

**I.O.S.**

MARINE GEOPHYSICAL DATA ACQUIRED 1984 – 1987

DATABASE SUMMARY

BY

T.P. LeBAS & J.M. EVANS

REPORT NO. 254

1988

**INSTITUTE OF  
OCEANOGRAPHIC SCIENCES  
DEACON LABORATORY**

NATURAL ENVIRONMENT  
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COUNCIL

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*Natural Environment Research Council*

INSTITUTE OF OCEANOGRAPHIC SCIENCES

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DOCUMENT DATA SHEET

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<i>ABSTRACT</i>  This report summarises underway bathymetric, magnetic and gravity data collected during geology/geophysics cruises between 1984 and 1987 by the Institute of Oceanographic Sciences Deacon Laboratory (IOSDL), United Kingdom. It supplements IOS Report No.194 (DRAKE & MILES, 1985) which catalogued cruises between 1973 and 1984.  Full details of the availability of cruise data together with a list of the complimentary Cruise Reports are included in the appendices.		
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## INTRODUCTION

Geophysical data collected during Institute of Oceanographic Sciences cruises are held on hard disk storage (with a magnetic tape backup) in the ORACLE relational database system. Access is through the Natural Environment Research Council IBM 4381 Computer at Wallingford, Oxfordshire, via the Joint Academic Network (JANET).

Due to the large size of the database OCDUL (the Oracle Cruise Data Users' Library) a concise summary document was necessary, outside the mainstream computing framework, as a bookshelf reference of available information. The data referenced in this report is restricted to geological and geophysical cruises of IOS and contracted work thereof between 1984 and 1987. This follows IOS report No. 194 which covered data acquired between 1973 and 1984. This earlier data is also held in the database.

## INFORMATION DESCRIPTION

The cruises are detailed in chronological order for each research vessel giving:-

- a) A title sheet showing cruise details.
- b) A track chart annotated with day numbers.

The title sheet describes general cruise information. The cruise title is given with a short description taken from the cruise report. Listed is the total number of data records for each leg (generally at 2 minute intervals) and the number of records in bathymetry, magnetics and gravity. In addition, documentation of cruise start and end ports, principal (Chief) scientist and the latitude/longitude limits of the cruise are given. Facing each title sheet are the corresponding track charts annotated with Julian day numbers (see Appendix D). All the maps use the ellipsoidal Mercator projection and the map scales are given at the base of each title page.

Appendices A to C contain full references to the published and unpublished cruise reports of each cruise entry. IOS geophysical cruise data is now distributed to the international scientific community through the World Data Centre, via the UK National Oceanographic Data Bank, Marine Information and Advisory Service (MIAS) of IOSDL.

## **DATA ACQUISITION**

The OCDUL database holds a number of data fields. These can be divided into: Navigation and Time, Current data, Bathymetry, Magnetics, and Gravity. Logging is done automatically onto the shipboard computer system which has its own calculation and verification programs. However, not all fields are present due either to the absence of equipment, to its malfunction or possibly due to difficulty in deployment.

Navigation and Time are the prime parameters for each data record as errors here will make any other data unusable. Time is given by an internal clock onboard ship which has an accuracy of  $\pm 2$  ms. Its power pack is separate from the shipboard power supply, thus it still continues during a power failure or fluctuation, thus retaining its accuracy. The time zone used is always GMT. There are several methods for determining position but generally satellite navigation is used as the prime navaid. GPS is also used when available. Consequently a combination of relative and absolute positioning is used. The onboard computer system linearly interpolates between absolute points using the relative movement logs to produce the final positioning figures.

Current data consists of current velocity and current azimuth measured from the E-M log data once the absolute positioning is completed.

Depths are calculated using a Precision Echo-Sounder (PES), which measures the delay time for a pulse to travel through the water column to the bottom and return. This initially gives a depth which is uncorrected for variation in water transmission speed through the water column. A calculation is made using the Carter tables (Carter, 1980) for the appropriate area which gives the velocity structure of the water column and thus a corrected depth value is logged.

Magnetic data is acquired using a nuclear precession magnetometer. The coil and sample bottle is towed about 300 metres behind the ship, taking samples every 10 seconds. The total magnetic field is measured and recorded. Using positional data and the International Geomagnetic Reference Field, a residual magnetic field is calculated. The coefficients used in this calculation are IGRF 1985 (IAGA, 1986). Every 5 years the IGRF is updated and corrected making a Definitive Geomagnetic Reference Field (DGRF) of the former IGRF. This unavoidably affects the accuracy of the residual field calculations. Consequently when using magnetic data the various IGRFs and DGRFs must be taken into account.

Gravity data are tied to the IGSN71 at both the start and end port gravity stations and reduced using the 1967 geodetic reference system (UGGI, 1971). Thus, instrumental drift can be calculated for the onboard gravimeter and taken into account, if significant.

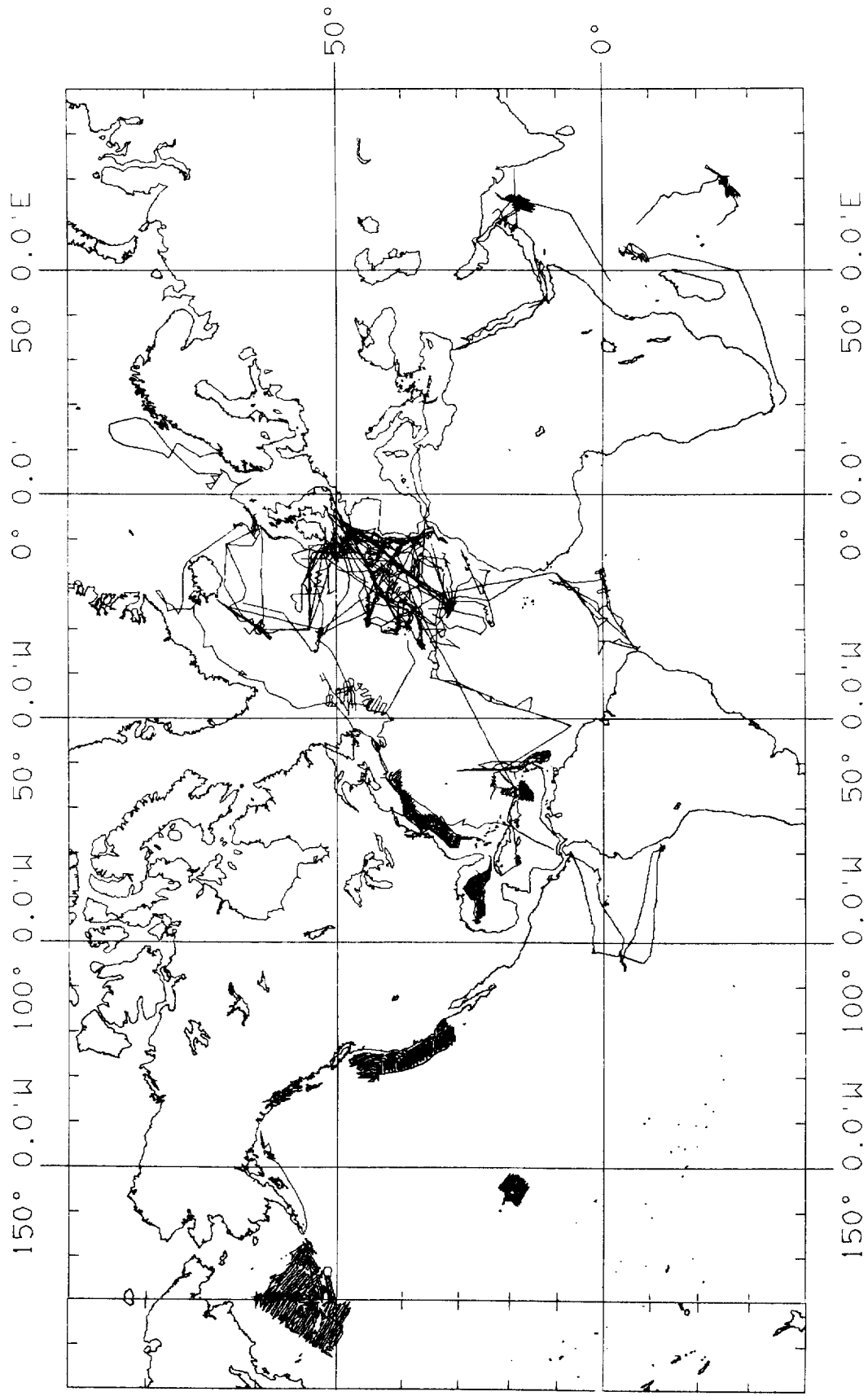
Each cruise produces a tape in DXFMT (merge-merge) format for transferral of the data to the IBM at Wallingford where it is placed on interactive magnetic disk in the database OCDUL. This database may be accessed through the JANET network. Enquiries on data may be made either by cruise name or by area of interest. The enquiry can be for information of cruises or for the actual data. Maps and profiles can be produced on these data on request, using library programs.



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- Carter D.J.T., 1980 Echo-sounding Correction Tables, formerly Matthews' Tables 3rd Edition.  
Taunton: Hydrographic Department 150pp (NP139).
- Drake S. & Miles P.R., 1985 IOS geophysical data held on magnetic tape, - summary. Bathymetric, magnetic and gravity data collected during marine geology and geophysics cruises 1973-1984.  
Institute of Oceanographic Sciences, Report, No. 194, 129pp.
- IAGA Division 1, Working Group 1, 1986 International Geomagnetic Reference Field Revision 1985.  
EOS: Transactions, America Geophysical Union 67, 523-524.
- UGGI, 1971 Geodetic Reference System 1967.  
IAG Publication Special No. 3, 115pp.





Total I.O.S.D.L. Cruise Data Coverage

**CRUISE NAME** : Discovery 161 (DIS161)

**CRUISE REPORT** : C188

**CRUISE DESCRIPTION** : Portuguese ocean-continent boundary, plate boundaries west of Iberia and seismic structure of sediments off Madeira.

**TOTAL RECORDS** : 24748

**BATHYMETRY** : 6774

**MAGNETICS** : 5475

**GRAVITY** : 14101

**PSO** : Whitmarsh

**START PORT** : Falmouth

**END PORT** : Funchal, Madeira

**DATA STARTS** : 1300z 15-Aug-86 JULIAN DAY : 227

**DATA ENDS** : 0446z 19-Sep-86 JULIAN DAY : 262

**MAXIMUM LATITUDE** : 50.1582N

**MINIMUM LATITUDE** : 31.3812N

**MAXIMUM LONGITUDE** : 5.0020W

**MINIMUM LONGITUDE** : 18.7675W

**MAP SCALE** : 1:20 Million at 0.0N





CRUISE NAME : Discovery 163 (DIS163)

CRUISE REPORT : C194

CRUISE DESCRIPTION : Geophysical studies of the Madeira abyssal plain  
and Cruiser seamount area, eastern North Atlantic.

TOTAL RECORDS : 16502

BATHYMETRY : 16441

MAGNETICS : 2990

GRAVITY : 0

PSO : Searle

START PORT : Falmouth

END PORT : Gibraltar

DATA STARTS : 1530z 26-Oct-86 JULIAN DAY : 299

DATA ENDS : 1434z 18-Nov-86 JULIAN DAY : 322

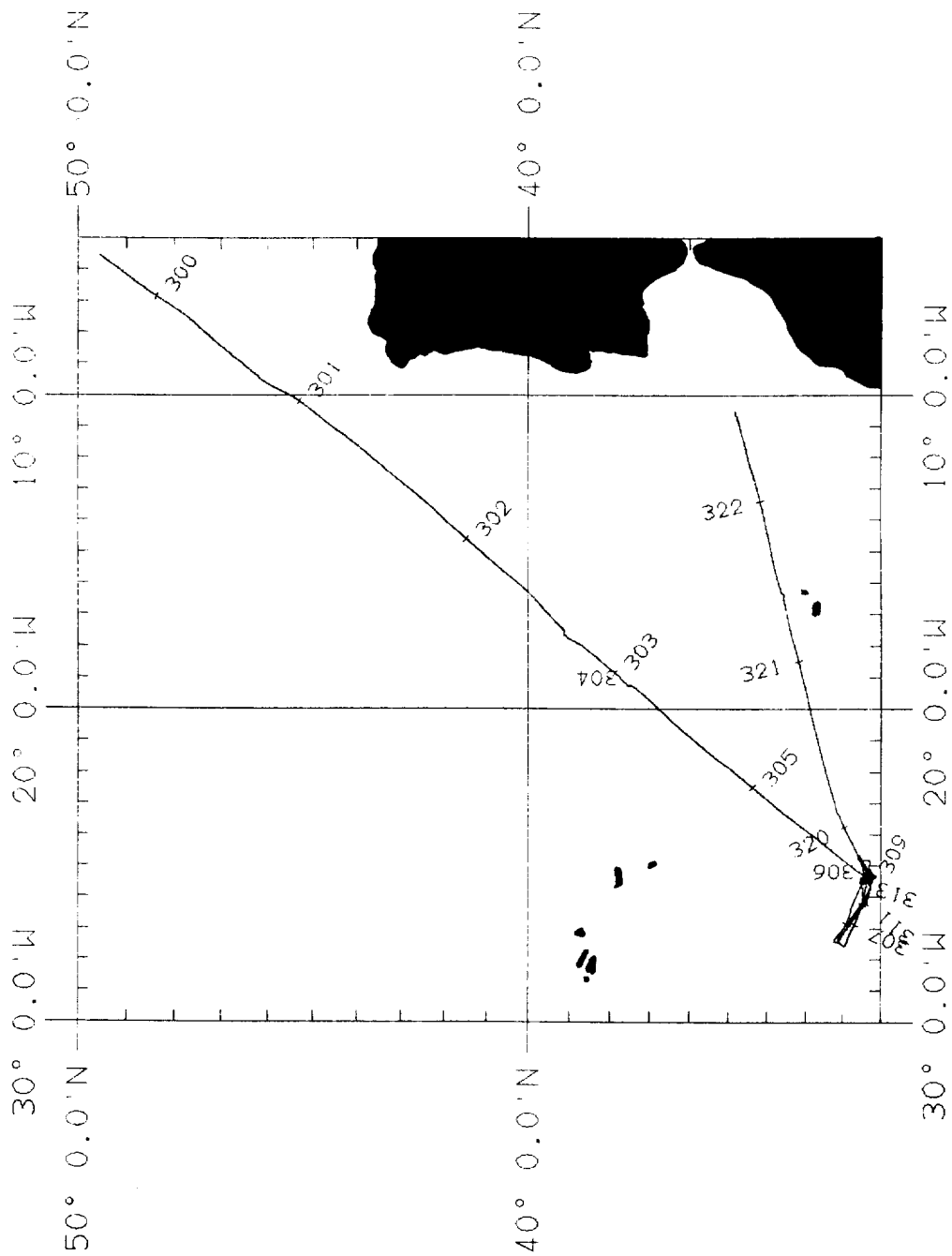
MAXIMUM LATITUDE : 49.5539N

MINIMUM LATITUDE : 31.1229N

MAXIMUM LONGITUDE : 5.5163W

MINIMUM LONGITUDE : 27.5822W

MAP SCALE : 1:25 Million at 0.0N



**CRUISE NAME** : Charles Darwin 9B/85 (CD9B85)

**CRUISE REPORT** : C182

**CRUISE DESCRIPTION** : Geology and Geophysics of the Great Meteor East area  
Madeira abyssal plain.

**TOTAL RECORDS** : 20740

**BATHYMETRY** : 4779

**MAGNETICS** : 3891

**GRAVITY** : 0

**PSO** : Searle

**START PORT** : Lisbon

**END PORT** : Glasgow

**DATA STARTS** : 1048z 06-Dec-85 JULIAN DAY : 340

**DATA ENDS** : 1616z 04-Jan-86 JULIAN DAY : 004

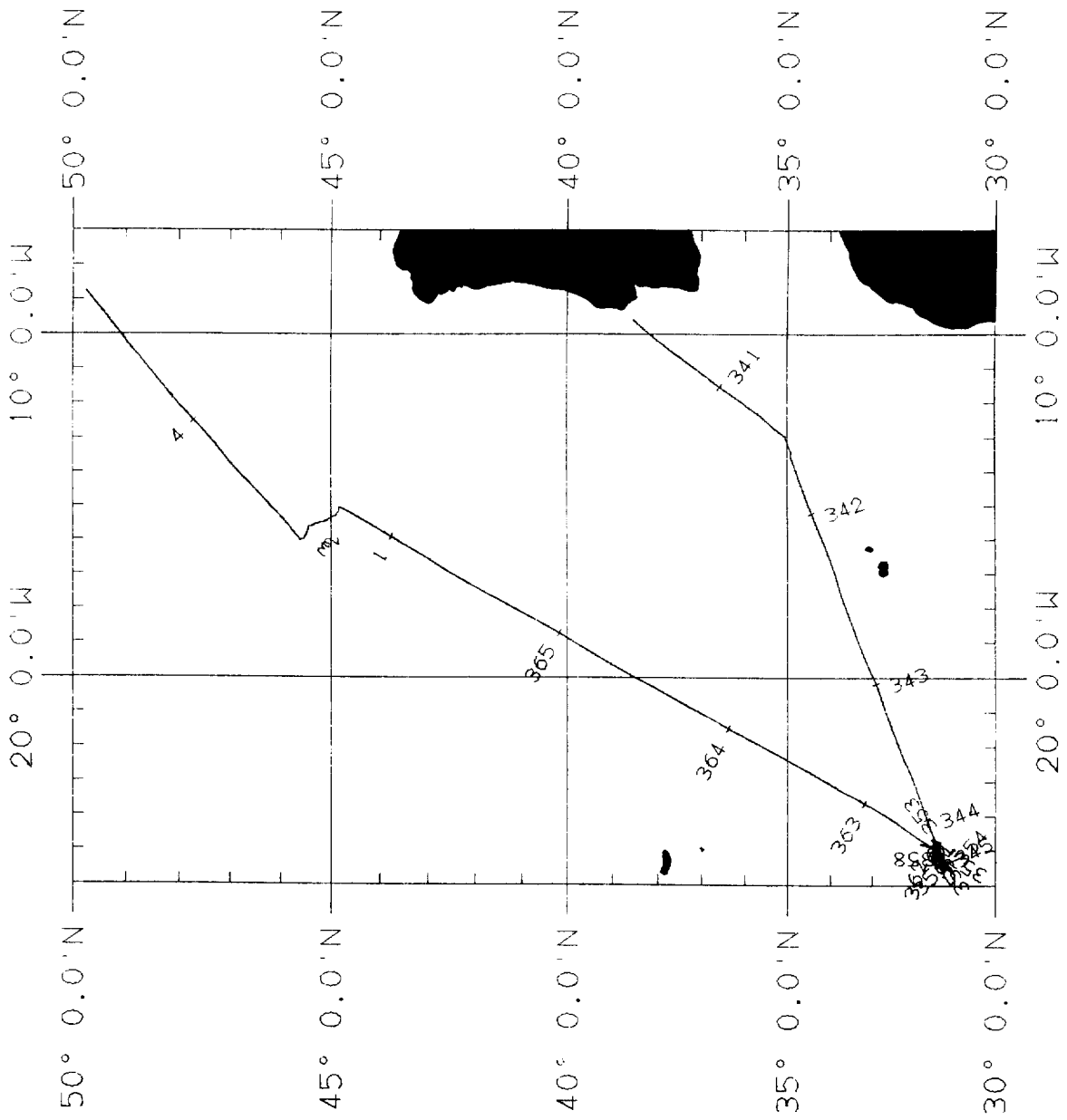
**MAXIMUM LATITUDE** : 49.7605N

**MINIMUM LATITUDE** : 30.9883N

**MAXIMUM LONGITUDE** : 8.7457W

**MINIMUM LONGITUDE** : 25.7536W

**MAP SCALE** : 1:22 Million at 0.0N



CRUISE NAME : Charles Darwin 11/86 (CD1186)

CRUISE REPORT :

CRUISE DESCRIPTION : Seismic anisotropy in layer 2, north east Atlantic.

