Report and Index of

Underway Marine Geophysical Data

Nemo Expedition

Leg 1

(NEMO01MV)

R/V Melville

(Issued November 2000)

Ports:
San Diego, California (16 February 2000)
to
Manzanillo, Mexico (17 March 2000)

Chief Scientist:
Spahr Webb, Scripps Institution of Oceanography
swebb@ucsd.edu scw@ldeo.colombia.edu

Computer Tech - John Chatwood
Resident Marine Tech - Shad Baiz

Post-Cruise processing and report preparation by the
Geological Data Center, Scripps Institution of Oceanography
La Jolla, CA 92093-0223

NOTE: This is an index of underway geophysical data edited and processed after the completion of the cruise leg and is intended primarily for informal use within the institution. This document is not to be reproduced or distributed outside Scripps without prior approval of the chief scientist or the Geological Data Center, Scripps Institution of Oceanography, La Jolla, California 92093–0223.

GDC Cruise ID# 292

Report and Index of Navigation
and Underway Geophysical Data

Processed by the Geological Data Center
Scripps Institution of Oceanography

Contents:

Index Chart – gives track of cruise leg, dates, ports, and mileage of each type of data collected.

Track Charts– annotated with dates and hour ticks

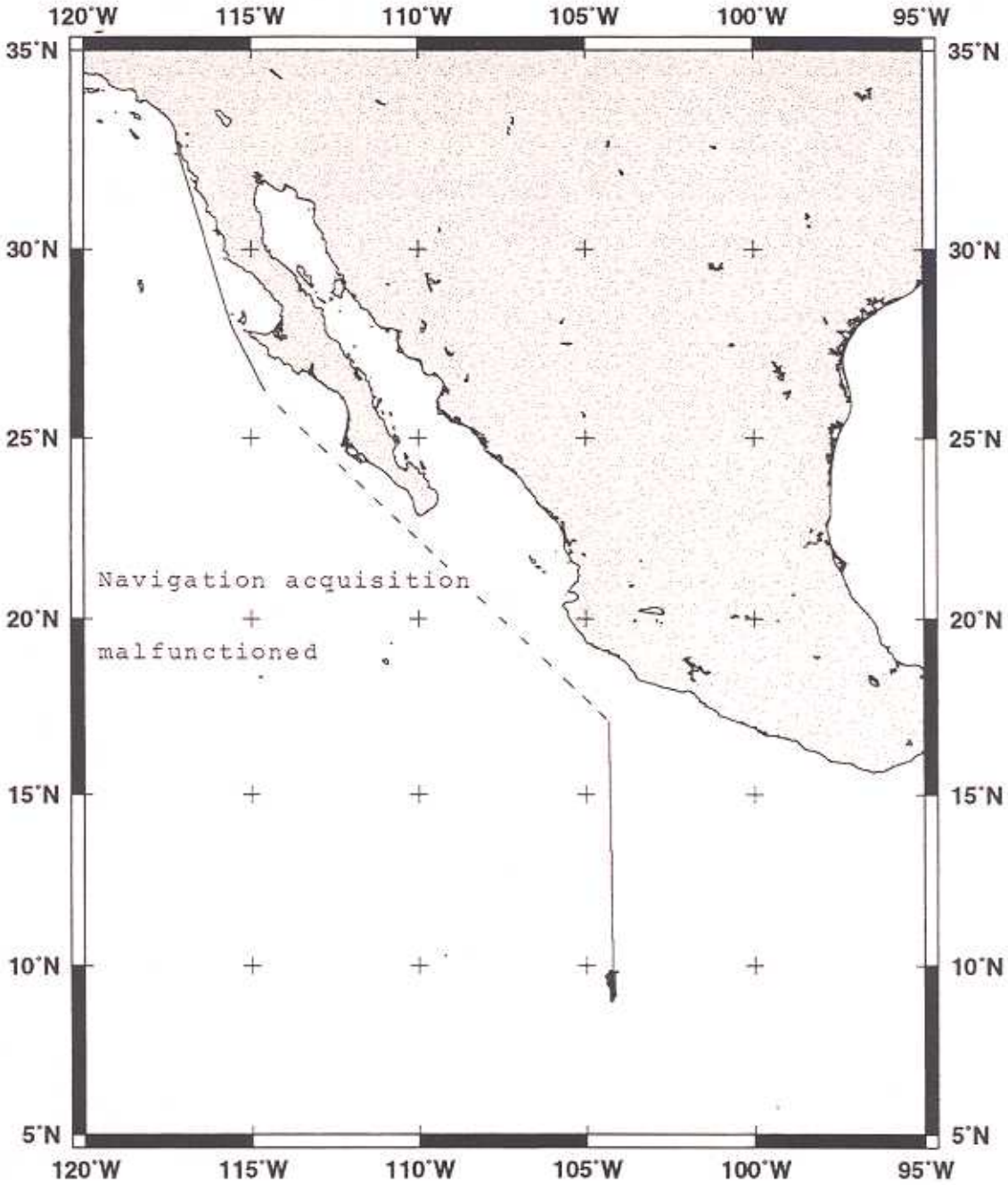
Profiles – depth, magnetic and gravity free air anomaly vs. distance. (Sections of track with seismic reflection data have a wide black line along the botttom of the profile.)

Sample Index – list of begin/end times and positions of all underway records as well as samples and measurements from other disciplines collected on the leg.

NOTE: One or more of the underway data types may not be collected on a given leg. For information on the availability and reproduction costs of data in the following forms, contact the Geological Data Center, Scripps Institution of Oceanography, La Jolla, California 92093–0223. Phone: (858)534–2752, Fax: (858)534–6500, internet email: ualbright@ucsd.edu or gwells@ucsd.edu

1. Files via ftp or on 8mm (Exabyte) magnetic tape or CDrom:
   a) Separate time series ASCII files of navigation, single beam depth, gravity and magnetics.
   b) Above data in a single merged ASCII file in the MGD77 Exchange Format.
   c) SeaBeam depth data (binary, Sun byte order)
   d) SeaBeam Sidescan data.
2. Microfilm (35mm flowfilm) or hard copies of:
   a) Underway watch log
   b) SeaBeam vertical beam profile/Sidescan records.
   c) 3.5 kHz and 12 kHz echosounder records.
   d) Seismic reflection profiler records.
3. Navigation abstract listing with times and positions of major course and speed changes.
4. Custom plots in Mercator projection:
   a) Track plots.
   b) SeaBeam depth contour plots.
   c) Depths, magnetic or gravity values printed or profiled along track.

Rev 6/2000



NEMO EXPEDITION LEG 1 (NEMO01MV)

CHIEF SCIENTIST: Spahr Webb, Scripps Institution

PORTS: San Diego, California - Manzanillo, Mexico

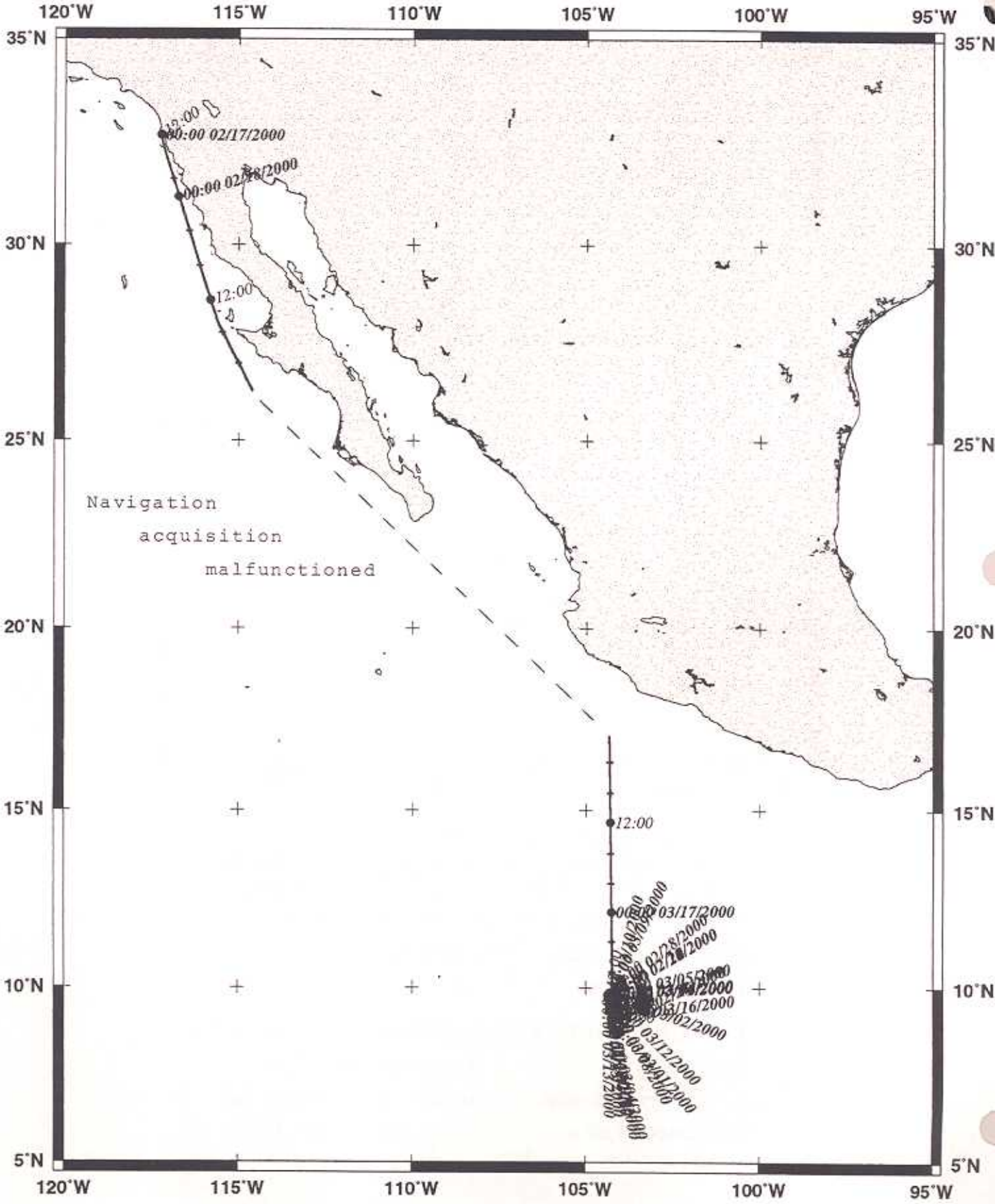
DATES: 16 February - 17 March 2000

SHIP: R/V Melville

TOTAL MILEAGE OF UNDERWAY DATA COLLECTED

Cruise-3174 miles	**Magnetics-none collected**
Bathymetry- 235 miles	**Seismic Reflection-none collected**
Sea Beam-235 miles	**Gravity-none collected**

