

INFORMAL REPORT AND INDEX OF
NAVIGATION, DEPTH, MAGNETIC AND SUBBOTTOM PROFILER DATA
(Issued March 1988)

HELIOS EXPEDITION

LEG 1

San Diego, California (16 September 1987)
to
Papeete, Tahiti (19 October 1987)

R/V Melville

Chief Scientist - H. Craig (SIO)

Resident Marine Technician - R. Comer

Post-Cruise Processing and Report Preparation
by Geological Data Center, Scripps Institution of Oceanography

Data Collection and Processing Funded by NSF
Grant Number OCE86-16368

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.
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Geological Data Center, Scripps Institution of Oceanography,
La Jolla, California 92093.

GDC Cruise I.D.# 233

INFORMAL REPORT AND INDEX OF NAVIGATION
AND UNDERWAY GEOPHYSICAL DATA

Processed by the Geological Data Center
Scripps Institution of Oceanography

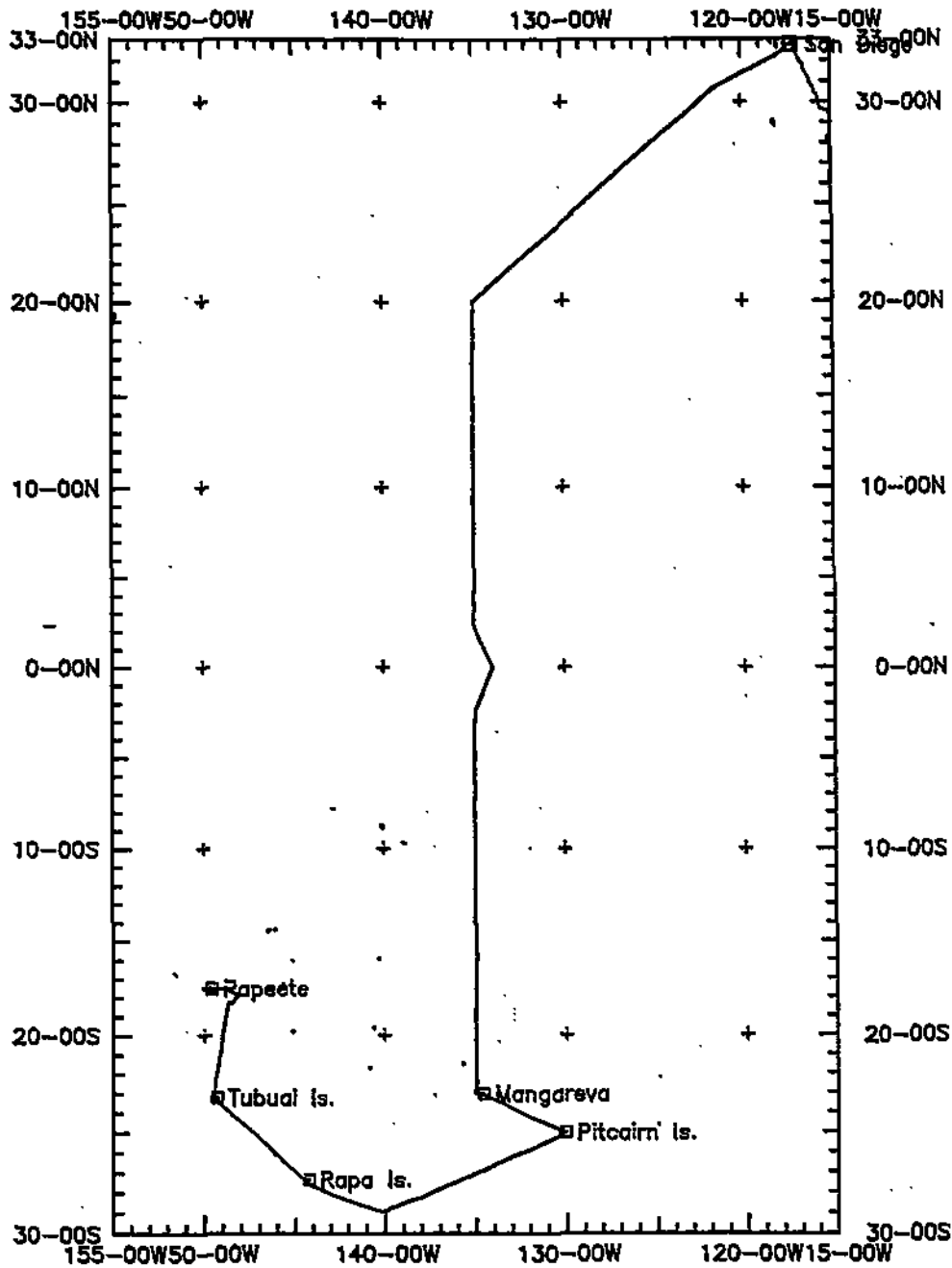
Contents:

-
- 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 anomaly and gravity free air anomaly vs. distance. Sections of track having subbottom profiles (airgun or watergun) records have a wide black line along the bottom of the profile. Sections having Sea Beam are indicated by a narrow black line.
- Sample Index - list of beginning and 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. Phone (619)534-2752.

1. Navigation listing with times and positions of course and speed changes, fixes and drift velocity.
2. Depth compilation plots - compilation plots at the traditional scale of 4in/degree longitude (1:1,000,000) are no longer produced for Sea Beam cruises. Custom plots may be requested of vertical beam (2 $\frac{2}{3}$ degree beam width) depths retrieved at one minute intervals of ship time.
3. Plots of depths, magnetics or gravity profiles along track - custom plots at various map and profile scales on Mercator projection may be requested.
4. Separate time series files of navigation, depth, gravity and magnetics as well as these data merged in the MGD77 Exchange format on magnetic tape.
5. Microfilm or Xerox copies of:
 - a. Echosounder records - 12 and 3.5 kHz frequency
 - b. Subbottom profiler records
 - c. Magnetometer records
 - d. Gravity records
 - e. Underway data log book



HELIOS LEG 1
Track at .1 in/deg (HELI01MV)

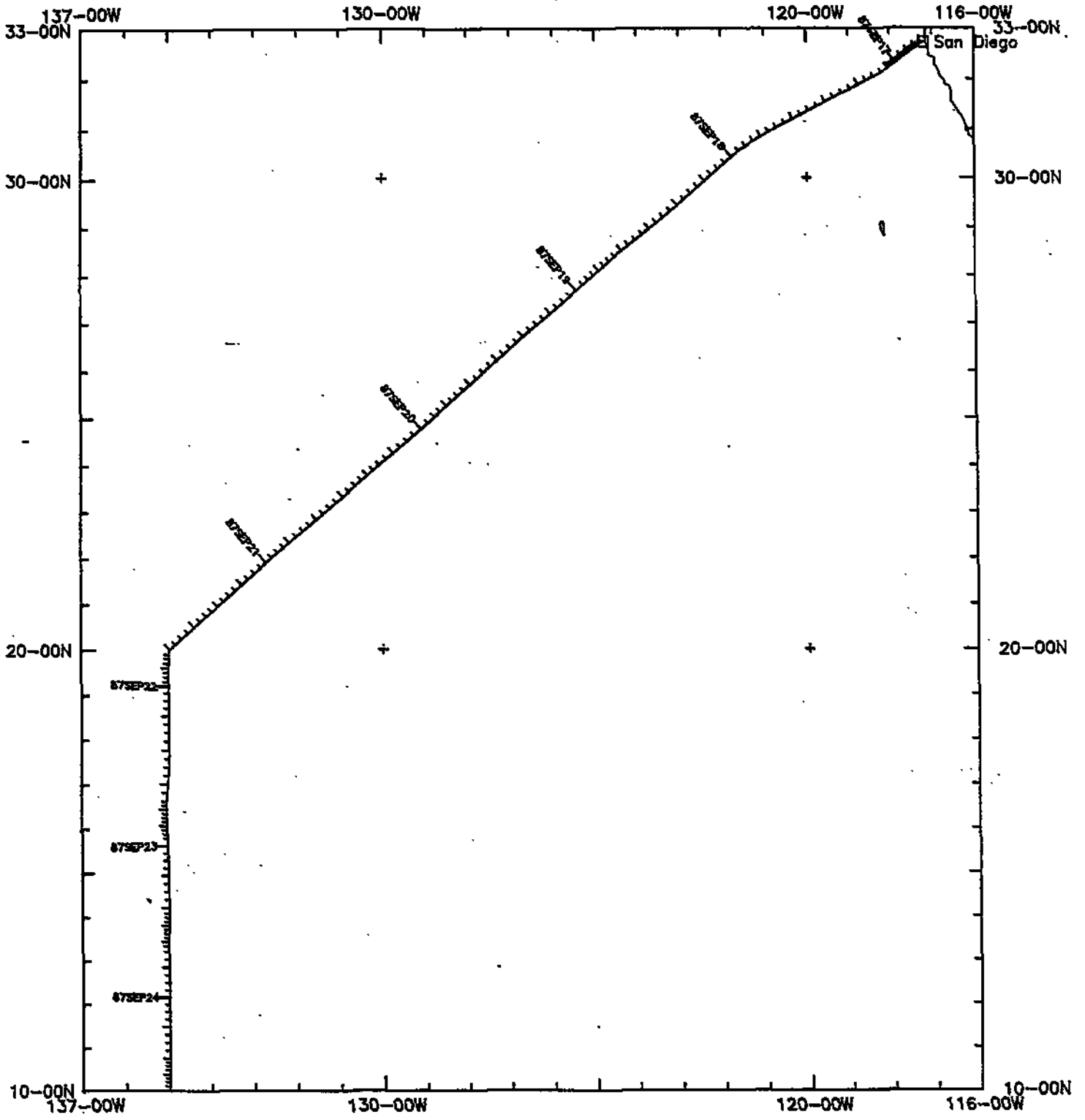
*

HELIOS EXPEDITION LEG 1

CHIEF SCIENTIST: H. Craig (SIO)
PORTS: San Diego, Calif. - Papeete, Tahiti
DATES: 16 September - 19 October 1987
SHIP: R/V Melville

