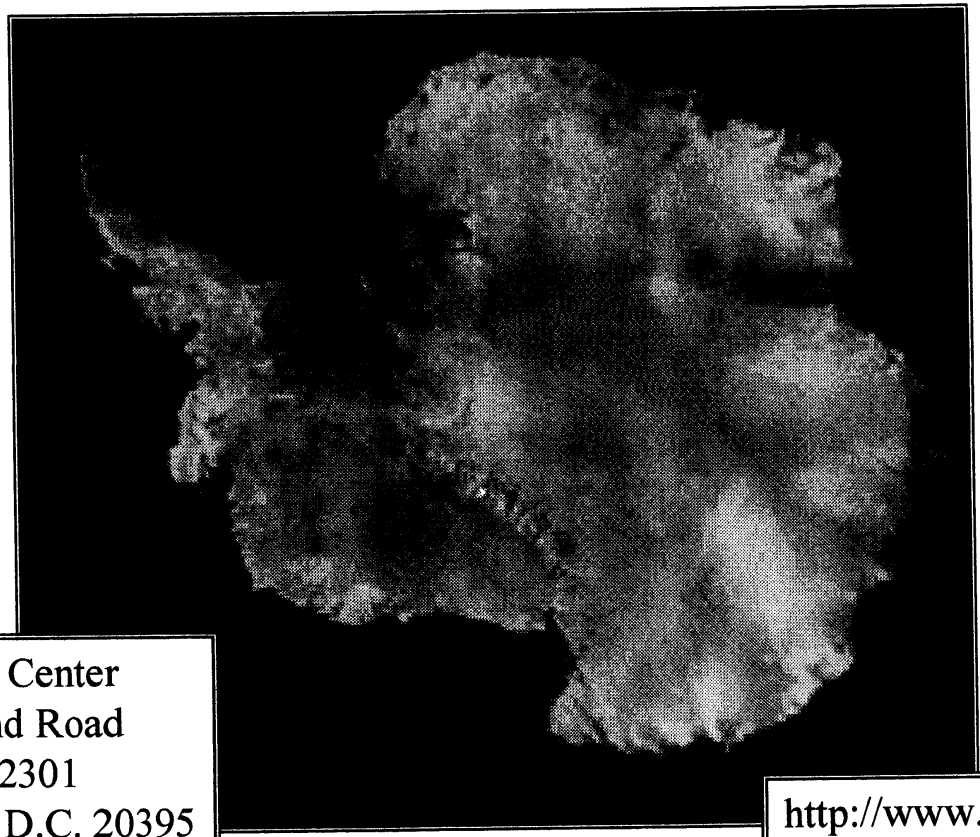
National Ice Center Antarctic Sea Ice Atlas 1996



National Ice Center
4251 Suitland Road
FB4, Room 2301
Washington D.C. 20395

http://www.natice.noaa.gov

PREFACE

The National Ice Center (NIC), under sponsorship of the United States Navy, the United States Coast Guard, and the National Oceanic and Atmospheric Administration (NOAA), provides sea ice analyses encompassing the "Arctic" and the "Antarctic". These analyses continue the data set established under our previous name, the Joint Ice Center. These atlases continue the near real-time integration of remotely sensed data and point observations and differ only in that the Arctic and Antarctic are split into two separate publications per hemisphere per year.

This publication is the 11th edition of the annual "Antarctic Sea Ice Atlas" published in hard copy format by the NIC. The atlas contains weekly charts depicting the sea ice extent and coverage in the Southern Hemisphere from the first week of January through December 1996.

The NIC uses a wide variety of data sources in the production of sea ice analyses. Table 1 lists the data sources used to produce the Antarctic weekly ice analyses contained in this publication. The line types used in the analyses provide metadata information with regard to sensor type. Solid lines depict boundaries derived from: point observations, Defense Meteorological Satellite Program Operational Line Scan (DMSP OLS) and NOAA Advanced Very High-Resolution Radiometer (AVHRR) data. Dash-dash-dotted line depicts boundaries derived from DMSP Special Sensor Microwave Imager (SSM/I), and dashed lines depict boundaries derived from forecast models and climatology.

Please direct questions or comments to the NIC Liaison Branch, at phone number (301) 457-5303 extension 311 or 303, facsimile number (301)457-5300, or electronic mail address: liaison@natice.noaa.gov

Atlas addendum: This publication is intended to serve as an interim solution, while transitioning to distribution via CD-ROM. The purpose of this atlas is to make all National Ice Center (NIC) sea ice charts available to customers using NIC designated archive centers. By fall 1999, it is anticipated that NIC will complete and distribute Arctic/Antarctic ice atlases on CD-ROM for 1995, 1996, 1997 and 1998. It should be noted that the charts presented in this atlas have been drawn by hand for operational use. Corrections to "hand annotations" are visible on some of the charts in the atlas.

From	To	Sensor Platform	Sensor and Type	Spectral Region	Resolution	Coverage
01-96	12-96	DMSP F-10, 11, 12, 13	OLS Fine: VIS IR SSM/I	 0.4 to 1.1 μm 10.2 to 12.8 μm 19.35 and 37GHz	0.55 km 25 km	3,012km 3,012km
01-96	12-96	NOAA 12, 14	AVHRR: HRPT/LAC VIS NIR IR	 0.58 to 0.68 μm 0.72 to 1.10 μm 3.55 to 3.93μm	1.1km at nadir; 2.5km at swath edge	4,000km

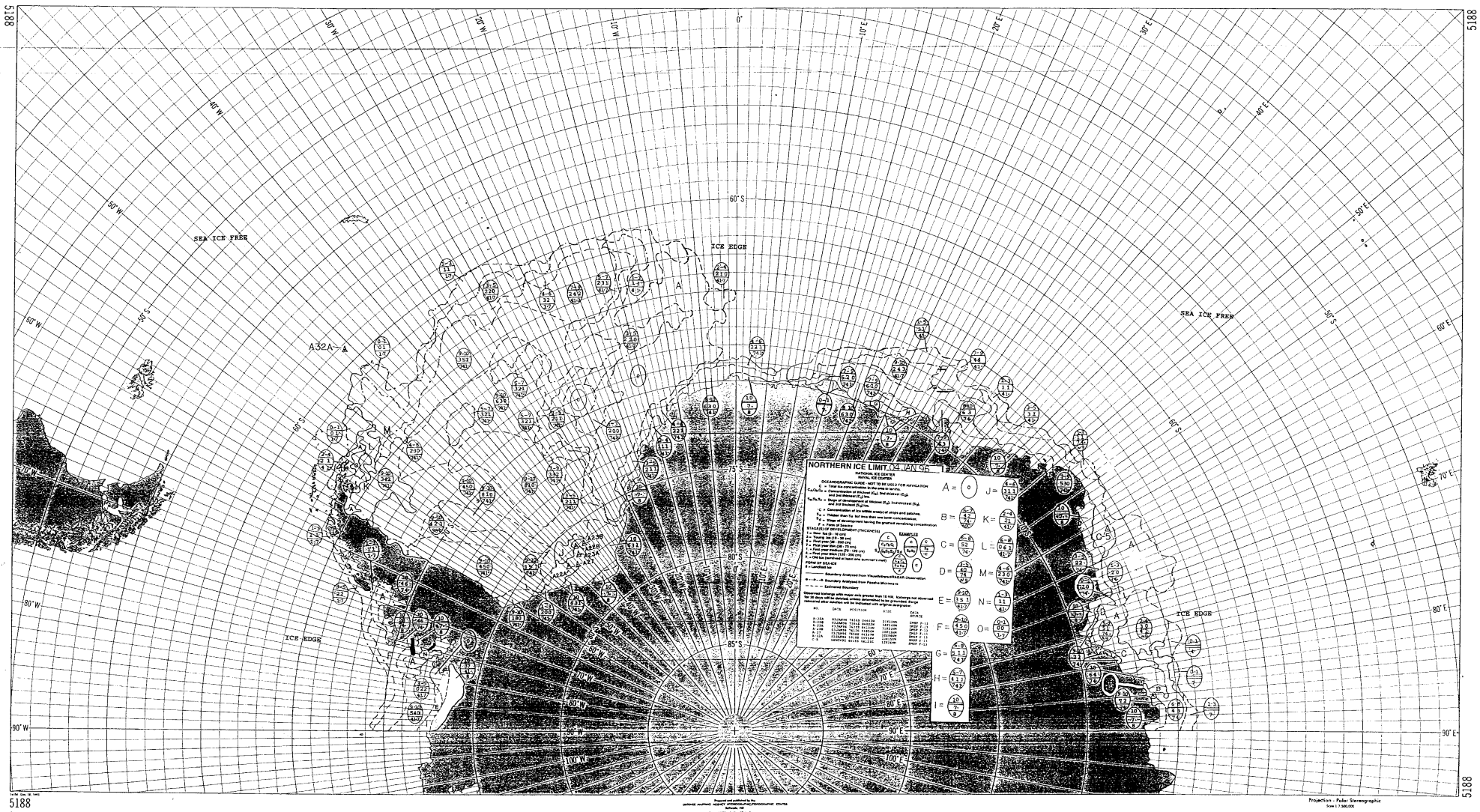
TABLE 1. 1996 Antarctic Satellite Data Sources

Abbreviations and Acronyms:

AVHRR- Advanced Very High Resolution Radiometer
cm- centimeter
GHz- GigaHertz
HRPT- High Resolution Picture transmission
IR- Infrared
km- kilometer
LAC- Local Area Coverage
NIR- Near Infrared
OLS- Operational Linescan System
SSM/I- Special Sensor Microwave Imager
μm- micrometer
VIS- Visible

Antarctica satellite composite courtesy of United States Geological Survey, Flagstaff, AZ.
(http://TerraWeb.wr.usgs.gov/TRS/projects/Antarctica/color/images).

Prepared under the authority of Commander, Naval Oceanography Command, Stennis Space Center, MS 39529-5000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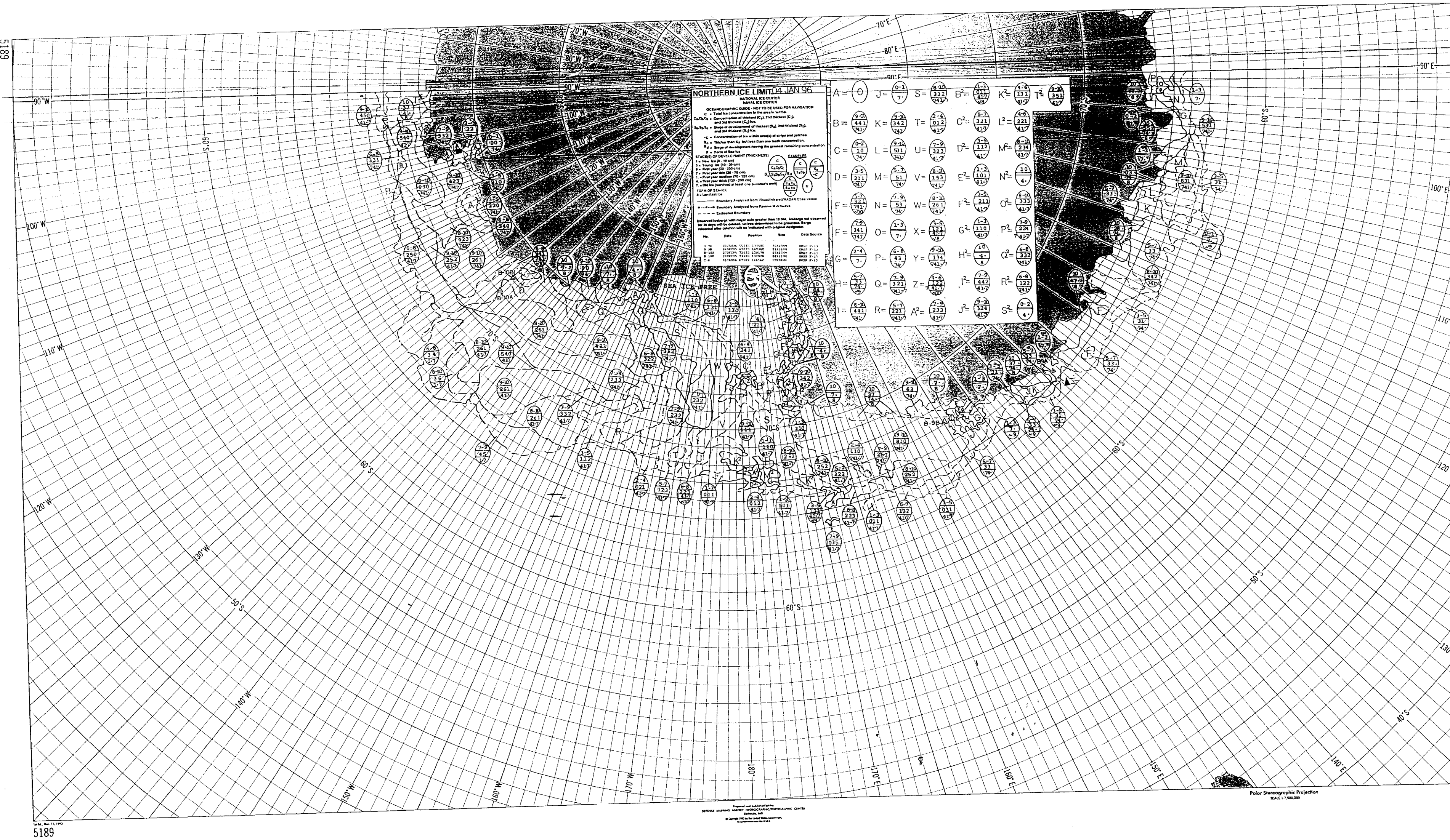
SEA ICE FREE
ICE EDGE
A32A
NORTHERN ICE LIMIT 04 JAN 96
ICE EDGE
SEA ICE FREE
ICE EDGE
5188
5188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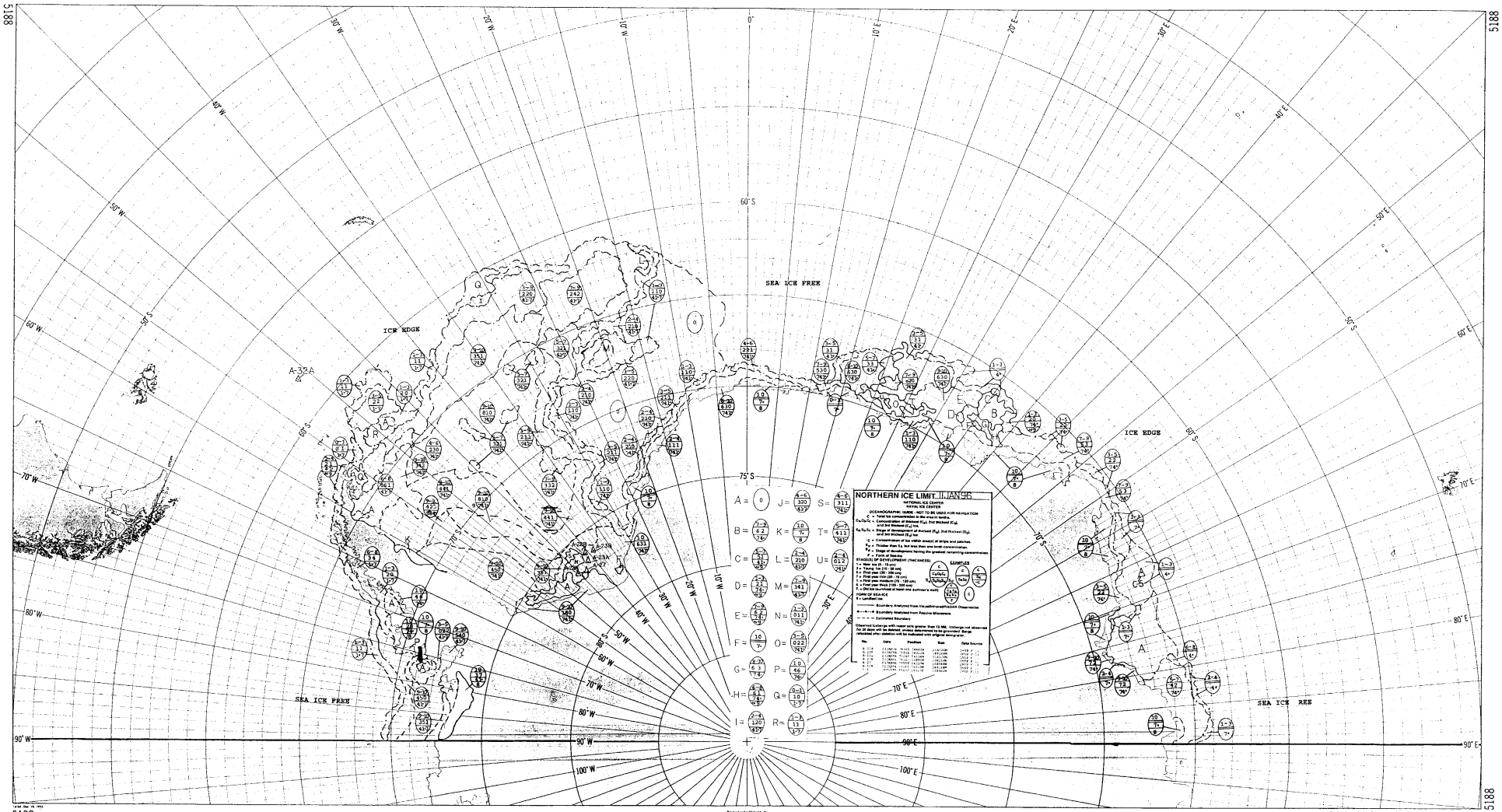
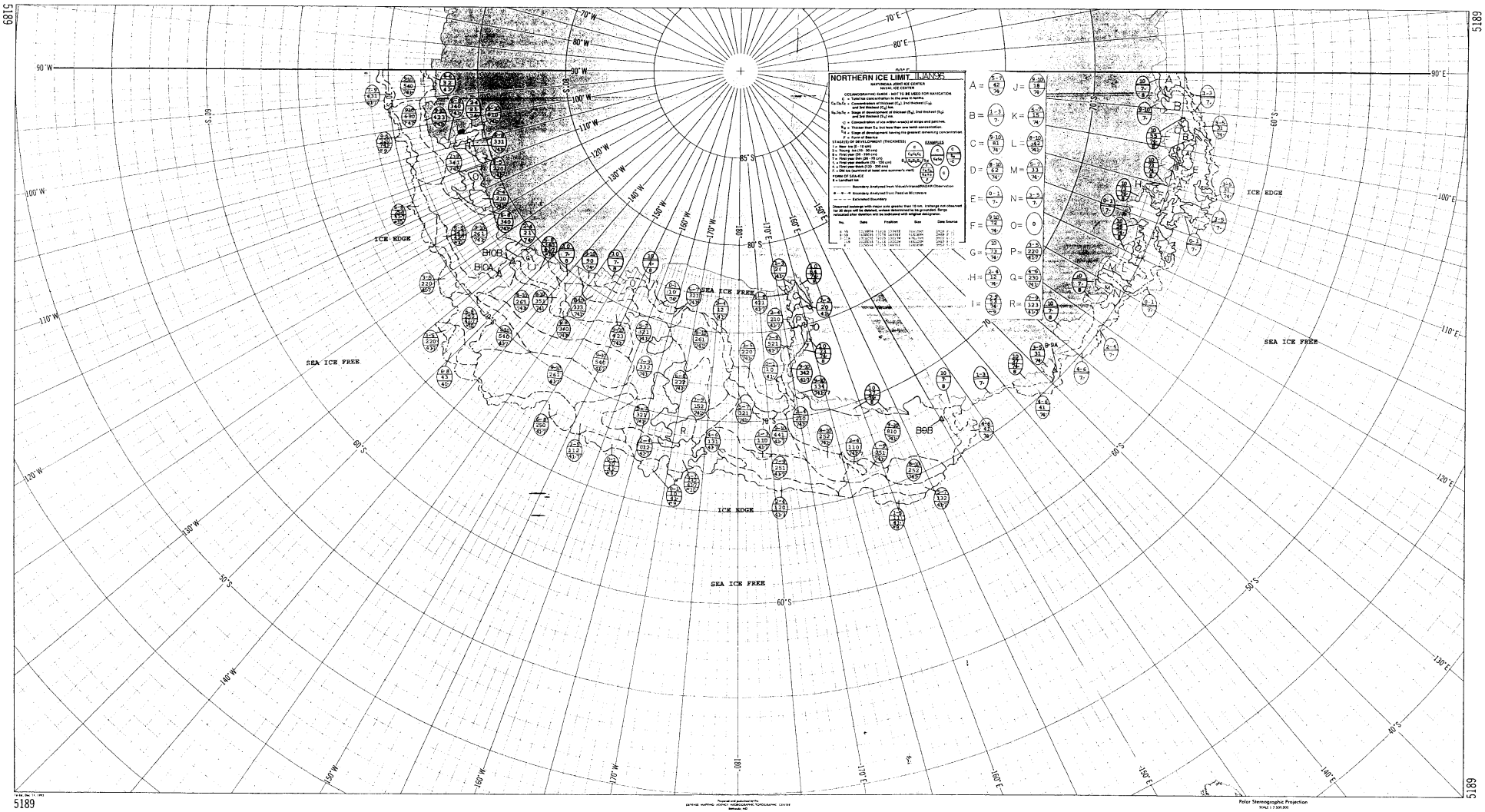
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
Polar Stereographic Projection


NORTHERN ICE LIMIT 11 JAN 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC USE - NOT TO BE USED FOR NAVIGATION
ICE EDGE
SEA ICE FREE
60° S
75° S
Projection - Polar Stereographic
5188



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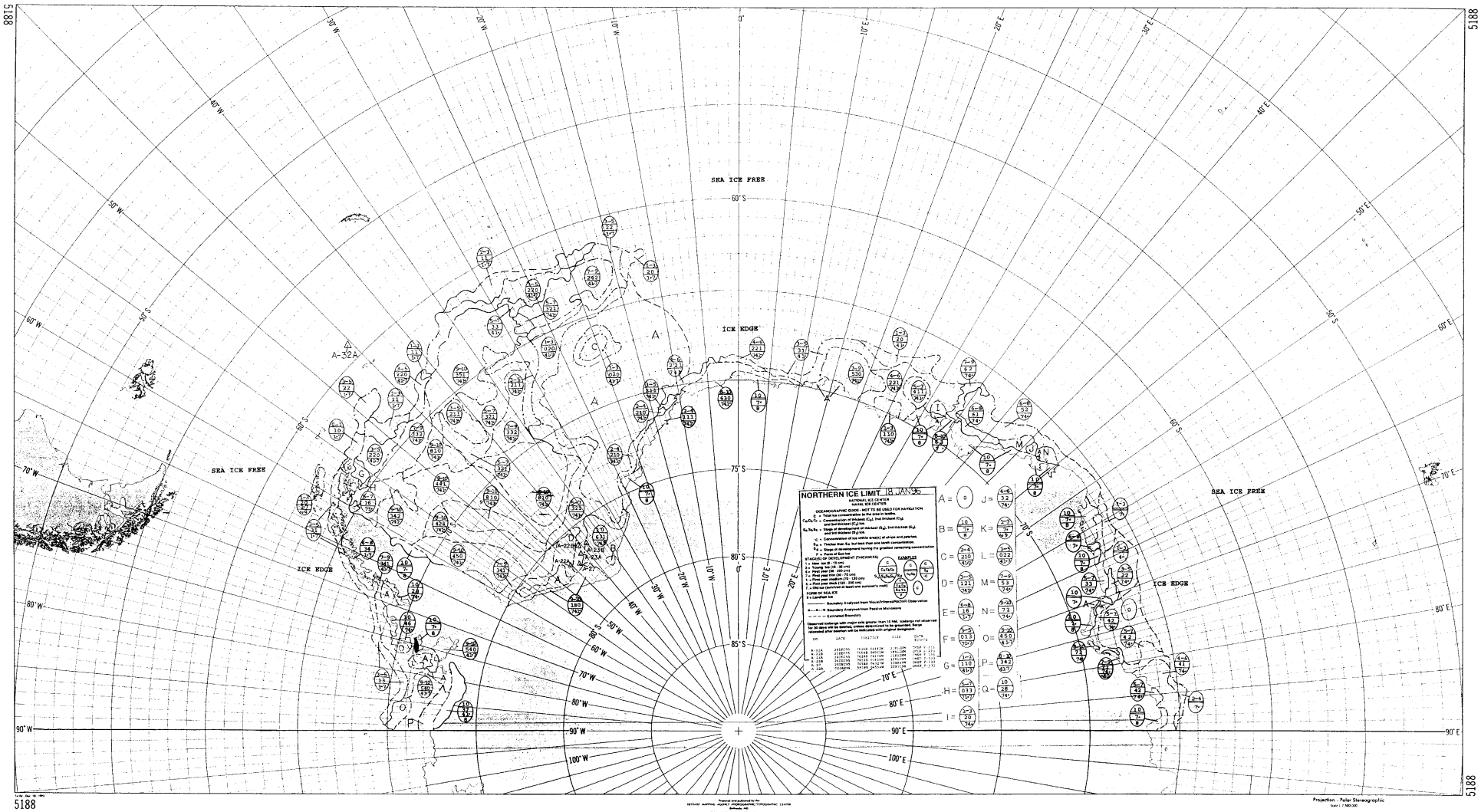
SCALE 1 : 7 500 000



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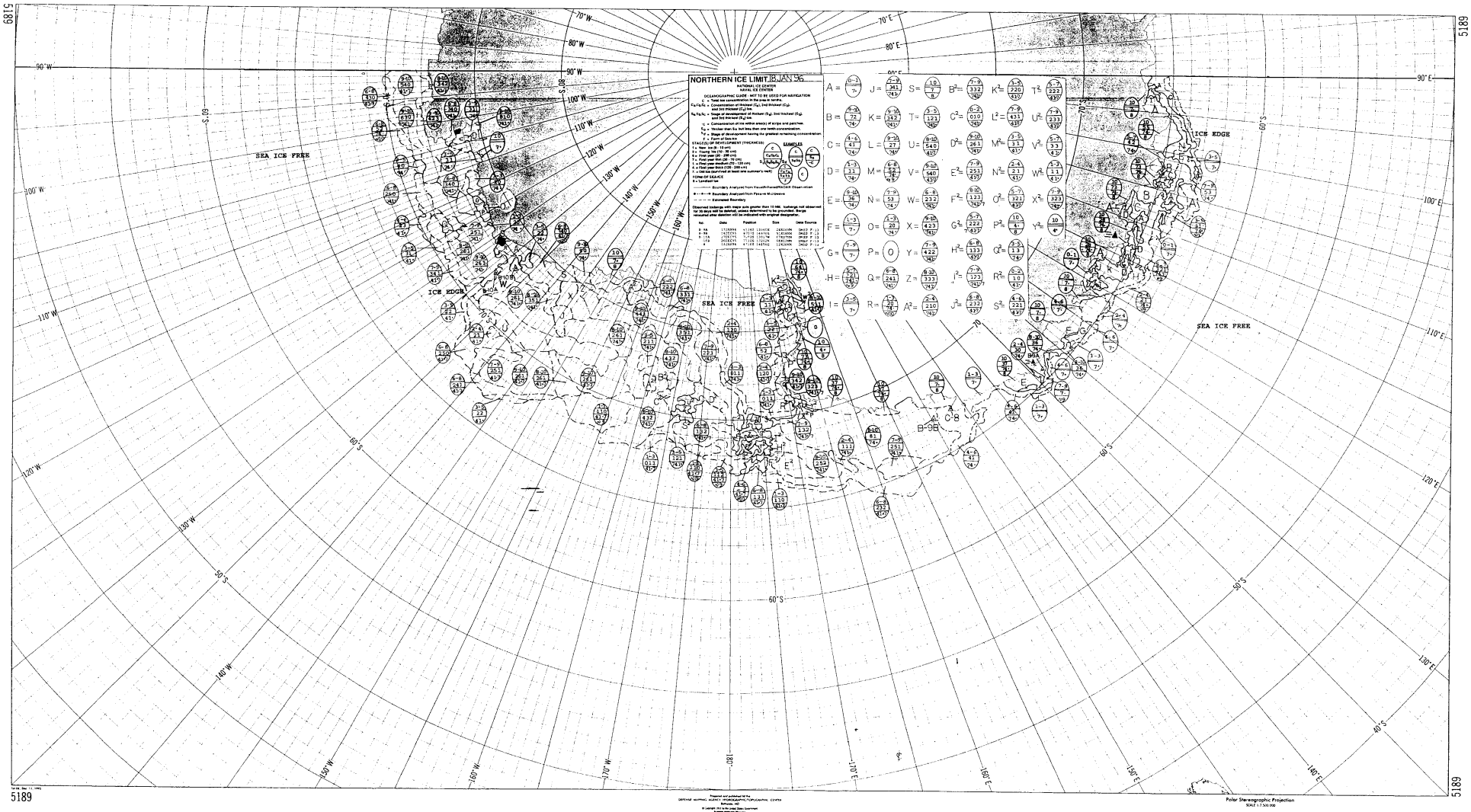
Projection - Polar Stereographic


NORTHERN ICE LIMIT 18 JAN 96
NATIONAL ICE CENTER
WASHINGTON, DC
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
STAGES OF DEVELOPMENT (THICKNESS)
EXAMPLES
FORM OF ISSUE
Boundary Analyzed from Visual/Aircraft/SLAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Barge
A = 0-1/7+
B = 9-10/72/76
C = 4-6/41/76
D = 1-3/13/76
E = 9-10/36/74
F = 1-3/7+
G = 7-9/7+
H = 5-6/20/76
I = 0-1/7+
J = 7-9/341/43
K = 9-10/342/43
L = 9-10/27/36
M = 6-8/53/45
N = 7-10/53/74
O = 1-3/20/76
P = 0
Q = 6-8/243/43
R = 1-3/20/43
S = 10/7/8
T = 5-8/121/36
U = 9-10/540/43
V = 9-10/540/43
W = 5-8/232/36
X = 9-10/423/43
Y = 7-9/422/36
Z = 9-10/333/43
A2 = 2-4/210/76
B2 = 7-9/332/36
C2 = 6-2/010/36
D2 = 9-10/261/40
E2 = 7-9/251/43
F2 = 9-10/123/43
G2 = 5-7/222/43
H2 = 6-8/133/43
I2 = 7-9/123/20
J2 = 6-8/232/43
K2 = 1-3/720/43
L2 = 7-9/431/43
M2 = 1-3/31/43
N2 = 2-4/21/43
O2 = 5-7/321/43
P2 = 10/4-/8
Q2 = 1-3/13/76
R2 = 5-6/10/43
S2 = 4-6/221/43
T2 = 5-7/222/43
U2 = 7-9/233/43
V2 = 5-8/33/43
W2 = 1-3/11/43
X2 = 7-9/323/43
Y2 = 10/6
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
SCALE 1:7,500,000
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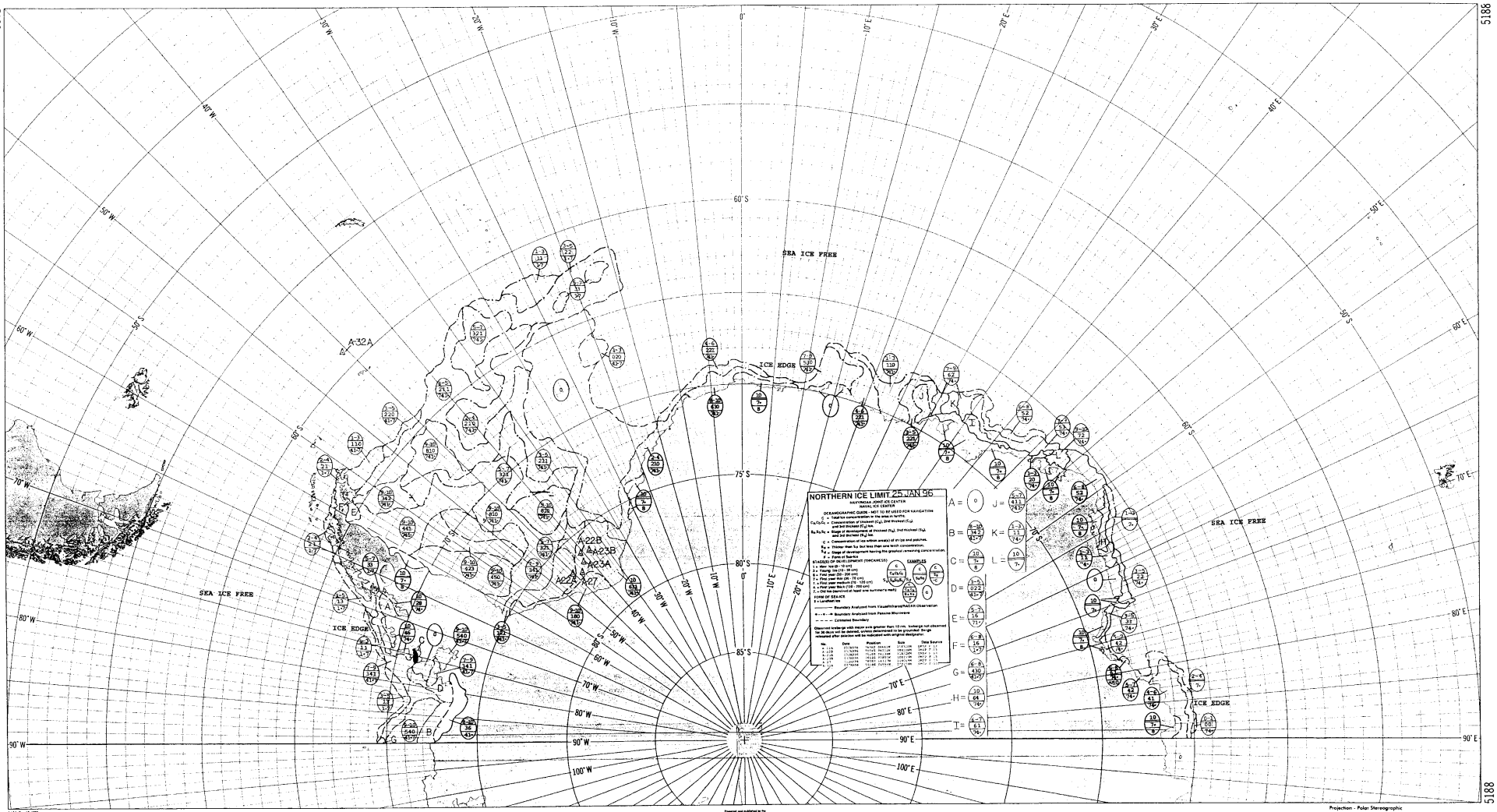
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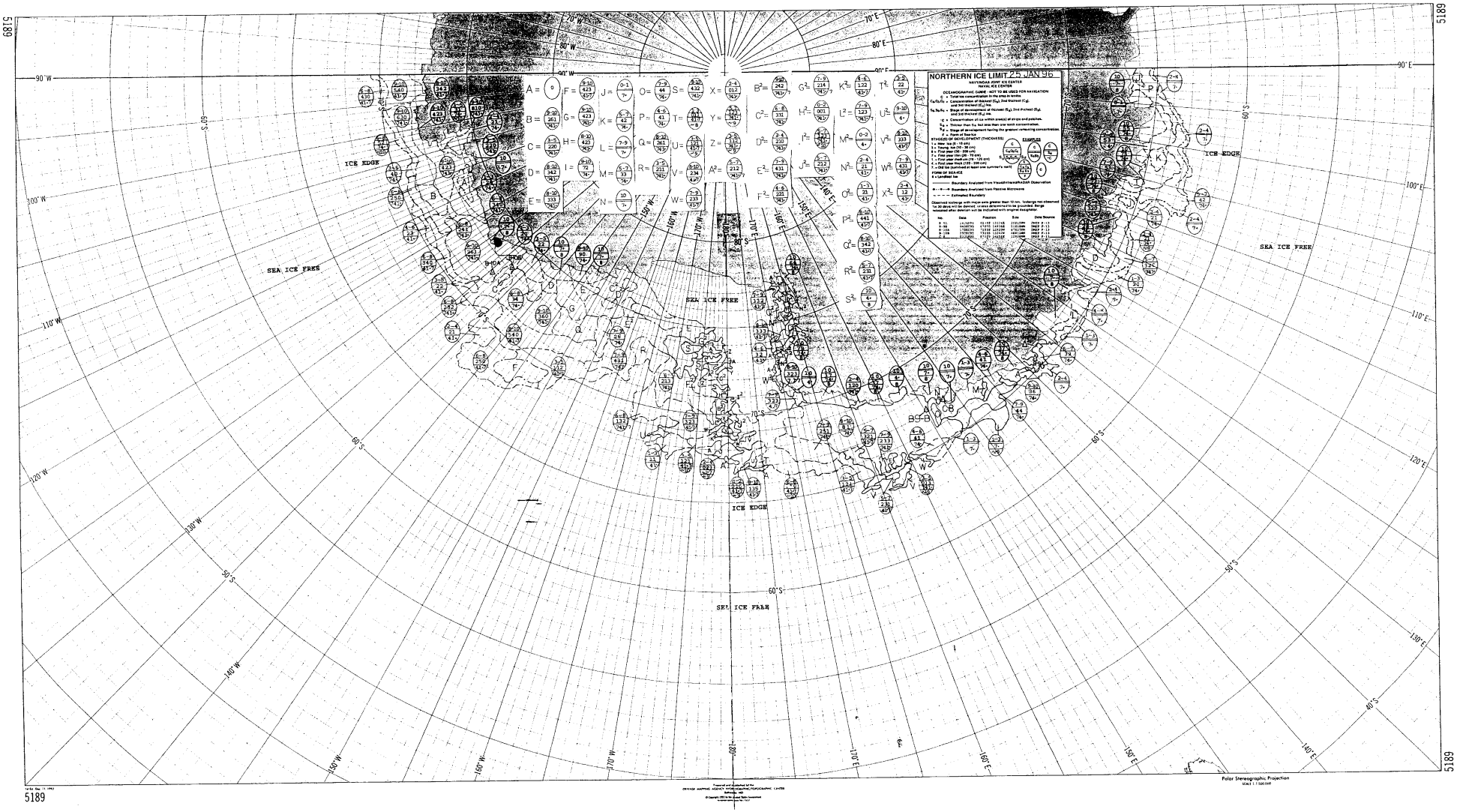
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
A-32A
A-22B
A-23B
A-23A
A-22A
A-27
60°S
75°S
80°S
85°S
Projection - Polar Stereographic
Scale 1:7,500,000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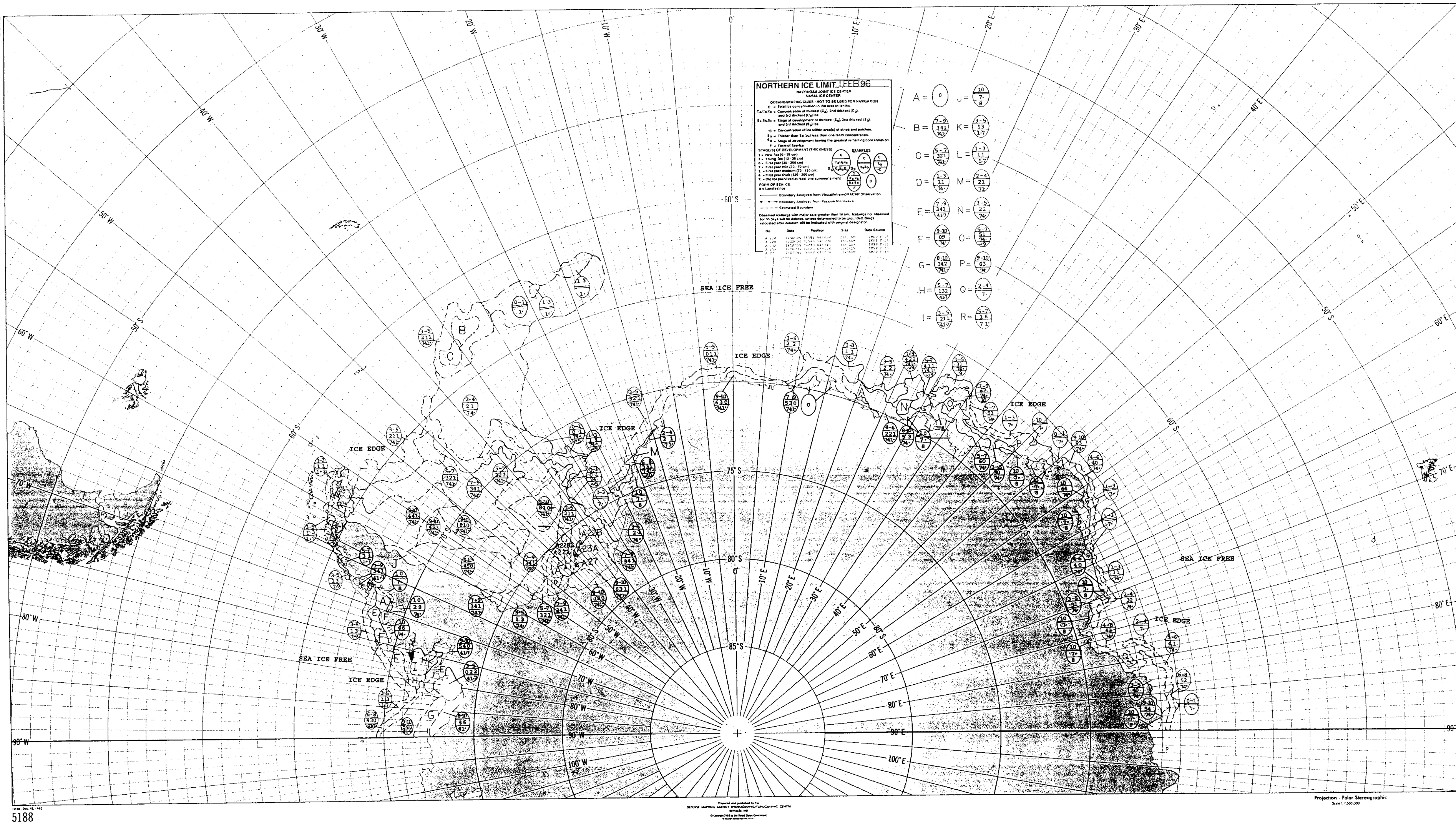
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection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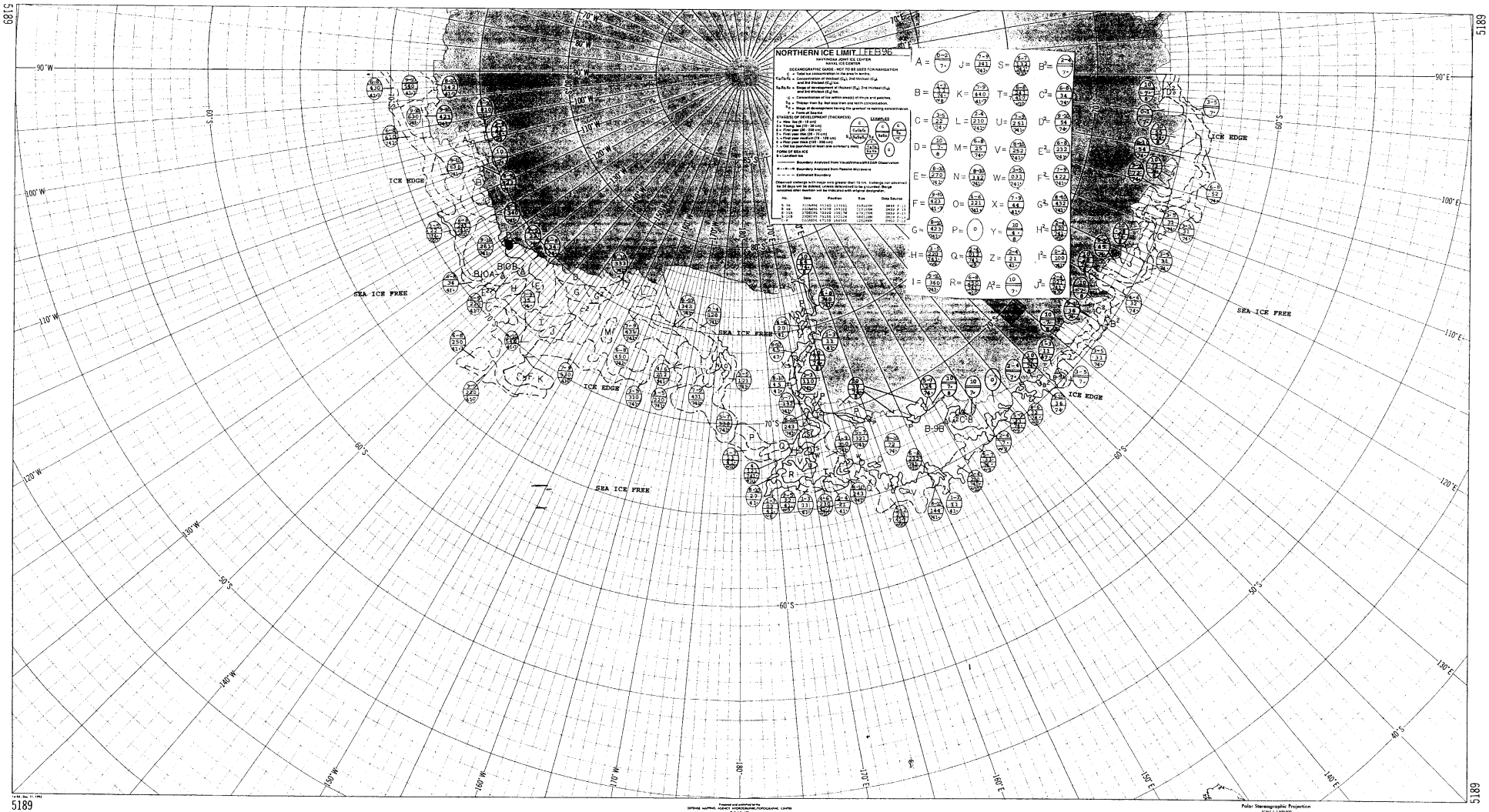
NORTHERN ICE LIMIT 1FEB96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
Sa,Sb,Sc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
·C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
3 = Young ice (10 - 30 cm)
6 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast ice
EXAMPLES
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 nm. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.
No. Date Position Size Data Source
SEA ICE FREE
ICE EDGE
60°S
75°S
80°S
85°S
A22B
A23A
A27
Projection - Polar Stereographic
Prepared and published by the Defense Mapping Agency Hydrographic/Topographic Center


NORTHERN ICE LIMIT 11 FEB 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
90°W
100°W
110°W
120°W
130°W
140°W
150°W
160°W
170°W
180°
170°E
160°E
150°E
140°E
130°E
120°E
110°E
100°E
90°E
80°S
70°S
60°S
50°S
40°S
Polar Stereographic Projection

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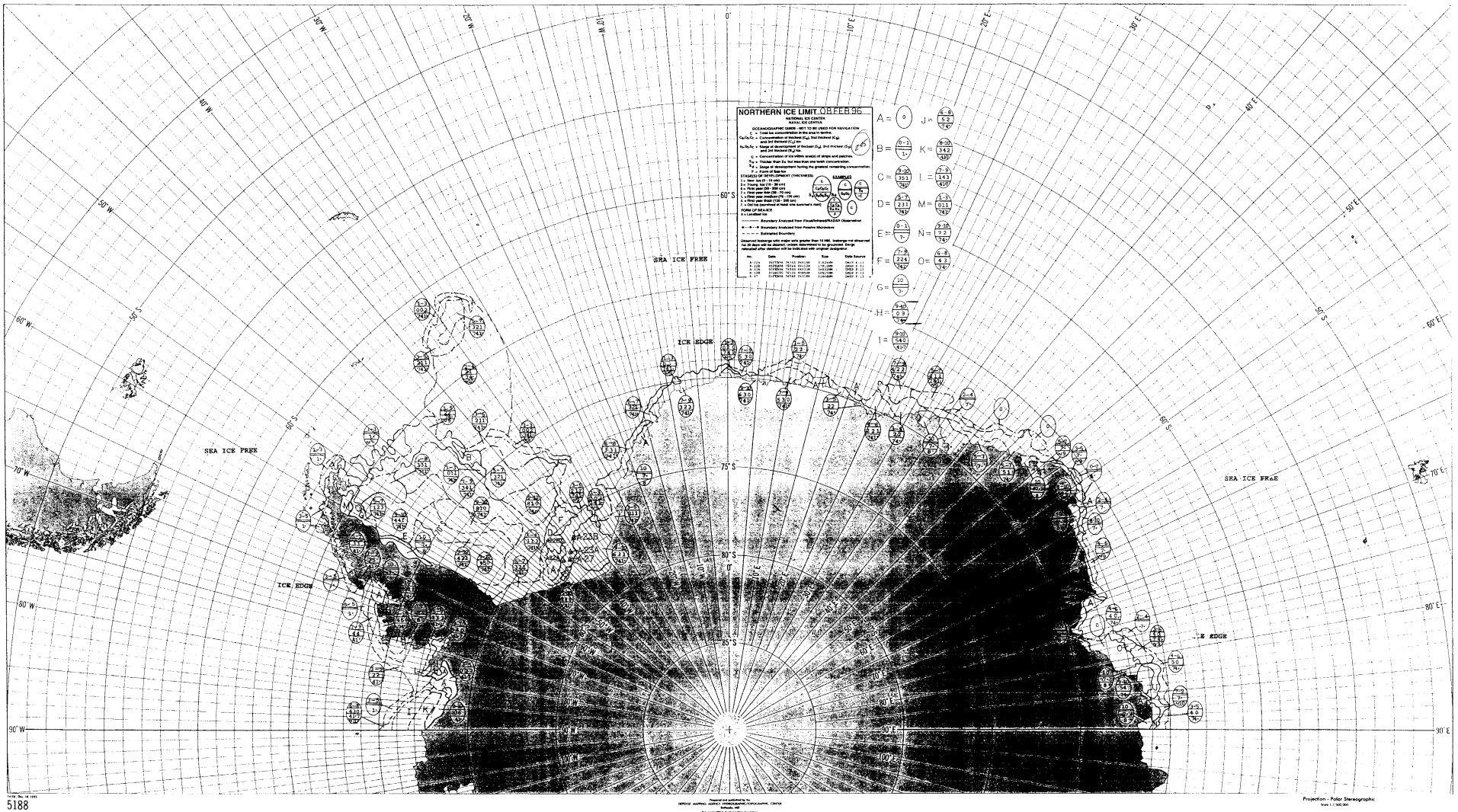
NORTHERN ICE LIMIT 08 FEB 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
A23A
A23B
A27
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
60°S
70°S
75°S
80°S
85°S
90°S
0°
10°W
20°W
30°W
40°W
50°W
60°W
70°W
80°W
90°W
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
Projection - Polar Stereographic

