

INFORMAL REPORT AND INDEX OF
NAVIGATION, DEPTH AND MAGNETIC DATA

(Issued July 8, 1977)

F. DRAKE 77 EXPEDITION

LEG 4D

(CUEA Leg 4)

Callao, Peru (5 May 1977)
to
Balboa, Canal Zone (27 May 1977)

R/V MELVILLE

Co-Chief Scientists - L. Codispoti (Univ. of Washington)
and T. Packard (Bigelow Lab. for Ocean Sciences)

Resident Marine Tech - W. Keith

Post-Cruise Processing and Report Preparation
by S.I.O. Geological Data Center - S. M. Smith,
U. Albright, G. Psaropoulos, G. Papadopoulos

Data Collection Funded by NSF
Contract Number OCE76-01309
Data Processing Funded by SIA and ONR

NOTE: This is an index of underway geophysical data edited and processed shortly 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 Geological Data Center, Scripps Institution of Oceanography, La Jolla, California 92093.

Informal Report and Index of Navigation, Depth, Magnetic and Subbottom Profiler Data *

Contents:

- Index Chart - gives track of cruise leg and boundaries of depth compilation plots (see below).
- Track Charts - annotated with dates (day/month) and hour ticks. The scale (.3"/deg. long) is the same as the index charts of previous SIO cruises published as Report IMR TR-25.
- Profiles - Depth and magnetic anomaly vs. distance. Dates (day/month) and positions of major course changes (greater than 30 degrees) are annotated. Sections of track having subbottom profiler (airgun) records have a solid black line along the bottom of the profile.

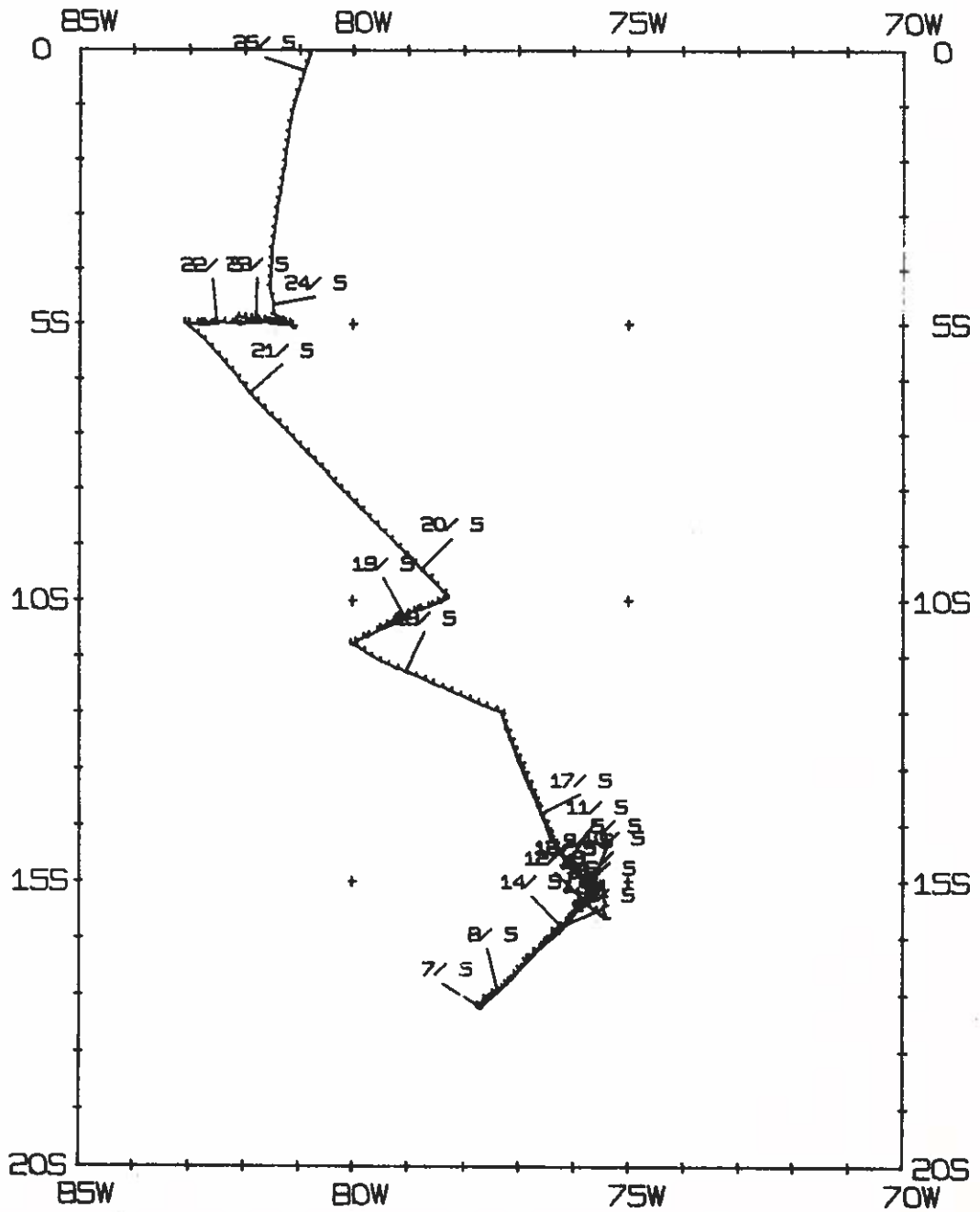
For information on the availability and reproduction costs of data in the following forms contact S. M. Smith, Curator, Geological Data Center, Scripps Institution of Oceanography La Jolla, California 92093 Phone: (714) 452-2752.

1. Navigation listing of times and positions of course and speed changes, fixes and drift velocity.
2. Depth compilation plots - in fathoms (assumed sound velocity of 800 fm./sec.) at approximately 1 mile spacing, plotted at 4" degree with standard U.S. Navy Oceanographic Office BC series boundaries (see index chart).
3. Plots of magnetic anomaly profiles along track-map scale = 1.2"/. degree; anomaly scale between 15°N and 15°S latitude = 500 gamma/inch; anomaly scale north of 15°N and south of 15°S = 1000 gamma/inch) from values retrieved at approximately 1 mile spacing and regional field removed using the 1965 IGRF.
4. Card Decks of navigation, depth and magnetics (for specific formats, contact S. M. Smith, Geological Data Center). Phone: (714) 452-2752
5. S.I.O. Sample Index - list of beginning and end times and positions of all underway records as well as all other samples (geology, biology, physical oceanography, etc.) collected on the cruise leg.
6. Microfilm or Xerox copies of:
 - a. Echosounder records - 12 and 3.5 kHz frequency
 - b. Subbottom profiler records (airgun)
 - c. Magnetometer records
 - d. Underway Data Log

* No subbottom profiler data collected

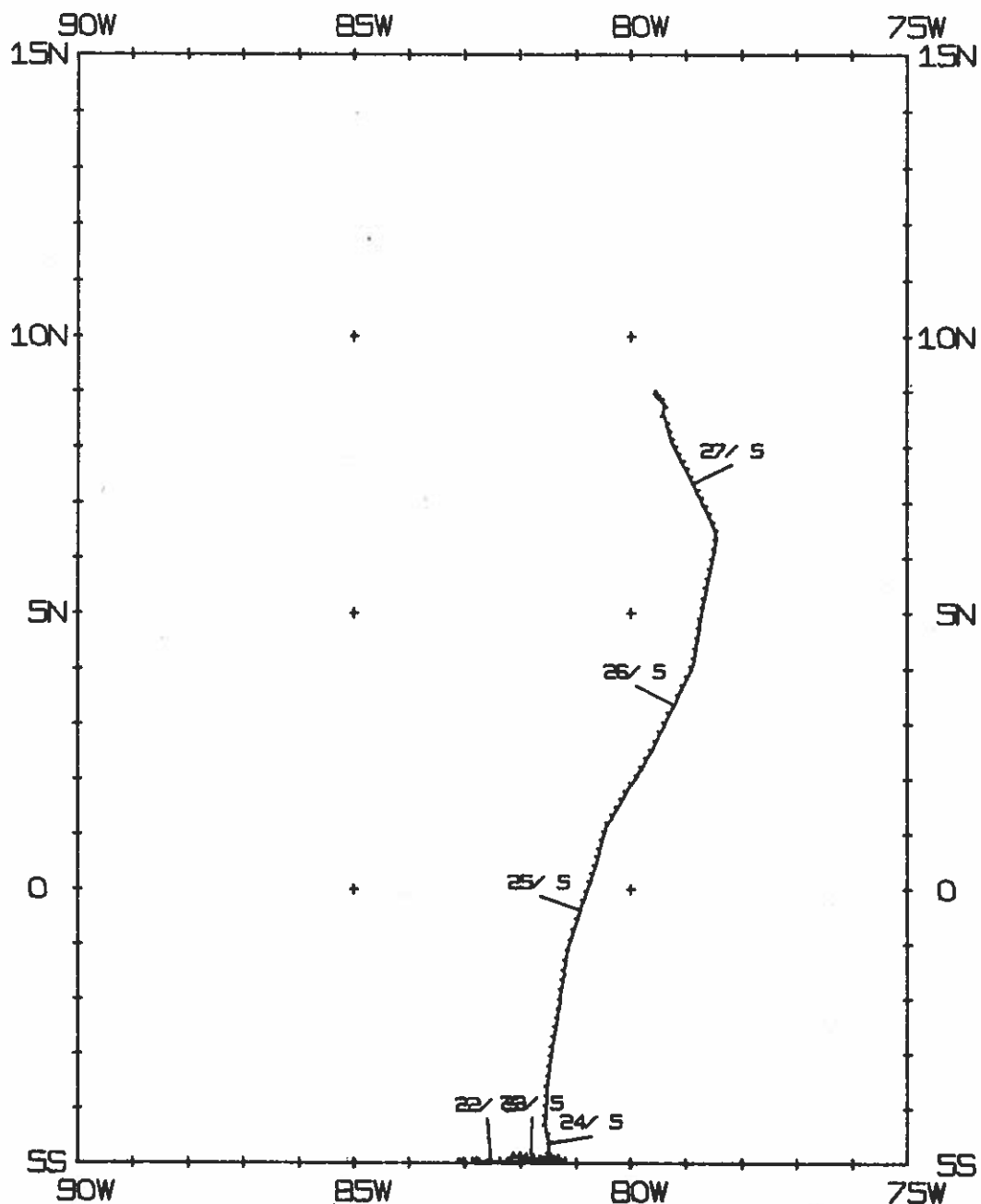
FD7740MV TRACK PLOT (1 OF 2)