TOTAL RECORDS : 15337

BATHYMETRY : 15162

MAGNETICS : 2248

GRAVITY : 0

PSO : Sinha

START PORT : Barry

END PORT : Falmouth

DATA STARTS : 0000z 05-Apr-86 JULIAN DAY : 095

DATA ENDS : 1200z 26-Apr-86 JULIAN DAY : 116

MAXIMUM LATITUDE : 48.5176N

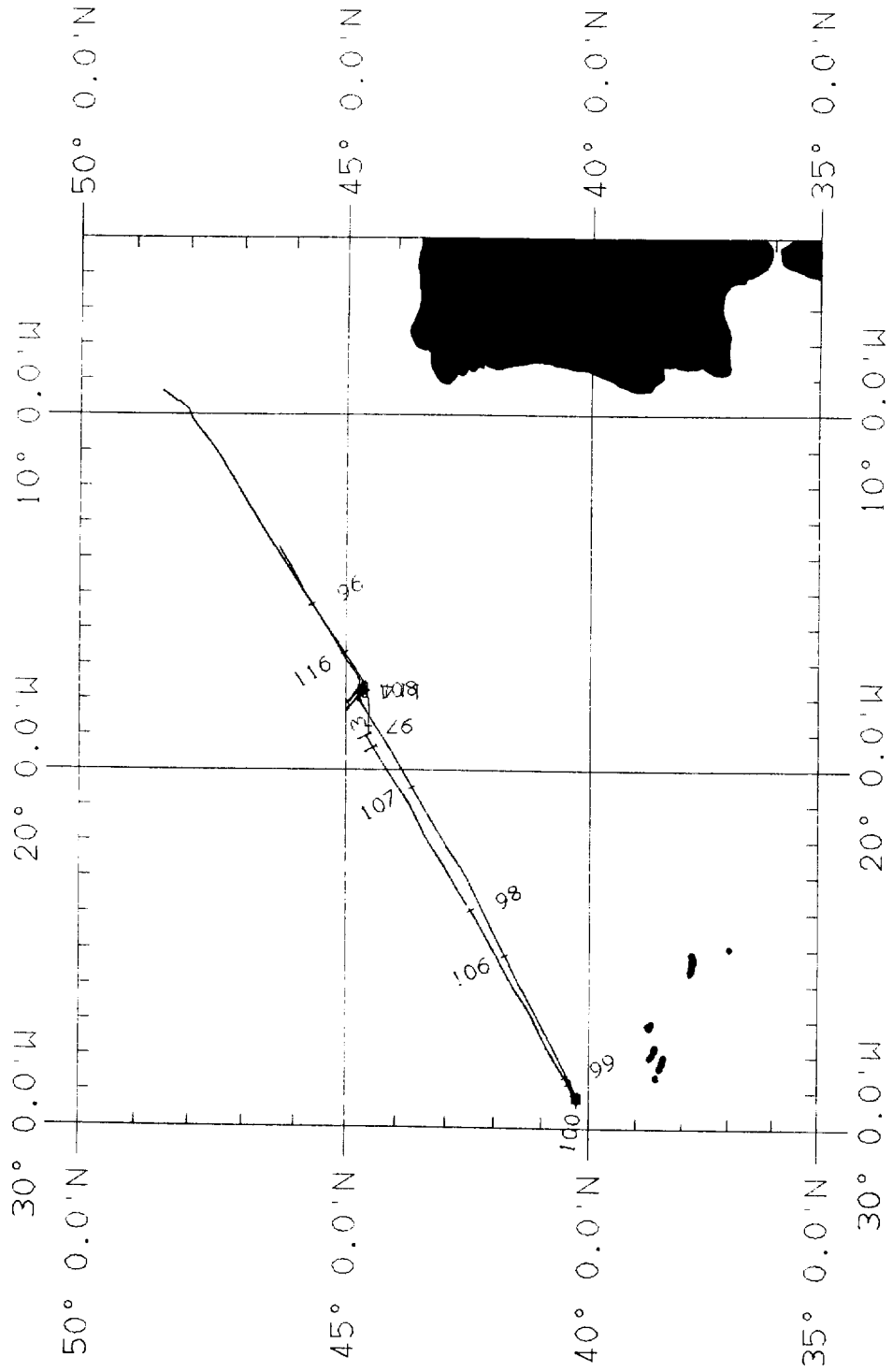
MINIMUM LATITUDE : 40.1638N

MAXIMUM LONGITUDE : 9.3151W

MINIMUM LONGITUDE : 29.4189W

MAP SCALE : 1:22 Million at 0.0N



CRUISE NAME : Charles Darwin 20/87 (CD2087)

CRUISE REPORT : C198

CRUISE DESCRIPTION : Gloria studies of the Indus fan and north east Indian Ocean.

TOTAL RECORDS : 17420

BATHYMETRY : 5736

MAGNETICS : 17167

GRAVITY : 16903

PSO : Kenyon

START PORT : Mombasa

END PORT : Muscat

DATA STARTS : 0722z 02-Feb-87 JULIAN DAY : 033

DATA ENDS : 1224z 26-Feb-87 JULIAN DAY : 057

MAXIMUM LATITUDE : 22.6696N

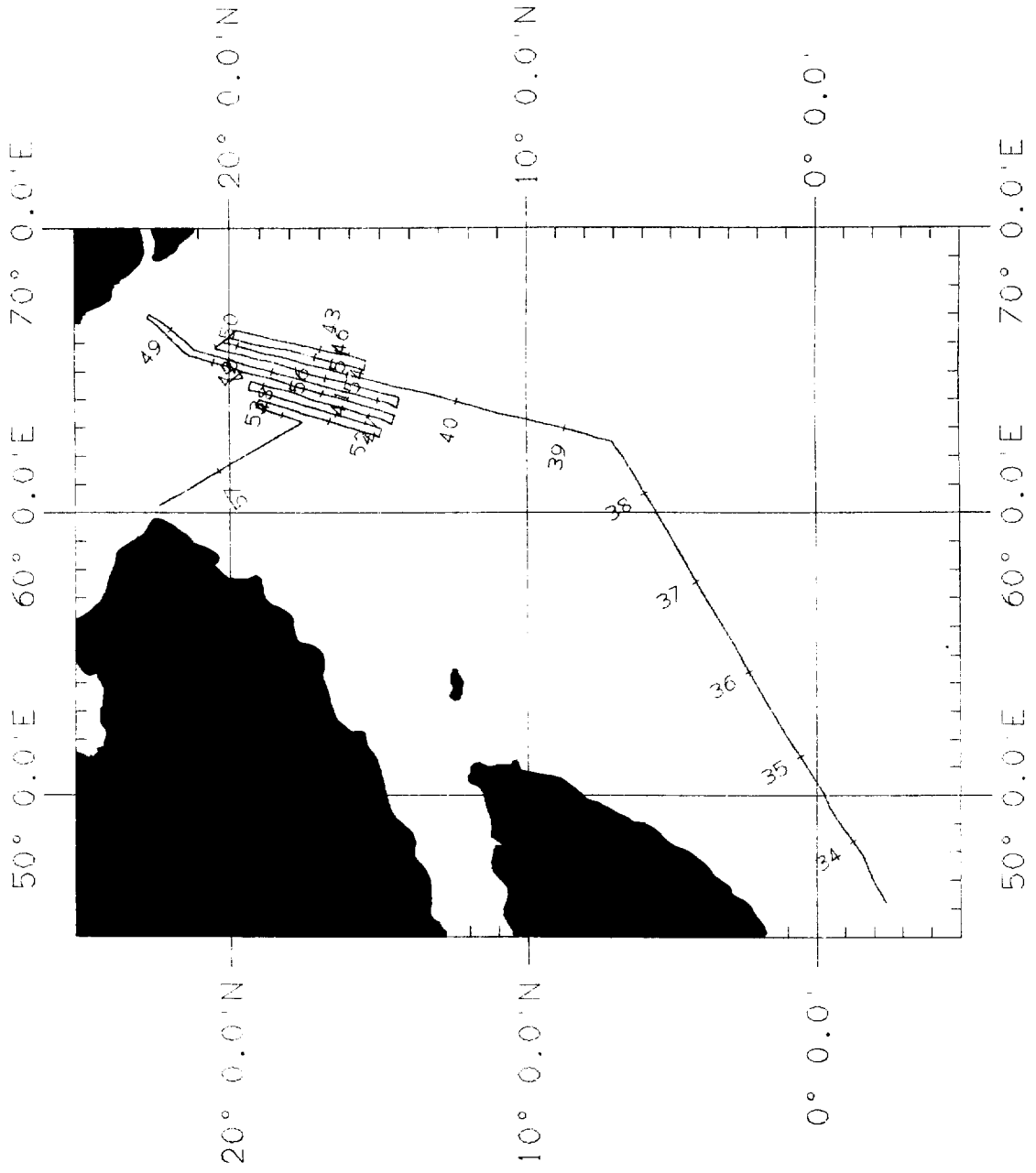
MINIMUM LATITUDE : 2.4124S

MAXIMUM LONGITUDE : 67.0120E

MINIMUM LONGITUDE : 46.2200E

MAP SCALE : 1:27 Million at 0.0N





**CRUISE NAME** : Charles Darwin 23/87 (CD2387)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : Geophysical investigations of the Indian Ocean triple junction.

**TOTAL RECORDS** : 19212

**BATHYMETRY** : 19204

**MAGNETICS** : 18854

**GRAVITY** : 18946

**PSO** : Parson

**START PORT** : Seychelles

**END PORT** : Mauritius

**DATA STARTS** : 0620z 14-May-87 JULIAN DAY : 134

**DATA ENDS** : 2242z 09-Jun-87 JULIAN DAY : 160

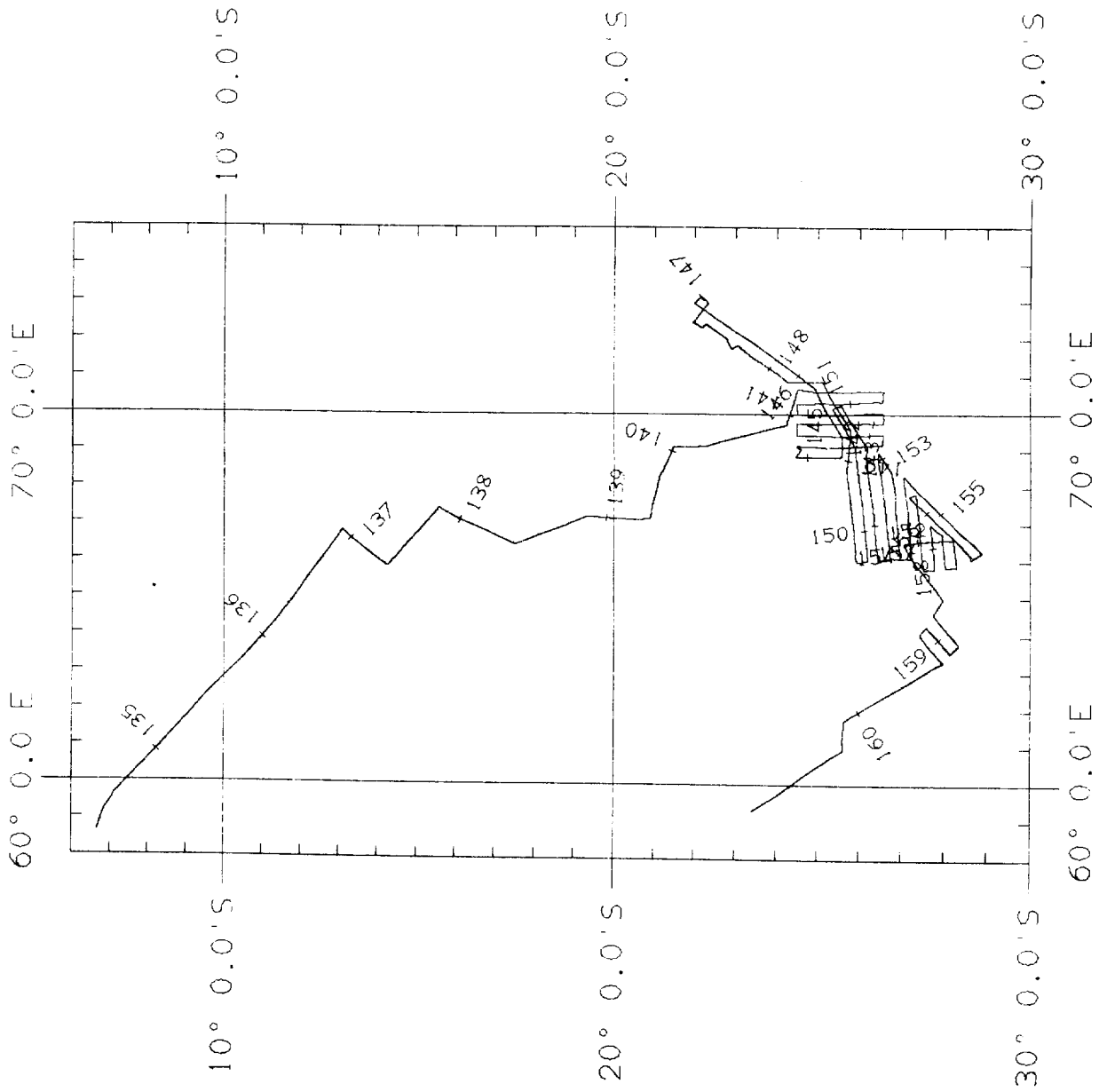
**MAXIMUM LATITUDE** : 6.6611S

**MINIMUM LATITUDE** : 28.8797S

**MAXIMUM LONGITUDE** : 73.1332E

**MINIMUM LONGITUDE** : 58.6482E

**MAP SCALE** : 1:20 Million at 0.0N



**CRUISE NAME** : Charles Darwin 27/87 (CD2787)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : Geological ground truth studies of the Indus Fan.

**TOTAL RECORDS** : 32772

**BATHYMETRY** : 3662

**MAGNETICS** : 11959

**GRAVITY** : 32444

**PSO** : Cramp

**START PORT** : Qaboos

**END PORT** : Qaboos

**DATA STARTS** : 1336z 31-Aug-87 JULIAN DAY : 243

**DATA ENDS** : 1701z 23-Sep-87 JULIAN DAY : 266

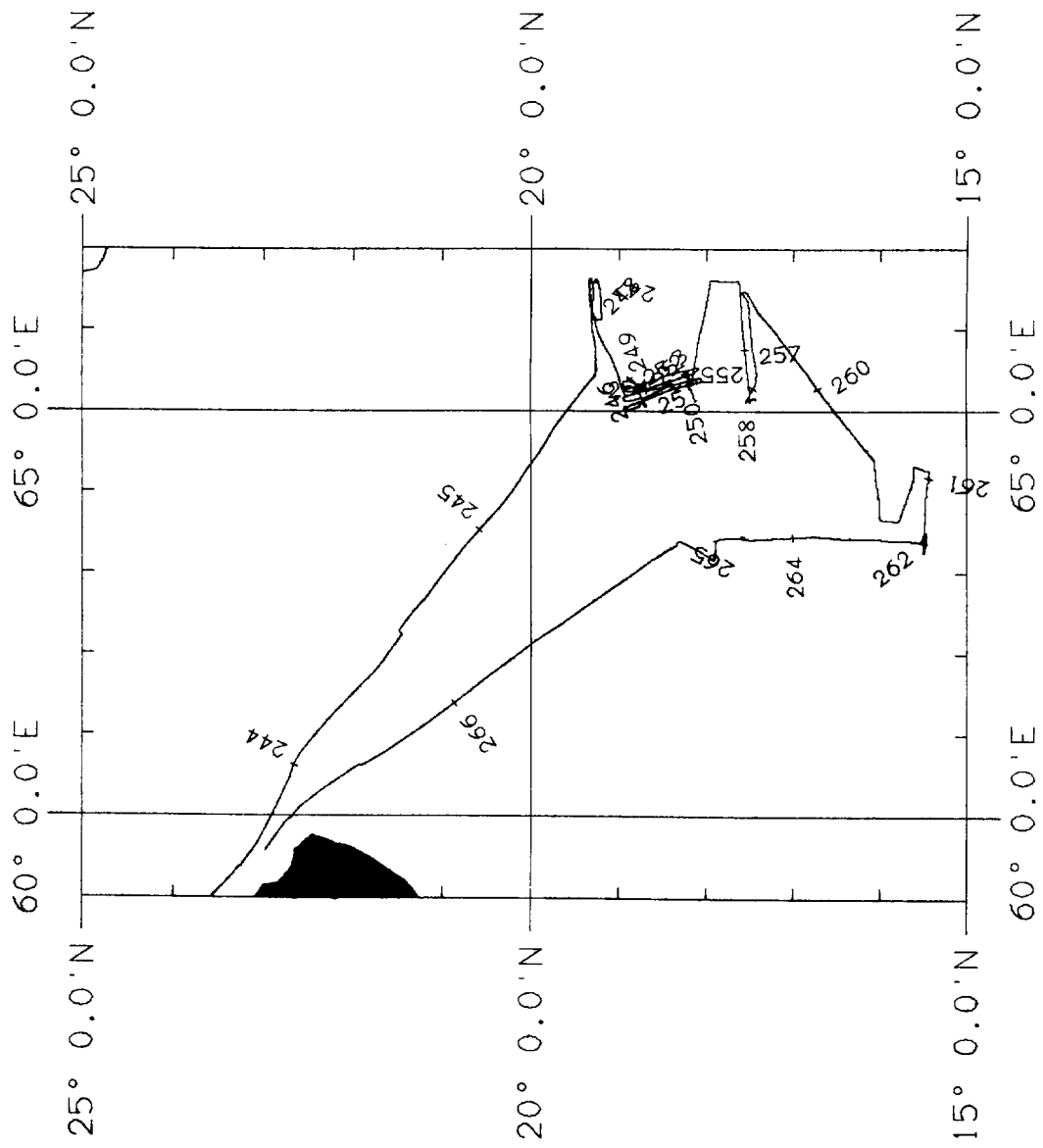
**MAXIMUM LATITUDE** : 23.5729N

**MINIMUM LATITUDE** : 15.4311N

**MAXIMUM LONGITUDE** : 66.6351E

**MINIMUM LONGITUDE** : 59.0090E

**MAP SCALE** : 1:10 Million at 0.ON



CRUISE NAME : Farnella 1/84 (FARN0184)

CRUISE REPORT : C174

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone  
off the western United States.

