

**REPORT AND INDEX OF  
UNDERWAY MARINE GEOPHYSICAL DATA**

**GLORIA EXPEDITION**

**LEG 3**

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R/V Melville

(Issued February 1993)

Easter Island (12 December 1992)  
to  
Papeete, Tahiti (6 January 1993)

Chief Scientist:

Donald Forsyth (Brown University)

Resident Marine Technician - Ron Comer

Computer Technician - George Bouchard

Sea Beam/Underway Processor - Uta Albright

Post-Cruise Processing and Report Preparation by the  
Geological Data Center, Scripps Institution of Oceanography  
La Jolla, California 92093

Data Collection and Processing Funded by:  
NSF Grant Number OCE91-02183

**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.

GDC Cruise I.D.# 261

# INFORMAL REPORT AND INDEX OF NAVIGATION AND UNDERWAY GEOPHYSICAL DATA

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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 anomaly and gravity free air anomaly vs. distance. (Sections of track with seismic reflection data have a wide black line along the bottom of the profile).

**Sample Index** - list of begin/end times and positions of all underway records as well as all other samples and measurements (geology, biology, physical oceanography, etc.) collected on the cruise leg.

**NOTE:** One or more of the underway data types may not be collected on a given cruise leg.

For information on the availability and reproduction costs of data in the following forms, contact S. M. Smith, Curator, Geological Data Center, Scripps Institution of Oceanography, La Jolla, CA 92093-0223. Phone (619)534-2752. Fax (619)534-5306. Internet Email: [ssmith@ucsd.edu](mailto:ssmith@ucsd.edu)

1. Files on Exabyte, DAT or 1/2 inch magnetic tape:
  - a) Separate time series ASCII files of navigation, single beam depth, gravity and magnetics.
  - b) These same data in a merged ASCII file in the MGD77 Exchange format.
  - c) SeaBeam depth data (binary, Sun byte order) in SIO Swath Bathymetry format (not available on 1/2" tape).
  - d) SeaBeam Sidescan data (not available on 1/2" tape).
2. Microfilm (35mm flowfilm) or Xerox copies of:
  - a) Underway Watch log book.
  - b) SeaBeam vertical beam profile/Sidescan records.
  - c) Echosounder records - 3.5 kHz frequency.
  - d) Magnetometer records.
  - e) Seismic reflection profiler records.
3. Navigation listing with times and positions of fixes and course and speed changes.
4. Plots:
  - a) Copies of archived 1.2"/degree scale trackplots.
  - b) Copies of archived 8"/degree scale SeaBeam depth plots.
  - c) Custom plots in Mercator projection:
    - 1) Track plots.
    - 2) SeaBeam depth contour plots.
    - 3) Depth, magnetic or gravity values printed or profiled along track.

## SIO SeaBeam 2000 Data Information

The following forms are available, subject to approval of the cruise leg chief scientist:

- 1) Hardcopy of realtime contour swath records and records with vertical beam and sidescan grayscale display are available for inspection at the data center.
- 2) Microfilm (35mm flowfilm) of vertical beam/sidescan records.
- 3) Sea Beam merged tapes - Sea Beam data merged with GPS-based navigation. (Navigation is edited to the extent that DR courses and speeds are edited and poor fixes are removed after inspection of speeds and drift vectors between fix pairs. No editing is done on the basis of adjusting to overlapping Sea Beam swaths.)
- 4) Archive contour plots - 8"/degree chart scale, with contour interval nominally 50m, are generated for all transit lines. Some survey areas are plotted at appropriate scales as well. Available for inspection at data center; additional copies may be generated from plot files stored on tape.
- 5) Custom generated plots of Sea Beam swaths on Mercator projection in four colors at variable plot scales and contour intervals. There are provisions to adjust positions of individual track lines and to edit out beams (bad data or overlapping data on inside of turns).

Revised February 1992

### GLORIA, Leg 3 Split Project Note

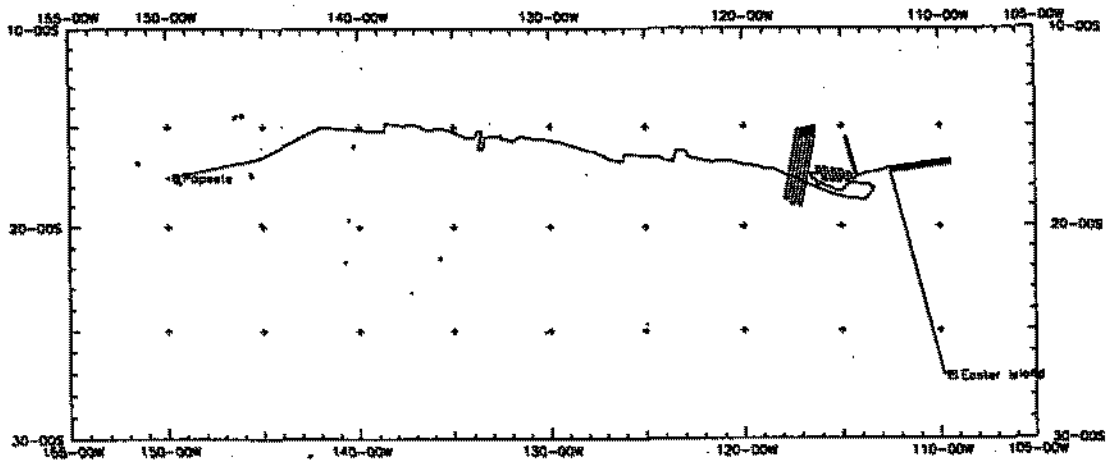
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Gloria, Leg 3 was split into two parts. Part A, east of 118W, had Ken Macdonald (UCSB) and Don Forsyth (Brown University) as co-Principal Investigators. Forsyth was the Chief Scientist on board.

Part B, west of 118W (after 2000Z/29Dec92), had David Sandwell (SIO) as the Principal Investigator and Mary Ann Lynch acting as the on board Chief Scientist.

During the two-year proprietary hold period there will be two underway merge files (uwmrg.GLOR3AMV and uwmrg.GLOR3BMV) maintained by GDC for use by each project. A merge file (uwmrg.GLOR03MV) for the whole leg will also be maintained by GDC and used for sending these data to NGDC when both parts are released from proprietary hold.

S.M.Smith SIO/GDC March 1993



GLORIA Leg 3 (GLOR03MV)

### GLORIA EXPEDITION LEG 3

CHIEF SCIENTIST: Donald Forsyth, Brown Univ.

