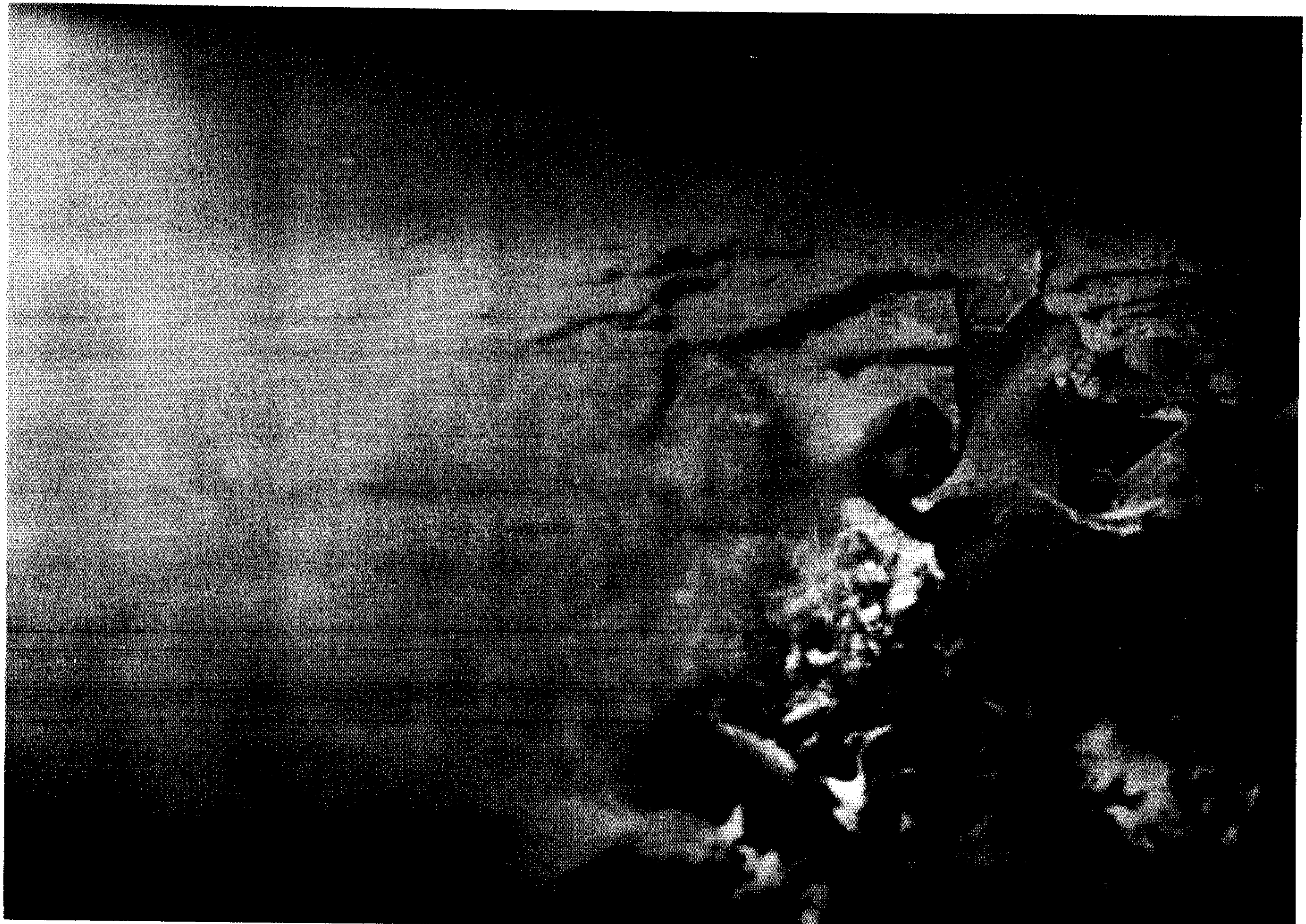


Figure 4. Ledges of organic material 5 to 10 cm high can be seen in background, surrounding the slight depression where fresh organic debris has accumulated. Note cloud of sediment resuspended by diver's fin.

strength of the muds outside of the depressions peak off scale, and residual valves averaged 1.09 PSI (7.52 KN/M^2). The gravels formed a pavement so hard they could not be penetrated.

In almost every case, the central areas of the depressions were marked by either gravels, cobbles, or a boulder. The largest boulder encountered, which was found in a depression having a diameter at about 4 meters, was 40-50 cm across and about 30 cm high. This boulder, together with the majority of gravel and cobble size rock fragments were angular and covered with marine growth. Close inspection of a number of cobble size fragments showed barnacle hold fasts on all sides; indicating that the cobbles had been overturned from time to time.

A very thin layer, 1-2 mm thick, of light brown fine sand or silt covered most of the exposed rocks and marine growth. This layer appeared to have only recently settled out of suspension and was easily resuspended by the wake of our diving fins.

Organisms.-- While we found the muddy surficial sediment to be highly bioturbated, only a few isopods were visable. Below the surface we found the thick shelled clam Astarte to be abundant.

A rich community of marine organisms occupied the surface of the larger rock fragments. These included various forms of algae, cupped shaped sponges, acorn barnacles, bryozoans and one or two soft bodied corals.

Most of the brown kelp we encountered in the depressions did not have rocks attached to the holdfast. Apparently their accumulation in the depressions is the result of becoming intangled with the few long fronds which are anchored to exposed cobbles and boulders.

General Comments

The mottled bottom seen in 1973 and 1976 sonographs is caused by the numerous depressions filled with organic material seen during the dive. These shallow depressions were most likely scoured by high velocity currents eroding muds and sands due to an increase in turbulence around exposed boulders and cobbles. The area then becomes a site of benthic marine growth, with holdfast-type organisms (kelp and barnacles) entrapping finer organic material until thick deposits accumulate. Upon burial, this debris would be compacted into the thin laminated mats seen outcropping on the sides of the depressions. Thus, accumulation of organic debris has been occuring at this site for some time. In this manner the "Boulder Patches" become sites of high benthic activity and eventually deposition of organic material.

Dive Site No. 76-17

Date: September 9, 1977
Depth: 2.5 - 6 m
Visibility: 2 m
Currents: None detected

Location: 70°23.8'N, 147°28.7'W
Divers: Erk Reimnitz and Larry Toimil
Length of traverse: 300 m northwestward
Supplementary data obtained: Photographs, vane shear measurements, salinity of interstitial water, fathogram nearby.

Introduction

The dive was made on the seaward side of Narwhal Island (Fig. 1). As is common for this area, the KARLUK could be brought to the site only on a tightly winding course because of ice. We anchored within 100 m from the beach, in a small clearing among grounded ice at a depth of about 2.5 m. Earlier during the day we had attempted to make a geophysical survey northward, winding through ice, to a point about 5.5 km from the island where we were stopped by a line of solid ice roughly along the 18 m depth contour. This ice was grounded, and afforded protection for the inshore areas. The sea was calm, and we detected no currents, so that the ice north of the island, either grounded or adrift, was rather stationary. We have reason to believe that over the last year little ice movement has taken place in this area because of multiyear stamukhi offshore. The purpose of the dive was to make further bottom observations in the area where the stamukhi zone and winter ice shear events occur close to shore.

A side scan sonar record and fathogram obtained very near the dive site along a winding course are shown in Figures 2a and 2b, respectively. Due to the presence of much grounded ice (Fig. 2a) forcing us to detour continuously, we did not make much progress in a seaward direction during the first 2/3 of the dive. After this we surfaced, got rid of the camera, and had the skiff man lead us through the ice seaward by towing a weighted line along the bottom. In this manner, we proceeded 200 m to a water depth of about 5.5 m. At 3.5 m depth, we traversed a thermocline with very blurred visibility, but in general, visibility was excellent.

Bottom Observations

Morphology.--The large scale relief observed along the traverse consisted of ice gouges, most of which were short and irregular. These gouges ranged from a few centimeters to nearly 1.5 m in vertical relief (ridge crest to gouge floor). Relatively smooth bottom areas (Fig. 3) were rare inshore of the 3 m isobath, but made up as much as 60% of the seafloor farther seaward. Figure 4, at a water depth of 2.5 m near where the photo of Figure 5 was taken, shows one of the short, irregular gouges. Figure 5 shows a grounded ice cake in the process of cutting a very shallow gouge. Current scour depressions, so commonly observed around grounded ice in summer time, were not formed at any of the ice-bottom contacts seen in this dive. At a water depth of 4 to 5 meters the interaction of ice with the bottom, consisting of sandy, cohesive mud and outcrops of stiff, overconsolidated silty clay, had produced highly irregular relief, including 20 to 30 cm large, angular blocks (Fig 6).

Figure 7 shows a view across a 2 m wide gouge with 60 cm high flanking ridges cut into sandy cohesive mud, with flanking slopes steeper than the angle of repose. Figure 8 is a close-up view of the flanking ridge, whose crest was

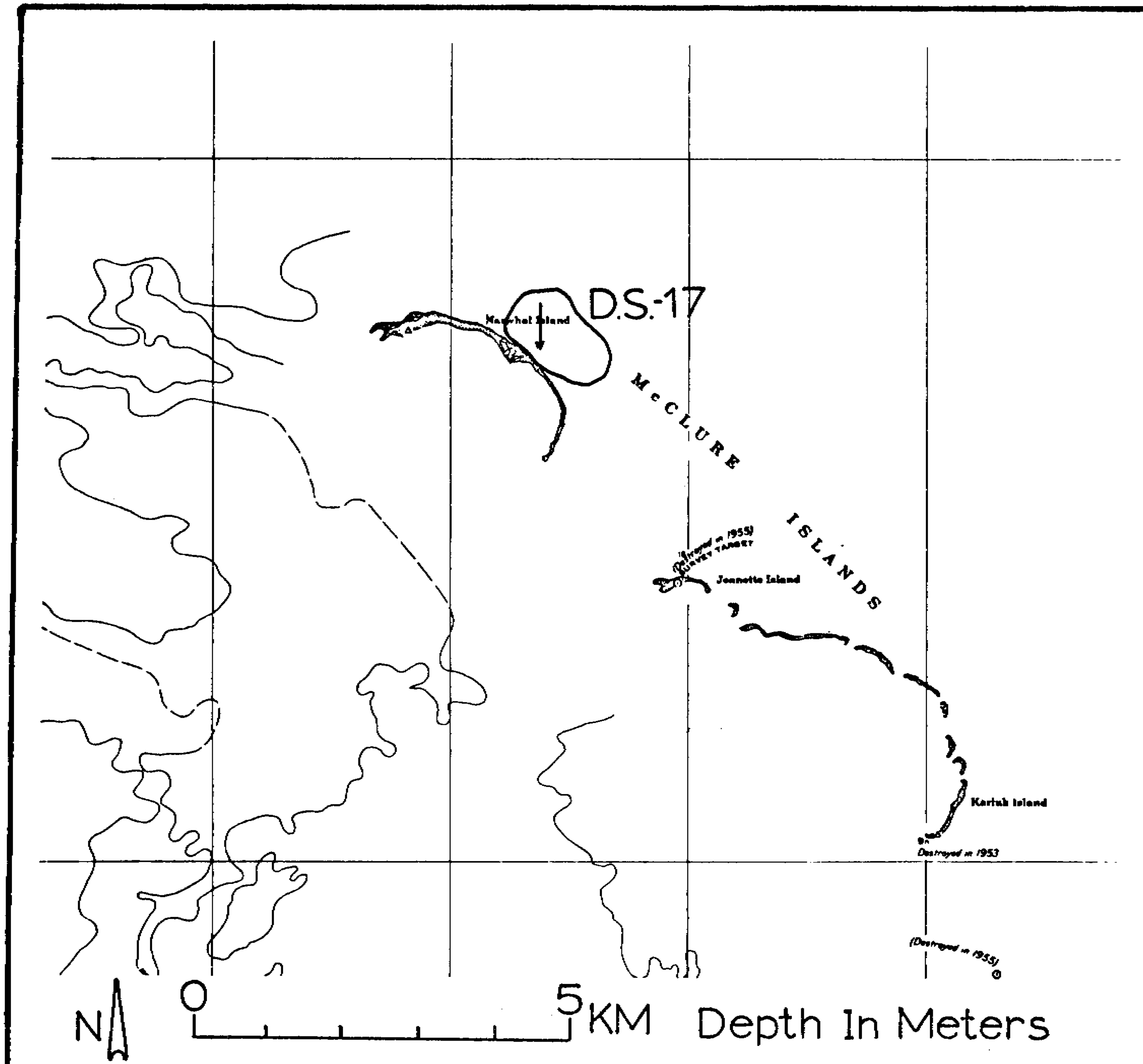
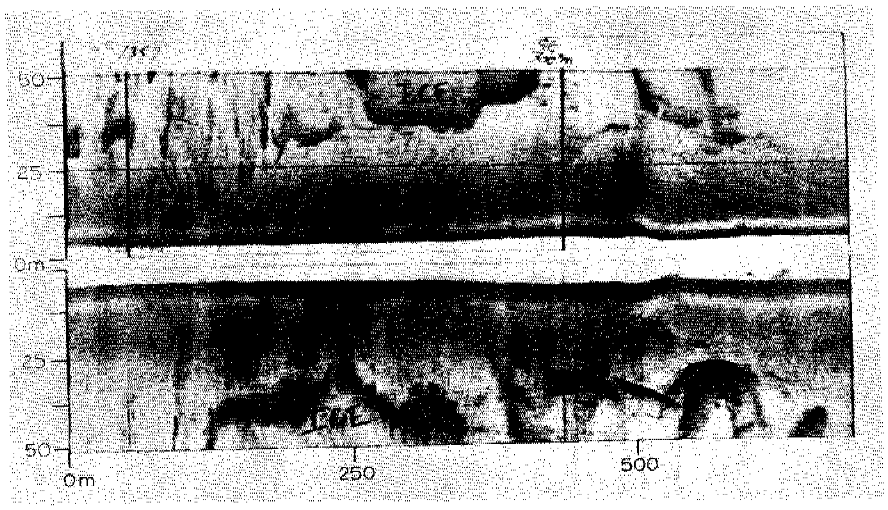


Figure 1. Location map showing dive site 17; arrow shows direction of trackline.

A



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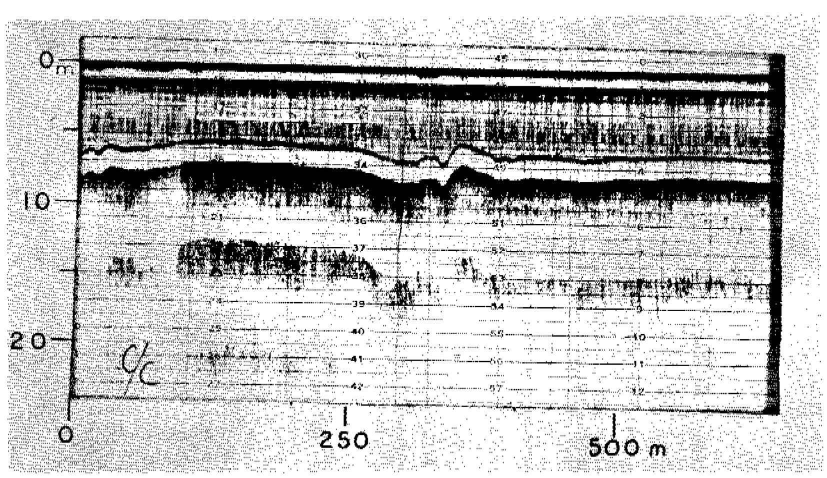


Figure 2. Side scan sonar (A) and raytheon (B) record near dive site 76-17, showing offshore relief and gouging. Gouge examined during dive is not on the records.

Figure 3.--Rounded cobbles, pebbles, and medium grained sand at a depth of about 2.5 m near Narwhal Island. Note lack of marine growth on the rocks, lack of burrowing organisms, and lack of ripple marks.

Figure 4.--Short, irregular gouge in same area as Figure 3.

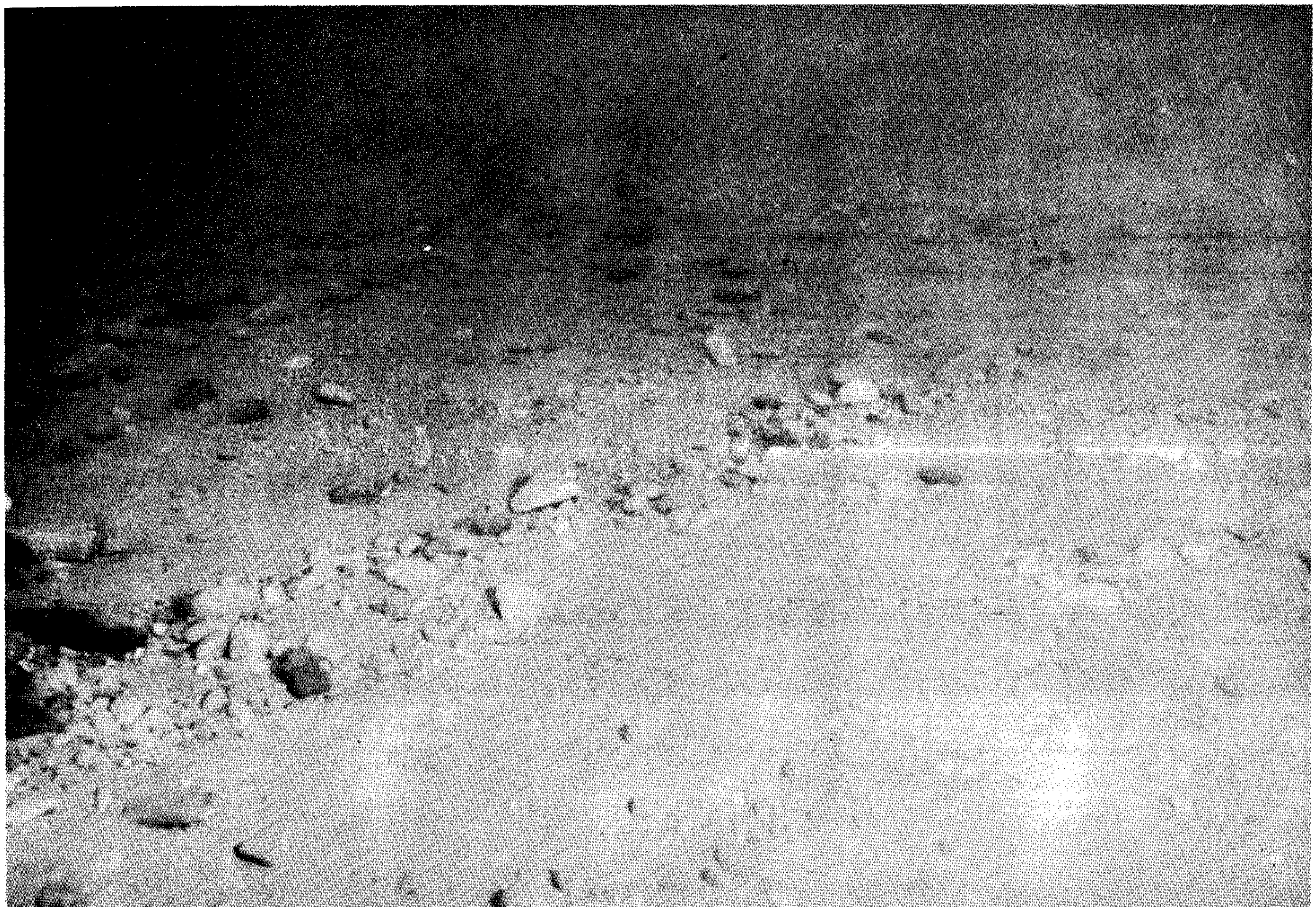


Figure 5.--Small summer gouge, approximately 30 cm wide, being formed in sandy mud with some cohesion. Water depth about 4 m, several hundred meters from Narwhal Island.

Figure 6.--Steep relief produced by ice gouging in sandy cohesive mud. Note angular blocks of overconsolidated silty clay among the brown kelp in the foreground.

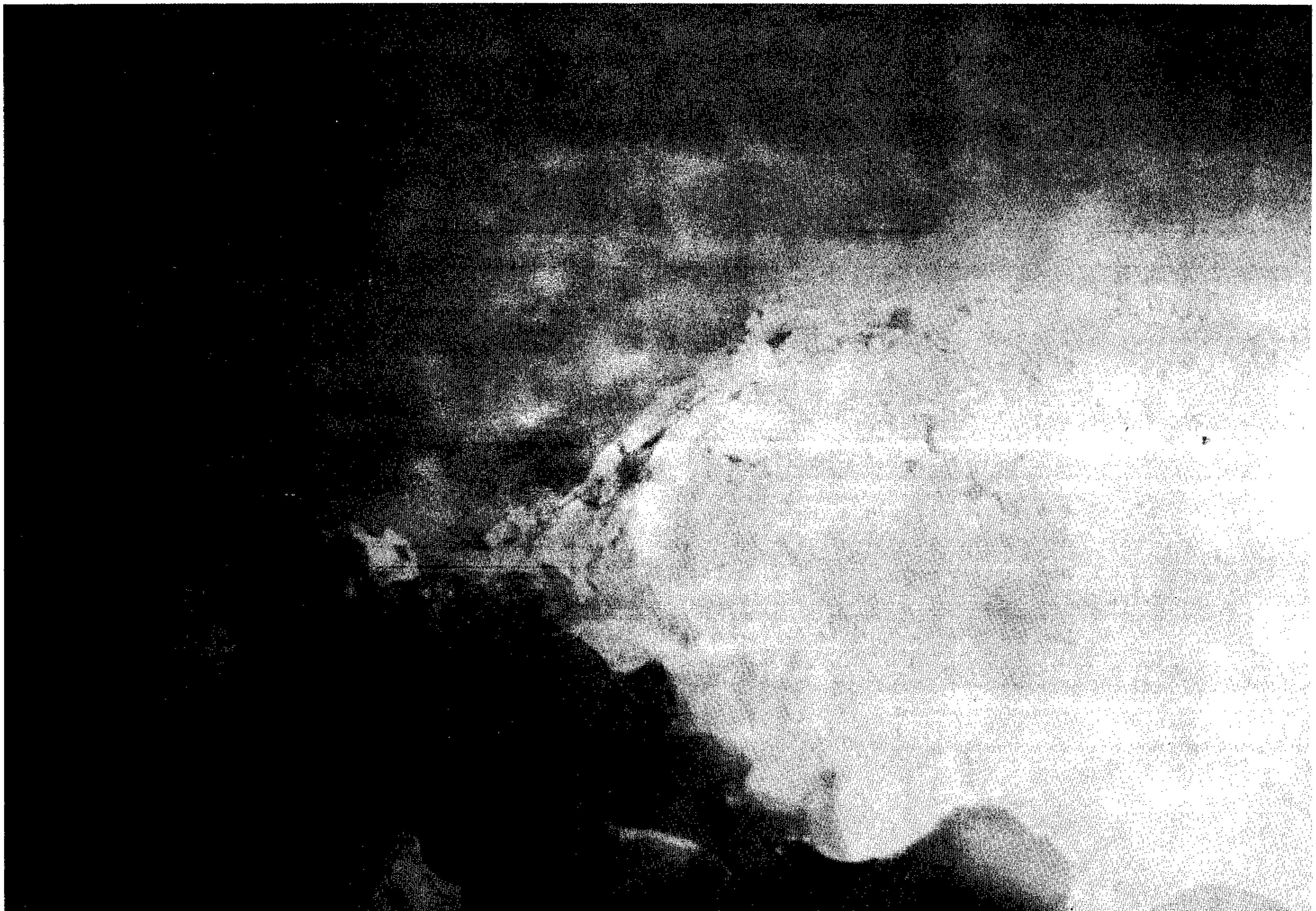
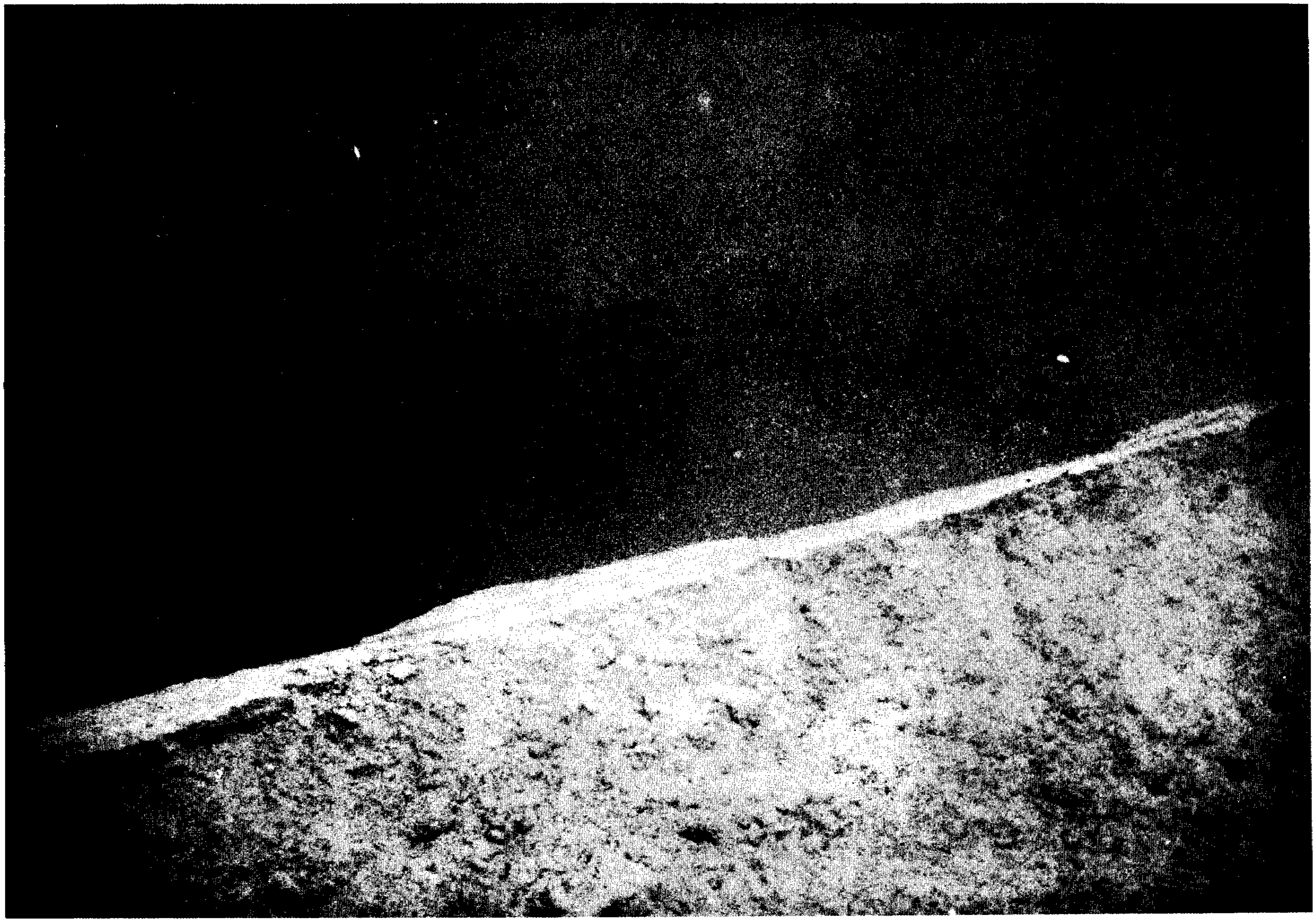


Figure 7.--View across a 2-m wide gouge with 60 cm high flanking ridges, cut into sandy cohesive mud.



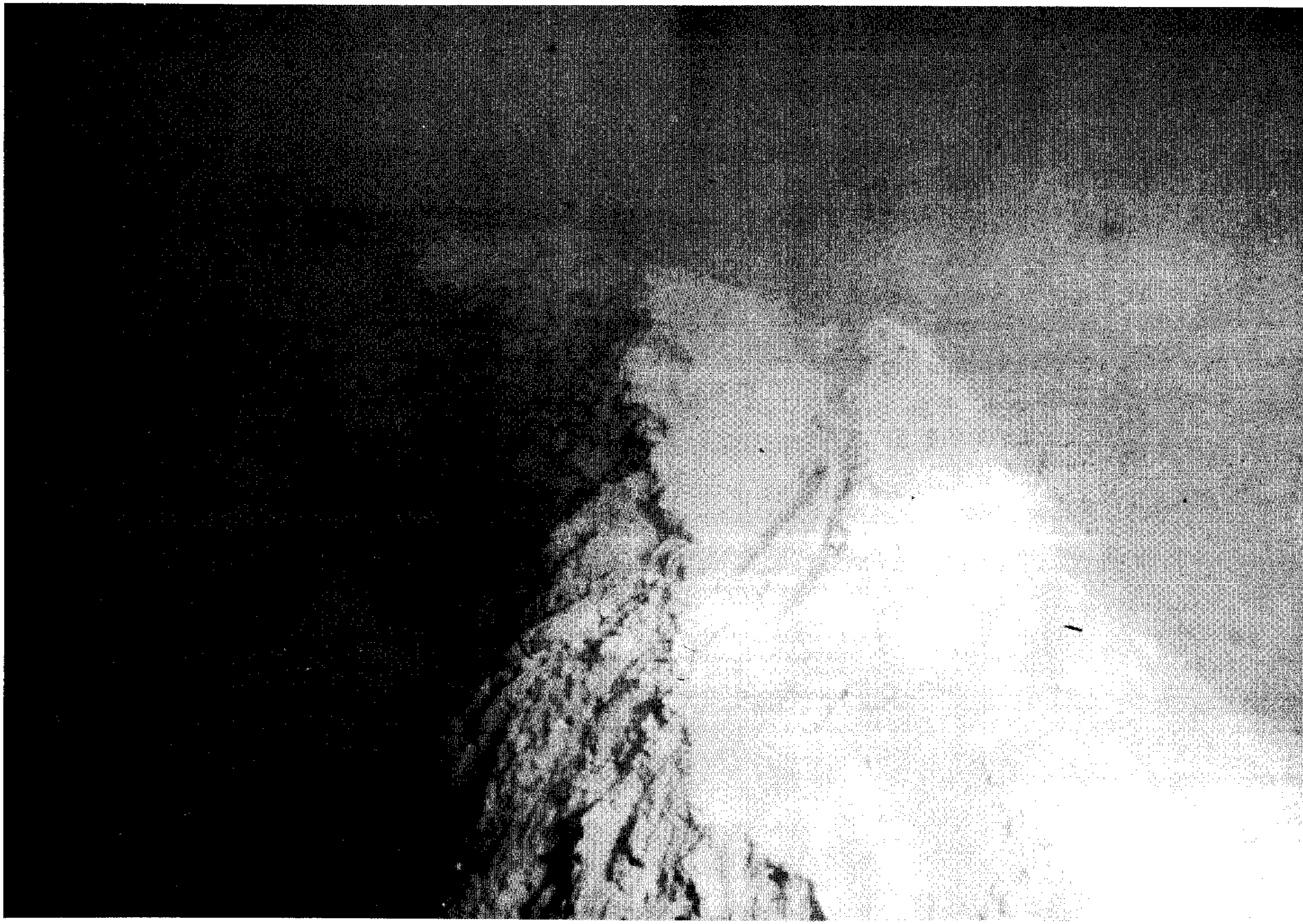


Figure 8.--Close-up view of flanking ridge seen in Figure 7. Angular relief, and lack of bioturbation and weathering indicates recency of event.

planed off by a subsequent event. Angular relief, and lack of bioturbation and weathering indicates recency of this gouge. It can be seen that plastic deformation of sediments was involved in the formation of this gouge.

Small scale ripple marks, very poorly defined, were observed in a few very small irregular patches. But several gouge floors were marked by transverse ripples, described earlier by Reimnitz and Barnes (1974) and still unexplained. We also saw scattered mounds and craters from the worm Arenicula, which here seemed to be larger than in most other areas observed.

Sediments.--The bottom sediments in the area are marked by wide variations. In general, the deposits were coarser along the inshore half of the bottom traverse. Here medium-grained sand, with patches of gravel and rounded cobbles were typical (Figs. 3 and 4). The northern beach of Narwhal Island is made up of similar deposits, although here they are somewhat better sorted into storm berm, beach face, and swash zone deposits, each somewhat different. Among the large clasts observed along the traverse, the pinkish granite originating from east of the Mackenzie Delta (Rodeick, 1974) was rather common. The distribution of gravel and cobbles was not only patchy and irregular on the surface, but within the upper 1 m of section as well. Thus, concentrations of gravel were often seen in sandy mud gouge flanks, or felt below surficial sand or mud patches. From a depth of about 3.5 m seaward, a sandy, cohesive mud generally blanketed the seafloor, but patches of sand and gravelly sand also were present. These materials apparently are underlain by a stiff (overconsolidated) silty clay, indicated by outcrops and a few scattered blocks of this material (Fig. 6). This silty clay is very similar to that observed by divers off Reindeer and Argo Islands (Reimnitz and Barnes, 1974) and in many other places on this shelf. About 5 slabs of nearly neutrally buoyant tundra mat, rather fresh in appearance, were also observed along the traverse. Seaward of 3.5 to 4 m depth, the bottom and particularly the floor of depressions, were covered with a thin transient layer of brown ooze, which appears to be rich in plankton remains. The floor of the gouge shown in figure 8 had a very soupy ooze layer about 5 cm thick. Except for the transient ooze layer on the surface, the bottom along the traverse was rather firm, but with large local variations (Table 1).

Organisms.--The bottom seaward of Narwhal Island, as observed previously off Cross Island, is characterized by being almost barren of benthic organisms. We saw very few isopods, a few scattered polychaete tubes, similar to the ones described off Karluk Island, scattered mounds and craters produced by Arenicula, and a few pieces of brown kelp (Fig. 6). None of the kelp was firmly anchored, only held in place temporarily by small pebbles. In contrast to rich marine growth seen on rocks in protected areas, elsewhere, the coarse clasts in this area were bare of any benthic organisms. The angular blocks of silty clay had a few bore-holes, up to .8 cm in diameter and the bottom in the muddier offshore part of the traverse had some small pockmarks suggesting the presence of burrowing organisms.

General Comments

Short, irregular ice gouges, common for a) nearshore areas off seaward facing beaches, b) offshore shoals (see dive 76-18), and c) regions with irregular bathymetry and relatively steep, local relief, do not show up nearly as well on sonographs as long, linear ice gouges typical for the open shelf with gentle slopes. Thus, the sonographs near the dive site show mainly reflections from ice, much of it grounded, and only a few well-defined gouges. The fact that current scour depressions had not formed along the ice bottom contacts and general lack of ripple marks, suggest that strong currents have not occurred here during the last few weeks, if not longer. This may be explained by the high concentration of grounded ice in the nearshore zone off Narwhal Island. The transverse ripples seen in several gouges must be due to some curious flow phenomenon associated with dragging objects. It is noteworthy that none of the ice had incorporated sediment near the bottom contact (Fig. 5). This has been noted previously by Reimnitz and Barnes (1974).

Reimnitz, et al. (1977a and b) have shown that a large part of the available marine energy is expended on the seafloor within the stamukhi zone by ice ridge and hummock formation, ice gouging, and that the stamukhi zone runs tangent and close to the major promontories of the Alaskan coast. Narwhal and Cross Island acting together form one of these promontories, where even the beaches are commonly disturbed by ice push. The total lack of marine growth on the cobbles and pebbles confirms the frequent ice interaction with the bottom near Narwhal Island and Cross Island (see Figure F in Reimnitz et al, 1973, a bottom photo taken seaward of Cross Island). Off Flaxman Island, where the stamukhi zone lies farther seaward and the beaches therefore are relatively protected, rocks seen on the bottom in closed circuit TV observations commonly have marine growth. It seems that the large-leaved brown kelp is able to survive by never attaching firmly. Since strong currents on the inner shelf generally flow parallel to shore, and long, linear, shore-parallel gouges on the central shelf would serve to track lightly anchored kelp, it may be able to stay in a shallow water habitat required for photosynthesis.

Dive Site No 76-18

Date: September 10, 1976

Depth: 6-12 m

Visibility: +1 m

Location: 70°33.2'N, 149°11.0'W

Divers: Erk Reimnitz and Larry Toimil

Length of traverse: 300 m northward

Currents: surface 15 cm/sec westward, bottom - none detected.

Supplementary data obtained: Vane shear measurements, pore water salinity determination, side scanning sonar record, and fathograms with sub-bottom seismic profile.

Introduction

The pronounced linear shoals occurring west of Prudhoe Bay several kilometers seaward of the barrier island chain (Fig. 1) are important focal points in the formation of major shear- and pressure ridge systems during the winter, and therefore exert considerable control on sea ice zonation on the Beaufort Sea shelf (Reimnitz, et al., 1977 a, b). Although these shoals in cross-section and relief are rather similar to modern barrier islands, they seem to have a different origin. It will be of considerable interest, and importance to know how they were formed. In the above two references, we have shown that these shoals seem to be migrating shoreward today. Therefore, we would also like to know what processes are involved in such shoal migration today.

On the day of the dive, the shoals in the area were marked by numerous grounded floebergs (stamukhi), which seemed to be of pressure ridge origin. Encountering fences of large, grounded ice on the shoals has been common occurrence during the 7 summer seasons in which we have made field observations in the area. The shoal on which the dive was made had a few gaps between the grounded floebergs, but many smaller free-floating ice cakes were drifting westward past these, at an estimated rate of 1/2 km/hr. We anchored the boat on the south side of the shoal, somewhat protected from the drifting ice. Because the gaps in the line of stamukhi were small, and individual floebergs large, we had the diving tender row the skiff with a weighted line through gap, which we could follow without running afoul under the ice.

The sonograph obtained near the actual diving traverse, and the fathogram recorded along the traverse after dive completion are shown in Figure 2. The fathogram (Fig. 2A) shows a foreshortened profile across the shoal, with slopes of about equal steepness but different relief: smooth on the south side and step-like on the north side. The adjacent flat bottom is about .5 m deeper on the seaward side of the shoal (right side). The sonograph is reversed, with the seaward side to the left (Fig. 2B). It shows the stamukhi on the crest of the shoal, some drifting ice on the leeward side, and a few ice gouges. But on this and other similar shoals we have never seen as many major gouges as one would expect because of the constant presence of grounded ice.

The dive started where marked on the fathogram (Fig. 2A). In the upper part of the water column, the visibility was estimated at about 2 m, but within a few meters of the bottom we penetrated a layer with abundant fine planktonic (?) particles, decreasing visibility to about 1 m.

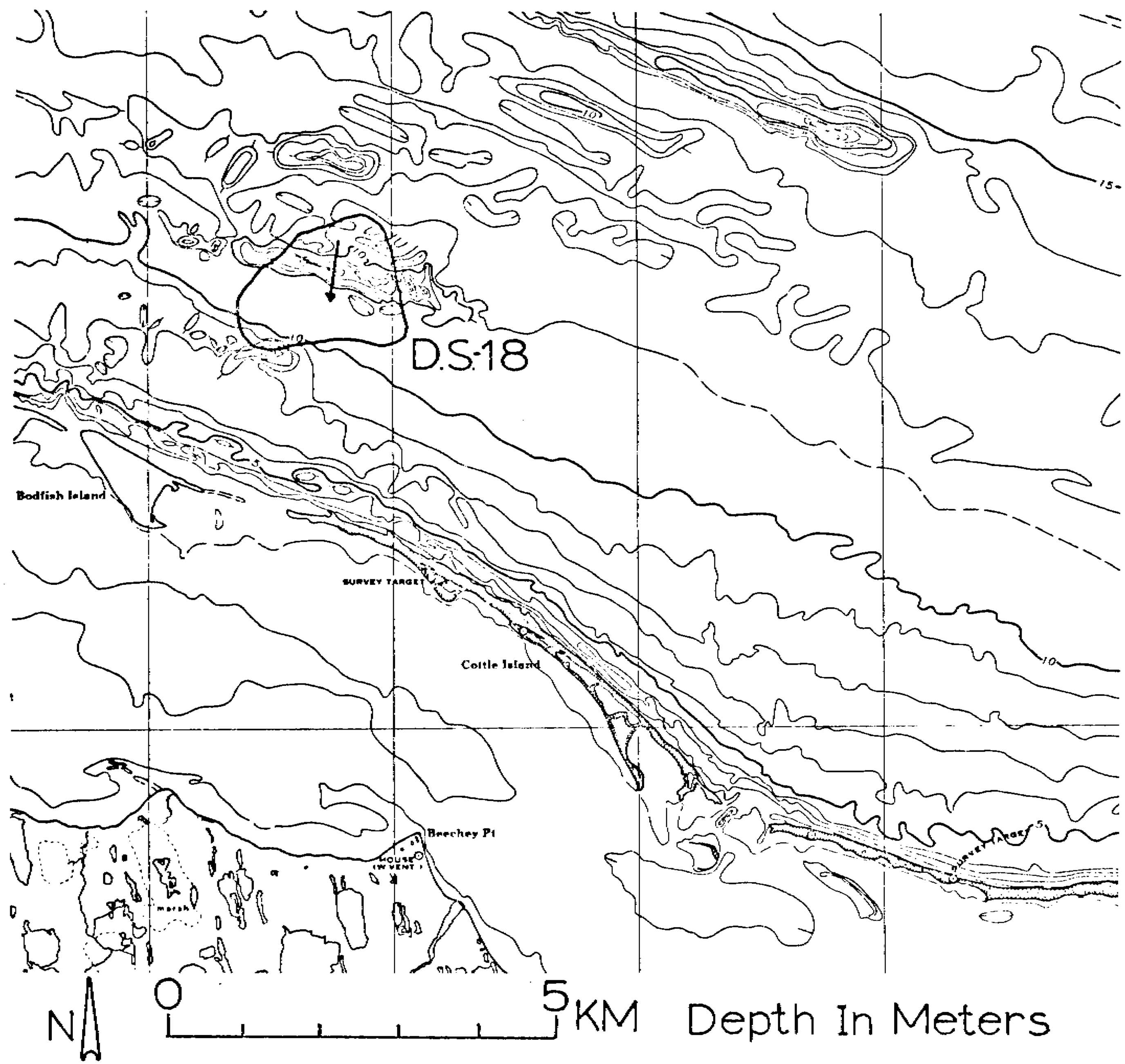


Figure 1. Location map-showing dive site 18; arrow shows direction of trackline.

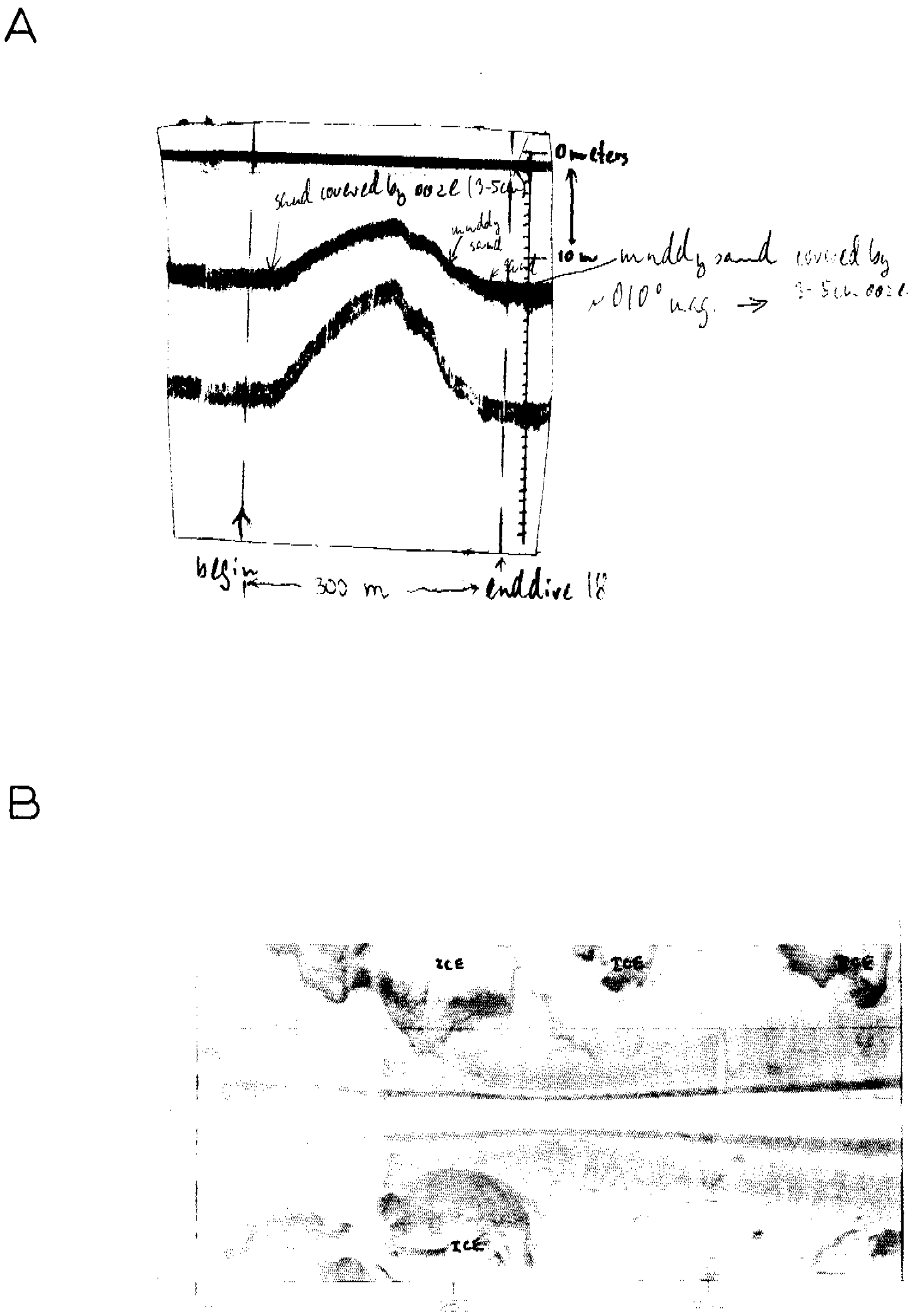


Figure 2. Fathogram (A) obtained along the traverse subsequent to dive 76-18. Side scan sonar record (B) obtained across the shoal between two large stamukhi (dark reflectors near the track) grounded on the seaward side of the shoal. This sonograph was recorded about 50 m east of the diving traverse. A lack of prominent gouges discernible on sonographs of sandy shoals is typical.

Bottom Observations

Morphology.--On the flat bottom adjacent to the ridge, the bottom was featureless, except for a multitude of tracks made by large isopods. Proceeding up the lee side of the shoal we saw several areas with indistinct, rounded off ripples, spaced about 15 cm apart and trending about NW to SE. The upper half of this slope had no detectable ripple marks, but was marked by an irregular microrelief of unknown origin. This surface was cut by numerous short, irregular gouges in criss-crossing patterns. On the crest of the shoal there also were numerous short, ill-defined gouges and two major linear gouges trending roughly parallel to the crest. These gouges were about 1.5 to 2 m wide, adjacent and parallel to each other, with the flanks of the ridges sloping at the angle of repose. In our judgement, none of the gouges on the crest had a fresh appearance, seeming rather weathered and subdued. Descending down the seaward side of the shoal, we saw a number of ill-defined gouge features, and micro-relief from bottom dwellers, notably the worm Arenicula. On the short stretch of flat-lying seafloor traversed near the end of the dive there was no noticeable relief, except for that produced by burrowing activity.

Sediments.--On the flat floor landward of the shoal (Fig. 2A) the bottom was a firm sand, covered by 3-5 cm of soupy brown ooze, probably remains of the summer plankton bloom. Sandy substrate continued halfway up the landward flank of the shoal, but the ooze layer disappeared at this point. Across the entire upper part of the shoal the bottom was clean, well-sorted sand, with brown ooze collecting in the bottoms of gouges. Halfway down the seaward slope, we crossed an area with muddy sand, which, when penetrated by the diver's hand, momentarily adhered to the glove. At the toe of the seaward slope (Fig. 2A), the slightly cohesive muddy sand gave way to rather clean sand, but at the very end of the traverse it was again muddy sand. The distribution of the transient ooze layer was similar on both seaward and landward side, with a 3-5 cm thick layer covering micro-relief on the flat floor adjacent to the shoal. Poking around with the hand during the traverse we did not detect any difference between surface and subsurface material, except that on the landward flank there may have been muddy sand below the sand. This is only judged by feeling, and we can not be certain. Not a single pebble was noted along the entire traverse, but there were numerous small clam shells and fragments, apparently mainly of the genus Cyrtodaria.

The substrate in general felt rather firm along the entire traverse, and some vane shear values from the end of the dive are given in Table 1.

Organisms.--Most notable was the large isopod, occurring in large numbers on the flat floor on both sides of the shoal. Here, within a view of 1 m, one could count perhaps ten of these, rapidly crawling along with the backs barely protruding from the ooze layer. On the shandy shoal devoid of ooze, they were not very numerous. In several places we saw groups of about five isopods feeding on pinkish, jelly-like organisms, shaped like a watermelon but with distinct ridges from one end to the other. We saw scattered coelenterates, soft spherical organisms of about 1.5 cm diameter attached to the bottom. There also were a few scattered tubes of polychaetes protruding several centimeters from the seafloor, and some mounds of the worm Arenicula. Also, several unattached brown kelp fronds were seen, but by and large the shoal itself did not have much bottom life as far as we could tell.

General Comments

The shoal, consisting of clean sand without any pebbles, is very different from modern barrier islands consisting of sandy gravel to gravelly sand. In speculating on the process of ice rafting in the Beaufort Sea, we have used the lack of coarse clasts as an argument against the rafting of gravel and boulders on the shelf (Reimnitz and Barnes, 1974). The time of the year when incorporated sediment is released from ice is summer time, when it melts. During this period the residence time of ice, because of grounding, is higher on the shoals than on the general shelf. Winnowing by currents (probably not by waves at this depth) should result in a cap of lag material on the shoal, representing the coarsest fraction supplied at this time.

As mentioned under dive 76-17, short irregular gouges are not recorded very well by side scanning sonar, compared to long linear ones. We saw a number of these during the dive, along with two major linear ones. But we were surprised by the general lack of evidence of recent ice gouging on the shoal, especially when compared to diving observations made across this and other shoals in 1972.

An 80 cm long core obtained on the crest of the shoal with a vibrocorer in 1976 penetrated clean, well-sorted, medium-grained sand, with several packages of current-produced structures. Thus, the crest of the ridge occasionally is shaped by current action, but probably these currents are mainly local along the bottom contact of stamukhi. Thus we do not expect that the packages with current-produced sedimentary structures extend very far laterally, but rather occur as lenses.

The dive has added further information on the Beaufort Sea shoals on the inner shelf, which generally are marked by stamukhi. But we are still a long way from an understanding of the origin of the shoals, and their long-term interaction with the ice.

Dive Site No. 76-19

Date: September 22, 1976
Depth: 5.5 m
Visibility: .6 m
Currents: 17 cm/sec at 86° mag.

Location: 70°23.95'N, 148°01.40'W
Divers: Erk Reimnitz and Larry Toimil
Length of traverse: 60 m
Supplementary data obtained: Vane shear measurements

Introduction

This dive was made mainly for the purpose of checking the condition of an instrument package consisting of current meter, tide gauge, and nephelometer, prior to retrieval. The wind was northeasterly at about 10 knots, and there was widely scattered drift ice, increasing in concentration northward toward Cross Island (Fig. 1). Attached to the current meter anchor was a steel cable as grappling line, with another anchor at the end. Dragging a grappling hook to pick up the grappling line we had accumulated a considerable amount of brown kelp, and the line itself also had many large brown fronds wrapped around it.

We swam a short distance along the grappling line toward the current meter with very poor visibility (about .6 m). We separated, while being teathered with a 2-m long line, and thus swam a search pattern around the current meter site. A 15 feet long dragmark led up to the current meter, indicating that we had dragged the instrument while grappling. In spite of the kelp in the area, the instruments were not fouled.

Bottom Observations

Morphology.--Small current ripples, with a wave length of about 10 cm, and indicative of westward current, were well developed in an even pattern. Lack of ripple disruption by burrowers suggested a recent origin for the ripples. The bottom was smooth on a large scale, except for several 30 cm diameter depressions that were only 1 to 2 cm deep and floored by granules and shell fragments.

Sediments.--The surficial sediments were fine to medium sand, except for the small depressions with granules and fragile shell fragments (Cyrtodaria). These shells were sparsely scattered about throughout the dive site. One large kelp frond was seen attached to a pebble. Very fine grained, dark organic matter was marking the steep, down-current side of the ripples. The bottom was firm (see shear strength in Table 1). In pushing the shear vane into the bottom it felt as if the firm substrate was muddy. When retrieving the anchor the flukes indeed had some very dark brown, and muddy sand with several pebbles and fragile shell fragments.

Organisms.--Except for the scattered fronds of brown kelp, and small shell fragments, we noted no benthic life.

General Comments

The current ripples were not actively migrating at the time of the dive, although the current meter at 1 m above the bottom recorded 17 cm/sec current. We judged the current as being "very weak." Earlier during the day the current velocity had been around 1/2 knot (25 cm/sec) for several hours, and we think that the ripples were formed at that time.

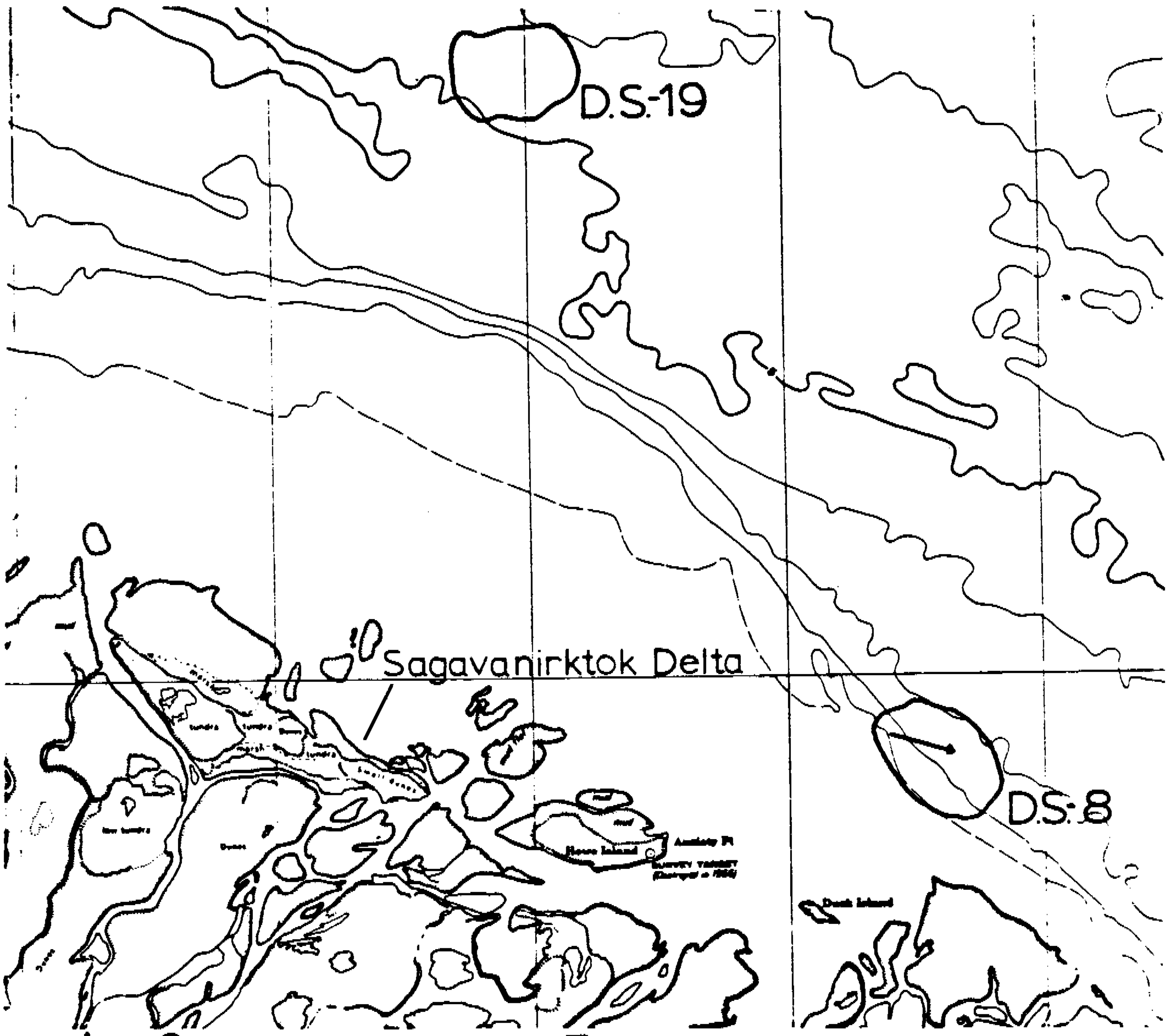


Figure 1. Location map showing dive site 12. Arrow shows direction of trackline.

It appears as though the sand layer blanketing the floor is very thin, underlain by muddy sand. We do not know what caused the apparent change in depositional environment. The site is close to the Sagavanirtok River delta (Fig. 1), which supplies predominantly finer-than-sand-size material, and no pebbles to the sea at this time. It could be that the muddy sand underlying the sand venier represents deltaic sediments from a time when the main discharge was closer to the site than today. The sand venier then would be a winnowing product of the underlying material. Because of the intense sediment disruption near arctic deltas by strudel scour (Reimnitz et al, 1974) it seems futile to attempt an interpretation of the limited observations at this site.

The origin of slight depressions marked by granule-size deposits in the sand venier remains unknown.

Dive Site No. 76-20

Date: September 23, 1976
Depth: 0-5 m
Visibility: .2 m to zero
Currents: weak into lagoon

Location: 70°26.55'N, 148°46.5'W
Divers: Erk Reimnitz and Larry Toimil
Length of traverse: 150 m
Supplementary data obtained: None at time of dive

Introduction

The tidal inlet studied on this dive is the main connection for eastern Simpson Lagoon and the open ocean (Fig. 1). The Kuparok River discharges into the lagoon nearby. During the middle of July 1976, we retrieved a current meter from the axis of the inlet, which had been in place since September 1975. The instrument package, mooring lines, and a 100-m long cable leading to an anchor nearby the channel all had collected very large amounts of fibrous organic matter. After observing very large amounts of similar organic matter in the tidal inlet east of Flaxman Island, there is an interest in knowing the source, pathways, and depositional sites of this material.

In 1972, some work was done in this inlet with the R/V LOON, including a dive, and a current meter implant. In order to place the instrument into the deepest part of the channel, we also made a reconnaissance bathymetric survey. In this survey, we first placed 4 buoys in the channel axis, and then ran a survey line along the line of buoys (Fig. 2). Figure 2, based on C&GS Chart 9472, shows that the maximum depth of the channel was 9 feet, and that the channel was much farther from the adjacent island than in 1972. In 1972, maximum depth in the channel was found to be about 27 feet.

At the time of the dive there was a weak current into the lagoon through the channel. We made several bottom traverses across the channel, with 20 to 30 cm visibility in very shallow water, and zero visibility below 1.5 m depth. The traverses were in the vicinity of buoys 2 and 3, close to the deepest part of the channel.

Bottom Observations

Morphology.--From the beach on the nearest island, the bottom slopes at the angle of repose toward the channel axis. Asymetric current ripples, 3-5 cm high, and spaced 20 cm apart, suggested seaward flow had shaped them. These were observed to a depth of 1.5 m on either side of the channel; below which depth poor visibility prevented detection. Adjacent to the channel axis we felt several 5-10 cm high ledges, which may have been slabs of tundra, rather than the actual bottom profile.

Sediments.--To a depth of 1-m adjacent to the beach was very loose gravel lying at the angle of repose, below 1 m surface sediment became sandier with pea gravel exposed in the troughs of ripples. Below a depth of 1.5 m, where we could no longer see, muddy bottom was felt, so soft that the hand could penetrate to the wrist. This mud was overlain by small patches of gravel. Near the channel floor, the sides felt like rather firm mud and in several places it felt as if small ledges were cut into the mud, but these may have been slabs of tundra. The channel axis was underlain by firmly packed gravel, with some angular rock fragments up to 4 or 5 cm in diameter. We felt a number of tundra slabs, sticks, branches, and an 8 cm diameter log, resting on or protruding from the channel fill. We observed none of the fibrous organic matter which must have been abundant in early summer.

Organisms.--None were observed.

General Comments

We believe that the details of the bottom morphology, and sediments in this active tidal inlet undergo short term, drastic changes. The longitudinal profile of the channel axis in 1972 (Fig. 2) showed a highly irregular bottom. Swimming along the channel axis in that year (August 24), with .5 m visibility, we found that the parts of the bottom profile were bluffs, 60 to 80 cm high, exposing fibrous organic matter which we interpreted as tundra. The high ground between the bluffs consisted of sandy gravel shaped into about 20 cm high current ripples pointing seaward. The deep holes were partly filled with soft mud and organic matter, and sticks. Thus, it appeared that this tidal inlet was not in equilibrium with open water conditions, but with catastrophic events during river flooding of sea ice and including strudel scour. Reimnitz et al, (1974) described what clearly was a strudel scour of major dimensions, found very near this tidal inlet.

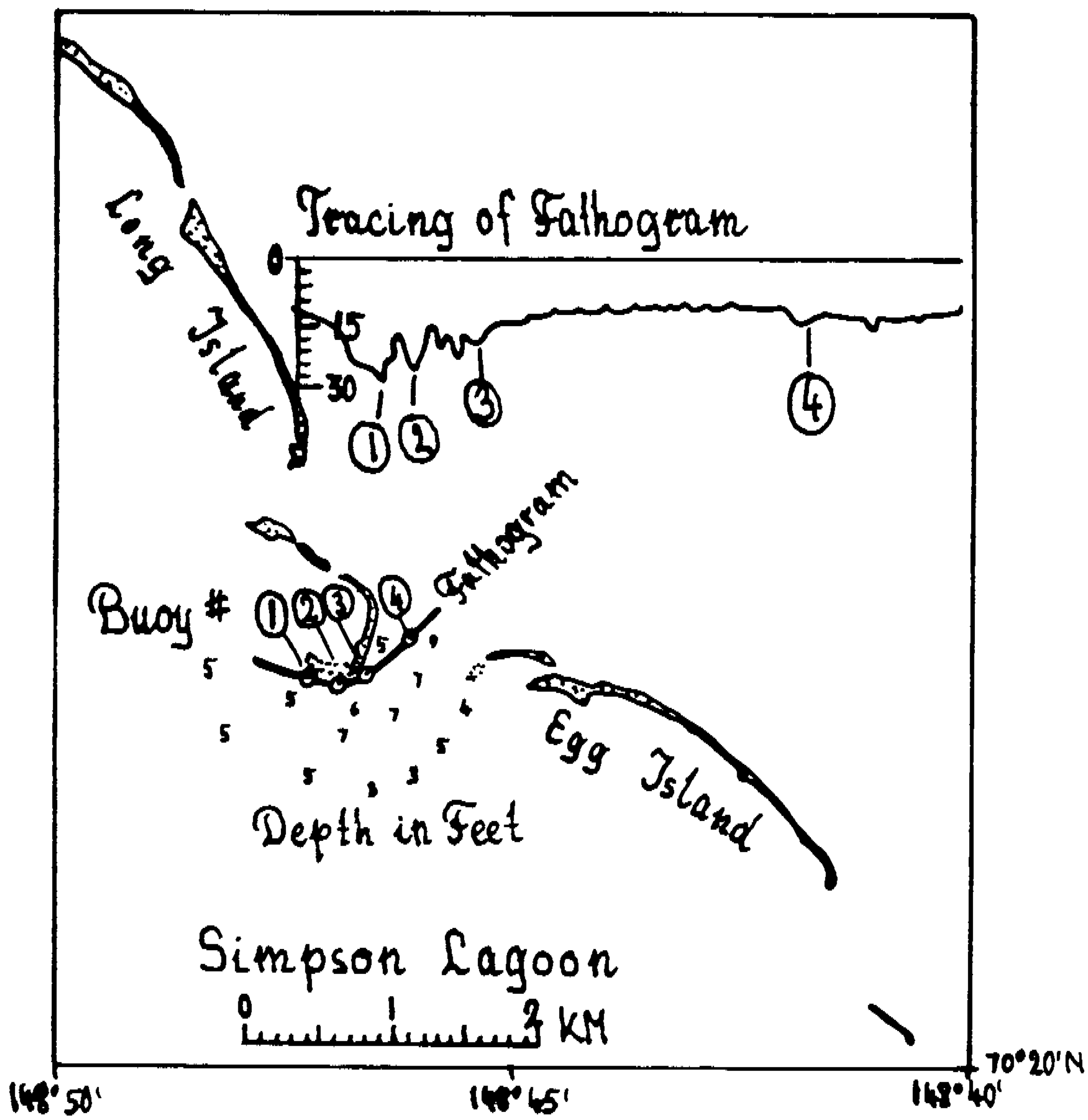


Figure 2.--Dive site 76-20 is located in the tidal inlet to Simpson Lagoon, near buoy 3. The four buoys were placed in the channel axis in 1972 for the purpose of obtaining a longitudinal depth profile of the inlet channel. Note that at that time the maximum depth was 27 feet, while C&GS Chart 9472, based on 1950 surveys, shows a maximum depth of 9 feet.

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ATTACHMENT C

Preliminary results and observations on vibracoring taken on the Beaufort Sea innershelf.

Peter Barnes, Erk Reimnitz, Larry Toimil

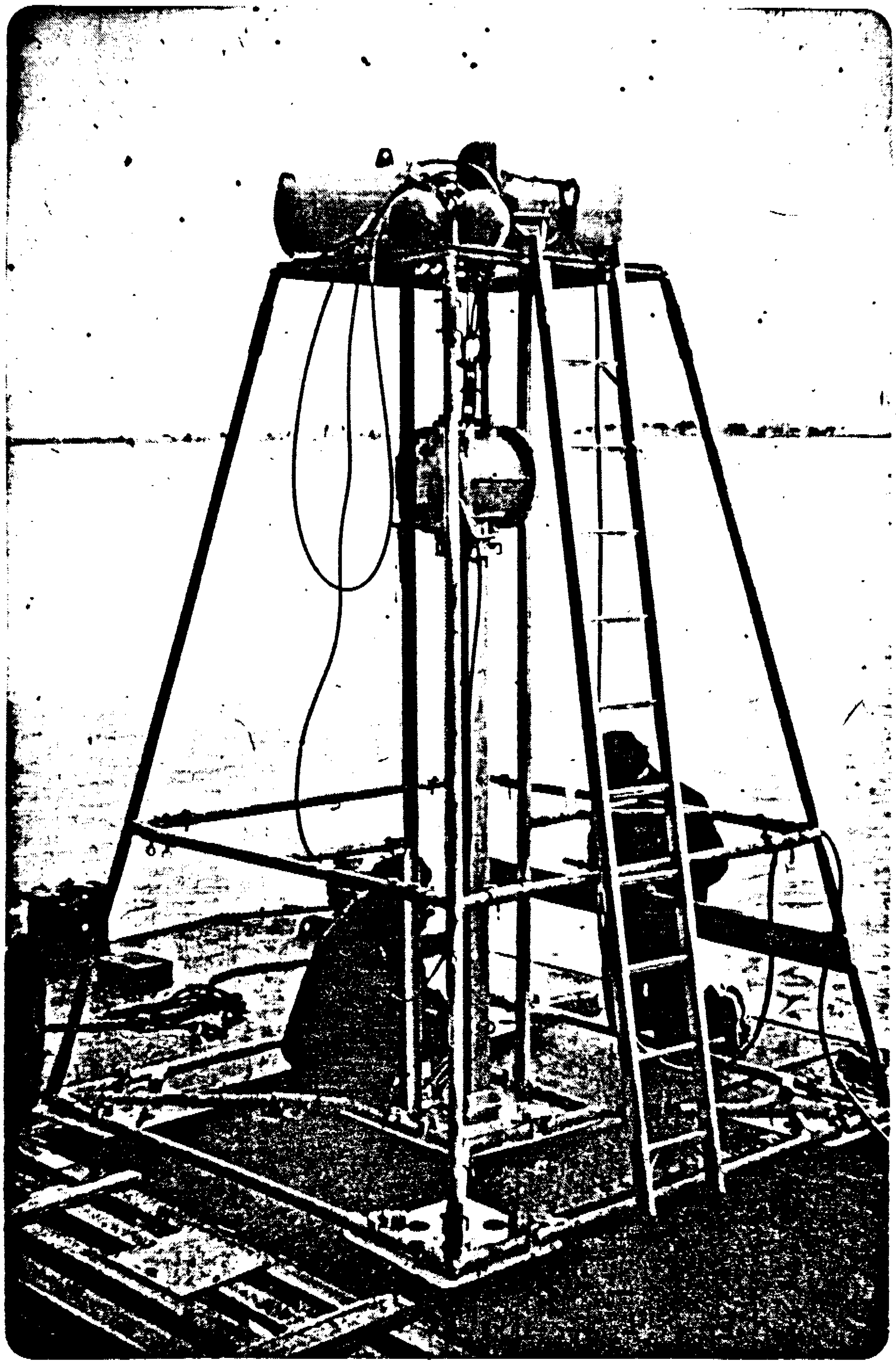
Introduction

Interpretation of modern sedimentary regimes requires that in addition to the surficial distribution of sedimentary parameters an understanding of their sub-seafloor distribution be known. This is especially true on the Arctic Shelves where ice gouging is actively influencing modern processes to depths of tens of centimeters on an annual basis (Reimnitz and others, 1977; Barnes and Reimnitz, 1974; Lewis, 1977). Numerous attempts during earlier studies to core the sediments of the Beaufort shelf met with limited success and were essentially unsucessful inside 20 m depth. The use of a vibrating coring device has allowed us to obtain cores up to 180 cm in length from several different geologic environments on the inner shelf of the Alaskan Beaufort Sea. The core descriptions and a preliminary interpretation are the basis of this report.

Coring Device

The Kiel vibratory coring device used in this study vibrates from the forces created by a pair of counter-rotating electrically driven eccentric weights driving a hammer against an anvil. The hammer impact from the downstroke of 700 kp is repeated at 2,840 times per minute and is transmitted through the driving head to the core barrel, forcing the barrel into the sediment. The vibrating head and core barrel are guided into the sediment by a tripod frame and vertical rails (Fig. 1). This same frame supports a winch which withdraws the core from the bottom after sampling. Two types of core barrels were used; 10 x 10 cm square steel barrels and 10.8 cm ID fiberglass barrels. The steel barrel appeared to propogate the vibrations to the sediment more efficiently and therefore was more successful in obtain full cores. It was necessary to use a spring type core catcher to retain sandy samples in both the round and square barrels.

Samples were obtained by anchoring the vessel and lowering the corer to



the sea floor and vibrating in increments until either full penetration was indicated on the control console or further penetration of the corer stopped. Vibrating times ranged from 3 to a maximum of 10 min. A discussion of the implications of varied penetration rates at different coring sites is given in another report (Reimnitz and others, 1977).

After retrieval, the cores were capped on the lower end and sealed at the top with plaster of Paris or wax. The cores were then shipped to Menlo Park and stored at about 4°C prior to analysis. The metal core boxes split in half from corner to corner by unscrewing the two halves. Fiberglass barrels were cut with a saw. The cores themselves were split using a wire "cheese cutter". One half of the core was inverted on plexiglass sheeting and a 1 cm slab sectioned from the center for radiography. Radiography was accomplished using 50 kv and 3 ma with type M or AA film in an attempt to achieve maximum contrast. Exposures were usually 10-15 min. The remainder of this half of the core was archived in plastic wrap at 4°C. The other half of the core was photographed and described and then impregnated with a sediment peel resin, essentially following the techniques outlined in Burger and others, (1969). The peels worked well in sandy sediments, clearly enhancing sedimentary structures; but they were unsucessful in the finer grained materials. The remainder of this half was sectioned into 5 cm and stored for future analysis.

Results

All types of sediments were encountered from gravels to sands, to clays and even peats. The variety is such that lateral extrapolations from one core station to another are not possible with the present spacing between core holes. During the first season of coring a variety of sedimentary environments were sampled (Fig. 2, A & B). The results we obtained indicate that at present the set of cores we have is insufficient to characterize any one environment. In fact, more questions were generated than answered, in particular regarding the lateral continuity of the stratigraphy and structures we observed. However, with only crude attention to detail, some relationships are evident from the initial descriptions and several environments could be distinguished.

Delta Front Platform

Along the arctic coast a bench or terrace is commonly developed along the 2-m isobath. The so-called 2-m bench is especially well developed off river deltas. Cores 18 through 23 on the delta of the Colville River (Fig. 2A and appendix) were distinctive in that they were well stratified and were characterized by abundant peat layers. These cores, all from water depths less than 4 m, also had bedded and cross-bedded clean sands, especially inshore of the 2-m bench. The occurrence of peat appears to increase both in the onshore direction and in the cores taken on the western section of the platform. No peat layers were noted seaward of these shallow cores. Two other components were conspicuous; coal by its presence in these cores and pebbles which were completely absent.

It appears that the sedimentary processes on the delta front platform, as recorded in the cores, reflect the influence of the Colville River and a coastal environment with a negligible influence from ice. Presumably the peat, coal and other detritus are supplied by the river and coastal bluff erosion (Arnborg et al., 1966; Walker, 1974), and reworked during the summer by waves and currents. One can also conclude that the river is not presently a source of gravel for the offshore environment. The abundance of low density peat in the river cores suggests a low energy environment where subsequent deposition buries the peats before they can be reworked and redistributed by waves and currents. The environment may be explained by the character of the arctic rivers of Alaska.

In the spring initial melting occurs from the top down towards the permafrost making organic material the first available detritus for river transport.

Subsequent melting of the permafrost active layer makes mineral detritus available. The initial flooding of the sea ice by river flow (Reimnitz and Bruder, 1972; Walker, 1974) occurs mostly on the sea ice overying the 2-m bench. Continued river flow and sea ice melting are confined to the delta front platform by sea ice seaward of the platform (Walker, 1974). This results in an initial input of organic material followed by the peak input of mineral detritus all of which are more or less constrained, by the presence of sea ice, to the 2-m bench. The intensity of subsequent open-season wave and current reworking as well as the seasonal variability of mineral and organic input, could determine the likliehood of peat layer preservation.

Areas reworked by strudel scour and ice gouge

Seaward of the delta front platform in an area influenced by strudel scour (Reimnitz and others, 1974) and ice gouge (Reimnitz and others, 1977) the vibro-cores exhibit a different character (Cores 13 through 17: Fig. 2A and appendix) Most notably, there is a lack of horizontal bedding and the sediments in total are generally finer grained. Pebbles, shells and well-defined sand layers occur occasionally. Much of the cored material appears disrupted from the action of ice gouging. As the rates of gouging in this area should rework the bottom sediments to an average depth of 30 cm in less than 100 years, while sedimentation is estimated at less than 10 cm per 100 years, we would expect the entire core to be reworked (Barnes and others, 1977). The existence of sand layers is therefore somewhat puzzling. Either they are lenses with only limited lateral extent or the areal influence of ice gouging is not a random process.

Barrier Islands

A series of 4 cores taken in the vicinity of Reindeer Island (Cores 5 through 8, Fig. 2B and appendix) show that this environment is dominated by sand. Clean-bedded sands with some bross bedding and with rare pebbles occur on the down-drift side of the island (Core 5). On the seaward side of the island sands with the same characteristics are overlain by gravels and pebbly sands (Core 6). Further offshore, poorly to well-bedded sands are found in association with mud lumps (Cores 7 and 8) but pebbles are not present. These cores could be interpreted to represent portions of the transgressive sequence of a migrating barrier island, where the stratigraphy wave and current bedding at the foot of the advancing island is represented in Core 5 which is overlain by the pebbly beach facies seen in the upper part of Core 6. Offshore ice gouging is perhaps responsible for the poor development of bedding. The mud lumps are derived from outcrops of pre-Holocene stiff silty clay which has been observed on diving, side-scan and seismic observation in the area (Reimnitz and Barnes, 1974).

Lagoons and Bays

The action of ice gouging and strudel scour is minimal in the central portion of Prudhoe Bay and in Stefansson Sound (Fig. 1). Cores taken from this environment reflect a sedimentologically more quiet and biologically more active regime (Cores 1, 4, 9 and 12). Bedding is clearly present but horizontal boundaries are poorly defined. Much of the core could be described as possibly bioturbated. There is occasional development of distinct sand beds with cross bedding (Core 12). The finer grained sediments are very dark and rich in organic materials. Thus the cores from protected inshore areas appear to be characterized by stratified sequence of organically rich fine-grained sediment, which has been partially disrupted by bioturbation.

Summary

Four sedimentary environments can be crudely characterized from the above discussion as follows:

1) Delta front platform consisting of well bedded sequences of sands, muds and peats.

2) Marine environment influenced by ice gouging and strudel scour, consisting primarily of unstructured muds.

3) Barrier islands composed of clean sands and minor amounts of gravels.

4) Protected lagoons and bays consisting of organic muds and minor sands with biologically disrupted bedding.

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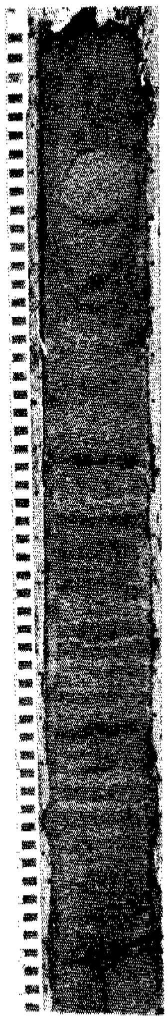
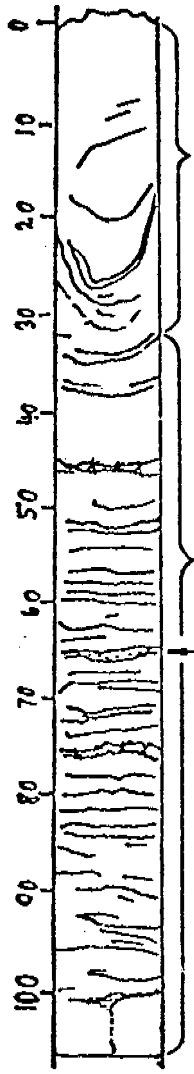
CORE No. PB76-1

Lat. 70°19.0'N, Long. 148°22.0'W **Water Depth: 3 m**

Location: Central part, mid-Prudhoe Bay

Photo	Sketch	Description





Medium grey silty clay to clayey silt banded as drawn, with bands marked by organic (very fine) mud. Several small pebbles to granules. Small fragile shell fragments ot 23 cm.

Probably disturbed during sampling.

irregular medium sand layer

Horizontally banded to mottled silty clay/clayey silt. Banding marked partly by fine organic concentrations, giving dark color, or variations in silt/clay ratio. No pebbles or shells. Does not become noticeably stiffer near bottom.
The station log may say that winch cable was jammed, preventing further penetration.

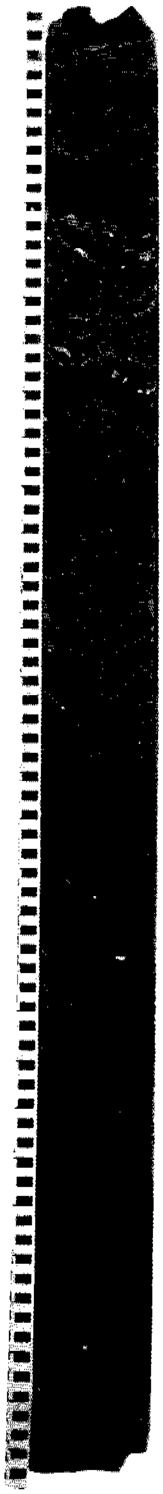
Total core length: 107 cm

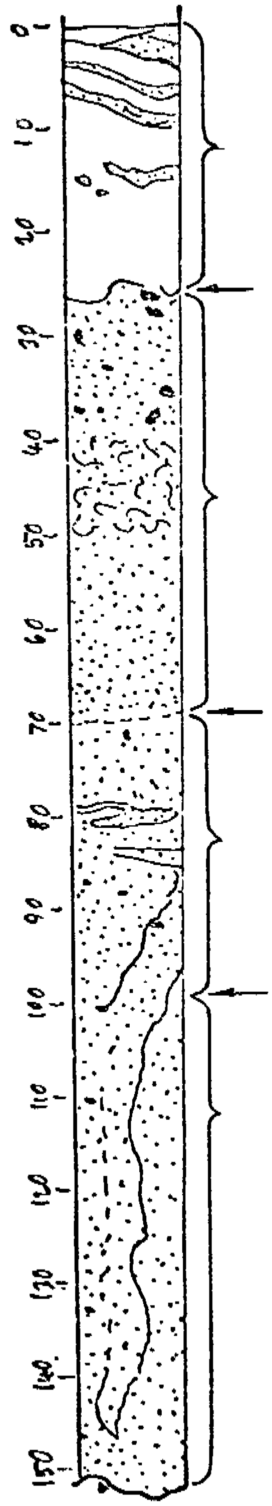
CORE No. PB76-2

Lat. 70°22.3'N, Long. 148°28.4'W Water Depth: 1.7 m

Location: Prudhoe Bay entrance channel (outer part on shreward side)

Photo	Sketch	Description





Irregular layers or pockets of clean oxidized fine sand. Sandy mud interbedded with sand layers in upper part, mottled below 10 cm depth.

Poorly defined contact

Homogeneous to mottled, slightly muddy medium to fine sand, grey, with pebbles from 25-40 cm, becoming grey, clean, homogeneous medium sand at 50 cm; 50-70 cm no pebbles or shells.

Oxidation boundary

Dark bron-grey, medium to fine sand especially dark at 80 cm; very fine humic substance when washed. Irregular horizontal banding 75-85 cm disrupted below 85 cm. A few pebbles as sketched.

No real boundary; marked by granulometric differences.

Disturbed core, medium sand, clean, grey, slightly oxidized along right side. Slight admixture of mud and very fine organic substance along left side making this half dark brownish grey.

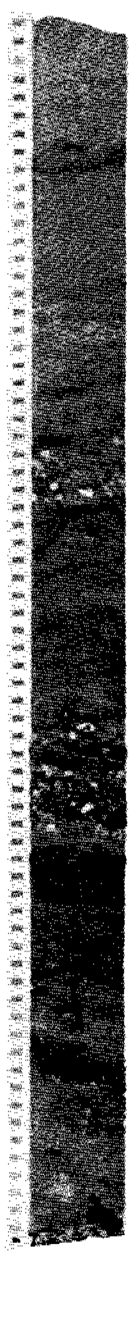
Homogeneous clean, grey, medium sand below 145 cm. Several pebbles as sketched.

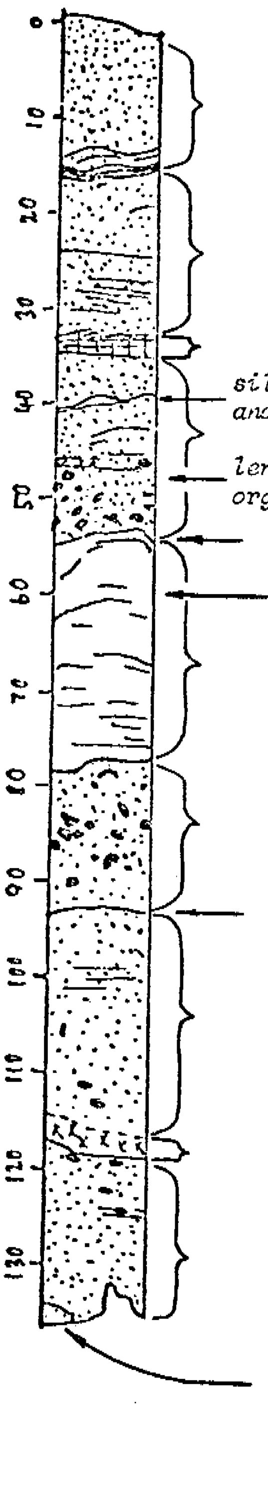
CORE No. PB76-3

Lat. 70°24.0'N, Long. 148°33.2'W Water Depth: 1.5 m

Location: East end of Stump Island

Photo	Sketch	Description





Medium to fine, partly oxidized sand, upper 10 cm homogeneous, ripple bedding in lower part, marked by concentrates of organic fines, and coal.

Fine, grey sand, smooth horizontal laminations marked by coal-rich laminae

Grey, silty clay, wavy to mottled upper surface with small sand lenses

silty clay lens and pebble

Grey, fine sand, becoming medium sand at 44cm and gravelly sand (partly oxidized) at 47 cm.

lens of fine, organic material

sharp, irregular contact

thin, irregular sand layer

dark grey, mottled to horizontally-banded clayey silt organic-rich laminae

Medium sand and gravel, partly oxidized, with coarse shell at top.

sharp contact

Dark grey muddy medium sand, banded horizontally in upper 10 cm, becoming structureless, with numerous small pebbles at 105 cm.

black, organic-rich fine sand with several small pebbles

Partly oxidized medium clean sand, with few pebbles down to 126 cm. Structureless, except for elongate horizontal. pocket rich in mud at 126 cm (including one pebble) on right side.

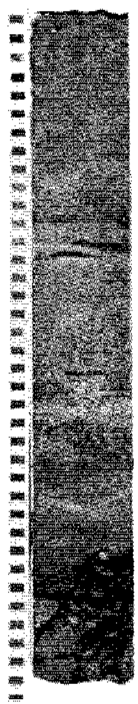
pocket of brownish muddy sand

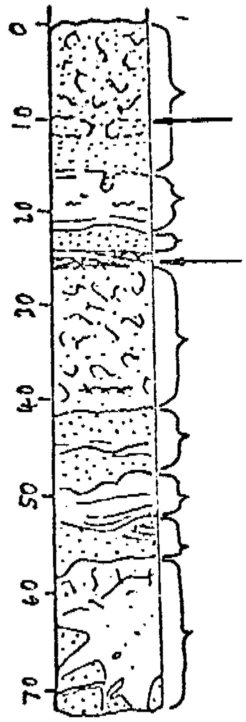
CORE No. PB76-4

Lat. 70°27.3'N, Long. 148°28.2'W   Water Depth: 6.5 m

Location: Stefansson Sound midway between Reindeer Island and Stump Island

Photo	Sketch	Description





Grey, slightly muddy medium to fine sand, homogeneous to mottled.

more muddy in pockets on both sides, and burrow? in center

Sandy mud, bioturbated, with very irregular upper contact horizontal banding marked by organic-rich dark layers

clean, fine sand-grey

organic lenses with thin clay-rich layer between

mottled sandy mud, organic, black lens at 39 cm

Muddy, mottled grey fine sand with highly mottled and muddy organic-rich sand in central part of unit

firm, hard to cut, banded silty clay with highly irregular upper contact

ripple-bedded, muddy fine sand

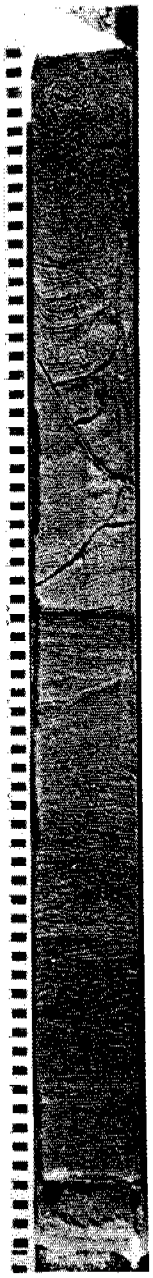
Firm, muddy fine sand, broken up during cutting due to core catcher. Mottled in upper part, possibly horizontally bedded near base. Several small shell fragments near base.

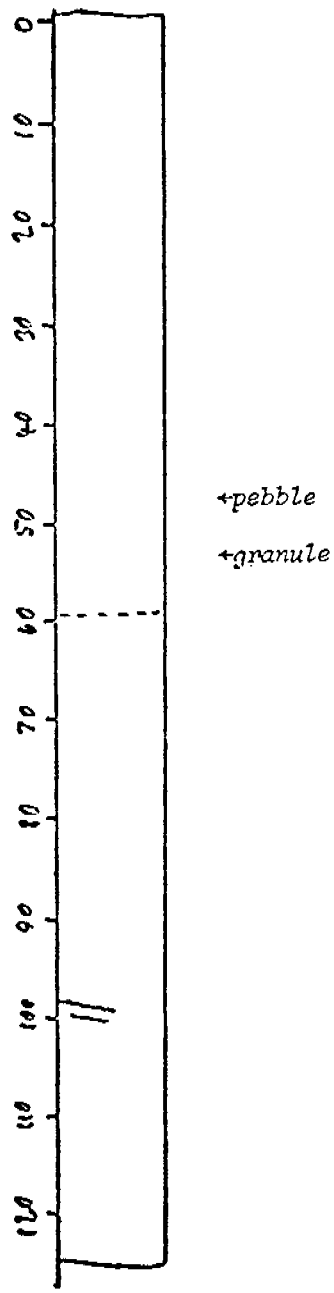
CORE No. PB76-5

Lat. 70°28.9'N, Long. 148°24.2'W Water Depth: 25 m

Location: On shoal west of Reindeer Island

Photo	Sketch	Description





Light grey sand, fine and clean down to around 30 cm, gradually becoming medium sand, clean for rest of core. Now oxidized. At 60 cm to bottom, color slightly darker grey, but barely noticeable. No minor structures noticeable except at 100 cm apparent bedding planes as sketched. No shell material.

Core rather dry in upper 30 cm but still damp below.

Subsequent observation on core since peel was made (this photo) revealed primary sedimentary structures. The upper 60 cm consists of plane bed laminations. Coring has disturbed the edges. Rippled cross beds and parallel laminations are between 76 and 113 cm.

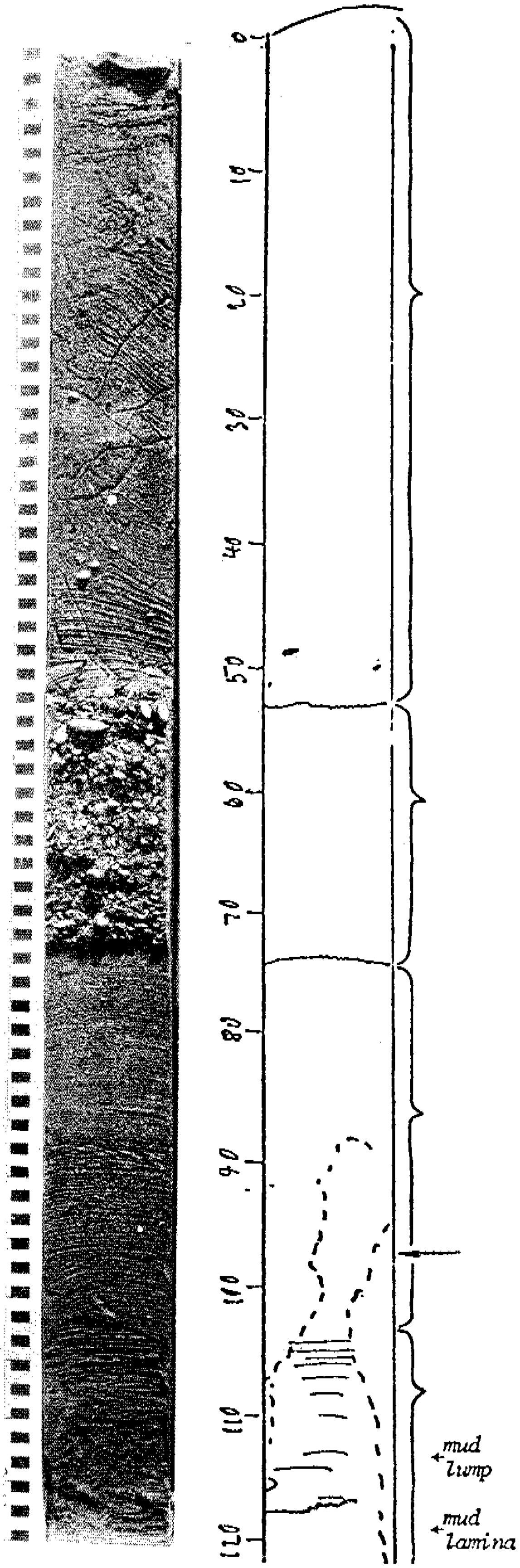
Total core length: 126 cm

CORE No. PB76-6

Lat. 70°30.5'N, Long. 148°21.1'W   Water Depth: 4 m

Location: North side of Reindeer Island

Photo	Sketch	Description



Light grey, fine, clean, homogeneous sand, beginning at 40 cm to grade into medium sand. Occasional granules to small pebbles. No shells.

Sand unit has a few pebbles throughout.

sharp, smooth contact

Slightly sandy fine gravel with high amount of granule-size material, rounded as beach material, few small shell fragments. Some fining toward base.

sharp smooth contact

Fine to medium clean sand, trace of horizontal bedding. No pebbles or shells.

Slightly oxidized outside of dashed boundary

Fine sand, thinly bedded, possibly with very fine mud whiskers intercalated. Unit is medium grey, definitely darker than above.

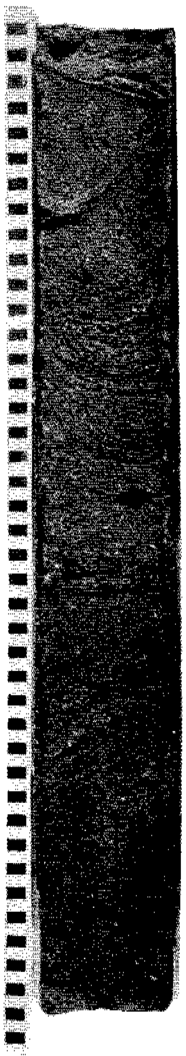
Total core length: 124 cm, No core catcher.

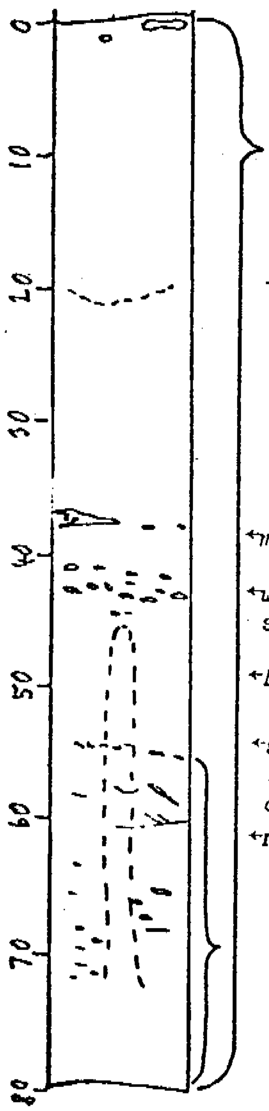
CORE No. PB76-7

Lat. 70°30.5'N, Long. 148°21.6'W **Water Depth: 11 m**

Location: North of Reindeer Island

Photo	Sketch	Description





←*dark grey silty clay lumps*

Clean, grey, medium grained sand with only traces of bedding. Unconformity at 45 cm seen in peel with distinct bedding from 45-65 cm.

←*light grey color band slightly oxidized above and below the 1 cm band*

←*mud lumps, large one dark grey silty clay*

←*winnow surface with mud lumps and shell fragments and slightly coarser sand near base*

←*Large vertical burrow, sand slightly oxidized*

←*small mud lumps and small shell fragments along horizontal layer (sand in this layer possibly slightly coarser than adjacent sand)*

←*ripple bedding?*

sketched features represent small, flattened, ***silty*** *clay lumps that never occur as continuous laminae*

NOTE: small (minute) shell debris throughout core, but concentrated in two layers as sketched. No pebbles

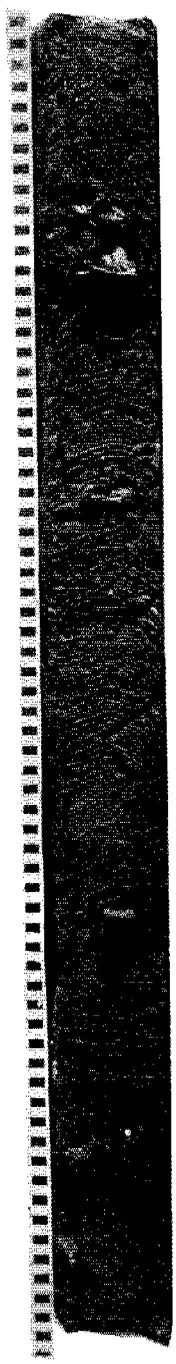
Total core length: 70 cm (no core catcher)

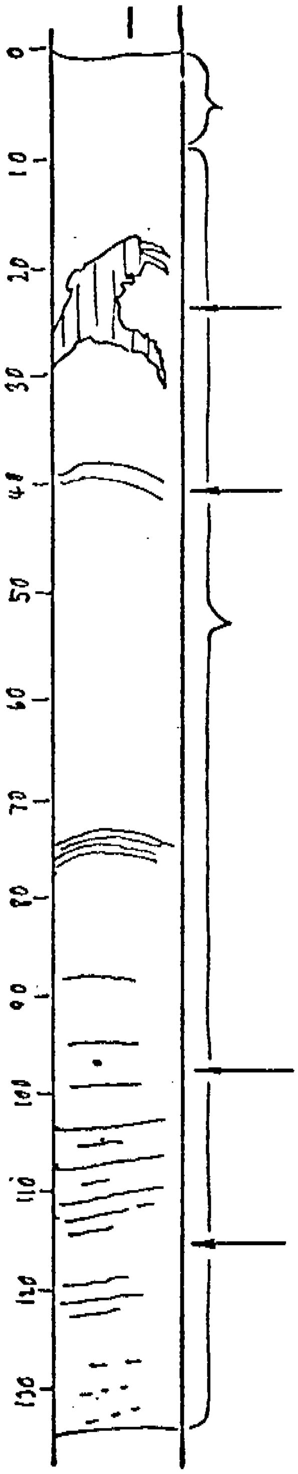
CORE No. PB76-8

Lat. 70°29.8'N, Long. 148°20.8'W   Water Depth: 8 m

Location: North of Reindeer Island

Photo	Sketch	Description





Medium to coarse sand with few scattered granules and small shell fragments, structureless, gradually fining down to fine-medium sand

Fragment of stiff, silty clay, medium grey, mixed with surrounding sand by ice pressure. Has sharply defined margins, but highly irregular.

2-3 mm smooth layers of medium sand

Fine to medium, clean sand, subrounded unoxidized. Horizontal bedding planes as sketched, being most pronounced from 102 cm down to 115 cm. This bedding is not from noticeable variations in grain size or sorting, but light grey to medium grey color variations, and from peel.

small clam valve

at 114 cm and 115 cm core- 1-2 mm laminae rich in dark string particles (coal?) These laminae are oxidized.

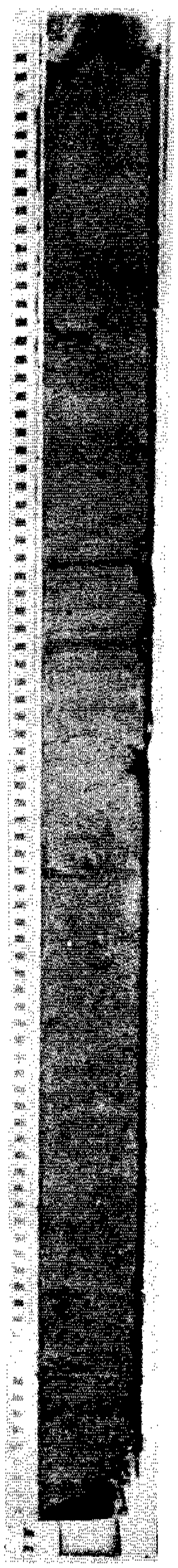
<u>NOTE</u>: very few faces of fine shell debris in the core. No pebbles.

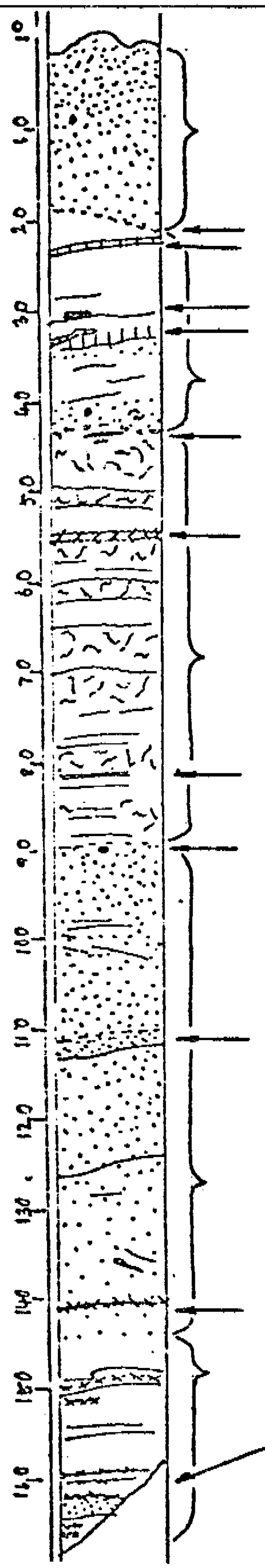
CORE No. PB76-9

Lat. 70°20.1'N, Long. 147°31.1'W   Water Depth: 6.5 m

Location: Stefansson Sound south of Narwhal Island

Photo	Sketch	Description





Two shells at surface, one live Asrarte

Dark grey, medium sand, angular, structureless, with a few granules and a small pebble. Possibly some shell fragments. Becoming more muddy, with mud in little pockets.

Irregular contact, ill-defined

clay layer

angular pebble

clay-rich

Dark grey, sandy silt, irregular, horizontal banding

shell fragments

dark, organic rich, but fine grained layers

Horizontally banded clayey silt, banding mainly alternating dark grey/olive drab color in some areas mottled without bans. No shells, no pebbles.

clay layer

angular pebble

clean, light grey, fine sand layer

Dark grey, muddy fine sand, band: horizontal sometimes deformed by larger mud content gradually becoming less sandy--more muddy downward. Little to no structure from 130-140 cm. Shell fragment at 137 cm.

thin, fine organic layer

Dark grey, sandy, clayey silt, well bedded, bedding mostly defined by fine organic rich layers (crosses)

clean, light grey, fine sand

core catcher

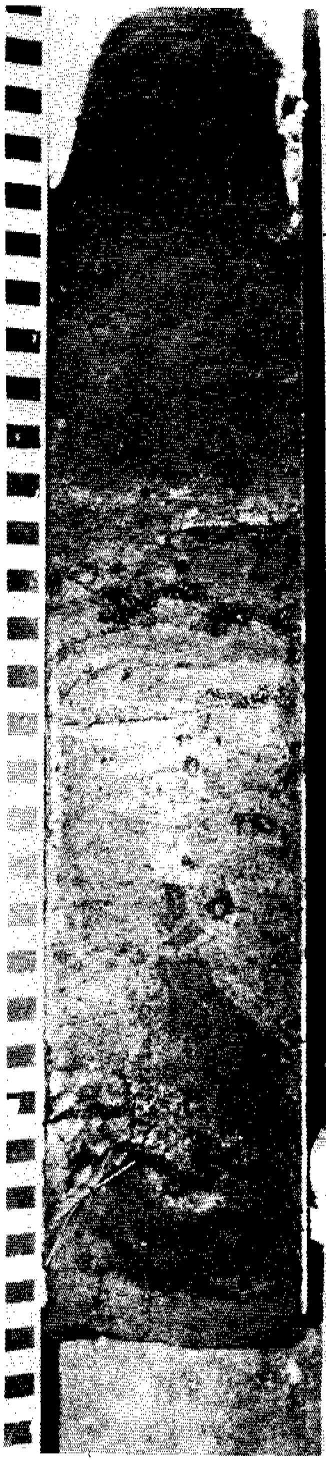
Total core length: 169 cm; core catcher activitaed: some downslipping. Few angular pebbles as marked. [illegible]

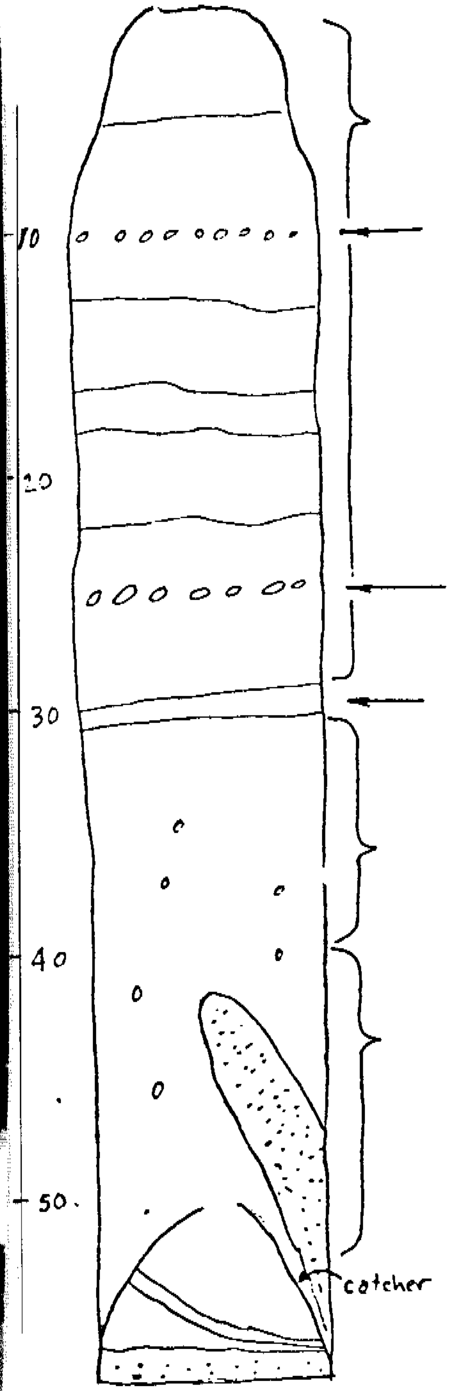
CORE No. PB76-10B

Lat. 70°17.1'N, Long. 147°44.3'W   Water Depth: 27 m

Location: Off Pt. Brower east of Sagvanirktok River

Photo	Sketch	Description





Central cut - no shells observed
Generally dark, reduced sandy mud with small olive oxidized zones at surface and below 32 cm.

10 cm gravel concentration

0-25 cm parting planes// to sea floor

25 cm gravel concentration

at 30 cm, wavy, medium grained sand unit

small pebbly, here and there

Between sand unit and flame structure mottled appearance

40-53 cm
Medium-coarse grained sand structure - related to coring technique

Additional medium to coarse grained sand in core catcher. Coarser than muddy sand above.

(1) small sliver of wood

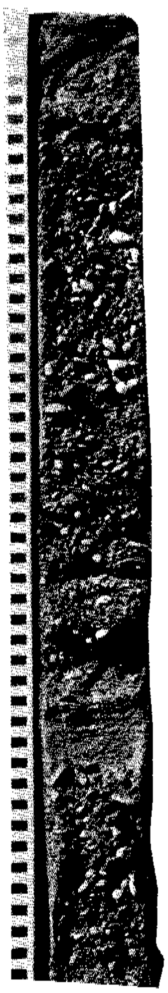
Matrix? Breaks in conchoidal fracture pattern in very stiff-mottled silty material.

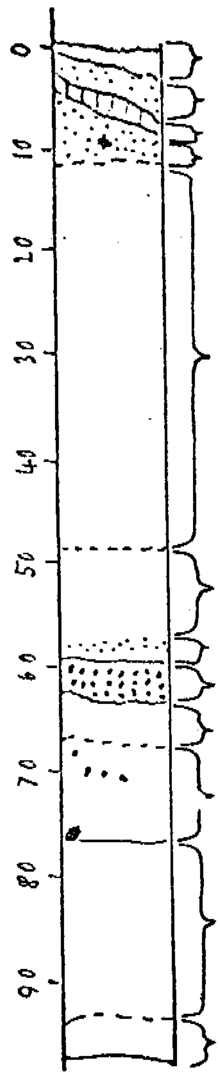
CORE No. PB76-11

Lat. 70°17.7'N, Long. 147°47.0'W **Water Depth: 1 m**

Location: Off Pt. Brower

Photo	Sketch	Description





brownish grey sandy mud

sand and pea gravel mixture, oxidized, one shell.

light grey silty clay layer

slighlty pebbly medium sand

Coarse, sandy gravel clasts up to >3 cm diameter (sand sub-angular) (pebbles rounded, similar to beach). Several small but thick shell fragments. No structures.

Slightly sandy gravel - gravel clasts smalle. smaller than above unit. No structures.

slightly pebbly sand

Rather well sorted pea gravel(granules largely) rounded, small, coarse sand content.

sandy gravel

Slightly pebbly, medium to coarse sand - no structures.

Sandy gravel, similar to beach material in roundness, small shell fragments.

Medium sand with few pebbles, probably disturbed, as it came out of core cap, which was only partly on the barrel. Portion of core probably lost during capping.

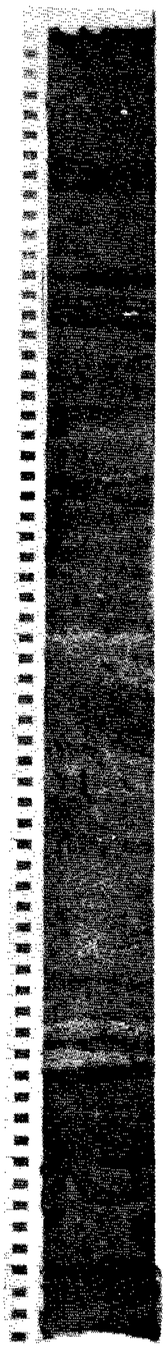
97 cm of core

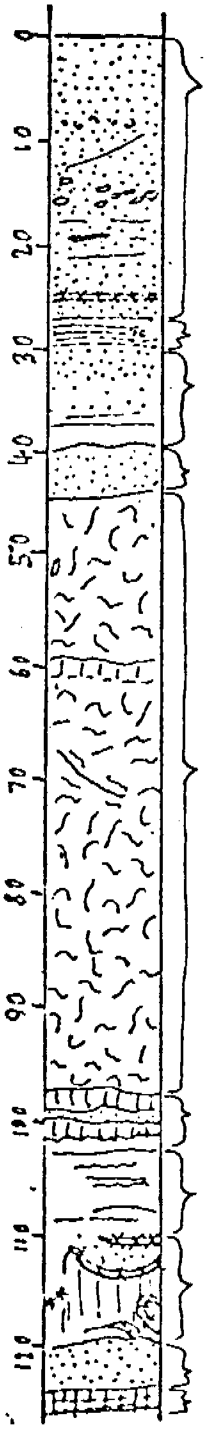
CORE No. PB76-12

Lat. 70°24.1'N, Long. 148°18.5'W   **Water Depth:** 3 m

Location: North of Prudhoe Bay

Photo	Sketch	Description





Medium, sand, partly oxidized in upper 15 cm, shells at 8 cm. below mud-ball layer grey fine sand trace of smooth, horizontal lamination?

+ Shells

+ Coal particles along dipping line

+ Clayey silt balls

Interlaminated clayey silt & fine sand. Black, organic rich layers and lens

Silty fine sand grading downward into Molted silty sand interspersed with mud.

Bedded clayey silt, at base muddy fine sand with ripple bedding.

Fine sand, clean, grey, homogenous?

+ Clam valve

+ Clay rich layer, irregular

Medium grey, clayey sandy. silt to silty sand highly mottled - disrupted. Some show mud balls and irregular sand pockets.

Silty clay with highly irregular micro relief on surface and bottom.

Fine silty sand.

Layered to laminated clayey silt and fine sand, ripple bedding?

+ Dark fine organics

Irregular, silty clay, light-grey, muddy fine sand near base.

Dark grey, homogenous fine sand

Horizontally bedded silty clay.

Total core length 126 cm.

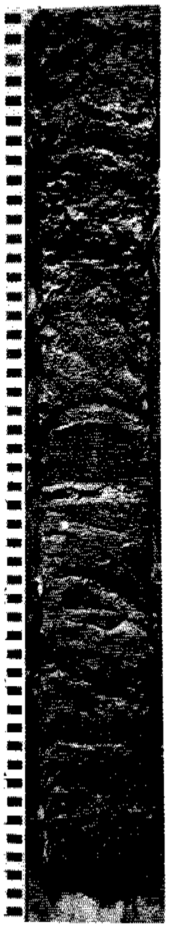
Note: Lower half of core rathter firm. No pebbles, apparently no fibrous organic layers. Coarse enough for dating purposes.

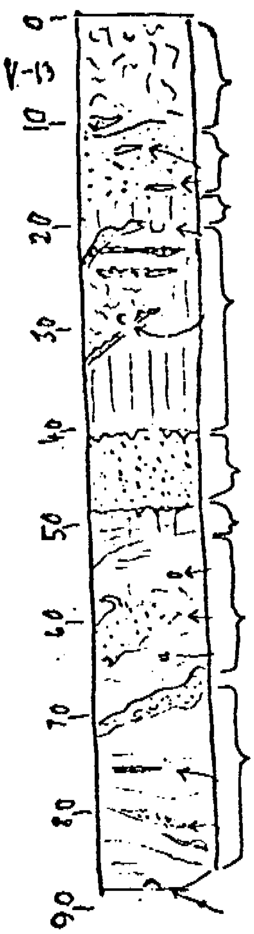
CORE No. PB76-13B

Lat. 70°44.8'N, Long. 150°28.1'W Water Depth: 19 m

Location: Off Colville Delta

Photo	Sketch	Description





← Bivalve

Interspersed pockets of sandy mud (grey) and oxidized fine to med. sand

Oxidized, clean, fine to med. sand, with 2 lenses of grey mud. grading down into sandy mud

← Astarte valves.

very soft silty clay, light grey, homogenous, with lenses and irregular pockets of grey, fine sand as sketched.
At 30 cm very mottled on left side

Fine-med. silty sand, upper and lower boundary rather sharp but with minor burrows?

Grey clayey silt

← Pebble
← Muddy sand pocket
← Shells.

Clayey, sandy silt. Horizontal dark-light boundry in upper part, mottled with irregular sand pocket or admixtures in lower part.

← Irregular sand Layer with shells

Dark grey/light grey color banding, horizontal, in clayey silt, rather firm.

← Sand lenses, irregular.

← Thick clam fragment

Total core length 88 cm.

Note: flap was pushed down and across core, lower 10 cm disturbed and ∿ 10 cm downward slippage occured.

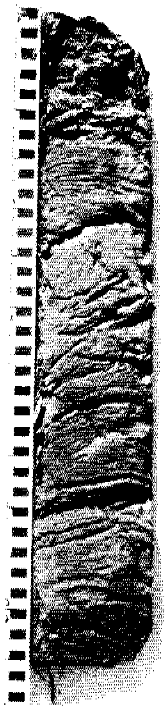
Since the lower part of core stopped and we don't know why we were unable to penetrate deeper than 98 cm.

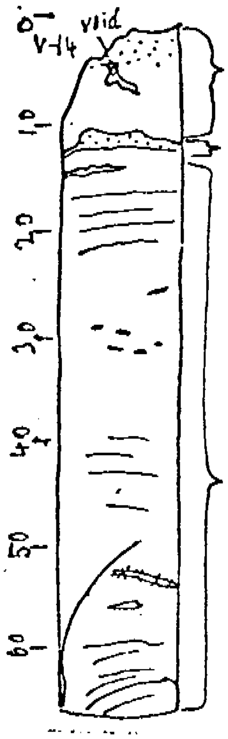
CORE No. PE76-14

Lat. 70°41.5'N, Long. 150°27.2'W   Water Depth: 1.5 m

Location: North of Colville Delta

Photo	Sketch	Description





Upper part disturbed with void, empty, possibly representing burrow.

Soft, brownish grey homogenous silty clay, sandy in upper 5 cm. Several small, irregular sand pockets from 5-10 cm down in core.

Granule/pebble sand with some very small shell fragments.

← *Silty sand lens.*

← *Sandy Silt Pockets*

Brownish grey silty clay. Structureless mainly, with trace of color banding to 22 cm depth, and below 40 cm again. 22-40 cm disrupted. Core catcher as drawn, causing disturbance from 50-60 cm depth.

← *Dark, find, organic rich, possibly including coal.*

← *Color banding.*

Total core length 73 cm, but a few cm of downward slippage of core must have occurred, resulting in loss of some sediments.

Sediments becoming gradually finer from top to bottom. But what stopped further penetration?

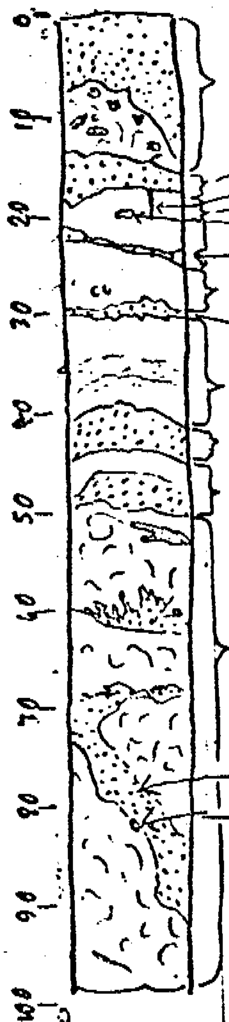
No shells collected, or seen in first cut. Except for sand, layer at 12 cm no pebbles.

CORE No. PB76-15

Lat. 70°37.0'N, Long. 150°27.0'W **Water Depth: 12.4 m**

Location: North of Colville Delta

Photo	Sketch	Description



Grey, muddy, medium grained sand, grading at ∿ 2 cm into oxidized clean, medium grained sand. Apparently homogenous. Highly irregular contact with clayey silt with numerous irregular pockets of fine silty sand.

Grey, homogenous, clean, medium sand, irregular sharp upper contact. Smooth, sharp lower contact.

← Crack, ——— grey, homogenous silty clay, with small, minute sand pockets.

Mushy wood fragment

← Irregular, thin muddy sand layer.

Grey, clayey silt, small sandy pockets, one 5 mm pebble on surface, shells

irregular layer of fine sand and shells.

Grey clayey silt, with irregular pockets and lenses of fine sand irregular horizontal layering in lower half.

Medium to fine grey clean sand, sharp-smooth lower wavey rippled sharp upper contact.

Homogenous silt, grading down into clean, grey, fine sand, sharp, irregular lower contact.

Churned-up grey clayey silt, with intermixed irregular sandy pockets, become darker grey from ∿ 70 cm on down (gradually).

Irregular unit of clean, fine, light grey, several small fragile shell fragments.

← 5 mm pebble.

98 cm total length.

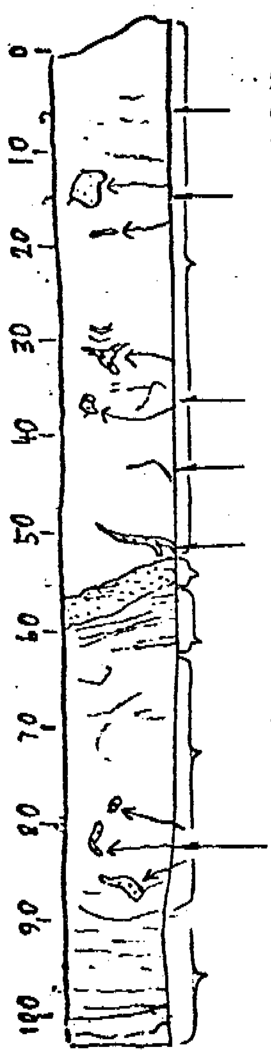
Notes: Ice disrupted below 45 cm, probably also from 8-14 cm.
No organic-rich layers. Two pebbles in first cut face. Numerous small, fragile clam fragments, preferentially in muddy sediments. Grade size of sand units does not changes through length of core.

CORE No. PB76-16

Lat. 70°36.3'N, Long. 150°28.2'W **Water Depth: 11.5 m**

Location: North of Colville Delta

Photo	Sketch	Description



Trace of horizontal bedding, characterized by dark and light banding, and discontinuous silty laminae and pockets. No organic rich layers.

Sandy silt

Irregularly molted, probably ice-disrupted, grey silty clay.
Small silt pockets - Abundant forams - espec. 25-30 cm.
Numerous broken and complete shell fragments.

Silty sand pocket

Trace of irregular horizontal banding.

Silty fine sand layer.
Grey, silty fine sand, may have some small fragile shell fragments. With trace of dark banding, horizontal as sketched.
Interlaminated clay-rich/ silty sand, horizontal.

Intensely molted grey silty clay (Light-to-dark-grey alterations).

irregular muddy sand pockets.

Light grey to dark grey silty clay/clayey silt, laminated, but irregular.

103 cm total penetration.

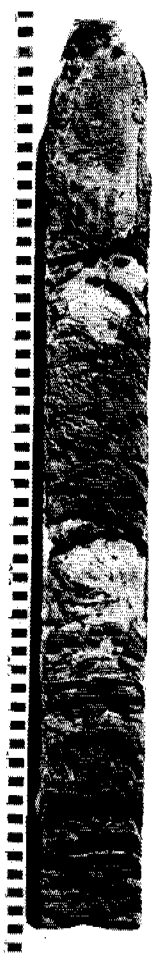
Core was cut with comparative ease, had no pebbles, no pronounced fibrous organic layers, and only a few small fragile clam fragments near and in sand unit (within first cut face).
Becoming stiffer toward bottom, gradually.
First interpretation calls for ice disrupted sediments.

CORE No. PB76-17

Lat. 70°34, 0'N Long. 150°28.2'W Water Depth: 8,5 m

Location: North of Colville Delta

Photo Sketch Description



Very soft and wet in upper 5 cm

Homogenous appearing blob of silty clay, grey, sitting suspended in grey, homogenous clayey silt. Probably sampling disturbance. Contact with underlying clay very irregular.

Light grey, cohesive silty clay, moltled by burrows or disrupted by ice, trace of prior horizontal banding? Remaining.

← Cracks

Sand pockets.

Light grey silty clay with convex upward bedding some marked by thin, fine sand layers, but fine sand generally occurring in irregular small pockets, or (near 80 cm depth) thicker layers marked by flame structures of silty clay. Scattered small shell fragments, mainly around 60 cm depth.

Clay silt, molted slightly firmer than sediments above, with irregular small sand pockets.

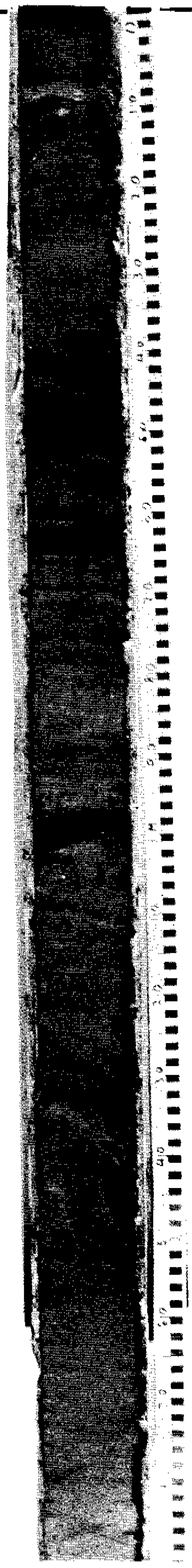
Note: *Not a single pebble, only small clear fragments, fine grained organic matter (dark band) at 95-96 cm, not good enough for dating. Core was cut easily, no obvious reason for lack of deeper penetration. Upper 50 cm appear disrupted by ice.*

CORE No. PB76-18

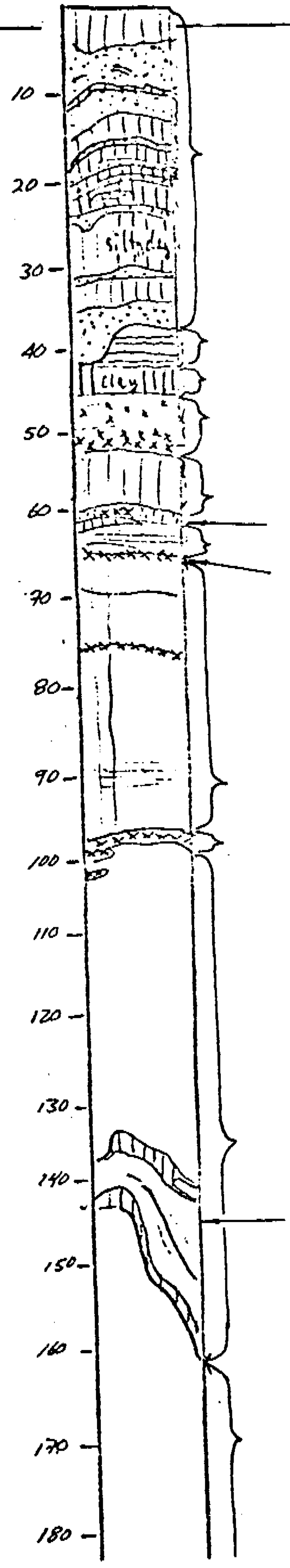
Lat. 70°33.3'N, Long. 150°27.9'W   Water Depth: 3.3 m

Location: North of Colville Delta

Photo



Sketch



Description

Grey silty clay with interbedded lenses of oxidized medium to fine grained sand. Clay contains lenses of organic matter. Bedding plane lamination and finning upwards in sands.

Grey clayey silt, interlaminated with fine org. and coal

Silty clay, grey.

Dark grey, muddy fine sand rich in organic matter very coarse fibrous in lower part

51-52 cm for C^{14}.

Homogenous silty clay, grey

Fine sand with some organic matter

Laminated sandy silt

Fibrous organic matter

Grey, soft, silty clay, in upper part several laminae of organic matter, shown dark in photos.

Clean washed, coarse fibrous organic matter

97-98 cm for C^{14}.

Grey silty clay, soft, possibly horizontal banding in upper part.

In lower part, large wave structure marked by more clayey layers and lamina rich in organics.

Ice disturbance

Light grey, soft, homogenous slightly silty clay

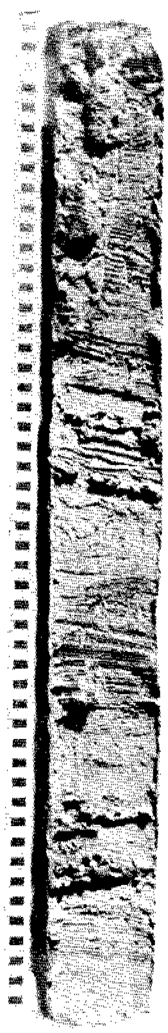
Note: Except for peat layers, entire core was easily

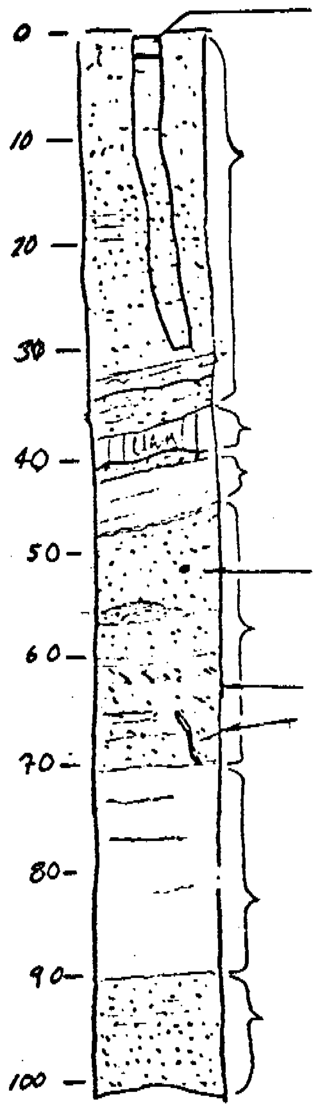
CORE No. PB76-19

Lat. 70°33.6'N Long. 150°28.1'W Water Depth: 2 m

Location: North of Colville Delta

Photo	Sketch	Description





Paraffin plug the "burrow" may be from boathook, used pushing the cap into box; but sand is dense, and should not be penetrable. Also burrow is irregular, with smaller burrows adjacent.

Medium grained, oxidized, clean sand grading downward into fine sand with some silt. The sub-horizontal lines drawn in represent coal laminae.

Clay layer with small sand pockets.
Clean fine sand, grey.
Sandy, clayey silt with horizontal bedding.

One black, rounded pebble in x-ray slab.

Fine gray sand interbedded with organic and coal rich laminae and lenses. Ripple bedding in central part.
← *Some small shells.*
← *Burrow.*

Sandy, clayey silt, somewhat mottled with trace of horizontal layering indicated

Horizontally layered fine, grey, sand; dark layers are coal concentrates apparently no ripple bedding.

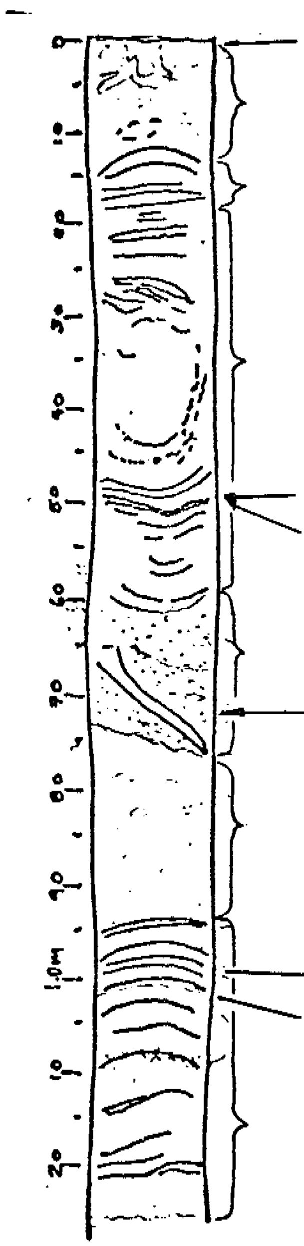
The core was easy to cut with wire, and comparing nature of sediment with long cores through stiff silty clay, I believe we may have hit ice-bonded sediment at 103 cm. Also, note rate of penetration curve. On first cut face no shells, but in sub-sampling a few were picked and put in vials.

CORE No. PB76-20

Lat. 70°32.7'N, Long. 150°27.5'W   Water Depth: 1.5 m

Location: North of Colville Delta

Photo   Sketch   Description



Dark brown, possibly burrows.

Clean, fine sand, light brown-oxidized laminated in lower half, molted upper half.

Fine sand, dark brown, rich in coal and probably organic material, but not fibrous.

Light grey, muddy fine sand, interbedded with thin laminae of fine-fibrous, dark organic matter also, lenses. Undisturbed in section from 15-28 cm, from 28-48 cm, concave upward structures possibly due to sampling procedure. Relatively undisturbed layering around 50 cm. 55-62 cm concave upward bedding planes

Concentrated fibrous organic matter.

C^{14} Sub Sp.

Homogenous clean sand.

Muddy, org. rich layers (dipping ∿ 30°).

Light grey, muddy fine sand, mottled or bioturbated,

Most pronounced organic lay..s.

One shell.

Clay layer.

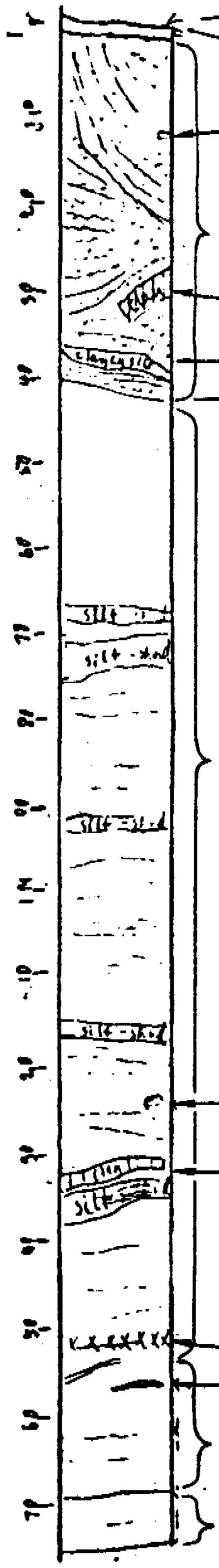
Light grey, muddy, fine sand interlaminated to interlayered with dark layers rich in very fine grained, soft organic matter, mottled from 108-114 cm.

Note: Not a sin.le pebble, one shell found in entire core on first cut face. Entire core rather sandy, not as stiff or resistant to penetration as other longer cores. No change in very bottom of core. Lack of deeper penetration could possibly be due to ice-bonded sediment. The organic rich layers are so fine grained that it would be too difficult to separate coal prior to C^{14} dating, probably no dating to be done.

Core No. PB76-21

Lat. 70°33.8'N, Long. 151°01.0'W   Water Depth: 4 m

Location: N.W. of Colville Delta

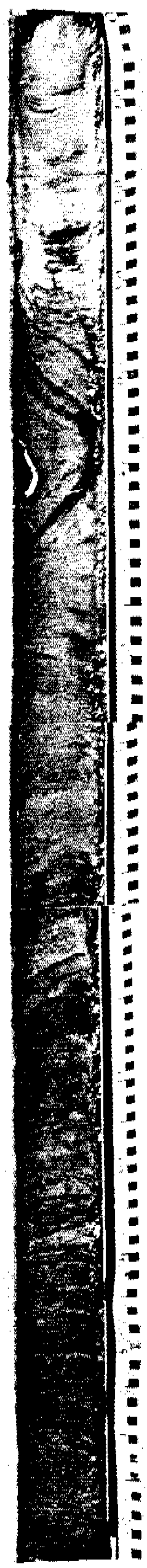
Photo	Sketch	Description
		*1/2 cm of mud.* *Small clam.* *Small razor clam.* *Slightly muddy, fine sand, bedding planes often marked by coal particles, coarsest in upper 20 cm. Large structure possibly artifact above 20 cm. in 3rd dimension, these structures are concentric.* *Lump.* *Silty layer.* *Rather sharp boundary.* *Rather uniform, bedded to mottled clay silt with more silty units as marked. (These may be fine sandy silt).* *Small clam fragment.* *Thin clay bed, underlain by fine sandy silt with undulating structures.* *C^{14} peat removed.* *4 mm thick stick of wood removed for C^{14} dating.* *Slightly softer, more cohesive, silty clay.* *Very firm, slightly clayey silt.*

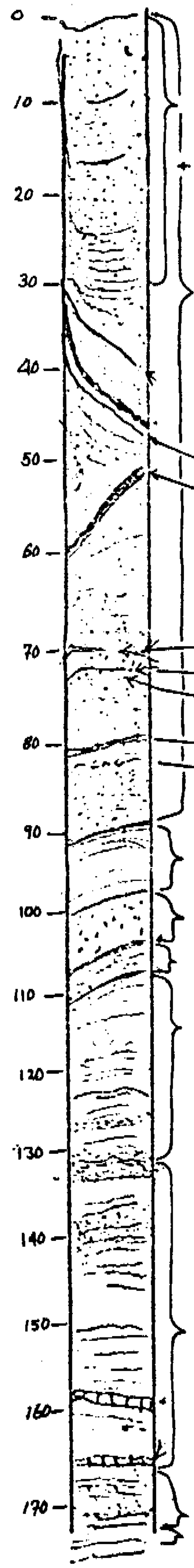
CORE No. PB76-22

Lat. 70°32.5'N, Long. 150°59.6'W **Water Depth: 0.6 m**

Location: N.W. of Colville Delta

Photo	Sketch	Description





Upper 30 cm dried out, friable, and cracked during slicing for x-rays

← *dark lamination marked by coal*

Fine, brownish, well-sorted sand with slightly undulating, generally horizontal layering. Bedding planes marked either by traces of coal (shiny fracture surfaces on sand size black particles) or very fine sand with traces of mud.

Major, unexplained structure as shown on central portion possibly leading along left margin or core to very surface of core.

Very fine sand/silt layers.
Coal particles and very fine fibrous org. matter.

Small, fragile clam valve.
Trace of coal concentration along bedding planes.
Several small clam fragments.

1/2 cm silty clay layer.
Clam fragments and entire valves.

Clayey silt interbedded with sand lenses and laminae.

Sand layer, slight trace of horizontal bedding.

Sandy clayey silt layers.

Clayey silt layers interbedded within sand lenses and layers, mottled, probably from bioturbation.

← *Coal particles.*

← *Coal particles in regular lenses and layers.*

Clayey silt, interbedded with sand lenses and laminae, two clay layers, flat horizontal to undulating bedding, no bioturbation.

← *Clay layer.*

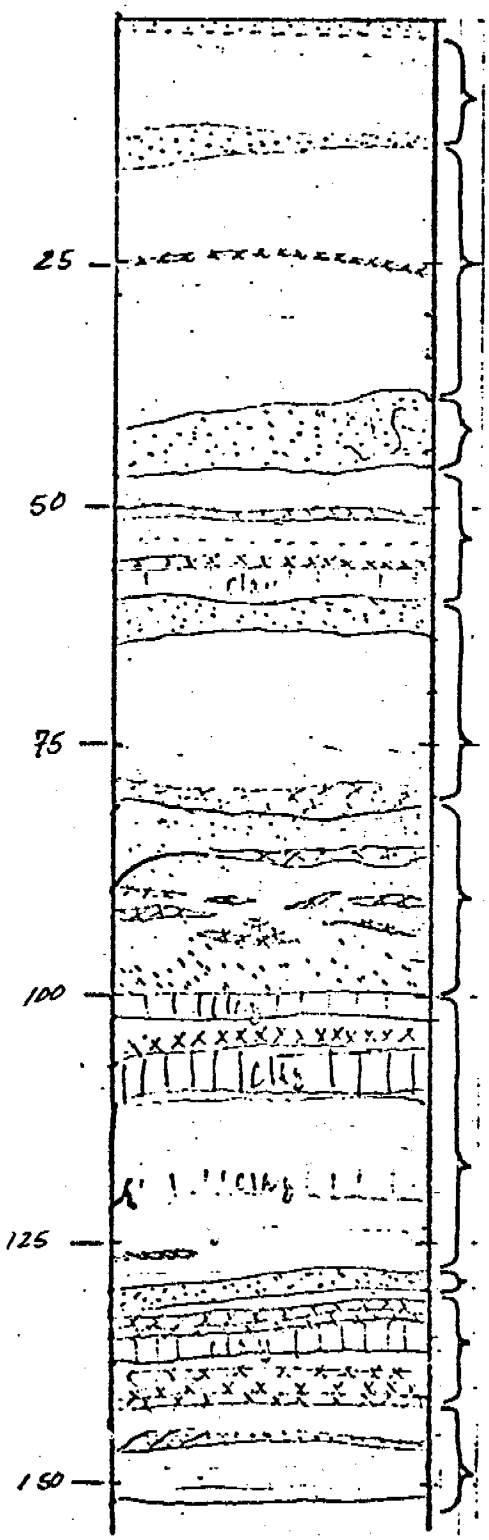
Sand with horizontal coal laminae
Cohesive silt rich in coal and organic material
178 cm total penetration. Lower 2 cm lost.

CORE No. PB76-23

Lat. 70°29.5'N Long. 150°59.5'W **Water Depth: 1 m**

Location: N.W. of Colville Delta

Photo	Sketch	Description



Apparently lost ~ 1 cm fine/med. grain oxidized sand

homogenous, brownish silt, possibly some bedding

← 9-10 cm, clean, oxidized, fine sand containing thin clay lamina.

Clayey silt with 1-2 m sand laminae interbedded, no ripple structures at 26 cm a 3 mm lamina of fine organic bedding slightly undulating. No pebbles, no sticks, no shells, no bioturbation.

35-47 cm fine-medium grained sand, mottled, perhaps bioturbated, brownish to gray alternating patch.

Silty, laminated, thin organic whiskers, 2 layers with fibrous org. material, thin sandy lamina between them, clay (1.5 cm) on bottom.

C-14 23-1 sub spl.

Clayey silt interbedded with thin sandy laminae. Fibrous org. material in lower 2 cm. No critters, no burrows, no pebbles.

Fine, gray sand with interbedded lenses of fibrous organic matter. Lenses of organic matter may reflect ripples?

← 2 cm of clean, fine sand.

Thinly bedded clayey silt with fine sand. Laminae and thin whiskers of black, probably org. rich laminae. No apparent ripple structure. No burrows, no pebbles or shells.

Sand layer, possibly ripple bedding?

Clay-homogenous between

Organic rich bedded clayey silt

C-14 23-2 sub spl
C-14 23-3 sup spl.

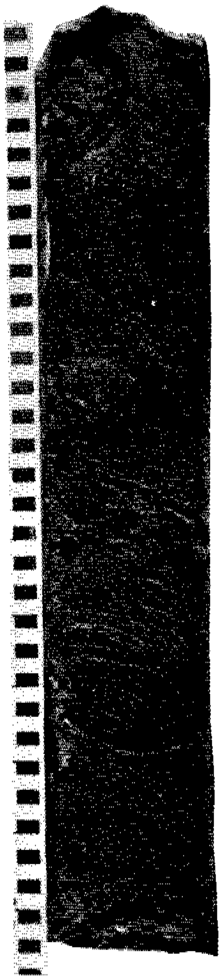
← sand layer, perhaps ripple structures thinly bedded silt.

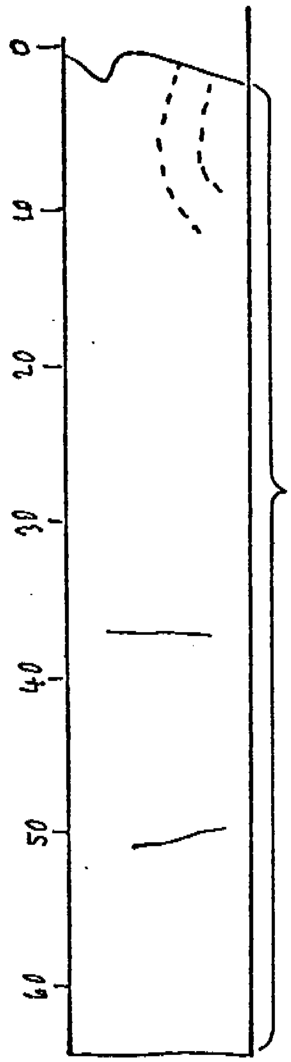
CORE No. PB76-24

Lat. 70°33.2'N, Long. 149°11.2'W   Water Depth: 7.5 m

Location: North of Bodfish Island

Photo	Sketch	Description





+ Slightly darker, fine to medium sand with dashed lines.

Medium to coarse, slightly oxidized, clean, homogenous sand, no structures visible except possibly the two sketched lines, representing somewhat finer sand

Note: No pebbles, no shells.
No core catcher used, some material slid out, but penetration stopped on something over 1 m down into ridge.

QUARTERLY REPORT

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REPORT PERIOD: 9th QUARTER
NO. OF PAGES:

AREAS OF FAULTING AND UNSTABLE SEDIMENTS IN THE ST. GEORGE BASIN REGION, SOUTHERN BERING SEA

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JULY 1977

I. ABSTRACT OF HIGHLIGHTS OF QUARTER'S ACCOMPLISHMENTS

Analyses of seismic-reflection profiles from last year's cruise (S4-76) are continuing, but final results are not yet available. Data from grain-size analyses of 295 samples and total carbon content determinations of 174 samples were completed during this quarter. The station locations and grain-size and total carbon data are included in this report, but our interpretations of these data will be part of a subsequent report (Gardner and Vallier, in preparation). Heavy mineral and clay mineral studies of surface samples and a petrographic description of rocks from a dredge haul are underway. Most of our efforts during the upcoming quarter will be directed towards finishing some of these studies and preparing for an August through September cruise in the southern Bering Sea.

II. TASK OBJECTIVES

The major task objectives are to outline and document problems related to faulting and seafloor instability (see Gardner and Vallier, Annual Report to OCSEAP, April, 1977). In addition, we are studying sediment distributions to determine the sediment dynamics on the seafloor.

III. FIELD OR LABORATORY ACTIVITIES

A. Ship or Field Trip Schedule: None

B. Scientific Party: None

C. Methods: We completed 295 grain-size analyses and 174 determinations of total carbon contents. Small samples (10-20 grams) were selected onboard the ship from piston cores, gravity cores, and Van Veen samplers. The samples used for total carbon determinations were (1) washed with deionized water twice using a centrifuge in order to eliminate corrosive salts, (2) dried in an oven overnight, (3) ground into a uniform powder using a mortar and pestle, and (4) analyzed in a LECO induction furnace. The following procedures were used for grain-size analyses. Samples were: (1) washed twice with deionized water to eliminate salt, (2) treated with hydrogen perioxide to eliminate organic matter, (3) peptized with 10% Calgon solution to disperse clays, (4) sieved through -1ϕ to 4ϕ (2mm to 0.063mm) sieves, (5) dried and weighed for the >2mm size fraction, (6) the 2mm to 0.063mm size fraction was dried, weighed, and microsplits were taken for analyses with a 2m by 0.25mm rapid sediment analyzer using methods of Thiede and others (1976). The <0.063mm fraction was diluted to 1000 ml. in a graduated cylinder, agitated to prevent differential settling, and a 20ml aliquot was taken, dried and weighed for total fine-fraction weight determination. Other aliquots were analyzed by hydrophotometer for size distribution determinations (Jordan and others, 1971).

The precision of total carbon analyses was determined by using five splits from each of the 174 samples run on the LECO induction furnace. Statistical analysis was applied to groups within each of the five total carbon values from each sample: the first two of five values, the first three of five values, the second three of five values, the last three of five values, and the best three (high and low values deleted and the remainder used) of five values. The means, variances, and standard deviations were calculated for each of the groups. The following average percent error was calculated: (1) first two readings, ±1.9%, (2) first three readings ±2.3%, (3) all five readings, ±2.3%, and (4) best three of five readings, ±1.1%. Therefore, we have a high confidence in our total carbon values.

D. Sample Localities: See Figure 1 for sample localities, S4-76.

E. Data Collected or Analyzed:

1. Number and types of samples: 174 samples for total carbon determinations. 295 samples for grain-size analyses (142 from gravity cores, 64 from Van Veen samplers, and 89 from piston cores).

2. Number and types of analyses: total carbon contents, five determinations for each sample equals 870 analyses. Grain-size analyses, approximately three determinations (>2mm, 2mm-0.063mm, and <0.063mm) for each of 295 samples equals 885 analyses.

IV. RESULTS

We have only begun the analyses of results from the surface samples at this time. Table 1 shows the sample locations, grain-size data, some statistical parameters (Folk and Ward, 1957), and total carbon contents. Figures 2,3, and 4 show the facies distribution, median diameters, and sorting values. The other results based on completed analyses will be available later (Gardner and Vallier, in preparation, U.S. Geological Survey Open File Report on grain-size distributions and total-carbon contents).

Median grain diameters (Mdϕ) of the surface samples range from 0.5 to 7.7 and average 3.65 (very fine sand). Sorting values ($\sigma\phi$) range from 0.35 to 4.0. Sediment facies are sand, silty sand, sandy silt, silt, and clayey silt. Clay comprises less than 10% of most samples; exceptions are samples near the center of St. George basin (stations 24-26), on the continental slope (station 36) and in the Pribilof Canyon system (stations 72,73, and 75). Total-carbon contents are generally les than one percent, however higher values occur from samples in the Pribilof Canyon system which has an abundance of finer-grained material and from near the island of Unalaska (station 85) where there are abundant carbonate shell fragments. In general, the total-carbon contents of the samples are inversely related to grain-size.

Three sediment provinces can be distinguished. The Pribilof Island province, which includes the islands and Pribilof ridge, is dominated by poorly- to well-sorted sand and silty sand with low total carbon contents. The Pribilof Canyon province, which includes the canyon system and adjacent Pribilof basin, is characterized by clayey silt with lesser amounts of sandy silt and silty sand. These sediments are moderately sorted and have relatively high total-carbon contents. The St. George basin province is dominated by poorly-sorted silt and sandy silt and high values of total carbon.

V. PRELIMINARY INTERPRETATION OF RESULTS

A thorough analysis of the data has not been attempted. We believe, however, that the distributions of sediments are the results of not only present-day sediment dynamics but also sediment dynamics associated with fluctuations of level sea related to Pleistocene glaciations. The submarine canyons and the general circulation pattern seem to exert a strong influence on the sediment distribution. The composition of the sediments suggest inputs from the mainland via the Yukon and Kuskokwin rivers, the Aleutian volcanoes, and the Pribilof Islands. A much more thorough sampling program must be undertaken before the several influences can be properly evaluated.

VI. PROBLEMES ENCOUNTERED/RECOMMENDED CHANGES

None

VII. ESTIMATE OF FUNDS EXPENDED

All funds have been expended.

VIII. BIBLIOGRAPHY

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TABLES

1. Station numbers, locations, sample numbers, water depths, size class ratios, statistical parameters, and total-carbon contents of surface sediments, southern Bering Sea, Cruise S4-76.

FIGURES

1. Station and sample locations from U.S.G.S. Cruise S4-76, southern Bering Sea.

2. Facies distributions of surface sediments, St. George basin area, southern Bering Sea.

3. Median diameters (Mdϕ) of surface sediments, St. George basin area, southern Bering Sea.

4. Sorting values ($\sigma\phi$) of surface sediments, St. George basin area, southern Bering Sea.

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (m)	Size Class: Gravel (%)	Size Class: Sand (%)	Size Class: Silt (%)	Size Class: Clay (%)	Median $Md\phi$	Sorting $\sigma\phi$	Skewness $\alpha\phi$	Kurtosis $K\phi$	Total Carbon (%)
1	54°44.27' 165°52.82'	G-2	248	0.0	81.118	15.820	3.062	3.4602	0.7952	0.4246	2.4240	0.3886
2	55°02.08' 165°29.43'	G-5	118	0.0	76.362	21.010	2.629	3.7228	0.6926	0.5480	3.0238	0.4072
3	55° 16.73' 165°08.53'	G-8	109	0.0	63.975	32.542	3.484	3.6555	1.2014	0.4562	1.2672	0.4347
4	55°30.92' 164°50.46'	G-11	101	0.086	75.529	21.356	3.029	3.2028	1.3203	0.4297	1.6581	0.3218
5	55°53.96' 165°42.08	G-13	109	0.0	42.821	51.840	5.339	4.5540	1.7202	0.0817	1.0913	0.7247
7	56°41.96' 166°55.18'	G-19	90	0.199	63.195	32.840	3.767	3.4526	1.5172	0.4572	1.1585	0.4775
8	56°45.23' 167°40.51'	G-20	95	0.257	76.177	20.260	2.946	3.0143	1.3177	0.4897	1.4358	0.4001
9	57°01.32' 168°16.90'	V-2	80	0.158	92.656	5.660	1.526	2.5789	0.7612	0.2590	2.4084	0.2470
10	57°07.73' 168°33.04'	V-3	75	0.0	94.059	4.083	1.857	3.1888	0.6997	0.0378	1.5486	0.2230
11	57°00.07' 168°44.04'	V-4	80	0.0	93.437	5.102	1.461	2.5926	0.6686	0.3550	1.7422	0.2233

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (m)	Size Class Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Median Mdϕ	Sorting $\sigma\phi$	Skewness $\alpha\phi$	Kurtosis Kϕ	Total Carbon (%)
12	56°57.27' 168°48.30	V-5	81	0.0	93.451	4.781	1.769	2.6936	0.7830	0.3767	1.9923	0.2545
13	56°53.14' 168°54.02'	V-6	82	0.0	91.741	6.612	1.647	2.5922	0.7295	0.4404	1.9386	--
14	56°47.93 168°36.30	G-27	98	0.0	75.519	19.894	4.587	3.1869	1.5218	0.5576	1.9034	0.3974
15	56°38.33' 168°38.23'	G-30	107	0.0	82.634	14.665	2.701	3.1833	1.0505	0.3765	2.3764	0.3554
16	56°36.32' 168°17.10'	G-32	107	0.0	81.911	15.071	3.0181	3.0551	1.1876	0.4904	2.1204	0.3073
17	56°31.83' 167°58.50'	G-33	111	0.0	73.598	21.640	4.762	3.1399	1.6804	0.5854	1.5426	0.4638
18	56°34.85' 167°54.21'	G-37	107	0.0	76.748	20.492	2.759	3.0442	1.3025	0.4598	1.4815	0.3199
19	56°36.70' 167°51.66'	G-38	107	0.0	70.028	26.360	3.612	3.2797	1.4682	0.5195	1.4165	0.3993
20	56°40.61' 167°46.47'	G-40	100	0.0	74.475	23.176	2.349	3.1487	1.2606	0.4016	1.2517	0.5420

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (m)	Size Class Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Median Mdϕ	Sorting σϕ	Skewness αϕ	Kurtosis Kϕ	Total Carbon (%)
21	56°27.12' 167°40.34'	G-41	115	0.0	63.995	31.571	4.434	3.3171	1.6323	0.5604	1.1173	0.4743
22	56°20.08' 167°26.72'	G-43	121	0.0	38.738	53.059	8.203	4.8443	2.0557	0.1265	1.0792	0.6946
23	56°09.00' 167°06.98'	G-46	128	0.0	17.873	69.969	12.158	5.5918	2.1773	0.1461	1.5767	0.9665
24	55°58.99' 166°44.48'	G-48	129	0.0	13.348	73.648	13.004	5.6593	1.9882	0.2870	1.6376	0.9768
25	55°47.99' 166°19.82'	G-49	126	0.0	13.917	76.847	9.236	5.4066	1.7357	0.2033	1.8738	0.8250
26	55°40.53' 166°01.60'	G-51	120	0.0	25.420	68.341	6.238	4.9169	1.6940	0.0661	1.3720	0.6747
27	55°31.02' 165°41.91'	G-52	114	0.0	21.061	73.516	5.424	4.9144	1.4479	0.0974	1.6105	0.6090
28	55°17.29' 165°59.04'	G-54	122	0.0	36.931	57.488	5.581	4.6001	1.6616	0.0718	1.3030	0.5605
29	55°25.91' 166°21.10'	G-56	128	0.0	22.629	70.853	6.518	4.8453	1.6040	0.1879	1.5603	0.7538

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (m)	Size Class				Median Mdϕ	Sorting $\sigma\phi$	Skewness $\alpha\phi$	Kurtosis Kϕ	Total Carbon (%)
				Gravel (%)	Sand (%)	Silt (%)	Clay (%)					
30	55°36.01' 166°39.80'	G-59	130	0.0	19.512	70.697	9.791	5.3504	1.8982	0.1579	1.4827	0.8782
31	55°47.65' 167°01.33'	G-62	135	0.179	27.960	60.789	11.073	5.4119	2.2912	0.0732	1.1345	0.9370
32	55°57.15' 167°23.99'	G-63	133	0.0	21.004	68.366	10.630	5.114	1.9884	0.3202	1.2685	0.9968
33	56°06.22' 167°46.28'	G-65	134	0.0	63.038	30.628	6.334	3.3701	1.7797	0.6222	1.5075	0.4995
34	56°18.82' 168°17.39'	G-67	157	1.420	84.937	8.587	5.057	1.9987	1.4171	0.1361	4.6656	0.3098
35	56°05.13' 170°03.02'	G-69	122	0.0	84.790	11.435	3.776	2.9005	1.1176	0.5035	2.4531	0.3431
36	56°06.28' 170°33.41'	G-71	400	0.0	20.020	47.784	32.196	6.5224	3.2712	0.1651	0.9266	0.7048
38	56°24.35' 170°58.34'	G-75	125	0.0	76.835	20.156	3.009	2.9933	1.2822	0.5499	1.6808	-
39	56°37.29' 170°40.08'	G-77	113	0.0	54.206	40.819	4.975	3.7873	1.5965	0.4348	1.1580	0.5199

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (mm)	Size Class				Median Mdφ	Sorting σφ	Skewness αφ	Kurtosis Kφ	Total Carbon (%)
				Gravel (%)	Sand (%)	Silt (%)	Clay (%)					
40	56°39.99' 170°35.95'	G-79	111	0.233	54.045	40.723	4.999	3.6251	1.6513	0.5153	1.1011	0.7497
41	56°41.02' 170°31.36'	G-80	108	0.0	37.943	56.467	5.589	4.5960	1.6662	0.1619	1.0524	0.8166
42	56°44.77' 170°29.06'	G-81	103	0.0	45.417	48.932	5.651	4.2156	1.7124	0.3171	1.1030	0.6540
43	56°48.49' 170°23.77'	G-82	97	0.0	50.052	43.982	5.966	3.9967	1.8170	0.3689	1.0674	0.7753
48	57°01.46' 169°33.69'	V-9	60	0.478	95.381	3.197	0.945	2.1359	0.4324	0.1385	2.2246	0.2225
49	56°57.29' 169°39.14'	V-10	60	2.873	92.277	3.186	1.664	2.2474	0.4080	-0.0515	3.0723	0.3356
50	56°56.38' 169°25.08'	V-11	68	0.183	94.070	4.395	1.351	2.8026	0.6531	0.1257	1.6644	0.2856
51	56°51.97' 169°31.05'	V-12	68	5.792	88.291	4.255	1.662	2.1718	1.1830	0.0104	3.3345	0.2346

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (m)	Size Class Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Median Mdϕ	Sorting σϕ	Skewness αϕ	Kurtosis Kϕ	Total Carbon (%)
53	56°33.73' 169°56.77'	G-89	96	0.0	63.124	31.732	5.145	3.6896	1.3563	0.6794	1.6334	0.8734
54	56°29.17' 170°04.02'	G-90	105	0.0	24.149	68.726	7.125	4.9394	1.7016	0.1993	1.4390	0.7987
55	56°22.32' 170°08.84'	P-7	110	0.0	20.806	72.308	6.887	5.1339	1.6920	0.1486	1.1581	0.7635
56	56°14.02' 169°50.04'	V-14	126	0.0	91.237	6.230	2.533	3.0021	0.8672	0.2222	2.8564	0.3146
57	56°19.58' 169°42.03'	V-15	145	0.0	94.986	3.326	1.688	2.2369	0.7690	-0.0128	1.8231	0.2228
58	56°22.57' 169°37.59'	G-94	123	33.731	62.547	2.605	1.117	0.5436	1.4801	0.0858	0.6318	0.2660
60	56°42.02' 169°10.12'	V-17	85	0.500	92.273	5.845	1.382	2.6400	0.5999	0.4848	1.9317	0.2803
61	56°34.02' 168°55.11'	V-18	100	0.0	94.095	4.823	1.082	2.8431	0.6454	0.0784	1.3498	0.2608
62	56°33.60' 168°44.77'	V-19	110	0.0	89.780	8.064	2.156	3.0429	0.9052	0.2116	2.4838	0.3153

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (m)	Size Class Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Median Mdϕ	Sorting σϕ	Skewness αϕ	Kurtosis Kϕ	Total Carbon (%)
63	56°33.27' 168°45.64'	V-20	102	0.058	91.715	6.284	1.943	2.6867	0.9190	0.2736	2.1372	0.2782
64	56°32.14' 168°47.00'	V-21	101	0.0	90.428	7.761	1.811	2.9278	0.8910	0.2115	2.4230	0.3056
65	56°30.21' 168°49.99'	V-22	102	0.192	88.403	8.361	3.044	2.8541	0.9702	0.2946	2.6271	0.2939
66	56°29.41' 168°51.22'	V-23	103	0.0	91.042	6.570	2.388	2.6468	0.9057	0.3220	2.8684	0.3330
67	56°26.26' 168°55.42'	V-24	108	10.129	83.874	4.185	1.812	1.8672	1.5744	-0.1221	1.8577	0.2541
68	56°21.72' 169°01.76'	G-103	125	5.775	80.346	10.952	2.928	1.6698	2.0263	0.1592	2.0487	0.2449
69	56°13.73' 169°00.74'	V-26	152	11.812	82.699	3.230	2.289	1.9574	1.3255	-0.3364	2.1058	0.2693
70	56°08.31' 169°32.27'	G-105	320	0.145	24.147	47.499	28.208	6.1692	2.9407	0.2833	0.8645	0.9069
72	55°38.09' 170°05.06'	P-10	2850	0.0	6.317	68.033	25.650	6.3317	2.6327	0.2839	0.9728	1.1193

Surface Samples Only!,

Station Number	Location	Sample Number	Water Depth (mm)	Size Class Ratios Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Median Mdϕ	Sorting σϕ	Skewness αϕ	Kurtosis Kϕ	Total Carbon (%)
73	55°39.41' 169°4835'	P-11	2770	0.0	5.935	50.582	43.465	7.7272	3.0751	0.0584	0.7956	1.6490
75	55°30.78' 169°15.78'	P-13	2080	0.0	3.474	65.299	31.227	6.9088	2.6310	0.2698	1.1632	1.5367
78	55°47.09' 168°13.30'	G-109	135	0.427	87.039	10.161	2.373	2.7378	1.0011	0.3233	2.0119	.3353
79	55°36.95 167°50.51'	G-111	132	0.0	67.190	28.506	4.304	3.0165	1.5896	0.6900	1.0601	.4316
80	55°27.00' 167°28.85'	G-113	138	0.0	47.135	47.646	5.219	4.0402	1.5705	0.4903	1.2100	-
81	55°17.26' 167°06.75'	G-116	140	0.266	54.768	37.660	7.306	3.5546	2.0643	0.4916	1.2976	.4108
82	55°07.81' 166°45.68'	G-118	144	0.0	51.711 †	51.950	6.339	4.7292	1.9619	0.0323	1.0360	.5943
83	54°58.99' 166°°25.97'	G-119	145	0.0	33.541	61.121	5.338	4.4814	1.4978	0.2185	1.2706	.5519

Surface Samples Only!