NEMO Leg 1 Track



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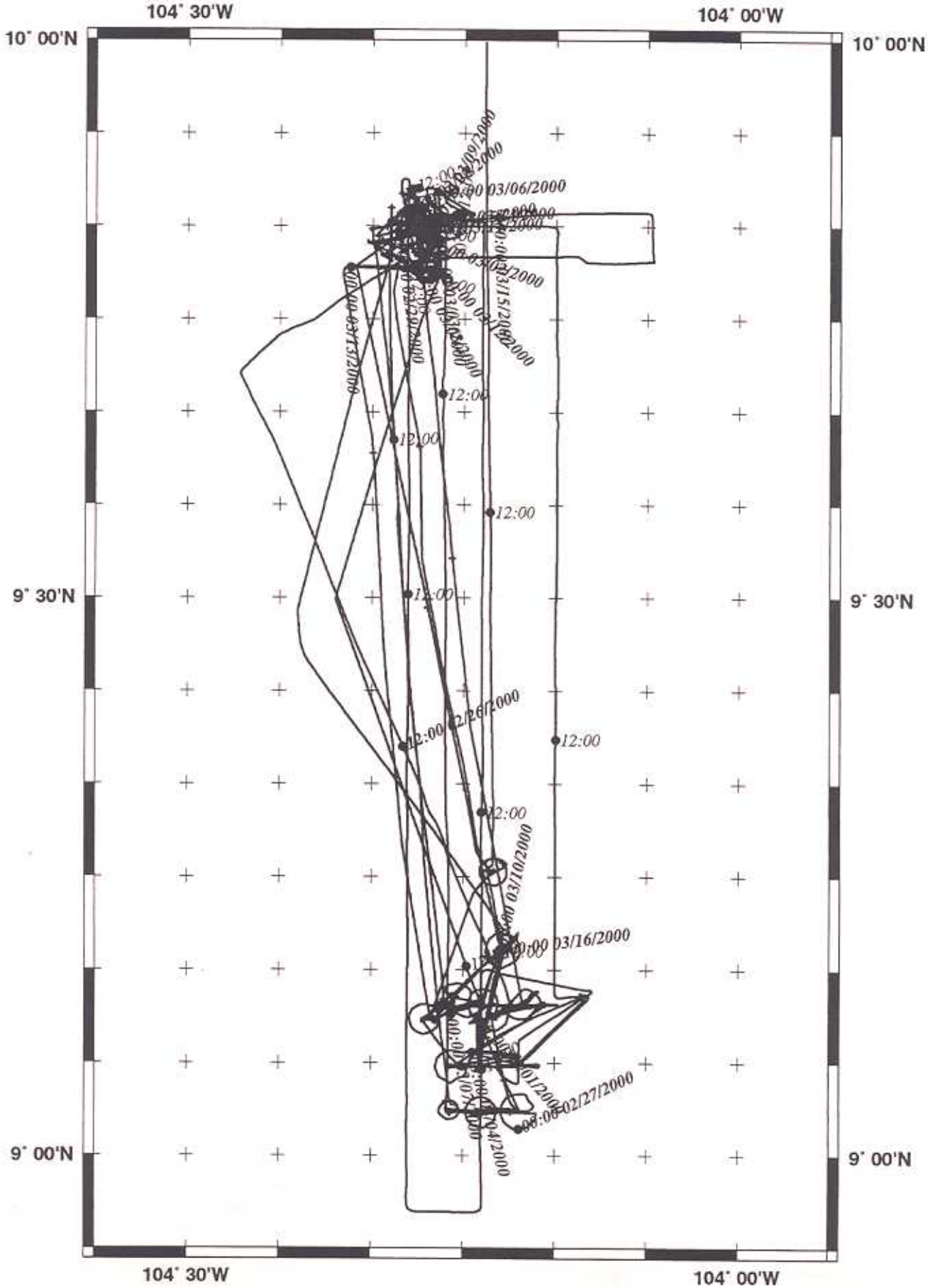

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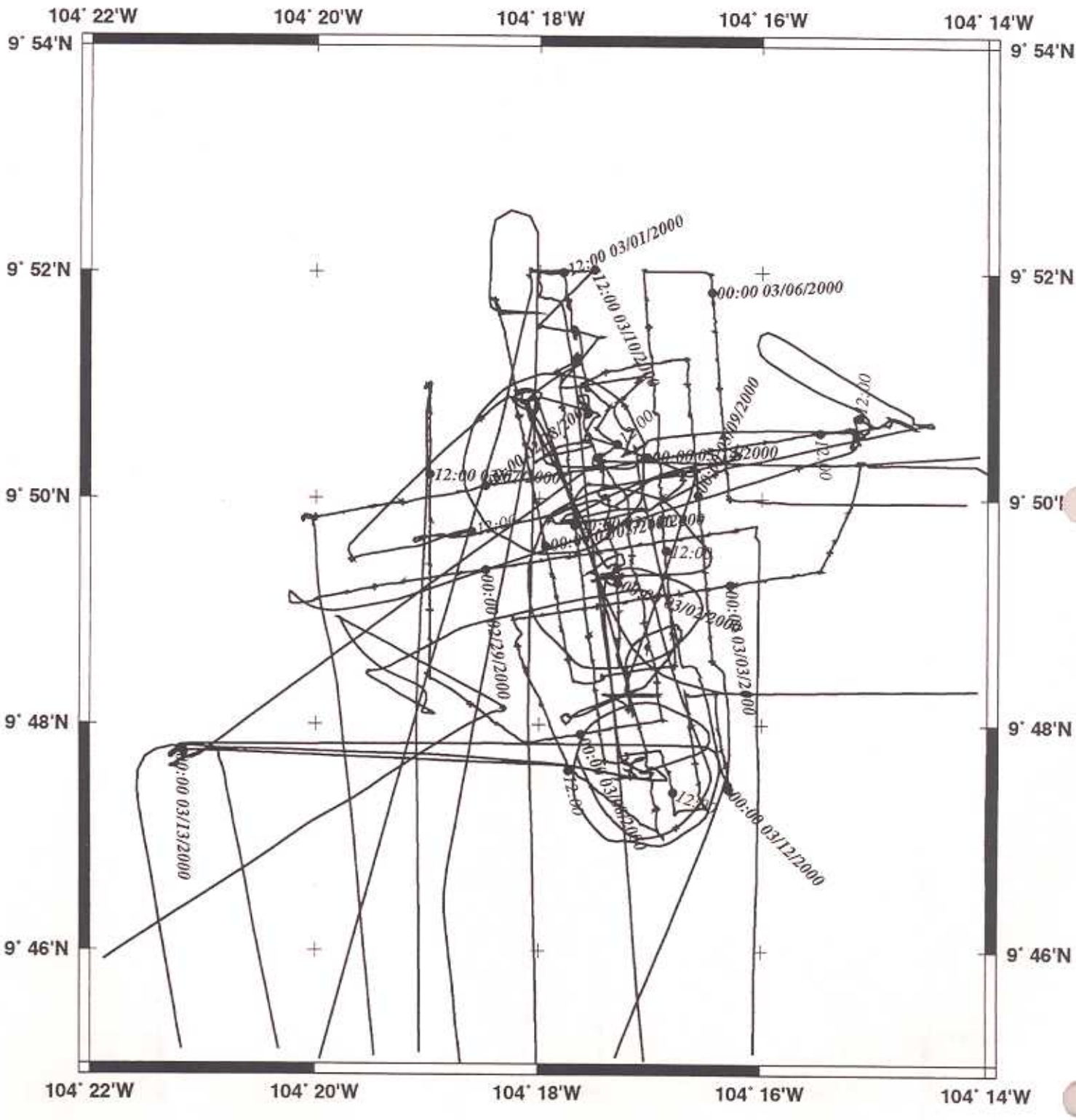