MERCATOR PROJECTION, SCALE= 0.312 IN/DEG LONGITUDE

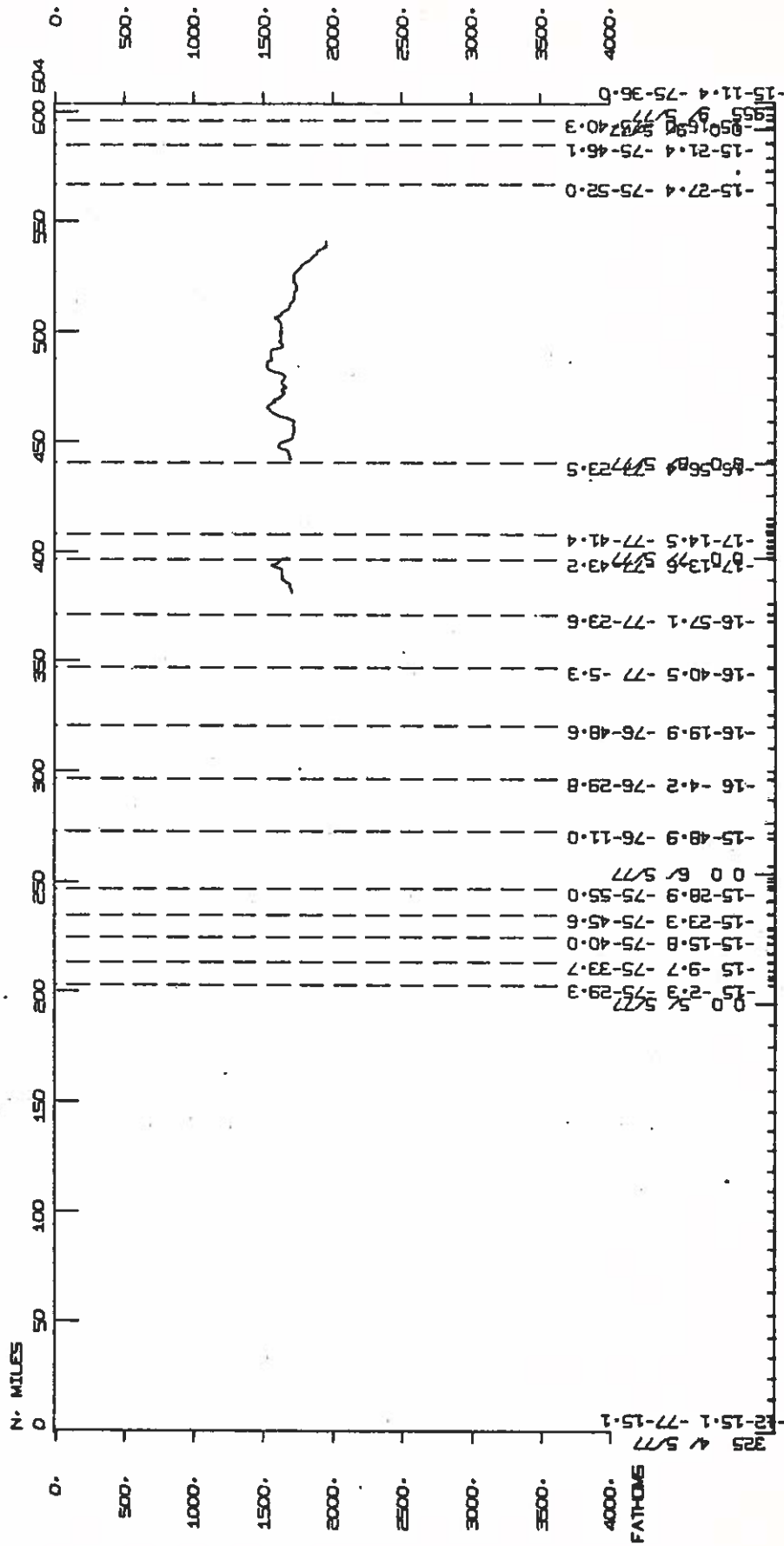
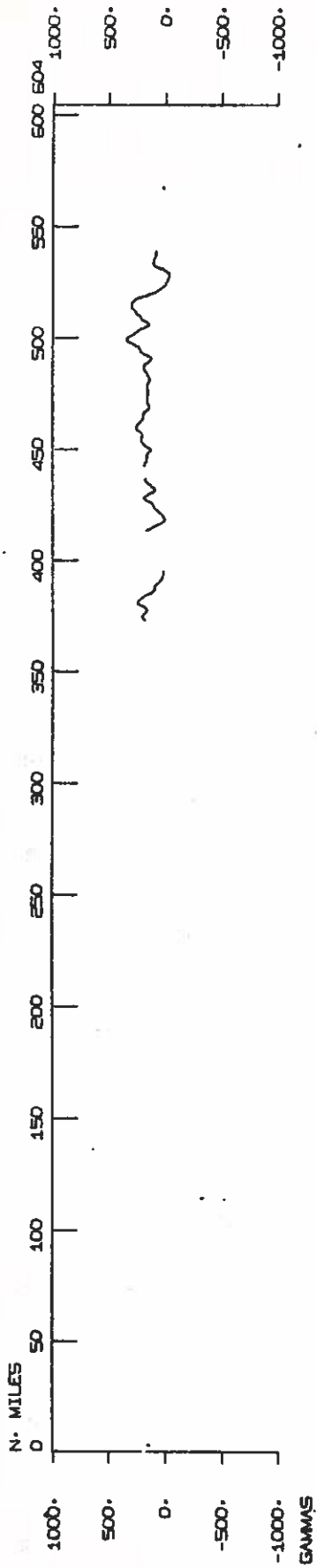


FD7740MV TRACK PLOT (2 OF 2)

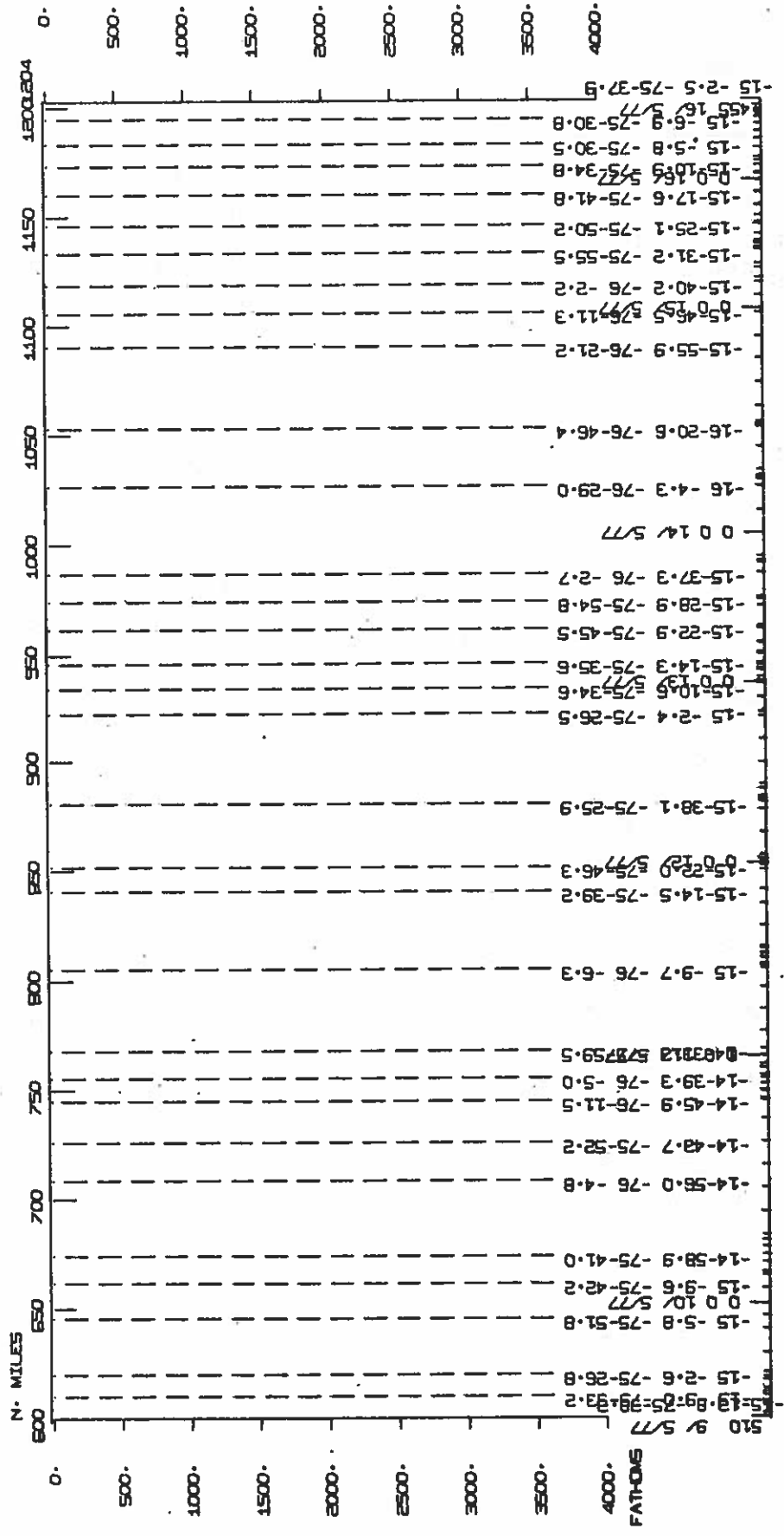
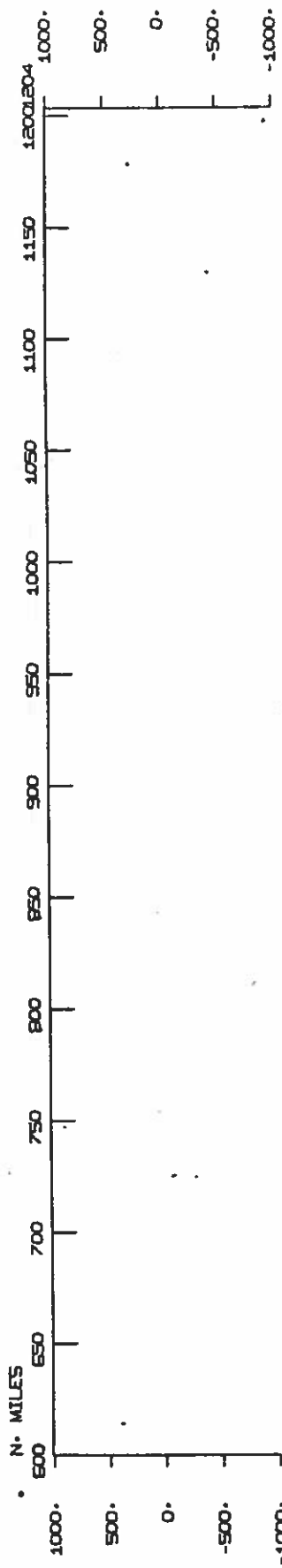
MERCATOR PROJECTION, SCALE= 0.312 IN/DEG LONGITUDE



