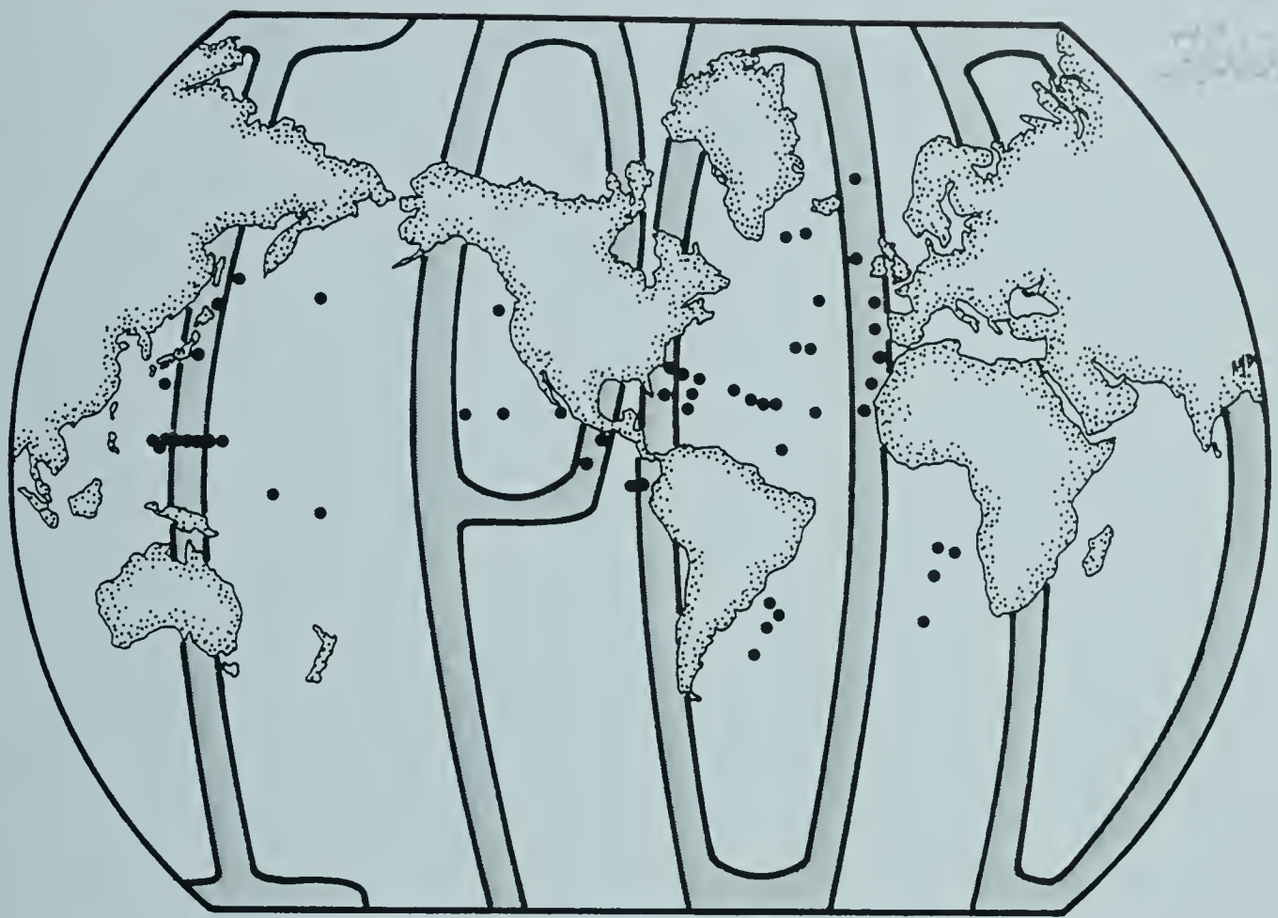


WALVIS RIDGE SITE SURVEY

RESULTS OF IPOD SITE SURVEYS ABOARD

R/V THOMAS B. DAVIE CRUISE 388

1979

E.S.W. SIMPSON

DEPT. OCEANOGRAPHY
UNIVERSITY OF CAPE TOWN
RONDEBOSCH, 7700

UCT TECH. REPT. # 1

P. D. RABINOWITZ

LAMONT-DOHERTY GEO. OBS.
OF COLUMBIA UNIVERSITY
PALISADES, N.Y. 10964

L-DGO TECH. REPT. JOI. INC.


Digitized by the Internet Archive
in 2020 with funding from
Columbia University Libraries

https://archive.org/details/walvisridgesites00simp

TABLE OF CONTENTS

I N T R O D U C T I O N

The purpose of this report is to present the underway geophysical measurements (navigation, bathymetry, geomagnetics and seismic reflection) collected aboard R/V THOMAS B. DAVIE of the University of Capetown, during cruise 388.

The cruise was devoted to surveying six candidate sites (Sites SA II, 1-6) for the International Phase of Ocean Drilling program (IPOD). The six sites which were originally chosen on a seismic line obtained by R/V VEMA cruise 27 (Fig. 1), are located on a NW - SE transect across the Walvis Ridge near 29°S (Fig. 2). An approximate 1° X 3° grid area was surveyed criss-crossing the candidate site. The data collected should provide sufficient seismic control for safety review by the JOIDES Pollution Prevention and Safety Panel, as well as provide the data necessary to construct detailed geophysical maps for interpretation and extrapolation of deep sea drill results.

According to the Southeast Atlantic Working Group of the JOIDES Ocean Paleoenvironment Panel, the proposed drill sites constitute a transect that has been selected in order to generate a spectrum of paleo-depths in the Cenozoic for analysis of changes in carbonate dissolution levels and in ocean circulation. The information should also permit reconstruction of the subsidence history of the aseismic Walvis Ridge. The drilling is intended to penetrate basement to ascertain the origin of the Walvis Ridge and to provide data to determine Mesozoic paleo-oceanographic gradients, especially at times of black shale formation.

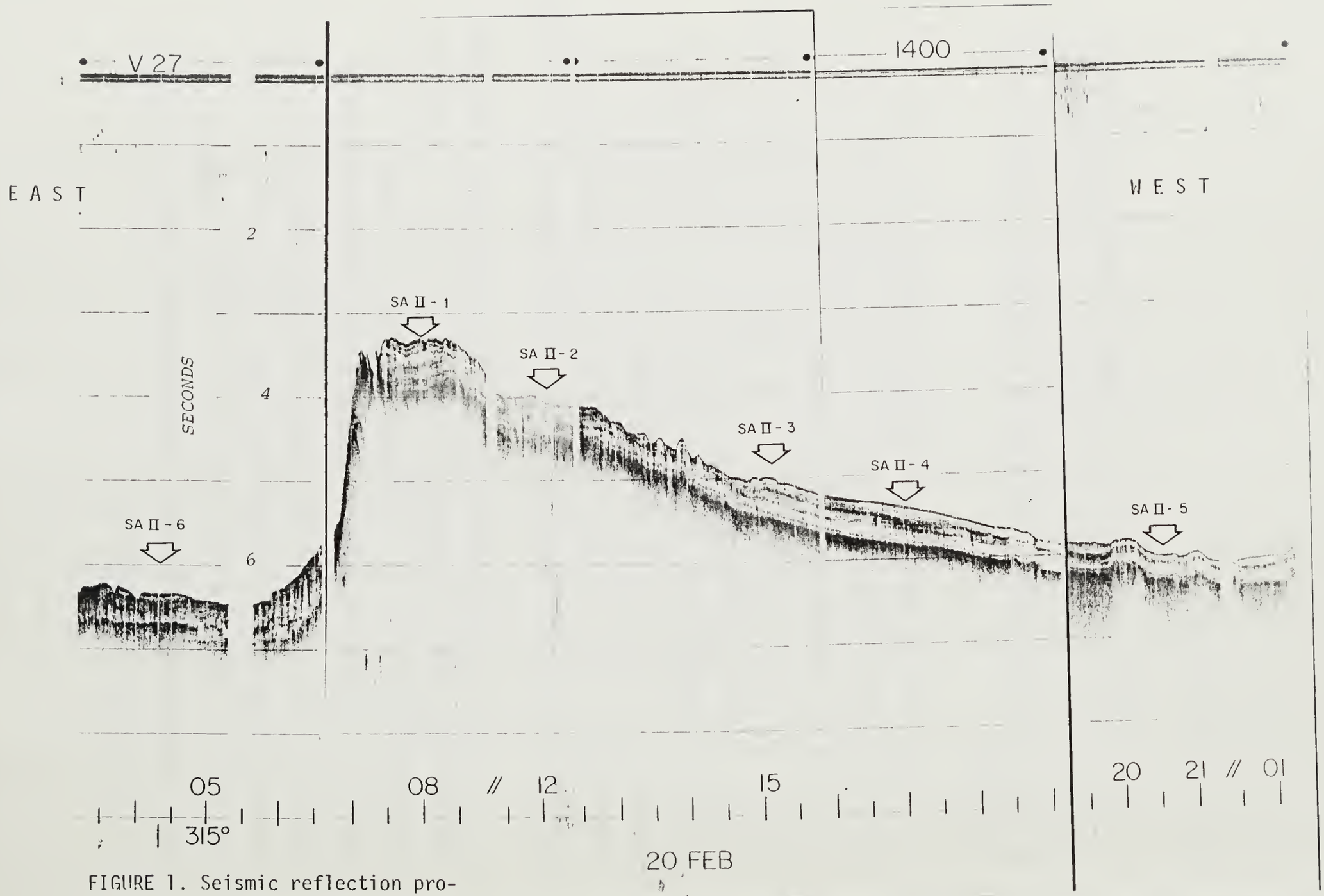


FIGURE 1. Seismic reflection profile across Walvis Ridge. VEMA cruise 27. SA II 1 to 6 are proposed drill sites.

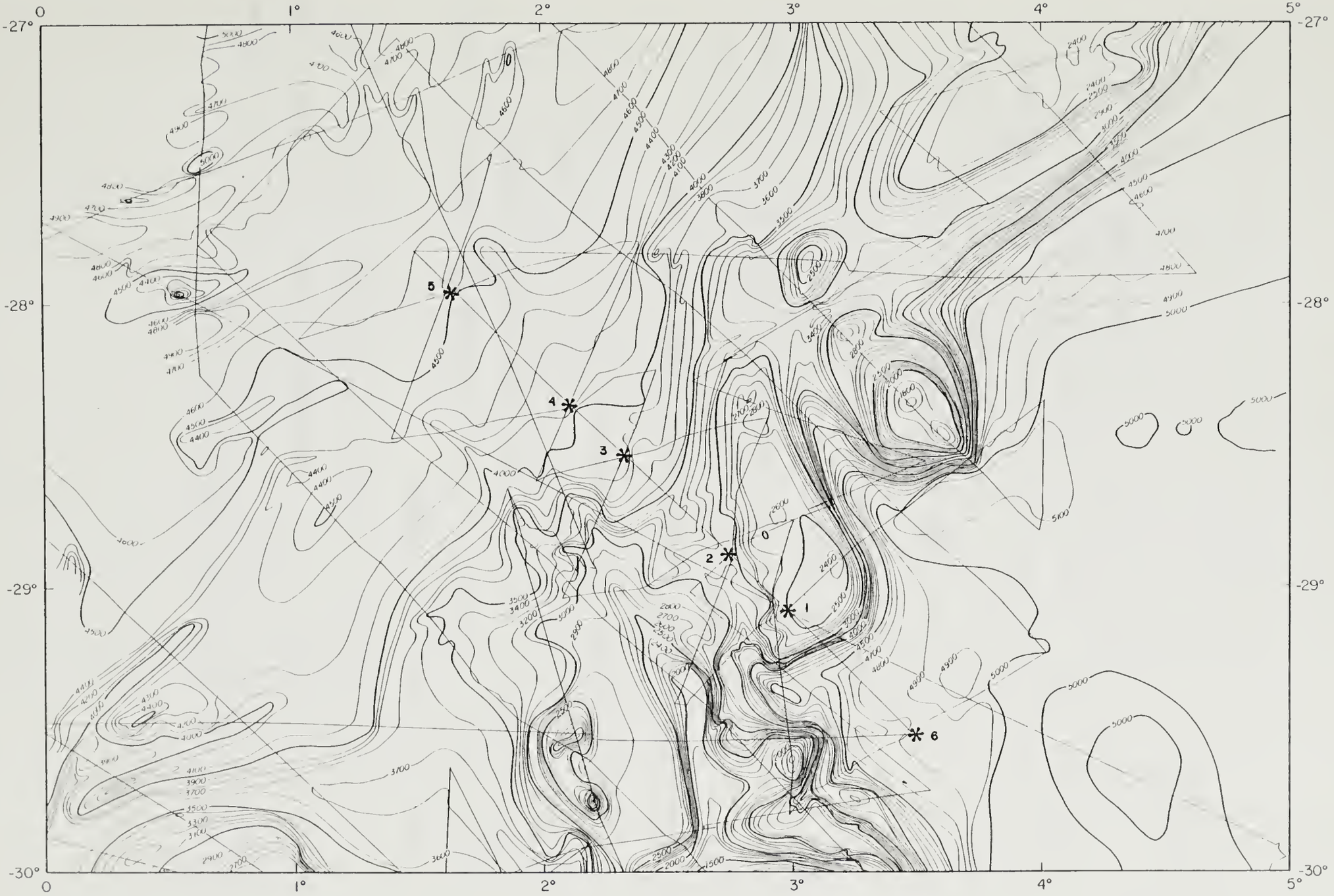


FIGURE 2. B A T H Y M E T P Y

* CANDIDATE SITES SA II (1 thru 6)

INSTRUMENTATION

Satellite fixes were obtained with a NCS 2900 Satellite Navigation system (Guier, 1966). The ship's log and gyrocompass were used to interpolate the ship's track between satellite fixes by employing the computer techniques of Talwani (1969). These interpolated ship positions should be generally accurate to better than 0.5 nautical miles.

A 12 kHz transducer was used with an EPC 4600 recorder for precision depth measurements. Relative depths can be resolved to about 2 meters ($\sim$1/400 sec of reflection time) in any depth in regions of low to moderate relief. Side echoes are common in areas of high relief and the resolution of small amplitude relief is extremely difficult in such areas.

A Varian proton precession magnetimeter was used for all magnetic measurements. The instrument was towed approximately 200 m astern of the ship. The accuracy of this type of instrument has been discussed in many publications (e.g., Heirtzler, 1961; Bullard and Mason, 1963) and is generally accepted to be about $\pm$10-15 gammas.

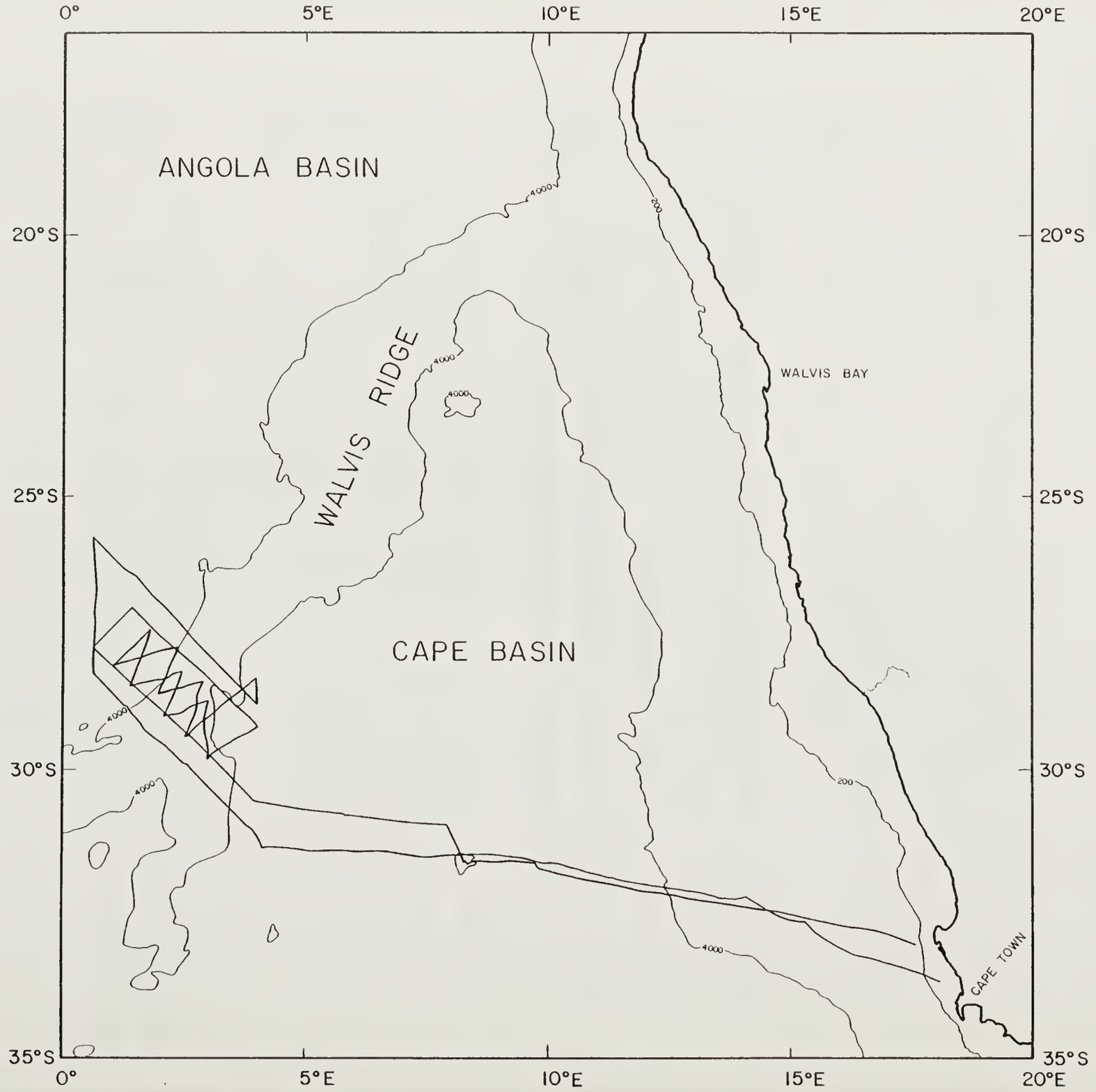
The sound sources of the seismic profiling system were 40, 150 and 300 cu. in. airguns built by Mr. J. Engelbrecht at NRIO (see Ewing and Zaunere, 1964). The signal is received by a towed hydrophone array, pre-amplified and fed into an EPC 4100 recorder (Ewing and Tirey, 1961).