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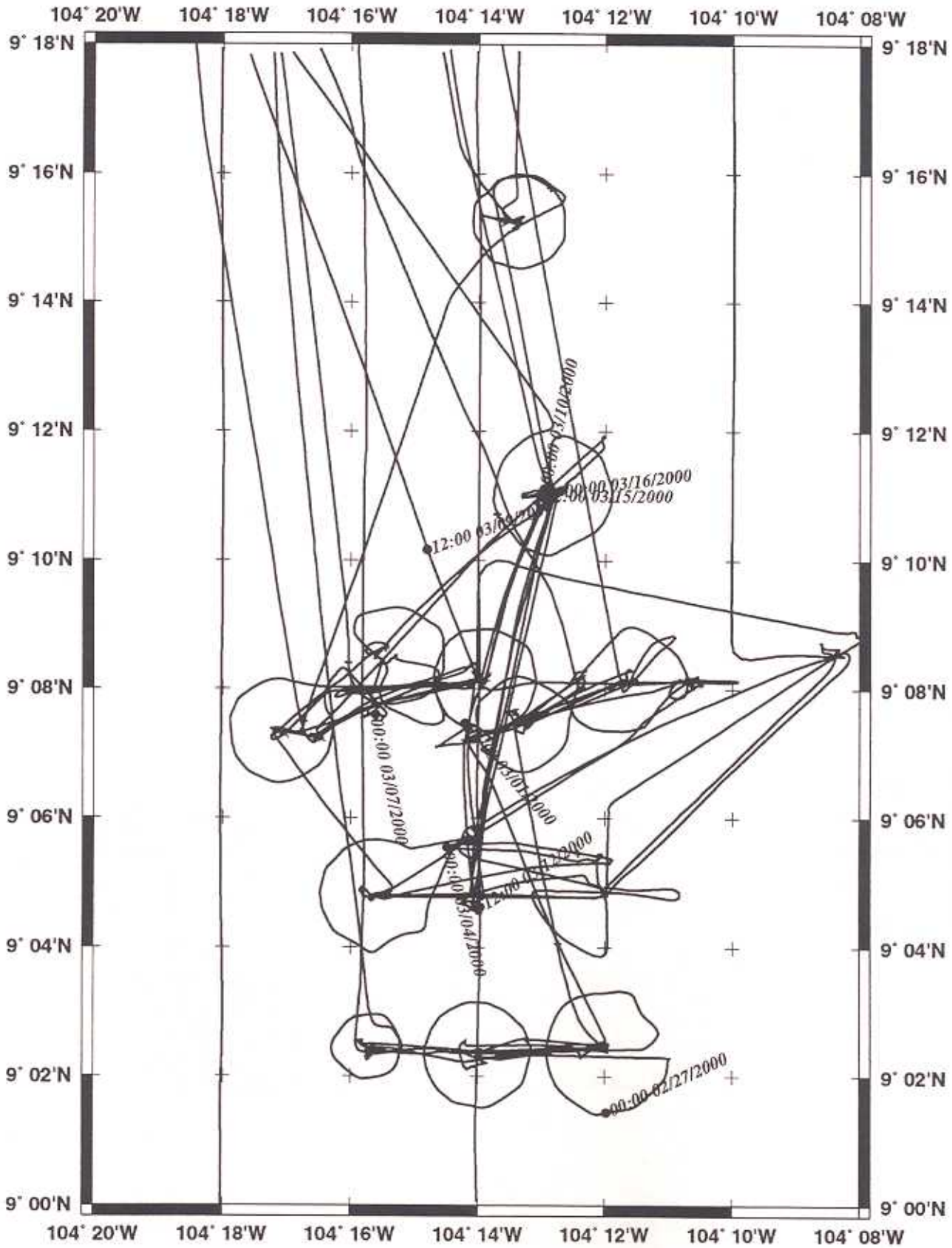

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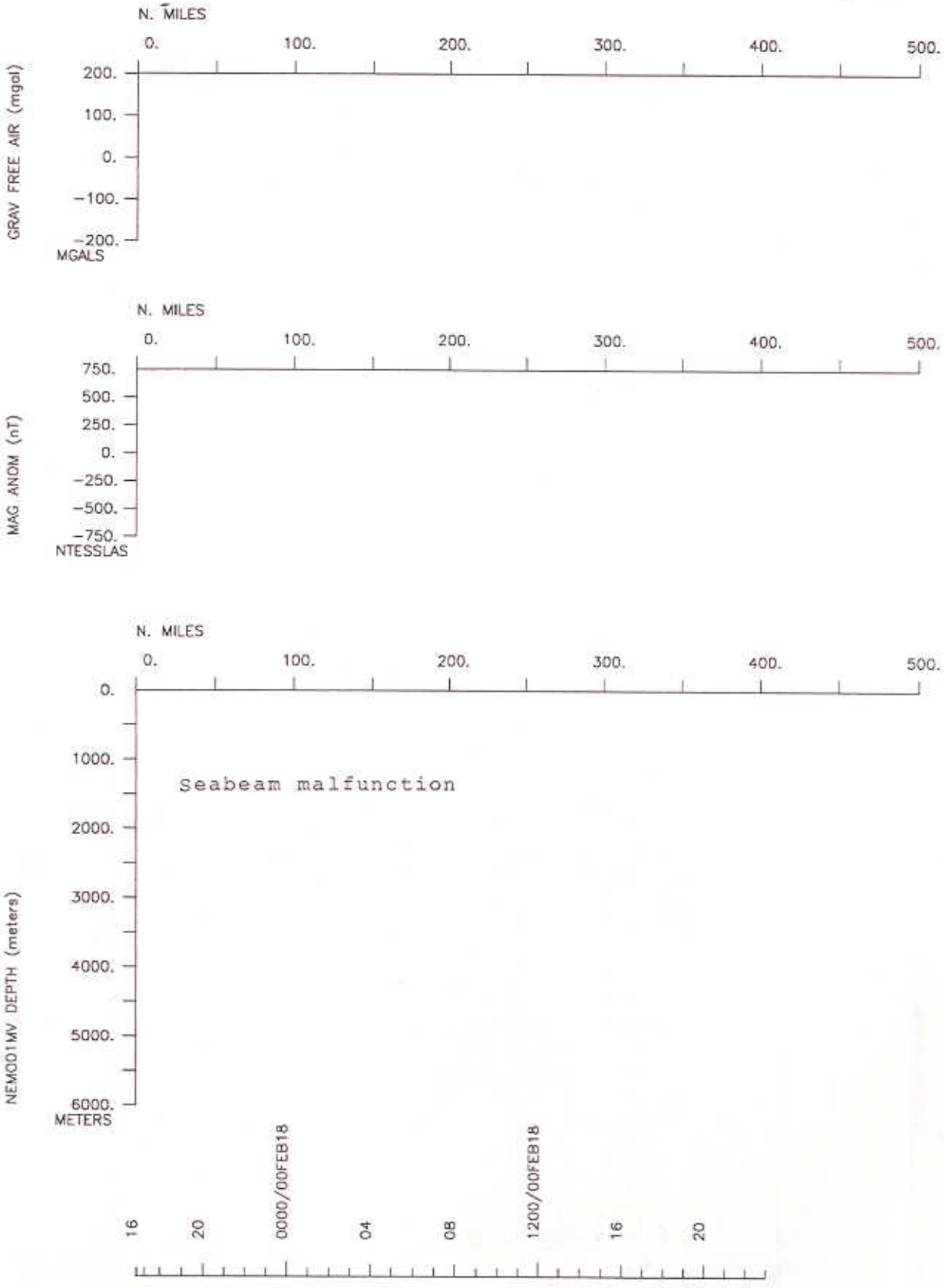
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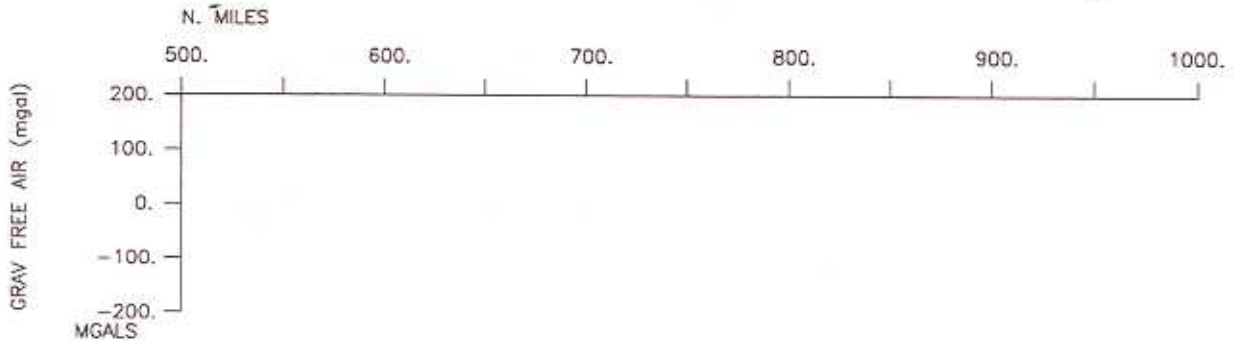
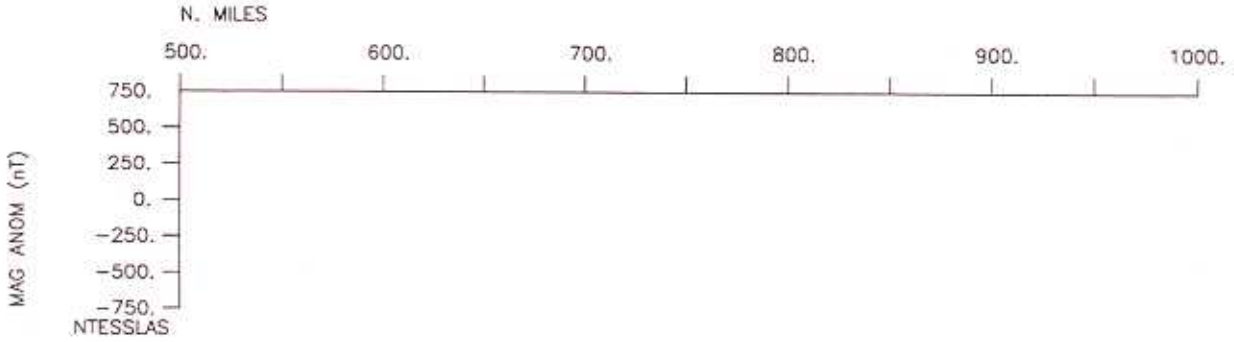
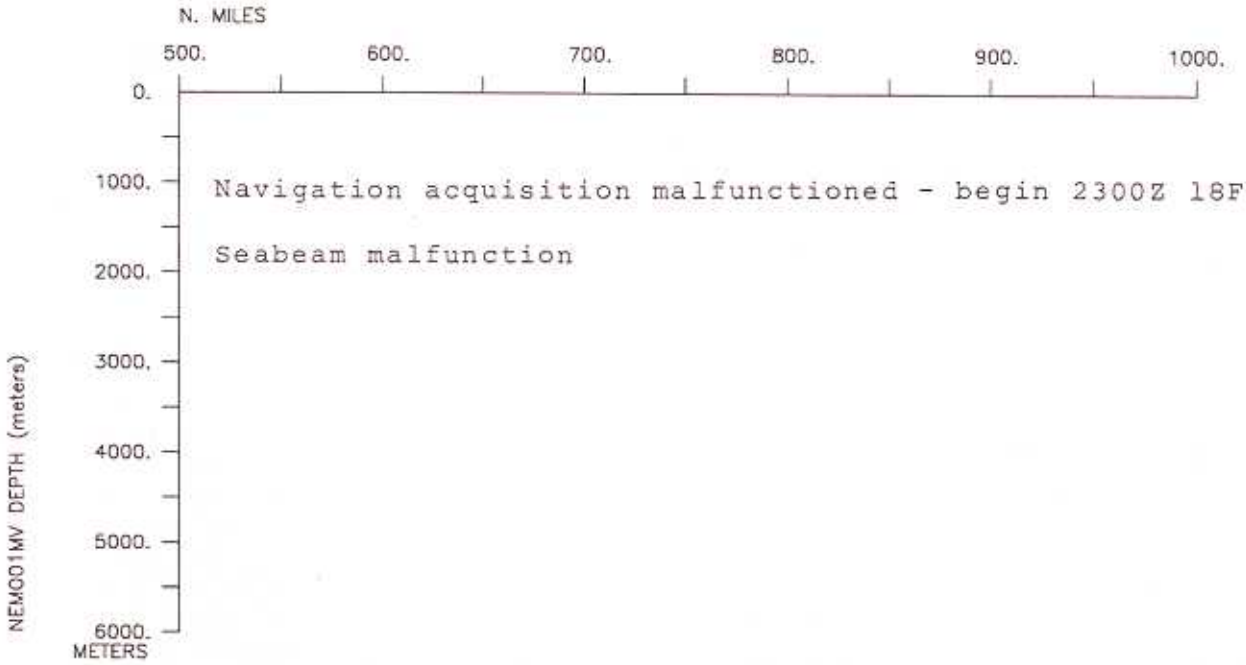
0.
100.
200.
300.
400.
500.
GRAV FREE AIR (mgal)
200.
100.
0.
−100.
−200.
MGALS
N. MILES
0.
100.
200.
300.
400.
500.
MAG ANOM (nT)
750.
500.
250.
0.
−250.
−500.
−750.
NTESSLAS
N. MILES
0.
100.
200.
300.
400.
500.
NEMO01MV DEPTH (meters)
0.
1000.
2000.
3000.
4000.
5000.
6000.
METERS
Seabeam malfunction
16
20
0000/00FEB18
04
08
1200/00FEB18
16
20