F. DRAKE 77 LEG 40



F. DRAKE 77 LEG 4D



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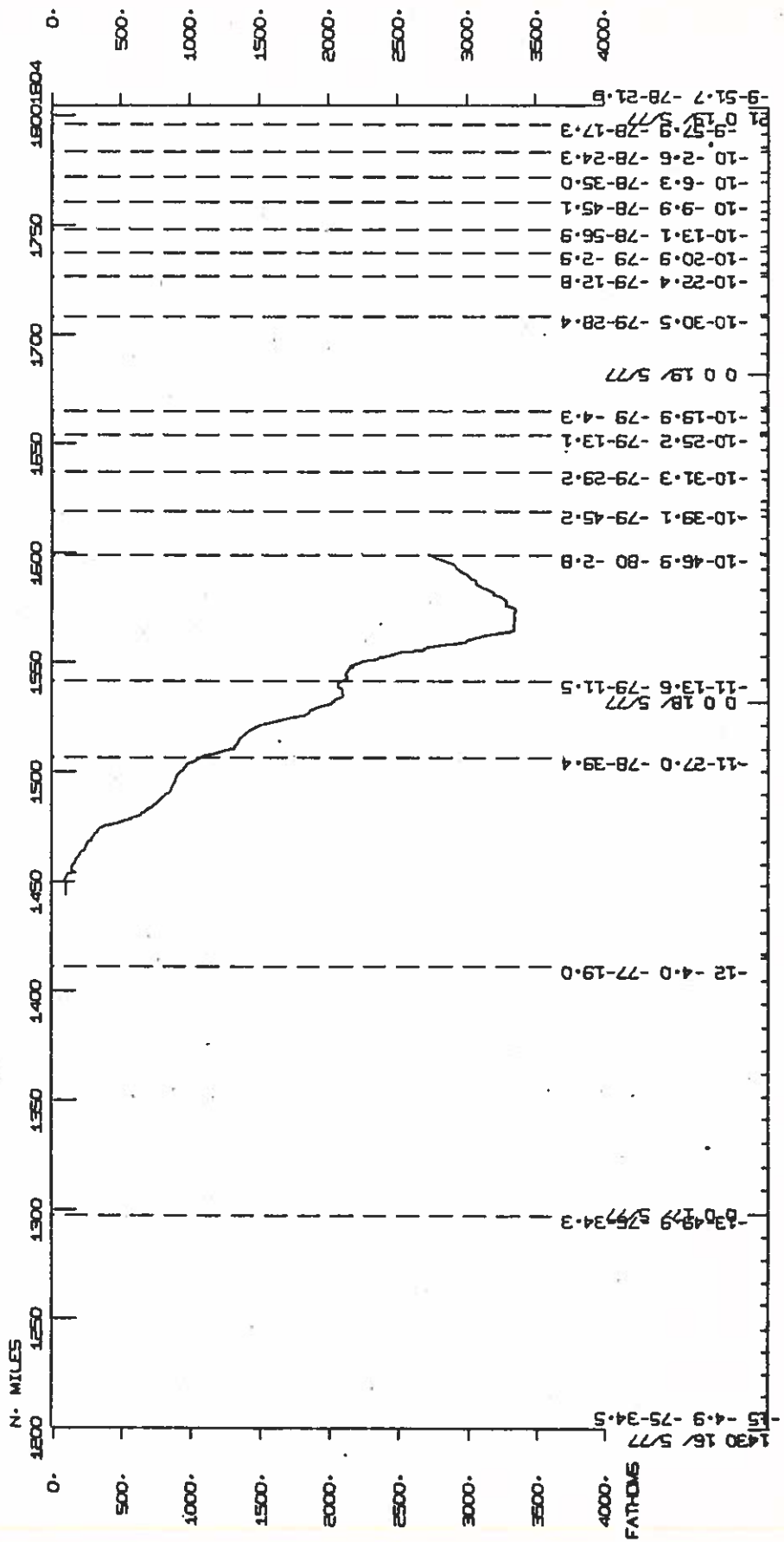
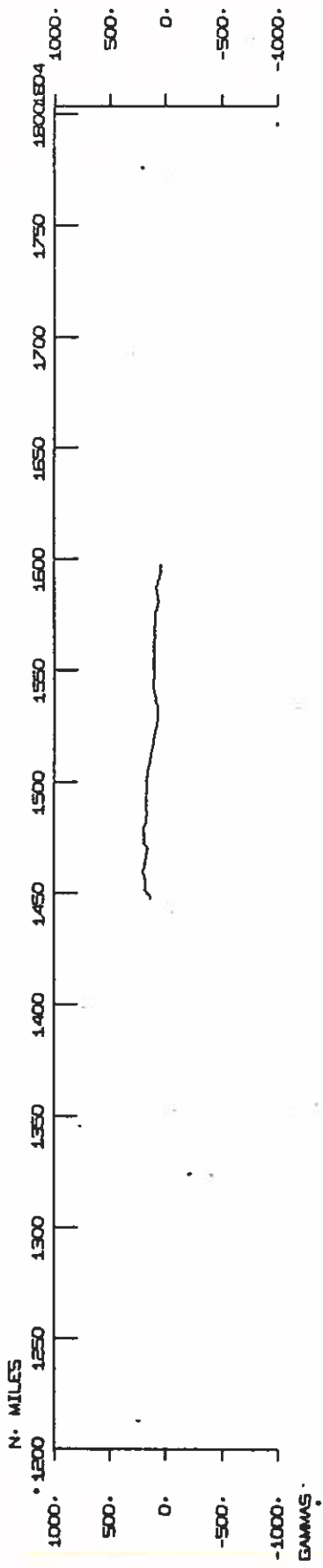
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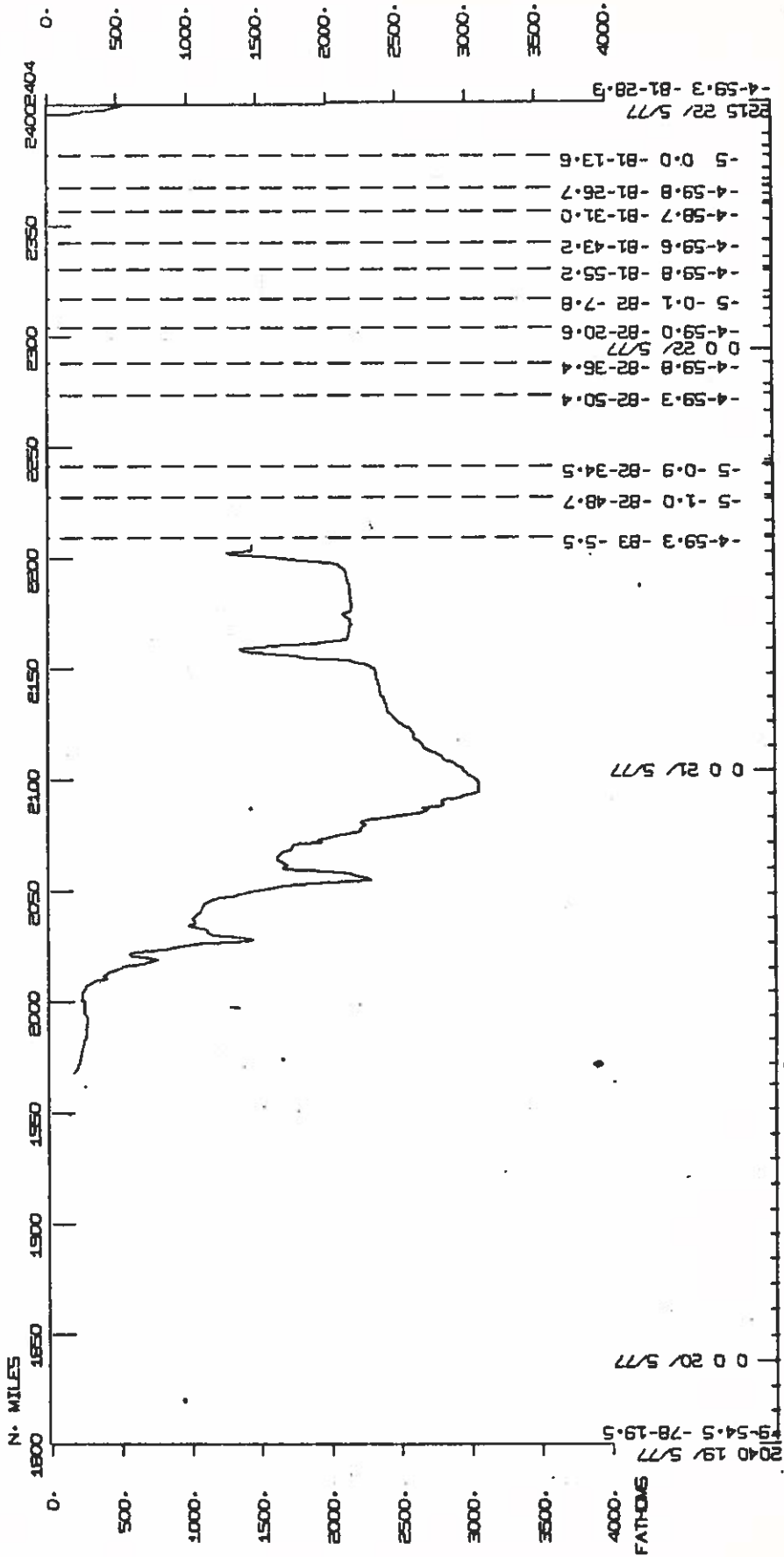
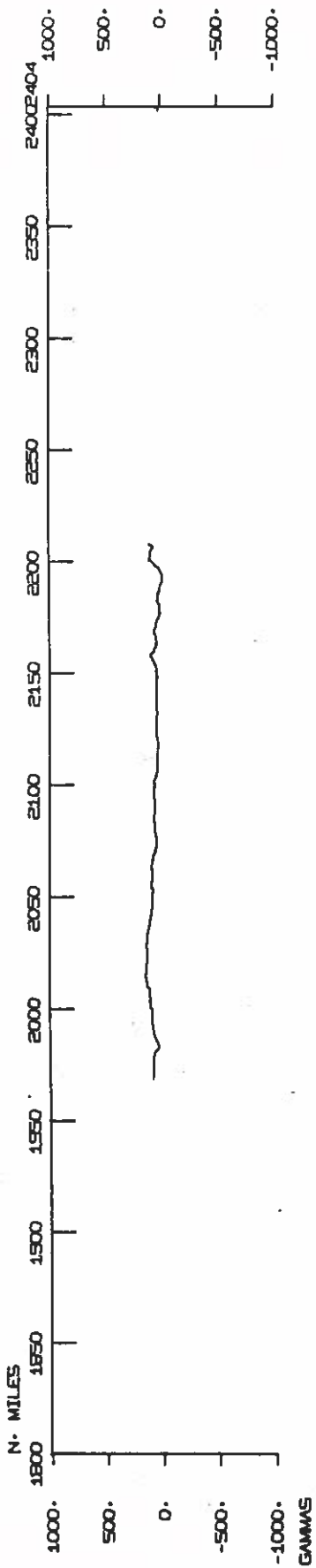
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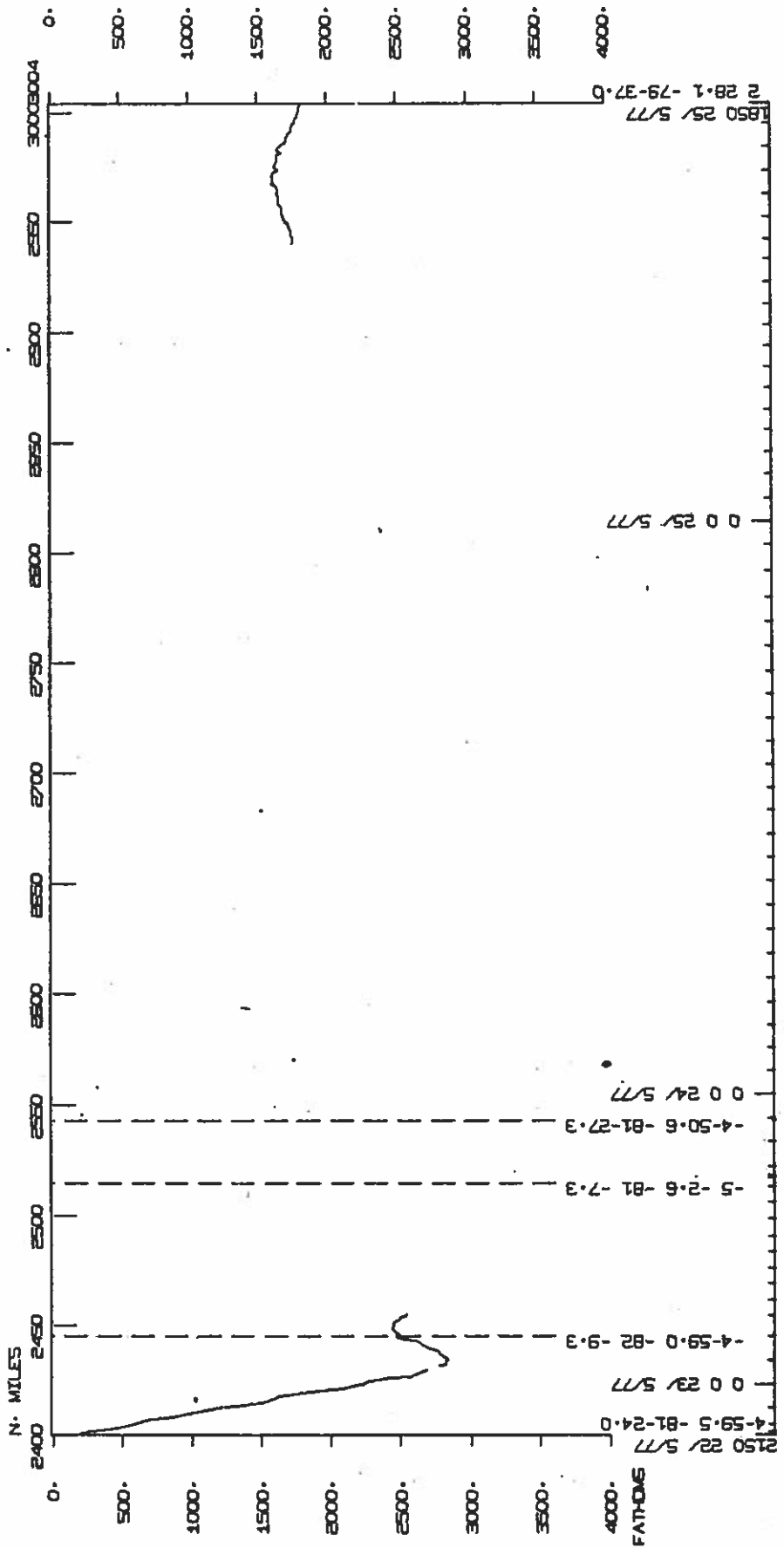
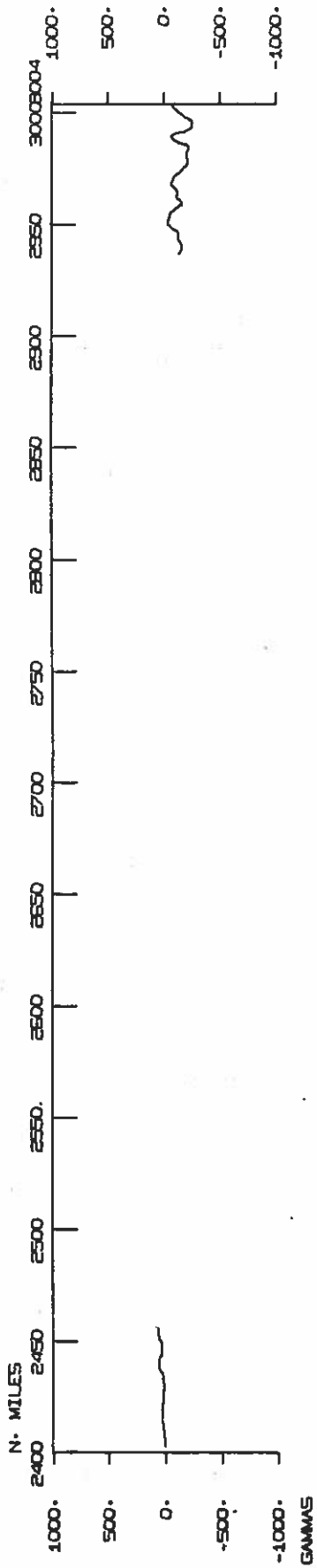
F. DRAKE 77 LEG 4D



