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NAVAL POLAR OCEANOGRAPHY CENTER WASHINGTON DC
ANTARCTIC ICE CHARTS 1979-1980.(U)
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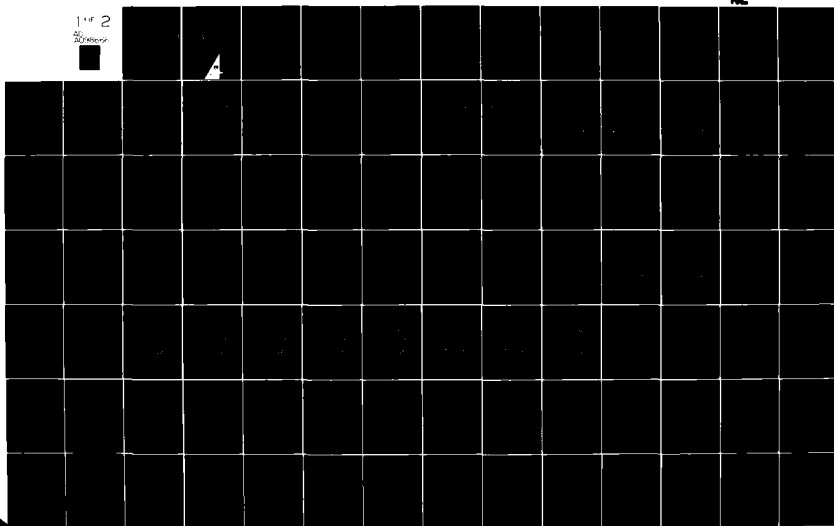
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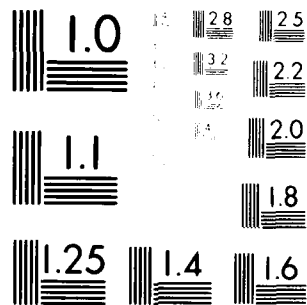
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MICROCOPY RESOLUTION TEST CHART
 NATIONAL BUREAU OF STANDARDS-1963-A

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ANTARCTIC ICE CHARTS 1979—1980

AD A098666

PREPARED BY
NAVAL POLAR OCEANOGRAPHY CENTER,
SUITLAND, MD

NOIC 100-100

PREPARED FOR
COMMANDER,
NAVAL OCEANOGRAPHY COMMAND
NSTL STATION, BAY ST. LOUIS. MS 39529

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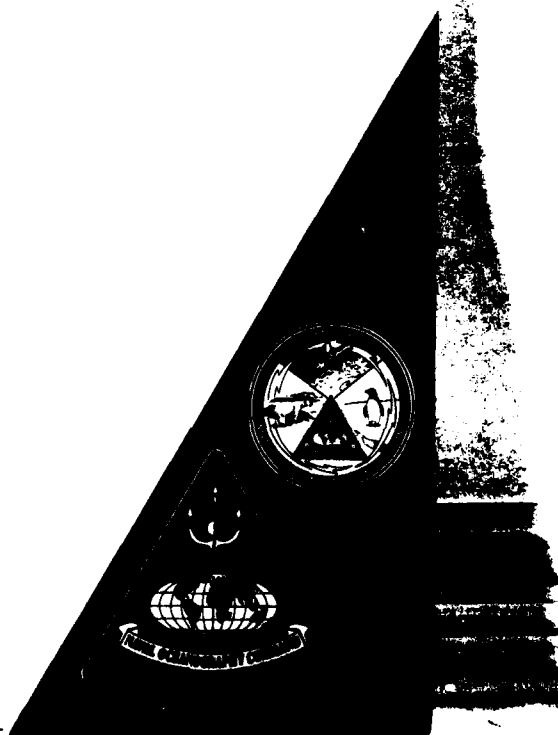
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FOREWORD

The U.S. Navy has a long and colorful history of polar exploration and currently is an active participant in the growing national activity in the Arctic and Antarctic. The strategic importance and increased demand for the natural resources of these areas have resulted in a greater requirement for environmental information. In 1976, the National Oceanic and Atmospheric Administration (NOAA) joined the Navy in forming a Joint Ice Center (JIC) to combine efforts and resources in sea ice analysis and forecasting.

Through 1972, reliable sea ice information in the polar regions was based on a relatively few shore station and ship reports augmented by limited aerial reconnaissance data. These data were further restricted mainly to the relatively small areas observed primarily during the ship operating seasons. The advent of high resolution satellite imagery combined with the ground truth of conventional observations has in recent years enabled a description of the polar ice fields on a semi-synoptic scale in both polar regions.

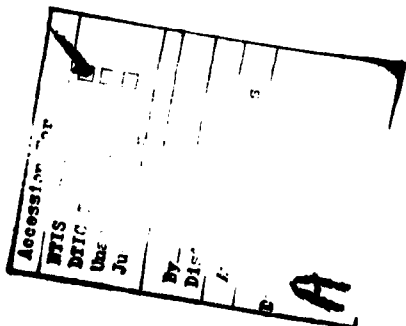
This publication is the fourth in a continuing bi-yearly series of Antarctic sea ice atlases prepared in the Joint Ice Center at the Naval Polar Oceanography Center, Suitland. The atlas contains weekly charts depicting Southern Hemisphere ice conditions and extents. The information presented was prepared under operational time constraints principally from satellite imagery supplemented by conventional observations. Table I located on the inside back cover summarizes satellite data availability for 1979 and 1980.

Commencing with the first analysis of 1980, ice concentrations are identified in tenths of ice coverage. Ice concentrations in analyses of prior years, 1979 and earlier, were identified in oktas or eighths coverage.

The purpose of this atlas is to provide operators and researchers with reliable weekly hemispheric ice analyses. Satellite data limitations and other difficulties involved in manually synthesizing various forms of ice data have evolved the following analysis procedures:

- a. Conventional shore station, ship and aerial ice reconnaissance observations are plotted on base charts and evaluated for timeliness.
- b. Satellite data is analyzed for ice information content, with the most recent and highest resolution considered first. Synthesis of conventional with satellite data yields the final analysis.
- c. Where sufficient data is not available to define the sea ice limit, an estimated ice boundary is depicted. After one week of no data availability the ice edge position is based on analyzed theoretical ice drift data and other diagnostic aids. During subsequent weeks of no data availability the ice edges approach seasonal mean positions.

Naval Polar Oceanography Center
Navy Department
4301 Suitland Road
Washington, DC 20390



FOREWORD

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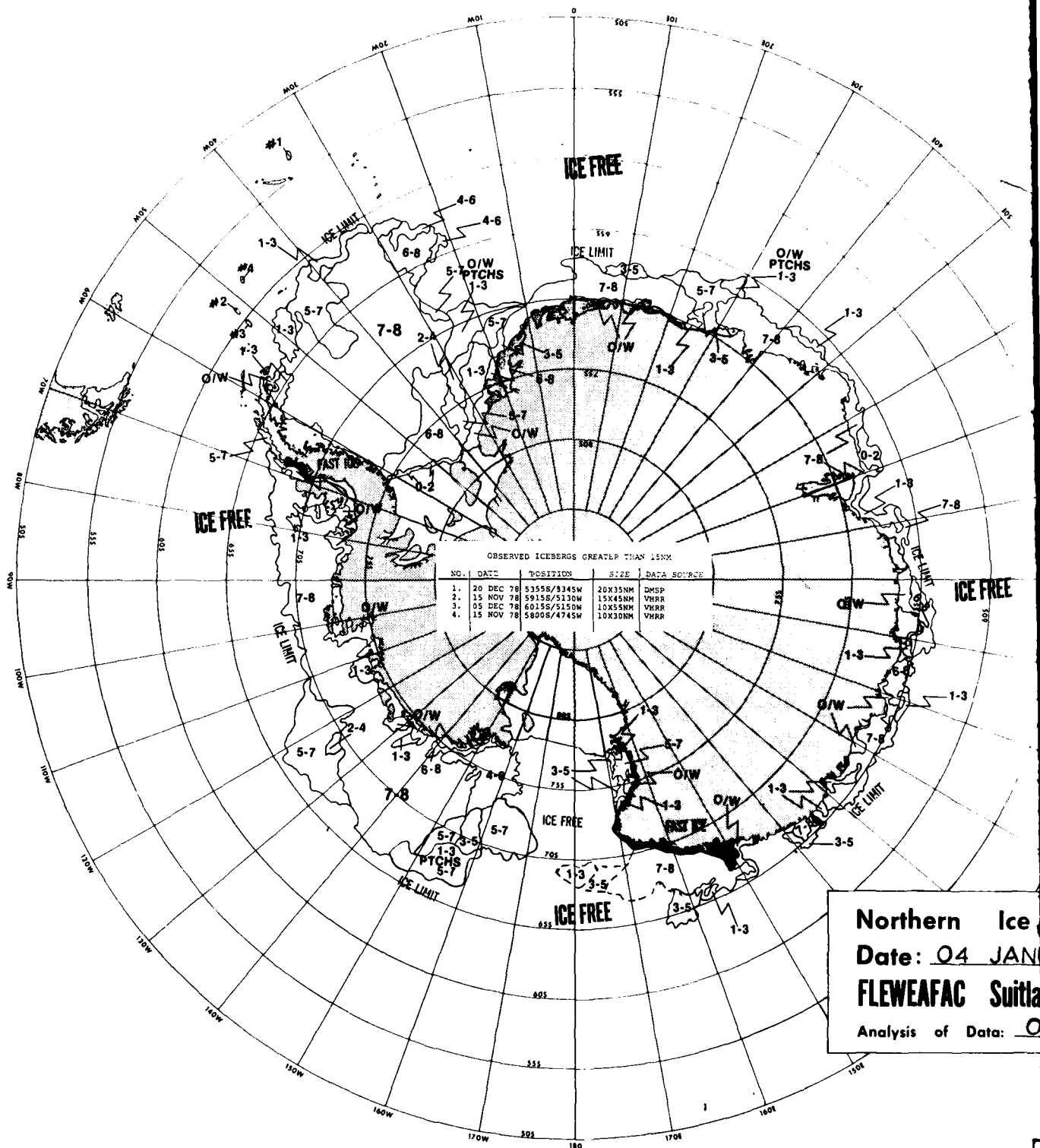
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Antarctic, ice analysis, sea ice, ice charts, Antarctic ice.		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This publication contains the weekly analysis charts of sea ice in the Antarctic for years 1979 and 1980. Ice free, Northern limits, types and concentrations of sea ice are depicted.		

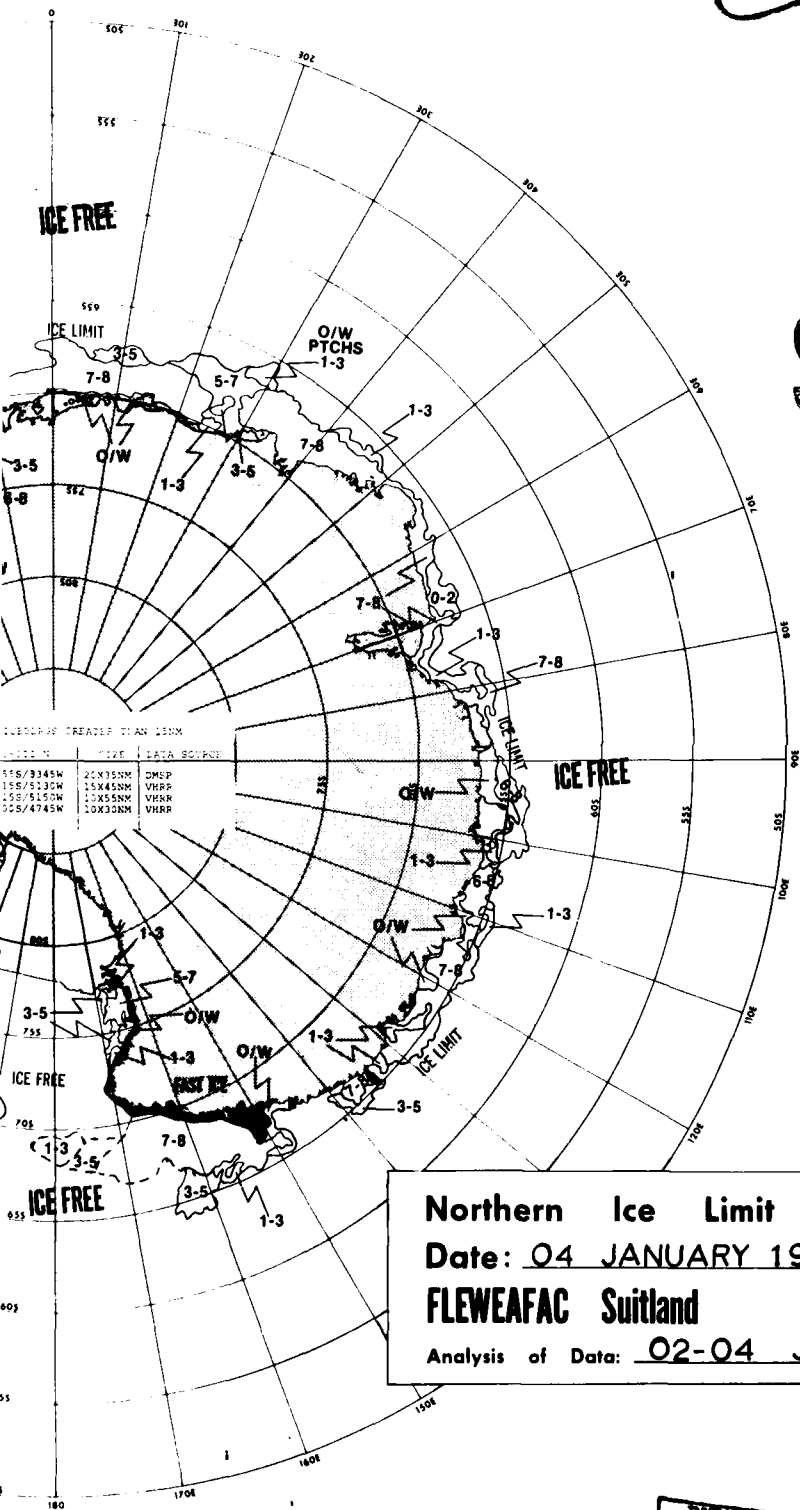
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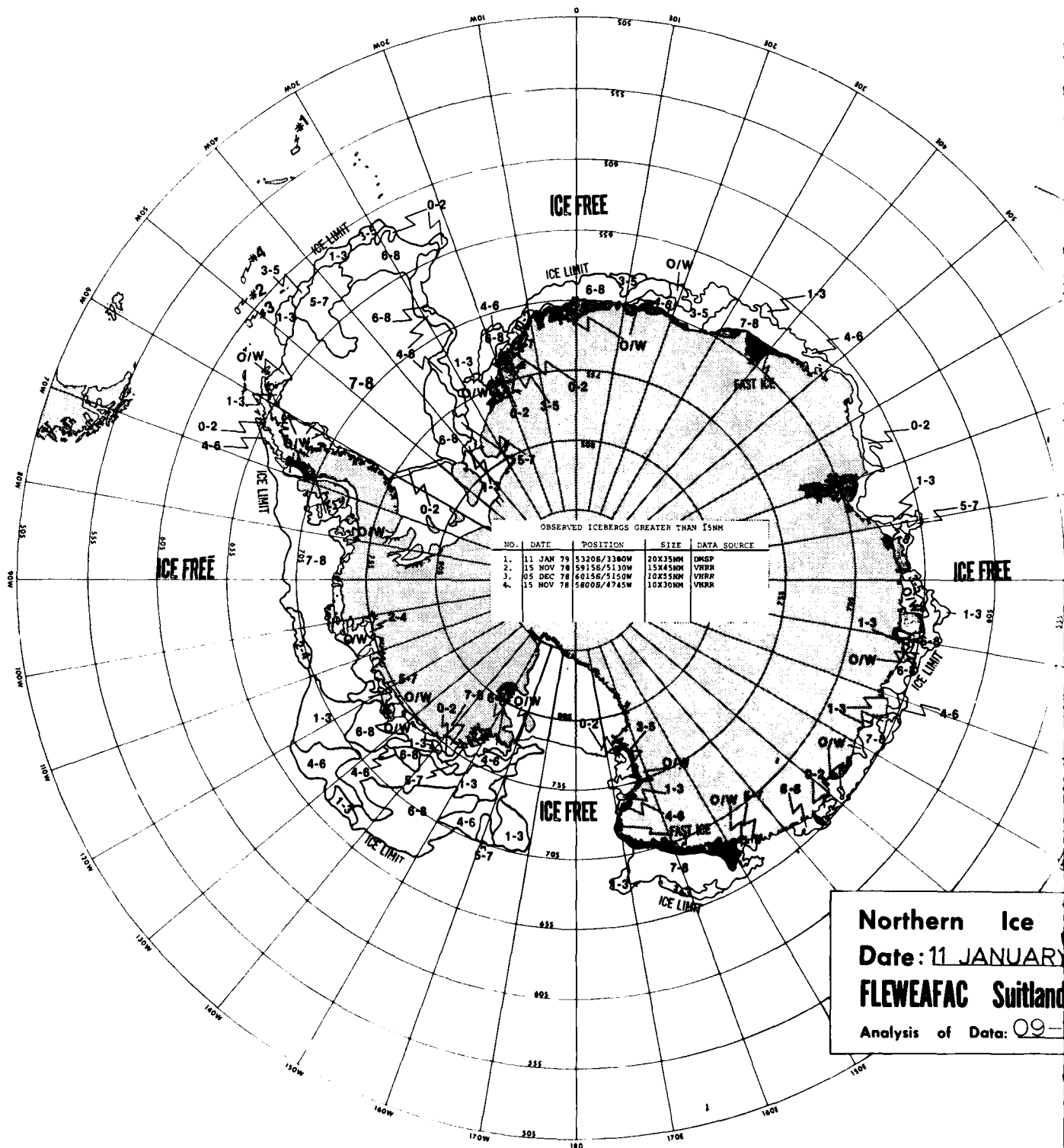
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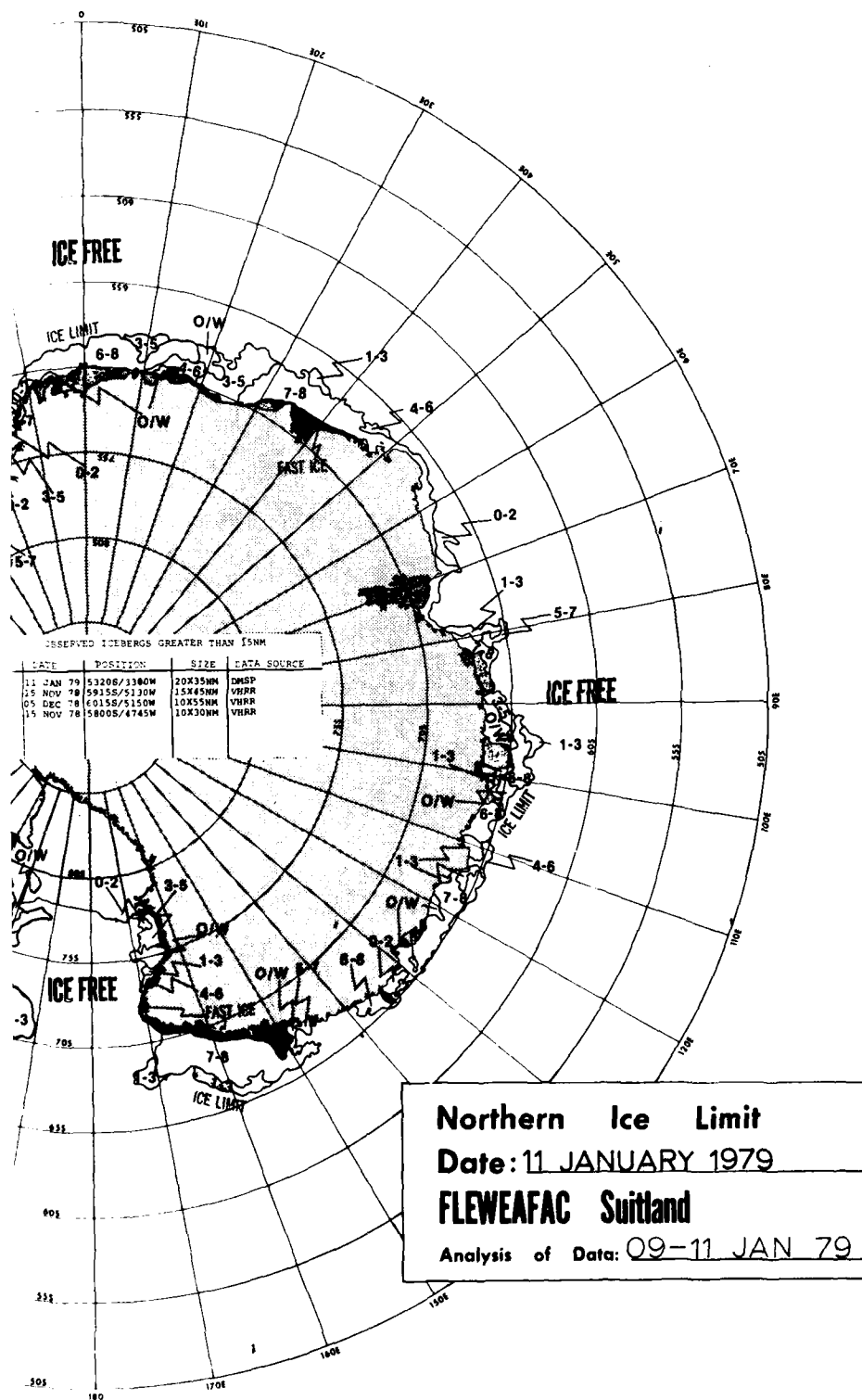
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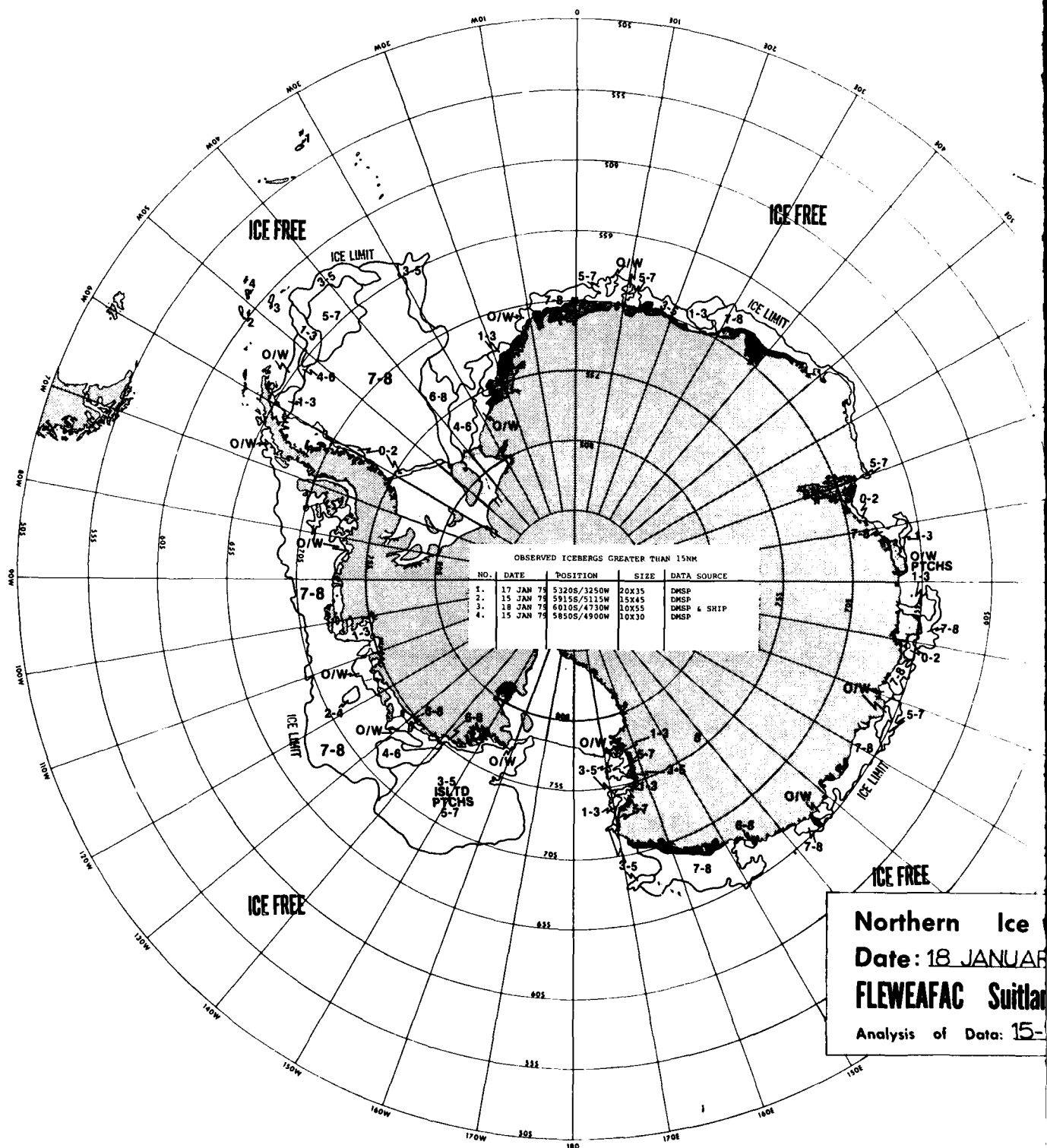
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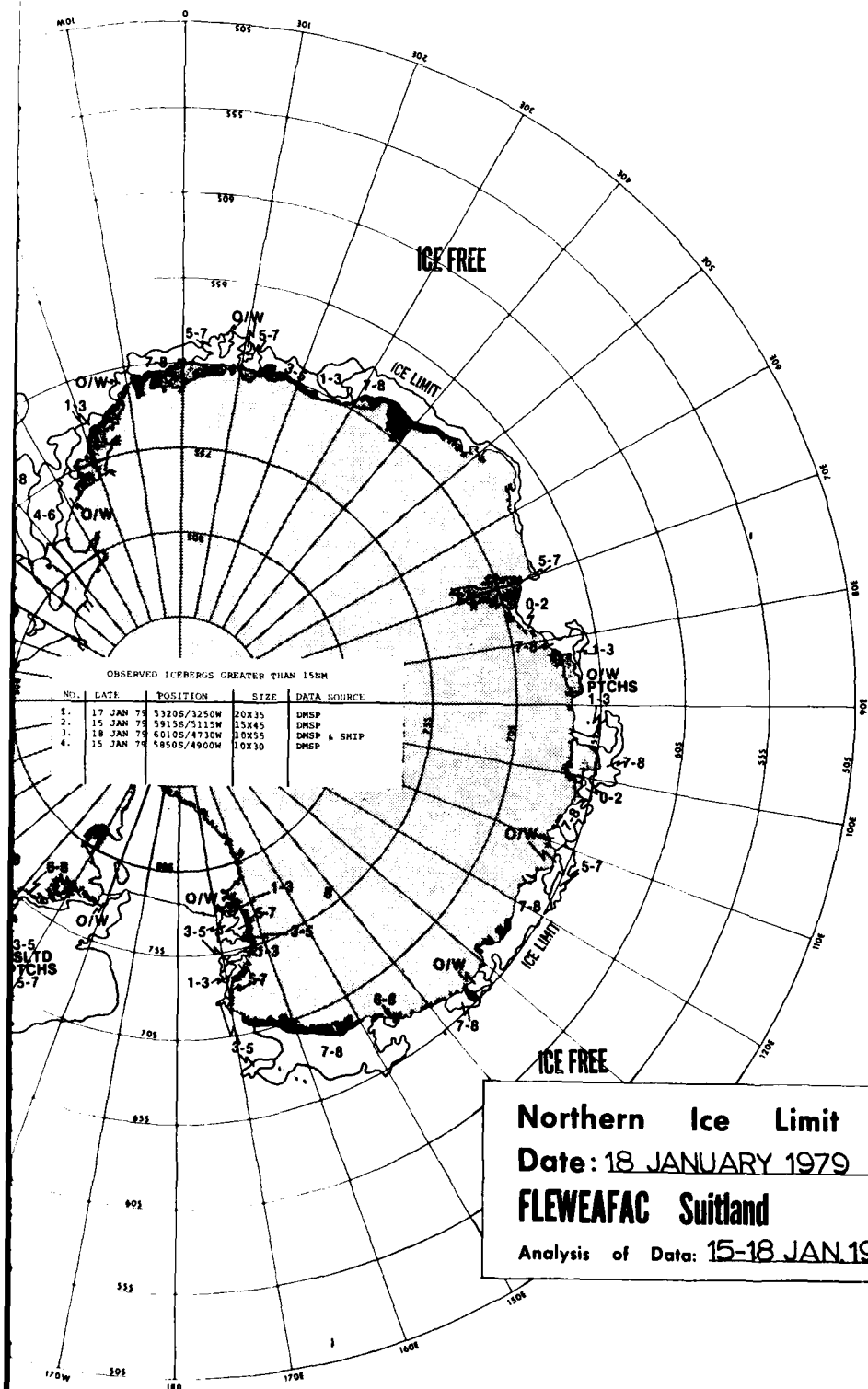


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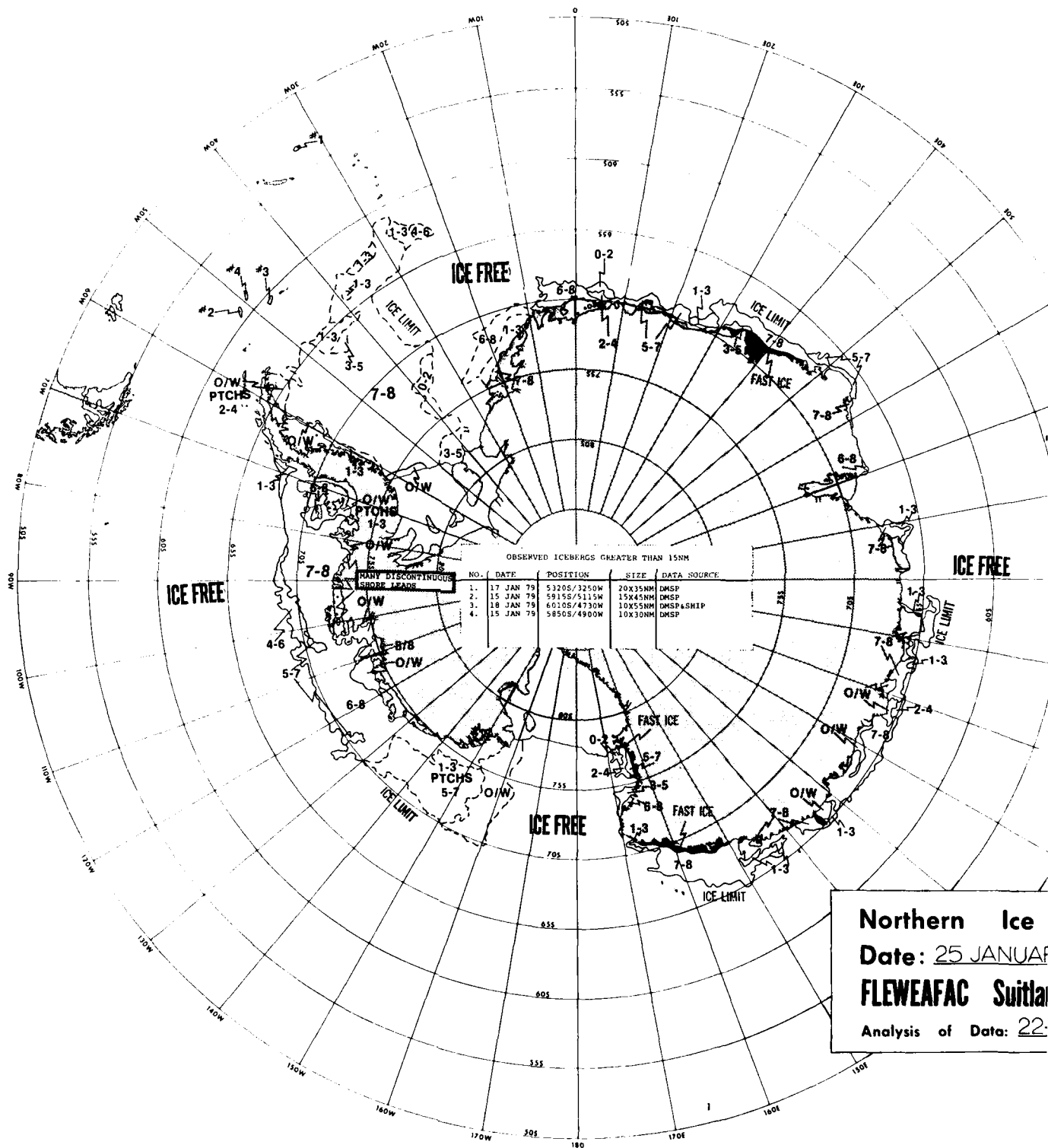


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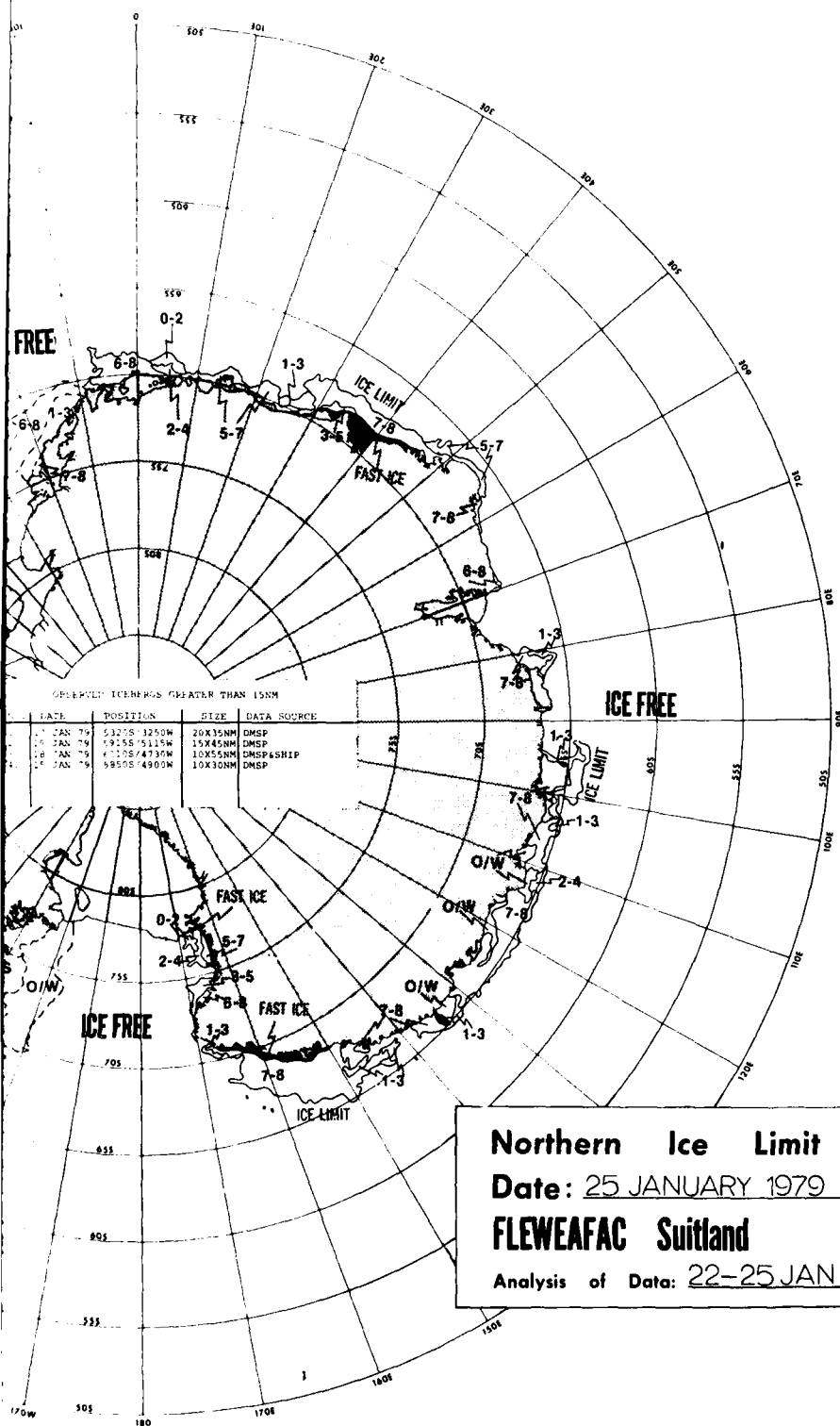
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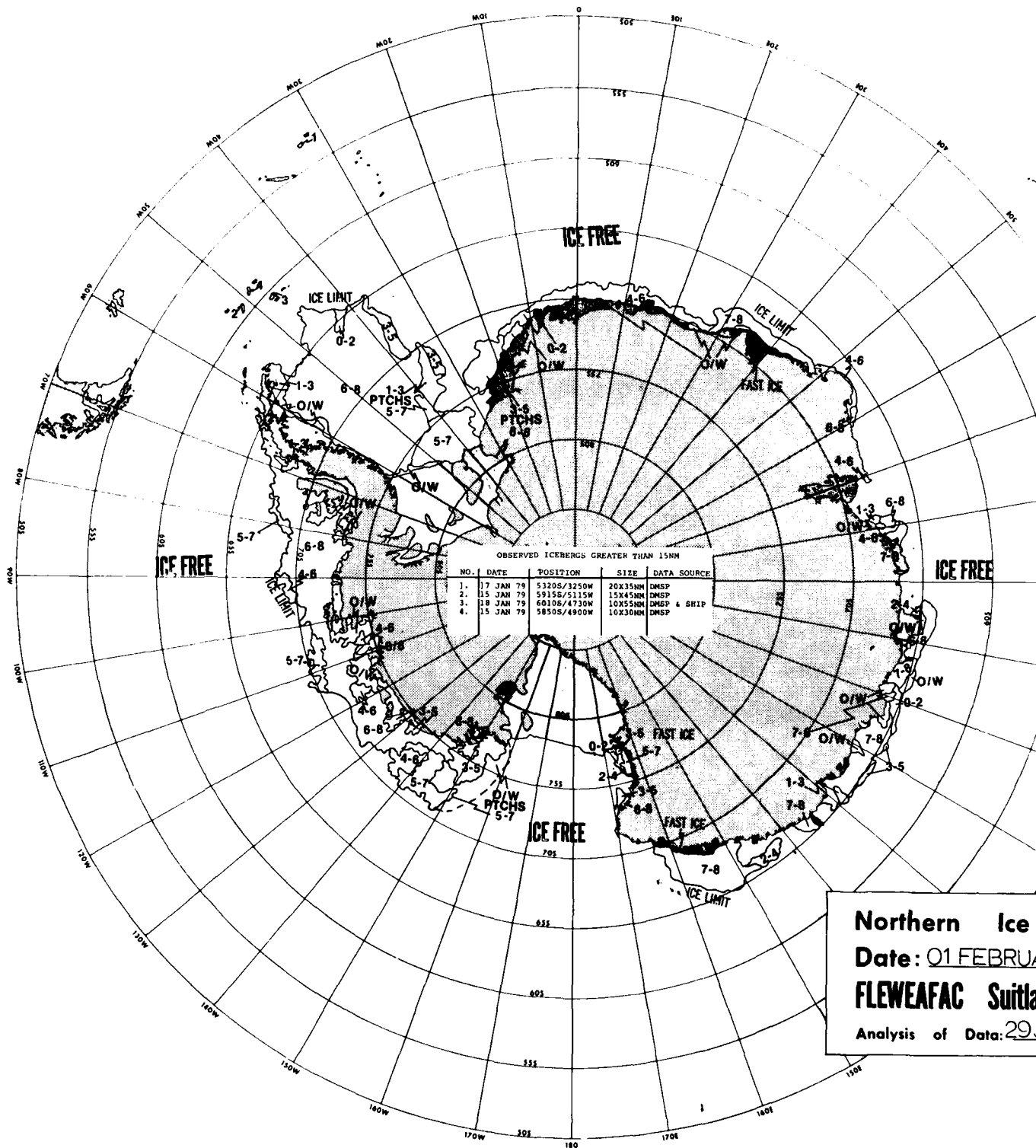


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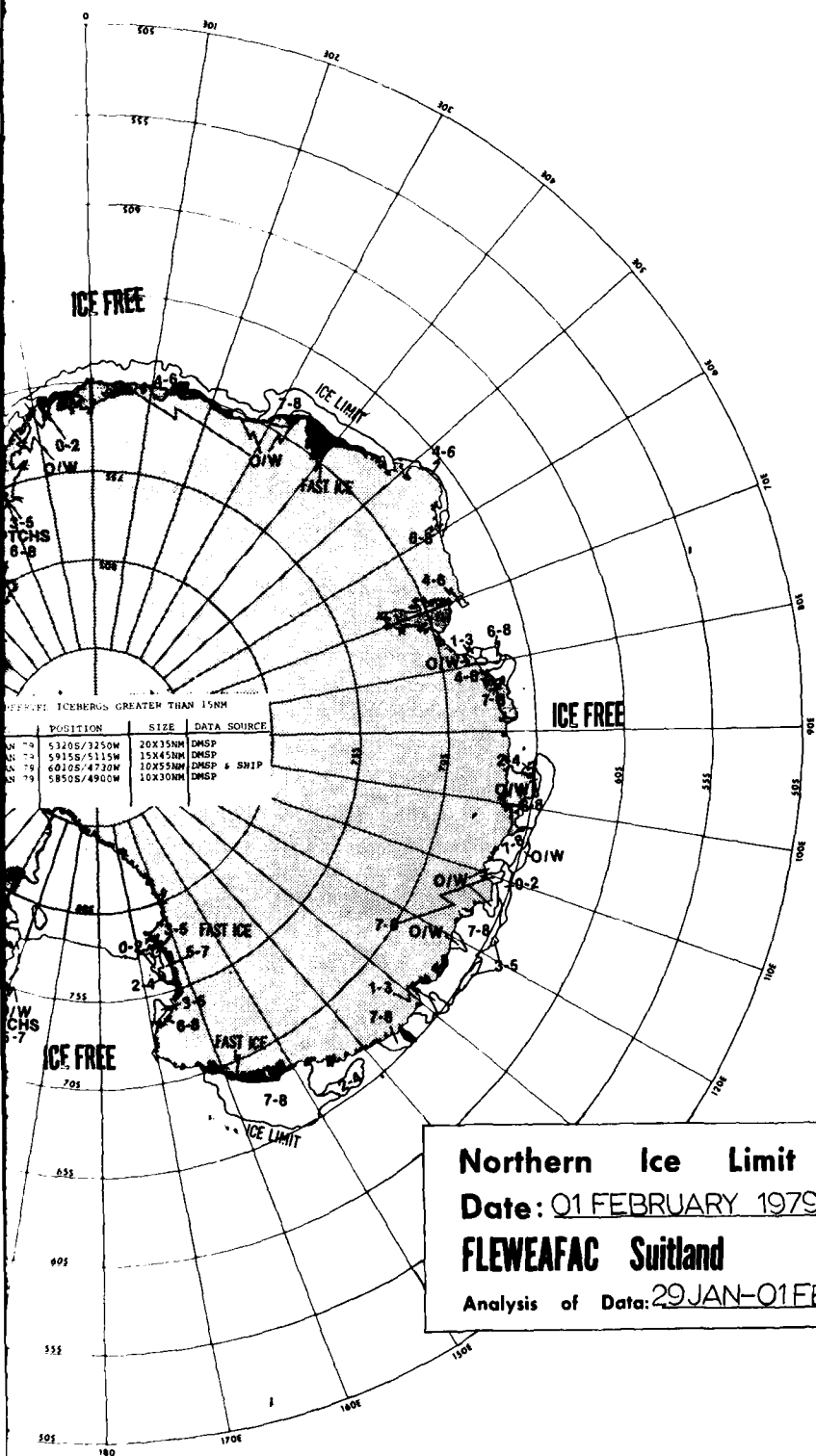
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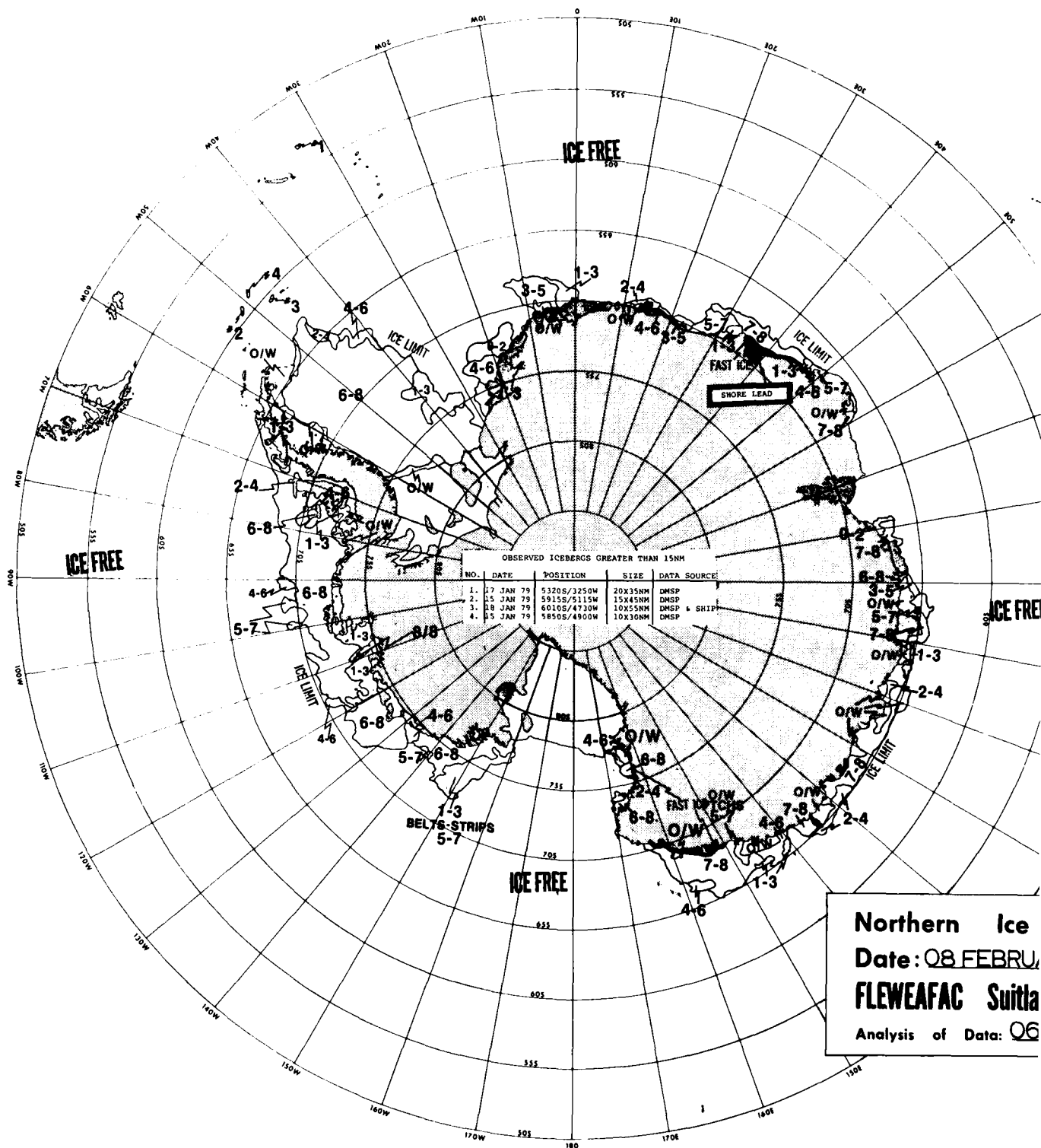
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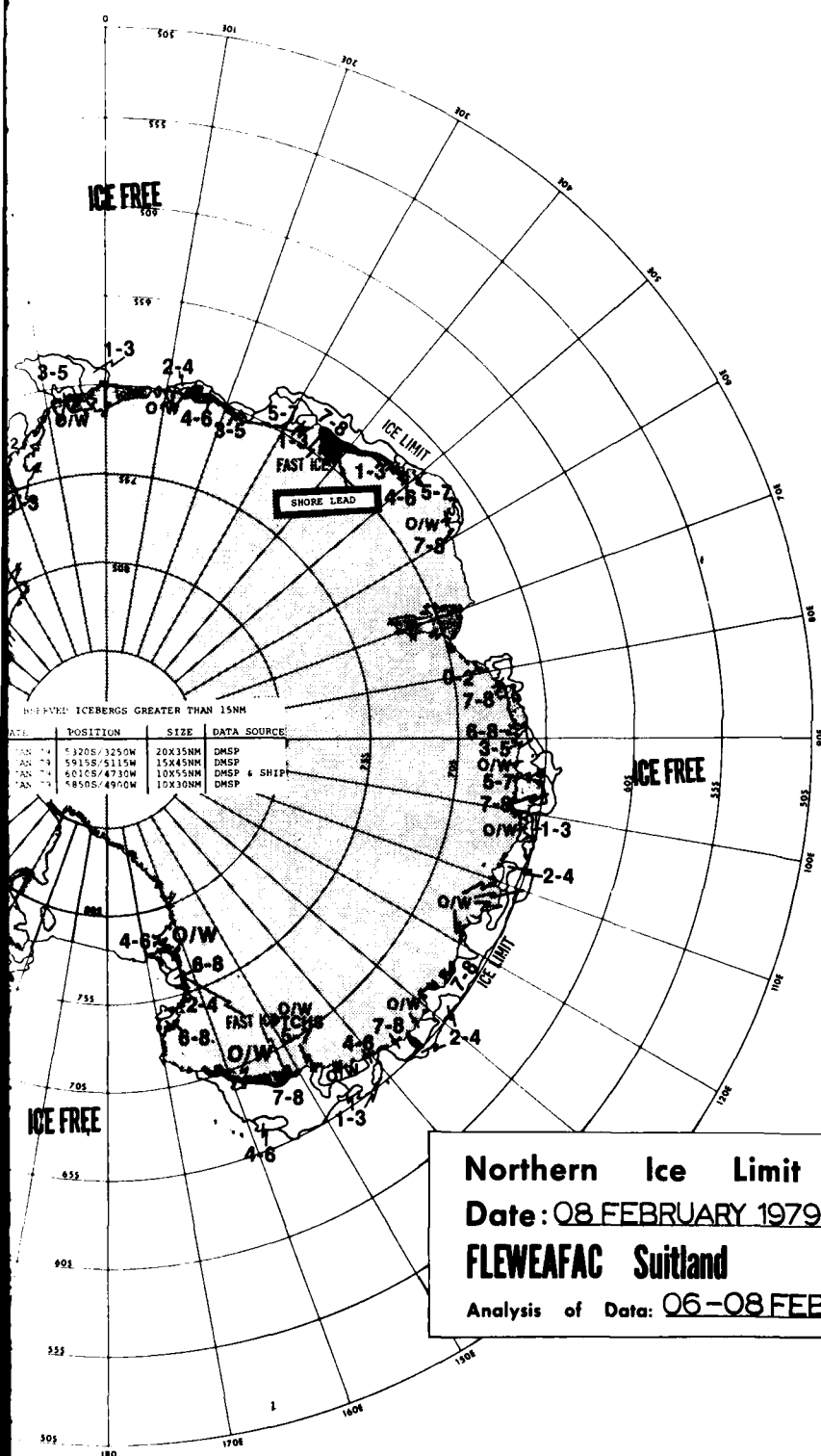