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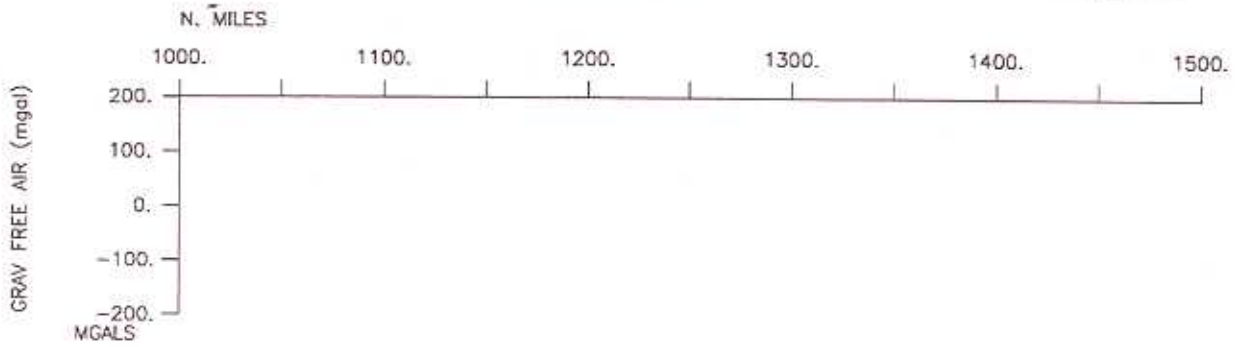
Seabeam malfunction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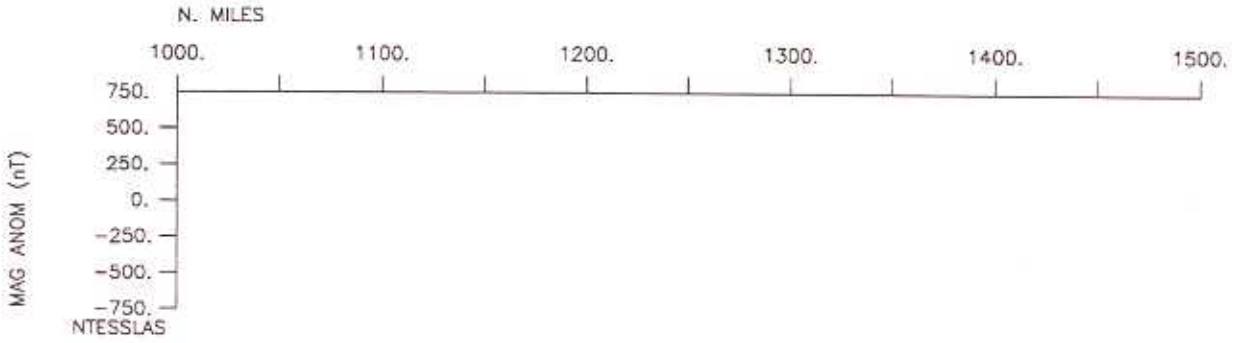
MGALS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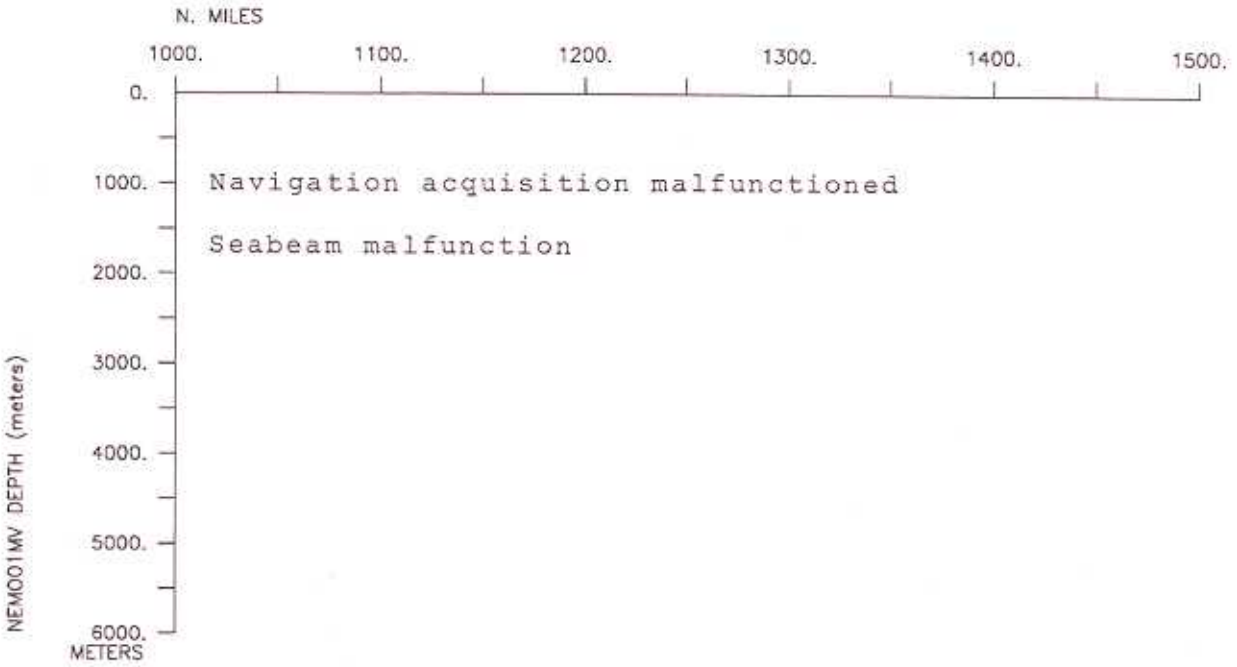
NTESSLAS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1100.
1200.
1300.
1400.
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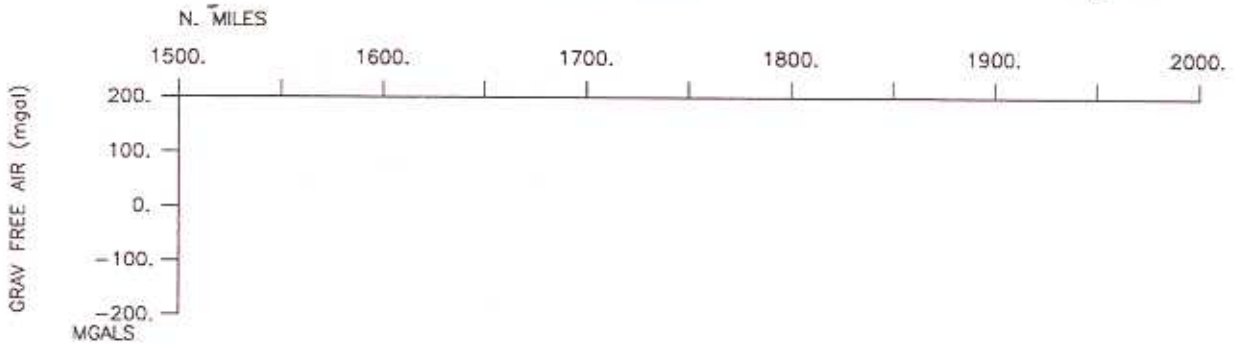
0.
1000.
2000.
3000.
4000.
5000.
6000.
METERS
Navigation acquisition malfunctioned
Seabeam malfunction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1800.
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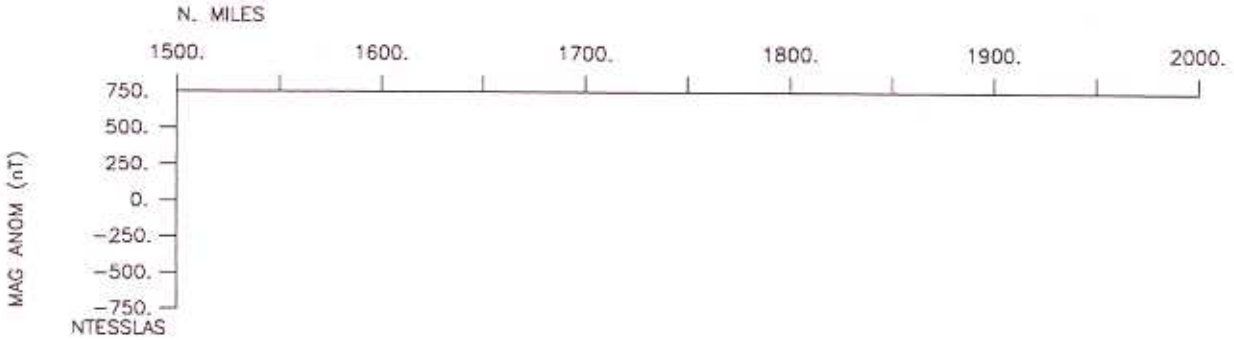
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1600.
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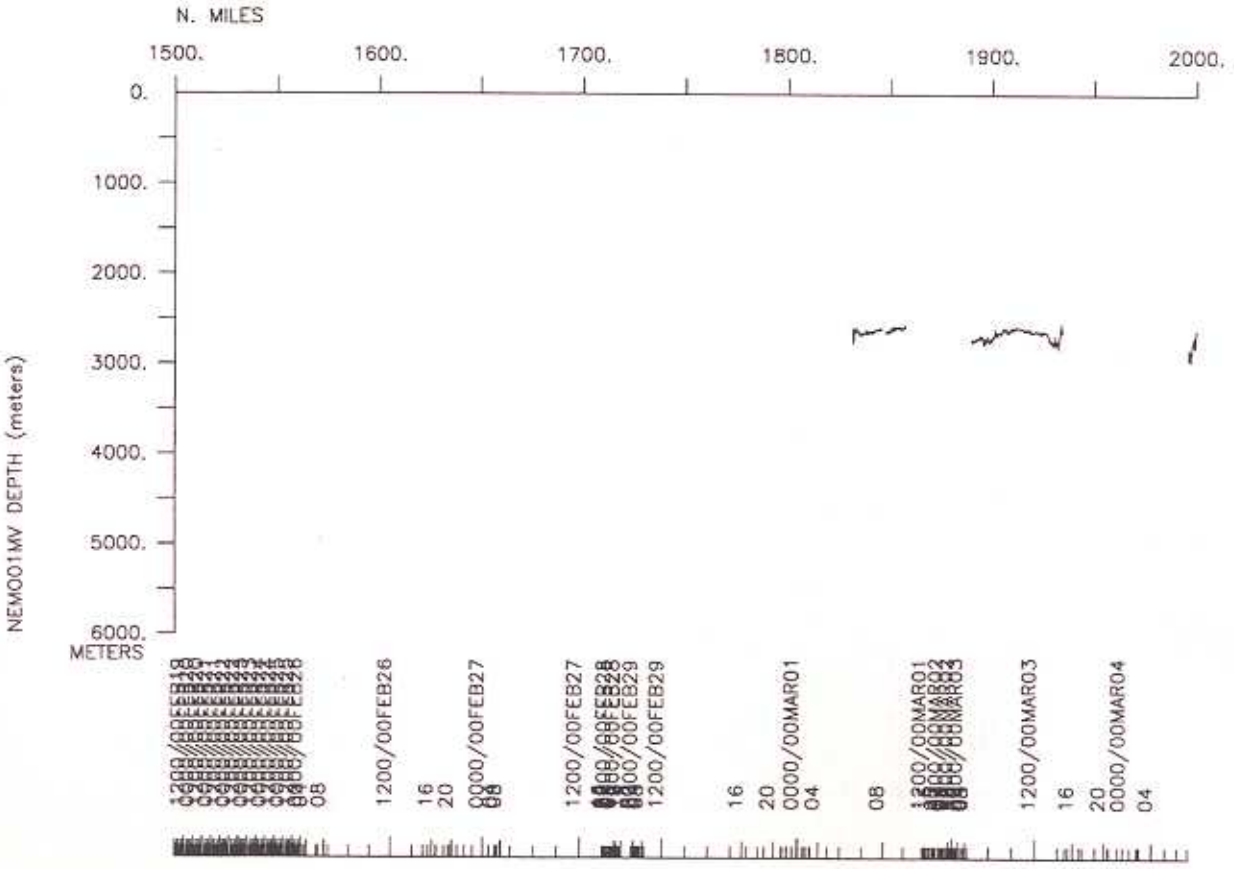
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1600.
1700.
1800.
1900.
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1000.
2000.
3000.
4000.
5000.