PORTS: Easter Island - Papeete, Tahiti

DATES: 12 December 1992 - 6 January 1993

SHIP: R/V Melville

#### TOTAL MILEAGE OF UNDERWAY DATA COLLECTED

Cruise - 6505 miles

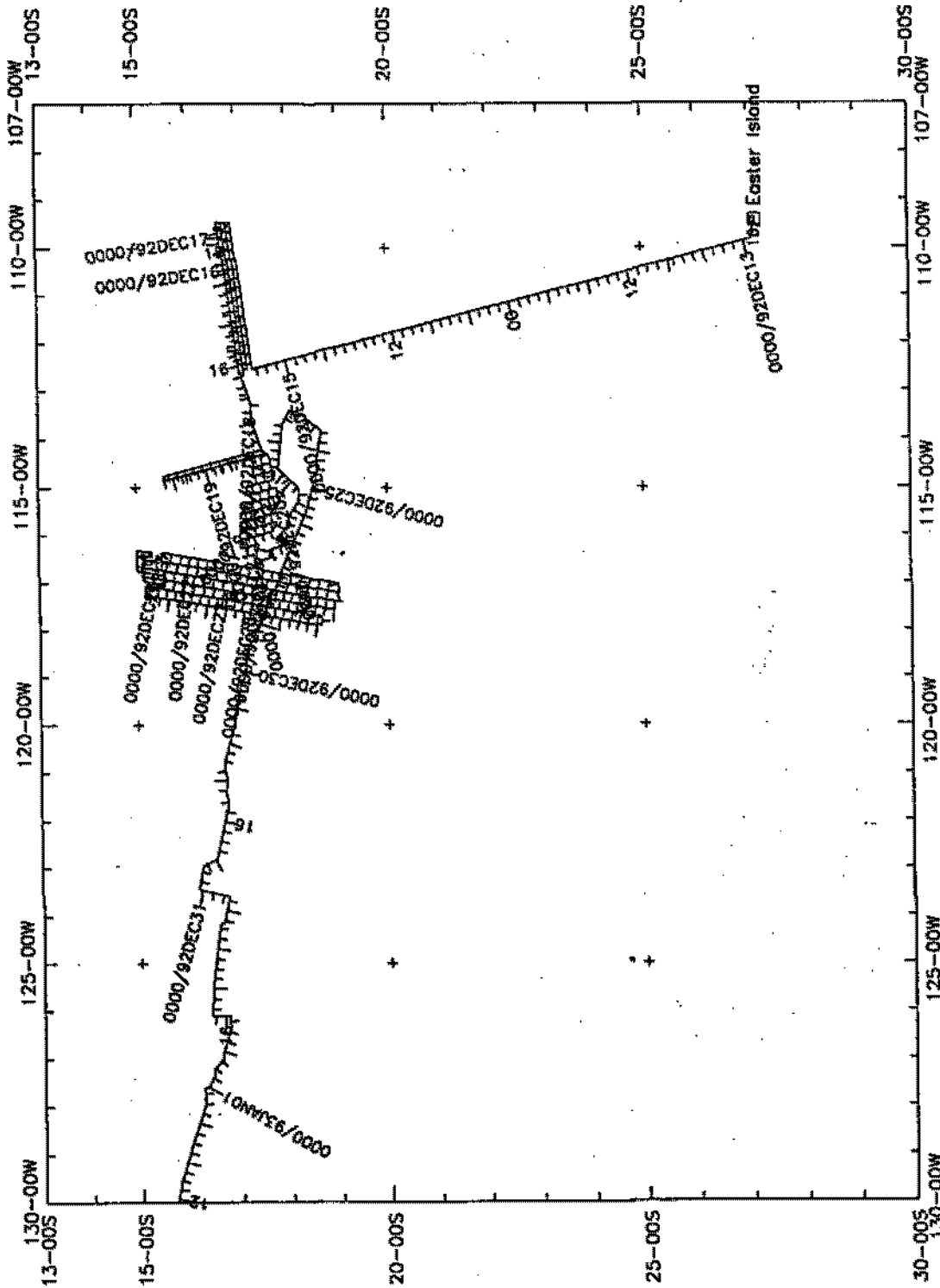
Magnetics - 6365 miles

Bathymetry - 6485 miles

Seismic Reflection - none collected

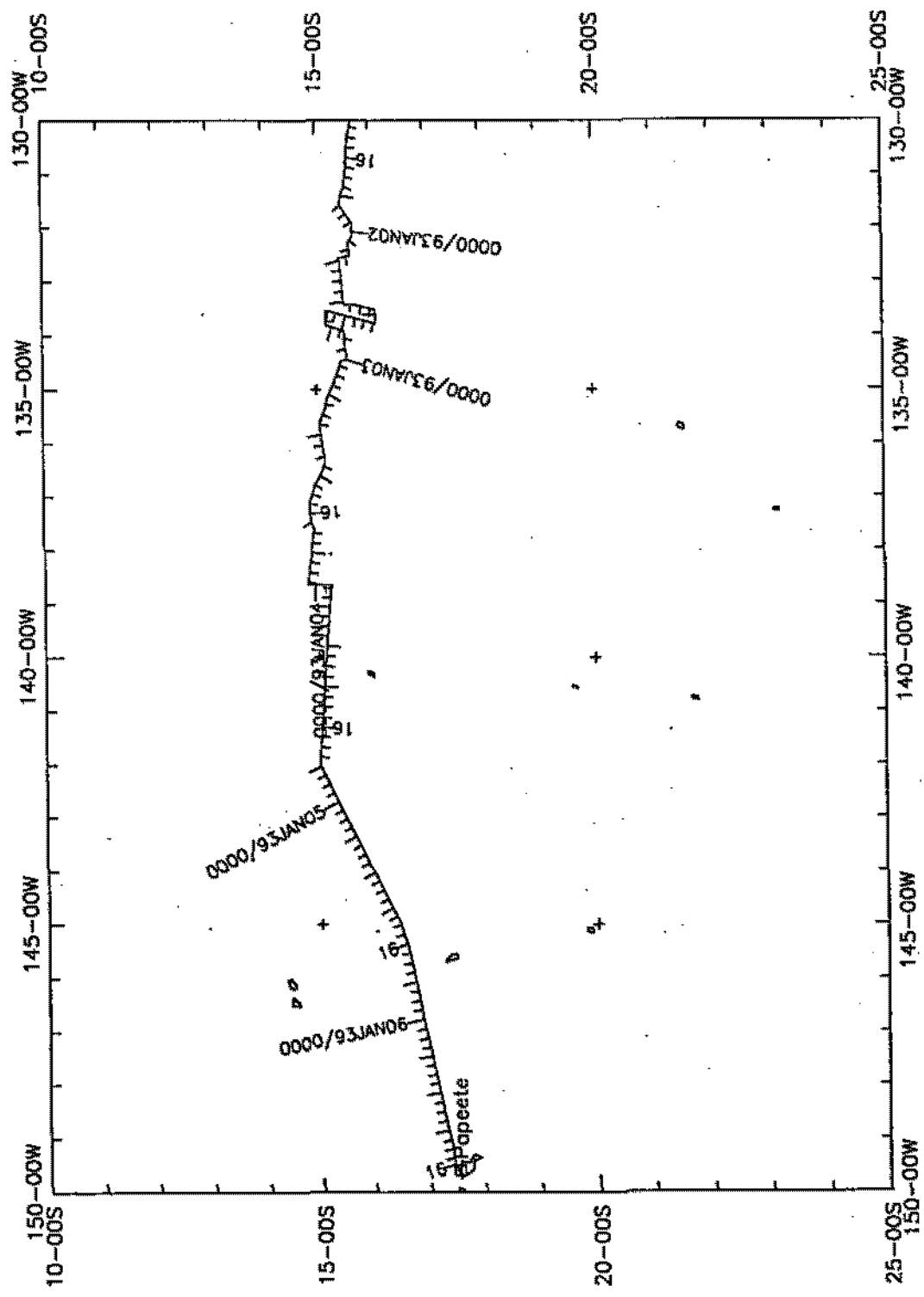
Sea Beam - 6485 miles

Gravity - 6280 miles



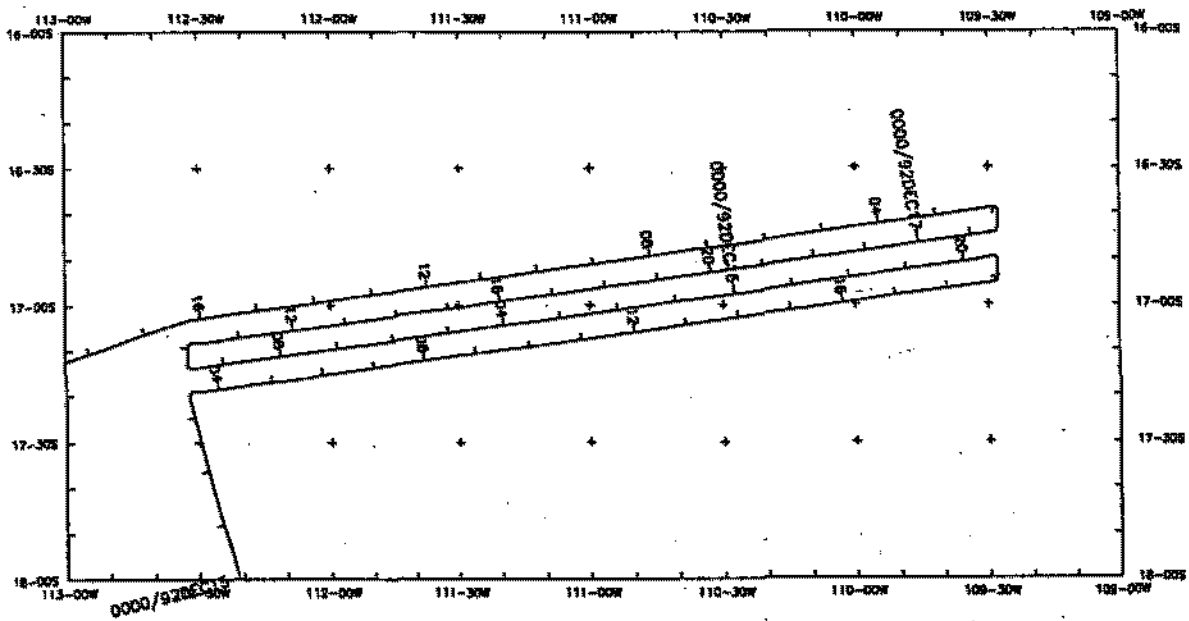
GLORIA Leg 3 (GLOR03MV) Part 1

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\*

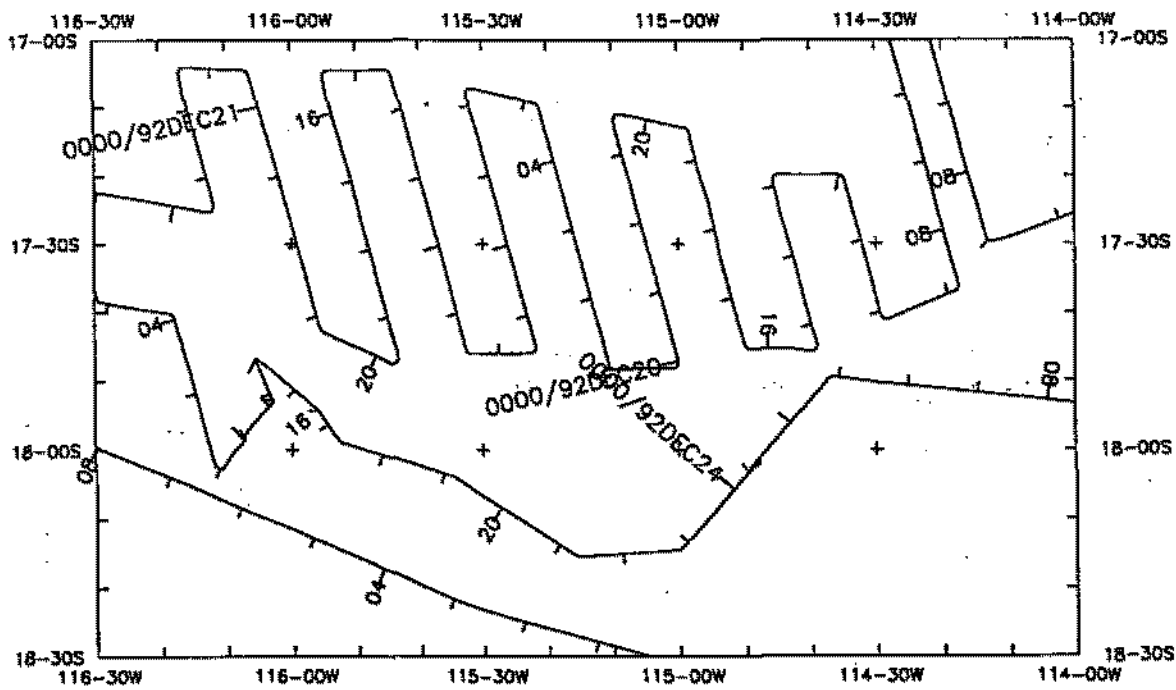
GLORIA Leg 3 (GLOR03MV) Part 2



GLORIA Leg 3 (GLOR03MV) Area 1

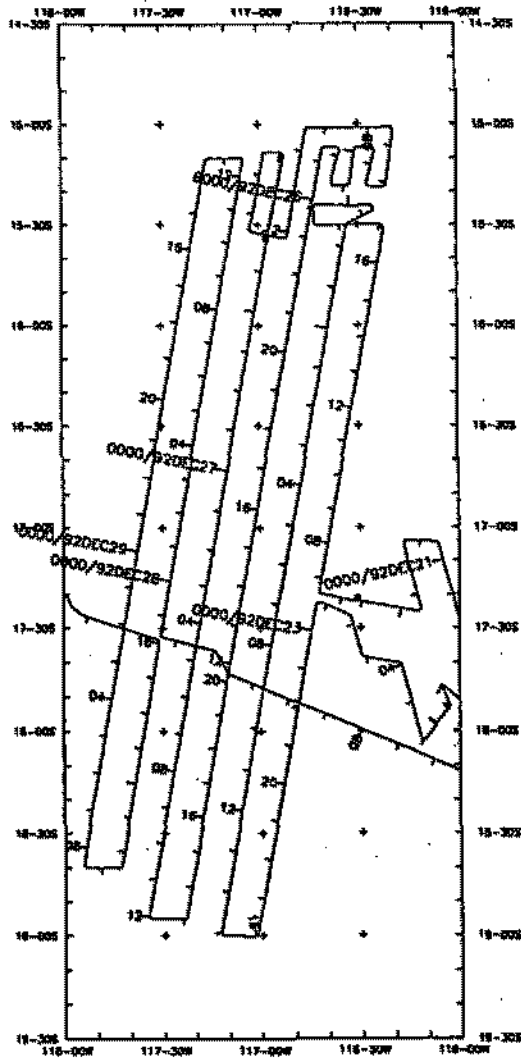