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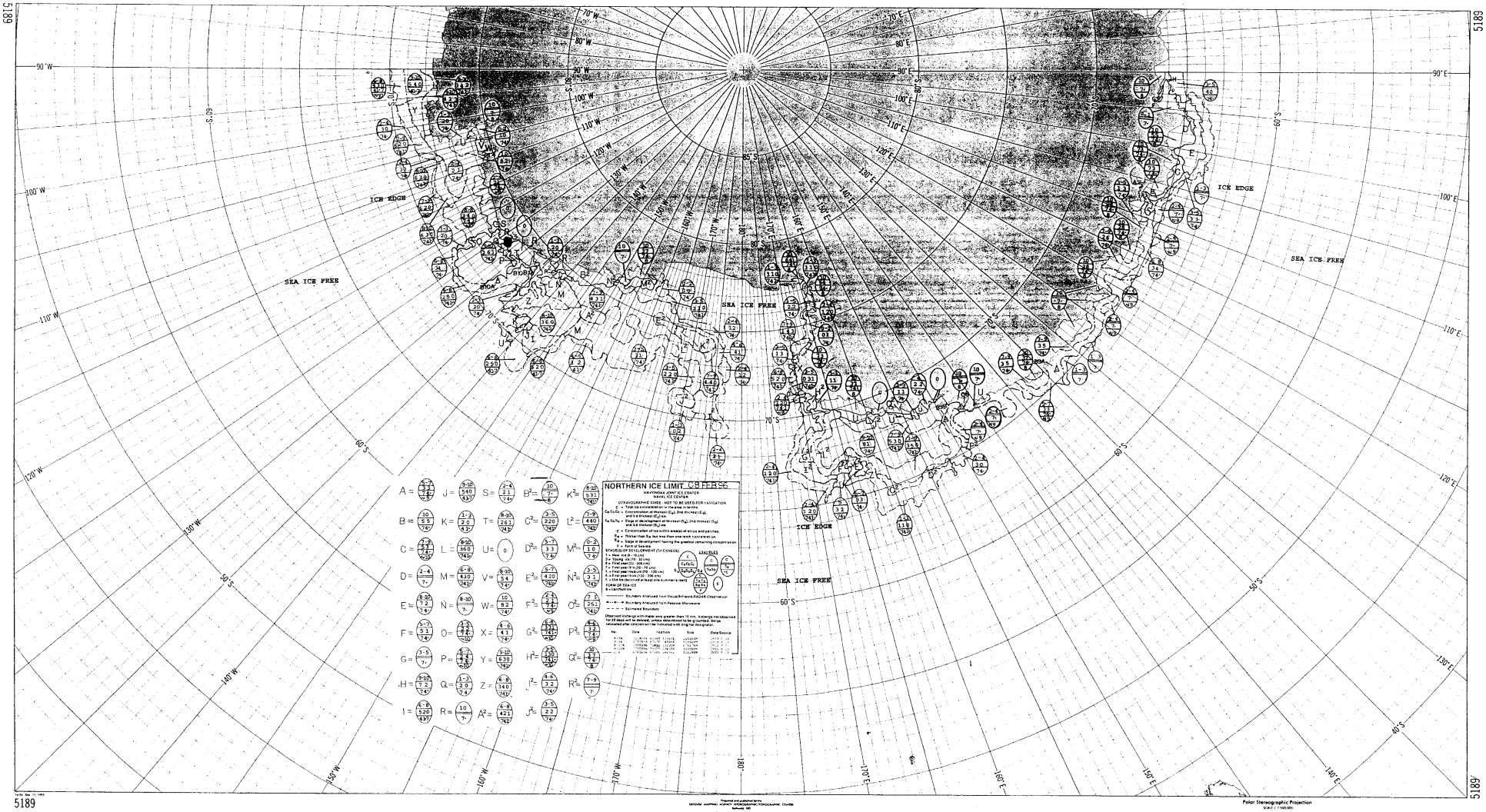
NORTHERN ICE LIMIT 08 FEB 96
NAVOCEANO JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca Cb Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
Sa Sb Sc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
Z = Concentrate of ice-centre analysis of ice and pictures.
Eg = Thicker than Sy but less than one tenth concentration.
Xe = Edge of development having the greatest remaining concentration.
W = Form of Seaway
STAGES OF DEVELOPMENT (To CHARTS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = Thin first-year (30 - 120 cm)
4 = First-year medium (70 - 120 cm)
5 = First-year thick (120 - 200 cm)
6 = Old ice (second winter ice, summer's melt)
FORM OF SEA ICE
1 = Bathsheet
UNUSUAL
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 nm. Icebergs not observed for 33 days will be deleted, unless determined to be grounded. Bergs relocated after unknown will be instructed with ship hull designation.
No. Date Position Size Data Source
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
SCALE 1:7,500,000
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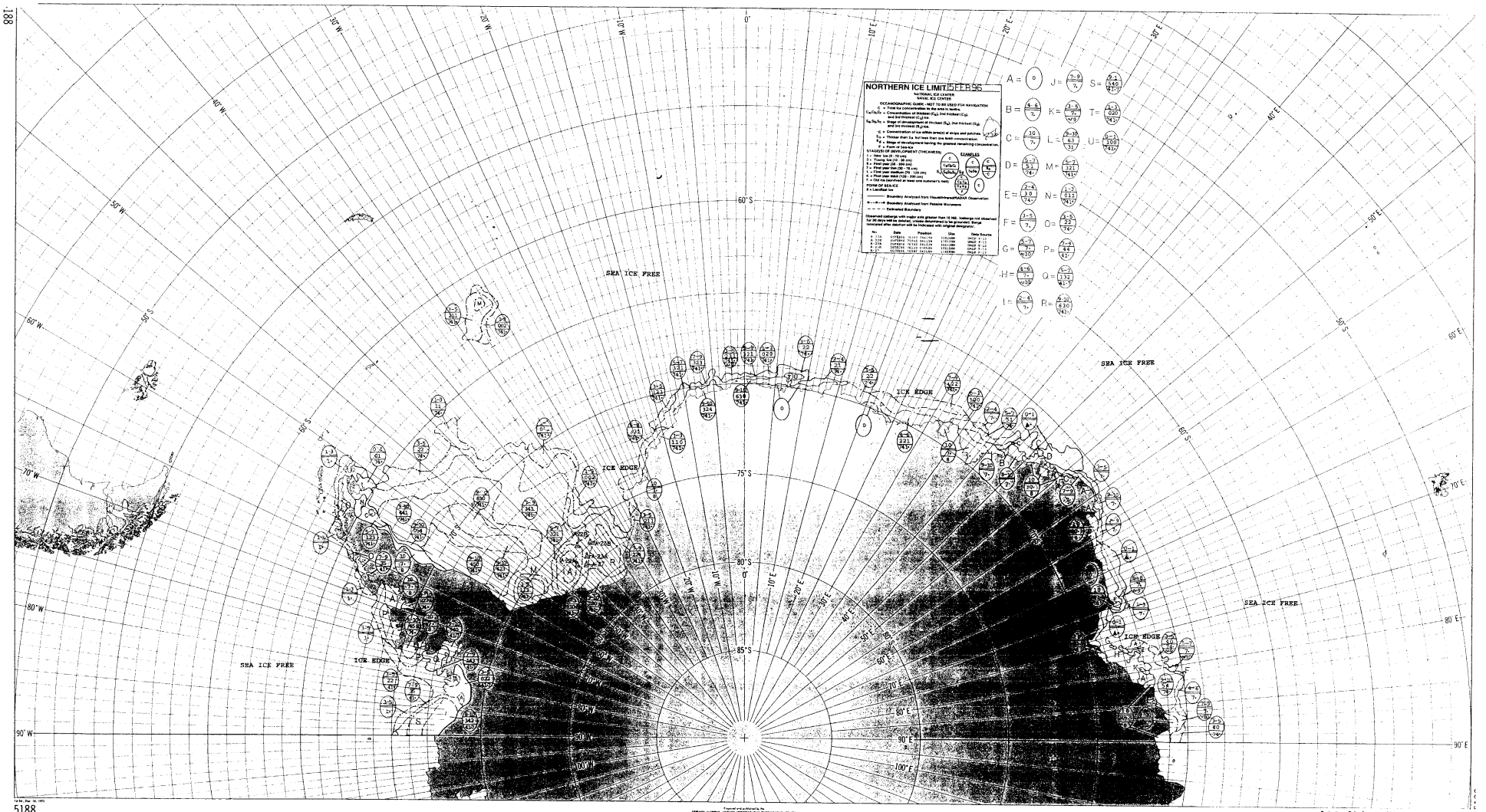
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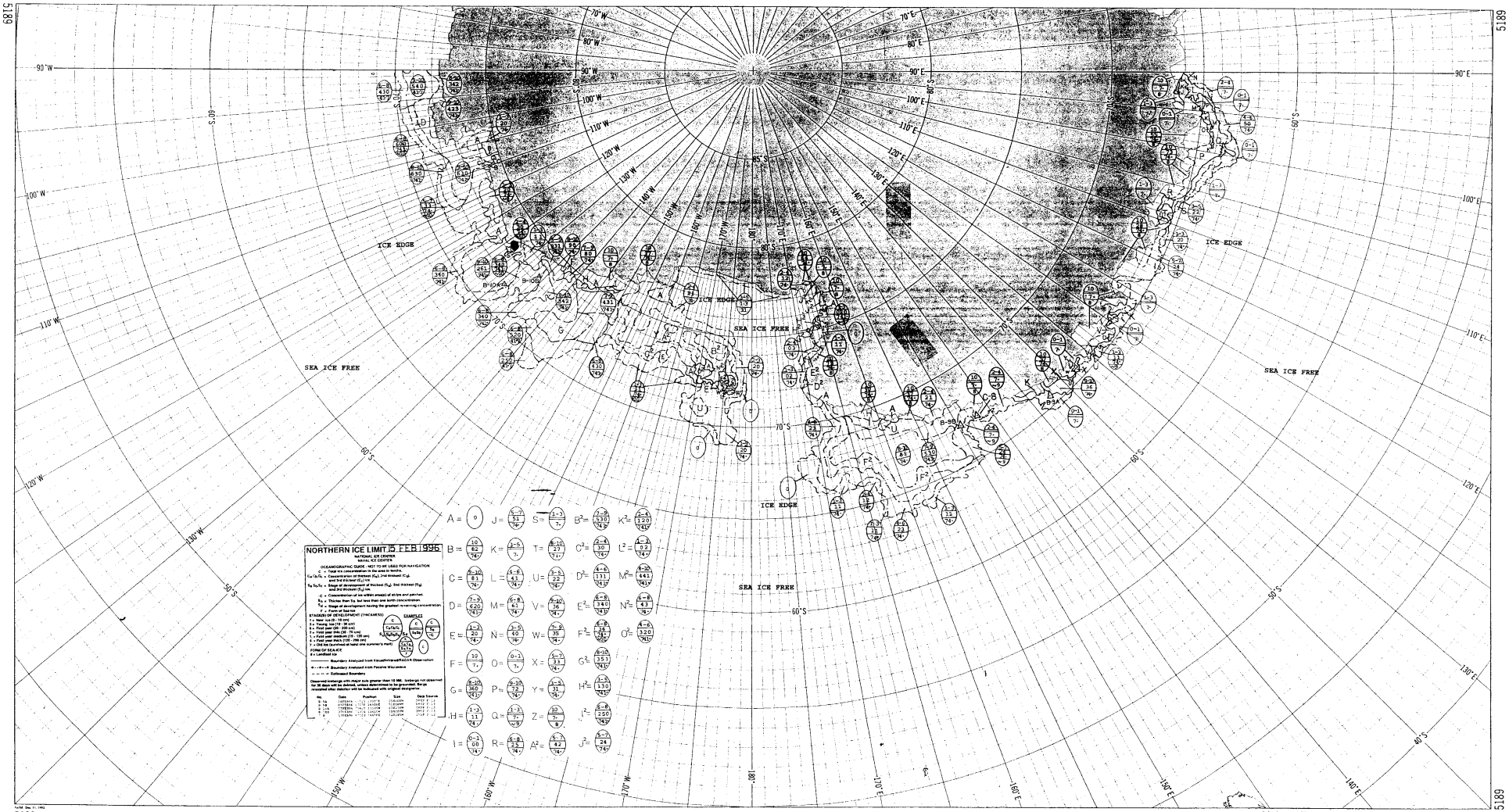
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
STAGES OF DEVELOPMENT (CHICAMEX/N)
EXAMPLES
FORM OF SEA-ICE
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Retreated Boundary
A = J = S =
B = K = T =
C = L = U =
D = M =
E = N =
F = O =
G = P =
H = Q =
I = R =
SEA ICE FREE
ICE EDGE
60°S
75°S
80°S
85°S
0°
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
100°E
10°W
20°W
30°W
40°W
50°W
60°W
70°W
80°W
90°W
Projection - Polar Stereographic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ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 15 FEB 1996
NATIONAL ICE CENTER
NAVAL ICE CENTER
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Polar Stereographic Projection
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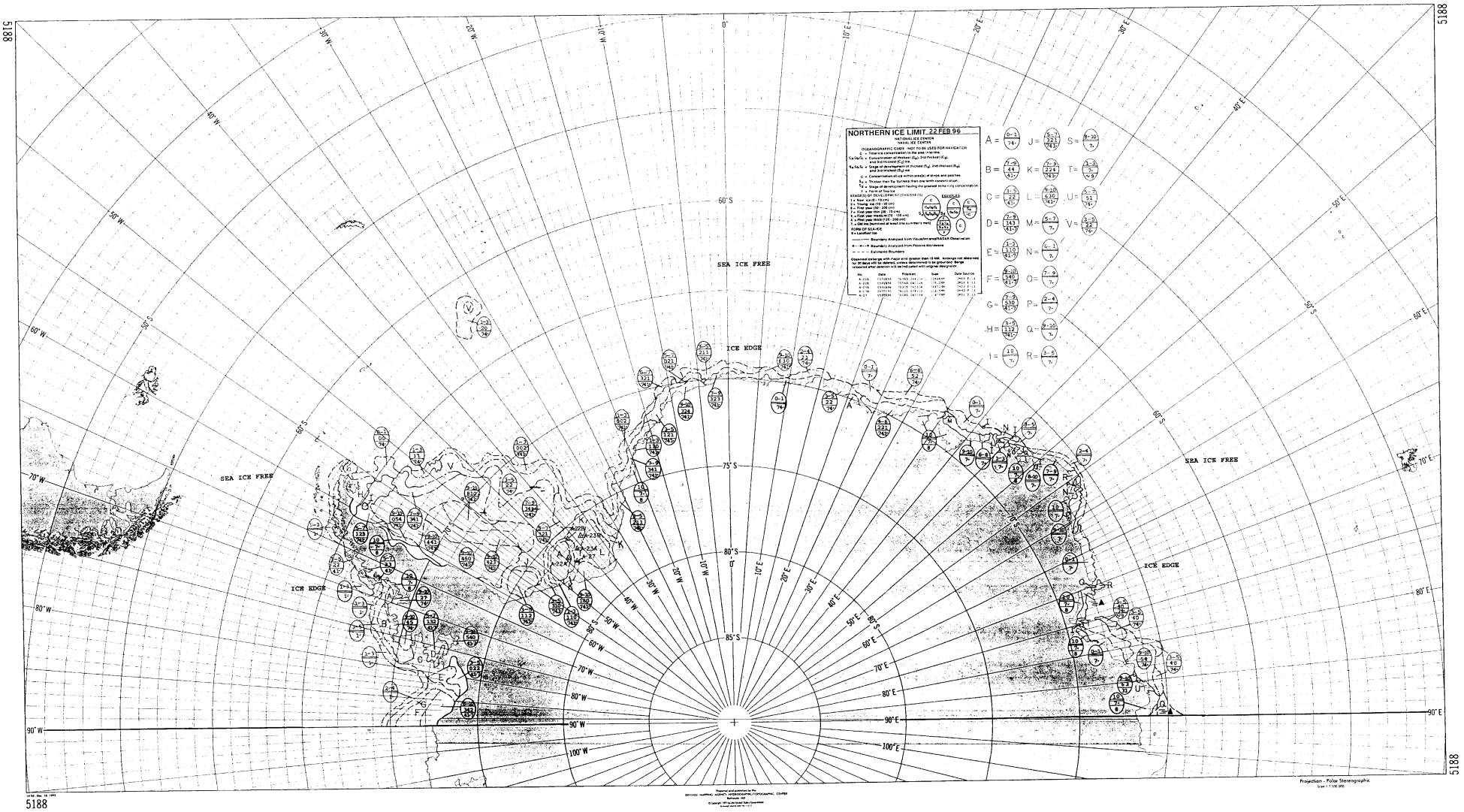

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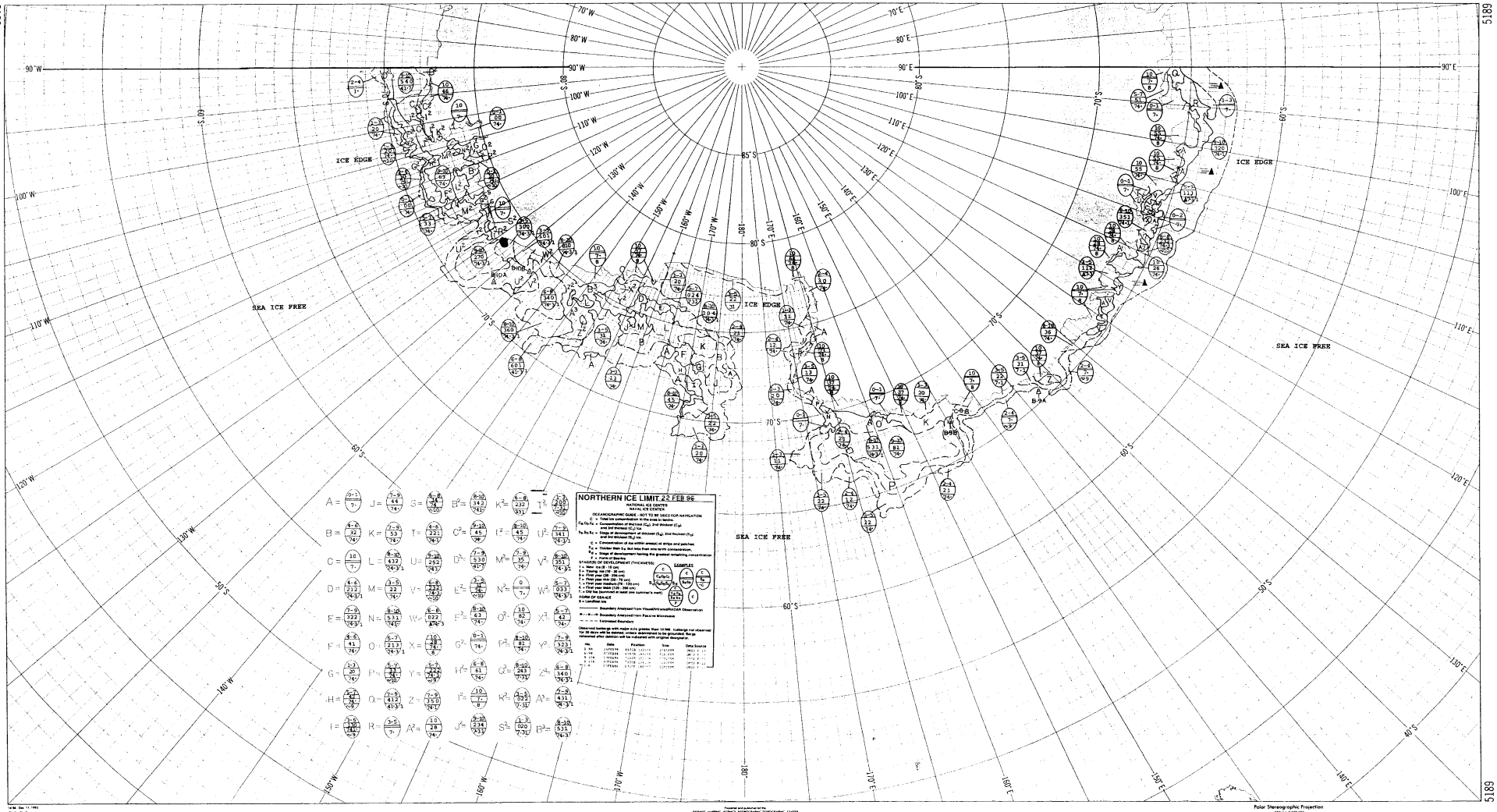

NORTHERN ICE LIMIT 22 FEB 96

NATIONAL ICE CENTER
NAVAL ICE CENTER

OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION

C_t = Total ice concentration of all the ones in tenths.
$C_a C_b C_c$ = Concentration of each ice type (or C_{av}), and thickness (T_{av}) and 3rd thickest (T_c) ice.
$S_a S_b S_c$ = Stage of development of thickest (S_{av}) and thickest (T_b) and 3rd thickest (S_c) ice.

C = Concentration of ice within area(s) of strips and patches
S_p = Thicker than S_a but less than one-tenth concentration.
S_v = Stage of development having the greatest remaining concentration
F = Form of ice (floes)

STAGES OF DEVELOPMENT (THICKNESS)

1 = New: ice (0 - 10 cm)
2 = Young: ice (10 - 30 cm)
3 = First year: thin (30 - 70 cm)
4 = First year: medium (70 - 120 cm)
5 = First year: thick (120 - 200 cm)
6 = Old: ice (survived at least one summer's melt)

FORM OF SEA ICE
1 = Landfast ice

EXAMPLES

Boundary Analysed from Visual/Infrared/Microwave Observation

Boundary Analysed from Passive Microwave

Estimated Boundary

Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be numbered with original designation.

No.	Date	Position	Size	Data Source
B 9A	241700Z FEB	65°15'S 120°15'E	28 x 11	
B 9B	271200Z FEB	67°15'S 134°15'E	7 x 5	
B 10A	190900Z FEB	67°15'S 134°15'E	7 x 5	
B 10B	271200Z FEB	67°15'S 134°15'E	7 x 5	

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Washington, DC

Polar Stereographic Projection
SCALE 1:7,500,000

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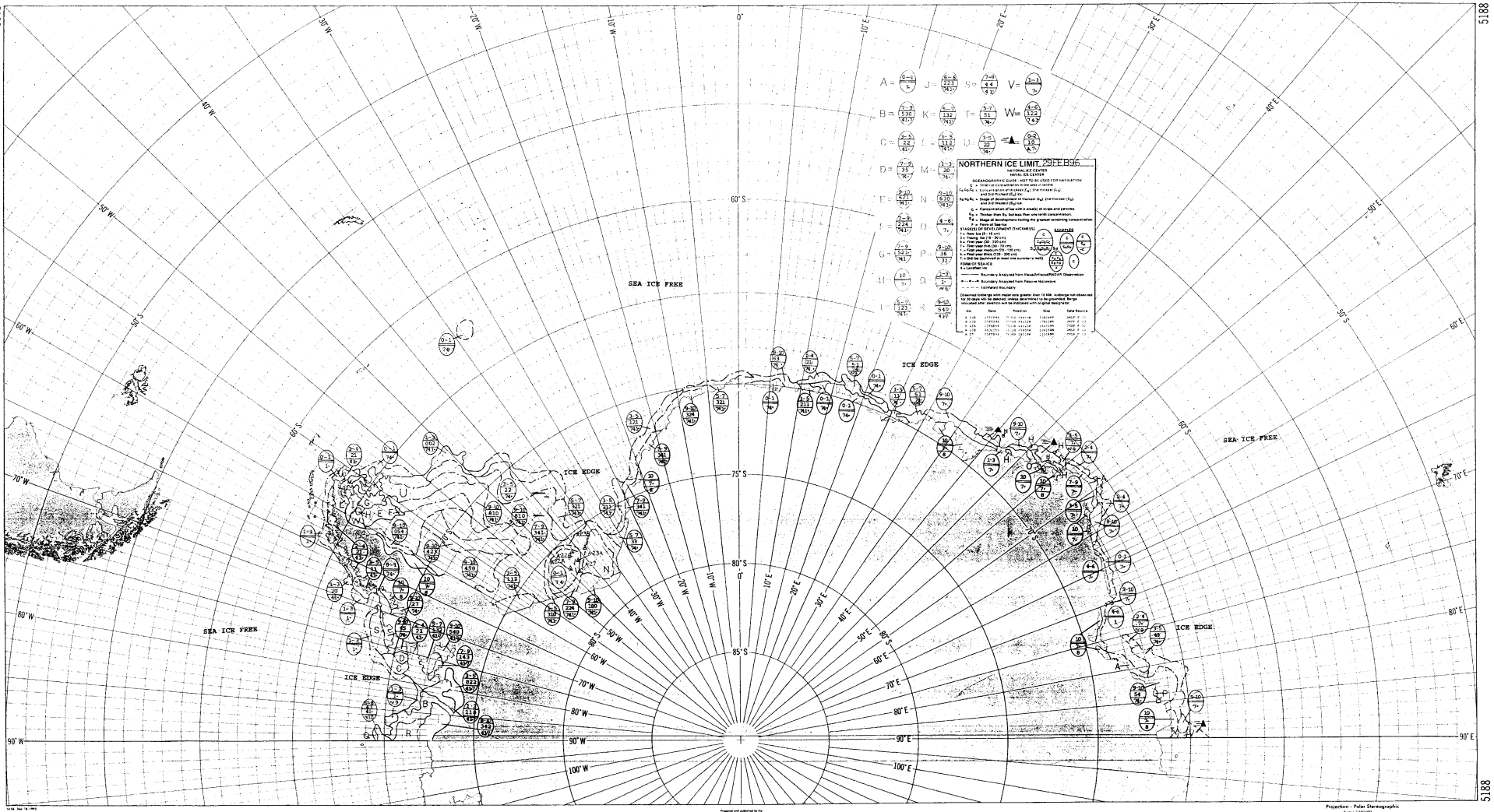

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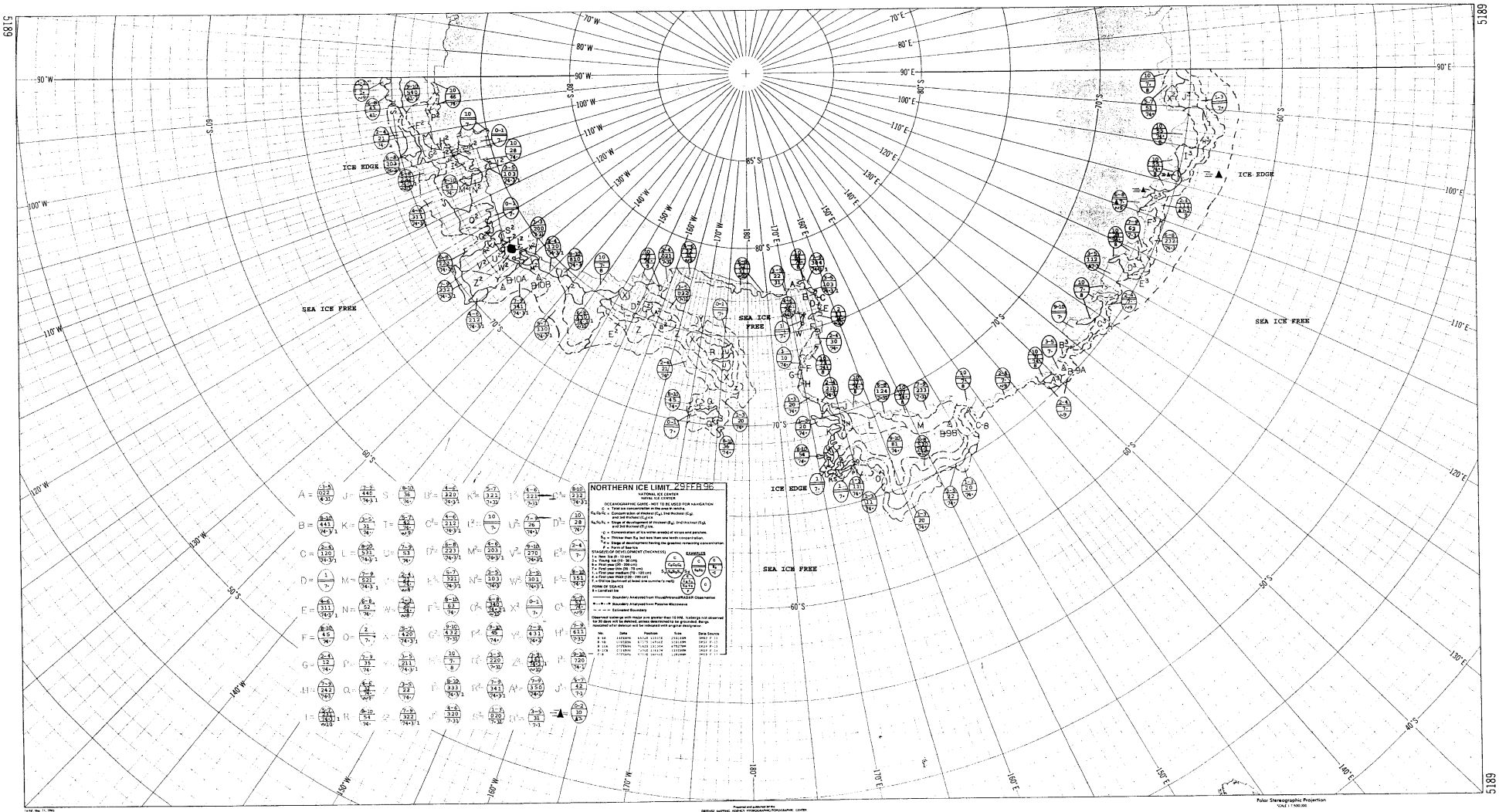
Projection - Polar Stereographic
Scale 1:7,500,000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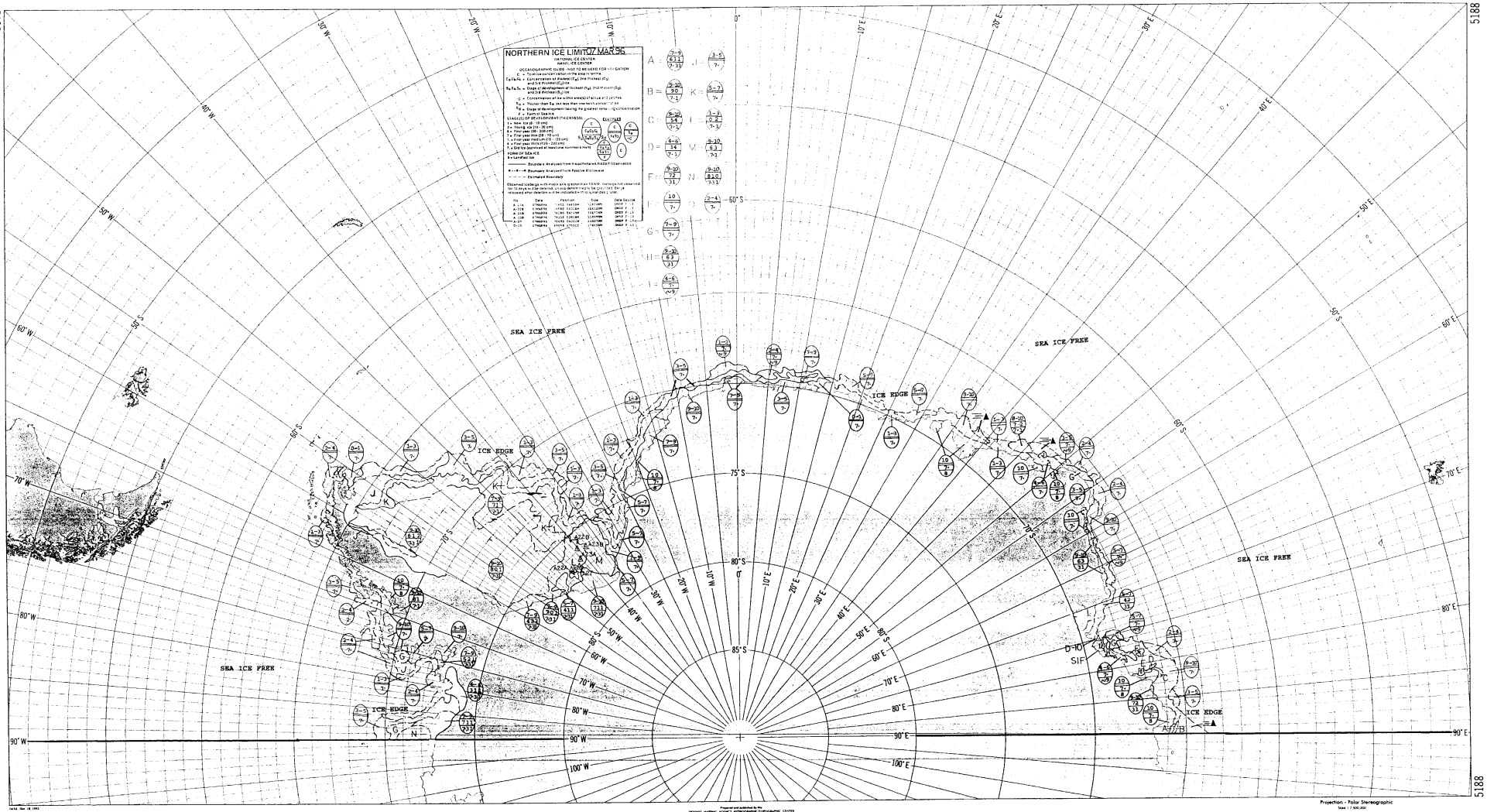
5189
ICE EDGE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
NORTHERN ICE LIMIT 25FEB96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C - Total ice concentration in the area in tenths.
Ca,Cb,Cc - Concentration of ice in partial (Ca), first thickness (Cb), and last thickness (Cc) ice.
Sa,Sb,Sc - Stage of development of thickness (Sa), 2nd thickness (Sb), and 3rd thickness (Sc) ice.
Cv - Concentration of ice within area(s) of ice free and patches.
Sv - Thicker than Sa, but less than one tenth concentration.
Sd - Stage of development having the greatest remaining concentration.
Fa - Form of floe ice.
STAGES OF DEVELOPMENT (THICKNESS)
1 - New (0-10 cm)
2 - Young (10-30 cm)
3 - First year (30 - 200 cm)
4 - First year thin (30 - 70 cm)
5 - First year medium (70 - 120 cm)
6 - First year thick (120 cm and over)
7 - Old ice (survived at least one summer melt)
FORM OF SEA ICE
1 - Land fast ice
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
Observed icebergs with major axis greater than 15 nm. Icebergs not observed for 24 days will be plotted, unless confirmed to be grounded. Bergs identified after dashboard will be plotted with graphical designations.
No. Date Position Type Data Source
Polar Stereographic Projection
Scale 1:1,500,000
Prepared and published at the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
WASHINGTON, D.C.
5189


NORTHERN ICE LIMIT 07 MAR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
D-10
SIF
A-23B
A-23A
A-22B
A-22A
A-34
A-27
A-21
A-20
A-18
A-17
A-16
A-15
A-14
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A-6
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A-4
A-3
A-2
A-1
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F-12
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F-10
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F-2
F-1
G-15
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G-13
G-12
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G-10
G-9
G-8
G-7
G-6
G-5
G-4
G-3
G-2
G-1
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I-1
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J-9
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J-5
J-4
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J-2
J-1
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M-1
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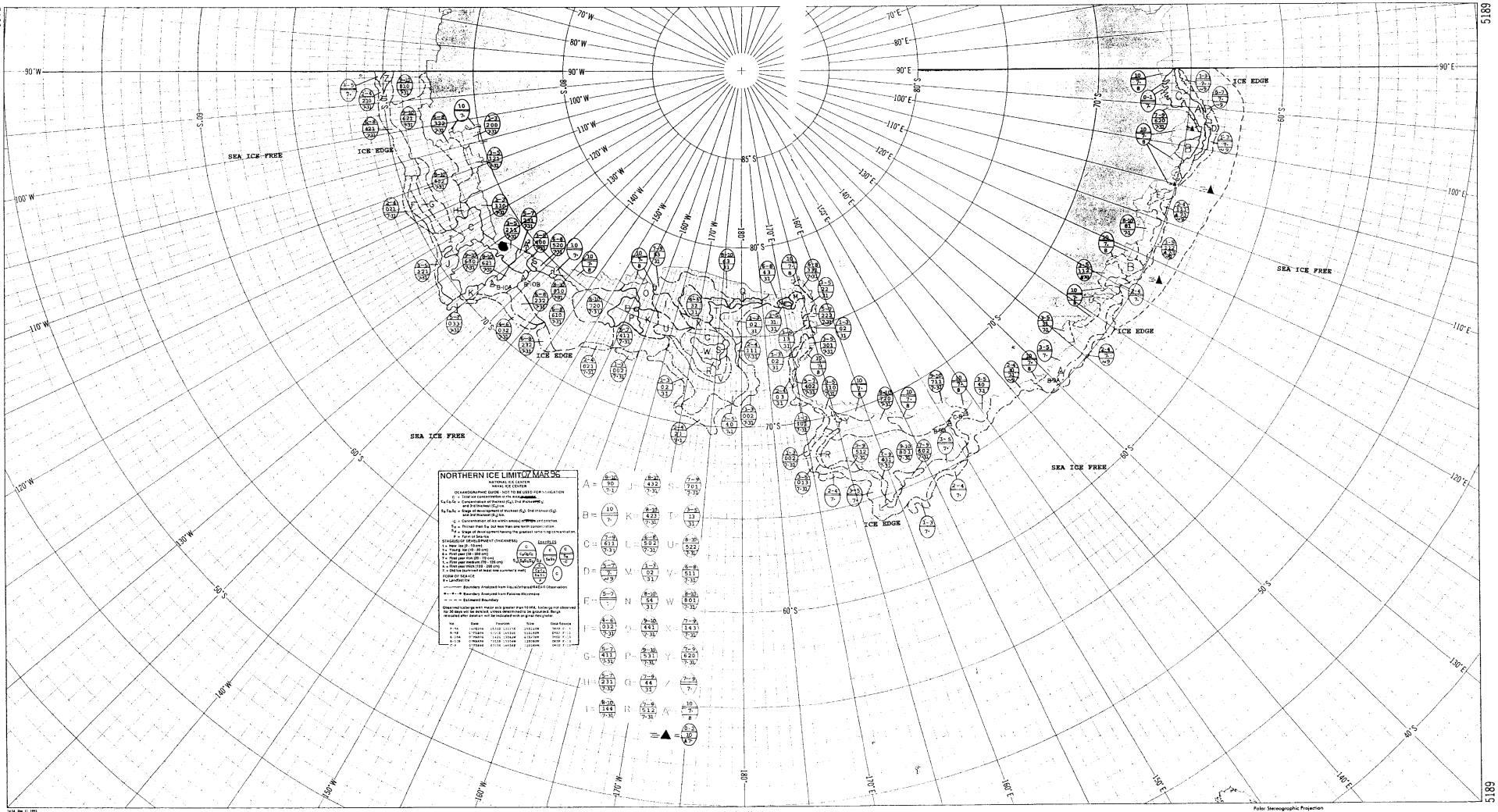
N-13
N-12
N-11
N-10
N-9
N-8
N-7
N-6
N-5
N-4
N-3
N-2
N-1
60° S
70° S
75° S
80° S
85° S
90° W
80° W
70° W
60° W
50° W
40° W
30° W
20° W
10° W
0°
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° W
100° E

5188


NORTHERN ICE LIMIT 07 MAR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC USE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
90°W
90°E
80°W
80°E
70°W
70°E
100°W
100°E
110°W
110°E
120°W
120°E
130°W
130°E
140°W
140°E
150°W
150°E
160°W
160°E
170°W
170°E
180°
85°S
80°S
70°S
60°S
50°S
40°S
Polar Stereographic Projection

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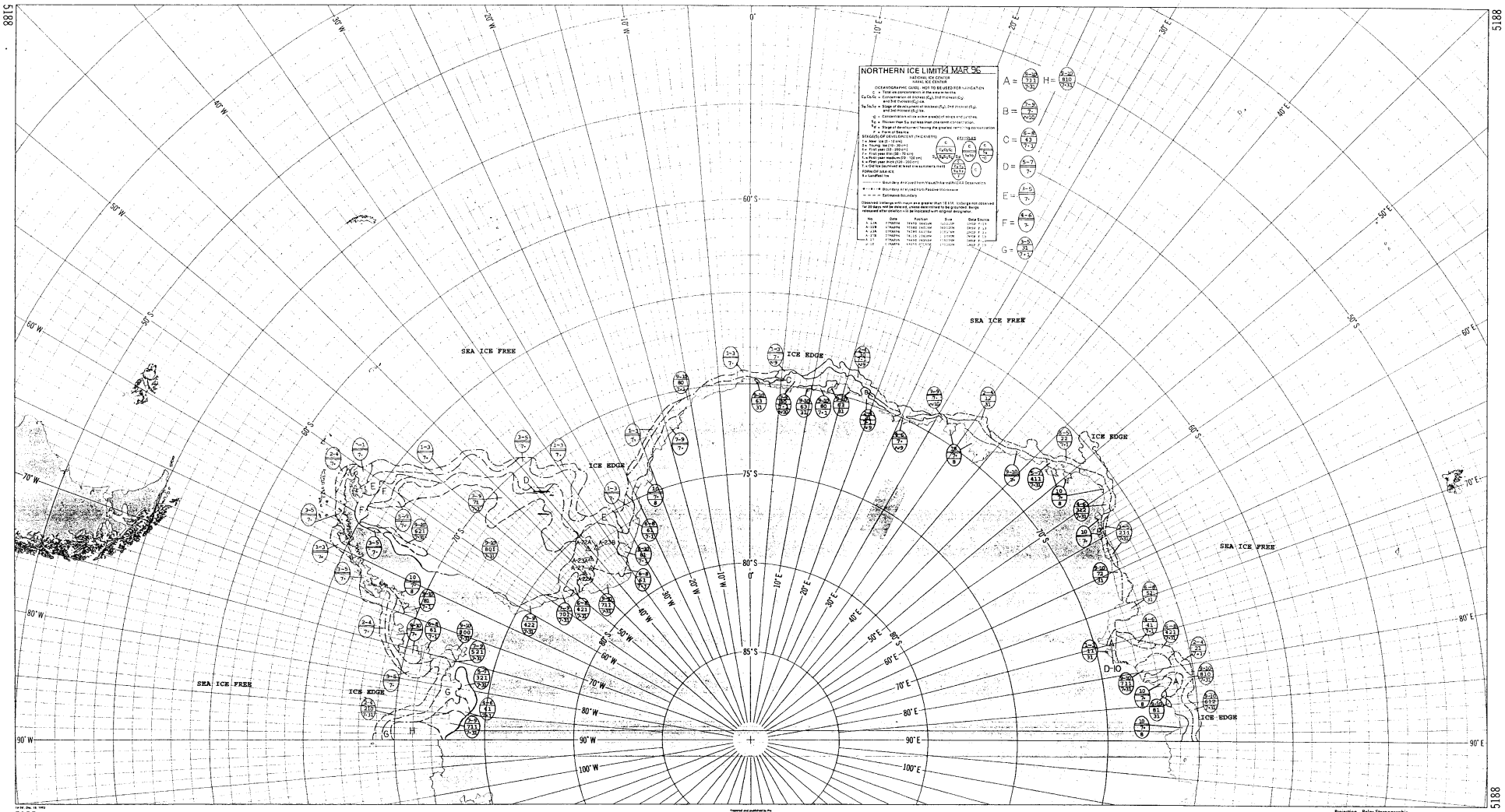

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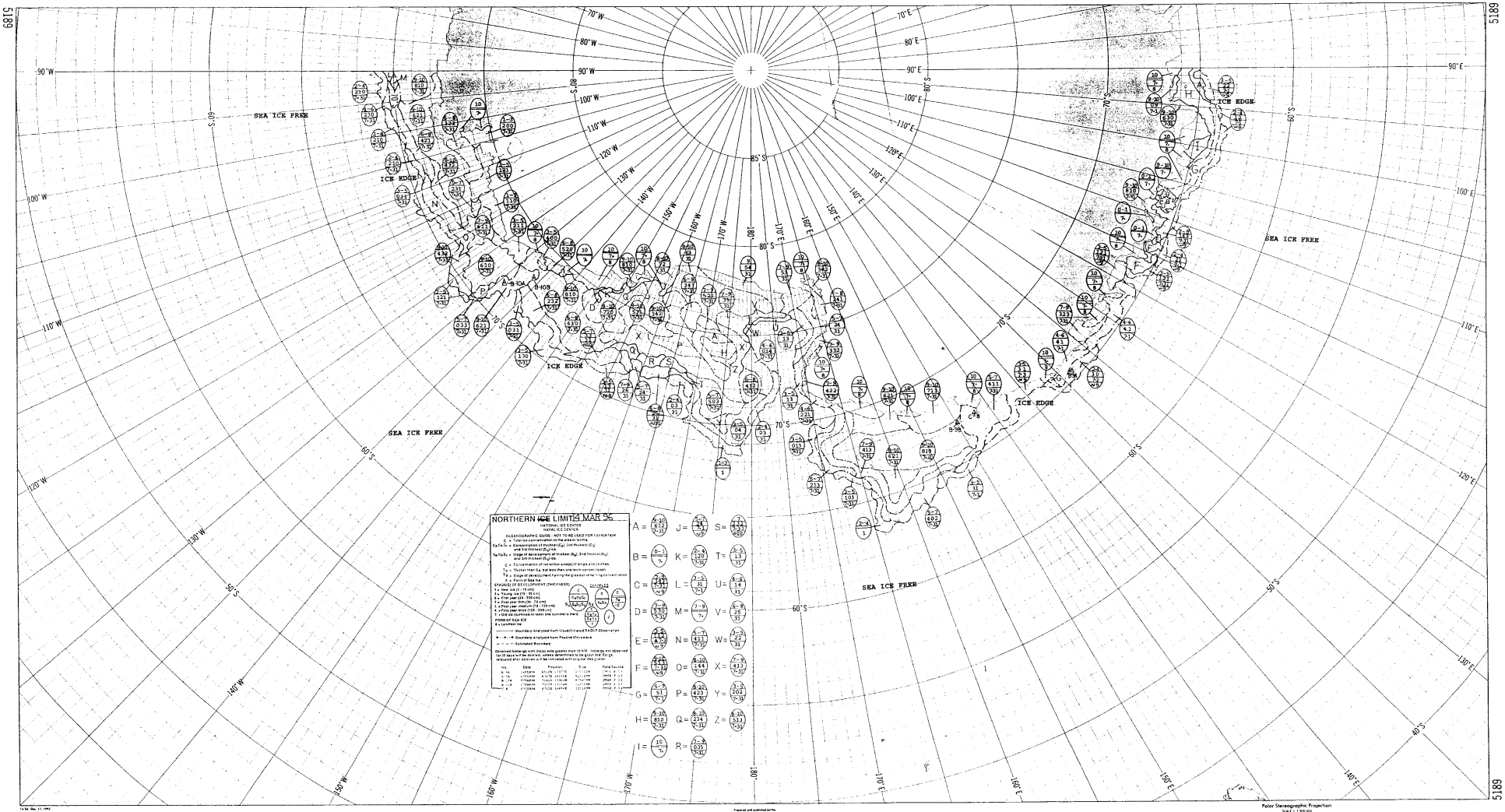
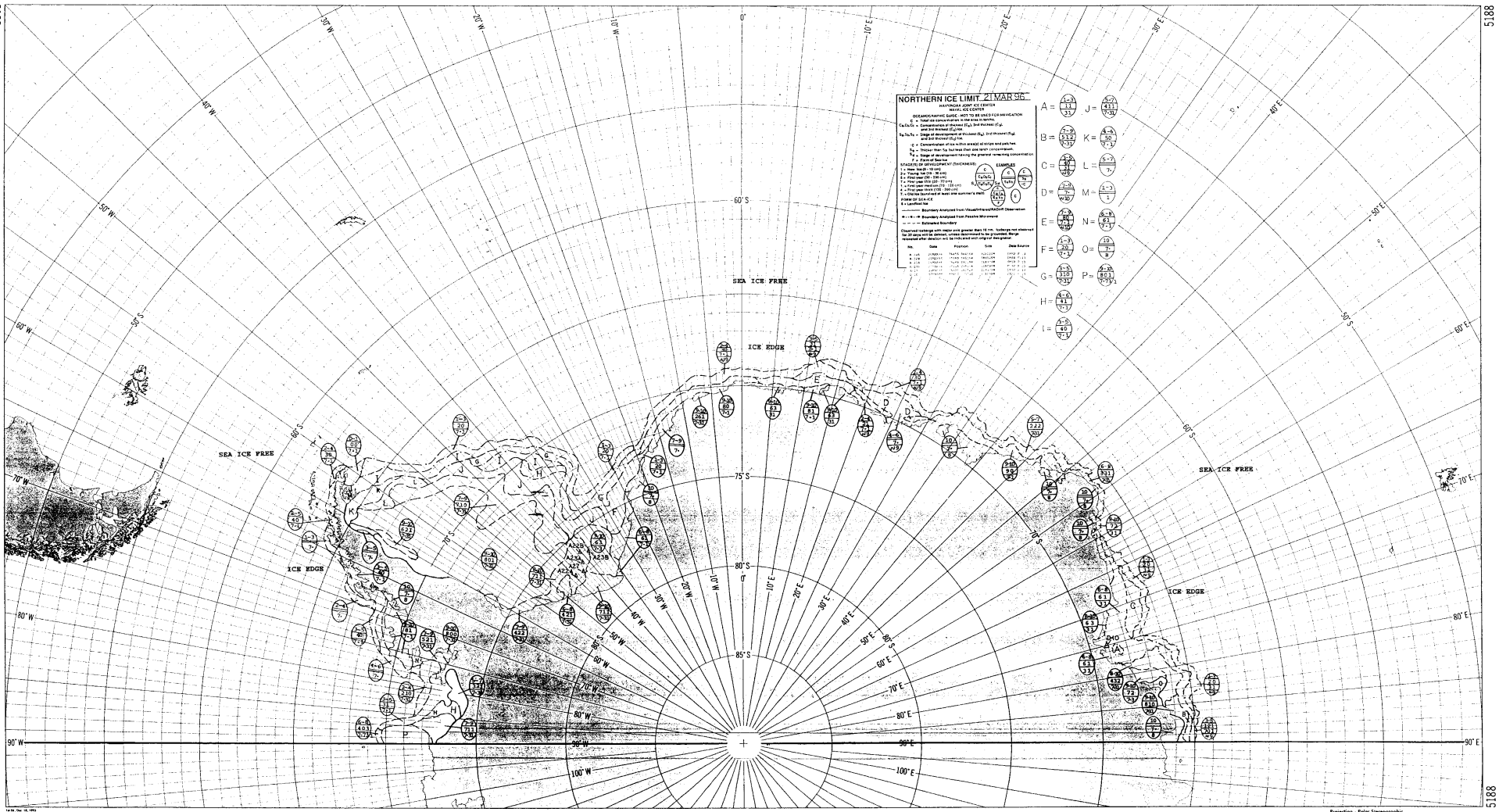

NORTHERN ICE LIMITS MAR 55
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
SCALE 1:7,500,000

5189



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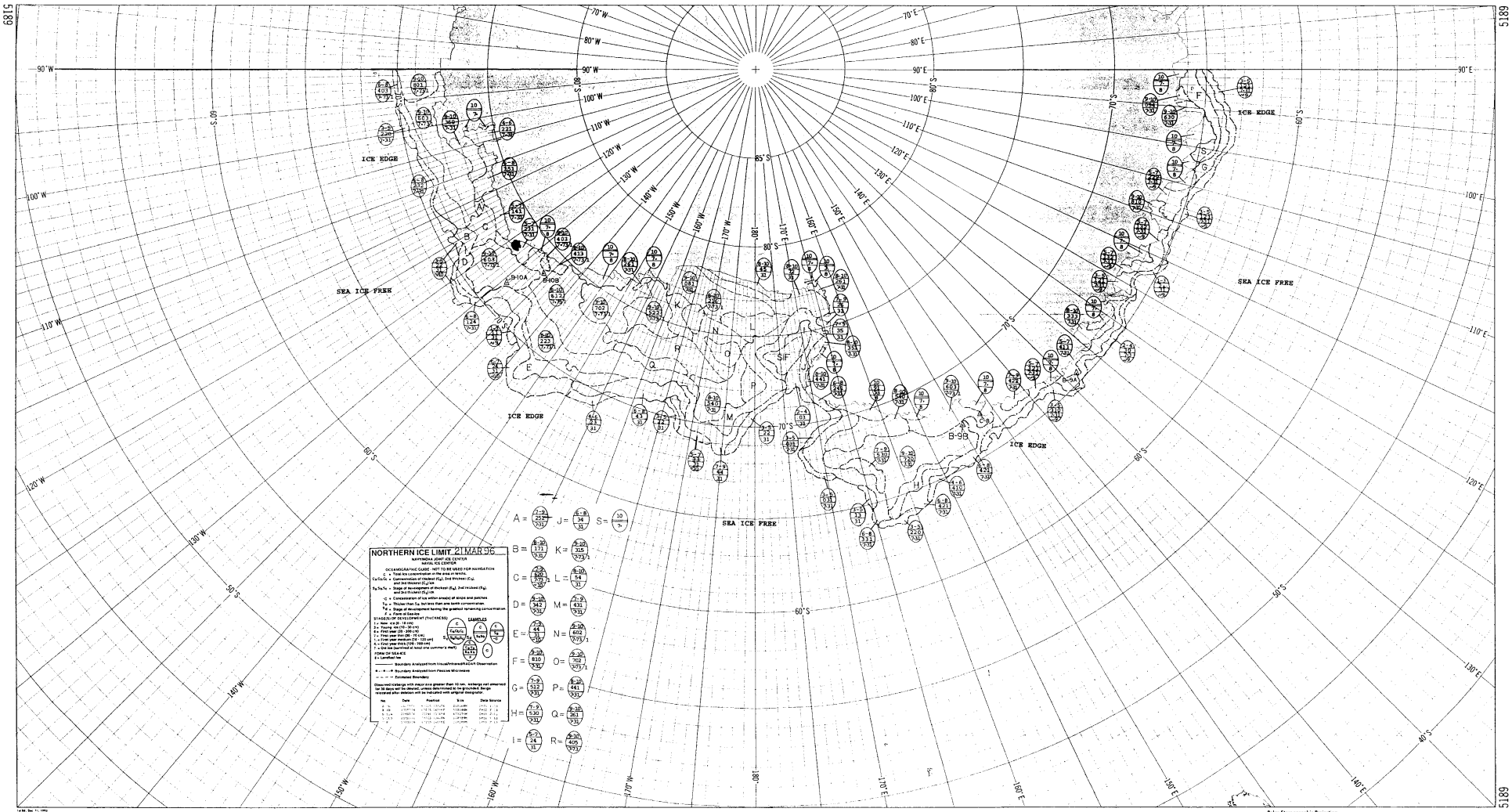
Projection - Polar Stereographic
Scale 1:7,500,000



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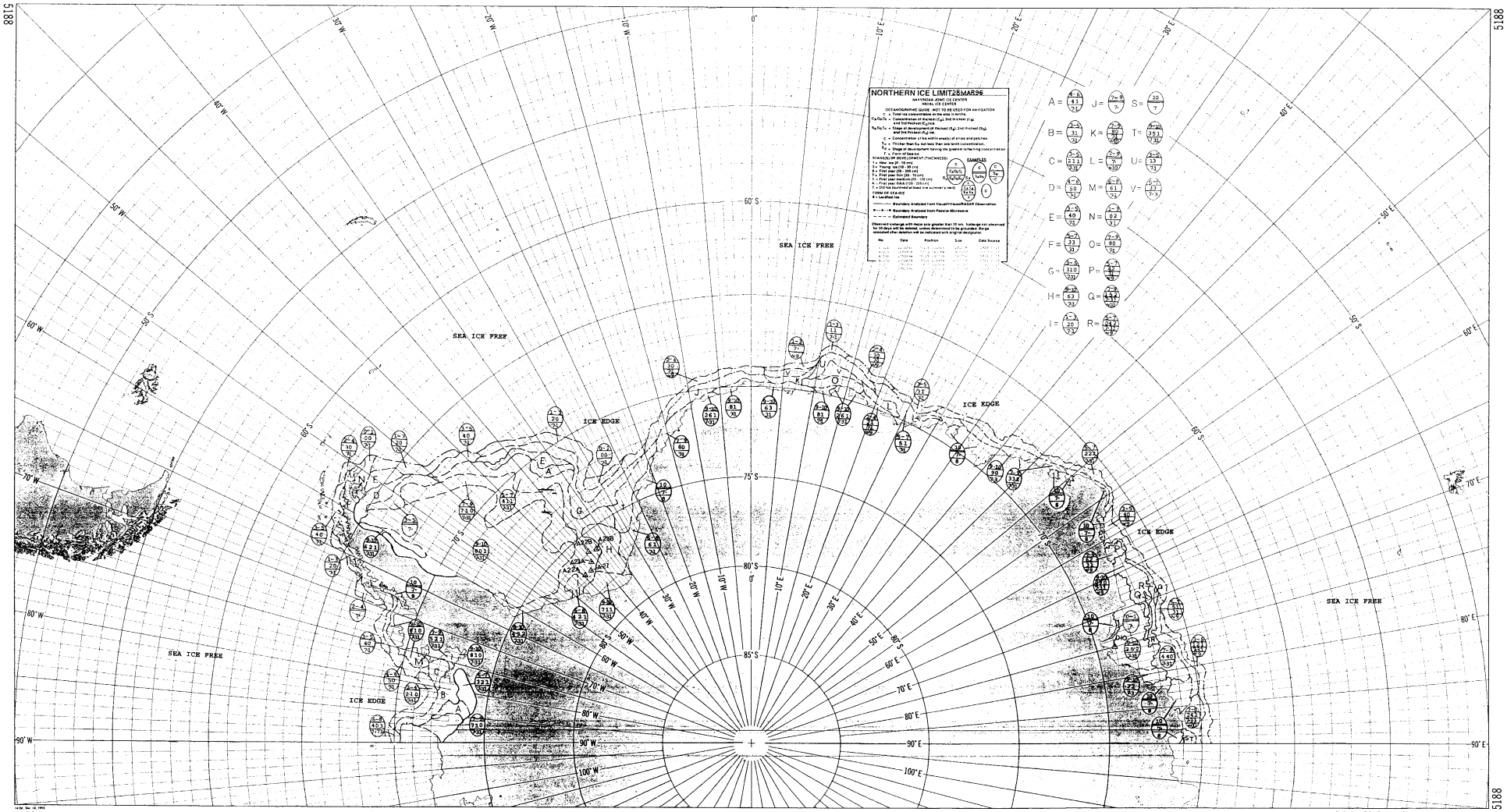
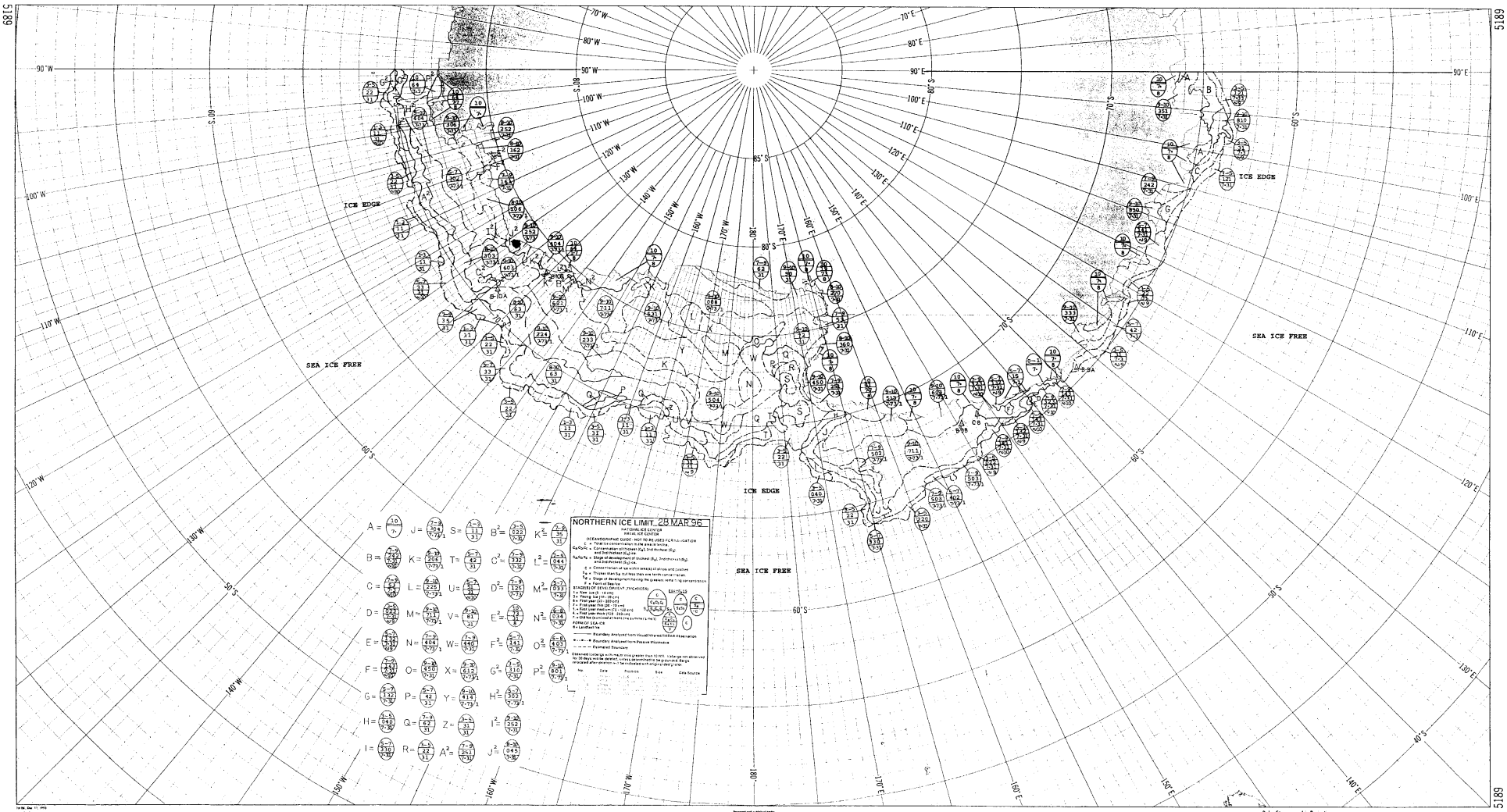
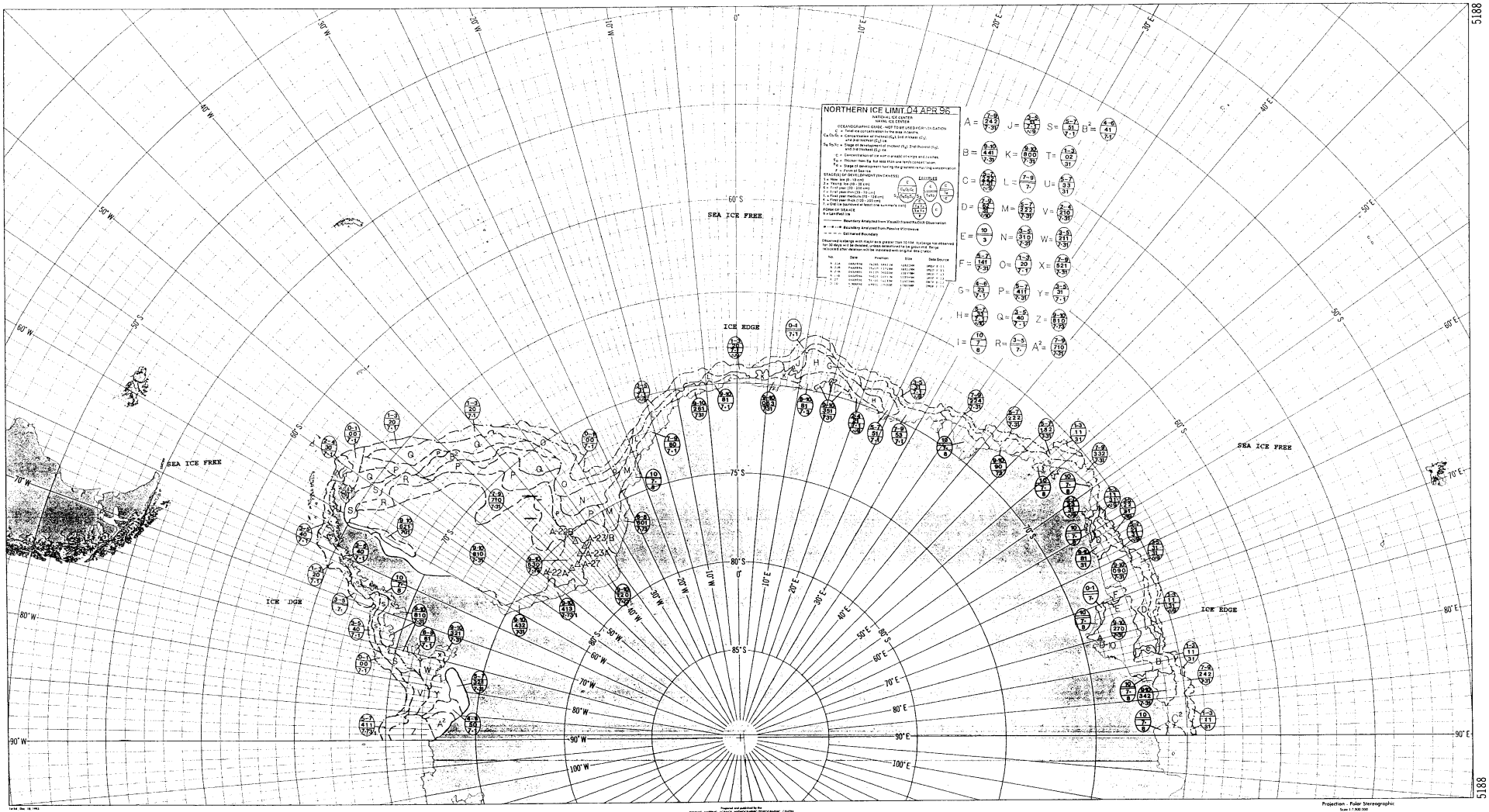

