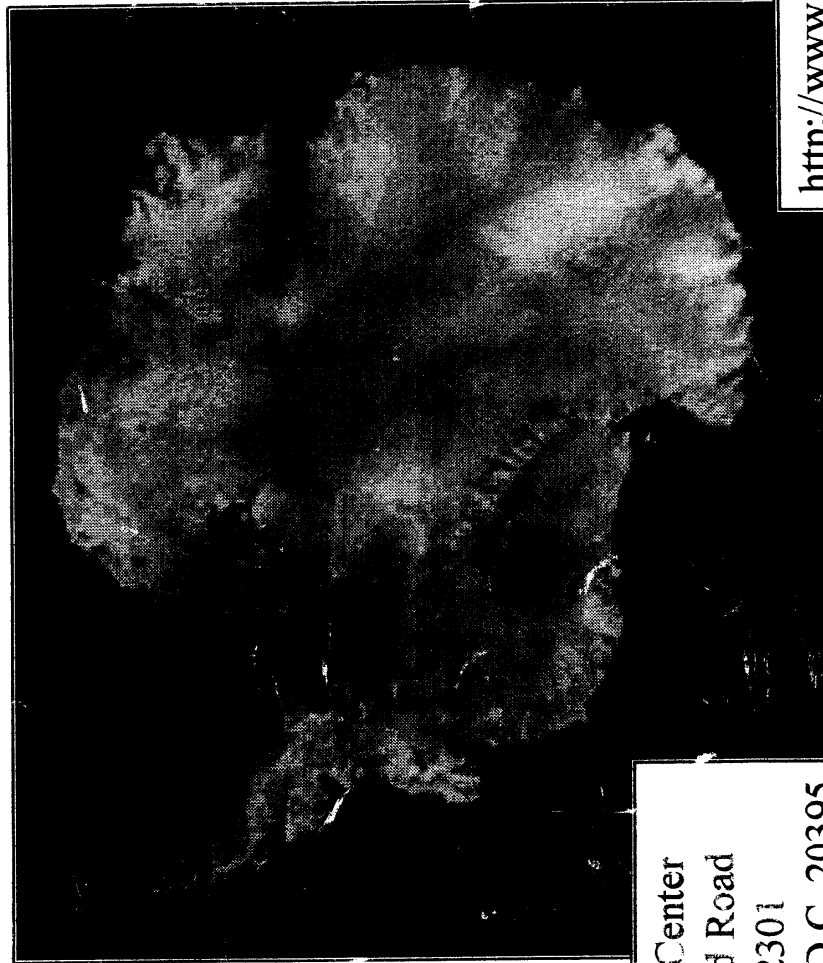




National Ice Center
Antarctic Sea Ice Atlas
1997

19990722 021



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

<http://www.natice.noaa.gov>

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited

DTIC QUALITY INSPECTED 4

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 12th 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 October 1997. During the last week of October 1997, the Antarctic paper charts were replaced by digital charts in a Graphics Interface Format (*.GIF). Printouts of the digital GIF charts for all Antarctic regions are contained in Supplement 1 to the "Antarctic Sea Ice Atlas". Future annual atlases will be available in a digital format on CD-ROM through the National Snow and Ice Data Center (<http://www-nsidc.colorado.edu>). NSIDC is the official archive center for the NIC.

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 atlases.

From	To	Sensor Platform	Sensor and Type	Spectral Region	Resolution	Coverage
01-97	12-97	DMSP F-10, 11, 12, 13, 14	OLS Fine: VIS IR SSM/I	0.4 to 1.1 μ m 10.2 to 12.8 μ m 19.35 and 37GHz	0.55 km 25 km	3,012km 3,012km
01-97	12-97	NOAA 12, 14	AVHRR: HRPT/LAC VIS NIR IR	0.58 to 0.68 μ m 0.72 to 1.10 μ m 3.55 to 3.93 μ m	1.1 km at nadir; 2.5km at swath edge	4,000km

TABLE 1. 1997 Antarctic Satellite Data Sources

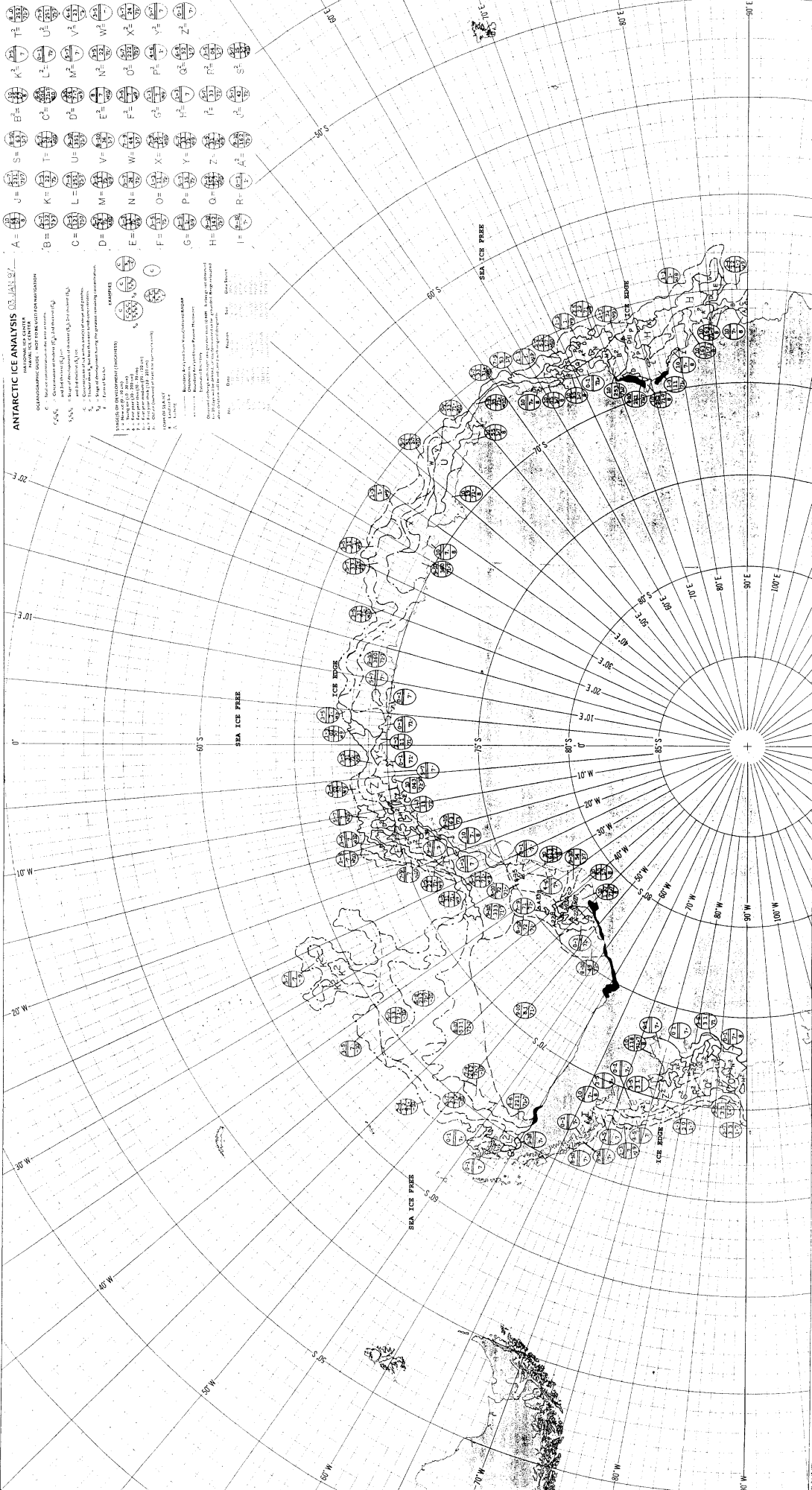
Note: DMSP F-14 launched 04/15/97

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
 μ m- micrometer
VIS- Visible

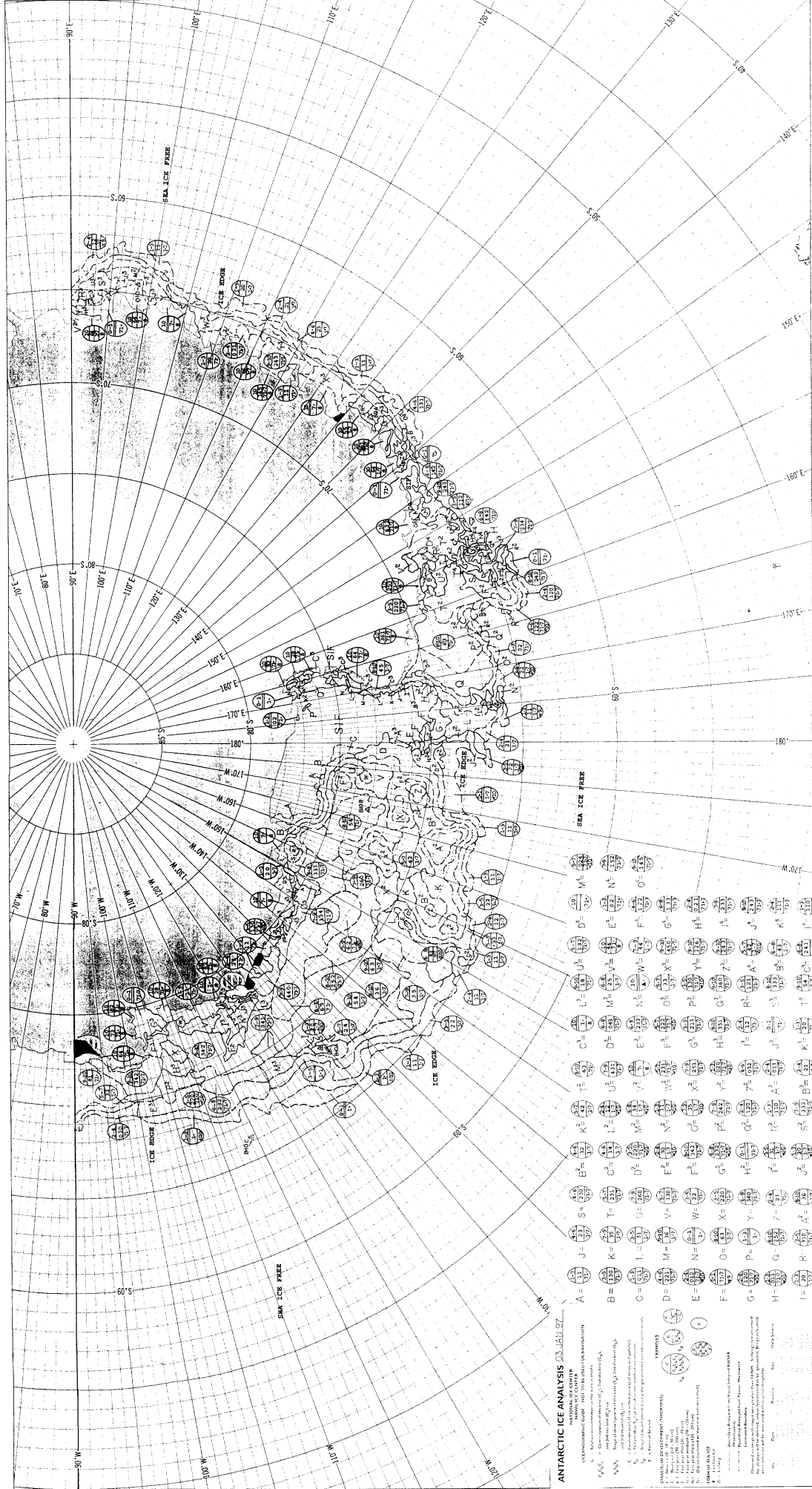
Antarctica satellite composite courtesy of United States Geological Survey, Flagstaff, AZ.
(<http://TertraWeb.wr.usgs.gov/TRS/projects/Antarctica/color/images>).

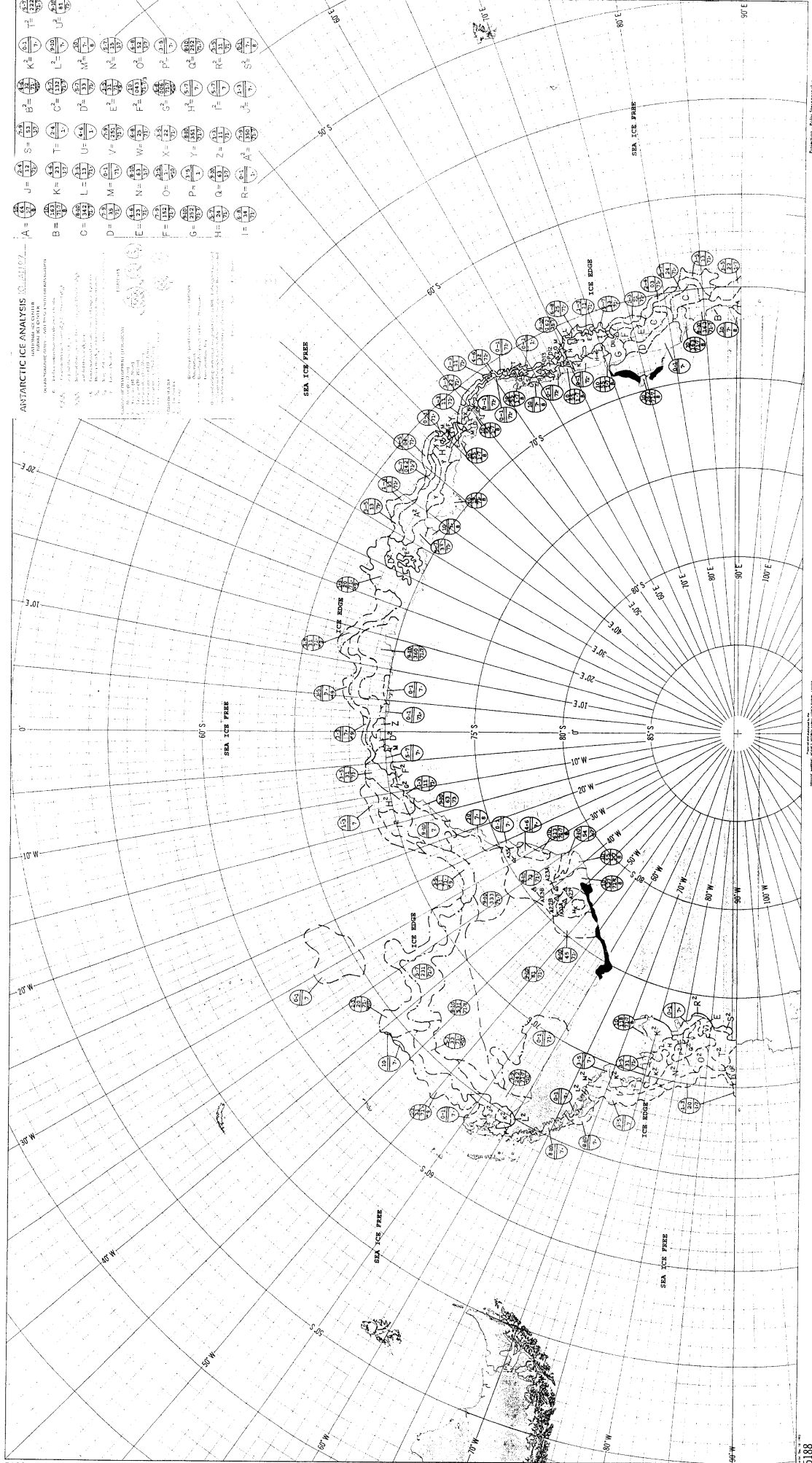
Prepared under the authority of Commander, Naval Oceanography Command, Stennis Space Center, MS 39529-5000



Prepared by the U.S. Navy Hydrographic Office

Scale: 1:500,000

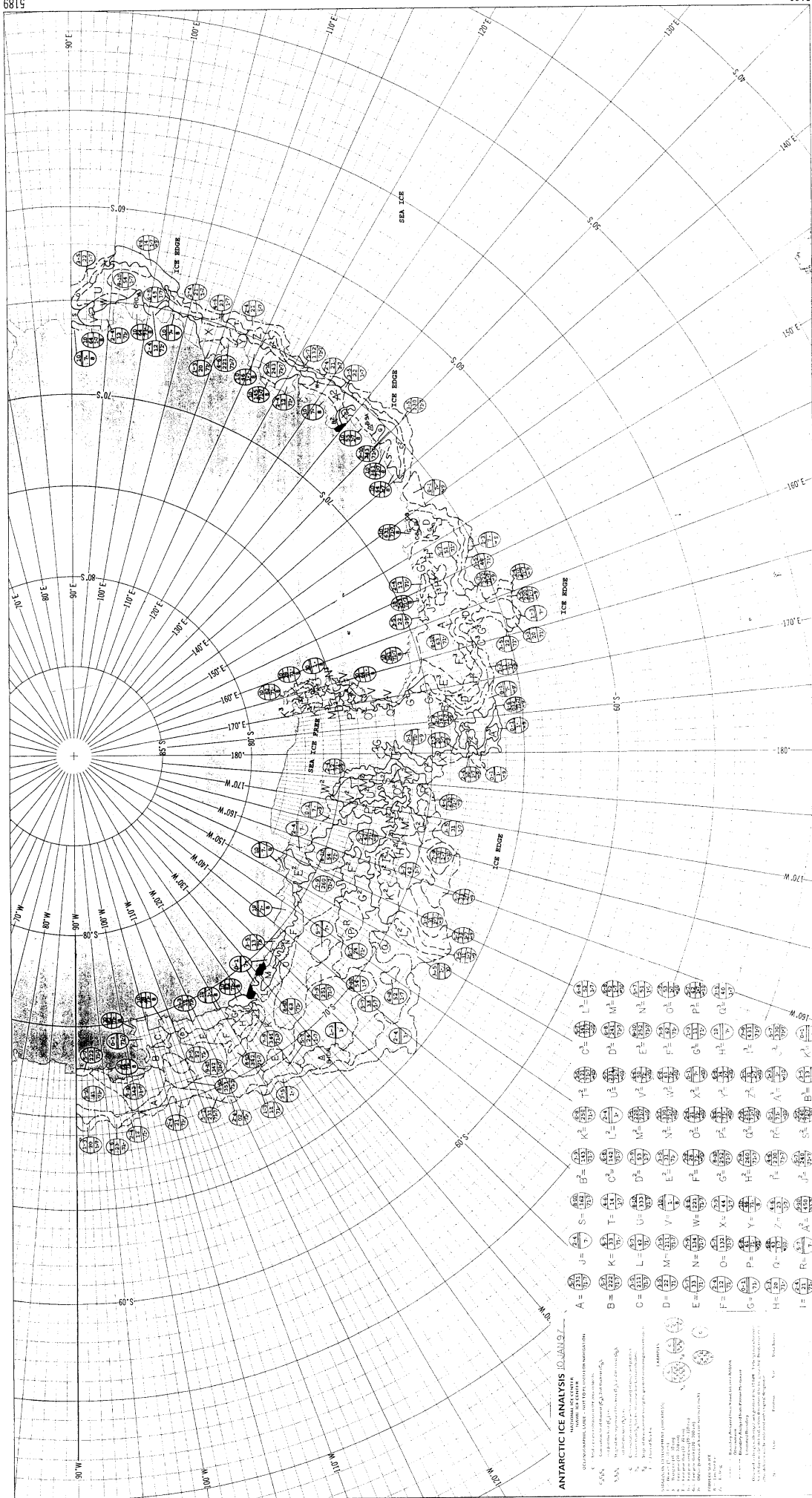




ANTARCTIC ICE ANALYSIS
 FORM NO. 10-1 (REV. 1-67)
 NAVY OCEANOGRAPHIC CENTER
 WASHINGTON, D. C. 20390

SYMBOLS:
 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 = ...

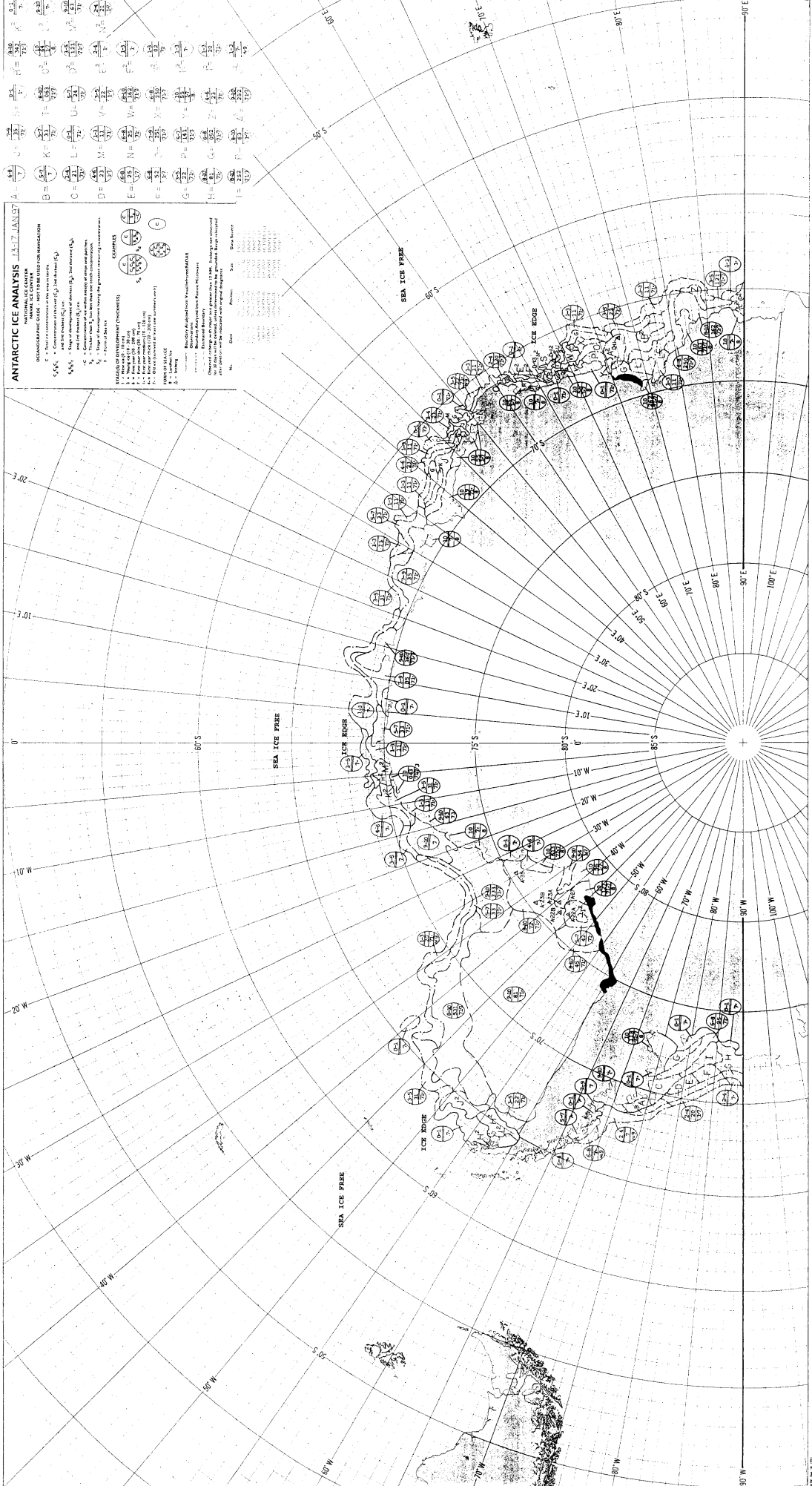
EXPLANATION:
 The symbols are used to indicate the presence and characteristics of sea ice. The letter in the symbol indicates the type of ice, and the number indicates the thickness in feet. The symbols are plotted on the map to show the distribution and extent of ice.



ANTARCTIC ICE ANALYSIS (0-1 JAN 97)
 NATIONAL CENTER FOR ENVIRONMENTAL INFORMATION

1. This is a preliminary report. It is subject to change without notice.
 2. Data are from the National Center for Environmental Information (NCEI) archive.
 3. Data are from the National Center for Environmental Information (NCEI) archive.
 4. Data are from the National Center for Environmental Information (NCEI) archive.
 5. Data are from the National Center for Environmental Information (NCEI) archive.
 6. Data are from the National Center for Environmental Information (NCEI) archive.
 7. Data are from the National Center for Environmental Information (NCEI) archive.
 8. Data are from the National Center for Environmental Information (NCEI) archive.
 9. Data are from the National Center for Environmental Information (NCEI) archive.
 10. Data are from the National Center for Environmental Information (NCEI) archive.

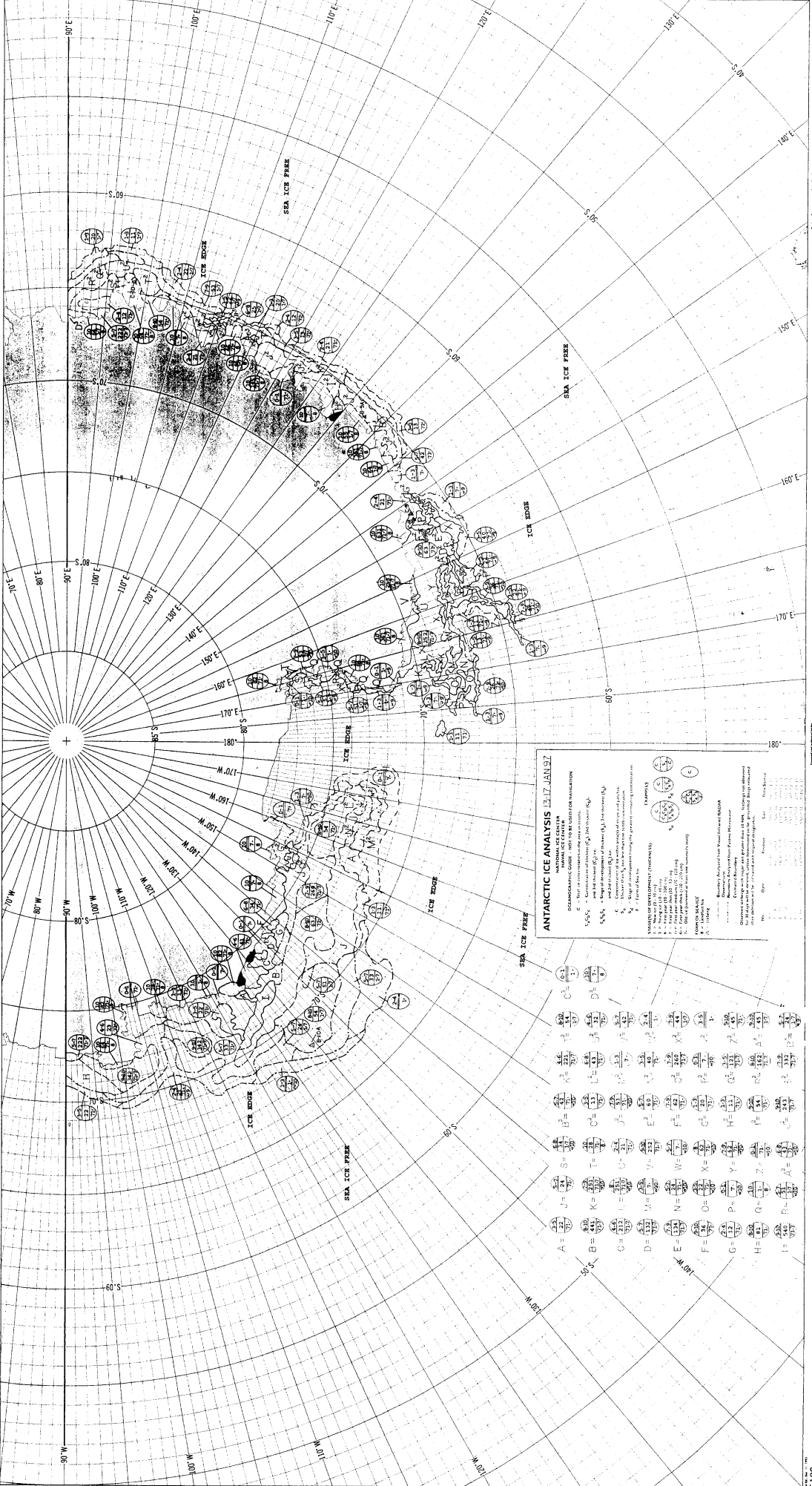
A = $\frac{1}{2}$	J = $\frac{1}{2}$	S = $\frac{1}{2}$	K = $\frac{1}{2}$	L = $\frac{1}{2}$	M = $\frac{1}{2}$	N = $\frac{1}{2}$	O = $\frac{1}{2}$	P = $\frac{1}{2}$	Q = $\frac{1}{2}$	R = $\frac{1}{2}$	S = $\frac{1}{2}$	T = $\frac{1}{2}$	U = $\frac{1}{2}$	V = $\frac{1}{2}$	W = $\frac{1}{2}$	X = $\frac{1}{2}$	Y = $\frac{1}{2}$	Z = $\frac{1}{2}$	AA = $\frac{1}{2}$	AB = $\frac{1}{2}$	AC = $\frac{1}{2}$	AD = $\frac{1}{2}$	AE = $\frac{1}{2}$	AF = $\frac{1}{2}$	AG = $\frac{1}{2}$	AH = $\frac{1}{2}$	AI = $\frac{1}{2}$	AJ = $\frac{1}{2}$	AK = $\frac{1}{2}$	AL = $\frac{1}{2}$	AM = $\frac{1}{2}$	AN = $\frac{1}{2}$	AO = $\frac{1}{2}$	AP = $\frac{1}{2}$	AQ = $\frac{1}{2}$	AR = $\frac{1}{2}$	AS = $\frac{1}{2}$	AT = $\frac{1}{2}$	AU = $\frac{1}{2}$	AV = $\frac{1}{2}$	AW = $\frac{1}{2}$	AX = $\frac{1}{2}$	AY = $\frac{1}{2}$	AZ = $\frac{1}{2}$	BA = $\frac{1}{2}$	BB = $\frac{1}{2}$	BC = $\frac{1}{2}$	BD = $\frac{1}{2}$	BE = $\frac{1}{2}$	BF = $\frac{1}{2}$	BG = $\frac{1}{2}$	BH = $\frac{1}{2}$	BI = $\frac{1}{2}$	BJ = $\frac{1}{2}$	BK = $\frac{1}{2}$	BL = $\frac{1}{2}$	BM = $\frac{1}{2}$	BN = $\frac{1}{2}$	BO = $\frac{1}{2}$	BP = $\frac{1}{2}$	BQ = $\frac{1}{2}$	BR = $\frac{1}{2}$	BS = $\frac{1}{2}$	BT = $\frac{1}{2}$	BU = $\frac{1}{2}$	BV = $\frac{1}{2}$	BW = $\frac{1}{2}$	BX = $\frac{1}{2}$	BY = $\frac{1}{2}$	BZ = $\frac{1}{2}$	CA = $\frac{1}{2}$	CB = $\frac{1}{2}$	CC = $\frac{1}{2}$	CD = $\frac{1}{2}$	CE = $\frac{1}{2}$	CF = $\frac{1}{2}$	CG = $\frac{1}{2}$	CH = $\frac{1}{2}$	CI = $\frac{1}{2}$	CJ = $\frac{1}{2}$	CK = $\frac{1}{2}$	CL = $\frac{1}{2}$	CM = $\frac{1}{2}$	CN = $\frac{1}{2}$	CO = $\frac{1}{2}$	CP = $\frac{1}{2}$	CQ = $\frac{1}{2}$	CR = $\frac{1}{2}$	CS = $\frac{1}{2}$	CT = $\frac{1}{2}$	CU = $\frac{1}{2}$	CV = $\frac{1}{2}$	CW = $\frac{1}{2}$	CX = $\frac{1}{2}$	CY = $\frac{1}{2}$	CZ = $\frac{1}{2}$	DA = $\frac{1}{2}$	DB = $\frac{1}{2}$	DC = $\frac{1}{2}$	DD = $\frac{1}{2}$	DE = $\frac{1}{2}$	DF = $\frac{1}{2}$	DG = $\frac{1}{2}$	DH = $\frac{1}{2}$	DI = $\frac{1}{2}$	DJ = $\frac{1}{2}$	DK = $\frac{1}{2}$	DL = $\frac{1}{2}$	DM = $\frac{1}{2}$	DN = $\frac{1}{2}$	DO = $\frac{1}{2}$	DP = $\frac{1}{2}$	DQ = $\frac{1}{2}$	DR = $\frac{1}{2}$	DS = $\frac{1}{2}$	DT = $\frac{1}{2}$	DU = $\frac{1}{2}$	DV = $\frac{1}{2}$	DW = $\frac{1}{2}$	DX = $\frac{1}{2}$	DY = $\frac{1}{2}$	DZ = $\frac{1}{2}$	EA = $\frac{1}{2}$	EB = $\frac{1}{2}$	EC = $\frac{1}{2}$	ED = $\frac{1}{2}$	EE = $\frac{1}{2}$	EF = $\frac{1}{2}$	EG = $\frac{1}{2}$	EH = $\frac{1}{2}$	EI = $\frac{1}{2}$	EJ = $\frac{1}{2}$	EK = $\frac{1}{2}$	EL = $\frac{1}{2}$	EM = $\frac{1}{2}$	EN = $\frac{1}{2}$	EO = $\frac{1}{2}$	EP = $\frac{1}{2}$	EQ = $\frac{1}{2}$	ER = $\frac{1}{2}$	ES = $\frac{1}{2}$	ET = $\frac{1}{2}$	EU = $\frac{1}{2}$	EV = $\frac{1}{2}$	EW = $\frac{1}{2}$	EX = $\frac{1}{2}$	EY = $\frac{1}{2}$	EZ = $\frac{1}{2}$	FA = $\frac{1}{2}$	FB = $\frac{1}{2}$	FC = $\frac{1}{2}$	FD = $\frac{1}{2}$	FE = $\frac{1}{2}$	FF = $\frac{1}{2}$	FG = $\frac{1}{2}$	FH = $\frac{1}{2}$	FI = $\frac{1}{2}$	FJ = $\frac{1}{2}$	FK = $\frac{1}{2}$	FL = $\frac{1}{2}$	FM = $\frac{1}{2}$	FN = $\frac{1}{2}$	FO = $\frac{1}{2}$	FP = $\frac{1}{2}$	FQ = $\frac{1}{2}$	FR = $\frac{1}{2}$	FS = $\frac{1}{2}$	FT = $\frac{1}{2}$	FU = $\frac{1}{2}$	FV = $\frac{1}{2}$	FW = $\frac{1}{2}$	FX = $\frac{1}{2}$	FY = $\frac{1}{2}$	FZ = $\frac{1}{2}$	GA = $\frac{1}{2}$	GB = $\frac{1}{2}$	GC = $\frac{1}{2}$	GD = $\frac{1}{2}$	GE = $\frac{1}{2}$	GF = $\frac{1}{2}$	GG = $\frac{1}{2}$	GH = $\frac{1}{2}$	GI = $\frac{1}{2}$	GJ = $\frac{1}{2}$	GK = $\frac{1}{2}$	GL = $\frac{1}{2}$	GM = $\frac{1}{2}$	GN = $\frac{1}{2}$	GO = $\frac{1}{2}$	GP = $\frac{1}{2}$	GQ = $\frac{1}{2}$	GR = $\frac{1}{2}$	GS = $\frac{1}{2}$	GT = $\frac{1}{2}$	GU = $\frac{1}{2}$	GV = $\frac{1}{2}$	GW = $\frac{1}{2}$	GX = $\frac{1}{2}$	GY = $\frac{1}{2}$	GZ = $\frac{1}{2}$	HA = $\frac{1}{2}$	HB = $\frac{1}{2}$	HC = $\frac{1}{2}$	HD = $\frac{1}{2}$	HE = $\frac{1}{2}$	HF = $\frac{1}{2}$	HG = $\frac{1}{2}$	HH = $\frac{1}{2}$	HI = $\frac{1}{2}$	HJ = $\frac{1}{2}$	HK = $\frac{1}{2}$	HL = $\frac{1}{2}$	HM = $\frac{1}{2}$	HN = $\frac{1}{2}$	HO = $\frac{1}{2}$	HP = $\frac{1}{2}$	HQ = $\frac{1}{2}$	HR = $\frac{1}{2}$	HS = $\frac{1}{2}$	HT = $\frac{1}{2}$	HU = $\frac{1}{2}$	HV = $\frac{1}{2}$	HW = $\frac{1}{2}$	HX = $\frac{1}{2}$	HY = $\frac{1}{2}$	HZ = $\frac{1}{2}$	IA = $\frac{1}{2}$	IB = $\frac{1}{2}$	IC = $\frac{1}{2}$	ID = $\frac{1}{2}$	IE = $\frac{1}{2}$	IF = $\frac{1}{2}$	IG = $\frac{1}{2}$	IH = $\frac{1}{2}$	II = $\frac{1}{2}$	IJ = $\frac{1}{2}$	IK = $\frac{1}{2}$	IL = $\frac{1}{2}$	IM = $\frac{1}{2}$	IN = $\frac{1}{2}$	IO = $\frac{1}{2}$	IP = $\frac{1}{2}$	IQ = $\frac{1}{2}$	IR = $\frac{1}{2}$	IS = $\frac{1}{2}$	IT = $\frac{1}{2}$	IU = $\frac{1}{2}$	IV = $\frac{1}{2}$	IW = $\frac{1}{2}$	IX = $\frac{1}{2}$	IY = $\frac{1}{2}$	IZ = $\frac{1}{2}$
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ANTARCTIC ICE ANALYSIS A1817 JAN 67
 NATIONAL ICE CENTER
 OCEANOGRAPHIC CHIEF, NAVY OCEANOGRAPHY
 C. - Point of observation (lat, lon, elev)
 S. - Date of observation (YYMMDD)
 T. - Time of day (HHMM)
 W. - Wind direction (true)
 S. - Speed of wind (knots)
 P. - Pressure (mb)
 T. - Temperature (air, surface, bottom, etc.)
 H. - Humidity (%)
 V. - Visibility (miles)
 I. - Ice extent (miles)
 A. - Area of ice (square miles)
 P. - Percentage of ice (percent)
 T. - Thickness of ice (feet)
 S. - State of sky (clear, overcast, etc.)
 W. - Wave height (feet)
 C. - Current (direction, speed)
 S. - State of sea (calm, choppy, etc.)
 T. - Time of day (HHMM)
 W. - Wind direction (true)
 S. - Speed of wind (knots)
 P. - Pressure (mb)
 T. - Temperature (air, surface, bottom, etc.)
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 S. - State of sea (calm, choppy, etc.)

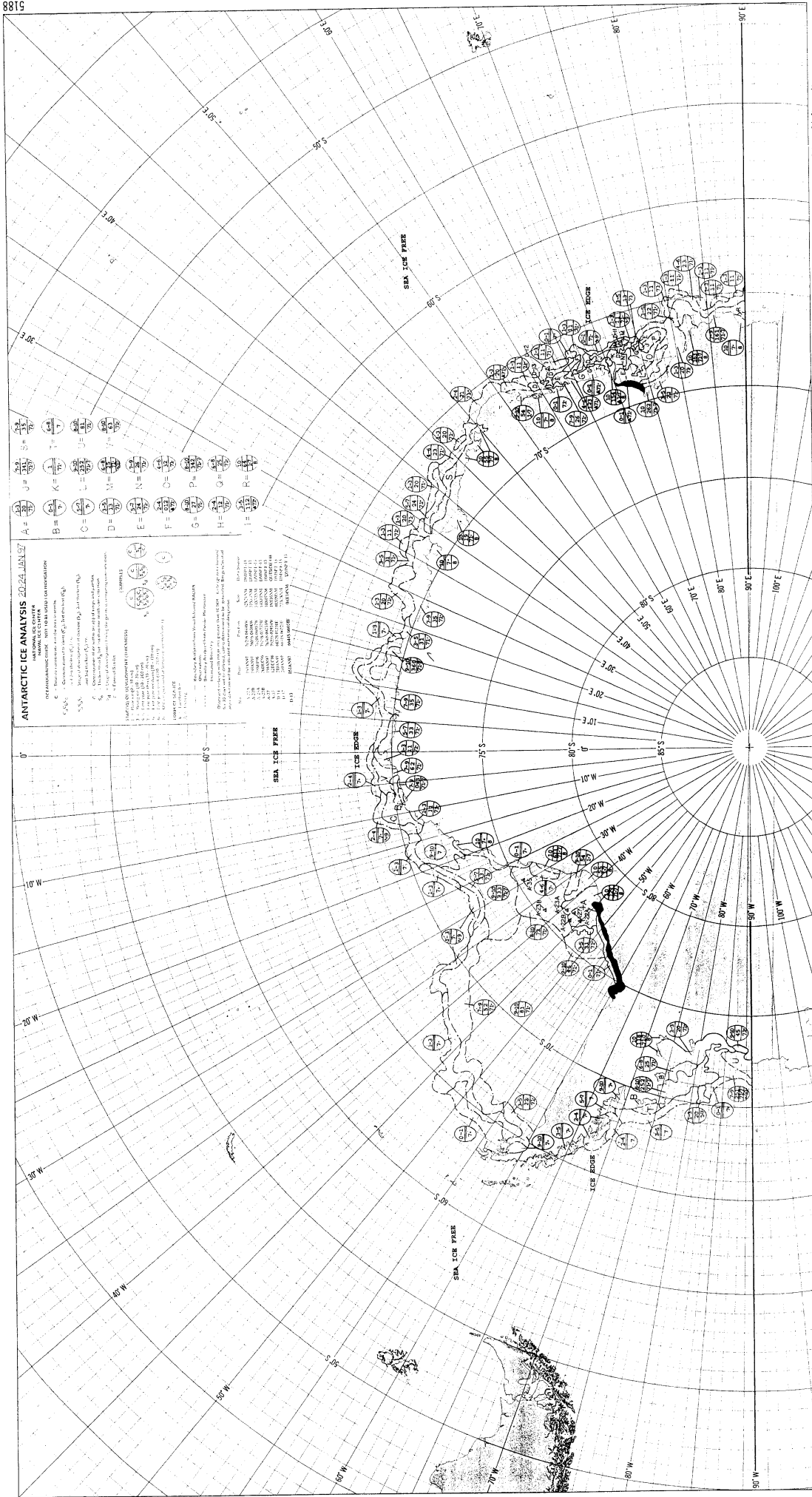
5188

5188



ANTARCTIC ICE ANALYSIS SYMBOLS
 HOW TO USE THE SYMBOLS
 The symbols are used to indicate the presence and characteristics of ice. The symbols are arranged in a grid pattern on the map. The symbols are used to indicate the presence and characteristics of ice. The symbols are arranged in a grid pattern on the map.

Symbol	Meaning
$\frac{1}{1}$	Ice-free
$\frac{2}{2}$	Thin ice
$\frac{3}{3}$	Medium ice
$\frac{4}{4}$	Thick ice
$\frac{5}{5}$	Very thick ice
$\frac{6}{6}$	Iceberg
$\frac{7}{7}$	Ice shelf
$\frac{8}{8}$	Ice plateau
$\frac{9}{9}$	Ice dome
$\frac{10}{10}$	Ice mountain
$\frac{11}{11}$	Ice wall
$\frac{12}{12}$	Ice ridge
$\frac{13}{13}$	Ice lead
$\frac{14}{14}$	Ice floe
$\frac{15}{15}$	Ice fragment
$\frac{16}{16}$	Ice chunk
$\frac{17}{17}$	Ice block
$\frac{18}{18}$	Ice mass
$\frac{19}{19}$	Ice field
$\frac{20}{20}$	Ice area



ANTARCTIC ICE ANALYSIS 20-24 JAN 67
 NAVY OPERATIONS CENTER
 HAWAIIAN ISLANDS CENTER
 HONOLULU, HAWAII

OVERSEAIRING CODE - NOT FOR USE IN CASE OF EMERGENCY
 C - Communications
 S - Status
 W - Weather
 I - Ice
 V - Visibility
 A - Altimeter
 P - Pressure
 R - Remarks

SYMBOLS
 (A) Example symbols for various ice types and concentrations.

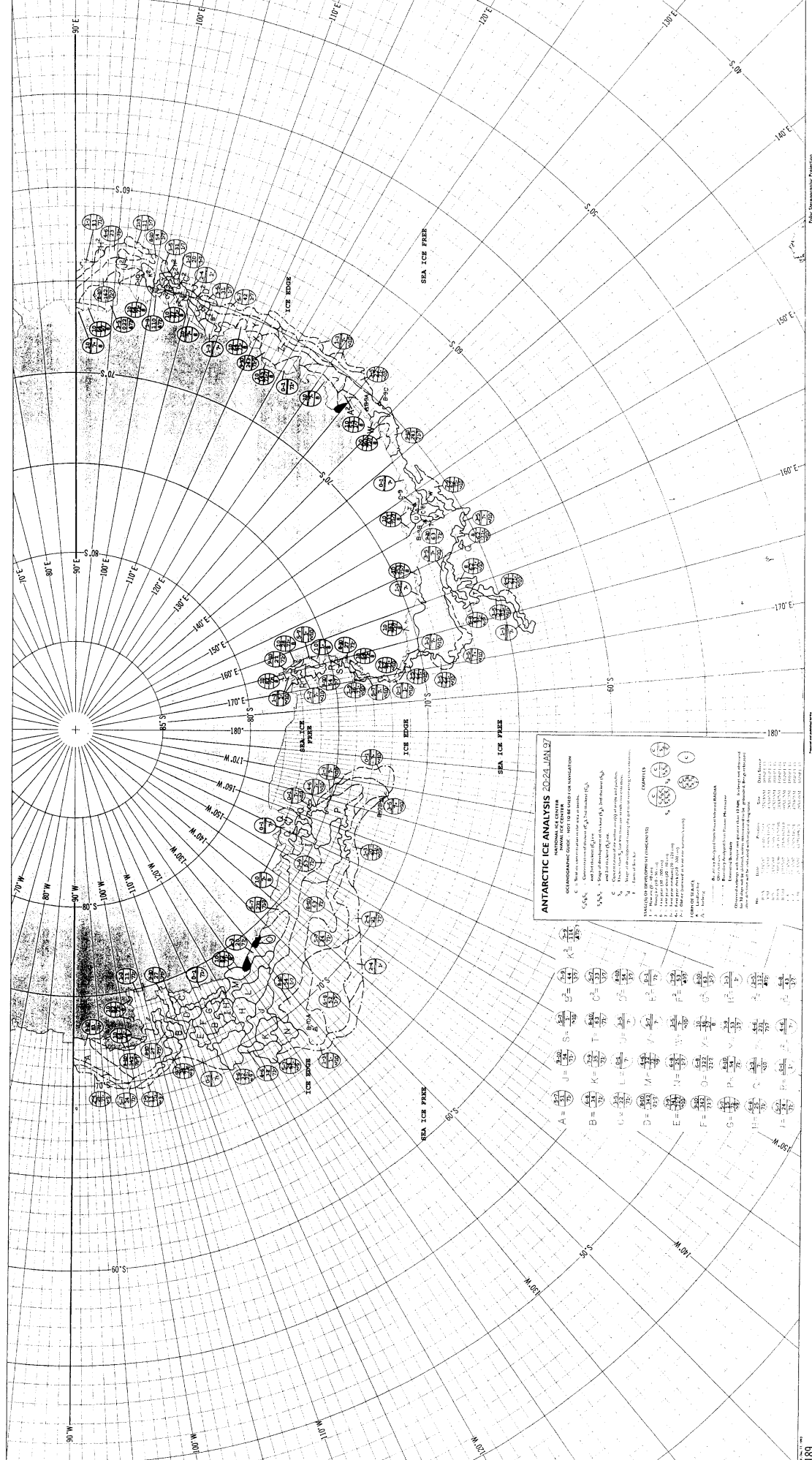
DEFINITIONS
 Ice type: 1 - Thin, 2 - Medium, 3 - Thick, 4 - Heavy, 5 - Very Heavy
 Concentration: 1 - 10%, 2 - 10-20%, 3 - 20-30%, 4 - 30-40%, 5 - 40-50%, 6 - 50-60%, 7 - 60-70%, 8 - 70-80%, 9 - 80-90%, 10 - 90-100%

UNITS
 Length: Statute Miles (SM), Nautical Miles (NM), Kilometers (KM)
 Area: Square Statute Miles (SSM), Square Nautical Miles (SNM), Square Kilometers (SQ KM)
 Weight: Short Tons (ST), Metric Tons (MT), Long Tons (LT)

MAP INFORMATION
 Scale: 1:500,000
 Date: 20-24 JAN 67
 Source: Satellite Imagery, Visual Observations, Radar Data

Projection: Mercator
Scale: 1:500,000

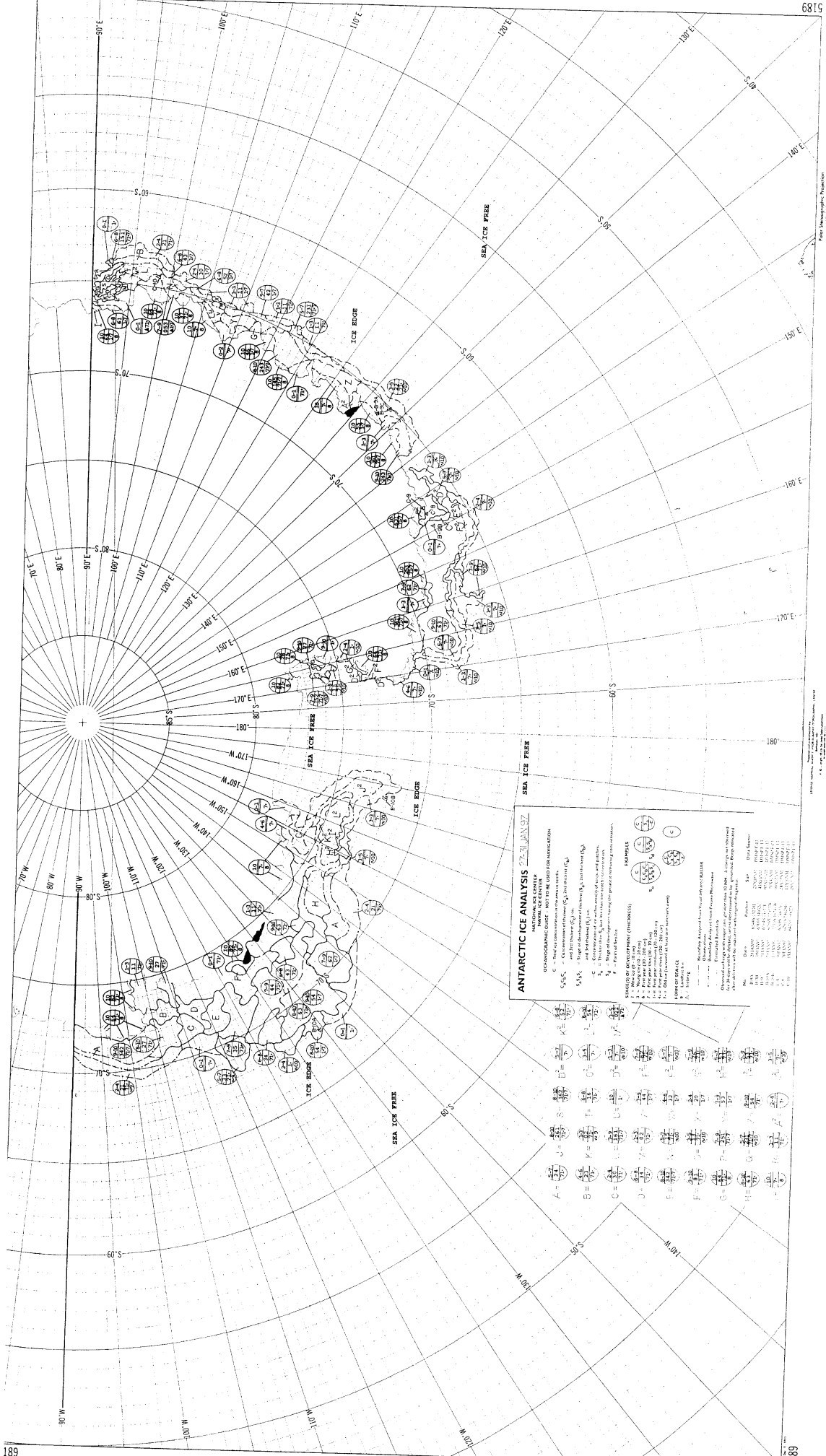
8815



ANTARCTIC ICE ANALYSIS 20-24 JAN 97
 NATIONAL ICE CENTER
 "ICE AND SNOW DATA" - NOT TO BE USED FOR NAVIGATION

ICE AND SNOW DATA
 1. Thickness (meters) - 1/10th of the number shown
 2. Direction of ice movement (true) - 0 = no movement, 1-9 = direction in degrees true
 3. Age (days) - 0 = first year ice, 1 = first year ice, 2 = second year ice, 3 = third year ice, 4 = fourth year ice, 5 = fifth year ice, 6 = sixth year ice, 7 = seventh year ice, 8 = eighth year ice, 9 = ninth year ice, 0 = tenth year ice

ABBREVIATIONS
 A = Iceberg
 B = Iceberg
 C = Iceberg
 D = Iceberg
 E = Iceberg
 F = Iceberg
 G = Iceberg
 H = Iceberg
 I = Iceberg
 J = Iceberg
 K = Iceberg
 L = Iceberg
 M = Iceberg
 N = Iceberg
 O = Iceberg
 P = Iceberg
 Q = Iceberg
 R = Iceberg
 S = Iceberg
 T = Iceberg
 U = Iceberg
 V = Iceberg
 W = Iceberg
 X = Iceberg
 Y = Iceberg
 Z = Iceberg
 AA = Iceberg
 AB = Iceberg
 AC = Iceberg
 AD = Iceberg
 AE = Iceberg
 AF = Iceberg
 AG = Iceberg
 AH = Iceberg
 AI = Iceberg
 AJ = Iceberg
 AK = Iceberg
 AL = Iceberg
 AM = Iceberg
 AN = Iceberg
 AO = Iceberg
 AP = Iceberg
 AQ = Iceberg
 AR = Iceberg
 AS = Iceberg
 AT = Iceberg
 AU = Iceberg
 AV = Iceberg
 AW = Iceberg
 AX = Iceberg
 AY = Iceberg
 AZ = Iceberg
 BA = Iceberg
 BB = Iceberg
 BC = Iceberg
 BD = Iceberg
 BE = Iceberg
 BF = Iceberg
 BG = Iceberg
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 CA = Iceberg
 CB = Iceberg
 CC = Iceberg
 CD = Iceberg
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 CP = Iceberg
 CQ = Iceberg
 CR = Iceberg
 CS = Iceberg
 CT = Iceberg
 CU = Iceberg
 CV = Iceberg
 CW = Iceberg
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 CY = Iceberg
 CZ = Iceberg
 DA = Iceberg
 DB = Iceberg
 DC = Iceberg
 DD = Iceberg
 DE = Iceberg
 DF = Iceberg
 DG = Iceberg
 DH = Iceberg
 DI = Iceberg
 DJ = Iceberg
 DK = Iceberg
 DL = Iceberg
 DM = Iceberg
 DN = Iceberg
 DO = Iceberg
 DP = Iceberg
 DQ = Iceberg
 DR = Iceberg
 DS = Iceberg
 DT = Iceberg
 DU = Iceberg
 DV = Iceberg
 DW = Iceberg
 DX = Iceberg
 DY = Iceberg
 DZ = Iceberg
 EA = Iceberg
 EB = Iceberg
 EC = Iceberg
 ED = Iceberg
 EE = Iceberg
 EF = Iceberg
 EG = Iceberg
 EH = Iceberg
 EI = Iceberg
 EJ = Iceberg
 EK = Iceberg
 EL = Iceberg
 EM = Iceberg
 EN = Iceberg
 EO = Iceberg
 EP = Iceberg
 EQ = Iceberg
 ER = Iceberg
 ES = Iceberg
 ET = Iceberg
 EU = Iceberg
 EV = Iceberg
 EW = Iceberg
 EX = Iceberg
 EY = Iceberg
 EZ = Iceberg
 FA = Iceberg
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 FG = Iceberg
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 FI = Iceberg
 FJ = Iceberg
 FK = Iceberg
 FL = Iceberg
 FM = Iceberg
 FN = Iceberg
 FO = Iceberg
 FP = Iceberg
 FQ = Iceberg
 FR = Iceberg
 FS = Iceberg
 FT = Iceberg
 FU = Iceberg
 FV = Iceberg
 FW = Iceberg
 FX = Iceberg
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 FZ = Iceberg
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 GL = Iceberg
 GM = Iceberg
 GN = Iceberg
 GO = Iceberg
 GP = Iceberg
 GQ = Iceberg
 GR = Iceberg
 GS = Iceberg
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 GU = Iceberg
 GV = Iceberg
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 GX = Iceberg
 GY = Iceberg
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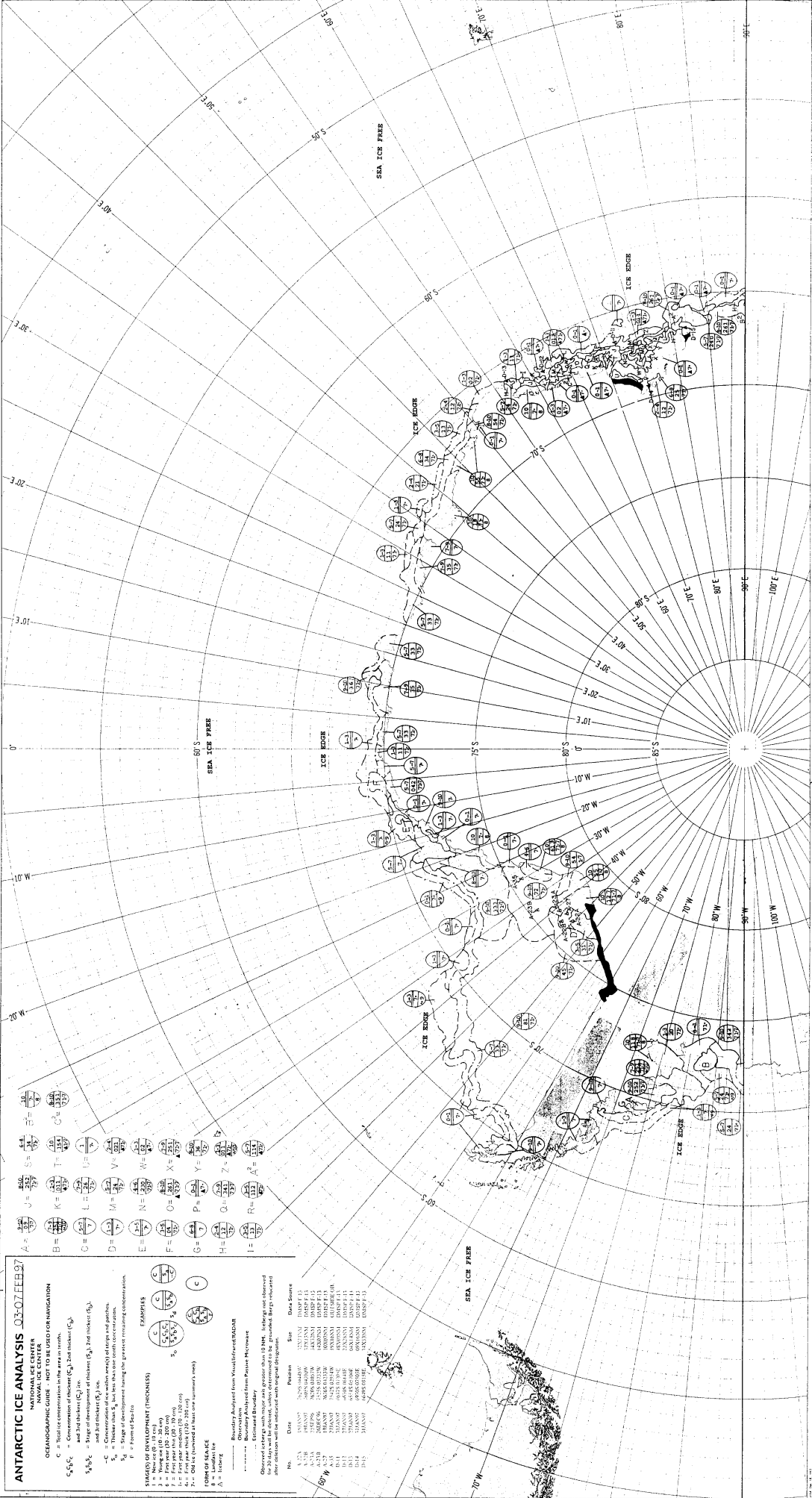
ANTARCTIC ICE ANALYSIS 223 JAN 97
 NATIONAL ICE CENTER
 DATA OBSERVED ON THE CONTINENT
 C = Total ice concentration in percent
 SALS = Concentration within $1/2^\circ$ grid cell (SALS)
 SALS = Degree of darkness of the ice, from 0 to 100
 SALS = Percent of ice covered by snow or rain
 SALS = Degree of darkness of the ice, from 0 to 100
 SALS = Percent of ice covered by snow or rain
 SALS = Degree of darkness of the ice, from 0 to 100
 SALS = Percent of ice covered by snow or rain

EXAMPLES

SYMBOLS ON CONTINENT (CONTINENT)

1. Name of station
2. Station number
3. Date of observation
4. Station number
5. Date of observation
6. Station number
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194. Station number
195. Date of observation
196. Station number
197. Date of observation
198. Station number
199. Date of observation
200. Station number

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 Office of Ocean Resources
 11/1/97



ANTARCTIC ICE ANALYSIS 030700Z

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

C = Total ice concentration in the area in tenths.
 C_1, C_2, C_3 = Concentration of floes (C₁), and thickness (C₂) and icebergs (C₃) in tenths.
 S_1, S_2, S_3 = Concentration of floes (S₁), and thickness (S₂) and icebergs (S₃) in tenths.
 C_4 = Concentration of ice within area(s) of strips and patches.
 S_4 = Concentration of ice within area(s) of strips and patches.
 T = Temperature in tenths.
 F = Point of Sea-ice.