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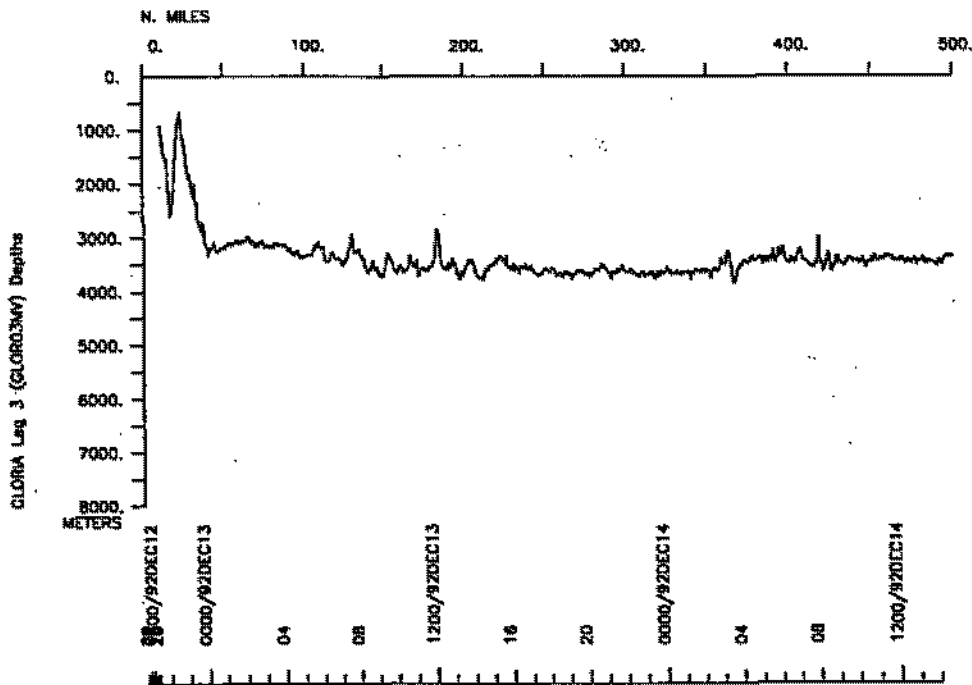
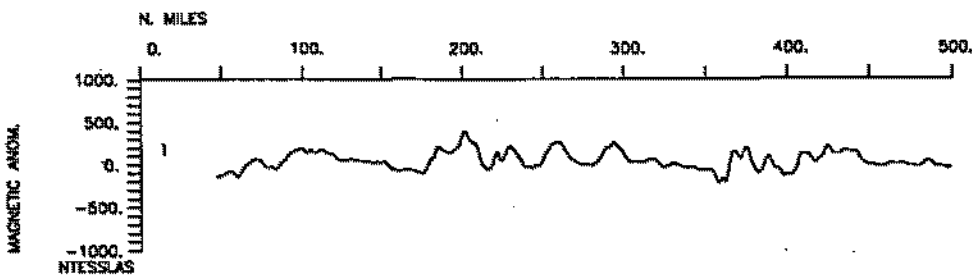
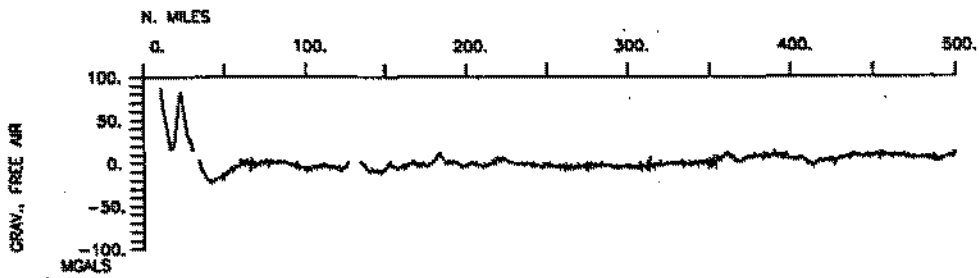


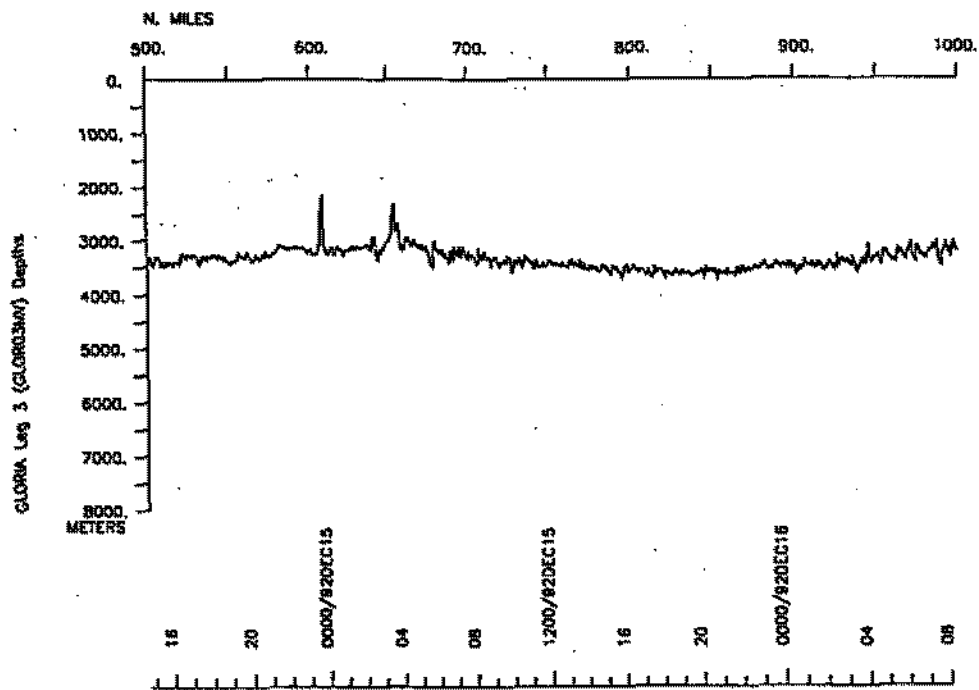
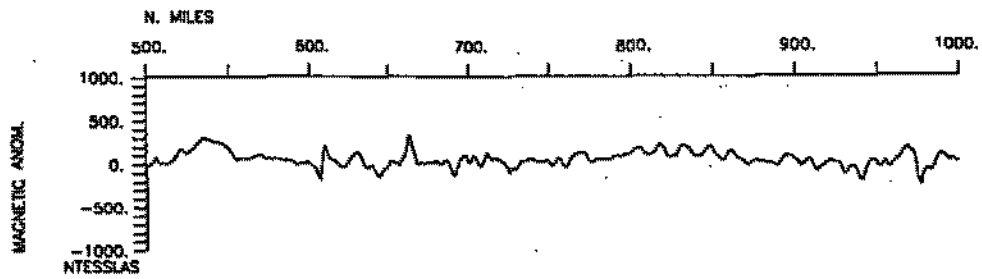
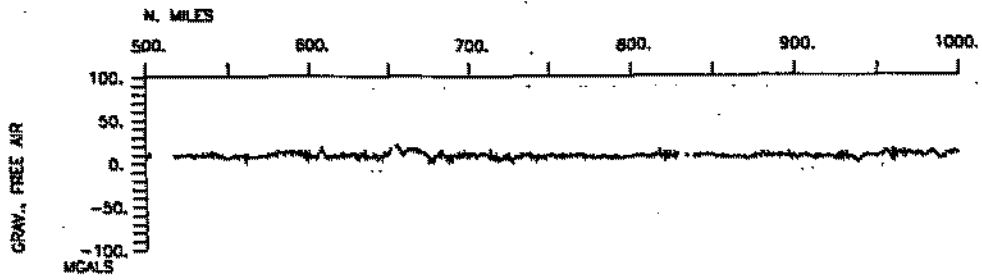
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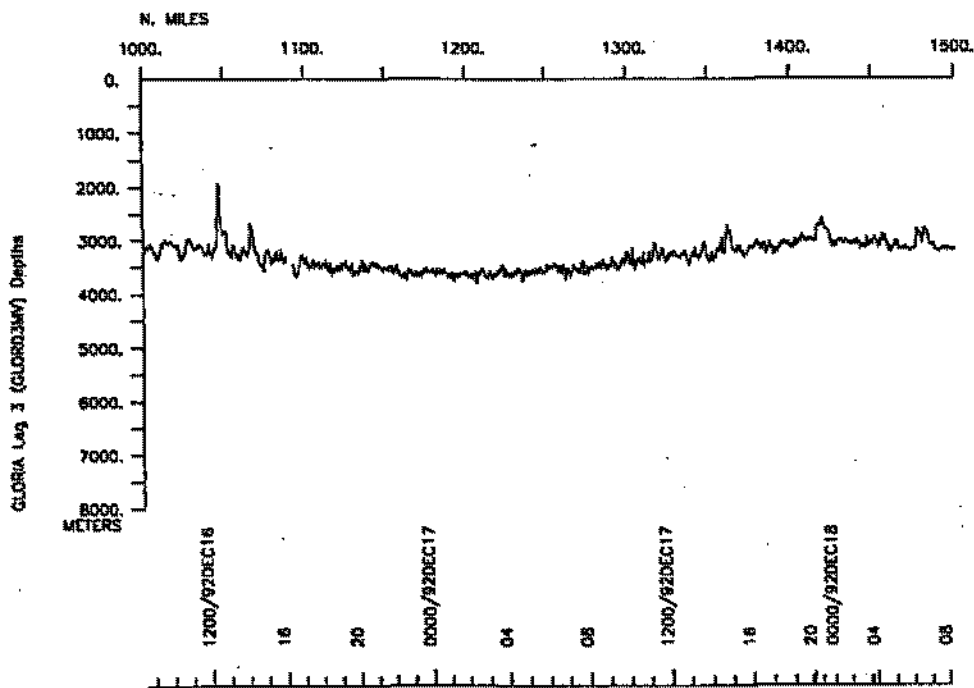
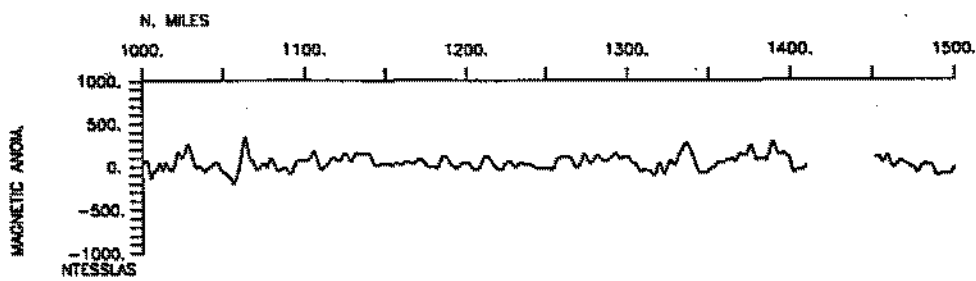
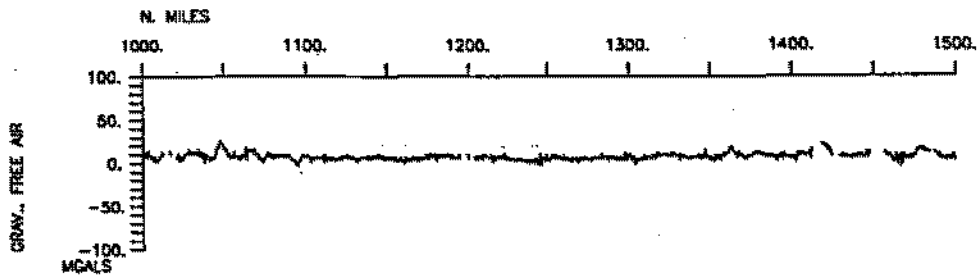
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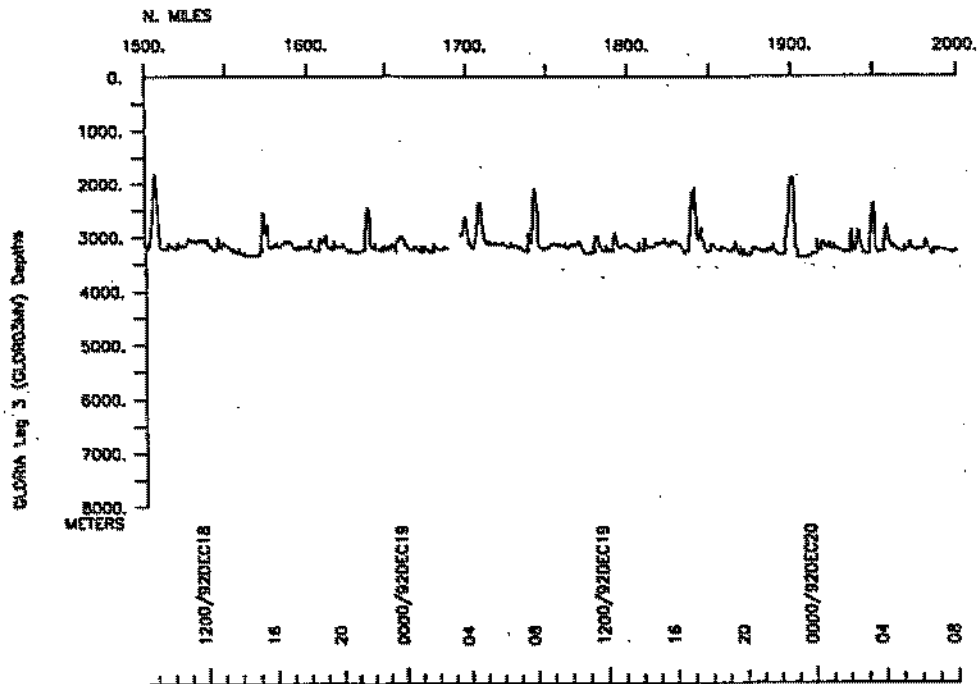
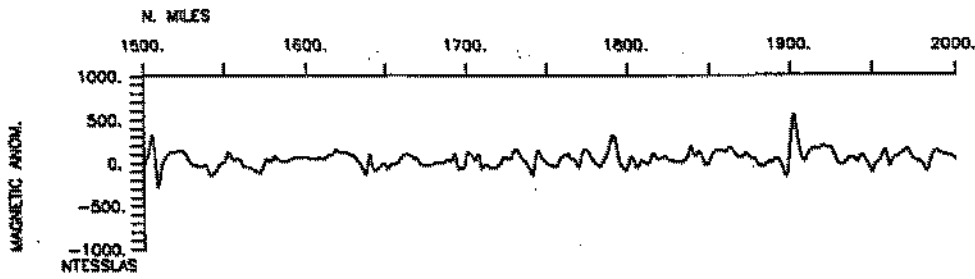
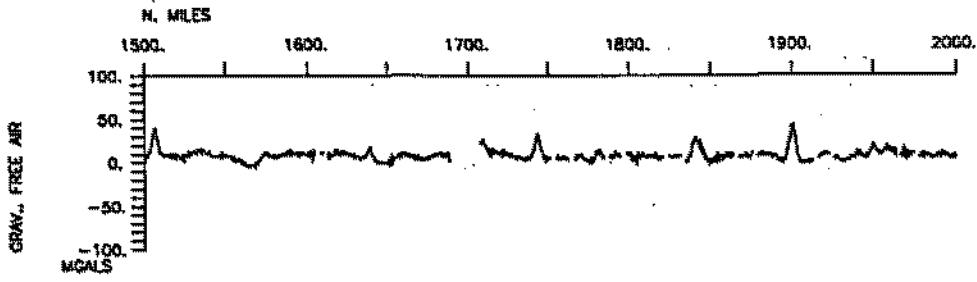