Station Number	Location	Sample Number	Water Depth (m)	Size Class				Median Mdϕ	Sorting $\sigma\phi$	Skewness $\alpha\phi$	Kurtosis Kϕ	Total Carbon (%)
				Gravel (%)	Sand (%)	Silt (%)	Clay (%)					
73	55°39.41' 169°48.35'	P-11	2770	0.0	5.935	50.582	43.465	7.7272	3.0751	0.0584	0.7956	1.6490
75	55°30.78' 169°15.78'	P-13	2080	0.0	3.474	65.299	31.227	6.9088	2.6310	0.2698	1.1632	1.5367
78	55°47.09' 168°13.30'	G-109	135	0.427	87.039	10.161	2.373	2.7378	1.0011	0.3233	2.0119	0.3353
79	55°36.95 167°50.51'	G-111	132	0.0	67.190	28.506	4.304	3.0165	1.5896	0.6900	1.0601	0.4316
80	55°27.00' 167°28.85'	G-113	138	0.0	47.135	47.646	5.219	4.0402	1.5705	0.4903	1.2100	–
81	55°17.26' 167°06.75'	G-116	140	0.266	54.768	37.660	7.306	3.5546	2.0643	0.4916	1.2976	0.4108
82	55°07.81' 166°45.68'	G-118	144	0.0	41.711	51.950	6.339	4.7292	1.9619	0.0323	1.0360	0.5943
83	54°58.99' 166°°25.97'	G-119	145	0.0	33.541	61.121	5.338	4.4814	1.4978	0.2185	1.2706	0.5519

Surface Samples Only

Station Number	Location	Sample Number	Water Depth (m)	Size Class Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Median Mdϕ	Sorting σϕ	Skewness αϕ	Kurtosis Kϕ	Total Carbon (%)
84	54°07.88' 165°44.29'	G-121	57	0.034	32.331	61.837	5.799	4.6358	1.5103	0.2742	1.1256	0.7458
85	54°07.67' 166°11.68'	V-29	86	9.432	84.055	4.177	2.336	1.8612	1.3321	0.1198	3.6430	3.1795

8th Quarterly Report

1 April - 30 June 1977

TITLE: Earthquake Activity and Ground Shaking in and along the Eastern Gulf of Alaska

PREPARED BY: Christopher Stephens

RESEARCH UNIT: 210

PRINCIPLE INVESTIGATORS: John C. Lahr

Robert A. Page

I. Objectives

The objective of this research is to evaluate the hazards associated with earthquake activity in the Gulf of Alaska and adjacent onshore areas that pose a threat to the safety of petroleum exploration and development.

II. Field and Laboratory Activities

A. Preparation for 1977 Field Season

Activities over the past quarter have been increasingly concentrated on preparations for the 1977 field season. Overall, our efforts have been directed towards increasing the reliability of station operations. Arrangements have been made to have a U.S.G.S. technician live in Alaska during FY78. About two-thirds of his time will be devoted to maintainence of our seismic stations, which should facilitate a more continuous operation of the network throughout the winter season. In addition, we have been conferring with Kenneth King (U.S.G.S., Las Vegas) in an effort to improve our installation design by drawing on his expertise in operating remote equipment under severe environmental conditions similar to those encountered in Alaska.

B. Laboratory Activities

1.) Routine Processing of Seismic Data

The routine processing of seismic data has continued at a slower than normal rate due to changes in personnel. We are working as rapidly as possible to fill two vacancies and have hired two students on temporary appointments in order to help with data processing during the summer.

2.) Data Analysis

The data analysis activity has increased during the last quarter. In addition to our study of the seismicity near Icy Bay we have initiated a detailed study of the recent shallow seismicity beneath Prince William Sound. Under a closely coordinated project supported by other funding, we have also initiated a re-evaluation of the 1904 great earthquake ($M_s > 8$) which occurred in central Alaska. These last two studies are discussed further below. A computer programmer has also been hired to develop interactive programs on the new U.S.G.S. Honeywell Computer in Menlo Park which will aid in processing and analyzing data.

PRINCE WILLIAM SOUND SHALLOW SEISMICITY

From July, 1975, through September, 1976, Prince William Sound has been one of the more active seismic areas along the eastern Gulf of Alaska. Since the earthquakes which occur beneath this area are the result of relative thrust motion between two lithospheric plates (see, e.g., Plafker, 1972), a careful study of these earthquakes may reveal some of the details of this interaction. In Figure 1, the earthquakes which occurred beneath Prince William Sound during the last two quarters of 1975 are plotted by number of events as a function of depth. What is particularly striking about this distribution is that most of the earthquakes are concentrated in a relatively narrow depth range of about 15 km centered around 26 km deep. However, it is also evident that the distribution is biased by the details of the velocity model used to locate the earthquakes. A number of earthquakes were located at shallower depths and may represent movement on faults or fractures within the upper plate. We hope to better resolve some of these features by improving our velocity model, deriving improved station corrections and then relocating the earthquakes which occurred in this region over the past two years.

CENTRAL ALASKA GREAT EARTHQUAKE OF 1904

Probably the largest instrumentally recorded earthquake in central Alaska occurred on 27 August 1904. The epicenter determinations made for this event vary considerably among various sources (e.g., Rosenthal, 1907; Milne, 1912; Gutenberg and Richter, 1954). Gutenberg and Richter (1954) placed the epicenter at 64°N by 151°W, over 150 km from the site of the nearest (and possibly the only) felt report (which was in Rampart), and within about 200 km of the present route of the Alaska pipeline. Richter (1958) determined a magnitude of 8.3 for this event. Considering the damage that could result from an earthquake of this magnitude, and the uncertainties that exist in the location, magnitude, and faulting mechanism of the 1904 earthquake, a more thorough investigation of this earthquake is necessary. Chris Stephens has begun working on this problem in cooperation with Wayne Thatcher, also of the U.S.G.S

During the past quarter, the process of collecting seismograms was begun. Using these, the earthquake will first be relocated, and then the methods of Kanamori (1970a, b), using long-period surface-wave synthetic seismograms, will be employed to investigate the rupture mechanism. Although the number of high quality seismographs operating at the time of the earthquake was relatively small, this technique was successfully applied by Okal (1977) to study two large earthquakes which occured in Mongolia in 1905.

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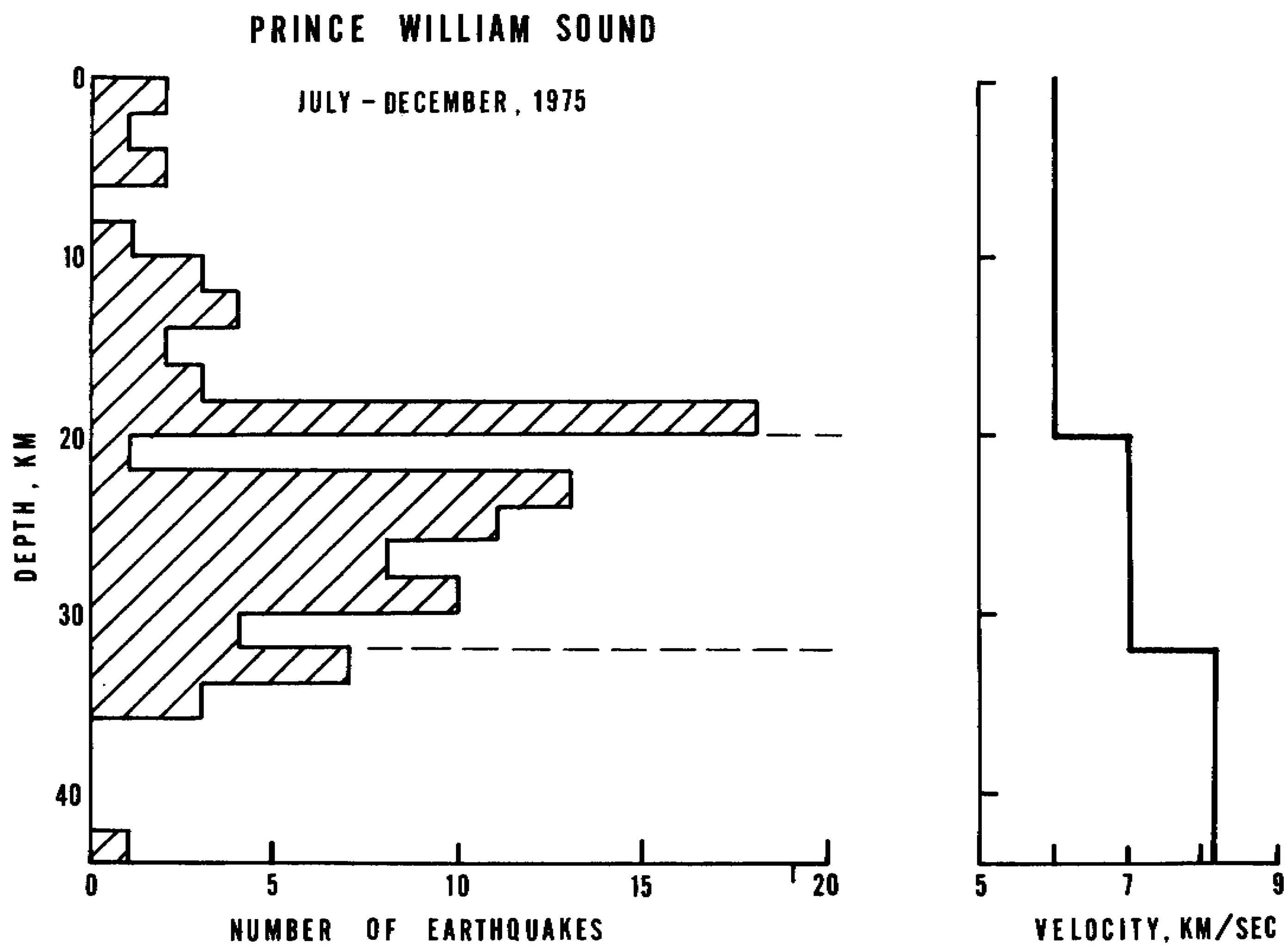

Figure 1. Plot of number of earthquakes as a function of depth for earthquakes located beneath Prince William Sound by the U.S.G.S. seismic network for the period July-December, 1975. Note the bias introduced into the distribution by the step increases in the velocity model at depths of 20 and 32 km.

Quarterly Report - R.U. 212
April 1977-June 1977

FAULTING, INSTABILITY, EROSION AND DEPOSITION OF SHELF SEDIMENTS, EASTERN GULF OF ALASKA

P. I. Paul R. Carlson
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I. Task Objectives:

B-10 - Determine the types and characteristics of bottom sediments.
D-2 - Determine the types and extent of natural seafloor stability. Compile maps indicating relative susceptibility to instability hazards.
D-6 - Determine and map the distribution, mode of faulting, age of most recent movement, and magnitude of offset for major faults.

II. Field activities:

A. Ship (R/V Growler)

1. April 22-May 25, 1977

2. Scientific Party
   Leg I - Dangerous River to Sitkagi Bluffs
   Paul Carlson, Jack Hampson, Jim Nicholson, Austin Post, Jim Riehle, Dave Shockroff

   Leg II - Yakutat Bay to Cape Suckling
   Bruce Molnia, Jack Hampson, Jim Nicholson, Austin Post/William Clique, Nancy Hardin, Roy Young

3. Dat collected
   51 High resolution seismic lines - 1200 km.
   10 Seafloor televisions observations
   1 side scan sonar line - 25 km.

B. Ship (NOAA Discoverer)

1. March 14-23, 1977

2. Scientific Party
   Jack Hampson

3. Data collected
   27 Shipek grab samples
   17 Gravity cores

III. Results and Plans

High quality, high resolution seismic reflection records (mini-sparker) were obtained in Yakutat and Icy Bays and in the nearshore zone of the eastern Gulf of Alaska between Dangerous River and Cape Suckling. These records will be studied and the results will be incorporated with data collected and synthesized in the previous two years. These data will allow us to extend our mapping closer to the shore and will help bridge the data gap between on and off-shore geologic knowledge.

The samples collected on the Discoverer cruise were obtained in the area of the northeastern Gulf of Alaska between Bering Trough and Yakutat Sea Valley. Vane shear and Tor vane measurements were made on the core samples. Moisture contents and bulk density samples were taken when possible. Size analyses and mineralogy will be completed on these samples in the laboratory. These data will add to our growing knowledge of the seafloor characteristics in lease sale area 39.

A piston coring cruise is planned for October 1977 in the north-eastern Gulf of Alaska between Montague Island and Yakutat Bay. Principle targets of study will be areas of seafloor instability. Long cores will provide additional information about the physical properties of the poorly consolidated sediments and will add knowledge about the slump and slide processes active on this high energy sea-floor. Hydrocarbon gradients also will be measured.

IV. Publications and oral presentations

During this past quarter, several papers have been presented at national and regional meetings. In addition, several papers have been submitted for publication. These papers and abstracts are listed below and those that have been published are attached in Appendix A.

Bruns, Terry R. and Plafker, George, 1977, Structure of the continental shelf, eastern Gulf of Alaska: Am. Assoc. Petroleum Geologists Bull., v. 61, p. 773.

Carlson, Paul R., 1977, Submarine slump features seaward of Icy Bay and the Malaspina Glacier, northeast Gulf of Alaska: Am. Assoc. Petroleum Geologists Bull., v. 61, p. 774.

Carlson, Paul R. and Molnia, Bruce F., in press, Submarine faults and slides on the continental shelf, northern Gulf of Alaska: Marine Geotechnology.

Carlson, Paul R., Molnia, Bruce F., Kittelson, Steven C., and Hampson, John C. Jr., in press, Bottom sediments on the continental shelf, northern Gulf of Alaska: U.S. Geol. Survey miscellaneous field studies.

Kvenvolden, Keith A., Redden, George D., and Carlson, Paul R., 1977, Hydrocarbon gases in sediments of the eastern Gulf of Alaska: Am. Assoc. Petroleum Geologists, v. 61, p. 806.

Molnia, Bruce F. and Carlson, Paul R., in press, Surface sedimentary units of the northern Gulf of Alaska continental shelf: Am. Assoc. Petroleum Geologists Bull.

Molnia, Bruce F. and Fuller, Paul, 1977, Clay mineralogy of eastern Gulf of Alaska: Am. Assoc. Petroleum Geologists Bull., V. 61, p. 815.

Molnia, Bruce F., 1977, Rapid shoreline erosion and retreat at Icy Bay, Alaska - a staging area for offshore petroleum development: Offshore Technology Conference, p. 115-124.

Molnia, Bruce F., Carlson, Paul R. and Bruns, Terry R., in press, Large submarine slide in Kayak Trough, Gulf of Alaska, in Coates, D. (ed), Landslides; Engineering geology reviews, Geol. Soc. America.

V. Preliminary Interpretation - Samples and records being analyzed.

VI. Problems - too frequent reporting dates.

VIII. Estimate funds expended - 70%.

Appendix A. Publications released.

Bruns, Terry R. and Plafker, George, 1977, Structure of Continental Shelf, Eastern Gulf of Alaska: Am. Assoc. Petroleum Geol. Bull. v. 61, p. 773.

U.S. Geological Survey marine geophysical data indicate that structural style in the eastern Gulf of Alaska increases in complexity from east to west and reflects the change from predominantly strike-slip through oblique slip to dip-slip motion along the boundary between the North American and Pacific plates during the late Cenozoic.

The eastern part between Cross Sound and Icy Bay is characterized by a basin filled with as much as 9 km of relatively undeformed upper Cenozoic sediment unconformably overlying an irregular basement surface. The axis of the basin is near and generally parallel with the coast. The seaward flank of the basin is formed by an uplifted shelf edge. Maximum uplift occurs at Fairweather Ground where probable Cretaceous to lower Tertiary highly deformed rocks are present at the seafloor; the amount of uplift diminishes westward. A central segment, beginning roughly at a line between Icy Bay and Pamplona Ridge and extending to Kayak Island, has an upper Cenozoic section, at least 7 km thick, that is folded and faulted and contains multiple angular unconformities indicating penecontemporaneous active deformation. Many large northeast-trending gently dipping, asymmetric and faulted folds are present in this segment, primarily in the east half near the Pamplona Ridge-Icy Bay trend. Some of these structures are concealed by 1 km or more of undeformed sediment, much of which may be Pleistocene or younger. Broad east-west-trending folds are present at the shelf edge and inner shelf in the west half of the area. The western area, between Kayak and Montague Islands, is characterized by complex, tightly folded and intensely faulted structures, and locally shallow acoustic basement. The thickness of upper Cenozoic sediment is extremely variable. Faults and folds with divergent trends probably reflect multiple periods of deformation in this region.

Carlson, Paul R., 1977, Submarine-Slump Features Seaward of Icy Bay and Malaspina Glacier, Northeast Gulf of Alaska: Am. Assoc. Petroleum Geol. Bull., v. 61, p. 774.

The earthquake-prone and storm-wracked continental shelf of the northeastern Gulf of Alaska has bottom features that indicate mass movement of a large area of the seafloor. A total of 29 seismic lines was run across the 1,200 sq-km area, south of Icy Bay and the Malaspina Glacier, on five cruises between September 1974 and June 1976. The acoustic profiles show disrupted bedding and irregular topographic expression, characteristics commonly associated with submarine slides and slumps.

Carlson, Paul R., 1977, (cont'd)

The slump structures are in water depths of 70 to 150 m on a slope of less than 0.5° are about 0.5 km wide (front to back), have a relief of 2 to 5 m, and consist of low-strength, poorly sorted, clayey silt. The slump "blocks" show progressive failure due to lateral extension or stretching of a sedimentary unit at the base of the blocks. This unit lies at a depth in the Holocene sediment of 35 to 50 m. Slump features of similar size and shape are present off the mouth of the Copper River, Alaska. The Copper River slump blocks probably were created by the intense ground shaking that accompanied the 1964 Alaska earthquake. The slump features southwest of the Malaspina Glacier cannot be related to a specific earthquake. However, the presence of a fault on the south side of the Icy Bay structure, the numerous earthquakes near the mouth of Icy Bay, and the active seismicity of nearby Pamplona Ridge (three magnitude-6 shocks in 1970) indicate that prolonged ground shaking is common and of sufficient intensity to cause the mass movement.

Molnia, Bruce F., and Paul T. Fuller, 1977, Clay Mineralogy of Eastern Gulf of Alaska: Am. Assoc. Petroleum Geol. Bull., v. 61, p. 815.

Analysis of the clay-mineral content of 87 bottom samples from the continental shelf of the northeastern Gulf of Alaska (Montague Island to Yakutat Bay) shows a remarkable uniformity in clay-mineral assemblage.

All samples are characterized by chlorite averaging 51% illite averaging 37% and kaolinite averaging 10%. Montmorillonite is present in only one-third of the samples analyzed and averages 2%. The rank of the major clay minerals differs from the western Gulf of Alaska where illite is in greater quantity than chlorite. Mineralogy was determined by X-ray diffraction of Mg++ and ethylene glycol-saturated clay samples of less than 2μ. The quantity of each clay mineral present was determined by a peak-area technique.

The major source area for these sediments is the highly deformed and intruded metasedimentary and meta-volcanic terrane of the Chugach, St. Elias, and Fairweather Mountains, where erosion is mainly mechanical by glaciation. Most material enters the gulf as rock flour where it is distributed by surface currents from east to west, thereby achieving a nearly uniform distribution.

Samples from the Miocene to Pleistocene Yakataga Formation, which underlies the Holocene sediment offshore and which is the major onshore formation in the eastern part of the area, contain the same clay-mineral assemblages as the modern sediment, with percentages that fall within the same ranges. Apparently the bedrock of the Yakataga Formation, like the modern sediment, was eroded and deposited mechanically.

Kvenvolden, Keith A., George D. Redden, and Paul R. Carlson, 1977, Am. Assoc. Petroleum Geol. Bull., v. 61, p. 806.

Hydrocarbon gases in Sediments of Eastern Gulf of Alaska.

Hydrocarbon gases were measured in nearshore, near-surface sediments recovered by grab samples and/or gravity cores at 12 stations. Methane (C_1) was detected in all samples and ranged in concentration from 0.32 to 23.0 nl/g of wet sediment. Hydrocarbon gases of higher molecular weights--i.e., ethane (C_2), propane (C_3), isobutane ($i\text{-}C_4$), n-butane ($n\text{-}C_4$), ethylene and propylene--were detected in most of the samples at concentrations at least an order of magnitude less than the concentration of C_1. The highest amounts of C_1, as well as C_2, C_3, and $n\text{-}C_4$, were found in a sample of clayey silt from near the mouth of the Copper River. High concentrations of gases also were found in clayey-silt samples southeast of Kayak Island. These areas of high gas concentrations show discontinuous seismic reflectors suggesting the presence of gas-charged sediments. Gravity-core samples from depths of about 50 cm below water-sediment interface at the stations near Kayak Island yielded C_1 at a concentration of about 14 and 20 nl/g. The ratios of C_1 $(C_2/(C_2+C_3)$ were 287 and 235 in addition, ethylene and propylene were observed. These data are consistent with a source from biochemical and low-temperature chemical diagensis of sedimentary organic materials. If the gases observed in these cores are related to apparent gas-charged sediments deeper in the Holocene section, then this deeper gas probably has resulted from early diagenetic processes and is not the product of seepage of petrogenically derived gases.

OTC 2892

RAPID SHORELINE EROSION AND RETREAT AT ICY BAY, ALASKA - A STAGING AREA FOR OFFSHORE PETROLEUM DEVELOPMENT

by Bruce F. Molnia, U. S. Geological Survey

This paper was presented at the 9th Annual OTC in Houston, Tex., May 2-5, 1977. The material is subject to correction by the author.

ABSTRACT

Icy Bay is the only sheltered bay near many of the offshore tracts that were leased for petroleum exploration in the April 1976 northern Gulf of Alaska OCS lease sale. Consequently, it has been selected as a primary onshore staging site for the support of offshore exploration and development. The environment of Icy Bay has many potentially hazardous features, including a submarine moraine at the bay mouth and actively calving glaciers at the bay's head which produce many icebergs. But most significant from the point of view of locating onshore facilities and pipeline corridors are the high rates of shoreline erosion and sediment deposition.

The glacier that once filled Icy Bay has receded more than 40 km since 1904, when the bay was completely ice-covered. A large hooked spit, Point Riou Spit, has developed on the eastern shore of the bay mouth within the limits of the terminal moraine and has grown to a length of 6.6 km (an average growth rate of 92 m/y). The Gulf of Alaska shoreline on the east side of Icy Bay, which includes the Malaspina Foreland and Point Riou Spit complex, has been steadily eroded northward by waves and longshore currents. Analysis of ten sets of aerial photographs taken since 1941 indicate that the eastern shoreline has receded as much as 1.3 km in this 35-year period, an average rate of retreat of 37 m/y. The western shoreline has also changed similarly; over 8.2 km^2 have disappeared, including all of Guyot Bay.

Field observations during 1976 revealed that the eastern section of Point Riou Spit is frequently washed over by storm waves and is filling in the Riou Bay portion of Icy Bay with sediment. At the point where the spit attaches to the Malaspina Foreland, a forest with trees at least 90 years old is being undercut by wave erosion. If pipelines or any onshore staging facilities are to be placed in the areas of Point Riou, Riou Bay, or the Malaspina Foreland, then the dynamic changes in shoreline position must be considered so that man-made structures will not be eroded away or silted in before the completion of development.

References and illustrations at end of paper

INTRODUCTION

Icy Bay, Alaska (Fig. 1), a north-trending fiord adjacent to the Gulf of Alaska, lies 20-80 km from the majority of potentially rich offshore tracts leased in the April 1976 Northern Gulf of Alaska Lease Sale (OCS Sale #39). It also offers the only shelter from storms for marine traffic between Yakutat Bay 90 km to the east and Prince William Sound 295 km to the west. Its location and the protection it can offer have made it a logical candidate for consideration as an onshore staging area for the development of Gulf of Alaska oil and gas.

On June 2, 1976, the Chugach Natives, Inc., applied to the Alaska District Army Corps of Engineers (NPA 76-124) for a permit to dredge and fill and to construct dock and shiphandling facilities in the Moraine Island area north of Point Riou Spit and Riou Bay (Fig. 2). Other plans include housing, fuel storage areas, warehouses, water storage and supply, power generation facilities, a sewage treatment site and an 1800 m (6,000') airstrip capable of handling jet traffic. Cecil Barnes, the president of Chugach Natives, Inc., is quoted in the July 21, 1976 "Alaska Scouting Service Report" as envisioning a new town at Icy Bay that could have a population of 2,500 in 7 to 10 years. Bomhoff and Associates, Inc., an Anchorage engineering firm, has prepared a feasibility study that was submitted to the State of Alaska in November 1976.

The U. S. Geological Survey has been investigating shoreline erosion as one of many potential hazards that might complicate or adversely affect normal petroleum operations (Molnia and others, 1976). Icy Bay, because of its recent dynamic history, was one area selected for detailed evaluation. This paper reports on the dynamics of the erosion and deposition processes in the Icy Bay area and relates these findings to proposed developments in eastern Icy Bay.

HISTORY OF ICY BAY

The history of Icy Bay is quite dynamic. As recently as 1904, today's Icy Bay did not exist. In 1794, when the explorer Vancouver surveyed the Gulf of Alaska coast, a large lobe of the Malaspina Glacier system, Guyot Glacier, extended several kilometers out to sea, occupying the area of present-day Icy Bay. A second bay, now filled in by glacial, glacial-fluvial and glacial marine deposits, located east of Icy Bay in the present Malaspina Foreland (Fig. 2), was open at that time. Vancouver named the eastern tip of this bay Point Riou. The infilling of this second bay (referred to as Vancouver's Icy Bay by Alpha 1975) is not well documented, but based on Belcher's (1843) observations, by the middle of the last century Vancouver's Icy Bay no longer existed.

Tebenkof (1848) published a series of charts based on data compiled by Russian explorers between 1788 and 1807 which generally agreed with Vancouver's description of the first Icy Bay. They show a triangular bay about 12 km long and 8 km wide at its mouth. By 1837, when Belcher examined the area, the bay had completely filled in and Guyot Glacier had receded, opening up the mouth of the present bay (Belcher, 1843). Water depths in the old bay as shown on Tebenkof's chart were as much as 27 m (90 ft). Rough calculations show that over 0.5 km^3 of sediment would be needed to fill the bay charted by Tebenkof. The infilling must have occurred between 1807 and 1838, or within about 30 years.

By 1886, Guyot Glacier had again advanced (Seton-Karr 1887) to a position over 10 km seaward of the 1977 shoreline position. A terminal moraine (Fig. 2) at the mouth of Icy Bay marks the limit of this advance. The moraine is thought to date from between 1904 and 1909 (Tarr and Martin, 1914). Ice retreat, which began prior to 1910, has continued to the present, (Fig. 3), with about 40 km of retreat through 1977. In 1913, Tarr and Martin named the opening bay Icy Bay.

After ice retreat began, and probably prior to 1910, longshore sediment transport began building a spit complex on the east shore of Icy Bay at the point where it meets the Gulf of Alaska. The spit, today called Point Riou Spit (Fig. 2), has continued to develop to the present time. (The modern Point Riou is not the same point named by Vancouver.) As the spit complex has grown, it has hooked to the northeast and isolated a portion of Icy Bay between it and the Malaspina Foreland. This body of water is known as Riou Bay (Fig. 2).

This study will examine the changes taking place in Riou Bay, Point Riou, and the eastern and western shorelines. Using the recent history of Icy Bay as a data base, projections will be made for areas being considered for petroleum-related development.

METHOD

The development of the Point Riou area was evaluated from vertical and oblique aerial photographs, USGS topographic maps, and from NOAA nautical charts. During the period 1941 - 1976, ten separate sets of vertical aerial photographs were made by various U. S. government and state agencies and private contractors. These were projected to a common scale and traced using Salzman Projectors and rephotographed to approximately the same scale. Common reference points were found (Fig. 2) and used to align overlays traced from each photograph, so comparisons of erosion and deposition could be made. Two U. S. Coast and Geodetic Survey triangulation stations originally established in 1922 (U. S. Coast and Geodetic Survey, 1922) were located. The distance between them was determined so that lengths measured on the photographs could be recalculated as true distances on the ground. Tidal heights at the time each photograph was made were determined for all aerial photographs and considered in evaluation of rates and locations of areas of deposition and erosion. Measurements were made using a compensating polar planimeter to calculate area, and these were compared to bathymetric data to calculate volume of sediment either deposited or eroded. Lengths were measured with a flexible ruler and converted to ground distance. Two separate sets of calculations were used to determine shoreline change. One set was generated from the air photographs listed below, which covered the period 1941 - 1976. The second set was based on three editions of the NOAA and U. S. Coast and Geodetic Survey Icy Bay 1:40,000 nautical chart (present number 16741, old number 8457), covering the period 1922-1971. The data from the two independent sources were then compared. A field check of the area was made in June 1976 from the Geological Survey's environmental research ship *R/V Sea Sounder.*

The vertical aerial photographs evaluated are as follows:

27 May 1941 U. S. Coast and Geodetic Survey nine-lens series 05651
30 June 1948, U. S. Navy Mission SEA - 47
26 July 1954, U. S. Air Force Mission 4G - 28
11 July 1957, U. S. Air Force Mission 51 AM01
26 Aug 1970, Alaska Dept. Lands YAK-26
7 June 1971, Nat. Ocean Survey
21 July 1972, U. S. Air Force AF 71-40
15 Aug. 1973, U. S. Air Force AF 71-40
30 Aug. 1975, North Pacific Aerial Surveys, Inc.
24 Aug. 1976, U. S. Geol. Survey 76 VI

This paper will concentrate on data from the 1941, 1948, 1957, 1971, and 1975 photographs, although information from other aerial surveys will be discussed.

The editions of the NOAA and U. S. Coast and Geodetic Survey 1:40,000 Icy Bay nautical chart used were the first (1923), third (1964), and fifth edition (1974).

DESCRIPTION OF NAUTICAL CHARTS

1923 Chart

The 1923 U. S. Coast and Geodetic Survey Chart

(Fig. 4), which is based on a Sept. 5 - 14, 1922 sextant, alidade, and lead line survey shows Point Riou Spit as being 3.18 km long and located in the area of the 1904 terminal moraine. This chart is the oldest known map that shows the eastern shore spit. The area occupied by the spit is 0.98 km^2 to mean lower low water (m.l.l.w.). The area of Riou Bay is 7.30 km^2, and the distance across its mouth is 5.52 km. This is the distance from the northeasternmost tip of the spit to the northwesternmost point on Moraine Island.

The west shore of Icy Bay, adjacent to the west side of the 1904 terminal moraine, is characteristically a low area of sand and mudflats that probably developed as part of the Guyot Glacier outwash plain. Guyot Bay is a large embayment formed by the eastward growth of a sediment spit along the shoreline and flanks of the moraine. Whereas Point Riou Spit has grown over the crest of the moraine and is growing out by infilling in deeper water, the unnamed spit on the west shore is not. This is probably due to an absence of abundant sediment migrating eastward.

The area immediately east of Guyot Bay reaches an elevation of about 12 m (40 feet) above m.l.l.w. From descriptions on the unpublished original 1922 survey (U. S. Coast Geodetic Survey 1922), it appears that this area is underlain by ice-cored moraine. The 1922 chart shows a bulbous island with a sinuous tail developing in open water at the east side of the terminus of Guyot Glacier. The morphology of the island complex resembles an esker with attached delta, and consequently the island is here named Esker Island.

Moraine Island is separated from the Malaspina Foreland by about 150 m of open water. It probably formed as a block of recessional moraine as Guyot Glacier retreated.

1964 Chart

The shoreline on the 1964 Coast and Geodetic Survey chart (Fig. 5) is based on the 1948 U. S. Navy aerial photographs. Point Riou Spit has grown to 6.02 km long and occupies an area of 2.62 km^2, and Riou Bay has an area of 10.65 km^2. The most significant changes from the 1923 chart are the growth of Point Riou Spit, the recession of Guyot Glacier, and the erosion of the spit and mudflats on the west shore of Icy Bay. The area shown as Guyot Bay (Fig. 5) is a completely different embayment than that shown on the 1923 chart (Fig. 4). The distance across the mouth of Riou Bay has decreased to 3.27 km. Esker Island is shown with an indistinct shoreline, hence no comparison to the 1923 chart can be made. Moraine Island has become attached to the Malaspina Foreland by development of a tombolo. Depths in Riou Bay are no longer shown on the 1964 chart, so no comparisons can be made or rates of infilling calculated.

1974 Chart

The 1974 NOAA Chart has the same western shoreline as the 1964 chart, but has a new eastern shoreline based on the 1971 NOAA aerial photographs. Point Riou Spit has decreased in length to 5.96 km, but a 1-km long bar, probably separated from the spit by a major storm, lies 1 km to the east of the present spit's tip. The area of the spit has increased to 2.73 km^2 (exclusive of the bar). The area of Riou Bay has decreased to 9.00 km^2 and its mouth is now 3.39 km across. With the exception of bathymetry measured by the U. S. Coast Guard in 1971 and the Geological Survey in 1970, the bathymetry shown on the 1974 chart is identical to that of the 1922 survey. Esker Island has been resurveyed and has essentially the same configuration as shown in 1922. Table I summarizes the pertinent data derived from the nautical charts. Figure 5 is a composite diagram showing the comparative positions of the important coastal features from the three charts. Figure 6 is a similar composite of the Point Riou shoreline drawn from three of the aerial surveys (1941, 1957, and 1975) and the 1923 nautical chart.

DESCRIPTION OF AERIAL PHOTOGRAPHS OF THE EASTERN SHORE

Although photographic coverage also exists from 1941 to 1975 for the shoreline on the west side of Icy Bay, this paper will concentrate on the eastern shore, the area proposed for petroleum-related development. Photographs that were evaluated in detail were made in 1941, 1948, 1957, 1971, and 1975. Other measurements were made on photographs made in 1954, 1970, and 1976.

1941 - The 1941 Coast and Geodetic Survey photograph (Fig. 7) was made when the tidal height was 8.3 feet (2.5 m) above m.l.l.w. This photograph is a composite from a nine-lens camera. A sketch map drawn from the photograph (Fig. 8) shows Point Riou Spit to be 5.29 km long and to occupy an area of 1.89 km^2. Riou Bay has an area of 9.24 km^2 and a mouth width of 3.73 km. Moraine Island is predominantly unvegetated and is attached to the Malaspina Foreland by a tombolo. A sandy beach a few hundred meters wide fronts the Gulf of Alaska as far as the eastern edge of the photograph at the Yahtse River. Data from the measurement of aerial photographs are summarized in Table II.

1948 - The 1948 Navy photograph (Fig. 9) was taken when the tidal height was approximately three feet (~ 1m) above m.l.l.w. A sketch map (Fig. 10) shows the length of Point Riou Spit to have increased to 5.53 km while its area increased to 2.34 km^2. When compared to 1941, this represents a growth rate of 34 m/yr (Table III) and a 24 percent increase in area. The area of Riou Bay has decreased to 9.14 km^2 and the distance across its mouth has decreased to 2.98 km. The width of exposed sandy beach has decreased by about 40 percent from the 1941 photograph.

1957 - The 1957 Air Force photograph (Fig. 11) was taken when the tide was 2.9 feet (0.9 m) above m.l.l.w. A sketch map (Fig. 12) shows that the length of Point Riou Spit has increased to 8.86 km and its area to 2.69 km^2. This represents an average growth rate of 148 m/y between 1948 and 1957. Riou Bay occupies an area of 8.55 km^2 and its mouth width has decreased to 2.20 km.

1971 - The 1971 NOAA photograph (Fig. 13), made when the tide was 3.5 feet (1.1 m) above m.l.l.w., and the sketch map (Fig. 14) show Point Riou Spit to be broader and shorter than in 1957. A linear bar, 1 km long, with a bulbous end to the southwest and a northwest-trending hook at its north tip, now occupies a part of the area that in 1957 was occupied by the east end of Point Riou Spit. The bar, here named Severed Bar, lies about 1 km east of the end of the spit. Observations made on June 12, 1976, indicate that a tidal height of about 6 feet (2 m) above m.l.l.w. is necessary to completely submerge the bar. Severed Bar trends parallel to Moraine Reef but appears to be separate from it.

Between 1957 and 1971, the westernmost edge of the spit has developed a rounded knob which projects out into what were open water depths of 18 - 70 m (10 - 40 fms) on the 1923 nautical chart. This area, here named Crested Point, gives the hooked end of the spit a profile similar to the head shape of the late Mesozoic dinosaur Corythosaurus. This profile continues through the present.

In spite of losing Severed Bar, Point Riou Spit has about the same area as in 1957 (2.70 km^2) but has decreased in length to 5.53 km. The area of Riou Bay (8.94 km^2) and the width of its mouth (3.6 km) have both increased (Table II).

No photographic coverage has been found for the period 1957 - 1970, but considering the rapid rate of spit growth and the large distance of open water between the spit's tip and Severed Bar, the storm that breached the spit and formed Severed Bar probably occurred late in the 1960's. The 1970 photo shows Severed Bar to be about the same size and shape as in 1971, but Point Riou Spit is about 200 m shorter (length 5.34 km) than in 1971. The Riou Bay mouth measured 3.25 km in 1970.

1975 - The 1975 North Pacific Aerial Survey photograph (Fig. 15) was made when the tide was 5.7 feet (1.75 m) above m.l.l.w. On the sketch map (Fig. 16), only a small area of the southwest part of Severed Bar is emergent, although its outline can be seen as a darker area on the photograph. The shape of Point Riou Spit is similar to that of 1971, with the exception that Crested Point has become more rounded and the embayment below the growing northeasternmost projection has been isolated as a saline lake that receives sea water only during storm washover. The spit has grown to a length of 6.48 km and occupies an area of 3.09 km^2. The area of Riou Bay (8.60 km^2) and the width of its mouth (2.70 km) have both decreased but neither have returned to the pre-storm dimensions of 1957. Measurements of incomplete 1976 Geological Survey photographs show a further increase in the spit's length to 6.60 km and a decrease of the bay mouth to 2.54 km. Areas could not be calculated from the 1976 photographs.

The most striking change between the 1975 photograph and earlier ones is the absence of sandy beach south of Reference Lake. June 1976 field observations of the Gulf of Alaska coastline immediately east of Riou Bay (Fig. 17) showed waves and surf breaking on the forested Malaspina Foreland. Recently deposited sand was found carpeting the forest floor behind the southeastern extension of the spit (Fig. 18). A large number of fallen trees, generally oriented with their roots toward the Gulf of Alaska and their trunks toward Riou Bay, have eroded from the Malaspina Foreland. Three ring counts of two of the larger trees yielded ages of about 90 years.

COMPARISONS AND INTERPRETATION OF NAUTICAL CHARTS AND AERIAL PHOTOGRAPHS

Interpretations of the nautical charts and of the various aerial photographs both lead to the same conclusions but to different magnitudes. Both the aerial photographs and the nautical charts show that presently Point Riou Spit is growing, Riou Bay's area is decreasing, and the Gulf of Alaska shoreline of Icy Bay is rapidly eroding and receding northward.

Values derived from the nautical charts are consistently greater than values from the same year's aerial photographs. This is due to two factors: (1) a difference in tidal reference points; and (2) a difference in base distances.

All aerial photographic surveys were made when tidal heights were above m.l.l.w. The range is from 2.9 (1957) to 8.3 (1941) feet (0.9 - 2.5 m) above m.l.l.w. The nautical charts are based on a shoreline supposedly corrected for m.l.l.w. Consequently lengths and areas calculated from nautical chart shorelines are greater than those from the same year's aerial photographs. For Point Riou beaches, which have slopes of between 3^{o} and 5^{o}, a one-foot (0.3 m) reduction in tidal heights will expose 3.4 to 5.7 meters of beach. The 1941 aerial photograph, the earliest used in this study, has the highest tidal height of all. Consequently, less shoreline is exposed than would be if the tidal height were equal to that of any of the more recent photographs. Since all other photos are compared to the 1941 shoreline, this means that the numbers calculated for shoreline erosion and retreat are lower than the actual area lost.

Measurements of distances on the 1964 and 1974 nautical charts are 7 - 10 percent greater than on the 1959 USGS topographic map used for ground truth for the aerial photographs. On this map, the distance from the northwest corner of Moraine Island to the southeast edge of Reference Lake is 5.84 km and the distance from the Moraine Island to the eastern edge of Intermediate Lake is 2.62 km. On the nautical charts these distances are 6.24 km and 2.85 km respectively.

SUMMARY OF CHANGES AT ICY BAY

Between 1941 and 1976 the Gulf of Alaska shoreline of the eastern shore of Icy Bay receded at least 1.3 km (Fig. 6). Between 1922 and 1976 the same shoreline receded as much as 1.5 km (Fig. 5). The latter number is presented with less confidence than the former due to the less than precise nature of the 1922 sextant, alidade, and lead-line survey.

Point Riou Spit began developing as soon as Guyot Glacier began retreating (about 1904) and continued to grow until at least 1957, when its length was 6.86 km. Sometime between 1957 and 1970, a large storm breached the eastern end of Point Riou Spit and detached Severed Bar. This increased the area of Riou Bay and also increased the distance across the mouth. Point Riou Spit has continued to grow, and as of 1976 (6.60 km) had almost reached its pre-storm length. Table III summarizes the incremental growth of Pt. Riou Spit. Between 1922 and 1957 the width of Riou

Bay's mouth and its area have steadily decreased. Following the major storm, Riou Bay's area and width have again been decreasing (Table II). Since 1941 Riou Bay's width has decreased from 3.73 km to 2.54 km, a decrease of 32 percent. In 1957 the width had decreased to 2.20 km. It is likely that the damaging storm had a recurrence interval of 50 to 100 years.

The western shoreline of Icy Bay has also undergone significant changes. Between 1922 and 1976 the shoreline has retreated as much as 4.8 km with a loss of more than 8.2 km^2. As the recent charts show no bathymetry in the area of change, no volume of sediment lost has been calculated.

Vancouver's Icy Bay, which existed until about 1837, was filled in with sediments in less than 40 years. Calculations based on Tebenkoff's (1848) chart indicate about 5×10^8 m^3 of sediment would be needed to raise the bottom to m.l.l.w. The growth in Point Riou Spit between 1922 and 1975 would require over 3.56×10^7 m^3 of new sediment.

The sediment being added to Pt. Riou Spit probably comes from two sources, the eroded Malaspina Foreland and the streams draining the Malaspina Glacier system. Sediment is transported into the Point Riou system by longshore drift and wave action.

The sediment eroded from the western shoreline may have been transported into Icy Bay and deposited on the growing shoreline near Claybluff Point. It might also remain in the vicinity of Guyot Bay but be below sea level because of melting of stagnant ice underlying the western shore. The sediment that rapidly filled Vancouver's Icy Bay must have come from the Malaspina system. To date, no detailed investigations have attempted to determine its source.

EFFECTS OF SHORELINE CHANGES AND SPIT GROWTH ON PROPOSED DEVELOPMENT

The sediment transport schemes for the eastern shore of Icy Bay can be characterized as: (1) longshore transport from the east and then continued longshore transport into Icy Bay along the margin of Point Riou Spit; and (2) washover sedimentation by storm waves, which drive sediment into southern Riou Bay, onto the Malaspina Foreland, and onto the inner curve of Point Riou Spit. Longshore transport has kept Point Riou elongating since its inception and, if allowed to continue without storm breaching, will probably close off the mouth of Riou Bay completely. The distance between Moraine Island and the tip of the spit has decreased from 5.52 km in 1922 to 2.54 km in 1976. Continued growth at the present rate would connect the two points in less than 20 years, thus closing off Riou Bay. Then, new sediment which had previously been deposited in deep water adjacent to Point Riou Spit, been attached to the spit, or entered Riou Bay would continue along the face of Moraine Island and enter Moraine Harbor, the major site for proposed development (Fig. 19). Moraine Harbor will fill in within 15 years if sedimentation continues at the rate calculated for Point Riou Spit between 1922 and 1974. (Human intervention could prolong the life of Riou Bay and Moraine Harbor, but this has not been considered in the calculations.)

This assumption is based on the calculation of the volume of sediment added to Point Riou Spit between 1922 and 1974, and the calculation of the area of Moraine Harbor. Between 1922 and 1974, Point Riou Spit increased in area by 1.75 km^2. The average water depth in which the spit grew was 20.35 m (11.13 fm). This number was obtained by contouring the open water depths on the 1923 nautical chart which are now occupied by the spit. Consequently, over 3.56×10^7 m^3 of sediment were added to Point Riou Spit during the period in question. This calculation is conservative because (1) the spit actually projects a significant distance above the upper limit calculated for m.l.l.w., and (2) the 1974 NOAA chart actually shows a 1971 shoreline. Available NOAA data and bathymetry from Bomhoff and Associates (1976) used to calculate the volume of Moraine Harbor indicate that $9.55 \times 10^6 m^3$ of sediment would fill Moraine Harbor to m.l.l.w. Using the depositional rate calculated for Point Riou Spit, $6.84 \times 10^5 m^3$/yr, the life of Moraine Harbor would be 14.0 years.

Even before the attachments of Point Riou Spit to Moraine Island, the increase in sediment would affect moorage sites for tankers and platforms and also loading and unloading areas for other marine traffic.

CONCLUSIONS

(1) The Gulf of Alaska shorelines at either side of Icy Bay have been eroding and retreating since the deglaciation of Icy Bay began in 1904.

(2) The Malaspina Foreland shoreline to the east of the bay mouth has been eroded back more than 1.3 km since 1941 and as much as 1.5 km since 1922.

(3) The western shoreline has retreated at least 4.8 km since 1922, and between 1922 and 1976 lost an area of more than 8.2 km^2.

(4) Point Riou Spit began developing as soon as longshore sediment transport was able to supply sediment to the area that the ice occupied in 1904. By 1922, it had reached a length of 3.18 km. By 1957, it had grown to 6.86 km. A major storm between 1957 and 1971 shortened the spit by breaching it, and formed Severed Bar. In 1976, Point Riou Spit was 6.60 km long.

(5) If Point Riou Spit continues to grow at its present rate, it will seal off the mouth of Riou Bay within 20 years. Further sedimentation will fill in Moraine Harbor, the proposed site for the Chugach Natives, Inc., development, about 15 years after sealing Riou Bay.

(6) Between 1922 and 1971, sedimentation added over 3.56×10^7 m^3 of sediment to Point Riou Spit. This included the growth of the spit into an area where previously over 40 fms (∿75 m) of open water existed.

(7) Vancouver's Icy Bay was filled in by sediment probably during the period between 1807 and 1837. Available bathymetry and geography imply that this would require a sediment volume of about 5×10^8 m^3.

(8) Before any attempts are made to construct major staging or related facilities in dynamic areas such as Icy Bay, the total sediment picture including areas of erosion and deposition, must

be carefully evaluated. The proposed facilities could be silted in long before the Gulf of Alaska offshore development is completed.

NOMENCLATURE

The names Crested Point, Esker Island, Intermediate Lake, Reference Lake, and Severed Bar have not as yet been formally accepted by the Board on Geographic Names. Applications have been submitted to formalize each of the above names, and their use here is in accordance with Board on Geographic Names policy.

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U. S. Geological Survey 1959, Icy Bay (D2-D3) quadrangle, Alaska, topographic map, scale 1:63,350.

TABLE I.

DATA DERIVED FROM ICY BAY NAUTICAL CHARTS

Edition	Point Riou Spit length (km)	Spit area (km^2)	Area of Riou Bay (km^2)	Width of Riou Bay Mouth (km)
1st (1922 data)	3.18	.98	7.3	5.52
3rd (1948 data)	6.02	2.62	10.65	3.27
5th (1971 data)	5.96	2.73	9.00	3.39

TABLE II.

SUMMARY OF DATA FROM AERIAL PHOTOGRAPHS

Date of Photograph	Point Riou Spit length (km)	Spit area (km^2)	Area of Riou Bay (km^2)	Width of Riou Bay mouth (km)
1941	5.29	1.89	9.24	3.73
1948	5.53	2.34	9.14	2.98
1954	6.85	2.52	8.55	2.36
1957	6.86	2.69	8.55	2.20
1970	5.34	*	*	3.25
1971	5.53	2.70	8.94	3.06
1975	6.48	3.09	8.60	2.70
1976	6.60	*	*	2.54

*incomplete photo coverage.

TABLE III.

INCREMENTAL GROWTH OF POINT RIOU SPIT, 1904-1976

1904 - 1922	177 m/yr
1922 - 1941	100 m/yr
1941 - 1948	34 m/yr
1948 - 1954	220 m/yr
1954 - 1957	3 m/yr
1957 - 1971	-95 m/yr
1971 - 1975	238 m/yr
1975 - 1976	169 m

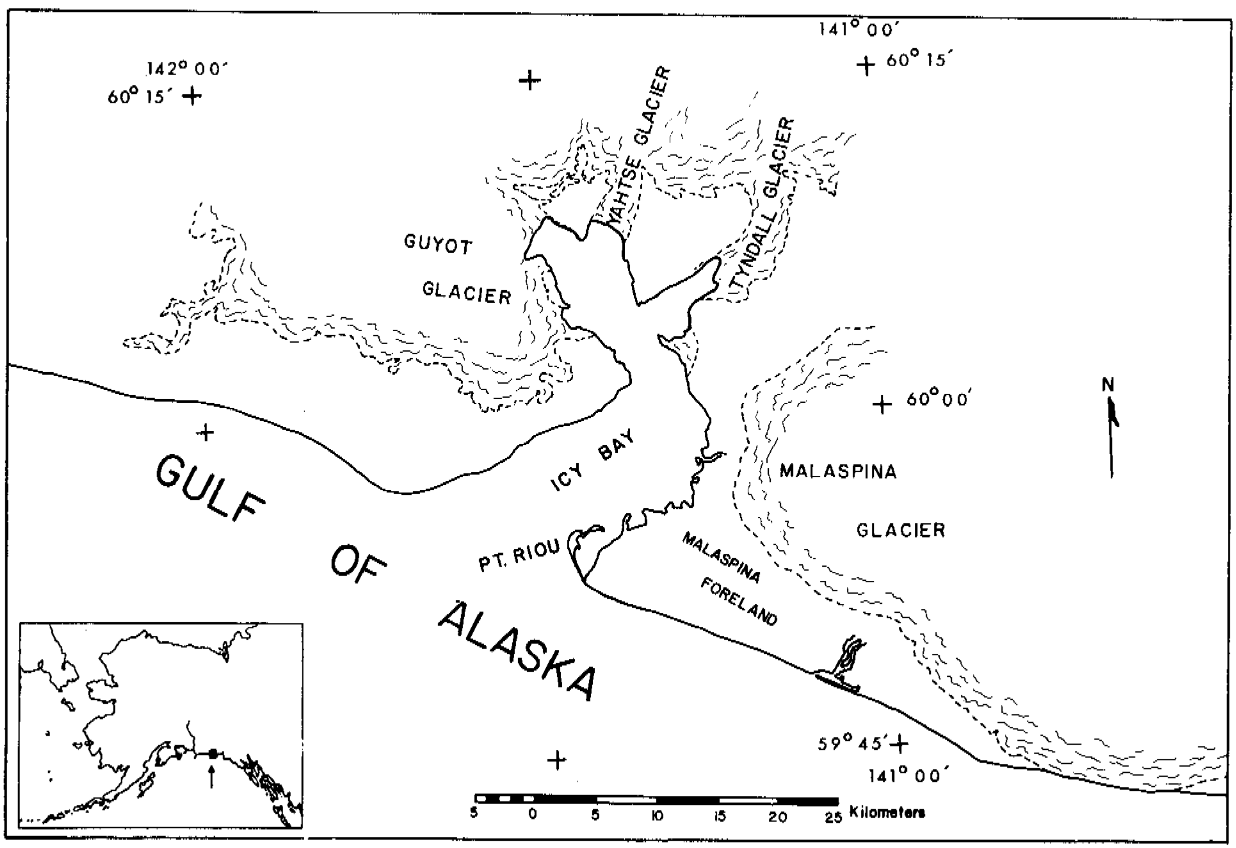


Fig. 1 - Map of Alaska showing the location of Icy Bay.

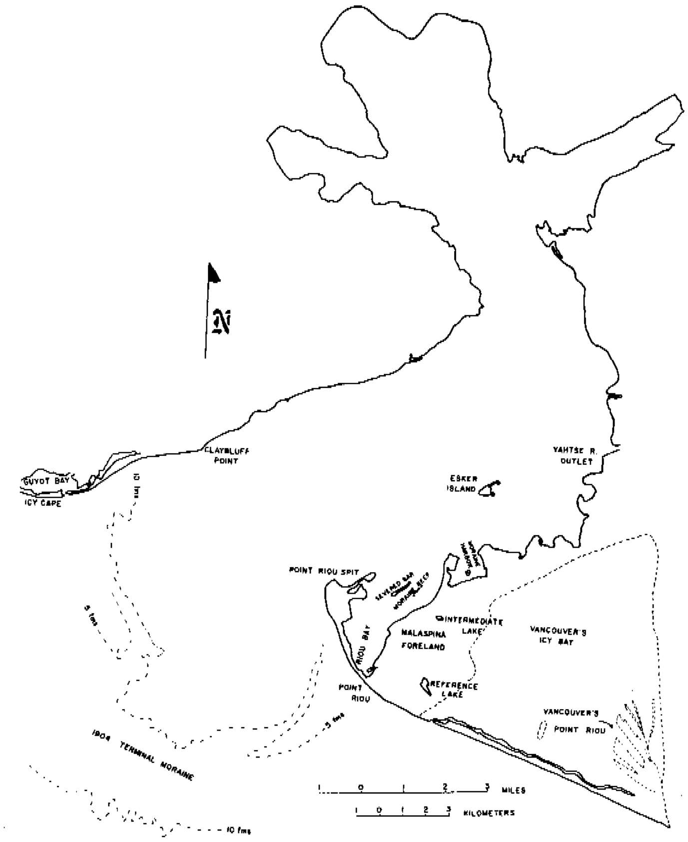


FIG. 2 - THE ICY BAY AREA SHOWING THE LOCATION OF GEOGRAPHIC FEATURES DISCUSSED IN THIS PAPER.

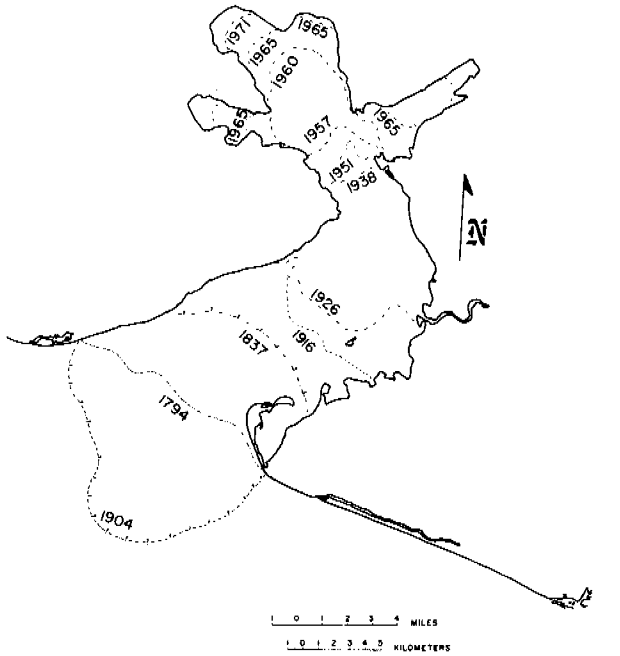


FIG. 3 - POSITIONS OF THE ICE FRONT OF GUYOT GLACIER, ICY BAY (MANY ICE FRONT POSITIONS FROM UNPUBLISHED FILES OF A.S. POST).

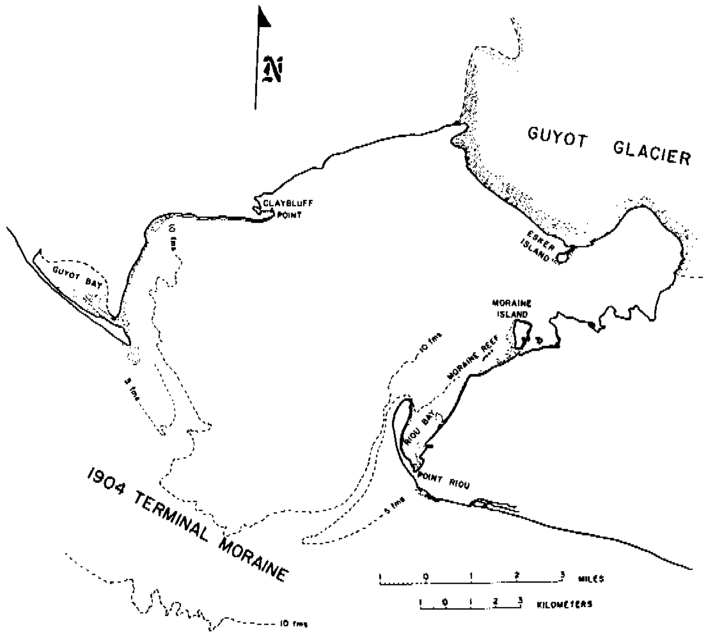


FIG. 4 - TRACING OF THE 1923 U. S. COAST AND GEODETIC SURVEY ICY BAY NAUTICAL CHART.

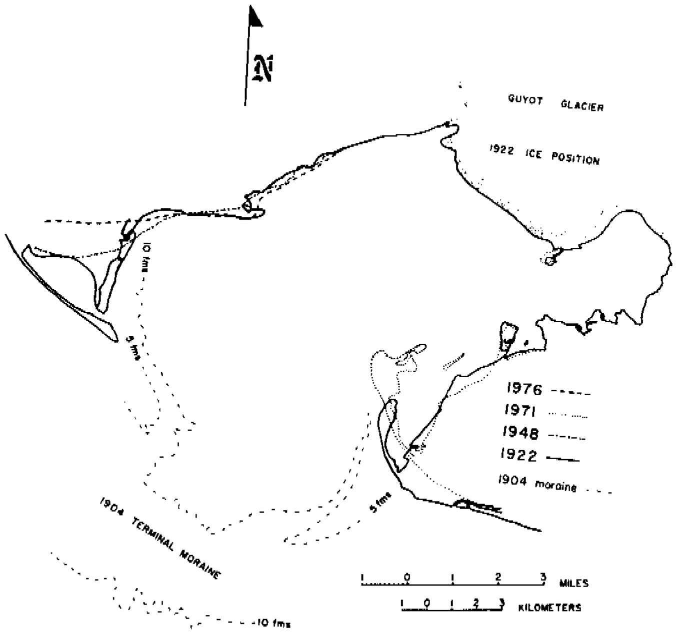


FIG. 5 - DIAGRAM BASED ON THE 1923, 1964 AND 1974 ICY BAY NAUTICAL CHARTS SHOWING THE RELATIONS OF MAJOR SHORELINE FEATURES.

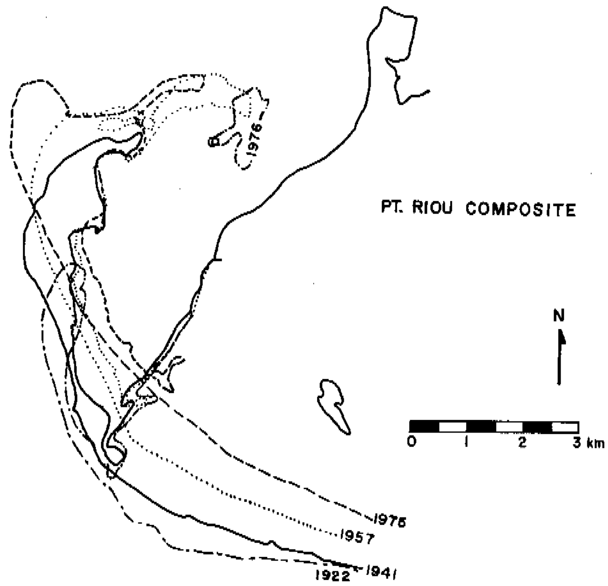


Fig. 6 - Composite diagram showing the position of shorelines determined, for the Point Riou area, from aerial photographs and the 1923 Nautical Chart.

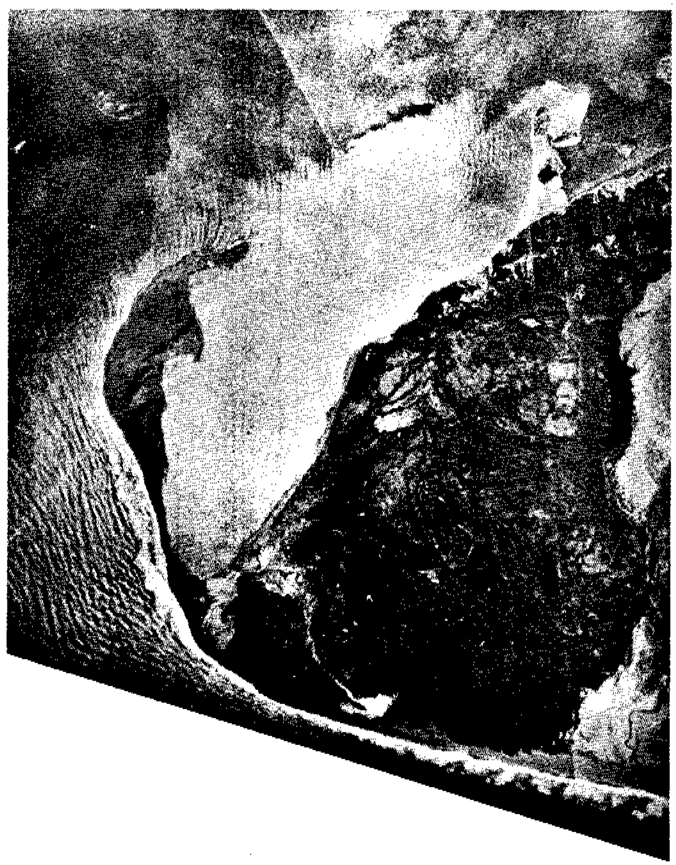


Fig. 7 - 1941 vertical aerial photograph of the Point Riou area.

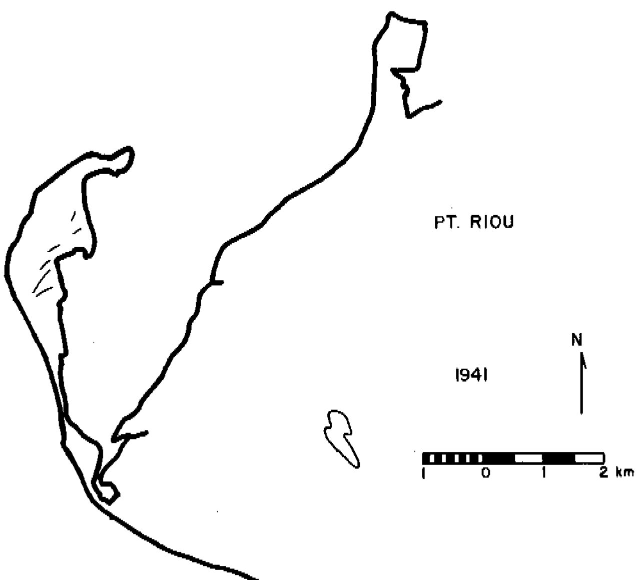


Fig. 8 - Sketch of the 1941 aerial photograph.

Fig. 9 - 1948 vertical aerial photograph of the Point Riou area.

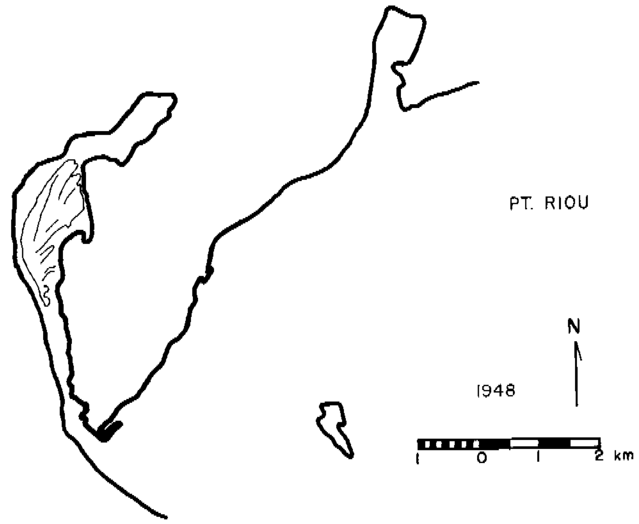


Fig. 10 – Sketch of the 1948 aerial photograph.

Fig. 11 – 1957 vertical aerial photograph of the Point Riou area.

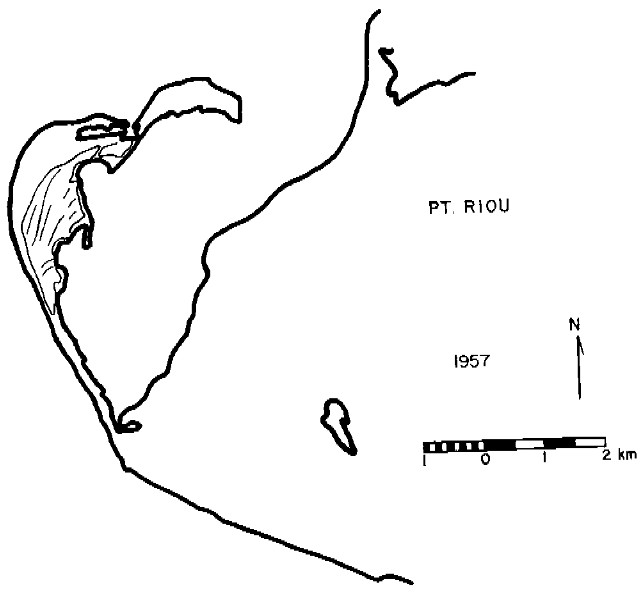


Fig. 12 – Sketch of the 1957 aerial photograph.

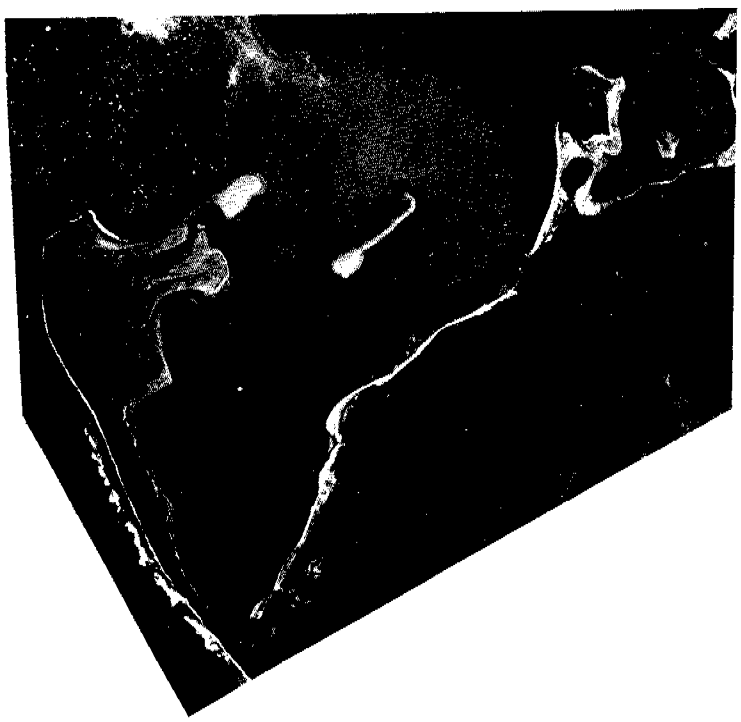


Fig. 13 – 1971 vertical aerial photograph of the Point Riou area.

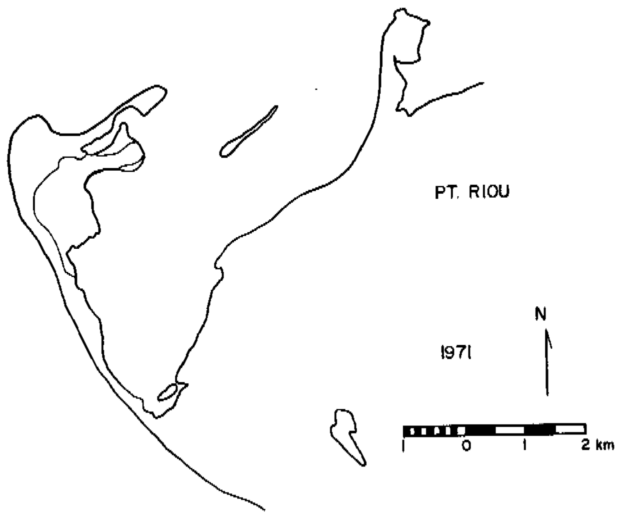


Fig. 14 - Sketch of the 1971 aerial photograph.

Fig. 15 - 1975 vertical air photograph of the Point Riou area.

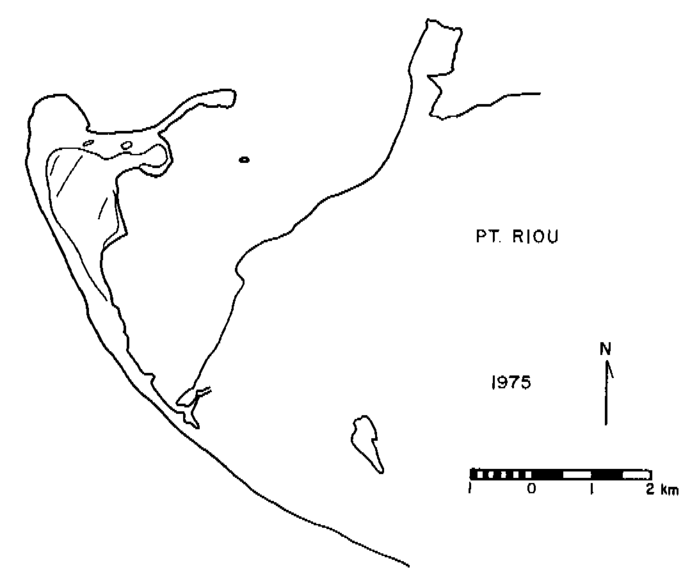


Fig. 16 - Sketch of the 1975 aerial photograph.

Fig. 17 - Ground view east of Point Riou showing active wave erosion (June 1976).

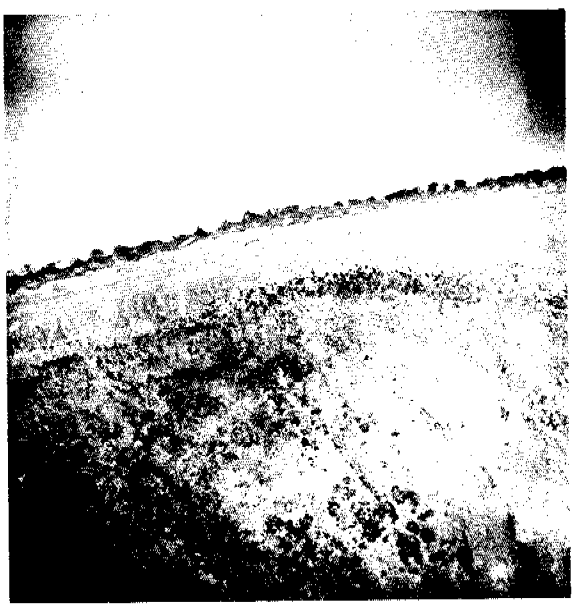


Fig. 18 - 1976 low vertical aerial photograph east of Point Riou showing wave-aligned trees along Malaspina Foreland.

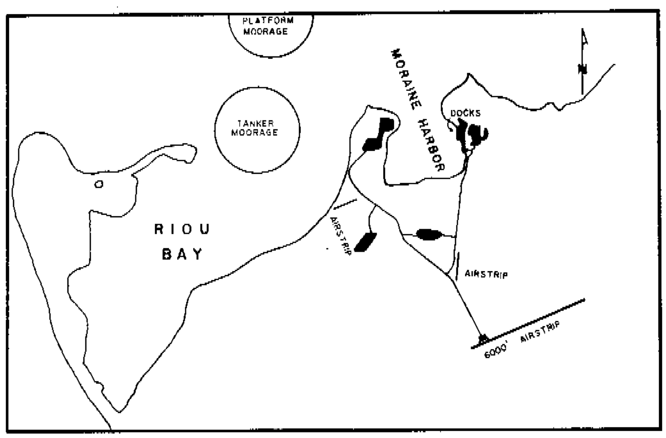


Fig. 19 - Map showing proposed development of Chugach Natives Inc., at Icy Bay (Bomhoff and Associates 1976).

QUARTERLY REPORT

TITLE: Seismic and Volcanic Risk Studies - Western Gulf of Alaska
RU: 251
PERIOD: April 1, 1977-June 30, 1977

PRINCIPAL INVESTIGATORS: H. Pulpan and J. Kienle, Geophysical Institute, University of Alaska

I. TASK OBJECTIVES:

It is the purpose of this research to determine the seismicity of the lower Cook Inlet, Kodiak, and Alaska Peninsula areas and the associated seismic risk to onshore and offshore developments, and to monitor the earthquake activity of two recently active volcanoes and evaluate their eruption potential and associated risk.

II. FIELD AND LABORATORY ACTIVITIES:

Jim Siwik visited the Homer recording center to repair one of three VHF links between DMR and the recording sites. On that occasion, various calibrations on the recording system were performed.

Juergen Kienle and Jim Siwik installed a new seismic station in order to be able to record the microearthquake activity associated with the formation of two new maars near Peulik Volcano. A narrative report about these maars, their relationship towards this current OCSEAP study and the field investigation conducted in association with their formation is the content of Appendix I. This field operation also allowed us to service some seismic stations of the Peninsula regional network.

Laboratory work was primarily associated with preparations for the annual station service trip and the ocean bottom seismometer experiment conducted by LDGO and USGS.

III. RESULTS AND INTERPRETATION:

Hypocenter determinations (files and maps). Appendix 2 and 3 give the listings of hypocenters and epicenter maps, respectively for the period January 1, 1977-March 31, 1977.

Appendix 1

Narrative Report About the Formation of Two New Maars on the Alaska Peninsula and Associated Field Investigations

Formation of two maars, 13 km northwest of Peulik Volcano, Alaska Peninsula

General Observations:

From March 30 to April 9, 1977, two new maars formed in lowland terrane at the southern shore of Becharof Lake, 3 km south of Gas Rocks. The eruption site lies 13 km northwest of Peulik Volcano, which erupted last in 1852. The maars appear to have formed very near or on the trace of the Bruin Bay fault, a major regional, northwest-trending fault of presumed Tertiary age. The two maars are separated by about 500 m. The eastern maar is about 100 m deep and circular with a diameter of about 250 m. It contains a lava dome and is now filling up with water. The western maar contains a lake, is elliptical, with dimensions of about 150 by 65 m, and is about 25 m deep to the lake surface.

Explosive activity began on March 30, in the now water-filled western maar. The second (eastern) maar was first seen on April 2, by a bush pilot and from that date on was the main source of volcanic activity. During the 10 days of eruption ash clouds reached heights of 25,000 feet. Figure 1 shows the eastern maar in eruption on April 6, 1977. Ash from the larger eruptions fell as far away as Kodiak Island, Katmai and the Bristol Bay lowlands. On April 3, a new lava lake was discovered in the bottom of the eastern maar. The two maars are now surrounded by aprons of tan and black colored scoria and also bomb strewn fields which show a pronounced grading from fine to very coarse as one approaches the crater rims. At the rim of the eastern maar the ash has accumulated to a depth of 10 m, and the bomb sizes are up to 1 m in diameter. At a distance of a few km at the shore of Becharof Lake, the ash layer is only a few cm thick containing fist-size scoria bombs.

The name "Ukinrek Maars" has been proposed by us to the U.S. Board of Geographic names. Ukinrek in Yupik Eskimo means "two holes in the ground" (Peulik means "one with smoke").

Scientific Value, Relevance to OCSEAP:

Maar formation, the result of the initial perforation of the earth's crust by the volatiles of a rising magma front, is a rare geologic phenomenon. To our knowledge, only twice in historic times have maars been seen to form: once in Chile in 1955 (Illies, 1959), and the second time at Iwo Jima, Japan, in 1957 (Corwin and Foster, 1959). Since the Ukinrek Maars formed in the middle of our existing regional Alaska Peninsula seismic network, we saw a unique opportunity to study their deep conduit system, the source of magma, in short, their plumbing through microearthquake observations.

Two aspects of this study may be of relevance to OCSEAP:

(1) The tectonic setting of the maars appears to be controlled by the Bruin Bay fault. There is a possibility that we might find evidence of seismic activity along the Becharof Lake section of the fault. The question of whether or not there is any recent displacement and current seismic activity on the Bruin Bay fault is of

interest to OCSEAP in lower Cook Inlet, where the fault marks the western boundary of the potential lower Cook Inlet petroleum province. Detterman et al. (1976) found no evidence for any Holocene displacement along the Bruin Bay fault in the Kenai and Tyonek quadrangles.

(2) Continued volcanic activity at or in the vicinity of the maars could constitute a volcanic hazard to the Bristol Bay offshore lease area, which would, however, be restricted to ash falls and noxious fumes and gas clouds.

Field Work:

A field party of volcanologists from the University of Alaska (J. Carden, J. Kienle, D. Lalla, and R. Motyka) and from Dartmouth College (J. Bratton and S. Self) spent 8 days at the maars from April 14-21, to conduct geologic-petrologic, gas-chemical, thermal, geodetic, and seismologic observations. Rock samples are now being analyzed. Preliminary results indicate that the lavas are alkali-basaltic or transitional from alkalic to tholeiitic. Temperatures as high as 805°C were encountered at only 1.1 m depth near the rim of the western maar within a thick lobe of black scoria. The high temperature is probably due to very rapid accumulation of hot scoria, thus trapping the heat. We also observed strong microearthquake swarm activity during these 8 days. Many of the smaller events originated at shallow depth beneath the craters, but some of the larger events originated from a few up to 20 km and were also seen at our Whale Mountain station 25 km N-NE of the maars.

Roughly during the same time period, from April 8 to April 22, 1977, a University of Washington research airplane sampled volcanic aerosols and gases.

From May 20 to May 29, 1977, with emergency funding from the U.S. Geological Survey, J. Kienle and J. Siwik from the University of Alaska installed a new short-period seismic station on Gas Rocks (MAA), 3 km N of the maars, field serviced station FLP, 35 km SE of the maars, and also station BMT, 25 km N-NE of the maars, where we had to install a radio receiver for MAA. The new narrow spaced tripartite array, consisting of MAA, FLP, and BMT, should allow us to delineate the tectonic setting of the maars through observations of the associated seismicity. To date, earthquake swarm activity is continuing.

References:

Corwin, G., and Foster, H. L., 1959. The 1957 explosive eruption on Iwo Jima, Volcano Islands: Am. J. of Science, p. 161-171.

Detterman, R. L., Hudson, T., Plafker, G., Tysdal, R. G., and Hoare, J. M., 1976. Reconnaissance geologic map along Bruin Bay and Lake Clark faults in Kenai and Tyonek quadrangles, Alaska: U.S. Geol. Survey open-file report 76-477, 4 pp and map.

Illies, H., 1959., Die Entstehungsgeschichte eines Maares in Sued-Chile: Geol. Rundschau, p. 232-244.

Figure 1 is a photograph of E Ukinrek Maar in eruption on the evening of April 6, 1977. Becharof Lake is pictured in the background, looking E-NE. Photograph was by Lou Gwartney. Unfortunately, a xerox copy of the photograph was submitted rather than the original photo. Since there was no visible reason for duplicating this, the author will have to be contacted if a significant version is required.

Appendix 2

List of Hypocenters

Cook Inlet-Western Gulf of Alaska

January 1, 1977-March 31, 1977

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	[illegible]
JAN 1	2	59	28.7	59	59.8	151	37.6	47.0	2.4	5	231	37	1.67	75.2	109.4	D
1	20	13	39.7	60	37.7	153	19.0	0.5	2.8	4	306	38	0.29	0.	0.	C
1	21	5	12.9	59	37.8	152	45.1	5.0	1.6	3	142	50	0.	0.	0.	C
1	22	6	23.6	60	25.2	155	14.7	5.0	3.2	3	310	136	0.27	0.	0.	C
1	22	27	4.9	59	53.7	151	52.7	5.0	1.9	3	194	29	0.01	0.	0.	C
2	1	5	39.3	60	47.9	152	41.4	203.1	2.3	4	321	42	0.	0.	0.	C
2	7	21	9.2	58	53.8	152	54.5	60.7	2.7	4	288	57	0.13	0.	0.	C
2	10	46	33.8	60	17.2	151	57.4	5.0	1.8	3	238	47	0.03	0.	0.	C
2	13	53	1.3	59	59.2	155	30.8	0.6	2.1	4	311	138	2.14	0.	0.	D
2	16	4	42.3	60	56.8	150	39.0	54.1	3.2	12	135	67	0.78	6.5	22.0	C
2	17	15	29.6	61	2.3	151	17.9	11.0	3.4	13	111	96	1.34	6.9	32.1	D
2	17	53	6.3	59	56.8	152	50.7	6.1	1.5	4	159	52	0.26	0.	0.	C
3	14	25	16.0	59	38.3	153	40.7	177.3	3.6	5	162	35	0.06	10.5	27.2	D
4	1	36	50.5	59	54.3	152	51.3	5.0	0.	3	163	57	0.	0.	0.	C
4	11	46	15.8	57	41.6	152	36.2	34.0	1.7	7	304	52	0.23	17.1	2.5	
4	12	52	5.2	59	32.7	153	27.8	119.6	1.6	4	198	17	0.	0.	0.	C
4	14	56	35.4	59	28.6	152	33.6	258.2	4.0	17	82	42	2.26	25.7	41.3	C
4	15	45	57.5	60	19.1	152	24.3	167.5	0.	16	91	23	1.28	[illegible]	18.[illegible]	C
4	19	47	21.6	59	42.9	159	53.9	5.0	3.1	5	323	282	13.33	164.[illegible]	[illegible].2	D
5	0	53	13.8	59	57.3	152	35.9	120.0	2.1	4	185	48	0.	0.	0.	C
5	6	38	33.0	59	54.8	151	58.6	5.0	0.8	3	227	71	0.	0.	0.	C
5	6	43	27.1	59	32.2	153	6.3	106.9	2.3	6	99	14	0.18	4.[illegible]	[illegible].4	
5	15	37	55.5	60	0.3	151	46.2	5.0	1.2	3	241	70	0.01	0.	0.	
6	2	32	42.5	59	50.8	152	51.5	5.0	0.	4	111	64	1.69	0.	0.	
6	6	16	15.3	58	5.3	154	8.8	21.9	2.3	4	284	58	0.	0.	0.	
6	11	10	29.1	58	43.7	153	28.9	5.0	2.5	8	177	66	1.87	20.	[illegible]	
6	14	27	35.7	60	16.5	152	19.6	5.0	2.4	5	208	29	2.40	[illegible]	[illegible]	
6	15	24	42.5	61	51.1	151	6.8	4.0	2.2	4	332	182	0.38	0.	0.	
6	17	44	31.9	60	14.6	152	10.8	174.[illegible]	3.4	16	38	39	4.14	32.[illegible]	[illegible]	
6	18	36	56.7	59	5.6	153	15.6	5.0	1.8	7	153	62	3.17	33.[illegible]	[illegible]34.4	
7	7	45	49.0	59	12.9	153	58.2	141.7	2.9	11	111	18	0.19	2.[illegible]	3.[illegible]	C
7	12	59	25.9	60	56.2	150	40.9	2.6	2.6	4	315	129	0.45	0.	0.	
7	15	32	35.7	59	46.7	152	28.7	97.1	2.0	5	128	44	0.05	2.[illegible]	5.[illegible]	
7	18	52	0.9	58	46.0	154	9.0	16.1	2.0	6	212	37	0.17	[illegible]	[illegible]	
7	18	57	49.2	60	22.4	152	3.7	51.4	2.2	4	264	39	0.45	0.	0.	
7	19	1	20.0	59	5.9	154	1.6	3.9	1.2	4	236	9	0.11	0.	0.	C
7	19	44	29.7	60	1.2	152	47.7	83.4	1.6	4	120	44	0.	0.	0.	
7	22	18	54.4	59	55.5	150	2.9	5.0	1.9	3	310	100	0.	0.	[illegible]	
7	23	12	1.1	59	34.7	152	45.2	[illegible]	0.	3	234	86	[illegible]	[illegible]	[illegible]	
8	6	26	56.0	59	30.4	153	32.9	12[illegible].3	1.2	4	179	24	0.	0.	[illegible]	
8	7	10	13.0	58	43.7	152	49.1	60.7	1.3	5	138	29	0.	[illegible]	[illegible]	
8	9	57	31.3	58	1.3	157	25.9	31.4	2.9	8	304	223	0.62	[illegible]	[illegible]	
8	9	46	42.9	59	23.4	152	26.2	5.0	0.1	4	204	45	3.65	0.	0.	
8	12	33	28.6	59	44.1	153	29.3	3.0	1.2	7	149	57	1.33	13.4	22.5	
8	15	43	39.8	56	13.0	157	42.3	5.0	3.9	11	324	343	0.23	44.6	240.7	D

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
JAN 8	19	28	16.1	61	22.7	151	1.1	40.4	2.9	7	320	143	0.54	113.5	828.2	D
9	3	53	24.2	59	55.5	153	20.2	145.9	3.3	16	66	50	0.29	2.2	3.6	B
9	10	42	23.7	60	14.2	153	11.1	139.8	2.4	8	102	30	0.21	3.5	7.0	C
9	13	10	36.7	59	47.2	152	9.0	68.4	2.4	6	143	31	0.27	6.9	13.9	D
9	14	24	50.9	59	53.4	153	33.9	96.2	0.	5	128	38	0.42	12.6	34.7	D
10	1	8	29.0	57	37.1	154	52.5	322.3	4.3	4	315	186	1.62	0.	0.	D
10	4	12	39.4	59	41.5	152	40.7	5.0	0.	4	177	58	0.40	0.	0.	D
10	10	17	31.5	59	14.8	153	48.7	136.5	2.6	13	70	24	0.18	1.9	3.0	[illegible]
10	10	25	39.6	60	2.3	152	51.8	115.4	1.9	6	115	42	0.22	5.4	8.9	C
10	12	46	13.1	58	59.4	153	15.2	5.0	0.7	6	205	66	4.89	78.3	463.2	D
10	19	53	3.6	59	33.4	151	57.9	11.6	0.9	5	86	21	4.24	56.9	467.5	D
10	21	8	59.2	60	19.3	151	59.2	49.3	1.8	6	241	44	1.36	75.5	100.6	D
10	22	51	46.2	57	52.0	151	41.3	5.0	1.9	8	253	49	9.49	278.5	175.4	D
11	4	22	0.4	59	52.8	153	46.0	171.5	2.2	7	126	27	0.11	4.4	10.7	C
11	9	8	22.8	59	37.2	149	20.8	2.5	3.0	11	266	127	1.59	62.6	59.1	D
11	14	0	21.8	57	39.5	152	22.0	35.2	1.9	6	301	12	0.17	5.9	2.1	D
11	17	30	41.1	59	25.7	152	45.6	5.0	0.	4	220	67	0.37	0.	0.	D
11	19	27	54.7	59	12.0	153	44.8	110.4	2.4	10	32	23	0.24	[illegible]	5.3	[illegible]
11	20	20	22.7	59	55.4	152	48.5	1.5	0.	5	112	55	0.77	[illegible]	[illegible]	D
11	20	36	45.6	59	2.9	151	40.8	53.2	2.0	4	196	60	0.	0.	0.	C
12	0	30	3.0	61	35.6	151	19.7	37.2	2.3	6	287	152	0.44	[illegible]	756.3	D
12	2	30	28.8	60	23.3	152	10.5	5.0	0.	3	244	33	11.29	0.	0.	[illegible]
12	11	22	26.3	59	10.4	151	55.9	65.1	2.2	8	171	39	[illegible]	3.7	7.5	C
12	14	44	53.2	59	7.4	153	15.5	89.1	1.3	5	173	59	[illegible]	[illegible]	[illegible]	[illegible]
12	15	25	43.7	59	46.6	149	47.7	1.3	2.2	6	295	104	2.06	87.3	164.1	[illegible]
12	19	1	26.4	60	0.6	152	38.2	127.1	2.8	18	67	45	0.30	[illegible]	[illegible]	[illegible]
12	20	8	6.5	62	7.9	145	5.1	35.7	3.4	4	341	454	[illegible]	0.	0.	
12	21	15	38.9	59	49.7	151	42.0	[illegible]	1.0	4	211	17	0.	0.	0.	
12	22	56	31.9	59	29.9	149	41.0	10.1	2.1	4	335	166	[illegible]	0.	0.	
13	5	27	39.5	62	40.5	151	47.1	5.0	3.1	9	309	256	[illegible]	[illegible]	[illegible]	
13	4	0	2.5	53	52.9	156	33.6	409.4	3.7	11	254	95	[illegible]	97.	[illegible]	[illegible]
13	4	54	30.0	61	56.8	151	9.9	40.6	2.6	13	95	75	0.54	[illegible]	[illegible]	[illegible]
13	12	51	47.3	58	20.7	156	40.4	207.2	3.1	11	[illegible]	[illegible]	0.45	28.1	[illegible]	[illegible]
13	19	46	2.8	59	37.7	150	53.5	[illegible]	1.8	4	296	[illegible]	0.	0.	0.	C
13	22	6	29.9	60	56.6	145	51.6	23.3	3.9	17	[illegible]	130	6.05	61.1	[illegible]	D
14	4	33	28.0	59	52.6	152	47.7	5.0	0.	3	166	[illegible]	0.	0.	0.	C
14	6	26	17.9	59	43.8	152	9.7	74.4	2.2	6	129	[illegible]	[illegible]	[illegible]	11.7	[illegible]
14	11	50	3.8	58	17.3	152	21.8	[illegible]	2.2	3	173	[illegible]	0.	[illegible]	[illegible]	
15	17	20	56.5	59	47.2	155	6.0	[illegible]	1.9	4	246	147	0.14	0.	0.	
15	21	0	43.7	62	49.2	150	27.9	[illegible]	4.3	20	122	[illegible]	1.11	[illegible]	[illegible]	[illegible]
16	6	30	29.8	58	32.0	150	22.2	[illegible]	2.6	5	[illegible]	115	0.21	49.1	[illegible]	
16	7	44	50.0	60	51.0	151	12.0	5.0	2.5	5	[illegible]	[illegible]	0.27	[illegible]	598.4	D
16	[illegible]	41	3.8	59	13.1	152	12.7	95.8	2.5	5	254	45	0.17	16.0	22.7	D
16	[illegible]	3	46.4	62	45.1	149	28.8	35.3	0.	10	147	124	0.39	[illegible]	[illegible]	D
16	11	10	34.4	60	18.8	151	30.0	94.9	1.9	4	263	71	0.14	0.	0.	C

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
JAN 16	18	38	5.5	59	50.1	152	33.1	177.1	0.	4	152	54	0.03	0.	0.	C
16	21	7	47.5	59	59.6	152	1.8	82.7	2.6	8	191	43	0.10	1.9	3.1	C
16	23	21	43.5	60	15.5	153	15.5	145.0	0.	4	178	32	0.30	0.	0.	C
17	15	42	20.7	59	0.9	154	28.7	110.7	0.	4	255	13	0.	0.	0.	C
18	1	7	47.4	60	11.7	152	4.7	5.0	0.	3	218	45	0.02	0.	0.	C
18	2	24	53.0	60	21.1	152	26.2	112.1	2.0	6	218	20	0.23	13.5	22.9	D
18	11	58	59.4	60	4.1	152	59.1	137.7	2.6	10	221	48	0.18	4.6	6.9	D
18	13	2	0.1	59	22.5	152	26.3	5.0	1.9	3	232	54	0.01	0.	0.	C
18	13	40	26.4	60	1.5	152	33.8	109.4	2.2	6	223	55	0.14	5.3	9.2	D
18	17	54	4.3	59	44.0	152	49.8	91.2	2.2	7	169	24	0.18	3.5	6.9	C
18	21	47	35.7	59	60.0	152	39.7	113.2	3.2	18	68	50	0.27	1.7	2.9	B
19	7	36	37.9	62	13.8	149	19.1	30.1	3.4	19	77	70	1.48	8.9	8.0	D
19	7	45	44.7	59	44.8	151	51.7	83.9	2.7	7	208	15	0.22	7.5	10.9	D
19	7	52	14.4	60	29.5	150	10.8	35.4	3.1	10	287	123	0.24	11.1	308.3	D
19	14	34	27.8	59	48.7	152	30.1	93.5	1.9	7	190	44	0.12	2.9	6.6	D
19	19	16	5.9	60	4.7	148	38.0	6.5	3.1	16	101	139	0.88	4.4	16.5	D
19	21	2	44.9	59	21.1	151	37.5	4.6	1.8	4	279	13	0.28	0.	0.	C
20	11	22	12.6	57	55.3	154	32.8	5.0	2.2	3	267	83	12.70	0.	0.	D
20	12	54	52.7	58	52.0	154	31.1	124.[illegible]	2.6	5	187	31	0.06	2.[illegible]	4.[illegible]	D
20	13	23	21.7	59	44.2	152	48.0	5.0	0.	3	174	65	0.	0.	0.	C
20	22	4	35.4	59	22.0	152	15.3	137.6	1.9	4	227	40	0.	0.	0.	C
21	0	59	12.5	62	0.1	153	9.4	32.1	3.1	9	143	164	8.70	75.8	678.4	D
21	1	3	56.1	59	36.7	152	52.8	103.0	2.5	5	149	20	0.20	7.4	14.2	D
21	2	30	6.7	60	48.5	150	4.6	13.7	2.6	4	322	154	0.31	0.	0.	[illegible]
21	11	4	13.6	59	30.4	152	36.8	5.0	1.2	3	201	33	0.	0.	0.	C
21	11	17	59.6	59	47.9	153	7.6	134.7	2.0	4	174	17	0.	0.	0.	[illegible]
22	5	54	52.7	59	40.3	153	30.0	130.[illegible]	2.7	9	127	15	0.14	[illegible]	3.[illegible]	[illegible]
22	6	15	56.6	60	6.9	152	44.6	112.1	2.8	9	185	58	0.19	[illegible]	4.[illegible]	[illegible]
22	6	41	57.0	59	37.1	152	59.2	115.1	1.7	9	149	14	0.31	5.[illegible]	[illegible]	[illegible]
22	7	34	9.6	60	0.4	153	30.5	180.1	2.0	5	256	40	0.11	21.[illegible]	47.1	[illegible]
22	11	41	43.0	58	5.4	152	45.0	5.0	1.9	3	238	24	0.06	0.	0.	[illegible]
22	20	5	46.4	59	36.9	152	14.1	5.0	0.	3	175	33	0.	0.	0.	[illegible]
23	1	56	8.1	59	33.3	153	1.8	104.0	3.2	5	131	15	0.16	[illegible]	6.4	[illegible]
23	16	43	13.2	57	51.3	152	55.8	5.0	1.5	3	215	[illegible]	0.05	[illegible]	0.	[illegible]
24	11	7	0.2	59	10.1	147	12.2	43.2	2.4	4	344	251	0.05	0.	0.	C
24	11	26	46.5	59	43.5	152	47.4	107.[illegible]	2.0	6	117	26	0.1[illegible]	4.[illegible]	12.1	[illegible]
24	19	13	25.2	58	2.7	152	57.5	5.0	0.	3	132	11	0.31	0.	0.	[illegible]
24	19	57	6.1	60	26.5	153	18.4	187.4	2.7	10	156	[illegible]	[illegible]	5.[illegible]	[illegible]	[illegible]
25	7	22	43.3	58	54.6	154	51.7	150.[illegible]	2.6	10	205	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	9	57	53.4	59	44.0	153	5.6	103.[illegible]	2.3	11	83	11	0.27	[illegible]	[illegible]	[illegible]
25	14	35	36.5	59	43.1	153	0.2	5.0	0.	3	260	[illegible]	0.23	0.	0.	[illegible]
25	17	8	17.2	62	31.0	149	32.5	5.0	3.7	22	80	[illegible]	16.0[illegible]	[illegible]	[illegible].7	[illegible]
25	17	12	19.9	61	3.9	149	57.1	36.6	3.2	19	141	29	0.72	4.9	3.9	D
26	3	49	26.7	58	16.3	151	22.8	27.9	2.6	7	233	69	0.36	8.[illegible]	3.[illegible]	D
26	8	56	50.7	59	9.9	152	31.8	7.[illegible]	2.6	6	121	52	0.46	4.4	801.5	D

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
JAN 26	12	20	19.8	60	11.6	154	26.7	5.0	2.1	3	211	120	0.03	0.	0.	C
26	21	38	47.0	61	26.3	150	40.6	1.0	2.8	14	83	48	4.60	30.9	106.8	D
27	0	1	31.8	59	26.9	152	52.1	38.3	2.3	4	188	73	0.	0.	0.	C
27	1	6	52.9	59	14.4	156	23.8	194.0	3.8	9	246	126	3.91	112.5	161.0	D
27	5	58	29.2	58	5.4	151	36.4	19.7	2.1	5	233	64	0.02	12.8	6.8	D
27	16	58	30.7	59	18.4	152	58.5	5.0	2.3	4	171	73	0.21	0.	0.	C
27	18	31	36.2	59	25.8	153	20.2	5.0	0.	3	232	77	0.14	0.	0.	C
27	21	32	11.7	59	43.0	153	2.0	116.1	2.6	5	231	78	0.24	53.9	90.5	D
27	23	17	52.6	59	41.4	152	55.6	5.0	0.	3	184	72	0.02	0.	0.	C
28	0	25	53.9	59	10.3	150	58.0	36.9	2.7	8	245	49	0.18	7.8	3.1	D
28	2	12	5.5	59	27.2	152	18.4	80.7	2.7	7	121	41	0.32	5.7	10.1	C
28	11	30	47.8	60	37.1	153	29.6	4.5	0.	4	270	45	21.14	0.	0.	D
28	11	45	27.5	59	56.2	152	56.7	5.0	0.	3	246	54	0.41	0.	0.	D
28	13	31	9.4	58	32.1	152	44.9	86.6	2.3	6	137	58	0.09	2.0	6.4	D
28	14	18	41.9	59	53.4	153	31.2	160.5	3.2	11	75	40	0.29	3.5	6.5	D
28	23	7	0.2	57	22.2	153	50.7	34.5	3.7	10	278	87	0.25	8.6	2.7	D
29	1	19	55.2	59	49.7	152	59.3	5.0	0.	3	254	67	0.50	0.	0.	D
29	8	11	11.7	59	43.8	151	38.6	127.0	0.	4	212	7	0.	0.	0.	C
29	8	48	27.8	59	43.0	152	52.3	5.0	0.	3	253	69	0.09	0.	0.	C
29	9	24	14.9	63	13.9	150	37.4	26.7	3.5	15	81	180	0.56	3.3	[illegible]	D
29	9	43	4.7	60	9.4	152	10.1	3.0	0.	4	201	44	0.53	0.	0.	D
29	12	8	55.3	60	26.3	153	18.7	241.5	0.	4	230	29	0.40	0.	0.	D
29	13	18	41.1	59	13.4	151	53.1	54.3	2.5	10	160	32	0.35	4.1	5.0	C
29	13	47	48.5	59	55.4	152	20.9	37.3	3.0	9	150	49	[illegible]	[illegible]	[illegible]	D
30	2	11	6.8	59	20.5	151	42.1	9.3	2.2	4	244	16	0.19	0.	0.	C
30	2	17	41.6	60	1.7	152	35.9	4.6	0.	4	140	44	0.44	0.	0.	D
30	12	41	42.7	58	28.1	150	52.4	34.5	1.9	4	250	119	0.32	0.	0.	C
30	13	33	10.8	59	41.0	152	32.3	5.0	0.	3	237	59	0.32	0.	0.	C
30	13	36	11.7	60	3.1	151	24.7	26.4	3.1	7	250	45	0.34	[illegible]	4.6	D
30	18	57	52.3	59	44.4	151	51.0	[illegible]	0.	4	162	14	0.	0.	0.	C
30	19	35	44.7	57	47.7	153	35.6	40.7	2.3	7	237	39	0.43	[illegible]	4.7	[illegible]
30	23	4	38.7	59	54.1	152	48.1	5.0	1.8	5	111	57	0.69	4.6	[illegible]	[illegible]
31	0	21	36.2	61	34.8	151	54.3	2.0	2.3	5	[illegible]	137	0.24	11.7	[illegible]	D
31	2	29	17.4	59	37.7	152	42.6	5.0	0.	3	252	60	0.12	0.	0.	C
31	9	53	59.6	59	37.3	152	23.1	5.0	0.	3	236	42	0.07	0.	0.	C
31	11	32	43.6	59	51.2	152	44.0	5.0	1.9	4	144	63	0.54	0.	0.	D
31	14	33	11.7	59	55.0	152	47.2	7.9	2.5	7	113	55	[illegible]	[illegible]	[illegible]	[illegible]
31	15	43	44.5	60	10.7	153	42.9	[illegible]	3.1	9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	16	15	50.4	60	5.6	152	57.7	139.1	3.1	10	107	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	16	59	7.9	59	25.6	152	39.4	230.5	0.	4	213	41	[illegible]	[illegible]	[illegible]	[illegible]
FEB 1	1	2	22.3	58	57.6	152	11.6	34.7	1.7	6	178	[illegible]	0.05	[illegible]	[illegible]	[illegible]
1	4	32	52.0	60	1.2	152	33.9	4.1	0.	5	142	45	0.41	[illegible]	[illegible]	[illegible]
1	8	51	45.6	62	11.0	151	16.4	65.7	3.6	21	57	94	0.35	1.6	7.9	C
1	12	11	26.3	60	0.4	152	36.9	5.0	0.	4	136	46	0.46	0.	0.	D
1	15	59	49.3	59	55.4	153	1.2	5.0	0.	3	252	56	0.58	0.	0.	D

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
FEB 1	19	43	42.6	62	58.0	151	11.2	33.0	3.6	22	57	141	0.82	3.4	906.1	D
2	5	36	12.0	59	53.6	153	16.1	156.7	3.2	9	81	54	0.29	4.2	8.2	B
2	7	14	35.8	56	57.4	152	34.5	33.4	1.8	6	332	88	0.02	12.1	2.2	D
2	7	17	12.1	56	5.5	152	29.8	5.0	3.3	12	305	184	0.41	21.3	18.8	D
2	7	52	22.3	56	3.6	152	18.9	28.6	3.3	11	306	188	0.47	35.7	589.7	D
2	7	58	5.7	59	23.3	152	45.3	3.5	2.0	6	83	38	2.83	31.3	64.8	D
2	10	24	0.2	60	15.0	152	46.8	80.1	0.	4	135	18	0.04	0.	0.	C
2	15	38	36.2	58	11.1	153	42.4	37.0	2.7	17	140	35	4.38	37.9	37.2	D
2	15	40	52.5	58	31.2	154	28.9	11.1	1.9	10	118	66	0.44	2.7	21.2	D
2	18	47	17.5	60	3.3	153	36.4	190.8	2.5	8	156	36	0.22	8.9	24.7	D
2	21	41	20.2	61	52.6	147	46.6	29.0	3.7	16	142	78	0.22	1.4	1.1	C
3	7	22	57.7	59	36.2	152	49.4	59.7	2.3	12	127	39	2.48	18.5	32.2	C
3	10	32	17.0	59	0.1	153	39.2	11.9	2.0	12	71	33	0.40	1.9	495.8	C
3	19	20	58.3	59	30.8	152	55.1	93.6	0.	4	144	73	0.15	0.	0.	C
4	4	18	24.0	60	8.7	153	18.6	165.5	3.2	9	170	55	0.27	4.3	8.0	D
4	7	14	18.4	57	46.5	156	3.1	5.0	0.	3	241	31	0.42	0.	0.	D
4	8	42	57.6	57	39.6	154	0.1	5.0	1.9	3	178	52	0.01	0.	0.	C
4	9	34	10.6	60	1.0	151	47.2	145.0	0.	4	219	40	1.16	0.	0.	D
4	13	14	32.6	60	45.9	153	1.0	382.5	4.0	8	132	40	5.13	150.5	237.5	[illegible]
4	15	12	57.5	61	12.7	154	38.1	35.8	3.1	10	165	134	3.96	56.0	107.2	D
4	16	50	3.1	59	1.3	161	5.5	39.5	3.9	7	289	395	2.82	222.2	309.4	D
4	20	11	30.0	61	42.7	146	53.9	103.2	3.8	9	295	345	5.26	187.4	[illegible]	D
5	10	16	44.7	57	55.1	155	26.4	35.9	2.0	4	123	16	0.44	0.	0.	[illegible]
5	12	2	43.0	59	32.7	152	58.0	5.0	2.4	7	74	75	1.02	7.6	[illegible]	D
5	22	5	59.2	59	10.4	150	44.2	40.3	0.	5	276	59	0.12	18.5	3.3	[illegible]
6	0	6	42.6	59	30.9	153	8.3	109.0	2.9	11	76	20	0.23	[illegible]	[illegible]	[illegible]
6	6	19	42.4	59	24.7	152	2.7	17.3	0.	4	179	27	0.42	0.	0.	[illegible]
6	12	29	46.0	59	13.4	152	29.1	5.0	0.	4	200	59	0.21	0.	0.	
7	21	50	57.1	60	1.7	152	49.9	5.0	0.	3	233	43	0.26	0.	0.	[illegible]
8	16	17	54.9	65	22.3	162	53.8	5.0	3.4	3	310	77	[illegible]	0.	0.	[illegible]
9	1	39	59.4	59	55.5	153	0.3	5.0	0.	3	251	56	0.64	0.	0.	[illegible]
9	2	33	20.7	59	25.7	153	9.7	5.0	0.	3	234	[illegible]	0.34	0.	0.	[illegible]
9	13	26	53.2	59	25.7	153	39.5	5.0	0.	3	[illegible]	117	0.71	0.	0.	[illegible]
9	11	31	27.0	57	10.1	157	57.3	5.0	1.4	3	137	[illegible]	0.	0.	0.	[illegible]
9	15	29	57.3	59	39.5	152	47.0	5.0	0.	3	253	64	[illegible]	0.	0.	[illegible]
9	22	43	37.5	59	59.3	152	51.1	5.0	1.7	7	148	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	3	27	10.1	58	41.9	152	45.0	5.0	2.6	6	[illegible]	24	[illegible]	[illegible]	[illegible]	[illegible]
10	4	13	1.9	58	27.3	153	35.9	5.0	1.6	3	[illegible]	[illegible]	[illegible]	0.	0.	
10	5	45	39.5	59	21.5	152	6.7	5.0	0.	3	275	[illegible]	0.	0.	0.	
10	10	49	27.3	60	17.3	152	49.5	124.1	2.8	9	[illegible]	14	[illegible]	[illegible]	[illegible]	
10	12	39	3.9	59	10.9	152	47.1	5.0	0.	3	[illegible]	[illegible]	0.	0.	[illegible]	
11	4	45	25.5	59	19.7	152	2.4	3.7	0.	4	200	[illegible]	[illegible]	[illegible]	[illegible]	
11	12	20	52.7	59	56.3	153	1.1	5.0	0.	3	252	56	0.56	0.	0.	[illegible]
11	19	26	45.7	58	7.5	153	49.3	5.0	1.6	4	152	100	0.35	0.	0.	D
11	23	17	3.6	61	1.8	147	7.1	2.5	0.	14	197	124	14.33	118.0	[illegible]	D

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
FEB 12	0	46	55.9	59	13.2	151	43.6	55.5	0.	7	192	29	0.17	4.0	6.4	D
12	2	45	50.9	59	25.2	152	55.0	87.4	2.9	9	84	25	0.17	1.9	3.3	B
12	3	34	56.3	59	26.7	152	51.7	80.9	0.	5	119	72	0.19	4.5	25.5	D
12	4	25	6.7	59	58.0	152	46.1	0.2	0.	5	140	50	0.41	8.5	83.2	D
12	7	1	49.4	60	21.0	152	22.5	121.9	2.9	9	217	23	0.41	8.3	11.1	D
12	7	44	43.7	59	20.9	152	32.2	67.5	2.3	7	96	46	0.17	2.1	4.5	B
12	14	32	26.4	57	18.1	155	43.0	76.6	2.4	8	183	53	0.15	2.6	3.1	D
12	14	35	14.9	58	38.5	156	46.9	1.1	2.3	8	298	9	72.56	158.7	293.3	D
13	1	51	44.2	59	31.4	152	25.5	91.4	2.5	7	97	46	0.17	2.7	5.4	C
13	16	0	25.6	59	43.2	152	45.8	5.0	0.	3	247	63	0.02	0.	0.	C
13	16	45	55.6	59	36.8	152	36.3	5.0	0.	3	249	54	0.08	0.	0.	C
13	17	31	34.5	59	21.2	154	2.4	5.0	1.8	3	230	126	0.	0.	0.	C
13	18	30	35.5	60	7.3	152	49.3	5.0	0.	4	194	33	0.59	0.	0.	D
13	20	34	57.1	59	32.2	153	6.6	5.0	1.8	6	139	78	1.32	14.1	279.8	D
13	23	45	37.7	63	12.7	150	30.8	136.6	3.6	20	65	97	0.35	1.9	5.3	B
14	5	30	39.1	58	16.0	152	23.2	34.1	2.5	5	224	50	0.29	15.2	12.6	D
14	13	27	24.6	59	48.9	153	0.9	5.0	0.	3	256	68	0.56	0.	0.	D
14	19	26	54.6	59	47.4	151	20.0	2.5	2.7	8	250	22	43.32	867.4	677.6	D
14	20	36	23.2	59	33.1	152	35.7	5.0	0.	3	255	55	0.	0.	0.	C
14	22	46	25.0	59	52.3	152	50.5	5.0	0.	3	242	61	0.16	0.	0.	C
14	19	15	35.8	59	28.4	151	56.5	5.0	0.	3	246	20	0.01	0.	0.	C
15	4	18	47.2	59	51.8	153	19.6	132.9	2.6	8	108	54	0.[illegible]	5.7	11.9	[illegible]
15	4	24	26.0	60	5.7	155	14.9	5.0	0.	3	327	141	0.	0.	0.	[illegible]
15	6	56	50.2	59	43.1	152	45.3	5.0	0.	3	247	63	0.02	0.	0.	C
15	7	7	13.8	59	6.2	153	49.8	5.0	1.9	3	228	21	0.01	0.	0.	C
15	11	26	24.1	58	8.0	152	48.0	20.2	2.2	4	224	22	0.	0.	0.	[illegible]
15	11	44	25.1	58	53.7	149	42.5	5.0	3.8	7	304	176	0.[illegible]	44.1	47.8	[illegible]
15	14	14	51.3	59	33.8	152	21.6	10.9	1.9	4	144	41	0.[illegible]	0.	0.	[illegible]
15	15	1	21.6	57	29.0	148	30.7	116.5	3.0	4	322	259	1.62	0.	0.	[illegible]
15	19	38	15.0	59	33.6	152	59.8	5.0	2.6	6	134	77	1.[illegible]	11.[illegible]	[illegible]	
16	4	28	13.5	56	18.6	151	7.4	2.5	3.6	4	334	353	0.73	0.	0.	[illegible]
16	5	4	23.0	58	49.5	154	2.8	52.7	2.5	6	195	37	0.[illegible]	21.1	42.[illegible]	
16	10	43	40.2	59	0.9	152	31.1	53.5	1.9	7	142	44	0.17	[illegible]	4.[illegible]	[illegible]
16	11	33	40.5	59	6.5	154	38.8	5.0	0.	3	284	143	0.[illegible]	0.	0.	[illegible]
16	20	22	37.0	58	53.7	154	26.4	128.6	2.7	9	159	26	0.[illegible]	1.[illegible]	2.5	[illegible]
17	1	50	10.3	59	51.9	152	55.2	122.9	3.4	7	147	60	0.24	0.[illegible]	1.6	[illegible]
17	2	53	9.1	57	53.6	156	43.8	0.5	2.1	4	175	29	0.14	0.	0.	[illegible]
17	10	1	24.2	59	8.9	151	40.7	2.5	2.9	9	212	56	14.[illegible]	210.[illegible]	[illegible]4.4	
17	22	7	52.0	60	4.7	153	8.5	134.9	2.4	4	150	43	0.	0.	0.	
18	17	35	0.5	60	11.8	151	55.0	79.4	3.8	15	110	53	0.[illegible]	5.[illegible]	[illegible].1	
19	0	44	15.0	58	49.3	154	53.1	142.7	3.5	4	264	50	0.02	0.	0.	
19	13	56	36.1	59	8.3	153	6.3	5.0	0.	4	124	62	0.[illegible]	0.	0.	
19	16	15	27.3	56	15.5	153	17.7	7.8	2.9	4	313	200	0.28	0.	0.	[illegible]
20	2	28	4.4	60	15.4	151	41.2	104.7	3.4	16	123	62	3.79	25.1	43.3	[illegible]
20	2	53	5.9	59	49.7	152	49.5	83.5	3.4	13	89	59	2.34	16.2	27.0	C

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR MN	SEC	LAT N DEG MIN	LONG W DEG MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
FEB 20	4 34	16.6	59 10.3	151 10.9	32.6	0.	4	254	60	0.01	0.	0.	C
20	5 44	1.0	57 37.2	155 6.3	39.3	2.0	6	110	29	3.56	47.9	27.9	C
20	7 45	1.4	56 48.5	156 10.2	41.3	2.1	7	211	78	0.18	3.2	279.3	D
20	10 28	54.2	53 57.1	153 12.5	77.0	2.4	5	117	44	0.15	3.7	6.6	D
21	6 42	32.3	62 53.5	151 12.7	31.0	3.9	20	58	147	1.14	4.9	269.2	D
21	9 15	16.8	58 56.8	152 50.5	63.0	2.8	5	141	45	0.01	0.1	0.3	C
21	9 15	43.4	59 31.4	152 23.4	5.0	0.	5	178	44	1.01	87.2	204.9	D
21	13 20	11.0	59 44.0	153 8.0	5.0	0.	3	154	79	0.	0.	0.	C
21	23 46	47.1	57 7.5	158 18.9	59.9	2.4	6	186	57	2.61	85.1	131.0	D
22	3 9	21.8	58 44.1	153 50.1	5.0	2.3	3	181	45	0.	0.	0.	C
22	7 24	25.2	59 31.5	152 55.0	88.6	2.4	5	129	30	0.03	0.8	1.1	C
22	11 44	55.4	59 42.6	153 11.9	119.3	2.7	6	157	39	0.06	1.5	2.4	C
22	13 50	15.9	57 33.1	154 28.1	5.0	1.9	3	148	26	0.	0.	0.	C
22	22 27	44.9	59 55.4	151 54.1	49.8	2.9	6	195	33	0.15	5.3	8.3	D
23	10 49	2.4	59 52.9	152 43.6	5.0	2.1	5	145	59	2.30	35.5	136.0	D
23	11 35	47.4	58 34.8	152 18.1	28.2	2.3	6	204	76	0.19	3.1	3.6	D
23	13 9	47.3	59 52.7	153 25.4	5.0	1.7	3	211	56	0.12	0.	0.	C
23	13 18	52.6	58 17.1	150 50.6	5.0	2.5	3	284	133	0.25	0.	0.	C
24	14 59	25.5	62 2.1	151 14.7	5.0	4.0	14	96	222	0.61	3.4	726.7	D
24	18 15	34.1	59 57.2	152 57.2	101.1	2.7	5	154	52	0.05	2.5	6.4	D
24	20 7	12.3	59 21.5	153 2.6	5.0	0.	3	213	86	0.	0.	0.	C
25	3 20	33.0	58 39.5	152 5.4	2.0	3.7	16	153	15	14.41	83.6	127.8	D
25	5 34	11.5	59 54.9	152 46.3	6.5	1.8	4	150	56	0.15	[illegible]	[illegible]	[illegible]
25	7 36	56.1	59 0.4	154 44.4	157.4	2.4	5	283	32	0.32	2.0	2.2	[illegible]
25	9 15	45.0	58 31.3	153 9.6	5.0	1.1	3	186	48	0.	0.	0.	C
25	9 30	23.2	58 39.3	153 19.9	5.0	2.2	5	143	57	0.24	4.8	[illegible]	[illegible]
25	14 3	32.7	59 20.9	153 4.8	113.6	2.3	4	144	19	0.	0.	0.	C
25	20 4	51.6	59 57.9	152 58.1	114.1	2.9	7	156	51	0.11	2.8	5.2	[illegible]
25	21 6	44.6	59 57.9	152 38.0	9.4	2.1	6	130	51	1.10	12.9	[illegible]	[illegible]
25	23 1	49.1	62 49.0	150 58.7	29.3	3.2	14	72	142	0.61	3.6	[illegible]	
26	0 17	46.7	59 26.3	153 28.2	105.5	2.0	4	152	11	0.	0.	0.	C
26	1 12	1.6	58 35.9	153 13.5	5.0	1.2	3	191	51	0.	0.	0.	C
26	9 11	25.9	60 11.3	152 52.6	112.4	2.0	4	174	26	0.	0.	[illegible]	[illegible]
26	14 15	24.9	57 12.8	155 19.0	41.9	2.2	10	180	43	0.27	2.7	1.5	[illegible]
26	14 17	23.2	60 7.0	153 5.3	134.9	1.0	4	193	37	0.	0.	[illegible]	[illegible]
26	14 48	13.1	59 13.2	154 58.8	5.0	1.4	3	296	46	0.16	0.	[illegible]	C
26	19 14	31.0	58 18.6	153 4.0	5.0	1.9	5	165	28	3.67	110.9	[illegible]	[illegible]
26	19 54	5.9	60 2.8	152 48.0	95.5	2.1	6	145	41	0.07	[illegible]	[illegible]	
27	0 40	27.8	60 21.0	152 9.1	36.9	2.4	5	237	36	0.33	5.4	[illegible]	[illegible]
27	5 2	59.7	60 15.2	151 33.8	39.0	2.1	4	258	[illegible]	[illegible]	0.	[illegible]	
27	7 11	16.0	59 44.3	152 35.1	92.1	2.1	5	127	37	0.05	1.6	[illegible]	[illegible]
27	10 50	33.2	59 20.9	151 3.8	5.0	1.3	4	261	109	0.07	0.	0.	[illegible]
27	15 4	35.1	59 40.1	153 4.9	164.2	2.7	7	113	3	1.31	41.5	71.8	C
27	19 55	19.4	59 25.8	153 13.8	119.9	2.7	8	124	9	0.15	2.9	4.9	C
27	23 36	15.2	60 10.1	152 8.8	70.9	2.1	5	205	44	0.05	4.3	9.7	D

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977		ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
FEB	28	5	14	53.6	63	9.7	150	46.2	27.0	3.8	18	78	174	0.65	3.3	732.3	D
	28	6	8	42.8	57	44.2	154	31.5	34.3	2.3	8	122	45	0.21	2.7	2.6	C
	28	7	37	1.5	60	21.3	153	20.7	183.1	3.3	8	238	32	0.14	6.7	10.2	D
	28	8	14	9.9	58	48.4	154	31.1	127.4	2.4	6	252	37	0.16	8.3	9.0	D
	28	14	4	7.4	59	0.5	152	41.3	100.4	2.0	5	157	46	0.52	22.3	28.0	D
	28	14	33	15.5	59	40.0	152	37.1	91.1	2.0	6	97	34	0.03	0.7	1.6	B
	28	16	9	33.9	59	33.4	152	38.2	96.4	2.2	6	175	35	0.08	3.4	4.0	C
	28	16	19	17.2	56	41.3	157	57.7	88.9	2.6	8	194	26	0.50	14.1	12.3	D
	28	16	51	35.1	59	35.5	153	6.1	114.0	2.5	7	84	9	0.10	2.1	3.7	B
	28	18	18	56.5	59	57.1	153	11.7	121.7	2.2	4	194	33	0.09	0.	0.	C
	28	20	54	0.2	59	47.3	151	59.4	5.0	1.4	3	221	71	0.	0.	0.	C
	28	21	49	18.4	60	10.5	152	18.6	5.0	2.1	5	190	37	1.16	33.3	70.9	D
MAR	1	1	15	10.1	59	43.2	152	49.7	97.6	2.6	6	110	23	0.15	3.2	6.0	C
	1	7	17	25.1	59	36.9	151	18.5	5.0	2.0	3	315	19	22.30	0.	0.	D
	1	7	36	49.1	60	15.7	151	52.3	0.9	2.3	4	240	52	0.64	0.	0.	D
	1	8	54	55.4	59	54.7	152	18.0	5.0	1.2	3	152	46	0.	0.	0.	C
	1	10	31	46.3	60	7.8	152	29.0	121.5	2.6	6	165	35	0.06	2.5	4.1	C
	1	10	52	3.7	58	21.5	151	28.6	2.3	2.5	6	255	59	1.12	33.4	26.4	D
	1	22	3	56.6	59	21.9	152	14.8	63.3	2.0	4	221	47	0.05	0.	0.	C
	2	0	17	23.1	62	1.6	150	41.9	0.7	4.0	15	62	60	1.07	5.3	22.8	D
	2	10	1	44.6	59	32.7	153	9.2	135.7	0.	4	142	77	0.	0.	0.	C
	2	13	5	13.4	59	59.3	152	38.2	5.0	0.9	3	132	48	0.01	0.	0.	C
	2	16	45	1.8	60	22.3	152	12.6	45.4	2.1	5	239	31	0.42	103.7	141.5	[illegible]
	2	18	34	57.3	59	50.8	152	40.3	92.2	1.8	4	119	39	0.	0.	0.	C
	3	5	38	47.6	59	18.6	153	4.0	101.2	2.5	8	87	17	0.20	3.2	5.5	B
	3	8	16	30.7	60	13.2	152	20.4	98.3	2.8	8	213	27	[illegible]	[illegible]	[illegible]	[illegible]
	3	9	19	23.0	57	34.9	154	54.8	81.3	2.3	6	152	32	0.12	[illegible]	[illegible]	[illegible]
	3	9	34	16.9	59	10.9	152	10.0	5.0	1.2	3	204	62	0.	0.	0.	[illegible]
	3	10	35	4.0	59	53.3	151	39.3	75.4	2.5	8	225	25	[illegible]	4.2	[illegible]	[illegible]
	3	11	33	22.1	60	14.1	152	39.9	106.8	2.1	4	155	21	0.	0.	0.	[illegible]
	3	14	8	30.1	53	48.7	156	2.5	5.0	2.2	3	242	215	1.45	0.	0.	[illegible]
	3	19	14	26.9	60	16.4	152	18.5	91.7	3.2	9	209	[illegible]	0.22	[illegible]	[illegible]	[illegible]
	3	20	9	54.4	59	38.1	152	20.9	91.6	2.5	8	101	[illegible]	0.25	[illegible]	7.1	[illegible]
	3	22	52	33.4	60	13.6	153	13.8	123.4	1.9	5	[illegible]	33	[illegible]	[illegible]	[illegible]	[illegible]
	3	23	5	10.6	59	36.9	152	25.0	5.0	1.0	3	191	43	0.	0.	0.	[illegible]
	4	1	49	2.6	59	46.1	151	45.7	43.9	2.3	5	[illegible]	14	[illegible]	[illegible]	[illegible]	[illegible]
	4	5	1	10.4	58	28.5	154	4.2	97.2	2.6	7	[illegible]	70	[illegible]	[illegible]	[illegible]	[illegible]
	4	8	31	22.9	59	15.4	153	21.6	99.0	2.7	5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	17	12	2.3	59	51.4	153	33.6	143.2	2.3	7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	21	20	2.6	59	13.8	154	11.9	5.0	1.6	3	211	[illegible]	[illegible]	0.	0.	[illegible]
	5	0	0	42.0	60	25.8	151	38.0	5.0	2.3	3	[illegible]	62	[illegible]	0.	0.	[illegible]
	5	7	19	51.4	59	15.7	151	35.4	25.0	2.4	6	216	44	0.59	[illegible]	[illegible]	[illegible]
	5	11	33	23.5	59	44.4	153	8.8	123.4	2.6	6	155	10	0.13	[illegible]	[illegible]	C
	6	1	11	56.9	60	14.3	153	12.9	151.6	1.9	4	213	29	0.	0.	0.	C
	6	7	6	56.4	59	21.0	152	0.5	5.0	1.8	3	213	76	0.	0.	0.	C

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR MN	SEC	LAT N DEG MIN	LONG W DEG MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
MAR 6	8 47	59.3	60 28.7	153 47.7	232.0	3.7	8	268	56	0.14	9.4	14.3	D
6	10 9	30.6	60 17.6	152 20.3	37.9	1.9	4	211	27	0.37	0.	0.	D
6	13 33	32.2	59 52.3	152 7.8	69.7	2.0	6	161	36	0.05	1.1	2.2	C
6	15 38	37.4	60 10.1	152 31.9	95.9	2.6	5	164	31	0.01	0.4	0.7	C
6	22 40	42.5	59 43.0	152 33.1	100.9	3.2	21	77	38	1.66	9.1	11.9	C
7	1 30	4.7	59 20.6	153 7.3	9.1	1.2	6	142	13	4.44	56.6	50.8	D
7	12 27	5.8	59 54.3	152 18.7	85.2	2.2	7	150	46	0.16	3.1	6.5	C
7	14 16	35.3	58 56.6	153 36.2	100.3	1.7	4	210	80	0.	0.	0.	C
7	16 5	58.7	59 19.8	153 33.5	110.4	1.7	4	242	7	0.07	0.	0.	C
7	18 31	42.5	59 31.4	152 36.0	49.9	1.8	4	177	51	1.41	0.	0.	D
7	21 57	1.0	58 9.1	153 48.1	14.0	1.8	5	143	39	0.06	1.6	2.8	C
8	4 44	47.2	58 50.7	154 43.7	139.3	2.4	6	259	41	0.11	6.9	7.1	D
8	10 25	33.8	59 49.2	152 28.9	80.9	2.3	8	125	46	0.16	2.4	4.4	B
8	13 33	55.7	59 45.4	151 52.5	5.0	0.9	3	226	77	0.01	0.	0.	C
8	13 58	39.7	60 8.3	152 21.1	5.0	1.8	6	180	39	1.03	1.5	3.5	D
8	14 25	19.0	59 35.5	153 3.2	104.3	2.4	7	75	12	0.09	1.7	3.0	C
8	14 50	56.4	59 57.6	152 29.5	94.4	2.9	10	142	53	0.25	4.0	5.4	D
9	0 18	46.9	58 42.5	152 53.7	63.6	2.1	5	144	32	0.04	1.5	2.2	C
9	5 23	52.9	59 32.4	152 30.3	83.8	2.1	5	100	42	0.01	0.3	0.7	C
9	6 20	29.0	60 15.6	152 29.0	99.1	1.9	4	187	23	0.	0.	0.	C
9	6 55	15.4	59 31.4	154 0.6	90.6	1.9	5	258	39	0.03	6.9	2.8	D
9	9 7	29.4	59 25.9	152 51.2	89.7	1.9	5	160	32	0.21	10.3	10.7	C
9	15 56	33.2	58 59.9	152 24.7	52.6	1.9	7	182	41	0.24	3.9	6.8	D
9	16 10	30.7	58 13.2	151 51.3	30.3	2.8	10	253	53	0.34	7.9	2.5	D
9	19 19	37.6	59 19.9	152 56.0	23.9	1.2	5	118	28	3.45	8.1	25.4	D
9	23 24	33.2	58 52.5	151 14.7	1.0	2.1	6	257	69	9.38	149.1	494.3	D
9	23 41	42.3	61 17.8	153 44.2	2.5	2.3	5	326	110	0.25	11.0	9.9	D
10	5 31	43.0	58 0.8	153 54.6	31.6	1.8	5	286	44	0.19	21.4	17.9	D
10	6 41	34.3	59 14.2	152 26.7	66.5	1.7	5	183	53	0.03	3.1	6.5	D
10	9 31	25.0	60 28.1	152 47.4	0.1	2.4	6	309	5	14.30	756.2	407.2	D
10	14 52	4.3	58 57.2	153 12.3	71.5	2.1	3	108	44	0.22	2.9	5.5	C
10	22 47	25.2	59 57.9	152 53.2	116.0	2.7	7	158	39	0.10	2.8	4.4	C
10	23 38	44.3	59 13.6	152 52.5	80.0	2.2	8	100	31	0.16	2.1	3.8	B
11	0 14	5.0	58 4.7	154 15.9	27.4	2.1	5	270	65	0.10	5.0	1.6	D
11	11 31	14.6	60 5.4	151 37.8	5.0	1.8	3	241	48	0.01	0.	0.	C
11	15 12	42.1	60 2.9	152 38.9	103.4	2.1	4	137	41	0.	0.	0.	C
11	15 43	37.9	59 51.7	153 28.1	142.7	1.8	4	186	26	0.	0.	0.	C
12	3 18	38.4	59 6.1	153 22.3	5.0	1.4	3	349	30	5.97	0.	0.	D
12	9 59	11.5	58 46.1	153 36.7	0.4	2.1	6	156	50	0.22	3.2	13.8	D
12	14 16	2.0	58 34.0	151 13.4	17.6	2.3	6	267	65	0.56	37.9	31.5	D
12	15 49	2.7	58 14.6	151 51.7	32.7	2.7	6	267	51	0.13	7.8	1.5	D
12	21 30	22.6	59 42.5	153 19.3	111.3	2.0	4	193	8	0.	0.	0.	C
13	0 36	45.8	58 31.5	150 52.6	5.0	2.4	5	297	86	20.48	940.2	489.0	D
13	1 30	51.9	60 34.1	154 26.3	15.8	3.7	8	286	93	4.37	302.0	171.5	D
13	10 48	0.6	59 32.5	153 8.6	112.6	2.0	6	157	22	0.12	3.2	4.9	C

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR MN	SEC	LAT N DEG MIN	LONG W DEG MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
MAR 13	15 39	26.7	59 58.9	152 22.7	5.0	1.3	3	204	53	1.46	0.	0.	D
13	17 19	17.5	59 21.9	152 3.2	5.0	1.1	3	211	73	0.	0.	0.	C
13	18 31	41.9	60 24.2	151 20.3	5.0	1.9	3	285	73	0.37	0.	0.	D
13	23 31	16.6	59 21.6	152 41.8	76.1	2.5	6	130	37	0.04	0.7	1.2	B
14	1 23	16.8	58 43.8	153 48.0	5.0	2.1	6	134	70	0.26	3.1	456.2	D
14	1 55	43.0	58 32.7	153 32.8	54.8	2.3	6	113	58	3.46	80.0	259.2	C
14	4 40	50.8	59 49.0	151 48.9	5.0	2.1	3	231	81	0.	0.	0.	C
14	5 27	36.9	59 2.5	152 8.9	7.9	2.0	4	207	47	0.55	0.	0.	D
14	9 48	7.5	59 38.7	153 38.8	8.6	1.0	4	229	23	0.02	0.	0.	C
14	9 51	8.7	60 2.4	151 41.4	75.1	2.1	6	231	42	0.04	1.6	2.3	C
14	11 47	10.9	59 45.9	153 18.5	5.0	0.	3	226	78	0.	0.	0.	C
15	0 42	19.6	56 37.8	157 56.1	74.3	2.8	7	211	30	0.11	3.3	2.8	D
15	13 19	23.6	60 3.5	152 37.3	94.1	1.3	5	141	41	0.03	3.4	7.2	D
16	2 47	5.8	59 48.1	153 4.0	107.4	2.6	9	154	18	0.24	3.9	6.7	C
16	6 3	5.7	61 39.5	151 30.4	23.9	2.4	5	287	154	0.11	14.9	6.5	D
16	6 51	32.3	59 59.1	152 29.4	5.0	1.2	5	145	50	1.44	9.1	17.4	D
16	9 55	17.8	59 45.4	151 23.8	43.6	1.9	4	244	33	0.01	0.	0.	C
16	15 19	24.1	59 17.4	151 53.8	72.7	2.0	7	206	27	0.11	3.7	5.9	D
16	19 33	41.5	58 53.8	150 29.2	35.9	2.5	7	292	89	0.21	11.9	2.4	D
17	10 13	9.1	59 47.9	152 15.6	5.0	0.3	3	156	52	0.	0.	0.	C
17	15 52	41.5	60 44.6	153 11.7	198.1	2.4	7	319	43	0.22	32.0	53.2	D
17	16 36	4.3	59 33.7	153 46.7	2.5	1.6	8	184	32	15.96	126.9	114.3	D
17	17 58	5.9	59 6.9	152 22.5	51.5	2.2	6	210	62	0.47	30.1	62.6	D
17	19 3	49.3	59 55.5	153 17.1	150.2	1.7	7	200	30	0.17	6.3	17.2	D
18	0 5	55.4	58 58.9	152 15.5	85.9	2.2	12	150	39	0.30	8.7	14.5	D
18	1 1	53.0	60 27.8	151 56.8	5.0	2.0	9	266	45	1.32	50.7	34.3	D
18	[illegible] 9	33.5	59 50.4	152 14.4	5.0	0.3	6	146	39	2.56	75.[illegible]	[illegible]	[illegible]
18	10 11	16.0	59 57.1	152 10.5	82.3	1.1	7	170	44	0.16	3.[illegible]	9.[illegible]	[illegible]
18	17 23	6.5	59 49.4	153 3.7	163.8	1.8	7	155	21	0.[illegible]	12.[illegible]	36.[illegible]	[illegible]
19	6 10	43.3	59 18.0	152 35.4	116.9	1.4	4	246	53	0.[illegible]	0.	0.	[illegible]
19	21 30	25.4	59 18.7	153 10.6	90.1	1.8	8	101	14	0.21	3.1	5.3	[illegible]
19	22 37	34.3	60 44.4	152 3.2	200.3	1.9	4	301	53	0.[illegible]	0.	0.	[illegible]
20	0 13	13.3	59 42.8	153 17.3	5.0	0.4	3	131	83	0.	0.	0.	[illegible]
20	5 48	3.9	60 25.2	152 10.8	28.1	1.0	4	251	32	0.11	0.	0.	[illegible]
20	13 39	43.5	60 14.7	152 36.0	136.0	1.1	4	167	21	0.25	0.	0.	[illegible]
20	13 46	45.6	61 0.7	147 21.9	36.7	2.7	17	135	114	1.[illegible]	9.7	[illegible]	[illegible]
21	5 54	47.6	59 24.3	153 22.2	103.3	2.0	9	142	8	0.1[illegible]	3.[illegible]	5.[illegible]	[illegible]
21	17 53	23.8	59 35.3	152 53.1	107.4	1.3	6	107	20	0.12	3.[illegible]	[illegible]	[illegible]
22	5 14	42.6	62 14.6	149 38.8	39.5	3.2	19	136	67	0.44	4.[illegible]	3.[illegible]	[illegible]
22	19 59	53.2	60 9.2	153 38.6	120.7	2.0	9	137	56	1.17	16.[illegible]	29.[illegible]	[illegible]
22	20 50	49.2	59 44.7	152 0.9	88.3	1.5	7	144	23	0.[illegible]	9.[illegible]	23.[illegible]	[illegible]
23	9 44	3.6	61 41.5	150 27.4	5.0	2.3	6	297	180	0.47	42.1	[illegible]	[illegible]
23	17 16	15.6	58 16.3	152 34.6	2.5	0.9	5	291	54	1.[illegible]	29.[illegible]	35.[illegible]	[illegible]
23	17 56	13.0	59 56.4	151 59.3	53.3	0.5	4	195	57	0.	0.	0.	C
23	21 13	24.7	59 38.9	153 11.8	110.3	0.9	5	93	1	0.03	0.9	2.2	C

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
MAR 23	22	30	14.9	59	48.5	153	19.3	146.6	1.0	4	197	18	0.	0.	0.	C
23	23	51	35.3	61	34.1	151	30.8	220.2	2.6	6	238	145	2.32	143.7	145.8	D
24	4	31	13.5	55	26.5	150	47.7	25.0	2.5	11	284	245	2.76	119.5	407.0	D
24	11	17	33.2	59	23.0	151	20.1	85.8	1.4	7	279	17	0.12	6.9	7.3	D
24	11	44	24.0	60	24.8	149	44.4	2.5	1.7	7	314	135	0.53	29.7	21.3	D
24	15	24	41.1	60	41.6	151	34.4	86.4	2.3	6	258	72	0.22	9.8	8.2	D
24	16	13	0.	59	52.8	153	24.6	165.4	3.1	22	84	27	1.45	8.9	11.9	C
24	21	43	22.0	60	2.9	153	14.0	145.0	1.6	6	184	44	0.24	9.6	25.1	D
25	0	49	17.8	59	51.5	151	18.0	61.4	2.0	5	253	29	0.20	15.8	14.3	D
25	7	2	37.8	61	15.1	154	51.3	1.3	2.7	8	241	44	36.36	760.1	64.8	D
26	2	56	3.2	59	16.0	155	17.8	1.3	0.9	4	299	107	2.71	0.	0.	D
26	4	15	1.8	59	49.4	153	13.0	127.1	1.9	10	103	19	0.20	2.5	4.4	C
26	7	51	31.6	57	42.6	153	36.3	35.2	1.3	10	86	47	0.35	4.2	3.9	C
26	9	38	19.9	60	18.5	152	18.6	122.8	1.1	5	217	28	0.23	20.9	41.5	D
26	12	33	23.5	60	17.8	152	32.5	48.6	0.5	5	188	18	0.56	25.4	40.2	D
26	15	14	54.8	58	33.9	152	17.9	2.5	0.7	4	279	83	0.83	0.	0.	D
26	16	58	45.5	59	28.7	152	22.8	73.7	1.0	4	138	45	0.	0.	0.	C
26	19	44	49.1	59	1.3	152	50.8	5.0	0.9	4	188	39	0.98	0.	0.	D
26	20	23	55.7	60	10.0	152	30.8	125.4	1.3	4	173	31	0.	0.	0.	C
26	22	4	53.2	59	2.4	154	39.5	1.2	0.8	4	275	65	0.21	0.	0.	C
27	3	10	21.3	59	12.3	151	52.2	5.0	1.1	4	231	91	0.60	0.	0.	D
27	13	29	22.1	59	39.4	149	42.9	21.6	2.1	5	322	107	0.64	159.7	42.0	D
27	13	57	50.2	59	35.8	152	30.6	61.7	1.5	10	91	41	4.00	36.0	72.5	C
27	14	32	24.7	59	29.0	154	2.2	407.5	2.8	4	278	38	0.98	0.	0.	C
27	15	8	16.8	59	46.0	152	48.9	113.0	2.2	10	98	26	0.96	11.2	19.2	C
27	16	17	15.5	59	49.6	155	34.1	61.[illegible]	1.5	5	297	132	0.02	24.2	55.8	D
27	20	9	21.3	59	5.5	153	16.4	125.2	1.7	9	110	21	1.54	24.[illegible]	44.1	C
27	23	8	24.5	59	59.7	153	8.0	119.7	2.0	9	172	38	0.62	13.1	22.5	D
28	2	7	33.6	60	10.3	152	36.7	47.7	1.5	7	154	28	1.32	41.[illegible]	21.8	D
28	4	12	7.6	60	55.6	150	23.5	5.0	1.8	4	333	144	5.43	0.	0.	D
28	5	35	45.0	59	11.9	152	31.5	77.4	1.0	7	184	50	0.30	6.6	14.8	D
28	6	24	55.4	59	40.8	151	9.6	5.0	1.3	4	287	116	1.00	0.	0.	D
28	10	7	5.1	59	36.0	152	57.2	126.3	1.3	7	104	16	0.29	6.7	20.7	C
28	10	41	39.0	56	8.9	146	24.9	33.0	2.9	5	346	480	0.62	316.9	152.3	D
28	21	34	55.6	59	51.8	153	15.9	163.3	2.8	11	105	23	0.97	13.1	20.7	C
29	1	19	12.4	61	26.0	152	19.3	116.6	2.5	6	219	115	1.34	61.9	61.4	D
29	2	35	17.7	60	2.8	153	18.8	153.4	1.9	7	191	44	0.56	20.4	46.5	D
29	11	19	12.0	59	39.6	152	15.4	25.1	1.4	7	132	34	5.54	59.3	222.5	C
29	23	14	12.9	59	47.7	152	59.9	91.3	1.2	5	151	20	0.70	23.2	49.5	D
30	0	28	23.9	60	19.8	151	59.2	2.5	1.7	7	243	44	1.86	281.8	380.4	D
30	2	47	3.4	59	41.6	150	47.9	5.0	1.6	4	296	136	1.01	0.	0.	D
30	7	58	0.1	59	16.3	152	26.4	22.5	1.3	8	130	51	2.23	18.7	105.7	D
30	9	5	10.7	59	33.7	153	45.7	154.4	1.4	4	221	31	0.	0.	0.	C
30	13	19	46.9	60	1.0	153	7.1	142.6	1.3	7	190	41	0.71	25.2	70.6	D
30	17	22	5.4	59	30.7	153	10.3	122.5	1.5	7	132	16	0.40	10.6	26.4	C

COOK INLET-WESTERN GULF OF ALASKA EARTHQUAKES

1977	ORIGIN TIME HR	MN	SEC	LAT N DEG	MIN	LONG W DEG	MIN	DEPTH KM	MAG	NO	GAP DEG	DM KM	RMS SEC	ERH KM	ERZ KM	Q
MAR 30	15	5	21.6	59	58.3	153	16.6	129.5	1.6	8	181	35	0.56	13.9	32.8	D
30	20	8	43.8	60	28.6	152	41.4	159.7	1.6	6	296	7	1.01	102.1	192.3	D
31	0	16	50.6	59	59.3	153	13.1	129.8	1.4	5	198	37	0.68	37.6	96.0	D
31	0	53	4.2	59	53.6	153	9.3	103.8	1.0	6	186	27	0.67	19.4	47.5	D
31	6	15	8.0	58	18.4	153	50.1	65.5	2.2	12	111	48	1.28	10.8	22.6	C
31	8	1	31.2	60	1.2	154	32.0	84.2	1.1	4	271	83	0.58	0.	0.	D
31	8	22	57.8	60	13.0	152	44.5	105.0	1.5	6	152	22	1.07	49.5	107.5	D
31	11	26	53.9	59	52.4	153	4.9	117.4	1.2	6	177	26	0.70	23.1	55.0	D
31	11	55	40.5	60	11.6	153	14.5	135.6	2.0	8	121	36	0.75	12.9	27.5	C
31	12	46	10.4	58	57.7	153	33.6	7.6	0.8	6	203	1	2.49	147.2	4.8	D
31	13	24	19.2	59	59.5	146	33.2	26.4	2.6	5	341	288	0.62	734.8	12.4	D
31	14	29	44.4	60	12.9	152	20.4	93.5	1.8	8	194	33	1.09	19.2	30.4	D
31	16	33	35.2	60	23.9	152	23.4	49.4	1.7	6	237	21	1.47	304.5	374.7	D
31	17	23	15.6	59	44.6	153	18.2	121.1	1.5	6	193	10	0.40	14.5	[illegible]	D
31	19	10	32.1	58	37.3	152	4.8	5.0	1.7	9	177	88	3.79	31.9	88.0	D
31	19	41	37.4	60	5.2	152	25.0	5.0	1.2	6	174	41	5.68	495.6	[illegible]	D
31	21	19	42.2	60	38.0	149	43.4	1.2	2.4	10	295	152	[illegible]	[illegible]	[illegible]	[illegible]

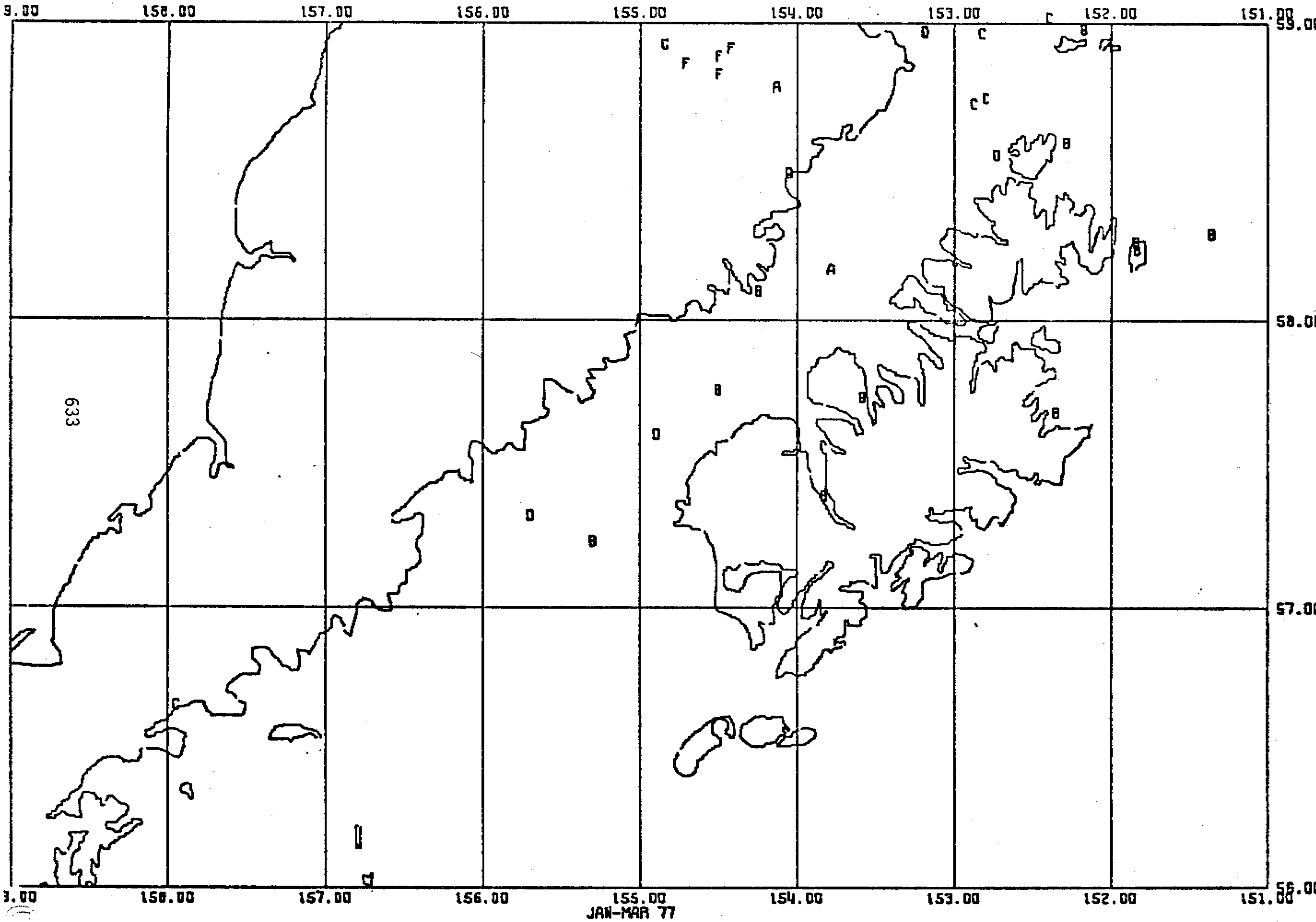
Appendix 3

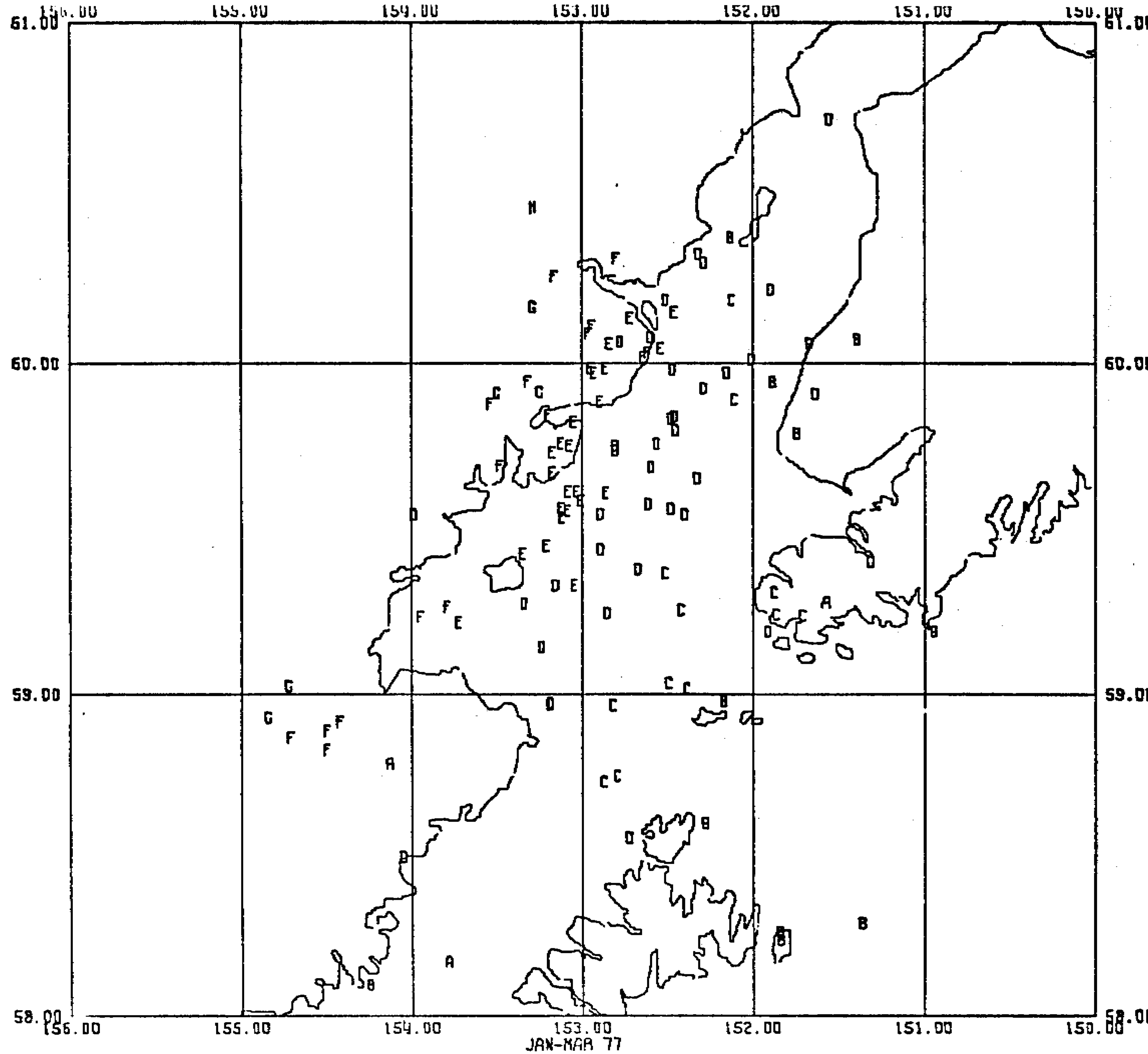
Epicenter Maps

Lower Cook Inlet-Western Gulf of Alaska

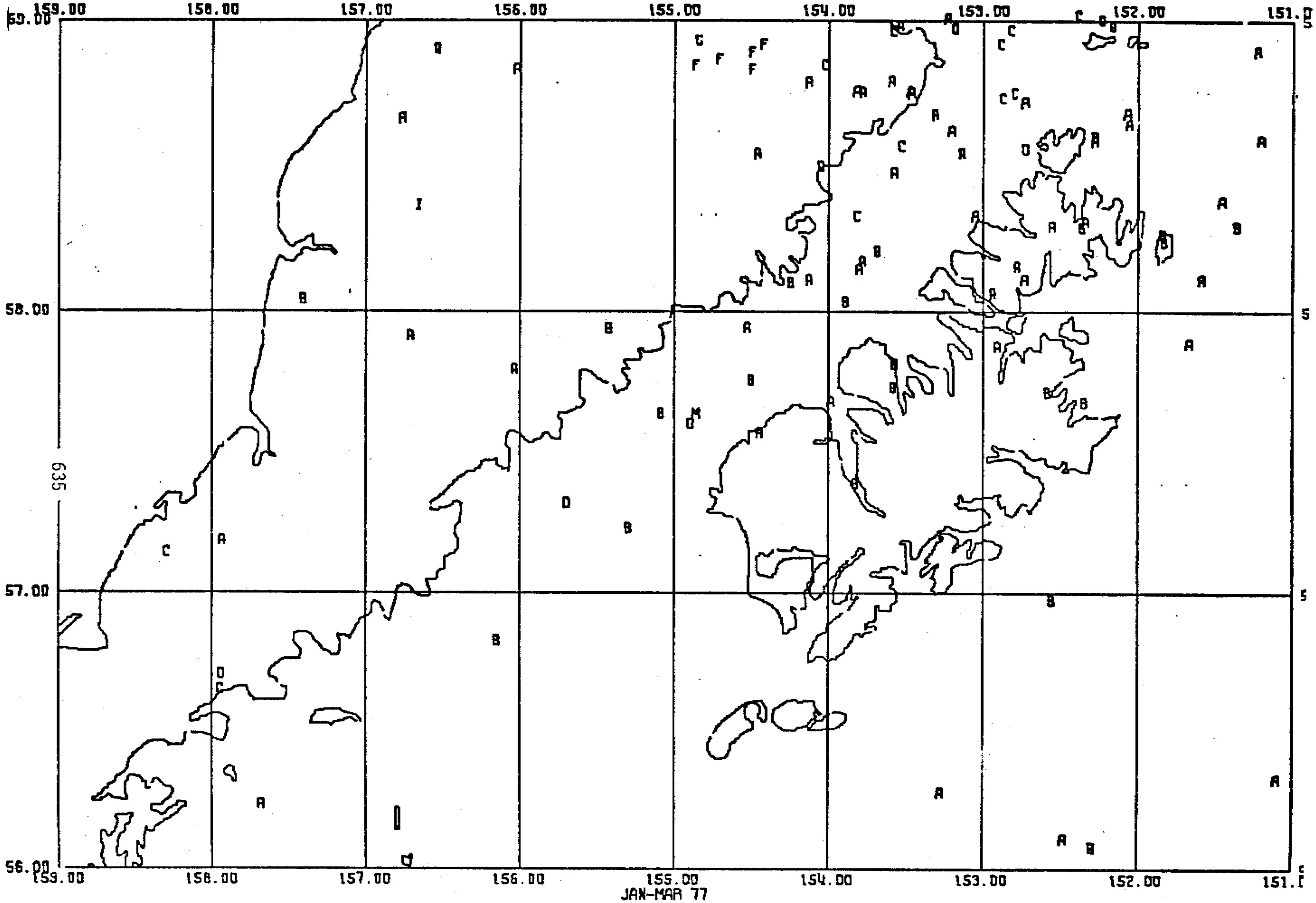
January 1, 1977-March 31, 1977

Kodiak-Alaska Peninsula epicenters (Class 1) - January 1, 1977-March 31, 1977

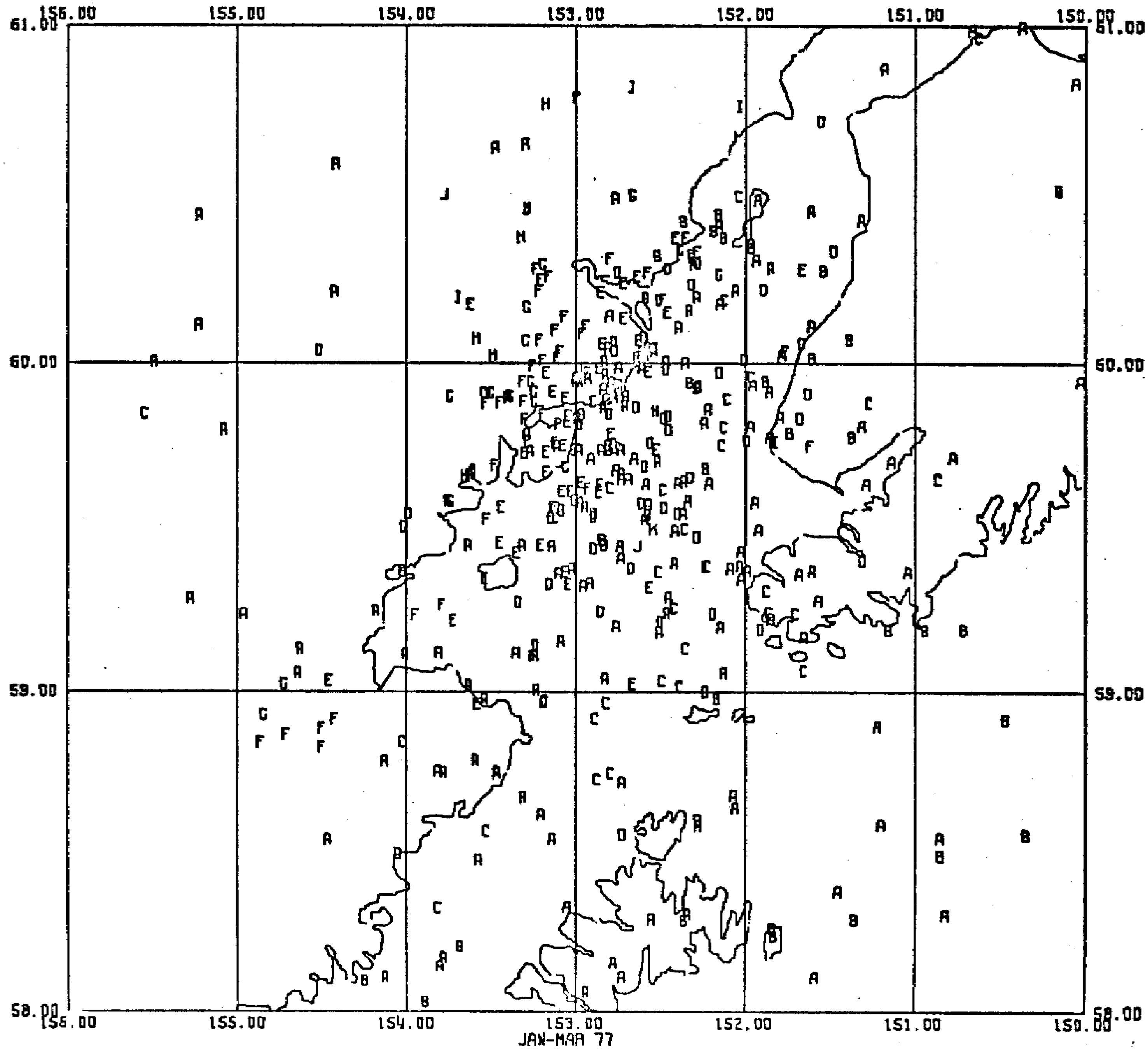




Lower Cook Inlet epicenters (Class 1) - January 1, 1977-March 31, 1977



Kodiak-Alaska Peninsula epicenters (all locatable events) - January 1, 1977-March 31, 1977



Lower Cook Inlet epicenters (all locatable events) - January 1, 1977-March 31, 1977

Quarterly Report:

R.U. #253

Title: Offshore permafrost: probing, thermal regime, and data analysis

Period: April 1, 1977, to June 30, 1977

P.I.'s: T. E. Osterkamp and W. D. Harrison

I. Task Objectives:

To determine the subsea permafrost regime in selected near-shore areas in the Chukchi and Beaufort Seas using light weight probing techniques and appropriate data analysis (D-9).