EXAMPLES

1 = Non-ice (0.10 tenths)
 2 = Thin ice (0.20 tenths)
 3 = Medium ice (0.30 tenths)
 4 = Thick ice (0.40 tenths)
 5 = Very thick ice (0.50 tenths)
 6 = Icebergs (0.60 tenths)
 7 = Land ice (0.70 tenths)
 8 = Land ice (0.80 tenths)
 9 = Land ice (0.90 tenths)

FORM OF SEA ICE

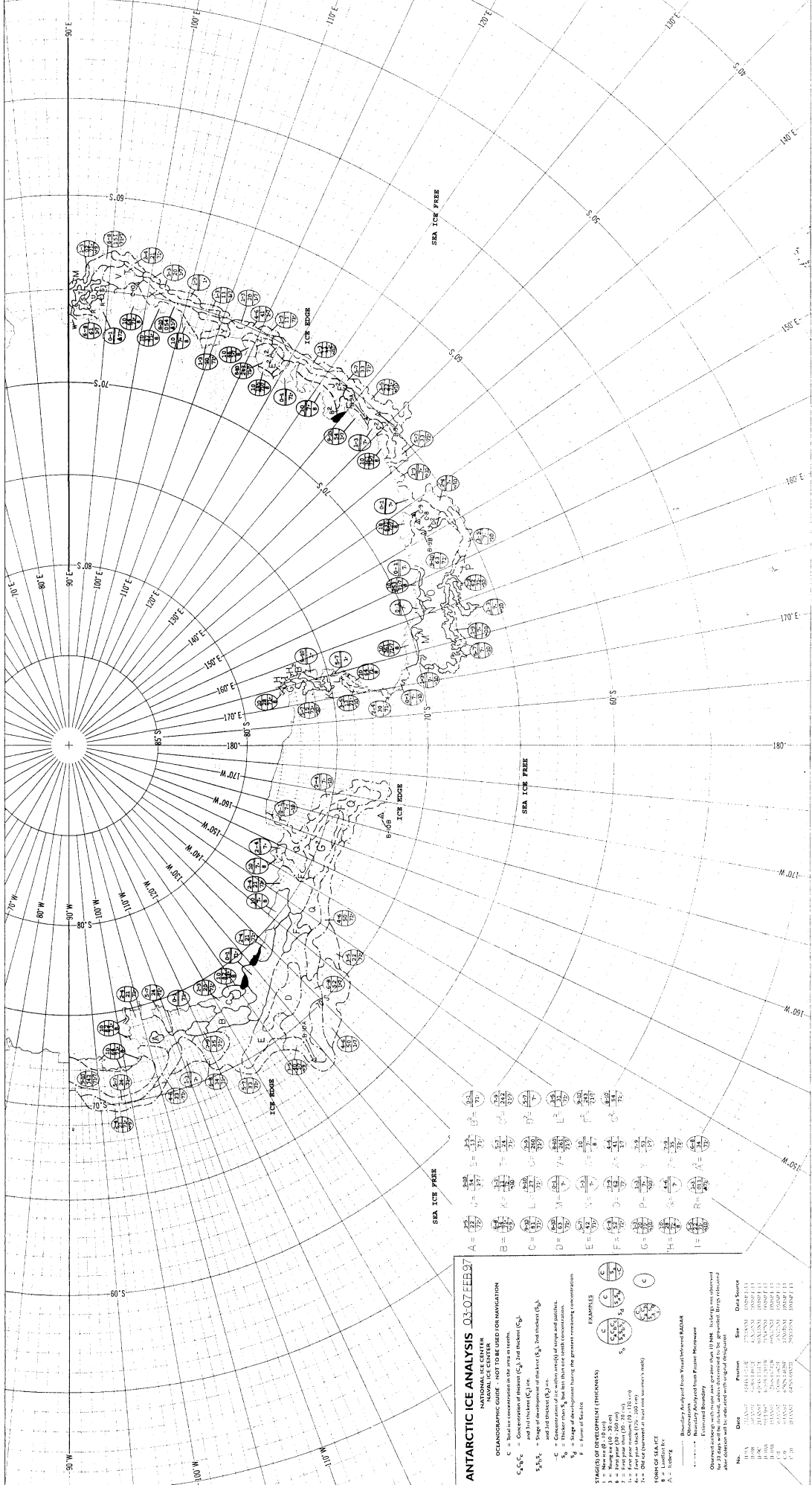
1 = Iceberg
 2 = Iceberg
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 4 = Iceberg
 5 = Iceberg
 6 = Iceberg
 7 = Iceberg
 8 = Iceberg
 9 = Iceberg
 0 = Iceberg

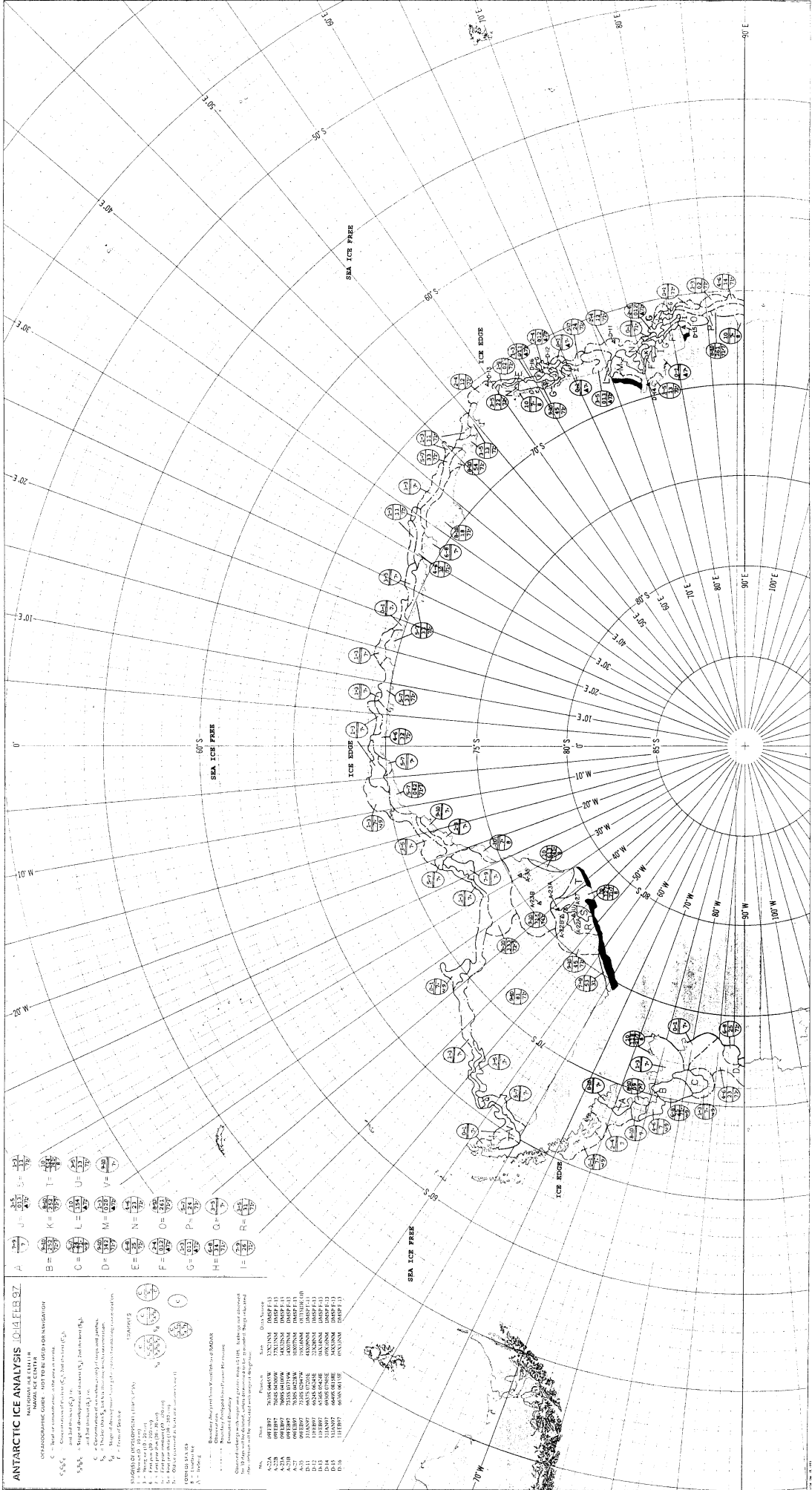
STANDARD SYMBOLS FROM VISUAL OBSERVATION

Observation: Boundary and Error Pattern Reference
 Observed edge with height, area greater than 10 NM. Iceberg not observed
 Observed edge with height, area greater than 10 NM. Iceberg not observed
 Observed edge with height, area greater than 10 NM. Iceberg not observed

NO. DATE POSITION SIZE DATA SOURCE

NO.	DATE	POSITION	SIZE	DATA SOURCE
1	030700	70°S 150°W	1000	INDOP F15
2	030700	70°S 150°W	1000	INDOP F15
3	030700	70°S 150°W	1000	INDOP F15
4	030700	70°S 150°W	1000	INDOP F15
5	030700	70°S 150°W	1000	INDOP F15
6	030700	70°S 150°W	1000	INDOP F15
7	030700	70°S 150°W	1000	INDOP F15
8	030700	70°S 150°W	1000	INDOP F15
9	030700	70°S 150°W	1000	INDOP F15
10	030700	70°S 150°W	1000	INDOP F15
11	030700	70°S 150°W	1000	INDOP F15
12	030700	70°S 150°W	1000	INDOP F15
13	030700	70°S 150°W	1000	INDOP F15
14	030700	70°S 150°W	1000	INDOP F15
15	030700	70°S 150°W	1000	INDOP F15
16	030700	70°S 150°W	1000	INDOP F15
17	030700	70°S 150°W	1000	INDOP F15
18	030700	70°S 150°W	1000	INDOP F15
19	030700	70°S 150°W	1000	INDOP F15
20	030700	70°S 150°W	1000	INDOP F15





ANTARCTIC ICE ANALYSIS 10-14 FEB 57

NAVY OPERATIONAL GUIDE - NOT TO BE USED FOR NAVIGATION

1. Symbols for ice analysis are shown in the following table.

2. Symbols for ice analysis are shown in the following table.

3. Symbols for ice analysis are shown in the following table.

4. Symbols for ice analysis are shown in the following table.

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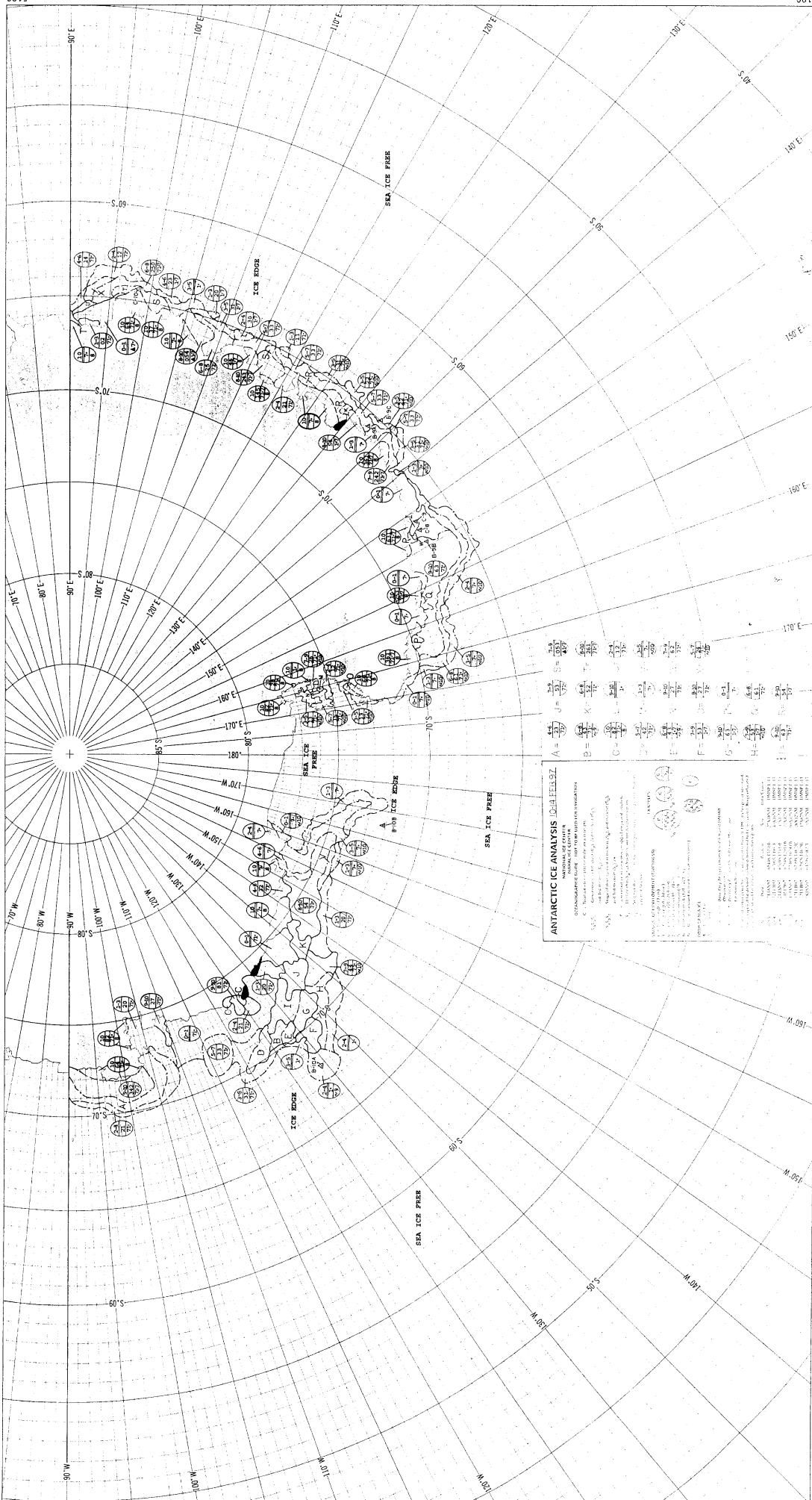
40. Symbols for ice analysis are shown in the following table.

41. Symbols for ice analysis are shown in the following table.

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44. Symbols for ice analysis are shown in the following table.



ANTARCTIC ICE ANALYSIS CHART

1:100,000
 NATIONAL ICE CENTER
 SCIENTIFIC CHARTS - THIS FORM REQUIRES TRANSFORMATION

SYMBOLS:

- A = ICE ANALYSIS SYMBOLS
- B = SEA ICE FREE
- C = SEA ICE FREE
- D = SEA ICE FREE
- E = SEA ICE FREE
- F = SEA ICE FREE
- G = SEA ICE FREE
- H = SEA ICE FREE

ICE ANALYSIS SYMBOLS:

- 1. ICE ANALYSIS SYMBOLS
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- 98. ICE ANALYSIS SYMBOLS
- 99. ICE ANALYSIS SYMBOLS
- 100. ICE ANALYSIS SYMBOLS

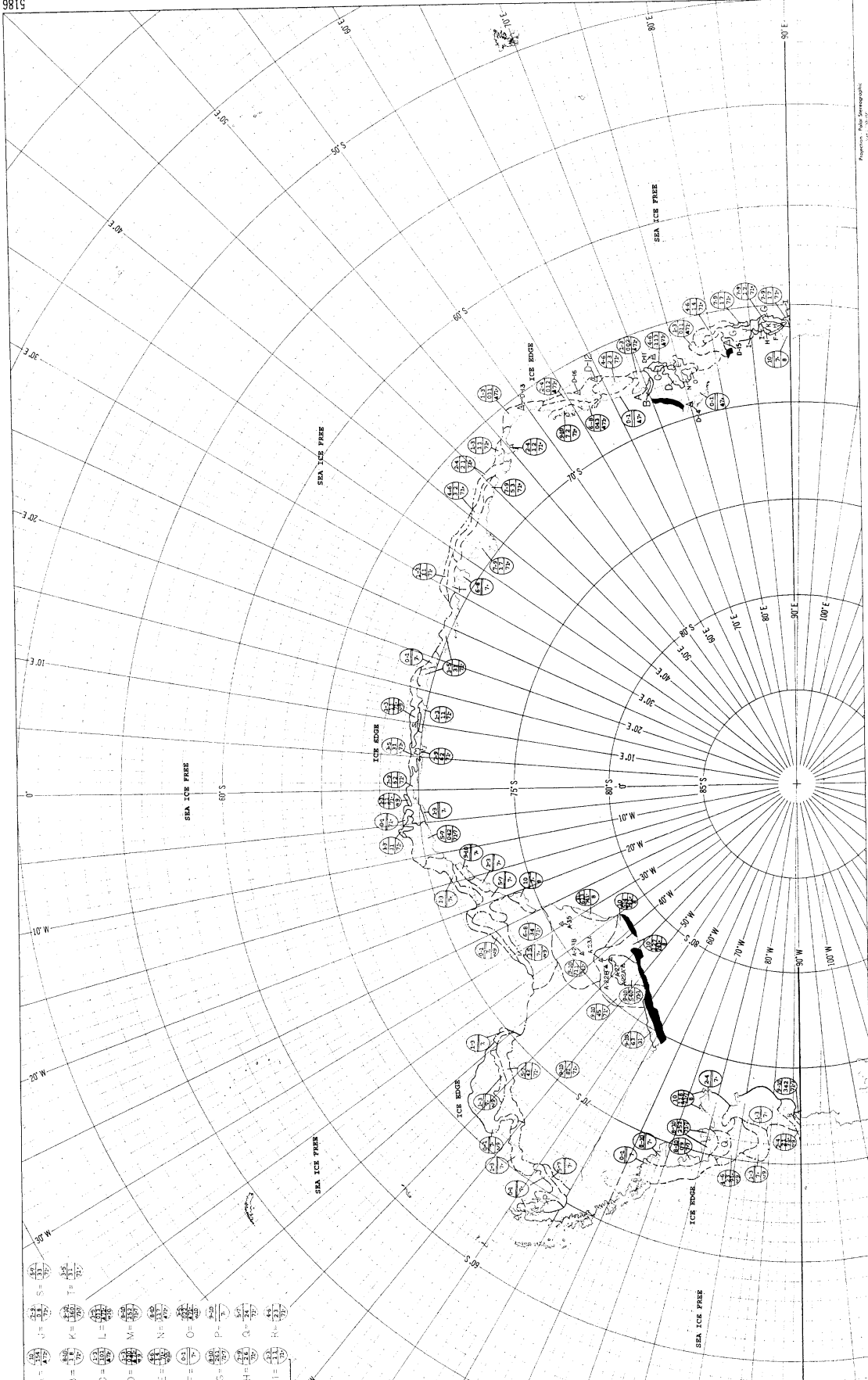
ANTARCTIC ICE ANALYSIS 1721 FEB 57
 MAINTAINED BY 3117
 DEPARTMENT OF COMMERCE, UNITED STATES GOVERNMENT

SYMBOLS:
 A. Icebergs
 B. Icebergs
 C. Icebergs
 D. Icebergs
 E. Icebergs
 F. Icebergs
 G. Icebergs
 H. Icebergs
 I. Icebergs
 J. Icebergs
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 S. Icebergs
 T. Icebergs
 U. Icebergs
 V. Icebergs
 W. Icebergs
 X. Icebergs
 Y. Icebergs
 Z. Icebergs

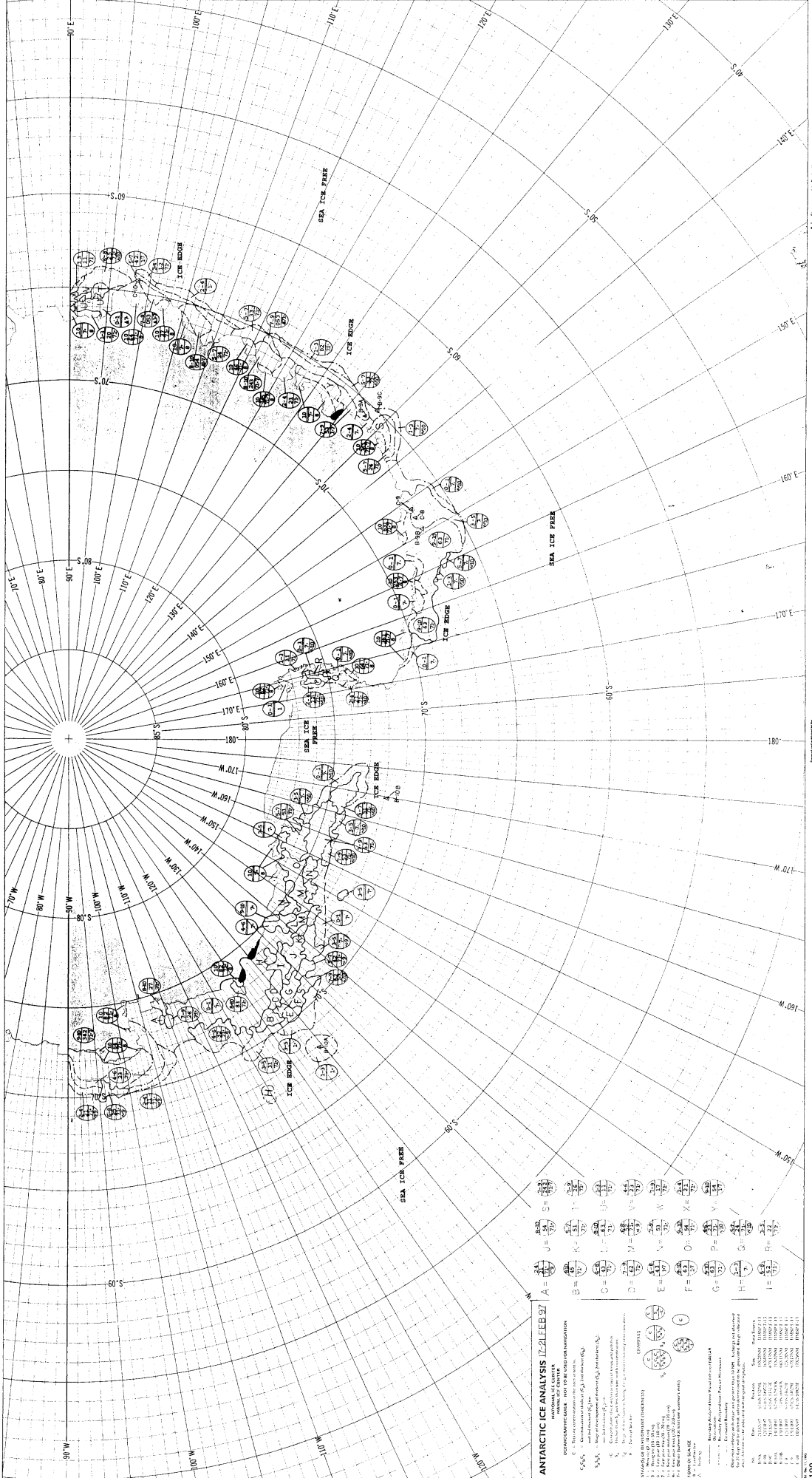
DEFINITIONS:
 A. Icebergs
 B. Icebergs
 C. Icebergs
 D. Icebergs
 E. Icebergs
 F. Icebergs
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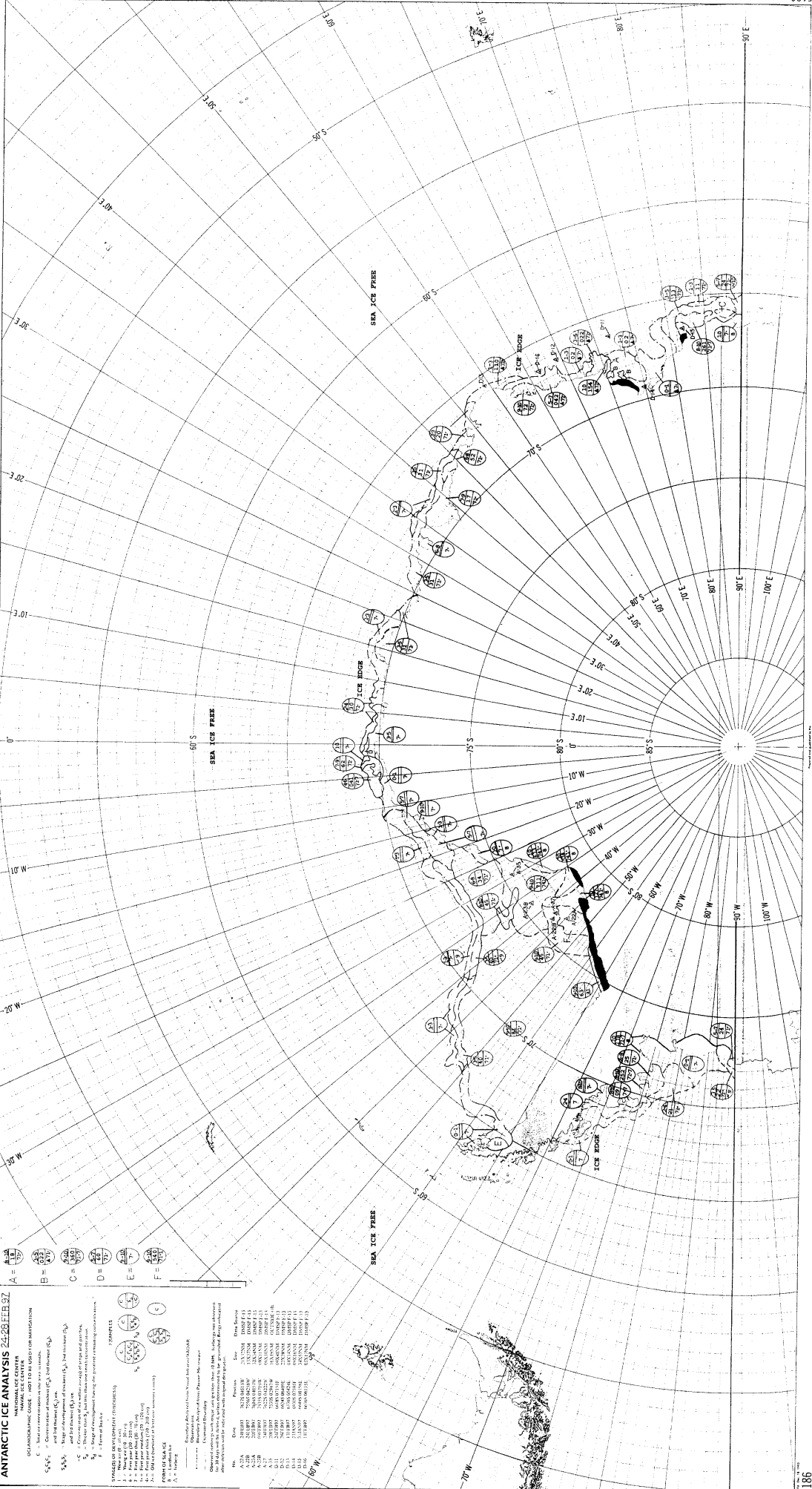
EXPLANATION:
 A. Icebergs
 B. Icebergs
 C. Icebergs
 D. Icebergs
 E. Icebergs
 F. Icebergs
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 X. Icebergs
 Y. Icebergs
 Z. Icebergs

NOTES:
 1. This chart is based on data received from the U.S. Navy, U.S. Coast Guard, and other sources.
 2. The chart is intended for use as a guide only and should not be used for navigation.
 3. The chart is subject to change without notice.
 4. The chart is not to be used for any purpose other than that for which it was designed.
 5. The chart is not to be used for any purpose other than that for which it was designed.



Projection - Polar Stereographic
 Scale - 1:100,000
 Date - February 1957





ANTARCTIC ICE ANALYSIS 24-28 FEB 57

NAVY OPERATIONAL CENTER
 NAVAL ICE CENTER

SYMBOLS:

- C - Sea ice concentration
- S₁, S₂, S₃ - Concentration of ice (S₁ for maximum S₂ and S₃ for minimum S₁)
- S₄, S₅ - Ice thickness (S₄ for maximum S₅ for minimum S₄)
- S₆ - Ice type (S₆ for maximum S₆ for minimum S₆)
- S₇ - Stage of development (S₇ for maximum S₇ for minimum S₇)
- S₈ - Ice age (S₈ for maximum S₈ for minimum S₈)
- S₉ - Ice color (S₉ for maximum S₉ for minimum S₉)
- S₁₀ - Ice texture (S₁₀ for maximum S₁₀ for minimum S₁₀)
- S₁₁ - Ice shape (S₁₁ for maximum S₁₁ for minimum S₁₁)
- S₁₂ - Ice sound (S₁₂ for maximum S₁₂ for minimum S₁₂)
- S₁₃ - Ice smell (S₁₃ for maximum S₁₃ for minimum S₁₃)
- S₁₄ - Ice taste (S₁₄ for maximum S₁₄ for minimum S₁₄)
- S₁₅ - Ice touch (S₁₅ for maximum S₁₅ for minimum S₁₅)
- S₁₆ - Ice sight (S₁₆ for maximum S₁₆ for minimum S₁₆)
- S₁₇ - Ice smell (S₁₇ for maximum S₁₇ for minimum S₁₇)
- S₁₈ - Ice taste (S₁₈ for maximum S₁₈ for minimum S₁₈)
- S₁₉ - Ice touch (S₁₉ for maximum S₁₉ for minimum S₁₉)
- S₂₀ - Ice sight (S₂₀ for maximum S₂₀ for minimum S₂₀)

FORMS OF SEA ICE

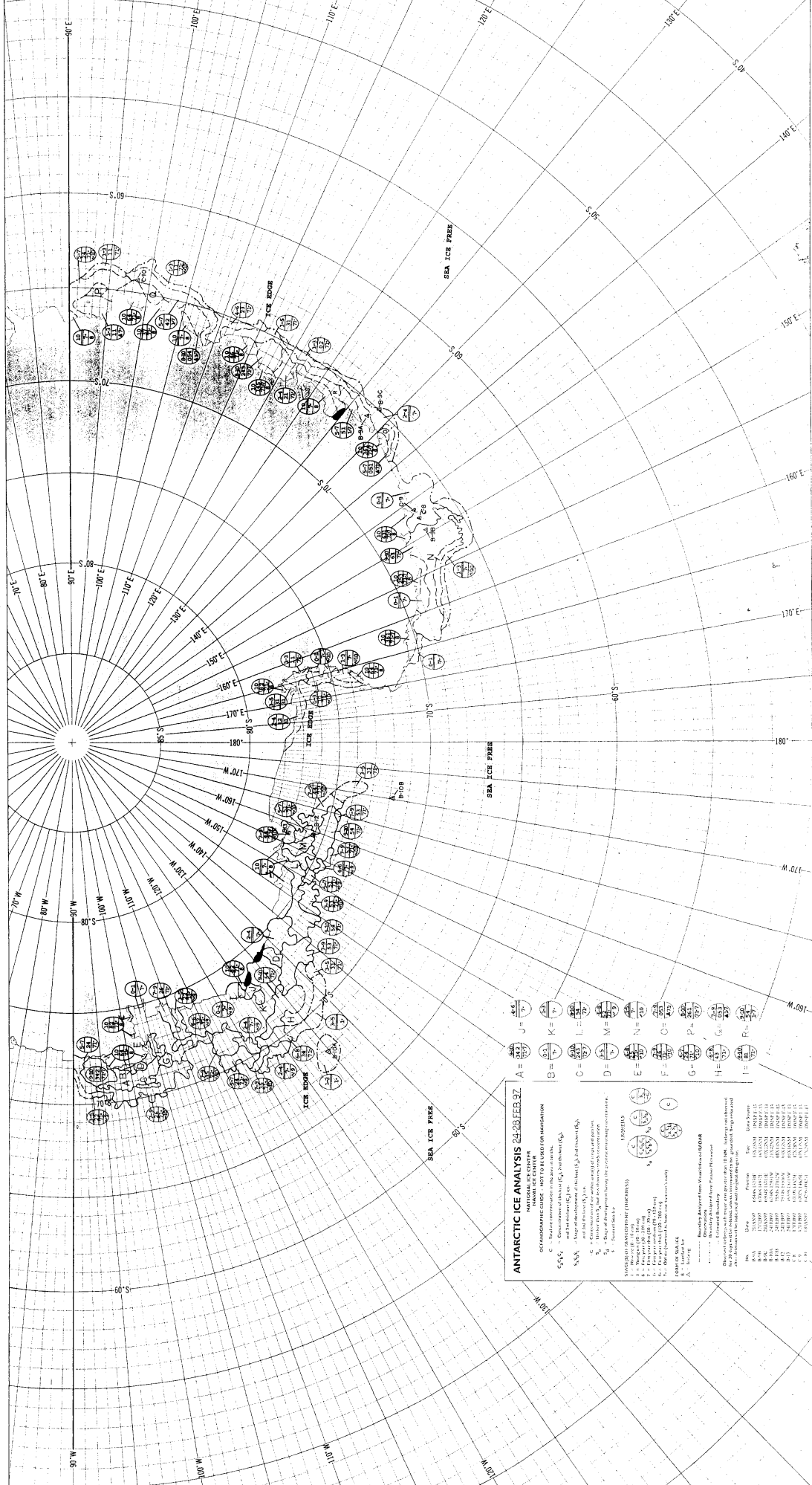
A - Iceberg
 B - Ice floe
 C - Ice cake
 D - Ice field
 E - Ice pack
 F - Ice sheet

REFERENCES:

1. "Antarctic Iceberg Handbook" (1954)
 2. "Antarctic Iceberg Handbook" (1955)
 3. "Antarctic Iceberg Handbook" (1956)
 4. "Antarctic Iceberg Handbook" (1957)
 5. "Antarctic Iceberg Handbook" (1958)
 6. "Antarctic Iceberg Handbook" (1959)
 7. "Antarctic Iceberg Handbook" (1960)
 8. "Antarctic Iceberg Handbook" (1961)
 9. "Antarctic Iceberg Handbook" (1962)
 10. "Antarctic Iceberg Handbook" (1963)
 11. "Antarctic Iceberg Handbook" (1964)
 12. "Antarctic Iceberg Handbook" (1965)
 13. "Antarctic Iceberg Handbook" (1966)
 14. "Antarctic Iceberg Handbook" (1967)
 15. "Antarctic Iceberg Handbook" (1968)
 16. "Antarctic Iceberg Handbook" (1969)
 17. "Antarctic Iceberg Handbook" (1970)
 18. "Antarctic Iceberg Handbook" (1971)
 19. "Antarctic Iceberg Handbook" (1972)
 20. "Antarctic Iceberg Handbook" (1973)

Projection - Polar Stereographic

Source - National Oceanic and Atmospheric Administration



ANTARCTIC ICE ANALYSIS FEB 32

NATIONAL ICE CENTER
 GOVERNMENT OF CANADA
 C - Ice concentration in the ice fields.
 S - Stage of development (1-5) of ice fields.
 N - Nature of ice (1-5) and thickness (ft).
 T - Time from the date of observation.
 F - Force per unit area (lb/ft²).
 W - Wind direction and force (knots).
 S - Sea surface temperature (°C).
 P - Pressure (hPa).
 H - Humidity (%).
 V - Visibility (miles).
 D - Direction of ice drift (true).
 S - Speed of ice drift (knots).
 R - Reference to the chart.

SYMBOLS OF DEVELOPMENT (STAGES)

EXPLANATION
 1 - Ice concentration in the ice fields.
 2 - Nature of ice (1-5) and thickness (ft).
 3 - Time from the date of observation.
 4 - Force per unit area (lb/ft²).
 5 - Wind direction and force (knots).
 6 - Sea surface temperature (°C).
 7 - Pressure (hPa).
 8 - Humidity (%).
 9 - Visibility (miles).
 10 - Direction of ice drift (true).
 11 - Speed of ice drift (knots).
 12 - Reference to the chart.

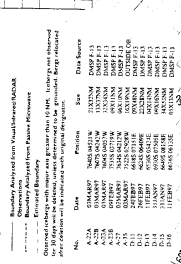
COAST OF CANADA
 A - Labrador
 B - Newfoundland
 C - Prince Edward Island
 D - Nova Scotia
 E - New Brunswick
 F - Quebec
 G - Ontario
 H - Manitoba
 I - Saskatchewan
 J - Alberta
 K - British Columbia
 L - Yukon
 M - Northwest Territories
 N - Nunavut

COAST OF ANTARCTICA
 A - Weddell Sea
 B - Ross Sea
 C - Amundsen Sea
 D - Bellingshove Sea
 E - Phoenix Islands
 F - Phoenix Islands
 G - Phoenix Islands
 H - Phoenix Islands
 I - Phoenix Islands
 J - Phoenix Islands
 K - Phoenix Islands
 L - Phoenix Islands
 M - Phoenix Islands
 N - Phoenix Islands
 O - Phoenix Islands
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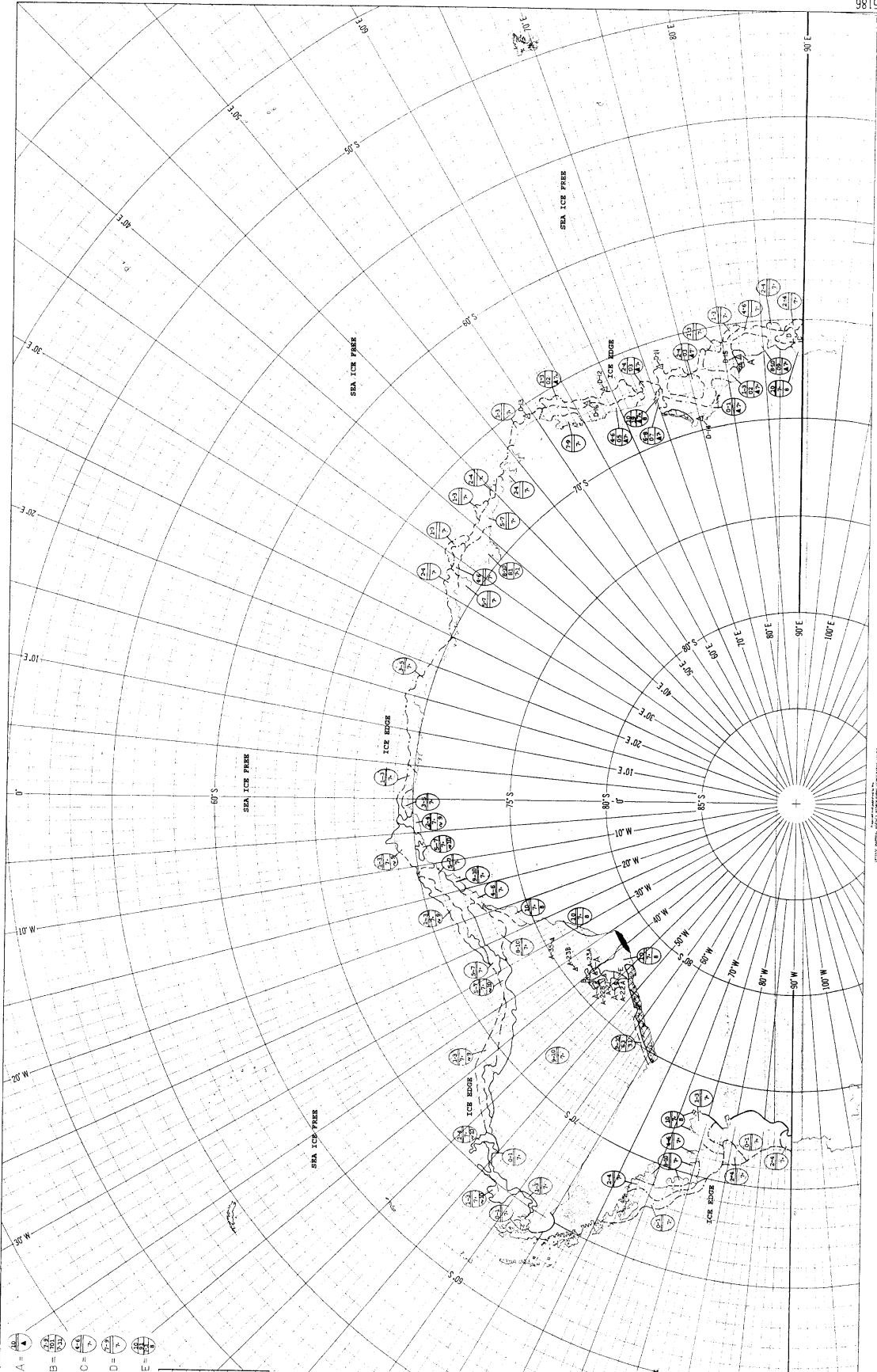
ANTARCTIC ICE ANALYSIS 03-07-MAR-97

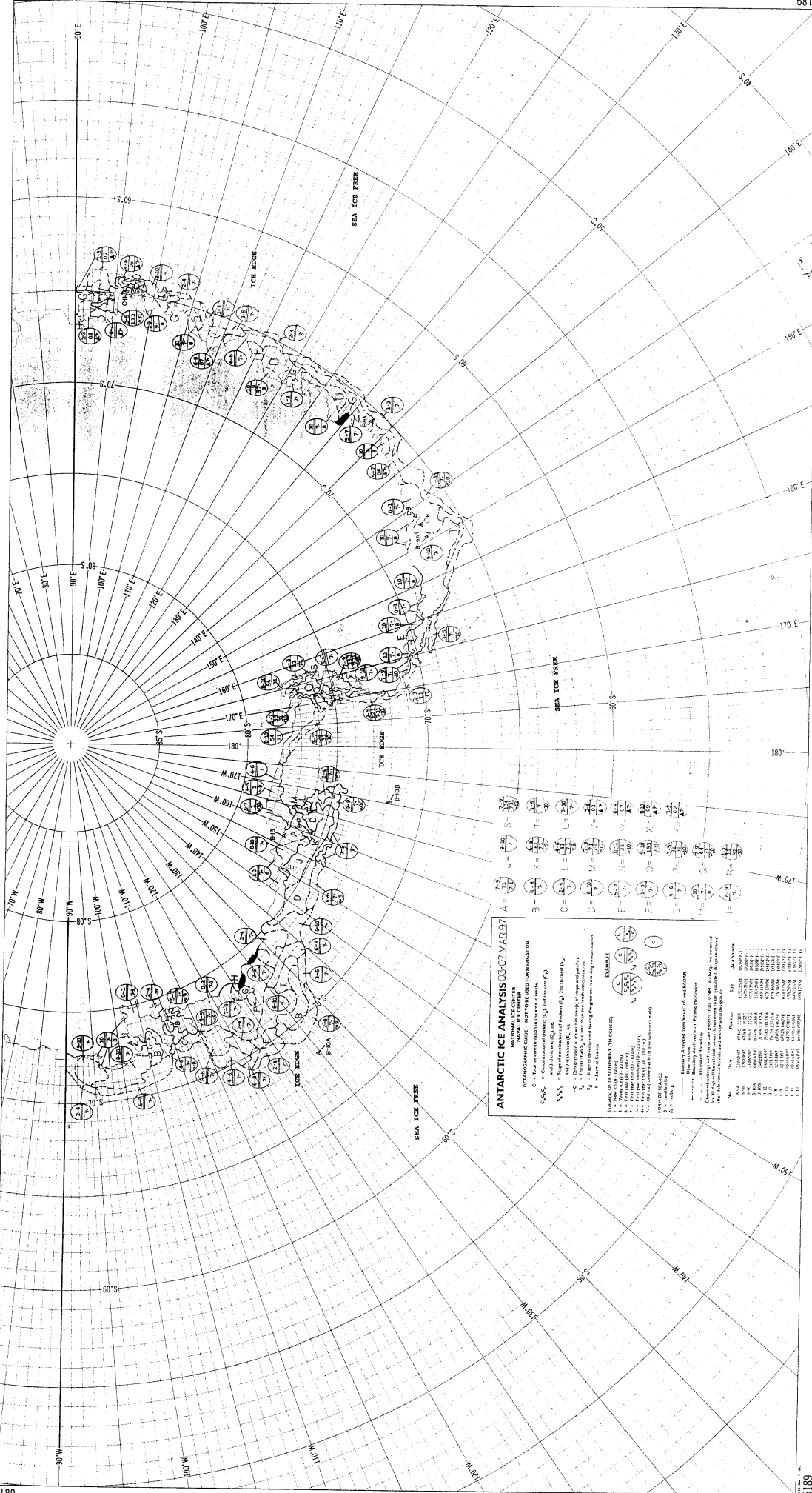
NATIONAL ICE CENTER
ANTARCTIC ICE ANALYSIS
 03-07-MAR-97

SYMBOLS:
 C = Ice concentration in sea ice.
 S, S₁, S₂ = Concentration of ice in % of area.
 S₁, S₂ = Concentration of ice in % of area.
 S₁, S₂ = Concentration of ice in % of area.
 S₁, S₂ = Concentration of ice in % of area.



Ice Type	Symbol	Concentration (%)
SEA ICE FREE	(Empty circle)	0
SEA ICE FREE	(Circle with 0)	0
SEA ICE FREE	(Circle with 10)	10
SEA ICE FREE	(Circle with 20)	20
SEA ICE FREE	(Circle with 30)	30
SEA ICE FREE	(Circle with 40)	40
SEA ICE FREE	(Circle with 50)	50
SEA ICE FREE	(Circle with 60)	60
SEA ICE FREE	(Circle with 70)	70
SEA ICE FREE	(Circle with 80)	80
SEA ICE FREE	(Circle with 90)	90
SEA ICE FREE	(Circle with 100)	100





ANTARCTIC ICE ANALYSIS 03-07 MAR 97

ORGANIZATIONAL INFORMATION

NATIONAL ICE CENTER

DATA SOURCES

C - Data in concentration in the area shown.

C_{max} - Maximum concentration of ice in the area.

C_{min} - Minimum concentration of ice in the area.

C_{avg} - Average concentration of ice in the area.

C_{std} - Standard deviation of concentration of ice in the area.

C_{var} - Variance of concentration of ice in the area.

C_{cov} - Covariance of concentration of ice in the area.

C_{corr} - Correlation coefficient of concentration of ice in the area.

C_{reg} - Regression coefficient of concentration of ice in the area.

C_{int} - Intercept of regression line of concentration of ice in the area.

C_{res} - Residuals of regression line of concentration of ice in the area.

C_{adj} - Adjusted R-squared value of regression line of concentration of ice in the area.

C_{f} - F-statistic of regression line of concentration of ice in the area.

C_{t} - T-statistic of regression line of concentration of ice in the area.

C_{p} - P-value of regression line of concentration of ice in the area.

C_{dof} - Degrees of freedom of regression line of concentration of ice in the area.

C_{sig} - Significance level of regression line of concentration of ice in the area.

C_{prob} - Probability of regression line of concentration of ice in the area.

C_{type} - Type of regression line of concentration of ice in the area.

C_{method} - Method of regression line of concentration of ice in the area.

$C_{software}$ - Software used for regression line of concentration of ice in the area.

$C_{version}$ - Version of software used for regression line of concentration of ice in the area.

C_{author} - Author of regression line of concentration of ice in the area.

C_{date} - Date of regression line of concentration of ice in the area.

C_{time} - Time of regression line of concentration of ice in the area.

$C_{location}$ - Location of regression line of concentration of ice in the area.

C_{scale} - Scale of regression line of concentration of ice in the area.

C_{units} - Units of regression line of concentration of ice in the area.

$C_{precision}$ - Precision of regression line of concentration of ice in the area.

$C_{accuracy}$ - Accuracy of regression line of concentration of ice in the area.

$C_{repeatability}$ - Repeatability of regression line of concentration of ice in the area.

$C_{robustness}$ - Robustness of regression line of concentration of ice in the area.

$C_{compatibility}$ - Compatibility of regression line of concentration of ice in the area.

$C_{interoperability}$ - Interoperability of regression line of concentration of ice in the area.

$C_{portability}$ - Portability of regression line of concentration of ice in the area.

$C_{flexibility}$ - Flexibility of regression line of concentration of ice in the area.

$C_{adaptability}$ - Adaptability of regression line of concentration of ice in the area.

$C_{scalability}$ - Scalability of regression line of concentration of ice in the area.

$C_{extensibility}$ - Extensibility of regression line of concentration of ice in the area.

$C_{maintainability}$ - Maintainability of regression line of concentration of ice in the area.

$C_{security}$ - Security of regression line of concentration of ice in the area.

$C_{reliability}$ - Reliability of regression line of concentration of ice in the area.

$C_{availability}$ - Availability of regression line of concentration of ice in the area.

$C_{usability}$ - Usability of regression line of concentration of ice in the area.

$C_{accessibility}$ - Accessibility of regression line of concentration of ice in the area.

$C_{portability}$ - Portability of regression line of concentration of ice in the area.

$C_{flexibility}$ - Flexibility of regression line of concentration of ice in the area.

$C_{adaptability}$ - Adaptability of regression line of concentration of ice in the area.

$C_{scalability}$ - Scalability of regression line of concentration of ice in the area.

$C_{extensibility}$ - Extensibility of regression line of concentration of ice in the area.

$C_{maintainability}$ - Maintainability of regression line of concentration of ice in the area.

$C_{security}$ - Security of regression line of concentration of ice in the area.

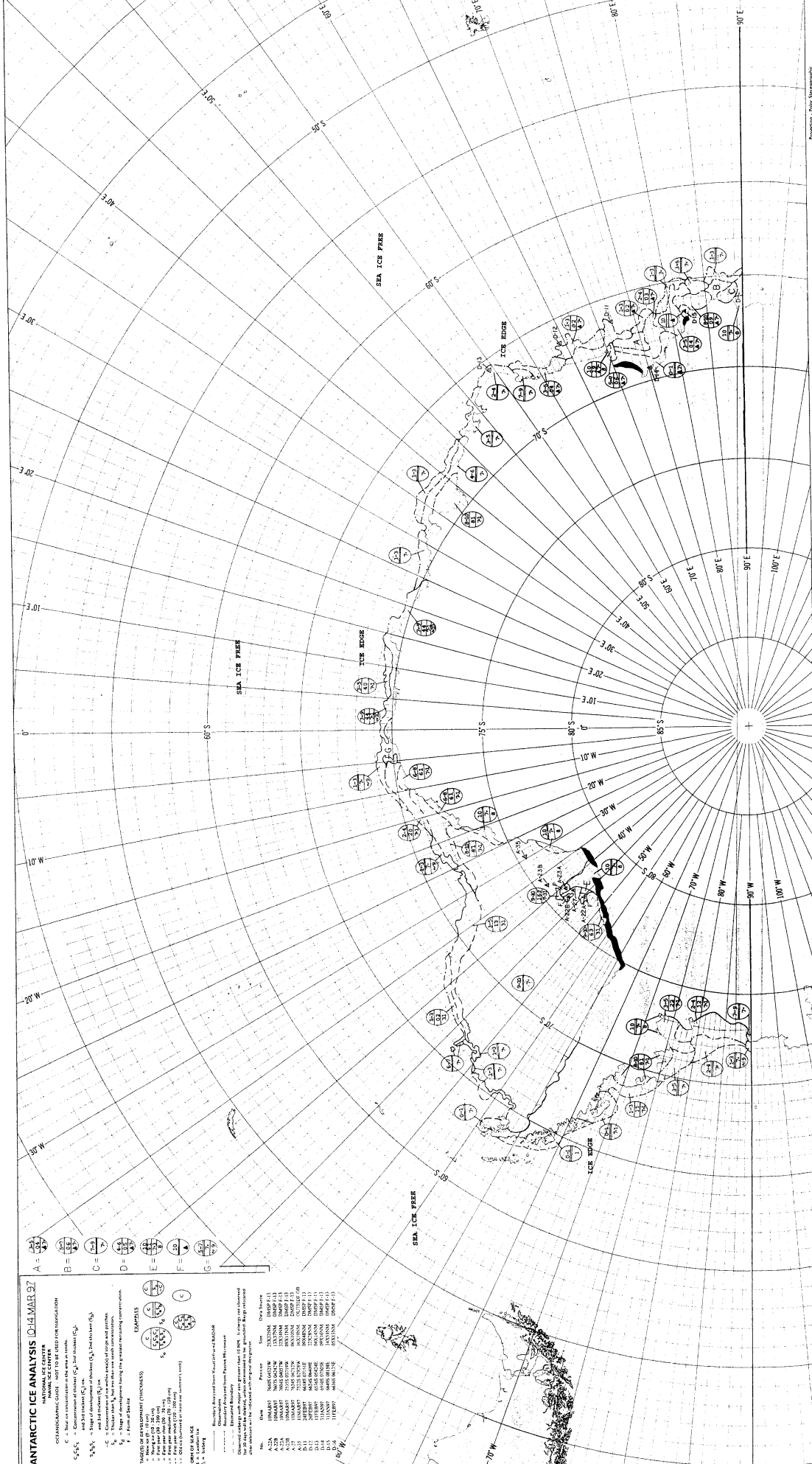
$C_{reliability}$ - Reliability of regression line of concentration of ice in the area.

$C_{availability}$ - Availability of regression line of concentration of ice in the area.

$C_{usability}$ - Usability of regression line of concentration of ice in the area.

$C_{accessibility}$ - Accessibility of regression line of concentration of ice in the area.