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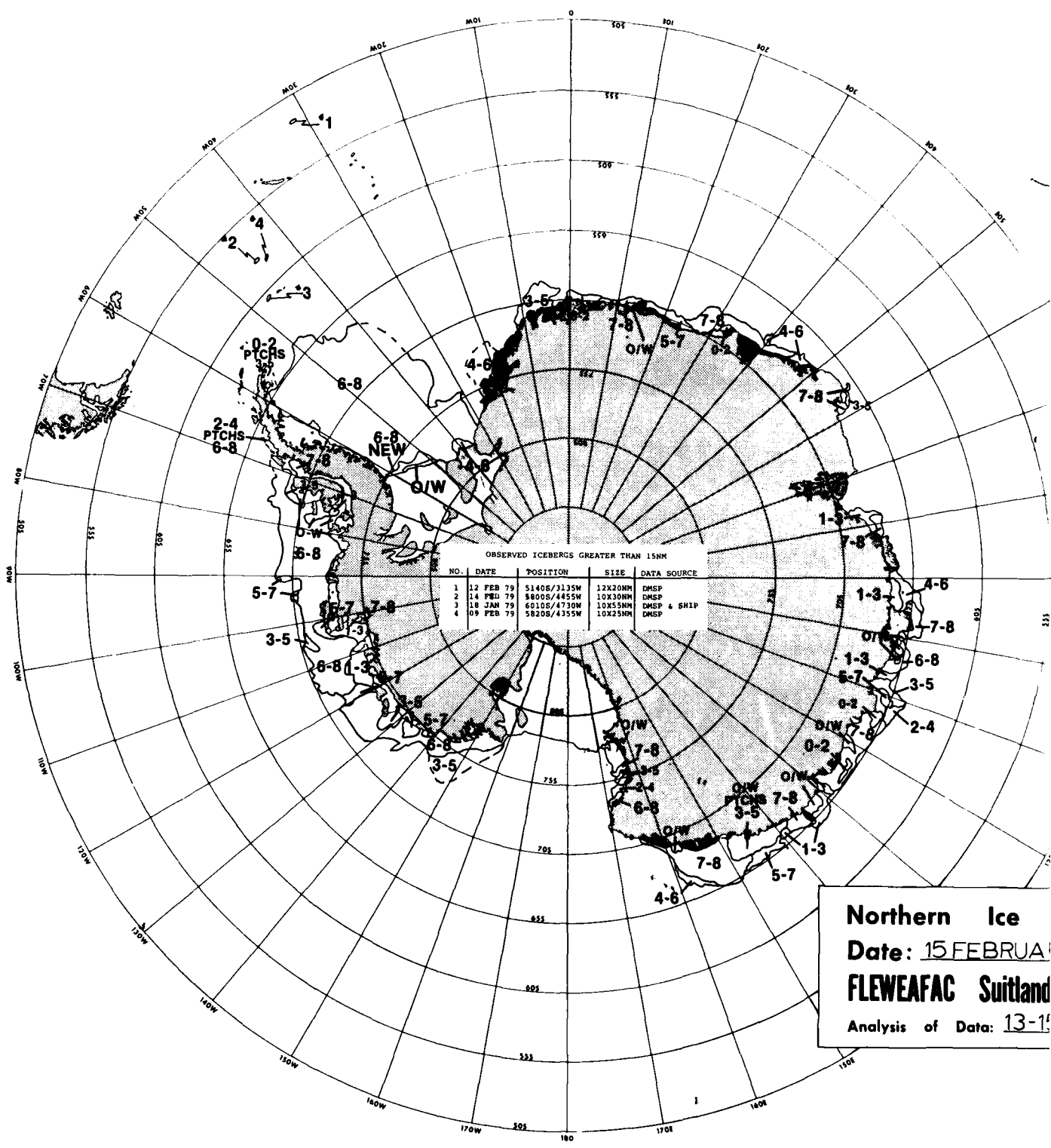




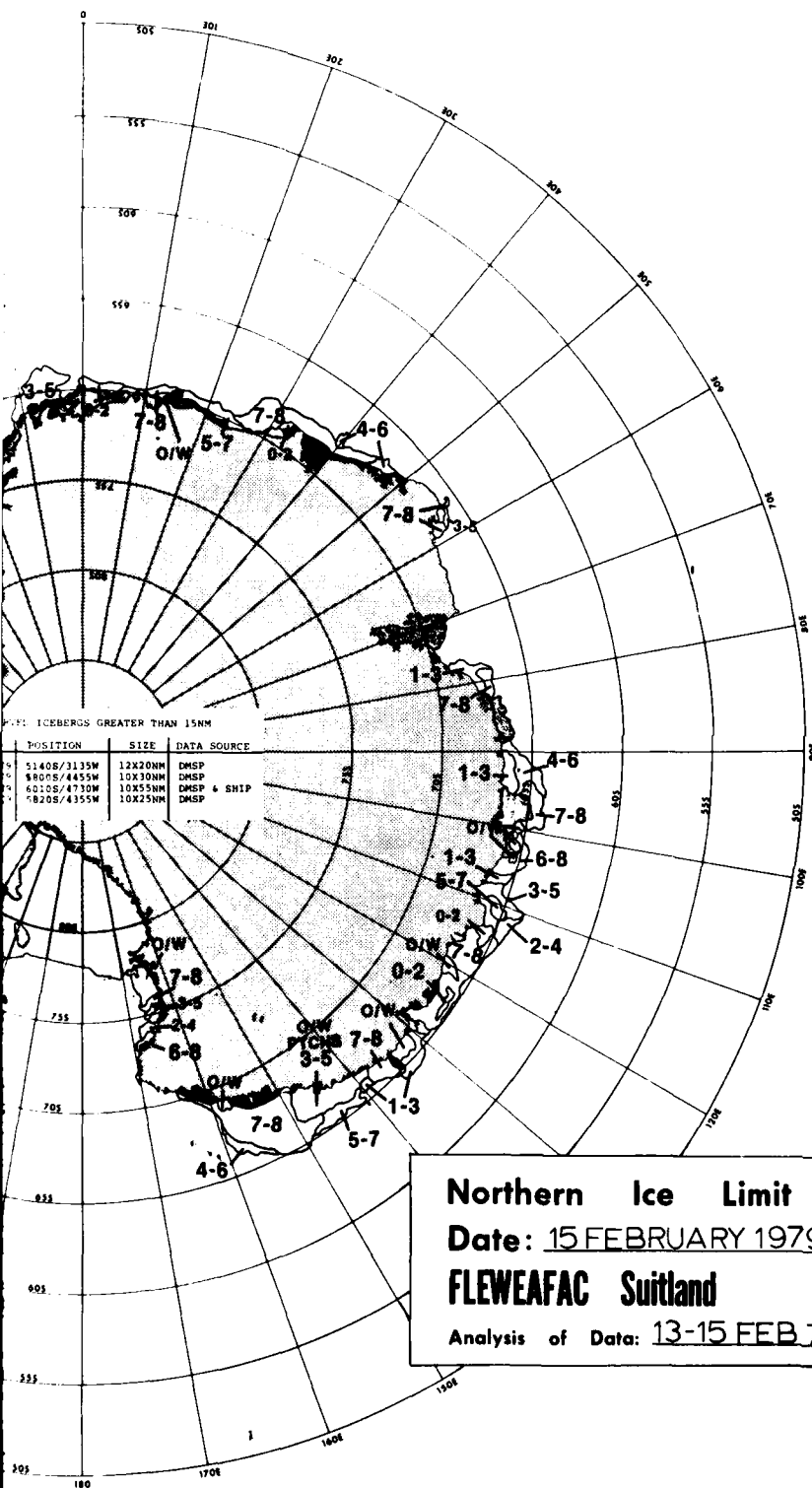
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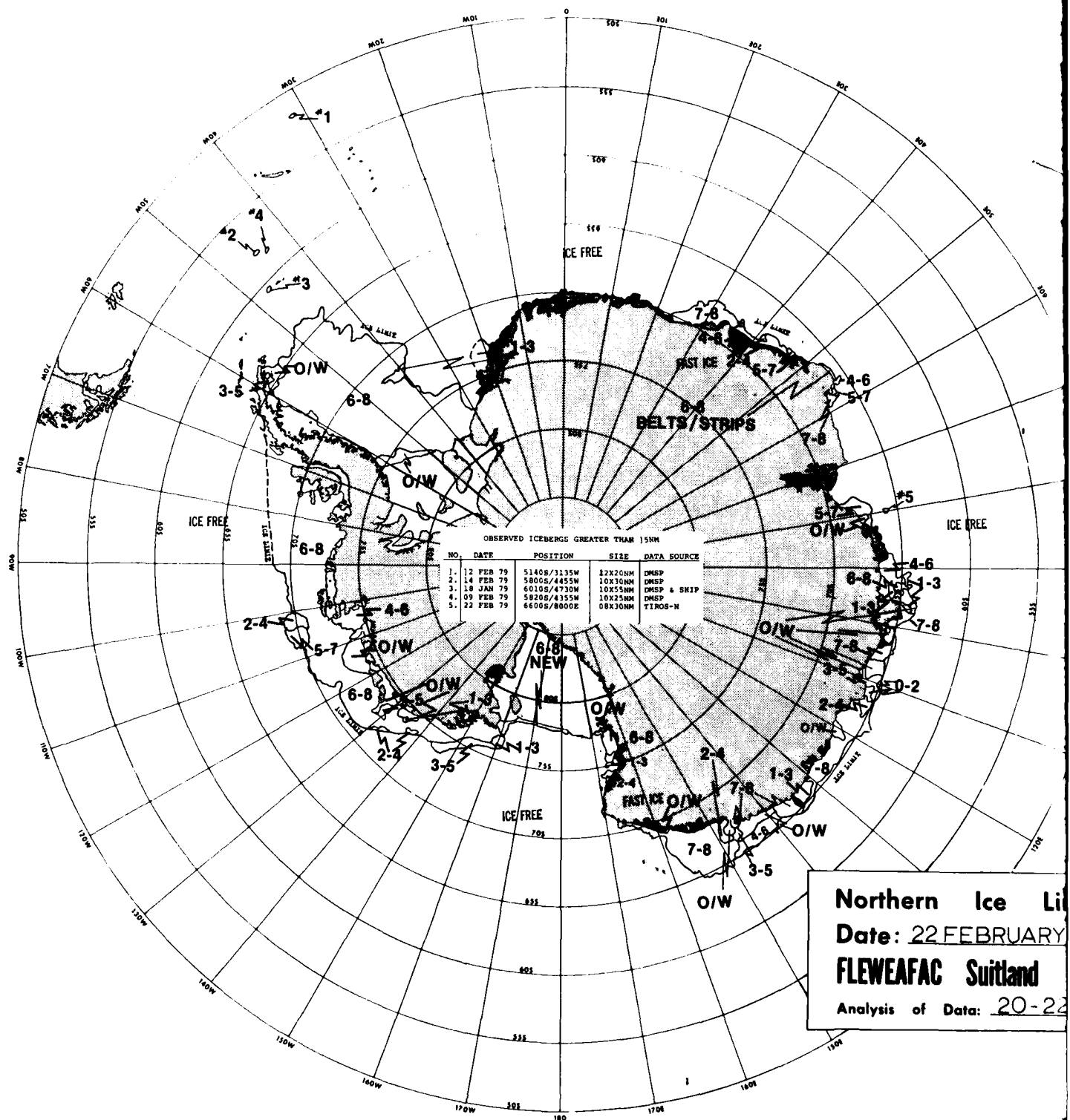


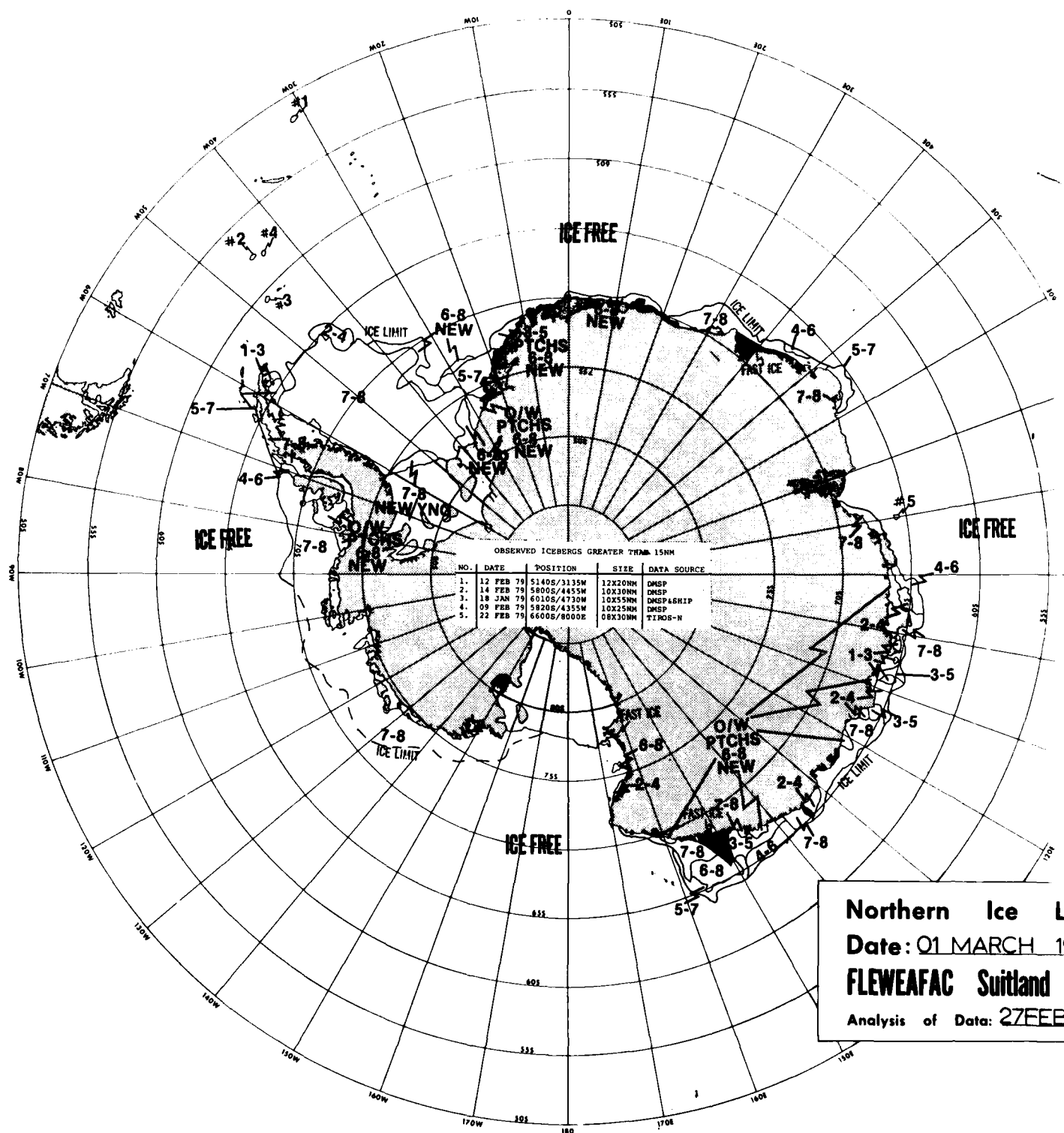
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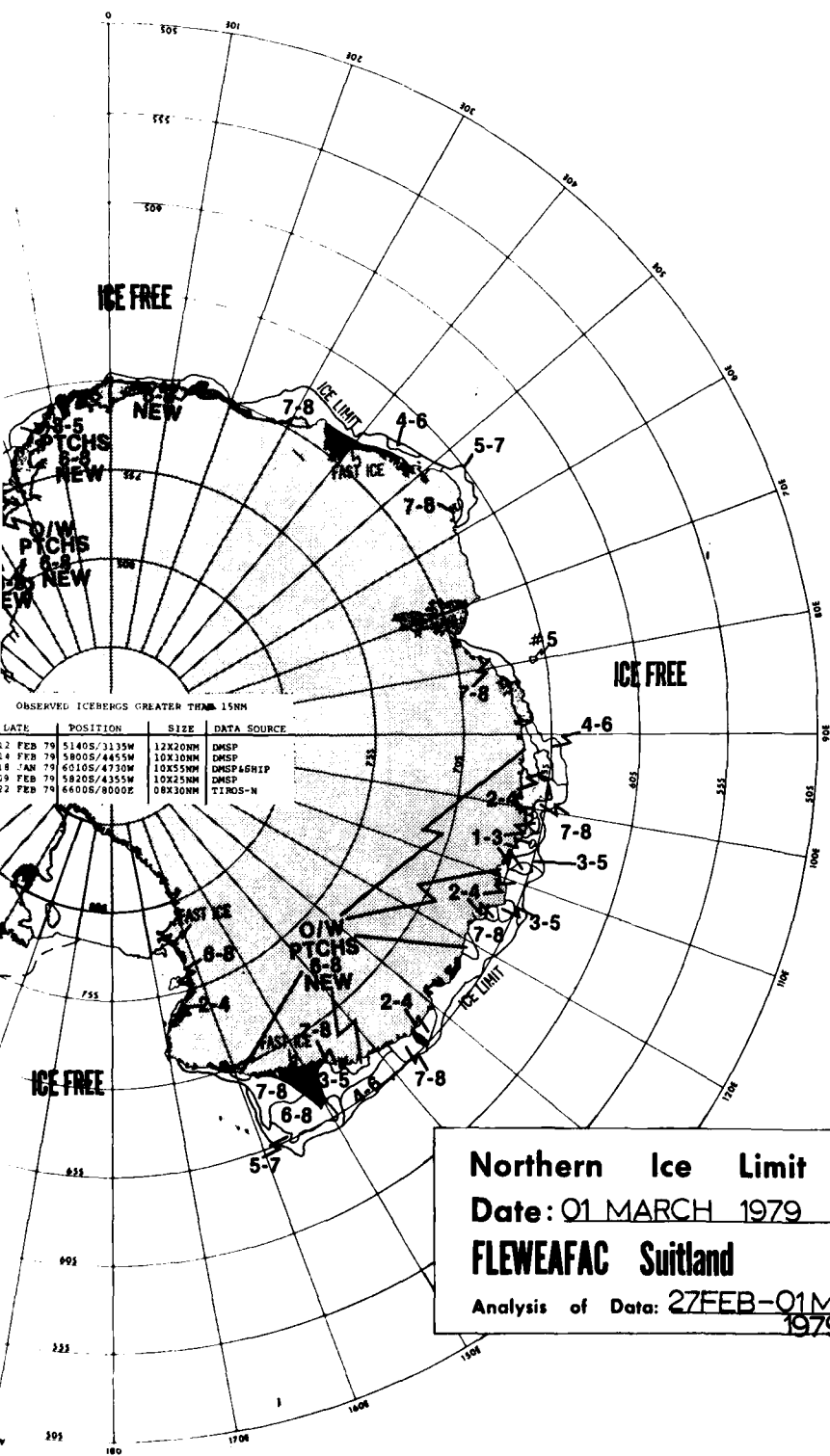
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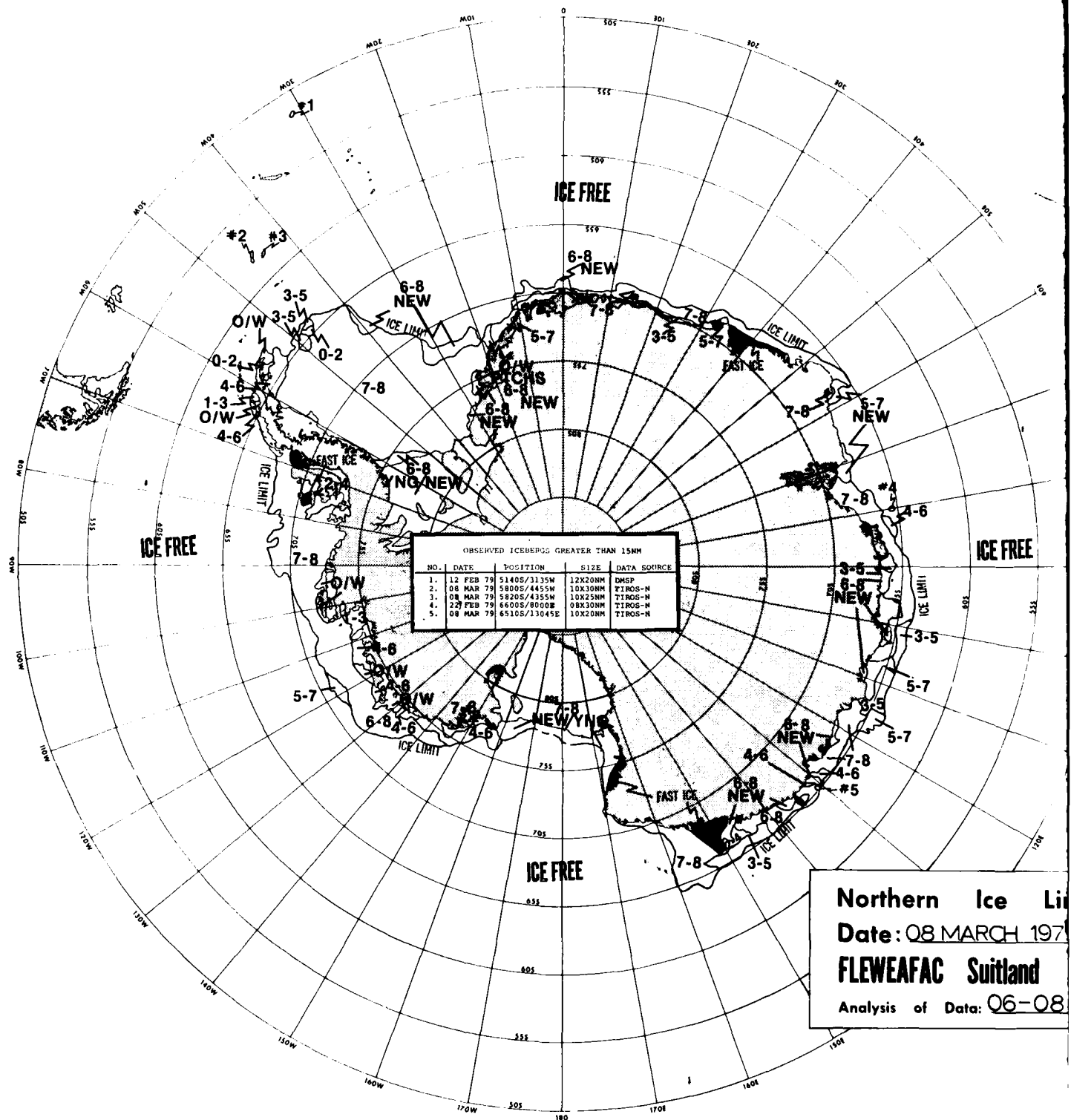


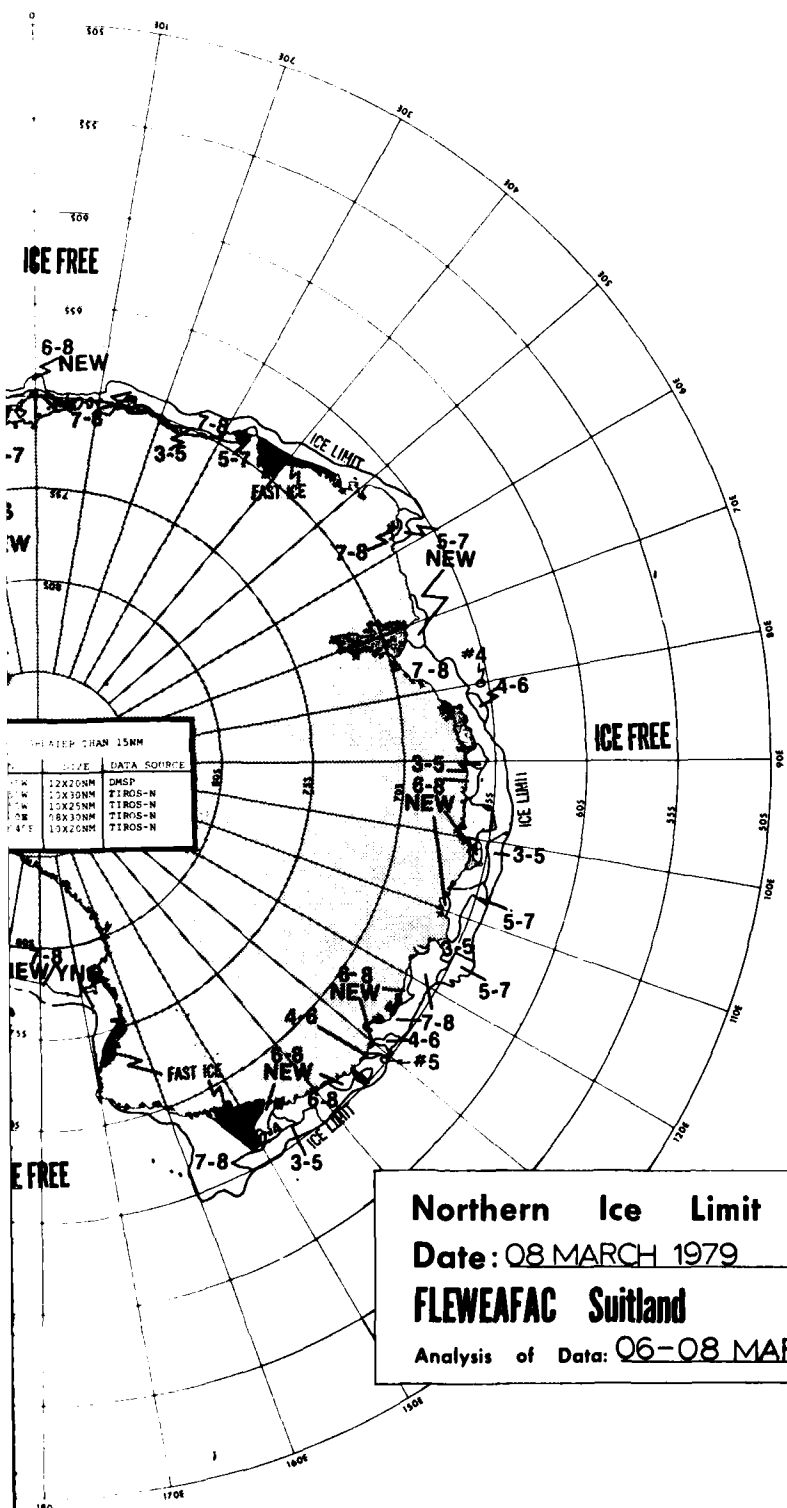


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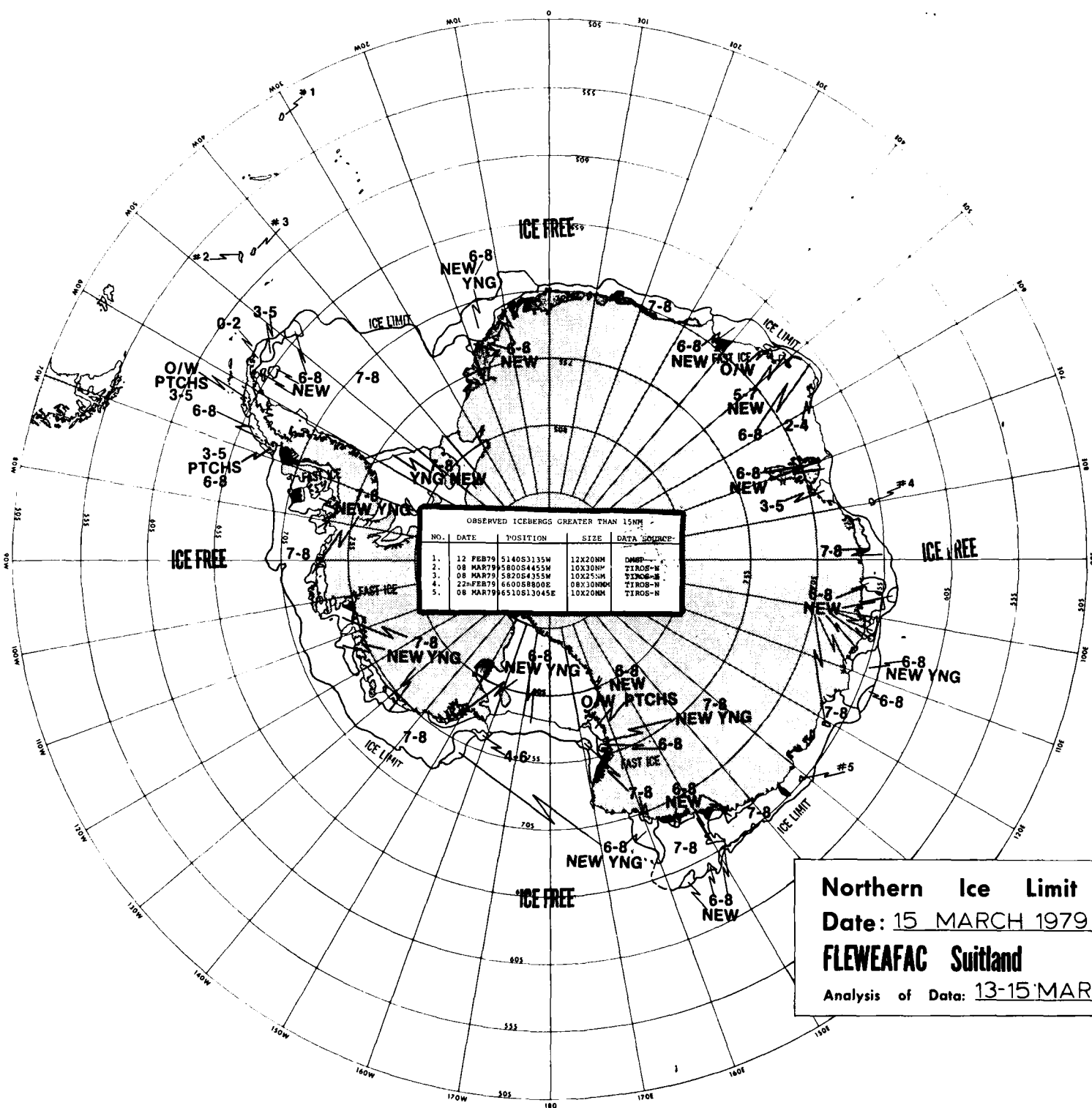


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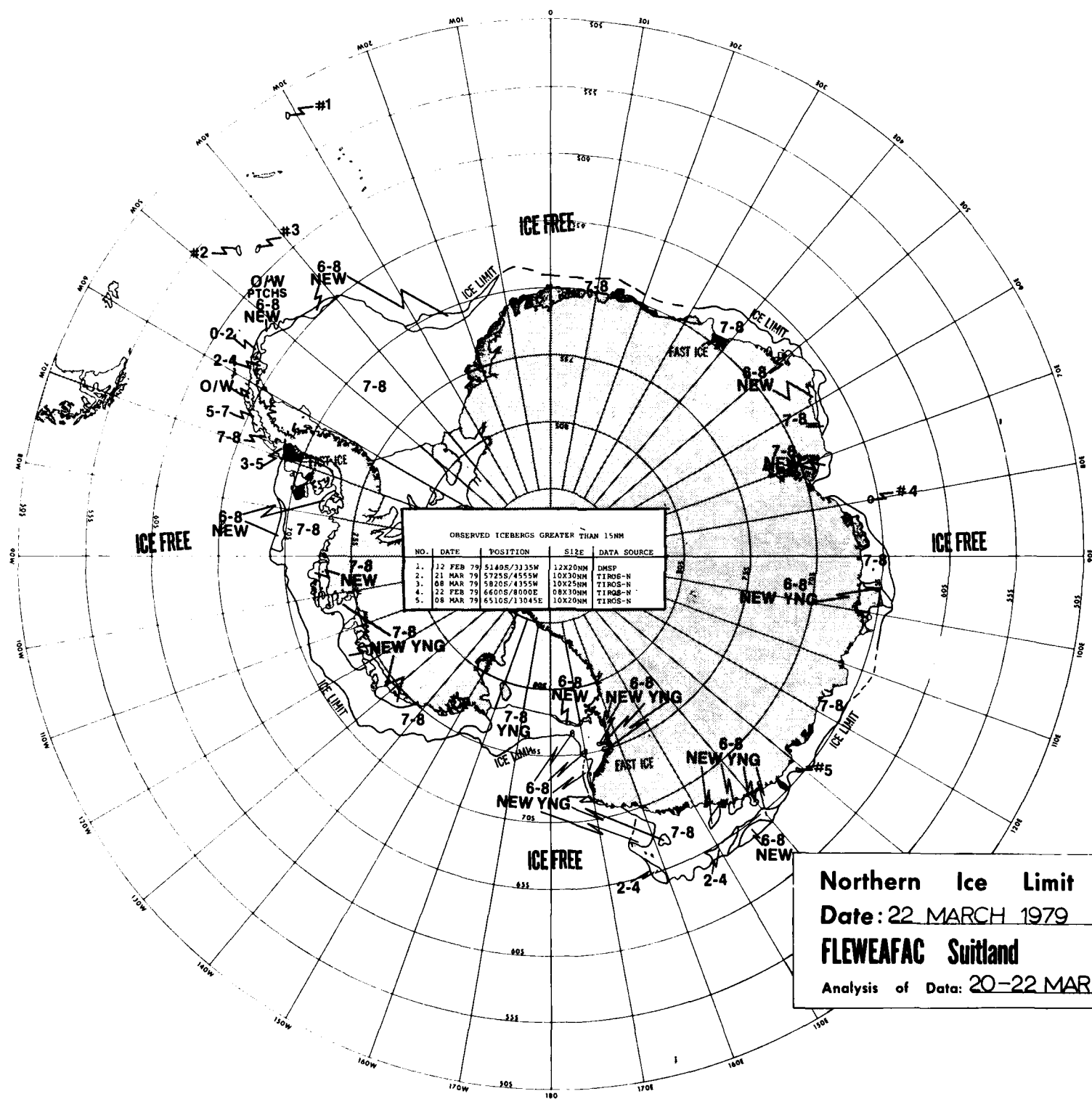


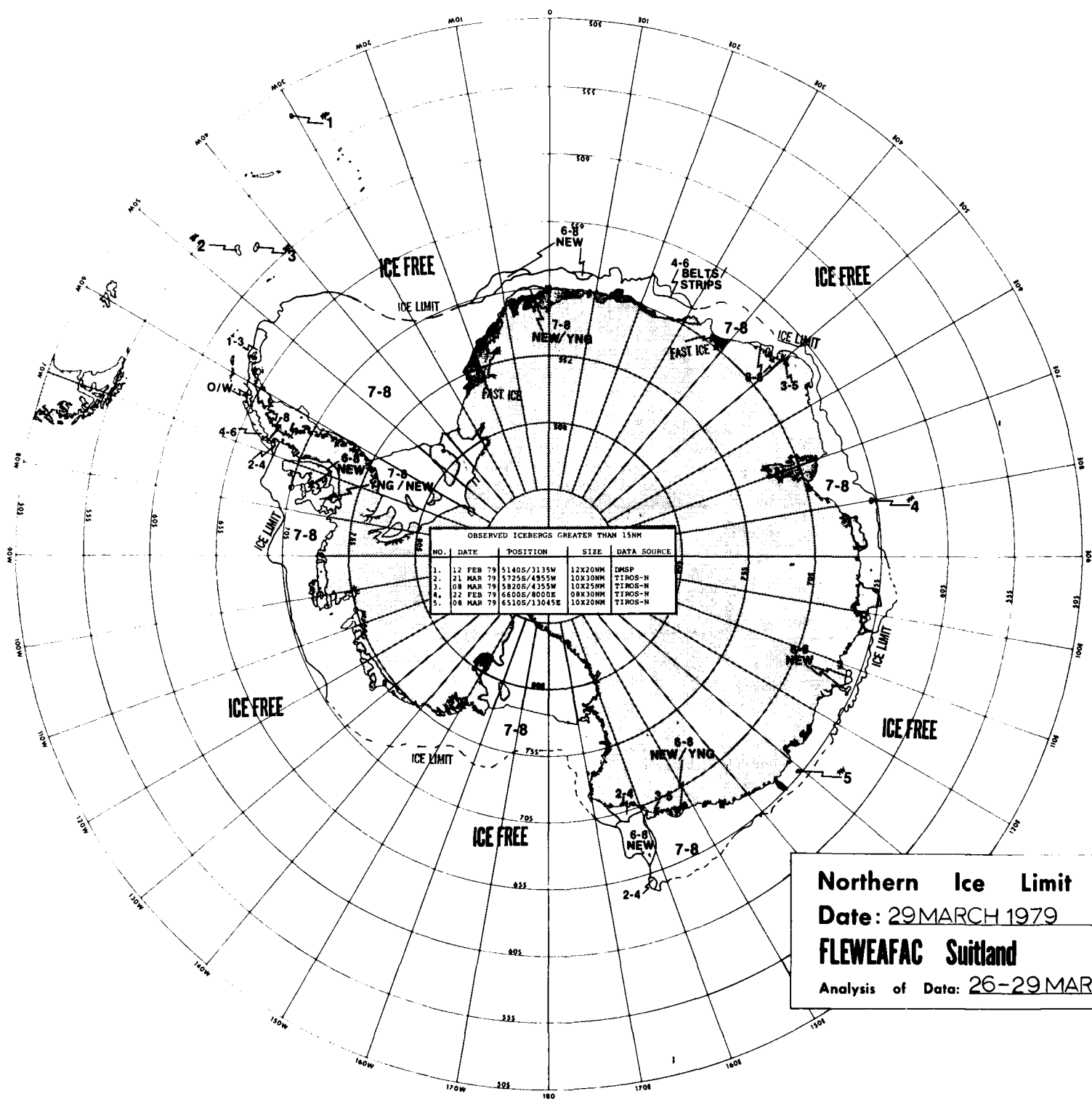
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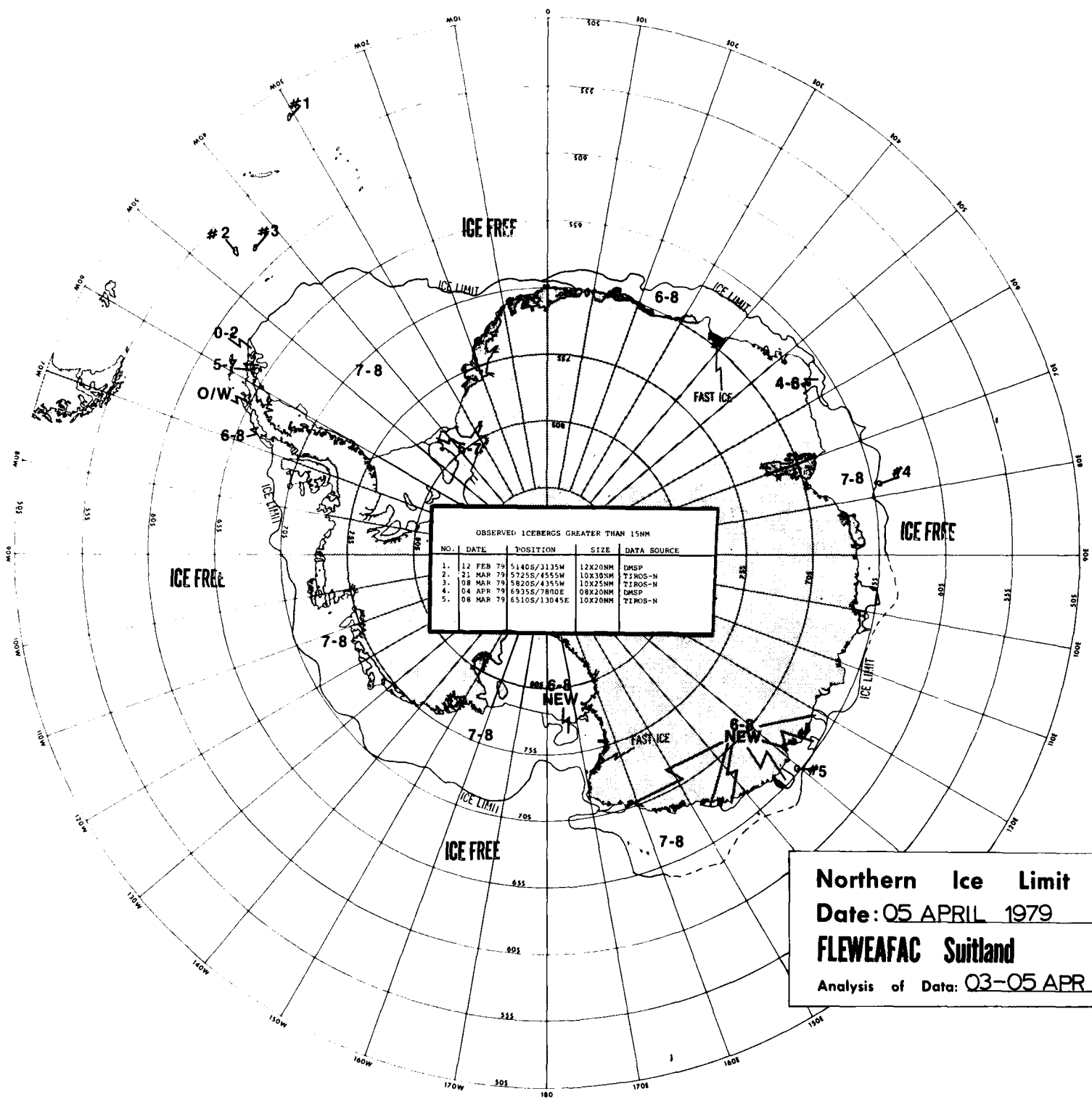
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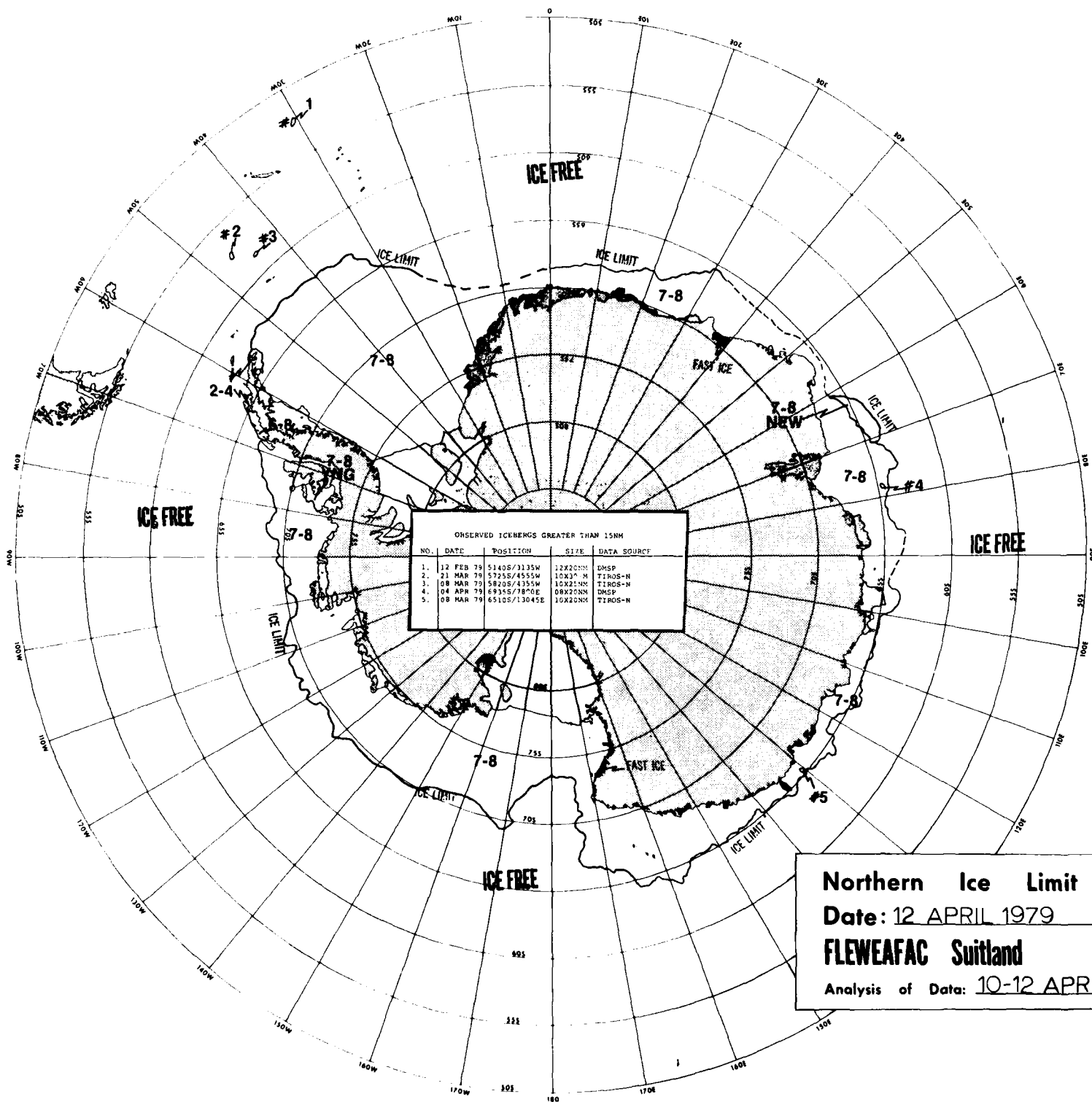


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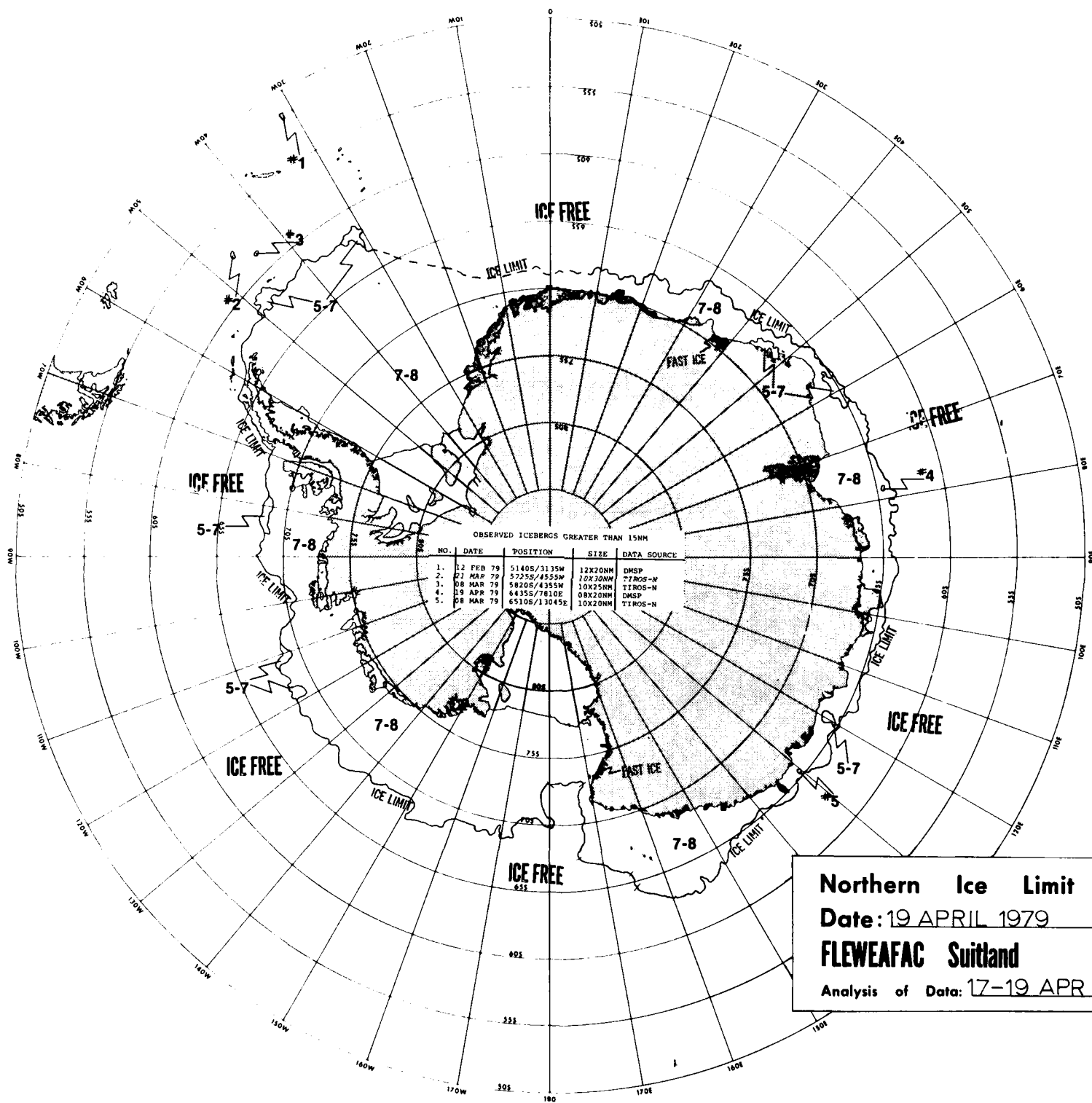


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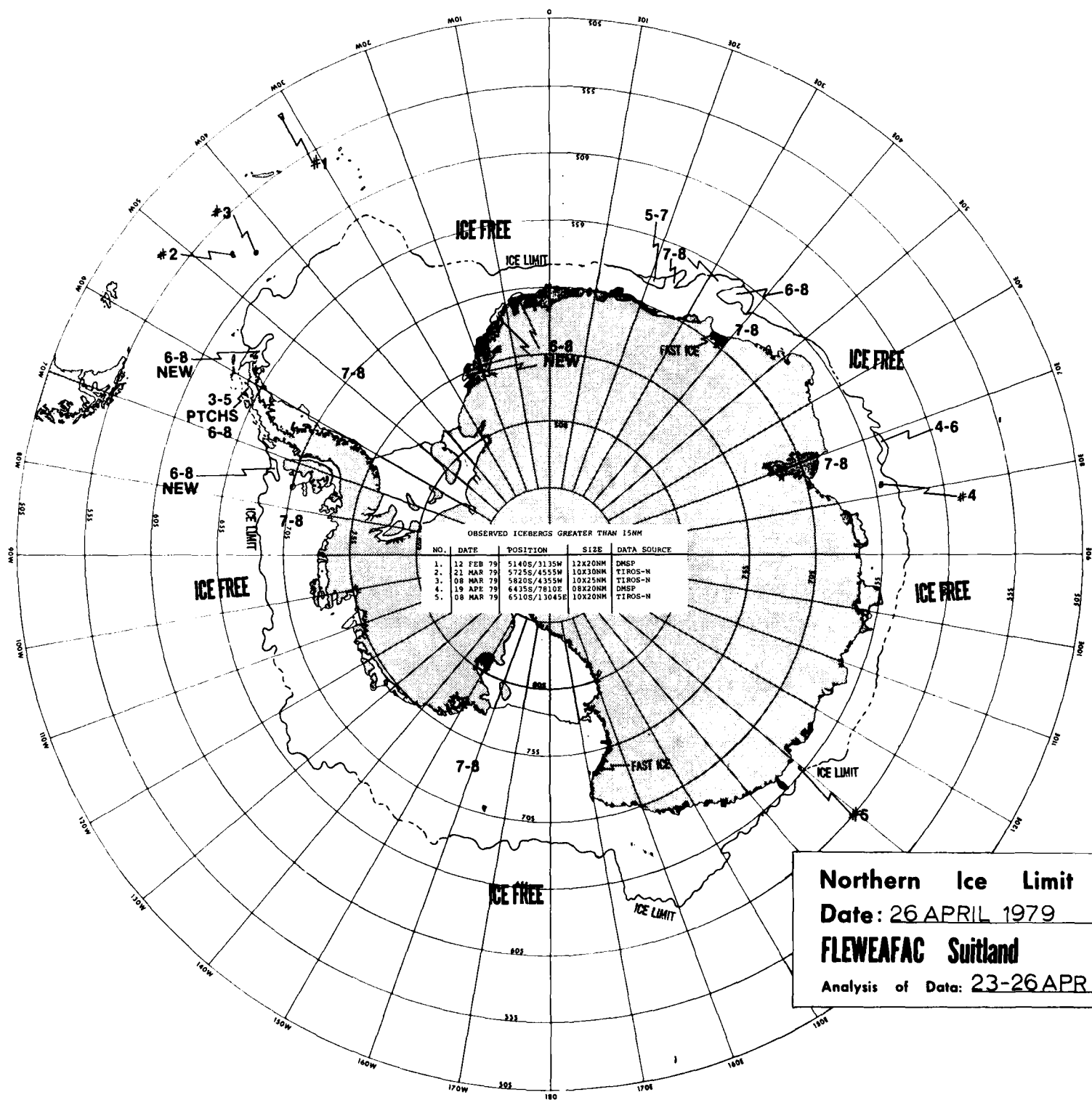