II. Field and Laboratory Work:

The first two weeks of April were spent completing the design and construction of our probes and equipment. On April 12, Dr. Osterkamp traveled from CRREL to the Geophysical Institute. The following week was spent on preparation for the field work and on calibration and testing of the equipment.

We were in the field from April 25-May 18. The field party consisted of W. Harrison, R. March, T. Osterkamp, and M. Smith (for the last two weeks only). One man returned to Barrow May 26-28, to re-log boreholes there.

Holes were driven or jetted into the sea bed at Kotzebue, Cape Blossom, Rabbit Creek, and Barrow in the Chukchi Sea, and Harrison Bay, Prudhoe Bay, and Elson Lagoon in the Beaufort Sea. A brief description of the type of data obtained follows:

1. <u>Southeastern Chukchi Sea-Rabbit Creek hole</u>

Location: Approximately 36 km north of Cape Krusenstern

Method: Driving

Distance offshore: 75 m

Water depth: 4.0 m

Ice thickness: 1.2 m

Depth reached: 18 m below sea bed

Data obtained: Temperature profile, blow count profile

Jetting into the sandy bottom was attempted, but abandoned when what seemed to be coarse gravel was encountered at ≈ 1 m below the sea bed. The ice was rafted in several places near the hole. A fairly detailed sea bed profile and temperatures under the ice near the hole were measured.

2. Kotzebue Sound-Cape Blossom hole

Location: Approximately 18 km south of Kotzebue

Method: Jetting

Distance offshore: 730 ± 20 m along a line bearing 308° (true) from Cape Blossom bench mark. Distance to closest shore about 300 m.

Water depth: 1.37 m

Ice thickness: 1.07 m

Depth reached: 10 m below sea bed

Data obtained: Temperature profile

Jet probably stopped by gravel, some of it fairly coarse.

3. Kotzebue Sound-Kotzebue hole

Location: On a line offshore approximately in line with the runway of Kotzebue airport

Method: Jetting

Distance offshore: About 310 m (372 m from lights at end of airport runway).

Water depth: 1.8 m

Ice thickness: ≃ 1.2 m

Depth reached: 25 m below sea bed

Data obtained: Temperature profile

Jetting was easy and the total time required was two hours. What appeared to be sand or gravel was encountered at 15-20 m. The jet was finally stopped at 25 m by what seemed to be a cobble or possibly bedrock. A sea bed profile was obtained near the hole.

4. Kotzebue Sound

Sea bed temperatures were measured at several points along two lines across Kotzebue Sound; one from Cape Blossom toward Cape Espenberg and one from Cape Espenberg toward Cape Krusenstern.

5. Barrow, Chukchi Sea-NARL hole

Location: Offshore near NARL

Method: Jetting

Distance offshore: ≃ 705 m (750 m from sea ice radar mast)

Water depth: 6.57 m

Ice thickness: 1.63 m

Depth reached: 16 m below sea bed

Data obtained: Temperature profile

Jetting was slow.

6. Harrison Bay-Thetis Island hole

Location: About due south of Thetis Island and about 8.5 km due west of Oliktok DEW station beacon

Method: Driving

Distance offshore: About 5.7 km perpendicular to coast southwest of Oliktok DEW station.

Water depth: 2.95 m

Ice thickness: About 2.0 m.

Depth reached: 15 m below sea bed

Data obtained: Temperature, salinity and blow count profiles.

The salinity of the water under the ice was 38°/₀₀.

Very hard driving was encountered at 16 m.

7. Harrison Bay-Oliktok hole

Location: About 550 m west of a point where the projection of DEW station runway intersects the coast

Method: Jetting

Distance offshore: Closest shore roughly 400 m

Water depth: 2.4 m

Ice thickness: 2.1 m

Depth reached: 8 m below sea bed

Data obtained: Temperature profile

The first 3 m of pipe went in easily. Sandy gravel was encountered at 3 m. Penetration of the next 5 m was with great difficulty due to caving in the hole.

8. Prudhoe Bay-Hole 1252

Location: On our old line bearing about 30.5° (true) from north Prudhoe Bay State #1 well, about even with the end of the original section of the west Arco dock

Method: Driving

Distance offshore: 1252 m

Water depth: 1.97 m

Ice thickness: 1.87 m

Depth reached: 15 m below sea bed

Data obtained: Temperature, salinity and blow count profiles. Hydraulic conductivity measurements.

Considerable time on probe development was spent in this hole.

9. Prudhoe Bay-Hole 2114

Location: On our old line, bearing about 30.5° (true) from north Prudhoe Bay State #1 well

Method: Driving

Distance offshore: 2114 m

Water depth: 1.85 m

Ice thickness: ≈ 1.9 m

Depth reached: 26 m below sea bed

Data obtained: Temperature and blow count profiles

This hole was also an experiment to learn what depths could be reached at Prudhoe Bay with our light-weight driving equipment. Driving was suspended when all our drill rod was used up; driving was still proceeding efficiently.

10. Prudhoe Bay-Offshore hole

Location: N70°34.0', W148°21' (NOAA helicopter global navigation system coordinates) about 8.9 km due north of Reindeer Island

Method: Jetting

Distance offshore: 22.1 km from point of intersection of west Arco dock with land

Water depth: 20.86 m

Ice thickness: 2.09 m

Depth reached: ≃ 38 m below sea bed

Data obtained: Pipe broken off at sea bed by ice movement before temperature logging was possible. Logging was delayed by bad flying weather.

The jetting progressed very easily to the 38 m depth (when all the pipe was used up) indicating that the gravel horizon lies below this depth.

Experience gained indicates that this experiment can be performed next year, possibly using some flexible hose to allow for ice movement.

11. Elson Lagoon-Tekegakrok Point-Hole 575

Location: On a line bearing 56.(0)° (true) offshore from bench mark on Tekegakrok Point

Method: Jetting

Distance offshore: 575 m

Water depth: Ice frozen to bottom

Ice thickness: 1.25 m

Depth reached: 19 m below sea bed

Data obtained: Temperature profile

Ice-bonded sediment to a depth of about 2.5 m below the sea bed was encountered, followed by an ice-unbonded layer extending to about 4.3 m, and an ice-bonded layer extending to the depth reached.

12. Elson Lagoon-Tekegakrok Point-Hole 611

Location: On a line bearing 56.(0)° (true) offshore from benchmark on Tekegakrok Point

Method: Jetting

Distance offshore: 611 m

Water depth: 1.7 m

Ice thickness: 1.68 m

Depth reached: 27 m below sea bed

Data obtained: Temperature profile

What appeared to be bonded permafrost was reached at 11 m. This hole froze up and temperature could only be logged to a depth of 21 m.

13. Elson Lagoon-Tekegakrok Point-Hole 798

Location: On a line bearing 56.(0)° (true) offshore from Tekegakrok Point

Method: Driving and jetting

Distance offshore: 798 m

Water depth: 2.22 m

Ice thickness: 1.65 m

Data obtained: Temperature, salinity and blow count profiles. Hydraulic conductivity measurements.

Hard sediment (clay horizon?) was encountered at about 12 m below the sea bed.

14. <u>Elson Lagoon-Tekegakrok Point-Hole 1036</u>

Location: On a line bearing 56.(0)° (true) offshore from benchmark on Tekegakrok Point

Method: Jetting

Distance offshore: 1036 m

Water depth: 2.5 m

Ice thickness: About 1.7 m

Depth reached: 17 m below sea bed

Data obtained: Temperature profile

What appeared to be a rock of at least cobble size was encountered at 4 m below sea bed. The jet was moved over 3 m where it penetrated 17 m below sea bed. Very hard sediment was encountered (a clay horizon?) at 15 m.

15. <u>Elson Lagoon-Tekegakrok Point-Hole 1466</u>

Location: On a line bearing 56.(0)° (true) offshore from benchmark on Tekegakrok Point

Method: Jetting

Distance offshore: 1466 m

Water depth: 2.80 m

Ice thickness: 1.8 m

Depth reached: 20 m below sea bed

Data obtained: Temperature profile

III. Results and Interpretation

We have just begun our data reduction and analysis.

IV. Problems

Lack of support (flying) at NARL due to high priority Navy research.

VI. Funds expended: $168,179 as of June 14, 1977

Quarterly Report

Contract #03-5-022-55
Research Unit #271
Report Period: 9th Quarter
Ending June 30
Number of Pages: 3

BEAUFORT SEACOAST PERMAFROST STUDIES

James C. Rogers
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Geophysical Institute
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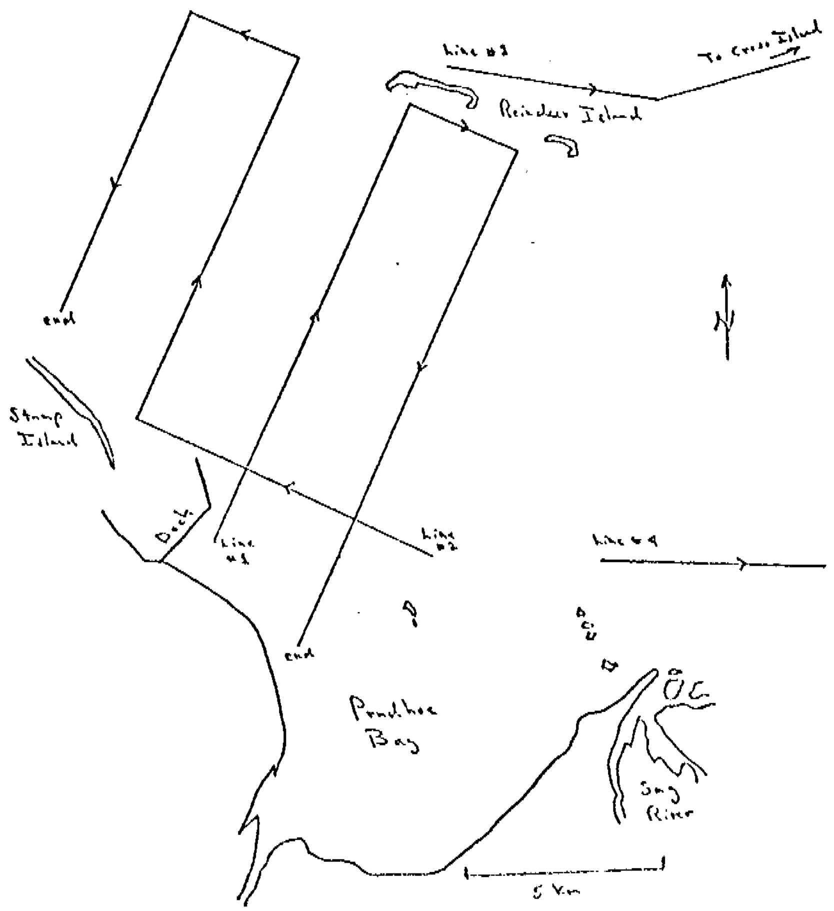
(907) 272-5522

June 25, 1977

I. Task objectives: The objectives of this study are to develop an understanding of the nature and distribution of offshore permafrost along the Alaskan Beaufort Seacoast. Also of interest is the distribution of permafrost beneath the barrier islands. Emphasis is placed upon seismic methods but close cooperation with others using thermal, chemical and geological methods is an important part of the work.

II. Field work: Two types of seismic investigations are planned for the summer field season. Refraction work will be carried out in cooperation with the USGS aboard the "Karluk" around the drill line from the west dock in Prudhoe Bay to Reindeer Island. Also, Cross Island will be investigated as well as the area around the Sag river. Some seismic reconnaisance work on the barrier islands will also be conducted. The sketch map below indicates tentative seismic lines for the work which was scheduled in mid August to minimize ice related problems.



III. Results: Information has been gathered on offshore permafrost near Prudhoe Bay. Several general features including surface slope and surface roughness have been observed. Several of these are to be found in the Beaufort Sea Synthesis Report (Arctic Project Bulletin #15, NOAA) where they have been coupled with information from other investigators.

IV. Preliminary Interpretation of Results: Data taken by this research unit has been synthesized with data from others in the Beaufort Sea Synthesis Report. Among the most important interpretation is that the offshore islands appear not to be uniformly underlain by ice bonded permafrost which suggests that the high salinity interstitial fluid is a dominant factor in the growth and decay of offshore permafrost.

V. Problems encountered/recommended changes: Continued efforts are being expended to diversify the seismic investigation. These have included the addition of portable land seismic equipment for island work. The result of this diversification is the recuction of the dependency upon one vessel and the attendant environmental/scheduling problems.

VI. Estimate of Funds Expended to Date: Approximately $97,000.

Quarterly Report

Contract 03-5-022-56
Task Order #3
Research Unit #290
Reporting Period 4/1/77-6/30/77

Benthos - Sedimentary Substrate Interactions

Charles M. Hoskin
Institute of Marine Science
University of Alaska

Dr. C. Hoskin is currently on leave from the University of Alaska. He is continuing to work on the correlation of major benthic organisms with sediment size analysis data. No results are available at this time. Dr. Hoskin is scheduled to return to the University in September. A full report on the progress of this project will be submitted on September 30, 1977. As the following Data Submission Schedule indicates, data have been submitted for the analysis of sediment samples received, as proposed.

June 30, 1977

3rd Quarterly Report

OCSEAP RU #327

Shallow faulting, bottom instability, and movement of sediments in lower Cook Inlet and western Gulf of Alaska

Principal Investigators:

Monty A. Hampton
Arnold H. Bouma

U.S. Geological Survey
345 Middlefield Road
Menlo Park, CA 94025

I. Task Objectives

Assessment of the environmental geologic hazards of lower Cook Inlet and the western Gulf of Alaska; in particular the identification and mapping of active surface faults and areas of sediment instability.

II. Field or laboratory activities

During the past quarter we continued our laboratory analyses of sediment samples collected in 1976, including computer processing of size analyses and scanning electron microscopy. Also, we were active in preparing our vessel, the R/V SEA SOUNDER, for this summer's field season, as well as preparing for our own cruises in lower Cook Inlet and on the Kodiak Shelf, which we are trying to coordinate with the NOAA group in Seattle.

III. Results

None of the above-mentioned analyses are completed yet.

IV. Preliminary interpretation of results

Refer to the last Annual Report.

V. Problems encountered - recommended changes

None

VI. Estimate of funds expended

As of May 21, 1977: $45,000

Quarterly Report

Contract: RK6 - 6074
Research Unit: RU-429
Reporting periods: 1 April 1977 - 1 July 1977

Faulting, Sediment, Instability, Erosion and Deposition Hazards of Norton Basin Sea Floor

Hans Nelson

Devin Thor

Pacific-Arctic Branch of Marine Geology
345 Middlefield Road
Menlo Park, California 95025

July, 1977

Activities this quarter included: A) analysis of seismic records from the Fall, 1977 cruise in Norton Basin, B) data summary, preparation and presentation of sand wave studies at the national AAPG-SEPM convention, June, 1977 in Washington D.C., and C) preparation for the Summer, 1977 cruise beginning in early July.

Analysis of high resolution seismic profiles continued at the Menlo Park and Seattle offices of the USGS. The primary missions were to continue assessment of active faulting, determine tectonic setting for the Pt. Clarence ridge and trough and sandwave field areas, isopach Holocene sediment thickness, and determine location of buried channels with thick fill of Holocene sediment.

Essentially all seismic, stratigraphic, sedimentologic, hydrographic, and photographic data were synthesized for the Port Clarence sandwave area because of the preparation for a talk at the Alaska OCS symposium for the AAPG-SEPM convention. These data suggest that active scour may occur in swales between the major ridges off Port Clarence and that sandwaves have modified recent ice gouges. On the other hand, unmodified gouges indicate that movement of mobile bedforms is not continual, but occurs intermittently, probably during major storm events.

The greatest amount of time this past quarter has been consumed by preparation for the upcoming cruise to Norton Basin. Primary effort was concentrated on procuring and setting up a 200 kHz high resolution, narrow beam echo sounder for determining precise height and/or depth measurements of mobile bedforms, ice gouges, and gas craters. Experimentation and development of adequate side-scan sonar targets for permanent underwater installation also was a significant effort. We wish to emplace these systems to reoccupy transects in mobile bedform, ice gouge and gas crater areas, so that rate of movement and formation of these hazardous features can be assessed.

Quarterly Report

Contract RK6-6074
Research Unit: 430
Reporting Period:
1 April 1977 -
30 June 1977

Bottom and Near-Bottom Sediment Dynamics in Norton Basin

David A. Cacchione
David E. Drake

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U. S. Geological Survey
345 Middlefield Road
Menlo Park, California 94025

July 1, 1977

I. Objectives

A. Development of quantitative relationship between hydrodynamic bottom velocity shear and induced sediment entrainment for a specific site in Norton Sound.

B. Estimation of near-bottom sediment flux at various locations in Norton Sound, with particular attention to the movements of Yukon River materials.

C. Comparison of bottom sediment movements during quiescent and stormy periods at specific sites in Norton Sound.

D. Monitoring of bottom currents and light scattering/transmission (within two meters of the sea floor) to enable prediction of sediment and pollutant flux vectors at future times.

E. Measurement of subsurface and surface suspended sediment distribution in Norton Basin.

II. Field and Laboratory Activities

A. Field activities: none

B. Laboratory work:

1. Sediment samples collected at GEOPROBE tripod site (5 gravity cores) were processed in the USGS sediment laboratory, Menlo Park. Textural parameters were determined using sieves and settling tubes, hydrophotometer and pipettes.

2. GEOPROBE cassette tapes have been converted to 9-track computer tapes. GEOPROBE data has been processed and plotted as time series data. Calibrations and corrections to the raw data have been applied; present results are in usable physical units.

3. Nome National Weather Service wind, air pressure, air temperature data for the period 19 September 1976 thru 15 October 1976 has been plotted and placed on computer tape.

4. Extensive calibration of the Marsh-McBirney electromagnetic current meters used on the GEOPROBE tripod has been completed. A recirculating water flume at Stanford University was used for the calibrations. Outputs of the e-m current meters were compared to measurements taken with a DISA laser water velocimeter.

5. Modifications to the GEOPROBE electronics system have been in progress to enable better performance of the current meters and pressure sensing components. The Montedoro nephelometer-transmissometer (N-T)

instrument was returned to the manufacturer for refurbishment and sensitivity increase. A new temperature-compensating circuit was added to both N-T's.

6. Analysis of suspended sediment filter samples is still in progress.

C. Methods: same as discussed in OCSEAP Annual Report, Sediment transport in Norton Sound-Northern Bering Sea, Alaska, 1 April 1977, Cacchione and Drake.

D. Sample localities: no new samples were collected.

E. Data collection: no new data except for calibration data described above.

F. Milestone chart: no changes

III. Results

During the period of the GEOPROBE tripod recording no unusually large storm events crossed through the Norton Sound region. Air temperatures averaged about 12.0°C, falling more rapidly to about 0°C during the last week (Oct 6-14). Surface wind speeds were generally low to moderate (5 to 15 knots), except for a 1.5 day period of 20-30 knot winds during the tripod recovery. Bottom currents at the GEOPROBE site were poorly correlated with the surface wind speed and direction measured at Nome. This latter relationship has also been reported by NOAA (PMEL) researchers.

Figure 1 shows the half-hourly bottom current speed averages over the entire experimental duration measured with the Bendix rotor. The peak current speed of about 30 cm/s early on September 29 correlates with a decrease in light transmission (TRANS) and a sudden increase in light scattering (NEPH). This relationship suggests local resuspension by the high bottom current speed. Note that speeds typically were 10-15 cm/s and did not appreciably change the light scattering measurement.

In Figure 2 we have expanded the time scale to show in detail the postulated resuspension event. The light scattering (NEPH) peak correlates with the time of peak bottom current. The light transmission (TRANS) appears to lead the peak activity in bottom current by about 6 hours, responding to a gradual increase in the bottom current.

In Figure 3 we present actual time series data taken from the GEOPROBE electromagnetic current sensors at 15 cm (speed 2) and 40 cm (speed 1) above the sea floor. The data were sampled every second for a burst duration of 132 seconds. Two such samples for each current sensor are displayed. The two burst samples are separated in time by one-half hour. The dominant features in each record are: 1) wave induced currents with periods of 5-7 seconds and about 5-10 cm/s peak speeds; 2) a mean level of about 5 cm/s for the first burst and increasing to about 8 cm/s for the second burst. This increase possibly represents a tidal effect.

Further analysis of both burst and averaged current meter data is proceeding.

IV. Preliminary Interpretation of Results

1. Resuspension of bottom materials dominated by modern Yukon silty sand occurred at flow speeds of 30 cm/s. The minimum threshold has not yet been determined.

2. Local transport of bottom and near-bottom sediment is induced by a complicated flow regime caused by waves, tidal and mean flow. Bottom currents of at least 12 cm/s can theoretically move the materials at the tripod location; speeds of 12 cm/s were the average measured conditions. This suggests some equilibrium between mean size and average (or mean) bottom currents.

3. Storm generated currents presumably entrain the sediments; the dominant mean flow, directed toward the Bering Strait, removes all but the coarse fraction.

V. Problems encountered

The Marsh-McBirney electromagnetic current meters have had several electronic and performance problems that have necessitated a careful, time-consuming calibration process to be established. The results of this calibration will be published under separate cover.

VI. Estimate of funds expended

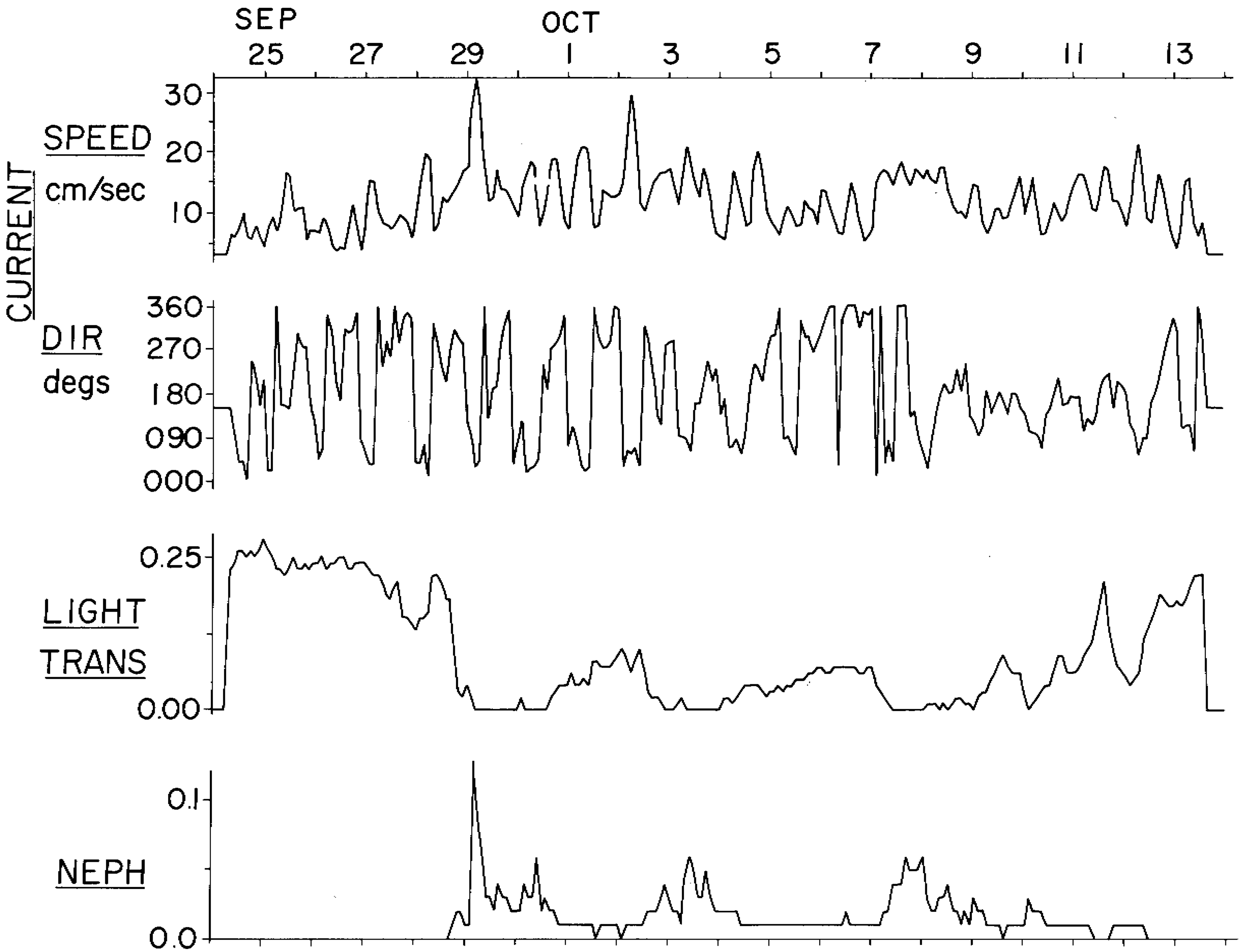
About $5,000 of project funds have been expended during this quarter.

FIGURE CAPTIONS

Figure 1. Current speed and direction measured with the Bendix savonius rotor/vane sensor located on the GEOPROBE tripod at 1.5 meters above the sea floor. Current speeds are one-half hour averages; vane readings were taken at the mid-sample period for the rotor measurement. Both are plotted as continuous curves. Light transmission (TRANS) and nephelometer (NEPH) values were measured with a Montedoro-Whitney instrument at half hourly intervals. Values are plotted on a relative scale.

Figure 2. Similar data as for figure 1 except horizontal scale has been expanded to cover a three-day period.

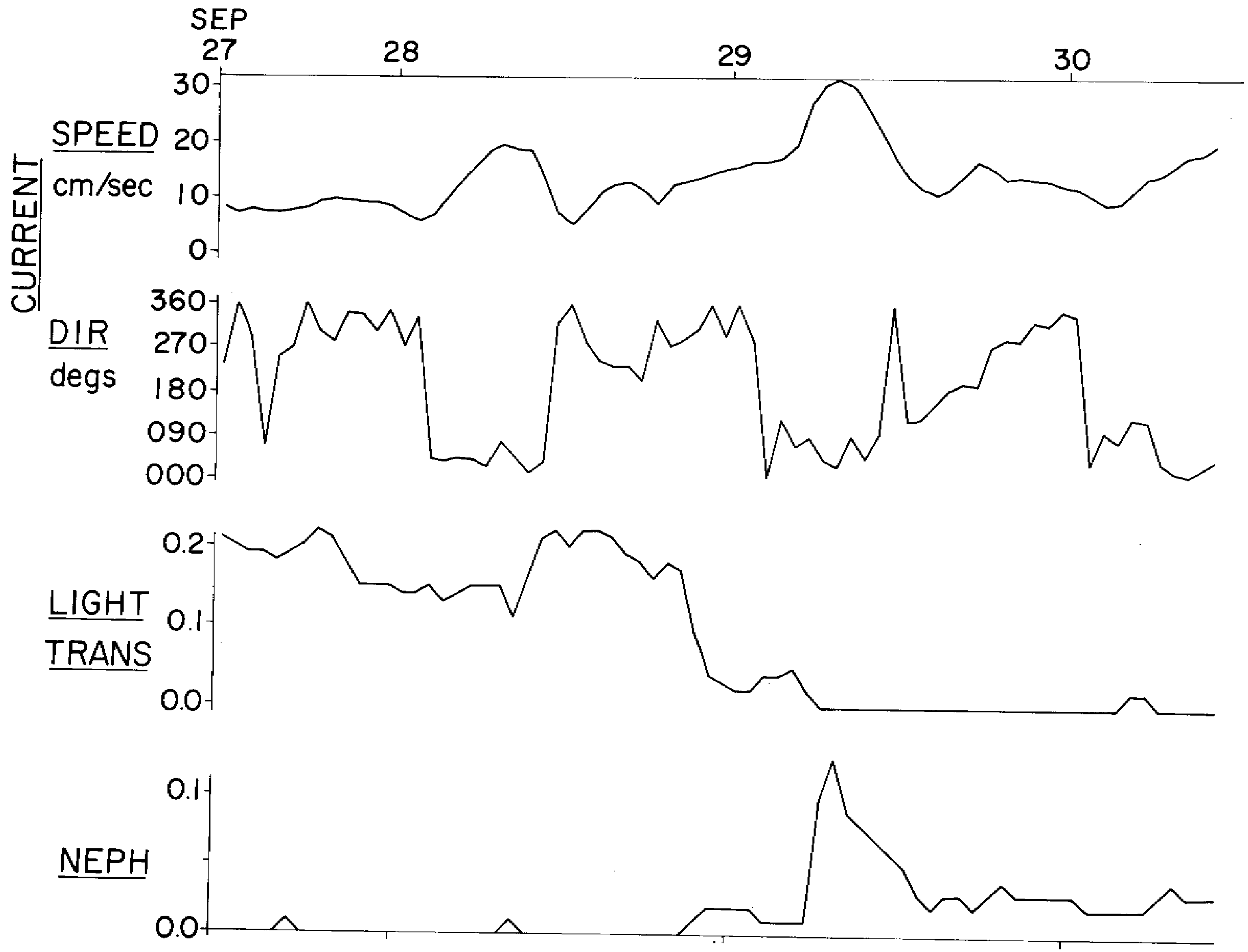
Figure 3. Burst e-m current meter measurements taken with the GEOPROBE vertical current meter array. Speed 2 and Speed 1 are one second values of current magnitude at 15 cm and 40 cm above the sea floor, respectively. Two consecutive bursts of 132 samples (seconds) are shown. Each burst occurs on the half hour.



SEP
OCT
25
27
29
1
3
5
7
9
11
13
CURRENT
SPEED
cm/sec
30
20
10
DIR
degs
360
270
180
090
000
LIGHT
TRANS
0.25
0.00
NEPH
0.1
0.0

FIG. 1

659


SEP
27
28
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CURRENT
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cm/sec
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20
10
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DIR
degs
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TRANS
0.2
0.1
0.0
NEPH
0.1
0.0

FIG. 2

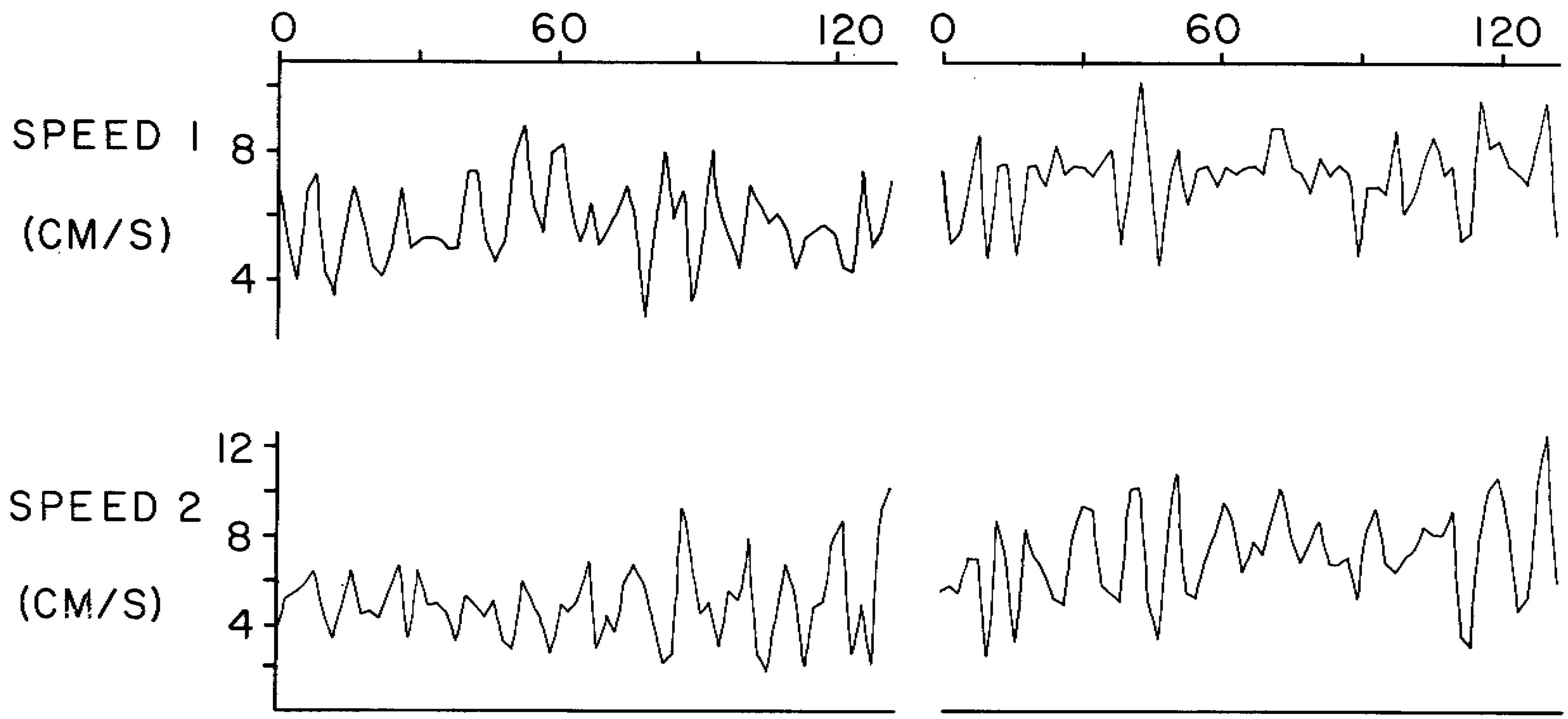

FIG. 3

Research Unit 473: Quarterly Report, April-May-June 1977

SHORELINE HISTORY OF CHUKCHI AND BEAUFORT SEAS AS AN AID TO PREDICTING OFFSHORE PERMAFROST CONDITIONS

I. Abstract of Highlights

Hopkins participated in meeting convened by B.L.M. in Anchorage on April 6th to evaluate probability of existence of identifiable archaeological sites on the continental shelf of Beaufort Sea and to decide whether a study should be funded to rank different areas on the Beaufort Shelf according to probability of containing identifiable archaeological sites.

II. Task Objectives: D-9

III. Field or Laboratory Activities

A. No field activities.

B. Scientific Party
D. M. Hopkins, geologist and P.I.
Louie Marincovich, molluscan paleontologist
R. E. Nelson, palynologist, compile paleoclimatic data
R. W. Hartz, compile coastal maps

C. Methods of Analysis
Study of maps and air photographs
Synthesis of field observations
Amino-acid racemization study of fossil mollusks

D. Sample Localities: No new ones.

E. Data collected or analyzed
Compile maps of direction of sediment transport, height of highest driftwood line, localities of rapid erosion, Icy Cape to Skull Cliff.

Identify modern mollusks from beach collections from Beaufort Sea coast.

Compile and synthesize data on history of sea level, temperatures, and snow cover in northern Beringia (Chukchi Sea shelf, Beaufort Sea shelf, and northern Alaska) during the last 30,000 years.

IV. Results

Hopkins participated in meeting convened by B.L.M. in Anchorage on April 6th to evaluate probability of existence of identifiable archaeological sites on the continental shelf of Beaufort Sea and to decide whether a study should be funded to rank different areas on the Beaufort Shelf according to probability of containing identifiable archaeological sites.

V. Interpretation:
Nothing new to report.

VI. Problems encountered and recommended changes:
No problems encountered. Fieldwork will be conducted between July 15 and September 1st on Beaufort Sea coast. All barrier islands between Point Barrow and Flaxman Island will be visted and mainland coast will be examined between Oliktok Point and Flaxman Island. Activity is shifted from Chukchi Sea to Beaufort Sea coast because shoreline information urgently needed there in order to interpret results of 1977 borehole program and to gather information upon which estimates of distribution of offshore permafrost can be based in accordance with leasing schedule.

VII. Estimate of funds expended to date:
$10,900

(Remaining funds will be expended on salaries, travel, and field expenses during July 15-Sept. 1st fieldwork.)

SECOND QUARTERLY REPORT

Period: April 1, 1977 - June 30, 1977

Title: Evaluation of Earthquake Activity Around Norton and Kotzebue Sounds - RU 483

Principal Investigators: N. N. Biswas and L. Gedney, Geophysical Institute
University of Alaska

I. Task Objectives

(1) Standarize system response of the seismographic station of the network.

(2) Scale and assemble the data for processing by the computer.

II. Field and Laboratory Activities:

A. SYSTEM CALIBRATION: The seismographic stations of the network were calibrated in the laboratory before installation. The amplitude data for a given earthquake recorded by different stations showed a higher level of scatter than could be explained by path or source effects - indicating calibration deficiencies. Thus, the station (ANV) near Nome was calibrated through the entire system. The procedure for the calibration has been standarized which will be utilized during the field season of 1977 for the entire network.

B. INSTRUMENTATION: Continued studies for the improvement of the signal-to-noise ratio carried out.

C. DATA TELEMETRY AND RECORDING: Microwave telemetry of the data to the central recording site at Fairbanks maintained without any difficulty.

D. DATA REDUCTION: The daily data (160 ft) in form of 16mm film recorded during the last quarter of 1976 and the first two quarters of 1977 have been scaled and punched on cards for processing on the computer.

The computer program for the determination of the hypocentral parameters has been supplemented to plot the epicenters simultaneously on a Marcater projection of the outline of the study area.

III. RESULTS: None.

IV. PRELIMINARY INTERPRETATION: None.

V. PROBLEMS ENCOUNTERED: None.

VI. ESTIMATED OF THE FUND EXPENDED: $26,000

QUARTERLY REPORT

A GEOGRAPHIC BASED INFORMATION MANAGEMENT SYSTEM FOR PERMAFROST IN THE BEAUFORT AND CHUKCHI SEAS.

Michael Vigdorchik

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University of Colorado
Boulder, Colorado 80309

April - June 1977

Prepared for:

U. S. Department of Commerce
National Oceanic and Atmospheric Administration
Environmental Research Laboratories
Outer Continental Shelf Environmental Assessment Program
Research Unit Number: 516
Contract Number: 3-7-022-35127

CONTENT OF QUARTERLY REPORT

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* Chapters included in Annual Report (October 1976 - April 1977)

** Chapter included in Quarterly Report (April - June 1977)

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* Chapters included in Annual Report

** Chapters included in Quarterly Report

I. Task Objectives

The content of this Quarterly Report includes two independent parts according to the two principal objectives of the work.

The first principal objective of this work is to develop a computerized system which will aid in predicting the distribution and characteristics of offshore permafrost. A special computerized system should divide the offshore territory into areas which are suitable or unsuitable for relict permafrost. Computer-based mapping of the distribution, thickness and character in modern offshore conditions will be the main part of the program.

The approach to solving this problem involves the gathering and study of all the source data about direct and indirect indicators of permafrost in the given area (depth, temperature and salinity of water, topography, bottom deposits, ice conditions, etc.)

The second objective of this work is to undertake a comprehensive review and analysis of past and current Societ literature on subsea permafrost and related coastal processes, and where appropriate, translate selected materials for general dissemination. The available materials relate to problems of the submarine permafrost origin and development such as Quaternary Arctic history, especially Quaternary transgressions and regressions in Eurasiatic arctic shelf should be summarized and evaluated with respect to their significance.

II. Summary of Results

According to the first objective connected with the data management system, all existing data on depth, temperature and salinity of the Beaufort and Chukchi Seas shelf have been gathered. Some of the data are on magnetic tapes. It makes it possible to begin to compile the source data maps as a second step of Data Management System development. Two base maps have also been prepared: A Geographyic Base Map as a basis for mapping all source data at the same scale and in a common format (each data category can be mapped onto a separate copy of the GBM) and a Grid Base Map in order to facilitate the referencing of mappable data for computer processing. It is used as an overlay for encoding the data. The individual cells on the Grid Base Map serve to represent discrete geographic areas which act as depositories for data. Each grid cell is indexed by its row and column number to provide a discrete address identifying a specific location. Both kinds of maps have been prepared in two scales: 1:50,000 and 1:1,000,000 (in the same coordinates system). The first scale is directly connected with submarine permafrost investigations in nearshore areas with more high density of data; second one is oriented on the maps generated during the Point Barrow meeting. The size of the grid cell is determined by several factors: the overall goals of the study; the character and density of the data; and the size of the study area. A grid cell size is 2.5 minutes by 2.5 minutes for the scale 1:50,000 and 30 minutes by 30 minutes for the scale 1:1,000,000.

Identifying the particular data characteristics for each grid cell, the computer is able to record the type, location, and extent of all mappable data within the study area.

The Universal Transverse Mercator (UTM) coordinate system for the scale 1:50,000 was selected because it is the contiguous coordinate system throughout the entire study area. In order to prepare a source data map for imput to the computer, the map must first be converted into a computer-readable form. This is referred to as "the process of encoding data." Encoding of a specific source data map is done by aligning a transparent copy of the Grid Base Map over the respective source data map. The data is encoded by writing into each grid cell on the transparent grid map the appropriate data label number, that is, the number used to represent a particular data characteristic. Specific techniques are used for manipulating the data. The portions of the maps are shown on Figures 1, 2, 3, and 4.

We also made some preliminary computer generated maps trying to work out an approach to generating the source data maps. The data assimilation problem is the problem of creating of equal-distance network of grid points from very sparsely distributed observation stations. We started from the most simple approach to this problem dividing our region (Alaskan shelf) on generally small rectangular areas. Some of them include shorelines and others are totally in the ocean. We have produced some preliminary contour maps on CDC-7600 (water salinity, sampling depth and temperature), we have made also the half-tones intensity maps of these characteristics. These maps have also been produced on the printer without using the plotting machine.

It is well known that in order to draw reasonably accurate contour maps of different physical charactieristics like temperature, depth, salinity, pressure and so on, one will need fairly dense data for the region of interest. Our primary interest lies in the Arctic zone, or more specifically, in different features of the ocean near the Alaskan shore. The main problem is that this area has a very poor observational network; so in our work we have to rely on very low density of observations.

At the beginning of our research we see three different approaches to the data assimilation problem, but all of them have the same main goal: to build the grid point network of data by mathematical and statistical means, very densely and equally spaced (let's say from 2' to 5') in latitudinal and longitudinal directions. Sometimes this procedure of data assimilation is called "objective analysis".

Each rectangle has from 50 to 100 observation points or stations. We divide this region on N points in latitudinal direction and M points in longitudinal. Then $\Delta\lambda = (\lambda \max - \Lambda \min)/M$ and $\Delta\emptyset = (\emptyset \max - \emptyset \min)/N$. Next task is to interpolate from stations to grid points. We decided to use only a linear interpolation technique at this stage of research. Let's consider the examples in Figs. 5 and 6. If several * points lie in $\Delta\emptyset$-strip of $\Delta\lambda$-strip we associate them with the same latitude or longitude. So all * points between horizontal lines 3 and 4 we associate with line 3 and * points between vertical lines 5 and 6 with line 5. This way we put all observational data on intersection of horizonal and vertical lines of the chosen grid-point network. Then by linear interpolation we compute values at grid-points.

Let us say we have data at points 2 and 5 on latitudinal lines (Fig. 5). Then value of function (temperature, salinity): $F_3 = F_2 + \frac{(\emptyset_3 - \emptyset_2)}{\emptyset_5 - \emptyset_2} \cdot (F_5 - F_2)$ The same way we compute F_4. In this way we will have all missing points on horizontal lines and then do the same procedure for vertical lines. Sometimes it is necessary to do several sweeps in horizontal and then vertical directions in order to fill in the region. From output, it is easy to follow up this process. We start from Tables 1 and 4 where 1 denotes the stations, 0 = missing points, and 2 = land. Tables 2 and 5 show the same region after use of our interpolation. It is worth mentioning that after using interpolation procedure we still have a few points left unfilled (not calculated). To avoid extrapolation, which is very inaccurate numerically, we assign to these points some fixed value. Let's say λ=2 3 4 5 6 We know value of point 6, so we assign to points λ,=2, 3, 4, 5 the value at point 6. The Table 3 and 6 show the cut-off region which is used to draw the contour maps. But because this area is not square we once move the linear interpolation from Table 2 (rectangular region) to the square region. Now we can use two-dimensional interpolation (Fig. 5). Let's say we have values of function (temperature, salinity and so on) at points 1, 2, 3, 4 and we wish to calculate f_0, then:

$$f_A = f_1 + \frac{(\phi_0 - \phi_1)}{\phi_2 - \phi_1} \cdot (f_2 - f_1)$$

$$f_B = f_3 + \frac{(\phi_0 - \phi_B)}{\phi_2 - \phi_1} \cdot (f_4 - f_1)$$

$$f_0 = f_A + \frac{(\lambda_0 - \lambda_1)}{\lambda_3 - \lambda_1} \cdot (f_B - f_A)$$

Meantime we discuss the simples approach to the data assimilation problem, and we give several contour maps which were produced by this technique.

Next step, we would like to order from World Data Center the already calculated data for the Alaskan region. But the problem is that (as is mentioned in the brochure) they will give us data only for 1^o, $.5^o$ or $.25^o$ degrees. If this is so, we again have to make linear, two-dimensional interpolation; and we hope that this way we can improve somehow our previous results. We still have to investigate this possibility.

The most sophisticated approach is the statistical one, where we will use observational data from all stations to calculate the values of different physical characteristics at every grid-point. The philosophy after this is that we have so little real data, that it is very wasteful not to use all possible information to compute the values at every point. It is clear that we have to assign the different weights to stations. Let's say we wish to compute value at grid-points when all station points are given (Fig. 5). It is clear the information from nearest stations λ and 2 is more important than data from points 5 and 6. So if we want to calculate f_0 as combination of f_1, f_2, f_3, f_4, f_5; $f_0 = A_1 f_1 + A_2 f_2 + A_3 f_3 + A_4 f_4 + A_5 f_5 + A_6 f_6$ we have to give the biggest values to A_1 and A_2 and the smallest to A_5 and A_6. We will then be using the statistical method (variances, covariances, and so on). The approach is now in initial stage of research.

A third kind of preliminary maps have been made by printer (Figs. 19-23). The explanation is as follows:

We have a matrix A (N x M).

$$\left.\begin{array}{l} AMAX = MAX\ (Aij) \\ AMIN = MIN\ (Aij) \end{array}\right\} : i = 1, 2 \ldots N;\ j = 1, \ldots M$$

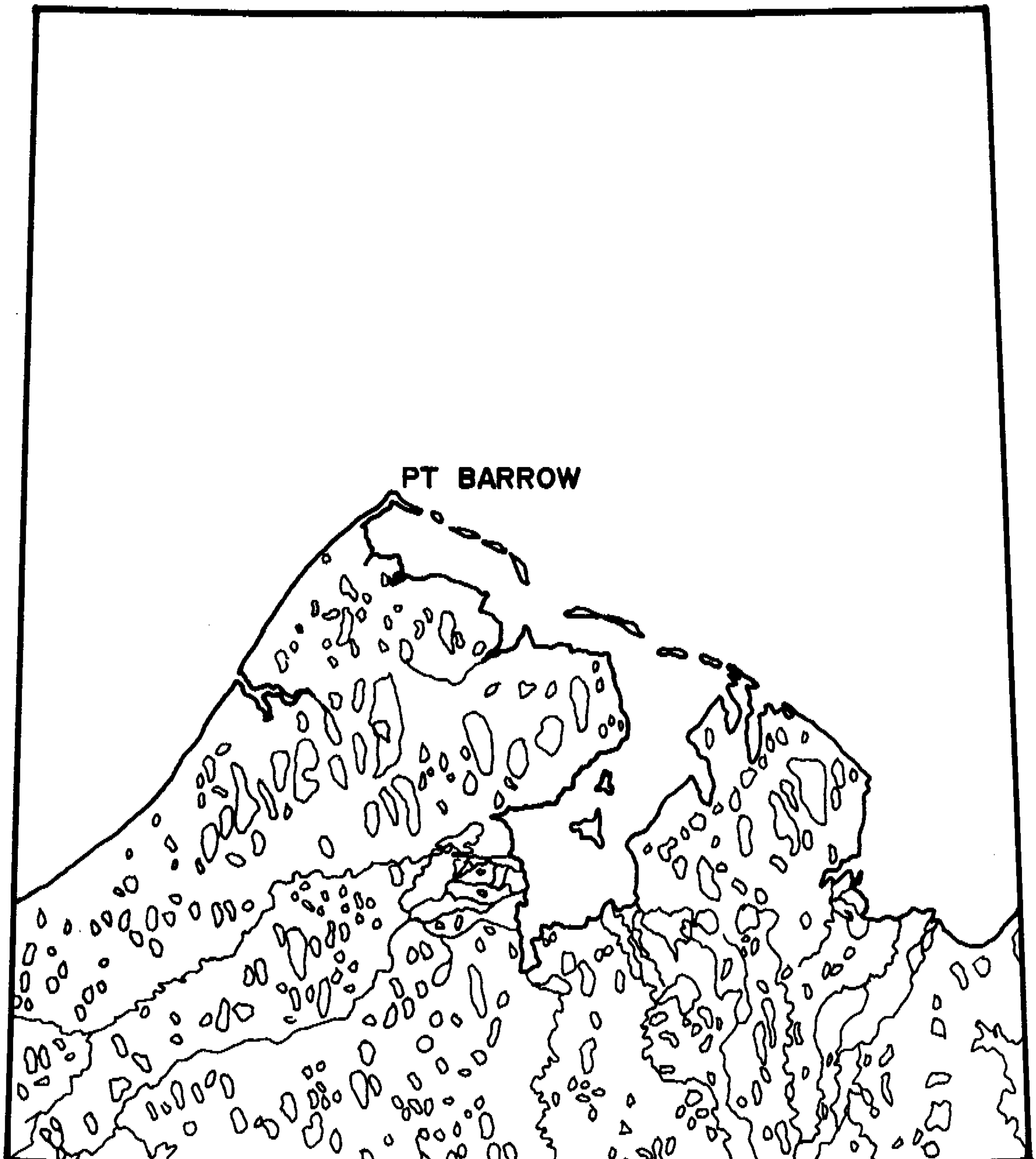
$$\Delta A = (AMAX - AMIN) / q$$

The program works the following way:

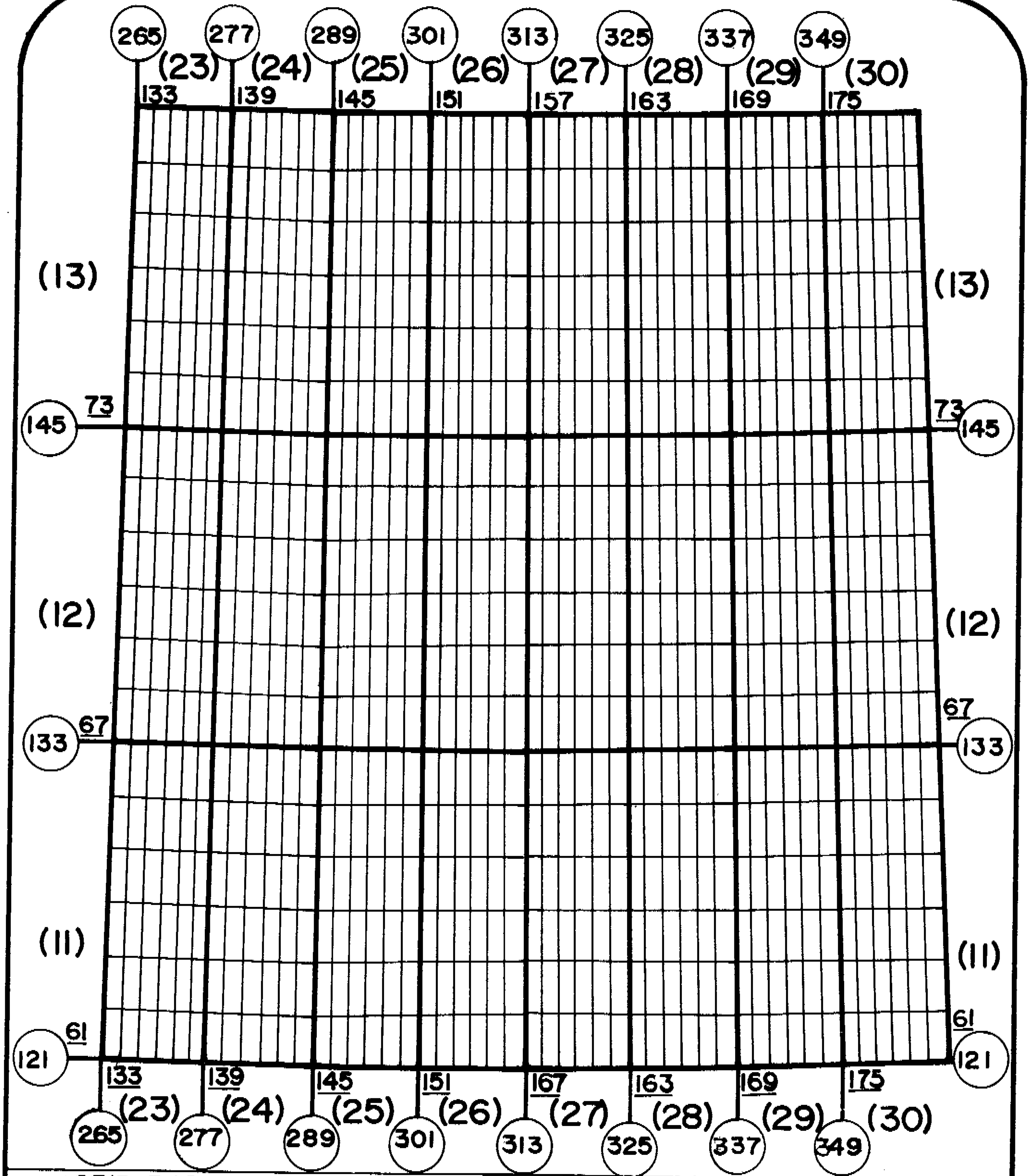
1. If Aij is a shore point, we print 0.
2. If $AMIN + \Delta A(K-1) \leqslant Aij \leqslant AMIN + \Delta A \cdot K;\ K = 1 \ldots q$, we print value of K.

Of course all these examples only demonstrate an approach to the computer mapping of the area with sparse data which will give us later the possibility to generate source data maps for our Data Management System.

According to another objective of the work, an in-depth search of the Soviet literature has been performed and the bibliography has been compiled. We have included this bibliography and the primary part of analysis of the Soviet data and results in subsea permafrost study in the annual report. This Quarterly Report is a continuation of the "Analysis". It includes the chapter "Submarine depth and thickness, cryogenic structures and their formation" on the 23 pages, 3 tables and 15 schemes, cross-sections and illustrations.

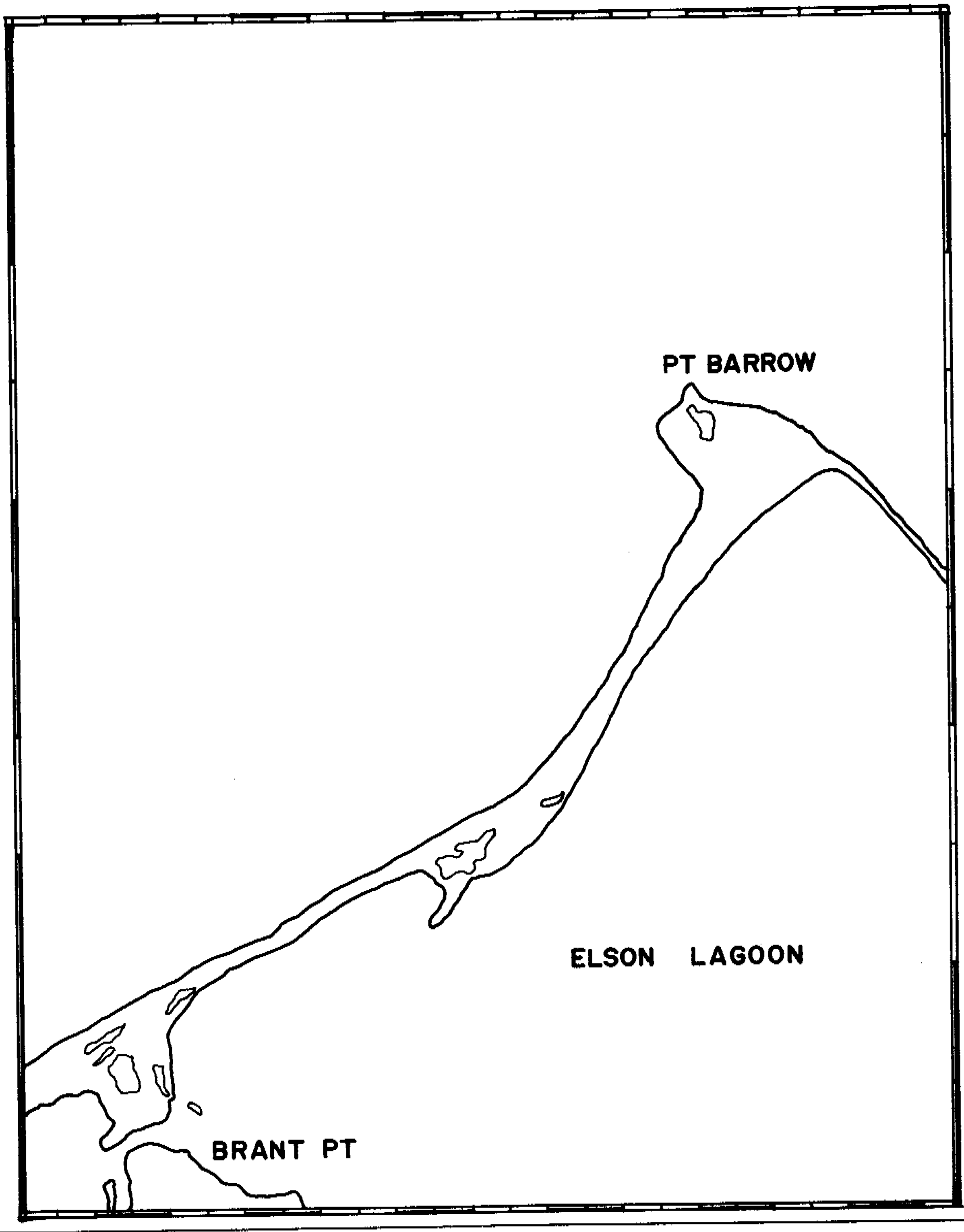


1. GEOGRAPHIC BASE MAP (PORTION) POINT BARROW
154° 30'/ 158° 30'— 70° 30'/ 72° 00' 1:1,000,000

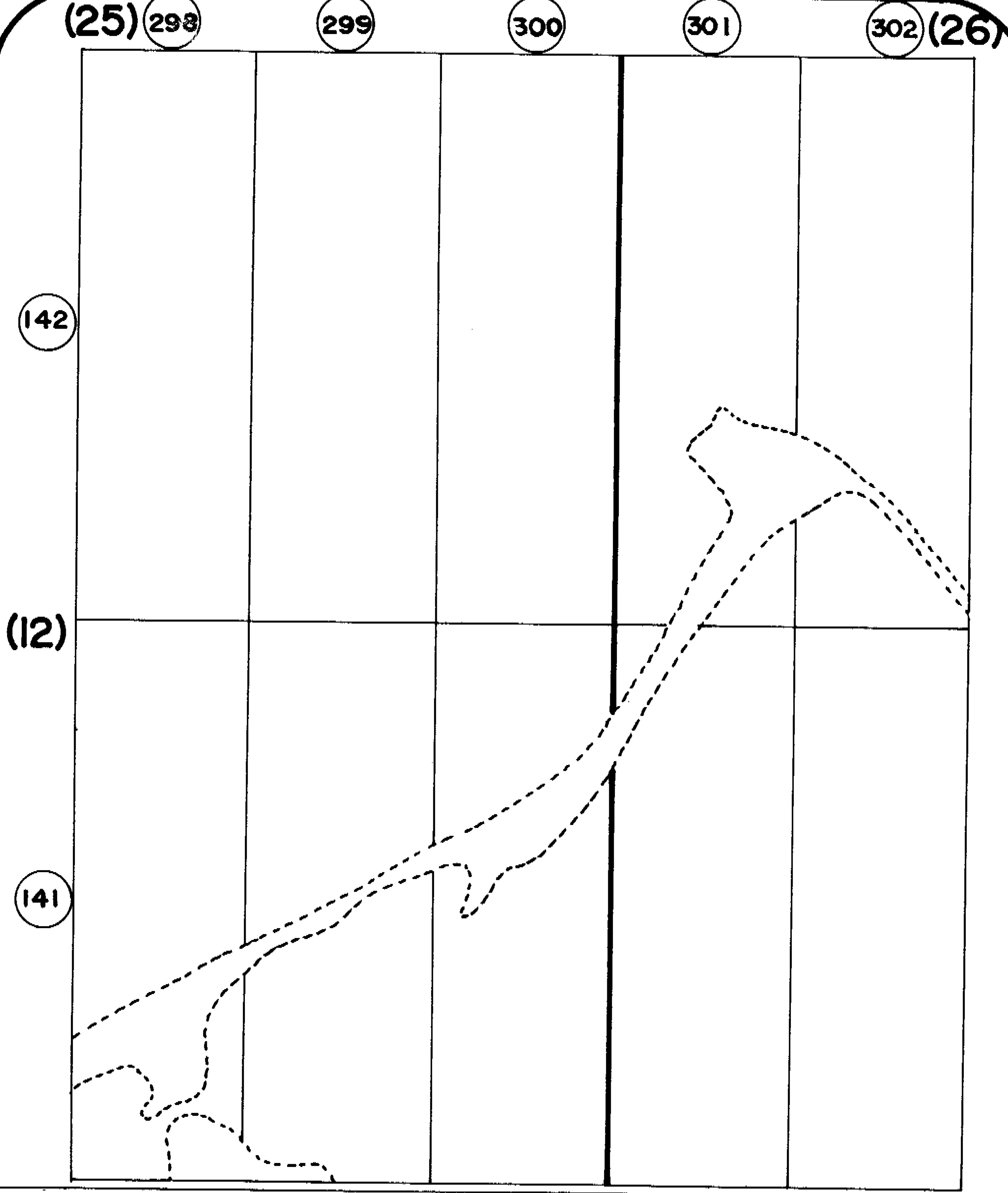


2. GRID BASE MAP (PORTION) POINT BARROW 1:1,000,000

(12)=1:1,000,000 133=1:250,000 (265) = 1:50,000 (NOT SHOWN)

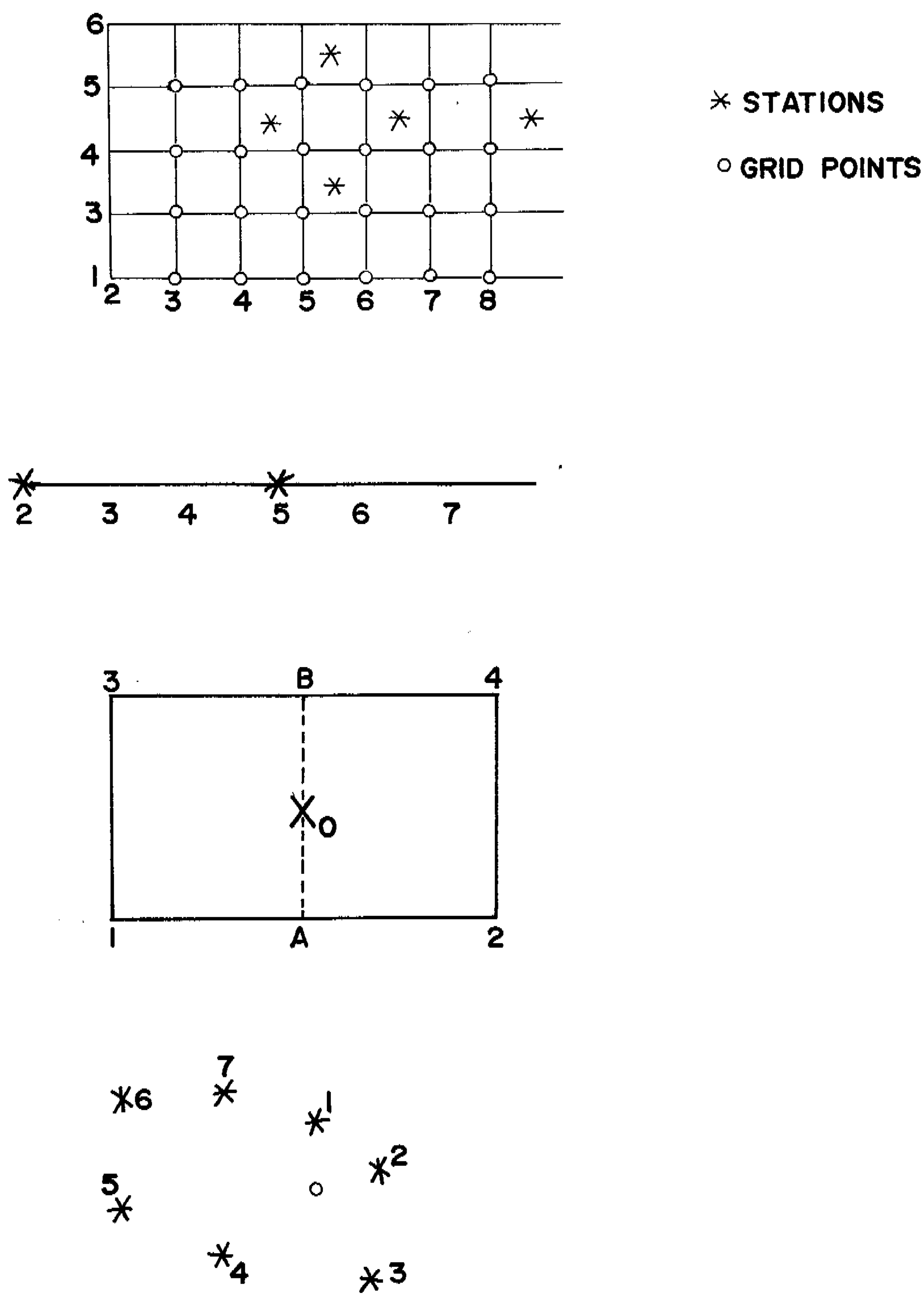


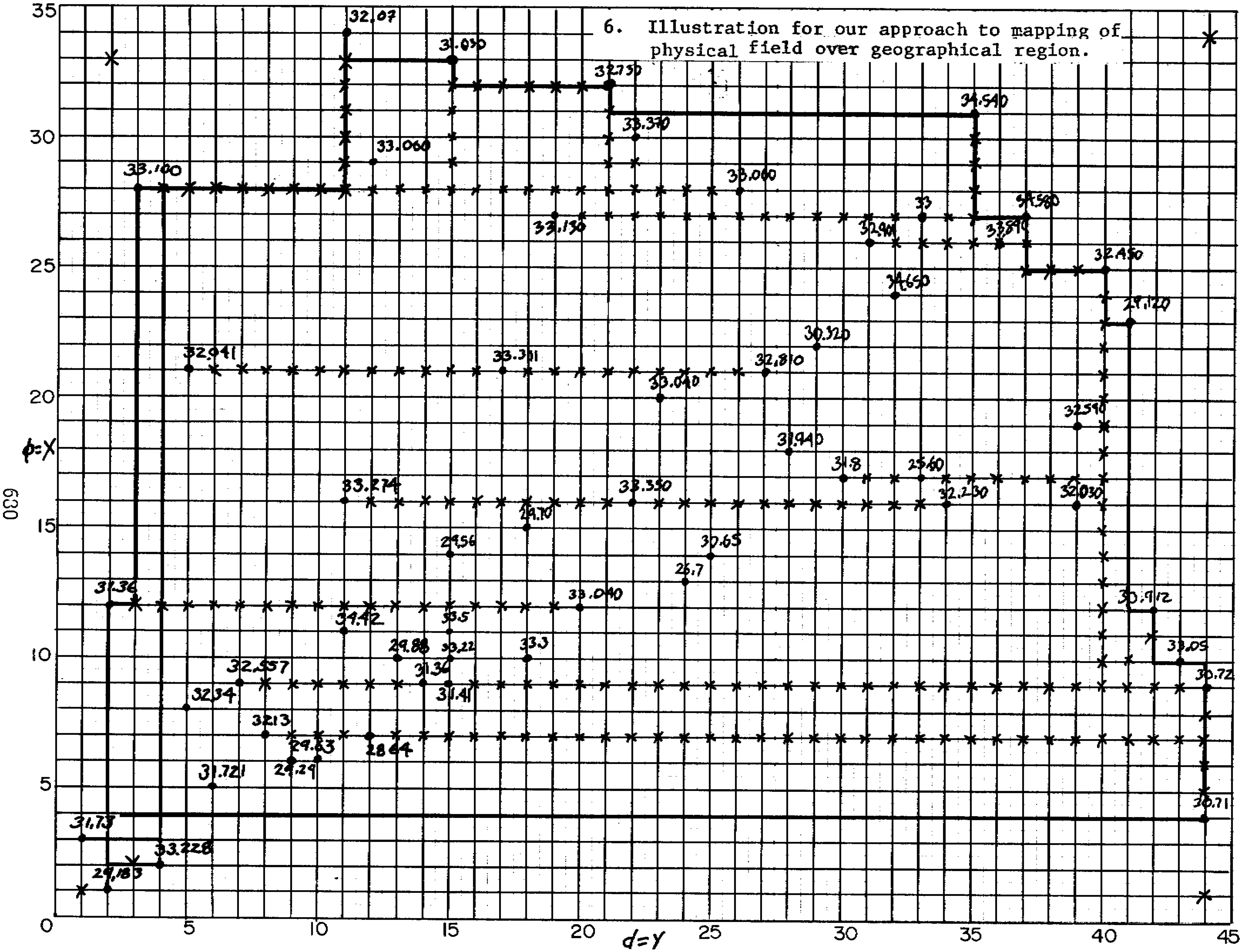
3. GEOGRAPHIC BASE MAP (PORTION) POINT BARROW
156° 25'/156° 37.5'— 71°20'/71° 25' 1: 50,000



4. GRID BASE MAP (PORTION) POINT BARROW 1:50,000
(12) = 1:1,000,000 (141) = 1:50,000

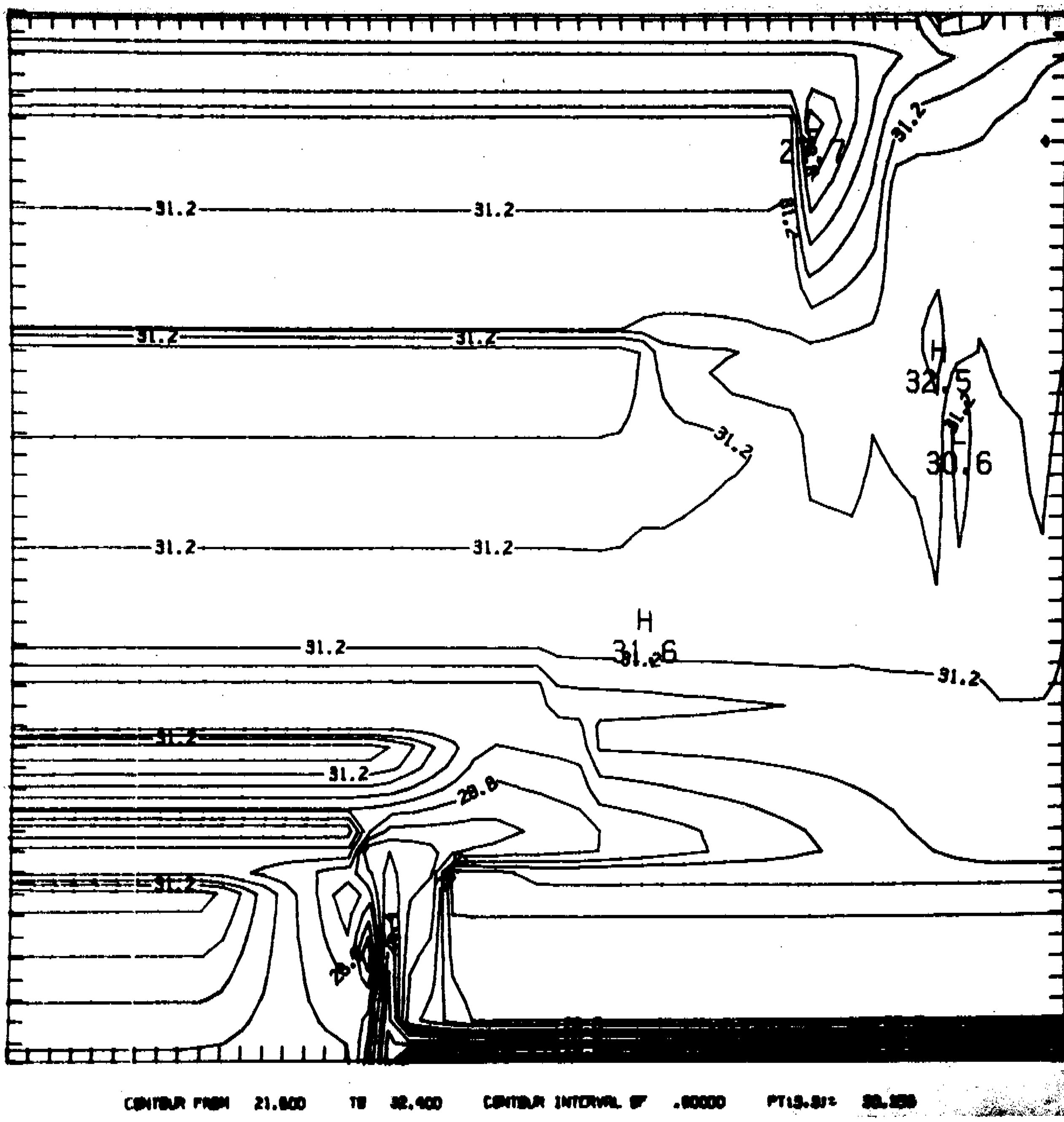
5. Illustration for our approach to mapping of physical field over geographical region.



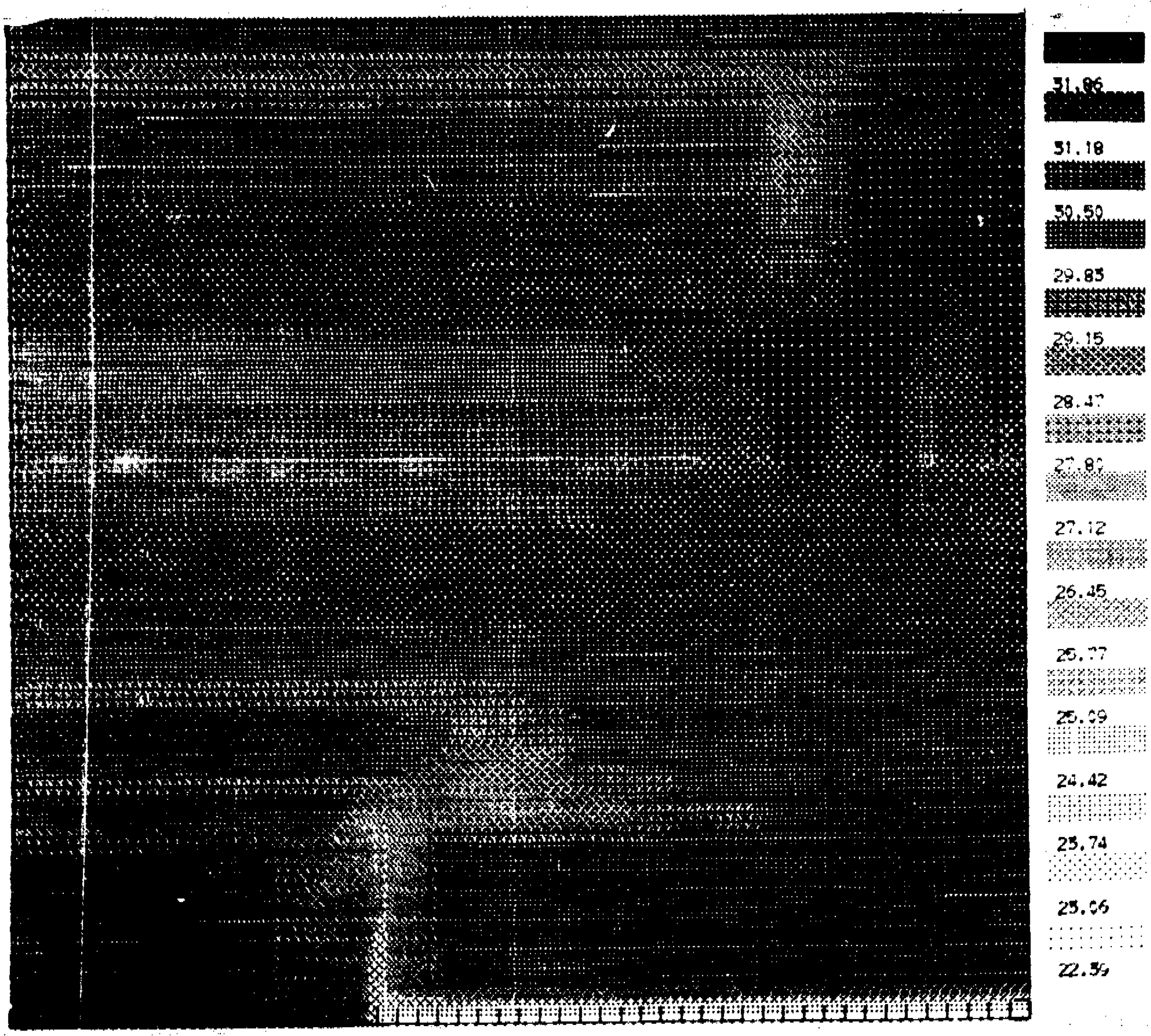


6. Illustration for our approach to mapping of physical field over geographical region.

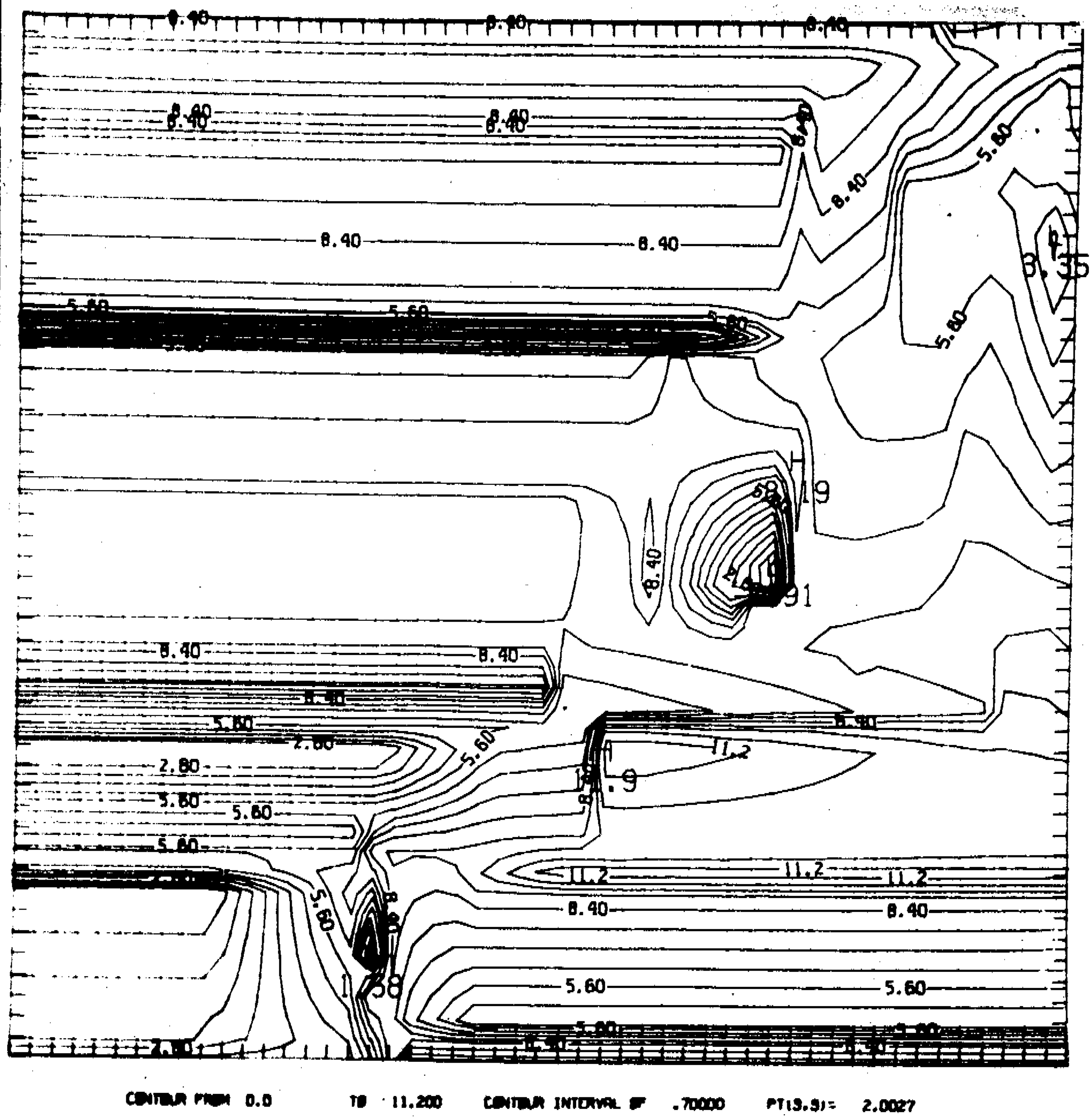
7. Example of the preliminary contour map of the ocean water salinity



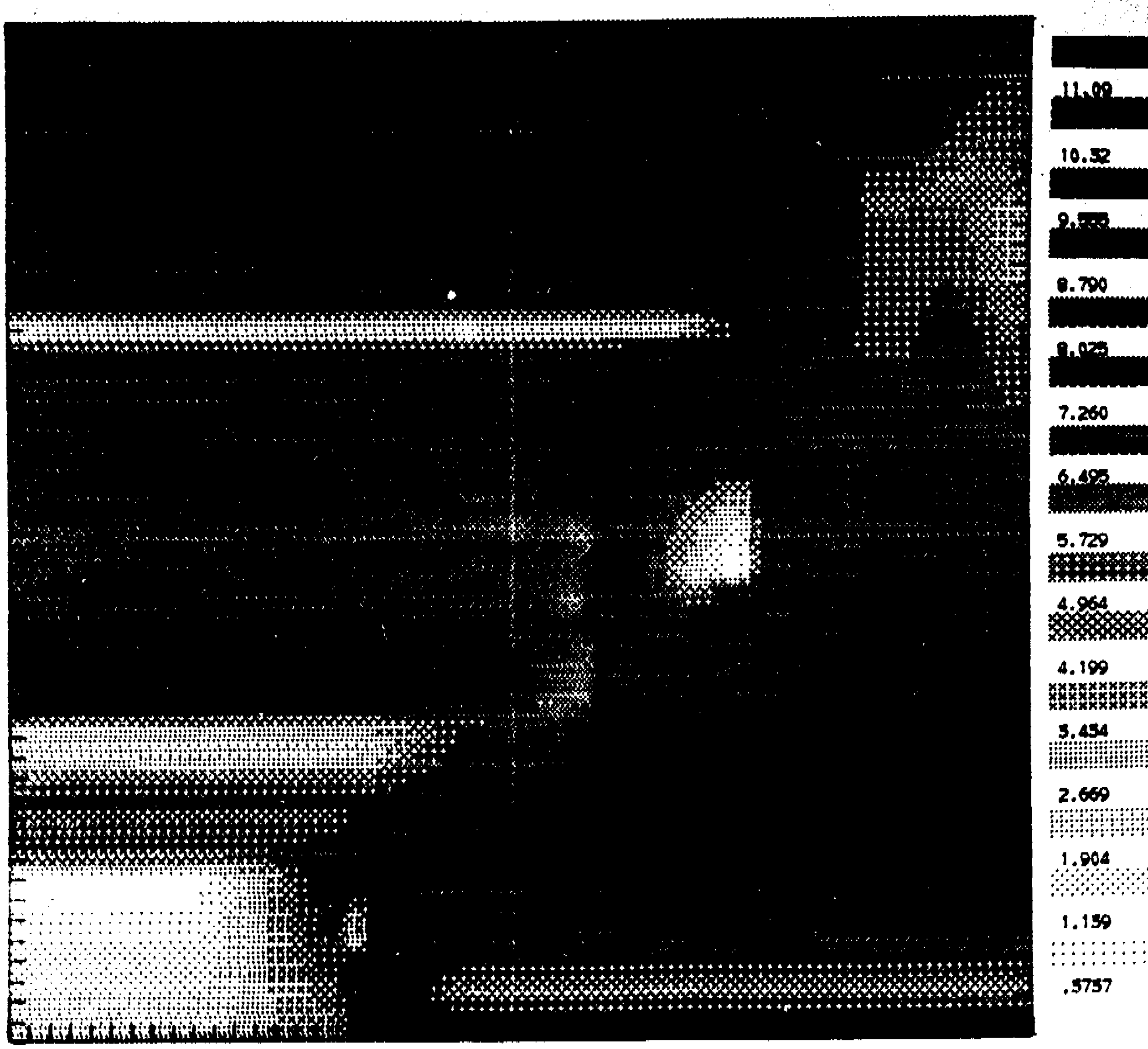
8. Example of the preliminary half-tone map of the ocean water salinity



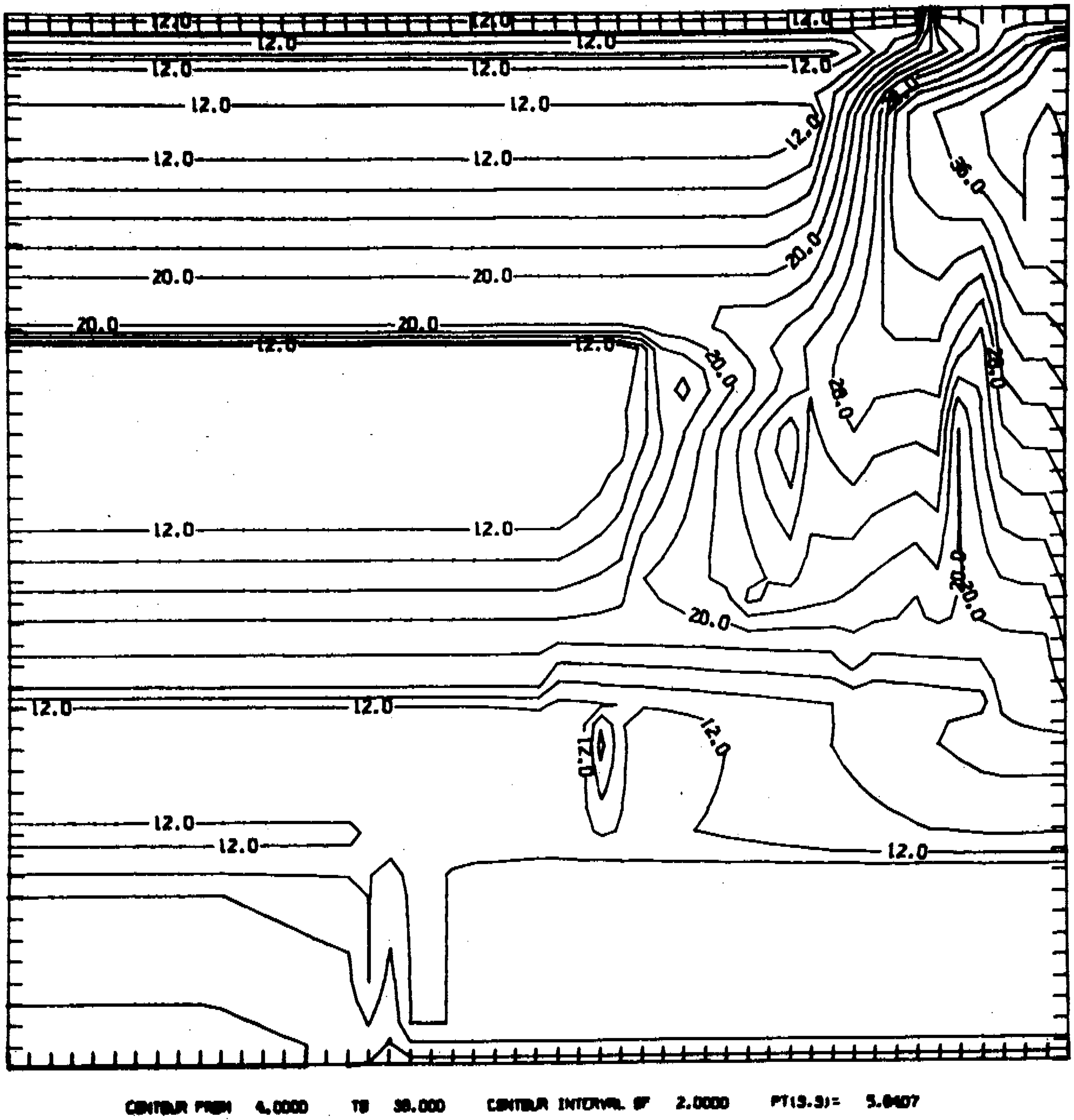
9. Example of the preliminary contour map of the ocean temperature



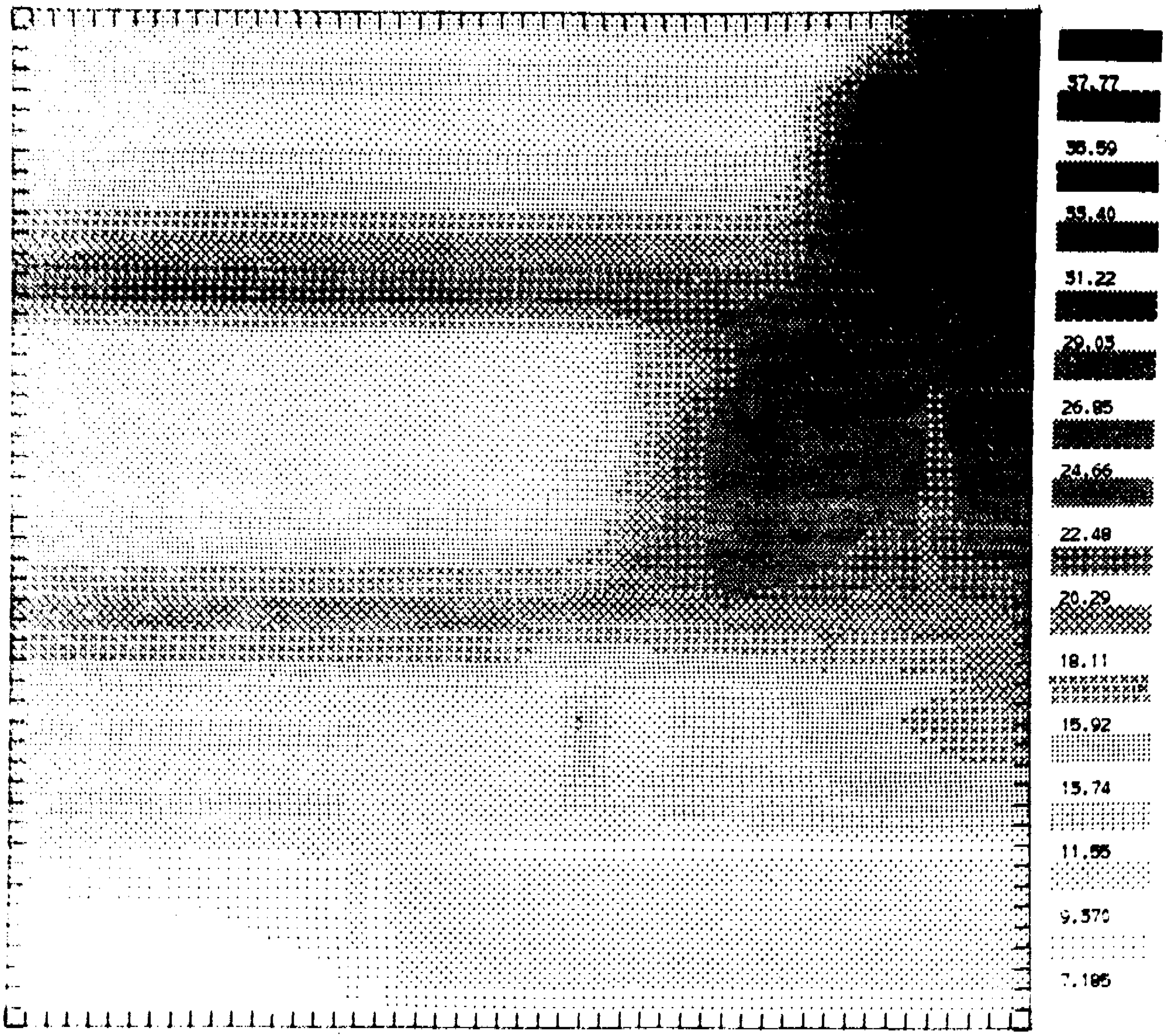
10. Example of the preliminary half-tone map of the ocean water temperatute



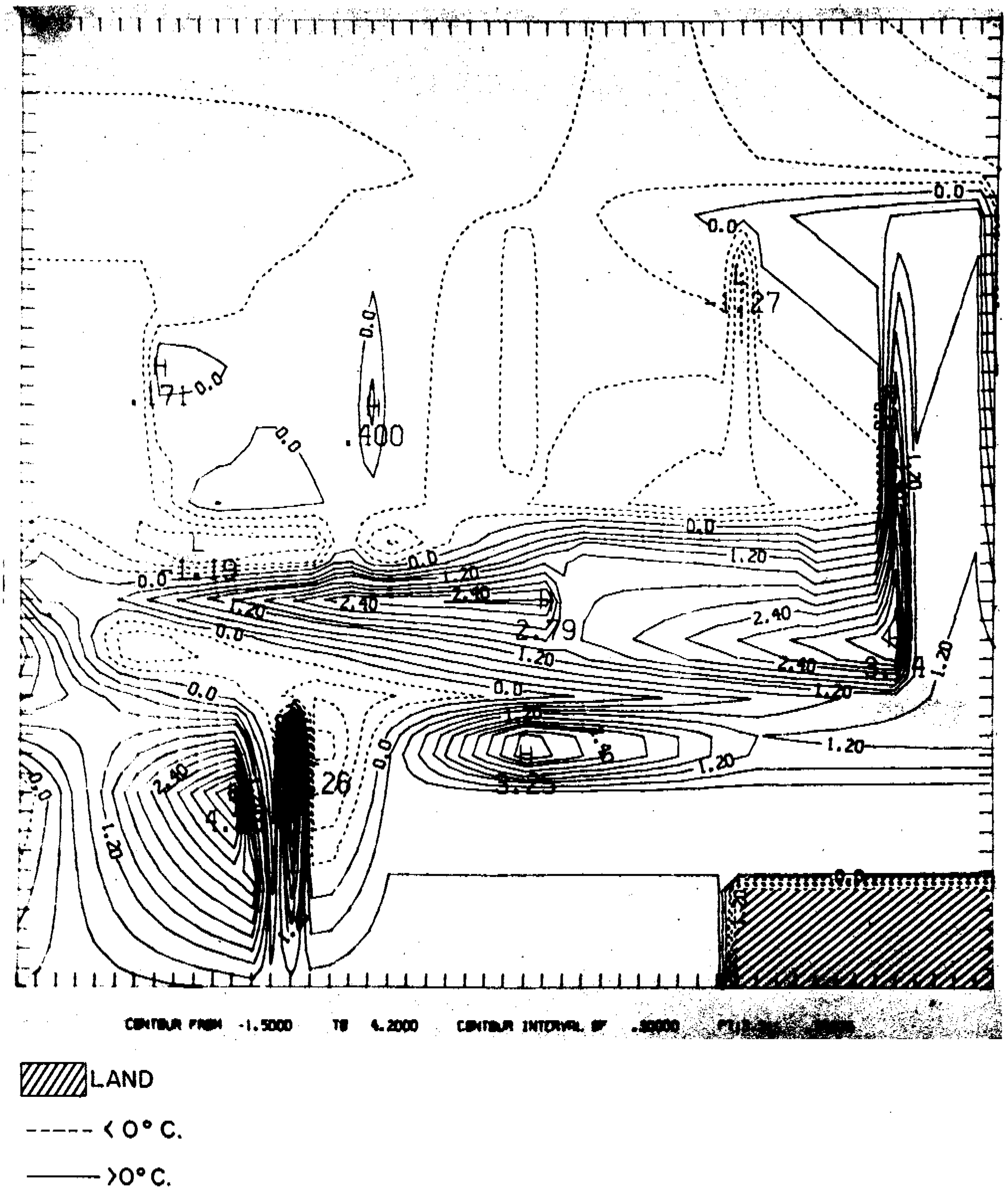
11. Example of the preliminary contour map of the maximum depth of the ocean water sampling



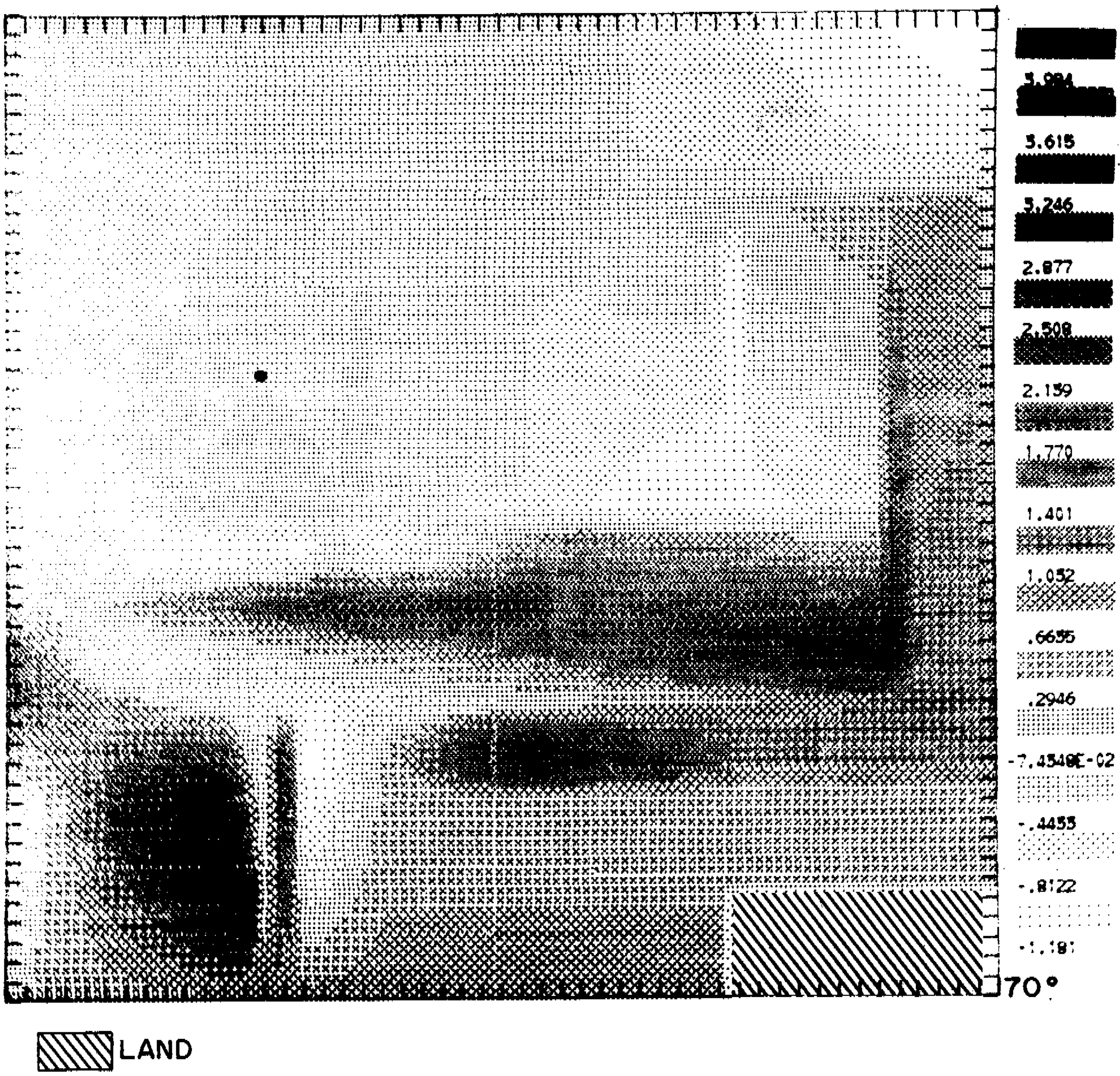
12. Example of the preliminary half-tone map of the maximum depth of the ocean water sampling



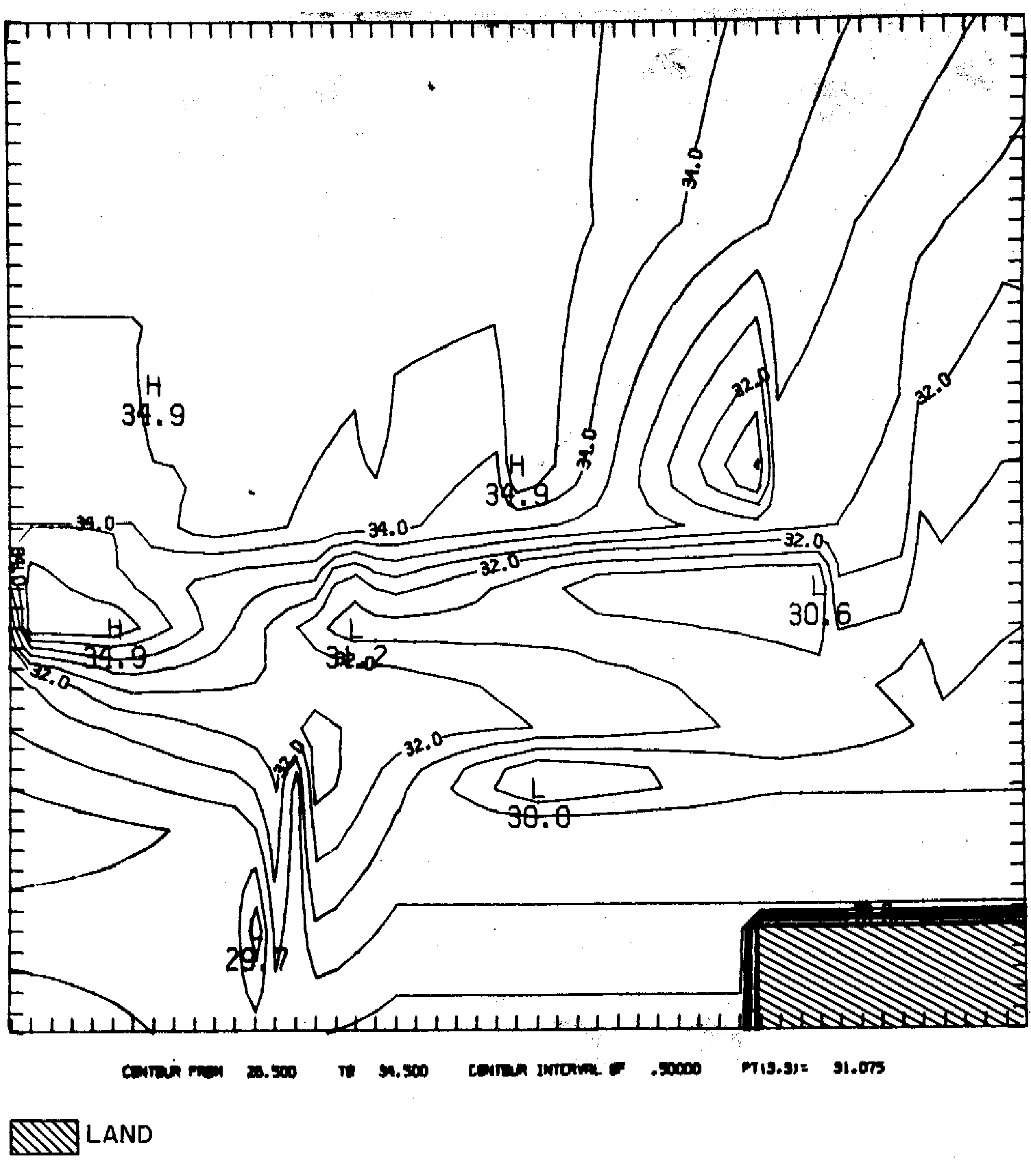
13. Example of the preliminary contour map of the ocean water temperature



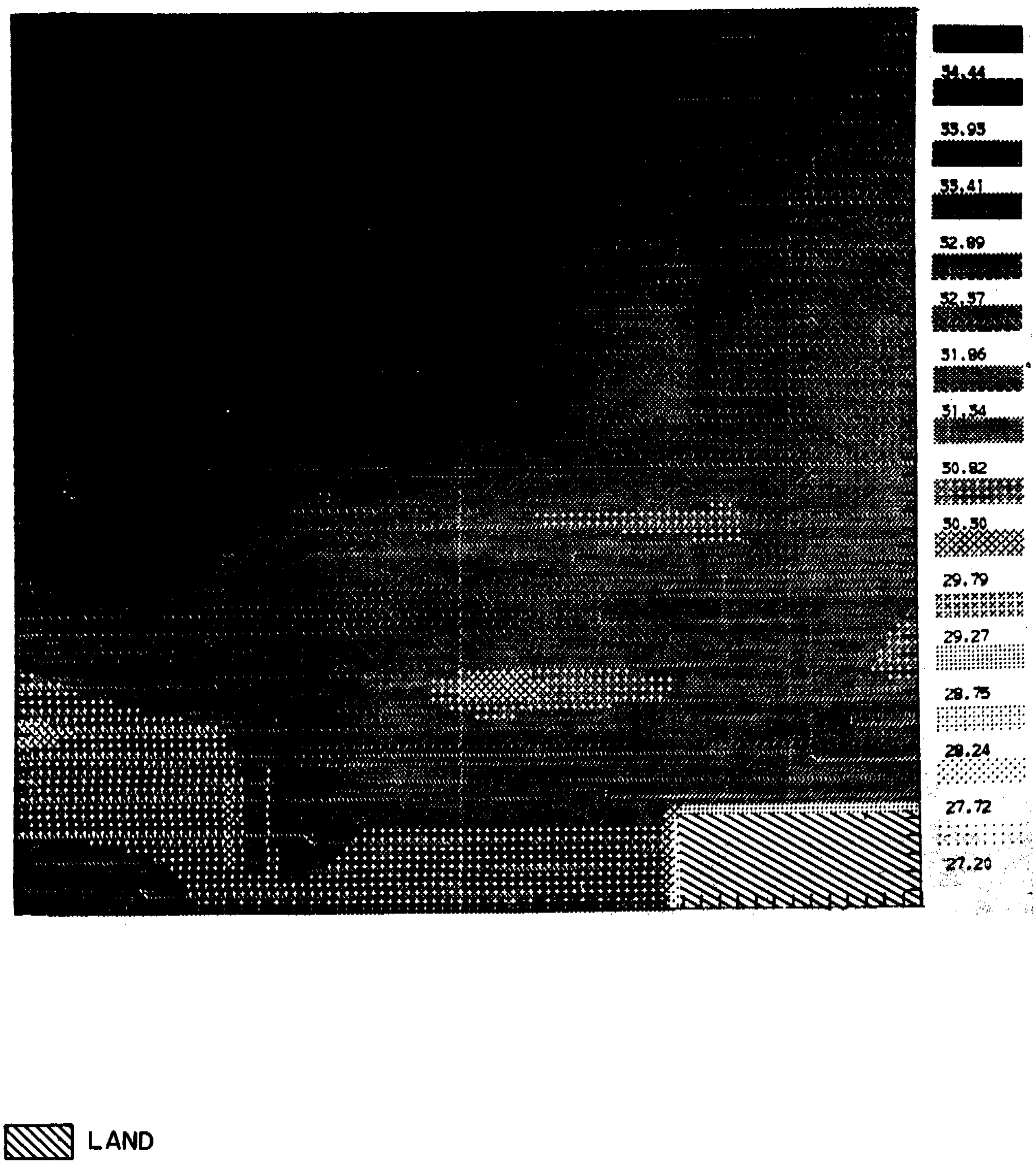
14. Example of the preliminary half-tone map of the ocean water temperature



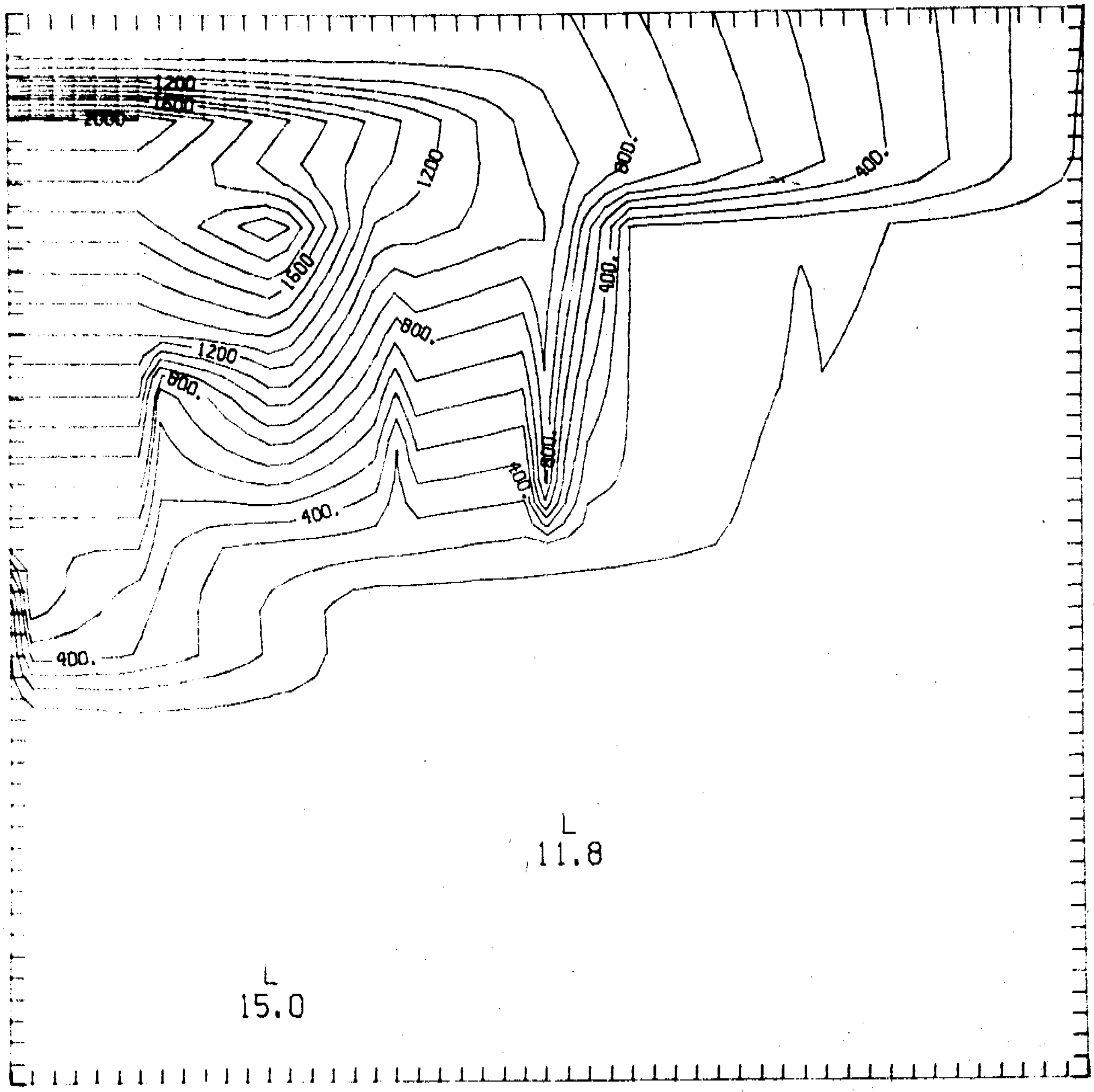
15. Example of the preliminary contour map of the water salinity



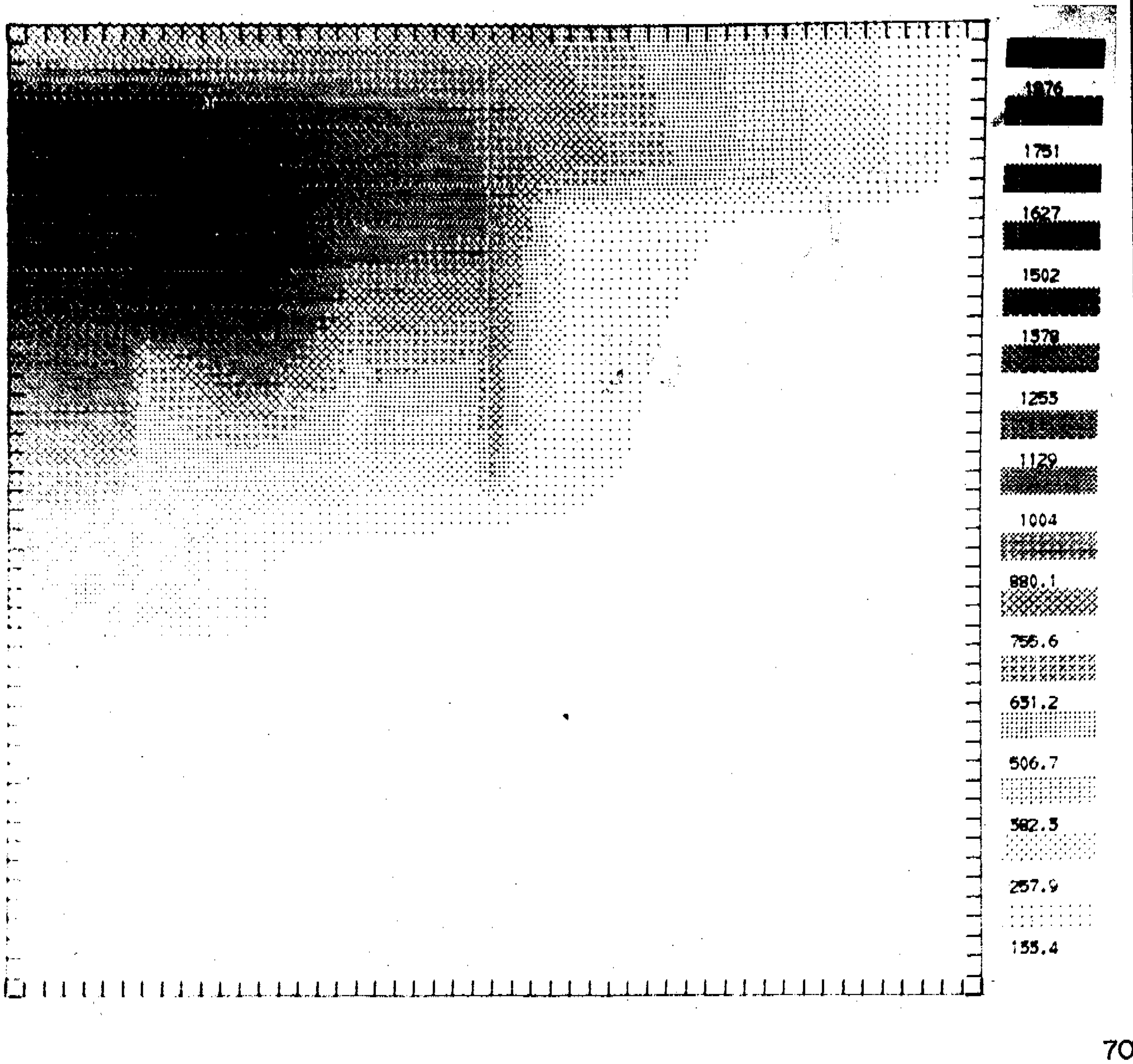
16. Example of the preliminary half-tone map of the water salinity



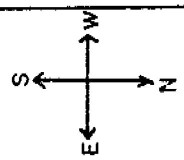
17. Example of the preliminary contour map of the maximum ocean water sampling depth

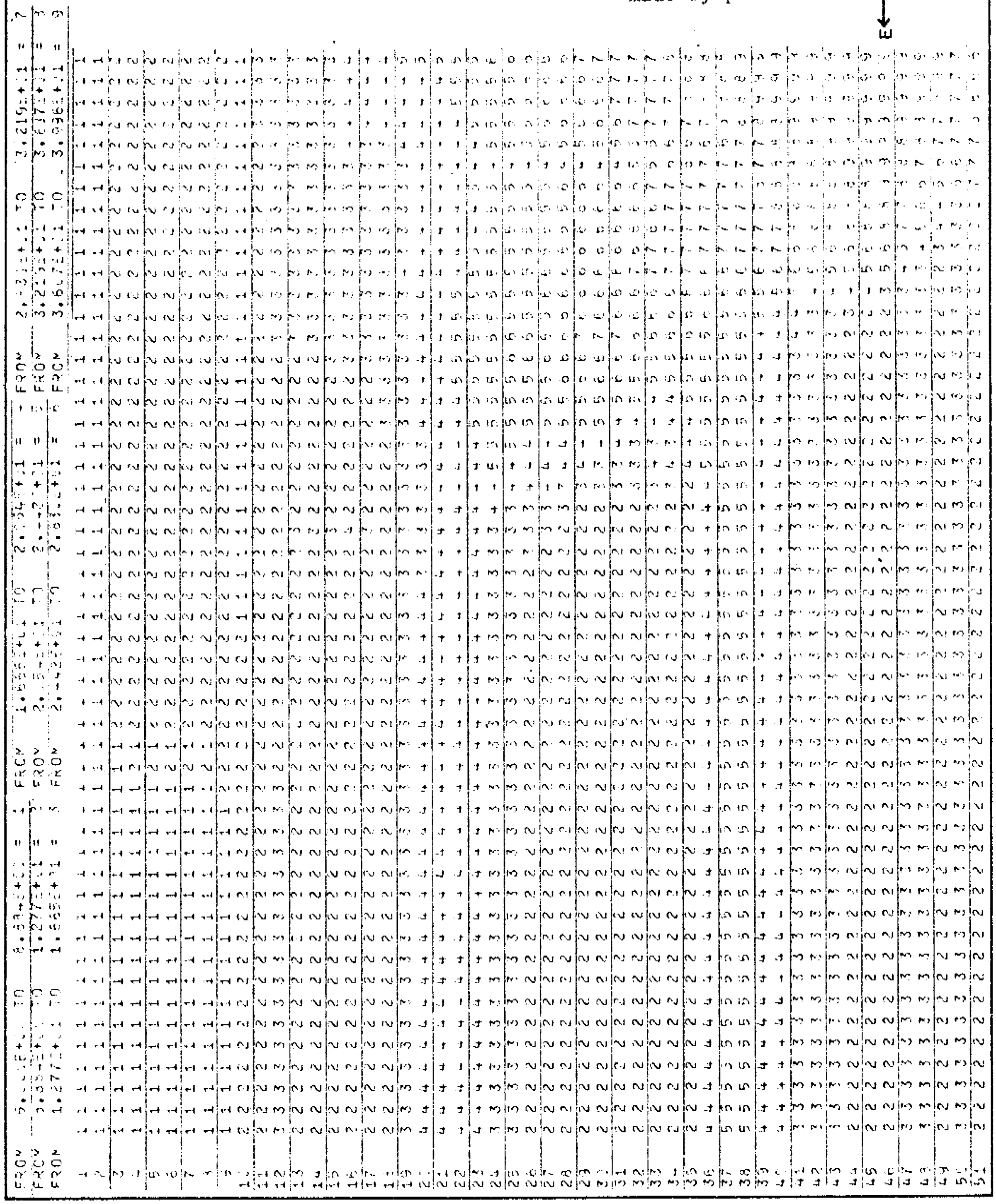


18. Example of the preliminary half-tone map of the maximum ocean water sampling depth

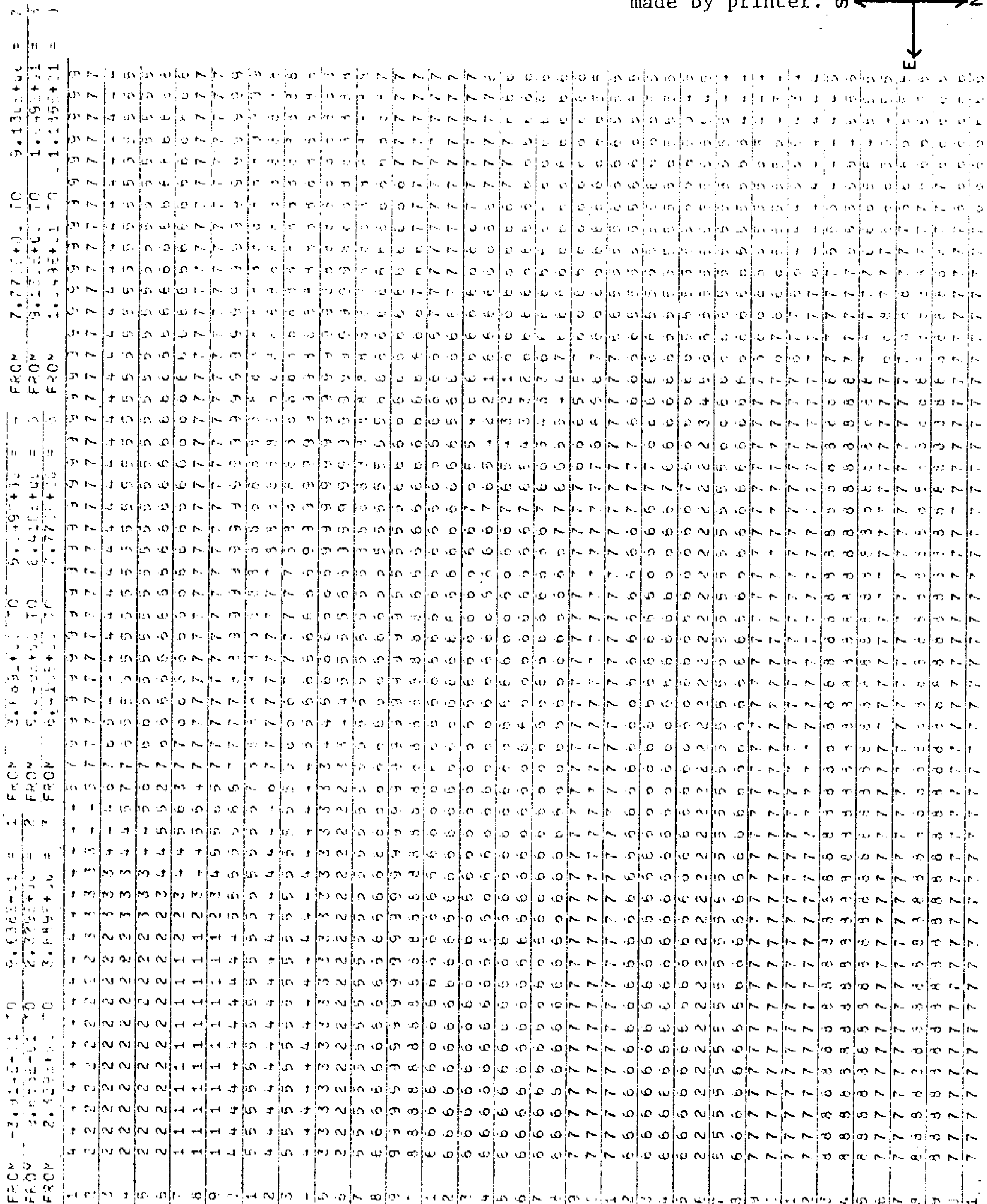


19. Example of the preliminary map of the ocean water temperature made by printer.





20. Example of the preliminary map of the water sampling depth made by printer.



21. Example of the preliminary map of the water salinity made by printer.

```
FROM   2.970E+01 TO   3.029E+01 =  1     FROM   3.204E+01 TO   3.262E+01 =  5
FROM   3.029E+01 TO   3.087E+01 =  2     FROM   3.262E+01 TO   3.321E+01 =  6
FROM   3.087E+01 TO   3.145E+01 =  3     FROM   3.321E+01 TO   3.379E+01 =  7
FROM   3.145E+01 TO   3.204E+01 =  4     FROM   3.379E+01 TO   3.438E+01 =  8
                                         FROM   3.438E+01 TO   3.496E+01 =  9
  1  333333333222222222222222222222222220000000000000
  2  333333333222222222222222222222222220000000000000
  3  333333332222232322222222222222222222000000000000
  4  333333222222132332222222222222222222000000000000
  5  332222222222132333222222222222222222000000000000
  6  222222222222132333322222222222222222000000000000
  7  2222222222221324433333333333333333333333333333333
  8  2222222222221324443333333333333333333333333333333
  9  2222222222222424443333333333333333333333333333333
 10  1222222222222425443333333333333333333333333333333
 11  1111222222222342554433333333333333333333333333333
 12  2222222222333425554433333222222333333333333333333
 13  2222223333334426554433322111122222223333333333333
 14  2223333333344453655544332221112222222233332222222222
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 21  5999999867776654433333333333333333333322443333333
 22  69999988777666554344444333333333322222222444333333
 23  79998888777666664455544443333222222222222444433333
 24  89968888777777775566555554444333333333333355443333333
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 46  99999999999999999999999999999999988888777777766666655
 47  99999999999999999999999999999999988888777777766666665
 48  99999999999999999999999999999999888888777777766666665
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 51  9999999999999999999999999999999999888888777777766656
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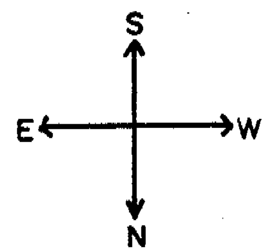

22. Example of the preliminary map of the water temperature made by printer.

FROM	-1.550E+00	TO	-8.942E-01	=	1
FROM	-8.942E-01	TO	-2.333E-01	=	2
FROM	-2.333E-01	TO	4.175E-01	=	3
FROM	4.175E-01	TO	1.073E+00	=	4
FROM	1.073E+00	TO	1.729E+00	=	5
FROM	1.729E+00	TO	2.385E+00	=	6
FROM	2.385E+00	TO	3.041E+00	=	7
FROM	3.041E+00	TO	3.697E+00	=	8
FROM	3.697E+00	TO	4.353E+00	=	9

```
 1  33344444444444444444444444444444400000000000
 2  33344444444454444444444444444444440000000000
 3  33344444445555454444444444444444440000000000
 4  33344445555566453334444444444444440000000000
 5  33344455556673533344444444444444440000000000
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 7  23344555667773623334444444444444444444444444
 8  23344556677863622334444444444444444444444444
 9  23344566778863722334444444444444444444444444
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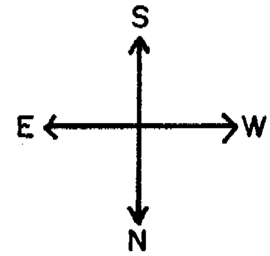

23. Example of the preliminary map of the water sampling depth made by printer.

FROM	1.180E+01	TO	2.327E+02	= 1
FROM	2.327E+02	TO	4.536E+02	= 2
FROM	4.536E+02	TO	6.745E+02	= 3
FROM	6.745E+02	TO	8.954E+02	= 4
FROM	8.954E+02	TO	1.116E+03	= 5
FROM	1.116E+03	TO	1.337E+03	= 6
FROM	1.337E+03	TO	1.558E+03	= 7
FROM	1.558E+03	TO	1.779E+03	= 8
FROM	1.779E+03	TO	2.000E+03	= 9

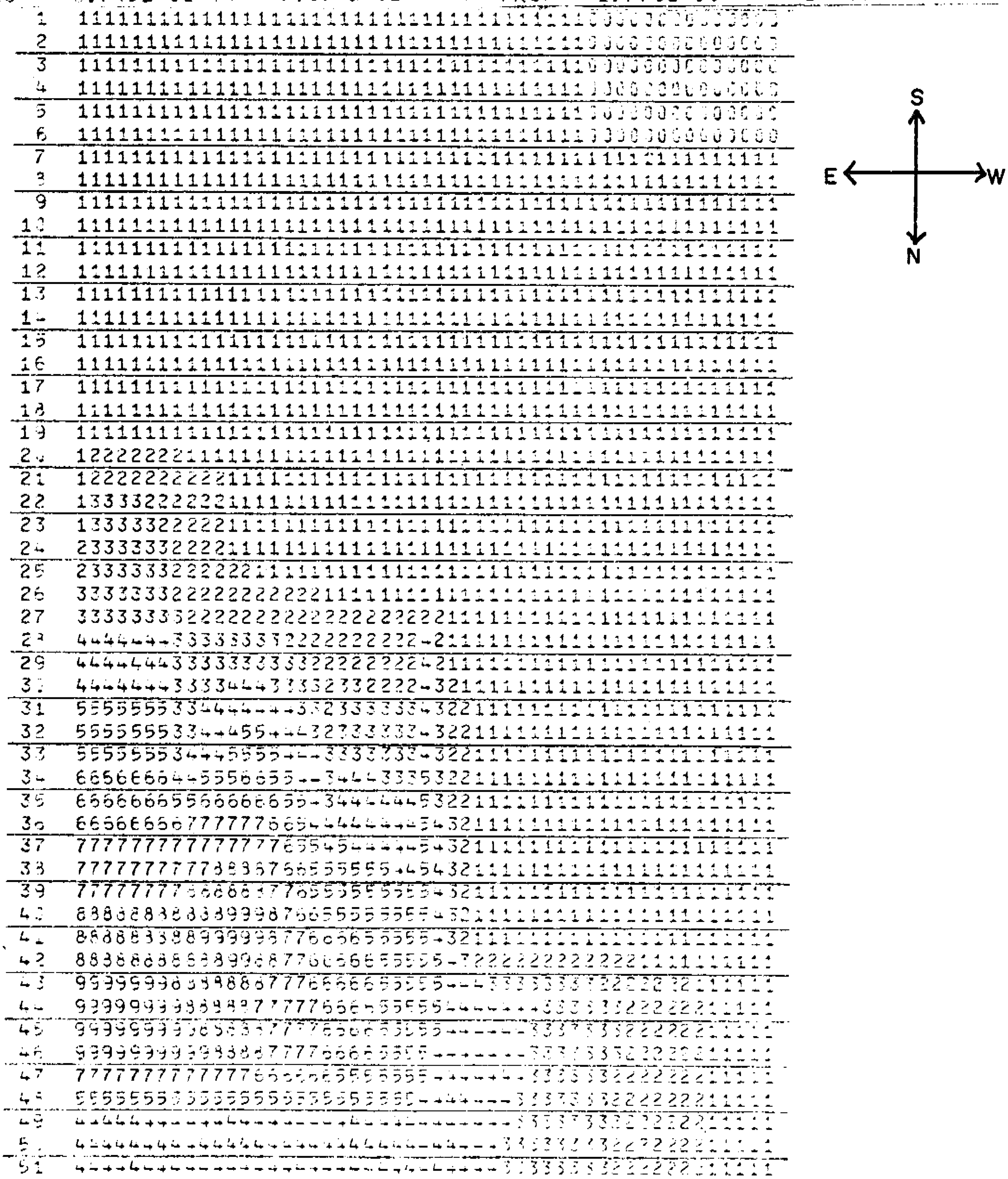

Table 1 Geographical region matrix with observational stations

Table 2 The same region's matrix but after interpolations between stations.

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Table 4 Geographical region matrix with observational stations

22222222222222222222222222222222222222222222222222222222222000000002222002222222222222222222222222000
22222222222222222222222222222222222222222222222222222222222000000002222002222222222222222222222222000
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Data Management System

List of Figures

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Table 3 Cut off region matrix from south and north.

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Table 5 The same region's matrix but after interpolations between stations.

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Table 6 Cut off region matrix from the south and north.

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Submarine Permafrost on Arctic

Shelf of Eurasia

(Continuation)

3. Depth and thickness, cryogenic structures and their formation.

Regional details concerning the area, distribution, thickness and depth of the upper boundary of the permafrost are known in the Arctic seas of the Eurasian, thanks to investigations of many geologists, especially V.M. Ponomarev (1940, 1960, 1961), N.F. Grigoriev (1952, 1964, 1966), V.A. Usov (1967, 1970), Ye. W. Molochushkin (1972), U.A. Zhigarev and T.R. Plakht (1974) and others. The scientists usually specify the kind of submarine permafrost they describe as: simple sediment or rock at a year round temperature below $0^{\circ}C$, ice bonded, brine soaked sediment or cold dry rock at a negative temperature. They specify the permafrost as that: which is in equilibrium with the modern temperature regime and the relict permafrost, which was formed when the climate was colder than now or, in the case of submerged shelf areas, which was formed before submergence. Sometimes the authors try to use the terminology "zone of the negative temperature," not "permafrost" empasizing that the deposits are not ice bonded in spite of their very low temperatures. Usually they explain this phenomena by hydrological, especially hydrochemical conditions of the layers and water (Table 9).

One of the first attempts to show the complicated structure and position of the submarine permafrost in connection with its depth and the sea depth was made by Zyukov et al. (414) in 1953 for the Ob bay area in the Kara Sea (near Ust Port). In Fig. 15 we can see some of the divisions of submarine permafrost. The seasonally freezing and cooled deposits lay directly on the bottom of the bay. Their thicknesses (about 1 m) decrease sharply, when the sea depth reaches 2 m. The authors divide permafrost into (1) seasonally freezing and cooled layers, (2) those separated from the seasonal layers, (3) those separated, and (4) "pereletok" (short term permafrost).

The thickness of permafrost in the Kara sea near Anderma and Vaigach Islands reaches 100 m at the water depth of 4 m, at 5 km offshore, and 60 m at the depth

Table 11-Weight moisture content of coastal delta deposits (for typical boreholes) on the beach near the mouth of the Yana River (in % of dry weight after Grigoriev, 1966 (110)

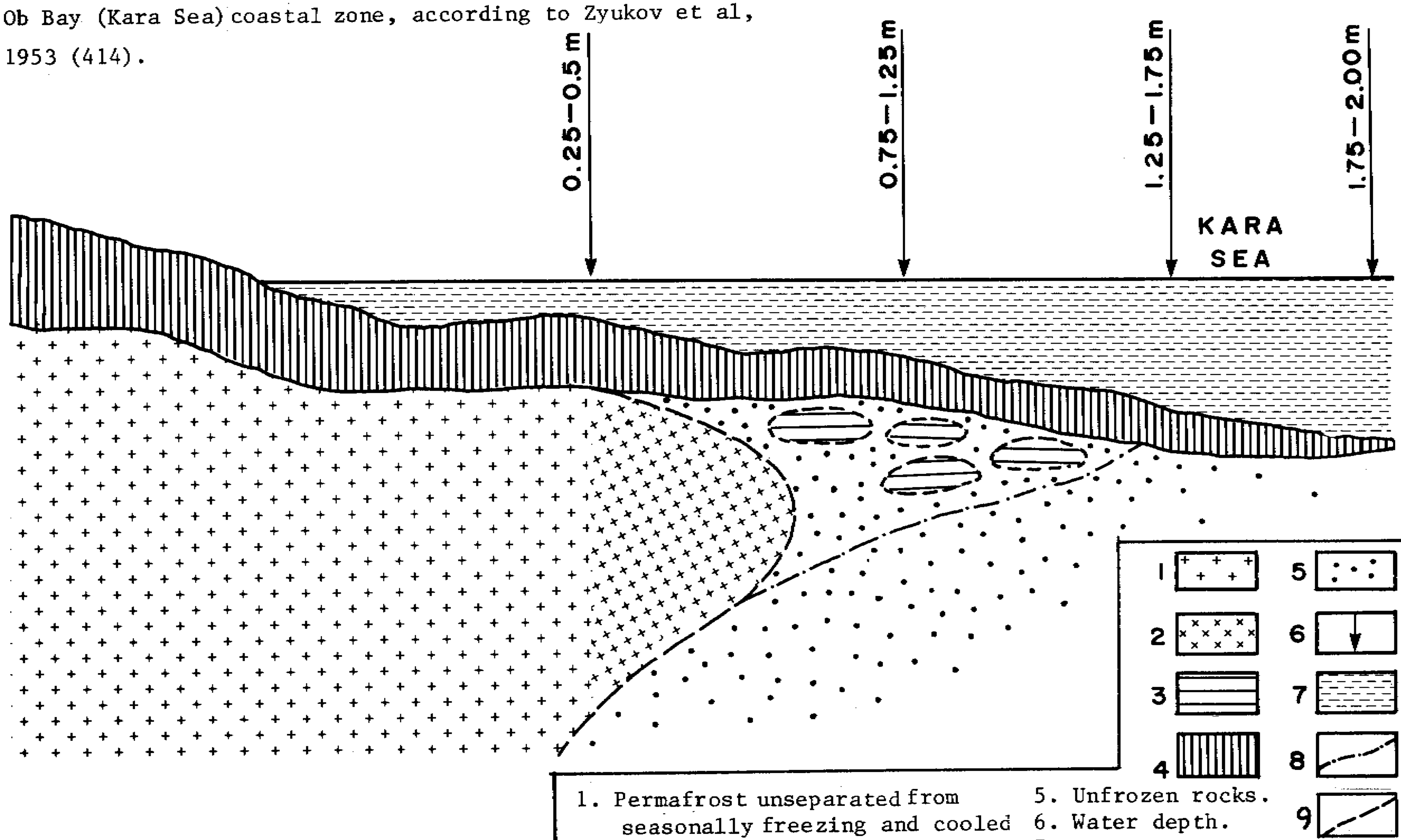
DEPTH m	B 10	B 11	B 16	B 17	B 19	B 20	B 25
0.5	–	56	39	–	28	49	73
1.0	–	229	61	–	41	58	50
1.5	–	172	52	74	45	52	89
2.0	–	32	76	25	77	144	48
2.5	–	29	55	44	52	53	26
3.0	–	35	56	31	42	35	33
3.5	–	33	33	28	56	52	20
4.0	–	27	58	30	55	42	26
4.5	–	37	49	28	–	35	40
5.0	–	142	46	29	–	58	43
5.5	–	40	43	33	–	45	30
6.0	–	27	48	50	–	30	47
6.5	–	26	31	–	–	34	27
7.0	–	24	47	–	–	57	26
7.5	–	47	–	–	–	31	40
8.0	–	23	–	–	–	33	39
8.5	27	24	–	–	–	30	38
9.0	27	25	–	–	–	18	–
9.5	25	24	–	–	–	19	–
10.0	26	22	–	–	–	21	–
10.0	35	–	–	–	–	23	–
12.0	36	–	–	–	–	22	–
13.0	34	–	–	–	–	25	–
14.0	35	–	–	–	–	–	–
15.0	66	–	–	–	–	–	–
16.0	40	–	–	–	–	–	–
17.0	60	–	–	–	–	–	–
18.0	21	–	–	–	–	–	–
19.0	22	–	–	–	–	–	–
20.0	22	–	–	–	–	–	–

or acicular shape of the air bubbles characteristic for river and lake ice. The size of the air bubbles in the ice varies from 0.5 to 3 mm. In the coastal zone of alluvial-lacustrine plains N.G. Grigoriev (1966, 110) discriminated the following regions with different ice saturation of the disperse deposits (Fig. 21):

1. Regions with primary development of ancient thick secondary vein ice (the ice is associated with remnants of ancient alluvial plains). The dimensions of the ice veins are up to 10 m in width to 40-50 m in height.
2. A region with primary distribution of an intermediate density of the network of ice veins (the ice is associated with alassy depressions and floodplains). The dimensions of the ice veins are: up to 2-3 m in width and up to 10-12 m in height.
3. A region with primary distribution of a thin network of thin secondary ice veins. The dimensions of the ice veins are: up to 1-2 m in width and up to 3-5 m in height.
4. A region of primary distribution of bedrock outcrops in which there are no large formations of underground ice.

The thickest and oldest ice veins are encountered in deposits of an ancient alluvial plain. This ice is not developed at the present time. The study of secondary vein ice in shore scarps of coastal plain revealed that the ice veins have a considerable thickness. In width they attain 10 m and are locally traced to a depth of more than 30 m. In many cases the ice veins occupy about 60-70% of the volume of the entire ground mass. In coastal show the form of the ice veins frequently is dependent on the angle at which these veins are cut by the shore. If in their strike the ice veins are directed perpendicular to the shore they usually have the rather regular form of narrow wedges or vertical columns. In those cases where the ice veins (especially intersecting ones) are cut by the shore at an angle, their form is more complex. Thus, in natural shows, as a result

Fig. 15 -Schematic cross section of the permafrost in the Ob Bay (Kara Sea) coastal zone, according to Zyukov et al, 1953 (414).

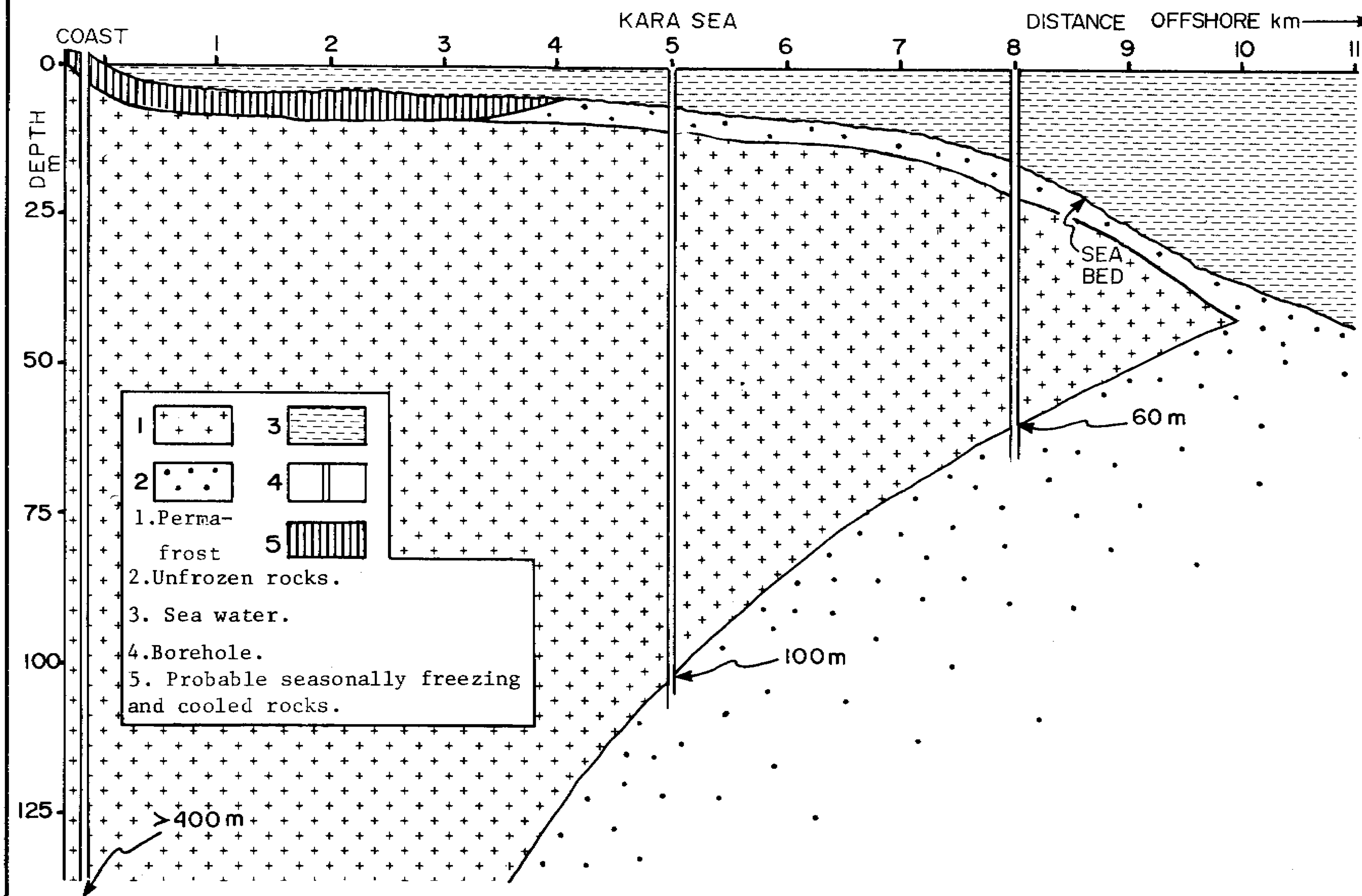


1. Permafrost unseparated from seasonally freezing and cooled layers.
2. Permafrost (separated from seasonally freezing and cooled layers.)
3. "Pereletok" (short term permafrost)
4. Seasonally freezing and cooled layers (seasonally thawing in the coastal area above the sea level).
5. Unfrozen rocks.
6. Water depth.
7. Sea water.
8. Boundary of "Pereletok"
9. Boundary of permafrost.

of intensive melting and destruction of the shore scarp, the form of the cross sections of the ice veins can change very rapidly, even in the course of a single summer season. The depth of the upper parts of the secondary vein ice is not everywhere the same. This depth varies from 0.7 to 3 m and the depth of the upper parts of the ice veins is usually greater than the depth of summer thawing. The upper parts of the ice veins in general have a mostly even surface as if they had been melted. The lower parts of the ice veins, in rare cases, are clearly visible in the shows; more frequently they are covered by land slips or extend deeper than the bottom of the shows.

Ice veins are also encountered on the bottom of alassy basins forming as a result of the melting of thick masses of ancient secondary vein ice. On the even surface of the alassy with thick peat bogs and a dense mossy cover extremely favorable conditions exists for frost cleft formation and the formation of secondary vein ice. Some of these ice veins were formed at the time of draining of the lake and others are forming at the present time. The ice veins in the alassy usually have a small thickness and a regular wedgelike form. The depth of the upper surface of the ice veins generally does not exceed the depth of seasonal melting of the ground, which is from 20 to 40-50 cm. In the sandy deposits of the coastal marine plain, the secondary vein ice is poorly developed and is characterized by a small thickness. The upper parts of the ice veins are usually found at a depth of 0.5 - 0.6 m; their width is 0.5 - 1.0 m. They are traced most frequently to a depth of 1.0 - 1.5 m. In the sandy deposits of the coastal marine plain secondary vein ice is extensively developed only in places which have peaty, silted and glazed horizons. Secondary vein ice is developed very extensively in deposits of the present-day floodplains. The upper parts of the ice veins are usually encountered at a depth of 0.5 m. The width of the ice

Fig. 16 -Schematic cross section of the bonded permafrost position and thickness in the area of the Vaigach Islands and Amderma, according to Vittenburg ,1940(377) and Neizvestnov,1973 (245).



veins is 1.2 m and in rare cases 4 m. There is a vertical extent of the ice veins of 1-3 m and in rare cases 8 m.

On the coastal zone of Yakutia the development of the ice in deluvial deposits can frequently be judged from the forms of clumplike microrelief which are extensively developed on the slopes of the bedrock masses.

Among the structural peculiarities of the layers of frozen disperse deposits, the geologists include the appearance of "ice tectonics." In the numerous scarps of the ancient alluvial plain and the scarps of the alassy and the flood-plains it is common to observe singular forms of folds and layered frozen ground along side contacts with the ice vein.

The clear separation of the layers of frozen ground, which is observed in the polygonal blocks between the ice veins, is caused in most cases by ice inclusions in the form of horizonal intercalations with a thickness of 1-3 cm, less frequently 10 and even 20 cm. This is the so-called "spurious stratification" caused by the inclusion of ice intercalations forming at the boundary with the seasonally thawing layer and not having anything in common with the primary stratification of the frozen ground. As a result of this clear stratification of the frozen ground, the flexure of the layers along the side contacts with the ice veins is clearly visible. A smooth flexure of the layers occurs as a result of the gradual growth of secondary vein ice. Despite the monolithic nature and density of the frozen ground, and as a result of the enormous lateral pressure, which increases in the width of the ice vein, the ice can become denser and be bent into folds. The flexure of the layers thus can not be regarded only as a result of nonuniform thawing within the polygons. The development of the polygons is caused primarily by growth of the ice veins and the ridges forming on the surface of the polygons are a result of pressure exerted on the ground by the growing ice veins.

Table 9-Freezing temperature of sea water of different salinity (from N.N.Zubov,1944)

SALINITY ‰	FREEZING TEMPERATURE OF SEA WATER °C
0	0.0
10	− 0.5
20	− 1.1
30	− 1.7
40	− 2.2
50	− 2.8
60	− 3.4
70	− 4.1
80	− 4.8
90	− 5.6
100	− 6.4
110	− 7.1
120	− 8.0
130	− 8.8
140	− 9.8
150	− 10.5

15 m, at 8 km, offshore (Fig. 16).

In the Laptev Sea (Kojevnikov Bay) the thickness of the permafrost at the distance 3 km offshore is more than 66 m and the permafrost body is separated by several layers of unfrozen rocks (Fig. 17). In the eastern part of the sea the surface of the bonded permafrost becomes lower from 35 m to 2 km to 85 m at 10 km offshore (Fig. 18). The borehole reached the big lense of buried ground ice at a depth of 86 m. The geologists did not give the data about submarine ice thickness in this area, but lenses of ground ice in submarine conditions in the Euroasiatic shelf of the Arctic ocean are the usual phenomena. For example, in the Kara Sea near Amderma the ice lense was reached at a depth interval of 28.55 to 42 k in the "ancient valley" continuing from the continent to the shelf. Fig. 19 shows the position of this lense, Fig. 20 the temperature data for the same lense.

The almost universal presence of underground ice, which varies in form, dimensions and origin, is the most characteristic peculiarity in the structure of permanently frozen Quaternary deposits, developed on the seacoast. It has been established that this underground ice, of considerable thickness, is not buried or fossil remnants of valley glaciers or continental glaciation, but is an entirely independent formation having a water, not a firm origin. According to the classification formulated by P.A. Shumskiy (1955), all the main ice formations present in the upper layers of the frozen stratum can be classified as the ice cement of frozen rocks, segregation ice and secondary vein ice. It is also possible to differentiate ice forming during the burial of snow "pereletoks" and drifts, during the freezing and burial of floodplain lakes and other variants of underground ice.