Printed on Demand - 10/97



ANTARCTIC ICE ANALYSIS 10-14 MAR 97
 NAVAL ICE CENTER
 NATIONAL ICE CENTER
 ENVIRONMENTAL SCIENCE CENTER

SYMBOLS:
 A = Sea ice concentration in the area in %
 B = Concentration of thickest ice (m)
 C = Concentration of thickest ice (ft)
 D = Stage of development of ice
 E = Stage of development of ice (m)
 F = Stage of development of ice (ft)
 G = Ice ridge

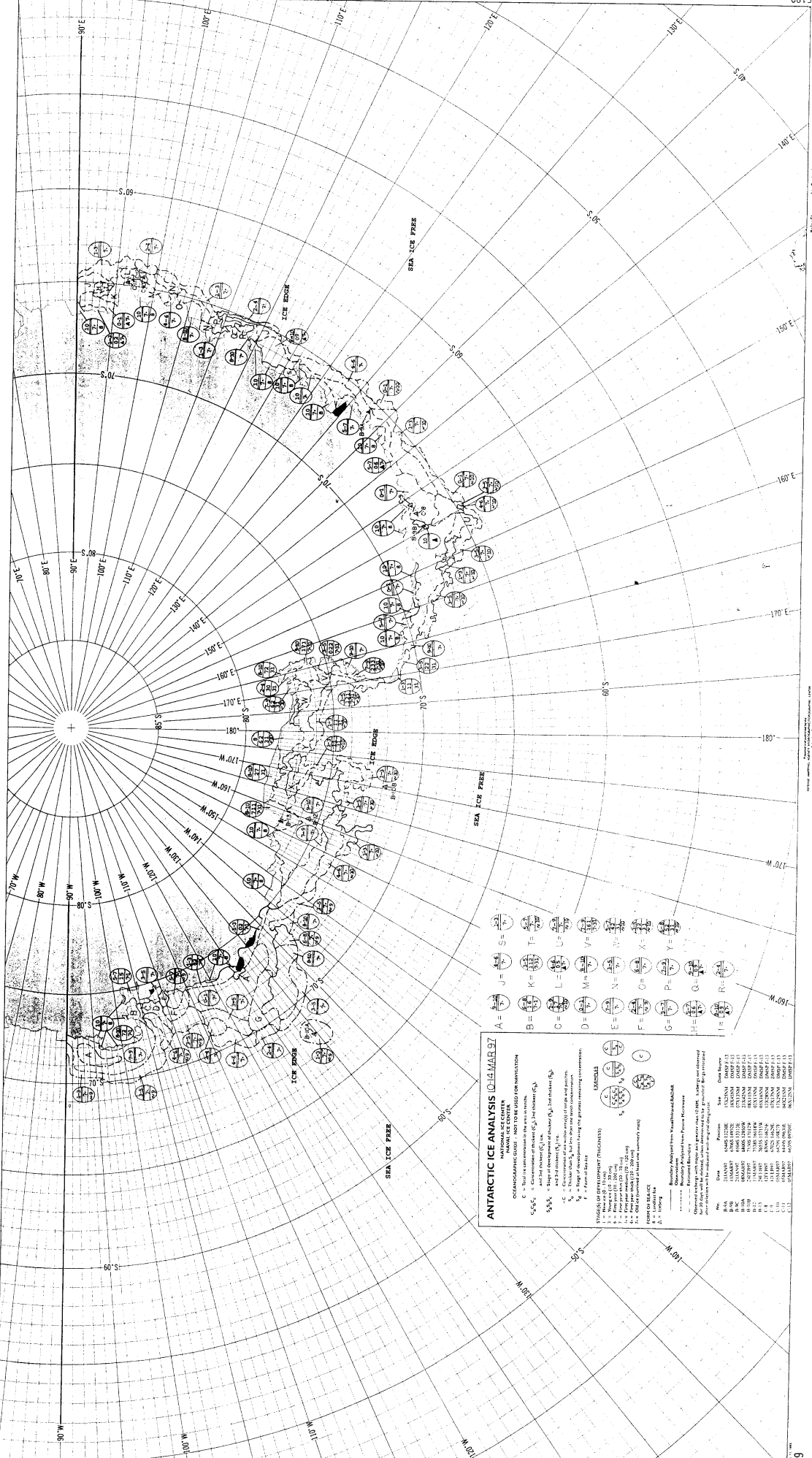
EXAMPLES:
 A = 100
 B = 100
 C = 100
 D = 100
 E = 100
 F = 100
 G = 100

KEY:
 A = Sea ice concentration in the area in %
 B = Concentration of thickest ice (m)
 C = Concentration of thickest ice (ft)
 D = Stage of development of ice
 E = Stage of development of ice (m)
 F = Stage of development of ice (ft)
 G = Ice ridge

NOTES:
 1. Data for 10-14 MAR 97
 2. Data for 10-14 MAR 97
 3. Data for 10-14 MAR 97
 4. Data for 10-14 MAR 97
 5. Data for 10-14 MAR 97
 6. Data for 10-14 MAR 97
 7. Data for 10-14 MAR 97
 8. Data for 10-14 MAR 97
 9. Data for 10-14 MAR 97
 10. Data for 10-14 MAR 97

Proprietary Photo Stereographic

NAVY, U.S. DEPARTMENT OF DEFENSE



ANTARCTIC ICE ANALYSIS (14 MAR 97)

NATIONAL ICE CENTER
 OCEANOGRAPHIC CHART - NOT FOR NAVIGATION

C = Total ice concentration in the area shown.
 S₁S₂C₁C₂ = Concentration of ice (S₁, S₂) and thickness (C₁, C₂)
 S₁S₂S₃ = Stage of development of ice (S₁, S₂, S₃)
 S₁S₂S₃S₄ = Stage of development of ice (S₁, S₂, S₃, S₄)
 S₁S₂S₃S₄S₅ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅)
 S₁S₂S₃S₄S₅S₆ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅, S₆)
 S₁S₂S₃S₄S₅S₆S₇ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅, S₆, S₇)
 S₁S₂S₃S₄S₅S₆S₇S₈ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅, S₆, S₇, S₈)
 S₁S₂S₃S₄S₅S₆S₇S₈S₉ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅, S₆, S₇, S₈, S₉)
 S₁S₂S₃S₄S₅S₆S₇S₈S₉S₁₀ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅, S₆, S₇, S₈, S₉, S₁₀)

STAGES OF DEVELOPMENT (PERCENTAGE)

S₁ = New ice (0-10%)
 S₂ = First year ice (10-30%)
 S₃ = First year ice (30-50%)
 S₄ = First year ice (50-70%)
 S₅ = First year ice (70-90%)
 S₆ = First year ice (90-100%)
 S₇ = Old ice (10-30%)
 S₈ = Old ice (30-50%)
 S₉ = Old ice (50-70%)
 S₁₀ = Old ice (70-90%)
 S₁₁ = Old ice (90-100%)

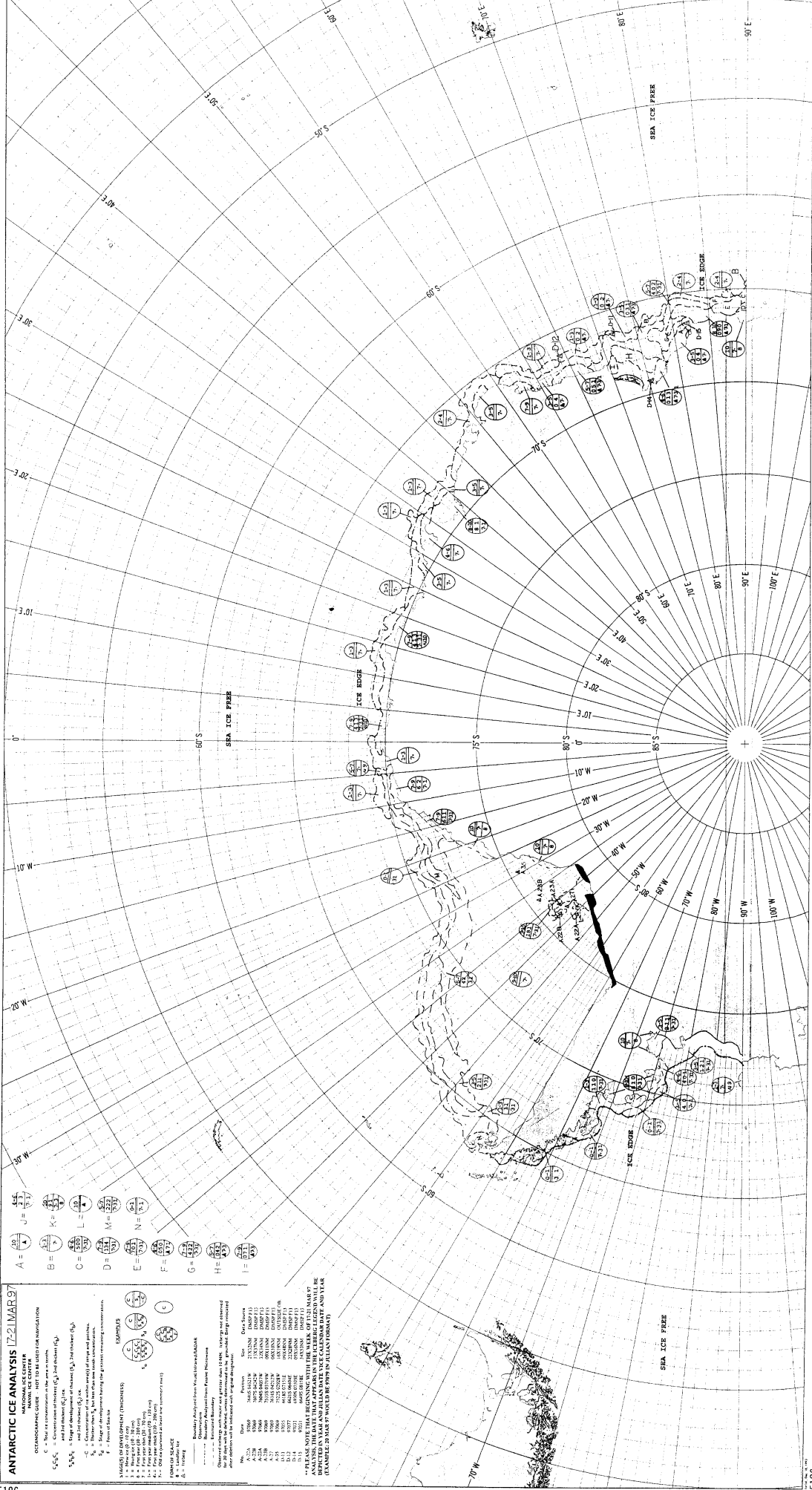
EXAMPLES

S₁S₂S₃S₄S₅S₆S₇S₈S₉S₁₀S₁₁ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅, S₆, S₇, S₈, S₉, S₁₀, S₁₁)
 S₁S₂S₃S₄S₅S₆S₇S₈S₉S₁₀S₁₁S₁₂ = Stage of development of ice (S₁, S₂, S₃, S₄, S₅, S₆, S₇, S₈, S₉, S₁₀, S₁₁, S₁₂)

SYMBOLS

A = 1/100
 B = 2/100
 C = 3/100
 D = 4/100
 E = 5/100
 F = 6/100
 G = 7/100
 H = 8/100
 I = 9/100
 J = 10/100
 K = 11/100
 L = 12/100
 M = 13/100
 N = 14/100
 O = 15/100
 P = 16/100
 Q = 17/100
 R = 18/100
 S = 19/100
 T = 20/100
 U = 21/100
 V = 22/100
 W = 23/100
 X = 24/100
 Y = 25/100
 Z = 26/100

Map Information:
 National Ice Center, Washington, DC
 Date: 14 MAR 97
 Scale: 1:100,000
 Projection: Lambert Conformal Conic
 Datum: WGS 84
 Contour Interval: 100 meters
 Source: Satellite altimetry and other data



ANTARCTIC ICE ANALYSIS 17-21 MAR 97

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

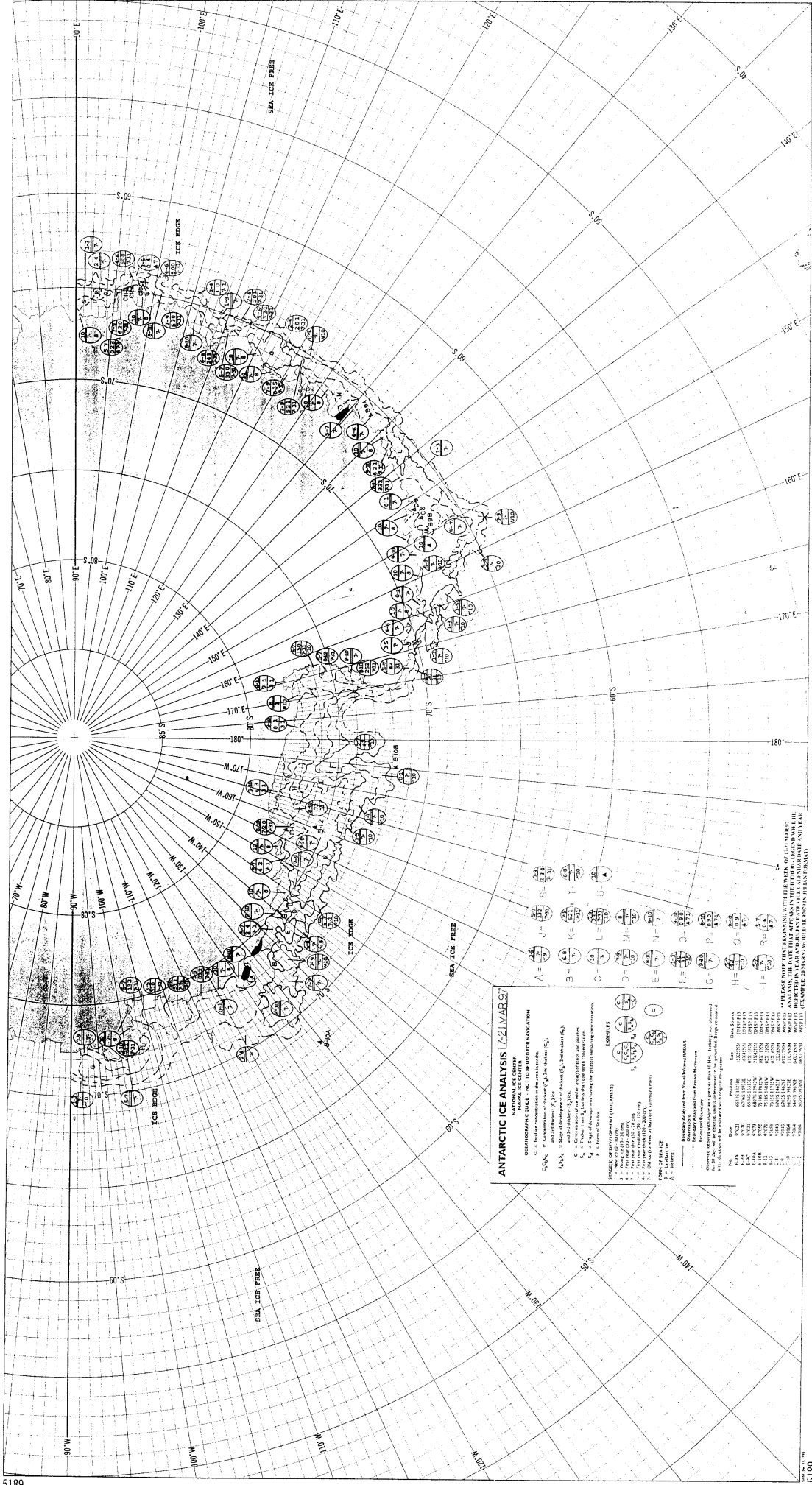
Legend:

- C:** Ice concentration in the area in tenths.
- C₁C₂C₃:** Ice concentration in the area in tenths.
- C₁C₂C₃C₄:** Ice concentration in the area in tenths.
- C₁C₂C₃C₄C₅:** Ice concentration in the area in tenths.
- C₁C₂C₃C₄C₅C₆:** Ice concentration in the area in tenths.
- C₁C₂C₃C₄C₅C₆C₇:** Ice concentration in the area in tenths.
- C₁C₂C₃C₄C₅C₆C₇C₈:** Ice concentration in the area in tenths.
- C₁C₂C₃C₄C₅C₆C₇C₈C₉:** Ice concentration in the area in tenths.
- C₁C₂C₃C₄C₅C₆C₇C₈C₉C₁₀:** Ice concentration in the area in tenths.

EXAMPLES:

- A:** 100% ice concentration
- B:** 80% ice concentration
- C:** 60% ice concentration
- D:** 40% ice concentration
- E:** 20% ice concentration
- F:** 10% ice concentration
- G:** 5% ice concentration
- H:** 2% ice concentration
- I:** 1% ice concentration

PLEASE NOTE THAT BEGINNING WITH THE WEEK OF 15-21 MAR 97, REPORTED IN YEAR AND JULIAN DATE CALENDAR DATE AND YEAR IS EXAMPLE IN MAR 97 WOULD BE 099 IN JULIAN DATE.



ANTARCTIC ICE ANALYSIS 24-28 MAR 57

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

C = Bar ice concentration in the area in tenths
 S₁ S₂ S₃ = Ice thickness (C₁ C₂ C₃)
 S₁ S₂ S₃ = Stage of development of ice (C₁ C₂ C₃)
 S₁ S₂ S₃ = Ice thickness (C₁ C₂ C₃)
 S₁ S₂ S₃ = Stage of development of ice (C₁ C₂ C₃)
 S₁ S₂ S₃ = Ice thickness (C₁ C₂ C₃)
 S₁ S₂ S₃ = Stage of development of ice (C₁ C₂ C₃)

EXAMPLES

1. C=10 S₁ S₂ S₃
 2. C=10 S₁ S₂ S₃
 3. C=10 S₁ S₂ S₃
 4. C=10 S₁ S₂ S₃
 5. C=10 S₁ S₂ S₃
 6. C=10 S₁ S₂ S₃
 7. C=10 S₁ S₂ S₃
 8. C=10 S₁ S₂ S₃
 9. C=10 S₁ S₂ S₃
 10. C=10 S₁ S₂ S₃

FORMS OF SEALS

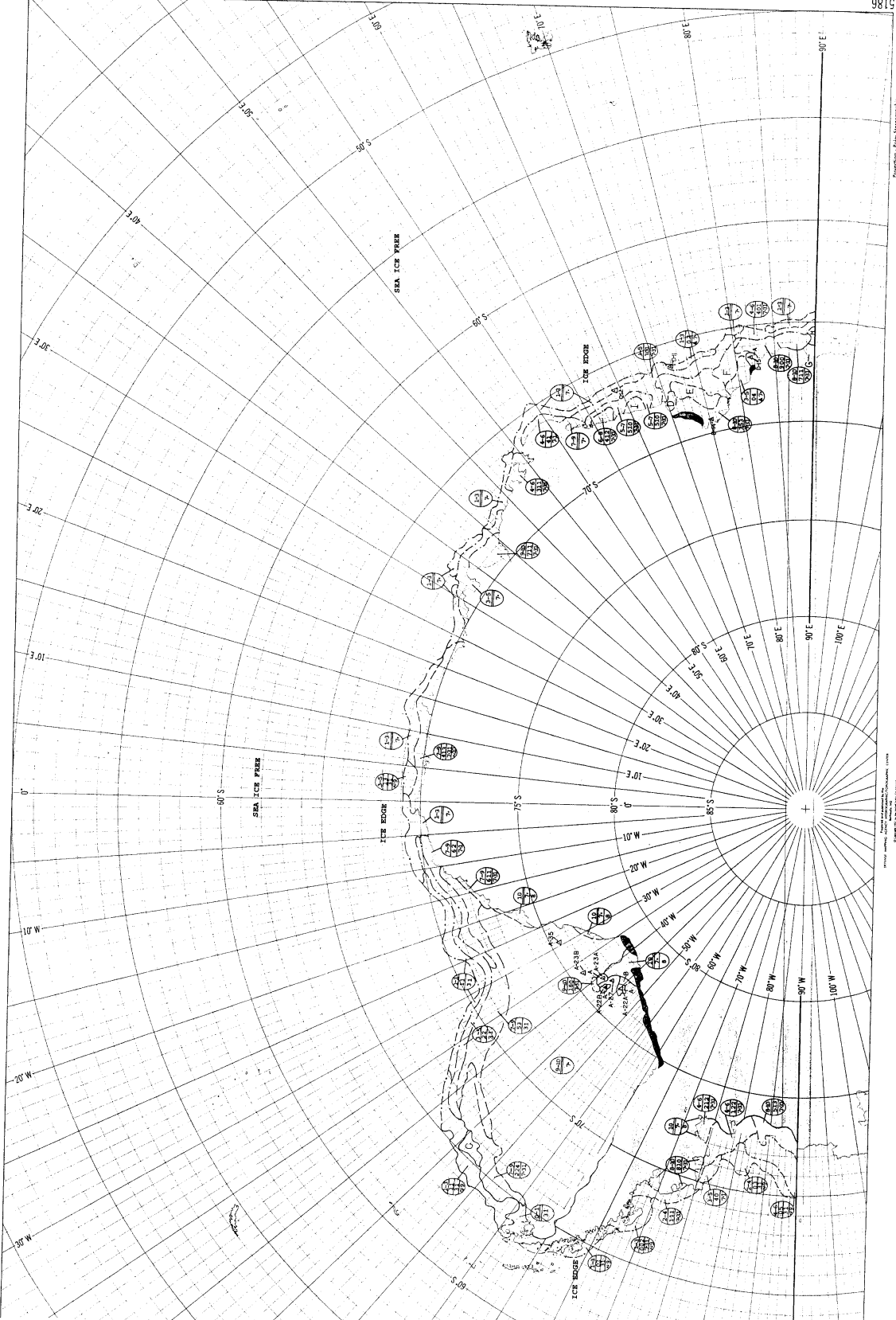
1. Seal 1
 2. Seal 2
 3. Seal 3
 4. Seal 4
 5. Seal 5
 6. Seal 6
 7. Seal 7
 8. Seal 8
 9. Seal 9
 10. Seal 10

BOUNDARY ANALYSIS FROM VISUAL OBSERVATION

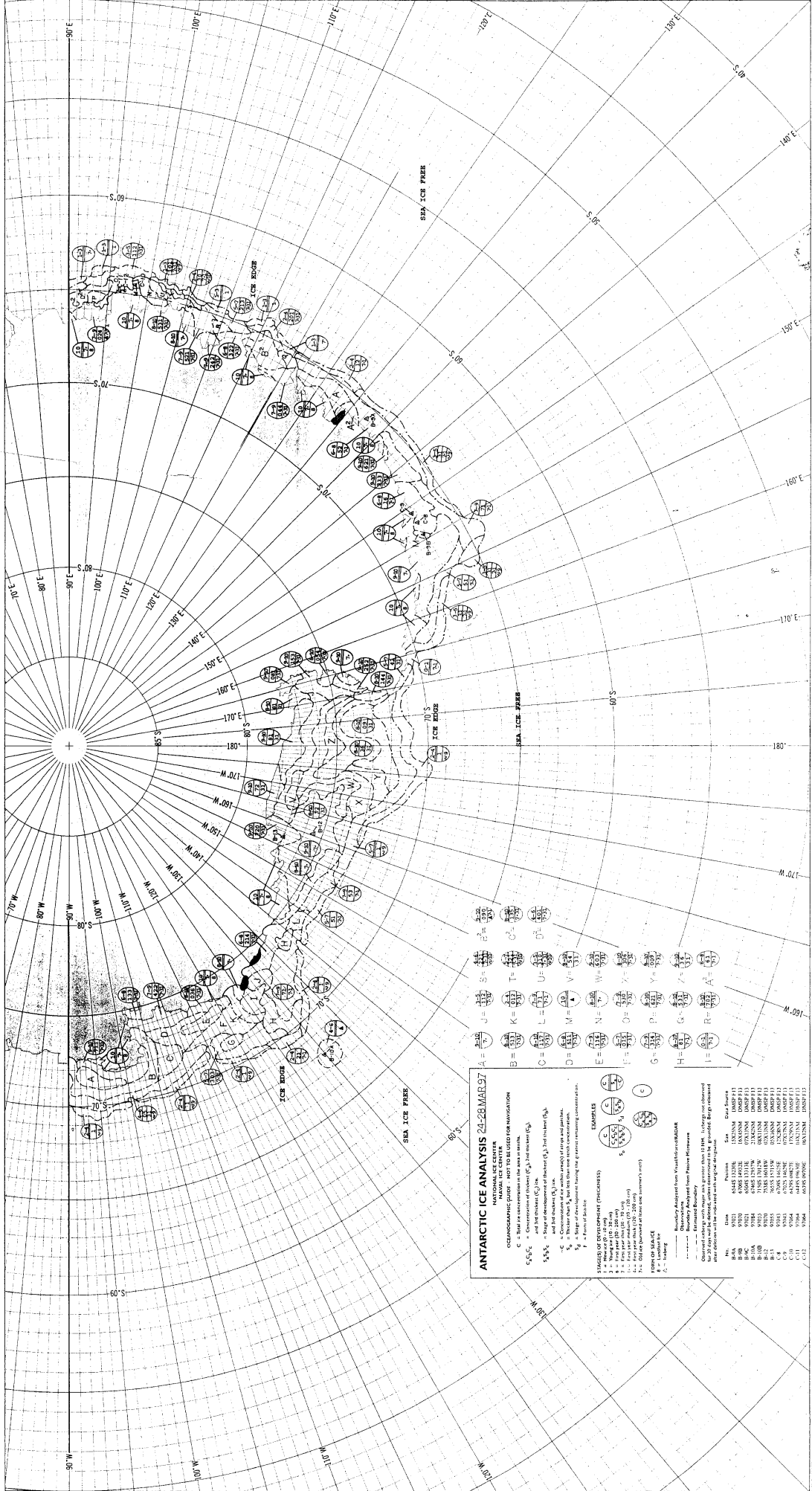
1. Boundary 1
 2. Boundary 2
 3. Boundary 3
 4. Boundary 4
 5. Boundary 5
 6. Boundary 6
 7. Boundary 7
 8. Boundary 8
 9. Boundary 9
 10. Boundary 10

EXAMPLES

1. Example 1
 2. Example 2
 3. Example 3
 4. Example 4
 5. Example 5
 6. Example 6
 7. Example 7
 8. Example 8
 9. Example 9
 10. Example 10



No.	Date	Observer	Station	Remarks
A-21A	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21B	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21C	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21D	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21E	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21F	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21G	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21H	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21I	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21J	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21K	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21L	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21M	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21N	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21O	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21P	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21Q	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21R	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21S	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21T	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21U	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21V	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21W	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21X	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21Y	24 MAR 57	7845 0431 W	735200 N	CLASIF 11
A-21Z	24 MAR 57	7845 0431 W	735200 N	CLASIF 11



ANTARCTIC ICE ANALYSIS 24-28 MAR 97

NATIONAL ICE CENTER
 ICE ANALYSIS SECTION
 4300 RIFKIN DRIVE
 WASHINGTON, DC 20543
 TEL: 202/344-2500
 FAX: 202/344-2501

SYMBOLS FOR ICEBERGS
 C = Concentration of icebergs (C₁ for the first (C₁), C₂, C₃, etc. for subsequent concentrations)
 S, N, W, E = Size of icebergs (S, N, W, E) in 100,000 sq km
 A, B, C, D, E, F = Age of icebergs (A, B, C, D, E, F) in years

SYMBOLS FOR DEVELOPMENT (FRONTAGES)
 1 = Number of icebergs
 2 = Area (sq km)
 3 = Length (km)
 4 = Perimeter (km)
 5 = Volume (10⁶ cu km)
 6 = Mass (10¹² tons)
 7 = Age (years)
 8 = Direction of movement
 9 = Direction of development
 10 = Direction of icebergs

SYMBOLS FOR SEA ICE
 A, B, C, D, E, F = Age of ice (A, B, C, D, E, F) in years
 G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z = Direction of ice movement

SYMBOLS FOR ICEBERGS
 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

SYMBOLS FOR DEVELOPMENT (FRONTAGES)
 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

SYMBOLS FOR SEA ICE
 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

SYMBOLS FOR ICEBERGS
 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

SYMBOLS FOR DEVELOPMENT (FRONTAGES)
 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

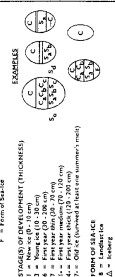
SYMBOLS FOR SEA ICE
 A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z

ANTARCTIC ICE ANALYSIS 1 JANUARY 1968

NAVYAL GEOFYSICAL CENTER

ICE CHARACTERISTICS - NOT TO BE USED FOR NAVIGATION

- C = Thickness concentration in the area shown.
- C_{10} = 10% thickness concentration.
- C_{20} = 20% thickness concentration.
- C_{30} = 30% thickness concentration.
- C_{40} = 40% thickness concentration.
- C_{50} = 50% thickness concentration.
- C_{60} = 60% thickness concentration.
- C_{70} = 70% thickness concentration.
- C_{80} = 80% thickness concentration.
- C_{90} = 90% thickness concentration.
- C_{100} = 100% thickness concentration.
- C_{110} = 110% thickness concentration.
- C_{120} = 120% thickness concentration.
- C_{130} = 130% thickness concentration.
- C_{140} = 140% thickness concentration.
- C_{150} = 150% thickness concentration.
- C_{160} = 160% thickness concentration.
- C_{170} = 170% thickness concentration.
- C_{180} = 180% thickness concentration.
- C_{190} = 190% thickness concentration.
- C_{200} = 200% thickness concentration.



SYMBOLS OF ICE CHARACTERISTICS

1 = Area of ice (in sq. mi.)

2 = Area of ice (in sq. km.)

3 = Area of ice (in sq. nautical miles)

4 = Area of ice (in sq. statute miles)

5 = Area of ice (in sq. kilometers)

6 = Area of ice (in sq. meters)

7 = Area of ice (in sq. feet)

8 = Area of ice (in sq. inches)

9 = Area of ice (in sq. centimeters)

10 = Area of ice (in sq. millimeters)

FORMS OF SEA ICE

A = Iceberg

B = Iceberg

C = Iceberg

D = Iceberg

E = Iceberg

F = Iceberg

G = Iceberg

H = Iceberg

I = Iceberg

No.	Date	Position	Area	Other Notes
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER
A-226	1968 01 01	73° 20' S 150° 00' W	1000	AVORER

BOUNDARY DATA

Boundary derived from Visual Observations

Boundary derived from Satellite Observations

Boundary derived from Radar Observations

Boundary derived from Other Observations

NOTES

1. This chart is based on the latest available information.

2. This chart is not to be used for navigation.

3. This chart is not to be used for other purposes.

4. This chart is not to be used for other purposes.

5. This chart is not to be used for other purposes.

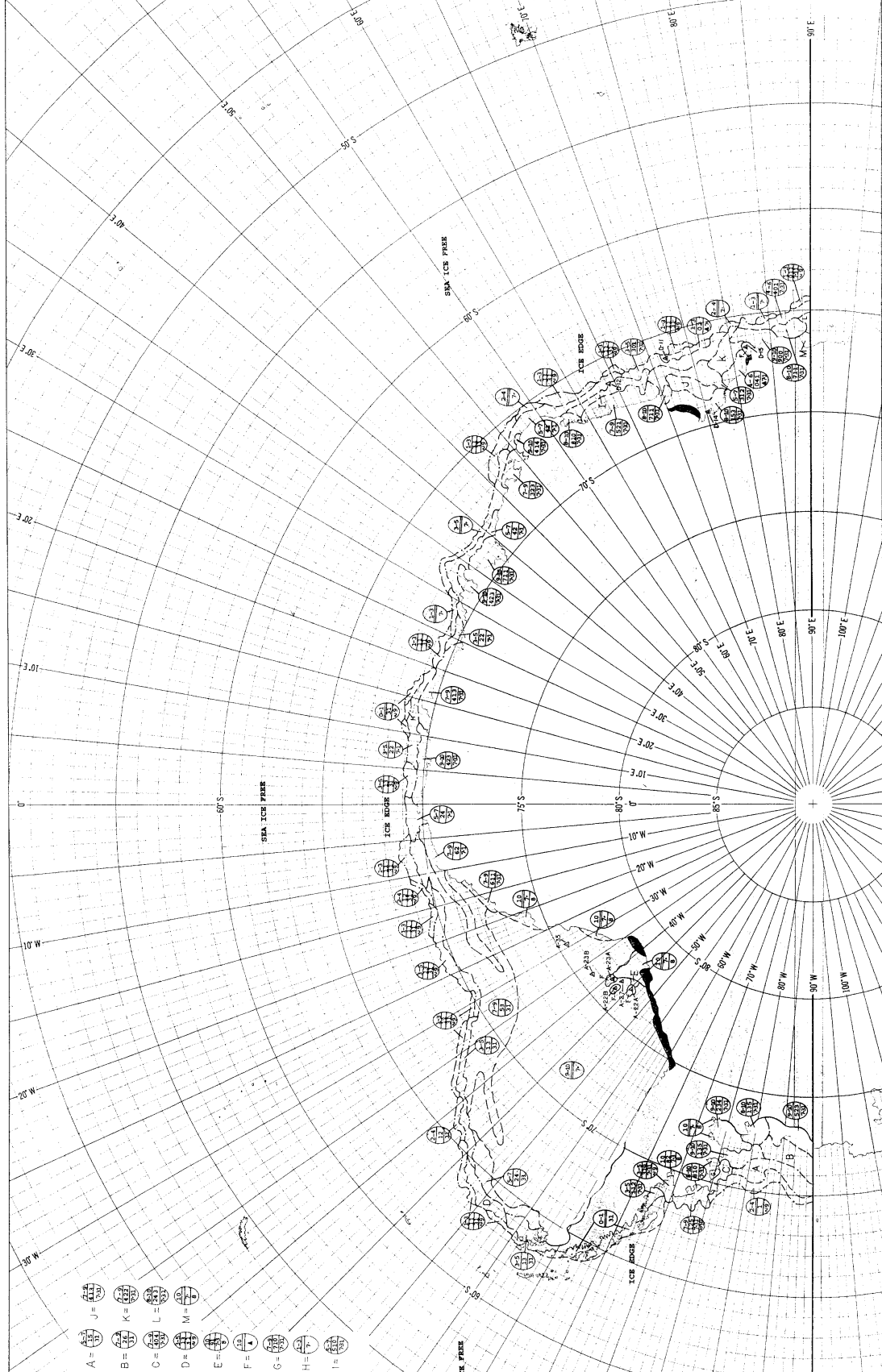
6. This chart is not to be used for other purposes.

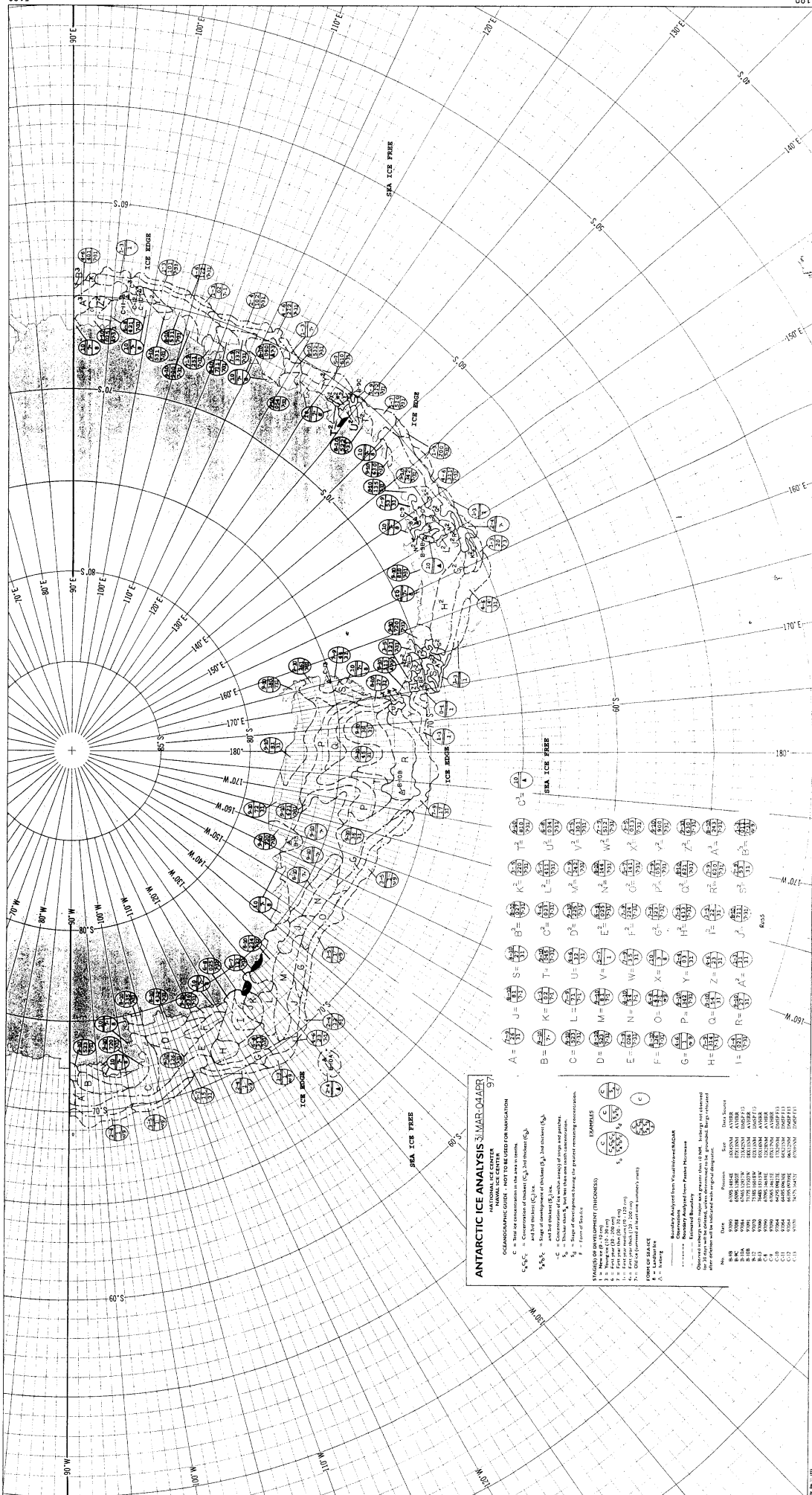
7. This chart is not to be used for other purposes.

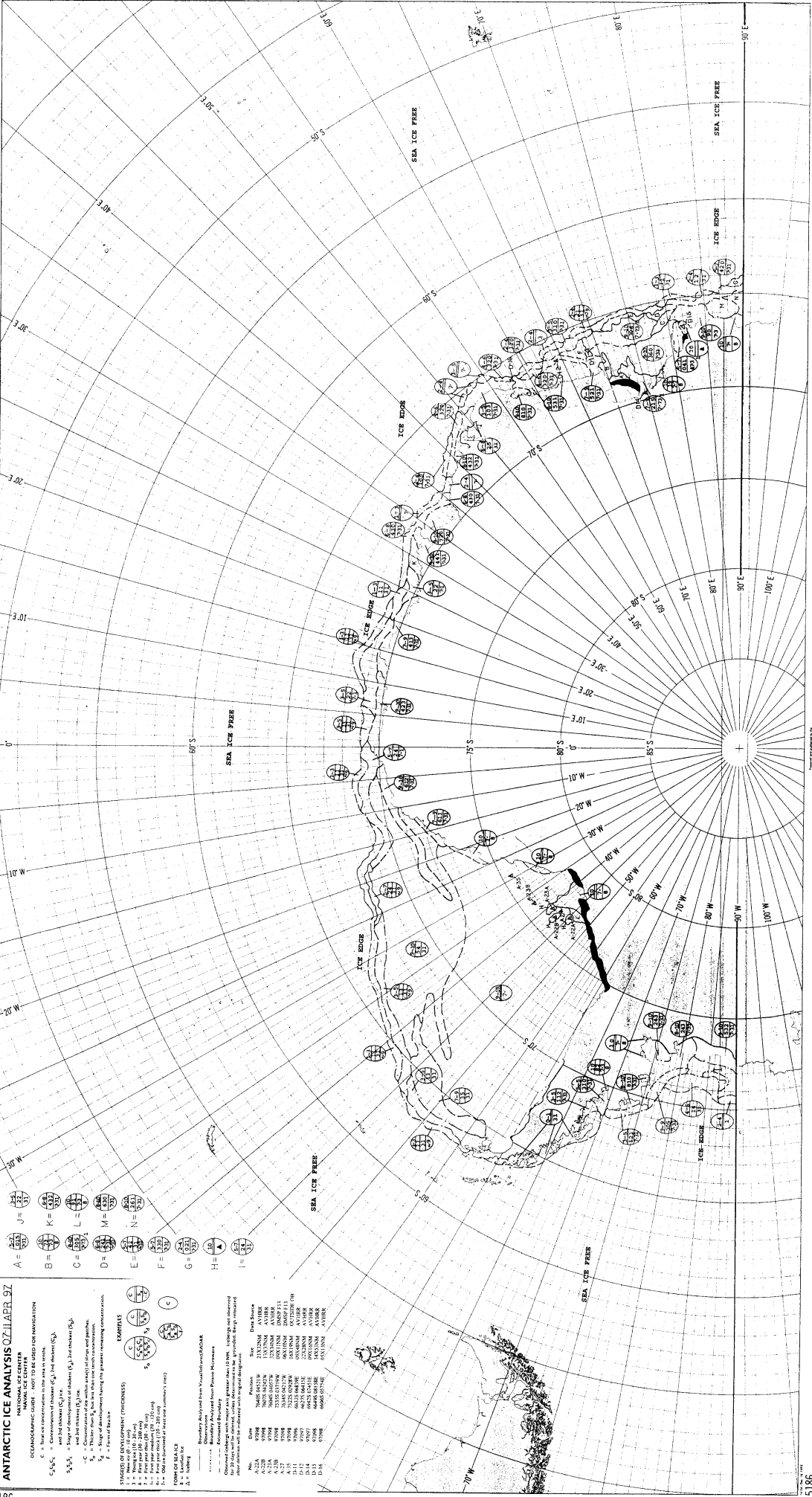
8. This chart is not to be used for other purposes.

9. This chart is not to be used for other purposes.

10. This chart is not to be used for other purposes.







ANTARCTIC ICE ANALYSIS 02 JULY 67

NAVY ICE CENTER
 NATIONAL ICE CENTER
 NAVY TO BE USED FOR NAVIGATION

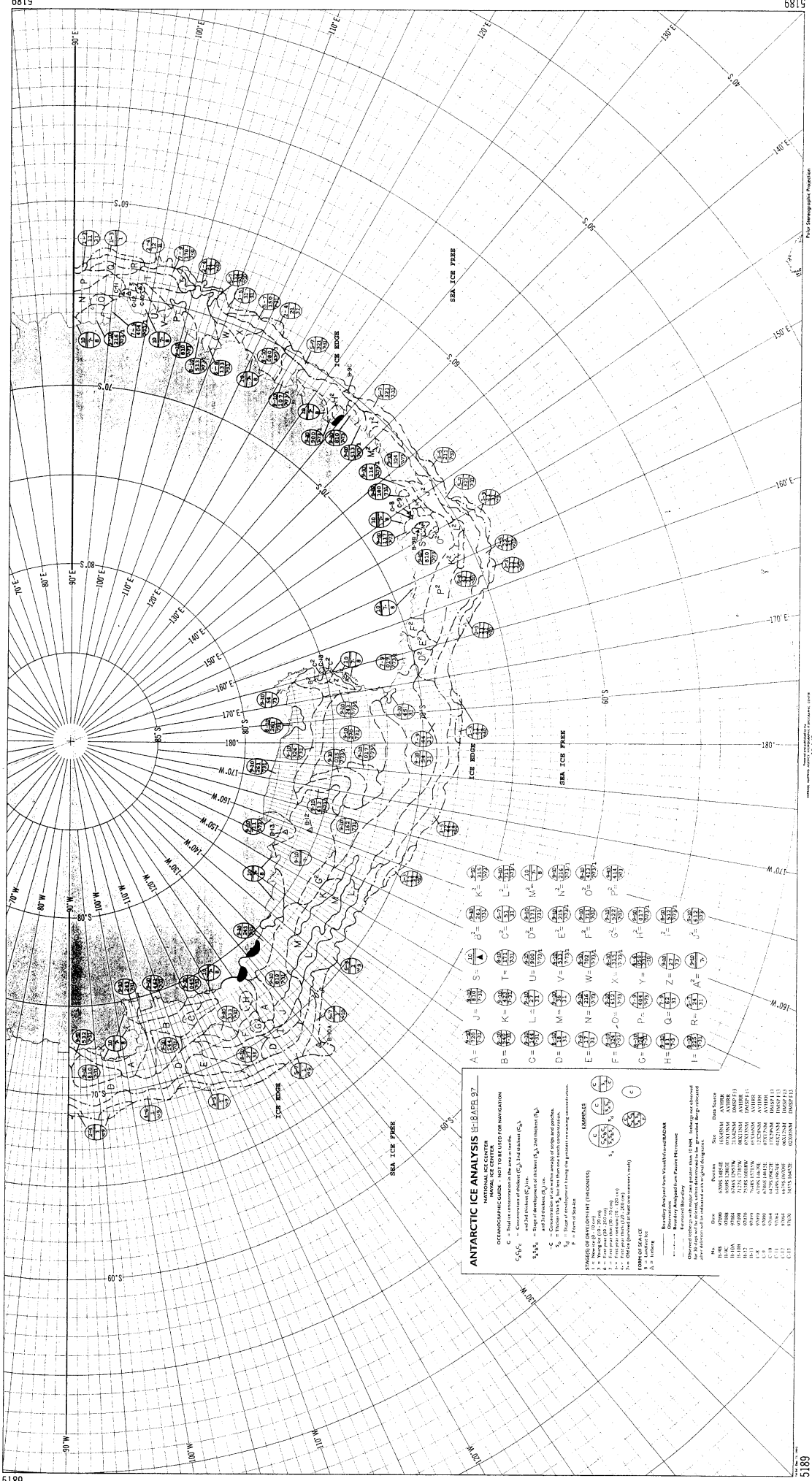
ICE - Ice
SEA ICE FREE - Sea ice free
ICE EDGE - Ice edge
SEA ICE FREE - Sea ice free

CONCENTRATIONS
 C₁ - Concentration of ice
 C₂ - Concentration of ice
 C₃ - Concentration of ice

STAGES OF DEVELOPMENT (THICKNESS)
 1 - 1st stage
 2 - 2nd stage
 3 - 3rd stage
 4 - 4th stage
 5 - 5th stage

EXAMPLES
 (A) (B) (C) (D) (E) (F) (G) (H) (I)

No.	Date	Position	Site	Data Source
A-123	09/08	70°S 130°E	ANTON	AVRHC
A-124	09/08	70°S 130°E	ANTON	AVRHC
A-125	09/08	70°S 130°E	ANTON	AVRHC
A-126	09/08	70°S 130°E	ANTON	AVRHC
A-127	09/08	70°S 130°E	ANTON	AVRHC
A-128	09/08	70°S 130°E	ANTON	AVRHC
A-129	09/08	70°S 130°E	ANTON	AVRHC
A-130	09/08	70°S 130°E	ANTON	AVRHC
A-131	09/08	70°S 130°E	ANTON	AVRHC
A-132	09/08	70°S 130°E	ANTON	AVRHC
A-133	09/08	70°S 130°E	ANTON	AVRHC
A-134	09/08	70°S 130°E	ANTON	AVRHC
A-135	09/08	70°S 130°E	ANTON	AVRHC
A-136	09/08	70°S 130°E	ANTON	AVRHC
A-137	09/08	70°S 130°E	ANTON	AVRHC
A-138	09/08	70°S 130°E	ANTON	AVRHC
A-139	09/08	70°S 130°E	ANTON	AVRHC
A-140	09/08	70°S 130°E	ANTON	AVRHC



ANTARCTIC ICE ANALYSIS (BASE 51)

NAVIGATION
 OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
 C = Thin ice concentration (see area notes)
 S, S₁, S₂, S₃ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₂ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₃ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₄ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₅ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₆ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₇ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₈ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₉ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₀ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₁ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₂ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₃ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₄ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₅ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₆ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₇ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₈ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₁₉ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)
 S₂₀ = Stage of development of snow (S₁, S₂, S₃ are defined by S₁)

EXAMPLES

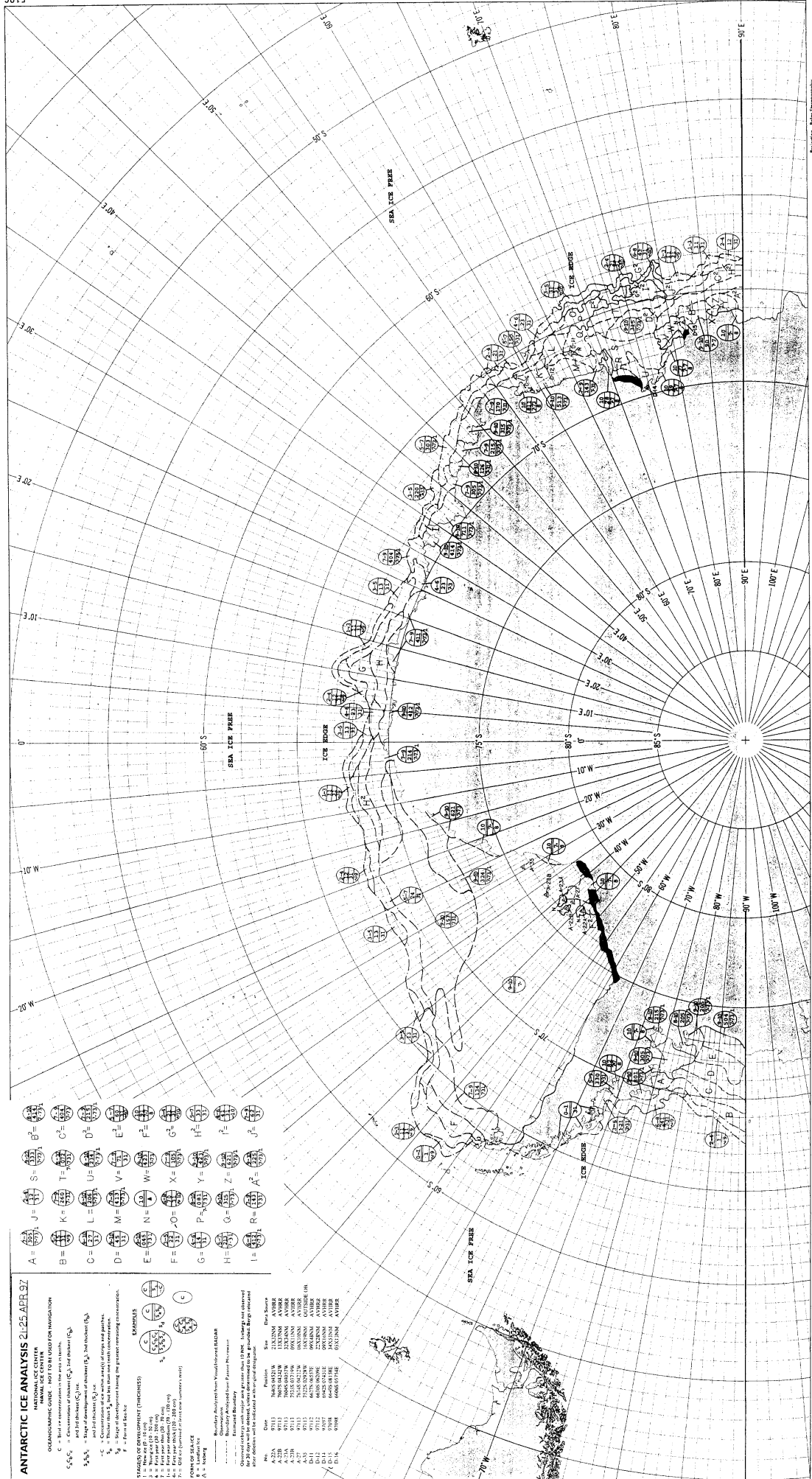
FORM OF OBSERVATION

EXPLANATIONS

BOUNDARY ANALYSIS FROM VISUAL OBSERVATION

Observed edge (e.g. with height) for greater than 15 miles. Under no circumstances shall the observed edge (e.g. with height) for greater than 15 miles be used as the basis for the plotted edge.

No.	Date	Position	Area	Dist. Source
100	1000	6000 143E	ANTARCTIC	ANTARCTIC
101	1001	6000 143E	ANTARCTIC	ANTARCTIC
102	1002	6000 143E	ANTARCTIC	ANTARCTIC
103	1003	6000 143E	ANTARCTIC	ANTARCTIC
104	1004	6000 143E	ANTARCTIC	ANTARCTIC
105	1005	6000 143E	ANTARCTIC	ANTARCTIC
106	1006	6000 143E	ANTARCTIC	ANTARCTIC
107	1007	6000 143E	ANTARCTIC	ANTARCTIC
108	1008	6000 143E	ANTARCTIC	ANTARCTIC
109	1009	6000 143E	ANTARCTIC	ANTARCTIC
110	1010	6000 143E	ANTARCTIC	ANTARCTIC
111	1011	6000 143E	ANTARCTIC	ANTARCTIC
112	1012	6000 143E	ANTARCTIC	ANTARCTIC
113	1013	6000 143E	ANTARCTIC	ANTARCTIC
114	1014	6000 143E	ANTARCTIC	ANTARCTIC
115	1015	6000 143E	ANTARCTIC	ANTARCTIC
116	1016	6000 143E	ANTARCTIC	ANTARCTIC
117	1017	6000 143E	ANTARCTIC	ANTARCTIC
118	1018	6000 143E	ANTARCTIC	ANTARCTIC
119	1019	6000 143E	ANTARCTIC	ANTARCTIC
120	1020	6000 143E	ANTARCTIC	ANTARCTIC



ANTARCTIC ICE ANALYSIS 2125 APR 87

GENERAL INFORMATION - NOT TO BE USED FOR NAVIGATION

MAP SCALE: 1:100,000

MAP DATE: 1987

MAP SHEET: 51815

MAP NUMBER: 9815

MAP TITLE: ANTARCTIC ICE ANALYSIS 2125 APR 87

MAP AUTHOR: U.S. NAVY

MAP PUBLISHER: U.S. NAVY

MAP DISTRIBUTION: U.S. NAVY

MAP REVISION: 1

MAP NOTES:

1. This chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

2. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

3. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

4. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

5. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

6. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

7. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

8. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

9. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

10. The chart is based on data received from the U.S. Navy's Antarctic Ice Charting Program.

SYMBOLS OF DEVELOPMENT (REFERENCES)

A - New ice (1 day)

B - First year (1st year)

C - First year (2nd year)

D - First year (3rd year)

E - First year (4th year)

F - First year (5th year)

G - First year (6th year)

H - First year (7th year)

I - First year (8th year)

J - First year (9th year)

K - First year (10th year)

L - First year (11th year)

M - First year (12th year)

N - First year (13th year)

O - First year (14th year)

P - First year (15th year)

Q - First year (16th year)

R - First year (17th year)

S - First year (18th year)

T - First year (19th year)

U - First year (20th year)

V - First year (21st year)

W - First year (22nd year)

X - First year (23rd year)

Y - First year (24th year)

Z - First year (25th year)

AA - First year (26th year)

AB - First year (27th year)

AC - First year (28th year)

AD - First year (29th year)

AE - First year (30th year)

AF - First year (31st year)

AG - First year (32nd year)

AH - First year (33rd year)

AI - First year (34th year)

AJ - First year (35th year)

AK - First year (36th year)

AL - First year (37th year)

AM - First year (38th year)

AN - First year (39th year)

AO - First year (40th year)

AP - First year (41st year)

AQ - First year (42nd year)

AR - First year (43rd year)

AS - First year (44th year)

AT - First year (45th year)

AU - First year (46th year)

AV - First year (47th year)

AW - First year (48th year)

AX - First year (49th year)

AY - First year (50th year)

AZ - First year (51st year)

BA - First year (52nd year)

BB - First year (53rd year)

BC - First year (54th year)

BD - First year (55th year)

BE - First year (56th year)

BF - First year (57th year)

BG - First year (58th year)

BH - First year (59th year)

BI - First year (60th year)

BJ - First year (61st year)

BK - First year (62nd year)

BL - First year (63rd year)

BM - First year (64th year)

BN - First year (65th year)

BO - First year (66th year)

BP - First year (67th year)

BQ - First year (68th year)

BR - First year (69th year)

BS - First year (70th year)

BT - First year (71st year)

BU - First year (72nd year)

BV - First year (73rd year)

BW - First year (74th year)

BX - First year (75th year)

BY - First year (76th year)

BZ - First year (77th year)

CA - First year (78th year)

CB - First year (79th year)

CC - First year (80th year)

CD - First year (81st year)

CE - First year (82nd year)

CF - First year (83rd year)

CG - First year (84th year)

CH - First year (85th year)

CI - First year (86th year)

CJ - First year (87th year)

CK - First year (88th year)

CL - First year (89th year)

CM - First year (90th year)

CN - First year (91st year)

CO - First year (92nd year)

CP - First year (93rd year)

CQ - First year (94th year)

CR - First year (95th year)

CS - First year (96th year)

CT - First year (97th year)

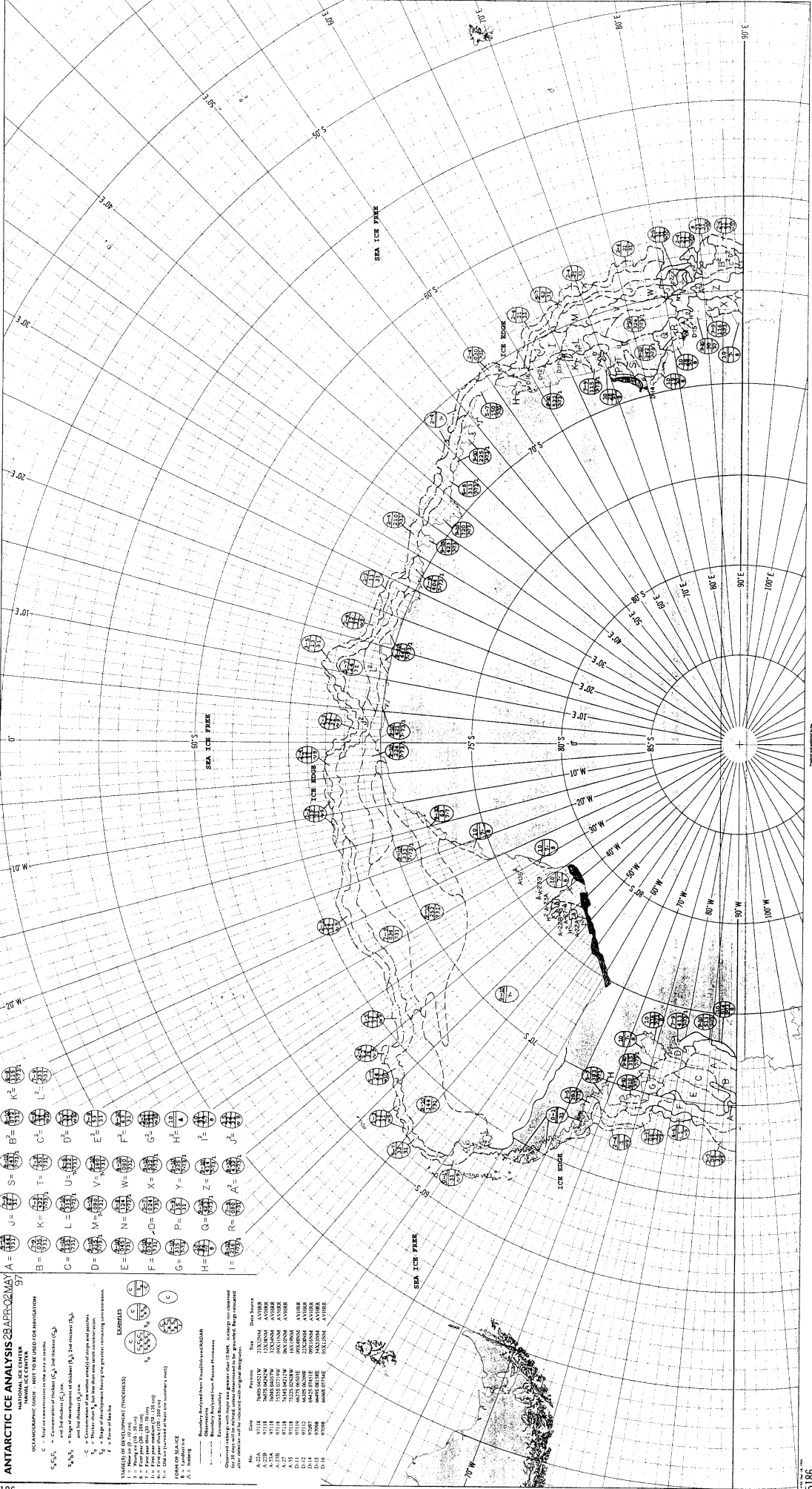
CU - First year (98th year)

CV - First year (99th year)

CV - First year (100th year)

51815

9815



ANTARCTIC ICE ANALYSIS 28 APR 62 MAY 57

ICEDAT CENTER
NAVAL ICE CENTER

SYMBOLS: \odot - 1st thickness (C₁), 2nd thickness (C₂)
 \odot - 3rd thickness (C₃)
 \odot - 4th thickness (C₄)
 \odot - 5th thickness (C₅)
 \odot - 6th thickness (C₆)
 \odot - 7th thickness (C₇)
 \odot - 8th thickness (C₈)
 \odot - 9th thickness (C₉)
 \odot - 10th thickness (C₁₀)
 \odot - 11th thickness (C₁₁)
 \odot - 12th thickness (C₁₂)
 \odot - 13th thickness (C₁₃)
 \odot - 14th thickness (C₁₄)
 \odot - 15th thickness (C₁₅)
 \odot - 16th thickness (C₁₆)
 \odot - 17th thickness (C₁₇)
 \odot - 18th thickness (C₁₈)
 \odot - 19th thickness (C₁₉)
 \odot - 20th thickness (C₂₀)
 \odot - 21st thickness (C₂₁)
 \odot - 22nd thickness (C₂₂)
 \odot - 23rd thickness (C₂₃)
 \odot - 24th thickness (C₂₄)
 \odot - 25th thickness (C₂₅)
 \odot - 26th thickness (C₂₆)
 \odot - 27th thickness (C₂₇)
 \odot - 28th thickness (C₂₈)
 \odot - 29th thickness (C₂₉)
 \odot - 30th thickness (C₃₀)
 \odot - 31st thickness (C₃₁)
 \odot - 32nd thickness (C₃₂)
 \odot - 33rd thickness (C₃₃)
 \odot - 34th thickness (C₃₄)
 \odot - 35th thickness (C₃₅)
 \odot - 36th thickness (C₃₆)
 \odot - 37th thickness (C₃₇)
 \odot - 38th thickness (C₃₈)
 \odot - 39th thickness (C₃₉)
 \odot - 40th thickness (C₄₀)
 \odot - 41st thickness (C₄₁)
 \odot - 42nd thickness (C₄₂)
 \odot - 43rd thickness (C₄₃)
 \odot - 44th thickness (C₄₄)
 \odot - 45th thickness (C₄₅)
 \odot - 46th thickness (C₄₆)
 \odot - 47th thickness (C₄₇)
 \odot - 48th thickness (C₄₈)
 \odot - 49th thickness (C₄₉)
 \odot - 50th thickness (C₅₀)

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 - 1st stage
 2 - 2nd stage
 3 - 3rd stage
 4 - 4th stage
 5 - 5th stage
 6 - 6th stage
 7 - 7th stage
 8 - 8th stage
 9 - 9th stage
 10 - 10th stage
 11 - 11th stage
 12 - 12th stage
 13 - 13th stage
 14 - 14th stage
 15 - 15th stage
 16 - 16th stage
 17 - 17th stage
 18 - 18th stage
 19 - 19th stage
 20 - 20th stage
 21 - 21st stage
 22 - 22nd stage
 23 - 23rd stage
 24 - 24th stage
 25 - 25th stage
 26 - 26th stage
 27 - 27th stage
 28 - 28th stage
 29 - 29th stage
 30 - 30th stage
 31 - 31st stage
 32 - 32nd stage
 33 - 33rd stage
 34 - 34th stage
 35 - 35th stage
 36 - 36th stage
 37 - 37th stage
 38 - 38th stage
 39 - 39th stage
 40 - 40th stage
 41 - 41st stage
 42 - 42nd stage
 43 - 43rd stage
 44 - 44th stage
 45 - 45th stage
 46 - 46th stage
 47 - 47th stage
 48 - 48th stage
 49 - 49th stage
 50 - 50th stage

ICE EDGE

1 - 1st edge
 2 - 2nd edge
 3 - 3rd edge
 4 - 4th edge
 5 - 5th edge
 6 - 6th edge
 7 - 7th edge
 8 - 8th edge
 9 - 9th edge
 10 - 10th edge
 11 - 11th edge
 12 - 12th edge
 13 - 13th edge
 14 - 14th edge
 15 - 15th edge
 16 - 16th edge
 17 - 17th edge
 18 - 18th edge
 19 - 19th edge
 20 - 20th edge
 21 - 21st edge
 22 - 22nd edge
 23 - 23rd edge
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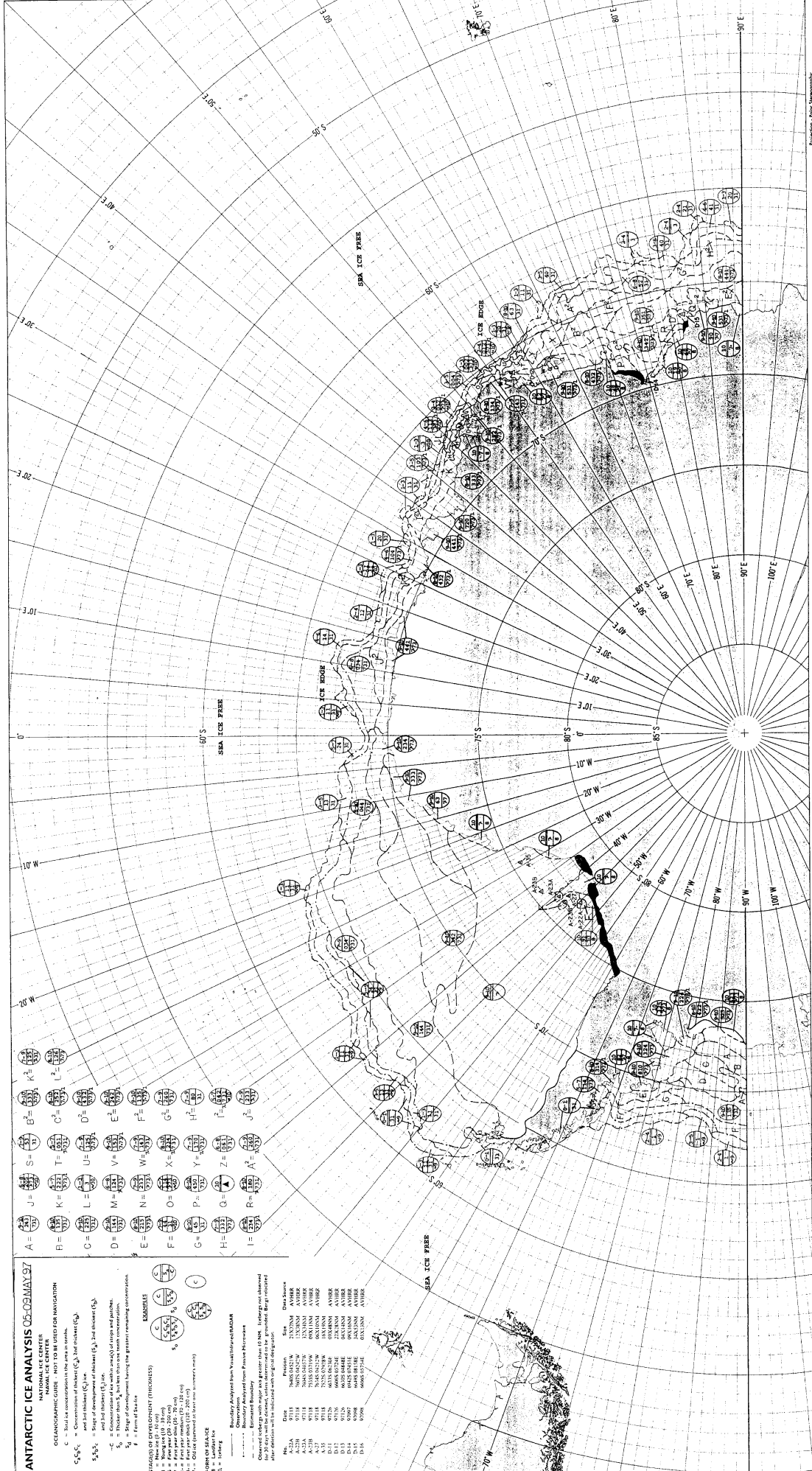
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Projection: Polar Stereographic, Scale: 1:100,000

Source: U.S. Navy Hydrographic Office, 1957

ANTARCTIC ICE ANALYSIS 05-02 MAY 57

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

C = Total ice concentration in the area in percent.
 C₁, C₂, C₃ = Concentrations of thickets (C₁), and thickets (C₂), and icebergs (C₃), in percent (C₁ + C₂ + C₃ = C).
 S₁, S₂, S₃ = Thicknesses (S₁), and thicknesses (S₂), and thicknesses (S₃), in feet (S₁ + S₂ + S₃ = S).
 T = Total ice thickness in feet (T = S).
 F = Form of ice (see legend).