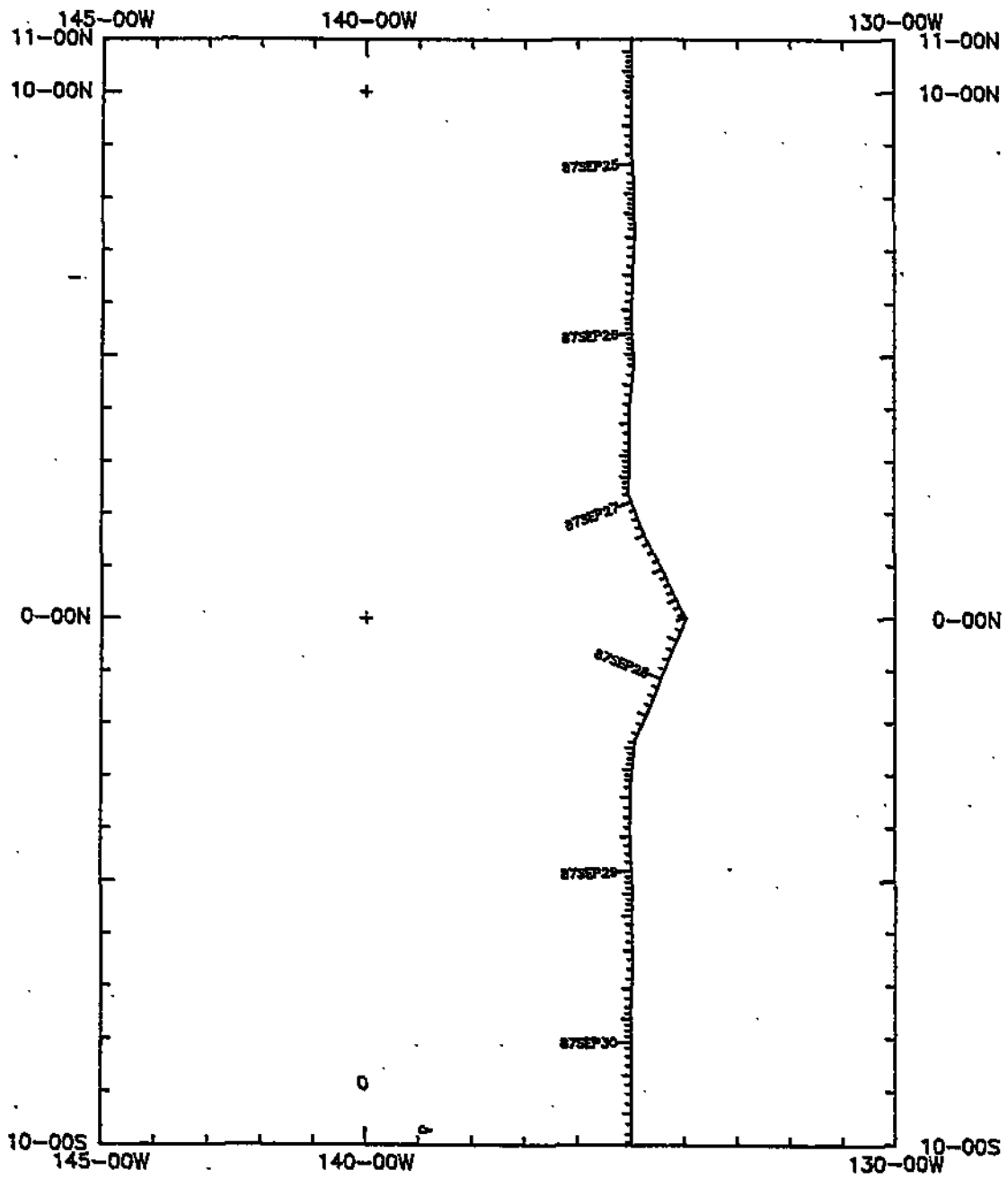
TOTAL MILEAGE OF UNDERWAY DATA COLLECTED

- 1) Cruise - 6030 miles
- 2) Bathymetry - 5080 miles
- 3) Magnetics - none collected
- 4) Seismic Reflection - none collected



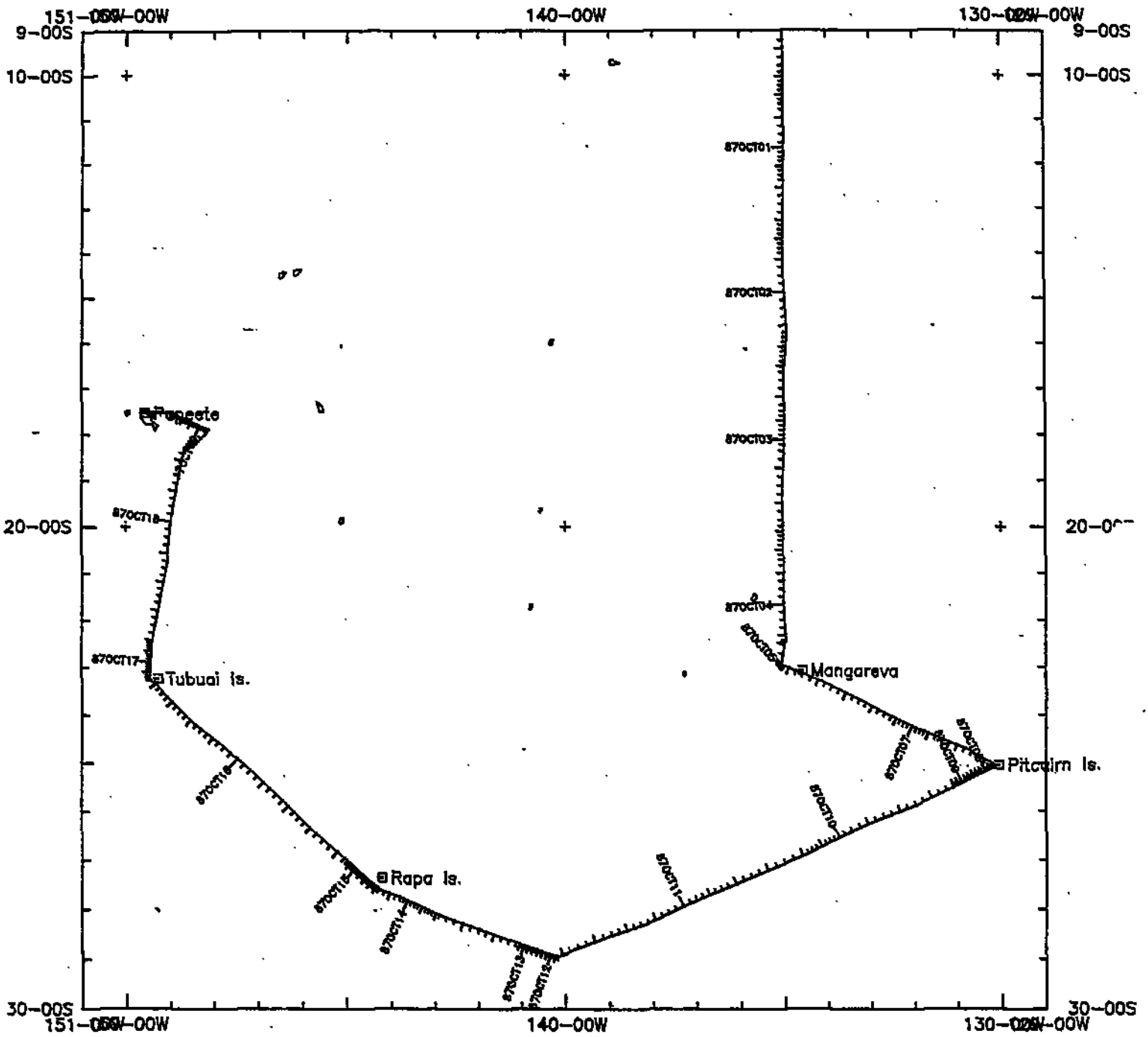
HELIOS LEG 1 (HELI01MV)
Track 1 of 3 at .312in/deg

*



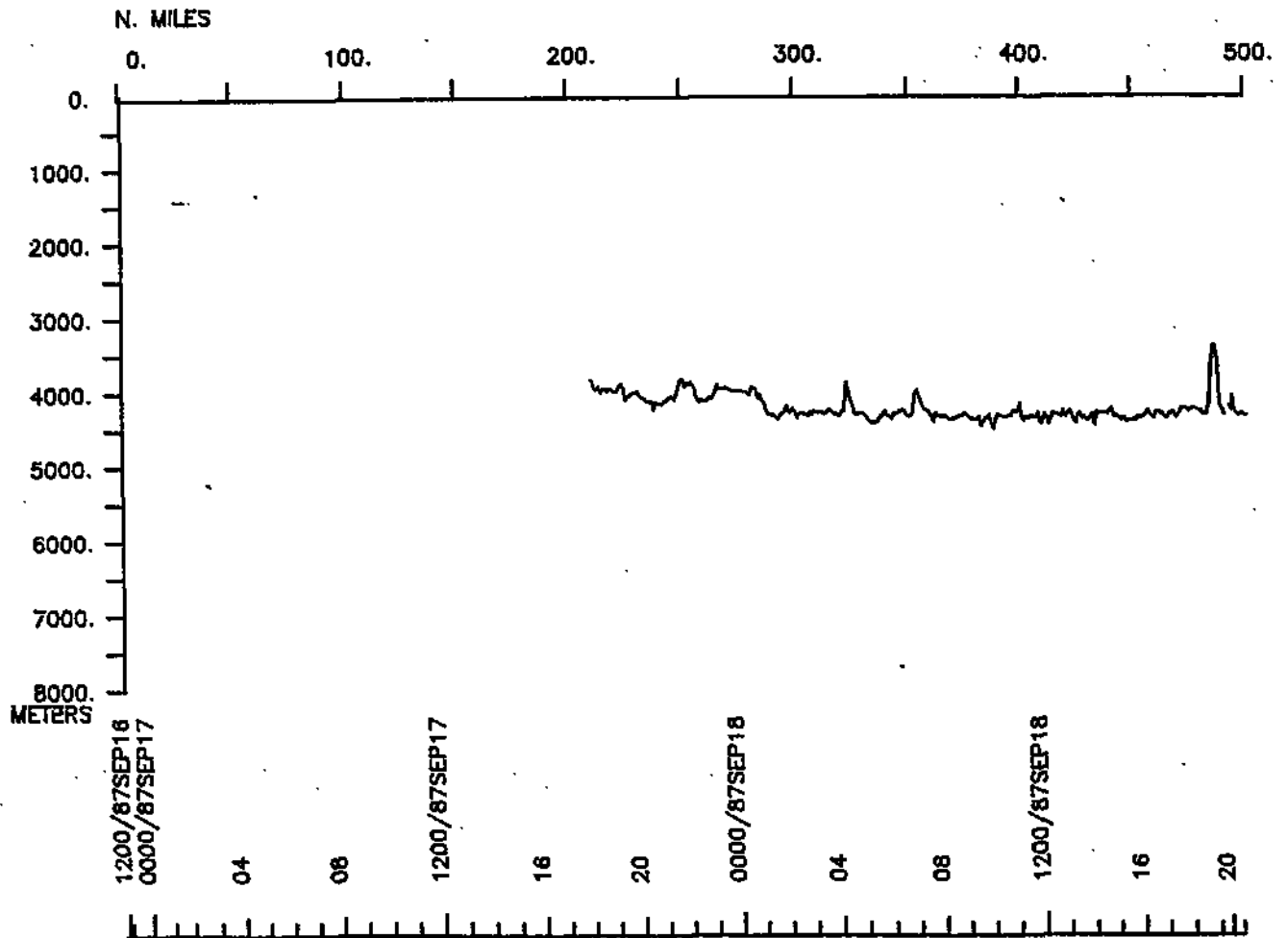
HELIOS LEG 1 (HELIO1MV)
Track 2 of 3 at .312in/deg