U N D E R W A Y G E O P H Y S I C A L D A T A

PART A. NAVIGATION

PART B. BATHYMETRIC AND GEOMAGNETIC PROFILES

PART C. SEISMIC REFLECTION RECORDS


0°
5°E
10°E
15°E
20°E
20°S
25°S
30°S
35°S
ANGOLA BASIN
WALVIS RIDGE
CAPE BASIN
WALVIS BAY
CAPE TOWN
4000
200

DY/MN/YR	TZ	TIME	LATITUDE	LONGITUDE	MILES	SPEED	HEADG	REGNG
6 3 79	0.0*	1644	-33 2.17	17 29.31	0.0	11.2	268	28569.
6 3 79	0.0	1717	-33 0.26	17 22.35	6.1	9.9	269	28568.
6 3 79	0.0*	2006	-32 51.16	16 51.05	33.9	9.7	279	28565.
7 3 79	0.0*	0206	-32 41.98	15 42.80	92.1	8.7	262	28533.
7 3 79	0.0*	0316	-32 39.79	15 31.07	102.2	8.8	262	28529.
7 3 79	0.0*	0504	-32 36.39	15 12.65	118.1	9.3	283	28522.
7 3 79	0.0*	0655	-32 32.40	14 52.89	135.2	9.4	284	28516.
7 3 79	0.0*	0753	-32 30.14	14 42.41	144.3	10.0	277	28514.
7 3 79	0.0*	0937	-32 27.89	14 22.02	161.6	10.8	279	28503.
7 3 79	0.0	1330	-32 21.14	13 32.97	203.6	5.8	277	28479.
7 3 79	0.0	1340	-32 21.02	13 31.84	204.6	10.4	279	28479.
7 3 79	0.0*	1505	-32 18.67	13 14.67	219.3	10.7	279	28470.
7 3 79	0.0*	1648	-32 15.64	12 53.20	237.7	10.7	277	28460.
7 3 79	0.0	1700	-32 15.34	12 50.68	239.8	11.3	278	28458.
7 3 79	0.0*	1742	-32 14.23	12 41.42	247.7	10.0	278	28453.
7 3 79	0.0*	1850	-32 12.58	12 28.18	259.0	10.1	279	28446.
7 3 79	0.0*	2046	-32 9.42	12 5.34	278.6	9.6	281	28435.
8 3 79	0.0*	0224	-31 58.48	11 2.71	332.8	10.3	273	28408.
8 3 79	0.0*	0258	-31 58.10	10 55.87	338.6	8.5	285	28402.
8 3 79	0.0*	0413	-31 55.31	10 43.83	349.2	10.8	279	28399.
8 3 79	0.0	0425	-31 54.95	10 41.32	351.4	10.5	279	28397.
8 3 79	0.0*	0444	-31 54.39	10 37.45	354.7	9.4	283	28395.
8 3 79	0.0*	0457	-31 53.93	10 35.12	356.8	9.4	280	28394.
8 3 79	0.0*	0557	-31 51.32	10 24.49	366.1	9.0	283	28391.
8 3 79	0.0	0730	-31 48.19	10 8.54	380.1	9.4	282	28384.
8 3 79	0.0	0900	-31 45.02	9 52.30	394.2	6.1	284	28377.
8 3 79	0.0	0907	-31 44.84	9 51.49	394.9	7.5	283	28377.
8 3 79	0.0	0915	-31 44.61	9 50.35	395.9	7.5	283	28377.
8 3 79	0.0	0934	-31 44.06	9 47.65	398.3	10.8	334	28375.
8 3 79	0.0	1004	-31 39.22	9 44.89	403.7	8.9	276	28385.
8 3 79	0.0*	1017	-31 39.00	9 42.65	405.6	9.7	276	28384.
8 3 79	0.0	1100	-31 38.26	9 34.55	412.5	9.7	271	28378.
8 3 79	0.0	1230	-31 37.96	9 17.50	427.1	9.9	271	28362.
8 3 79	0.0	1333	-31 37.76	9 5.26	437.5	9.7	271	28351.
8 3 79	0.0	1600	-31 37.27	8 37.27	461.3	11.1	265	28324.
8 3 79	0.0	1648	-31 38.05	8 26.66	470.2	8.6	271	28312.
8 3 79	0.0*	1653	-31 38.03	8 26.02	470.9	13.8	252	28311.
8 3 79	0.0	1655	-31 38.17	8 25.51	471.4	6.2	227	28310.
8 3 79	0.0*	1739	-31 41.20	8 21.58	475.9	4.3	317	28299.
8 3 79	0.0*	1839	-31 37.98	8 18.15	480.2	1.3	22	28304.
8 3 79	0.0*	1934	-31 36.90	8 18.68	481.4	1.0	209	28307.
8 3 79	0.0*	2125	-31 38.58	8 17.58	483.3	2.1	308	28301.
8 3 79	0.0	2130	-31 38.47	8 17.42	483.5	5.3	326	28302.
8 3 79	0.0*	2307	-31 31.29	8 11.89	492.1	3.4	323	28314.
8 3 79	0.0	2330	-31 30.25	8 10.99	493.4	7.9	336	28316.
9 3 79	0.0	0105	-31 18.77	8 5.00	506.0	9.1	336	28339.
9 3 79	0.0*	0201	-31 10.94	8 1.08	514.5	9.1	335	28356.
9 3 79	0.0*	0321	-30 59.87	7 55.22	526.6	9.3	335	28379.
9 3 79	0.0	0326	-30 59.17	7 54.85	527.4	10.1	271	28380.
9 3 79	0.0*	0347	-30 59.08	7 50.73	530.9	9.0	274	28376.
9 3 79	0.0*	0508	-30 58.23	7 36.55	543.1	7.6	267	28363.
9 3 79	0.0	0515	-30 58.27	7 35.51	544.0	7.4	268	28362.
9 3 79	0.0*	0534	-30 58.32	7 32.79	546.3	10.1	279	28359.
9 3 79	0.0*	0556	-30 57.74	7 28.53	550.0	8.8	275	28356.
9 3 79	0.0*	0702	-30 56.79	7 17.25	559.8	8.6	274	28346.
9 3 79	0.0*	0738	-30 56.39	7 11.26	564.9	9.2	273	28341.
9 3 79	0.0*	0910	-30 55.43	6 54.80	579.1	8.1	275	28325.
9 3 79	0.0	0930	-30 55.18	6 51.67	581.8	8.2	275	28323.
9 3 79	0.0*	1054	-30 54.12	6 38.38	593.2	8.2	277	28311.
9 3 79	0.0	1129	-30 53.49	6 32.86	598.0	8.2	277	28306.
9 3 79	0.0*	1502	-30 49.65	5 59.08	627.2	7.3	272	28278.
9 3 79	0.0	1517	-30 49.57	5 56.96	629.1	7.6	272	28276.
9 3 79	0.0*	1601	-30 49.30	5 50.50	634.6	8.3	287	28269.
9 3 79	0.0*	1648	-30 47.33	5 43.32	641.1	10.5	275	28266.
9 3 79	0.0	1650	-30 47.30	5 42.92	641.4	8.8	274	28265.
9 3 79	0.0*	1701	-30 47.16	5 41.05	643.1	7.9	277	28264.
9 3 79	0.0	1720	-30 46.84	5 38.17	645.5	9.0	277	28261.
9 3 79	0.0*	1751	-30 46.27	5 32.81	650.2	8.1	276	28256.
9 3 79	0.0	1800	-30 46.13	5 31.40	651.4	7.7	276	28255.
9 3 79	0.0*	1858	-30 45.26	5 22.80	658.8	8.4	279	28247.
9 3 79	0.0*	2016	-30 43.41	5 10.31	669.7	7.6	273	28237.
9 3 79	0.0	2040	-30 43.22	5 6.78	672.6	7.7	273	28234.
9 3 79	0.0*	2202	-30 42.56	4 54.61	683.3	8.5	278	28221.
9 3 79	0.0	2250	-30 41.59	4 46.82	690.0	8.7	278	28214.
9 3 79	0.0*	2343	-30 40.51	4 37.98	697.7	8.1	279	28206.

DY/MN/YR	TZ	TIME	LATITUDE	LONGITUDE	MILES	SPEED	HEADG	REGMG
10 3 79	0.0	0009	-30 39.92	4 33.95	701.2	8.1	277	26203.
10 3 79	0.0*	0226	-30 37.51	4 12.62	719.7	9.4	282	26183.
10 3 79	0.0	0352	-30 34.70	3 57.25	733.3	10.8	317	26171.
10 3 79	0.0*	0417	-30 31.40	3 53.70	737.8	8.7	320	26175.
10 3 79	0.0*	0439	-30 28.93	3 51.33	741.0	9.4	312	26178.
10 3 79	0.0*	0507	-30 25.93	3 47.59	745.4	9.3	316	26181.
10 3 79	0.0	0525	-30 23.91	3 45.38	748.1	9.3	316	26183.
10 3 79	0.0*	0655	-30 13.74	3 34.27	762.1	9.6	314	26194.
10 3 79	0.0*	0946	-29 54.58	3 11.54	789.6	9.5	316	26211.
10 3 79	0.0*	1403	-29 24.78	2 39.40	830.4	9.5	310	26243.
10 3 79	0.0	1420	-29 23.04	2 37.04	833.1	10.0	309	26244.
10 3 79	0.0	1522	-29 16.52	2 27.90	843.4	9.3	309	26248.
10 3 79	0.0	1524	-29 16.32	2 27.62	843.7	9.7	309	26248.
10 3 79	0.0*	1554	-29 13.25	2 23.31	848.6	10.3	311	26250.
10 3 79	0.0*	1701	-29 5.70	2 13.44	860.0	8.5	316	26255.
10 3 79	0.0	1718	-29 3.96	2 11.55	862.4	8.8	317	26257.
10 3 79	0.0*	1755	-28 59.96	2 7.37	867.9	9.1	316	26261.
10 3 79	0.0*	1847	-28 54.04	2 1.40	875.8	9.8	310	26268.
10 3 79	0.0*	1954	-28 46.97	1 51.93	886.7	9.8	310	26272.
10 3 79	0.0*	2056	-28 40.39	1 43.19	896.8	9.4	309	26276.
10 3 79	0.0	2200	-28 34.04	1 34.35	906.8	9.4	308	26279.
10 3 79	0.0*	2241	-28 30.04	1 28.58	913.2	9.3	310	26281.
10 3 79	0.0	2307	-28 27.39	1 25.10	917.3	9.1	313	26282.
11 3 79	0.0	0130	-28 12.61	1 7.10	939.0	8.8	313	26293.
11 3 79	0.0	0200	-28 9.62	1 3.46	943.3	8.6	312	26295.
11 3 79	0.0	0230	-28 6.70	0 59.90	947.6	9.1	313	26297.
11 3 79	0.0*	0325	-28 1.03	0 53.01	955.9	9.9	312	26301.
11 3 79	0.0	0330	-28 0.47	0 52.31	956.8	10.0	312	26301.
11 3 79	0.0*	0343	-27 59.02	0 50.49	958.9	8.9	316	26302.
11 3 79	0.0	0422	-27 54.84	0 45.95	964.7	9.2	316	26305.
11 3 79	0.0*	0510	-27 49.53	0 40.17	972.1	10.1	309	26310.
11 3 79	0.0	0530	-27 47.39	0 37.23	975.5	8.5	42	26311.
11 3 79	0.0*	0607	-27 43.52	0 41.27	980.7	8.8	45	26327.
11 3 79	0.0*	0712	-27 36.88	0 48.92	990.2	8.7	44	26356.
11 3 79	0.0	0720	-27 36.06	0 49.85	991.4	8.5	44	26360.
11 3 79	0.0*	0751	-27 32.95	0 53.34	995.8	8.3	43	26374.
11 3 79	0.0*	0840	-27 28.05	0 58.64	1002.6	8.6	44	26395.
11 3 79	0.0*	1026	-27 17.28	1 10.66	1017.7	8.5	42	26442.
11 3 79	0.0	1100	-27 13.72	1 14.30	1022.5	8.4	43	26458.
11 3 79	0.0	1230	-27 4.57	1 24.02	1035.1	9.6	48	26498.
11 3 79	0.0	1240	-27 3.52	1 25.37	1036.7	7.8	137	26503.
11 3 79	0.0	1340	-27 9.23	1 31.27	1044.5	7.9	137	26497.
11 3 79	0.0*	1458	-27 16.78	1 39.09	1054.7	7.7	132	26489.
11 3 79	0.0	1510	-27 17.83	1 40.36	1056.3	7.7	132	26488.
11 3 79	0.0*	1643	-27 25.95	1 50.19	1068.2	7.6	135	26482.
11 3 79	0.0	1650	-27 26.58	1 50.90	1069.1	7.7	135	26481.
11 3 79	0.0*	1703	-27 27.75	1 52.22	1070.8	6.9	138	26480.
11 3 79	0.0*	1756	-27 32.36	1 56.79	1076.9	7.7	131	26475.
11 3 79	0.0*	1946	-27 41.61	2 8.72	1090.9	7.8	130	26469.
11 3 79	0.0*	2049	-27 46.92	2 15.83	1099.2	6.2	127	26465.
11 3 79	0.0	2130	-27 49.53	2 19.63	1103.4	5.8	127	26464.
11 3 79	0.0*	2133	-27 49.71	2 19.89	1103.7	7.7	126	26464.
11 3 79	0.0*	2318	-27 57.65	2 32.23	1117.2	6.7	131	26461.
11 3 79	0.0	2338	-27 59.13	2 34.12	1119.4	7.2	131	26460.
12 3 79	0.0*	0230	-28 12.78	2 51.47	1140.0	7.2	138	26449.
12 3 79	0.0*	0248	-28 14.40	2 53.11	1142.1	7.1	135	26447.
12 3 79	0.0*	0419	-28 22.05	3 1.65	1152.9	7.5	135	26439.
12 3 79	0.0*	0517	-28 27.25	3 7.43	1160.1	7.1	137	26433.
12 3 79	0.0*	0604	-28 31.38	3 11.68	1165.7	7.6	134	26428.
12 3 79	0.0*	0622	-28 33.02	3 13.60	1168.0	7.7	134	26426.
12 3 79	0.0*	0703	-28 36.74	3 17.87	1173.3	7.5	135	26422.
12 3 79	0.0*	0809	-28 42.57	3 24.51	1181.6	7.5	132	26416.
12 3 79	0.0*	0917	-28 48.32	3 31.64	1190.1	8.0	128	26410.
12 3 79	0.0	0940	-28 50.23	3 34.41	1193.1	8.4	130	26409.
12 3 79	0.0*	1103	-28 57.77	3 44.51	1204.8	8.2	133	26403.
12 3 79	0.0	1150	-29 2.22	3 49.82	1211.2	8.0	138	26398.
12 3 79	0.0	1345	-29 13.78	4 1.35	1226.5	8.6	238	26383.
12 3 79	0.0	1405	-29 15.28	3 58.55	1229.4	7.3	238	26375.
12 3 79	0.0	1455	-29 18.44	3 52.55	1235.5	9.3	238	26359.
12 3 79	0.0*	1549	-29 22.84	3 44.40	1243.9	8.6	240	26336.
12 3 79	0.0	1550	-29 22.91	3 44.26	1244.0	8.9	241	26336.
12 3 79	0.0*	1608	-29 24.19	3 41.57	1246.7	8.5	242	26329.
12 3 79	0.0*	1710	-29 28.20	3 32.60	1255.5	8.7	238	26306.
12 3 79	0.0*	1733	-29 29.93	3 29.33	1258.8	8.0	229	26298.
12 3 79	0.0*	1757	-29 31.99	3 26.53	1262.0	10.7	247	26289.

DY/MN/YR	TZ	TIME	LATITUDE	LONGITUDE	MILES	SPEED	HEADG	REGMG
12 3 79	0.0	1810	-29 32.86	3 24.07	1264.3	7.0	251	28283.
12 3 79	0.0*	1818	-29 33.16	3 23.05	1265.2	8.5	240	28281.
12 3 79	0.0*	1857	-29 35.87	3 17.49	1270.8	9.1	235	28266.
12 3 79	0.0	2000	-29 41.22	3 8.44	1280.3	7.7	236	28241.
12 3 79	0.0	2010	-29 41.94	3 7.22	1281.6	9.0	251	28237.
12 3 79	0.0*	2026	-29 42.68	3 4.60	1284.0	8.0	253	28232.
12 3 79	0.0	2034	-29 42.98	3 3.43	1285.0	8.7	215	28230.
12 3 79	0.0	2107	-29 46.85	3 0.20	1289.8	10.0	219	28216.
12 3 79	0.0	2114	-29 47.75	2 59.35	1291.0	10.5	4	28212.
12 3 79	0.0*	2212	-29 37.65	3 0.25	1301.1	9.6	353	28239.
12 3 79	0.0	2215	-29 37.17	3 0.19	1301.6	9.4	352	28240.
13 3 79	0.0	0000	-29 20.79	2 57.73	1318.1	9.6	353	28278.
13 3 79	0.0*	0150	-29 3.22	2 55.51	1335.8	11.6	0	28321.
13 3 79	0.0	0205	-29 0.33	2 55.54	1338.7	11.0	16	28328.
13 3 79	0.0	0318	-28 47.52	2 59.84	1352.0	11.1	20	28368.
13 3 79	0.0*	0328	-28 45.79	3 0.58	1353.9	10.8	22	28374.
13 3 79	0.0	0329	-28 45.62	3 0.66	1354.0	10.3	257	28374.
13 3 79	0.0	0400	-28 46.79	2 54.72	1359.4	6.8	261	28363.
13 3 79	0.0	0404	-28 46.86	2 54.21	1359.8	8.5	247	28362.
13 3 79	0.0	0505	-28 50.13	2 45.07	1368.5	9.5	258	28340.
13 3 79	0.0*	0515	-28 50.46	2 43.30	1370.1	10.7	248	28337.
13 3 79	0.0	0545	-28 52.39	2 37.59	1375.4	9.9	236	28324.
13 3 79	0.0	0705	-28 59.68	2 24.97	1388.7	7.6	246	28287.
13 3 79	0.0*	0721	-29 0.42	2 22.82	1390.7	8.4	255	28282.
13 3 79	0.0	0722	-29 0.46	2 22.66	1390.8	11.7	265	28282.
13 3 79	0.0*	0810	-29 1.26	2 12.03	1400.2	9.7	265	28265.
13 3 79	0.0	0815	-29 1.32	2 11.11	1401.0	9.7	262	28263.
13 3 79	0.0	0825	-29 1.54	2 9.28	1402.6	8.5	259	28260.
13 3 79	0.0	0837	-29 1.85	2 7.37	1404.3	9.9	260	28256.
13 3 79	0.0	0852	-29 2.27	2 4.59	1406.7	10.0	25	28251.
13 3 79	0.0*	0957	-28 52.48	2 9.85	1417.6	9.1	20	28284.
13 3 79	0.0	1023	-28 48.78	2 11.40	1421.5	9.8	23	28296.
13 3 79	0.0	1245	-28 27.44	2 21.98	1444.8	8.2	19	28367.
13 3 79	0.0	1430	-28 13.87	2 27.52	1459.2	10.7	259	28411.
13 3 79	0.0	1500	-28 14.83	2 21.56	1464.5	10.3	259	28399.
13 3 79	0.0*	1520	-28 15.45	2 17.72	1468.0	9.0	262	28392.
13 3 79	0.0	1523	-28 15.51	2 17.21	1468.4	8.6	232	28391.
13 3 79	0.0	1637	-28 21.94	2 7.61	1479.0	8.8	264	28360.
13 3 79	0.0*	1638	-28 21.95	2 7.44	1479.2	10.0	260	28360.
13 3 79	0.0*	1707	-28 22.72	2 2.00	1484.0	10.7	262	28349.
13 3 79	0.0	1714	-28 22.89	2 0.59	1485.3	11.3	262	28347.
13 3 79	0.0*	1728	-28 23.24	1 57.63	1487.9	10.1	260	28342.
13 3 79	0.0*	1809	-28 24.34	1 49.88	1494.8	9.2	257	28327.
13 3 79	0.0	1813	-28 24.48	1 49.20	1495.4	8.7	256	28326.
13 3 79	0.0*	1916	-28 26.55	1 39.11	1504.5	9.5	257	28305.
13 3 79	0.0	1924	-28 26.82	1 37.71	1505.8	9.6	261	28303.
13 3 79	0.0	1952	-28 27.47	1 32.67	1510.3	9.5	262	28293.
13 3 79	0.0	2032	-28 28.29	1 25.48	1516.7	11.9	265	28281.
13 3 79	0.0	2036	-28 28.35	1 24.58	1517.5	8.5	266	28279.
13 3 79	0.0	2043	-28 28.41	1 23.46	1518.4	9.0	20	28277.
14 3 79	0.0*	0234	-27 39.28	1 44.58	1571.0	8.4	10	28437.
14 3 79	0.0	0243	-27 38.03	1 44.84	1572.3	8.8	15	28441.
14 3 79	0.0	0306	-27 34.78	1 45.86	1575.6	8.2	16	28451.
14 3 79	0.0	0356	-27 28.20	1 47.99	1582.5	10.6	231	28472.
14 3 79	0.0*	0430	-27 31.97	1 42.75	1588.5	7.9	220	28454.
14 3 79	0.0*	0607	-27 41.61	1 33.33	1601.2	8.1	225	28413.
14 3 79	0.0*	0632	-27 43.99	1 30.64	1604.6	9.1	230	28403.
14 3 79	0.0*	0713	-27 47.91	1 25.21	1610.8	9.1	228	28384.
14 3 79	0.0*	0849	-27 57.53	1 12.88	1625.3	8.9	229	28340.
14 3 79	0.0	0928	-28 1.34	1 7.92	1631.1	9.8	224	28322.
14 3 79	0.0	1005	-28 5.64	1 3.08	1637.2	8.4	226	28304.
14 3 79	0.0	1022	-28 7.29	1 1.13	1639.6	8.9	74	28297.
14 3 79	0.0	1120	-28 4.92	1 10.48	1648.2	9.3	73	28317.
14 3 79	0.0	1200	-28 3.12	1 17.19	1654.4	9.1	73	28332.
14 3 79	0.0*	1426	-27 56.66	1 41.11	1676.4	7.9	68	28386.
14 3 79	0.0*	1545	-27 52.77	1 52.08	1686.9	8.5	77	28413.
14 3 79	0.0*	1613	-27 51.93	1 56.48	1690.9	8.9	74	28422.
14 3 79	0.0	1620	-27 51.66	1 57.62	1691.9	8.8	77	28424.
14 3 79	0.0*	1720	-27 49.82	2 7.34	1700.7	9.3	73	28444.
14 3 79	0.0	1830	-27 46.72	2 19.06	1711.5	9.0	90	28470.
14 3 79	0.0	1855	-27 46.78	2 23.30	1715.3	8.5	195	28476.
14 3 79	0.0*	1907	-27 48.43	2 22.80	1717.0	8.7	198	28471.
14 3 79	0.0	1910	-27 48.85	2 22.65	1717.4	8.7	204	28470.
14 3 79	0.0*	2012	-27 57.04	2 18.44	1726.4	8.4	206	28441.
14 3 79	0.0	2025	-27 58.66	2 17.51	1728.2	8.5	203	28436.