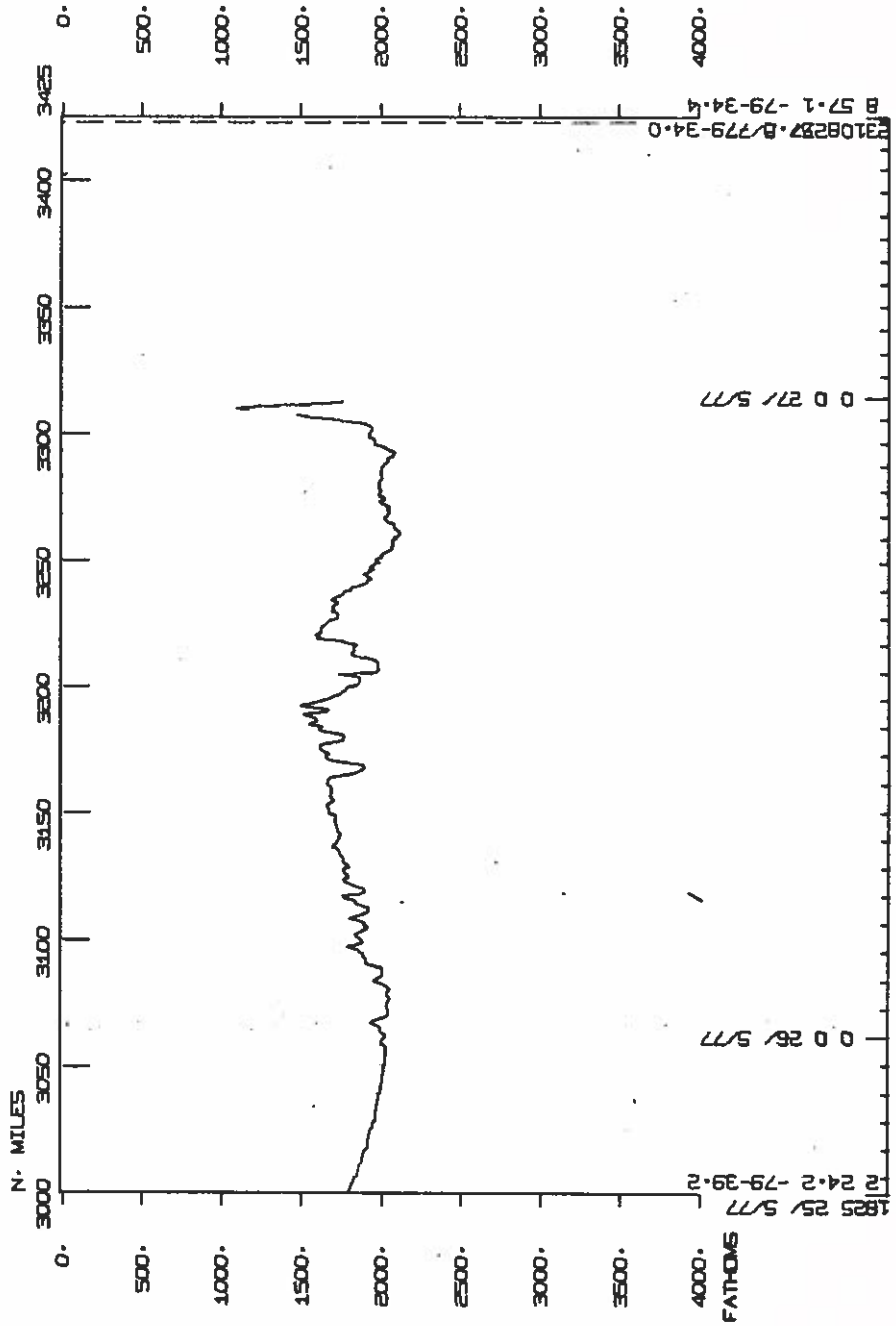
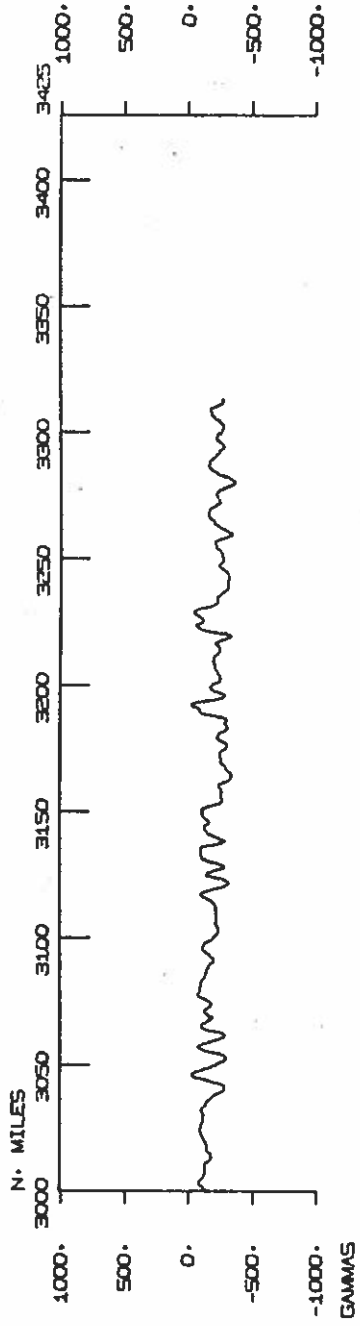
F. DRAKE 77 LEG 4D