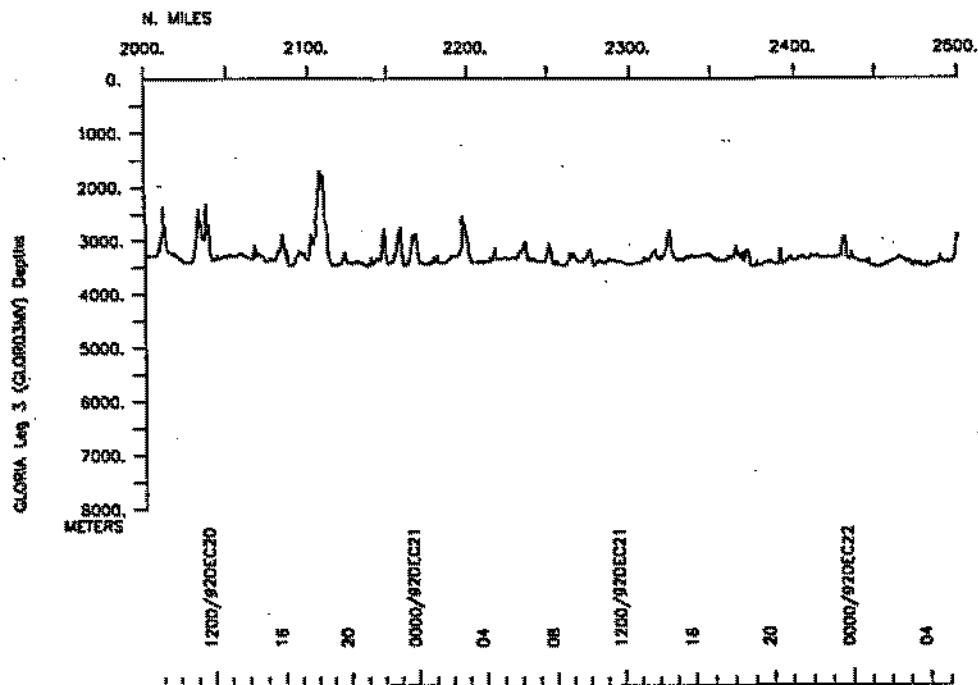
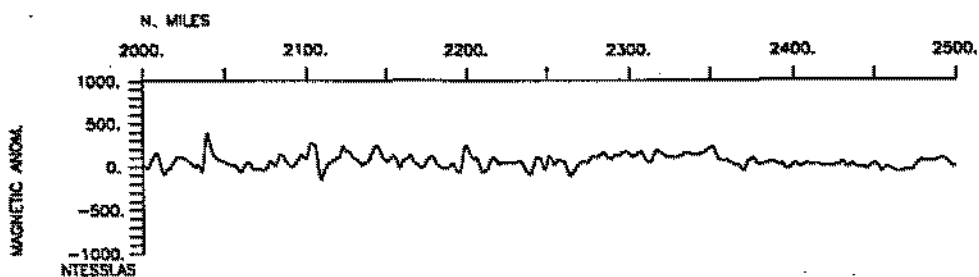
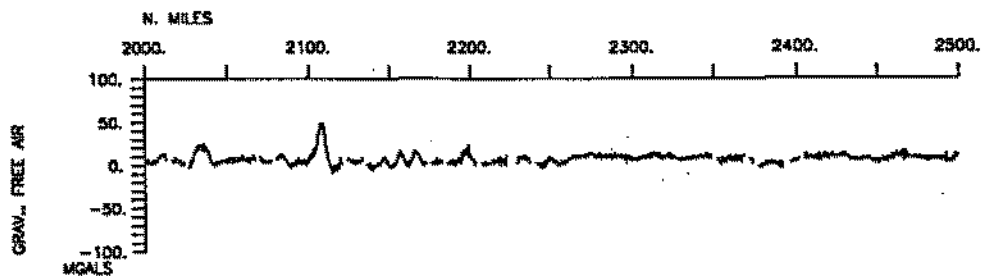
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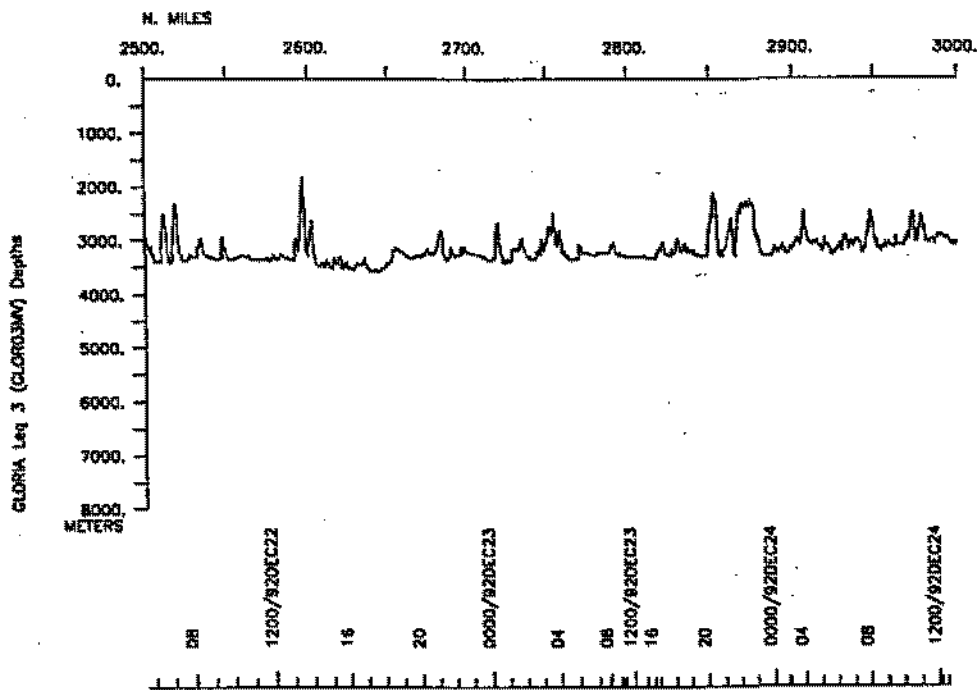
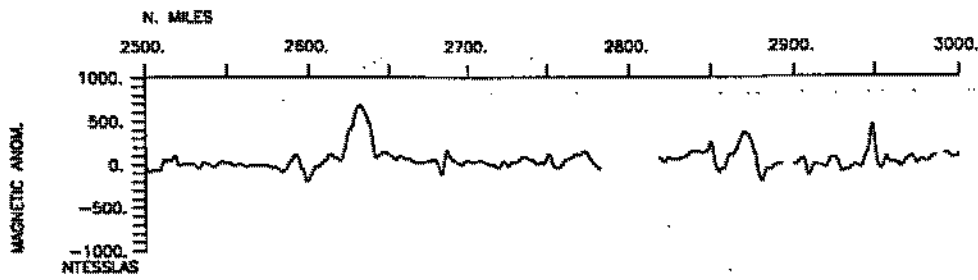
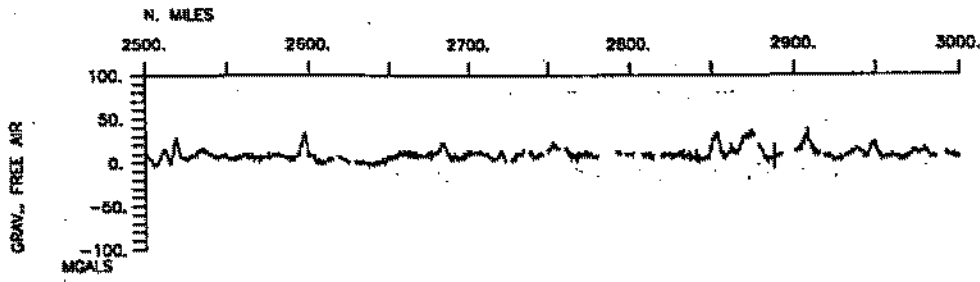