TOTAL RECORDS : 17641

BATHYMETRY : 16705

MAGNETICS : 8713

GRAVITY : 0

PSO : Kenyon

START PORT : San Diego

END PORT : Long Beach

DATA STARTS : 1744z 26-Apr-84 JULIAN DAY : 117

DATA ENDS : 1000z 21-May-84 JULIAN DAY : 142

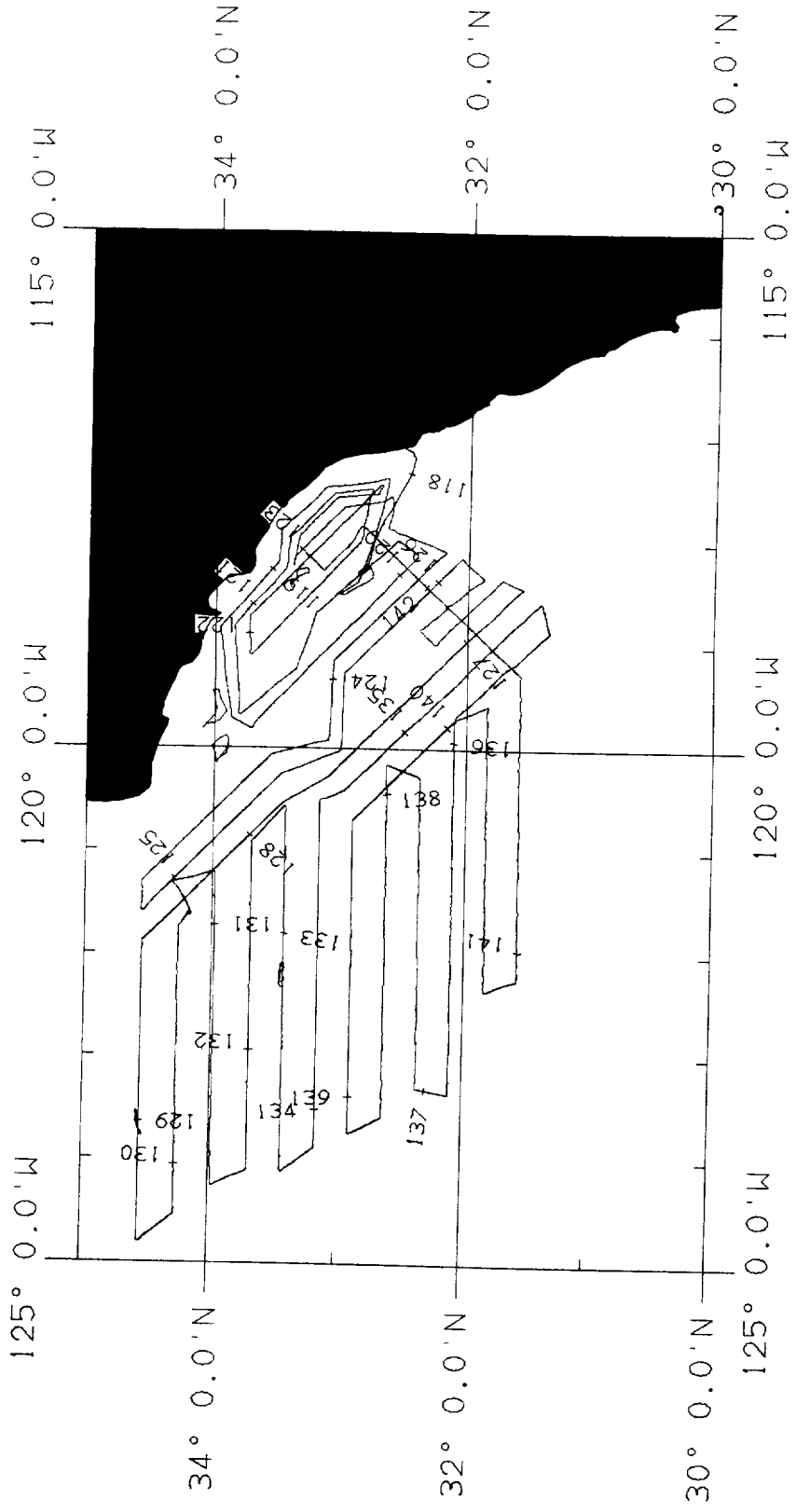
MAXIMUM LATITUDE : 34.5812N

MINIMUM LATITUDE : 31.3377N

MAXIMUM LONGITUDE : 116.9152W

MINIMUM LONGITUDE : 124.8090W

MAP SCALE : 1:7.5 million at 0.0N



CRUISE NAME : Farnella 2/84 (FARN0284)

CRUISE REPORT : C174

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone  
off the western United States.

TOTAL RECORDS : 14554

BATHYMETRY : 14455

MAGNETICS : 13678

GRAVITY : 0

PSO : Masson

START PORT : Long Beach

END PORT : San Francisco

DATA STARTS : 1642z 23-May-84 JULIAN DAY : 144

DATA ENDS : 0046z 13-Jun-84 JULIAN DAY : 165

MAXIMUM LATITUDE : 38.9693N

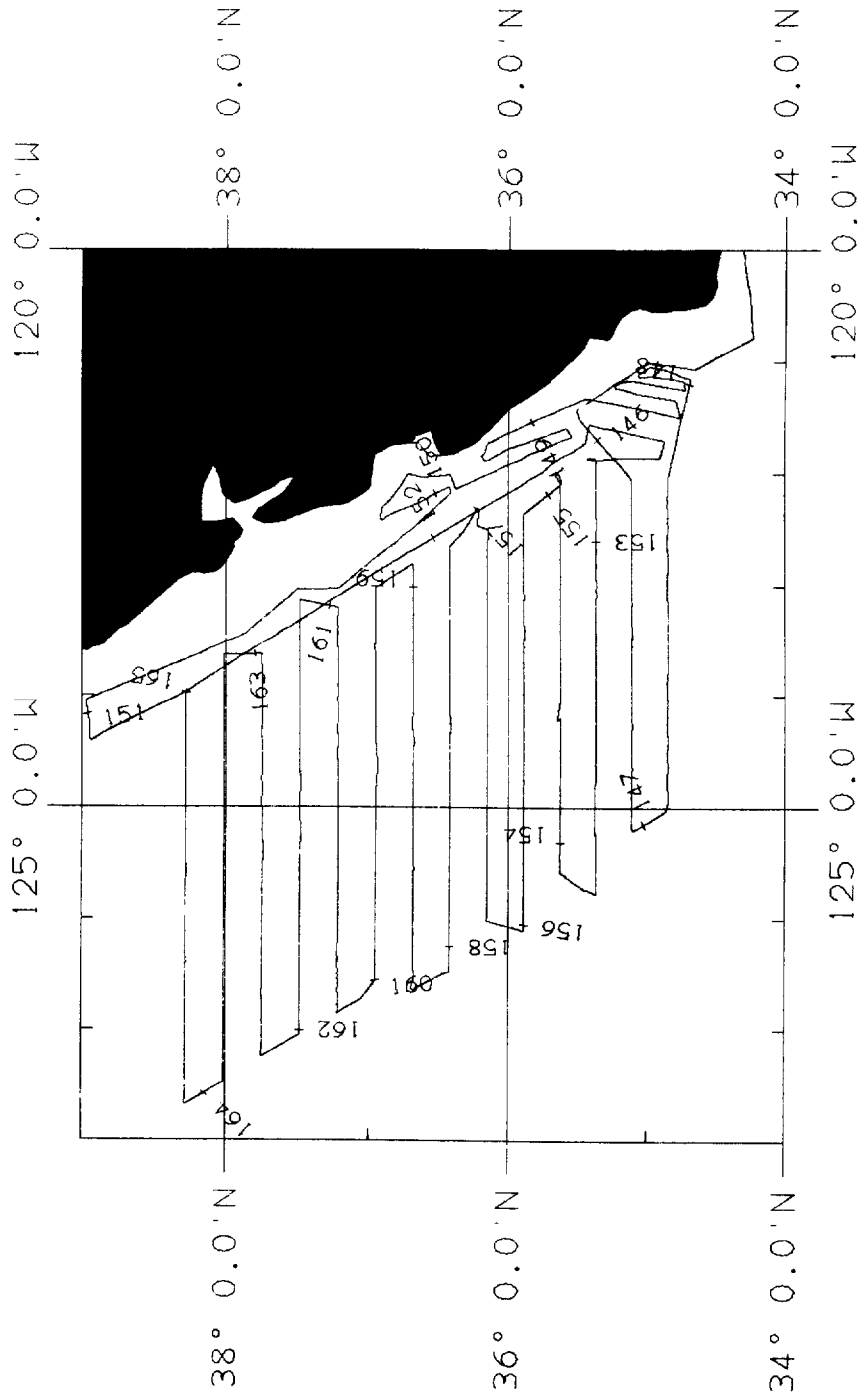
MINIMUM LATITUDE : 34.1000N

MAXIMUM LONGITUDE : 127.6812W

MINIMUM LONGITUDE : 120.0000W

MAP SCALE : 1:7.5 million at 0.0N





**CRUISE NAME** : Farnella 3/84 (FARN0384)  
**CRUISE REPORT** : C174  
**CRUISE DESCRIPTION** : Gloria studies of the exclusive economic zone  
off the western United States.  
  
**TOTAL RECORDS** : 16320  
**BATHYMETRY** : 15622  
**MAGNETICS** : 14463  
**GRAVITY** : 0  
  
**PSO** : Masson  
  
**START PORT** : San Francisco  
**END PORT** : Coos Bay, Washington  
  
**DATA STARTS** : 2254z 15-Jun-84 JULIAN DAY : 167  
**DATA ENDS** : 1500z 08-Jul-84 JULIAN DAY : 190  
  
**MAXIMUM LATITUDE** : 43.0418N  
**MINIMUM LATITUDE** : 38.0500N  
**MAXIMUM LONGITUDE** : 123.1500W  
**MINIMUM LONGITUDE** : 128.8692W  
  
**MAP SCALE** : 1:7.5 million at 0.0N



CRUISE NAME : Farnella 4/84 (FARN0484)

CRUISE REPORT : C174

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone  
off the western United States.

TOTAL RECORDS : 24631

BATHYMETRY : 24356

MAGNETICS : 24164

GRAVITY : 0

PSO : Kenyon

START PORT : Coos Bay, Washington

END PORT : San Diego

DATA STARTS : 1800z 11-Jul-84 JULIAN DAY : 193

DATA ENDS : 2300z 14-Aug-84 JULIAN DAY : 227

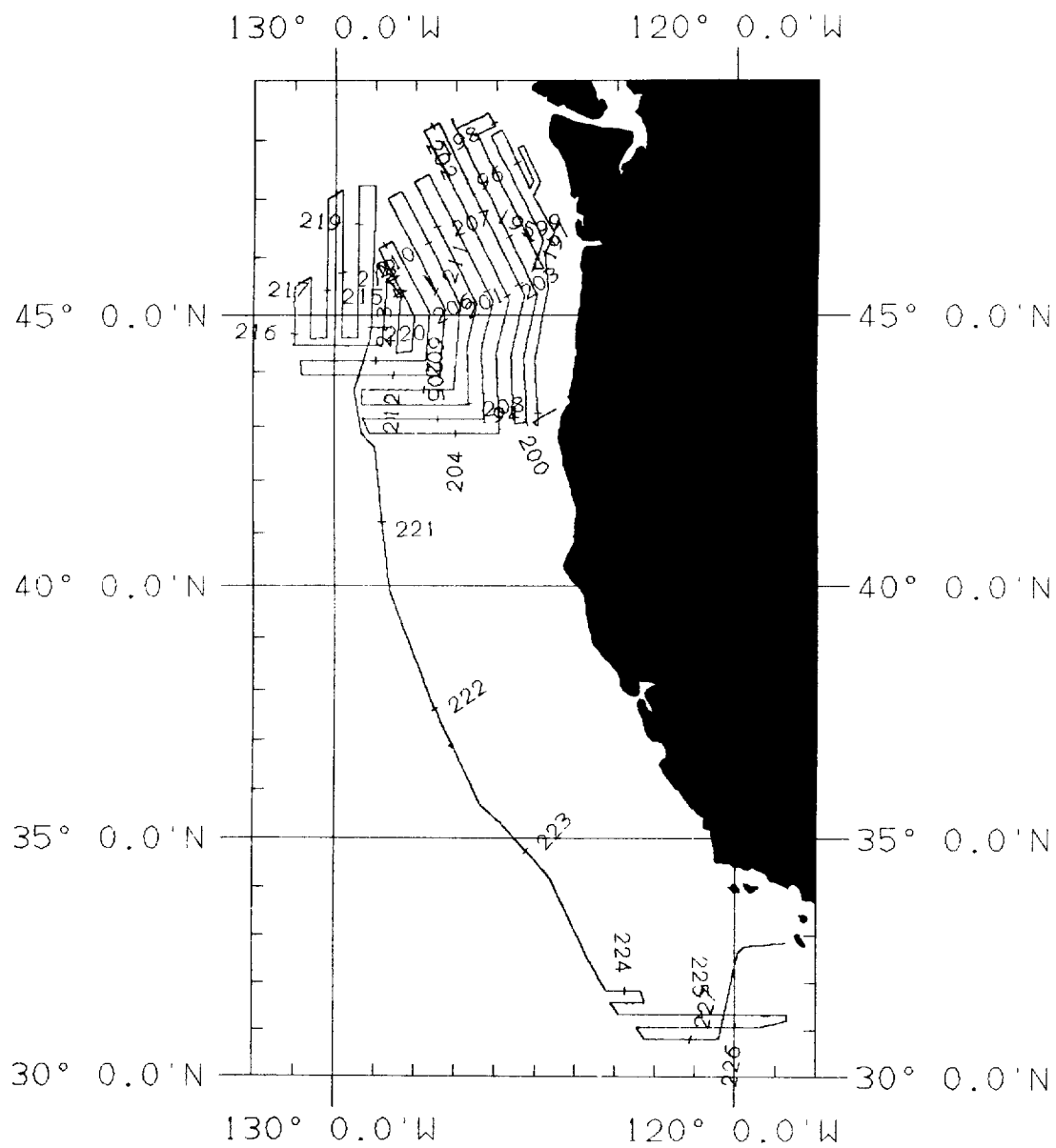
MAXIMUM LATITUDE : 48.4527N

MINIMUM LATITUDE : 30.7953N

MAXIMUM LONGITUDE : 118.7247W

MINIMUM LONGITUDE : 131.0050W

MAP SCALE : 1:15 million at 0.0N



CRUISE NAME : Farnella 1/85 (FARN0185)

CRUISE REPORT : C185

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone off the eastern USA, Gulf of Mexico and Puerto Rico.

TOTAL RECORDS : 17887

BATHYMETRY : 17887

MAGNETICS : 17887

GRAVITY : 0

PSO : Rothwell/Huggett

START PORT : Miami

END PORT : New Orleans

DATA STARTS : 1816z 07-Aug-85 JULIAN DAY : 219

DATA ENDS : 1746z 01-Sep-85 JULIAN DAY : 244

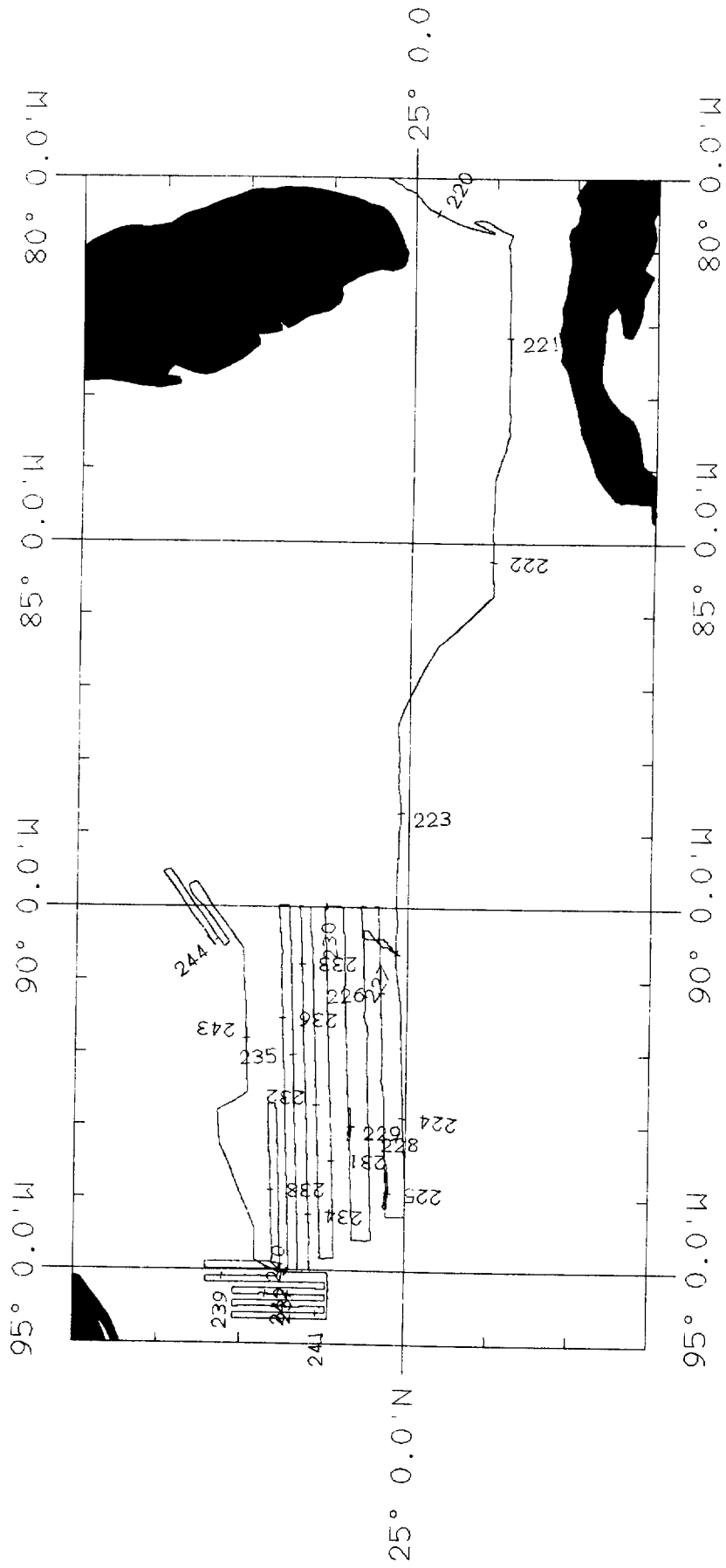
MAXIMUM LATITUDE : 27.9698N

MINIMUM LATITUDE : 23.8160N

MAXIMUM LONGITUDE : 80.0060W

MINIMUM LONGITUDE : 95.6683W

MAP SCALE : 1:10 million at 0.0N



CRUISE NAME : Farnella 2/85 (FARN0285)

CRUISE REPORT : C185

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone  
off the eastern USA, Gulf of Mexico and Puerto  
Rico.