F. DRAKE77 LEG 4D



F. DRAKE 77 LEG 4 D



S.I.O. SAMPLE INDEX

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LEG 4D

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Callao, Peru (5 May 1977)

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Index Encoding Funded by NSF
Grant Number OCE76-00131
Index Processing and Report Preparation
Funded in Part by SIA

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 Technician and processed onshore 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 cards. 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.)

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NUMBER OF SAMPLES OF CLASS 'TYPE' GOING TO DESTINATION 'DISP'

DISP	TYPE							TOTAL	
	DP	HC	LB	MG	NE	PE	TD		
BUS	I					6	1	6	
DMK	I				82	2	1	84	
FNC	I					1	1	1	
GDC	I	6		1	1		1	8	
OSU	I					3	70	73	
PKU	I					2	1	2	
SIO	I					2	1	2	
SIX	I					5	1	5	
UWA	I		147			8	1	155	
TOTAL	I	6	147	1	1	82	29	70	336

SAMPLE 'TYPE' CODES USED ABOVE

DP = DEPTH
 HC = HYDROGRAPHIC CAST
 LB = LOG BOOKS
 MG = MAGNETICS (TOWED VEHICLE, SURFACE, TOTAL FIELD)
 NE = NEPHELOMETER
 PE = PERSONNEL IN SCIENTIFIC PARTY
 TD = SALINITY/TEMPERATURE/DEPTH (STD)

SAMPLE 'DISP' CODES USED ABOVE

BOS = BIGELOW LABORATORY FOR OCEAN SCIENCES
 DMK = DENMARK, UNIV. OF COPENHAGEN
 FNC = FRANCE
 GDC = GEOLOGICAL DATA CENTER -- S. SMITH (EXT. 2752)
 OSU = OREGON STATE UNIVERSITY
 PKU = PERU
 SIO = SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA, CAL. 92093
 SIX = SCRIPPS INSTITUTION NON-EMPLOYEE -(CONTACT DORCAS UTTER EXT. 2356)
 UWA = UNIV. OF WASHINGTON, SEATTLE

S.I.U. SAMPLE INDEX

F. DRAKE 77 EXPEDITION LEG 4D

FD774DMV

*** PORTS ***

100 4 577
1200 27 577

LGPT B CALLAO, PERU
LGPT E BALBOA, C.Z.

12 03 S 77 10 W F FD774DMV
8 57 N. 79.34 W F FD774DMV

PERSONNEL

PECS	CODISPOTI, L.	UWA	FD774DMV
PECS	PACKARD, T.	BOS	FD774DMV
PERT	KEITH, W.	SIO	FD774DMV
PECT	MOE, R.	SIO	FD774DMV
PE	AMMERMAN, J.	BOS	FD774DMV
PE	BASS, A.	BOS	FD774DMV
PE	BATTEEN, M.	UWA	FD774DMV
PEXN	BETZ, M.	SIX	FD774DMV
PE	BISHOP, D.	UWA	FD774DMV
PE	BLASCO, D.	BOS	FD774DMV
PE	DEVOL, A.	UWA	FD774DMV
PEXN	ESTRADA, M.	SIX	FD774DMV
PE	FRIEBARTSHAUSER, M	UWA	FD774DMV
PE	GARFIELD, N.	BOS	FD774DMV
PE	GARFIELD, P.	BOS	FD774DMV
PEXN	HUNDAHL, H.	DMK	FD774DMV
PEXN	IZAQUIRRE, R.	PRU	FD774DMV
PEXN	KULLENBERG, G.	DMK	FD774DMV
PE	LEWIS, L.	OSU	FD774DMV
PE	LOWMAN, D.	UWA	FD774DMV
PEXN	MINAS, H.	FNC	FD774DMV
PEXN	OCHOA, N.	PRU	FD774DMV
PE	PAUL, J.	SIX	FD774DMV
PE	PEDERSEN, W.	SIX	FD774DMV
PE	PITTOCK, H.	OSU	FD774DMV
PE	SCHRAMM, R.	OSU	FD774DMV
PE	WESTHAGEN, A.	UWA	FD774DMV
PE	WHALING, P.	SIX	FD774DMV
PE	WISEGRAVER, D.	UWA	FD774DMV

*** NOTE *** TIME ZONES AND MINUTES OF LATITUDE AND LONGITUDE ARE LISTED
IN TENTHS (E.G. 10.6 IS LISTED AS 106)

14JUL77 PAGE 1
 TIME DATE TIME TZ SAMP DISP CRUISE
 GMT D.M.Y. LOC LOC CODE SAMPLE IDENT. CODE LAT. LONG. LEG-SHIP

UNDERWAY DATA CURATOR - STUART SMITH (EXT.2752)

*** LOG BOOKS ***

2100 6 577 LBUW B UNDERWAY LOG GDC 17 5S 77 272W S FD774DMV
 10 27 577 LBUW E UNDERWAY LOG GDC 7 203N 78 531W S FD774DMV

*** FATHOGRAMS ***

2135 7 577 DPR3 B GDR 3.5KHZ R-01 GDC 17 69S 77 383W S FD774DMV
 1305 8 577 DPR3 E GDR 3.5KHZ R-01 GDC 15 481S 76 120W S FD774DMV
 1535 17 577 DPR3 B GDR 3.5KHZ R-02 GDC 11 519S 77 411W S FD774DMV
 650 18 577 DPR3 E GDR 3.5KHZ R-02 GDC 10 469S 80 28W S FD774DMV
 1130 20 577 DPR3 B GDR 3.5KHZ R-03 GDC 7 550S 80 185W S FD774DMV
 950 21 577 DPR3 E GDR 3.5KHZ R-03 GDC 4 595S 83 51W S FD774DMV
 2155 22 577 DPR3 B GDR 3.5KHZ R-04 GDC 4 595S 81 247W S FD774DMV
 259 23 577 DPR3 E GDR 3.5KHZ R-04 GDC 4 532S 82 63W S FD774DMV
 1245 25 577 DPRT B GDR 12KHZ R-01 GDC 1 334N 80 100W S FD774DMV
 106 26 577 DPRT E GDR 12KHZ R-01 GDC 3 308N 79 65W S FD774DMV
 109 26 577 DPRT B GDR 12KHZ R-02 GDC 3 313N 79 63W S FD774DMV
 10 27 577 DPRT E GDR 12KHZ R-02 GDC 7 203N 78 531W S FD774DMV

*** MAGNETOMETER ***

2100 6 577 MGR B MAGNETICS R-01 GDC 17 5S 77 272W S FD774DMV
 2355 26 577 MGR E MAGNETICS R-01 GDC 7 189N 78 523W S FD774DMV

CONDUCTIVITY, TEMPERATURE, DEPTH

1755 5 577 TDCT 372 975M S14 OSU 15 266S 75 502W S FD774DMV
 2004 5 577 TDCT 373 950M S14 OSU 15 288S 75 552W S FD774DMV
 2257 5 577 TDCT 374 950M S14 OSU 15 323S 75 586W S FD774DMV
 210 6 577 TDCT 375 945M S14 OSU 15 471S 76 99W S FD774DMV
 559 6 577 TDCT 376 950M S14 OSU 16 43S 76 299W S FD774DMV
 958 6 577 TDCT 377 943M S14 OSU 16 199S 76 486W S FD774DMV