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0-1/8 in.)
 2 = Young ice (1/8-1/4 in.)
 3 = First-year ice (1/4-1/2 in.)
 4 = Second-year ice (1/2-1 in.)
 5 = Old ice (1 in. or more) (summers' limit)
 6 = Ice age (1 in. or more) (winter's limit)

FORM OF ICE

A = Iceberg
 B = Iceberg
 C = Iceberg
 D = Iceberg
 E = Iceberg
 F = Iceberg
 G = Iceberg
 H = Iceberg
 I = Iceberg
 J = Iceberg
 K = Iceberg
 L = Iceberg
 M = Iceberg
 N = Iceberg
 O = Iceberg
 P = Iceberg
 Q = Iceberg
 R = Iceberg
 S = Iceberg

LEGENDS

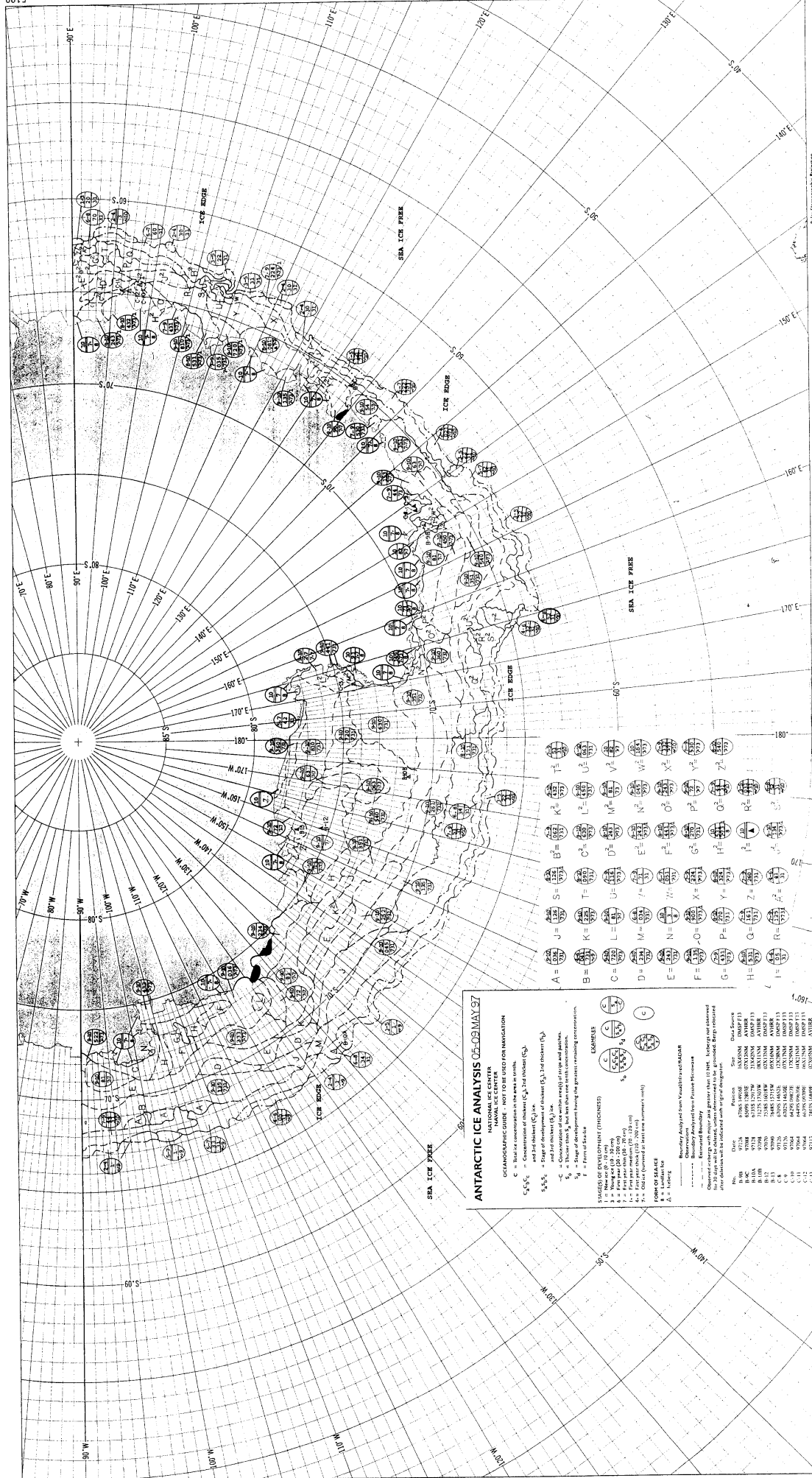
1 = New ice (0-1/8 in.)
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 6 = Ice age (1 in. or more) (winter's limit)

BOUNDARY ANALYSIS FROM VISUAL OBSERVATION

--- Estimated Boundary
 --- Estimated Boundary
 --- Estimated Boundary

After definition for indicated with ship's designation

ALFA	9711	3405-0315W	23-00N	ANTARCTIC
BRAVO	9712	3405-0315W	23-00N	ANTARCTIC
CHARLIE	9713	3405-0315W	23-00N	ANTARCTIC
DELTA	9714	3405-0315W	23-00N	ANTARCTIC
ECHO	9715	3405-0315W	23-00N	ANTARCTIC
FOXTROT	9716	3405-0315W	23-00N	ANTARCTIC
GOLF	9717	3405-0315W	23-00N	ANTARCTIC
HOTEL	9718	3405-0315W	23-00N	ANTARCTIC
INDIA	9719	3405-0315W	23-00N	ANTARCTIC
JULIETT	9720	3405-0315W	23-00N	ANTARCTIC
KILO	9721	3405-0315W	23-00N	ANTARCTIC
LIMA	9722	3405-0315W	23-00N	ANTARCTIC
MIKE	9723	3405-0315W	23-00N	ANTARCTIC
NOVEMBER	9724	3405-0315W	23-00N	ANTARCTIC
OSCAR	9725	3405-0315W	23-00N	ANTARCTIC
PAPA	9726	3405-0315W	23-00N	ANTARCTIC
QUEBEC	9727	3405-0315W	23-00N	ANTARCTIC
RADIO	9728	3405-0315W	23-00N	ANTARCTIC
SIERRA	9729	3405-0315W	23-00N	ANTARCTIC
TANGO	9730	3405-0315W	23-00N	ANTARCTIC
UNIFORM	9731	3405-0315W	23-00N	ANTARCTIC
VICTOR	9732	3405-0315W	23-00N	ANTARCTIC
XRAY	9733	3405-0315W	23-00N	ANTARCTIC
YANKEE	9734	3405-0315W	23-00N	ANTARCTIC
ZULU	9735	3405-0315W	23-00N	ANTARCTIC



ANTARCTIC ICE ANALYSIS 05.09 MAX 97

NATIONAL ICE CENTER
NAVAL ICE CENTER
ICE ANALYSIS CENTER FOR NAVIGATION

ICE CHARACTERISTICS

- C = Total ice concentration on the area in units.
- S₁, S₂, S₃ = Stage of development of thickness (S₁ = 1st thickest (T₁), S₂ = 2nd thickest (T₂), and S₃ = 3rd thickest (T₃)).
- T₁, T₂, T₃ = Stage of development of thickness (T₁ = 1st thickest (S₁), T₂ = 2nd thickest (S₂), and T₃ = 3rd thickest (S₃)).
- W = Thickness (m).
- W₁ = Thickness (m) of the white area (W) of scrape and patch.
- W₂ = Thickness (m) of the white area (W) of scrape and patch.
- W₃ = Thickness (m) of the white area (W) of scrape and patch.
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- W₁₀₀ = Thickness (m) of the white area (W) of scrape and patch.

POINT OF SEAS

- A = Landfast ice
- B = Lead
- C = Ice edge

EXAMPLES

1 = New or old (10 cm)

2 = New or old (15 cm)

3 = New or old (20 cm)

4 = New or old (25 cm)

5 = New or old (30 cm)

6 = New or old (35 cm)

7 = New or old (40 cm)

8 = New or old (45 cm)

9 = New or old (50 cm)

10 = New or old (55 cm)

11 = New or old (60 cm)

12 = New or old (65 cm)

13 = New or old (70 cm)

14 = New or old (75 cm)

15 = New or old (80 cm)

16 = New or old (85 cm)

17 = New or old (90 cm)

18 = New or old (95 cm)

19 = New or old (100 cm)

20 = New or old (105 cm)

21 = New or old (110 cm)

22 = New or old (115 cm)

23 = New or old (120 cm)

24 = New or old (125 cm)

25 = New or old (130 cm)

26 = New or old (135 cm)

27 = New or old (140 cm)

28 = New or old (145 cm)

29 = New or old (150 cm)

30 = New or old (155 cm)

31 = New or old (160 cm)

32 = New or old (165 cm)

33 = New or old (170 cm)

34 = New or old (175 cm)

35 = New or old (180 cm)

36 = New or old (185 cm)

37 = New or old (190 cm)

38 = New or old (195 cm)

39 = New or old (200 cm)

40 = New or old (205 cm)

41 = New or old (210 cm)

42 = New or old (215 cm)

43 = New or old (220 cm)

44 = New or old (225 cm)

45 = New or old (230 cm)

46 = New or old (235 cm)

47 = New or old (240 cm)

48 = New or old (245 cm)

49 = New or old (250 cm)

50 = New or old (255 cm)

51 = New or old (260 cm)

52 = New or old (265 cm)

53 = New or old (270 cm)

54 = New or old (275 cm)

55 = New or old (280 cm)

56 = New or old (285 cm)

57 = New or old (290 cm)

58 = New or old (295 cm)

59 = New or old (300 cm)

60 = New or old (305 cm)

61 = New or old (310 cm)

62 = New or old (315 cm)

63 = New or old (320 cm)

64 = New or old (325 cm)

65 = New or old (330 cm)

66 = New or old (335 cm)

67 = New or old (340 cm)

68 = New or old (345 cm)

69 = New or old (350 cm)

70 = New or old (355 cm)

71 = New or old (360 cm)

72 = New or old (365 cm)

73 = New or old (370 cm)

74 = New or old (375 cm)

75 = New or old (380 cm)

76 = New or old (385 cm)

77 = New or old (390 cm)

78 = New or old (395 cm)

79 = New or old (400 cm)

80 = New or old (405 cm)

81 = New or old (410 cm)

82 = New or old (415 cm)

83 = New or old (420 cm)

84 = New or old (425 cm)

85 = New or old (430 cm)

86 = New or old (435 cm)

87 = New or old (440 cm)

88 = New or old (445 cm)

89 = New or old (450 cm)

90 = New or old (455 cm)

91 = New or old (460 cm)

92 = New or old (465 cm)

93 = New or old (470 cm)

94 = New or old (475 cm)

95 = New or old (480 cm)

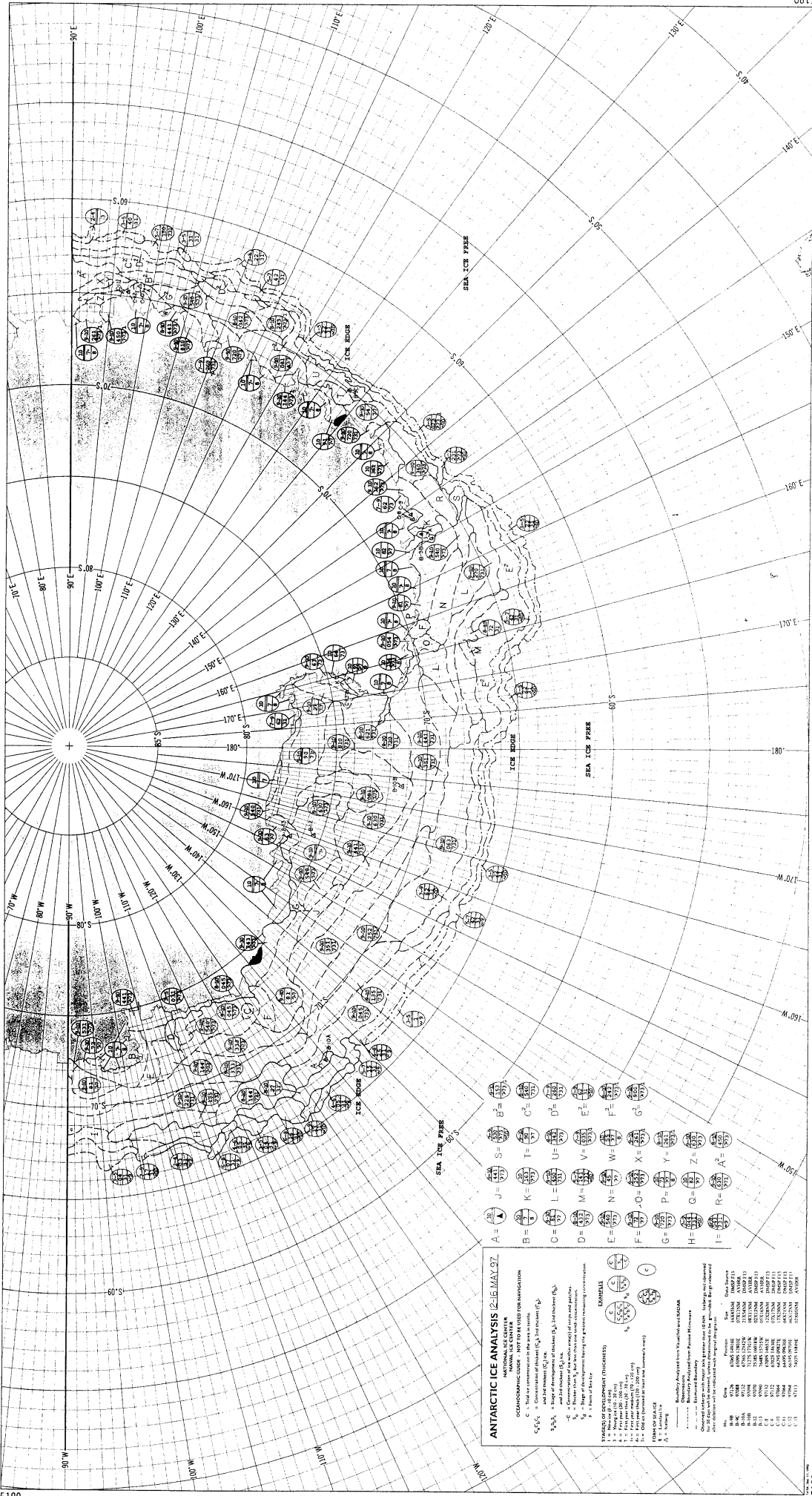
96 = New or old (485 cm)

97 = New or old (490 cm)

98 = New or old (495 cm)

99 = New or old (500 cm)

100 = New or old (505 cm)

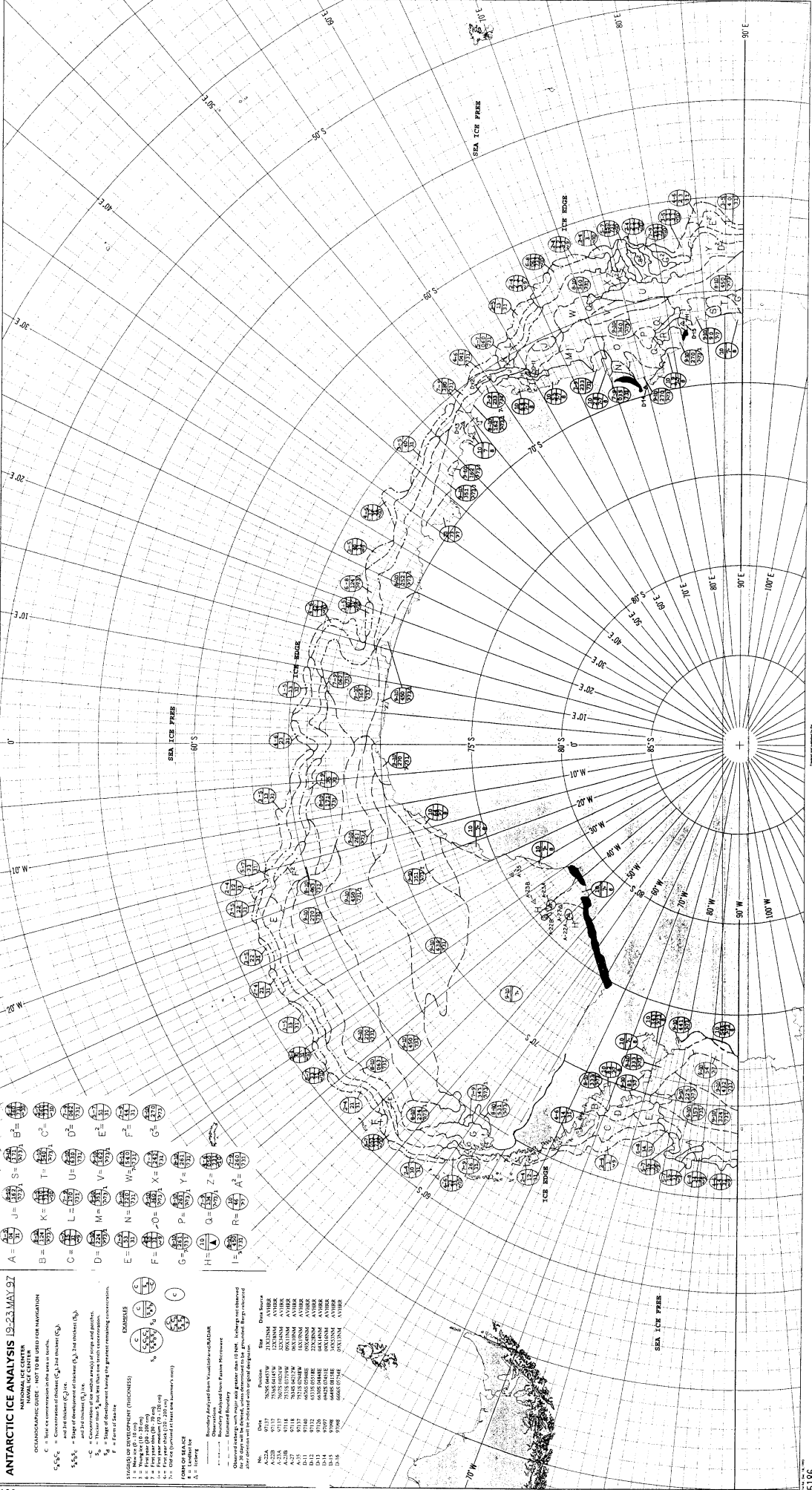


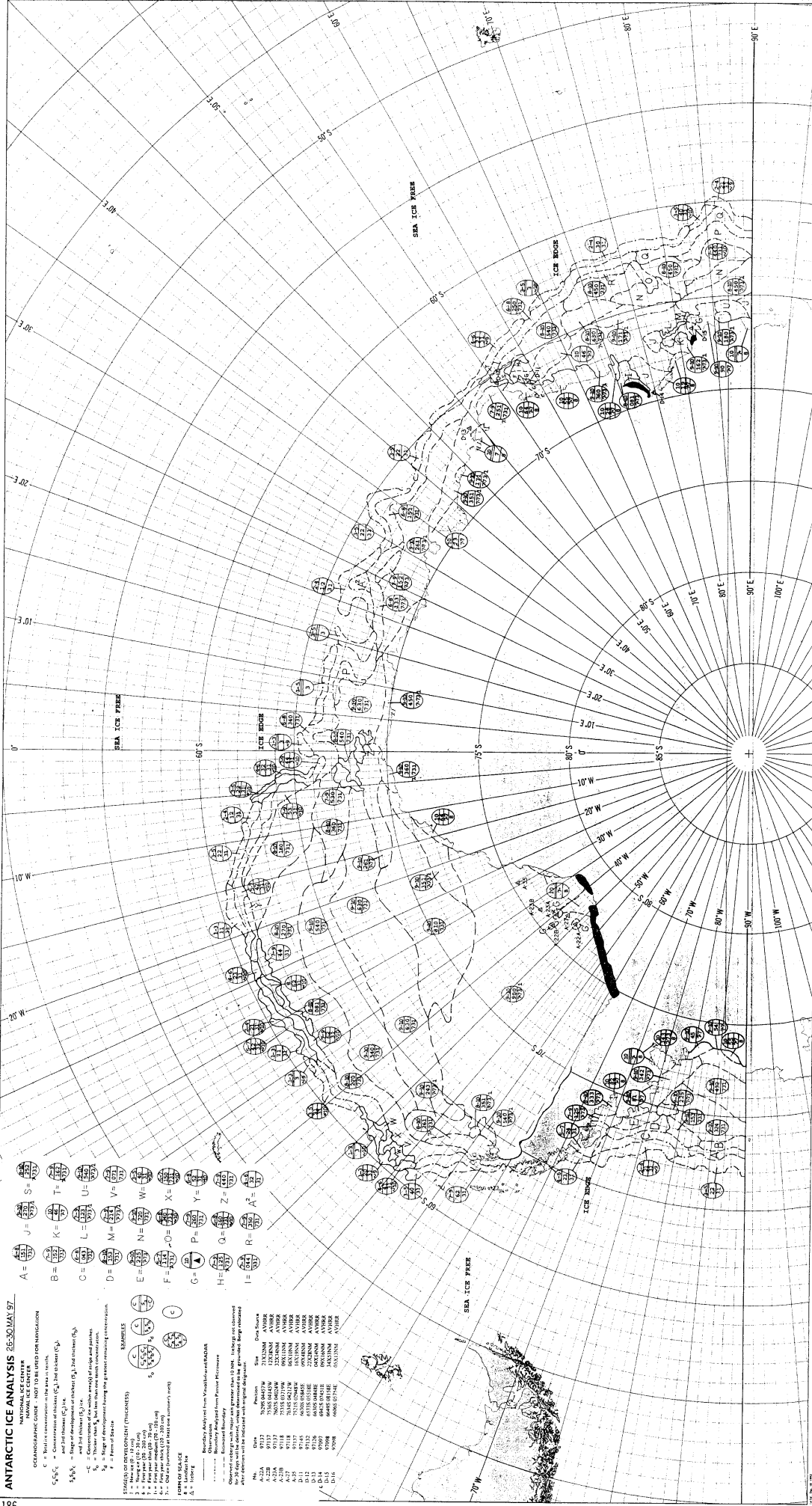
ANTARCTIC ICE ANALYSIS 2-8-MAY-57
 NATIONAL CENTER FOR ENVIRONMENTAL DATA
 OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
 AND FOR REPORTS (Q1, Q2, Q3)
 Q1, Q2, Q3 = Concentration of ice (C₁, C₂, C₃) in tenths (%)
 S₁, S₂, S₃ = Shape of development of ice (S₁, S₂, S₃)
 C = Concentration of ice (tenths) (C₁, C₂, C₃)
 S₁, S₂, S₃ = Shape of development of ice (S₁, S₂, S₃)
 P = Form of ice
 D = Degree of development of ice (D₁, D₂, D₃)

STAGES OF DEVELOPMENT (THICKNESS)
 1 = New ice (0.25 m)
 2 = First-year ice (0.25-0.50 m)
 3 = Second-year ice (0.50-0.75 m)
 4 = Third-year ice (0.75-1.00 m)
 5 = Fourth-year ice (1.00-1.50 m)
 6 = Old ice (1.50 m or more)

FORMS OF ICE
 A = Iceberg
 B = Ice field
 C = Ice pack

EXAMPLES
 (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) (AA) (AB) (AC) (AD) (AE) (AF) (AG) (AH) (AI) (AJ) (AK) (AL) (AM) (AN) (AO) (AP) (AQ) (AR) (AS) (AT) (AU) (AV) (AW) (AX) (AY) (AZ) (BA) (BB) (BC) (BD) (BE) (BF) (BG) (BH) (BI) (BJ) (BK) (BL) (BM) (BN) (BO) (BP) (BQ) (BR) (BS) (BT) (BU) (BV) (BW) (BX) (BY) (BZ) (CA) (CB) (CC) (CD) (CE) (CF) (CG) (CH) (CI) (CJ) (CK) (CL) (CM) (CN) (CO) (CP) (CQ) (CR) (CS) (CT) (CU) (CV) (CW) (CX) (CY) (CZ) (DA) (DB) (DC) (DD) (DE) (DF) (DG) (DH) (DI) (DJ) (DK) (DL) (DM) (DN) (DO) (DP) (DQ) (DR) (DS) (DT) (DU) (DV) (DW) (DX) (DY) (DZ) (EA) (EB) (EC) (ED) (EE) (EF) (EG) (EH) (EI) (EJ) (EK) (EL) (EM) (EN) (EO) (EP) (EQ) (ER) (ES) (ET) (EU) (EV) (EW) (EX) (EY) (EZ) (FA) (FB) (FC) (FD) (FE) (FF) (FG) (FH) (FI) (FJ) (FK) (FL) (FM) (FN) (FO) (FP) (FQ) (FR) (FS) (FT) (FU) (FV) (FW) (FX) (FY) (FZ) (GA) (GB) (GC) (GD) (GE) (GF) (GG) (GH) (GI) (GJ) (GK) (GL) (GM) (GN) (GO) (GP) (GQ) (GR) (GS) (GT) (GU) (GV) (GW) (GX) (GY) (GZ) (HA) (HB) (HC) (HD) (HE) (HF) (HG) (HH) (HI) (HJ) (HK) (HL) (HM) (HN) (HO) (HP) (HQ) (HR) (HS) (HT) (HU) (HV) (HW) (HX) (HY) (HZ) (IA) (IB) (IC) (ID) (IE) (IF) (IG) (IH) (II) (IJ) (IK) (IL) (IM) (IN) (IO) (IP) (IQ) (IR) (IS) (IT) (IU) (IV) (IW) (IX) (IY) (IZ) (JA) (JB) (JC) (JD) (JE) (JF) (JG) (JH) (JI) (JJ) (JK) (JL) (JM) (JN) (JO) (JP) (JQ) (JR) (JS) (JT) (JU) (JV) (JW) (JX) (JY) (JZ) (KA) (KB) (KC) (KD) (KE) (KF) (KG) (KH) (KI) (KJ) (KK) (KL) (KM) (KN) (KO) (KP) (KQ) (KR) (KS) (KT) (KU) (KV) (KW) (KX) (KY) (KZ) (LA) (LB) (LC) (LD) (LE) (LF) (LG) (LH) (LI) (LJ) (LK) (LL) (LM) (LN) (LO) (LP) (LQ) (LR) (LS) (LT) (LU) (LV) (LW) (LX) (LY) (LZ) (MA) (MB) (MC) (MD) (ME) (MF) (MG) (MH) (MI) (MJ) (MK) (ML) (MN) (MO) (MP) (MQ) (MR) (MS) (MT) (MU) (MV) (MW) (MX) (MY) (MZ) (NA) (NB) (NC) (ND) (NE) (NF) (NG) (NH) (NI) (NJ) (NK) (NL) (NM) (NO) (NP) (NQ) (NR) (NS) (NT) (NU) (NV) (NW) (NX) (NY) (NZ) (OA) (OB) (OC) (OD) (OE) (OF) (OG) (OH) (OI) (OJ) (OK) (OL) (OM) (ON) (OO) (OP) (OQ) (OR) (OS) (OT) (OU) (OV) (OW) (OX) (OY) (OZ) (PA) (PB) (PC) (PD) (PE) (PF) (PG) (PH) (PI) (PJ) (PK) (PL) (PM) (PN) (PO) (PP) (PQ) (PR) (PS) (PT) (PU) (PV) (PW) (PX) (PY) (PZ) (QA) (QB) (QC) (QD) (QE) (QF) (QG) (QH) (QI) (QJ) (QK) (QL) (QM) (QN) (QO) (QP) (QQ) (QR) (QS) (QT) (QU) (QV) (QW) (QX) (QY) (QZ) (RA) (RB) (RC) (RD) (RE) (RF) (RG) (RH) (RI) (RJ) (RK) (RL) (RM) (RN) (RO) (RP) (RQ) (RR) (RS) (RT) (RU) (RV) (RW) (RX) (RY) (RZ) (SA) (SB) (SC) (SD) (SE) (SF) (SG) (SH) (SI) (SJ) (SK) (SL) (SM) (SN) (SO) (SP) (SQ) (SR) (SS) (ST) (SU) (SV) (SW) (SX) (SY) (SZ) (TA) (TB) (TC) (TD) (TE) (TF) (TG) (TH) (TI) (TJ) (TK) (TL) (TM) (TN) (TO) (TP) (TQ) (TR) (TS) (TT) (TU) (TV) (TW) (TX) (TY) (TZ) (UA) (UB) (UC) (UD) (UE) (UF) (UG) (UH) (UI) (UJ) (UK) (UL) (UM) (UN) (UO) (UP) (UQ) (UR) (US) (UT) (UU) (UV) (UW) (UX) (UY) (UZ) (VA) (VB) (VC) (VD) (VE) (VF) (VG) (VH) (VI) (VJ) (VK) (VL) (VM) (VN) (VO) (VP) (VQ) (VR) (VS) (VT) (VU) (VV) (VW) (VX) (VY) (VZ) (WA) (WB) (WC) (WD) (WE) (WF) (WG) (WH) (WI) (WJ) (WK) (WL) (WM) (WN) (WO) (WP) (WQ) (WR) (WS) (WT) (WU) (WV) (WW) (WX) (WY) (WZ) (XA) (XB) (XC) (XD) (XE) (XF) (XG) (XH) (XI) (XJ) (XK) (XL) (XM) (XN) (XO) (XP) (XQ) (XR) (XS) (XT) (XU) (XV) (XW) (XX) (XY) (XZ) (YA) (YB) (YC) (YD) (YE) (YF) (YG) (YH) (YI) (YJ) (YK) (YL) (YM) (YN) (YO) (YP) (YQ) (YR) (YS) (YT) (YU) (YV) (YW) (YX) (YZ) (ZA) (ZB) (ZC) (ZD) (ZE) (ZF) (ZG) (ZH) (ZI) (ZJ) (ZK) (ZL) (ZM) (ZN) (ZO) (ZP) (ZQ) (ZR) (ZS) (ZT) (ZU) (ZV) (ZW) (ZX) (ZY) (ZZ)





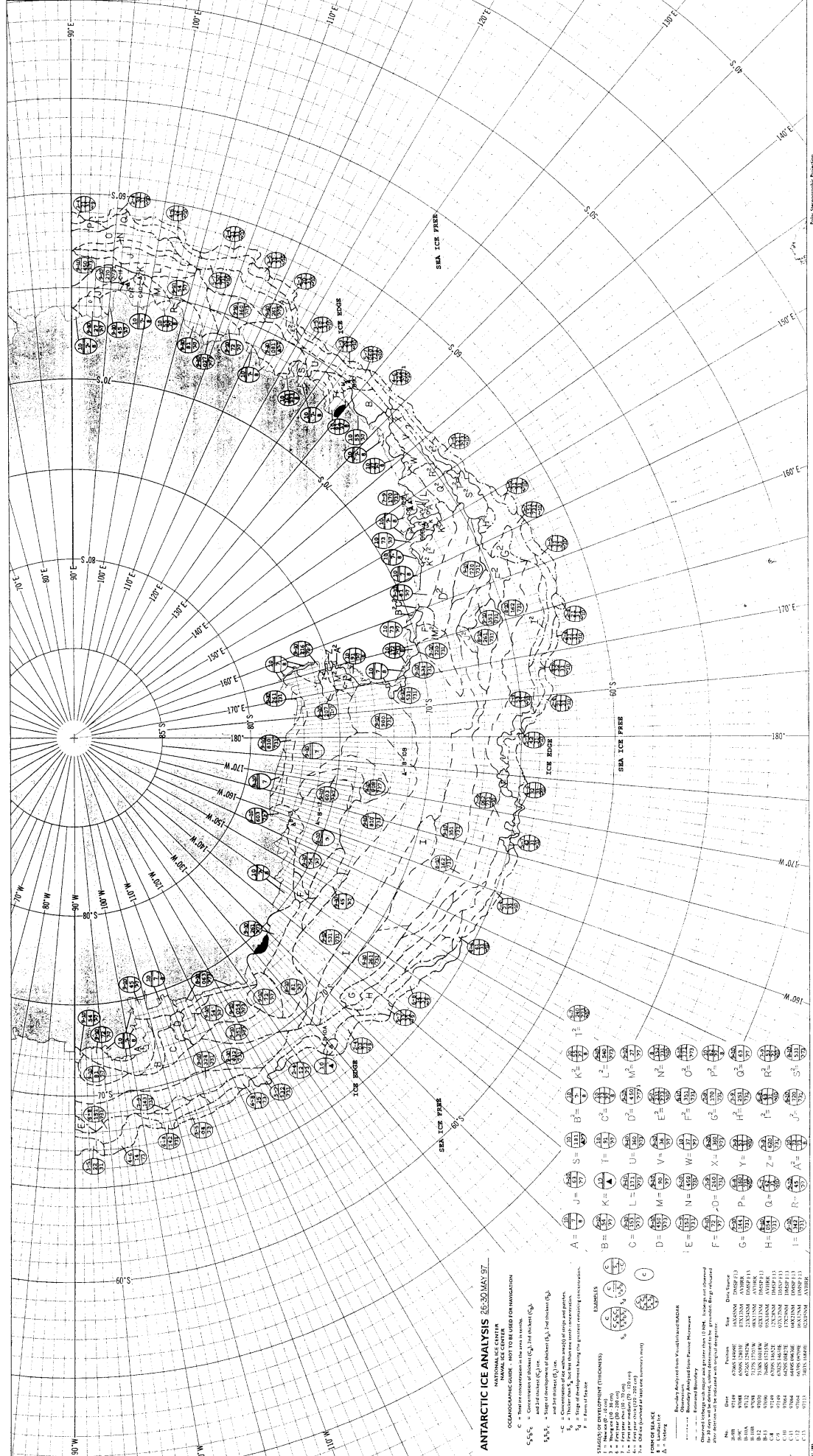
ANTARCTIC ICE ANALYSIS 25-30 MAY 97
 NATIONAL ICE CENTER
 OCEANOGRAPHIC CHART - NOT TO BE USED FOR NAVIGATION
 C = 1/8 inch concentration (100 ft area) in track.
 C₁ C₂ C₃ = 1/8 inch concentration (100 ft area) in track.
 S₁ S₂ S₃ = 1/8 inch thickness (100 ft area) in track.
 T₁ T₂ T₃ = 1/8 inch thickness (100 ft area) in track.
 U₁ U₂ U₃ = 1/8 inch thickness (100 ft area) in track.
 V₁ V₂ V₃ = 1/8 inch thickness (100 ft area) in track.
 W₁ W₂ W₃ = 1/8 inch thickness (100 ft area) in track.
 X₁ X₂ X₃ = 1/8 inch thickness (100 ft area) in track.
 Y₁ Y₂ Y₃ = 1/8 inch thickness (100 ft area) in track.
 Z₁ Z₂ Z₃ = 1/8 inch thickness (100 ft area) in track.
 A₁ A₂ A₃ = 1/8 inch thickness (100 ft area) in track.

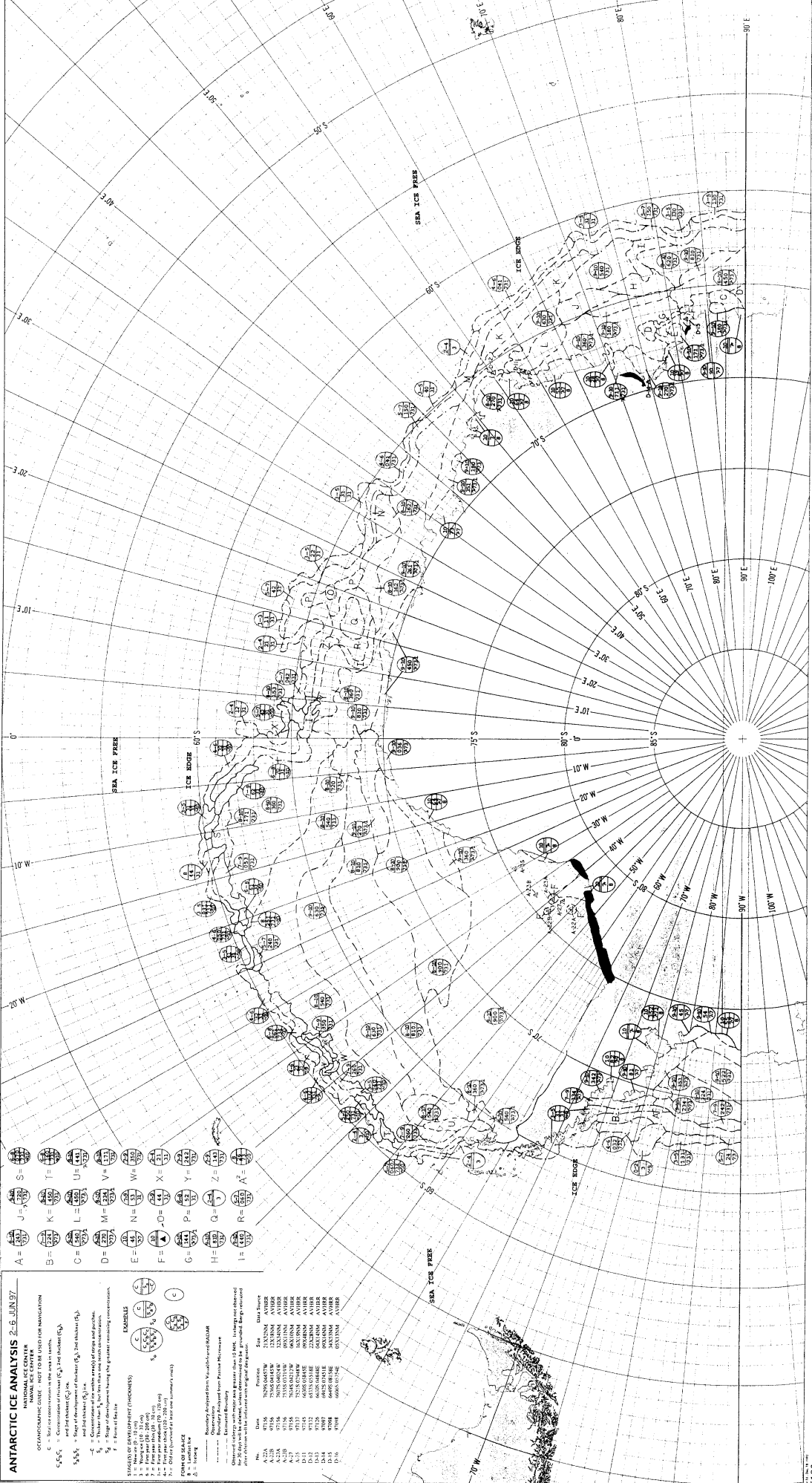
EXAMPLES

	1/8 inch concentration and 1/8 inch thickness
	1/8 inch concentration and 1/4 inch thickness
	1/4 inch concentration and 1/8 inch thickness
	1/4 inch concentration and 1/4 inch thickness
	1/2 inch concentration and 1/8 inch thickness
	1/2 inch concentration and 1/4 inch thickness
	1/2 inch concentration and 1/2 inch thickness
	3/4 inch concentration and 1/8 inch thickness
	3/4 inch concentration and 1/4 inch thickness
	3/4 inch concentration and 1/2 inch thickness
	1 inch concentration and 1/8 inch thickness
	1 inch concentration and 1/4 inch thickness
	1 inch concentration and 1/2 inch thickness

STATION DATA

No.	Date	Position	Observer
4222A	97122	7629 8457 S	21X2200N AV00K
4222B	97122	7625 8422 S	21X2200N AV00K
4222C	97122	7621 8422 S	21X2200N AV00K
4222D	97122	7617 8422 S	21X2200N AV00K
4222E	97122	7613 8422 S	21X2200N AV00K
4222F	97122	7609 8422 S	21X2200N AV00K
4222G	97122	7605 8422 S	21X2200N AV00K
4222H	97122	7601 8422 S	21X2200N AV00K
4222I	97122	7597 8422 S	21X2200N AV00K
4222J	97122	7593 8422 S	21X2200N AV00K
4222K	97122	7589 8422 S	21X2200N AV00K
4222L	97122	7585 8422 S	21X2200N AV00K
4222M	97122	7581 8422 S	21X2200N AV00K
4222N	97122	7577 8422 S	21X2200N AV00K
4222O	97122	7573 8422 S	21X2200N AV00K
4222P	97122	7569 8422 S	21X2200N AV00K
4222Q	97122	7565 8422 S	21X2200N AV00K
4222R	97122	7561 8422 S	21X2200N AV00K
4222S	97122	7557 8422 S	21X2200N AV00K
4222T	97122	7553 8422 S	21X2200N AV00K
4222U	97122	7549 8422 S	21X2200N AV00K
4222V	97122	7545 8422 S	21X2200N AV00K
4222W	97122	7541 8422 S	21X2200N AV00K
4222X	97122	7537 8422 S	21X2200N AV00K
4222Y	97122	7533 8422 S	21X2200N AV00K
4222Z	97122	7529 8422 S	21X2200N AV00K





ANTARCTIC ICE ANALYSIS 2-6 JUN 67
 NATIONAL ICE CENTER
 GEOPOLYGRAPHIC DATA FOR NAVIGATION

C = Total ice concentration in the area in tenths.
 C₁ = Concentration of thickest ice (C₁ = 100).
 C₂ = Concentration of ice with a maximum thickness of 100 ft.
 C₃ = Concentration of ice with a maximum thickness of 50 ft.
 C₄ = Concentration of ice with a maximum thickness of 25 ft.
 C₅ = Concentration of ice with a maximum thickness of 15 ft.
 C₆ = Concentration of ice with a maximum thickness of 10 ft.
 C₇ = Concentration of ice with a maximum thickness of 5 ft.
 C₈ = Concentration of ice with a maximum thickness of 2 ft.
 C₉ = Concentration of ice with a maximum thickness of 1 ft.

EXAMPLES

STAGES OF DEVELOPMENT (THICKNESSES)

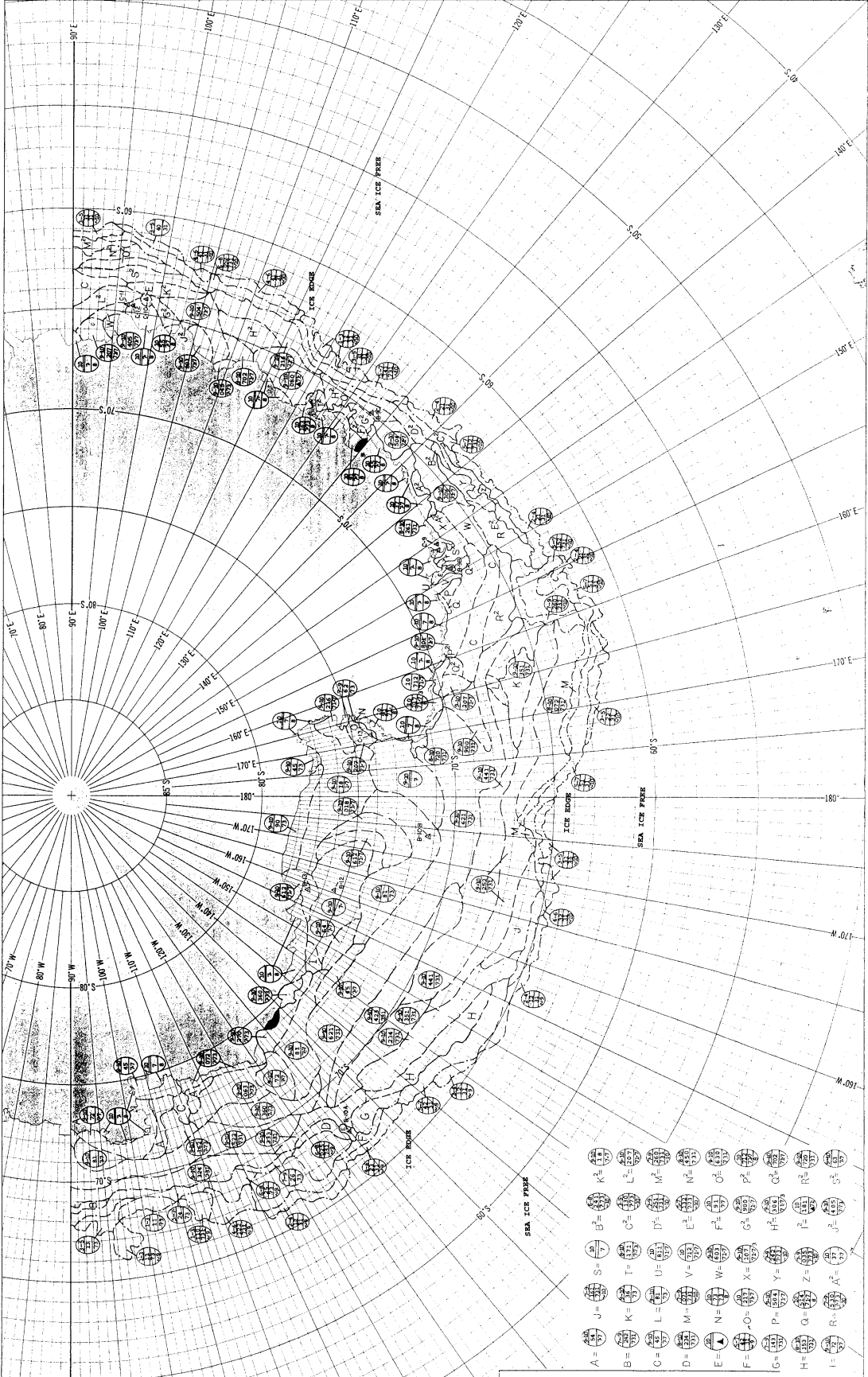
1 = None (0-10 ft)
 2 = 10-20 ft
 3 = 20-30 ft
 4 = 30-40 ft
 5 = 40-50 ft
 6 = 50-60 ft
 7 = 60-70 ft
 8 = 70-80 ft
 9 = 80-90 ft
 10 = 90-100 ft
 11 = 100-120 ft
 12 = 120-150 ft
 13 = 150-200 ft
 14 = 200-300 ft
 15 = 300-400 ft
 16 = 400-500 ft
 17 = 500-600 ft
 18 = 600-800 ft
 19 = 800-1000 ft
 20 = 1000 ft or more

FORM QUALITY

1 = Excellent
 2 = Good
 3 = Fair
 4 = Poor
 5 = Very Poor
 6 = Unusable

DATA SOURCE

1 = USCGC Healy
 2 = USCGC Spencer
 3 = USCGC Spencer
 4 = USCGC Spencer
 5 = USCGC Spencer
 6 = USCGC Spencer
 7 = USCGC Spencer
 8 = USCGC Spencer
 9 = USCGC Spencer
 10 = USCGC Spencer
 11 = USCGC Spencer
 12 = USCGC Spencer
 13 = USCGC Spencer
 14 = USCGC Spencer
 15 = USCGC Spencer
 16 = USCGC Spencer
 17 = USCGC Spencer
 18 = USCGC Spencer
 19 = USCGC Spencer
 20 = USCGC Spencer



5189

5189

ANTARCTIC ICE ANALYSIS 2-5 JUN 57

NATIONAL ICE CENTER
OSLOGRAMMIC
C = 30% for concentration in the area 30 miles
S 30% = Concentration of ice (S, 30% thick) (C_S)
S 30% = and ice thickness (C_S)
S 30% = and ice thickness (C_S)
C = Concentration of ice (with area) of average ice.
S = Stage of development having the greatest remaining concentration.
P = Form of flake

STAGE OF DEVELOPMENT (THICKNESS)

1 = None (0-100 mm)
2 = Thin (100-200 mm)
3 = Fair (200-300 mm)
4 = Good (300-400 mm)
5 = Very good (400-500 mm)
6 = Excellent (500-600 mm)
7 = Superior (600-700 mm)
8 = Excellent (700-800 mm)
9 = Superior (800-900 mm)
10 = Excellent (900-1000 mm)
11 = Superior (1000-1100 mm)
12 = Excellent (1100-1200 mm)
13 = Superior (1200-1300 mm)
14 = Excellent (1300-1400 mm)
15 = Superior (1400-1500 mm)
16 = Excellent (1500-1600 mm)
17 = Superior (1600-1700 mm)
18 = Excellent (1700-1800 mm)
19 = Superior (1800-1900 mm)
20 = Excellent (1900-2000 mm)

FORM OF FLAKE

A = Hexagonal
B = Pentagonal
C = Square
D = Triangular
E = Circular
F = Irregular
G = Star-shaped
H = Crescent-shaped
I = Ring-shaped
J = Ribbon-shaped
K = Needle-shaped
L = Plate-shaped
M = Flake-shaped
N = Crystalline
O = Amorphous
P = Fibrous
Q = Fibrillar
R = Spherulitic
S = Globular
T = Radial
U = Irregular
V = Spherulitic
W = Globular
X = Crystalline
Y = Globular
Z = Radial
AA = Hexagonal
AB = Pentagonal
AC = Square
AD = Triangular
AE = Circular
AF = Irregular
AG = Star-shaped
AH = Crescent-shaped
AI = Ring-shaped
AJ = Ribbon-shaped
AK = Needle-shaped
AL = Plate-shaped
AM = Flake-shaped
AN = Crystalline
AO = Amorphous
AP = Fibrous
AQ = Fibrillar
AR = Spherulitic
AS = Globular
AT = Radial

COMBINES

Examples: A¹ S³ P, B² S⁴ Q, C³ S⁵ R, D⁴ S⁶ T, E⁵ S⁷ U, F⁶ S⁸ V, G⁷ S⁹ W, H⁸ S¹⁰ X, I⁹ S¹¹ Y, J¹⁰ S¹² Z, K¹¹ S¹³ AA, L¹² S¹⁴ AB, M¹³ S¹⁵ AC, N¹⁴ S¹⁶ AD, O¹⁵ S¹⁷ AE, P¹⁶ S¹⁸ AF, Q¹⁷ S¹⁹ AG, R¹⁸ S²⁰ AH, S²¹ S²² AI, T²² S²³ AJ, U²³ S²⁴ AK, V²⁴ S²⁵ AL, W²⁵ S²⁶ AM, X²⁶ S²⁷ AN, Y²⁷ S²⁸ AO, Z²⁸ S²⁹ AP, AA²⁹ S³⁰ AQ, AB³⁰ S³¹ AR, AC³¹ S³² AS, AD³² S³³ AT

SYMBOLS

1. Station
2. Ice edge
3. Sea ice free
4. Estimated boundary
5. Estimated boundary
6. Estimated boundary
7. Estimated boundary
8. Estimated boundary
9. Estimated boundary
10. Estimated boundary
11. Estimated boundary
12. Estimated boundary
13. Estimated boundary
14. Estimated boundary
15. Estimated boundary
16. Estimated boundary
17. Estimated boundary
18. Estimated boundary
19. Estimated boundary
20. Estimated boundary

ANTARCTIC ICE ANALYSIS 31-10 JUN 57

DEPARTMENT OF COMMERCE
NAVY AND MARINE CORPS
HYDROGRAPHIC OFFICE
WASHINGTON, D.C. 20540

1. This is a contour map of ice concentration in the area shown.
2. Contour lines are drawn at 5% intervals.
3. Contour lines are labeled with the percentage of ice concentration.
4. Contour lines are labeled with the percentage of ice concentration.
5. Contour lines are labeled with the percentage of ice concentration.

6. Contour lines are labeled with the percentage of ice concentration.
7. Contour lines are labeled with the percentage of ice concentration.
8. Contour lines are labeled with the percentage of ice concentration.

9. Contour lines are labeled with the percentage of ice concentration.
10. Contour lines are labeled with the percentage of ice concentration.

11. Contour lines are labeled with the percentage of ice concentration.
12. Contour lines are labeled with the percentage of ice concentration.

13. Contour lines are labeled with the percentage of ice concentration.
14. Contour lines are labeled with the percentage of ice concentration.

15. Contour lines are labeled with the percentage of ice concentration.
16. Contour lines are labeled with the percentage of ice concentration.

17. Contour lines are labeled with the percentage of ice concentration.
18. Contour lines are labeled with the percentage of ice concentration.

19. Contour lines are labeled with the percentage of ice concentration.
20. Contour lines are labeled with the percentage of ice concentration.

21. Contour lines are labeled with the percentage of ice concentration.
22. Contour lines are labeled with the percentage of ice concentration.

23. Contour lines are labeled with the percentage of ice concentration.
24. Contour lines are labeled with the percentage of ice concentration.

25. Contour lines are labeled with the percentage of ice concentration.
26. Contour lines are labeled with the percentage of ice concentration.

27. Contour lines are labeled with the percentage of ice concentration.
28. Contour lines are labeled with the percentage of ice concentration.

29. Contour lines are labeled with the percentage of ice concentration.
30. Contour lines are labeled with the percentage of ice concentration.

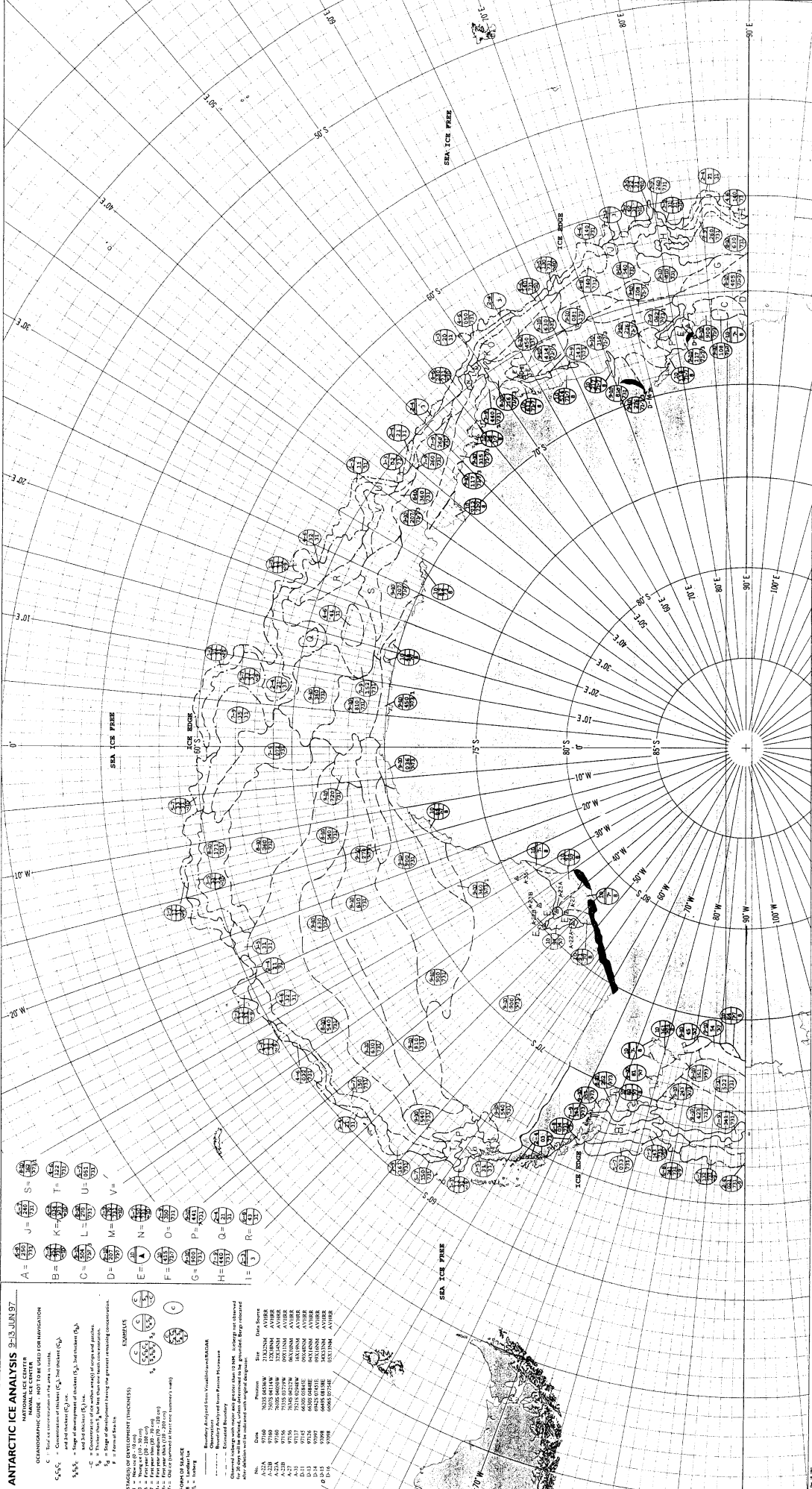
31. Contour lines are labeled with the percentage of ice concentration.
32. Contour lines are labeled with the percentage of ice concentration.