TD368 .NAV

10

DY/MN/YR	TZ	TIME	LATITUDE	LONGITUDE	MILES	SPEED	HEADG	REGMG
15 3 79	0.0	0122	-28 37.46	1 58.31	1770.5	8.9	65	28305.
15 3 79	0.0*	0146	-28 36.00	2 2.00	1774.1	8.0	76	28314.
15 3 79	0.0*	0330	-28 32.80	2 17.45	1788.0	8.3	77	28345.
15 3 79	0.0*	0435	-28 30.84	2 27.41	1797.0	8.3	63	28365.
15 3 79	0.0	0445	-28 30.23	2 28.82	1798.4	8.6	64	28369.
15 3 79	0.0*	0518	-28 28.18	2 33.64	1803.1	8.0	73	28381.
15 3 79	0.0*	0544	-28 27.17	2 37.43	1806.6	8.2	76	28389.
15 3 79	0.0*	0623	-28 25.94	2 43.33	1811.9	8.7	75	28401.
15 3 79	0.0	0633	-28 25.57	2 44.93	1813.4	8.6	80	28404.
15 3 79	0.0*	0729	-28 24.28	2 53.93	1821.4	7.2	79	28421.
15 3 79	0.0	0733	-28 24.20	2 54.47	1821.9	10.5	203	28422.
15 3 79	0.0*	0740	-28 25.32	2 53.91	1823.1	8.6	203	28418.
15 3 79	0.0*	0927	-28 39.48	2 47.06	1838.5	8.4	195	28370.
15 3 79	0.0	0932	-28 40.15	2 46.84	1839.2	8.5	184	28368.
15 3 79	0.0	1005	-28 44.83	2 46.39	1843.9	7.5	183	28355.
15 3 79	0.0	1020	-28 46.70	2 46.25	1845.7	8.9	184	28350.
15 3 79	0.0*	1111	-28 54.26	2 45.52	1853.3	8.9	188	28329.
15 3 79	0.0	1113	-28 54.55	2 45.47	1853.6	8.7	201	28329.
15 3 79	0.0*	1448	-29 23.44	2 32.38	1864.7	9.8	212	28236.
15 3 79	0.0	1455	-29 24.40	2 31.67	1885.8	9.0	98	28233.
15 3 79	0.0	1512	-29 24.80	2 34.57	1888.4	8.0	30	28236.
15 3 79	0.0*	1523	-29 23.53	2 35.41	1889.9	9.3	43	28240.
15 3 79	0.0*	1630	-29 15.95	2 43.58	1900.3	8.6	44	28271.
15 3 79	0.0	1640	-29 14.90	2 44.74	1901.7	9.6	44	28275.
15 3 79	0.0*	1710	-29 11.45	2 48.59	1906.5	8.8	41	28289.
15 3 79	0.0*	1737	-29 8.51	2 51.59	1910.5	10.6	60	28301.
15 3 79	0.0*	1817	-29 5.01	2 58.58	1917.5	8.0	50	28320.
15 3 79	0.0	1833	-29 3.66	3 0.48	1919.7	8.6	46	28326.
15 3 79	0.0*	2036	-28 51.47	3 15.16	1937.4	9.3	52	28378.
15 3 79	0.0	2100	-28 49.22	3 18.55	1941.1	9.4	53	28389.
15 3 79	0.0*	2220	-28 41.86	3 30.03	1953.6	6.6	52	28425.
15 3 79	0.0	2245	-28 40.20	3 32.50	1956.3	9.7	51	28433.
15 3 79	0.0	2330	-28 35.62	3 38.97	1963.6	9.1	52	28454.
16 3 79	0.0	0210	-28 20.72	4 0.82	1987.9	9.8	181	28526.
16 3 79	0.0*	0426	-28 43.03	4 0.31	2010.2	10.0	176	28464.
16 3 79	0.0	0435	-28 44.53	4 0.41	2011.7	9.5	191	28460.
16 3 79	0.0*	0454	-28 47.49	3 59.71	2014.7	9.6	196	28451.
16 3 79	0.0	0458	-28 48.10	3 59.51	2015.4	9.6	311	28449.
16 3 79	0.0*	0536	-28 44.05	3 54.30	2021.5	8.7	318	28453.
16 3 79	0.0*	0643	-28 36.73	3 46.95	2031.2	9.3	313	28462.
16 3 79	0.0*	0721	-28 32.66	3 42.11	2037.1	8.9	310	28467.
16 3 79	0.0*	0819	-28 27.07	3 34.65	2045.7	8.8	316	28471.
16 3 79	0.0	0900	-28 22.71	3 29.88	2051.8	8.6	317	28477.
16 3 79	0.0*	1005	-28 15.90	3 22.74	2061.0	9.1	315	28485.
16 3 79	0.0*	1351	-27 51.52	2 55.66	2095.2	9.2	322	28512.
16 3 79	0.0*	1429	-27 46.90	2 51.61	2101.0	10.5	312	28519.
16 3 79	0.0*	1542	-27 38.29	2 41.02	2113.8	8.7	321	28526.
16 3 79	0.0	1558	-27 36.47	2 39.40	2116.1	8.8	320	28529.
16 3 79	0.0*	1617	-27 34.32	2 37.42	2118.9	9.2	321	28532.
16 3 79	0.0*	1832	-27 18.12	2 22.88	2139.6	10.1	312	28554.
16 3 79	0.0*	1915	-27 13.24	2 16.92	2146.8	8.5	316	28558.
16 3 79	0.0*	2018	-27 6.76	2 10.04	2155.7	10.5	314	28565.
16 3 79	0.0	2100	-27 1.60	2 4.16	2163.0	10.4	315	28570.
16 3 79	0.0*	2116	-26 59.62	2 1.98	2165.8	9.1	312	28572.
16 3 79	0.0*	2258	-26 49.03	1 49.22	2181.4	8.8	321	28580.
16 3 79	0.0	2320	-26 46.52	1 46.98	2184.6	9.7	320	28583.
17 3 79	0.0*	0140	-26 28.97	1 30.98	2207.2	11.3	305	28605.
17 3 79	0.0	0150	-26 27.89	1 29.26	2209.1	9.4	301	28605.
17 3 79	0.0*	0329	-26 19.81	1 14.41	2224.6	8.7	312	28602.
17 3 79	0.0	0346	-26 18.15	1 12.36	2227.1	9.7	314	28603.
17 3 79	0.0*	0447	-26 11.28	1 4.46	2237.0	9.4	315	28609.
17 3 79	0.0*	0515	-26 8.16	1 0.99	2241.4	9.4	317	28611.
17 3 79	0.0*	0634	-25 59.06	0 51.70	2253.7	9.7	316	28620.
17 3 79	0.0*	0737	-25 51.65	0 43.89	2264.0	9.3	314	28626.
17 3 79	0.0	0740	-25 51.33	0 43.52	2264.4	9.7	320	28626.
17 3 79	0.0	0834	-25 44.56	0 37.34	2273.2	9.8	178	28634.
17 3 79	0.0*	1043	-26 5.54	0 38.09	2294.2	8.8	174	28579.
17 3 79	0.0	1050	-26 6.56	0 38.20	2295.2	8.9	174	28576.
17 3 79	0.0*	1444	-26 41.29	0 41.76	2330.1	8.6	186	28490.
17 3 79	0.0	1455	-26 42.85	0 41.55	2331.6	8.7	187	28485.
17 3 79	0.0*	1526	-26 47.33	0 40.85	2336.2	9.7	179	28472.
17 3 79	0.0	1531	-26 48.14	0 40.86	2337.0	9.4	182	28470.
17 3 79	0.0*	1632	-26 57.65	0 40.41	2346.5	9.1	189	28444.
17 3 79	0.0*	1745	-27 8.54	0 38.47	2357.5	9.1	177	28412.
17 3 79	0.0	1748	-27 8.99	0 38.49	2358.0	9.1	173	28411.

DY/MN/YR	TZ	TIME	LATITUDE	LONGITUDE	MILES	SPEED	HEADG	REGMG
17 3 79	0.0*	1827	-27 14.85	0 39.27	2363.9	8.9	181	28397.
17 3 79	0.0*	1931	-27 24.32	0 39.06	2373.3	9.6	188	28372.
17 3 79	0.0*	2006	-27 29.88	0 38.13	2379.0	8.6	183	28356.
17 3 79	0.0	2023	-27 32.31	0 37.97	2381.4	8.5	182	28350.
17 3 79	0.0	2330	-27 58.94	0 36.76	2408.0	8.2	184	28279.
17 3 79	0.0*	2334	-27 59.48	0 36.71	2408.6	8.8	184	28278.
17 3 79	0.0	2348	-28 1.53	0 36.54	2410.6	9.3	175	28273.
18 3 79	0.0	0116	-28 15.12	0 37.64	2424.3	9.0	137	28240.
18 3 79	0.0*	0235	-28 23.80	0 46.73	2436.1	9.0	136	28232.
18 3 79	0.0	0253	-28 25.76	0 48.83	2438.6	9.3	135	28230.
18 3 79	0.0	0400	-28 33.16	0 57.09	2449.1	4.8	136	28224.
18 3 79	0.0	0408	-28 33.62	0 57.59	2449.8	9.0	135	28224.
18 3 79	0.0*	0421	-28 35.02	0 59.15	2451.7	8.7	138	28223.
18 3 79	0.0*	0649	-28 51.06	1 15.55	2473.3	8.9	126	28207.
18 3 79	0.0	0655	-28 51.59	1 16.36	2474.2	8.9	126	28207.
18 3 79	0.0*	0730	-28 54.71	1 21.12	2479.4	9.3	139	28206.
18 3 79	0.0	0830	-29 1.78	1 28.07	2488.7	10.2	137	28199.
18 3 79	0.0	0905	-29 6.21	1 32.65	2494.7	3.4	145	28195.
18 3 79	0.0	0920	-29 6.91	1 33.21	2495.5	9.4	138	28194.
18 3 79	0.0*	0938	-29 9.01	1 35.35	2498.3	8.3	144	28191.
18 3 79	0.0	1000	-29 11.47	1 37.40	2501.4	8.3	142	28188.
18 3 79	0.0	1107	-29 18.89	1 43.85	2510.7	3.7	155	28179.
18 3 79	0.0*	1120	-29 19.62	1 44.23	2511.5	4.2	135	28178.
18 3 79	0.0	1123	-29 19.77	1 44.40	2511.7	8.7	132	28178.
18 3 79	0.0	1200	-29 23.36	1 48.95	2517.0	9.7	135	28175.
18 3 79	0.0	1230	-29 26.79	1 52.86	2521.9	6.1	131	28172.
18 3 79	0.0	1245	-29 27.80	1 54.16	2523.4	9.0	120	28172.
18 3 79	0.0*	1434	-29 35.98	2 10.34	2539.7	9.7	119	28174.
18 3 79	0.0	1438	-29 36.30	2 10.98	2540.3	9.4	134	28174.
18 3 79	0.0*	1657	-29 51.68	2 28.76	2562.1	8.6	120	28160.
18 3 79	0.0	1705	-29 52.26	2 29.91	2563.3	8.8	120	28160.
18 3 79	0.0*	1720	-29 53.37	2 32.10	2565.5	8.0	120	28161.
18 3 79	0.0	1730	-29 54.04	2 33.42	2566.8	7.5	131	28161.
18 3 79	0.0*	1738	-29 54.70	2 34.29	2567.8	9.2	143	28160.
18 3 79	0.0	1808	-29 58.38	2 37.47	2572.4	9.4	133	28156.
18 3 79	0.0*	1844	-30 2.28	2 42.16	2578.0	9.2	134	28152.
19 3 79	0.0*	0139	-30 47.08	3 34.26	2641.5	8.4	134	28111.
19 3 79	0.0	0150	-30 48.16	3 35.55	2643.0	8.4	135	28110.
19 3 79	0.0*	0328	-30 57.95	3 46.82	2656.8	11.2	126	28100.
19 3 79	0.0	0335	-30 58.73	3 48.04	2658.1	11.0	127	28100.
19 3 79	0.0*	0412	-31 2.84	3 54.35	2664.9	9.5	143	28098.
19 3 79	0.0*	0455	-31 8.31	3 59.11	2671.7	7.3	147	28091.
19 3 79	0.0*	0512	-31 10.07	4 0.40	2673.8	9.0	153	28088.
19 3 79	0.0	0547	-31 14.76	4 3.18	2679.0	9.0	153	28080.
19 3 79	0.0	0635	-31 21.19	4 7.00	2686.2	10.9	164	28070.
19 3 79	0.0*	0641	-31 22.23	4 7.35	2687.3	10.0	144	28068.
19 3 79	0.0	0645	-31 22.77	4 7.80	2688.0	10.0	86	28067.
19 3 79	0.0*	0744	-31 22.09	4 19.24	2697.8	7.8	88	28082.
19 3 79	0.0	0748	-31 22.07	4 19.85	2698.3	7.9	88	28083.
19 3 79	0.0*	0830	-31 21.90	4 26.32	2703.8	9.1	95	28091.
19 3 79	0.0	0936	-31 22.89	4 37.97	2713.8	8.3	96	28102.
19 3 79	0.0*	1016	-31 23.47	4 44.43	2719.4	7.6	97	28108.
19 3 79	0.0	1030	-31 23.69	4 46.48	2721.1	7.7	97	28109.
19 3 79	0.0*	1341	-31 26.75	5 14.99	2745.7	9.2	64	28134.
19 3 79	0.0	1350	-31 26.61	5 16.61	2747.0	9.2	83	28137.
19 3 79	0.0	1404	-31 26.37	5 19.12	2749.2	8.9	83	28140.
19 3 79	0.0*	1439	-31 25.74	5 25.16	2754.4	7.5	91	28148.
19 3 79	0.0*	1530	-31 25.88	5 32.59	2760.7	9.4	91	28156.
19 3 79	0.0*	1607	-31 26.01	5 39.39	2766.5	8.5	92	28163.
19 3 79	0.0*	1624	-31 26.10	5 42.22	2769.0	8.0	90	28166.
19 3 79	0.0	1640	-31 26.12	5 44.72	2771.1	8.0	90	28169.
19 3 79	0.0*	1650	-31 26.13	5 46.29	2772.4	9.5	89	28171.
19 3 79	0.0	1707	-31 26.09	5 49.44	2775.1	10.3	89	28174.
19 3 79	0.0*	1716	-31 26.07	5 51.25	2776.7	8.7	94	28176.
19 3 79	0.0*	1837	-31 26.99	6 4.94	2788.4	8.6	92	28189.
19 3 79	0.0*	1936	-31 27.39	6 14.82	2796.8	8.5	90	28199.
19 3 79	0.0	2218	-31 27.58	6 41.73	2819.8	8.7	90	28227.
19 3 79	0.0*	2303	-31 27.64	6 49.39	2826.3	9.1	99	28235.
20 3 79	0.0*	0232	-31 32.81	7 26.22	2858.1	9.1	94	28261.
20 3 79	0.0*	0245	-31 32.95	7 28.54	2860.1	8.3	97	28263.
20 3 79	0.0*	0319	-31 33.59	7 34.00	2864.8	9.6	82	28267.
20 3 79	0.0*	0405	-31 32.66	7 42.00	2872.2	11.5	64	28278.
20 3 79	0.0*	0431	-31 32.22	7 48.41	2877.2	8.9	83	28285.
20 3 79	0.0	0448	-31 31.91	7 51.36	2879.7	9.0	83	28289.
20 3 79	0.0*	0513	-31 31.46	7 55.72	2883.4	9.4	79	28295.