TOTAL RECORDS : 15834

BATHYMETRY : 15524

MAGNETICS : 15625

GRAVITY : 0

PSO : Kenyon

START PORT : New Orleans

END PORT : Tampa, Florida

DATA STARTS : 1800z 06-Sep-85 JULIAN DAY : 249

DATA ENDS : 1800z 28-Sep-85 JULIAN DAY : 271

MAXIMUM LATITUDE : 29.2043N

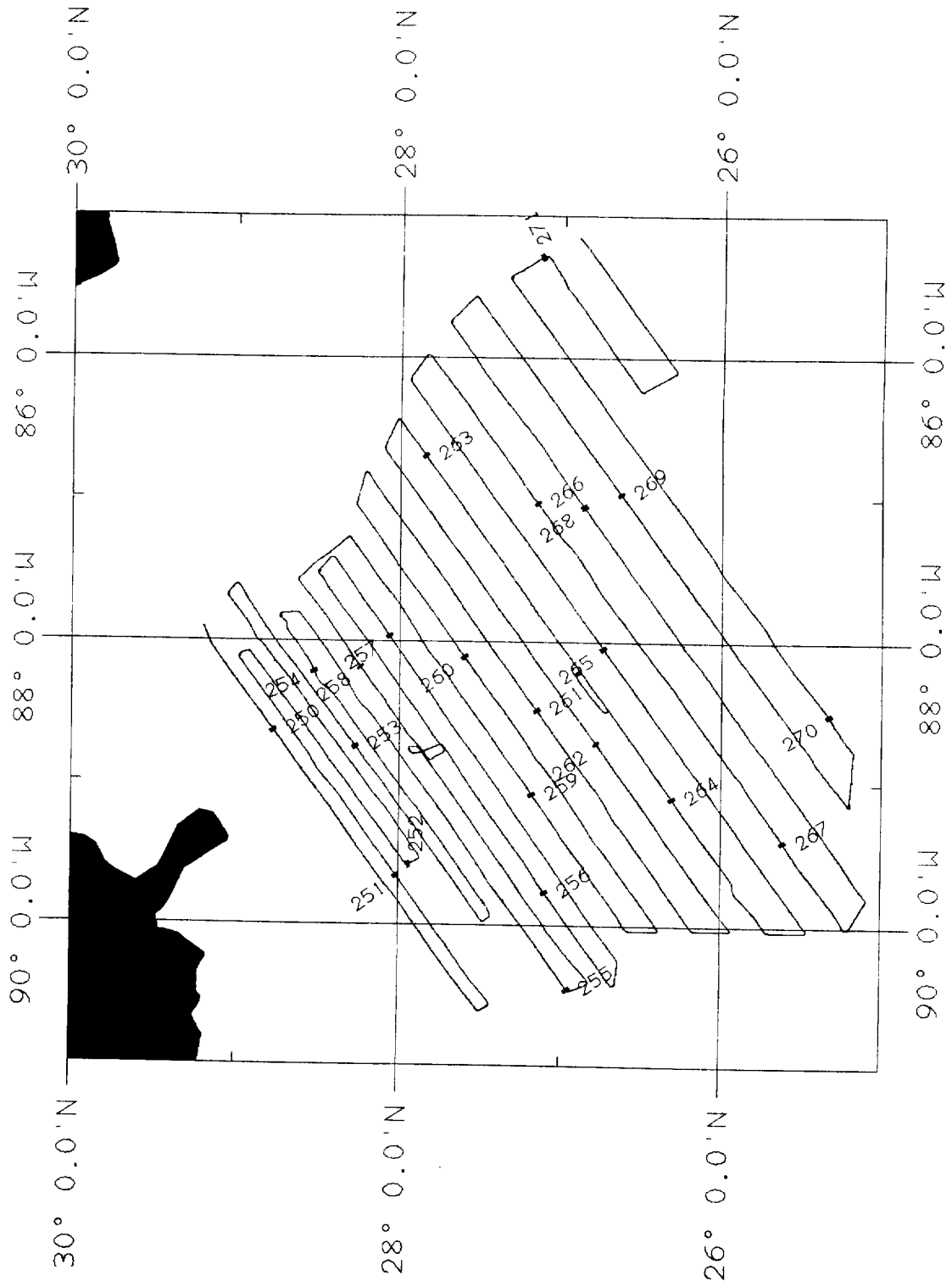
MINIMUM LATITUDE : 25.0876N

MAXIMUM LONGITUDE : 85.1430W

MINIMUM LONGITUDE : 90.6103W

MAP SCALE : 1:5 million at 0.0N





CRUISE NAME : Farnella 3A/85 (FARN3A85)

CRUISE REPORT : C185

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone off the USA, Gulf of Mexico and Puerto Rico.

TOTAL RECORDS : 13526

BATHYMETRY : 13222

MAGNETICS : 12998

GRAVITY : 0

PSO : Parson

START PORT : Tampa, Florida

END PORT : Key West, Florida

DATA STARTS : 0000z 03-Oct-85 JULIAN DAY : 276

DATA ENDS : 2000z 21-Oct-85 JULIAN DAY : 294

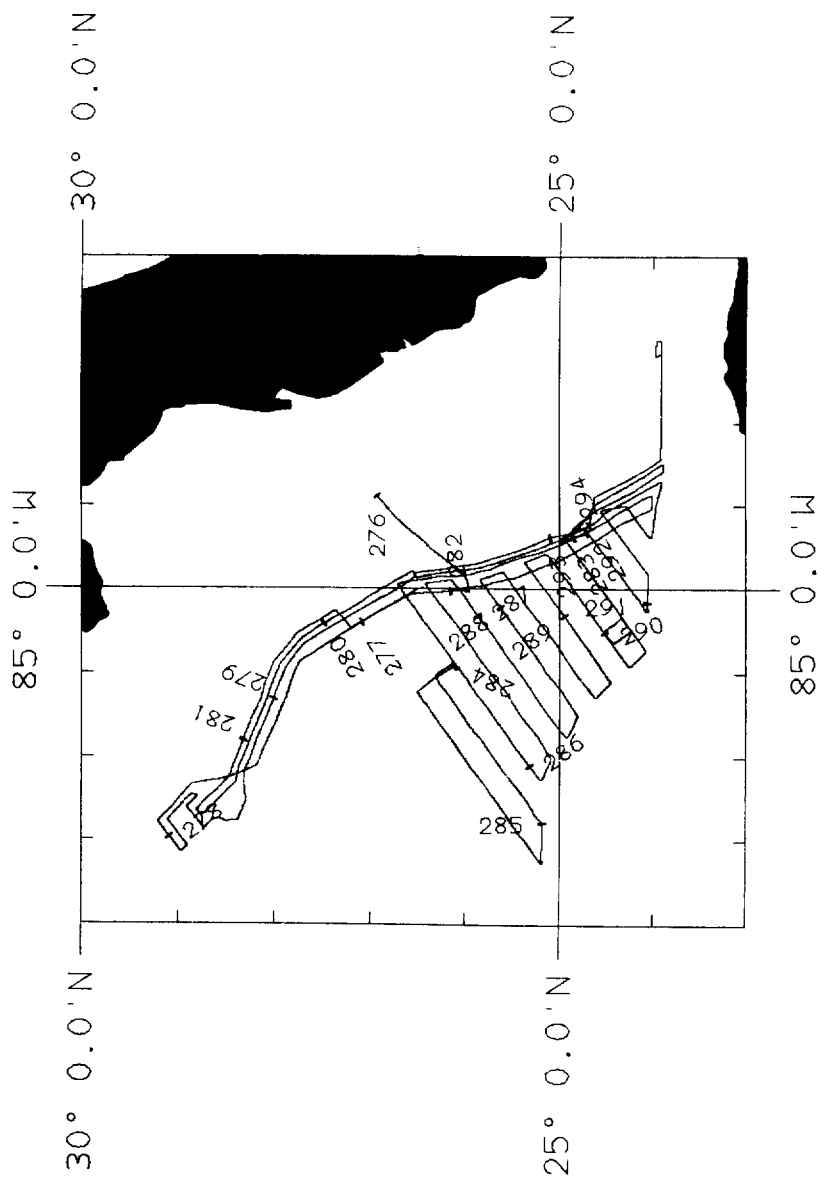
MAXIMUM LATITUDE : 29.2106N

MINIMUM LATITUDE : 23.8792N

MAXIMUM LONGITUDE : 82.0021W

MINIMUM LONGITUDE : 88.2697W

MAP SCALE : 1:10 million at 0.0N



CRUISE NAME : Farnella 3B/85 (FARN3B85)

CRUISE REPORT : C185

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone off the eastern USA, Gulf of Mexico and Puerto Rico.

TOTAL RECORDS : 6683

BATHYMETRY : 6650

MAGNETICS : 5829

GRAVITY : 0

PSO : Parson

START PORT : Key West, Florida

END PORT : San Juan, Puerto Rico

DATA STARTS : 1704z 23-Oct-85 JULIAN DAY : 296

DATA ENDS : 0005z 02-Nov-85 JULIAN DAY : 306

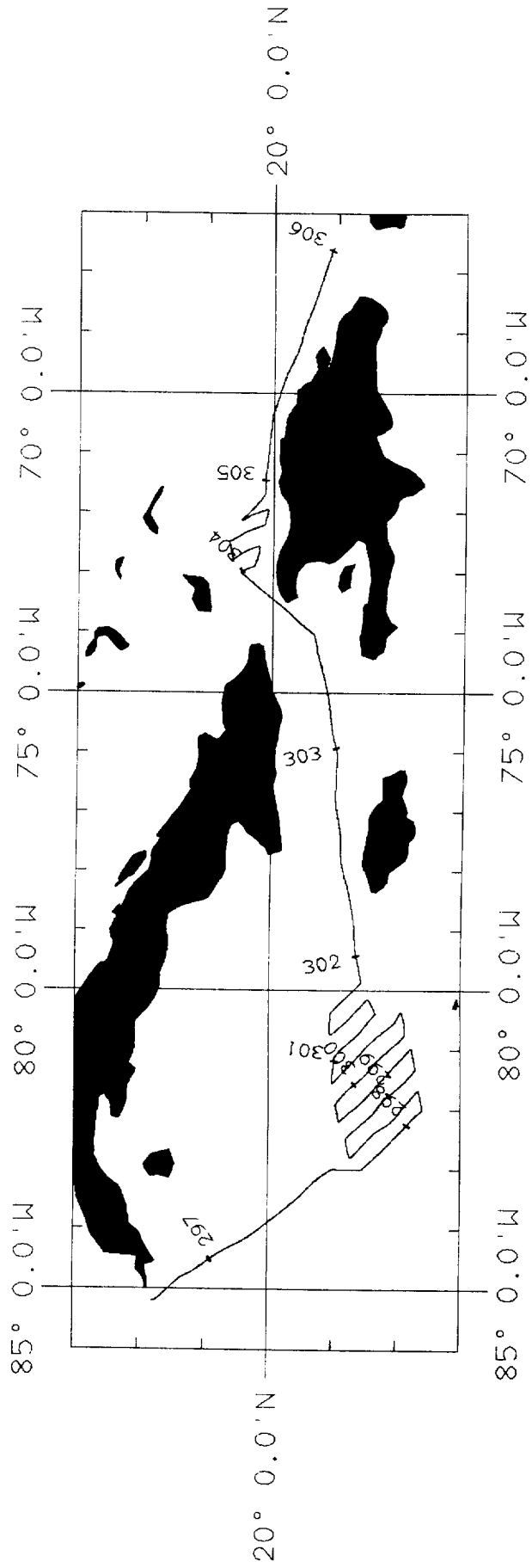
MAXIMUM LATITUDE : 21.7897N

MINIMUM LATITUDE : 17.6041N

MAXIMUM LONGITUDE : 67.5892W

MINIMUM LONGITUDE : 85.2097W

MAP SCALE : 1:12 million at 0.0N



CRUISE NAME : Farnella 4/85 (FARNO485)

CRUISE REPORT : C185

CRUISE DESCRIPTION : Gloria studies of the exclusive economic zone off the eastern USA, Gulf of Mexico and Puerto Rico.

TOTAL RECORDS : 19710

BATHYMETRY : 19705

MAGNETICS : 18598

GRAVITY : 0

PSO : Masson

START PORT : San Juan, Puerto Rico

END PORT : San Juan, Puerto Rico

DATA STARTS : 0000z 05-Nov-85 JULIAN DAY : 309

DATA ENDS : 1650z 02-Dec-85 JULIAN DAY : 336

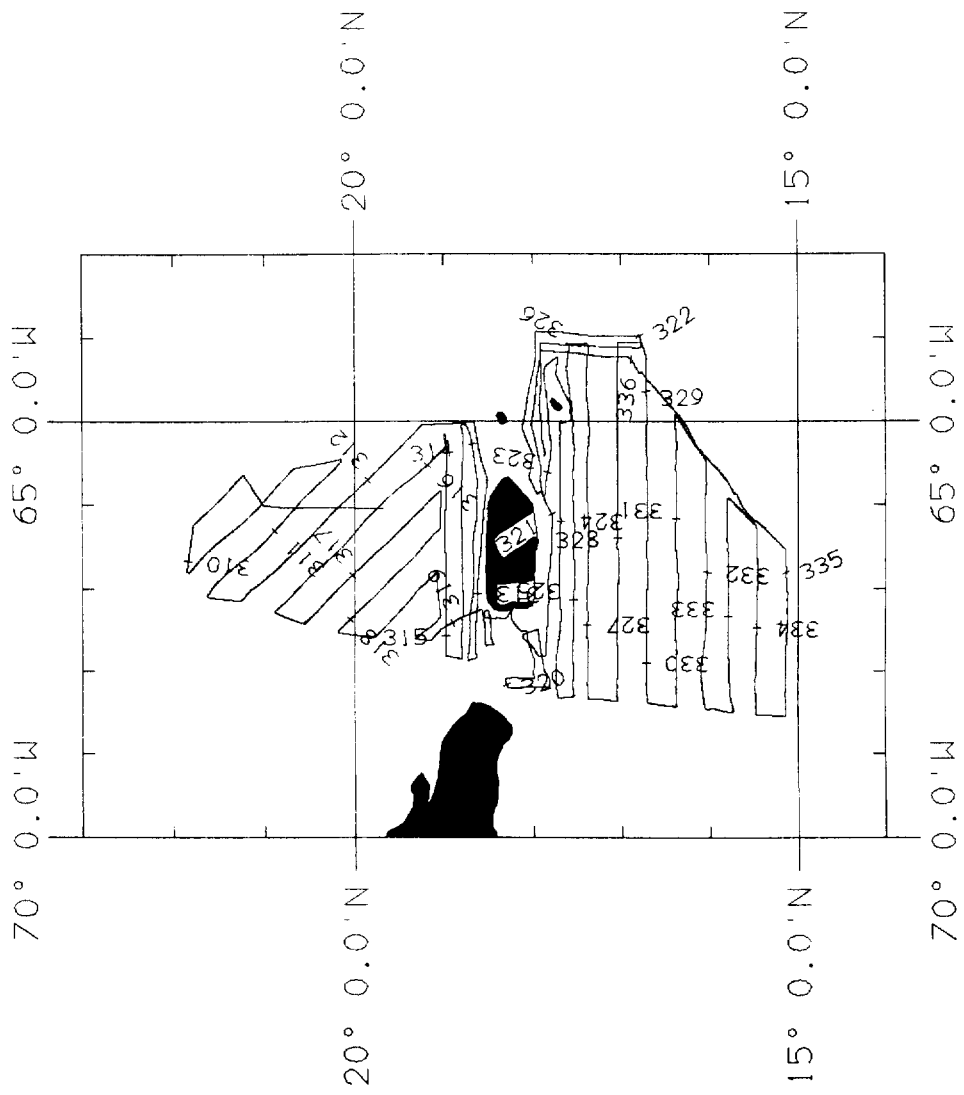
MAXIMUM LATITUDE : 21.8513N

MINIMUM LATITUDE : 15.1153N

MAXIMUM LONGITUDE : 63.9316W

MINIMUM LONGITUDE : 68.5509W

MAP SCALE : 1:10 million at 0.0N



**CRUISE NAME** : Farnella 1/86 (FARNO186)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA, Bering Sea and the Gulf of Alaska.