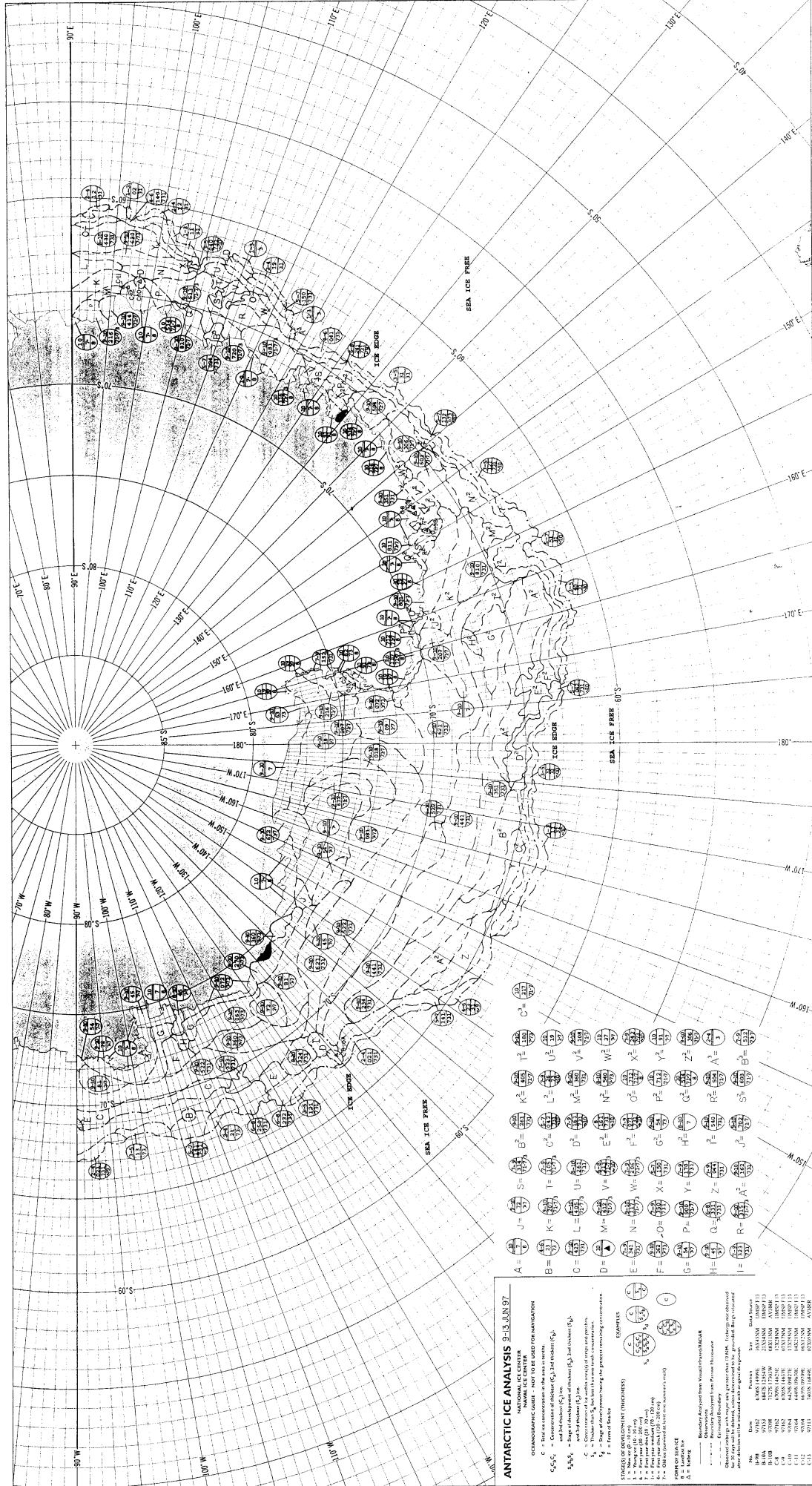
33. Contour lines are labeled with the percentage of ice concentration.
34. Contour lines are labeled with the percentage of ice concentration.

35. Contour lines are labeled with the percentage of ice concentration.
36. Contour lines are labeled with the percentage of ice concentration.

37. Contour lines are labeled with the percentage of ice concentration.
38. Contour lines are labeled with the percentage of ice concentration.

39. Contour lines are labeled with the percentage of ice concentration.
40. Contour lines are labeled with the percentage of ice concentration.





ANTARCTIC ICE ANALYSIS 2-18 JUN 57

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

C - Ice concentration in the area shown.
C₁C₂C₃ - Concentration in 100, 50, and 20% thicknesses.
S₁S₂S₃ - Stage of development of thickness (S₁) and thickness (S₂) and thickness (S₃) in feet.
T - Thickness in feet.
T₁ - Thickness in feet, but less than 100 feet concentration.
F - Form of ice.

EXAMPLES

FORM OF ICE
 1 - New or old (100%)
 2 - First year (100-200%)
 3 - First year (200-300%)
 4 - First year (300-400%)
 5 - First year (400-500%)
 6 - Old (500-600%)
 7 - Old (600-700%)
 8 - Old (700-800%)
 9 - Old (800-900%)
 10 - Old (900-1000%)

FORM OF ICE
 A - Iceberg
 B - Iceberg
 C - Iceberg
 D - Iceberg
 E - Iceberg
 F - Iceberg
 G - Iceberg
 H - Iceberg
 I - Iceberg
 J - Iceberg
 K - Iceberg
 L - Iceberg
 M - Iceberg
 N - Iceberg
 O - Iceberg
 P - Iceberg
 Q - Iceberg
 R - Iceberg
 S - Iceberg
 T - Iceberg
 U - Iceberg
 V - Iceberg
 W - Iceberg
 X - Iceberg
 Y - Iceberg
 Z - Iceberg
 AA - Iceberg
 AB - Iceberg
 AC - Iceberg
 AD - Iceberg
 AE - Iceberg
 AF - Iceberg
 AG - Iceberg
 AH - Iceberg
 AI - Iceberg
 AJ - Iceberg
 AK - Iceberg
 AL - Iceberg
 AM - Iceberg
 AN - Iceberg
 AO - Iceberg
 AP - Iceberg
 AQ - Iceberg
 AR - Iceberg
 AS - Iceberg
 AT - Iceberg
 AU - Iceberg
 AV - Iceberg
 AW - Iceberg
 AX - Iceberg
 AY - Iceberg
 AZ - Iceberg
 BA - Iceberg
 BB - Iceberg
 BC - Iceberg
 BD - Iceberg
 BE - Iceberg
 BF - Iceberg
 BG - Iceberg
 BH - Iceberg
 BI - Iceberg
 BJ - Iceberg
 BK - Iceberg
 BL - Iceberg
 BM - Iceberg
 BN - Iceberg
 BO - Iceberg
 BP - Iceberg
 BQ - Iceberg
 BR - Iceberg
 BS - Iceberg
 BT - Iceberg
 BU - Iceberg
 BV - Iceberg
 BV - Iceberg
 BW - Iceberg
 BX - Iceberg
 BY - Iceberg
 BZ - Iceberg
 CA - Iceberg
 CB - Iceberg
 CC - Iceberg
 CD - Iceberg
 CE - Iceberg
 CF - Iceberg
 CG - Iceberg
 CH - Iceberg
 CI - Iceberg
 CJ - Iceberg
 CK - Iceberg
 CL - Iceberg
 CM - Iceberg
 CN - Iceberg
 CO - Iceberg
 CP - Iceberg
 CQ - Iceberg
 CR - Iceberg
 CS - Iceberg
 CT - Iceberg
 CU - Iceberg
 CV - Iceberg
 CW - Iceberg
 CX - Iceberg
 CY - Iceberg
 CZ - Iceberg
 DA - Iceberg
 DB - Iceberg
 DC - Iceberg
 DD - Iceberg
 DE - Iceberg
 DF - Iceberg
 DG - Iceberg
 DH - Iceberg
 DI - Iceberg
 DJ - Iceberg
 DK - Iceberg
 DL - Iceberg
 DM - Iceberg
 DN - Iceberg
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 DR - Iceberg
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 DT - Iceberg
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 EA - Iceberg
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 EG - Iceberg
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 ET - Iceberg
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 EX - Iceberg
 EY - Iceberg
 EZ - Iceberg
 FA - Iceberg
 FB - Iceberg
 FC - Iceberg
 FD - Iceberg
 FE - Iceberg
 FF - Iceberg
 FG - Iceberg
 FH - Iceberg
 FI - Iceberg
 FJ - Iceberg
 FK - Iceberg
 FL - Iceberg
 FM - Iceberg
 FN - Iceberg
 FO - Iceberg
 FP - Iceberg
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 FZ - Iceberg
 GA - Iceberg
 GB - Iceberg
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BOUNDARY ANALYSIS FROM VISUAL OBSERVATION
 1 - Boundary observed from Visual Observation
 2 - Boundary observed from Photo Interpretation
 3 - Boundary observed from Photo Interpretation
 4 - Boundary observed from Photo Interpretation
 5 - Boundary observed from Photo Interpretation
 6 - Boundary observed from Photo Interpretation
 7 - Boundary observed from Photo Interpretation
 8 - Boundary observed from Photo Interpretation
 9 - Boundary observed from Photo Interpretation
 10 - Boundary observed from Photo Interpretation

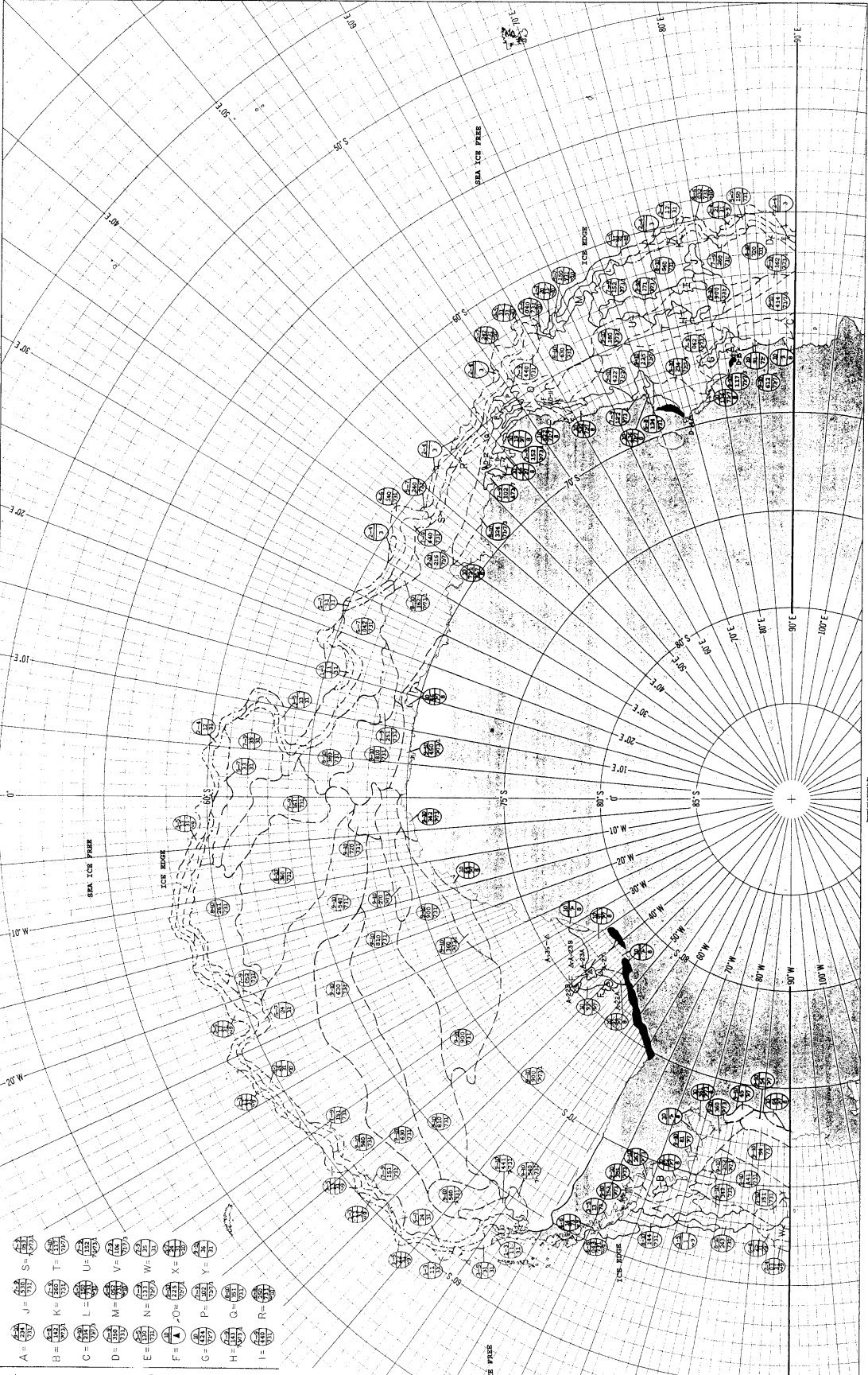
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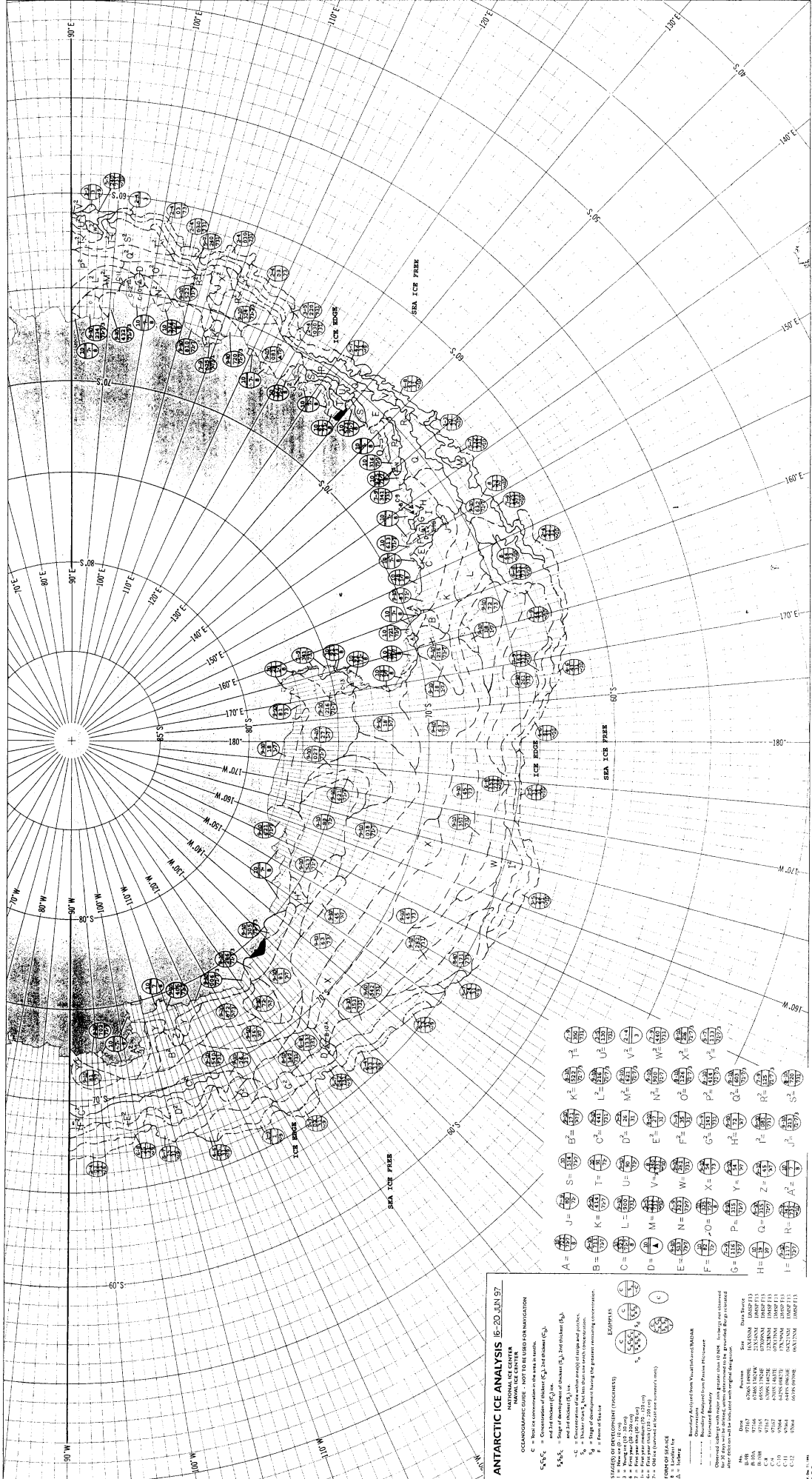
ANTARCTIC ICE ANALYSIS 16-20 JUN 97

NATIONAL ICE CENTER
OCEANOGRAPHIC DATA REPORT FOR NAVIGATION

SYMBOLS:
 C = Sea ice concentration in the area shown.
 S, S₁, S₂ = Concentration of ice in S, S₁, and S₂ respectively.
 S₁S₂C = Concentration of ice in S₁, S₂, and C respectively.
 S₁S₂C₁C₂ = Concentration of ice in S₁, S₂, C₁, and C₂ respectively.
 C = Concentration of the water ahead of probe and profile.
 S = Stage of development using the Antarctic reporting conventions.
 F = Form of feature.

STAGES OF DEVELOPMENT (THICKNESS):
 1 = New ice (0-30 cm)
 2 = First year ice (30-100 cm)
 3 = First year ice (100-200 cm)
 4 = First year ice (200-300 cm)
 5 = First year ice (300-500 cm)
 6 = First year ice (500-1000 cm)
 7 = First year ice (1000-1500 cm)
 8 = First year ice (1500-2000 cm)
 9 = First year ice (2000-3000 cm)
 10 = First year ice (3000-5000 cm)
 11 = First year ice (5000-10000 cm)
 12 = First year ice (10000-15000 cm)
 13 = First year ice (15000-20000 cm)
 14 = First year ice (20000-30000 cm)
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 19 = First year ice (200000-300000 cm)
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 21 = First year ice (500000-1000000 cm)
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 23 = First year ice (1500000-2000000 cm)
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 28 = First year ice (15000000-20000000 cm)
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 33 = First year ice (150000000-200000000 cm)
 34 = First year ice (200000000-300000000 cm)
 35 = First year ice (300000000-500000000 cm)
 36 = First year ice (500000000-1000000000 cm)
 37 = First year ice (1000000000-1500000000 cm)
 38 = First year ice (1500000000-2000000000 cm)
 39 = First year ice (2000000000-3000000000 cm)
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 43 = First year ice (15000000000-20000000000 cm)
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 96 = First year ice (500000000000000000000-1000000000000000000000 cm)
 97 = First year ice (1000000000000000000000-1500000000000000000000 cm)
 98 = First year ice (1500000000000000000000-2000000000000000000000 cm)
 99 = First year ice (2000000000000000000000-3000000000000000000000 cm)
 100 = First year ice (3000000000000000000000-5000000000000000000000 cm)





ANTARCTIC ICE ANALYSIS (6-20 JUN 57)
 NATIONAL ICE CENTER
 OCEANOGRAPHIC DATA CENTER

SYMBOLS FOR OBSERVATIONS

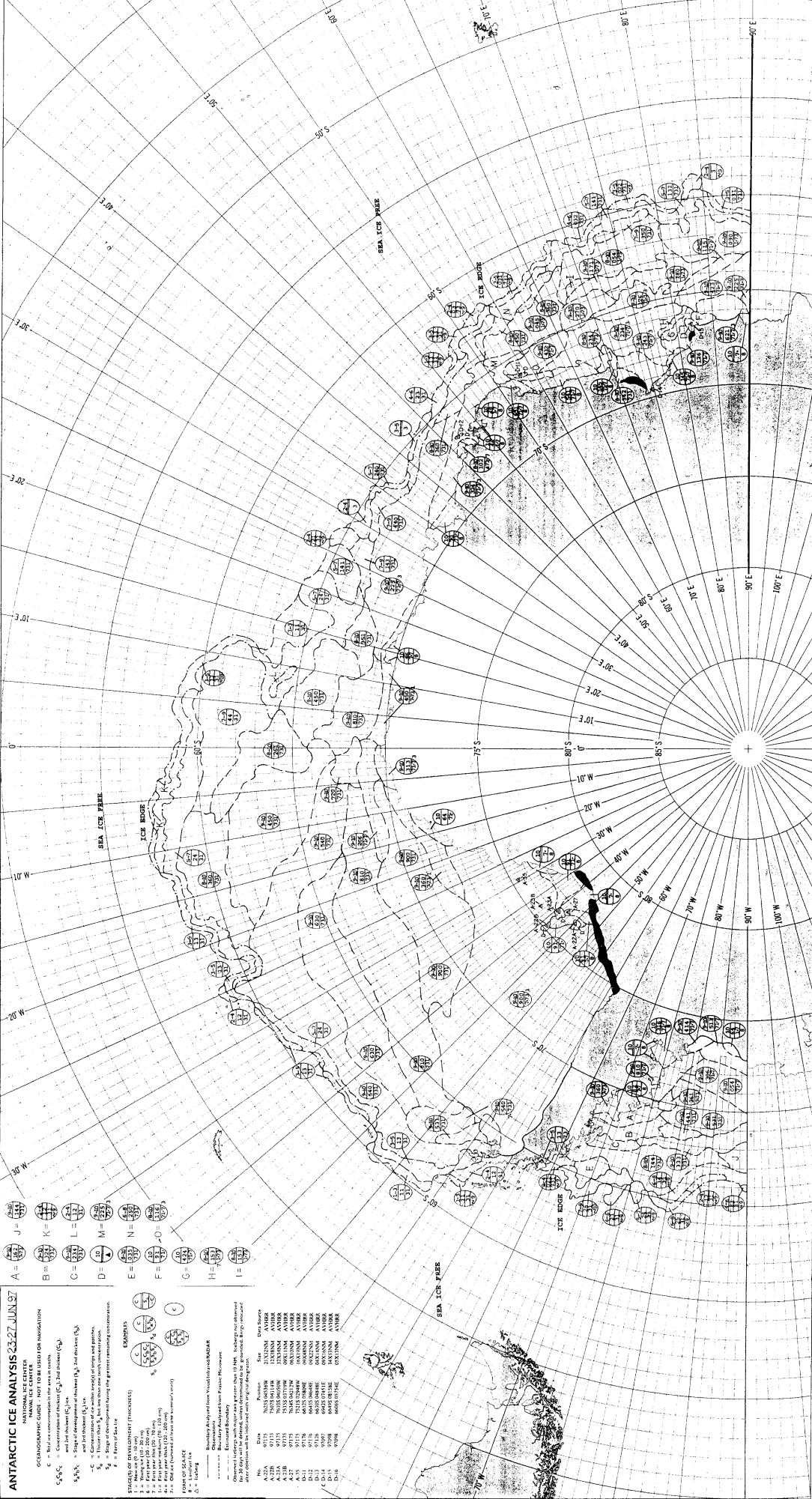
C = Total concentration in the area in hours.
 C₁, C₂, C₃ = Concentration of thicker (C₁), 2nd thickest (C₂), and 3rd thickest (C₃) ice.
 S₁, S₂, S₃ = Thickness (S₁), thickness (S₂), thickness (S₃) and ice height (S₄).
 L₁ = Concentration in ice within 1000 ft of ship and point.
 L₂ = Concentration in ice within 500 ft of ship and point.
 L₃ = Concentration in ice within 250 ft of ship and point.
 P = Range of distribution in hours (ice extent according to concentration).
 P = Power of Signal

ESSENTIALS

1 = None (0-2000)
 2 = None (20-100)
 3 = None (10-50)
 4 = None (5-25)
 5 = None (2-10)
 6 = None (1-5)
 7 = None (0.5-2.5)
 8 = None (0.2-1.0)
 9 = None (0.1-0.5)

STATION LIST

Station	Latitude	Longitude	Remarks
07004	68°55'S	156°00'W	RUSSIA
07005	68°55'S	156°00'W	RUSSIA
07006	68°55'S	156°00'W	RUSSIA
07007	68°55'S	156°00'W	RUSSIA
07008	68°55'S	156°00'W	RUSSIA
07009	68°55'S	156°00'W	RUSSIA
07010	68°55'S	156°00'W	RUSSIA
07011	68°55'S	156°00'W	RUSSIA
07012	68°55'S	156°00'W	RUSSIA
07013	68°55'S	156°00'W	RUSSIA
07014	68°55'S	156°00'W	RUSSIA
07015	68°55'S	156°00'W	RUSSIA
07016	68°55'S	156°00'W	RUSSIA
07017	68°55'S	156°00'W	RUSSIA
07018	68°55'S	156°00'W	RUSSIA
07019	68°55'S	156°00'W	RUSSIA
07020	68°55'S	156°00'W	RUSSIA
07021	68°55'S	156°00'W	RUSSIA
07022	68°55'S	156°00'W	RUSSIA
07023	68°55'S	156°00'W	RUSSIA
07024	68°55'S	156°00'W	RUSSIA
07025	68°55'S	156°00'W	RUSSIA
07026	68°55'S	156°00'W	RUSSIA
07027	68°55'S	156°00'W	RUSSIA
07028	68°55'S	156°00'W	RUSSIA
07029	68°55'S	156°00'W	RUSSIA
07030	68°55'S	156°00'W	RUSSIA
07031	68°55'S	156°00'W	RUSSIA
07032	68°55'S	156°00'W	RUSSIA
07033	68°55'S	156°00'W	RUSSIA
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07069	68°55'S	156°00'W	RUSSIA
07070	68°55'S	156°00'W	RUSSIA
07071	68°55'S	156°00'W	RUSSIA
07072	68°55'S	156°00'W	RUSSIA
07073	68°55'S	156°00'W	RUSSIA
07074	68°55'S	156°00'W	RUSSIA
07075	68°55'S	156°00'W	RUSSIA
07076	68°55'S	156°00'W	RUSSIA
07077	68°55'S	156°00'W	RUSSIA
07078	68°55'S	156°00'W	RUSSIA
07079	68°55'S	156°00'W	RUSSIA
07080	68°55'S	156°00'W	RUSSIA
07081	68°55'S	156°00'W	RUSSIA
07082	68°55'S	156°00'W	RUSSIA
07083	68°55'S	156°00'W	RUSSIA
07084	68°55'S	156°00'W	RUSSIA
07085	68°55'S	156°00'W	RUSSIA
07086	68°55'S	156°00'W	RUSSIA
07087	68°55'S	156°00'W	RUSSIA
07088	68°55'S	156°00'W	RUSSIA
07089	68°55'S	156°00'W	RUSSIA
07090	68°55'S	156°00'W	RUSSIA
07091	68°55'S	156°00'W	RUSSIA
07092	68°55'S	156°00'W	RUSSIA
07093	68°55'S	156°00'W	RUSSIA
07094	68°55'S	156°00'W	RUSSIA
07095	68°55'S	156°00'W	RUSSIA
07096	68°55'S	156°00'W	RUSSIA
07097	68°55'S	156°00'W	RUSSIA
07098	68°55'S	156°00'W	RUSSIA
07099	68°55'S	156°00'W	RUSSIA
07100	68°55'S	156°00'W	RUSSIA



Photocopy - Public Domain/USNHC
Date: 10/01/00

Scale: 1:500,000
Projection: Lambert Conformal Conic
Datum: Antarctic Spheroid 1960

ANTARCTIC ICE ANALYSIS 25.27 JUN.97
 NATIONAL ICE CENTER
 NAVY OCEANOGRAPHIC CENTER

SYMBOLS
 ○ = Iceberg location
 ○ (with letter) = Iceberg name
 ○ (with number) = Iceberg number
 ○ (with letter and number) = Iceberg name and number
 ○ (with letter and number in a circle) = Iceberg name and number in a circle
 ○ (with letter and number in a square) = Iceberg name and number in a square
 ○ (with letter and number in a triangle) = Iceberg name and number in a triangle
 ○ (with letter and number in a diamond) = Iceberg name and number in a diamond
 ○ (with letter and number in a hexagon) = Iceberg name and number in a hexagon
 ○ (with letter and number in an octagon) = Iceberg name and number in an octagon
 ○ (with letter and number in a decagon) = Iceberg name and number in a decagon
 ○ (with letter and number in a dodecagon) = Iceberg name and number in a dodecagon

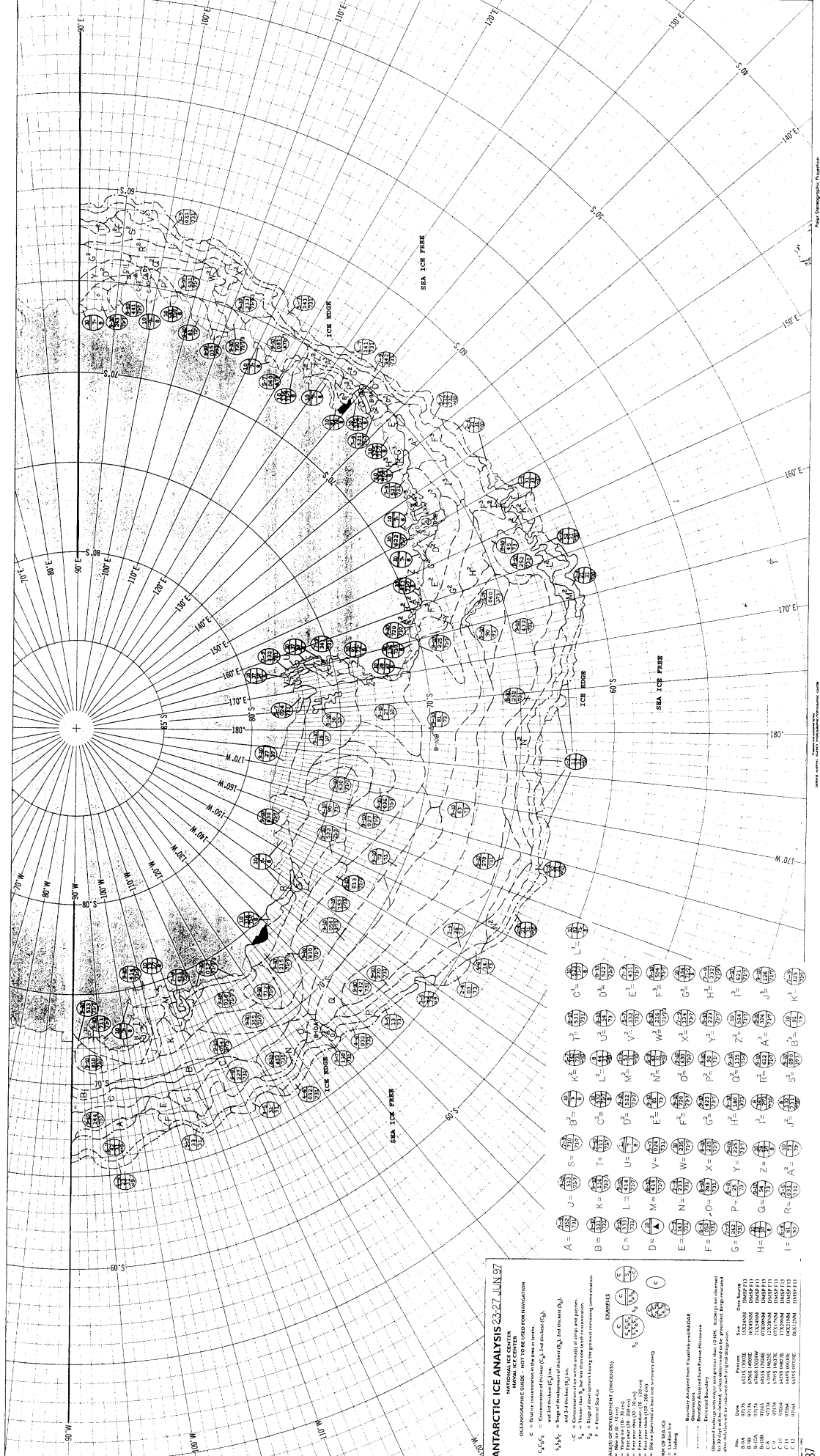
EXAMPLES
 ○ (A) = Iceberg A
 ○ (10) = Iceberg 10
 ○ (A10) = Iceberg A10
 ○ (A10) (circled) = Iceberg A10 (circled)
 ○ (A10) (squared) = Iceberg A10 (squared)
 ○ (A10) (triangled) = Iceberg A10 (triangled)
 ○ (A10) (diamond) = Iceberg A10 (diamond)
 ○ (A10) (hexagon) = Iceberg A10 (hexagon)
 ○ (A10) (octagon) = Iceberg A10 (octagon)
 ○ (A10) (decagon) = Iceberg A10 (decagon)
 ○ (A10) (dodecagon) = Iceberg A10 (dodecagon)

KEY
 ○ = Iceberg location
 ○ (with letter) = Iceberg name
 ○ (with number) = Iceberg number
 ○ (with letter and number) = Iceberg name and number
 ○ (with letter and number in a circle) = Iceberg name and number in a circle
 ○ (with letter and number in a square) = Iceberg name and number in a square
 ○ (with letter and number in a triangle) = Iceberg name and number in a triangle
 ○ (with letter and number in a diamond) = Iceberg name and number in a diamond
 ○ (with letter and number in a hexagon) = Iceberg name and number in a hexagon
 ○ (with letter and number in an octagon) = Iceberg name and number in an octagon
 ○ (with letter and number in a decagon) = Iceberg name and number in a decagon
 ○ (with letter and number in a dodecagon) = Iceberg name and number in a dodecagon

NOTES
 1. This chart is based on satellite data received from the National Ice Center.
 2. The chart is based on satellite data received from the National Ice Center.
 3. The chart is based on satellite data received from the National Ice Center.
 4. The chart is based on satellite data received from the National Ice Center.
 5. The chart is based on satellite data received from the National Ice Center.
 6. The chart is based on satellite data received from the National Ice Center.
 7. The chart is based on satellite data received from the National Ice Center.
 8. The chart is based on satellite data received from the National Ice Center.
 9. The chart is based on satellite data received from the National Ice Center.
 10. The chart is based on satellite data received from the National Ice Center.

BOUNDARY
 --- Boundary defined from Visual Observations
 --- Boundary defined from Satellite Observations
 --- Boundary defined from Other Sources

DATA SOURCES
 No. Date Data Source
 A-236 0715 7025040100 AVNBR
 A-237 0715 7025040100 AVNBR
 A-238 0715 7025040100 AVNBR
 A-239 0715 7025040100 AVNBR
 A-240 0715 7025040100 AVNBR
 A-241 0715 7025040100 AVNBR
 A-242 0715 7025040100 AVNBR
 A-243 0715 7025040100 AVNBR
 A-244 0715 7025040100 AVNBR
 A-245 0715 7025040100 AVNBR
 A-246 0715 7025040100 AVNBR
 A-247 0715 7025040100 AVNBR
 A-248 0715 7025040100 AVNBR
 A-249 0715 7025040100 AVNBR
 A-250 0715 7025040100 AVNBR



ANTARCTIC ICE ANALYSIS 23-27 JUN 57

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

C = Total ice concentration in the area in tenths.
C₁C₂C₃ = Concentration of thickness (C₁), and thickness (C₂), and 3rd thickness (C₃) in tenths.
S₁S₂S₃ = Stage of development of thickness (S₁), and thickness (S₂) and 3rd thickness (S₃) in tenths.
S₁ = Number of stages of development, but not more than 3.
S₂ = Stage of development having the greatest remaining concentration.
S₃ = 3rd stage of development.
F = Feet of thickness.
T = Thickness in feet.
A = Area in square miles (100 000 sq mi).
E = Error per cent (0 to 100).
D = Date of observation (DDMMYY).
D = Date of departure of last (summary only).
FORM OF SEA ICE
A = Iceberg
B = Icefield
C = Ice pack

EXAMPLES

$\frac{C}{100}$	$\frac{C_1}{100}$	$\frac{C_2}{100}$	$\frac{C_3}{100}$	$\frac{S_1}{100}$	$\frac{S_2}{100}$	$\frac{S_3}{100}$	$\frac{F}{100}$	$\frac{T}{100}$	$\frac{A}{100}$	$\frac{E}{100}$	$\frac{D}{100}$
100	100	100	100	100	100	100	100	100	100	100	100

Quantity Analyzed from Visual Observations

Estimated Uncertainty

Quantity Analyzed from Remote Measurements

Estimated Uncertainty

Quantity Analyzed from Satellite Data

Estimated Uncertainty

Quantity Analyzed from Other Sources

Estimated Uncertainty

Quantity Analyzed from Other Sources

Estimated Uncertainty

Quantity Analyzed from Other Sources

Estimated Uncertainty

Map Projections: Antarctic Stereographic, Lambert Conformal Conic, Mercator, Transverse Mercator, UTM, and others.

ANTARCTIC ICE ANALYSIS 01-03 JUL 57

NATIONAL ICE CENTER
NAVY OPERATIONS CENTER
WASHINGTON, D. C.

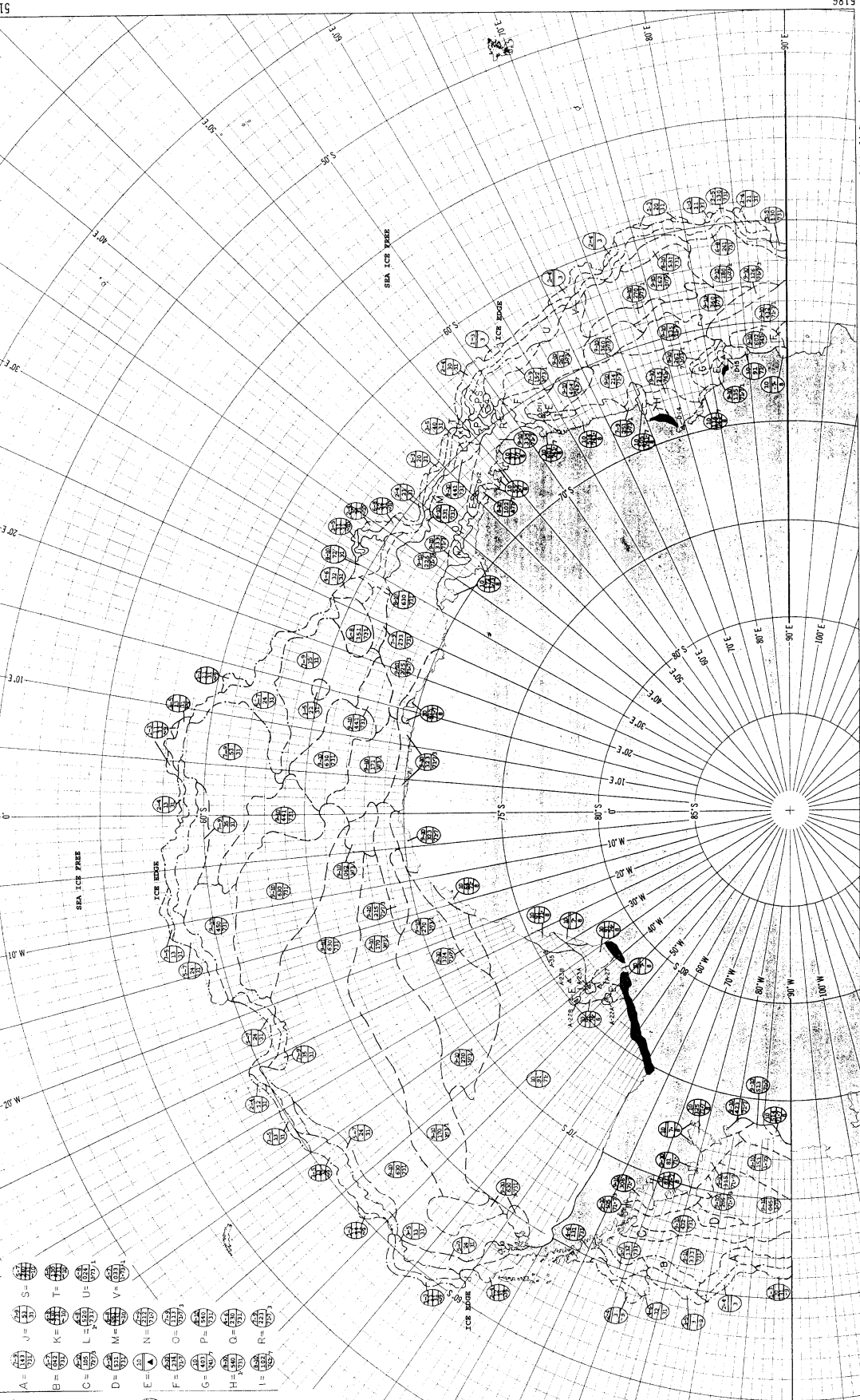
SYMBOLS

CONCENTRATION
 C₁C₂C₃ = Concentration of ice (C₁ for extent, C₂ for thickness, C₃ for ice type)
 S₁S₂S₃ = Stage of development of ice (S₁ for extent, S₂ for thickness, S₃ for ice type)
 C = Concentration of ice within area of extent and thickness
 S = Stage of development of ice within area of extent and thickness
 T = Thickness of ice within area of extent and thickness
 A = Age of ice within area of extent and thickness

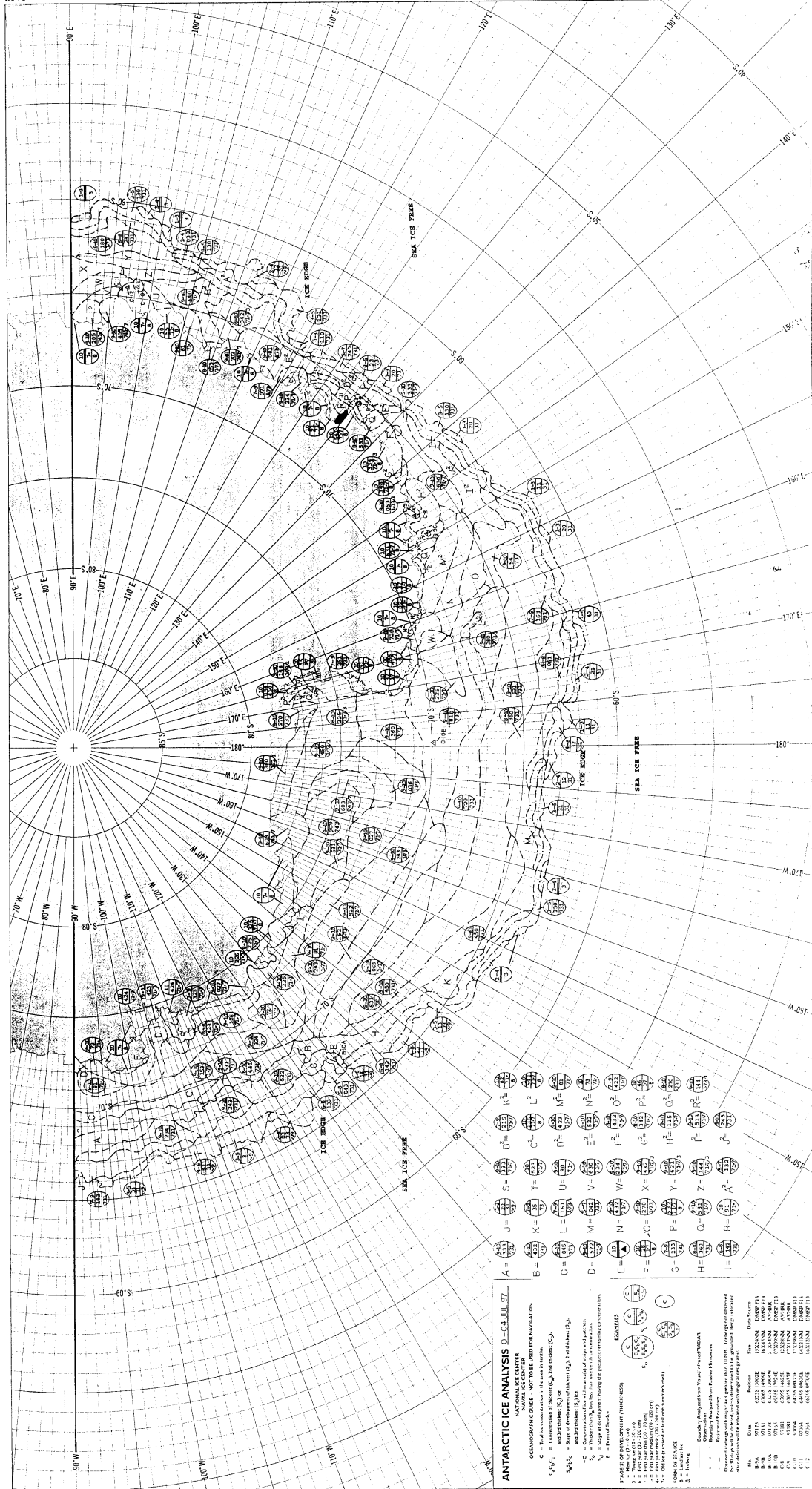
STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0-150 ft)
 2 = First year ice (150-300 ft)
 3 = Second year ice (300-600 ft)
 4 = Third year ice (600-1200 ft)
 5 = Old ice (1200 ft or more)

AGE OF ICE
 A = Ice age
 A₁ = 1st year
 A₂ = 2nd year
 A₃ = 3rd year
 A₄ = 4th year
 A₅ = 5th year
 A₆ = 6th year
 A₇ = 7th year
 A₈ = 8th year
 A₉ = 9th year
 A₁₀ = 10th year
 A₁₁ = 11th year
 A₁₂ = 12th year
 A₁₃ = 13th year
 A₁₄ = 14th year
 A₁₅ = 15th year
 A₁₆ = 16th year
 A₁₇ = 17th year
 A₁₈ = 18th year
 A₁₉ = 19th year
 A₂₀ = 20th year
 A₂₁ = 21st year
 A₂₂ = 22nd year
 A₂₃ = 23rd year
 A₂₄ = 24th year
 A₂₅ = 25th year
 A₂₆ = 26th year
 A₂₇ = 27th year
 A₂₈ = 28th year
 A₂₉ = 29th year
 A₃₀ = 30th year
 A₃₁ = 31st year
 A₃₂ = 32nd year
 A₃₃ = 33rd year
 A₃₄ = 34th year
 A₃₅ = 35th year
 A₃₆ = 36th year
 A₃₇ = 37th year
 A₃₈ = 38th year
 A₃₉ = 39th year
 A₄₀ = 40th year
 A₄₁ = 41st year
 A₄₂ = 42nd year
 A₄₃ = 43rd year
 A₄₄ = 44th year
 A₄₅ = 45th year
 A₄₆ = 46th year
 A₄₇ = 47th year
 A₄₈ = 48th year
 A₄₉ = 49th year
 A₅₀ = 50th year
 A₅₁ = 51st year
 A₅₂ = 52nd year
 A₅₃ = 53rd year
 A₅₄ = 54th year
 A₅₅ = 55th year
 A₅₆ = 56th year
 A₅₇ = 57th year
 A₅₈ = 58th year
 A₅₉ = 59th year
 A₆₀ = 60th year
 A₆₁ = 61st year
 A₆₂ = 62nd year
 A₆₃ = 63rd year
 A₆₄ = 64th year
 A₆₅ = 65th year
 A₆₆ = 66th year
 A₆₇ = 67th year
 A₆₈ = 68th year
 A₆₉ = 69th year
 A₇₀ = 70th year
 A₇₁ = 71st year
 A₇₂ = 72nd year
 A₇₃ = 73rd year
 A₇₄ = 74th year
 A₇₅ = 75th year
 A₇₆ = 76th year
 A₇₇ = 77th year
 A₇₈ = 78th year
 A₇₉ = 79th year
 A₈₀ = 80th year
 A₈₁ = 81st year
 A₈₂ = 82nd year
 A₈₃ = 83rd year
 A₈₄ = 84th year
 A₈₅ = 85th year
 A₈₆ = 86th year
 A₈₇ = 87th year
 A₈₈ = 88th year
 A₈₉ = 89th year
 A₉₀ = 90th year
 A₉₁ = 91st year
 A₉₂ = 92nd year
 A₉₃ = 93rd year
 A₉₄ = 94th year
 A₉₅ = 95th year
 A₉₆ = 96th year
 A₉₇ = 97th year
 A₉₈ = 98th year
 A₉₉ = 99th year
 A₁₀₀ = 100th year



No.	Date	Position	Size	Area	Age	Stage	Concentration	Ice Type
A-138	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-139	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-140	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-141	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-142	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-143	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-144	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-145	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-146	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-147	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-148	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-149	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI
A-150	6712	75 05 S 141 00 W	1135000	1135000	AVI	1	0	AVI



5187

Map Information: Projection: Polar Stereographic; Reference: World Map 7; Datum: Everest; Vertical Datum: Mean Sea Level; Scale: 1:500,000; Date: 1969; Source: U.S. Navy Hydrographic Office

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

ANTARCTIC ICE ANALYSIS (IQUAD 57)
 NATIONAL ICE CENTER
 ORGANIZING OFFICE FOR NAVIGATION

C = Total ice concentration in the area is 100%.

S_1, S_2, S_3 = Direction of drift (S_1), S_2 and current (S_3)
 S_4, S_5, S_6 = Direction of drift (S_4), S_5 and current (S_6)
 S_7, S_8 = Direction of drift (S_7) and current (S_8)

C = Concentration of the area used on maps and charts.

S_1, S_2 = Direction of drift (S_1) and current (S_2)

S_3 = Stage of development showing the greatest remaining concentration.

S_4 = Form of Ice

STAGES OF DEVELOPMENT (THICKNESS)

1 = Newly formed (0 to 30 cm)
 2 = First year ice (30 to 100 cm)
 3 = First year ice (100 to 200 cm)
 4 = First year ice (200 to 300 cm)
 5 = First year ice (300 to 500 cm)

ICE TYPES

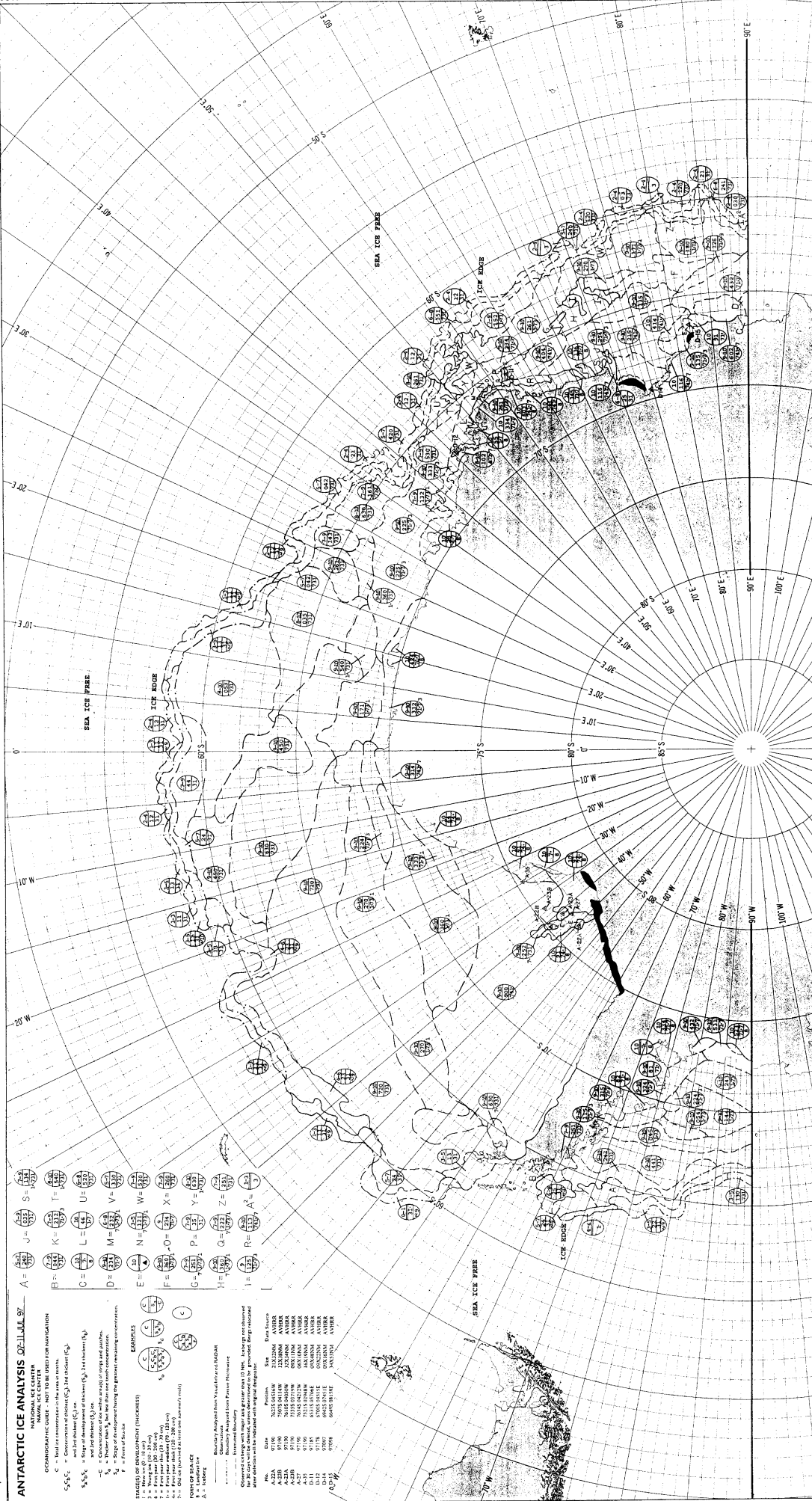
A = Landfast Ice
 B = Loose Ice
 C = Drifted Ice

Legend: Boundary, Ship or Ice from Vessel/Underway/Block, Direction, Estimated Thickness, Direction, Estimated Thickness, Direction, Estimated Thickness.

Scale: 1:500,000
 Date: 1969
 Projection: Polar Stereographic
 Datum: Everest
 Vertical Datum: Mean Sea Level

Division: Office of Naval Affairs, Department of the Navy
 Office: Naval Hydrographic Office, Washington, D.C.

Drawn: [List of names]
 Checked: [List of names]
 Published: [List of names]



Projection: Polar Stereographic
 Date: 11/1/61

Scale: 1:10,000,000
 Date: 11/1/61

ANTARCTIC ICE ANALYSIS 02-11-61 97

NATIONAL ICE CENTER
 OCEANOGRAPHIC DATA CENTER FOR NAVIGATION

SYMBOLS FOR OBSERVATIONS

C = Total ice concentration in the area shown.
 S, S₁, S₂, S₃ = Concentration of sheets (S₁, S₂, S₃) and icebergs (S₄)
 S₁, S₂, S₃ = Concentration of ice sheets (S₁, S₂, S₃)
 S₄ = Concentration of ice with areas of floes and patches.
 C = Concentration of ice with areas of floes and patches.
 F = Stage of development during the greatest maximum concentration.
 P = Form of floe.