										14JUL77		PAGE 2	
TIME	DATE	TIME	TZ	SAMP			DISP					CRUISE	
GMT	D.M.Y.	LOC	LOC	CODE	SAMPLE	IDENT.	CODE	LAT.	LONG.			LEG-SHIP	
1403	6	577		TDCT	378	937M S14	OSU 16	406S	77 53W	S	FD774DMV		
1827	6	577		TDCT	379	946M S14	OSU 16	573S	77 236W	S	FD774DMV		
2259	6	577		TDCT	380A	235M S14	OSU 17	136S	77 431W	S	FD774DMV		
329	7	577		TDCT	380B	869M S14	OSU 17	146S	77 428W	S	FD774DMV		
1800	8	577		TDCT	382	950M S14	OSU 15	256S	75 575W	S	FD774DMV		
2153	8	577		TDCT	383	960M S14	OSU 15	214S	75 461W	S	FD774DMV		
54	9	577		TDCT	384	978M S14	OSU 15	175S	75 423W	S	FD774DMV		
311	9	577		TDCT	385	972M S14	OSU 15	161S	75 403W	S	FD774DMV		
818	9	577		TDCT	386	964M S14	OSU 15	136S	75 376W	S	FD774DMV		
1240	9	577		TDCT	387	577M S01	OSU 15	109S	75 361W	S	FD774DMV		
1529	9	577		TDCT	388	174M S01	OSU 15	89S	75 335W	S	FD774DMV		
1650	9	577		TDCT	389	134M S01	OSU 15	73S	75 319W	S	FD774DMV		
1827	9	577		TDCT	390	99M S01	OSU 15	51S	75 290W	S	FD774DMV		
1950	9	577		TDCT	391	49M S01	OSU 15	21S	75 269W	S	FD774DMV		
2233	9	577		TDCT	392	517M S14	OSU 15	58S	75 518W	S	FD774DMV		
0	10	577		TDCT	393	ABORT	OSU 15	26S	75 492W	S	FD774DMV		
230	10	577		TDCT	394	ABORT	OSU 15	65S	75 422W	S	FD774DMV		
1414	10	577		TDCT	399	517M S14	OSU 14	460S	76 114W	S	FD774DMV		
1606	10	577		TDCT	400	218M S10	OSU 14	442S	76 88W	S	FD774DMV		
1800	10	577		TDCT	401	184M S10	OSU 14	419S	76 71W	S	FD774DMV		
1934	10	577		TDCT	402	142M S09	OSU 14	395S	76 48W	S	FD774DMV		
2304	10	577		TDCT	403	142M S09	OSU 14	372S	76 37W	S	FD774DMV		
24	11	577		TDCT	404	117M S10	OSU 14	351S	76 10W	S	FD774DMV		
131	11	577		TDCT	405	54M S08	OSU 14	333S	75 595W	S	FD774DMV		
818	13	577		TDCT	413	1020M S14	OSU 15	161S	75 385W	S	FD774DMV		
1046	13	577		TDCT	414	1013M S14	OSU 15	177S	75 419W	S	FD774DMV		
1328	13	577		TDCT	415	1020M S16	OSU 15	231S	75 454W	S	FD774DMV		
1724	13	577		TDCT	416	1026M S14	OSU 15	287S	75 546W	S	FD774DMV		
2033	13	577		TDCT	417	1010M S14	OSU 15	387S	76 23W	S	FD774DMV		
258	14	577		TDCT	418	290M S16	OSU 16	35S	76 309W	S	FD774DMV		
1551	15	577		TDCT	424	560M S19	OSU 15	252S	75 500W	S	FD774DMV		
1841	15	577		TDCT	425	563M S14	OSU 15	212S	75 453W	S	FD774DMV		
2049	15	577		TDCT	426	571M S19	OSU 15	176S	75 414W	S	FD774DMV		
2259	15	577		TDCT	427	568M S14	OSU 15	153S	75 375W	S	FD774DMV		
226	16	577		TDCT	428	569M S14	OSU 15	135S	75 371W	S	FD774DMV		
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633	16	577		TDCT	430	157M S09	OSU 15	81S	75 324W	S	FD774DMV		
802	16	577		TDCT	431	96M S06	OSU 15	49S	75 293W	S	FD774DMV		
910	16	577		TDCT	432	48M S06	OSU 15	23S	75 271W	S	FD774DMV		
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1332	18	577		TDCT	436	768M S14	OSU 10	314S	79 291W	S	FD774DMV		
1657	18	577		TDCT	437	774M S18	OSU 10	251S	79 129W	S	FD774DMV		
2042	18	577		TDCT	438	777M S14	OSU 10	199S	79 42W	S	FD774DMV		
1053	19	577		TDCT	442	155M S07	OSU 10	134S	78 573W	S	FD774DMV		
1210	19	577		TDCT	443	141M S06	OSU 10	108S	78 507W	S	FD774DMV		
1331	19	577		TDCT	444	141M S06	OSU 10	99S	78 451W	S	FD774DMV		
1515	19	577		TDCT	445	154M S06	OSU 10	64S	78 351W	S	FD774DMV		
1658	19	577		TDCT	446	131M S06	OSU 10	26S	78 244W	S	FD774DMV		
1848	19	577		TDCT	447	106M S06	OSU 9	599S	78 206W	S	FD774DMV		
1957	19	577		TDCT	448	75M S04	OSU 9	578S	78 171W	S	FD774DMV		

TIME GMT	DATE D.M.Y.	TIME LOC	TZ LOC	SAMP CODE	SAMPLE IDENT.	DISP CODE	LAT.	LONG.	CRUISE LEG-SHIP
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1307	21	577		TDCT	450	750M S14	OSU 5 8S	82 491W S	FD774DMV
1607	21	577		TDCT	451	774M S14	OSU 5 8S	82 345W S	FD774DMV
130	22	577		TDCT	454	774M S14	OSU 4 589S	82 205W S	FD774DMV
338	22	577		TDCT	455	777M S14	OSU 5 1S	82 78W S	FD774DMV
614	22	577		TDCT	456	778M S14	OSU 4 599S	81 551W S	FD774DMV
847	22	577		TDCT	457	777M S14	OSU 4 596S	81 432W S	FD774DMV
1150	22	577		TDCT	458	770M S18	OSU 4 587S	81 337W S	FD774DMV
1500	22	577		TDCT	459	770M S14	OSU 4 599S	81 273W S	FD774DMV
1745	22	577		TDCT	460	120M S06	OSU 5 0S	81 201W S	FD774DMV
1856	22	577		TDCT	461	54M S03	OSU 5 0S	81 136W S	FD774DMV
2015	22	577		TDCT	462	21M S03	OSU 4 595S	81 93W S	FD774DMV

HYDROGRAPHIC CAST

132	5	577		HCNI	TSO	G A 363	UWA 15 27S	75 286W S	FD774DMV
250	5	577		HCNI	TSO	G A 364	UWA 15 53S	75 298W S	FD774DMV
425	5	577		HCNI	TSO	G A 365	UWA 15 75S	75 311W S	FD774DMV
554	5	577		HCNI	TSO	G A 366	UWA 15 96S	75 343W S	FD774DMV
734	5	577		HCNI	TSO	G A 367	UWA 15 120S	75 363W S	FD774DMV
936	5	577		HCNI	TSO	G A 368	UWA 15 141S	75 379W S	FD774DMV
1124	5	577		HCNI	TSO	G A 369	UWA 15 161S	75 402W S	FD774DMV
1359	5	577		HCNI	TSO	G A 370	UWA 15 187S	75 419W S	FD774DMV
1630	5	577		HCNI	TSO	G A 371	UWA 15 240S	75 457W S	FD774DMV
1840	5	577		HCNI	TSO	G A 372	UWA 15 264S	75 506W S	FD774DMV
2047	5	577		HCNI	TSO	G A 373	UWA 15 290S	75 558W S	FD774DMV
2347	5	577		HCNI	TSO	G A 374	UWA 15 335S	75 596W S	FD774DMV
258	6	577		HCNI	TSO	G A 375	UWA 15 484S	76 107W S	FD774DMV
659	6	577		HCNI	TSO	G A 376	UWA 16 44S	76 301W S	FD774DMV
1053	6	577		HCNI	TSO	QG A 377	UWA 16 199S	76 487W S	FD774DMV
1452	6	577		HCNI	TSO	QG A 378	UWA 16 408S	77 56W S	FD774DMV
1917	6	577		HCNI	TSO	G A 379	UWA 16 574S	77 238W S	FD774DMV
2332	6	577		HCNI	TSO	G A 380-1	UWA 17 133S	77 429W S	FD774DMV
410	7	577		HCNI	TSO	G A 380-2	UWA 17 147S	77 430W S	FD774DMV
936	7	577		HCNI	TSO	G A 380-3	UWA 17 129S	77 432W S	FD774DMV
110	7	577		HCNI	T	380-K	UWA 17 136S	77 435W S	FD774DMV
346	7	577		HCNI	T	QG A 380DB1	UWA 17 147S	77 429W S	FD774DMV
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1545	7	577		HCNI	T N	QG A 380DB4	UWA 17 149S	77 421W S	FD774DMV
1726	7	577		HCNI	TSO	G A 380-F	UWA 17 152S	77 424W S	FD774DMV
1927	7	577		HCNI	T N	QG A 380DB3	UWA 17 135S	77 441W S	FD774DMV
9	8	577		HCNI	TSO	G A 381	UWA 16 566S	77 233W S	FD774DMV
110	8	577		HCNI	S N	QG A 381DB1	UWA 16 569S	77 231W S	FD774DMV
222	8	577		HCNI	S N	QG A 381DB2	UWA 16 574S	77 227W S	FD774DMV
1848	8	577		HCNI	TSO	G A 382	UWA 15 256S	75 574W S	FD774DMV
1951	8	577		HCNI	TS N	QG A 382DB1	UWA 15 257S	75 574W S	FD774DMV
2232	8	577		HCNI	TSO	G A 383	UWA 15 215S	75 463W S	FD774DMV
0	9	577		HCNI	T N	QG A 384DB1	UWA 15 171S	75 425W S	FD774DMV
146	9	577		HCNI	TSO	G A 384	UWA 15 177S	75 423W S	FD774DMV
411	9	577		HCNI	TSO	G A 385	UWA 15 164S	75 403W S	FD774DMV