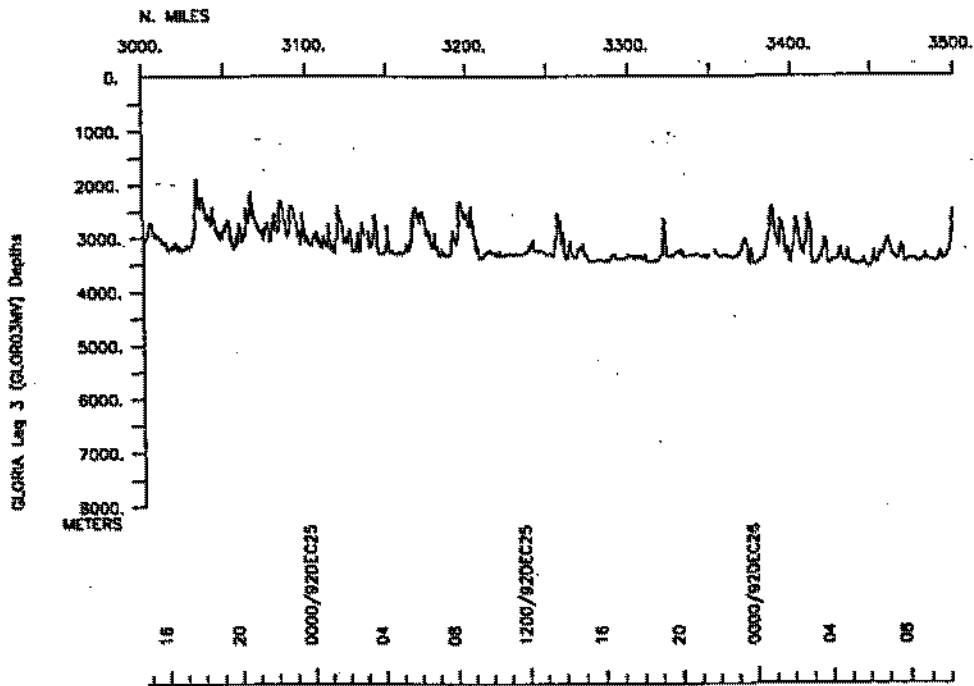
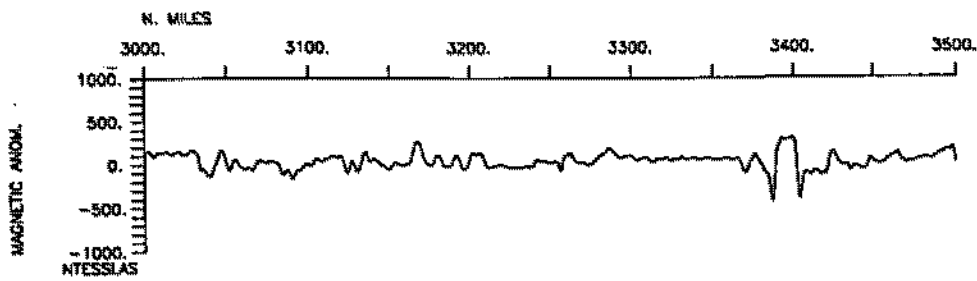
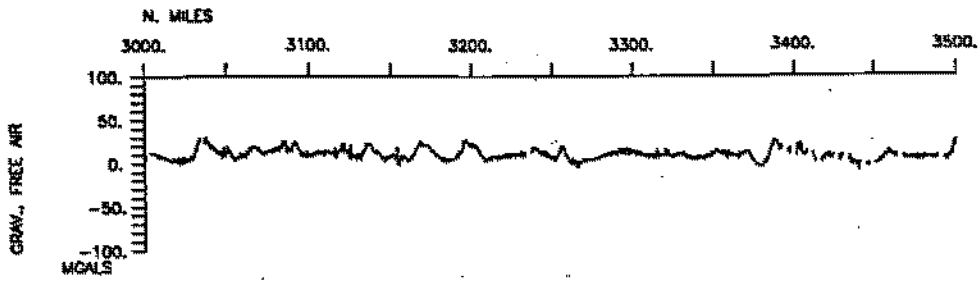


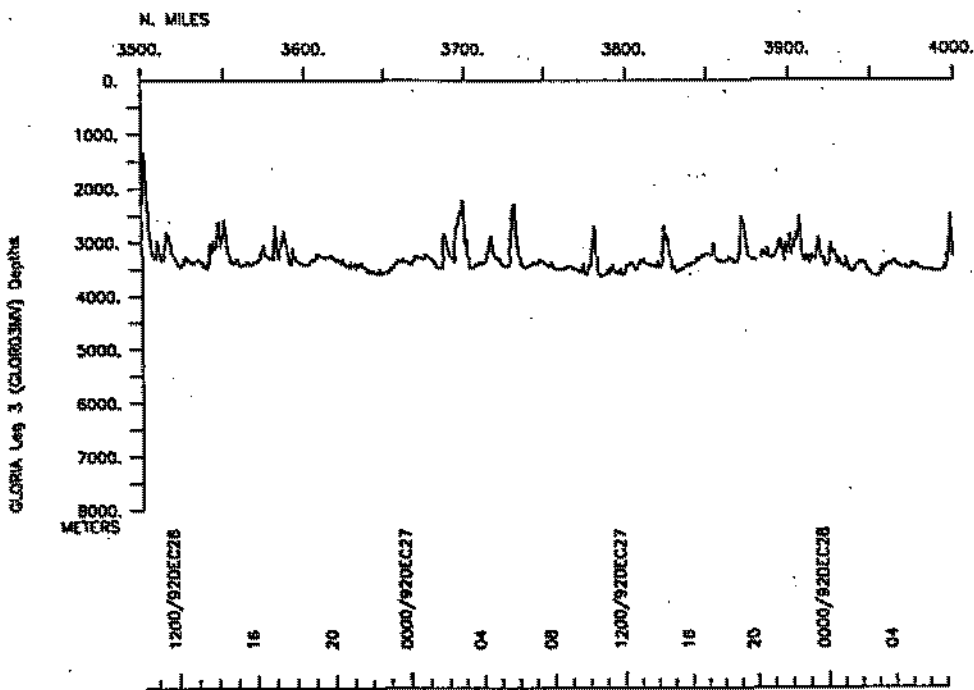
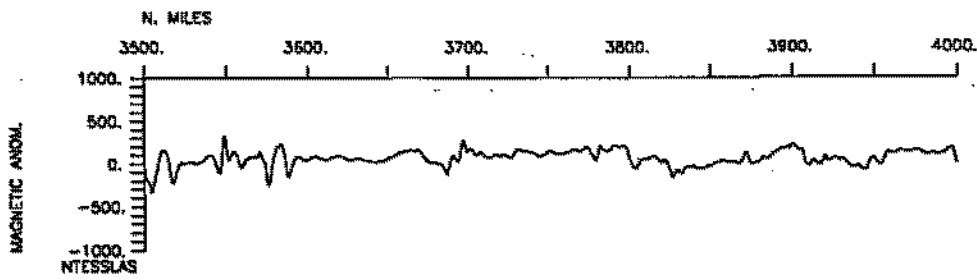
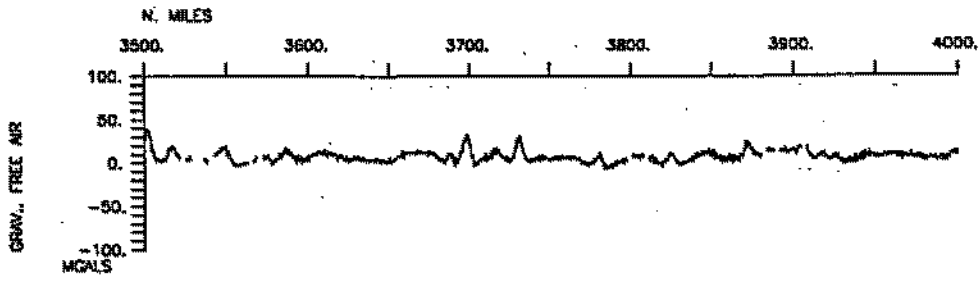