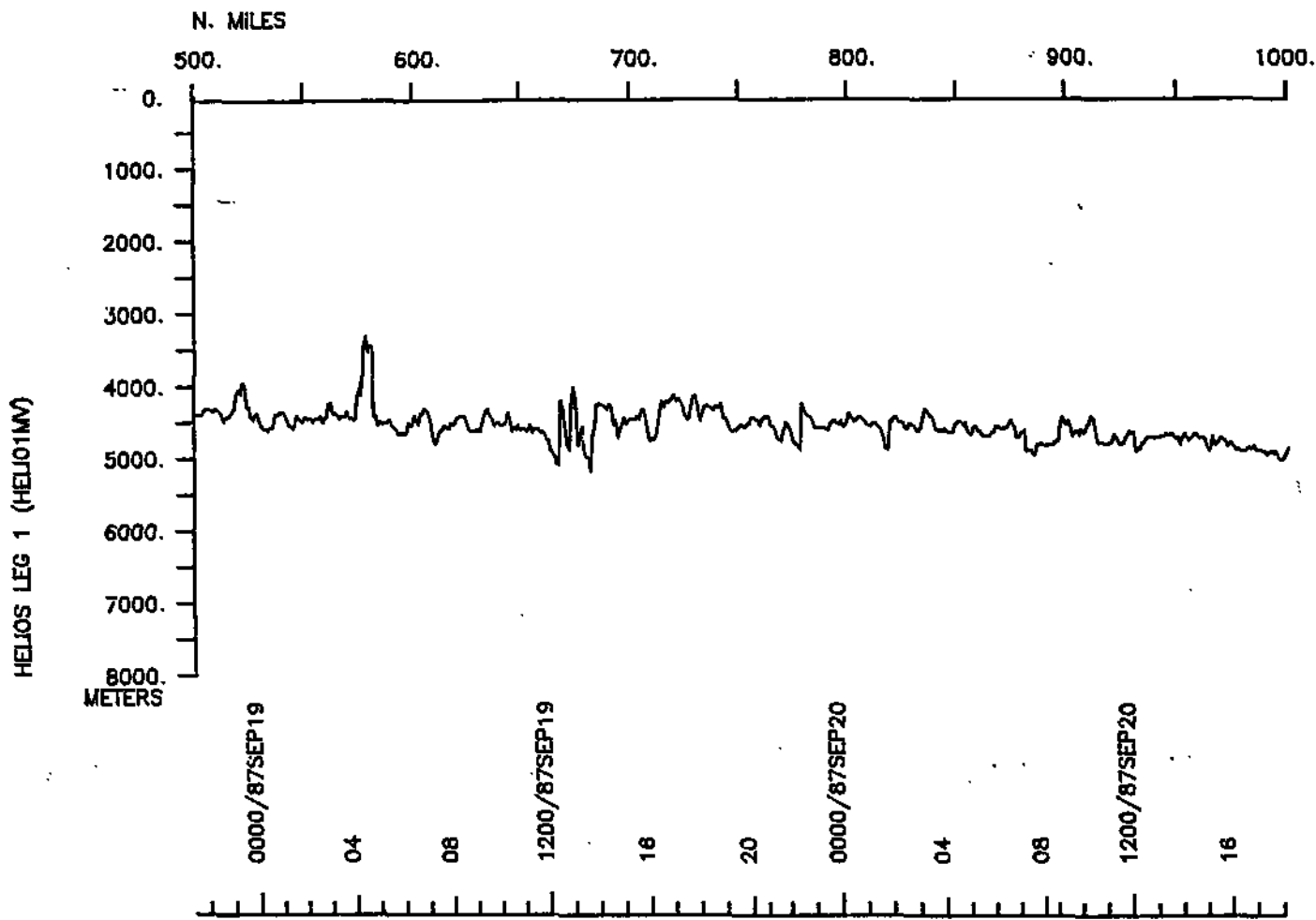
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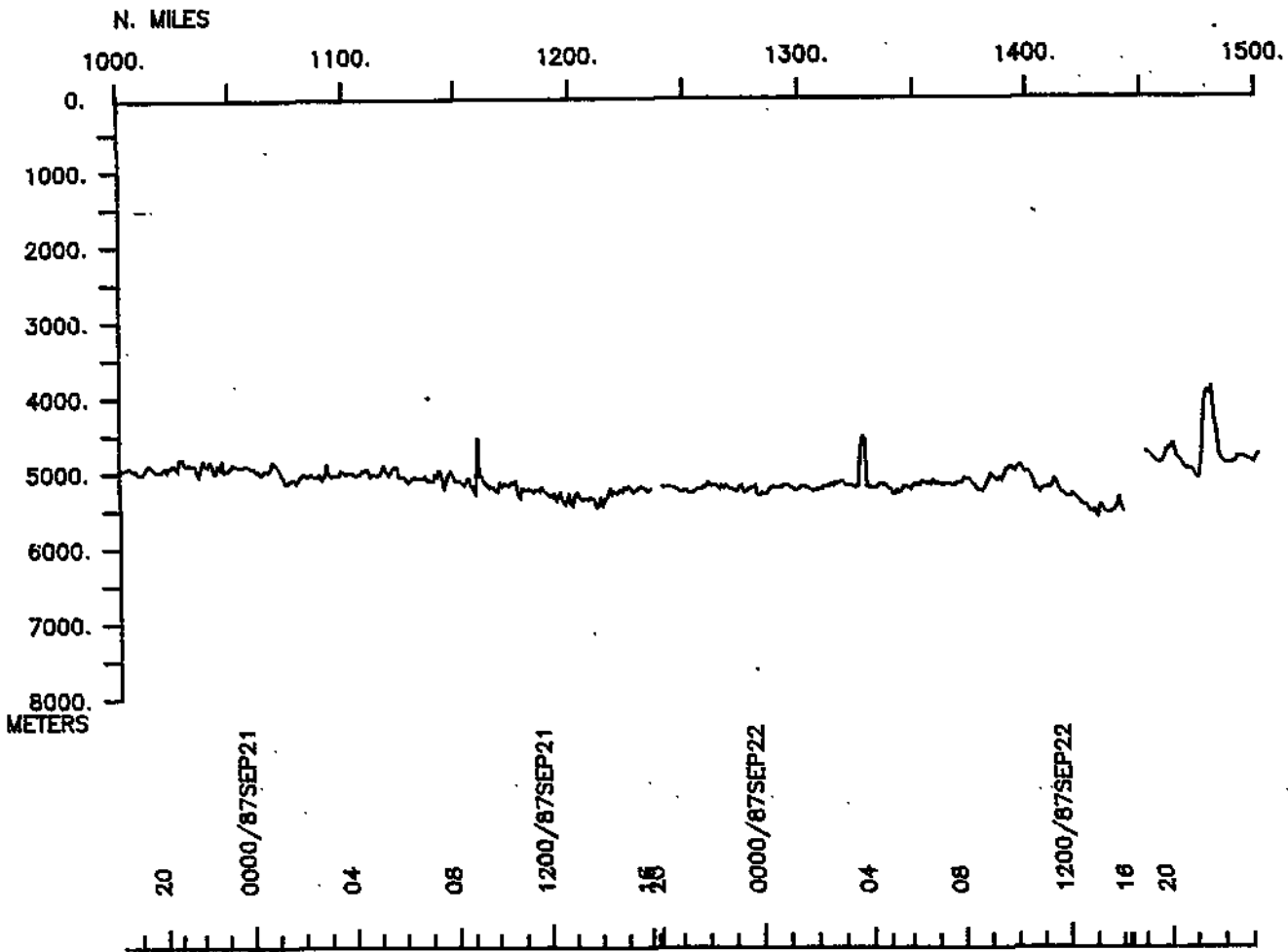
HELIOS LEG 1 (HELIO1MV)
Track 3 of 3 at .312in/deg

HELIOS LEG 1 (HELI01MV)