NORTHERN ICE LIMIT 28MAR26
NAVY/NOAA JOINT ICE CENTER
GLOBAL ICE CHART
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
60°S
70°S
75°S
80°S
85°S
0°
10°W
20°W
30°W
40°W
50°W
60°W
70°W
80°W
90°W
100°W
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
100°E
Projection - Polar Stereographic


ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT, 28 MAR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
Polar Stereographic Projection



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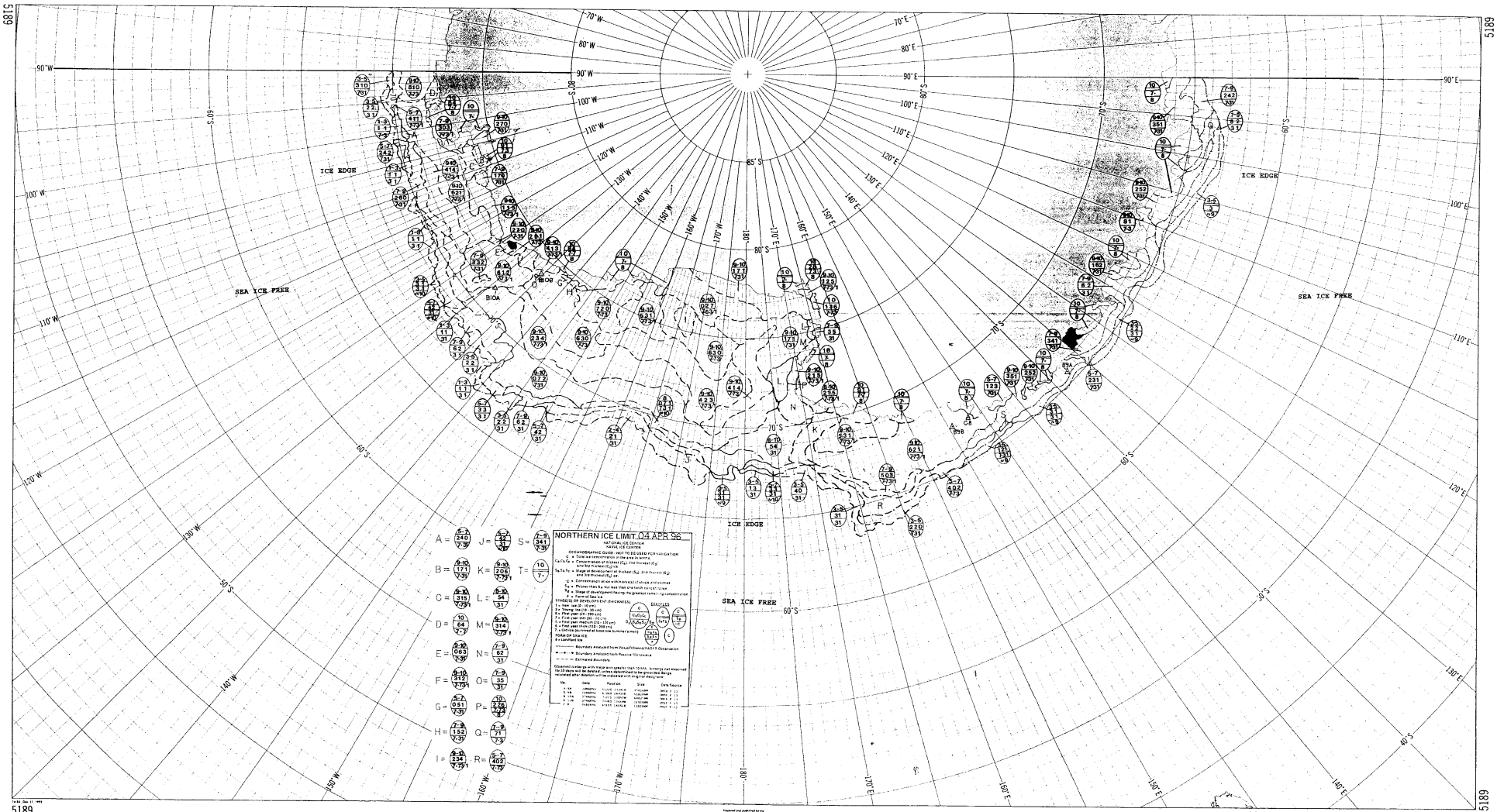
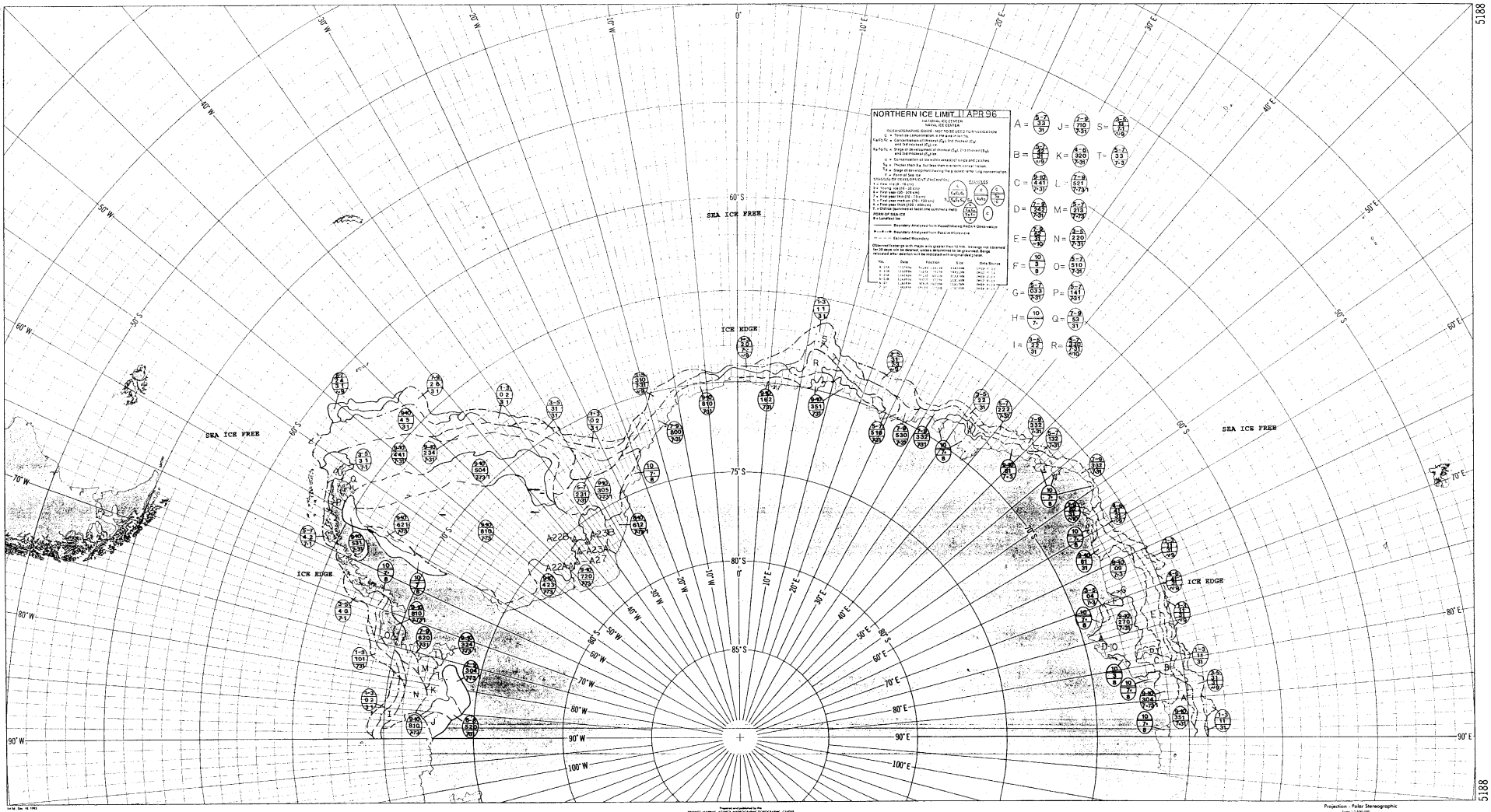
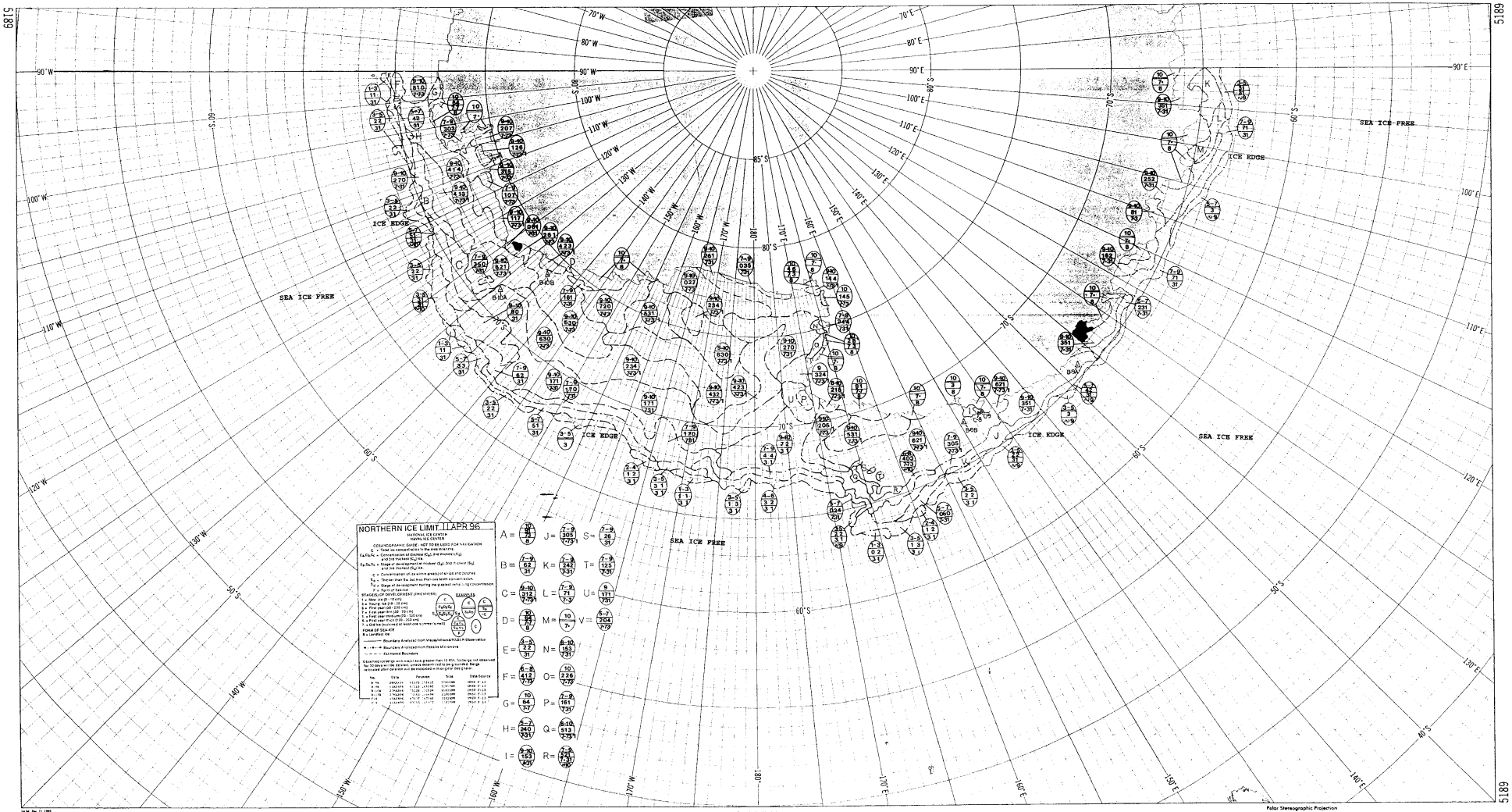
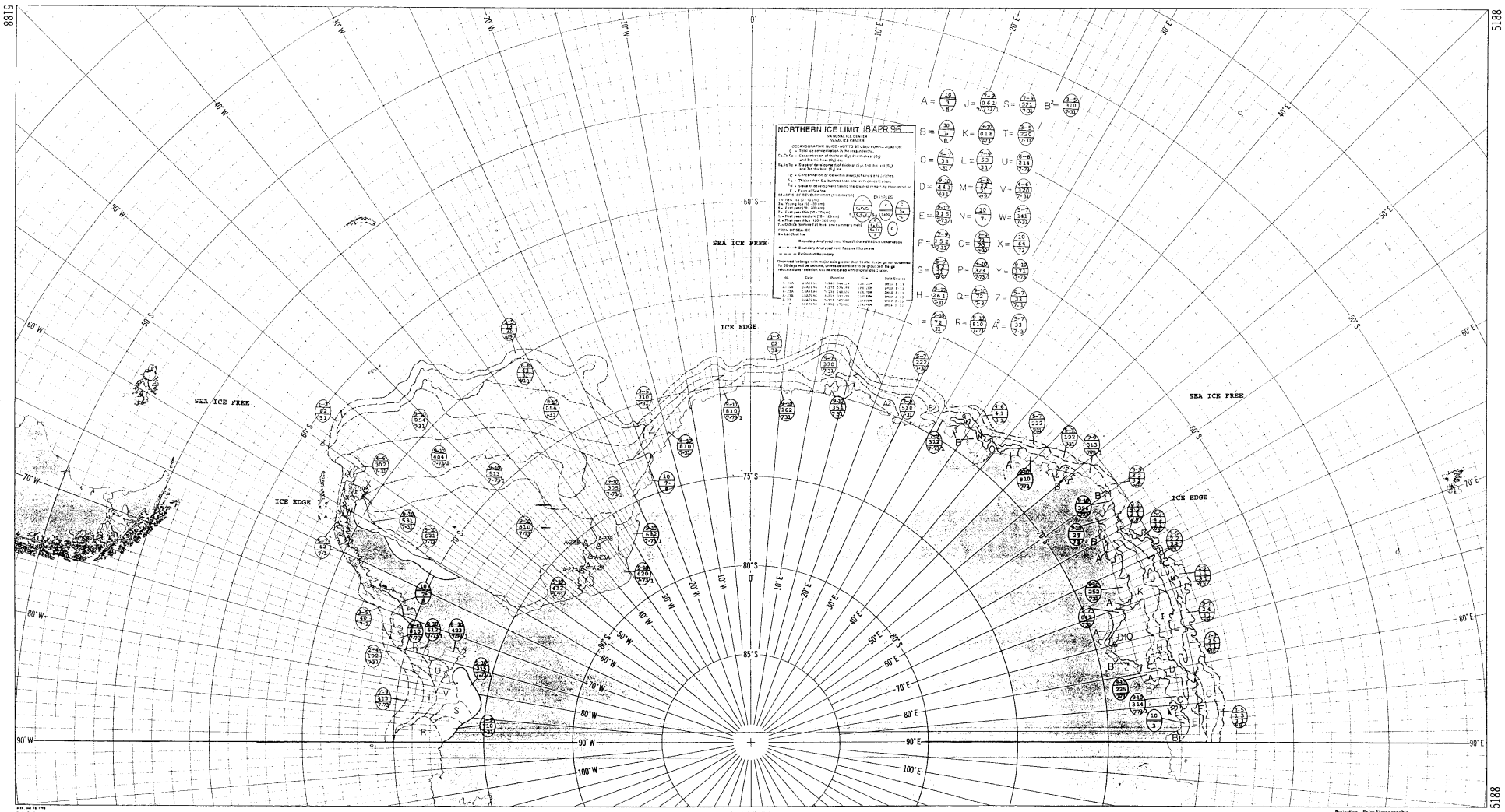

5189
5189
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 04 APR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
A = 5-7 340 7-9
B = 9-10 171 7-91
C = 9-10 315 7-791
D = 10 24 7-9
E = 9-10 063 7-39
F = 9-10 117 7-791
G = 5-7 051 7-39
H = 7-9 152 7-35
I = 9-10 234 7-791
J = 5-7 40 7-9
K = 9-10 206 7-791
L = 9-10 54 31
M = 9-10 314 7-791
N = 7-9 62 31
O = 7-9 35 31
P = 10 2.26 7-9
Q = 7-9 71 7-9
R = 5-7 402 7-9
S = 7-9 341 7-9
T = 10 7- 8
Polar Stereographic Projection
SCALE 1:7,500,000
5189
5189


NORTHERN ICE LIMIT 11 APR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHARTS - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
60° S
75° S
80° S
85° S
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
A22A
A23A
A23B
A27
5188
5188
5188


NORTHERN ICE LIMIT 11 APR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
ICE EDGE
SEA ICE FREE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
ICE EDGE
ICE EDGE
ICE EDGE
A = J = S =
B = K = T =
C = L = U =
D = M = V =
E = N =
F = O =
G = P =
H = Q =
I = R =
Polar Stereographic Projection
SCALE 1:7,500,000



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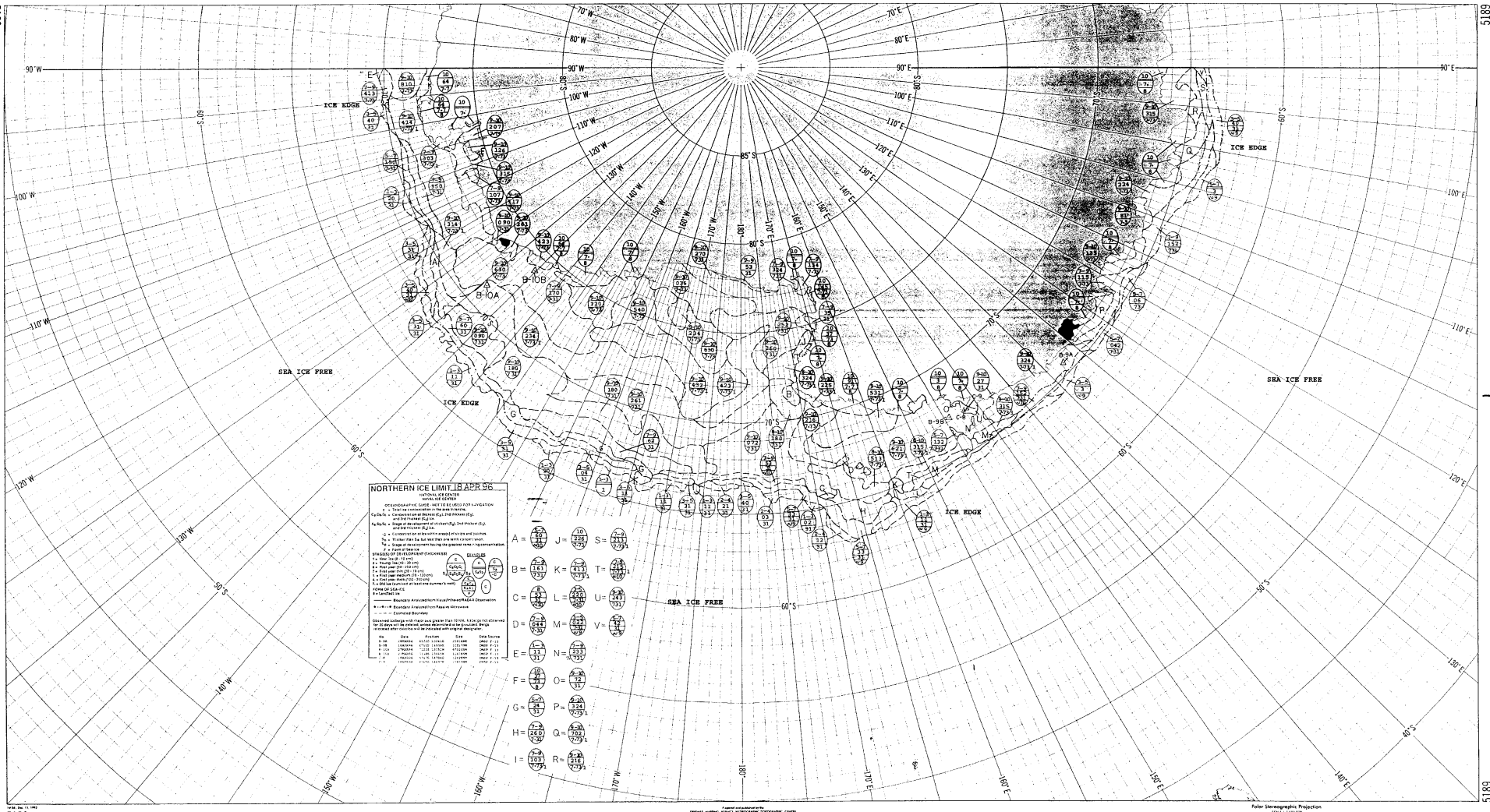
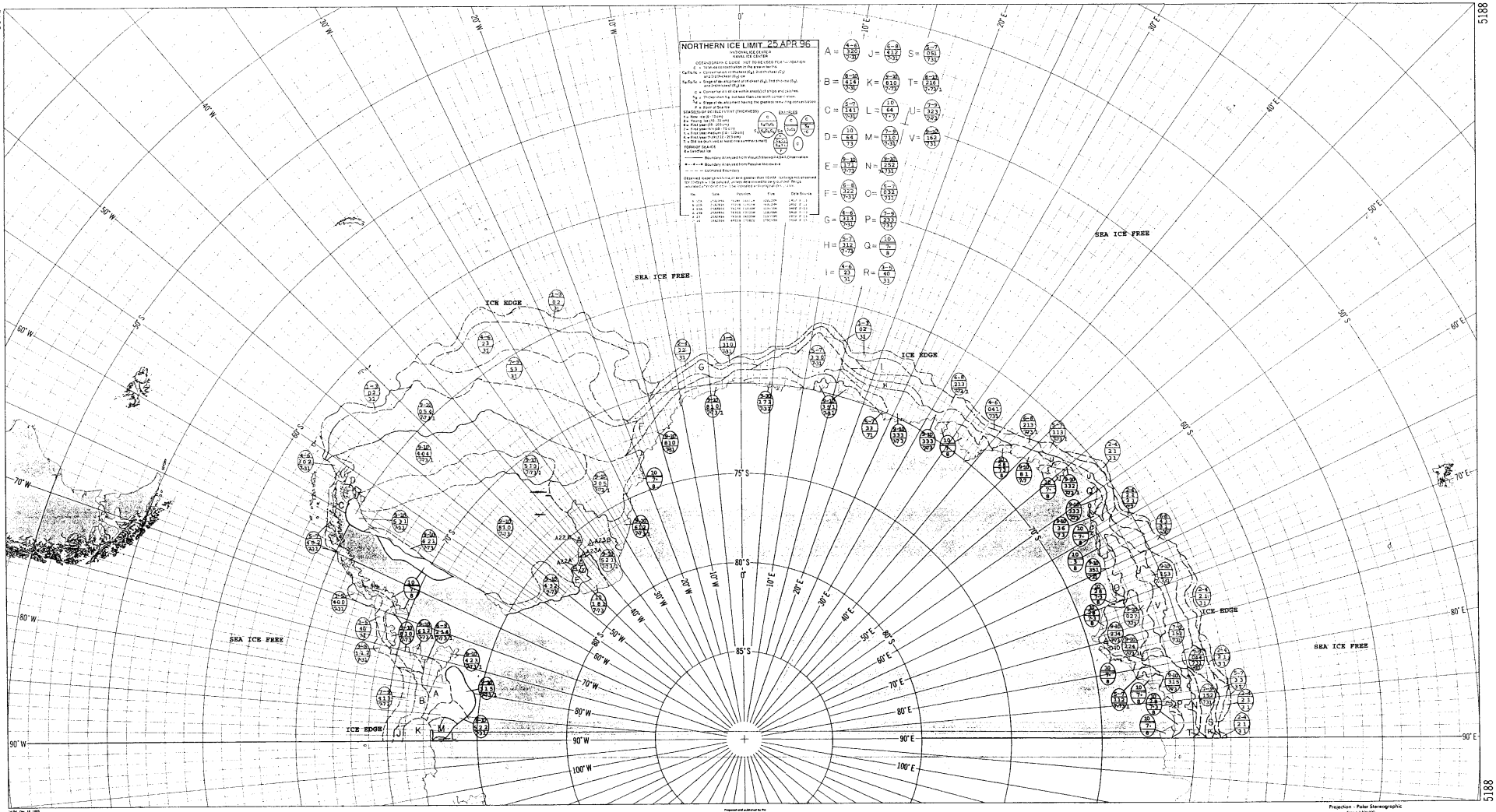
Projection - Polar Stereographic


NORTHERN ICE LIMIT 18 APR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
ICE EDGE
SEA ICE FREE
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection
SCALE 1:10,000,000


NORTHERN ICE LIMIT 25 APR 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
ICE EDGE
75°S
80°S
85°S
Projection - Polar Stereographic

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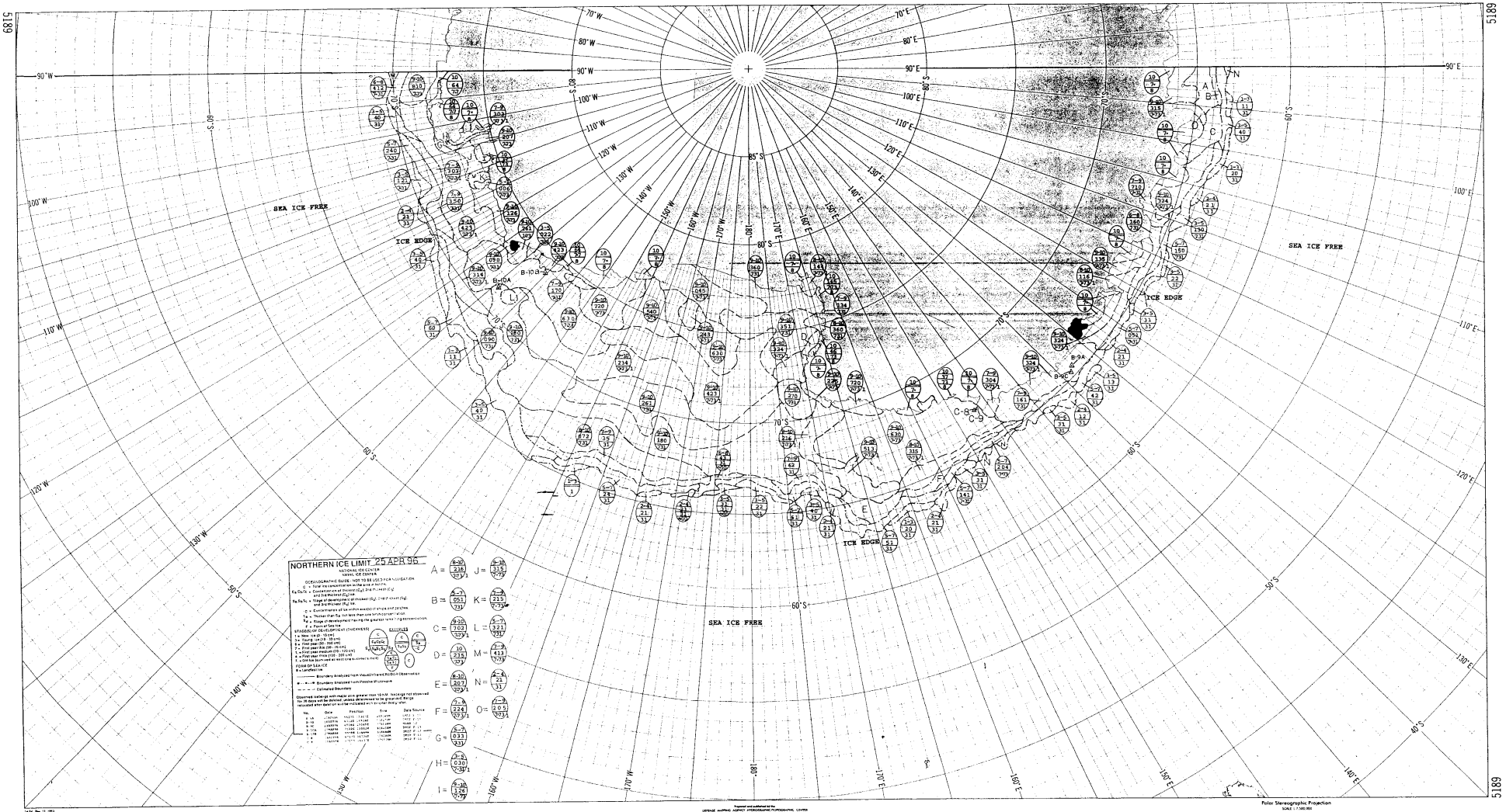
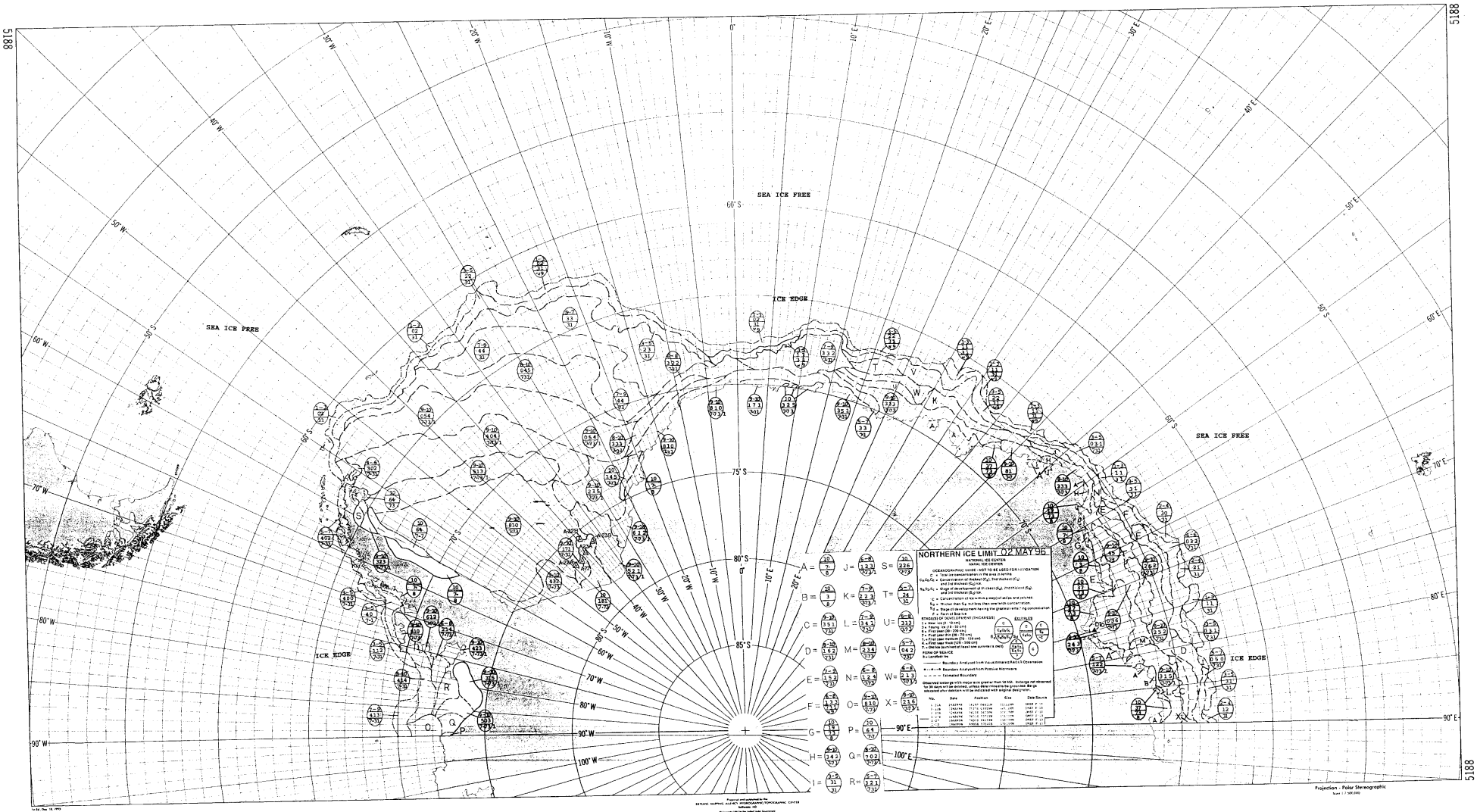
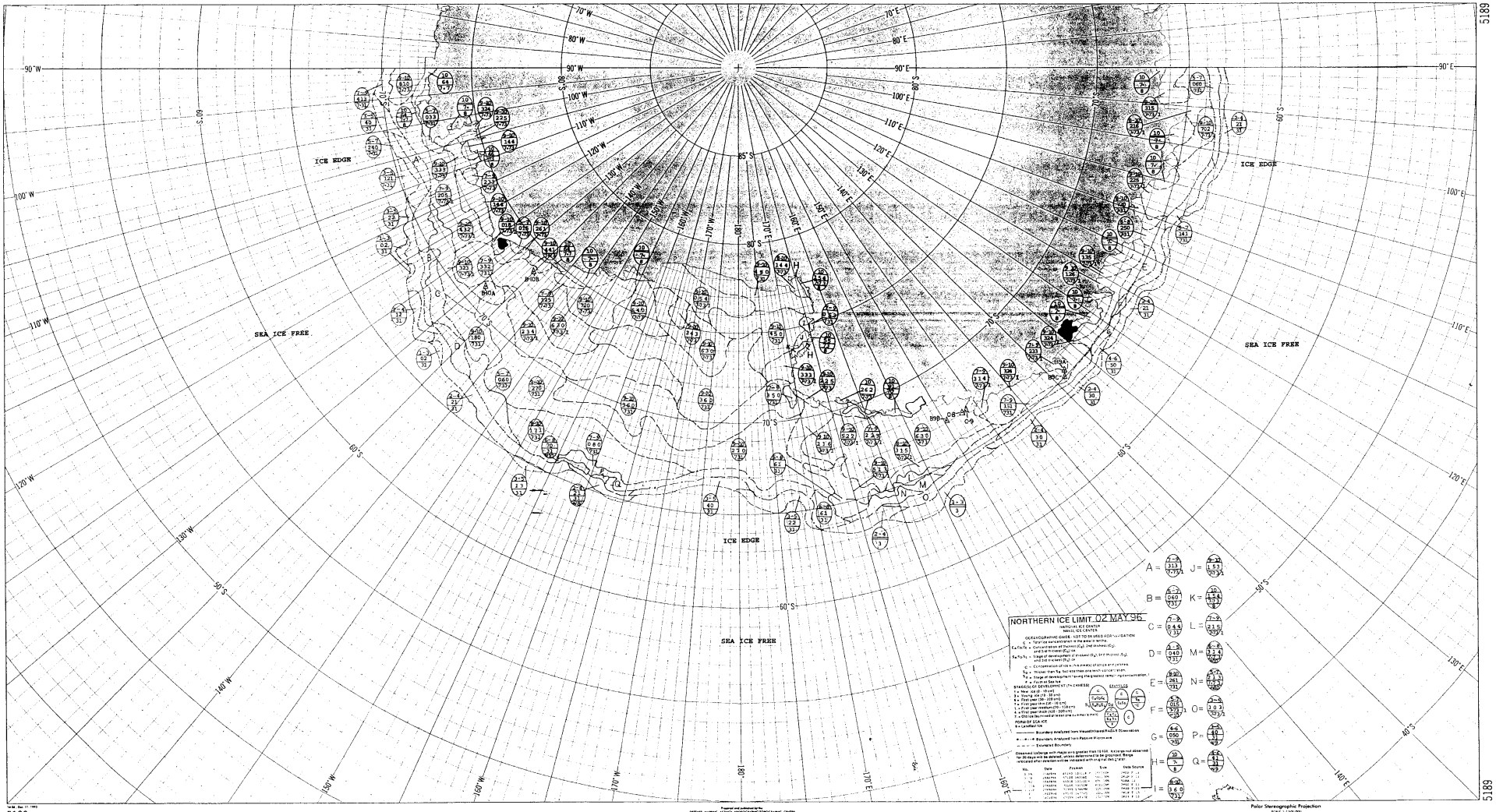

SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
B-10A
B-9A
B-9C
C-8
C-9
NORTHERN ICE LIMIT 25 APR 96
NATIONAL ISC CENTER
SUITLAND, MD 20746
A =
B =
C =
D =
E =
F =
G =
H =
I =
J =
K =
L =
M =
N =
O =
Polar Stereographic Projection

5189


5188
SEA ICE FREE
ICE EDGE
60°S
75°S
80°S
85°S
NORTHERN ICE LIMIT 02 MAY 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
Projection - Polar Stereographic



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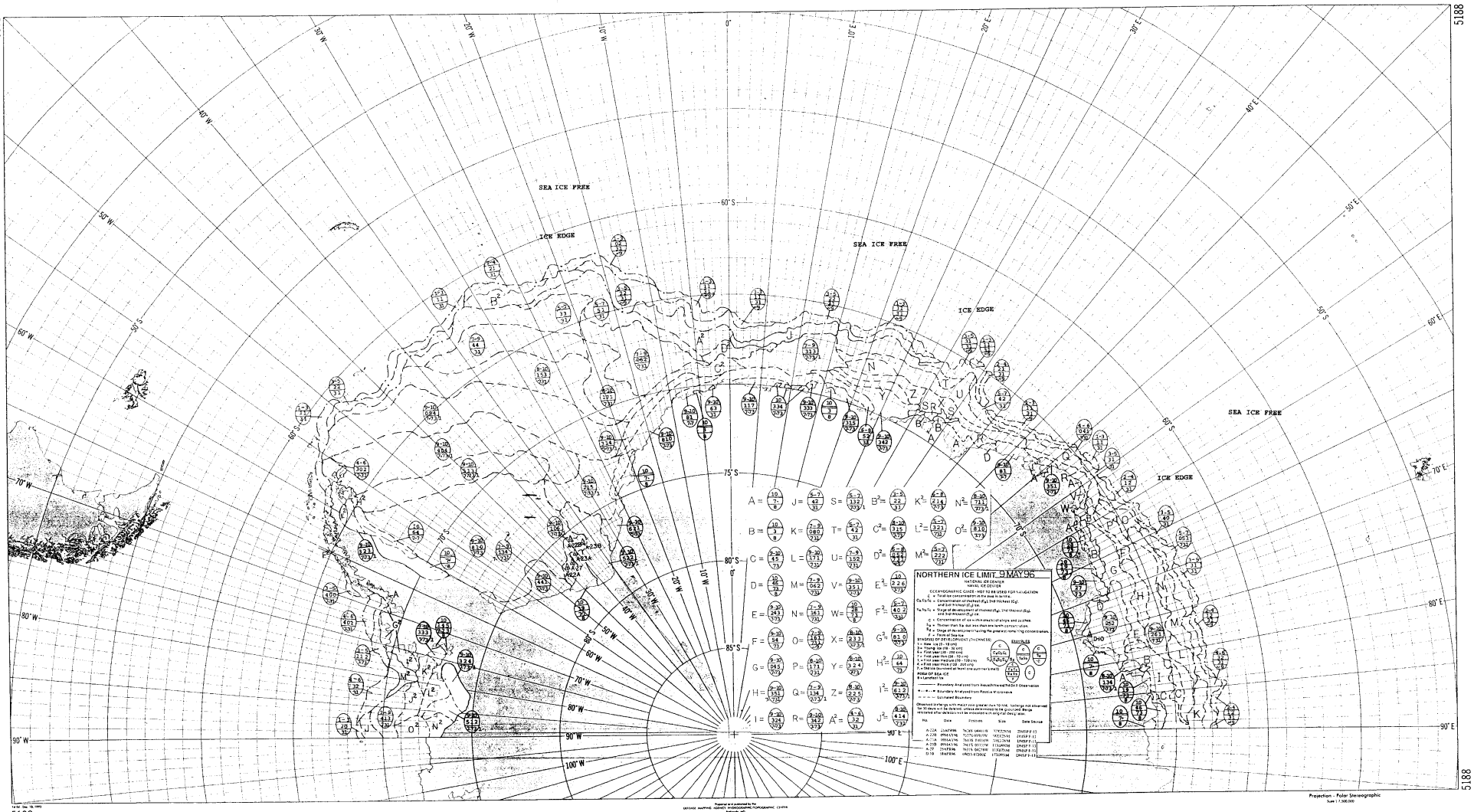
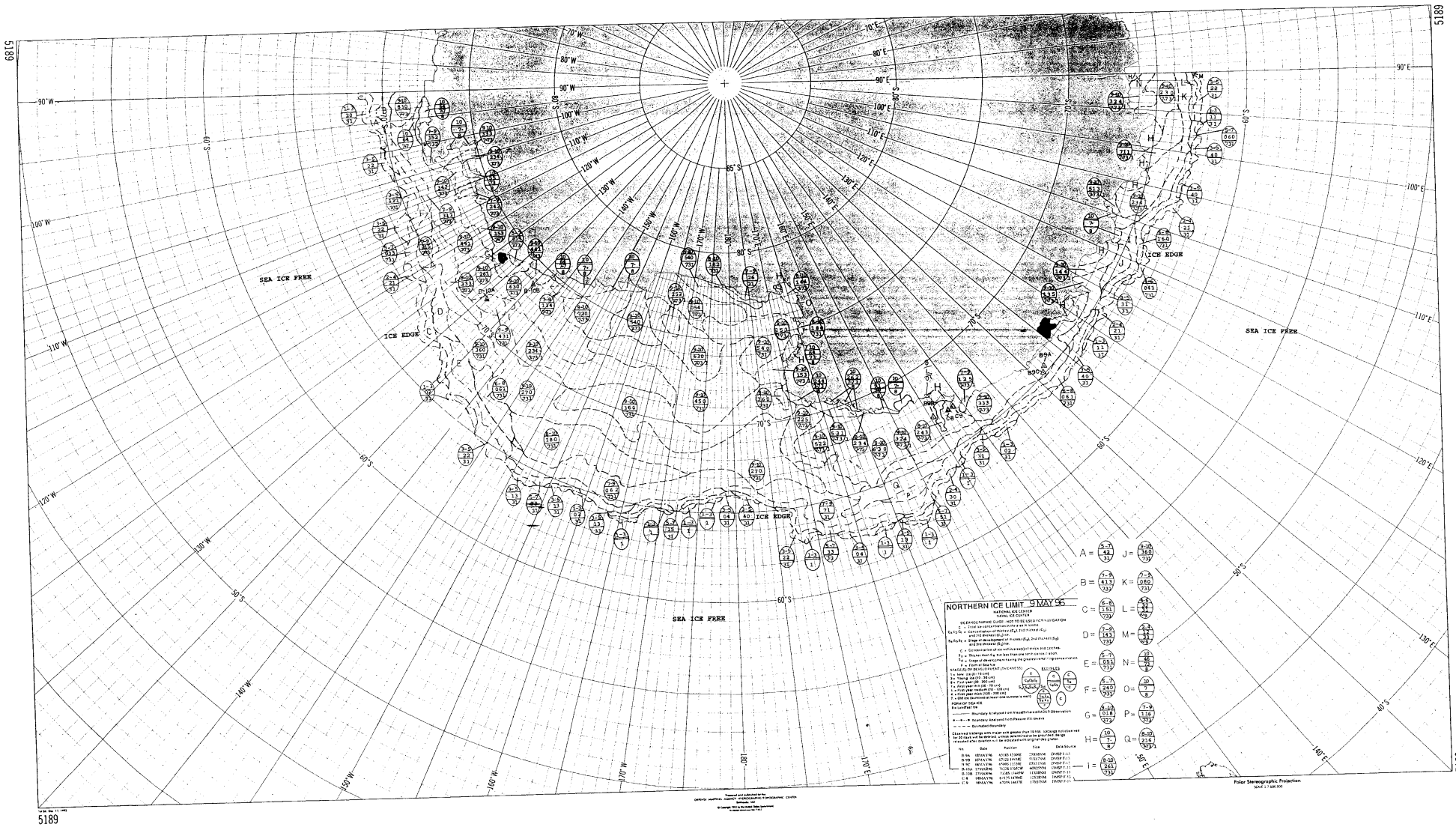
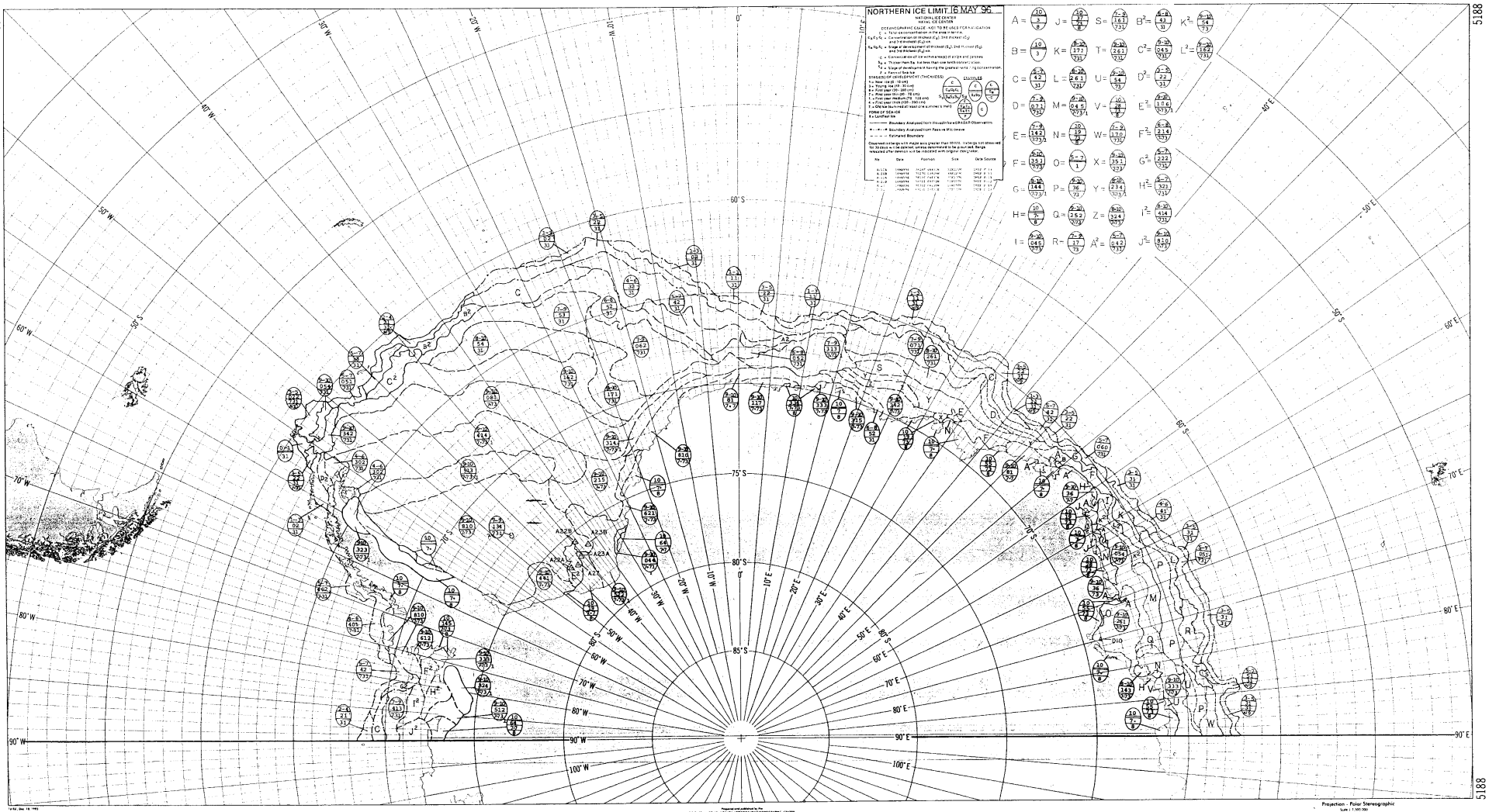
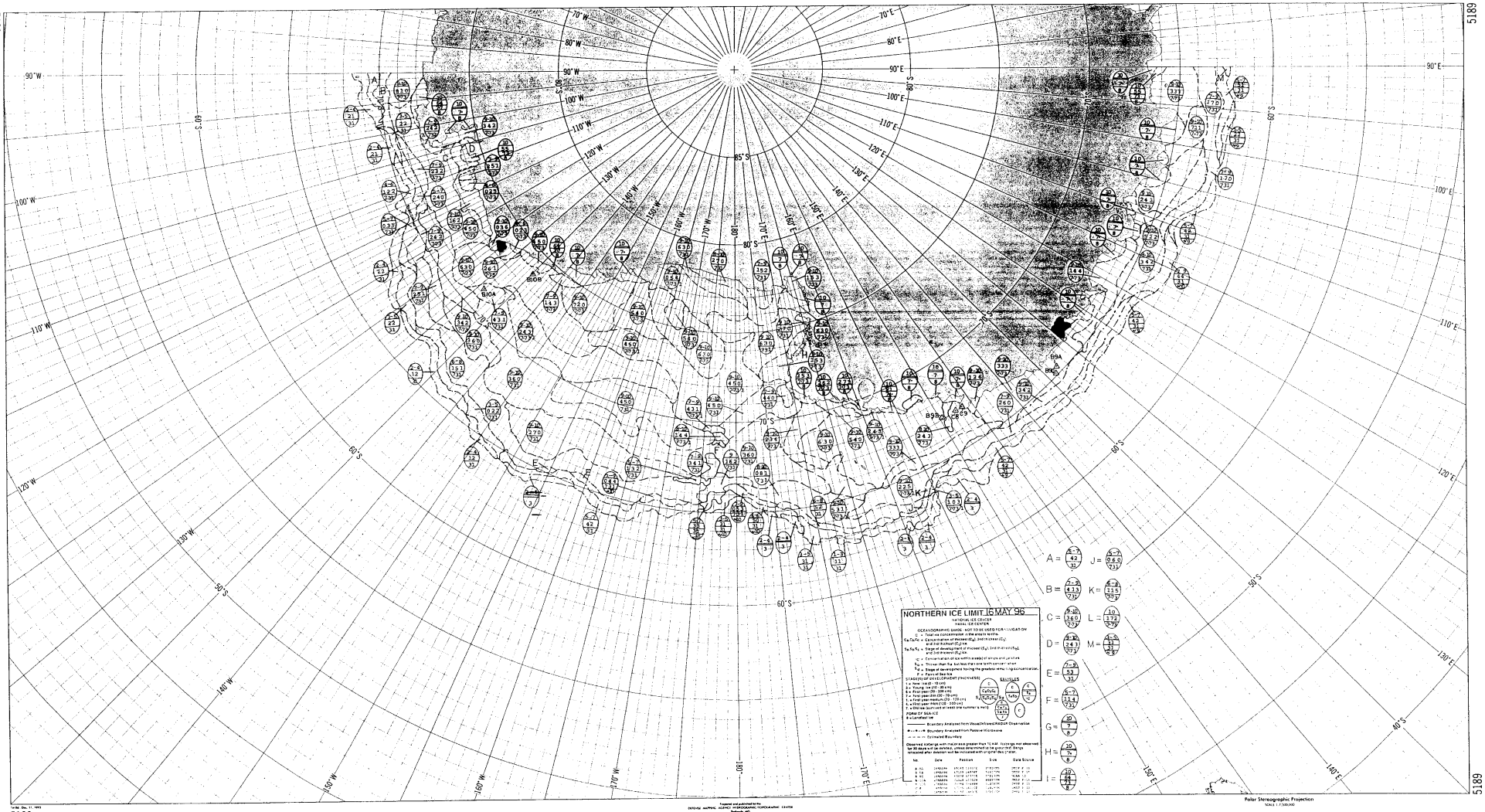
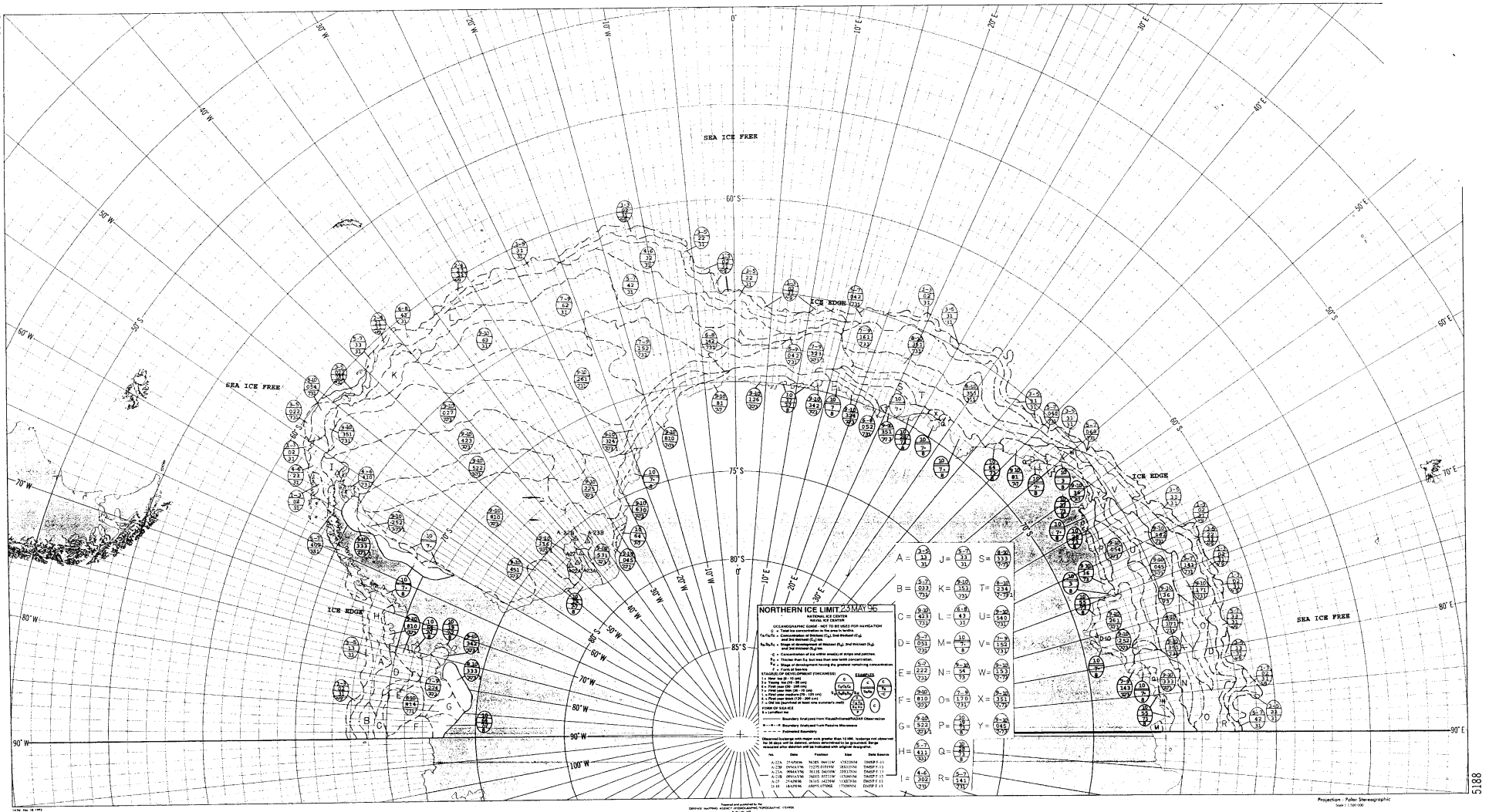