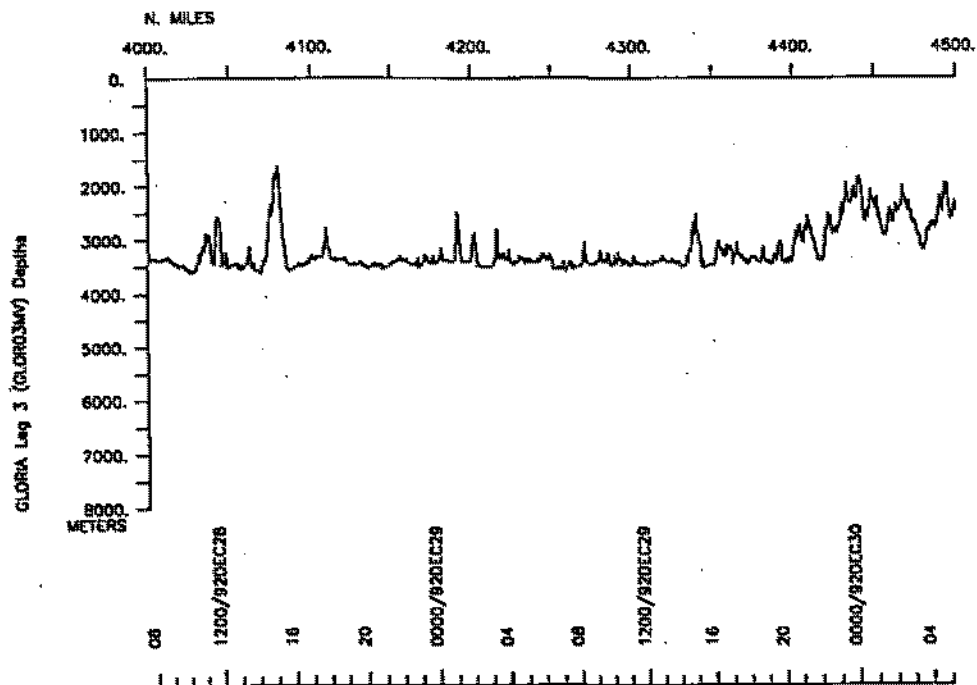
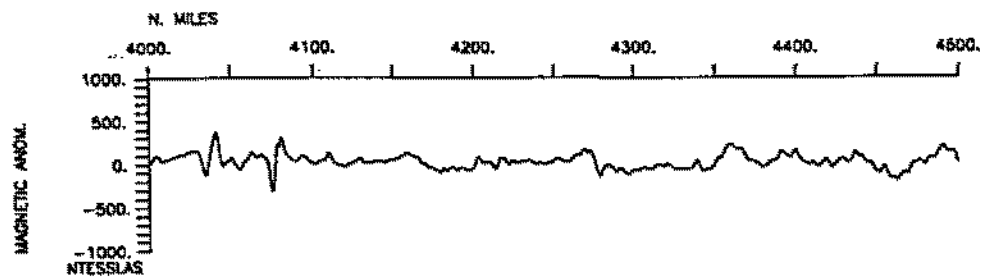
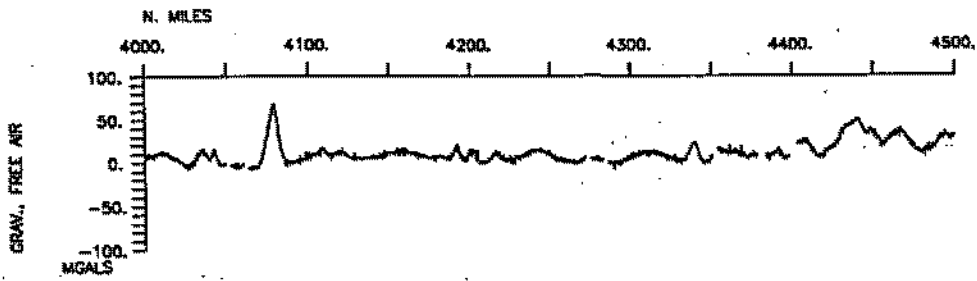


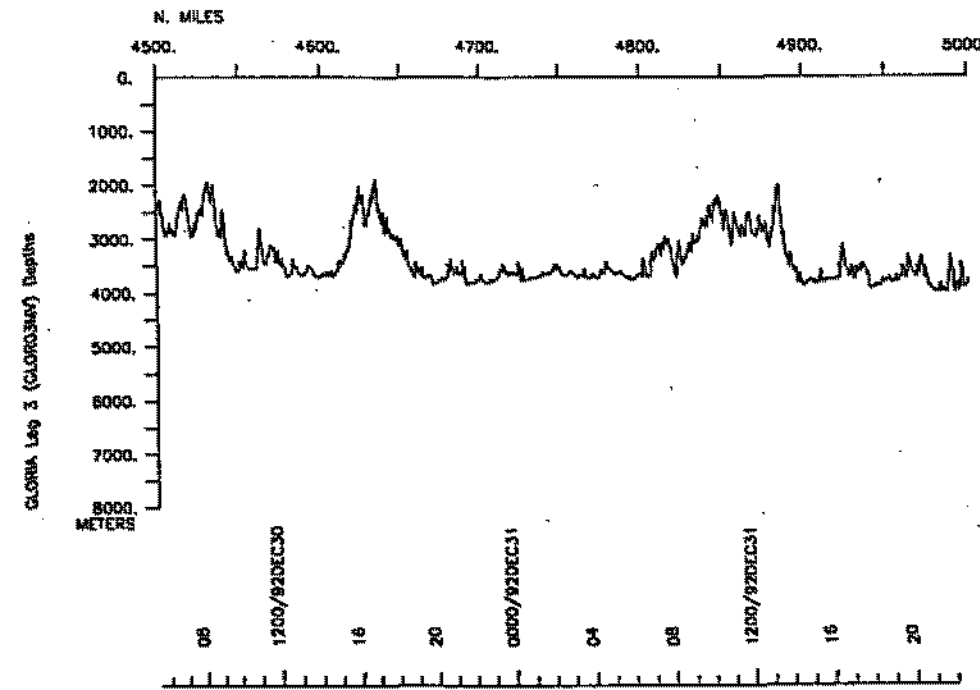
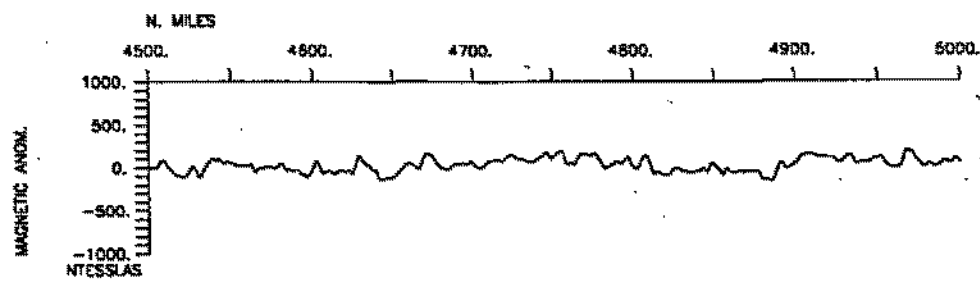
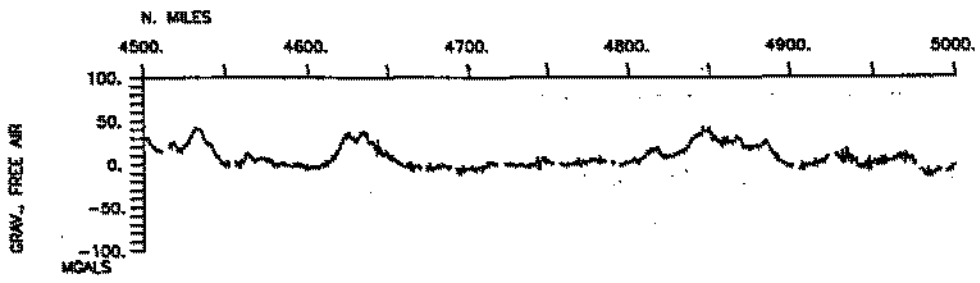


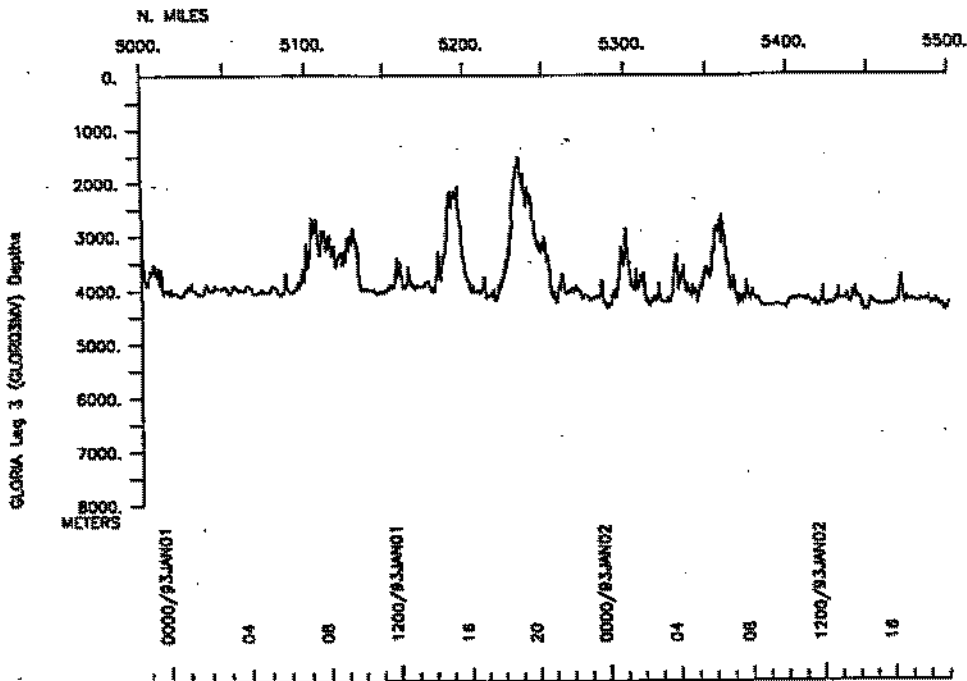
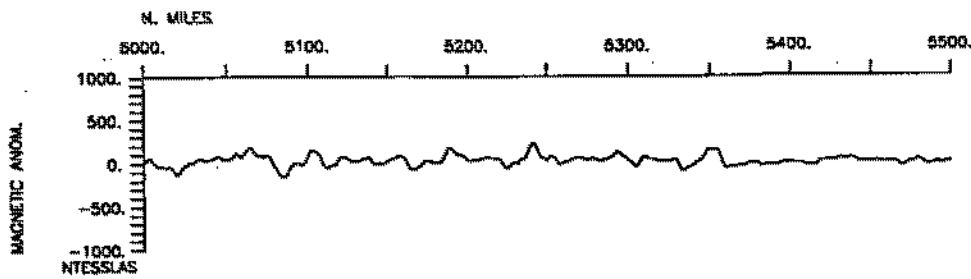
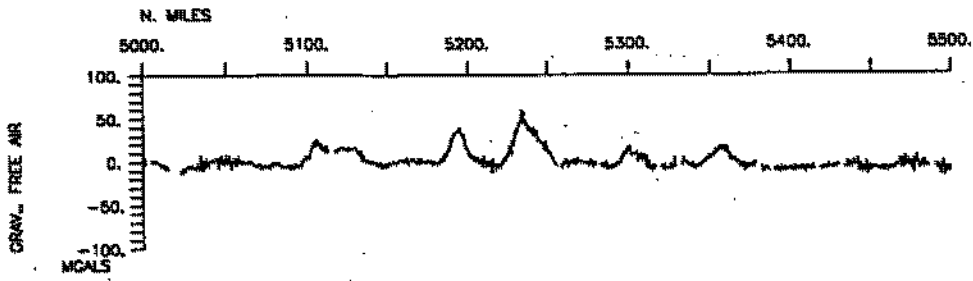