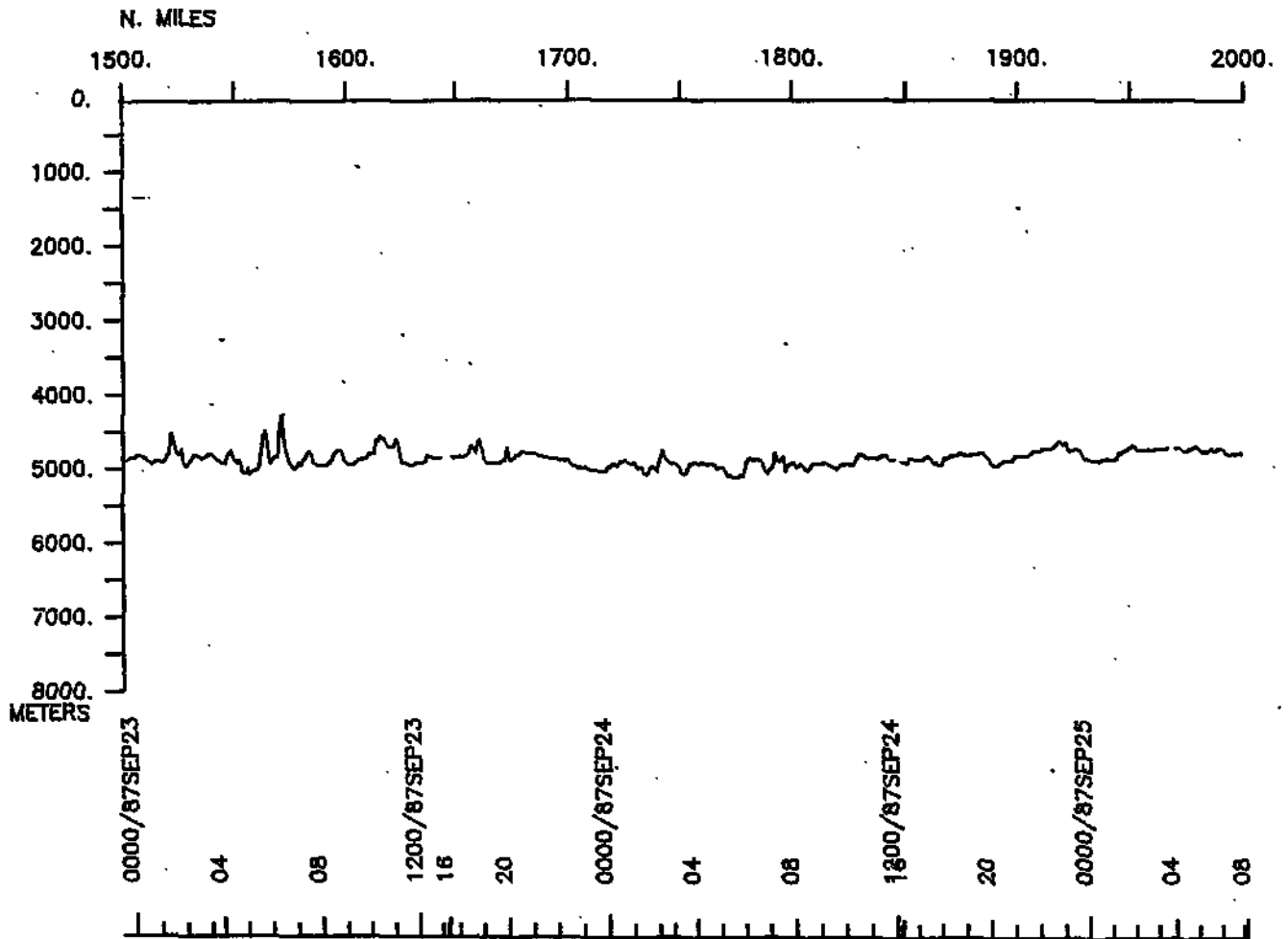


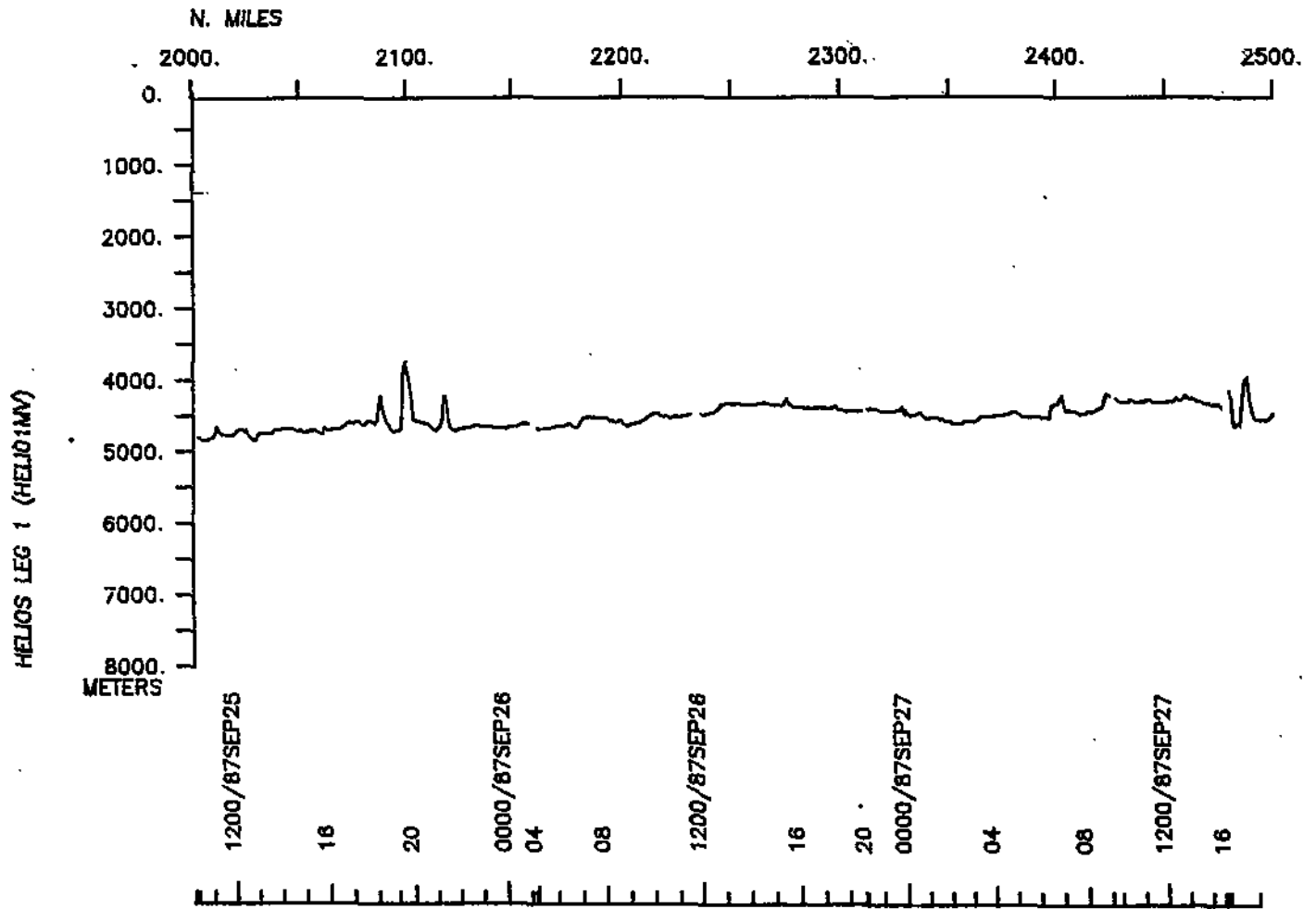


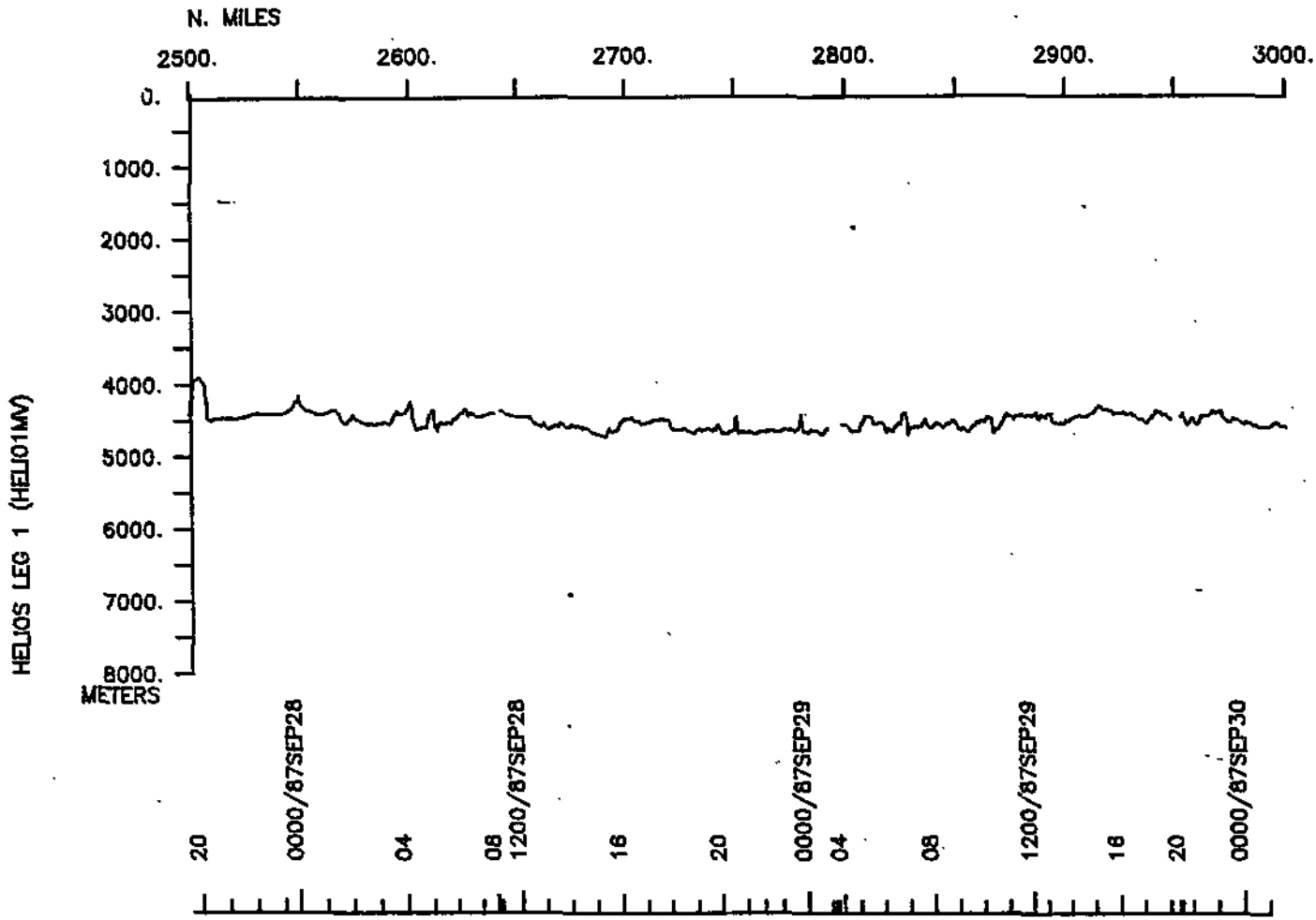
HELIOS LEG 1 (HELIOS11M)