EXAMPLES

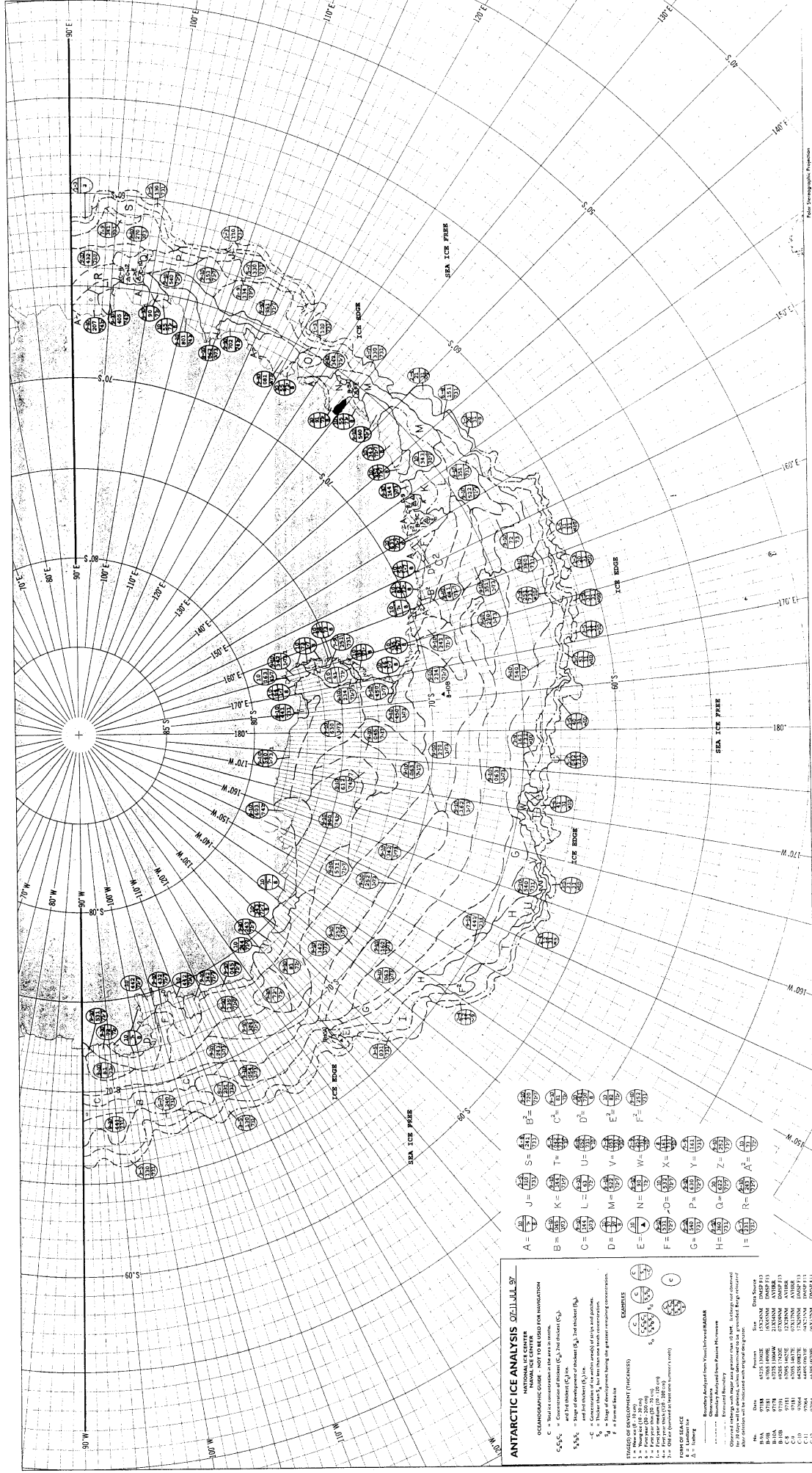
1. 100% S₁ 1
 2. 100% S₂ 2
 3. 100% S₃ 3
 4. 100% S₄ 4
 5. 100% S₁ 1
 6. 100% S₂ 2
 7. 100% S₃ 3
 8. 100% S₄ 4
 9. 100% S₁ 1
 10. 100% S₂ 2
 11. 100% S₃ 3
 12. 100% S₄ 4
 13. 100% S₁ 1
 14. 100% S₂ 2
 15. 100% S₃ 3
 16. 100% S₄ 4
 17. 100% S₁ 1
 18. 100% S₂ 2
 19. 100% S₃ 3
 20. 100% S₄ 4

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0 to 25 cm)
 2 = Young ice (25 to 50 cm)
 3 = First year ice (50 to 100 cm)
 4 = Multi-year ice (100 to 200 cm)
 5 = Old ice (200 to 300 cm)
 6 = Very old ice (300 to 400 cm)
 7 = Icebergs (400 to 500 cm)
 8 = Icebergs (500 to 600 cm)
 9 = Icebergs (600 to 700 cm)
 10 = Icebergs (700 to 800 cm)
 11 = Icebergs (800 to 900 cm)
 12 = Icebergs (900 to 1000 cm)
 13 = Icebergs (1000 to 1100 cm)
 14 = Icebergs (1100 to 1200 cm)
 15 = Icebergs (1200 to 1300 cm)
 16 = Icebergs (1300 to 1400 cm)
 17 = Icebergs (1400 to 1500 cm)
 18 = Icebergs (1500 to 1600 cm)
 19 = Icebergs (1600 to 1700 cm)
 20 = Icebergs (1700 to 1800 cm)
 21 = Icebergs (1800 to 1900 cm)
 22 = Icebergs (1900 to 2000 cm)
 23 = Icebergs (2000 to 2100 cm)
 24 = Icebergs (2100 to 2200 cm)
 25 = Icebergs (2200 to 2300 cm)
 26 = Icebergs (2300 to 2400 cm)
 27 = Icebergs (2400 to 2500 cm)
 28 = Icebergs (2500 to 2600 cm)
 29 = Icebergs (2600 to 2700 cm)
 30 = Icebergs (2700 to 2800 cm)
 31 = Icebergs (2800 to 2900 cm)
 32 = Icebergs (2900 to 3000 cm)
 33 = Icebergs (3000 to 3100 cm)
 34 = Icebergs (3100 to 3200 cm)
 35 = Icebergs (3200 to 3300 cm)
 36 = Icebergs (3300 to 3400 cm)
 37 = Icebergs (3400 to 3500 cm)
 38 = Icebergs (3500 to 3600 cm)
 39 = Icebergs (3600 to 3700 cm)
 40 = Icebergs (3700 to 3800 cm)
 41 = Icebergs (3800 to 3900 cm)
 42 = Icebergs (3900 to 4000 cm)
 43 = Icebergs (4000 to 4100 cm)
 44 = Icebergs (4100 to 4200 cm)
 45 = Icebergs (4200 to 4300 cm)
 46 = Icebergs (4300 to 4400 cm)
 47 = Icebergs (4400 to 4500 cm)
 48 = Icebergs (4500 to 4600 cm)
 49 = Icebergs (4600 to 4700 cm)
 50 = Icebergs (4700 to 4800 cm)
 51 = Icebergs (4800 to 4900 cm)
 52 = Icebergs (4900 to 5000 cm)
 53 = Icebergs (5000 to 5100 cm)
 54 = Icebergs (5100 to 5200 cm)
 55 = Icebergs (5200 to 5300 cm)
 56 = Icebergs (5300 to 5400 cm)
 57 = Icebergs (5400 to 5500 cm)
 58 = Icebergs (5500 to 5600 cm)
 59 = Icebergs (5600 to 5700 cm)
 60 = Icebergs (5700 to 5800 cm)
 61 = Icebergs (5800 to 5900 cm)
 62 = Icebergs (5900 to 6000 cm)
 63 = Icebergs (6000 to 6100 cm)
 64 = Icebergs (6100 to 6200 cm)
 65 = Icebergs (6200 to 6300 cm)
 66 = Icebergs (6300 to 6400 cm)
 67 = Icebergs (6400 to 6500 cm)
 68 = Icebergs (6500 to 6600 cm)
 69 = Icebergs (6600 to 6700 cm)
 70 = Icebergs (6700 to 6800 cm)
 71 = Icebergs (6800 to 6900 cm)
 72 = Icebergs (6900 to 7000 cm)
 73 = Icebergs (7000 to 7100 cm)
 74 = Icebergs (7100 to 7200 cm)
 75 = Icebergs (7200 to 7300 cm)
 76 = Icebergs (7300 to 7400 cm)
 77 = Icebergs (7400 to 7500 cm)
 78 = Icebergs (7500 to 7600 cm)
 79 = Icebergs (7600 to 7700 cm)
 80 = Icebergs (7700 to 7800 cm)
 81 = Icebergs (7800 to 7900 cm)
 82 = Icebergs (7900 to 8000 cm)
 83 = Icebergs (8000 to 8100 cm)
 84 = Icebergs (8100 to 8200 cm)
 85 = Icebergs (8200 to 8300 cm)
 86 = Icebergs (8300 to 8400 cm)
 87 = Icebergs (8400 to 8500 cm)
 88 = Icebergs (8500 to 8600 cm)
 89 = Icebergs (8600 to 8700 cm)
 90 = Icebergs (8700 to 8800 cm)
 91 = Icebergs (8800 to 8900 cm)
 92 = Icebergs (8900 to 9000 cm)
 93 = Icebergs (9000 to 9100 cm)
 94 = Icebergs (9100 to 9200 cm)
 95 = Icebergs (9200 to 9300 cm)
 96 = Icebergs (9300 to 9400 cm)
 97 = Icebergs (9400 to 9500 cm)
 98 = Icebergs (9500 to 9600 cm)
 99 = Icebergs (9600 to 9700 cm)
 100 = Icebergs (9700 to 9800 cm)
 101 = Icebergs (9800 to 9900 cm)
 102 = Icebergs (9900 to 10000 cm)

Legend:
 --- Sea Ice Free
 --- Ice Edge
 --- Ice Moore

Scale: 1:10,000,000
 Date: 11/1/61



Revised Sounding Practices
1967-1-10-68

A = $\frac{A}{100}$	J = $\frac{J}{100}$	S = $\frac{S}{100}$	B ² = $\frac{B^2}{100}$	C ² = $\frac{C^2}{100}$	D ² = $\frac{D^2}{100}$	E ² = $\frac{E^2}{100}$	F ² = $\frac{F^2}{100}$
B = $\frac{B}{100}$	K = $\frac{K}{100}$	T = $\frac{T}{100}$	U = $\frac{U}{100}$	V = $\frac{V}{100}$	W = $\frac{W}{100}$	X = $\frac{X}{100}$	Y = $\frac{Y}{100}$
C = $\frac{C}{100}$	L = $\frac{L}{100}$	U = $\frac{U}{100}$	V = $\frac{V}{100}$	W = $\frac{W}{100}$	X = $\frac{X}{100}$	Y = $\frac{Y}{100}$	Z = $\frac{Z}{100}$
D = $\frac{D}{100}$	M = $\frac{M}{100}$	P = $\frac{P}{100}$	Q = $\frac{Q}{100}$	R = $\frac{R}{100}$	A ¹ = $\frac{A^1}{100}$		
E = $\frac{E}{100}$	N = $\frac{N}{100}$	P = $\frac{P}{100}$	Q = $\frac{Q}{100}$	R = $\frac{R}{100}$			
F = $\frac{F}{100}$	O = $\frac{O}{100}$	P = $\frac{P}{100}$	Q = $\frac{Q}{100}$	R = $\frac{R}{100}$			
G = $\frac{G}{100}$	P = $\frac{P}{100}$	Q = $\frac{Q}{100}$	R = $\frac{R}{100}$				
H = $\frac{H}{100}$	P = $\frac{P}{100}$	Q = $\frac{Q}{100}$	R = $\frac{R}{100}$				
I = $\frac{I}{100}$	P = $\frac{P}{100}$	Q = $\frac{Q}{100}$	R = $\frac{R}{100}$				

ANTARCTIC ICE ANALYSIS DECILULL 97
 NATIONAL ICE CENTER
 OCEANOGRAPHIC CODE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.
 S, S₁, S₂ = Concentration of thick (C₁) and thin (C₂) ice.
 S₁, S₂ = 100 percent of thick (C₁) and thin (C₂) ice.
 S₁, S₂ = Concentration of ice with rounded tops and points.
 S₁, S₂ = Stage of development, being the greatest remaining concentration.
 F = Form of floe

EXAMPLES

STAGES OF DEVELOPMENT (THICKNESS)

1 = None (0 to 30 cm)
 2 = Intermediate (30 to 75 cm)
 3 = Advanced (75 to 150 cm)
 4 = Very advanced (150 to 300 cm)
 5 = Broken (300 to 600 cm)
 6 = Unbroken (600 to 1200 cm)
 7 = Unbroken (1200 to 2400 cm)
 8 = Unbroken (2400 to 4800 cm)
 9 = Unbroken (4800 to 9600 cm)

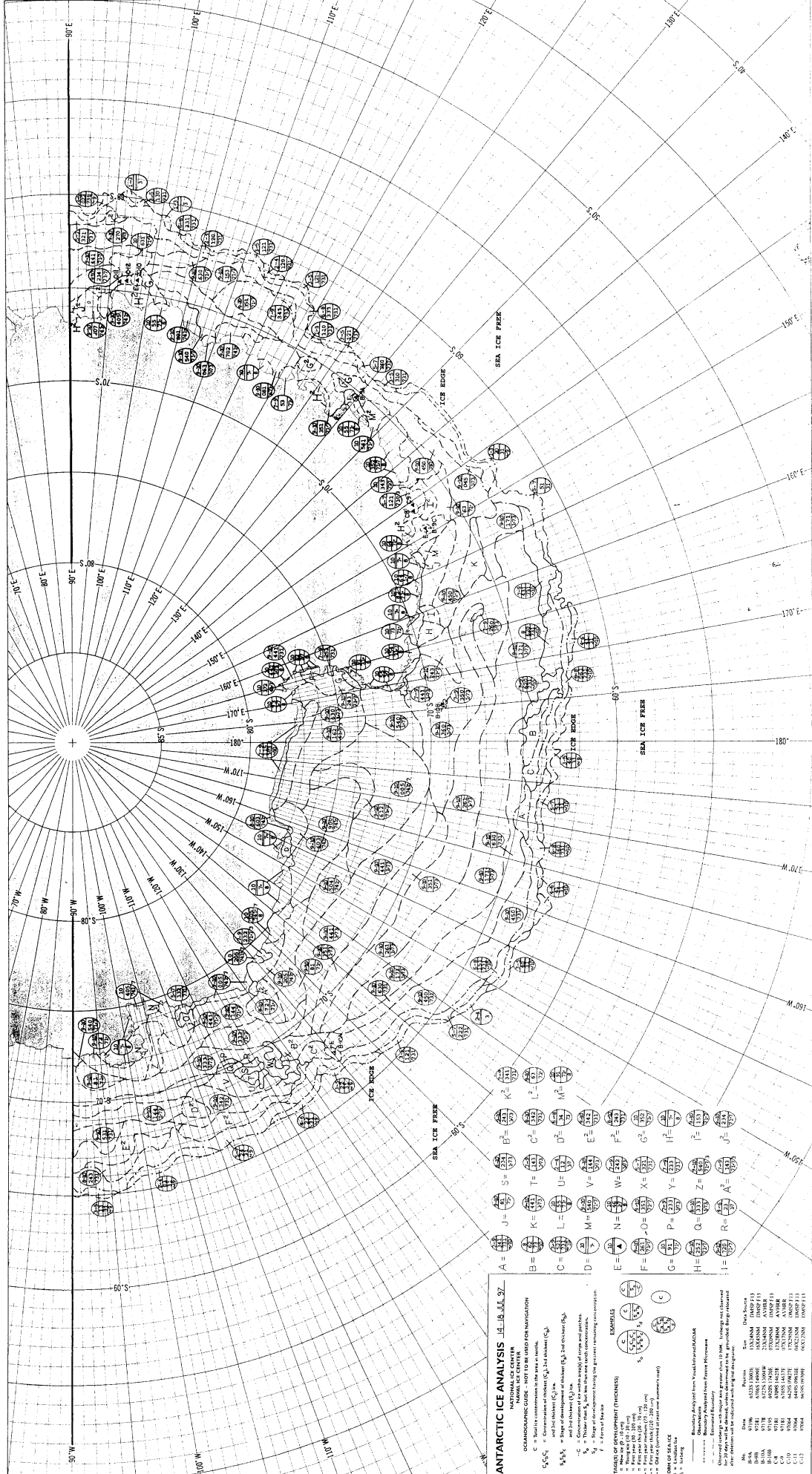
FORM OF FLOE

0 = Unbroken
 1 = Broken
 2 = Intermediate
 3 = Advanced
 4 = Very advanced
 5 = Broken
 6 = Unbroken

REMARKS
 Remarks Analyzed from Visual Observations
 Remarks Analyzed from Radar Measurements
 Remarks Analyzed from Satellite Measurements
 Remarks Analyzed from Other Measurements

ABBREVIATIONS
 A = Admiralty
 B = British
 C = Canadian
 D = Danish
 E = American
 F = French
 G = German
 H = Japanese
 I = Italian
 J = Japanese
 K = Korean
 L = Lithuanian
 M = Mexican
 N = Norwegian
 O = Other
 P = Polish
 Q = Russian
 R = Romanian
 S = Spanish
 T = Turkish
 U = Ukrainian
 V = Vietnamese
 W = West German
 X = Unknown
 Y = Yugoslav
 Z = Zulu

STANDARD SYMBOLS
 A = Admiralty
 B = British
 C = Canadian
 D = Danish
 E = American
 F = French
 G = German
 H = Japanese
 I = Italian
 J = Japanese
 K = Korean
 L = Lithuanian
 M = Mexican
 N = Norwegian
 O = Other
 P = Polish
 Q = Russian
 R = Romanian
 S = Spanish
 T = Turkish
 U = Ukrainian
 V = Vietnamese
 W = West German
 X = Unknown
 Y = Yugoslav
 Z = Zulu



ANTARCTIC ICE ANALYSIS U.S. NAVY **97**

NATIONAL ICE CENTER
OPERATIONAL INFORMATION FOR NAVIGATION

- C = Total ice concentration in the area shown.
- S, S₁, S₂ = Concentration of thick (C₁) and thin (C₂) ice and thickness (C₁, C₂).
- H, H₁, H₂ = Concentration of heavy (H₁) and medium (H₂) ice and thickness (H₁, H₂).
- C₁, C₂ = Concentration of ice areas (C₁, C₂) of open and patches.
- S₁, S₂ = Stage of development (S₁, S₂) for ice area remaining concentration.
- F = Form of Sea Ice.

STAGES OF DEVELOPMENT (THICKNESS)

- 1 = New ice (0 to 20 cm)
- 2 = First year ice (20 to 30 cm)
- 3 = First year ice (30 to 40 cm)
- 4 = First year ice (40 to 50 cm)
- 5 = First year ice (50 to 200 cm)
- 6 = Old ice (200 cm and greater)

EXAMPLES

- A = $\frac{100}{100}$ (100% C, 100% S)
- B = $\frac{100}{100}$ (100% C, 100% H)
- C = $\frac{100}{100}$ (100% C, 100% F)
- D = $\frac{100}{100}$ (100% C, 100% S, 100% H)
- E = $\frac{100}{100}$ (100% C, 100% S, 100% H, 100% F)
- F = $\frac{100}{100}$ (100% C, 100% S, 100% H, 100% F, 100% S₁)
- G = $\frac{100}{100}$ (100% C, 100% S, 100% H, 100% F, 100% S₁, 100% S₂)
- H = $\frac{100}{100}$ (100% C, 100% S, 100% H, 100% F, 100% S₁, 100% S₂, 100% H₁)
- I = $\frac{100}{100}$ (100% C, 100% S, 100% H, 100% F, 100% S₁, 100% S₂, 100% H₁, 100% H₂)
- J = $\frac{100}{100}$ (100% C, 100% S, 100% H, 100% F, 100% S₁, 100% S₂, 100% H₁, 100% H₂, 100% F₁)

STATION DATA

Station	Date	Source
A-1	1957	NAVY
B-1	1957	NAVY
C-1	1957	NAVY
D-1	1957	NAVY
E-1	1957	NAVY
F-1	1957	NAVY
G-1	1957	NAVY
H-1	1957	NAVY
I-1	1957	NAVY
J-1	1957	NAVY
A-2	1958	NAVY
B-2	1958	NAVY
C-2	1958	NAVY
D-2	1958	NAVY
E-2	1958	NAVY
F-2	1958	NAVY
G-2	1958	NAVY
H-2	1958	NAVY
I-2	1958	NAVY
J-2	1958	NAVY
A-3	1959	NAVY
B-3	1959	NAVY
C-3	1959	NAVY
D-3	1959	NAVY
E-3	1959	NAVY
F-3	1959	NAVY
G-3	1959	NAVY
H-3	1959	NAVY
I-3	1959	NAVY
J-3	1959	NAVY

ANTARCTIC ICE ANALYSIS 2125 JUL 97
NATIONAL ICE CENTERS
 NOT TO BE USED FOR NAVIGATION

SYMBOLS
 C = Basin contour in the 1:200,000 scale
 C₁C₂C₃ = Concentration of ice (C₁ for the inner C₂ and the outer C₃)
 S = Ice shelf (S₁ for the inner S₂ and the outer S₃)
 C₁S₁ = Concentration of ice (S₁ for the inner C₁ and the outer S₁)
 C₂S₂ = Concentration of ice (S₂ for the inner C₂ and the outer S₂)
 C₃S₃ = Concentration of ice (S₃ for the inner C₃ and the outer S₃)
 S = Stage of development having the greatest remaining concentration
 S = Series of the ice

EXAMPLES

1 = Stage of development (THICKNESS)
 1 = Stage of development (THICKNESS)
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SCALE
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 1:500,000
 1:250,000
 1:125,000
 1:62,500

ANTARCTIC ICE ANALYSIS
 National Ice Center
 2125 JUL 97
 NOT TO BE USED FOR NAVIGATION

SYMBOLS
 C = Basin contour in the 1:200,000 scale
 C₁C₂C₃ = Concentration of ice (C₁ for the inner C₂ and the outer C₃)
 S = Ice shelf (S₁ for the inner S₂ and the outer S₃)
 C₁S₁ = Concentration of ice (S₁ for the inner C₁ and the outer S₁)
 C₂S₂ = Concentration of ice (S₂ for the inner C₂ and the outer S₂)
 C₃S₃ = Concentration of ice (S₃ for the inner C₃ and the outer S₃)
 S = Stage of development having the greatest remaining concentration
 S = Series of the ice

EXAMPLES

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ANTARCTIC ICE ANALYSIS
 National Ice Center
 2125 JUL 97
 NOT TO BE USED FOR NAVIGATION

SYMBOLS
 C = Basin contour in the 1:200,000 scale
 C₁C₂C₃ = Concentration of ice (C₁ for the inner C₂ and the outer C₃)
 S = Ice shelf (S₁ for the inner S₂ and the outer S₃)
 C₁S₁ = Concentration of ice (S₁ for the inner C₁ and the outer S₁)
 C₂S₂ = Concentration of ice (S₂ for the inner C₂ and the outer S₂)
 C₃S₃ = Concentration of ice (S₃ for the inner C₃ and the outer S₃)
 S = Stage of development having the greatest remaining concentration
 S = Series of the ice

EXAMPLES

1 = Stage of development (THICKNESS)
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SCALE
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 1:62,500

ANTARCTIC ICE ANALYSIS
 National Ice Center
 2125 JUL 97
 NOT TO BE USED FOR NAVIGATION

SYMBOLS
 C = Basin contour in the 1:200,000 scale
 C₁C₂C₃ = Concentration of ice (C₁ for the inner C₂ and the outer C₃)
 S = Ice shelf (S₁ for the inner S₂ and the outer S₃)
 C₁S₁ = Concentration of ice (S₁ for the inner C₁ and the outer S₁)
 C₂S₂ = Concentration of ice (S₂ for the inner C₂ and the outer S₂)
 C₃S₃ = Concentration of ice (S₃ for the inner C₃ and the outer S₃)
 S = Stage of development having the greatest remaining concentration
 S = Series of the ice

EXAMPLES

1 = Stage of development (THICKNESS)
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SCALE
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 1:62,500

ANTARCTIC ICE ANALYSIS
 National Ice Center
 2125 JUL 97
 NOT TO BE USED FOR NAVIGATION

SYMBOLS
 C = Basin contour in the 1:200,000 scale
 C₁C₂C₃ = Concentration of ice (C₁ for the inner C₂ and the outer C₃)
 S = Ice shelf (S₁ for the inner S₂ and the outer S₃)
 C₁S₁ = Concentration of ice (S₁ for the inner C₁ and the outer S₁)
 C₂S₂ = Concentration of ice (S₂ for the inner C₂ and the outer S₂)
 C₃S₃ = Concentration of ice (S₃ for the inner C₃ and the outer S₃)
 S = Stage of development having the greatest remaining concentration
 S = Series of the ice

EXAMPLES

1 = Stage of development (THICKNESS)
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SCALE
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ANTARCTIC ICE ANALYSIS
 National Ice Center
 2125 JUL 97
 NOT TO BE USED FOR NAVIGATION

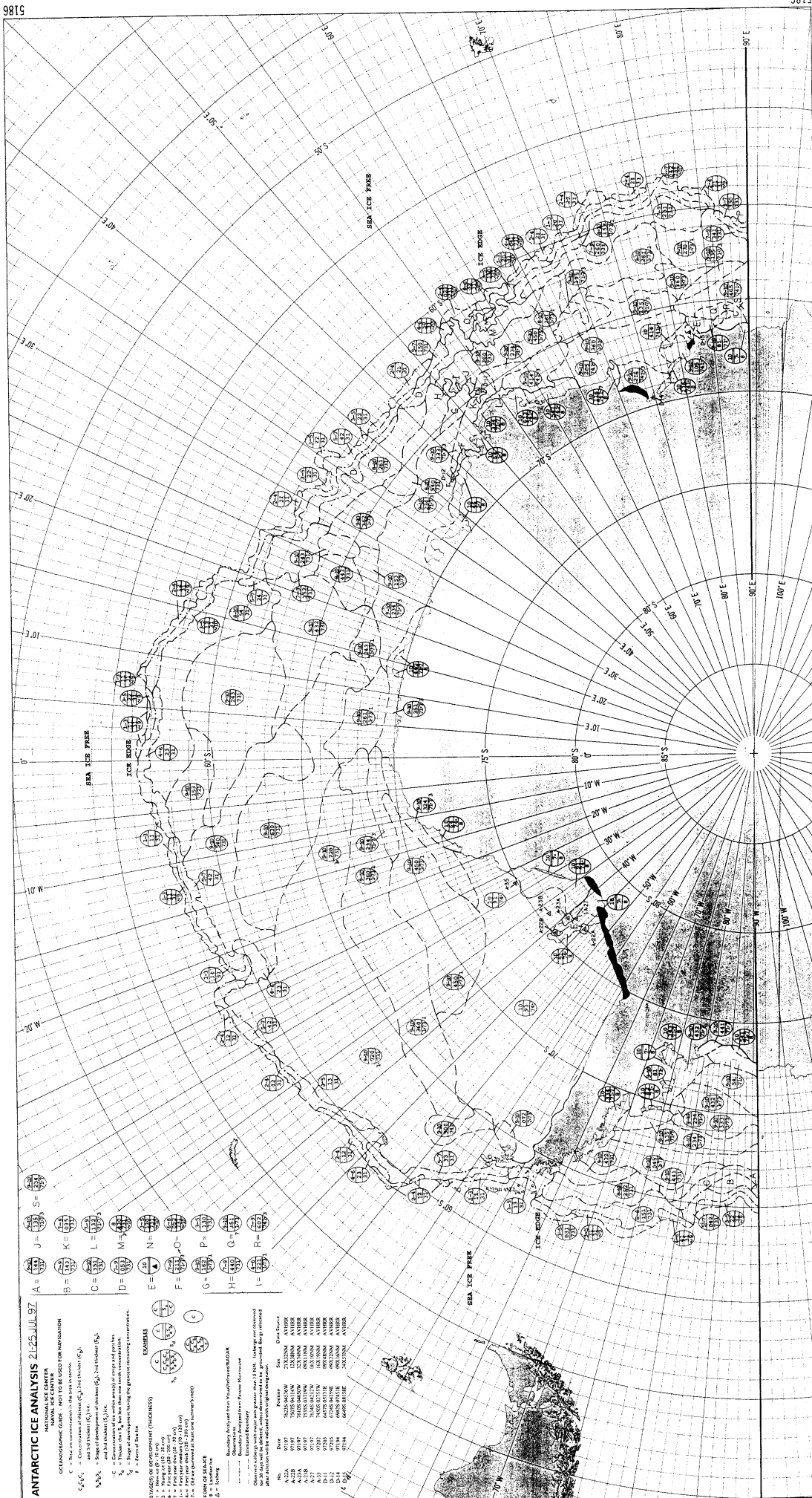
SYMBOLS
 C = Basin contour in the 1:200,000 scale
 C₁C₂C₃ = Concentration of ice (C₁ for the inner C₂ and the outer C₃)
 S = Ice shelf (S₁ for the inner S₂ and the outer S₃)
 C₁S₁ = Concentration of ice (S₁ for the inner C₁ and the outer S₁)
 C₂S₂ = Concentration of ice (S₂ for the inner C₂ and the outer S₂)
 C₃S₃ = Concentration of ice (S₃ for the inner C₃ and the outer S₃)
 S = Stage of development having the greatest remaining concentration
 S = Series of the ice

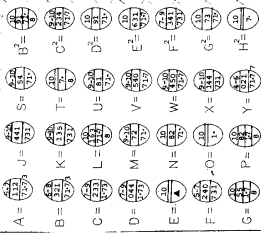
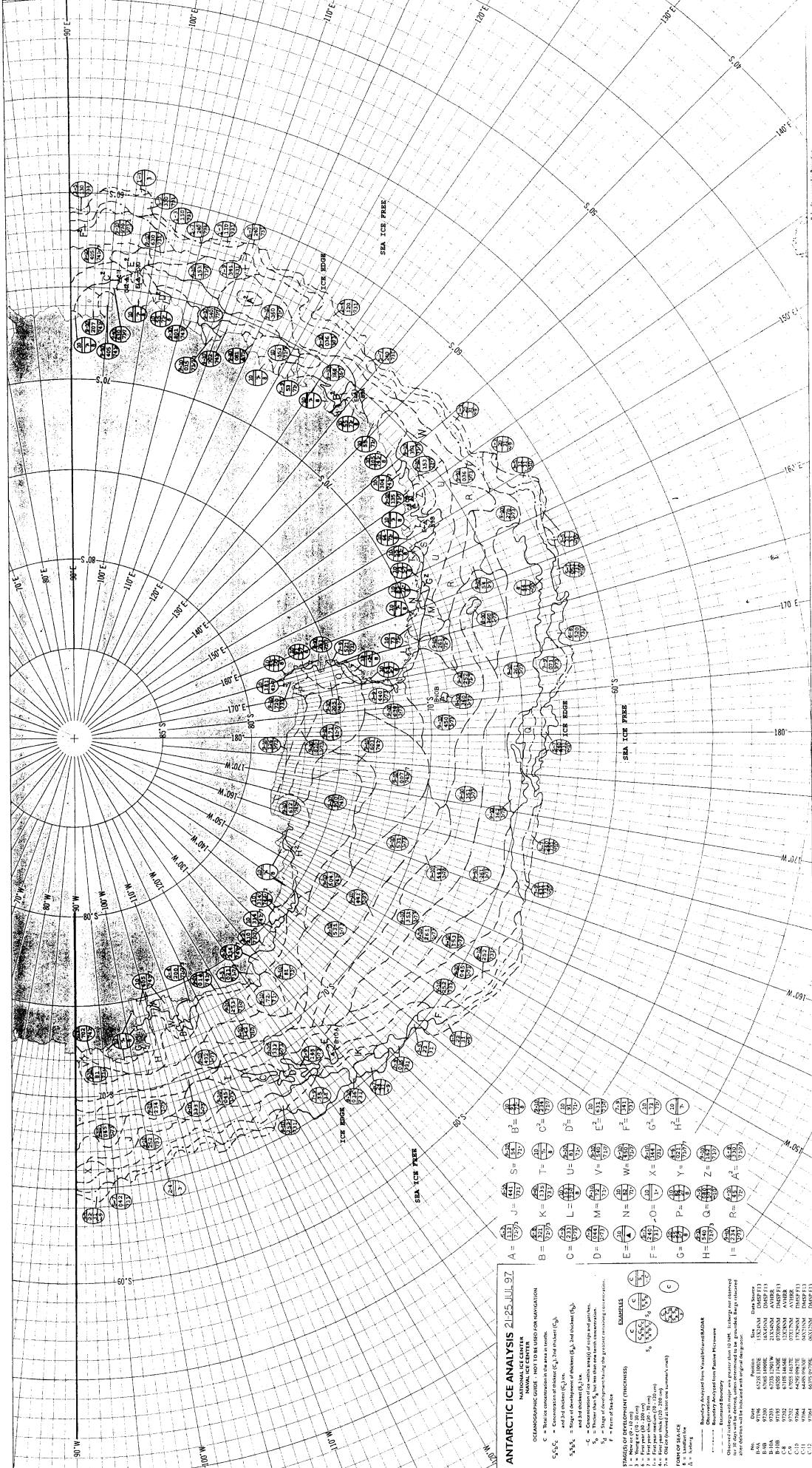
EXAMPLES

1 = Stage of development (THICKNESS)
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SCALE
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ANTARCTIC ICE ANALYSIS
 National Ice Center
 2125 JUL 97
 NOT TO BE USED FOR NAVIGATION





ANTARCTIC ICE ANALYSIS 24-25 JUL 57
NAVAL ICE CENTER

SYMBOLIC CODE - NOT TO BE USED FOR NAVIGATION

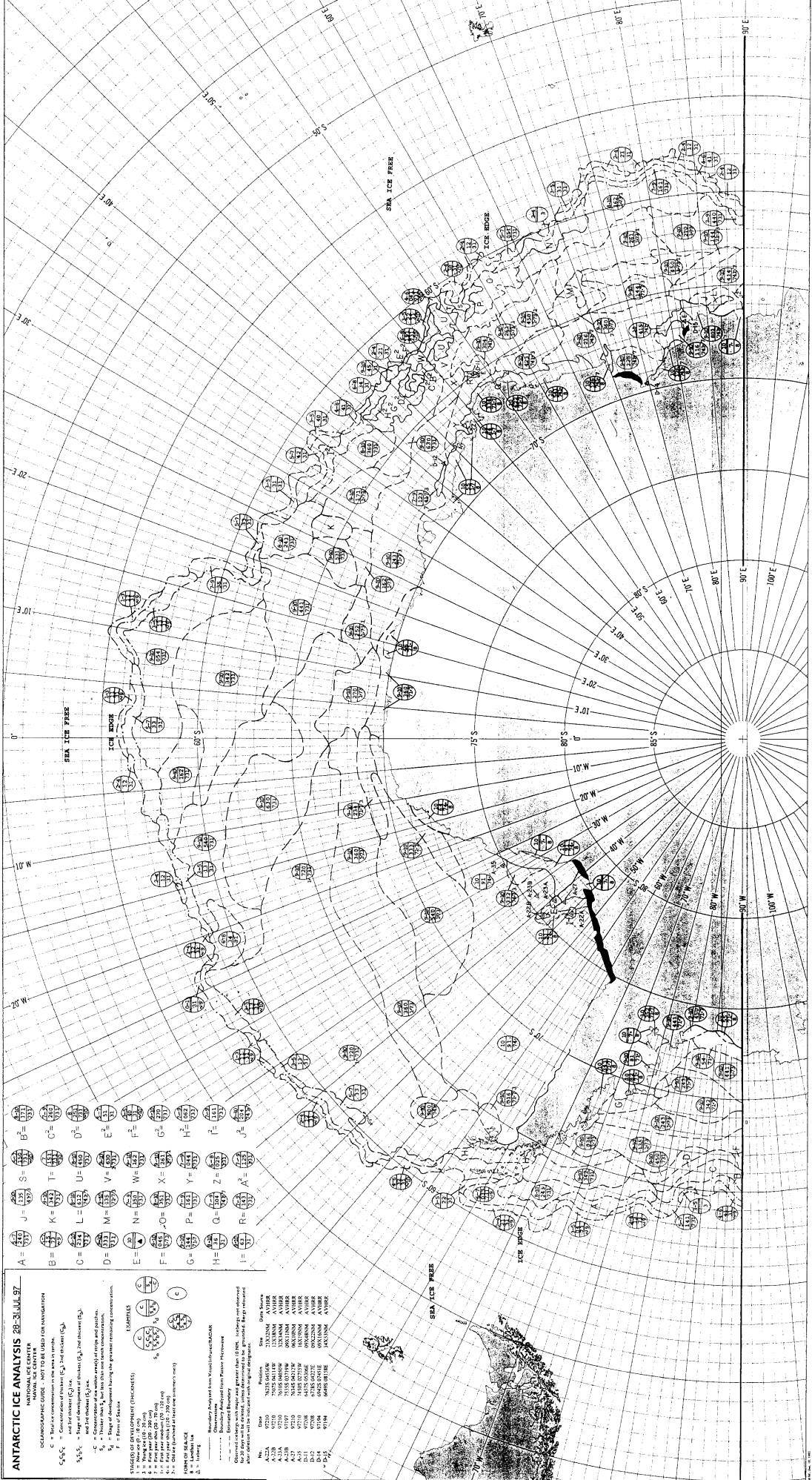
C = Concentration of flakes (C₁ 2nd highest) (C₂)
 S, S₁, S₂ = Sea ice thickness (S₁ 1st, S₂ 2nd)
 S₁, S₂ = Range of development of flakes (S₁ 1st highest) (S₂)
 C = Concentration of ice with range of range and growth
 S₁ = Range of thickness (S₁ 1st, S₂ 2nd)
 S₂ = Range of thickness (S₂ 1st, S₁ 2nd)
 P = Form of flakes

STAGES OF DEVELOPMENT (CIRCLES)

1 = New ice (C 1-30 min)
 2 = Early stage (30 min - 1 hr)
 3 = Intermediate stage (1 hr - 2 hr)
 4 = Late stage (2 hr - 4 hr)
 5 = Early stage (4 hr - 8 hr)
 6 = Intermediate stage (8 hr - 24 hr)
 7 = Late stage (24 hr - 48 hr)

DATA SOURCES

0146 - Data Source
 0150 - 157514000
 0151 - 157514000
 0152 - 157514000
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ANTARCTIC ICE ANALYSIS 28-JUL-57
 NATIONAL ICE CENTER
 DOUGLASS HAFSLUND
 C = Total ice concentration in the area to be analyzed.
 C₁, C₂, C₃ = Concentrations of broken ice (C₁ and C₂ are 100% and C₃ is 50% respectively).
 S, S₁, S₂, S₃ = Stage of development of thickness (S₁, S₂, and S₃ are 100%, 50%, and 25% respectively).
 E, E₁, E₂, E₃ = Stage of development having the greatest remaining concentration.
 F = Form of ice
 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 = Examples

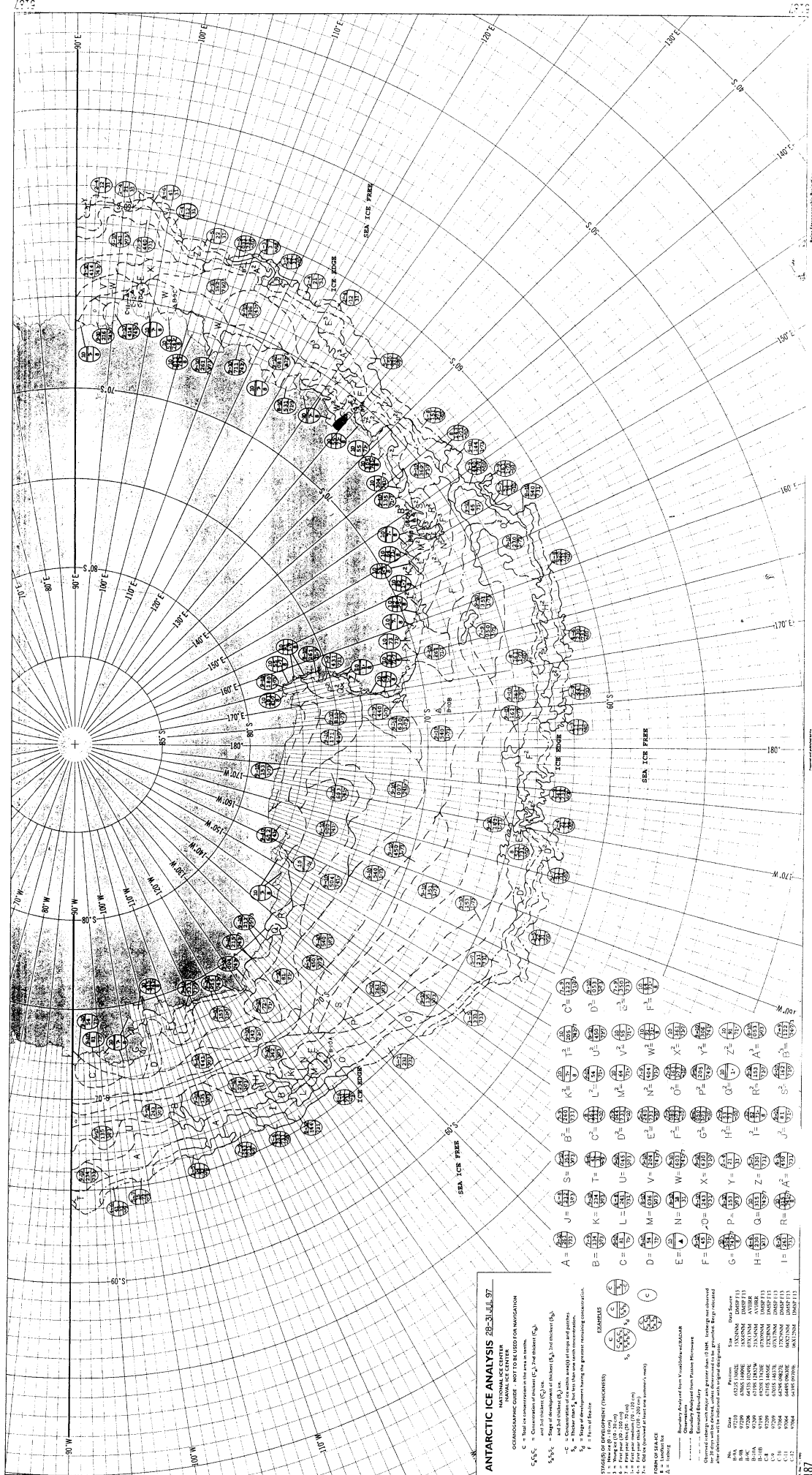
EXAMPLES

A	100	100	100	100	100	100	100	100	100	100
B	100	100	100	100	100	100	100	100	100	100
C	100	100	100	100	100	100	100	100	100	100
D	100	100	100	100	100	100	100	100	100	100
E	100	100	100	100	100	100	100	100	100	100
F	100	100	100	100	100	100	100	100	100	100
G	100	100	100	100	100	100	100	100	100	100
H	100	100	100	100	100	100	100	100	100	100
I	100	100	100	100	100	100	100	100	100	100
J	100	100	100	100	100	100	100	100	100	100
K	100	100	100	100	100	100	100	100	100	100
L	100	100	100	100	100	100	100	100	100	100
M	100	100	100	100	100	100	100	100	100	100
N	100	100	100	100	100	100	100	100	100	100
O	100	100	100	100	100	100	100	100	100	100
P	100	100	100	100	100	100	100	100	100	100
Q	100	100	100	100	100	100	100	100	100	100
R	100	100	100	100	100	100	100	100	100	100
S	100	100	100	100	100	100	100	100	100	100
T	100	100	100	100	100	100	100	100	100	100
U	100	100	100	100	100	100	100	100	100	100
V	100	100	100	100	100	100	100	100	100	100
W	100	100	100	100	100	100	100	100	100	100
X	100	100	100	100	100	100	100	100	100	100
Y	100	100	100	100	100	100	100	100	100	100
Z	100	100	100	100	100	100	100	100	100	100

FORM OF SEA ICE

A	100	100	100	100	100	100	100	100	100	100
B	100	100	100	100	100	100	100	100	100	100
C	100	100	100	100	100	100	100	100	100	100
D	100	100	100	100	100	100	100	100	100	100
E	100	100	100	100	100	100	100	100	100	100
F	100	100	100	100	100	100	100	100	100	100
G	100	100	100	100	100	100	100	100	100	100
H	100	100	100	100	100	100	100	100	100	100
I	100	100	100	100	100	100	100	100	100	100
J	100	100	100	100	100	100	100	100	100	100
K	100	100	100	100	100	100	100	100	100	100
L	100	100	100	100	100	100	100	100	100	100
M	100	100	100	100	100	100	100	100	100	100
N	100	100	100	100	100	100	100	100	100	100
O	100	100	100	100	100	100	100	100	100	100
P	100	100	100	100	100	100	100	100	100	100
Q	100	100	100	100	100	100	100	100	100	100
R	100	100	100	100	100	100	100	100	100	100
S	100	100	100	100	100	100	100	100	100	100
T	100	100	100	100	100	100	100	100	100	100
U	100	100	100	100	100	100	100	100	100	100
V	100	100	100	100	100	100	100	100	100	100
W	100	100	100	100	100	100	100	100	100	100
X	100	100	100	100	100	100	100	100	100	100
Y	100	100	100	100	100	100	100	100	100	100
Z	100	100	100	100	100	100	100	100	100	100

FORM OF SEA ICE
 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 = Examples
 Boundary Adapted from Visual Ice and Radar
 Estimated Boundary
 Sea Ice with the greatest concentration is shown. Under the assumed
 conditions, the ice concentration in the area shown is 100%. Sea ice
 concentration in the area shown is 100%.



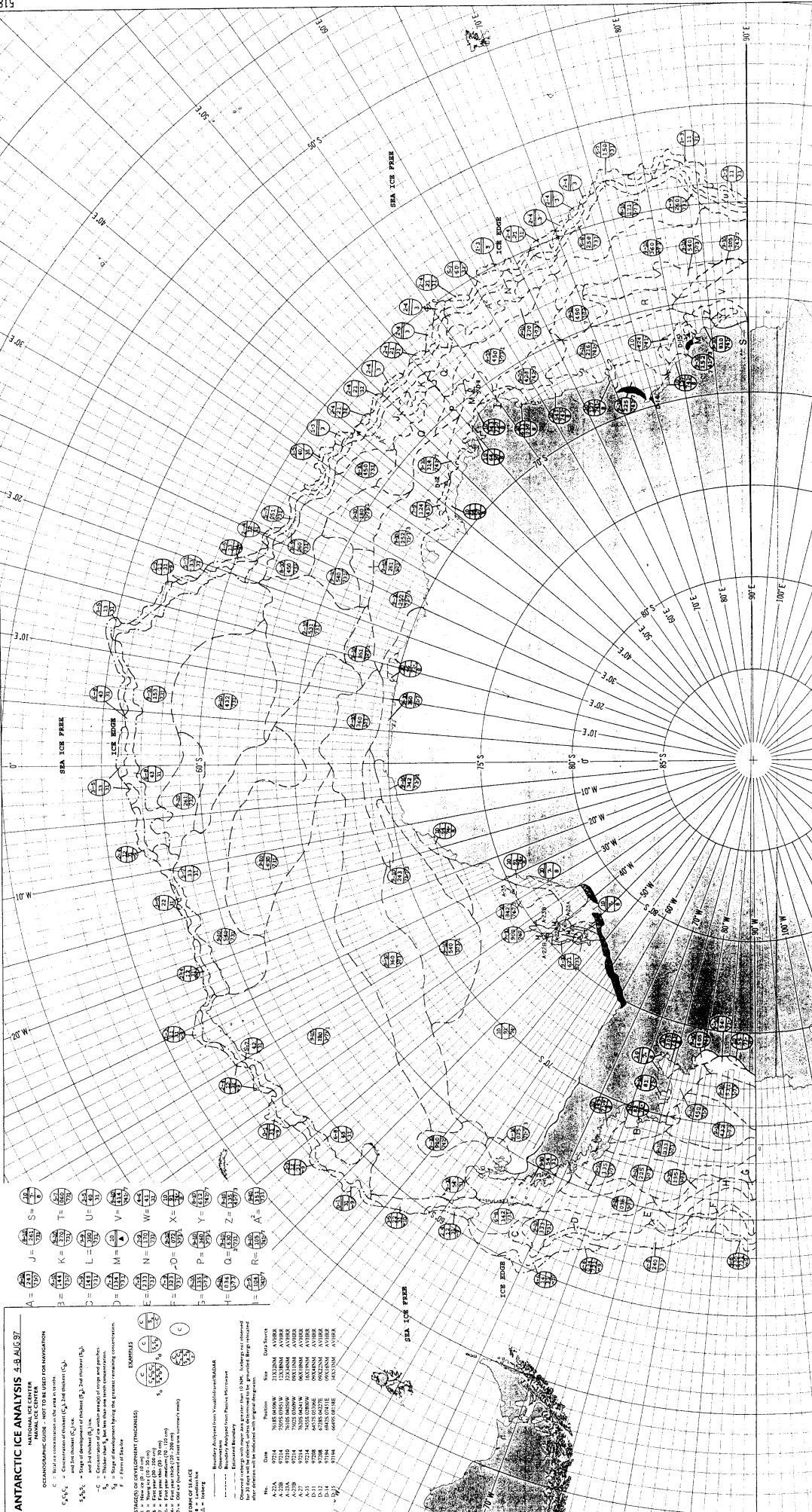
ANTARCTIC ICE ANALYSIS 28-31 JUL 57

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

- C = Total ice concentration in area in percent.
- C₁C₂C₃ = Concentration of classes (C₁), 2nd highest (C₂), and lowest (C₃).
- S₁S₂S₃ = Stage of development of thickness (S₁), 2nd highest (S₂), and lowest (S₃).
- S₁ = Thickest stage.
- S₂ = Thinner stage.
- S₃ = Thinnest stage.
- F = Flow of ice.

EXAMPLES

- 1. 100% (C) 100% (S) 100% (F)
- 2. 100% (C) 100% (S) 100% (F)
- 3. 100% (C) 100% (S) 100% (F)
- 4. 100% (C) 100% (S) 100% (F)
- 5. 100% (C) 100% (S) 100% (F)
- 6. 100% (C) 100% (S) 100% (F)
- 7. 100% (C) 100% (S) 100% (F)
- 8. 100% (C) 100% (S) 100% (F)
- 9. 100% (C) 100% (S) 100% (F)
- 10. 100% (C) 100% (S) 100% (F)
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- 12. 100% (C) 100% (S) 100% (F)
- 13. 100% (C) 100% (S) 100% (F)
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- 33. 100% (C) 100% (S) 100% (F)
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- 43. 100% (C) 100% (S) 100% (F)
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- 63. 100% (C) 100% (S) 100% (F)
- 64. 100% (C) 100% (S) 100% (F)
- 65. 100% (C) 100% (S) 100% (F)
- 66. 100% (C) 100% (S) 100% (F)
- 67. 100% (C) 100% (S) 100% (F)
- 68. 100% (C) 100% (S) 100% (F)
- 69. 100% (C) 100% (S) 100% (F)
- 70. 100% (C) 100% (S) 100% (F)
- 71. 100% (C) 100% (S) 100% (F)
- 72. 100% (C) 100% (S) 100% (F)
- 73. 100% (C) 100% (S) 100% (F)
- 74. 100% (C) 100% (S) 100% (F)
- 75. 100% (C) 100% (S) 100% (F)
- 76. 100% (C) 100% (S) 100% (F)
- 77. 100% (C) 100% (S) 100% (F)
- 78. 100% (C) 100% (S) 100% (F)
- 79. 100% (C) 100% (S) 100% (F)
- 80. 100% (C) 100% (S) 100% (F)
- 81. 100% (C) 100% (S) 100% (F)
- 82. 100% (C) 100% (S) 100% (F)
- 83. 100% (C) 100% (S) 100% (F)
- 84. 100% (C) 100% (S) 100% (F)
- 85. 100% (C) 100% (S) 100% (F)
- 86. 100% (C) 100% (S) 100% (F)
- 87. 100% (C) 100% (S) 100% (F)
- 88. 100% (C) 100% (S) 100% (F)
- 89. 100% (C) 100% (S) 100% (F)
- 90. 100% (C) 100% (S) 100% (F)
- 91. 100% (C) 100% (S) 100% (F)
- 92. 100% (C) 100% (S) 100% (F)
- 93. 100% (C) 100% (S) 100% (F)
- 94. 100% (C) 100% (S) 100% (F)
- 95. 100% (C) 100% (S) 100% (F)
- 96. 100% (C) 100% (S) 100% (F)
- 97. 100% (C) 100% (S) 100% (F)
- 98. 100% (C) 100% (S) 100% (F)
- 99. 100% (C) 100% (S) 100% (F)
- 100. 100% (C) 100% (S) 100% (F)



Projection - Polar Stereographic
Scale - 1:500,000

Antarctic Peninsula, Antarctic Peninsula, Antarctic Peninsula, Antarctic Peninsula

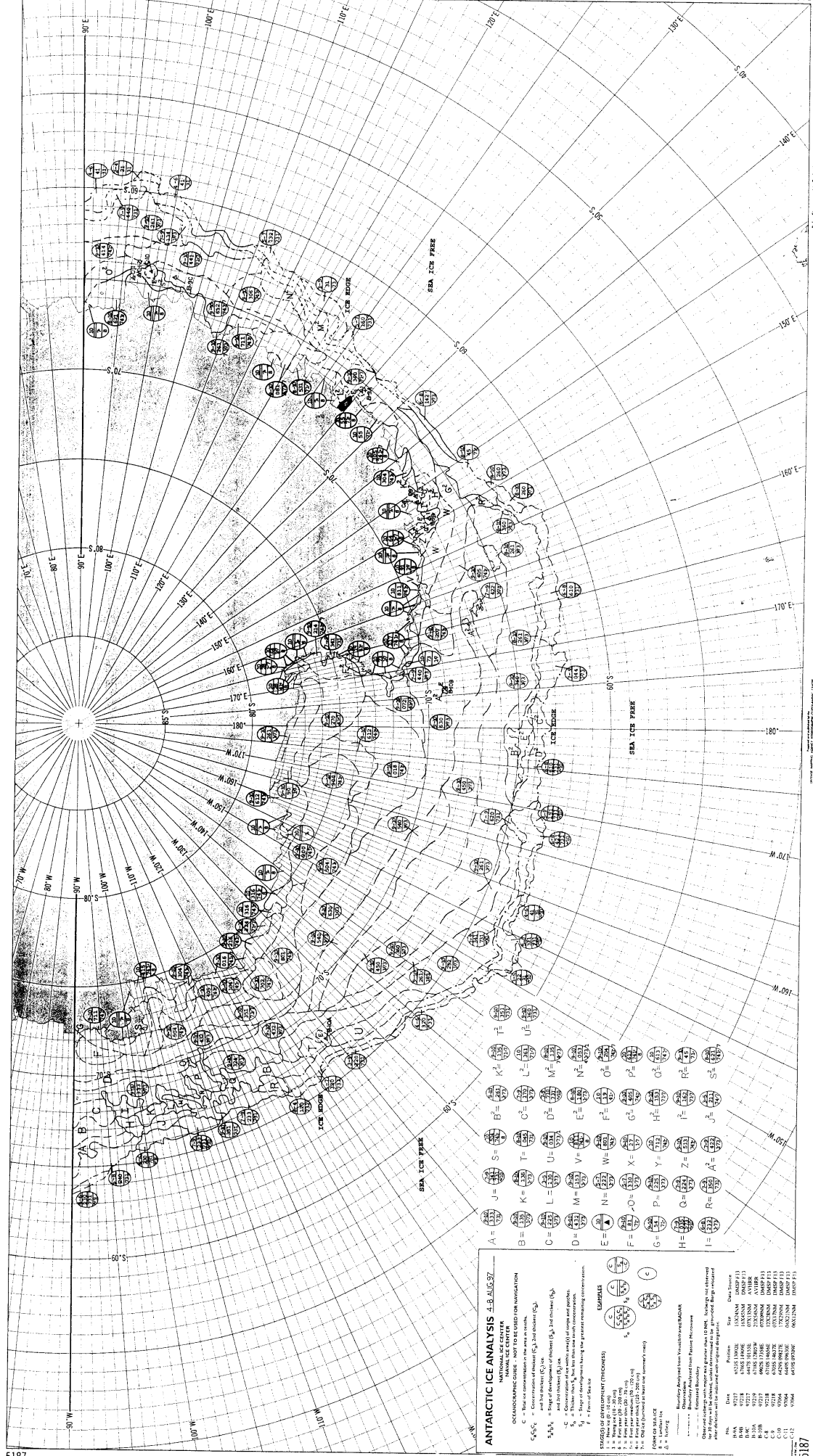
ANTARCTIC ICE ANALYSIS 4.8.16.97
 NAVY ICE CENTER
 OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

- C = Contour interval (C₁) and extent (C₂)
- S = Stage (development of isobars) and thickness (S₁)
- T = Thickness (T₁) and thickness (T₂)
- U = Contour interval (U₁) and extent (U₂)
- V = Contour interval (V₁) and extent (V₂)
- W = Contour interval (W₁) and extent (W₂)
- X = Contour interval (X₁) and extent (X₂)
- Y = Contour interval (Y₁) and extent (Y₂)
- Z = Contour interval (Z₁) and extent (Z₂)
- A = Contour interval (A₁) and extent (A₂)

STAGES OF DEVELOPMENT (EXAMPLES)

No.	Date	Position	Sea	Data Source
A-12A	07214	70°00' 04°00' W	ANTARCTIC	ANTARCTIC
A-13A	07210	70°00' 04°00' W	ANTARCTIC	ANTARCTIC
A-14A	07210	70°00' 04°00' W	ANTARCTIC	ANTARCTIC
A-15A	07210	70°00' 04°00' W	ANTARCTIC	ANTARCTIC
A-16A	07210	70°00' 04°00' W	ANTARCTIC	ANTARCTIC
A-17A	07210	70°00' 04°00' W	ANTARCTIC	ANTARCTIC
D-11A	07208	68°15' 05°00' W	ANTARCTIC	ANTARCTIC
D-12A	07208	68°15' 05°00' W	ANTARCTIC	ANTARCTIC
D-13A	07208	68°15' 05°00' W	ANTARCTIC	ANTARCTIC
D-14A	07208	68°15' 05°00' W	ANTARCTIC	ANTARCTIC
D-15A	07208	68°15' 05°00' W	ANTARCTIC	ANTARCTIC

Boundary defined from Visual Observations
 Boundary defined from Passive Microwave
 Observed edge with upper sea pressure less than 10 DPA. Edge is not observed
 if edge is within 10 DPA of edge of ice. Edge is not observed if edge is within
 10 DPA of edge of ice. Edge is not observed if edge is within 10 DPA of edge of ice.



ANTARCTIC ICE ANALYSIS 4-B AUG 57
 NATIONAL ICE CENTER
 NATIONAL ICE CENTER

DOCKING SYMBOLS AND CONVENTIONS
 C = Base or concentration in the area shown.
 S, K, L, U, V, W, X, Y, Z = Concentration of ice (S, 2nd digit) (K, 3rd digit) (L, 4th digit) (U, 5th digit) (V, 6th digit) (W, 7th digit) (X, 8th digit) (Y, 9th digit) (Z, 10th digit).
 A, B, C, D, E, F, G, H, I = Concentration of ice (A, 1st digit) (B, 2nd digit) (C, 3rd digit) (D, 4th digit) (E, 5th digit) (F, 6th digit) (G, 7th digit) (H, 8th digit) (I, 9th digit).
 J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z = Direction of ice drift (J, 1st digit) (K, 2nd digit) (L, 3rd digit) (M, 4th digit) (N, 5th digit) (O, 6th digit) (P, 7th digit) (Q, 8th digit) (R, 9th digit) (S, 10th digit) (T, 11th digit) (U, 12th digit) (V, 13th digit) (W, 14th digit) (X, 15th digit) (Y, 16th digit) (Z, 17th digit).
 A, B, C, D, E, F, G, H, I = Direction of ice drift (A, 1st digit) (B, 2nd digit) (C, 3rd digit) (D, 4th digit) (E, 5th digit) (F, 6th digit) (G, 7th digit) (H, 8th digit) (I, 9th digit).
 J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z = Direction of ice drift (J, 1st digit) (K, 2nd digit) (L, 3rd digit) (M, 4th digit) (N, 5th digit) (O, 6th digit) (P, 7th digit) (Q, 8th digit) (R, 9th digit) (S, 10th digit) (T, 11th digit) (U, 12th digit) (V, 13th digit) (W, 14th digit) (X, 15th digit) (Y, 16th digit) (Z, 17th digit).

ICE TYPES AND DEVELOPMENT (THICKNESSES)

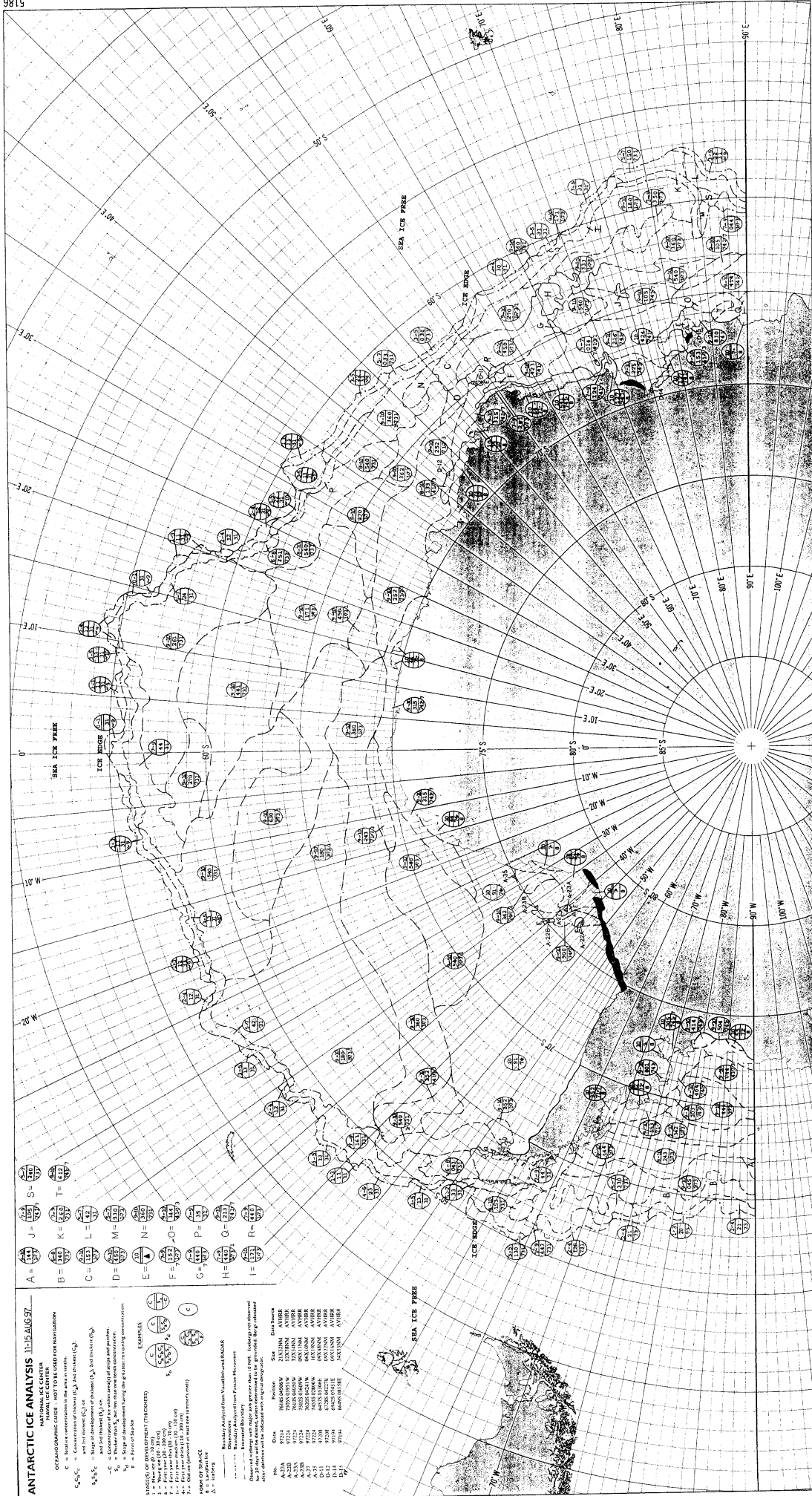
Ice Type	Development	Thickness
1	1st Year	100-150
2	2nd Year	150-200
3	3rd Year	200-250
4	4th Year	250-300
5	5th Year	300-350
6	6th Year	350-400
7	7th Year	400-450
8	8th Year	450-500
9	9th Year	500-550
10	10th Year	550-600
11	11th Year	600-650
12	12th Year	650-700
13	13th Year	700-750
14	14th Year	750-800
15	15th Year	800-850
16	16th Year	850-900
17	17th Year	900-950
18	18th Year	950-1000
19	19th Year	1000-1050
20	20th Year	1050-1100

ICE TYPES AND DEVELOPMENT (THICKNESSES)

1 = 1st Year
 2 = 2nd Year
 3 = 3rd Year
 4 = 4th Year
 5 = 5th Year
 6 = 6th Year
 7 = 7th Year
 8 = 8th Year
 9 = 9th Year
 10 = 10th Year
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 18 = 18th Year
 19 = 19th Year
 20 = 20th Year

ICE TYPES AND DEVELOPMENT (THICKNESSES)

1 = 1st Year
 2 = 2nd Year
 3 = 3rd Year
 4 = 4th Year
 5 = 5th Year
 6 = 6th Year
 7 = 7th Year
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 9 = 9th Year
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 14 = 14th Year
 15 = 15th Year
 16 = 16th Year
 17 = 17th Year
 18 = 18th Year
 19 = 19th Year
 20 = 20th Year



ANTARCTIC ICE ANALYSIS CHARTS

NATIONAL ICE CENTER
 NATIONAL ICE DATA CENTER
 1000 EAST 17TH AVENUE, SUITE 100
 DENVER, COLORADO 80202
 (303) 440-2000
 FAX (303) 440-2001
 WWW.NIC.COM

SYMBOLS

ICE BOUNDARIES

ICE EDGES

SEA ICE FREE

ICE BOUNDARIES

ICE EDGES

SEA ICE FREE

SYMBOLS OF DEVELOPMENT (PRIORITY)

SYMBOLS OF DEVELOPMENT (PRIORITY)

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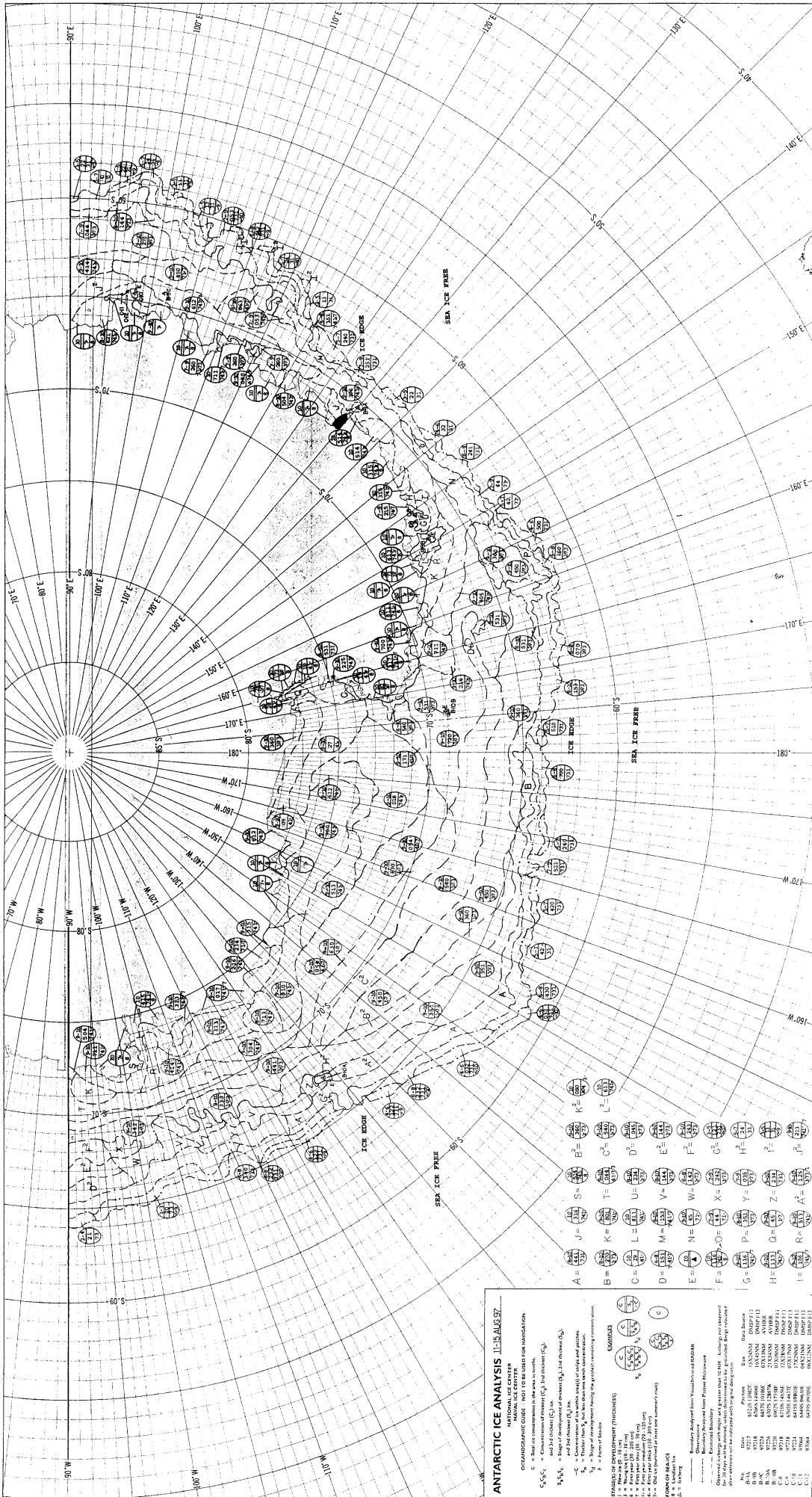
SYMBOLS OF DEVELOPMENT (PRIORITY)

SYMBOLS OF DEVELOPMENT (PRIORITY)

SYMBOLS OF DEVELOPMENT (PRIORITY)

SYMBOLS OF DEVELOPMENT (PRIORITY)

SYMBOLS OF DEVELOPMENT (PRIORITY)



ANTARCTIC ICE ANALYSIS 11-15 AUG 72
 NATIONAL ICE CENTER
 NATIONAL ICE CENTER FOR NAVIGATION

ORGANOGRAPHIC CODES IN THE AREA IN WHICH:
 C = Base ice concentration in the area in which:
 S₁S₂S₃C₁C₂C₃ = Concentration of Percent (C₁), and thickness (S₁), and thickness (S₂) and thickness (S₃) in
 S₁S₂S₃ = Concentration of Percent (C₁) and thickness (S₁) and thickness (S₂) in
 C = Concentration of Percent (C₁) and thickness (S₁) and thickness (S₂) in
 S₁S₂S₃C₁C₂C₃ = Concentration of Percent (C₁) and thickness (S₁) and thickness (S₂) and thickness (S₃) in

SYMBOLS:
 S₁S₂S₃C₁C₂C₃ = Concentration of Percent (C₁) and thickness (S₁) and thickness (S₂) and thickness (S₃) in
 S₁S₂S₃ = Concentration of Percent (C₁) and thickness (S₁) and thickness (S₂) in
 C = Concentration of Percent (C₁) and thickness (S₁) and thickness (S₂) in

STATUS OF DEVELOPMENT (THICKNESS):
 A = 100% (0-20 ft)
 B = 80% (20-30 ft)
 C = 60% (30-40 ft)
 D = 40% (40-50 ft)
 E = 20% (50-60 ft)
 F = 10% (60-70 ft)
 G = 5% (70-80 ft)
 H = 0% (80-90 ft)
 I = 0% (90-100 ft)
 J = 0% (100-110 ft)
 K = 0% (110-120 ft)
 L = 0% (120-130 ft)
 M = 0% (130-140 ft)
 N = 0% (140-150 ft)
 O = 0% (150-160 ft)
 P = 0% (160-170 ft)
 Q = 0% (170-180 ft)
 R = 0% (180-190 ft)
 S = 0% (190-200 ft)
 T = 0% (200-210 ft)
 U = 0% (210-220 ft)
 V = 0% (220-230 ft)
 W = 0% (230-240 ft)
 X = 0% (240-250 ft)
 Y = 0% (250-260 ft)
 Z = 0% (260-270 ft)
 AA = 0% (270-280 ft)
 AB = 0% (280-290 ft)
 AC = 0% (290-300 ft)

CODES OF SYMBOLS:
 A = Landfast
 B = Floating
 C = Unbroken
 D = Broken
 E = Thin
 F = Thin
 G = Thin
 H = Thin
 I = Thin
 J = Thin
 K = Thin
 L = Thin
 M = Thin
 N = Thin
 O = Thin
 P = Thin
 Q = Thin
 R = Thin
 S = Thin
 T = Thin
 U = Thin
 V = Thin
 W = Thin
 X = Thin
 Y = Thin
 Z = Thin
 AA = Thin
 AB = Thin
 AC = Thin

BOUNDARY SHEET OF THIS NAVIGATION AND CHARTS:
 11-15 AUG 72

ORGANIZATIONAL CHART:
 NATIONAL ICE CENTER
 NATIONAL ICE CENTER FOR NAVIGATION

ANTARCTIC ICE ANALYSIS 18:22 AUG 97

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

C = Sea ice concentration in the area shown.