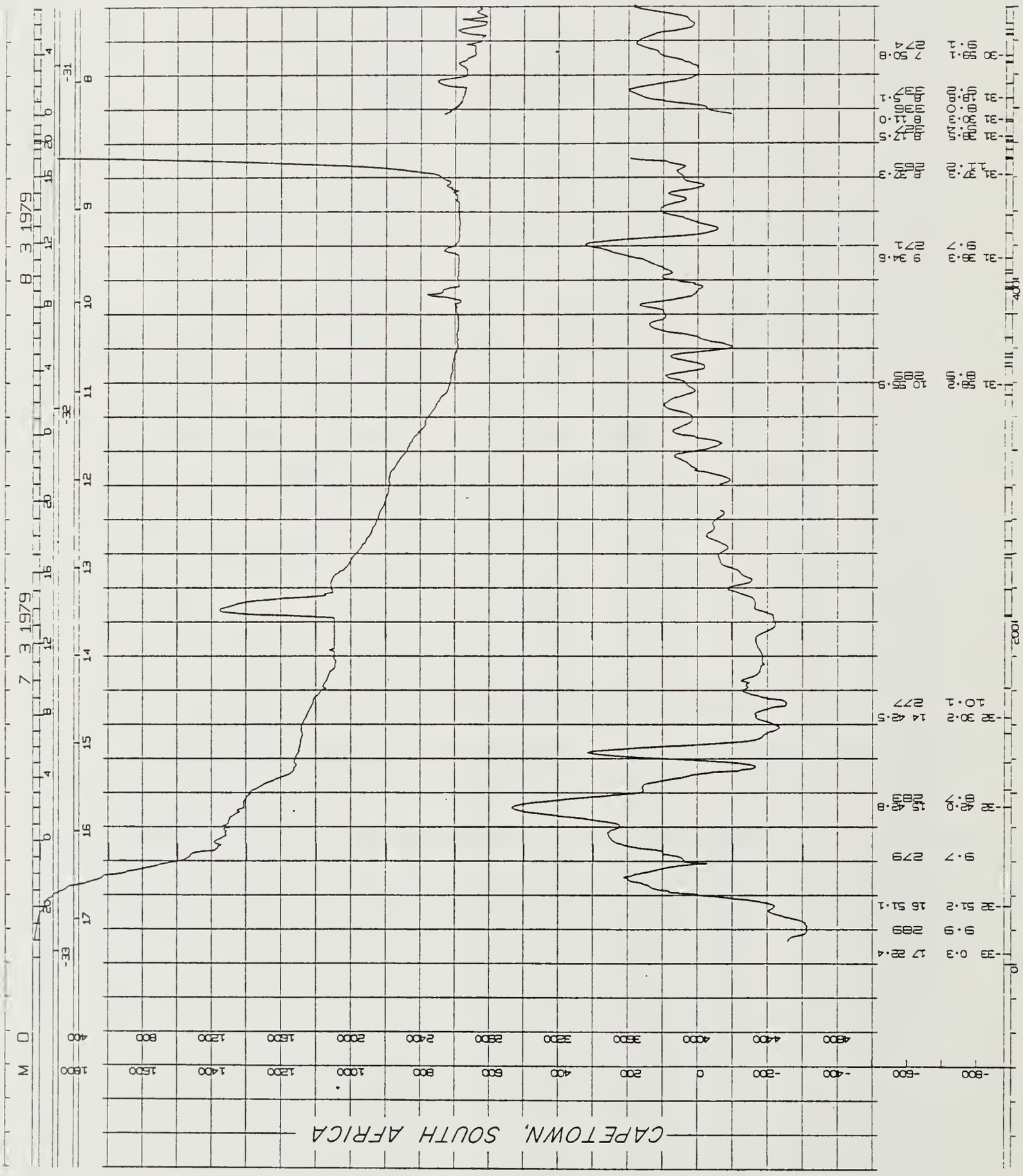
DY/MN/YR	TZ	TIME	LATITUDE	LONGITUDE	MILES	SPEED	HEADG	REGNG
20 3 79	0.0	0520	-31 31.26	7 56.98	2884.5	9.5	80	28297.
20 3 79	0.0*	0551	-31 30.47	8 2.68	2889.5	8.8	82	28304.
20 3 79	0.0	0557	-31 30.36	8 3.70	2890.3	8.6	85	28306.
20 3 79	0.0*	0655	-31 29.64	8 13.45	2898.7	8.5	105	28317.
20 3 79	0.0	0733	-31 31.06	8 19.58	2904.1	7.9	107	28320.
20 3 79	0.0*	0735	-31 31.14	8 19.87	2904.4	9.0	86	28320.
20 3 79	0.0*	0907	-31 30.19	8 36.00	2916.1	7.6	89	28339.
20 3 79	0.0	0912	-31 30.18	8 36.75	2918.8	8.6	91	28339.
20 3 79	0.0	1125	-31 30.80	8 59.18	2937.9	8.2	98	28360.
20 3 79	0.0*	1344	-31 33.67	9 21.28	2957.0	8.2	92	28374.
20 3 79	0.0	1400	-31 33.75	9 23.84	2959.1	7.8	92	28377.
20 3 79	0.0*	1439	-31 34.00	9 29.81	2964.2	10.1	103	28382.
20 3 79	0.0	1507	-31 35.11	9 35.18	2969.0	5.1	105	28384.
20 3 79	0.0*	1527	-31 35.56	9 37.10	2970.6	6.0	103	28385.
20 3 79	0.0	1537	-31 35.79	9 38.25	2971.6	7.7	103	28385.
20 3 79	0.0*	1624	-31 37.16	9 45.19	2977.7	7.1	104	28388.
20 3 79	0.0*	1705	-31 38.39	9 50.70	2982.6	6.3	91	28390.
20 3 79	0.0	1811	-31 38.53	9 58.86	2989.5	9.6	94	28398.
20 3 79	0.0*	1932	-31 39.63	10 14.06	3002.5	9.8	107	28409.
20 3 79	0.0	2130	-31 45.38	10 35.67	3021.8	11.2	105	28414.
20 3 79	0.0*	2200	-31 46.90	10 42.03	3027.4	7.9	105	28416.
21 3 79	0.0*	0135	-31 54.35	11 14.02	3055.6	9.3	84	28426.
21 3 79	0.0	0142	-31 54.24	11 15.29	3056.6	7.1	78	28427.
21 3 79	0.0*	0152	-31 54.00	11 16.66	3057.8	7.9	108	28429.
21 3 79	0.0*	0314	-31 57.32	11 28.69	3068.6	8.9	91	28431.
21 3 79	0.0*	0340	-31 57.39	11 33.24	3072.4	6.8	97	28435.
21 3 79	0.0*	0422	-31 57.98	11 38.80	3077.2	7.6	97	28438.
21 3 79	0.0	0435	-31 58.20	11 40.73	3078.8	7.9	97	28439.
21 3 79	0.0	0557	-31 59.67	11 53.26	3089.6	2.3	90	28447.
21 3 79	0.0*	0609	-31 59.67	11 53.81	3090.0	2.9	115	28447.
21 3 79	0.0	0630	-32 0.10	11 54.90	3091.1	8.9	105	28447.
21 3 79	0.0*	0648	-32 0.82	11 57.94	3093.7	7.2	97	28448.
21 3 79	0.0*	0802	-32 2.04	12 8.32	3102.6	8.0	97	28454.
21 3 79	0.0*	0947	-32 3.81	12 24.63	3116.5	7.3	100	28462.
21 3 79	0.0	0957	-32 4.03	12 26.05	3117.8	7.8	99	28463.
21 3 79	0.0*	1346	-32 8.87	13 0.84	3147.6	7.1	103	28480.
21 3 79	0.0	1351	-32 9.01	13 1.52	3148.2	6.3	104	28480.
21 3 79	0.0*	1435	-32 10.13	13 6.84	3152.9	7.6	102	28482.
21 3 79	0.0*	1615	-32 12.91	13 21.35	3165.5	9.1	111	28487.
21 3 79	0.0	1715	-32 16.21	13 31.34	3174.5	9.3	108	28487.
21 3 79	0.0*	1717	-32 16.31	13 31.69	3174.8	7.5	87	28487.
21 3 79	0.0	1800	-32 16.03	13 38.06	3180.2	8.3	83	28493.
21 3 79	0.0*	1804	-32 15.96	13 38.71	3180.8	7.5	93	28493.
21 3 79	0.0	1820	-32 16.09	13 41.06	3182.8	6.2	98	28495.
21 3 79	0.0*	1845	-32 16.46	13 44.09	3185.4	8.4	104	28497.
21 3 79	0.0*	1908	-32 17.24	13 47.79	3188.6	7.7	101	28498.
21 3 79	0.0	1915	-32 17.42	13 48.83	3189.5	7.8	76	28498.
21 3 79	0.0	2054	-32 14.40	14 3.67	3202.4	7.1	122	28518.
22 3 79	0.0*	0058	-32 29.77	14 32.71	3231.3	6.8	112	28502.
22 3 79	0.0*	0226	-32 33.60	14 43.67	3241.3	6.7	107	28502.
22 3 79	0.0*	0520	-32 39.39	15 5.86	3260.9	5.7	109	28505.
22 3 79	0.0*	0600	-32 40.64	15 10.16	3264.7	6.3	92	28505.
22 3 79	0.0*	0702	-32 40.95	15 17.89	3271.3	7.1	134	28511.
22 3 79	0.0	0715	-32 42.02	15 19.21	3272.8	7.2	134	28509.
22 3 79	0.0*	0840	-32 49.25	15 27.83	3283.0	6.0	132	28498.
22 3 79	0.0	0900	-32 50.60	15 29.61	3285.1	6.6	130	28496.
22 3 79	0.0	0930	-32 52.75	15 32.62	3288.4	7.0	128	28493.
22 3 79	0.0*	1022	-32 56.51	15 38.30	3294.4	8.1	120	28488.
22 3 79	0.0*	1340	-33 9.95	16 5.89	3321.2	6.5	120	28478.
22 3 79	0.0	1400	-33 11.03	16 8.12	3323.3	7.5	113	28477.
22 3 79	0.0*	1441	-33 13.12	16 13.74	3328.5	9.4	103	28477.
22 3 79	0.0*	1628	-33 17.10	16 33.21	3345.3	9.7	107	28483.
22 3 79	0.0	1630	-33 17.20	16 33.58	3345.6	9.2	107	28483.
22 3 79	0.0*	1712	-33 19.15	16 40.88	3352.0	8.5	105	28485.
22 3 79	0.0*	1757	-33 20.88	16 48.19	3358.3	8.8	106	28487.
22 3 79	0.0*	1900	-33 23.56	16 58.77	3367.6	8.0	102	28489.
22 3 79	0.0*	1945	-33 24.87	17 5.78	3373.6	9.0	101	28492.
22 3 79	0.0	1950	-33 25.02	17 6.66	3374.3	9.1	104	28492.
22 3 79	0.0*	2130	-33 28.90	17 24.26	3389.5	9.0	108	28497.
22 3 79	0.0	2135	-33 29.14	17 25.11	3390.3	9.1	112	28496.
22 3 79	0.0	2336	-33 36.00	17 45.43	3408.5	2.4	100	28499.
22 3 79	0.0	2342	-33 36.04	17 45.70	3408.6	6.6	111	28499.
23 3 79	0.0*	0133	-33 41.95	18 3.42	3424.6			28501.

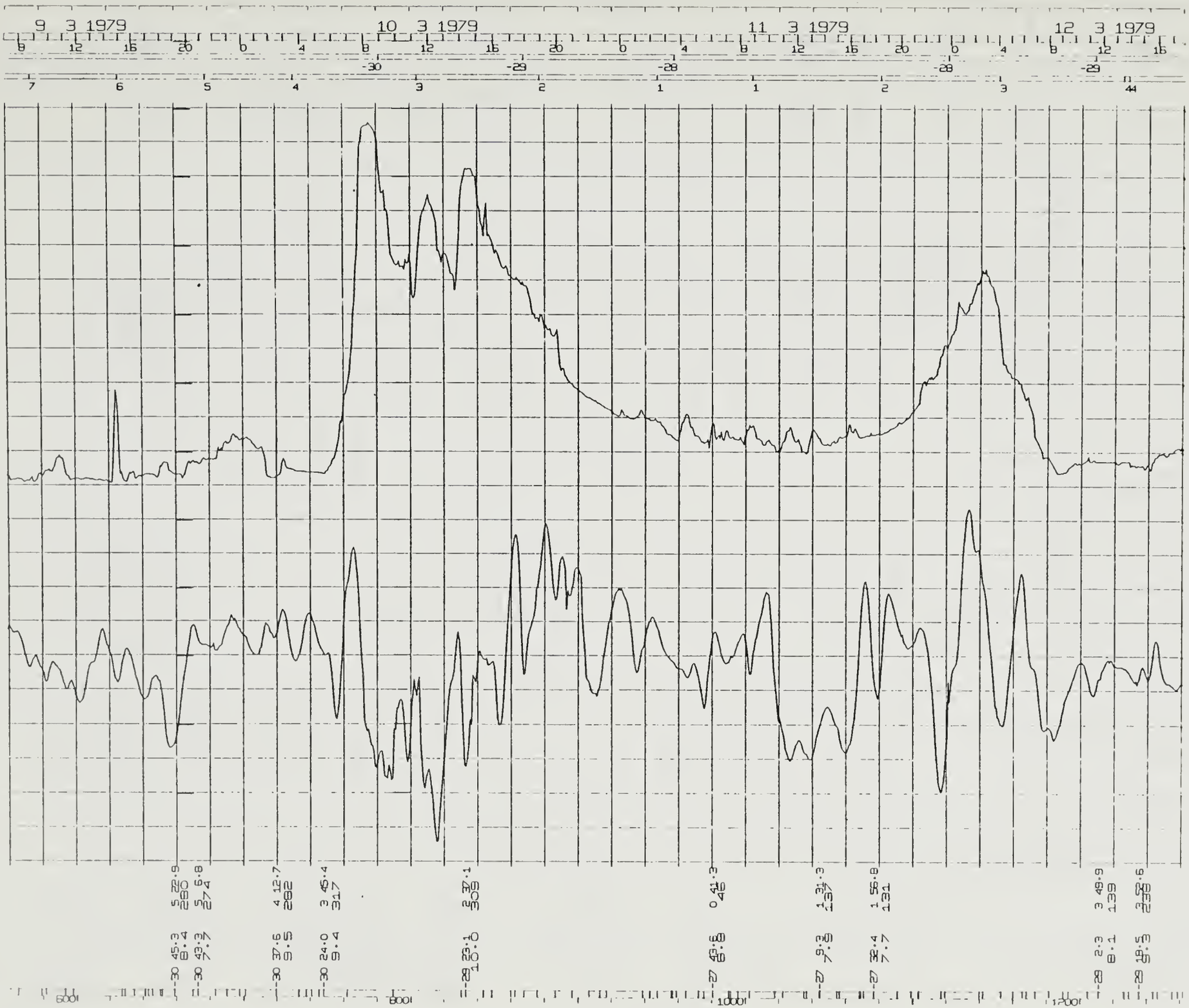
PART B

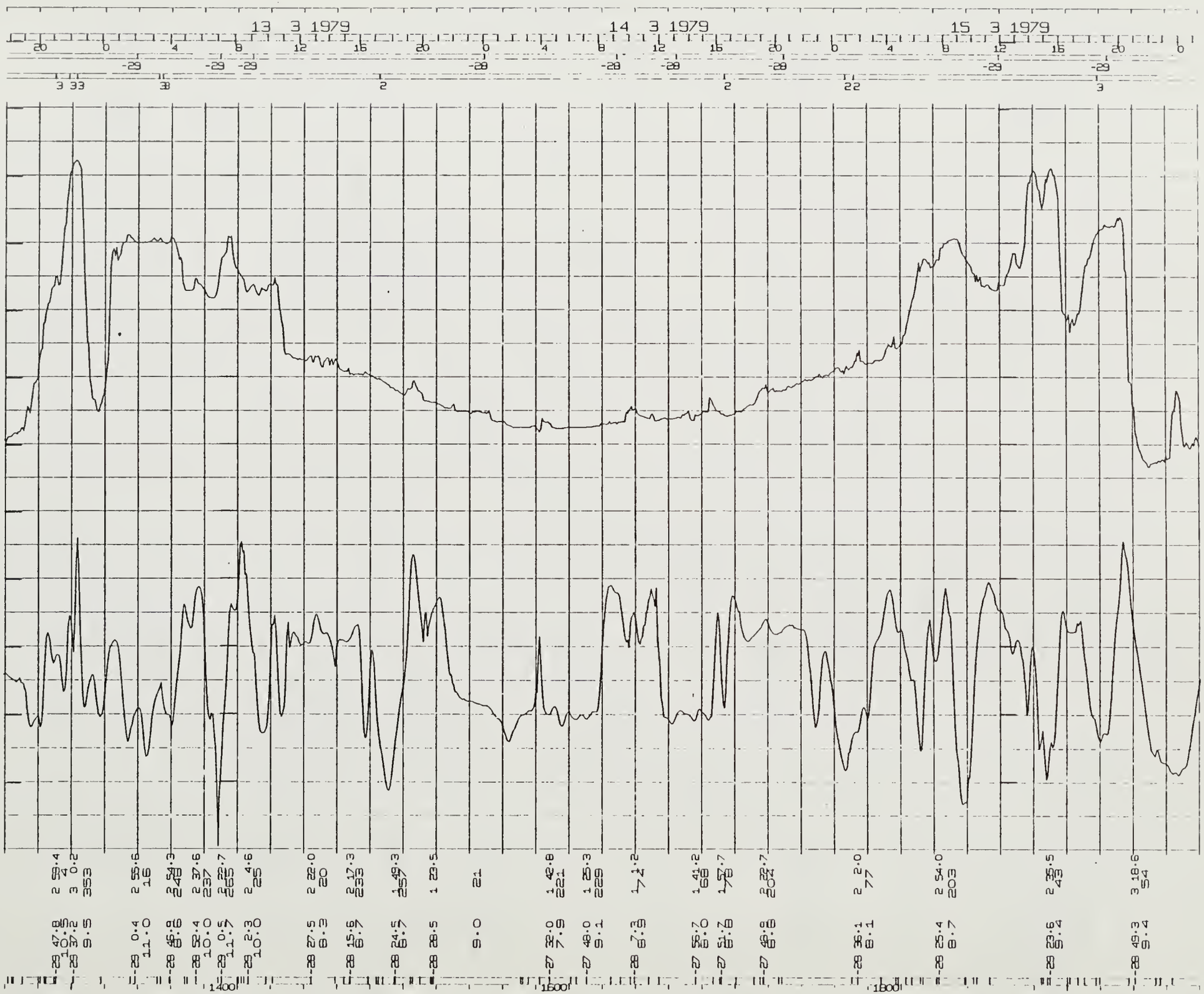
Bathymetric and Geomagnetic Profiles

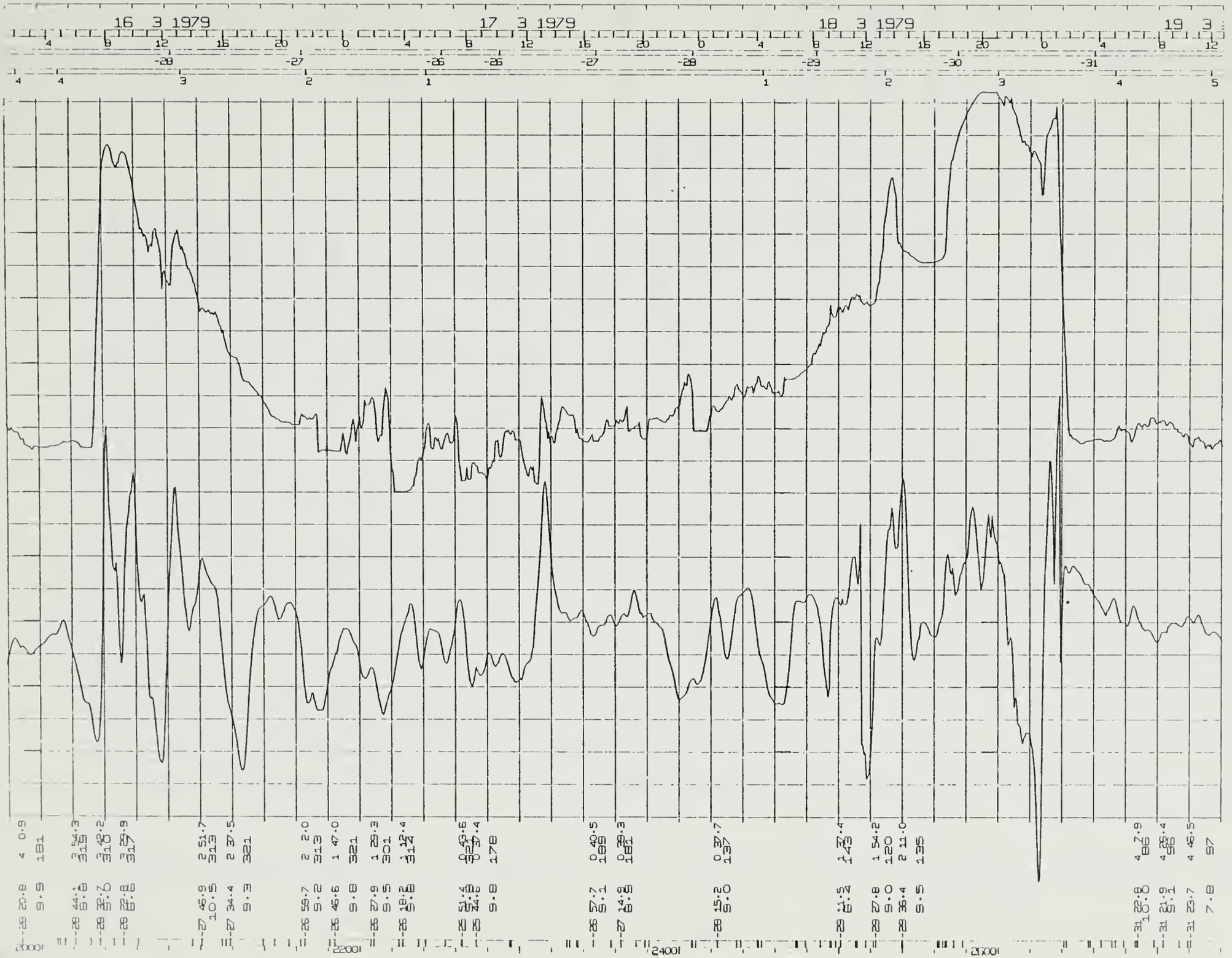
All bathymetric magnetic and navigational data were digitized and reduced using the data processing procedures outlined in Talwani (1969).