5188
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
NORTHERN ICE LIMIT 9 MAY 96
NATIONAL OCEANOGR
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
Projection - Polar Stereographic
Scale 1:7,500,000
5188


5189
SEA ICE FREE
ICE EDGE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 9 MAY 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
A =
B =
C =
D =
E =
F =
G =
H =
I =
J =
K =
L =
M =
N =
O =
P =
Q =
Polar Stereographic Projection
5189


NORTHERN ICE LIMIT 16 MAY 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CAUTION - NOT TO BE USED FOR NAVIGATION
Projection - Polar Stereographic
5188


NORTHERN ICE LIMIT 15 MAY 95
NATIONAL ICE CENTER
NAVAL OCEANOGRAPHIC OFFICE
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
A = Total ice concentration in the area's entirety
Ca Cb Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and thinnest (Cc) ice
Sa Sb Sc = Stage of development of thickest (Sa), 2nd thickest (Sb), and thinnest (Sc) ice
Cd = Concentration of ice which exists between ice ridges and pressure
Sd = Thinner than Sa, but less than one tenth concentration when
Sd = Stage of development having the greatest areal (Cd) concentration
F = Form of floe size
STAGES OF ICE DEVELOPMENT (THICKNESS)
1. New (0 - 2 cm)
2. Young ice (2 - 30 cm)
3. First year (30 - 200 cm)
4. First year medium (70 - 120 cm)
5. First year thick (120 - 200 cm)
6. Old ice (ice which at least one summer's melt)
FORM OF SEA ICE
8 = Landfast ice
Boundary Analyzed from Visible/Infrared RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
A = J =
B = K =
C = L =
D = M =
E =
F =
G =
H =
I =
Polar Stereographic Projection
5189
5189


SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 23 MAY 95
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
Projection - Polar Stereographic

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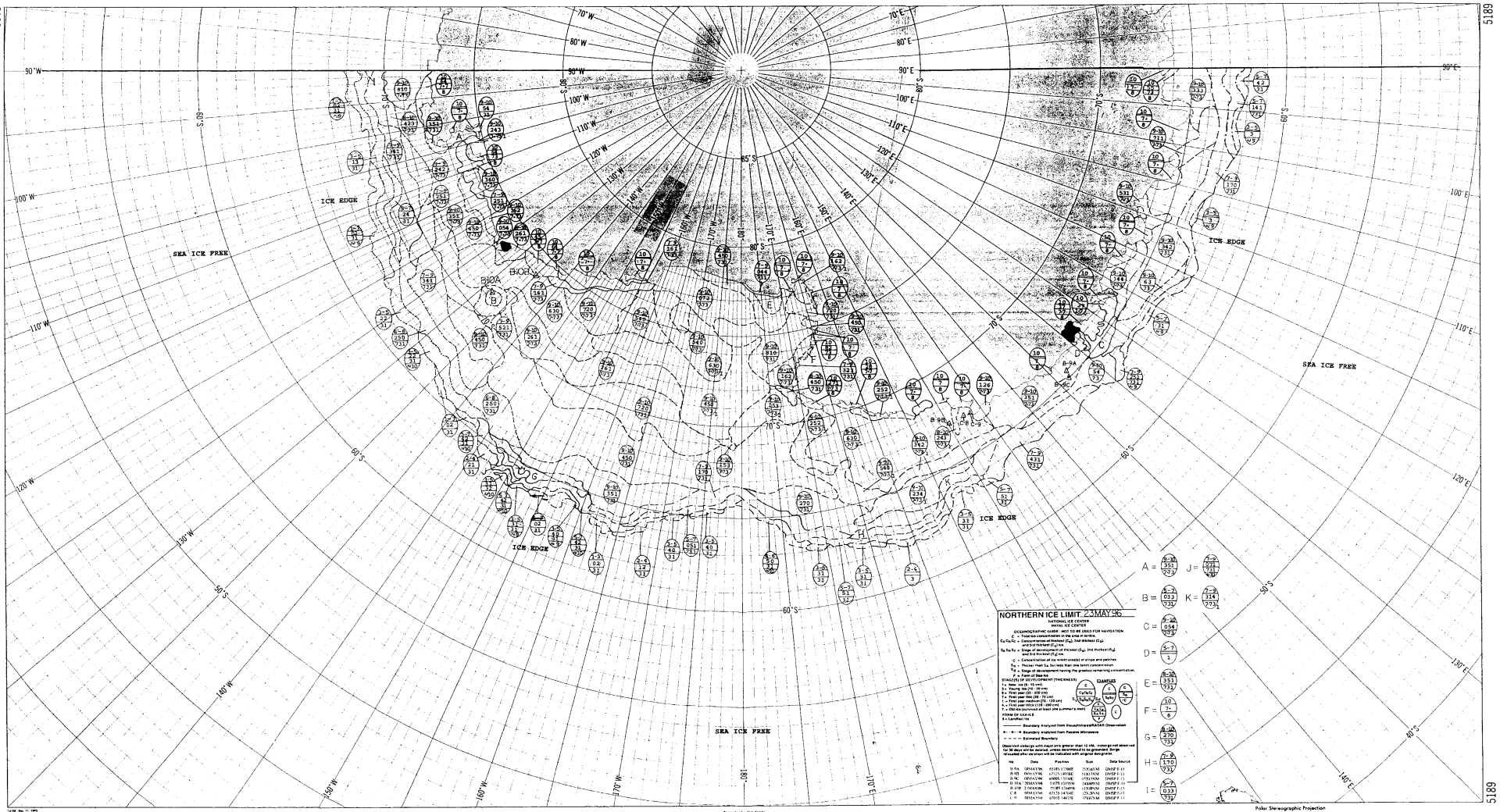
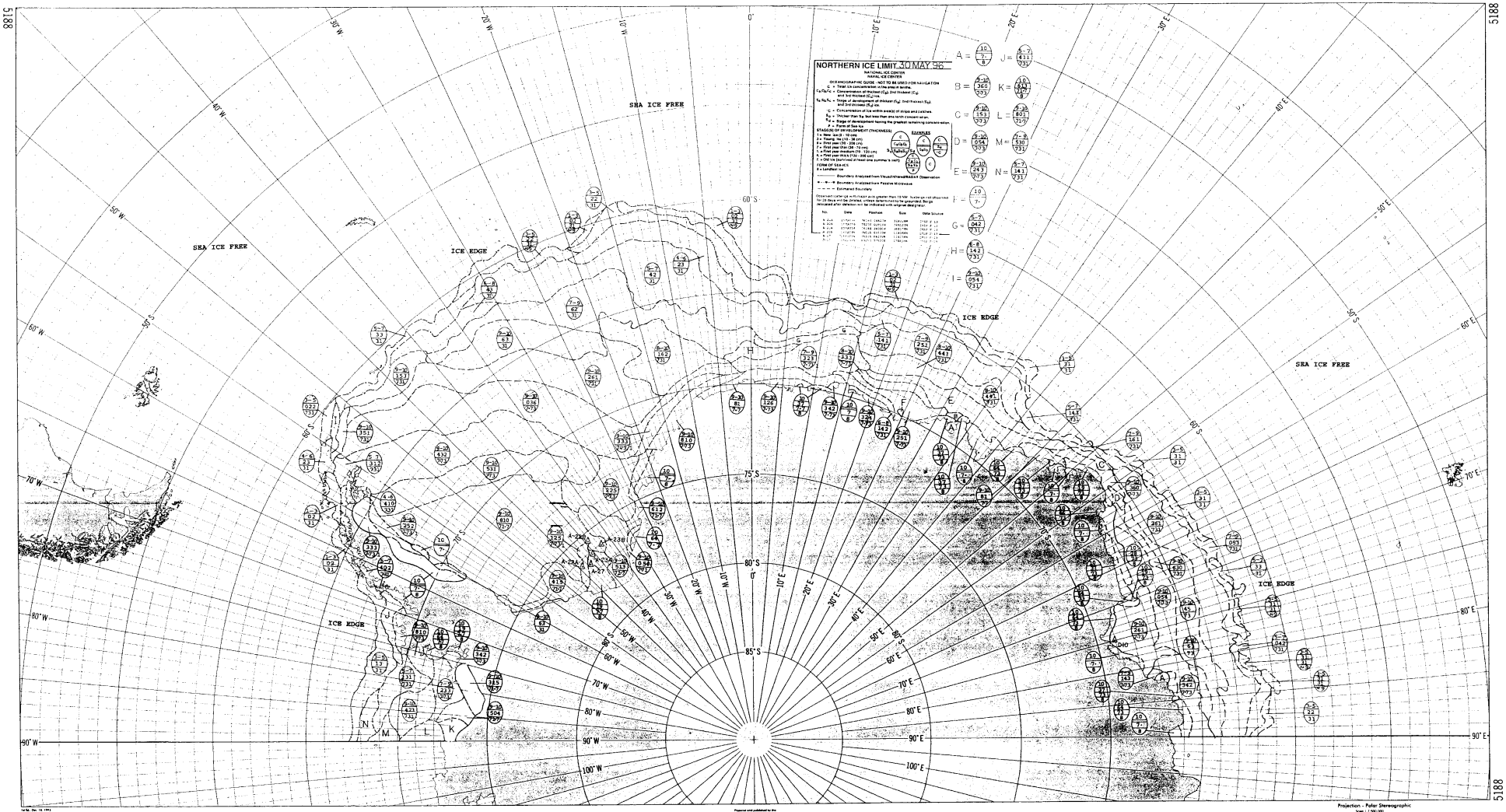
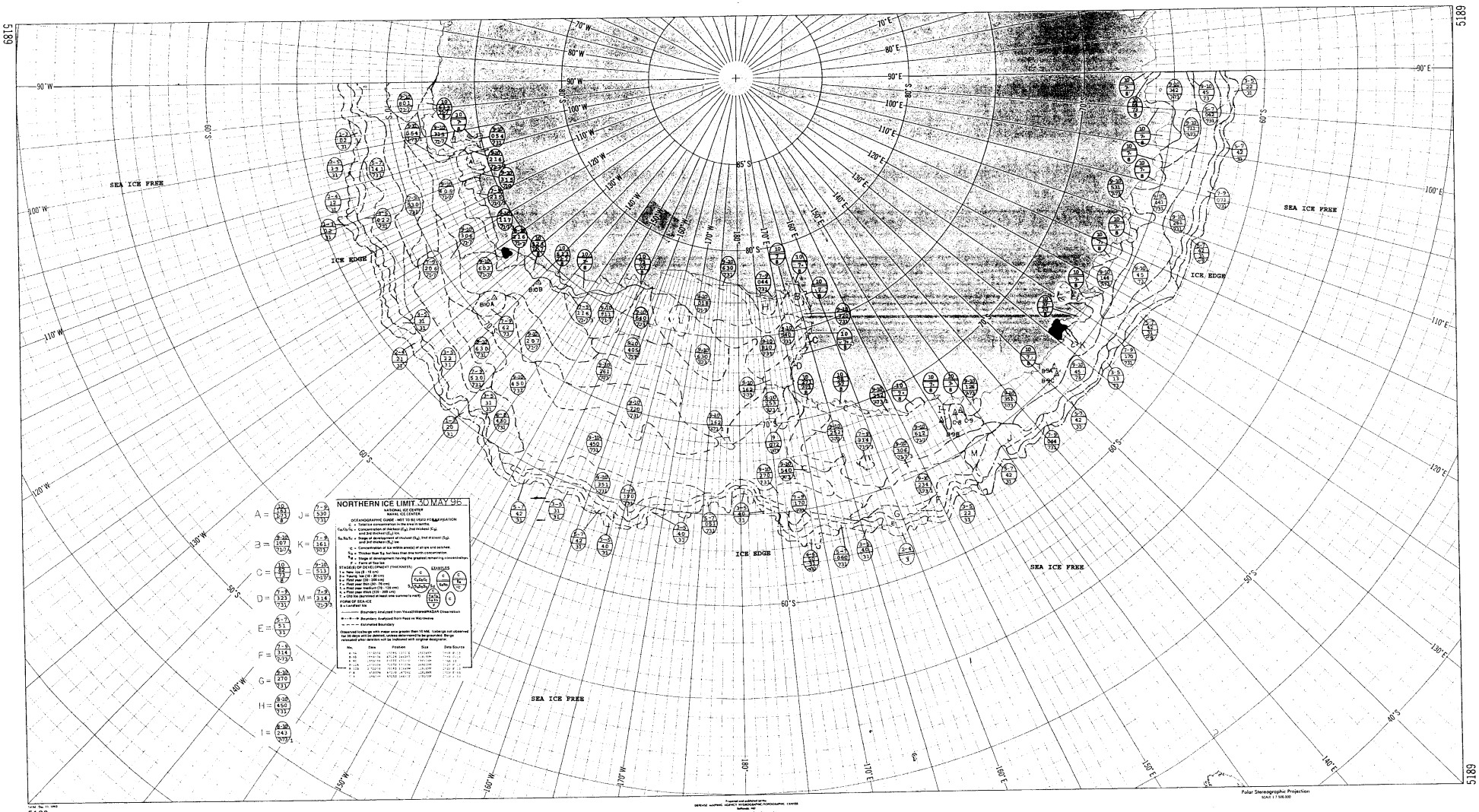
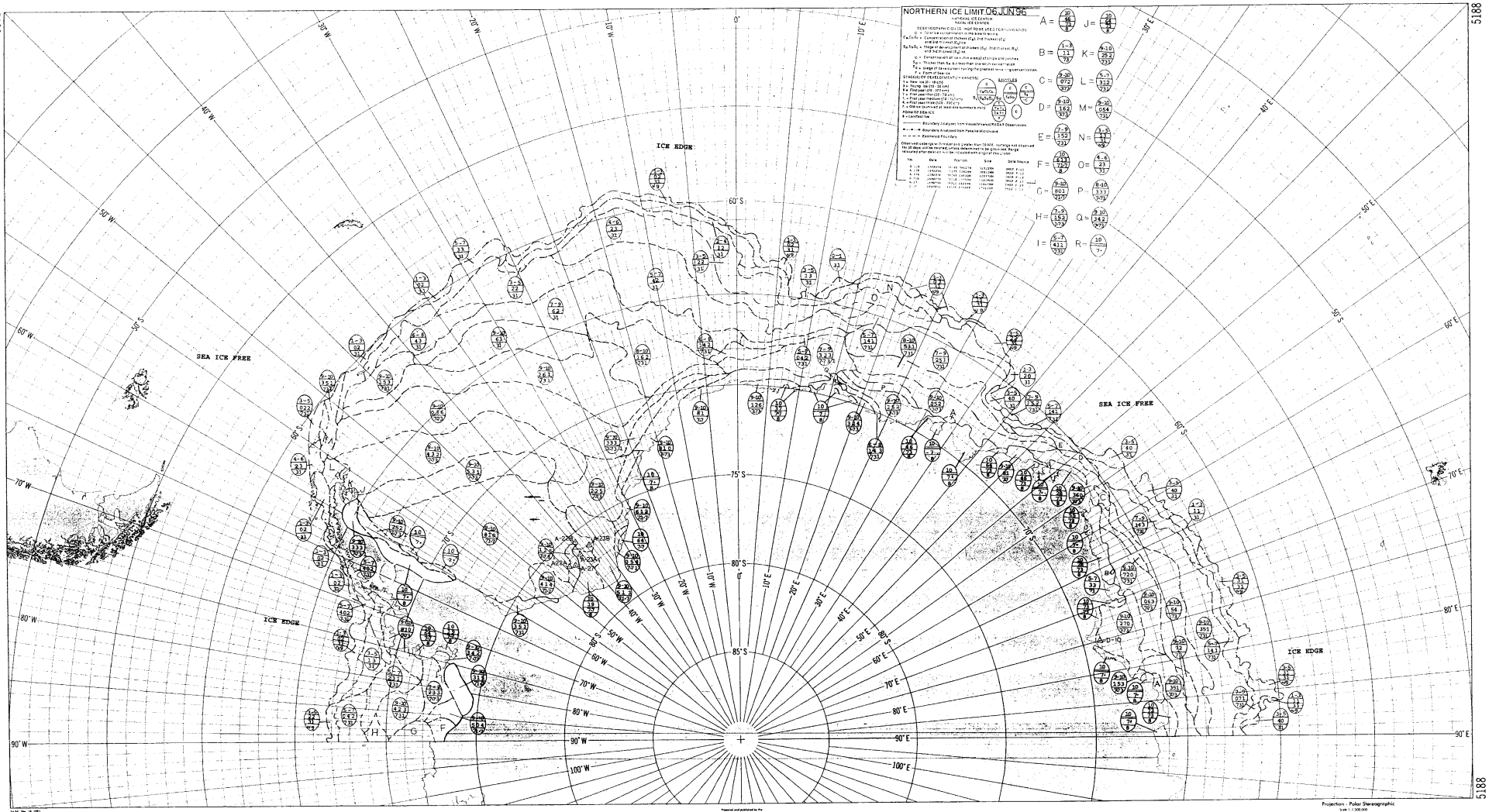
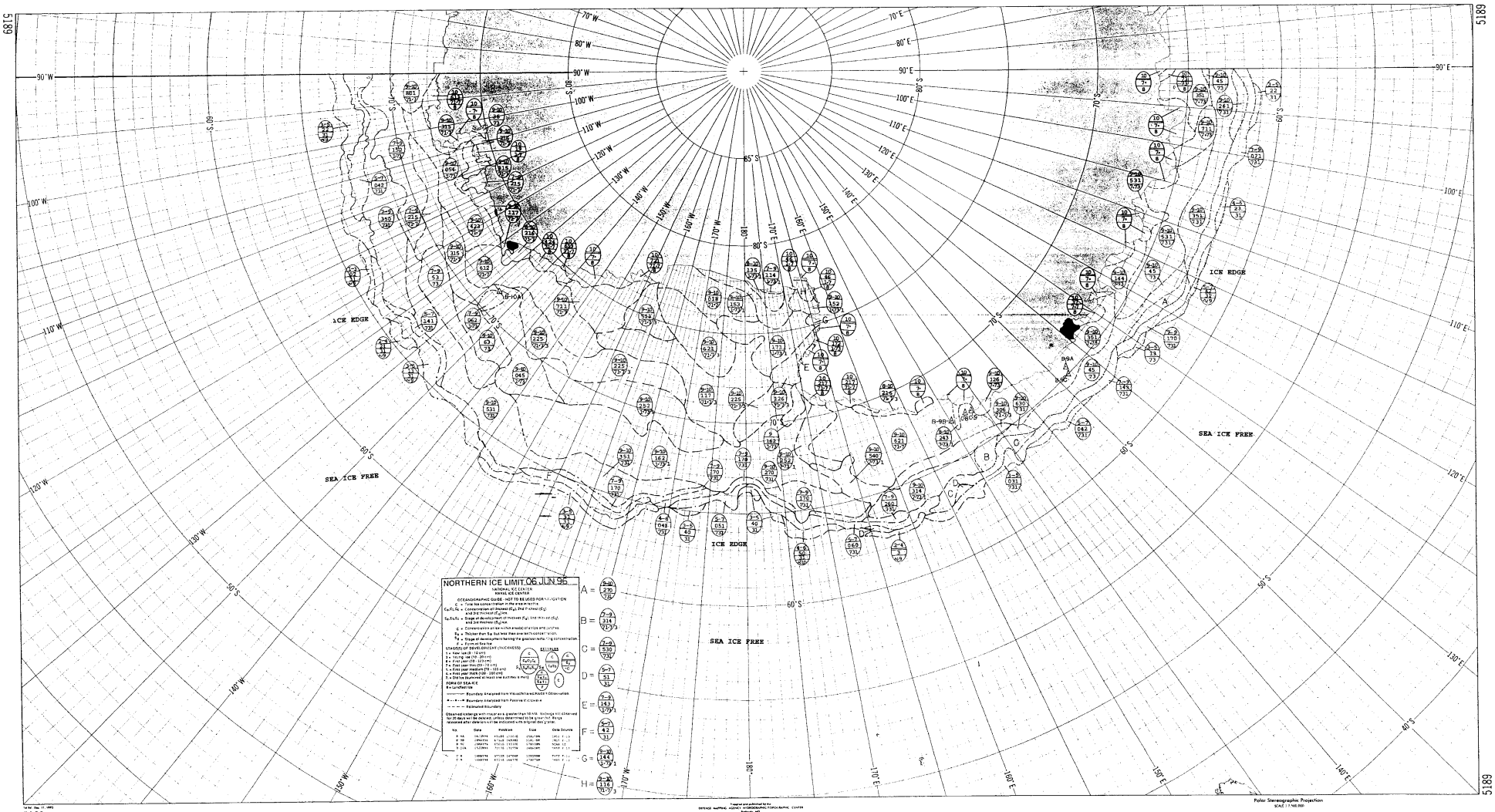

ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
B10A
B-9A
B-9B
B-9C
NORTHERN ICE LIMIT 23MAY96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
Cd = Concentration of ice which exhibits of stage and particular
Sd = Thicker than Sa but less than one tenth concentration
Se = Stage of development having the greatest remaining concentration
Fa = Form of Sea Ice
STAGES OF DEVELOPMENT (THICKNESS)
1 = New: ice (0 - 10 cm)
2 = Nilas (10 - 30 cm)
3 = Young ice (30 - 200 cm)
4 = First year thin (30 - 70 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = First year old ice at least one summer's melt
FORM OF SEA ICE
8 = Landfast Ice
Boundary Analyzed from Visual/Infrared/SAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Unsurveyed icebergs with areas greater than 10 NM. Icebergs not observed for 30 days will be retired, unless determined to be grounded. Bergs resurveyed after decision will be indicated with original designator.
No Date Position Size Data Source
B-9A 08MAY96 81.0S 1.7.56E 17.5X12.5NM DMSP F-11
B-9B 09MAY96 67.2S 7.49.0E 11.0X7.5NM DMSP F-11
B-9C 08MAY96 69.0S 5.33.0E 17.0X13.0NM DMSP F-11
B-10A 28MAY96 74.0S 131.0W 34.0X9.0NM DMSP F-11
B-10B 31MAY96 75.0S 154.0W 15.0X9.0NM DMSP F-11
C-8 09MAY96 67.3S 14.5E 25.2X9.9NM DMSP F-11
C-9 08MAY96 67.0S 146.1E 19.0X5.0NM DMSP F-11
A =
B =
C =
D =
E =
F =
G =
H =
I =
J =
K =
Polar Stereographic Projection
SCALE 1:7 500 000


NORTHERN ICE LIMIT 30 MAY 96
NATIONAL ICE CENTER
WASHINGTON, DC
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
ICE EDGE
SEA ICE FREE
ICE EDGE
60°S
70°S
75°S
80°S
85°S
0°
10°W
20°W
30°W
40°W
50°W
60°W
70°W
80°W
90°W
100°W
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
100°E
A
B
C
D
E
F
G
H
I
J
K
L
M
N
Projection - Polar Stereographic


NORTHERN ICE LIMIT 30 MAY 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
ICE EDGE
SIOA
SIOB
A =
B =
C =
D =
E =
F =
G =
H =
I =
J =
K =
L =
M =
Polar Stereographic Projection
SCALE 1:7 500 000


NORTHERN ICE LIMIT 06 JUN 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
ICE EDGE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
ICE EDGE
0°
10° W
10° E
20° W
20° E
30° W
30° E
40° W
40° E
50° W
50° E
60° W
60° E
70° W
70° E
80° W
80° E
90° W
90° E
100° W
100° E
50° S
60° S
70° S
75° S
80° S
85° S

5188


NORTHERN ICE LIMIT 06 JUN 95
ICE EDGE
SEA ICE FREE
IS-10A
B-9A
B-9B
A
B
C
D
E
F
G
H

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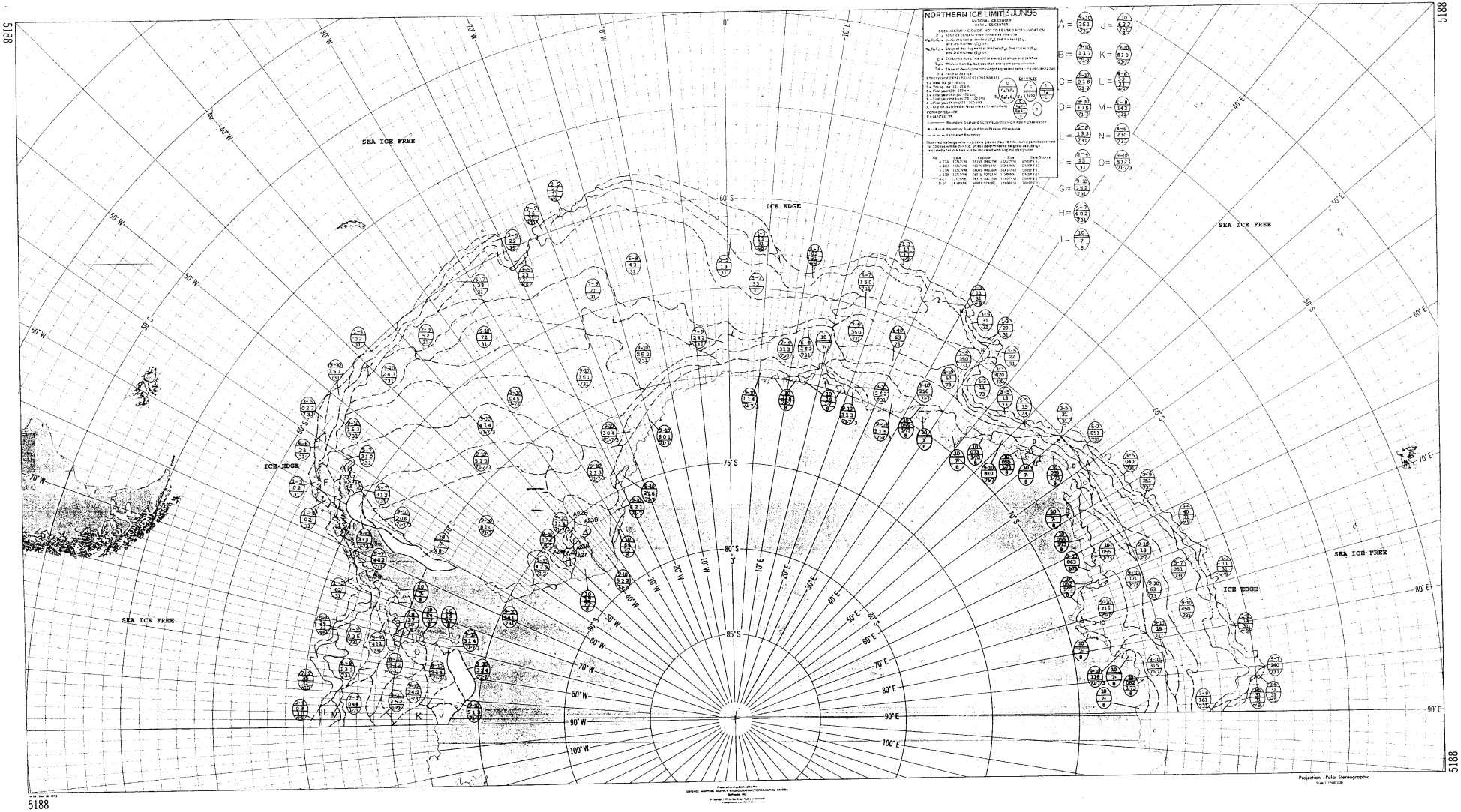
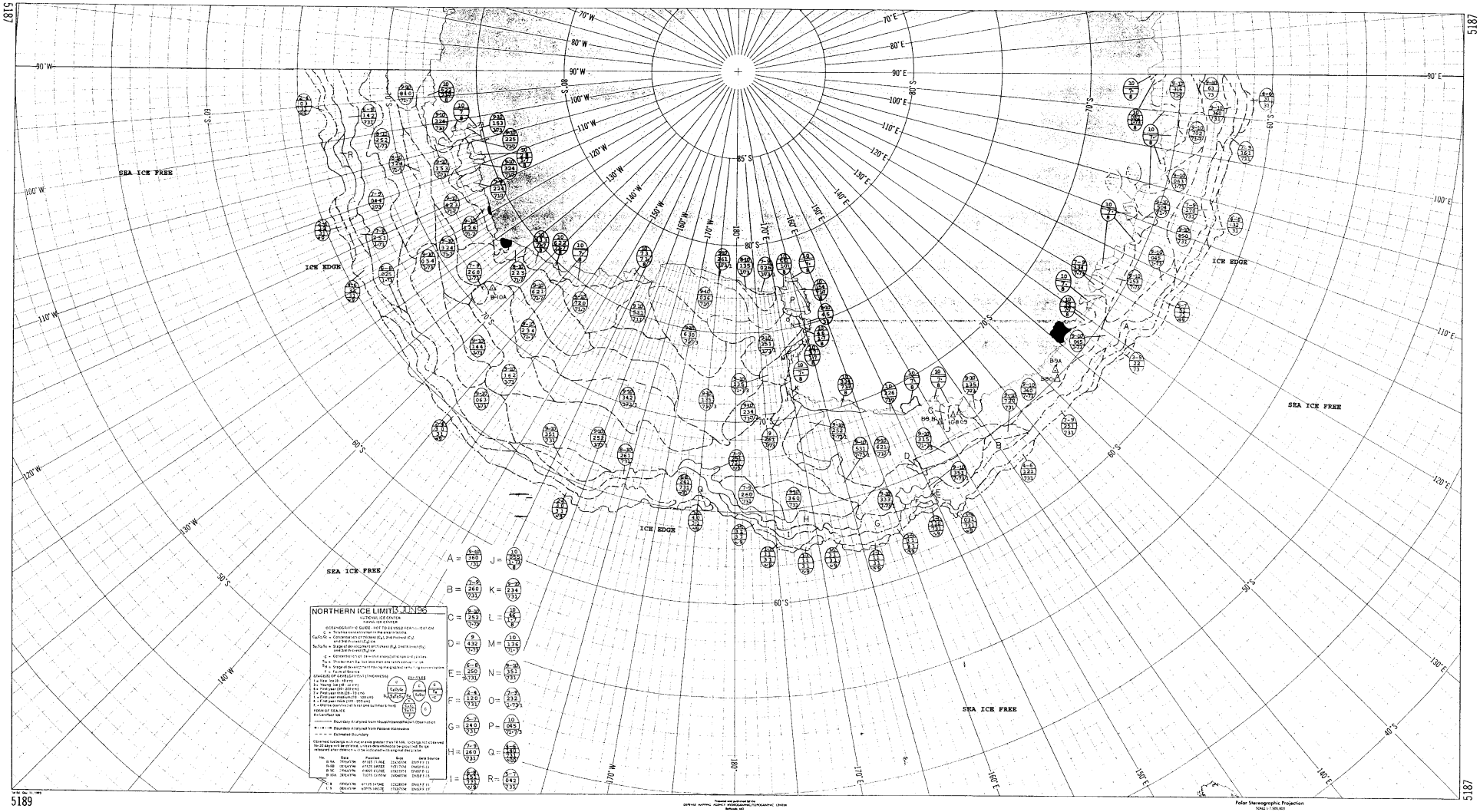

NORTHERN ICE LIMIT 13 JUN 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
60° S
75° S
80° S
85° S
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
Projection - Polar Stereographic



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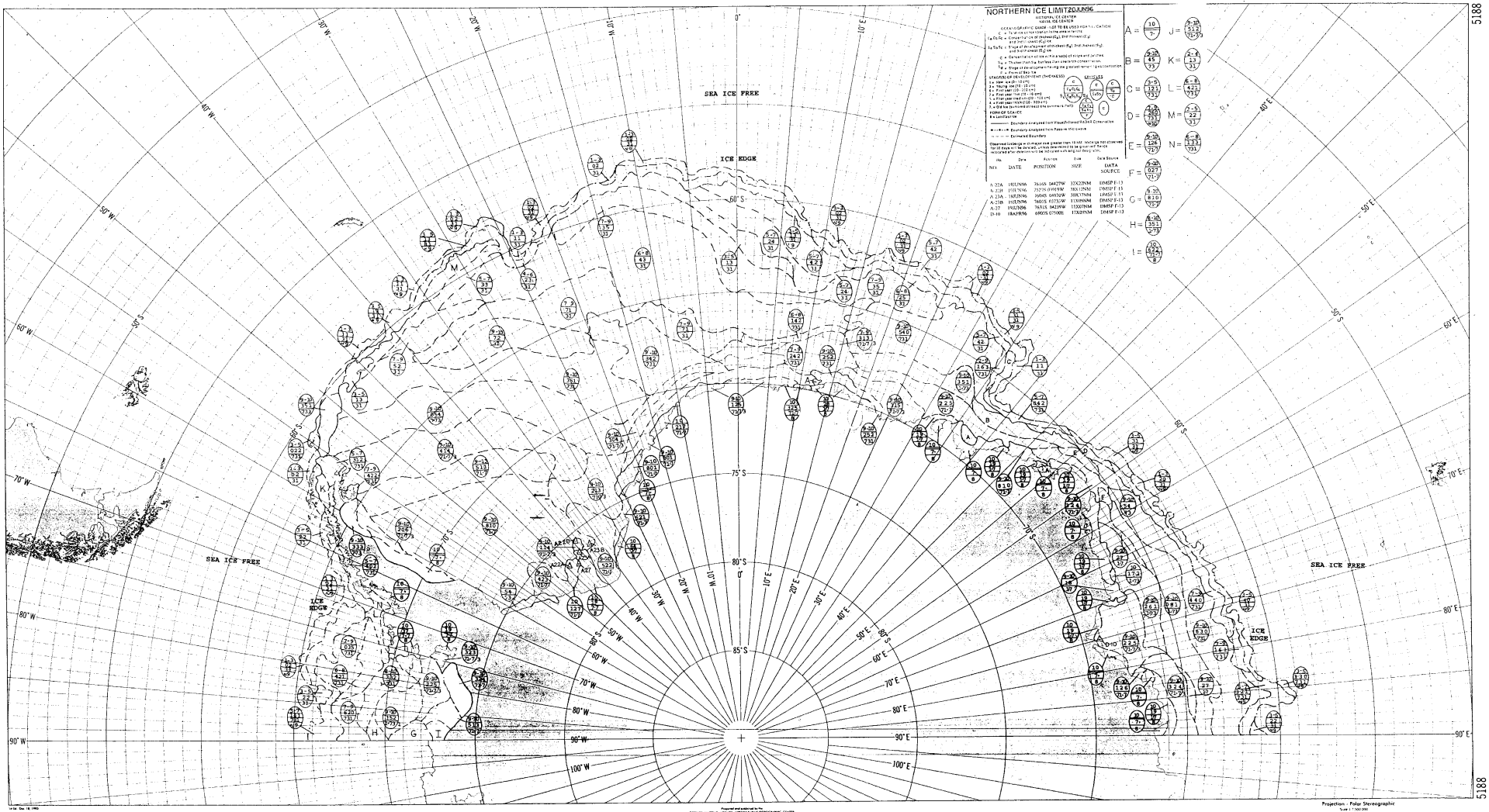
NORTHERN ICE LIMIT 20 JUN 96
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
60° S
70° S
75° S
80° S
85° S
90° S

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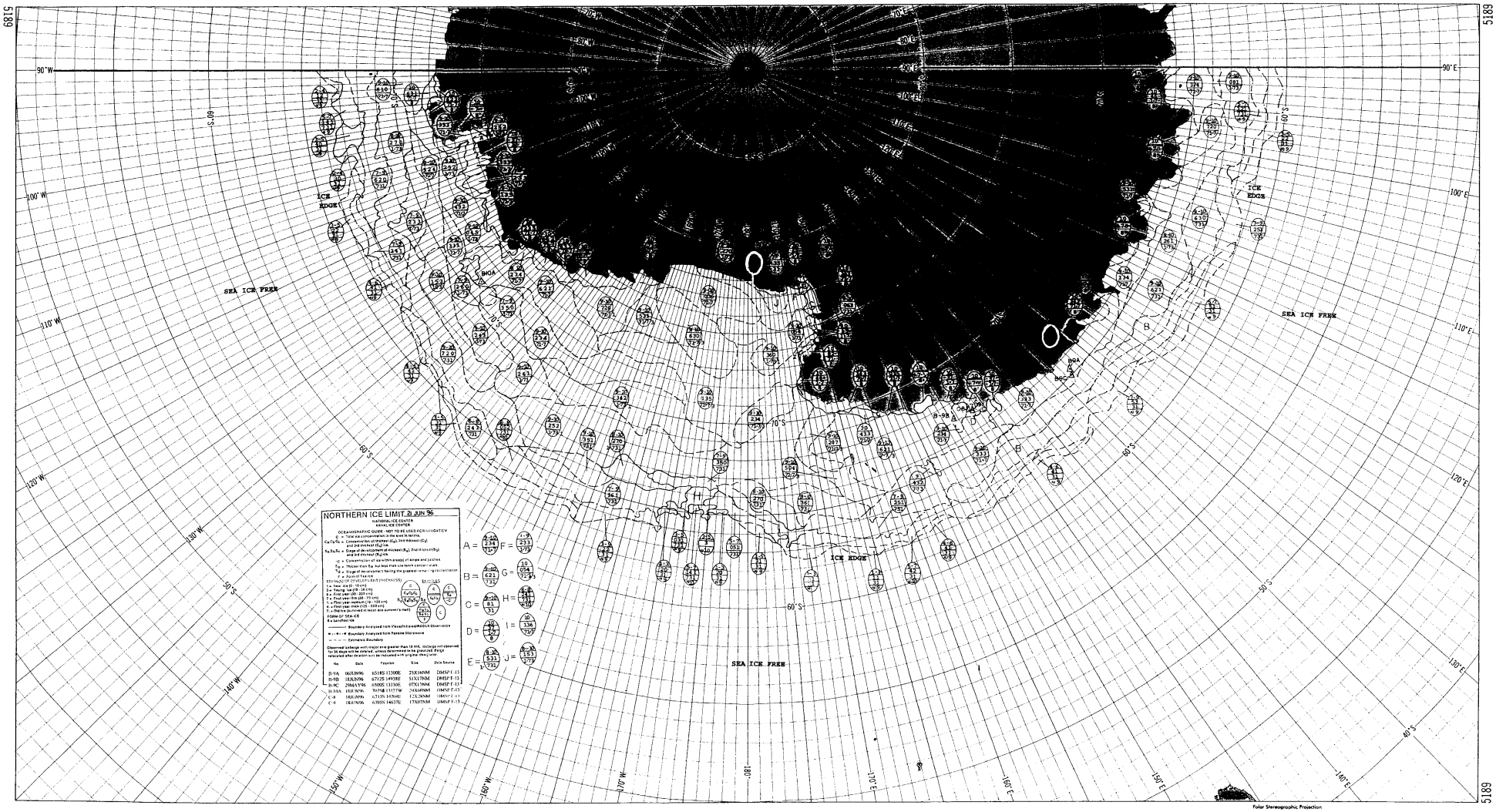
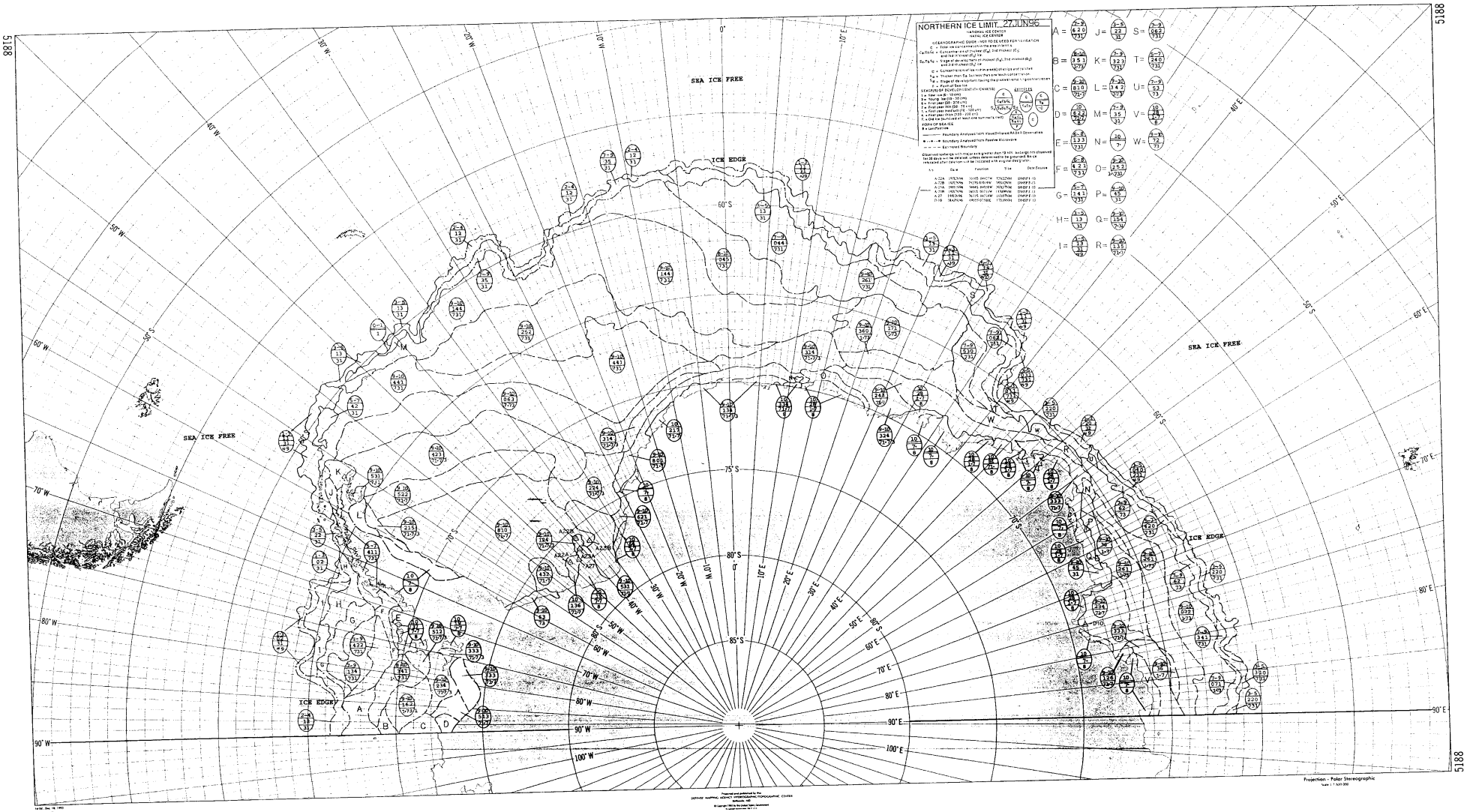

5189
5189
90°W
90°E
100°W
100°E
110°W
110°E
120°W
120°E
130°W
130°E
140°W
140°E
150°W
150°E
160°W
180°
170°W
170°E
60°S
70°S
80°S
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 2 JUN 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
Boundary Analyzed from Vessel/Helo/AMSR-E/I Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection



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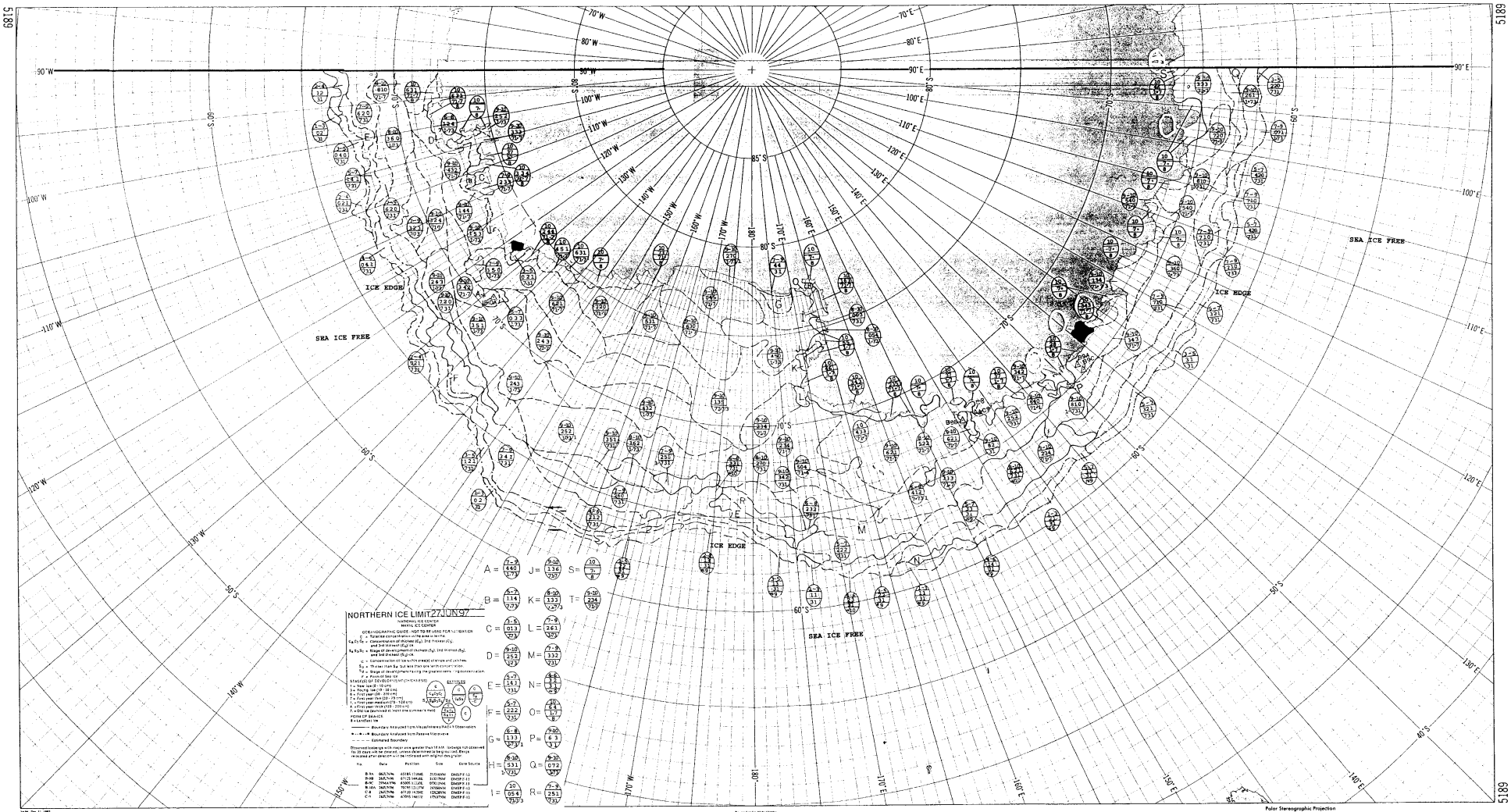

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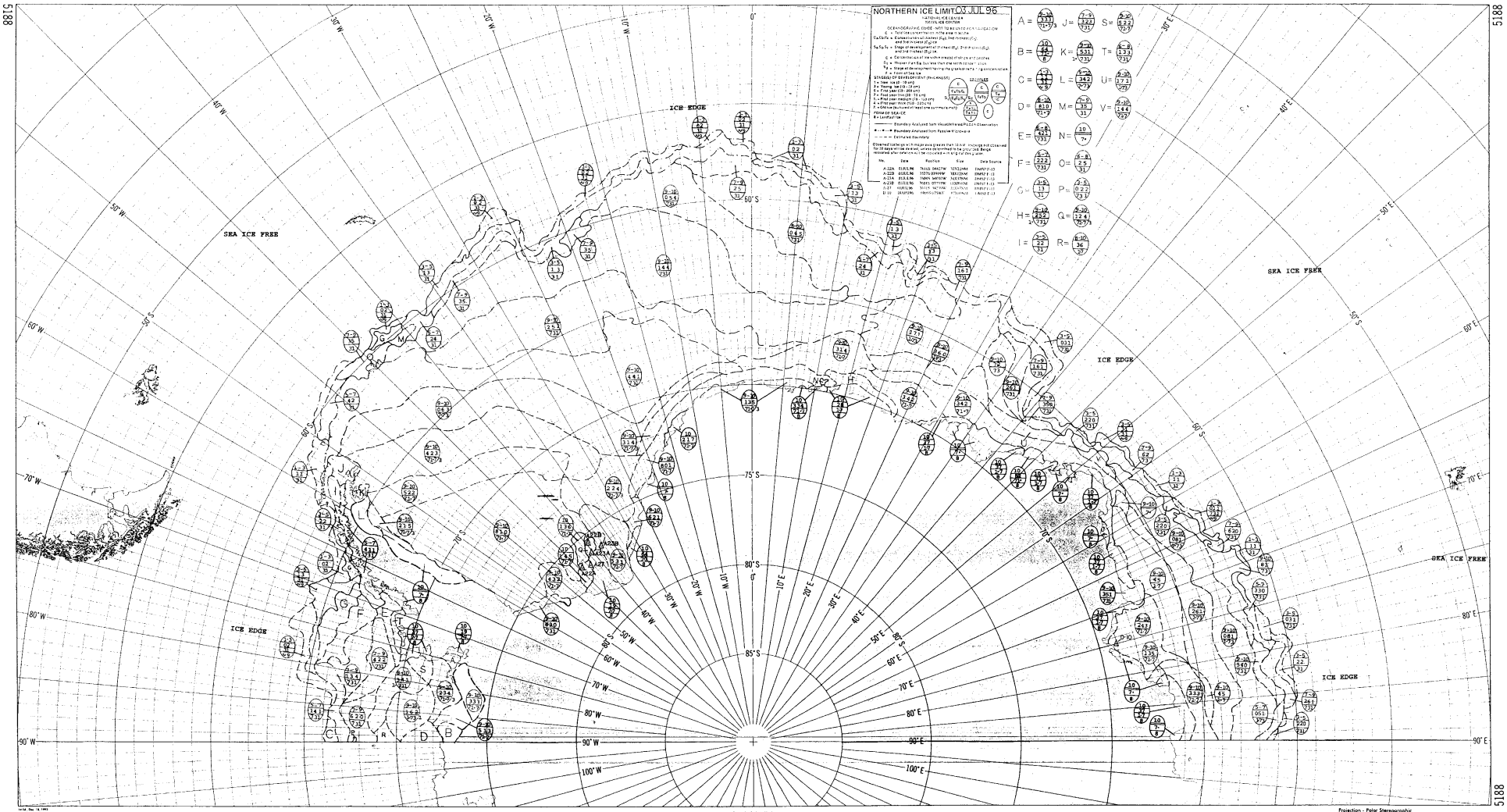