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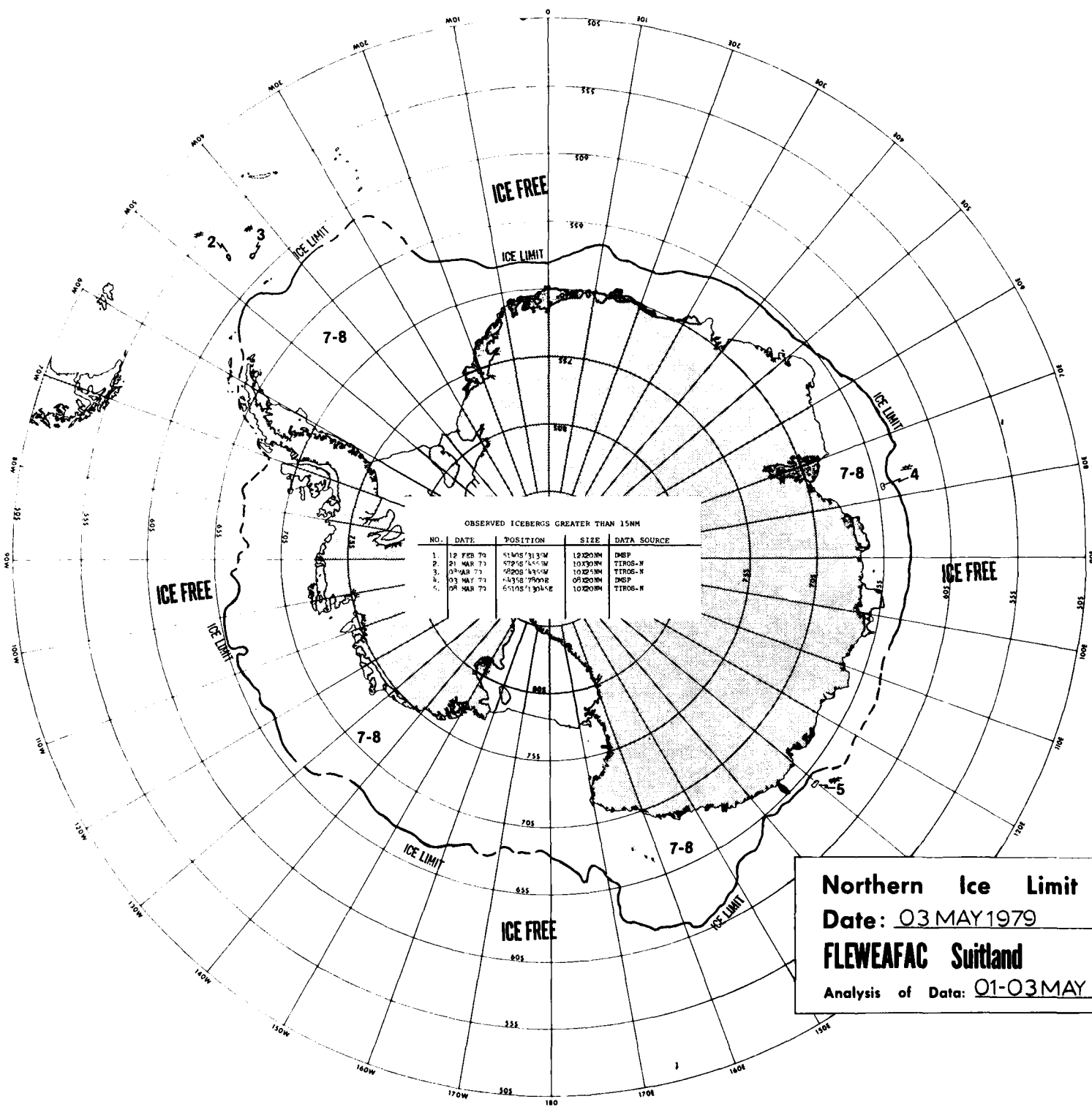


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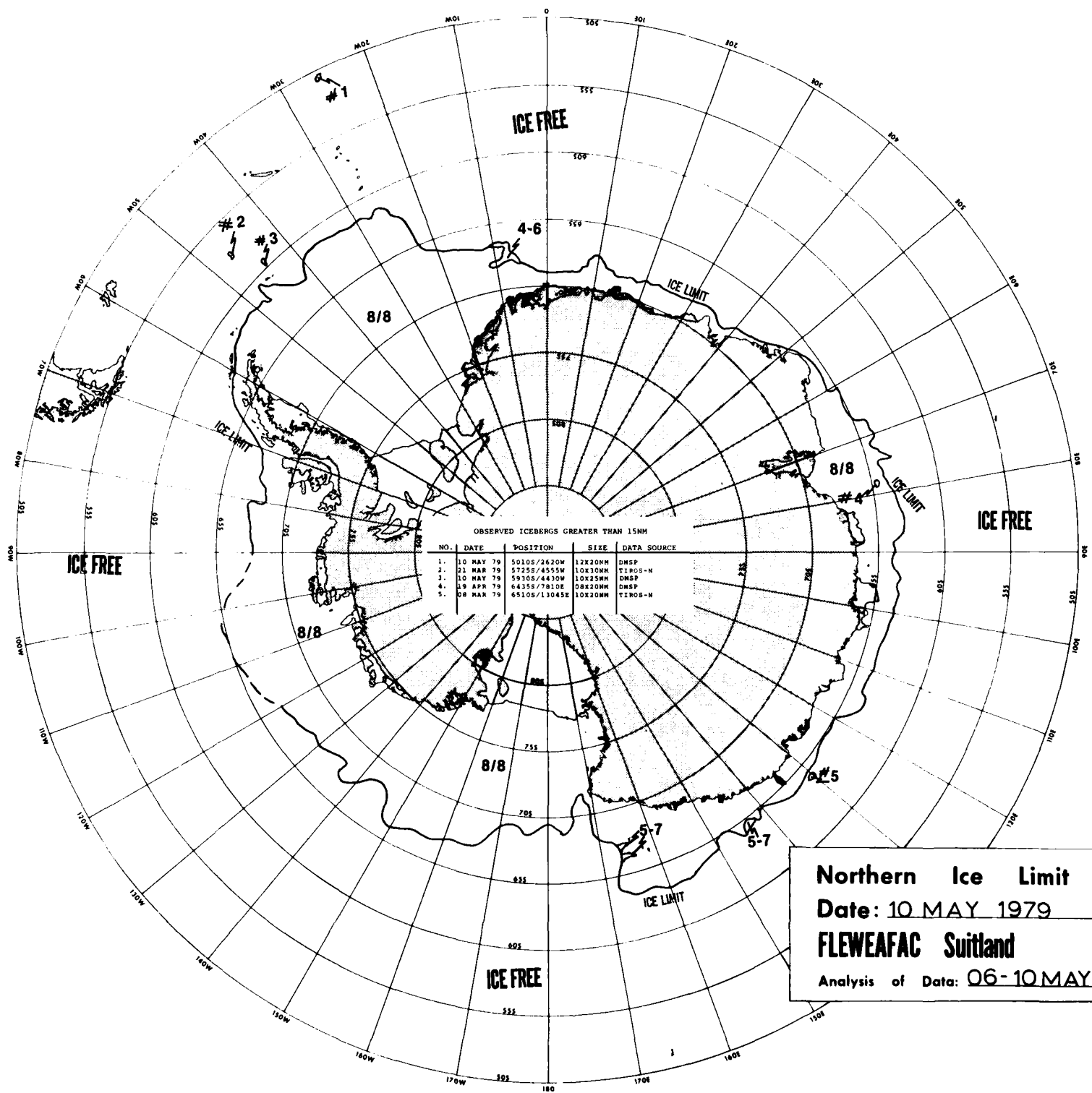


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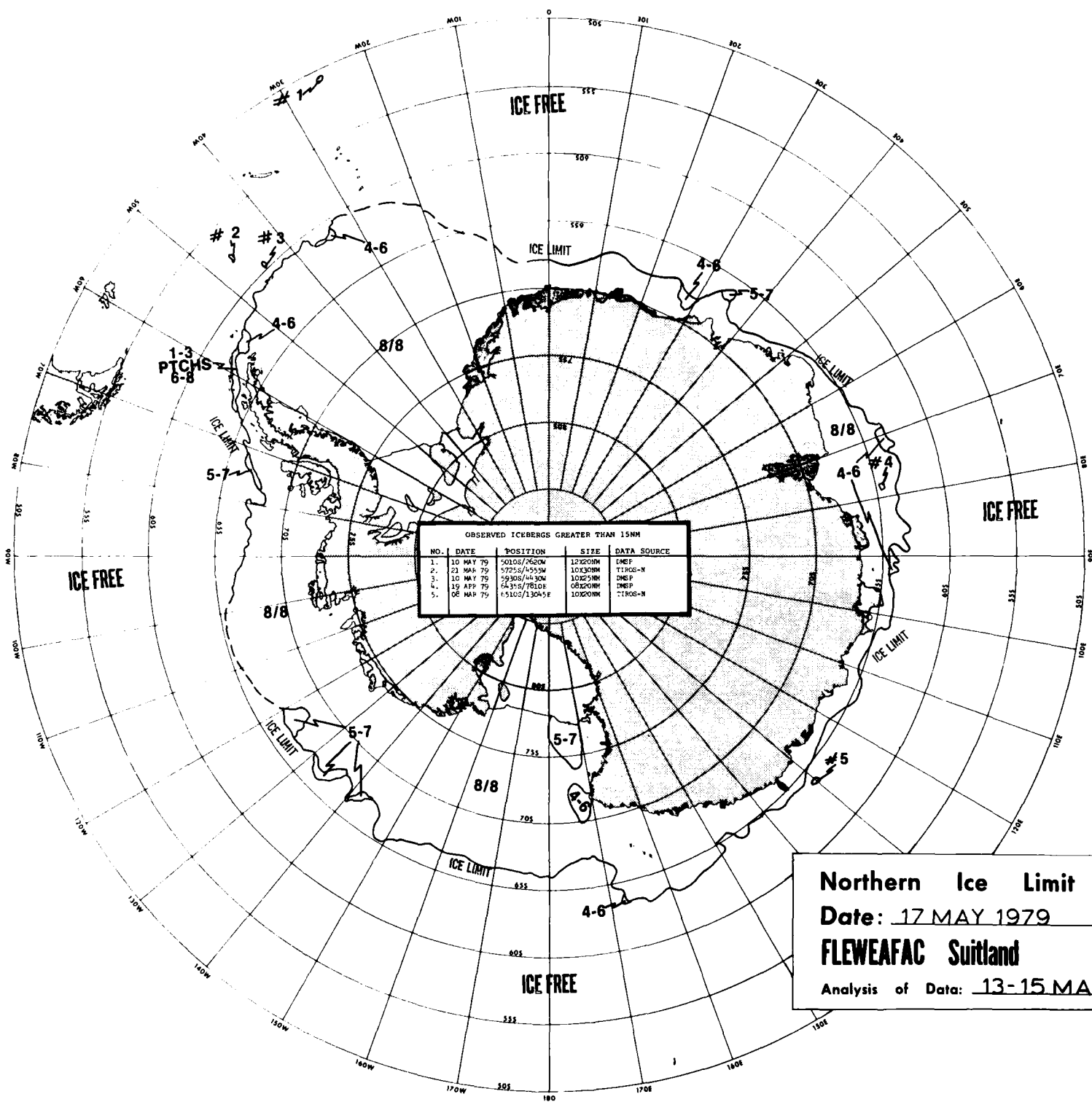


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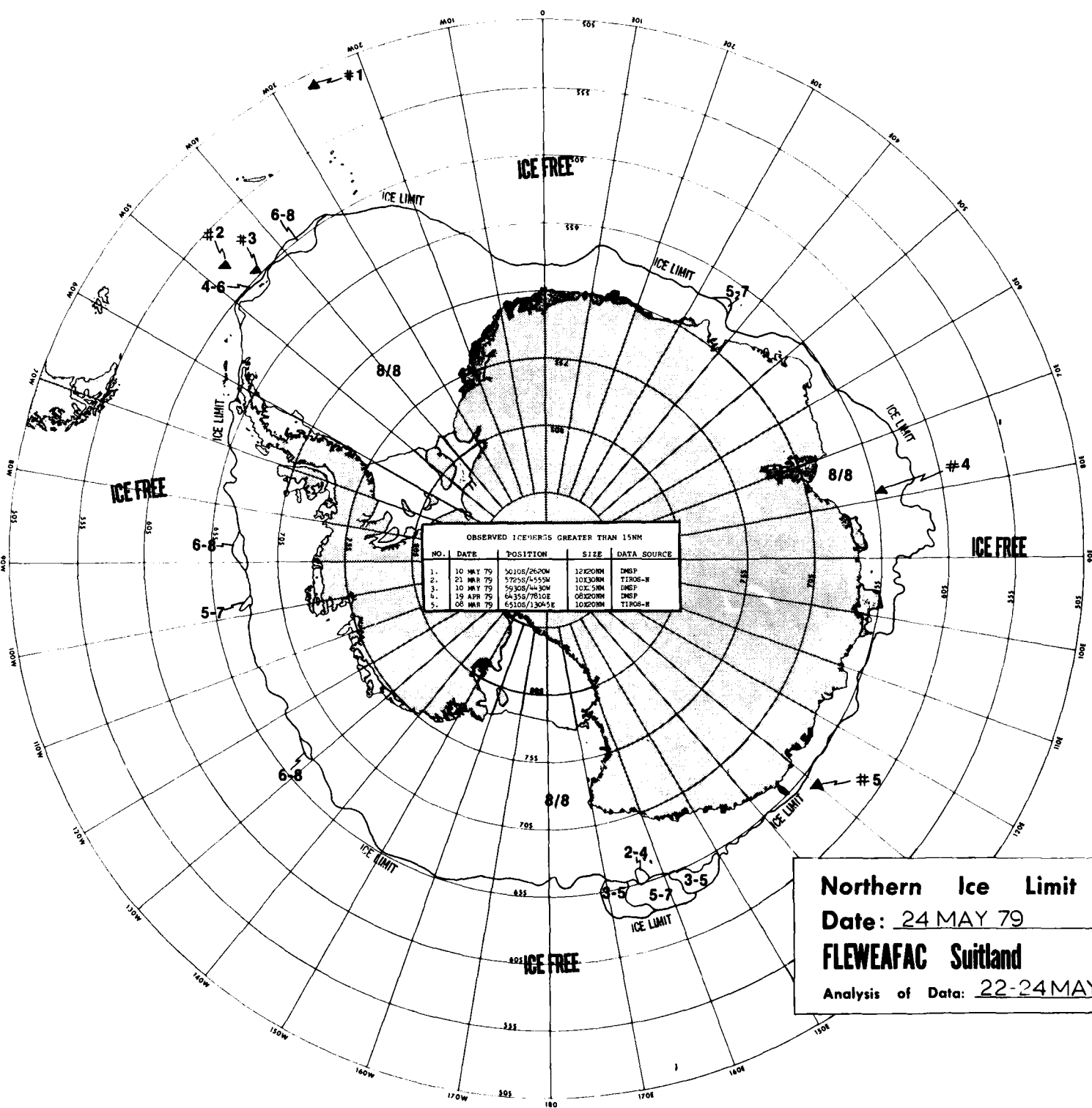


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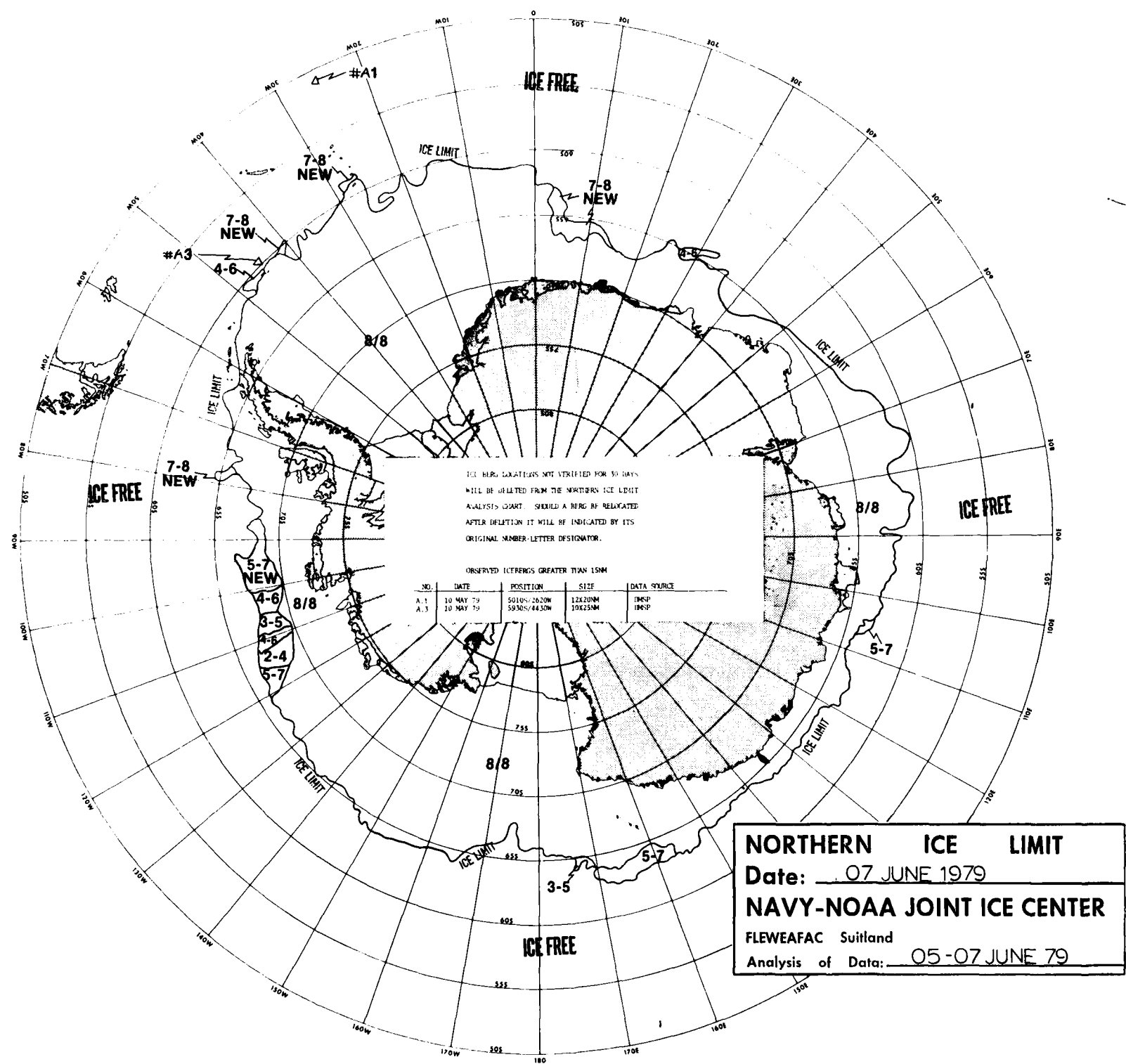


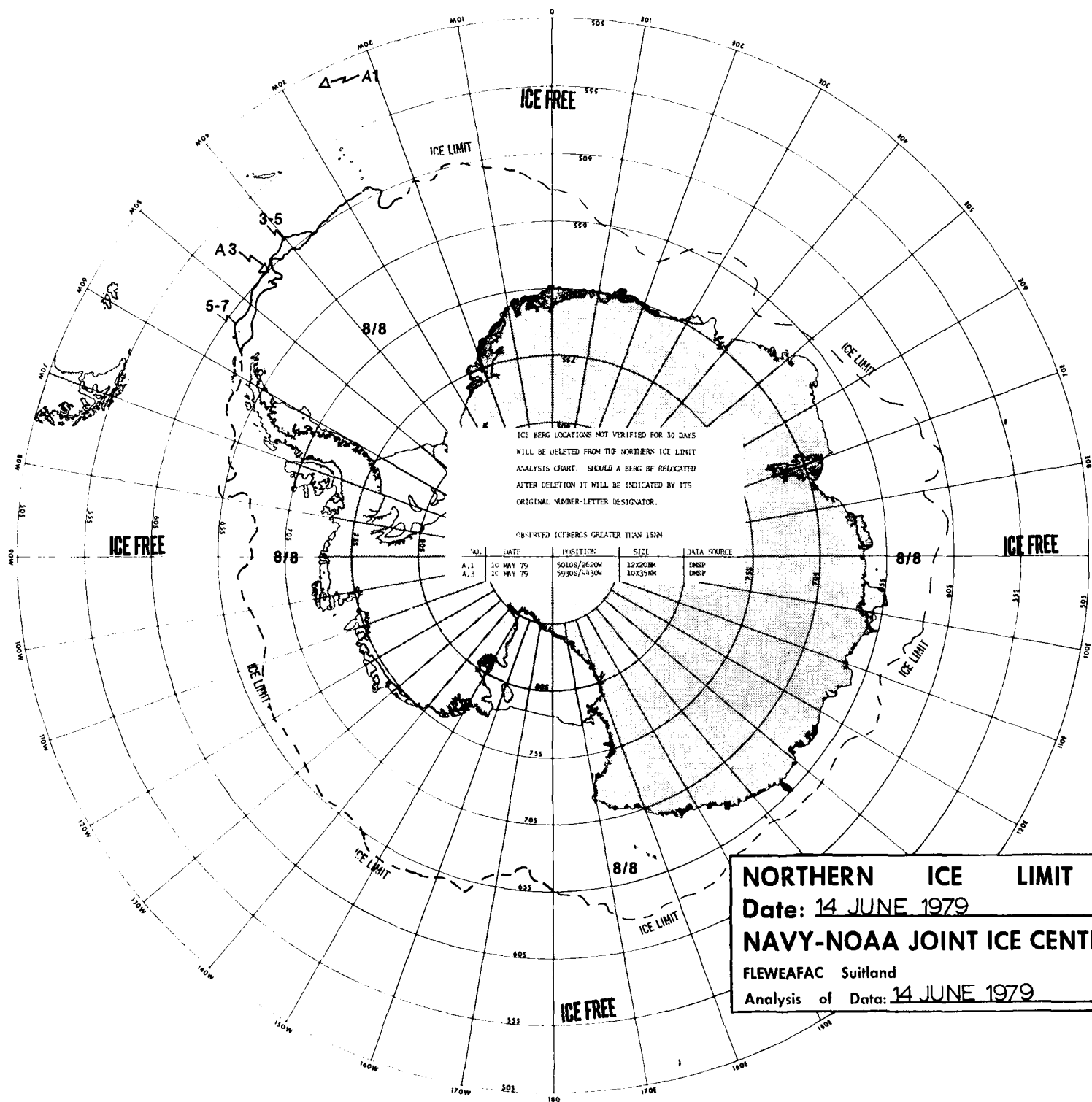
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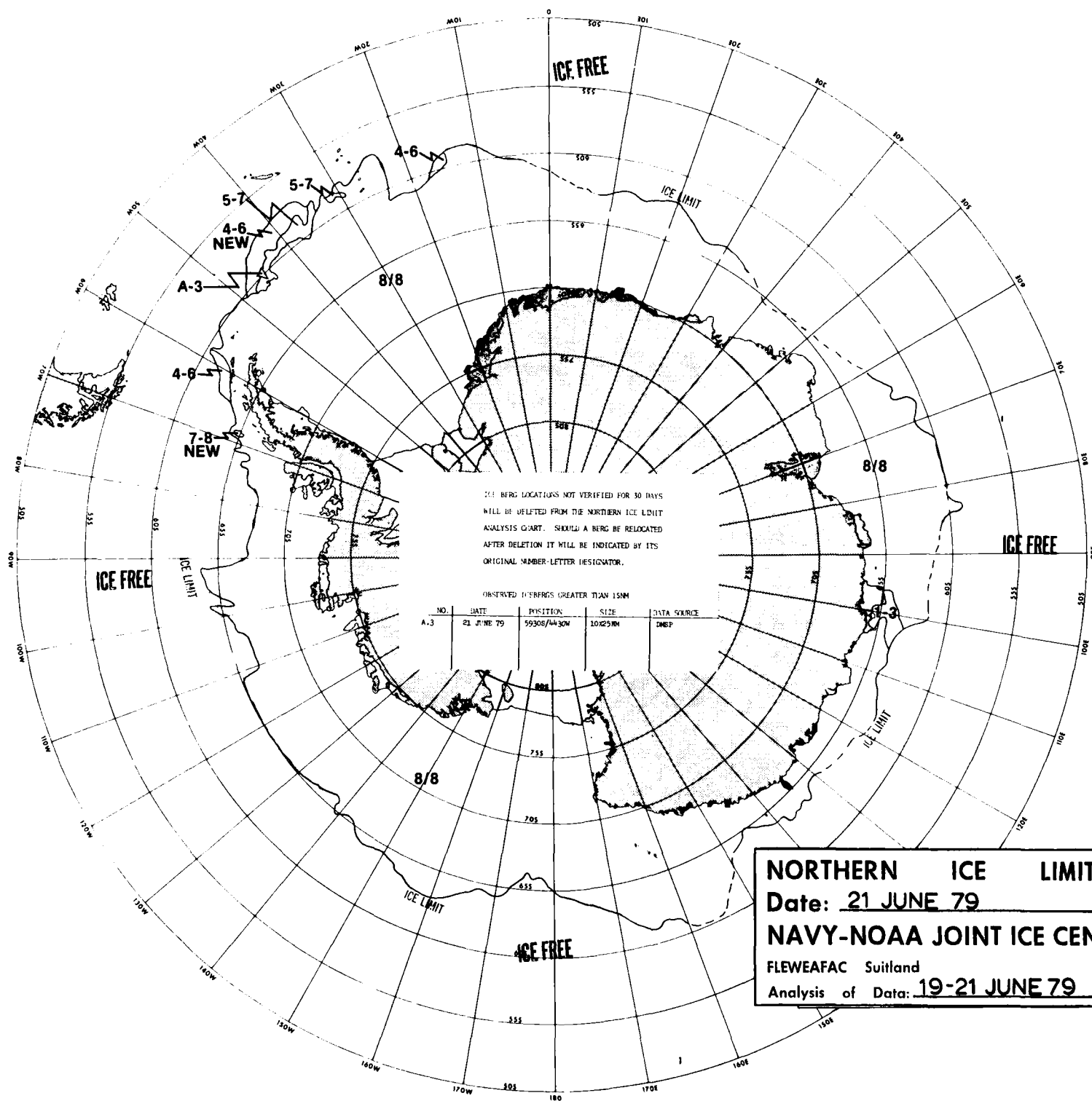
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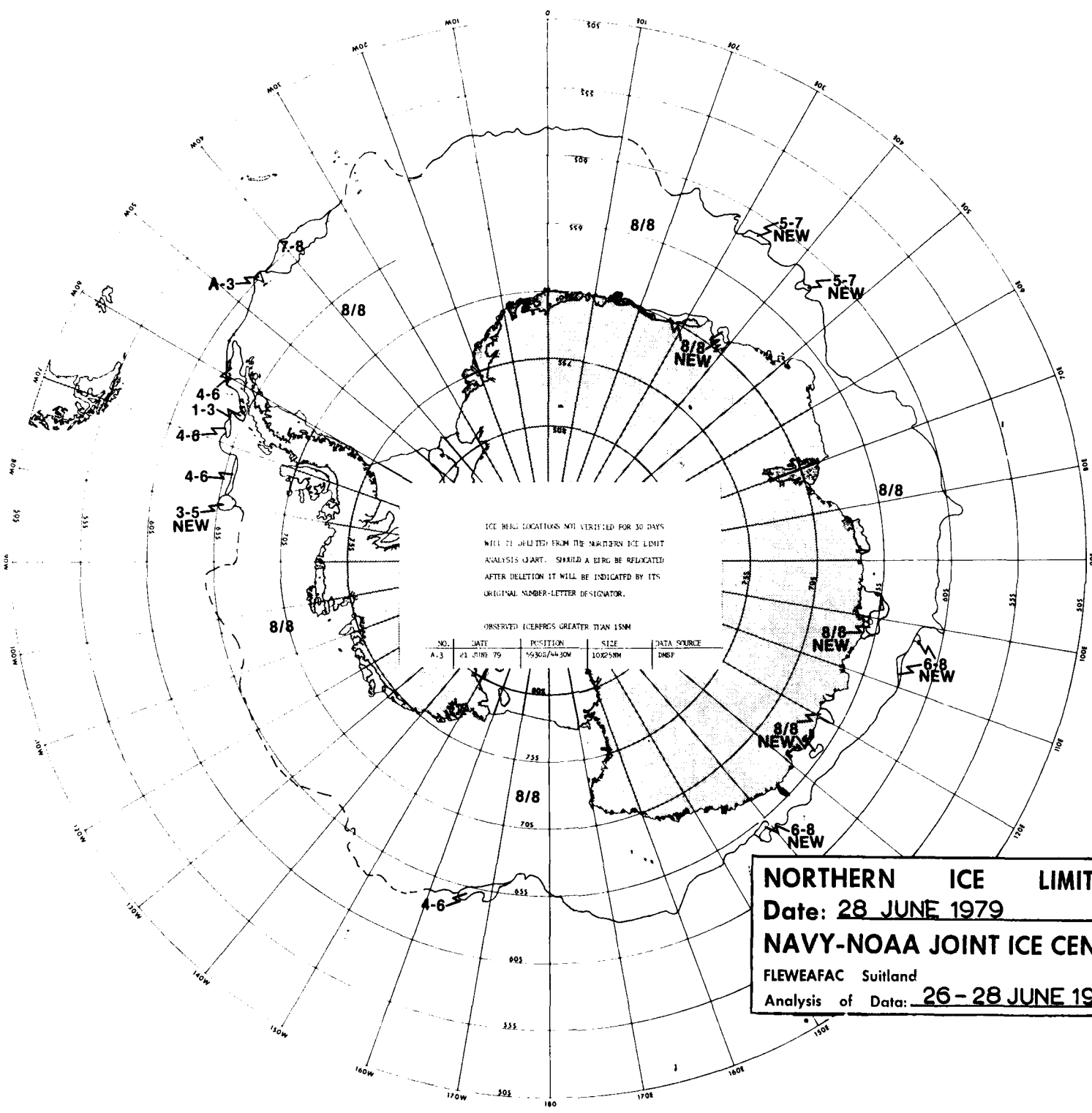
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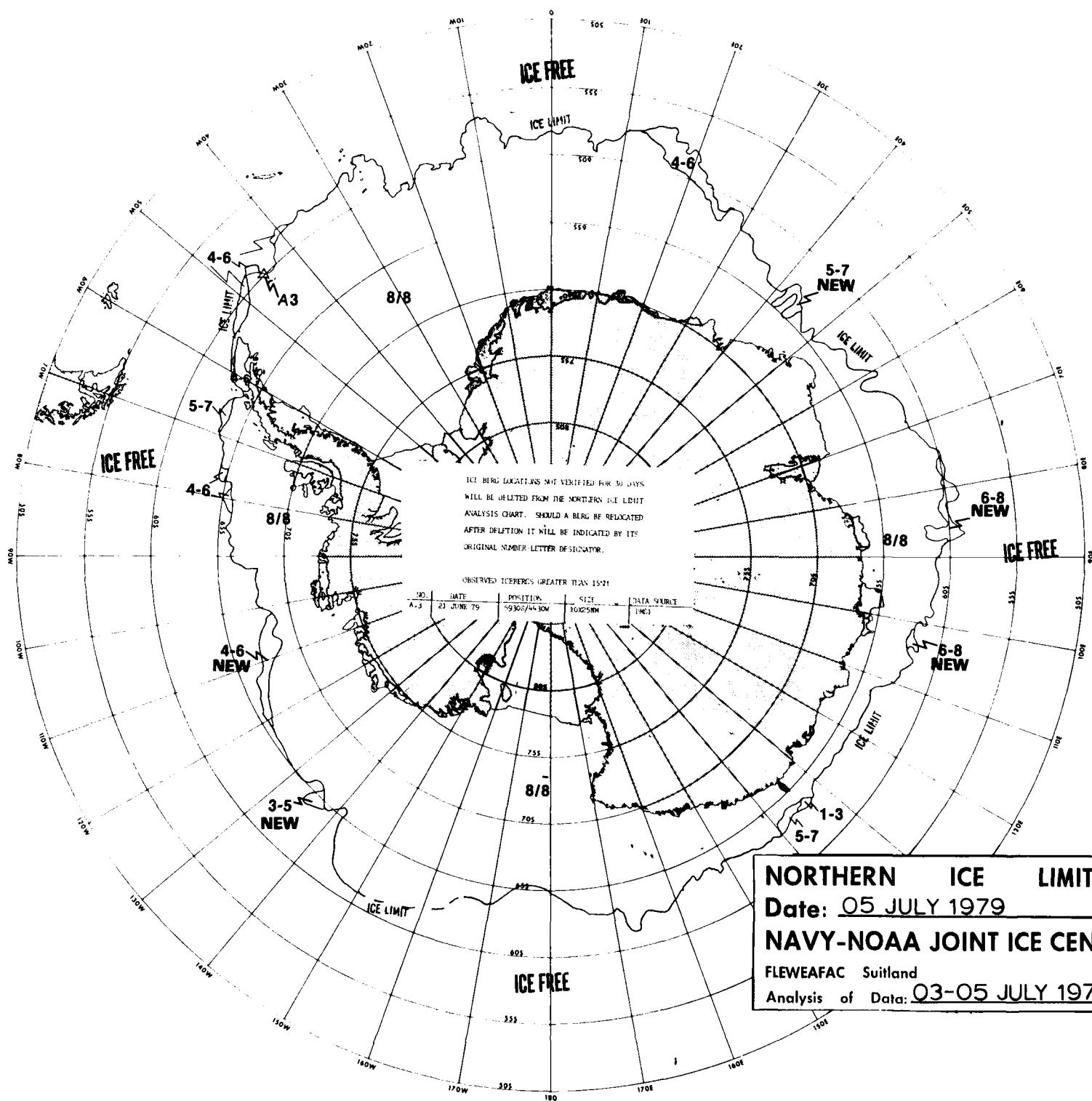








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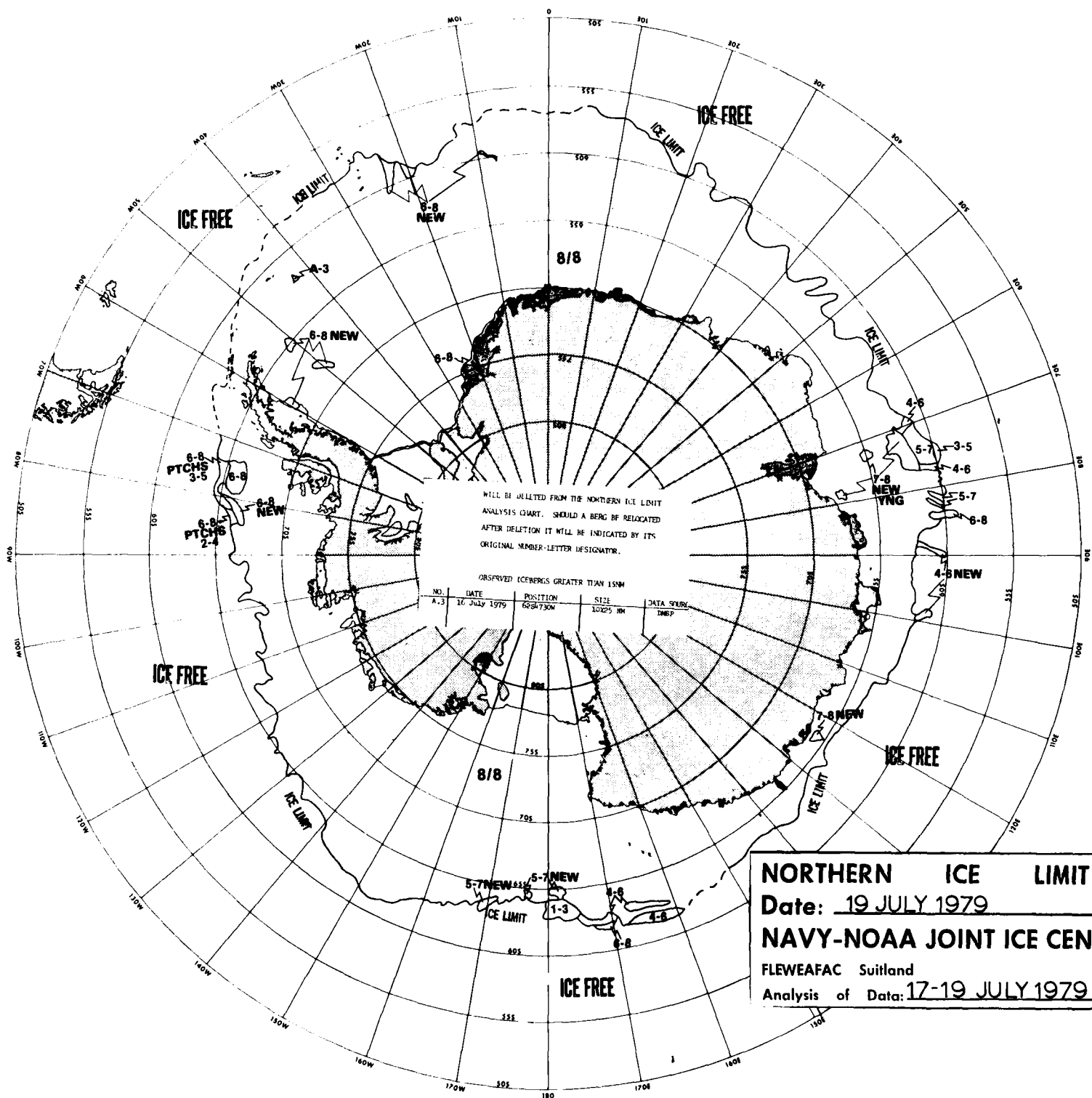
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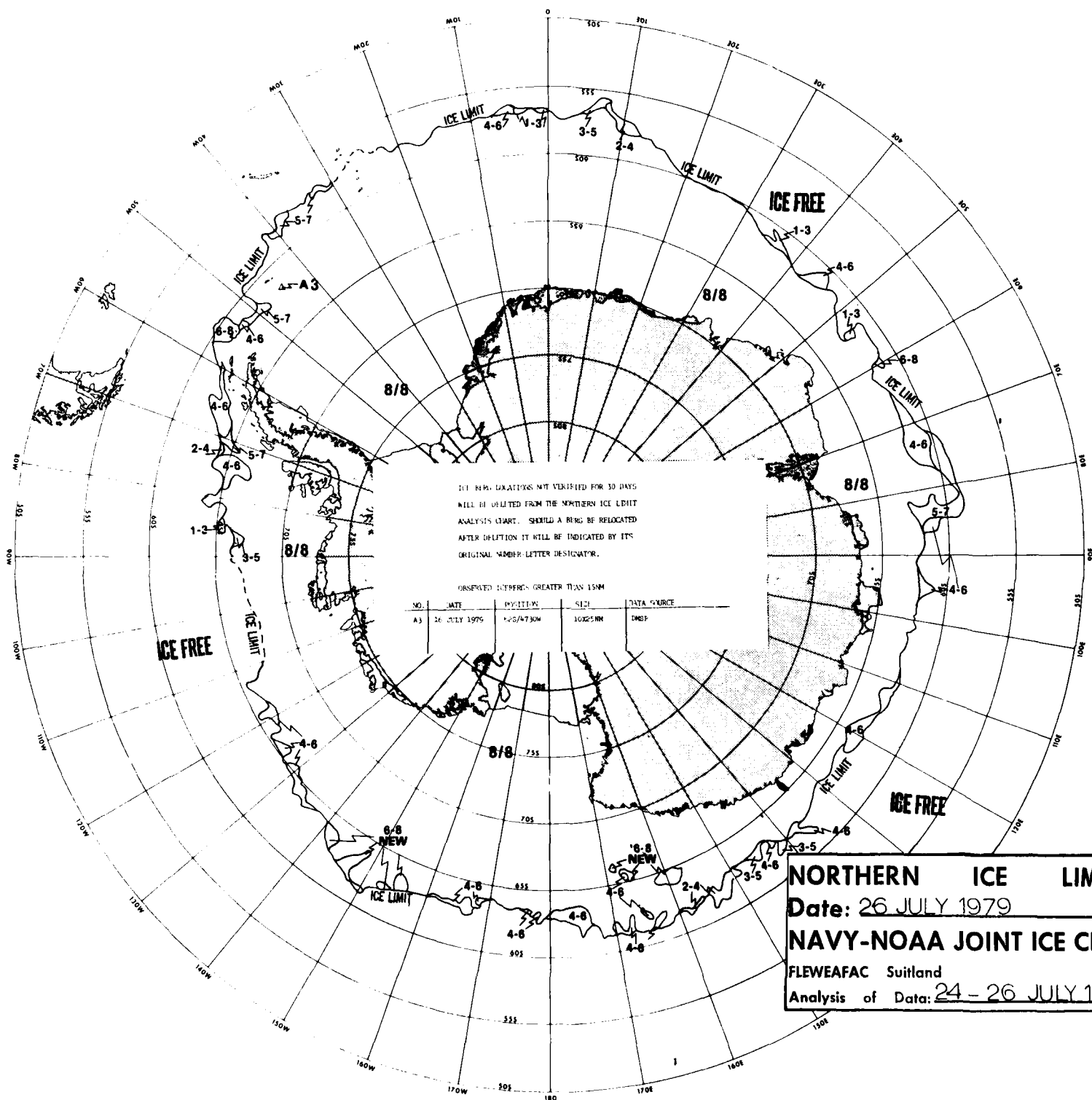
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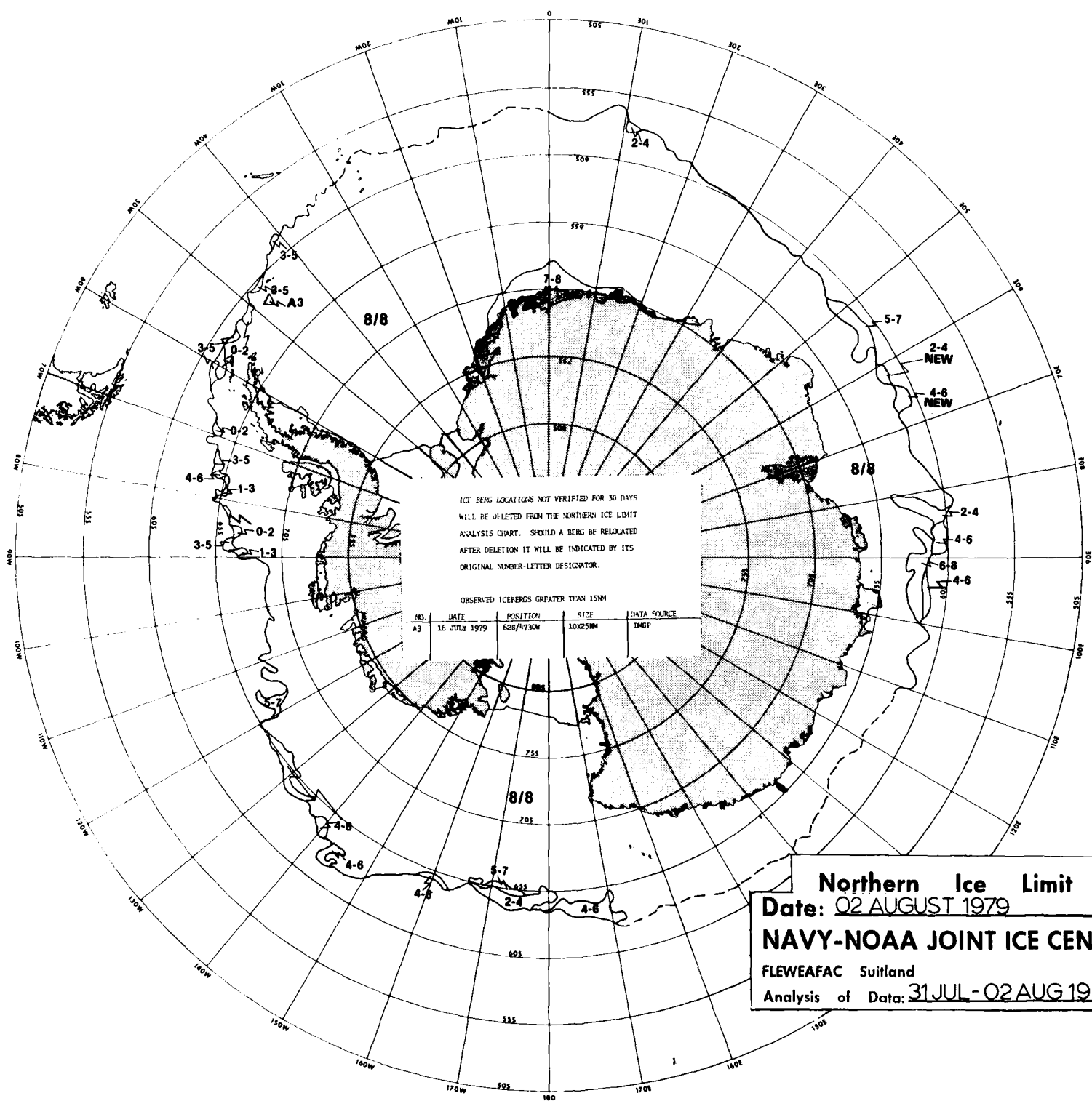
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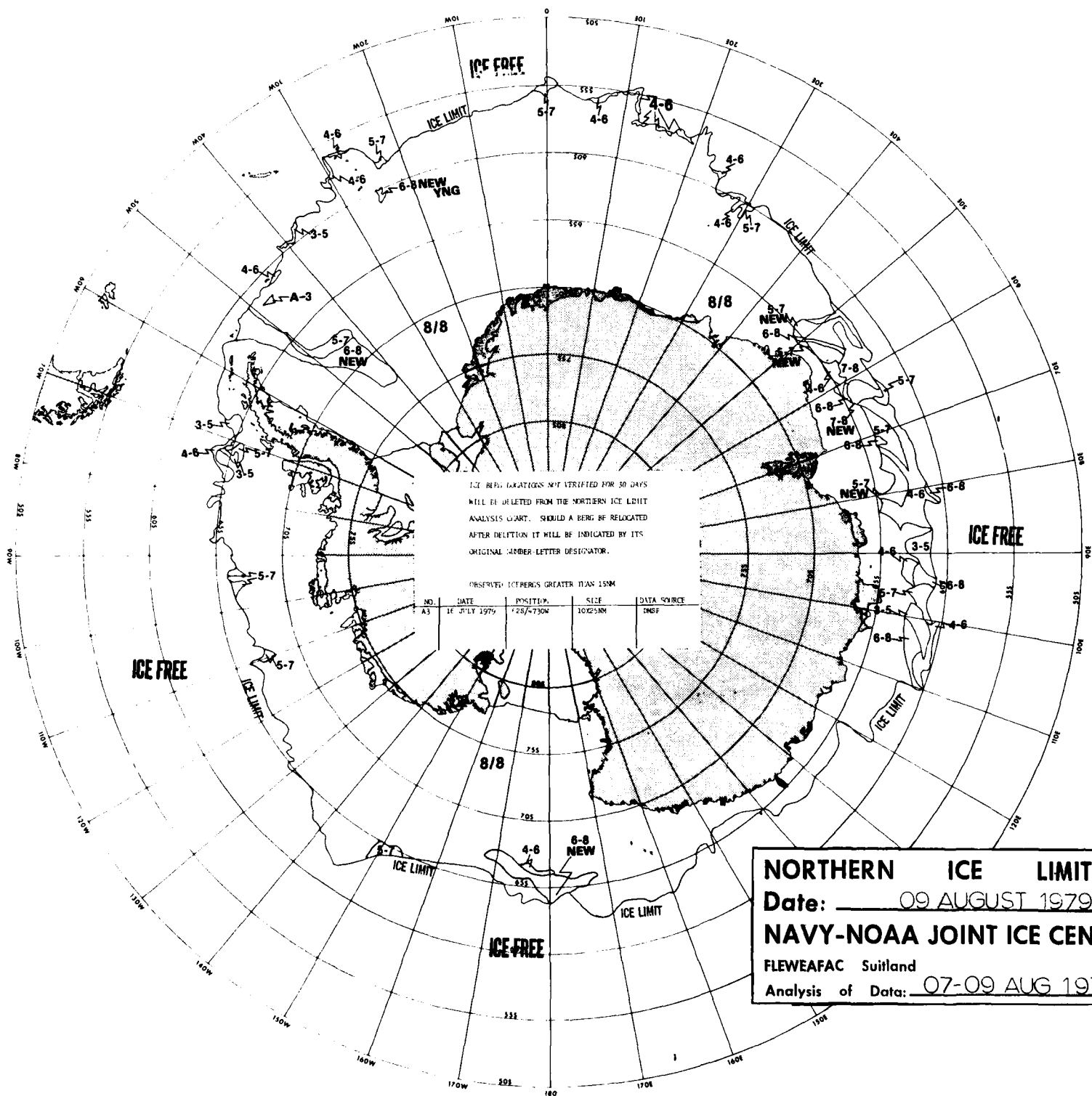
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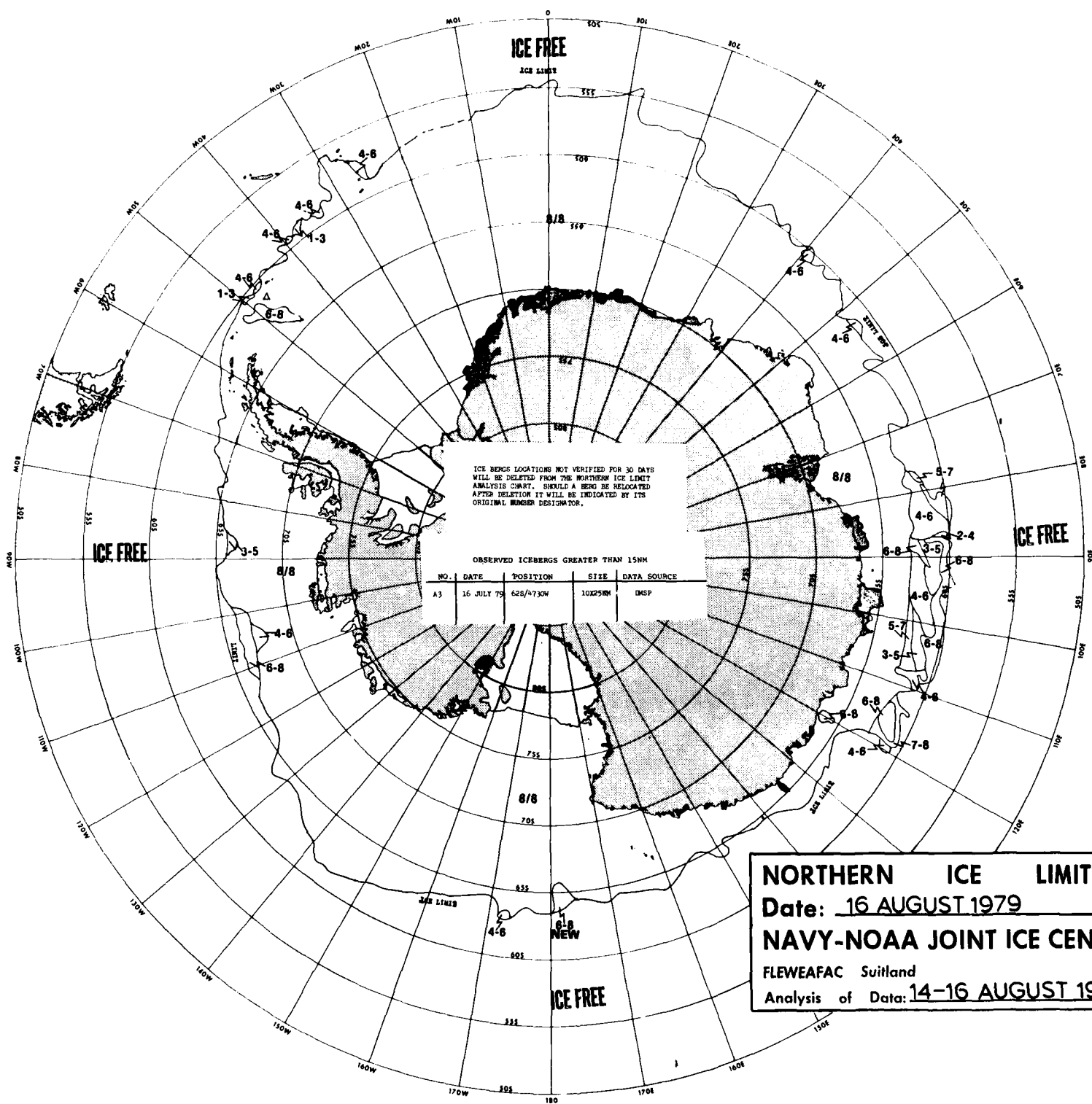