$C_1/C_2/C_3$ = Concentration of ice (C₁) and thickness (C₂) and thickness (C₃) and 1st stroke (C₄).

$S_1/S_2/S_3$ = Stage of development of ice (S₁) and thickness (S₂) and 1st stroke (S₃).

$T_1/T_2/T_3$ = Thickness (T₁), T₂ and T₃.

$E_1/E_2/E_3$ = Stage of development along the greater remaining concentration.

$F_1/F_2/F_3$ = Form of feature.

EXAMPLES

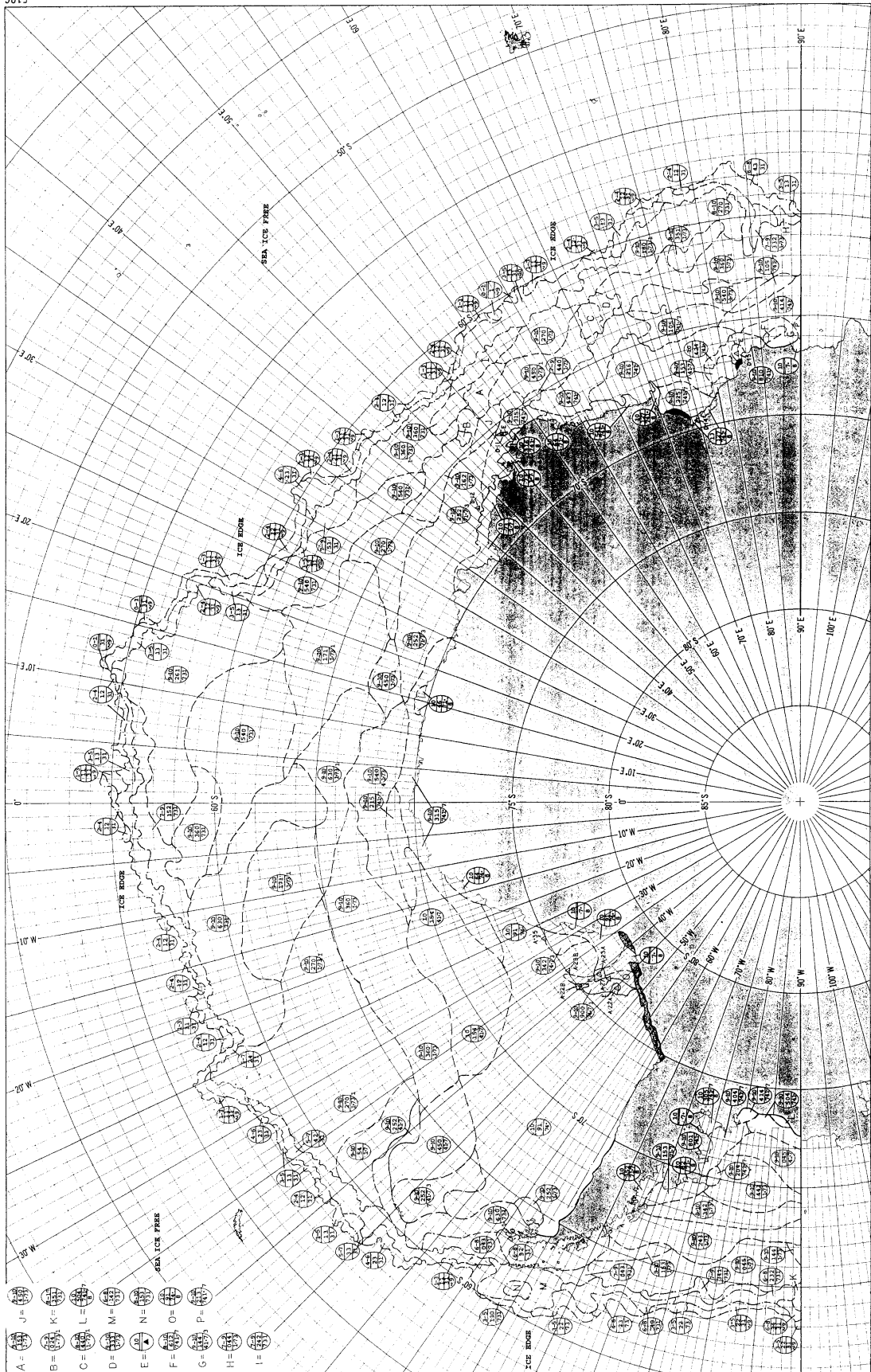
(Examples of symbols for concentration, stage of development, thickness, and form)

FORMS OF ICE

A = Land ice
B = Ice shelf
C = Ice edge
D = Ice ridge
E = Ice shelf
F = Ice shelf
G = Ice shelf
H = Ice shelf
I = Ice shelf
J = Ice shelf
K = Ice shelf
L = Ice shelf
M = Ice shelf
N = Ice shelf
O = Ice shelf
P = Ice shelf
Q = Ice shelf
R = Ice shelf
S = Ice shelf
T = Ice shelf
U = Ice shelf
V = Ice shelf
W = Ice shelf
X = Ice shelf
Y = Ice shelf
Z = Ice shelf

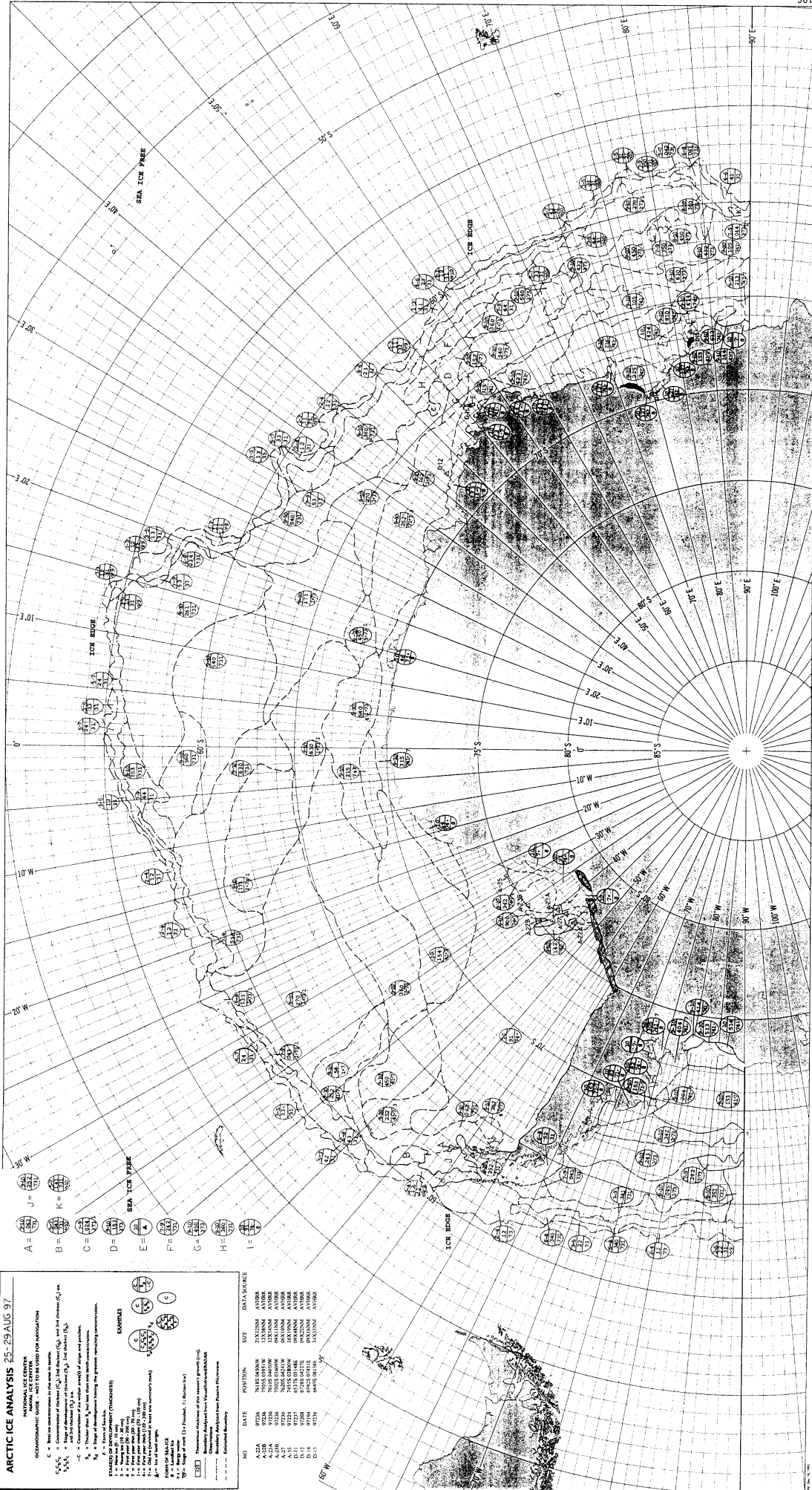
BOUNDARY
A = Land ice
B = Ice shelf
C = Ice edge
D = Ice ridge
E = Ice shelf
F = Ice shelf
G = Ice shelf
H = Ice shelf
I = Ice shelf
J = Ice shelf
K = Ice shelf
L = Ice shelf
M = Ice shelf
N = Ice shelf
O = Ice shelf
P = Ice shelf
Q = Ice shelf
R = Ice shelf
S = Ice shelf
T = Ice shelf
U = Ice shelf
V = Ice shelf
W = Ice shelf
X = Ice shelf
Y = Ice shelf
Z = Ice shelf

ICE TYPES
A = Ice shelf
B = Ice shelf
C = Ice shelf
D = Ice shelf
E = Ice shelf
F = Ice shelf
G = Ice shelf
H = Ice shelf
I = Ice shelf
J = Ice shelf
K = Ice shelf
L = Ice shelf
M = Ice shelf
N = Ice shelf
O = Ice shelf
P = Ice shelf
Q = Ice shelf
R = Ice shelf
S = Ice shelf
T = Ice shelf
U = Ice shelf
V = Ice shelf
W = Ice shelf
X = Ice shelf
Y = Ice shelf
Z = Ice shelf



5186

Prepared by: [unreadable]
Scale: [unreadable]
Date: [unreadable]



ARCTIC ICE ANALYSIS 25-29 AUG 97

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

C = Total ice concentration in the area in tenths.
 C₁ = Concentration of thick ice (C₁ and thick ice C₂ and thin ice C₃) in tenths.
 C₂ = Concentration of medium ice (C₂ and medium ice C₃) in tenths.
 C₃ = Concentration of thin ice (C₃ and thin ice C₃) in tenths.
 C₄ = Stage of development during the present reporting period.

EXAMPLES

1. 100% thick ice (C₁ = 10, C₂ = 0, C₃ = 0, C₄ = 1) →

2. 100% medium ice (C₁ = 0, C₂ = 10, C₃ = 0, C₄ = 1) →

3. 100% thin ice (C₁ = 0, C₂ = 0, C₃ = 10, C₄ = 1) →

4. 100% thin ice with 10% thick ice (C₁ = 1, C₂ = 0, C₃ = 9, C₄ = 1) →

5. 100% thin ice with 10% medium ice (C₁ = 0, C₂ = 1, C₃ = 9, C₄ = 1) →

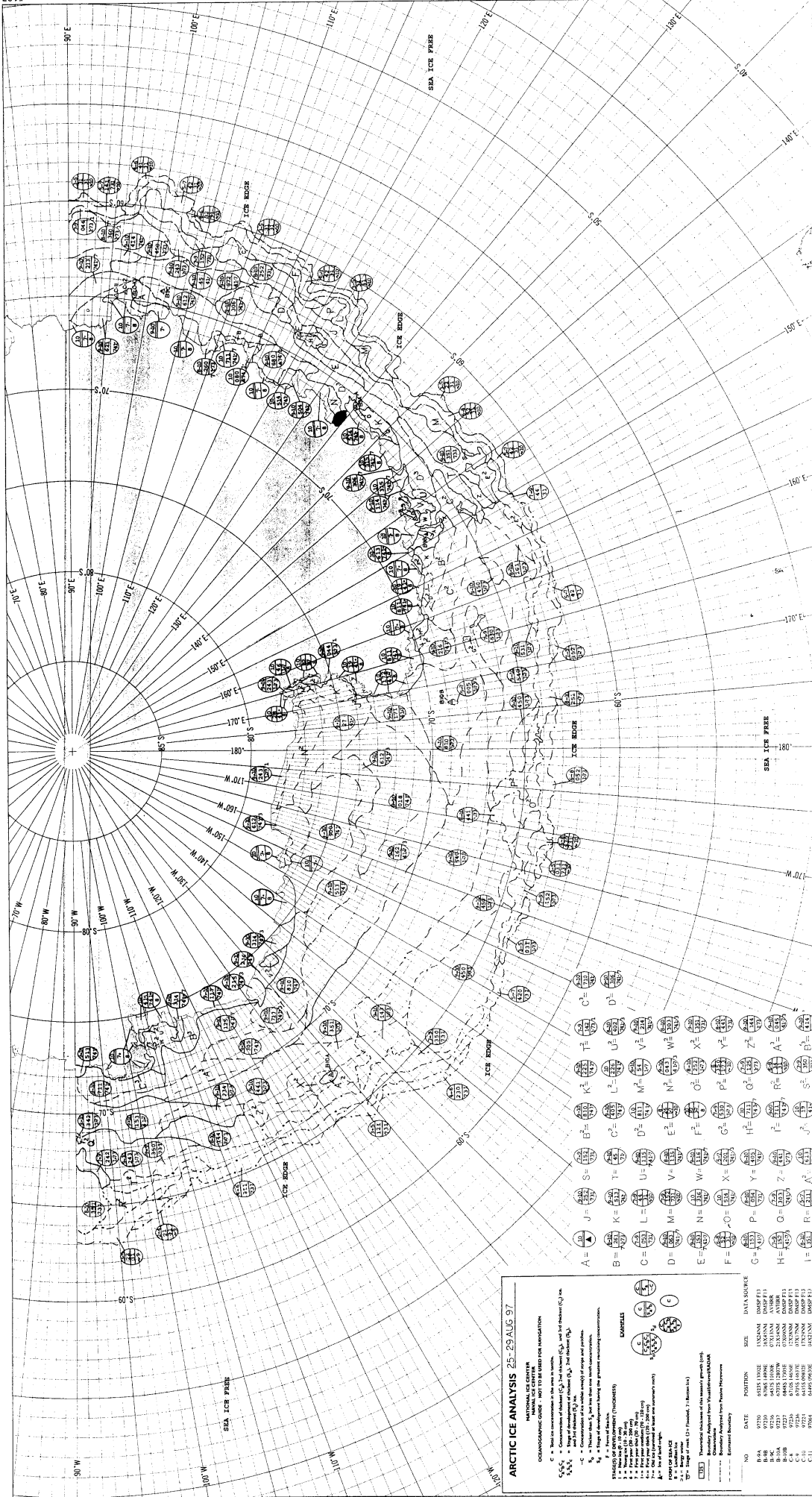
6. 100% thin ice with 10% thick ice and 10% medium ice (C₁ = 1, C₂ = 1, C₃ = 8, C₄ = 1) →

KEY OF SYMBOLS

A = Ice edge
 B = Ice edge
 C = Ice edge
 D = Ice edge
 E = Ice edge
 F = Ice edge
 G = Ice edge
 H = Ice edge
 I = Ice edge

NO DATE POSITION SIZE DATA SOURCE

A-228	97236	7050 S 020 W	12	ATKINS
A-229	97236	7050 S 020 W	12	ATKINS
A-230	97236	7050 S 020 W	12	ATKINS
A-231	97236	7050 S 020 W	12	ATKINS
A-232	97236	7050 S 020 W	12	ATKINS
A-233	97236	7050 S 020 W	12	ATKINS
A-234	97236	7050 S 020 W	12	ATKINS
A-235	97236	7050 S 020 W	12	ATKINS
A-236	97236	7050 S 020 W	12	ATKINS
A-237	97236	7050 S 020 W	12	ATKINS
A-238	97236	7050 S 020 W	12	ATKINS
A-239	97236	7050 S 020 W	12	ATKINS
A-240	97236	7050 S 020 W	12	ATKINS
A-241	97236	7050 S 020 W	12	ATKINS
A-242	97236	7050 S 020 W	12	ATKINS
A-243	97236	7050 S 020 W	12	ATKINS
A-244	97236	7050 S 020 W	12	ATKINS
A-245	97236	7050 S 020 W	12	ATKINS
A-246	97236	7050 S 020 W	12	ATKINS
A-247	97236	7050 S 020 W	12	ATKINS
A-248	97236	7050 S 020 W	12	ATKINS
A-249	97236	7050 S 020 W	12	ATKINS
A-250	97236	7050 S 020 W	12	ATKINS



ARCTIC ICE ANALYSIS 25-29 AUG 97
 NATIONAL ICE CENTER
 NATIONAL ICE CENTER
 POLYGRAPHIC CENTER FOR ICE INFORMATION

SYMBOLS:
 C = Ice concentration in tenths (0.1 to 1.0)
 S, S², S³ = Concentration of fresh (S¹), old (S²), and brackish (S³) ice
 C¹, C², C³ = Age of ice in tenths (C¹, C², C³)
 -C = Concentration of a single event (range and position)
 C = Range of time, but no concentration information
 F = First of Series
 S = Second of Series
 T = Third of Series
 E = Error (0.1 to 0.9)
 P = Probability (0.1 to 0.9)
 R = Range of time (0.1 to 0.9)
 C = Concentration (0.1 to 0.9)
 S = Salinity (0.1 to 0.9)
 C = Concentration (0.1 to 0.9)
 S = Salinity (0.1 to 0.9)

EXAMPLES:
 C¹ = 0.1 (Fresh ice, 10% concentration)
 C² = 0.2 (Old ice, 20% concentration)
 C³ = 0.3 (Brackish ice, 30% concentration)
 C¹ = 0.4 (Fresh ice, 40% concentration)
 C² = 0.5 (Old ice, 50% concentration)
 C³ = 0.6 (Brackish ice, 60% concentration)
 C¹ = 0.7 (Fresh ice, 70% concentration)
 C² = 0.8 (Old ice, 80% concentration)
 C³ = 0.9 (Brackish ice, 90% concentration)

POWER OF 10:
 C¹ = 0.1 (Fresh ice, 10% concentration)
 C² = 0.2 (Old ice, 20% concentration)
 C³ = 0.3 (Brackish ice, 30% concentration)
 C¹ = 0.4 (Fresh ice, 40% concentration)
 C² = 0.5 (Old ice, 50% concentration)
 C³ = 0.6 (Brackish ice, 60% concentration)
 C¹ = 0.7 (Fresh ice, 70% concentration)
 C² = 0.8 (Old ice, 80% concentration)
 C³ = 0.9 (Brackish ice, 90% concentration)

NO.	DATE	POSITION	SIZE	DATA SOURCE
B-5A	0720	68N 150E	LANTANA	DMP-F11
B-5B	0725	68N 150E	LANARK	DMP-F11
B-5C	0730	68N 150E	CELESTINE	ANUR
B-5D	0735	68N 150E	COMMON	DMP-F11
C-1	0740	68N 150E	COMMON	DMP-F11
C-2	0745	68N 150E	COMMON	DMP-F11
C-3	0750	68N 150E	COMMON	DMP-F11
C-4	0755	68N 150E	COMMON	DMP-F11
C-5	0800	68N 150E	COMMON	DMP-F11

NOTES:
 1. Range of time (0.1 to 0.9)
 2. Concentration (0.1 to 0.9)
 3. Salinity (0.1 to 0.9)
 4. Error (0.1 to 0.9)
 5. Probability (0.1 to 0.9)
 6. Range of time (0.1 to 0.9)
 7. Concentration (0.1 to 0.9)
 8. Salinity (0.1 to 0.9)
 9. Error (0.1 to 0.9)
 10. Probability (0.1 to 0.9)

ANTARCTIC ICE ANALYSIS 01.05 SEP. 92

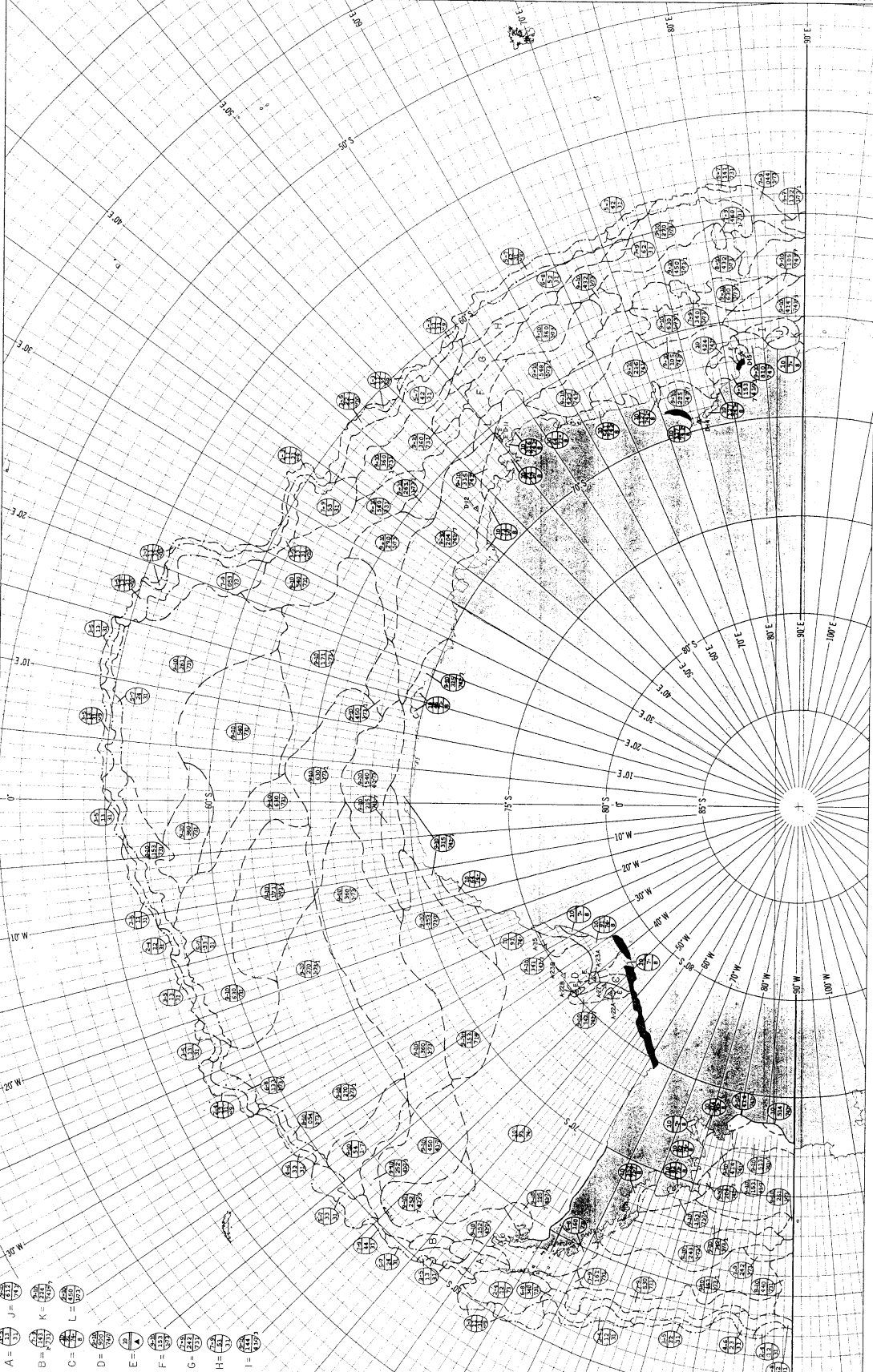
NATIONAL ICE CENTER
 ICING/CHARTING GUIDE - NOT TO BE USED FOR NAVIGATION
 C = Color concentration in the area to be charted.
 C₁C₂C₃ = Concentration of thickness (C₁), 2nd thickness (C₂) and 3rd thickness (C₃).
 S₁S₂S₃ = Stage of development of thickness (S₁), 2nd thickness (S₂) and 3rd thickness (S₃).
 T₁T₂T₃ = Thickness (T₁), 2nd thickness (T₂) and 3rd thickness (T₃).
 T₁ = Thickness (T₁), but does not show each concentration.
 T₂ = Stage of development having the greatest remaining concentration.
 T₃ = Stage of thickness.



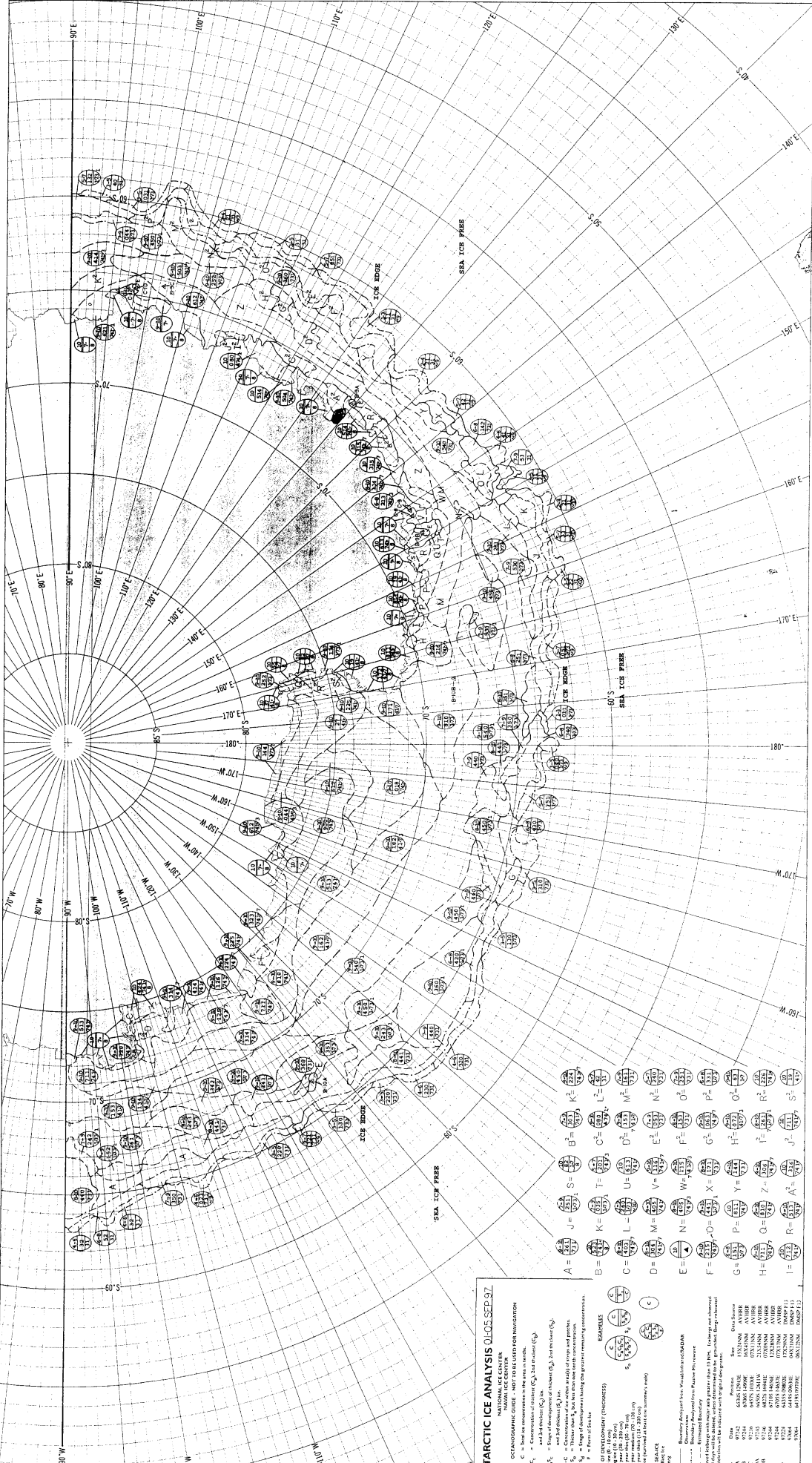
EXAMPLES
 1. 1st year ice (1st year)
 2. 1st year ice (1st year)
 3. 1st year ice (1st year)
 4. 1st year ice (1st year)
 5. 1st year ice (1st year)

FORM OF SEALS
 1. 1st year ice (1st year)
 2. 1st year ice (1st year)
 3. 1st year ice (1st year)
 4. 1st year ice (1st year)
 5. 1st year ice (1st year)

NO.	Date	Observer	Station
A-228	9224	741330N	AVIRK
A-229	9224	7018 8010W	AVIRK
A-230	9224	7018 8010W	AVIRK
A-231	9224	7018 8010W	AVIRK
A-232	9224	7018 8010W	AVIRK
A-233	9224	7018 8010W	AVIRK
A-234	9224	7018 8010W	AVIRK
A-235	9224	7018 8010W	AVIRK
A-236	9224	7018 8010W	AVIRK
A-237	9224	7018 8010W	AVIRK
A-238	9224	7018 8010W	AVIRK
A-239	9224	7018 8010W	AVIRK
A-240	9224	7018 8010W	AVIRK
A-241	9224	7018 8010W	AVIRK
A-242	9224	7018 8010W	AVIRK
A-243	9224	7018 8010W	AVIRK
A-244	9224	7018 8010W	AVIRK
A-245	9224	7018 8010W	AVIRK
A-246	9224	7018 8010W	AVIRK
A-247	9224	7018 8010W	AVIRK
A-248	9224	7018 8010W	AVIRK
A-249	9224	7018 8010W	AVIRK
A-250	9224	7018 8010W	AVIRK



5186
 NATIONAL ICE CENTER
 ICING/CHARTING GUIDE - NOT TO BE USED FOR NAVIGATION
 C = Color concentration in the area to be charted.
 C₁C₂C₃ = Concentration of thickness (C₁), 2nd thickness (C₂) and 3rd thickness (C₃).
 S₁S₂S₃ = Stage of development of thickness (S₁), 2nd thickness (S₂) and 3rd thickness (S₃).
 T₁T₂T₃ = Thickness (T₁), 2nd thickness (T₂) and 3rd thickness (T₃).
 T₁ = Thickness (T₁), but does not show each concentration.
 T₂ = Stage of development having the greatest remaining concentration.
 T₃ = Stage of thickness.
 EXAMPLES
 1. 1st year ice (1st year)
 2. 1st year ice (1st year)
 3. 1st year ice (1st year)
 4. 1st year ice (1st year)
 5. 1st year ice (1st year)
 FORM OF SEALS
 1. 1st year ice (1st year)
 2. 1st year ice (1st year)
 3. 1st year ice (1st year)
 4. 1st year ice (1st year)
 5. 1st year ice (1st year)
 NO. Date Observer Station
 A-228 9224 741330N AVIRK
 A-229 9224 7018 8010W AVIRK
 A-230 9224 7018 8010W AVIRK
 A-231 9224 7018 8010W AVIRK
 A-232 9224 7018 8010W AVIRK
 A-233 9224 7018 8010W AVIRK
 A-234 9224 7018 8010W AVIRK
 A-235 9224 7018 8010W AVIRK
 A-236 9224 7018 8010W AVIRK
 A-237 9224 7018 8010W AVIRK
 A-238 9224 7018 8010W AVIRK
 A-239 9224 7018 8010W AVIRK
 A-240 9224 7018 8010W AVIRK
 A-241 9224 7018 8010W AVIRK
 A-242 9224 7018 8010W AVIRK
 A-243 9224 7018 8010W AVIRK
 A-244 9224 7018 8010W AVIRK
 A-245 9224 7018 8010W AVIRK
 A-246 9224 7018 8010W AVIRK
 A-247 9224 7018 8010W AVIRK
 A-248 9224 7018 8010W AVIRK
 A-249 9224 7018 8010W AVIRK
 A-250 9224 7018 8010W AVIRK
 5186



Legend for Ice Concentration Symbols (C):

A = 0%
 B = 1/100
 C = 2/100
 D = 3/100
 E = 4/100
 F = 5/100
 G = 6/100
 H = 7/100
 I = 8/100
 J = 9/100
 K = 10/100
 L = 11/100
 M = 12/100
 N = 13/100
 O = 14/100
 P = 15/100
 Q = 16/100
 R = 17/100
 S = 18/100
 T = 19/100
 U = 20/100
 V = 21/100
 W = 22/100
 X = 23/100
 Y = 24/100
 Z = 25/100

ANTARCTIC ICE ANALYSIS Q105 SEP 97

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

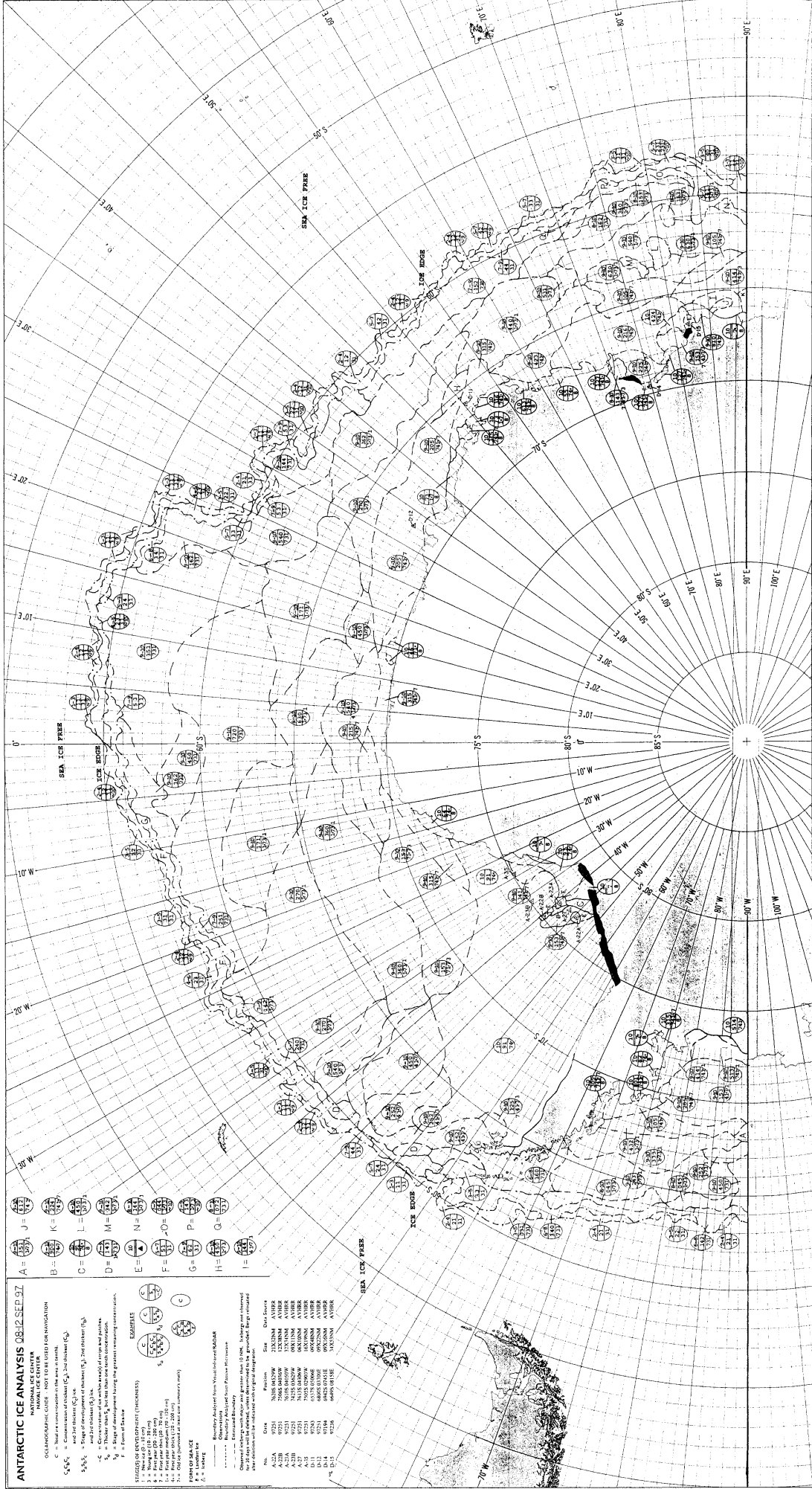
C = Total ice concentration in the area in tenths
 C₁C₂C₃ = Concentration of nearest C₁, C₂ and nearest (E₁)
 S₁S₂S₃ = Stage of development of number (E₁), and thickness (E₂) and ice thickness (E₃) in feet
 S₁ = Thinner than S₂, S₂ has some weak or no open leads
 S₂ = Thicker than S₃, S₃ has no weak or no open leads
 S₃ = Stage of development being the greater remaining concentration
 E = From 0 to 10 ft

SEASHELLS
 (Symbol: [circle with S])
 A = 0%
 B = 1/100
 C = 2/100
 D = 3/100
 E = 4/100
 F = 5/100
 G = 6/100
 H = 7/100
 I = 8/100
 J = 9/100
 K = 10/100
 L = 11/100
 M = 12/100
 N = 13/100
 O = 14/100
 P = 15/100
 Q = 16/100
 R = 17/100
 S = 18/100
 T = 19/100
 U = 20/100
 V = 21/100
 W = 22/100
 X = 23/100
 Y = 24/100
 Z = 25/100

FORMS OF SEALICE
 A = 0%
 B = 1/100
 C = 2/100
 D = 3/100
 E = 4/100
 F = 5/100
 G = 6/100
 H = 7/100
 I = 8/100
 J = 9/100
 K = 10/100
 L = 11/100
 M = 12/100
 N = 13/100
 O = 14/100
 P = 15/100
 Q = 16/100
 R = 17/100
 S = 18/100
 T = 19/100
 U = 20/100
 V = 21/100
 W = 22/100
 X = 23/100
 Y = 24/100
 Z = 25/100

BORDER ADJUSTED FROM VISUAL OBSERVATIONS
 Boundary adjusted from Visual Observations
 Boundary adjusted from Radar Observations
 Boundary adjusted from Satellite Observations
 The 90°E area which contains satellite data is determined by the "Standard Day" satellite observation file which contains satellite data for the "Standard Day" satellite observation.

STATION IDENTIFICATION
 B-PN 87942
 B-BA 87234
 B-RP 87234
 B-100 87234
 C-S 87234
 C-10 87234
 C-11 87234
 C-12 87234
 C-13 87234
 C-14 87234
 C-15 87234
 C-16 87234
 C-17 87234
 C-18 87234
 C-19 87234
 C-20 87234
 C-21 87234
 C-22 87234
 C-23 87234
 C-24 87234
 C-25 87234
 C-26 87234
 C-27 87234
 C-28 87234
 C-29 87234
 C-30 87234



ANTARCTIC ICE ANALYSIS 0812 SEP 57

NATIONAL ICE CENTER
 OCEANOGRAPHIC CODE - NOT TO BE USED FOR NAVIGATION
 C = Year of observation in the area in hand.
 S₁C₁C₂ = Concentration of ice (C₁ and thickness (C₂)
 S₂S₁S₂ = Stage of development (S₁) and thickness (S₂)
 S₃S₁S₂ = Stage of development (S₃) and thickness (S₂)
 S₄ = Thickness (S₄)
 S₅ = Stage of development (S₅)
 S₆ = Stage of development (S₆)
 S₇ = Form of ice

STAGES OF DEVELOPMENT (THICKNESS)

A = Young ice (10-15 cm)
 B = First year ice (15-30 cm)
 C = First year ice (30-50 cm)
 D = First year ice (50-100 cm)
 E = First year ice (100-200 cm)
 F = First year ice (200-300 cm)
 G = First year ice (300-400 cm)
 H = First year ice (400-500 cm)
 I = First year ice (500-600 cm)
 J = First year ice (600-700 cm)
 K = First year ice (700-800 cm)
 L = First year ice (800-900 cm)
 M = First year ice (900-1000 cm)
 N = First year ice (1000-1100 cm)
 O = First year ice (1100-1200 cm)
 P = First year ice (1200-1300 cm)
 Q = First year ice (1300-1400 cm)
 R = First year ice (1400-1500 cm)
 S = First year ice (1500-1600 cm)
 T = First year ice (1600-1700 cm)
 U = First year ice (1700-1800 cm)
 V = First year ice (1800-1900 cm)
 W = First year ice (1900-2000 cm)
 X = First year ice (2000-2100 cm)
 Y = First year ice (2100-2200 cm)
 Z = First year ice (2200-2300 cm)

FORMS OF ICE

A = Landfast
 B = Fast
 C = Loose
 D = Drift
 E = Edge
 F = Edge
 G = Edge
 H = Edge
 I = Edge
 J = Edge
 K = Edge
 L = Edge
 M = Edge
 N = Edge
 O = Edge
 P = Edge
 Q = Edge
 R = Edge
 S = Edge
 T = Edge
 U = Edge
 V = Edge
 W = Edge
 X = Edge
 Y = Edge
 Z = Edge

EXAMPLES

A-1000-1000-1000
 B-1000-1000-1000
 C-1000-1000-1000
 D-1000-1000-1000
 E-1000-1000-1000
 F-1000-1000-1000
 G-1000-1000-1000
 H-1000-1000-1000
 I-1000-1000-1000
 J-1000-1000-1000
 K-1000-1000-1000
 L-1000-1000-1000
 M-1000-1000-1000
 N-1000-1000-1000
 O-1000-1000-1000
 P-1000-1000-1000
 Q-1000-1000-1000
 R-1000-1000-1000
 S-1000-1000-1000
 T-1000-1000-1000
 U-1000-1000-1000
 V-1000-1000-1000
 W-1000-1000-1000
 X-1000-1000-1000
 Y-1000-1000-1000
 Z-1000-1000-1000

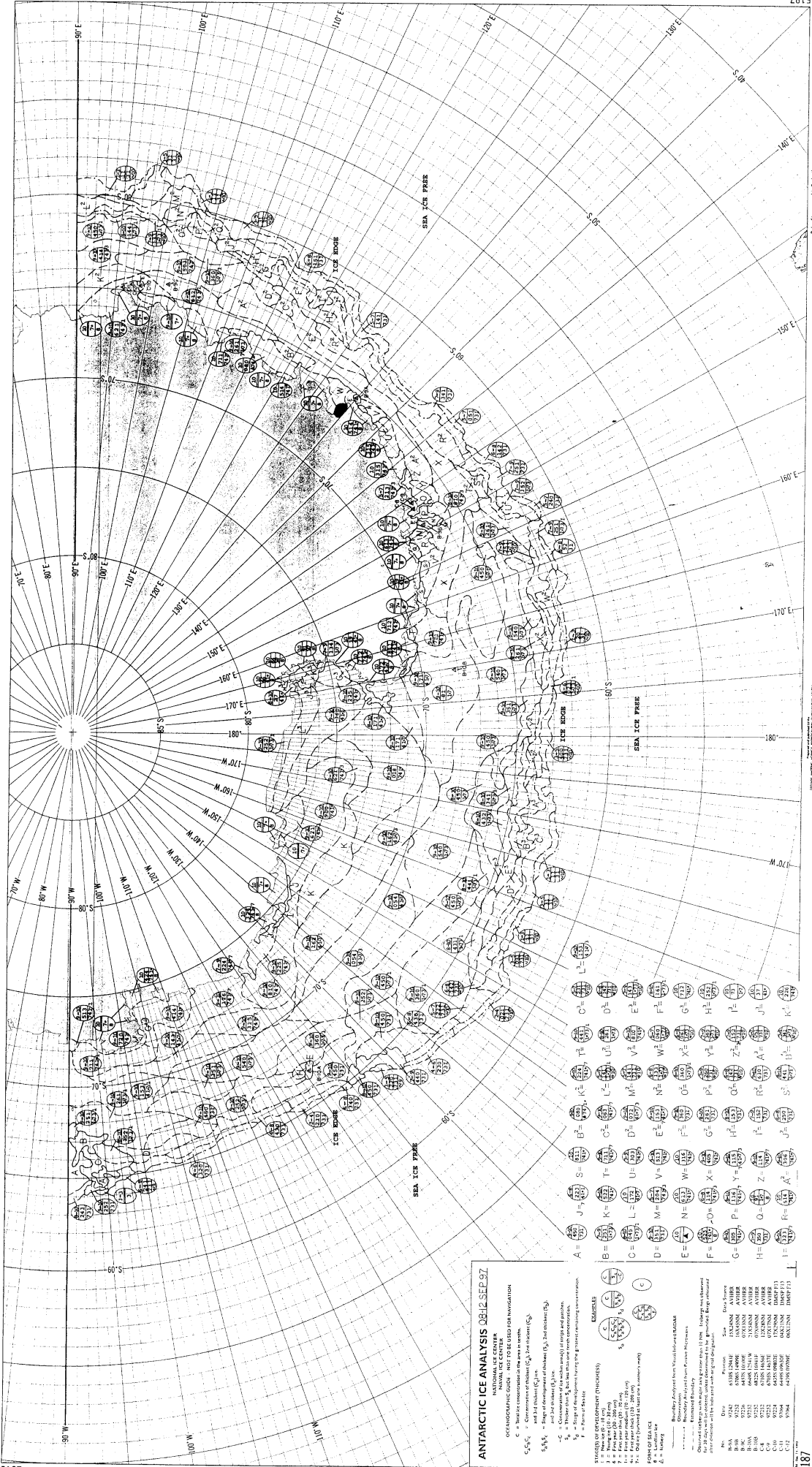
BOUNDARY DEFINITIONS

..... Boundary defined from visual observations
 - - - - - Boundary defined from satellite data
 - - - - - Estimated Boundary
 - - - - - Boundary defined from satellite data
 - - - - - Boundary defined from satellite data
 - - - - - Boundary defined from satellite data

ICE EDGE

SEA ICE FRASE

5186



ANTARCTIC ICE ANALYSIS QBLZ SEP 97

NATIONAL ICE CENTER
 GEOGRAPHIC QUICK - NOT TO BE USED FOR NAVIGATION

C = Basic ice concentration in the area shown.
 S, N, E, W = Direction of thickness (T) for ice edge (E).
 S, N, E, W = Direction of movement of thickness (T) for ice edge (E).
 S, N, E, W = Direction of movement of thickness (T) for ice edge (E).