In the considered regions, those underground ice formations of greatest

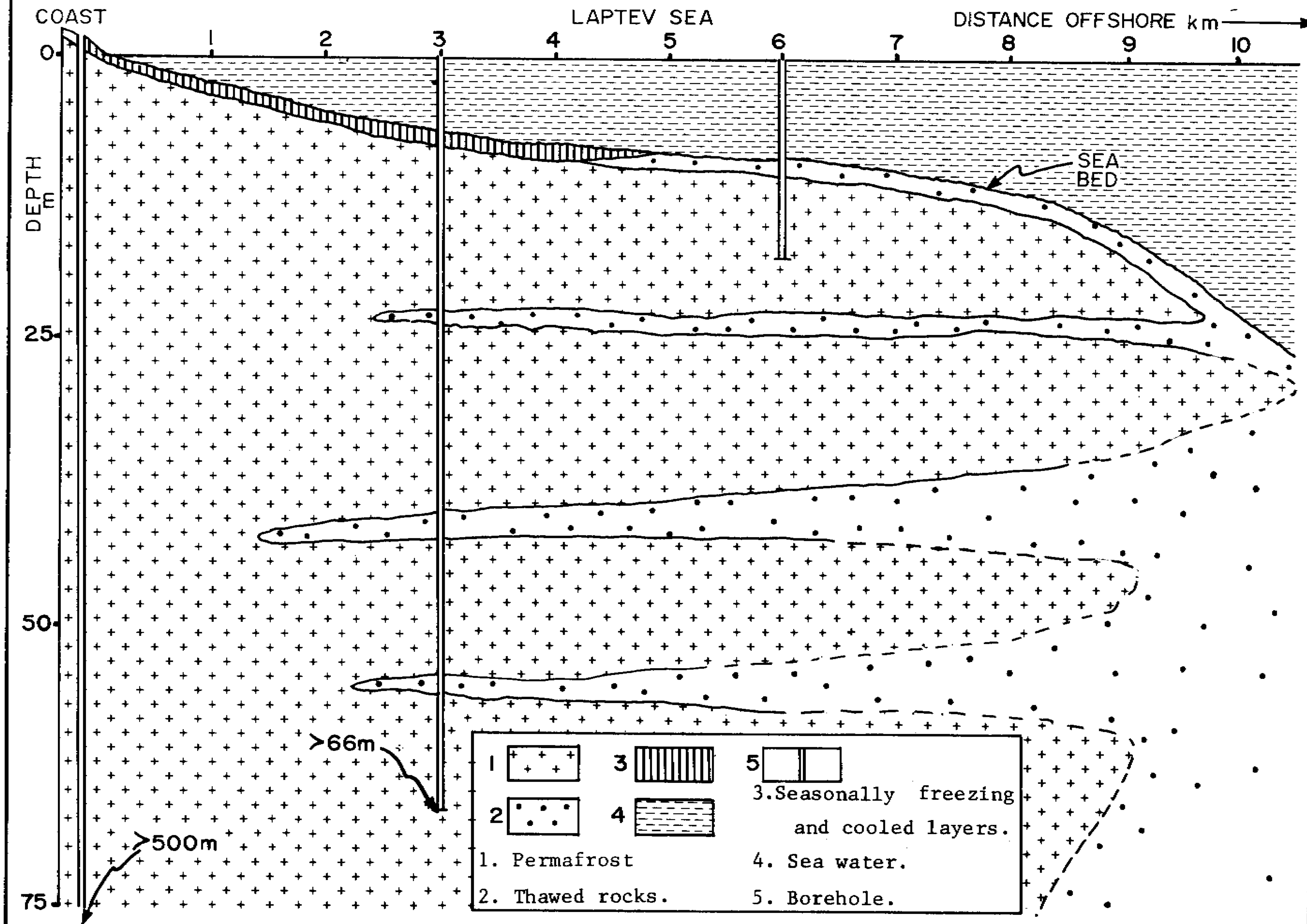
Table 10 -Moisture and salts content in shelf deposits,April-May 1969. according to Katasonov and Pudov,1972 (147)

DEPTH m	MOISTURE IN % OF DRY WEIGHT	pH	SALTS CONTENT (g IN 100g)	SALINITY
	BOREHOLE 64			
1	22.0	5.5	2.245	HIGH
3	25.6	7.2	0.757	MODERATE
11	32.0	6.0	1.273	HIGH
15	17.0	7.9	0.451	WEAK
20	26.0	7.0	0.541	MODERATE
25	28.0	7.26	0.320	WEAK
35	29.6	6.0	0.606	MODERATE
40	23.5	6.72	0.256	NON SALINE
50	22.2	6.0	0.292	NON SALINE
BOREHOLE 96				
1	19.4	6.38	1.421	HIGH
8	36.8	7.22	1.160	HIGH
25	23.6	7.94	0.411	WEAK

volume are the secondary vein ice formations. The general features of the mechanism for the formation of ice veins can be represented in the following form. In the case of great vertical temperature gradients in the upper horizons of the stratum of permanently frozen rocks frostlike tracks are formed. The annual repetition of cracking in the permanently frozen layers and the freezing of the water penetrating into the frost clefts, appearing in one and the same place, leads to the formation of the large frost vein. Horizontally, such ice veins usually form a polygonal lattice. As a rule, the cracking of the permafrost layer occurs at the depth greater than the thickness of the seasonally thawing layer and therefore the ice veins forming during winter do not thaw during the summer. Intensive frost cracking on the coast occurs primarily in highly icy peat and silty ground. The depth of the frost clefts can be different (from 1 to 4 m) depending on the thickness of these horizons and on the nature of the underlying rocks.

The most favorable conditions for the growth of secondary vein ice are the conditions of a floodplain regime. Here the surface horizons are always greatly moistened, peaty and silted. In addition, under floodplain regime conditions the growth of secondary vein ice can occur syngenetically, that is, simultaneously with the accumulation of precipitation, and thus ice veins can grow both in width and height. Secondary vein ice can grow both syngenetically and epigenetically, that is, can form after there has been an accumulation and freezing of the entire stratum of deposits. The most distinguishing characteristic of secondary vein ice is vertical stratification caused by the inclusion of mineral and plant admixtures entering the frost clefts with the water. Another of the distinguishing characteristics of the structure of secondary vein ice are the fine air bubbles dispersed in the ice mass. In the secondary vein ice the air bubbles have been rounded, elongated or slightly dendritic form, in contrast or a true cylindrical

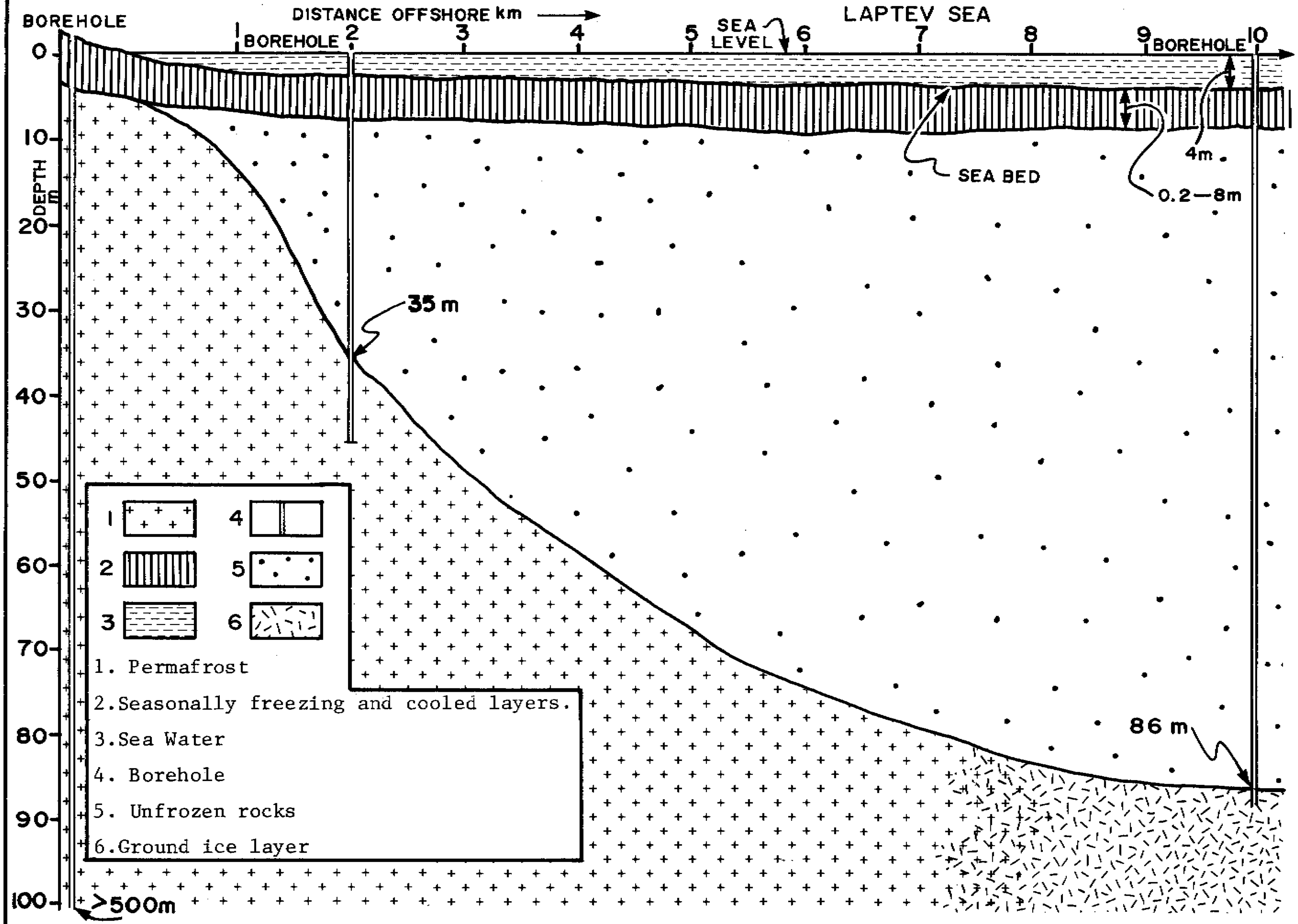
Fig. 17-Schematic cross section of the submarine bonded permafrost position and thickness in the Kojevnikov Bay, according to Ponomarev 1940 (265),1950(266), 1960(269).



The slight smooth concavity of the ice intercalations in the polygonal blocks probably corresponds to the lower isothermal surface of the once-existing seasonally melted layer. However, deep "coffer" folds outlined by ice intercalations scarcely coincide with the position of the surface of the seasonally melted layer.

In Grigoriev's opinion (110), the position of the isothermal surface is caused by pressure from the growing ice vein (the direction of the ice intercalations along the lateral contacts with a vein is almost vertical). As a result of such pressure the smoothly warping ice intercalations are deformed, sometimes folded and in many cases bent back almost at right angles. The nature of the contact between the ice veins and the ground mass is evidence that the main masses of secondary vein ice in ancient and modern alluvial deposits of the coastal lowlands increased simultaneously with the accumulation of sediments in the floodplain regime. At the present time, intensive growth of syngenetic secondary vein ice is observed in extensive sectors of floodplains (this is graphically indicated by the presence of growing ridges on the surface of the polygonal floodplains). However, on the ancient alluvial plain the growth of ice veins is not noted at this time. In the coastal scarps of the ancient coastal plains, one also finds vertical thin veins of ice from 10 to 30 cm in thickness which have been traced to a depth of only 3-4 m. The nature of ice stratification and the bedding of the surrounding ground indicated that these veins have an epigenetic origin. This kind of thin epigenetic ice vein is also formed in thick ancient synegentic ice veins, but the growth there is evidently difficult. The age of the deposits one the coastal plain is indicated by the ancient age of the syngenetic secondary vein ice. If the onset of formation of the ancient coastal alluvial plain is related to the beginning of the Middle Pleistocene, the onset of freezing of the unconsolidated Quaternary deposits and the formation of thick

Fig. 18-Bonded permafrost in the eastern part of the Laptev Sea, according to Grigoryev 1973 (111) and Zhigarev & Plakht , 1974 (405).



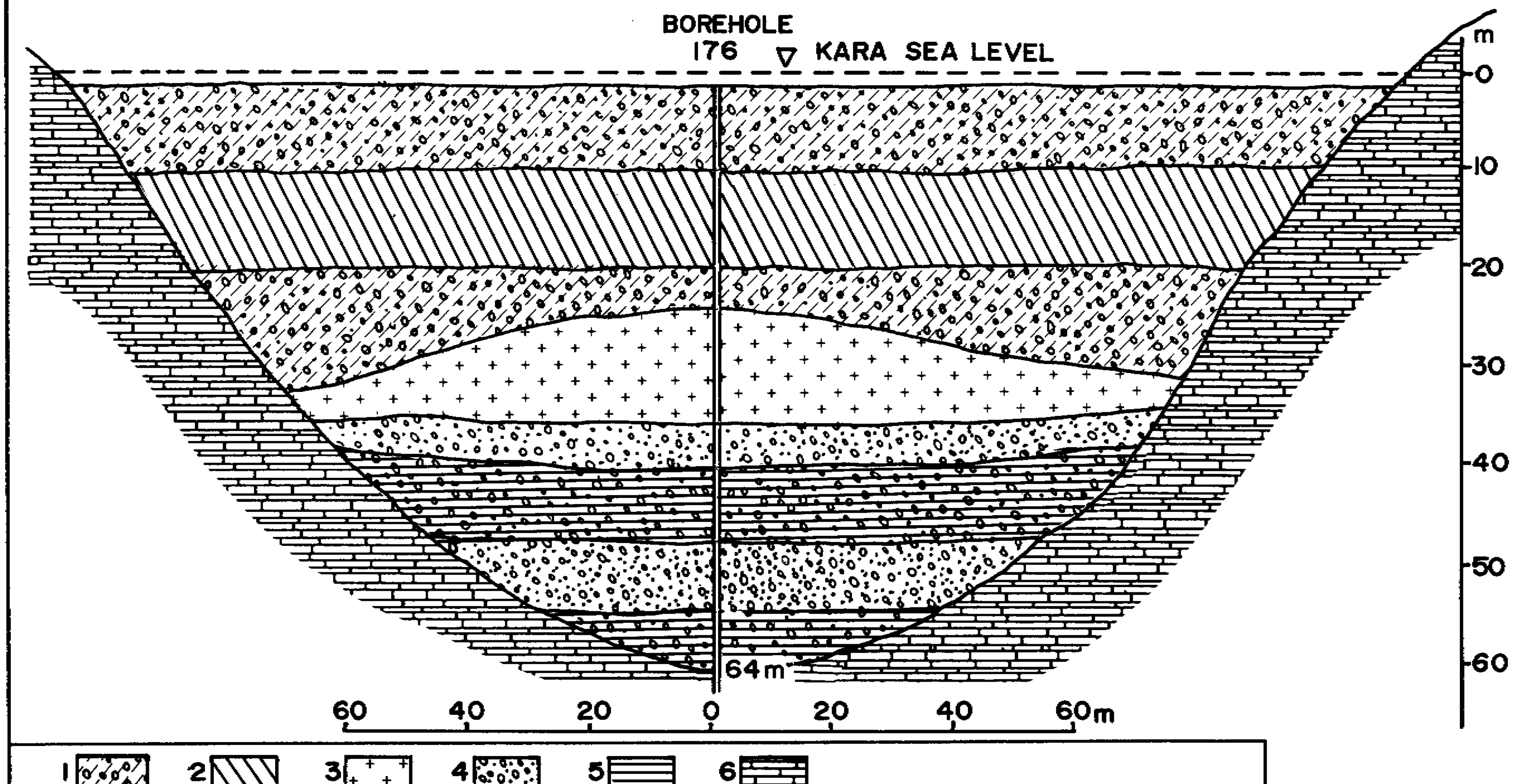
underground ice is related to the same time. However, the main mass of epigenetic vein ice has a Holocene age. The broad development of secondary vien ice in all elements of Quaternary deposits is evidence that the conditions for the development and growth of ice were favorable during the course of the entire second half of the Quaternary period.

Simultaneously with the secondary vein ice of syngenetic and epigenetic orgin, constitutional ice, scattered through the entire mass of frozen ground, developed extensively in the layers of permanently frozen ground in the coastal and shelf parts of the Arctic on the north of Eurasia. This ice is represented for the most part by ice cement and segregation ice. The first was formed as a result of the rapid freezing of moisture present in the ground pores and the second as a result of the segregation and freezing of moisture migrating in the ground pores toward the freezing front. This increased ice content constitutes the most characteristic peculiarities of the permanently frozen ground layers developed in the coastal shelf zone.

The thickness of the permafrost on the Arctic islands sometimes reaches 220 m but in the submarine conditions around the islands it usually decreases by 35-5 m at the distance offshore of 10-15 km.

In general the picture of the main features of the submarine permafrost distribution in the Arctic seas looks as it is shown in Fig. 22. Of course, this figure shows only the scheme of the relict Pleistocene and Holocene permafrost of the coastal plains, shelf and islands. The characteristics and distribution of recent permafrost, including submarine permafrost characterized by seasonal and partly multi-year cryogenic stages, will be considered later and be shown in greater scale. In the illustration (Fig. 22), we can see that the permafrost is usually not monolithic but often a discontinous body, half being separated by unfrozedn deposits. We can see also the trend in the

Fig. 19-Geological cross section of the "anceint valley" innundated by sea water in Amderma (Kara Sea), according to Ponomarev 1960 (269)



1. Sandy loam with gravel. 3. Ground ice with sand in upper part. 5. Clay with gravel.

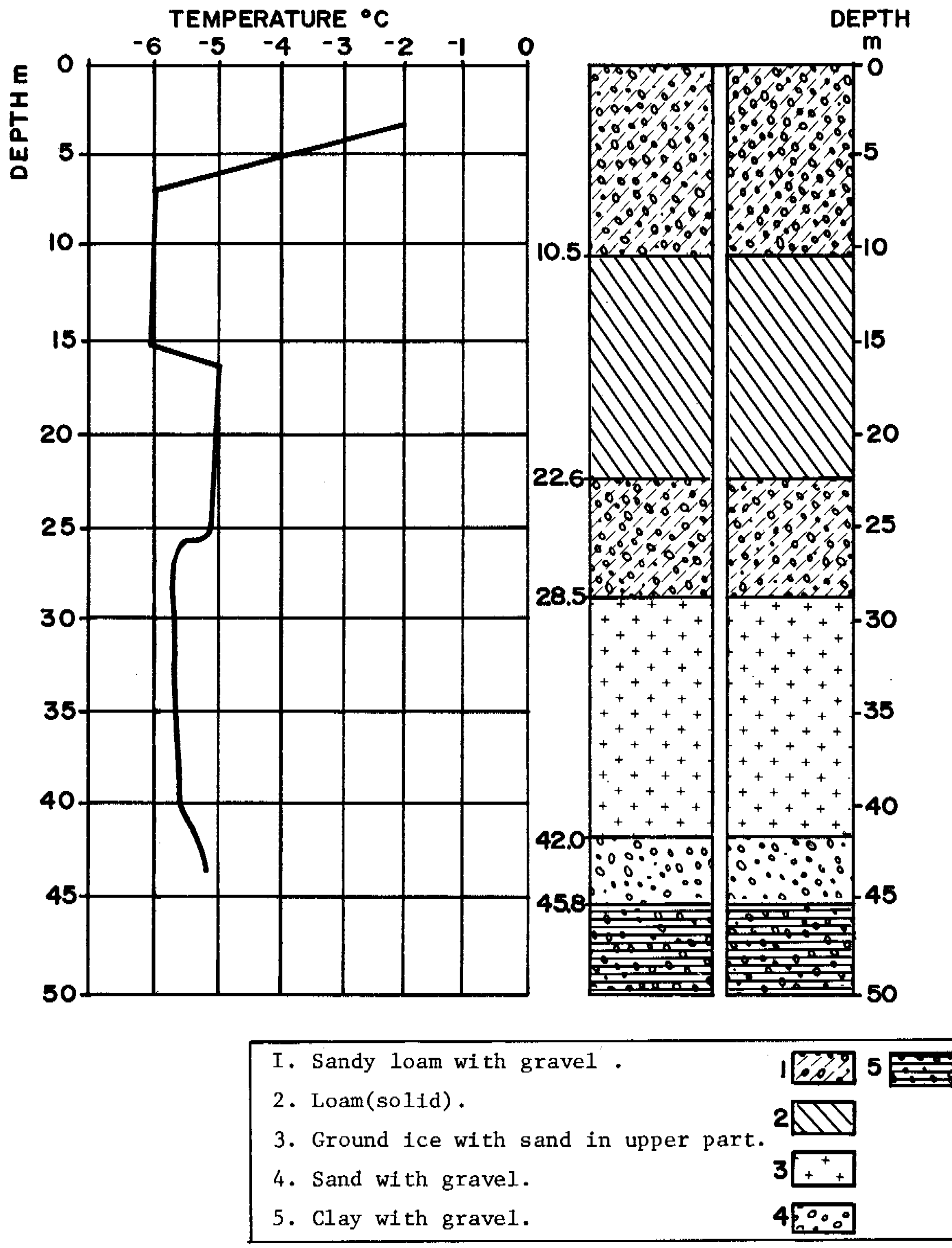
2. Loam (solid). 4. Sand with gravel 6. Limestone.

permafrost depth and thickness decreasing in the offshore direction and the limits of these characteristics are typical for the Arctic shelf of Eurasia.

Cryogenic phenomena found in Pleistocene formations on the shelf provide evidence of the existence of permafrsot, although the mere fact of their presence or absence in the cross-section affords no basis for paleogeographic conclusions. In order to reconstruct the history of permafrost formation, to determine the time of freezing of the sediments whose age has been ascertained on paleontological and chronological data or by means of other methods, one must find convincing proof that a given cryogenic phenomenon developed together with accumulation of deposits i.e. syngenetically. This is the prime condition. Furthermore, cyrogenic phenomena do not occur everywhere, even under the most severe climatic conditions. They are characteristic of only definite sediments and particular facies. Sometimes horizons which lack any "traces of frozen ground" may therefore be erroneously attributed to a warmer period.

It seems very difficult to solve the problems relating to the syngenesis of cryogenic phenomena and their association with those or other formations, even if the physical substance of all these phenomena could be ascertained. The geologic-cryogenic regularities controlling the development of these phenomena can only be explained with the aid of adequate research methods. One of those methods is the frozen-ground facial analysis of Quaternary formations. It is justified by the following facts. In cross-sections, properties of the sediments are studies as may provide distinguishing evidence of their genesis (mineral composition, stratificaiton pattern, faunal and floral remains, etc.) and facies. At the same time such syngenetic cryogenic phenomena are identified that are already known to bear traces of permafrost action. In subaqueous sediments, they appear in two forms: either oblique or vertical cryogenic forms. In subaerial formations, the leading features are a stratified or striated cryogenic texture, as well as ice veins with irregular border contracts.

Fig. 20 -Temperature of the ground ice in the Kara Sea, according to Ponomarev 1960 (265).



I. Sandy loam with gravel .
2. Loam(solid).
3. Ground ice with sand in upper part.
4. Sand with gravel.
5. Clay with gravel.

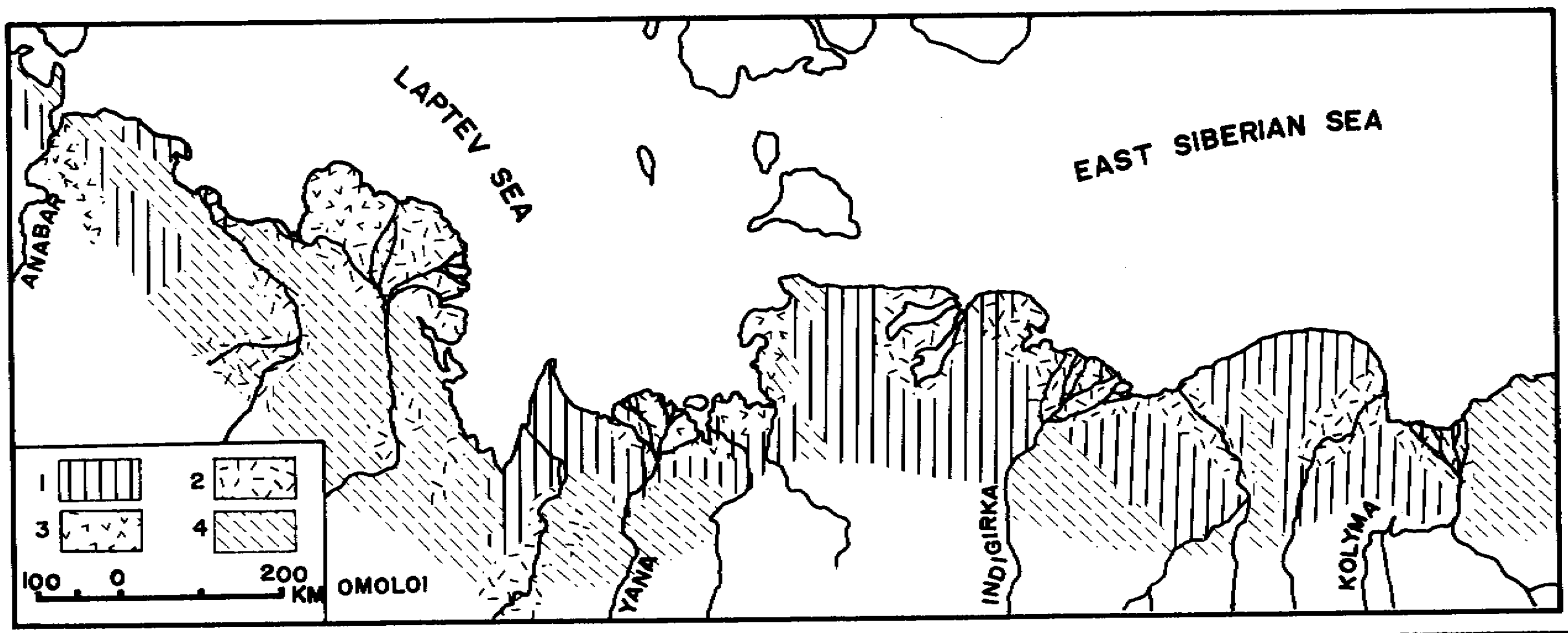
The thus ascertained syngenetic freezing of the sediments, occurring in the cross-section and in a definte area, must be correlated with the facies from which cryogenic phenomena are absent or in which they are recorded by forms occurring in the active layer of permafrost.

Since the early fifties, some places of the Eurasiatic northern seas and (on particular) its shallow-water coastal area were chosen as the "proving ground" for the comprehensive investigations of the layers of shelf deposits that had been transformed by cryogenic processes. In 1971 S.M. Fotiev* had proposed the terms "subaquatic cryogenic stratum," or SKT for such kind of layers, SFL for seasonally frozen layer, and STL for seasonally thawed layer. Some works were carried out by the expedition of the USSR Academic of Sciences and Moscow State University in the eastern part of the Vanicina gulf (Laptev Sea). In 1972 Ye. Katusonov and G. Pudov published the results of the criolithological investigations of this area. In Fig. 23 we see that permafrost is developed in most of the area under the sea ice. The depth of the permafrost here is more than 50 m. The area under unfrozen sea water is "talik." There are three lithological sorts of deposits under Vanking Gulf: silty sands, silty aleurites and sandy aleurites. The authors divide all these deposits into two series. Upper one is wet and ice saturated (70-45%). The lower one looks "dry" and very dense. Sands and aleurites of the lower series have the fissures filled by ice crystals. The material of the upper series is less dense, viscose after melting, and often flowing. There are many "broken" lenses of ice with thickness about 1.5 cm. They create the cross-bedded cryogenic structures and the small fissures are half filled by crystals of ice. The upper series is high

* The article "Role of the Chemical Composition and Mineralization of Subterranean Waters in the Freezing Process . . ." TR-PNIISA, Vol. 11, 1971.

Fig 21-Schematic map of distribution of disperse deposits with different ice saturation in the coastal zone of the Yakutia, after Grigoriev, 1966 (110).

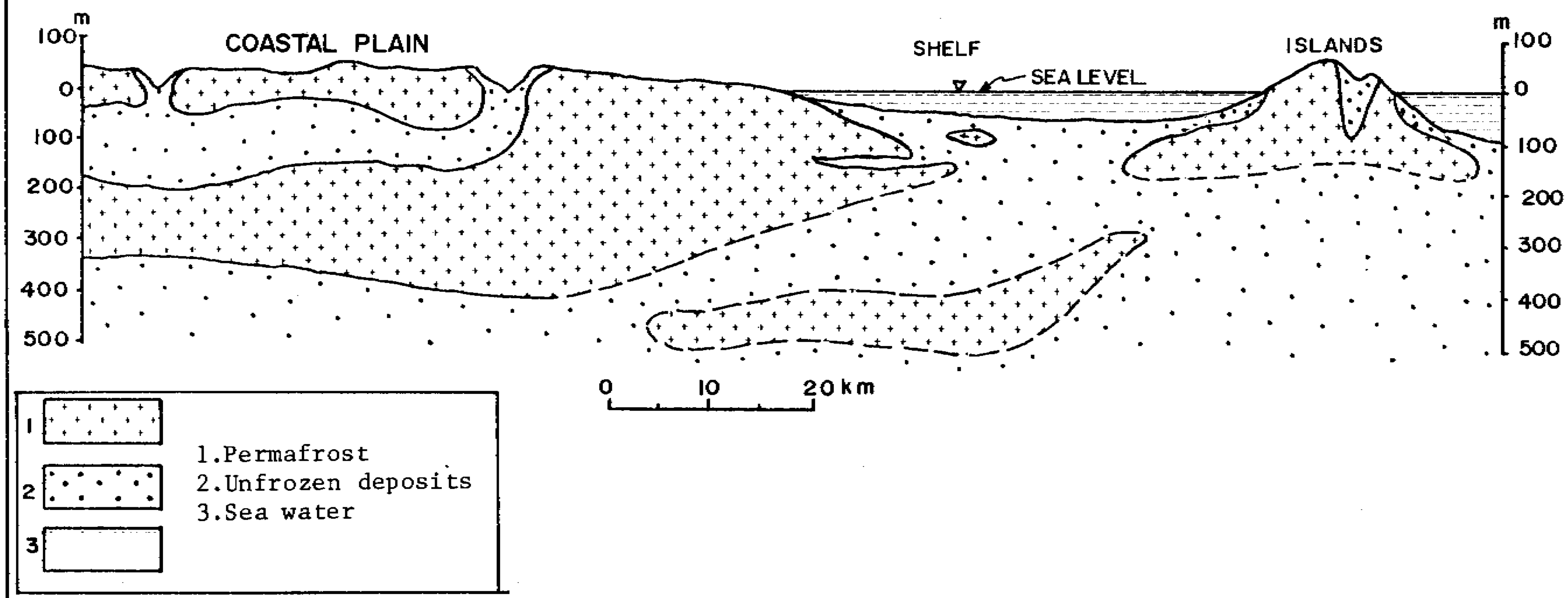
1. Regions with primary development of ancient thick secondary vein ice associated with remenants of ancient alluvial plains (dimensions of ice veins up to 6-8 m in width and up to 40-50 m in height.
2. Regions with primary distribution of intermediate density of network of ice veins associated with floodplains and alassy (dimensions of ice veins up to 2-3 m in width and up to 10-12 m in height.
3. Regions with primary distribution of thin networks of thin secondary vein ice associated with remenantsof sandy coastal marine plain (dimensions of ice veins up to 1-2 m in width and up to 3-5m in height.
4. Regions with primary distribution of bedrock outcrops.



in salts (chlorides and sulphates of magnesium, calcium and sodim). The lower one has the fissures completely filled by ice crystals. This series is unsalted. Table 10 show the moisture and salinity of the deposits for the different depths in this area. Because of the definte regularity of the ice content, the cryogenic structures distribution and the properties of the deposits, the geologists made a conclusion that differences of the two series could be explained with a cryolithological approach. They supposed that the more time the deposits had been in an unfrozen state and subjected to the diagenesis and consolidation, the weaker and more monotonous the ice formation process must have been. On the contrary, the transition of the deposits from an unfrozen to a frozen state was fast, then these deposits were not subjected to serious changes and the cryogenic structures were developing much more intensively. The authors distinguished three types of permafrost in the sedimentary deposits: (a) Singenetic type, if the deposits were not changed by the final moment of the complete freezing. Their formation took place near the surface due to the influence of the permafrost basement. Typical cryogenic structures are usually layered for subaerial and cross-bedded for subaqueous deposits. (b) Parasingenetic type, if the deposits were formed in the permafrost conditions but were in an unfrozen state for a long time. They had been consolidated and fissured; which is why the fissure cryogenic structures are typical for them. (c) Epigenetic type, if the deposits had been formed before the permafrost conditions. These cryogenic structures are connected with tectonic dislocations and lithogenic cracks forming the large blocks.

Katsonov and Pudov suppose that the cryogenetic structures of the upper series of deposits (Fig. 23) were formed singenetically in the relatively salted Holocene basin. The lower one was formed in the middle Pleistocene, it has the parasingenetic cryogenic structures formed in the fresh water basin. We can see that in spite of

Fig.22-Schematic cross section of the submarine relict Pleistocene and Holocene permafrost distribution on the Eurasiatic part of the Artic Ocean shelf, according to Ivanov 1969 (124), Ponomarev 1960 (269), Katasonov and Pudov, Usov 1967 (363), and others.



the fact that both series are very similar lithologically, they are different in the cryolithological sense.

M. Ivanov's investigations (1969), (124) of the cryogenic structure of coastal-delta perenially frozen deposits show the following:

1. In the structure of most of the sectors of the beach areas of river mouths situated on the coast of the Laptev Sea and the East Siberian Sea the principal components of this stucture are coastal-delta deposits represented primarily by sands, sandy and clayey aleurites, and also silts and clays. The structure of the upper layer of perennially frozen sandy and clayey aleurites is characterized by slitlike voids with a width up to 1 cm. and a length of 3-4 cm, whose formation is evidently associated with temperature stresses in the bottom sediments during their freezing. In these same deposits one also finds obliquely and vertically arranged tubular voids with a width to 3mm and a length up to 40 cm, associated with the vital functioning of mud-eaters (worms), moving about in the layer of thawed ground.

2. The moisture-ice content of coastal-delta and marine deposits varies in a rather wide range (Table 11). In determining the moisture content of ground taken from boreholes drilled in the bottom of the beach areas at the mouths of the Indigirka and Yana Rivers, the geologists usually noted a tendency to decrease in the moisture-ice content of bottom deposits with depth, and only at individual horizons, to which the accumulation of segregation ice or ice cement is associated, is this tendency impaired.

3. Foredelta deposits are also characterized by the broad development of massive cryogenic textures, the formation of fissured and radial textures, and also intercalations and lenses of ice with broken outlines. A pecularity of this complex of foredelta deposits is that they contain secondary vein ice forming during the freezing of the bottom deposits under the layer of ice covering them (Fig. 7, 9).

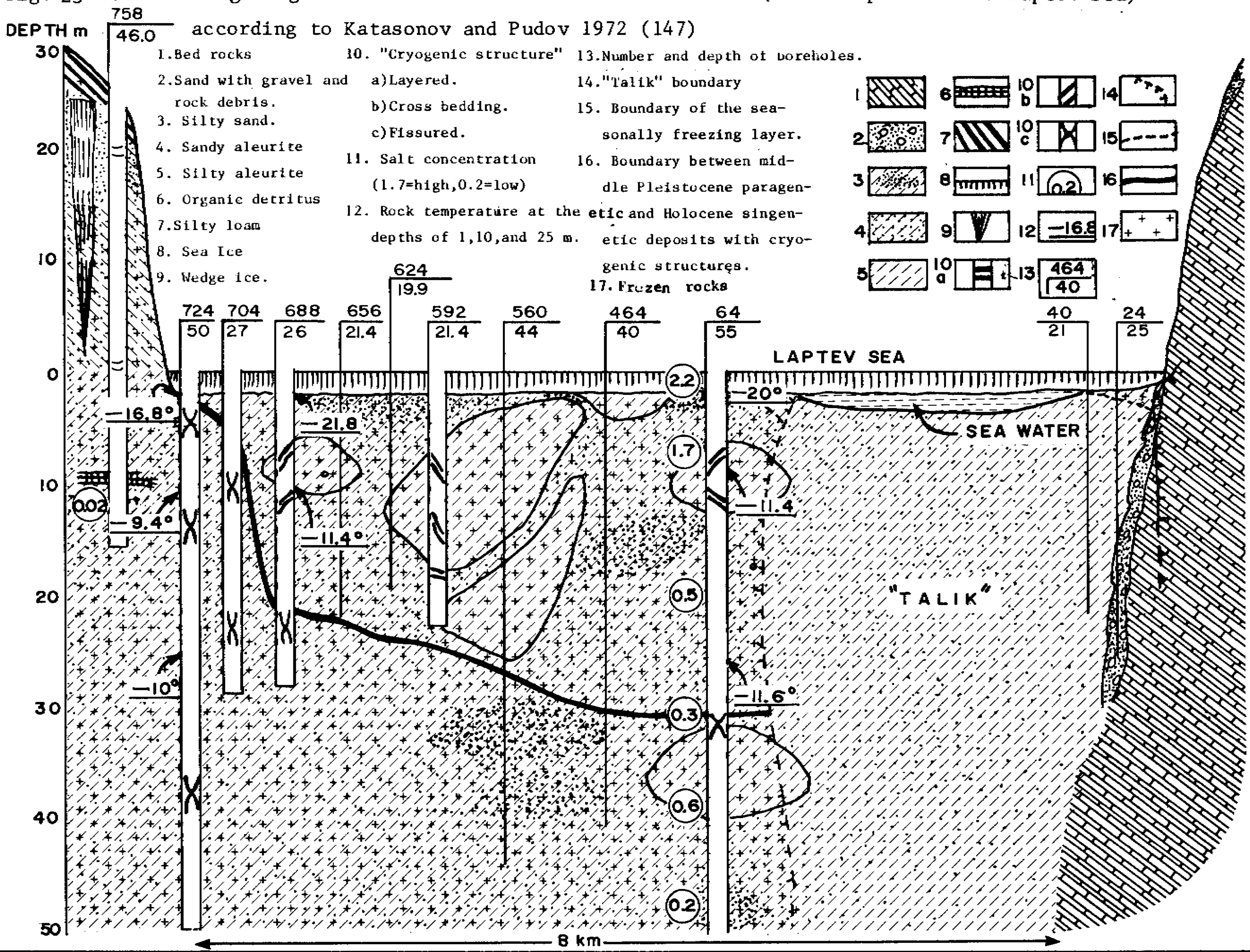


Fig. 23 -Permafrost geological cross section of the Vankina Gulf (eastern part of the Laptev Sea) according to Katasonov and Pudov 1972 (147)

The silty deposits usually underlying the layers of sandy aleurites are characterized not only by ice cement, but also by individual schlieren and intercalations of ice with a granular structure. In many cases the horizontal ice intercalations have vertical offshoots which create an irregular rectangular grid.

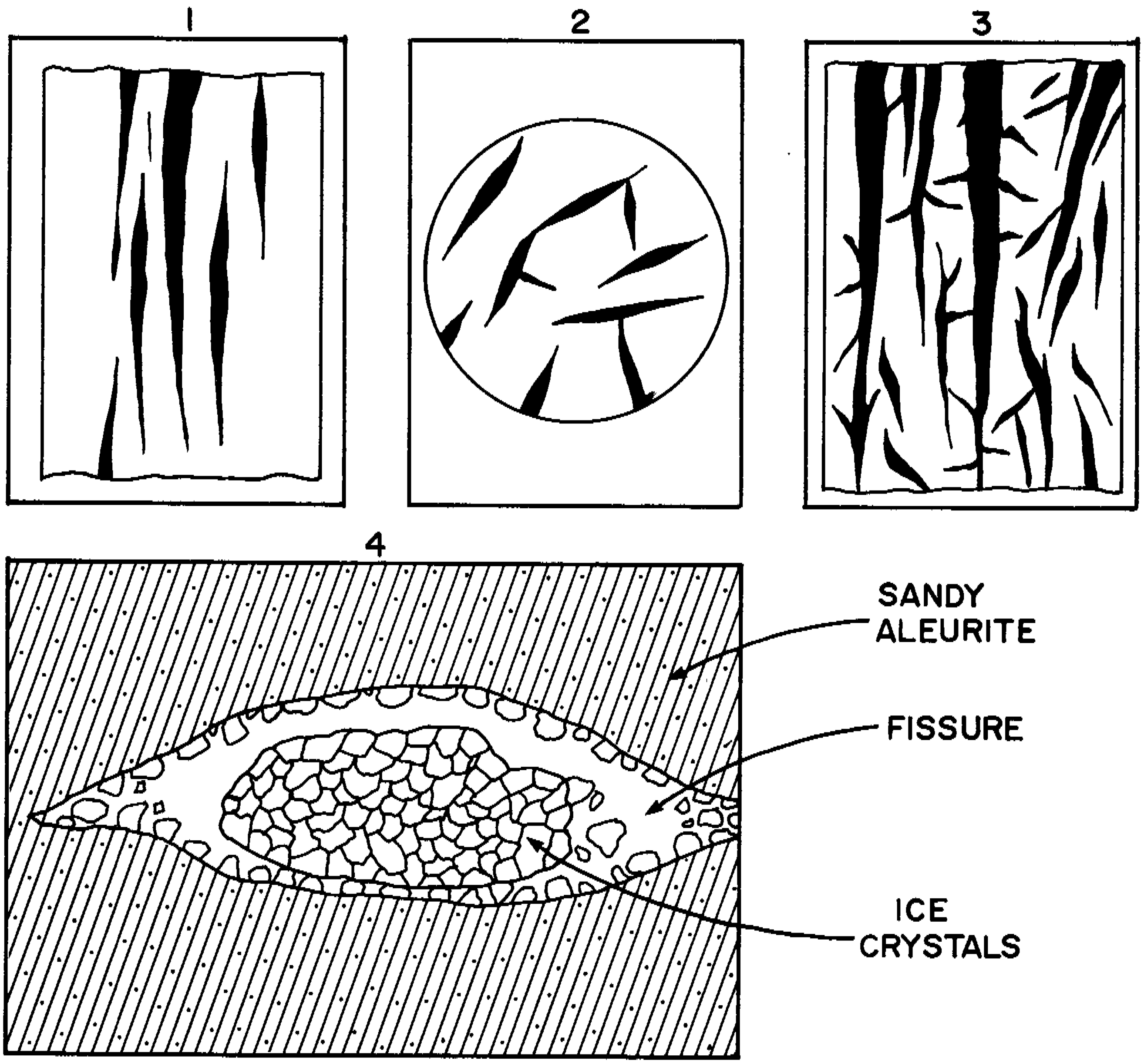
The texture-forming ice consists of rounded trains similar to fish eggs measuring up to 1-2 mm, not firmly bound one to the other. The ice grains are usally covered by a dull whitish encrustation. In individual schlieren with voids at the center the granular ice in many cases makes up only the walls of the schlieren. The granular structure of the texture-forming ice which we encountered in the frozen silty deposits on the bottom of the beach area at the mouth of teh Indigirka is evidently associated with the salinity of the bottom sediments. The tiniest particles of salt could serve as singular centers for the formation of individual grains of ice during the freezing of bottom sediments.

The broad propagation for texture-forming ice having a granular structure is also indicated by the fact that such ice is present in the frozen silty deposits laying on the floor of Siellyakh Bay in the Laptev Sea and on the bottom of the lagoon on Vil'kitskiy Island, situated in Kara Sea (Fig. 25,26). The cryogenic structure of the seasonally freezing layer in general is similar to the cryogenic structure of the upper layer of permanently frozen ground. In the case of syngenetic freezing, when with the accumulation of precipitation the upper surface of the permanently frozen stratum rises, the lower horizons of the seasonally freezing layer pass into a permanently frozen state. At the same time, the cryogenic textures forming in the seasonally melted layer are simultaneously preserved.

The formation of different types of cryogenic textures is dependent on the facies of the ground, the moisture content and the nature of freezing. The following is the P. A. Shumskiy approach, N. F. Grigoriev, 1966 (110):

Fig. 24 - Fissure ice, according to Ivanov, 1969 (124).

1. Vertical fissure ice in consolidated aleurite, longitudinal section
2. Vertical fissure ice in consolidated aleurite, transverse section.
3. Cryogenic structure of radiating fissure ice in the silty sand and aleurite of the seasonally frozen bottom layer deposits.
4. Horizontal fissure in modern frozen deposits.



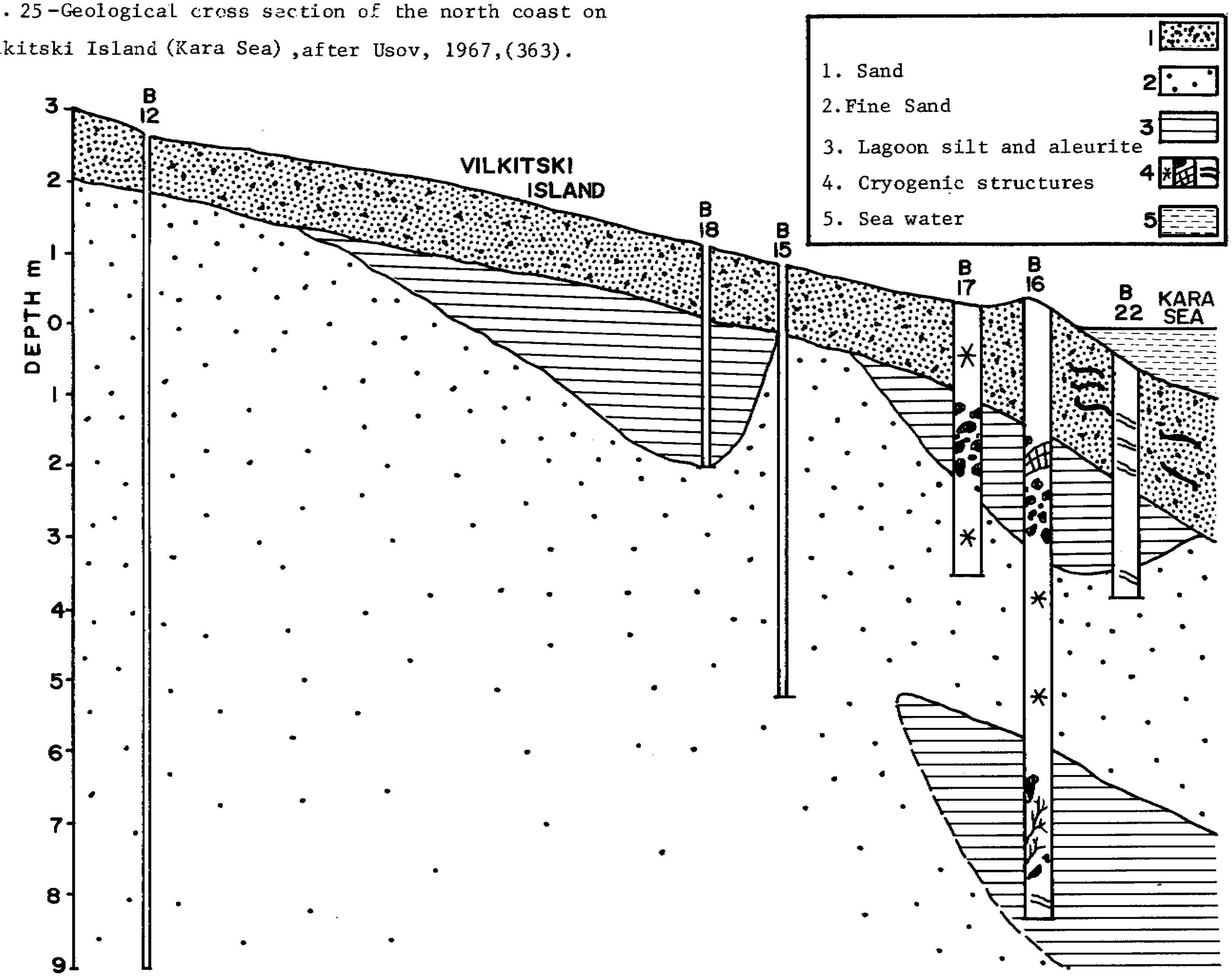
following is the P. A. Shumskiy approach, N. F. Grigoriev, 1966 (110):
1) Fused, characterized by the development in the ground pores of only very small formations of ice cement; 2) cellular or reticular, for which the formation of intersecting ice intercalations in the ground is typical; 3) layered, clearly expressed intercalations of ice and ground.

Earlier, Ye. M. Katasonov 1960 (144), 1962 (145) had formulated a detailed classification of cryogenic textures for the principal genetic varieties of both seasonally and permanently frozen Quaternary deposits which can be used as well for the ground in the Eurasiatic coastal and shelf areas of the Arctic Ocean (Fig. 27).

Later, the same author published the more detailed "Classification of Frost-Caused Phenomena" (1973,148) dividing them into two categories: (1) Surface phenomena including relief forms due to freeze and thaw, such as small and large polygons, frost fissures, frost-heaving mounds, ostioles, mud strips and (2) Subsurface one, among which ground and ice veins, streaks deformations of sediments occur. Cryogenic phenomena include moreover slope troughs (dells) produced by thermo-erosion, icings, thermokarst depressions, as well as depressions formed as a result of the melting of glacier ice. His classification presented below (Fig. 28) refers to phenomena but not to the deposits in which they occur.

The author divides cryogenic phenomena into subterraneous and correlated surface structures--according to their genesis i.e. to the conditions under which the deposits were accumulated and frozen. The choice of such a classificatory distinction is inspired by the necessity of correlating the pheonmena under consideration with the properties of components (including also paleontologic remains) and the structure of Quaternary sediments. Such a classification is designed to serve geocryology (permafrost studies) and paleogeographic purposes.

Fig. 25 -Geological cross section of the north coast on Vilkitski Island (Kara Sea) ,after Usov, 1967,(363).



Depending on the accumulational environment, present-day cryogenic phenomena are being divided into two groups namely into subaqueous or subaerial ones.

Subaqueous cryogenic phenomena are due to freezing of the aqueous sediments, deposited in abandoned river chanels (oxbow), lakes and marine coastal zones. Characteristic of these formations are incrustations and agglomerations of ice. At the surface, the presence of ice is revealed by bulgunnyakhs rather than frost-heaving surfaces. The latter are not always well-developed and are not therefore presented in the table.

Subaerial cryogenic phenomena are being initiated during freezing of the sediments accumulated on flood plains, in deltas and on slopes. They fall into two sub-groups:

Terrace-delta cryogenic structures which are characteristic of alluvial, deltaic as well as fluvioglacial formations. The sub-group of cryogenic slope phenomena comprises all thos that occur in colluvial-solifluciton, eluvial and colluvial formations. It further includes the phenomena occurring in the eolian sediments and peaty swamps deposited on the surface of supra-inundational terraces and watershed plateaus.

Subaerial cryogenic phenomena are associated with particular forms of accumulational surfaces, with slopes, whether steep or gentle, with various landscape types. Moisture of the active layer provides the most reliable index of such topographic, or rather frozen-ground facial conditions which are likely to either promote or inhibit the development of those or other cryogenic phenomena. Abundant moisture leads to formation of ice veings and small ice layers. In dry places with a deficiency of water in the active layer, ground veins are usually the result. These conditions have been marked in the classification table in which the cryogenic phenomena occurring in "swampy" and "dry" slope facies are distinguished from the deltaic and terrace ones.

Fig. 26-Ice inclusion forms in the shallow water deposits of the sea embayment, (enlarged four times) according to Usov 1967 (363).

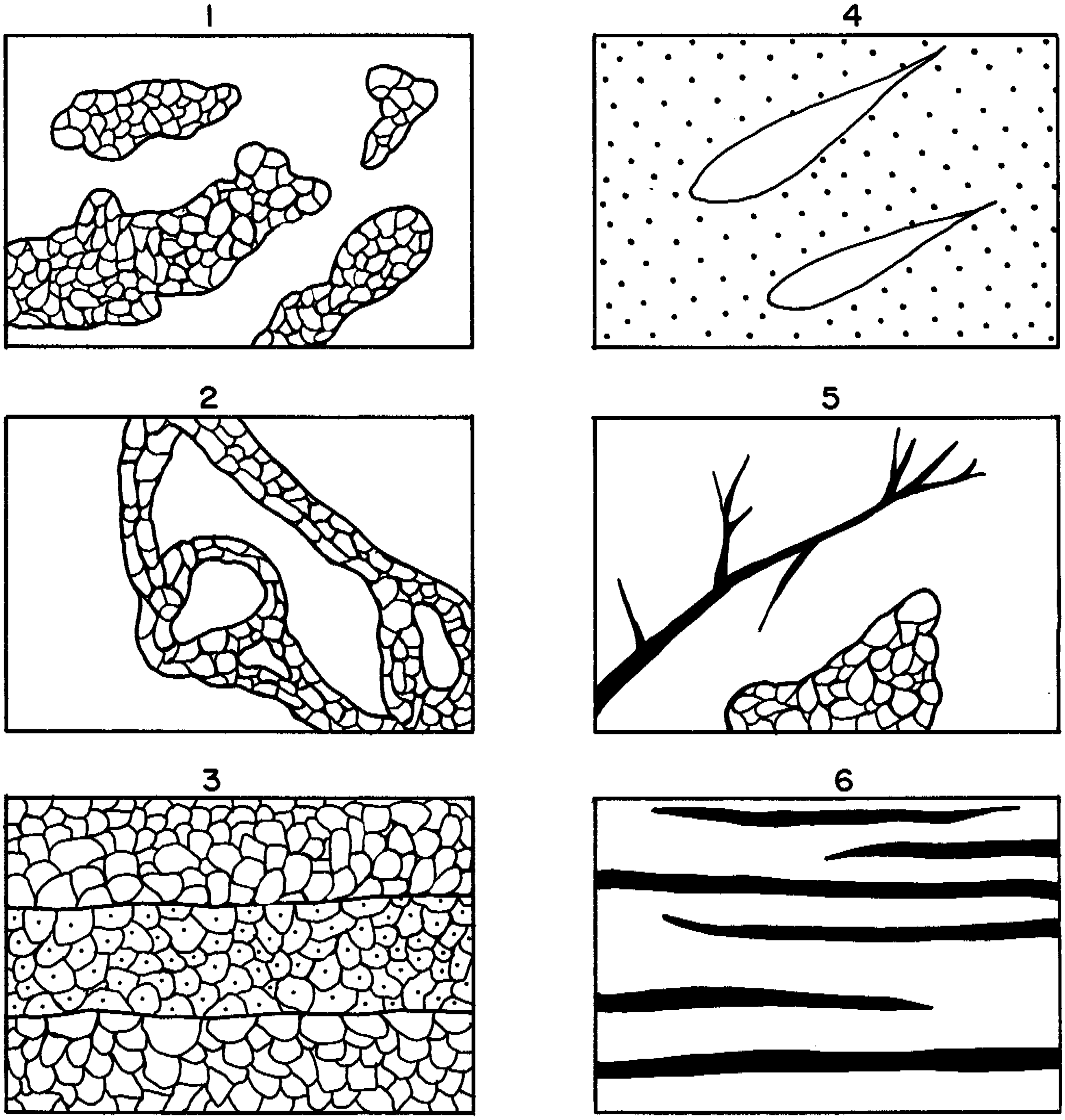
1&2. Ice inclusions in the upper lens of the lagoon deposits.

3. Injected layered corse-crystaline ice.

4. Closed cavity ice on walls.

5. Injected ice inclusions in the lower lens of the lagoon deposits.

6. Layered cryogenic texture of the submarine slope.



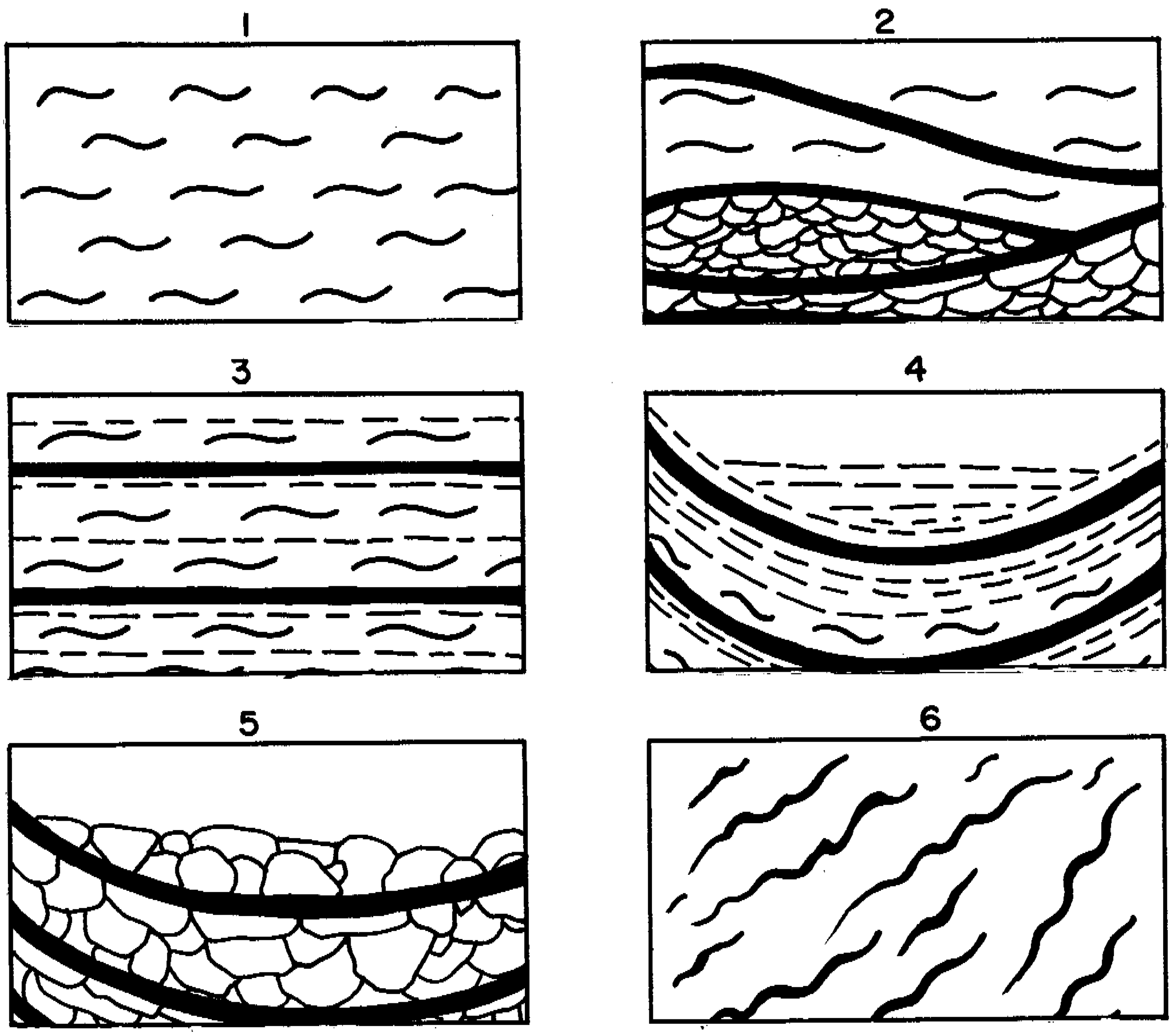
The frozen-ground facial conditions which determine the composition and moisture content (the amount of ice) of present-day sediments are responsible for the depth of thawing, the thermal conditions of rocks and consequently for the intensity of cryogenic processes in any given area. Ye. M. Katasonov thinks therefore, the cryogenic processes should be regarded as a complemenatry indication of frozen-ground facial conditions. In the classification table a distinction is made amoung: (1) Physical processes such a migration of film water, injection and crystallization of water, etc.; (2) Mechanical processes which produce disintegration, displacement and crushing of the material, its sorting, deformation of layers during frost heaving, frost cracking, and (3) Specifically geologic processes which cause preservation of ice and solifluction. This division is somewhat simplified in that various processes may operate simultaneously, encroach upon one another or one may give rise to another. In this classification, the morphogenetic criteriam permits to derive logical conclusions certifying to the existence of a relationship between cryogenic phenomena and specific sediments, frozen-ground facial conditions of both their accumulation and their freezing.

Frozen-ground facial conditions can be most readily reconstructed on the basis of occurrence of ice which originates syngenetically ynder the influence of pre-existant permafrost. In subaqueous deposits, ice takes the form of either oblique or vertical lenses and schlieren, which repeat the sape of taliks. In subaerial formations, ice accumulations appear in the form of intervening layers at the border between the active zone and permafrost.

Tiny ground and umus veins, corresponding with micropolygons are in fact widespread cryogenic phenomena occurring principally on slopes and developing within the active layer under conditions of denudation and instability of accumulation. Such small veins together with the large ground veins that reflect the polygons of the active layer which have 10-30 m in size and with ice wedges due to cracking

Fig. 27 -The most widely occuring cryogenic textures of permanently frozen Quaternary deposits, according to Katasonov, 1962 (145).

1. Thin lenticular, characteristic of deposits (facies) of dry slopes.
2. Gently undulating lenticular or recticular, characteristic of deluvium (facies of gentle wet slopes)
3. Horizontal parallel bedding, characteristic of floodplain deposits.
4. Concave parallel bedding, characteristic of deposits of polygonal flood plain (with ice veins).
5. Concave, parallel bedding, recticular, characteristic of deposits in troughs and wet medows.
6. Obliquely bedded ,cryogenic, forming during freezing of bottom slopes.



of the passive zone of permafrost, constitute a series of frost-fissure polygons.

Deposits with higher moisture content (accumulation of ice) that fill the marshy and peaty dells thaw to a depth of hardly 0.4-0.8 m and yet the mean annual temperature is low (down to -6^{0}C); frost cracking occurs within the permafrost, thus inducing formation of ice veins but no ground veins. The sediments of the ridges on the flood coastal plains consist of fine sands with a negligible content of ice, of silts and sands, that thaw to a depth of 3 m and their mean annual temperature oscillates from -1.5^{o} to -2.5^{o}C. Frost fissures develope within the active zone often extending down to the permafrost. The ground and ground-ice veins developed here are large whereas the colluvial and alluvial silts covering the major part of the slopes surfaces exhibit predominantly ground and humus veins forming micropolygons. Since there are no deep cracks here, the active layer is intersected by a dense network of small fissures and constitutes a sort of "elastic coer" in which the tensile stresses, called forth by winter thermal gradients, are being released.

Some experts attribute the development of fissuring to differential cooling down of deposits. N. N. Romanovskiy (1961) 286, basing his inferences on the results obtained by measurements, believes that in deposits whose mean temperatures are of -5 to -6^{o}C and below, only ice veins are apt to form, whereas at tempertures of -2 to -3^{o}C and above, give rise to ground veins.

This data testifies to certain regularities due to thermal regime. However, two facts should be taken into account: First, ground veins are found in deposits whose mean annual temperature is -7 to -8^{o}C (as described from the Anabara lowland, Lena delta); second, even under the most favorable geothermal conditions--ice veins fail to develop, in slope sediments whose upper protions are usually dissected by tiny fissures.

ORIGIN OF ROCKS				CRYOGENIC PHENOMENA			PROCESSES		
	LAND-FORM ELEMENTS		ORIGIN AND FACIES OF DEPOSITS	SURFICIAL	UNDERGROUND: HUGE MASSES OF ICE, FISSURES, DISTURBANCES LAYERS.	UNDERGROUND: ICE INTRUSIONS	PHYSICAL	MECHANICAL	REMARKS
1	2	3	4	5	6	7	8	9	10
SUBAERIAL ENVIRONMENT	SLOPES INTERFLUVES	MOIST GROUNDS	1 ELUVIUM OF BEDROCK	1 FISSURES POLYGONS (10–20m)	1 ICE WEDGES			FROST CRACKING IN PERMA-FROST	
			2 ELUVIUM OF PLEISTOCENE DEPOSITS	2 DEBRIS ISLANDS	2 CRYOTURBATIONS		SORTING	DISRUPTION AND SQUE-EZING OF LAYERS	SOLI-FLUXION
			3 COLLUVIUM	3a FISSURES POLYGONS (10–20m)	3a ICE WEDGES			FROST CRACKING IN PERMA-FROST	
					3b PACKED LAYERS OF "GOLETZ" ICE		CRYSTAL-LIZATON OF WATER		
			4 SOLFLUXION DEPOSITS	4a SOLFLUXION FORMS	4a CRYOTURBATIONS				SOLI-FLUXION
				4b DEBRIS ISLANDS ELONGATED DOWN THE SLOPE	4b CRYOTURBATIONS		SORTING	DISRUPTION AND SQUE-EZING OF LAYERS	SOLI-FLUXION
				4c FISSURES	4c BENT ICE WEDGES			FROST CRACKING IN PERMA-FROST	SOLI-FLUXION
						4d ICE INTERLAYERS DISRUPTED	CRYSTAL-LIZATION OF WATER		SOLI-FLUXION
			5 DELUVIAL DEPOSITS		5 PACKETS OF LAYERED ICE	5 ICE INTERLAYERS WAVY	CRYSTAL-LIATZION OF WATER		
			6 PEAT—BOG DEPOSITS	6a POLYGONS (10–20m)	6a ICE WEDGES			FROST CRACKING IN PERMA-FROST	
				6b PEAT THUFURS	6b LENSES OF ICE		INJECTION SORTING		
						6c BENT ICE INTLAYERS	CRYSTAL-LIZATION OF WATER		

Fig.28a-Classification of frost caused subaqueous and subaerial phenomena,after Ey.M.Katasnov 1960,1973.

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ORIGIN OF ROCKS				CRYOGENIC PHENOMENA			PROCESS		
	LANDFORM ELEMENTS		ORIGIN AND FACIES OF DEPOSITS	SURFICAL	UNDERGROUND		PHYSICAL	MECHANICAL	REMARKS
					HUGE MASSES OF ICE FISSURES, DISTURBANCES LAYERS	ICE INTRUSIONS			
1	2	3	4	5	6	7	8	9	10
SUBAERIAL ENVIRONMENT	SLOPES INTERFLUVES	SLIGHTLY MOIST AND DRY GROUNDS	7 ELUVIUM OF BEDROCK	7 STONE POLYGONS (0.5–4.0m)	7 PATTERNED GROUNDS			SORTING	
			8 ELUVIUM OF PLEISTOCENE DEPOSITS	8 MICRO-POLYGONS (0.5–3.0m)	8 FROST CRACKS WITH MINERAL AND/OR ORGANIC MATERIAL			FROST CRACKING IN ACTIVE LAYER	
			9 COLLUVIUM		?			?	
			10 DELUVIAL DEPOSITS	10 MICRO-POLYGONS (0.5–3.0m)	10 FROST CRACKS WITH MINERAL AND/OR ORGANIC MATERIAL			FROST CRACKING IN ACTIVE LAYER	
			11 EOLIAN SANDS	11 HIGH-CENTER POLYGONS (2–8 m)	11 GROUND FISSURES (SAG VEINS)			FROST CRACKING IN ACTIVE LAYER	
	FLOOD PLAINS DELTAS	MOIST GROUNDS	12 PEAT-BOG DEPOSITS	12a LOW-CENTER POLYGONS (10–20m)	12a ICE WEDGES			FROST CRACKING IN PERMAFROST	
						12b BENT AND HORIZONTAL ICE INTERLAYERS	CRYSTALIZATION OF WATER		
			13 FLOOD-PLAIN AND DELTA DEPOSITS (SILT/SAND)	13 FISSURES, POLYGONS	13 ICE WEDGES			FROST CRACKING IN PERMAFROST	
			14 SEDIMENTS OF NEAR-BED SHOALS	14 FISSURES INDISTINCTLY VISABLE	14 ICE-MINERAL WEDGES			FROST CRACKING IN PERMAFROST AND ACTIVE LAYER	
			15 GLACIOFLUVIAL PEBBLES	15a POLYGONS (10–40m) AND FISSURES	15a ICE WEDGES			FROST CRACKING IN PERMAFROST	
					15b FROST FISSURES WITH SECONDARY INFILLING			FROST CRACKING IN ACTIVE LAYER	
		DRY GROUNDS	16 FLOOD-PLAIN DEPOSITS	16 FISSURES POLYGONS	16 FROST FISSURES WITH SECONDARY INFILLING			FROST CRACKING IN ACTIVE LAYER	
			17 SEDIMENTS OF NEAR-BED SHOALS	17 FISSURES INDISTINCTLY VISABLE	17 GROUND FISSURES (SAG VEINS)			FROST CRACKING IN ACTIVE LAYER	

Fig 28b–Classification of frost caused subaqueous and subaerial phenomena, after Ey.M.Katasnov 1960, 1973.

--Continued on next page--

ORIGIN OF ROCKS				CRYOGENIC PHENOMENA			PROCESSES		
	LAND-FORM ELEMENT		ORIGIN AND FACIES OF DEPOSITS	SURFICAL	UNDERGROUND		PHYSICAL	MECHANICAL	REMARKS
					HUGE MASSES OF ICE, FISSURES, DISTURBANCES LAYERS.	ICE INTRUSIONS			
1	(2)	(3)	4	5	6	7	8	9	10
SUBAQUEOUS ENVIRONMENT	18		OXBOW AND LACUSTRINE DEPOSITS	18a PINGOS	18a LENSES OF ICE		INJECTION	BENDING OF LAYERS	
						18b VERTICAL AND DIAGONALLY ORIENTED SEGREGATION ICE	SORTING		
	19		MARINE LITTORAL DEPOSITS		19a FLOES		INJECTION (SORTING ?)		PERSISTING OF ICE PACK (?)
					19b BLOCKS OF ICE				PERSISTING OF ICE PACK
						19c HORIZONTALLY AND DIAGONALLY ORIENTED SEGREGATION ICE	SORTING		

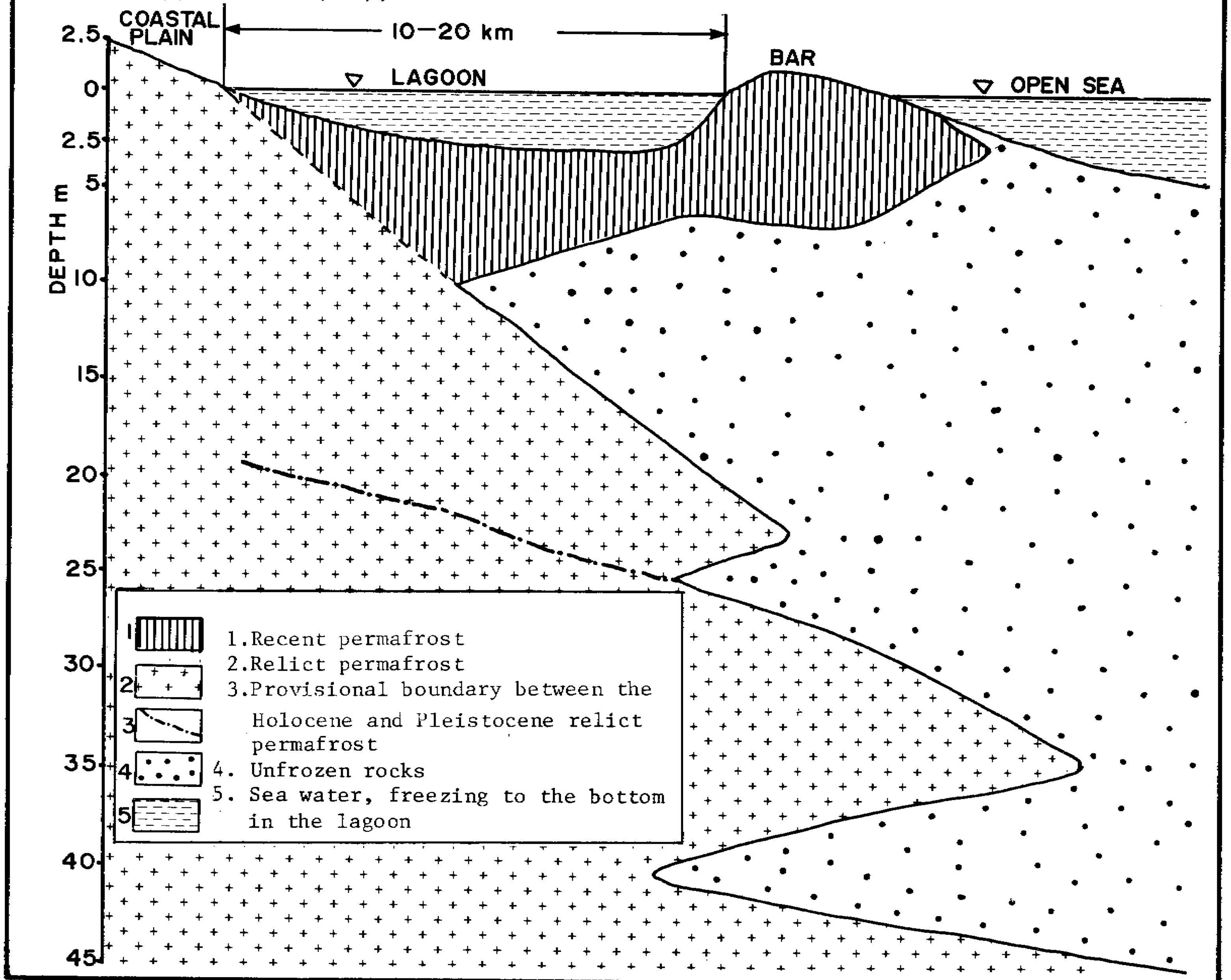
Fig. 28c-Classification of frost caused subaqueous and subaerial phenomena, after Ey.M.Katasnov 1960, 1973.

The termal and physical regularities controlling the development of ice and ground veins are of importance for the solution of many problems relating to geocryology. In the case in question thos regularities are obviously associated with the genetic types and facies of the sediments in which cryogenic phenomena re occurring, since the mineral composition, the moisture content and the thermal regime of these deposits are determined by one and the same cause, which is their genesis, the conditions of their formation.

Analysis of the facies distinguished, comparison of their specific features and of the present-day homogeneous formations of cryogenic phenomena can help to elucidate the paleogeographic conditions and to reconstruct the history of development of the submarine permafrost. The advantage of the frozen ground-facial method consists in that id does not permit to study cryogenic phenomena in abstraction of the sediments within which they occur and sets the investigation of these phenomena upon firm geologic foundations.

In describing the present-day layers of perennially frozen deposits encountered on the bottoms of shallow-water rivers, lakes, and sea water bodies, scientists usually note some peculiarities of the cryogenic structure of the frozen strata forming under different physiographic conditions. The complex of cryogenic textures characteristic, for example, for the upper syngenetic layer, a combination of radial-fissured textures with oblique-broken intercalations and lenses of ice (according to observations made by M. S. Ivanov (124) in the beach area ner the mouth of the Yana (Fig. 7). The lower, epigenetic part of the frozen layer is characterized by a combination of massive cryogenic textures with horizontal ice intercalations. But in this layer it is most typical to observe texture-forming ice with a granular stucture and also thin bandlike fissures and siltlike voids only partially filled with ice. It was also noted that there is a close correlation between the compostion of the deposits and the type of cryogenic textures. For example, in the sandy and sandy-aleuritic deposits there is a predominance of a

Fig.29-Scheme of the relationship between recent and relict permafrost in lagoon conditions, according to Ivanov 1969 (124), Ponomarev 1960 (269), Katasonov and Pudov 1972 (147), Usov 1967 (363), and others.



massive cryogenic texture, but in the clayey aleurites, containing lenticular inclusions of plant remains, there is widespread development of horizontally oriented lenticular cryogenic textures.

It should be note also that, depending on the conditions for the freezing of alluvium in the formation of underwater frozen strata in Northern Yakutia, as the factor some geologist underline of the greatest importance is the complex polygenetic freezing in which, as a rule, relatively thin syngenetic layer of perennially frozen deposits usually covers a thick epigenetic or paracingenetic layer of frozen rocks.

Some examples of this cryolithological approach can be found in the works of V. Usov published in 1965-1969. This author studies the formation of the permanently frozen deposits and cryogenic structures in the lagoon conditions. V. Usov supposed the possibility of the relatively deep-water deposits freezing by the level of the middle sublitoral. The main condition for this is the presence of the same kind of the freezing agent. Most often it is the ice body. In his opinion the freezing of the subaquatic deposits in Arctic lagoons conditions is the most probable source of permafrost development. He divides the marine accumulation area into three zones:

(1) Subaquatic and subairial deposits of the shallow coasts, freezing singeneticaly.

(2) Relatively shallow water deposits, including bay deposits, freezing under water during the small changing of the reservior parameters (singenetic and diagenetic types of the cryogenic structures formations).

(3) Areas closed to middle littoral, formed by thawed, cold and partly perennially frozen deposits.

V. Usov emphasizes the existence of relict permafrost in all three zones and its influence as an agent in stimulating the freezing of th younger layers.

Fig. 29 shows the scheme of the relationship between recent and relict permafrost. The recent one is forming now in the lagoon conditions when the sea ice interacts with the lagoon and bar bottom. The presence of the relict Holocene permafrost aids to the development of recent permafrost from below, that goes on repeating the same thing, that happened before in the Holocene with the older Pleistocene relict permafrost acting as a freezing agent.

V. Usov considered the possibility of the determination of the different types of the freezing processes and cryogenic structures in the first and second zones. On the basis of the differences in the cryogenic structues he delineates the formations of the lagoon, embayed, deltaic and tidal-march types of the Arctic coast. He specifies the peculiarities of the way epigenetic freezing of the bottom marine deposits (clay, in particular) is connected with the duration of the subairial exposure. The freezing of such kinds of the deposits usually is followed by intensive formation of ice layers and the cryogenic structures look like singenetic ones but really have the epigenetic origin. The schemes for these dynamic processes will be done in a special chapter later.

To be Continued

Submarine Permafrost on Arctic Shelf of Eurasia

List of Figures

* Figures included in Annual Report (1 April 1977)

Submarine Permafrost on Arctic Shelf of Eurasia

List of Tables

* Tables included in Annual Report (1 April 1977)

Financial Status

Amount dispersed since beginning of work	$26,500
Amount dispersed Second Quarter (April-June 1977)	22,480

DATA MANAGEMENT

DATA MANAGEMENT

Quarterly Report

Contract #03-5-022-56
Research Unit #350
Task Order #2
Reporting Period 4/1 - 6/30/77
Number of Pages

ALASKAN OCS PROGRAM COORDINATION

Mr. Donald H. Rosenberg
Alaska Sea Grant Program
University of Alaska
Fairbanks, Alaska 99701

I. Task Objectives

This project provides for coordination of all NOAA/OCS Task Orders within the University of Alaska. It provides for a coordinator and related support services necessary for the accomplishment of the scientific programs. These services include Data Management, Fiscal Management, and Logistics Coordination.

II. Field and Laboratory Activities

Not applicable

III. Results

A. Data Management

1. Data Management Plans

Data management plans for recently approved task orders #33 and 34 need to be formulated. We request a meeting with the appropriate data manager to negotiate the content of these plans as soon as is convenient.

2. Data Submitted this Quarter

Task order #21, Rex Sole data resubmission, Pollock data and Arrowtooth Flounder data on 4/22/77.

Data submitted on behalf of Dr. Peter Connors of Bodega Bay Laboratory. A resubmission of 1975 data and new submission of 1976 data. 4/4/77.

Task order #21, Flathead Sole data on 5/23/77.

Task order #20, Silas Bent cruise 8/31 - 9/14/75; and Discoverer cruise 11/23 - 12/2/75.
Benthic grab data on 5/23/77.

Task order #19, Surveyer 9/76; Miller Freeman 11/76, three batches, Moana Wave 10/76 CTD data submitted on 5/23/77.

Task order #13, zooplankton data for Discoverer cruise 8/3/ - 8/17/75 on 5/23/77.

B. Logistics Coordination

The following cruises and field activities were undertaken within the OCS program and were coordinated through this office:

Field season	Bird Survey, Task order #27
Field season	Bird Survey, Task order #28
Miller Freeman	CTD survey
Discoverer	Ice edge survey
Surveyor	Ice edge survey
Surveyor	Zooplankton survey
Acona	Trace metals
Acona	Hydrocarbons
UHIH	Ice edge survey.

C. Contract Monitoring

This office is currently involved in the preparation and submission of FY '78 proposals.

IV. Problems Encountered

None this quarter.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 24 R.U. NUMBER:

PRINCIPAL INVESTIGATOR: Mr. David M. Hickok

No environmental data are to be taken by this task order as indicated in the Data Management Plan. A schedule of submission is therefore not applicable[1].

NOTE: 1 Data Management Plan has been approved and made contractual.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 29

PRINCIPAL INVESTIGATOR: Dr. H. M. Feder

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 1	2	3	4
Big Valley 001	6/17/76	6/23/76	8/30/77			
Big Valley 002	7/18/76	7/28/76	8/30/77			
Big Valley 003	8/19/76	8/29/76	8/30/77			
Big Valley 004	3/3/77	3/18/77	9/30/77			

NOTE: [1] Data Management Plan submitted August 16, 1976, we await formal approval by Contracting Officer.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 6 R.U. NUMBER: 99

PRINCIPAL INVESTIGATOR: Dr. P. Jan Cannon

No environmental data are to be taken by this task order as indicated in the Data Management Plan. A schedule of submission is therefore not applicable[1].

NOTE: [1] Data Management Plan has been approved by M. Pelto; we await approval by the Contract Officer.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 13 R.U. NUMBER: 156/164

PRINCIPAL INVESTIGATOR: Dr. R. T. Cooney

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]		
	From	To	Batch 1		
Discoverer Leg I #808	5/15/75	5/30/75	submitted		
Discoverer Leg II #808	6/2/75	6/19/75	submitted		
Discoverer Leg I #810	8/9/75	8/28/75	submitted		
Miller Freeman #815	11/10/75	11/26/75	submitted		
Contract #03-5-022-34	Last	Year	submitted		
Surveyor 001/2	3/76	4/76	submitted		
Discoverer 002	8/3/76	8/17/76	submitted		
Discoverer	6/28/77	Current	--		

Notes: [1] Data Management Plan has been approved and made contractual. Format has been received and approved by all parties.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 1 R.U. NUMBER: 159/164/427

PRINCIPAL INVESTIGATOR: Dr. Vera Alexander and Dr. Ted Cooney

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 1	2	3	4
Discoverer Leg I #808	5/15/75	5/30/75	submitted	submitted	None	None
Discoverer Leg II #808	6/2/75	6/19/75	submitted	submitted	None	None
Discoverer Leg I #810	8/9/75	8/28/75	submitted	submitted	None	None
Miller Freeman #815	11/10/75	11/26/75	submitted	submitted	None	None
Surveyor Su/001/2	3/76	4/76	a	a	None	None
Surveyor 1	3/15/77	4/6/77	b			
Surveyor 2	4/14/77	5/3/77	b			
Discoverer	5/20/77	6/11/77	b			
UHIH	4/1/77	4/7/77	b			

Note: [1] Data Management Plan and data Formats have been approved and are considered contractual. An update of data management plan, reflecting FY '77 Work Statement must be negotiated.

a. Data are currently being keypunched and transferred to magnetic tape.

b. A modified data management plan (see 1 above) is needed in order to schedule the data submission for these cruises.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 7 R.U. NUMBER: 178

PRINCIPAL INVESTIGATOR: Dr. Robert J. Barsdate

No environmental data are to be taken by this task order as indicated in the Data Management Plan. A schedule of submission is therefore not applicable[1].

NOTE: [1] Data Management Plan has been approved and made contractural.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 8 R.U. NUMBER: 194

PRINCIPAL INVESTIGATOR: Dr. F. H. Fay

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 1			
Alaska Peninsula	7/23/75	7/24/75	submitted			
Kotzebue Sound	7/17/75	7/20/75	submitted			
Kotzebue Sound	7/22/75	7/24/75	submitted			
St. Lawrence Is.	8/8/75	8/22/75	submitted			
Alaska Peninsula	Summer 1976		submitted			
Kotzebue Sound	Summer 1976		submitted			
	All FY '76 data have been submitted					

Note: 1 Data Management Plan has been approved by M. Pelto; we await approval by the Contract Officer.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 12 R.U. NUMBER: 162/163/288/293/312

PRINCIPAL INVESTIGATOR: Dr. D. C. Burrell

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 1	2	3	4
Discoverer Leg II #808	6/2/75	6/19/75	*	*	None	*
Silas Bent Leg I #811	8/31/75	9/14/75	None	None	None	None
Discoverer Leg IV #812	10/8/75	10/16/75	*	*	None	*
Miller Freeman	8/16/75	10/20/75	None	None	Unknown	None
Discoverer Leg III #810	9/12/75	10/3/75	None	None	None	*
North Pacific	4/25/75	8/7/75	None	None	Unknown	None
Intertidal Biota		1975	None	None	Unknown	None
Discoverer #816	11/12/75	12/2/75	*	*	None	*
Contract 03-5-022-34	Last	Year	*	None	None	None
USCGC Glacier	8/18/76	9/3/76	*	None	None	None
Discoverer	9/10/76	9/24/76	*	None	None	None

Note: [1] Data Management Plan has been approved by M. Pelto, we await approval by the Contract Officer.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 5	6	7	8
Discoverer Leg II 808	6/2/75	6/19/75	*	None	None	None
Silas Bent Leg I 811	8/31/75	9/14/75	None	None	None	None
Discoverer Leg IV 812	10/8/75	10/16/75	*	*	None	None
Miller Freeman	8/16/75	10/20/75	None	Lost	*	*
Discoverer Leg III 810	9/12/75	10/3/75	None	*	None	None
North Pacific	4/25/75	8/7/75	None	Lost	Lost	Lost
Intertidal Biota		1975	None	None	*	*
Discoverer 816	11/23/75	12/2/75	*	None	None	None
Contract 03-5-022-34	Last	year	*	None	*	*
Glacier	8/18/76	9/3/76	*	*	None	None

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 9	10		
Discoverer Leg II 808	6/2/75	6/19/75	*	*		
Silas Bent Leg I 811	8/31/75	9/14/75	*	*		
Discoverer Leg IV 812	10/8/75	10/16/75	*	*		
Miller Freeman	8/16/75	10/20/75	none	none		
Discoverer Leg III 810	9/12/75	10/3/75	none	none		
North Pacific	4/25/75	8/7/75	none	none		
Intertidal Biota		1975	none	none		
Discoverer 816	11/23/75	12/2/75	*	*		
Contract 03-5-022-34	Last	year	*	none		
Moana Wave	3/76	4/15/76	*	none		
Beaufort Sea Sediments	-	-	*	*		
Acona	4/6/77	4/14/77	9/30/77			

* Suitable format for magnetic tape submission was received 3/21/77. Formating of data will proceed, delivery date is unknown at this time. These data have been submitted in tabular form in the Annual and Quarterly Reports for T/O 12 including the Final report of contract 03-5-022-34.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 5 R.U. NUMBER: 275/276/294

PRINCIPAL INVESTIGATOR: Dr. D. G. Shaw

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]		
	From	To	Batch 1	2	3
Silas Bent Leg I #811	8/31/75	9/14/75	None	submitted	submitted
Discoverer Leg III #810	9/12/75	10/3/75	None	None	submitted
Discoverer Leg IV #812	10/3/75	10/16/75	Submitted	None	submitted
Surveyor #814	10/28/75	11/17/75	None	submitted	None
North Pacific	4/25/75	8/7/75	submitted	None	None
Contract 03-5-022-34	Last	Year	submitted	submitted	submitted
Moana Wave MW 001	2/21/76	3/5/76	None	submitted	submitted
Miller Freeman	5/17/76	6/4/76	submitted	None	None
Glacier	8/18/76	9/3/76	None	submitted	None
Discoverer	9/10/76	9/24/76	None	submitted	submitted
Moana Wave	10/7/76	10/16/76	None	submitted	submitted
Acona	6/25/76	7/2/76	submitted	submitted	submitted
Discoverer	5/20/77	6/11/77	3/31/78	None	None
Acona	6/22/77	6/27/66	Unknown at this time.		

Note: [1] Data Management plan has been approved and made contractual.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 21 R.U. NUMBER: 284

PRINCIPAL INVESTIGATOR: Dr. R. L. Smith

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates From	Collection Dates To	Estimated Submission Dates[1] Batch 1			
North Pacific	4/25/75	8/7/75	(a)			
Miller Freeman	8/16/75	10/20/75	(a)			
Miller Freeman	3/76	6/76	(a)			

Note: [1] Data Management Plan has been approved and made contractual.

(a) Data for the predators, Rex Sole, Flathead Sole, Pollock, Arrowtooth Flounder have been submitted.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 31 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 20 R.U. NUMBER: 281

PRINCIPAL INVESTIGATOR: Dr. H. M. Feder

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]		
	From	To	Batch 1	2	
Silas Bent Leg I #811	8/31/75	9/14/75	submitted	None	
Discoverer Leg IV #812	10/8/75	10/16/75	submitted[a]	None	
North Pacific	4/25/75	8/7/75	None	submitted	
Discoverer #816	11/23/75	12/2/75	submitted	None	
Contract #03-5-022-34	Last	Year	submitted		
Moana Wave	3/30/76	4/15/76	submitted		
Discoverer 001	3/17/76	3/27/76	(b)		
Miller Freeman			(b)		

Note: [1] Data Management Plan and Data Formats have been approved and are considered contractual.

(a) Only samples for Kodiak area were processed and submitted as requested.

(b) Selected samples will be processed to provide seasonal coverage as deemed necessary.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 19 R.U. NUMBER: 289

PRINCIPAL INVESTIGATOR: Dr. T. C. Royer

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 1	2	3	
Acona #193	7/1/74	7/9/74	submitted	None	None	
Acona #200	10/8/74	10/14/74	submitted	None	None	
Acona #202	11/18/74	11/20/74	submitted	None	None	
Acona #205	2/12/75	2/14/75	submitted	None	None	
Acona #207	3/21/75	3/27/75	submitted	None	None	
Acona #212	6/3/75	6/13/75	submitted			
Oceangrapher #805	2/1/75	2/13/75	submitted	None	None	
Silas Bent #811	8/31/75	9/28/75	Submitted			
Discoverer #812	10/3/75	10/16/75	(a)			
Surveyor #814	10/28/75	11/17/75	submitted			
Discoverer #816	11/23/75	12/2/75	(b)	None	None	
Station 60	6/2/74	9/10/74	None	(c)	None	
Station 64	4/28/75	5/20/75	None	(c)	None	
Station 9	-	-	-	(c)		
Station 9	-	-	-	(c)		
Moana Wave MW 001	2/21/76	3/5/76	submitted			
Moana Wave MW 003/004	4/20/76	5/21/76	submitted			
Moana Wave MW005	9/22/76	10/1/76	7/15/77			
Surveyor SU 003	9/7/76	9/17/76	submitted			

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 1	2	3	
Surveyor	9/20/76	10/2/76	7/15/77			
Miller Freeman	11/1/76	11/19/76	submitted			
Moana Wave	10/7/76	11/16/76	submitted			
Miller Freeman	4/2/77	4/9/77	9/30/77			

Note:

[1] Data Management Plan and Data Formats have been approved and are considered contractual.

(a) Parent tapes were coded in PODAS format, tapes were submitted to F. Cava as requested.

(b) Data useless due to malfunction of shipboard data logger.

(c) See following memo; copy enclosed, and problems section of Report.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 3 R.U. NUMBER: 291

PRINCIPAL INVESTIGATOR: Dr. C. M. Hoskin

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]		
	From	To	Batch 1		
Discoverer Leg I #808	5/15/75	5/30/75	Submitted		
Discoverer Leg II #808	6/2/75	6/19/75	Submitted		
Miller Freeman	8/16/75	10/20/75	Submitted		

All data for FY '76 have been submitted.

Note: [1] Data Management Plan has been approved by M. Pelto; we await approval by the Contract Officer.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 15 R.U. NUMBER: 5/303

PRINCIPAL INVESTIGATOR: Dr. H. M. Feder

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan.

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]			
	From	To	Batch 1	2		
Discoverer Leg I #808	5/15/75	5/30/75	submitted	None		
Discoverer Leg II #808	6/2/75	6/19/75	submitted	None		
Miller Freeman	8/16/75	10/20/75	submitted (a)	submitted		
Miller Freeman	3/76	6/76	(a)	8/30/77		

Note: [1] Data Management Plan and Data Format have been approved and are considered contractual.

(a) Only selected samples were processed

* That portion of cruise 808 grabs sorted, were submitted. The remainder are currently being sorted.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 25 R.U. NUMBER: 347

PRINCIPAL INVESTIGATOR: Mr. James Wise

No environmental data are to be taken by this task order as indicated in the Data Management Plan. A schedule of submission is therefore not applicable[1].

NOTE: [1] Data Management Plan has been approved and made contractual.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 23 R.U. NUMBER: 351

PRINCIPAL INVESTIGATOR: Ms. E. R. Dieter

No environmental data are to be taken by this task order as indicated in the Data Management Plan. A schedule of submission is therefore not applicable[1].

NOTE: [1] Data Management Plan has been approved and made contractual.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 2

PRINCIPAL INVESTIGATOR: Mr. Donald H. Rosenberg

No environmental data are to be taken by this task order as indicated in the Data Management Plan. A schedule of submission is therefore not applicable[1]

NOTE: [1] Data Management Plan has been approved and made contractual.

OCS COORDINATION OFFICE

University of Alaska

ENVIRONMENTAL DATA SUBMISSION SCHEDULE

DATE: March 31, 1977

CONTRACT NUMBER: 03-5-022-56 T/O NUMBER: 30 R.U. NUMBER: 502

PRINCIPAL INVESTIGATOR: H. M. Feder
University of Alaska

Submission dates are estimated only and will be updated, if necessary, each quarter. Data batches refer to data as identified in the data management plan

Cruise/Field Operation	Collection Dates		Estimated Submission Dates[1]		
	From	To	Batch 1		
Miller Freeman	9/1/76	10/15/76	9/30/77[a]		

Note: [1] Data management plan was submitted on 8/30/76, approved by M. Pelto on 9/13/76; we await approval by the contracting officer.

[a] Raw field data was submitted at the end of the cruise. Verified and formated data will be submitted on above date.

QUARTERLY REPORT

Research Unit 362

Quarter Ending - 15 June 1977

Establish and Service a Project Marine Baseline
Data Base for the Alaska MEA Program

Submitted by: John J. Audet
Principal Investigator
National Oceanographic Data Center
Environmental Data Service
National Oceanic and Atmospheric Agency

July 1, 1977

Table I

File Types Received and Final Processed (March 15 - June 15,1977).

File Type	Format Name	Number Rec'd	Number Finaled
015	Current Meter	10	13
017	Pressure Gauge	2	9
021	Trace Metals	2	2
022	STD Data	3	10
023	Fish Resource	8	121
024	Zooplankton	2	8
028	Phytoplankton	1	4
029	Primary Productivity	1	4
032	Benthic Organisms	6	-
034	Marine Bird Sighting-Land Census	1	-
043	Hydrocarbons I	-	3
056	Lagrangian Currents	-	32
073	Grain Size Analysis	2	2
101	Wind Data	-	3
	Total	38	211

Data Reports

A total of 58 data reports were received from the Project Office this quarter and entered in the data tracking system. The number of reports by discipline is as follows:

Marine Mammals	8
Marine Birds	10
Fish/Plankton	13
Effects	2
Chemistry/Microbiology	6
Physical Oceanography/Meteorology	3
Geology/Geophysics/Permafrost	10
Sea Ice	4
Maps/Charts	2
	58

ROSCOP

A total of 49 ROCSOPs were received this quarter. ROSCOPs were received from ADF&G, USFWS, USGS,PMEL, Univ. of Washington, Univ. of Alaska, NMFS, Dames and Moore and College of the Atlantic.

Data Requests

Date Received	Date Completed	Requestor/Description
3/15/77	3/29/77	Mike Crane - request for original ADF&G tapes-data to be resubmitted.
3/18/77	5/19/77	Kathy Frost - ADF&G Fish resource data from MILLER FREEMAN - collected by Pereyra (NWFC).
3/21/77	4/12/77	William Dupre - Univ. of Houston - meteorological data sent by NCC.
4/15/77	5/5/77	Dick Tripp - Univ. of Washington meteorological data sent by NCC (requested through Dean Dale).
4/15/77	5/31/77	Dean Dale - current meter data for Dutch Harbor - no OCSEAP data available.

Date Received	Date Completed	Requestor/Description
4/22/77	4/25/77	Mauri Pelto - List of data sets/ROSCOPs overdue (now incorporated into each quarterly report submitted to Project Office).
4/25/77	5/9/77	Lance Trasky - ADF&G Request for OCSEAP reports - Program Office responded to request following contact with Wayne Fischer.
4/25/77	5/13/77	Patty Miller - Univ. of Alaska XBT/MBT data for Norton/Chukchi areas.
5/12/77	5/24/77	Mike Crane - NODC CALCOMP plot tape for testing on Anchorage plot facility.
5/12/77	6/2/77	Wayne Fischer - request for all OCSEAP formats -- sent to Thomas Wetmore, LGL Ltd, Edmonton, Canada.
5/13/77	6/2/77	Francesca Cava - request for bird and mammal formats - sent to Gerry McGonegal, RRCS Ltd, Edmonton, Canada.
-	6/10/77	Tom Royer - Univ. of Alaska USCG ocean station data - continuing request for new data as received at NODC.

Format Development

A number of modifications to existing formats and several new formats were completed this quarter. A system for format approval has been established where by a draft is forwarded to the Juneau Office for approval; distribution to other OCSEAP data management personnel and OCSEAP investigators is completed following the Project Office approval. The success of this system is reflected in Table I.

In an effort to keep all OCSEAP data management personnel aware of ongoing format and code modifications, a 'fact sheet' is being distributed on a monthly basis which describes all modifications in work and copies of any completed work during the month. The first 'fact sheet' was forwarded on May 11, 1977; a second 'fact sheet' was hand-delivered to Project Office personnel June 14 during the Lake Quinault meeting. A third sheet is planned for distribution by the end of June. Incorporation of these modifications in each format will be completed by NODC and NGSDC as soon as possible and distributed to investigators through the established format approval system described above.

A revised edition of all OCSEAP format cover sheets was completed and distributed to all OCSEAP data management personnel during the quarter.

Efforts are underway at NODC to generate in digital form all OCSEAP format codes for futher output listings and other requests.

Digital Data

This quarter a total of 38 data sets were received by NODC and NGSDC and a total of 211 data sets 'final processed' (118 of these were included in one data submission as multi-file data for file type 023). Two of the data sets were processed by NGSDC. There are 98 data sets in a 'hold' status either awaiting additional information or possible resubmission of the data sets (e.g. - the 63 mammal data sets for file types 025 and 026).

The totals to date are 667 data sets received and 302 data sets final processed. Of this total, 556 data sets have been tentatively accepted by the Data Centers for final processing. In reference to discussions and meetings with Project Office personnel, it is evident that many of these 'accepted' data sets may be subject to additional review by the Project Offices before final processing is completed.

The totals received and finaled for each file type for this quarter are shown below. The distribution of these data sets by lease area is included as Appendix A.

Table 2.

Format Development Status (3/15/77 - 6/15/77).

File Type	Format Name	Forwarded to JPO	Approved by JPO	Distributed to OCSEAP
029 -	Primary Productivity (mod.)	2/28/77	3/25/77	4/15/77
032 -	Benthic Organisms (mod.)	2/28/77	3/28/77	4/15/77
033 -	Marine Bird Sighting (mod.)	2/28/77	5/23/77	6/28/77
035 -	Marine Bird Colony (mod.)	2/28/77	5/23/77	-
072 -	Beach Profiles (new)	3/14/77	3/29/77	4/15/77
061 -	Trace Elements (new)	3/14/77	5/24/77	6/23/77
024 -	Zooplankton (mod.)	4/21/77	5/17/77	6/23/77
030 -	Intertidal Data (mod.)	4/25/77	5/17/77	6/1/77
025 -	Mammal Specimen (mod.)	5/4/77	6/20/77	-
027 -	Mammal Sighting I (mod.)	5/4/77	6/20/77	-

Data Processing

Results of error-check programs are being routinely forwarded to the Juneau Project Office to clarify key punch errors and missing data fields. Program documentation has been forwarded to Juneau and Boulder and to Mike Crane to help define what parameters are currently being checked as part of the data processing.

Pete Topoly's visit to Juneau and the Lake Quinault meeting have resulted in several action items concerning data processing. Copies of all error check results (regardless of the errors), new ranges for independent parameters and inventories of all parameters will be forwarded to the Project Office during the first phases of data processing. Steps to implement these actions are now underway at NODC.

Data Product Development

A status report of all NODC data product development pertaining to OCSEAP formats was forwarded to Wayne Fischer on 5/4/77. This memo was in response to his memo of 3/11/77 and included specific comments concerning BLM requirements and products. Samples of some of these developmental products were shown by Wayne Fischer to NOAA headquarters personnel in Rockville on June 8, 1977. NODC personnel also discussed these products and other planned products during the meetings at Lake Quinault the week of June 12-17.

It was determined at Lake Quinault that a review of the Boulder Office 'Data Product Compendium' would be completed by the EDS Data Centers to identify those products readily available using OCSEAP digital data, those products available with some developemental effort and those products not available through the EDS Data Centers either because of lack of digital data submissions or because the product is outside the data centers' responsibilities or capabilities.

Another product completed this quarter was an updated version of the Alaskan Environmental Data Index (ENDEX). A copy of all files, consisting of five large volumes, was forwarded to BLM-Anchorage for their information.

Data Inventories

All digital data received by the Data Centers are inventoried for position and data information as they are received. Exceptions include data with tape reading problems or data sets with format problems which are placed on 'hold'. Data files from initial inventories created during pre-processing (Program 'QUADI') are replaced by finalized data files (Program 'DIP') after data have completed all the processing steps.

The first edition of the OCSEAP data catalog, completed this month, includes the station locations for both initial and final inventories. This first edition contains 59 plots sorted by file type and four different Alaskan regions. The catalog includes all data received to May 1, 1977. Copies of the catalog were distributed to most OCSEAP data management personnel at the Lake Quinault meeting; the Program Office is compiling a list of individuals for futher distribution. BLM offices have received copies with the quarterly distribution of the data tracking system.

Included in this inventory are plots of all OCSEAP microbiological data held at the National Institutes of Health. Working with Dr. Krichevsky of NIH, a file has been created which essentially is the same as the NODC inventory file. A similar approach is planned for the OCSEAP hydrocargon data held at the National Bureau of Standards and the non-OCSEAP format epicenter data held at NGSDC.

Data Tracking System

A file type summary indicating the status of data processing for each data set has been developed from the data tracking system. This summary includes the total number of data sets received, accepted and final processed for both digital and non-digital data received by the EDS Data Centers.

At the request of the Program Office, a significant number of entries under 'PLANNED DATA' have been included in the recent version of the tracking system. Copies of these additions have been forwarded to the Juneau and Fairbanks offices for further comments and modifications.

Taxonomic Code

The revised NODC taxonomic code was distributed to BLM and OCSEAP personnel and to a number of OCSEAP investigators on March 29, 1977.

Computer programs are now available to check a data set and match the equivalent new code to the earlier Alaskan codes. A list of codes with no match and a list of the names for all codes used in the data set is also included with each computer run.

Requests for codes and other information concerning the codes were completed by Dr. Collins for Pat Gould (USFWS), Jim Blackburn (ADF&G) and Bob Schultz (Juneau) during this quarter.

Meetings

NODC personnel met at NODC with Wayne Fischer and Doug Wolfe on April 1, 1977 to discuss OCSEAP data requests and data product development for NODC.

Pete Topoly of the Data Preparation Division visited the Juneau Project Office the week of June 5-10 to discuss improvements in data checking and to establish specific ranges for selected parameters.

Six members of EDS attended the OCSEAP Data Management Meeting at Lake Quinault, Washington the week of June 12-17. In attendence from the NODC, Washington office were Jim Audet, Phil Hadsell and Gary Falk. The other EDS personnel included Mike Crane, the Anchorage representative, Dean Dale, the NODC Seattle liaison and Rod Combellick from NGSDC, Boulder.

Problems

Data resubmissions are a constant problem, as some data sets are resubmitted after 'final processing' which causes additional corrections and work for the inventory systems as well as processing. The action items discussed in data processing should reduce these resubmissions as data sets will not be final processed until the Project has agreed that the data submission is correct and adequate.

The implementation of an improved telecommunication network between the OCSEAP data base and related inventories and the Project and Program Offices, Mike Crane in Anchorage and Dean Dale in Seattle remains to be resolved. George Saxton, of NODC, is now working closely with Mike Crane and other EDS personnel and progress is expected in the near future.

Appendix A - Distribution of Data Sets by Lease Area (3/15/77 - 6/15/77)

File Type	Total	Lease Area Code								
		1	2	3	4	5	6	7	8	9
015	10	-	-	-	9	1	9	-	-	-
017	2	-	-	-	2	-	-	-	-	-
021	2	2	-	-	-	-	-	-	-	-
022	2	-	2	2	2	-	2	-	2	-
023	8	4	-	4	-	-	-	-	-	-
024	3	-	-	-	2	1	2	-	2	-
028	1	-	-	-	-	1	-	-	-	-
029	1	-	-	-	-	1	-	-	-	-
032	6	2	2	2	-	4	-	-	-	-
034	1	-	-	-	-	1	-	-	-	-
073	2	(NGSDC processing data)								
	38									

1=NEGOA
2=Lower Cook Inlet
3=Kodiak Shelf
4=St. George Basin
5=Beaufort Sea
6=Bristol Bay
7=Norton Sound
8=Aleutian Shelf
9=Chukchi Sea

Appendix B - Distribution of Data Reports by Lease Area (3/15/77 - 6/15/77)

Discipline	Total	Lease Area Code								
		1	2	3	4	5	6	7	8	9
Marine Mammals	8	3	-	-	1	5	3	3	-	4
Marine Birds	10	3	2	2	1	2	1	4	1	4
Fish/Plankton	13	4	2	1	5	4	5	1	-	-
Effects	2	1	-	-	1	-	1	-	-	-
Chemistry/Microbiology	6	2	2	-	-	5	-	-	-	-
Phy. Ocean./Meteor.	3	-	-	-	-	2	-	-	-	1
Geology/Geophysics/Permafrost	10	2	-	-	-	6	1	3	-	1
Sea Ice	4	-	-	-	-	4	-	1	-	2
Maps/Charts	2	-	-	-	-	2	-	-	-	-
	58									

NGSDC also received 7 data reports during the quarter.

See Appendix A for Lease Codes.

QUARTERLY REPORT

Contract No. 03-5-022-56
Task Order Number 24
Quarter Ending June 30, 1977

ADMINISTRATIVE SUPPORT NODC/OCSEAP REPRESENTATIVE

RU #370

David M. Hickok

Arctic Environmental Information and Data Center
University of Alaska

June 23, 1977

June 23, 1977

QUARTERLY REPORT

For the Period Ending June 30, 1977

I. Task Objectives:

To provide office space, secretarial, data processing and relevant logistics support for the OCS/EDS employee(s).

II. Not applicable.

III. Results:

Task order has been modified to include additional secretarial support, plus data processing personnel and facilities.

IV. Not applicable.

V. Not applicable.

OCS COORDINATION OFFICE

University of Alaska

ESTIMATE OF FUNDS EXPENDED

DATE: June 30, 1977

CONTRACT NUMBER: 03-5-022-56

TASK ORDER NUMBER: 24

PRINCIPAL INVESTIGATOR: Mr. David M. Hickok

Period September 1, 1975 - June 30, 1977 (22 mos.)

	Total Budget	Expended	Remaining
Salaries & Wages	57,389	25,114	32,275
Staff Benefits	10,789	4,474	6,315
Equipment	-0-	-0-	-0-
Travel	-0-	-0-	-0-
Other	25,301	20,662	4,639
Total Direct	93,479	50,250	43,229
Indirect	28,994	12,747	16,247
Task Order Total	122,473	62,997*	59,476

*Preliminary cost data, not yet fully processed.

Quarterly Report

Contract No: N/A
Research Unit No: 496
Reporting Period: April 1977
through June 30, 1977
Number of Pages: 2

"Maintenance of Alaskan OCSEAP Surface
Marine and Coastal Station Data File"

Principal Investigator:

William A. Brower, Jr. (D5312)
Applied Climatology Branch
National Climatic Center
Federal Building, Room 401
Asheville, NC 28801
Comm: (704) 258-2850, x266
FTS : 672-0266

June 24, 1977

I. Task Objectives

This task serves to maintain the data file compiled for use in the production of the "Climatic Atlas of the OCS Waters and Coastal Regions of Alaska" (RU #347) and to provide meteorological data products and services for the Alaskan area to OCSEAP's Principal Investigators.

II. Field and Laboratory Activities

NA

III. Results

- An inventory of Alaskan data held at NCC in manuscript form has been completed (see attachment). The publication, "Index of Original Surface Weather Records for Stations in Alaska," is available at no cost to OCSEAP PI's.

- An inventory of Alaskan data held at NCC in digital form is scheduled for completion sometime during last quarter of FY-77.

- There have been several requests by OCSEAP PI's for data products and services.

IV. Preliminary Interpretation of Results

Item 1 under Results is a quantum jump toward completing the task of identifying and maintaining an inventory of Alaskan data held at NCC in manuscript, digital, and statistical summary forms.

V. Problems Encountered

None

VI. Estimate of Funds Expended

As of 6/15/77, \$14.3K of the \$25K funds for FY-77 have been expended. Expending the remaining funds (\$10.7K) during the last quarter of FY-77 is dependent in part on the number of requests and costs to provide data services and products to OCSEAP PI's.

INDEX OF ORIGINAL

SURFACE WEATHER RECORDS

(HOURLY, SYNOPTIC AND AUTOGRAPHIC)

FOR STATIONS IN

ALASKA

ON FILE AT
NATIONAL CLIMATIC CENTER
FEDERAL BUILDING
ASHEVILLE, NORTH CAROLINA 28801

This Index of Original Surface Weather Records for Stations in Alaska was produced as a part of the Environmental Data Index (ENDEX) Program. It is the first for the U.S. states to be revised and printed; and, although, work has been initiated on an index for each of the remaining 49 states, completion is dependent upon future funding.

Completion of the Alaskan Index was made possible under the direction of the Outer Continental Shelf Environmental Assessment Program of the National Oceanic and Atmospheric Administration of the Department of Commerce through funding by the Department of the Interior's Bureau of Land Management. It was prepared as a part of Research Unit No. 496, Maintenance of Alaskan OCSEAP Surface Marine and Coastal Station Data File, which serves to maintain the data file compiled for use in the production of the "Climatic Atlas of the OCS Waters and Coastal Regions of Alaska" (RU #247) and to provide meteorological data products and services for the Alaskan area to OCSEAP's Principal Investigators.

Hourly, Synoptic, and Autographic Original Records

CONTENTS

1. Introduction

This index has been prepared as a part of ENDEX, the Environmental Data Index Experiment. Its purpose is to automate the indexes of environmental data to efficiently serve the needs of atmospheric and earth scientists.

All the hourly aviation, synoptic, supplementary airways, and similar observations available in manuscript form at the National Climatic Center are listed in this state index. In deciding about the inclusion of unusual records, those which would help in plotting detailed synoptic weather maps were included; those similar to cooperative climatological daily observations were not. Indexes of the latter will be digitized as another project.

Autographic charts and traces have been included in this index, since values of temperature, pressure, wind, humidity and so forth, could be extracted for the kinds of studies this index has been designed to aid.

One of the most valuable parts of this index is the station history information contained in the latitude-longitude and station elevation columns. Many of the earlier station indexes are incomplete in this regard. Extensive research went into the effort to pinpoint the locations of the stations. Users who find inconsistencies in the station history information are asked to call them to the attention of the Chief, Archival Services Branch, NCC.

The records covered by this series of indexes form the major file of meteorological data within the United States. Begun by the Army Signal Corps in the late 19th century, some of the records have been preserved and passed on by the government agencies that have followed. The records that are filed by the National Archives are not indexed here. Nearly all of those are for the years before 1900.

Copies of the records can be provided at the requester's expense in a number of forms including paper copy, microfilm, microfiche, punched cards and magnetic tape. For costs or information, write

Director
National Climatic Center
Federal Building
Asheville, North Carolina 28801

2. Description of Indexes

<u>Alphabetic</u>
The alphabetic listing utilizes the names of the weather station preparing the observations. This is often the name of the city or community; occasionally, it is the name of a military installation, an airport, or a geographical feature. Cross-referencing has been inserted to help the user. For a given station, the records are listed in time order. When one becomes familiar with the index, this arrangement gives a quick, and almost pictorial, presentation of the weather station activity of each location. Station moves stand out.

<u>By Year</u>
The records are listed from the oldest to the newest to readily show which are available for studies based on many years of data. This arrangement also expedites the selection of records when studying particular storms of the past. By referring to a specific year, all available records can be seen. An interesting feature of this index is the way in which it shows the expansion of the national meteorological network. From few entries per year in the early times, there is a marked increase with the advent of commercial aviation in the 1930's. The many stations shown during World War II and the post-War era are followed in most states by a shrinkage due to retrenchment in the more recent times.

<u>By Elevation</u>
This index will aid those looking for observations characteristic of certain altitudes above sea level.

<u>By Latitude</u>
This index is abbreviated to give names and station history data for locating weather observing points on a geographical basis. This supplements the map.

3. Explanation of Entries

Station Name

Long names were abbreviated. Commonly used abbreviations are:

AP, APT	- Airport	Lk	- Lake
Cty	- City	LS	- Light Ship/Station
Fld	- Field	Mt	- Mount, Mountain
Ft	- Fort	Nk	- Neck
Hb	- Harbor	Rck	- Rock
Is	- Island	Rvr	- River
LB Sta	- Light Boat Station		

Type

The type of weather station. This is sometimes best described by naming the service which operated the station. Codes used are:

Code	Type of Station	Code	Type of Station
Weather Bureau		Military	
A	Aviation Reports & Coop-A Stations	AAB	Army Air Base
AC	Cooperative Aviation Reports	AAF	Army Air Field
S	Synoptic Reports	AAFB	Auxiliary Air Force Base
SA	Synoptic and Aviation Reports	AB	Air Base (Air Force)
SAC	Cooperative Synoptic and Aviation Reports	AF	Air Force
SC	Cooperative Synoptic Reports	AFB	Air Force Base
WBAS	Weather Bureau Airport Station	AFS	Air Force Station
WBFO	Weather Bureau Forecast Office	ANG	Air National Guard
WBMO	Weather Bureau Meteorological Observatory	ASC	Army
WBO	Weather Bureau Office	MCAF	Marine Corps Air Facility
WBUA	Weather Bureau Upper Air Unit	MCAS	Marine Corps Air Station
WSFO	Weather Service Forecast Office	NAAF	Naval Auxiliary Air Facility
WSMO	Weather Service Meteorological Observatory	NAAS	Naval Auxiliary Air Station
WSO	Weather Service Office	NAF	Naval Air Facility
		NAS	Naval Air Station
Others		NF	Naval Facility
AMOS	Automatic Weather Station	NS	Naval Station
CAA	Civil Aeronautics Adm. Facility		
CG	Coast Guard		
COOP	Cooperative		
FAA	Federal Aviation Agency		
FSS	Flight Service Station (FAA)		
LAWR	Limited Airport Weather Reporting Station (Tower)		
MARS	Marine Reporting Station		
SAWR	Supplementary Airways Weather Reporting Station		
SPL	Special Purpose Office (Fire weather, temporary observing sites)		

Latitude, Longitude

The coordinates given for the station in the most authoritative documents available to the workers. Given in degrees and minutes.

Elevation

In feet. The height above sea level of the barometer was used if known. The reported station elevations and ground heights at the stations were used as first- and second-alternatives when necessary.

"Hourly" Records by Month

These are the records usually made for aviation purposes and are the most detailed observations made. Because of their importance, they have been indexed in greater detail than the other records. A number entry means that records are on file for that month. The value of the number is a code which tells the number of observations recorded per day.

Code for Observations per Day used in the "Hourly" Records Columns

Blank - No Records
1 - 24 per day
2 - (Not used)
3 - 3 or less obs per day
4 - 4
5 - 5 to 11
6 - 12 to 18
7 - 19 to 23
0 - Records on microfilm only. See the film for number of obs per day.

A valuable source of information about data appearing on these forms through the years is:
History of Weather Bureau Climatological Record Forms for Surface Synoptic and Airway Observations. (Key to Meteorological Records Documentation No. 2.211) Washington, DC 1964. For sale by the Superintendent of Documents, Washington, DC 20402. Price 40 cents.

Number of Months in Year with:
The records in these categories are so voluminous that it was felt an abbreviated index would suffice for nearly all purposes. In these columns, a 12 means that records are on file for every month. A blank means that no records are on file. 08 followed by a group of 12's will nearly always mean that records began in May of the first year and were continuous thereafter. Numbers higher than 50 mean that the records exist only on microfilm. In such cases, 50 has been added to the number of months available for that year.

Synoptic Form
Form 1083. This usually gives 4 observations per day in the special code used for reporting weather internationally. Examples of the forms are given in the publication listed previously under the explanation for "Hourly" records. Intermediate 3-hourly observations are sometimes included on the form; from July 1939 to December 1948 the 3-hourly observations may appear on a companion form (Form 1082). Some stations omitted the nighttime observations. Laymen find these forms difficult to use because of its special coding and the fact that times are often in GMT. "Hourly" records, if available, are usually preferable.

Meteorological Summary
Form 1001, and/or 1002, and/or 1014. These are the comprehensive station records kept by first-order Weather Bureau stations from 1892 to 1948. A few stations have continued a modified form. Examples of the forms are given in the publication listed previously under the explanation for "Hourly" records. A similar military record, Form 1, is also indexed under this category.

Barograms
A continuous record of pressure in which the oscillations have been traced by a pen on a moving sheet of paper. In the older records, a 1-inch change of pressure was shown as a 1-inch change on the chart. Beginning in 1936, the older instruments were replaced by microbarographs which magnified the change 2 1/2 times. At Weather Bureau stations each chart formerly contained 4 days record. The exact times of pressure changes with squall lines, thunderstorms and other phenomena were hard to read, so the chart commonly in use today is accelerated to rotate once each 12-hours. Two traces appear on each chart since they are changed daily.

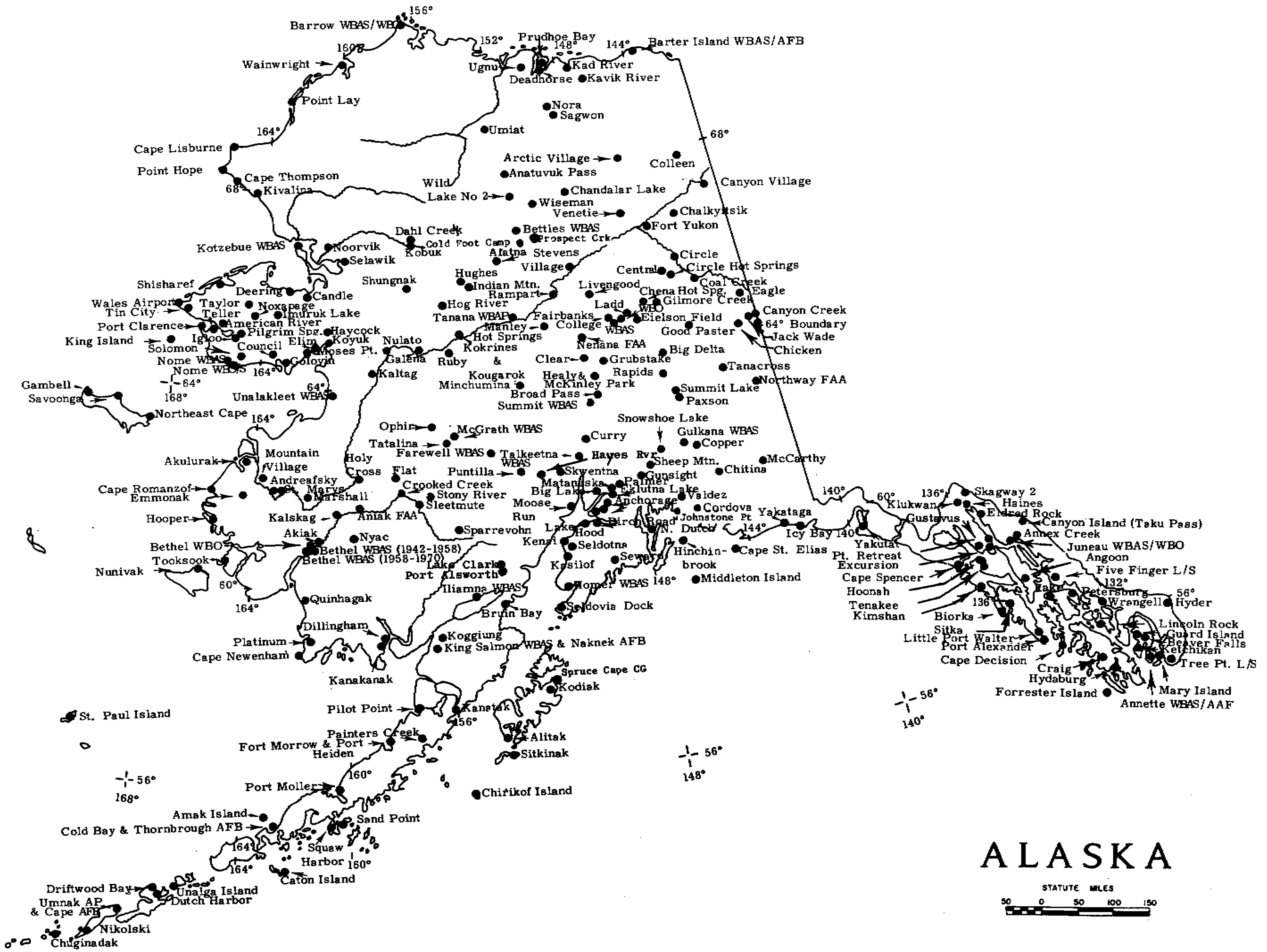
Thermograms
A continous record of temperature. A variety of charts has been used through the years. First-order stations are no longer required to operate thermographs. During the years in which thermograms were considered an official record, they were carefully annotated and the periods are nearly complete. In recent years, some instruments appear to be out of calibration and there are gaps in the series of forms. Most being received now are from cooperative stations that have volunteered their records.

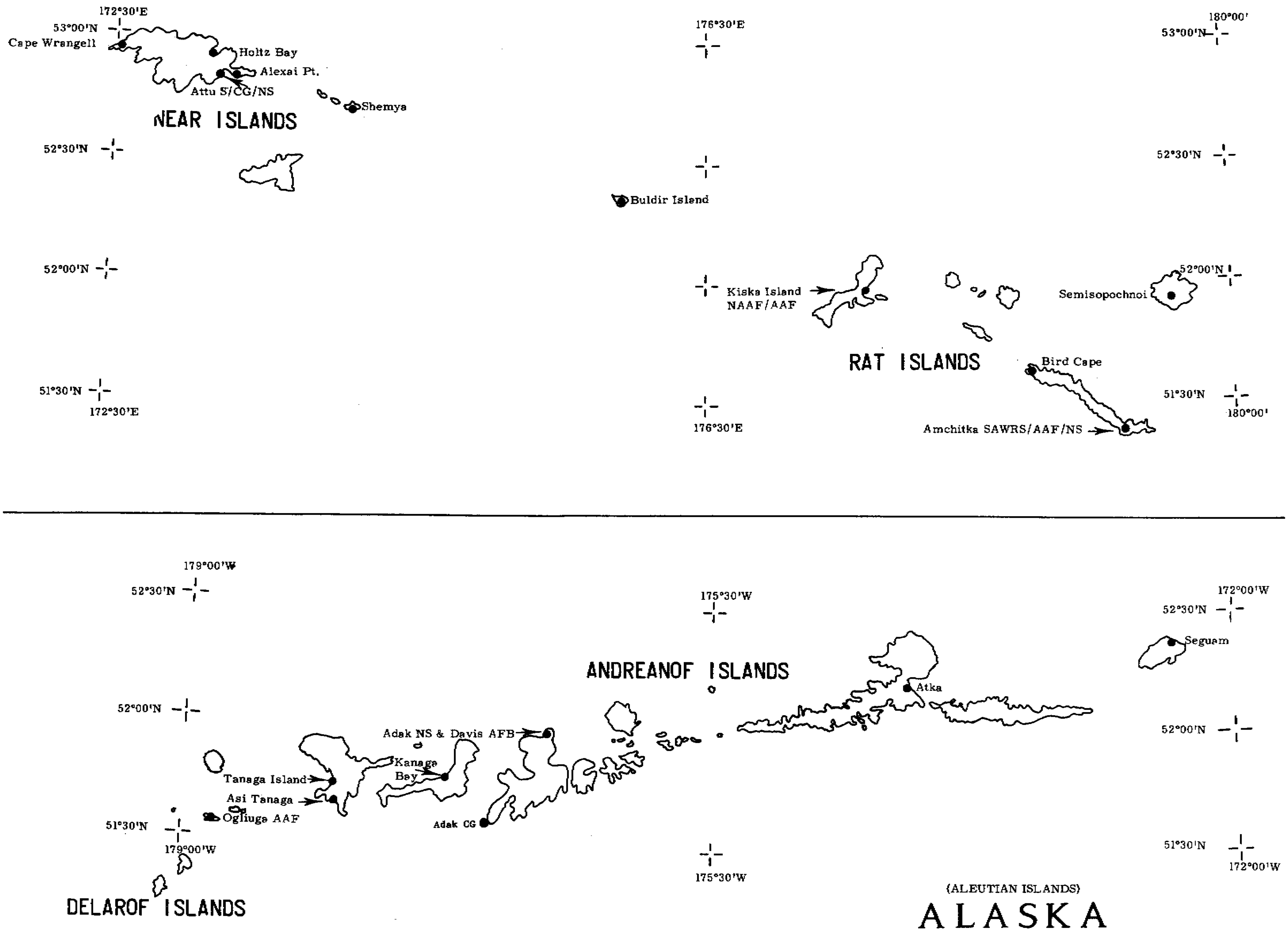
Triple Register
Most of the records indexed under this column are the daily sheets from the station meteorographs, sometimes known also as a quadruple register since they recorded wind direction, wind speed, sunshine and rainfall. The oldest records are from single registers which recorded speed only; from two-magnet registers which recorded wind speed, rainfall and sunshine; and from double registers (anemographs) which recorded wind direction and speed. The most recent records of this type are in the form of long strips torn from continuous rolls in daily increments.

Wind Recorder
These show a continuous trace of wind speed as opposed to the triple register type of equipment which is based on an electrical contact opening and closing with the passage of each mile of wind. These records have not been quality controlled and there have been problems of calibration, lack of annotation and improper time registration. Many of the records do not contain direction traces. For some stations, direction and speed are on different rolls.

Humidity Recorder
These are instrument charts which give a measurement of relative humidity or dew point. Those of the hygrothermograph type usually contain an adjoining record of temperature.

Radar Logs
These records give the radar operator's interpretation of the echoes seen on his scope. Location, size, shape, movement, intensity and change of intensity are given in code.


ALASKA
STATUTE MILES
50 0 50 100 150
Barrow WBAS/WBO
Wainwright
Point Lay
Cape Lisburne
Point Hope
Cape Thompson
Kivalina
Kotzebue WBAS
Noorvik
Selawik
Shishmaref
Wales Airport
Tin City
Taylor
Teller
Deering
Candle
Noxapage
Imuruk Lake
Port Clarence
King Island
Igloo
American River
Pilgrim Spg.
Haycock
Koyuk
Solomon
Council
Elim
Moses Pt.
Nome WBAS
Golovin
Gambell
Savoonga
Northeast Cape
Unalakleet WBAS
Nulato
Galena
Kaltag
Ruby
Kokrines
Akulurak
Mountain Village
Andreafsky
St. Marys
Marshall
Holy Cross
Cape Romanzof
Emmonak
Hooper
Bethel WBO
Tooksook
Nunivak
Kalskag
Akiak
Aniak FAA
Nyac
Bethel WBAS (1942-1958)
Bethel WBAS (1958-1970)
Quinhagak
Dillingham
Platinum
Cape Newenham
Kanakanak
St. Paul Island
Shungnak
Dahl Creek
Kobuk
Cold Foot Camp
Hughes
Indian Mtn.
Rampart
Hog River
Tanana WBAP
Manley Hot Springs
Kougarok
Minchumina
Ophir
Tatalina
McGrath WBAS
Farewell WBAS
Flat
Crooked Creek
Stony River
Sleetmute
Sparrevohn
Lake Clark
Port Alsworth
Iliamna WBAS
Bruin Bay
Koggiung
King Salmon WBAS & Naknek AFB
Pilot Point
Kanatak
Painters Creek
Fort Morrow & Port Heiden
Port Moller
Amak Island
Cold Bay & Thornbrough AFB
Sand Point
Squaw Harbor
Caton Island
Driftwood Bay
Unalga Island
Dutch Harbor
Umnak AP & Cape AFB
Nikolski
Chuginadak
Chirikof Island
Spruce Cape CG
Kodiak
Alitak
Sitkinak
Ugnu
Prudhoe Bay
Deadhorse
Kad River
Kavik River
Barter Island WBAS/AFB
Nora
Sagwon
Umiat
Arctic Village
Anatuvuk Pass
Colleen
Wild
Lake No 2
Chandalar Lake
Wiseman
Venetie
Canyon Village
Chalkyitsik
Fort Yukon
Bettles WBAS
Prospect Crk
Alatna
Stevens Village
Circle
Central
Circle Hot Springs
Coal Creek
Eagle
Livengood
Chena Hot Spg.
Gilmore Creek
Ladd
WBO
Fairbanks
College
WBAS
Eielson Field
Good Paster
Canyon Creek
64° Boundary
Jack Wade
Chicken
Nenana FAA
Clear
Grubstake
Big Delta
Healy & McKinley Park
Rapids
Broad Pass
Summit WBAS
Tanacross
Northway FAA
Summit Lake
Paxson
Snowshoe Lake
Gulkana WBAS
Copper
Curry
Talkeetna WBAS
Hayes Rvr
Sheep Mtn.
McCarthy
Chitina
Puntilla
Skwentna
Gunsight
Matanuska
Palmer
Eklutna Lake
Big Lake
Valdez
Moose Run
Anchorage
Cordova
Lake Hood
Birch Road
Johnstone Pt
N. Dutch
Kenai
Seldotna
Kasilof
Seward
Hinchinbrook
Homer WBAS
Seldovia Dock
Cape St. Elias
Middleton Island
Yakataga
Icy Bay
Yakutat
Pt. Retreat
Excursion
Cape Spencer
Hoonah
Tenakee
Kimshan
Biorka
Sitka
Little Port Walter
Port Alexander
Cape Decision
Craig
Hydaburg
Forrester Island
Klukwan
Gustavus
Skagway 2
Haines
Eldred Rock
Canyon Island (Taku Pass)
Annex Creek
Juneau WBAS/WBO
Angoon
Five Finger L/S
Petersburg
Wrangell
Hyder
Lincoln Rock
Guard Island
Beaver Falls
Ketchikan
Tree Pt. L/S
Mary Island
Annette WBAS/AAF
156°
152°
148°
144°
160°
164°
168°
68°
64°
60°
56°
140°
136°
132°


172°30'E
53°00'N
Cape Wrangell
Holtz Bay
Alexai Pt.
Attu S/CG/NS
Shemya
NEAR ISLANDS
52°30'N
52°00'N
51°30'N
172°30'E
176°30'E
Buldir Island
Kiska Island NAAF/AAF
RAT ISLANDS
Bird Cape
Amchitka SAWRS/AAF/NS
176°30'E
180°00'
53°00'N
52°30'N
52°00'N
Semisopochnoi
51°30'N
180°00'
179°00'W
52°30'N
52°00'N
51°30'N
179°00'W
175°30'W
ANDREANOF ISLANDS
Atka
Adak NS & Davis AFB
Kanaga Bay
Tanaga Island
Asi Tanaga
Ogliuga AAF
Adak CG
DELAROF ISLANDS
175°30'W
172°00'W
52°30'N
Seguam
52°00'N
51°30'N
172°00'W
(ALEUTIAN ISLANDS)
ALASKA

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
ADAK	SEE	DAVIS	AFB																							25701
ADAK	AAF	1944	51 53N	176 39W	14		1	1	1	1	1	1	1	1	1	1	1									25707
ADAK	NS	1942	51 52N	176 39W	15										1	1	1									25704
	NS	1943	51 52N	176 39W	15	1	1																			25704
ADAK	NS	1943	51 53N	176 38W	15			1	1	1	1	1	1	1	1	1	1									25704
	NS	1944	51 53N	176 38W	15	1	1	1	1	1																25704
ADAK	NS	1944	51 57N	176 36W	104						1	1	1	1	1	1	1									25704
	NS	1945	51 57N	176 36W	104	1	1	1	1	1	1	1	1	1												25704
ADAK	NS	1950	51 53N	176 39W	15							1	1	1	1	1	1									25704
	NS	1951	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1									25704
	NS	1952	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	11		25704
	NS	1953	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	NS	1954	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	NS	1955	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			11	12		25704
	NS	1956	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	NS	1957	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	NS	1958	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	NS	1959	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	NS	1960	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12	12		25704
	NS	1961	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12	10		25704
	NS	1962	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12	01		25704
	NS	1963	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1964	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1965	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1966	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1967	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12			25704
	NS	1968	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	09		12			25704
	NS	1969	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			11	12		12			25704
	NS	1970	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	08		12			25704
	NS	1971	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1972	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1973	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1974	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1975	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	NS	1976	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
ADAK	CG	1972	51 35N	177 00W											5	5	5									
	CG	1973	51 35N	177 00W		5	5	5	5	5	5	5	5		5	5	5									
	CG	1974	51 35N	177 00W		5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1975	51 35N	177 00W		5	5	5	5	5	5			5	5	5	5									
	CG	1976	51 35N	177 00W		5	5	5	5	5	5		5	5	5	5	5									
AKIAK	COOP	1919	60 52N	161 23W	21														01	02						
	COOP	1920	60 52N	161 23W	21														09	09						
	COOP	1921	60 52N	161 23W	21														12	12						
	COOP	1922	60 52N	161 23W	21														07	07						
	COOP	1923	60 52N	161 23W	35														09	08						
AKULURAK	A	1941	62 30N	164 25W	33													09	08	07						
	A	1942	62 30N	164 25W	33													12	12	11						
	A	1943	62 30N	164 25W	33													06		05						
AKULURAK	AAF	1944	62 30N	164 25W	31				1	1	1	1	1							57						26610
ALATNA	A	1936	66 34N	152 44W	600												3									
	A	1937	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1938	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	66 34N	152 44W	600	3	3	3	3	3	3	5	5	5	5	5	5									
	A	1942	66 34N	152 44W	600	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1943	66 34N	152 44W	600	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1944	66 34N	152 44W	600	5	5	5	5	5																
ALEXAI PT	AFS	1943	52 50N	173 18E	27						1	1	1	1	1	1	1			57	52					45701
	AFS	1944	52 50N	173 18E	27	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			45701
	AFS	1945	52 50N	173 18E	27	1	1	1	1	1	1	1	1	1						59	59					45701
ALITAK	A	1942	56 57N	154 10W	24			3	3	3	3	3	3	3	3	3		09	06	09						25512
ALITAK	NF	1942	56 55N	154 15W	30												6	01	01	01						25512
	NF	1943	56 55N	154 15W	30	6	6	6	6	6	6	6	6	6	6	6	6		06							25512
	NF	1944	56 55N	154 15W	30	6	6	6	6																	25512
ALITAK	NS	1945	56 55N	154 15W	30		7	7	7	7	7	7	7					03								25502
AMAK ISLAND	AF	1943	55 24N	163 08W	15		5	5			5	5	5	5	5											25609
	AF	1944	55 24N	163 08W	15				1	1	1	1	1	1												25609
AMCHITKA IS	SAWR	1967	51 23N	179 15E	237							6	6	6	6	6	6									
	SAWR	1968	51 23N	179 15E	237	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1969	51 23N	179 15E	237	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1970	51 23N	179 15E	237	6	6	6	5	6	6	6	6	6	6	6	6									
	SAWR	1971	51 23N	179 15E	237	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1972	51 23N	179 15E	237	3	3	3	3	3	3	3	3		3	3	3									
	SAWR	1973	51 23N	179 15E	237	0	0	0	0	0	0	0	0													

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
AMCHITKA IS	AAF	1943	51 24N	179 16E	251		1	1	1	1	1	1	1	1	1	1	1			55	53					45702
	AAF	1944	51 24N	179 16E	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62	08				45702
	AAF	1945	51 24N	179 16E	202	1	1	1	1	1	1	1	1	1	1	1	1			62	62					45702
	AAF	1946	51 24N	179 16E	202	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			45702
	AAF	1947	51 24N	179 16E	202	1	1	1	1	1	1									06	06					45702
AMCHITKA IS	AAF	1947	51 23N	179 15E	202							1	1	1	1	1	1			56	56					45702
	AAF	1948	51 23N	179 15E	202	1	1	1	1	1	1									56	56		02			45702
AMCHITKA IS	AFB	1948	51 24N	179 18E	202							1	1	1	1	1	1			56	56		02			45702
	AFB	1949	51 24N	179 18E	202	1	1	1	1	1	1	1	1	1	1	1	1			62	62					45702
	AFB	1950	51 24N	179 18E	202	1	1	1	1	1	1		1	1	1	1				59	60					45702
	AFB	1965	51 23N	179 15E	220					6	6	6	6	6	6	6										45702
AMCHITKA IS	NS	1944	51 24N	179 16E	80	1	1	1	1																	45711
	NS	1972	51 24N	179 16E	80											3										45711
AMERICAN RVR	AAF	1944	65 27N	165 46W	119				1	1	1	1	1	1	1	1	1			59	59					26611
	AAF	1945	65 27N	165 46W	119	1	1	1	1	1	1	1	1							58	58					26611
ANAKTUVUK	COOP	1966	68 10N	151 46W	2100																04					
	COOP	1967	68 10N	151 46W	2100																12					
	COOP	1968	68 10N	151 46W	2100																04					
	COOP	1969	68 10N	151 46W	2100																04					
	COOP	1970	68 10N	151 46W	2100																05					
	A	1971	68 10N	151 46W	2100									5	5	5	5				10					
	A	1972	68 10N	151 46W	2100	5	5	5	5	5	5	5	5	5	5	5	5				11					
	A	1973	68 10N	151 46W	2100				5	5	5	5	5	5			5				06					
ANCHORAGE	SEE ELMENDORF AFB																									26401
ANCHORAGE	SEE ELMENDORF AFB 2																									26452
ANCHORAGE	COOP	1916	61 14N	149 52W	40																	12				
	COOP	1917	61 14N	149 52W	40																	12				
	COOP	1918	61 14N	149 52W	40																	12				
	COOP	1919	61 14N	149 52W	40																	12				
	COOP	1920	61 14N	149 52W	40																	12				
	COOP	1921	61 14N	149 52W	40																	12				
	COOP	1922	61 15N	149 51W	40														01			12				
	COOP	1923	61 15N	149 51W	40														02			02				
ANCHORAGE	S	1923	61 13N	149 52W	118														10	10	10	10				
	S	1924	61 13N	149 52W	118														12	12	12	12				
	COOP	1925	61 13N	149 52W	118														05	05	05	12				
ANCHORAGE	WBO	1929	61 13N	149 52W	118														06			12				
	WBO	1930	61 13N	149 52W	118														12			12				
	WBO	1931	61 13N	149 52W	118														12			12				
	WBO	1932	61 13N	149 52W	118														12			12				
	WBO	1933	61 13N	149 52W	118														12			12				
	WBO	1934	61 13N	149 52W	118														12			12				
	WBO	1935	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12				
	WBO	1936	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12				
	WBO	1937	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12				
	WBO	1938	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12	02	11				
	WBO	1939	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5	07	12	12	12	12				
	WBO	1940	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12	12	04				
	WBO	1941	61 13N	149 52W	118	6	6	6	6	1	1	1	1	1	1	1	1	12	12	12	12	12				
	WBO	1942	61 13N	149 52W	118	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	04	12				
	WBO	1943	61 13N	149 52W	118													01	01	01		01				
ANCHORAGE	WBAS	1943	61 13N	149 50W	141		1	1	1	1	1	1	1	1	1	1	1	11	11	11		11				26409
	WBAS	1944	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26409
	WBAS	1945	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1	08	12	12	12	12				26409
	WBAS	1946	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26409
	WBAS	1947	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26409
	WBAS	1948	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26409
	WBAS	1949	61 13N	149 50W	141															12	12	12				26409
	WBAS	1950	61 13N	149 50W	141															12	12	12				26409
	WBAS	1951	61 13N	149 50W	141												1			12	12	12				26409
	WBAS	1952	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26409
	WBAS	1953	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1		5			10	10	10				26409
	SAWR	1954	61 13N	149 50W	134	5	5	5	5	3				4	3	4	4									26409
	CAA	1955	61 13N	149 50W	134	4	6	6	6	6	6	6	6	6	6	6	6									26409
	CAA	1956	61 13N	149 50W	134	6	6	6	6	6	6	6	6	6	6	6	6									26409
	CAA	1957	61 13N	149 50W	134	6	6	6	6	6	6	6	6	6	6	6	6									26409
	CAA	1959	61 13N	149 50W	134					5	3	3														26409
	LAWR	1961	61 13N	149 50W	134					1	1	1	1	1	1	1	1									26409
	LAWR	1962	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	LAWR	1963	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1964	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1965	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1966	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1967	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1968	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1969	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1970	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1971	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1972	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1973	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1974	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
ANCHORAGE	FAA	1975	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	FAA	1976	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
ANCHORAGE	WBAS	1953	61 10N	149 59W	105															02	02		01			26451
	WBAS	1954	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			26451
	WBAS	1955	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			10	10		12			26451
	WBAS	1956	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	WBAS	1957	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	WBAS	1958	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	WBAS	1959	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	WBAS	1960	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	WBAS	1961	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	WBAS	1962	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	WBAS	1963	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			26451
	WBAS	1964	61 10N	149 59W	105	1	1	1												03	03		03			26451
ANCHORAGE	WBAS	1964	61 10N	150 01W	147				1	1	1	1	1	1	1	1	1			09	02		09			26451
	WBAS	1965	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26451
	WBAS	1966	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12	02		12			26451
	WBAS	1967	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	WBAS	1968	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	WBAS	1969	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	WBAS	1970	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	WBAS	1971	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	WBAS	1972	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	WSO	1973	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			02			26451
	WSO	1974	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26451
	WSO	1975	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26451
	WSO	1976	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26451
ANCHORAGE PS	COOP	1964	61 13N	149 52W	85																12					
	COOP	1965	61 13N	149 52W	85																12					
	COOP	1966	61 13N	149 52W	85																09					
	COOP	1967	61 13N	149 52W	85																04					
ANDREAFSKY	SAWR	1966	62 04N	163 18W	290			3	3	3	3	3	3				3									
	A	1967	62 04N	163 18W	290	3				3	3	3	3	3	3	3	3									
	A	1968	62 04N	163 18W	290	3	3	3	3	3	3	3														
	A	1969	62 04N	163 18W	290	3	3	3	3	3				3	3	3	3									
	A	1970	62 04N	163 18W	290	3	3	3	3	3	3					3	3									
	SAWR	1971	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1972	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1973	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1974	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1975	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3										
	SAWR	1976	62 04N	163 18W	290		3	3	3	3	3	3	3	3		3										
ANGOON	A	1941	57 30N	134 35W	14				4	4	4	4	4	4	4	4	4			08						25310
	A	1942	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5			12						25310
	A	1943	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5	02		12						25310
	A	1944	57 30N	134 35W	14	5	5	5												03						25310
	A	1945	57 30N	134 35W	14				5	5	5	5	5	5	5	5	5			08						25310
	A	1946	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1947	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1948	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5											25310
	A	1949	57 31N	134 35W	14		5	5	5	5	5	5	5	5	5	5	5									25310
	A	1950	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1951	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1952	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1953	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1954	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1955	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1956	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1957	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1958	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1959	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1960	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1961	57 31N	134 35W	14	5	5		5	5	5	5	5	5	5	5	5									25310
	A	1962	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1963	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5			5									25310
	A	1964	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1965	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1966	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1967	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1968	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1969	57 31N	134 35W	14	5	5	5																		25310
	A	1970	57 31N	134 35W	14		5	5	5	5	5	5	5	5	5	5										25310
	A	1971	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1972	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1973	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1974	57 31N	134 35W	14	5	5	5	5	5	5	5	5		5	5	5									25310
	A	1975	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	A	1976	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
ANIAK	COOP	1935	61 35N	159 32W	81								3	3	3	3										26516
	COOP	1936	61 35N	159 32W	100	3	3	3	3	3	3	3	3	3	3	3	3									26516
	COOP	1937	61 35N	159 32W	100	3	3	3	3	3	3															26516
	COOP	1939	61 35N	159 32W	100											3	5									26516
	SA	1940	61 35N	159 32W	100	4	3	3	3	3	3	3	3	3	3	3	3									26516
	SA	1941	61 35N	159 32W	100	3	3	3	3	3	3															26516
	CAA	1942	61 35N	159 32W	100	4	4	4	4	4	4	4	4	5	5	5	5	12		06						26516
	CAA	1943	61 35N	159 32W	100	5	5	5	7	1	1	1	1	1	1	1	1	12	08	12						26516

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
ANIAK	CAA	1944	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1	12	04	12						26516
	CAA	1945	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26516
	CAA	1946	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1947	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1948	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1949	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1950	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1951	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1952	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1953	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1954	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1955	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1956	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1957	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1958	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	CAA	1959	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	FAA	1960	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	FAA	1961	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	FAA	1962	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			10						26516
	FAA	1963	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	FAA	1964	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	6	6	6			12	02					26516
	FAA	1965	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			11	04					26516
	FAA	1966	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26516
	FAA	1967	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26516
	FAA	1968	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26516
	FAA	1969	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			11						26516
	FAA	1970	61 35N	159 32W	91	6	6	6	6	6	6	5	5	5	5	5	5			12						26516
	FAA	1971	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			12						26516
	FAA	1972	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			11						26516
	FAA	1973	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			04						26516
	FAA	1974	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			12						26516
	FAA	1975	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			06						26516
	FAA	1976	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5									26516
ANNETTE	A	1941	55 02N	131 34W	110	5	5	5	5	5	5	5	5	5	5			01								25308
	A	1942	55 02N	131 34W	110									1				12	03							25308
	A	1943	55 02N	131 34W	110													02	02							25308
ANNETTE	WBAS	1947	55 02N	131 34W	113												1			01						25308
	WBAS	1948	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1		12	12						25308
	WBAS	1949	55 02N	131 34W	113															12						25308
	WBAS	1950	55 02N	131 34W	113															12			01			25308
	WBAS	1951	55 02N	131 34W	113															12			12			25308
	WBAS	1952	55 02N	131 34W	113															12			12			25308
	WBAS	1953	55 02N	131 34W	113															12			12			25308
	WBAS	1954	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1955	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1956	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1957	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1958	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1959	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1960	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1961	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			10			12			25308
	WBAS	1962	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1963	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1964	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25308
	WBAS	1965	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1966	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25308
	WBAS	1967	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1968	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1969	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1970	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1971	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WBAS	1972	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WSO	1973	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	WSO	1974	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25308
	WSO	1975	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			11			11			25308
	WSO	1976	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
ANNETTE IS	AAF	1941	55 02N	131 35W	114							6	6	6	1	6	6					58				25301
	AAF	1942	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1					53				25301
	AAF	1943	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	62		07			25301
	AAF	1944	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25301
	AAF	1945	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25301
	AAF	1946	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	61		12			25301
	AAF	1947	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			61	61		12			25301
ANNEX CREEK	A	1937	58 19N	134 06W	24				3	3	3	3	3	3	3	3	3									25311
	A	1938	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3										25311
	A	1939	58 19N	134 06W	24					3	3	3	3	3	3	3	3									25311
	A	1940	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3	3									25311
	A	1941	58 19N	134 06W	24	3	3	3	3			3	3	3	3	3	3									25311
	A	1942	58 19N	134 06W	24					3	3	3	3	3	3	3	3									25311
	A	1943	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3	3									25311
	A	1944	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3	3									25311
	A	1945	58 19N	134 06W	24	3	3																			25311
ARCTIC VILAG	COOP	1963	68 08N	145 32W	2250																07					
	COOP	1964	68 08N	145 32W	2250																09					
	COOP	1965	68 08N	145 32W	2250																08					
	COOP	1966	68 08N	145 32W	2250																04					
	COOP	1970	68 08N	145 32W	2250																10					

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
ARCTIC VILAG	CBBP	1971	68 08N	145 32W	2250																12					
	CBBP	1972	68 08N	145 32W	2250	3	3														06					
ASI TANAGA	NS	1946	51 40N	178 00W	148												6									25709
	NS	1947	51 40N	178 00W	148	6	1	1	1	1	1	1	1	1	1	1	1									25709
	NS	1948	51 40N	178 00W	148	1	6	6	6	6	6	6	6	1	1	1	1									25709
	NS	1949	51 40N	178 00W	148	1	1	1																		25709
ATIGUN	SAWR	1974	68 11N	149 25W	3335											1	1									
	SAWR	1975	68 11N	149 25W	3335	1	1	1	1	1	1	1	1	6	6	6										
	SAWR	1976	68 11N	149 25W	3335				6	6	6	6	6	6	6	6										
ATKA	A	1936	52 12N	174 20W	11											3	3		05	04						25715
	A	1937	52 12N	174 20W	11	3	3	3	3	3							3		07	07						25715
	A	1938	52 12N	174 20W	11	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25715
	A	1939	52 12N	174 20W	11	3	3	3	3	3	3			3	3	3	3	04	10	10						25715
	A	1940	52 10N	174 12W	36	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25715
	A	1941	52 10N	174 12W	36	3	3	3	3	3	3	3	3	3	3	3	3	12	12	09						25715
	A	1942	52 10N	174 12W	36	3	3	3	3	3	3							06	06	08						25715
ATKA	SAWR	1950	52 10N	174 12W	50											3	3									25715
	SAWR	1951	52 10N	174 12W	50	5	5	4	4	3	3	4														25715
ATKA	NS	1942	52 14N	174 13W	26												1									25710
	NS	1943	52 14N	174 13W	26	1	1	1	1	1	1	1	1	1	1	1										25710
ATKA ISLAND	AAF	1944	52 13N	174 12W	36		1	1	1	1	1	1	1	1	1	1	1			57	60					25708
	AAF	1945	52 13N	174 12W	36	1	1	1	1	1	1	1	1	1	1					60	60					25708
	AAF	1947	52 13N	174 12W	36									6	6	6	6			58	58					25708
	AAF	1948	52 13N	174 12W	36	6	6	6	6	6	6	6	6	6	6	6	6			62	62					25708
	AAF	1949	52 13N	174 12W	36	6	6	6	6	6	6	6	6	6	6	6				61	61					25708
ATTU	S	1941	52 50N	173 11E	12									3	3	3	3	04	04	04						45712
	S	1942	52 50N	173 11E	12	3	3	3										03	03	03						45712
ATTU	CG	1961	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1962	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1963	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1964	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1965	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1966	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1967	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1968	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1969	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1970	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1971	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1972	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1973	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1974	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	CG	1975	52 50N	173 11E	70	5	5	5	5	5	5		5		5	5	5									45712
	CG	1976	52 50N	173 11E	70	5	5	5		5	5	5	5	5	5		5									45712
ATTU	NS	1943	52 50N	173 11E	91								1	1	1	1	1									45709
	NS	1944	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	NS	1945	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	NS	1946	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	NS	1947	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	NS	1948	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	NS	1949	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	NS	1950	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	NS	1951	52 50N	173 11E	91	1																				45709
ATTU	NS	1954	52 48N	173 10E	92								1	1	1	1	1			05			05	05		45709
	NS	1955	52 48N	173 10E	92	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		45709
	NS	1956	52 48N	173 10E	92	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		45709
	NS	1957	52 48N	173 10E	92	1	1	1	1	1	1	1	1	6	5	5	5			12			12	12		45709
	NS	1958	52 48N	173 10E	92	5	5	5	5	5	5									06			06	06		45709
	NS	1973	52 48N	173 10E	92											5										45709
AUFEIS	SAWR	1974	69 09N	149 35W	1000					1	1	1	1	1												
AUGUSTINE IS	A	1972	59 25N	153 25W	30							3	3													
	A	1973	59 25N	153 25W	30						3	3	3													
BARROW	WBO	1920	71 18N	156 46W	25														03	03	03					27502
	WBO	1921	71 18N	156 46W	25														12	12	12					27502
	WBO	1922	71 18N	156 46W	25														12	12	12					27502
	WBO	1923	71 18N	156 46W	25														12	12	12					27502
	WBO	1924	71 18N	156 46W	25														12	12	04	05				27502
	WBO	1925	71 18N	156 46W	25														12	12	08					27502
	WBO	1926	71 18N	156 46W	25														12	12	05	07				27502
	WBO	1927	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1928	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1929	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1930	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1931	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1932	71 18N	156 46W	25														11	11	11	12				27502
	WBO	1933	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1934	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1935	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1936	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1937	71 18N	156 46W	25														12	12	12	12				27502

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
BARROW	WBO	1938	71 18N	156 46W	25														12	12	12	12				27502
	WBO	1939	71 18N	156 46W	25													05	12	12	12	12				27502
	WBO	1940	71 18N	156 46W	25									3	3		3	12	12	12	12	12				27502
	WBO	1941	71 18N	156 46W	25	5	5	5	5	5	5	5	5	5	5	5	5	09	12	12	12	12				27502
	WBO	1942	71 18N	156 46W	25	5	5	5	5	5	5	5	5	5	5	5	5	03	12	12	12	12				27502
	WBO	1943	71 18N	156 47W	24	5	5	5			5	5	5			5	5		12	12	12	12				27502
	WBAS	1944	71 18N	156 47W	29	5	5	5	5	5	5	6	6	6	6	6	6		12	12	12	12				27502
	WBAS	1945	71 18N	156 47W	29	6	7	6	6	6	6		6	6	6	6	6		12	12	12	11				27502
	WBAS	1946	71 18N	156 47W	29	6	6	6	6	6	1	1	1	1	1	1	1		12	12	12	12				27502
	WBAS	1947	71 18N	156 47W	29	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				27502
	WBAS	1948	71 18N	156 47W	29	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				27502
	WBAS	1949	71 18N	156 47W	29	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	WBAS	1950	71 18N	156 47W	29	1	1	1	0	0	0	0	0	0	0	0	0			12	12	12				27502
	WBAS	1951	71 18N	156 47W	29	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				27502
	WBAS	1952	71 18N	156 47W	29	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				27502
	WBAS	1953	71 18N	156 47W	29	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				27502
	WBAS	1954	71 18N	156 47W	29	6	6	6	6	6	6	6	6	6	6	6	6			12	12	12				27502
	WBAS	1955	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	WBAS	1956	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	WBAS	1957	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	WBAS	1958	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	.12				27502
	WBAS	1959	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	WBAS	1960	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			11	11					27502
	WBAS	1961	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					27502
	WBAS	1962	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					27502
	WBAS	1963	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					27502
	WBAS	1964	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	06					27502
	WBAS	1965	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WBAS	1966	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WBAS	1967	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WBAS	1968	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WBAS	1969	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WBAS	1970	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WBAS	1971	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WBAS	1972	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WSO	1973	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WSO	1974	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	WSO	1975	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			11		04				27502
	WSO	1976	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12			08			27502
BARTER IS	WBAS	1956	70 08N	143 38W	50												1			01						27401
	WBAS	1957	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1958	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1959	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1960	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1961	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1962	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1963	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1964	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1965	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1966	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1967	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1968	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1969	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1970	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1971	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WBAS	1972	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WSO	1973	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WSO	1974	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	WSO	1975	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			11						27401
	WSO	1976	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12			05			27401
BARTER IS	AAF	1947	70 08N	143 36W	40										1	1	1			53						27401
	AFB	1948	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			62	58					27401
	AFB	1949	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			62	62					27401
	AFB	1950	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			62	60					27401
	AFB	1951	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			12	09					27401
	AFB	1952	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			11	12					27401
	AFB	1953	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			12	03					27401
	AFB	1954	70 08N	143 36W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	AFB	1955	70 08N	143 36W	21	1	1	1	1	1	1	1	1	5	5	5	5			12						27401
	AFB	1956	70 08N	143 36W	20	5	5	5	6	6	1	1	1	1	1	1	1			11						27401
BEAVER FALLS	A	1940	55 23N	131 28W	35					3	3	3	3	3	3	3	3									25313
	A	1941	55 23N	131 28W	35	3	3	3	3	3	3	3														25313
	A	1942	55 23N	131 28W	35	3	3	3	3	3																25313
BETHEL	WBO	1923	60 48N	161 45W	38														04	04						26615
	WBO	1924	60 48N	161 45W	38														12	12						26615
	WBO	1925	60 48N	161 45W	38														12	12						26615
	WBO	1926	60 48N	161 45W	38														12	12						26615
	WBO	1927	60 48N	161 45W	38														12	12						26615
	WBO	1928	60 48N	161 45W	38														12	12						26615
	WBO	1929	60 48N	161 45W	38														12	12						26615
	WBO	1930	60 48N	161 45W	38														12	12						26615
	WBO	1931	60 48N	161 45W	38														12	12						26615
	WBO	1932	60 48N	161 45W	38												3		12	12						26615
	WBO	1933	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3			3		12	12						26615
	WBO	1934	60 48N	161 45W	38	3	3	3											12	12						26615
	WBO	1935	60 48N	161 45W	38		3	3	3	3	3	3	3	3	3	3	3		12	12						26615
	WBO	1936	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26615
	WBO	1937	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26615

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NUMBER OF MONTHS IN YEAR WITH