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METERS
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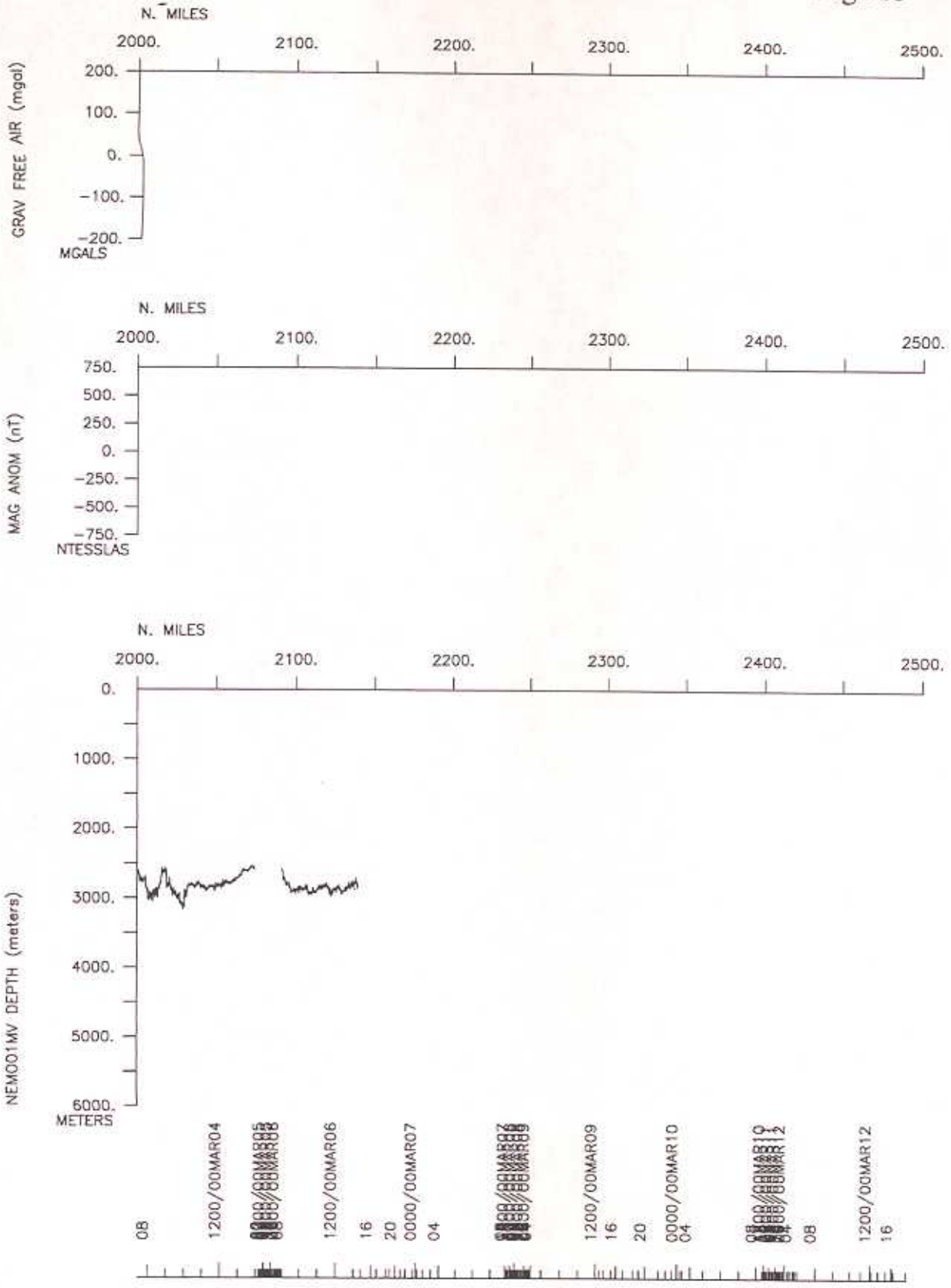
1200/00FEB27
1200/00FEB29
0000/00MAR01
1200/00MAR03
0000/00MAR04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2100.
2200.
2300.
2400.
2500.
GRAV FREE AIR (mgal)
200.
100.
0.
-100.
-200.
MGALS
N. MILES
2000.
2100.
2200.
2300.
2400.
2500.
MAG ANOM (nT)
750.
500.
250.
0.
-250.
-500.
-750.
NTESSLAS
N. MILES
2000.
2100.
2200.
2300.
2400.
2500.
NEMO01MV DEPTH (meters)
0.
1000.
2000.
3000.
4000.
5000.
6000.
METERS
08
1200/00MAR04
1200/00MAR06
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20
0000/00MAR07
04
1200/00MAR09
16
20
0000/00MAR10
04
08
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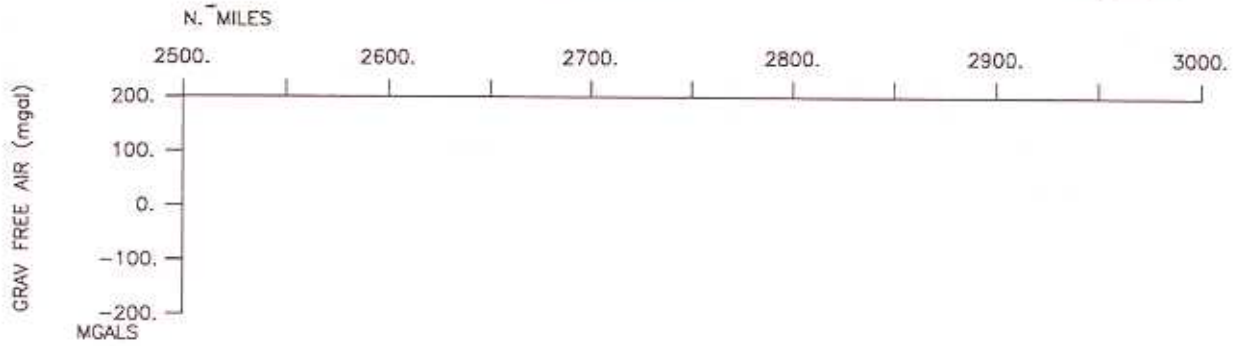
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2500.
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2800.
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100.
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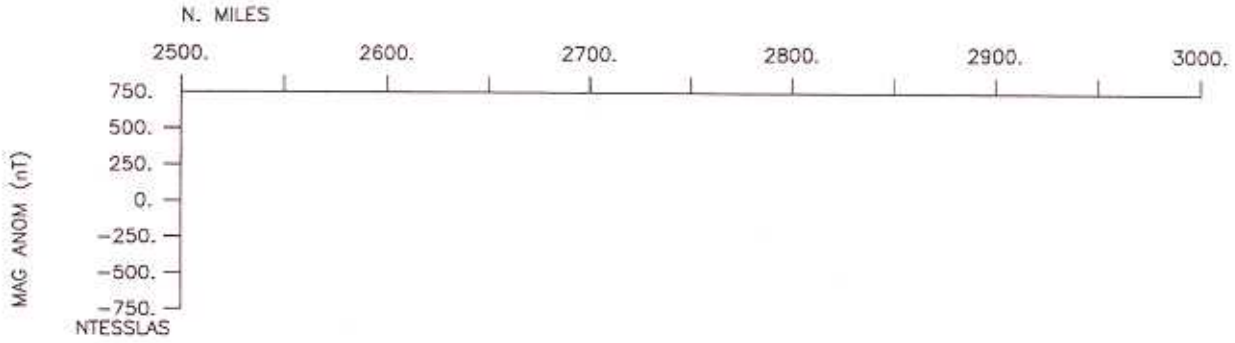
-200.
MGALS