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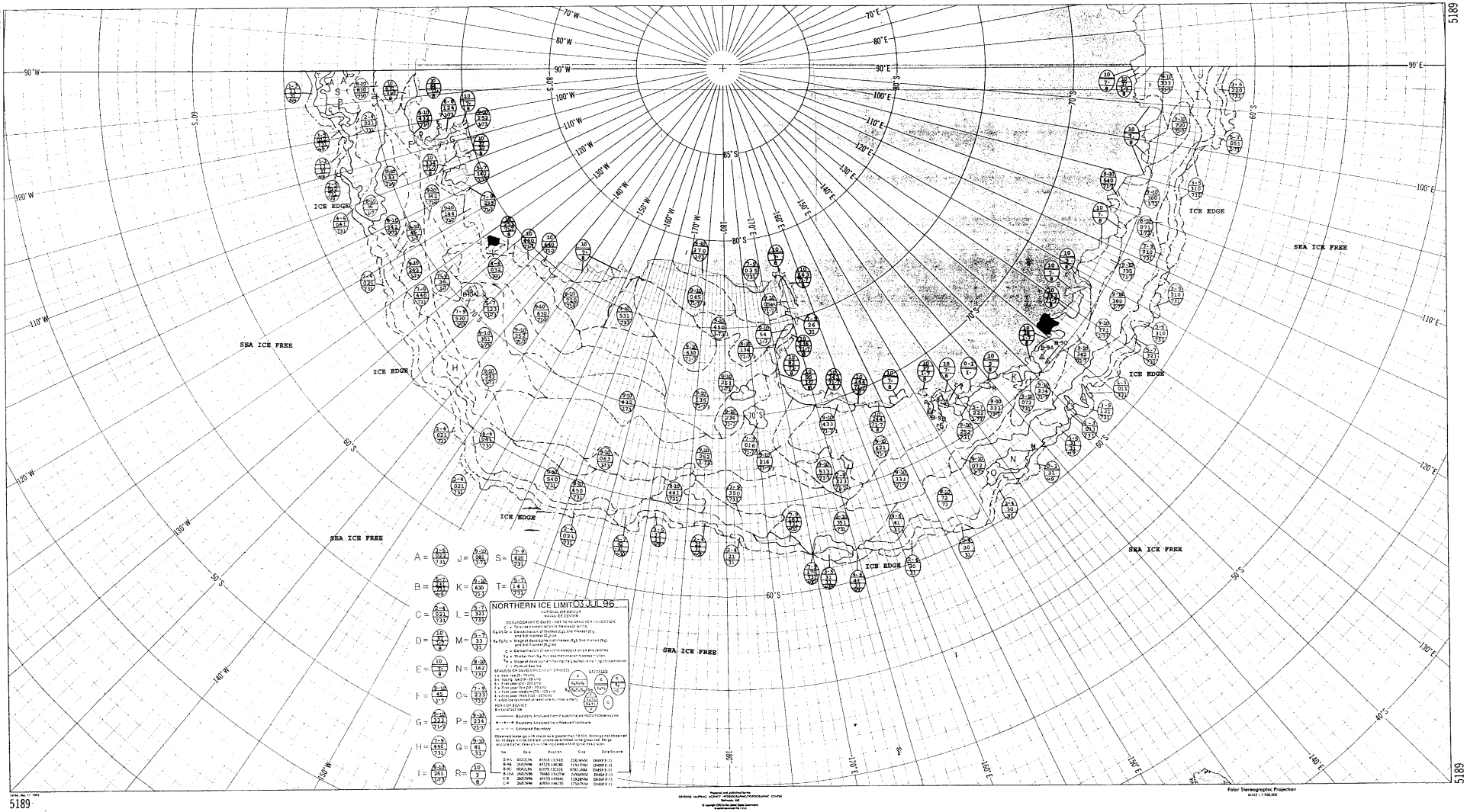
Projection - Polar Stereographic



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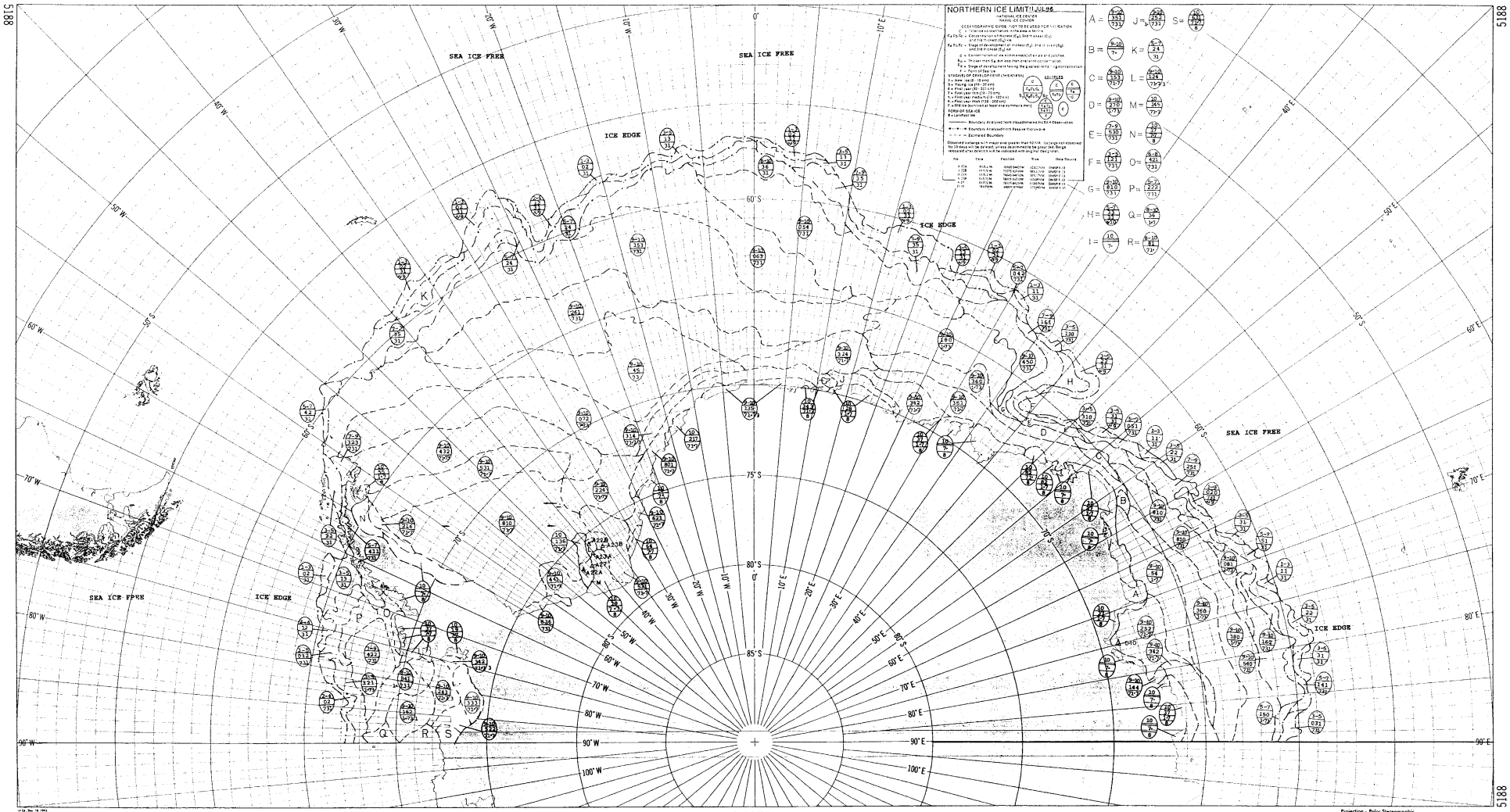

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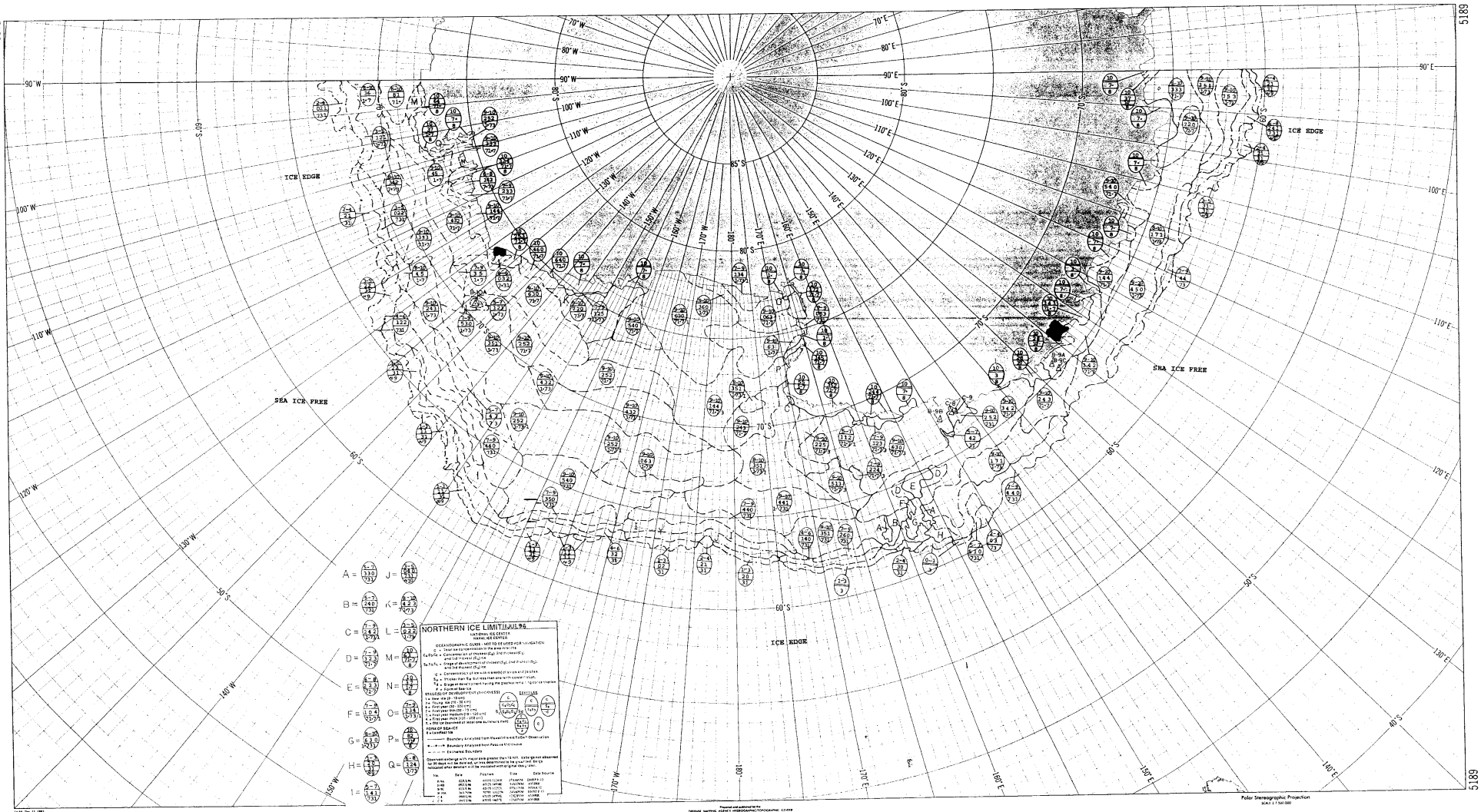
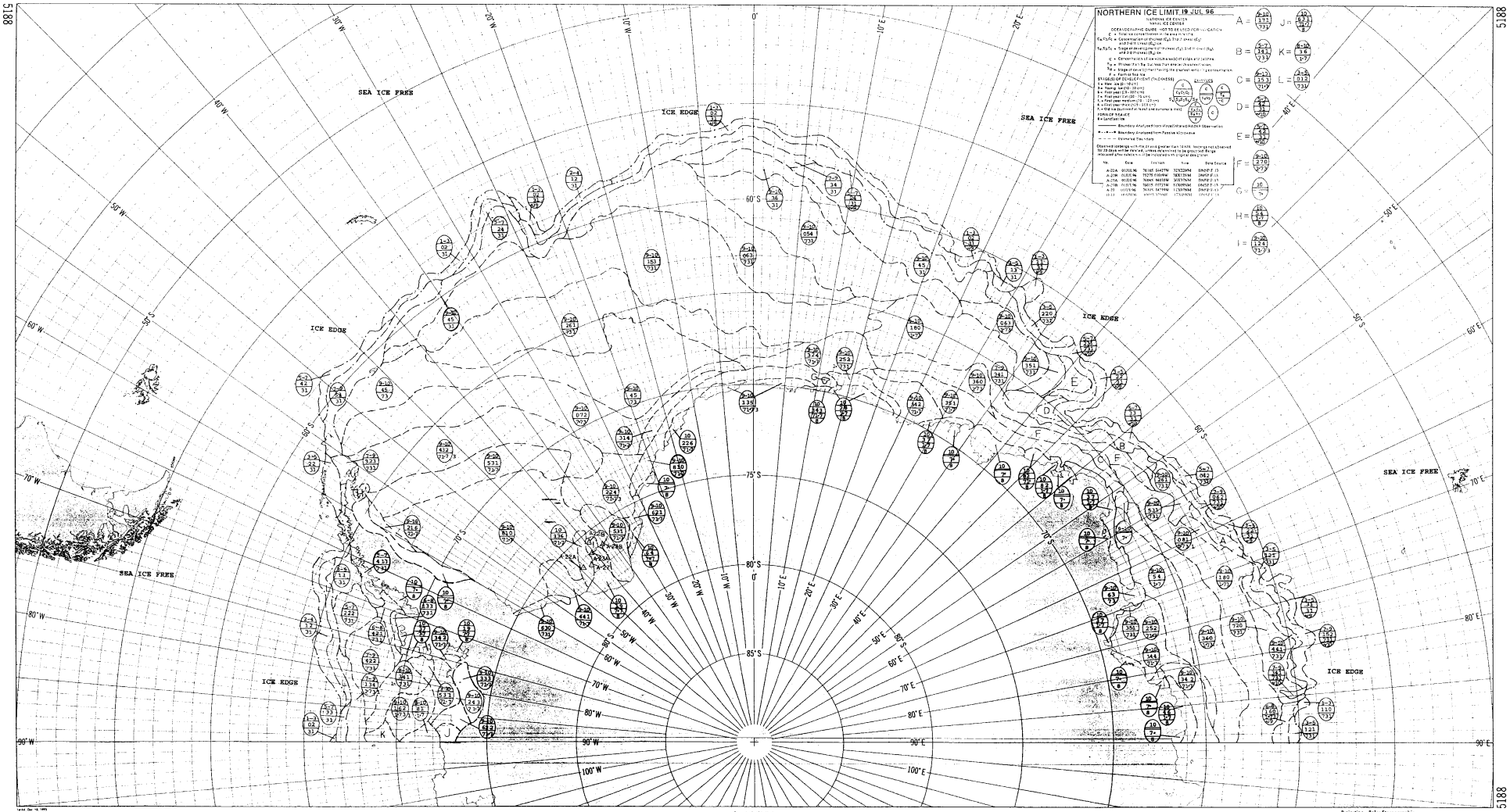
Projection - Polar Stereographic


ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
NORTHERN ICE LIMITS JULY 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CLOCK - NOT TO BE USED FOR NAVIGATION
FORM OF SEA ICE
Polar Stereographic Projection



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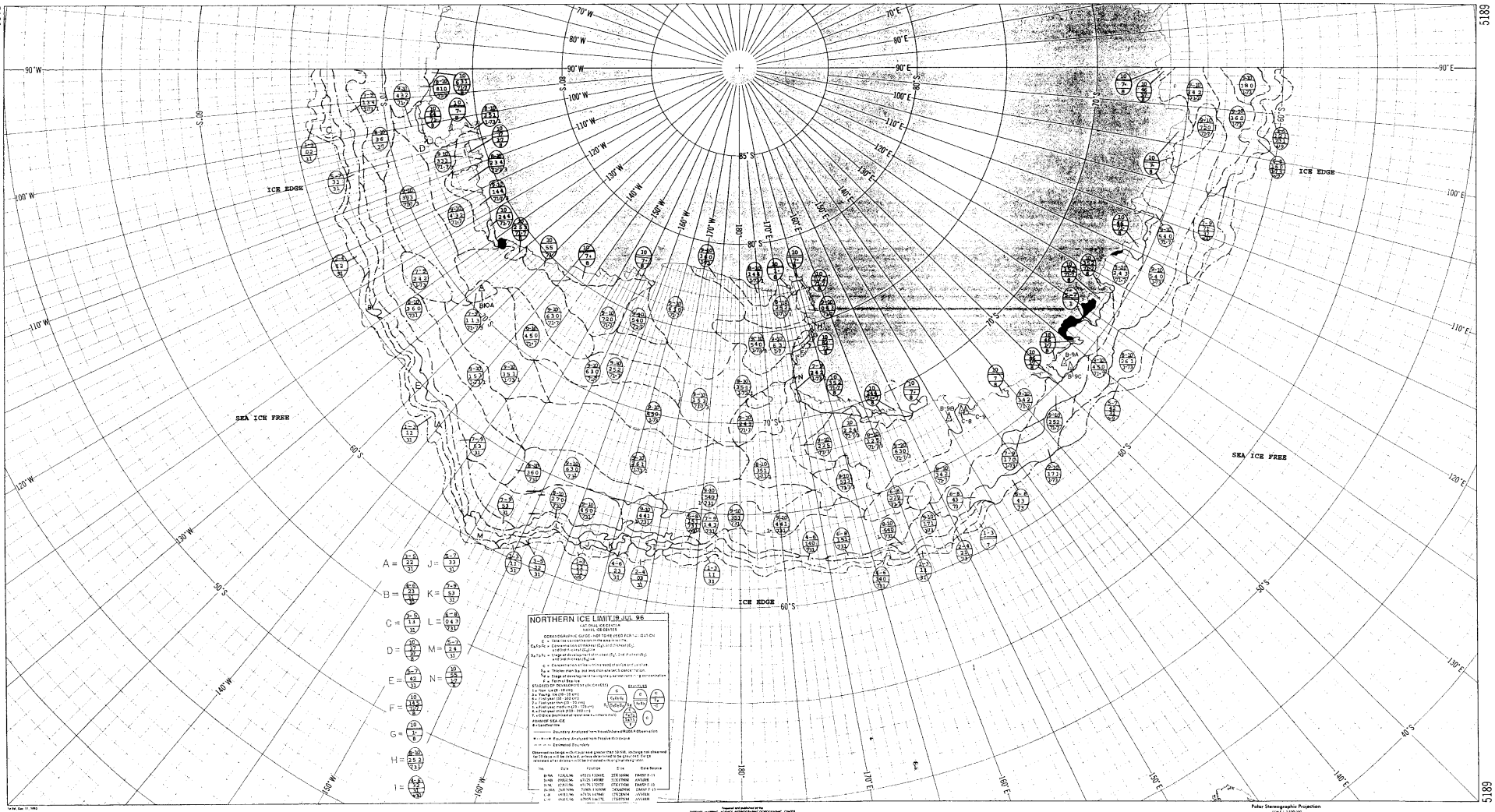
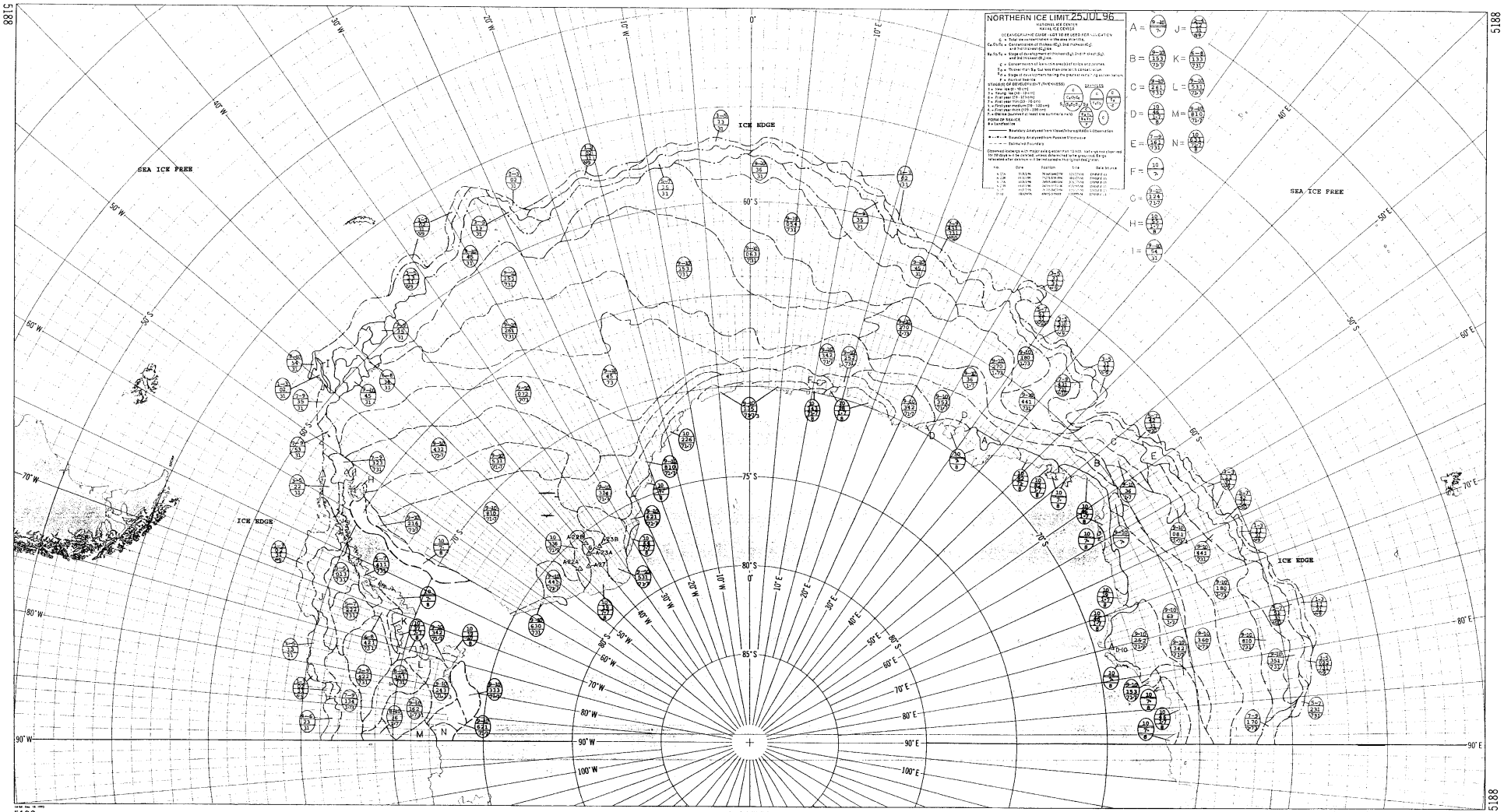
Projection - Polar Stereographic


5189
ICE EDGE
SEA ICE FREE
BIOA
B-9A
B-9B
B-9C
ICE EDGE
SEA ICE FREE
ICE EDGE
NORTHERN ICE LIMIT 9 JUL 96
Polar Stereographic Projection



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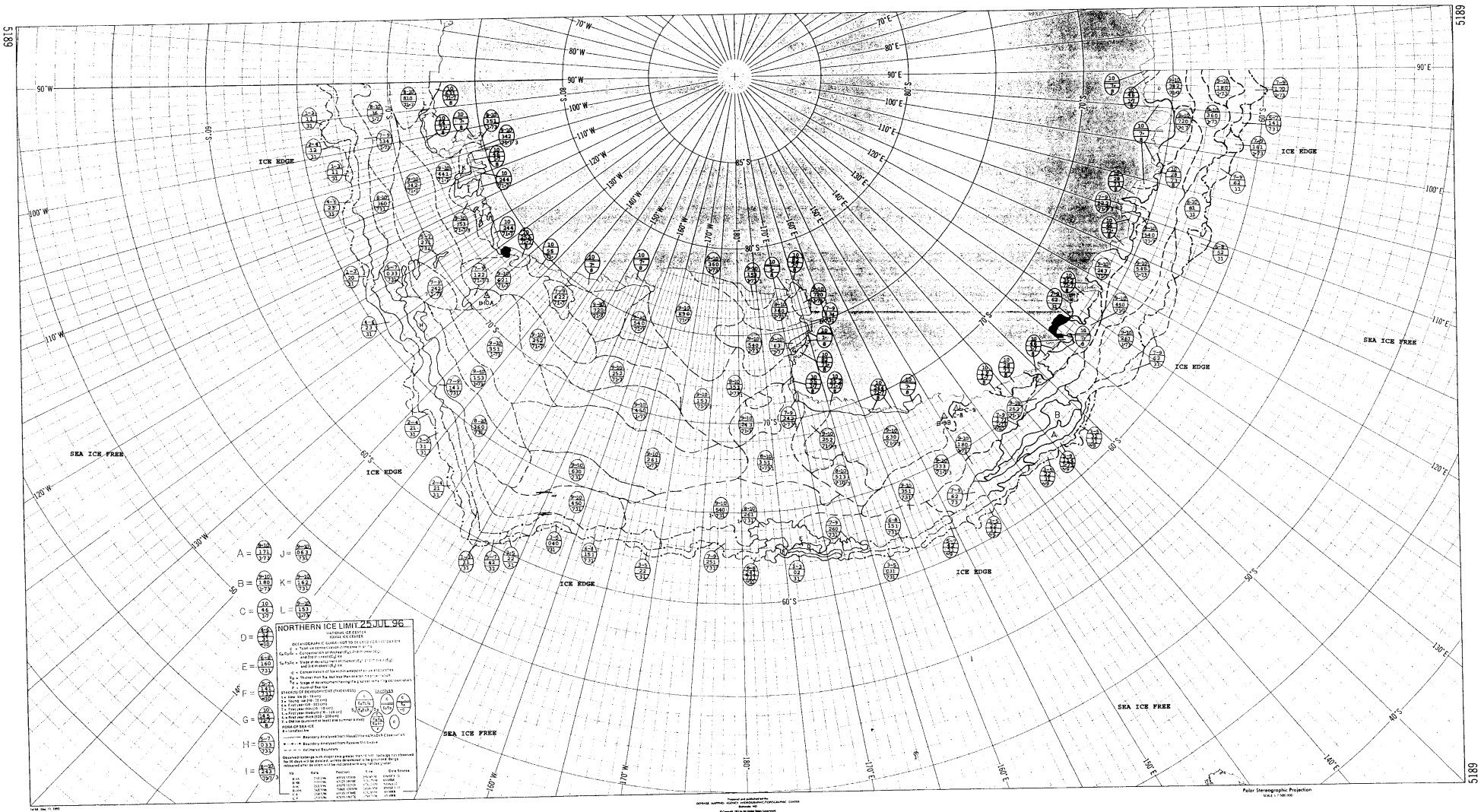
Projection - Polar Stereographic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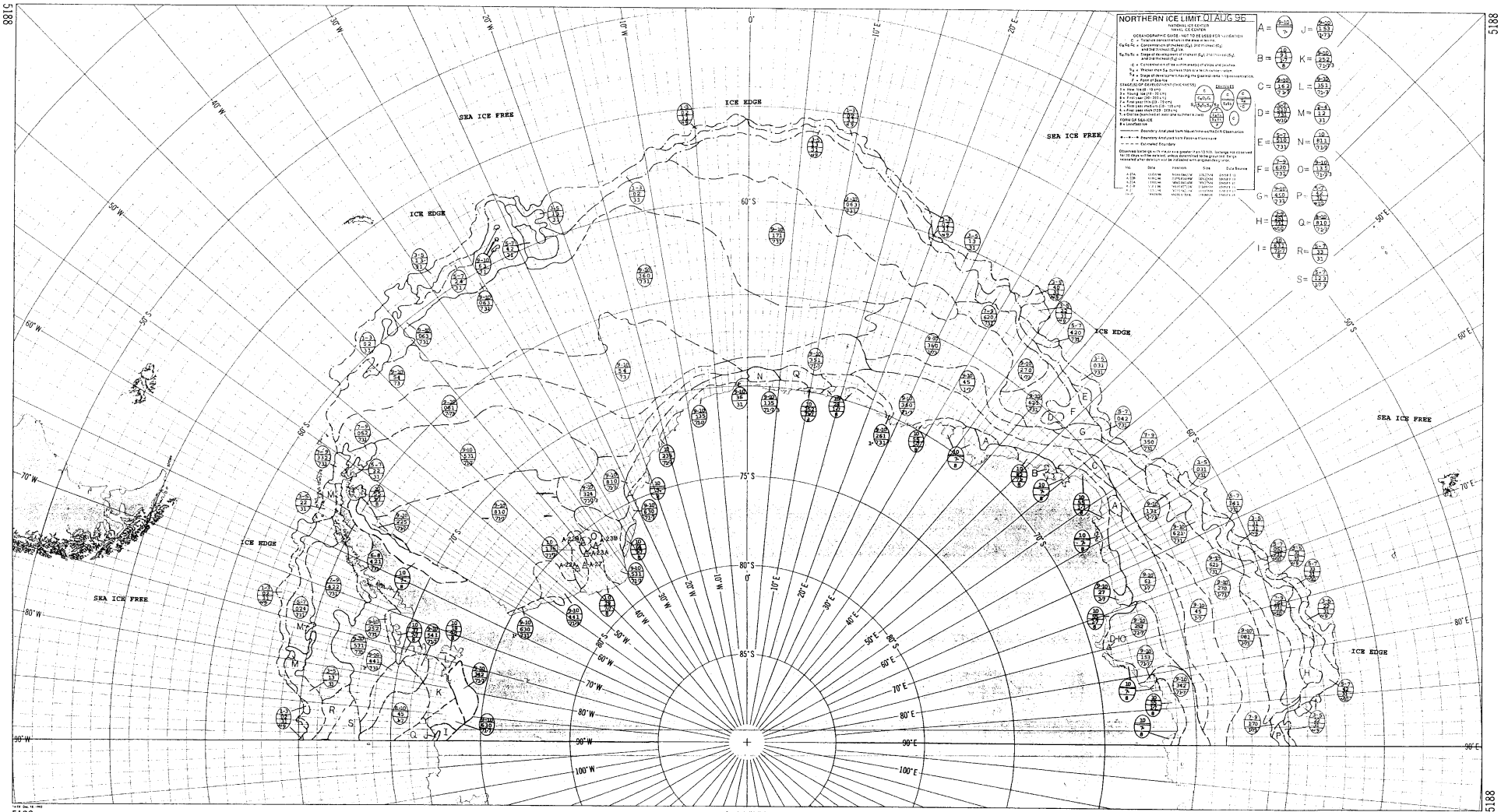
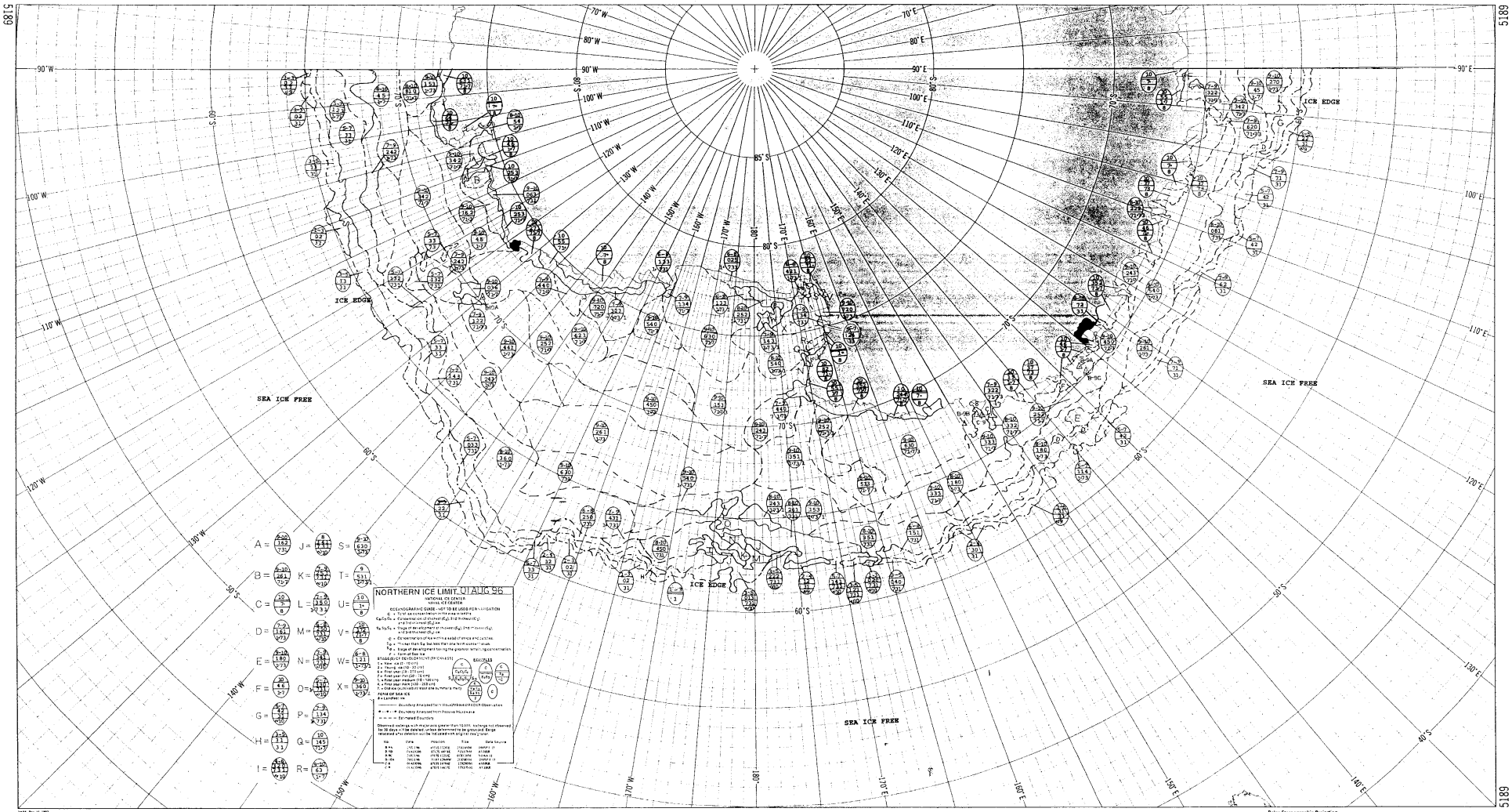
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 25JUL 96
Polar Stereographic Projection


NORTHERN ICE LIMIT 01 AUG 95
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
ICE EDGE
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
60° S
65° S
70° S
75° S
80° S
85° S
5188



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Polar Stereographic Projection
SCALE 1:7,500,000

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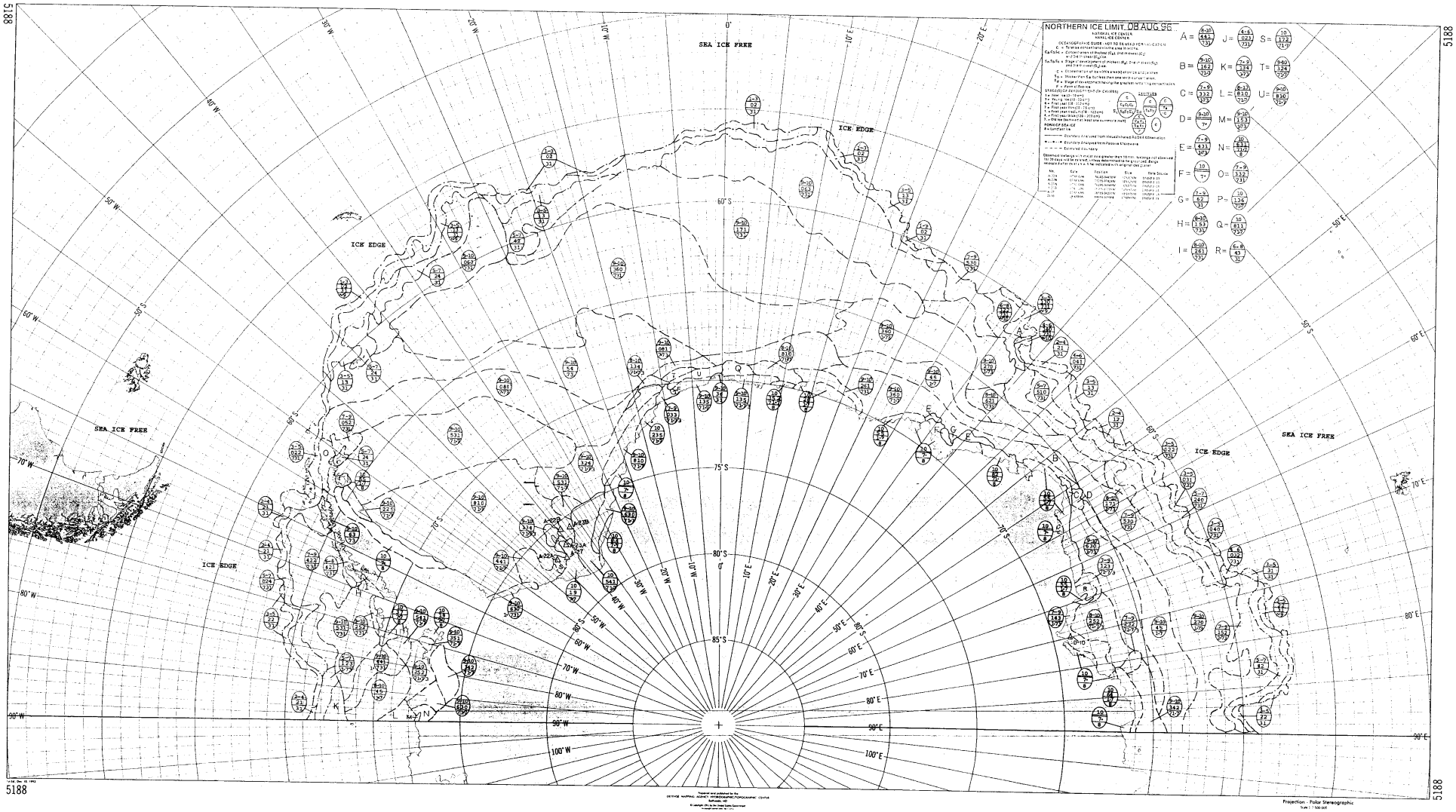
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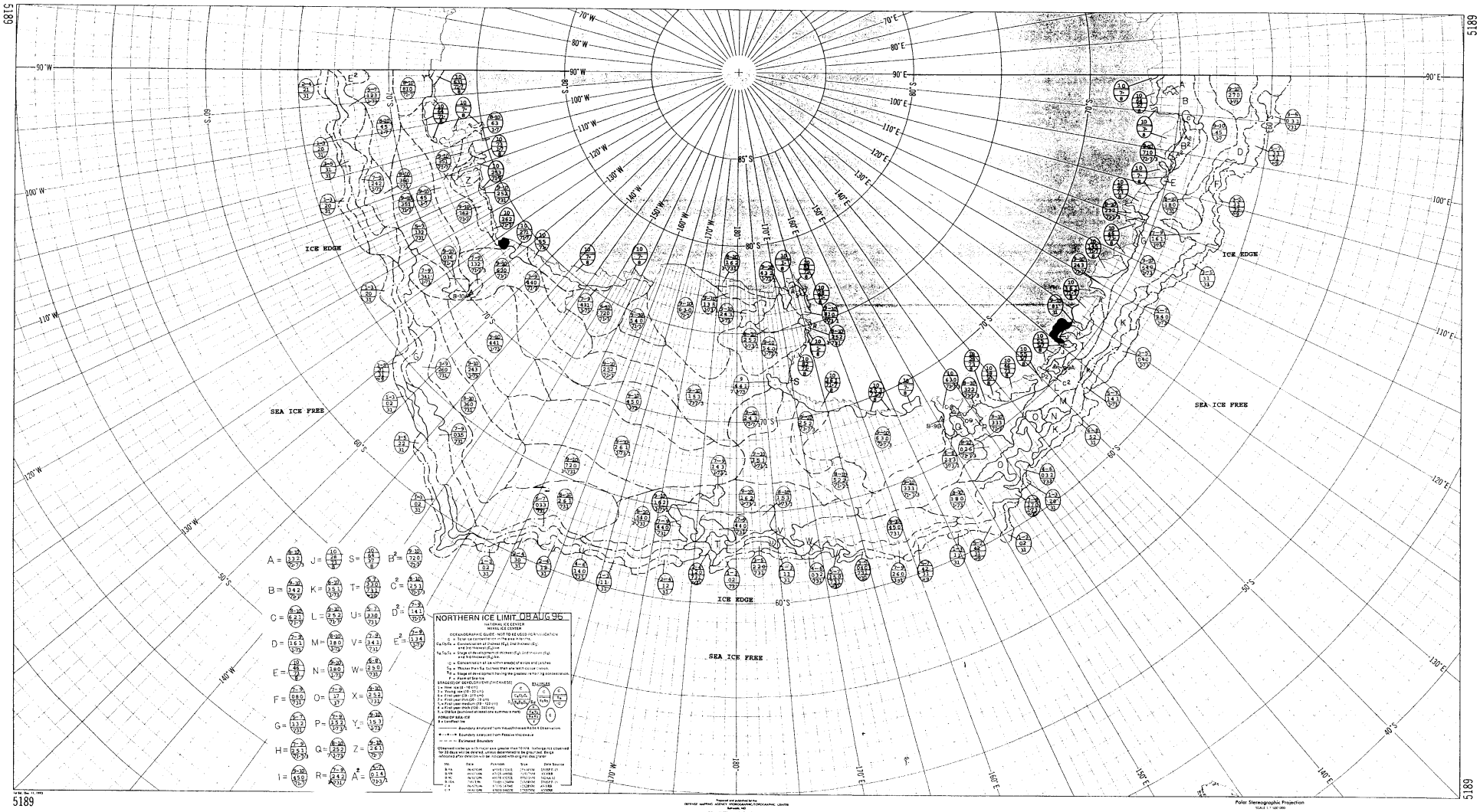
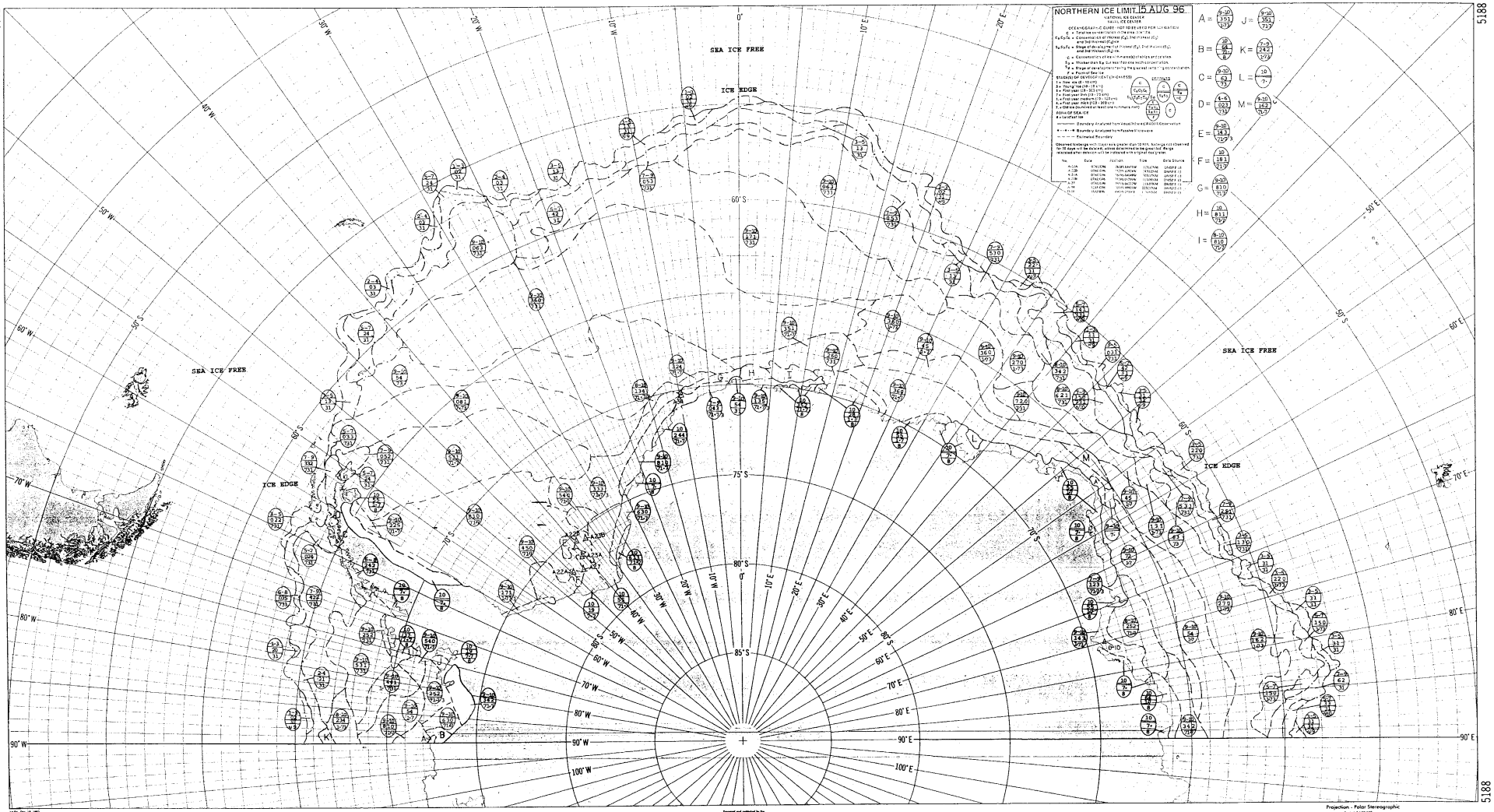
5188
NORTHERN ICE LIMIT 08 AUG 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
60° S
65° S
70° S
75° S
80° S
85° S
5188
5188


ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT OB AUG 95
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
Polar Stereographic Projection



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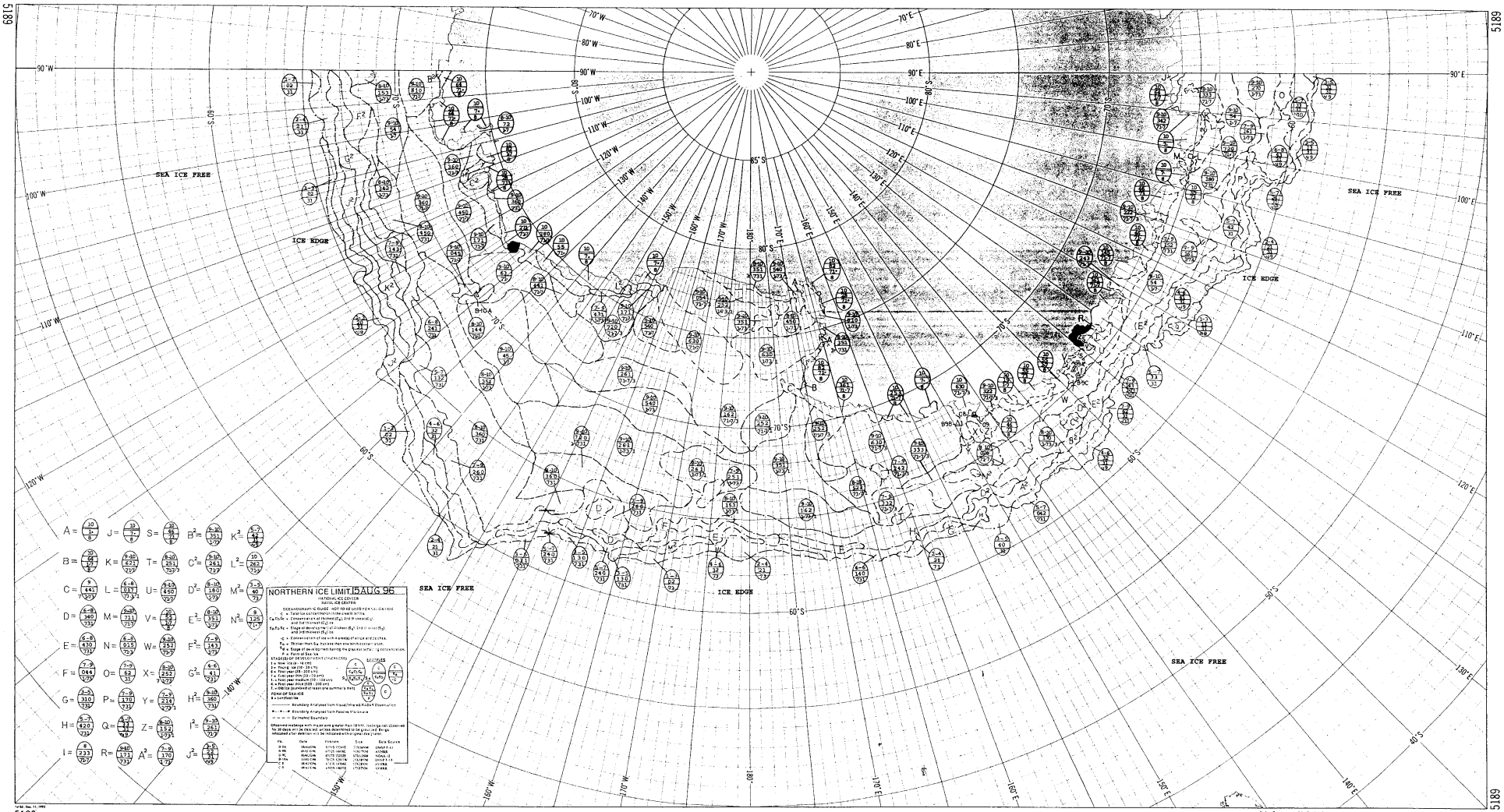
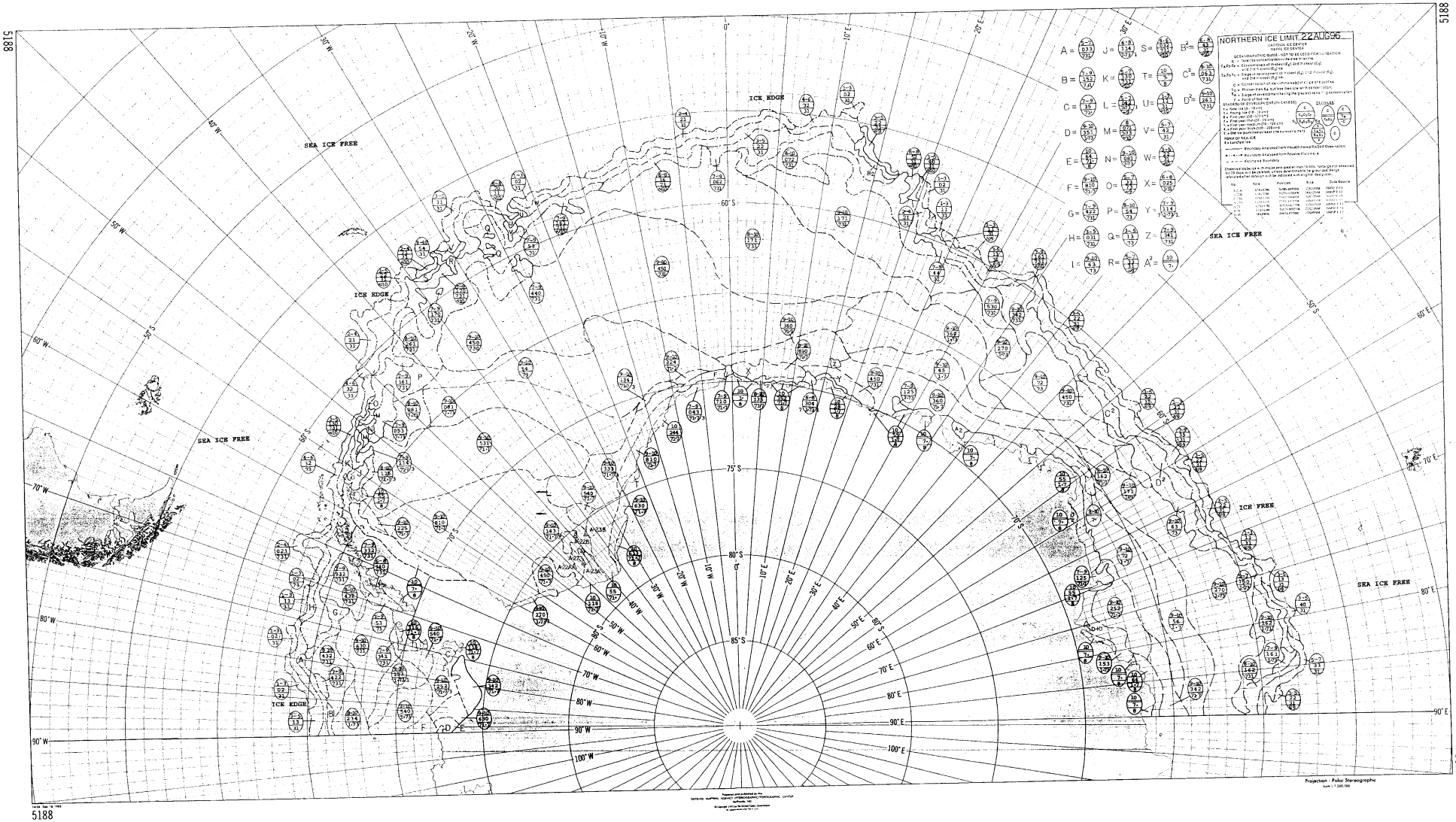
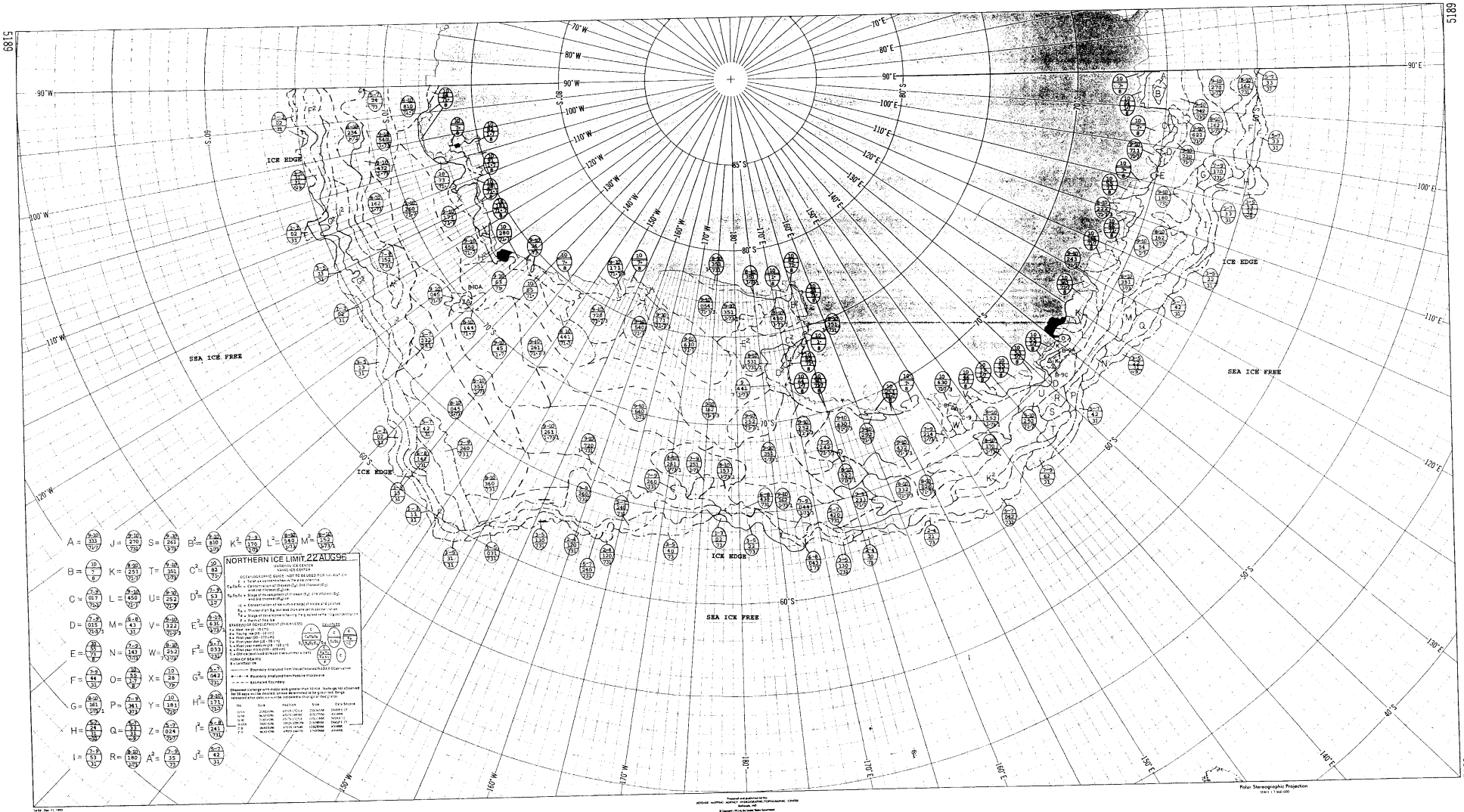
Projection - Polar Stereographic