TIME		DATE	TIME TZ	SAMP	DISP		14JUL77		PAGE	4
GMT	D.M.Y.	LOC	LOC	CODE	SAMPLE	IDENT.	CODE	LAT.	LONG.	CRUISE
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724	9	577		HCNI	S N	QG A 386DB1	UWA 15	135S	75 374W	S FD774DMV
901	9	577		HCNI	TSON	G A 386	UWA 15	136S	75 375W	S FD774DMV
1029	9	577		HCNI	TSON	QG A 387DB1	UWA 15	109S	75 358W	S FD774DMV
1110	9	577		HCNI	TSON	G A 387	UWA 15	108S	75 361W	S FD774DMV
1210	9	577		HCNI	TSON	QG A 387DB2	UWA 15	108S	75 362W	S FD774DMV
1349	9	577		HCNI	T N	QG A 387DB3	UWA 15	112S	75 356W	S FD774DMV
1503	9	577		HCNI	TSO	G A 388	UWA 15	89S	75 334W	S FD774DMV
1640	9	577		HCNI	TSON	QG A 389	UWA 15	73S	75 319W	S FD774DMV
1817	9	577		HCNI	TSON	G A 390	UWA 15	51S	75 291W	S FD774DMV
1943	9	577		HCNI	TSON	QG A 391	UWA 15	22S	75 269W	S FD774DMV
2304	9	577		HCNI	TSON	QG A 392	UWA 15	53S	75 522W	S FD774DMV
50	10	577		HCNI	TSON	QG A 393	UWA 15	69S	75 446W	S FD774DMV
300	10	577		HCNI	TSON	QG A 394	UWA 15	64S	75 423W	S FD774DMV
414	10	577		HCNI	TSON	QG A 395	UWA 15	17S	75 417W	S FD774DMV
530	10	577		HCNI	TSON	QG A 396	UWA 14	582S	75 416W	S FD774DMV
640	10	577		HCNI	TSON	QG A 397	UWA 14	545S	75 393W	S FD774DMV
740	10	577		HCNI	TSON	QG A 398	UWA 14	529S	75 388W	S FD774DMV
1445	10	577		HCNI	TSON	QG A 399	UWA 14	461S	76 113W	S FD774DMV
1637	10	577		HCNI	TSON	QG A 400	UWA 14	439S	76 90W	S FD774DMV
1826	10	577		HCNI	TSON	QG A 401	UWA 14	419S	76 71W	S FD774DMV
1954	10	577		HCNI	TSON	QG A 402	UWA 14	396S	76 46W	S FD774DMV
2323	10	577		HCNI	TSON	QG A 403	UWA 14	373S	76 36W	S FD774DMV
44	11	577		HCNI	TSON	QG A 404	UWA 14	354S	76 8W	S FD774DMV
152	11	577		HCNI	TSON	QG A 405	UWA 14	334S	75 596W	S FD774DMV
654	11	577		HCNI	TSON	QG A 406-1	UWA 15	104S	76 66W	S FD774DMV
904	11	577		HCNI	TS N	QG A 406DB1	UWA 15	92S	76 67W	S FD774DMV
1156	11	577		HCNI	TS N	QG A 406DB2	UWA 15	96S	76 45W	S FD774DMV
1331	11	577		HCNI	TSON	QG A 406-2	UWA 15	93S	76 56W	S FD774DMV
1518	11	577		HCNI	TS N	QG A 406DB3	UWA 15	92S	76 56W	S FD774DMV
2043	11	577		HCNI	TSON	QG A 407-1	UWA 15	221S	75 463W	S FD774DMV
2158	11	577		HCNI	TS N	QG A 407DB1	UWA 15	227S	75 456W	S FD774DMV
25	12	577		HCNI	TS N	QG A 407DB2	UWA 15	227S	75 459W	S FD774DMV
244	12	577		HCNI	TSON	QG A 407-2	UWA 15	222S	75 465W	S FD774DMV
417	12	577		HCNI	TS N	QG A 407DB3	UWA 15	225S	75 465W	S FD774DMV
753	12	577		HCNI	TSON	QG A 408-1	UWA 15	384S	75 260W	S FD774DMV
855	12	577		HCNI	TS N	QG A 408DB1	UWA 15	385S	75 253W	S FD774DMV
1106	12	577		HCNI	TS N	QG A 408DB2	UWA 15	385S	75 241W	S FD774DMV
1332	12	577		HCNI	TSON	QG A 408-2	UWA 15	379S	75 268W	S FD774DMV
1512	12	577		HCNI	TS N	QG A 408DB3	UWA 15	379S	75 266W	S FD774DMV
2005	12	577		HCNI	TSON	G A 409	UWA 15	24S	75 263W	S FD774DMV
2156	12	577		HCNI	TSON	G A 410	UWA 15	73S	75 309W	S FD774DMV
104	13	577		HCNI	TSON	QG A 411	UWA 15	126S	75 347W	S FD774DMV
159	13	577		HCNI	TS N	QG A 411DB1	UWA 15	129S	75 345W	S FD774DMV
507	13	577		HCNI	TSON	QG A 412	UWA 15	143S	75 369W	S FD774DMV
640	13	577		HCNI	TS N	QG A 412DB1	UWA 15	139S	75 363W	S FD774DMV
913	13	577		HCNI	TSON	G A 413	UWA 15	162S	75 388W	S FD774DMV
1150	13	577		HCNI	TSON	G A 414	UWA 15	177S	75 417W	S FD774DMV
1432	13	577		HCNI	TSON	QG A 415	UWA 15	232S	75 450W	S FD774DMV
1534	13	577		HCNI	TS N	QG A 415DB1	UWA 15	229S	75 447W	S FD774DMV
1810	13	577		HCNI	TSON	G A 416	UWA 15	288S	75 544W	S FD774DMV
2133	13	577		HCNI	TSON	G A 417	UWA 15	395S	76 32W	S FD774DMV
327	14	577		HCNI	TSON	QG A 418-1	UWA 16	35S	76 309W	S FD774DMV

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630	14	577		HCNI	TS N	QG A 418DB2	UWA 16 39S	76 309W	S	FD774DMV	
829	14	577		HCNI	TSO N	G A 418-2	UWA 16 41S	76 305W	S	FD774DMV	
959	14	577		HCNI	T	QG A 418DB3	UWA 16 43S	76 305W	S	FD774DMV	
1326	14	577		HCNI	TS N	QG A 419DB1	UWA 16 209S	76 464W	S	FD774DMV	
1420	14	577		HCNI	TSO N	QG A 419-1	UWA 16 210S	76 465W	S	FD774DMV	
1507	14	577		HCNI	TS	QG A 419DB2	UWA 16 211S	76 470W	S	FD774DMV	
1633	14	577		HCNI	TSO N	QG A 419-2	UWA 16 213S	76 473W	S	FD774DMV	
1749	14	577		HCNI	S N	Q 419DB3	UWA 16 216S	76 466W	S	FD774DMV	
2358	14	577		HCNI	TSO N	QG A 420	UWA 15 477S	76 108W	S	FD774DMV	
224	15	577		HCNI	TSO N	QG A 421	UWA 15 408S	76 19W	S	FD774DMV	
414	15	577		HCNI	TSO N	QG A 422	UWA 15 363S	76 4W	S	FD774DMV	
653	15	577		HCNI	TSO N	QG A 423-1	UWA 15 309S	75 547W	S	FD774DMV	
812	15	577		HCNI	T	QG A 423DB1	UWA 15 310S	75 547W	S	FD774DMV	
1013	15	577		HCNI	T	QG A 423DB2	UWA 15 303S	75 549W	S	FD774DMV	
1153	15	577		HCNI	TSO N	QG A 423-2	UWA 15 309S	75 547W	S	FD774DMV	
1401	15	577		HCNI	T N	QG A 423DB3	UWA 15 313S	75 542W	S	FD774DMV	
1635	15	577		HCNI	TSO N	QG A 424	UWA 15 257S	75 498W	S	FD774DMV	
1913	15	577		HCNI	TSO N	G A 425	UWA 15 214S	75 451W	S	FD774DMV	
2130	15	577		HCNI	TSO N	QG A 426	UWA 15 178S	75 411W	S	FD774DMV	
2333	15	577		HCNI	TSO N	G A 427	UWA 15 155S	75 373W	S	FD774DMV	
108	16	577		HCNI	T	428K	UWA 15 135S	75 374W	S	FD774DMV	
255	16	577		HCNI	TSO N	G A 428	UWA 15 135S	75 373W	S	FD774DMV	
521	16	577		HCNI	TSO N	QG A 429	UWA 15 117S	75 363W	S	FD774DMV	
653	16	577		HCNI	TSO N	QG A 430	UWA 15 79S	75 321W	S	FD774DMV	
820	16	577		HCNI	TSO N	QG A 431	UWA 15 49S	75 291W	S	FD774DMV	
918	16	577		HCNI	TSO N	QG A 432	UWA 15 22S	75 271W	S	FD774DMV	
1221	16	577		HCNI	TSO N	QG A 433	UWA 15 65S	75 320W	S	FD774DMV	
740	18	577		HCNI	TSO N	QG A 434	UWA 10 472S	80 23W	S	FD774DMV	
1103	18	577		HCNI	TSO N	QG A 435	UWA 10 395S	79 443W	S	FD774DMV	
1411	18	577		HCNI	TSO N	QG A 436	UWA 10 314S	79 288W	S	FD774DMV	
1800	18	577		HCNI	TSO N	QG A 437	UWA 10 249S	79 122W	S	FD774DMV	
1912	18	577		HCNI	N	QG A 437DB1	UWA 10 247S	79 117W	S	FD774DMV	
2120	18	577		HCNI	TSO	QG A 438	UWA 10 198S	79 34W	S	FD774DMV	
331	19	577		HCNI	TSO N	QG A 439	UWA 10 303S	79 281W	S	FD774DMV	
657	19	577		HCNI	TS N	QG A 440	UWA 10 227S	79 123W	S	FD774DMV	
912	19	577		HCNI	TS N	QG A 441	UWA 10 204S	79 25W	S	FD774DMV	
1110	19	577		HCNI	TSO N	QG A 442	UWA 10 132S	78 572W	S	FD774DMV	
1235	19	577		HCNI	TSO N	QG A 443	UWA 10 108S	78 504W	S	FD774DMV	
1350	19	577		HCNI	TS N	QG A 444	UWA 10 96S	78 451W	S	FD774DMV	
1532	19	577		HCNI	TSO N	QG A 445	UWA 10 62S	78 349W	S	FD774DMV	
1715	19	577		HCNI	TS N	QG A 446	UWA 10 24S	78 249W	S	FD774DMV	
1905	19	577		HCNI	TSO N	QG A 447	UWA 9 595S	78 204W	S	FD774DMV	
2008	19	577		HCNI	TS N	QG A 448	UWA 9 577S	78 169W	S	FD774DMV	
1048	21	577		HCNI	TSO N	QG A 449	UWA 4 594S	83 58W	S	FD774DMV	
1355	21	577		HCNI	TS N	QG A 450	UWA 5 11S	82 486W	S	FD774DMV	
1646	21	577		HCNI	TSO N	QG A 451-1	UWA 5 9S	82 340W	S	FD774DMV	
1718	21	577		HCNI	TSO N	QG A 451-2	UWA 5 9S	82 339W	S	FD774DMV	
2103	21	577		HCNI	TS N	QG A 452	UWA 4 592S	82 503W	S	FD774DMV	
2314	21	577		HCNI	TS N	QG A 453	UWA 5 1S	82 362W	S	FD774DMV	
143	22	577		HCNI	TS N	QG A 454	UWA 4 589S	82 205W	S	FD774DMV	
415	22	577		HCNI	TSO N	QG A 455	UWA 4 600S	82 77W	S	FD774DMV	