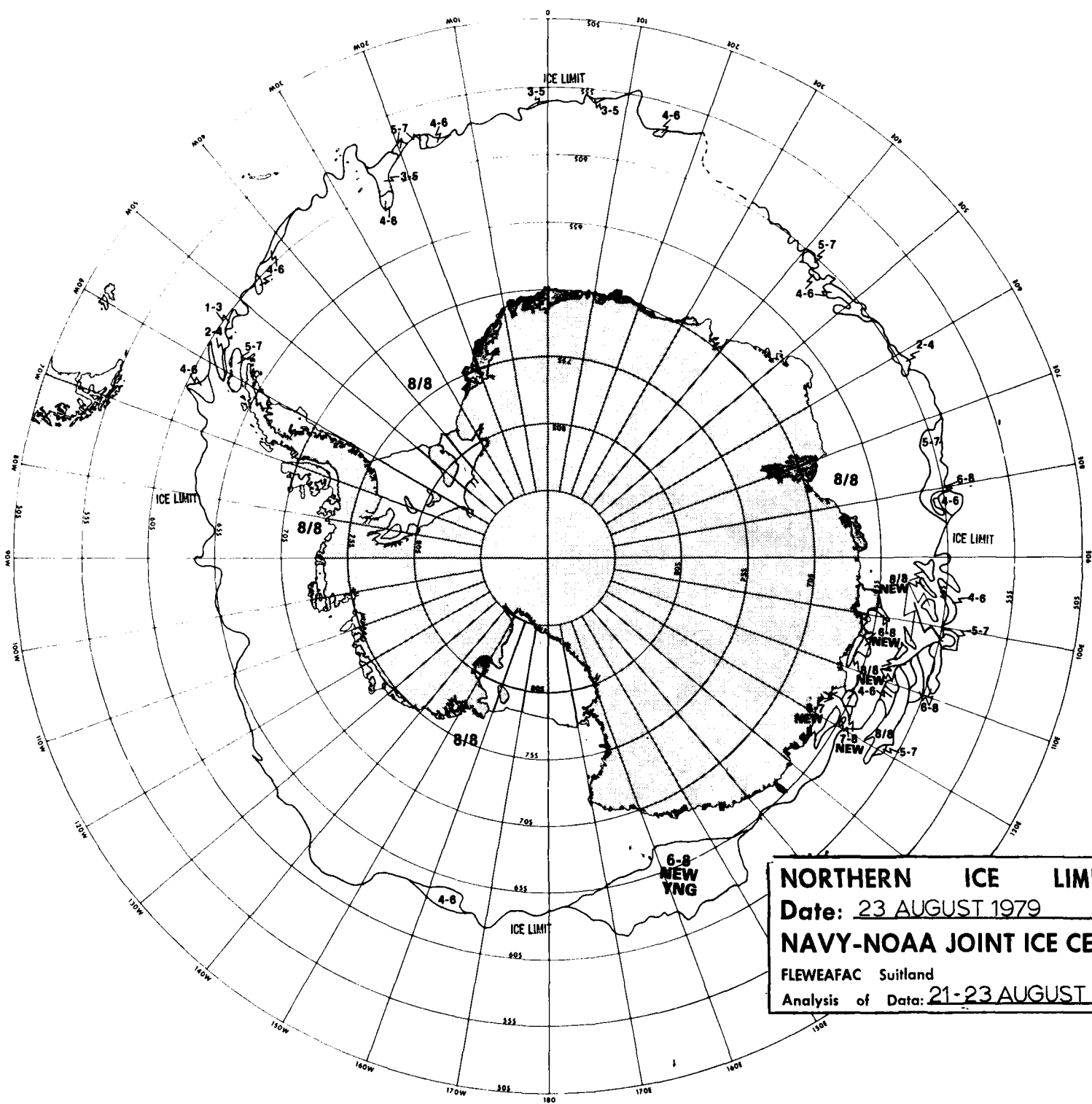
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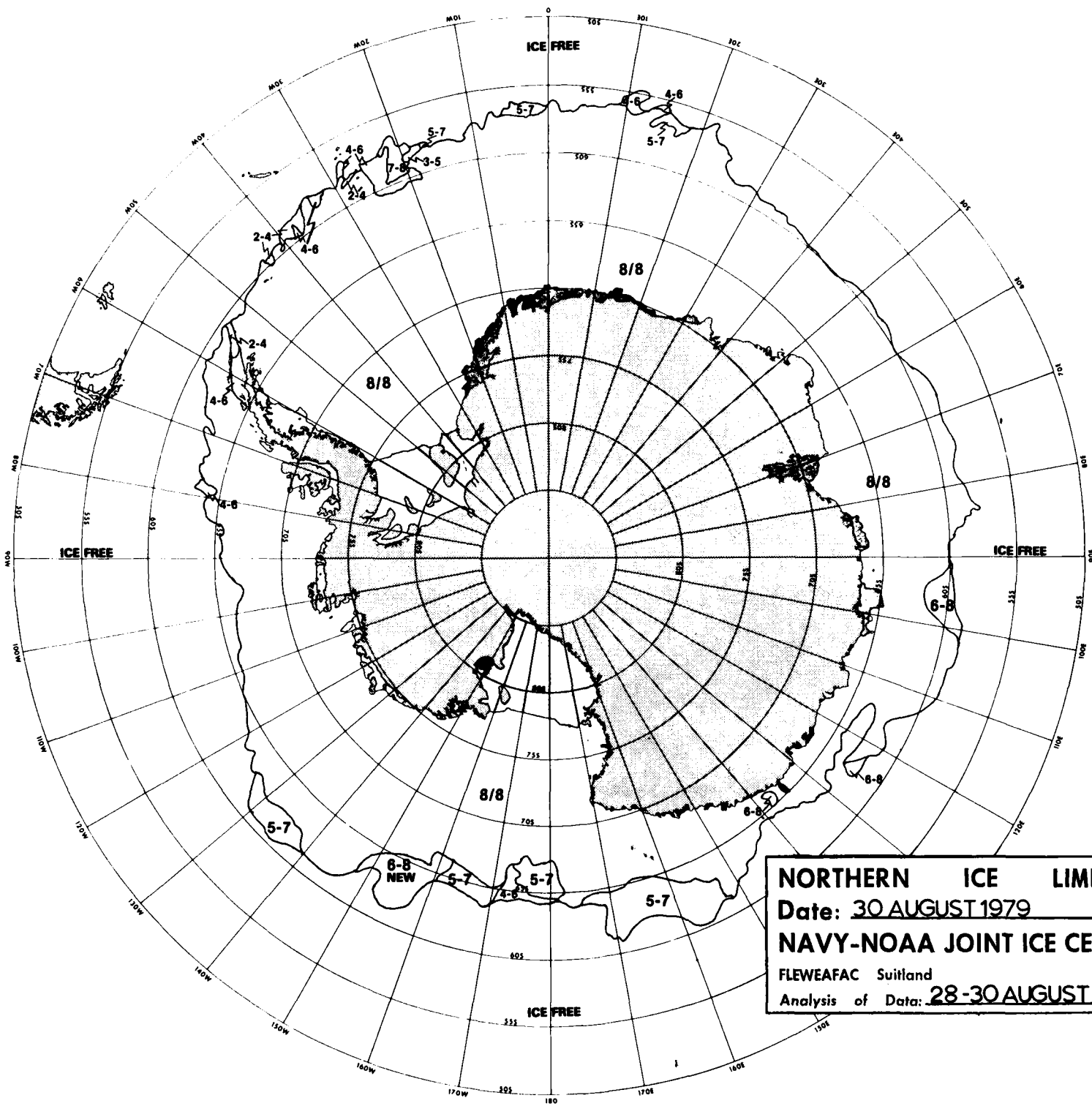
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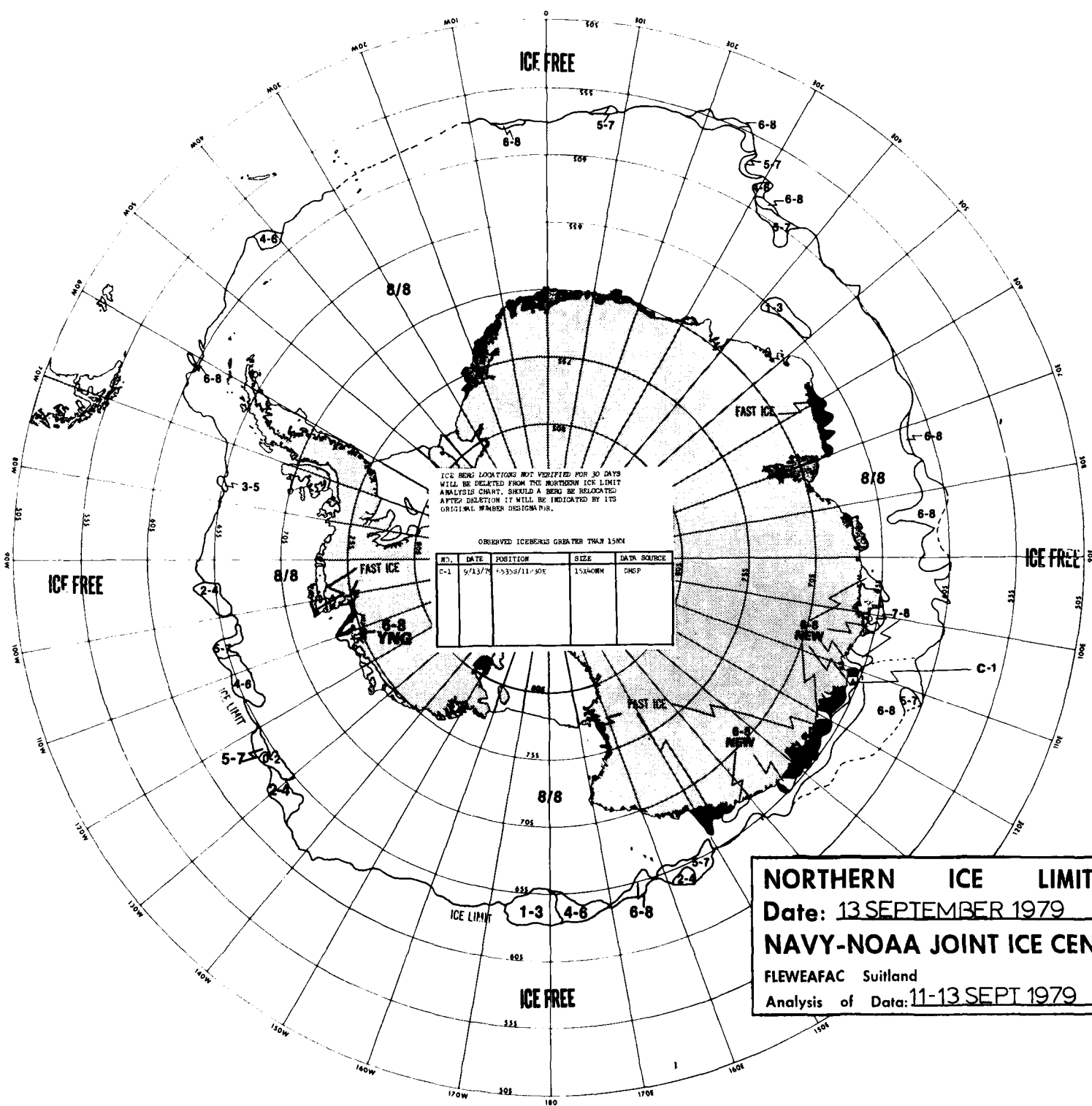
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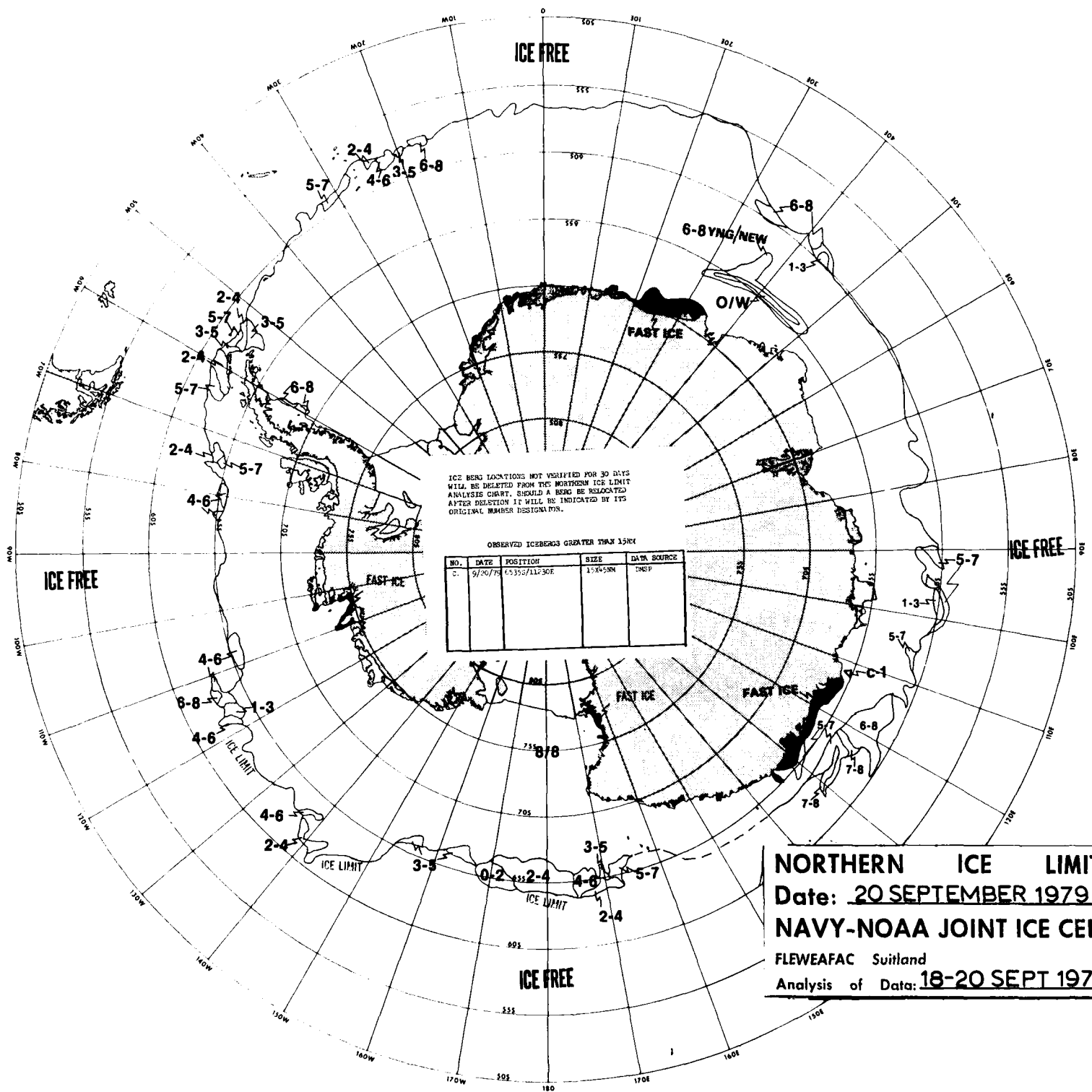
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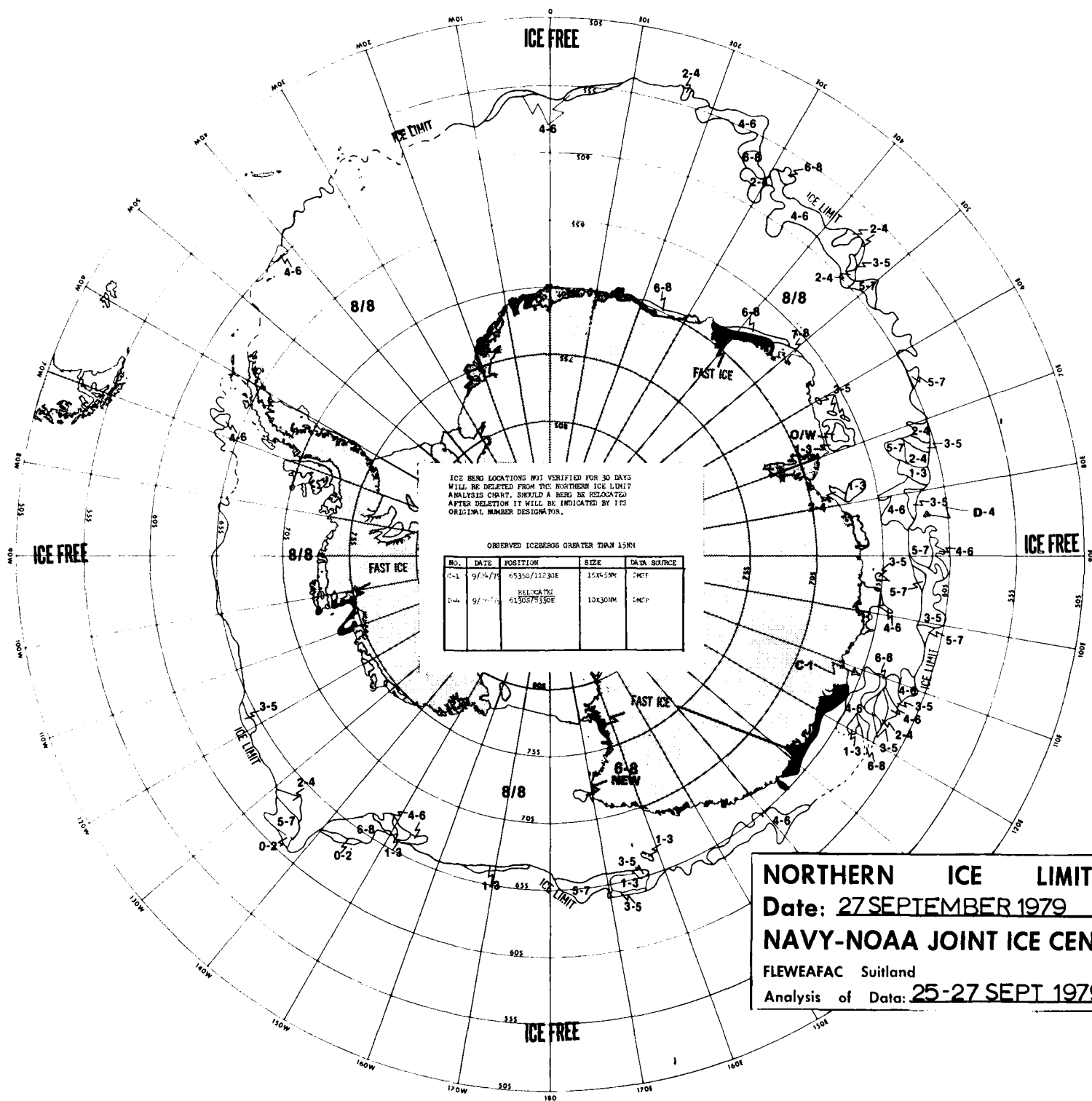


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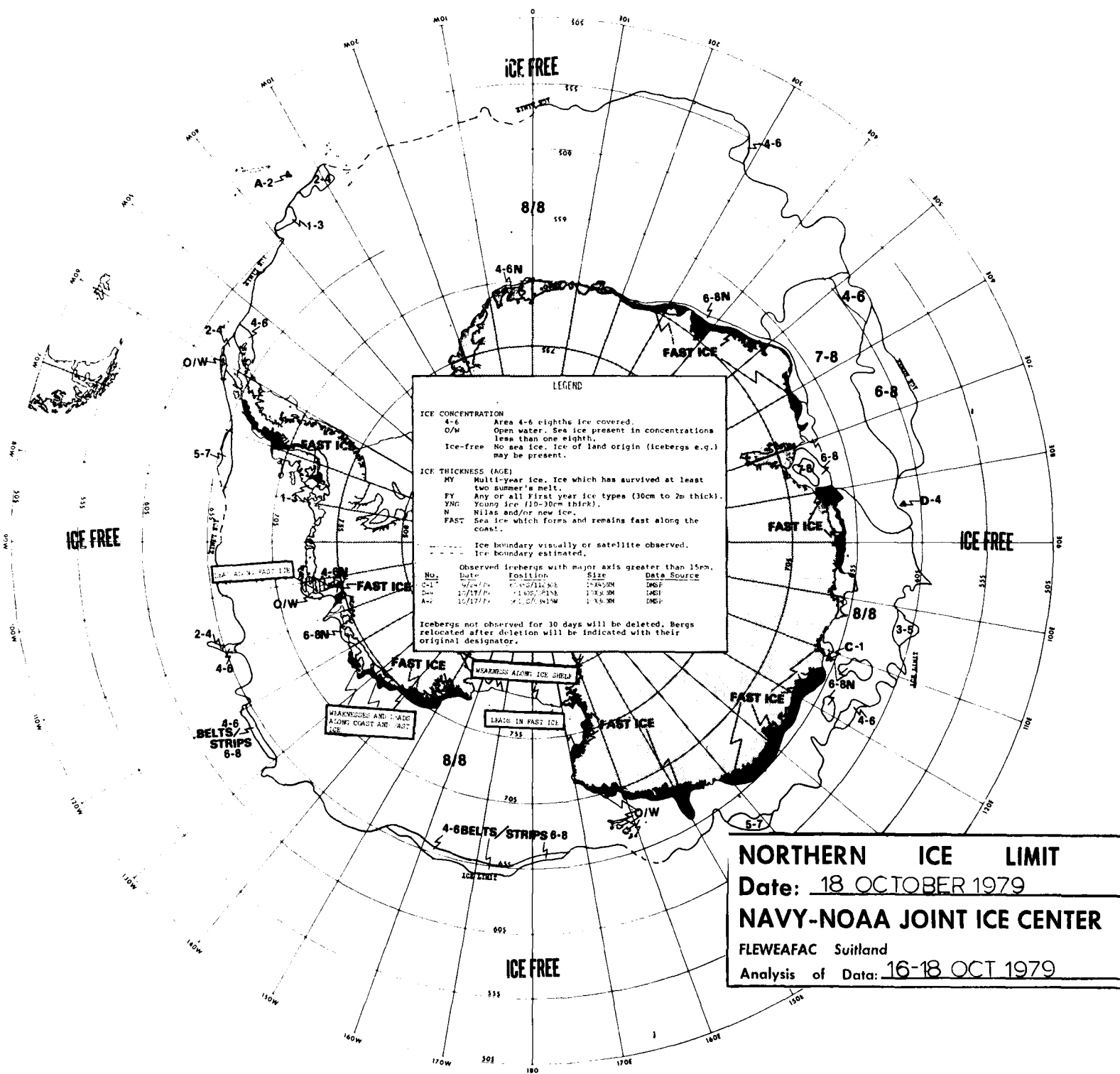


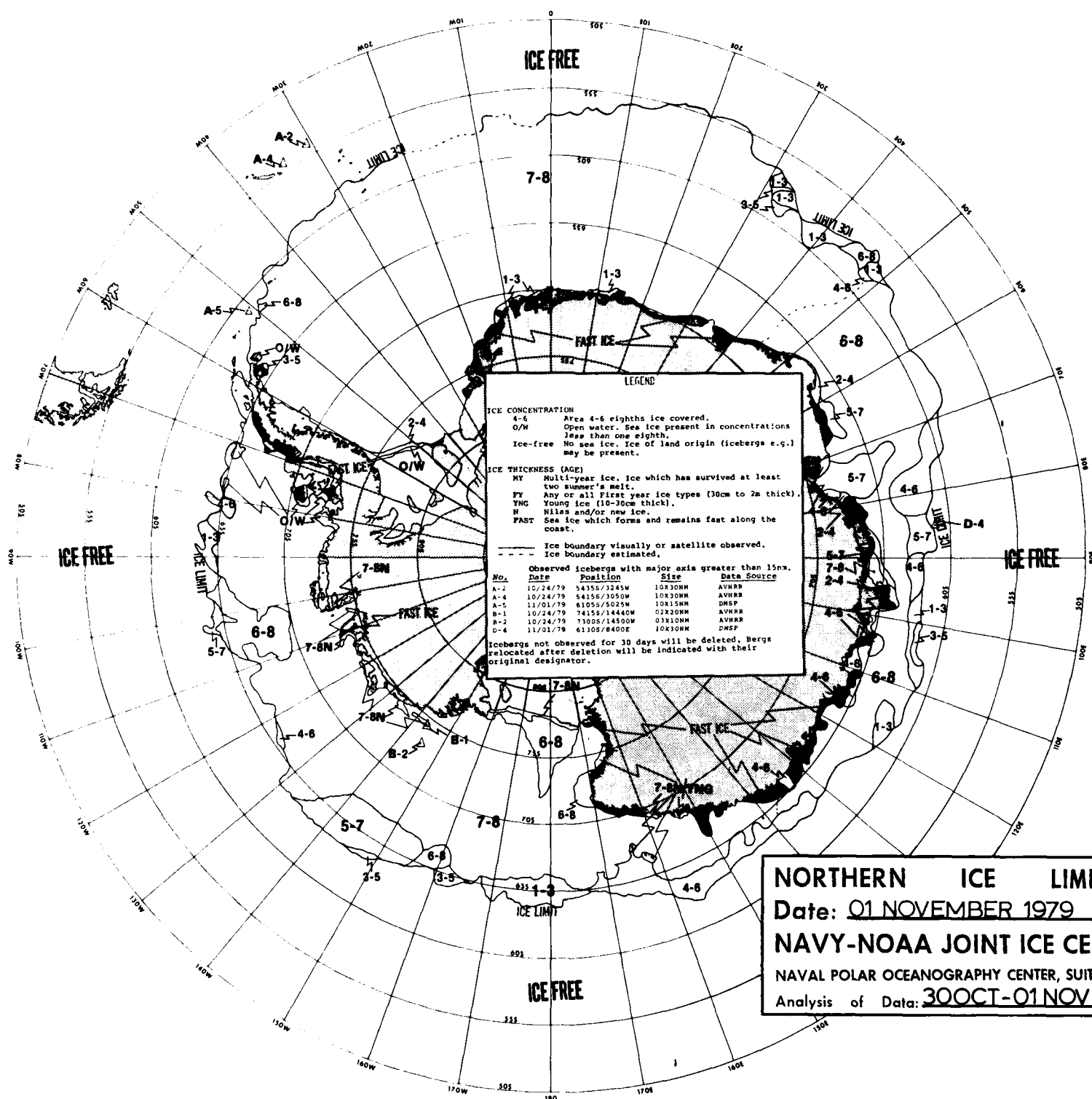
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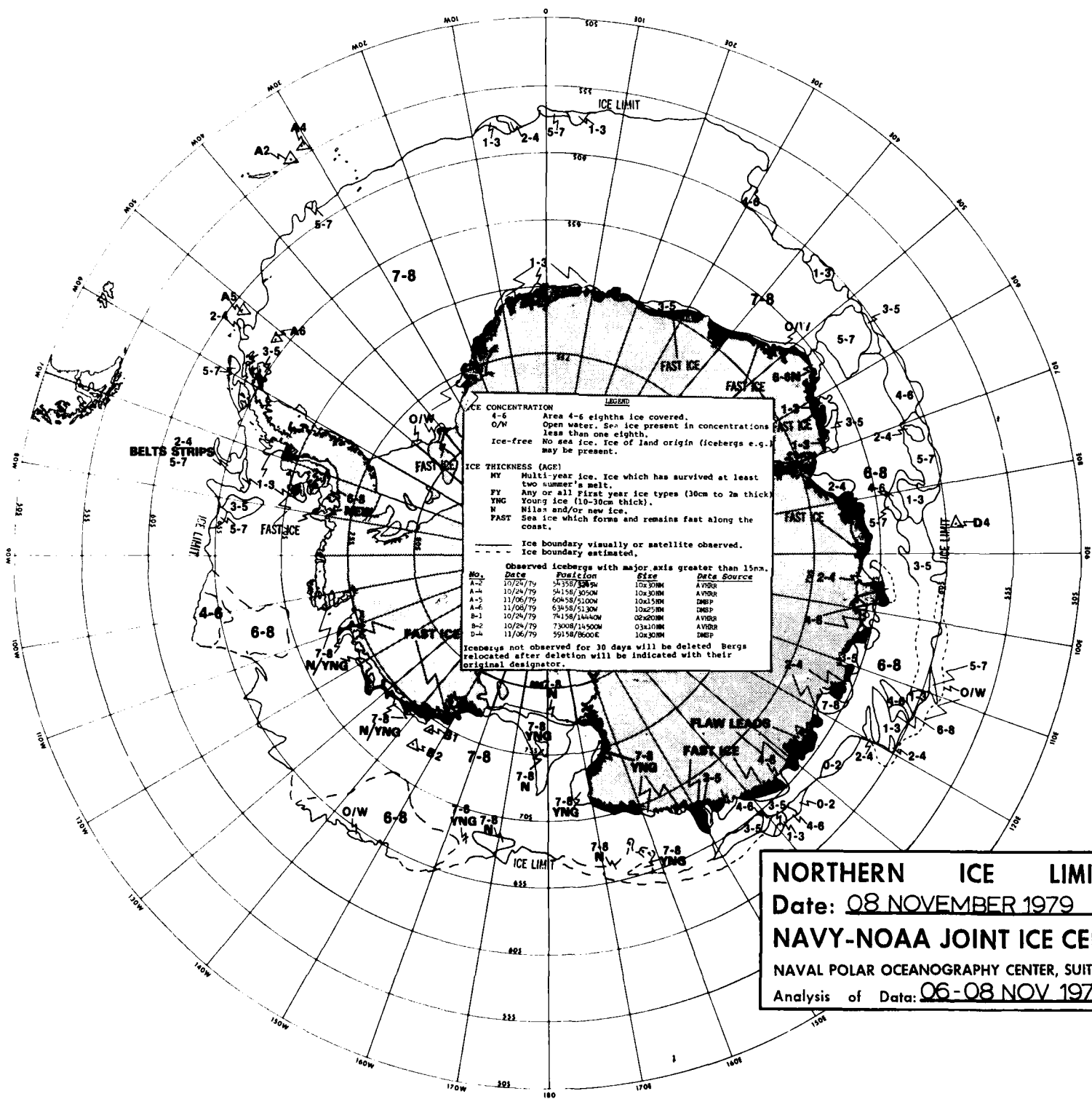


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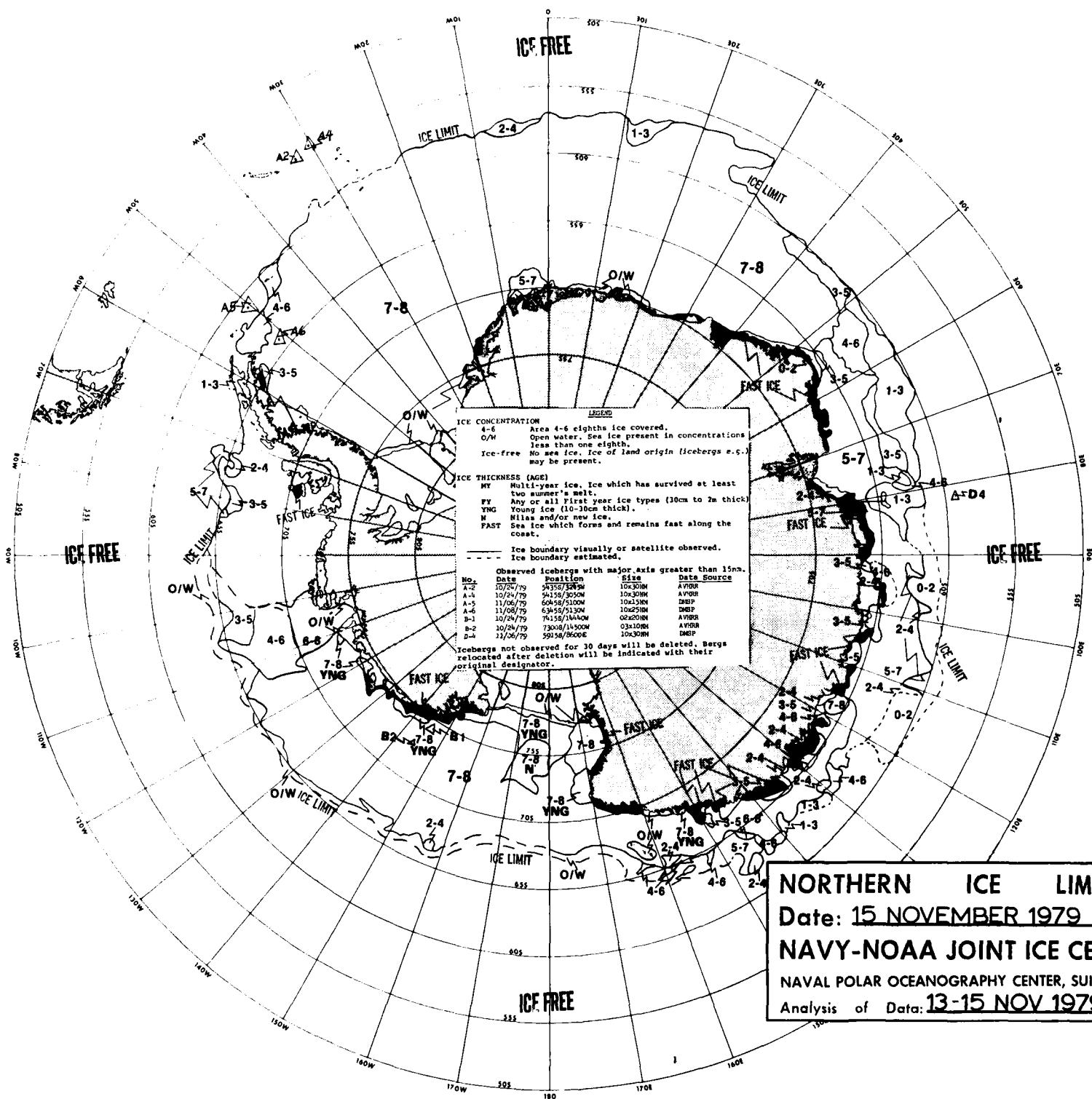




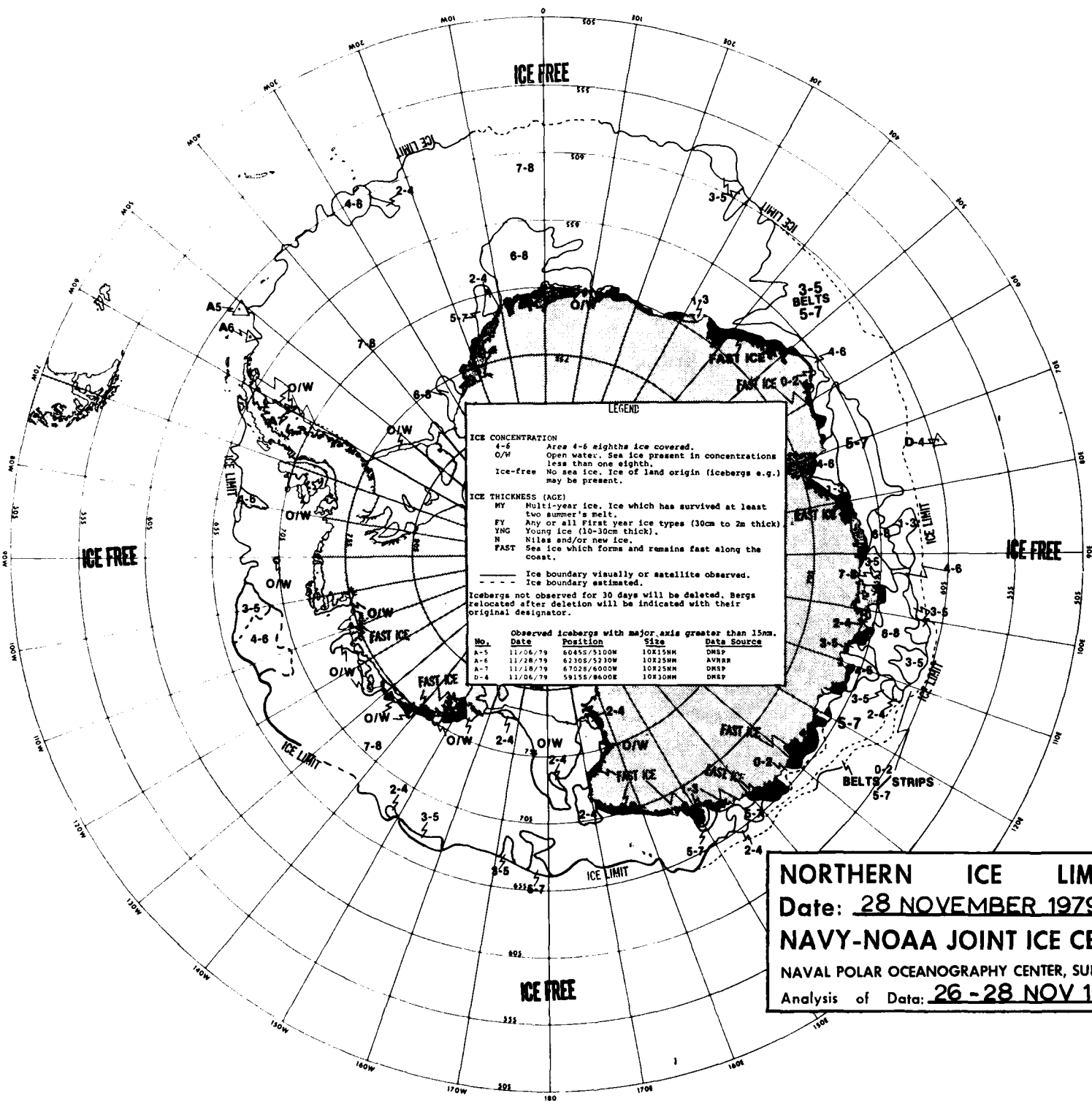
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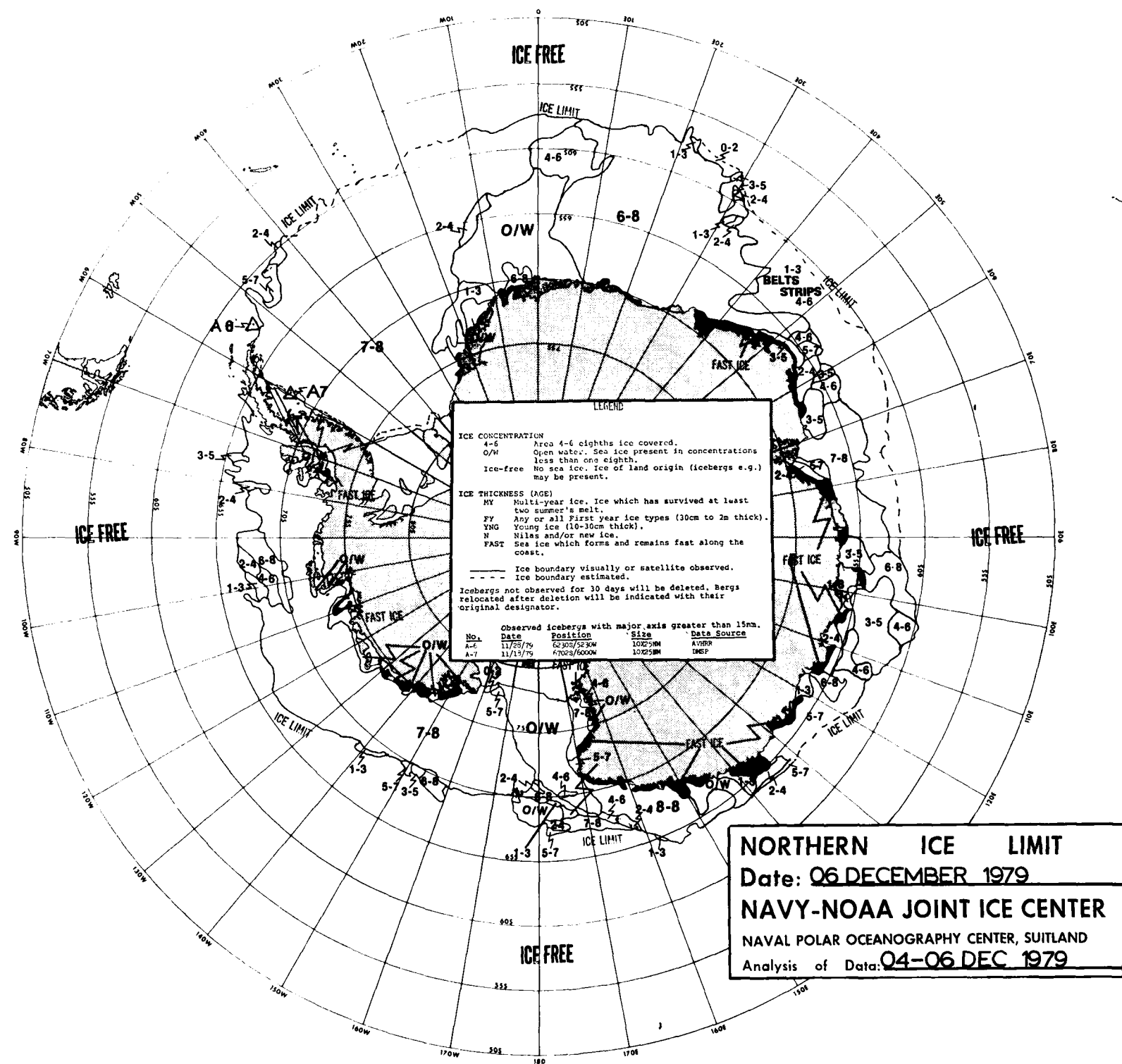
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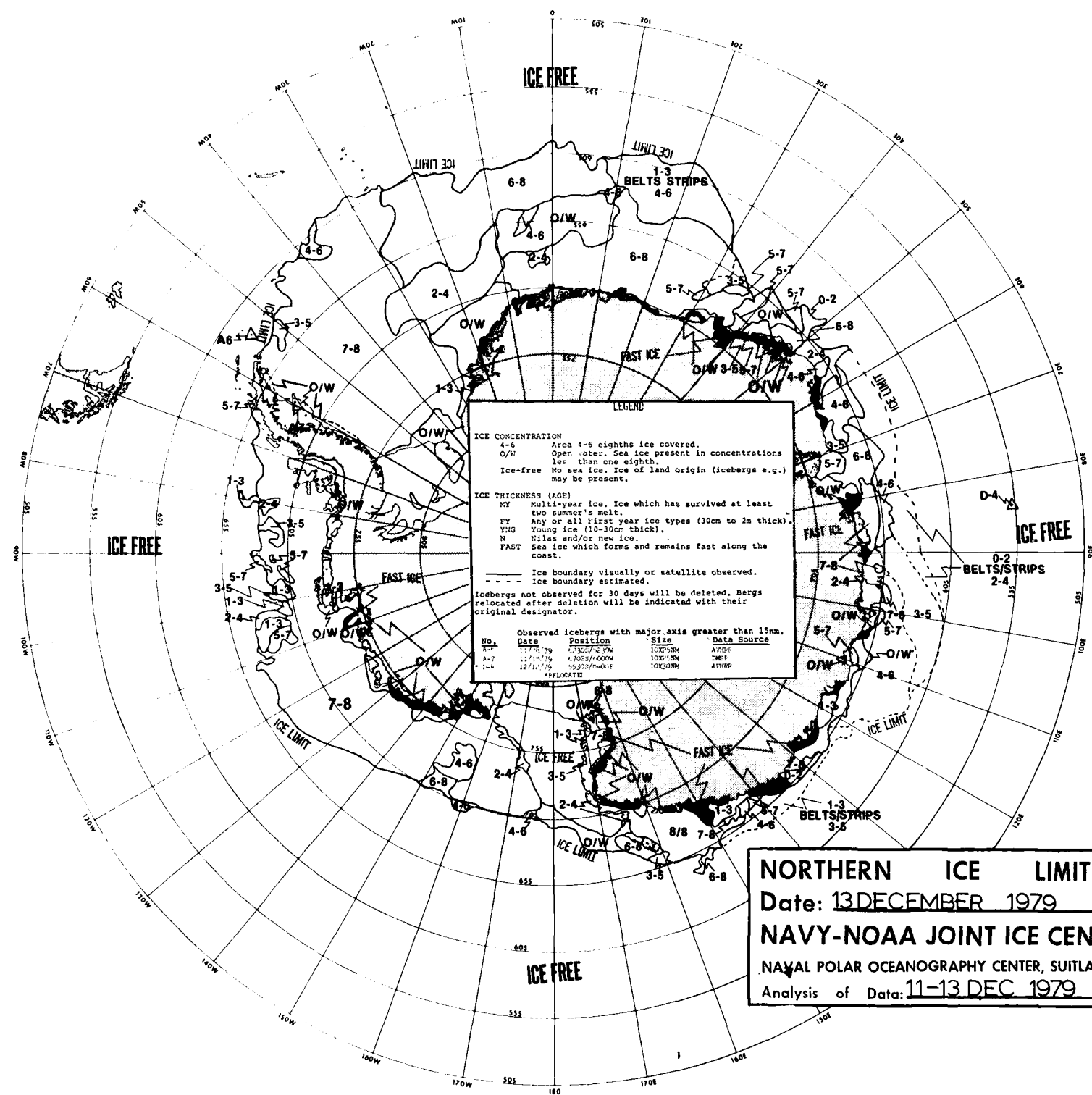


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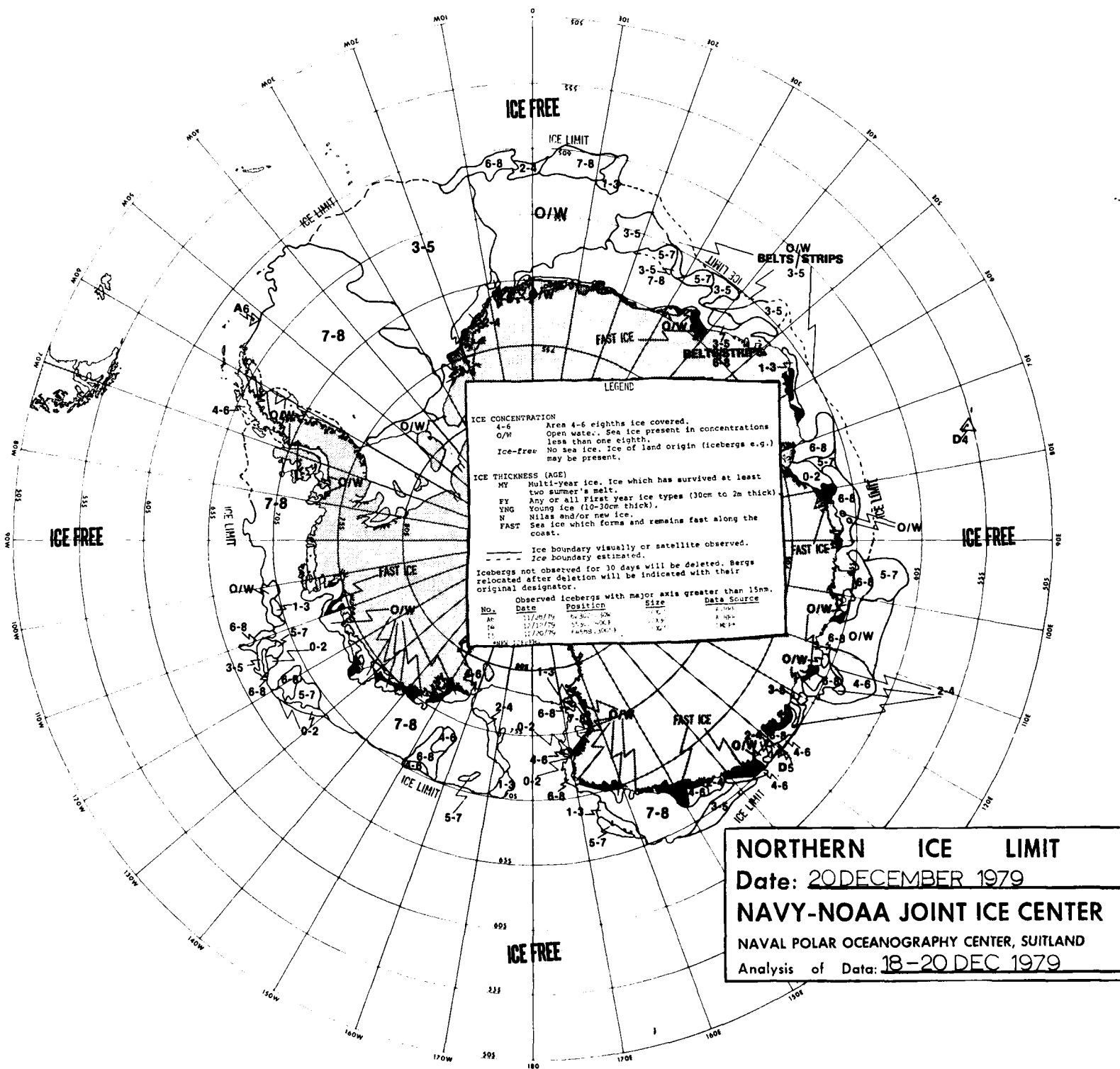