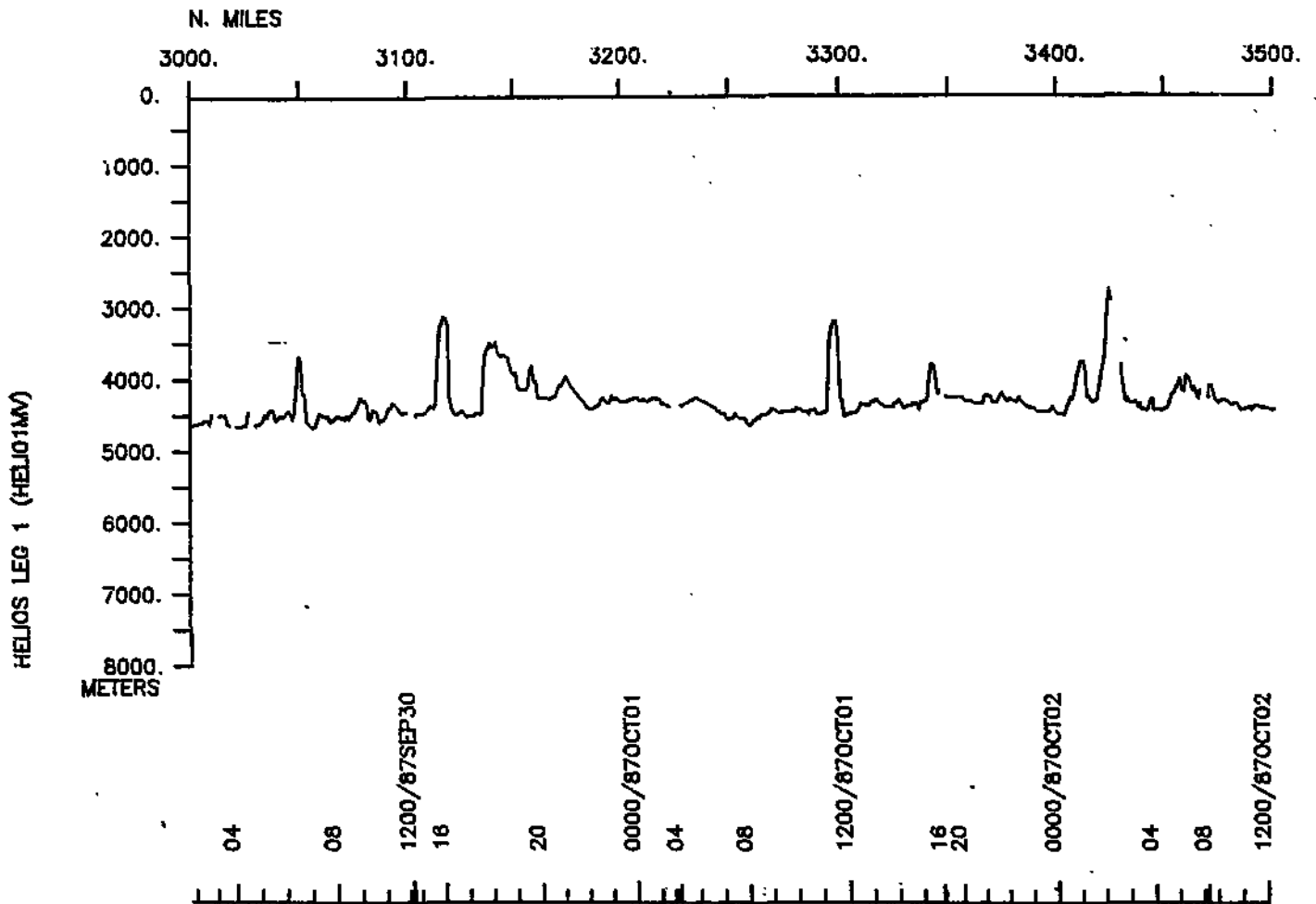


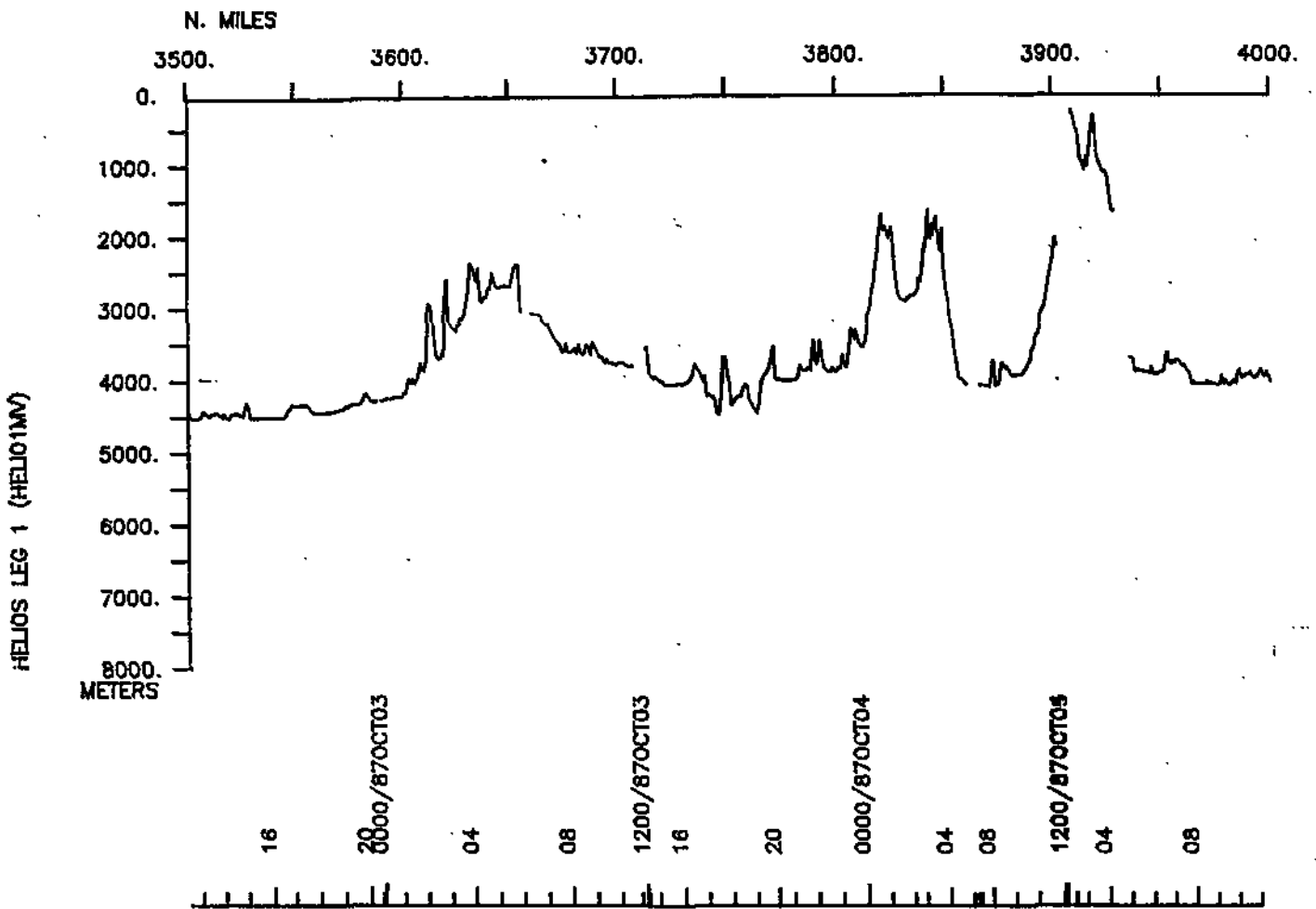
HELIOS LEG 1. (HELI01MV)