N. MILES
2500.
2600.
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-250.
-500.
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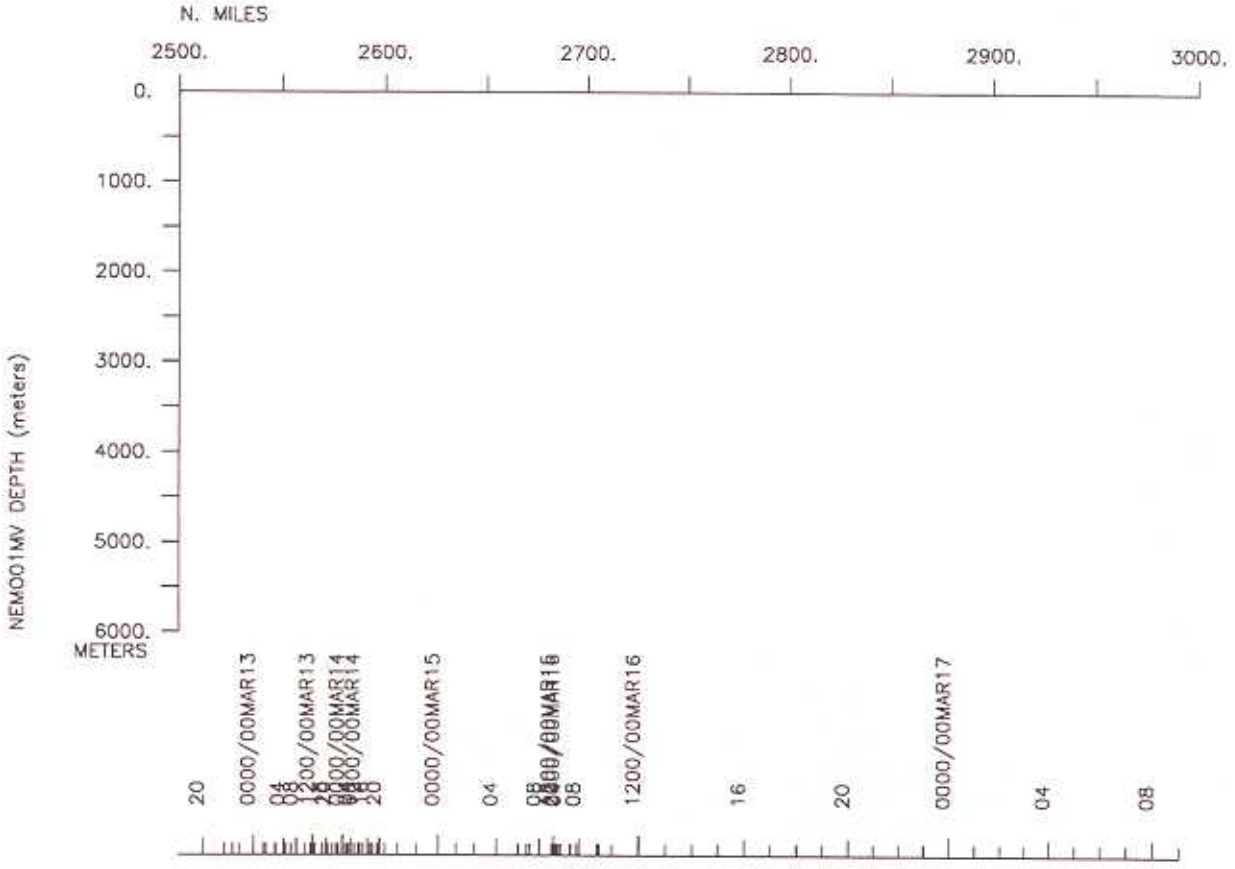
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2600.
2700.
2800.
2900.
3000.
NEMO01MV DEPTH (meters)
0.
1000.
2000.
3000.
4000.
5000.
6000.
METERS
20
0000/00MAR13
04
08
1200/00MAR13
16
20
0000/00MAR14
04
08
1200/00MAR14
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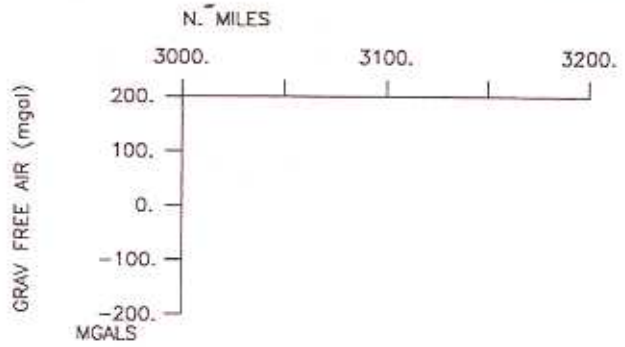
0000/00MAR15
04
08
1200/00MAR16
16
20
0000/00MAR17
04
08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100.
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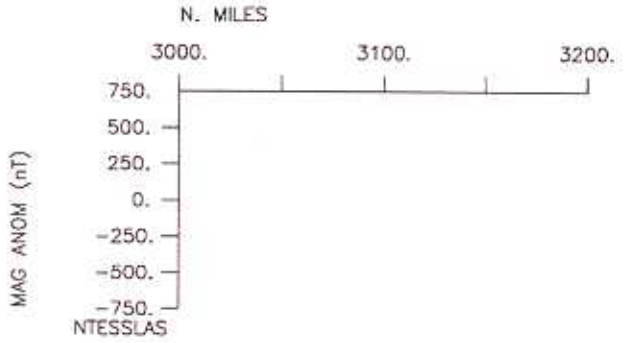
-200.
MGALS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3200.
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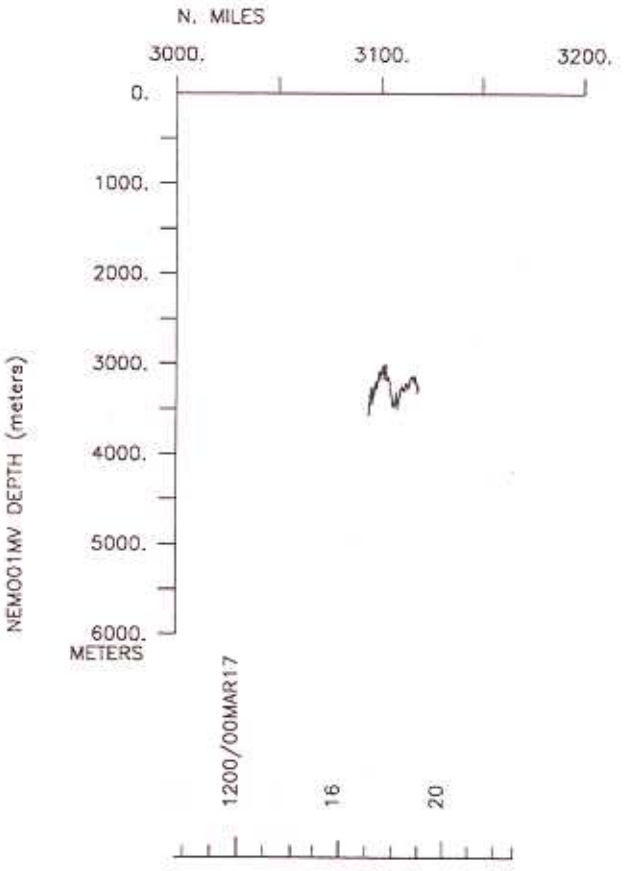
-750.
NTESSLAS