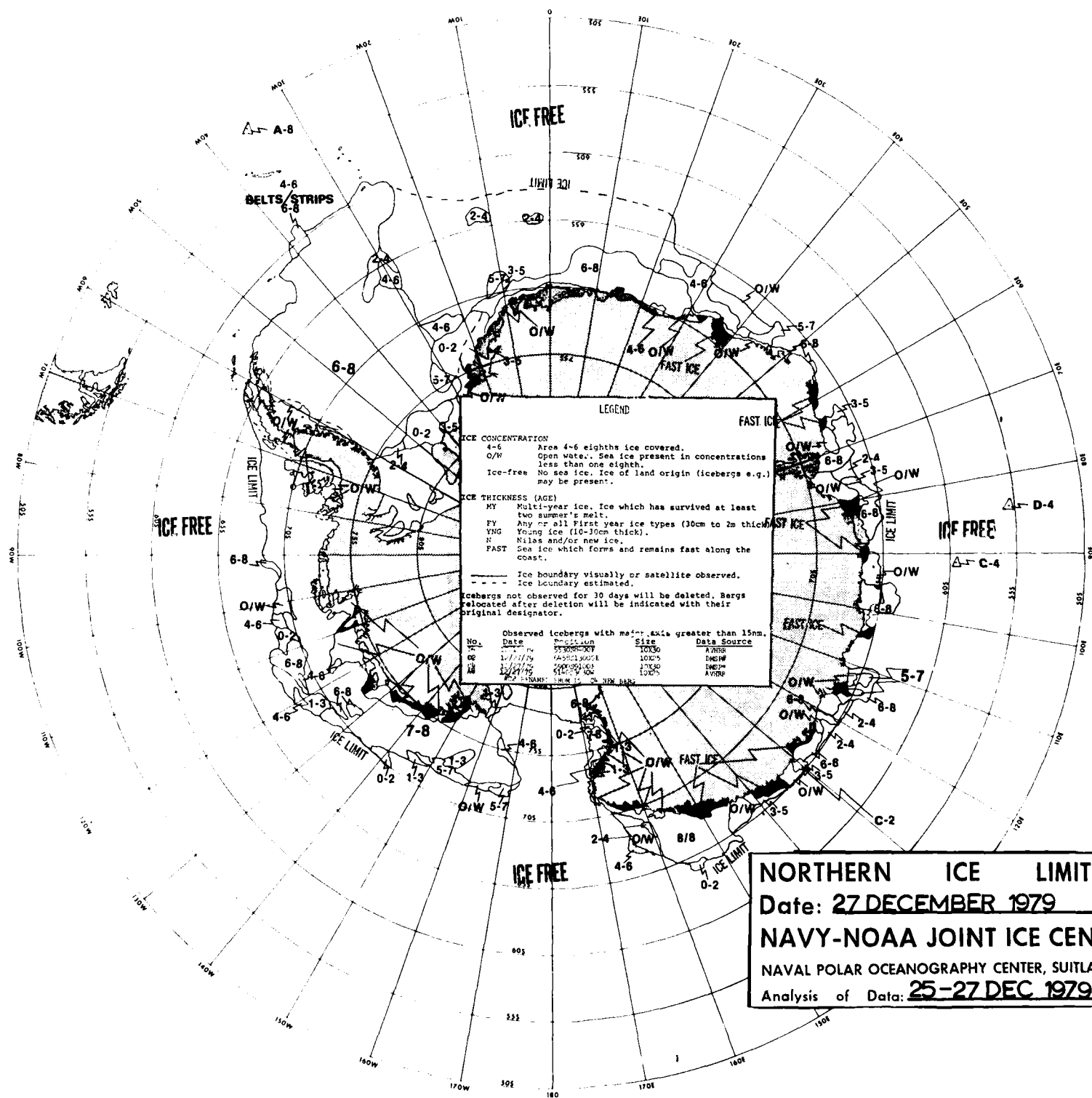
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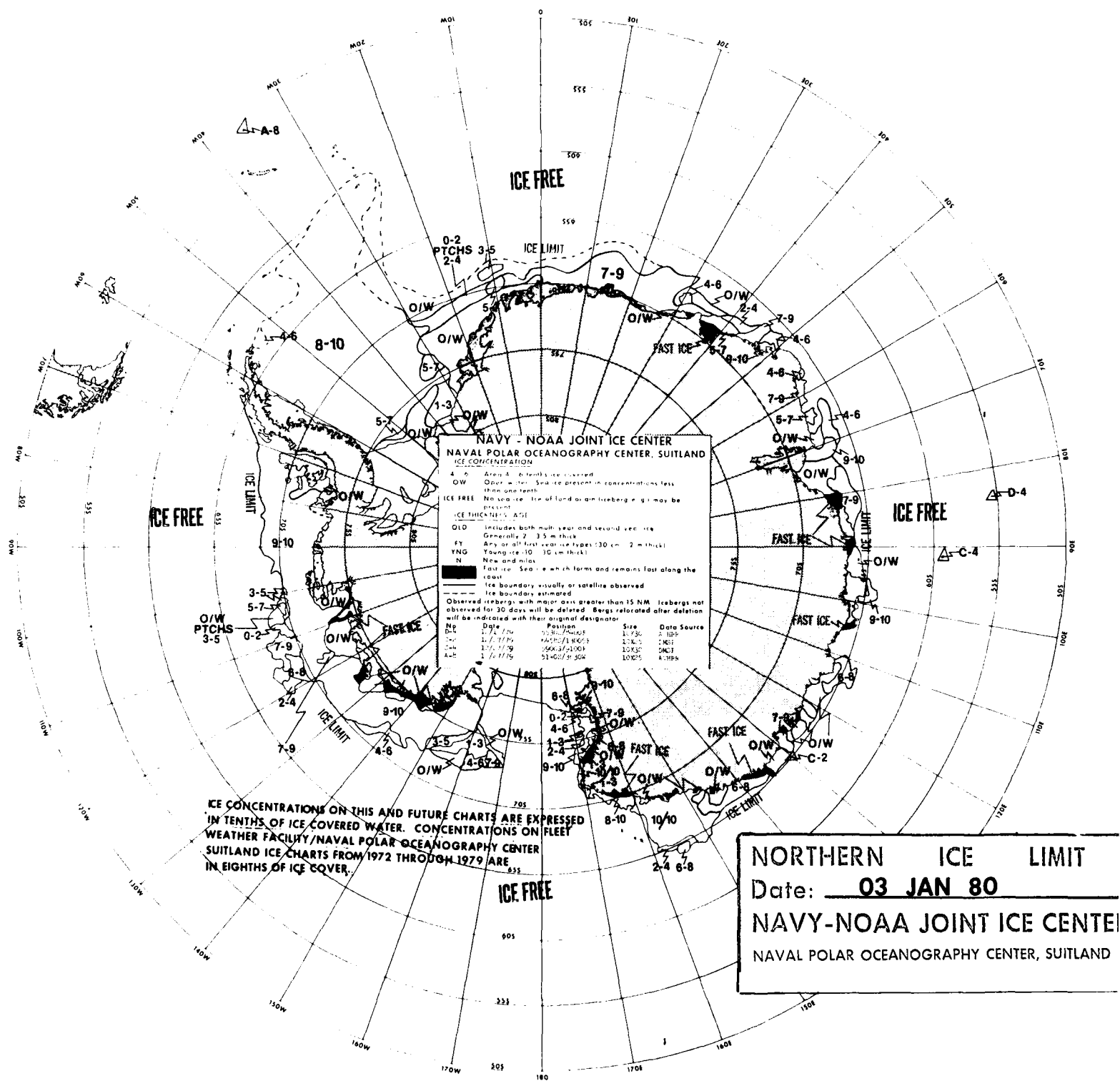


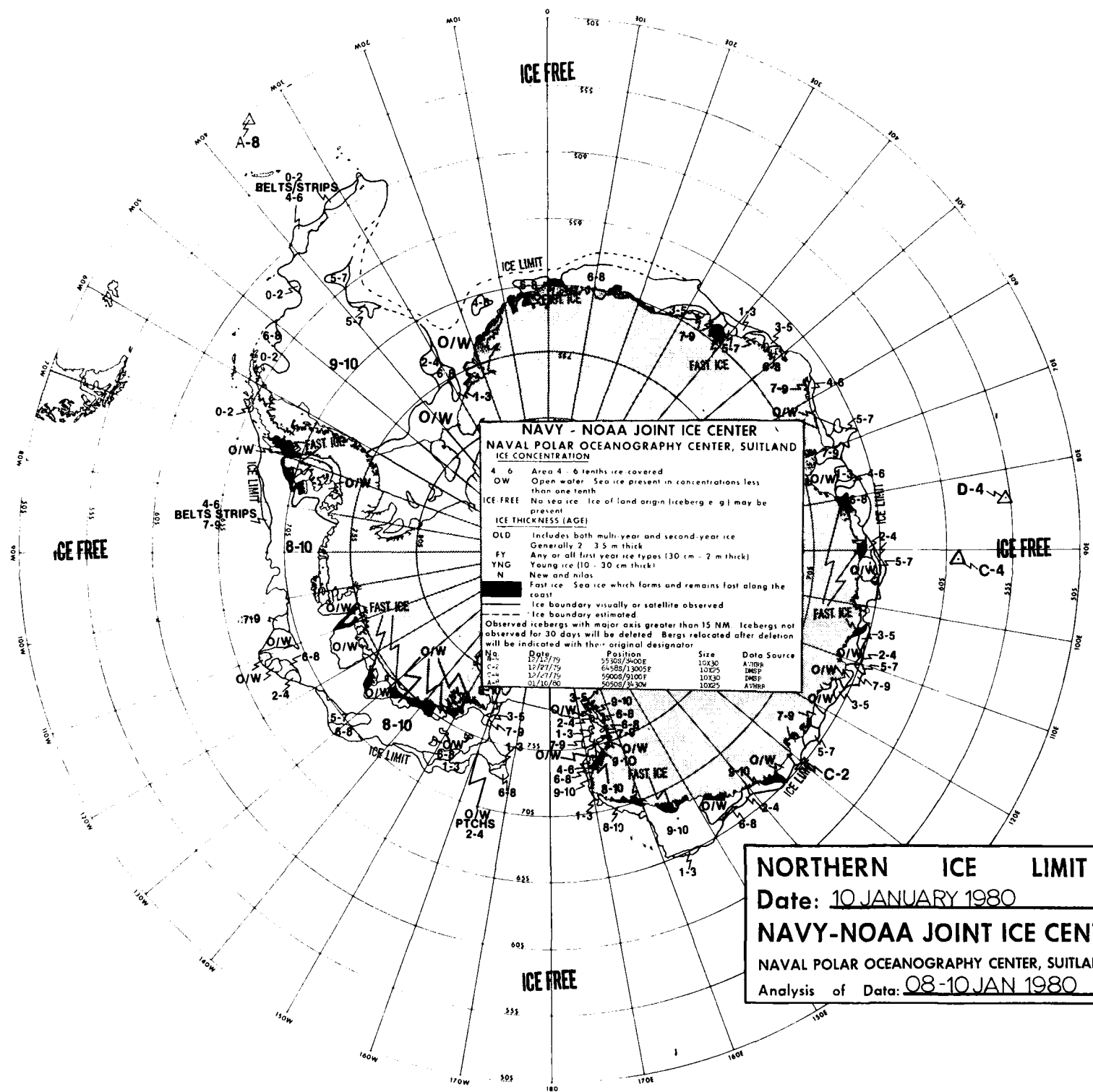


NORTHERN ICE LIMIT
Date: 13 DECEMBER 1979
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: 11-13 DEC 1979

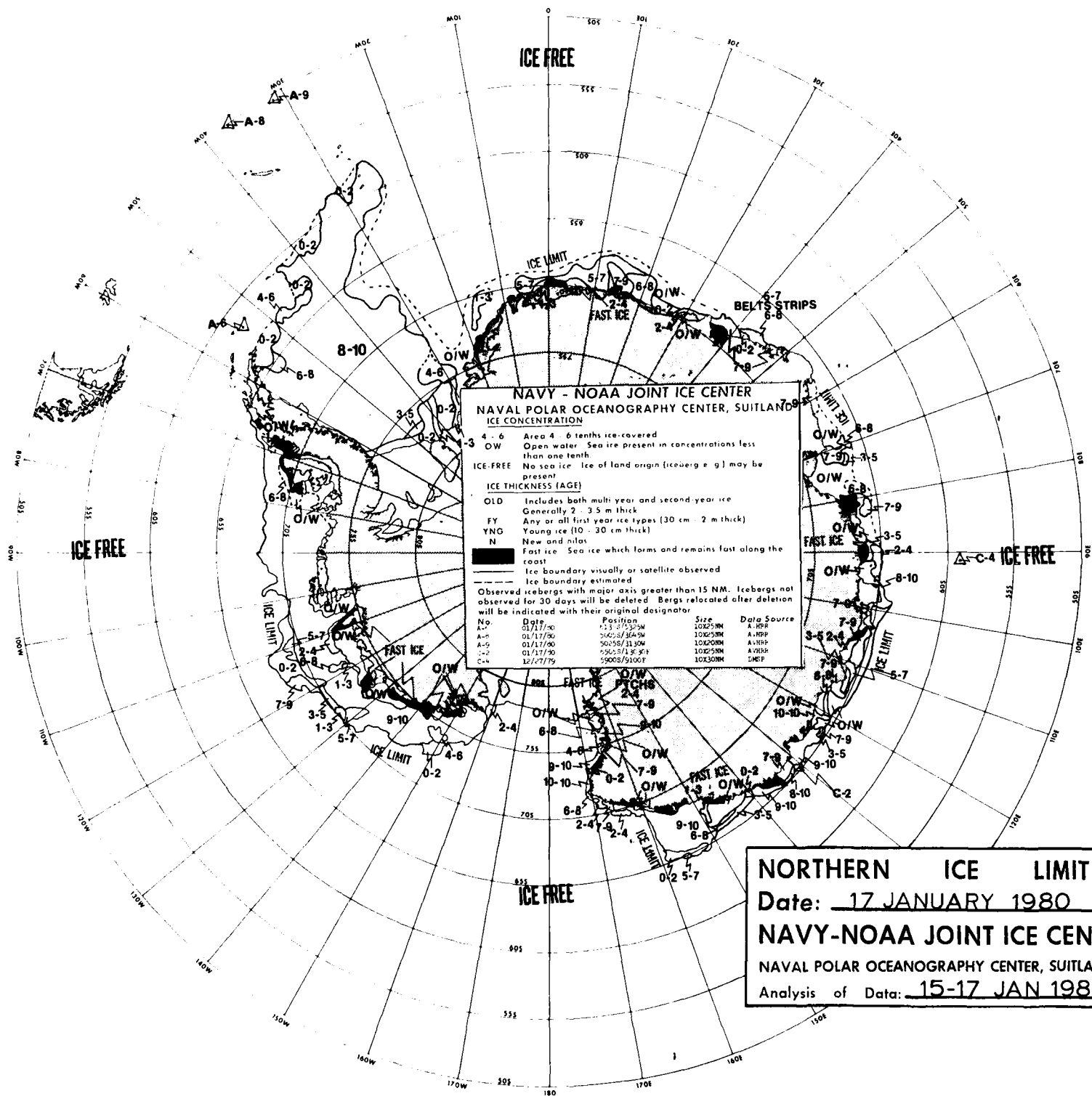


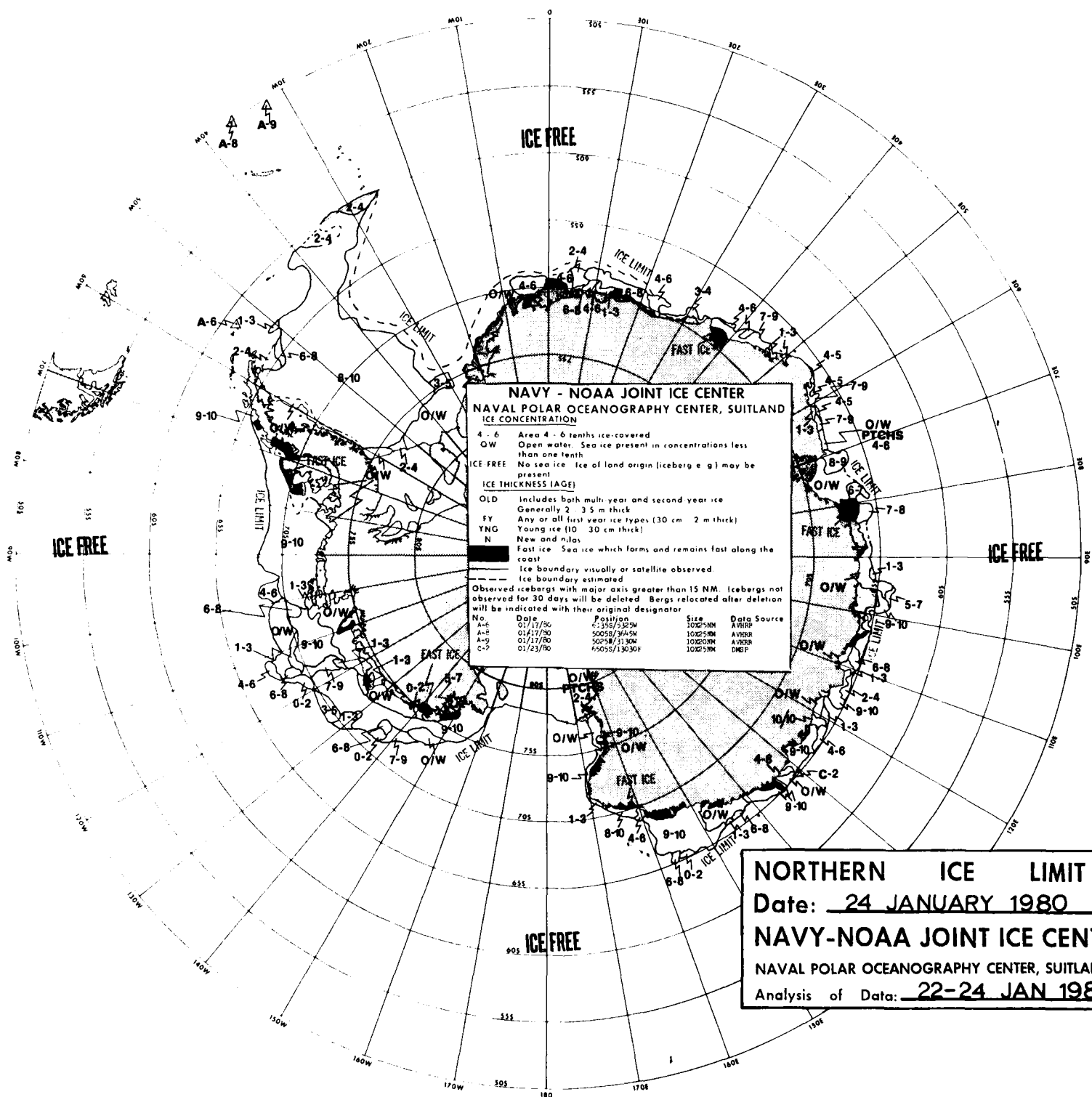


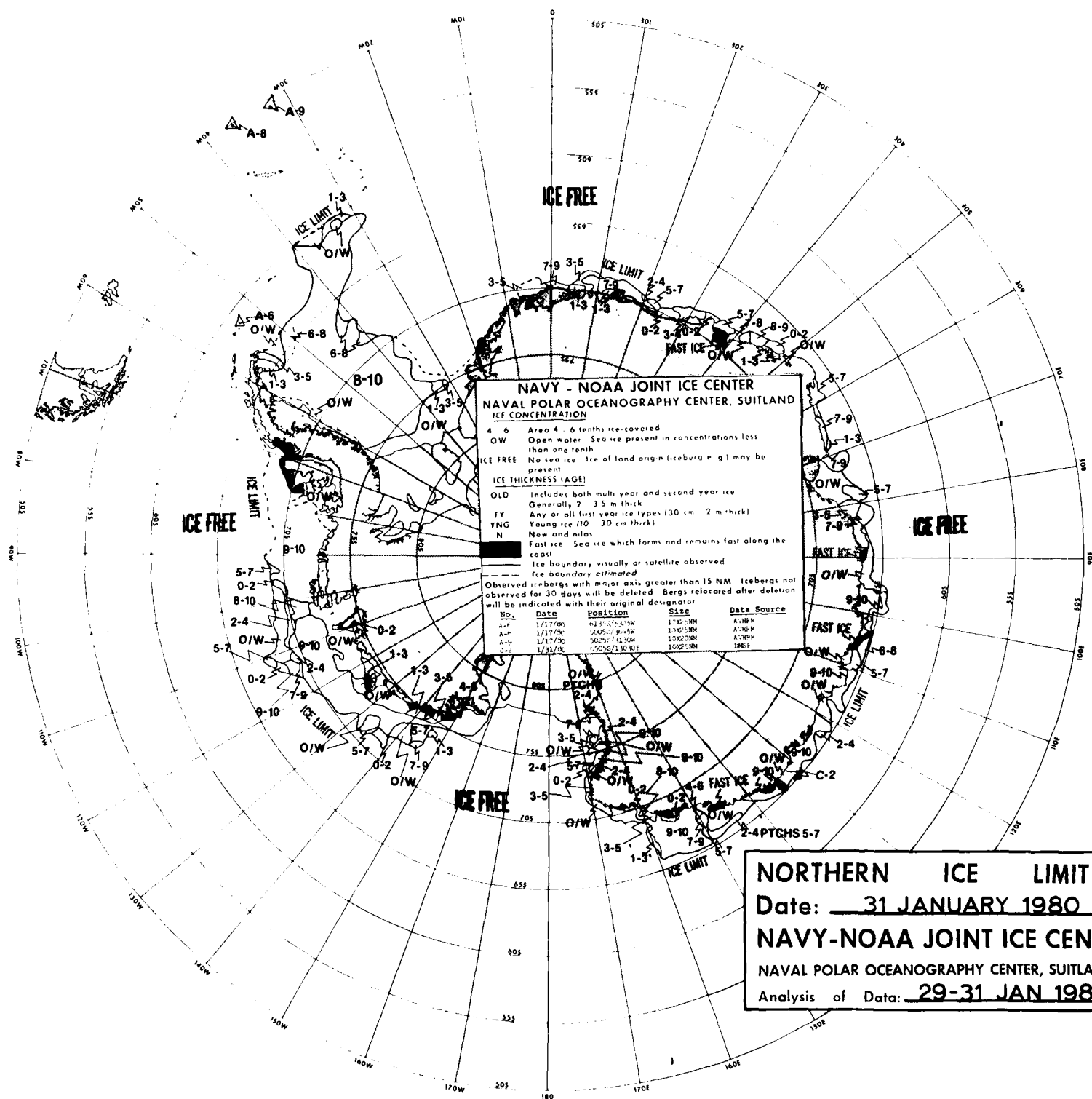




NORTHERN ICE LIMIT
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NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: 08-10 JAN 1980







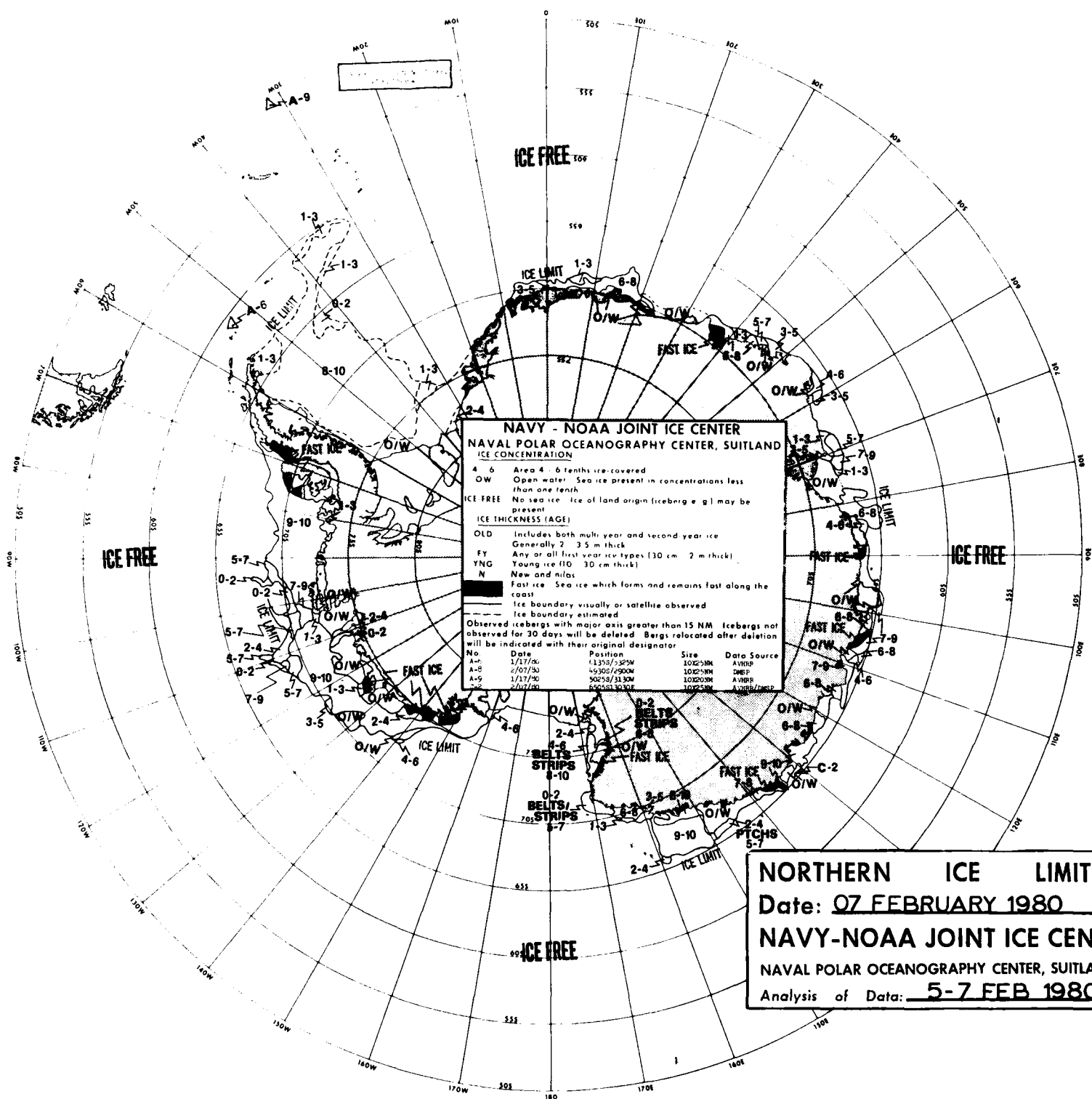
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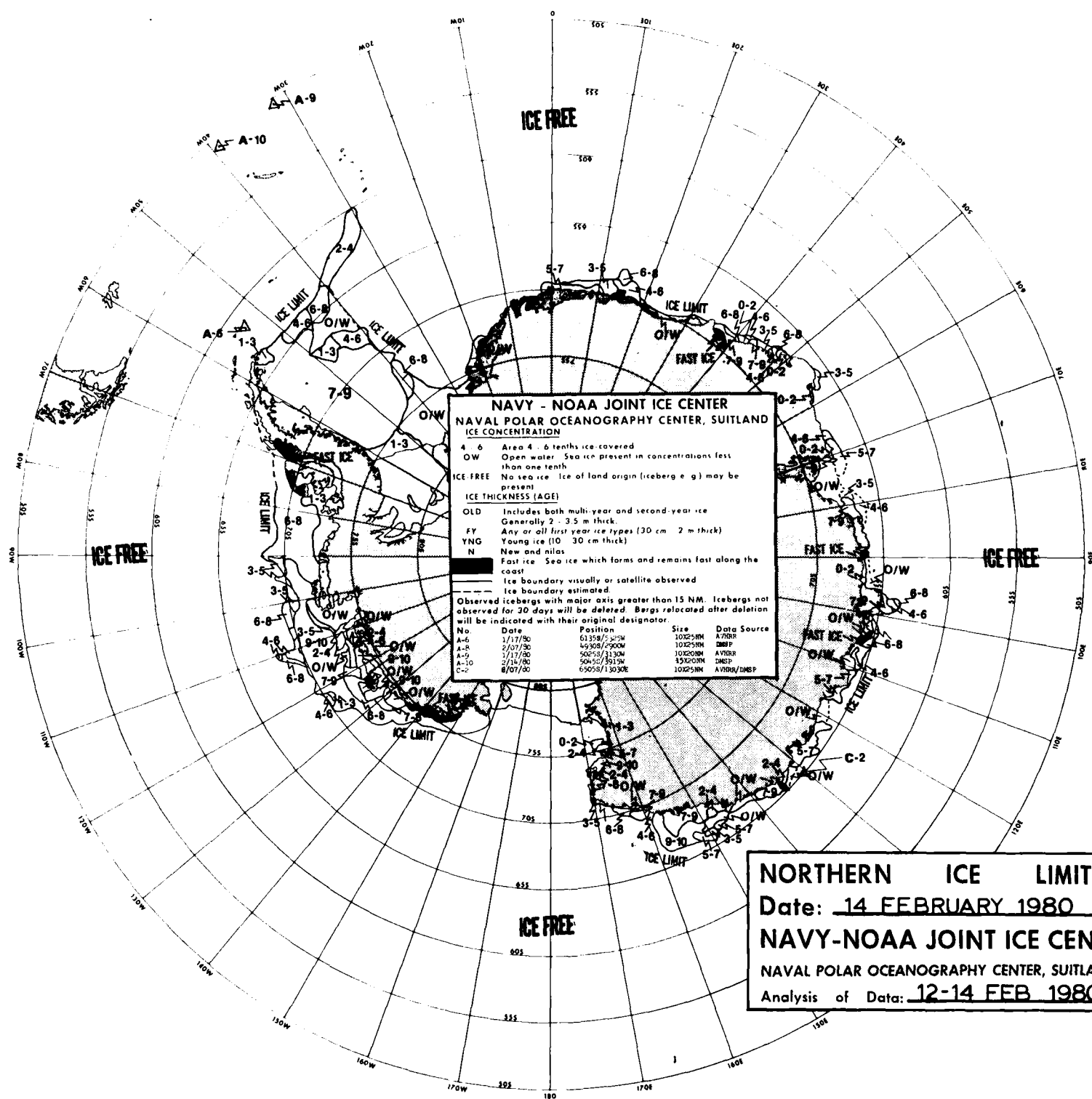
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NAVY-NOAA JOINT ICE CENTER

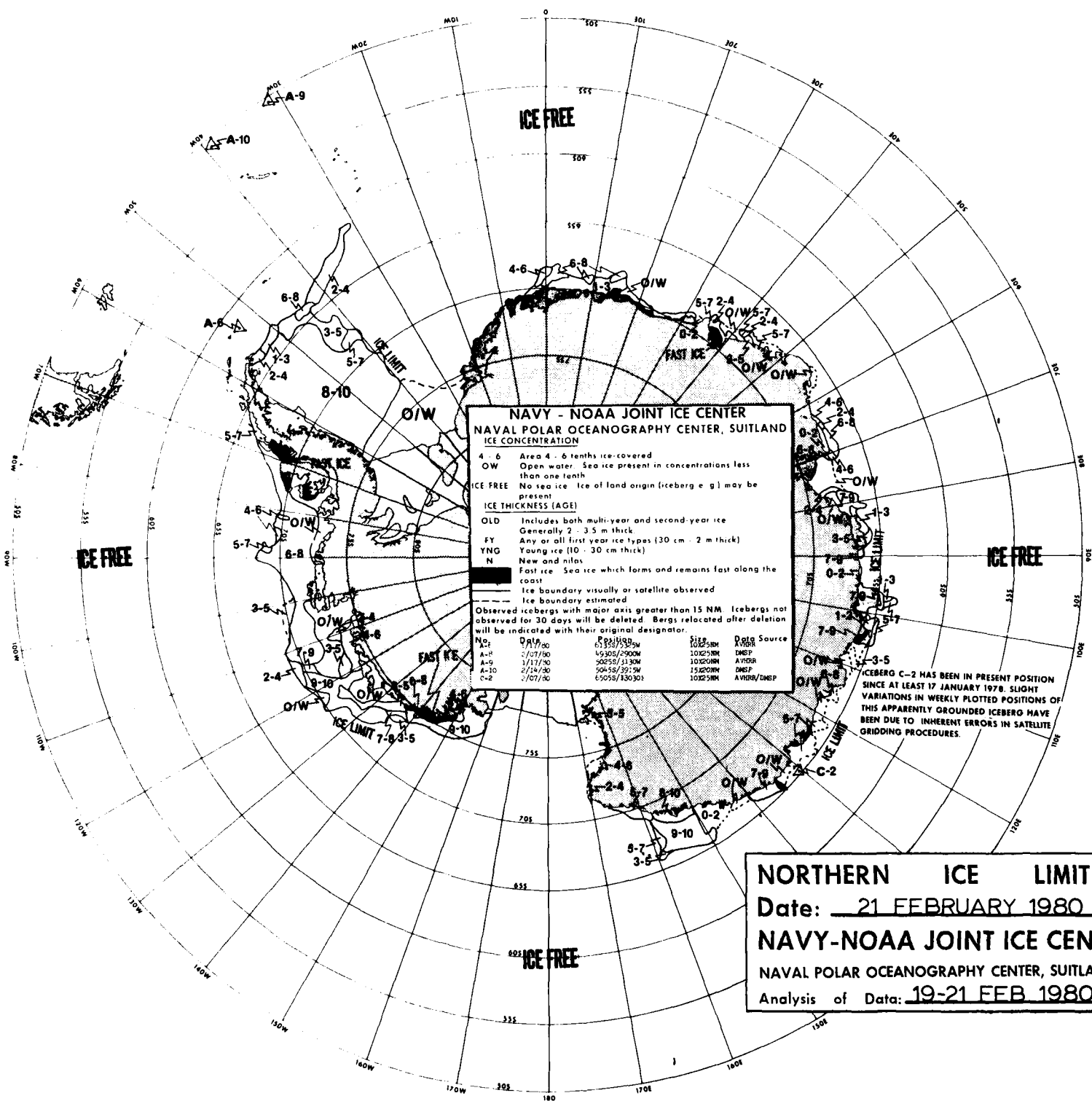
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

Analysis of Data: 29-31 JAN 1980

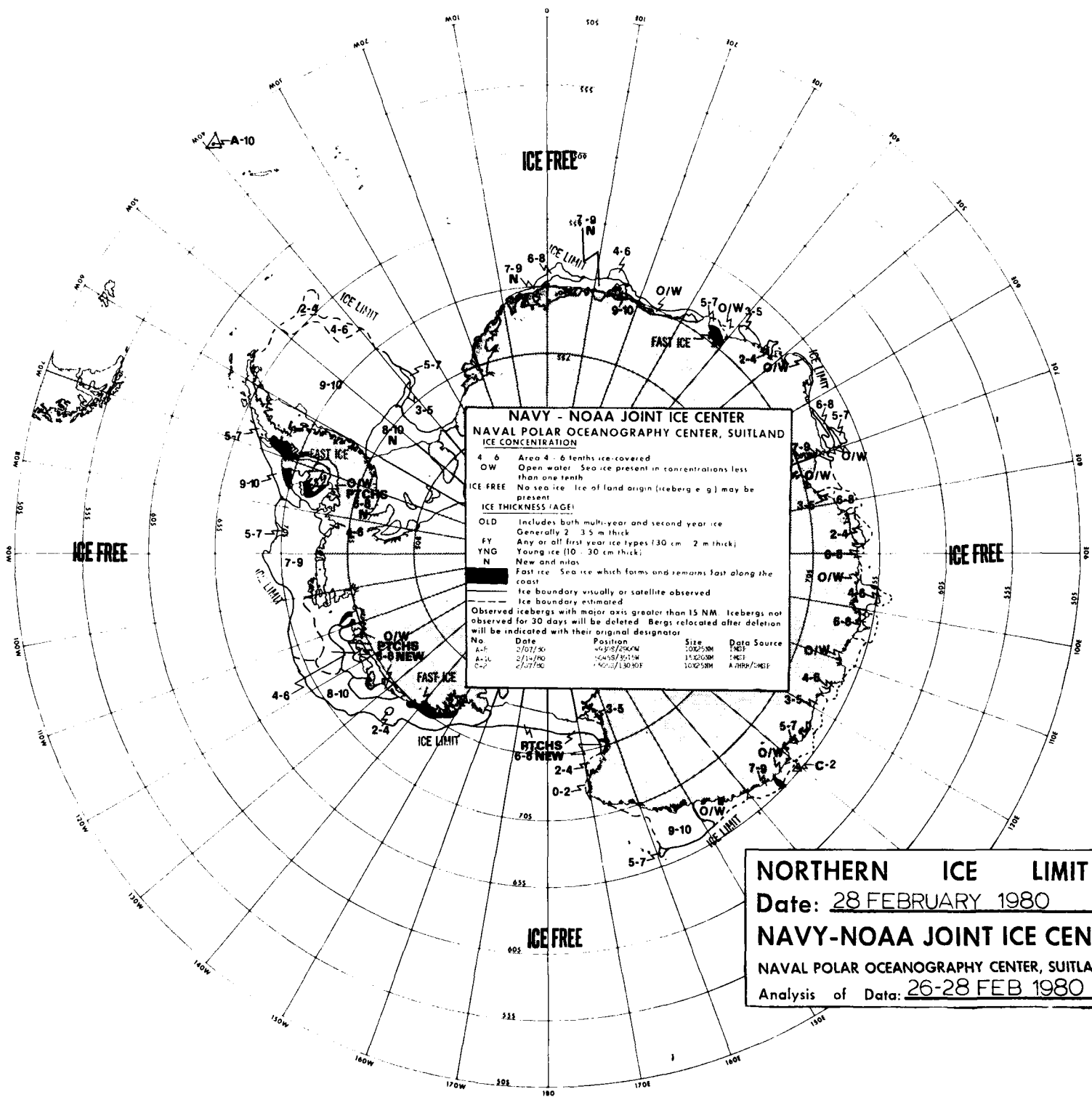


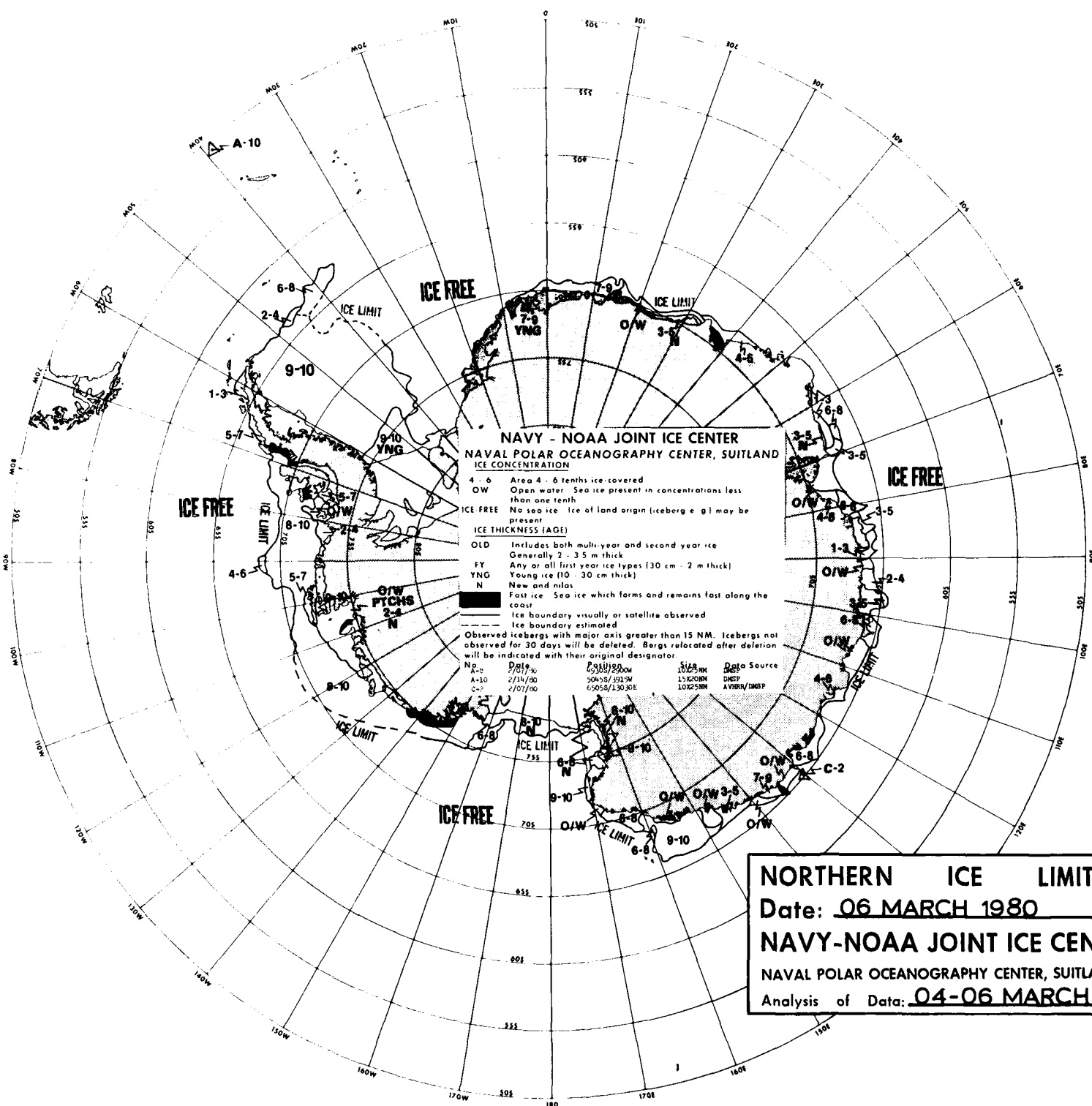


NORTHERN ICE LIMIT
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NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: 12-14 FEB 1980

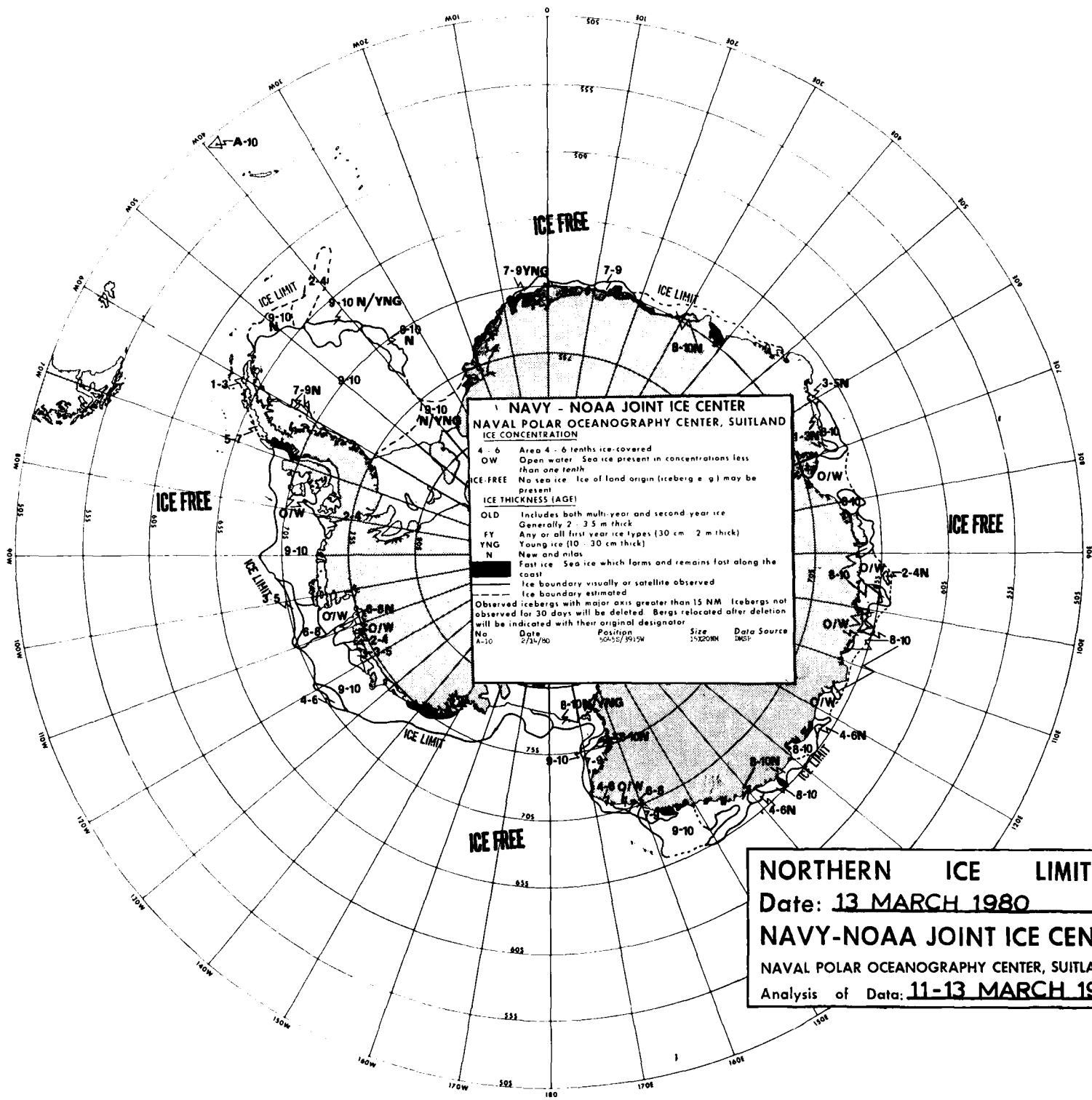


NORTHERN ICE LIMIT
 Date: 21 FEBRUARY 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: 19-21 FEB 1980

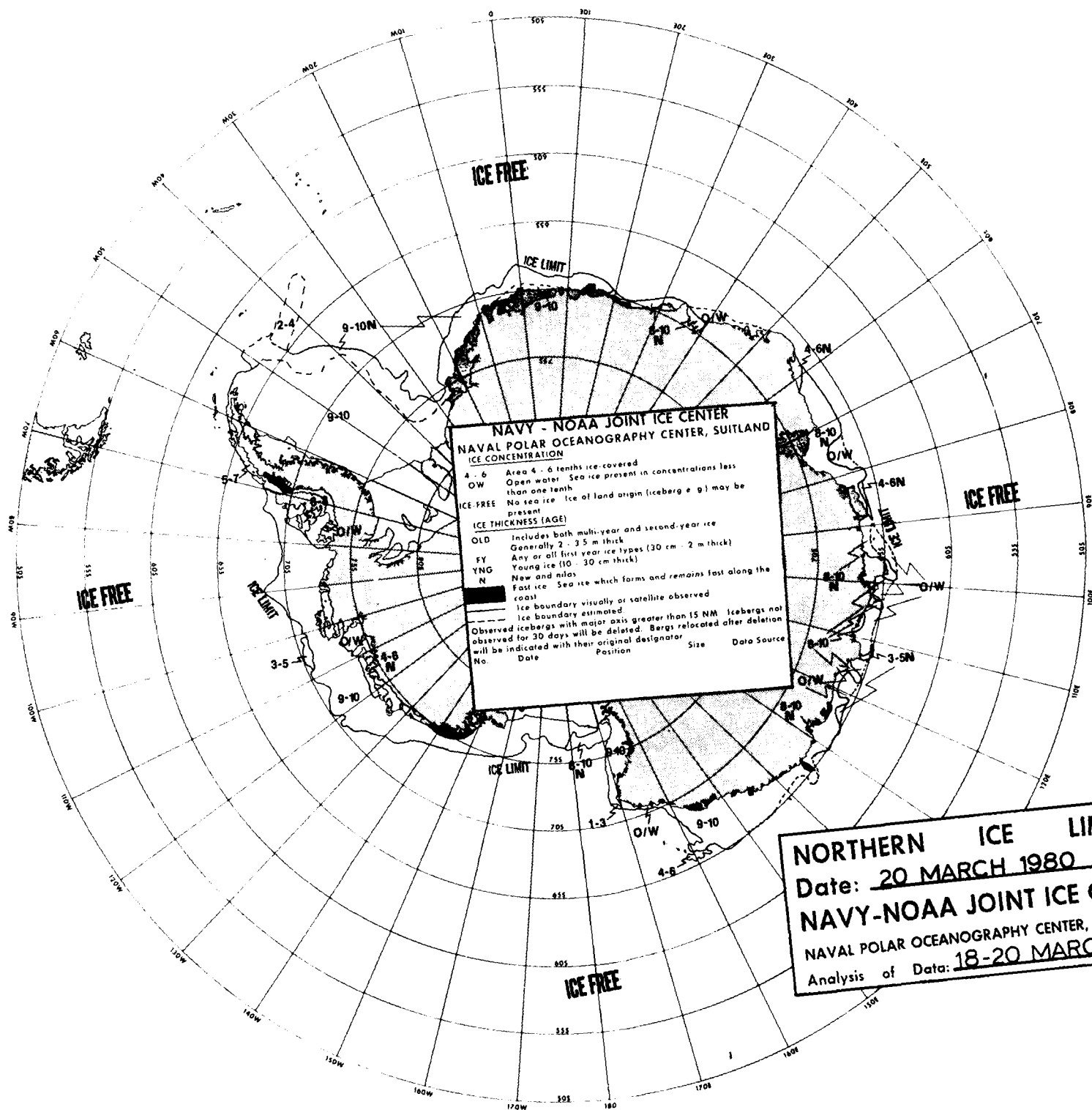




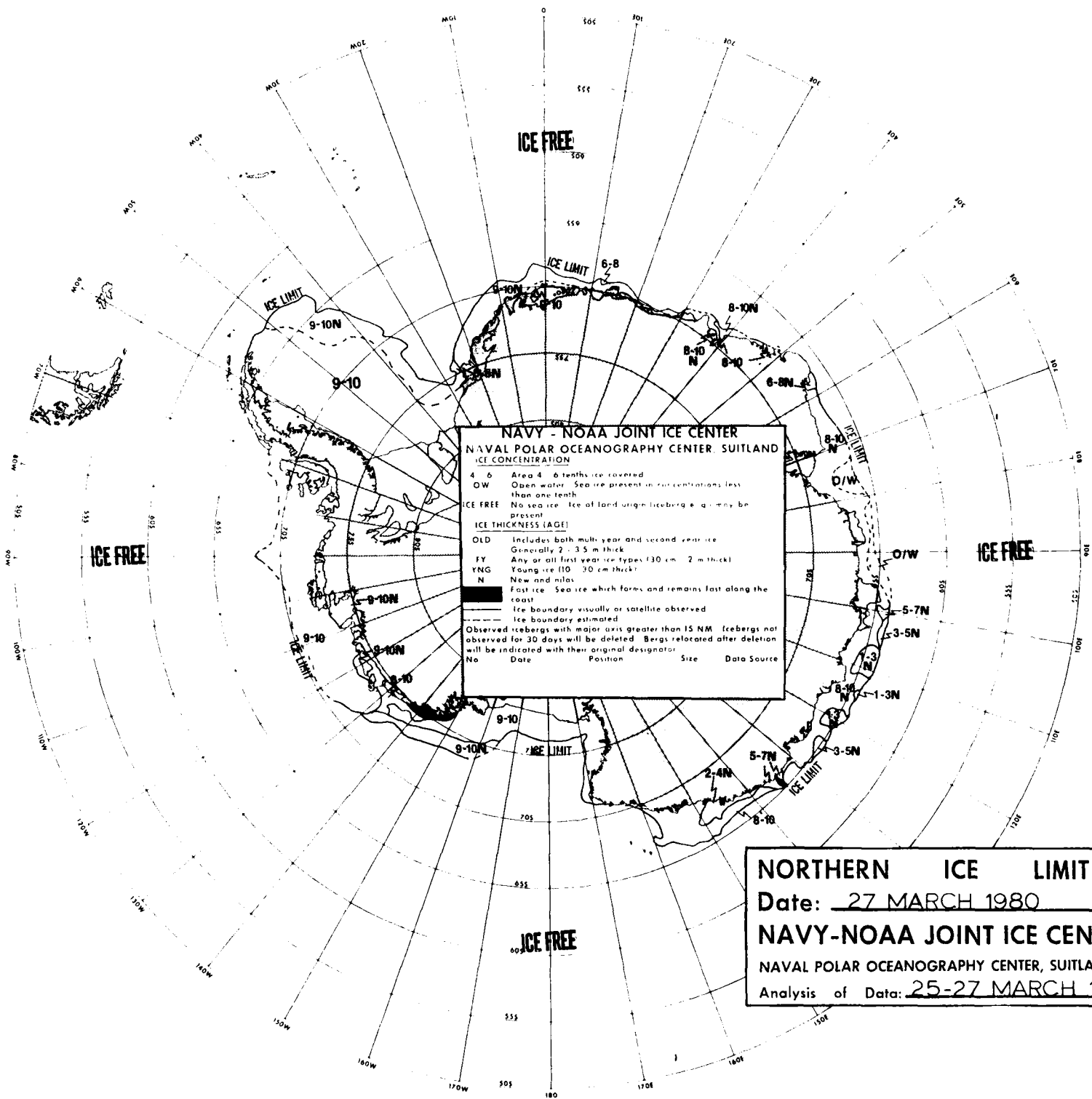
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NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: **04-06 MARCH 1980**