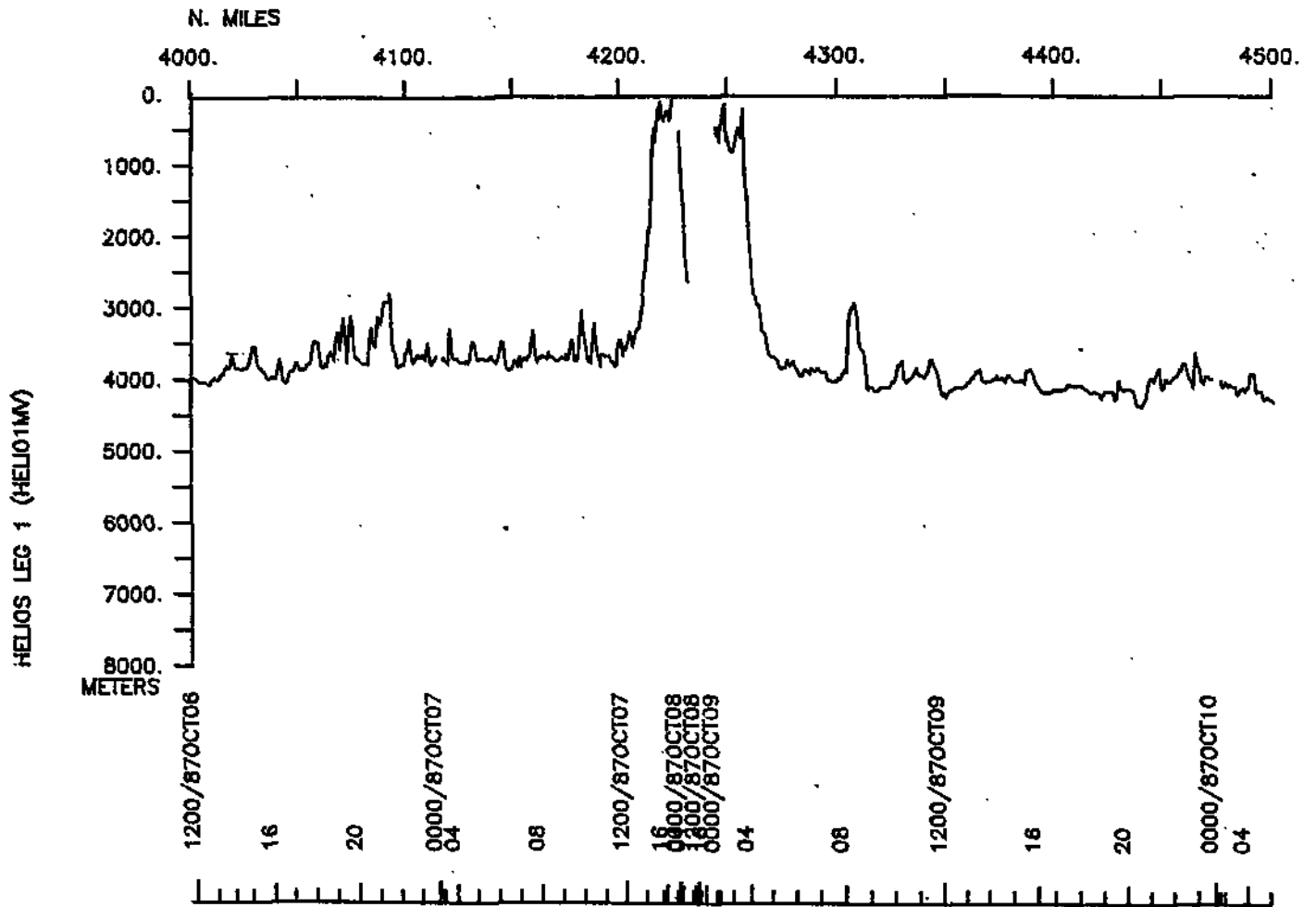


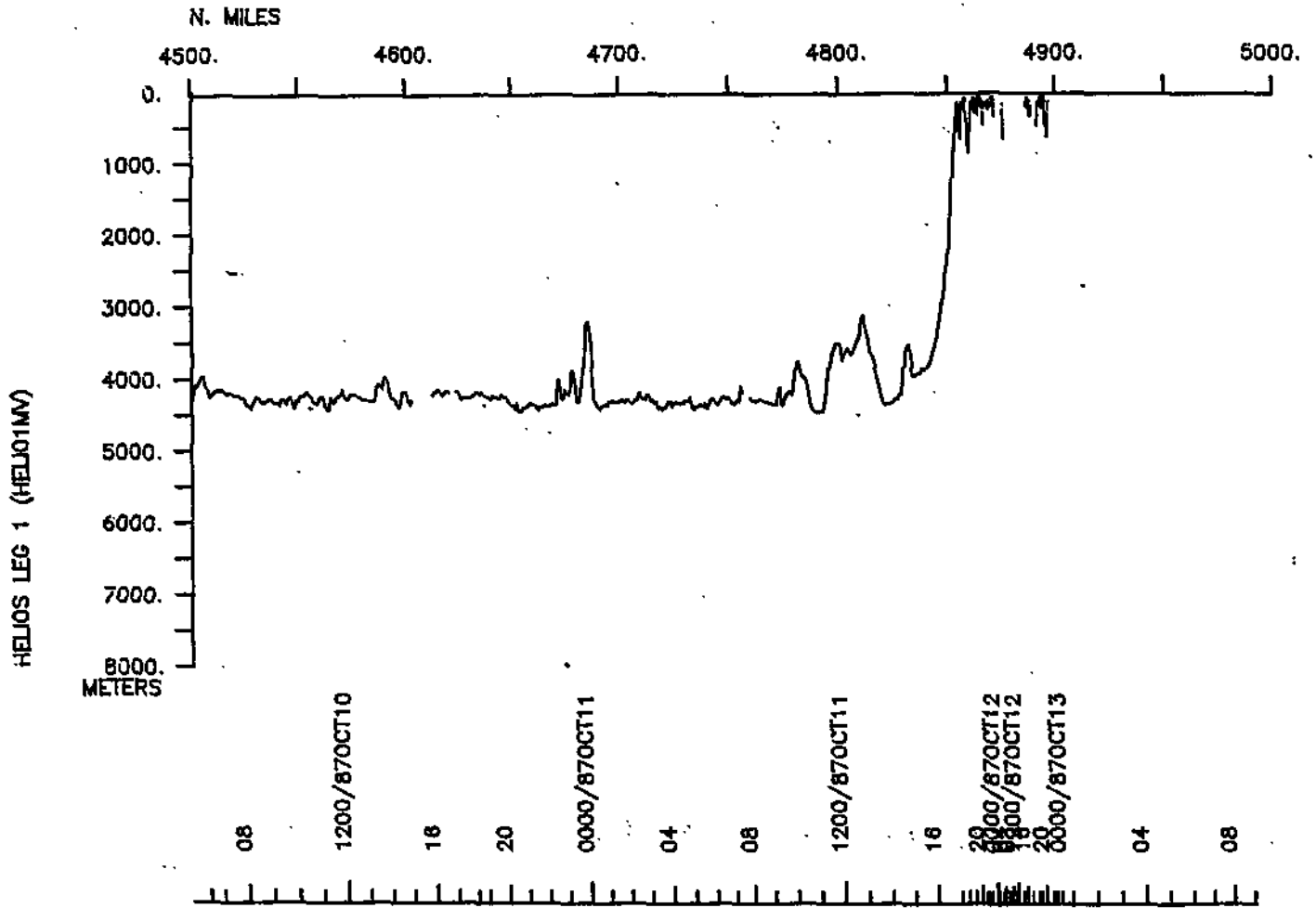




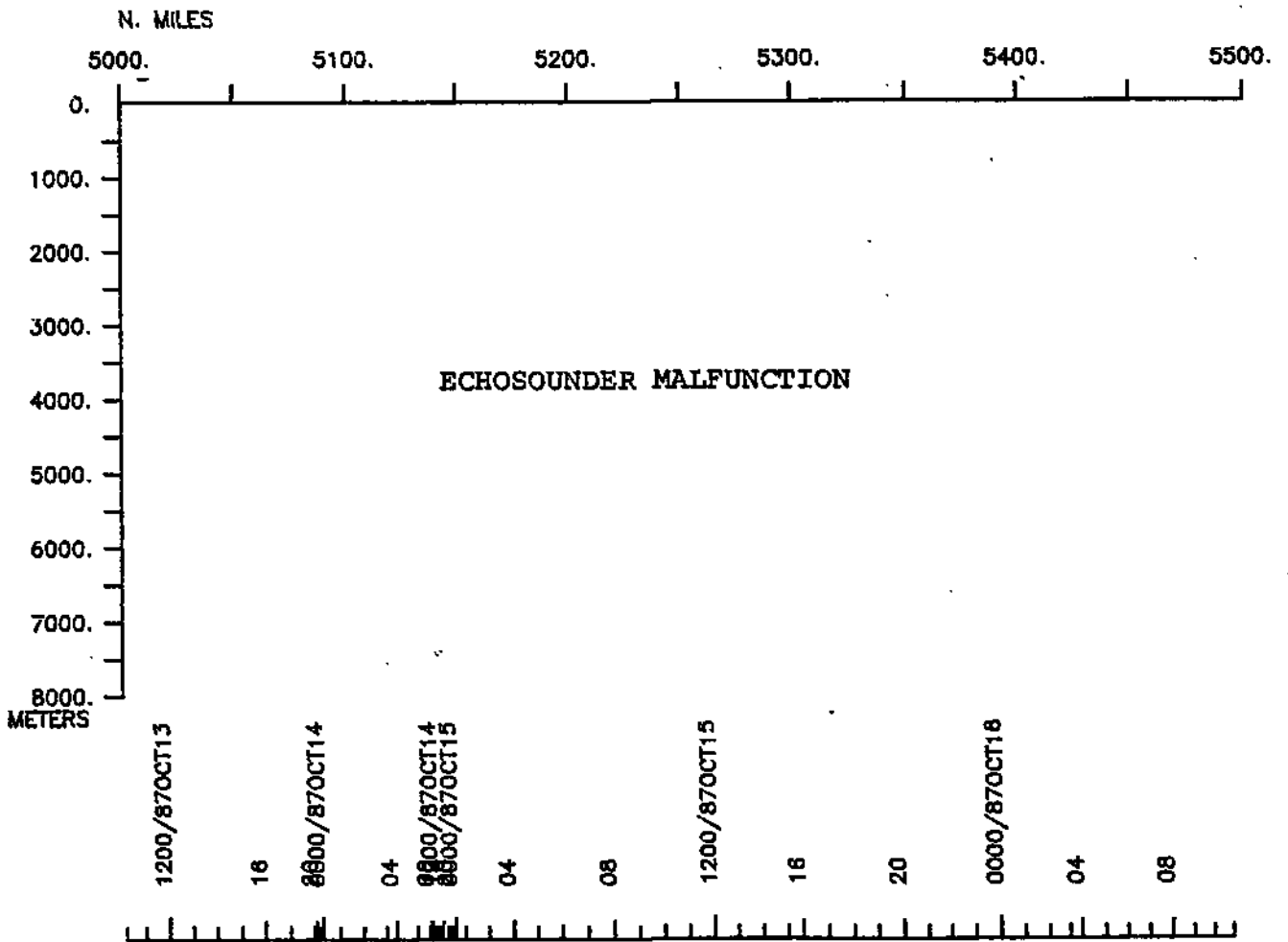




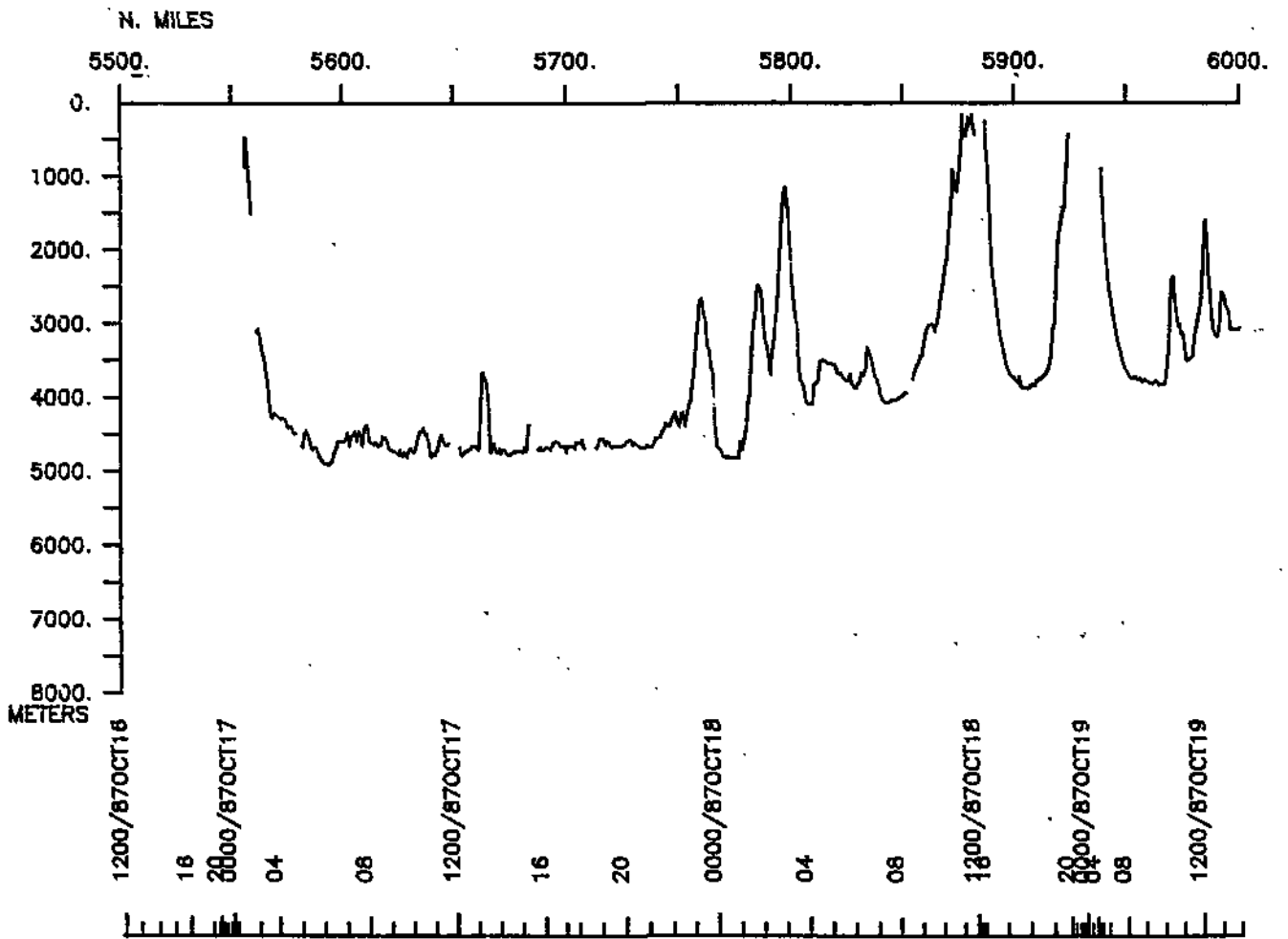




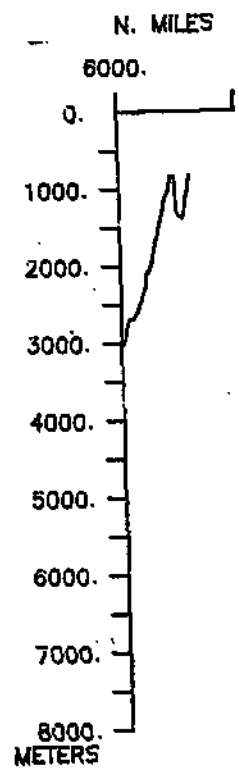
HELIOS LEG 1 (HELI01MV)



HELIOS LEG 1 (HELI01MV)



HELJOS LEG 1 (HELIO1MV)



S.I.O. SAMPLE INDEX

(Issued March 1988)

HELIOS EXPEDITION

Leg 1

San Diego, Calif. (16 September 1987)
to
Papeete, Tahiti (19 October 1987)

R/V Melville

Chief Scientist - H. Craig

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 I.D.# 233

PORTS

2300	160987	LGPT B	SAN DIEGO, CALIF	32-43 N	117-11 W	f	HELIO1MV
1754	191087	LGPT E	PAPEETE, TAHITI	17-32 N	149-34 W	f	HELIO1MV
1100	041087	LGSS B	MANGAREVA, GAMBIER	23-07 S	134-57 W	f	HELIO1MV
0223	061087	LGSS E	MANGAREVA, GAMBIER	23-07 S	134-57 W	f	HELIO1MV
1400	071087	LGSS B	PITCAIRN IS.	25-04 S	130-05 W	f	HELIO1MV
0200	101087	LGSS E	PITCAIRN IS.	25-04 S	130-05 W	f	HELIO1MV
1748	131087	LGSS B	ILES DE BASS	27-541S	143-268W	s	HELIO1MV
0030	141087	LGSS E	ILES DE BASS	27-523S	143-309W	s	HELIO1MV
0600	141087	LGSS B	RAPA IS.	27-366S	144-190W	s	HELIO1MV
0142	151087	LGSS E	RAPA IS.	27-366S	144-190W	s	HELIO1MV
1810	161087	LGUS B	TUBUAI IS.	23-23 S	149-27 W	f	HELIO1MV
0220	171087	LGUS E	TUBUAI IS.	23-23 S	149-27 W	f	HELIO1MV
1810	161087	LGSS B	MEHITIA IS.	23-195S	149-294W	s	HELIO1MV
J230	191087	LGSS E	MEHITIA IS.	17-529S	148-080W	s	HELIO1MV

*** PERSONNEL ***

***	NAME	TITLE	AFFILIATION	CRID **
PECS GRD	CRAIG, HARMON	CHIEF SCIENTIST	SCRIPPS INSTITUTION	HELIO1MV
PECT STS	BOUCHARD, GEORGE	COMPUTER TECH	SCRIPPS INSTITUTION	HELIO1MV
PEVL SIX	CRAIG, JOHN	RESEARCH ASST	NON-SCRIPPS EMPLOYEE	HELIO1MV
PESP GRD	CRAIG, VALERIE	ADMIN ASST	SCRIPPS INSTITUTION	HELIO1MV
PERT STS	COMER, RONALD	RES TECH	SCRIPPS INSTITUTION	HELIO1MV
PEMT STS	COSTELLO, JAMES	MARINE TECH	SCRIPPS INSTITUTION	HELIO1MV
PEST GRD	FARLEY, KENNETH	GRAD STUDENT	SCRIPPS INSTITUTION	HELIO1MV
PESP STS	GRANIRER, JULIAN	WATCH STANDER	SCRIPPS INSTITUTION	HELIO1MV
PESP MFC	HAINES, ROBERT	WATCH STANDER	SCRIPPS INSTITUTION	HELIO1MV
PERT STS	HARGREAVES, GEOFF	WATCH STANDER	SCRIPPS INSTITUTION	HELIO1MV
PESP STS	HARRISON, KATHLEEN	WATCH STANDER	SCRIPPS INSTITUTION	HELIO1MV
PEVL SIX	JOHNSON, NANCY	VOLUNTEER	NON-SCRIPPS EMPLOYEE	HELIO1MV
PESP SIX	RICHMOND, ROBERT	BIOLOGIST	UNIV. OF GUAM	HELIO1MV
PESP SIX	SCHELTEMA, RUDOLF	BIOLOGIST	WOOD HOLE OCEAN.INST.	HELIO1MV