Examples:
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
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Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

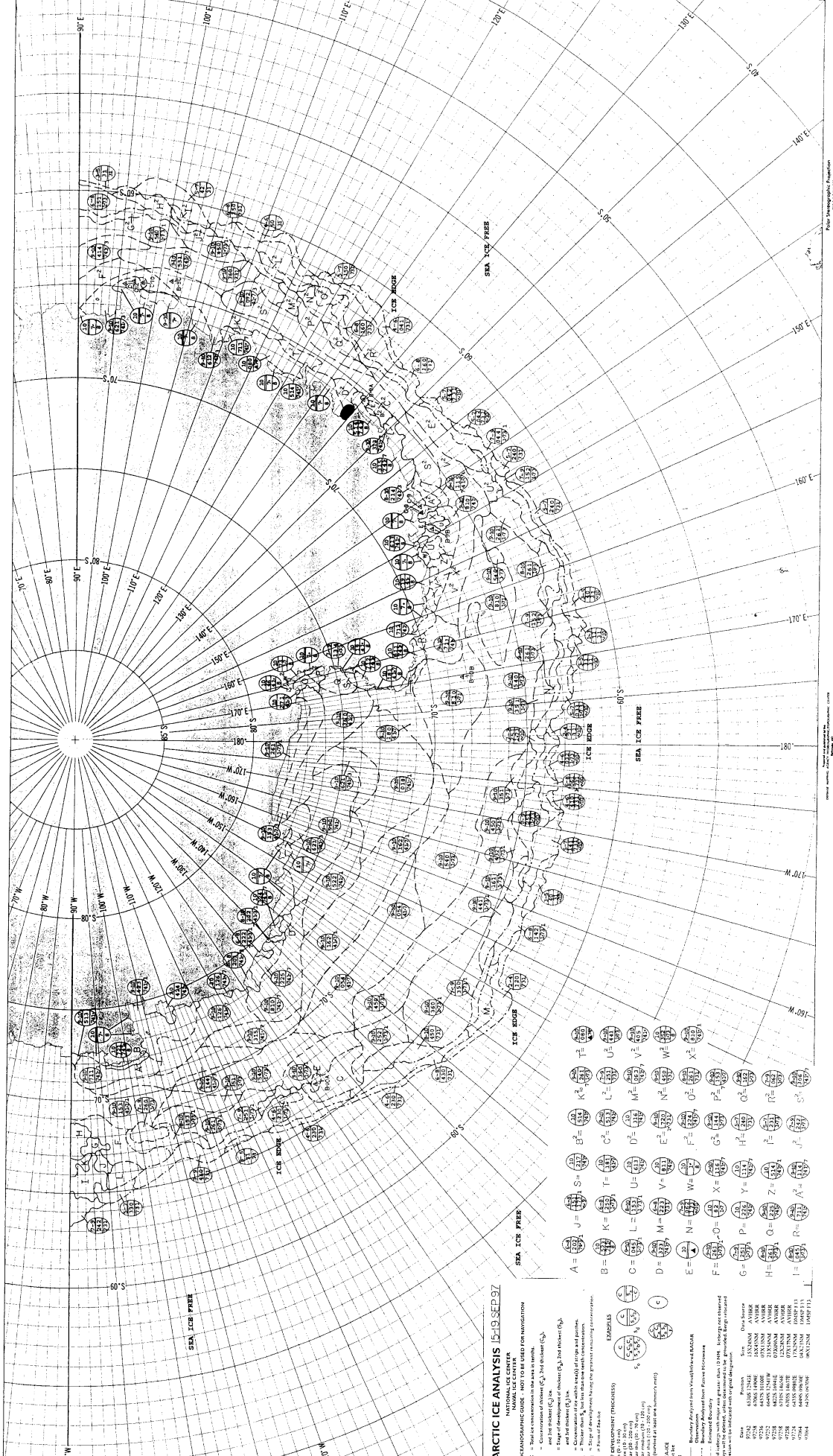
Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West

Boundary Analysis from Visual Observations
 (S) = Ice edge moving South
 (N) = Ice edge moving North
 (E) = Ice edge moving East
 (W) = Ice edge moving West



ANTARCTIC ICE ANALYSIS 1519 SEP 97

NATIONAL ICE CENTER
 OCEANOGRAPHIC DATA CENTER FOR NAVIGATION

C = Total ice concentration in the area shown.
 S, C, S, C = Concentration of different ice types (C₁, C₂, C₃) and the thickness (S₁, S₂, S₃) in meters (ft).
 C, S, S, S = Concentration of (or with) one(s) of the ice and position.
 S, S, S = Type of development since the previous reporting concentration.
 P = Form of the ice

STAGES OF DEVELOPMENT (THICKNESS)

1 = Thin ice (0-50 cm)	6 = Thick ice (100-150 cm)
2 = Medium ice (50-100 cm)	7 = Very thick ice (150-200 cm)
3 = Ice perched (100-150 cm)	8 = Ice perched (200-250 cm)
4 = Ice perched (150-200 cm)	9 = Ice perched (250-300 cm)

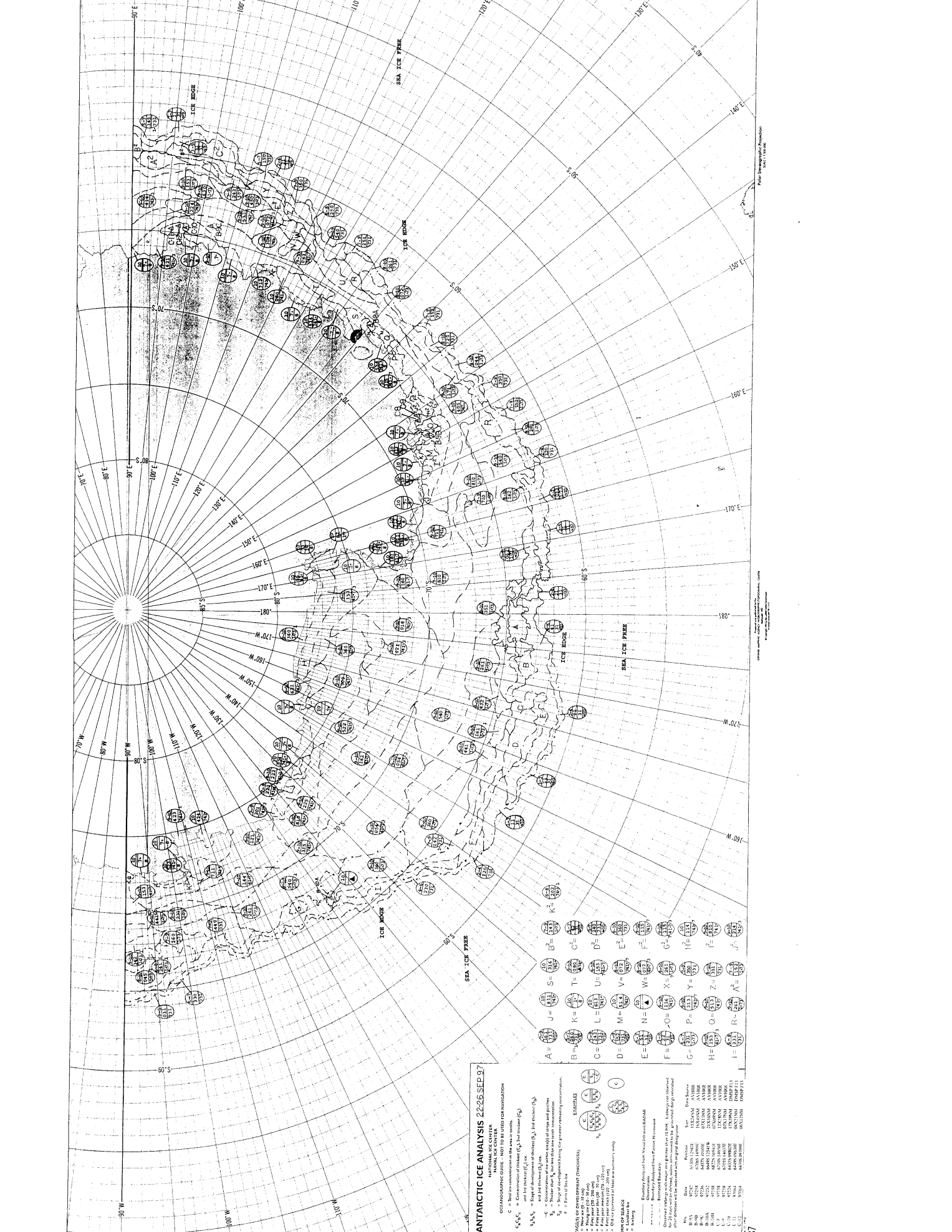
The ice thickness of each area (minimum unity)

ESSENTIALS

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	AA
AB	AC	AD	AE	AF	AG	AH	AI	AJ
AK	AL	AM	AN	AO	AP	AQ	AR	AS
AT	AU	AV	AW	AX	AY	AZ	BA	BB
BC	BD	BE	BF	BG	BH	BI	BJ	BK
BL	BM	BN	BO	BP	BQ	BR	BS	BT
BU	BV	BW	BX	BY	BZ	CA	CB	CC
CD	CE	CF	CG	CH	CI	CJ	CK	CL
CM	CN	CO	CP	CQ	CR	CS	CT	CU
CV	CW	CX	CY	CZ	DA	DB	DC	DD
DE	DF	DG	DH	DI	DJ	DK	DL	DM
DN	DO	DP	DQ	DR	DS	DT	DU	DV
DW	DX	DY	DZ	EA	EB	EC	ED	EE
EF	EG	EH	EI	EJ	EK	EL	EM	EN
EO	EP	EQ	ER	ES	ET	EU	EV	EW
EX	EY	EZ	FA	FB	FC	FD	FE	FF
FG	FH	FI	FJ	FK	FL	FM	FN	FO
FP	FQ	FR	FS	FT	FU	FV	FW	FX
FY	FZ	GA	GB	GC	GD	GE	GF	GG
GH	GI	GO	GP	GQ	GR	GS	GT	GU
GV	GW	GX	GZ	HA	HB	HC	HD	HE
HF	HG	HH	HI	HJ	HK	HL	HM	HN
HO	HP	HQ	HR	HS	HT	HU	HV	HW
HX	HY	HZ	IA	IB	IC	ID	IE	IF
IG	IH	II	IJ	IK	IL	IM	IN	IO
IP	IQ	IR	IS	IT	IU	IV	IW	IX
IY	IZ	JA	JB	JC	JD	JE	JF	JG
JH	JI	JO	JP	JQ	JR	JS	JT	JU
JV	JW	JX	JY	JZ	KA	KB	KC	KD
KE	KF	KG	KH	KI	KJ	KL	KM	KN
KO	KP	KQ	KR	KS	KT	KU	KV	KW
KX	KY	KZ	LA	LB	LC	LD	LE	LF
LG	LH	LI	LJ	LK	LL	LM	LN	LO
LP	LQ	LR	LS	LT	LU	LV	LW	LX
LY	LZ	MA	MB	MC	MD	ME	MF	MG
MH	MI	MO	MP	MQ	MR	MS	MT	MU
MV	MW	MX	MY	MZ	NA	NB	NC	ND
NE	NF	NG	NH	NI	NJ	NK	NL	NO
NP	NQ	NR	NS	NT	NU	NV	NW	NX
NY	NZ	OA	OB	OC	OD	OE	OF	OG
OH	OI	OJ	OK	OL	OM	ON	OO	OP
OQ	OR	OS	OT	OU	OV	OW	OX	OY
OZ	PA	PB	PC	PD	PE	PF	PG	PH
PI	PJ	PK	PL	PM	PN	PO	PP	PQ
PR	PS	PT	PV	PW	PX	PY	PZ	QA
QB	QC	QD	QE	QF	QG	QH	QI	QJ
QK	QL	QM	QN	QO	QP	QQ	QR	QS
QT	QU	QV	QW	QX	QY	QZ	RA	RB
RC	RD	RE	RF	RG	RH	RI	RJ	RK
RL	RM	RN	RO	RP	RQ	RR	RS	RT
RU	RV	RW	RX	RY	RZ	SA	SB	SC
SD	SE	SF	SG	SH	SI	SJ	SK	SL
SM	SN	SO	SP	SQ	SR	SS	ST	SU
SV	SW	SX	SY	SZ	TA	TB	TC	TD
TE	TF	TF	TF	TF	TF	TF	TF	TF

STATION LIST

Sta	Position	Date	Source
11-01	61°30'N 150°00'W	1519	ANKR
11-02	61°30'N 150°00'W	1519	ANKR
11-03	61°30'N 150°00'W	1519	ANKR
11-04	61°30'N 150°00'W	1519	ANKR
11-05	61°30'N 150°00'W	1519	ANKR
11-06	61°30'N 150°00'W	1519	ANKR
11-07	61°30'N 150°00'W	1519	ANKR
11-08	61°30'N 150°00'W	1519	ANKR
11-09	61°30'N 150°00'W	1519	ANKR
11-10	61°30'N 150°00'W	1519	ANKR
11-11	61°30'N 150°00'W	1519	ANKR
11-12	61°30'N 150°00'W	1519	ANKR
11-13	61°30'N 150°00'W	1519	ANKR
11-14	61°30'N 150°00'W	1519	ANKR
11-15	61°30'N 150°00'W	1519	ANKR
11-16	61°30'N 150°00'W	1519	ANKR
11-17	61°30'N 150°00'W	1519	ANKR
11-18	61°30'N 150°00'W	1519	ANKR
11-19	61°30'N 150°00'W	1519	ANKR
11-20	61°30'N 150°00'W	1519	ANKR
11-21	61°30'N 150°00'W	1519	ANKR
11-22	61°30'N 150°00'W	1519	ANKR
11-23	61°30'N 150°00'W	1519	ANKR
11-24	61°30'N 150°00'W	1519	ANKR
11-25	61°30'N 150°00'W	1519	ANKR
11-26	61°30'N 150°00'W	1519	ANKR
11-27	61°30'N 150°00'W	1519	ANKR
11-28	61°30'N 150°00'W	1519	ANKR
11-29	61°30'N 150°00'W	1519	ANKR
11-30	61°30'N 150°00'W	1519	ANKR



ANTARCTIC ICE ANALYSIS 22-26 SEP 97

NATIONAL ICE CENTER
 GEOGRAPHIC NAME - NOT FOR USE FOR NAVIGATION

SYMBOLS FOR DEVELOPMENT (THIS PAGE)

- A = Ice age (1950-1959)
- B = Ice age (1960-1969)
- C = Ice age (1970-1979)
- D = Ice age (1980-1989)
- E = Ice age (1990-1999)
- F = Ice age (2000-2009)
- G = Ice age (2010-2019)
- H = Ice age (2020-2029)
- I = Ice age (2030-2039)

SYMBOLS

- C = Sea ice concentration in the area (contour)
- C₅₀ = Concentration of thicket (C₅₀) in the area (contour)
- C₁₀ = Concentration of open lead (C₁₀) in the area (contour)
- S₁₀ = Directional ice velocity (S₁₀) in the area (contour)
- S₅ = Directional ice velocity (S₅) in the area (contour)
- S₁ = Directional ice velocity (S₁) in the area (contour)
- S₀ = Directional ice velocity (S₀) in the area (contour)
- W = Direction of ice drift

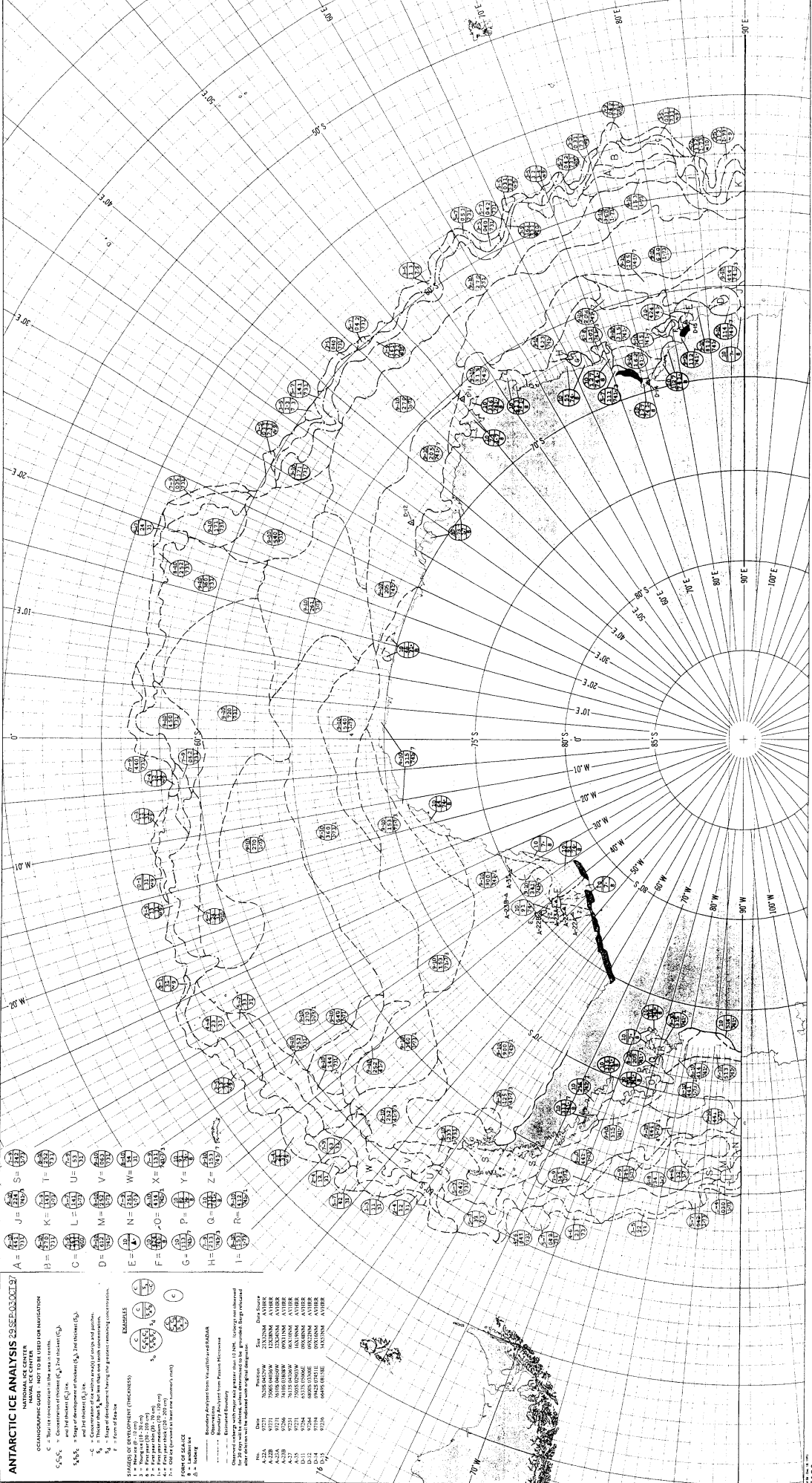
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A	Ice age (1950-1959)	J	Ice age (1990-1999)
B	Ice age (1960-1969)	K	Ice age (2000-2009)
C	Ice age (1970-1979)	L	Ice age (2010-2019)
D	Ice age (1980-1989)	M	Ice age (2020-2029)
E	Ice age (1990-1999)	N	Ice age (2030-2039)
F	Ice age (2000-2009)	O	Ice age (2040-2049)
G	Ice age (2010-2019)	P	Ice age (2050-2059)
H	Ice age (2020-2029)	Q	Ice age (2060-2069)
I	Ice age (2030-2039)	R	Ice age (2070-2079)
J	Ice age (1990-1999)	S	Ice age (2080-2089)
K	Ice age (2000-2009)	T	Ice age (2090-2099)
L	Ice age (2010-2019)	U	Ice age (2100-2109)
M	Ice age (2020-2029)	V	Ice age (2110-2119)
N	Ice age (2030-2039)	W	Ice age (2120-2129)
O	Ice age (2040-2049)	X	Ice age (2130-2139)
P	Ice age (2050-2059)	Y	Ice age (2140-2149)
Q	Ice age (2060-2069)	Z	Ice age (2150-2159)
R	Ice age (2070-2079)		
S	Ice age (2080-2089)		
T	Ice age (2090-2099)		
U	Ice age (2100-2109)		
V	Ice age (2110-2119)		
W	Ice age (2120-2129)		
X	Ice age (2130-2139)		
Y	Ice age (2140-2149)		
Z	Ice age (2150-2159)		

ABBREVIATIONS

BVA = British Antarctic Survey
 CHM = Commonwealth Marine
 CIA = Canadian Ice Agency
 GIB = Geological Institute of Bergen
 IAGLR = International Association of Great Lakes Researchers
 IMR = International Meteorological Research
 JICA = Japanese Ice Center
 NCC = National Ice Center
 NIV = National Institute of Oceanography
 OCS = Office of Coastal Survey
 ORS = Office of Research and Survey
 PGO = Polar Geographical Expedition
 RGS = Royal Geographical Society
 SCA = Soviet Antarctic Expedition
 USIA = United States Ice Agency

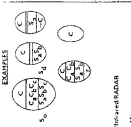
NOTES

1. This chart is a representation of the ice data received from the participating countries and is not a guarantee of accuracy.
2. This chart is based on satellite data and may not be accurate in areas where satellite coverage is poor.
3. This chart is based on data received from the participating countries and may not be accurate in areas where data is sparse.
4. This chart is based on data received from the participating countries and may not be accurate in areas where data is sparse.
5. This chart is based on data received from the participating countries and may not be accurate in areas where data is sparse.
6. This chart is based on data received from the participating countries and may not be accurate in areas where data is sparse.
7. This chart is based on data received from the participating countries and may not be accurate in areas where data is sparse.
8. This chart is based on data received from the participating countries and may not be accurate in areas where data is sparse.



ANTARCTIC ICE ANALYSIS

NATIONAL ICE CENTER
 OCEANOGRAPHIC CHART NOT TO BE USED FOR NAVIGATION
 C = 1/8" contour interval (1:50,000 scale)
 C₁ = Contour interval (1:50,000 scale)
 C₂ = Contour interval (1:100,000 scale)
 C₃ = Contour interval (1:200,000 scale)
 S = Stage of development (see text)
 S₁ = Stage of development (see text)
 S₂ = Stage of development (see text)

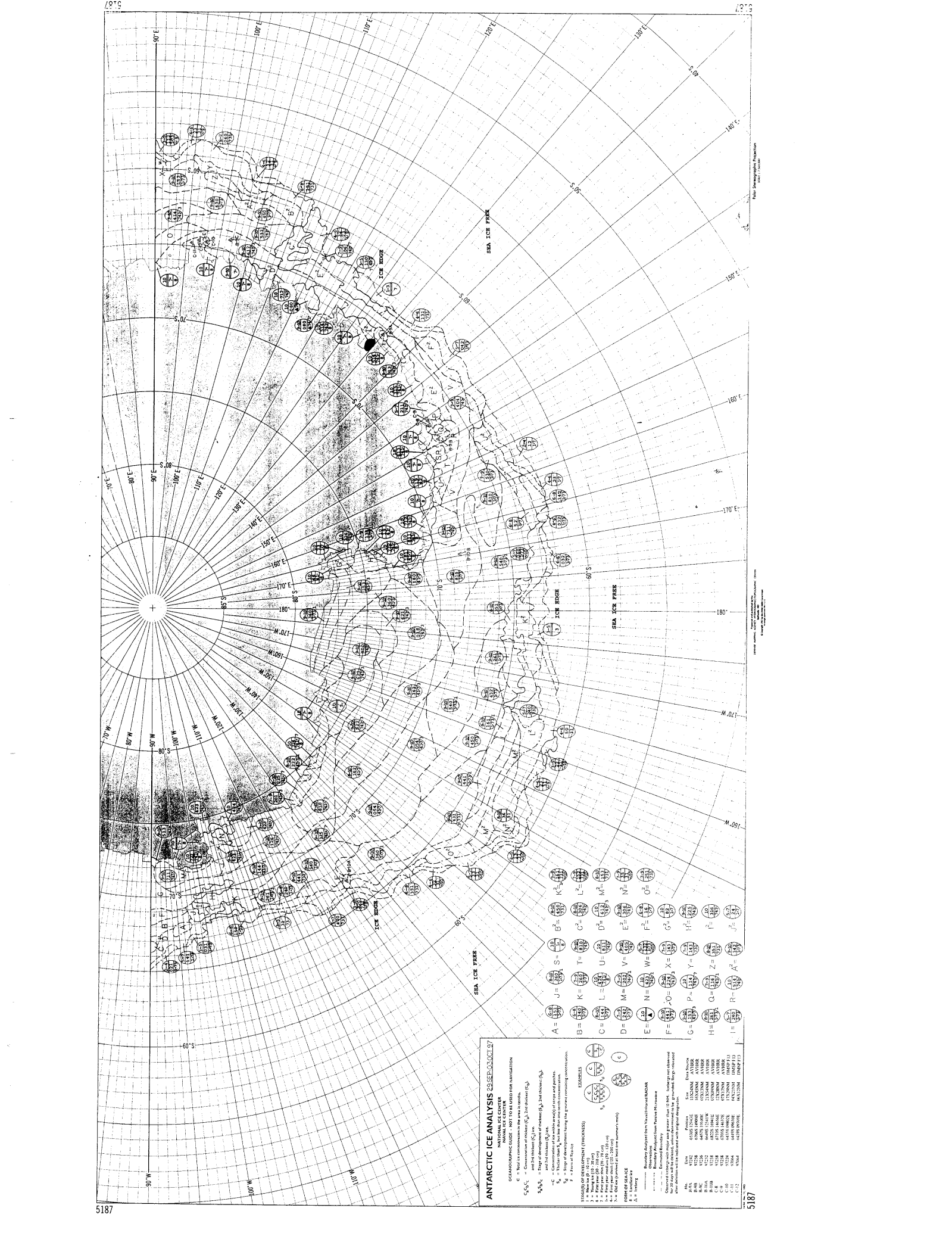


STAGES OF DEVELOPMENT (THICKNESS)

1 = 100m (300 feet)
 2 = 200m (600 feet)
 3 = 300m (900 feet)
 4 = 400m (1,200 feet)
 5 = 500m (1,500 feet)
 6 = 600m (1,800 feet)
 7 = 700m (2,100 feet)
 8 = 800m (2,400 feet)

FORM OF ICE
 S = Sea Ice
 L = Land Ice

A 12A	0771	7000 84020W	71A 20M	SEA ICE
A 12B	0771	7000 84020W	71B 20M	SEA ICE
A 12C	0771	7000 84020W	71C 20M	SEA ICE
A 12D	0771	7000 84020W	71D 20M	SEA ICE
A 12E	0771	7000 84020W	71E 20M	SEA ICE
A 12F	0771	7000 84020W	71F 20M	SEA ICE
A 12G	0771	7000 84020W	71G 20M	SEA ICE
A 12H	0771	7000 84020W	71H 20M	SEA ICE
A 12I	0771	7000 84020W	71I 20M	SEA ICE
A 12J	0771	7000 84020W	71J 20M	SEA ICE
A 12K	0771	7000 84020W	71K 20M	SEA ICE
A 12L	0771	7000 84020W	71L 20M	SEA ICE
A 12M	0771	7000 84020W	71M 20M	SEA ICE
A 12N	0771	7000 84020W	71N 20M	SEA ICE
A 12O	0771	7000 84020W	71O 20M	SEA ICE
A 12P	0771	7000 84020W	71P 20M	SEA ICE
A 12Q	0771	7000 84020W	71Q 20M	SEA ICE
A 12R	0771	7000 84020W	71R 20M	SEA ICE
A 12S	0771	7000 84020W	71S 20M	SEA ICE
A 12T	0771	7000 84020W	71T 20M	SEA ICE
A 12U	0771	7000 84020W	71U 20M	SEA ICE
A 12V	0771	7000 84020W	71V 20M	SEA ICE
A 12W	0771	7000 84020W	71W 20M	SEA ICE
A 12X	0771	7000 84020W	71X 20M	SEA ICE
A 12Y	0771	7000 84020W	71Y 20M	SEA ICE
A 12Z	0771	7000 84020W	71Z 20M	SEA ICE



ANTARCTIC ICE ANALYSIS

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

C = This ice concentration in the area is level.

$C_1 \times C_2$ = Concentration in both C_1 and C_2 directions (e.g., $\frac{2}{3} \times \frac{1}{2}$)

$S_1 \times S_2$ = Stage of development of ice in both S_1 and S_2 directions (e.g., S_1 - 1, S_2 - 2)

S_1 = Stage of development of ice in the S_1 direction

S_2 = Stage of development of ice in the S_2 direction

S_3 = Stage of development of ice in the S_3 direction

S_4 = Stage of development of ice in the S_4 direction

S_5 = Stage of development of ice in the S_5 direction

S_6 = Stage of development of ice in the S_6 direction

S_7 = Stage of development of ice in the S_7 direction

S_8 = Stage of development of ice in the S_8 direction

S_9 = Stage of development of ice in the S_9 direction

S_{10} = Stage of development of ice in the S_{10} direction

S_{11} = Stage of development of ice in the S_{11} direction

S_{12} = Stage of development of ice in the S_{12} direction

S_{13} = Stage of development of ice in the S_{13} direction

S_{14} = Stage of development of ice in the S_{14} direction

S_{15} = Stage of development of ice in the S_{15} direction

S_{16} = Stage of development of ice in the S_{16} direction

S_{17} = Stage of development of ice in the S_{17} direction

S_{18} = Stage of development of ice in the S_{18} direction

S_{19} = Stage of development of ice in the S_{19} direction

S_{20} = Stage of development of ice in the S_{20} direction

S_{21} = Stage of development of ice in the S_{21} direction

S_{22} = Stage of development of ice in the S_{22} direction

S_{23} = Stage of development of ice in the S_{23} direction

S_{24} = Stage of development of ice in the S_{24} direction

S_{25} = Stage of development of ice in the S_{25} direction

S_{26} = Stage of development of ice in the S_{26} direction

S_{27} = Stage of development of ice in the S_{27} direction

S_{28} = Stage of development of ice in the S_{28} direction

S_{29} = Stage of development of ice in the S_{29} direction

S_{30} = Stage of development of ice in the S_{30} direction

FORM OF ICE

1 = Thin (1-40 cm)

2 = Medium (41-100 cm)

3 = Thick (101-200 cm)

4 = Very thick (201-400 cm)

5 = Ice shelf

6 = Ice pack

7 = Ice island

8 = Iceberg

9 = Ice floe

10 = Ice chunk

11 = Ice fragment

12 = Ice fragment (broken)

13 = Ice fragment (broken)

14 = Ice fragment (broken)

15 = Ice fragment (broken)

16 = Ice fragment (broken)

17 = Ice fragment (broken)

18 = Ice fragment (broken)

19 = Ice fragment (broken)

20 = Ice fragment (broken)

21 = Ice fragment (broken)

22 = Ice fragment (broken)

23 = Ice fragment (broken)

24 = Ice fragment (broken)

25 = Ice fragment (broken)

26 = Ice fragment (broken)

27 = Ice fragment (broken)

28 = Ice fragment (broken)

29 = Ice fragment (broken)

30 = Ice fragment (broken)

FORM OF ICE

1 = Thin (1-40 cm)

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5 = Ice shelf

6 = Ice pack

7 = Ice island

8 = Iceberg

9 = Ice floe

10 = Ice chunk

11 = Ice fragment

12 = Ice fragment (broken)

13 = Ice fragment (broken)

14 = Ice fragment (broken)

15 = Ice fragment (broken)

16 = Ice fragment (broken)

17 = Ice fragment (broken)

18 = Ice fragment (broken)

19 = Ice fragment (broken)

20 = Ice fragment (broken)

21 = Ice fragment (broken)

22 = Ice fragment (broken)

23 = Ice fragment (broken)

24 = Ice fragment (broken)

25 = Ice fragment (broken)

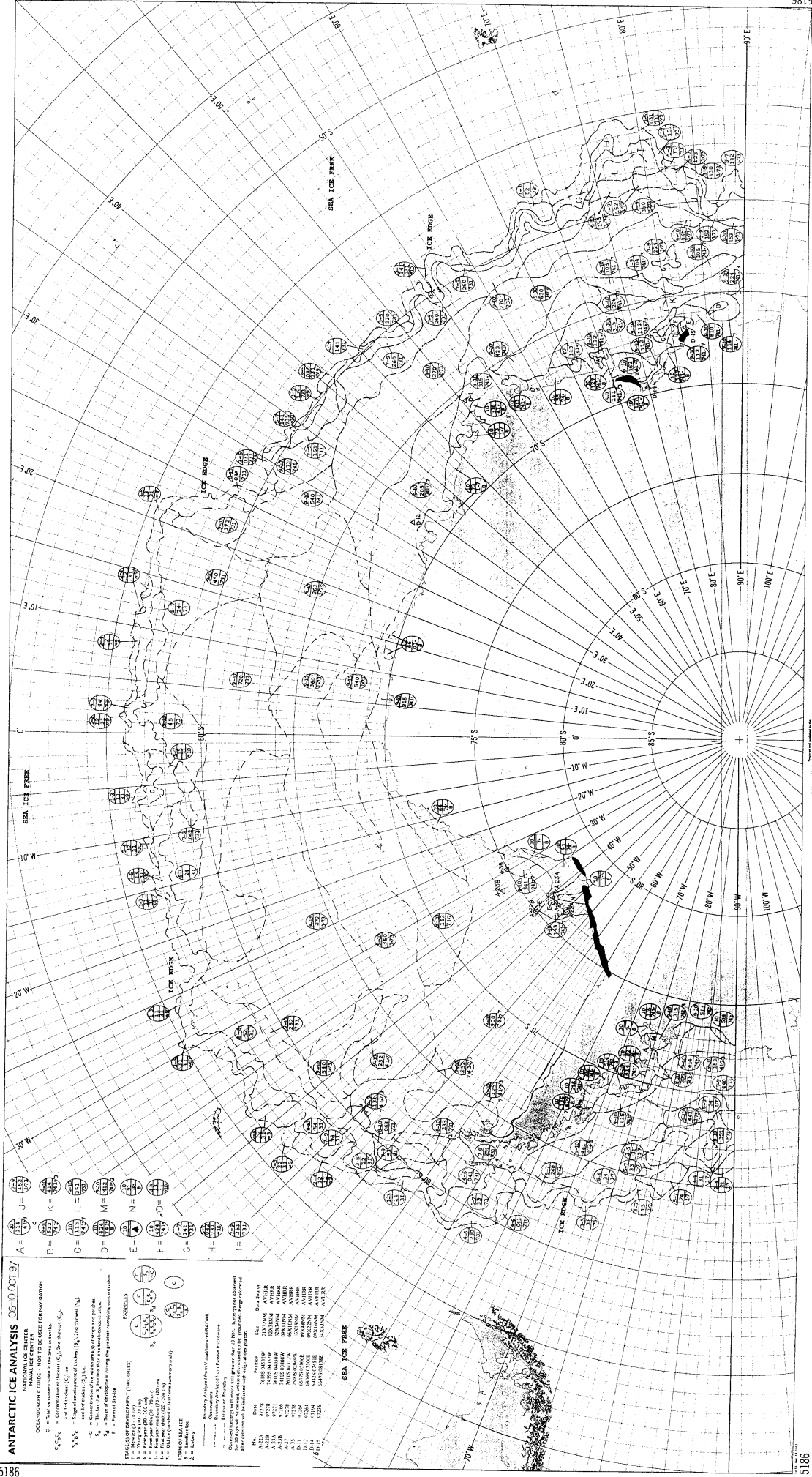
26 = Ice fragment (broken)

27 = Ice fragment (broken)

28 = Ice fragment (broken)

29 = Ice fragment (broken)

30 = Ice fragment (broken)



ANTARCTIC ICE ANALYSIS 06-10 OCT 97

- NATIONAL ICE CENTER
GOVERNMENT OF CANADA
- C - Total ice concentration in the area as noted.
 - S₁S₂S₃ - Concentration of thickness (C₁, C₂, and C₃)
 - S₁S₂S₃ - Concentration of thickness (C₁, C₂, and C₃) and icebergs (I₁)
 - C - Concentration of icebergs (I₁)
 - S₁S₂S₃ - Type of development using the present existing concentration.
 - F - Form of Iceberg
- SYMBOLS OF DEVELOPMENT (THICKNESS)**
- A - 100% (0-200m)
 - B - 75% (0-200m)
 - C - 50% (0-200m)
 - D - 25% (0-200m)
 - E - 10% (0-200m)
 - F - 5% (0-200m)
 - G - 2% (0-200m)
 - H - 1% (0-200m)
 - I - 0% (0-200m)
- FORM OF ICEBERG**
- A - Isolated
 - B - L-shaped
 - C - T-shaped
 - D - Y-shaped
 - E - X-shaped
 - F - Star-shaped
 - G - Triangular
 - H - Square
 - I - Rectangular
 - J - Irregular
 - K - Oval
 - L - Round
 - M - Oval
 - N - Irregular
 - O - Round
 - P - Oval
 - Q - Irregular
 - R - Round
 - S - Oval
 - T - Irregular
 - U - Round
 - V - Oval
 - W - Irregular
 - X - Round
 - Y - Oval
 - Z - Irregular
- REFERENCES**
- 1. Antarctic Peninsula from Vancouver to Maitland
 - 2. Antarctic Peninsula from Maitland to Phoenix
 - 3. Antarctic Peninsula from Phoenix to Bransfield
 - 4. Antarctic Peninsula from Bransfield to Weddell
 - 5. Antarctic Peninsula from Weddell to Ross
 - 6. Antarctic Peninsula from Ross to McMurdo
 - 7. Antarctic Peninsula from McMurdo to Ross
 - 8. Antarctic Peninsula from Ross to Victoria
 - 9. Antarctic Peninsula from Victoria to Phoenix
 - 10. Antarctic Peninsula from Phoenix to Maitland
 - 11. Antarctic Peninsula from Maitland to Vancouver
- REVISIONS**
- | Date | Revision | By |
|----------|----------|------|
| 10/06/97 | Initial | J.P. |
| 10/07/97 | 1 | J.P. |
| 10/08/97 | 2 | J.P. |
| 10/09/97 | 3 | J.P. |
| 10/10/97 | 4 | J.P. |
| 10/11/97 | 5 | J.P. |
| 10/12/97 | 6 | J.P. |
| 10/13/97 | 7 | J.P. |
| 10/14/97 | 8 | J.P. |
| 10/15/97 | 9 | J.P. |
| 10/16/97 | 10 | J.P. |

Produced by the National Ice Center, Ottawa, Ontario, Canada
 Project Number: 970101
 Date: 10/06/97
 Version: 1.0

ANTARCTIC ICE ANALYSIS 131700T 92

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

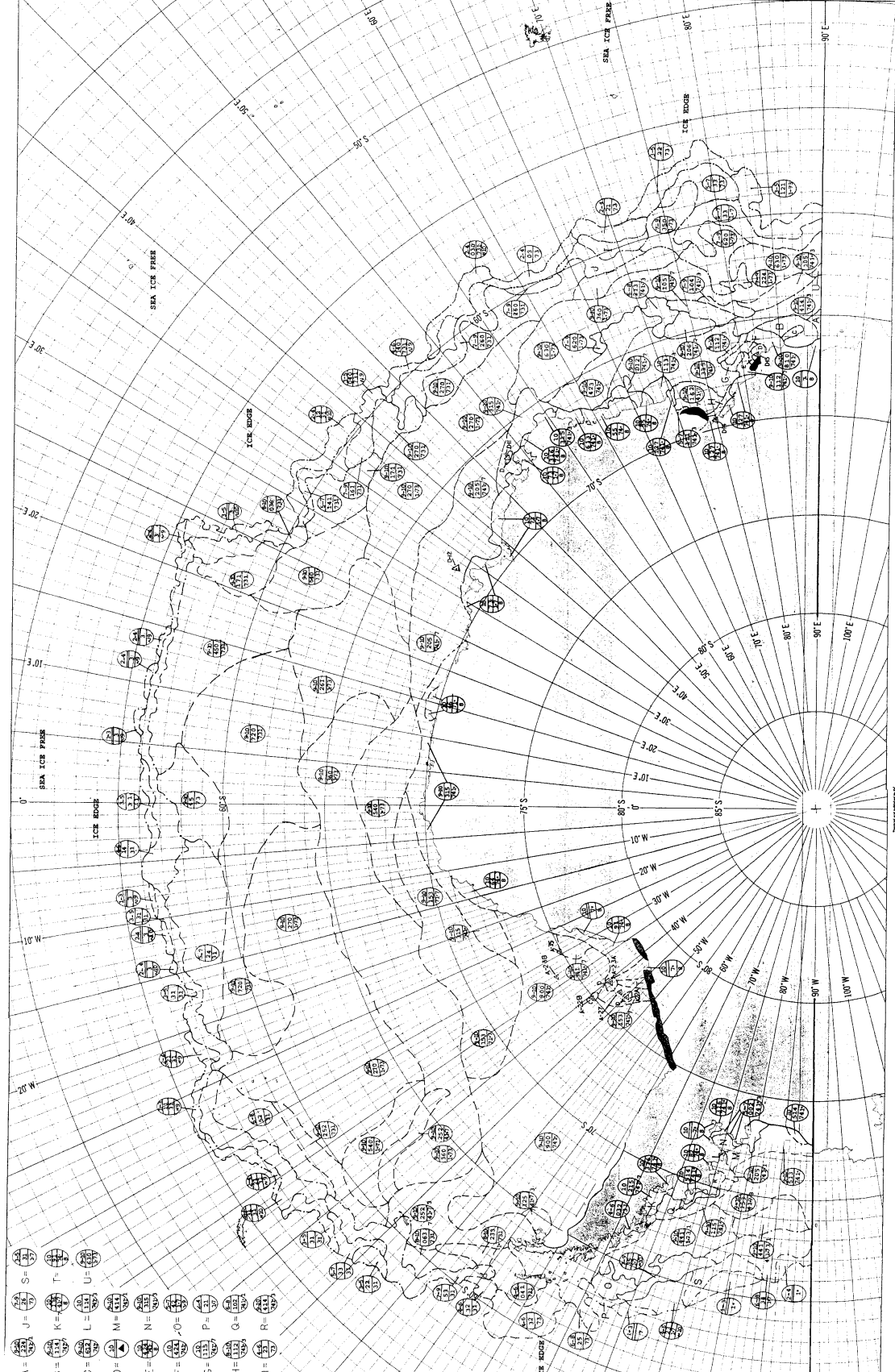
\oplus = Iceberg
 \odot = Concentration of icebergs
 \circ = Stage of development of floes (S₁ - 2nd smallest S₂)
 \otimes = Concentration of floes (F₁ - 2nd smallest F₂)
 \circ = Concentration of ice with the (S₁) or (F₁) and patchy
 \otimes = Thicker than S₂ but thinner than S₁ on both concentration
 \otimes = Thicker than F₂ but thinner than F₁ on both concentration
 \otimes = Patchy
 \otimes = Form of floe
 \otimes = Examples

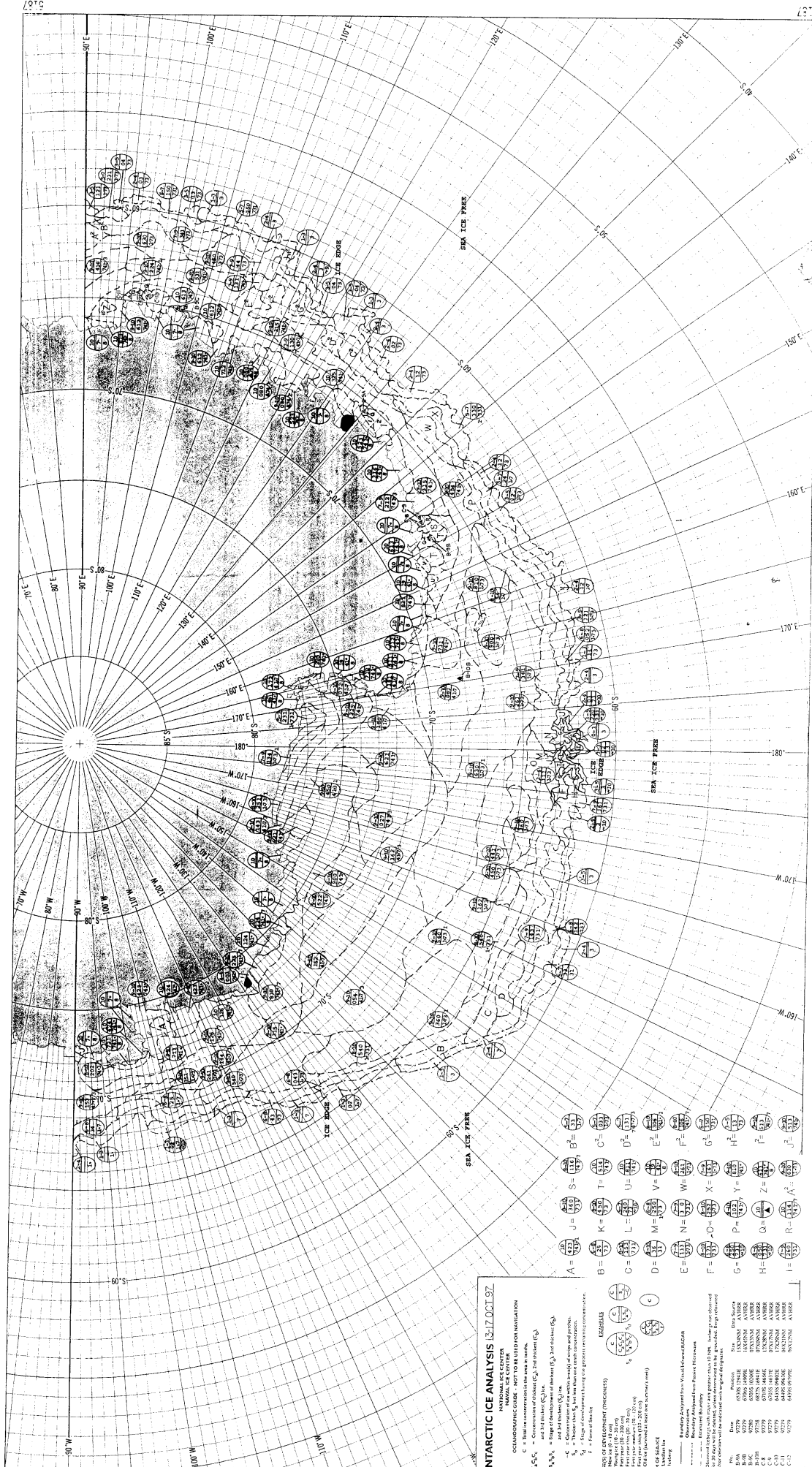
STAGES OF DEVELOPMENT (THICKNESS):
 1 = Melted (0.0 - 0.25)
 2 = First year (0.25 - 0.5)
 3 = First year (0.5 - 1.0)
 4 = First year (1.0 - 1.5)
 5 = First year (1.5 - 2.0)
 6 = Old ice (2.0 or more)

FORMS OF ICE:
 A = Iceberg
 B = Iceberg
 C = Iceberg
 D = Iceberg
 E = Iceberg
 F = Iceberg
 G = Iceberg
 H = Iceberg
 I = Iceberg

BOUNDARY DEFINITIONS:
 --- Boundary designated from Visual Observation
 --- Boundary designated from Passive Microwave
 --- Observed Iceberg with major sea area (SEA ICE FREE) to that. Icebergs not observed
 --- Major sea areas (SEA ICE FREE) to that. Icebergs not observed

No.	Date	Position	Sea Area	Iceberg
1-2	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
3	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
4-5	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
6	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
7	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
8	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
9	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
10	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
11	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
12	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
13	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
14	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
15	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
16	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
17	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
18	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
19	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
20	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
21	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
22	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
23	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
24	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
25	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
26	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
27	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
28	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
29	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC
30	31/12	73°58'S 115°32'W	ANTARCTIC	ANTARCTIC





ANTARCTIC ICE ANALYSIS 1317 0001 97

ICE ANALYSIS CENTER
NAUTICAL CENTER

GLACIOLOGICAL CODE - NOT TO BE USED FOR INFORMATION

C 6% S₁ = Concentration of snow (C₁) for 1st month (C₁)
 S₁ S₂ S₃ = Layer of snow (S₁), 2nd month (S₂)
 S₁ S₂ S₃ S₄ = Concentration of ice with ice (C₁) at 1st stage and 2nd stage
 S₁ S₂ S₃ S₄ S₅ = Concentration of ice with ice (C₁) at 1st stage and 2nd stage
 S₁ S₂ S₃ S₄ S₅ S₆ = Concentration of ice with ice (C₁) at 1st stage and 2nd stage
 S₁ S₂ S₃ S₄ S₅ S₆ S₇ = Concentration of ice with ice (C₁) at 1st stage and 2nd stage

STAGES OF DEVELOPMENT (PERCENTAGES)

1 = New snow (0-10%)
 2 = Fresh snow (10-20%)
 3 = Old snow (20-30%)
 4 = Snow with ice (30-40%)
 5 = Snow with ice (40-50%)
 6 = Snow with ice (50-60%)
 7 = Snow with ice (60-70%)

FORMS OF ICE

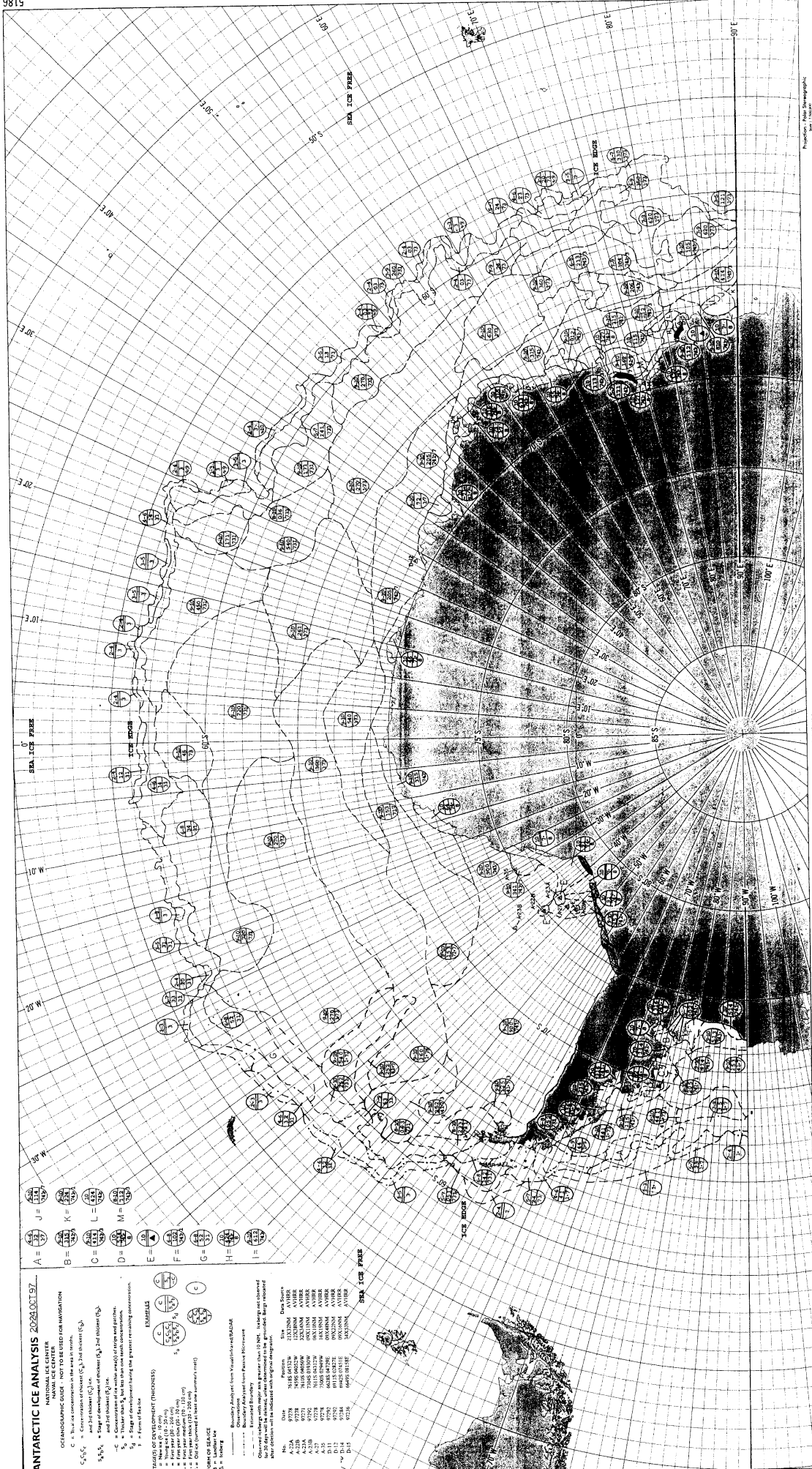
A = Ice
 B = Ice
 C = Ice
 D = Ice
 E = Ice
 F = Ice
 G = Ice
 H = Ice
 I = Ice
 J = Ice
 K = Ice
 L = Ice
 M = Ice
 N = Ice
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 Y = Ice
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 OM = Ice
 ON = Ice
 OO = Ice
 OP = Ice
 OQ = Ice
 OR = Ice
 OS = Ice
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 OW = Ice
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 OY = Ice
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 RV = Ice
 RW = Ice
 RX = Ice
 RY = Ice
 RZ = Ice
 SA = Ice
 SB = Ice
 SC = Ice
 SD = Ice
 SE = Ice
 SF = Ice
 SG = Ice
 SH = Ice
 SI = Ice
 SJ = Ice
 SK = Ice
 SL = Ice
 SM = Ice
 SN = Ice
 SO = Ice
 SP = Ice
 SQ = Ice
 SR = Ice
 SS = Ice
 ST = Ice
 SU = Ice
 SV = Ice
 SW = Ice
 SX = Ice
 SY = Ice
 SZ = Ice
 TA = Ice
 TB = Ice
 TC = Ice
 TD = Ice
 TE = Ice
 TF = Ice
 TG = Ice
 TH = Ice
 TI = Ice
 TJ = Ice
 TK = Ice
 TL = Ice
 TM = Ice
 TN = Ice
 TO = Ice
 TP = Ice
 TQ = Ice
 TR = Ice
 TS = Ice
 TT = Ice
 TU = Ice
 TV = Ice
 TW = Ice
 TX = Ice
 TY = Ice
 TZ = Ice
 UA = Ice
 UB = Ice
 UC = Ice
 UD = Ice
 UE = Ice
 UF = Ice
 UG = Ice
 UH = Ice
 UI = Ice
 UJ = Ice
 UK = Ice
 UL = Ice
 UM = Ice
 UN = Ice
 UO = Ice
 UP = Ice
 UQ = Ice
 UR = Ice
 US = Ice
 UT = Ice
 UU = Ice
 UV = Ice
 UW = Ice
 UX = Ice
 UY = Ice
 UZ = Ice
 VA = Ice
 VB = Ice
 VC = Ice
 VD = Ice
 VE = Ice
 VF = Ice
 VG = Ice
 VH = Ice
 VI = Ice
 VJ = Ice
 VK = Ice
 VL = Ice
 VM = Ice
 VN = Ice
 VO = Ice
 VP = Ice
 VQ = Ice
 VR = Ice
 VS = Ice
 VT = Ice
 VU = Ice
 VV = Ice
 VW = Ice
 VX = Ice
 VY = Ice
 VZ = Ice
 WA = Ice
 WB = Ice
 WC = Ice
 WD = Ice
 WE = Ice
 WF = Ice
 WG = Ice
 WH = Ice
 WI = Ice
 WJ = Ice
 WK = Ice
 WL = Ice
 WM = Ice
 WN = Ice
 WO = Ice
 WP = Ice
 WQ = Ice
 WR = Ice
 WS = Ice
 WT = Ice
 WU = Ice
 WV = Ice
 WW = Ice
 WX = Ice
 WY = Ice
 WZ = Ice
 XA = Ice
 XB = Ice
 XC = Ice
 XD = Ice
 XE = Ice
 XF = Ice
 XG = Ice
 XH = Ice
 XI = Ice
 XJ = Ice
 XK = Ice
 XL = Ice
 XM = Ice
 XN = Ice
 XO = Ice
 XP = Ice
 XQ = Ice
 XR = Ice
 XS = Ice
 XT = Ice
 XU = Ice
 XV = Ice
 XW = Ice
 XX = Ice
 XY = Ice
 XZ = Ice
 YA = Ice
 YB = Ice
 YC = Ice
 YD = Ice
 YE = Ice
 YF = Ice
 YG = Ice
 YH = Ice
 YI = Ice
 YJ = Ice
 YK = Ice
 YL = Ice
 YM = Ice
 YN = Ice
 YO = Ice
 YP = Ice
 YQ = Ice
 YR = Ice
 YS = Ice
 YT = Ice
 YU = Ice
 YV = Ice
 YW = Ice
 YX = Ice
 YY = Ice
 YZ = Ice
 ZA = Ice
 ZB = Ice
 ZC = Ice
 ZD = Ice
 ZE = Ice
 ZF = Ice
 ZG = Ice
 ZH = Ice
 ZI = Ice
 ZJ = Ice
 ZK = Ice
 ZL = Ice
 ZM = Ice
 ZN = Ice
 ZO = Ice
 ZP = Ice
 ZQ = Ice
 ZR = Ice
 ZS = Ice
 ZT = Ice
 ZU = Ice
 ZV = Ice
 ZW = Ice
 ZX = Ice
 ZY = Ice
 ZZ = Ice

BOUNDARY SYMBOLS

- - - - - Boundary (shaded from Power Electronic)
 - - - - - Boundary (shaded from Power Electronic)
 - - - - - Boundary (shaded from Power Electronic)

REMARKS

1. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 2. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 3. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 4. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 5. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 6. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 7. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 8. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 9. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.
 10. Information for the purpose of this chart is derived from the Antarctic Peninsula and the Antarctic Peninsula and the Antarctic Peninsula.



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SYMBOLS

A = 1st stage of ice development (1st year ice)
 B = 2nd stage of ice development (2nd year ice)
 C = 3rd stage of ice development (3rd year ice)
 D = 4th stage of ice development (4th year ice)
 E = 5th stage of ice development (5th year ice)
 F = 6th stage of ice development (6th year ice)
 G = 7th stage of ice development (7th year ice)
 H = 8th stage of ice development (8th year ice)
 I = 9th stage of ice development (9th year ice)
 J = 10th stage of ice development (10th year ice)
 K = 11th stage of ice development (11th year ice)
 L = 12th stage of ice development (12th year ice)
 M = 13th stage of ice development (13th year ice)
 N = 14th stage of ice development (14th year ice)
 O = 15th stage of ice development (15th year ice)
 P = 16th stage of ice development (16th year ice)
 Q = 17th stage of ice development (17th year ice)
 R = 18th stage of ice development (18th year ice)
 S = 19th stage of ice development (19th year ice)
 T = 20th stage of ice development (20th year ice)

STAGES OF DEVELOPMENT (THICKNESS)

1 = New ice (0.1-0.2 m)
 2 = First year ice (0.2-0.4 m)
 3 = Second year ice (0.4-0.6 m)
 4 = Third year ice (0.6-0.8 m)
 5 = Fourth year ice (0.8-1.0 m)
 6 = Fifth year ice (1.0-1.2 m)
 7 = Sixth year ice (1.2-1.4 m)
 8 = Seventh year ice (1.4-1.6 m)
 9 = Eighth year ice (1.6-1.8 m)
 10 = Ninth year ice (1.8-2.0 m)
 11 = Tenth year ice (2.0-2.2 m)
 12 = Eleventh year ice (2.2-2.4 m)
 13 = Twelfth year ice (2.4-2.6 m)
 14 = Thirteenth year ice (2.6-2.8 m)
 15 = Fourteenth year ice (2.8-3.0 m)
 16 = Fifteenth year ice (3.0-3.2 m)
 17 = Sixteenth year ice (3.2-3.4 m)
 18 = Seventeenth year ice (3.4-3.6 m)
 19 = Eighteenth year ice (3.6-3.8 m)
 20 = Nineteenth year ice (3.8-4.0 m)

FORMS OF ICE

1 = New ice
 2 = First year ice
 3 = Second year ice
 4 = Third year ice
 5 = Fourth year ice
 6 = Fifth year ice
 7 = Sixth year ice
 8 = Seventh year ice
 9 = Eighth year ice
 10 = Ninth year ice
 11 = Tenth year ice
 12 = Eleventh year ice
 13 = Twelfth year ice
 14 = Thirteenth year ice
 15 = Fourteenth year ice
 16 = Fifteenth year ice
 17 = Sixteenth year ice
 18 = Seventeenth year ice
 19 = Eighteenth year ice
 20 = Nineteenth year ice

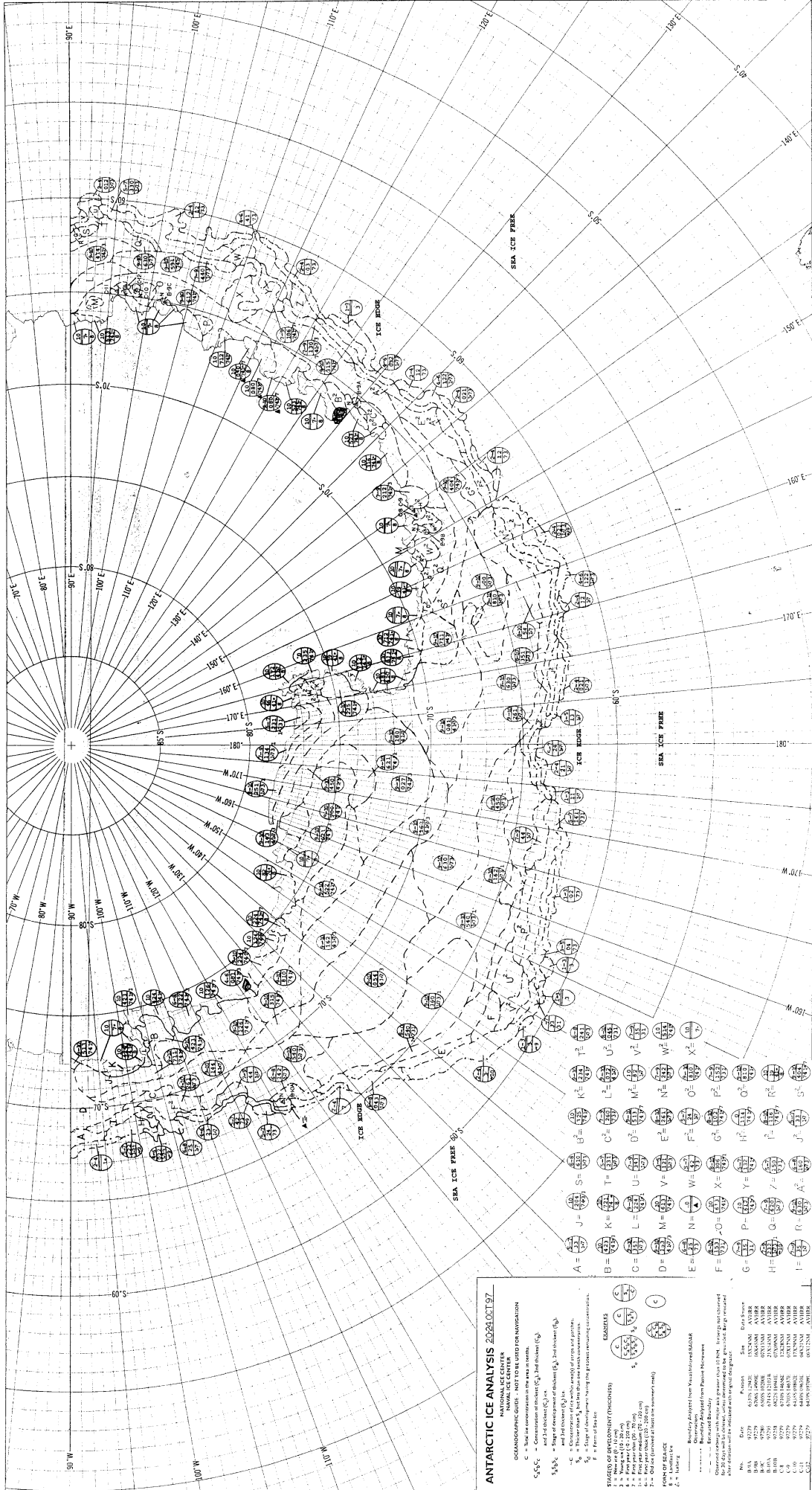
BOUNDARY SYMBOLS

1 = Boundary between ice shelves and ice
 2 = Boundary between ice shelves and ice
 3 = Boundary between ice shelves and ice
 4 = Boundary between ice shelves and ice
 5 = Boundary between ice shelves and ice
 6 = Boundary between ice shelves and ice
 7 = Boundary between ice shelves and ice
 8 = Boundary between ice shelves and ice
 9 = Boundary between ice shelves and ice
 10 = Boundary between ice shelves and ice

DATA SOURCE

No.	Date	Position	Area
A-128	97778	70°S 165°E	1000000
A-129	97778	70°S 165°E	1000000
A-130	97778	70°S 165°E	1000000
A-131	97778	70°S 165°E	1000000
A-132	97778	70°S 165°E	1000000
A-133	97778	70°S 165°E	1000000
A-134	97778	70°S 165°E	1000000
A-135	97778	70°S 165°E	1000000
A-136	97778	70°S 165°E	1000000
A-137	97778	70°S 165°E	1000000
A-138	97778	70°S 165°E	1000000
A-139	97778	70°S 165°E	1000000
A-140	97778	70°S 165°E	1000000
A-141	97778	70°S 165°E	1000000
A-142	97778	70°S 165°E	1000000
A-143	97778	70°S 165°E	1000000
A-144	97778	70°S 165°E	1000000
A-145	97778	70°S 165°E	1000000

Projection: Polar Stereographic
 Datum: Antarctic



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 C = Thick ice concentration in the area of chart.
 C₁, C₂, C₃ = Concentration of ice (C₁, C₂ and thickness (C₃) and thickness (C₃)
 S₁, S₂, S₃ = Direction of ice motion (S₁, S₂ and thickness (S₃)
 T = Direction of ice motion (T)
 W = Concentration of ice (W) and thickness (W)
 M = Direction of ice motion (M) and thickness (M)
 S₁, S₂ = Direction of ice motion (S₁, S₂)
 F = Feet of thickness
 S₁, S₂ = Direction of ice motion (S₁, S₂)
 F = Feet of thickness
 S₁, S₂ = Direction of ice motion (S₁, S₂)
 F = Feet of thickness

STAGES OF DEVELOPMENT (PHASES)

A =	1	2	3	4	5	6	7	8	9	10
B =	11	12	13	14	15	16	17	18	19	20
C =	21	22	23	24	25	26	27	28	29	30
D =	31	32	33	34	35	36	37	38	39	40
E =	41	42	43	44	45	46	47	48	49	50
F =	51	52	53	54	55	56	57	58	59	60
G =	61	62	63	64	65	66	67	68	69	70
H =	71	72	73	74	75	76	77	78	79	80
I =	81	82	83	84	85	86	87	88	89	90

STATION IDENTIFICATION

010	020	030	040	050	060	070	080	090	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
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STATION IDENTIFICATION (continued)

2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520	2530	2540	2550	2560	2570	2580	2590	2600	2610	2620	2630	2640	2650	2660	2670	2680	2690	2700	2710	2720	2730	2740	2750	2760	2770	2780	2790	2800	2810	2820	2830	2840	2850	2860	2870	2880	2890	2900	2910	2920	2930	2940	2950	2960	2970	2980	2990	3000
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STATION IDENTIFICATION (continued)

3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230	3240	3250	3260	3270	3280	3290	3300	3310	3320	3330	3340	3350	3360	3370	3380	3390	3400	3410	3420	3430	3440	3450	3460	3470	3480	3490	3500	3510	3520	3530	3540	3550	3560	3570	3580	3590	3600	3610	3620	3630	3640	3650	3660	3670	3680	3690	3700	3710	3720	3730	3740	3750	3760	3770	3780	3790	3800	3810	3820	3830	3840	3850	3860	3870	3880	3890	3900	3910	3920	3930	3940	3950	3960	3970	3980	3990	4000
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STATION IDENTIFICATION (continued)

4010	4020	4030	4040	4050	4060	4070	4080	4090	4100	4110	4120	4130	4140	4150	4160	4170	4180	4190	4200	4210	4220	4230	4240	4250	4260	4270	4280	4290	4300	4310	4320	4330	4340	4350	4360	4370	4380	4390	4400	4410	4420	4430	4440	4450	4460	4470	4480	4490	4500	4510	4520	4530	4540	4550	4560	4570	4580	4590	4600	4610	4620	4630	4640	4650	4660	4670	4680	4690	4700	4710	4720	4730	4740	4750	4760	4770	4780	4790	4800	4810	4820	4830	4840	4850	4860	4870	4880	4890	4900	4910	4920	4930	4940	4950	4960	4970	4980	4990	5000
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