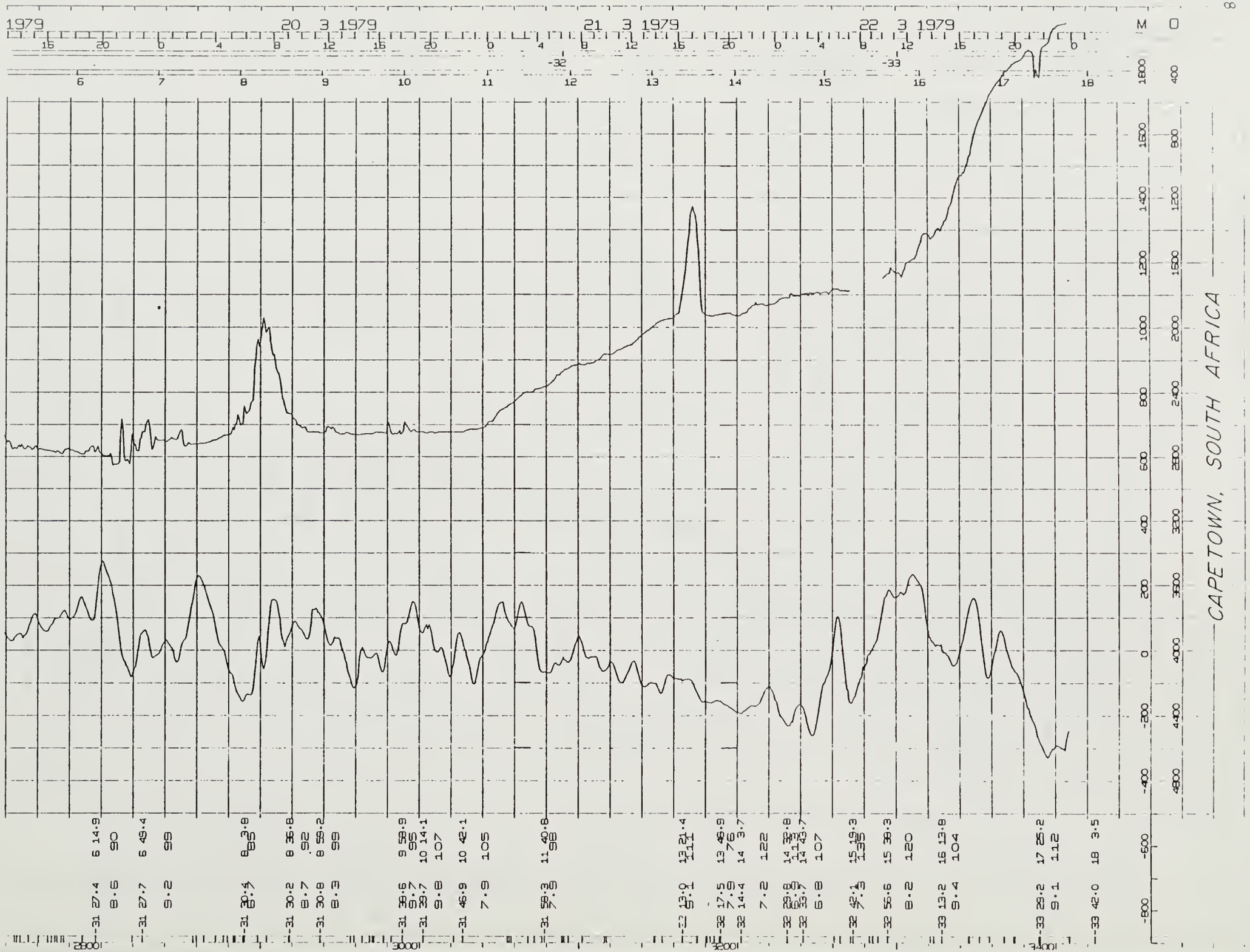
The profiles of topography are plotted at a vertical exaggeration of 100:1. The units of depth used are nominal fathoms (1/400 sec reflection time). Residual geomagnetic anomalies are plotted in gammas (10^5 gammas = 1 oersted). They are obtained by subtracting the regional magnetic field (Cain et al., 1964) from the observations of the total magnetic field. The topographic and geomagnetic profiles are plotted with respect to distance, which is annotated at intervals of 200 nautical miles near the bottom of each profile. In addition, tick marks shown above the distance scale indicate the distance at which any change in course or speed occurred. The corresponding course and speed between changes and the coordinates at the points of change are annotated above the distance scale listings. Navigational changes which occur too frequently to be annotated in the space available or only minor adjustments in course or speed are indicated only by tick marks. Listings of the entire detailed navigation as well as navigation plot appear in Part A. The course and speed apply to the time interval following each entry.


CAPETOWN, SOUTH AFRICA
M D
7 3 1979
8 3 1979
TD 388


9 3 1979
10 3 1979
11 3 1979
12 3 1979
0 4 8 12 16 20
-30 -29 -28 -28 -29
7 6 5 4 3 2 1 1 2 3 44
5 22.9 280 5 6.8 274
4 12.7 282
3 45.4 317
2 37.1 309
0 41.3 48
1 31.3 137
1 56.8 131
3 49.9 139
2 52.6 252
-30 45.3 8.4
-30 43.3 7.3
-30 37.6 9.5
-30 24.0 9.4
-29 23.1 10.0
-27 43.6 8.6
-27 9.3 7.6
-27 32.4 7.7
-29 2.3 8.1
-29 18.5 8.5
600 800 1000 1200

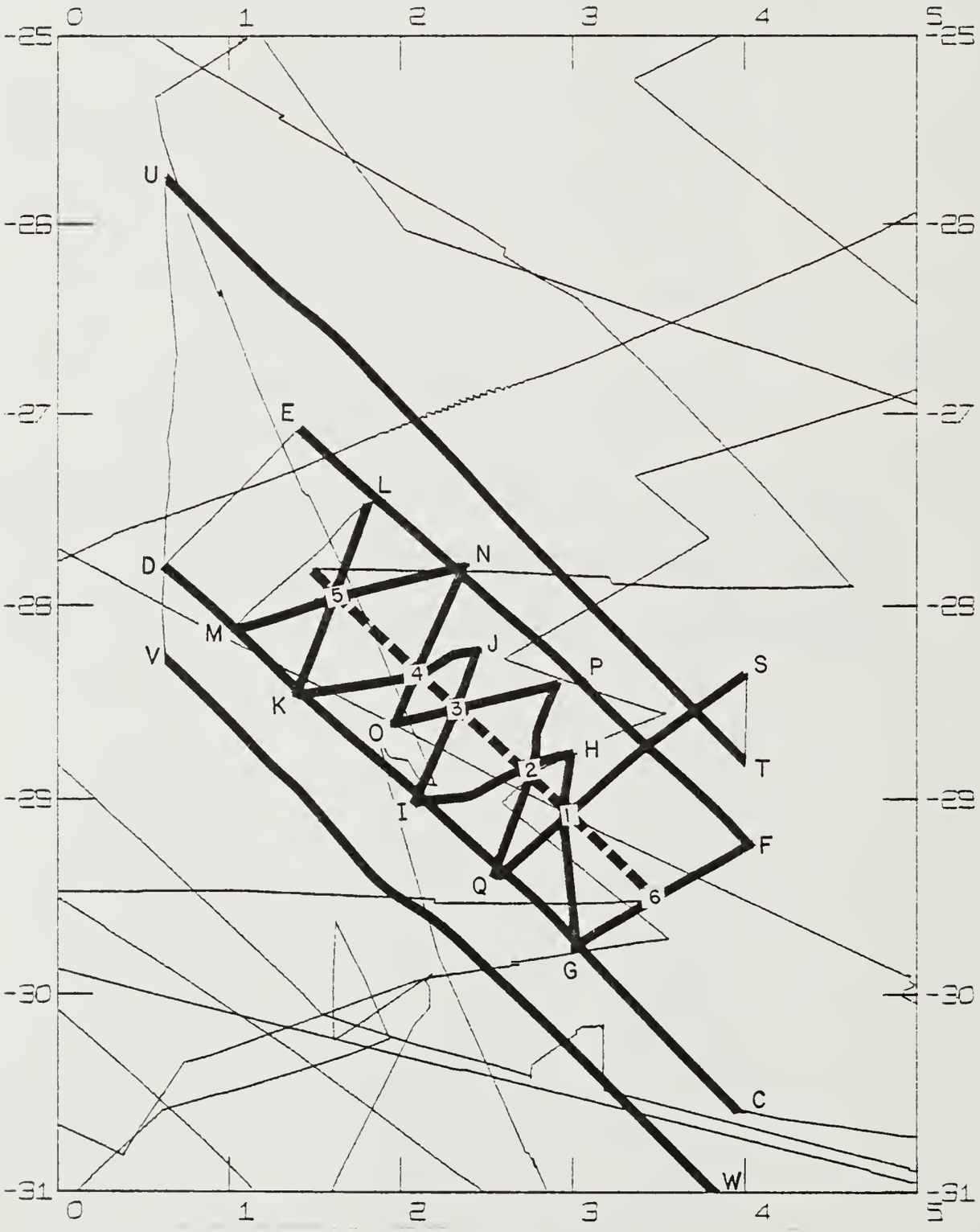

13 3 1979
14 3 1979
15 3 1979
1400
1600
1800


16 3 1979
17 3 1979
18 3 1979
19 3


1979
20 3 1979
21 3 1979
22 3 1979
CAPE TOWN, SOUTH AFRICA

P A R T C: SEISMIC REFLECTION RECORDS

THE VERTICAL SCALE IS GIVEN IN SECONDS OF TWO-WAY REFLECTION TIME. SEISMIC REFLECTION LINES KEYED TO NAVIGATION INDEX MAP (PAGE 20) AND NAVIGATION LISTINGS (PAGES 7 TO 12).



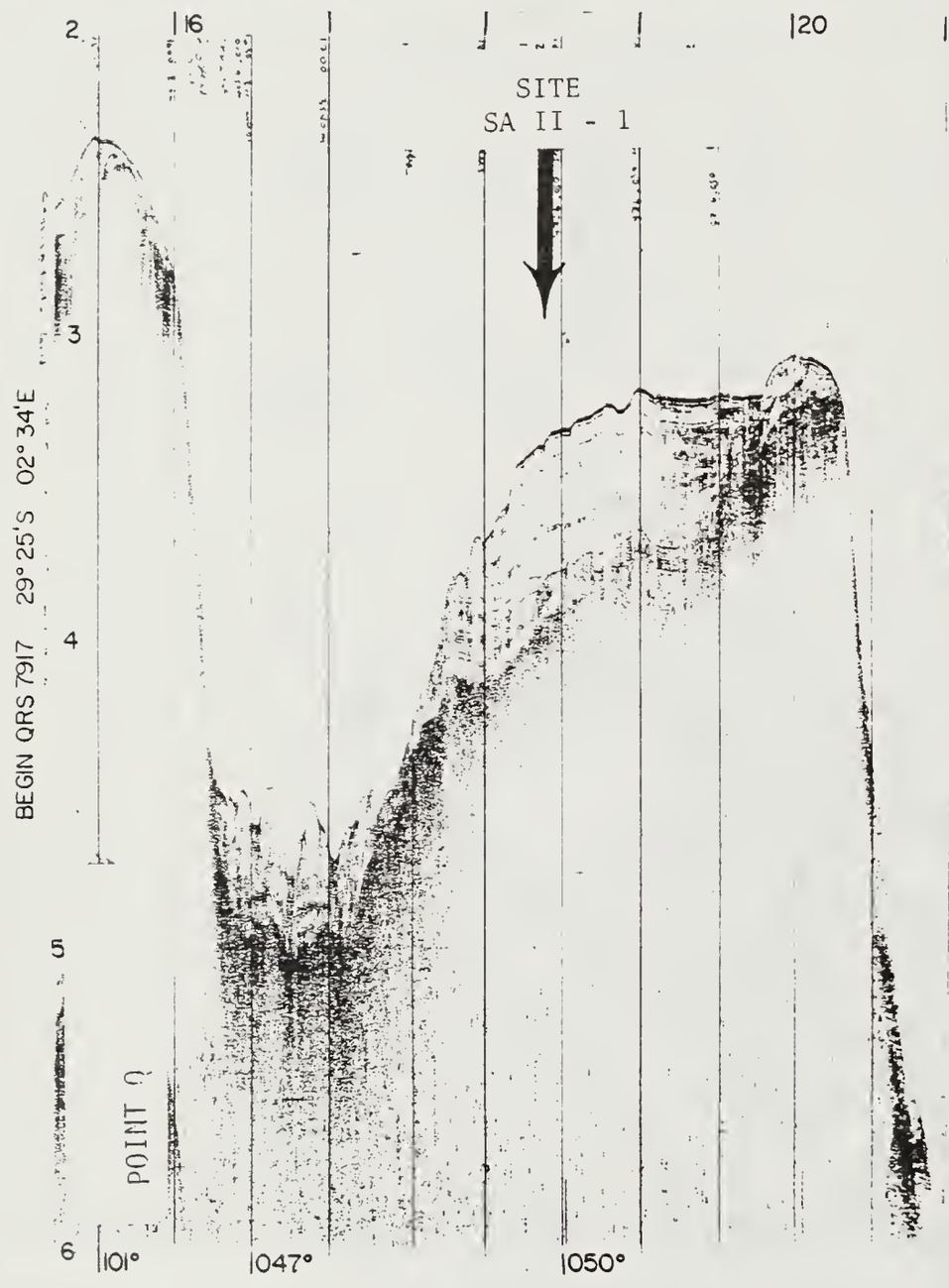
W A L V I S R I D G E

CANDIDATE SITES SA II (1 through 6)

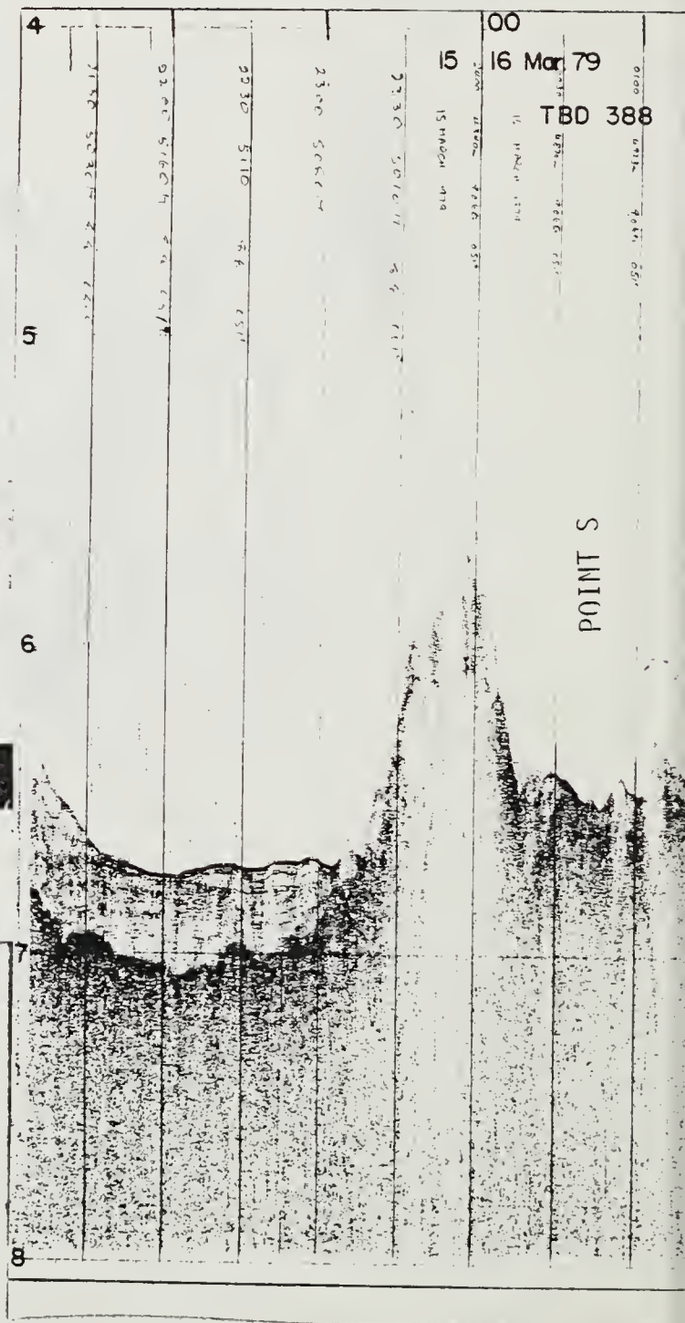
R/V VEMA CRUISE 27 (SEE FIG. 1)