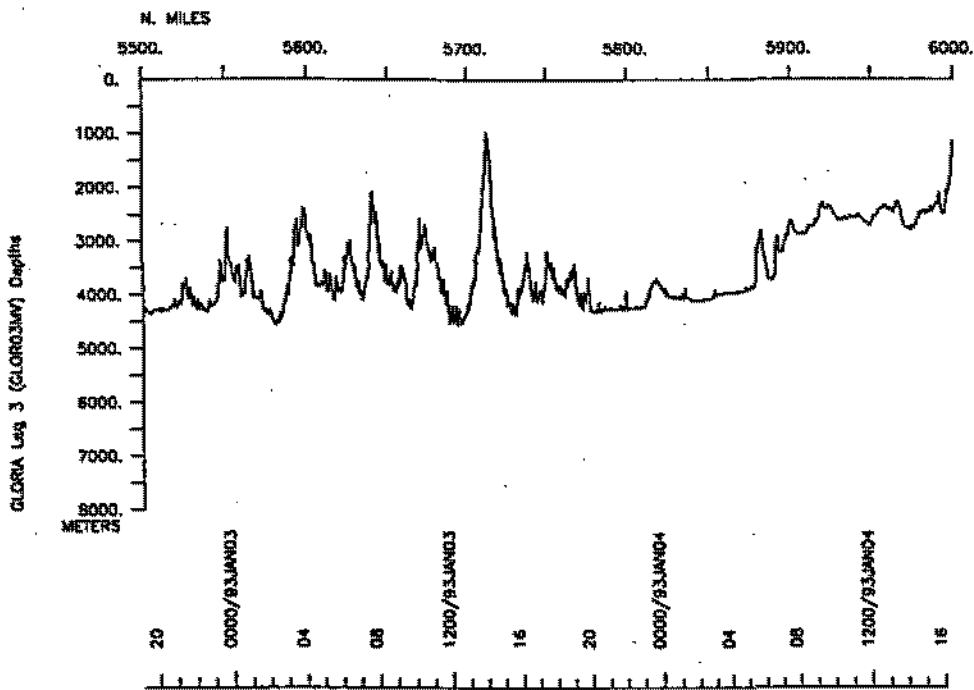
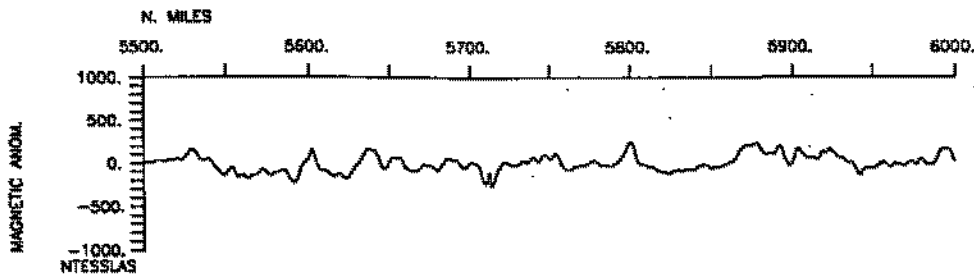
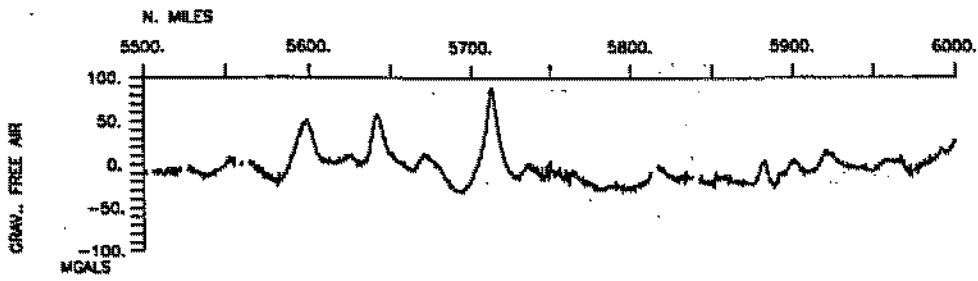


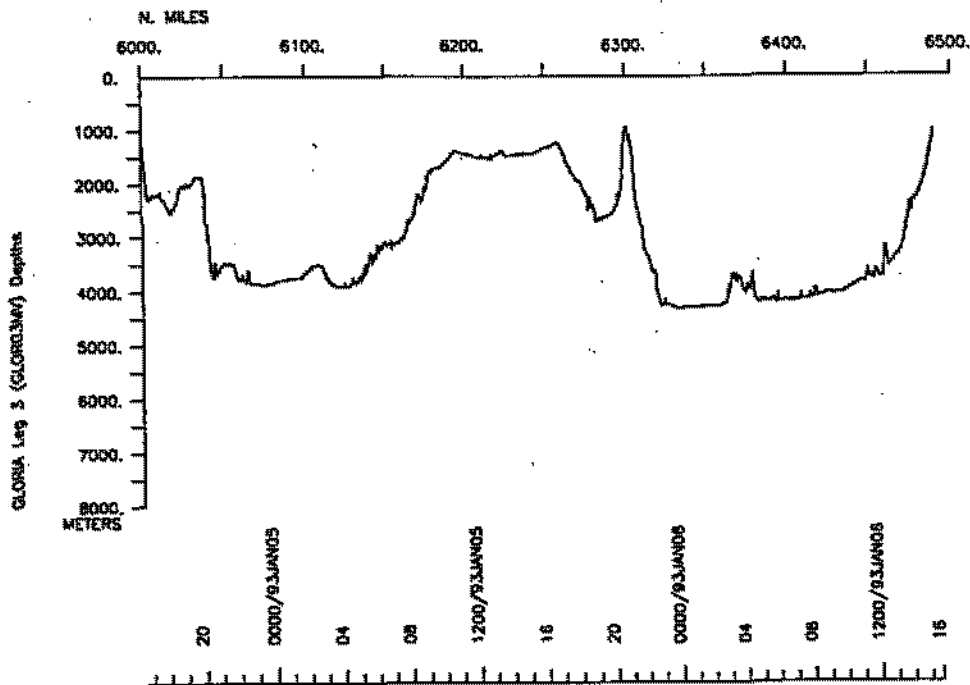
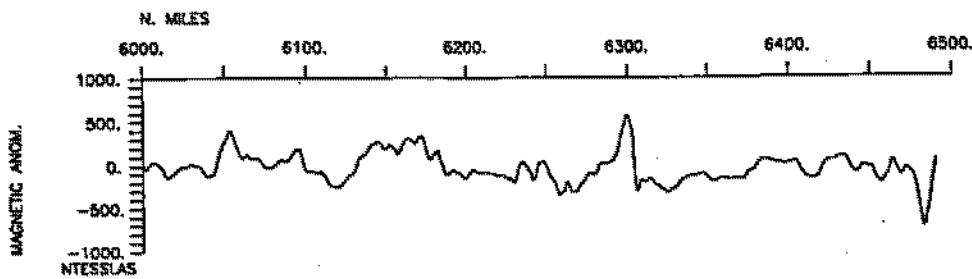
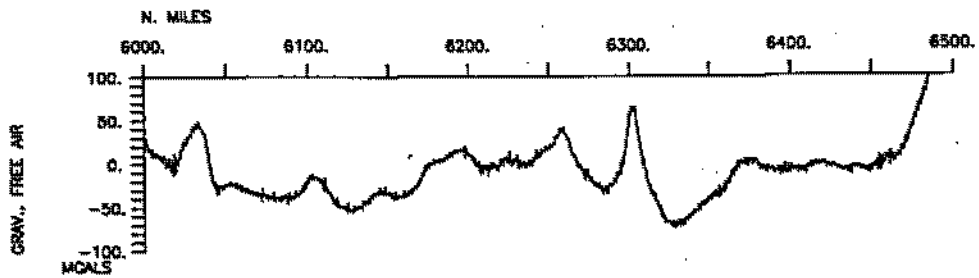


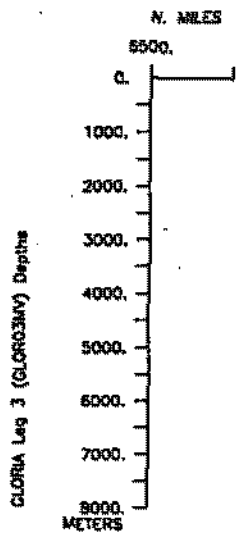
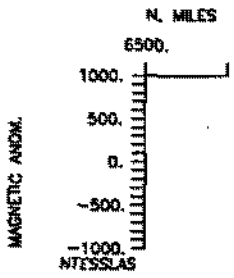
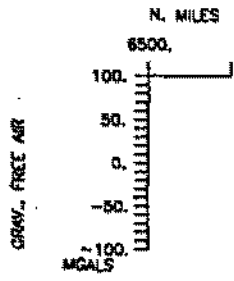














## S.I.O. SAMPLE INDEX

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(Issued February 1993)

### GLORIA EXPEDITION

Leg 3

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R/V Melville

Easter Island (12 December 1992)  
to  
Papeete, Tahiti (6 January 1993)

Chief Scientist:

Donald Forsyth (Brown University)

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 further computer searches on these parameters. (Listings defining these codes are available from the Geological Data Center.)