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
BETHEL	WBO	1938	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26615
	WBO	1939	60 48N	161 45W	38	3	3	3	4	5	4	4	3	3	3	3	3	05	12	12						26615
	WBO	1940	60 48N	161 45W	22	3	3	3	3	3	3	3	3	3	3	6	6	12	12	10						26615
	WBO	1941	60 48N	161 45W	22	6	6	6	6	6	6	6	6	6	6	6	6	10	12	12						26615
	WBO	1942	60 48N	161 45W	22	6	6	6	6	6	6	6	6					04	08	08						26615
BETHEL	WBAS	1942	60 47N	161 43W	15									1	1	1	1		04	04						26615
	WBAS	1943	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		03				26615
	WBAS	1944	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26615
	WBAS	1945	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		11				26615
	WBAS	1946	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26615
	WBAS	1947	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26615
	WBAS	1948	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1	06	12	12		12				26615
	WBAS	1949	60 47N	161 43W	15															12						26615
	WBAS	1950	60 47N	161 43W	15															12						26615
	WBAS	1951	60 47N	161 43W	15															12						26615
	WBAS	1952	60 47N	161 43W	15															12						26615
	WBAS	1953	60 47N	161 43W	15															12						26615
	WBAS	1954	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1955	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1956	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1957	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1958	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1					10						26615
BETHEL	WBAS	1958	60 47N	161 48W	131											1	1			02						26615
	WBAS	1959	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1960	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1961	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1962	60·47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1963	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12		01				26615
	WBAS	1964	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1965	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			11						26615
	WBAS	1966	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			11						26615
	WBAS	1967	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1968	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1969	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			11						26615
	WBAS	1970	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1971	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WBAS	1972	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WSO	1973	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WSO	1974	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	WSO	1975	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26615
	WSO	1976	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26615
BETTLES	CAA	1944	66 54N	151 43W	855				6	6	6	6	6	6	7	7	7	09	02	10						26517
	CAA	1945	66 54N	151 43W	855	7	1	1	1	1	1	1	1	1	1	1	1	12		12						26517
	CAA	1946	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	CAA	1947	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	CAA	1948	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	CAA	1949	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	CAA	1950	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	CAA	1951	66 54N	151 43W	855	1	1	1												03						26517
BETTLES	CAA	1951	66 55N	151 31W	672				1	1	1	1	1	1	1	1	1			09						26533
	CAA	1952	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	CAA	1953	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	CAA	1954	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	CAA	1955	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	CAA	1956	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	CAA	1957	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	CAA	1958	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	CAA	1959	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1960	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1961	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1962	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1963	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1964	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1965	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1966	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	FAA	1967	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	WBAS	1968	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	WBAS	1969	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	WBAS	1970	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	WBAS	1971	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	WBAS	1972	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			09						26533
	WSO	1973	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	WSO	1974	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	WSO	1975	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			11						26533
	WSO	1976	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			02						26533
BIG DELTA	A	1935	64 08N	145 44W	995										3	3										26415
	A	1936	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	A	1937	64 08N	145 44W	995	3																				26415
	A	1938	64 08N	145 44W	995		3	3	3	3	3	3	3	3	3	3	3									26415
	A	1939	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	A	1940	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	A	1941	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	CAA	1942	64 00N	145 44W	1274	3	3	3	3	5	5	6	1	1	1	1	1	07		10						26415
	CAA	1943	64 00N	145 44W	1274	1	1	1	1	1	1	1	1	1	1	1	1	12	08	12						26415
	AF	1944	64 00N	145 44W	1274	1	1	1	1	1	1							06		06						26415
	AF	1945	64 00N	145 44W	1274										1	1	1			03						26415
	CAA	1946	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
BIG DELTA	CAA	1947	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1948	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1949	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1950	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1951	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1952	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1953	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1954	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1955	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1956	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1957	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1958	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAA	1959	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1960	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1961	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1962	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1963	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1964	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1965	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1966	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1967	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1968	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1969	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1970	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	FAA	1971	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			11						26415
	FAA	1972	64 00N	145 44W	1275	1	1	1	1	1	1	6	6	6	6	6	6			12						26415
	FAA	1973	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			12						26415
	FAA	1974	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			11						26415
	FAA	1975	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			12						26415
	FAA	1976	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			12						26415
BIG DELTA	AAF	1944	64 00N	145 44W	1272						1	1	1	1	1	1	1			56	55					26406
	AAF	1945	64 00N	145 44W	1272	1	1	1	1	1	1	1	1	1	1					60	60					26406
BIG LAKE	SAWR	1960	61 32N	149 50W	150						3	3	3	3	3	3	3									
	SAWR	1961	61 32N	149 50W	150	3			3	3	3	3	3													
BIGRKA IS	CAA	1941	56 51N	135 32W	215		6	6	6	6	6	6	6	6	6	6	7	11	02	09						
	CAA	1942	56 51N	135 32W	215	1	1	1	1	7	5	6	6	6	5	5	5	12	10	12						
	CAA	1943	56 51N	135 32W	215	6	6	6	6	6	6	6	6	6	6	6	6		12	12						
	CAA	1944	56 51N	135 32W	215	6	6	6	6	6	6	6	6						01	09						
	CG	1972	56 51N	135 33W	50								5	5	5	5	5									
	CG	1973	56 51N	135 33W	50	5	5	5	5	5	5	5		3	3											
	CG	1974	56 51N	135 33W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1975	56 51N	135 33W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1976	56 51N	135 33W	50	5	5	5	5	5	5	5	5	5	5	5	5									
BIRCH ROAD	COOP	1967	61 08N	149 46W	460																06					
	COOP	1968	61 08N	149 46W	460																12					
	COOP	1969	61 08N	149 46W	460																12					
	COOP	1970	61 08N	149 46W	460																12					
	COOP	1971	61 08N	149 46W	460																12					
	COOP	1972	61 08N	149 46W	460																06					
BIRD CAPE	AAF	1943	51 39N	178 40E	1008				6	1	1	1	1	6	6											45705
BLAIR LK RNG	AF	1974	64 20N	147 39W	725											1	1									26460
	AF	1975	64 20N	147 39W	725	1	1	1	1	1	1	1	1	1	1	1	1									26460
	AF	1976	64 20N	147 39W	725	5	5	5	5	5	5	5	5	5	5	5	5									64060
BOUNDARY	A	1947	64 04N	141 07W	2600										5	5	5									26416
	A	1948	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	A	1949	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	A	1950	64 04N	141 07W	2600			5	5	5	5	5	5	5	5	5	5									26416
	A	1951	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	A	1952	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	A	1953	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	A	1954	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	A	1955	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	A	1956	64 04N	141 07W	2600	5	5					5	5	5	5	5	5									26416
	A	1957	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5											26416
BROAD PASS	A	1938	63 22N	149 02W	2127										3	3	3									
	A	1939	63 22N	149 02W	2127	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	63 22N	149 02W	2127	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	63 22N	149 02W	2127	3	3	3	3	3	3	3	3	3		3										
BRUIN BAY	CAA	1943	59 22N	153 58W	51								7	1	1	1	1	04		04						
	CAA	1944	59 22N	153 59W	51	1	1	1	1	1	1	1						07		07						
BULDIR IS	AAF	1943	52 22N	175 58E	49										6	6	6			53	53					45706
	AAF	1944	52 22N	175 58E	49	6	6	6	0	6	6	6	6	6	6	6	6			62	62					45706
	AAF	1945	52 22N	175 58E	49	6	6	6	6	6	6	6	6							58	58					45706
CANDLE	A	1938	65 56N	161 55W	10		3	3	3	3	3	3	3	3	3	3	3									26619
	A	1939	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3									26619
	A	1940	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3									26619
	A	1941	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3									26619
	A	1942	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3			12						26619
	A	1943	65 56N	161 55W	10	4	4	4	4	4	4	4	4	4	4	4	4			12						26619
	A	1944	65 56N	161 55W	10	5	5	5	5	5	5	5	5	5	5	5	5			03						26619
	A	1945	65 56N	161 55W	24	5	4	4	5	5	5	5	5	5	5	5	5			10						26619

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
CANDLE	A	1946	65 56N	161 55W	24	5	5	5	6	6	6	6	6	6	6	6	6			03						26619
	A	1947	65 56N	161 55W	24	6	6	6	6	6	6	6	6	6	6	6	6									26619
	A	1948	65 56N	161 55W	24	6	6	6	6	6	6	6	6	6	6	6	6									26619
	A	1949	65 56N	161 55W	24	6	6	6	6	6	6	6	6	6	6	5	5									26619
	A	1950	65 56N	161 55W	24	5	5	5	5	5	5	5	5	5	5	5										26619
CANYON CREEK	A	1940	64 10N	141 08W	3500					3	3	3	3	3	3	3	3									
CANYON IS	A	1942	58 33N	133 40W	85									5	5	5	5									
	A	1943	58 33N	133 40W	85	5	5	5	5	5	5	5	5	5	5	5	5									
	CAA	1944	58 33N	133 40W	85	6	6	6	6	6	6	6	6	6	6	6	6									
	CAA	1945	58 33N	133 40W	85	6	6	6	6	6																
CANYON VILAG	COOP	1963	67 09N	141 45W	990																06					
	COOP	1964	67 09N	141 45W	990																12					
	COOP	1965	67 09N	141 45W	990																10					
	COOP	1966	67 09N	141 45W	990																09					
	COOP	1967	67 09N	141 45W	990																12					
	COOP	1968	67 09N	141 45W	990																06					
CAPE	AAF	1942	53 23N	167 54W	131		6	6	6	6	1	1	1	1	1	1	1			58	54					25602
	AAF	1943	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25602
	AAF	1944	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62		04			25602
	AAF	1945	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	61		08			25602
	AAF	1946	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	61		02			25602
	AAF	1947	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	55					25602
	AFB	1948	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25602
	AFB	1949	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25602
	AFB	1950	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1				61	61		04			25602
CAPE DECISIO	CG	1939	56 00N	134 08W	50											3	3									25315
	CG	1940	56 00N	134 08W	50	3	3	3	3	3	3	3		3	3	5	5	02	02							25315
	CG	1941	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5		11	11							25315
	CG	1942	56 00N	134 08W	50				5	4	4	4	4	5	4	4	4	09	05	09						25315
	CG	1943	56 00N	134 08W	50	4	4	4	4	4	5	4	4	5	1	1	1	12		12						25315
	CG	1944	56 00N	134 08W	50	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25315
	CG	1945	56 00N	134 08W	50	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25315
	CG	1946	56 00N	134 08W	50	1	1	7	6	6	6	6	6	6	5	5	5	12		12						25315
	CG	1947	56 00N	134 08W	50	5	5	5	5	5	5	5			6	6	5	12		10						25315
	CG	1948	56 00N	134 08W	50	5	6	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1949	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1950	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1951	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1952	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1953	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1954	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1955	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1956	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1957	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5		5	11		11						25315
	CG	1958	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1959	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1960	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1961	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CG	1962	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		11						25315
	CG	1963	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	6	12		11						25315
	CG	1964	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25315
	CG	1965	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25315
	CG	1966	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		10						25315
	CG	1967	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CG	1968	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CG	1969	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		06						25315
	CG	1970	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CG	1971	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CG	1972	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	11		12						25315
	CG	1973	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		10						25315
	CG	1974	56 00N	134 08W	50	6	6	6	6	6	6	6	6					07		07						25315
CAPE HINCHIN	CG	1939	60 14N	146 39W	185			5	5	5	5	5	5	5	5	5	5									26417
	CG	1940	60 14N	146 39W	185	3	3	3	3	3	3	3	3	3	3	3	3									26417
	CG	1941	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1943	60 14N	146 39W	185										1	1										26417
	CG	1944	60 14N	146 39W	185	1	1	1	1	1	1	1	1	1	1	1	1									26417
	CG	1945	60 14N	146 39W	185	1	1	1	1	1	1	1	1	1		1	1									26417
	CG	1946	60 14N	146 39W	185	1	1	6	6	6	6	6	6	5	4	4	4									26417
	CG	1947	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CG	1948	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CG	1949	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CG	1950	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CG	1951	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CG	1952	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CG	1953	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	5	5									26417
	CG	1954	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1955	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1956	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1957	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1958	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1959	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1960	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1961	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1962	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1963	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1964	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH: 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
CAPE HINCHIN	CG	1965	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1966	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1967	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1968	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1969	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1970	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1971	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1972	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1973	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CG	1974	60 14N	146 39W	185	5	5	5	5	5	5	5														26417
CAPE LISBURN	AFS	1952	68 52N	166 08W	67								6	6	5	5	5									26631
	AFS	1953	68 52N	166 08W	67	6	6	6	6	6	6	6	6	6	6	6	6			04						26631
	AFS	1954	68 52N	166 08W	67	6	6	6	6	6	6	6	6	6	6	6	6			12						26631
	AFS	1955	68 52N	166 08W	67	1	6	6	6	1	1	1	1	1	1	6	6			11						26631
	AFS	1956	68 52N	166 08W	52	1	1	1	1	1	1	1	1	1	1	1	1			11						26631
	AFS	1957	68 52N	166 08W	52	1	1	1	1	1	1	1	1	1	1	1	1			12						26631
	AFS	1958	68 52N	166 08W	52	1	1	1	1	1	7	7	7	7	7	7	7			12						26631
	AFS	1959	68 52N	166 08W	52	7	7	7	7	7	7	7	7	7	7	7	7			12						26631
	AFS	1960	68 52N	166 08W	52	7	7	7	7	7	7	7	7	7	7	7	7			12						26631
	AFS	1961	68 52N	166 08W	52	7	7	7												03						26631
CAPE LISBURN	AFS	1961	68 53N	166 08W	52				7	7	7	7	7	7	7	7	7			09						26631
	AFS	1962	68 53N	166 08W	52	7	7	7	7	7	7	7	7	7	7	7	7			12						26631
	AFS	1963	68 53N	166 08W	52	7	7	7	7	7	7	7	1	1	1	1	1			12						26631
	AFS	1964	68 53N	166 08W	53	7	1	1	1	7	7	7	7	7	7	1	7			03						26631
	AFS	1965	68 53N	166 08W	53	7	7	7	7	7	7	7	7	7	1	1	1									26631
	AFS	1966	68 53N	166 08W	53	7	7	7	1	1	1	1	7	7	7	7	7									26631
	AFS	1967	68 53N	166 08W	53	7	7	7	1	1	1	1	1	1	7	7	7									26631
	AFS	1968	68 53N	166 08W	53	7	7	7	7	1	1	1	1	7	7	7	7									26631
	AFS	1969	68 53N	166 08W	53	7	6	6	7	7	7	7	7	7	1	1	1									26631
	AFS	1970	68 53N	166 08W	53	7	6	6	7	7	7	7	7	7	1	1	1									26631
	AFS	1971	68 53N	166 08W	53	1	1	1	1	1	1	1	1	1	1	1	1									26631
	AFS	1972	68 53N	166 08W	53	1	1	1	1	7	6	6	6	7	7	7	7									26631
	AFS	1973	68 53N	166 08W	53	6	6	7	7	7	7	7	7	7	7	7	7									26631
	AFS	1974	68 53N	166 08W	53	7	7	7	1	1	1	1	1	1	1	1	1									26631
	AFS	1975	68 53N	166 08W	53	1	1	1	1	1	1	1	1	1	1	1	1									26631
	AFS	1976	68 53N	166 08W	53	6	6	6	6	6	6	6	6	6	6	6	6									26631
CAPE NEWENHA	AFS	1953	58 40N	162 10W	543							6	6	6	6	6	6			06						25623
	AFS	1954	58 40N	162 10W	543	6	6	6	6	6	6	6	6	6	6	6	6			12						25623
	AFS	1955	58 40N	162 10W	543	6	6	6	6	1	1	1	1	1	6	6	6			12						25623
	AFS	1956	58 40N	162 10W	543	6	1	1	1	1	1	1	1	1	1	1	1			11						25623
	AFS	1957	58 40N	162 10W	543	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	AFS	1958	58 40N	162 10W	543	1	1	1	1	1	7	7	7	7	7	7	7			12						25623
	AFS	1959	58 40N	162 10W	543	7	7	7	1	1	1	1	1	1	1	1	1			12						25623
	AFS	1960	58 40N	162 10W	543	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	AFS	1961	58 40N	162 10W	543	1	1	1												03						25623
CAPE NEWENHA	AFS	1961	58 39N	162 04W	543				1	1	1	1	1	1	1	1	1			09						25623
	AFS	1962	58 39N	162 04W	543	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	AFS	1963	58 39N	162 04W	235	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	AFS	1964	58 39N	162 04W	235	1	1	7	7	7	7	7	7	7	1	6	6			03						25623
	AFS	1965	58 39N	162 04W	235	7	7	7	1	1	1	1	7	7	7	7	7									25623
	AFS	1966	58 39N	162 04W	235	7	7	1	1	1	1	1	7	7	1	1	1									25623
	AFS	1967	58 39N	162 04W	235	1	1	1	1	1	1	1	1	7	7	7	7						08			25623
	AFS	1968	58 39N	162 04W	235	7	7	7	7	1	1	7	7	7	1	7	1						12			25623
	AFS	1969	58 39N	162 04W	235	1	7	7	6	7	6	6	7	7	1	7	1						12			25623
	AFS	1970	58 39N	162 04W	235	7	7	7	7	7	7	7	1	1	1	1	1						12			25623
	AFS	1971	58 39N	162 04W	235	1	1	1	1	1	1	1	1	1	1	1	1						12			25623
	AFS	1972	58 39N	162 04W	235	1	1	6	6	1	7	7	7	7	7	7	7						12			25623
	AFS	1973	58 39N	162 04W	235	7	7	7	7	7	7	7	7	1	1	1	1						03			25623
	AFS	1974	58 39N	162 04W	235	1	1	1	1	1	1	1	1	1	1	1	1									25623
	AFS	1975	58 39N	162 04W	235	7	7	7	7	7	7	7	7	7	7	7	7									25623
	AFS	1976	58 39N	162 04W	235	7	7	7	7	7	7	7	7	7	7	7	7									25623
CAPE POLE	A	1974	55 58N	133 48W	50	5	5		5	5	5						5									
	A	1975	55 58N	133 48W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	55 58N	133 48W	50	5	5	5	5	5	5	5	5	5	5	5	5									
CAPE PRINCE	SEE TIN CITY																									26634
CAPE ROMANZO	AFS	1953	61 47N	165 52W	434			7	7	7	7	7	7	7	6	6	6			10						26633
	AFS	1954	61 47N	165 52W	434	6	6	6	6	6	6	6	6	6	6	6	6			11						26633
	AFS	1955	61 47N	165 52W	434	6	6	6	6	1	1	1	1	1	6	6	6			12						26633
	AFS	1956	61 47N	165 52W	434	1	1	1	1	1	1	1	1	1	1	1	1			11						26633
	AFS	1957	61 47N	165 52W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	AFS	1958	61 47N	165 52W	434	1	1	1	1	1	7	7	7	7	7	7	7			12						26633
	AFS	1959	61 47N	165 52W	434	7	7	7	1	1	1	1	1	1	1	1	1			12						26633
	AFS	1960	61 47N	165 52W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	AFS	1961	61 47N	165 52W	434	1	1	1												03						26633
CAPE ROMANZO	AFS	1961	61 47N	166 02W	434				1	1	1	1	1	1	1	1	1			09						26633
	AFS	1962	61 47N	166 02W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	AFS	1963	61 47N	166 02W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	AFS	1964	61 47N	166 02W	405	1	1	1	1	7	7	7	7	7	7	7	7			03						26633
	AFS	1965	61 47N	166 02W	405	7	7	7	7	7	7	7	1	1	1	7	1									26633
	AFS	1966	61 47N	166 02W	405	7	7	7	7	1	7	7	7	7	7	7	7									26633
	AFS	1967	61 47N	166 02W	405	7	7	7	1	7	7	1	1	1	7	7	7									26633
	AFS	1968	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
	AFS	1969	61 47N	166 02W	405	7	5	7	6	7	7	7	7	7	1	1	1									26633
	AFS	1970	61 47N	166 02W	405	1	6	7	7	7	6	7	1	1	1	1	1									26633

RECORDS INDEX **ALPHABETIC** BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
CAPE ROMANZO	AFS	1971	61 47N	166 02W	405	1	1	1	1	1	1	1	1	1	1	1	1									26633
	AFS	1972	61 47N	166 02W	405	1	1	1	1	7	7	7	6	6	6	7	7									26633
	AFS	1973	61 47N	166 02W	405	6	6	7	7	7	7	7	7	7	7	7	7									26633
	AFS	1974	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
	AFS	1975	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
	AFS	1976	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
CAPE ST ELIA	CG	1939	59 48N	144 36W	58			3	3	3	3	3	3	3	3	3	3									25401
	CG	1940	59 48N	144 36W	58	3	3	3	3	3	3	3	3	3	3	3	3									25401
	CG	1941	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5									25401
	CG	1942	59 48N	144 36W	58		5	5	5	5	5	5	5	5	5	5	5									25401
	CG	1943	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5									25401
	CG	1944	59 48N	144 36W	58	1	1	1	1	1	1	1	1	1	1	1	1	08		08						25401
	CG	1945	59 48N	144 36W	58	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25401
	CG	1946	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1947	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1948	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1949	59 48N	144 36W	58	4	4	4	4	4	4	4	4	4	4	4	4	12		12						25401
	CG	1950	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		11						25401
	CG	1951	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1952	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1953	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1954	59 48N	144 36W	58	5	5	6	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1955	59 48N	144 36W	58	5	5	5	5	5	5	5	6		5	5	5	11		11						25401
	CG	1956	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1957	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1958	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1959	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		10						25401
	CG	1960	59 48N	144 36W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		06						25401
	CG	1961	59 48N	144 36W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CG	1962	59 48N	144 36W	50	5	5	5	5	5	6	6	6	6	6	6	6	12		12						25401
	CG	1963	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CG	1964	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CG	1965	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25401
	CG	1966	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	11		12						25401
	CG	1967	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CG	1968	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CG	1969	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CG	1970	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CG	1971	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CG	1972	59 48N	144 36W	50	6	6	6	6	6	6	6	6	1	1	1	1	12		11						25401
	CG	1973	59 48N	144 36W	50	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25401
	CG	1974	59 48N	144 36W	50	1	1	1	1	1	1	1						06		07						25401
CAPE SARICHE	CG	1940	54 36N	164 56W	175		3	3	3	3	3	3	3	3	3	3	3									25622
	CG	1941	54 36N	164 56W	175	3	3	3	3	3	3	3	3	3	3											25622
CAPE SARICHE	CG	1952	54 36N	164 56W	175			5	5	5	5	5	5	5	5	5	5									25622
	CG	1953	54 36N	164 56W	175	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CG	1954	54 36N	164 56W	175	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CG	1955	54 36N	164 56W	175	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CG	1956	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			04						25622
	CG	1957	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1958	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1959	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1960	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1961	54 36N	164 56W	176	5	5	5	5	5	5		5	5	5	5	5			12						25622
	CG	1962	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1963	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1964	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1965	54 36N	164 56W	176	5	5	5	5	6	5	5	5	5	5	5	5			12						25622
	CG	1966	54 36N	164 56W	176	5	5	5	5	5		5	5	5	5	5	5			12						25622
	CG	1967	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1968	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1969	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1970	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1971	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CG	1972	54 38N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			04						25622
	CG	1973	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CG	1974	54 36N	164 56W	176		5	5	5	5	5	5	5	5	5	5	5									25622
	CG	1975	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CG	1976	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5		5									25622
CAPE SPENCER	CG	1938	58 12N	136 38W	88								3	3		3	3									25316
	CG	1939	58 12N	136 38W	88	3	3				3	3	4	3	3	3	3									25316
	CG	1940	58 12N	136 38W	88	3	3	3	3	3	5	5	5	5	4	5	5									25316
	CG	1941	58 12N	136 38W	88	5	5	5	5	5	5	5	5	5	5	5	5									25316
	CG	1942	58 12N	136 38W	88			5	5	5	5	5	5	5	5	5	5	05		05						25316
	CG	1943	58 12N	136 38W	88	5	5	5	5	5	5	5	5	5	1	1	1	12		12						25316
	CG	1944	58 12N	136 38W	88	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25316
	CG	1945	58 12N	136 38W	88	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25316
	CG	1946	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1947	58 12N	136 38W	88	6	6	6	6	6	6	8	6	6	6	6	6	12		12						25316
	CG	1948	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1949	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1950	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1951	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1952	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1953	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1954	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1955	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		10						25316
	CG	1956	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
CAPE SPENCER	CG	1957	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1958	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1959	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1960	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1961	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1962	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1963	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25316
	CG	1964	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1965	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1966	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	10		12						25316
	CG	1967	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1968	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1969	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1970	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1971	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1972	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CG	1973	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	11		08						25316
	CG	1974	58 12N	136 38W	88	6	6	6	6	6	6	6	6					08		07						25316
CAPE STARR	SEE NIKOLSKI																									25605
CAPE THOMPSO	SPL	1959	68 06N	165 46W	36								3	3	3	3	3									26636
	SPL	1960	68 06N	165 46W	36	3	3	3	3	3	3	3	3	3	3	3	3									26636
	SPL	1961	68 06N	165 46W	36	3	3	3	3	3	3	3	3	3	3	3	3									26636
	SPL	1962	68 06N	165 46W	36	3	3	3	3	3	3	3	3	3	3	3	3			01	01					26636
	SPL	1963	68 06N	165 46W	36	3	3	3	3																	26636
CAPE WRANGEL	NF	1944	52 53N	172 31E	50		5	5	6	5	5	5	6	5	5	5	5									45713
	NF	1945	52 53N	172 31E	50	6					5															45713
CATON ISLAND	NF	1943	54 25N	162 28W	130										6	7	7									25615
	NF	1944	54 25N	162 28W	130	7	7	7	7	7	7	7	7	7	7	7	7									25615
	NF	1945	54 25N	162 28W	130	7	7	7	7																	25615
CATON ISLAND	NS	1943	54 25N	162 28W	140								1	1	1											25612
	NS	1945	54 25N	162 28W	140					7	7	7	7	7	7											25612
CENTRAL	A	1940	65 35N	144 47W	750					3	3	3	3	3	3	3	3									26418
	A	1941	65 35N	144 47W	750	3	3			3	3	3	3	3	3	3	3									26418
	A	1942	65 35N	144 47W	750	3	3	3	3	3	3	3	3	3	3											26418
CENTRAL	A	1946	65 35N	144 48W	870											5	5									26418
	A	1947	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	A	1948	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	A	1949	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	A	1950	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	A	1951	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5										26418
	A	1952	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	A	1953	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	A	1954	65 35N	144 48W	870	5	5	5	5	5																26418
CENTRAL	COOP	1963	65 33N	144 49W	1000																07					
	COOP	1964	65 33N	144 49W	1000																11					
	COOP	1965	65 33N	144 49W	1000																12					
	COOP	1966	65 33N	144 49W	1000																12					
	COOP	1967	65 33N	144 49W	1000																12					
	COOP	1968	65 33N	144 49W	1000																10					
	COOP	1969	65 33N	144 49W	1000																10					
	COOP	1970	65 33N	144 49W	1000																12					
	COOP	1971	65 33N	144 49W	1000																12					
	COOP	1972	65 33N	144 49W	1000																12					
	COOP	1973	65 33N	144 49W	1000																11					
	COOP	1974	65 33N	144 49W	1000																11					
	COOP	1975	65 33N	144 49W	1000																11					
	COOP	1976	65 33N	144 49W	1000																11					
CHALKYITSIK	COOP	1963	66 38N	143 43W	560																07					
	COOP	1964	66 38N	143 43W	560																12					
	COOP	1965	66 38N	143 43W	560																11					
	COOP	1966	66 38N	143 43W	560																11					
	COOP	1967	66 38N	143 43W	560																12					
	COOP	1968	66 38N	143 43W	560																09					
	COOP	1969	66 38N	143 43W	560																08					
	COOP	1970	66 38N	143 43W	560																06					
	COOP	1971	66 38N	143 43W	560																06					
	COOP	1972	66 38N	143 43W	560																11					
	COOP	1973	66 38N	143 43W	560																03					
CHANDALAR	A	1974	67 30N	148 30W	1845										1	1	1									
	A	1975	67 30N	148 30W	1845	1	1	1	1	1	1	1	6	6	6	6	6									
	A	1976	67 30N	148 30W	1845	6	6	6	6	6	6	6	6	6	6	6	6									
CHENA HOT SP	COOP	1963	65 03N	146 03W	1200																07					
	COOP	1964	65 03N	146 03W	1200																12					
	COOP	1965	65 03N	146 03W	1200																12					
	COOP	1966	65 03N	146 03W	1200																11					
	COOP	1967	65 03N	146 03W	1200																11					
	COOP	1968	65 03N	146 03W	1200																11					
	COOP	1969	65 03N	146 03W	1200																11					
	COOP	1970	65 03N	146 03W	1200																12					
	COOP	1971	65 03N	146 03W	1200																12					
	COOP	1972	65 03N	146 03W	1200																12					

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
CHENA HOT SP	COOP	1973	65 03N	146 03W	1200																12					
	COOP	1974	65 03N	146 03W	1200																08					
CHICKEN	A	1935	64 04N	141 56W	2000										3	3	3									
	A	1936	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1938	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	64 04N	141 56W	2000	3	3	3	3	3																
CHIRIKOF	NS	1943	55 55N	155 35W	143				1	1	1	1		1	1	1	1									25505
	NS	1945	55 55N	155 35W	143					1	1	1	1	1	1											25505
CHIRIKOF IS	NF	1943	55 54N	155 34W	75											6	7									25511
	NF	1944	55 54N	155 34W	75	7	7	7	7	7	7	7	7	7	7	7	7									25511
	NF	1945	55 54N	155 34W	75	1	1	1	1																	25511
CHIRIKOF IS	SAWR	1953	55 54N	155 34W	25			3	3	3	3	3			3	3	3									25511
	SAWR	1954	55 54N	155 34W	25			3	3	3	3	3	3													25511
CHITINA	A	1939	61 32N	144 27W	572						3	3	3	3	3	3	3									
	A	1940	61 32N	144 27W	572	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	61 32N	144 27W	572	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1942	61 32N	144 27W	581	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1943	61 32N	144 27W	581	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1944	61 32N	144 27W	581	3	3	3	3																	
CHUGINADAK	AAF	1943	52 50N	169 50W	80							6	6	6	6	6	6			56						25601
	AAF	1944	52 50N	169 50W	80	6	6	6	6	6	6									56						25601
CIRCLE	A	1931	65 48N	144 04W	700					3	3	3	3	3	3	3	3									26446
	A	1932	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1933	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1934	65 48N	144 04W	700	3	3	3	3	3	3		3	3	3	3	3									26446
	A	1935	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3		3	3									26446
	A	1936	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1937	65 48N	144 04W	700	3	3	3	3	3	3	3			3	3	3									26446
	A	1938	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1939	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1940	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1941	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1942	65 48N	144 04W	700	5	5	5	5	5	5	5														26446
	A	1943	65 48N	144 04W	700	5	5	5	5	5	5	5	5	5	5	5	5									26446
	A	1944	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	A	1945	65 48N	144 04W	700	3	5	5	5	5	5	5	5	5	5	5	5									26446
	A	1946	65 48N	144 04W	700	4		4																		26446
CIRCLE HOT S	A	1935	65 29N	144 36W	935								3	3	3	3	3									26419
	A	1936	65 29N	144 36W	935	3	3	3																		26419
	A	1938	65 29N	144 36W	935										3	3	3									26419
	A	1939	65 29N	144 36W	935	3	3	3	3	3	3	3														26419
	A	1940	65 29N	144 36W	935								3	3	3	3										26419
	A	1941	65 29N	144 36W	935			3	3																	26419
CIRCLE HOT S	A	1954	65 29N	144 36W	935						5	5	5	5	5	5	5									26419
	A	1955	65 29N	144 36W	935	5	5	5	5	5	5	5	5	5	5	3	3									26419
	SAWR	1956	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	SAWR	1957	65 29N	144 36W	935					3	3	3	3	3	3	3	3									26419
	SAWR	1958	65 29N	144 36W	935	3	3	5	3	4	3	3	3													26419
CIRCLE HOT S	SAWR	1962	65 29N	144 36W	935											3	3									26419
	SAWR	1963	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	SAWR	1964	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	SAWR	1965	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	SAWR	1966	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3										26419
	SAWR	1967	65 29N	144 36W	935					3	3	3	3	3	3	3	3									26419
	SAWR	1968	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	SAWR	1969	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	SAWR	1970	65 29N	144 36W	935	3	3	3	3	3					3											26419
	SAWR	1971	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	SAWR	1972	65 29N	144 36W	935	3	3																			26419
CLEAR	SAWR	1959	64 17N	149 11W	580			3	3	3	3	3	3	3	3	3	3									
	SAWR	1960	64 17N	149 11W	580	3																				
	SAWR	1961	64 17N	149 11W	580	3					3															
	SAWR	1963	64 19N	149 09W	546			5	5	5	5	5	5	5	5	5	5									
	SAWR	1964	64 19N	149 09W	546		5	5	5	5	5	5	5	5	5	5	5									
	SAWR	1965	64 19N	149 09W	546	5	5	5	5	5	6	5	5	5	5	5	5				01					
	SAWR	1966	64 19N	149 09W	546	5	5	5	5	5	5	5	5	5	5	5	5				11					
	SAWR	1967	64 17N	149 10W	542	5	5	5	5	5	5	5	5	5	5	5	5				08					
	SAWR	1968	64 17N	149 10W	542	5	5	5	5	5	5	5	4	4	4	4	4									
	SAWR	1969	64 17N	149 10W	542	4	4	4	4	4	4	4	4	3												
	SAWR	1970	64 18N	149 11W	580	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1971	64 18N	149 11W	580	5	5	5	5	3	3	3	3	3	3	3	3									
	SAWR	1972	64 18N	149 11W	580	5	5	5	5	3	3															
CLEAR STA A	AFS	1947	62 13N	149 05W	537										1	1										26408
	AFS	1948	62 13N	149 05W	537															52	53					26408
COAL CREEK	A	1938	65 16N	143 16W	1050					3	3	3	3	3	3											
	A	1939	65 16N	143 16W	1050					3	3	3	3	3	3											
	A	1940	65 16N	143 16W	1050					3	3	3	3	3	3											

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
COAL CREEK	A	1941	65 16N	143 16W	1050						3	3		3	3											
COFFMAN COVE	A	1974	56 00N	132 50W	10		5	5	5	5		5	5	5												
COLD BAY	SEE THORNBROUGH AFB																									25603
COLD BAY	SAWR	1953	55 12N	162 43W	98											5	5									25624
	SAWR	1954	55 12N	162 43W	93	5	5	5	5		1	1	1	1	1	1	1			06						25624
	WBAS	1955	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	WBAS	1956	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	WBAS	1957	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	WBAS	1958	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	WBAS	1959	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12			06			25624
	WBAS	1960	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1961	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1962	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1963	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1964	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1965	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1966	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1967	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1968	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1969	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1970	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1971	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WBAS	1972	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	WSO	1973	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			09			25624
	WSO	1974	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25624
	WSO	1975	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25624
	WSO	1976	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25624
COLD FT CAMP	SAWR	1974	67 03N	149 34W	1063			3	3	3	5	5				1	1									
	SAWR	1975	67 03N	149 34W	1063	1	1	1	1	1	1	1	1	1	1	1	6									
	SAWR	1976	67 03N	149 34W	1063	6	6	6	6	6	6	6	6	6	6	6	6									
COLLEEN	COOP	1963	67 44N	142 28W	900																06					
	COOP	1964	67 44N	142 28W	900																06					
	COOP	1965	67 44N	142 28W	900																09					
	COOP	1966	67 44N	142 28W	900																11					
	COOP	1967	67 44N	142 28W	900																10					
	COOP	1968	67 44N	142 28W	900																11					
COLLEGE	A	1970	64 52N	147 50W	621									5	5	5	5									
	A	1971	64 52N	147 50W	621		3	3	3	3	3	3	3													
COPPER CTR	A	1938	61 58N	145 19W	1044											3	3									
	A	1939	61 58N	145 19W	1044	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	61 58N	145 19W	1044	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	61 58N	145 19W	1044	3	3	3	3	3				3	3	3	3	11	08	08						
	A	1942	61 58N	145 19W	1044	3	3	3	3	3	3	3	3	3				09	09	09						
CORDOVA	S	1923	60 32N	145 42W	44														10	10		10				26410
	S	1924	60 32N	145 42W	44														12	12		12				26410
	S	1925	60 32N	145 42W	44														12	12		12				26410
	S	1926	60 32N	145 42W	44														12	12		12				26410
	S	1927	60 32N	145 42W	44														12	12		12				26410
	S	1928	60 32N	145 42W	44														12	12		12				26410
	S	1929	60 32N	145 42W	44														05	05		05				26410
CORDOVA	S	1929	60 31N	145 36W	25														07	07		07				26410
	S	1930	60 31N	145 36W	25														12	12		12				26410
	S	1931	60 31N	145 36W	25		3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	S	1932	60 31N	145 36W	25	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	S	1933	60 31N	145 36W	25	3	3	3	3	3									05	05		05				26410
CORDOVA	S	1933	60 32N	145 42W	70						3	3	3	3	3	3	3		07	07		07				26410
	S	1934	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	S	1935	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	S	1936	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	S	1937	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	S	1938	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	S	1939	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3	06	12	12		12				26410
	S	1940	60 32N	145 42W	70	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26410
	S	1941	60 32N	145 42W	70	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26410
	S	1942	60 32N	145 42W	70	6	6	6	6	6										05						26410
CORDOVA	AF	1942	60 30N	145 30W	45						6	6						07	06	07						26410
	AF	1943	60 30N	145 30W	45						1	1	1	1				12	05							26410
	AF	1944	60 30N	145 30W	45		1	1										12								26410
	WBAS	1945	60 30N	145 30W	44									1	1	1	1	03	04	04	01					26410
	WBAS	1946	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12					26410
	WBAS	1947	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1		12	12	03					26410
	WBAS	1948	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26410
	WBAS	1949	60 30N	145 30W	44															12						26410
	WBAS	1950	60 30N	145 30W	44															12						26410
	WBAS	1951	60 30N	145 30W	44															12						26410
	WBAS	1952	60 30N	145 30W	44															12						26410
	WBAS	1953	60 30N	145 30W	44															12						26410
	WBAS	1954	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	WBAS	1955	60 30N	145 30W	44	1	1	1	1	1	6	6	7	7	7	7	7			12						26410
	WBAS	1956	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	WBAS	1957	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

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NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
CORDOVA	WBAS	1958	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	WBAS	1959	60 3LN	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	WBAS	1960	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	WBAS	1961	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			11						26410
	WBAS	1962	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	WBAS	1963	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	WBAS	1964	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1965	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1966	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			11						26410
	FAA	1967	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1968	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1969	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1970	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1971	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1972	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1973	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1974	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	FAA	1975	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			10						26410
	FAA	1976	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			09						26410
CORDOVA	AAF	1942	60 29N	145 30W	45						6	1	1	1	1	1	1				51					26402
	AAF	1943	60 29N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			62	62		07			26402
	AAF	1944	60 29N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			26402
	AAF	1945	60 29N	145 30W	45	1	1	1	1	1	1	1	1							58	61		08			26402
	AAF	1946	60 29N	145 30W	45																51					26402
COUNCIL	A	1936	64 53N	163 41W	95					3			3	3	3	3	3									
	A	1937	64 53N	163 41W	95								4	4	4	4	4									
	A	1938	64 53N	163 41W	95	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	64 53N	163 41W	95	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	64 53N	163 41W	95	4	4	4	4	4	4	4	4	4	4	4	4									
	A	1941	64 53N	163 41W	95	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1942	64 53N	163 41W	95	5	5	5	5	5	5	5	5	5	5											
CRAIG	A	1930	55 29N	133 09W	13									3	3	3	3									25317
	A	1931	55 29N	133 09W	13	3	3		3	3	3	3	3	3												25317
	A	1932	55 29N	133 09W	13				3	3	3	3	3	3	3											25317
	A	1933	55 29N	133 09W	13				3	3	3	3		3	3											25317
	A	1934	55 29N	133 09W	13				3	3	3	3		3	3											25317
	A	1936	55 29N	133 09W	13												3									25317
	A	1937	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3									25317
	A	1938	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3									25317
	A	1939	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3									25317
	A	1940	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3	04	04	04						25317
	A	1941	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25317
	A	1942	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25317
	A	1943	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25317
	A	1944	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12	12					25317
	A	1945	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	04	12						25317
	A	1946	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	08		12						25317
	A	1947	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5			12						25317
	A	1948	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5			12						25317
	A	1949	55 29N	133 09W	13															12						25317
	A	1950	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5			09						25317
	A	1951	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1952	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1953	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1954	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	4	4									25317
	A	1955	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5										25317
	A	1956	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5										25317
	A	1957	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1958	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1959	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1960	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1961	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1962	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1963	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1964	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1965	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1966	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1967	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1968	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1969	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1970	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1971	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1972	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	A	1973	55 29N	133 09W	13	5	5	5	5	5							5									25317
	A	1974	55 29N	133 09W	13		5	5																		25317
CROOKED CREK	A	1930	61 52N	158 15W	150			3	3		3	3	3	3	3	3	3									26518
	A	1931	61 52N	158 15W	150	3	3	3	3	3	3	3	3	3	3	3	3									26518
	A	1932	61 52N	158 15W	150	3	3	3	3	3	3	3	3	3	3	3	3									26518
	A	1933	61 52N	158 15W	150	3	3	3	3	3	3	3	3	3	3	3	3									26518
	A	1934	61 52N	158 15W	150	3	3	3	3	3			3	3	3	3	3									26518
	A	1935	61 52N	158 15W	150	3	3									3	3									26518
	A	1936	61 52N	158 15W	150	3	3	3	3	3	3	3	3													26518
	A	1938	61 52N	158 15W	150				3	3	3	3	3	3	3	3	3									26518
	A	1939	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518
	A	1940	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518
	A	1941	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518
	A	1942	61 52N	158 15W	125	3	3	3	3	3	3	3	3			3	3									26518
	A	1943	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
CROOKED CREK	A	1944	61 52N	158 15W	125	3	3	3	3	3		3	3	3	3	3	3									26518
	A	1945	61 52N	158 15W	125	3	3	3	3	3	3	3	5	5	5	5	5									26518
	A	1946	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1947	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1948	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1949	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1950	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1951	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1952	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1953	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1954	61 52N	158 15W	125	5	5	5	5	4	5	5	5	5	5	5	5									26518
	A	1955	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1956	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	A	1957	61 52N	158 15W	125	5	5	5	5	5	5															26518
CROOKED CREK	COOP	1968	61 52N	158 15W	130																04					
	COOP	1969	61 52N	158 15W	130																12					
	COOP	1970	61 52N	158 15W	130																08					
	COOP	1971	61 52N	158 15W	130																12					
	COOP	1972	61 52N	158 15W	130																10					
	COOP	1973	61 52N	158 15W	130																12					
	COOP	1974	61 52N	158 15W	130															09	08					
CURRY	A	1941	62 37N	150 02W	556												5									
	A	1942	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1943	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1944	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1945	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1946	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5											
	A	1947	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5		5	5									
	A	1948	62 37N	150 02W	556	5																				
DAHL CREEK	A	1967	66 56N	156 52W	270			3	3	4	4	4	4	4	4	4	4									
	A	1968	66 56N	156 52W	270	4	4	4	4	4	4	4														
DAVIS	AAF	1942	51 53N	176 39W	217										1	1	1									25701
	AAF	1943	51 53N	176 39W	217	1	1	1	1	1	1	1	1	1	1	1	1			62			01			25701
	AAF	1944	51 53N	176 39W	217	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			25701
	AAF	1945	51 53N	176 39W	24	0	0	1	1	1	1	1	1	1	1	1	1			62	62		10			25701
	AAF	1946	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			25701
	AAF	1947	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25701
	AFB	1948	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			25701
	AFB	1949	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			25701
	AFB	1950	51 53N	176 39W	15	1	1	1	1	1	1									55	55					25701
DEADHORSE	SAWR	1969	70 12N	148 27W	47		1	1	1	1	1	1	1	1	1	1	1									
	FSS	1970	70 12N	148 27W	50	1	1	1	1	1	1	1	1	6	6	6	6									
	FSS	1971	70 12N	148 27W	50	6	6	6	6	6	6	6	6	6	6	6	6									
	FSS	1972	70 12N	148 27W	50	6	6	6	6	6	6	6	6	6	6	6	6									
	FSS	1973	70 12N	148 27W	50	6	6	6	6	6	6	6	6	6	6	6	6									
	FSS	1974	70 12N	148 28W	83	6	6	6	6	6	6	6	6	6	6	1	1									
	FSS	1975	70 12N	148 28W	83	1	1	1	1	1	1	1	1	1	1	1	1									
	FSS	1976	70 12N	148 28W	83	1	1	1	1	1	1	1	1	1	1	1	1									
DEERING	A	1936	66 04N	162 45W	15											3	3									
	A	1937	66 04N	162 45W	15	3	3				3	3	3	3	3	3										
	A	1938	66 04N	162 45W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	66 04N	162 45W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	66 04N	162 45W	15	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1941	66 04N	162 45W	15			3	3	3	3	3	3	3	3	3										
	A	1942	66 04N	162 45W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1943	66 04N	162 45W	15	5	5	5	5	5	5															
DIETRICH	SAWR	1974	67 41N	149 44W	1488											1	1									
	SAWR	1975	67 41N	149 44W	1489	1	1	1	1	1	1	1	1	1	1	1	6									
	SAWR	1976	67 41N	149 44W	1489	6	6	6	6	6	6	6	6	6	6	6	6									
DILLINGHAM	SAWR	1941	59 03N	158 27W	38									4	4	4	4	04		04						25513
	SAWR	1942	59 03N	158 27W	38	4	4	4	4	4								03		03						25513
DILLINGHAM	SAWR	1951	59 03N	158 27W	30												3									25513
	SAWR	1952	59 03N	158 27W	30						3	3	3	3	3	3	5									25513
	SAWR	1953	59 03N	158 27W	30	5	5	5	5	5	5	5	5	5	5	5	5									25513
	SAWR	1954	59 03N	158 27W	30				3	3	3	3	3	3	3	3										25513
	SAWR	1956	59 03N	158 27W	50			5	5	3	3	5	4	3	5	4	3									25513
	SAWR	1957	59 03N	158 27W	50	5	5	5	5	4	5	4	5	5	4	4	5									25513
	SAWR	1958	59 03N	158 27W	50	5	5	5	5	5	5	5	5	4	5	5	5									25513
	SAWR	1959	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	SAWR	1960	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	SAWR	1961	59 03N	158 27W	50	5	5	5	5	5	5	5	6	5	5	5	5									25513
	SAWR	1962	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	SAWR	1963	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	SAWR	1964	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	6	5	5									25513
	SAWR	1965	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	SAWR	1966	59 03N	158 27W	50	5	5	5	5	5	5	5	5		5	5	5									25513
	SAWR	1967	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	SAWR	1968	59 03N	158 27W	50	5	5	5	5	5	5															25513
DILLINGHAM	FSS	1966	59 03N	158 31W	86							5	5	5	5	5	5									25512
	FSS	1967	59 03N	158 31W	86	5	5	5	5	5	5	5	5	5	5	5	5									25512
	FSS	1968	59 03N	158 31W	86	5	5	5	5	5	5	5	5	5	5	5	5									25512
	FSS	1969	59 03N	158 31W	86	5	5	5	5	6	6	6	6	6	6	6	6									25512

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
DILLINGHAM	FSS	1970	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	FSS	1971	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	FSS	1972	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	FSS	1973	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	FSS	1974	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	FSS	1975	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	FSS	1976	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
DOLLY VARDEN	CG	1974	60 48N	151 38W	108	3	3	3	3	3	3	3	3	3	3	3	3			01						
	CG	1975	60 48N	151 38W	108	3	3	3	3	3	3	3	3	3	3	3	3			09						
	CG	1976	60 48N	151 38W	108	3	3	3	3	3	3	3	3	3	3	3	3			12						
DRIFT RIVER	SAWR	1968	60 35N	152 09W	35			3	3	3	3															
DRIFTWOOD BY	AFS	1959	53 59N	166 51W	1277						5	5	5	5	5	5	5									25515
	AFS	1960	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1961	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1962	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1963	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1964	53 59N	166 51W	1277	5	5	5																		25515
DRIFTWOOD BY	AFS	1964	53 58N	166 51W	1298				5	5	5	5	5	5	5	5	5									25515
	AFS	1965	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1966	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1967	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1968	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	AFS	1969	53 58N	166 51W	1298	5	5	5	5	5																25515
DUTCH HARBOR	NF	1915	53 53N	166 32W	47														08	01						25616
	NF	1916	53 53N	166 32W	47														12	12						25616
	NF	1917	53 53N	166 32W	47														12	12						25616
	NF	1918	53 53N	166 32W	47														12	12						25616
	NF	1919	53 53N	166 32W	47														12	12						25616
	NF	1920	53 53N	166 32W	47														12	12						25616
	NF	1921	53 53N	166 32W	47														12	12						25616
	NF	1922	53 53N	166 32W	47														12	12						25616
	NF	1923	53 53N	166 32W	47														12	12						25616
	NF	1924	53 53N	166 32W	47														12	12						25616
	NF	1925	53 53N	166 32W	47														12	12						25616
	NF	1926	53 53N	166 32W	47														12	12						25616
	NF	1927	53 53N	166 32W	47														12	12						25616
	NF	1928	53 53N	166 32W	47														12	12						25616
	NF	1929	53 53N	166 32W	47														12	12						25616
	NF	1930	53 53N	166 32W	47														12	12						25616
	NF	1931	53 53N	166 32W	47														12	12						25616
	NF	1932	53 53N	166 32W	47														12	12						25616
	NF	1933	53 53N	166 32W	47														12	12						25616
	NF	1934	53 53N	166 32W	47														12	12						25616
	NF	1935	53 53N	166 32W	47							3	3	3	3	3	3		12	12						25616
	NF	1936	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25616
	NF	1937	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25616
	NF	1938	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25616
	NF	1939	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3	07	12	12						25616
	NF	1940	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25616
	NF	1941	53 53N	166 32W	47	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						25616
	NF	1942	53 53N	166 32W	30	4	4	4	4	4	4	4	4	5	5	5	5									25616
	NF	1943	53 53N	166 32W	30	5	5	5	5	5	5	5	5	5	5	5	5									25616
	NF	1944	53 53N	166 32W	30	5	5	1	1	1	1	1	1	1	1	1	1									25616
	NF	1945	53 53N	166 32W	30	1	1	1	1																	25616
DUTCH HARBOR	SA	1948	53 53N	166 32W	22										5	5	5									25614
	SA	1949	53 53N	166 32W	22	5	5	5	5	5	5	5	5	5	5	5	5									25614
	SA	1950	53 53N	166 32W	22	5	5	5	5	5	5	5	5	5	5	5	5									25614
	SAWR	1954	53 53N	166 32W	13								5	5	5	5	5									25614
	SAWR	1955	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	5	5	5									25614
	SAWR	1956	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	5	5	5									25614
	SAWR	1960	53 53N	166 32W	13												3									25614
	SAWR	1961	53 53N	166 32W	13	3	3	3	3	3	3	3	3	5	3	3	3									25614
	SAWR	1962	53 53N	166 32W	13	3	3	3	3	5	5	5	5	5	3	3	3									25614
	SAWR	1963	53 53N	166 32W	13	3	3	3	3	3	3	3	3	3	3	4	4									25614
	SAWR	1964	53 53N	166 32W	13	4	3	3	4		3	4	3	3	3	3	3									25614
	SAWR	1965	53 53N	166 32W	13	3	3	3	3	3	3	3														25614
	SAWR	1966	53 53N	166 32W	13										3	3	3									25614
	SAWR	1967	53 53N	166 32W	13	3	3	3	3	3	3	3	3	3	3	3	3									25614
	SAWR	1968	53 53N	166 32W	13	3	3	3	3	3	3	5	5	5	5	5	5									25614
	SAWR	1969	53 53N	166 32W	13	5	5	5		5	5	5	5	5	5	5	5									25614
	SAWR	1970	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	5	5	5									25614
	SAWR	1971	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	3	3	3									25614
	SAWR	1972	53 53N	166 32W	13	3	3	3	3																	25614
	SAWR	1973	53 53N	166 32W	13			3	3	3	3	3	3	3												25614
	SAWR	1974	53 53N	166 32W	13	3																				25614
	A	1976	53 53N	166 32W	13							5	5	5	5	5	5									25614
DUTCH HARBOR	NS	1933	53 53N	166 32W	26						1	1	1	1	1	1	1									25611
	NS	1934	53 53N	166 32W	26	1	1	1	1	1																25611
DUTCH HARBOR	NS	1939	53 53N	166 32W	26							1	1	1	1	1	1									25611
	NS	1940	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	NS	1941	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	NS	1942	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	NS	1943	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	NS	1944	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611

RECORDS INDEX ALPHABETIC BY STATION NAME

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HOURLY RECORDS BY MONTH: 1 = 24 OBS PER DAY

NUMBER OF MONTHS IN YEAR WITH

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
DUTCH HARBOR	NS	1945	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	NS	1946	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	NS	1947	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1											25611
DUTCH HARBOR	NS	1952	53 54N	166 32W	15						1	1	1	1	1	1	1			01	06		07			25611
	NS	1953	53 54N	166 32W	15	1	1	1	1	1	1	1	1	1	1	1	1			01	11		10			25611
	NS	1954	53 54N	166 32W	10	1	1	1	1	1	1	1								07	05		06			25611
DUTCH HARBOR	AFS	1950	53 54N	166 32W	23												1			51	51					25620
	AFS	1951	53 54N	166 32W	23	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25620
	AFS	1952	53 54N	166 32W	23	1	1	1	1	1										05	05					25620
EAGLE	WBO	1899	64 46N	141 12W	821														05	05		12				26422
	WBO	1900	64 46N	141 12W	821														12	12		12				26422
	WBO	1901	64 46N	141 12W	821														12	09		12				26422
EAGLE	WBO	1909	64 46N	141 12W	834														05							26422
	WBO	1910	64 46N	141 12W	834														12							26422
	WBO	1911	64 46N	141 12W	834														12							26422
	WBO	1912	64 46N	141 12W	834														12							26422
	WBO	1913	64 46N	141 12W	834														12							26422
	WBO	1914	64 46N	141 12W	834														12							26422
	WBO	1915	64 46N	141 12W	834														12							26422
	WBO	1916	64 46N	141 12W	834														12							26422
	WBO	1917	64 46N	141 12W	834														12	05						26422
	WBO	1918	64 46N	141 12W	834														12	12						26422
	A	1919	64 46N	141 12W	834														12	12						26422
	A	1920	64 46N	141 12W	834														12	12						26422
	A	1921	64 46N	141 12W	834														12	12						26422
	A	1922	64 46N	141 12W	834														12	12						26422
	A	1923	64 46N	141 12W	834														12	12						26422
	A	1924	64 46N	141 12W	834														12	12						26422
	A	1925	64 46N	141 12W	834														12	12						26422
	A	1926	64 46N	141 12W	834														12	12						26422
	A	1927	64 46N	141 12W	834														12	12						26422
	A	1928	64 46N	141 12W	834														12	12						26422
	A	1929	64 46N	141 12W	834														12	12						26422
	A	1930	64 46N	141 12W	837									3	3	3	3		12	12						26422
	A	1931	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26422
	A	1932	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26422
	A	1933	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26422
	A	1934	64 46N	141 12W	837	3	3	3	3	3	3								01							26422
	A	1935	64 46N	141 12W	837										3	3	3									26422
	A	1936	64 46N	141 12W	837	3	3	3	3	3	3	3	3													26422
	A	1937	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	A	1938	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	A	1939	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	A	1940	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	A	1941	64 46N	141 12W	806	5	5	5	5	5	5	5	5	5	5	5	5			04						26422
	A	1942	64 46N	141 12W	806	5	5	5	5	5	5	5	5	5	5	5	5			12						26422
	A	1943	64 46N	141 12W	806	5	5	5												03						26422
	A	1944	64 46N	141 12W	806				1	1	1	1	1	1												26422
	A	1947	64 46N	141 12W	806					4	5	5	5	5	5	5	5									26422
	A	1948	64 46N	141 12W	806	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1949	64 46N	141 12W	806	5	5	5	5	5	3	3	3	3	3	3	3									26422
	A	1950	64 46N	141 12W	806	5	5	5	5	5	5				5	5	5									26422
	A	1951	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1952	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1953	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1954	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1955	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1956	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1957	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1958	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1959	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1960	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	A	1961	64 46N	141 12W	821	5	5	5	5	5		5	5	5	5	5	5									26422
	A	1962	64 46N	141 12W	821	5	5	5	5	5			5	5	5	5	5									26422
	A	1963	64 46N	141 12W	821	5	5	5	5	5				4												26422
EAGLE	A	1963	64 47N	141 12W	840										4	4	4									26422
	A	1964	64 47N	141 12W	840	5	4	4	4	4	4	4	4	4	4	4	4									26422
	A	1965	64 47N	141 12W	840	4	4	4	4	4	4	4	4	4	4											26422
	A	1974	64 47N	141 12W	840																02					26422
	A	1975	64 47N	141 12W	840																12					26422
	A	1976	64 47N	141 12W	840																11					26422
EGAVIK	A	1938	64 02N	160 55W	15	3	3	3	3	3	3	3	3													
EIELSON	AAF	1944	64 39N	147 04W	547											1	1			51	52					26407
	AAF	1945	64 39N	147 04W	547	1	1	1	1	1	1									56	56		05			26407
	AAF	1946	64 39N	147 04W	547										6	6	6				03					26407
	AAF	1947	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			54	62					26407
	AFB	1948	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			62	62		10			26407
	AFB	1949	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26407
	AFB	1950	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26407
	AFB	1951	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26407
	AFB	1952	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26407
	AFB	1953	64 39N	147 04W	552	1	1	1	1	1	1	1	1	1	1	1	1			12	03		11			26407
	AFB	1954	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			07			26407
	AFB	1955	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26407
	AFB	1956	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			11			11			26407

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NUMBER OF MONTHS IN YEAR WITH

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
EIELSON	AFB	1957	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	AFB	1958	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	AFB	1959	64 39N	147 04W	539	1	1	1	1	1	1	1								07			07			26407
EIELSON	AFB	1959	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			05			05			26407
	AFB	1960	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	AFB	1961	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	AFB	1962	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	AFB	1963	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	AFB	1964	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			03			12			26407
	AFB	1965	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1966	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1967	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1968	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1969	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1970	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1971	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1972	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	AFB	1973	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						01			26407
	AFB	1974	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1									26407
	AFB	1975	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1									26407
	AFB	1976	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1									26407
EKLUTNA LAKE	COOP	1955	61 24N	149 09W	880																			06		
	COOP	1956	61 24N	149 09W	880																			12		
	COOP	1957	61 24N	149 09W	880																			12		
	COOP	1958	61 24N	149 09W	880																			12		
	COOP	1959	61 24N	149 09W	880																			12		
	COOP	1960	61 24N	149 09W	880																			12		
	COOP	1961	61 24N	149 09W	880																			12		
	COOP	1962	61 24N	149 09W	880																			12		
	COOP	1963	61 24N	149 09W	880																			12		
	COOP	1964	61 24N	149 09W	880																			12		
	COOP	1965	61 24N	149 09W	880																			12		
	COOP	1966	61 24N	149 09W	880																			12		
	COOP	1967	61 24N	149 09W	880																			12		
	COOP	1968	61 24N	149 09W	880																			12		
	COOP	1969	61 24N	149 09W	880																			11		
	COOP	1970	61 24N	149 09W	880																			12		
	COOP	1971	61 24N	149 09W	880																			12		
	COOP	1972	61 24N	149 09W	880																			12		
	COOP	1973	61 24N	149 09W	880																			12		
	COOP	1974	61 24N	149 09W	880																			11		
	COOP	1975	61 24N	149 09W	880																			06		
	COOP	1976	61 24N	149 09W	880																			06		
ELDRED ROCK	CG	1939	58 58N	135 13W	54			3	3	3	3	3	3	3	3	3	3									25318
	CG	1940	58 58N	135 13W	54	3	3	3	3	3	3	3	3	3	4	5	5									25318
	CG	1941	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5			10						25318
	CG	1943	58 58N	135 13W	54										1	1	1			02						25318
	CG	1944	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1									25318
	CG	1945	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			10						25318
	CG	1946	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			11						25318
	CG	1947	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			11						25318
	CG	1948	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			03						25318
	CG	1949	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1									25318
	CG	1950	58 58N	135 13W	54	4	4	4	4	4	4	4	4	4	4	4	4									25318
	CG	1951	58 58N	135 13W	54	4	4	4	4	4	4	4	4	4	4	4	4									25318
	CG	1952	58 58N	135 13W	54	4	4	4	4	4	4	4	4	4	5	5	5									25318
	CG	1953	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1954	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1955	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1956	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1957	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1958	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1959	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1960	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1961	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1962	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1963	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5		5	5									25318
	CG	1964	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1965	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1966	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1967	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1968	58 58N	135 13W	54		5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1969	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1970	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1971	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1972	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1973	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	CG	1974	58 58N	135 13W	54	5	5	5	5	5	5	5														25318
ELFIN COVE	A	1974	58 12N	136 40W	20											5	5									
	A	1975	58 12N	136 40W	20	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	58 12N	136 40W	20	5	5	5	5	5	5	5	5	5	5	5	5									
ELIM	A	1937	64 40N	162 06W	30										3	3	3									
	A	1938	64 40N	162 06W	30	3	3	3	3	3	3		3	3	3	3	3									
	A	1939	64 40N	162 06W	30		3	3	3	3	3															
ELMENDORF	AAF	1941	61 15N	149 48W	192			1	1	1	1	1	1	1	1	1	1			60	60			59		26401
	AAF	1942	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	56					26401

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
ELMENDORF	AAF	1943	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			12	51		10			26401
	AAF	1944	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			26401
	AAF	1945	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1				62		12			26401
	AAF	1946	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			26401
	AAF	1947	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26401
	AFB	1948	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			26401
	AFB	1949	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26401
	AFB	1950	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26401
	AFB	1951	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26401
	AFB	1952	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26401
	AFB	1953	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1					10	03		10			26401
ELMENDORF	AFB	1956	61 15N	149 48W	258				1	1	1	1	1	1	1	1	1			08			09			26401
	AFB	1957	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26401
	AFB	1958	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12			08			26401
	AFB	1959	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12						26401
	AFB	1960	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12						26401
	AFB	1961	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			12			10			26401
	AFB	1962	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26401
	AFB	1963	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26401
	AFB	1964	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			03			07			26401
	AFB	1965	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						11			26401
	AFB	1966	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	AFB	1967	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	AFB	1968	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	AFB	1969	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	AFB	1970	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	AFB	1971	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	AFB	1972	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	AFB	1973	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1									26401
	AFB	1974	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1									26401
	AFB	1975	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1									26401
	AFB	1976	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1									26401
ELMENDORF 2	AFB	1953	61 15N	149 48W	206										1	1	1			03			01			26452
	AFB	1954	61 15N	149 48W	206	1	1	1	1	1	1	1	1	1	1	1	1			12			05			26452
	AFB	1955	61 15N	149 48W	206	1	1	1	1	1	1	1	1	1	1	1	1			12						26452
	AFB	1956	61 15N	149 48W	206	1	1	1	1											04						26452
EMMONAK	SAWR	1968	62 46N	164 30W	8												3									
	SAWR	1969	62 46N	164 30W	8	3	3	3	3																	
EXCURSION IN	A	1943	58 25N	135 26W	25		4	4	4	4	4	4	4	4	4	4	5									
	A	1944	58 25N	135 26W	25	5	5	5																		
FAIRBANKS	SEE	EIELSON AFB																								26407
FAIRBANKS	SEE	LADD AAB																								26403
FAIRBANKS	FAA	1962	64 51N	147 47W	432									5	5	5	5									
	FAA	1963	64 51N	147 47W	432	5	5	5	5	5	5															
FAIRBANKS	SPL	1923	64 50N	147 43W	500														12							26411
	SPL	1924	64 50N	147 43W	500														12							26411
	SPL	1925	64 50N	147 43W	500														12							26411
	SPL	1926	64 50N	147 43W	500														12							26411
	SPL	1927	64 50N	147 43W	500														02							26411
	WBO	1929	64 50N	147 43W	454														03	04		04		03		26411
	WBO	1930	64 50N	147 43W	454							5	5	5	5	5	5		12	12		12		12		26411
	WBO	1931	64 50N	147 43W	454	4	4	4	4	5	5	5	5	5	5	5	5		12	12		12		12		26411
	WBO	1932	64 50N	147 43W	454	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	WBO	1933	64 50N	147 43W	484	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	WBO	1934	64 50N	147 43W	484	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	WBO	1935	64 50N	147 43W	484	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	WBO	1936	64 50N	147 43W	484	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12		12		26411
	WBO	1937	64 50N	147 43W	484	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12		12		26411
	WBO	1938	64 50N	147 43W	484	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12		12		26411
	WBO	1939	64 50N	147 43W	484	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12		12		26411
	WBO	1940	64 50N	147 43W	484	6	6	6	6	6	6	6	6	6	6	6	6		12	12		12		12		26411
	WBO	1941	64 50N	147 43W	484	7	7	7	7	7	7	7	7	7	7	7	7	05	12	12		12		12		26411
	WBO	1942	64 50N	147 43W	484	1	1	1	1	1	1	1						07	07	07		07		07		26411
FAIRBANKS	WBO	1942	64 50N	147 36W	464								1	1	1	1	1	05	05	05		05		05		26411
	WBO	1943	64 50N	147 36W	464													04	04	04		04		04		26411
FAIRBANKS	WBAS	1943	64 50N	147 43W	442					6	6	1	1	1	1	1	1	08	08	08	08	08				26411
	WBAS	1944	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26411
	WBAS	1945	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1	10	12	12	12	12		05		26411
	WBAS	1946	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26411
	WBAS	1947	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26411
	WBAS	1948	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26411
	WBAS	1949	64 50N	147 43W	442															12	12	12				26411
	WBAS	1950	64 50N	147 43W	442															12	12	12				26411
	WBAS	1951	64 50N	147 43W	442															08	08	08				26411
FAIRBANKS	WBAS	1951	64 49N	147 52W	443															04	04					26411
	WBAS	1952	64 49N	147 52W	443															12	12	02				26411
	WBAS	1953	64 49N	147 52W	443															12	12	12				26411
	WBAS	1954	64 49N	147 52W	443	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26411
	WBAS	1955	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12	04				26411
	WBAS	1956	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	WBAS	1957	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411

RECORDS INDEX **ALPHABETIC** BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
FAIRBANKS	WBAS	1958	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	WBAS	1959	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	WBAS	1960	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	WBAS	1961	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	WBAS	1962	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	WBAS	1963	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	WBAS	1964	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	06					26411
	WBAS	1965	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WBAS	1966	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WBAS	1967	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WBAS	1968	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WBAS	1969	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WBAS	1970	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WBAS	1971	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WBAS	1972	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WSO	1973	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WSO	1974	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WSO	1975	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	WSO	1976	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			11						26411
FAIRWAY IS	CG	1944	57 27N	134 52W	40			1	1	1	1	1	1	1	1					08						
FAREWELL	CAA	1941	62 32N	153 54W	1503												4			01						26519
	CAA	1942	62 32N	153 54W	1503	4	4	4	4	4		4	6	6	6	6	6			12						26519
	CAA	1943	62 32N	153 54W	1503	5	5	5	6	1	1	1	1	1	1	1	1			12						26519
	CAA	1944	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1	11	04	12						26519
	CAA	1945	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26519
	CAA	1946	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1947	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1948	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1949	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1950	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1951	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1952	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1953	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1954	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1955	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			10						26519
	CAA	1956	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1957	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1958	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	CAA	1959	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FAA	1960	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FAA	1961	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FAA	1962	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			10						26519
	FAA	1963	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FAA	1964	62 32N	153 54W	1503	1	1	1	1	1	1	1	5	5	5	5	5			12	09					26519
	FAA	1965	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FAA	1966	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	10					26519
	WBAS	1967	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	WBAS	1968	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	WBAS	1969	62 32N	153 54W	1503	6	6	6	6	6	6	6	5	5	5	5	5			12	12					26519
	WBAS	1970	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	WBAS	1971	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	WBAS	1972	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	WSO	1973	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	WSO	1974	62 31N	153 53W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	10					26519
	WSO	1975	62 31N	153 53W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	11					26519
	WSO	1976	62 31N	153 53W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	09					26519
FIRE ISLAND	AFS	1948	61 09N	150 14W	50	5	5	5	5											54	54					26507
FIVE FINGER	CG	1939	57 16N	133 37W	30				3	3	3	3	3	3	3	3	3									25319
	CG	1940	57 16N	133 37W	30	3	3	3	3	3	3	4	4	4	4	5	5									25319
	CG	1941	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5			09						25319
	CG	1942	57 16N	133 37W	30					5										05						25319
	CG	1943	57 16N	133 37W	30									4	1	1	1			03						25319
	CG	1944	57 16N	133 37W	30	1	1	1	1	1	1	1	1	1	1	1	1			12						25319
	CG	1945	57 16N	133 37W	30	1	1	1	1	1	1	1	1	1	1	1	1			12						25319
	CG	1946	57 16N	133 37W	30	1	1	1	1	1	6	1	1	1	6	4	4			12						25319
	CG	1947	57 16N	133 37W	30	4	4	4	4	4	4	4	4	4	4	4	4			12						25319
	CG	1948	57 16N	133 37W	30	4		4	4	4	4	4	4	4	4	4	4			12						25319
	CG	1949	57 16N	133 37W	30	4	4	4	4	4	4	4	4	4	4	4	4			12						25319
	CG	1950	57 16N	133 37W	30	4	4	4	4	4	4	4	4	4	4	4	4			04						25319
	CG	1951	57 16N	133 37W	30	4	4	5	4	4	4	4	4	4	4	5	5									25319
	CG	1952	57 16N	133 37W	30	5	5	5	4	4	4	4	4	4	4	5	5									25319
	CG	1953	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1954	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1955	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1956	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1957	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1958	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1959	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1960	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1961	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1962	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1963	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1964	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1965	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1966	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1967	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1968	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1969	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
FIVE FINGER	CG	1970	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1971	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1972	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1973	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1974	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1975	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	CG	1976	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
FIVE MILE CP	SAWR	1974	66 05N	150 00W	440											1	1									
	SAWR	1975	66 05N	150 00W	440	1	1	1	1	1	1	1	1	1	1	1	6									
	SAWR	1976	66 05N	150 00W	440	6	6	6	6	6	6	6	6	6	6	6	6									
FLAT	A	1931	62 27N	158 00W	303								3	3	3	3	3									26520
	A	1932	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1933	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3		3									26520
	A	1934	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3												26520
	A	1935	62 27N	158 00W	303									3	3	3	3									26520
	A	1936	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1937	62 27N	158 00W	303	3	3	3	3	3	3		3	3	3	3	3									26520
	A	1938	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3	3	3									26520
	SA	1939	62 27N	158 00W	303	3	3	3	5	5	5	5	5	3	3	4	4			07						26520
	SA	1940	62 27N	158 00W	303	3	4	5	5	5	5	5	5	5	5	5	5			12						26520
	SA	1941	62 27N	158 00W	303	5	6	6	6	6	6	6	6	6	6	6	6			12						26520
	SA	1942	62 27N	158 00W	303	6	6	6	6	6	6	6	6	6	6	6	6			12						26520
	SA	1943	62 27N	158 00W	303	6	6	6	6	6	6	6	6	6	6	6	6			12						26520
	A	1944	62 27N	158 00W	309	6	6	6	6	6	6	6	6	6	6	6	6			12						26520
	A	1945	62 27N	158 00W	326	6	6	6	5	5	5	5	5	5	5	3	3			12						26520
	A	1946	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3			06						26520
	A	1947	62 27N	158 00W	326	3	4	4	4	4	3	3	3	3	3	3	3									26520
	A	1948	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1949	62 27N	158 00W	326										3	3	3									26520
	A	1950	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1951	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1952	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1953	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1954	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1955	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1956	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1957	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1958	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1959	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	A	1960	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3											26520
	A	1961	62 27N	158 00W	326				3	3						3	3									26520
FOREST IS	CG	1943	54 48N	133 32W	1210													02		02						
	CG	1944	54 48N	133 32W	1210													05		05						
FORT GLENN	SEE	CAPE AFB																								25602
FORT MORROW	SEE	PORT HEIDEN																								25504
FORT MORROW	AAF	1942	56 57N	158 37W	94									1	1	1	1	04	04							25504
	AAF	1943	56 57N	158 37W	94	1	1	1	1	1	1	1	1	1	1	1	1	12	01							25504
	AAF	1944	56 57N	158 37W	94	1	1	1	1	1	1	1	1	1	1	1	1	12	04							25504
	AAF	1945	56 57N	158 37W	94	1	1	1	1	1	1	1	1	1				03								25504
FT RANDALL	SEE	THORNBROUGH AFB																								25603
FORT YUKON	A	1924	66 35N	145 18W	410														12	12						26413
	A	1925	66 35N	145 18W	410														12	12						26413
	A	1926	66 35N	145 18W	410														12	12						26413
	A	1927	66 35N	145 18W	410														12	12						26413
	A	1928	66 35N	145 18W	410														12	12						26413
	A	1929	66 35N	145 18W	410														12	12						26413
	A	1930	66 35N	145 18W	410									3	3	3	3		12	12						26413
	A	1931	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26413
	A	1932	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26413
	A	1933	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26413
	A	1934	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		01	01						26413
	A	1935	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	A	1936	66 35N	145 18W	410	3	3	3	3																	26413
	A	1937	66 35N	145 18W	410												3									26413
	A	1938	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	A	1939	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	A	1940	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	A	1941	66 35N	145 18W	410	5	5	5	5	5	5	5	5	5	5	5	5									26413
	A	1942	66 35N	145 18W	410	5	5	5	5																	26413
	CAA	1943	66 35N	145 18W	425							6	6	6	6	6	6		04	06						26413
	CAA	1944	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6		06	12						26413
	CAA	1945	66 35N	145 18W	425	6	6	6	6	6	6	6	6	5	5	5	5			12						26413
	CAA	1946	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	CAA	1947	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	CAA	1948	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	CAA	1949	66 35N	145 18W	425	6	5	6	6	5	6	6	6	6	6	5	5			12						26413
	CAA	1950	66 35N	145 18W	425	6	5	6	6	6	5	5	6	6	6	6	6			12						26413
	CAA	1951	66 35N	145 18W	425	5	6	5	5	6	5	6	6	6	6	6	6			12						26413
	CAA	1952	66 35N	145 18W	425	6	6	5	6	6	6	6	6	6	6	6	6			12						26413
	CAA	1953	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	CAA	1954	66 35N	145 18W	425	6	6	6	6	6	6	6	5	6	6	6	6			12						26413
	CAA	1955	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	CAA	1956	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	CAA	1957	66 35N	145 18W	425	6	6	6	6	6	5	6	6	5	5	6	5			12						26413

RECORDS INDEX **ALPHABETIC** BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
FORT YUKON	CAA	1958	66 35N	145 18W	425	6	5	6	6	6	6	6	5	5	5	6	6			12						26413
	CAA	1959	66 35N	145 18W	425	6	6	6	6	6	6	5	6	6	6	6	6			12						26413
	FAA	1960	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	FAA	1961	66 35N	145 18W	425	5	5	5	5	5	5	5	5	5	5	5	5			12						26413
	FAA	1962	66 35N	145 18W	425	5	5	5	5	5	5	5	5	5	5	5	5			12						26413
	A	1963	66 35N	145 18W	425	6	5	5	5	5	5	5	5	5	5	5	5			12						26413
	A	1964	66 35N	145 18W	425	5	5	5	5	5	5	5	5	5	6	5	5			12						26413
	SAWR	1965	66 35N	145 18W	422	5	5	5	5	5	5	5	5	5	5	5	5			08						26413
	A	1966	66 35N	145 18W	422	5	5	5	5	5	5									06						26413
FORT YUKON	AC	1966	66 33N	145 12W	457							5	5	5	5	5	5			06						26413
	AC	1967	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5			12						26413
	AC	1968	66 33N	145 12W	457	6	6	6	6	6	6	5	5	5	5	5	5			12						26413
	AC	1969	66 33N	145 12W	457	5	5	5	5	5	5	5	5			5	5			11			02			26413
	AC	1970	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5									26413
	AC	1971	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5			10						26413
	AC	1972	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5			11						26413
	AC	1973	66 33N	145 12W	457	3	3	3	3	3	3	3	3		3					07						26413
	AC	1974	66 33N	145 12W	457	3	3	3	3				5	5	5	5	5									26413
	AC	1975	66 33N	145 12W	457	5	5	5	5	5	5					5	5									26413
	AC	1976	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5										26413
FORT YUKON	A	1968	66 34N	145 16W	435				5	5	3	3	3	3	3	3	3									
	A	1969	66 34N	145 16W	435	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1970	66 34N	145 16W	435	3	3	3	3	3	3	3	3		3	3	3									
	A	1971	66 34N	145 16W	435	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1972	66 34N	145 16W	435	3	3	3	3	3		3		3	3	3	3									
	A	1973	66 34N	145 16W	435	3	3	3	3	3	3	3	3													
	A	1974	66 34N	145 16W	435	3																				
FRANKLIN BLK	SAWR	1974	69 43N	148 41W	357			3		3	5	5				1	1									
	SAWR	1975	69 43N	148 41W	357	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1976	69 43N	148 41W	357				6	6	6	6	6	6	6	6	6									
FUNTER BAY	A	1974	58 15N	134 54W	5			5	5	5	5	5	5	5	5	5	5									
	A	1975	58 15N	134 54W	5	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	58 15N	134 54W	5	5	5	5	5	5	5	5	5	5	5	5	5									
GALBRAITHE	SAWR	1970	68 29N	149 29W	2665																			04		
	SAWR	1971	68 29N	149 29W	2665																			07		
	SAWR	1974	68 29N	149 29W	2665			3	3	3	3	3				1	1									
	SAWR	1975	68 29N	149 29W	2665	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1976	68 29N	149 29W	2665	1	1	1	1	1	1	1	1	1	1	1	1									
GALENA	CAA	1945	64 43N	156 54W	130												6			02						26509
	CAA	1946	64 43N	156 54W	130	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	WBAS	1947	64 43N	156 54W	139	1	1	1	1	1	1	1	1	1	1	1	1		03	12						26509
	WBAS	1948	64 43N	156 54W	139	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26509
	WBAS	1949	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	WBAS	1950	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	WBAS	1951	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	WBAS	1952	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	WBAS	1953	64 43N	156 54W	125	1			1	1										05						26509
GALENA	AFS	1941	64 43N	156 54W	135												5									26501
	AFS	1942	64 43N	156 54W	135	5	5	5	5	5				1	1	1	1			54						26501
	AFS	1943	64 43N	156 54W	135	1	1	1	1	1	1	1	1	1	1	1	1			62	55					26501
	AFS	1944	64 43N	156 54W	135	1	1	1	1	1	1	1	1	1	1	1	1			62	62		04			26501
	AFS	1945	64 43N	156 54W	123	1	1	1	1	1	1	1	1	1	1	1				60	59		07			26501
GALENA	AFS	1953	64 43N	156 54W	125						1	1	1	1	1	1	1			07						26501
	AFS	1954	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	AFS	1955	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	AFS	1956	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			11						26501
	AFS	1957	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	AFS	1958	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	AFS	1959	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	AFS	1960	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	AFS	1961	64 43N	156 54W	125	1	1	1												03						26501
GALENA	AFS	1961	64 44N	156 56W	125				1	1	1	1	1	1	1	1	1			09						26501
	AFS	1962	64 44N	156 56W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	AFS	1963	64 44N	156 56W	125	1	1	1	1	1	1	1	1	1	1	1	1			12			08			26501
	AFS	1964	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1			03			12			26501
	AFS	1965	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1966	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1967	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1968	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1969	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1970	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1971	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1972	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	AFS	1973	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						03			26501
	AFS	1974	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1									26501
	AFS	1975	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1									26501
	AFS	1976	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1									26501
GAMBELL	SA	1935	63 51N	171 36W	30								3	3	3	3	3									26703
	SA	1936	63 51N	171 36W	30	3	3	3	3	3	3	3														26703
	SA	1938	63 51N	171 36W	30											3	3									26703
	SA	1939	63 51N	171 36W	30											3	3									26703
	SA	1940	63 51N	171 36W	30	3	3	3										09	09	09						26703

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
GAMBELL	SA	1941	63 51N	171 36W	30	3	3		3			3	3	3		3	3	12	12	12						26703
	SA	1942	63 51N	171 36W	30											1	1	12	12	12						26703
	WBAS	1943	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26703
	WBAS	1944	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26703
	WBAS	1945	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	11	12	12						26703
	WBAS	1946	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	01	12	12						26703
	WBAS	1947	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1		12	12		10				26703
	WBAS	1948	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26703
	WBAS	1949	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12		12				26703
	WBAS	1950	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12		12				26703
	WBAS	1951	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12		06				26703
	WBAS	1952	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12						26703
	WBAS	1953	63 51N	171 36W	32	1	1	1	1	1	1									05						26703
	SAWR	1954	63 51N	171 36W	30											3										
	SAWR	1955	63 51N	171 36W	30		3							3												
	SAWR	1956	63 51N	171 36W	30											3	3									
	SAWR	1957	63 51N	171 36W	30	3	3	3	3																	
GAMBELL	SAWR	1965	63 46N	171 45W	25												3									
	SAWR	1966	63 46N	171 45W	25	3	3	3	3		3	3	3	3												
	SAWR	1967	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1968	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1969	63 46N	171 45W	25	3	3	3		3			3	3	3	3	3									
	SAWR	1970	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1971	63 46N	171 45W	25	3	3	3	3	3							3									
	SAWR	1972	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1973	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1974	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1975	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1976	63 46N	171 45W	25	3	3	3																		
GILMORE CREK	COOP	1962	64 59N	147 25W	973															04	03	04				
	COOP	1963	64 59N	147 25W	973															04	04					
GLACIER	COOP	1974	58 27N	135 53W	50																			02		
GOLOVIN	A	1930	64 33N	163 01W	20		3	3	3	3	3	3	3	3	3	3	3									26628
	A	1931	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1932	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1933	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1934	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1935	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1936	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1937	64 33N	163 01W	20				3	3	3	3	3	3	3	3	3									26628
	A	1938	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1939	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	A	1940	64 33N	163 01W	20	4	4	4	4	4	4	4	4	4	4	4	4									26628
	A	1941	64 33N	163 01W	12	5	5	5	5	5	5	5	5	5	5	5	5	07		07						26628
	A	1942	64 33N	163 01W	12	5	5	5	5	5	5	5	5	6	6	6	6	12		12						26628
	A	1943	64 33N	163 01W	12	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26628
	A	1944	64 33N	163 01W	12	6	6	6	6	6	6	6	6	6	6	6	6	10		10						26628
	A	1945	64 33N	163 01W	12	6	6	6	6	6	6	6	6	6	6											26628
GOOD PASTER	A	1939	64 20N	144 05W	2500											3	3									
	A	1940	64 20N	144 05W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	64 20N	144 05W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1942	64 20N	144 05W	2500	3	3					5	5	5	5	5	5									
	A	1943	64 20N	144 05W	2500	5																				
GRAVINA	A	1939	55 11N	131 49W	40					5	5	5	5	5	5	5	5			01						
	A	1940	55 11N	131 49W	40	4	4																			
GRUBSTAKE	A	1941	64 02N	148 12W	1500								3	3	3											
GUARD ISLAND	CG	1940	55 27N	131 53W	20		3	3	3	3	3	3	3	3	3	3	3			02						25320
	CG	1941	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5				11						25320
	CG	1942	55 27N	131 53W	20				4	4										02						25320
	CG	1943	55 27N	131 53W	20										1	1	1			04						25320
	CG	1944	55 27N	131 53W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						25320
	CG	1945	55 27N	131 53W	20	1	1	1	1	1	1	1	1	1	1	1	1			10						25320
	CG	1946	55 27N	131 53W	20	1	1	1	1	1	1	1	1	1	1	1	1			04						25320
	CG	1947	55 27N	131 53W	20	1	1	1	4	4	4	4	4	4	4	4	4			03						25320
	CG	1948	55 27N	131 53W	20	4	4	4	4	4	4	4	4	4	4	4	4									25320
	CG	1949	55 27N	131 53W	20	4	4	4	4	4	4	4	4	4	4	4	4									25320
	CG	1950	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1951	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1952	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1953	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1954	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1955	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1956	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1957	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1958	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1959	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1960	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1961	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	6	5	5									25320
	CG	1962	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1963	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1964	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1965	55 27N	131 53W	20	6	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1966	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1967	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
GUARD ISLAND	CG	1968	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	CG	1969	55 27N	131 53W	20	5	5	5	5	5	5															25320
GULKANA	CAA	1942	62 09N	145 27W	1579										6	6	1			02						26425
	CAA	1943	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1944	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1945	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1946	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1947	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1948	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1949	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1950	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1951	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1952	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1953	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1954	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1955	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1956	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1957	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1958	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	CAA	1959	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	FAA	1960	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	FAA	1961	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			11						26425
	FAA	1962	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	FAA	1963	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	FAA	1964	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	FAA	1965	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	FAA	1966	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	WBAS	1967	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	WBAS	1968	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	WBAS	1969	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	WBAS	1970	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	WBAS	1971	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	WBAS	1972	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	WSO	1973	62 09N	145 27W	1579	1	1	1	1	1	1	6	6	6	6	6	6			12						26425
	WSO	1974	62 09N	145 27W	1579	6	6	6	6	6	6	6	6	6	6	6	6			12						26425
	WSO	1975	62 09N	145 27W	1579	6	6	6	6	6	6	6	6	6	6	6	6			12						26425
	WSO	1976	62 09N	145 27W	1579	6	6	6	6	6	6	6	6	6	6	6	6			12						26425
GUNSIGHT	A	1966	61 54N	147 18W	2960						3	3	3	3	3	3	3									
	A	1967	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1968	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1969	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1970	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1971	61 54N	147 18W	2960	3	3	3	3	3	3	3		3	3	3	3									
	A	1972	61 54N	147 18W	2960	3	3	3	3	3	3			3	3	3	3									
	A	1973	61 54N	147 18W	2960	3	3	3	3	3					3	3	3									
	A	1974	61 54N	147 18W	2960	3		3																		
GUSTAVUS	A	1939	58 25N	135 42W	20								3		3	3	3									25322
	A	1940	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322
	A	1941	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322
	A	1942	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322
	A	1943	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322
	A	1944	58 25N	135 42W	20	3	3	3	3		3	3	3	3	7	1	1			03						25322
	CAA	1945	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1946	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1947	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1948	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1949	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1950	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1951	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1952	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1953	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1954	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1955	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1956	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1957	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1958	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	CAA	1959	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	FAA	1960	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	FAA	1961	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	FAA	1962	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	FAA	1963	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	FAA	1964	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	7	7	7			12						25322
	FAA	1965	58 25N	135 42W	29	6	6	6	6	6	6	6	6	6	6	6	6			12						25322
	FAA	1966	58 25N	135 42W	29	6	6	6	6	6	6	6	6	6	6	6	6			12						25322
	FAA	1967	58 25N	135 42W	29	6	6	6	6	6	6	6	6	6	6	6	6			12						25322
	FAA	1968	58 25N	135 42W	29	6	6	6	6	6	6									06						25322
GUSTAVUS	SAWR	1968	58 25N	135 44W	19							5	5	5	5	5	5									25322
	SAWR	1969	58 25N	135 44W	19	5	5	5	5	6	6	6	6	6	6	6	6									25322
	SAWR	1970	58 25N	135 44W	19	6	6	6	6	6	6	6	6	6	6	6	6									25322
	SAWR	1971	58 25N	135 44W	19	5	5	5	5	5	5	5	5	5	5	5	5									25322
	SAWR	1972	58 25N	135 44W	19	5	5	5	5	5	5	5	5	5												25322
	SAWR	1976	58 25N	135 44W	19								5	5	5	5	5									25322
HAINES	A	1930	59 14N	135 27W	15							3	3	3	3	3	3									25323
	A	1931	59 14N	135 27W	15	3	3	3	3	3	3	3	3	3	3											25323
	A	1932	59 14N	135 27W	15				3	3	3	3	3	3												25323
	A	1933	59 14N	135 27W	15				3	3	3	3														25323

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

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NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
HAINES	A	1938	59 14N	135 27W	15						3	3	3	3	3	3	3									25323
	A	1939	59 14N	135 27W	15	3	3	3	3	3	3	3	3	3	3	3	3									25323
	A	1940	59 14N	135 27W	15	3	3	3	3	3	3	3	3	3												25323
HAINES	CAA	1940	59 13N	135 26W	257										6	6	6	03								25323
	CAA	1941	59 13N	135 26W	257	6	6	6	6	6	6	6	6	6	6	6	6	12		01						25323
	CAA	1942	59 13N	135 26W	257	6	6	6	6	6	5	5	1	1	1	1	1	12		12						25323
	CAA	1943	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1944	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1945	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1946	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1947	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1948	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1949	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1950	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1951	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1952	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	CAA	1953	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1				09		09						25323
HAINES	A	1963	59 14N	135 27W	70									5	5	5	5									25323
	A	1964	59 14N	135 27W	70	5	5	5	5	5	5	5	5	5	5	5	5									25323
	A	1965	59 14N	135 27W	70	5		5	5	5	5	5	5				5									25323
	A	1966	59 14N	135 27W	60	5	5	5	5	5	5	5	5	5	5	5	5									25323
	A	1967	59 14N	135 27W	60	5	5	5	5	5	5	5	5	5	5	5	5									25323
	A	1968	59 14N	135 27W	90	5	5	5	5	5																25323
	A	1973	59 14N	135 26W	31						3	3	3	3	3	3	3			07						25232
	A	1974	59 14N	135 26W	31	3	3	3	3	3	3	3	3	3	5	5	5			11						25232
	A	1975	59 14N	135 26W	31	5	5	5	5	5	5	5	5	5	5	5	5			12						25232
	A	1976	59 14N	135 26W	31	5	5	5	5	5	5	5	5	5	5	5	5			12						25232
HAPPY VALLEY	SAWR	1974	69 10N	148 50W	948			3	3	3	3		1			1	1									
	SAWR	1975	69 10N	148 50W	948	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1976	69 10N	148 50W	948	1	1	1	1	1	1	1	1	1	1	1	1									
HAYCOCK	A	1940	65 12N	161 09W	200			3	3	3	3	3	3	3	3	3	3									
	A	1941	65 12N	161 09W	200	3	3	3	3	3	3	3	3		3	3	3									
	A	1942	65 12N	161 09W	200	3	3	3																		
HAYES RIVER	A	1971	61 59N	152 05W	1000							5	5	5	5	5	5									
	A	1972	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1973	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1974	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1975	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
HEALY	A	1938	63 51N	148 58W	1350										3	3										26447
	A	1939	63 51N	148 58W	1350	3	3	3	3	3	3	3	3	3	3	3	3									26447
	A	1940	63 51N	148 58W	1350	3	3	3	3	3	3	3	3	3	3	3	3									26447
	A	1941	63 51N	148 58W	1350	5	5	6	5	5	5	6	5	6	4	4	4									26447
	A	1942	63 51N	148 58W	1350	5	5	6	6	6	6	6	6	6	6	6	6									26447
	A	1943	63 51N	148 58W	1350	6	6	6	6	6	6	6	8	6	6	6	6			07						26447
	A	1944	63 51N	148 58W	1350	8	6	6	6	6	6	6	6	6	6	6	6			01						26447
	A	1945	63 51N	148 58W	1350	6	6	6	6	6	6	6	6	6												26447
HEALY	SAWR	1969	63 52N	148 57W	1273			5	5	5	5	5	5										01			
HEALY	SAWR	1976	63 53N	149 01W	1475											5	5									
HOG RIVER	A	1940	65 45N	155 50W	500		3	3		3																
HOLTZ BAY	AAF	1943	52 55N	173 10E	45								1	1	1					53	53					45704
HOLY CROSS	A	1940	62 10N	159 45W	150						3	3	3	3	3	3	3									26521
	A	1941	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	A	1942	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	A	1943	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	A	1944	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	A	1945	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3											26521
HOMER	A	1939	59 38N	151 30W	55		3	3	3	3	3	3	3	3	3	3	3									25507
	A	1940	59 38N	151 30W	55	3	3	3	3	3	3	5	3	3	3	3	3									25507
	A	1941	59 38N	151 30W	55	3	3	3	3	3	5	5	5	5	5	5	5	08		08						25507
	A	1942	59 38N	151 30W	55	5	5	5	5	6	6	6	6	6	6	6	6	12	12	12						25507
	CAA	1943	59 38N	151 30W	73	1	6	6	1	1	1	1	1	1	1	1	1	12	12	12						25507
	CAA	1944	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1	12	07	12						25507
	CAA	1945	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25507
	CAA	1946	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1947	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1948	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1949	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1950	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						255U7
	CAA	1951	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1952	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1953	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1954	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1955	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1956	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1957	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1958	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	CAA	1959	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	FAA	1960	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	FAA	1961	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
HOMER	FAA	1962	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	FAA	1963	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	FAA	1964	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	FAA	1965	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	FAA	1966	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WBAS	1967	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WBAS	1968	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WBAS	1969	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WBAS	1970	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WBAS	1971	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WBAS	1972	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WSO	1973	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WSO	1974	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WSO	1975	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	WSO	1976	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
HOONAH	A	1941	58 07N	135 27W	49			4	4	5	5	5	5	5	5	5	5			09						
	A	1942	58 07N	135 27W	49	5	5	5	5	5	5	5	5							06						
HOOPER	SAWR	1961	61 30N	166 06W	80											3	3									
	SAWR	1962	61 30N	166 06W	80	3	3	4	3		3	3	3	3	3	3	3									
	SAWR	1963	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1964	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1965	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1966	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1967	61 30N	166 06W	80	3	3	3	3	3	3		3	3	3	3	3									
	SAWR	1968	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1969	61 30N	166 06W	80	3	3			3	3					3	3									
HOT SPRINGS	A	1930	64 59N	150 40W	275										3	3										
	A	1931	64 59N	150 40W	275											3	3									
	A	1932	64 59N	150 40W	275	3	3	3																		
	A	1933	64 59N	150 40W	275		3	3	3	3	3	3	3	3	3	3	3									
	A	1934	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1935	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1936	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1938	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1942	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1943	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
HUGHES	A	1939	66 04N	154 14W	545										3	3	3									26522
	A	1940	66 04N	154 14W	545	3	3	3		3	3	3	3	3	3	3	3									26522
	A	1941	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	A	1942	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	A	1943	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	A	1944	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	A	1945	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6	6			12						26522
	A	1946	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6	6			12						26522
	A	1947	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6	6			12						26522
	A	1948	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6	6			12						26522
	A	1949	66 04N	154 14W	545															04						26522
	A	1950	66 04N	154 14W	545															01						26522
HUGHES	A	1953	66 04N	154 14W	545	6	6	6	6	6	6	6	6													26522
	A	1954	66 04N	154 14W	545						5	5	5	5	5	5	5									26522
	A	1955	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1956	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1957	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1958	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1959	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1960	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1961	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1962	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1963	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1964	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1965	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1966	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1967	66 04N	154 14W	545	5	5	5	5	5	5	5	5			5	5									26522
	A	1968	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1969	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	A	1970	66 04N	154 14W	545	5																				26522
HULL	SAWR	1969	70 15N	148 57W											6	6	6									
	SAWR	1970	70 15N	148 57W		1																				
HYDABURG	A	1940	55 12N	132 48W	25		3	3	3	3	3															
HYDER	A	1942	55 54N	130 01W	9					5	5	5	5	5	5	5	5			06						
ICY BAY	SAWR	1956	59 59N	141 48W	10	3	4	3	3	3	3	1	1	1	1	1	1									
	SAWR	1957	59 59N	141 48W	10	1	5	5	5																	
IGLOO	A	1937	65 09N	165 04W	4			3	3	5	3	3														
ILIAMNA	A	1939	59 44N	154 48W	68			3	3	3	3	3	3	5	5	5	5									25506
	A	1940	59 44N	154 49W	68	5	5	3	3	4	5	4	5	5	5	4	5									25506
	A	1941	59 44N	154 49W	68	4	5	6	6	6	6	6	6	6	6	6	6	10	10	06						25506
	A	1942	59 44N	154 49W	68	6	6	6	6	6		6						06	05	06						25506

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

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NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
ILIAMNA	FAA	1931	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1942	59 45N	154 55W	152								6	6	6	6	6	05	04	05						25506
	CAA	1943	59 45N	154 55W	152	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12						25506
	CAA	1944	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1	12	06	12						25506
	CAA	1945	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25506
	CAA	1946	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1947	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1948	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1949	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1950	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1951	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1952	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1953	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1954	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1955	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1956	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1957	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1958	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	CAA	1959	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	FAA	1960	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	FAA	1961	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	FAA	1962	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	FAA	1963	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	FAA	1964	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	6	6	6			12						25506
	FAA	1965	59 45N	154 55W	152	6	6	6	6	6	6	6	6	6	6	6	6			12						25506
	FAA	1966	59 45N	154 55W	152	6	6	6	6	6	6	6	6	6	6	6	6			12						25506
	WBAS	1967	59 45N	154 55W	190	6	6	6	6	6	6	6	6	6	6	6	6			12	07					25506
	WBAS	1968	59 45N	154 55W	190	6	6	6	6	6	6	6	6	6	6	6	6			12	12					25506
	WBAS	1969	59 45N	154 55W	190	6	6	6	6	6	6	6	6	6	6	6	6			12	12					25506
	WBAS	1970	59 45N	154 55W	190	6	6	6	6	6	5	5	5	5	5	5	5			12	11					25506
	FAA	1971	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	FAA	1972	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	11					25506
	FAA	1973	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	FAA	1974	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	FAA	1975	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	FAA	1976	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
IMURUK LAKE	AAF	1944	65 35N	163 50W	557															51						26613
	AAF	1945	65 35N	163 50W	557				1	1	1	1	1	1	1	1				57	58					26613
INDEPENDENCE	A	1939	61 47N	149 18W	3600												3									
	A	1940	61 47N	149 18W	3600	3																				
INDIAN MTN	AFS	1951	66 03N	153 45W	1075							5	5	5	5	5	5									26535
	AFS	1952	66 03N	153 45W	1075	5	5	5	5	6	6	6	6	6	6	6	6									26535
	AFS	1953	66 03N	153 45W	1075	1	1	1	1	1	1	1	6	6	1	6	6			06						26535
	AFS	1954	66 03N	153 45W	1075	6	6	6	6	6	6	6	6	6	6	6	6			12						26535
	AFS	1955	66 03N	153 45W	1075	1	1	1	1	1	1	1	1	1	1	1	1			12						26535
	AFS	1956	66 03N	153 45W	1075	1	1	1	1	1	1	1	1	1	1	1	1			11						26535
	AFS	1957	66 03N	153 45W	1075	1	1	1	1	1	1	1	1	1	1	1	1			12						26535
	AFS	1958	66 03N	153 45W	1075	1	1	1	1	1	7	7	7	7	7	7	7			12						26535
	AFS	1959	66 03N	153 45W	1075	7	7	7	7	7	7	7	7	7	7	7	7			12						26535
	AFS	1960	66 03N	153 45W	1075	7	7	7	7	7	7	7	7	7	7	7	7			12						26535
	AFS	1961	66 03N	153 45W	1075	7	7	7												03						26535
INDIAN MTN	AFS	1961	66 00N	153 42W	1075				7	7	7	7	7	7	7	7	7			09						26535
	AFS	1962	66 00N	153 42W	1075	7	7	7	7	7	7	7	7	7	7	7	7			12						26535
	AFS	1963	66 00N	153 42W	1075	7	7	7	7	7	7	7	1	1	1	1	1			12						26535
	AFS	1964	66 00N	153 42W	946	1	1	1	1	7	7	7	7	7	1	1	1			03						26535
	AFS	1965	66 00N	153 42W	946	1	7	7	1	7	7	1	7	7	7	1	1									26535
	AFS	1966	66 00N	153 42W	946	1	1	1	1	1	1	1	1	1	7	7	7									26535
	AFS	1967	66 00N	153 42W	946	7	7	7	7	1	1	1	1	1	7	7	7						12			26535
	AFS	1968	66 00N	153 42W	946	6	7	7	7	7	7	7	1	1	1	1	1						10			26535
	AFS	1969	66 00N	153 42W	946	1	7	1	7	1	1	7	1	7	1	7	1						04			26535
	AFS	1970	66 00N	153 42W	946	1	7	7	7	1	1	1	7	1	1	1	1						12			26535
	AFS	1971	66 00N	153 42W	946	1	1	6	6	6	6	6	1	1	1	6	6						12			26535
	AFS	1972	66 00N	153 42W	946	6	1	1	1	1	1	1	1	1	1	1	1						05			26535
	AFS	1973	66 00N	153 42W	946	6	7	1	1	1	7	7	7	7	7	7	7						05			26535
	AFS	1974	66 00N	153 42W	946	6	6	6	6	6	6	6	6	6	6	6	6									26535
	AFS	1975	66 00N	153 42W	946	7	7	7	7	7	7	7	7	7	7	7	7									26535
	AFS	1976	66 00N	153 42W	946	7	7	7	7	7	7	7	7	7	7	7	7									26535
JACK WADE	A	1940	64 07N	141 35W	1800					3	3	3	3	3		3	3									
	A	1941	64 07N	141 35W	1800	3	3	3	3	3	3	3	5	5	5	4		04								
	A	1942	64 07N	141 35W	1800	3	3	3		4	4	4	5	5				07	06	06						
JOHNSTONE PT	A	1975	60 29N	146 36W	24		3	3	3	3	3	3	3	3	3	3	3									
	A	1976	60 29N	146 36W	24	3	3	3	3	3	3	3	3	3	3	3	3									
JUNEAU	WBO	1917	58 18N	134 24W	80														12	12	11	11				25324
	WBO	1918	58 18N	134 24W	80														12	12	12	12				25324
	WBO	1919	58 18N	134 24W	80														12	12	12	12				25324
	WBO	1920	58 18N	134 24W	80														12	12	12	12				25324
	WBO	1921	58 18N	134 24W	80														12	12	12	12				25324
	WBO	1922	58 18N	134 24W	80														04	04	04	04				25324
JUNEAU	WBO	1922	58 18N	134 25W	203														08	08	08	08				25324
	WBO	1923	58 18N	134 25W	203														12	12	12	12				25324
	WBO	1924	58 18N	134 25W	203														12	12	12	12				25324
	WBO	1925	58 18N	134 25W	203														12	12	12	12				25324
	WBO	1926	58 18N	134 25W	203														12	12	12	12				25324
	WBO	1927	58 18N	134 25W	203														12	12	12	12				25324

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

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NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
JUNEAU	WBO	1928	58 18N	134 25W	203														12	12	12	12				25324
	WBO	1929	58 18N	134 25W	203														12	12	12	12				25324
	WBO	1930	58 18N	134 25W	203												3		12	12	12	12				25324
	WBO	1931	58 18N	134 25W	203														01	01	01	01				25324
JUNEAU	WBO	1931	58 18N	134 24W	132		3	3	3	3	3	3	3	3	3	3			11	11	11	11				25324
	WBO	1932	58 18N	134 24W	132				3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	WBO	1933	58 18N	134 24W	132		3	3	3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	WBO	1934	58 18N	134 24W	132				3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	WBO	1935	58 18N	134 24W	132	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	WBO	1936	58 18N	134 24W	132		3	3	3	3	3	3	3	3	3	5	5		12	12	12	12				25324
	WBO	1937	58 18N	134 24W	132		3	4	5	6	5	5	5	5	5	5	5		12	12	12	12				25324
	WBO	1938	58 18N	134 24W	132		3	3	3	5	5	5	5	5	6	6	6		12	12	12	12				25324
	WBO	1939	58 18N	134 24W	132	5	6	6	6	6	6	6	6	6	6	6	6	06	12	12	12	12				25324
	WBO	1940	58 18N	134 24W	132	5	6	6	6	6	7	6	6	6	6	6	6	12	12	12	12	12				25324
	WBO	1941	58 18N	134 24W	132	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12	12	12				25324
	WBO	1942	58 18N	134 24W	132	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				25324
	WBO	1943	58 18N	134 24W	132	1	1	1	1	1	1							06	06	06	06	06				25324
JUNEAU	WBAS	1943	58 22N	134 35W	22							1	1	1	1	1	1	06		06	06	06				25309
	WBAS	1944	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1	12		12	12	12				25309
	WBAS	1945	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1	09		12	12	12				25309
	WBAS	1946	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1947	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1948	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1949	58 22N	134 35W	22	0	0	0	0	0	0	0	0	1	1	1	0			12	12	12				25309
	WBAS	1950	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	WBAS	1951	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	WBAS	1952	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	WBAS	1953	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	WBAS	1954	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1955	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1956	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1957	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1958	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	WBAS	1959	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12	03	03			25309
	WBAS	1960	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25309
	WBAS	1961	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25309
	WBAS	1962	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25309
	WBAS	1963	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			25309
	WBAS	1964	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	06		12			25309
	WBAS	1965	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WBAS	1966	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			11			12			25309
	WBAS	1967	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WBAS	1968	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WBAS	1969	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WBAS	1970	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WBAS	1971	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WBAS	1972	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WSO	1973	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			10			25309
	WSO	1974	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WSO	1975	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	WSO	1976	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
KAD RIVER	SAWR	1969	70 04N	147 43W	75				1	1	1	1	1	1	1											
KAKE	A	1971	56 58N	133 57W	30											3	3									
	A	1972	56 58N	133 57W	30	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1973	56 58N	133 57W	30	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1974	56 58N	133 57W	30	3	3	3	3	3	3	3	3	3	5	5	5									
	A	1975	56 58N	133 57W	30	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	56 58N	133 57W	30	5	5	5	5	5	5	5	5	5	5	5	5									
KALSKAG	A	1939	61 27N	160 48W	90			3	3	5	5	5	5	5	5	5	5									
	A	1940	61 27N	160 49W	90	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1941	61 27N	160 49W	90	5	5	6	6	6	6	5	5	5	5	5	5									
	A	1942	61 27N	160 49W	90	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1943	61 27N	160 49W	90	5	5	5	5	5	5															
KALTAG	A	1931	64 20N	158 45W	93						3	3	3	3	3	3	3									
	A	1932	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1933	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1934	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1935	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1936	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	64 20N	158 45W	93					3	3			3	3	3	3									
	A	1938	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	64 20N	158 45W	93	3	3	3	3	3	3	3	3	4	4	4	4									
	A	1940	64 20N	158 45W	93	3	4	5	5	3	3	5	3	3	5	5	4									
	A	1941	64 20N	158 45W	93	3	5	5	5	5	5	5	5	5	5	5	5									
	A	1942	64 20N	158 45W	93	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1943	64 20N	158 45W	93	5	5	5	5	5	5			5	5	5	5									
	A	1944	64 20N	158 45W	93	5	5	5																		
KALTAG	AAF	1943	64 18N	158 43W	158							1	1	1	1	1	1		01	62						26502
	AAF	1944	64 18N	158 43W	158	1	1	1	1	1	1	1	1	1	1	1	1			62	54					26502
	AAF	1945	64 18N	158 43W	158	1	1	1	1	1	1	1	1	1						59	59					26502
KANAGA BAY	NS	1934	51 43N	177 15W	50					1	1	1														25711
	NS	1942	51 46N	177 15W	50	1	1																			25711
KANAKANAK	A	1931	59 01N	158 31W	85									3	3	3	3									

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
KANAKANAK	A	1932	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1933	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1934	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1935	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1936	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1938	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	59 01N	158 31W	85	4	4	4	4	4	4	4														
KANAKANAK	SA	1941	59 01N	158 31W	99													05	05	05						
KANATAK	A	1939	57 34N	156 02W	23				3	3									04							
	A	1940	57 34N	156 02W	23													10	09	10						
	A	1941	57 34N	156 02W	23													10	09	08						
KASILOF	A	1938	60 19N	151 17W	60								3	3	3	3	3									
	A	1939	60 19N	151 17W	60	3	3	3	3						3	3	3									
	A	1940	60 19N	151 17W	60	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	60 19N	151 16W	60	3	3	3	3	3	3	3	3	3	3	3	3									
KAVIK RIVER	SAWR	1968	69 41N	146 56W	617												1									
	SAWR	1969	69 41N	146 56W	617	1	1	1	1	1	1	1	1	1	1											
KAVIK	SAWR	1973	69 41N	146 56W	617	6	6	6	6																	
	SAWR	1974	69 41N	146 56W	617	6	6	6	6	6	6	6														
KENAI	A	1939	60 34N	151 15W	85			3	3	3						3	3									26523
	A	1940	60 34N	151 15W	85	3	3																			26523
	A	1941	60 34N	151 15W	85												4			01						26523
	CAA	1942	60 34N	151 15W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26523
	CAA	1943	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1		01	12						26523
	CAA	1944	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1		04	12						26523
	CAA	1945	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1946	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1947	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1948	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1949	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1950	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1951	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1952	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1953	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1954	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1955	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
	CAA	1956	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1957	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1958	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	CAA	1959	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1960	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1961	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1962	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1963	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1964	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1965	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1966	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
	FAA	1967	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1968	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1969	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
	FAA	1970	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1971	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1972	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1973	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1974	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	FAA	1975	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			10						26523
	FAA	1976	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
KETCHIKAN	SA	1929	55 20N	131 39W	16														03	03						25325
	SA	1930	55 20N	131 39W	16								3	3	3	3			11	11						25325
KETCHIKAN	SA	1930	55 21N	131 39W	16												3		01	01						25325
	SA	1931	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	SA	1932	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	SA	1933	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	SA	1934	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	SA	1935	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12		08				25325
	SA	1936	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				25325
	SA	1937	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				25325
	SA	1938	55 21N	131 39W	15	3	3	3	3	3	3	3	3	5	5	5	5		12	12		12				25325
	SA	1939	55 21N	131 39W	15	3	3	3	3	3	3	3	4	3	3	3	3	06	12	12		12				25325
	WBO	1940	55 21N	131 39W	15	4	4	4	4	4	4	4	4	4	5	4	4	12	12	12						25325
	WBO	1941	55 21N	131 39W	15	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25325
	WBO	1942	55 21N	131 39W	15	5	5	5	5	5	5	5	5	5	5	6	5	12	12	12						25325
	WBO	1943	55 21N	131 39W	15	6	6	6	6	6	6	6	6	1	1	1	1	12	12	12						25325
	WBO	1944	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						25325
	WBO	1945	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						25325
	WBO	1946	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1	01	12	12						25325
	WBO	1947	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12						25325
	SAWR	1948	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5			01						25325
	SAWR	1949	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1950	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1951	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
KETCHIKAN	SAWR	1952	55 20N	131 34W	0	5	5		5	5	5	5	5	5	5	5	5									25325
	SAWR	1953	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1954	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1955	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1956	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1957	55 20N	131 34W	0	4	4	4	5	5	5	5	5	5	5	5	5									25325
	SAWR	1958	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1959	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1960	55 20N	131 34'I	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1961	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1962	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1963	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1964	55 20N	131 34W	0	5	5	5	5	5	5	5	6	5	5	5	5									25325
	SAWR	1965	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1966	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1967	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	SAWR	1968	55 20N	131 34W	0	5	5	5	5	5	5	6	6	6	6	6	6									25325
	SAWR	1969	55 20N	131 34W	0	6	6	6	6	6																25325
KETCHIKAN	FSS	1969	55 20N	131 40W	122										6	6	6									25325
	FSS	1970	55 20N	131 40W	122	6	6	6	6	6	6	6	6	6	6	6	6									25325
	FSS	1971	55 20N	131 40W	122	5	5	5	5	5	5	5	5	5	5	5	5									25325
	FSS	1972	55 20N	131 40W	122	5	5	5	5	5	5	5	5	5	5	5	5									25325
	FSS	1973	55 20N	131 40W	122	5	5	5	5	5	5	5	6	6	6	6	6									25325
	FSS	1974	55 21N	131 42W	96	6	6	6	6	6	6	6	6	1	1	1	1									25325
	FSS	1975	55 21N	131 42W	96	1	1	1	1	1	1	1	1	1	1	1	1									25325
	FSS	1976	55 21N	131 42W	96	1	1	1	1	1	1	1	1	1	1	1	1									25325
KETCHIKAN	CG	1972	55 35N	131 30W											5	5	5									
	CG	1973	55 35N	131 30W		5	5	5	5	5	5		5	5	5	5	5									
	CG	1974	55 35N	131 30W		5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1975	55 35N	131 30W		5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1976	55 35N	131 30W		5	5	5	5	5	5	5	5	5	5	5										
KIMSHAN	A	1940	57 41N	136 06W	13							4	4	4	4	4	4			06						
	A	1941	57 41N	136 06W	13	4	4	4	4	5	5	5	5	5	5	5	5			12						
	A	1942	57 41N	136 06W	13	5	5	5	5	5	4	4	4	4	4	4	4			12						
	A	1943	57 41N	136 06W	13	4	4	4	4	4	4	4	4							08						
KING ISLAND	A	1939	64 56N	168 01W	100											3	3									
	A	1940	64 56N	168 01W	100	3	3	3	3	3	3															
KING SALMON	WBAS	1955	58 41N	156 39W	49											1	1			02		01				25503
	WBAS	1956	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	WBAS	1957	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	WBAS	1958	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	WBAS	1959	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	WBAS	1960	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25503
	WBAS	1961	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1962	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25503
	WBAS	1963	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25503
	WBAS	1964	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			10			25503
	WBAS	1965	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1966	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1967	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1968	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1969	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1970	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1971	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WBAS	1972	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WSO	1973	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WSO	1974	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WSO	1975	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	WSO	1976	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
KISKA ISLAND	NAAF	1942	51 59N	177 33E	71		1	1	1																	45710
	NAAF	1943	51 58N	177 32E	71											1	1									45710
	NAAF	1944	51 58N	177 32E	71	1	1	1	1	1	1	1														45710
KISKA ISLAND	AAF	1943	51 59N	177 34E	298									6	1	1	0			54	54					45703
	AAF	1944	51 59N	177 34E	298	1	1	1	1	1	1	1	1	1	1	1	1			62	62					45703
	AAF	1945	51 59N	177 34E	298	1	1	1	1	1	1	1	1	1	1					60	60					45703
KIVALINA	A	1942	67 45N	164 42W	10											4	3	02		02						
	A	1943	67 45N	164 42W	10	5	3	5	5	4	3	3	3	3		3	3	04		12						
	A	1944	67 45N	164 42W	10	3	3													02						
KLUKWAN	A	1939	59 24N	135 54W	91											4	4									
	A	1940	59 24N	135 54W	91	4	4	4	4	4							4									
	A	1941	59 24N	135 54W	91	4	4	4	4	4	4	4			4	4	4			11						
	A	1942	59 24N	135 54W	91															03						
KOBUK	A	1953	66 54N	156 52W	140								5	5	5	5	5									
	A	1954	66 54N	156 52W	140	5	5	5																		
KODIAK	NF	1915	57 46N	152 22W	12														03							25509
	NF	1916	57 46N	152 22W	12														12							25509
	NF	1917	57 46N	152 22W	12														12	08						25509
	NF	1918	57 46N	152 22W	12														12	11						25509
	NF	1919	57 46N	152 22W	12														12	08						25509
	NF	1920	57 46N	152 22W	12														12	12						25509
	NF	1921	57 46N	152 22W	12														12	11						25509

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
						HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY												NUMBER OF MONTHS IN YEAR WITH								
KODIAK	NF	1922	57 46N	152 22W	12														12	12						25509
	NF	1923	57 46N	152 22W	12														12	12						25509
	NF	1924	57 46N	152 22W	12														12	12						25509
	NF	1925	57 46N	152 22W	12														12	12						25509
	NF	1926	57 46N	152 22W	12														12	12						25509
	NF	1927	57 46N	152 22W	12														12	12						25509
	NF	1928	57 46N	152 22W	12														12	12						25509
	NF	1929	57 46N	152 22W	12														12	12						25509
	NF	1930	57 46N	152 22W	12														12	12						25509
	NF	1931	57 46N	152 22W	12														02	02						25509
KODIAK	SA	1931	57 48N	152 24W	152														10	10		06				25509
	SA	1932	57 48N	152 24W	152														12	12						25509
	SA	1933	57 48N	152 24W	152														12	12						25509
	SA	1934	57 48N	152 24W	152														12	12						25509
	SA	1935	57 48N	152 24W	152														12	12						25509
	SA	1936	57 48N	152 24W	152								3	3	3	3	3		12	12						25509
	SA	1937	57 48N	152 24W	152	3						3	3	3		3	3		12	12						25509
	SA	1938	57 48N	152 24W	152	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25509
	SA	1939	57 48N	152 24W	152	3	3	3	3	3	3	3	4	3	3	3	3	06	12	12						25509
	SA	1940	57 48N	152 24W	152	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25509
	SA	1941	57 48N	152 24W	152	4	3	3	4	4	4							06	06	06						25509
KODIAK	CAA	1941	57 46N	152 19W	106							6	6	6	6	6	6	06	06	06						25509
	NF	1942	57 45N	152 31W	39	1	1	1	1	1	1	1	1	1	1	1	1		12							25509
	NF	1943	57 45N	152 31W	39	1	1	1	1	1	1	1	1	1	1	1	1		12							25509
	NF	1944	57 45N	152 31W	39	1	1	1	1	1	1	1	1	1	1	1	1		12							25509
	NF	1945	57 45N	152 31W	39	1	1	1	1										05							25509
KODIAK	NAF	1941	57 44N	152 30W	112												1									25501
	NAF	1942	57 44N	152 30W	112	1	1	1	1	1		1	1	1	1	1	1			03						25501
	NAF	1943	57 44N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1944	57 44N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1945	57 44N	152 30W	112	1	1	1	1																	25501
KODIAK	NAF	1945	57 45N	152 30W	112					1	1	1	1	1	1	1	1									25501
	NAF	1946	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1947	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1948	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1949	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1950	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1951	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	NAF	1952	57 45N	152 30W	112	1	1		1	1	1	1	1	1	1	1	1			11			12	12		25501
	NAF	1953	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			11		09	11	11		25501
	NAF	1954	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12		11	12	12		25501
	NAF	1955	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12		11	12	12		25501
	NAF	1956	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12		12	11	11		25501
	NAF	1957	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	NAF	1958	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	NAF	1959	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	NAF	1960	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	NAF	1961	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12	02		12	12		25501
	NAF	1962	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	NAF	1963	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12	01		12	12		25501
	NAF	1964	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12	12		25501
	NAF	1965	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12	03		25501
	NAF	1966	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	NAF	1967	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	NAF	1968	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	NAF	1969	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	NAF	1970	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	NAF	1971	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	NAF	1972	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	10		12			25501
KODIAK	WSO	1973	57 45N	152 30W	111	6	1	1	1	1	1	1	1	1	1	1	1			11			07			25501
	WSO	1974	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12			01			25501
	WSO	1975	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25501
	WSO	1976	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			11						25501
KOGGIUNG	A	1939	59 02N	156 20W	50								3	3	3	3	3									
KOKRINES	AAF	1943	64 54N	154 40W	185							1	1	1	1	1	1			56	54					26503
	AAF	1944	64 54N	154 40W	185	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26503
	AAF	1945	64 54N	154 40W	185	1	1	1	1	1	1	1	1							59	59					26503
	AAF	1946	64 54N	154 40W	185						1															26503
KOTZEBUE	SA	1930	66 52N	162 38W	11									3	3	3	3									26616
	SA	1931	66 52N	162 38W	11	3	3	3	3	3	3	3	3	3	3	3	3									26616
	SA	1932	66 52N	162 38W	11	3	3	3																		26616
	SA	1933	66 52N	162 38W	11										3	3	3									26616
	SA	1934	66 52N	162 38W	11	3			3	3	3			3	3	3	3									26616
	SA	1935	66 52N	162 38W	11	3	3	3	3	3	3	3	3	3	3	3	3									26616
	SA	1936	66 52N	162 38W	11	3	3	3	3	3	3	3	3	3	3	3	3									26616
	SA	1937	66 52N	162 38W	11				3	3	3	3	3	3	3	3	3									26616
	SA	1938	66 52N	162 38W	11	3	3	3	3	3	3	5	3	3	5	5	5									26616
	SA	1939	66 52N	162 38W	11	4	4	5	5	5	3	5	5	3	3	4	5									26616
	SA	1940	66 52N	162 38W	11	3	4	3	4	5	4	4	5	5	5	5	6			06						26616
	SA	1941	66 52N	162 38W	12	5	5	5	5	5	5	5	5	5	5	5	5	05	05	06						26616
	SA	1942	66 52N	162 38W	12	5	5	5	5	5	6	6	6	5	5	5	5	12	12	12						26616
	WBAS	1943	66 52N	162 38W	20	6	6	6	6	6	6	6	7	7	1	1	1	12	12	12						26616
	WBAS	1944	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26616
	WBAS	1945	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1	08	12	11						26616

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
KOTZEBUE	WBAS	1946	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26616
	WBAS	1947	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26616
	WBAS	1948	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26616
	WBAS	1949	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	WBAS	1950	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	WBAS	1951	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	WBAS	1952	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	WBAS	1953	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	WBAS	1954	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1955	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1956	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1957	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1958	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1959	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1960	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1961	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1962	66 52N	162 38W	20	1	1	1		1	1	1	1	1	1	1	1			12						26616
	WBAS	1963	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1964	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1965	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1966	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1967	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1968	66 52N	162 38W	20	1	1	1		1	1		1	1	1	1	1			12						26616
	WBAS	1969	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	.					26616
	WBAS	1970	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1971	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	WBAS	1972	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			01			26616
	WSO	1973	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			08			26616
	WSO	1974	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26616
	WSO	1975	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			10			26616
	WSO	1976	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26616
KOUGAROK	AAF	1945	64 54N	154 40W	185															51	51					26614
	AAF	1946	64 54N	154 40W	185	1	1	1	6	6	6	6	6	1						58	59					26614
KOYUK	A	1941	64 57N	161 08W	10	5	5	5	5	5	5	5	5	5	5	5										
	A	1942	64 57N	161 08W	10	5	5	5	5	5	5	5														
	A	1943	64 57N	161 06W	65					1	1	1														
KOYUK	AAF	1943	64 52N	161 06W	41					1	1	1	1	1	1	1	1			54						26602
	AAF	1944	64 52N	161 06W	41	1	1	1	1	1	1	1	1	1	1	1	1			62	53					26602
	AAF	1945	64 52N	161 06W	41	1	1	1	1	1	1	1	1	1						59	58					26602
KULIK LAKE	SAWR	1958	58 59N	155 07W	400							5	4	4												
LADD	AAB	1940	64 51N	147 35W	464															51						26403
	AAB	1941	64 51N	147 35W	464		6	6	1	1	1	1	1	1	1	1	1			62	58					26403
	AAB	1942	64 51N	147 35W	464	1	1	1	1	1	1	1			1	1	1		12	62	62					26403
	AAB	1943	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	62	62		11			26403
	AAB	1944	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	62	61		12			26403
	AAB	1945	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	60	60		11			26403
	AAB	1946	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	62	62		10			26403
	AAB	1947	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			59	59		12			26403
	AAB	1948	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			62	62		10			26403
	AAB	1949	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			62	61		12			26403
	AAB	1950	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			62	60		12			26403
	AAB	1951	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12	11		12			26403
	AAB	1952	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26403
	AAB	1953	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12	02		12			26403
	AAB	1954	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26403
	AAB	1955	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			11			12			26403
	AAB	1956	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			11			09			26403
	AAB	1957	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1	1	1			12						26403
	AAB	1958	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1	1	1			12			01			26403
	AAB	1959	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26403
	AAB	1960	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1					10			10			26403
LAKE CHANDAL	COOP	1963	67 30N	148 30W	1900																07					
	COOP	1964	67 30N	148 30W	1900																12					
	COOP	1965	67 30N	148 30W	1900																09					
LAKE CHANDAL	A	1968	67 30N	148 30W	1825											4	4									
	A	1969	67 30N	148 30W	1825	4	4	4	4	4	4	4	4	4	4	4	4									
	A	1970	67 30N	148 30W	1825		4	4	4	4																
	A	1971	67 30N	148 30W	1825					5	5			3	3	3	3									
	A	1972	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1973	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1974	67 30N	148 30W	1825	5	5	5	5	5	5	5		5	5	5	5									
	A	1975	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									
LAKE CLARK	A	1970	60 17N	154 17W	271					6	6	6	6	6	6	5	5									
	A	1971	60 17N	154 17W	271	5	5	5	5		5	5														
LAKE HOOD	LAWR	1968	61 11N	149 57W	148											6	6									
	LAWR	1969	61 11N	149 57W	148	6	6	6	5	5	5	6	6	6	6	6	6									
	LAWR	1970	61 11N	149 57W	148	6	6	6	5	6	6	6	6	6	6	6	6									
	LAWR	1971	61 11N	149 57W	148	3	3	3	3		3	3	3	3	3	3	3									
	LAWR	1972	61 11N	149 57W	148	3	3	3	3	3	3	3	3	3	3	3	3									
	LAWR	1973	61 11N	149 57W	148	3	3	3			3		3	3	3	3	3									
	LAWR	1974	61 11N	149 57W	148	3	3	3	3	3		3	3		3	3	3									
	LAWR	1975	61 11N	149 57W	148	3	3	3	3			3	3		3	3	3									

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
LAKE HOOD	LAWR	1976	61 11N	149 57W	148	3	3	3	3		3		3	3	3	3	3									
LAKE LOUISE	A	1972	62 18N	146 35W	2450				5	5	5	5	5	5	3		3									
	A	1973	62 18N	146 35W	2450	5	5	5	5	5																
LEVEL ISLAND	A	1973	56 28N	133 06W	30								5	5	5	5	5									
	A	1974	56 28N	133 06W	30	5	5	5	5	5	5	5	5	5	5	5										
	A	1975	56 28N	133 06W	30	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	56 28N	133 06W	30	5	5	5	5	5	5	5	5	5	5	5	5									
LINCOLN ROCK	CG	1942	56 03N	132 46W	25						5	5	5	5	5	5	5			06						25326
	CG	1943	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	7	1	1			12						25326
	CG	1944	56 03N	132 46W	25	1	1	1	1	1	1	1	1	1	1	1	1			12						25326
	CG	1945	56 03N	132 46W	25	1	1	1	1	1	1	1	1	1	1	1	1			12						25326
	CG	1946	56 03N	132 46W	25	1	1	1	1	1	1	1	1	1	6	4	4			12						25326
	CG	1947	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			12						25326
	CG	1948	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			12						25326
	CG	1949	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			12						25326
	CG	1950	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			03						25326
	CG	1951	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4									25326
	CG	1952	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4									25326
	CG	1953	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	5									25326
	CG	1954	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1955	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1956	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1957	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1958	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1959	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1960	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1961	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1962	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1963	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1964	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1965	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1966	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	CG	1967	56 03N	132 46W	25	5	5	5		5	5	5	5	5	5	5	5									25326
	CG	1968	56 03N	132 46W	25	5	5	5																		25326
LITTLE PORT	A	1940	56 23N	134 39W	14										3	3	3									25327
	A	1941	56 23N	134 39W	14	3	3	3	3	3	3	3	3	3	3	3	3									25327
	A	1942	56 23N	134 39W	14	3	3	3	3	3	3	3														25327
LIVENGOOD	A	1931	65 35N	148 29W	550		5	3	3	3	3	3	3	3	3	3	3									26428
	A	1932	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	A	1933	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	A	1934	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	A	1935	65 35N	148 29W	550	3	3				3	3	3	3	3	3	3									26428
	A	1936	65 35N	148 29W	550	3	3	3	3	3	3	3	3		3	3	3									26428
	A	1937	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	A	1938	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	A	1939	65 35N	148 29W	550	3	3	3	3					3	3	3	3									26428
	A	1940	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	A	1941	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	A	1942	65 35N	148 29W	550	3	3	3	3																	26428
	A	1946	65 35N	148 29W	730				3	4	4	4	4	4	4	4										26428
LIVENGOOD	COOP	1963	65 32N	148 31W	580																07					
	COOP	1964	65 32N	148 31W	580																12					
	COOP	1965	65 32N	148 31W	580																12					
	COOP	1966	65 32N	148 31W	580																02					
	SAWR	1974	65 35N	148 29W												6	6									
	SAWR	1975	65 35N	148 29W		6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1976	65 35N	148 29W		6	6	6	6	6	6	6	6	6	6	6	6									
LUCKY SHOT	A	1939	61 47N	149 25W	3300					3	3	3	3	3	3	3	3									
	A	1940	61 47N	149 25W	3300	3	3	3	3	3																
MACLEOD HARB	A	1972	59 53N	147 45W	45		3	3	3	3	3	3	3	3	3	3	3									
	A	1973	59 53N	147 45W	45	3	3	3	3	3	3	3	3	3	3		3									
	A	1974	59 53N	147 45W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1975	59 53N	147 45W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1976	59 53N	147 45W	45	3		3	3	3	3	3	3	3	3	3	3									
MCCARTHY	SAWR	1956	61 26N	142 55W	1600						4	5	3	4	3	4	3									
	SAWR	1957	61 26N	142 55W	1600	3	3	4	3	3	3	3	3	3	3	3	3									
	SAWR	1958	61 26N	142 55W	1600	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1959	61 26N	142 55W	1600	3	3		3	3	3	3	3	3	3	3	3									
	SAWR	1960	61 26N	142 55W	1600	3	3																			
MCCARTHY	SAWR	1974	61 26N	142 55W	1600		5	5	5	5	5	5	5	5	5	5	5									
	SAWR	1975	61 26N	142 55W	1600	6	6	6	6	6	6	6	6	6	6	6	6				07					
	SAWR	1976	61 26N	142 55W	1600	6	6	6	6	6	6	6	6	6	6	6	6				11					
MCGRATH	A	1931	62 58N	155 37W	333		3	3	3	3	3	3	3	3	3	3	3									26510
	A	1932	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	A	1933	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	A	1934	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	A	1935	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	A	1936	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	A	1937	62 58N	155 37W	333	3	3	3	3		3	3	3	3	3	3	3									26510
	A	1938	62 58N	155 37W	333	3	3					3	3	3	3	3	3									26510
	A	1939	62 58N	155 37W	333	3	3	4	4	4	4	4	4	4	4	3	3	10	10	10						26510

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
MCGRATH	A	1940	62 58N	155 37W	333	3	3	3	3	3	3	3	3			3	3	12	12	12						26510
	CAA	1941	62 58N	155 37W	328	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26510
	WBAS	1942	62 58N	155 37W	341	6	6	6	6	6	6	6	1	1	1	1	1	03	12	12						26510
	WBAS	1943	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	WBAS	1944	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	WBAS	1945	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	WBAS	1946	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	WBAS	1947	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	WBAS	1948	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	WBAS	1949	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	WBAS	1950	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	WBAS	1951	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	WBAS	1952	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	WBAS	1953	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	WBAS	1954	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1955	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1956	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1957	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1958	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1959	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1960	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1961	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1962	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1963	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1964	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1965	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1966	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1967	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1968	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1969	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1970	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1971	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WBAS	1972	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WSO	1973	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WSO	1974	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WSO	1975	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	WSO	1976	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
MCKINLEY PRK	COOP	1922	63 44N	148 55W	1730														01							26429
	COOP	1923	63 44N	148 55W	1730														12							26429
	COOP	1924	63 44N	148 55W	1730														07							26429
MCKINLEY PRK	A	1941	63 43N	148 58W	2092									4	5	5	5									26429
	A	1942	63 43N	148 58W	2092	5	5	5	5	5	5	5	5	5	5	5	5									26429
	A	1943	63 43N	148 58W	2092	5	5	5	5																	26429
MCKINLEY PRK	A	1949	63 43N	148 58W	2092							5	5	5	5	5										26429
	A	1951	63 43N	148 58W	2092			5																		26429
	A	1975	63 39N	148 48W	2050											5	5									26429
	A	1976	63 39N	148 48W	2050	5	5	5	5																	26429
MANLEY HOT S	A	1945	65 00N	150 39W	325											6	6									26524
	A	1946	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1947	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1948	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1949	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1950	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1951	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1952	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1953	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1954	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1955	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1956	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	A	1957	65 00N	150 39W	325	5	5	5	5	5	5	5	5													26524
	A	1958	64 59N	150 40W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1959	64 59N	150 40W	265	5	5	5	5	5	5	5	5	5	5	5										26524
MANLEY HOT S	A	1959	65 00N	150 39W	265												5									26524
	A	1960	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1961	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1962	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1963	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1964	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1965	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1966	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1967	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1968	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1969	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	A	1970	65 00N	150 39W	265				5	5	5	5	5	5	5											26524
	A	1976	65 00N	150 39W	265										3	3	3									26524
MANLEY H SPG	AAF	1943	64 59N	150 38W	285												6			51	51					26505
	AAF	1944	64 59N	150 38W	285	1	1	1	1	1	1	1	1	1						59	59					26505
MANLEY H SPG	AAF	1944	65 00N	150 39W	264										1	1	1			53	53					26505
	AAF	1945	65 00N	150 39W	264	1	1	1	1	1	1	1	1	1	1	1	1			61	61					26505
MARSHALL	A	1940	61 51N	161 43W	87	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1941	61 51N	161 43W	87	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1942	61 51N	161 43W	87		3	3	3																	
MARY ISLAND	CG	1940	55 06N	131 11W	39		3	3	3	3	3	4	4	4	4	4	4			01						

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
MARY ISLAND	CG	1941	55 06N	131 11W	39	5	5		5	5	5	5	5	5	5	5				09						
MATANUSKA	A	1942	61 32N	149 14W	166				3	3	3	3	3	3	3	3	3			09						26448
	A	1943	61 32N	149 14W	166	3	3	3	3	3	3	3	3	3	3	3	3			12						26448
	A	1944	61 32N	149 14W	166	3	3	3	3	3	3	3	3	3	3	3	3			07						26448
	A	1945	61 32N	149 14W	166	3	3	3	3	3	3	3	3	3	3	3	3									26448
MIDDLETON IS	CAA	1942	59 28N	146 19W	45											6	6	02		02						25402
	CAA	1943	59 28N	146 19W	45	6	5	5	5	5	5	5	5	5	5	5	5	12	05	12						25402
	CAA	1944	59 28N	146 19W	45	6	6	6	5	5	5	5	5	6	6	5	5	12		12						25402
	CAA	1945	59 28N	146 19W	45	6	1	1	1	1	1	1	1	1	1	1	1	12		12						25402
	CAA	1946	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1947	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1948	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1949	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1950	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1951	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1952	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1953	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1954	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1955	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1956	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1957	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1958	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	CAA	1959	59 28N	146 19W	45	1														01						25402
MIDDLETON IS	AFS	1959	59 27N	146 19W	121	7	7	1	1	1	1	1	1	1	1	1	1			12						25403
	AFS	1960	59 27N	146 19W	121	1	1	1	1	1	1	1	1	1	1	1	1			12						25403
	AFS	1961	59 27N	146 19W	121	1	1	1	1	1	1	1	1	1	1	1	1			12						25403
	AFS	1962	59 27N	146 19W	121	1	1	1	1	1	1	1	1	1	1	1	1			12						25403
	AFS	1963	59 27N	146 19W	121	1	1	1	1	1	7									06						25403
MINCHUMINA	CAA	1941	63 53N	152 17W	701												4									26512
	CAA	1942	63 53N	152 17W	701	4	4	4	4				1	1	1	1	1									26512
	CAA	1943	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1									26512
	CAA	1944	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	10	04	10						26512
	CAA	1945	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26512
	CAA	1946	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	01		12						26512
	CAA	1947	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26512
	CAA	1948	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	07		12						26512
	CAA	1949	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1950	63 53N	152 17W	701	1	1	1	1	1	1	1	1		1	1	1			12						26512
	CAA	1951	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1952	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1953	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1954	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1		1	1			12						26512
	CAA	1955	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1956	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1957	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1958	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	CAA	1959	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	FAA	1960	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			11						26512
	FAA	1961	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1									26512
	FAA	1962	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	FAA	1963	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	FAA	1964	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	6	6	6			12						26512
	FAA	1965	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12						26512
	FAA	1966	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12						26512
	WBAS	1967	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12						26512
	WBAS	1968	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26512
	FAA	1969	63 53N	152 17W	701	6	6	6	5	5	5	5	5	5	5	5	5			06	04					26512
	FAA	1970	63 53N	152 17W	701	5	5	5	5	5	5	5	5													26512
	FAA	1975	63 53N	152 17W	701		6	6	6	6	6	6	6	6	6	6	6									26512
	FAA	1976	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6									26512
MOOSE RUN	COOP	1966	61 15N	149 40W	395																03					
	COOP	1967	61 15N	149 40W	395																08					
	COOP	1968	61 15N	149 40W	395																09					
	COOP	1969	61 15N	149 40W	395																01					
MOSES POINT	CAA	1941	64 42N	162 03W	16					5	5	5	6	6	6	6	6			08						26620
	CAA	1942	64 42N	162 03W	21	6	6	6	5	5	5	6	6	7	1	1	1			12						26620
	CAA	1943	64 42N	162 03W	21	6	6	6	6	1	1							05	03	06						26620
	CAA	1945	64 42N	162 03W	21											1	1			02						26620
	CAA	1946	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1947	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1948	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1949	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1950	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1951	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1952	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1953	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1		1			12						26620
	CAA	1954	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1955	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1956	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1957	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1958	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	CAA	1959	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	FAA	1960	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	FAA	1961	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	FAA	1962	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	FAA	1963	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
MOSES POINT	FAA	1964	64 42N	162 03W	21	1	1	1	1	1	1	1	6	6	6	6	6			12						26620
	FAA	1965	64 42N	162 03W	21	6	6	6	6	6	6	6	6	6	6	6	6			12						26620
	FAA	1966	64 42N	162 03W	21	6	6	6	6	6	6	6	6	6	6	6	6			12						26620
	AC	1967	64 42N	162 03W	21	6	6	6	6	6	6	6	6	6	6	6	6			06						26620
	AC	1968	64 42N	162 03W	21	6	6	6	6	6	6	5	5	5	5	5	5									26620
	AC	1969	64 42N	162 03W	21	5	5	5	5	5	5															26620
MOSES POINT	AAF	1943	64 43N	162 05W	21					1	1	1	1	1	1	1	1			57						26603
	AAF	1944	64 43N	162 05W	21	1	1	1	1	1	1	1	1	1	1	1	1			62	54					26603
	AAF	1945	64 43N	162 05W	21	1	1	1	1	1	1	1	1	1	1	1				62	61					26603
MT VILLAGE	SA	1945	62 07N	163 45W	44												4			01						26621
	SA	1946	62 07N	163 45W	44	4												11		11						26621
	SA	1947	62 07N	163 45W	44			3										12		12						26621
	SA	1948	62 07N	163 45W	44									3	3	3	3	11		12						26621
	SA	1949	62 07N	163 45W	44	3	3	3	3	3	3							11		11						26621
	SA	1950	62 07N	163 45W	44			4	4	4								05		05						26621
MT VILLAGE	SA	1950	62 07N	163 43W	44								4	4	4	4	4	05		05						26621
	SA	1951	62 07N	163 43W	44	4	4	4	4	4	4	4	4	4	4	4	4	11		12						26621
	SA	1952	62 07N	163 43W	44	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26621
	SA	1953	62 07N	163 43W	44	4	4	4	4	4	4	4	4	3	3	3	3	12		12						26621
	SA	1954	62 07N	163 43W	44	4	4	4	4	4	4	4	3	3	3	3	3	12		12						26621
	SA	1955	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	SA	1956	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	SA	1957	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	SA	1958	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	SA	1959	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	SA	1960	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	SA	1961	62 07N	163 43W	49	3									3	3	3	04		04						26621
	SA	1962	62 07N	163 43W	49	3	3	3	3	3	3	3		3	3	3	3	11		11						26621
	SA	1963	62 07N	163 43W	49	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	SA	1964	62 07N	163 43W	49	3												01		01						26621
MTN VILLAGE	AAF	1943	62 07N	163 45W	496															53						26635
	AAF	1944	62 07N	163 45W	496										1	1	1			59						26635
	AAF	1945	62 07N	163 45W	496	1	1	1	1	1	1	1	1	1												26635
MURPHY LAKE	SAWR	1974	68 38N	149 34W	2450			4	4	4			1		1	1	1									
	SAWR	1975	68 38N	149 34W	2450		1	1	1	1	1															
NAKNEK	A	1935	58 42N	157 02W	86							3	3	3	3	3	3									
	A	1936	58 42N	157 02W	86	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	58 42N	157 02W	86	3	3	3	3					3	3	3	3									
	A	1938	58 42N	157 02W	86	3	3	3	3	3				3	3	3										
	A	1939	58 42N	157 02W	86		3	3	3	3	3	3	3	3	3	3	3									
	A	1940	58 42N	157 02W	86	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	58 42N	157 02W	86	3	6	6	6	6	6	6	6	6	6	6		08	09	09						
NAKNEK	CAA	1941	58 40N	156 45W	67													01		01						
	AAF	1942	58 40N	156 45W	49													12	08	02						
	AAF	1943	58 40N	156 45W	49													01	01							
NAKNEK	AAF	1942	58 41N	156 39W	49	5	5	6	6	1	1	1	1	1	1	1	1			11	52					25503
	AAF	1943	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		03			25503
	AAF	1944	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	AAF	1945	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	AAF	1946	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			25503
	AAF	1947	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			25503
	AFB	1948	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	AFB	1949	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	AFB	1950	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	AFB	1951	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12			25503
	AFB	1952	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12	03		12			25503
	AFB	1953	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	AFB	1954	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			08			25503
	AFB	1955	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1					10			08			25503
NENANA	A	1930	64 33N	149 05W	353								3	3	3	3	3									26435
	A	1931	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1932	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1933	64 33N	149 05W	353	3	3	3	3		3	3	3	3	3	3	3									26435
	A	1934	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1935	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1936	64 33N	149 05W	353	3	3	3	3			3	3	3	3	3	3									26435
	A	1937	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1938	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1939	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1940	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1941	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	A	1942	64 33N	149 05W	353	5	5	5	5	5	5						5									26435
	CAA	1943	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			02						26435
	CAA	1944	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1	01		12						26435
	CAA	1945	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1946	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1947	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1948	64 33N	149 05W	364	1		1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1949	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1950	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1951	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1952	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1953	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
NENANA	CAA	1954	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1955	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1956	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1957	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1958	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	CAA	1959	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1960	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1961	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1962	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1963	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1964	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			11						26435
	FAA	1965	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1966	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			07						26435
	FAA	1967	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1968	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	FAA	1969	64 33N	149 05W	364	1	1	1	1	1	1	6	6	6	6	6	6			11						26435
	FAA	1970	64 33N	149 05W	364	6	6	6	6	6	6	6	6	6	6	6	6			12						26435
	FAA	1971	64 33N	149 05W	364	6	6	6	6	6	6	6	6	6	6	6	6			12						26435
	A	1972	64 33N	149 05W	364	6	6	6	6	6	5	5	5	5	5	5				11						26435
	A	1973	64 33N	149 05W	362	5	5	5	5	5	5	5	5	5	5	5				11						26435
	A	1974	64 33N	149 05W	362	5	5			5	5	5	5	5	5	5	5			10						26435
	A	1975	64 33N	149 05W	362	5	5		5					5	5	5	5			10						26435
	A	1976	64 33N	149 05W	362	5	5									5	5			02						26435
NENANA	AAF	1943	64 33N	149 05W	367							6	1	1	1	1				55						26404
NIKOLAI	COOP	1970	63 01N	154 22W	425																04					
	COOP	1971	63 01N	154 22W	425																12					
	COOP	1972	63 01N	154 22W	425																11					
	COOP	1973	63 01N	154 22W	425																10					
	COOP	1974	63 01N	154 22W	425															08	05					
	COOP	1976	63 01N	154 22W	425																06					
NIKOLSKI	A	1942	52 57N	168 52W	24			4										01		01						
	A	1972	52 57N	168 52W	24				3	3	3	3	3	3	3	3										
	A	1973	52 57N	168 52W	24		3	3	3	3	3	3	3	3	3	3	3									
	A	1974	52 57N	168 51W	70	3	3	3	3																	
NIKOLSKI	AAF	1942	52 55N	168 58W	315									6	5	5	5			59						25605
	AAF	1943	52 55N	168 58W	315	5	6	6	6	7	7	7	7	7	7	7	7			62						25605
	AAF	1944	52 55N	168 58W	315	6	6	6	6	6	6	6	6	6	6	6	6			62	58					25605
	AAF	1945	52 55N	168 58W	315	6	6	6	6	6	6	6	6	6						58	58					25605
NIKOLSKI	AFS	1959	52 55N	168 47W	705						1	1	1	1	1	1	1									25626
	AFS	1960	52 55N	168 47W	705	1	1	1	1	1	1	1	1	1	1	1	1									25626
	AFS	1961	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1962	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1963	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1964	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1965	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1966	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1967	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1968	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	AFS	1969	52 55N	168 47W	705	5	5	5	5	5																25626
NO GRUB	A	1939	64 50N	145 58W	1300		3	3	3	3	3	3	3	3	3	3										
NOME	SPL	1908	64 30N	165 24W	22														12							26617
	SPL	1909	64 30N	165 24W	22														12							26617
	SPL	1910	64 30N	165 24W	22														12							26617
	SPL	1911	64 30N	165 24W	22														12							26617
	SPL	1912	64 30N	165 24W	22														12			06				26617
	SPL	1913	64 30N	165 24W	22														12			12				26617
	SPL	1914	64 30N	165 24W	22														12			12				26617
	SPL	1915	64 30N	165 24W	22														12			12				26617
	SPL	1916	64 30N	165 24W	22														06			06				26617
NOME	S	1916	64 29N	165 24W	10														06			06				26617
	S	1917	64 29N	165 24W	10														12	06		12				26617
	S	1918	64 29N	165 24W	10														12	12		12				26617
	S	1919	64 29N	165 24W	10														12	12	06	12				26617
	S	1920	64 29N	165 24W	10														12	12	12	12				26617
	S	1921	64 29N	165 24W	10														12	12	03	12				26617
	S	1922	64 29N	165 24W	10														12	12	12	12				26617
	S	1923	64 29N	165 24W	10														12	12	12	12				26617
	S	1924	64 29N	165 24W	12														12	12	12	12				26617
	S	1925	64 29N	165 24W	10														12	12	12	12				26617
	S	1926	64 29N	165 24W	12														12	12	12	12				26617
	S	1927	64 29N	165 24W	12														12	12	12	12				26617
	S	1928	64 29N	165 24W	12														06	06	06	06				26617
NOME	S	1928	64 29N	165 21W	33														06	06	06	06				26617
	S	1929	64 29N	165 21W	33														12	08	12	07				26617
	S	1930	64 29N	165 21W	33														07	07	07	06				26617
NOME	WBO	1930	64 29N	165 24W	12														05	05	05	05				26617
	WBO	1931	64 29N	165 24W	12														12	12	12	12				26617
	WBO	1932	64 29N	165 24W	12														12	12	12	12				26617
	WBO	1933	64 29N	165 24W	12														12	12	12	12				26617
	WBO	1934	64 29N	165 24W	12														12	12	12	12				26617
	WBO	1935	64 29N	165 24W	12						3	3	3	3	3	3	3		12	12	12	12				26617
	WBO	1936	64 29N	165 24W	12	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12	12				26617

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
NOME	WBO	1937	64 29N	165 24W	12														12	12	12	12				26617
	WBO	1938	64 29N	165 24W	12	5	4	4	4	4	4	4	3	4	3	4	5		12	12	12	12				26617
	WBO	1939	64 29N	165 24W	12	5	5	5	5	5	5	5	5	6	6	5	5	05	12	12	12	12				26617
	WBO	1940	64 29N	165 24W	12	5	6	6	6	6	6	6	6	6	6	6	6	12	12	12	12	12				26617
	WBO	1941	64 29N	165 24W	12	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	WBO	1942	64 29N	165 24W	12	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	WBO	1943	64 29N	165 24W	12	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	WBO	1944	64 29N	165 24W	12	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	WBO	1945	64 29N	165 24W	12	1	1	1	1	1	1	1	1	1	1	1	1	08	12	12	12	12				26617
	WBO	1946	64 29N	165 24W	12	1	1	1											03	03	03	03				26617
NOME	WBAS	1946	64 30N	165 26W	15				1	1	1	1	1	1	1	1	1		09	09	09	09				26617
	WBAS	1947	64 30N	165 26W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26617
	WBAS	1948	64 30N	165 26W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26617
	WBAS	1949	64 30N	165 26W	15		1									1	1			12	12	12				26617
	WBAS	1950	64 30N	165 26W	15	1	1	1	1	1										12	12	12				26617
	WBAS	1951	64 30N	165 26W	18															12	12	12				26617
	WBAS	1952	64 30N	165 26W	18															12	12	10				26617
	WBAS	1953	64 30N	165 26W	18															12	12	12				26617
	WBAS	1954	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26617
	WBAS	1955	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26617
	WBAS	1956	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26617
	WBAS	1957	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	07				26617
	WBAS	1958	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	WBAS	1959	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	WBAS	1960	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	WBAS	1961	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	WBAS	1962	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	WBAS	1963	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12		03			26617
	WBAS	1964	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	05		02			26617
	WBAS	1965	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12						26617
	WBAS	1966	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			04			26617
	WBAS	1967	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WBAS	1968	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WBAS	1969	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WBAS	1970	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WBAS	1971	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WBAS	1972	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26617
	WSO	1973	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WSO	1974	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WSO	1975	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	WSO	1976	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
NOME	AAF	1940	64 31N	165 26W	43	6	6	6																		26604
	AAF	1941	64 31N	165 26W	43											1										26604
	AAF	1942	64 31N	165 26W	43		5	5	6	6	6	1	1	1	1	1	1									26604
	AAF	1943	64 31N	165 26W	43	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			26604
	AAF	1944	64 31N	165 26W	46	1	1	1	1	1	1	1	1	1	1	1	1			62	62		06			26604
	AAF	1945	64 31N	165 26W	46	1	1	1	1	1	1	1	1	1	1	1	1			59	57					26604
	AAF	1946	64 31N	165 26W	46	1	1	1												53	53					26604
NONDALTON	A	1939	59 59N	154 50W	300			3	3	3																
NOORVIK	COOP	1920	66 50N	161 00W	68															04						
	COOP	1921	66 50N	161 00W	68															12						
	COOP	1922	66 50N	161 00W	68															12						
	COOP	1923	66 50N	161 00W	68															12						
	COOP	1924	66 50N	161 00W	68															12						
	COOP	1925	66 50N	161 00W	68															12						
NORA FEDERAL	SAWR	1969	69 34N	148 45W	450				6	6	6	6	6	6	6	6	6									
	SAWR	1970	69 34N	148 45W	450	6	6	6	6																	
NORTH DUTCH	CAA	1943	60 46N	147 48W	39									6	6	6	6	05		04						26436
	CAA	1944	60 46N	147 48W	39	6	6	6	6	6	6	6	6	6	6	6	6	12	04	12						26436
	CAA	1945	60 46N	147 48W	39	6	6	6	6	6	6	6	5	6	6	5	5	12		12						26436
	CAA	1946	60 46N	147 48W	39	5	6	6	6	6	5	6	6	6	6	6	6			12						26436
	CAA	1947	60 46N	147 48W	39	6	6	6	5	6	6	6	5	6	6	6	6			12						26436
	CAA	1948	60 46N	147 48W	39	6	6	6	6	6	6	6	6	6	6	6	5			12						26436
	CAA	1949	60 46N	147 48W	39	6	6	6	6	6	6	6	6	6	6	6	6			12						26436
	CAA	1950	60 46N	147 48W	39	5	5	5	5	5	5	5	5	5	5	5	5			12						26436
	CAA	1951	60 46N	147 48W	39	5	5	5	5	4	4	4	4	4	4	4	4			08						26436
	CAA	1952	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	CAA	1953	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	CAA	1954	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	CAA	1955	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	CAA	1956	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	CAA	1957	60 46N	147 48W	39	4																				26436
NORTHEAST CA	AFS	1952	63 19N	168 56W	38							6	6	6												26632
	AFS	1953	63 19N	168 56W	38	6	5	5	5	6	6	6	6	6	6	6	6			06						26632
	AFS	1954	63 19N	168 56W	38	6	6	6	6	6	6	6	6	6	6	6	6			12						26632
	AFS	1955	63 19N	168 56W	38	6	6	6	6	7	7	7	7	1	1	6	6			12						26632
	AFS	1956	63 19N	168 56W	38	6	6	6	1	1	1	1	1	1	1	1	6			12						26632
	AFS	1957	63 19N	168 56W	38	6	6	6	6	6	6	1	1	1	1	1	1			06						26632
	AFS	1958	63 19N	168 56W	33	1	1	1	1	1	7	7	7	7	7	7	7			12						26632
	AFS	1959	63 19N	168 56W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26632
	AFS	1960	63 19N	168 56W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26632
	AFS	1961	63 19N	168 56W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26632
	AFS	1962	63 19N	168 56W	33	1	1	1												03						26632
NORTHEAST CA	AFS	1962	63 19N	168 58W	33				1	1	1	1	1	1	1	1	1			09						26632

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
NORTHEAST CA	AFS	1963	63 19N	168 58W	33	1	1	1	1	1	1	1	1	1	1	1	1			07						26632
	AFS	1964	63 19N	168 58W	30	1	1	1	1	7	7	7	1	1	1	1	7			03						26632
	AFS	1965	63 19N	168 58W	30	7	7	7	7	7	7	7	1	1	1	1	1									26632
	AFS	1966	63 19N	168 58W	30	1	1	1	1	1	7	1	1	1	1	7	7									26632
	AFS	1967	63 19N	168 58W	30	7	7	7	7	7	7	1	1	1	1	1	1									26632
	AFS	1968	63 19N	168 58W	30	7	7	1	1	7	1	1	7	1	1	1	7									26632
	AFS	1969	63 19N	168 58W	30	7	6	7	7	1	1	7	6													26632
NORTH SHORE	SEE	UMNAK	ISLAND																							25610
NORTHWAY	AF	1942	62 57N	141 56W	1713			5	5	5	7	1	1	1	1	1	1	04	03	06						26412
	WBAS	1943	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26412
	WBAS	1944	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26412
	WBAS	1945	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1	08	12	12						26412
	WBAS	1946	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26412
	WBAS	1947	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26412
	WBAS	1948	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26412
	WBAS	1949	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	WBAS	1950	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	WBAS	1951	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	WBAS	1952	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	WBAS	1953	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	WBAS	1954	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	WBAS	1955	62 57N	141 56W	1718	1	1	1	1	1	6	6	6	6	6	6	6			12						26412
	WBAS	1956	62 57N	141 56W	1718	7	7	6	7	6	6	6	6	6	6	6	7			12						26412
	WBAS	1957	62 57N	141 56W	1718	7	6	7	6	7	6	6			1	1	1			10						26412
	CAA	1958	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	CAA	1959	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1960	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1961	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1962	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1963	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1964	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			02						26412
	FAA	1965	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1966	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1967	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1968	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1969	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1970	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1971	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1972	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1973	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1974	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1975	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	FAA	1976	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
NOXAPAGE	AAF	1943	65 32N	164 12W	250								1	1						52	52					26606
NULATO	A	1931	64 43N	158 04W	128		3	3	3	3		3	3	3	3	3	3									
	A	1932	64 43N	158 04W	128	3	3	3	3	3		3	3	3	3											
NULATO	A	1935	64 43N	158 04W	153											3	3									
	A	1936	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	64 43N	158 04W	210									3	3	3	3									
	A	1938	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1939	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3	09		09						
	A	1940	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3	10	12	12						
	A	1941	64 43N	158 04W	210	6	6	6	6	6	6	6	6	6	6	6	6	11	12	12						
	A	1942	64 43N	158 04W	210	6	6	6	6	6	6	6	6	6	6	6	6		12	12						
	A	1943	64 43N	158 04W	210	5	5	5	5	5	5	5	5	5	5	5	5		09	12						
	A	1944	64 43N	158 04W	210	5	5	6	6	5	5	5	5	5	5	4			10	11						
NUNIVAK	A	1940	60 23N	166 12W	37													02	02	02						26622
	A	1941	60 23N	166 12W	37													12	12	05						26622
	A	1942	60 23N	166 12W	37													06	06							26622
	A	1944	60 23N	166 12W	37	5	5	5	5	5	5	5	5	5	5	5	5									26622
	ASC	1945	60 23N	166 12W	50	5	5	5	5	5	5	5	5	5	5	5	5	04								26622
	SA	1946	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4			11						26622
	SA	1947	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	SA	1948	60 23N	166 12W	50	4	3	3	3	3	3				3	3	3	12		12						26622
	SA	1949	60 23N	166 12W	50			3	3	3	4		4	3	3	3	3	11		12						26622
	SA	1950	60 23N	166 12W	50	3	3	3	3	3	3	3	3	3	5	3	3	12		12						26622
	SA	1951	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	SA	1952	60 23N	166 12W	50	4	4	4	4	4	3	4	4	4	4	4	4	12		12						26622
	SA	1953	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	SA	1954	60 23N	166 12W	50	4	3	4	4	4	3	3	3	4	4	4	4	12		12						26622
	SA	1955	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	SA	1956	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	SA	1957	60 23N	166 12W	50	4	3	3	4	4	4	4	4	4	4	4	4	12		12						26622
	SA	1958	60 23N	166 12W	35	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	SA	1959	60 23N	166 12W	35	3	3				3	3	3	3	3	3	3	09		08						26622
	SA	1960	60 23N	166 12W	45	3	3	3	3	3	3	3	3			1	1	07		10						26622
	SA	1961	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	12		09						26622
	SA	1962	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26622
	SA	1963	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	11		12						26622
	SA	1964	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26622
	SA	1965	60 23N	166 12W	45	5	3	3	3	3	3	3	3	3	3	3	3	12		11						26622
	SA	1966	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	3	3	3	11		12						26622
	SA	1967	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26622
	SA	1968	60 23N	166 12W	52	3	3	3	3	3	3	4	4	4	4	4	4	12		12						26622
	SA	1969	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	4	4	4	12		12						26622
	SA	1970	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	3	4	4	12		12						26622