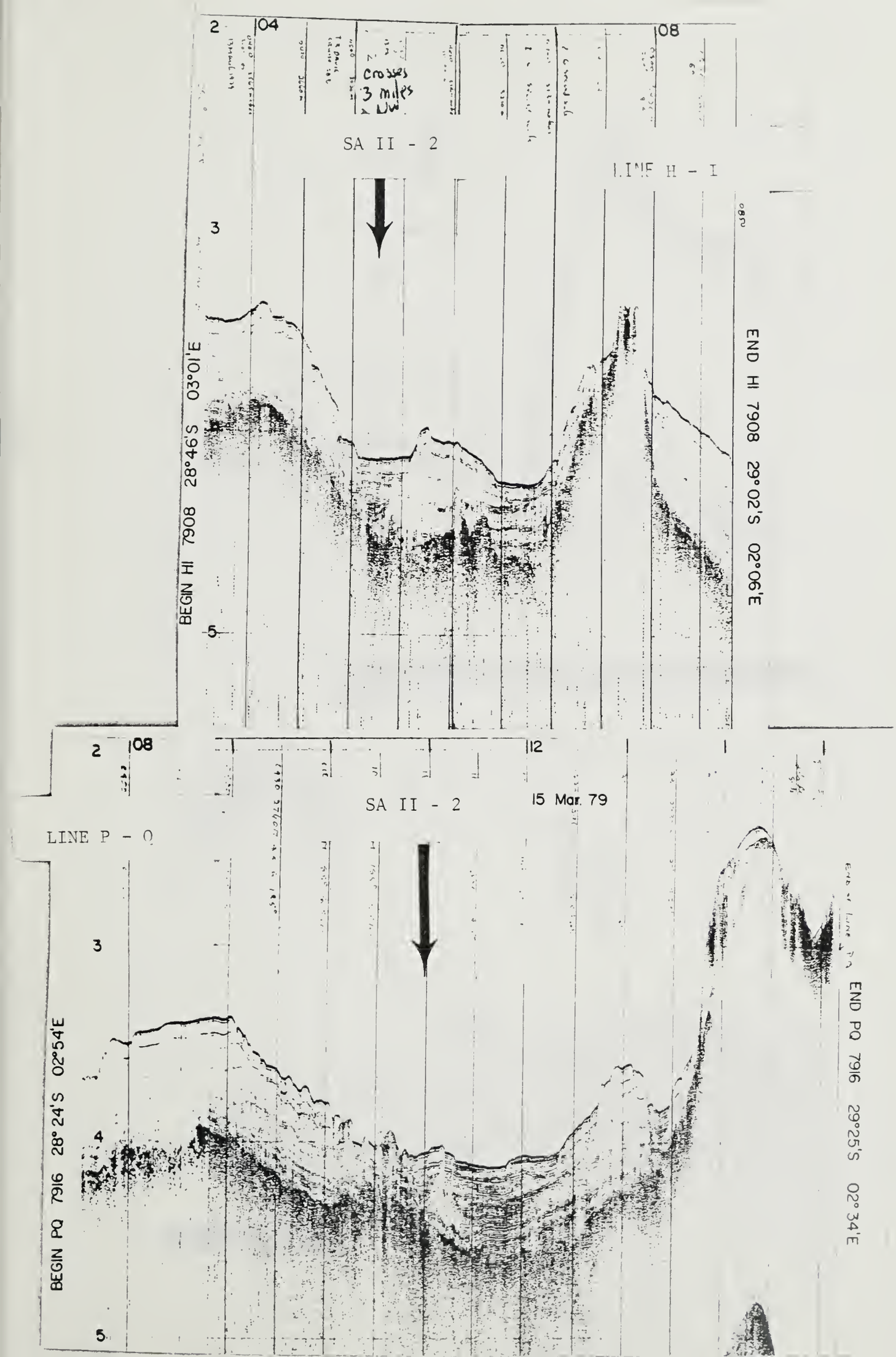
R/V THOMAS B. DAVIE CRUISE 388

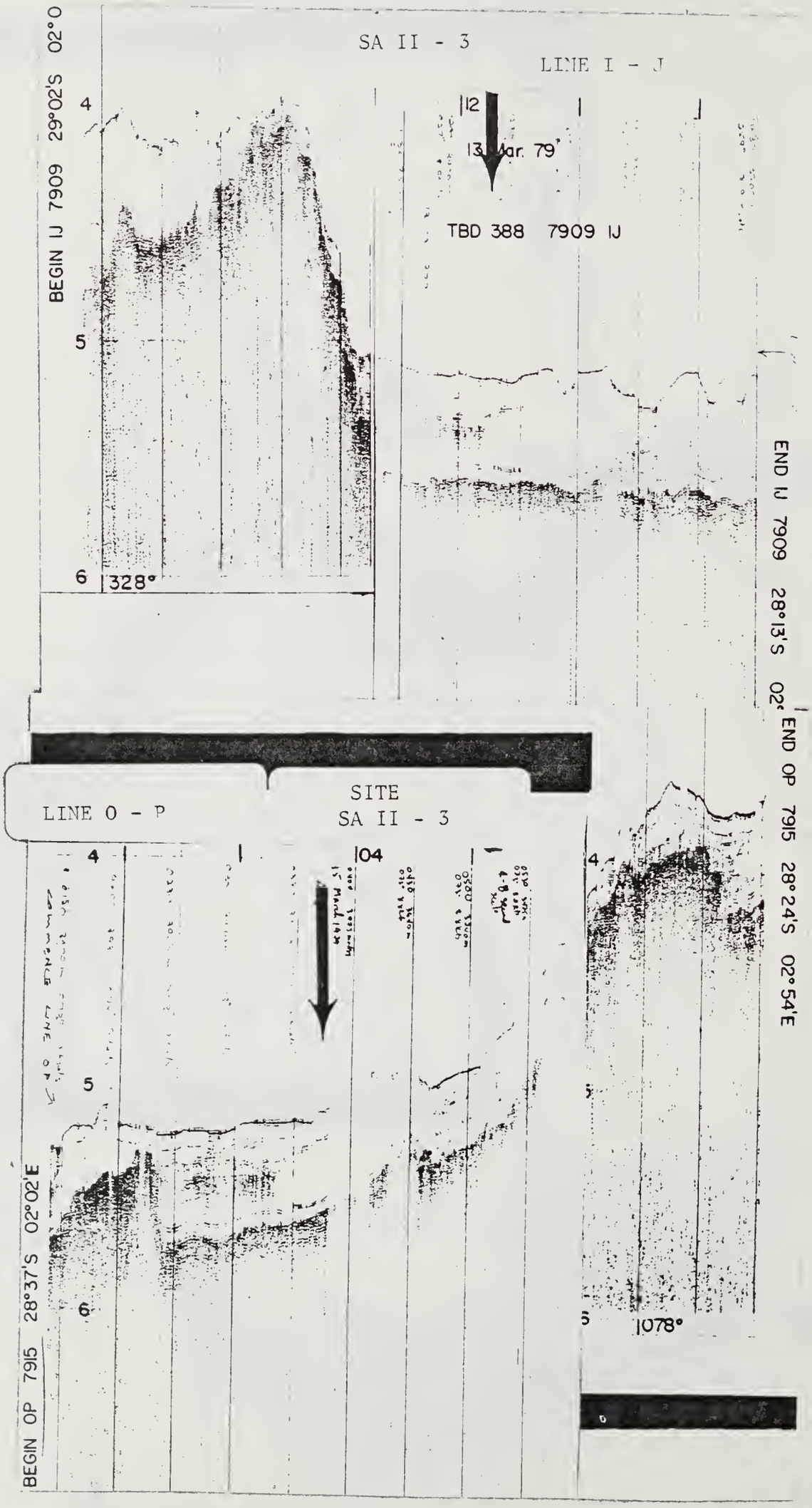
LINE G - H

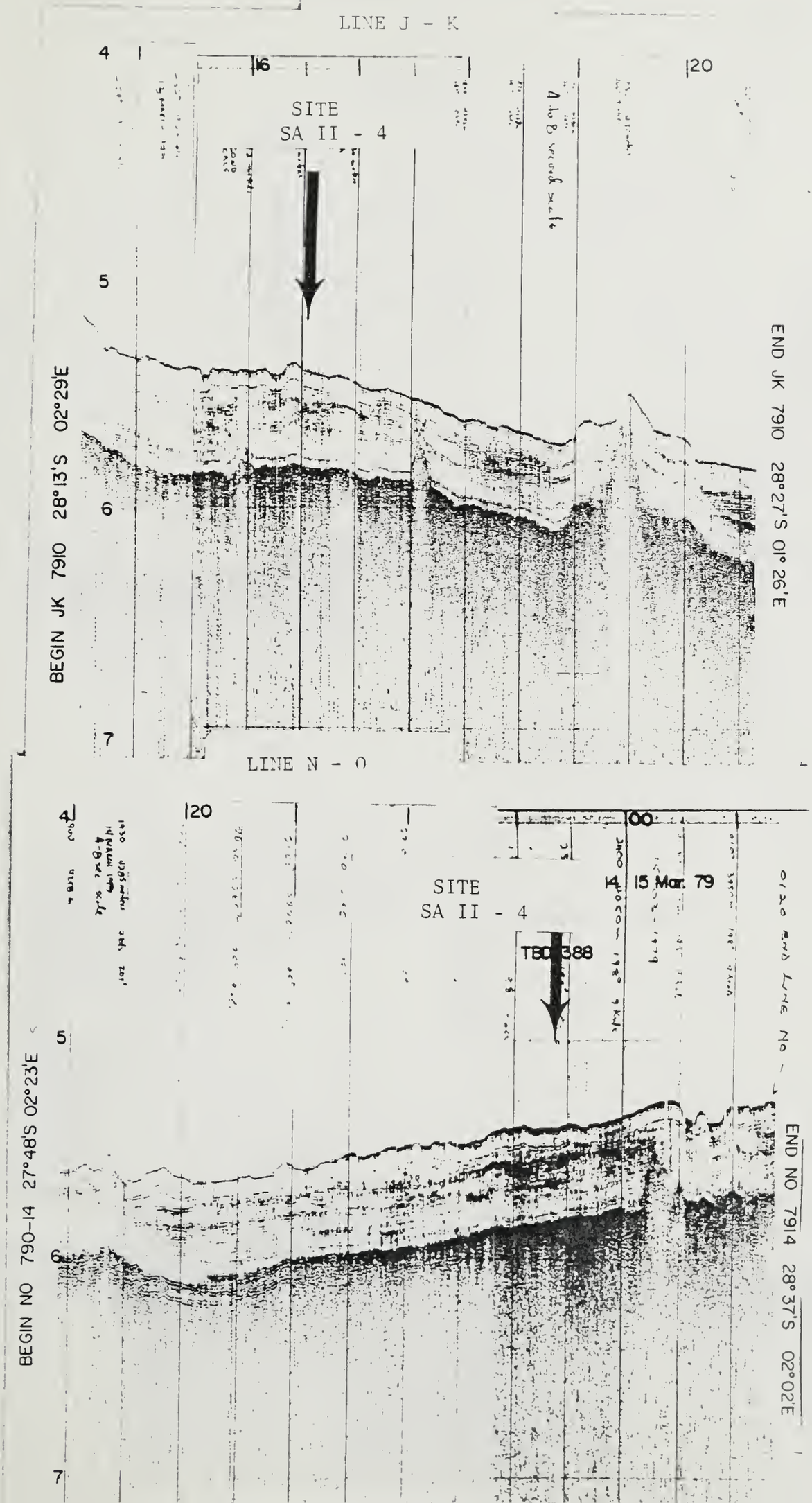

2
16
120
SITE
SA II - 1
3
BEGIN QRS 7917 29° 25'S 02° 34'E
4
5
POINT Q
6
101°
047°
050°

LINE Q - S

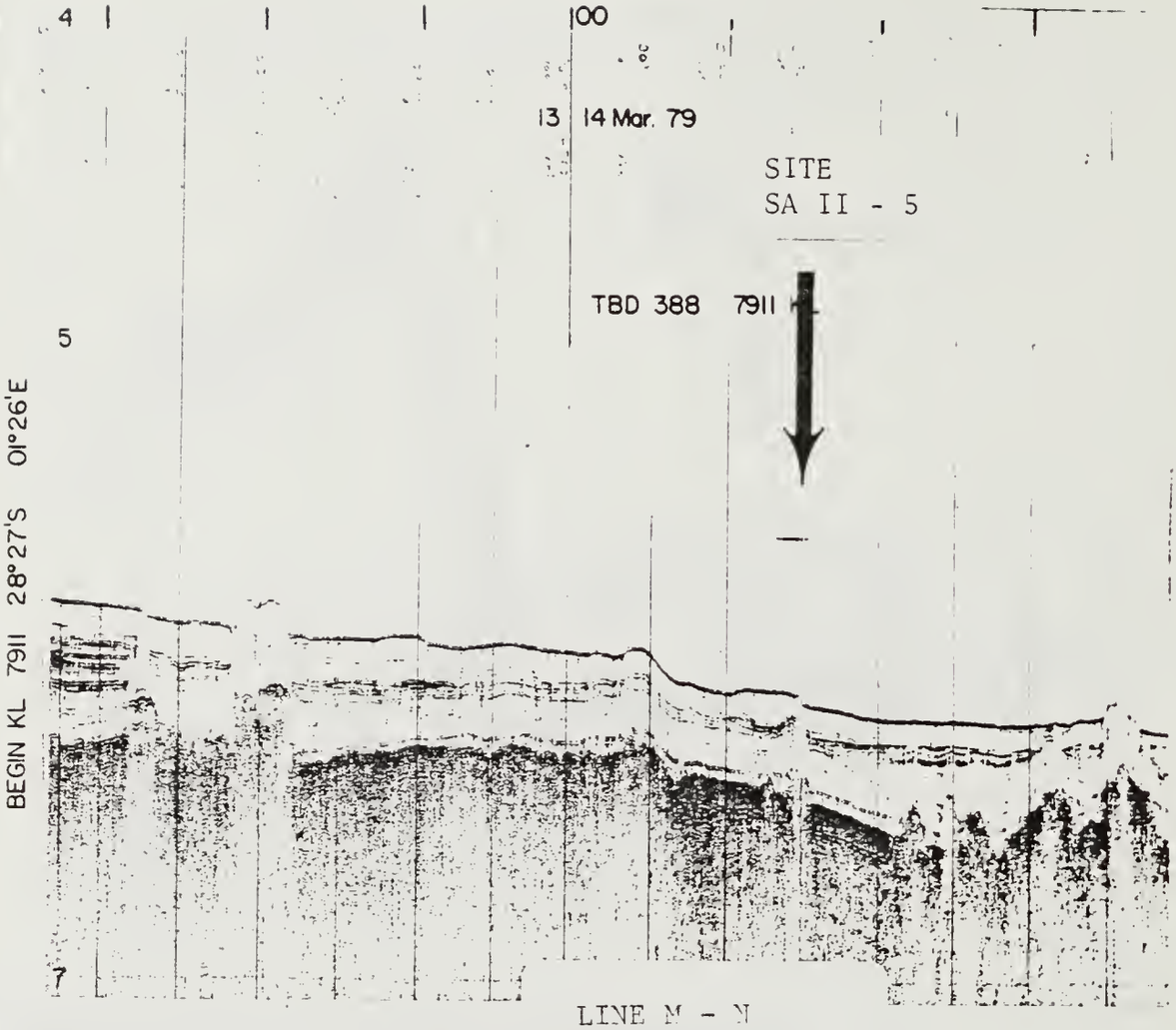

4
00
15
16 Mar 79
TBD 388
5
POINT S
6
7
8


2
04
08
2 crosses
3 miles
SA II - 2
LINE H - I
3
BEGIN HI 7908 28°46'S 03°01'E
END HI 7908 29°02'S 02°06'E
5
2
08
12
SA II - 2
15 Mar. 79
LINE P - Q
3
4
BEGIN PQ 7916 28° 24'S 02°54'E
END PQ 7916 29°25'S 02° 34'E
5

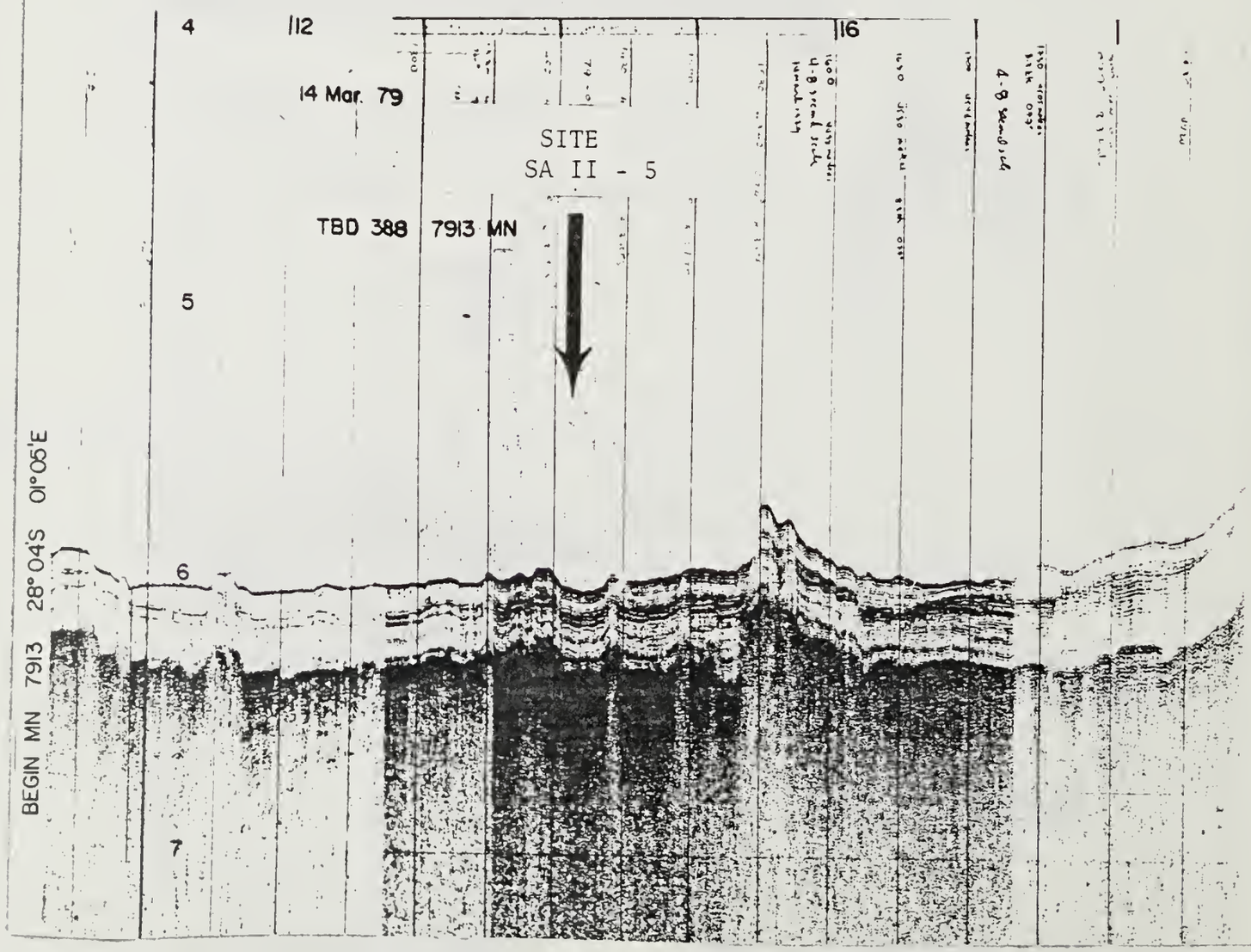

SA II - 3
LINE I - J
BEGIN IJ 7909 29°02'S 02°0
END IJ 7909 28°13'S 02°
TBD 388 7909 IJ
328°
SITE
SA II - 3
LINE O - P
BEGIN OP 7915 28°37'S 02°02'E
END OP 7915 28°24'S 02°54'E
1078°