N. MILES
3000.
3100.
3200.
NEMO01MV DEPTH (meters)
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1000.
2000.
3000.
4000.
5000.
6000.
METERS
1200/00MAR17
16
20

S.I.O. Sample Index

NEMO Expedition

Leg 1

(NEMO01MV)

R/V Melville

(Issued November 2000)

PORTS:

San Diego, California (16 February 2000)
to
Manzanillo, Mexico (17 March 2000)

Chief Scientist:

Spahr Webb, Scripps Institution

The Sample Index is a first level interdisciplinary listing of time, position, sample identification and disposition of all samples, records and measurements collected on this cruise leg. The index data are encoded at sea by the resident marine technician and processed on shore by the S.I.O. Geological Data Center shortly after the completion of the cruise leg.

Positions are interpolated on the basis of sample time by comparison to a single, edited navigation file. Samples beginning at one time and position and ending at another are entered on two consecutive lines. Disposition and sample type are represented by three and four character codes to permit future computer searches on these parameters. (Listings defining these codes are available from the Geological Data Center.)

GDC Cruise ID# 292

```
#*** Ports ***

2356 160200  0 LGPT B San Diego, California      32-40.00N 117-14.00W f NEMO01MV
2356 170300  0 LGPT E Manzanillo, Mexico         19-03.00N 104-20.00W f NEMO01MV


#*** Personnel ***
#        ********NAME******** ******TITLE******  *****AFFILIATION**** **CRID**
#--- ---- -------------------- -----------------  -------------------- --------

PECS MPL  Webb,S.              Chief Scientist    Scripps Institution  NEMO01MV
PECS MPL  Crawford,W.          Co-Chief Scient.   Scripps Institution  NEMO01MV
PESP CCS  Doherty,D.           Engineer           Scripps Institution  NEMO01MV
PESP WHOI Evans,R.             Scientist          Woods Hole O. I.     NEMO01MV
PEST MPL  Golden,C.            Grad student       Scripps Institution  NEMO01MV
PEST MPL  Key,K.               Grad student       Scripps Institution  NEMO01MV
PEVL VOL  Lewis,L.             Technician         Quantec              NEMO01MV
PEXN MPL  Miyano,H.            Grad student       Scripps Institution  NEMO01MV
PESP WHOI Roosen,E.            Technician         Woods Hole O. I.     NEMO01MV
PERT STS  Baiz,S.              Resident tech      Scripps Institution  NEMO01MV
PECT STS  Chatwood,J.          Computer tech      Scripps Institution  NEMO01MV


#*** NOTES ***
#An 'X' in the (B)egin/(E)nd column following the sample code indicates no
#sample or data recovered.  A 'C' indicates continuation of data collection
#from before the beginning or after the end of a particular leg, (moored
#bottom instruments, for example.)  The number appearing in the columns
#between the sample identifier and the disposition code, for many sample
#entries, is the water depth in corrected meters.

#GMT DDMMYY    SAMP B SAMPLE               DISP                          p CRUISE
#TIME DATE  TZ CODE E IDENTIFIER           CODE LATITUDE  LONGITUDE      c LEG-SHIP
#---------- -- ---------------------------- ---- --------- ----------     - --------

#*** Underway Data Curator - Geological Data Center ext. 41899 *


#*** Log Books ***

1700 170200  0 LBUW B minimal UW watch log GDC  32-38.08N 117-13.29W g NEMO01MV
1813 150300  0 LBUW E minimal UW watch log GDC   9-11.07N 104-12.72W g NEMO01MV


#*** Sea Beam Records (vertical beam and side scan) ***

1812 170200  0 MBSR B vbeam&sidescan r-01  GDC  32-42.40N 117-14.18W g NEMO01MV
1913 170300  0 MBSR E vbeam&sidescan r-01  GDC  17-04.25N 104-19.62W g NEMO01MV
```

#GMT DDMMYY #TIME DATE	TZ	SAMP CODE	B E	SAMPLE IDENTIFIER	DISP CODE	LATITUDE	LONGITUDE	p c	CRUISE LEG-SHIP
#*** Seismic Reflection ***									
0501 220200	0	SPXX	B	free vehicle cd	MPL	18-51.29N	109-57.38W	g	NEMO01MV
1627 260200	0	SPXX	E	free vehicle	MPL	9-07.68N	104-13.40W	g	NEMO01MV
2221 220200	0	SPXX	B	free vehicle hd	MPL	17-11.66N	108-55.11W	g	NEMO01MV
1515 260200	0	SPXX	E	free vehicle	MPL	9-08.28N	104-12.31W	g	NEMO01MV
0721 240200	0	SPXX	B	free vehicle sts	MPL	14-01.98N	106-56.56W	g	NEMO01MV
0724 260200	0	SPXX	E	free vehicle	MPL	9-48.94N	104-19.80W	g	NEMO01MV
1819 260200	0	SPXX	B	free vehicle cd	MPL	9-02.40N	104-11.95W	g	NEMO01MV
1939 290200	0	SPXX	E	free vehicle	MPL	9-02.54N	104-12.00W	g	NEMO01MV
1923 260200	0	SPXX	B	free vehicle hd	MPL	9-02.33N	104-14.00W	g	NEMO01MV
1903 290200	0	SPXX	E	free vehicle	MPL	9-02.54N	104-14.19W	g	NEMO01MV
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1908 030300	0	SPXX	B	free vehicle hd	MPL	9-04.77N	104-15.57W	g	NEMO01MV
1900 060300	0	SPXX	E	free vehicle	MPL	9-04.80N	104-15.46W	g	NEMO01MV
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1519 090300	0	SPXX	E	free vehicle	MPL	9-07.33N	104-17.18W	g	NEMO01MV
2123 060300	0	SPXX	B	free vehicle sts	MPL	9-08.14N	104-13.89W	g	NEMO01MV
1425 090300	0	SPXX	E	free vehicle	MPL	9-08.14N	104-14.08W	g	NEMO01MV
0116 070300	0	SPXX	B	free vehicle hd	MPL	9-08.52N	104-15.28W	g	NEMO01MV
1616 090300	0	SPXX	E	free vehicle	MPL	9-08.56N	104-15.61W	g	NEMO01MV
1708 090300	0	SPXX	B	free vehicle cd	MPL	9-11.05N	104-12.79W	g	NEMO01MV
1311 120300	0	SPXX	E	free vehicle	MPL	9-04.78N	104-13.95W	g	NEMO01MV
1917 090300	0	SPXX	B	free vehicle sts	MPL	9-08.12N	104-13.88W	g	NEMO01MV
1521 120300	0	SPXX	E	free vehicle	MPL	9-08.40N	104-14.08W	g	NEMO01MV
1442 120300	0	SPXX	B	free vehicle hd	MPL	9-07.23N	104-16.47W	g	NEMO01MV
0754 160300	0	SPXX	E	free vehicle	MPL	9-07.33N	104-16.76W	g	NEMO01MV
2125 120300	0	SPXX	B	free vehicle sts	MPL	9-47.79N	104-21.17W	g	NEMO01MV
0209 150300	0	SPXX	E	free vehicle	MPL	9-47.76N	104-20.88W	g	NEMO01MV
0529 070300	0	SPXX	B	free vehicle sts	MPL	9-24.25N	104-17.81W	g	NEMO01MV
1004 160300	0	SPXX	E	free vehicle	MPL	9-15.29N	104-13.52W	g	NEMO01MV