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NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
NUNIVAK	SA	1971	60 23N	166 12W	52	4	4	4	4	4	4	4	4	4	4	4	4	12		06						26622
	SA	1972	60 23N	166 12W	52	4	4	4	4	4	4	4			4	4	4	10		09						26622
	SA	1973	60 23N	166 12W	52	4	4		4	3	3	3	3	3	3	3	3	02		02						26622
	SA	1974	60 23N	166 12W	52	3		3	3	3	3	3	3	3	3	3	3									26622
	SA	1975	60 23N	166 12W	52	3	3	3	3	3	3	3		3	3	3	3									26622
	SA	1976	60 23N	166 12W	52	3	3		3	3	3	3	3													26622
NUNIVAK IS	AAF	1943	60 12N	166 06W	50															54	54					26605
	AAF	1944	60 12N	166 06W	50	5	5	5	5	5	5	5	5	5	5	5	5			62	62					26605
	AAF	1945	60 12N	166 06W	50	5	5	5	5	5	5	5	5	5						58	58					26605
NYAC	SAWR	1949	61 00N	159 59W	450							4	4	3	4	3	3									26525
	SAWR	1950	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1951	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1952	61 00N	159 59W	450	3	3		3	3	3	3	3	3	3	3	3									26525
	SAWR	1953	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1954	61 00N	159 59W	450	3	3	3	3		3	3	3	3	3	3	3									26525
	SAWR	1955	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1956	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1957	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1958	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3										26525
	SAWR	1959	61 00N	159 59W	450				3	3	3	3	3	3	3	3	3									26525
	SAWR	1960	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1961	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	SAWR	1962	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3		3									26525
	SAWR	1963	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3												26525
OCEAN CAPE	CG	1972	59 33N	139 42W									5	5	5	5	5									
	CG	1973	59 33N	139 42W		5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1974	59 33N	139 42W		5	5				5	5	5	5		5	5									
	CG	1976	59 33N	139 42W				3	3	3																
OCEAN RANGER	SAWR	1976	55 32N	166 57W								5	6	6	6	6	6									
OGLIUGA	AAF	1943	51 33N	178 48W	50		6	6	6	6	6	6	6	6	6	6	6			61	52					25702
	AAF	1944	51 33N	178 48W	50	7	7	7	7	7	7	7	7							58	58					25702
OHOGAMUTE	A	1937	61 38N	161 54W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1938	61 38N	161 54W	45	3	3	3	3	3	3															
OLD EDGERTON	COOP	1974	61 48N	144 59W	1320																07					
	COOP	1975	61 48N	144 59W	1320																12					
	COOP	1976	61 48N	144 59W	1320																12					
OLD MAN	SAWR	1974	67 27N	150 35W	1271						5	5				1	1									
	SAWR	1975	67 27N	150 35W	1271	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1976	67 27N	150 35W	1271	6	6	6	6	6	6	6	6	6	6	6										
OPHIR	A	1939	63 10N	156 33W	400										3	4	3									
	A	1940	63 10N	156 33W	400	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1941	63 10N	156 33W	400	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1942	63 10N	156 33W	400	5	6	6																		
PAINTERS CRK	SAWR	1967	57 10N	157 26W	545		5	5	5	5	5	5	5													
PALMER	A	1947	61 36N	149 07W	245	3	3																			25331
	A	1948	61 36N	149 08W	300											3	3									25331
	A	1949	61 36N	149 08W	300	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1950	61 36N	149 08W	300	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1951	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1952	61 36N	149 05W	198	3		3	3	3	3	3	3	3	3	3	3									25331
	A	1953	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1954	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1955	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3											25331
	A	1956	61 36N	149 05W	198					3	3			3	3	3	3									25331
	A	1957	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1958	61 36N	149 05W	225	3	3	3	3	3	3	3	3	3												25331
PALMER	A	1958	61 36N	149 07W	230											3	3									25331
	A	1959	61 36N	149 07W	230	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1960	61 36N	149 07W	230	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1961	61 36N	149 07W	275	3	3	3	3	3	3	3	3	3	3	3	3									25331
	A	1962	61 36N	149 07W	275	3	3	3	3	3	3	3	3	3												25331
PALMER	A	1962	61 36N	149 05W	198										3	3	3									25331
	A	1963	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	4										25331
	A	1964	61 36N	149 05W	198	5	5	5	5	5	5	5	3	3	5	4	5									25331
	A	1965	61 36N	149 05W	198	4	4	4	4	4	4	4	4	4	4	4	5									25331
	FAA	1966	61 36N	149 05W	198	5	5	5	5	5	5	5	5	5	5	5	5			01						25331
	FAA	1967	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			11	04					25331
	FAA	1968	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	FAA	1969	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			11						25331
	FAA	1970	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	FAA	1971	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	FAA	1972	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	FAA	1973	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	FAA	1974	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	FAA	1975	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	FAA	1976	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
PAXSON	A	1939	63 03N	145 27W	2697						4	5	4	3	3	3	3									
	A	1940	63 03N	145 27W	2697	4	3			3	4	3	3	3	3											

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NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
PAXSON	A	1941	63 03N	145 27W	2697						3	3	3	3	3	3	3									
	A	1942	63 03N	145 27W	2697	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1943	63 03N	145 27W	2697	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1944	63 03N	145 27W	2697	3	3	3	3	3	3	3														
	A	1974	63 03N	145 27W	2697		5	5	5	5	5	5	5	5	5	5	5									
	A	1975	63 03N	145 27W	2697		5	5	5	5		3	3	3			3									
	A	1976	63 03N	145 27W	2697		3																			
PETERSBURG	A	1932	56 49N	132 57W	50	3			3	3	3		3	3	3											25329
	A	1933	56 49N	132 57W	50	3			3	3	3															25329
PETERSBURG	A	1936	56 49N	132 57W	50											3	3									25329
	A	1937	56 49N	132 57W	50	3	3	3	3	3	3	3	3	3	3	3	3									25329
	A	1938	56 49N	132 57W	50	3	3	3	3	3	3	3	3	3	3	3	3									25329
	A	1939	56 49N	132 57W	50	3	3	3	3	3	3	3	3	3	3	3	3									25329
	CAA	1940	56 49N	132 57W	111	3	3	3	3	3	3	3	3	6	6	6	6	04	04	04						25329
	CAA	1941	56 49N	132 57W	111	6	6	6	6	6	6	6	6	6	6	6	6	12	12							25329
	CAA	1942	56 49N	132 57W	111	6	6	6	6	6	6	6	1	1	1	1	1	12	06	12						25329
	CAA	1943	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1	12	05	12						25329
	CAA	1944	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25329
	CAA	1945	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25329
	CAA	1946	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1947	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1948	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1949	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1950	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1951	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1952	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1953	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1954	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	CAA	1955	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	A	1956	56 49N	132 57W	50	1	1	1	1	5	5	5	5	5	5	5	5			04						25329
	A	1957	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1958	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1959	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1960	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1961	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1962	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1963	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1964	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1965	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1966	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1967	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1968	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1969	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1970	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1971	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1972	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1973	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1974	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1975	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	A	1976	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
PIGOT	A	1939	60 47N	148 20W	280								3	3	3	3	3									
	A	1940	60 47N	148 20W	280	3	3																			
PILGRIM SPRG	A	1937	65 05N	164 58W	50										3	3	3									
	A	1938	65 05N	164 58W	50	3	3	3	3	3	3	3	3	3	3	3										
	A	1939	65 05N	164 58W	50	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1940	65 05N	164 58W	50			3	3	3	3	3	3	3	3	3	3									
	A	1941	65 05N	164 58W	50	5	5	5	5	5	5															
PILOT POINT	A	1938	57 37N	157 34W	50												3									25514
	A	1939	57 37N	157 34W	50	3	3	3	3	3	3	3	3	3	3	3	3									25514
	A	1940	57 37N	157 34W	50	3	3	3								3	3									25514
	A	1941	57 37N	157 34W	50	3	3	3	3	3	3	3	3	3	3	3	3			01						25514
	A	1942	57 37N	157 34W	50	3	3	3	3	3			3	3	3	3	3			10						25514
	A	1943	57 37N	157 34W	50	3	3	3												03						25514
	A	1944	57 37N	157 34W	50	5	5	5	5	5	5	5	5	5	5	5	5			12						25514
	A	1945	57 37N	157 34W	50	5	5	5	5	5	5	5								07						25514
PINGO	SAWR	1969	70 02N	147 43W	100							1	1	1	1											
PLATINUM	A	1939	59 01N	161 47W	15					3	3	3	3	3	3	3	3									25613
	A	1940	59 01N	161 47W	15	3	3	3	3	3	3	3	3	3												25613
	A	1941	59 01N	161 47W	15	3	3	3	3	3	3	3	3			3	3			05						25613
	A	1942	59 01N	161 47W	15	3	3	3	3	3	3	5	5	5				01	01	08						25613
PLATINUM	A	1945	59 01N	161 47W	20									5	6	6	6			04						25613
	A	1946	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1947	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1948	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1949	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1950	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1951	59 01N	161 47W	20	6	6	5	5	5	5	5	5	5	5	5	5			12						25613
	A	1952	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	6	6			12						25613
	A	1953	59 01N	161 47W	20	6	6	6	6	5	5	5	5	5	5	6	6			12						25613
	A	1954	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1955	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1956	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1957	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	A	1958	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
PLATINUM	A	1959	59 01N	161 47W	20	6	6	6	6	5	5	5	5	4	4	4	4			12						25613
	A	1960	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			12						25613
	A	1961	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			12						25613
	A	1962	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			09						25613
	A	1963	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			12						25613
	A	1964	59 01N	161 47W	20	5	5	5	5	5	5									06						25613
PLATINUM	AAF	1942	59 01N	161 47W	21										7	7	7									25604
	AAF	1943	59 01N	161 47W	21	7	7	7	7	7	7	7	7	7	7	7	7			54						25604
	AAF	1944	59 01N	161 47W	21	7	7	7	7	7	7	7	7	7	7	7	7			62						25604
	AAF	1945	59 01N	161 47W	21	7	7	7	7	7	7	7	7	7						59						25604
PLEASANT IS	A	1944	58 10N	135 30W	14											1	1									25340
	A	1945	58 10N	135 30W	14	1	1	1	1	1	1															25340
POINT BARROW	CAA	1946	71 20N	156 39W	11								1	1	1	1	1			02						27504
	CAA	1947	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	CAA	1948	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	CAA	1949	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	CAA	1950	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	CAA	1951	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	CAA	1952	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	CAA	1953	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1						09						27504
POINT BARROW	AFS	1955	71 21N	156 39W	14	1	1	5	5			6	5							04						27505
POINT BARROW	AFS	1959	71 18N	156 47W	8								5	5	5	5	5									27506
	AFS	1960	71 18N	156 47W	8	5	5	5	5																	27506
	AFS	1961	71 18N	156 47W	8				5	5	5	5	5	5	5	5	5									27506
	AFS	1962	71 18N	156 47W	8	5	5	5																		27506
POINT BARROW	AFS	1962	71 20N	156 39W	8				5	5	5	5	5	5	5	5	5									27506
	AFS	1963	71 20N	156 39W	8	5	5	5	5	5	5	5	5	5	5	5	5									27506
	AFS	1964	71 20N	156 39W	19	5	5	5	5	5	3	3	3	4	3	3	3									27506
	AFS	1965	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	AFS	1966	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	AFS	1967	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	AFS	1968	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	AFS	1969	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	AFS	1970	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	AFS	1971	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	AFS	1972	71 20N	156 39W	19	3								3	3	3	3									27506
POINT BARROW	NS	1945	71 20N	156 24W	13					1	1	1	1	1	1	1	1									27501
	NS	1946	71 20N	156 24W	13	1	6	6	6	6	6	6														27501
	NS	1973	71 20N	156 24W	13	6	6	6	6	6	6	6	6	6	6	6	6									27501
	NS	1974	71 20N	156 24W	13	3	3	3	3	3		3														27501
POINT HOPE	A	1941	68 20N	166 48W	14								4	4	4	4	4	05	05	05						26623
	A	1942	68 20N	166 48W	14	4	4	4	4	4	4	4	3	3	3	3	3	12	12	12						26623
	A	1943	68 20N	166 48W	14	3	3	3	3		3	3	3					07	07	07						26623
	A	1945	68 20N	166 48W	14											4	4	02		02						26623
	A	1946	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	A	1947	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	A	1948	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	A	1949	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	A	1950	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	A	1951	68 20N	166 48W	14	5	5	5	5	5	4	4	4	5	4	4	4	12		12						26623
	A	1952	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4				09		09						26623
POINT HOPE	AAF	1943	68 21N	166 47W	19										6	6	6			53	53					26601
	AAF	1944	68 21N	166 47W	19	6	6	6	6	6	6	6	6	1	1	1	1			62	62					26601
	AAF	1945	68 21N	166 47W	19	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26601
POINT LAY	SA	1941	69 45N	163 03W	18									3	3	3	3	05		03						26624
	SA	1942	69 45N	163 03W	18	3	3	3	3	3	3							06	06	06						26624
	SA	1943	69 45N	163 03W	18													11	11	11						26624
	SA	1944	69 45N	163 03W	18													12	08	12						26624
	SA	1945	69 45N	163 03W	18													09		09						26624
	SA	1946	69 45N	163 03W	18													12		12						26624
	SA	1947	69 45N	163 03W	18													10		10						26624
	SA	1948	69 45N	163 03W	18													10		10						26624
	SA	1949	69 45N	163 03W	18											3	3	12		12						26624
	SA	1950	69 45N	163 03W	18	3	3	3	3	3		3	3	3	3	3	3	09		11						26624
	SA	1951	69 45N	163 03W	18	3	3	3	3	3	4	4	4	4	4	4	4	12		12						26624
	SA	1952	69 45N	163 03W	18	4	4	4	4	4				4	4	4	4	12		09						26624
	SA	1953	69 45N	163 03W	18	4	4	4	4	4	4	4	4	4	4	4	4	09		12						26624
	SA	1954	69 45N	163 03W	18	4	4	4	4	4	4	4	4	4	4	4	4	12		10						26624
	SA	1955	69 45N	163 03W	18	4	4	4	4	4	4	4	4				4	09		08						26624
	SA	1956	69 45N	163 03W	28	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26624
	SA	1957	69 45N	163 03W	12	4	4	4	4	4	4	4	4	4	4	4	4	10		09						26624
	SA	1958	69 45N	163 03W	12	3	3	3	3	3	3	3	3			3	3	03		03						26624
	SA	1959	69 45N	163 03W	12	3	3	3	3																	26624
PT RETREAT	CG	1945	58 25N	134 57W	20		1	1	1	1	1	1	1	1	1	1	1									25330
	CG	1946	58 25N	134 57W	20	1	1	6	6	6	6	6	5	5	4	4	4									25330
	CG	1947	58 25N	134 57W	20	4	4	4	4	4	4	4	4	4	4	4	4									25330
	CG	1948	58 25N	134 57W	20	4	4	4	4	4	4	4	4	4	4											25330
	CG	1949	58 25N	134 57W	20					4	4	4	4	4	4	4	4									25330
	CG	1950	58 25N	134 57W	20	5	5	5	4	4	4	4	4	4	4	5	5									25330
	CG	1951	58 25N	134 57W	20	5	5	5	4	4	4	4	4	4	4	5	5									25330
	CG	1952	58 25N	134 57W	20	5	5	5	5	5	4	4	4	4	4	4	4									25330

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
PT RETREAT	CG	1953	58 25N	134 57W	20	5	5	5	5	4	5	5	4	5	5	4	5									25330
	CG	1954	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1955	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1956	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1957	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1958	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1959	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1960	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1961	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1962	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5			01						25330
	CG	1963	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1964	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1965	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1966	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1967	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1968	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1969	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1970	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1971	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1972	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	CG	1973	58 25N	134 57W	20	5	5	5	5	5	5	5														25330
PT SPENCER	AAF	1944	65 15N	166 21W	10	1	1	1	1	1	1	1	1	1	1	1	1									26612
	AAF	1945	65 15N	166 21W	10	1	1	1	1	1	1	1	1	1	1	1										26612
PORTAGE	A	1935	60 51N	148 59W	35											3	3									26437
	A	1936	60 51N	148 59W	35						3	3		3												26437
	A	1937	60 51N	148 59W	35				3	3	3	3	3	3	3											26437
	A	1938	60 51N	148 59W	35	3	3	3	3	3	3	3	3	3	3	3										26437
	A	1939	60 51N	148 59W	35						3	3	3	3	3	3	3									26437
	A	1940	60 51N	148 59W	35				3	3	3	3	3	3	3	3	3									26437
	A	1941	60 51N	148 59W	35	3	3	3	3	3	3	3	3	3	3	3	3									26437
	A	1942	60 51N	148 59W	35	5	5	5	5	5	5	5	6	6	6	6	6									26437
	A	1943	60 51N	148 59W	35	5	5	5	5	5	5	5	5	5	5	5	5									26437
	A	1944	60 51N	148 59W	35					5	6	6														26437
PORT ALEXAND	A	1949	56 15N	134 39W	18					5	5	5	5	5	5	5	5									25348
	A	1950	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1951	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1952	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1953	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1954	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1955	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1956	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1957	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1958	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1959	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1960	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1961	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1962	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	A	1963	56 15N	134 39W	18	5	5	5	5	5																25348
PORT ALSWORT	A	1971	60 12N	154 18W	268									5	5	5	5									
	A	1972	60 12N	154 18W	268	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1973	60 12N	154 18W	268	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1974	60 12N	154 18W	268	5	5	5	5	5	5	5		5	5	5	5									
	A	1975	60 12N	154 18W	268	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	60 12N	154 18W	268	6	6	6	6	6	6	6	6	6	6	6	6									
PORT ALTHORP	A	1943	58 09N	136 22W	12					6	6	6	6	7	7	5	5									
	A	1944	58 09N	136 22W	12	5	5	6	6																	
PORT CLARENC	CG	1962	65 15N	166 52W	18			1	1	1	1	1	1					06		06						
	CG	1963	65 15N	166 52W	18		1	1	1	1	1	1	5	5	5	5	5	11		11						
	CG	1964	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1965	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1966	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	11		11						
	CG	1967	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1968	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1969	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1970	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1971	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1972	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	CG	1973	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		11						
	CG	1974	65 15N	166 52W	18	5	5	5	6	6	6	6	6	6	6	6	6	11		10						
	CG	1975	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	02		12						
	CG	1976	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5			10						
PORT HEIDEN	CAA	1947	56 57N	158 37W	102									1	1	1	1			04						25508
	CAA	1948	56 57N	158 37W	102	1	1	1	1	1	1	1	1	1	1	1	1			12						25508
	CAA	1949	56 57N	158 37W	102	1	1	1	1	1	1	1	1	1	1	1	1			12						25508
	CAA	1950	56 57N	158 37W	102	1	1	1	1	1	1	1	1	1	1	1	1			12						25508
	SA	1951	56 57N	158 37W	92	1	1	1	1	1	1			4	5	5	5	03		10						25508
	SA	1952	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	4	09		12						25508
	SA	1953	56 57N	158 37W	92	5	5	5	4			5	5					05		12						25508
	SA	1954	56 57N	158 37W	92						5	5	5	5	5	5	5	06		09						25508
	SA	1955	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5	10		10						25508
	SA	1956	56 57N	158 37W	92	5	5	5	5	5	6	6	5	5	5	5	5	07		08						25508
	A	1957	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5	04		03						25508
	A	1958	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1959	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1960	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
PORT HEIDEN	A	1961	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1962	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1963	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1964	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1965	56 57N	158 37W	92	5	5	5	5	5	5	5	5		5	5	5									25508
	A	1966	56 57N	158 37W	92	5	5		5	5	5	5	5	5	5	5	5									25508
	A	1967	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1968	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1969	56 57N	158 37W	92	5	5	5	5	5	5	5	5		5	5										25508
	A	1970	56 57N	158 37W	92		5	5	5	5	5	5	5	5	5	5	5									25508
	A	1971	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5										25508
	A	1972	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1973	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1974	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1975	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	A	1976	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
PORT HEIDEN	AAF	1942	56 57N	158 39W	84								6	6	6	6	6			54	54					25504
	AAF	1943	56 57N	158 39W	84	6	1	1	1	1	1	1	1	1	1	1	1			62	62		06			25504
	AAF	1944	56 57N	158 39W	84	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25504
	AAF	1945	56 57N	158 39W	84	1	1	1	1	1	1	1	1	1	5					60	60		10			25504
PORT MOLLER	AFS	1959	56 00N	160 31W	1038						5	5	5	5	5	5	5									25625
	AFS	1960	56 00N	160 31W	1038	5	5	5	5	5	5	5	6	6	5	5	5									25625
	AFS	1961	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1962	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1963	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1964	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1965	56 00N	160 31W	1083	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1966	56 00N	160 31W	1083	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1967	56 00N	160 31W	1083	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1968	56 00N	160 31W	1053	5	5	5	5	5	5	5	5	5	5	5	5									25625
	AFS	1969	56 00N	160 31W	1053	5	5	5	5	5																25625
PROSPECT CRK	SAWR	1974	66 48N	150 38W	1105		3	3	3	3	3	3	3			1	1									
	SAWR	1975	66 48N	150 38W	1105	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1976	66 48N	150 38W	1105	1	1	1	1	1	1	1	1	1	1	1	1									
PRUDHOE BAY	SAWR	1967	70 19N	148 33W	10				6								6									
	SAWR	1968	70 19N	148 33W	10	6	6																			
PRUDHOE BAY	SAWR	1968	70 15N	148 20W	45						6	6	6	6	6	6	1									
	SAWR	1969	70 15N	148 20W	45	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1970	70 15N	148 20W	45	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1971	70 15N	148 20W	45	1	1	1	1	1	1	1	1	1	1	1	1									
	SAWR	1972	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1973	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1974	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1975	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	SAWR	1976	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
PUNTILLA	A	1941	62 06N	152 45W	1837								5	5	5	6	6									26526
	A	1942	62 06N	152 45W	1837	6		6	6	6	6	5	6	6	6	6	6			10						26526
	A	1943	62 06N	152 45W	1837	6	6	6	6	6			6	6	6	6	6			10						26526
	A	1944	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6			12						26526
	A	1945	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6			06						26526
	A	1946	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1947	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1948	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1949	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1950	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1951	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1952	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1953	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1954	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1955	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1956	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	A	1957	62 06N	152 45W	1837	6	6	6	6	6	6	6	6													26526
	A	1958	62 06N	152 45W	1837							5	5	5	5	5	5									26526
	A	1959	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1960	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1961	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1962	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1963	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1964	62 06N	152 45W	1837	5	5	5	5	5	5	5	5		5	5	5									26526
	A	1965	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1966	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1967	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1968	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1969	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1970	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1971	62 06N	152 45W	1837	5	5	5	5	5	5	5	5		5	5	5									26526
	A	1972	62 06N	152 45W	1837	5	5			5			5	5	5	5	5									26526
	A	1973	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1974	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1975	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	A	1976	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5										26526
QUINHAGAK	SAWR	1966	59 45N	161 54W	10										3	4	4									
	SAWR	1967	59 45N	161 54W	10	4	4	4	4	4	4	4	4			4	4									
	SAWR	1968	59 45N	161 54W	10	4	4	4	4	4	4	3	3	3												
	SAWR	1969	59 45N	161 54W	10							3	3	3	3	3	3									

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
QUINHAGAK	SAWR	1970	59 45N	161 54W	10	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1971	59 45N	161 54W	10	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1972	59 45N	161 54W	10	3																				
RADIOVILLE	A	1935	57 36N	136 09W	15									3	3	3	3									25332
	A	1936	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1937	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1938	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1939	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1940	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1941	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1942	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1943	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1944	57 36N	136 09W	15	3					3	3	3	3	3	3	3									25332
	A	1945	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	A	1946	57 36N	136 09W	15	3	3	3	3	3	3															25332
RAMPART	COOP	1963	65 30N	150 08W	400																07					
	COOP	1964	65 30N	150 08W	400																12					
	COOP	1965	65 30N	150 08W	400																12					
	COOP	1966	65 30N	150 08W	400																12					
	COOP	1967	65 30N	150 08W	400																12					
	COOP	1968	65 30N	150 08W	400																11					
	COOP	1969	65 30N	150 08W	400																12					
	COOP	1970	65 30N	150 08W	400																05					
	COOP	1975	65 30N	150 08W	400																02					
	COOP	1976	65 30N	150 08W	400																10					
RAPIDS	A	1935	63 32N	145 51W	2128										3	3	3									
	A	1936	63 32N	145 51W	2128	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	63 32N	145 51W	2128	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1938	63 32N	145 51W	2128	3	3	3	3	3	3	3	3	3	5	5	5									
	A	1939	63 32N	145 51W	2128	5	5	6	5	5	5	5	5	5	5	5	5									
	A	1940	63 32N	145 51W	2128	5	5	5	5	5	5	5	5	5	5	5	5	03	03							
	A	1941	63 32N	145 51W	2128	6	6	6	6	6	6	6	6	6	6	6	6	12	12	08						
	A	1942	63 32N	145 51W	2128	6	6	6	6	6	6	6	6	6	6	6	6	12	08	12						
	A	1943	63 32N	145 51W	2128	6	6	6	6	6	6	6	6	6	6	6	6	12		12						
	A	1944	63 32N	145 51W	2128	6	6	6	6	6	6	6						07		07						
REINDEER PAS	AAF	1942	53 31N	167 55W	74								5	6	6	6	6									25606
	AAF	1943	53 31N	167 55W	74	6	6	6	6	6	6	6	6	7	1	6	6									25606
	AAF	1944	53 31N	167 55W	74	1	1	1	1	1	1	1	1	1	1	1	1			52	52					25606
	AAF	1945	53 31N	167 55W	74	1	1	1	1	1	1	1	1	1												25606
RICHARDSON	A	1935	64 17N	146 21W	880										3	3	3									
	A	1936	64 17N	146 21W	880	3	3	3	3	3	3	3	3	3	3	5	3									
	A	1937	64 17N	146 21W	880	5	5	5	5	3	3	3	3	3	3	3	3									
	A	1938	64 17N	146 21W	880	3	3	3	3	3	3	3	3	3	3	3	5									
	A	1939	64 17N	146 21W	880	5	5	5	3	3	3	3	3	3	5	5	3									
	A	1940	64 17N	146 21W	880	5	5	5	4	4	3	3	3	5	5	3	4			03						
	A	1941	64 17N	146 21W	880	4	5	5	5	5	5	4	4	4	3	4	3			04						
	A	1942	64 17N	146 21W	880	5	5	5	5	5	5	5	5	5	5					03						
ROCK RIDGE	COOP	1972	61 07N	149 45W	840																02					
	COOP	1973	61 07N	149 45W	840																12					
	COOP	1974	61 07N	149 45W	840																04					
RUBY	A	1931	64 44N	155 26W	175			3	3	3	3	3	3	3	3	3	3									
	A	1932	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3		3									
	A	1933	64 44N	155 26W	175	3	3																			
	A	1935	64 44N	155 26W	175											3	3									
	A	1936	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1937	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3	3	3		03							
	A	1938	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3	3	3		12							
	A	1939	64 44N	155 26W	175	3	3	3	3	4	5	5	5	5	5	3	3	10	12	08						
	CAA	1940	64 44N	155 26W	705	5	4	5	6	6	6	6	6	6	6	6	6	12	12	02						
	CAA	1941	64 44N	155 26W	705	6	6	6	6	6	6	6	6	6	6	6	6	08	12	12						
	CAA	1942	64 44N	155 26W	705	6	6	6	6	6	6	1	1						08	08						
SAGWON	SAWR	1966	69 22N	148 42W	650							4	4	4	4	4	4									
	SAWR	1967	69 22N	148 42W	650	4	4	4	4	4	4	4	4	4	4	4	4									
	SAWR	1968	69 22N	148 42W	650	4	4	4	4	4	4			4	4	4	4									
	SAWR	1969	69 22N	148 42W	650			6	6	6	6	6	6	6	1	1	1									
	SAWR	1970	69 22N	148 42W	650	1	1	1	1	1	1	1	6	6			6									
	SAWR	1971	69 22N	148 42W	650	6	6	6	6	6																
ST MARYS	COOP	1968	62 04N	163 11W	30																05					
	COOP	1969	62 04N	163 11W	30															07	11					
	COOP	1970	62 04N	163 11W	30															12	12					
	COOP	1971	62 04N	163 11W	30															12	09					
	COOP	1972	62 04N	163 11W	30															11	12					
	COOP	1973	62 04N	163 11W	30															11	11					
	COOP	1974	62 04N	163 11W	30															10	11					
	COOP	1975	62 04N	163 11W	30															12	12					
	COOP	1976	62 04N	163 11W	30															12	11					
ST MATTHEW	ASC	1942	60 29N	172 42W	97													03								
	ASC	1943	60 29N	172 42W	97													12								
	ASC	1944	60 29N	172 42W	97													06								
ST MATTHEW	AAF	1942	60 21N	172 42W	97										1	1	1			53						26701
	AAF	1943	60 21N	172 42W	97	1	1	1	1	1	1	1	1							61	53					26701

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
ST MATTHEW	AAF	1944	60 21N	172 42W	97							1	1	1	1	1	1			62	62					26701
	AAF	1945	60 21N	172 42W	97	1	1	1	1	1	1	1	1	1	1					60	60					26701
ST MICHAEL	SAWR	1966	63 30N	162 00W	35	3	3	3	3	3	3				3											
ST PAUL IS	SPL	1911	57 07N	170 16W	20														04							25713
	SPL	1912	57 07N	170 16W	20														08							25713
ST PAUL IS	S	1915	57 07N	170 16W	20														05							25713
	S	1916	57 07N	170 16W	20														10							25713
	S	1917	57 07N	170 16W	20														12							25713
	S	1918	57 07N	170 16W	20														12	06						25713
	S	1919	57 07N	170 16W	20														12	12						25713
	S	1920	57 07N	170 16W	60														12	12						25713
	S	1921	57 07N	170 16W	60														12	12						25713
	S	1922	57 07N	170 16W	60														12	12						25713
	S	1923	57 07N	170 16W	60														12	12						25713
	SA	1924	57 07N	170 16W	46														12	12						25713
	SA	1925	57 07N	170 16W	46														12	12						25713
	SA	1926	57 07N	170 16W	46														12	12						25713
	SA	1927	57 07N	170 16W	46														12	12						25713
	SA	1928	57 07N	170 16W	92														12	12						25713
	SA	1929	57 07N	170 16W	92														12	12						25713
	SA	1930	57 07N	170 16W	19														12	12						25713
	SA	1931	57 07N	170 16W	19														12	12						25713
	SA	1932	57 07N	170 16W	19														12	12						25713
	SA	1933	57 07N	170 16W	19														12	12						25713
	SA	1934	57 07N	170 16W	19														12	12						25713
	SA	1935	57 07N	170 16W	19														12	12						25713
	SA	1936	57 07N	170 16W	19								1	1	1	1	1		12	12						25713
	SA	1937	57 07N	170 16W	19	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25713
	SA	1938	57 07N	170 16W	19			3	3	3	3	3	3	3	3	3	3		12	12						25713
	SA	1939	57 07N	170 16W	19	3	3	3	3	3	3	3	3	3	3	3	3	06	12	12						25713
	SA	1940	57 07N	170 16W	19	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25713
	SA	1941	57 07N	170 16W	19	4	4	4	4	4	4	4	4	4	4	4	4			12						25713
	SA	1942	57 07N	170 16W	19	1	1	1	1	1										05						25713
	WBO	1945	57 07N	170 16W	96										1	1	1		02	02	02					25713
	WBO	1946	57 07N	170 16W	96														12	12	07					25713
	WBO	1947	57 07N	170 16W	96	1	1	1	1									01	06	06	06					25713
ST PAUL IS	WBAS	1947	57 09N	170 13W	28														06	06	06					25713
	WBAS	1948	57 09N	170 13W	28														12	12	12					25713
	WBAS	1949	57 09N	170 13W	28						0	0	0	0	0	0	0			12	12					25713
	WBAS	1950	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	WBAS	1951	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	WBAS	1952	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	WBAS	1953	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	WBAS	1954	57 09N	170 13W	28	4	4	4	4	4	4	4	4	4	4	4	4			12	12					25713
	WBAS	1955	57 09N	170 13W	28	4	4	4	5	5	5	5	5	5	5	5	5			12	12					25713
	WBAS	1956	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12	09					25713
	WBAS	1957	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	WBAS	1958	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	WBAS	1959	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	WBAS	1960	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	WBAS	1961	57 09N	170 13W	28	5	5	5	5	5	5	5	1	1	1	1	1			12						25713
	WBAS	1962	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1963	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1964	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1965	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1966	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1967	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1968	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1969	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1970	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1971	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WBAS	1972	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	WSO	1973	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			11			01			25713
	WSO	1974	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25713
	WSO	1975	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25713
	WSO	1976	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25713
ST PAULS IS	AAF	1943	57 08N	170 16W	96											1	1			52	52					25705
	AAF	1944	57 08N	170 16W	96	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25705
	AAF	1945	57 08N	170 16W	96	1	1	1	1	1	1	1	1	1	1					60	60					25705
	AAF	1946	57 08N	170 16W	96																55					25705
ST PAUL IS	NS	1933	57 07N	170 16W	19						1	1	1	1	1	1	1									25712
	NS	1934	57 07N	170 16W	19	1	1	1	1	1																25712
SAND POINT	S	1941	55 20N	160 30W	32									4	4	4	4	04	04	03						25617
	S	1942	55 20N	160 30W	32	4	4	4	4	4	4							06	06	06						25617
	NF	1943	55 20N	160 30W	32										7	7	7	03								25617
	NF	1944	55 20N	160 30W	32	7	7	7	7	7	7	7	7	7	7	7	7	12								25617
	CAA	1945	55 20N	160 30W	32	7	7	7	7	1	1	1	1	1	1	1	1	09		06						25617
	CAA	1946	55 20N	160 30W	32	1	1	1	1	1	1	1	7	6	6	6	6			12						25617
	CAA	1947	55 20N	160 30W	32	6	6	6	6	6	6	6								07						25617
SAND POINT	SAWR	1961	55 20N	160 30W	32		5	5	5																	25617
	SAWR	1962	55 20N	160 30W	50			5	5	5	5	5	5	5	5	5	5									25617
	SAWR	1963	55 20N	160 30W	50	5	5	5	4	5	5	5	5	5	5	5	5									25617
	SAWR	1964	55 20N	160 30W	50	5	5	4	5	4	5	5	5	5	5	5	5									25617
	SAWR	1965	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617

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NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
SAND POINT	SAWR	1966	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAWR	1967	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAWR	1968	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAWR	1969	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAWR	1970	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAWR	1971	55 20N	160 30W	50	3	3	3	3	3	3	3	3	3	3	3	3									25617
	SAWR	1972	55 20N	160 30W	50	3	3	3	3	3	3	3	3	3	3	3	3									25617
	SAWR	1973	55 20N	160 30W	50	3	3	3	3	3	3		3	3	3	3	3									25617
	SAWR	1974	55 20N	160 30W	50	3																				25617
SAVOONGA	A	1930	63 41N	170 26W	35											3	3									
	A	1931	63 41N	170 26W	35	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1932	63 41N	170 26W	35	3	3	3	3	3	3	3	3	3	3											
	A	1933	63 41N	170 26W	35						3															
	A	1934	63 41N	170 26W	35				3	3	3															
	A	1935	63 41N	170 26W	35							3	3	3	3											
SAVOONGA	A	1947	63 41N	170 26W	35									3	3	3	3			04						
	A	1948	63 41N	170 26W	35	3	3	3	3	3	3	3	3	3	3	3	3			10						
	A	1949	63 41N	170 26W	35	4	4	4	4	4										05						
SAVOONGA	A	1965	63 42N	170 28W	45												3									
	A	1966	63 42N	170 28W	45	3	3	3	3	3		3	3	3	3	3	3									
	A	1967	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1968	63 42N	170 28W	45	3	3	3	3		3	3	3	3	3		3									
	A	1969	63 42N	170 28W	45										3	3	3									
	A	1973	63 42N	170 28W	45		3	3	3	3	3	3	3	3	3	3	3									
	A	1974	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1975	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	A	1976	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
SEDCO 706	SAWR	1976	59 52N	143 18W											6	6	6									
SEGUAM	AAF	1943	52 23N	172 25W	62				6	6	6	6	6	6	6	0	0			59						25703
	AAF	1944	52 23N	172 25W	62	0	6	6	6	6	6	6	6	6	6	6	6			62	60					25703
	AAF	1945	52 23N	172 25W	62	6	6	6	6	6	6	6	6	6						59	59					25703
SELAWIK	A	1938	66 34N	160 01W	20											3	3									
	A	1939	66 34N	160 01W	20	3	3																			
SELDOVIA	SAWR	1961	59 26N	151 42W	19		3	3	3	3	3	3	3	3	3	3										
	SAWR	1962	59 26N	151 42W	19			3	3	3	3															
SEMISOPOCHNO	AAF	1944	51 55N	179 35E	100			6	6	6	6	6	6	6	0						53					45707
SENTINEL IS	CG	1940	58 33N	134 55W	60			3	3	3	3	3	3	3	3	4	5									
	CG	1941	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
SENTINEL IS	CG	1959	58 33N	134 55W	60												5									
	CG	1960	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1961	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1962	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1963	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1964	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1965	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5												
SEWARD	SAWR	1955	60 08N	149 25W	17		3	3	3	3	3	3	3													
	SAWR	1956	60 08N	149 25W	17	3	3									3	3									
	SAWR	1957	60 08N	149 25W	17	3	3																			
	SAWR	1958	60 08N	149 25W	17				3																	
	SAWR	1961	60 08N	149 25W	17												3									
SEWARD	A	1931	60 07N	149 27W	66	3	3	3	3	3	3	3	3	3	3	3	3									26438
	A	1932	60 07N	149 27W	66	3	3	3	3	3	3	3	3	3	3	3	3									26438
	A	1933	60 07N	149 27W	66	3	3	3	3	3	3	3	3													26438
	A	1935	60 07N	149 27W	66											3	3									26438
	A	1936	60 07N	149 27W	66											3										26438
	A	1937	60 07N	149 27W	66	3	3	3	3	3	3	3														26438
	A	1938	60 07N	149 27W	66									3	3	3	3									26438
	A	1939	60 07N	149 27W	66	3	3	3	3	3	3	3	3	3	3	3	3									26438
	A	1940	60 07N	149 27W	66	3	3	3	3	4	3	5	5	3	3	5	4									26438
	SA	1941	60 07N	149 27W	62	6	6	6	6	6	6	6	6	6	6	6	6	11	11	11						26438
	SA	1942	60 07N	149 27W	62	6												01	01	01						26438
SEWARD	SA	1942	60 08N	149 27W	116		6	6	6	6	6	6	6	6	6	6	6	11	06	11						26438
	SA	1943	60 08N	149 27W	116	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26438
	SA	1944	60 08N	149 27W	95	6	6	6	6	6	6	6	6	6	6	6	6	12	01	12						26438
	SA	1945	60 08N	149 27W	95	5	5	5	5	5	5	5						07		07						26438
SEWARD	SA	1945	60 07N	149 27W	76								5	6	6	6	6	05		05						26438
	A	1946	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1947	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1948	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1949	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1950	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1951	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1952	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1953	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1954	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1955	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1956	60 07N	149 27W	76	6	6	6	6	8	6	6	6	6	6	6	6			12						26438
	A	1957	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438

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HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
SEWARD	A	1958	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1959	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1960	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1961	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1962	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1963	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1964	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1965	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1966	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1967	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1968	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1969	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1970	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1971	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1972	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1973	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1974	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	A	1975	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			11						26438
	A	1976	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
SHEEP MTN	CAA	1943	61 48N	147 41W	2316		6	6	6	1	1	1	1	1	1	1	1	06	02	11						26439
	CAA	1944	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1	12	01	12						26439
	CAA	1945	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26439
	CAA	1946	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	CAA	1947	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	CAA	1948	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	CAA	1949	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	CAA	1950	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	SAWR	1951	61 48N	147 41W	2316	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SAWR	1952	61 48N	147 41W	2316	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SAWR	1953	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SAWR	1954	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SAWR	1955	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1956	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1957	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1958	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1959	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1960	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1961	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1962	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1963	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1964	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	A	1965	61 48N	147 41W	2280	5		5	5	5	5	5	5	5	5	5	5									26439
	A	1966	61 48N	147 41W	2280	5	5	5	5	5																26439
SHEMYA	SAWR	1955	52 43N	174 06E	93												1			01						45715
	SAWR	1956	52 43N	174 06E	93	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	SAWR	1957	52 43N	174 06E	93	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	SAWR	1958	52 43N	174 06E	93	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	WBAS	1959	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			05			45715
	WBAS	1960	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	WBAS	1961	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	WBAS	1962	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			03			45715
	WBAS	1963	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	WBAS	1964	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	WBAS	1965	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			04			45715
	WBAS	1966	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			11			12			45715
	WBAS	1967	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	WBAS	1968	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	WBAS	1969	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	WBAS	1970	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	WBAS	1971	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	WBAS	1972	52 43N	174 06E	128	1	1	1	1	1	1		1	1	1	1	1			12			12			45715
	WSO	1973	52 43N	174 06E	128	1	1	1	1											04			04			45715
SHEMYA	AAF	1943	52 43N	174 06E	132						1	1	1	1	1	1	1				55					45708
	AAF	1944	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			61	62					45708
	AAF	1945	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	61		08			45708
	AAF	1946	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	AAF	1947	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	AFB	1948	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	59		12			45708
	AFB	1949	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	AFB	1950	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	AFB	1951	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			45708
	AFB	1952	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			45708
	AFB	1953	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			12	03		11			45708
	AFB	1954	52 43N	174 06E	132	1	1	1	1	1	1	4	4							08			05			45708
	AFB	1955	52 43N	174 06E	132							6	6	6	6	7				05						45708
SHEMYA	NS	1958	52 43N	174 06E	113						4	4	4	4	4	4	4			07			07	07		45714
	NS	1959	52 43N	174 06E	113	4	4	4	4	4	4	4	1							08			08	07		45714
SHISHAREF	SA	1937	66 14N	166 07W	16					3	3	3		3	3	3	3									26625
	SA	1938	66 14N	166 07W	16	3	3	3	3	3	3	3	3	3	3	3	3									26625
	SA	1939	66 14N	166 07W	16	3	3	3	3	3	3	4	4	3	3	3	4									26625
	SA	1940	66 14N	166 07W	16	4	4	4	4	4	4	4	4	4	4	4	4									26625
	SA	1941	66 14N	166 07W	16	4	4	5	5	6	5	6	5	5	5	5	4	05	05	05						26625
	SA	1942	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5	12	07	12						26625
	SA	1943	66 14N	166 07W	16	5	5	5	5	5			5	5	5	5	5	10	05	10						26625
	SA	1944	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5	12	07	12						26625
	SA	1945	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5	12		12						26625
	SA	1946	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
SHISHAREF	SA	1947	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625
	SA	1948	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625
	SA	1949	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625
	SA	1950	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			11						26625
	SA	1951	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5									26625
	SA	1952	66 14N	166 07W	16	5	5	5	5	5	5															26625
SHUNGNAK	SA	1941	66 54N	157 07W	500													05	05	05						26513
	SA	1942	66 54N	157 07W	500													07	07	07						26513
	CAA	1943	66 54N	157 02W	138										5	5	5	03		03						26513
	CAA	1944	66 54N	157 02W	138							3	5	5	5	6	6	12	04	12						26513
	CAA	1945	66 54N	157 U2W	138	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26513
	CAA	1946	66 54N	157 02W	138	6	6	6	6	6	5	6	6	6	6	6	6			12						26513
	CAA	1947	66 54N	157 02W	138	6	6	6	6	6	6	6	6	6	6	6	6			12						26513
	CAA	1948	66 54N	157 02W	138	6	6	6	6	6	6	6	6	6	6	6	6			12						26513
	CAA	1949	66 54N	157 02W	138	6	6		6	6	6	6	6	6	6	6	6			12						26513
	CAA	1950	66 54N	157 02W	138	5	5	5	6	6	6	6	6							10						26513
SISTER IS	A	1947	58 10N	135 15W	35									3	3	3	3									25341
	A	1948	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1949	58 10N	135 15W	35	5	6	6	5	5	6	5	5	5	5	5	5									25341
	A	1950	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1951	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1952	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1953	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1954	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1955	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1956	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1957	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1958	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1959	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1960	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1961	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1962	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1963	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1964	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	3	3									25341
	A	1965	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1966	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1967	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1968	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1969	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1970	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1971	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1972	58 10N	135 15W	35	5	5	5	5	5	5		5	5	5	5	5									25341
	A	1973	58 10N	135 15W	35	5	5	5	5	5	5		5	5	5	5	5									25341
	A	1974	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1975	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	A	1976	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
SITKA	SPL	1898	57 03N	135 20W	63														07	05	07					25334
	SPL	1899	57 03N	135 20W	63														02	03	02					25334
SITKA	SPL	1908	57 03N	135 20W	63														06							25334
	SPL	1909	57 03N	135 20W	63														12							25334
	SPL	1910	57 03N	135 20W	63														12							25334
	SPL	1911	57 03N	135 20W	63														12							25334
	SPL	1912	57 03N	135 20W	63														12							25334
	SPL	1913	57 03N	135 20W	63														12							25334
	SPL	1914	57 03N	135 20W	63														12							25334
	SPL	1915	57 03N	135 20W	63														12							25334
	SPL	1916	57 03N	135 20W	63														12							25334
	SPL	1917	57 03N	135 20W	63														12							25334
	SPL	1918	57 03N	135 20W	63														12							25334
	SPL	1919	57 03N	135 20W	63														12	08						25334
	SPL	1920	57 03N	135 20W	63														12	12						25334
	SPL	1921	57 03N	135 20W	63														12	12						25334
	SPL	1922	57 03N	135 20W	63														12	12						25334
	SPL	1923	57 03N	135 20W	63														12	12						25334
	SPL	1924	57 03N	135 20W	63														12	12						25334
	SPL	1925	57 03N	135 20W	63														12	12						25334
	SPL	1926	57 03N	135 20W	63														07	06						25334
SITKA	A	1930	57 03N	135 20W	65								3	3	3	3	3									25333
	A	1931	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	A	1932	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3											25333
	A	1933	57 03N	135 20W	31				3	3	3	3	3	3	3											25333
	A	1934	57 03N	135 20W	31				3	3	3	3	3	3	3	3										25333
	A	1935	57 03N	135 20W	31				3	3	3	3	3	3	3	3	3									25333
	A	1936	57 03N	135 20W	31			3	3	3	3	3	3	3	3	3	3									25333
	A	1937	57 03N	135 20W	31	3	3	3	4	4	3	4	4	3	3	3	3									25333
	A	1938	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	A	1939	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	A	1940	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	A	1941	57 03N	135 20W	25	6	6	6	6	6	6	6	6	6	6	6	6			10						25333
	A	1942	57 03N	135 20W	25	6	6	6	6											04						25333
	CAA	1944	57 04N	135 21W	66								1	1	1	1	1	09		03						25333
	CAA	1945	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25333
	CAA	1946	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1947	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1948	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1949	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1950	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

HOURLY RECORDS BY MONTH: 1 = 24 OBS PER DAY

NUMBER OF MONTHS IN YEAR WITH: SYNOPTIC FORM, METL SUMMARY, BAROGRAMS, THERMOGRAMS, TRIPLE REGISTER, WIND RECORDER, HUMIDITY RECORDER, RADAR LOGS

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
SITKA	CAA	1951	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1952	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1953	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1954	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1955	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1956	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1957	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1958	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	CAA	1959	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1960	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1961	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1962	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1963	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1964	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1965	57 04N	135 21W	66		1	1	1	1	1	1	1	1	1	1	1			11						25333
	FAA	1966	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1967	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	FAA	1968	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	03					25333
	FAA	1969	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	FAA	1970	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	FAA	1971	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	FAA	1972	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	FAA	1973	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	05					25333
	FAA	1974	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	06					25333
	FAA	1975	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	06					25333
	FAA	1976	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	07					25333
SITKA	NS	1938	57 03N	135 21W	98									1	1	1	1									25307
	NS	1939	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	NS	1940	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	NS	1941	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	NS	1942	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	NS	1943	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	NS	1944	57 03N	135 21W	98	1	1	1	1	1	1															25307
SITKINAK	CG	1960	56 33N	154 08W	53											5	5									
	CG	1961	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			08						
	CG	1962	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
	CG	1963	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
	CG	1964	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			11						
	CG	1965	56 33N	154 08W	53	5	5	5	5	5	5		5	5	5	5	5			07						
	CG	1966	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			05						
	CG	1967	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			03						
	CG	1968	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
	CG	1969	56 33N	154 08W	53	5	5	5	5	5	5									06						
	CG	1970	56 33N	154 08W	53					5	5	5	5	5	5	5	5			08						
	CG	1971	56 33N	154 08W	53	5	1	1	1	1	1	1	1	1	1	1	1			12						
	CG	1972	56 33N	154 08W	53	1	1	1	1	1	1	5	5	5	5	5	5			12						
	CG	1973	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			11						
	CG	1974	56 33N	154 08W	53		5	5	5	5	5	5	5	5	5	5	5			10						
	CG	1975	56 33N	154 08W	53			5	5	5	5	5	5	5	5	5	5			12						
	CG	1976	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
SKAGWAY	A	1931	59 27N	135 19W	11							3	3	3	3											25335
	A	1932	59 27N	135 19W	11				3	3	3	3	3	3	3											25335
	A	1933	59 27N	135 19W	11				3	3	3	3	3	3	3											25335
	A	1934	59 27N	135 19W	11				3		3	3	3	3	3											25335
	A	1935	59 27N	135 19W	11				3	3	3	3	3	3	3	3	3									25335
	A	1936	59 27N	135 19W	11	3		4	3	3	3	3	3	3	3	3	3									25335
	A	1937	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	A	1938	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	A	1939	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	A	1940	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	A	1941	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	A	1942	59 27N	135 19W	11	3	3	3	3	5	6	6	6	6	6	6	6			08						25335
	A	1943	59 27N	135 19W	11	6																				25335
	A	1945	59 27N	135 19W	18								6	6	6	6	6									25335
	A	1946	59 27N	135 19W	18	5	5	5								6	5									25335
	A	1947	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1948	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1949	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1950	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1951	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1952	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1953	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1954	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1955	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1956	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1957	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1958	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1959	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1960	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1961	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1962	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1963	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1964	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	3	5	5									25335
	A	1965	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1966	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1967	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1968	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	A	1969	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5			04						25335
	A	1970	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335

RECORDS INDEX **ALPHABETIC** BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
SKAGWAY	A	1971	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	A	1972	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	A	1973	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	A	1974	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	A	1975	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	A	1976	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
SKAGWAY	AAF	1943	59 27N	135 19W	21										6	6	6									25303
	AAF	1944	59 27N	135 19W	21	6	6	6	6	6	6	6	6	6	6	6	6				51					25303
	AAF	1945	59 27N	135 19W	21	6	6	6	6	6											55					25303
SKWENTNA	A	1939	61 57N	151 10W	228					3	3	3	3	3	3	4	5									26514
	A	1940	61 57N	151 10W	228	4	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1941	61 57N	151 10W	228	5	4	4	4	4	4	4	4	4	4	4	4	12	12	12						26514
	A	1942	61 57N	151 10W	228	4	5	5	5	5	5	5	5	5	5	5	5	12	05	12						26514
	A	1943	61 57N	151 10W	228	5	5	5	5	5	5	5	5		5	5	5	11		11						26514
	A	1944	61 57N	151 10W	153	5	5	5	5	5	5	5	5	5	5	5	5	12		12						26514
	A	1945	61 57N	151 10W	153	5												01		01						26514
SKWENTNA	CAA	1945	61 58N	151 12W	153		1	1	1	1	1	1	1	1	1	1	1	11		11						26514
	CAA	1946	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1947	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1948	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1949	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1950	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1951	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1952	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1953	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1954	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1955	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1956	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1957	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	CAA	1958	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	A	1959	61 58N	151 12W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	A	1960	61 58N	151 12W	158	1	1	1	1	1	1	1	1	1	1	1	1			02						26514
	A	1961	61 58N	151 12W	158	3	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1962	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1963	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1964	61 58N	151 12W	153	3	3	3	3	3	3	3	3			3	3									26514
	A	1965	61 58N	151 12W	153	3	3	3	3	3																26514
	A	1966	61 58N	151 12W	153		3	3	3	3	3	3	3	3	3	3	3									26514
	A	1967	61 58N	151 12W	153	3	3	3	3	3	3		3	3	3	3	3									26514
	A	1968	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1969	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1970	61 58N	151 12W	153	3								3	3	3	3									26514
	A	1971	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1972	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	A	1973	61 58N	151 12W	153	3	3	3	3	3	3	3	3													26514
	A	1974	61 58N	151 12W	153			5	5		5	5	5	5	5	5	5									26514
	A	1975	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
SLANA	A	1974	62 43N	143 55W	2420						5	5	5	5	5	5	5									
	A	1975	62 43N	143 55W	2420	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	62 43N	143 55W	2420	5	5	5	5	5	5	5	5	5	5	5	5									
SLEETMUTE	A	1957	61 42N	157 11W	285										5	5	5									
	A	1958	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1959	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1960	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1961	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1962	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1963	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1964	61 42N	157 11W	285	5																				
	A	1972	61 42N	157 11W	285															04						
	A	1973	61 42N	157 11W	285															07						
SNOWSHOE LAK	A	1966	62 02N	146 40W	2295				3	3	3	3	3	3	3	3	3			04	05					
	A	1967	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1968	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1969	62 02N	146 40W	2410	3	3		3	3	3	3	3	3	3	3	3			12						
	A	1970	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1971	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1972	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1973	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1974	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1975	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	A	1976	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
SOLDOTNA	SAWR	1962	60 28N	151 02W	115			4	3	3	4	4	5	5	5	5	5									
	SAWR	1963	60 28N	151 02W	115	5	5	5	5	5	5	5	5	5	4	5	5									
	SAWR	1964	60 28N	151 02W	115	5	5	4	4	4	4	4	4	4	4	4	4									
	SAWR	1965	60 28N	151 02W	115		4	4	4	4	4	4	4	4	4	4	4									
	SAWR	1966	60 28N	151 02W	115	4	4	4	4	4	4	4	4	4	4	4	4									
	SAWR	1967	60 28N	151 02W	115	4	4	4	4	4	4	4	4	4	4	4	4									
	SAWR	1968	60 28N	151 02W	115	5	5	5	5	5	5	5														
SOLOMON	A	1931	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	A	1932	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	A	1933	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	A	1934	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	A	1935	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	A	1936	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
SOLOMON	A	1937	64 35N	164 24W	15					3	3	3	3	3	3	3	3									26629
	A	1938	64 35N	164 24W	15	3	4	5	5	5	5	5	4	5	5	4	4									26629
	A	1939	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	A	1940	64 35N	164 24W	15	4	5	5	5	5	5	5	5	5	5	5	5									26629
	A	1941	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	A	1942	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	A	1943	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	A	1944	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	A	1945	64 35N	164 24W	15	5	5	5	5	6	6	6	6	6	5	5	5									26629
	A	1946	64 35N	164 24W	15	5	5	5																		26629
SPARREVOHN	AFS	1951	61 06N	155 34W	1729							6	6	6	6	6										26534
	AFS	1952	61 06N	155 34W	1729				6			6	6	6	6	6	6			05						26534
	AFS	1953	61 06N	155 34W	1729	6	6	6	1	1	1	1	1	1	1	1	1			12						26534
	AFS	1954	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			12						26534
	AFS	1955	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			12						26534
	AFS	1956	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			11						26534
	AFS	1957	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			12						26534
	AFS	1958	61 06N	155 34W	1729	1	1	1	1	1	7	7	7	7	7	7	7			12						26534
	AFS	1959	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	AFS	1960	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	AFS	1961	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	AFS	1962	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	AFS	1963	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	1	1	1	7			11						26534
	AFS	1964	61 06N	155 34W	1735	7	1	1	1	1	1	7	7	7	7	7	7			03						26534
	AFS	1965	61 06N	155 34W	1736	7	7	1	1	1	1	1	7	7	7	1	1									26534
	AFS	1966	61 06N	155 34W	1736	1	1	1	1	1	1	1	1	1	7	7	7									26534
	AFS	1967	61 06N	155 34W	1736	7	1	1	1	1	1	1	1	1	1	6	7						12			26534
	AFS	1968	61 06N	155 34W	1736	7	7	7	1	1	7	7	1	1	1	1	1						10			26534
	AFS	1969	61 06N	155 34W	1736	1	7	7	7	1	1	1	1	7	1	1	1						03			26534
	AFS	1970	61 06N	155 34W	1736	7	5	6	1	7	7	7	1	1	1	1	1						12			26534
	AFS	1971	61 06N	155 34W	1736	1	1	1	1	1	1	1	1	1	1	1	1						12			26534
	AFS	1972	61 06N	155 34W	1736	6	1	6	7	7	6	6	6	7	7	7	7						12			26534
	AFS	1973	61 06N	155 34W	1736	6	6	7	1	1	1	6	6	7	1	1	1						01			26534
	AFS	1974	61 06N	155 34W	1736	1	1	1	1	1	1	1	1	1	1	1	1									26534
	AFS	1975	61 06N	155 34W	1736	6	6	6	6	6	6	6	6	6	6	6	6									26534
	AFS	1976	61 06N	155 34W	1736	6	6	6	6	6	6	6	6	6	6	6	6									26534
SPRUCE CAPE	CG	1972	57 50N	152 19W											5	5	5									
	CG	1973	57 50N	152 19W		5	5	5	5	5	5	5	5	5	5	5	5									
	CG	1974	57 50N	152 19W		5	5	5																		
SQUAW HARBOR	A	1931	55 15N	160 33W	200		3	3	3	3	3	3	3	3	3	3	3									
	A	1932	55 15N	160 33W	200	3	3	3	3	3	3	3	3	3	3	3	3									
STAMPEDE	SAWR	1938	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1939	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1940	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1941	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1942	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1943	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3										
	SAWR	1946	63 44N	150 22W	2500	4	3																			
STEVENS VILA	A	1940	66 01N	149 05W	350					3	3	3	3	3	3	3	3									26449
	A	1941	66 01N	149 05W	350	3	3	5	5	5	5	5	5	5	5	5	5									26449
	A	1942	66 01N	149 05W	350	5	5	5	5	5	5		5	5	5		5									26449
	A	1943	66 01N	149 05W	350	5	5	5	5	5	5			5	5	5	5									26449
	A	1944	66 01N	149 05W	350	5	5	5	5	5	5				5	5	5									26449
	A	1945	66 01N	149 05W	350	5	5	5	5	5	5	5	5	5	5		5									26449
	A	1946	66 01N	149 05W	350	5																				26449
STONY RIVER	SA	1940	61 46N	156 38W	221			3	3	3	3	3	3	3	3	3	3									26527
	SA	1941	61 46N	156 38W	221	3	3	3	3	3	3	3	3	3	3	3	3									26527
	SA	1942	61 46N	156 38W	221	3	3	3						3												26527
	SA	1943	61 46N	156 38W	221	3	3	3				3						01		01						26527
	SA	1944	61 46N	156 38W	221		3	5	5	5	5	5	5	5	5	5	5	05	02	05						26527
	SA	1945	61 46N	156 38W	221										5	5	5	11		11						26527
	SA	1946	61 46N	156 38W	221	5	5	5	5	5	5	5	5					08		06						26527
	SA	1947	61 46N	156 38W	221										5	5	5	03		03						26527
	SA	1948	61 46N	156 38W	221	5	5	5	5	5	5	5	5	5	5	5	5	11		11						26527
	SA	1949	61 46N	156 38W	221	5	5	5	5	5	5	5	5	5	5	5	5									26527
	A	1950	61 46N	156 38W	221	5	5	5	5	5	5	5	5	5	5	5	5									26527
	A	1951	61 46N	156 38W	221	5	5	5																		26527
STONY RIVER	A	1966	61 46N	156 38W	221											3	3									
	A	1967	61 46N	156 38W	221			3	3	3	3	3				3	3				12					
	A	1968	61 46N	156 38W	221	3	3	3	3	3	3										06					
STUYAHOK	A	1938	62 10N	161 50W	1500							3	3	3	3	3	3									
	A	1939	62 10N	161 50W	1500	3	3	3	3	3	3	3	5	5	5	5	4									
	A	1940	62 10N	161 50W	1500	4	5	4	4	4																
SUMMIT	CAA	1940	63 20N	149 08W	2405					5	5	6	6	6	6	6	6									26414
	CAA	1941	63 20N	149 08W	2405	6	6	6	6	6	6	6	6	6	6	6	6	12	09	11						26414
	CAA	1942	63 20N	149 08W	2405	6	6	6	6	6	6	1	1	1	1	1	1	12	09	12						26414
	CAA	1943	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1	10	12	12						26414
	CAA	1944	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26414
	CAA	1945	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26414
	CAA	1946	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1	03	07	12						26414
	CAA	1947	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1	01		12						26414
	CAA	1948	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1949	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
SUMMIT	CAA	1950	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1951	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1952	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1953	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1954	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1955	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1956	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1957	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1958	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	CAA	1959	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	FAA	1960	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	FAA	1961	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	FAA	1962	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	FAA	1963	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	FAA	1964	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	FAA	1965	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	FAA	1966	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			11						26414
	FAA	1967	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	WBAS	1968	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	WBAS	1969	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	WBAS	1970	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	WBAS	1971	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	WBAS	1972	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	WSO	1973	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			02	01		26414
	WSO	1974	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			07			26414
	WSO	1975	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			10			26414
	WSO	1976	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			03			26414
SUMMIT LAKE	A	1967	63 08N	145 32W	3230											4	4									
	A	1968	63 08N	145 32W	3230	4	4	4	4	4	4	4	4	4	4	4	4									
	A	1969	63 08N	145 32W	3230	4	4																			
SUNSHINE LAK	COOP	1964	62 10N	150 10W	300																02					
SUSIE 1	SAWR	1966	69 31N	148 53W	500	6	6	6	6	6	6															
	SAWR	1967	69 31N	148 53W	500	6	6	6																		
TACOTNA	A	1931	63 00N	156 04W	1410												3									
	A	1932	63 00N	156 04W	1410	3	3	3	3	3					3	3	3									
	A	1933	63 00N	156 04W	1410	3		3	3	3	3	3	3	3	3											
TAKU LODGE	A	1940	58 33N	133 41W	175						3	3	3	3	3	4	4									
	A	1941	58 33N	133 41W	175	5	5	5	5	5	3	3	3	4	5	4	5									
	A	1942	58 33N	133 41W	175	5	5	4	4	4	4	4	4	4	4	4	4									
	A	1943	58 33N	133 41W	175	4	4	4	4	4	4	4	4	4	4	4										
TALKEETNA	CAA	1940	62 18N	150 06W	356						6	7	6	6	6	6	6	12	02							26528
	CAA	1941	62 18N	150 06W	356	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26528
	CAA	1942	62 18N	150 06W	356	6	6	6	6	6	6	6	1	1	1	1	1	12	12	12						26528
	CAA	1943	62 18N	150 06W	356	1	1	1	1	1	1	1	1	1	1	1	1	12	07	12						26528
	CAA	1944	62 18N	150 06W	356	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26528
	CAA	1945	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1946	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1947	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1948	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1949	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1950	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1951	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1952	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1953	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1954	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1955	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1956	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1957	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1958	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	CAA	1959	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	FAA	1960	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	FAA	1961	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	FAA	1962	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			11						26528
	FAA	1963	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	FAA	1964	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	FAA	1965	62 18N	150 06W	351	1	1	1	1	1	6	6	6	6	6	6	6			12	04					26528
	FAA	1966	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12	05					26528
	FAA	1967	62 18N	150 06W	351	6	6	6	6	6	6	6	6	1	1	1	1			12						26528
	WBAS	1968	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	WBAS	1969	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	WBAS	1970	62 18N	150 06W	351	1	1	1	1	1	1	6	6	6	6	6	6			12	05					26528
	WBAS	1971	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	WBAS	1972	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	WSO	1973	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	WSO	1974	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	WSO	1975	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	WSO	1976	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
TANACROSS	A	1941	63 24N	143 18W	1200	5	5	6	6	6	6	6	6	6	6	6	6			05						26440
	A	1942	63 24N	143 19W	1200	6	6	6	6	6	6	6	6	6	6	6	6			12						26440
	CAA	1943	63 24N	143 18W	1546	6	6	6	6	6			1	1	1	1	1									26440
	CAA	1944	63 24N	143 18W	1546	1	1	1	1	1								04		04						26440
	CAA	1945	63 24N	143 19W	1546										1	1	1			03						26440
	CAA	1946	63 24N	143 19W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440
	CAA	1947	63 24N	143 19W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440
	CAA	1948	63 24N	143 18W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
TANACROSS	CAA	1949	63 24N	143 19W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440
	CAA	1950	63 24N	143 19W	1546	1	1	1	1	1	1	1	1							08						26440
TANACROSS	AAF	1944	63 24N	143 19W	1554				.	1	1	1	1	1	1	1	1			57	56					26405
	AAF	1945	63 24N	143 19W	1554	1	1	1	1	1	1	1	1	1	1					60	60					26405
	AAF	1947	63 24N	143 19W	1554															53	53					26405
TANAGA IS	NS	1944	51 45N	178 02W	145			1	6	6	6	6	1	1	1	1										25714
	NS	1945	51 45N	178 02W	145	1	1			1		1	1	1	6	6	6									25714
	NS	1946	51 45N	178 02W	145	6	6	6																		25714
TANALIAN PT	A	1939	60 13N	154 22W	308					3	3	3	3	3	3	3	3									26531
	A	1940	60 13N	154 22W	308	3	3	3	3	3	3	3	3													26531
	A	1941	60 13N	154 22W	308				3	3	3	3	3	3			3									26531
	A	1942	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5												26531
	A	1943	60 13N	154 22W	308			5	5	5	5	5	5	5	5	5	5			03						26531
	A	1944	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	A	1945	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	A	1946	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	A	1947	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	A	1948	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			10						26531
TANANA	S	1909	65 10N	152 06W	220														04							26529
	S	1910	65 10N	152 06W	220														12							26529
	S	1911	65 10N	152 06W	220														12							26529
	S	1912	65 10N	152 06W	220														12							26529
	S	1913	65 10N	152 06W	220														12							26529
	S	1914	65 10N	152 06W	220														12							26529
	S	1915	65 10N	152 06W	220														12							26529
	S	1916	65 10N	152 06W	220														12	01						26529
	S	1917	65 10N	152 06W	220														12	12						26529
	S	1918	65 10N	152 06W	220														12	12						26529
	S	1919	65 10N	152 06W	220														12	12	06					26529
	S	1920	65 10N	152 06W	220														12	12	07					26529
	S	1921	65 10N	152 06W	220														12	12	05					26529
	S	1922	65 10N	152 06W	220														12	12	12					26529
	S	1923	65 10N	152 06W	220														12	12	12					26529
	S	1924	65 10N	152 06W	220														12	12	12					26529
	S	1925	65 10N	152 06W	220														12	12	12					26529
	S	1926	65 10N	152 06W	220														12	12	12					26529
	S	1927	65 10N	152 06W	220														12	12	12					26529
	S	1928	65 10N	152 06W	220														12	12	12					26529
	SA	1929	65 10N	152 06W	220														12	12	12					26529
	SA	1930	65 10N	152 06W	220									4	4	4	4		12	12	12					26529
	SA	1931	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12					26529
	SA	1932	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12					26529
	SA	1933	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3		11	11	11					26529
	SA	1934	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	SA	1935	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	SA	1936	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	SA	1937	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	SA	1938	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3			06						26529
	SA	1939	65 10N	152 06W	234	3	3	3	3	3	3	3	3	3	3	3	3		10	11						26529
	SA	1940	65 10N	152 06W	234	3	3	3	3	3	3	3	3	3	3	3	3		12	11						26529
	CAA	1941	65 10N	152 06W	234	6	6	6	6	6	6	6	6	6	6	6	6		12	01						26529
	CAA	1942	65 10N	152 06W	234	6	6	6	6	6	6	6	6	6	6	6	6	04	08							26529
	CAA	1943	65 10N	152 06W	234	6	6	6	6	6								05		01						26529
	CAA	1945	65 10N	152 06W	240											1	1			02						26529
	CAA	1946	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1947	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1948	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1949	65 10N	152 06W	240	1	1		1	1	1	1	1	1	1	1	1			09						26529
	CAA	1950	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1951	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1952	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1953	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1954	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1955	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1956	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1957	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1958	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	CAA	1959	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	FAA	1960	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	FAA	1961	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	FAA	1962	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	FAA	1963	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	FAA	1964	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	FAA	1965	65 10N	152 06W	240	1	1	1	1	1	6	6	6	6	6	6	6			12						26529
	FAA	1966	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	06					26529
	FAA	1967	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	08					26529
	WBAS	1968	65 10N	152 06W	240	6	6	6	6	6	6	6	6	7	6	6	6			12	09					26529
	WBAS	1969	65 10N	152 06W	240	1	1	1	1	1	1	1	6	6	6	6	6			12	05					26529
	FSS	1970	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	08					26529
	FSS	1971	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26529
	FSS	1972	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26529
	FSS	1973	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	11					26529
	FSS	1974	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	02					26529
	FSS	1975	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	02					26529
	FSS	1976	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12						26529
TANANA	AFS	1943	65 12N	152 12W	230						1	1	1	1	1	1	1			57						26504
	AFS	1944	65 12N	152 12W	230	1	1	1	1	1	1	1	1	1	1	1	1			62						26504

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
TANANA	AFS	1945	65 12N	152 12W	230	1	1	1	1	1	1	1	1	1	1	1	1			60						26504
TATALINA	AFB	1952	62 54N	155 59W	939				6			5	5	5	5	5	6			03						26536
	AFB	1953	62 54N	155 59W	939	6	6	6	6	6	6	6	6	6	6	6	6			12						26536
	AFB	1954	62 54N	155 59W	939	6	6	6	6	6	6	6	6	6	6	6	6			12						26536
	AFB	1955	62 54N	155 59W	939	1	6	6	6	6	6	6	6	6	1	6	6			12						26536
	AFB	1956	62 54N	155 59W	939	6	6	6	6	1	1	1	1	1	1	1	1			11						26536
	AFB	1957	62 54N	155 59W	939	1	1	1	1	1	1	1	1	1	1	1	1			12						26536
	AFB	1958	62 54N	155 59W	939	1	1	1	1	1	7	7	7	7	7	7	7			12						26536
	AFB	1959	62 54N	155 59W	939	7	7	7	7	7	7	7	7	7	7	7	7			12						26536
	AFB	1960	62 54N	155 59W	939	7	7	7	7	7	7	7	7	7	7	7	7			12						26536
	AFB	1961	62 54N	155 59W	939	7	7	7												03						26536
TATALINA	AFB	1961	62 53N	155 57W	939				7	7	7	7	7	7	7	7	7			09						26536
	AFB	1962	62 53N	155 57W	939	7	7	7	7	7	7	7	7	7	7	7	7			12						26536
	AFB	1963	62 53N	155 57W	939	7	7	7	7	7	7	7	1	7	7	7	7			12						26536
	AFB	1964	62 53N	155 57W	897	7	7	7	7	7	7	7	7	7	7	1	1			03						26536
	AFB	1965	62 53N	155 57W	897	1	1	1	7	1	1	7	7	7	7	7	1									26536
	AFB	1966	62 53N	155 57W	897	1	1	1	7	7	1	1	1	1	1	7	7									26536
	AFB	1967	62 53N	155 57W	931	7	7	7	1	7	7	7	7	7	7	7	7						12			26536
	AFB	1968	62 53N	155 57W	931	7	7	7	7	6	6	6	5	7	7	7	5						12			26536
	AFB	1969	62 53N	155 57W	931	5	5	7	7	7	7	7	6	7	6	7	7						12			26536
	AFB	1970	62 53N	155 57W	931	7	5	7	7	7	7	6	1	1	1	1	1						12			26536
	AFB	1971	62 53N	155 57W	931	1	1	1	6	6	6	6	6	6	6	6	6						12			26536
	AFB	1972	62 53N	155 57W	931	6	6	6	7	7	7	7	7	7	7	7	7						12			26536
	AFB	1973	62 53N	155 57W	931	6	6	7	7	6	6	6	6	7	7	7	7						03			26536
	AFB	1974	62 53N	155 57W	931	6	6	6	7	7	7	7	7	7	7	7	7									26536
	AFB	1975	62 53N	155 57W	931	7	7	1	1	1	6	6	6	6	6	6	6									26536
	AFB	1976	62 53N	155 57W	931	6	6	6	6	6	6	6	6	6	6	6	6									26536
TAYLOR	A	1940	65 40N	164 47W	250		3	3	4	4				4			3									
	A	1941	65 40N	164 47W	250	3	3	3	3	3	3			4												
TELLER	A	1937	65 16N	166 21W	10							3	3	3	3	3	3									26626
	A	1938	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	A	1939	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	A	1940	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	A	1941	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	A	1942	65 16N	166 21W	10	3	3	4	4	3	3	3	3	3	3	3	3			05						26626
	A	1943	65 16N	166 21W	10	3	3	3	3	3	5	6								12						26626
TELLER	A	1946	65 16N	166 21W	10				5	5	5	5	5	5	5	5	5			06						26626
	A	1947	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1948	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1949	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1950	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1951	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1952	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1953	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1954	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1955	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1956	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1957	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1958	65 16N	166 21W	10				5	5	5	5	5	5	5	5	5									26626
	A	1959	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1960	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1961	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1962	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	A	1963	65 16N	166 21W	10	5	5	5																		26626
TELLER	AAF.	1943	65 18N	166 55W	10								1	1						56						26607
	AAF	1944	65 18N	166 55W	10															62	53					26607
	AAF	1945	65 18N	166 55W	10															59	59					26607
TENAKEE	A	1940	57 47N	135 12W	19		3	3	3	3	3	3	3	3		3	3									25336
	A	1941	57 47N	135 12W	19	3	3	4	5	5		5	5	5	5	5	5			05						25336
	A	1942	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5			12						25336
	A	1943	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5			12						25336
	A	1944	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5					09						25336
	A	1945	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5			08						25336
	A	1946	57 47N	135 12W	19	5	5	5	5	5	5	5	5													25336
	A	1947	57 47N	135 12W	19				5	5	5	5	5	5	5	5	5									25336
	A	1948	57 47N	135 12W	19	5	5	5	5	5	5	5	5													25336
	A	1949	57 47N	135 12W	19		5	5	5	5	5	5	5	5	5	5	5									25336
	A	1950	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5									25336
	A	1951	57 47N	135 12W	19	5	5																			25336
TETLIN	A	1940	63 10N	142 32W	1800										3	3	3									
	A	1941	63 10N	142 32W	1800	3	3	3	4	5	5	4	4	4	4	4	4									
	A	1942	63 10N	142 32W	1800	4	4	4	4	4	4															
THORNBROUGH	AAF	1942	55 12N	162 43W	99			6	6	6	1	1	1	1	1	1	1			57						25603
	AAF	1943	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62						25603
	AAF	1944	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62			05			25603
	AAF	1945	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	AAF	1946	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	AAF	1947	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	AFB	1948	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	AFB	1949	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	AFB	1950	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	AFB	1951	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25603
	AFB	1952	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25603

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
THORNBROUGH	AFB	1953	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			11	03		03			25603
	AFB	1954	55 12N	162 43W	99	4	4	4	4	4	4									06						25603
TIN CITY	A	1937	65 34N	167 55W	269										3	3	3									
	A	1938	65 34N	167 55W	269	3	3	3	3	3	3	3	3													
TIN CITY	AFS	1953	65 34N	167 55W	271					5	6	7	7	6	6	6	6			03						26634
	AFS	1954	65 34N	167 55W	271	6	6	6	6	6	6	6	6	6	6	6	6			12						26634
	AFS	1955	65 34N	167 55W	271	6	6	6	6	1	1	1	1	1	6	6	6			12						26634
	AFS	1956	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			11						26634
	AFS	1957	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634
	AFS	1958	65 34N	167 55W	271	1	1	1	1	1	7	7	7	7	7	7	7			12						26634
	AFS	1959	65 34N	167 55W	271	7	7	7	7	7	7	7	7	7	7	7	7			12						26634
	AFS	1960	65 34N	167 55W	271	7	7	7	7	7	1	1	1	1	1	1	1			12						26634
	AFS	1961	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634
	AFS	1962	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634
	AFS	1963	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634
	AFS	1964	65 34N	167 55W	273	1	1	1	1	1	7	1	1	1	7	7	1			03						26634
	AFS	1965	65 34N	167 55W	273	1	1	1	1	1	1	1	1	1	7	7	1									26634
	AFS	1966	65 34N	167 55W	273	1	1	1	1	1	1	1	1	7	7	1	7									26634
	AFS	1967	65 34N	167 55W	273	7	7	7	7	1	1	1	1	1	1	1	7									26634
	AFS	1968	65 34N	167 55W	258	6	6	7	1	1	7	7	7	7	7	6	7									26634
	AFS	1969	65 34N	167 55W	258	7	7	7	6	1	1	1	7	7	7	1	1									26634
	AFS	1970	65 34N	167 55W	258	1	1	6	7	7	1	1	1	1	1	1	1									26634
	AFS	1971	65 34N	167 55W	258	1	1	1	1	1	1	1	1	1	1	1	1									26634
	AFS	1972	65 34N	167 55W	258	1	1	1	6	6	6	6	6	6	6	6	6									26634
	AFS	1973	65 34N	167 55W	258	6	6	7	7	6	6	6	7	7	7	7	7									26634
	AFS	1974	65 34N	167 55W	258	7	7	7	7	7	7	7	7	7	7	7	7									26634
	AFS	1975	65 34N	167 55W	258	7	7	7	7	7	7	7	7	7	7	7	7									26634
	AFS	1976	65 34N	167 55W	258	6	6	6	6	6	6	6	6	6	6	6	6									26634
TOKSOOK	SAWR	1966	60 32N	165 07W	15										3	3	3									
	SAWR	1967	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1968	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1969	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1970	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1971	60 32N	165 07W	15	3	3	3	3		3	3	3	3	3	3										
	SAWR	1972	60 32N	165 07W	15									3	3	3										
	SAWR	1973	60 32N	165 07W	15												3									
	SAWR	1974	60 32N	165 07W	15	3																				
TONSINA	SAWR	1975	61 33N	145 13W	1875		6	6	6	6	6	6	6	6	6	6										
	SAWR	1976	61 33N	145 13W	1875				6	6	6	6	6	6	6	6										
TREE POINT	CG	1940	54 48N	130 56W	36		3	3	3	3	4	4	4	4	5	5	5			03						25337
	CG	1941	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5			12						25337
	CG	1942	54 48N	130 56W	36				5	5	5	4	4	4	4	4	4			09						25337
	CG	1943	54 48N	130 56W	36	4	4	4	4	4	4	4	4	5	1	1	1			11						25337
	CG	1944	54 48N	130 56W	36	1	1	1	1	1	1	1	1	1	1	1	1			12						25337
	CG	1945	54 48N	130 56W	36	1	1	1	1	1	1	1	1	1	1	1	1			12						25337
	CG	1946	54 48N	130 56W	36	1	6	6	6	6	6	6	7	7	7	5	4			09						25337
	CG	1947	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			10						25337
	CG	1948	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			12						25337
	CG	1949	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			12						25337
	CG	1950	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			05						25337
	CG	1951	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4									25337
	CG	1952	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4									25337
	CG	1953	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4									25337
	CG	1954	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1955	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1956	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1957	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1958	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1959	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1960	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1961	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1962	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1963	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1964	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1965	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1966	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1967	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1968	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1969	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	CG	1970	54 48N	130 56W	36	5																				25337
TYONEK	A	1940	61 02N	151 11W	50						3	3	3	3	3	3	4									
	A	1941	61 02N	151 11W	50	3	5	4	3	3	3			3	3	3	3			03						
	A	1942	61 02N	151 11W	50	3	3	3	3	3										05						
TYONE LAKE	A	1969	62 31N	146 42W	2371							4	4	4	4		4									
	A	1970	62 31N	146 42W	2371	4	4	4	4	4	4	4	4	4		4	4									
	A	1971	62 31N	146 42W	2371	3	3	3					3	3	3											
TRINITY-UGAS	SAWR	1966	57 26N	157 44W	132							5	5	5												
UGNU	SAWR	1969	70 23N	149 50W	48	6																				
UMIAT	CAA	1946	69 22N	152 08W	337								7	1	1	1	1			05						26508
	WBAS	1947	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	WBAS	1948	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	WBAS	1949	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
UMIAT	WBAS	1950	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	WBAS	1951	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	WBAS	1952	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	CAA	1953	69 22N	152 08W	337	5	5	5	5	5	5									06						26508
UMIAT	SAWR	1956	69 22N	152 08W	337	5	5	6	5	5	6	5	5	5	5	5	1									26508
	SAWR	1957	69 22N	152 08W	337	1	1	1	1	1	1	5														26508
	SAWR	1958	69 22N	152 08W	337										3	5	3									26508
	SAWR	1959	69 22N	152 08W	337	3	4	4	4	4	4	4	4	4	4	4	4									26508
	SAWR	1960	69 22N	152 08W	337	3	3	3	3	3	4	4	4	4	4	4	4									26508
	SAWR	1961	69 22N	152 08W	337	3	3	3	3	3	3	3	3	3	3	3	3									26508
	SAWR	1962	69 22N	152 08W	337	3	3	3		3	3	3	3	3		3	3									26508
	SAWR	1963	69 22N	152 08W	337	3	3									5	5									26508
	SAWR	1964	69 22N	152 08W	337	5	5	5	5	5	5	5	5	5	5	5	5									26508
	SAWR	1965	69 22N	152 08W	337	5	5	5	5	5	5	5	5	5	5	5	5									26508
UMIAT	SAWR	1969	69 22N	152 08W	337						5	5	5	5	5	5	5									26508
	SAWR	1970	69 22N	152 08W	337	5	5	5	5	5	5	5														26508
	SAWR	1971	69 22N	152 08W	337						5				5	5										26508
	SAWR	1975	69 22N	152 08W	337									6	6	6										26508
	SAWR	1976	69 22N	152 03W	337	6	6	6	6	6	6	6	6	6	6	6	6									26508
UMIAT	NS	1945	69 22N	152 08W	337				1	1	1	1	1	1	1	1	1			09						26506
	NS	1946	69 22N	152 08W	337	1	1	1	1	1	1	1								07						26506
UMIAT	AFS	1953	69 22N	152 08W	340							1	1	1	1	1	1			06						26537
	AFS	1954	69 22N	152 08W	340	1	1	1	1	1	1	1	1							08						26537
	AFS	1955	69 22N	152 08W	340		1													01						26537
UMNAK	SAWR	1951	53 23N	167 54W	130	5	5	5	5	6	6	5	5	5	5	5	5									25621
	SAWR	1952	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5										25621
	SAWR	1953	53 23N	167 54W	130		5	5	5	5	5	5	5	5	5	5	5									25621
	SAWR	1954	53 23N	167 54W	130	5	5		5	5	5	5	6	5	6	5	6									25621
	SAWR	1955	53 23N	167 54W	130	6	5	5	5	5	5	5	5	5	5	5	5									25621
	SAWR	1956	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	6	6	5									25621
	SAWR	1957	53 23N	167 54W	130								5	5	5	5	5									25621
	SAWR	1959	53 23N	167 54W	130	5	5	5			4	5	5	6	6	6	6									25621
	SAWR	1960	53 23N	167 54W	130	5	5		5	5	5	5	5	5	5	5										25621
	SAWR	1961	53 23N	167 54W	130	5	5	5	5	5	5	5	5	6	5	5	5									25621
	SAWR	1962	53 23N	167 54W	130	5	5	5	5	5	6	5	5	5	5	5	5									25621
	SAWR	1963	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5	5									25621
	SAWR	1964	53 23N	167 54W	130	5	5		5	5	5	5			5	5	5									25621
	SAWR	1965	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5		5									25621
	SAWR	1966	53 23N	167 54W	130	3	3	3				3	5	5	5	5	5									25621
	SAWR	1967	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5	5·									25621
	SAWR	1968	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5	5									25621
	SAWR	1969	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5										25621
	SAWR	1972	53 23N	167 54W	130				5	5	5	5	5	5												25621
UMNAK ISLAND	AAF	1944	53 32N	167 47W	67							1	1	1	1	1	1			56			08			25610
	AAF	1945	53 32N	167 47W	67	1	1	1	1	1	1	1	1	1						59	55		09			25610
	AAF	1946	53 32N	167 47W	67															58	58					25610
UMNAK ISLAND	SEE CAPE AFB																									25602
UNALAKLEET	A	1930	63 53N	160 48W	30												3									26627
	A	1931	63 53N	160 48W	30		3	3	3	3	3	3	3	3	3	3	3									26627
	A	1932	63 53N	160 48W	30	3	3		3	3	3	3	3	3	3	3	3									26627
	A	1933	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	A	1934	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	A	1935	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	A	1936	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3		3										26627
	A	1937	63 53N	160 48W	30										3		3									26627
	A	1938	63 53N	160 48W	30	3	3	3	3					3	3	3	3									26627
	A	1939	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	A	1940	63 53N	160 48W	30	3	3	5	5	4	3	3	3	5	5	5	3									26627
	A	1941	63 53N	160 48W	20	3	4	4	4	6	5	5	5	5	6	6	6			08						26627
	A	1942	63 53N	160 48W	20	6	6	6	6	6	5	5	5		5	5	5			11						26627
	A	1943	63 53N	160 48W	20	5	5	5	5	5	7	1								06						26627
	CAA	1945	63 53N	160 48W	21											1	1									26627
	CAA	1946	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1947	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1948	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1949	63 53N	160 48W	21	1	1		1	1	1	1	1	1	1	1	1			12						26627
	CAA	1950	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1951	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1952	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1953	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1954	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1955	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1956	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1957	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1958	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	CAA	1959	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	FAA	1960	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	FAA	1961	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	FAA	1962	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	FAA	1963	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	FAA	1964	63 53N	160 48W	21	1	1	1	1	1	1	1	6	6	6	6	6			12						26627
	FAA	1965	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			12						26627
	FAA	1966	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			11						26627
	WBAS	1967	63 53N	160 48W	21	6	6	6	6	6	1	1	1	1	1	1	1			12						26627

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ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
UNALAKLEET	WBAS	1968	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	WBAS	1969	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	WBAS	1970	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	WBAS	1971	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	WBAS	1972	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	WSO	1973	63 53N	160 48W	21	1	5	5	5	5	5	5	5	6	6	6	6			12						26627
	WSO	1974	63 53N	160 48W	21	6	6	6	6	1	1	1	6	6	6	6	6			12			09			26627
	WSO	1975	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			11			12			26627
	WSO	1976	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			12			11			26627
UNALAKLEET	AAF	1943	63 54N	160 47W	22						0	0	1	1	1	1	1			55	54					26608
	AAF	1944	63 54N	160 47W	22	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26608
	AAF	1945	63 54N	160 47W	22	1	1	1	1	1	1	1	1	1	1	1				62	61					26608
UNALGA IS	NF	1943	53 58N	166 10W	711												1	01								25608
	NF	1944	53 58N	166 10W	711	1		1	1	1	1		1	1	1	1	1	02								25608
	NF	1945	53 58N	166 10W	711	1	1	1	1	1	1	1	1	1												25608
UPPER RUSSIA	SAWR	1956	60 21N	150 06W	700						3	5	5	5	5	5	3									
	SAWR	1957	60 21N	150 06W	700	3	5	3	5	3	5	5	5	5	3	5	3									
	SAWR	1958	60 21N	150 06W	700	5	5	3	3	3	3	3	3	3	3	3	3									
	SAWR	1959	60 21N	150 06W	700	3	3	3	3	3	3	3	3	3	3	3	3									
	SAWR	1960	60 21N	150 06W	700	3	3																			
VALDEZ	S	1909	61 07N	146 16W	27														04							26442
	S	1910	61 07N	146 16W	27														12							26442
	S	1911	61 07N	146 16W	27														12							26442
	S	1912	61 07N	146 16W	27														12							26442
	S	1913	61 07N	146 16W	27														12							26442
	S	1914	61 07N	146 16W	27														12							26442
	S	1915	61 07N	146 16W	27														12							26442
	S	1916	61 07N	146 16W	27														12	03						26442
	S	1917	61 07N	146 16W	27														12	12	08					26442
	S	1918	61 07N	146 16W	34														12	12	12					26442
	S	1919	61 07N	146 16W	34														12	12	12					26442
	S	1920	61 07N	146 16W	34														12	12	12					26442
	S	1921	61 07N	146 16W	34														12	12	12					26442
	S	1922	61 07N	146 16W	23														12	12	12					26442
	S	1923	61 07N	146 16W	23														03	03	03					26442
VALDEZ	A	1931	61 07N	146 16W	12								3	3	3	3	3									26442
	A	1932	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1933	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1934	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1935	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1936	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1937	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1938	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1939	61 07N	146 16W	17	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1940	61 07N	146 16W	17	3	3	3	3	3	3	3	3	3	3	3	3									26442
	A	1941	61 07N	146 16W	17	5	5	5	5	5	5	5	5	5	5	5	5	02								26442
	A	1942	61 07N	146 16W	17	5	5	5	5	5	5	5	5	5	5	5	5			12						26442
	A	1943	61 07N	146 16W	16	5	5	5	5				5	5	5	5	5			10						26442
	A	1944	61 07N	146 16W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26442
	A	1945	61 07N	146 16W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26442
	A	1946	61 07N	146 16W	13	5	5	5	5	5	5	5	5	5	5	5	5			04						26442
	A	1947	61 07N	146 16W	13	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1948	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1949	61 07N	146 16W	15	5	5		5	5	5	5	5	5	5	5	5									26442
	A	1950	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1951	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1952	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1953	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1954	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1955	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1956	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1957	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1958	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1959	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1960	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1961	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1962	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1963	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1964	61 07N	146 16W	15	5	5	5	5																	26442
VALDEZ	A	1964	61 08N	146 15W	75					5	5	5	5	5	5	5	5									26442
	A	1965	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1966	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1967	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5	5	5									26442
	A	1968	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5		5									26442
	A	1969	61 08N	146 15W	75	5	5	5	5	5	5	5	5			5										26442
	A	1971	61 08N	146 15W	49		5	5	5	5	5	5	5	5	5	5	5									26442
	A	1972	61 08N	146 15W	49	5	5	5	5	5	5	5	5		6	6	6			03	01					26442
	A	1973	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26442
	A	1974	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	10		09			26442
	A	1975	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	12		12			26442
	A	1976	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	12		12			26442
VENETIE	COOP	1963	67 00N	146 34W	620																07					
	COOP	1964	67 00N	146 34W	620																12					
	COOP	1965	67 00N	146 34W	620																12					
	COOP	1966	67 00N	146 34W	620																07					

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

I = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
WAINWRIGHT	SA	1942	70 37N	160 04W	29										3	3	3	01	02	03						27503
	SA	1943	70 37N	160 04W	29	3	3	3	3	3	3	3	3	3	3	3	3		12	12						27503
	SA	1944	70 37N	160 04W	29	3	3	3	3	3	3	3			3	3	3	03	07	10						27503
	SA	1945	70 37N	160 04W	29	3	3	3	3	4	4	4	5	5	5	5	5	12		12						27503
	SA	1946	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1947	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1948	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1949	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1950	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1951	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1952	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1953	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1954	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1955	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1956	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	SA	1957	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	A	1958	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	03		03						27503
	A	1959	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	A	1960	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	A	1961	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	A	1962	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	A	1963	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5												27503
WALES	A	1939	65 37N	168 03W	30	3	3	3	3	3	3	3	3	3	3	3	3									26618
	A	1940	65 37N	168 03W	30	5	4	3	3	3	3	3	3	3	3	3	3									26618
	A	1941	65 37N	168 03W	30	5	3	3	3	3	3	3	3	3	3	3	3			02						26618
	A	1942	65 37N	168 03W	30	3	3	3	3	3	3	3	3	3	3	3	3			11						26618
	A	1943	65 37N	168 03W	30					3	3	3								02						26618
	CAA	1945	65 37N	168 03W	16													02		02						26618
	WBAS	1946	65 37N	168 03W	16		4	4	5	5	5	5	5	5	5	5	5	10		10						26618
	WBAS	1947	65 37N	168 03W	18	5	5	5	5	7	1	1	1	1	1	1	1	12		12						26618
	WBAS	1948	65 37N	168 03W	18	1	1	1	5	5	5	5	5	5	5	5	5			12						26618
	WBAS	1949	65 37N	168 03W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26618
	WBAS	1950	65 37N	168 03W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26618
	WBAS	1951	65 37N	168 03W	18	5	5	5	6	6	6	6	5	5	5	5	5			12						26618
	SA	1952	65 37N	168 03W	18	5	5	5	5	5	5	5	3	3	3	3	3	10		12						26618
	SA	1953	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	SA	1954	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	SA	1955	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	SA	1956	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	SA	1957	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	SA	1958	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	SA	1959	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	SAWR	1960	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	07		07						26618
	SAWR	1961	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1962	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1963	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1964	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1965	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1966	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1967	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1968	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1969	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1970	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1971	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1972	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1973	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1974	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1975	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	SAWR	1976	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
WALES	AAF	1943	65 37N	168 03W	17							1	1	1	1	1	1			56	54					26609
	AAF	1944	65 37N	168 03W	17	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26609
	AAF	1945	65 37N	168 03W	17	1	1	1	1	1	1	1	1	1	1					62	55					26609
	AAF	1946	65 37N	168 03W	17															52						26609
WEST FORK	COOP	1967	65 28N	148 40W	430																06					
	COOP	1968	65 28N	148 40W	430																12					
	COOP	1969	65 28N	148 40W	430																12					
	COOP	1970	65 28N	148 40W	430																08					
	COOP	1971	65 28N	148 40W	430																12					
	COOP	1972	65 28N	148 40W	430																12					
	COOP	1973	65 28N	148 40W	430																09					
WEST KAVIK	SAWR	1969	70 03N	147 42W											6	6	6									
	SAWR	1970	70 03N	147 42W		6																				
WEST KUPARUK	SAWR	1969	70 20N	149 18W	50				1	1	1	1	1	1												
WHITE MOUNTA	A	1946	64 41N	163 24W	50				5	5	5															26630
WHITTER	A	1974	60 46N	148 41W	156							5	5	5	5	5	5									
	A	1975	60 46N	148 41W	156	5	5	5	5	5	5	5	5	5	5	5	5									
	A	1976	60 46N	148 41W	156	5	5	5	5	5	5	5	5	5	5	5	5									
WIDE BAY	SAWR	1963	57 22N	156 25W	20			5	4	3	3	3	3	3	3					05						
WILD LAKE 2	COOP	1963	67 33N	151 33W	1180																02					
	COOP	1964	67 33N	151 33W	1180																12					
	COOP	1965	67 33N	151 33W	1180																11					
	COOP	1966	67 33N	151 33W	1180																08					
	COOP	1967	67 33N	151 33W	1180																07					

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
WILD LAKE 2	COOP	1968	67 33N	151 33W	1180																06					
	COOP	1969	67 33N	151 33W	1180																06					
	COOP	1970	67 33N	151 33W	1190																04					
	COOP	1971	67 33N	151 33W	1190																04					
	COOP	1972	67 33N	151 33W	1190																04					
	COOP	1975	67 33N	151 33W	1190																02					
	COOP	1976	67 33N	151 33W	1190																02					
WISEMAN	A	1931	67 26N	150 13W	1290		3	3	3	3	3	3	3	3	3	3	3									26511
	A	1932	67 26N	150 13W	1290	3	3	3	3	3	3	3		3	3	3	3									26511
	A	1933	67 26N	150 13W	1290	3	3	3	3	3	3	3	3	3	3	3	3									26511
	A	1934	67 26N	150 13W	1290	3	3	3	3	3	3	3	3	3	3	3	3									26511
	A	1935	67 26N	150 13W	1290	3						3	4	3	3	3	3									26511
	A	1936	67 26N	150 13W	1290	5	3	4	3	3	4	5	5	3	4	4	4									26511
	A	1937	67 26N	150 13W	1290	4	3	3	3	3	3	3	3	5	5	3	3									26511
	A	1938	67 26N	150 13W	1290	5	5	4	5	5	3	5	5	5	5	5	4									26511
	A	1939	67 26N	150 13W	1290	4	5	4	5	5	5	5	5	4	5	5	5									26511
	A	1940	67 26N	150 13W	1290	4	5	5	5	5	5	5	5	5	5	5	5									26511
	A	1941	67 26N	150 13W	1290	5	6	6	6	6	6	6	6	6	6	6	6	07	07	01						26511
	A	1942	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	10	11						26511
	A	1943	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26511
	A	1944	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	11	12						26511
	A	1945	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	08	12						26511
	A	1946	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	A	1947	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	A	1948	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	A	1949	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	A	1950	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	05		05						26511
	A	1951	67 26N	150 13W	1290	5	5	5	5	5	5	5	5	5	5	5	5									26511
	A	1952	67 26N	150 13W	1290	5	5	5	5	5	5	5	5													26511
WOSNESSENSKI	A	1939	55 13N	161 21W	25										3	3	3	01	01	01						
	A	1940	55 13N	161 21W	25	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						
	A	1941	55 13N	161 21W	25	3	3	3	3	3	3	3	3	3				09	09	09						
WRANGELL	A	1930	56 28N	132 23W	18								3	3	3	3	3									25338
	A	1931	56 28N	132 23W	18	3	3	3	3	3	3	3	3	3	3											25338
	A	1932	56 28N	132 23W	18				3	3	3	3	3	3	3											25338
	A	1933	56 28N	132 23W	18				3	3	3	3	3	3	3											25338
	A	1934	56 28N	132 23W	18				3	3	3	3	3	3	3		3									25338
	A	1935	56 28N	132 23W	18				3	3	3	3	3	3	3	3	3									25338
	A	1936	56 28N	132 23W	18	3	3		3	3	3	3	3	3	3	3	3									25338
	A	1937	56 28N	132 23W	18	3	3	3	3	3	3	3	3	3	3	3	3									25338
	A	1938	56 28N	132 23W	18	3	3	4	4	3	3	3	4	5	5	5	5									25338
	A	1939	56 28N	132 23W	18	5	5	3	4	4	5	5	4	4	5	4	5									25338
	A	1940	56 28N	132 23W	18	5	5	5	4	4	4	4	4	4	4	4	5									25338
	A	1941	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			11						25338
	A	1942	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			12						25338
	A	1943	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			12						25338
	A	1944	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			12						25338
	A	1945	56 28N	132 23W	43	5	5	5	5	5	6	5	5	5	5	5	5			04						25338
	A	1946	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1947	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1948	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1949	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1950	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1951	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1952	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1953	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1954	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1955	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1956	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1957	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1958	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1959	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1960	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1961	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1962	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1963	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1964	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5										25338
	A	1965	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1966	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1967	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1968	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1969	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1970	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1971	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1972	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1973	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1974	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1975	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	A	1976	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
YAKATAGA	CAA	1943	60 05N	142 30W	33			7	7	1	1	1	1	1	1	1	1	10	04	10						26445
	CAA	1944	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26445
	CAA	1945	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26445
	CAA	1946	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1947	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1948	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1949	60 05N	142 30W	33	1	1	1		1	1		1	1	1	1	1			10						26445
	CAA	1950	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1951	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445

RECORDS INDEX ALPHABETIC BY STATION NAME

ALASKA

NAME	TYPE	YEAR	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
						HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY												NUMBER OF MONTHS IN YEAR WITH								
YAKATAGA	CAA	1952	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1953	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1954	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1955	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1956	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1957	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1958	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	CAA	1959	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	FAA	1960	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	FAA	1961	60 05N	142 30W	33	1	1	1	1	1	1		1	1	1	1	1			11						26445
	FAA	1962	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	FAA	1963	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	FAA	1964	60 05N	142 30W	33	1	1	1	1	1	1	1	1	6	6	6	6			12						26445
	FAA	1965	60 05N	142 30W	33	6	6	6	6	6	6	6	6	6	6	6	6			12						26445
	FAA	1966	60 05N	142 30W	33	6	6	6	6	6	6	6	6	6	6	6	6			11						26445
	FAA	1967	60 05N	142 30W	33	6	6	6	6	6	6	6	6	6	6	6	6			11						26445
	A	1968	60 05N	142 30W	33	6	6	6	6	6	6	4	4	4	4	4	4			05						26445
	A	1969	60 05N	142 30W	33	4	4	4	4	4	4	4	4	4	4											26445
	A	1970	60 05N	142 30W	33	4	4	4	4	4	4	4	4	4	4	4	4									26445
	A	1971	60 05N	142 30W	33	4	4	4	4	4	4	4	4	4	4	4	4									26445
	A	1972	60 05N	142 30W	33	4		3	4	4	4	4	4	4	4	4	4									26445
	A	1973	60 05N	142 30W	33			3	3	3	4	4	4	4	4	4	4									26445
	A	1974	60 05N	142 30W	33			4	4	4	4	4	4	4	4											26445
	A	1975	60 05N	142 30W	33		5	5	5	5	5	5	5	5	5	5	5			11						26445
	A	1976	60 05N	142 30W	33	5	5	5	5	5	5	5	5	5	5		5			11						26445
YAKUTAT	CAA	1936	59 32N	139 44W	90								3	3												25339
	CAA	1938	59 32N	139 44W	90					3	3	3	3	3												25339
	CAA	1939	59 32N	139 44W	90					3	3	3	3	3												25339
	CAA	1940	59 32N	139 44W	90						6	7	6	5	5	5	5	01	01	01						25339
	CAA	1941	59 32N	139 44W	90	6	6	6	6									09	06	09						25339
YAKUTAT	AAF	1941	59 31N	139 40W	45										1	1	1	03		03						25339
	AAF	1942	59 31N	139 40W	45													12	10	12						25339
	AAF	1943	59 31N	139 40W	45													01	04	06						25339
YAKUTAT	WBAS	1948	59 31N	139 40W	31								1	1	1	1	1		05	05	05					25339
	WBAS	1949	59 31N	139 40W	31	1	1	1	1	1	1	1	1	0	0	0	0			12	12					25339
	WBAS	1950	59 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
	WBAS	1951	59 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
	WBAS	1952	59 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
	WBAS	1953	59 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
	WBAS	1954	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
	WBAS	1955	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
	WBAS	1956	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	10					25339
	WBAS	1957	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
	WBAS	1958	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
	WBAS	1959	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	10					25339
	WBAS	1960	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1961	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1962	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1963	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1964	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			07			25339
	WBAS	1965	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25339
	WBAS	1966	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25339
	WBAS	1967	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			04			25339
	WBAS	1968	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1969	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1970	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1971	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WBAS	1972	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WSO	1973	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
	WSO	1974	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			02			25339
	WSO	1975	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25339
	WSO	1976	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			11			11			25339
YAKUTAT	AAF	1941	59 31N	139 40W	31					1	1	1	0	0	1	1	1			55	54					25302
	AAF	1942	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	58					25302
	AAF	1943	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62		07			25302
	AAF	1944	59 31N	139 40W	31	1		1	1	1	1	1	1	1	1	1	1			62	62		12			25302
	AAF	1945	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25302
	AAF	1946	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25302
	AAF	1947	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25302
	AAF	1948	59 31N	139 40W	31	1	1	1	1	1	1	1								57	57					25302

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1898	SITKA	SPL	57 03N	135 20W	63														07	05	07					25334
1899	EAGLE	WBO	64 46N	141 12W	821														05	05		12				26422
	SITKA	SPL	57 03N	135 20W	63														02	03	02					25334
1900	EAGLE	WBO	64 46N	141 12W	821														12	12		12				26422
1901	EAGLE	WBO	64 46N	141 12W	821														12	09		12				26422
1908	NOME	SPL	64 30N	165 24W	22														12							26617
	SITKA	SPL	57 03N	135 20W	63														06							25334
1909	EAGLE	WBO	64 46N	141 12W	834														05							26422
	NOME	SPL	64 30N	165 24W	22														12							26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	TANANA	S	65 10N	152 06W	220														04							26529
	VALDEZ	S	61 07N	146 16W	27														04							26442
1910	EAGLE	WBO	64 46N	141 12W	834														12							26422
	NOME	SPL	64 30N	165 24W	22														12							26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	TANANA	S	65 10N	152 06W	220														12							26529
	VALDEZ	S	61 07N	146 16W	27														12							26442
1911	EAGLE	WBO	64 46N	141 12W	834														12							26422
	NOME	SPL	64 30N	165 24W	22														12							26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	ST PAUL IS	SPL	57 07N	170 16W	20														04							25713
	TANANA	S	65 10N	152 06W	220														12							26529
	VALDEZ	S	61 07N	146 16W	27														12							26442
1912	EAGLE	WBO	64 46N	141 12W	834														12							26422
	NOME	SPL	64 30N	165 24W	22														12			06				26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	ST PAUL IS	SPL	57 07N	170 16W	20														08							25713
	TANANA	S	65 10N	152 06W	220														12							26529
	VALDEZ	S	61 07N	146 16W	27														12							26442
1913	EAGLE	WBO	64 46N	141 12W	834														12							26422
	NOME	SPL	64 30N	165 24W	22														12			12				26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	TANANA	S	65 10N	152 06W	220														12							26529
	VALDEZ	S	61 07N	146 16W	27														12							26442
1914	EAGLE	WBO	64 46N	141 12W	834														12							26422
	NOME	SPL	64 30N	165 24W	22														12			12				26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	TANANA	S	65 10N	152 06W	220														12							26529
	VALDEZ	S	61 07N	146 16W	27														12							26442
1915	DUTCH HARBOR	NF	53 53N	166 32W	47														08	01						25616
	EAGLE	WBO	64 46N	141 12W	834														12							26422
	KODIAK	NF	57 46N	152 22W	12														03							25509
	NOME	SPL	64 30N	165 24W	22														12			12				26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	ST PAUL IS	S	57 07N	170 16W	20														05							25713
	TANANA	S	65 10N	152 06W	220														12							26529
	VALDEZ	S	61 07N	146 16W	27														12							26442
1916	ANCHORAGE	COOP	61 14N	149 52W	40																	12				
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	WBO	64 46N	141 12W	834														12							26422
	KODIAK	NF	57 46N	152 22W	12														12							25509
	NOME	S	64 29N	165 24W	10														06			06				26617
	NOME	SPL	64 30N	165 24W	22														06			06				26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	ST PAUL IS	S	57 07N	170 16W	20														10							25713
	TANANA	S	65 10N	152 06W	220														12	01						26529
	VALDEZ	S	61 07N	146 16W	27														12	03						26442
1917	ANCHORAGE	COOP	61 14N	149 52W	40																	12				
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	WBO	64 46N	141 12W	834														12	05						26422
	JUNEAU	WBO	58 18N	134 24W	80														12	12	11	11				25324
	KODIAK	NF	57 46N	152 22W	12														12	08						25509
	NOME	S	64 29N	165 24W	10														12	06		12				26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	ST PAUL IS	S	57 07N	170 16W	20														12							25713
	TANANA	S	65 10N	152 06W	220														12	12						26529
	VALDEZ	S	61 07N	146 16W	27														12	12	08					26442
1918	ANCHORAGE	COOP	61 14N	149 52W	40																	12				
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	WBO	64 46N	141 12W	834														12	12						26422
	JUNEAU	WBO	58 18N	134 24W	80														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	11						25509
	NOME	S	64 29N	165 24W	10														12	12		12				26617
	SITKA	SPL	57 03N	135 20W	63														12							25334
	ST PAUL IS	S	57 07N	170 16W	20														12	06						25713
	TANANA	S	65 10N	152 06W	220														12	12						26529
	VALDEZ	S	61 07N	146 16W	34														12	12	12					26442

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1919	AKIAK	COOP	60 52N	161 23W	21														01	02						
	ANCHORAGE	COOP	61 14N	149 52W	40																	12				
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	JUNEAU	WBO	58 18N	134 24W	80														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	08						25509
	NOME	S	64 29N	165 24W	10														12	12	06	12				26617
	SITKA	SPL	57 03N	135 20W	63														12	08						25334
	ST PAUL IS	S	57 07N	170 16W	20														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	06					26529
	VALDEZ	S	61 07N	146 16W	34														12	12	12					26442
1920	AKIAK	COOP	60 52N	161 23W	21														09	09						
	ANCHORAGE	COOP	61 14N	149 52W	40																	12				
	BARROW	WBO	71 18N	156 46W	25														03	03	03					27502
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	JUNEAU	WBO	58 18N	134 24W	80														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	NOME	S	64 29N	165 24W	10														12	12	12	12				26617
	NOORVIK	COOP	66 50N	161 00W	68															04						
	SITKA	SPL	57 03N	135 20W	63														12	12						25334
	ST PAUL IS	S	57 07N	170 16W	60														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	07					26529
	VALDEZ	S	61 07N	146 16W	34														12	12	12					26442
1921	AKIAK	COOP	60 52N	161 23W	21														12	12						
	ANCHORAGE	COOP	61 14N	149 52W	40																	12				
	BARROW	WBO	71 18N	156 46W	25														12	12	12					27502
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	JUNEAU	WBO	58 18N	134 24W	80														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	11						25509
	NOME	S	64 29N	165 24W	10														12	12	03	12				26617
	NOORVIK	COOP	66 50N	161 00W	68															12						
	SITKA	SPL	57 03N	135 20W	63														12	12						25334
	ST PAUL IS	S	57 07N	170 16W	60														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	05					26529
	VALDEZ	S	61 07N	146 16W	34														12	12	12					26442
1922	AKIAK	COOP	60 52N	161 23W	21														07	07						
	ANCHORAGE	COOP	61 15N	149 51W	40														01			12				
	BARROW	WBO	71 18N	156 46W	25														12	12	12					27502
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	JUNEAU	WBO	58 18N	134 25W	203														08	08	08	08				25324
	JUNEAU	WBO	58 18N	134 24W	80														04	04	04	04				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	MCKINLEY PRK	COOP	63 44N	148 55W	1730														01							26429
	NOME	S	64 29N	165 24W	10														12	12	12	12				26617
	NOORVIK	COOP	66 50N	161 00W	68															12						
	SITKA	SPL	57 03N	135 20W	63														12	12						25334
	ST PAUL IS	S	57 07N	170 16W	60														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	12					26529
	VALDEZ	S	61 07N	146 16W	23														12	12	12					26442
1923	AKIAK	COOP	60 52N	161 23W	35														09	08						
	ANCHORAGE	S	61 13N	149 52W	118														10	10	10	10				
	ANCHORAGE	COOP	61 15N	149 51W	40														02			02				
	BARROW	WBO	71 18N	156 46W	25														12	12	12					27502
	BETHEL	WBO	60 48N	161 45W	38														04	04						26615
	CORDOVA	S	60 32N	145 42W	44														10	10		10				26410
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	FAIRBANKS	SPL	64 50N	147 43W	500														12							26411
	JUNEAU	WBO	58 18N	134 25W	203														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	MCKINLEY PRK	COOP	63 44N	148 55W	1730														12							26429
	NOME	S	64 29N	165 24W	10														12	12	12	12				26617
	NOORVIK	COOP	66 50N	161 00W	68															12						
	SITKA	SPL	57 03N	135 20W	63														12	12						25334
	ST PAUL IS	S	57 07N	170 16W	60														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	12					26529
	VALDEZ	S	61 07N	146 16W	23														03	03	03					26442
1924	ANCHORAGE	S	61 13N	149 52W	118														12	12	12	12				
	BARROW	WBO	71 18N	156 46W	25														12	12	04	05				27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CORDOVA	S	60 32N	145 42W	44														12	12		12				26410
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	FAIRBANKS	SPL	64 50N	147 43W	500														12							26411
	FORT YUKON	A	66 35N	145 18W	410														12	12						26413
	JUNEAU	WBO	58 18N	134 25W	203														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	MCKINLEY PRK	COOP	63 44N	148 55W	1730														07							26429
	NOME	S	64 29N	165 24W	12														12	12	12	12				26617
	NOORVIK	COOP	66 50N	161 00W	68															12						
	SITKA	SPL	57 03N	135 20W	63														12	12						25334
	ST PAUL IS	SA	57 07N	170 16W	46														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	12					26529

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1925	ANCHORAGE	COOP	61 13N	149 52W	118														05	05	05	12				
	BARROW	WBO	71 18N	156 46W	25														12	12	08					27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CORDOVA	S	60 32N	145 42W	44														12	12		12				26410
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	FAIRBANKS	SPL	64 50N	147 43W	500														12							26411
	FORT YUKON	A	66 35N	145 18W	410														12	12						26413
	JUNEAU	WBO	58 18N	134 25W	203														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	NOME	S	64 29N	165 24W	10														12	12	12	12				26617
	NOORVIK	COOP	66 50N	161 00W	68															12						
	SITKA	SPL	57 03N	135 20W	63														12	12						25334
	ST PAUL IS	SA	57 07N	170 16W	46														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	12					26529
1926	BARROW	WBO	71 18N	156 46W	25														12	12	05	07				27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CORDOVA	S	60 32N	145 42W	44														12	12		12				26410
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	FAIRBANKS	SPL	64 50N	147 43W	500														12							26411
	FORT YUKON	A	66 35N	145 18W	410														12	12						26413
	JUNEAU	WBO	58 18N	134 25W	203														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	NOME	S	64 29N	165 24W	12														12	12	12	12				26617
	SITKA	SPL	57 03N	135 20W	63														07	06						25334
	ST PAUL IS	SA	57 07N	170 16W	46														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	12					26529
1927	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CORDOVA	S	60 32N	145 42W	44														12	12		12				26410
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	FAIRBANKS	SPL	64 50N	147 43W	500														02							26411
	FORT YUKON	A	66 35N	145 18W	410														12	12						26413
	JUNEAU	WBO	58 18N	134 25W	203														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	NOME	S	64 29N	165 24W	12														12	12	12	12				26617
	ST PAUL IS	SA	57 07N	170 16W	46														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	12					26528
1928	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CORDOVA	S	60 32N	145 42W	44														12	12		12				26410
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	FORT YUKON	A	66 35N	145 18W	410														12	12						26413
	JUNEAU	WBO	58 18N	134 25W	203														12	12	12	12				25324
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	NOME	S	64 29N	165 21W	33														06	06	06	06				26617
	NOME	S	64 29N	165 24W	12														06	06	06	06				26617
	ST PAUL IS	SA	57 07N	170 16W	92														12	12						25713
	TANANA	S	65 10N	152 06W	220														12	12	12					26529
1929	ANCHORAGE	WBO	61 13N	149 52W	118														06			12				
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CORDOVA	S	60 32N	145 42W	44														05	05		05				26410
	CORDOVA	S	60 31N	145 36W	25														07	07		07				26410
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	834														12	12						26422
	FAIRBANKS	WBO	64 50N	147 43W	454														03	04		04		03		26411
	FORT YUKON	A	66 35N	145 18W	410														12	12						26413
	JUNEAU	WBO	58 18N	134 25W	203														12	12	12	12				25324
	KETCHIKAN	SA	55 20N	131 39W	16														03	03						25325
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	NOME	S	64 29N	165 21W	33														12	08	12	07				26617
	ST PAUL IS	SA	57 07N	170 16W	92														12	12						25713
	TANANA	SA	65 10N	152 06W	220														12	12	12					26529
1930	ANCHORAGE	WBO	61 13N	149 52W	118														12			12				
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CORDOVA	S	60 31N	145 36W	25														12	12		12				26410
	CRAIG	A	55 29N	133 09W	13									3	3	3	3									25317
	CROOKED CREK	A	61 52N	158 15W	150			3	3		3	3	3	3	3	3	3									26518
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	837									3	3	3	3		12	12						26422
	FAIRBANKS	WBO	64 50N	147 43W	454							5	5	5	5	5	5		12	12		12		12		26411
	FORT YUKON	A	66 35N	145 18W	410									3	3	3	3		12	12						26413
	GOLOVIN	A	64 33N	163 01W	20		3	3	3	3	3	3	3	3	3	3	3									26628
	HAINES	A	59 14N	135 27W	15							3	3	3	3	3	3									25323
	HOT SPRINGS	A	64 59N	150 40W	275										3	3										
	JUNEAU	WBO	58 18N	134 25W	203												3		12	12	12	12				25324
	KETCHIKAN	SA	55 20N	131 39W	16								3	3	3	3			11	11						25325
	KETCHIKAN	SA	55 21N	131 39W	16												3		01	01						25325
	KODIAK	NF	57 46N	152 22W	12														12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11									3	3	3	3									26616
	NENANA	A	64 33N	149 05W	353								3	3	3	3	3									26435

RECORDS INDEX ARRANGED BY YEAR

ALASKA

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
						HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY												NUMBER OF MONTHS IN YEAR WITH								
1930	NOME	WBO	64 29N	165 24W	12														05	05	05	05				26617
	NOME	S	64 29N	165 21W	33														07	07	07	06				26617
	SAVOONGA	A	63 41N	170 26W	35											3	3									
	SITKA	A	57 03N	135 20W	65								3	3	3	3	3									25333
	ST PAUL IS	SA	57 07N	170 16W	19														12	12						25713
	TANANA	SA	65 10N	152 06W	220									4	4	4	4		12	12	12					26529
	UNALAKLEET	A	63 53N	160 48W	30												3									26627
	WRANGELL	A	56 28N	132 23W	18								3	3	3	3	3									25338
1931	ANCHORAGE	WBO	61 13N	149 52W	118														12			12				
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38														12	12						26615
	CIRCLE	A	65 48N	144 04W	700					3	3	3	3	3	3	3	3									26446
	CORDOVA	S	60 31N	145 36W	25		3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	CRAIG	A	55 29N	133 09W	13	3	3		3	3	3	3	3	3												25317
	CROOKED CREK	A	61 52N	158 15W	150	3	3	3	3	3	3	3	3	3	3	3	3									26518
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26422
	FAIRBANKS	WBO	64 50N	147 43W	454	4	4	4	4	5	5	5	5	5	5	5	5		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303								3	3	3	3	3									26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26413
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	HAINES	A	59 14N	135 27W	15	3	3	3	3	3	3	3	3	3	3											25323
	HOT SPRINGS	A	64 59N	150 40W	275											3	3									
	ILIAMNA	FAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	JUNEAU	WBO	58 18N	134 25W	203														01	01	01	01				25324
	JUNEAU	WBO	58 18N	134 24W	132		3	3	3	3	3	3	3	3	3				11	11	11	11				25324
	KALTAG	A	64 20N	158 45W	93						3	3	3	3	3	3	3									
	KANAKANAK	A	59 01N	158 31W	85									3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	KODIAK	NF	57 46N	152 22W	12														02	02						25509
	KODIAK	SA	57 48N	152 24W	152														10	10		06				25509
	KOTZEBUE	SA	66 52N	162 38W	11	3	3	3	3	3	3	3	3	3	3	3	3									26616
	LIVENGOOD	A	65 35N	148 29W	550		5	3	3	3	3	3	3	3	3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333		3	3	3	3	3	3	3	3	3	3	3									26510
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12														12	12	12	12				26617
	NULATO	A	64 43N	158 04W	128		3	3	3	3		3	3	3	3	3	3									
	RUBY	A	64 44N	155 26W	175			3	3	3	3	3	3	3	3	3	3									
	SAVOONGA	A	63 41N	170 26W	35	3	3	3	3	3	3	3	3	3	3	3	3									
	SEWARD	A	60 07N	149 27W	66	3	3	3	3	3	3	3	3	3	3	3	3									26438
	SITKA	A	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	SKAGWAY	A	59 27N	135 19W	11							3	3	3	3											25335
	SOLOMON	A	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	SQUAW HARBOR	A	55 15N	160 33W	200		3	3	3	3	3	3	3	3	3	3	3									
	ST PAUL IS	SA	57 07N	170 16W	19														12	12						25713
	TACOTNA	A	63 00N	156 04W	1410												3									
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12					26529
	UNALAKLEET	A	63 53N	160 48W	30		3	3	3	3	3	3	3	3	3	3	3									26627
	VALDEZ	A	61 07N	146 16W	12								3	3	3	3	3									26442
	WISEMAN	A	67 26N	150 13W	1290		3	3	3	3	3	3	3	3	3	3	3									26511
	WRANGELL	A	56 28N	132 23W	18	3	3	3	3	3	3	3	3	3	3											25338
1932	ANCHORAGE	WBO	61 13N	149 52W	118														12			12				
	BARROW	WBO	71 18N	156 46W	25														11	11	11	12				27502
	BETHEL	WBO	60 48N	161 45W	38												3		12	12						26615
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CORDOVA	S	60 31N	145 36W	25	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	CRAIG	A	55 29N	133 09W	13				3	3	3	3	3	3	3											25317
	CROOKED CREK	A	61 52N	158 15W	150	3	3	3	3	3	3	3	3	3	3	3	3									26518
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26422
	FAIRBANKS	WBO	64 50N	147 43W	454	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26413
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	HAINES	A	59 14N	135 27W	15				3	3	3	3	3	3												25323
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3																		
	JUNEAU	WBO	58 18N	134 24W	132				3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	KALTAG	A	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	KODIAK	SA	57 48N	152 24W	152														12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11	3	3	3																		26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12														12	12	12	12				26617
	NULATO	A	64 43N	158 04W	128	3	3	3	3	3		3	3	3	3											
	PETERSBURG	A	56 49N	132 57W	50	3			3	3	3		3	3	3											25328
	RUBY	A	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3		3									
	SAVOONGA	A	63 41N	170 26W	35	3	3	3	3	3	3	3	3	3	3											
	SEWARD	A	60 07N	149 27W	66	3	3	3	3	3	3	3	3	3	3	3	3									26438
	SITKA	A	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3											25333
	SKAGWAY	A	59 27N	135 19W	11				3	3	3	3	3	3	3											25335
	SOLOMON	A.	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	SQUAW HARBOR	A	55 15N	160 33W	200	3	3	3	3	3	3	3	3	3	3	3	3									
	ST PAUL IS	SA	57 07N	170 16W	19														12	12						25713
	TACOTNA	A	63 00N	156 04W	1410	3	3	3	3	3					3	3	3									
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12					26529
	UNALAKLEET	A	63 53N	160 48W	30	3	3		3	3	3	3	3	3	3	3	3									26627
	VALDEZ	A	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1932	WISEMAN	A	67 26N	150 13W	1290	3	3	3	3	3	3	3		3	3	3	3									26511
	WRANGELL	A	56 28N	132 23W	18				3	3	3	3	3	3	3											25338
1933	ANCHORAGE	WBO	61 13N	149 52W	118														12			12				
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3			3		12	12						26615
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CORDOVA	S	60 31N	145 36W	25	3	3	3	3	3									05	05		05				26410
	CORDOVA	S	60 32N	145 42W	70						3	3	3	3	3	3	3		07	07		07				26410
	CRAIG	A	55 29N	133 08W	13				3	3	3	3		3	3											25317
	CROOKED CREK	A	61 52N	158 15W	150	3	3	3	3	3	3	3	3	3	3	3	3									26518
	DUTCH HARBOR	NS	53 53N	166 32W	26						1	1	1	1	1	1	1									25611
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26422
	FAIRBANKS	WBO	64 50N	147 43W	484	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3		3									26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26413
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	HAINES	A	59 14N	135 27W	15				3	3	3	3														25323
	HOT SPRINGS	A	64 59N	150 40W	275		3	3	3	3	3	3	3	3	3	3	3									
	JUNEAU	WBO	58 18N	134 24W	132		3	3	3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	KALTAG	A	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	KODIAK	SA	57 48N	152 24W	152														12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11										3	3	3									26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	NENANA	A	64 33N	149 05W	353	3	3	3	3		3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12														12	12	12	12				26617
	PETERSBURG	A	56 48N	132 57W	50	3			3	3	3															25329
	RUBY	A	64 44N	155 26W	175	3	3																			
	SAVOONGA	A	63 41N	170 26W	35						3															
	SEWARD	A	60 07N	149 27W	66	3	3	3	3	3	3	3	3													26438
	SITKA	A	57 03N	135 20W	31				3	3	3	3	3	3	3											25333
	SKAGWAY	A	59 27N	135 19W	11				3	3	3	3	3	3	3											25335
	SOLOMON	A	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	ST PAUL IS	NS	57 07N	170 16W	19						1	1	1	1	1	1	1									25712
	ST PAUL IS	SA	57 07N	170 16W	19														12	12						25713
	TACOTNA	A	63 00N	156 04W	1410	3		3	3	3	3	3	3	3	3											
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3		11	11	11					26529
	UNALAKLEET	A	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	VALDEZ	A	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WISEMAN	A	67 26N	150 13W	1290	3	3	3	3	3	3	3	3	3	3	3	3									26511
	WRANGELL	A	56 28N	132 23W	18				3	3	3	3	3	3	3											25338
1934	ANCHORAGE	WBO	61 13N	149 52W	118														12			12				
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38	3	3	3											12	12						26615
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3		3	3	3	3	3									26446
	CORDOVA	S	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	CRAIG	A	55 29N	133 09W	13				3	3	3	3		3	3											25317
	CROOKED CREK	A	61 52N	158 15W	150	3	3	3	3	3			3	3	3	3	3									26518
	DUTCH HARBOR	NF	53 53N	166 32W	47														12	12						25616
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1																25611
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3								01							26422
	FAIRBANKS	WBO	64 50N	147 43W	484	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3												26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3		01	01						26413
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	JUNEAU	WBO	58 18N	134 24W	132				3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	KALTAG	A	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	KANAGA BAY	NS	51 43N	177 15W	50					1	1	1														25711
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25325
	KODIAK	SA	57 48N	152 24W	152														12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11	3			3	3	3			3	3	3	3									26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12														12	12	12	12				26617
	SAVOONGA	A	63 41N	170 26W	35				3	3	3															
	SITKA	A	57 03N	135 20W	31				3	3	3	3	3	3	3	3										25333
	SKAGWAY	A	59 27N	135 19W	11				3		3	3	3	3	3											25335
	SOLOMON	A	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	ST PAUL IS	NS	57 07N	170 16W	19	1	1	1	1	1																25712
	ST PAUL IS	SA	57 07N	170 16W	19														12	12						25713
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	UNALAKLEET	A	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	VALDEZ	A	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WISEMAN	A	67 26N	150 13W	1290	3	3	3	3	3	3	3	3	3	3	3	3									26511
	WRANGELL	A	56 28N	132 23W	18				3	3	3	3	3	3	3		3									25338
1935	ANCHORAGE	WBO	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12				
	ANIAK	COOP	61 35N	159 32W	81								3	3	3	3										26516
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38		3	3	3	3	3	3	3	3	3	3	3		12	12						26615
	BIG DELTA	A	64 08N	145 44W	995										3	3										26415
	CHICKEN	A	64 04N	141 56W	2000										3	3	3									
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3		3	3									26446
	CIRCLE HOT S	A	65 29N	144 36W	935								3	3	3	3	3									26419

RECORDS INDEX ARRANGED BY YEAR

ALASKA

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
						HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY												NUMBER OF MONTHS IN YEAR WITH								
1935	CORDOVA	S	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	CROOKED CREK	A	61 52N	158 15W	150	3	3									3	3									26518
	DUTCH HARBOR	NF	53 53N	166 32W	47							3	3	3	3	3	3		12	12						25616
	EAGLE	A	64 46N	141 12W	837										3	3	3									26422
	FAIRBANKS	WBO	64 50N	147 43W	484	4	4	4	4	4	4	4	4	4	4	4	4		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303									3	3	3	3									26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	GAMBELL	SA	63 51N	171 36W	30								3	3	3	3	3									26703
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	JUNEAU	WBO	58 18N	134 24W	132	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12	12				25324
	KALTAG	A	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12		08				25325
	KODIAK	SA	57 48N	152 24W	152														12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11	3	3	3	3	3	3	3	3	3	3	3	3									26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3				3	3	3	3	3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	NAKNEK	A	58 42N	157 02W	86							3	3	3	3	3	3									
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12						3	3	3	3	3	3	3		12	12	12	12				26617
	NULATO	A	64 43N	158 04W	153											3	3									
	PORTAGE	A	60 51N	148 59W	35											3	3									26437
	RADIOVILLE	A	57 36N	136 09W	15									3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128										3	3	3									
	RICHARDSON	A	64 17N	146 21W	880										3	3	3									
	RUBY	A	64 44N	155 26W	175											3	3									
	SAVOONGA	A	63 41N	170 26W	35							3	3	3	3											
	SEWARD	A	60 07N	149 27W	66											3	3									26438
	SITKA	A	57 03N	135 20W	31				3	3	3	3	3	3	3	3	3									25333
	SKAGWAY	A	59 27N	135 19W	11				3	3	3	3	3	3	3	3	3									25335
	SOLOMON	A	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	ST PAUL IS	SA	57 07N	170 16W	19														12	12						25713
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	UNALAKLEET	A	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	VALDEZ	A	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WISEMAN	A	67 26N	150 13W	1290	3						3	4	3	3	3	3									26511
	WRANGELL	A	56 28N	132 23W	18				3	3	3	3	3	3	3	3	3									25338
1936	ALATNA	A	66 34N	152 44W	600												3									
	ANCHORAGE	WBO	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12				
	ANIAK	COOP	61 35N	159 32W	100	3	3	3	3	3	3	3	3	3	3	3	3									26516
	ATKA	A	52 12N	174 20W	11											3	3		05	04						25715
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26615
	BIG DELTA	A	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	CHICKEN	A	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CIRCLE HOT S	A	65 29N	144 36W	935	3	3	3																		26419
	CORDOVA	S	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	COUNCIL	A	64 53N	163 41W	95					3			3	3	3	3	3									
	CRAIG	A	55 29N	133 09W	13												3									25317
	CROOKED CREK	A	61 52N	158 15W	150	3	3	3	3	3	3	3	3													26518
	DEERING	A	66 04N	162 45W	15											3	3									
	DUTCH HARBOR	NF	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25616
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3													26422
	FAIRBANKS	WBO	64 50N	147 43W	484	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3																	26413
	GAMBELL	SA	63 51N	171 36W	30	3	3	3	3	3	3	3														26703
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	JUNEAU	WBO	58 18N	134 24W	132		3	3	3	3	3	3	3	3	3	5	5		12	12	12	12				25324
	KALTAG	A	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				25325
	KODIAK	SA	57 48N	152 24W	152								3	3	3	3	3		12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11	3	3	3	3	3	3	3	3	3	3	3	3									26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3		3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333	3	3	3	3	3	3	3	3	3	3	3	3									26510
	NAKNEK	A	58 42N	157 02W	86	3	3	3	3	3	3	3	3	3	3	3	3									
	NENANA	A	64 33N	149 05W	353	3	3	3	3			3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12	3	3	3	3	3	3	3	3	3	3	3	3		12	12	12	12				26617
	NULATO	A	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3									
	PETERSBURG	A	56 49N	132 57W	50											3	3									25329
	PORTAGE	A	60 51N	148 59W	35						3	3		3												26437
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	3	3	3	3	3	3	3	3	3	3	3	3									
	RICHARDSON	A	64 17N	146 21W	880	3	3	3	3	3	3	3	3	3	3	5	3									
	RUBY	A	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3	3	3									
	SEWARD	A	60 07N	149 27W	66											3										26438
	SITKA	A	57 03N	135 20W	31			3	3	3	3	3	3	3	3	3	3									25333
	SKAGWAY	A	59 27N	135 19W	11	3		4	3	3	3	3	3	3	3	3	3									25335
	SOLOMON	A	64 35N	164 24W	15	3	3	3	3	3	3	3	3	3	3	3	3									26629
	ST PAUL IS	SA	57 07N	170 16W	19								1	1	1	1	1		12	12						25713
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	UNALAKLEET	A	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3		3										26627
	VALDEZ	A	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WISEMAN	A	67 26N	150 13W	1290	5	3	4	3	3	4	5	5	3	4	4	4									26511
	WRANGELL	A	56 28N	132 23W	18	3	3		3	3	3	3	3	3	3	3	3									25338
	YAKUTAT	CAA	59 32N	139 44W	90								3	3												25339

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1937	ALATNA	A	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	ANCHORAGE	WBO	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12				
	ANIAK	COOP	61 35N	159 32W	100	3	3	3	3	3	3															26516
	ANNEX CREEK	A	58 19N	134 06W	24				3	3	3	3	3	3	3	3	3									25311
	ATKA	A	52 12N	174 20W	11	3	3	3	3	3							3		07	07						25715
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26615
	BIG DELTA	A	64 08N	145 44W	995	3																				26415
	CHICKEN	A	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3			3	3	3									26446
	CORDOVA	S	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	COUNCIL	A	64 53N	163 41W	95								4	4	4	4	4									
	CRAIG	A	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3									25317
	DEERING	A	66 04N	162 45W	15	3	3				3	3	3	3	3	3										
	DUTCH HARBOR	NF	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25616
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	ELIM	A	64 40N	162 06W	30										3	3	3									
	FAIRBANKS	WBO	64 50N	147 43W	484	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303	3	3	3	3	3	3		3	3	3	3	3									26520
	FORT YUKON	A	66 35N	145 18W	410												3									26413
	GOLOVIN	A	64 33N	163 01W	20				3	3	3	3	3	3	3	3	3									26628
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	IGLOO	A	65 09N	165 04W	4			3	3	5	3	3														
	JUNEAU	WBO	58 18N	134 24W	132		3	4	5	6	5	5	5	5	5	5	5		12	12	12	12				25324
	KALTAG	A	64 20N	158 45W	93					3	3			3	3	3	3									
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	16	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				25325
	KODIAK	SA	57 48N	152 24W	152	3						3	3	3		3	3		12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11				3	3	3	3	3	3	3	3	3									26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333	3	3	3	3		3	3	3	3	3	3	3									26510
	NAKNEK	A	58 42N	157 02W	86	3	3	3	3					3	3	3	3									
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12														12	12	12	12				26617
	NULATO	A	64 43N	158 04W	210									3	3	3	3									
	OHOGAMUTE	A	61 38N	161 54W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	PETERSBURG	A	56 49N	132 57W	50	3	3	3	3	3	3	3	3	3	3	3	3									25329
	PILGRIM SPRG	A	65 05N	164 58W	50										3	3	3									
	PORTAGE	A	60 51N	148 59W	35				3	3	3	3	3	3	3											26437
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	3	3	3	3	3	3	3	3	3	3	3	3									
	RICHARDSON	A	64 17N	146 21W	880	5	5	5	5	3	3	3	3	3	3	3	3									
	RUBY	A	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3	3	3		03							
	SEWARD	A	60 07N	149 27W	66	3	3	3	3	3	3	3														26438
	SHISHAREF	SA	66 14N	166 07W	16					3	3	3		3	3	3	3									26625
	SITKA	A	57 03N	135 20W	31	3	3	3	4	4	3	4	4	3	3	3	3									25333
	SKAGWAY	A	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	SOLOMON	A	64 35N	164 24W	15					3	3	3	3	3	3	3	3									26629
	ST PAUL IS	SA	57 07N	170 16W	19	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25713
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3									26529
	TELLER	A	65 16N	166 21W	10							3	3	3	3	3	3									26626
	TIN CITY	A	65 34N	167 55W	269										3	3	3									
	UNALAKLLET	A	63 53N	160 48W	30										3		3									26627
	VALDEZ	A	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WISEMAN	A	67 26N	150 13W	1290	4	3	3	3	3	3	3	3	5	5	3	3									26511
	WRANGELL	A	56 28N	132 23W	18	3	3	3	3	3	3	3	3	3	3	3	3									25338
1938	ALATNA	A	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	ANCHORAGE	WBO	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5		12	12	02	11				
	ANNEX CREEK	A	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3										25311
	ATKA	A	52 12N	174 20W	11	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25715
	BARROW	WBO	71 18N	156 46W	25														12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38	3	3	3	3	3	3	3	3	3	3	3	3		12	12						26615
	BIG DELTA	A	64 08N	145 44W	995		3	3	3	3	3	3	3	3	3	3	3									26415
	BROAD PASS	A	63 22N	149 02W	2127										3	3	3									
	CANDLE	A	65 56N	161 55W	10		3	3	3	3	3	3	3	3	3	3	3									26619
	CAPE SPENCER	CG	58 12N	136 38W	88								3	3		3	3									25316
	CHICKEN	A	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CIRCLE HOT S	A	65 29N	144 36W	935										3	3	3									26419
	COAL CREEK	A	65 16N	143 16W	1050					3	3	3	3	3	3											
	COPPER CTR	A	61 58N	145 19W	1044											3	3									
	CORDOVA	S	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12				26410
	COUNCIL	A	64 53N	163 41W	95	3	3	3	3	3	3	3	3	3	3	3	3									
	CRAIG	A	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3									25317
	CROOKED CREK	A	61 52N	158 15W	150				3	3	3	3	3	3	3	3	3									26518
	DEERING	A	66 04N	162 45W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	DUTCH HARBOR	NF	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25616
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	EGAVIK	A	64 02N	160 55W	15	3	3	3	3	3	3	3	3													
	ELIM	A	64 40N	162 06W	30	3	3	3	3	3	3		3	3	3	3	3									
	FAIRBANKS	WBO	64 50N	147 43W	484	3	3	3	3	3	3	3	3	3	3	3	3		12	12		12		12		26411
	FLAT	A	62 27N	158 00W	303	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	GAMBELL	SA	63 51N	171 36W	30											3	3									26703
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	HAINES	A	59 14N	135 27W	15						3	3	3	3	3	3	3									25323
	HEALY	A	63 51N	148 58W	1350										3	3										26447
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	JUNEAU	WBO	58 18N	134 24W	132		3	3	3	5	5	5	5	5	6	6	6		12	12	12	12				25324
	KALTAG	A	64 20N	158 45W	93	3	3	3	3	3	3	3	3	3	3	3	3									

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1938	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KASILOF	A	60 19N	151 17W	60								3	3	3	3	3									
	KETCHIKAN	SA	55 21N	131 39W	15	3	3	3	3	3	3	3	3	5	5	5	5		12	12		12				25325
	KODIAK	SA	57 48N	152 24W	152	3	3	3	3	3	3	3	3	3	3	3	3		12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11	3	3	3	3	3	3	5	3	3	5	5	5									26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	MCGRATH	A	62 58N	155 37W	333	3	3					3	3	3	3	3	3									26510
	NAKNEK	A	58 42N	157 02W	86	3	3	3	3	3				3	3	3										
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12	5	4	4	4	4	4	4	3	4	3	4	5		12	12	12	12				26617
	NULATO	A	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3									
	OHOGAMUTE	A	61 38N	161 54W	45	3	3	3	3	3	3															
	PETERSBURG	A	56 49N	132 57W	50	3	3	3	3	3	3	3	3	3	3	3	3									25329
	PILGRIM SPRG	A	65 05N	164 58W	50	3	3	3	3	3	3	3	3	3	3	3										
	PILOT POINT	A	57 37N	157 34W	50												3									25514
	PORTAGE	A	60 51N	148 59W	35	3	3	3	3	3	3	3	3	3	3	3										26437
	RADIOVILLE	A	57 36N	136 08W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	3	3	3	3	3	3	3	3	3	5	5	5									
	RICHARDSON	A	64 17N	146 21W	880	3	3	3	3	3	3	3	3	3	3	3	5									
	RUBY	A	64 44N	155 26W	175	3	3	3	3	3	3	3	3	3	3	3	3		12							
	SELAWIK	A	66 34N	160 01W	20											3	3									
	SEWARD	A	60 07N	149 27W	66									3	3	3	3									26438
	SHISHAREF	SA	66 14N	166 07W	16	3	3	3	3	3	3	3	3	3	3	3	3									26625
	SITKA	A	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	SITKA	NS	57 03N	135 21W	98									1	1	1	1									25307
	SKAGWAY	A	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	SOLOMON	A	64 35N	164 24W	15	3	4	5	5	5	5	5	4	5	5	4	4									26629
	ST PAUL IS	SA	57 07N	170 16W	19			3	3	3	3	3	3	3	3	3	3		12	12						25713
	STAMPEDE	SAWR	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	STUYAHOK	A	62 10N	161 50W	1500							3	3	3	3	3	3									
	TANANA	SA	65 10N	152 06W	220	3	3	3	3	3	3	3	3	3	3	3	3			06						26529
	TELLER	A	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	TIN CITY	A	65 34N	167 55W	269	3	3	3	3	3	3	3	3													
	UNALAKLEET	A	63 53N	160 48W	30	3	3	3	3					3	3	3	3									26627
	VALDEZ	A	61 07N	146 16W	12	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WISEMAN	A	67 26N	150 13W	1290	5	5	4	5	5	3	5	5	5	5	5	4									26511
	WRANGELL	A	56 28N	132 23W	18	3	3	4	4	3	3	3	4	5	5	5	5									25338
	YAKUTAT	CAA	59 32N	139 44W	90					3	3	3	3	3												25339
1939	ALATNA	A	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	ANCHORAGE	WBO	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5	07	12	12	12	12				
	ANIAK	COOP	61 35N	159 32W	100											3	5									26516
	ANNEX CREEK	A	58 19N	134 06W	24					3	3	3	3	3	3	3	3									25311
	ATKA	A	52 12N	174 20W	11	3	3	3	3	3	3			3	3	3	3	04	10	10						25715
	BARROW	WBO	71 18N	156 46W	25													05	12	12	12	12				27502
	BETHEL	WBO	60 48N	161 45W	38	3	3	3	4	5	4	4	3	3	3	3	3	05	12	12						26615
	BIG DELTA	A	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	BROAD PASS	A	63 22N	149 02W	2127	3	3	3	3	3	3	3	3	3	3	3	3									
	CANDLE	A	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3									26619
	CAPE DECISIO	CG	56 00N	134 08W	50											3	3									25315
	CAPE HINCHIN	CG	60 14N	146 39W	185			5	5	5	5	5	5	5	5	5	5									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	3	3				3	3	4	3	3	3	3									25316
	CAPE ST ELIA	CG	59 48N	144 36W	58			3	3	3	3	3	3	3	3	3	3									25401
	CHICKEN	A	64 04N	141 56W	2000	3	3	3	3	3	3	3	3	3	3	3	3									
	CHITINA	A	61 32N	144 27W	572						3	3	3	3	3	3	3									
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CIRCLE HOT S	A	65 29N	144 36W	935	3	3	3	3	3	3	3			-											26419
	COAL CREEK	A	65 16N	143 16W	1050					3	3	3	3	3	3											
	COPPER CTR	A	61 58N	145 19W	1044	3	3	3	3	3	3	3	3	3	3	3	3									
	CORDOVA	S	60 32N	145 42W	70	3	3	3	3	3	3	3	3	3	3	3	3	06	12	12		12				26410
	COUNCIL	A	64 53N	163 41W	95	3	3	3	3	3	3	3	3	3	3	3	3									
	CRAIG	A	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3									25317
	CROOKED CREK	A	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518
	DEERING	A	66 04N	162 45W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	DUTCH HARBOR	NS	53 53N	166 32W	26							1	1	1	1	1	1									25611
	DUTCH HARBOR	NF	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3	07	12	12						25616
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	ELDRED ROCK	CG	58 58N	135 13W	54			3	3	3	3	3	3	3	3	3	3									25318
	ELIM	A	64 40N	162 06W	30		3	3	3	3	3															
	FAIRBANKS	WBO	64 50N	147 43W	484	5	5	5	5	5	5	5	5	5	5	5	5		12	12		12		12		26411
	FIVE FINGER	CG	57 16N	133 37W	30				3	3	3	3	3	3	3	3	3									25319
	FLAT	SA	62 27N	158 00W	303	3	3	3	5	5	5	5	5	3	3	4	4			07						26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	GAMBELL	SA	63 51N	171 36W	30											3	3									26703
	GOLOVIN	A	64 33N	163 01W	20	3	3	3	3	3	3	3	3	3	3	3	3									26628
	GOOD PASTER	A	64 20N	144 05W	2500											3	3									
	GRAVINA	A	55 11N	131 49W	40					5	5	5	5	5	5	5	5			01						
	GUSTAVUS	A	58 25N	135 42W	20								3		3	3	3									25322
	HAINES	A	59 14N	135 27W	15	3	3	3	3	3	3	3	3	3	3	3	3									25323
	HEALY	A	63 51N	148 58W	1350	3	3	3	3	3	3	3	3	3	3	3	3									26447
	HOMER	A	59 38N	151 30W	55		3	3	3	3	3	3	3	3	3	3	3									25507
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545										3	3	3									26522
	ILIAMNA	A	59 44N	154 48W	68			3	3	3	3	3	3	5	5	5	5									25506
	INDEPENDENCE	A	61 47N	149 18W	3600												3									
	JUNEAU	WBO	58 18N	134 24W	132	5	6	6	6	6	6	6	6	6	6	6	6	06	12	12	12	12				25324
	KALSKAG	A	61 27N	160 49W	90			3	3	5	5	5	5	5	5	5	5									
	KALTAG	A	64 20N	158 45W	93	3	3	3	3	3	3	3	3	4	4	4	4									
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KANATAK	A	57 34N	156 02W	23				3	3									04							
	KASILOF	A	60 19N	151 17W	60	3	3	3	3						3	3	3									
	KENAI	A	60 34N	151 15W	85			3	3	3						3	3									26523

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1939	KETCHIKAN	SA	55 21N	131 39W	15	3	3	3	3	3	3	3	4	3	3	3	3	06	12	12		12				25325
	KING ISLAND	A	64 56N	168 01W	100											3	3									
	KLUKWAN	A	59 24N	135 54W	91											4	4									
	KODIAK	SA	57 48N	152 24W	152	3	3	3	3	3	3	3	4	3	3	3	3	06	12	12						25509
	KOGGIUNG	A	59 02N	156 20W	50								3	3	3	3	3									
	KOTZEBUE	SA	66 52N	162 38W	11	4	4	5	5	5	3	5	5	3	3	4	5									26616
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3					3	3	3	3									26428
	LUCKY SHOT	A	61 47N	149 25W	3300					3	3	3	3	3	3	3	3									
	MCGRATH	A	62 58N	155 37W	333	3	3	4	4	4	4	4	4	4	4	3	3	10	10	10						26510
	NAKNEK	A	58 42N	157 02W	86		3	3	3	3	3	3	3	3	3	3	3									
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NO GRUB	A	64 50N	145 58W	1300		3	3	3	3	3	3	3	3	3	3										
	NOME	WBO	64 29N	165 24W	12	5	5	5	5	5	5	5	5	6	6	5	5	05	12	12	12	12				26617
	NONDALTON	A	59 58N	154 50W	300			3	3	3																
	NULATO	A	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3	09		09						
	OPHIR	A	63 10N	156 33W	400										3	4	3									
	PAXSON	A	63 03N	145 27W	2697						4	5	4	3	3	3	3									
	PETERSBURG	A	56 49N	132 57W	50	3	3	3	3	3	3	3	3	3	3	3	3									25329
	PIGOT	A	60 47N	148 20W	280								3	3	3	3	3									
	PILGRIM SPRG	A	65 05N	164 58W	50	3	3	3	3	3	3	3	3	3	3	3	3									
	PILOT POINT	A	57 37N	157 34W	50	3	3	3	3	3	3	3	3	3	3	3	3									25514
	PLATINUM	A	59 01N	161 47W	15					3	3	3	3	3	3	3	3									25613
	PORTAGE	A	60 51N	148 59W	35						3	3	3	3	3	3	3									26437
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	5	5	6	5	5	5	5	5	5	5	5	5									
	RICHARDSON	A	64 17N	146 21W	880	5	5	5	3	3	3	3	3	3	5	5	3									
	RUBY	A	64 44N	155 26W	175	3	3	3	3	4	5	5	5	5	5	3	3	10	12	08						
	SELAWIK	A	66 34N	160 01W	20	3	3																			
	SEWARD	A	60 07N	149 27W	66	3	3	3	3	3	3	3	3	3	3	3	3									26438
	SHISHAREF	SA	66 14N	166 07W	16	3	3	3	3	3	3	4	4	3	3	3	4									26625
	SITKA	A	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	SITKA	NS	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	SKAGWAY	A	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	SKWENTNA	A	61 57N	151 10W	228					3	3	3	3	3	3	4	5									26514
	SOLOMON	A	64 35N	164 24W	15	5	5	5	5	5	5	5	5	6	5	5	5									26629
	ST PAUL IS	SA	57 07N	170 16W	19	3	3	3	3	3	3	3	3	3	3	3	3	06	12	12						25713
	STAMPEDE	SAWR	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	STUYAHOK	A	62 10N	161 50W	1500	3	3	3	3	3	3	3	5	5	5	5	4									
	TANALIAN PT	A	60 13N	154 22W	308					3	3	3	3	3	3	3	3									26531
	TANANA	SA	65 10N	152 06W	234	3	3	3	3	3	3	3	3	3	3	3	3		10	11						26529
	TELLER	A	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	UNALAKLEET	A	63 53N	160 48W	30	3	3	3	3	3	3	3	3	3	3	3	3									26627
	VALDEZ	A	61 07N	146 16W	17	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WALES	A	65 37N	168 03W	30	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WISEMAN	A	67 26N	150 13W	1290	4	5	4	5	5	5	5	5	4	5	5	5									26511
	WOSNESSENSKI	A	55 13N	161 21W	25										3	3	3	01	01	01						
	WRANGELL	A	56 28N	132 23W	18	5	5	3	4	4	5	5	4	4	5	4	5									25338
	YAKUTAT	CAA	59 32N	139 44W	90					3	3	3	3	3												25339
1940	ALATNA	A	66 34N	152 44W	600	3	3	3	3	3	3	3	3	3	3	3	3									
	ANCHORAGE	WBO	61 13N	149 52W	118	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12	12	04				
	ANIAK	SA	61 35N	159 32W	100	4	3	3	3	3	3	3	3	3	3	3	3									26516
	ANNEX CREEK	A	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3	3									25311
	ATKA	A	52 10N	174 12W	36	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25715
	BARROW	WBO	71 18N	156 46W	25									3	3		3	12	12	12	12	12				27502
	BEAVER FALLS	A	55 23N	131 28W	35					3	3	3	3	3	3	3	3									25313
	BETHEL	WBO	60 48N	161 45W	22	3	3	3	3	3	3	3	3	3	3	6	6	12	12	10						26615
	BIG DELTA	A	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	BROAD PASS	A	63 22N	149 02W	2127	3	3	3	3	3	3	3	3	3	3	3	3									
	CANDLE	A	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3									26619
	CANYON CREEK	A	64 10N	141 08W	3500					3	3	3	3	3	3	3	3									
	CAPE DECISIO	CG	56 00N	134 08W	50	3	3	3	3	3	3	3		3	3	5	5	02	02							25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	3	3	3	3	3	3	3	3	3	3	3	3									26417
	CAPE SARICHE	CG	54 36N	164 56W	175		3	3	3	3	3	3	3	3	3	3	3									25622
	CAPE SPENCER	CG	58 12N	136 38W	88	3	3	3	3	3	5	5	5	5	4	5	5									25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	3	3	3	3	3	3	3	3	3	3	3	3									25401
	CENTRAL	A	65 35N	144 47W	750					3	3	3	3	3	3	3	3									26418
	CHICKEN	A	64 04N	141 56W	2000	3	3	3	3	3																
	CHITINA	A	61 32N	144 27W	572	3	3	3	3	3	3	3	3	3	3	3	3									
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CIRCLE HOT S	A	65 29N	144 36W	935								3	3	3	3										26419
	COAL CREEK	A	65 16N	143 16W	1050					3	3	3	3	3	3											
	COPPER CTR	A	61 58N	145 19W	1044	3	3	3	3	3	3	3	3	3	3	3	3									
	CORDOVA	S	60 32N	145 42W	70	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26410
	COUNCIL	A	64 53N	163 41W	95	4	4	4	4	4	4	4	4	4	4	4	4									
	CRAIG	A	55 29N	133 09W	13	3	3	3	3	3	3	3	3	3	3	3	3	04	04	04						25317
	CROOKED CREK	A	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518
	DEERING	A	66 04N	162 45W	15	5	5	5	5	5	5	5	5	5	5	5	5									
	DUTCH HARBOR	NF	53 53N	166 32W	47	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25616
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	EAGLE	A	64 46N	141 12W	837	3	3	3	3	3	3	3	3	3	3	3	3									26422
	ELDRED ROCK	CG	58 58N	135 13W	54	3	3	3	3	3	3	3	3	3	4	5	5									25318
	FAIRBANKS	WBO	64 50N	147 43W	484	6	6	6	6	6	6	6	6	6	6	8	6		12	12		12		12		26411
	FIVE FINGER	CG	57 16N	133 37W	30	3	3	3	3	3	3	4	4	4	4	5	5									25319
	FLAT	SA	62 27N	158 00W	303	3	4	5	5	5	5	5	5	5	5	5	5			12						26520
	FORT YUKON	A	66 35N	145 18W	410	3	3	3	3	3	3	3	3	3	3	3	3									26413
	GAMBELL	SA	63 51N	171 36W	30	3	3	3										09	09	09						26703
	GOLOVIN	A	64 33N	163 01W	20	4	4	4	4	4	4	4	4	4	4	4	4									26628
	GOOD PASTER	A	64 20N	144 05W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	GRAVINA	A	55 11N	131 49W	40	4	4																			
	GUARD ISLAND	CG	55 27N	131 53W	20		3	3	3	3	3	3	3	3	3	3	3			02						25320
	GUSTAVUS	A	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1940	HAINES	A	59 14N	135 27W	15	3	3	3	3	3	3	3	3	3												25323
	HAINES	CAA	59 13N	135 26W	257										6	6	6	03								25323
	HAYCOCK	A	65 12N	161 09W	200			3	3	3	3	3	3	3	3	3	3									
	HEALY	A	63 51N	148 58W	1350	3	3	3	3	3	3	3	3	3	3	3	3									26447
	HOG RIVER	A	65 45N	155 50W	500		3	3		3																
	HOLY CROSS	A	62 10N	159 45W	150						3	3	3	3	3	3	3									26521
	HOMER	A	59 38N	151 30W	55	3	3	3	3	3	3	5	3	3	3	3	3									25507
	HOT SPRINGS	A	64 58N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	3	3	3		3	3	3	3	3	3	3	3									26522
	HYDABURG	A	55 12N	132 49W	25		3	3	3	3	3															
	ILIAMNA	A	59 44N	154 49W	68	5	5	3	3	4	5	4	5	5	5	4	5									25506
	INDEPENDENCE	A	61 47N	149 18W	3600	3																				
	JACK WADE	A	64 07N	141 35W	1800					3	3	3	3	3		3	3									
	JUNEAU	WBO	58 18N	134 24W	132	5	6	6	6	6	7	6	6	6	6	6	6	12	12	12	12	12				25324
	KALSKAG	A	61 27N	160 49W	90	5	5	5	5	5	5	5	5	5	5	5	5									
	KALTAG	A	64 20N	158 45W	93	3	4	5	5	3	3	5	3	3	5	5	4									
	KANAKANAK	A	59 01N	158 31W	85	3	3	3	3	3	3	3	3	3	3	3	3									
	KANATAK	A	57 34N	156 02W	23													10	09	10						
	KASILOF	A	60 19N	151 17W	60	3	3	3	3	3	3	3	3	3	3	3	3									
	KENAI	A	60 34N	151 15W	85	3	3																			26523
	KETCHIKAN	WBO	55 21N	131 39W	15	4	4	4	4	4	4	4	4	4	5	4	4	12	12	12						25325
	KIMSHAN	A	57 41N	136 06W	13							4	4	4	4	4	4			06						
	KING ISLAND	A	64 56N	168 01W	100	3	3	3	3	3	3															
	KLUKWAN	A	59 24N	135 54W	91	4	4	4	4	4							4									
	KODIAK	SA	57 48N	152 24W	152	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25509
	KOTZEBUE	SA	66 52N	162 38W	11	3	4	3	4	5	4	4	5	5	5	5	6			06						26616
	LADD	AAB	64 51N	147 35W	464															51						26403
	LITTLE PORT	A	56 23N	134 39W	14										3	3	3									25327
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	LUCKY SHOT	A	61 47N	149 25W	3300	3	3	3	3	3																
	MARSHALL	A	61 51N	161 43W	87	5	5	5	5	5	5	5	5	5	5	5	5									
	MARY ISLAND	CG	55 06N	131 11W	39		3	3	3	3	3	4	4	4	4	4	4			01						
	MCGRATH	A	62 58N	155 37W	333	3	3	3	3	3	3	3	3			3	3	12	12	12						26510
	NAKNEK	A	58 42N	157 02W	86	3	3	3	3	3	3	3	3	3	3	3	3									
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12	5	6	6	6	6	6	6	6	6	6	6	6	12	12	12	12	12				26617
	NOME	AAF	64 31N	165 26W	43	6	6	6																		26604
	NULATO	A	64 43N	158 04W	210	3	3	3	3	3	3	3	3	3	3	3	3	10	12	12						
	NUNIVAK	A	60 23N	166 12W	37													02	02	02						26622
	OPHIR	A	63 10N	156 33W	400	3	3	3	3	3	3	3	3	3	3	3	3									
	PAXSON	A	63 03N	145 27W	2697	4	3			3	4	3	3	3	3											
	PETERSBURG	CAA	56 49N	132 57W	111	3	3	3	3	3	3	3	3	6	6	6	6	04	04	04						25329
	PIGOT	A	60 47N	148 20W	280	3	3																			
	PILGRIM SPRG	A	65 05N	164 58W	50			3	3	3	3	3	3	3	3	3	3									
	PILOT POINT	A	57 37N	157 34W	50	3	3	3								3	3									25514
	PLATINUM	A	59 01N	161 47W	15	3	3	3	3	3	3	3	3	3												25613
	PORTAGE	A	60 51N	148 59W	35				3	3	3	3	3	3	3	3	3									26437
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	5	5	5	5	5	5	5	5	5	5	5	5	03	03							
	RICHARDSON	A	64 17N	146 21W	880	5	5	5	4	4	3	3	3	5	5	3	4			03						
	RUBY	CAA	64 44N	155 26W	705	5	4	5	6	6	6	6	6	6	6	6	6	12	12	02						
	SENTINEL IS	CG	58 33N	134 55W	60			3	3	3	3	3	3	3	3	4	5									
	SEWARD	A	60 07N	149 27W	66	3	3	3	3	4	3	5	5	3	3	5	4									26438
	SHISHAREF	SA	66 14N	166 07W	16	4	4	4	4	4	4	4	4	4	4	4	4									26625
	SITKA	A	57 03N	135 20W	31	3	3	3	3	3	3	3	3	3	3	3	3									25333
	SITKA	NS	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	SKAGWAY	A	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	SKWENTNA	A	61 57N	151 10W	228	4	3	3	3	3	3	3	3	3	3	3	3									26514
	SOLOMON	A	64 35N	164 24W	15	4	5	5	5	5	5	5	5	5	5	5	5									26629
	ST PAUL IS	SA	57 07N	170 16W	19	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						25713
	STAMPEDE	SAWR	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	STEVENS VILA	A	66 01N	149 05W	350					3	3	3	3	3	3	3	3									26449
	STONY RIVER	SA	61 46N	156 38W	221			3	3	3	3	3	3	3	3	3	3									26527
	STUYAHOK	A	62 10N	161 50W	1500	4	5	4	4	4																
	SUMMIT	CAA	63 20N	149 08W	2405					5	5	6	6	6	6	6	6									26414
	TAKU LODGE	A	58 33N	133 41W	175						3	3	3	3	3	4	4									
	TALKEETNA	CAA	62 18N	150 06W	356						6	7	6	6	6	6	6	12	02							26528
	TANALIAN PT	A	60 13N	154 22W	308	3	3	3	3	3	3	3	3													26531
	TANANA	SA	65 10N	152 06W	234	3	3	3	3	3	3	3	3	3	3	3	3		12	11						26529
	TAYLOR	A	65 40N	164 47W	250		3	3	4	4				4			3									
	TELLER	A	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	TENAKEE	A	57 47N	135 12W	19		3	3	3	3	3	3	3			3	3									25336
	TETLIN	A	63 10N	142 32W	1800										3	3	3									
	TREE POINT	CG	54 48N	130 56W	36		3	3	3	3	4	4	4	4	5	5	5			03						25337
	TYONEK	A	61 02N	151 11W	50						3	3	3	3	3	3	4									
	UNALAKLEET	A	63 53N	160 48W	30	3	3	5	5	4	3	3	3	5	5	5	3									26627
	VALDEZ	A	61 07N	146 16W	17	3	3	3	3	3	3	3	3	3	3	3	3									26442
	WALES	A	65 37N	168 03W	30	5	4	3	3	3	3	3	3	3	3	3	3									26618
	WISEMAN	A	67 26N	150 13W	1290	4	5	5	5	5	5	5	5	5	5	5	5									26511
	WOSNESSENSKI	A	55 13N	161 21W	25	3	3	3	3	3	3	3	3	3	3	3	3	12	12	12						
	WRANGELL	A	56 28N	132 23W	18	5	5	5	4	4	4	4	4	4	4	4	5									25338
	YAKUTAT	CAA	59 32N	139 44W	90						6	7	6	5	5	5	5	01	01	01						25339
1941	AKULURAK	A	62 30N	164 25W	33													09	08	07						
	ALATNA	A	66 34N	152 44W	600	3	3	3	3	3	3	5	5	5	5	5	5									
	ANCHORAGE	WBO	61 13N	149 52W	118	6	6	6	6	1	1	1	1	1	1	1	1	12	12	12	12	12				
	ANGOON	A	57 30N	134 35W	14				4	4	4	4	4	4	4	4	4			08						25310
	ANIAK	SA	61 35N	159 32W	100	3	3	3	3	3	3															26516
	ANNETTE	A	55 02N	131 34W	110	5	5	5	5	5	5	5	5	5	5			01								25308
	ANNETTE IS	AAF	55 02N	131 35W	114							6	6	6	1	6	6					58				25301
	ANNEX CREEK	A	58 19N	134 06W	24	3	3	3	3			3	3	3	3	3	3									25311
	ATKA	A	52 10N	174 12W	36	3	3	3	3	3	3	3	3	3	3	3	3	12	12	09						25715