**TOTAL RECORDS** : 6065

**BATHYMETRY** : 4181

**MAGNETICS** : 0

**GRAVITY** : 0

**PSO** : Parson

**START PORT** : San Francisco

**END PORT** : Dutch Harbor

**DATA STARTS** : 1803z 24-Jun-86 JULIAN DAY : 175

**DATA ENDS** : 0404z 03-Jul-86 JULIAN DAY : 184

**MAXIMUM LATITUDE** : 59.5801N

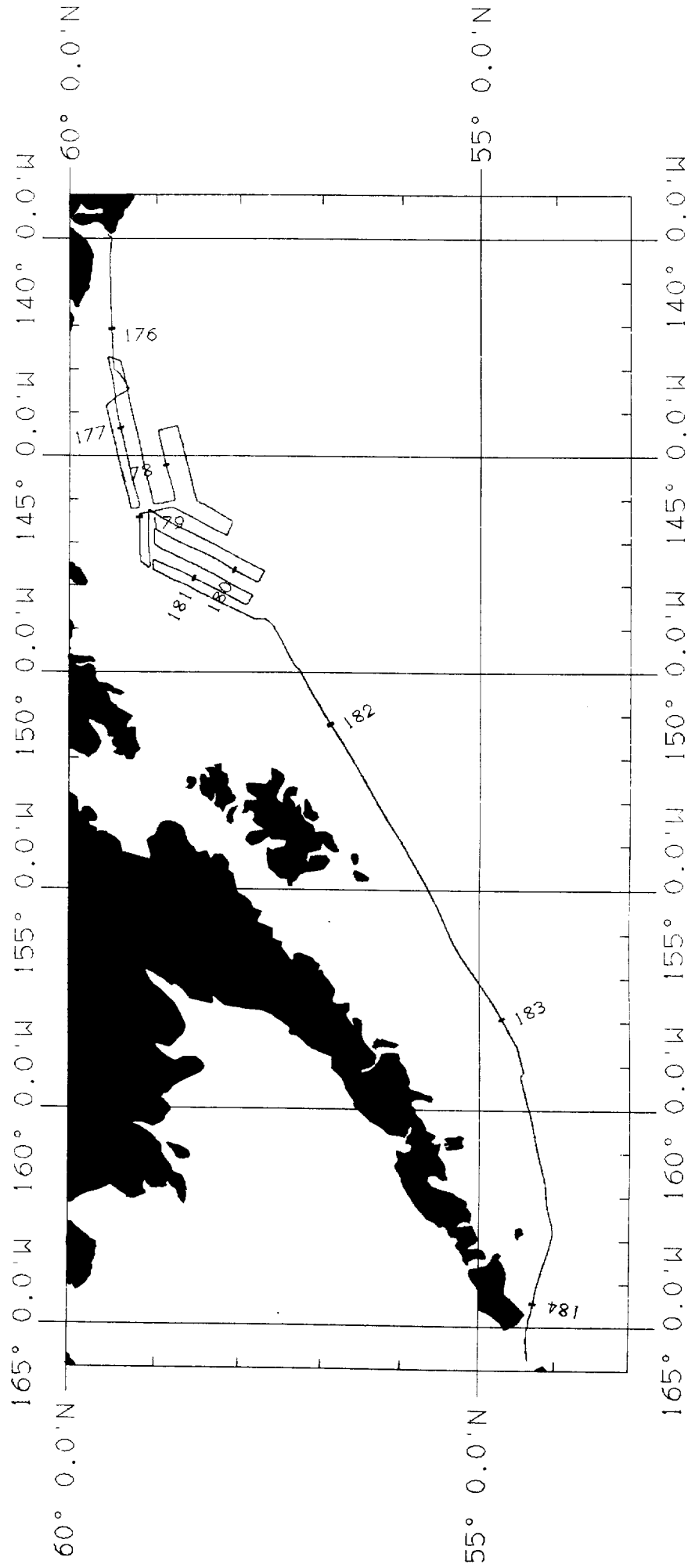
**MINIMUM LATITUDE** : 54.0251N

**MAXIMUM LONGITUDE** : 139.9091W

**MINIMUM LONGITUDE** : 165.7639W

**MAP SCALE** : 1:15 Million at 0.0N





**CRUISE NAME** : Farnella 2/86 (FARNO286)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA, Bering Sea and the Gulf of Alaska.

**TOTAL RECORDS** : 18796

**BATHYMETRY** : 6201

**MAGNETICS** : 15933

**GRAVITY** : 0

**PSO** : Parson

**START PORT** : Dutch Harbor

**END PORT** : Dutch Harbor

**DATA STARTS** : 2000z 06-Jul-86 JULIAN DAY : 187

**DATA ENDS** : 0000z 02-Aug-86 JULIAN DAY : 214

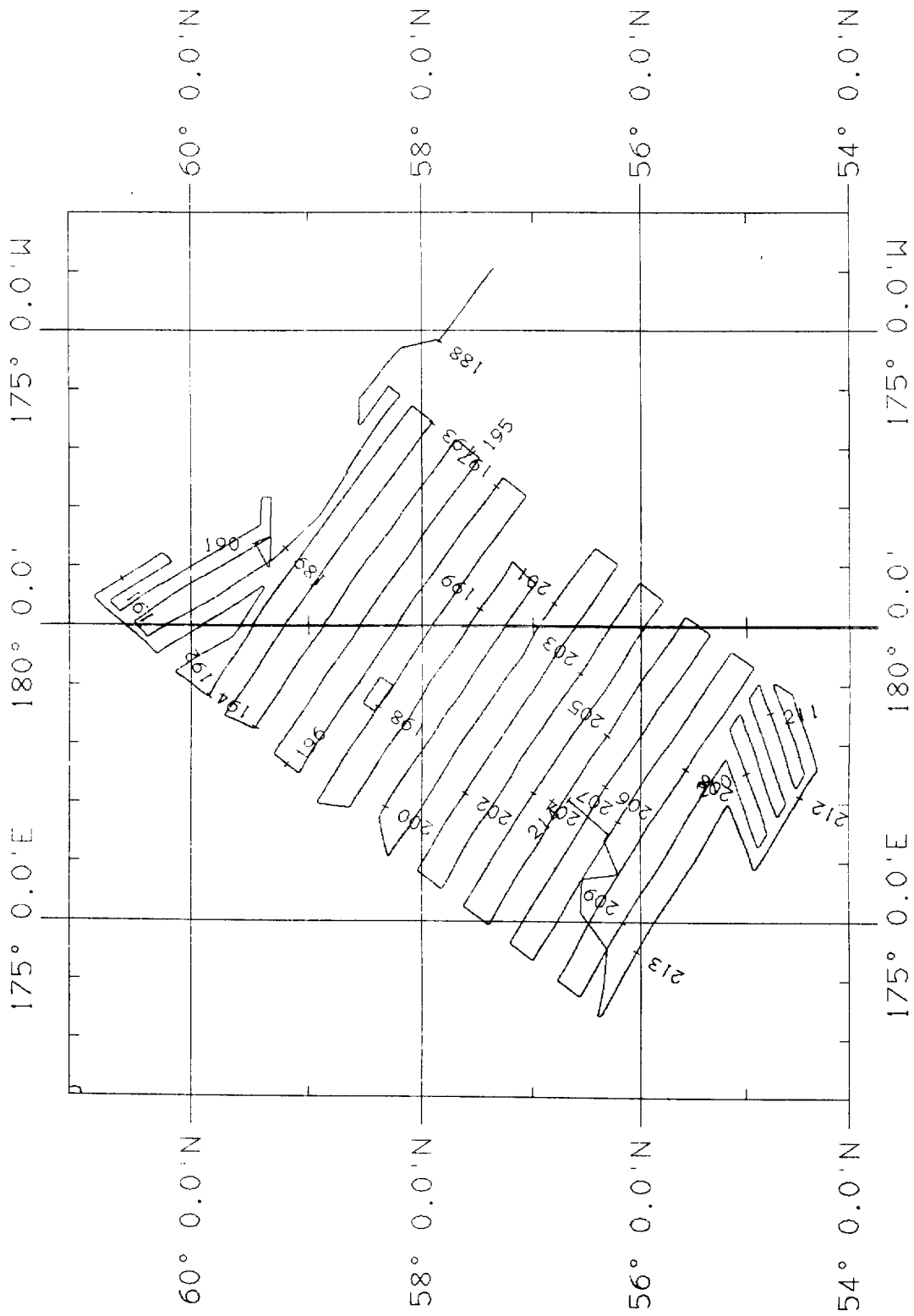
**MAXIMUM LATITUDE** : 60.7941N

**MINIMUM LATITUDE** : 54.3135N

**MAXIMUM LONGITUDE** : 173.9081W

**MINIMUM LONGITUDE** : 173.4132E

**MAP SCALE** : 1:12 Million at 0.0N



**CRUISE NAME** : Farnella 3/86 (FARN0386)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA, Bering Sea and the Gulf of Alaska.

**TOTAL RECORDS** : 16921

**BATHYMETRY** : 16918

**MAGNETICS** : 16706

**GRAVITY** : 0

**PSO** : Huggett/Rothwell

**START PORT** : Dutch Harbor

**END PORT** : Dutch Harbor

**DATA STARTS** : 1100z 07-Aug-86 JULIAN DAY : 219

**DATA ENDS** : 2300z 30-Aug-86 JULIAN DAY : 242

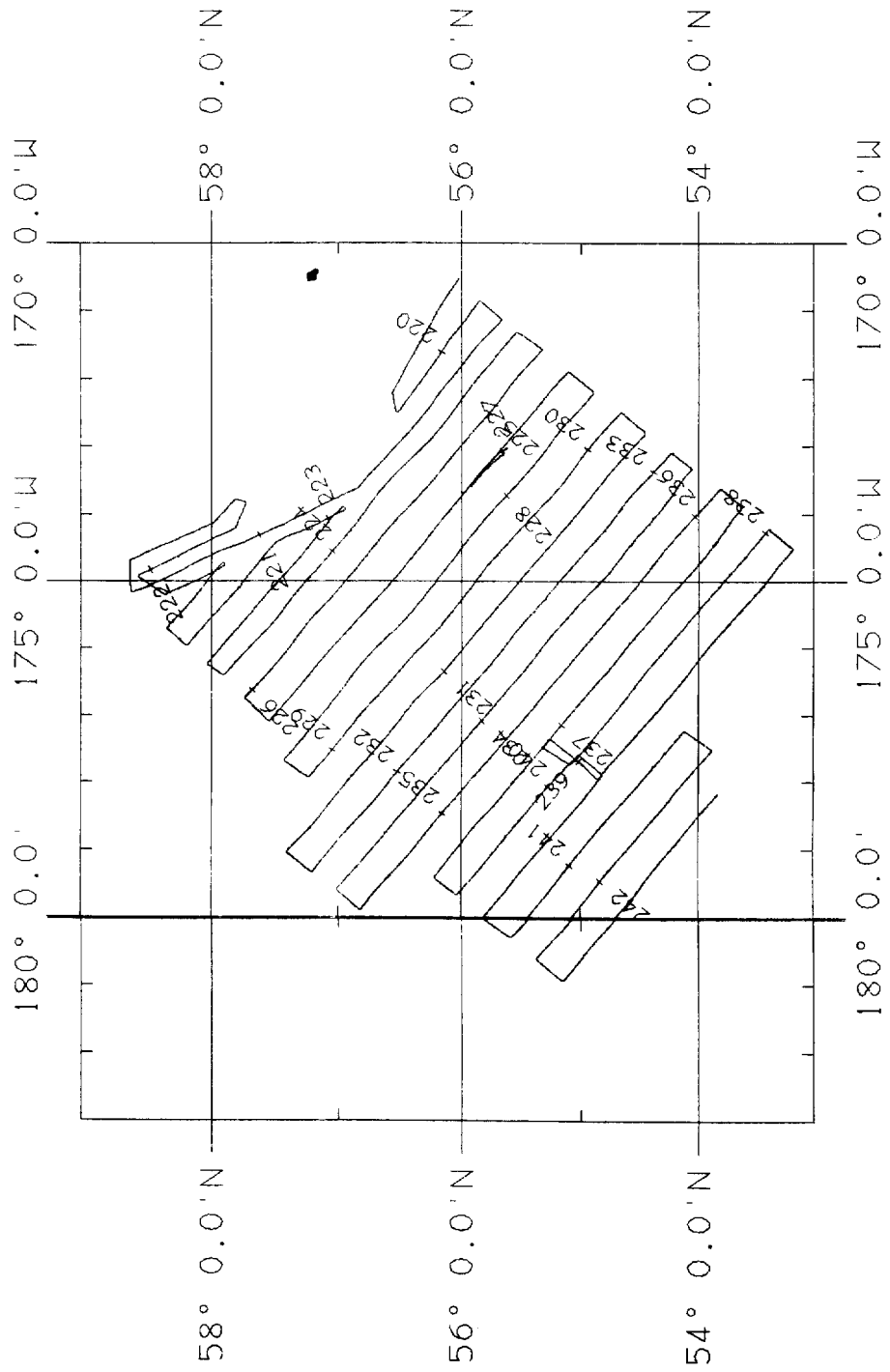
**MAXIMUM LATITUDE** : 58.6299N

**MINIMUM LATITUDE** : 53.1803N

**MAXIMUM LONGITUDE** : 170.6392W

**MINIMUM LONGITUDE** : 179.0346E

**MAP SCALE** : 1:12 Million at 0.0N



**CRUISE NAME** : Farnella 4/86 (FARNO486)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA, Bering Sea and the Gulf of Alaska.

**TOTAL RECORDS** : 19024

**BATHYMETRY** : 17884

**MAGNETICS** : 17834

**GRAVITY** : 0

**PSO** : Kenyon

**START PORT** : Dutch Harbor

**END PORT** : Dutch Harbor

**DATA STARTS** : 0054z 04-Sept-86 JULIAN DAY : 247

**DATA ENDS** : 1100z 30-Sept-86 JULIAN DAY : 273

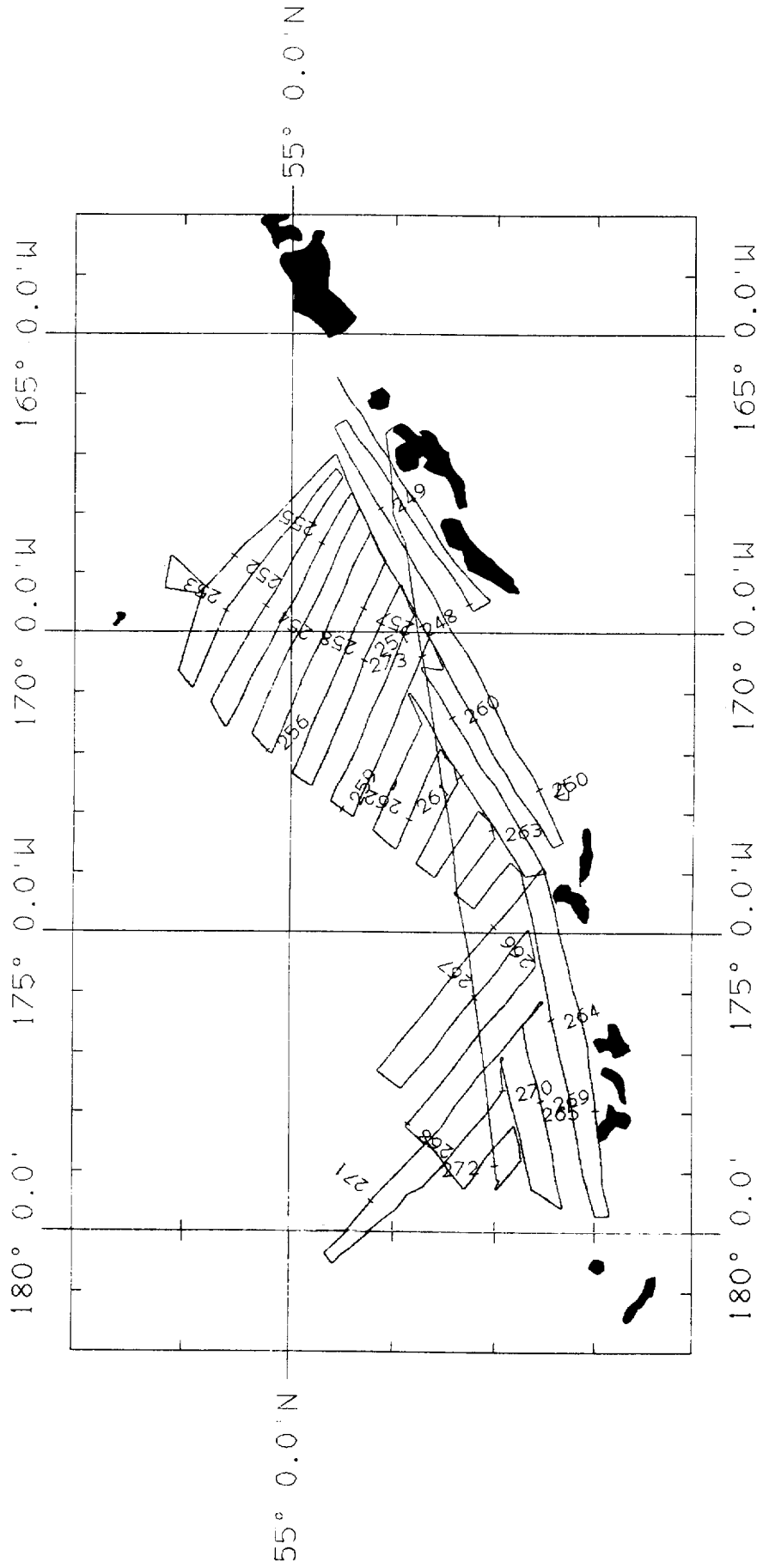
**MAXIMUM LATITUDE** : 56.1777N

**MINIMUM LATITUDE** : 51.8436N

**MAXIMUM LONGITUDE** : 165.7131W

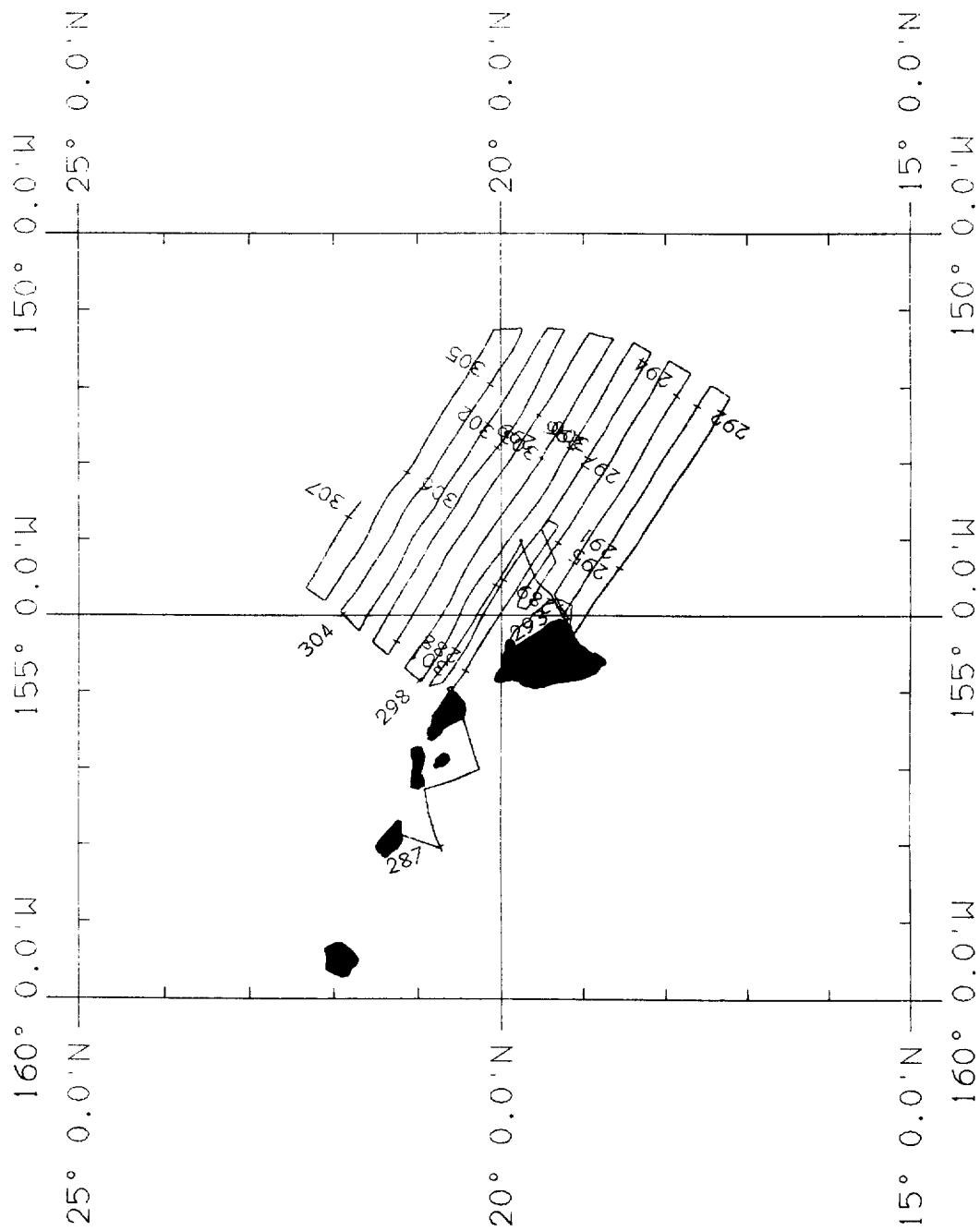
**MINIMUM LONGITUDE** : 179.5982E

**MAP SCALE** : 1:12 Million at 0.0N



**CRUISE NAME** : Farnella 5/86 (FARN0586)  
**CRUISE REPORT** :  
**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA north-east of Hawaii.  
  