GDC Cruise ID.# 261

\*\*\*\* Ports \*\*\*

2134 121292 +5 LGPT B Easter Island, Chile 27-09.00S 109-27.00W f GLOR03MV  
 1735 060193 +10 LGPT E Papeete, Tahiti 17-32.00S 149-34.00W f GLOR03MV

\*\*\*\* Personnel \*\*\*

#	*****NAME*****	*****TITLE*****	*****AFFILIATION*****	**CRID**
PECS SIX	Forsyth, Dr. D.	Chief Scientist	Brown University	GLOR03MV
PERT STS	Comer, R.L.	Resident Tech.	Scripps Institution	GLOR03MV
PECT STS	Bouchard, G.	Computer Tech.	Scripps Institution	GLOR03MV
PEBE STS	Heckman, E.	Electronic Eng.	Scripps Institution	GLOR03MV
PESP STS	Albright, U.	Seabeam Proc.	Scripps Institution	GLOR03MV
PESP GRD	Hollingshead, C.	OBS Technician	Scripps Institution	GLOR03MV
PEST GRD	Lynch, M.	Grad. Stud.	Scripps Institution	GLOR03MV
PEST GRD	Levitt, D.	Grad. Stud.	Scripps Institution	GLOR03MV
PEST USB	Scheirer, D.	Grad. Stud.	UC Santa Barbara	GLOR03MV
PEST USB	Alexander, R.	Grad. Stud.	UC Santa Barbara	GLOR03MV
PEST USB	Beedle, N.	Grad. Stud.	UC Santa Barbara	GLOR03MV
PEST USB	Cormier, M.H.	Grad. Stud.	UC Santa Barbara	GLOR03MV
PEVL SIX	Feldman, K.	Volunteer	Brown University	GLOR03MV
PEXN UTK	Korenaga, J.	Observer	Univ. of Tokyo	GLOR03MV

\*\*\*\* 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 - S. M. Smith ext. 42752 ***										
#*** Log Books ***										
2134	121292	0	LBUW	B Underway Science Log	GDC	27-08.41S	109-27.38W	g		GLOR03MV
1530	060193	0	LBUW	E Underway Science Log	GDC	17-26.13S	149-26.13W	g		GLOR03MV
0530	221292	0	LBSC	B SeaMount Log Bk.v4	UCSB	17-05.30S	116-51.26W	g		GLOR03MV
1545	060193	0	LBSC	E SeaMount Log Bk.v4	UCSB	17-26.46S	149-27.85W	g		GLOR03MV
#*** Magnetics (Earth Total Field) Records ***										
2157	121292	0	MGRA	B Magnetics R-1	GDC	27-07.67S	109-32.42W	g		GLOR03MV
1737	211292	0	MGRA	E Magnetics R-1	GDC	15-30.06S	116-30.70W	g		GLOR03MV
1748	211292	0	MGRA	B Magnetics R-2	GDC	15-30.08S	116-33.03W	g		GLOR03MV
0156	030193	0	MGRA	E Magnetics R-2	GDC	15-23.16S	134-43.73W	g		GLOR03MV
0200	030193	0	MGRA	B Magnetics R-3	GDC	15-22.91S	134-44.43W	g		GLOR03MV
1531	060193	0	MGRA	E Magnetics R-3	GDC	17-32.26S	149-34.53W	g		GLOR03MV
#*** Sea Beam Records (vertical beam and side scan) ***										
2136	121292	0	MBSR	B v.beam&sidescan r-01	GDC	27-08.35S	109-27.78W	g		GLOR03MV
1837	181292	0	MBSR	E v.beam&sidescan r-01	GDC	15-32.94S	114-47.78W	g		GLOR03MV
1837	181292	0	MBSR	B v.beam&sidescan r-02	GDC	15-32.94S	114-47.78W	g		GLOR03MV
0110	241292	0	MBSR	E v.beam&sidescan r-02	GDC	18-03.16S	114-49.64W	g		GLOR03MV
0300	241292	0	MBSR	B v.beam&sidescan r-03	GDC	18-03.01S	114-49.55W	g		GLOR03MV
1517	241292	0	MBSR	E v.beam&sidescan r-03	GDC	18-20.39S	113-30.66W	g		GLOR03MV
1517	241292	0	MBSR	B v.beam&sidescan r-04	GDC	18-20.39S	113-30.66W	g		GLOR03MV
2020	271292	0	MBSR	E v.beam&sidescan r-04	GDC	17-42.31S	117-10.56W	g		GLOR03MV
2054	271292	0	MBSR	B v.beam&sidescan r-05	GDC	17-36.98S	117-13.72W	g		GLOR03MV
0244	040193	0	MBSR	E v.beam&sidescan r-05	GDC	15-13.60S	138-51.15W	g		GLOR03MV
1032	040193	0	MBSR	B v.beam&sidescan r-06	GDC	15-07.01S	140-15.87W	g		GLOR03MV
0028	060193	0	MBSR	E v.beam&sidescan r-06	GDC	16-54.65S	146-50.99W	g		GLOR03MV
0028	060193	0	MBSR	B v.beam&sidescan r-07	GDC	16-54.65S	146-50.99W	g		GLOR03MV
1735	060193	0	MBSR	E v.beam&sidescan r-07	GDC	27-08.50S	109-26.35W	g		GLOR03MV

GMT #TIME	DDMMYY DATE	SAMP TZ	B CODE	SAMPLE E IDENTIFIER	DISP CODE	LATITUDE	LONGITUDE	p c	CRUISE LEG-SHIP
#*** Echo Sounder Records ***									
2137	141292	0	DPR3	B 3.5khz R-01	GDC	18-27.18S	112-13.50W	g	GLOR03MV
1425	151292	0	DPR3	E 3.5khz R-01	GDC	17-02.06S	110-21.79W	g	GLOR03MV
1430	151292	0	DPR3	B 3.5khz R-02	GDC	17-01.93S	110-20.79W	g	GLOR03MV
1408	171292	0	DPR3	E 3.5khz R-02	GDC	16-59.77S	112-05.48W	g	GLOR03MV
1414	171292	0	DPR3	B 3.5khz R-03	GDC	16-59.93S	112-06.80W	g	GLOR03MV
2024	191292	0	DPR3	E 3.5khz R-03	GDC	17-10.95S	115-09.26W	g	GLOR03MV
2029	191292	0	DPR3	B 3.5khz R-04	GDC	17-11.63S	115-09.83W	g	GLOR03MV
1654	211292	0	DPR3	E 3.5khz R-04	GDC	15-31.33S	116-22.44W	g	GLOR03MV
1710	211292	0	DPR3	B 3.5khz R-05	GDC	15-30.03S	116-24.88W	g	GLOR03MV
0208	241292	0	DPR3	E 3.5khz R-05	GDC	18-03.11S	114-49.64W	g	GLOR03MV
0318	241292	0	DPR3	B 3.5khz R-06	GDC	18-01.37S	114-48.11W	g	GLOR03MV
0235	261292	0	DPR3	E 3.5khz R-06	GDC	15-16.62S	116-37.81W	g	GLOR03MV
0241	261292	0	DPR3	B 3.5khz R-07	GDC	15-17.79S	116-37.83W	g	GLOR03MV
0140	281292	0	DPR3	E 3.5khz R-07	GDC	16-59.19S	117-24.47W	g	GLOR03MV
0148	281292	0	DPR3	B 3.5khz R-08	GDC	16-57.80S	117-24.21W	g	GLOR03MV
2320	291292	0	DPR3	E 3.5khz R-08	GDC	17-09.25S	118-46.53W	g	GLOR03MV
2325	291292	0	DPR3	B 3.5khz R-09	GDC	17-09.23S	118-47.53W	g	GLOR03MV
2000	311292	0	DPR3	E 3.5khz R-09	GDC	16-36.46S	126-51.12W	g	GLOR03MV
2005	311292	0	DPR3	B 3.5khz R-10	GDC	16-36.13S	126-52.10W	g	GLOR03MV
1800	020193	0	DPR3	E 3.5khz R-10	GDC	15-11.71S	133-32.98W	g	GLOR03MV
1810	020193	0	DPR3	B 3.5khz R-11	GDC	15-11.05S	133-34.66W	g	GLOR03MV
1436	040193	0	DPR3	E 3.5khz R-11	GDC	15-04.12S	141-02.51W	g	GLOR03MV
1441	040193	0	DPR3	B 3.5khz R-12	GDC	15-04.01S	141-03.49W	g	GLOR03MV
1323	060193	0	DPR3	E 3.5khz R-12	GDC	17-23.23S	149-05.38W	g	GLOR03MV

#GMT	DDMMYY	SAMP	B	SAMPLE	DISP				p	CRUISE
#TIME	DATE	TZ	CODE	E IDENTIFIER	CODE	LATITUDE	LONGITUDE		c	LEG-SHIP
#										
#*** Gravity Core ***										
0158	241292	0	COGC	Grav. core 1	3247M UCSB	18-03.11S	114-49.63W	g		GLOR03MV
#*** Ocean Bottom Seismometer ***										
1400	101292		SBOB	C Site 1, Obs. 6	LMD	27-10.52S	109-23.97W	g		GLOR03MV
2133	171292	0	SBOB	E Site 1, Obs. 6	LMD	17-14.41S	113-05.00W	g		GLOR03MV
1400	101292		SBOB	C Site 2, Obs. 5	LMD	27-10.52S	109-23.97W	g		GLOR03MV
0004	181292	0	SBOB	E Site 2, Obs. 5	LMD	17-16.63S	113-16.16W	g		GLOR03MV
1400	101292		SBOB	C Site 3, Obs. 4	LMD	27-10.52S	109-23.97W	g		GLOR03MV
0335	181292	0	SBOB	E Site 3, Obs. 4	LMD	17-18.41S	113-38.48W	g		GLOR03MV
1400	101292		SBOB	C Site 5, Obs. 8	LMD	27-10.52S	109-23.97W	g		GLOR03MV
0815	231292	0	SBOB	E Site 5, Obs. 8	LMD	17-58.26S	116-07.37W	g		GLOR03MV
1400	101292		SBOB	C Site 6, Obs. 12	LMD	27-10.52S	109-23.97W	g		GLOR03MV
1045	231292	0	SBOB	E Site 6, Obs. 12	LMD	17-52.86S	116-02.83W	g		GLOR03MV
1400	101292		SBOB	C Site 8, Obs. 14	LMD	27-10.52S	109-23.97W	g		GLOR03MV
1308	231292	0	SBOB	E Site 8, Obs. 14	LMD	17-46.72S	116-05.47W	g		GLOR03MV
1400	101292		SBOB	C Site 7, Obs. 3	LMD	27-10.52S	109-23.97W	g		GLOR03MV
1627	231292	0	SBOB	E Site 7, Obs. 3	LMD	17-54.33S	115-56.10W	g		GLOR03MV
1400	101292		SBOB	C Site 4b, Obs. 9	LMD	27-10.52S	109-23.97W	g		GLOR03MV
1332	241292	0	SBOB	E Site 4b, Obs. 9	LMD	18-04.75S	113-23.44W	g		GLOR03MV
#*** Expendable Bathythermographs ***										
0000	131292	0	BTXP	B XBT 1-16 for SVP	GDC	26-56.77S	109-52.49W	g		GLOR03MV
#*** Continuous Recorded Gravity ***										
2134	121292	0	GVCR	B Gravity	GDC	27-08.41S	109-27.38W	g		GLOR03MV
1735	060193	0	GVCR	E Gravity	GDC	17-32.24S	149-34.52W	g		GLOR03MV
#	End Sample Index									GLOR03MV