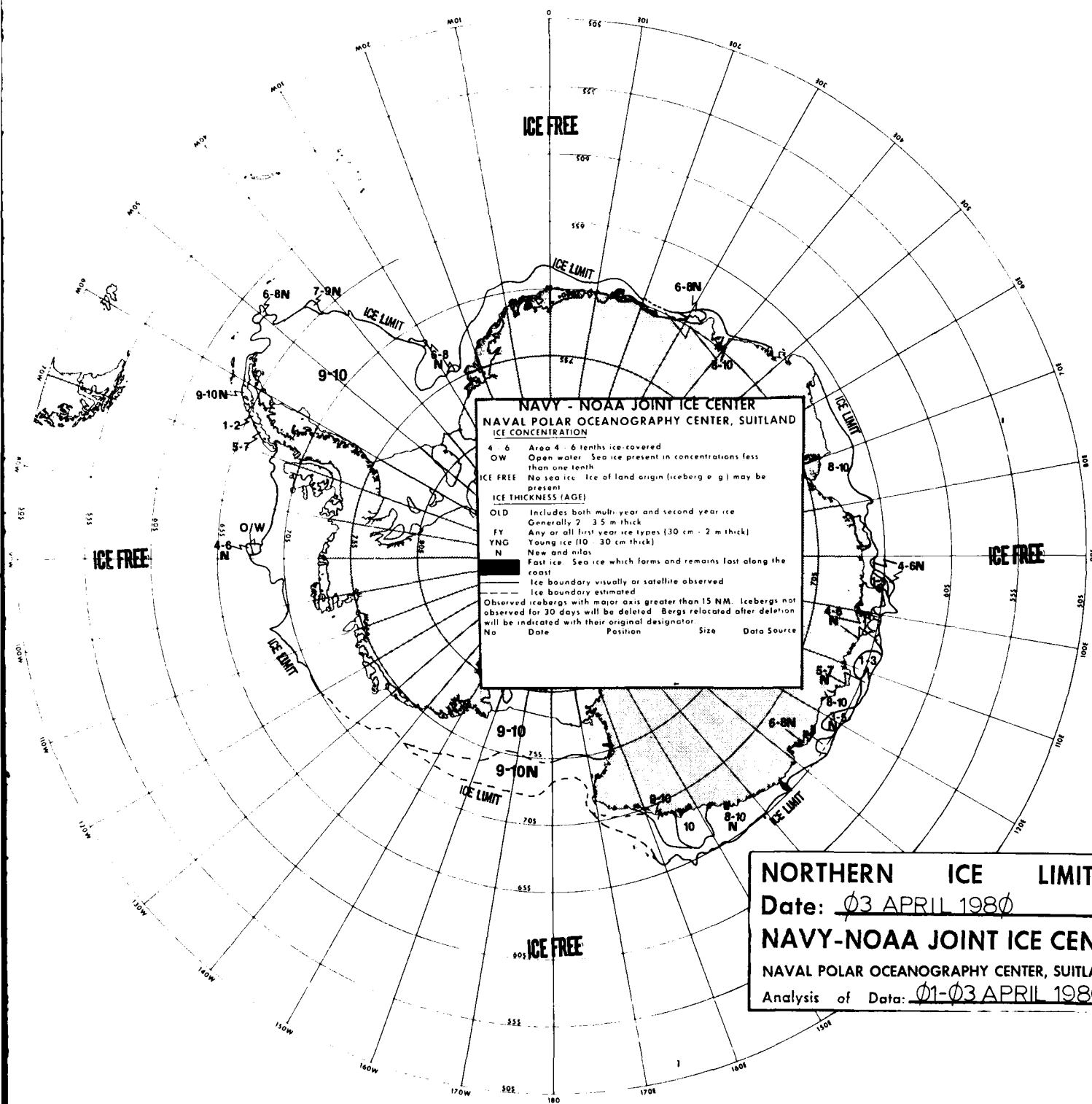
NORTHERN ICE LIMIT
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NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: **11-13 MARCH 1980**



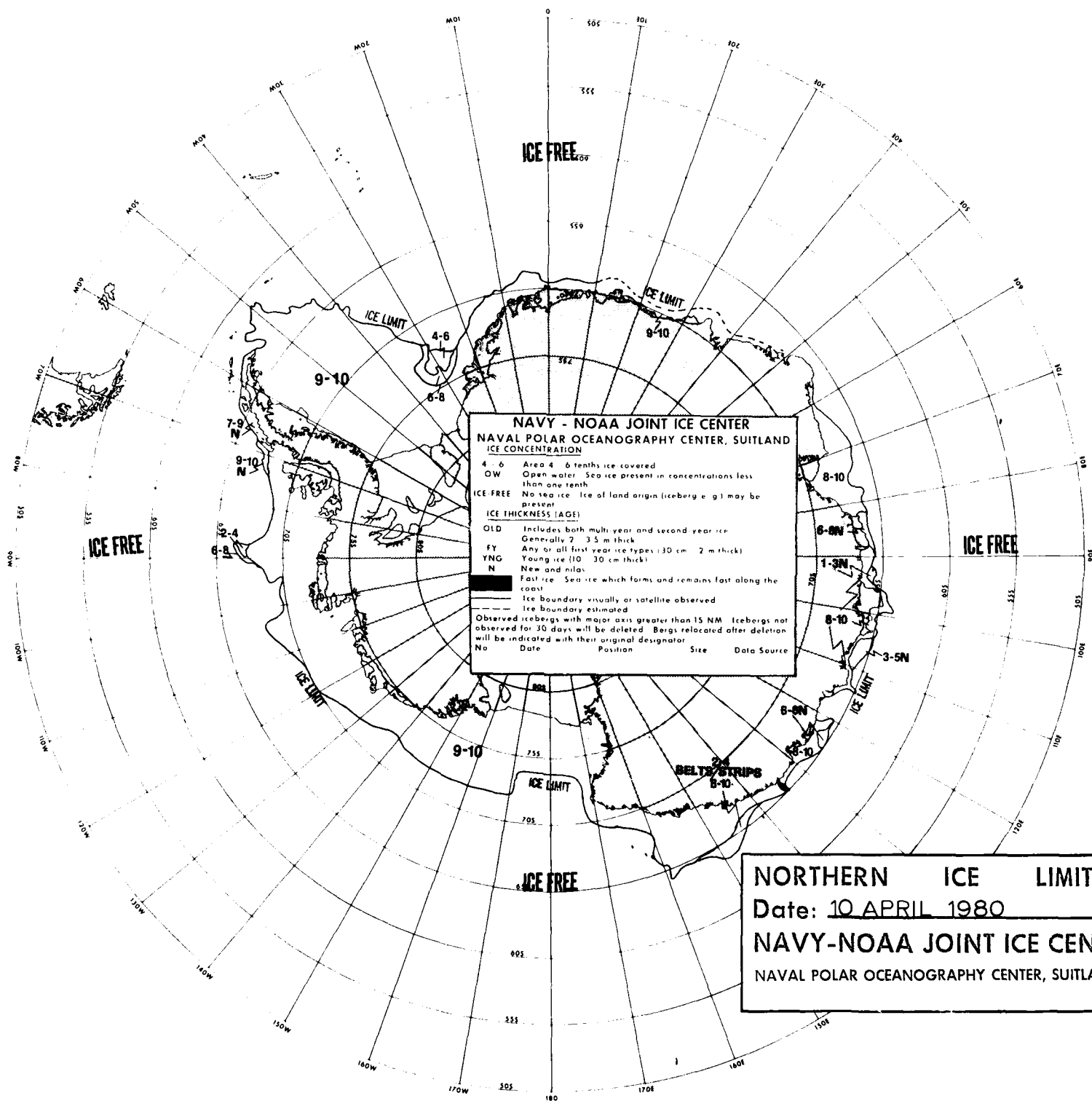
NORTHERN ICE LIMIT
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NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: 18-20 MARCH 1980

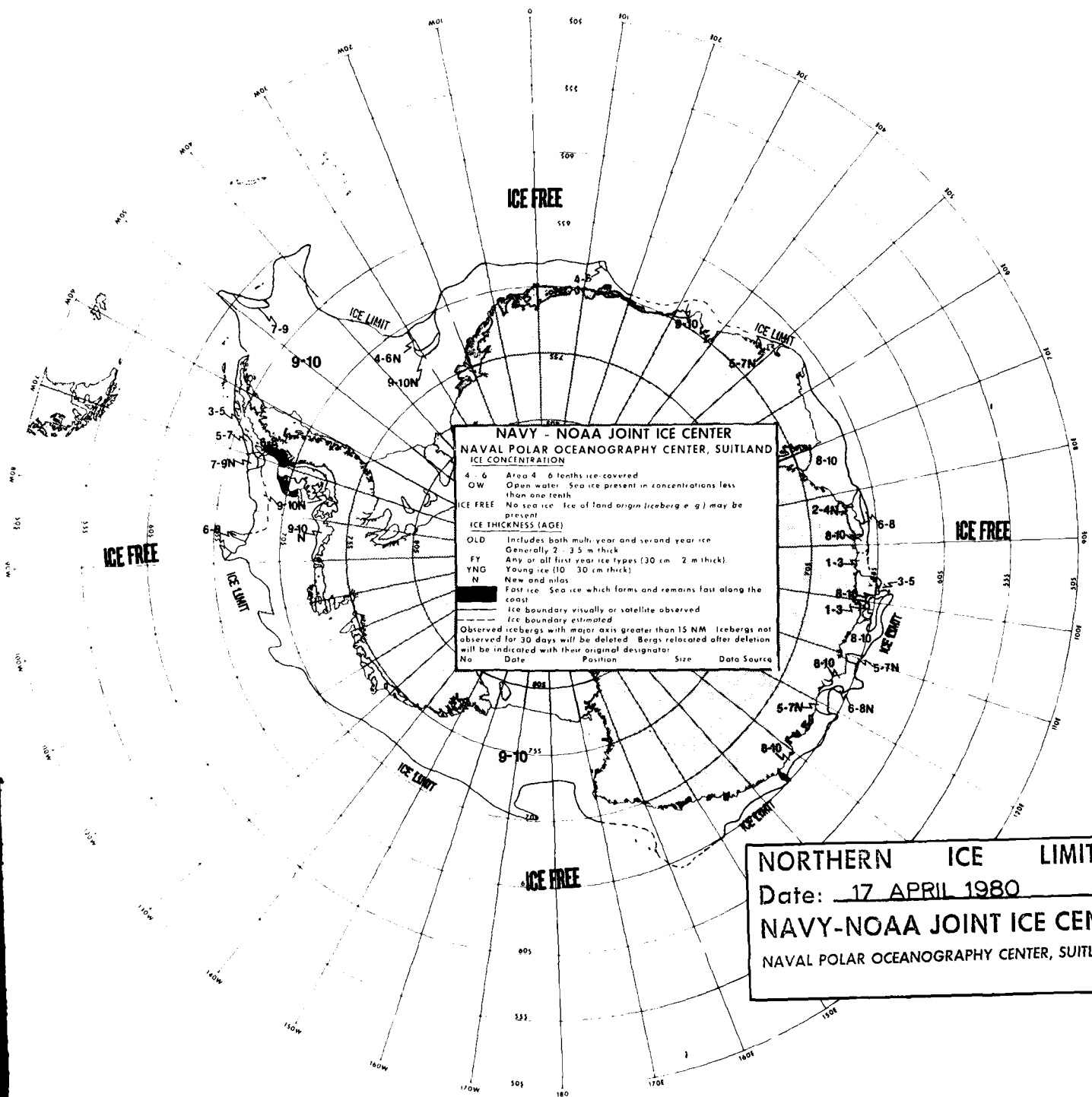


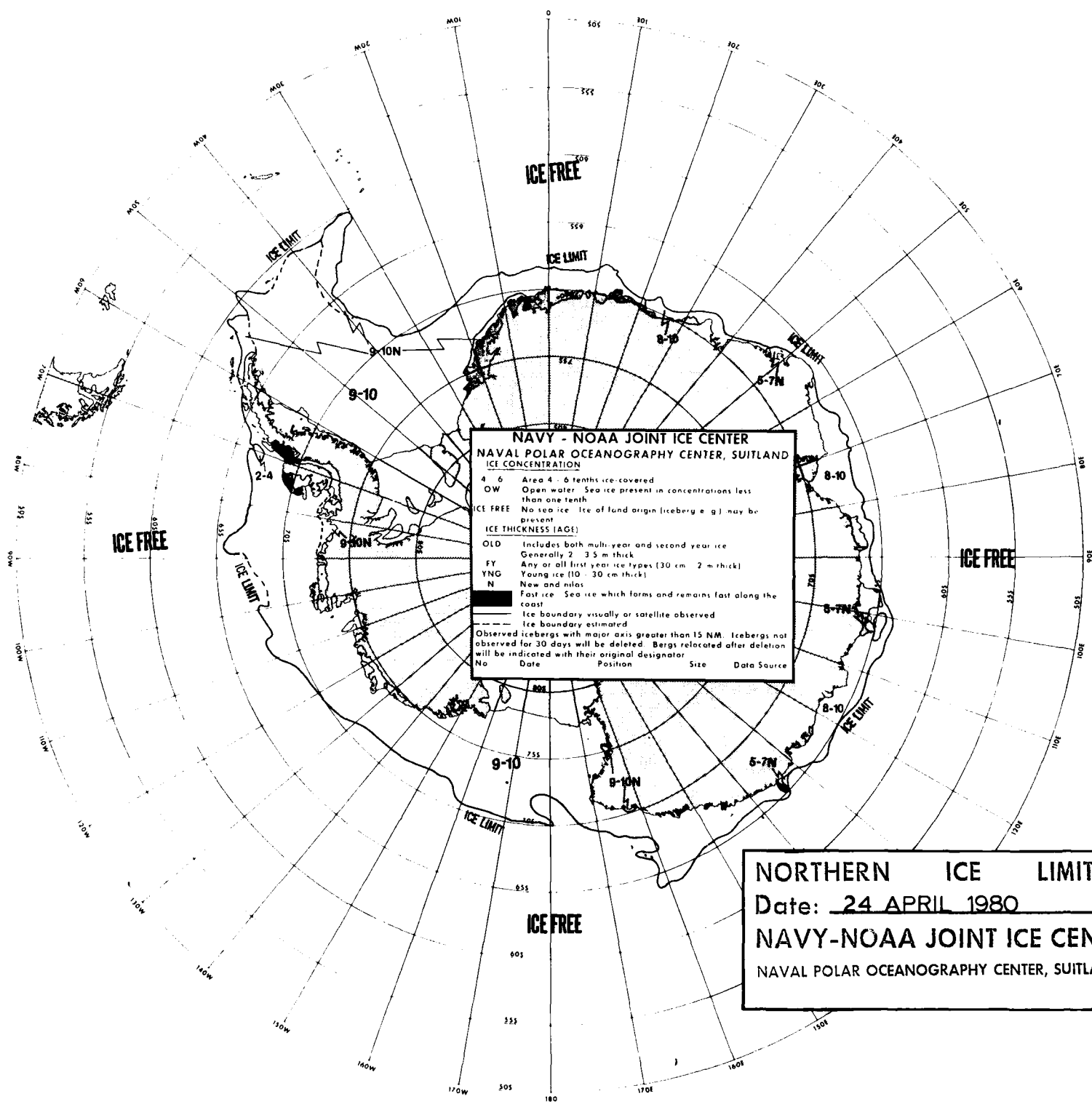
NORTHERN ICE LIMIT
 Date: 27 MARCH 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
 Analysis of Data: 25-27 MARCH 1980



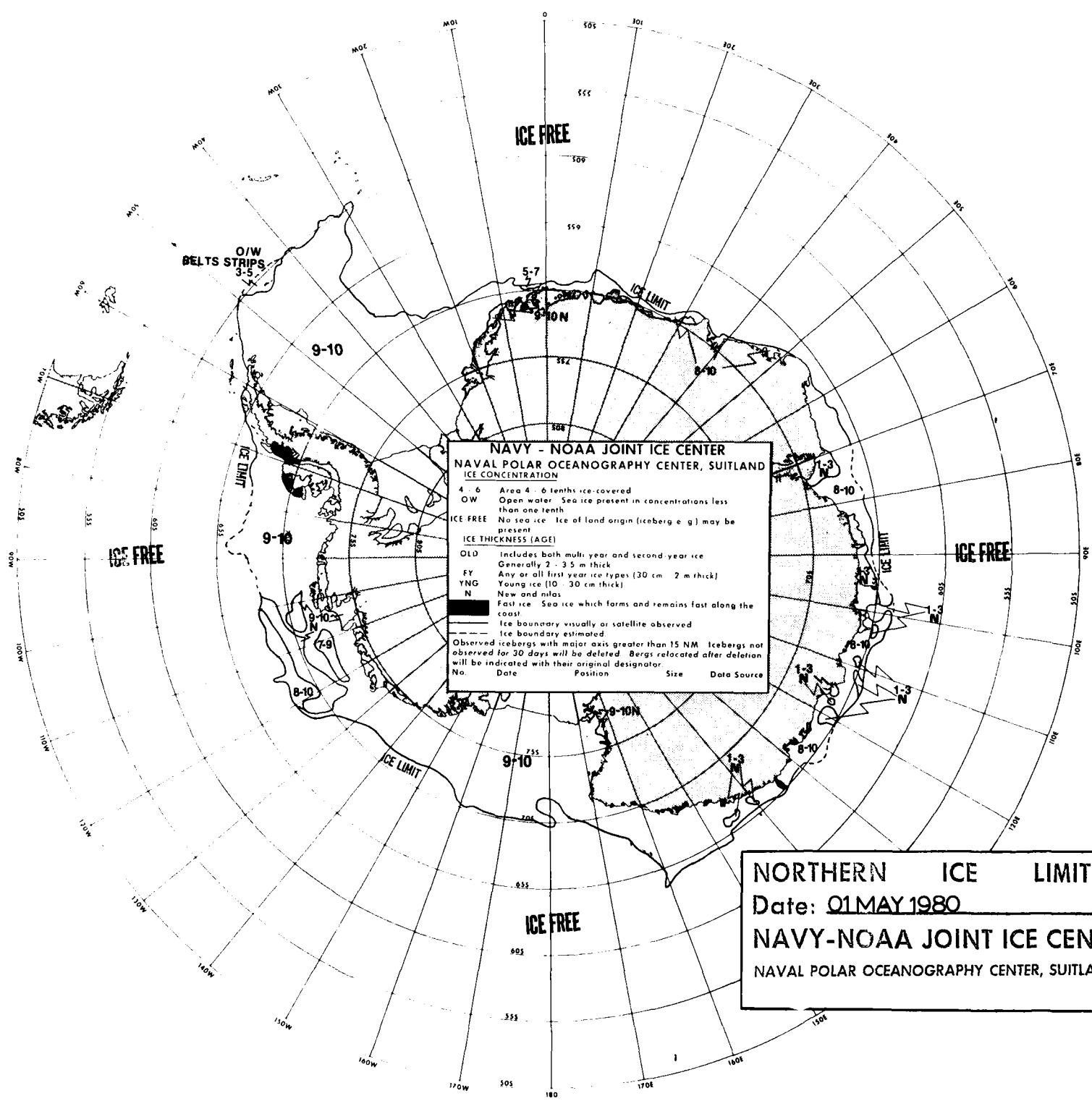
NORTHERN ICE LIMIT
Date: 03 APRIL 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
Analysis of Data: 01-03 APRIL 1980

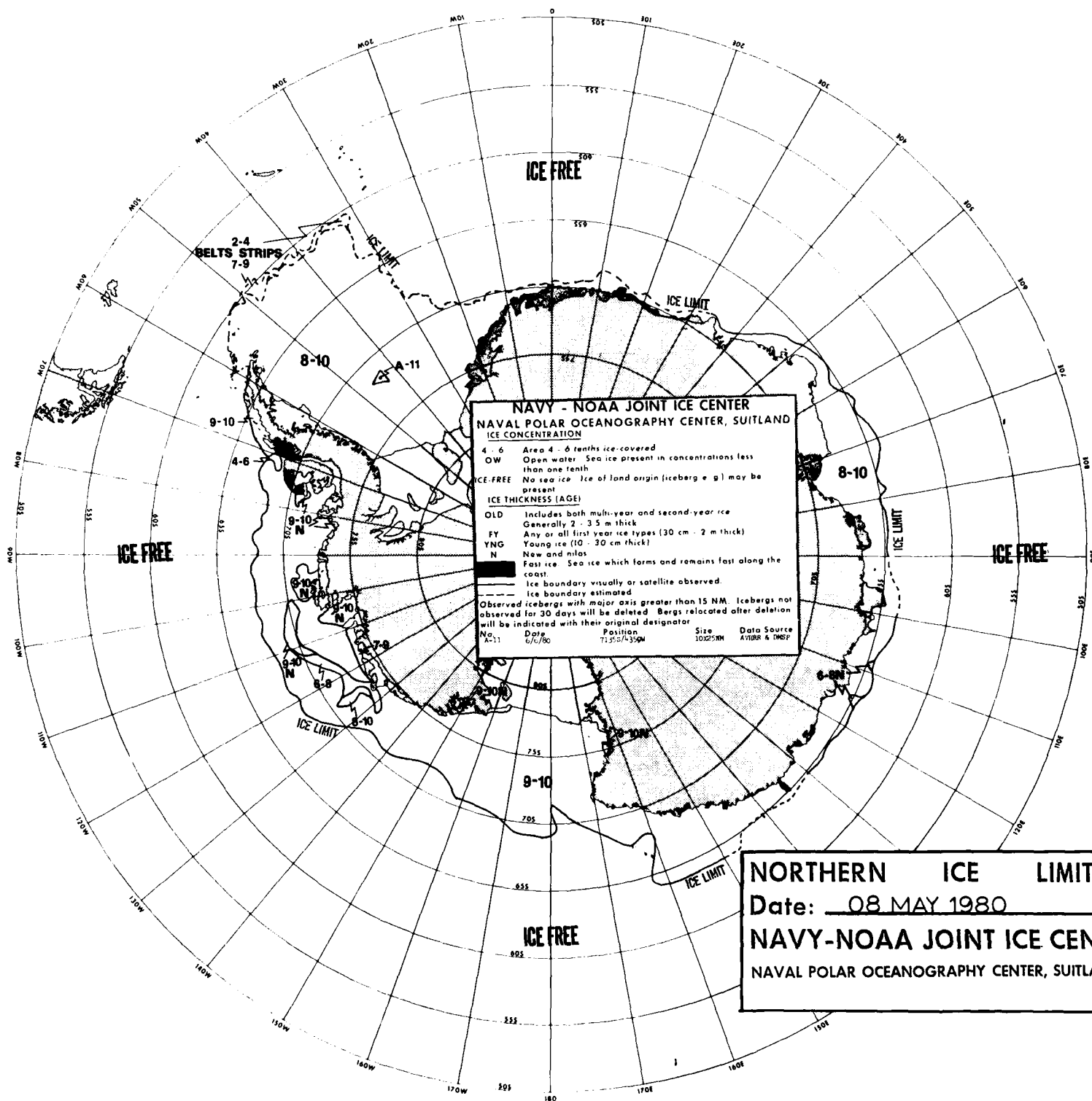


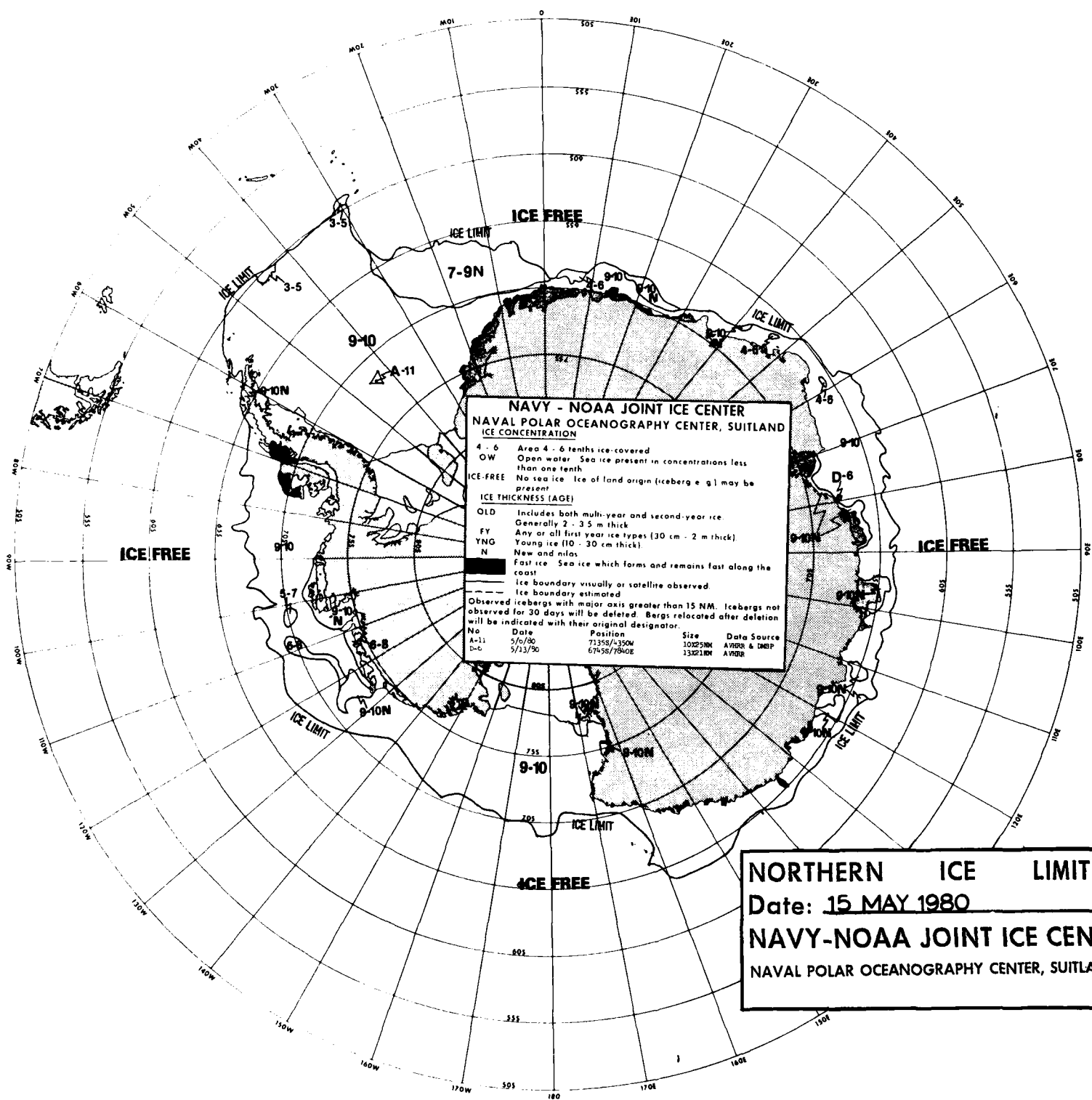




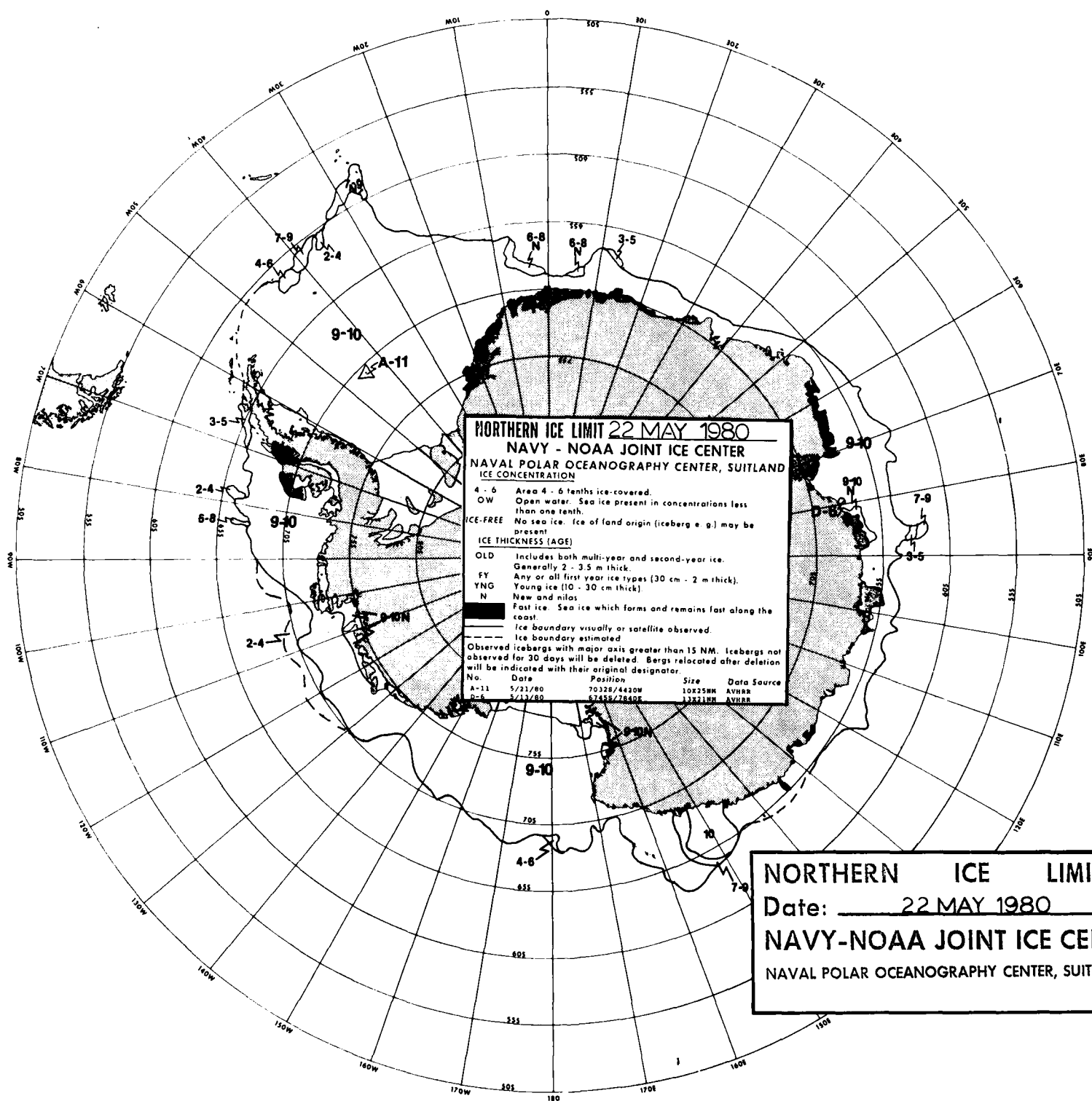
NORTHERN ICE LIMIT
 Date: 24 APRIL 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



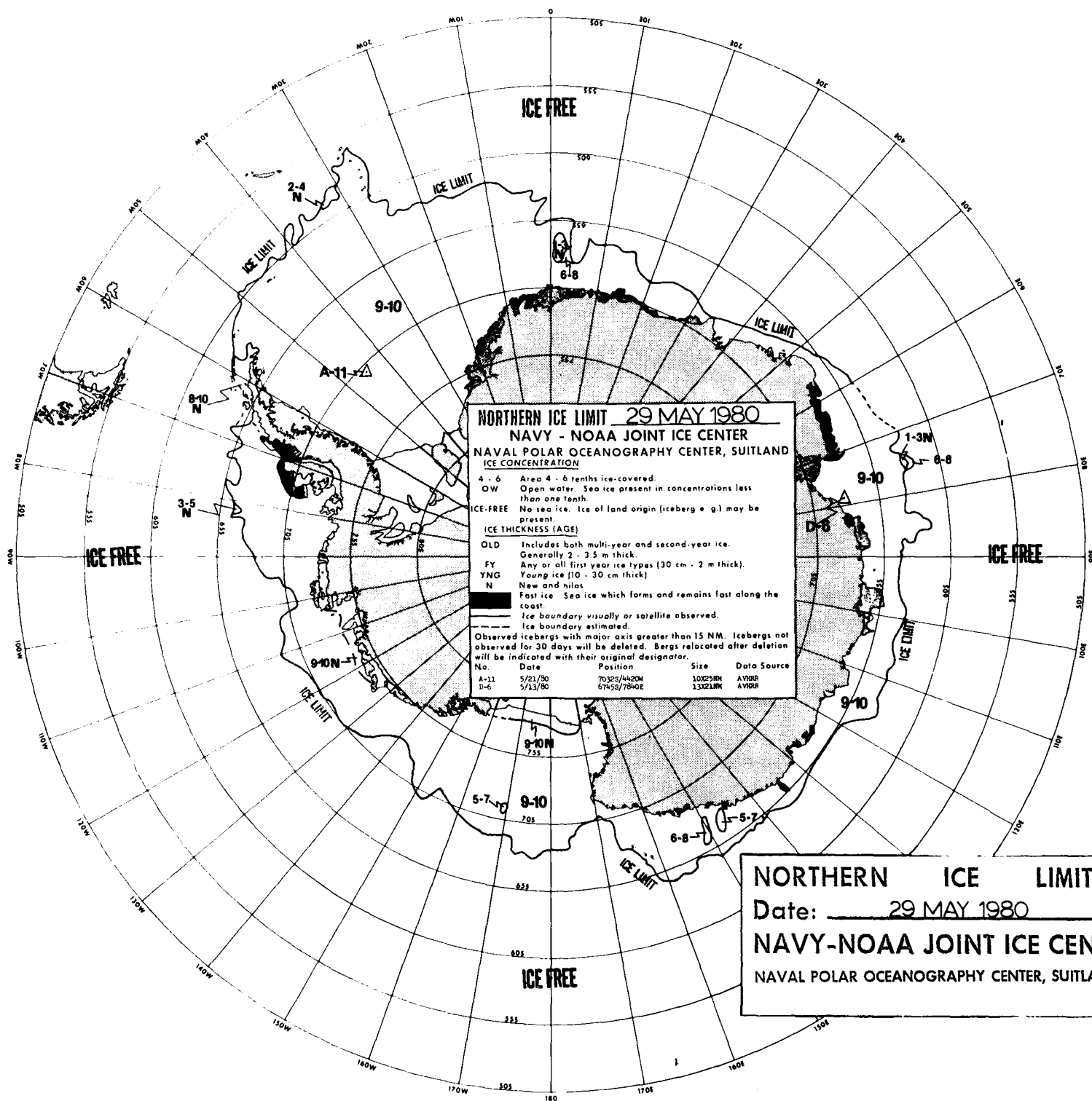




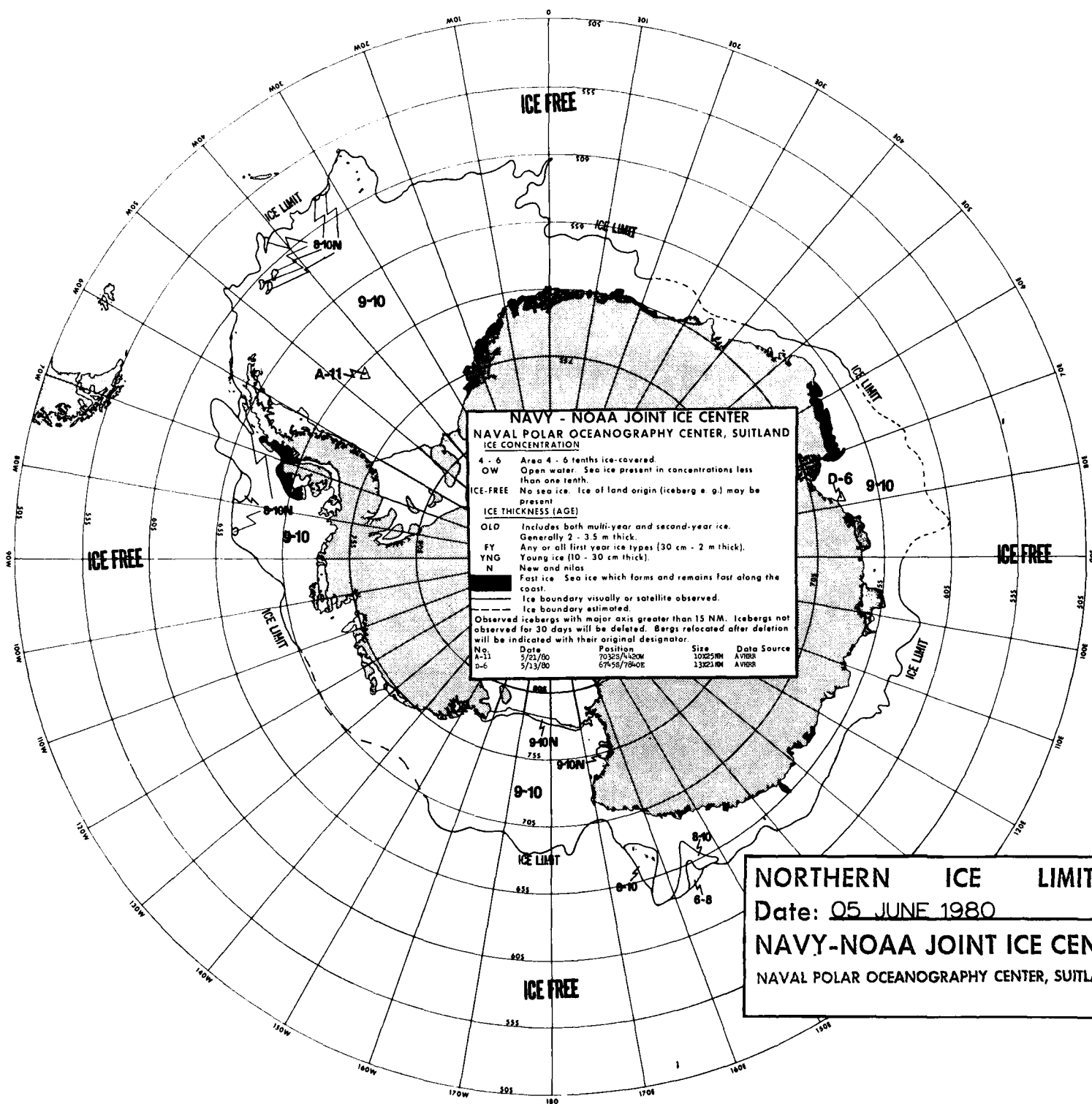
NORTHERN ICE LIMIT
Date: 15 MAY 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



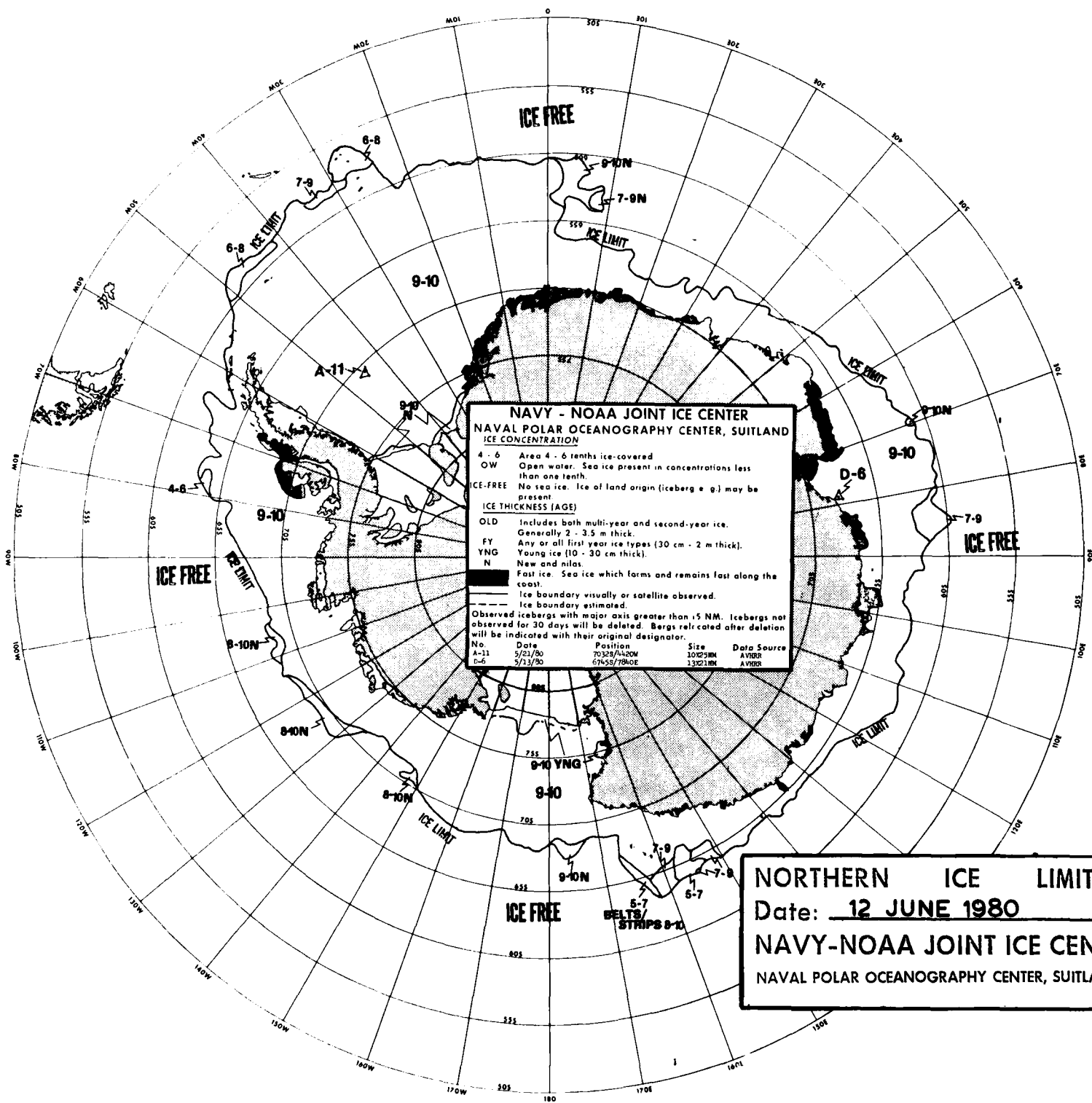
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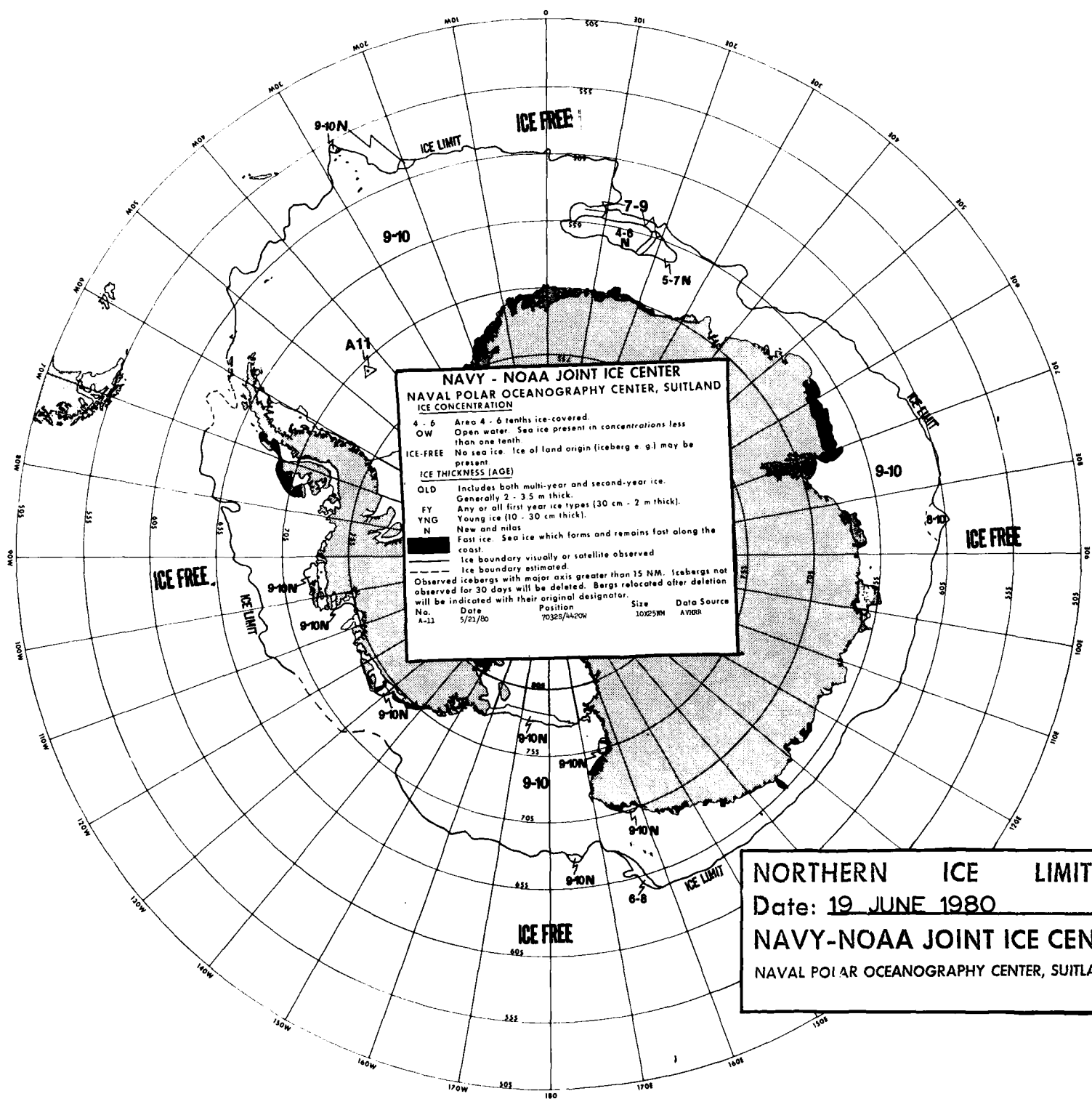
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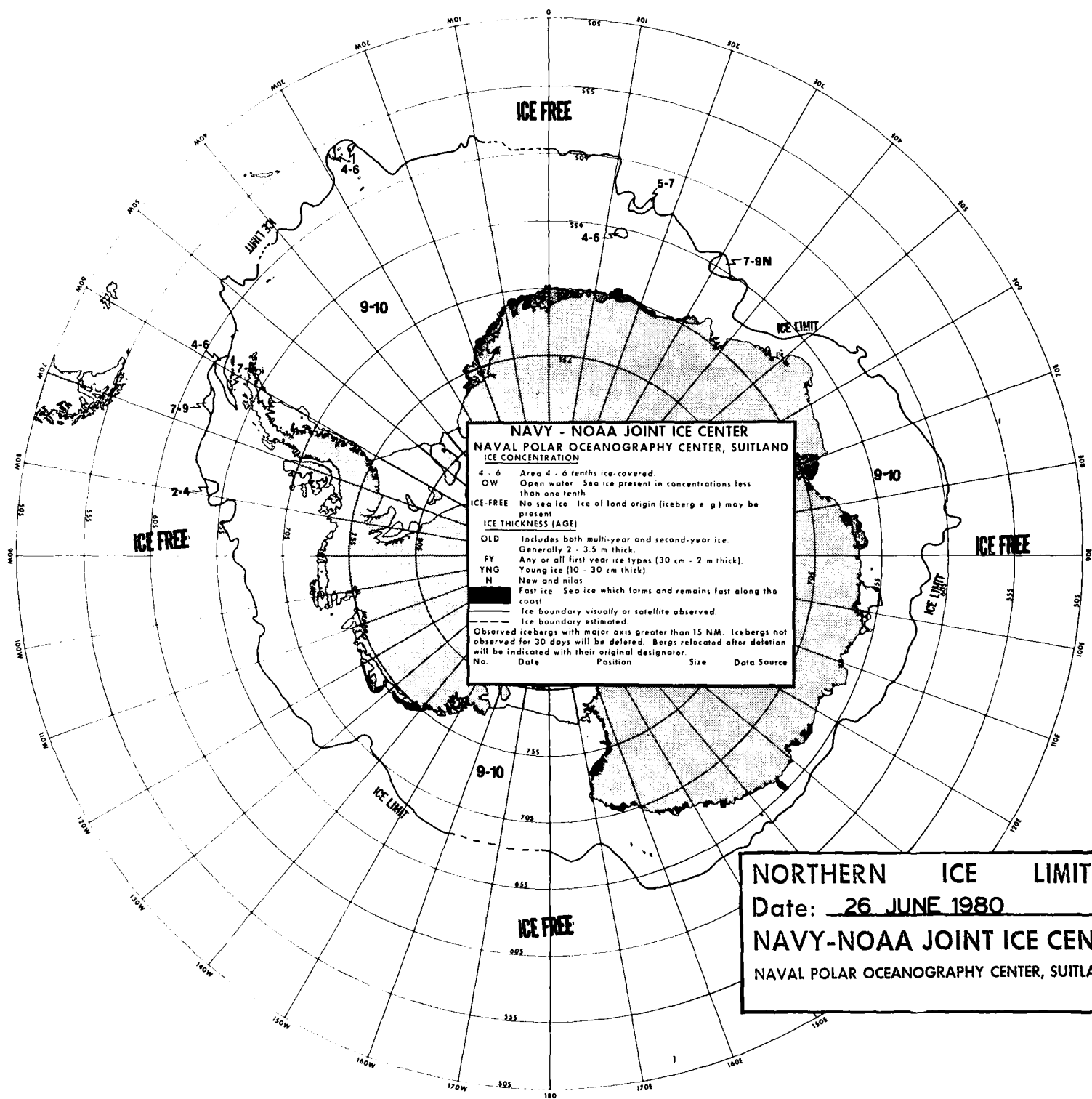
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NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