PESP WHO	WILLIAMS, ISABELLE	RESEARCH ASSO.	WOOD HOLE OCEAN.INST.	HELIO1MV

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. POSITIONS ARE IN TENTHS
 #OF MINUTES.

#GMT	DDMMYY	LOC T	SAMP	SAMPLE	DISP	LAT.	LONG.	CRUISE
#TIME	DATE	TIME Z	CODE	IDENTIFIER	CODE			LEG-SHIP

***UNDERWAY DATA CURATOR - S. M. SMITH EXT. 42752

*** UNDERWAY WATCH LOG ***

1800	170987		LBWU	B UNDERWAY WATCH LOG	GDC	31-010N	120-426W	sHELIO1MV
1754	191087		LBWU	E UNDERWAY WATCH LOG	GDC	17-301S	149-350W	sHELIO1MV

*** ECHOSOUNDERS ***

1720	170987		DPRT	B 12KHZ PDR R-01	GDC	31-043N	120-352W	sHELIO1MV
1654	270987		DPRT	E 12KHZ PDR R-01	GDC	0-001S	133-593W	sHELIO1MV
1720	270987		DPRT	B 12KHZ PDR R-02	GDC	0-001S	133-592W	sHELIO1MV
1400	071087		DPRT	E 12KHZ PDR R-02	GDC	25-048S	130-084W	sHELIO1MV
1419	071087		DPRT	B 12KHZ PDR R-03	GDC	25-049S	130-081W	sHELIO1MV
0736	121087		DPRT	E 12KHZ PDR R-03	GDC	28-586S	140-147W	sHELIO1MV
1650	121087		DPRT	B 12KHZ PDR R-04	GDC	28-584S	140-145W	sHELIO1MV
2117	121087		DPRT	E 12KHZ PDR R-04	GDC	28-587S	140-141W	sHELIO1MV
0221	171087		DPRT	B 12KHZ PDR R-05	GDC	23-182S	149-262W	sHELIO1MV
1754	191087		DPRT	E 12KHZ PDR R-05	GDC	17-301S	149-350W	sHELIO1MV

*** HYDROCASTS ***

1830	210987		HCNI	STA-01	16BTL	5185M	GRD	20-002N	134-591W	sHELIO1MV
1643	220987		HCNI	STA-02	17BTL	5510M	GRD	16-397N	135-006W	sHELIO1MV
1538	230987		HCNI	STA-03	18BTL	4810M	GRD	13-191N	135-012W	sHELIO1MV
1422	240987		HCNI	STA-04	18BTL	4835M	GRD	10-007N	134-594W	sHELIO1MV
0843	250987		HCNI	STA-05	18BTL	4755M	GRD	7-316N	134-581W	sHELIO1MV
0306	260987		HCNI	STA-06	18BTL	4560M	GRD	4-579N	134-575W	sHELIO1MV
2039	260987		HCNI	STA-07	18BTL	4380M	GRD	2-290N	135-022W	sHELIO1MV
1614	270987		HCNI	STA-08	18BTL	4340M	GRD	0-000S	133-595W	sHELIO1MV
0927	280987		HCNI	STA-09	18BTL	4350M	GRD	2-290S	134-571W	sHELIO1MV
0233	290987		HCNI	STA-10	18BTL	4575M	GRD	5-002S	134-572W	sHELIO1MV
1951	290987		HCNI	STA-11	18BTL	4475M	GRD	7-303S	135-005W	sHELIO1MV
1258	300987		HCNI	STA-12	18BTL	4400M	GRD	9-595S	134-586W	sHELIO1MV
0336	011087		HCNI	STA-13	18BTL	4295M	GRD	12-006S	134-589W	sHELIO1MV
1740	011087		HCNI	STA-14	18BTL	4140M	GRD	13-599S	135-005W	sHELIO1MV
0759	021087		HCNI	STA-15	18BTL	4250M	GRD	16-003S	134-564W	sHELIO1MV
2230	021087		HCNI	STA-16	18BTL	4225M	GRD	18-008S	134-593W	sHELIO1MV
1259	031087		HCNI	STA-17	17BTL	3746M	GRD	20-021S	135-002W	sHELIO1MV
0616	041087		HCNI	STA-18	17BTL	4005M	GRD	22-294S	134-573W	sHELIO1MV