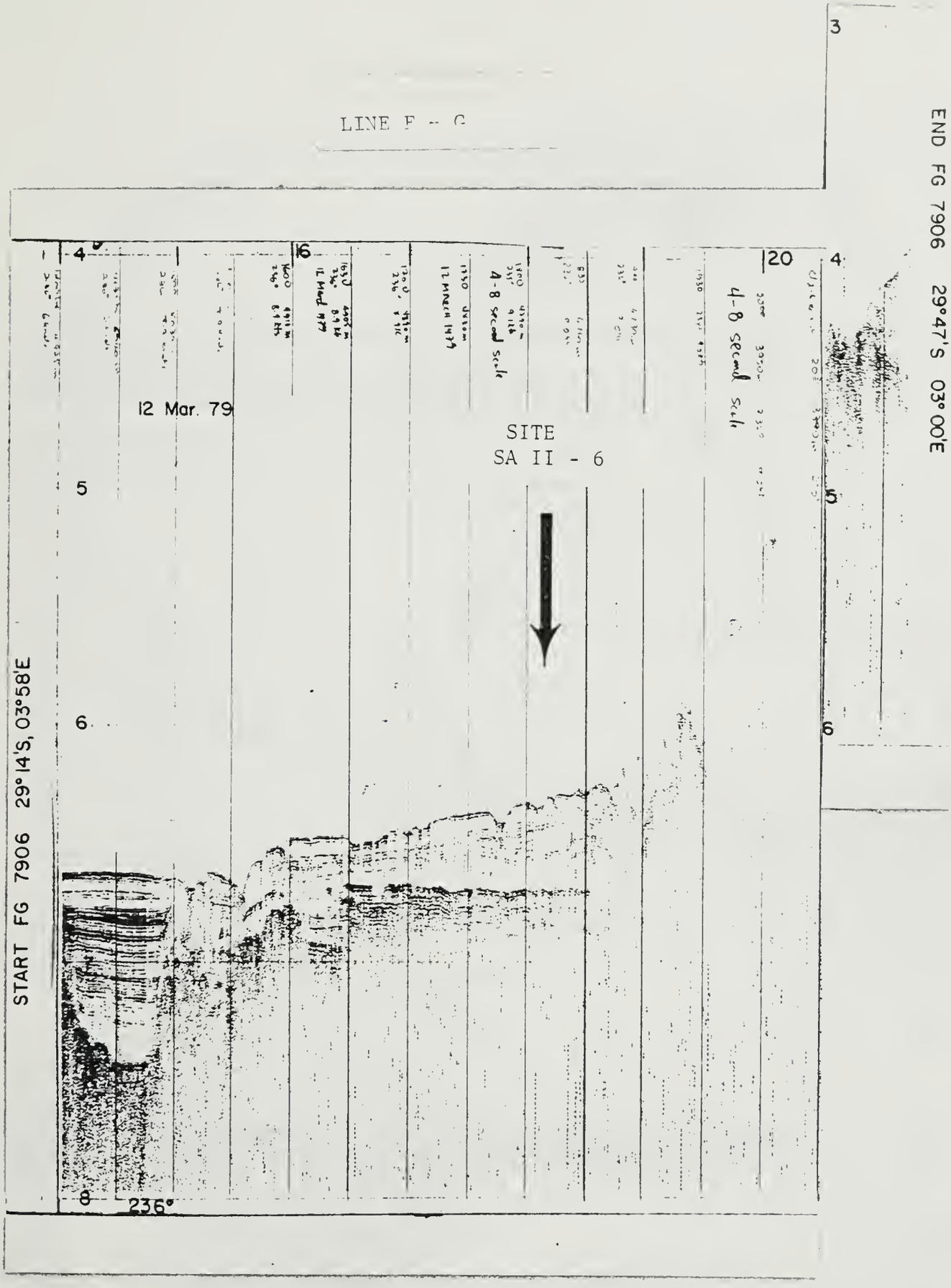

LINE J - K
SITE
SA II - 4
BEGIN JK 7910 28°13'S 02°29'E
END JK 7910 28°27'S 01°26'E
LINE N - O
SITE
SA II - 4
14 15 Mar. 79
BEGIN NO 790-14 27°48'S 02°23'E
END NO 7914 28°37'S 02°02'E

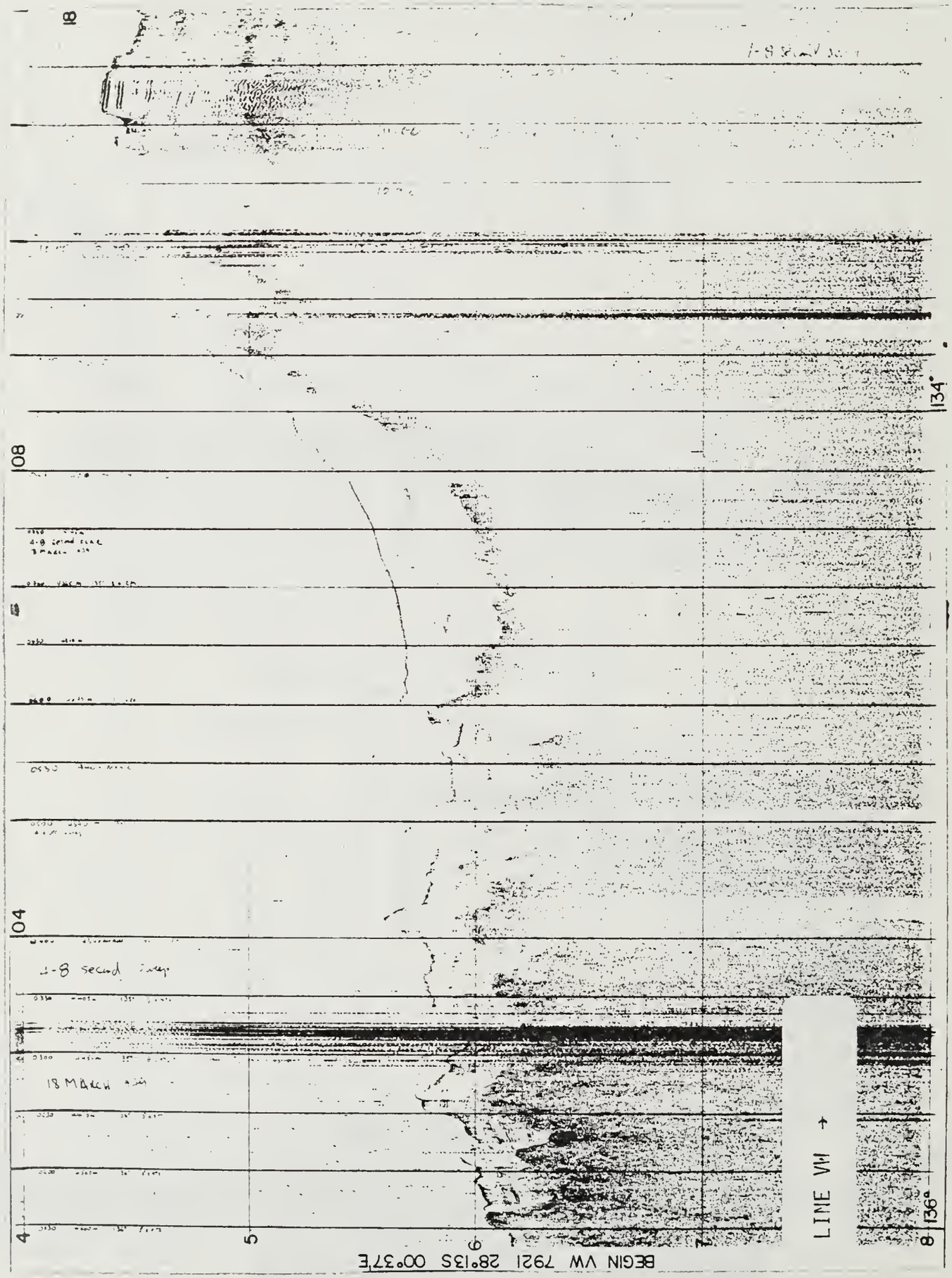
LINE K - L



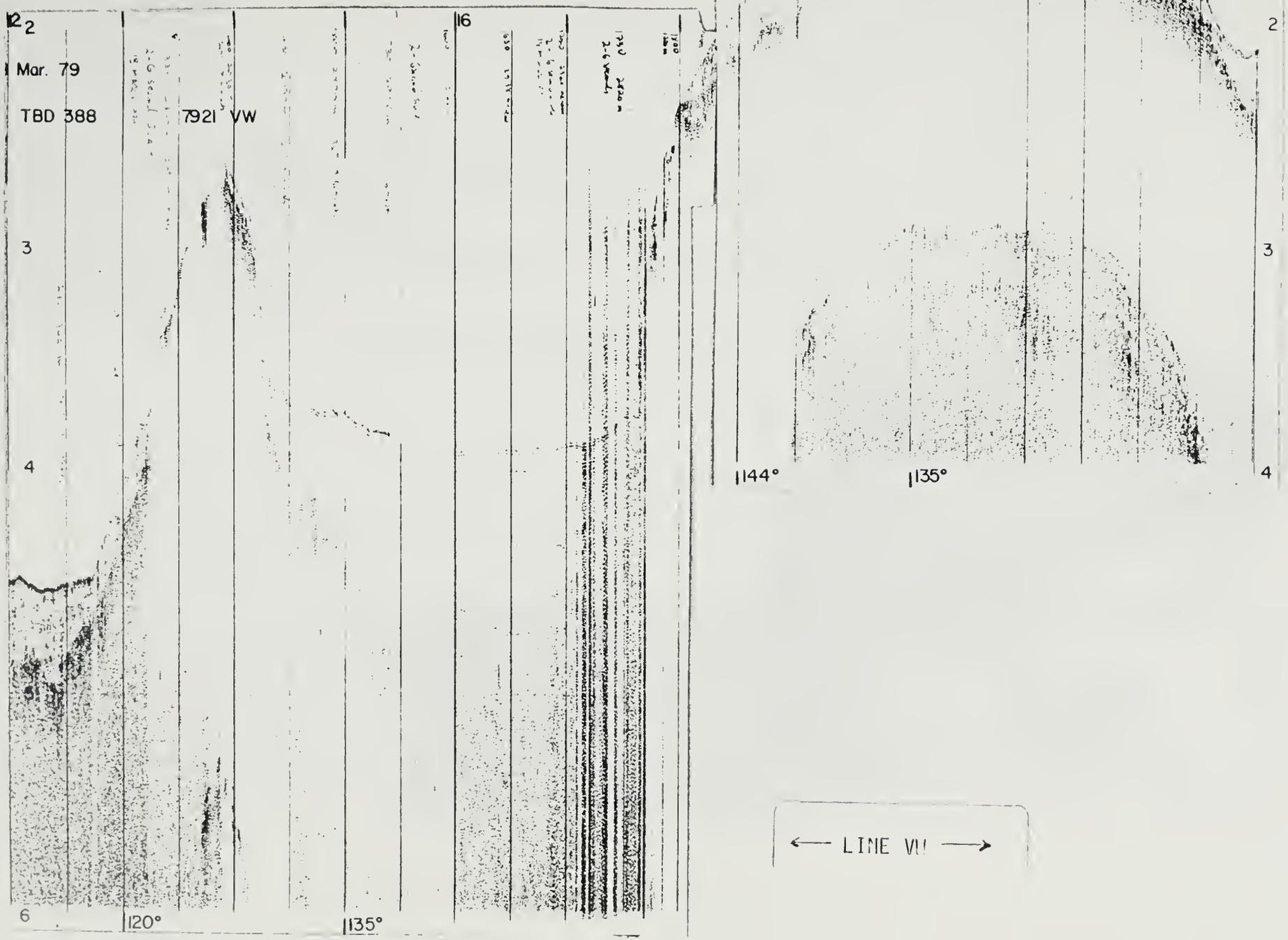
LINE M - N



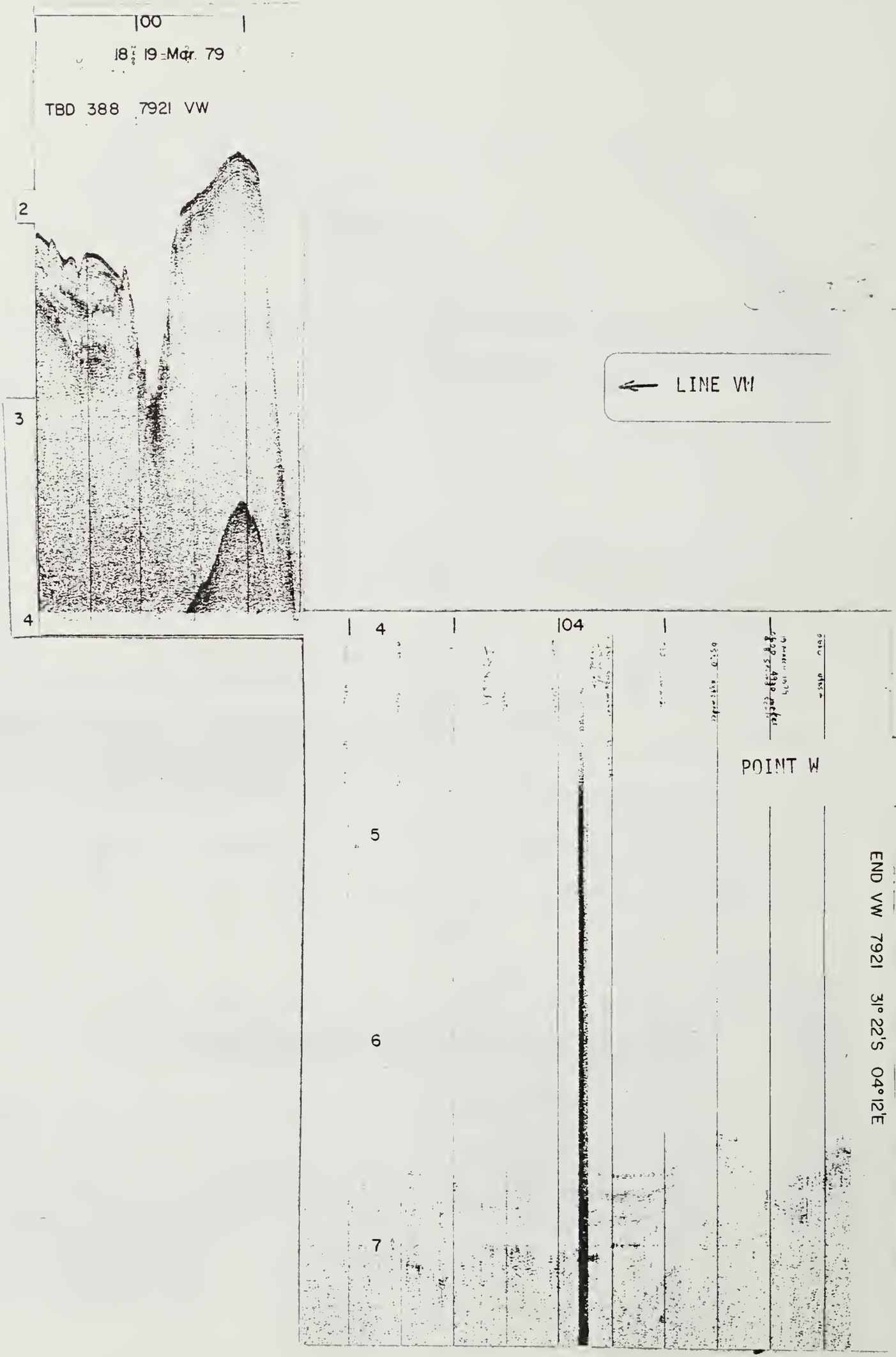

LINE F – G
END FG 7906 29°47'S 03°00'E
START FG 7906 29°14'S, 03°58'E
12 Mar. 79
SITE
SA II - 6
A-B scale
4-B scale
236°

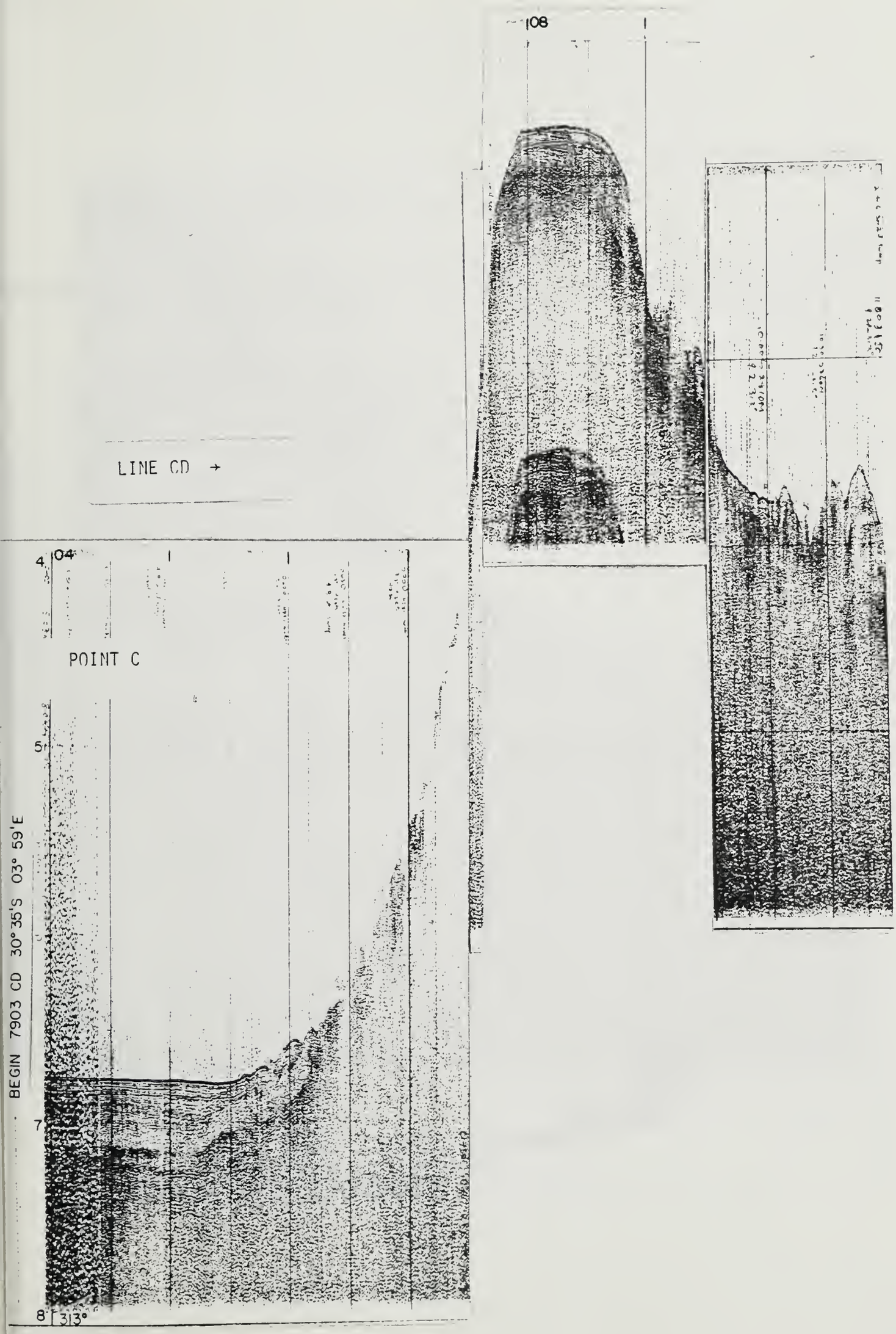

18
108
04
4-8 second sweep
18 MARCH
BEGIN VW 7921 28°13S 00°37E
LINE VW 7
134°
136°
4
5
6
7
8