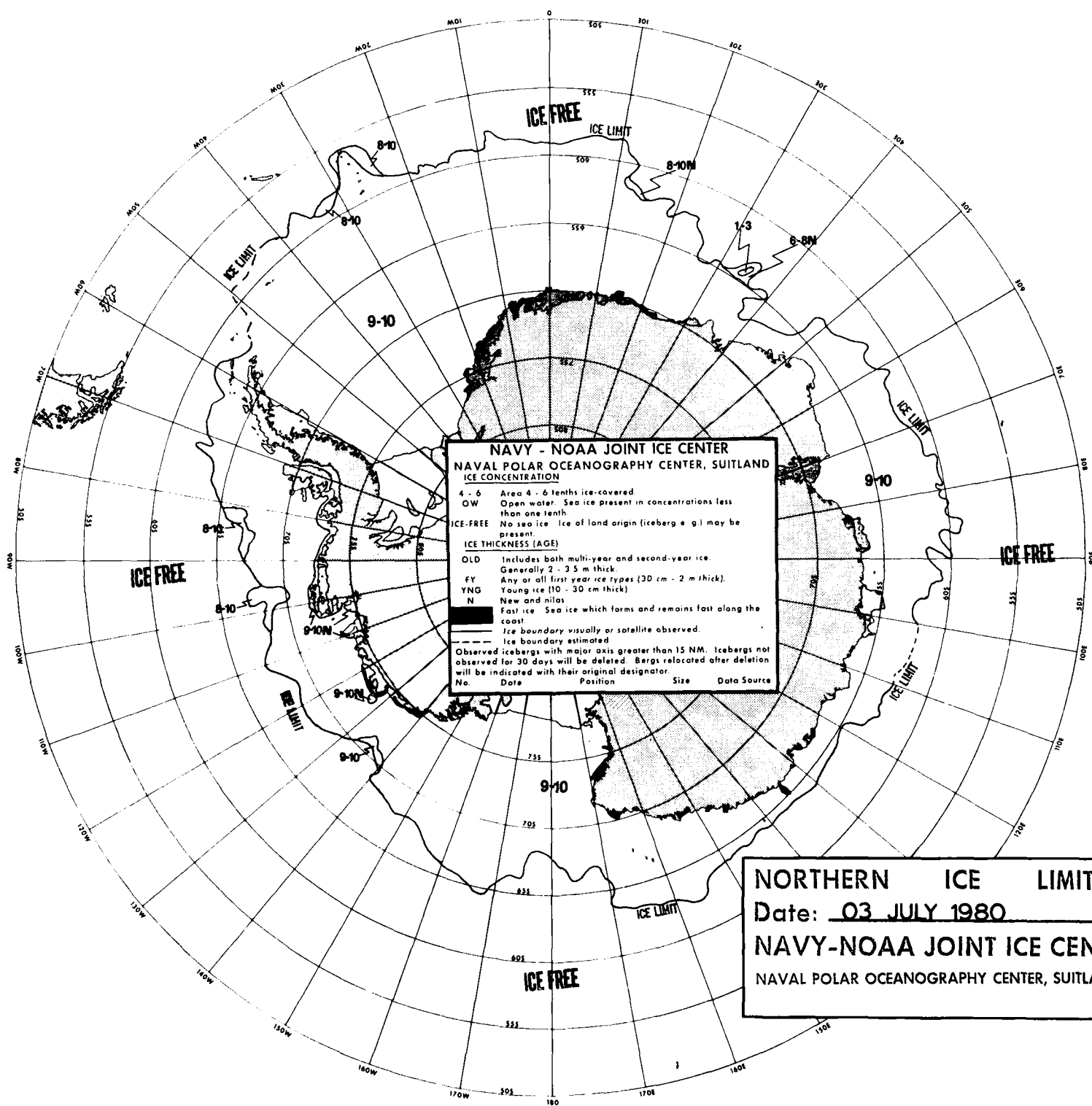


NORTHERN ICE LIMIT
 Date: 12 JUNE 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



NORTHERN ICE LIMIT
Date: 19 JUNE 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



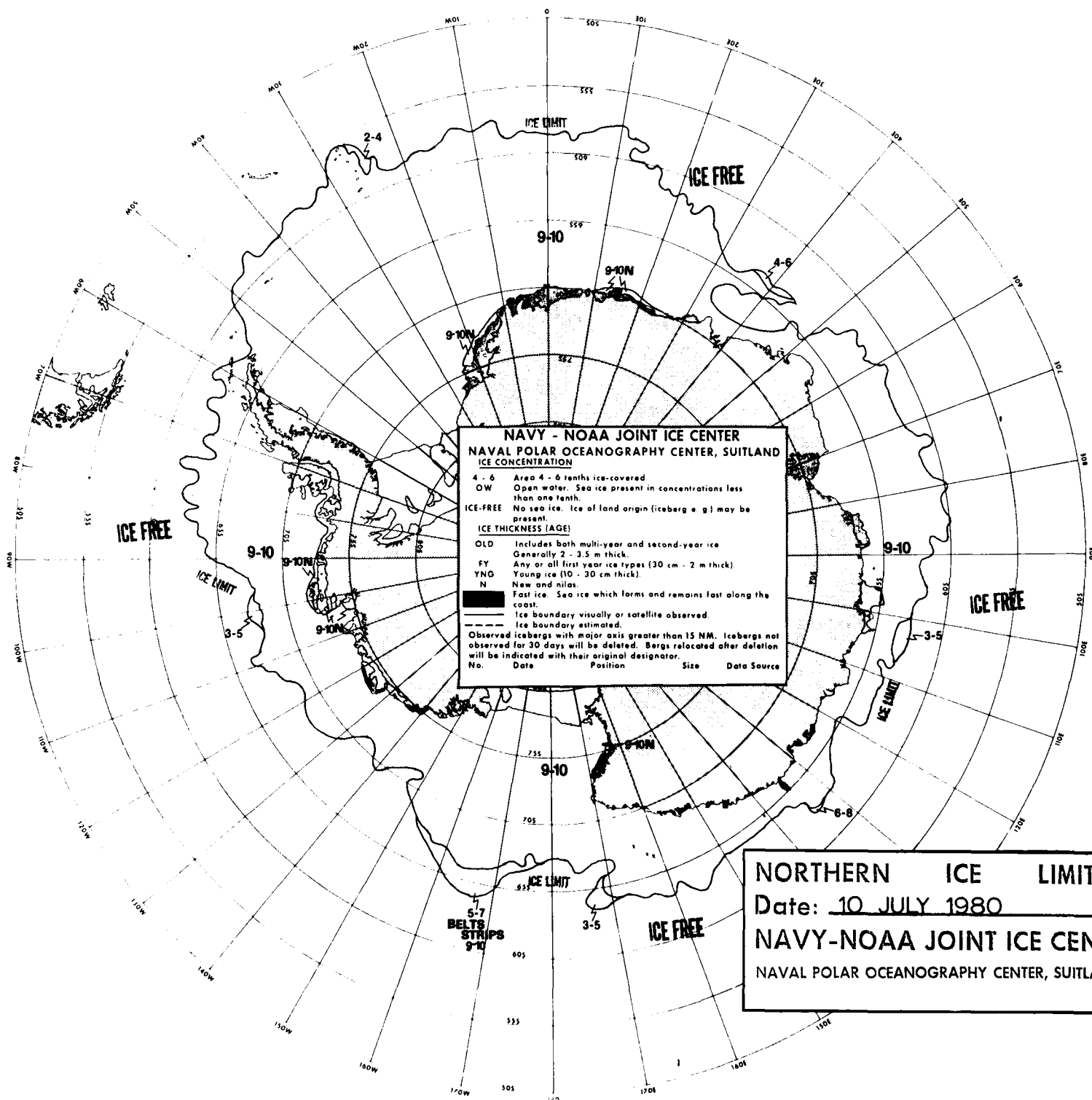


NORTHERN	ICE	LIMIT
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Date: 03 JULY 1980

NAVY-NOAA JOINT ICE CENTER

NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

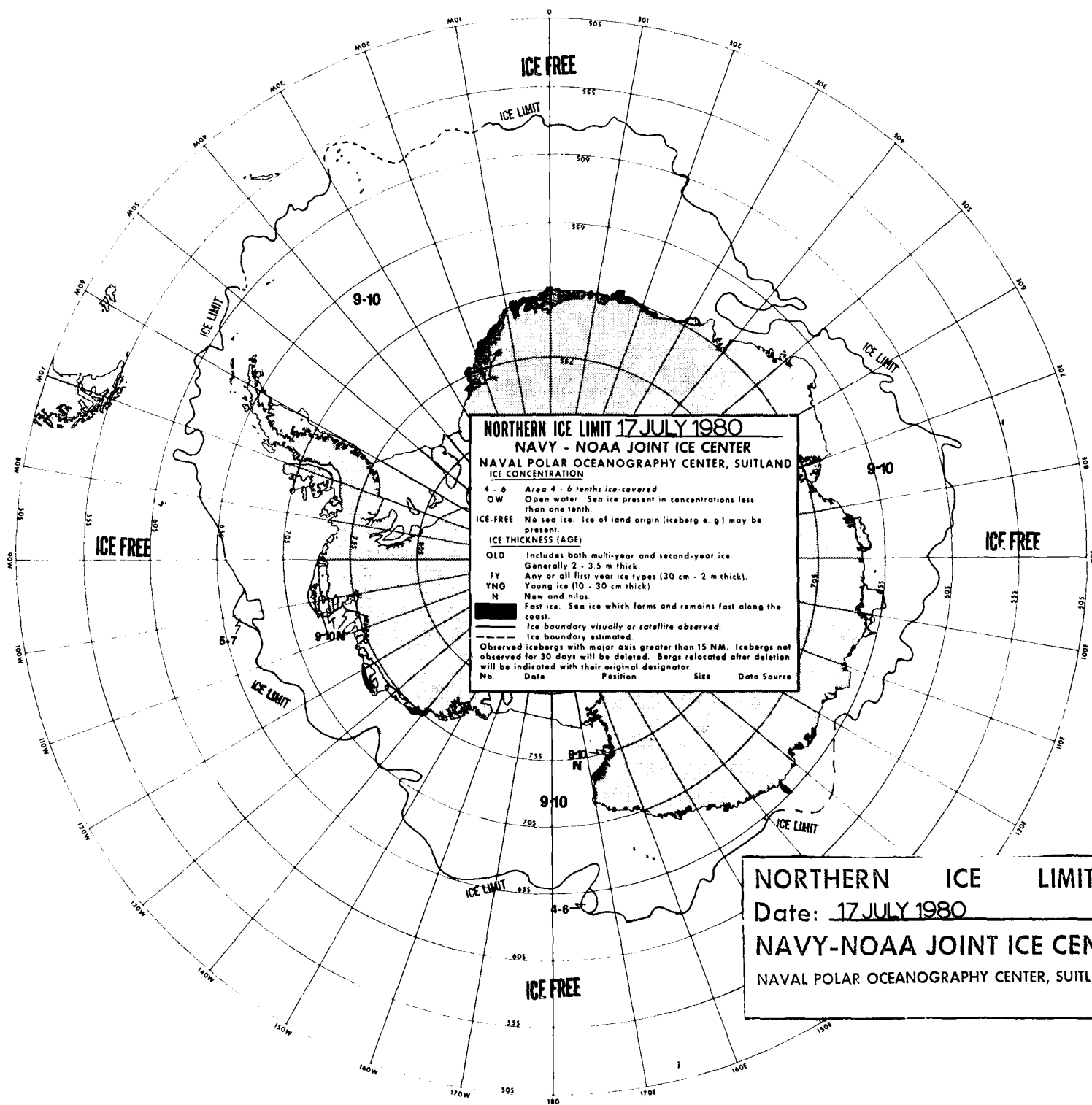


NORTHERN ICE LIMIT

Date: 10 JULY 1980

NAVY-NOAA JOINT ICE CENTER

NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



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NAVAL POLAR OCEANOGRAPHY CENTER WASHINGTON DC
ANTARCTIC ICE CHARTS 1979-1980.(U)
MAY 81

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UNCLASSIFIED

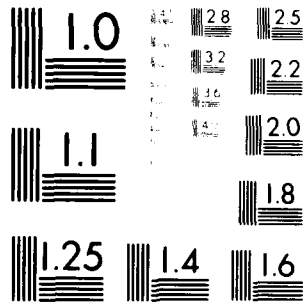
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2 of 2

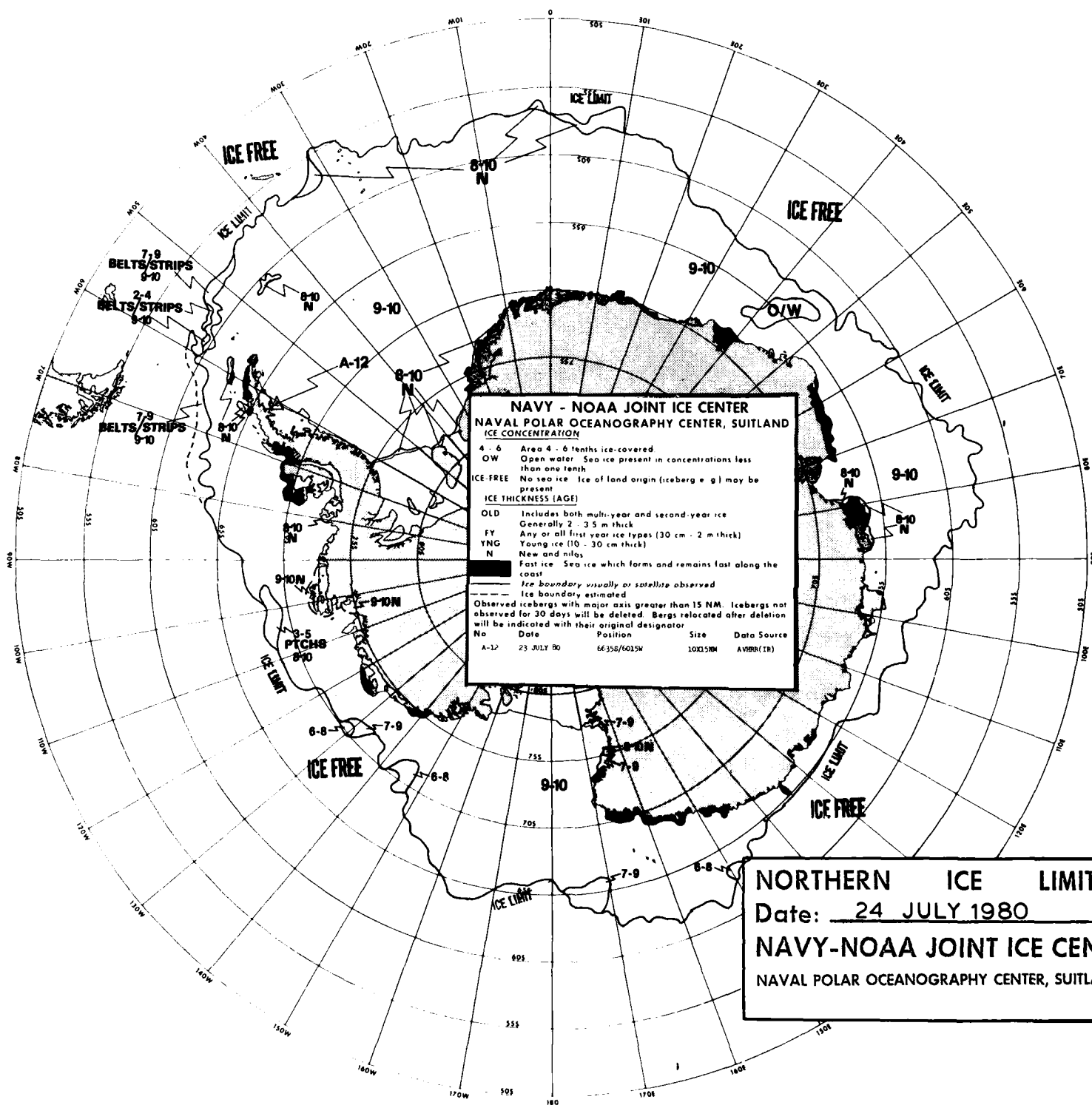
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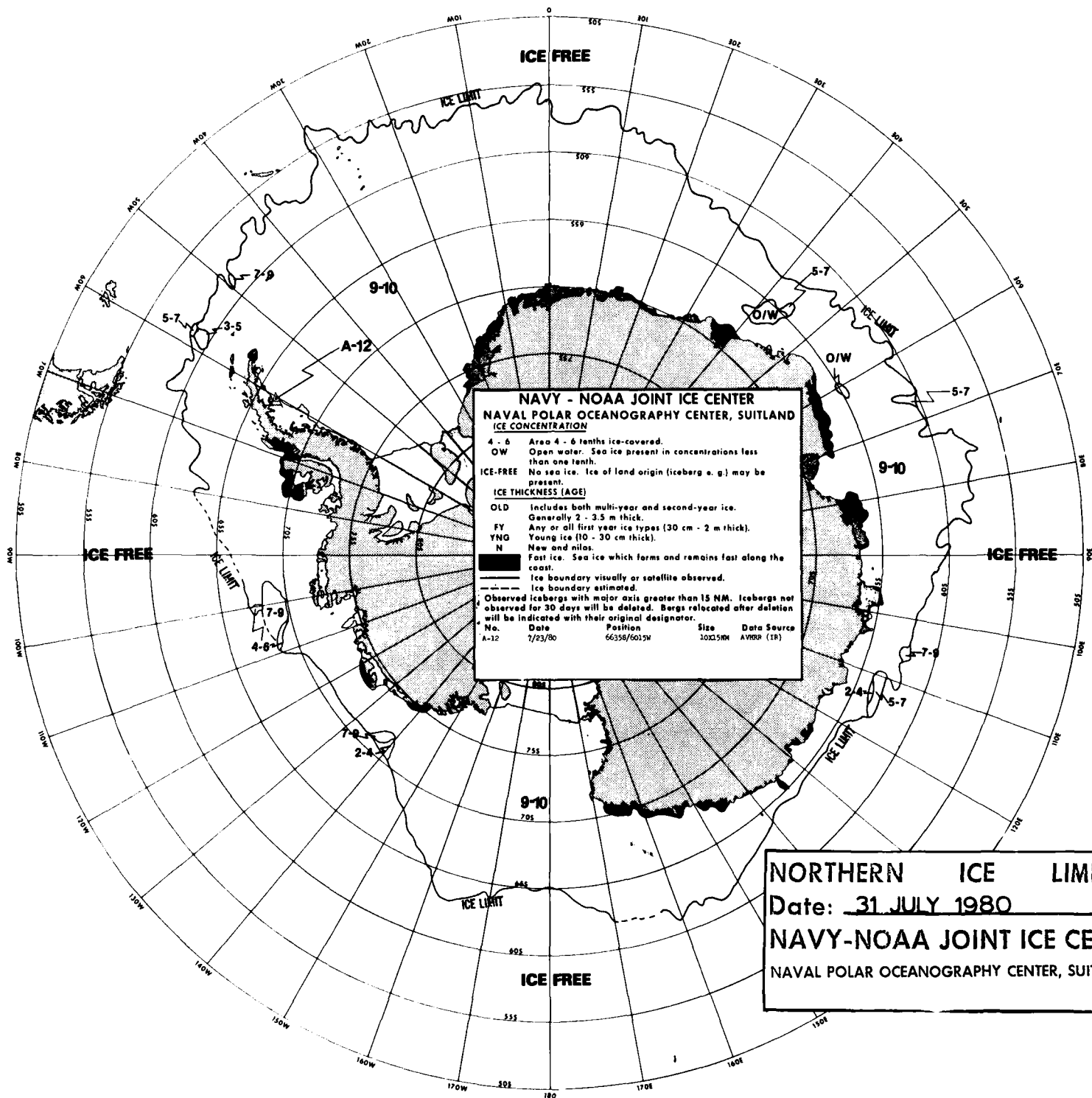
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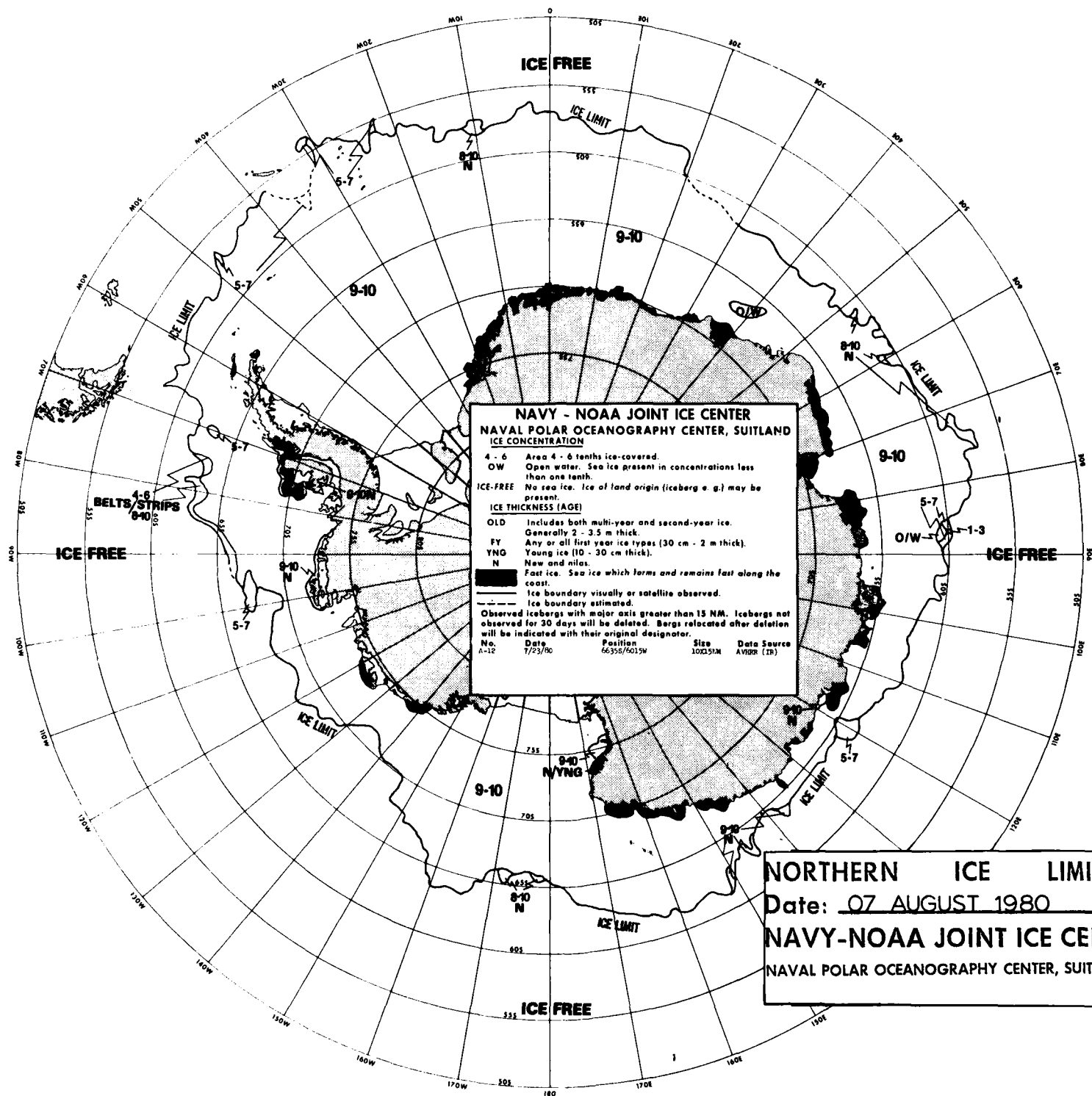
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 NATIONAL BUREAU OF STANDARDS-1963-A



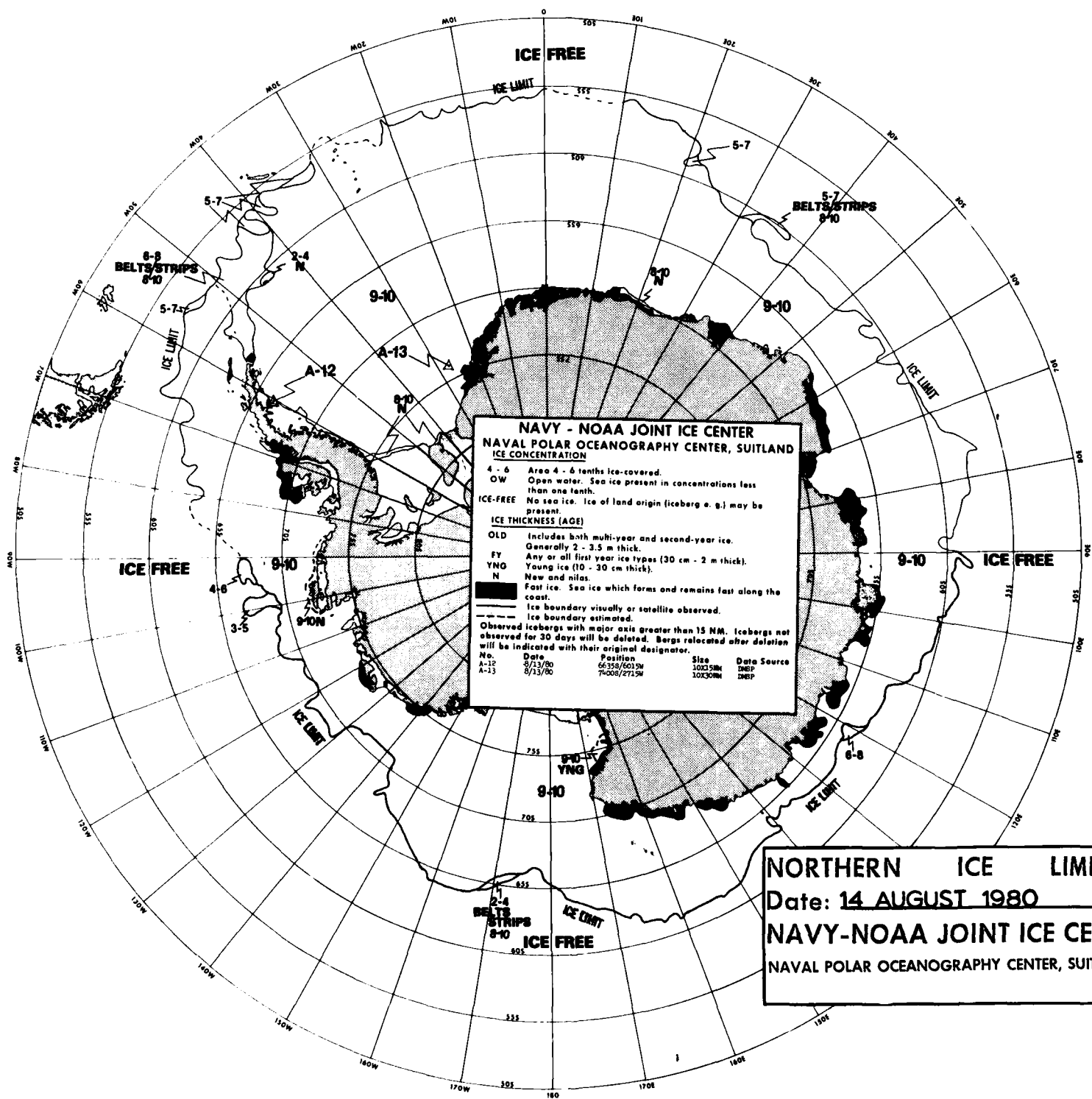
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Date: 24 JULY 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



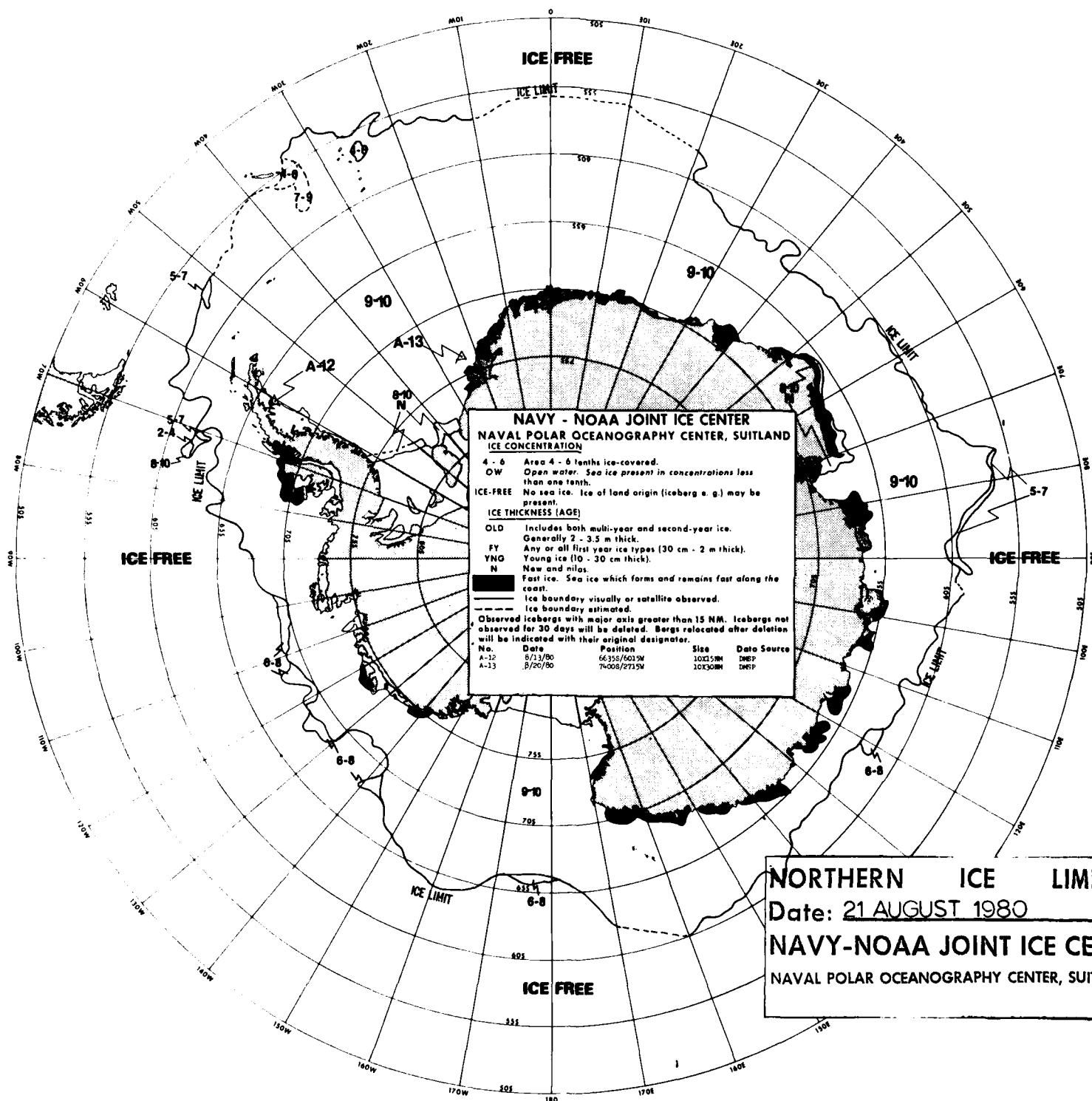
NORTHERN ICE LIMIT
 Date: 31 JULY 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



NORTHERN ICE LIMIT
Date: 07 AUGUST 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



NORTHERN ICE LIMIT
Date: 14 AUGUST 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

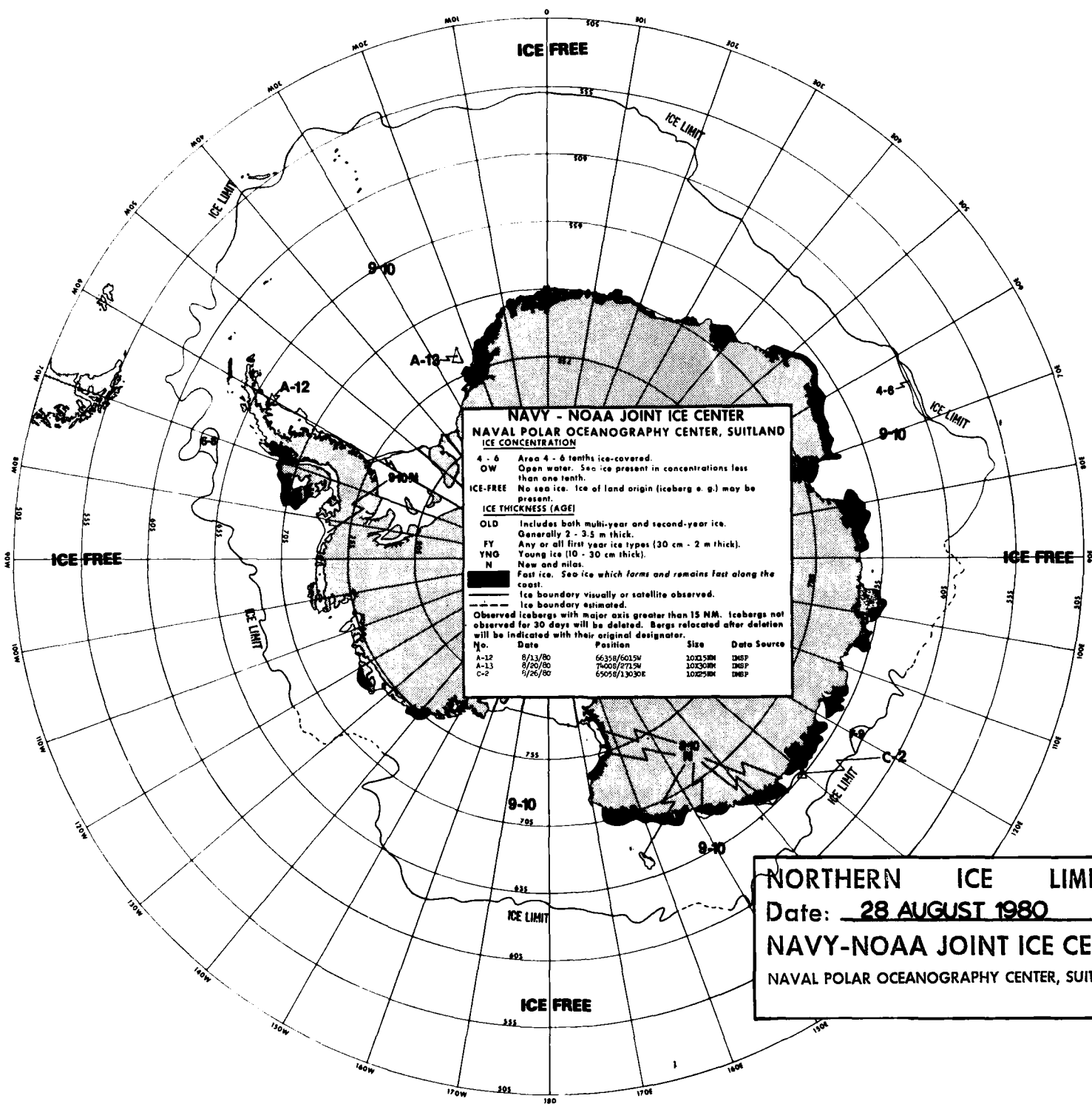


NORTHERN ICE LIMIT

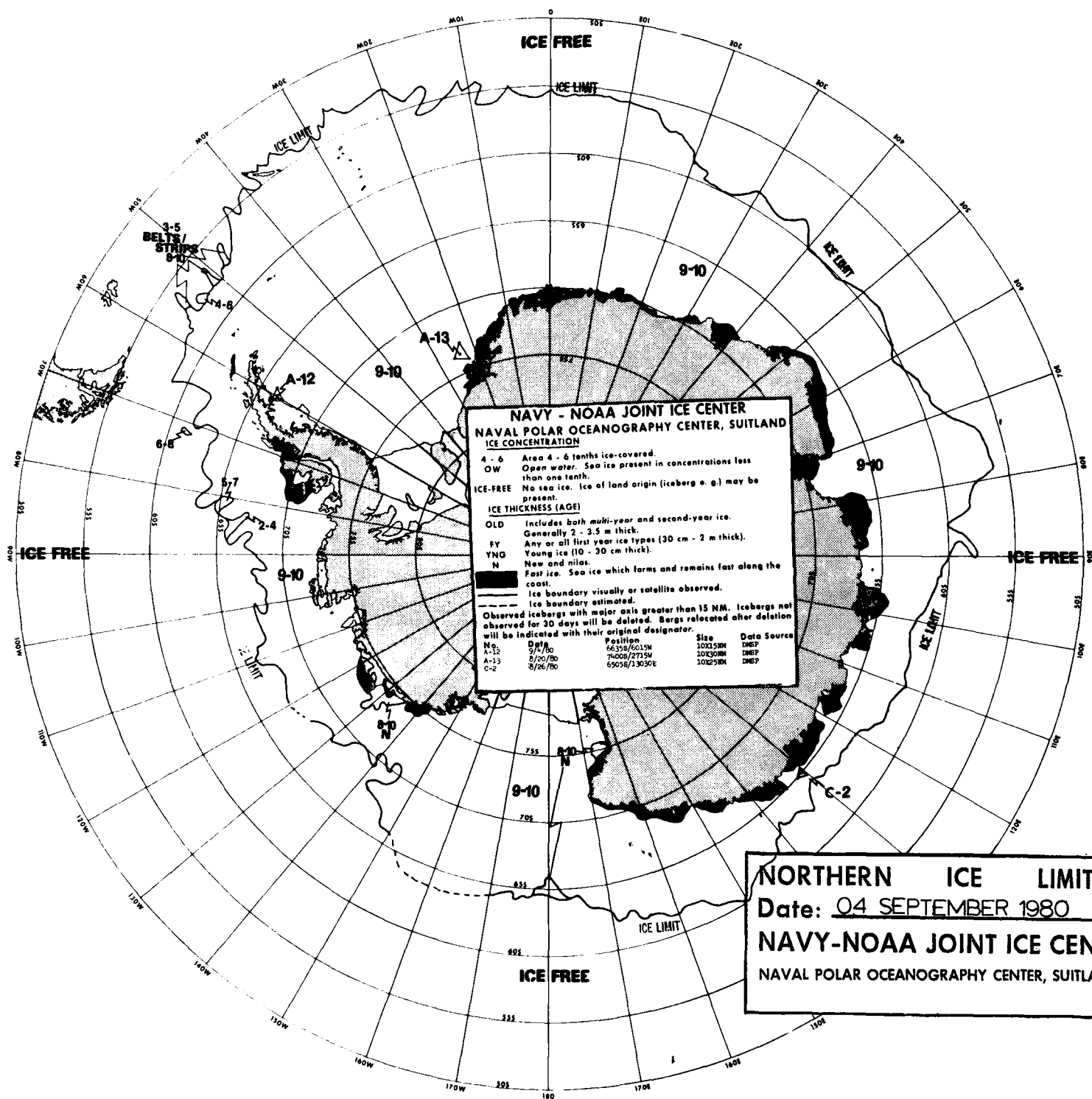
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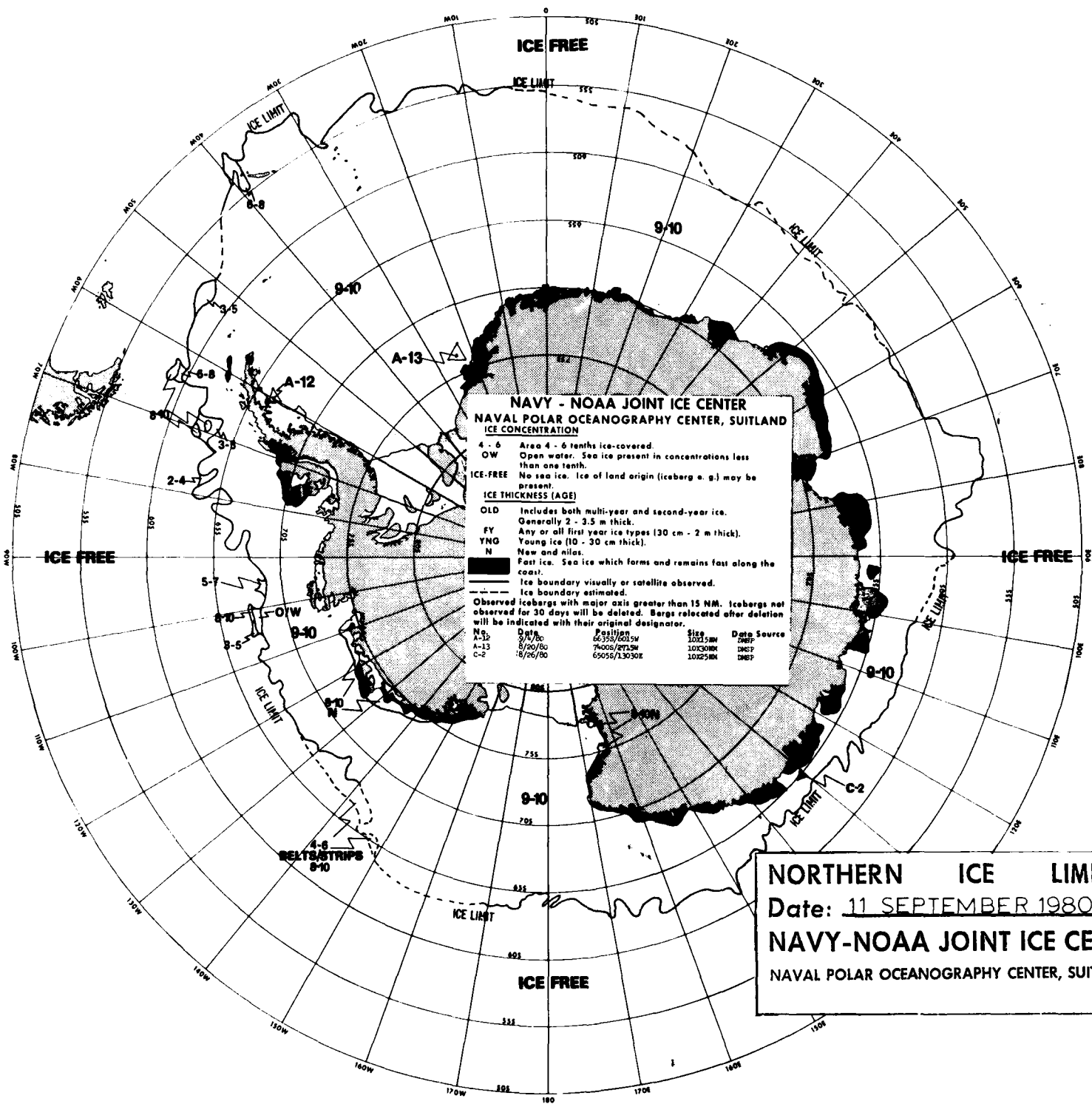
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NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

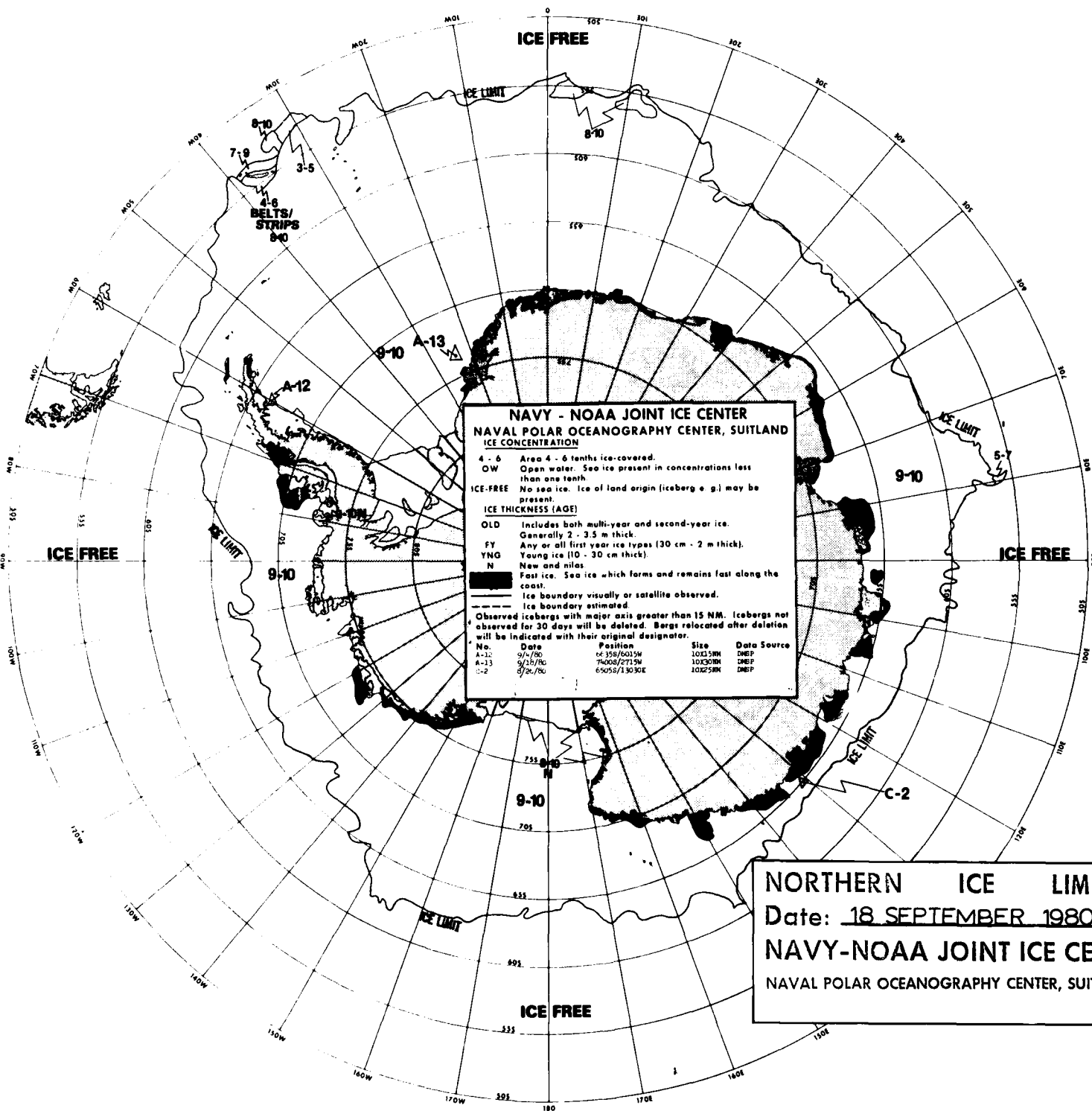


NORTHERN ICE LIMIT
Date: **28 AUGUST 1980**
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

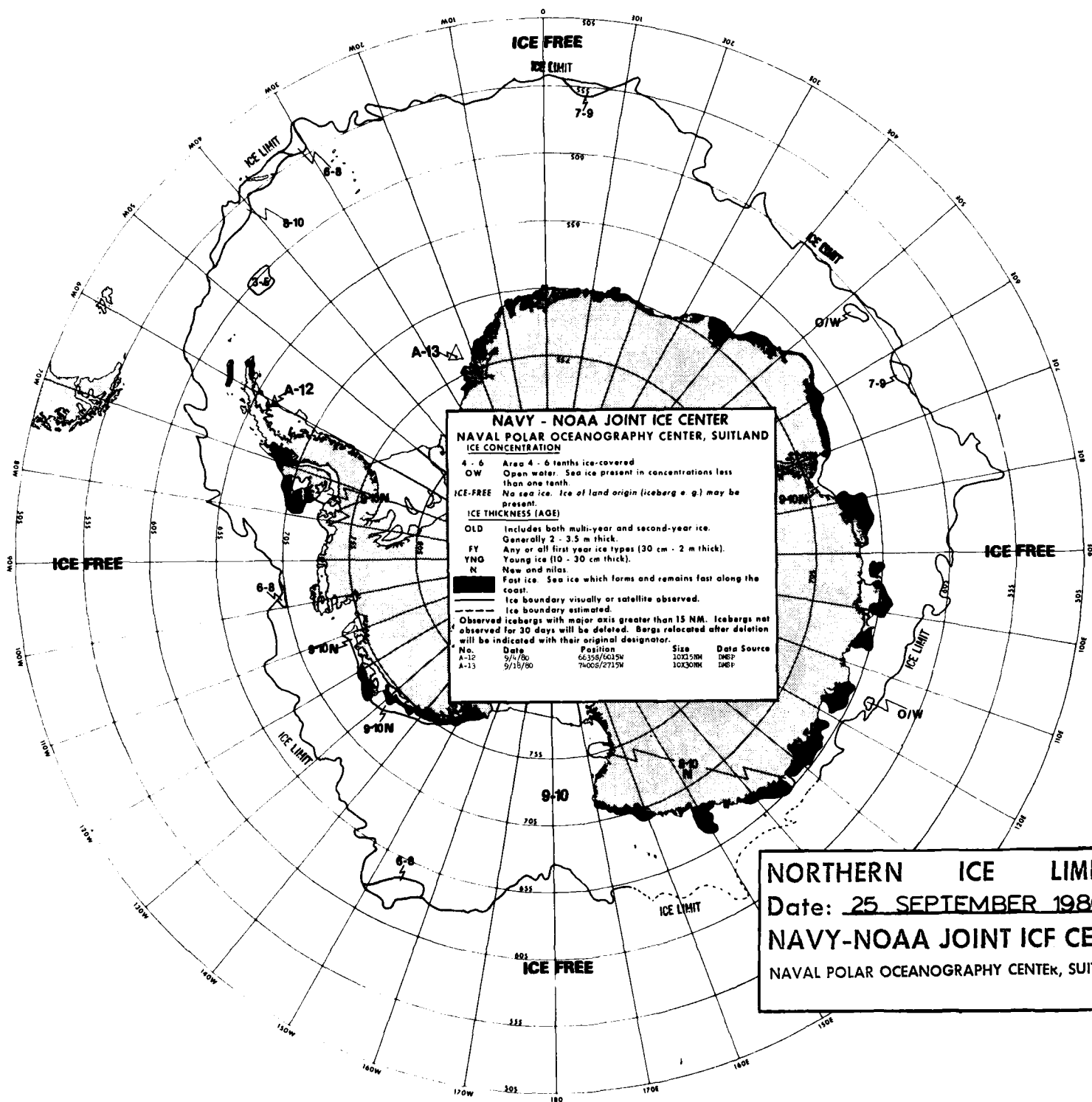




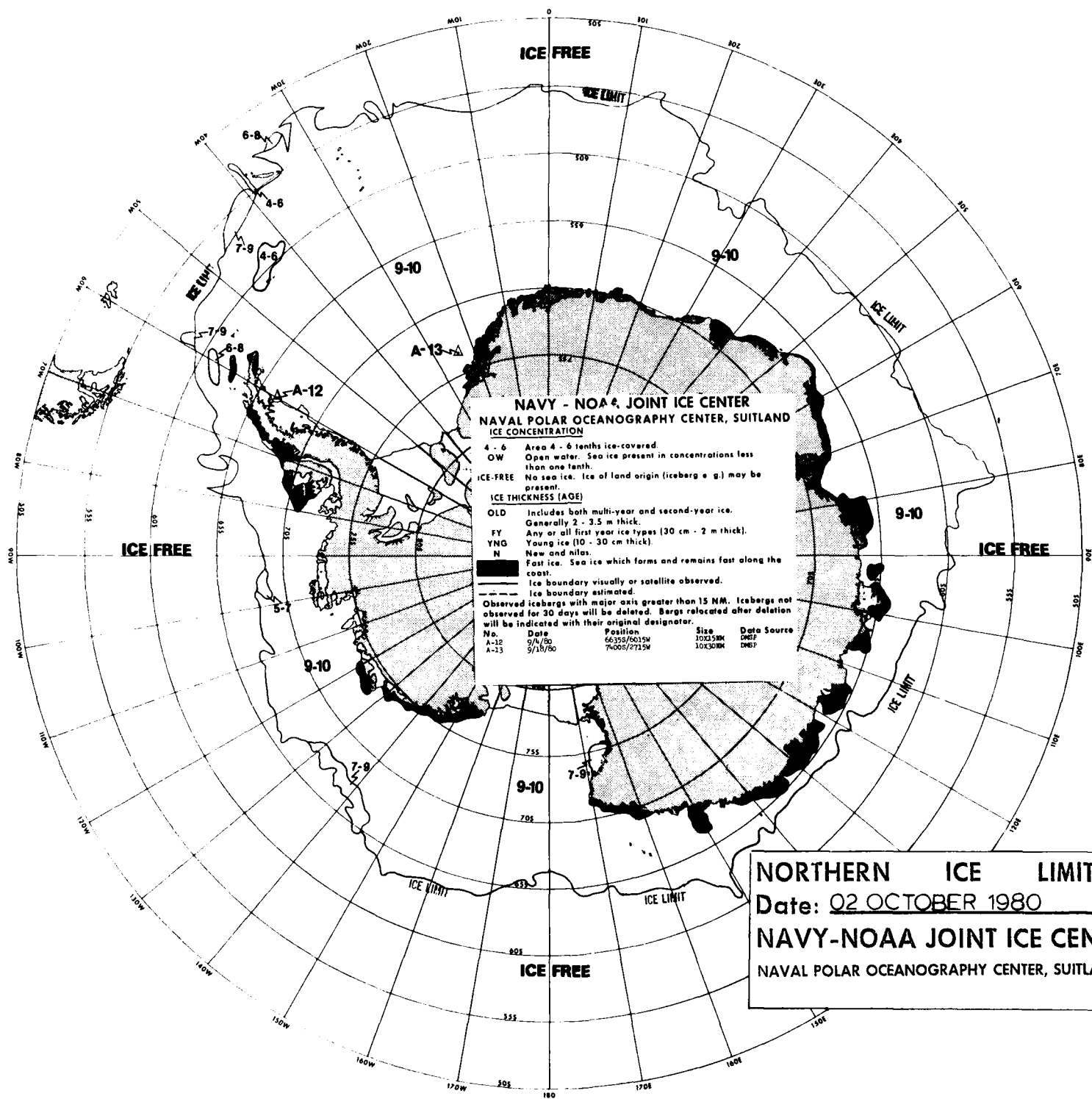
NORTHERN ICE LIMIT
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NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