**TOTAL RECORDS** : 14414  
**BATHYMETRY** : 14405  
**MAGNETICS** : 13939  
**GRAVITY** : 0  
  
**PSO** : Belderson  
  
**START PORT** : Honolulu  
**END PORT** : Hilo, Hawaii  
  
**DATA STARTS** : 1938z 13-Oct-86 JULIAN DAY : 286  
**DATA ENDS** : 0158z 03-Nov-86 JULIAN DAY : 307  
  
**MAXIMUM LATITUDE** : 22.3253N  
**MINIMUM LATITUDE** : 17.2188N  
**MAXIMUM LONGITUDE** : 151.2324W  
**MINIMUM LONGITUDE** : 158.0808W  
  
**MAP SCALE** : 1:10 Million at 0.0N





CRUISE NAME : Farnella 6/86 (FARNO686)

CRUISE REPORT :

CRUISE DESCRIPTION : USGS GLORIA studies of the exclusive economic zone off the USA, south-west of Hawaii.

TOTAL RECORDS : 14579

BATHYMETRY : 14573

MAGNETICS : 12240

GRAVITY : 14552

PSO : Wilson

START PORT : Honolulu

END PORT : Honolulu

DATA STARTS : 2014z 05-Nov-86 JULIAN DAY : 309

DATA ENDS : 0210z 26-Nov-86 JULIAN DAY : 330

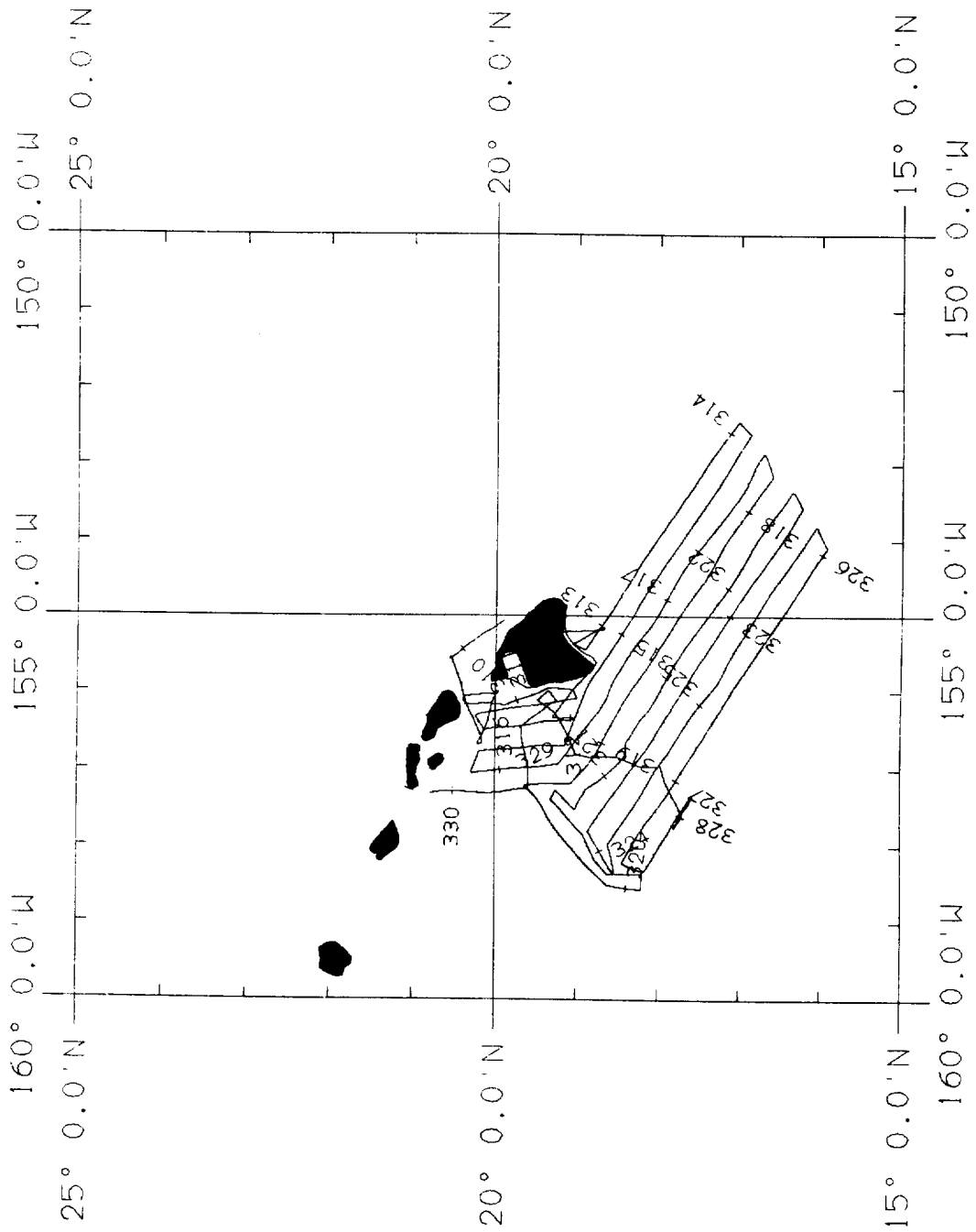
MAXIMUM LATITUDE : 20.7738N

MINIMUM LATITUDE : 15.9353N

MAXIMUM LONGITUDE : 152.4335W

MINIMUM LONGITUDE : 158.5656W

MAP SCALE : 1 : 10 million at 0.0N



**CRUISE NAME** : Farnella 1/87 (FARNO187)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the eastern coast of the USA.  
Leg 1 southern Atlantic leg.

**TOTAL RECORDS** : 16925

**BATHYMETRY** : 5189

**MAGNETICS** : 13576

**GRAVITY** : 0

**PSO** : Wilson

**START PORT** : Jacksonville, Florida

**END PORT** : Norfolk, Virginia

**DATA STARTS** : 0900z 03-Feb-87 JULIAN DAY : 034

**DATA ENDS** : 2300z 26-Feb-87 JULIAN DAY : 057

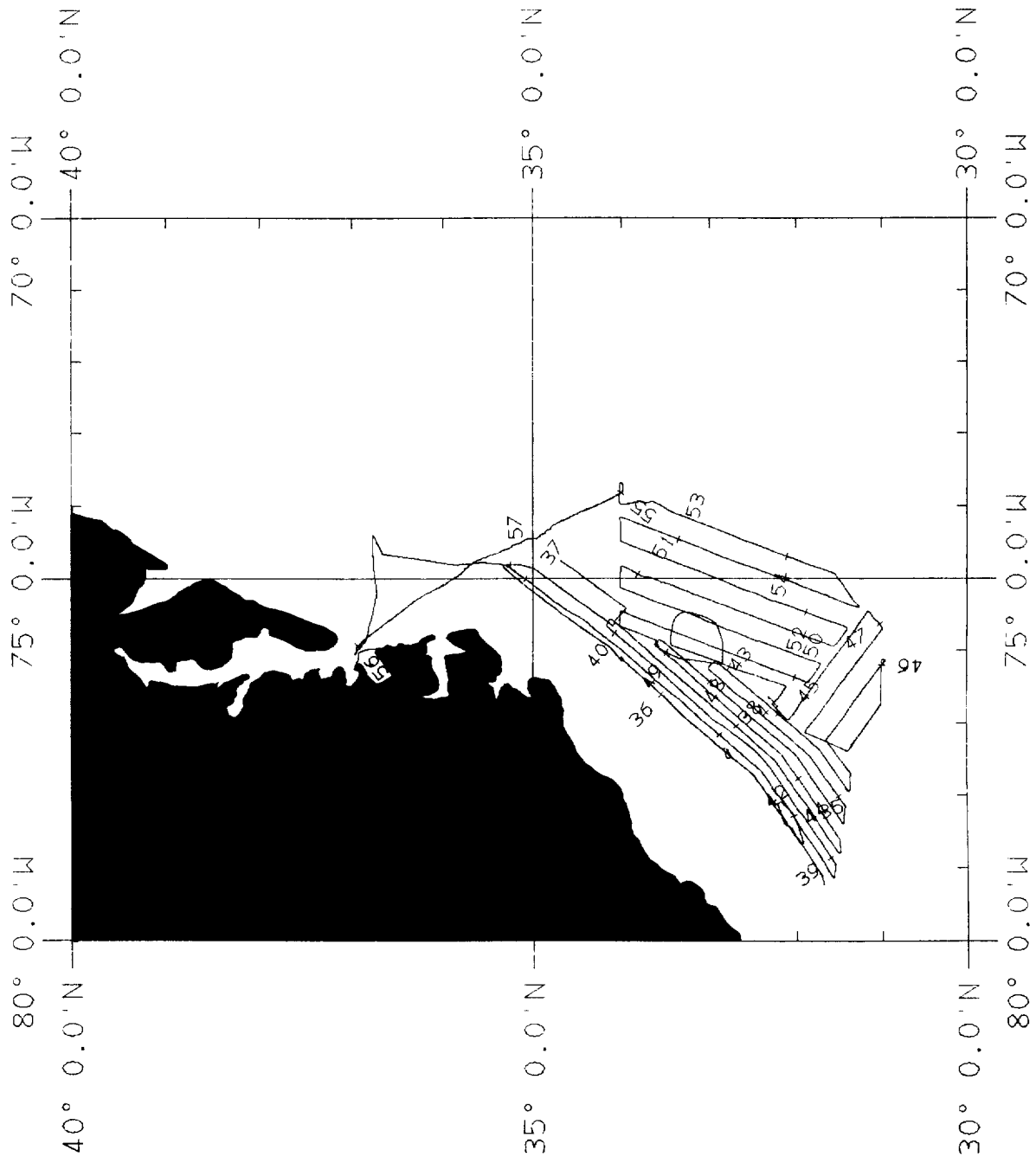
**MAXIMUM LATITUDE** : 36.9632N

**MINIMUM LATITUDE** : 30.9663N

**MAXIMUM LONGITUDE** : 73.6890W

**MINIMUM LONGITUDE** : 79.2326W

**MAP SCALE** : 1:10 Million at 0.0N



**CRUISE NAME** : Farnella 2/87 (FARNO287)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the eastern coast of the USA, Leg 2 mid Atlantic leg.

**TOTAL RECORDS** : 17767

**BATHYMETRY** : 16712

**MAGNETICS** : 13064

**GRAVITY** : 0

**PSO** : Williams

**START PORT** : Norfolk, Virginia

**END PORT** : Woods Hole, Massachusetts

**DATA STARTS** : 1900z 01-Mar-87 JULIAN DAY : 060

**DATA ENDS** : 1200z 26-Mar-87 JULIAN DAY : 085

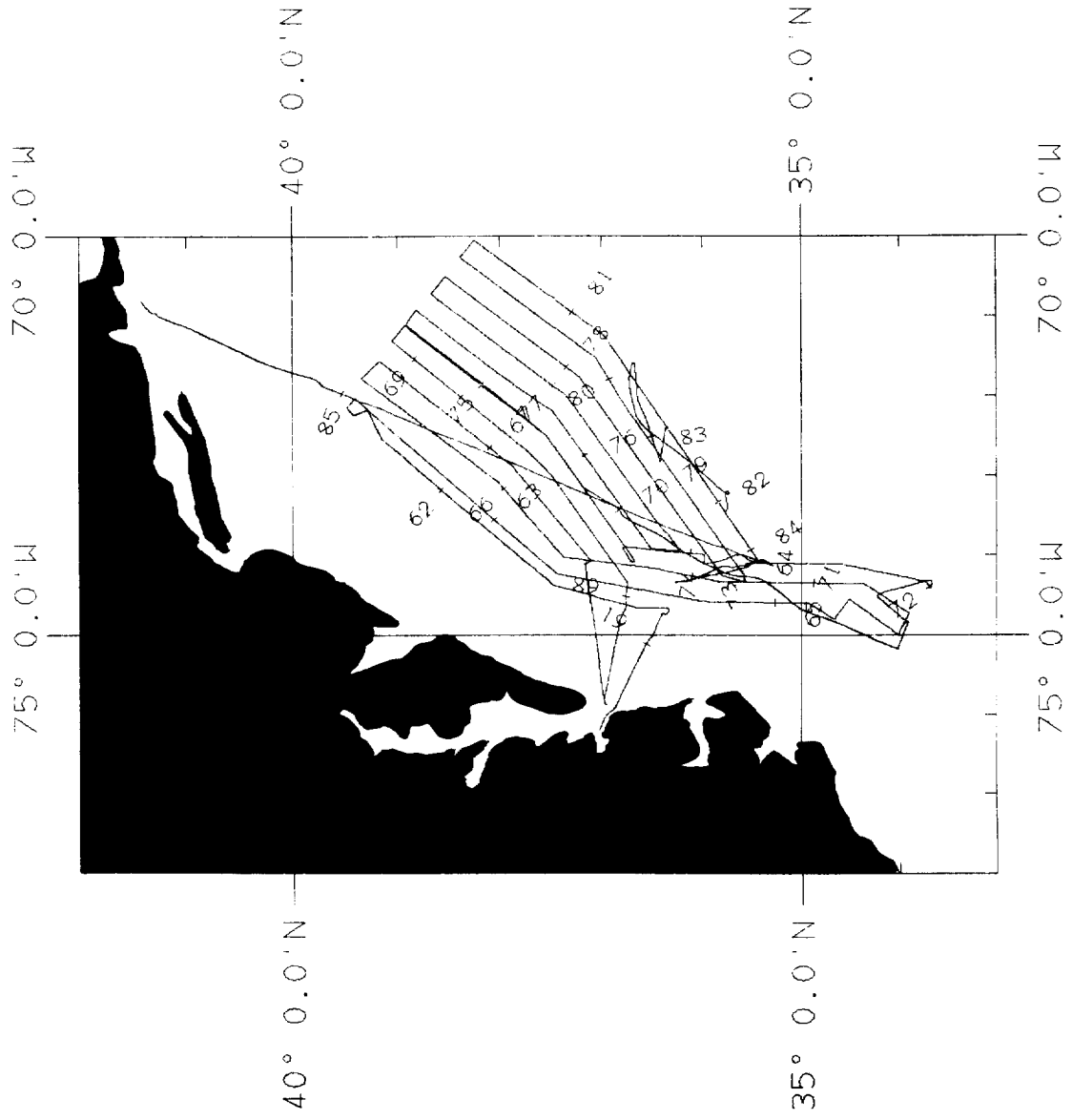
**MAXIMUM LATITUDE** : 41.4201N

**MINIMUM LATITUDE** : 33.6716N

**MAXIMUM LONGITUDE** : 70.0583W

**MINIMUM LONGITUDE** : 76.2026W

**MAP SCALE** : 1:10 Million at 0.0N



**CRUISE NAME** : Farnella 3/87 (FARN0387)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the eastern coast of the USA, Leg 3 northern Atlantic leg.