#GMT TIME	DDMMYY DATE	TZ	SAMP CODE	B E	SAMPLE IDENTIFIER	DISP CODE	LATITUDE	LONGITUDE	p c	CRUISE LEG-SHIP
#*** Electric Field ***										
1655	230200	0	EFFV	B	ef free vehicle 11	IGPP	15-24.94N	107-48.41W	g	NEMO01MV
1307	140300	0	EFFV	E	ef free vehicle	IGPP	9-49.67N	104-18.88W	g	NEMO01MV
1811	230200	0	EFFV	B	ef free vehicle 12	IGPP	15-17.66N	107-43.86W	g	NEMO01MV
1336	140300	0	EFFV	E	ef free vehicle	IGPP	9-49.91N	104-17.78W	g	NEMO01MV
1943	230200	0	EFFV	B	ef free vehicle 13	IGPP	15-08.85N	107-38.35W	g	NEMO01MV
2324	130300	0	EFFV	E	ef free vehicle	IGPP	9-49.93N	104-17.31W	g	NEMO01MV
2303	230200	0	EFFV	B	ef free vehicle 14	IGPP	14-49.69N	107-26.38W	g	NEMO01MV
2350	130300	0	EFFV	E	ef free vehicle	IGPP	9-50.27N	104-16.62W	g	NEMO01MV
0452	240200	0	EFFV	B	ef free vehicle 15	IGPP	14-16.26N	107-05.48W	g	NEMO01MV
2045	130300	0	EFFV	E	ef free vehicle	IGPP	9-50.40N	104-16.20W	g	NEMO01MV
1515	240200	0	EFFV	B	ef free vehicle 16	IGPP	13-16.58N	106-28.18W	g	NEMO01MV
1500	130300	0	EFFV	E	ef free vehicle	IGPP	9-50.66N	104-14.48W	g	NEMO01MV
1752	240200	0	EFFV	B	ef free vehicle 17	IGPP	13-01.54N	106-18.78W	g	NEMO01MV
1537	140300	0	EFFV	E	ef free vehicle	IGPP	9-50.20N	104-16.67W	g	NEMO01MV
0045	250200	0	EFFV	B	ef free vehicle 08	IGPP	12-21.97N	105-54.05W	g	NEMO01MV
1804	140300	0	EFFV	E	ef free vehicle	IGPP	9-48.87N	104-16.74W	g	NEMO01MV
0212	250200	0	EFFV	B	ef free vehicle 18	IGPP	12-13.64N	105-48.85W	g	NEMO01MV
1845	140300	0	EFFV	E	ef free vehicle	IGPP	9-48.06N	104-17.73W	g	NEMO01MV
#*** Electro-Magnetics **										
2108	230200	0	EMFV	B	em free vehicle 04	MPL	15-00.71N	107-33.26W	g	NEMO01MV
0145	140300	0	EMFV	E	em free vehicle	MPL	9-50.47N	104-17.53W	g	NEMO01MV
0150	240200	0	EMFV	B	em free vehicle 05	MPL	14-33.69N	107-16.38W	g	NEMO01MV
0233	140300	0	EMFV	E	em free vehicle	MPL	9-50.72N	104-17.49W	g	NEMO01MV
0349	240200	0	EMFV	B	em free vehicle 06	MPL	14-22.29N	107-09.25W	g	NEMO01MV
0326	120300	0	EMFV	E	em free vehicle	MPL	9-50.61N	104-17.15W	g	NEMO01MV
1648	240200	0	EMFV	B	em free vehicle 01	MPL	13-07.67N	106-22.61W	g	NEMO01MV
0505	120300	0	EMFV	E	em free vehicle	MPL	9-51.18N	104-17.65W	g	NEMO01MV
1322	240200	0	EMFV	B	em free vehicle 03	MPL	13-27.40N	106-34.95W	g	NEMO01MV
0435	120300	0	EMFV	E	em free vehicle	MPL	9-51.11N	104-17.03W	g	NEMO01MV
2305	240200	0	EMFV	B	em free vehicle 07	MPL	12-31.55N	106-00.04W	g	NEMO01MV
0520	130300	0	EMFV	E	em free vehicle	MPL	9-49.50N	104-17.25W	g	NEMO01MV
0347	250200	0	EMFV	B	em free vehicle 09	MPL	12-04.54N	105-43.16W	g	NEMO01MV
0145	130300	0	EMFV	E	em free vehicle	MPL	9-47.71N	104-17.04W	g	NEMO01MV
#***			End Sample Index							NEMO01MV

```
# MGD77 header file description and data
# column,1         2         3         4         5         6         7         8
#2345678901234567890123456789012345678901234567890123456789012345678901234567890
#|-cruise identifier
#         |-format acronym(=MGD77)
#              |-data center file number(leave blank)
#                    |-no. of headers type 1 (=1)
#                     |-no. of headers type 2 (=0)
#                      |-no. of parameters (=29)
#                       parameter codes
#                       |-----depths          5 = present in file
#                       |-----mags            3 = collected, not in file
#                       |-----grav            1 = no collected
#                       |-----h.r.seis. (3.5 khz)
#                       |-----d.p.seis. (seis. reflection)
#                       |-----file creation date
#                             |-contributing institution
1NEMO01MVMGD77         102951111      SCRIPPS INSTITUTION OF OCEANOGRAPHY      01
#                                   code-||-platform type
#country           |platform name         ||      |chief scientist(s)
USA                R/V MELVILLE          1SHIP  SPAHR WEBB,SCRIPPS INSTITUTION  02
#project, cruise & leg                                      |funding
NEW MILLENNIUM OF OCEANOGRAPHY LEG 1                       NSF                     03
#bdate|port(city,country)                |edate|port(city,country)
000216SAN DIEGO, CALIFORNIA              000317ASTORIA,OREGON                      04
#navigation instrumentation              |position determination method
PCODE GPS                                SMOOTHED FIT TO 60 SEC FIXES            05
#bathymetry instrumentation              |additional forms of depth data
SEABEAM 2000 12kHz, w/SIDESCAN           ANAL.REC,35MM FILM,DIGITAL MAG. TAPE    06
#magnetics instrumentation               |additional forms of magnetic data
                                         NONE COLLECTED                          07
#gravity instrumentation                 |additional forms of gravity data
                                         NONE COLLECTED                          08
#seismic instrumentation                 |formats of seismic data
                                         NONE COLLECTED                          09
# data format description (in fortran) for seq. no. 10-11
A(I1,A8,F5.2,4I2,F5.3,F8.5,F9.5,I1,F6.4,F6.1,I2,I1,3F6.1,I1,F5.1,F6.0,F7.1,      10
F6.1,F5.1,A8,4I1)                                                                11
#bathymetry
#digitizing rate(min)
#| |-sampling rate
#|              |-sound velocity(meters/sec)
#|                   |-dep datum code
#|                    |-interpolation scheme
0101PING IN H2O15000  1 MINUTE VALUES EXTRACTED FROM SEABEAM VERTICAL BEAM       12
#magnetics
#digitizing rate(min)
#| |-sampling rate(sec)
#|  |-sensor tow dist.(meters)
#|     |-sensor depth (meters)
#|          |-horizontal sensor separation(meters)
#|            |-reference field
#|                         |-method of deriving residual field
                                                                                 13
#gravity
#|digitizing rate (min)
#| |-sampling rate(sec)
#|  |-code
#|  |-theoretical grav. formula(in plain language)
#|                        |-code
#|                        |-reference system (in plain language)
#|                                  |-corrections applied
                                                                                 14
#gravity continued
#|departure base station gravity(mgal)
#|      |-departure base station description
#|
#|                                        |-arrival base station gravity(mgal)
#|                                              |-arrival base stat. description
```

```
#           10 degree area identifiers                                    15
#|no. of area identifiers (col 1-2) . col 3 is blank, then starting with
# column 4 for the next two lines, there are 4 columns separated by
# commas for each area identifiers.
                                                                          16
                                                                          17
#seq. line no's. 18-24 are reserved for additional documentation
PROCESSED BY GEOLOGICAL DATA CENTER, SCRIPPS INSTITUTION OF OCEANOGRAPHY  18
                                                                          19
                                                                          20
DEPTHS CORRECTED FOR 5 METER SHIP DRAFT                                   21
NAVIGATION: PCODE GPS                                                     22
NAVIGATION DOWN FROM 2341Z 000218 TO 0335Z 000226                         23
SEABEAM DOWN FROM BEGINNING OF LEG TO 0630 000301                         24
```