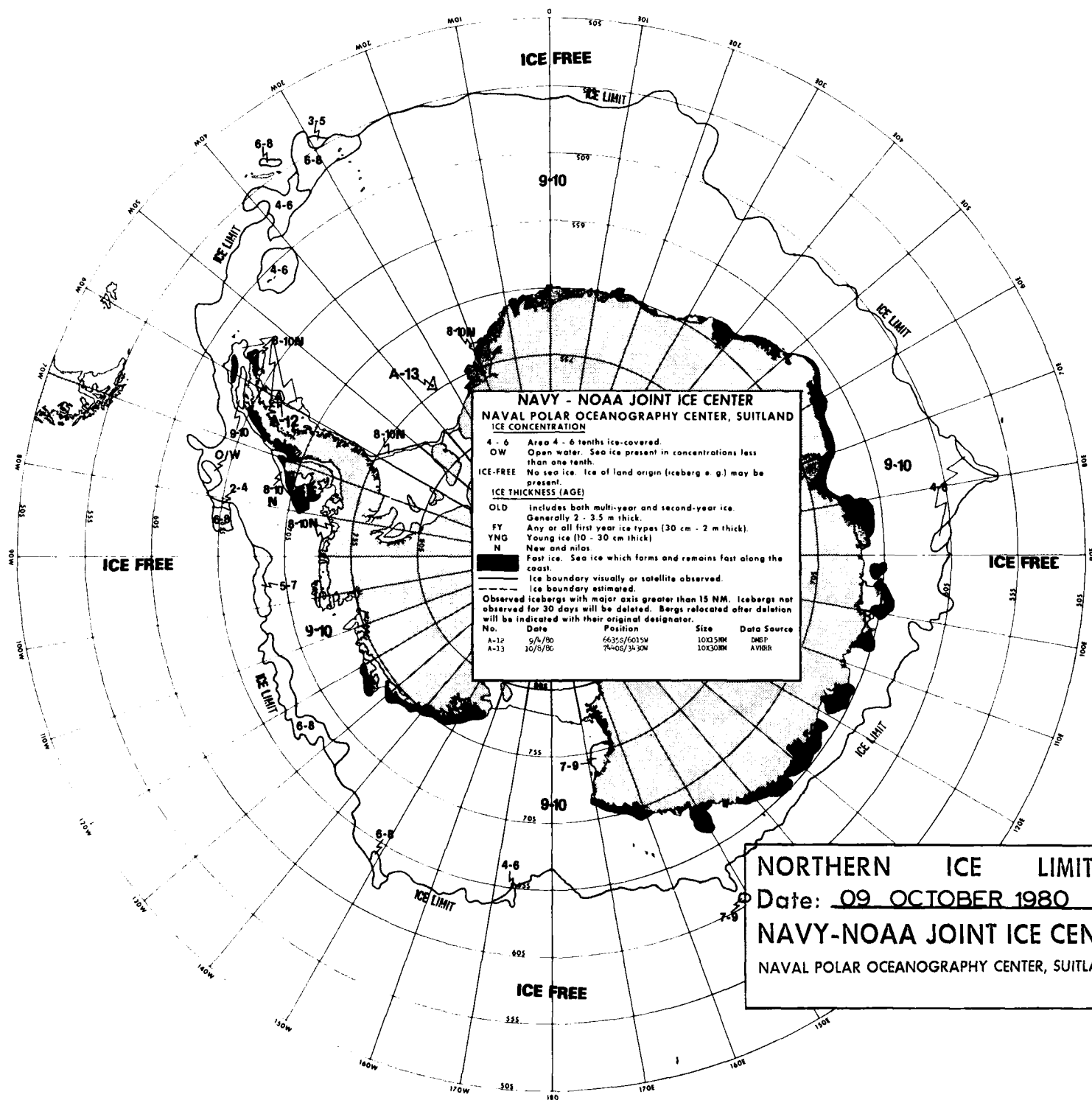
NORTHERN ICE LIMIT
Date: 18 SEPTEMBER 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



NORTHERN ICE LIMIT
Date: 25 SEPTEMBER 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



NORTHERN ICE LIMIT
Date: 02 OCTOBER 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

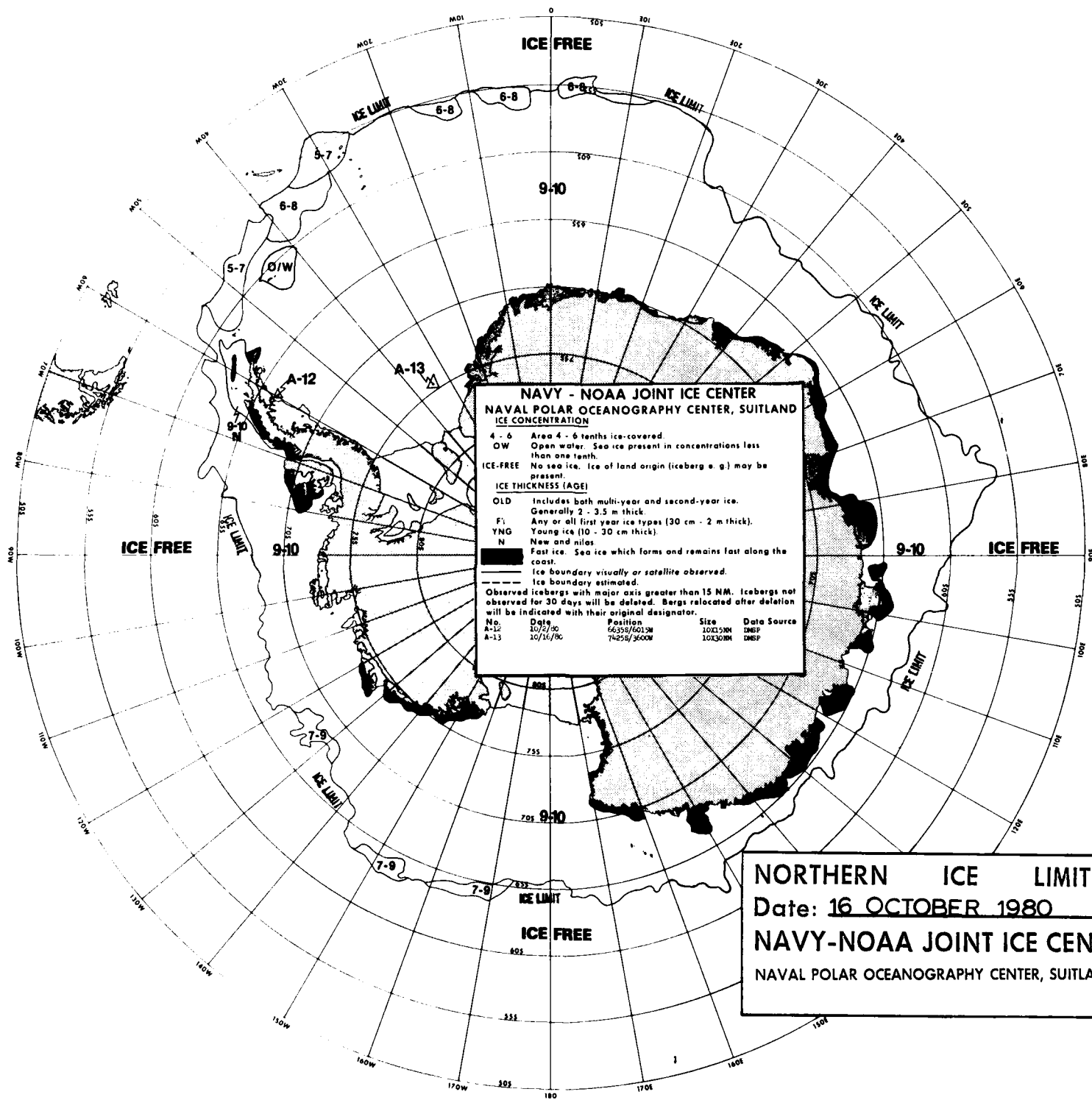


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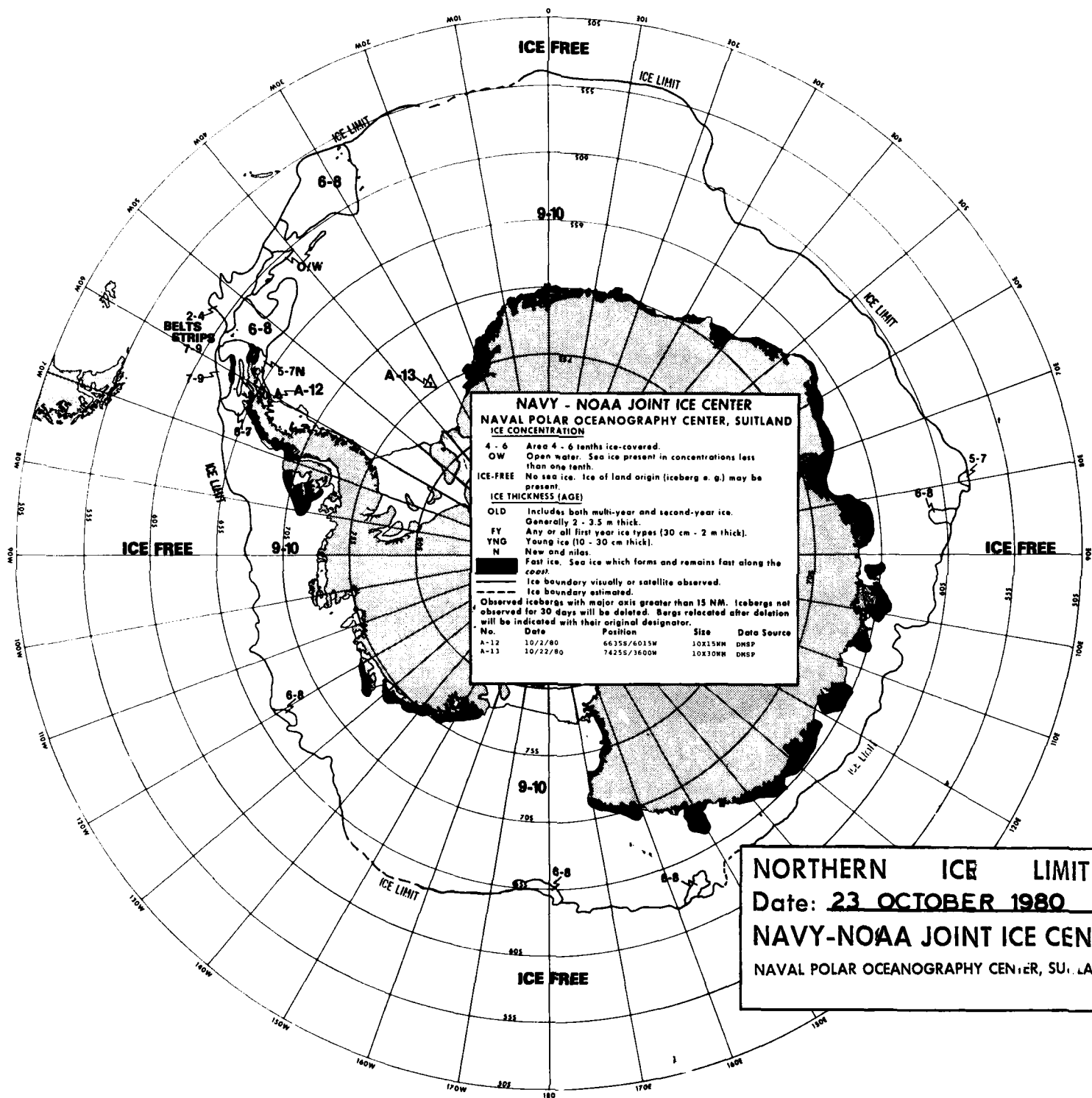
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NAVY-NOAA JOINT ICE CENTER

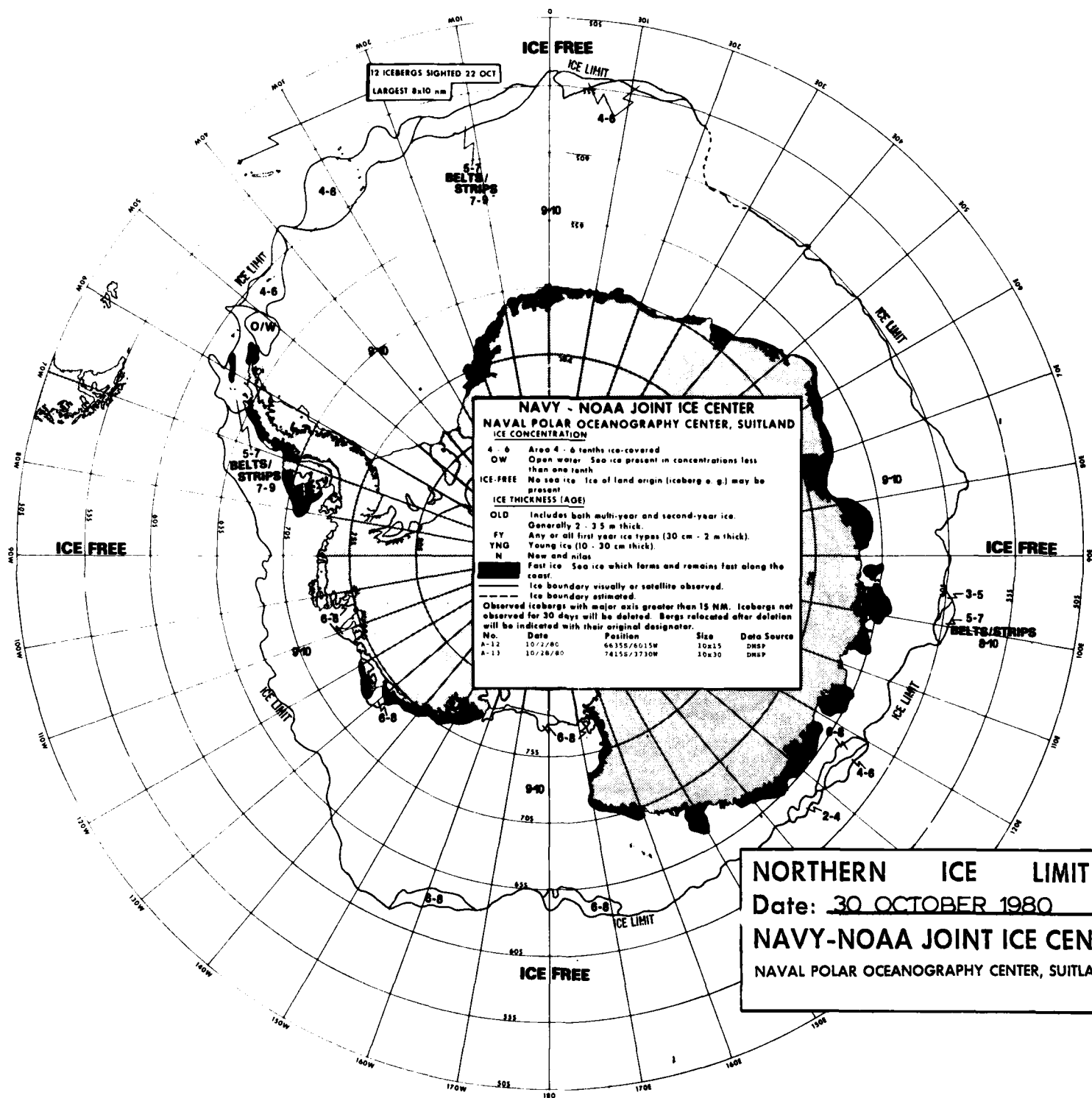
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



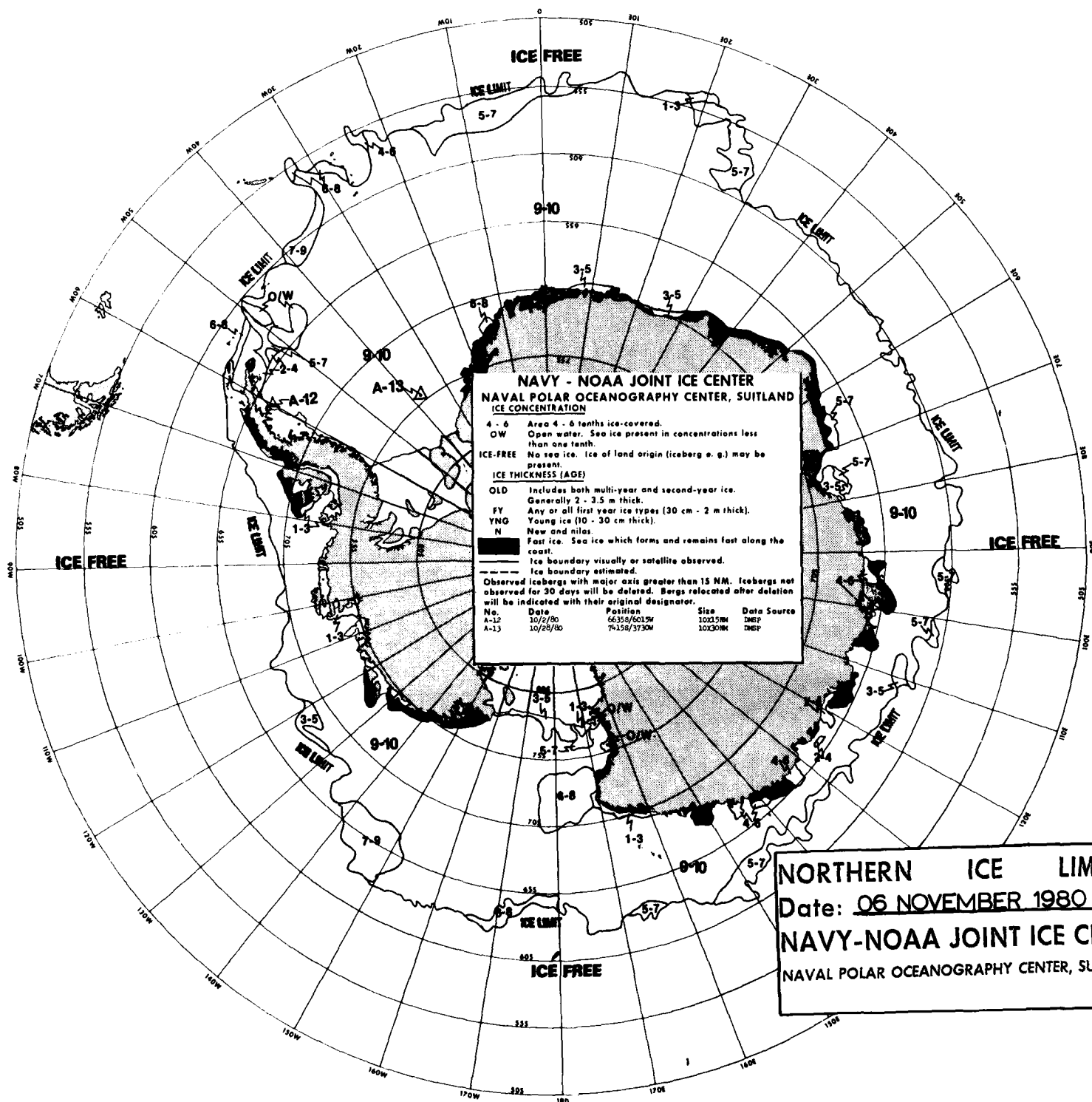
NORTHERN ICE LIMIT
Date: **16 OCTOBER 1980**
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



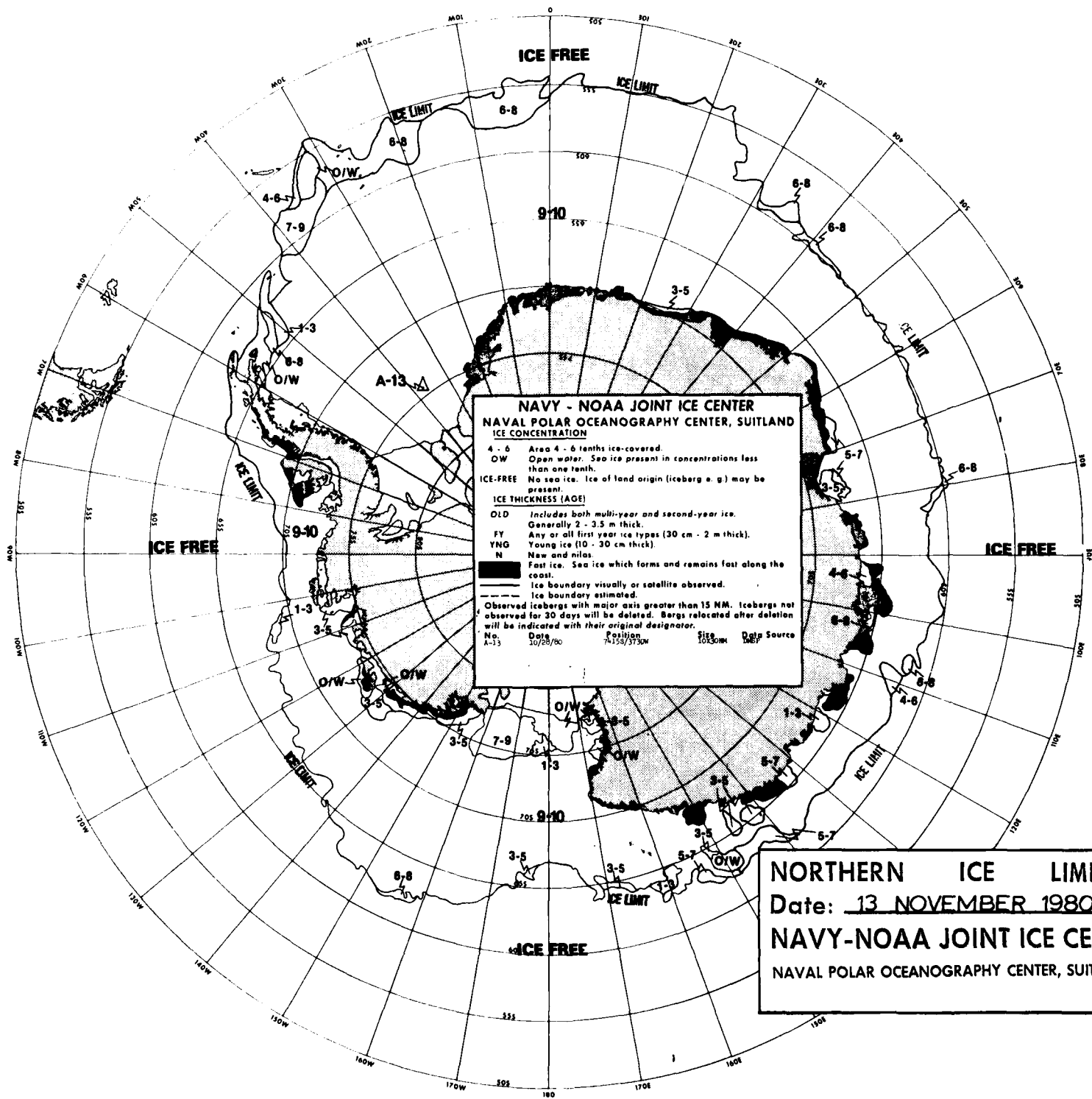
NORTHERN ICE LIMIT
Date: 23 OCTOBER 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



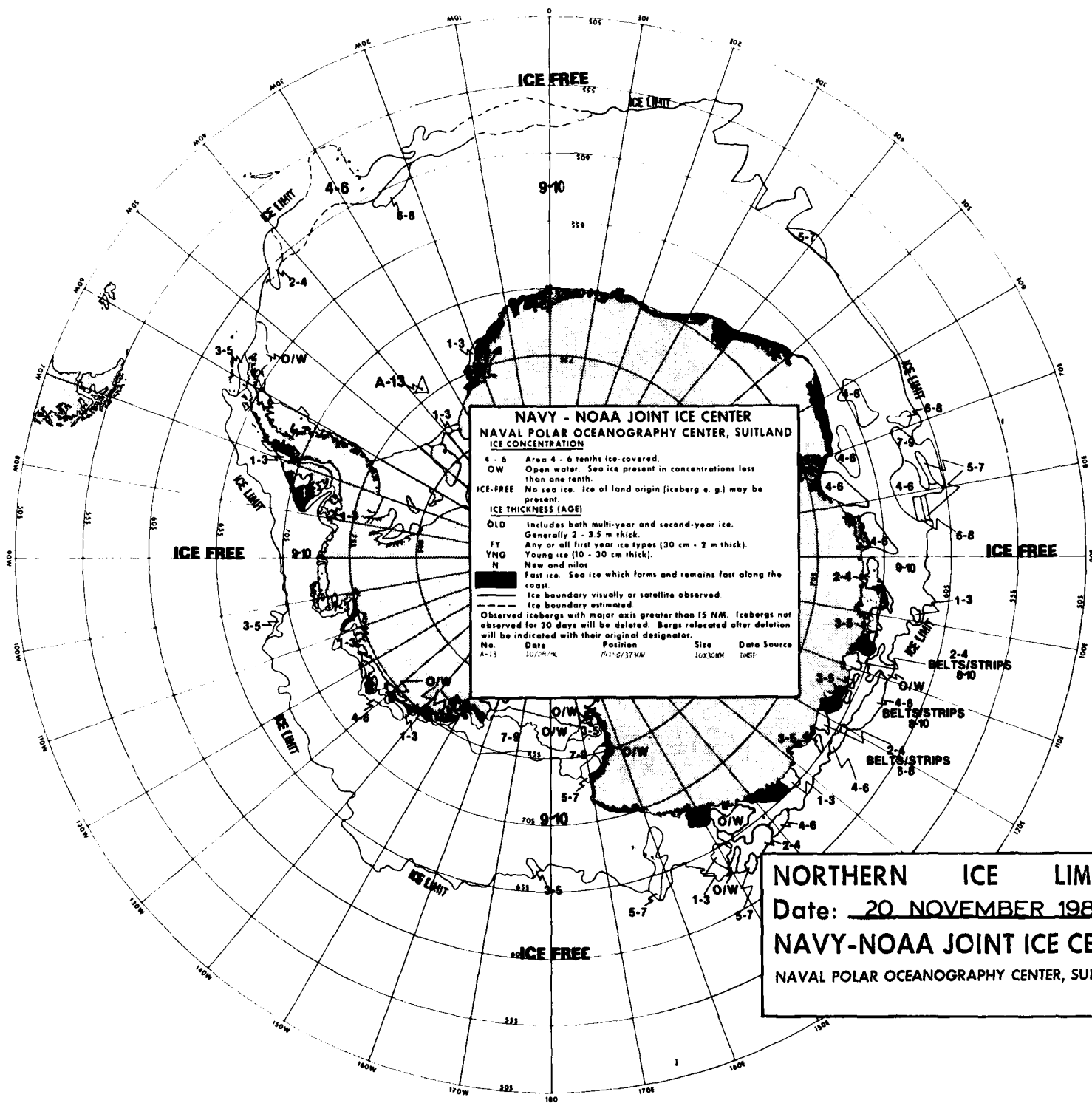
NORTHERN ICE LIMIT
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NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

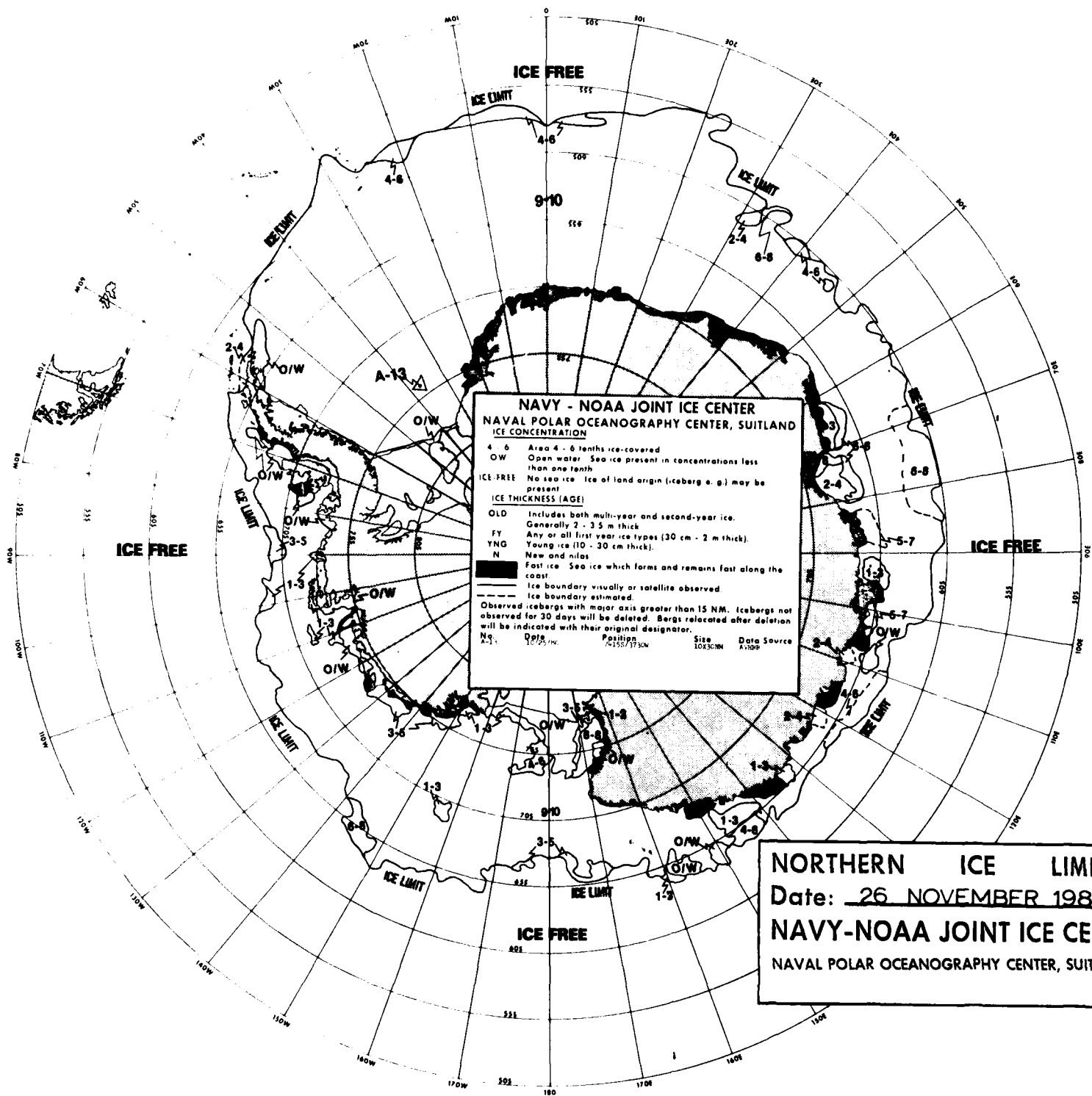


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NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

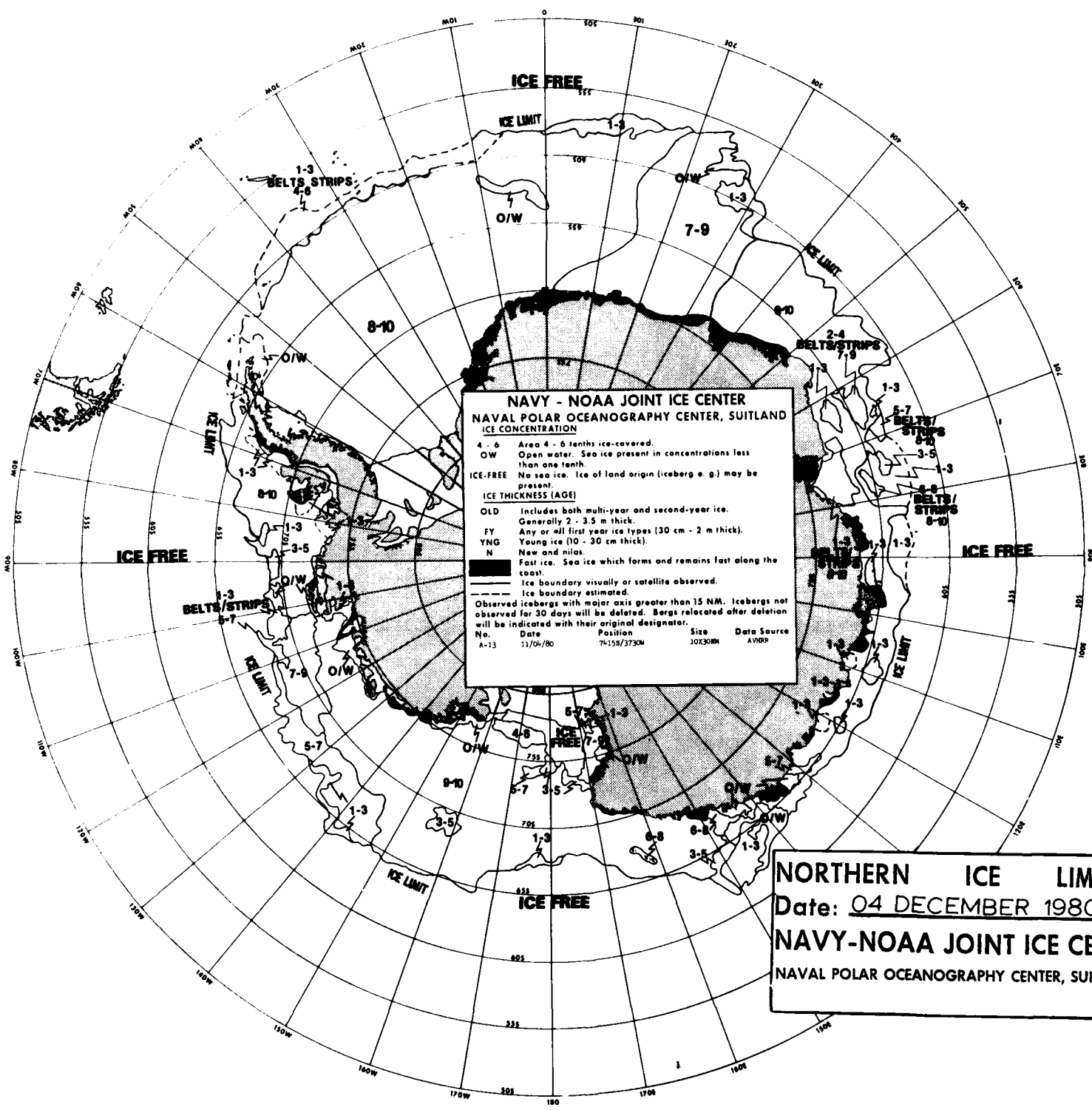


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Date: 13 NOVEMBER 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

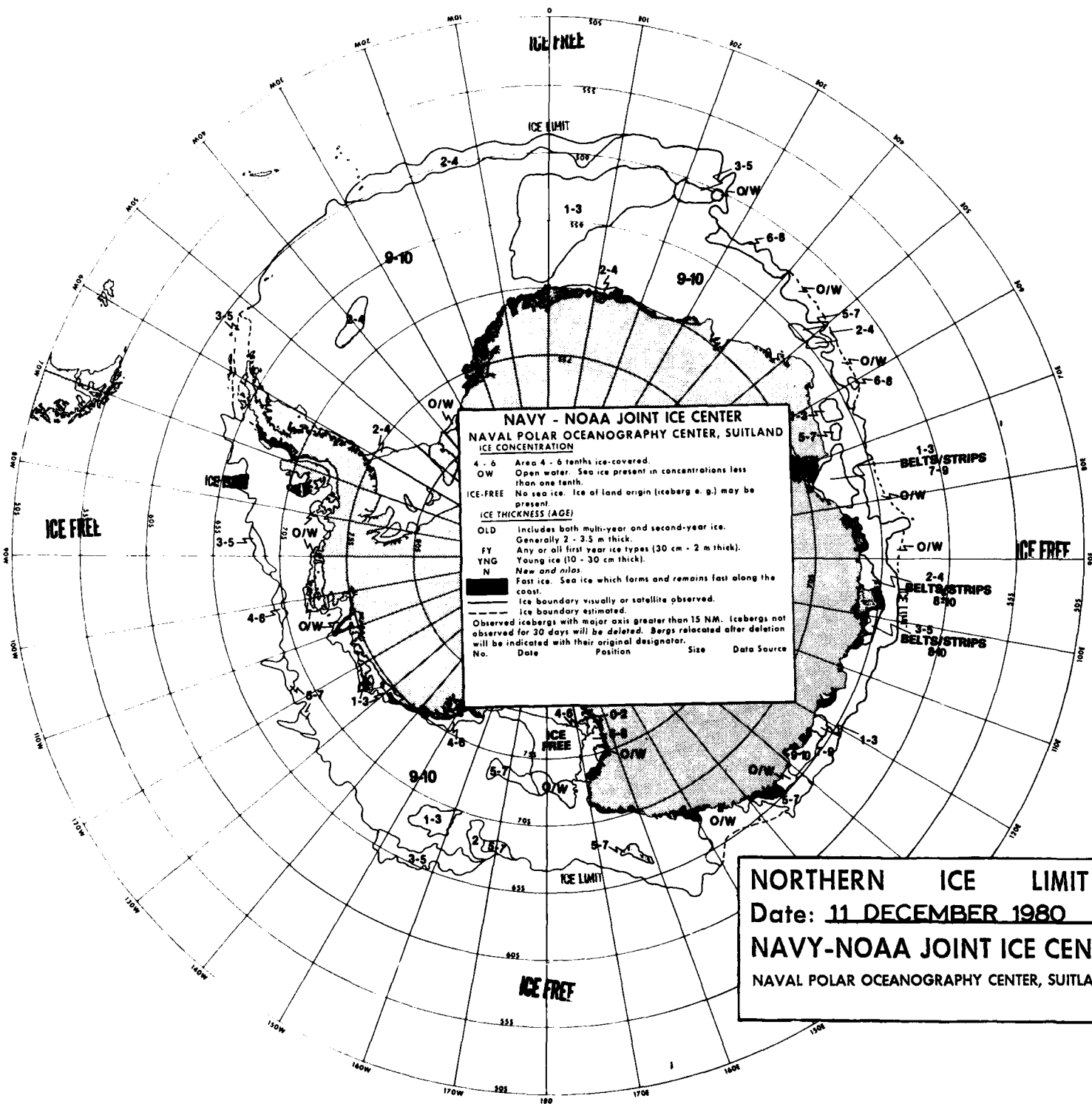


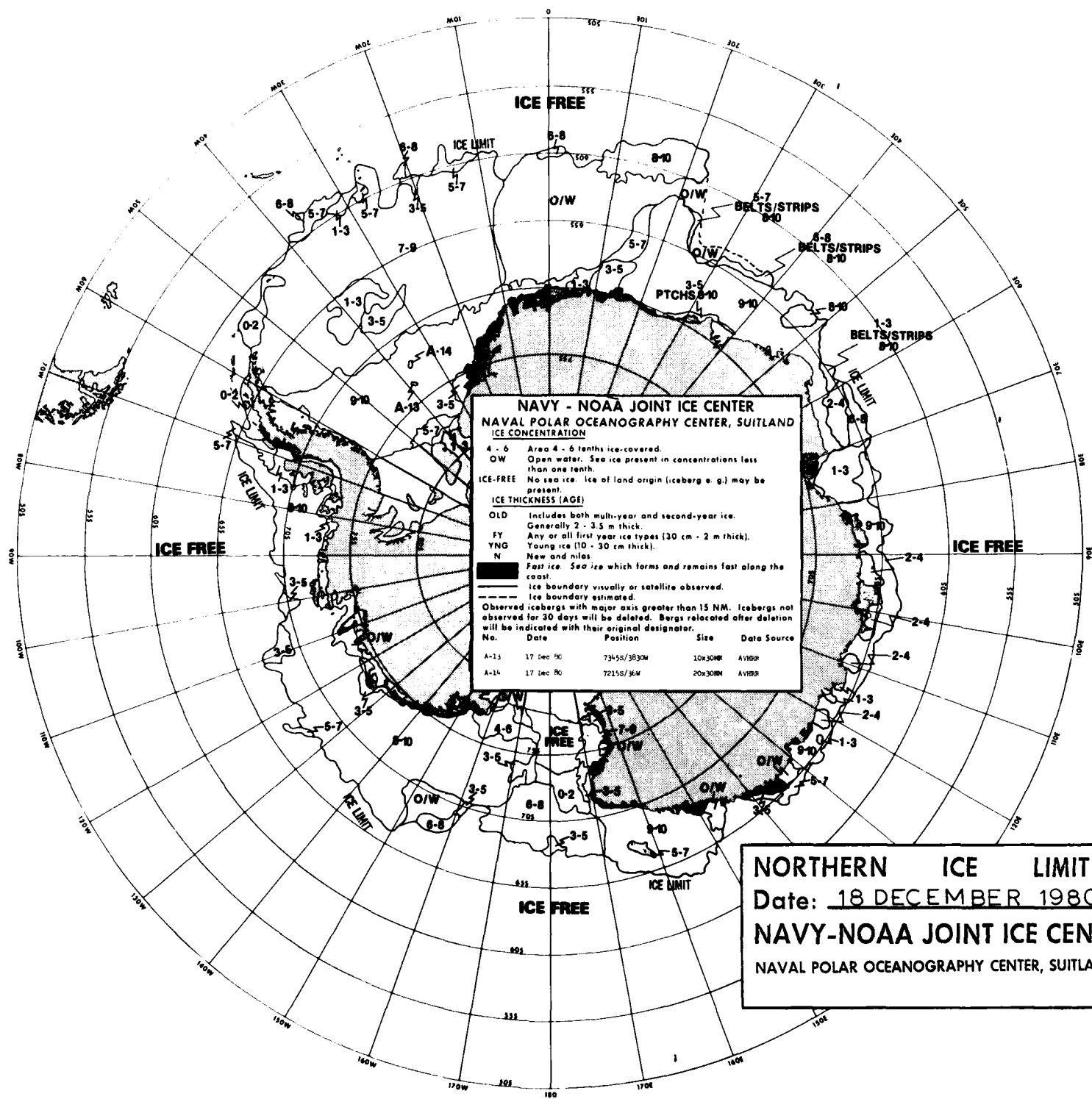


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 Date: 26 NOVEMBER 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

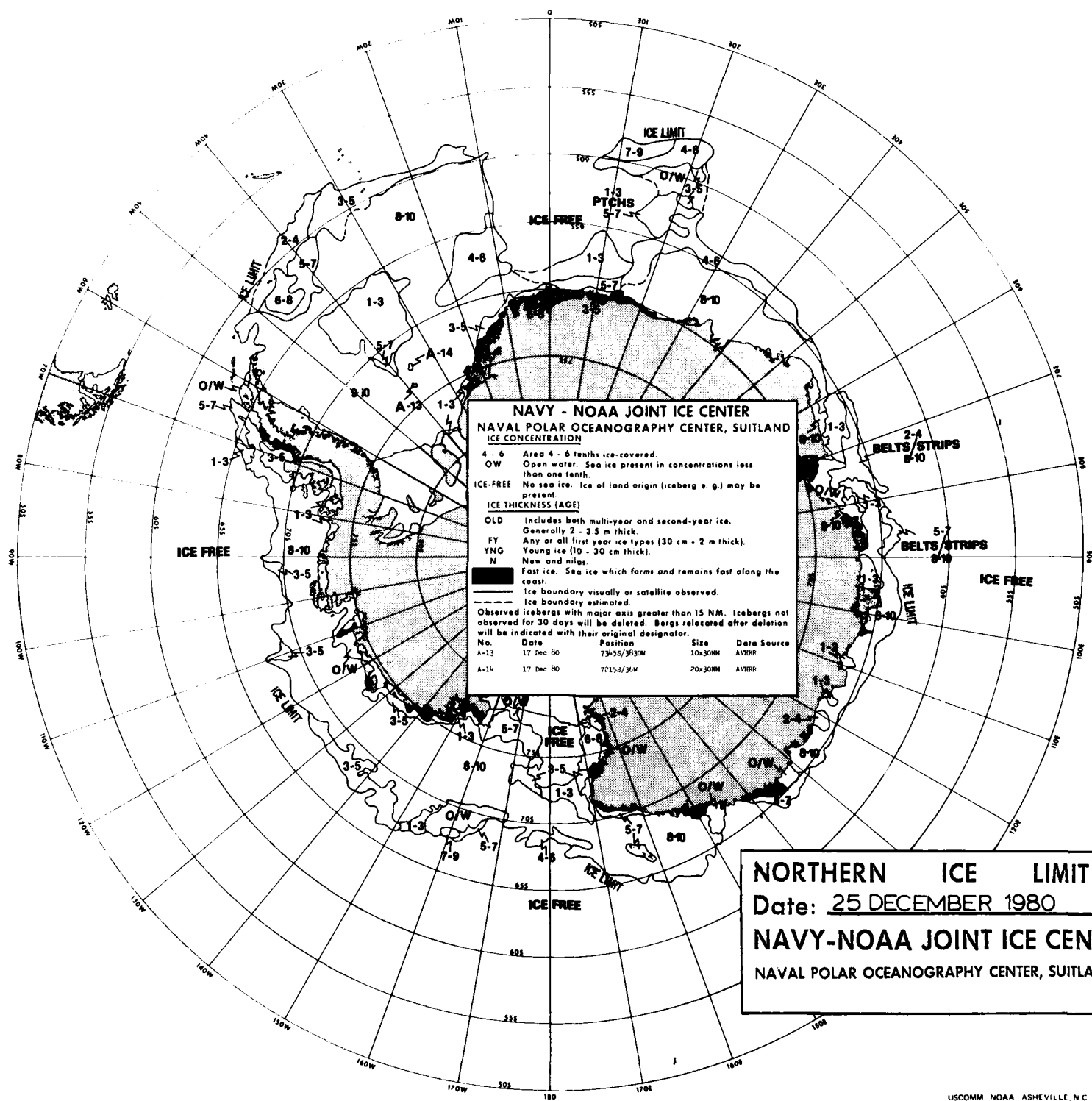


NORTHERN ICE LIMIT
 Date: 04 DECEMBER 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND





NORTHERN ICE LIMIT
Date: 18 DECEMBER 1980
NAVY-NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND



NORTHERN ICE LIMIT
 Date: 25 DECEMBER 1980
NAVY-NOAA JOINT ICE CENTER
 NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND

TABLE I TYPE OF SATELLITE IMAGERY UTILIZED DURING 1979 AND 1980

Time Period		Satellite Remote Sensing			Resolution	Coverage
From	To	Sensor Platform	Sensor Type	Spectral Region		
1-79	1-79	NOAA-5	VHRR VIS IR	0.6-0.7 um 10.5-12.5um	1km 1km	Regional
2-79	11-80	TIROS-N	AVHRR HRPT/LAC VIS NIR IR	0.55-0.90um 3.55-3.93um 10.5-11.5um	1km 1km 1km	Regional
			GAC VIS IR	0.55-0.90um 10.5-11.5um	4km 4km	Global
1-79	8-80	DMSP	HR MI	0.4-1.1um 8.0-13.0um	3.7km 4.4km	Global
1-80	12-80	NOAA-6	AVHRR HRPT/LAC VIS NIR IR	0.55-0.68um 3.55-3.93um 10.5-11.5um	1km 1km 1km	Regional
2-80	12-80		GAC VIS IR	0.55-0.68um 10.5-11.5um	4km 4km	Global
1-79	12-80	NIMBUS-5	ESMR	1.55cm	25km	Global
4-80	12-80	NIMBUS-7	SMMR	1.66cm	50km	Global

Abbreviations and Acronyms

AVHRR - Advanced Very High Resolution Radiometer	km - Kilometer
cm - Centimeter	LAC - Local Area Coverage
DMSP - Defense Meteorological Satellite Program	MI - High Resolution (Infrared Scanning Radiometer)
ESMR - Electrically Scanning Microwave Radiometer	NIR - Near Infrared
GAC - Global Area Coverage	SMMR - Scanning Multifrequency Microwave Radiometer
HR - High Resolution (Visual Scanning Radiometer)	VHRR - Very High Resolution Radiometer
HRPT - High Resolution Picture Transmission	VIS - Visual
IR - Infrared	um - Micrometer

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