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1941	ATTU	S	52 50N	173 11E	12									3	3	3	3	04	04	04						45712
	BARROW	WBO	71 18N	156 46W	25	5	5	5	5	5	5	5	5	5	5	5	5	09	12	12	12	12				27502
	BEAVER FALLS	A	55 23N	131 28W	35	3	3	3	3	3	3	3														25313
	BETHEL	WBO	60 48N	161 45W	22	6	6	6	6	6	6	6	6	6	6	6	6	10	12	12						26615
	BIG DELTA	A	64 08N	145 44W	995	3	3	3	3	3	3	3	3	3	3	3	3									26415
	BIORKA IS	CAA	56 51N	135 32W	215		6	6	6	6	6	6	6	6	6	6	7	11	02	09						
	BROAD PASS	A	63 22N	149 02W	2127	3	3	3	3	3	3	3	3	3		3										
	CANDLE	A	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3									26619
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5		11	11							25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE SARICHE	CG	54 36N	164 56W	175	3	3	3	3	3	3	3	3	3	3											25622
	CAPE SPENCER	CG	58 12N	136 38W	88	5	5	5	5	5	5	5	5	5	5	5	5									25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5									25401
	CENTRAL	A	65 35N	144 47W	750	3	3			3	3	3	3	3	3	3	3									26418
	CHITINA	A	61 32N	144 27W	572	3	3	3	3	3	3	3	3	3	3	3	3									
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CIRCLE HOT S	A	65 29N	144 36W	935			3	3																	26419
	COAL CREEK	A	65 16N	143 16W	1050						3	3		3	3											
	COPPER CTR	A	61 58N	145 19W	1044	3	3	3	3	3				3	3	3	3	11	08	08						
	CORDOVA	S	60 32N	145 42W	70	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26410
	COUNCIL	A	64 53N	163 41W	95	5	5	5	5	5	5	5	5	5	5	5	5									
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25317
	CROOKED CREK	A	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518
	CURRY	A	62 37N	150 02W	556												5									
	DEERING	A	66 04N	162 45W	15			3	3	3	3	3	3	3	3	3										
	DILLINGHAM	SAWR	59 03N	158 27W	38									4	4	4	4	04		04						25513
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	DUTCH HARBOR	NF	53 53N	166 32W	47	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						25616
	EAGLE	A	64 46N	141 12W	806	5	5	5	5	5	5	5	5	5	5	5	5			04						26422
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5			10						25318
	ELMENDORF	AAF	61 15N	149 48W	192			1	1	1	1	1	1	1	1	1	1			60	60			59		26401
	FAIRBANKS	WBO	64 50N	147 43W	484	7	7	7	7	7	7	7	7	7	7	7	7	05	12	12		12		12		26411
	FAREWELL	CAA	62 32N	153 54W	1503												4			01						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5			09						25319
	FLAT	SA	62 27N	158 00W	303	5	6	6	6	6	6	6	6	6	6	6	6			12						26520
	FORT YUKON	A	66 35N	145 18W	410	5	5	5	5	5	5	5	5	5	5	5	5									26413
	GALENA	AFS	64 43N	156 54W	135												5									26501
	GAMBELL	SA	63 51N	171 36W	30	3	3		3			3	3	3		3	3	12	12	12						26703
	GOLOVIN	A	64 33N	163 01W	12	5	5	5	5	5	5	5	5	5	5	5	5	07		07						26628
	GOOD PASTER	A	64 20N	144 05W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	GRUBSTAKE	A	64 02N	148 12W	1500								3	3	3											
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5				11						25320
	GUSTAVUS	A	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322
	HAINES	CAA	59 13N	135 26W	257	6	6	6	6	6	6	6	6	6	6	6	6	12		01						25323
	HAYCOCK	A	65 12N	161 09W	200	3	3	3	3	3	3	3	3		3	3	3									
	HEALY	A	63 51N	148 58W	1350	5	5	6	5	5	5	6	5	6	4	4	4									26447
	HOLY CROSS	A	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	HOMER	A	59 38N	151 30W	55	3	3	3	3	3	5	5	5	5	5	5	5	08		08						25507
	HOONAH	A	58 07N	135 27W	49			4	4	5	5	5	5	5	5	5	5			09						
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	ILIAMNA	A	59 44N	154 49W	68	4	5	6	6	6	6	6	6	6	6	6	6	10	10	06						25506
	JACK WADE	A	64 07N	141 35W	1800	3	3	3	3	3	3	3	5	5	5	4		04								
	JUNEAU	WBO	58 18N	134 24W	132	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12	12	12				25324
	KALSKAG	A	61 27N	160 49W	90	5	5	6	6	6	6	5	5	5	5	5	5									
	KALTAG	A	64 20N	158 45W	93	3	5	5	5	5	5	5	5	5	5	5	5									
	KANAKANAK	SA	59 01N	158 31W	99													05	05	05						
	KANAKANAK	A	59 01N	158 31W	85	4	4	4	4	4	4	4														
	KANATAK	A	57 34N	156 02W	23													10	09	08						
	KASILOF	A	60 19N	151 16W	60	3	3	3	3	3	3	3	3	3	3	3	3									
	KENAI	A	60 34N	151 15W	85												4			01						26523
	KETCHIKAN	WBO	55 21N	131 39W	15	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25325
	KIMSHAN	A	57 41N	136 06W	13	4	4	4	4	5	5	5	5	5	5	5	5			12						
	KLUKWAN	A	59 24N	135 54W	91	4	4	4	4	4	4	4			4	4	4			11						
	KODIAK	NAF	57 44N	152 30W	112												1									25501
	KODIAK	SA	57 48N	152 24W	152	4	3	3	4	4	4							06	06	06						25509
	KODIAK	CAA	57 46N	152 19W	106							6	6	6	6	6	6	06	06	06						25509
	KOTZEBUE	SA	66 52N	162 38W	12	5	5	5	5	5	5	5	5	5	5	5	5	05	05	06						26616
	KOYUK	A	64 57N	161 08W	10	5	5	5	5	5	5	5	5	5	5	5										
	LADD	AAB	64 51N	147 35W	464		6	6	1	1	1	1	1	1	1	1	1			62	58					26403
	LITTLE PORT	A	56 23N	134 39W	14	3	3	3	3	3	3	3	3	3	3	3	3									25327
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3	3	3	3	3	3	3	3	3									26428
	MARSHALL	A	61 51N	161 43W	87	3	3	3	3	3	3	3	3	3	3	3	3									
	MARY ISLAND	CG	55 06N	131 11W	39	5	5		5	5	5	5	5	5	5	5				09						
	MCGRATH	CAA	62 58N	155 37W	328	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26510
	MCKINLEY PRK	A	63 43N	148 58W	2092									4	5	5	5									26429
	MINCHUMINA	CAA	63 53N	152 17W	701												4									26512
	MOSES POINT	CAA	64 42N	162 03W	16					5	5	5	6	6	6	6	6			08						26620
	NAKNEK	CAA	58 40N	156 45W	67													01		01						
	NAKNEK	A	58 42N	157 02W	86	3	6	6	6	6	6	6	6	6	6	6		08	09	09						
	NENANA	A	64 33N	149 05W	353	3	3	3	3	3	3	3	3	3	3	3	3									26435
	NOME	WBO	64 29N	165 24W	12	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	NOME	AAF	64 31N	165 26W	43											1										26604
	NULATO	A	64 43N	158 04W	210	6	6	6	6	6	6	6	6	6	6	6	6	11	12	12						
	NUNIVAK	A	60 23N	166 12W	37													12	12	05						26622
	OPHIR	A	63 10N	156 33W	400	3	3	3	3	3	3	3	3	3	3	3	3									
	PAXSON	A	63 03N	145 27W	2697						3	3	3	3	3	3	3									
	PETERSBURG	CAA	56 49N	132 57W	111	6	6	6	6	6	6	6	6	6	6	6	6	12	12							25329
	PILGRIM SPRG	A	65 05N	164 58W	50	5	5	5	5	5	5															
	PILOT POINT	A	57 37N	157 34W	50	3	3	3	3	3	3	3	3	3	3	3	3			01						25514
	PLATINUM	A	59 01N	161 47W	15	3	3	3	3	3	3	3	3			3	3			05						25613
	POINT HOPE	A	68 20N	166 48W	14								4	4	4	4	4	05	05	05						26623

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
						HOURLY RECORDS BY MONTH, 1 = 24 OBS PER DAY																				
1941	POINT LAY	SA	69 45N	163 03W	18									3	3	3	3	05		03						26624
	PORTAGE	A	60 51N	148 59W	35	3	3	3	3	3	3	3	3	3	3	3	3									26437
	PUNTILLA	A	62 06N	152 45W	1837								5	5	5	6	6									26526
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	6	6	6	6	6	6	6	6	6	6	6	6	12	12	08						
	RICHARDSON	A	64 17N	146 21W	880	4	5	5	5	5	5	4	4	4	3	4	3			04						
	RUBY	CAA	64 44N	155 26W	705	6	6	6	6	6	6	6	6	6	6	6	6	08	12	12						
	SAND POINT	S	55 20N	160 30W	32									4	4	4	4	04	04	03						25617
	SENTINEL IS	CG	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	SEWARD	SA	60 07N	149 27W	62	6	6	6	6	6	6	6	6	6	6	6	6	11	11	11						26438
	SHISHMAREF	SA	66 14N	166 07W	16	4	4	5	5	6	5	6	5	5	5	5	4	05	05	05						26625
	SHUNGNAK	SA	66 54N	157 07W	500													05	05	05						26513
	SITKA	A	57 03N	135 20W	25	6	6	6	6	6	6	6	6	6	6	6	6			10						25333
	SITKA	NS	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	SKAGWAY	A	59 27N	135 19W	11	3	3	3	3	3	3	3	3	3	3	3	3									25335
	SKWENTNA	A	61 57N	151 10W	228	5	4	4	4	4	4	4	4	4	4	4	4	12	12	12						26514
	SOLOMON	A	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	ST PAUL IS	SA	57 07N	170 16W	18	4	4	4	4	4	4	4	4	4	4	4	4			12						25713
	STAMPEDE	SAWR	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	STEVENS VILA	A	66 01N	149 05W	350	3	3	5	5	5	5	5	5	5	5	5	5									26449
	STONY RIVER	SA	61 46N	156 38W	221	3	3	3	3	3	3	3	3	3	3	3	3									26527
	SUMMIT	CAA	63 20N	149 08W	2405	6	6	6	6	6	6	6	6	6	6	6	6	12	09	11						26414
	TAKU LODGE	A	58 33N	133 41W	175	5	5	5	5	5	3	3	3	4	5	4	5									
	TALKEETNA	CAA	62 18N	150 06W	356	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26528
	TANACROSS	A	63 24N	143 19W	1200	5	5	6	6	6	6	6	6	6	6	6	6			05						26440
	TANALIAN PT	A	60 13N	154 22W	308				3	3	3	3	3	3			3									26531
	TANANA	CAA	65 10N	152 06W	234	6	6	6	6	6	6	6	6	6	6	6	6		12	01						26529
	TAYLOR	A	65 40N	164 47W	250	3	3	3	3	3	3			4												
	TELLER	A	65 16N	166 21W	10	3	3	3	3	3	3	3	3	3	3	3	3									26626
	TENAKEE	A	57 47N	135 12W	19	3	3	4	5	5		5	5	5	5	5	5			05						25336
	TETLIN	A	63 10N	142 32W	1800	3	3	3	4	5	5	4	4	4	4	4	4									
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5			12						25337
	TYONEK	A	61 02N	151 11W	50	3	5	4	3	3	3			3	3	3	3			03						
	UNALAKLEET	A	63 53N	160 48W	20	3	4	4	4	6	5	5	5	5	6	6	6			08						26627
	VALDEZ	A	61 07N	146 16W	17	5	5	5	5	5	5	5	5	5	5	5	5	02								26442
	WALES	A	65 37N	168 03W	30	5	3	3	3	3	3	3	3	3	3	3	3			02						26618
	WISEMAN	A	67 26N	150 13W	1290	5	6	6	6	6	6	6	6	6	6	6	6	07	07	01						26511
	WOSNESSENSKI	A	55 13N	161 21W	25	3	3	3	3	3	3	3	3	3				09	09	09						
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			11						25338
	YAKUTAT	CAA	59 32N	139 44W	90	6	6	6	6									09	06	09						25339
	YAKUTAT	AAF	59 31N	139 40W	45										1	1	1	03		03						25339
	YAKUTAT	AAF	59 31N	139 40W	31					1	1	1	0	0	1	1	1			55	54					25302
1942	ADAK	NS	51 52N	176 38W	15										1	1	1									25704
	AKULURAK	A	62 30N	164 25W	33													12	12	11						
	ALATNA	A	66 34N	152 44W	600	5	5	5	5	5	5	5	5	5	5	5	5									
	ALITAK	NF	56 55N	154 15W	30												6	01	01	01						25512
	ALITAK	A	56 57N	154 10W	24			3	3	3	3	3	3	3	3	3		09	06	09						25512
	ANCHORAGE	WBO	61 13N	149 52W	118	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	04	12				
	ANGOON	A	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5			12						25310
	ANIAK	CAA	61 35N	159 32W	100	4	4	4	4	4	4	4	4	5	5	5	5	12		06						26516
	ANNETTE	A	55 02N	131 34W	110									1				12	03							25308
	ANNETTE IS	AAF	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1					53				25301
	ANNEX CREEK	A	58 19N	134 06W	24					3	3	3	3	3	3	3	3									25311
	ATKA	NS	52 14N	174 13W	26												1									25710
	ATKA	A	52 10N	174 12W	36	3	3	3	3	3	3							06	06	08						25715
	ATTU	S	52 50N	173 11E	12	3	3	3										03	03	03						45712
	BARROW	WBO	71 18N	156 46W	25	5	5	5	5	5	5	5	5	5	5	5	5	03	12	12	12	12				27502
	BEAVER FALLS	A	55 23N	131 28W	35	3	3	3	3	3																25313
	BETHEL	WBO	60 48N	161 45W	22	6	6	6	6	6	6	6	6					04	08	08						26615
	BETHEL	WBAS	60 47N	161 43W	15									1	1	1	1		04	04						26615
	BIG DELTA	CAA	64 00N	145 44W	1274	3	3	3	3	5	5	6	1	1	1	1	1	07		10						26415
	BIORKA IS	CAA	56 51N	135 32W	215	1	1	1	1	7	5	6	6	6	5	5	5	12	10	12						
	CANDLE	A	65 56N	161 55W	10	3	3	3	3	3	3	3	3	3	3	3	3			12						26619
	CANYON IS	A	58 33N	133 40W	85									5	5	5	5									
	CAPE	AAF	53 23N	167 54W	131		6	6	6	6	1	1	1	1	1	1	1			58	54					25602
	CAPE DECISIO	CG	56 00N	134 08W	50				5	4	4	4	4	5	4	4	4	09	05	09						25315
	CAPE SPENCER	CG	58 12N	136 38W	88			5	5	5	5	5	5	5	5	5	5	05		05						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58		5	5	5	5	5	5	5	5	5	5	5									25401
	CENTRAL	A	65 35N	144 47W	750	3	3	3	3	3	3	3	3	3	3											26418
	CHITINA	A	61 32N	144 27W	581	3	3	3	3	3	3	3	3	3	3	3	3									
	CIRCLE	A	65 48N	144 04W	700	5	5	5	5	5	5	5														26446
	COPPER CTR	A	61 58N	145 19W	1044	3	3	3	3	3	3	3	3	3				09	09	09						
	CORDOVA	S	60 32N	145 42W	70	6	6	6	6	6										05						26410
	CORDOVA	AF	60 30N	145 30W	45						6	6						07	06	07						26410
	CORDOVA	AAF	60 29N	145 30W	45						6	1	1	1	1	1	1				51					26402
	COUNCIL	A	64 53N	163 41W	95	5	5	5	5	5	5	5	5	5	5											
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25317
	CROOKED CREK	A	61 52N	158 15W	125	3	3	3	3	3	3	3	3			3	3									26518
	CURRY	A	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	DAVIS	AAF	51 53N	176 38W	217										1	1	1									25701
	DEERING	A	66 04N	162 45W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	DILLINGHAM	SAWR	59 03N	158 27W	38	4	4	4	4	4								03		03						25513
	DUTCH HARBOR	NF	53 53N	166 32W	30	4	4	4	4	4	4	4	4	5	5	5	5									25616
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	EAGLE	A	64 46N	141 12W	806	5	5	5	5	5	5	5	5	5	5	5	5			12						26422
	ELMENDORF	AAF	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	56					26401
	FAIRBANKS	WBO	64 50N	147 43W	484	1	1	1	1	1	1	1						07	07	07		07		07		26411
	FAIRBANKS	WBO	64 50N	147 36W	464								1	1	1	1	1	05	05	05		05		05		26411
	FAREWELL	CAA	62 32N	153 54W	1503	4	4	4	4	4		4	6	6	6	6	6			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30					5										05						25319
	FLAT	SA	62 27N	158 00W	303	6	6	6	6	6	6	6	6	6	6	6	6			12						26520

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1942	FORT MORROW	AAF	56 57N	158 37W	94									1	1	1	1	04	04							25504
	FORT YUKON	A	66 35N	145 18W	410	5	5	5	5																	26413
	GALENA	AFS	64 43N	156 54W	135	5	5	5	5	5				1	1	1	1			54						26501
	GAMBELL	SA	63 51N	171 36W	30											1	1	12	12	12						26703
	GOLOVIN	A	64 33N	163 01W	12	5	5	5	5	5	5	5	5	6	6	6	6	12		12						26628
	GOOD PASTER	A	64 20N	144 05W	2500	3	3					5	5	5	5	5	5									
	GUARD ISLAND	CG	55 27N	131 53W	20				4	4										02						25320
	GULKANA	CAA	62 09N	145 27W	1579										6	6	1			02						26425
	GUSTAVUS	A	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322
	HAINES	CAA	59 13N	135 26W	257	6	6	6	6	6	5	5	1	1	1	1	1	12		12						25323
	HAYCOCK	A	65 12N	161 09W	200	3	3	3																		
	HEALY	A	63 51N	148 58W	1350	5	5	6	6	6	6	6	6	6	6	6	6									26447
	HOLY CROSS	A	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	HOMER	A	59 38N	151 30W	55	5	5	5	5	6	6	6	6	6	6	6	6	12	12	12						25507
	HOONAH	A	58 07N	135 27W	49	5	5	5	5	5	5	5	5							08						
	HOT SPRINGS	A	64 58N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	HYDER	A	55 54N	130 01W	9					5	5	5	5	5	5	5	5			06						
	ILIAMNA	A	59 44N	154 49W	68	6	6	6	6	6		6						06	05	06						25506
	ILIAMNA	CAA	59 45N	154 55W	152								6	6	6	6	6	05	04	05						25506
	JACK WADE	A	64 07N	141 35W	1800	3	3	3		4	4	4	5	5				07	06	06						
	JUNEAU	WBO	58 18N	134 24W	132	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				25324
	KALSKAG	A	61 27N	160 49W	90	5	5	5	5	5	5	5	5	5	5	5	5									
	KALTAG	A	64 20N	158 45W	93	5	5	5	5	5	5	5	5	5	5	5	5									
	KANAGA BAY	NS	51 46N	177 15W	50	1	1																			25711
	KENAI	CAA	60 34N	151 15W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26523
	KETCHIKAN	WBO	55 21N	131 39W	15	5	5	5	5	5	5	5	5	5	5	6	5	12	12	12						25325
	KIMSHAN	A	57 41N	136 06W	13	5	5	5	5	5	4	4	4	4	4	4	4			12						
	KISKA ISLAND	NAAF	51 59N	177 33E	71		1	1	1																	45710
	KIVALINA	A	67 45N	164 42W	10											4	3	02		02						
	KLUKWAN	A	59 24N	135 54W	91															03						
	KODIAK	NAF	57 44N	152 30W	112	1	1	1	1	1		1	1	1	1	1	1			03						25501
	KODIAK	NF	57 45N	152 31W	38	1	1	1	1	1	1	1	1	1	1	1	1		12							25509
	KOTZEBUE	SA	66 52N	162 38W	12	5	5	5	5	5	6	6	6	5	5	5	5	12	12	12						26616
	KOYUK	A	64 57N	161 08W	10	5	5	5	5	5	5	5														
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1			1	1	1		12	62	62					26403
	LINCOLN ROCK	CG	56 03N	132 46W	25						5	5	5	5	5	5	5			06						25326
	LITTLE PORT	A	56 23N	134 39W	14	3	3	3	3	3	3	3														25327
	LIVENGOOD	A	65 35N	148 29W	550	3	3	3	3																	26428
	MARSHALL	A	61 51N	161 43W	87		3	3	3																	
	MATANUSKA	A	61 32N	149 14W	166				3	3	3	3	3	3	3	3	3			09						26448
	MCGRATH	WBAS	62 58N	155 37W	341	6	6	6	6	6	6	6	1	1	1	1	1	03	12	12						26510
	MCKINLEY PRK	A	63 43N	148 58W	2092	5	5	5	5	5	5	5	5	5	5	5	5									26429
	MIDDLETON IS	CAA	59 28N	146 19W	45											6	6	02		02						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	4	4	4	4				1	1	1	1	1									26512
	MOSES POINT	CAA	64 42N	162 03W	21	6	6	6	5	5	5	6	6	7	1	1	1			12						26620
	NAKNEK	AAF	58 41N	156 39W	49	5	5	6	6	1	1	1	1	1	1	1	1			11	52					25503
	NAKNEK	AAF	58 40N	156 45W	48													12	08	02						
	NENANA	A	64 33N	149 05W	353	5	5	5	5	5	5						5									26435
	NIKOLSKI	AAF	52 55N	168 58W	315									6	5	5	5			59						25605
	NIKOLSKI	A	52 57N	168 52W	24			4										01		01						
	NOME	WBO	64 29N	165 24W	12	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	NOME	AAF	64 31N	165 26W	43		5	5	6	6	6	1	1	1	1	1	1									26604
	NORTHWAY	AF	62 57N	141 56W	1713			5	5	5	7	1	1	1	1	1	1	04	03	06						26412
	NULATO	A	64 43N	158 04W	210	6	6	6	6	6	6	6	6	6	6	6	6		12	12						
	NUNIVAK	A	60 23N	166 12W	37													06	06							26622
	OPHIR	A	63 10N	156 33W	400	5	6	6																		
	PAXSON	A	63 03N	145 27W	2697	3	3	3	3	3	3	3	3	3	3	3	3									
	PETERSBURG	CAA	56 49N	132 57W	111	6	6	6	6	6	6	6	1	1	1	1	1	12	06	12						25329
	PILOT POINT	A	57 37N	157 34W	50	3	3	3	3	3			3	3	3	3	3			10						25514
	PLATINUM	AAF	59 01N	161 47W	21										7	7	7									25604
	PLATINUM	A	59 01N	161 47W	15	3	3	3	3	3	3	5	5	5				01	01	08						25613
	POINT HOPE	A	68 20N	166 48W	14	4	4	4	4	4	4	4	3	3	3	3	3	12	12	12						26623
	POINT LAY	SA	69 45N	163 03W	18	3	3	3	3	3	3							06	06	06						26624
	PORT HEIDEN	AAF	56 57N	158 39W	84								6	6	6	6	6			54	54					25504
	PORTAGE	A	60 51N	148 59W	35	5	5	5	5	5	5	5	6	6	6	6	6									26437
	PUNTILLA	A	62 06N	152 45W	1837	6		6	6	6	6	5	6	6	6	6	6			10						26526
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	6	6	6	6	6	6	6	6	6	6	6	6	12	08	12						
	REINDEER PAS	AAF	53 31N	167 55W	74								5	6	6	6	6									25606
	RICHARDSON	A	64 17N	146 21W	880	5	5	5	5	5	5	5	5	5	5					03						
	RUBY	CAA	64 44N	155 26W	705	6	6	6	6	6	6	1	1						08	08						
	SAND POINT	S	55 20N	160 30W	32	4	4	4	4	4	4							06	06	06						25617
	SEWARD	SA	60 08N	149 27W	116		6	6	6	6	6	6	6	6	6	6	6	11	06	11						26438
	SEWARD	SA	60 07N	149 27W	62	6												01	01	01						26438
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5	12	07	12						26625
	SHUNGNAK	SA	66 54N	157 07W	500													07	07	07						26513
	SITKA	A	57 03N	135 20W	25	6	6	6	6											04						25333
	SITKA	NS	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	SKAGWAY	A	59 27N	135 19W	11	3	3	3	3	5	6	6	6	6	6	6	6			08						25335
	SKWENTNA	A	61 57N	151 10W	228	4	5	5	5	5	5	5	5	5	5	5	5	12	05	12						26514
	SOLOMON	A	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	ST MATTHEW	ASC	60 29N	172 42W	97													03								
	ST MATTHEW	AAF	60 21N	172 42W	97										1	1	1			53						26701
	ST PAUL IS	SA	57 07N	170 16W	19	1	1	1	1	1										05						25713
	STAMPEDE	SAWR	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3	3									
	STEVENS VILA	A	66 01N	149 05W	350	5	5	5	5	5	5		5	5	5		5									26449
	STONY RIVER	SA	61 46N	156 38W	221	3	3	3						3												26527
	SUMMIT	CAA	63 20N	149 08W	2405	6	6	6	6	6	6	1	1	1	1	1	1	12	09	12						26414
	TAKU LODGE	A	58 33N	133 41W	175	5	5	4	4	4	4	4	4	4	4	4	4									
	TALKEETNA	CAA	62 18N	150 06W	356	6	6	6	6	6	6	6	1	1	1	1	1	12	12	12						26528
	TANACROSS	A	63 24N	143 19W	1200	6	6	6	6	6	6	6	6	6	6	6	6			12						26440

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1942	TANALIAN PT	A	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5												26531
	TANANA	CAA	65 10N	152 06W	234	6	6	6	6	6	6	6	6	6	6	6	6	04	08							26529
	TELLER	A	65 16N	166 21W	10	3	3	4	4	3	3	3	3	3	3	3	3			05						26626
	TENAKEE	A	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5			12						25336
	TETLIN	A	63 10N	142 32W	1800	4	4	4	4	4	4															
	THORNBROUGH	AAF	55 12N	162 43W	89			6	6	6	1	1	1	1	1	1	1			57						25603
	TREE POINT	CG	54 48N	130 56W	36				5	5	5	4	4	4	4	4	4			09						25337
	TYONEK	A	61 02N	151 11W	50	3	3	3	3	3										05						
	UNALAKLEET	A	63 53N	160 48W	20	6	6	6	6	6	5	5	5		5	5	5			11						26627
	VALDEZ	A	61 07N	146 16W	17	5	5	5	5	5	5	5	5	5	5	5	5			12						26442
	WAINWRIGHT	SA	70 37N	160 04W	29										3	3	3	01	02	03						27503
	WALES	A	65 37N	168 03W	30	3	3	3	3	3	3	3	3	3	3	3	3			11						26618
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	10	11						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			12						25338
	YAKUTAT	AAF	59 31N	139 40W	45													12	10	12						25339
	YAKUTAT	AAF	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	58					25302
1943	ADAK	NS	51 53N	176 38W	15			1	1	1	1	1	1	1	1	1	1									25704
	ADAK	NS	51 52N	176 39W	15	1	1																			25704
	AKULURAK	A	62 30N	164 25W	33													06		05						
	ALATNA	A	66 34N	152 44W	600	5	5	5	5	5	5	5	5	5	5	5	5									
	ALEXAI PT	AFS	52 50N	173 19E	27						1	1	1	1	1	1	1			57	52					45701
	ALITAK	NF	56 55N	154 15W	30	6	6	6	6	6	6	6	6	6	6	6	6		06							25512
	AMAK ISLAND	AF	55 24N	163 08W	15		5	5			5	5	5	5	5											25609
	AMCHITKA IS	AAF	51 24N	179 18E	251		1	1	1	1	1	1	1	1	1	1	1			55	53					45702
	ANCHORAGE	WBAS	61 13N	149 50W	141		1	1	1	1	1	1	1	1	1	1	1	11	11	11		11				26409
	ANCHORAGE	WBO	61 13N	149 52W	118													01	01	01		01				
	ANGOON	A	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5	02		12						25310
	ANIAK	CAA	61 35N	159 32W	100	5	5	5	7	1	1	1	1	1	1	1	1	12	08	12						26516
	ANNETTE	A	55 02N	131 34W	110													02	02							25308
	ANNETTE IS	AAF	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	62		07			25301
	ANNEX CREEK	A	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3	3									25311
	ATKA	NS	52 14N	174 13W	26	1	1	1	1	1	1	1	1	1	1	1										25710
	ATTU	NS	52 50N	173 11E	91								1	1	1	1	1									45709
	BARROW	WBO	71 18N	156 47W	24	5	5	5			5	5	5			5	5		12	12	12	12				27502
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		03				26615
	BIG DELTA	CAA	64 00N	145 44W	1274	1	1	1	1	1	1	1	1	1	1	1	1	12	08	12						26415
	BIORKA IS	CAA	56 51N	135 32W	215	6	6	6	6	6	6	6	6	6	6	6	6		12	12						
	BIRD CAPE	AAF	51 39N	178 40E	1008				6	1	1	1	1	6	6											45705
	BRUIN BAY	CAA	59 22N	153 59W	51								7	1	1	1	1	04		04						
	BULDIR IS	AAF	52 22N	175 58E	49										6	6	6			53	53					45706
	CANDLE	A	65 56N	161 55W	10	4	4	4	4	4	4	4	4	4	4	4	4			12						26619
	CANYON IS	A	58 33N	133 40W	85	5	5	5	5	5	5	5	5	5	5	5	5									
	CAPE	AAF	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25602
	CAPE DECISIO	CG	56 00N	134 08W	50	4	4	4	4	4	5	4	4	5	1	1	1	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185										1	1										26417
	CAPE SPENCER	CG	58 12N	136 38W	88	5	5	5	5	5	5	5	5	5	1	1	1	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5									25401
	CATON ISLAND	NS	54 25N	162 28W	140								1	1	1											25612
	CATON ISLAND	NF	54 25N	162 28W	130										6	7	7									25615
	CHIRIKOF	NS	55 55N	155 35W	143				1	1	1	1		1	1	1	1									25505
	CHIRIKOF IS	NF	55 54N	155 34W	75											6	7									25511
	CHITINA	A	61 32N	144 27W	581	3	3	3	3	3	3	3	3	3	3	3	3									
	CHUGINADAK	AAF	52 50N	169 50W	80							6	6	6	6	6	6			56						25601
	CIRCLE	A	65 48N	144 04W	700	5	5	5	5	5	5	5	5	5	5	5	5									26446
	CORDOVA	AAF	60 29N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			62	62		07			26402
	CORDOVA	AF	60 30N	145 30W	45						1	1	1	1				12	05							26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12						25317
	CROOKED CREK	A	61 52N	158 15W	125	3	3	3	3	3	3	3	3	3	3	3	3									26518
	CURRY	A	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	DAVIS	AAF	51 53N	176 39W	217	1	1	1	1	1	1	1	1	1	1	1	1			62			01			25701
	DEERING	A	66 04N	162 45W	15	5	5	5	5	5	5															
	DUTCH HARBOR	NF	53 53N	166 32W	30	5	5	5	5	5	5	5	5	5	5	5	5									25616
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	EAGLE	A	64 46N	141 12W	806	5	5	5												03						26422
	ELDRED ROCK	CG	58 58N	135 13W	54										1	1	1			02						25318
	ELMENDORF	AAF	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			12	51		10			26401
	EXCURSION IN	A	58 25N	135 26W	25		4	4	4	4	4	4	4	4	4	4	5									
	FAIRBANKS	WBAS	64 50N	147 43W	442					6	6	1	1	1	1	1	1	08	08	08	08	08				26411
	FAIRBANKS	WBO	64 50N	147 36W	464													04	04	04		04		04		26411
	FAREWELL	CAA	62 32N	153 54W	1503	5	5	5	6	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30									4	1	1	1			03						25319
	FLAT	SA	62 27N	158 00W	303	6	6	6	6	6	6	6	6	6	6	6	6			12						26520
	FOREST IS	CG	54 48N	133 32W	1210													02		02						
	FORT MORROW	AAF	56 57N	158 37W	94	1	1	1	1	1	1	1	1	1	1	1	1	12	01							25504
	FORT YUKON	CAA	66 35N	145 18W	425							6	6	6	6	6	6		04	06						26413
	GALENA	AFS	64 43N	156 54W	135	1	1	1	1	1	1	1	1	1	1	1	1			62	55					26501
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26703
	GOLOVIN	A	64 33N	163 01W	12	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26628
	GOOD PASTER	A	64 20N	144 05W	2500	5																				
	GUARD ISLAND	CG	55 27N	131 53W	20										1	1	1			04						25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	A	58 25N	135 42W	20	3	3	3	3	3	3	3	3	3	3	3	3									25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HEALY	A	63 51N	148 58W	1350	6	6	6	6	6	6	6	6	6	6	6	6			07						26447
	HOLTZ BAY	AAF	52 55N	173 10E	45								1	1	1					53	53					45704
	HOLY CROSS	A	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	HOMER	CAA	59 38N	151 30W	73	1	6	6	1	1	1	1	1	1	1	1	1	12	12	12						25507
	HOT SPRINGS	A	64 59N	150 40W	275	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	ILIAMNA	CAA	59 45N	154 55W	152	6	6	6	1	1	1	1	1	1	1	1	1	12	12	12						25506
	JUNEAU	WBAS	58 22N	134 35W	22							1	1	1	1	1	1	06		06	06	06				25309

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1943	JUNEAU	WBO	58 18N	134 24W	132	1	1	1	1	1	1							06	06	06	06	06				25324
	KALSKAG	A	61 27N	160 49W	90	5	5	5	5	5	5															
	KALTAG	AAF	64 18N	158 43W	158							1	1	1	1	1	1		01	62						26502
	KALTAG	A	64 20N	158 45W	93	5	5	5	5	5	5			5	5	5	5									
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1		01	12						26523
	KETCHIKAN	WBO	55 21N	131 39W	15	6	6	6	6	6	6	5	6	1	1	1	1	12	12	12						25325
	KIMSHAN	A	57 41N	136 06W	13	4	4	4	4	4	4	4	4							08						
	KISKA ISLAND	NAAF	51 58N	177 32E	71											1	1									45710
	KISKA ISLAND	AAF	51 58N	177 34E	288									6	1	1	0			54	54					45703
	KIVALINA	A	67 45N	164 42W	10	5	3	5	5	4	3	3	3	3		3	3	04		12						
	KODIAK	NAF	57 44N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KODIAK	NF	57 45N	152 31W	39	1	1	1	1	1	1	1	1	1	1	1	1		12							25509
	KOKRINES	AAF	64 54N	154 40W	185							1	1	1	1	1	1			56	54					26503
	KOTZEBUE	WBAS	66 52N	162 38W	20	6	6	6	6	6	6	6	7	7	1	1	1	12	12	12						26616
	KOYUK	A	64 57N	161 06W	65					1	1	1														
	KOYUK	AAF	64 52N	161 06W	41					1	1	1	1	1	1	1	1			54						26602
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	62	62		11			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	7	1	1			12						25326
	MANLEY H SPG	AAF	64 59N	150 38W	285												6			51	51					26505
	MATANUSKA	A	61 32N	149 14W	166	3	3	3	3	3	3	3	3	3	3	3	3			12						26448
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	MCKINLEY PRK	A	63 43N	148 58W	2092	5	5	5	5																	26429
	MIDDLETON IS	CAA	59 28N	146 19W	45	6	5	5	5	5	5	5	5	5	5	5	5	12	05	12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1									26512
	MOSES POINT	AAF	64 43N	162 05W	21					1	1	1	1	1	1	1	1			57						26603
	MOSES POINT	CAA	64 42N	162 03W	21	6	6	6	6	1	1							05	03	06						26620
	MTN VILLAGE	AAF	62 07N	163 45W	496															53						26635
	NAKNEK	AAF	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		03			25503
	NAKNEK	AAF	58 40N	156 45W	48													01	01							
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			02						26435
	NENANA	AAF	64 33N	149 05W	367							6	1	1	1	1				55						26404
	NIKOLSKI	AAF	52 55N	168 58W	315	5	6	6	6	7	7	7	7	7	7	7	7			62						25605
	NOME	AAF	64 31N	165 26W	43	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			26604
	NOME	WBO	64 29N	165 24W	12	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39									6	6	6	6	05		04						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26412
	NOXAPAGE	AAF	65 32N	164 12W	250								1	1						52	52					26606
	NULATO	A	64 43N	158 04W	210	5	5	5	5	5	5	5	5	5	5	5	5		09	12						
	NUNIVAK IS	AAF	60 12N	166 06W	50															54	54					26605
	OGLIUGA	AAF	51 33N	178 48W	50		6	6	6	6	6	6	6	6	6	6	6			61	52					25702
	PAXSON	A	63 03N	145 27W	2697	3	3	3	3	3	3	3	3	3	3	3	3									
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1	12	05	12						25329
	PILOT POINT	A	57 37N	157 34W	50	3	3	3												03						25514
	PLATINUM	AAF	59 01N	161 47W	21	7	7	7	7	7	7	7	7	7	7	7	7			54						25604
	POINT HOPE	A	68 20N	166 48W	14	3	3	3	3		3	3	3					07	07	07						26623
	POINT HOPE	AAF	68 21N	166 47W	18										6	6	6			53	53					26601
	POINT LAY	SA	69 45N	163 03W	18													11	11	11						26624
	PORT ALTHORP	A	58 09N	136 22W	12					6	6	6	6	7	7	5	5									
	PORT HEIDEN	AAF	56 57N	158 38W	84	6	1	1	1	1	1	1	1	1	1	1	1			62	62		06			25504
	PORTAGE	A	60 51N	148 59W	35	5	5	5	5	5	5	5	5	5	5	5	5									26437
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6			6	6	6	6	6			10						26526
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	6	6	6	6	6	6	6	6	6	6	6	6	12		12						
	REINDEER PAS	AAF	53 31N	167 55W	74	6	6	6	6	6	6	6	6	7	1	6	6									25606
	SAND POINT	NF	55 20N	160 30W	32										7	7	7	03								25617
	SEGUAM	AAF	52 23N	172 25W	62				6	6	6	6	6	6	6	0	0			59						25703
	SEWARD	SA	60 08N	149 27W	116	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316		6	6	6	1	1	1	1	1	1	1	1	06	02	11						26439
	SHEMYA	AAF	52 43N	174 06E	132						1	1	1	1	1	1	1				55					45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5			5	5	5	5	5	10	05	10						26625
	SHUNGNAK	CAA	66 54N	157 02W	138										5	5	5	03		03						26513
	SITKA	NS	57 03N	135 21W	98	1	1	1	1	1	1	1	1	1	1	1	1									25307
	SKAGWAY	A	59 27N	135 19W	11	6																				25335
	SKAGWAY	AAF	59 27N	135 19W	21										6	6	6									25303
	SKWENTNA	A	61 57N	151 10W	228	5	5	5	5	5	5	5	5		5	5	5	11		11						26514
	SOLOMON	A	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26629
	ST MATTHEW	AAF	60 21N	172 42W	97	1	1	1	1	1	1	1	1							61	53					26701
	ST MATTHEW	ASC	60 29N	172 42W	97													12								
	ST PAULS IS	AAF	57 08N	170 16W	96											1	1			52	52					25705
	STAMPEDE	SAWR	63 44N	150 22W	2500	3	3	3	3	3	3	3	3	3	3	3										
	STEVENS VILA	A	66 01N	149 05W	350	5	5	5	5	5	5			5	5	5	5									26449
	STONY RIVER	SA	61 46N	156 38W	221	3	3	3				3						01		01						26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1	10	12	12						26414
	TAKU LODGE	A	58 33N	133 41W	175	4	4	4	4	4	4	4	4	4	4	4										
	TALKEETNA	CAA	62 18N	150 06W	356	1	1	1	1	1	1	1	1	1	1	1	1	12	07	12						26528
	TANACROSS	CAA	63 24N	143 19W	1546	6	6	6	6	6			1	1	1	1	1									26440
	TANALIAN PT	A	60 13N	154 22W	308			5	5	5	5	5	5	5	5	5	5			03						26531
	TANANA	AFS	65 12N	152 12W	230						1	1	1	1	1	1	1			57						26504
	TANANA	CAA	65 10N	152 06W	234	6	6	6	6	6								05		01						26529
	TELLER	AAF	65 18N	166 55W	10								1	1						56						26607
	TELLER	A	65 16N	166 21W	10	3	3	3	3	3	5	6								12						26626
	TENAKEE	A	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5			12						25336
	THORNBROUGH	AAF	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62						25603
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	5	1	1	1			11						25337
	UNALAKLEET	A	63 53N	160 48W	20	5	5	5	5	5	7	1								06						26627
	UNALAKLEET	AAF	63 54N	160 47W	22						0	0	1	1	1	1	1			55	54					26608
	UNALGA IS	NF	53 58N	166 10W	711												1	01								25608
	VALDEZ	A	61 07N	146 16W	16	5	5	5	5				5	5	5	5	5			10						26442
	WAINWRIGHT	SA	70 37N	160 04W	29	3	3	3	3	3	3	3	3	3	3	3	3		12	12						27503
	WALES	A	65 37N	168 03W	30					3	3	3								02						26518
	WALES	AAF	65 37N	168 03W	17							1	1	1	1	1	1			56	54					26609
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	12	12						26511

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1943	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			12						25338
	YAKATAGA	CAA	60 05N	142 30W	33			7	7	1	1	1	1	1	1	1	1	10	04	10						26445
	YAKUTAT	AAF	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62		07			25302
	YAKUTAT	AAF	59 31N	139 40W	45													01	04	06						25339
1944	ADAK	NS	51 57N	176 36W	104						1	1	1	1	1	1	1									25704
	ADAK	AAF	51 53N	176 39W	14		1	1	1	1	1	1	1	1	1	1	1									25707
	ADAK	NS	51 53N	176 38W	15	1	1	1	1	1																25704
	AKULURAK	AAF	62 30N	164 25W	31				1	1	1	1	1							57						26610
	ALATNA	A	66 34N	152 44W	600	5	5	5	5	5																
	ALEXAI PT	AFS	52 50N	173 19E	27	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			45701
	ALITAK	NF	56 55N	154 15W	30	6	6	6	6																	25512
	AMAK ISLAND	AF	55 24N	163 08W	15				1	1	1	1	1	1												25609
	AMCHITKA IS	AAF	51 24N	179 16E	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62	08				45702
	AMCHITKA IS	NS	51 24N	179 16E	80	1	1	1	1																	45711
	AMERICAN RVR	AAF	65 27N	165 46W	119				1	1	1	1	1	1	1	1	1			59	59					26611
	ANCHORAGE	WBAS	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26409
	ANGOON	A	57 30N	134 35W	14	5	5	5												03						25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1	12	04	12						26516
	ANNETTE IS	AAF	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25301
	ANNEX CREEK	A	58 19N	134 06W	24	3	3	3	3	3	3	3	3	3	3	3	3									25311
	ATKA ISLAND	AAF	52 13N	174 12W	36		1	1	1	1	1	1	1	1	1	1	1			57	60					25708
	ATTU	NS	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	BARROW	WBAS	71 18N	156 47W	29	5	5	5	5	5	5	6	6	6	6	6	6		12	12	12	12				27502
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26615
	BETTLES	CAA	66 54N	151 43W	655				6	6	6	6	6	6	7	7	7	09	02	10						26517
	BIG DELTA	AF	64 00N	145 44W	1274	1	1	1	1	1	1							06		06						26415
	BIG DELTA	AAF	64 00N	145 44W	1272						1	1	1	1	1	1	1			58	55					26406
	BIORKA IS	CAA	56 51N	135 32W	215	6	6	6	6	6	6	6	6						01	09						
	BRUIN BAY	CAA	58 22N	153 59W	51	1	1	1	1	1	1	1						07		07						
	BULDIR IS	AAF	52 22N	175 58E	49	6	6	6	0	6	8	8	6	6	6	6	6			62	62					45706
	CANDLE	A	65 56N	161 55W	10	5	5	5	5	5	5	5	5	5	5	5	5			03						26619
	CANYON IS	CAA	58 33N	133 40W	85	6	6	6	6	6	6	6	6	6	6	6	6									
	CAPE	AAF	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62		04			25602
	CAPE DECISIO	CG	56 00N	134 08W	50	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	1	1	1	1	1	1	1	1	1	1	1	1									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	1	1	1	1	1	1	1	1	1	1	1	1	08		08						25401
	CAPE WRANGEL	NF	52 53N	172 31E	50		5	5	6	5	5	5	6	5	5	5	5									45713
	CATON ISLAND	NF	54 25N	162 28W	130	7	7	7	7	7	7	7	7	7	7	7	7									25615
	CHIRIKOF IS	NF	55 54N	155 34W	75	7	7	7	7	7	7	7	7	7	7	7	7									25511
	CHITINA	A	61 32N	144 27W	581	3	3	3	3																	
	CHUGINADAK	AAF	52 50N	169 50W	80	6	6	6	6	6	6									56						25601
	CIRCLE	A	65 48N	144 04W	700	3	3	3	3	3	3	3	3	3	3	3	3									26446
	CORDOVA	AAF	60 29N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			26402
	CORDOVA	AF	60 30N	145 30W	45		1	1										12								26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	12	12	12					25317
	CROOKED CREK	A	61 52N	158 15W	125	3	3	3	3	3		3	3	3	3	3	3									26518
	CURRY	A	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	DAVIS	AAF	51 53N	176 39W	217	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			25701
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	DUTCH HARBOR	NF	53 53N	166 32W	30	5	5	1	1	1	1	1	1	1	1	1	1									25616
	EAGLE	A	64 46N	141 12W	806				1	1	1	1	1	1												26422
	EIELSON	AAF	64 39N	147 04W	547											1	1			51	52					26407
	ELDRED ROCK	CG	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1									25318
	ELMENDORF	AAF	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			26401
	EXCURSION IN	A	58 25N	135 26W	25	5	5	5																		
	FAIRBANKS	WBAS	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26411
	FAIRWAY IS	CG	57 27N	134 52W	40			1	1	1	1	1	1	1	1					08						
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1	11	04	12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	1	1	1	1	1	1	1	1	1	1	1	1			12						25319
	FLAT	A	62 27N	158 00W	309	6	6	6	6	6	6	6	6	6	6	6	6			12						26520
	FOREST IS	CG	54 48N	133 32W	1210													05		05						
	FORT MORROW	AAF	56 57N	158 37W	94	1	1	1	1	1	1	1	1	1	1	1	1	12	04							25504
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6		06	12						26413
	GALENA	AFS	64 43N	156 54W	135	1	1	1	1	1	1	1	1	1	1	1	1			62	62		04			26501
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26703
	GOLOVIN	A	64 33N	163 01W	12	6	6	6	6	6	6	6	6	6	6	6	6	10		10						26628
	GUARD ISLAND	CG	55 27N	131 53W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	A	58 25N	135 42W	20	3	3	3	3		3	3	3	3	7	1	1			03						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HEALY	A	63 51N	148 58W	1350	6	6	6	6	6	6	6	6	6	6	6	6			01						26447
	HOLY CROSS	A	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3	3	3									26521
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1	12	07	12						25507
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5			12						26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1	12	06	12						25506
	IMURUK LAKE	AAF	65 35N	163 50W	557															51						26613
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1	12		12	12	12				25309
	KALTAG	AAF	64 18N	158 43W	158	1	1	1	1	1	1	1	1	1	1	1	1			62	54					26502
	KALTAG	A	64 20N	158 45W	93	5	5	5																		
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1		04	12						26523
	KETCHIKAN	WBO	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						25325
	KISKA ISLAND	AAF	51 59N	177 34E	298	1	1	1	1	1	1	1	1	1	1	1	1			62	62					45703
	KISKA ISLAND	NAAF	51 58N	177 32E	71	1	1	1	1	1	1	1														45710
	KIVALINA	A	67 45N	164 42W	10	3	3													02						
	KODIAK	NAF	57 44N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KODIAK	NF	57 45N	152 31W	39	1	1	1	1	1	1	1	1	1	1	1	1		12							25509
	KOKRINES	AAF	64 54N	154 40W	185	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26503
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26616
	KOYUK	AAF	64 52N	161 06W	41	1	1	1	1	1	1	1	1	1	1	1	1			62	53					26602
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	62	61		12			26403

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1944	LINCOLN ROCK	CG	56 03N	132 46W	25	1	1	1	1	1	1	1	1	1	1	1	1			12						25326
	MANLEY H SPG	AAF	64 59N	150 38W	285	1	1	1	1	1	1	1	1	1						59	59					26505
	MANLEY H SPG	AAF	65 00N	150 39W	264										1	1	1			53	53					26505
	MATANUSKA	A	61 32N	149 14W	166	3	3	3	3	3	3	3	3	3	3	3	3			07						26448
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	6	6	6	5	5	6	5	5	6	6	5	5	12		12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	10	04	10						26512
	MOSES POINT	AAF	64 43N	162 05W	21	1	1	1	1	1	1	1	1	1	1	1	1			62	54					26603
	MTN VILLAGE	AAF	62 07N	163 45W	496										1	1	1			59						26635
	NAKNEK	AAF	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1	01		12						26435
	NIKOLSKI	AAF	52 55N	168 58W	315	6	6	6	6	6	6	6	6	6	6	6	6			62	58					25605
	NOME	WBO	64 29N	165 24W	12	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12				26617
	NOME	AAF	64 31N	165 26W	46	1	1	1	1	1	1	1	1	1	1	1	1			62	62		06			26604
	NORTH DUTCH	CAA	60 46N	147 48W	39	6	6	6	6	6	6	6	6	6	6	6	6	12	04	12						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						26412
	NULATO	A	64 43N	158 04W	210	5	5	6	6	5	5	5	5	5	5	4			10	11						
	NUNIVAK	A	60 23N	166 12W	37	5	5	5	5	5	5	5	5	5	5	5	5									26622
	NUNIVAK IS	AAF	60 12N	166 06W	50	5	5	5	5	5	5	5	5	5	5	5	5			62	62					26605
	OGLIUGA	AAF	51 33N	178 48W	50	7	7	7	7	7	7	7	7							58	58					25702
	PAXSON	A	63 03N	145 27W	2697	3	3	3	3	3	3	3														
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25329
	PILOT POINT	A	57 37N	157 34W	50	5	5	5	5	5	5	5	5	5	5	5	5			12						25514
	PLATINUM	AAF	59 01N	161 47W	21	7	7	7	7	7	7	7	7	7	7	7	7			62						25604
	PLEASANT IS	A	58 10N	135 30W	14											1	1									25340
	POINT HOPE	AAF	68 21N	166 47W	19	6	6	6	6	6	6	6	6	1	1	1	1			62	62					26601
	POINT LAY	SA	69 45N	163 03W	18													12	08	12						26624
	PORT ALTHORP	A	58 09N	136 22W	12	5	5	6	6																	
	PORT HEIDEN	AAF	56 57N	158 39W	84	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25504
	PORTAGE	A	60 51N	148 59W	35					5	6	6														26437
	PT SPENCER	AAF	65 15N	166 21W	10	1	1	1	1	1	1	1	1	1	1	1	1									26612
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6			12						26526
	RADIOVILLE	A	57 36N	136 09W	15	3					3	3	3	3	3	3	3									25332
	RAPIDS	A	63 32N	145 51W	2128	6	6	6	6	6	6	6						07		07						
	REINDEER PAS	AAF	53 31N	167 55W	74	1	1	1	1	1	1	1	1	1	1	1	1			52	52					25606
	SAND POINT	NF	55 20N	160 30W	32	7	7	7	7	7	7	7	7	7	7	7	7	12								25617
	SEGUAM	AAF	52 23N	172 25W	62	0	6	6	6	6	6	6	6	6	6	6	6			62	60					25703
	SEMISOPOCHNO	AAF	51 55N	179 35E	100			6	6	6	6	6	6	6	0						53					45707
	SEWARD	SA	60 08N	149 27W	95	6	6	6	6	6	6	6	6	6	6	6	6	12	01	12						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1	12	01	12						26439
	SHEMYA	AAF	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			61	62					45708
	SHISHMAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5	12	07	12						26625
	SHUNGNAK	CAA	66 54N	157 02W	138							3	5	5	5	6	6	12	04	12						26513
	SITKA	CAA	57 04N	135 21W	66								1	1	1	1	1	08		03						25333
	SITKA	NS	57 03N	135 21W	98	1	1	1	1	1	1															25307
	SKAGWAY	AAF	59 27N	135 19W	21	6	6	6	6	6	6	6	6	6	6	6	6				51					25303
	SKWENTNA	A	61 57N	151 10W	153	5	5	5	5	5	5	5	5	5	5	5	5	12		12						26514
	SOLOMON	A	64 35N	164 24W	15	5	5	5	5	5	5	5	5	5	5	5	5									26628
	ST MATTHEW	AAF	60 21N	172 42W	97							1	1	1	1	1	1			62	62					26701
	ST MATTHEW	ASC	60 29N	172 42W	97													06								
	ST PAULS IS	AAF	57 08N	170 16W	96	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25705
	STEVENS VILA	A	66 01N	149 05W	350	5	5	5	5	5	5				5	5	5									26449
	STONY RIVER	SA	61 46N	156 38W	221		3	5	5	5	5	5	5	5	5	5	5	05	02	05						26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26414
	TALKEETNA	CAA	62 18N	150 06W	356	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26528
	TANACROSS	CAA	63 24N	143 19W	1546	1	1	1	1	1								04		04						26440
	TANACROSS	AAF	63 24N	143 19W	1554					1	1	1	1	1	1	1	1			57	56					26405
	TANAGA IS	NS	51 45N	178 02W	145			1	6	6	6	6	1	1	1											25714
	TANALIAN PT	A	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	TANANA	AFS	65 12N	152 12W	230	1	1	1	1	1	1	1	1	1	1	1	1			62						26504
	TELLER	AAF	65 18N	166 55W	10															62	53					26607
	TENAKEE	A	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5					09						25336
	THORNBROUGH	AAF	55 12N	162 43W	89	1	1	1	1	1	1	1	1	1	1	1	1			62			05			25603
	TREE POINT	CG	54 48N	130 56W	36	1	1	1	1	1	1	1	1	1	1	1	1			12						25337
	UMNAK ISLAND	AAF	53 32N	167 47W	67							1	1	1	1	1	1			56			08			25610
	UNALAKLEET	AAF	63 54N	160 47W	22	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26608
	UNALGA IS	NF	53 58N	166 10W	711	1		1	1	1	1		1	1	1	1	1	02								25608
	VALDEZ	A	61 07N	146 16W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26442
	WAINWRIGHT	SA	70 37N	160 04W	29	3	3	3	3	3	3	3			3	3	3	03	07	10						27503
	WALES	AAF	65 37N	168 03W	17	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26609
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	11	12						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5			12						25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26445
	YAKUTAT	AAF	59 31N	139 40W	31	1		1	1	1	1	1	1	1	1	1	1			62	62		12			25302
1945	ADAK	NS	51 57N	176 36W	104	1	1	1	1	1	1	1	1	1												25704
	ALEXAI PT	AFS	52 50N	173 19E	27	1	1	1	1	1	1	1	1	1						59	59					45701
	ALITAK	NS	56 55N	154 15W	30		7	7	7	7	7	7	7					03								25502
	AMCHITKA IS	AAF	51 24N	179 16E	202	1	1	1	1	1	1	1	1	1	1	1	1			62	62					45702
	AMERICAN RVR	AAF	65 27N	165 46W	119	1	1	1	1	1	1	1	1							58	58					26611
	ANCHORAGE	WBAS	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1	08	12	12	12	12				26409
	ANGOON	A	57 30N	134 35W	14				5	5	5	5	5	5	5	5	5			08						25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26516
	ANNETTE IS	AAF	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25301
	ANNEX CREEK	A	58 19N	134 06W	24	3	3																			25311
	ATKA ISLAND	AAF	52 13N	174 12W	36	1	1	1	1	1	1	1	1	1	1					60	60					25708
	ATTU	NS	52 50N	173 11E	81	1	1	1	1	1	1	1	1	1	1	1	1									45709
	BARROW	WBAS	71 18N	156 47W	29	6	7	6	6	6	6		6	6	6	6	6		12	12	12	11				27502
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		11				26615
	BETTLES	CAA	66 54N	151 43W	855	7	1	1	1	1	1	1	1	1	1	1	1	12		12						26517
	BIG DELTA	AAF	64 00N	145 44W	1272	1	1	1	1	1	1	1	1	1	1					60	60					26406
	BIG DELTA	AF	64 00N	145 44W	1274										1	1	1			03						26415

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1945	BULDIR IS	AAF	52 22N	175 58E	49	6	6	6	6	6	6	6	6							58	58					45706
	CANDLE	A	65 56N	161 55W	24	5	4	4	5	5	5	5	5	5	5	5	5			10						26619
	CANYON IS	CAA	58 33N	133 40W	85	6	6	6	6	6																25511
	CAPE	AAF	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	61		08			25602
	CAPE DECISIO	CG	56 00N	134 08W	50	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 38W	185	1	1	1	1	1	1	1	1	1		1	1									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25401
	CAPE WRANGEL	NF	52 53N	172 31E	50	6					5															45713
	CATON ISLAND	NF	54 25N	162 28W	130	7	7	7	7																	25615
	CATON ISLAND	NS	54 25N	162 28W	140					7	7	7	7	7	7											25612
	CHIRIKOF	NS	55 55N	155 35W	143					1	1	1	1	1	1											25505
	CHIRIKOF IS	NF	55 54N	155 34W	75	1	1	1	1																	25511
	CIRCLE	A	65 48N	144 04W	700	3	5	5	5	5	5	5	5	5	5	5	5									26446
	CORDOVA	AAF	60 28N	145 30W	45	1	1	1	1	1	1	1	1							58	61		08			26402
	CORDOVA	WBAS	60 30N	145 30W	44									1	1	1	1	03	04	04	01					26410
	CRAIG	A	55 28N	133 08W	13	5	5	5	5	5	5	5	5	5	5	5	5	12	04	12						25317
	CROOKED CREK	A	61 52N	158 15W	125	3	3	3	3	3	3	3	5	5	5	5	5									26518
	CURRY	A	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5	5	5									
	DAVIS	AAF	51 53N	176 39W	24	0	0	1	1	1	1	1	1	1	1	1	1			62	62		10			25701
	DUTCH HARBOR	NF	53 53N	166 32W	30	1	1	1	1																	25616
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	EIELSON	AAF	64 39N	147 04W	547	1	1	1	1	1	1									56	56		05			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			10						25318
	ELMENDORF	AAF	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1				62		12			26401
	FAIRBANKS	WBAS	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1	10	12	12	12	12		05		26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	1	1	1	1	1	1	1	1	1	1	1	1			12						25319
	FLAT	A	62 27N	158 00W	326	6	6	6	5	5	5	5	5	5	5	3	3			12						26520
	FORT MORROW	AAF	56 57N	158 37W	94	1	1	1	1	1	1	1	1	1				03								25504
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	5	5	5	5			12						26413
	GALENA	CAA	64 43N	156 54W	130												6			02						26509
	GALENA	AFS	64 43N	156 54W	123	1	1	1	1	1	1	1	1	1	1	1				60	59		07			26501
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	11	12	12						26703
	GOLOVIN	A	64 33N	163 01W	12	6	6	6	6	6	6	6	6	6	6											26628
	GUARD ISLAND	CG	55 27N	131 53W	20	1	1	1	1	1	1	1	1	1	1	1	1			10						25320
	GULKANA	CAA	62 09N	145 27W	1578	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HEALY	A	63 51N	148 58W	1350	6	6	6	6	8	6	6	6	6												26447
	HOLY CROSS	A	62 10N	159 45W	150	3	3	3	3	3	3	3	3	3	3											26521
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25507
	HUGHES	A	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6				12						26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25506
	IMURUK LAKE	AAF	65 35N	163 50W	557				1	1	1	1	1	1	1	1				57	58					26613
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1	09		12	12	12				25309
	KALTAG	AAF	64 18N	158 43W	158	1	1	1	1	1	1	1	1	1						59	59					26502
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	WBO	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12						25325
	KISKA ISLAND	AAF	51 59N	177 34E	298	1	1	1	1	1	1	1	1	1	1					60	60					45703
	KODIAK	NF	57 45N	152 31W	39	1	1	1	1										05							25509
	KODIAK	NAF	57 44N	152 30W	112	1	1	1	1																	25501
	KODIAK	NAF	57 45N	152 30W	112					1	1	1	1	1	1	1	1									25501
	KOKRINES	AAF	64 54N	154 40W	185	1	1	1	1	1	1	1	1							59	59					26503
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1	08	12	11						26616
	KOUGAROK	AAF	64 54N	154 40W	185															51	51					26614
	KOYUK	AAF	64 52N	161 06W	41	1	1	1	1	1	1	1	1	1						59	59					26602
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	60	60		11			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	1	1	1	1	1	1	1	1	1	1	1	1			12						25326
	MANLEY H SPG	AAF	65 00N	150 39W	264	1	1	1	1	1	1	1	1	1	1	1	1			61	61					26505
	MANLEY HOT S	A	65 00N	150 39W	325											6	6									26524
	MATANUSKA	A	61 32N	149 14W	166	3	3	3	3	3	3	3	3	3	3	3	3									26448
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	6	1	1	1	1	1	1	1	1	1	1	1	12		12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26512
	MOSES POINT	AAF	64 43N	162 05W	21	1	1	1	1	1	1	1	1	1	1	1				62	61					26603
	MOSES POINT	CAA	64 42N	162 03W	21											1	1			02						26620
	MT VILLAGE	SA	62 07N	163 45W	44												4			01						26621
	MTN VILLAGE	AAF	62 07N	163 45W	486	1	1	1	1	1	1	1	1	1												26635
	NAKNEK	AAF	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AAF	52 55N	168 58W	315	6	6	6	6	6	6	6	6	6						58	58					25605
	NOME	WBO	64 29N	165 24W	12	1	1	1	1	1	1	1	1	1	1	1	1	08	12	12	12	12				26617
	NOME	AAF	64 31N	165 26W	46	1	1	1	1	1	1	1	1	1	1	1	1			59	57					26604
	NORTH DUTCH	CAA	60 46N	147 48W	39	6	6	6	6	6	6	6	5	6	6	5	5	12		12						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1	08	12	12						26412
	NUNIVAK	ASC	60 23N	166 12W	50	5	5	5	5	5	5	5	5	5	5	5	5	04								26622
	NUNIVAK IS	AAF	60 12N	166 06W	50	5	5	5	5	5	5	5	5	5						58	58					26605
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25329
	PILOT POINT	A	57 37N	157 34W	50	5	5	5	5	5	5	5								07						25514
	PLATINUM	A	59 01N	161 47W	20									5	6	6	6			04						25613
	PLATINUM	AAF	59 01N	161 47W	21	7	7	7	7	7	7	7	7	7						59						25604
	PLEASANT IS	A	58 10N	135 30W	14	1	1	1	1	1	1															25340
	POINT BARROW	NS	71 20N	156 24W	13					1	1	1	1	1	1	1	1									27501
	POINT HOPE	A	68 20N	166 48W	14											4	4	02		02						26623
	POINT HOPE	AAF	68 21N	166 47W	19	1	1	1	1	1	1	1	1	1	1	1	1			62	62					26601
	POINT LAY	SA	69 45N	163 03W	18													09		09						26624
	PORT HEIDEN	AAF	56 57N	158 39W	84	1	1	1	1	1	1	1	1	1	5					60	60		10			25504
	PT RETREAT	CG	58 25N	134 57W	20		1	1	1	1	1	1	1	1	1	1	1									25330
	PT SPENCER	AAF	65 15N	166 21W	10	1	1	1	1	1	1	1	1	1	1	1										26612
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6			06						26526
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3	3	3	3	3	3									25332

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1945	REINDEER PAS	AAF	53 31N	167 55W	74	1	1	1	1	1	1	1	1	1												25606
	SAND POINT	CAA	55 20N	160 30W	32	7	7	7	7	1	1	1	1	1	1	1	1	09		06						25617
	SEGUAM	AAF	52 23N	172 25W	62	6	6	6	6	6	6	6	6	6						59	59					25703
	SEWARD	SA	60 08N	149 27W	95	5	5	5	5	5	5	5						07		07						26438
	SEWARD	SA	60 07N	149 27W	76								5	6	6	6	6	05		05						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26439
	SHEMYA	AAF	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	61		08			45708
	SHISHMAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5	12		12						26625
	SHUNGNAK	CAA	66 54N	157 02W	138	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26513
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25333
	SKAGWAY	AAF	59 27N	135 19W	21	6	6	6	6	6											55					25303
	SKAGWAY	A	59 27N	135 19W	18								6	6	6	6	6									25335
	SKWENTNA	A	61 57N	151 10W	153	5												01		01						26514
	SKWENTNA	CAA	61 58N	151 12W	153		1	1	1	1	1	1	1	1	1	1	1	11		11						26514
	SOLOMON	A	64 35N	164 24W	15	5	5	5	5	6	6	6	6	6	5	5	5									26629
	ST MATTHEW	AAF	60 21N	172 42W	97	1	1	1	1	1	1	1	1	1	1					60	60					26701
	ST PAUL IS	WBO	57 07N	170 16W	96										1	1	1		02	02	02					25713
	ST PAULS IS	AAF	57 08N	170 16W	96	1	1	1	1	1	1	1	1	1	1					60	60					25705
	STEVENS VILA	A	66 01N	149 05W	350	5	5	5	5	5	5	5	5	5	5		5									26449
	STONY RIVER	SA	61 46N	156 38W	221										5	5	5	11		11						26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANACROSS	CAA	63 24N	143 18W	1546										1	1	1			03						26440
	TANACROSS	AAF	63 24N	143 19W	1554	1	1	1	1	1	1	1	1	1	1					60	60					26405
	TANAGA IS	NS	51 45N	178 02W	145	1	1			1		1	1	1	6	6	6									25714
	TANALIAN PT	A	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	TANANA	CAA	65 10N	152 06W	240											1	1			02						26529
	TANANA	AFS	65 12N	152 12W	230	1	1	1	1	1	1	1	1	1	1	1	1			60						26504
	TELLER	AAF	65 18N	166 55W	10															59	59					26607
	TENAKEE	A	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5			08						25336
	THORNBROUGH	AAF	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	TREE POINT	CG	54 48N	130 56W	36	1	1	1	1	1	1	1	1	1	1	1	1			12						25337
	UMIAT	NS	69 22N	152 08W	337				1	1	1	1	1	1	1	1	1			09						26506
	UMNAK ISLAND	AAF	53 32N	167 47W	67	1	1	1	1	1	1	1	1	1						59	55		09			25610
	UNALAKLEET	AAF	63 54N	160 47W	22	1	1	1	1	1	1	1	1	1	1	1				62	61					26608
	UNALAKLEET	CAA	63 53N	160 48W	21											1	1									26627
	UNALGA IS	NF	53 58N	166 10W	711	1	1	1	1	1	1	1	1	1												25608
	VALDEZ	A	61 07N	146 16W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26442
	WAINWRIGHT	SA	70 37N	160 04W	29	3	3	3	3	4	4	4	5	5	5	5	5	12		12						27503
	WALES	AAF	65 37N	168 03W	17	1	1	1	1	1	1	1	1	1	1					62	55					26609
	WALES	CAA	65 37N	168 03W	16													02		02						26618
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12	08	12						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	6	5	5	5	5	5	5			04						25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26445
	YAKUTAT	AAF	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25302
1946	AMCHITKA IS	AAF	51 24N	179 16E	202	1	1	1	1	1	1	1	1	1	1	1	1			62	62		01			45702
	ANCHORAGE	WBAS	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26409
	ANGOON	A	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE IS	AAF	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			62	61		12			25301
	ASI TANAGA	NS	51 40N	178 00W	148												6									25709
	ATTU	NS	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	BARROW	WBAS	71 18N	156 47W	29	6	6	6	6	6	1	1	1	1	1	1	1		12	12	12	12				27502
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26615
	BETTLES	CAA	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CANDLE	A	65 56N	161 55W	24	5	5	5	6	6	6	6	6	6	6	6	6			03						26619
	CAPE	AAF	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	61		02			25602
	CAPE DECISIO	CG	56 00N	134 08W	50	1	1	7	6	6	6	6	6	6	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	1	1	6	6	6	6	6	6	5	4	4	4									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CENTRAL	A	65 35N	144 48W	870											5	5									26418
	CIRCLE	A	65 48N	144 04W	700	4		4																		26446
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12					26410
	CORDOVA	AAF	60 29N	145 30W	45																51					26402
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5	08		12						25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	CURRY	A	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5	5											
	DAVIS	AAF	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			25701
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1	1	1									25611
	EIELSON	AAF	64 39N	147 04W	547										6	6	6				03					26407
	ELDRED ROCK	CG	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			11						25318
	ELMENDORF	AAF	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			26401
	FAIRBANKS	WBAS	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	1	1	1	1	1	6	1	1	1	6	4	4			12						25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3			06						26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	CAA	64 43N	156 54W	130	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1	01	12	12						26703
	GUARD ISLAND	CG	55 27N	131 53W	20	1	1	1	1	1	1	1	1	1	1	1	1			04						25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6	6			12						26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	WBO	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1	01	12	12						25325

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1946	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KOKRINES	AAF	64 54N	154 40W	185						1															26503
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26616
	KOUGAROK	AAF	64 54N	154 40W	185	1	1	1	6	6	6	6	6	1						59	59					26614
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1		12	62	62		10			26403
	LINCOLN ROCK	CG	56 03N	132 46W	26	1	1	1	1	1	1	1	1	1	6	4	4			12						25326
	LIVENGOOD	A	65 35N	148 29W	730				3	4	4	4	4	4	4	4										26428
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	01		12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 45W	44	4												11		11						26621
	NAKNEK	AAF	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBO	64 29N	165 24W	12	1	1	1											03	03	03	03				26617
	NOME	AAF	64 31N	165 26W	46	1	1	1												53	53					26604
	NOME	WBAS	64 30N	165 26W	15				1	1	1	1	1	1	1	1	1		09	09	09	09				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	5	6	6	6	6	5	6	6	6	6	6	6			12						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4			11						26622
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT BARROW	NS	71 20N	156 24W	13	1	6	6	6	6	6	6														27501
	POINT BARROW	CAA	71 20N	156 39W	11								1	1	1	1	1			02						27504
	POINT HOPE	A	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	POINT LAY	SA	69 45N	163 03W	18													12		12						26624
	PT RETREAT	CG	58 25N	134 57W	20	1	1	6	6	6	6	6	5	5	4	4	4									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	RADIOVILLE	A	57 36N	136 09W	15	3	3	3	3	3	3	3														25332
	SAND POINT	CAA	55 20N	160 30W	32	1	1	1	1	1	1	1	7	6	6	6	6			12						25617
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	SHEMYA	AAF	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625
	SHUNGNAK	CAA	66 54N	157 02W	138	6	6	6	6	6	5	6	6	6	6	6	6			12						26513
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5								6	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SOLOMON	A	64 35N	164 24W	15	5	5	5																		26629
	ST PAUL IS	WBO	57 07N	170 16W	96														12	12	07					25713
	ST PAULS IS	AAF	57 08N	170 16W	96																55					25705
	STEVENS VILA	A	66 01N	149 05W	350	5																				26449
	STONY RIVER	SA	61 46N	156 38W	221	5	5	5	5	5	5	5	5					08		06						26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1	03	07	12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANACROSS	CAA	63 24N	143 19W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440
	TANAGA IS	NS	51 45N	178 02W	145	6	6	6																		25714
	TANALIAN PT	A	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TELLER	A	65 16N	166 21W	10				5	5	5	5	5	5	5	5	5			06						26626
	TENAKEE	A	57 47N	135 12W	19	5	5	5	5	5	5	5	5													25336
	THORNBROUGH	AAF	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	TREE POINT	CG	54 48N	130 56W	36	1	6	6	6	6	6	6	7	7	7	5	4			09						25337
	UMIAT	CAA	69 22N	152 08W	337								7	1	1	1	1			05						26508
	UMIAT	NS	69 22N	152 08W	337	1	1	1	1	1	1	1								07						26506
	UMNAK ISLAND	AAF	53 32N	167 47W	67															58	58					25610
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	13	5	5	5	5	5	5	5	5	5	5	5	5			04						26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	WBAS	65 37N	168 03W	16		4	4	5	5	5	5	5	5	5	5	5	10		10						26618
	WALES	AAF	65 37N	168 03W	17															52						26609
	WHITE MOUNTA	A	64 41N	163 24W	50				5	5	5															26630
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	AAF	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25302
1947	AMCHITKA IS	AAF	51 23N	179 15E	202							1	1	1	1	1	1			56	56					45702
	AMCHITKA IS	AAF	51 24N	179 16E	202	1	1	1	1	1	1									06	06					45702
	ANCHORAGE	WBAS	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26409
	ANGOON	A	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113												1			01						25308
	ANNETTE IS	AAF	55 02N	131 35W	114	1	1	1	1	1	1	1	1	1	1	1	1			61	61		12			25301
	ASI TANAGA	NS	51 40N	178 00W	148	6	1	1	1	1	1	1	1	1	1	1	1									25709
	ATKA ISLAND	AAF	52 13N	174 12W	36									6	6	6	6			58	58					25708
	ATTU	NS	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	BARROW	WBAS	71 18N	156 47W	29	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				27502
	BARTER IS	AAF	70 08N	143 36W	40										1	1	1			53						27401
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26615
	BETTLES	CAA	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600										5	5	5									26416
	CANDLE	A	65 56N	161 55W	24	6	6	6	6	6	6	6	6	6	6	6	6									26619
	CAPE	AAF	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	55					25602
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5			6	6	5	12		10						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5										26418
	CLEAR STA A	AFS	62 13N	149 05W	537										1	1										26408

RECORDS INDEX ARRANGED BY YEAR

ALASKA

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NUMBER OF MONTHS IN YEAR WITH

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1947	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1		12	12	03					26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5			12						25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	CURRY	A	62 37N	150 02W	556	5	5	5	5	5	5	5	5	5		5	5									
	DAVIS	AAF	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25701
	DUTCH HARBOR	NS	53 53N	166 32W	26	1	1	1	1	1	1	1	1	1	1											25611
	EAGLE	A	64 46N	141 12W	806					4	5	5	5	5	5	5	5									26422
	EIELSON	AAF	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			54	62					26407
	ELDRED ROCK	CG	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			11						25318
	ELMENDORF	AAF	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26401
	FAIRBANKS	WBAS	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	4	4	4	4	4	4	4	4	4	4	4	4			12						25319
	FLAT	A	62 27N	158 00W	326	3	4	4	4	4	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	WBAS	64 43N	156 54W	139	1	1	1	1	1	1	1	1	1	1	1	1		03	12						26509
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1		12	12		10				26703
	GUARD ISLAND	CG	55 27N	131 53W	20	1	1	1	4	4	4	4	4	4	4	4	4			03						25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6	6			12						26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	WBO	55 21N	131 39W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12						25325
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			59	59		12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			12						25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	MIDDLETON IS	CAA	59 26N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	12		12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 45W	44			3										12		12						26621
	NAKNEK	AAF	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		09			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	6	6	6	5	6	6	6	5	6	6	6	6			12						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	PALMER	A	61 36N	149 07W	245	3	3																			25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT BARROW	CAA	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	POINT HOPE	A	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	POINT LAY	SA	69 45N	163 03W	18													10		10						26624
	PORT HEIDEN	CAA	56 57N	158 37W	102									1	1	1	1			04						25508
	PT RETREAT	CG	58 25N	134 57W	20	4	4	4	4	4	4	4	4	4	4	4	4									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SAND POINT	CAA	55 20N	160 30W	32	6	6	6	6	6	6	6								07						25617
	SAVOONGA	A	63 41N	170 26W	35									3	3	3	3			04						
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	SHEMYA	AAF	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625
	SHUNGNAK	CAA	66 54N	157 02W	138	6	6	6	6	6	6	6	6	6	6	6	6			12						26513
	SISTER IS	A	58 10N	135 15W	35									3	3	3	3									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	ST PAUL IS	WBO	57 07N	170 16W	96	1	1	1	1									01	06	06	06					25713
	ST PAUL IS	WBAS	57 08N	170 13W	28														06	06	06					25713
	STONY RIVER	SA	61 46N	156 38W	221										5	5	5	03		03						26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1	01		12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANACROSS	CAA	63 24N	143 19W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440
	TANACROSS	AAF	63 24N	143 19W	1554															53	53					26405
	TANALIAN PT	A	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			12						26531
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TENAKEE	A	57 47N	135 12W	19				5	5	5	5	5	5	5	5	5									25336
	THORNBROUGH	AAF	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			10						25337
	UMIAT	WBAS	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	13	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	WBAS	65 37N	168 03W	18	5	5	5	5	7	1	1	1	1	1	1	1	12		12						26618
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	AAF	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25302
1948	AMCHITKA IS	AAF	51 23N	179 15E	202	1	1	1	1	1	1									56	56		02			45702
	AMCHITKA IS	AFB	51 24N	179 18E	202							1	1	1	1	1	1			56	56		02			45702
	ANCHORAGE	WBAS	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26409
	ANGOON	A	57 30N	134 35W	14	5	5	5	5	5	5	5	5	5	5											25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1		12	12						25308

RECORDS INDEX ARRANGED BY YEAR

ALASKA

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

NUMBER OF MONTHS IN YEAR WITH

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1948	ASI TANAGA	NS	51 40N	178 00W	148	1	6	6	6	6	6	6	6	1	1	1	1									25709
	ATKA ISLAND	AAF	52 13N	174 12W	36	6	6	6	6	6	6	6	6	6	6	6	6			62	62					25708
	ATTU	NS	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	BARROW	WBAS	71 18N	156 47W	29	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			62	58					27401
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1	05	12	12		12				26615
	BETTLES	CAA	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	CANDLE	A	65 56N	161 55W	24	6	6	6	6	6	6	6	6	6	6	6	6									26619
	CAPE	AFB	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25602
	CAPE DECISIO	CG	56 00N	134 08W	50	5	6	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	CLEAR STA A	AFS	62 13N	149 05W	537															52	53					26408
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5			12						25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	CURRY	A	62 37N	150 02W	556	5																				
	DAVIS	AFB	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			25701
	DUTCH HARBOR	SA	53 53N	166 32W	22										5	5	5									25614
	EAGLE	A	64 46N	141 12W	806	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			62	62		10			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1			03						25318
	ELMENDORF	AFB	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			26401
	FAIRBANKS	WBAS	64 50N	147 43W	442	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIRE ISLAND	AFS	61 09N	150 14W	50	5	5	5	5											54	54					26507
	FIVE FINGER	CG	57 16N	133 37W	30	4		4	4	4	4	4	4	4	4	4	4			12						25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	WBAS	64 43N	156 54W	139	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26509
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1		12	12		12				26703
	GUARD ISLAND	CG	55 27N	131 53W	20	4	4	4	4	4	4	4	4	4	4	4	4									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	6	6	6	6	6	6	6	6	6	6	6	6			12						26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5			01						25325
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			62	62		10			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			12						25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1	07		12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 45W	44									3	3	3	3	11		12						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	NENANA	CAA	64 33N	149 05W	364	1		1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	15	1	1	1	1	1	1	1	1	1	1	1	1		12	12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	6	6	6	6	6	6	6	6	6	6	6	5			12						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1		12	12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	3	3	3	3	3				3	3	3	12		12						26622
	PALMER	A	61 36N	149 08W	300											3	3									25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT BARROW	CAA	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	POINT HOPE	A	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	POINT LAY	SA	69 45N	163 03W	18													10		10						26624
	PORT HEIDEN	CAA	56 57N	158 37W	102	1	1	1	1	1	1	1	1	1	1	1	1			12						25508
	PT RETREAT	CG	58 25N	134 57W	20	4	4	4	4	4	4	4	4	4	4											25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SAVOONGA	A	63 41N	170 26W	35	3	3	3	3	3	3	3	3	3	3	3	3			10						
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	SHEMYA	AFB	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	59		12			45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625
	SHUNGNAK	CAA	66 54N	157 02W	138	6	6	6	6	6	6	6	6	6	6	6	6			12						26513
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	ST PAUL IS	WBAS	57 09N	170 13W	28														12	12	12					25713
	STAMPEDE	SAWR	63 44N	150 22W	2500	4	3																			
	STONY RIVER	SA	61 46N	156 38W	221	5	5	5	5	5	5	5	5	5	5	5	5	11		11						26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANACROSS	CAA	63 24N	143 19W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440
	TANALIAN PT	A	60 13N	154 22W	308	5	5	5	5	5	5	5	5	5	5	5	5			10						26531
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TENAKEE	A	57 47N	135 12W	19	5	5	5	5	5	5	5	5													25336
	THORNBROUGH	AFB	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			12						25337

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1948	UMIAT	WBAS	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	WBAS	65 37N	168 03W	18	1	1	1	5	5	5	5	5	5	5	5	5			12						26618
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	AAF	59 31N	139 40W	31	1	1	1	1	1	1	1								57	57					25302
	YAKUTAT	WBAS	59 31N	139 40W	31								1	1	1	1	1		05	05	05					25339
1949	AMCHITKA IS	AFB	51 24N	179 18E	202	1	1	1	1	1	1	1	1	1	1	1	1			62	62					45702
	ANCHORAGE	WBAS	61 13N	149 50W	141															12	12	12				26409
	ANGOON	A	57 31N	134 35W	14		5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113															12						25308
	ASI TANAGA	NS	51 40N	178 00W	148	1	1	1																		25709
	ATKA ISLAND	AAF	52 13N	174 12W	36	6	6	6	6	6	6	6	6	6	6	6				61	61					25708
	ATTU	NS	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	BARROW	WBAS	71 18N	156 47W	29	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			62	62					27401
	BETHEL	WBAS	60 47N	161 43W	15															12						26615
	BETTLES	CAA	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	CANDLE	A	65 56N	161 55W	24	6	6	6	6	6	6	6	6	6	6	5	5									26619
	CAPE	AFB	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1	1			62	62					25602
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	4	4	4	4	4	4	4	4	4	4	4	4	12		12						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	CORDOVA	WBAS	60 30N	145 30W	44															12						26410
	CRAIG	A	55 29N	133 09W	13															12						25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	DAVIS	AFB	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1			62	62		11			25701
	DUTCH HARBOR	SA	53 53N	166 32W	22	5	5	5	5	5	5	5	5	5	5	5	5									25614
	EAGLE	A	64 46N	141 12W	806	5	5	5	5	5	3	3	3	3	3	3	3									26422
	EIELSON	AFB	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			.62	62		12			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	1	1	1	1	1	1	1	1	1	1	1	1									25318
	ELMENDORF	AFB	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26401
	FAIRBANKS	WBAS	64 50N	147 43W	442															12	12	12				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	4	4	4	4	4	4	4	4	4	4	4	4			12						25319
	FLAT	A	62 27N	158 00W	326										3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	5	6	6	5	6	6	6	6	6	5	5			12						26413
	GALENA	WBAS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12		12				26703
	GUARD ISLAND	CG	55 27N	131 53W	20	4	4	4	4	4	4	4	4	4	4	4	4									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545															04						26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	JUNEAU	WBAS	58 22N	134 35W	22	0	0	0	0	0	0	0	0	1	1	1	0			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			62	61		12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			12						25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	MCKINLEY PRK	A	63 43N	148 58W	2092							5	5	5	5	5										26429
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 45W	44	3	3	3	3	3	3							11		11						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	.15		1									1	1			12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	6	6	6	6	6	6	6	6	6	6	6	6			12						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	50			3	3	3	4		4	3	3	3	3	11		12						26622
	NYAC	SAWR	61 00N	159 59W	450							4	4	3	4	3	3									26525
	PALMER	A	61 36N	149 08W	300	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT BARROW	CAA	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	POINT HOPE	A	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	POINT LAY	SA	69 45N	163 03W	18											3	3	12		12						26624
	PORT ALEXAND	A	56 15N	134 39W	18					5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	CAA	56 57N	158 37W	102	1	1	1	1	1	1	1	1	1	1	1	1			12						25508
	PT RETREAT	CG	58 25N	134 57W	20					4	4	4	4	4	4	4	4									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SAVOONGA	A	63 41N	170 26W	35	4	4	4	4	4										05						
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	SHEMYA	AFB	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			12						26625
	SHUNGNAK	CAA	66 54N	157 02W	138	6	6		6	6	6	6	6	6	6	6	6			12						26513

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1949	SISTER IS	A	58 10N	135 15W	35	5	6	6	5	5	6	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	ST PAUL IS	WBAS	57 09N	170 13W	28						0	0	0	0	0	0	0			12	12					25713
	STONY RIVER	SA	61 46N	156 38W	221	5	5	5	5	5	5	5	5	5	5	5	5									26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANACROSS	CAA	63 24N	143 19W	1546	1	1	1	1	1	1	1	1	1	1	1	1			12						26440
	TANANA	CAA	65 10N	152 06W	240	1	1		1	1	1	1	1	1	1	1	1			09						26529
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TENAKEE	A	57 47N	135 12W	19		5	5	5	5	5	5	5	5	5	5	5									25336
	THORNBROUGH	AFB	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			12						25337
	UMIAT	WBAS	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1		1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5		5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	WBAS	65 37N	168 03W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26618
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	12		12						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1		1	1		1	1	1	1	1			10						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	0	0	0	0			12	12					25339
1950	ADAK	NS	51 53N	176 38W	15							1	1	1	1	1	1									25704
	AMCHITKA IS	AFB	51 24N	179 18E	202	1	1	1	1	1	1		1	1	1	1				59	60					45702
	ANCHORAGE	WBAS	61 13N	149 50W	141															12	12	12				26409
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113															12			01			25308
	ATKA	SAWR	52 10N	174 12W	50											3	3									25715
	ATTU	NS	52 50N	173 11E	91	1	1	1	1	1	1	1	1	1	1	1	1									45709
	BARROW	WBAS	71 18N	156 47W	29	1	1	1	0	0	0	0	0	0	0	0	0			12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			62	60					27401
	BETHEL	WBAS	60 47N	161 43W	15															12						26615
	BETTLES	CAA	66 54N	151 43W	855	1	1	1	1	1	1	1	1	1	1	1	1			12						26517
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600			5	5	5	5	5	5	5	5	5	5									26416
	CANDLE	A	65 56N	161 55W	24	5	5	5	5	5	5	5	5	5	5	5										26619
	CAPE	AFB	53 23N	167 54W	131	1	1	1	1	1	1	1	1	1	1	1				61	61		04			25602
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		11						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	CORDOVA	WBAS	60 30N	145 30W	44															12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5			09						25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	DAVIS	AFB	51 53N	176 39W	15	1	1	1	1	1	1									55	55					25701
	DUTCH HARBOR	AFS	53 54N	166 32W	23												1			51	51					25620
	DUTCH HARBOR	SA	53 53N	166 32W	22	5	5	5	5	5	5	5	5	5	5	5	5									25614
	EAGLE	A	64 46N	141 12W	806	5	5	5	5	5	5				5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	4	4	4	4	4	4	4	4	4	4	4	4									25318
	ELMENDORF	AFB	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			26401
	FAIRBANKS	WBAS	64 50N	147 43W	442															12	12	12				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	4	4	4	4	4	4	4	4	4	4	4	4			04						25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	5	6	6	6	5	5	6	6	6	6	6			12						26413
	GALENA	WBAS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12		12				26703
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545															01						26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	JUNEAU	WBAS	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			62	60		12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4			03						25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1		1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 45W	44			4	4	4								05		05						26621
	MT VILLAGE	SA	62 07N	163 43W	44								4	4	4	4	4	05		05						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	15	1	1	1	1	1										12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	5	5	5	5	5	5	5	5	5	5	5	5			12						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	50	3	3	3	3	3	3	3	3	3	5	3	3	12		12						26622
	NYAC	SAWR	61 00N	159 58W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 08W	300	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1950	PLATINUM	A	58 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT BARROW	CAA	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	POINT HOPE	A	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26623
	POINT LAY	SA	69 45N	163 03W	18	3	3	3	3	3		3	3	3	3	3	3	08		11						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	CAA	56 57N	158 37W	102	1	1	1	1	1	1	1	1	1	1	1	1			12						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	4	4	4	4	4	4	4	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	CAA	61 48N	147 41W	2316	1	1	1	1	1	1	1	1	1	1	1	1			12						26439
	SHEMYA	AFB	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5			11						26625
	SHUNGNAK	CAA	66 54N	157 02W	138	5	5	5	6	6	6	6	6							10						26513
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	ST PAUL IS	WBAS	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	STONY RIVER	A	61 46N	156 38W	221	5	5	5	5	5	5	5	5	5	5	5	5									26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANACROSS	CAA	63 24N	143 19W	1546	1	1	1	1	1	1	1	1							08						26440
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TENAKEE	A	57 47N	135 12W	19	5	5	5	5	5	5	5	5	5	5	5	5									25336
	THORNBROUGH	AFB	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			62	62		12			25603
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4			05						25337
	UMIAT	WBAS	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	WBAS	65 37N	168 03W	18	5	5	5	5	5	5	5	5	5	5	5	5			12						26618
	WISEMAN	A	67 26N	150 13W	1290	6	6	6	6	6	6	6	6	6	6	6	6	05		05						26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
1951	ADAK	NS	51 53N	176 39W	15	1	1	1	1	1	1	1	1	1	1	1	1									25704
	ANCHORAGE	WBAS	61 13N	149 50W	141												1			12.	12	12				26409
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113															12			12			25308
	ATKA	SAWR	52 10N	174 12W	50	5	5	4	4	3	3	4														25715
	ATTU	NS	52 50N	173 11E	91	1																				45709
	BARROW	WBAS	71 18N	156 47W	29	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			12	09					27401
	BETHEL	WBAS	60 47N	161 43W	15															12						26615
	BETTLES	CAA	66 55N	151 31W	672				1	1	1	1	1	1	1	1	1			09						26533
	BETTLES	CAA	66 54N	151 43W	855	1	1	1												03						26517
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5										26418
	CORDOVA	WBAS	60 30N	145 30W	44															12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	DILLINGHAM	SAWR	59 03N	158 27W	30												3									25513
	DUTCH HARBOR	AFS	53 54N	166 32W	23	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25620
	EAGLE	A	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			12	12	.	12			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	4	4	4	4	4	4	4	4	4	4	4	4									25318
	ELMENDORF	AFB	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26401
	FAIRBANKS	WBAS	64 49N	147 52W	443															04	04					26411
	FAIRBANKS	WBAS	64 50N	147 43W	442															08	08	08				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	4	4	5	4	4	4	4	4	4	4	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	5	6	5	5	6	5	6	6	6	6	6	6			12						26413
	GALENA	WBAS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12		06				26703
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075							5	5	5	5	5	5									26535
	JUNEAU	WBAS	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1									25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12	11		12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4									25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	MCKINLEY PRK	A	63 43N	148 58W	2092			5																		26429
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1951	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	4	4	4	4	4	4	4	4	4	4	4	4	11		12						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18															12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	5	5	5	5	4	4	4	4	4	4	4	4			08						26436
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	5	5	5	5	5	5	5	5	5	5			12						25613
	POINT BARROW	CAA	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	POINT HOPE	A	68 20N	166 48W	14	5	5	5	5	5	4	4	4	5	4	4	4	12		12						26623
	POINT LAY	SA	69 45N	163 03W	18	3	3	3	3	3	4	4	4	4	4	4	4	12		12						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	SA	56 57N	158 37W	92	1	1	1	1	1	1			4	5	5	5	03		10						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	4	4	4	4	4	4	4	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	SAWR	61 48N	147 41W	2316	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	AFB	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5	5	5	5	5	5	5									26625
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SPARREVOHN	AFS	61 06N	155 34W	1729							6	6	6	6	6										26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	STONY RIVER	A	61 46N	156 38W	221	5	5	5																		26527
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TENAKEE	A	57 47N	135 12W	19	5	5																			25336
	THORNBROUGH	AFB	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25603
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4									25337
	UMIAT	WBAS	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	6	6	5	5	5	5	5	5									25621
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	6	6	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	WBAS	65 37N	168 03W	18	5	5	5	6	6	6	6	5	5	5	5	5			12						26618
	WISEMAN	A	67 26N	150 13W	1290	5	5	5	5	5	5	5	5	5	5	5	5									26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
1952	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	11		25704
	ANCHORAGE	WBAS	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26409
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113															12			12			25308
	BARROW	WBAS	71 18N	156 47W	29	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			11	12					27401
	BETHEL	WBAS	60 47N	161 43W	15															12						26615
	BETTLES	CAA	66 56N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	4	4	4	4	4	4	4	4	4	4	4	4									26417
	CAPE LISBURN	AFS	68 52N	166 08W	67								6	6	5	5	5									26531
	CAPE SARICHE	CG	54 36N	164 56W	175			5	5	5	5	5	5	5	5	5	5									25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	CORDOVA	WBAS	60 30N	145 30W	44															12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	DILLINGHAM	SAWR	59 03N	158 27W	30						3	3	3	3	3	3	5									25513
	DUTCH HARBOR	AFS	53 54N	166 32W	23	1	1	1	1	1										05	05					25620
	DUTCH HARBOR	NS	53 54N	166 32W	15						1	1	1	1	1	1	1			01	06		07			25611
	EAGLE	A	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	547	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	4	4	4	4	4	4	4	4	4	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26401
	FAIRBANKS	WBAS	64 49N	147 52W	443															12	12	02				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	4	4	4	4	4	4	4	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	5	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	WBAS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26509
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1	1	1	1	1	1	1			12						26703
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	5	5	5	5	6	6	6	6	6	6	6	6									26535
	JUNEAU	WBAS	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH: 1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1952	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5		5	5	5	5	5	5	5	5	5									25325
	KODIAK	NAF	57 45N	152 30W	112	1	1		1	1	1	1	1	1	1	1	1			11			12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	4									25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	MIDDLETON IS	CAA	59 26N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12	03		12			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18															12	12	10				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	NORTHEAST CA	AFS	63 19N	168 56W	38							6	6	6												26632
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	4	4	4	4	3	4	4	4	4	4	4	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3		3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 05W	198	3		3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	6	6			12						25613
	POINT BARROW	CAA	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1	1	1	1			12						27504
	POINT HOPE	A	68 20N	166 48W	14	4	4	4	4	4	4	4	4	4				09		09						26623
	POINT LAY	SA	69 45N	163 03W	18	4	4	4	4	4				4	4	4	4	12		09						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	SA	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	4	09		12						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	4	4	4	4	4	4	4									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	SAWR	61 48N	147 41W	2316	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	AFB	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			45708
	SHISHAREF	SA	66 14N	166 07W	16	5	5	5	5	5	5															26625
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SPARREVOHN	AFS	61 06N	155 34W	1729				6			6	6	6	6	6	6			05						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939				6			5	5	5	5	5	6			03						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	THORNBROUGH	AFB	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25603
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4									25337
	UMIAT	WBAS	69 22N	152 08W	337	1	1	1	1	1	1	1	1	1	1	1	1			12						26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5										25621
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	SA	65 37N	168 03W	18	5	5	5	5	5	5	5	3	3	3	3	3	10		12						26618
	WISEMAN	A	67 26N	150 13W	1290	5	5	5	5	5	5	5	5													26511
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	58 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
1953	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	ANCHORAGE	WBAS	61 10N	149 59W	105															02	02		01			26451
	ANCHORAGE	WBAS	61 13N	149 50W	141	1	1	1	1	1	1	1	1	1	1		5			10	10	10				26409
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113															12			12			25308
	BARROW	WBAS	71 18N	156 47W	29	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	40	1	1	1	1	1	1	1	1	1	1	1	1			12	03					27401
	BETHEL	WBAS	60 47N	161 43W	15															12						26615
	BETTLES	CAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146·39W	185	4	4	4	4	4	4	4	4	4	4	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	67	6	6	6	6	6	6	6	6	6	6	6	6			04						26631
	CAPE NEWENHA	AFS	58 40N	162 10W	543							6	6	6	6	6	6			06						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434			7	7	7	7	7	7	7	6	6	6			10						26633
	CAPE SARICHE	CG	54 36N	164 56W	175	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5	5	5	5	5	5	5	5									26418
	CHIRIKOF IS	SAWR	55 54N	155 34W	25			3	3	3	3	3			3	3	3									25511
	COLD BAY	SAWR	55 12N	162 43W	98											5	5									25624
	CORDOVA	WBAS	60 30N	145 30W	44															12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	DILLINGHAM	SAWR	59 03N	158 27W	30	5	5	5	5	5	5	5	5	5	5	5	5									25513
	DUTCH HARBOR	NS	53 54N	166 32W	15	1	1	1	1	1	1	1	1	1	1	1	1			01	11		10			25611
	EAGLE	A	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	552	1	1	1	1	1	1	1	1	1	1	1	1			12	03		11			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	192	1	1	1	1	1	1	1	1	1	1					10	03		10			26401
	ELMENDORF 2	AFB	61 15N	149 48W	206										1	1	1			03			01			26452
	FAIRBANKS	WBAS	64 49N	147 52W	443															12	12	12				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1953	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	WBAS	64 43N	156 54W	125	1			1	1										05						26509
	GALENA	AFS	64 43N	156 54W	125						1	1	1	1	1	1	1			07						26501
	GAMBELL	WBAS	63 51N	171 36W	32	1	1	1	1	1	1									05						26703
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	CAA	59 13N	135 26W	257	1	1	1	1	1	1	1	1	1				09		09						25323
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	6	6	6	6	6	6	6	6													26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	1	1	1	1	1	1	1	6	6	1	6	6			06						26535
	JUNEAU	WBAS	58 22N	134 35W	22	0	0	0	0	0	0	0	0	0	0	0	0			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KOBUK	A	66 54N	156 52W	140								5	5	5	5	5									
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			11		09	11	11		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	0	0	0	0	0	0	0	0	0	0	0	0			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12	02		12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	4	4	4	4	4	4	4	4	4	4	4	5									25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	0	0	0	0	0	0	0	0	0	0	0	0			12						26510
	MIDDLETON IS	CAA	59 26N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1		1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	4	4	4	4	4	4	4	4	3	3	3	3	12		12						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18															12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	NORTHEAST CA	AFS	63 19N	168 56W	38	6	5	5	5	6	6	6	6	6	6	6	6			06						26632
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	5	5	5	5	5	5	6	6			12						25613
	POINT BARROW	CAA	71 20N	156 39W	11	1	1	1	1	1	1	1	1	1						08						27504
	POINT LAY	SA	69 45N	163 03W	18	4	4	4	4	4	4	4	4	4	4	4	4	09		12						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	SA	56 57N	158 37W	92	5	5	5	4			5	5					05		12						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	4	5	5	4	5	5	4	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	SAWR	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	AFB	52 43N	174 06E	132	1	1	1	1	1	1	1	1	1	1	1	1			12	03		11			45708
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SPARREVOHN	AFS	61 06N	155 34W	1728	6	6	6	1	1	1	1	1	1	1	1	1			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25713
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	6	6	6	6	6	8	6	6	6	6	6	6			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	THORNBROUGH	AFB	55 12N	162 43W	89	1	1	1	1	1	1	1	1	1	1	1	1			11	03		03			25603
	TIN CITY	AFS	65 34N	167 55W	271					5	6	7	7	6	6	6	6			03						26634
	TREE POINT	CG	54 48N	130 56W	36	4	4	4	4	4	4	4	4	4	4	4	4									25337
	UMIAT	AFS	69 22N	152 08W	340							1	1	1	1	1	1			06						26537
	UMIAT	CAA	69 22N	152 08W	337	5	5	5	5	5	5									06						26508
	UMNAK	SAWR	53 23N	167 54W	130		5	5	5	5	5	5	5	5	5	5	5									25621
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	SA	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	0	0	0	0	0	0	0	0	0	0	0	0			12	12					25339
1954	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	ANCHORAGE	SAWR	61 13N	149 50W	134	5	5	5	5	3				4	3	4	4									26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	NS	52 48N	173 10E	92								1	1	1	1	1			05			05	05		45709
	BARROW	WBAS	71 18N	156 47W	29	6	6	6	6	6	6	6	6	6	6	6	6			12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	CAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	67	6	6	6	6	6	6	6	6	6	6	6	6			12						26631
	CAPE NEWENHA	AFS	58 40N	162 10W	543	6	6	6	6	6	6	6	6	6	6	6	6			12						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	6	6	6	6	6	6	6	6	6	6	6	6			11						26633
	CAPE SARICHE	CG	54 36N	164 56W	175	5	5	5	5	5	5	5	5	5	5	5	5									25622

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1954	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CENTRAL	A	65 35N	144 48W	870	5	5	5	5	5																26418
	CHIRIKOF IS	SAWR	55 54N	155 34W	25			3	3	3	3	3	3													25511
	CIRCLE HOT S	A	65 29N	144 36W	835						5	5	5	5	5	5	5									26419
	COLD BAY	SAWR	55 12N	162 43W	93	5	5	5	5		1	1	1	1	1	1	1			06						25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 28N	133 09W	13	5	5	5	5	5	5	5	5	5	5	4	4									25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	4	5	5	5	5	5	5	5									26518
	DILLINGHAM	SAWR	59 03N	158 27W	30				3	3	3	3	3	3	3											25513
	DUTCH HARBOR	NS	53 54N	166 32W	10	1	1	1	1	1	1	1								07	05		06			25611
	DUTCH HARBOR	SAWR	53 53N	166 32W	13								5	5	5	5	5									25614
	EAGLE	A	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			07			26407
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF 2	AFB	61 15N	149 48W	206	1	1	1	1	1	1	1	1	1	1	1	1			12			05			26452
	FAIRBANKS	WBAS	64 49N	147 52W	443	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	5	6	6	6	6			12						26413
	GALENA	AFS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	GAMBELL	SAWR	63 51N	171 36W	30											3										
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545						5	5	5	5	5	5	5									26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	6	6	6	6	6	6	6	6	6	6	6	6			12						26535
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KOBUK	A	66 54N	156 52W	140	5	5	5																		
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12		11	12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26403
	LINCOLN ROCK	CG	56 03N	132 48W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1		1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	4	4	4	4	4	4	4	3	3	3	3	3	12		12						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			08			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	NORTHEAST CA	AFS	63 19N	168 56W	38	6	6	6	6	6	6	6	6	6	6	6	6			12						26632
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	3	4	4	4	3	3	3	4	4	4	4	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3		3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT LAY	SA	69 45N	163 03W	18	4	4	4	4	4	4	4	4	4	4	4	4	12		10						26624
	PORT ALEXAND	A	56 15N	134 38W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	SA	56 57N	158 37W	92						5	5	5	5	5	5	5	06		09						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	SAWR	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	AFB	52 43N	174 06E	132	1	1	1	1	1	1	4	4							08			05			45708
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	6	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SPARREVOHN	AFS	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	4	4	4	4	4	4	4	4	4	4	4	4			12	12					25713
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	6	6	6	6	6	6	6	6	6	6	6	6			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	THORNBROUGH	AFB	55 12N	162 43W	99	4	4	4	4	4	4									06						25603
	TIN CITY	AFS	65 34N	167 55W	271	6	6	6	6	6	6	6	6	6	6	6	6			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	AFS	69 22N	152 08W	340	1	1	1	1	1	1	1	1							08						26537
	UMNAK	SAWR	53 23N	167 54W	130	5	5		5	5	5	5	6	5	6	5	6									25621
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	6	5	6	12		12						27503
	WALES	SA	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
1955	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			11	12		25704
	ANCHORAGE	CAA	61 13N	149 50W	134	4	6	6	6	6	6	6	6	6	6	6	6									26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			10	10		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1955	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	NS	52 48N	173 10E	82	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		45709
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	BARTER IS	AFB	70 08N	143 36W	21	1	1	1	1	1	1	1	1	5	5	5	5			12						27401
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	CAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5	5	5									26416
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	67	1	6	6	6	1	1	1	1	1	1	6	6			11						26631
	CAPE NEWENHA	AFS	58 40N	162 10W	543	6	6	6	6	1	1	1	1	1	6	6	6			12						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	6	6	6	6	1	1	1	1	1	6	6	6			12						26633
	CAPE SARICHE	CG	54 36N	164 56W	175	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		10						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	6		5	5	5	11		11						25401
	CIRCLE HOT S	A	65 29N	144 36W	935	5	5	5	5	5	5	5	5	5	5	3	3									26419
	COLD BAY	WBAS	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	6	6	7	7	7	7	7			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5										25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	5	5	5									25614
	EAGLE	A	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			06		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF 2	AFB	61 15N	149 48W	206	1	1	1	1	1	1	1	1	1	1	1	1			12						26452
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12	04				26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			10						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	AFS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	GAMBELL	SAWR	63 51N	171 38W	30		3							3												
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	1	1	1	1	1	1	1	1	1	1	1	1			12						26535
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	49											1	1			02		01				25503
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12		11	12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			11			12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	NAKNEK	AFB	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1					10			08			25503
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	NORTHEAST CA	AFS	63 19N	168 56W	38	6	6	6	6	7	7	7	7	1	1	6	6			12						26632
	NORTHWAY	WBAS	62 57N	141 56W	1718	1	1	1	1	1	6	6	6	6	6	6	6			12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3										25331
	PETERSBURG	CAA	56 49N	132 57W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT BARROW	AFS	71 21N	156 39W	14	1	1	5	5			6	5							04						27505
	POINT LAY	SA	69 45N	163 03W	18	4	4	4	4	4	4	4	4				4	09		08						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	SA	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5	10		10						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SEWARD	SAWR	60 08N	149 25W	17		3	3	3	3	3	3	3													
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	SAWR	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	SAWR	52 43N	174 06E	83												1			01						45715
	SHEMYA	AFB	52 43N	174 06E	132							6	6	6	6	7				05						45708
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SPARREVOHN	AFS	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	4	4	4	5	5	5	5	5	5	5	5	5			12	12					25713
	SUMMIT	CAA	63 20N	149 08W	2407	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	1	6	6	6	6	6	6	6	6	1	6	6			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	6	6	6	6	1	1	1	1	1	6	6	6			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	AFS	69 22N	152 08W	340		1													01						26537
	UMNAK	SAWR	53 23N	167 54W	130	6	5	5	5	5	5	5	5	5	5	5	5									25621

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	MET'L SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1955	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	SA	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
1956	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	ANCHORAGE	CAA	61 13N	149 50W	134	6	6	6	6	6	6	6	6	6	6	6	6									26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	NS	52 48N	173 10E	92	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		45708
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	BARTER IS	WBAS	70 08N	143 38W	50												1			01						27401
	BARTER IS	AFB	70 08N	143 36W	20	5	5	5	6	6	1	1	1	1	1	1	1			11						27401
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	CAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5					5	5	5	5	5	5									26416
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	52	1	1	1	1	1	1	1	1	1	1	1	1			11						26631
	CAPE NEWENHA	AFS	58 40N	162 10W	543	6	1	1	1	1	1	1	1	1	1	1	1			11						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	1	1	1	1	1	1	1	1	1	1	1	1			11						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			04						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	COLD BAY	WBAS	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 08W	13	5	5	5	5	5	5	5	5	5	5	5										25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5	5	5	5	5	5	5									26518
	DILLINGHAM	SAWR	59 03N	158 27W	50			5	5	3	3	5	4	3	5	4	3									25513
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	5	5	5									25614
	EAGLE	A	64 46N	141 12W	836	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			11			11			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	258				1	1	1	1	1	1	1	1	1			08			09			26401
	ELMENDORF 2	AFB	61 15N	149 48W	206	1	1	1	1											04						26452
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	AFS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			11						26501
	GAMBELL	SAWR	63 51N	171 36W	30											3	3									
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ICY BAY	SAWR	59 59N	141 48W	10	3	4	3	3	3	3	1	1	1	1	1	1									
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	1	1	1	1	1	1	1	1	1	1	1	1			11						26535
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12		12	11	11		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LADD	AAB	64 51N	147 35W	464	1	1	1	1	1	1	1	1	1	1	1	1			11			09			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 39W	325	6	6	6	6	6	6	6	6	6	6	6	6									26524
	MCCARTHY	SAWR	61 26N	142 55W	1600						4	5	3	4	3	4	3									
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	4	4	4	4	4	4	4	4	4	4	4	4									26436
	NORTHEAST CA	AFS	63 19N	168 56W	38	6	6	6	1	1	1	1	1	1	1	1	6			12						26632
	NORTHWAY	WBAS	62 57N	141 56W	1718	7	7	6	7	6	6	6	6	6	6	6	7			12						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 05W	198					3	3			3	3	3	3									25331
	PETERSBURG	A	56 49N	132 57W	50	1	1	1	1	5	5	5	5	5	5	5	5			04						25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT LAY	SA	69 45N	163 03W	28	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	SA	56 57N	158 37W	92	5	5	5	5	5	6	6	5	5	5	5	5	07		08						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6	6	6	6	6									26526
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SEWARD	SAWR	60 08N	149 25W	17	3	3									3	3									
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	SAWR	52 43N	174 06E	93	1	1	1	1	1	1	1	1	1	1	1	1			12						45715

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1956	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SPARREVOHN	AFS	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			11						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12	09					25713
	SUMMIT	CAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	938	6	6	6	6	1	1	1	1	1	1	1	1			11						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			11						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	5	5	6	5	5	6	5	5	5	5	5	1									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	6	6	5									25621
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	UPPER RUSSIA	SAWR	60 21N	150 06W	700						3	5	5	5	5	5	3									
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	28	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	SA	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	10					25339
1957	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	ANCHORAGE	CAA	61 13N	149 50W	134	6	6	6	6	6	6	6	6	6	6	6	6									26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	NS	52 48N	173 10E	92	1	1	1	1	1	1	1	1	6	5	5	5			12			12	12		45708
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	CAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BOUNDARY	A	64 04N	141 07W	2600	5	5	5	5	5	5	5	5	5	5											26416
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5		5	11		11						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	52	1	1	1	1	1	1	1	1	1	1	1	1			12						26631
	CAPE NEWENHA	AFS	58 40N	162 10W	543	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CIRCLE HOT S	SAWR	65 29N	144 36W	935					3	3	3	3	3	3	3	3									26419
	COLD BAY	WBAS	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	A	61 52N	158 15W	125	5	5	5	5	5	5															26518
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	4	5	4	5	5	4	4	5									25513
	EAGLE	A	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26401
	FAIRBANKS	WBAS	64 48N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	5	6	6	5	5	6	5			12						26417
	GALENA	AFS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	GAMBELL	SAWR	63 51N	171 36W	30	3	3	3	3																	
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ICY BAY	SAWR	59 59N	141 48W	10	1	5	5	5																	
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	1	1	1	1	1	1	1	1	1	1	1	1			12						26535
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	4	4	4	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LADD	AAB	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1	1	1			12						26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 39W	325	5	5	5	5	5	5	5	5													26524
	MCCARTHY	SAWR	61 26N	142 55W	1600	3	3	4	3	3	3	3	3	3	3	3	3									
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12	07				26617
	NORTH DUTCH	CAA	60 46N	147 48W	39	4																				26436
	NORTHEAST CA	AFS	63 19N	168 56W	38	6	6	6	6	6	6	1	1	1	1	1	1			06						26632
	NORTHWAY	WBAS	62 57N	141 56W	1718	7	6	7	6	7	6	6			1	1	1			10						26412
	NUNIVAK	SA	60 23N	166 12W	50	4	3	3	4	4	4	4	4	4	4	4	4	12		12						26622

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1957	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT LAY	SA	69 45N	163 03W	12	4	4	4	4	4	4	4	4	4	4	4	4	10		09						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5	04		03						25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	6	6	6	6	6	6	6	6													26526
	SEWARD	SAWR	60 08N	149 25W	17	3	3																			
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	SAWR	52 43N	174 06E	93	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SLEETMUTE	A	61 42N	157 11W	285										5	5	5									
	SPARREVOHN	AFS	61 06N	155 34W	1729	1	1	1	1	1	1	1	1	1	1	1	1			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	SUMMIT	CAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	1	1	1	1	1	1	1	1	1	1	1	1			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	1	1	1	1	1	1	5														26508
	UMNAK	SAWR	53 23N	167 54W	130								5	5	5	5	5									25621
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	UPPER RUSSIA	SAWR	60 21N	150 06W	700	3	5	3	5	3	5	5	5	5	3	5	3									
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	SA	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	12		12						27503
	WALES	SA	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
1958	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	NS	52 48N	173 10E	92	5	5	5	5	5	5									06			06	06		45709
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 43W	15	1	1	1	1	1	1	1	1	1						10						26615
	BETHEL	WBAS	60 47N	161 48W	131											1	1			02						26615
	BETTLES	CAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	52	1	1	1	1	1	7	7	7	7	7	7	7			12						26631
	CAPE NEWENHA	AFS	58 40N	162 10W	543	1	1	1	1	1	7	7	7	7	7	7	7			12						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	1	1	1	1	1	7	7	7	7	7	7	7			12						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CIRCLE HOT S	SAWR	65 29N	144 36W	835	3	3	5	3	4	3	3	3													26419
	COLD BAY	WBAS	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12						25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	4	5	5	5									25513
	EAGLE	A	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	539	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12			08			26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	5	6	6	6	6	6	5	5	5	6	6			12						26413
	GALENA	AFS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	1	1	1	1	1	7	7	7	7	7	7	7			12						26535
	JUNEAU	WBAS	58 22N	134 35W	22	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	KULIK LAKE	SAWR	58 59N	155 07W	400							5	4	4												
	LADD	AAB	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1	1	1			12			01			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	64 59N	150 40W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCCARTHY	SAWR	61 26N	142 55W	1600	3	3	3	3	3	3	3	3	3	3	3	3									

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1958	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						25402
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	NORTHEAST CA	AFS	63 19N	168 56W	33	1	1	1	1	1	7	7	7	7	7	7	7			12						26632
	NORTHWAY	CAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	35	4	4	4	4	4	4	4	4	4	4	4	4	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3										26525
	PALMER	A	61 36N	149 07W	230											3	3									25331
	PALMER	A	61 36N	149 05W	225	3	3	3	3	3	3	3	3	3												25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	6	6	6	6	6	6	6	6			12						25613
	POINT LAY	SA	69 45N	163 03W	12	3	3	3	3	3	3	3	3			3	3	03		03						26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837							5	5	5	5	5	5									26526
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SEWARD	SAWR	60 08N	149 25W	17				3																	
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	NS	52 43N	174 06E	113						4	4	4	4	4	4	4			07			07	07		45714
	SHEMYA	SAWR	52 43N	174 06E	93	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	CAA	61 58N	151 12W	153	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SLEETMUTE	A	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	SPARREVOHN	AFS	61 06N	155 34W	1729	1	1	1	1	1	7	7	7	7	7	7	7			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	SUMMIT	CAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	1	1	1	1	1	7	7	7	7	7	7	7			12						26536
	TELLER	A	65 16N	166 21W	10				5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	1	1	1	1	1	7	7	7	7	7	7	7			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337										3	5	3									26508
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	UPPER RUSSIA	SAWR	60 21N	150 06W	700	5	5	3	3	3	3	3	3	3	3	3	3									
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	A	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5	03		03						27503
	WALES	SA	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25339
1959	ADAK	NS	51 53N	176 39W	14	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25704
	ANCHORAGE	CAA	61 13N	149 50W	134					5	3	3														26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	CAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12	12				27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	CAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	CAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									264:7
	CAPE LISBURN	AFS	68 52N	166 08W	52	7	7	7	7	7	7	7	7	7	7	7	7			12						25631
	CAPE NEWENHA	AFS	58 40N	162 10W	543	7	7	7	1	1	1	1	1	1	1	1	1			12						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	7	7	7	1	1	1	1	1	1	1	1	1			12						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	58	5	5	5	5	5	5	5	5	5	5	5	5	12		10						25401
	CAPE THOMPSO	SPL	68 06N	165 46W	36								3	3	3	3	3									26636
	CLEAR	SAWR	64 17N	149 11W	580			3	3	3	3	3	3	3	3	3	3									
	COLD BAY	WBAS	55 12N	162 43W	86	1	1	1	1	1	1	1	1	1	1	1	1			12			06			25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	DRIFTWOOD BY	AFS	53 58N	166 51W	1277						5	5	5	5	5	5	5									25515
	EAGLE	A	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 39N	147 04W	539	1	1	1	1	1	1	1								07			07			26407
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			05			05			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12						26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAREWELL	CAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3	3	3									26520
	FORT YUKON	CAA	66 35N	145 18W	425	6	6	6	6	6	6	5	6	6	6	6	6			12						26413
	GALENA	AFS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	CAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	CAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	CAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1959	ILIAMNA	CAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	7	7	7	7	7	7	7	7	7	7	7	7			12						26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12	03	03			25309
	KENAI	CAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12						25503
	KODIAK	NAF	57 45N	152 30W	112	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LADD	AAB	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	64 59N	150 40W	265	5	5	5	5	5	5	5	5	5	5	5										26524
	MANLEY HOT S	A	65 00N	150 39W	265												5									26524
	MCCARTHY	SAWR	61 26N	142 55W	1600	3	3		3	3	3	3	3	3	3	3	3									
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	CAA	59 28N	146 19W	45	1														01						25402
	MIDDLETON IS	AFS	59 27N	146 19W	121	7	7	1	1	1	1	1	1	1	1	1	1			12						25403
	MINCHUMINA	CAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	CAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	NENANA	CAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705						1	1	1	1	1	1	1									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	NORTHEAST CA	AFS	63 19N	168 56W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26632
	NORTHWAY	CAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	35	3	3				3	3	3	3	3	3	3	09		09						26622
	NYAC	SAWR	61 00N	159 59W	450				3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 07W	230	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	6	6	6	6	5	5	5	5	4	4	4	4			12						25613
	POINT BARROW	AFS	71 18N	156 47W	8								5	5	5	5	5									27506
	POINT LAY	SA	69 45N	163 03W	12	3	3	3	3																	26624
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1038						5	5	5	5	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	SENTINEL IS	CG	58 33N	134 55W	60												5									
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	NS	52 43N	174 06E	113	4	4	4	4	4	4	4	1							08			08	07		45714
	SHEMYA	WBAS	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			05			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	CAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26514
	SLEETMUTE	A	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	SPARREVOHN	AFS	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	SUMMIT	CAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	CAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	CAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	7	7	7	7	7	7	7	7	7	7	7	7			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	7	7	7	7	7	7	7	7	7	7	7	7			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	3	4	4	4	4	4	4	4	4	4	4	4									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5			4	5	5	6	6	6	6									25621
	UNALAKLEET	CAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	UPPER RUSSIA	SAWR	60 21N	150 06W	700	3	3	3	3	3	3	3	3	3	3	3	3									
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	A	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	WALES	SA	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	CAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	10					25339
1960	ADAK	NS	51 53N	176 38W	14	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12	12		25704
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			11	11					27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BIG LAKE	SAWR	61 32N	149 50W	150						3	3	3	3	3	3	3									
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	52	7	7	7	7	7	7	7	7	7	7	7	7			12						26631
	CAPE NEWENHA	AFS	58 40N	162 10W	543	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		06						25401
	CAPE THOMPSO	SPL	68 06N	165 46W	36	3	3	3	3	3	3	3	3	3	3	3	3									26636
	CLEAR	SAWR	64 17N	149 11W	580	3																				
	COLD BAY	WBAS	55 12N	162 43W	96	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	DRIFTWOOD BY	AFS	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1960	DUTCH HARBOR	SAWR	53 53N	166 32W	13												3									25614
	EAGLE	A	64 46N	141 12W	821	5	5	5	5	5	5	5	5	5	5	5	5									26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	258	1	1	1	1	1	1	1	1	1	1	1	1			12						26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAREWELL	FAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326	3	3	3	3	3	3	3	3	3	3											26520
	FORT YUKON	FAA	66 35N	145 18W	425	6	6	6	6	6	6	6	6	6	6	6	6			12						26413
	GALENA	AFS	64 43N	156 54W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	FAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	FAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	FAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	FAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	7	7	7	7	7	7	7	7	7	7	7	7			12						26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25309
	KENAI	FAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25503
	KODIAK	NAF	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LADD	AAB	64 51N	147 35W	484	1	1	1	1	1	1	1	1	1	1					10			10			26403
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 38W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCCARTHY	SAWR	61 26N	142 55W	1600	3	3																			
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	AFS	59 27N	146 19W	121	1	1	1	1	1	1	1	1	1	1	1	1			12						25403
	MINCHUMINA	FAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			11						26512
	MOSES POINT	FAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	44	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	1	1	1	1	1	1	1	1	1	1	1	1									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	NORTHEAST CA	AFS	63 19N	168 56W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	45	3	3	3	3	3	3	3	3			1	1	07		10						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 07W	230	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			12						25613
	POINT BARROW	AFS	71 18N	156 47W	8	5	5	5	5																	27506
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1038	5	5	5	5	5	5	5	6	6	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	SENTINEL IS	CG	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	WBAS	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SITKINAK	CG	56 33N	154 08W	53											5	5									
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	158	1	1	1	1	1	1	1	1	1	1	1	1			02						26514
	SLEETMUTE	A	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	SPARREVOHN	AFS	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	5	5	5	5	5	5	5	5	5	5	5	5			12						25713
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	FAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	FAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	7	7	7	7	7	7	7	7	7	7	7	7			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	7	7	7	7	7	1	1	1	1	1	1	1			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	3	3	3	3	3	4	4	4	4	4	4	4									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5		5	5	5	5	5	5	5	5										25621
	UNALAKLEET	FAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	UPPER RUSSIA	SAWR	60 21N	150 06W	700	3	3																			
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	A	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3	07		07						26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	FAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1961	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12	10		25704
	ANCHORAGE	LAWR	61 13N	149 50W	134					1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5		5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	81	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			10			12			25308
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1961	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	3	3	3	3	3	3	3	3	3	3	3	3									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	6	5	5	5									25621
	UNALAKLEET	FAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	A	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	FAA	60 05N	142 30W	33	1	1	1	1	1	1		1	1	1	1	1			11						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1962	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12	01		25704
	ANCHORAGE	LAWR	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			26451
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			10						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		11						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	52	7	7	7	7	7	7	7	7	7	7	7	7			12						26631
	CAPE NEWENHA	AFS	58 39N	162 04W	543	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	CAPE ROMANZO	AFS	61 47N	166 02W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	5	5	5	5	5	6	6	6	6	6	6	6	12		12						25401
	CAPE THOMPSO	SPL	68 06N	165 46W	36	3	3	3	3	3	3	3	3	3	3	3	3			01	01					26636
	CIRCLE HOT S	SAWR	65 28N	144 36W	935											3	3									26419
	COLD BAY	WBAS	55 12N	162 43W	89	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	6	5									25513
	DRIFTWOOD BY	AFS	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3	3	3	3	5	5	5	5	5	3	3	3									25614
	EAGLE	A	64 46N	141 12W	821	5	5	5	5	5			5	5	5	5	5									26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26401
	FAIRBANKS	FAA	64 51N	147 47W	432									5	5	5	5									
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAREWELL	FAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			10						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	FAA	66 35N	145 16W	425	5	5	5	5	5	5	5	5	5	5	5	5			12						26413
	GALENA	AFS	64 44N	156 56W	125	1	1	1	1	1	1	1	1	1	1	1	1			12						26501
	GILMORE CREK	COOP	64 59N	147 25W	973															04	03	04				
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	FAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	FAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	FAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3	4	3		3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	FAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 00N	153 42W	1075	7	7	7	7	7	7	7	7	7	7	7	7			12						26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25309
	KENAI	FAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25503
	KODIAK	NAF	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12			12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1		1	1	1	1	1	1	1	1			12						26616
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	AFS	59 27N	146 19W	121	1	1	1	1	1	1	1	1	1	1	1	1			12						25403
	MINCHUMINA	FAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	FAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	49	3	3	3	3	3	3	3		3	3	3	3	11		11						26621
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	NORTHEAST CA	AFS	63 19N	168 58W	33	1	1	1												03						26632
	NORTHEAST CA	AFS	63 19N	168 58W	33				1	1	1	1	1	1	1	1	1			09						26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3		3									26525
	PALMER	A	61 36N	149 05W	198										3	3	3									25331
	PALMER	A	61 36N	149 07W	275	3	3	3	3	3	3	3	3	3												25331
	PETERSBURG	A	56 48N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			09						25613
	POINT BARROW	AFS	71 20N	156 39W	8				5	5	5	5	5	5	5	5	5									27506
	POINT BARROW	AFS	71 18N	156 47W	8	5	5	5																		27506
	PORT ALEXAND	A	56 15N	134 39W	16	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT CLARENC	CG	65 15N	166 52W	18			1	1	1	1	1	1					06		06						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5			01						25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1961	BIG LAKE	SAWR	61 32N	149 50W	150	3			3	3	3	3	3													
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 52N	166 08W	52	7	7	7												03						26631
	CAPE LISBURN	AFS	68 53N	166 08W	52				7	7	7	7	7	7	7	7	7			09						26631
	CAPE NEWENHA	AFS	58 39N	162 04W	543				1	1	1	1	1	1	1	1	1			09						25623
	CAPE NEWENHA	AFS	58 40N	162 10W	543	1	1	1												03						25623
	CAPE ROMANZO	AFS	61 47N	165 52W	434	1	1	1												03						26633
	CAPE ROMANZO	AFS	61 47N	166 02W	434				1	1	1	1	1	1	1	1	1			09						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5		5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	5	5	5	5	5	5	5	5	5	5	5	5	12		12						25401
	CAPE THOMPSO	SPL	68 06N	165 46W	36	3	3	3	3	3	3	3	3	3	3	3	3									26636
	CLEAR	SAWR	64 17N	149 11W	580	3					3															
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	CORDOVA	WBAS	60 30N	145 30W	44	1	1	1	1	1	1	1	1	1	1	1	1			11						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	6	5	5	5	5									25513
	DRIFTWOOD BY	AFS	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3	3	3	3	3	3	3	3	5	3	3	3									25614
	EAGLE	A	64 46N	141 12W	821	5	5	5	5	5		5	5	5	5	5	5									26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			12			10			26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAREWELL	FAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FLAT	A	62 27N	158 00W	326				3	3						3	3									26520
	FORT YUKON	FAA	66 35N	145 18W	425	5	5	5	5	5	5	5	5	5	5	5	5			12						26413
	GALENA	AFS	64 44N	156 56W	125				1	1	1	1	1	1	1	1	1			09						26501
	GALENA	AFS	64 43N	156 54W	125	1	1	1												03						26501
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	FAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			11						26425
	GUSTAVUS	FAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HOMER	FAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80											3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	FAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 03N	153 45W	1075	7	7	7												03						26535
	INDIAN MTN	AFS	66 00N	153 42W	1075				7	7	7	7	7	7	7	7	7			09						26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25309
	KENAI	FAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	49	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12	02		12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	AFS	59 27N	146 19W	121	1	1	1	1	1	1	1	1	1	1	1	1			12						25403
	MINCHUMINA	FAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1									26512
	MOSES POINT	FAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	49	3									3	3	3	04		04						26621
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26617
	NORTHEAST CA	AFS	63 19N	168 56W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	12		09						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3	3	3	3									26525
	PALMER	A	61 36N	149 07W	275	3	3	3	3	3	3	3	3	3	3	3	3									25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			12						25613
	POINT BARROW	AFS	71 18N	156 47W	8				5	5	5	5	5	5	5	5	5									27506
	PORT ALEXAND	A	56 15N	134 39W	18	5	5	5	5	5	5	5	5	5	5	5	5									25348
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	SAND POINT	SAWR	55 20N	160 30W	32		5	5	5																	25617
	SELDOVIA	SAWR	59 26N	151 42W	19		3	3	3	3	3	3	3	3	3	3										
	SENTINEL IS	CG	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SEWARD	SAWR	60 08N	149 25W	17												3									
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	WBAS	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			08						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	158	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SLEETMUTE	A	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	SPARREVOHN	AFS	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	5	5	5	5	5	5	5	1	1	1	1	1			12						25713
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	FAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	FAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 54N	155 59W	939	7	7	7												03						26536
	TATALINA	AFB	62 53N	155 57W	939				7	7	7	7	7	7	7	7	7			09						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1962	SAND POINT	SAWR	55 20N	160 30W	50			5	5	5	5	5	5	5	5	5	5									25617
	SELDOVIA	SAWR	59 26N	151 42W	19			3	3	3	3															
	SENTINEL IS	CG	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	WBAS	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			03			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SLEETMUTE	A	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	SOLDOTNA	SAWR	60 28N	151 02W	115			4	3	3	4	4	5	5	5	5	5									
	SPARREVOHN	AFS	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	7	7	7	7			12						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	FAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			11						26528
	TANANA	FAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 53N	155 57W	939	7	7	7	7	7	7	7	7	7	7	7	7			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5	5	5	5	5	5	5	5	5	5									26626
	TIN CITY	AFS	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	3	3	3		3	3	3	3	3		3	3									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	6	5	5	5	5	5	5									25621
	UNALAKLEET	FAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WAINWRIGHT	A	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5	5	5	5									27503
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	FAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1963	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			26451
	ANCHORAGE	LAWR	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5			5									25310
	ANIAK	FAA	61 35N	159 32W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ARCTIC VILAG	COOP	68 08N	145 32W	2250																07					
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	12					27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12		01				26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CANYON VILAG	COOP	67 09N	141 45W	990																06					
	CAPE DECISIO	CG	56 00N	134 08W	50	5	5	5	5	5	5	5	5	5	5	5	6	12		11						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	52	7	7	7	7	7	7	7	1	1	1	1	1			12						26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	1	1	1	1	1	1	1	1	1	1	1	1			12						25623
	CAPE ROMANZO	AFS	61 47N	166 02W	434	1	1	1	1	1	1	1	1	1	1	1	1			12						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CAPE THOMPSO	SPL	68 06N	165 46W	36	3	3	3	3																	26636
	CENTRAL	COOP	65 33N	144 49W	1000																07					
	CHALKYITSIK	COOP	66 38N	143 43W	560																07					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																07					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	CLEAR	SAWR	64 19N	149 09W	546			5	5	5	5	5	5	5	5	5	5									
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEEN	COOP	67 44N	142 28W	900																06					
	CORDOVA	WBAS	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	DRIFTWOOD BY	AFS	53 59N	166 51W	1277	5	5	5	5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3	3	3	3	3	3	3	3	3	3	4	4									25614
	EAGLE	A	64 47N	141 12W	840										4	4	4									26422
	EAGLE	A	64 46N	141 12W	821	5	5	5	5	5				4												26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5		5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	12					26411
	FAIRBANKS	FAA	64 51N	147 47W	432	5	5	5	5	5	5															
	FAREWELL	FAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	1	1	1	1	1			12						26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	A	66 35N	145 18W	425	6	5	5	5	5	5	5	5	5	5	5	5			12						26413
	GALENA	AFS	64 44N	156 56W	125	1	1	1	1	1	1	1	1	1	1	1	1			12			08			26501
	GILMORE CREK	COOP	64 59N	147 25W	973															04	04					
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	FAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	FAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	1	1	1			12						25322
	HAINES	A	59 14N	135 27W	70									5	5	5	5									25323
	HOMER	FAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	FAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	1	1	1			12						25506
	INDIAN MTN	AFS	66 00N	153 42W	1075	7	7	7	7	7	7	7	1	1	1	1	1			12						26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	12		11			25309
	KENAI	FAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325

RECORDS INDEX ARRANGED BY YEAR

ALASKA

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1963	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25503
	KODIAK	NAF	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12	01		12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LAKE CHANDAL	COOP	67 30N	148 30W	1900																07					
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25328
	LIVENGOOD	COOP	65 32N	148 31W	580																07					
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MIDDLETON IS	AFS	59 27N	146 19W	121	1	1	1	1	1	7									08						25403
	MINCHUMINA	FAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	1	1	1			12						26512
	MOSES POINT	FAA	64 42N	162 03W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26620
	MT VILLAGE	SA	62 07N	163 43W	49	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26621
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	12		03			26617
	NORTHEAST CA	AFS	63 19N	168 58W	33	1	1	1	1	1	1	1	1	1	1	1	1			07						26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	11		12						26622
	NYAC	SAWR	61 00N	159 59W	450	3	3	3	3	3	3	3	3	3												26525
	PALMER	A	61 36N	149 05W	198	3	3	3	3	3	3	3	3	3	3	4										25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	5	5	5	5	5	5	5	5	5	5	5	5			12						25613
	POINT BARROW	AFS	71 20N	156 39W	8	5	5	5	5	5	5	5	5	5	5	5	5									27506
	PORT ALEXAND	A	56 15N	134 39W	16	5	5	5	5	5																25348
	PORT CLARENC	CG	65 15N	166 52W	18		1	1	1	1	1	1	5	5	5	5	5	11		11						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	RAMPART	COOP	65 30N	150 08W	400																07					
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	5	4	5	5	5	5	5	5	5	5									25617
	SENTINEL IS	CG	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	WBAS	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SLEETMUTE	A	61 42N	157 11W	285	5	5	5	5	5	5	5	5	5	5	5	5									
	SOLDOTNA	SAWR	60 28N	151 02W	115	5	5	5	5	5	5	5	5	5	4	5	5									
	SPARREVOHN	AFS	61 06N	155 34W	1729	7	7	7	7	7	7	7	7	1	1	1	7			11						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	FAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	FAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 53N	155 57W	939	7	7	7	7	7	7	7	1	7	7	7	7			12						26536
	TELLER	A	65 16N	166 21W	10	5	5	5																		26626
	TIN CITY	AFS	65 34N	167 55W	271	1	1	1	1	1	1	1	1	1	1	1	1			12						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	3	3									5	5									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5	5									25621
	UNALAKLEET	FAA	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5	5	5	5	5	5	5	5	5									26442
	VENETIE	COOP	67 00N	146 34W	620																07					
	WAINWRIGHT	A	70 37N	160 04W	29	5	5	5	5	5	5	5	5	5												27503
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WIDE BAY	SAWR	57 22N	156 25W	20			5	4	3	3	3	3	3						05						
	WILD LAKE 2	COOP	67 33N	151 33W	1180																02					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	FAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	1	1	1	1			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1964	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WBAS	61 10N	149 59W	105	1	1	1												03	03		03			26451
	ANCHORAGE	WBAS	61 10N	150 01W	147				1	1	1	1	1	1	1	1	1			09	02		09			26451
	ANCHORAGE PS	COOP	61 13N	149 52W	85																12					
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	81	1	1	1	1	1	1	1	1	1	6	6	6			12	02					26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25308
	ARCTIC VILAG	COOP	68 08N	145 32W	2250																09					
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12	06					27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CANYON VILAG	COOP	67 09N	141 45W	990																12					
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25315
	CAPE HINCHIN	CG	60 14N	146 38W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	1	1	1	7	7	7	7	7	7	1	7			03						26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	1	1	7	7	7	7	7	7	7	1	6	6			03						25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	1	1	1	1	7	7	7	7	7	7	7	7			03						26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CENTRAL	COOP	65 33N	144 48W	1000																11					
	CHALKYITSIK	COOP	66 38N	143 43W	560																12					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																12					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419

NUMBER OF MONTHS IN YEAR WITH (SYNOPTIC FORM through RADAR LOGS); HOURLY RECORDS BY MONTH: 1 = 24 OBS PER DAY

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1964	CLEAR	SAWR	64 19N	149 09W	546		5	5	5	5	5	5	5	5	5	5	5									
	COLD BAY	WBAS	55 12N	162 43W	89	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEEN	COOP	67 44N	142 28W	900																06					
	CORDOVA	WBAS	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	6	5	5									25513
	DRIFTWOOD BY	AFS	53 59N	166 51W	1277	5	5	5																		25515
	DRIFTWOOD BY	AFS	53 58N	166 51W	1288				5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	4	3	3	4		3	4	3	3	3	3	3									25614
	EAGLE	A	64 47N	141 12W	840	5	4	4	4	4	4	4	4	4	4	4	4									26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1			03			12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1			03			07			26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12	06					26411
	FAREWELL	FAA	62 32N	153 54W	1503	1	1	1	1	1	1	1	5	5	5	5	5			12	09					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	A	66 35N	145 18W	425	5	5	5	5	5	5	5	5	5	6	5	5			12						26413
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1			03			12			26501
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	FAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	FAA	58 25N	135 42W	29	1	1	1	1	1	1	1	1	1	7	7	7			12						25322
	HAINES	A	59 14N	135 27W	70	5	5	5	5	5	5	5	5	5	5	5	5									25323
	HOMER	FAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	FAA	59 45N	154 55W	152	1	1	1	1	1	1	1	1	1	6	6	6			12						25506
	INDIAN MTN	AFS	66 00N	153 42W	946	1	1	1	1	7	7	7	7	7	1	1	1			03						26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12	06		12			25309
	KENAI	FAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	6	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			10			25503
	KODIAK	NAF	57 45N	152 30W	116	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12	12		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LAKE CHANDAL	COOP	67 30N	148 30W	1900																12					
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	LIVENGOOD	COOP	65 32N	148 31W	580																12					
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	341	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MINCHUMINA	FAA	63 53N	152 17W	701	1	1	1	1	1	1	1	1	1	6	6	6			12						26512
	MOSES POINT	FAA	64 42N	162 03W	21	1	1	1	1	1	1	1	6	6	6	6	6			12						26620
	MT VILLAGE	SA	62 07N	163 43W	49	3												01		01						26621
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			11						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12	05		02			26617
	NORTHEAST CA	AFS	63 19N	168 58W	30	1	1	1	1	7	7	7	1	1	1	1	7			03						26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			02						26412
	NUNIVAK	SA	60 23N	166 12W	45	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26622
	PALMER	A	61 36N	149 05W	198	5	5	5	5	5	5	5	3	3	5	4	5									25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PLATINUM	A	59 01N	161 47W	20	5	5	5	5	5	5									06						25613
	POINT BARROW	AFS	71 20N	156 39W	19	5	5	5	5	5	3	3	3	4	3	3	3									27506
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HE.DEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1038	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5		5	5	5									26526
	RAMPART	COOP	65 30N	150 08W	400																12					
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	4	5	4	5	5	5	5	5	5	5									25617
	SENTINEL IS	CG	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5	5	5	5									
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	WBAS	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12						45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	3	3									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			11						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	3	5	5									25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3			3	3									26514
	SLEETMUTE	A	61 42N	157 11W	285	5																				
	SOLDOTNA	SAWR	60 28N	151 02W	115	5	5	4	4	4	4	4	4	4	4	4	4									
	SPARREVOHN	AFS	61 06N	155 34W	1735	7	1	1	1	1	1	7	7	7	7	7	7			03						26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	SUNSHINE LAK	COOP	62 10N	150 10W	300																02					
	TALKEETNA	FAA	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	FAA	65 10N	152 06W	240	1	1	1	1	1	1	1	1	1	1	1	1			12						26529
	TATALINA	AFB	62 53N	155 57W	897	7	7	7	7	7	7	7	7	7	7	1	1			03						26536
	TIN CITY	AFS	65 34N	167 55W	273	1	1	1	1	1	7	1	1	1	7	7	1			03						26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	5	5	5	5	5	5	5	5	5	5	5	5									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5		5	5	5	5			5	5	5									25621
	UNALAKLEET	FAA	63 53N	160 48W	21	1	1	1	1	1	1	1	6	6	6	6	6			12						26627
	VALDEZ	A	61 07N	146 16W	15	5	5	5	5																	26442
	VALDEZ	A	61 08N	146 15W	75					5	5	5	5	5	5	5	5									26442
	VENETIE	COOP	67 00N	146 34W	620																12					
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WILD LAKE 2	COOP	67 33N	151 33W	1180																12					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5										25338
	YAKATAGA	FAA	60 05N	142 30W	33	1	1	1	1	1	1	1	1	6	6	6	6			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			07			25339

RECORDS INDEX ARRANGED BY YEAR

ALASKA

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
						HOURLY RECORDS BY MONTH, 1 = 24 OBS PER DAY												NUMBER OF MONTHS IN YEAR WITH								
1965	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	AMCHITKA IS	AFB	51 23N	179 15E	220					6	6	6	6	6	6	6										45702
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26451
	ANCHORAGE PS	COOP	61 13N	149 52W	85																12					
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			11	04					26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ARCTIC VILAG	COOP	68 08N	145 32W	2250																09					
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			11						26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CANYON VILAG	COOP	67 09N	141 45W	980																10					
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	7	7	7	7	7	7	7	7	1	1	1									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	7	7	7	1	1	1	1	7	7	7	7	7									25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	7	7	7	7	7	7	1	1	1	7	1									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		11						25401
	CENTRAL	COOP	65 33N	144 49W	1000																12					
	CHALKYITSIK	COOP	66 38N	143 43W	560																11					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																12					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	CLEAR	SAWR	64 19N	149 09W	546	5	5	5	5	5	6	5	5	5	5	5	5				01					
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEEN	COOP	67 44N	142 28W	900																09					
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	DRIFTWOOD BY	AFS	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3	3	3	3	3	3	3														25614
	EAGLE	A	64 47N	141 12W	840	4	4	4	4	4	4	4	4	4	4											26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						11			26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	FAA	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	SAWR	66 35N	145 18W	422	5	5	5	5	5	5	5	5	5	5	5	5			08						26413
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25												3									
	GUARD ISLAND	CG	55 27N	131 53W	20	6	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	FAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUSTAVUS	FAA	58 25N	135 42W	29	6	6	6	6	6	6	6	6	6	6	6	6			12						25322
	HAINES	A	59 14N	135 27W	70	5		5	5	5	5	5	5				5									25323
	HOMER	FAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	FAA	59 45N	154 55W	152	6	6	6	6	6	6	6	6	6	6	6	6			12						25506
	INDIAN MTN	AFS	66 00N	153 42W	946	1	7	7	1	7	7	1	7	7	7	1	1									26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KENAI	FAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12	03		25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LAKE CHANDAL	COOP	67 30N	148 30W	1900																09					
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	LIVENGOOD	COOP	65 32N	148 31W	580																12					
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MINCHUMINA	FAA	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12						26512
	MOSES POINT	FAA	64 42N	162 03W	21	6	6	6	6	6	6	6	6	6	6	6	6			12						26620
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12						26617
	NORTHEAST CA	AFS	63 19N	168 58W	30	7	7	7	7	7	7	7	1	1	1	1	1									26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	45	5	3	3	3	3	3	3	3	3	3	3	3	12		11						26622
	PALMER	A	61 36N	149 05W	198	4	4	4	4	4	4	4	4	4	4	4	5									25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	AFS	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5		5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1083	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	RAMPART	COOP	65 30N	150 08W	400																12					
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAVOONGA	A	63 42N	170 28W	45												3									
	SENTINEL IS	CG	58 33N	134 55W	60	5	5	5	5	5	5	5	5	5												
	SEWARD	A	60 07N	149 27W	76	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5		5	5	5	5	5	5	5	5	5	5									26439
	SHEMYA	WBAS	52 43N	174 06E	125	1	1	1	1	1	1	1	1	1	1	1	1			12			04			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341

RECORDS INDEX ARRANGED BY YEAR

ALASKA

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

NUMBER OF MONTHS IN YEAR WITH

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1966	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MINCHUMINA	FAA	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12						26512
	MOOSE RUN	COOP	61 15N	149 40W	395																03					
	MOSES POINT	FAA	64 42N	162 03W	21	6	6	6	6	6	6	6	6	6	6	6	6			12						26620
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			07						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			04			26617
	NORTHEAST CA	AFS	63 19N	168 58W	30	1	1	1	1	1	7	1	1	1	1	7	7									26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	3	3	3	11		12						26622
	PALMER	FAA	61 36N	149 05W	198	5	5	5	5	5	5	5	5	5	5	5	5			01						25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	AFS	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	11		11						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5		5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1083	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	QUINHAGAK	SAWR	59 45N	161 54W	10										3	4	4									
	RAMPART	COOP	65 30N	150 08W	400																12					
	SAGWON	SAWR	69 22N	148 42W	650							4	4	4	4	4	4									
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAVOONGA	A	63 42N	170 28W	45	3	3	3	3	3		3	3	3	3	3	3									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEEP MTN	A	61 48N	147 41W	2280	5	5	5	5	5																26439
	SHEMYA	WBAS	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			11			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			05						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	153		3	3	3	3	3	3	3	3	3	3	3									26514
	SNOWSHOE LAK	A	62 02N	146 40W	2295				3	3	3	3	3	3	3	3	3			04	05					
	SOLDOTNA	SAWR	60 28N	151 02W	115	4	4	4	4	4	4	4	4	4	4	4	4									
	SPARREVOHN	AFS	61 06N	155 34W	1736	1	1	1	1	1	1	1	1	1	7	7	7									26534
	ST MICHAEL	SAWR	63 30N	162 00W	35	3	3	3	3	3	3				3											
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	STONY RIVER	A	61 46N	156 38W	221											3	3									
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			11						26414
	SUSIE 1	SAWR	69 31N	148 53W	500	6	6	6	6	6	6															
	TALKEETNA	FAA	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12	05					26528
	TANANA	FAA	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	06					26529
	TATALINA	AFS	62 53N	155 57W	897	1	1	1	7	7	1	1	1	1	1	7	7									26536
	TIN CITY	AFS	65 34N	167 55W	273	1	1	1	1	1	1	1	1	7	7	1	7									26634
	TOKSOOK	SAWR	60 32N	165 07W	15										3	3	3									
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	TRINITY-UGAS	SAWR	57 26N	157 44W	132							5	5	5												
	UMNAK	SAWR	53 23N	167 54W	130	3	3	3				3	5	5	5	5	5									25621
	UNALAKLEET	FAA	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			11						26627
	VALDEZ	A	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5	5	5									26442
	VENETIE	COOP	67 00N	146 34W	620																07					
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WILD LAKE 2	COOP	67 33N	151 33W	1180																08					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	FAA	60 05N	142 30W	33	6	6	6	6	6	6	6	6	6	6	6	6			11						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25339
1967	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	05		12			25704
	AMCHITKA IS	SAWR	51 23N	179 15E	237							6	6	6	6	6	6									
	ANAKTUVUK	COOP	68 10N	151 46W	2100																12					
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	ANCHORAGE PS	COOP	61 13N	149 52W	85																04					
	ANDREAFSKY	A	62 04N	163 18W	290	3				3	3	3	3	3	3	3	3									
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									253.0
	ANIAK	FAA	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BIRCH ROAD	COOP	61 08N	149 46W	460																06					
	CANYON VILAG	COOP	67 09N	141 45W	990																12					
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	7	7	1	1	1	1	1	1	7	7	7									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	1	1	1	1	1	1	1	1	7	7	7	7						08			25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	7	7	1	7	7	1	1	1	7	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CENTRAL	COOP	65 33N	144 49W	1000																12					
	CHALKYITSIK	COOP	66 38N	143 43W	560																12					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																11					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935					3	3	3	3	3	3	3	3									26419
	CLEAR	SAWR	64 17N	149 10W	542	5	5	5	5	5	5	5	5	5	5	5	5				08					
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEEN	COOP	67 44N	142 28W	900																10					
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DAHL CREEK	A	66 56N	156 52W	270			3	3	4	4	4	4	4	4	4	4									