**TOTAL RECORDS** : 19379

**BATHYMETRY** : 19378

**MAGNETICS** : 18007

**GRAVITY** : 0

**PSO** : Williams

**START PORT** : Woods Hole, Massachusetts

**END PORT** : Woods Hole, Massachusetts

**DATA STARTS** : 1600z 28-Mar-87 JULIAN DAY : 087

**DATA ENDS** : 2000z 24-Apr-87 JULIAN DAY : 114

**MAXIMUM LATITUDE** : 42.2891N

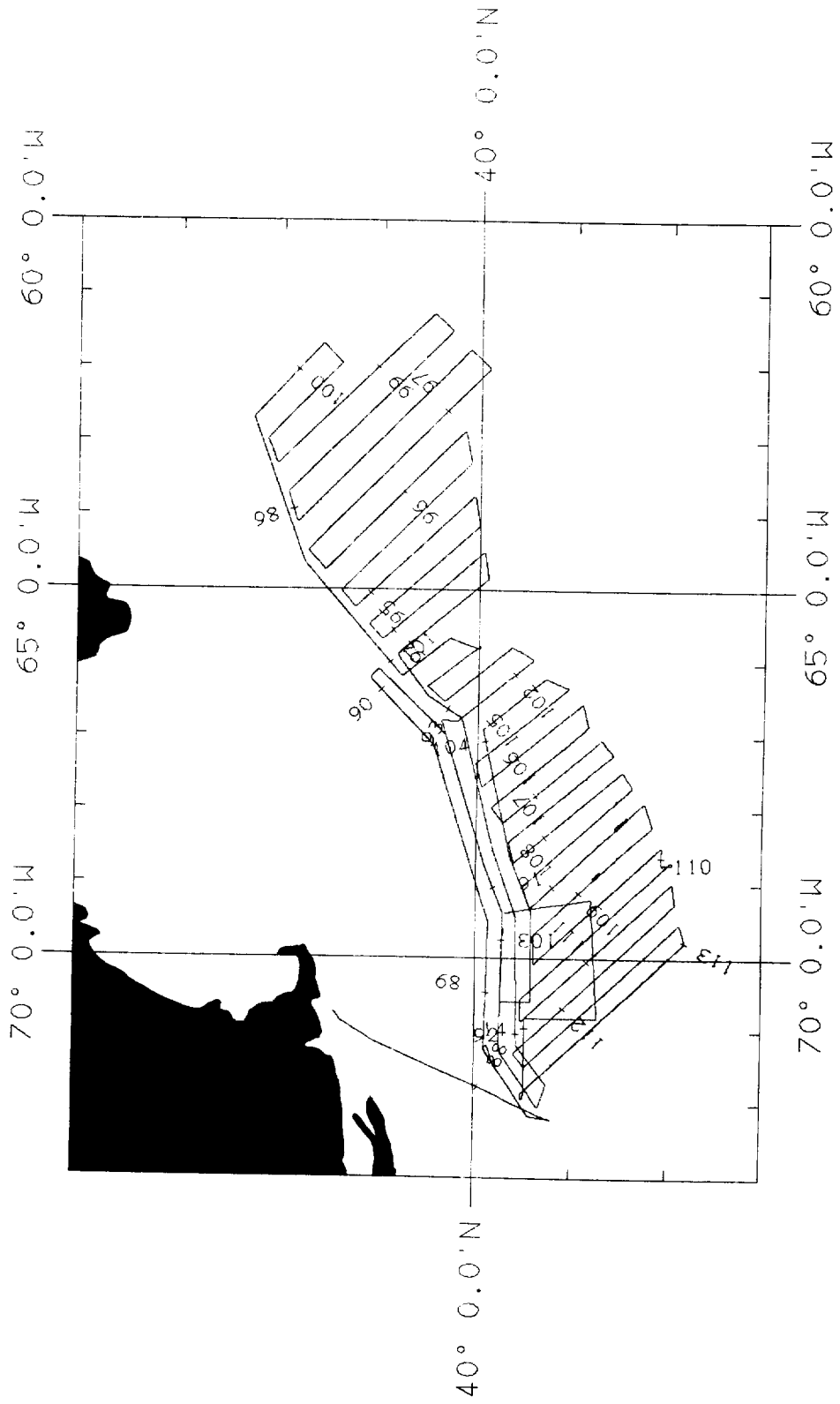
**MINIMUM LATITUDE** : 37.8135N

**MAXIMUM LONGITUDE** : 61.2815W

**MINIMUM LONGITUDE** : 72.2183W

**MAP SCALE** : 1:10 Million at 0.0N





**CRUISE NAME** : Farnella 4/87 (FARNO487)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the eastern coast of the USA, Hatteras Transverse Canyon.

**TOTAL RECORDS** : 6657

**BATHYMETRY** : 2169

**MAGNETICS** : 6203

**GRAVITY** : 0

**PSO** : Huggett

**START PORT** : Woods Hole, Massachusetts

**END PORT** : Norfolk, Virginia

**DATA STARTS** : 1208z 28-Apr-87 JULIAN DAY : 118

**DATA ENDS** : 1902z 07-May-87 JULIAN DAY : 127

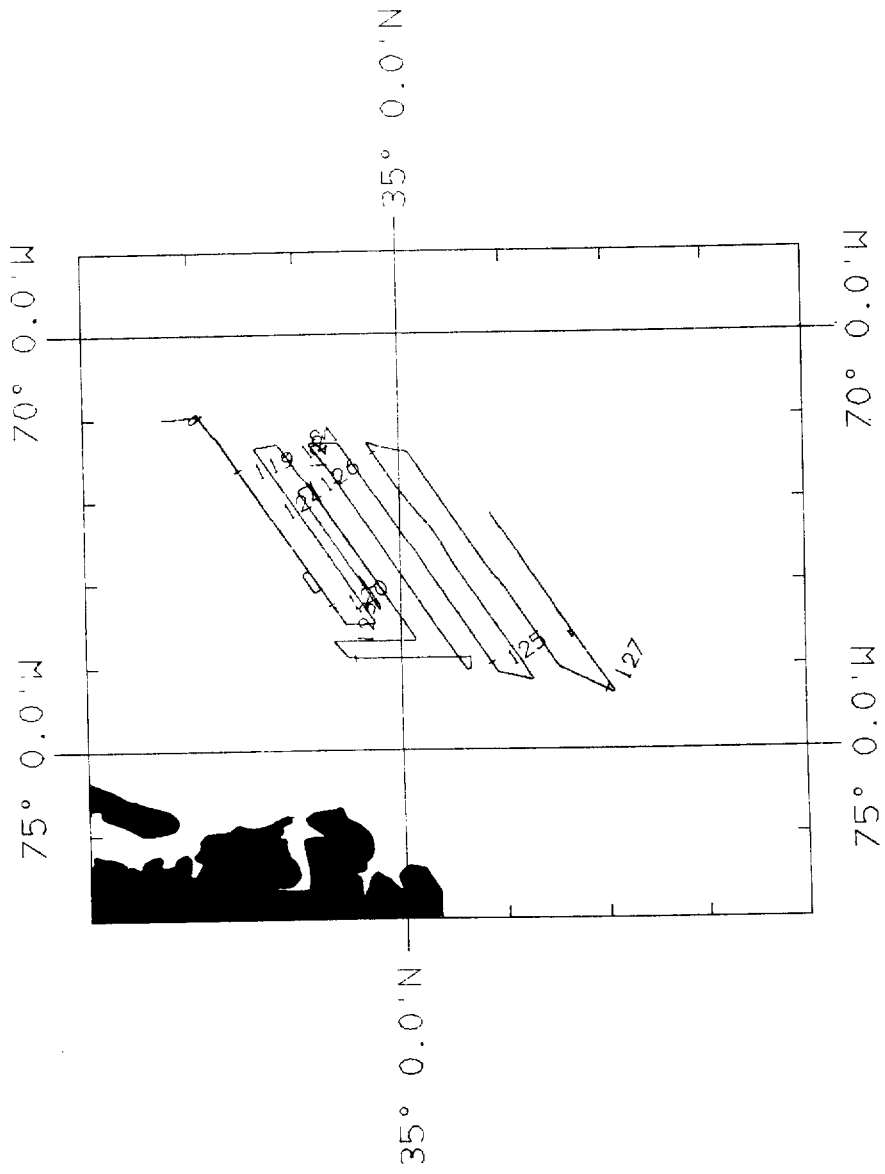
**MAXIMUM LATITUDE** : 37.2626N

**MINIMUM LATITUDE** : 32.9199N

**MAXIMUM LONGITUDE** : 70.9518W

**MINIMUM LONGITUDE** : 74.3304W

**MAP SCALE** : 1:10 Million at 0.0N



**CRUISE NAME** : Farnella 5/87 (FARN0587)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the eastern coast of the USA, Blake Spur.

**TOTAL RECORDS** : 12375

**BATHYMETRY** : 12374

**MAGNETICS** : 12283

**GRAVITY** : 0

**PSO** : Huggett

**START PORT** : Norfolk, Virginia

**END PORT** : Nassau, Bahamas

**DATA STARTS** : 1532z 10-May-87 JULIAN DAY : 130

**DATA ENDS** : 2000z 27-May-87 JULIAN DAY : 147

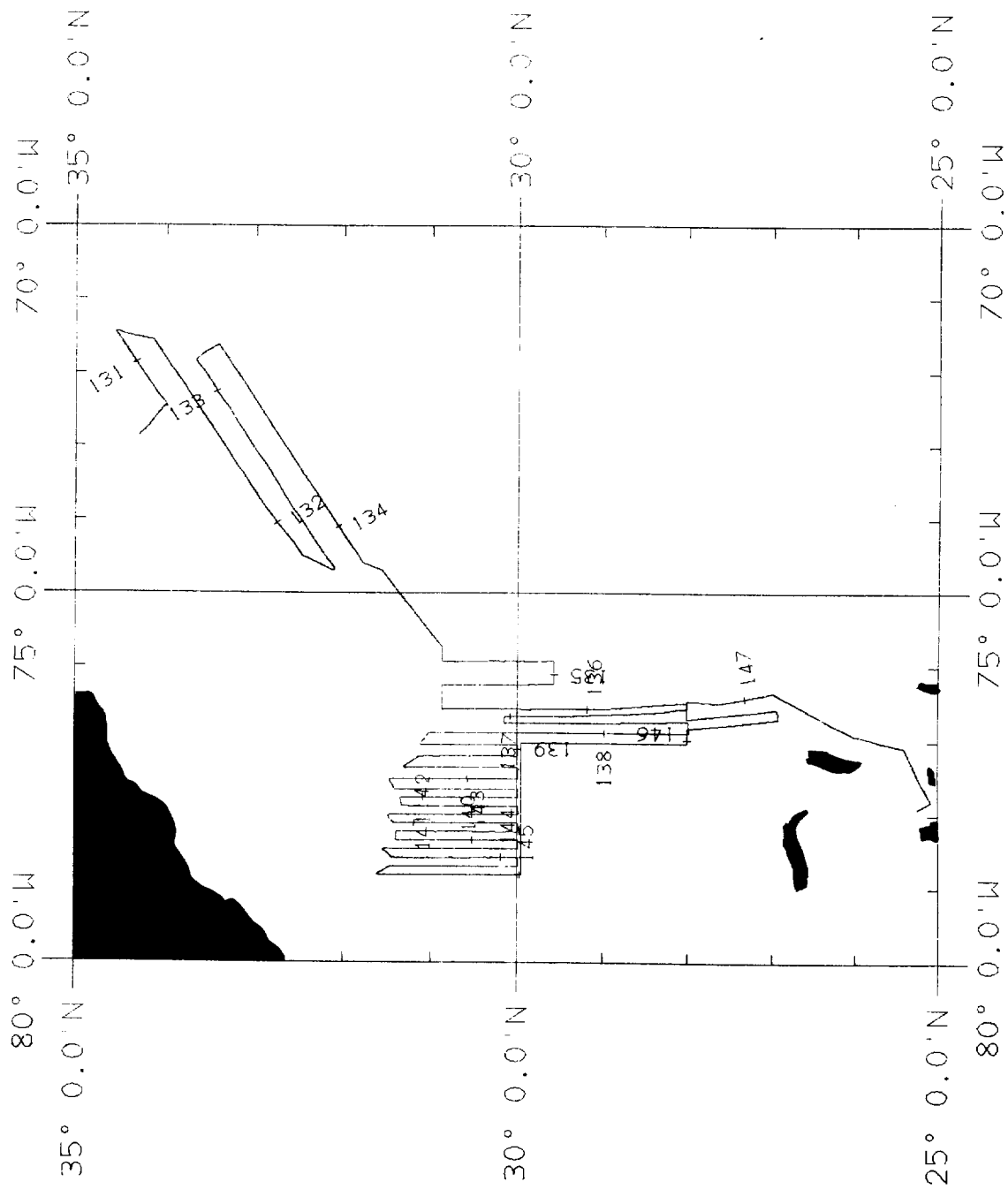
**MAXIMUM LATITUDE** : 34.5606N

**MINIMUM LATITUDE** : 25.0836N

**MAXIMUM LONGITUDE** : 71.4423W

**MINIMUM LONGITUDE** : 78.8178W

**MAP SCALE** : 1:10 Million at 0.0N



**CRUISE NAME** : Farnella 1/87 Bering Sea (FARN0687)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA, Bering Sea and the Gulf of Alaska.