										14JUL77		PAGE 7	
TIME	DATE	TIME	TZ	SAMP			DISP				CRUISE		
GMT	D.M.Y.	LOC	LOC	CODE	SAMPLE	IDENT.	CODE	LAT.	LONG.		LEG-SHIP		
14	5771830	50	NEWL	420	800M		DMK 15	473S	76 109W	S	FD774DMV		
14	5772040	50	NEWL	421	900M		DMK 15	402S	76 22W	S	FD774DMV		
14	5772245	50	NEWL	422	900M		DMK 15	361S	76 7W	S	FD774DMV		
15	577 102	50	NEWL	423	900M		DMK 15	306S	75 548W	S	FD774DMV		
15	5771100	50	NEWL	424	900M		DMK 15	253S	75 500W	S	FD774DMV		
15	5771400	50	NEWL	425	900M		DMK 15	213S	75 452W	S	FD774DMV		
15	5771540	50	NEWL	426	900M		DMK 15	176S	75 415W	S	FD774DMV		
15	5771800	50	NEWL	427	960M		DMK 15	153S	75 375W	S	FD774DMV		
15	5771930	50	NEWL	428	880M		DMK 15	134S	75 375W	S	FD774DMV		
15	5772300	50	NEWL	429-1	365M		DMK 15	109S	75 348W	S	FD774DMV		
15	5772300	50	NEWL	429-2	610M		DMK 15	109S	75 348W	S	FD774DMV		
16	577 140	50	NEWL	430	153M		DMK 15	80S	75 323W	S	FD774DMV		
16	577 300	50	NEWL	431	100M		DMK 15	49S	75 293W	S	FD774DMV		
16	577 410	50	NEWL	432	52M		DMK 15	23S	75 271W	S	FD774DMV		
16	577 530	50	NEWL	433	125M		DMK 15	69S	75 309W	S	FD774DMV		
18	577 140	50	NEWL	434	500M		DMK 10	469S	80 28W	S	FD774DMV		
18	577 530	50	NEWL	435	500M		DMK 10	393S	79 448W	S	FD774DMV		
18	577 830	50	NEWL	436	500M		DMK 10	314S	79 291W	S	FD774DMV		
18	5771140	50	NEWL	437	500M		DMK 10	252S	79 131W	S	FD774DMV		
18	5771530	50	NEWL	438	500M		DMK 10	199S	79 43W	S	FD774DMV		
18	5771750	50	NEWL	439	157M		DMK 10	143S	78 574W	S	FD774DMV		
18	5772200	50	NEWL	439	300M		DMK 10	304S	79 284W	S	FD774DMV		
19	577 100	50	NEWL	440	300M		DMK 10	224S	79 128W	S	FD774DMV		
19	577 600	50	NEWL	442	157M		DMK 10	133S	78 573W	S	FD774DMV		
19	577 730	50	NEWL	443	140M		DMK 10	108S	78 504W	S	FD774DMV		
19	577 830	50	NEWL	444	145M		DMK 10	99S	78 451W	S	FD774DMV		
19	5771020	50	NEWL	445	158M		DMK 10	63S	78 350W	S	FD774DMV		
19	5771200	50	NEWL	446	135M		DMK 10	26S	78 244W	S	FD774DMV		
19	5771340	50	NEWL	447	105M		DMK 9	600S	78 207W	S	FD774DMV		
19	5771500	50	NEWL	448	78M		DMK 9	578S	78 170W	S	FD774DMV		
21	577 450	50	NEWL	449	500M		DMK 4	595S	83 51W	S	FD774DMV		
21	577 800	50	NEWL	450	500M		DMK 5	7S	82 498W	S	FD774DMV		
21	5771120	50	NEWL	451	600M		DMK 5	7S	82 344W	S	FD774DMV		
21	5771540	50	NEWL	452	400M		DMK 4	593S	82 503W	S	FD774DMV		
21	5772045	50	NEWL	454	500M		DMK 4	589S	82 205W	S	FD774DMV		
21	5772230	50	NEWL	455	500M		DMK 5	1S	82 78W	S	FD774DMV		
22	577 105	50	NEWL	456	500M		DMK 4	598S	81 552W	S	FD774DMV		
22	577 430	50	NEWL	457	500M		DMK 4	593S	81 434W	S	FD774DMV		
22	577 730	50	NEWL	458	400M		DMK 4	588S	81 334W	S	FD774DMV		
22	5771000	50	NEWL	459	820M		DMK 4	599S	81 273W	S	FD774DMV		
22	5771230	50	NEWL	460	122M		DMK 4	599S	81 201W	S	FD774DMV		
22	5771350	50	NEWL	461	55M		DMK 5	0S	81 137W	S	FD774DMV		
22	5771500	50	NEWL	462	24M		DMK 4	595S	81 93W	S	FD774DMV		

TIME GMT	DATE D.M.Y.	TIME TZ	SAMP LOC	LOC	CODE	SAMPLE IDENT.	DISP CODE	LAT.	LONG.	CRUISE LEG-SHIP
656	22	577	HCNI	TS N	QG A	456	UWA	4 599S	81 551W	S FD774DMV
931	22	577	HCNI	TSON	QG A	457	UWA	4 592S	81 434W	S FD774DMV
1230	22	577	HCNI	TSON	QG A	458	UWA	4 588S	81 334W	S FD774DMV
1316	22	577	HCNI	T	QG A	458DB1	UWA	4 592S	81 326W	S FD774DMV
1515	22	577	HCNI	TSON	QG A	459	UWA	4 599S	81 272W	S FD774DMV
1801	22	577	HCNI	TS N	QG A	460	UWA	5 1S	81 201W	S FD774DMV
1907	22	577	HCNI	TSON	QG A	461	UWA	5 0S	81 136W	S FD774DMV
2008	22	577	HCNI	TS N	QG A	462	UWA	4 595S	81 93W	S FD774DMV

*** NEPHELOMETER ***

5	577	800	50	NEWL	370	1M	DMK	15 183S	75 419W	S FD774DMV
5	577	800	50	NEWL	371	1M	DMK	15 183S	75 419W	S FD774DMV
5	577	800	50	NEWL	372	1M	DMK	15 183S	75 419W	S FD774DMV
5	577	800	50	NEWL	373	1M	DMK	15 183S	75 419W	S FD774DMV
5	577	1930	50	NEWL	374	100M	DMK	15 347S	76 4W	S FD774DMV
6	577	1030	50	NEWL	378	500M	DMK	16 411S	77 57W	S FD774DMV
6	577	1500	50	NEWL	379	600M	DMK	16 576S	77 239W	S FD774DMV
7	577	0	50	NEWL	380	840M	DMK	17 139S	77 429W	S FD774DMV
7	577	1100	50	NEWL	380	910M	DMK	17 150S	77 422W	S FD774DMV
7	577	2030	50	NEWL	381	600M	DMK	16 571S	77 229W	S FD774DMV
8	577	1400	50	NEWL	382	700M	DMK	15 256S	75 574W	S FD774DMV
8	577	1647	50	NEWL	383	500M	DMK	15 214S	75 461W	S FD774DMV
8	577	1905	50	NEWL	384	800M	DMK	15 172S	75 425W	S FD774DMV
8	577	2200	50	NEWL	385	900M	DMK	15 160S	75 403W	S FD774DMV
9	577	150	50	NEWL	386	800M	DMK	15 136S	75 375W	S FD774DMV
9	577	600	50	NEWL	387	525M	DMK	15 108S	75 360W	S FD774DMV
9	577	700	50	NEWL	388	171M	DMK	15 108S	75 362W	S FD774DMV
9	577	1140	50	NEWL	389	130M	DMK	15 73S	75 319W	S FD774DMV
9	577	1330	50	NEWL	390	101M	DMK	15 50S	75 290W	S FD774DMV
9	577	1440	50	NEWL	391	53M	DMK	15 22S	75 269W	S FD774DMV
10	577	1000	50	NEWL	399	784M	DMK	14 462S	76 112W	S FD774DMV
10	577	1100	50	NEWL	400	245M	DMK	14 442S	76 87W	S FD774DMV
10	577	1230	50	NEWL	401	180M	DMK	14 419S	76 71W	S FD774DMV
10	577	1430	50	NEWL	402	150M	DMK	14 394S	76 48W	S FD774DMV
10	577	1530	50	NEWL	403	140M	DMK	14 369S	76 35W	S FD774DMV
10	577	1900	50	NEWL	404	117M	DMK	14 350S	76 11W	S FD774DMV
11	577	1600	50	NEWL	407	20M	DMK	15 223S	75 462W	S FD774DMV
12	577	930	50	NEWL	408	500M	DMK	15 379S	75 267W	S FD774DMV
12	577	1430	50	NEWL	409	50M	DMK	15 24S	75 264W	S FD774DMV
12	577	1600	50	NEWL	410	130M	DMK	15 70S	75 309W	S FD774DMV
12	577	1800	50	NEWL	411	600M	DMK	15 116S	75 351W	S FD774DMV
12	577	2300	50	NEWL	412	900M	DMK	15 136S	75 378W	S FD774DMV
13	577	300	50	NEWL	413	900M	DMK	15 160S	75 384W	S FD774DMV
13	577	530	50	NEWL	414	900M	DMK	15 177S	75 419W	S FD774DMV
13	577	815	50	NEWL	415	900M	DMK	15 231S	75 454W	S FD774DMV
13	577	1220	50	NEWL	416	700M	DMK	15 288S	75 547W	S FD774DMV
13	577	1525	50	NEWL	417	600M	DMK	15 386S	76 21W	S FD774DMV
13	577	2130	50	NEWL	418	800M	DMK	16 35S	76 309W	S FD774DMV
14	577	900	50	NEWL	419	800M	DMK	16 209S	76 465W	S FD774DMV