#GMT #TIME	DDMMYY DATE	LOC T TIME Z	SAMP CODE	SAMPLE IDENTIFIER	DISP CODE	LAT.	LONG.	CRUISE LEG-SHIP
0121	071087		HCNI	STA-19 17BTL 3650M	GRD	24-211S	131-477W	sHELIO1MV
0118	101087		HCNI	STA-20 16BTL 3955M	GRD	26-345S	133-452W	sHELIO1MV
2229	111087		HCNI	STA-21 8BTL 133M	GRD	28-591S	140-158W	sHELIO1MV
0224	121087		HCNI	STA-22 10BTL 140M	GRD	28-594S	140-147W	sHELIO1MV
0016	131087		HCNI	STA-23 8BTL 40M	GRD	28-584S	140-159W	sHELIO1MV

*** ROCK DREDGES ***

0614	081087		DRRO B	ROCK DREDGE 01 2525M	GRD	24-598S	130-042W	sHELIO1MV
0722	081087		DRRO E	PITCAIRN 01 1985M	GRD	25-002S	130-043W	sHELIO1MV
0308	121087		DRRO B	ROCK DREDGE 02 283M	GRD	28-586S	140-152W	sHELIO1MV
0351	121087		DRRO E	MACDONALD SEAMT 151M	GRD	28-586S	140-153W	sHELIO1MV
0631	121087		DRRO B	ROCK DREDGE 03 325M	GRD	28-594S	140-155W	sHELIO1MV
0727	121087		DRRO E	MACDONALD SEAMT 165M	GRD	28-587S	140-148W	sHELIO1MV
2133	121087		DRRO B	ROCK DREDGE 04 160M	GRD	28-583S	140-142W	sHELIO1MV
2159	121087		DRRO E	MACDONALD SEAMT 75M	GRD	28-582S	140-148W	sHELIO1MV
2313	121087		DRRO B	ROCK DREDGE 05 90M	GRD	28-588S	140-160W	sHELIO1MV
2356	121087		DRRO E	MACDONALD SEAMT 40M	GRD	28-586S	140-156W	sHELIO1MV

*** BIOLOGICAL LAND SAMPLES ***

1800	041087		BLLS	MANGAREVA IS.	WHO	23-042S	135-055W	sHELIO1MV
1800	081087		BLLS	PITCAIRN IS.	WHO	25-035S	130-053W	sHELIO1MV
1800	131087		BLLS	ILES DE BASS	WHO	27-539S	143-282W	sHELIO1MV
1800	141087		BLLS	RAPA IS.	WHO	27-370S	144-172W	sHELIO1MV
2000	161087		BLLS	TUBUAI IS.	WHO	23-195S	149-297W	sHELIO1MV
1800	181087		BLLS	MEHETIA IS.	WHO	18-052S	148-178W	sHELIO1MV

*** BIOLOGICAL SAMPLES COLLECTED BY DIVERS ***

1800	051087		BDIV	MANGAREVA IS.	WHO	23-051S	135-057W	sHELIO1MV
1800	091087		BDIV	PITCAIRN IS.	WHO	26-083S	132-412W	sHELIO1MV
1800	131087		BDIV	ILES DE BASS	WHO	27-539S	143-282W	sHELIO1MV
1800	141087		BDIV	ILES DE BASS	WHO	27-370S	144-172W	sHELIO1MV

*** GEOLOGICAL ROCK SAMPLE ON LAND ***

1800	041087		GLRS	MANGAREVA, GAMBIER	GRD	23-042S	135-055W	sHELIO1MV
1900	051087		GLRS	MANGAREVA, GAMBIER	GRD	23-052S	135-057W	sHELIO1MV
2200	041087		GLRS	MANGAREVA, GAMBIER	GRD	23-043S	135-056W	sHELIO1MV
0030	061087		GLRS	MANGAREVA, GAMBIER	GRD	23-061S	135-035W	sHELIO1MV
1800	081087		GLRS	PITCAIRN IS. 02	GRD	25-035S	130-053W	sHELIO1MV
1800	091087		GLRS	PITCAIRN IS. 16	GRD	26-083S	132-412W	sHELIO1MV
1800	131087		GLRS	ILES DE BASS 17	GRD	27-539S	143-282W	sHELIO1MV
1800	141087		GLRS	RAPA IS. 20	GRD	27-370S	144-172W	sHELIO1MV
2000	161087		GLRS	TUBUAI IS. 07	GRD	23-195S	149-297W	sHELIO1MV
1800	181087		GLRS	MEHETIA IS. 10	GRD	18-052S	148-178W	sHELIO1MV

#GMT #TIME	DDMMYY DATE	LOC TIME	T Z	SAMP CODE	SAMPLE IDENTIFIER	DISP CODE	LAT.	LONG.	CRUISE LEG-SHIP

*** EXPENDABLE BATHYTHERMOGRAPHS ***									
1539	170987			BTXP	xbt 0001 Probe T-4	GDC	31-123N	120-156W	sHELIO1MV
0251	180987			BTXP	xbt 0002 Probe T-4	GDC	30-055N	122-128W	sHELIO1MV
1345	180987			BTXP	xbt 0003 Probe T-4	GDC	28-452N	123-595W	sHELIO1MV
0143	190987			BTXP	xbt 0004 Probe T-4	GDC	27-278N	125-431W	sHELIO1MV
1414	190987			BTXP	xbt 0005 Probe T-4	GDC	25-564N	127-393W	sHELIO1MV
0239	200987			BTXP	xbt 0006 Probe T-4	GDC	24-265N	129-308W	sHELIO1MV
1413	200987			BTXP	xbt 0007 Probe T-4	GDC	23-030N	131-169W	sHELIO1MV
0247	210987			BTXP	xbt 0008 Probe T-4	GDC	21-341N	133-144W	sHELIO1MV
1444	210987			BTXP	xbt 0009 Probe T-4	GDC	20-095N	134-498W	sHELIO1MV
2054	210987			BTXP	xbt 0010 Probe T-4	GDC	19-516N	134-588W	sHELIO1MV
0232	220987			BTXP	xbt 0011 Probe T-4	GDC	18-456N	135-011W	sHELIO1MV
0920	220987			BTXP	xbt 0012 Probe T-4	GDC	17-314N	135-001W	sHELIO1MV
1436	220987			BTXP	xbt 0013 Probe T-4	GDC	16-381N	134-590W	sHELIO1MV
2059	220987			BTXP	xbt 0014 Probe T-4	GDC	16-110N	135-013W	sHELIO1MV
0232	230987			BTXP	xbt 0015 Probe T-4	GDC	15-086N	135-014W	sHELIO1MV
0922	230987			BTXP	xbt 0016 Probe T-4	GDC	14-007N	135-015W	sHELIO1MV
1741	230987			BTXP	xbt 0017 Probe T-4	GDC	13-186N	135-003W	sHELIO1MV
2159	230987			BTXP X	xbt 18 bad trace	GDC	12-311N	135-004W	sHELIO1MV
2210	230987			BTXP	xbt 0019 Probe T-4	GDC	12-289N	134-598W	sHELIO1MV
0301	240987			BTXP	xbt 0020 Probe T-4	GDC	11-396N	135-016W	sHELIO1MV
1628	240987			BTXP	xbt 0024 Probe T-4	GDC	10-010N	135-002W	sHELIO1MV
2141	240987			BTXP	xbt 0025 Probe T-4	GDC	9-034N	135-001W	sHELIO1MV
0236	250987			BTXP X	xbt 0026 Noisy probe	GDC	8-120N	134-565W	sHELIO1MV
0242	250987			BTXP	xbt 0027 Probe T-4	GDC	8-081N	134-597W	sHELIO1MV
1033	250987			BTXP	xbt 0028 Probe T-4	GDC	7-310N	134-570W	sHELIO1MV
1611	250987			BTXP	xbt 0029 Probe T-4	GDC	6-295N	134-588W	sHELIO1MV
2112	250987			BTXP	xbt 0030 Probe T-4	GDC	5-400N	135-012W	sHELIO1MV
0129	260987			BTXP	xbt 0031 Probe T-4	GDC	4-597N	135-003W	sHELIO1MV
0902	260987			BTXP	xbt 0032 Probe T-4	GDC	4-176N	134-573W	sHELIO1MV
1445	260987			BTXP	xbt 0033 Probe T-4	GDC	3-126N	135-026W	sHELIO1MV
2216	260987			BTXP	xbt 0034 Probe T-4	GDC	2-291N	135-016W	sHELIO1MV
0315	270987			BTXP	xbt 0035 Probe T-4	GDC	1-428N	134-459W	sHELIO1MV
0951	270987			BTXP	xbt 0038 Probe T-4	GDC	0-478N	134-198W	sHELIO1MV
1435	270987			BTXP	xbt 0039 Probe T-4	GDC	0-000N	134-004W	sHELIO1MV
2107	270987			BTXP	xbt 0040 Probe T-4	GDC	0-377S	134-222W	sHELIO1MV
0249	280987			BTXP	xbt 0041 Probe T-4	GDC	1-365S	134-399W	sHELIO1MV
1148	280987			BTXP	xbt 0042 Probe T-4	GDC	2-436S	134-582W	sHELIO1MV
1552	280987			BTXP	xbt 0043 Probe T-4	GDC	3-243S	135-019W	sHELIO1MV
2106	280987			BTXP	xbt 0044 Probe T-4	GDC	4-235S	135-012W	sHELIO1MV
0442	290987			BTXP	xbt 0045 Probe T-4	GDC	5-037S	135-014W	sHELIO1MV
0851	290987			BTXP	xbt 0046 Probe T-4	GDC	5-470S	134-576W	sHELIO1MV
1445	290987			BTXP	xbt 0047 Probe T-4	GDC	6-487S	134-594W	sHELIO1MV
2250	290987			BTXP	xbt 0048 Probe T-4	GDC	7-413S	134-599W	sHELIO1MV
0256	300987			BTXP	xbt 0049 Probe T-7(4)	GDC	8-307S	134-585W	sHELIO1MV
0303	300987			BTXP X	xbt 0050 Noisy probe	GDC	8-305S	134-595W	sHELIO1MV