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1965	SITKA	FAA	57 04N	135 21W	66		1	1	1	1	1	1	1	1	1	1	1			11						25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5		5	5	5	5	5			07						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3																26514
	SOLDOTNA	SAWR	60 28N	151 02W	115		4	4	4	4	4	4	4	4	4	4	4									
	SPARREVOHN	AFS	61 06N	155 34W	1736	7	7	1	1	1	1	1	7	7	7	1	1									26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	FAA	62 18N	150 06W	351	1	1	1	1	1	6	6	6	6	6	6	6			12	04					26528
	TANANA	FAA	65 10N	152 06W	240	1	1	1	1	1	6	6	6	6	6	6	6			12						26529
	TATALINA	AFB	62 53N	155 57W	897	1	1	1	7	1	1	7	7	7	7	7	1									26536
	TIN CITY	AFS	65 34N	167 55W	273	1	1	1	1	1	1	1	1	1	7	7	1									26634
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMIAT	SAWR	69 22N	152 08W	337	5	5	5	5	5	5	5	5	5	5	5	5									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5		5									25621
	UNALAKLEET	FAA	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			12						26627
	VALDEZ	A	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5	5	5									26442
	VENETIE	COOP	67 00N	146 34W	620																12					
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WILD LAKE 2	COOP	67 33N	151 33W	1180																11					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	FAA	60 05N	142 30W	33	6	6	6	6	6	6	6	6	6	6	6	6			12						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25339
1966	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	ANAKTUVUK	COOP	68 10N	151 46W	2100																04					
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12	02		12			26451
	ANCHORAGE PS	COOP	61 13N	149 52W	85																09					
	ANDREAFSKY	SAWR	62 04N	163 18W	280			3	3	3	3	3	3				3									
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25308
	ARCTIC VILAG	COOP	68 08N	145 32W	2250																04					
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			11						26615
	BETTLES	FAA	66 55N	151 31W	672	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	CANYON VILAG	COOP	67 09N	141 45W	990																09					
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		10						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	7	7	1	1	1	1	7	7	7	7	7									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	7	7	1	1	1	1	1	7	7	1	1	1									25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	7	7	7	1	7	7	7	7	7	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5		5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	10		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	11		12						25401
	CENTRAL	COOP	65 33N	144 49W	1000																12					
	CHALKYITSIK	COOP	66 38N	143 43W	560																11					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																11					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3										26419
	CLEAR	SAWR	64 19N	149 09W	546	5	5	5	5	5	5	5	5	5	5	5	5				11					
	COLD BAY	WBAS	55 12N	162 43W	89	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEEN	COOP	67 44N	142 28W	900																11					
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			11						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	DILLINGHAM	FSS	59 03N	158 31W	86							5	5	5	5	5	5									25512
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5		5	5	5									25513
	DRIFTWOOD BY	AFS	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13										3	3	3									25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	FAA	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	10					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	A	66 35N	145 18W	422	5	5	5	5	5	5									06						26413
	FORT YUKON	AC	66 33N	145 12W	457							5	5	5	5	5	5			06						26413
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3		3	3	3	3												
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	FAA	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960						3	3	3	3	3	3	3									
	GUSTAVUS	FAA	58 25N	135 42W	29	6	6	6	6	6	6	6	6	6	6	6	6			12						25322
	HAINES	A	59 14N	135 27W	60	5	5	5	5	5	5	5	5	5	5	5	5									25323
	HOMER	FAA	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	FAA	59 45N	154 55W	152	6	6	6	6	6	6	6	6	6	6	6	6			12						25506
	INDIAN MTN	AFS	66 00N	153 42W	946	1	1	1	1	1	1	1	1	1	7	7	7									26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			11			12			25309
	KENAI	FAA	60 34N	151 15W	91	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5	5	5	5	5	5	5	5	5	5									25326
	LIVENGOOD	COOP	65 32N	148 31W	580																02					
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH — 1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1967	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5	5	5	5	5	5	5									25513
	DILLINGHAM	FSS	59 03N	158 31W	86	5	5	5	5	5	5	5	5	5	5	5	5									25512
	DRIFTWOOD BY	AFS	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3	3	3	3	3	3	3	3	3	3	3	3									25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WBAS	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	AC	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5			12						26413
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	WBAS	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	GUSTAVUS	FAA	58 25N	135 42W	29	6	6	6	6	6	6	6	6	6	6	6	6			12						25322
	HAINES	A	59 14N	135 27W	60	5	5	5	5	5	5	5	5	5	5	5	5									25323
	HOMER	WBAS	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3	3	3	3	3		3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5			5	5									26522
	ILIAMNA	WBAS	59 45N	154 55W	190	6	6	6	6	6	6	6	6	6	6	6	6			12	07					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	7	7	7	7	1	1	1	1	1	7	7	7						12			26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5		5	5	5	5	5	5	5	5									25326
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MINCHUMINA	WBAS	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12						26512
	MOOSE RUN	COOP	61 15N	149 40W	395																08					
	MOSES POINT	AC	64 42N	162 03W	21	6	6	6	6	6	6	6	6	6	6	6	6			06						26620
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORTHEAST CA	AFS	63 19N	168 58W	30	7	7	7	7	7	7	1	1	1	1	1	1									26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	3	3	3	12		12						26622
	PAINTERS CRK	SAWR	57 10N	157 26W	545		5	5	5	5	5	5	5													
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			11	04					25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	AFS	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1083	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PRUDHOE BAY	SAWR	70 19N	148 33W	10				6								6									
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	QUINHAGAK	SAWR	59 45N	161 54W	10	4	4	4	4	4	4	4	4			4	4									
	RAMPART	COOP	65 30N	150 08W	400																12					
	SAGWON	SAWR	69 22N	148 42W	650	4	4	4	4	4	4	4	4	4	4	4	4									
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAVOONGA	A	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEMYA	WBAS	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12						25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			03						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3		3	3	3	3	3									26514
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SOLDOTNA	SAWR	60 28N	151 02W	115	4	4	4	4	4	4	4	4	4	4	4	4									
	SPARREVOHN	AFS	61 06N	155 34W	1736	7	1	1	1	1	1	1	1	1	1	6	7						12			26534
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	STONY RIVER	A	61 46N	156 38W	221			3	3	3	3	3				3	3				12					
	SUMMIT	FAA	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	SUMMIT LAKE	A	63 08N	145 32W	3230											4	4									
	SUSIE 1	SAWR	69 31N	148 53W	500	6	6	6																		
	TALKEETNA	FAA	62 18N	150 06W	351	6	6	6	6	6	6	6	6	1	1	1	1			12						26528
	TANANA	FAA	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	08					26529
	TATALINA	AFB	62 53N	155 57W	931	7	7	7	1	7	7	7	7	7	7	7	7						12			26536
	TIN CITY	AFS	65 34N	167 55W	273	7	7	7	7	1	1	1	1	1	1	1	7									26634
	TOKSOOK	SAWR	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5	5									25621
	UNALAKLEET	WBAS	63 53N	160 48W	21	6	6	6	6	6	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5	5	5									26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WEST FORK	COOP	65 28N	148 40W	430																06					
	WILD LAKE 2	COOP	67 33N	151 33W	1180																07					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	FAA	60 05N	142 30W	33	6	6	6	6	6	6	6	6	6	6	6	6			11						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			04			25339
1968	ADAK	NS	51 53N	176 38W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	09		12			25704
	AMCHITKA IS	SAWR	51 23N	179 15E	237	6	6	6	6	6	6	6	6	6	6	6	6									
	ANAKTUVUK	COOP	68 10N	151 46W	2100																04					
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1968	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	ANDREAFSKY	A	62 04N	163 18W	290	3	3	3	3	3	3	3														
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	WBAS	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BIRCH ROAD	COOP	61 08N	149 46W	460																12					
	CANYON VILAG	COOP	67 09N	141 45W	990																06					
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	7	7	7	1	1	1	1	7	7	7	7									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	7	7	7	7	1	1	7	7	7	1	7	1						12			25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CENTRAL	COOP	65 33N	144 49W	1000																10					
	CHALKYITSIK	COOP	66 38N	143 43W	560																09					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																11					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	CLEAR	SAWR	64 17N	149 10W	542	5	5	5	5	5	5	5	4	4	4	4	4									
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEEN	COOP	67 44N	142 28W	900																11					
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	COOP	61 52N	158 15W	130																04					
	DAHL CREEK	A	66 56N	156 52W	270	4	4	4	4	4	4	4														
	DILLINGHAM	SAWR	59 03N	158 27W	50	5	5	5	5	5	5															25513
	DILLINGHAM	FSS	59 03N	158 31W	86	5	5	5	5	5	5	5	5	5	5	5	5									25512
	DRIFT RIVER	SAWR	60 35N	152 09W	35			3	3	3	3															
	DRIFTWOOD BY	AFS	53 58N	166 51W	1298	5	5	5	5	5	5	5	5	5	5	5	5									25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3	3	3	3	3	3	5	5	5	5	5	5									25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54		5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	EMMONAK	SAWR	62 46N	164 30W	8												3									
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WBAS	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	AC	66 33N	145 12W	457	6	6	6	6	6	6	5	5	5	5	5	5			12						26413
	FORT YUKON	A	66 34N	145 16W	435				5	5	3	3	3	3	3	3	3									
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5	5	5	5	5	5	5									25320
	GULKANA	WBAS	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	GUSTAVUS	FAA	58 25N	135 42W	29	6	6	6	6	6	6									06						25322
	GUSTAVUS	SAWR	58 25N	135 44W	19							5	5	5	5	5	5									25322
	HAINES	A	59 14N	135 27W	90	5	5	5	5	5																25323
	HOMER	WBAS	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3	3	3	3	3	3	3	3	3	3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522
	ILIAMNA	WBAS	59 45N	154 55W	190	6	6	6	6	6	6	6	6	6	6	6	6			12	12					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	6	7	7	7	7	7	7	1	1	1	1	1						10			26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KAVIK RIVER	SAWR	69 41N	146 56W	617												1									
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	5	5	5	5	5	5	6	6	6	6	6	6									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1		1	1		1	1	1	1	1			12						26616
	LAKE CHANDAL	A	67 30N	148 30W	1825											4	4									
	LAKE HOOD	LAWR	61 11N	149 57W	148											6	6									
	LINCOLN ROCK	CG	56 03N	132 46W	25	5	5	5																		25326
	MANLEY HOT S	A	65 00N	150 39W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MINCHUMINA	WBAS	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26512
	MOOSE RUN	COOP	61 15N	149 40W	395																09					
	MOSES POINT	AC	64 42N	162 03W	21	6	6	6	6	6	6	5	5	5	5	5	5									26620
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	1	1	1	1	1	1			12						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5	5	5	5	5	5	5	5									25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORTHEAST CA	AFS	63 19N	168 58W	30	7	7	1	1	7	1	1	7	1	1	1	7									26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3	3	3	3	3	3	4	4	4	4	4	4	12		12						26622
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	AFS	71 20N	156 39W	18	3	3	3	3	3	3	3	3	3	3	3	3									27506
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PORT MOLLER	AFS	56 00N	160 31W	1053	5	5	5	5	5	5	5	5	5	5	5	5									25625
	PRUDHOE BAY	SAWR	70 19N	148 33W	10	6	6																			
	PRUDHOE BAY	SAWR	70 15N	148 20W	45						6	6	6	6	6	6	1									
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	QUINHAGAK	SAWR	59 45N	161 54W	10	4	4	4	4	4	4	3	3	3												

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1968	RAMPART	COOP	65 30N	150 08W	400																11					
	SAGWON	SAWR	69 22N	148 42W	650	4	4	4	4	4	4			4	4	4	4									
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAVOONGA	A	63 42N	170 28W	45	3	3	3	3		3	3	3	3	3		3									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEMYA	WBAS	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	03					25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5									25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SOLDOTNA	SAWR	60 28N	151 02W	115	5	5	5	5	5	5	5														
	SPARREVOHN	AFS	61 06N	155 34W	1736	7	7	7	1	1	7	7	1	1	1	1	1						10			26534
	ST MARYS	COOP	62 04N	163 11W	30																05					
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	STONY RIVER	A	61 46N	156 38W	221	3	3	3	3	3	3										06					
	SUMMIT	WBAS	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	SUMMIT LAKE	A	63 08N	145 32W	3230	4	4	4	4	4	4	4	4	4	4	4	4									
	TALKEETNA	WBAS	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	WBAS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	7	6	6	6			12	09					26529
	TATALINA	AFB	62 53N	155 57W	931	7	7	7	7	6	6	6	5	7	7	7	5						12			26536
	TIN CITY	AFS	65 34N	167 55W	258	6	6	7	1	1	7	7	7	7	7	6	7									26634
	TOKSOOK	SAWR	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5	5									25621
	UNALAKLEET	WBAS	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 08N	146 15W	75	5	5	5	5	5	5	5	5	5	5		5									26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WEST FORK	COOP	65 28N	148 40W	430																12					
	WILD LAKE 2	COOP	67 33N	151 33W	1180																06					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33	6	6	6	6	6	6	4	4	4	4	4	4			05						26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1969	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			11	12		12			25704
	AMCHITKA IS	SAWR	51 23N	179 15E	237	6	6	6	6	6	6	6	6	6	6	6	6									
	ANAKTUVUK	COOP	68 10N	151 46W	2100																04					
	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANDREAFSKY	A	62 04N	163 18W	290	3	3	3	3	3				3	3	3	3									
	ANGOON	A	57 31N	134 35W	14	5	5	5																		25310
	ANIAK	FAA	61 35N	159 32W	91	6	6	6	6	6	6	6	6	6	6	6	6			11						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			11						26615
	BETTLES	WBAS	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BIRCH ROAD	COOP	61 08N	149 46W	460																12					
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		06						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	6	6	7	7	7	7	7	7	1	1	1									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	1	7	7	6	7	6	6	7	7	1	7	1						12			25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	5	7	6	7	7	7	7	7	1	1	1									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CENTRAL	COOP	65 33N	144 49W	1000																10					
	CHALKYITSIK	COOP	66 38N	143 43W	560																08					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																11					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	CLEAR	SAWR	64 17N	149 10W	542	4	4	4	4	4	4	4	4	3												
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	COOP	61 52N	158 15W	130																12					
	DEADHORSE	SAWR	70 12N	148 27W	47		1	1	1	1	1	1	1	1	1	1	1									
	DILLINGHAM	FSS	59 03N	158 31W	86	5	5	5	5	6	6	6	6	6	6	6	6									25512
	DRIFTWOOD BY	AFS	53 58N	166 51W	1298	5	5	5	5	5																25515
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	5	5	5		5	5	5	5	5	5	5	5									25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			11		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	EMMONAK	SAWR	62 46N	164 30W	8	3	3	3	3																	
	FAIRBANKS	WBAS	64 49N	147 52W	440	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WBAS	62 32N	153 54W	1503	6	6	6	6	6	6	6	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	AC	66 33N	145 12W	457	5	5	5	5	5	5	5	5			5	5			11			02			26413
	FORT YUKON	A	66 34N	145 16W	435	3	3	3	3	3	3	3	3	3	3	3	3									
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3		3			3	3	3	3	3									
	GUARD ISLAND	CG	55 27N	131 53W	20	5	5	5	5	5	5															25320
	GULKANA	WBAS	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	GUSTAVUS	SAWR	58 25N	135 44W	19	5	5	5	5	6	6	6	6	6	6	6	6									25322
	HEALY	SAWR	63 52N	148 57W	1273			5	5	5	5	5	5										01			
	HOMER	WBAS	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HOOPER	SAWR	61 30N	166 06W	80	3	3			3	3					3	3									
	HUGHES	A	66 04N	154 14W	545	5	5	5	5	5	5	5	5	5	5	5	5									26522

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1969	HULL	SAWR	70 15N	148 57W											6	6	6									
	ILIAMNA	WBAS	59 45N	154 55W	190	6	6	6	6	6	6	6	6	6	6	6	6			12	12					25506
	INDIAN MTN	AFS	66 00N	153 42W	846	1	7	1	7	1	1	7	1	7	1	7	1						04			26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KAD RIVER	SAWR	70 04N	147 43W	75				1	1	1	1	1	1	1											
	KAVIK RIVER	SAWR	69 41N	146 56W	617	1	1	1	1	1	1	1	1	1	1											
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
	KETCHIKAN	SAWR	55 20N	131 34W	0	6	6	6	6	6																25325
	KETCHIKAN	FSS	55 20N	131 40W	122										6	6	6									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LAKE CHANDAL	A	67 30N	148 30W	1825	4	4	4	4	4	4	4	4	4	4	4	4									
	LAKE HOOD	LAWR	61 11N	149 57W	148	6	6	6	5	5	5	6	6	6	6	6	6									
	MANLEY HOT S	A	65 00N	150 38W	265	5	5	5	5	5	5	5	5	5	5	5	5									26524
	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MINCHUMINA	FAA	63 53N	152 17W	701	6	6	6	5	5	5	5	5	5	5	5	5			06	04					26512
	MOOSE RUN	COOP	61 15N	149 40W	395																01					
	MOSES POINT	AC	64 42N	162 03W	21	5	5	5	5	5	5															26620
	NENANA	FAA	64 33N	149 05W	364	1	1	1	1	1	1	6	6	6	6	6	6			11						26435
	NIKOLSKI	AFS	52 55N	168 47W	705	5	5	5	5	5																25626
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORA FEDERAL	SAWR	69 34N	148 45W	450				6	6	6	6	6	6	6	6	6									
	NORTHEAST CA	AFS	63 19N	168 58W	30	7	6	7	7	1	1	7	6													26632
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	4	4	4	12		12						26622
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			11						25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PINGO	SAWR	70 02N	147 43W	100							1	1	1	1											
	POINT BARROW	AFS	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5		5	5										25508
	PORT MOLLER	AFS	56 00N	160 31W	1053	5	5	5	5	5																25625
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	1	1	1	1	1	1	1	1	1	1	1	1									
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	QUINHAGAK	SAWR	59 45N	161 54W	10							3	3	3	3	3	3									
	RAMPART	COOP	65 30N	150 08W	400																12					
	SAGWON	SAWR	69 22N	148 42W	650			6	6	6	6	6	6	6	1	1	1									
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SAVOONGA	A	63 42N	170 28W	45										3	3	3									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEMYA	WBAS	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5									06						
	SKAGWAY	A	59 27N	135 19W	18	5	5	5	5	5	5	5	5	5	5	5	5			04						25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3		3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	1	7	7	7	1	1	1	1	7	1	1	1						03			26534
	ST MARYS	COOP	62 04N	163 11W	30															07	11					
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	WBAS	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	SUMMIT LAKE	A	63 08N	145 32W	3230	4	4																			
	TALKEETNA	WBAS	62 18N	150 06W	351	1	1	1	1	1	1	1	1	1	1	1	1			12						26528
	TANANA	WBAS	65 10N	152 06W	240	1	1	1	1	1	1	1	6	6	6	6	6			12	05					26529
	TATALINA	AFB	62 53N	155 57W	831	5	5	7	7	7	7	7	6	7	6	7	7						12			26536
	TIN CITY	AFS	65 34N	167 55W	258	7	7	7	6	1	1	1	7	7	7	1	1									26634
	TOKSOOK	SAWR	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	TREE POINT	CG	54 48N	130 56W	36	5	5	5	5	5	5	5	5	5	5	5	5									25337
	TYONE LAKE	A	62 31N	146 42W	2371							4	4	4	4		4									
	UGNU	SAWR	70 23N	149 50W	48	6																				
	UMIAT	SAWR	69 22N	152 08W	337						5	5	5	5	5	5	5									26508
	UMNAK	SAWR	53 23N	167 54W	130	5	5	5	5	5	5	5	5	5	5	5										25621
	UNALAKLEET	WBAS	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 08N	146 15W	75	5	5	5	5	5	5	5	5			5										26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WEST FORK	COOP	65 28N	148 40W	430																12					
	WEST KAVIK	SAWR	70 03N	147 42W											6	6	6									
	WEST KUPARUK	SAWR	70 20N	149 18W	50				1	1	1	1	1	1												
	WILD LAKE 2	COOP	67 33N	151 33W	1180																06					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33	4	4	4	4	4	4	4	4	4	4											26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1970	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	08		12			25704
	AMCHITKA IS	SAWR	51 23N	179 15E	237	6	6	6	6	6	6	6	6	6	6	6	6									
	ANAKTUVUK	COOP	68 10N	151 46W	2100																05					
	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANDREAFSKY	A	62 04N	163 18W	280	3	3	3	3	3	3					3	3									
	ANGOON	A	57 31N	134 35W	14		5	5	5	5	5	5	5	5	5	5										25310
	ANIAK	FAA	61 35N	159 32W	91	6	6	6	6	6	6	5	5	5	5	5	5			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ARCTIC VILAG	COOP	68 08N	145 32W	2250																10					
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	WBAS	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			12						26415
	BIRCH ROAD	COOP	61 08N	149 46W	460																12					

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1970	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	6	6	7	7	7	7	7	7	1	1	1									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	7	7	7	7	7	7	7	1	1	1	1	1						12			25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	1	6	7	7	7	6	7	1	1	1	1	1									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CENTRAL	COOP	65 33N	144 49W	1000																12					
	CHALKYITSIK	COOP	66 38N	143 43W	560																06					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																12					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3					3											26419
	CLEAR	SAWR	64 18N	149 11W	580	6	6	6	6	6	6	6	6	6	6	6	6									
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEGE	A	64 52N	147 50W	621									5	5	5	5									
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	COOP	61 52N	158 15W	130																08					
	DEADHORSE	FSS	70 12N	148 27W	50	1	1	1	1	1	1	1	1	6	6	6	6									
	DILLINGHAM	FSS	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	5	5	5									25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKLUTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	FAIRBANKS	WBAS	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WBAS	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	A	66 34N	145 16W	435	3	3	3	3	3	3	3	3		3	3	3									
	FORT YUKON	AC	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5									26413
	GALBRAITHE	SAWR	68 29N	149 29W	2665																			04		
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	GULKANA	WBAS	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3	3	3	3	3	3	3	3	3	3	3	3									
	GUSTAVUS	SAWR	58 25N	135 44W	19	6	6	6	6	6	6	6	6	6	6	6	6									25322
	HOMER	WBAS	59 38N	151 30W	73	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	HUGHES	A	66 04N	154 14W	545	5																				26522
	HULL	SAWR	70 15N	148 57W		1																				
	ILIAMNA	WBAS	59 45N	154 55W	190	6	6	6	6	6	5	5	5	5	5	5	5			12	11					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	1	7	7	7	1	1	1	7	1	1	1	1						12			26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	FSS	55 20N	131 40W	122	6	6	6	6	6	6	6	6	6	6	6	6									25325
	KING SALMON	WBAS	58 41N	156 39W	47	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LAKE CHANDAL	A	67 30N	148 30W	1825		4	4	4	4																
	LAKE CLARK	A	60 17N	154 17W	271					6	6	6	6	6	6	5	5									
	LAKE HOOD	LAWR	61 11N	149 57W	148	6	6	6	5	6	6	6	6	6	6	6	6									
	MANLEY HOT S	A	65 00N	150 39W	265				5	5	5	5	5	5	5											26524
	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MINCHUMINA	FAA	63 53N	152 17W	701	5	5	5	5	5	5	5	5													26512
	NENANA	FAA	64 33N	149 05W	364	6	6	6	6	6	6	6	6	6	6	6	6			12						26435
	NIKOLAI	COOP	63 01N	154 22W	425																04					
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORA FEDERAL	SAWR	69 34N	148 45W	450	6	6	6	6																	
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3	3	3	3	3	3	3	3	3	3	4	4	12		12						26622
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	AFS	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HEIDEN	A	56 57N	158 37W	92		5	5	5	5	5	5	5	5	5	5	5									25508
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	1	1	1	1	1	1	1	1	1	1	1	1									
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	QUINHAGAK	SAWR	59 45N	161 54W	10	3	3	3	3	3	3	3	3	3	3	3	3									
	RAMPART	COOP	65 30N	150 08W	400																05					
	SAGWON	SAWR	69 22N	148 42W	650	1	1	1	1	1	1	1	6	6			6									
	SAND POINT	SAWR	55 20N	160 30W	50	5	5	5	5	5	5	5	5	5	5	5	5									25617
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEMYA	WBAS	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	SITKINAK	CG	56 33N	154 08W	53					5	5	5	5	5	5	5	5			08						
	SKAGWAY	A	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	SKWENTNA	A	61 58N	151 12W	153	3								3	3	3	3									26514
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	7	5	6	1	7	7	7	1	1	1	1	1						12			26534
	ST MARYS	COOP	62 04N	163 11W	30															12	12					
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	WBAS	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	WBAS	62 18N	150 06W	351	1	1	1	1	1	1	6	6	6	6	6	6			12	05					26528
	TANANA	FSS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	08					26529
	TATALINA	AFB	62 53N	155 57W	931	7	5	7	7	7	7	6	1	1	1	1	1						12			26536
	TIN CITY	AFS	65 34N	167 55W	258	1	1	6	7	7	1	1	1	1	1	1	1									26634
	TOKSOOK	SAWR	60 32N	165 07W	15	3	3	3	3	3	3	3	3	3	3	3	3									
	TREE POINT	CG	54 48N	130 56W	36	5																				25337
	TYONE LAKE	A	62 31N	146 42W	2371	4	4	4	4	4	4	4	4	4		4	4									
	UMIAT	SAWR	69 22N	152 08W	337	5	5	5	5	5	5	5														26508
	UNALAKLEET	WBAS	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1970	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WEST FORK	COOP	65 28N	148 40W	430																08					
	WEST KAVIK	SAWR	70 03N	147 42W		6																				
	WILD LAKE 2	COOP	67 33N	151 33W	1190																04					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33	4	4	4	4	4	4	4	4	4	4	4	4									26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1971	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	AMCHITKA IS	SAWR	51 23N	179 15E	237	6	6	6	6	6	6	6	6	6	6	6	6									
	ANAKTUVUK	A	68 10N	151 46W	2100									5	5	5	5				10					
	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANDREAFSKY	SAWR	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3	3									
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			12						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ARCTIC VILAG	COOP	68 08N	145 32W	2250																12					
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	BARROW	WBAS	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	WBAS	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	1	1	1	1	1	1			11						26415
	BIRCH ROAD	COOP	61 08N	149 46W	460																12					
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25315
	CAPE HINGHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	1	1	1	1	1	1	1	1	1	1	1	1									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	1	1	1	1	1	1	1	1	1	1	1	1						12			25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	1	1	1	1	1	1	1	1	1	1	1	1									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			12						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25401
	CENTRAL	COOP	65 33N	144 49W	1000																12					
	CHALKYITSIK	COOP	66 38N	143 43W	560																06					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																12					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3	3	3	3	3	3	3	3	3	3	3									26419
	CLEAR	SAWR	64 18N	149 11W	580	5	5	5	5	3	3	3	3	3	3	3	3									
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	COLLEGE	A	64 52N	147 50W	621		3	3	3	3	3	3	3													
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	COOP	61 52N	158 15W	130																12					
	DEADHORSE	FSS	70 12N	148 27W	50	6	6	6	6	6	6	6	6	6	6	6	6									
	DILLINGHAM	FSS	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	5	5	5	5	5	5	5	5	5	3	3	3									25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKULTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	FAIRBANKS	WBAS	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WBAS	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	A	66 34N	145 16W	435	3	3	3	3	3	3	3	3	3	3	3	3									
	FORT YUKON	AC	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5			10						26413
	GALBRAITHE	SAWR	68 29N	149 29W	2665																			07		
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3							3									
	GULKANA	WBAS	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3	3	3	3	3	3	3		3	3	3	3									
	GUSTAVUS	SAWR	58 25N	135 44W	19	5	5	5	5	5	5	5	5	5	5	5	5									25322
	HAYES RIVER	A	61 59N	152 05W	1000							5	5	5	5	5	5									
	HOMER	WBAS	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	FAA	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	1	1	6	6	6	6	6	1	1	1	6	6						12			26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KAKE	A	56 58N	133 57W	30											3	3									
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	FSS	55 20N	131 40W	122	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12						26616
	LAKE CHANDAL	A	67 30N	148 30W	1825					5	5			3	3	3	3									
	LAKE CLARK	A	60 17N	154 17W	271	5	5	5	5		5	5														
	LAKE HOOD	LAWR	61 11N	149 57W	148	3	3	3	3		3	3	3	3	3	3	3									
	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	NENANA	FAA	64 33N	149 05W	364	6	6	6	6	6	6	6	6	6	6	6	6			12						26435
	NIKOLAI	COOP	63 01N	154 22W	425																12					
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	4	4	4	4	4	4	4	4	4	4	4	4	12		06						26622
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	AFS	71 20N	156 39W	19	3	3	3	3	3	3	3	3	3	3	3	3									27506
	PORT ALSWORT	A	60 12N	154 18W	268									5	5	5	5									
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5										25508
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	1	1	1	1	1	1	1	1	1	1	1	1									
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5		5	5	5									26526
	QUINHAGAK	SAWR	59 45N	161 54W	10	3	3	3	3	3	3	3	3	3	3	3	3									
	SAGWON	SAWR	69 22N	148 42W	650	6	6	6	6	6																

RECORDS INDEX ARRANGED BY YEAR

ALASKA

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
						HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY												NUMBER OF MONTHS IN YEAR WITH								
1971	SAND POINT	SAWR	55 20N	160 30W	50	3	3	3	3	3	3	3	3	3	3	3	3									25617
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEMYA	WBAS	52 43N	174 06E	128	1	1	1	1	1	1	1	1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	SITKINAK	CG	56 33N	154 08W	53	5	1	1	1	1	1	1	1	1	1	1	1			12						
	SKAGWAY	A	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	1	1	1	1	1	1	1	1	1	1	1	1						12			26534
	ST MARYS	COOP	62 04N	163 11W	30															12	09					
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	WBAS	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	WBAS	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	TANANA	FSS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26529
	TATALINA	AFB	62 53N	155 57W	931	1	1	1	6	6	6	6	6	6	6	6	6						12			26536
	TIN CITY	AFS	65 34N	167 55W	258	1	1	1	1	1	1	1	1	1	1	1	1									26634
	TOKSOOK	SAWR	60 32N	165 07W	15	3	3	3	3		3	3	3	3	3	3										
	TYONE LAKE	A	62 31N	146 42W	2371	3	3	3					3	3	3											
	UMIAT	SAWR	69 22N	152 08W	337						5				5	5										26508
	UNALAKLEET	WBAS	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 08N	146 15W	48		5	5	5	5	5	5	5	5	5	5	5									26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WEST FORK	COOP	65 28N	148 40W	430																12					
	WILD LAKE 2	COOP	67 33N	151 33W	1190																04					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33	4	4	4	4	4	4	4	4	4	4	4	4									26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1972	ADAK	CG	51 35N	177 00W											5	5	5									
	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	AMCHITKA IS	SAWR	51 23N	179 15E	237	3	3	3	3	3	3	3	3		3	3	3									
	AMCHITKA IS	NS	51 24N	179 16E	80											3										45711
	ANAKTUVUK	A	68 10N	151 46W	2100	5	5	5	5	5	5	5	5	5	5	5	5				11					
	ANCHORAGE	WBAS	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26451
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANDREAFSKY	SAWR	62 04N	163 18W	280	3	3	3	3	3	3	3	3	3	3	3	3									
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			11						26516
	ANNETTE	WBAS	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ARCTIC VILAG	COOP	68 08N	145 32W	2250	3	3														06					
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	AUGUSTINE IS	A	59 25N	153 25W	30							3	3													
	BARROW	WBAS	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WBAS	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WBAS	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	WBAS	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			09						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	1	1	1	1	1	1	6	6	6	6	6	6			12						26415
	BIORKA IS	CG	56 51N	135 33W	50								5	5	5	5	5									
	BIRCH ROAD	COOP	61 08N	149 46W	460																06					
	CAPE DECISIO	CG	56 00N	134 08W	60	6	6	6	6	6	6	6	6	6	6	6	6	11		12						25315
	CAPE HINGHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	1	1	1	1	7	6	6	6	7	7	7	7									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	1	1	6	6	1	7	7	7	7	7	7	7						12			25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	1	1	1	1	7	7	7	6	6	6	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5			04						25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	12		12						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	6	6	6	6	6	6	6	6	1	1	1	1	12		11						25401
	CENTRAL	COOP	65 33N	144 49W	1000																12					
	CHALKYITSIK	COOP	66 38N	143 43W	560																11					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																12					
	CIRCLE HOT S	SAWR	65 29N	144 36W	935	3	3																			26419
	CLEAR	SAWR	64 18N	149 11W	580	5	5	5	5	3	3															
	COLD BAY	WBAS	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25624
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 28N	133 09W	13	5	5	5	5	5	5	5	5	5	5	5	5									25317
	CROOKED CREK	COOP	61 52N	158 15W	130																10					
	DEADHORSE	FSS	70 12N	148 27W	50	6	6	6	6	6	6	6	6	6	6	6	6									
	DILLINGHAM	FSS	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3	3	3	3																	25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						12			26407
	EKULTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1						12			26401
	FAIRBANKS	WBAS	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WBAS	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	A	66 34N	145 16W	435	3	3	3	3	3		3		3	3	3	3									
	FORT YUKON	AC	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5	5			11						26413
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						12			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	GULKANA	WBAS	62 09N	145 27W	1579	1	1	1	1	1	1	1	1	1	1	1	1			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3	3	3	3	3	3			3	3	3	3									
	GUSTAVUS	SAWR	58 25N	135 44W	19	5	5	5	5	5	5	5	5	5												25322
	HAYES RIVER	A	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	HOMER	WBAS	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	FAA	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	11					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	6	1	1	1	1	1	1	1	1	1	1	1						05			26535
	JUNEAU	WBAS	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KAKE	A	56 58N	133 57W	30	3	3	3	3	3	3	3	3	3	3	3	3									
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	CG	55 35N	131 30W											5	5	5									

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH
1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1972	KETCHIKAN	FSS	55 20N	131 40W	122	5	5	5	5	5	5	5	5	5	5	5	5									25325
	KING SALMON	WBAS	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	NAF	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12	10		12			25501
	KOTZEBUE	WBAS	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			01			26616
	LAKE CHANDAL	A	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									
	LAKE HOOD	LAWR	61 11N	149 57W	148	3	3	3	3	3	3	3	3	3	3	3	3									
	LAKE LOUISE	A	62 18N	146 35W	2450				5	5	5	5	5	5	3		3									
	MACLEOD HARB	A	59 53N	147 45W	45		3	3	3	3	3	3	3	3	3	3	3									
	MCGRATH	WBAS	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	NENANA	A	64 33N	149 05W	364	6	6	6	6	6	5	5	5	5	5	5				11						26435
	NIKOLAI	COOP	63 01N	154 22W	425																11					
	NIKOLSKI	A	52 57N	168 52W	24				3	3	3	3	3	3	3	3										
	NOME	WBAS	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26617
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	4	4	4	4	4	4	4			4	4	4	10		09						26622
	OCEAN CAPE	CG	59 33N	139 42W									5	5	5	5	5									
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	AFS	71 20N	156 39W	19	3								3	3	3	3									27506
	PORT ALSWORT	A	60 12N	154 18W	268	5	5	5	5	5	5	5	5	5	5	5	5									
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		12						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5	5	5	5	5	5									25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5			5			5	5	5	5	5									26526
	QUINHAGAK	SAWR	59 45N	161 54W	10	3																				
	ROCK RIDGE	COOP	61 07N	149 45W	840																02					
	SAND POINT	SAWR	55 20N	160 30W	50	3	3	3	3	3	3	3	3	3	3	3	3									25617
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEMYA	WBAS	52 43N	174 06E	128	1	1	1	1	1	1		1	1	1	1	1			12			12			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5		5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	12					25333
	SITKINAK	CG	56 33N	154 08W	53	1	1	1	1	1	1	5	5	5	5	5	5			12						
	SKAGWAY	A	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SLEETMUTE	A	61 42N	157 11W	285															04						
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	6	1	6	7	7	6	6	6	7	7	7	7						12			26534
	SPRUCE CAPE	CG	57 50N	152 19W											5	5	5									
	ST MARYS	COOP	62 04N	163 11W	30															11	12					
	ST PAUL IS	WBAS	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12						25713
	SUMMIT	WBAS	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12						26414
	TALKEETNA	WBAS	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	TANANA	FSS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26529
	TATALINA	AFB	62 53N	155 57W	931	6	6	6	7	7	7	7	7	7	7	7	7						12			26536
	TIN CITY	AFS	65 34N	167 55W	258	1	1	1	6	6	6	6	6	6	6	6	6									26634
	TOKSOOK	SAWR	60 32N	165 07W	15									3	3	3										
	UMNAK	SAWR	53 23N	167 54W	130				5	5	5	5	5	5												25621
	UNALAKLEET	WBAS	63 53N	160 48W	21	1	1	1	1	1	1	1	1	1	1	1	1			12						26627
	VALDEZ	A	61 08N	146 15W	49	5	5	5	5	5	5	5	5		6	6	6			03	01					26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WEST FORK	COOP	65 28N	148 40W	430																12					
	WILD LAKE 2	COOP	67 33N	151 33W	1190																04					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33	4		3	4	4	4	4	4	4	4	4	1									26445
	YAKUTAT	WBAS	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1973	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	ADAK	CG	51 35N	177 00W		5	5	5	5	5	5	5	5		5	5	5									
	AMCHITKA IS	SAWR	51 23N	179 15E	237	0	0	0	0	0	0	0	0													
	ANAKTUVUK	A	68 10N	151 46W	2100				5	5	5	5	5	5			5				06					
	ANCHORAGE	WSO	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12			02			26451
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANDREAFSKY	SAWR	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3	3									
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			04						26516
	ANNETTE	WSO	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	ATTU	NS	52 48N	173 10E	92											5										45709
	AUGUSTINE IS	A	59 25N	153 25W	30						3	3	3													
	BARROW	WSO	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WSO	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WSO	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	WSO	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			12						26415
	BIORKA IS	CG	56 51N	135 33W	50	5	5	5	5	5	5	5		3	3											
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6	6	6	6	6	12		10						25315
	CAPE HINGHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5	5	5	5	5	5									26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	6	6	7	7	7	7	7	7	7	7	7	7									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	7	7	7	7	7	7	7	7	1	1	1	1						03			25623
	CAPE ROMANZO	AFS	61 47N	166 02W	405	6	6	7	7	7	7	7	7	7	7	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6	6	6	6	6	11		08						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	1	1	1	1	1	1	1	1	1	1	1	1	12		12						25401
	CENTRAL	COOP	65 33N	144 49W	1000																11					
	CHALKYITSIK	COOP	66 38N	143 43W	560																03					
	CHENA HOT SP	COOP	65 03N	146 03W	1200																12					
	COLD BAY	WSO	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			09			25624
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 28N	133 09W	13	5	5	5	5	5							5									25317
	CROOKED CREK	COOP	61 52N	158 15W	130																12					
	DEADHORSE	FSS	70 12N	148 27W	50	6	6	6	6	6	6	6	6	6	6	6	6									

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1973	DILLINGHAM	FSS	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	DUTCH HARBOR	SAWR	53 53N	166 32W	13			3	3	3	3	3	3	3												25614
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1						01			26407
	EKULTNA LAKE	COOP	61 24N	149 09W	880																			12		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5	5	5	5	5	5									25318
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1									26401
	FAIRBANKS	WSO	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WSO	62 32N	153 54W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	12					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FORT YUKON	A	66 34N	145 16W	435	3	3	3	3	3	3	3	3													
	FORT YUKON	AC	66 33N	145 12W	457	3	3	3	3	3	3	3	3		3					07						26413
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1						03			26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	GULKANA	WSO	62 09N	145 27W	1579	1	1	1	1	1	1	6	6	6	6	6	6			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3	3	3	3	3					3	3	3									
	HAINES	A	59 14N	135 26W	31						3	3	3	3	3	3	3			07						25232
	HAYES RIVER	A	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	HOMER	WSO	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	FAA	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	INDIAN MTN	AFS	66 00N	153 42W	848	6	7	1	1	1	7	7	7	7	7	7	7						05			26535
	JUNEAU	WSO	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			10			25309
	KAKE	A	56 58N	133 57W	30	3	3	3	3	3	3	3	3	3	3	3	3									
	KAVIK	SAWR	69 41N	146 56W	617	6	6	6	6																	
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	FSS	55 20N	131 40W	122	5	5	5	5	5	5	6	6	6	6	6	6									25325
	KETCHIKAN	CG	55 35N	131 30W		5	5	5	5	5	5		5	5	5	5	5									
	KING SALMON	WSO	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	WSO	57 45N	152 30W	111	6	1	1	1	1	1	1	1	1	1	1	1			11			07			25501
	KOTZEBUE	WSO	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			08			26616
	LAKE CHANDAL	A	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									
	LAKE HOOD	LAWR	61 11N	149 57W	148	3	3	3			3		3	3	3	3	3									
	LAKE LOUISE	A	62 18N	146 35W	2450	5	5	5	5	5																
	LEVEL ISLAND	A	56 28N	133 06W	30								5	5	5	5	5									
	MACLEOD HARB	A	59 53N	147 45W	45	3	3	3	3	3	3	3	3	3	3		3									
	MCGRATH	WSO	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	NENANA	A	64 33N	149 05W	362	5	5	5	5	5	5	5	5	5	5	5				11						26435
	NIKOLAI	COOP	63 01N	154 22W	425																10					
	NIKOLSKI	A	52 57N	168 52W	24		3	3	3	3	3	3	3	3	3	3	3									
	NOME	WSO	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	4	4		4	3	3	3	3	3	3	3	3	02		02						26622
	OCEAN CAPE	CG	59 33N	139 42W		5	5	5	5	5	5	5	5	5	5	5	5									
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	NS	71 20N	156 24W	13	6	6	6	6	6	6	6	6	6	6	6	6									27501
	PORT ALSWORT	A	60 12N	154 18W	268	5	5	5	5	5	5	5	5	5	5	5	5									
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	12		11						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	PT RETREAT	CG	58 25N	134 57W	20	5	5	5	5	5	5	5														25330
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	ROCK RIDGE	COOP	61 07N	149 45W	840																12					
	SAND POINT	SAWR	55 20N	160 30W	50	3	3	3	3	3	3		3	3	3	3	3									25617
	SAVOONGA	A	63 42N	170 28W	45		3	3	3	3	3	3	3	3	3	3	3									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SHEMYA	WSO	52 43N	174 06E	128	1	1	1	1											04			04			45715
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5		5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	05					25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			11						
	SKAGWAY	A	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3													26514
	SLEETMUTE	A	61 42N	157 11W	285															07						
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	6	6	7	1	1	1	6	6	7	1	1	1						01			26534
	SPRUCE CAPE	CG	57 50N	152 19W		5	5	5	5	5	5	5	5	5	5	5	5									
	ST MARYS	COOP	62 04N	163 11W	30															11	11					
	ST PAUL IS	WSO	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			11			01			25713
	SUMMIT	WSO	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			02	01		26414
	TALKEETNA	WSO	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	TANANA	FSS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	11					26529
	TATALINA	AFB	62 53N	155 57W	931	6	6	7	7	6	6	6	6	7	7	7	7						03			26536
	TIN CITY	AFS	65 34N	167 55W	258	6	6	7	7	6	6	6	7	7	7	7	7									26634
	TOKSOOK	SAWR	60 32N	165 07W	15												3									
	UNALAKLEET	WSO	63 53N	160 48W	21	1	5	5	5	5	5	5	5	6	6	6	6			12						26627
	VALDEZ	A	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	12					26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WEST FORK	COOP	65 28N	148 40W	430																09					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33			3	3	3	4	4	4	4	4	4	4									26445
	YAKUTAT	WSO	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12						25339
1974	ADAK	CG	51 35N	177 00W		5	5	5	5	5	5	5	5	5	5	5	5									
	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WSO	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26451
	ANDREAFSKY	SAWR	62 04N	163 18W	290	3	3	3	3	3	3	3	3	3	3	3	3									
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5		5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			12						26516
	ANNETTE	WSO	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25308
	ATIGUN	SAWR	68 11N	149 25W	3335											1	1									
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5	5	5	5	5	5	5									45712
	AUFEIS	SAWR	69 08N	149 35W	1000					1	1	1	1	1												

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1974	BARROW	WSO	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12						27502
	BARTER IS	WSO	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12						27401
	BETHEL	WSO	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12						26615
	BETTLES	WSO	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			12						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			11						26415
	BIORKA IS	CG	56 51N	135 33W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	BLAIR LK RNG	AF	64 20N	147 39W	725											1	1									26460
	CAPE DECISIO	CG	56 00N	134 08W	50	6	6	6	6	6	6	6	6					07		07						25315
	CAPE HINCHIN	CG	60 14N	146 39W	185	5	5	5	5	5	5	5														26417
	CAPE LISBURN	AFS	68 53N	166 08W	53	7	7	7	1	1	1	1	1	1	1	1	1									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	1	1	1	1	1	1	1	1	1	1	1	1									25623
	CAPE POLE	A	55 58N	133 48W	50	5	5		5	5	5						5									
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176		5	5	5	5	5	5	5	5	5	5	5									25622
	CAPE SPENCER	CG	58 12N	136 38W	88	6	6	6	6	6	6	6	6					08		07						25316
	CAPE ST ELIA	CG	59 48N	144 36W	50	1	1	1	1	1	1	1						06		07						25401
	CENTRAL	COOP	65 33N	144 49W	1000																11					
	CHANDALAR	A	67 30N	148 30W	1845										1	1	1									
	CHENA HOT SP	COOP	65 03N	146 03W	1200																09					
	COFFMAN COVE	A	56 00N	132 50W	10		5	5	5	5		5	5	5												
	COLD BAY	WSO	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25624
	COLD FT CAMP	SAWR	67 03N	149 34W	1063			3	3	3	5	5				1	1									
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			12						26410
	CRAIG	A	55 29N	133 09W	13		5	5																		25317
	CROOKED CREK	COOP	61 52N	158 15W	130															09	09					
	DEADHORSE	FSS	70 12N	148 28W	63	6	6	6	6	6	6	6	6	6	6	1	1									
	DIETRICH	SAWR	67 41N	149 44W	1489											1	1									
	DILLINGHAM	FSS	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	DOLLY VARDEN	CG	60 48N	151 38W	108	3	3	3	3	3	3	3	3	3	3	3	3			01						
	DUTCH HARBOR	SAWR	53 53N	166 32W	13	3																				25614
	EAGLE	A	64 47N	141 12W	840																02					26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1									26407
	EKULTNA LAKE	COOP	61 24N	149 09W	880																			11		
	ELDRED ROCK	CG	58 58N	135 13W	54	5	5	5	5	5	5	5														25318
	ELFIN COVE	A	58 12N	136 40W	20											5	5									
	ELMENDORF	AFB	61 15N	149 48W	178	1	1	1	1	1	1	1	1	1	1	1	1									26401
	FAIRBANKS	WSO	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WSO	62 31N	153 53W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	10					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FIVE MILE CP	SAWR	66 05N	150 00W	440											1	1									
	FORT YUKON	AC	66 33N	145 12W	457	3	3	3	3				5	5	5	5	5									26413
	FORT YUKON	A	66 34N	145 16W	435	3																				
	FRANKLIN BLK	SAWR	69 43N	148 41W	357			3		3	5	5				1	1									
	FUNTER BAY	A	58 15N	134 54W	5			5	5	5	5	5	5	5	5	5	5									
	GALBRAITHE	SAWR	68 29N	149 29W	2665			3	3	3	3	3				1	1									
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1									26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	GLACIER	COOP	58 27N	135 53W	50																			02		
	GULKANA	WSO	62 09N	145 27W	1579	6	6	6	6	6	6	6	6	6	6	6	6			12						26425
	GUNSIGHT	A	61 54N	147 18W	2960	3		3																		
	HAINES	A	59 14N	135 26W	31	3	3	3	3	3	3	3	3	3	5	5	5			11						25232
	HAPPY VALLEY	SAWR	69 10N	148 50W	948			3	3	3	3		1			1	1									
	HAYES RIVER	A	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	HOMER	WSO	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	FAA	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	6	6	6	6	6	6	6	6	6	6	6	6									26535
	JUNEAU	WSO	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KAKE	A	56 58N	133 57W	30	3	3	3	3	3	3	3	3	3	5	5	5									
	KAVIK	SAWR	69 41N	146 56W	617	6	6	6	6	6	6	6														
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			12						26523
	KETCHIKAN	FSS	55 21N	131 42W	96	6	6	6	6	6	6	6	6	1	1	1	1									25325
	KETCHIKAN	CG	55 35N	131 30W		5	5	5	5	5	5	5	5	5	5	5	5									
	KING SALMON	WSO	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	WSO	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12			01			25501
	KOTZEBUE	WSO	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26616
	LAKE CHANDAL	A	67 30N	148 30W	1825	5	5	5	5	5	5	5		5	5	5	5									
	LAKE HOOD	LAWR	61 11N	149 57W	148	3	3	3	3	3		3	3		3	3	3									
	LEVEL ISLAND	A	56 28N	133 06W	30	5	5	5	5	5	5	5	5	5	5	5										
	LIVENGOOD	SAWR	65 35N	148 29W												6	6									
	MACLEOD HARB	A	59 53N	147 45W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	MCCARTHY	SAWR	61 26N	142 55W	1600		5	5	5	5	5	5	5	5	5	5	5									
	MCGRATH	WSO	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MURPHY LAKE	SAWR	68 38N	149 34W	2450			4	4	4			1		1	1	1									
	NENANA	A	64 33N	149 05W	362	5	5			5	5	5	5	5	5	5	5			10						26435
	NIKOLAI	COOP	63 01N	154 22W	425															08	05					
	NIKOLSKI	A	52 57N	168 51W	70	3	3	3	3																	
	NOME	WSO	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3		3	3	3	3	3	3	3	3	3	3									26622
	OCEAN CAPE	CG	59 33N	139 42W		5	5				5	5	5	5		5	5									
	OLD EDGERTON	COOP	61 48N	144 58W	1320																07					
	OLD MAN	SAWR	67 27N	150 35W	1271						5	5				1	1									
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PAXSON	A	63 03N	145 27W	2697		5	5	5	5	5	5	5	5	5	5	5									
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	POINT BARROW	NS	71 20N	156 24W	13	3	3	3	3	3		3														27501
	PORT ALSWORT	A	60 12N	154 18W	268	5	5	5	5	5	5	5		5	5	5	5									
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	6	6	6	6	6	6	6	6	6	11		10						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PROSPECT CRK	SAWR	66 48N	150 38W	1105		3	3	3	3	3	3	3			1	1									
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526

RECORDS INDEX ARRANGED BY YEAR

ALASKA

						HOURLY RECORDS BY MONTH 1 = 24 OBS PER DAY												NUMBER OF MONTHS IN YEAR WITH								
YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1974	ROCK RIDGE	COOP	61 07N	149 45W	840																04					
	SAND POINT	SAWR	55 20N	160 30W	50	3																				25617
	SAVOONGA	A	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	06					25333
	SITKINAK	CG	56 33N	154 08W	53		5	5	5	5	5	5	5	5	5	5	5			10						
	SKAGWAY	A	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	SKWENTNA	A	61 58N	151 12W	153			5	5		5	5	5	5	5	5	5									26514
	SLANA	A	62 43N	143 55W	2420						5	5	5	5	5	5	5									
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	1	1	1	1	1	1	1	1	1	1	1	1									26534
	SPRUCE CAPE	CG	57 50N	152 19W		5	5	5																		
	ST MARYS	COOP	62 04N	163 11W	30															10	11					
	ST PAUL IS	WSO	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25713
	SUMMIT	WSO	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			07			26414
	TALKEETNA	WSO	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	TANANA	FSS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	02					26529
	TATALINA	AFB	62 53N	155 57W	931	6	6	6	7	7	7	7	7	7	7	7	7									26536
	TIN CITY	AFS	65 34N	167 55W	258	7	7	7	7	7	7	7	7	7	7	7	7									26634
	TOKSOOK	SAWR	60 32N	165 07W	15	3																				
	UNALAKLEET	WSO	63 53N	160 48W	21	6	6	6	6	1	1	1	6	6	6	6	6			12			09			26627
	VALDEZ	A	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	10		09			26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WHITTER	A	60 46N	148 41W	156							5	5	5	5	5	5									
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33			4	4	4	4	4	4	4	4	4										26445
	YAKUTAT	WSO	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			02			25339
1975	ADAK	CG	51 35N	177 00W		5	5	5	5	5	5			5	5	5	5									
	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WSO	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26451
	ANDREAFSKY	SAWR	62 04N	163 18W	280	3	3	3	3	3	3	3	3	3	3	3										
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5			06						26516
	ANNETTE	WSO	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			11			11			25308
	ATIGUN	SAWR	68 11N	149 25W	3335	1	1	1	1	1	1	1	1	6	6	6										
	ATTU	CG	52 50N	173 11E	70	5	5	5	5	5	5		5		5	5	5									45712
	BARROW	WSO	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			11		04				27502
	BARTER IS	WSO	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			11						27401
	BETHEL	WSO	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26615
	BETTLES	WSO	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			11						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			12						26415
	BIORKA IS	CG	56 51N	135 33W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	BLAIR LK RNG	AF	64 20N	147 39W	725	1	1	1	1	1	1	1	1	1	1	1	1									26460
	CAPE LISBURN	AFS	68 53N	166 08W	53	1	1	1	1	1	1	1	1	1	1	1	1									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	7	7	7	7	7	7	7	7	7	7	7	7									25623
	CAPE POLE	A	55 58N	133 48W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5	5	5									25622
	CENTRAL	COOP	65 33N	144 48W	1000																11					
	CHANDALAR	A	67 30N	148 30W	1845	1	1	1	1	1	1	1	6	6	6	6	6									
	COLD BAY	WSO	55 12N	162 43W	98	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25624
	COLD FT CAMP	SAWR	67 03N	149 34W	1063	1	1	1	1	1	1	1	1	1	1	1	6									
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			10						26410
	DEADHORSE	FSS	70 12N	148 28W	83	1	1	1	1	1	1	1	1	1	1	1	1									
	DIETRICH	SAWR	67 41N	149 44W	1489	1	1	1	1	1	1	1	1	1	1	1	6									
	DILLINGHAM	FSS	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	DOLLY VARDEN	CG	60 48N	151 38W	108	3	3	3	3	3	3	3	3	3	3	3	3			09						
	EAGLE	A	64 47N	141 12W	840																12					26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1									26407
	EKULTNA LAKE	COOP	61 24N	149 09W	880																			06		
	ELFIN COVE	A	58 12N	136 40W	20	5	5	5	5	5	5	5	5	5	5	5	5									
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1									26401
	FAIRBANKS	WSO	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			12						26411
	FAREWELL	WSO	62 31N	153 53W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	11					26519
	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FIVE MILE CP	SAWR	66 05N	150 00W	440	1	1	1	1	1	1	1	1	1	1	1	6									
	FORT YUKON	AC	66 33N	145 12W	457	5	5	5	5	5	5					5	5									26413
	FRANKLIN BLK	SAWR	69 43N	148 41W	357	1	1	1	1	1	1	1	1	1	1	1	1									
	FUNTER BAY	A	58 15N	134 54W	5	5	5	5	5	5	5	5	5	5	5	5	5									
	GALBRAITHE	SAWR	68 29N	149 29W	2665	1	1	1	1	1	1	1	1	1	1	1	1									
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1									26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3	3	3	3	3	3	3	3	3	3									
	GULKANA	WSO	62 09N	145 27W	1579	6	6	6	6	6	6	6	6	6	6	6	6			12						26425
	HAINES	A	59 14N	135 26W	31	5	5	5	5	5	5	5	5	5	5	5	5			12						25232
	HAPPY VALLEY	SAWR	69 10N	148 50W	948	1	1	1	1	1	1	1	1	1	1	1	1									
	HAYES RIVER	A	61 58N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	HOMER	WSO	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	FAA	59 45N	154 55W	190	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	7	7	7	7	7	7	7	7	7	7	7	7									26535
	JOHNSTONE PT	A	60 29N	146 36W	24		3	3	3	3	3	3	3	3	3	3	3									
	JUNEAU	WSO	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KAKE	A	56 58N	133 57W	30	5	5	5	5	5	5	5	5	5	5	5	5									
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			10						26523
	KETCHIKAN	FSS	55 21N	131 42W	96	1	1	1	1	1	1	1	1	1	1	1	1									25325
	KETCHIKAN	CG	55 35N	131 30W		5	5	5	5	5	5	5	5	5	5	5	5									
	KING SALMON	WSO	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	WSO	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			12						25501
	KOTZEBUE	WSO	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			10			26616
	LAKE CHANDAL	A	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1975	LAKE HOOD	LAWR	61 11N	148 57W	148	3	3	3	3			3	3		3	3	3									
	LEVEL ISLAND	A	58 28N	133 06W	30	5	5	5	5	5	5	5	5	5	5	5	5									
	LIVENGOOD	SAWR	65 35N	148 29W		6	6	6	6	6	6	6	6	6	6	6	6									
	MACLEOD HARB	A	59 53N	147 45W	. 45	3	3	3	3	3	3	3	3	3	3	3	3									
	MCCARTHY	SAWR	61 26N	142 55W	1600	6	6	6	6	6	6	6	6	6	6	6	6				07					
	MCGRATH	WSO	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MCKINLEY PRK	A	63 38N	148 48W	2050											5	5									26429
	MINCHUMINA	FAA	63 53N	152 17W	701		6	6	6	6	6	6	6	6	6	6	6									26512
	MURPHY LAKE	SAWR	68 38N	149 34W	2450		1	1	1	1	1															
	NENANA	A	64 33N	149 05W	362	5	5		5					5	5	5	5			10						26435
	NOME	WSO	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3	3	3	3	3	3	3		3	3	3	3									26622
	OLD EDGERTON	COOP	61 48N	144 59W	1320																12					
	OLD MAN	SAWR	67 27N	150 35W	1271	1	1	1	1	1	1	1	1	1	1	1	1									
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PAXSON	A	63 03N	145 27W	2697		5	5	5	5		3	3	3			3									
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PORT ALSWORT	A	60 12N	154 18W	268	5	5	5	5	5	5	5	5	5	5	5	5									
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5	02		12						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PROSPECT CRK	SAWR	66 48N	150 38W	1105	1	1	1	1	1	1	1	1	1	1	1	1									
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5	5									26526
	RAMPART	COOP	65 30N	150 08W	400																02					
	SAVOONGA	A	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			11						26438
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	06					25333
	SITKINAK	CG	56 33N	154 08W	53			5	5	5	5	5	5	5	5	5	5			12						
	SKAGWAY	A	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	SKWENTNA	A	61 58N	151 12W	153	3	3	3	3	3	3	3	3	3	3	3	3									26514
	SLANA	A	62 43N	143 55W	2420	5	5	5	5	5	5	5	5	5	5	5	5									
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	6	6	6	6	6	6	6	6	6	6	6	6									26534
	ST MARYS	COOP	62 04N	163 11W	30															12	12					
	ST PAUL IS	WSO	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25713
	SUMMIT	WSO	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			10			26414
	TALKEETNA	WSO	62 18N	150 06W	351	6	6	6	6	6	6	6	6	6	6	6	6			12						26528
	TANANA	FSS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12	02					26529
	TATALINA	AFB	62 53N	155 57W	931	7	7	1	1	1	6	6	6	6	6	6	6									26536
	TIN CITY	AFS	65 34N	167 55W	258	7	7	7	7	7	7	7	7	7	7	7	7									26634
	TONSINA	SAWR	61 33N	145 13W	1875		6	6	6	6	6	6	6	6	6	6										
	UMIAT	SAWR	69 22N	152 08W	337									6	6	6										26508
	UNALAKLEET	WSO	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			11			12			26627
	VALDEZ	A	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	12		12			26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WHITTER	A	60 46N	148 41W	156	5	5	5	5	5	5	5	5	5	5	5	5									
	WILK LAKE 2	COOP	67 33N	151 33W	1190																02					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33		5	5	5	5	5	5	5	5	5	5	5			11						26445
	YAKUTAT	WSO	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25339
1976	ADAK	CG	51 35N	177 00W		5	5	5	5	5	5		5	5	5	5	5									
	ADAK	NS	51 53N	176 39W	16	1	1	1	1	1	1	1	1	1	1	1	1			12	12		12			25704
	ANCHORAGE	FAA	61 13N	149 50W	134	1	1	1	1	1	1	1	1	1	1	1	1									26409
	ANCHORAGE	WSO	61 10N	150 01W	158	1	1	1	1	1	1	1	1	1	1	1	1			12						26451
	ANDREAFSKY	SAWR	62 04N	163 18W	290		3	3	3	3	3	3	3	3		3										
	ANGOON	A	57 31N	134 35W	14	5	5	5	5	5	5	5	5	5	5	5	5									25310
	ANIAK	FAA	61 35N	159 32W	91	5	5	5	5	5	5	5	5	5	5	5	5									26516
	ANNETTE	WSO	55 02N	131 34W	113	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25308
	ATIGUN	SAWR	68 11N	149 25W	3335				6	6	6	6	6	6	6	6										
	ATTU	CG	52 50N	173 11E	70	5	5	5		5	5	5	5	5	5		5									45712
	BARROW	WSO	71 18N	156 47W	38	1	1	1	1	1	1	1	1	1	1	1	1			12			08			27502
	BARTER IS	WSO	70 08N	143 38W	50	1	1	1	1	1	1	1	1	1	1	1	1			12			05			27401
	BETHEL	WSO	60 47N	161 48W	131	1	1	1	1	1	1	1	1	1	1	1	1			12			11			26615
	BETTLES	WSO	66 55N	151 31W	652	1	1	1	1	1	1	1	1	1	1	1	1			02						26533
	BIG DELTA	FAA	64 00N	145 44W	1275	6	6	6	6	6	6	6	6	6	6	6	6			12						26415
	BIORKA IS	CG	56 51N	135 33W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	BLAIR LK RNG	AF	64 20N	147 39W	725	5	5	5	5	5	5	5	5	5	5	5	5									64060
	CAPE LISBURN	AFS	68 53N	166 08W	53	6	6	6	6	6	6	6	6	6	6	6	6									26631
	CAPE NEWENHA	AFS	58 39N	162 04W	235	7	7	7	7	7	7	7	7	7	7	7	7									25623
	CAPE POLE	A	55 58N	133 48W	50	5	5	5	5	5	5	5	5	5	5	5	5									
	CAPE ROMANZO	AFS	61 47N	166 02W	405	7	7	7	7	7	7	7	7	7	7	7	7									26633
	CAPE SARICHE	CG	54 36N	164 56W	176	5	5	5	5	5	5	5	5	5	5		5									25622
	CENTRAL	COOP	65 33N	144 49W	1000																11					
	CHANDALAR	A	67 30N	148 30W	1845	6	6	6	6	6	6	6	6	6	6	6	6									
	COLD BAY	WSO	55 12N	162 43W	99	1	1	1	1	1	1	1	1	1	1	1	1			12			11			25624
	COLD FT CAMP	SAWR	67 03N	149 34W	1063	6	6	6	6	6	6	6	6	6	6	6	6									
	CORDOVA	FAA	60 30N	145 30W	45	1	1	1	1	1	1	1	1	1	1	1	1			09						26410
	DEADHORSE	FSS	70 12N	148 28W	83	1	1	1	1	1	1	1	1	1	1	1	1									
	DIETRICH	SAWR	67 41N	149 44W	1489	6	6	6	6	6	6	6	6	6	6	6	6									
	DILLINGHAM	FSS	59 03N	158 31W	86	6	6	6	6	6	6	6	6	6	6	6	6									25512
	DOLLY VARDEN	CG	60 48N	151 38W	108	3	3	3	3	3	3	3	3	3	3	3	3			12						
	DUTCH HARBOR	A	53 53N	166 32W	13							5	5	5	5	5	5									25614
	EAGLE	A	64 47N	141 12W	840																11					26422
	EIELSON	AFB	64 41N	147 05W	569	1	1	1	1	1	1	1	1	1	1	1	1									26407
	EKULTNA LAKE	COOP	61 24N	149 09W	880																			06		
	ELFIN COVE	A	58 12N	136 40W	20	5	5	5	5	5	5	5	5	5	5	5	5									
	ELMENDORF	AFB	61 15N	149 48W	176	1	1	1	1	1	1	1	1	1	1	1	1									26401
	FAIRBANKS	WSO	64 49N	147 52W	455	1	1	1	1	1	1	1	1	1	1	1	1			11						26411
	FAREWELL	WSO	62 31N	153 53W	1503	5	5	5	5	5	5	5	5	5	5	5	5			12	09					26519

RECORDS INDEX ARRANGED BY YEAR

ALASKA

NUMBER OF MONTHS IN YEAR WITH

HOURLY RECORDS BY MONTH

1 = 24 OBS PER DAY

YEAR	NAME	TYPE	LAT.	LONG.	ELEV.	J	F	M	A	M	J	J	A	S	O	N	D	SYNOPTIC FORM	METL SUMMARY	BAROGRAMS	THERMOGRAMS	TRIPLE REGISTER	WIND RECORDER	HUMIDITY RECORDER	RADAR LOGS	WBAN NUMBER
1976	FIVE FINGER	CG	57 16N	133 37W	30	5	5	5	5	5	5	5	5	5	5	5	5									25319
	FIVE MILE CP	SAWR	66 05N	150 00W	440	6	6	6	6	6	6	6	6	6	6	6	6									
	FORT YUKON	AC	66 33N	145 12W	457	5	5	5	5	5	5	5	5	5	5	5										26413
	FRANKLIN BLK	SAWR	69 43N	148 41W	357				6	6	6	6	6	6	6	6	6									
	FUNTER BAY	A	58 15N	134 54W	5	5	5	5	5	5	5	5	5	5	5	5	5									
	GALBRAITHE	SAWR	68 29N	149 29W	2665	1	1	1	1	1	1	1	1	1	1	1	1									
	GALENA	AFS	64 44N	156 56W	149	1	1	1	1	1	1	1	1	1	1	1	1									26501
	GAMBELL	SAWR	63 46N	171 45W	25	3	3	3																		
	GULKANA	WSO	62 09N	145 27W	1579	6	6	6	6	6	6	6	6	6	6	6	6			12						26425
	GUSTAVUS	SAWR	58 25N	135 44W	19								5	5	5	5	5									25322
	HAINES	A	59 14N	135 26W	31	5	5	5	5	5	5	5	5	5	5	5	5			12						25232
	HAPPY VALLEY	SAWR	69 10N	148 50W	948	1	1	1	1	1	1	1	1	1	1	1	1									
	HAYES RIVER	A	61 59N	152 05W	1000	5	5	5	5	5	5	5	5	5	5	5	5									
	HEALY	SAWR	63 53N	149 01W	1475											5	5									
	HOMER	WSO	59 38N	151 30W	69	1	1	1	1	1	1	1	1	1	1	1	1			12						25507
	ILIAMNA	FAA	59 45N	154 55W	180	5	5	5	5	5	5	5	5	5	5	5	5			12	12					25506
	INDIAN MTN	AFS	66 00N	153 42W	946	7	7	7	7	7	7	7	7	7	7	7	7									26535
	JOHNSTONE PT	A	60 29N	146 36W	24	3	3	3	3	3	3	3	3	3	3	3	3									
	JUNEAU	WSO	58 22N	134 35W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25309
	KAKE	A	56 58N	133 57W	30	5	5	5	5	5	5	5	5	5	5	5	5									
	KENAI	FAA	60 34N	151 15W	106	1	1	1	1	1	1	1	1	1	1	1	1			11						26523
	KETCHIKAN	CG	55 35N	131 30W		5	5	5	5	5	5	5	5	5	5	5										
	KETCHIKAN	FSS	55 21N	131 42W	96	1	1	1	1	1	1	1	1	1	1	1	1									25325
	KING SALMON	WSO	58 41N	156 39W	46	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25503
	KODIAK	WSO	57 45N	152 30W	111	1	1	1	1	1	1	1	1	1	1	1	1			11						25501
	KOTZEBUE	WSO	66 52N	162 38W	20	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26616
	LAKE CHANDAL	A	67 30N	148 30W	1825	5	5	5	5	5	5	5	5	5	5	5	5									
	LAKE HOOD	LAWR	61 11N	149 57W	148	3	3	3	3		3		3	3	3	3	3									
	LEVEL ISLAND	A	56 28N	133 06W	30	5	5	5	5	5	5	5	5	5	5	5	5									
	LIVENGOOD	SAWR	65 35N	148 29W		6	6	6	6	6	6	6	6	6	6	6	6									
	MACLEOD HARB	A	59 53N	147 45W	45	3		3	3	3	3	3	3	3	3	3	3									
	MANLEY HOT S	A	65 00N	150 39W	265										3	3	3									26524
	MCCARTHY	SAWR	61 26N	142 55W	1600	6	6	6	6	6	6	6	6	6	6	6	6				11					
	MCGRATH	WSO	62 58N	155 37W	340	1	1	1	1	1	1	1	1	1	1	1	1			12						26510
	MCKINELY PRK	A	63 39N	148 48W	2050	5	5	5	5																	26429
	MINCHUMINA	FAA	63 53N	152 17W	701	6	6	6	6	6	6	6	6	6	6	6	6									26512
	NENANA	A	64 33N	149 05W	362	5	5									5	5			02						26435
	NIKOLAI	COOP	63 01N	154 22W	425																06					
	NOME	WSO	64 30N	165 26W	18	1	1	1	1	1	1	1	1	1	1	1	1			12			12			26617
	NORTHWAY	FAA	62 57N	141 56W	1718	1	1	1	1	1	1	1	1	1	1	1	1			12						26412
	NUNIVAK	SA	60 23N	166 12W	52	3	3		3	3	3	3	3													26622
	OCEAN CAPE	CG	59 33N	139 42W				3	3	3																
	OCEAN RANGER	SAWR	55 32N	166 57W								5	6	6	6	6	6									
	OLD EDGERTON	COOP	61 48N	144 59W	1320																12					
	OLD MAN	SAWR	67 27N	150 35W	1271	6	6	6	6	6	6	6	6	6	6	6										
	PALMER	FAA	61 36N	149 05W	240	5	5	5	5	5	5	5	5	5	5	5	5			12						25331
	PAXSON	A	63 03N	145 27W	2697		3																			
	PETERSBURG	A	56 49N	132 57W	50	5	5	5	5	5	5	5	5	5	5	5	5									25329
	PORT ALSWORT	A	60 12N	154 18W	268	6	6	6	6	6	6	6	6	6	6	6	6									
	PORT CLARENC	CG	65 15N	166 52W	18	5	5	5	5	5	5	5	5	5	5	5	5			10						
	PORT HEIDEN	A	56 57N	158 37W	92	5	5	5	5	5	5	5	5	5	5	5	5									25508
	PROSPECT CRK	SAWR	66 48N	150 38W	1105	1	1	1	1	1	1	1	1	1	1	1	1									
	PRUDHOE BAY	SAWR	70 15N	148 20W	45	6	6	6	6	6	6	6	6	6	6	6	6									
	PUNTILLA	A	62 06N	152 45W	1837	5	5	5	5	5	5	5	5	5	5	5										26526
	RAMPART	COOP	65 30N	150 08W	400																10					
	SAVOONGA	A	63 42N	170 28W	45	3	3	3	3	3	3	3	3	3	3	3	3									
	SEDCO 706	SAWR	59 52N	143 18W											6	6	6									
	SEWARD	A	60 07N	149 27W	70	6	6	6	6	6	6	6	6	6	6	6	6			12						26438
	SISTER IS	A	58 10N	135 15W	35	5	5	5	5	5	5	5	5	5	5	5	5									25341
	SITKA	FAA	57 04N	135 21W	66	1	1	1	1	1	1	1	1	1	1	1	1			12	07					25333
	SITKINAK	CG	56 33N	154 08W	53	5	5	5	5	5	5	5	5	5	5	5	5			12						
	SKAGWAY	A	59 28N	135 18W	30	5	5	5	5	5	5	5	5	5	5	5	5			12						25335
	SLANA	A	62 43N	143 55W	2420	5	5	5	5	5	5	5	5	5	5	5	5									
	SNOWSHOE LAK	A	62 02N	146 40W	2410	3	3	3	3	3	3	3	3	3	3	3	3			12						
	SPARREVOHN	AFS	61 06N	155 34W	1736	6	6	6	6	6	6	6	6	6	6	6	6									26534
	ST MARYS	COOP	62 04N	163 11W	30															12	11					
	ST PAUL IS	WSO	57 09N	170 13W	28	1	1	1	1	1	1	1	1	1	1	1	1			12			12			25713
	SUMMIT	WSO	63 20N	149 08W	2410	1	1	1	1	1	1	1	1	1	1	1	1			12			03			26414
	TALKEETNA	WSO	62 18N	150 06W	351	6	6	6	6	6	6	6	5	6	6	6	6			12						26528
	TANANA	FSS	65 10N	152 06W	240	6	6	6	6	6	6	6	6	6	6	6	6			12						26529
	TATALINA	AFB	62 53N	155 57W	931	6	6	6	6	6	6	6	6	6	6	6	6									26536
	TIN CITY	AFS	65 34N	167 55W	258	6	6	6	6	6	6	6	6	6	6	6	6									26634
	TONSINA	SAWR	61 33N	145 13W	1875				6	6	6	6	6	6	6	6										
	UMIAT	SAWR	69 22N	152 03W	337	6	6	6	6	6	6	6	6	6	6	6	6									26508
	UNALAKLEET	WSO	63 53N	160 48W	21	6	6	6	6	6	6	6	6	6	6	6	6			12			11			26627
	VALDEZ	A	61 08N	146 21W	87	6	6	6	6	6	6	6	6	6	6	6	6			12	12		12			26442
	WALES	SAWR	65 37N	168 03W	18	3	3	3	3	3	3	3	3	3	3	3	3									26618
	WHITTER	A	60 46N	148 41W	156	5	5	5	5	5	5	5	5	5	5	5	5									
	WILD LAKE 2	COOP	67 33N	151 33W	1190																02					
	WRANGELL	A	56 28N	132 23W	43	5	5	5	5	5	5	5	5	5	5	5	5									25338
	YAKATAGA	A	60 05N	142 30W	33	5	5	5	5	5	5	5	5	5	5		5			11						26445
	YAKUTAT	WSO	59 31N	139 40W	31	1	1	1	1	1	1	1	1	1	1	1	1			11			11			25339

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ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
0	KETCHIKAN	SAWR	55 20N	131 34W	25325
4	IGLOO	A	65 09N	165 04W	
5	FUNTER BAY	A	58 15N	134 54W	
8	EMMONAK	SAWR	62 46N	164 30W	
8	POINT BARROW	AFS	71 18N	156 47W	27506
9	HYDER	A	55 54N	130 01W	
10	CANDLE	A	65 56N	161 55W	26619
10	COFFMAN COVE	A	56 00N	132 50W	
10	DUTCH HARBOR	NS	53 54N	166 32W	25611
10	ICY BAY	SAWR	59 59N	141 48W	
10	KIVALINA	A	67 45N	164 42W	
10	KOYUK	A	64 57N	161 08W	
10	NOME	S	64 29N	165 24W	26617
10	PRUDHOE BAY	SAWR	70 19N	148 33W	
10	PT SPENCER	AAF	65 15N	166 21W	26612
10	QUINHAGAK	SAWR	59 45N	161 54W	
10	TELLER	A	65 16N	166 21W	26626
10	TELLER	AAF	65 18N	166 55W	26607
11	ATKA	A	52 12N	174 20W	25715
11	KOTZEBUE	SA	66 52N	162 38W	26616
11	POINT BARROW	CAA	71 20N	156 39W	27504
11	SKAGWAY	A	59 27N	135 19W	25335
12	ATTU	S	52 50N	173 11E	45712
12	GOLOVIN	A	64 33N	163 01W	26628
12	KODIAK	NF	57 46N	152 22W	25509
12	KOTZEBUE	SA	66 52N	162 38W	26616
12	NOME	S	64 29N	165 24W	26617
12	NOME	WBO	64 29N	165 24W	26617
12	POINT LAY	SA	69 45N	163 03W	26624
12	PORT ALTHORP	A	58 09N	136 22W	
12	VALDEZ	A	61 07N	146 16W	26442
13	CRAIG	A	55 29N	133 09W	25317
13	DUTCH HARBOR	A	53 53N	166 32W	25614
13	DUTCH HARBOR	SAWR	53 53N	166 32W	25614
13	KIMSHAN	A	57 41N	136 06W	
13	POINT BARROW	NS	71 20N	156 24W	27501
13	VALDEZ	A	61 07N	146 16W	26442
14	ADAK	AAF	51 53N	176 39W	25707
14	ADAK	NS	51 53N	176 39W	25704
14	ANGOON	A	57 30N	134 35W	25310
14	DAVIS	AAF	51 53N	176 39W	25701
14	LITTLE PORT	A	56 23N	134 39W	25327
14	PLEASANT IS	A	58 10N	135 30W	25340
14	POINT BARROW	AFS	71 21N	156 39W	27505
14	POINT HOPE	A	68 20N	166 48W	26623
15	ADAK	NS	51 53N	176 38W	25704
15	AMAK ISLAND	AF	55 24N	163 08W	25609
15	BETHEL	WBAS	60 47N	161 43W	26615
15	DAVIS	AAF	51 53N	176 39W	25701
15	DAVIS	AFB	51 53N	176 39W	25701
15	DEERING	A	66 04N	162 45W	
15	DUTCH HARBOR	NS	53 54N	166 32W	25611
15	EGAVIK	A	64 02N	160 55W	
15	HAINES	A	59 14N	135 27W	25323
15	KETCHIKAN	SA	55 21N	131 39W	25325
15	KETCHIKAN	WBO	55 21N	131 39W	25325
15	NOME	WBAS	64 30N	165 26W	26617
15	PLATINUM	A	59 01N	161 47W	25613
15	RADIOVILLE	A	57 36N	136 09W	25332
15	SOLOMON	A	64 35N	164 24W	26629
15	TOKSOOK	SAWR	60 32N	165 07W	
15	VALDEZ	A	61 07N	146 16W	26442
16	ADAK	NS	51 53N	176 39W	25704
16	KETCHIKAN	SA	55 20N	131 39W	25325
16	MOSES POINT	CAA	64 42N	162 03W	26620
16	SHISHAREF	SA	66 14N	166 07W	26625
16	VALDEZ	A	61 07N	146 16W	26442
16	WALES	CAA	65 37N	168 03W	26618
16	WALES	WBAS	65 37N	168 03W	26618
17	SEWARD	SAWR	60 08N	149 25W	
17	VALDEZ	A	61 07N	146 16W	26442
17	WALES	AAF	65 37N	168 03W	26609
18	NOME	WBAS	64 30N	165 26W	26617
18	NOME	WSO	64 30N	165 26W	26617
18	POINT LAY	SA	69 45N	163 03W	26624
18	PORT ALEXAND	A	56 15N	134 39W	25348
18	PORT CLARENC	CG	65 15N	166 52W	
18	SKAGWAY	A	59 27N	135 19W	25335
18	VALDEZ	A	61 07N	146 16W	26442
18	WALES	SA	65 37N	168 03W	26618
18	WALES	SAWR	65 37N	168 03W	26618
18	WALES	WBAS	65 37N	168 03W	26618
18	WRANGELL	A	56 28N	132 23W	25338
19	GUSTAVUS	SAWR	58 25N	135 44W	25322
19	POINT BARROW	AFS	71 20N	156 39W	27506
19	POINT HOPE	AAF	68 21N	166 47W	26601
19	SELDOVIA	SAWR	59 26N	151 42W	
19	ST PAUL IS	NS	57 07N	170 16W	25712
19	ST PAUL IS	SA	57 07N	170 16W	25713
19	TENAKEE	A	57 47N	135 12W	25336
20	BARTER IS	AFB	70 08N	143 36W	27401
20	ELFIN COVE	A	58 12N	136 40W	
20	GOLOVIN	A	64 33N	163 01W	26628
20	GUARD ISLAND	CG	55 27N	131 53W	25320
20	GUSTAVUS	A	58 25N	135 42W	25322
20	JUNEAU	WBAS	58 22N	134 35W	25309
20	JUNEAU	WSO	58 22N	134 35W	25309
20	KOTZEBUE	WBAS	66 52N	162 38W	26616
20	KOTZEBUE	WSO	66 52N	162 38W	26616
20	PLATINUM	A	59 01N	161 47W	25613
20	PT RETREAT	CG	58 25N	134 57W	25330
20	SELAWIK	A	66 34N	160 01W	
20	ST PAUL IS	S	57 07N	170 16W	25713
20	ST PAUL IS	SPL	57 07N	170 16W	25713
20	UNALAKLEET	A	63 53N	160 48W	26627
20	WIDE BAY	SAWR	57 22N	156 25W	
21	AKIAK	COOP	60 52N	161 23W	
21	BARTER IS	AFB	70 08N	143 36W	27401
21	MOSES POINT	AAF	64 43N	162 05W	26603
21	MOSES POINT	AC	64 42N	162 03W	26620
21	MOSES POINT	CAA	64 42N	162 03W	26620
21	MOSES POINT	FAA	64 42N	162 03W	26620
21	PLATINUM	AAF	59 01N	161 47W	25604
21	SKAGWAY	AAF	59 27N	135 19W	25303
21	UNALAKLEET	CAA	63 53N	160 48W	26627
21	UNALAKLEET	FAA	63 53N	160 48W	26627
21	UNALAKLEET	WBAS	63 53N	160 48W	26627
21	UNALAKLEET	WSO	63 53N	160 48W	26627
22	BETHEL	WBO	60 48N	161 45W	26615
22	DUTCH HARBOR	SA	53 53N	166 32W	25614
22	JUNEAU	WBAS	58 22N	134 35W	25309
22	NOME	SPL	64 30N	165 24W	26617
22	UNALAKLEET	AAF	63 54N	160 47W	26608
23	DUTCH HARBOR	AFS	53 54N	166 32W	25620
23	KANATAK	A	57 34N	156 02W	
23	VALDEZ	S	61 07N	146 16W	26442
24	ALITAK	A	56 57N	154 10W	25512
24	ANNEX CREEK	A	58 19N	134 06W	25311
24	BARROW	WBO	71 18N	156 47W	27502
24	CANDLE	A	65 56N	161 55W	26619
24	DAVIS	AAF	51 53N	176 39W	25701
24	JOHNSTONE PT	A	60 29N	146 36W	
24	NIKOLSKI	A	52 57N	168 52W	
25	BARROW	WBO	71 18N	156 46W	27502
25	CHIRIKOF IS	SAWR	55 54N	155 34W	25511
25	CORDOVA	S	60 31N	145 36W	26410
25	EXCURSION IN	A	58 25N	135 26W	
25	GAMBELL	SAWR	63 46N	171 45W	
25	HYDABURG	A	55 12N	132 49W	
25	LINCOLN ROCK	CG	56 03N	132 46W	25326
25	SITKA	A	57 03N	135 20W	25333
25	WOSNESSENSKI	A	55 13N	161 21W	
26	ATKA	NS	52 14N	174 13W	25710
26	DUTCH HARBOR	NS	53 53N	166 32W	25611
27	ALEXAI PT	AFS	52 50N	173 19E	45701
27	VALDEZ	S	61 07N	146 16W	26442
28	POINT LAY	SA	69 45N	163 03W	26624
28	ST PAUL IS	WBAS	57 09N	170 13W	25713
28	ST PAUL IS	WSO	57 09N	170 13W	25713
29	BARROW	WBAS	71 18N	156 47W	27502

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ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
29	GUSTAVUS	CAA	58 25N	135 42W	25322
29	GUSTAVUS	FAA	58 25N	135 42W	25322
29	WAINWRIGHT	A	70 37N	160 04W	27503
29	WAINWRIGHT	SA	70 37N	160 04W	27503
30	ALITAK	NF	56 55N	154 15W	25512
30	ALITAK	NS	56 55N	154 15W	25502
30	AUGUSTINE IS	A	59 25N	153 25W	
30	DILLINGHAM	SAWR	59 03N	158 27W	25513
30	DUTCH HARBOR	NF	53 53N	166 32W	25616
30	ELIM	A	64 40N	162 08W	
30	FIVE FINGER	CG	57 16N	133 37W	25319
30	GAMBELL	SA	63 51N	171 36W	26703
30	GAMBELL	SAWR	63 51N	171 36W	
30	KAKE	A	56 58N	133 57W	
30	LEVEL ISLAND	A	56 28N	133 06W	
30	NORTHEAST CA	AFS	63 19N	168 58W	26632
30	SKAGWAY	A	59 28N	135 18W	25335
30	ST MARYS	COOP	62 04N	163 11W	
30	UNALAKLEET	A	63 53N	160 48W	26627
30	WALES	A	65 37N	168 03W	26618
31	AKULURAK	AAF	62 30N	164 25W	26610
31	BARROW	WBAS	71 18N	156 47W	27502
31	HAINES	A	59 14N	135 26W	25232
31	SITKA	A	57 03N	135 20W	25333
31	YAKUTAT	AAF	59 31N	139 40W	25302
31	YAKUTAT	WBAS	59 31N	139 40W	25339
31	YAKUTAT	WSO	59 31N	139 40W	25339
32	GAMBELL	WBAS	63 51N	171 36W	26703
32	SAND POINT	CAA	55 20N	160 30W	25617
32	SAND POINT	NF	55 20N	160 30W	25617
32	SAND POINT	S	55 20N	160 30W	25617
32	SAND POINT	SAWR	55 20N	160 30W	25617
33	AKULURAK	A	62 30N	164 25W	
33	NOME	S	64 29N	165 21W	26617
33	NORTHEAST CA	AFS	63 19N	168 56W	26632
33	YAKATAGA	A	60 05N	142 30W	26445
33	YAKATAGA	CAA	60 05N	142 30W	26445
33	YAKATAGA	FAA	60 05N	142 30W	26445
34	VALDEZ	S	61 07N	146 16W	26442
35	AKIAK	COOP	60 52N	161 23W	
35	BEAVER FALLS	A	55 23N	131 28W	25313
35	DRIFT RIVER	SAWR	60 35N	152 08W	
35	NUNIVAK	SA	60 23N	166 12W	26622
35	PORTAGE	A	60 51N	148 59W	26437
35	SAVOONGA	A	63 41N	170 26W	
35	SISTER IS	A	58 10N	135 15W	25341
35	ST MICHAEL	SAWR	63 30N	162 00W	
36	ATKA	A	52 10N	174 12W	25715
36	ATKA ISLAND	AAF	52 13N	174 12W	25708
36	CAPE THOMPSO	SPL	68 06N	165 46W	26636
36	TREE POINT	CG	54 48N	130 56W	25337
37	NUNIVAK	A	60 23N	166 12W	26622
38	BARROW	WBAS	71 18N	156 47W	27502
38	BARROW	WSO	71 18N	156 47W	27502
38	BETHEL	WBO	60 48N	161 45W	26615
38	DILLINGHAM	SAWR	59 03N	158 27W	25513
38	NORTHEAST CA	AFS	63 19N	168 56W	26632
39	KODIAK	NF	57 45N	152 31W	25509
39	MARY ISLAND	CG	55 06N	131 11W	
39	NORTH DUTCH	CAA	60 46N	147 48W	26436
40	ANCHORAGE	COOP	61 14N	149 52W	
40	BARTER IS	AAF	70 08N	143 36W	27401
40	BARTER IS	AFB	70 08N	143 36W	27401
40	FAIRWAY IS	CG	57 27N	134 52W	
40	GRAVINA	A	55 11N	131 49W	
41	KOYUK	AAF	64 52N	161 06W	26602
43	NOME	AAF	64 31N	165 26W	26604
43	WRANGELL	A	56 28N	132 23W	25338
44	CORDOVA	S	60 32N	145 42W	26410
44	CORDOVA	WBAS	60 30N	145 30W	26410
44	MT VILLAGE	SA	62 07N	163 43W	26621
45	CORDOVA	AAF	60 29N	145 30W	26402
45	CORDOVA	AF	60 30N	145 30W	26410
45	CORDOVA	FAA	60 30N	145 30W	26410
45	CORDOVA	WBAS	60 30N	145 30W	26410

ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
45	HOLTZ BAY	AAF	52 55N	173 10E	45704
45	MACLEOD HARB	A	59 53N	147 45W	
45	MIDDLETON IS	CAA	59 28N	146 19W	25402
45	NUNIVAK	SA	60 23N	166 12W	26622
45	OHOGAMUTE	A	61 38N	161 54W	
45	PRUDHOE BAY	SAWR	70 15N	148 20W	
45	SAVOONGA	A	63 42N	170 28W	
45	YAKUTAT	AAF	59 31N	139 40W	25339
46	KING SALMON	WBAS	58 41N	156 39W	25503
46	KING SALMON	WSO	58 41N	156 39W	25503
46	NOME	AAF	64 31N	165 26W	26604
46	ST PAUL IS	SA	57 07N	170 16W	25713
47	DEADHORSE	SAWR	70 12N	148 27W	
47	DUTCH HARBOR	NF	53 53N	166 32W	25616
47	KING SALMON	WBAS	58 41N	156 39W	25503
48	UGNU	SAWR	70 23N	149 50W	
49	BULDIR IS	AAF	52 22N	175 58E	45706
49	HOONAH	A	58 07N	135 27W	
49	KING SALMON	WBAS	58 41N	156 39W	25503
49	MT VILLAGE	SA	62 07N	163 43W	26621
49	NAKNEK	AAF	58 41N	156 39W	25503
49	NAKNEK	AFB	58 41N	156 39W	25503
49	VALDEZ	A	61 08N	146 15W	26442
50	ATKA	SAWR	52 10N	174 12W	25715
50	BARTER IS	WBAS	70 08N	143 38W	27401
50	BARTER IS	WSO	70 08N	143 38W	27401
50	BIORKA IS	CG	56 51N	135 33W	
50	CAPE DECISIO	CG	56 00N	134 08W	25315
50	CAPE POLE	A	55 58N	133 48W	
50	CAPE ST ELIA	CG	59 48N	144 36W	25401
50	CAPE WRANGEL	NF	52 53N	172 31E	45713
50	DEADHORSE	FSS	70 12N	148 27W	
50	DILLINGHAM	SAWR	59 03N	158 27W	25513
50	FIRE ISLAND	AFS	61 09N	150 14W	26507
50	GLACIER	COOP	58 27N	135 53W	
50	KANAGA BAY	NS	51 43N	177 15W	25711
50	KOGGIUNG	A	59 02N	156 20W	
50	NUNIVAK	ASC	60 23N	166 12W	26622
50	NUNIVAK	SA	60 23N	166 12W	26622
50	NUNIVAK IS	AAF	60 12N	166 06W	26605
50	OGLIUGA	AAF	51 33N	178 48W	25702
50	PETERSBURG	A	56 49N	132 57W	25329
50	PILGRIM SPRG	A	65 05N	164 58W	
50	PILOT POINT	A	57 37N	157 34W	25514
50	SAND POINT	SAWR	55 20N	160 30W	25617
50	TYONEK	A	61 02N	151 11W	
50	WEST KUPARUK	SAWR	70 20N	149 18W	
50	WHITE MOUNTA	A	64 41N	163 24W	26630
51	BRUIN BAY	CAA	59 22N	153 59W	
52	CAPE LISBURN	AFS	68 53N	166 08W	26631
52	NUNIVAK	SA	60 23N	166 12W	26622
53	CAPE LISBURN	AFS	68 53N	166 08W	26631
53	SITKINAK	CG	56 33N	154 08W	
54	ELDRED ROCK	CG	58 58N	135 13W	25318
55	HOMER	A	59 38N	151 30W	25507
58	CAPE ST ELIA	CG	59 48N	144 36W	25401
60	HAINES	A	59 14N	135 27W	25323
60	KASILOF	A	60 19N	151 16W	
60	SENTINEL IS	CG	58 33N	134 55W	
60	ST PAUL IS	S	57 07N	170 16W	25713
62	SEGUAM	AAF	52 23N	172 25W	25703
62	SEWARD	SA	60 07N	149 27W	26438
63	SITKA	SPL	57 03N	135 20W	25334
65	KOYUK	A	64 57N	161 06W	
65	SITKA	A	57 03N	135 20W	25333
66	SEWARD	A	60 07N	149 27W	26438
66	SITKA	CAA	57 04N	135 21W	25333
66	SITKA	FAA	57 04N	135 21W	25333
67	CAPE LISBURN	AFS	68 52N	166 08W	26631
67	NAKNEK	CAA	58 40N	156 45W	
67	UMNAK ISLAND	AAF	53 32N	167 47W	25610
68	ILIAMNA	A	59 44N	154 49W	25506
68	NOORVIK	COOP	66 50N	161 00W	
69	HOMER	WBAS	59 38N	151 30W	25507
69	HOMER	WSO	59 38N	151 30W	25507

BY ELEVATION

ALASKA

ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
70	ATTU	CG	52 50N	173 11E	45712
70	CORDOVA	S	60 32N	145 42W	26410
70	HAINES	A	59 14N	135 27W	25323
70	NIKOLSKI	A	52 57N	168 51W	
70	SEWARD	A	60 07N	149 27W	26438
71	KISKA ISLAND	NAAF	51 58N	177 32E	45710
73	HOMER	CAA	59 38N	151 30W	25507
73	HOMER	FAA	59 38N	151 30W	25507
73	HOMER	WBAS	59 38N	151 30W	25507
74	REINDEER PAS	AAF	53 31N	167 55W	25606
75	CHIRIKOF IS	NF	55 54N	155 34W	25511
75	KAD RIVER	SAWR	70 04N	147 43W	
75	VALDEZ	A	61 08N	146 15W	26442
76	SEWARD	A	60 07N	149 27W	26438
76	SEWARD	SA	60 07N	149 27W	26438
80	AMCHITKA IS	NS	51 24N	179 16E	45711
80	CHUGINADAK	AAF	52 50N	169 50W	25601
80	HOOPER	SAWR	61 30N	166 06W	
80	JUNEAU	WBO	58 18N	134 24W	25324
81	ANIAK	COOP	61 35N	159 32W	26516
83	DEADHORSE	FSS	70 12N	148 28W	
84	PORT HEIDEN	AAF	56 57N	158 38W	25504
85	ANCHORAGE PS	COOP	61 13N	149 52W	
85	CANYON IS	A	58 33N	133 40W	
85	CANYON IS	CAA	58 33N	133 40W	
85	KANAKANAK	A	59 01N	158 31W	
85	KENAI	A	60 34N	151 15W	26523
86	DILLINGHAM	FSS	59 03N	158 31W	25512
86	NAKNEK	A	58 42N	157 02W	
87	MARSHALL	A	61 51N	161 43W	
87	VALDEZ	A	61 08N	146 21W	26442
88	CAPE SPENCER	CG	58 12N	136 38W	25316
90	HAINES	A	59 14N	135 27W	25323
90	KALSKAG	A	61 27N	160 49W	
90	YAKUTAT	CAA	59 32N	139 44W	25339
91	ANIAK	CAA	61 35N	159 32W	26516
91	ANIAK	FAA	61 35N	159 32W	26516
91	ATTU	NS	52 50N	173 11E	45709
91	KENAI	CAA	60 34N	151 15W	26523
91	KENAI	FAA	60 34N	151 15W	26523
91	KLUKWAN	A	59 24N	135 54W	
92	ATTU	NS	52 48N	173 10E	45709
92	PORT HEIDEN	A	56 57N	158 37W	25508
92	PORT HEIDEN	SA	56 57N	158 37W	25508
92	ST PAUL IS	SA	57 07N	170 16W	25713
93	COLD BAY	SAWR	55 12N	162 43W	25624
93	KALTAG	A	64 20N	158 45W	
93	SHEMYA	SAWR	52 43N	174 06E	45715
94	FORT MORROW	AAF	56 57N	158 37W	25504
95	COUNCIL	A	64 53N	163 41W	
95	SEWARD	SA	60 08N	149 27W	26438
96	COLD BAY	WBAS	55 12N	162 43W	25624
96	KETCHIKAN	FSS	55 21N	131 42W	25325
96	ST PAUL IS	WBO	57 07N	170 16W	25713
96	ST PAULS IS	AAF	57 08N	170 16W	25705
97	ST MATTHEW	AAF	60 21N	172 42W	26701
97	ST MATTHEW	ASC	60 29N	172 42W	
98	COLD BAY	SAWR	55 12N	162 43W	25624
98	SITKA	NS	57 03N	135 21W	25307
99	COLD BAY	WBAS	55 12N	162 43W	25624
99	COLD BAY	WSO	55 12N	162 43W	25624
99	KANAKANAK	SA	59 01N	158 31W	
99	THORNBROUGH	AAF	55 12N	162 43W	25603
99	THORNBROUGH	AFB	55 12N	162 43W	25603
100	ANIAK	CAA	61 35N	159 32W	26516
100	ANIAK	COOP	61 35N	159 32W	26516
100	ANIAK	SA	61 35N	159 32W	26516
100	KING ISLAND	A	64 56N	168 01W	
100	PINGO	SAWR	70 02N	147 43W	
100	SEMISOPOCHNO	AAF	51 55N	179 35E	45707
102	PORT HEIDEN	CAA	56 57N	158 37W	25508
104	ADAK	NS	51 57N	176 36W	25704
105	ANCHORAGE	WBAS	61 10N	149 59W	26451
106	KENAI	FAA	60 34N	151 15W	26523
106	KODIAK	CAA	57 46N	152 19W	25509

ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
108	DOLLY VARDEN	CG	60 48N	151 38W	
110	ANNETTE	A	55 02N	131 34W	25308
111	KODIAK	NAF	57 45N	152 30W	25501
111	KODIAK	WSO	57 45N	152 30W	25501
111	PETERSBURG	CAA	56 49N	132 57W	25329
112	KODIAK	NAF	57 45N	152 30W	25501
113	ANNETTE	WBAS	55 02N	131 34W	25308
113	ANNETTE	WSO	55 02N	131 34W	25308
113	SHEMYA	NS	52 43N	174 06E	45714
114	ANNETTE IS	AAF	55 02N	131 35W	25301
115	SOLDOTNA	SAWR	60 28N	151 02W	
116	KODIAK	NAF	57 45N	152 30W	25501
116	SEWARD	SA	60 08N	149 27W	26438
118	ANCHORAGE	COOP	61 13N	149 52W	
118	ANCHORAGE	S	61 13N	149 52W	
118	ANCHORAGE	WBO	61 13N	149 52W	
119	AMERICAN RVR	AAF	65 27N	165 46W	26611
121	MIDDLETON IS	AFS	59 27N	146 18W	25403
122	KETCHIKAN	FSS	55 20N	131 40W	25325
123	GALENA	AFS	64 43N	156 54W	26501
125	CROOKED CREK	A	61 52N	158 15W	26518
125	GALENA	AFS	64 43N	156 54W	26501
125	GALENA	WBAS	64 43N	156 54W	26509
125	SHEMYA	WBAS	52 43N	174 06E	45715
128	NULATO	A	64 43N	158 04W	
128	SHEMYA	WBAS	52 43N	174 06E	45715
128	SHEMYA	WSO	52 43N	174 06E	45715
130	CATON ISLAND	NF	54 25N	162 28W	25615
130	CROOKED CREK	COOP	61 52N	158 15W	
130	GALENA	CAA	64 43N	156 54W	26509
130	UMNAK	SAWR	53 23N	167 54W	25621
131	BETHEL	WBAS	60 47N	161 48W	26615
131	BETHEL	WSO	60 47N	161 48W	26615
131	CAPE	AAF	53 23N	167 54W	25602
131	CAPE	AFB	53 23N	167 54W	25602
132	JUNEAU	WBO	58 18N	134 24W	25324
132	SHEMYA	AAF	52 43N	174 06E	45708
132	SHEMYA	AFB	52 43N	174 06E	45708
132	TRINITY-UGAS	SAWR	57 26N	157 44W	
134	ANCHORAGE	CAA	61 13N	149 50W	26409
134	ANCHORAGE	FAA	61 13N	149 50W	26409
134	ANCHORAGE	LAWR	61 13N	149 50W	26409
134	ANCHORAGE	SAWR	61 13N	149 50W	26409
135	GALENA	AFS	64 43N	156 54W	26501
138	SHUNGNAK	CAA	66 54N	157 02W	26513
139	GALENA	WBAS	64 43N	156 54W	26509
140	CATON ISLAND	NS	54 25N	162 28W	25612
140	KOBUK	A	66 54N	156 52W	
141	ANCHORAGE	WBAS	61 13N	149 50W	26409
143	CHIRIKOF	NS	55 55N	155 35W	25505
145	TANAGA IS	NS	51 45N	178 02W	25714
147	ANCHORAGE	WBAS	61 10N	150 01W	26451
148	ASI TANAGA	NS	51 40N	178 00W	25709
148	LAKE HOOD	LAWR	61 11N	149 57W	
149	GALENA	AFS	64 44N	156 56W	26501
150	BIG LAKE	SAWR	61 32N	149 50W	
150	CROOKED CREK	A	61 52N	158 15W	26518
150	HOLY CROSS	A	62 10N	159 45W	26521
152	ILIAMNA	CAA	59 45N	154 55W	25506
152	ILIAMNA	FAA	59 45N	154 55W	25506
152	KODIAK	SA	57 48N	152 24W	25509
153	NULATO	A	64 43N	158 04W	
153	SKWENTNA	A	61 58N	151 12W	26514
153	SKWENTNA	CAA	61 58N	151 12W	26514
156	WHITTER	A	60 46N	148 41W	
158	ANCHORAGE	WBAS	61 10N	150 01W	26451
158	ANCHORAGE	WSO	61 10N	150 01W	26451
158	KALTAG	AAF	64 18N	158 43W	26502
158	SKWENTNA	A	61 58N	151 12W	26514
166	MATANUSKA	A	61 32N	149 14W	26448
175	CAPE SARICHE	CG	54 36N	164 56W	25622
175	RUBY	A	64 44N	155 26W	
175	TAKU LODGE	A	58 33N	133 41W	
176	CAPE SARICHE	CG	54 36N	164 56W	25622
176	ELMENDORF	AFB	61 15N	149 48W	26401

BY ELEVATION

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ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
185	CAPE HINCHIN	CG	60 14N	146 39W	26417
185	CAPE HINGHIN	CG	60 14N	146 39W	26417
185	KOKRINES	AAF	64 54N	154 40W	26503
185	KOUGAROK	AAF	64 54N	154 40W	26614
190	ILIAMNA	FAA	59 45N	154 55W	25506
190	ILIAMNA	WBAS	59 45N	154 55W	25506
192	AMCHITKA IS	AAF	51 24N	179 16E	45702
192	ELMENDORF	AAF	61 15N	149 48W	26401
192	ELMENDORF	AFB	61 15N	149 48W	26401
198	PALMER	A	61 36N	149 05W	25331
198	PALMER	FAA	61 36N	149 05W	25331
200	HAYCOCK	A	65 12N	161 09W	
200	SQUAW HARBOR	A	55 15N	160 33W	
202	AMCHITKA IS	AAF	51 23N	179 15E	45702
202	AMCHITKA IS	AFB	51 24N	179 16E	45702
203	JUNEAU	WBO	58 18N	134 25W	25324
206	ELMENDORF 2	AFB	61 15N	149 48W	26452
210	NULATO	A	64 43N	158 04W	
215	BIORKA IS	CAA	56 51N	135 32W	
217	DAVIS	AAF	51 53N	176 39W	25701
220	AMCHITKA IS	AFB	51 23N	179 15E	45702
220	TANANA	S	65 10N	152 06W	26529
220	TANANA	SA	65 10N	152 06W	26529
221	STONY RIVER	A	61 46N	156 38W	
221	STONY RIVER	SA	61 46N	156 38W	26527
225	PALMER	A	61 36N	149 05W	25331
228	SKWENTNA	A	61 57N	151 10W	26514
230	PALMER	A	61 36N	149 07W	25331
230	TANANA	AFS	65 12N	152 12W	26504
234	TANANA	CAA	65 10N	152 06W	26529
234	TANANA	SA	65 10N	152 06W	26529
235	CAPE NEWENHA	AFS	58 39N	162 04W	25623
237	AMCHITKA IS	SAWR	51 23N	179 15E	
240	PALMER	FAA	61 36N	149 05W	25331
240	TANANA	CAA	65 10N	152 06W	26529
240	TANANA	FAA	65 10N	152 06W	26529
240	TANANA	FSS	65 10N	152 06W	26529
240	TANANA	WBAS	65 10N	152 06W	26529
245	PALMER	A	61 36N	149 07W	25331
250	NOXAPAGE	AAF	65 32N	164 12W	26606
250	TAYLOR	A	65 40N	164 47W	
251	AMCHITKA IS	AAF	51 24N	179 16E	45702
257	HAINES	CAA	59 13N	135 26W	25323
258	ELMENDORF	AFB	61 15N	149 48W	26401
258	TIN CITY	AFS	65 34N	167 55W	26634
264	MANLEY H SPG	AAF	65 00N	150 38W	26505
265	MANLEY HOT S	A	65 00N	150 38W	26524
268	PORT ALSWORT	A	60 12N	154 18W	
269	TIN CITY	A	65 34N	167 55W	
270	DAHL CREEK	A	66 56N	156 52W	
271	LAKE CLARK	A	60 17N	154 17W	
271	TIN CITY	AFS	65 34N	167 55W	26634
273	TIN CITY	AFS	65 34N	167 55W	26634
275	HOT SPRINGS	A	64 59N	150 40W	
275	PALMER	A	61 36N	149 07W	25331
280	PIGOT	A	60 47N	148 20W	
285	MANLEY H SPG	AAF	64 59N	150 38W	26505
285	SLEETMUTE	A	61 42N	157 11W	
290	ANDREAFSKY	A	62 04N	163 18W	
290	ANDREAFSKY	SAWR	62 04N	163 18W	
298	KISKA ISLAND	AAF	51 59N	177 34E	45703
300	NONDALTON	A	59 58N	154 50W	
300	PALMER	A	61 36N	149 08W	25331
300	SUNSHINE LAK	COOP	62 10N	150 10W	
303	FLAT	A	62 27N	158 00W	26520
303	FLAT	SA	62 27N	158 00W	26520
308	TANALIAN PT	A	60 13N	154 22W	26531
309	FLAT	A	62 27N	158 00W	26520
315	NIKOLSKI	AAF	52 55N	168 58W	25605
325	MANLEY HOT S	A	65 00N	150 39W	26524
326	FLAT	A	62 27N	158 00W	26520
328	MCGRATH	CAA	62 58N	155 37W	26510
333	MCGRATH	A	62 58N	155 37W	26510
337	UMIAT	CAA	69 22N	152 08W	26508
337	UMIAT	NS	69 22N	152 08W	26508

ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
337	UMIAT	SAWR	69 22N	152 08W	26508
337	UMIAT	WBAS	69 22N	152 08W	26508
340	MCGRATH	WBAS	62 58N	155 37W	26510
340	MCGRATH	WSO	62 58N	155 37W	26510
340	UMIAT	AFS	69 22N	152 08W	26537
341	MCGRATH	WBAS	62 58N	155 37W	26510
350	STEVENS VILA	A	66 01N	149 05W	26449
351	TALKEETNA	CAA	62 18N	150 06W	26528
351	TALKEETNA	FAA	62 18N	150 06W	26528
351	TALKEETNA	WBAS	62 18N	150 06W	26528
351	TALKEETNA	WSO	62 18N	150 06W	26528
353	NENANA	A	64 33N	149 05W	26435
356	TALKEETNA	CAA	62 18N	150 06W	26528
357	FRANKLIN BLK	SAWR	69 43N	148 41W	
362	NENANA	A	64 33N	149 05W	26435
364	NENANA	A	64 33N	149 05W	26435
364	NENANA	CAA	64 33N	149 05W	26435
364	NENANA	FAA	64 33N	149 05W	26435
367	NENANA	AAF	64 33N	149 05W	26404
395	MOOSE RUN	COOP	61 15N	149 40W	
400	KULIK LAKE	SAWR	58 59N	155 07W	
400	OPHIR	A	63 10N	156 33W	
400	RAMPART	COOP	65 30N	150 08W	
405	CAPE ROMANZO	AFS	61 47N	166 02W	26633
410	FORT YUKON	A	66 35N	145 18W	26413
422	FORT YUKON	A	66 35N	145 18W	26413
422	FORT YUKON	SAWR	66 35N	145 18W	26413
425	FORT YUKON	A	66 35N	145 18W	26413
425	FORT YUKON	CAA	66 35N	145 18W	26413
425	FORT YUKON	FAA	66 35N	145 18W	26413
425	NIKOLAI	COOP	63 01N	154 22W	
430	WEST FORK	COOP	65 28N	148 40W	
432	FAIRBANKS	FAA	64 51N	147 47W	
434	CAPE ROMANZO	AFS	61 47N	166 02W	26633
435	FORT YUKON	A	66 34N	145 16W	
440	FAIRBANKS	WBAS	64 49N	147 52W	26411
440	FIVE MILE CP	SAWR	66 05N	150 00W	
442	FAIRBANKS	WBAS	64 50N	147 43W	26411
443	FAIRBANKS	WBAS	64 49N	147 52W	26411
450	NORA FEDERAL	SAWR	69 34N	148 45W	
450	NYAC	SAWR	61 00N	159 59W	26525
454	FAIRBANKS	WBO	64 50N	147 43W	26411
455	FAIRBANKS	WBAS	64 49N	147 52W	26411
455	FAIRBANKS	WSO	64 49N	147 52W	26411
457	FORT YUKON	AC	66 33N	145 12W	26413
460	BIRCH ROAD	COOP	61 08N	149 46W	
464	FAIRBANKS	WBO	64 50N	147 36W	26411
464	LADD	AAB	64 51N	147 35W	26403
484	FAIRBANKS	WBO	64 50N	147 43W	26411
484	LADD	AAB	64 51N	147 35W	26403
496	MTN VILLAGE	AAF	62 07N	163 45W	26635
500	FAIRBANKS	SPL	64 50N	147 43W	26411
500	HOG RIVER	A	65 45N	155 50W	
500	SHUNGNAK	SA	66 54N	157 07W	26513
500	SUSIE 1	SAWR	69 31N	148 53W	
537	CLEAR STA A	AFS	62 13N	149 05W	26408
539	EIELSON	AFB	64 39N	147 04W	26407
542	CLEAR	SAWR	64 17N	149 10W	
543	CAPE NEWENHA	AFS	58 40N	162 10W	25623
545	HUGHES	A	66 04N	154 14W	26522
545	PAINTERS CRK	SAWR	57 10N	157 26W	
546	CLEAR	SAWR	64 19N	149 09W	
547	EIELSON	AAF	64 39N	147 04W	26407
547	EIELSON	AFB	64 39N	147 04W	26407
550	LIVENGOOD	A	65 35N	148 29W	26428
552	EIELSON	AFB	64 39N	147 04W	26407
556	CURRY	A	62 37N	150 02W	
557	IMURUK LAKE	AAF	65 35N	163 50W	26613
560	CHALKYITSIK	COOP	66 38N	143 43W	
569	EIELSON	AFB	64 41N	147 05W	26407
572	CHITINA	A	61 32N	144 27W	
580	CLEAR	SAWR	64 17N	149 11W	
580	LIVENGOOD	COOP	65 32N	148 31W	
581	CHITINA	A	61 32N	144 27W	
600	ALATNA	A	66 34N	152 44W	

ALASKA

ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
617	KAVIK	SAWR	69 41N	146 56W	
617	KAVIK RIVER	SAWR	69 41N	146 56W	
620	VENETIE	COOP	67 00N	146 34W	
621	COLLEGE	A	64 52N	147 50W	
650	SAGWON	SAWR	69 22N	148 42W	
652	BETTLES	WBAS	66 55N	151 31W	26533
652	BETTLES	WSO	66 55N	151 31W	26533
672	BETTLES	CAA	66 55N	151 31W	26533
672	BETTLES	FAA	66 55N	151 31W	26533
700	CIRCLE	A	65 48N	144 04W	26446
700	UPPER RUSSIA	SAWR	60 21N	150 06W	
701	MINCHUMINA	CAA	63 53N	152 17W	26512
701	MINCHUMINA	FAA	63 53N	152 17W	26512
701	MINCHUMINA	WBAS	63 53N	152 17W	26512
705	NIKOLSKI	AFS	52 55N	168 47W	25626
705	RUBY	CAA	64 44N	155 26W	
711	UNALGA IS	NF	53 58N	166 10W	25608
725	BLAIR LK RNG	AF	64 20N	147 39W	26460
730	LIVENGOOD	A	65 35N	148 29W	26428
750	CENTRAL	A	65 35N	144 47W	26418
806	EAGLE	A	64 46N	141 12W	26422
821	EAGLE	A	64 46N	141 12W	26422
821	EAGLE	WBO	64 46N	141 12W	26422
834	EAGLE	A	64 46N	141 12W	26422
834	EAGLE	WBO	64 46N	141 12W	26422
836	EAGLE	A	64 46N	141 12W	26422
837	EAGLE	A	64 46N	141 12W	26422
840	EAGLE	A	64 47N	141 12W	26422
840	ROCK RIDGE	COOP	61 07N	149 45W	
855	BETTLES	CAA	66 54N	151 43W	26517
870	CENTRAL	A	65 35N	144 48W	26418
880	EKLUTNA LAKE	COOP	61 24N	149 09W	
880	EKULTNA LAKE	COOP	61 24N	149 09W	
880	RICHARDSON	A	64 17N	146 21W	
897	TATALINA	AFB	62 53N	155 57W	26536
900	COLLEEN	COOP	67 44N	142 28W	
931	TATALINA	AFB	62 53N	155 57W	26536
935	CIRCLE HOT S	A	65 29N	144 36W	26419
935	CIRCLE HOT S	SAWR	65 29N	144 36W	26419
939	TATALINA	AFB	62 54N	155 58W	26536
946	INDIAN MTN	AFS	66 00N	153 42W	26535
948	HAPPY VALLEY	SAWR	69 10N	148 50W	
973	GILMORE CREK	COOP	64 59N	147 25W	
990	CANYON VILAG	COOP	67 09N	141 45W	
995	BIG DELTA	A	64 08N	145 44W	26415
1000	AUFEIS	SAWR	69 09N	149 35W	
1000	CENTRAL	COOP	65 33N	144 49W	
1000	HAYES RIVER	A	61 59N	152 05W	
1008	BIRD CAPE	AAF	51 39N	178 40E	45705
1038	PORT MOLLER	AFS	56 00N	160 31W	25625
1044	COPPER CTR	A	61 58N	145 19W	
1050	COAL CREEK	A	65 16N	143 16W	
1053	PORT MOLLER	AFS	56 00N	160 31W	25625
1063	COLD FT CAMP	SAWR	67 03N	149 34W	
1075	INDIAN MTN	AFS	66 03N	153 45W	26535
1083	PORT MOLLER	AFS	56 00N	160 31W	25625
1105	PROSPECT CRK	SAWR	66 48N	150 38W	
1180	WILD LAKE 2	COOP	67 33N	151 33W	
1190	WILD LAKE 2	COOP	67 33N	151 33W	
1190	WILK LAKE 2	COOP	67 33N	151 33W	
1200	CHENA HOT SP	COOP	65 03N	146 03W	
1200	TANACROSS	A	63 24N	143 19W	26440
1210	FOREST IS	CG	54 48N	133 32W	
1271	OLD MAN	SAWR	67 27N	150 35W	
1272	BIG DELTA	AAF	64 00N	145 44W	26406
1273	HEALY	SAWR	63 52N	148 57W	
1274	BIG DELTA	AF	64 00N	145 44W	26415
1274	BIG DELTA	CAA	64 00N	145 44W	26415
1275	BIG DELTA	CAA	64 00N	145 44W	26415
1275	BIG DELTA	FAA	64 00N	145 44W	26415
1277	DRIFTWOOD BY	AFS	53 59N	166 51W	25515
1290	WISEMAN	A	67 26N	150 13W	26511
1298	DRIFTWOOD BY	AFS	53 58N	166 51W	25515
1300	NO GRUB	A	64 50N	145 58W	
1320	OLD EDGERTON	COOP	61 48N	144 59W	
1350	HEALY	A	63 51N	148 58W	26447
1410	TACOTNA	A	63 00N	156 04W	
1475	HEALY	SAWR	63 53N	149 01W	
1488	DIETRICH	SAWR	67 41N	149 44W	
1500	GRUBSTAKE	A	64 02N	148 12W	
1500	STUYAHOK	A	62 10N	161 50W	
1503	FAREWELL	CAA	62 32N	153 54W	26519
1503	FAREWELL	FAA	62 32N	153 54W	26519
1503	FAREWELL	WBAS	62 32N	153 54W	26519
1503	FAREWELL	WSO	62 32N	153 54W	26519
1546	TANACROSS	CAA	63 24N	143 19W	26440
1554	TANACROSS	AAF	63 24N	143 19W	26405
1578	GULKANA	CAA	62 09N	145 27W	26425
1579	GULKANA	FAA	62 09N	145 27W	26425
1579	GULKANA	WBAS	62 09N	145 27W	26425
1579	GULKANA	WSO	62 09N	145 27W	26425
1600	MCCARTHY	SAWR	61 26N	142 55W	
1713	NORTHWAY	AF	62 57N	141 56W	26412
1718	NORTHWAY	CAA	62 57N	141 56W	26412
1718	NORTHWAY	FAA	62 57N	141 56W	26412
1718	NORTHWAY	WBAS	62 57N	141 56W	26412
1729	SPARREVOHN	AFS	61 06N	155 34W	26534
1730	MCKINLEY PRK	COOP	63 44N	148 55W	26429
1735	SPARREVOHN	AFS	61 06N	155 34W	26534
1736	SPARREVOHN	AFS	61 06N	155 34W	26534
1800	JACK WADE	A	64 07N	141 35W	
1800	TETLIN	A	63 10N	142 32W	
1825	LAKE CHANDAL	A	67 30N	148 30W	
1837	PUNTILLA	A	62 06N	152 45W	26526
1845	CHANDALAR	A	67 30N	148 30W	
1875	TONSINA	SAWR	61 33N	145 13W	
1900	LAKE CHANDAL	COOP	67 30N	148 30W	
2000	CHICKEN	A	64 04N	141 56W	
2050	MCKINELY PRK	A	63 39N	148 48W	26429
2050	MCKINLEY PRK	A	63 39N	148 48W	26429
2092	MCKINLEY PRK	A	63 43N	148 58W	26429
2100	ANAKTUVUK	A	68 10N	151 46W	
2100	ANAKTUVUK	COOP	68 10N	151 46W	
2127	BROAD PASS	A	63 22N	149 02W	
2128	RAPIDS	A	63 32N	145 51W	
2250	ARCTIC VILAG	COOP	68 08N	145 32W	
2280	SHEEP MTN	A	61 48N	147 41W	26439
2280	SHEEP MTN	SAWR	61 48N	147 41W	26439
2295	SNOWSHOE LAK	A	62 02N	146 40W	
2316	SHEEP MTN	CAA	61 48N	147 41W	26439
2316	SHEEP MTN	SAWR	61 48N	147 41W	26439
2371	TYONE LAKE	A	62 31N	146 42W	
2405	SUMMIT	CAA	63 20N	149 08W	26414
2407	SUMMIT	CAA	63 20N	149 08W	26414
2410	SNOWSHOE LAK	A	62 02N	146 40W	
2410	SUMMIT	CAA	63 20N	149 08W	26414
2410	SUMMIT	FAA	63 20N	149 08W	26414
2410	SUMMIT	WBAS	63 20N	149 08W	26414
2410	SUMMIT	WSO	63 20N	149 08W	26414
2420	SLANA	A	62 43N	143 55W	
2450	LAKE LOUISE	A	62 18N	146 35W	
2450	MURPHY LAKE	SAWR	68 38N	149 34W	
2500	GOOD PASTER	A	64 20N	144 05W	
2500	STAMPEDE	SAWR	63 44N	150 22W	
2600	BOUNDARY	A	64 04N	141 07W	26416
2665	GALBRAITHE	SAWR	68 29N	149 29W	
2697	PAXSON	A	63 03N	145 27W	
2960	GUNSIGHT	A	61 54N	147 18W	
3230	SUMMIT LAKE	A	63 08N	145 32W	
3300	LUCKY SHOT	A	61 47N	149 25W	
3335	ATIGUN	SAWR	68 11N	149 25W	
3500	CANYON CREEK	A	64 10N	141 08W	
3600	INDEPENDENCE	A	61 47N	149 18W	
	ADAK	CG	51 35N	177 00W	
	HULL	SAWR	70 15N	148 57W	
	KETCHIKAN	CG	55 35N	131 30W	
	LIVENGOOD	SAWR	65 35N	148 29W	
	OCEAN CAPE	CG	59 33N	139 42W	
	OCEAN RANGER	SAWR	55 32N	166 57W	
	SEDCO 706	SAWR	59 52N	143 18W	

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ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER
	SPRUCE CAPE	CG	57 50N	152 19W	
	WEST KAVIK	SAWR	70 03N	147 42W	

ELEV.	NAME	TYPE	LAT.	LONG.	WBAN NUMBER

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LAT.	NAME	TYPE	LONG.	WBAN NUMBER
52 55N	HOLTZ BAY	AAF	173 10E	45704
52 53N	CAPE WRANGEL	NF	172 31E	45713
52 50N	ALEXAI PT	AFS	173 19E	45701
52 50N	ATTU	CG	173 11E	45712
52 50N	ATTU	NS	173 11E	45709
52 50N	ATTU	S	173 11E	45712
52 48N	ATTU	NS	173 10E	45709
52 43N	SHEMYA	AAF	174 06E	45708
52 43N	SHEMYA	AFB	174 06E	45708
52 43N	SHEMYA	NS	174 06E	45714
52 43N	SHEMYA	SAWR	174 06E	45715
52 43N	SHEMYA	WBAS	174 06E	45715
52 43N	SHEMYA	WSO	174 06E	45715
52 22N	BULDIR IS	AAF	175 58E	45706
51 59N	KISKA ISLAND	AAF	177 34E	45703
51 58N	KISKA ISLAND	NAAF	177 33E	45710
51 58N	KISKA ISLAND	NAAF	177 32E	45710
51 55N	SEMISOPOCHNO	AAF	179 35E	45707
51 39N	BIRD CAPE	AAF	178 40E	45705
51 24N	AMCHITKA IS	AAF	179 16E	45702
51 24N	AMCHITKA IS	AFB	179 18E	45702
51 24N	AMCHITKA IS	NS	179 16E	45711
51 23N	AMCHITKA IS	AAF	179 15E	45702
51 23N	AMCHITKA IS	AFB	179 15E	45702
51 23N	AMCHITKA IS	SAWR	179 15E	
71 21N	POINT BARROW	AFS	156 38W	27505
71 20N	POINT BARROW	AFS	155 39W	27506
71 20N	POINT BARROW	CAA	156 39W	27504
71 20N	POINT BARROW	NS	156 24W	27501
71 18N	BARROW	WBAS	156 47W	27502
71 18N	BARROW	WBO	156 47W	27502
71 18N	BARROW	WBO	156 46W	27502
71 18N	BARROW	WSO	156 47W	27502
71 18N	POINT BARROW	AFS	156 47W	27506
70 37N	WAINWRIGHT	A	160 04W	27503
70 37N	WAINWRIGHT	SA	160 04W	27503
70 23N	UGNU	SAWR	149 50W	
70 20N	WEST KUPARUK	SAWR	149 18W	
70 19N	PRUDHOE BAY	SAWR	148 33W	
70 15N	HULL	SAWR	148 57W	
70 15N	PRUDHOE BAY	SAWR	148 20W	
70 12N	DEADHORSE	FSS	148 28W	
70 12N	DEADHORSE	FSS	148 27W	
70 12N	DEADHORSE	SAWR	148 27W	
70 08N	BARTER IS	AAF	143 36W	27401
70 08N	BARTER IS	AFB	143 36W	27401
70 08N	BARTER IS	WBAS	143 38W	27401
70 08N	BARTER IS	WSO	143 38W	27401
70 04N	KAD RIVER	SAWR	147 43W	
70 03N	WEST KAVIK	SAWR	147 42W	
70 02N	PINGO	SAWR	147 43W	
69 45N	POINT LAY	SA	163 03W	26624
69 43N	FRANKLIN BLK	SAWR	148 41W	
69 41N	KAVIK	SAWR	146 56W	
69 41N	KAVIK RIVER	SAWR	146 56W	
69 34N	NORA FEDERAL	SAWR	148 45W	
69 31N	SUSIE 1	SAWR	148 53W	
69 22N	SAGWON	SAWR	148 42W	
69 22N	UMIAT	AFS	152 08W	26537
69 22N	UMIAT	CAA	152 08W	265[illegible]
69 22N	UMIAT	NS	152 08W	26506
69 22N	UMIAT	SAWR	152 08W	26508
69 22N	UMIAT	SAWR	152 03W	26508
69 22N	UMIAT	WBAS	152 08W	26508
69 10N	HAPPY VALLEY	SAWR	148 50W	
69 09N	AUFEIS	SAWR	149 35W	
68 53N	CAPE LISBURN	AFS	166 08W	26631
68 52N	CAPE LISBURN	AFS	166 08W	26631
68 38N	MURPHY LAKE	SAWR	149 34W	
68 29N	GALBRAITHE	SAWR	149 29W	
68 21N	POINT HOPE	AAF	166 47W	26601
68 20N	POINT HOPE	A	166 48W	26623
68 11N	ATIGUN	SAWR	149 25W	
68 10N	ANAKTUVUK	A	151 46W	
68 10N	ANAKTUVUK	COOP	151 46W	
68 08N	ARCTIC VILAG	COOP	145 32W	
68 06N	CAPE THOMPSO	SPL	165 46W	26636
67 45N	KIVALINA	A	164 42W	
67 44N	COLLEEN	COOP	142 28W	
67 41N	DIETRICH	SAWR	149 44W	
67 33N	WILD LAKE 2	COOP	151 33W	
67 33N	WILK LAKE 2	COOP	151 33W	
67 30N	CHANDALAR	A	148 30W	
67 30N	LAKE CHANDAL	A	148 30W	
67 30N	LAKE CHANDAL	COOP	148 30W	
67 27N	OLD MAN	SAWR	150 35W	
67 26N	WISEMAN	A	150 13W	26511
67 09N	CANYON VILAG	COOP	141 45W	
67 03N	COLD FT CAMP	SAWR	149 34W	
67 00N	VENETIE	COOP	146 34W	
66 56N	DAHL CREEK	A	156 52W	
66 55N	BETTLES	CAA	151 31W	26533
66 55N	BETTLES	FAA	151 31W	26533
66 55N	BETTLES	WBAS	151 31W	26533
66 55N	BETTLES	WSO	151 31W	26533
66 54N	BETTLES	CAA	151 43W	26517
66 54N	KOBUK	A	156 52W	
66 54N	SHUNGNAK	CAA	157 02W	26513
66 54N	SHUNGNAK	SA	157 07W	26513
66 52N	KOTZEBUE	SA	162 38W	26616
66 52N	KOTZEBUE	WBAS	162 38W	26616
66 52N	KOTZEBUE	WSO	162 38W	26616
66 50N	NOORVIK	COOP	161 00W	
66 48N	PROSPECT CRK	SAWR	150 38W	
66 38N	CHALKYITSIK	COOP	143 43W	
66 35N	FORT YUKON	A	145 18W	26413
66 35N	FORT YUKON	CAA	145 18W	26413
66 35N	FORT YUKON	FAA	145 18W	26413
66 35N	FORT YUKON	SAWR	145 18W	26413
66 34N	ALATNA	A	152 44W	
66 34N	FORT YUKON	A	145 16W	
66 34N	SELAWIK	A	160 01W	
66 33N	FORT YUKON	AC	145 12W	26413
66 14N	SHISHAREF	SA	166 07W	26625
66 05N	FIVE MILE CP	SAWR	150 00W	
66 04N	DEERING	A	162 45W	
66 04N	HUGHES	A	154 14W	26522
66 03N	INDIAN MTN	AFS	153 45W	26535
66 01N	STEVENS VILA	A	149 05W	26449
66 00N	INDIAN MTN	AFS	153 42W	26535
65 56N	CANDLE	A	161 55W	26619
65 48N	CIRCLE	A	144 04W	26446
65 45N	HOG RIVER	A	155 50W	
65 40N	TAYLOR	A	164 47W	
65 37N	WALES	A	168 03W	26618
65 37N	WALES	AAF	168 03W	26609
65 37N	WALES	CAA	168 03W	26618
65 37N	WALES	SA	168 03W	26618
65 37N	WALES	SAWR	168 03W	26618
65 37N	WALES	WBAS	168 03W	26618
65 35N	CENTRAL	A	144 48W	26418
65 35N	CENTRAL	A	144 47W	26418
65 35N	IMURUK LAKE	AAF	163 50W	26613
65 35N	LIVENGOOD	A	148 29W	26428
65 35N	LIVENGOOD	SAWR	148 29W	
65 34N	TIN CITY	A	167 55W	
65 34N	TIN CITY	AFS	167 55W	26634
65 33N	CENTRAL	COOP	144 49W	
65 32N	LIVENGOOD	COOP	148 31W	
65 32N	NOXAPAGE	AAF	164 12W	26606
65 30N	RAMPART	COOP	150 08W	
65 29N	CIRCLE HOT S	A	144 36W	26419
65 29N	CIRCLE HOT S	SAWR	144 36W	26419
65 28N	WEST FORK	COOP	148 40W	
65 27N	AMERICAN RVR	AAF	165 46W	26611
65 18N	TELLER	AAF	166 55W	26607
65 16N	COAL CREEK	A	143 16W	
65 16N	TELLER	A	166 21W	26626
65 15N	PORT CLARENC	CG	168 52W	
65 15N	PT SPENCER	AAF	166 21W	26612

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LAT.	NAME	TYPE	LONG.	WBAN NUMBER
65 12N	HAYCOCK	A	161 09W	
65 12N	TANANA	AFS	152 12W	26504
65 10N	TANANA	CAA	152 06W	26529
65 10N	TANANA	FAA	152 06W	26529
65 10N	TANANA	FSS	152 06W	26529
65 10N	TANANA	S	152 06W	26529
65 10N	TANANA	SA	152 06W	26529
65 10N	TANANA	WBAS	152 06W	26529
65 09N	IGLOO	A	165 04W	
65 05N	PILGRIM SPRG	A	164 58W	
65 03N	CHENA HOT SP	COOP	146 03W	
65 00N	MANLEY H SPG	AAF	150 39W	26505
65 00N	MANLEY HOT S	A	150 39W	26524
64 59N	GILMORE CREK	COOP	147 25W	
64 59N	HOT SPRINGS	A	150 40W	
64 59N	MANLEY H SPG	AAF	150 38W	26505
64 59N	MANLEY HOT S	A	150 40W	26524
64 57N	KOYUK	A	161 08W	
64 57N	KOYUK	A	161 06W	
64 56N	KING ISLAND	A	168 01W	
64 54N	KOKRINES	AAF	154 40W	26503
64 54N	KOUGAROK	AAF	154 40W	26614
64 53N	COUNCIL	A	163 41W	
64 52N	COLLEGE	A	147 50W	
64 52N	KOYUK	AAF	161 06W	26602
64 51N	FAIRBANKS	FAA	147 47W	
64 51N	LADD	AAB	147 35W	26403
64 50N	FAIRBANKS	SPL	147 43W	26411
64 50N	FAIRBANKS	WBAS	147 43W	26411
64 50N	FAIRBANKS	WBO	147 43W	26411
64 50N	FAIRBANKS	WBO	147 36W	26411
64 50N	NO GRUB	A	145 58W	
64 49N	FAIRBANKS	WBAS	147 52W	26411
64 49N	FAIRBANKS	WSO	147 52W	26411
64 47N	EAGLE	A	141 12W	26422
64 46N	EAGLE	A	141 12W	26422
64 46N	EAGLE	WBO	141 12W	26422
64 44N	GALENA	AFS	156 56W	26501
64 44N	RUBY	A	155 26W	
64 44N	RUBY	CAA	155 26W	
64 43N	GALENA	AFS	156 54W	26501
64 43N	GALENA	CAA	156 54W	26509
64 43N	GALENA	WBAS	156 54W	26509
64 43N	MOSES POINT	AAF	162 05W	26603
64 43N	NULATO	A	158 04W	
64 42N	MOSES POINT	AC	162 03W	26620
64 42N	MOSES POINT	CAA	162 03W	26620
64 42N	MOSES POINT	FAA	162 03W	26620
64 41N	EIELSON	AFB	147 05W	26407
64 41N	WHITE MOUNTA	A	163 24W	26630
64 40N	ELIM	A	162 06W	
64 39N	EIELSON	AAF	147 04W	26407
64 39N	EIELSON	AFB	147 04W	26407
64 35N	SOLOMON	A	164 24W	26629
64 33N	GOLOVIN	A	163 01W	26628
64 33N	NENANA	A	149 05W	26435
64 33N	NENANA	AAF	149 05W	26404
64 33N	NENANA	CAA	149 05W	26435
64 33N	NENANA	FAA	149 05W	26435
64 31N	NOME	AAF	165 26W	26604
64 30N	NOME	SPL	165 24W	26617
64 30N	NOME	WBAS	165 26W	26617
64 30N	NOME	WSO	165 26W	26617
64 29N	NOME	S	165 24W	26617
64 29N	NOME	S	165 21W	26617
64 29N	NOME	WBO	165 24W	26617
64 20N	BLAIR LK RNG	AF	147 39W	64060
64 20N	GOOD PASTER	A	144 05W	
64 20N	KALTAG	A	158 45W	
64 19N	CLEAR	SAWR	149 09W	
64 18N	CLEAR	SAWR	149 11W	
64 18N	KALTAG	AAF	158 43W	26502
64 17N	CLEAR	SAWR	149 11W	
64 17N	CLEAR	SAWR	149 10W	
64 17N	RICHARDSON	A	146 21W	

LAT.	NAME	TYPE	LONG.	WBAN NUMBER
64 10N	CANYON CREEK	A	141 08W	
64 08N	BIG DELTA	A	145 44W	26415
64 07N	JACK WADE	A	141 35W	
64 04N	BOUNDARY	A	141 07W	26416
64 04N	CHICKEN	A	141 56W	
64 02N	EGAVIK	A	160 55W	
64 02N	GRUBSTAKE	A	148 12W	
64 00N	BIG DELTA	AAF	145 44W	26406
64 00N	BIG DELTA	AF	145 44W	26415
64 00N	BIG DELTA	CAA	145 44W	26415
64 00N	BIG DELTA	FAA	145 44W	26415
63 54N	UNALAKLEET	AAF	160 47W	26608
63 53N	HEALY	SAWR	149 01W	
63 53N	MINCHUMINA	CAA	152 17W	26512
63 53N	MINCHUMINA	FAA	152 17W	26512
63 53N	MINCHUMINA	WBAS	152 17W	26512
63 53N	UNALAKLEET	A	160 48W	26627
63 53N	UNALAKLEET	CAA	160 48W	26627
63 53N	UNALAKLEET	FAA	160 48W	26627
63 53N	UNALAKLEET	WBAS	160 48W	26627
63 53N	UNALAKLEET	WSO	160 48W	26627
63 52N	HEALY	SAWR	148 57W	
63 51N	GAMBELL	SA	171 36W	26703
63 51N	GAMBELL	SAWR	171 36W	
63 51N	GAMBELL	WBAS	171 38W	26703
63 51N	HEALY	A	148 58W	26447
63 46N	GAMBELL	SAWR	171 45W	
63 44N	MCKINLEY PRK	COOP	148 55W	26429
63 44N	STAMPEDE	SAWR	150 22W	
63 43N	MCKINLEY PRK	A	148 58W	26429
63 42N	SAVOONGA	A	170 28W	
63 41N	SAVOONGA	A	170 26W	
63 39N	MCKINELY PRK	A	148 48W	26429
63 38N	MCKINLEY PRK	A	148 48W	26429
63 32N	RAPIDS	A	145 51W	
63 30N	ST MICHAEL	SAWR	162 00W	
63 24N	TANACROSS	A	143 19W	26440
63 24N	TANACROSS	AAF	143 19W	26405
63 24N	TANACROSS	CAA	143 19W	26440
63 22N	BROAD PASS	A	149 02W	
63 20N	SUMMIT	CAA	149 08W	26414
63 20N	SUMMIT	FAA	149 08W	26414
63 20N	SUMMIT	WBAS	149 08W	26414
63 20N	SUMMIT	WSO	149 08W	26414
63 19N	NORTHEAST CA	AFS	168 58W	26632
63 19N	NORTHEAST CA	AFS	168 56W	26632
63 10N	OPHIR	A	156 33W	
63 10N	TETLIN	A	142 32W	
63 08N	SUMMIT LAKE	A	145 32W	
63 03N	PAXSON	A	145 27W	
63 01N	NIKOLAI	COOP	154 22W	
63 00N	TACOTNA	A	156 04W	
62 58N	MCGRATH	A	155 37W	26510
62 58N	MCGRATH	CAA	155 37W	26510
62 58N	MCGRATH	WBAS	155 37W	26510
62 58N	MCGRATH	WSO	155 37W	26510
62 57N	NORTHWAY	AF	141 56W	26412
62 57N	NORTHWAY	CAA	141 56W	26412
62 57N	NORTHWAY	FAA	141 56W	26412
62 57N	NORTHWAY	WBAS	141 56W	26412
62 54N	TATALINA	AFB	155 59W	26536
62 53N	TATALINA	AFB	155 57W	26536
62 46N	EMMONAK	SAWR	164 30W	
62 43N	SLANA	A	143 55W	
62 37N	CURRY	A	150 02W	
62 32N	FAREWELL	CAA	153 54W	26519
62 32N	FAREWELL	FAA	153 54W	26519
62 32N	FAREWELL	WBAS	153 54W	26519
62 32N	FAREWELL	WSO	153 54W	26519
62 31N	FAREWELL	WSO	153 53W	26519
62 31N	TYONE LAKE	A	146 42W	
62 30N	AKULURAK	A	164 25W	
62 30N	AKULURAK	AAF	164 25W	26610
62 27N	FLAT	A	158 00W	26520
62 27N	FLAT	SA	158 00W	26520

BY LATITUDE

ALASKA

LAT.	NAME	TYPE	LONG.	WBAN NUMBER
62 18N	LAKE LOUISE	A	146 35W	
62 18N	TALKEETNA	CAA	150 06W	26528
62 18N	TALKEETNA	FAA	150 06W	26528
62 18N	TALKEETNA	WBAS	150 06W	26528
62 18N	TALKEETNA	WSO	150 06W	26528
62 13N	CLEAR STA A	AFS	149 05W	26408
62 10N	HOLY CROSS	A	159 45W	26521
62 10N	STUYAHOK	A	161 50W	
62 10N	SUNSHINE LAK	COOP	150 10W	
62 09N	GULKANA	CAA	145 27W	26425
62 09N	GULKANA	FAA	145 27W	26425
62 09N	GULKANA	WBAS	145 27W	26425
62 09N	GULKANA	WSO	145 27W	26425
62 07N	MT VILLAGE	SA	163 45W	26621
62 07N	MT VILLAGE	SA	163 43W	26621
62 07N	MTN VILLAGE	AAF	163 45W	26635
62 06N	PUNTILLA	A	152 45W	26526
62 04N	ANDREAFSKY	A	163 18W	
62 04N	ANDREAFSKY	SAWR	163 18W	
62 04N	ST MARYS	COOP	163 11W	
62 02N	SNOWSHOE LAK	A	146 40W	
61 59N	HAYES RIVER	A	152 05W	
61 58N	COPPER CTR	A	145 18W	
61 58N	SKWENTNA	A	151 12W	26514
61 58N	SKWENTNA	CAA	151 12W	26514
61 57N	SKWENTNA	A	151 10W	26514
61 54N	GUNSIGHT	A	147 18W	
61 52N	CROOKED CREK	A	158 15W	26518
61 52N	CROOKED CREK	COOP	158 15W	
61 51N	MARSHALL	A	161 43W	
61 48N	OLD EDGERTON	COOP	144 59W	
61 48N	SHEEP MTN	A	147 41W	26439
61 48N	SHEEP MTN	CAA	147 41W	26439
61 48N	SHEEP MTN	SAWR	147 41W	26439
61 47N	CAPE ROMANZO	AFS	166 02W	26633
61 47N	CAPE ROMANZO	AFS	165 52W	26633
61 47N	INDEPENDENCE	A	149 18W	
61 47N	LUCKY SHOT	A	149 25W	
61 46N	STONY RIVER	A	156 38W	
61 46N	STONY RIVER	SA	156 38W	26527
61 42N	SLEETMUTE	A	157 11W	
61 38N	OHOGAMUTE	A	161 54W	
61 36N	PALMER	A	149 08W	25331
61 36N	PALMER	A	149 07W	25331
61 36N	PALMER	A	149 05W	25331
61 36N	PALMER	FAA	149 05W	25331
61 35N	ANIAK	CAA	159 32W	26516
61 35N	ANIAK	COOP	159 32W	26516
61 35N	ANIAK	FAA	159 32W	26516
61 35N	ANIAK	SA	159 32W	26516
61 33N	TONSINA	SAWR	145 13W	
61 32N	BIG LAKE	SAWR	149 50W	
61 32N	CHITINA	A	144 27W	
61 32N	MATANUSKA	A	149 14W	26446
61 30N	HOOPER	SAWR	166 06W	
61 27N	KALSKAG	A	160 49W	
61 26N	MCCARTHY	SAWR	142 55W	
61 24N	EKLUTNA LAKE	COOP	149 09W	
61 24N	EKULTNA LAKE	COOP	149 09W	
61 15N	ANCHORAGE	COOP	149 51W	
61 15N	ELMENDORF	AAF	149 48W	26401
61 15N	ELMENDORF	AFB	149 48W	26401
61 15N	ELMENDORF 2	AFB	149 48W	26452
61 15N	MOOSE RUN	COOP	149 40W	
61 14N	ANCHORAGE	COOP	149 52W	
61 13N	ANCHORAGE	CAA	149 50W	26409
61 13N	ANCHORAGE	COOP	149 52W	
61 13N	ANCHORAGE	FAA	149 50W	26409
61 13N	ANCHORAGE	LAWR	149 50W	26409
61 13N	ANCHORAGE	S	149 52W	
61 13N	ANCHORAGE	SAWR	149 50W	26409
61 13N	ANCHORAGE	WBAS	149 50W	26409
61 13N	ANCHORAGE	WBO	149 52W	
61 13N	ANCHORAGE PS	COOP	149 52W	
61 11N	LAKE HOOD	LAWR	149 57W	

LAT.	NAME	TYPE	LONG.	WBAN NUMBER
61 10N	ANCHORAGE	WBAS	150 01W	26451
61 10N	ANCHORAGE	WBAS	149 59W	26451
61 10N	ANCHORAGE	WSO	150 01W	26451
61 09N	FIRE ISLAND	AFS	150 14W	26507
61 08N	BIRCH ROAD	COOP	149 46W	
61 08N	VALDEZ	A	146 21W	26442
61 08N	VALDEZ	A	146 15W	26442
61 07N	ROCK RIDGE	COOP	149 45W	
61 07N	VALDEZ	A	146 16W	26442
61 07N	VALDEZ	S	146 16W	26442
61 06N	SPARREVOHN	AFS	155 34W	26534
61 02N	TYONEK	A	151 11W	
61 00N	NYAC	SAWR	159 59W	26525
60 52N	AKIAK	COOP	161 23W	
60 51N	PORTAGE	A	148 59W	26437
60 48N	BETHEL	WBO	161 45W	26615
60 48N	DOLLY VARDEN	CG	151 38W	
60 47N	BETHEL	WBAS	161 48W	26615
60 47N	BETHEL	WBAS	161 43W	26615
60 47N	BETHEL	WSO	161 48W	26615
60 47N	PIGOT	A	148 20W	
60 46N	NORTH DUTCH	CAA	147 48W	26436
60 46N	WHITTER	A	148 41W	
60 35N	DRIFT RIVER	SAWR	152 09W	
60 34N	KENAI	A	151 15W	26523
60 34N	KENAI	CAA	151 15W	26523
60 34N	KENAI	FAA	151 15W	26523
60 32N	CORDOVA	S	145 42W	26410
60 32N	TOKSOOK	SAWR	165 07W	
60 31N	CORDOVA	S	145 36W	26410
60 30N	CORDOVA	AF	145 30W	26410
60 30N	CORDOVA	FAA	145 30W	26410
60 30N	CORDOVA	WBAS	145 30W	26410
60 29N	CORDOVA	AAF	145 30W	26402
60 28N	JOHNSTONE PT	A	146 36W	
60 28N	ST MATTHEW	ASC	172 42W	
60 28N	SOLDOTNA	SAWR	151 02W	
60 23N	NUNIVAK	A	166 12W	26622
60 23N	NUNIVAK	ASC	166 12W	26622
60 23N	NUNIVAK	SA	166 12W	26622
60 21N	ST MATTHEW	AAF	172 42W	26701
60 21N	UPPER RUSSIA	SAWR	150 06W	
60 19N	KASILOF	A	151 17W	
60 19N	KASILOF	A	151 16W	
60 17N	LAKE CLARK	A	154 17W	
60 14N	CAPE HINCHIN	CG	146 39W	26417
60 14N	CAPE HINGHIN	CG	146 39W	26417
60 13N	TANALIAN PT	A	154 22W	26531
60 12N	NUNIVAK IS	AAF	166 06W	26605
60 12N	PORT ALSWORT	A	154 18W	
60 08N	SEWARD	SA	149 27W	26438
60 08N	SEWARD	SAWR	149 25W	
60 07N	SEWARD	A	149 27W	26438
60 07N	SEWARD	SA	149 27W	26438
60 05N	YAKATAGA	A	142 30W	26445
60 05N	YAKATAGA	CAA	142 30W	26445
60 05N	YAKATAGA	FAA	142 30W	26445
59 59N	ICY BAY	SAWR	141 48W	
59 59N	NONDALTON	A	154 50W	
59 53N	MACLEOD HARB	A	147 45W	
59 52N	SEDCO 706	SAWR	143 18W	
59 48N	CAPE ST ELIA	CG	144 36W	25401
59 45N	ILIAMNA	CAA	154 55W	25506
59 45N	ILIAMNA	FAA	154 55W	25506
59 45N	ILIAMNA	WBAS	154 55W	25506
59 45N	QUINHAGAK	SAWR	161 54W	
59 44N	ILIAMNA	A	154 49W	25506
59 38N	HOMER	A	151 30W	25507
59 38N	HOMER	CAA	151 30W	25507
59 38N	HOMER	FAA	151 30W	25507
59 38N	HOMER	WBAS	151 30W	25507
59 38N	HOMER	WSO	151 30W	25507
59 33N	OCEAN CAPE	CG	139 42W	
59 32N	YAKUTAT	CAA	139 44W	25339
59 31N	YAKUTAT	AAF	139 40W	25302

ALASKA

LAT.	NAME	TYPE	LONG.	WBAN NUMBER
59 31N	YAKUTAT	WBAS	139 40W	25339
59 31N	YAKUTAT	WSO	139 40W	25339
59 28N	MIDDLETON IS	CAA	146 19W	25402
59 28N	SKAGWAY	A	135 18W	25335
59 27N	MIDDLETON IS	AFS	146 19W	25403
59 27N	SKAGWAY	A	135 19W	25335
59 27N	SKAGWAY	AAF	135 19W	25303
59 26N	SELDOVIA	SAWR	151 42W	
59 25N	AUGUSTINE IS	A	153 25W	
59 24N	KLUKWAN	A	135 54W	
59 22N	BRUIN BAY	CAA	153 59W	
59 14N	HAINES	A	135 27W	25323
59 14N	HAINES	A	135 26W	25232
59 13N	HAINES	CAA	135 26W	25323
59 03N	DILLINGHAM	FSS	158 31W	25512
59 03N	DILLINGHAM	SAWR	158 27W	25513
59 02N	KOGGIUNG	A	156 20W	
59 01N	KANAKANAK	A	158 31W	
59 01N	KANAKANAK	SA	158 31W	
59 01N	PLATINUM	A	161 47W	25613
59 01N	PLATINUM	AAF	161 47W	25604
58 59N	KULIK LAKE	SAWR	155 07W	
58 58N	ELDRED ROCK	CG	135 13W	25318
58 42N	NAKNEK	A	157 02W	
58 41N	KING SALMON	WBAS	156 39W	25503
58 41N	KING SALMON	WSO	156 39W	25503
58 41N	NAKNEK	AAF	156 39W	25503
58 41N	NAKNEK	AFB	156 39W	25503
58 40N	CAPE NEWENHA	AFS	162 10W	25623
58 40N	NAKNEK	AAF	156 45W	
58 40N	NAKNEK	CAA	156 45W	
58 39N	CAPE NEWENHA	AFS	162 04W	25623
58 33N	CANYON IS	A	133 40W	
58 33N	CANYON IS	CAA	133 40W	
58 33N	SENTINEL IS	CG	134 55W	
58 33N	TAKU LODGE	A	133 41W	
58 27N	GLACIER	COOP	135 53W	
58 25N	EXCURSION IN	A	135 26W	
58 25N	GUSTAVUS	A	135 42W	25322
58 25N	GUSTAVUS	CAA	135 42W	25322
58 25N	GUSTAVUS	FAA	135 42W	25322
58 25N	GUSTAVUS	SAWR	135 44W	25322
58 25N	PT RETREAT	CG	134 57W	25330
58 22N	JUNEAU	WBAS	134 35W	25309
58 22N	JUNEAU	WSO	134 35W	25309
58 19N	ANNEX CREEK	A	134 06W	25311
58 18N	JUNEAU	WBO	134 25W	25324
58 18N	JUNEAU	WBO	134 24W	25324
58 15N	FUNTER BAY	A	134 54W	
58 12N	CAPE SPENCER	CG	136 38W	25316
58 12N	ELFIN COVE	A	136 40W	
58 10N	PLEASANT IS	A	135 30W	25340
58 10N	SISTER IS	A	135 15W	25341
58 09N	PORT ALTHORP	A	136 22W	
58 07N	HOONAH	A	135 27W	
57 50N	SPRUCE CAPE	CG	152 19W	
57 48N	KODIAK	SA	152 24W	25509
57 47N	TENAKEE	A	135 12W	25336
57 46N	KODIAK	CAA	152 19W	25509
57 46N	KODIAK	NF	152 22W	25509
57 45N	KODIAK	NAF	152 30W	25501
57 45N	KODIAK	NF	152 31W	25509
57 45N	KODIAK	WSO	152 30W	25501
57 44N	KODIAK	NAF	152 30W	25501
57 41N	KIMSHAN	A	136 06W	
57 37N	PILOT POINT	A	157 34W	25514
57 36N	RADIOVILLE	A	136 09W	25332
57 34N	KANATAK	A	156 02W	
57 31N	ANGOON	A	134 35W	25310
57 30N	ANGOON	A	134 35W	25310
57 27N	FAIRWAY IS	CG	134 52W	
57 26N	TRINITY-UGAS	SAWR	157 44W	
57 22N	WIDE BAY	SAWR	156 25W	
57 16N	FIVE FINGER	CG	133 37W	25319
57 10N	PAINTERS CRK	SAWR	157 26W	

LAT.	NAME	TYPE	LONG.	WBAN NUMBER
57 09N	ST PAUL IS	WBAS	170 13W	25713
57 09N	ST PAUL IS	WSO	170 13W	25713
57 08N	ST PAULS IS	AAF	170 18W	25705
57 07N	ST PAUL IS	NS	170 16W	25712
57 07N	ST PAUL IS	S	170 16W	25713
57 07N	ST PAUL IS	SA	170 16W	25713
57 07N	ST PAUL IS	SPL	170 16W	25713
57 07N	ST PAUL IS	WBO	170 16W	25713
57 04N	SITKA	CAA	135 21W	25333
57 04N	SITKA	FAA	135 21W	25333
57 03N	SITKA	A	135 20W	25333
57 03N	SITKA	NS	135 21W	25307
57 03N	SITKA	SPL	135 20W	25334
56 58N	KAKE	A	133 57W	
56 57N	ALITAK	A	154 10W	25512
56 57N	FORT MORROW	AAF	158 37W	25504
56 57N	PORT HEIDEN	A	158 37W	25508
56 57N	PORT HEIDEN	AAF	158 39W	25504
56 57N	PORT HEIDEN	CAA	158 37W	25508
56 57N	PORT HEIDEN	SA	158 37W	25508
56 55N	ALITAK	NF	154 15W	25512
56 55N	ALITAK	NS	154 15W	25502
56 51N	BIORKA IS	CAA	135 32W	
56 51N	BIORKA IS	CG	135 33W	
56 49N	PETERSBURG	A	132 57W	25329
56 49N	PETERSBURG	CAA	132 57W	25329
56 33N	SITKINAK	CG	154 08W	
56 28N	LEVEL ISLAND	A	133 06W	
56 28N	WRANGELL	A	132 23W	25338
56 23N	LITTLE PORT	A	134 38W	25327
56 15N	PORT ALEXAND	A	134 39W	25348
56 03N	LINCOLN ROCK	CG	132 46W	25326
56 00N	CAPE DECISIO	CG	134 08W	25315
56 00N	COFFMAN COVE	A	132 50W	
56 00N	PORT MOLLER	AFS	160 31W	25625
55 58N	CAPE POLE	A	133 48W	
55 55N	CHIRIKOF	NS	155 35W	25505
55 54N	CHIRIKOF IS	NF	155 34W	25511
55 54N	CHIRIKOF IS	SAWR	155 34W	25511
55 54N	HYDER	A	130 01W	
55 35N	KETCHIKAN	CG	131 30W	
55 32N	OCEAN RANGER	SAWR	166 57W	
55 29N	CRAIG	A	133 09W	25317
55 27N	GUARD ISLAND	CG	131 53W	25320
55 24N	AMAK ISLAND	AF	163 08W	25609
55 23N	BEAVER FALLS	A	131 28W	25313
55 21N	KETCHIKAN	FSS	131 42W	25325
55 21N	KETCHIKAN	SA	131 39W	25325
55 21N	KETCHIKAN	WBO	131 39W	25325
55 20N	KETCHIKAN	FSS	131 40W	25325
55 20N	KETCHIKAN	SA	131 39W	25325
55 20N	KETCHIKAN	SAWR	131 34W	25325
55 20N	SAND POINT	CAA	160 30W	25617
55 20N	SAND POINT	NF	160 30W	25617
55 20N	SAND POINT	S	160 30W	25617
55 20N	SAND POINT	SAWR	160 30W	25617
55 15N	SQUAW HARBOR	A	160 33W	
55 13N	WOSNESSENSKI	A	161 21W	
55 12N	COLD BAY	SAWR	162 43W	25624
55 12N	COLD BAY	WBAS	162 43W	25624
55 12N	COLD BAY	WSO	162 43W	25624
55 12N	HYDABURG	A	132 49W	
55 12N	THORNBROUGH	AAF	162 43W	25603
55 12N	THORNBROUGH	AFB	162 43W	25603
55 11N	GRAVINA	A	131 49W	
55 06N	MARY ISLAND	CG	131 11W	
55 02N	ANNETTE	A	131 34W	25308
55 02N	ANNETTE	WBAS	131 34W	25308
55 02N	ANNETTE	WSO	131 34W	25308
55 02N	ANNETTE IS	AAF	131 35W	25301
54 48N	FOREST IS	CG	133 32W	
54 48N	TREE POINT	CG	130 56W	25337
54 36N	CAPE SARICHE	CG	164 56W	25622
54 25N	CATON ISLAND	NF	162 28W	25615
54 25N	CATON ISLAND	NS	162 28W	25612

BY LATITUDE

ALASKA

LAT.	NAME	TYPE	LONG.	WBAN NUMBER
53 59N	DRIFTWOOD BY	AFS	166 51W	25515
53 58N	DRIFTWOOD BY	AFS	166 51W	25515
53 58N	UNALGA IS	NF	166 10W	25608
53 54N	DUTCH HARBOR	AFS	166 32W	25620
53 54N	DUTCH HARBOR	NS	166 32W	25611
53 53N	DUTCH HARBOR	A	166 32W	25614
53 53N	DUTCH HARBOR	NF	166 32W	25616
53 53N	DUTCH HARBOR	NS	166 32W	25611
53 53N	DUTCH HARBOR	SA	166 32W	25614
53 53N	DUTCH HARBOR	SAWR	166 32W	25614
53 32N	UMNAK ISLAND	AAF	167 47W	25610
53 31N	REINDEER PAS	AAF	167 55W	25606
53 23N	CAPE	AAF	167 54W	25602
53 23N	CAPE	AFB	167 54W	25602
53 23N	UMNAK	SAWR	167 54W	25621
52 57N	NIKOLSKI	A	168 52W	
52 57N	NIKOLSKI	A	168 51W	
52 55N	NIKOLSKI	AAF	168 58W	25605
52 55N	NIKOLSKI	AFS	168 47W	25626
52 50N	CHUGINADAK	AAF	169 50W	25601
52 23N	SEGUAM	AAF	172 25W	25703
52 14N	ATKA	NS	174 13W	25710
52 13N	ATKA ISLAND	AAF	174 12W	25708
52 12N	ATKA	A	174 20W	25715
52 10N	ATKA	A	174 12W	25715
52 10N	ATKA	SAWR	174 12W	25715
51 57N	ADAK	NS	176 36W	25704
51 53N	ADAK	AAF	176 39W	25707
51 53N	ADAK	NS	176 39W	25704
51 53N	ADAK	NS	176 38W	25704
51 53N	DAVIS	AAF	176 39W	25701
51 53N	DAVIS	AFB	176 39W	25701
51 52N	ADAK	NS	176 39W	25704
51 46N	KANAGA BAY	NS	177 15W	25711
51 45N	TANAGA IS	NS	178 02W	25714
51 43N	KANAGA BAY	NS	177 15W	25711
51 40N	ASI TANAGA	NS	178 00W	25709
51 35N	ADAK	CG	177 00W	
51 33N	OGLIUGA	AAF	178 48W	25702

LAT.	NAME	TYPE	LONG.	WBAN NUMBER

USCOMM-NOAA-ASHEVILLE,NC-5-23-77-600

QUARTERLY REPORT

Research Unit 497

Reporting Period 1 April 1977
30 June 1977

ALASKAN DATA PROCESSING FACILITY

Edgar F. Law

30 June 1977

SUMMARY

Travel

Juneau	6-7 June
Lake Quinault	12-17 June
Bluff	27-30 June

Number of Principal Investigator - Coding Forms	8
Number of File Types - Coding Forms	9
Period of record - 1975 - 1977	
Total Forms Received to Date	260
Total Forms Processed to Date	229
Total Forms Received this Period	74
Total Forms Processed this Period	92

Total Data Received to Date	244
Total Data Controlled to Date	240
Total Data Received this Period	105
Total Data Controlled this Period	102

1. Ship or Laboratory Activities

a. Travel Schedule

The field activities are limited to meetings with investigators or OCSEAP management personnel. Many meetings were held in Anchorage as investigators were traveling to field operations. The balance of the meetings in Anchorage included local investigators. The travel itineraries are listed below.

TRAVEL RUs - 497/370

Dates	
1. 6-7 June 1977	Juneau
2. 12-17 June 1977	Lake Quinault, Washington
3. 27-30 June 1977	Bluff, Alaska, Drury (RU 237)

2. Scientific Party

Staff for the keyentry facility and OCSEAP support are listed below.

Michael L. Crane	EDS	Physical Scientists
Joanne Grant	U of A	Data Transcriber
Wanda McClure	U of A	Data Transcriber
Richard Paulsen	U of A	Data Transcriber
Virginia Holsapple	U of A	Secretary

3. Methods

Not applicable

4. Sample Localities/ Ship or Aircraft Tracklines

Not applicable

5. Data Collected or Analyzed

Not applicable

MILESTONES

	June 30	Sept 30	Dec 31	Feb 28	Mar 31

Data Entry Backlog Data Entry 1977 Data Keyentry Arctic Investigators

50% 25%

Data Checking - no software assistance

Data Checking 30%

Hardware Install telecommunications equipment

15%

Data Checking Data Checking - Software assisted

55%

Management Files

Design and Maintain Office Files

10%

Problems Encountered/Recommended Changes

The increased effort in certifying data as it is received will require powerful software and the volume of material will require greater capacity equipment. Because the data managers in the OCSEA P Program require more direct support in data handling, expanded tele-communications is needed to facilitate this support. Access to power software through remote job entry equipment would be necessary and sufficient to accomplish the appropriate tasks of checking, inventorying and delivering summary reports. Detailed requirements were discussed at a data management meeting in Lake Quinault, Washington.

Another problem is the software used to check the OCSEAP digital data. This research unit will require delivery of software or access to expanded software. NODC is currently developing the necessary check programs. Depending on the completion time, implementation of software checking will require NODC assistance.

Estimate of Funds Expended

RU 497	Salaries	3/4 of total	=	24k
	Indirect	3/4 of total	=	8k
	Travel		=	7k
RU 370	Submitted under separate University report.			

★U.S. Government Printing Office: 1977-781-914/176 Region 8