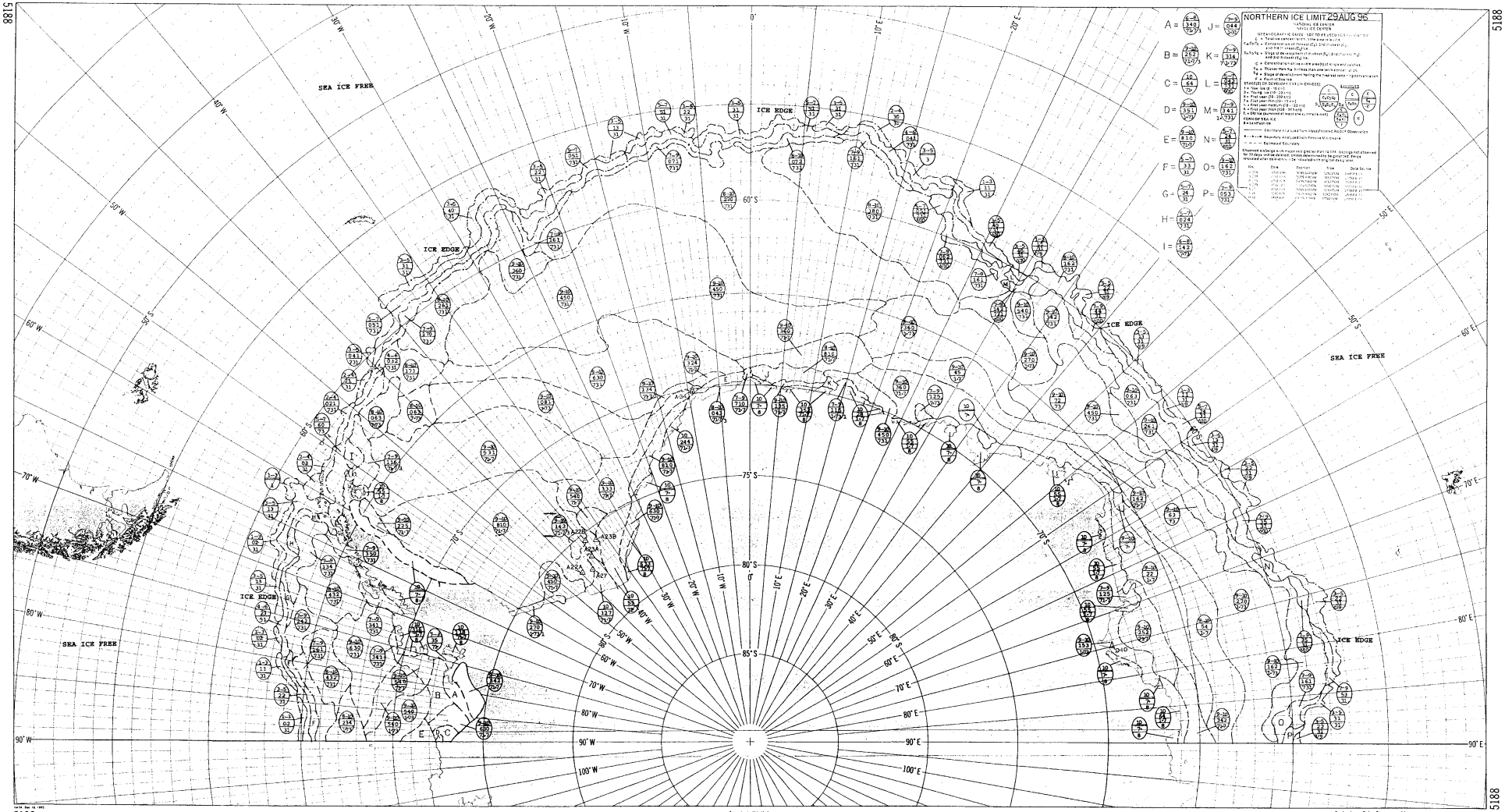

SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 15 AUG 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
Pole Stereographic Projection

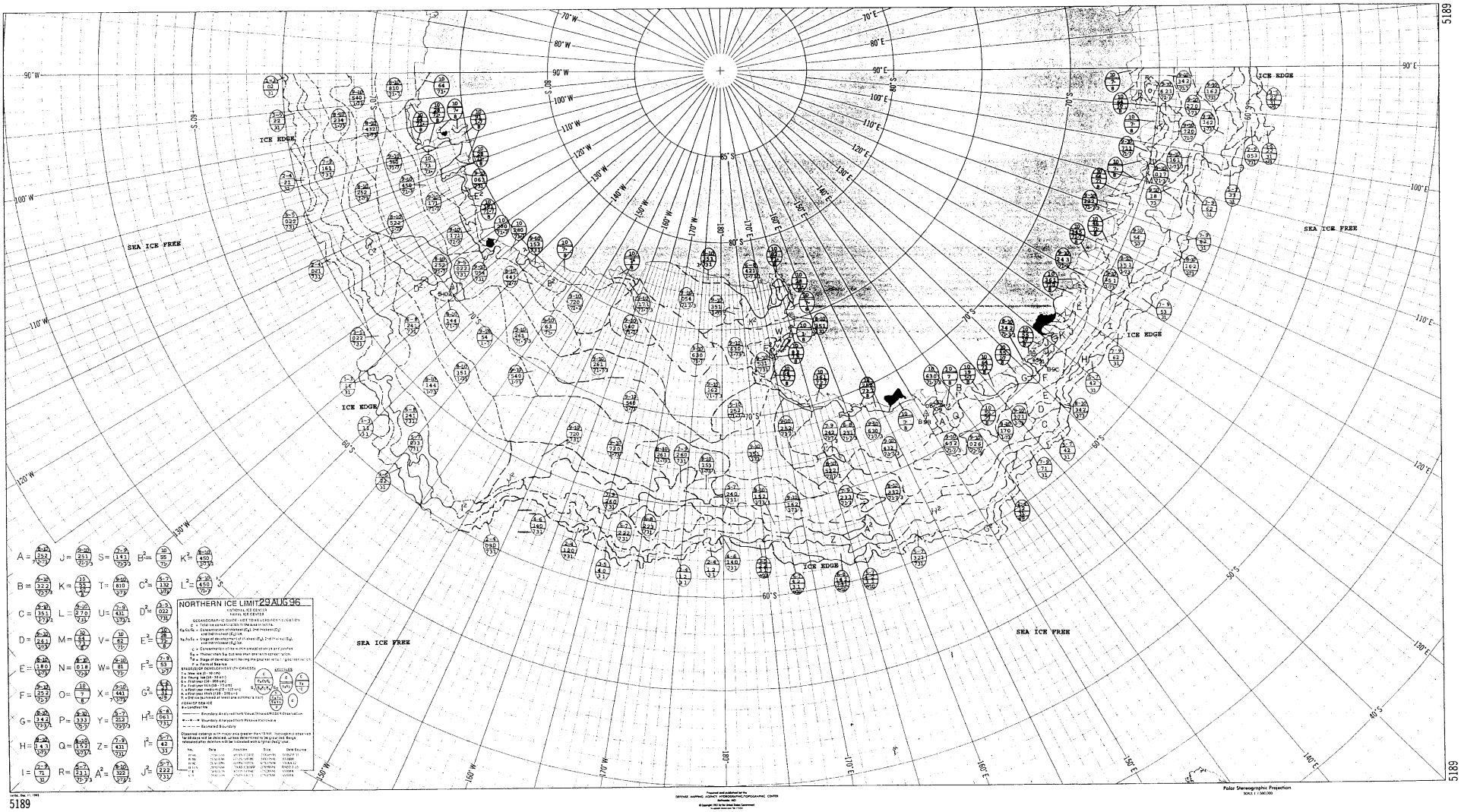
5189


NORTHERN ICE LIMIT 22AUG96
ICE EDGE
SEA ICE FREE
ICE FREE
Projection - Polar Stereographic


NORTHERN ICE LIMIT 22AUG96
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection

5189


NORTHERN ICE LIMIT 29 AUG 95
SEA ICE FREE
ICE EDGE
60°S
75°S
80°S
85°S
0°
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
100°E
10°W
20°W
30°W
40°W
50°W
60°W
70°W
80°W
90°W
100°W
5188
Projection - Polar Stereographic


NORTHERN ICE LIMIT 29 AUG 96
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
SCALE 1 / 500,000

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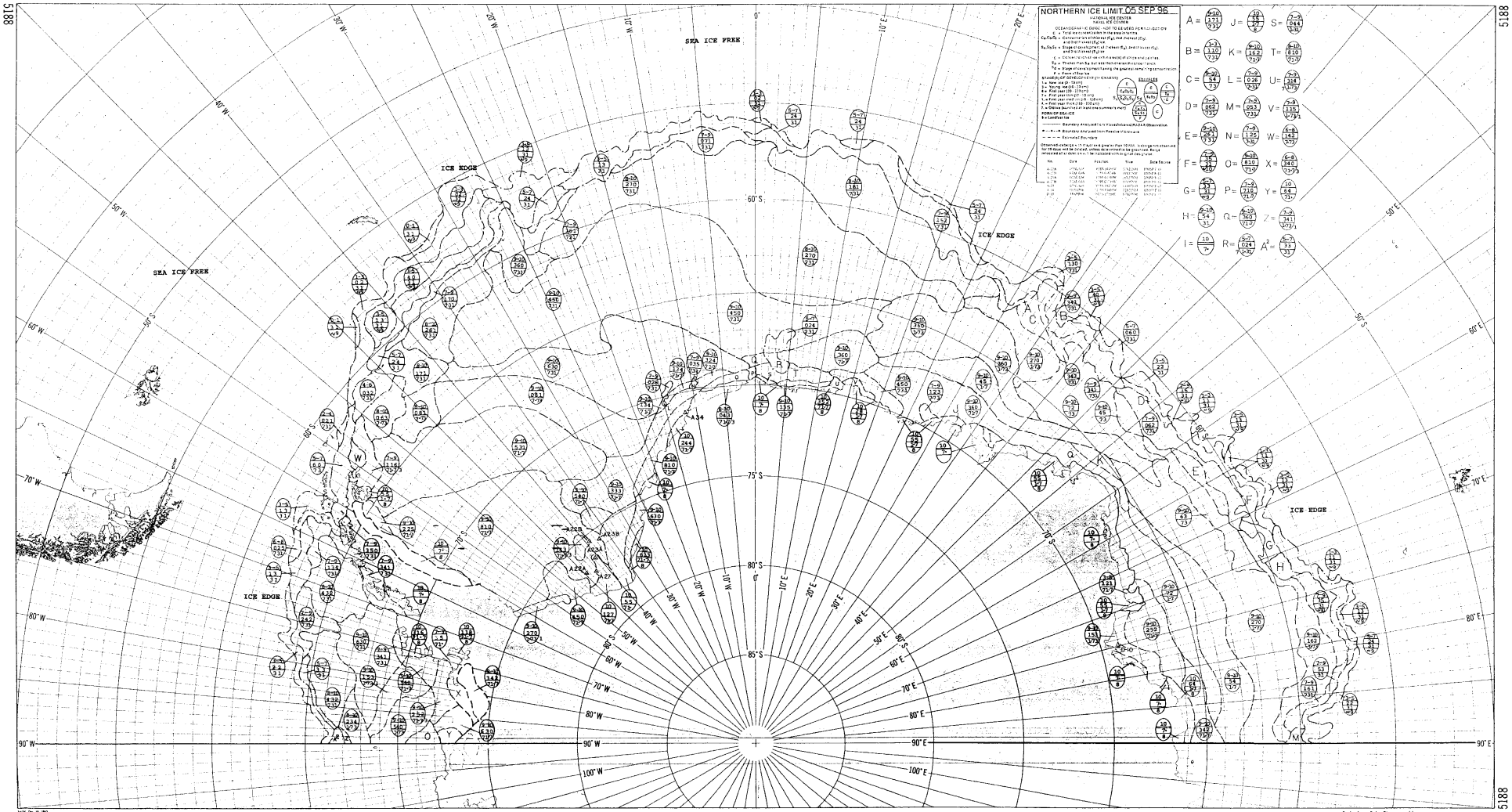
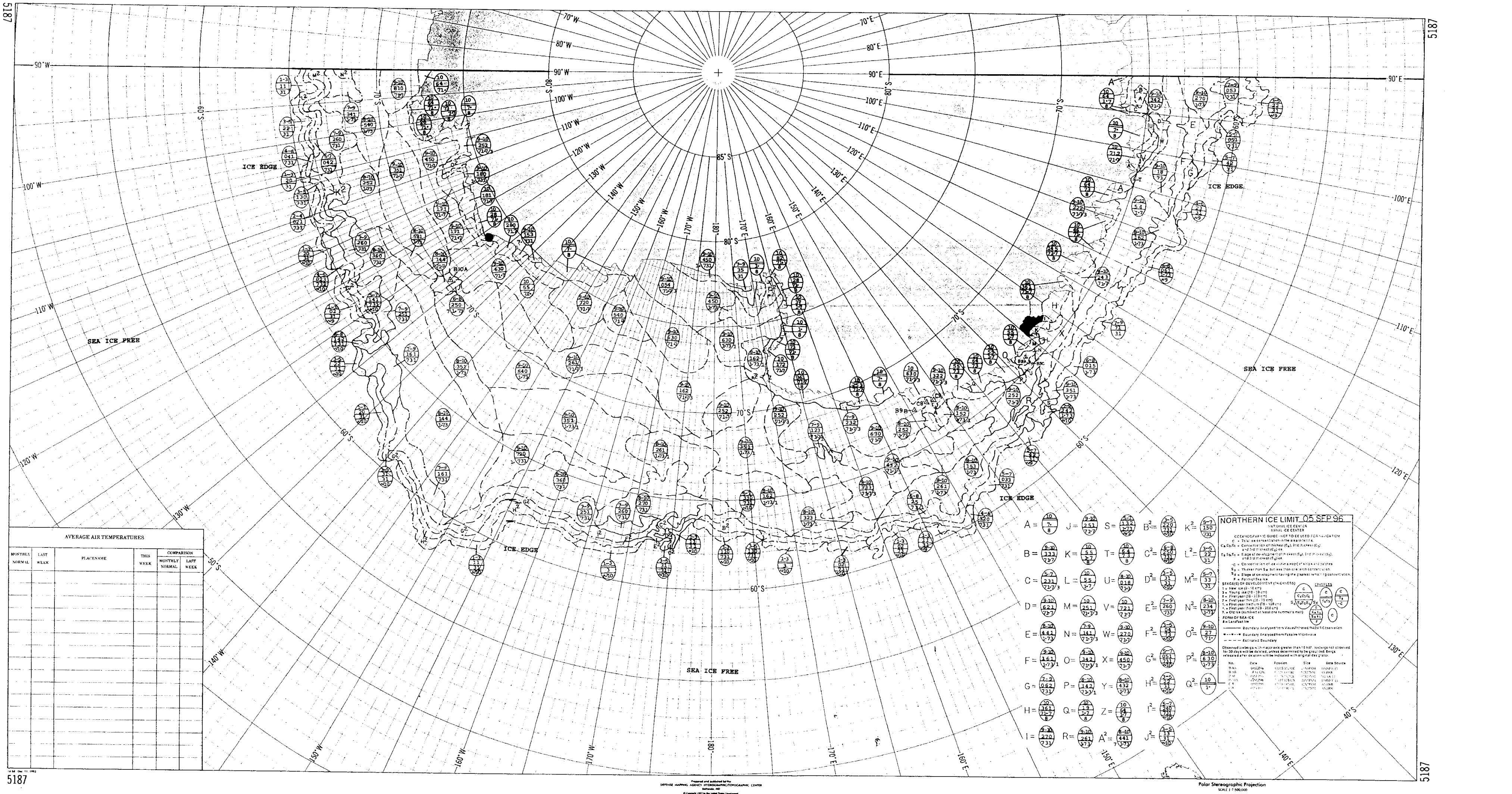
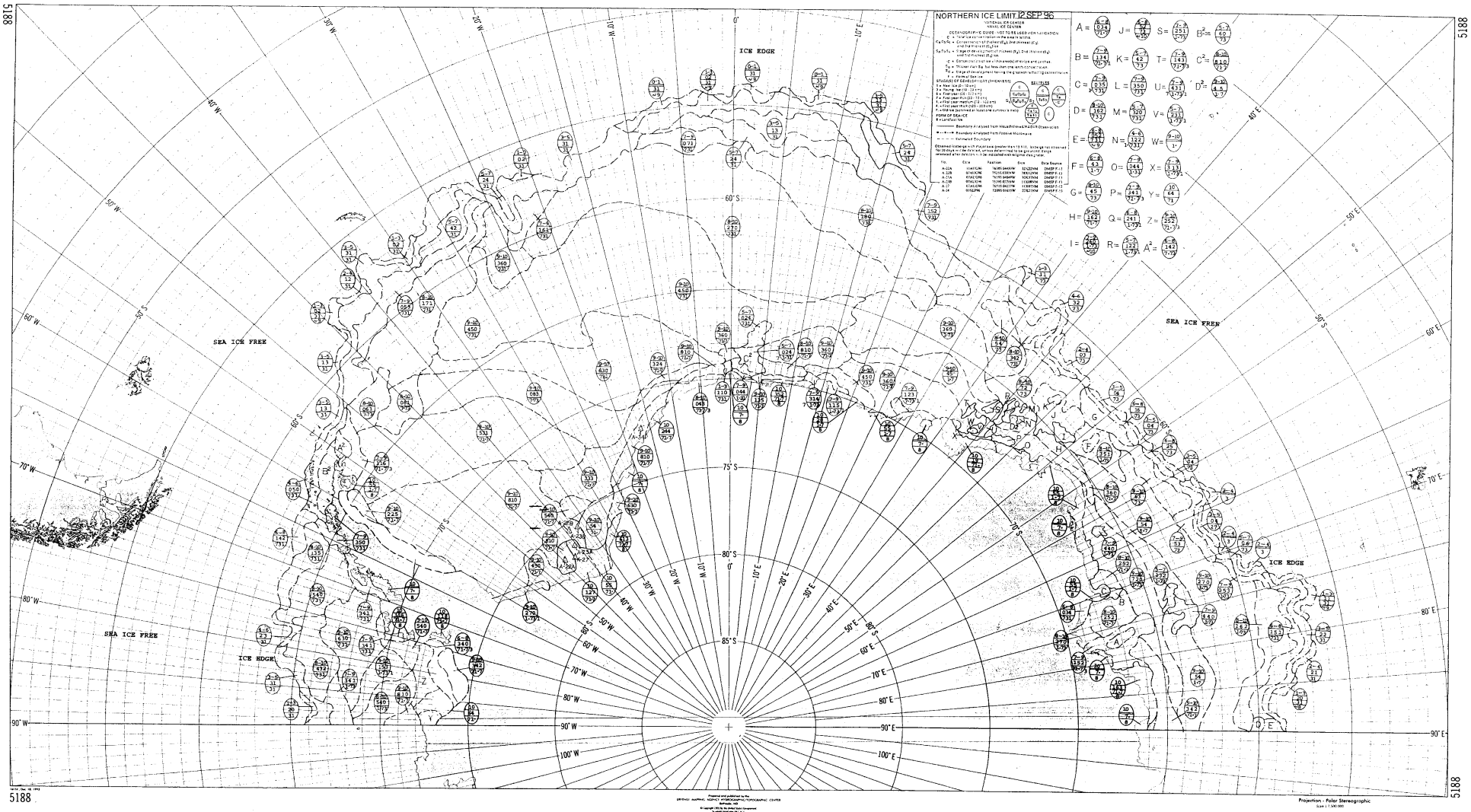
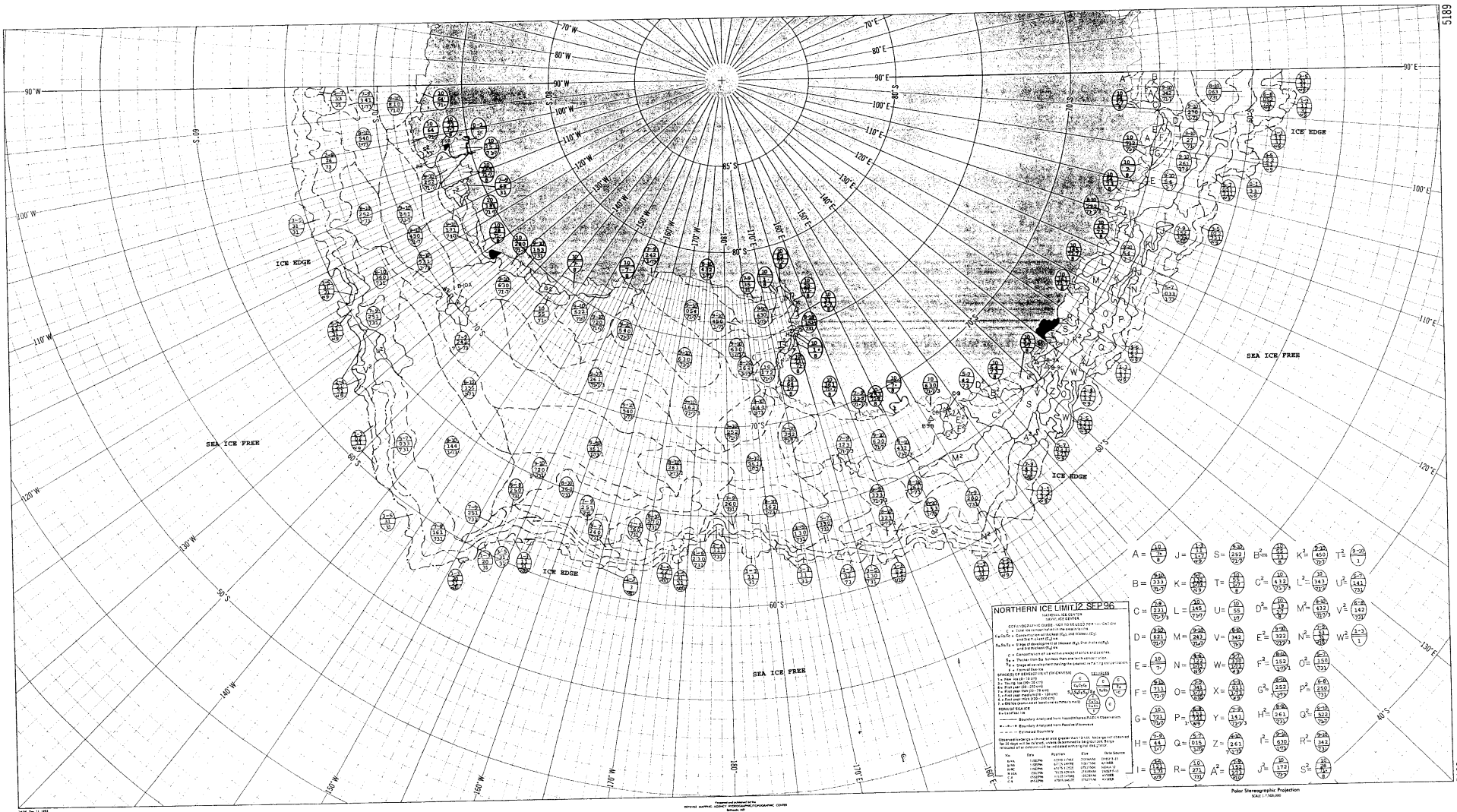

NORTHERN ICE LIMIT 05 SEP 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
ICE EDGE
ICE EDGE
ICE EDGE
SEA ICE FREE
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z
60°S
70°S
75°S
80°S
85°S
0°
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
100°E
10°W
20°W
30°W
40°W
50°W
60°W
70°W
80°W
90°W
100°W
Projection - Polar Stereographic


5187
NORTHERN ICE LIMIT 05 SEP 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
SEA ICE FREE
ICE EDGE
AVERAGE AIR TEMPERATURES
MONTHLY NORMAL
LAST WEEK
PLACENAME
THIS WEEK
COMPARISON
Polar Stereographic Projection


NORTHERN ICE LIMIT 12 SEP 96
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
60° S
70° S
75° S
80° S
85° S
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
5188
5188


ICE EDGE
SEA ICE FREE
NORTHERN ICE LIMIT 12 SEP 96
Polar Stereographic Projection
SCALE 1:7,500,000

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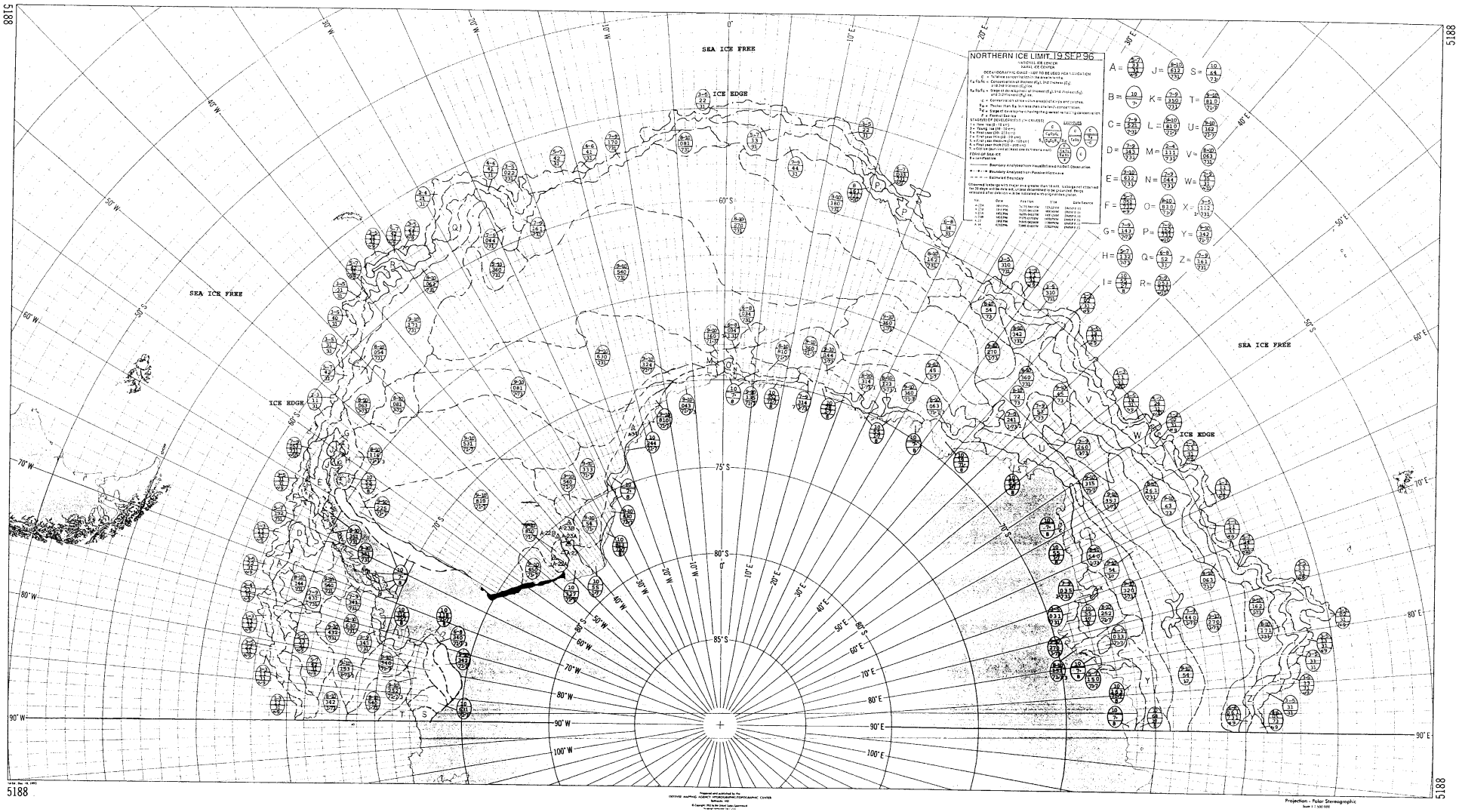
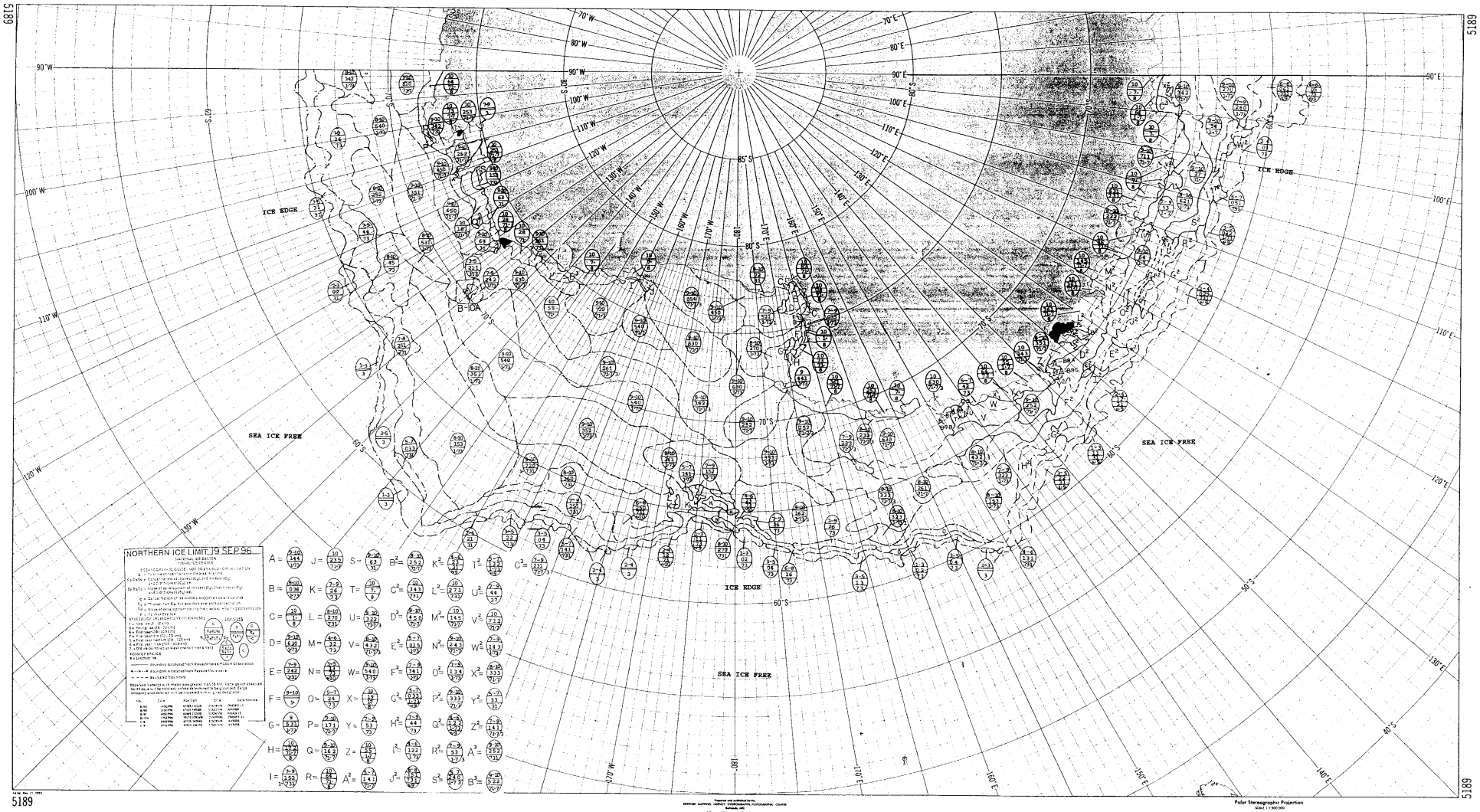
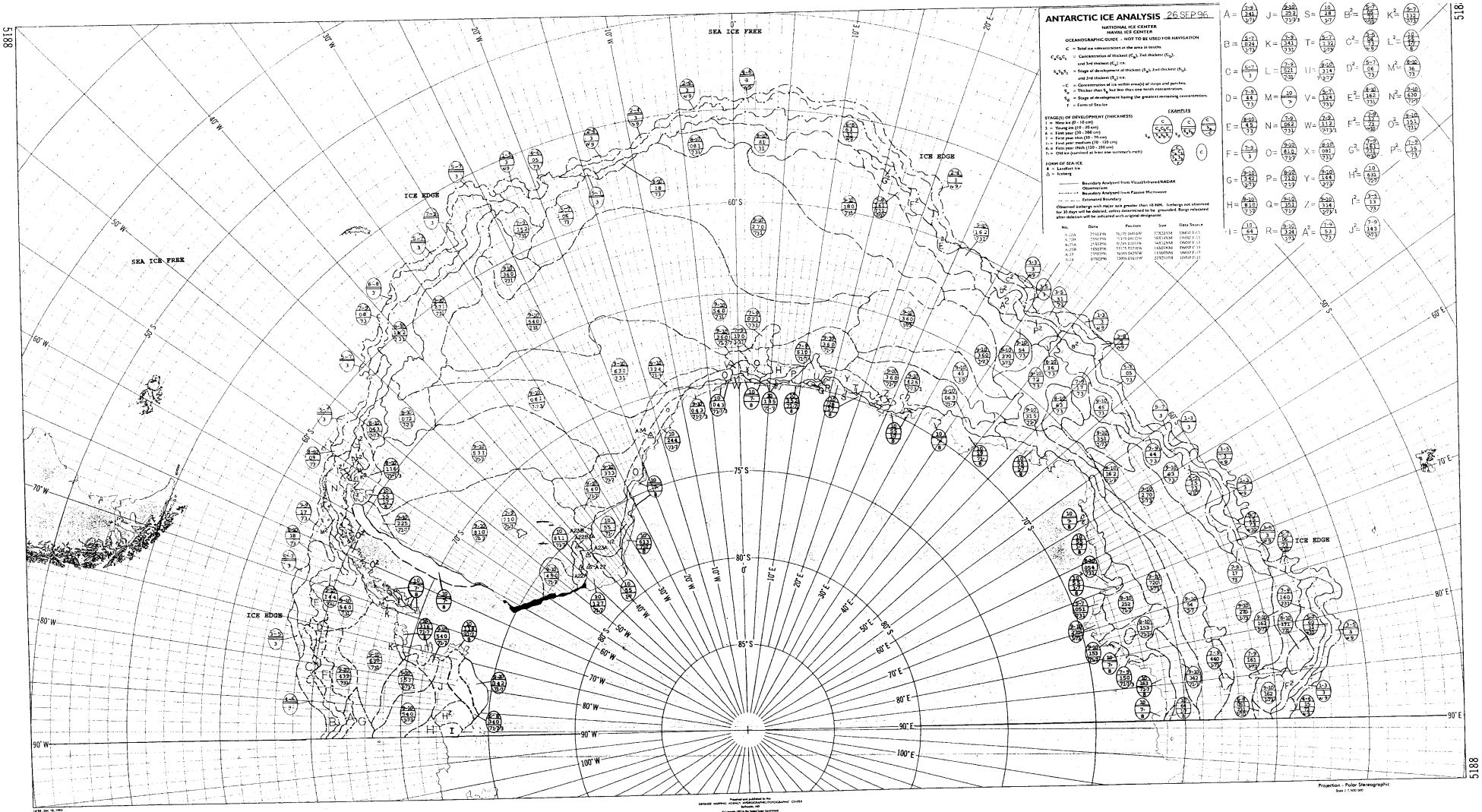

NORTHERN ICE LIMIT 19 SEP 96
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
0°
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
60° S
70° S
75° S
80° S
85° S
5188
5188
5188


NORTHERN ICE LIMIT 19 SEP 96
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection


ANTARCTIC ICE ANALYSIS 26 SEP 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
$-C$ = Concentration of ice within area(s) of strips and patches.
S_x = Thicker than S_b but less than one tenth concentration.
S_g = Stage of development having the greatest remaining concentration.
f = Form of Sea Ice
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
4 = First year thin (30 - 70 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA ICE
B = Landfast Ice
Δ = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.
No. Date Position Size Data Source
SEA ICE FREE
ICE EDGE
ICE EDGE
ICE EDGE
ICE EDGE
SEA ICE FREE
Projection - Polar Stereographic
Scale 1:7 500 000
Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER Bethesda, MD
5188
5188
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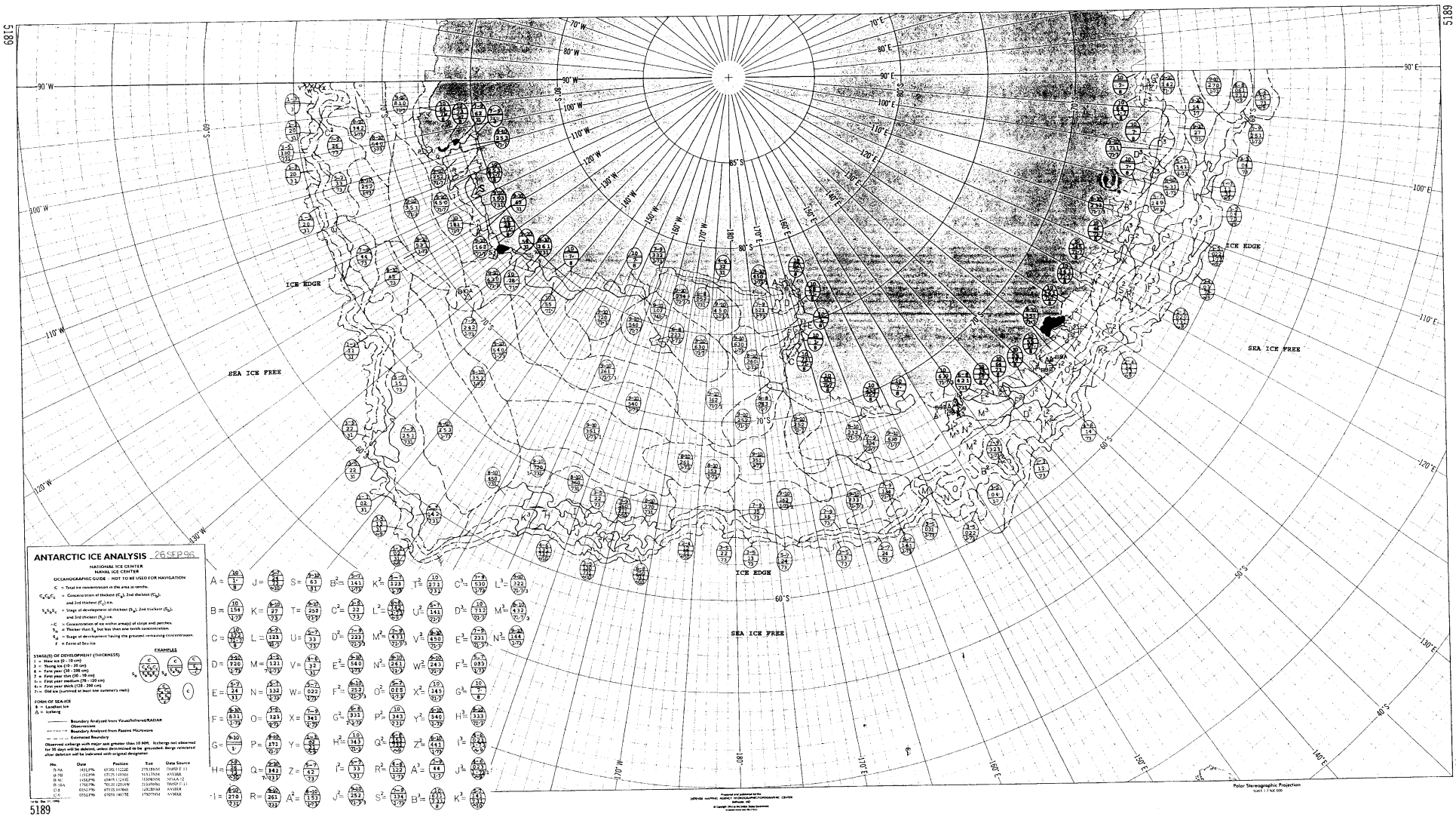
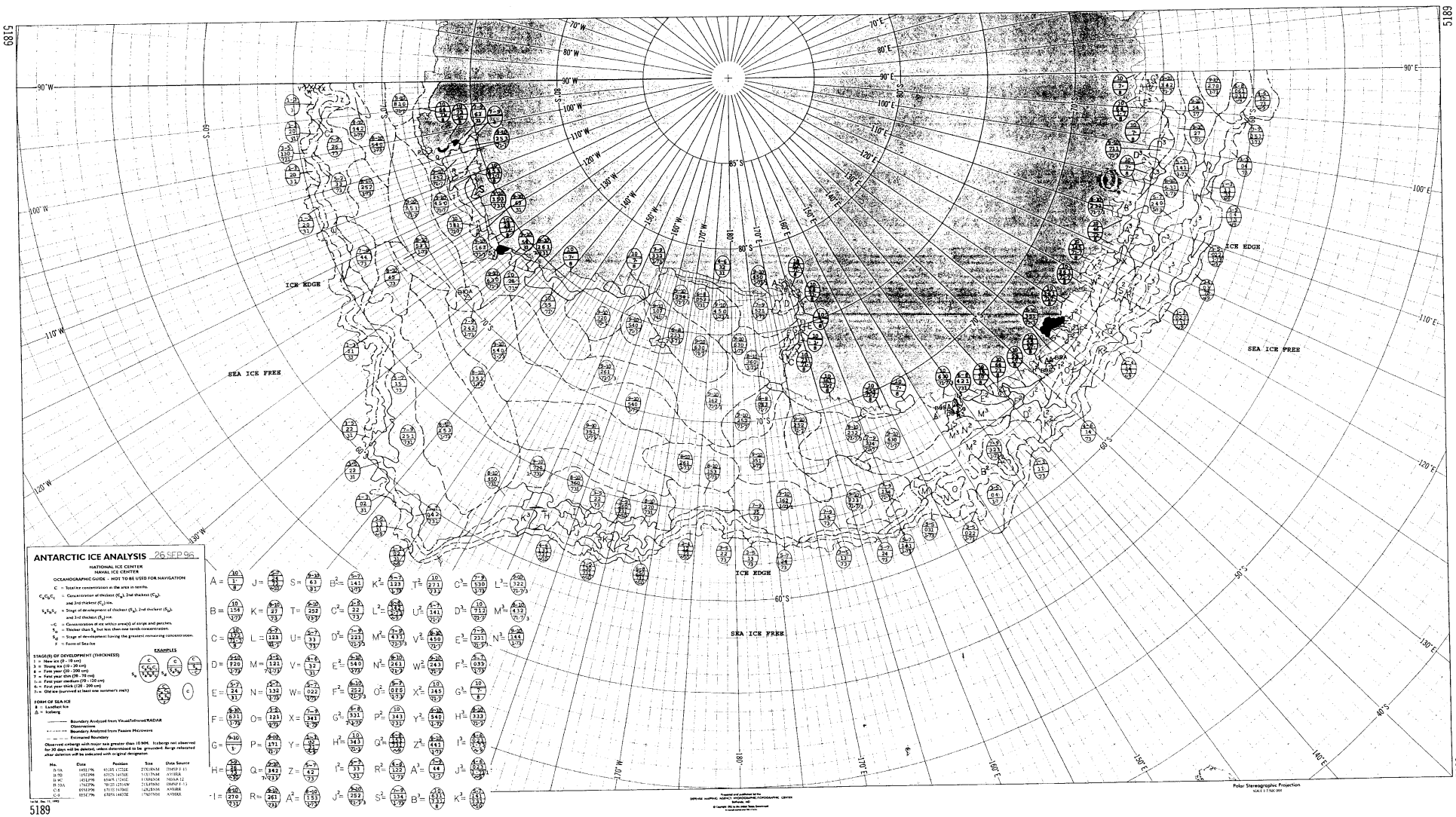

ANTARCTIC ICE ANALYSIS 26SEP96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CUDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_1C_2C_3$ = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
$S_1S_2S_3$ = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
-C = Concentration of ice within area(s) of open and pack ice.
S_x = Thicker than S_1 but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea Ice.
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = Grey ice (30 - 70 cm)
4 = First year thin (30 - 70 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA ICE
B = Landfast Ice
Δ = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.
No. Date Position Size Data Source
B-54 14SEP96 65SOS 172.22E 270.1NM TMPSF F 35
B-55 11SEP96 65S2S 149.5E 51X17NM AVHRR
B-56 11SEP96 65W51 124.9E 15X9NM NOAA 12
B-56A 17SEP96 70S20 120.6W 21X9NM TMPSF F 11
C-8 03SEP96 69S35 84W01 14X3NM AVHRR
C-9 03SEP96 67S55 140.5E 17X07NM AVHRR
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
GMT 17 NOV 000
5189
5189


ANTARCTIC ICE ANALYSIS 26 SEP 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
+C = Concentration of ice within area(s) of strips and patches.
S_n = Thinner than S_b but less than new tends concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea Ice
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
4 = First year (30 - 200 cm)
7 = First year thin (70 - 70 cm)
8 = First year medium (70 - 120 cm)
9 = First year thick (120 - 200 cm)
1+ = Old ice (survived at least one summer's melt)
FORM OF SEA ICE
X = Landfast ice
Δ = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after detection will be indicated with original designator.
No. Date Position Size Data Source
B-50A 14SEP96 65.58S 172.52E 270.0NM IMAFP F-15
B-50 15SEP96 65.72S 167.52E 513.0NM AVHRR
B-49 14SEP96 65.66S 172.43E 115.0NM/SM NIMA F-12
B-50A 15SEP96 70.12S 125.00W 215.0NM IMAFP F-15
C-8 05SEP96 67.51S 167.86E 6.0LRNM AVHRR
C-9 05SEP96 67.85S 166.02E 17.0LRNM AVHRR
ICE EDGE
SEA ICE FREE
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Polar Stereographic Projection
SCALE 1:7 500 000
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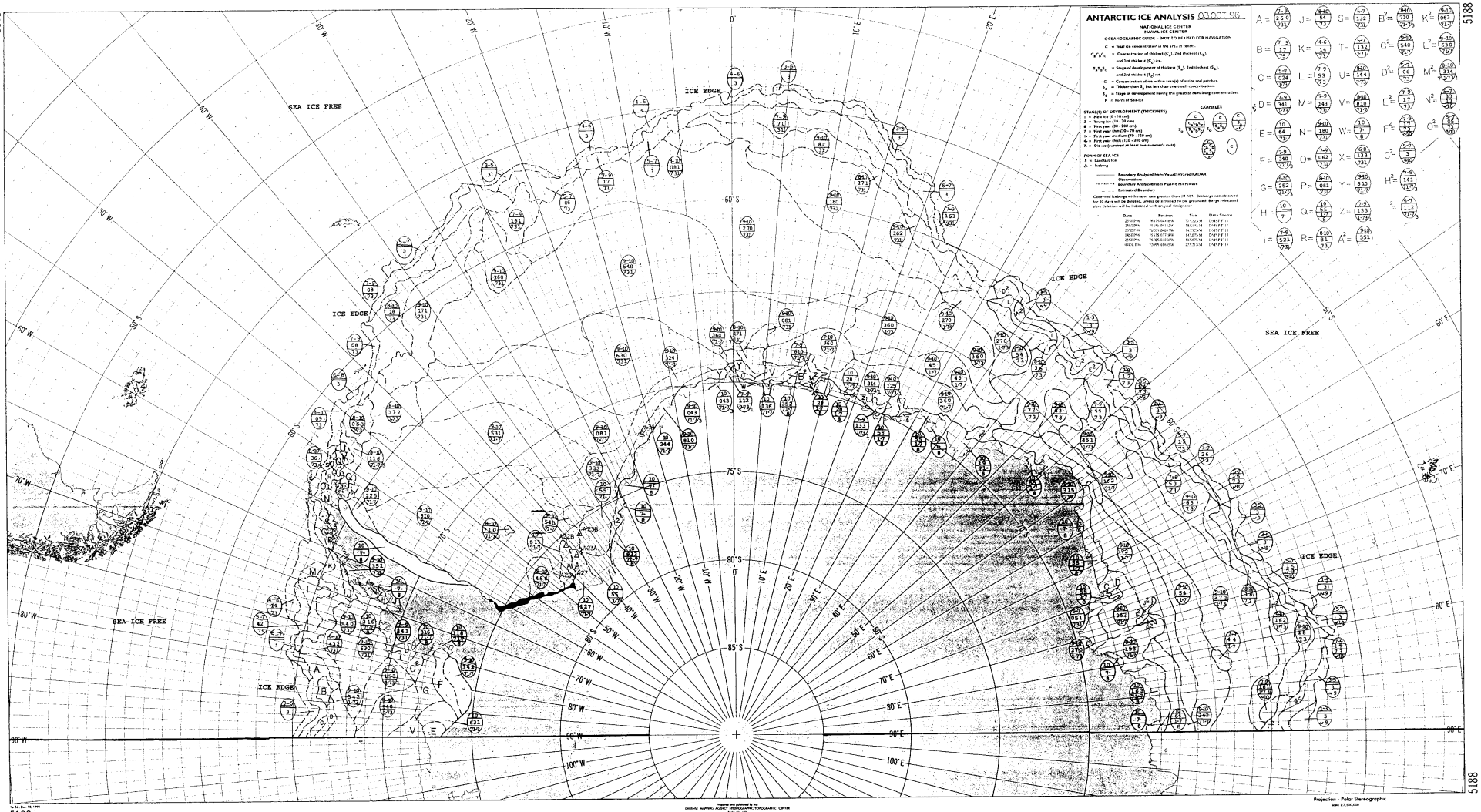
ANTARCTIC ICE ANALYSIS 03 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
C_a C_b C_c = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
S_a S_b S_c = Stage of development of thickest (S_a), 2nd thickest (S_b) and 3rd thickest (S_c) ice
-C = Concentration of ice within area(s) of strips and patches.
S_b = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
7 = First year thin (70 - 120 cm)
4 = First year medium (120 - 170 cm)
5 = First year thick (170 - 300 cm)
6 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
K = Level ice
A = Ice cake
EXAMPLES
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 24 hours will be deleted, unless determined to be grounded. Bergs untracked plus colonies will be indicated with original designator.
Projection - Polar Stereographic
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ICE EDGE
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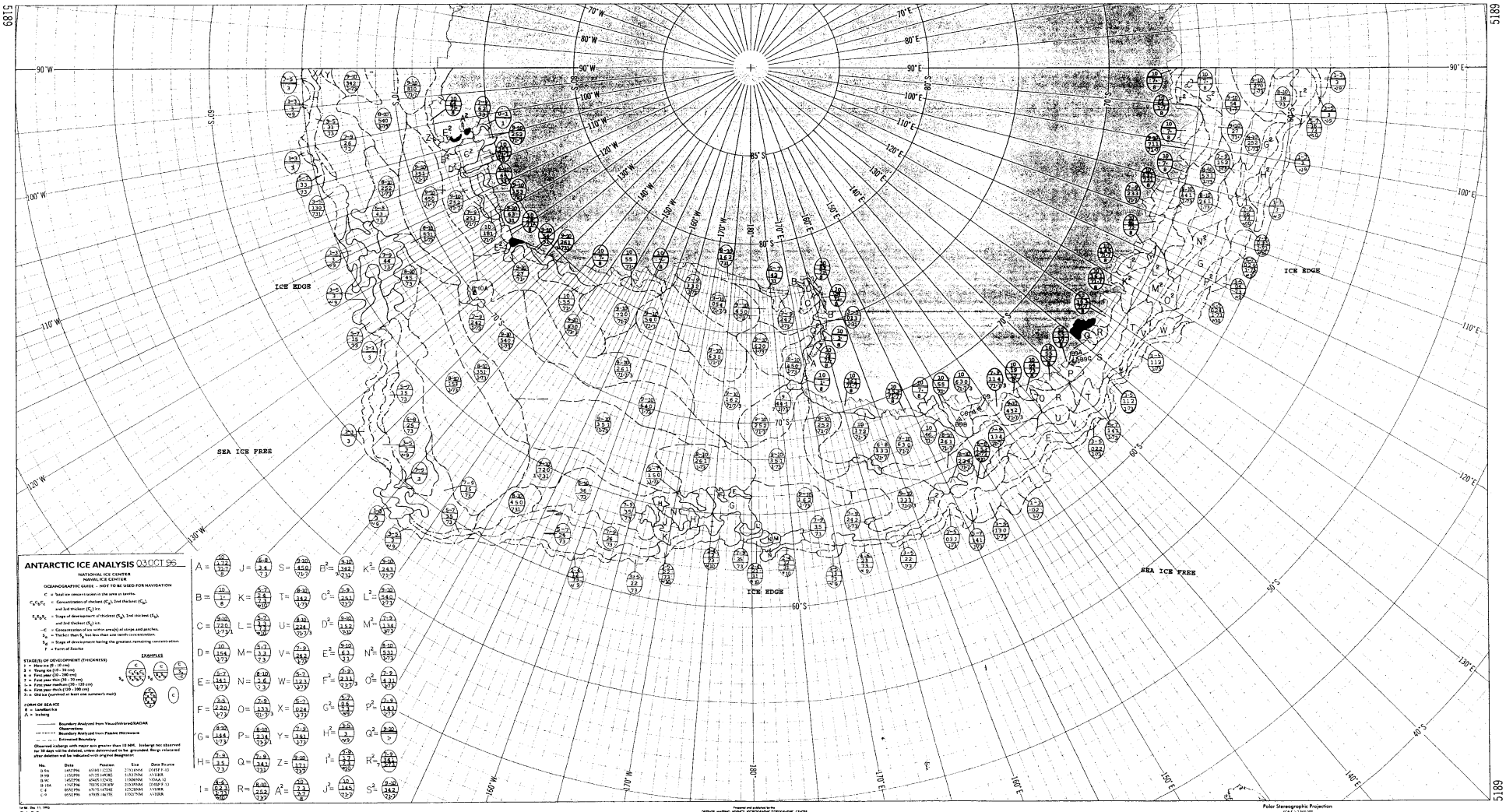

ANTARCTIC ICE ANALYSIS 03OCT 96

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C = Total ice concentration in the same as tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

–C = Concentration of ice within area(s) of strips and patches.

S_w = Thicker than S_b, but less than one tenth concentration.

S_d = Stage of development having the greatest remaining concentration.