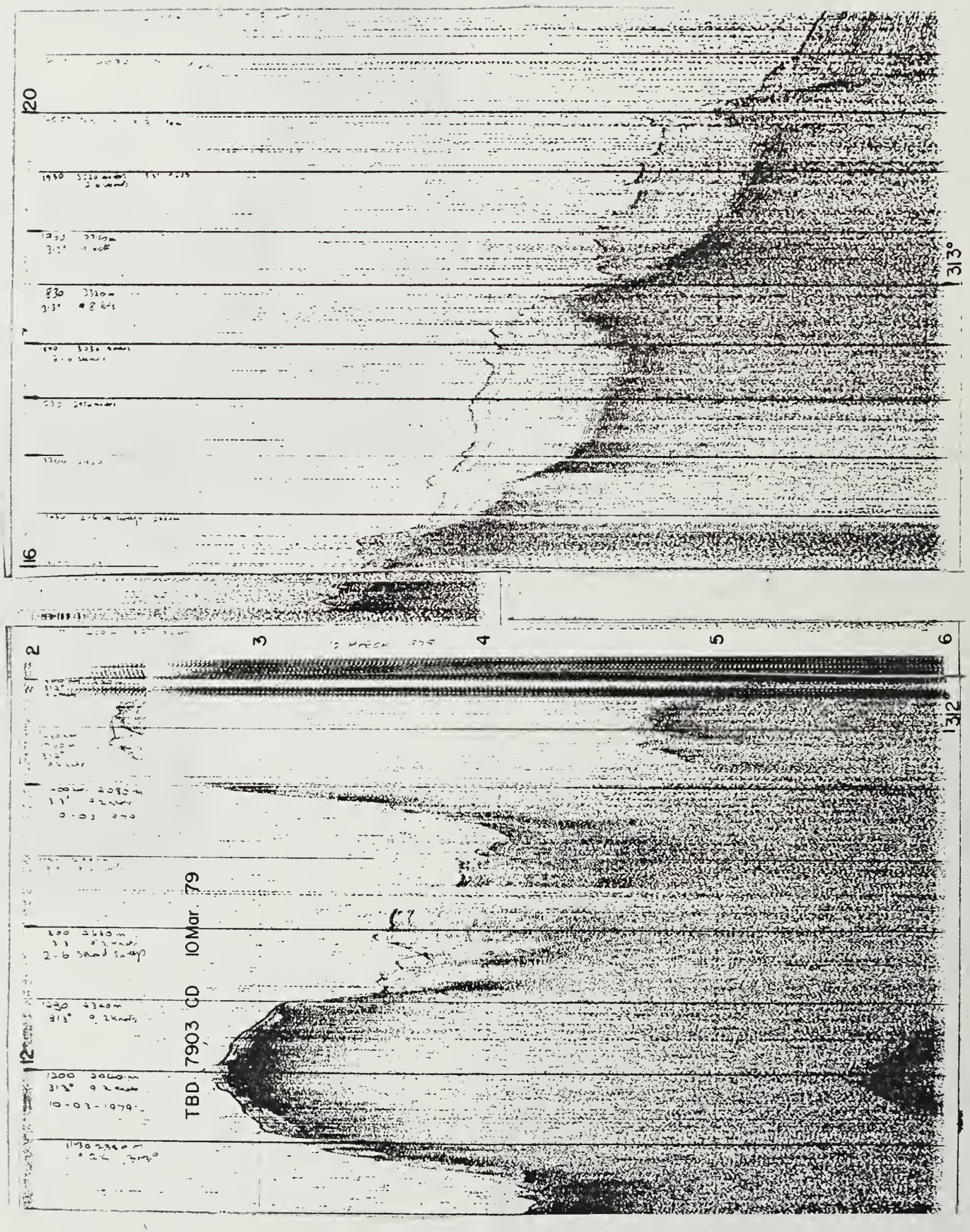
POINT V

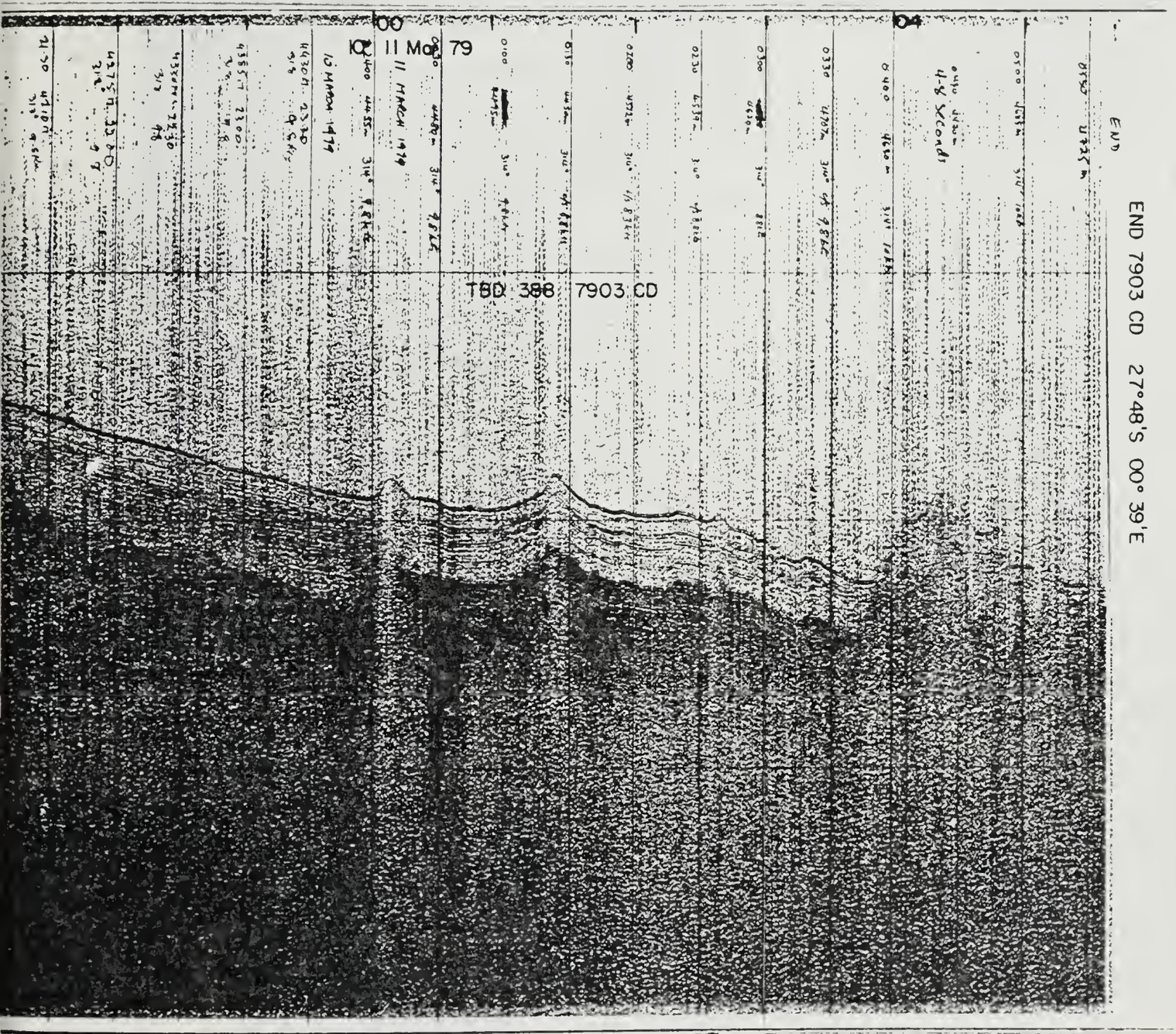


← LINE VII →


100
18 19 Mar. 79
TBD 388 7921 VW
2
3
4
LINE VW
4
104
POINT W
5
6
7
END VW 7921 31° 22'S 04° 12'E


108
LINE CD →
4
104
POINT C
5
7
8
313°
BEGIN 7903 CD 30° 35'S 03° 59'E


LINE CD
TBD 7903 CD 10Mar 79
313°
312°


END 7903 CD 27°48'S 00° 39'E
TBD 388 7903 CD
11 Mar 79
POINT D
LINE CD

12 Mar 79
00
7905EF
TBD 388
20
4-8 second scale
4-8 second scale
11 march 1979
11 MARCH 1979
4-8 second scale
16
1
1
4 13
5
6
7
8
LINE EF →
133°
BEGIN 7905 EF 27°05'S 01°25'E
POINT E

LINE EF

POINT F

END 7905 EF 29° 14'S 03° 58'E

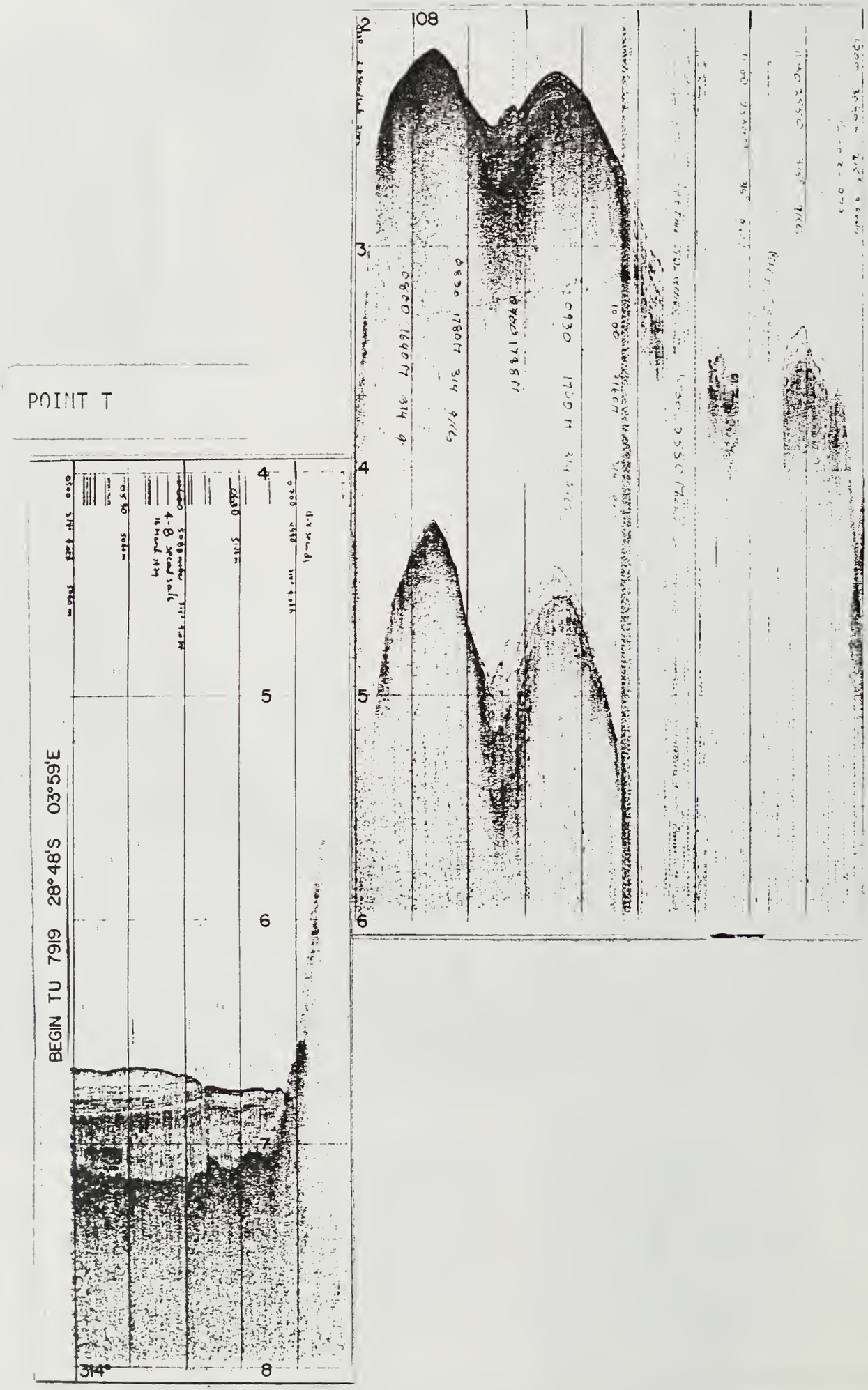
12 Mar. 79

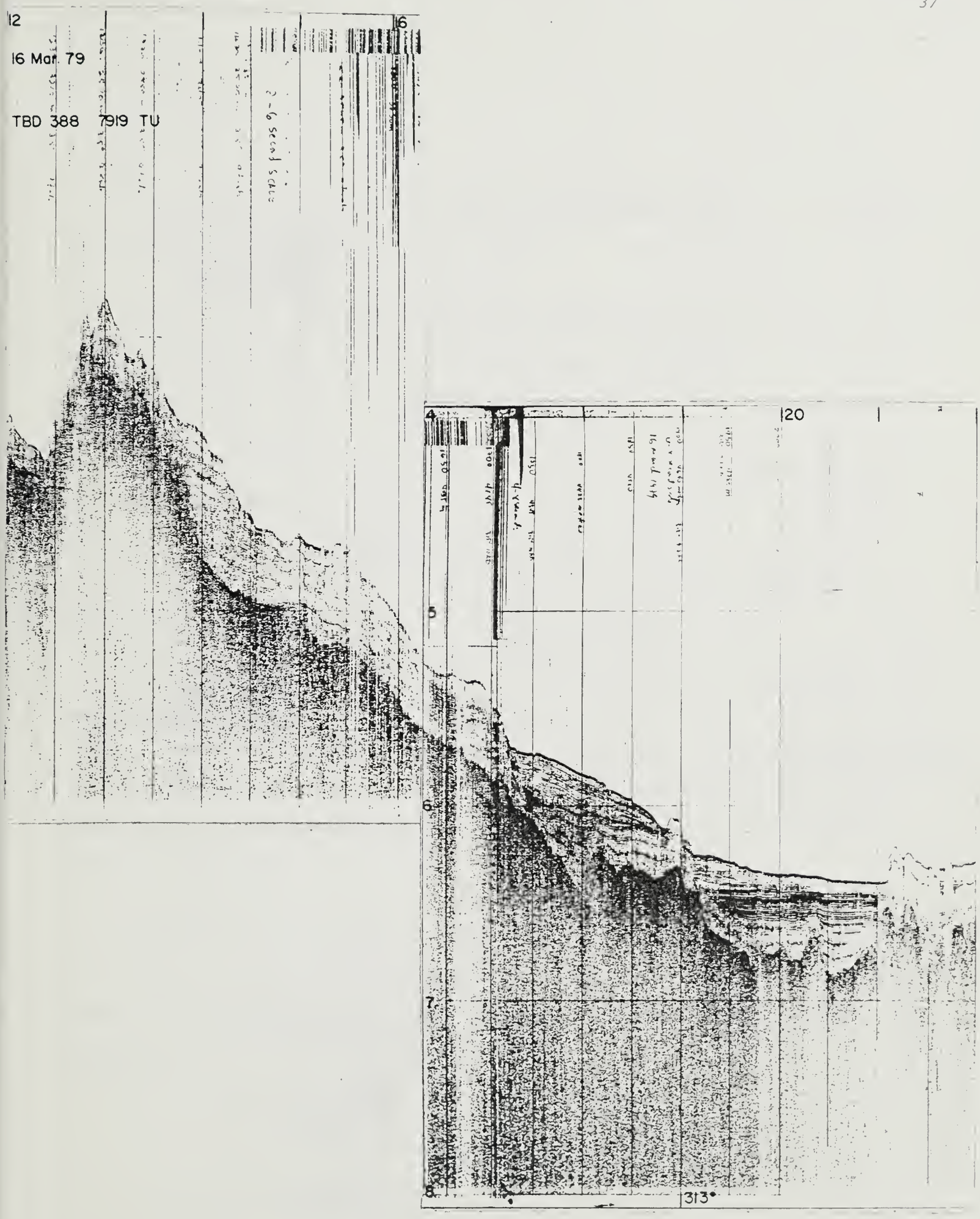
140°

133°

4-8 second scale

4-8 second scale


POINT T
BEGIN TU 7919 28°48'S 03°59'E
LINE TU



← LINE TU →

POINT U

END TU 7919 25° 45'S 00° 38'E

108

4 5 6 7 8

320°

105

6 7 8

312°

100

16 17 Mar. 79

TBD 388 7919 TU

REFERENCES

BULLARD, E.C. and R.G. Mason, 1963. The magnetic field over the ocean. in The Sea, Vol. III (M.N. Hill, Ed.), Interscience, New York, 963 p.

CAIN, J.C., S. Hendricks, W.E. Daniels and D.C. Jensen, 1964. Computation of the main geomagnetic field from spherical harmonic expansions. Goddard Space Flight Center Publ., X-611-64-316, 47 p.

EWING, J.I. and G.B. Tirey, 1961. Seismic Profiler. J. Geophys. Res., Vol. 67, p. 2509-2527.

EWING, J.I. and R. Zaunere, 1964. Seismic profiling with a pneumatic sound source. J. Geophys. Res., Vol. 69 #22, p. 4913-4915.

GUIER, W.H., 1966. Satellite navigation using integral Doppler data, the AN/SRN-9 equipment. J. Geophys. Res., Vol. 71 #24, p. 5903.

HEIRTZLER, J.R., 1961. VEMA cruise 16, geomagnetic measurements. Technical Report #2, CU-3-61-Nonr-Geology, Lamont-Doherty Geological Observatory, Palisades, New York.

TALWANI, M., August 1969. A computer system for the reduction, storage and display of underway data acquired at sea. Technical Report #1, CU-1-69, N00014-67-A-0108-0004, Lamont-Doherty Geological Observatory, Palisades, New York, 348 p.

ACKNOWLEDGMENTS

We wish to thank Captain R.W. Young, the officers and crew of the R/V THOMAS B. DAVIE for their cooperation in gathering the data. We are grateful to Jack C. Engelbrecht of NRIO for his expertise in keeping the shipboard equipment functioning at all times. Portal Baker, Harry Watson-Smith and Dan LeCordeur assisted in gathering the data collected in this report.

The South African National Committee for Oceanographic Research provided financial assistance to operate the research vessel.

COLUMBIA LIBRARIES OFFSITE
CU90641760