**TOTAL RECORDS** : 17019

**BATHYMETRY** : 17019

**MAGNETICS** : 15418

**GRAVITY** : 17014

**PSO** : Huggett

**START PORT** : Dutch Harbor

**END PORT** : Dutch Harbor

**DATA STARTS** : 0900z 30-Jun-87 JULIAN DAY : 181

**DATA ENDS** : 0336z 24-Jul-87 JULIAN DAY : 205

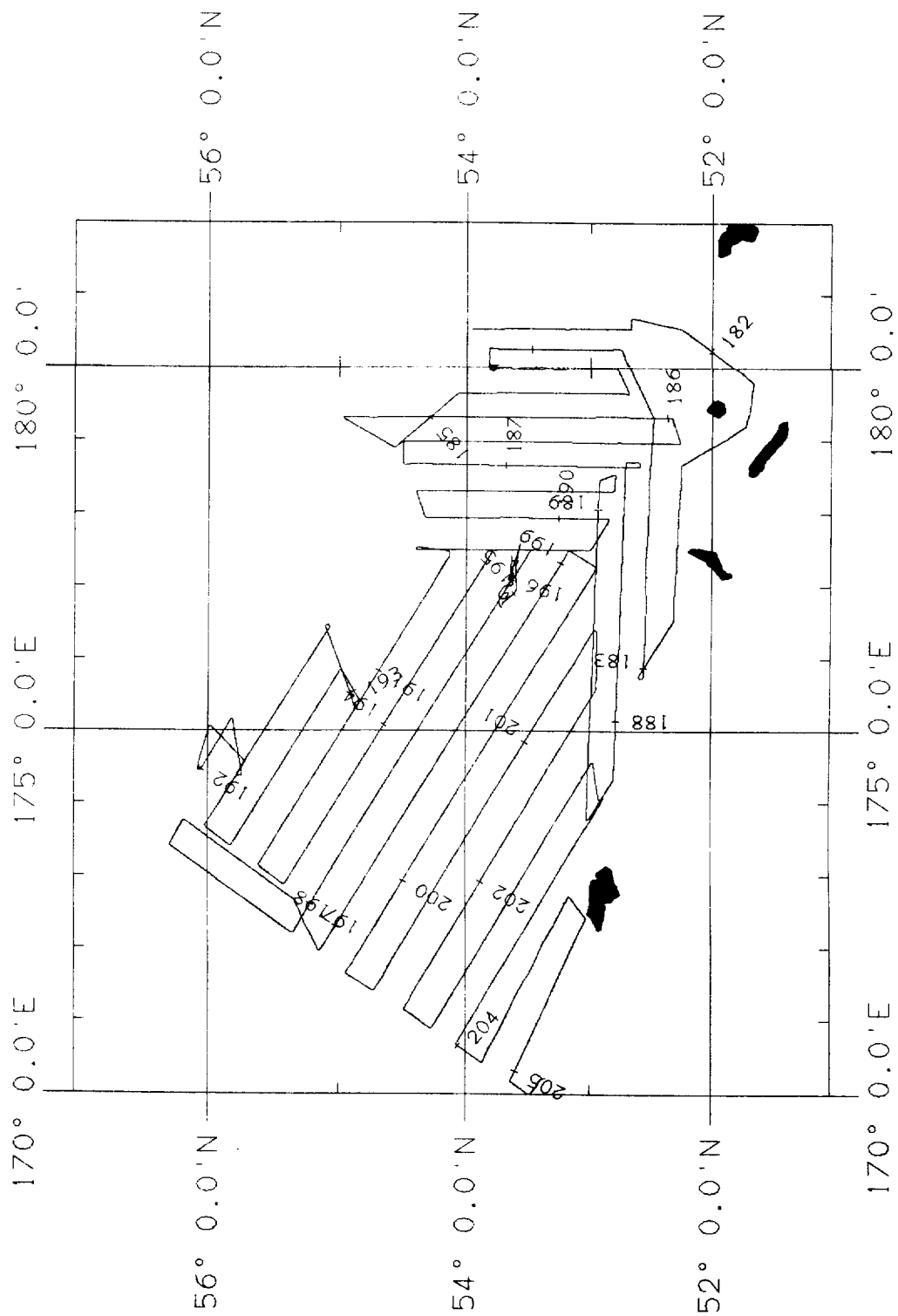
**MAXIMUM LATITUDE** : 56.2839N

**MINIMUM LATITUDE** : 51.6582N

**MAXIMUM LONGITUDE** : 179.3482W

**MINIMUM LONGITUDE** : 169.9957E

**MAP SCALE** : 1:10 Million at 0.0N



**CRUISE NAME** : Farnella 2/87 Aleutian Arc (FARN0787)

**CRUISE REPORT** :

**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA, the western Aleutian Arc.

**TOTAL RECORDS** : 17999

**BATHYMETRY** : 17992

**MAGNETICS** : 13775

**GRAVITY** : 17995

**PSO** : Masson

**START PORT** : Adak, Alaska

**END PORT** : Dutch Harbor

**DATA STARTS** : 1818z 29-JUL-87 JULIAN DAY: 210

**DATA ENDS** : 1800z 24-Aug-87 JULIAN DAY: 236

**MAXIMUM LATITUDE** : 53.4317N

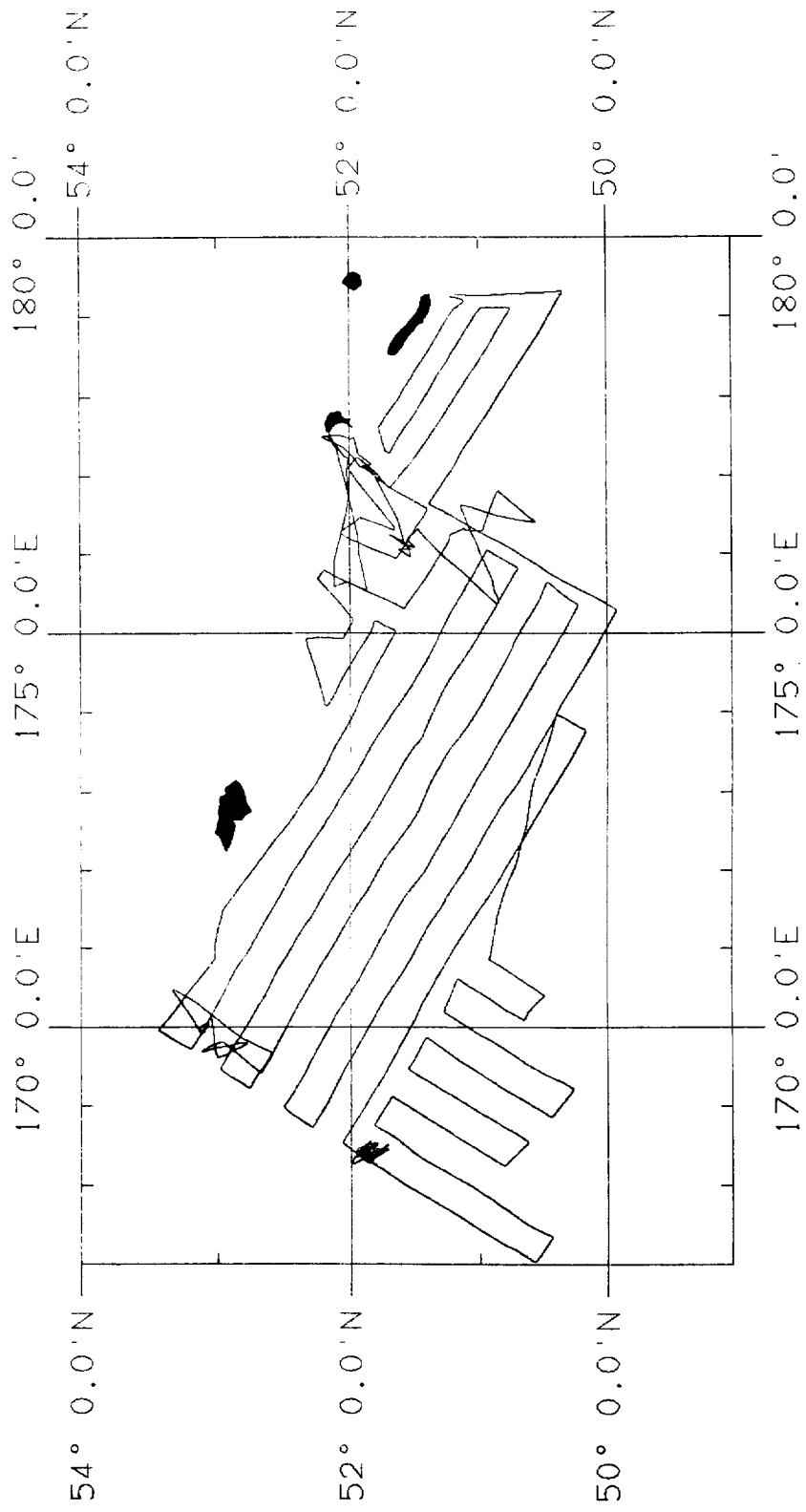
**MINIMUM LATITUDE** : 49.9245N

**MAXIMUM LONGITUDE** : 179.3240E

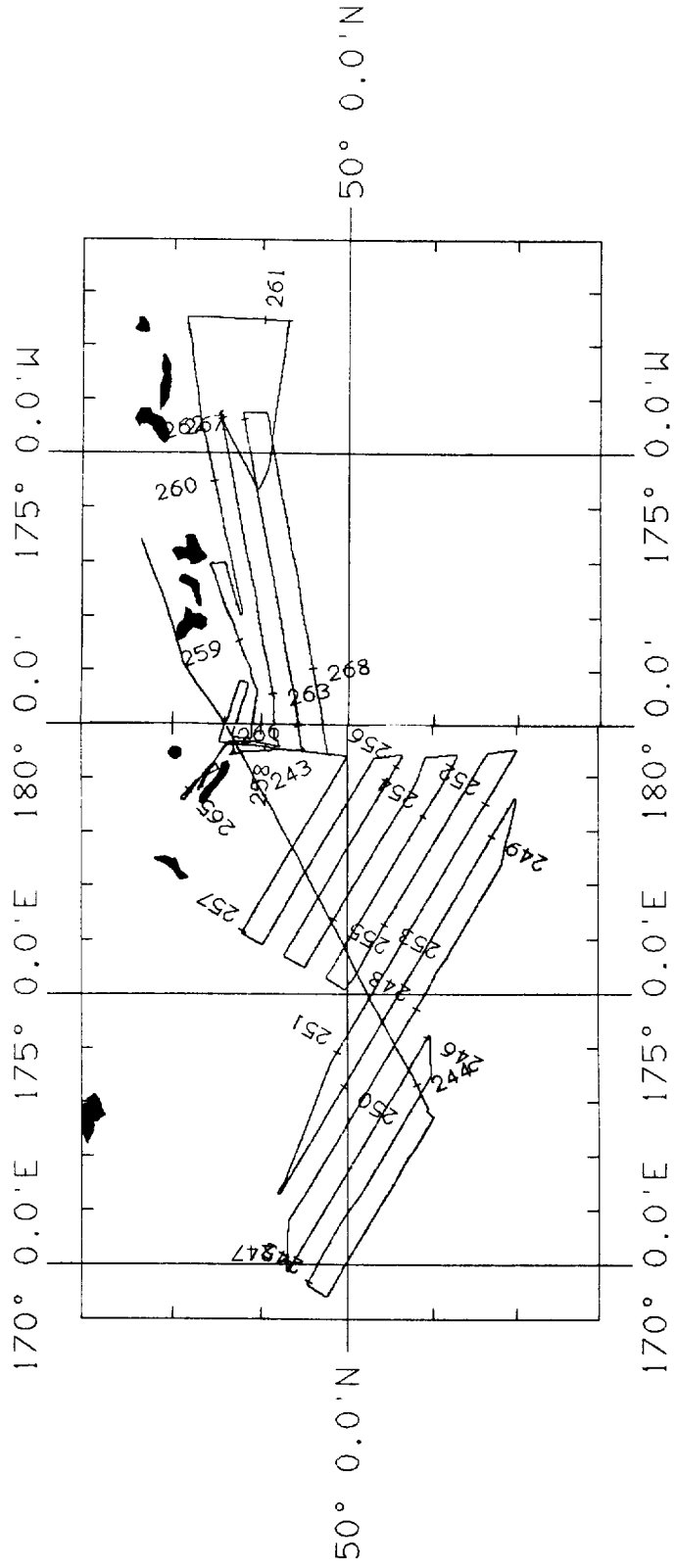
**MINIMUM LONGITUDE** : 167.0281E

**MAP SCALE** : 1:10 Million at 0.0N





**CRUISE NAME** : Farnella 3/87 Aleutian Arc (FARNO887)  
**CRUISE REPORT** :  
**CRUISE DESCRIPTION** : USGS GLORIA studies of the exclusive economic zone off the USA, the western Aleutian Arc.  
  
**TOTAL RECORDS** : 18471  
**BATHYMETRY** : 18440  
**MAGNETICS** : 14633  
**GRAVITY** : 15553  
  
**PSO** : Dobson  
  
**START PORT** : Dutch Harbor  
**END PORT** : Dutch Harbor  
  
**DATA STARTS** : 0720z 30-Aug-87 JULIAN DAY : 242  
**DATA ENDS** : 0800z 25-Sep-87 JULIAN DAY : 268  
  
**MAXIMUM LATITUDE** : 52.3559N  
**MINIMUM LATITUDE** : 47.9989N  
**MAXIMUM LONGITUDE** : 171.9478W  
**MINIMUM LONGITUDE** : 169.8942E  
  
**MAP SCALE** : 1 : 15 million at 0.0N





## APPENDIX A.

PUBLISHED CRUISE REPORTS

- C 174 KENYON, N.H. & MASSON, D.G. et. al., 1985. M.V. FARNELLA CRUISES 1/84 - 4/84: 26 April - 15 August, 1984. GLORIA studies of the Exclusive Economic zone off the western United States between 30°30' and 48°30'N. 27pp.
- C 185 KENYON, N.H., MASSON, D.G., PARSON, L.M., and ROTHWELL, R.G. et.al., 1986. M.V. FARNELLA Cruises 1/85 - 4/85, 7 August - 3 December, 1985. GLORIA studies of the Exclusive Economic Zone off the eastern United States of America, Gulf of Mexico and Puerto Rico. 22pp.
- C 188 WHITMARSH, R.B. et. al., 1986 RRS Discovery Cruise 161, 15 August (227) - 19 September (262) 1986. Portuguese ocean - continent boundary, plate boundaries west of Iberia and seismic structure of sediments off Madeira. 35pp.
- C 182 SEARLE, R.C. et. al., 1986. RRS Charles Darwin Cruise 9B/85 : 6 December, 1985 - 6 January, 1986. Geology and Geophysics of the great Meteor East area, Madeira Abyssal plain. 45pp.
- C 194 SEARLE, R.C. et. al., 1987. RRS Discovery Cruise 163, 26 October - 19 November, 1986. Geophysical studies of the Madeira Abyssal plain and Cruiser Seamount area, eastern North Atlantic. 40pp.
- C 198 KENYON, N.H. et. al., 1987. RRS Charles Darwin Cruise 20, 31 January - 27 February 1987. Gloria study of the Indus Fan.17pp.
- In Press HUGGETT, O.J., KENYON, N.H., and PARSON, L.M., et.al., 1987. M.V. FARNELLA Cruises 1/86 - 4/86 : 18 June - 30 September, 1986. GLORIA studies of the Exclusive Economic Zone of the Gulf of Alaska and the Bering Sea.
- PARSON L.M., et. al., 1987. RRS Charles Darwin Cruise 23, 13 May - 11 June, 1987. Geophysical Investigations of the Indian Ocean Triple Junction.



## APPENDIX B

DATA AVAILABLE THROUGH WORLD DATA CENTRE A

Data from the following Cruises are currently available through World Data Centre A: This list also covers Cruises detailed in IOS Report 194 (1985).

Discovery	54	legs 1,2	Shackleton	3/75	
	60			4/75	
	68	leg 2		3/76	leg 2
	73	legs 1,2		6/76	
	74	leg 2		8/77	
	84	legs 1,2		6/79	leg 1,2
	90	legs 1,2			
	91		Starella	1/79	
	93	legs 1,2			
	96				
	101		Farnella	2/81	leg 1,2
	103			3/81	
	104			4/81	
	106	leg 2			
	107	legs 1-3			
	109	legs 1,2			
	110	legs 1,2			
	111	legs 1,2			
	118	legs 1,2			
	134				

DATA DUE TO BE LODGED WITH WORLD DATA CENTRE.

Discovery	123	legs 1,2	
	131	legs 1-3	
	142		
	144		
	153		
	161		-when released
	163		
Charles Darwin	9B/85		
	11/86		-when released
	20/87		-when released
	23/87		-when released
	27/87		-when released
Farnella	1-4/84		-when released
	1-4/85		-when released
	1-6/86		-when released
	1-8/87		-when released





## APPENDIX C

ADDRESSES FOR DATA SOURCES

Acquisition of data or further information on the data summarised on this report may be obtained from the following:

1. For data already lodged with the World Data Centre:

World Data Centre A,  
Marine Geology and Geophysics,  
NOAA/EDIS (D-64),  
325, Broadway,  
Boulder,  
Colorado 80303,  
United States of America.

2. For released data or specific data enquiries:

Head of Geology and Geophysics Group,  
Institute of Oceanographic Sciences,  
Deacon Laboratory,  
Brook Road,  
Wormley,  
Godalming, Surrey, GU8 5UB,  
United Kingdom.

3. For all other enquiries:

Marine Information and Advisory Service (MIAS),  
Institute of Oceanographic Sciences,  
Deacon Laboratory  
Brook Road,  
Wormley,  
Godalming,  
Surrey, GU8 5UB,  
United Kingdom.

## APPENDIX D - Julian day number/date conversion tables

## NON LEAP YEAR

JAN		FEB		MAR		APR		MAY		JUN	
1	1	1	32	1	60	1	91	1	121	1	152
2	2	2	33	2	61	2	92	2	122	2	153
3	3	3	34	3	62	3	93	3	123	3	154
4	4	4	35	4	63	4	94	4	124	4	155
5	5	5	36	5	64	5	95	5	125	5	156
6	6	6	37	6	65	6	96	6	126	6	157
7	7	7	38	7	66	7	97	7	127	7	158
8	8	8	39	8	67	8	98	8	128	8	159
9	9	9	40	9	68	9	99	9	129	9	160
10	10	10	41	10	69	10	100	10	130	10	161
11	11	11	42	11	70	11	101	11	131	11	162
12	12	12	43	12	71	12	102	12	132	12	163
13	13	13	44	13	72	13	103	13	133	13	164
14	14	14	45	14	73	14	104	14	134	14	165
15	15	15	46	15	74	15	105	15	135	15	166
16	16	16	47	16	75	16	106	16	136	16	167
17	17	17	48	17	76	17	107	17	137	17	168
18	18	18	49	18	77	18	108	18	138	18	169
19	19	19	50	19	78	19	109	19	139	19	170
20	20	20	51	20	79	20	110	20	140	20	171
21	21	21	52	21	80	21	111	21	141	21	172
22	22	22	53	22	81	11	112	22	142	22	173
23	23	23	54	23	82	23	113	23	143	23	174
24	24	24	55	24	83	24	114	24	144	24	175
25	25	25	56	25	84	25	115	25	145	25	176
26	26	26	57	26	85	26	116	26	146	26	177
27	27	27	58	27	86	27	117	27	147	27	178
28	28	28	59	28	87	28	118	28	148	28	179
29	29			29	88	29	119	29	149	29	180
30	30			30	89	30	120	30	150	30	181
31	31			31	90			31	151		

## NON LEAP YEAR

JUL		AUG		SEP		OCT		NOV		DEC	
1	182	1	213	1	244	1	274	1	305	1	335
2	183	2	214	2	145	2	275	2	306	2	336
3	184	3	215	3	246	3	276	3	307	3	337
4	185	4	216	4	247	4	277	4	308	4	338
5	186	5	217	5	248	5	278	5	309	5	339
6	187	6	218	6	249	6	279	6	310	6	340
7	188	7	219	7	250	7	280	7	311	7	341
8	189	8	220	8	251	8	281	8	312	8	342
9	190	9	221	9	252	9	282	9	313	9	343
10	191	10	222	10	253	10	283	10	314	10	344
11	192	11	223	11	254	11	284	11	315	11	345
12	193	12	224	12	255	12	285	12	316	12	346
13	194	13	225	13	256	13	286	13	317	13	347
14	195	14	226	14	257	14	287	14	318	14	348
15	196	15	227	15	258	15	288	15	319	15	349
16	197	16	228	16	259	16	289	16	320	16	350
17	198	17	229	17	260	17	290	17	321	17	351
18	199	18	230	18	261	18	291	18	322	18	352
19	200	19	231	19	262	19	292	19	323	19	353
20	201	20	232	20	263	20	293	20	324	20	354
21	202	21	233	21	264	21	294	21	325	21	355
22	203	22	234	22	265	22	295	22	326	22	356
23	204	23	235	23	266	23	296	23	327	23	357
24	205	24	236	24	267	24	297	24	328	24	358
25	206	25	237	25	268	25	298	25	329	25	359
26	207	26	238	26	269	26	299	26	330	26	360
27	208	27	239	27	270	27	300	27	331	27	361
28	209	28	240	28	271	28	301	28	332	28	362
29	210	29	241	29	272	29	302	29	333	29	363
30	211	30	242	30	273	30	303	30	334	30	364
31	212	31	243			31	304			31	365

## LEAP YEAR (1964, 1968, 1972, 1976, 1980, 1984, 1988)

JAN		FEB		MAR		APR		MAY		JUN	
1	1	1	32	1	61	1	92	1	122	1	153
2	2	2	33	2	62	2	93	2	123	2	154
3	3	3	34	3	63	3	94	3	124	3	155
4	4	4	35	4	64	4	95	4	125	4	156
5	5	5	36	5	65	5	96	5	126	5	157
6	6	6	37	6	66	6	97	6	127	6	158
7	7	7	38	7	67	7	98	7	128	7	159
8	8	8	39	8	68	8	99	8	129	8	160
9	9	9	40	9	69	9	100	9	130	9	161
10	10	10	41	10	70	10	101	10	131	10	162
11	11	11	42	11	71	11	102	11	132	11	163
12	12	12	43	12	72	12	103	12	133	12	164
13	13	13	44	13	73	13	104	13	134	13	165
14	14	14	45	14	74	14	105	14	135	14	166
15	15	15	46	15	75	15	106	15	136	15	167
16	16	16	47	16	76	16	107	16	137	16	168
17	17	17	48	17	77	17	108	17	138	17	169
18	18	18	49	18	78	18	109	18	139	18	170
19	19	19	50	19	79	19	110	19	140	19	171
20	20	20	51	20	80	20	111	20	141	20	172
21	21	21	52	21	81	21	112	21	142	21	173
22	22	22	53	22	82	22	113	22	143	22	174
23	23	23	54	23	83	23	114	23	144	23	175
24	24	24	55	24	84	24	115	24	145	24	176
25	25	25	56	25	85	25	116	25	146	25	177
26	26	26	57	26	86	26	117	26	147	26	178
27	27	27	58	27	87	27	118	27	148	27	179
28	28	28	59	28	88	28	119	28	149	28	180
29	29	29	60	29	89	29	120	29	150	29	181
30	30			30	90	30	121	30	151	30	182
31	31			31	91			31	152		

## LEAP YEAR

JUL		AUG		SEP		OCT		NOV		DEC	
1	183	1	214	1	245	1	275	1	306	1	336
2	184	2	215	2	246	2	276	2	307	2	337
3	185	3	216	3	247	3	277	3	308	3	338
4	186	4	217	4	248	4	278	4	309	4	339
5	186	5	218	5	249	5	279	5	310	5	340
6	188	6	219	6	250	6	280	6	311	6	341
7	189	7	220	7	251	7	281	7	312	7	342
8	190	8	221	8	252	8	282	8	313	8	343
9	191	9	222	9	253	9	283	9	314	9	344
10	192	10	223	10	254	10	284	10	315	10	345
11	193	11	224	11	255	11	285	11	316	11	346
12	194	12	225	12	256	12	286	12	317	12	347
13	195	13	226	13	257	13	287	13	318	13	348
14	196	14	227	14	258	14	288	14	319	14	349
15	197	15	228	15	259	15	289	15	320	15	350
16	198	16	229	16	260	16	290	16	321	16	351
17	199	17	230	17	261	17	291	17	322	17	352
18	200	18	231	18	262	18	292	18	323	18	353
19	201	19	232	19	263	19	293	19	324	19	354
20	202	20	233	20	264	20	294	20	325	20	355
21	203	21	234	21	265	21	295	21	326	21	356
22	204	22	235	22	266	22	296	22	327	22	357
23	205	23	236	23	267	23	297	23	328	23	358
24	206	24	237	24	268	24	298	24	329	24	359
25	207	25	238	25	269	25	299	25	330	25	360
26	208	26	239	26	270	26	300	26	331	26	361
27	209	27	240	27	271	27	301	27	332	27	362
28	210	28	241	28	272	28	302	28	333	28	363
29	211	29	242	29	273	29	303	29	334	29	364
30	212	30	243	30	274	30	304	30	335	30	365
31	213	31	244			31	305			31	366