F = Form of floe/ice

EXAMPLES

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year thin (30 - 70 cm)
4 = First year medium (70 - 120 cm)
5 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)

FORM OF SEA ICE

B = Land-fast ice
A = Iceberg

Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary

Observed icebergs with major axis greater than 15 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Date Source
D-96	14OCT96	65.58S 112.23E	27X14NM	D14SEP 95
B-90	11SEP96	67.17S 149.18E	11X3.7NM	A13JUL
B-91	14SEP96	69.46S 157.47E	15X8NM	N10AUG 11
B-18A	17SEP96	70.17S 129.13W	23X9NM	D19SEP 13
C-8	05SEP96	67.41S 147.56E	17X7NM	A13JUL
C-9	05SEP96	67.45S 146.17E	17X2.7NM	A13JUL

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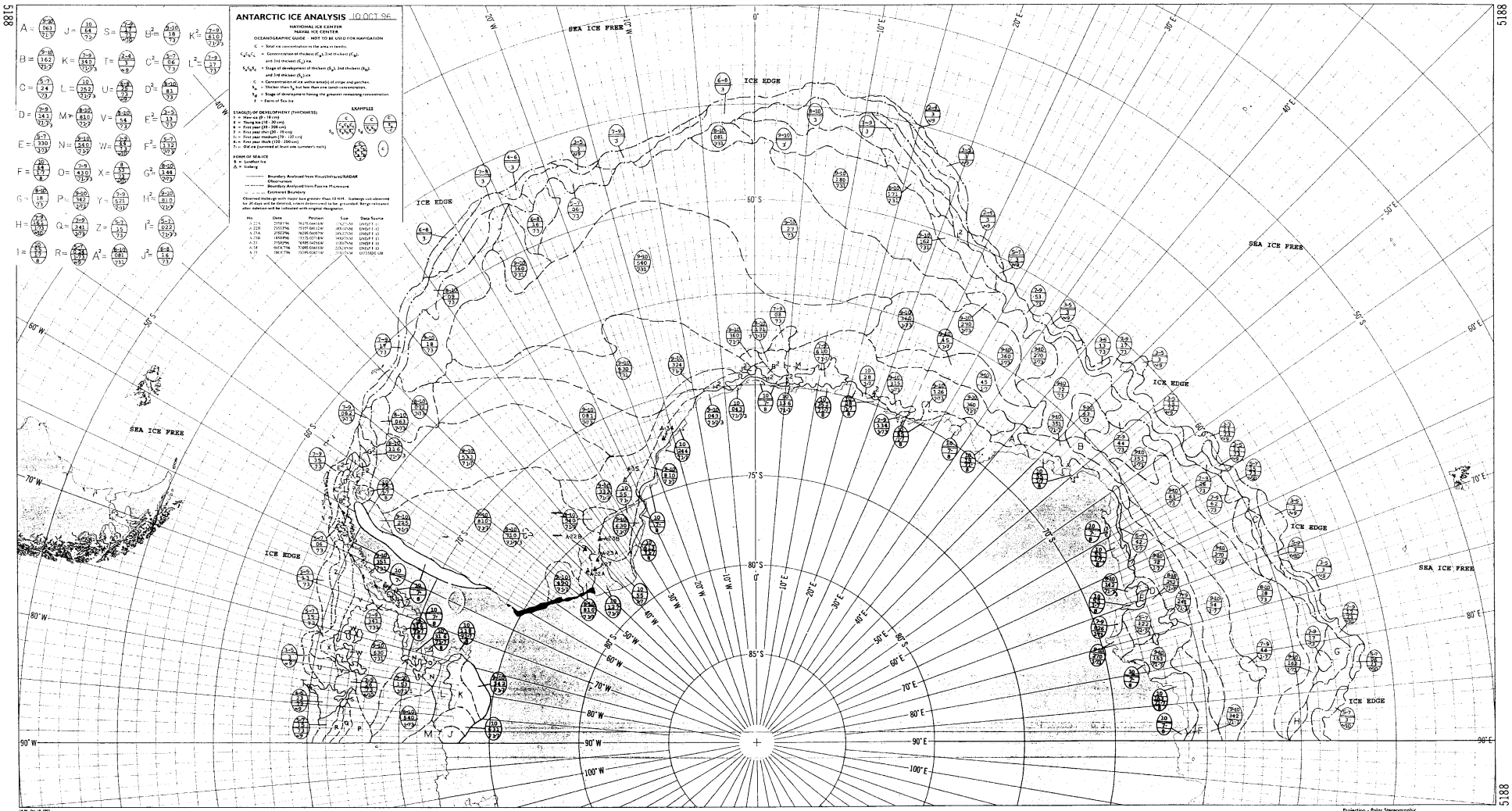
Polar Stereographic Projection
SCALE 1:7 500 000


ANTARCTIC ICE ANALYSIS 10 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area or trends
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice
C_t = Concentration of ice within area(s) of strips and patches
S_w = Thicker than S_a but less than one tenth concentration
S_d = Stage of development having the greatest remaining concentration
f = Form of floe ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
4 = First year thin (30 - 70 cm)
4.= First year medium (70 - 120 cm)
4+= First year thick (120 - 200 cm)
7.= Old ice (survived at least one summer's melt)
EXAMPLES
FORM OF SEA ICE
B = Landfast Ice
Δ = Iceberg
Boundary Analysed from Visual/Infrared/RADAR Observations
Boundary Analysed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs released after deletion will be indicated with original designator.
No. Date Position Size Data Source
A-22A 2152Z96 76.27S 164.54W 17x27 NM DMSP F-10
A-22B 2152Z96 75.55S 041.22W 185x25NM DMSP F-10
A-23A 2152Z96 76.08S 065.51W 24x27NM DMSP F-10
A-23B 1858Z96 73.57S 037.18W 19x82NM DMSP F-10
A-23 1758Z96 74.00S 045.06W 113x27NM DMSP F-10
A-24 0454Z96 72.00S 038.05W 225x21NM DMSP F-10
A-25 1901Z96 73.19S 024.51W 71x27NM GOES8/E-GR
SEA ICE FREE
ICE EDGE
60°S
70°S
75°S
80°S
85°S
90°S
10°W
20°W
30°W
40°W
50°W
60°W
70°W
80°W
90°W
100°W
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
100°E
A-22A
A-22B
A-23A
A-23B
A-24
A-25
Projection - Polar Stereographic
Scale = 1:3,500,000
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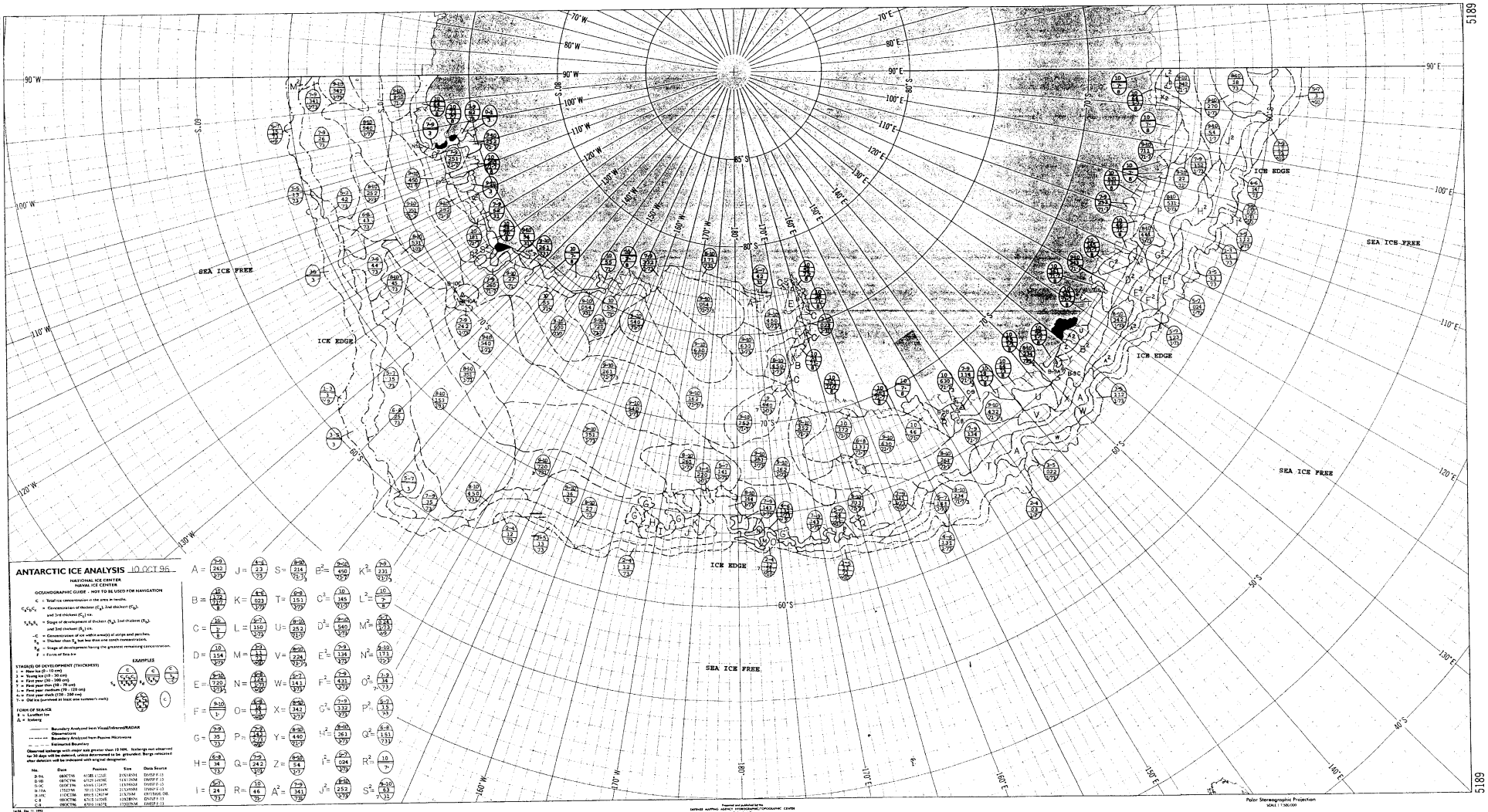
ANTARCTIC ICE ANALYSIS 10 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
90° W
80° W
70° W
100° W
110° W
120° W
130° W
90° E
80° E
70° E
100° E
110° E
120° E
130° E
140° E
150° E
160° E
170° E
180°
50° S
60° S
70° S
80° S
85° S
Polar Stereographic Projection
SCALE 1:7,500,000
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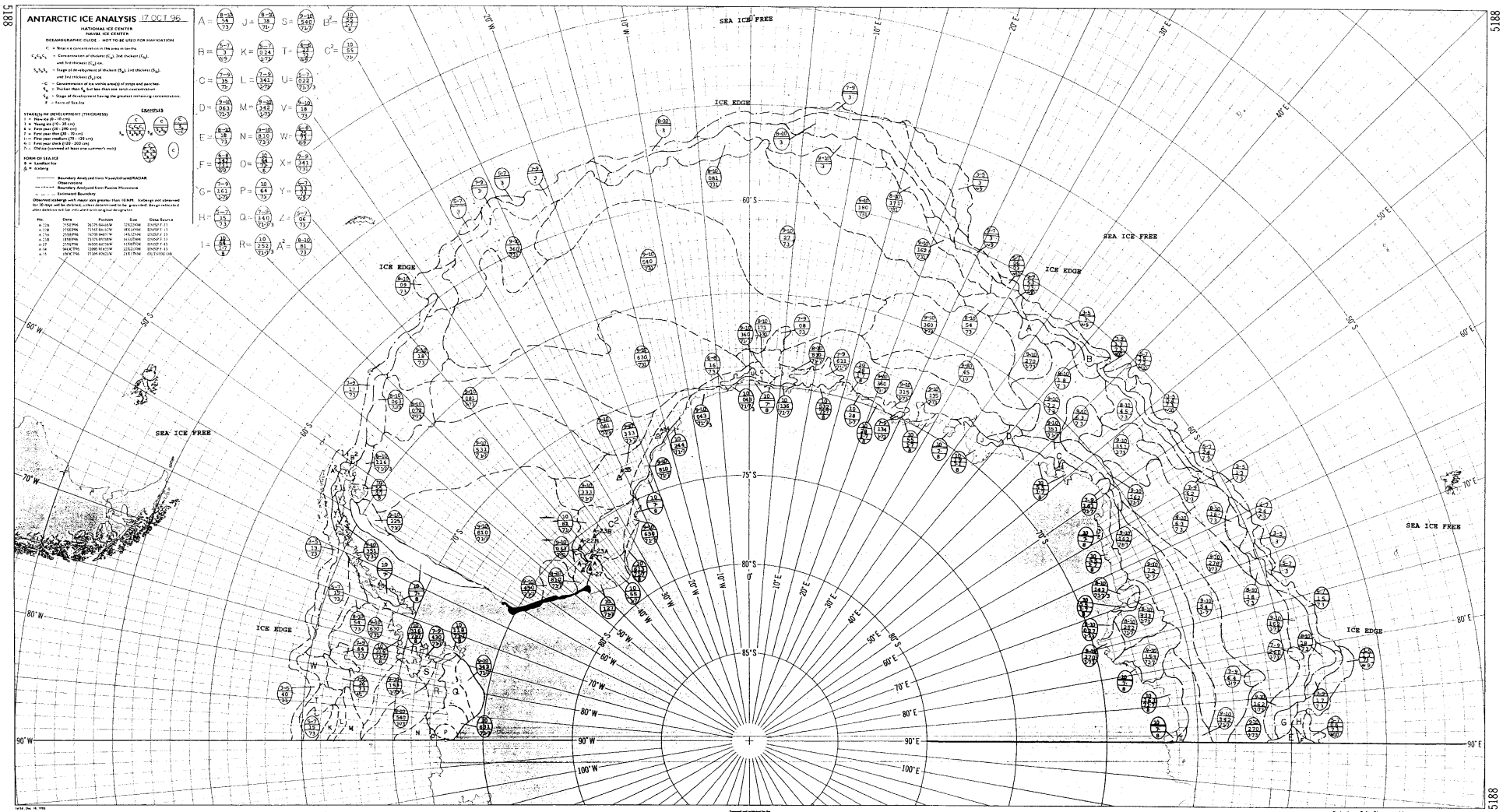
ANTARCTIC ICE ANALYSIS 17 OCT 96
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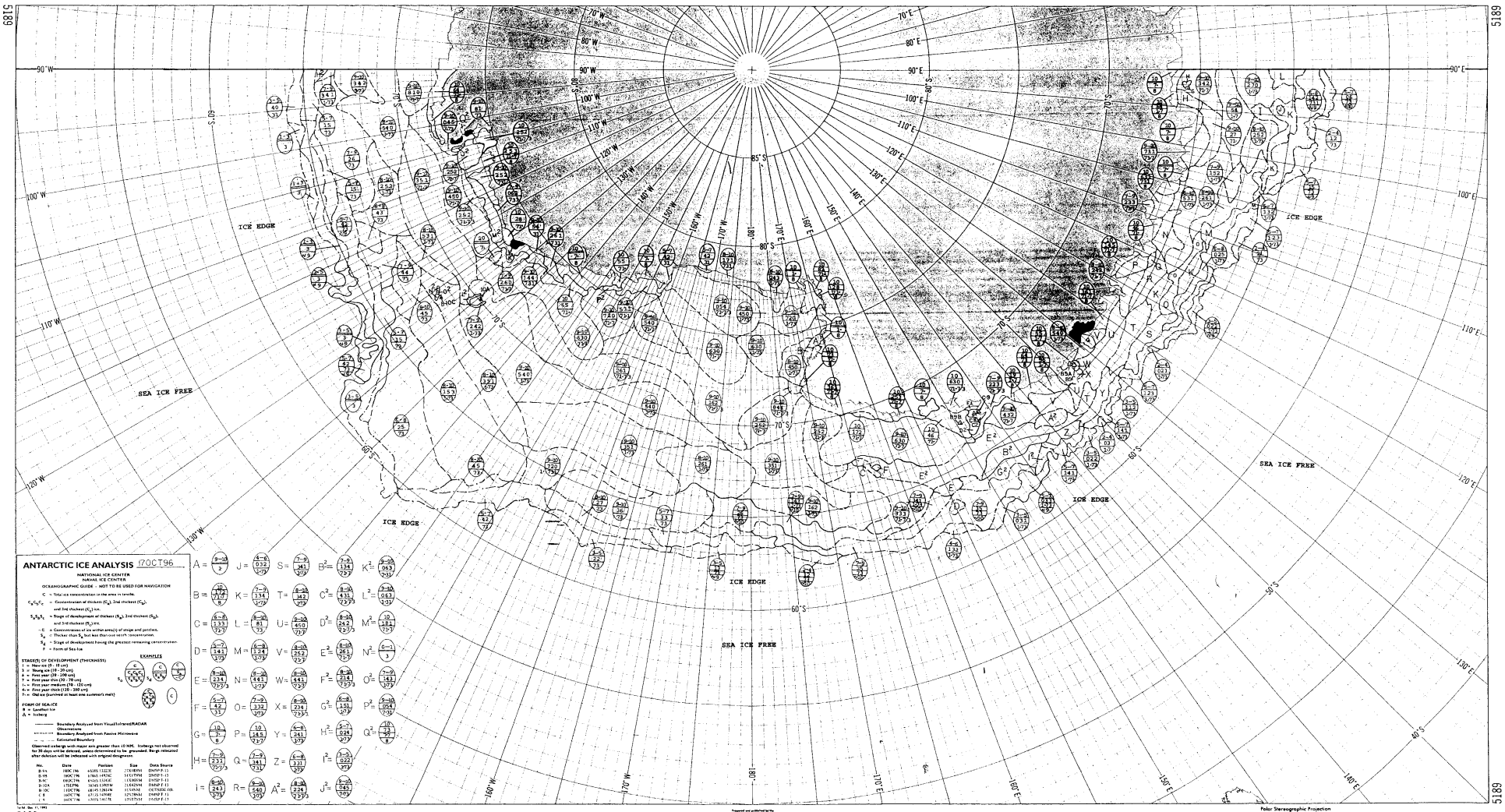
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
4 = First year (30 - 70 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA ICE
8 = Level ice
9 = Ridging
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designation.
No. Date Position Size Data Source
A-23A 17SEP96 76.7S 66.6W 153/22NM DMSP F-13
A-23B 25SEP96 75.9S 64.1W 98/43NM DMSP F-13
A-24 17SEP96 74.5S 75.8W 63/32NM DMSP F-13
A-25B 18SEP96 72.7S 89.9W 63/32NM DMSP F-13
A-27 27SEP96 66.9S 84.9W 113/27NM DMSP F-13
A-16 30OCT96 72.9S 89.6W 125/21NM DMSP F-13
A-15 19OCT96 57.9S 30.2W 218/13NM OCEANSAT-OB
SEA ICE FREE
ICE EDGE
60°S
70°S
75°S
80°S
85°S
90°W
90°E
100°W
100°E
Projection - Polar Stereographic


ICE EDGE
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ANTARCTIC ICE ANALYSIS I70CT96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$c_1c_2c_3$ = Concentration of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
$s_1s_2s_3$ = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
–C = Concentration of ice within area(s) of stage and partials.
S_x = Thicker than S_1 but less than one tenth concentration.
S_y = Stage of development having the greatest remaining concentration.
f = Form of Sea Ice
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
4 = First year medium (70 - 120 cm)
5 = First year thick (120 - 200 cm)
8 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
B = Landfast Ice
A = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Extrapolated Boundary
Observed icebergs with major axis greater than 0 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.
No. Date Horizon Size Data Source
B 44 180C196 65.18S 112.2E 2.1 NMI ENVSP P-13
B 48 180C196 67.16S 143.3E 51 NMI ENVSP F-13
B 49 180C196 67.16S 143.3E 51 NMI ENVSP F-13
B-50A 170CT96 64.46S 139.5W 1.1 KM/HR ENVSP F-13
B-50C 110CT96 68.45S 138.1W 11 NMI SAT/SSM/I ICE
I 8 160CT96 67.1S 145W 12 NM/HR ENVSP F-13
I 9 160CT96 63.9S 140.7E 15 NM/HR ENVSP F-13
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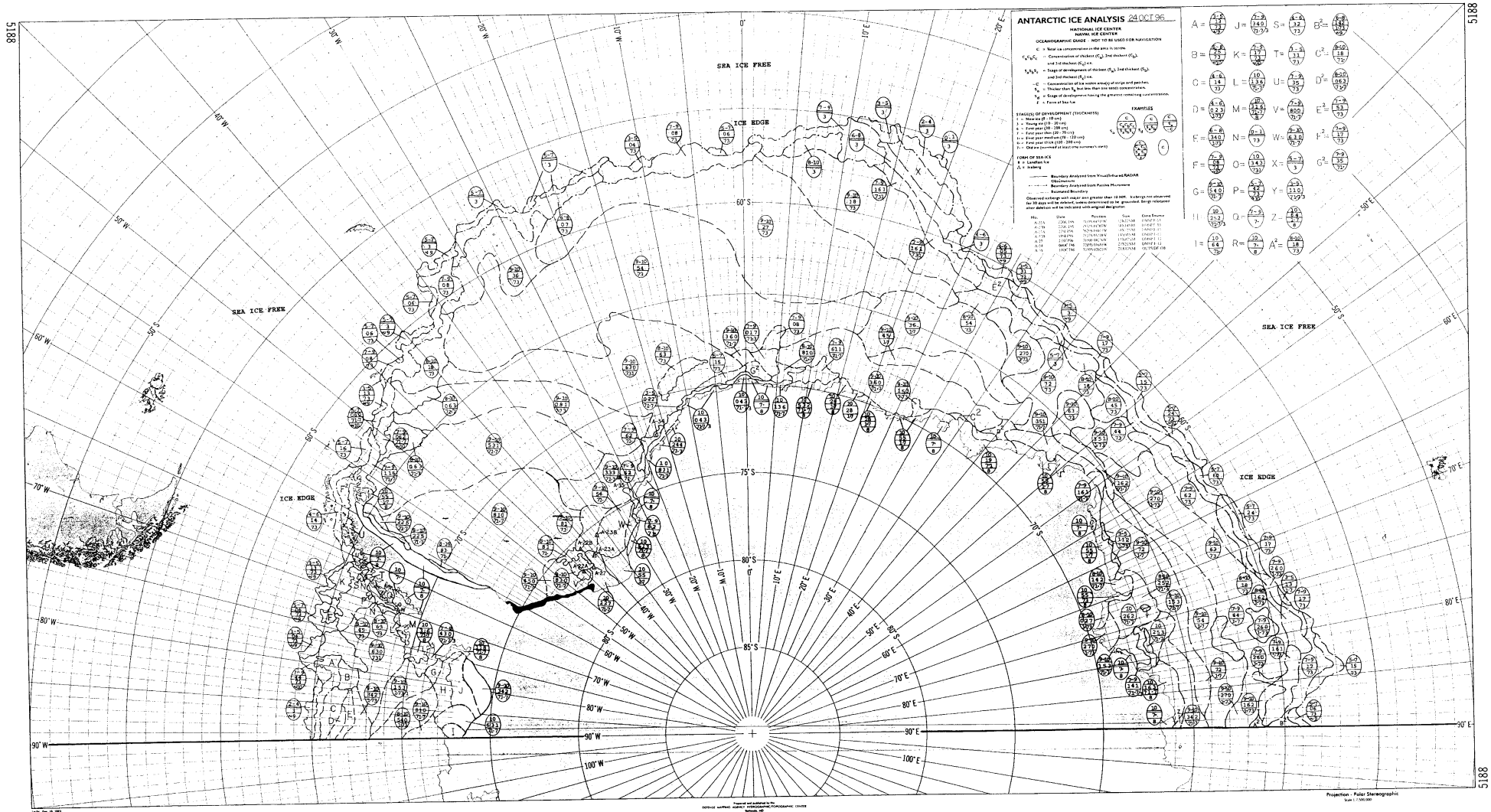
ANTARCTIC ICE ANALYSIS 24 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC CHIEF - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
ICE EDGE
0°
10° W
10° E
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30° W
30° E
40° W
40° E
50° W
50° E
60° W
60° E
70° W
70° E
80° W
80° E
90° W
90° E
100° W
100° E
50° S
60° S
70° S
75° S
80° S
85° S
Projection - Polar Stereographic

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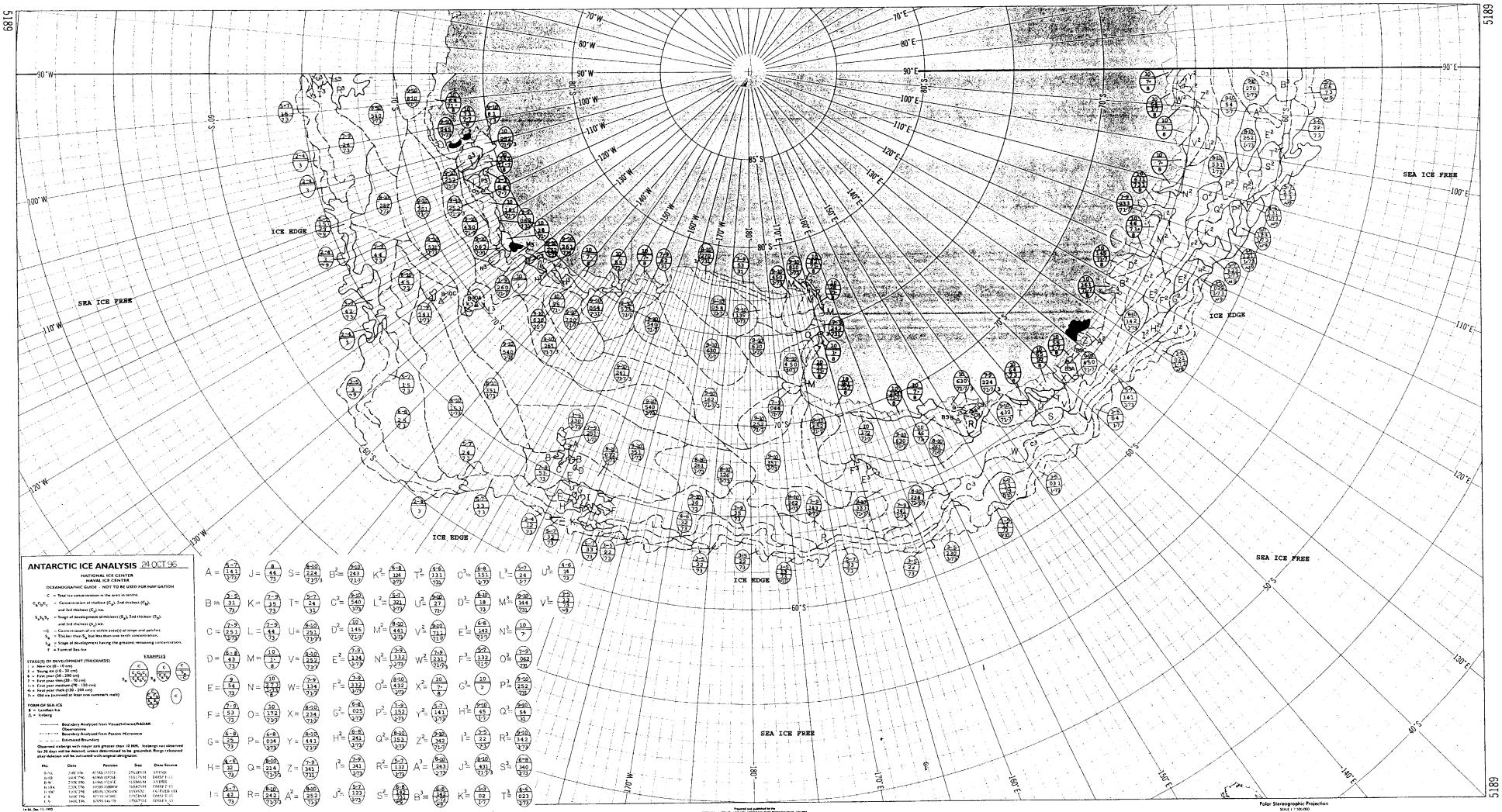

ANTARCTIC ICE ANALYSIS 24 OCT 96

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OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

C_a S_a F_a = Concentration of thickest (F_a), 2nd thickest (S_a) and 3rd thickest (C_a) ice.

S_b S_c S_d = Stage of development of thickest (S_b), 2nd thickest (S_c) and 3rd thickest (S_d) ice.

-C = Concentration of ice within area(s) of ridges and patches.

S_g = Thicker than S_a but less than one tenth concentration.

S_g = Stage of development having the greatest remaining concentration.

Y = A Form of Sea Ice

EXAMPLES

STAGES OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = Grey ice (30 - 70 cm)
4 = First year thin (70 - 120 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)

FORM OF SEA ICE
B = Bergy bit
I = Iceberg

Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary

Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after dismissal will be evaluated with original designation.

No.	Date	Position	Size	Data Source
B-54	21OCT96	65°58S 177°27E	27X18NM	AVHRR
B-53	16OCT96	63°06S 110°35E	51X17NM	DMSP F-13
B-56	21OCT96	63°06S 173°43E	11X6NM	AVHRR
B-58A	22OCT96	69°08S 108°06W	34X47NM	DMSP F-13
B-59C	11OCT96	68°07S 126°49W	11X4NM	OLYMPUS-OH
I-5	16OCT96	67°17S 147°48E	17X7NM	DMSP F-13
I-9	16OCT96	63°05S 141°17E	17X6?NM	DMSP F-13

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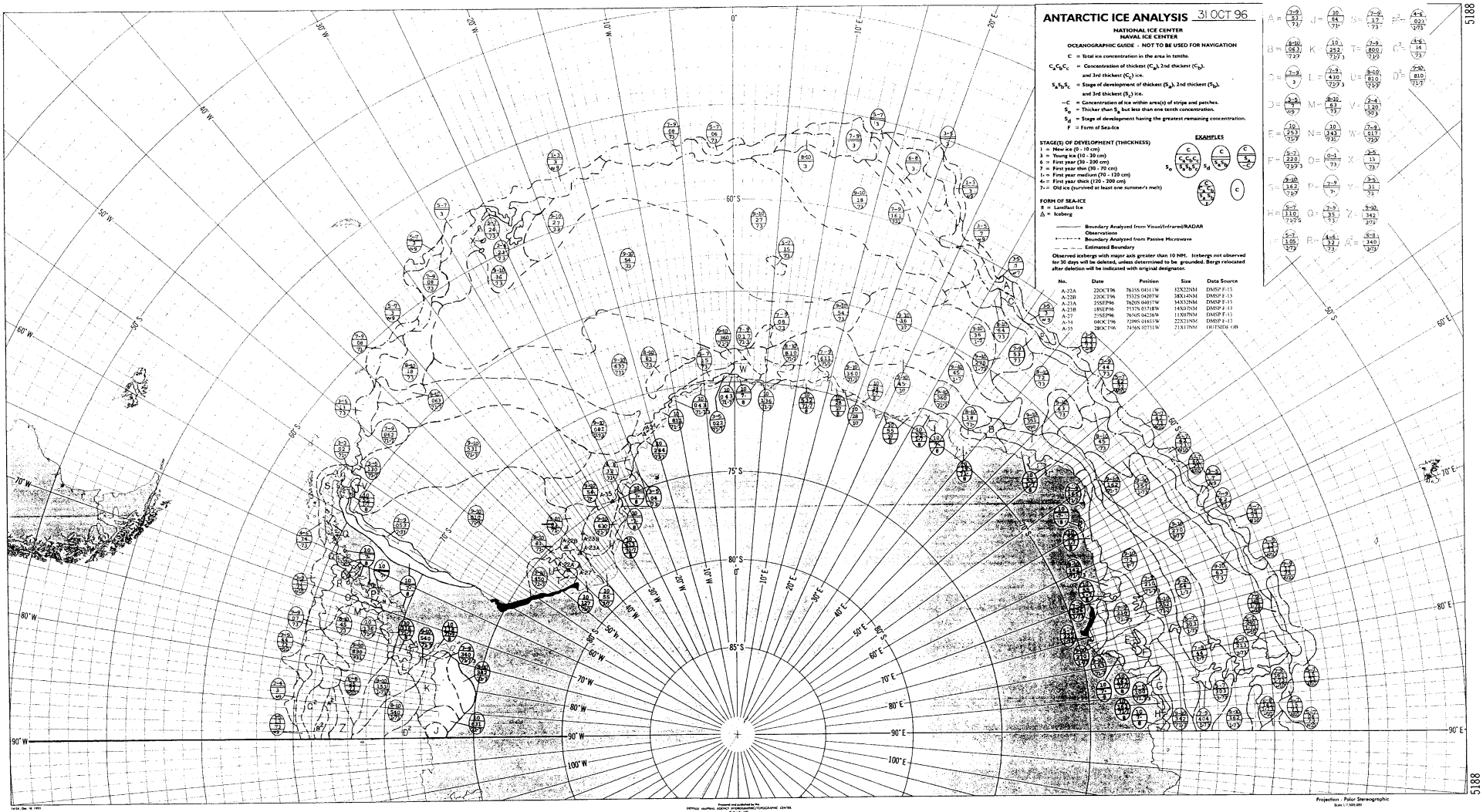
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ANTARCTIC ICE ANALYSIS 31 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_tC_bC_c$ = Concentration of thickest (C_t), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_tS_bS_c$ = Stage of development of thickest (S_t), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
–C = Concentration of ice within area(s) of stripe and patches.
S_o = Thicker than S_b but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
3 = Young ice (10 - 30 cm)
4 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1- = First year medium (70 - 120 cm)
4- = First year thick (120 - 200 cm)
7- = Old ice (survived at least one summer's melt)
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
△ = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.
No. Date Position Size Data Source
A-22A 22OCT96 76.15S 045.11W 32X22NM DMSP F-13
A-22B 22OCT96 75.32S 042.07W 38X14NM DMSP F-13
A-23A 19SEP96 76.20S 040.17W 34X13NM DMSP F-13
A-23B 19SEP96 75.37S 037.18W 14X07NM DMSP F-13
A-27 21SEP96 76.56S 042.56W 11X07NM DMSP F-13
A-34 08OCT96 72.09S 016.53W 22X21NM DMSP F-13
A-35 28OCT96 74.56S 027.31W 21X17NM OUTSIDE OB
Projection - Polar Stereographic
Scale 1:7,500,000
Issued: Dec. 18, 1995
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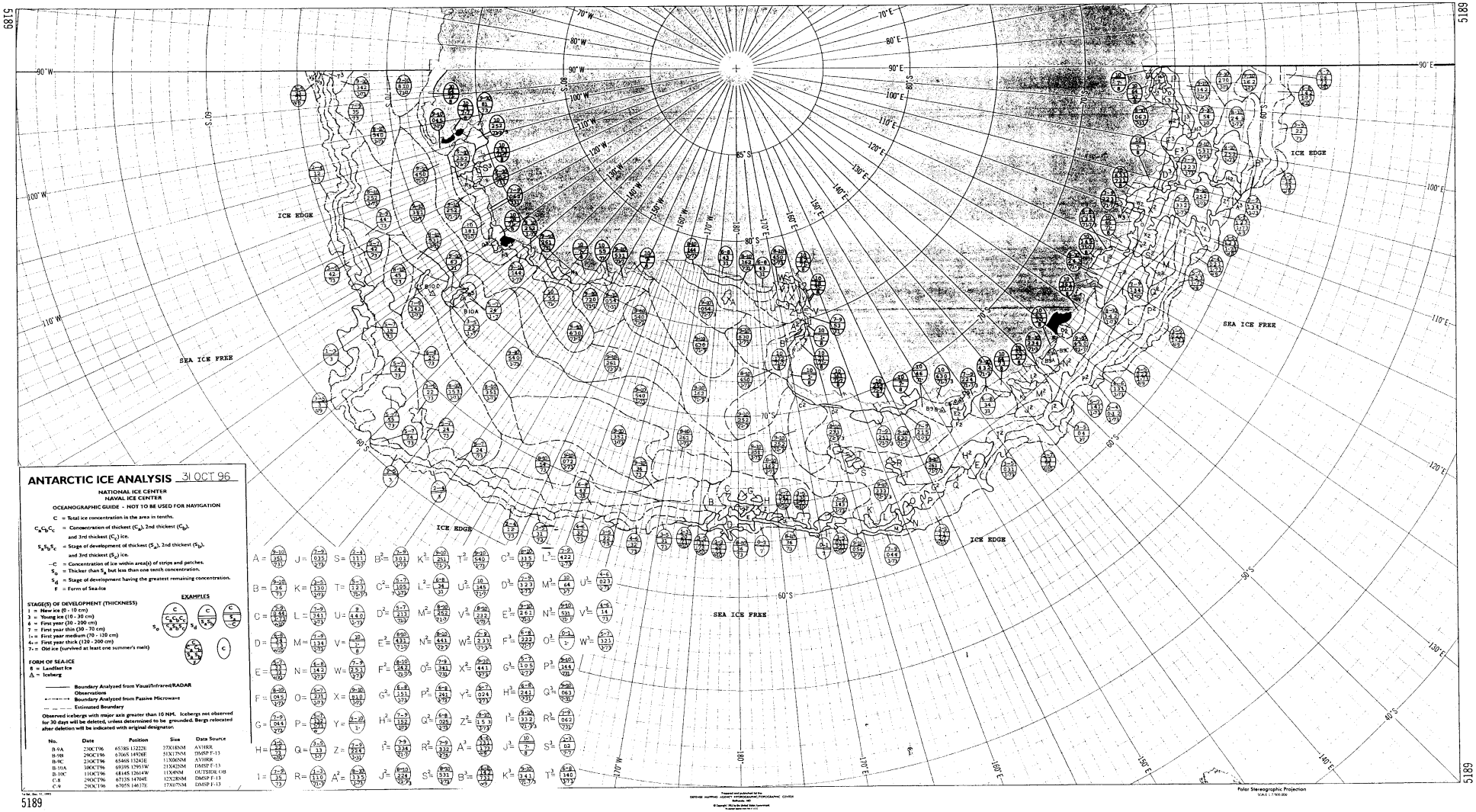
ICE EDGE
SEA ICE FREE
BIDA
ANTARCTIC ICE ANALYSIS 31 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
–C = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = Grey ice (30 - 70 cm)
4 = Grey-white ice (70 - 120 cm)
5 = First year thin (30 - 70 cm)
6 = First year medium (70 - 120 cm)
7 = First year thick (120 - 200 cm)
8 = First year heavy (> 200 cm)
9 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
A = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.
No. Date Position Size Data Source
B-9A 230CT96 6538S 12222E 27X18NM AVHRR
B-9B 290CT96 6706S 14926E 51X17NM DMSP F-13
B-9C 230CT96 6546S 13245E 11X06NM AVHRR
B-10A 30OCT96 6938S 12951W 21X42NM DMSP F-13
B-10C 110CT96 6814S 12614W 11X9NM OUTSIDE OB
C-8 290CT96 6713S 14704E 12X2RNM DMSP F-13
C-9 290CT96 6705S 14617E 17X07NM DMSP F-13
Polar Stereographic Projection
SCALE 1:7 900,000
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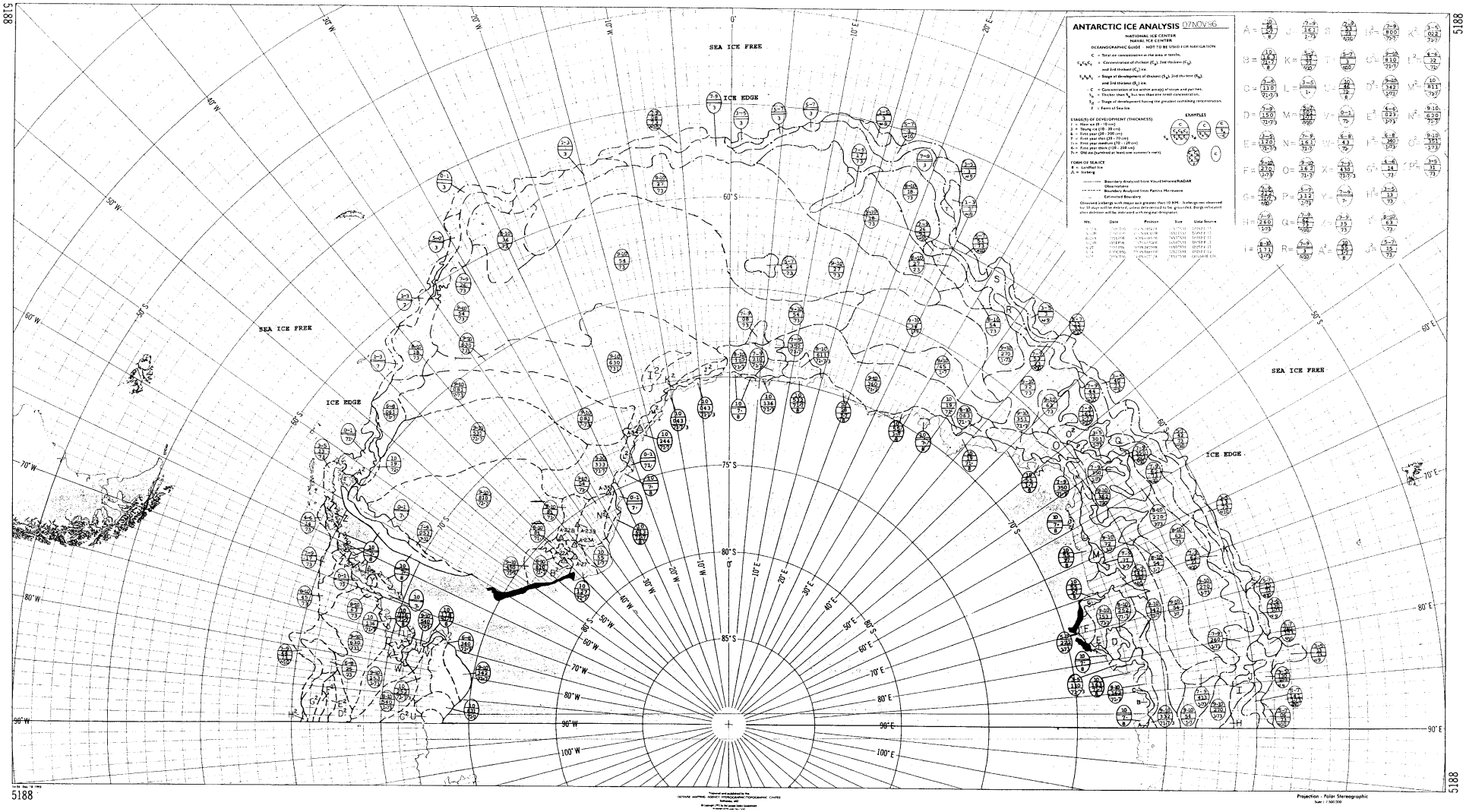
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OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
EXAMPLES
STAGES OF DEVELOPMENT (THICKNESS)
FORM OF SEA ICE
SEA ICE FREE
ICE EDGE
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
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65° S
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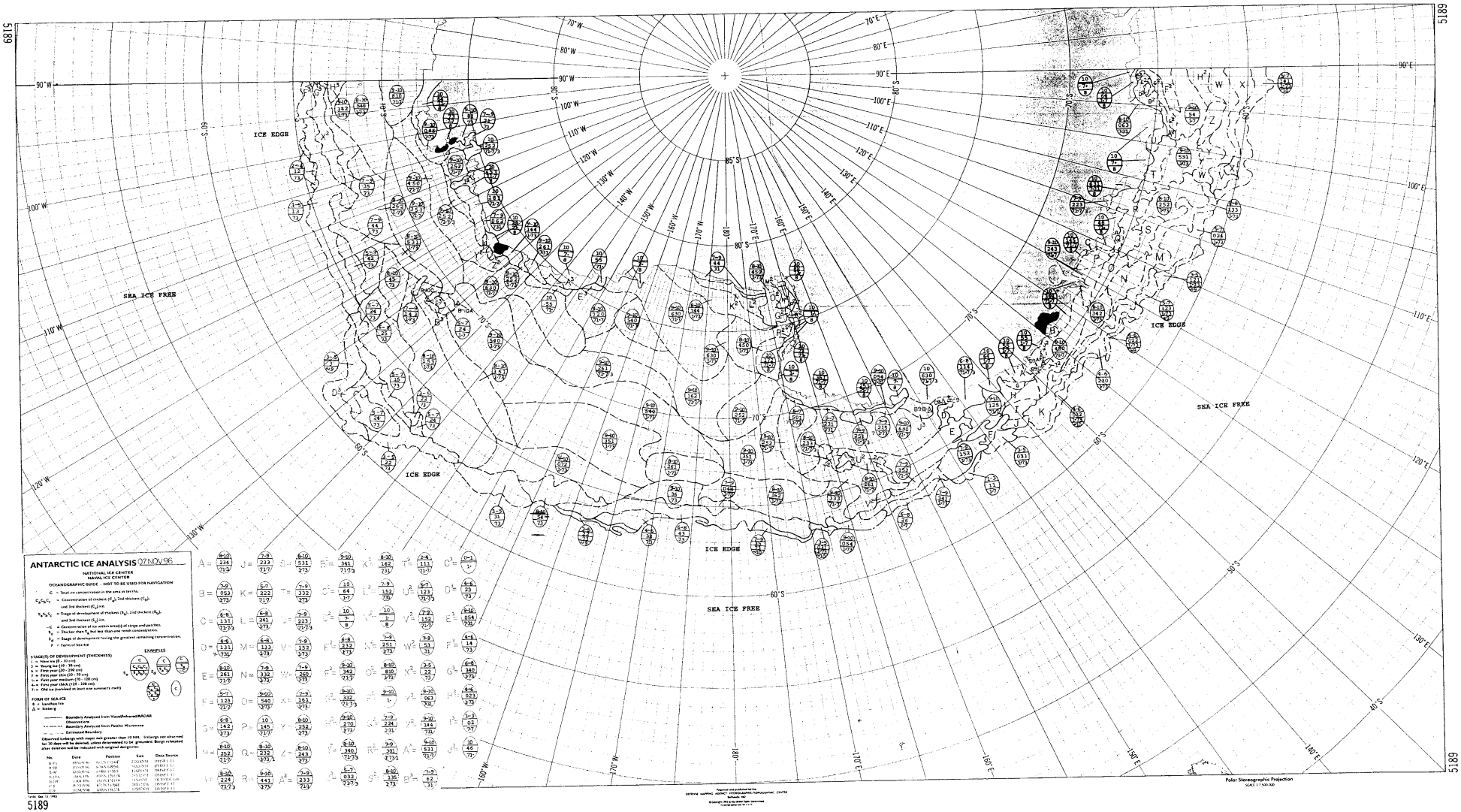
75° S
80° S
85° S
Projection - Polar Stereographic



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OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area as tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$s_as_bs_c$ = Stage of development of thickest (s_a), 2nd thickest (s_b), and 3rd thickest (s_c) ice.

-C = Concentration of ice within area(s) of strips and patches.

s_x = Thicker than s_a but less than one tenth concentration.

s_d = Stage of development having the greatest remaining concentration.

F = Form of ice/size

EXAMPLES

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 70 cm)
4 = First year medium (70 - 120 cm)
5 = First year thick (120 - 200 cm)
6 = Old ice (survived at least one summer's melt)

FORM OF SEA ICE
A = Landfast ice
B = Iceberg

Boundary Analyzed from Visual/Infrared/RADAR
Climatic
Boundary Analyzed from Passive Microwave
Estimated Boundary

Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
B-53	04NOV96	66°S/179°E	23X20NM	DMSP F-13
B-50	01NOV96	67°S/178°W	16X13NM	DMSP F-13
B-36	26OCT96	68°S/177°E	81X50NM	DMSP F-13
B-35A	26OCT96	69°S/179°E	37X31NM	DMSP F-13
B-49	31OCT96	67°S/176°E	13X12NM	DMSP F-13
B-54	04NOV96	66°S/178°E	30X23NM	DMSP F-13

Polar Stereographic Projection
SCALE 1:7,500,000

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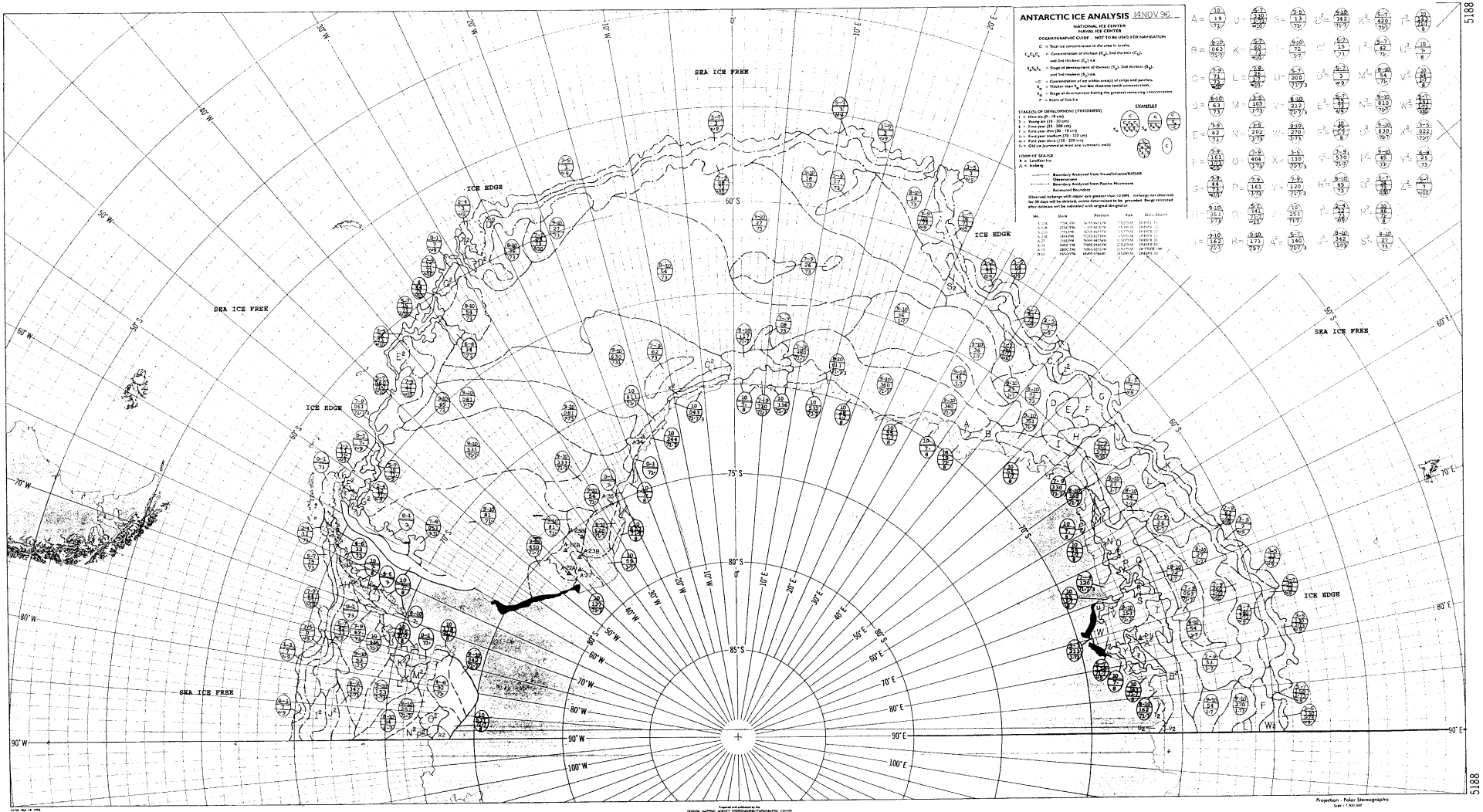
EXTERNAL AFFAIRS DEPUTY HYDROGRAPHIC/TOPOGRAPHIC CENTER


ANTARCTIC ICE ANALYSIS 14NOV 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
0°
10° W
20° W
30° W
40° W
50° W
60° W
70° W
80° W
90° W
100° W
10° E
20° E
30° E
40° E
50° E
60° E
70° E
80° E
90° E
100° E
50° S
60° S
70° S
75° S
80° S
85° S

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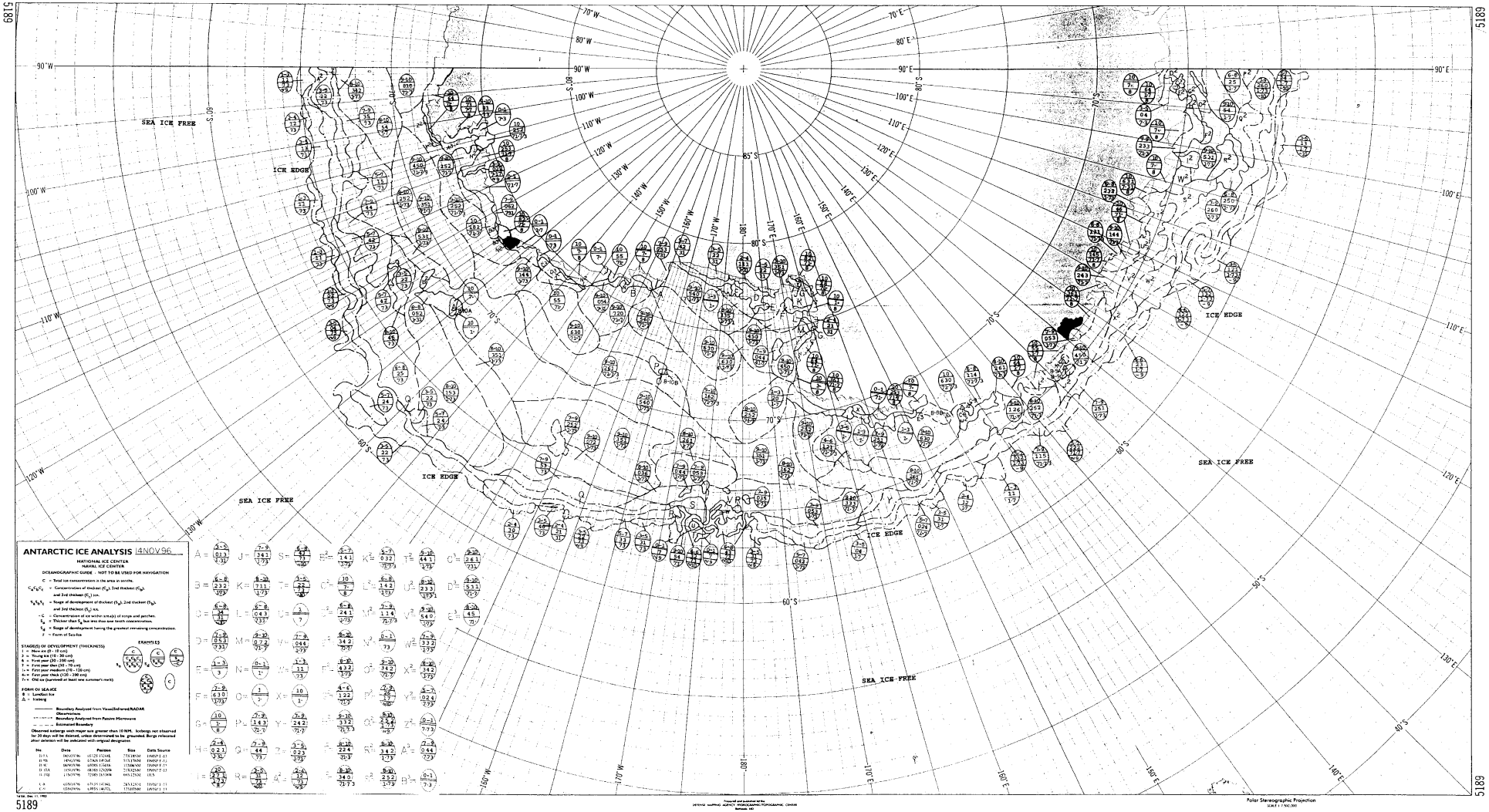
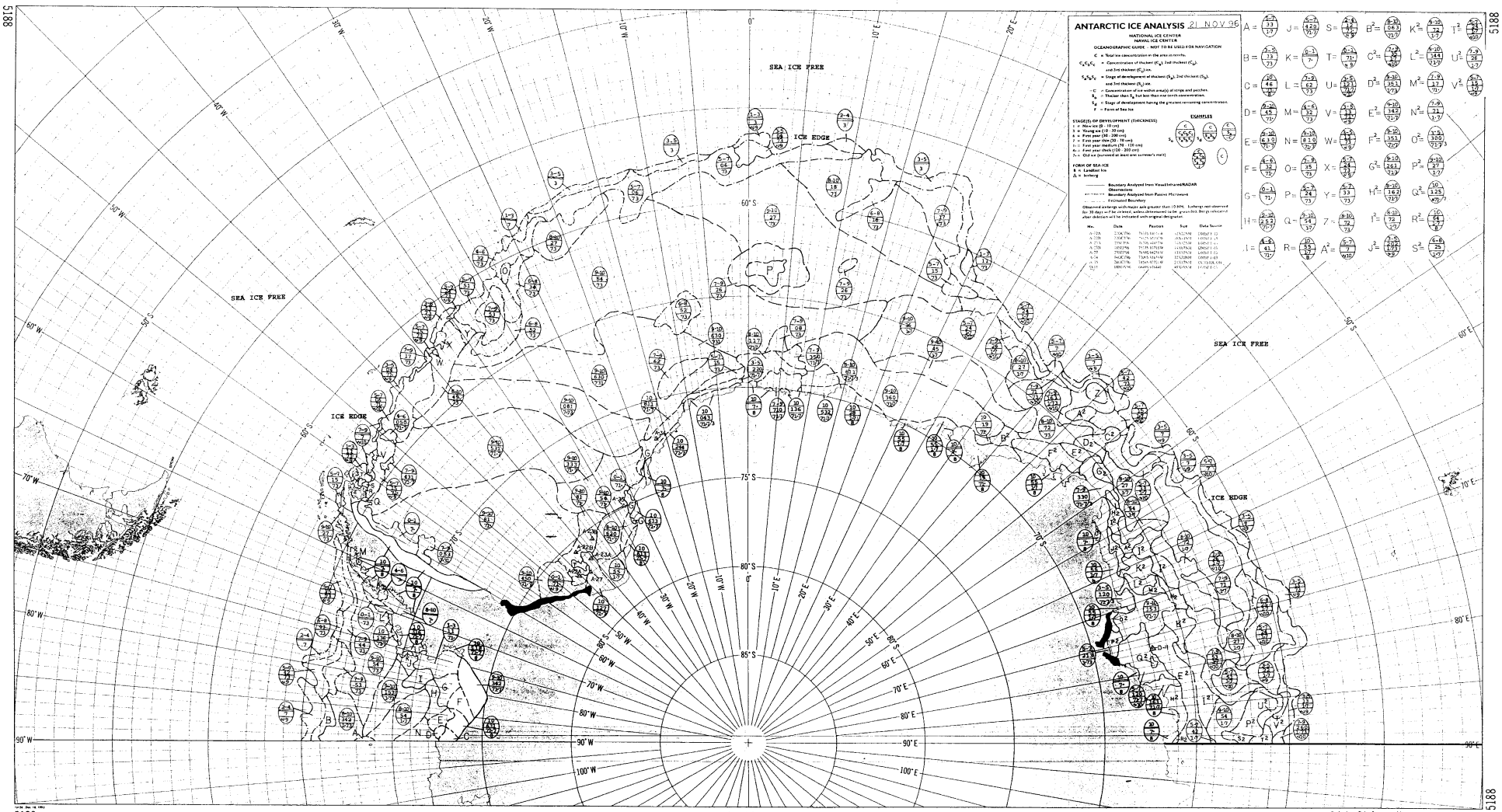
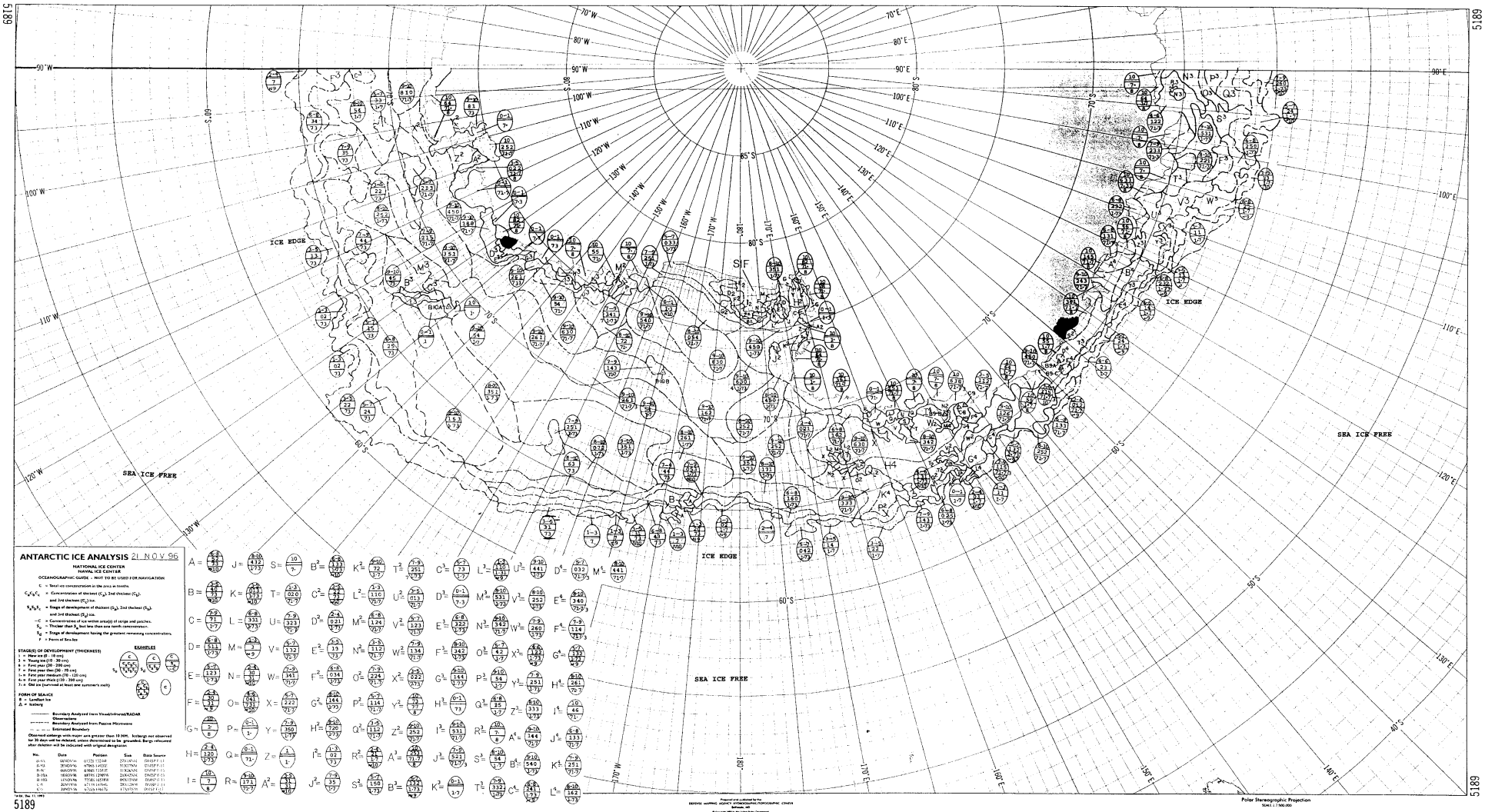

SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ANTARCTIC ICE ANALYSIS 14NOV96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_1C_2C_3$ = Concentration of thickest (C_1), 2nd thickest (C_2), and 3rd thickest (C_3) ice.
$S_1S_2S_3$ = Stage of development of thickest (S_1), 2nd thickest (S_2), and 3rd thickest (S_3) ice.
• C = Concentration of ice within area(s) of rings and patches.
S_d = Thicker than S_a but less than one tenth concentration.
S_a = Stage of development having the greatest remaining concentration.
f = Form of Sea Ice
EXAMPLES
STAGES OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 15 cm)
2 = Young ice (15 - 30 cm)
3 = Grey ice (30 - 70 cm)
4 = First year thin (30 - 70 cm)
1• = First year medium (70 - 120 cm)
4• = First year thick (120 - 200 cm)
7• = Old ice (survived at least one summer's melt)
FORM OF SEA ICE
B = Land-fast Ice
Δ = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after detection will be indicated with original designator.
No Date Position Size Data Source
Polar Stereographic Projection
SCALE 1:7 500 000
Produced and published under the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Washington, DC
5189


ANTARCTIC ICE ANALYSIS 21 NOV 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
ICE EDGE
60° S
70° S
75° S
80° S
85° S
90° W
90° E
0°
5188



ANTARCTIC ICE ANALYSIS 21 NOV 96

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NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

–C = Concentration of ice within area(s) of ice/ice and patches.

S_x = Thicker than S_a but less than one-tenth concentration.

S_d = Stage of development having the greatest remaining concentration.

F = Form of Sea Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 15 cm)
2 = Young ice (10 - 30 cm)
3 = Grey ice (30 - 70 cm)
4 = Grey-white (70 - 120 cm)
5 = First year thin (120 - 150 cm)
6 = First year medium (150 - 180 cm)
7 = First year thick (180 - 200 cm)
8 = Old ice (survived at least one summer's melt)
9 = Ice of various stages of development

EXAMPLES

FORM OF SEA ICE

B = Landfast Ice
A = Iceberg

Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary

Observed icebergs with major axes greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designation.

No.	Date	Position	Size	Data Source
A-53	18NOV96	69°12S 172°24E	23X18X12	DMSP F-13
K-52	20NOV96	67°06S 149°02E	51X31NN	DMSP F-13
B-51	16NOV96	63°48S 152°15E	11X6XNN	DMSP F-13
B-184	18NOV96	68°39S 129°49E	20X15NN	DMSP F-13
K-50	18NOV96	67°18S 149°54E	20X12NN	DMSP F-13
C-51	20NOV96	67°19S 145°46E	28X12NN	DMSP F-13
C-52	20NOV96	67°02S 146°47E	41X19NN	DMSP F-13

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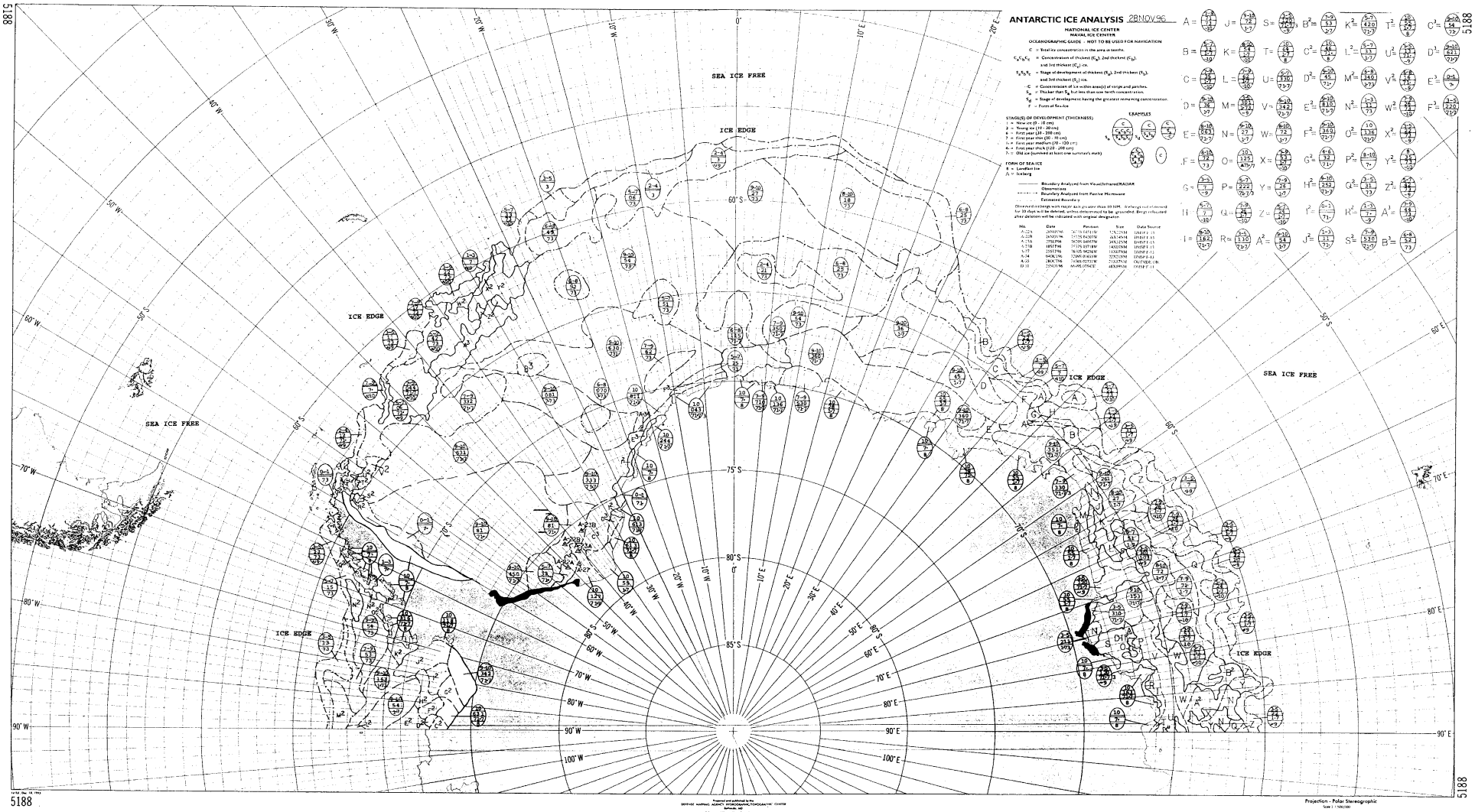
Polar Stereographic Projection
SCALE 1 / 7,500,000



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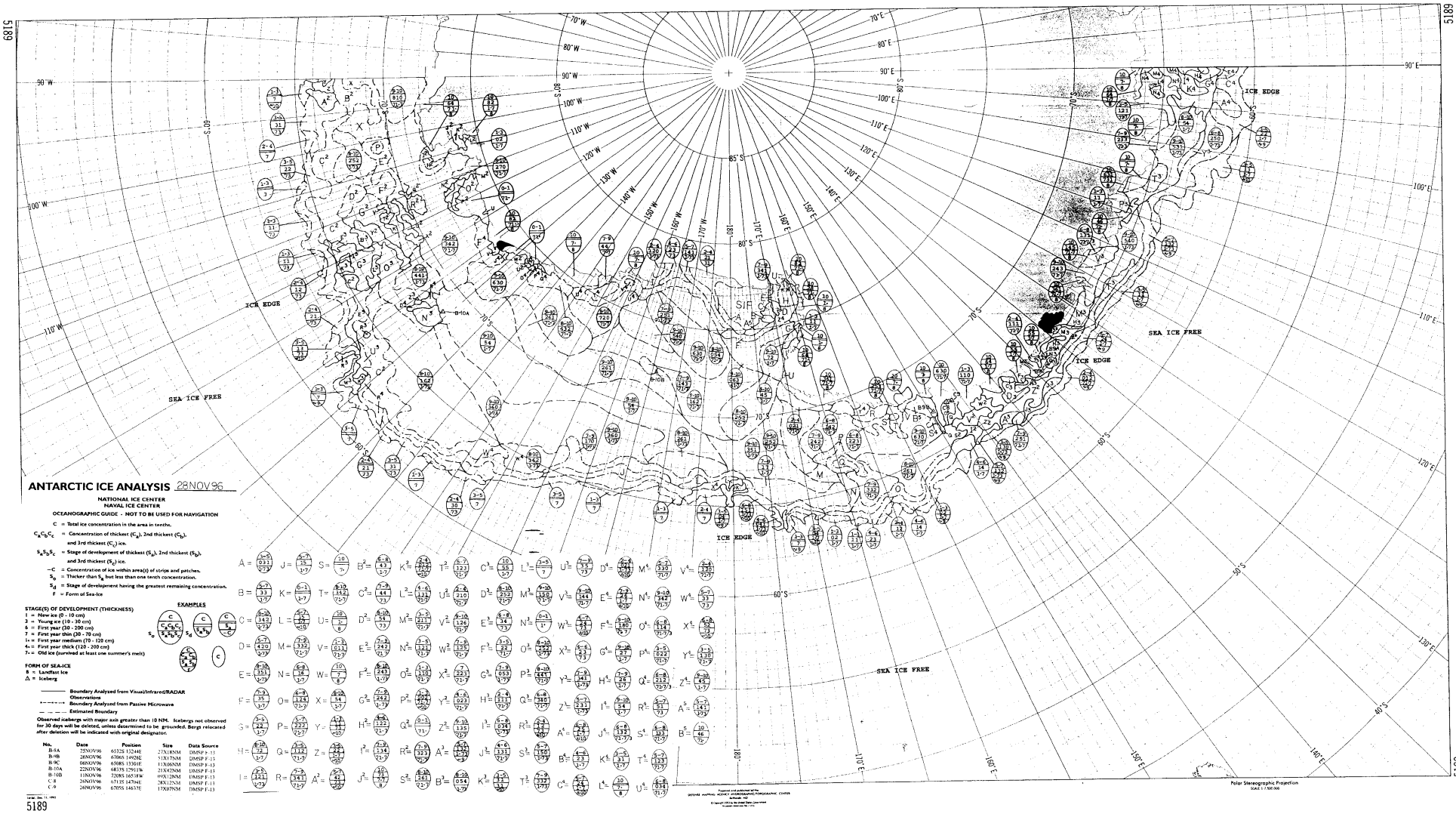

ANTARCTIC ICE ANALYSIS 28NOV96

NATIONAL ICE CENTER
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OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

–C = Concentration of ice within area(s) of strips and patches.

S_b = Thicker than S_a but less than one tenth concentration.

S_d = Stage of development having the greatest remaining concentration.

F = Form of Sea-Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
3 = Young ice (10 - 30 cm)
4 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1- = First year medium (70 - 120 cm)
4- = First year thick (120 - 200 cm)
7- = Old ice (survived at least one summer's melt)

FORM OF SEA-ICE
B = Landfast Ice
△ = Iceberg

EXAMPLES

——— Boundary Analyzed from Visual/Infrared/RADAR Observations

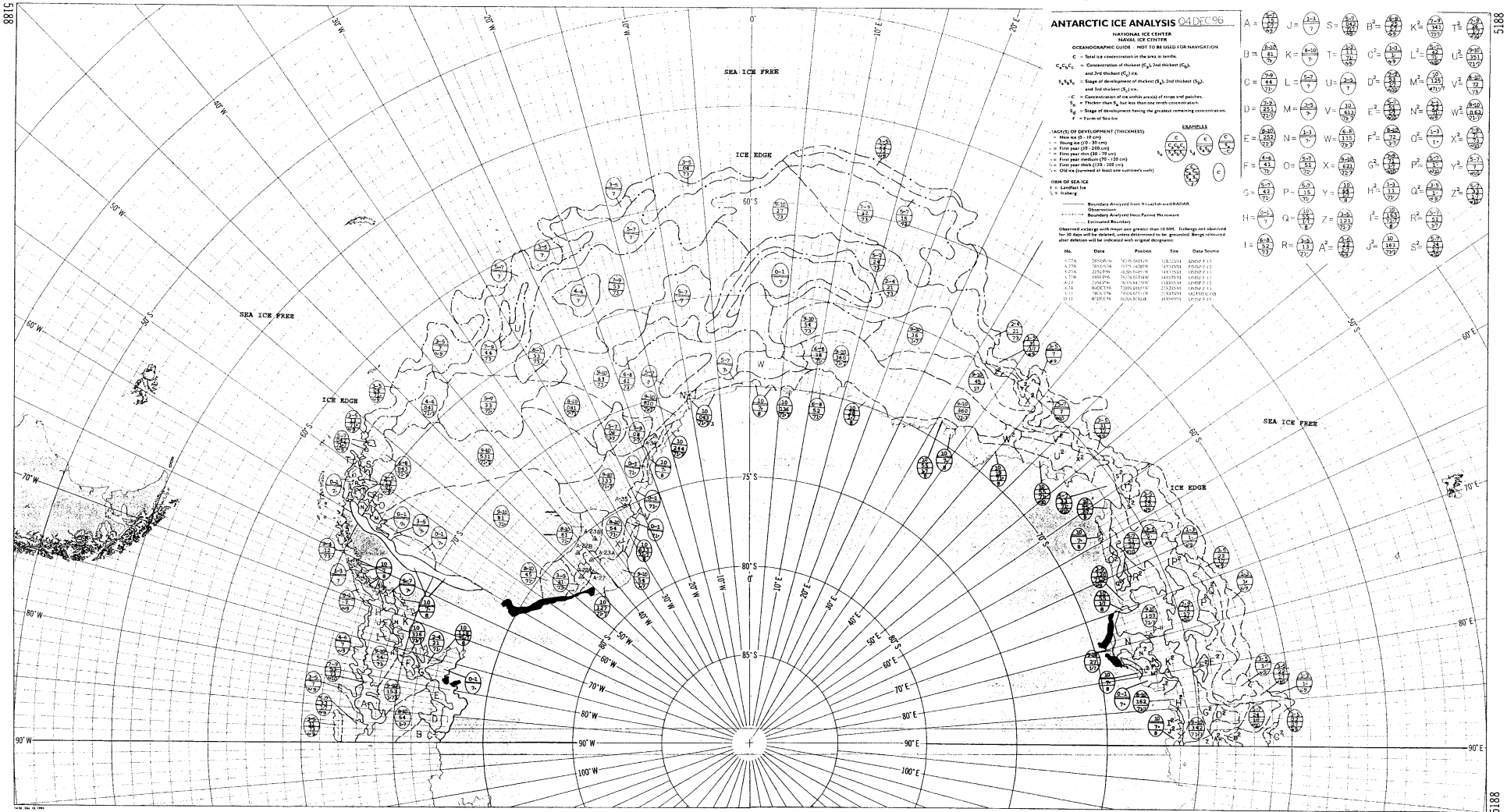
+–+–+–+–+ Boundary Analyzed from Passive Microwave

– – – – Estimated Boundary

Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
B-9A	25NOV96	6532S 13244E	27X11NM	DMSP F-13
B-9B	26NOV96	6706S 14926E	51X17NM	DMSP F-13
B-9C	06NOV96	6508S 13301E	11X06NM	DMSP F-13
B-10A	22NOV96	6833S 12911W	21X02NM	DMSP F-13
B-10B	11NOV96	7208S 16518W	09X12NM	DMSP F-13
C-8	26NOV96	6713S 14704E	28X12NM	DMSP F-13
C-9	26NOV96	6705S 14637E	17X07NM	DMSP F-13

Polar Stereographic Projection
SCALE 1 / 9,500,000



ANTARCTIC ICE ANALYSIS 04 DEC 96

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NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$s_as_bs_c$ = Stage of development of thickest (s_a), 2nd thickest (s_b), and 3rd thickest (s_c) ice.

–C = Concentration of ice within area(s) of stripe and patches.

S_s = Thicker than S_d but less than one tenth concentration.

S_d = Stage of development having the greatest remaining concentration.

f = Form of Sea Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
4 = First year thin (30 - 70 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)

FORM OF SEA ICE

1 = Landfast Ice
2 = Iceberg

EXAMPLES

Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary

Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designators.

No.	Date	Position	Size	Data Source
A-22A	26NOV96	76.9S 045.1W	32X22NM	RMSP F-13
A-23B	30NOV96	73.7S 042.8W	34X15NM	RMSP F-13
A-23A	28NOV96	74.2S 045.1W	34X15NM	DMSP F-13
A-27B	1DEC96	73.7S 057.6W	14X05NM	DMSP F-13
A-27	28NOV96	76.1S 047.9W	15X05NM	DMSP F-13
A-24	04OCT96	72.0S 050.5W	27X21NM	DMSP F-13
A-31	3DEC96	74.6S 077.1W	27X07NM	DGTHTEC OB
D-11	02DEC96	66.0S 162.4E	45X06NM	DMSP F-15

A = (2-3 / 12 / 73)
B = (8-10 / 83 / 93)
C = (7-8 / 44 / 71)
D = (7-9 / 23 / 72/73)
E = (8-10 / 252 / 73)
F = (4-6 / 41 / 73)
G = (5-7 / 42 / 73)
H = (0-1 / 7)
I = (6-8 / 52 / 73)
J = (1-3 / 7)
K = (8-10 / 7)
L = (5-7 / 7)
M = (3-9 / 7+)
N = (1-3 / 7)
O = (5-7 / 51 / 72)
P = (5-7 / 15 / 72)
Q = (10 / 82 / 8)
R = (2-3 / 13 / 73)
S = (5-7 / 10/7 / 93)
T = (1-3 / 7 / 76)
U = (2-3 / 7)
V = (10 / 63 / 73/9)
W = (8-10 / 115 / 73/7)
X = (9-10 / 621 / 73/9)
Y = (10 / 64 / 8)
Z = (1-3 / 123 / 73)
A^2 = (5-8 / 42 / 93)
B^2 = (6-8 / 42 / 93)
C^2 = (1-3 / 1 / 93)
D^2 = (2-8 / 33 / 93)
E^2 = (5-7 / 33 / 93)
F^2 = (8-10 / 72 / 93)
G^2 = (7-8 / 72 / 93)
H^2 = (1-3 / 11 / 93)
I^2 = (10 / 163 / 73/9)
J^2 = (10 / 163 / 73/9)
K^2 = (7-9 / 341 / 93)
L^2 = (5-7 / 33 / 93)
M^2 = (10 / 135 / 93/7)
N^2 = (2-3 / 12 / 93)
O^2 = (1-3 / 1+ / 93)
P^2 = (5-7 / 5 / 93)
Q^2 = (1-3 / 1 / 93)
R^2 = (5-7 / 51 / 93)
S^2 = (5-7 / 23 / 93)
T^2 = (7-8 / 45 / 93)
U^2 = (8-10 / 351 / 93/9)
V^2 = (8-10 / 72 / 93)
W^2 = (8-10 / 163 / 93/7)
X^2 = (2-3 / 7 / 93)
Y^2 = (5-7 / 7 / 93)
Z^2 = (5-7 / 53 / 93)

Projection - Polar Stereographic
Scale = 1:500,000

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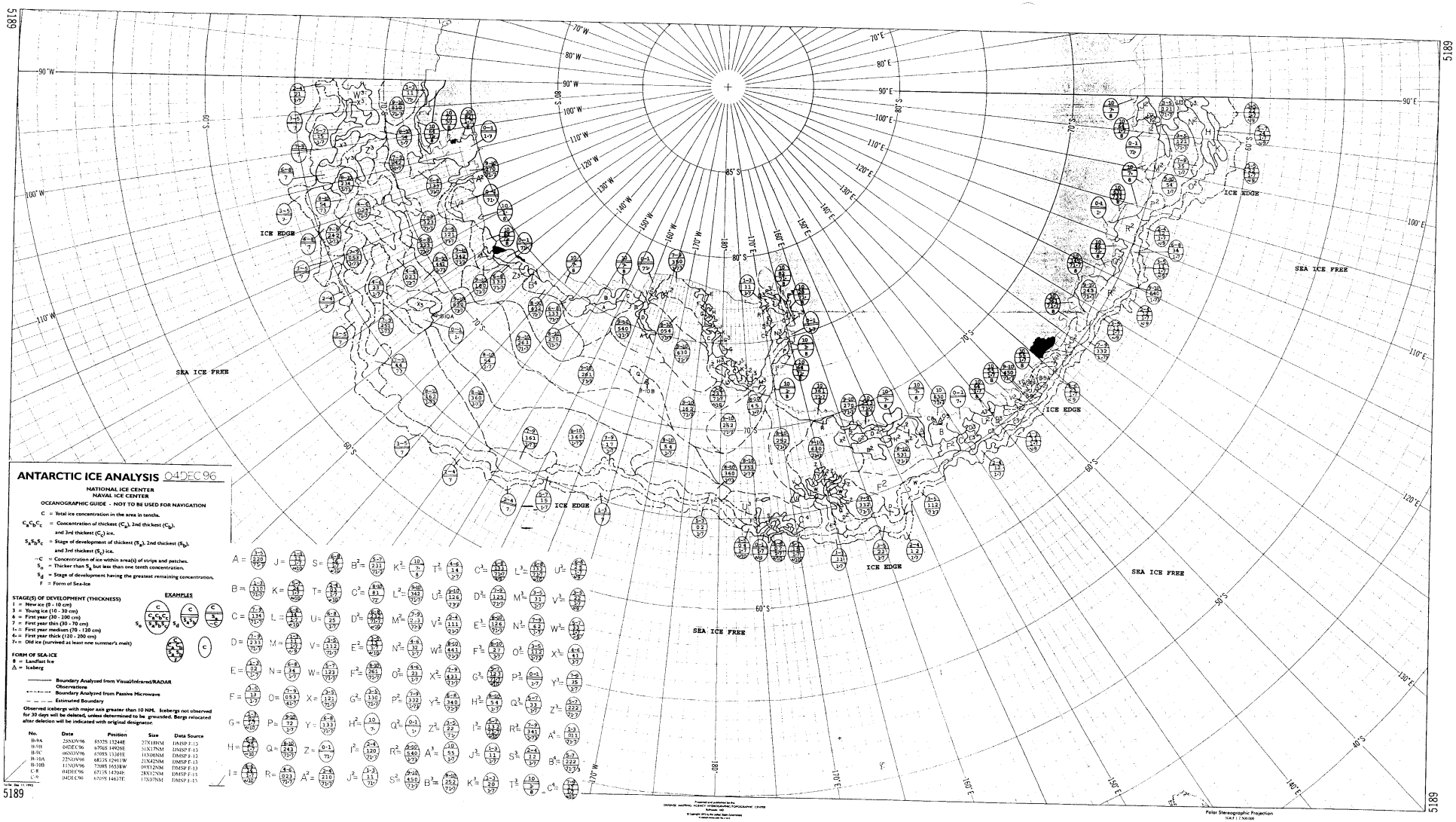
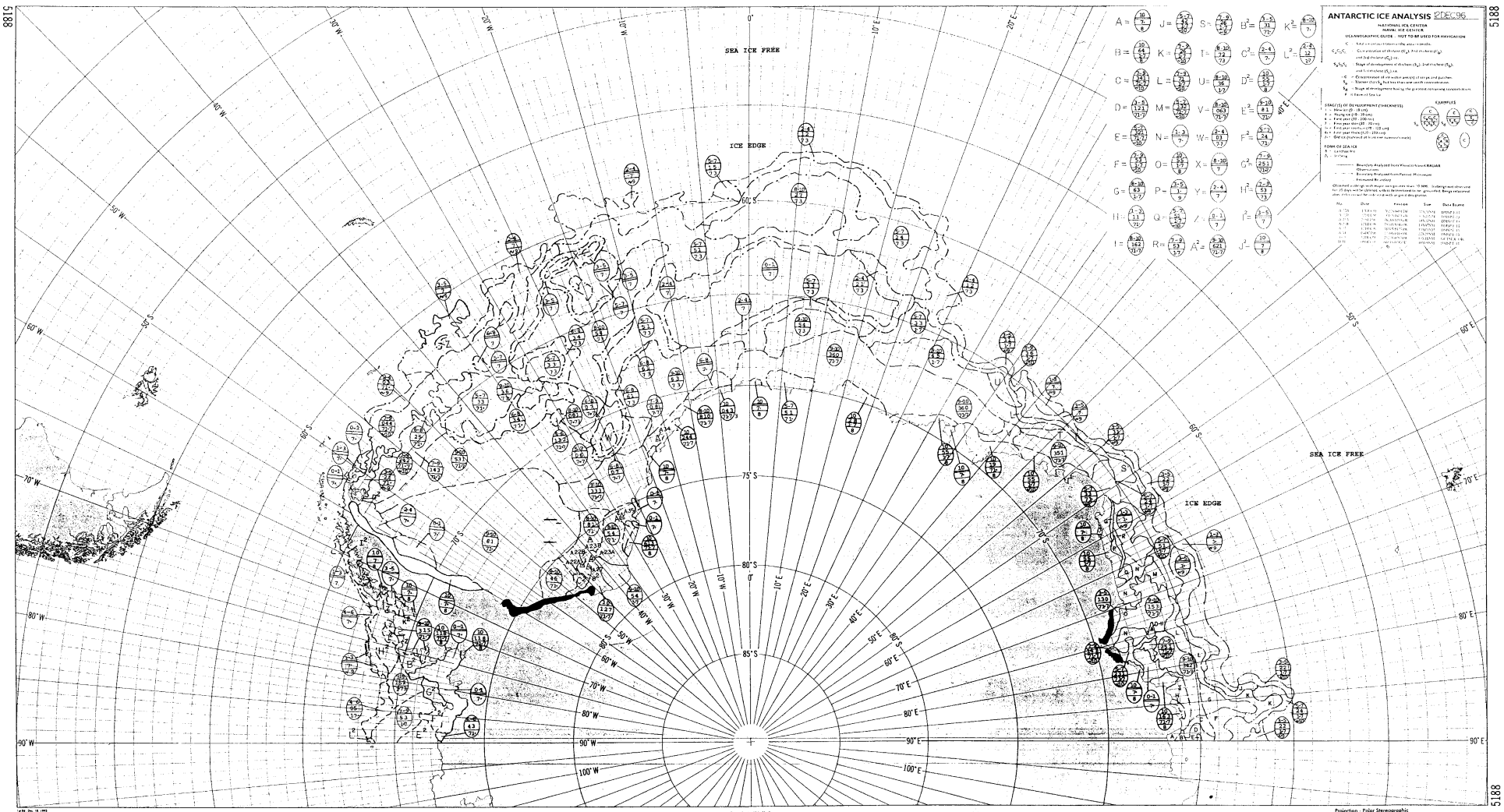
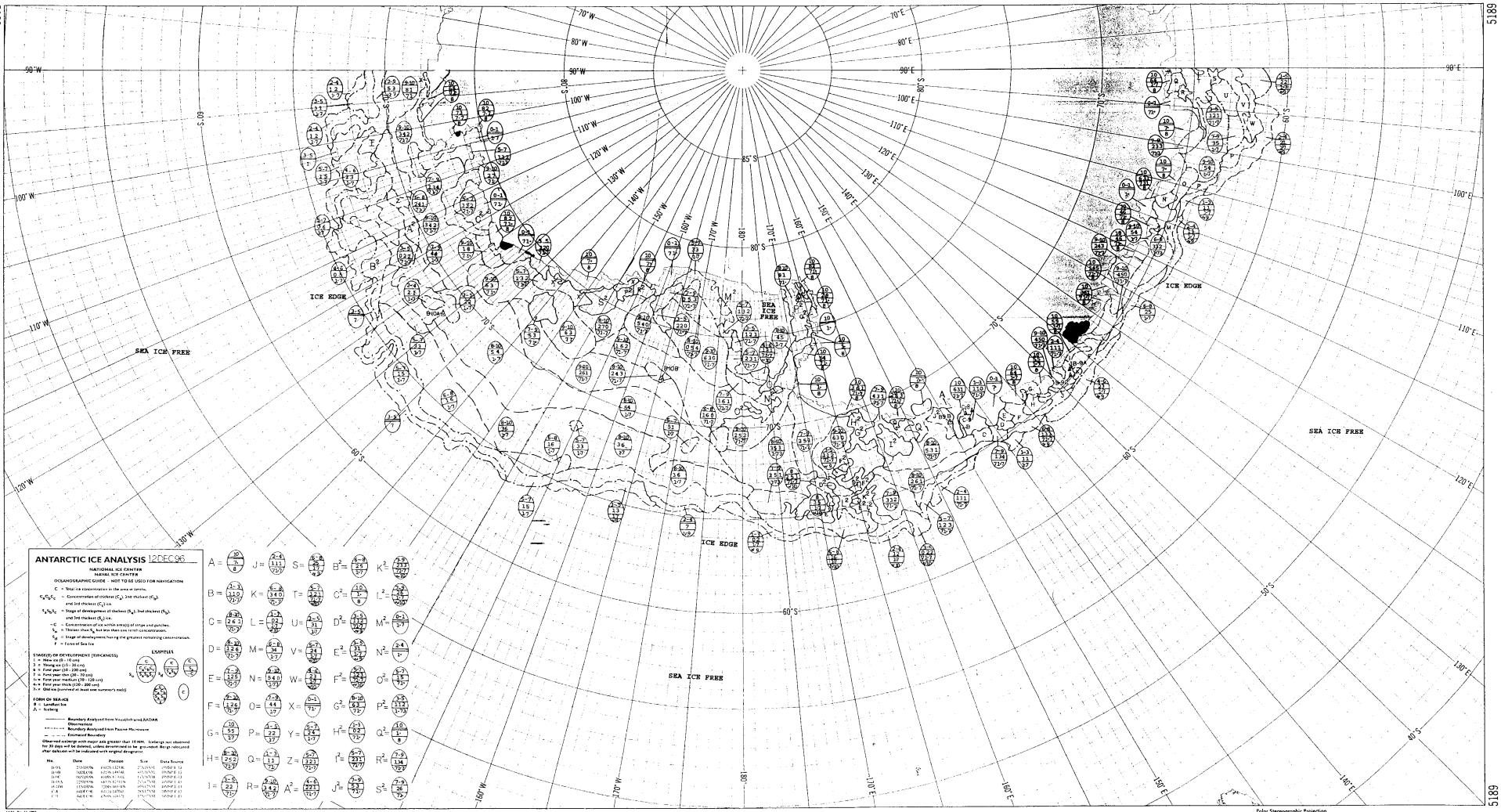

ANTARCTIC ICE ANALYSIS 04DEC96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
–C = Concentration of ice within area(s) of strips and patches.
S_m = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
4 = First year thick (120 - 200 cm)
5 = First year medium (70 - 120 cm)
6 = First year thin (30 - 70 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
$ = Landfast Ice
△ = Iceberg
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.
No. Date Position Size Data Source
B-9A 25NOV96 65325 13244E 27X18NM DMSP F-13
B-9B 04DEC96 67968 14920E 31X17NM DMSP F-13
B-9C 06NOV96 65985 13201E 11X08NM DMSP F-13
B-10A 22NOV96 68325 12901W 21X42NM DMSP F-13
B-10B 11NOV96 73085 16538W 09X12NM DMSP F-13
C-8 04DEC96 67135 14704E 28X12NM DMSP F-13
C-9 04DEC96 67095 14637E 17X07NM DMSP F-13
EXAMPLES
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
5189


ANTARCTIC ICE ANALYSIS DEC96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
Projection - Polar Stereographic
Scale 1:7,500,000
5188
5188
5188



ANTARCTIC ICE ANALYSIS 12DEC96

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NAVAL ICE CENTER

OCEANOGRAPHIC USE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

–C = Concentration of ice within area(s) of strips and patches.

S_x = Thicker than S_b but less than ice in 10th concentration.

S_z = Stage of development having the greatest remaining concentration.

F = Form of Sea Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
4 = First year thin (30 - 70 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)

EXAMPLES

FORM OF SEA ICE

B = Landfast Ice
A = Iceberg

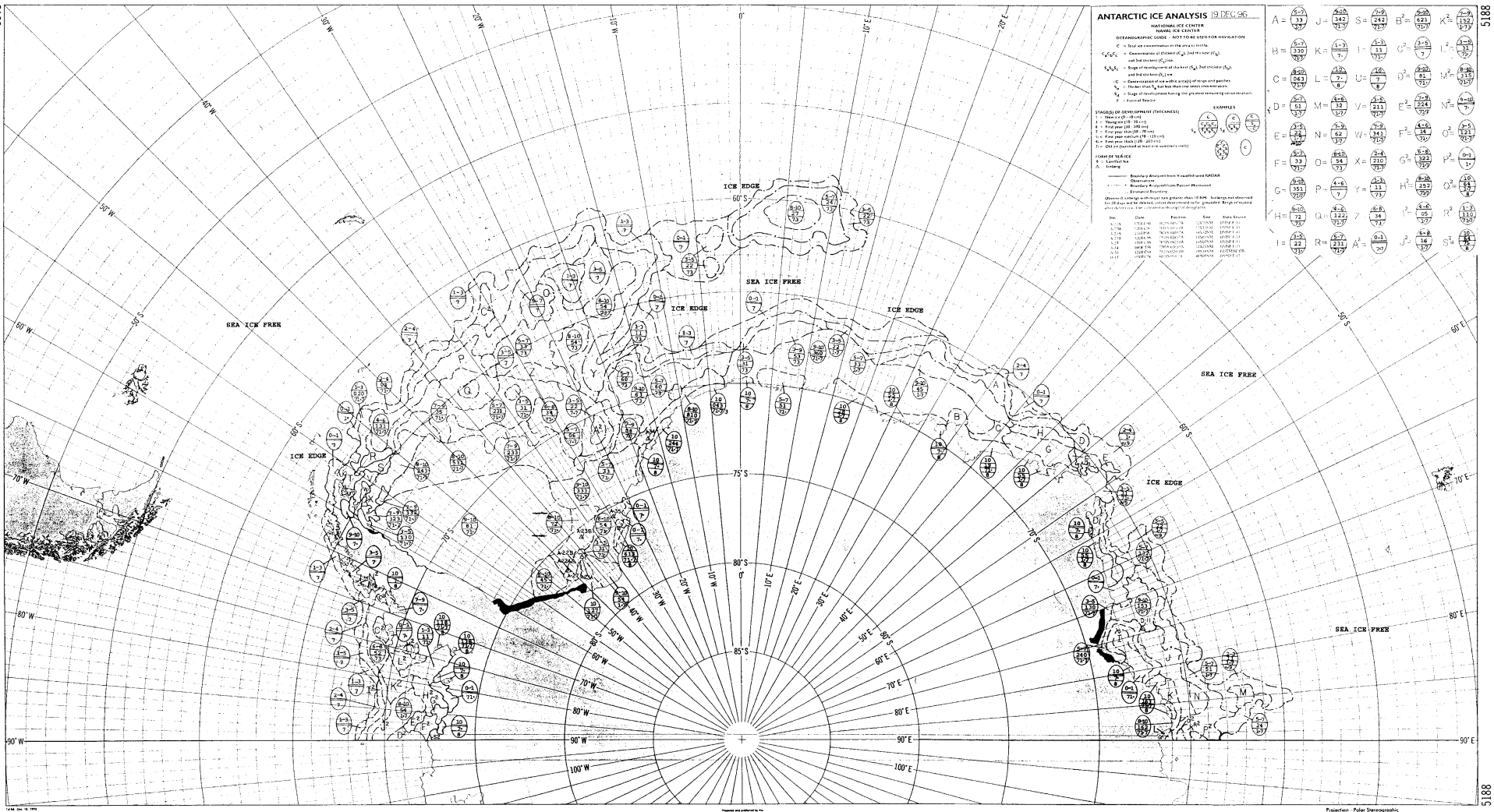
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary

Observed icebergs with major axis greater than 10 NM. Icebergs not observed for 30 days will be deleted, unless determined to be grounded. Bergs relocated after deletion will be indicated with original designator.

No.	Date	Position	Size	Data Source
B-95	25/0000Z	64.2S / 52.9E	2.7 x 1.5 NM	DMSP F-13
B-98	16/2324Z	67.3S / 89.9E	4.5 x 3.5 NM	DMSP F-13
B-97	17/2324Z	66.7S / 83.1E	3.5 x 2.5 NM	DMSP F-13
B-96	22/0259Z	66.7S / 51.6E	11.5 x 7.5 NM	DMSP F-13
B-100	22/0259Z	72.0S / 165.0E	19.5 x 7.5 NM	DMSP F-13
C-8	04/0858Z	60.1S / 139.5E	20.5 x 7.5 NM	DMSP F-13
C-9	04/0858Z	67.0S / 129.5E	17.5 x 7.5 NM	DMSP F-13

A = (10 / – / 8)
B = (3-3 / 3 1 0 / 72-7)
C = (8-10 / 2 6 5 / 72-7)
D = (8-10 / 3 2 6 / 72-7)
E = (7-8 / 1 2 5 / 72-7)
F = (6-7 / 1 2 6 / 72-7)
G = (10 / 5 5 / 37)
H = (8-10 / 2 6 2 / 72-7)
I = (5-5 / 2 2 / 72-7)
J = (4-4 / 1 1 1 / 72-7)
K = (6-8 / 3 4 0 / 72-7)
L = (4-5 / 0 2 / 72-7)
M = (6-8 / 3 4 / 37)
N = (5-10 / 8 4 0 / 37)
O = (7-8 / 4 4 / 37)
P = (3-5 / 2 2 / 37)
Q = (3-3 / 1 1 / 72-7)
R = (5-10 / 3 4 2 / 72-7)
S = (6-8 / 1 5 / 37)
T = (5-7 / 2 2 1 / 72-7)
U = (3-5 / 3 1 / 37)
V = (5-7 / 2 2 / 72-7)
W = (4-8 / 2 2 / 72-7)
X = (5-7 / 7 3 / 72-7)
Y = (5-7 / 2 4 / 37)
Z = (5-7 / 2 2 1 / 72-7)
A² = (6-8 / 2 2 1 / 72-7)
B² = (6-8 / 2 5 / 37)
C² = (10 / 1 / 8)
D² = (3-3 / 1 1 1 / 72-7)
E² = (5-7 / 1 2 / 72-7)
F² = (5-7 / 2 2 1 / 72-7)
G² = (8-10 / 2 2 / 72-7)
H² = (2-3 / 0 2 / 72-7)
I² = (5-7 / 3 3 1 / 72-7)
J² = (5-9 / 5 3 / 72-7)
K² = (7-9 / 2 1 1 / 72-7)
L² = (5-7 / 1 2 / 72-7)
M² = (0-1 / 1 / 7)
N² = (2-4 / 1+ / –)
O² = (5-7 / 1 5 / 72-7)
P² = (3-5 / 1 1 2 / 1-72)
Q² = (3-5 / 1+ / 8)
R² = (7-9 / 1 3 4 / 72-7)
S² = (7-9 / 2 6 / 72-7)

Polar Stereographic Projection
SCALE 1:7,500,000


ANTARCTIC ICE ANALYSIS 19 DEC 96
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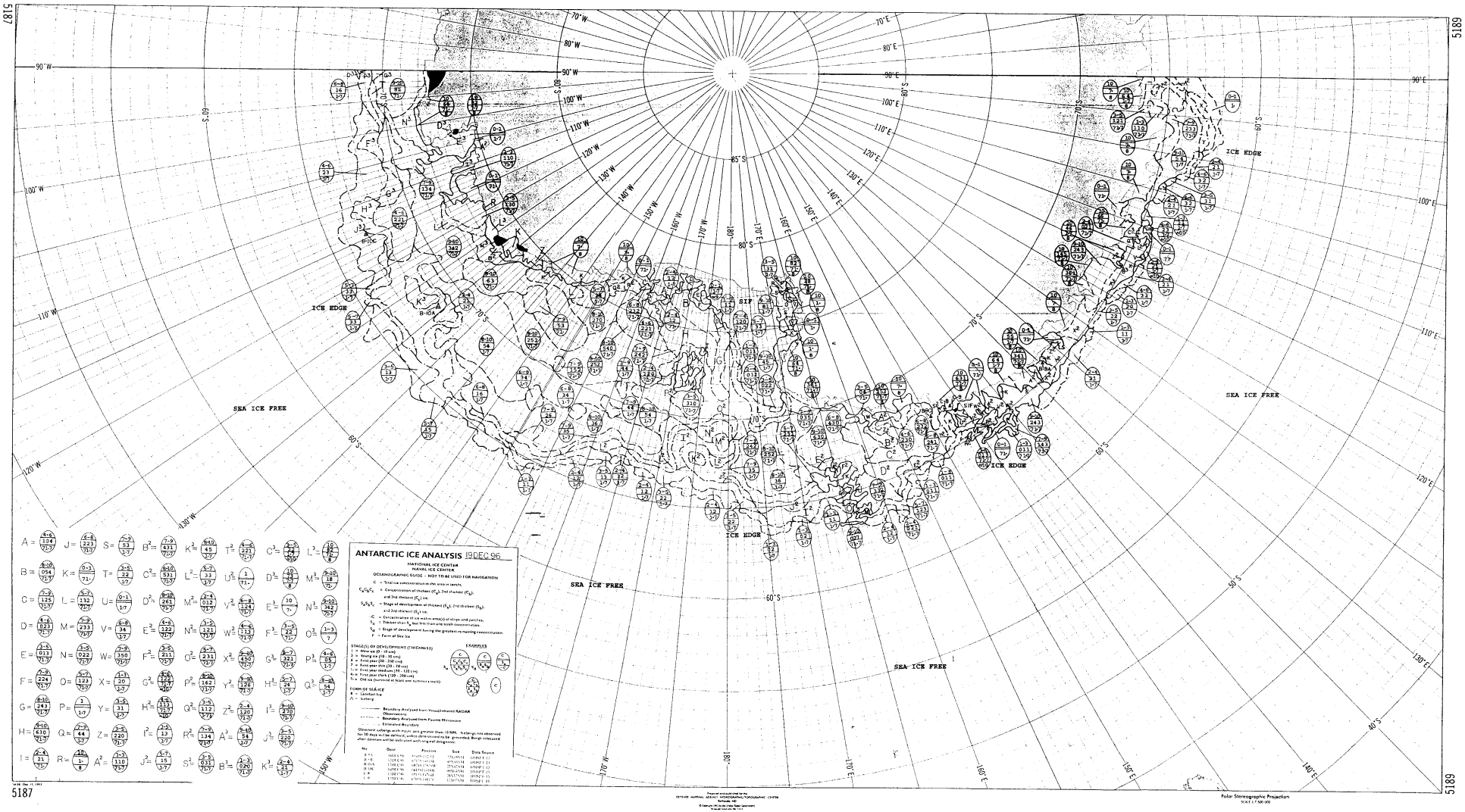
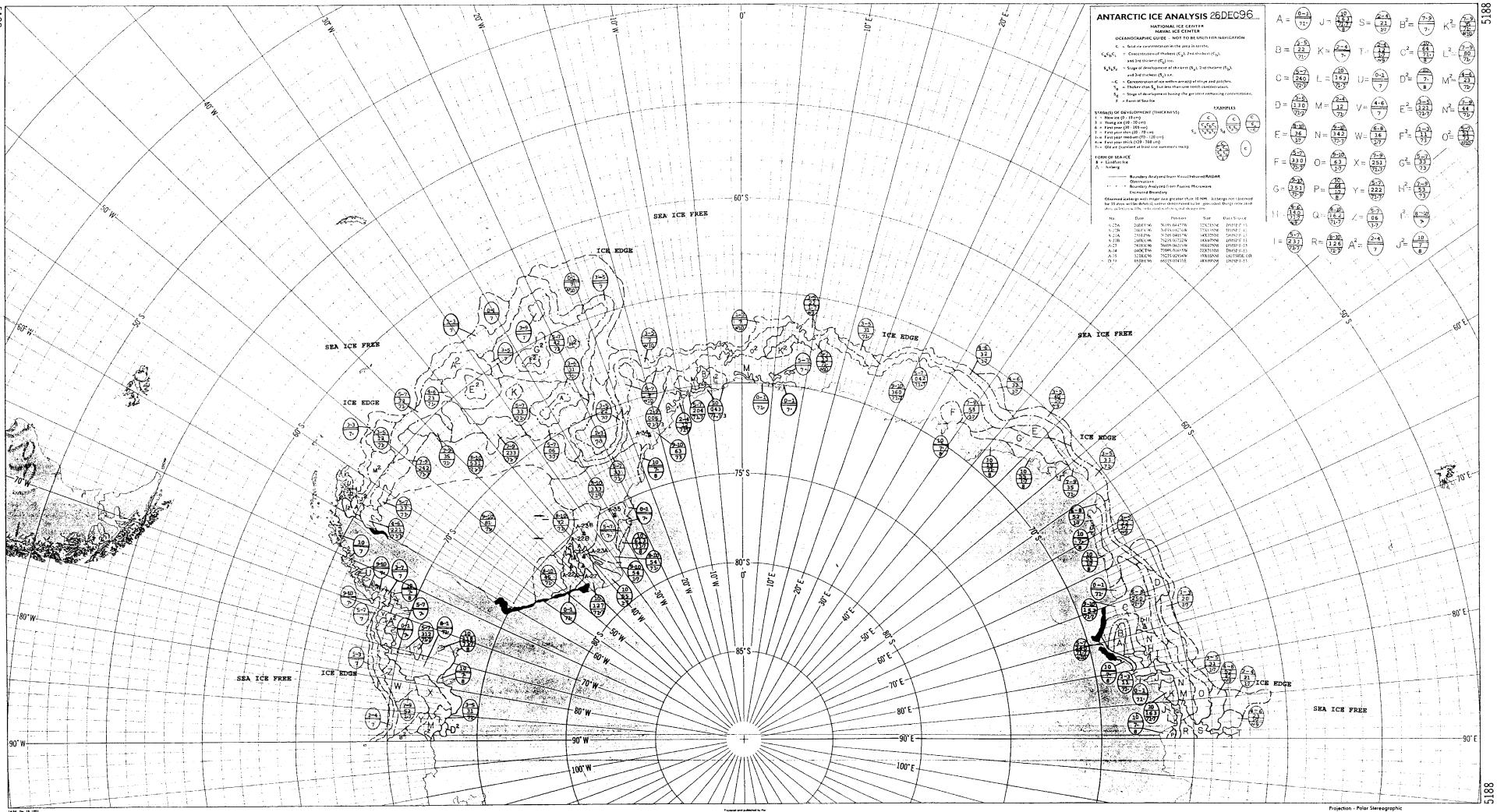
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
FORM OF SEA ICE
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
ICE EDGE
SEA ICE FREE
60° S
70° S
75° S
80° S
85° S
90° W
90° E
Projection - Polar Stereographic


ANTARCTIC ICE ANALYSIS 19DEC 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC OUTDE - NOT TO BE USED FOR NAVIGATION
ICE EDGE
SEA ICE FREE
SIF
90° W
80° W
70° W
100° W
110° W
120° W
130° W
140° W
150° W
160° W
170° W
180°
170° E
160° E
150° E
140° E
130° E
120° E
110° E
100° E
90° E
80° E
70° E
85° S
80° S
70° S
60° S
50° S
40° S
Polar Stereographic Projection
SCALE 1:7 500 000

5187

5189

5188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SEA ICE FREE
ICE EDGE
60°S
70°S
80°S
85°S
0°
10°E
20°E
30°E
40°E
50°E
60°E
70°E
80°E
90°E
100°E
10°W
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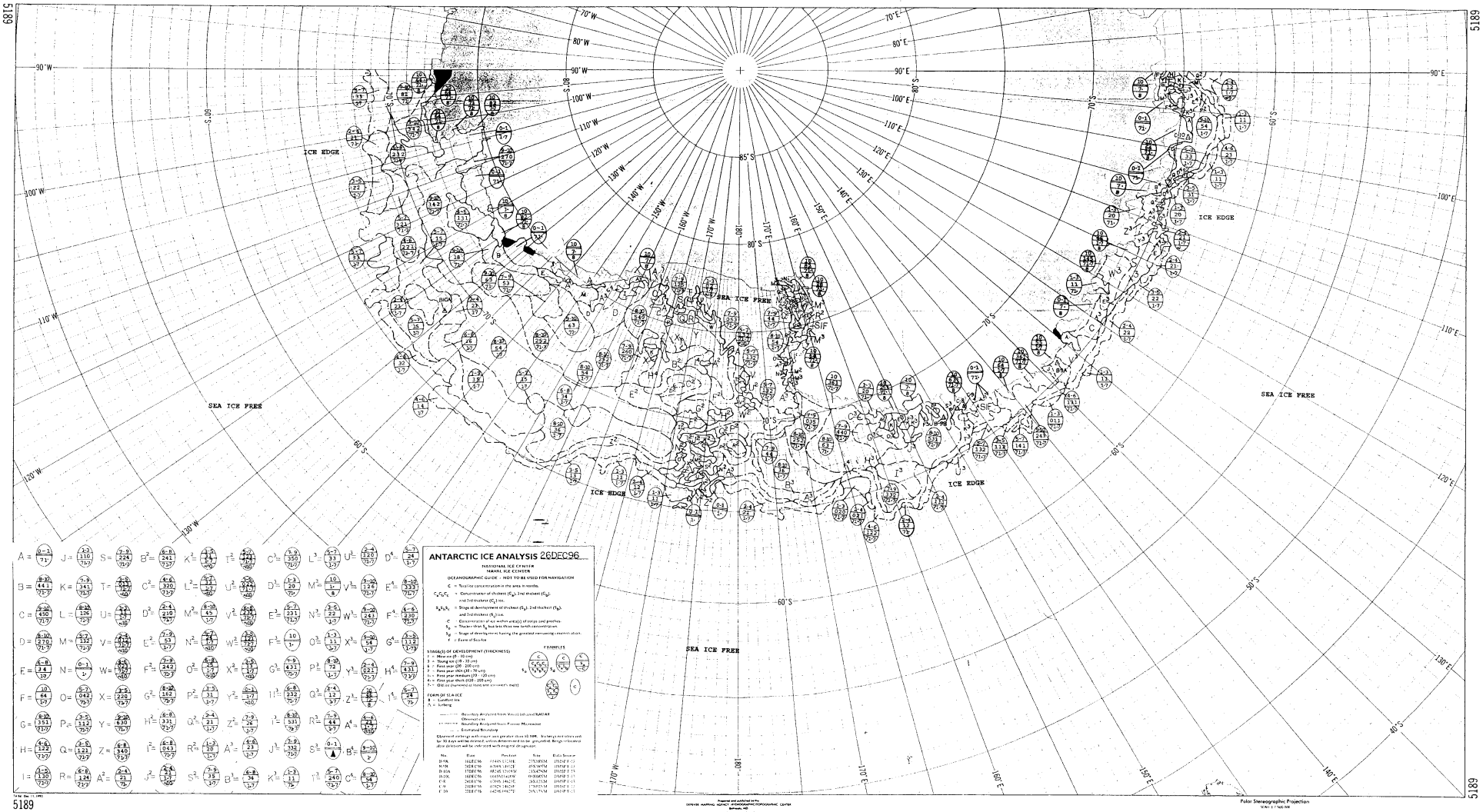
90°W
100°W
Projection - Polar Stereographic

5188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