23. UNDERWAY GEOPHYSICAL DATA: NAVIGATION, BATHYMETRY, MAGNETICS, AND SEISMIC PROFILES

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INTRODUCTION AND METHODS

The underway data collected on Leg 33 includes magnetic, bathymetric, and seismic profiles and navigational records. Much of the material presented in this chapter was compiled from shipboard records and processed by S. Smith, U. Albright, B. Long, L. Bunch, and G. Psaropolus of The Underway Data Processing Group, Scripps Institution of Oceanography Geological Data Center (for information on the availability and reproduction costs of these data, contact the Scientific Information Facility, Deep Sea Drilling Project, S10, La Jolla, Calif. 92037). The recording of the basic data aboard *Glomar Challenger* was done under the supervision of the Laboratory Officer for Leg 33, Robert Iuliucci.

Methods used are outlined below:

Navigation: Satellite fixes and course and speed changes were encoded aboard *Glomar Challenger* from data given in the underway geophysical log. The data were keypunched on shore, and put through a navigation smoothing program, edited on the basis of reasonable ship and drift velocities, and a deck of corrected navigation points punched out for later merging in the depth and magnetic data. Table 1 includes time, position, satellite fix and drift velocity data, and course and speed changes. The ship's track and time ticks to which the seismic profiles (see Figure 2a-dd) are keyed are shown in Figure 1 (in pocket at back of volume), a bathymetric chart of the region traversed during Leg 33.

Magnetics: The magnetics (in gammas), scaled from analog records produced by a Varian proton-precession magnetometer towed 200-300 meters behind the ship, were recorded at sea in the underway geophysical logbook at 5-min intervals. These data were keypunched on shore, put through a profile program, and edited by comparison to the original analog records. Available from the Scientific Information Facility are plots of magnetic anomaly profiles along the ship's track shown in Figure 1, from values retrieved at approximately 1 mile spacing; the regional field was removed using the 1965 International Geomagnetic Reference Field. In this chapter, the magnetic data are shown as profiles keyed to the navigation, depth, and seismic profile records in Figure 3a-g.

Depth: The depths scaled from the fathograms made on a Gifft 12-kHz PDR calibrated to an 800 fathom/sec sound velocity (1.463 km/sec) were recorded at sea in the underway geophysical logbook at 5-min intervals. The depths were keypunched on shore and edited in the same fashion as the magnetics data. The bathymetric profiles so generated are shown in Figure 3a-g below the magnetic profiles. Available from the Scientific Information Facility are depth plots, in fathoms (using an assumed 800 fathom/sec sound velocity) at approximately 1 mile spacing, plotted at 4″/degree with standard U.S. Navy Oceanographic Office BC series boundaries.

Seismic profiles: The energy sources used were 2 Bolt 600A airguns, of 30 and 40 in^3. Returns were recorded on 2 EDO Western Model 333 recorders. The number 1 EDO was kept on 10-sec sweep, with the band pass filter generally set for a 160-320 Hz range; occasionally, the 80-160 Hz or 40-160 Hz band was recorded. On these profiles (see Figure 2a-dd), which are photographs of the original records, are shown the vertical scale in seconds of two-way travel time, local time, and the ship's course and speed; drill sites are also indicated. Each profile photograph has a roll and number that is keyed to the ship's track on Figure 1 and the magnetic and bathymetric profiles shown on Figure 3a-g. The number 2 EDO was set for a 4-sec sweep with a 2-6 sec trigger delay deepending on the water depth; a 160-320 Hz band pass setting was generally used. These 4-sec sweep records, annotated in terms of drill-site stratigraphy, acoustistratigraphy, physiography, and structure are shown as Figure 4a-f.

Sonobuoy runs were made at the various sites. See the individual Site Reports for methods and results.

RESULTS AND DISCUSSION

Honolulu to Site 314 (Figure 4a)

After leaving Honolulu *Glomar Challenger* steamed west-southwest over the probable distal southern edge of a turbidite fan of Kaula-Kauai Island provenance (0000 4 November 1973). These sediments appear to be ponded against the slightly higher standing, topographically rougher northwest end of the Hawaiian Arch. Records obtained on Leg 17 (Raff, 1973; profiles 32, 33, and 34) show how the turbidites have smoothed over the rougher basement topography. The northeastern end of the Hawaiian Arch, which seems to be interrupted by an extension of the Molokai Fracture Zone (Figure 1), shows rough topography (0000 4 November 1973 to ~1800 4 November 1973). Locally 0.1-0.5 sec of an upper transparent layer lies over possible older sedimentary sections represented by a vague reflector ~0.1-0.2 sec thick (~1100 4 November 1973). Bottom water, flowing east towards the Hawaiian Islands through passes in the Line Islands south of Horizon Guyot (Normark and Spiess, in press), may be eroding the bottom sediments. At 0000 5 November 1973 we passed ~105 n mi north-northwest of Site 68

TABLE 1
Navigation Data, Leg 33

DA	MO	YR	Time	Latitude	Longitude	Dist.	Actual Speed	Actual Course	Drift Speed	Drift Hed.	Dr Speed	Dr Course	Comment	Drift Qlty.	Drift Dist.	Drift Time	No.
3	11	1973	0430	21°16.2′	-157°51.0′	0.0	8.1	244	0.4	71	8.5	244	DR	0.00	0.0	0.0	3
3	11	1973	500	21°14.4′	-157°54.9′	4.1	8.6	247	0.4	321	8.5	244	DR	0.00	0.2	0.5	5
3	11	1973	544	21°11.9′	-158° 1.1′	10.4	9.0	244	0.5	248	8.5	244	SATL	0.00	0.3	0.7	7
3	11	1973	716	21° 5.9′	-158°14.4′	24.1	9.2	244	0.7	250	8.5	244	SATL	1.50	0.8	1.5	9
3	11	1973	830	21° 1.0′	-158°25.4′	35.5	9.7	246	1.3	257	8.5	244	SATL	1.00	0.9	1.2	11
3	11	1973	9 6	20°58.6′	-158°31.1′	41.3	9.5	242	1.1	226	8.5	244	SATL	1.00	0.8	0.6	13
3	11	1973	1016	20°53.4′	-158°41.6′	52.4	9.3	241	0.9	212	8.5	244	SATL	0.50	1.3	1.2	15
3	11	1973	1152	20°46.2′	-158°55.5′	67.3	8.9	244	0.4	235	8.5	244	SATL	1.50	1.5	1.6	17
3	11	1973	12 3	20°45.5′	-158°57.1′	68.9	10.4	244	0.4	235	10.0	244	C/S				18
3	11	1973	13 0	20°41.1′	-159° 6.5′	78.8	10.4	247	0.4	235	10.0	247	C/C				19
3	11	1973	16 0	20°28.7′	-159°37.0′	109.9	10.4	243	0.4	235	10.0	243	C/C				20
3	11	1973	17 2	20°23.8′	-159°47.2′	120.7	10.2	243	0.2	233	10.0	243	SATL	0.00	2.0	5.2	22
3	11	1973	1846	20°15.7′	-160° 4.0′	138.4	9.7	243	0.3	50	10.0	243	SATL	1.50	0.4	1.7	24
3	11	1973	1952	20°10.9′	-160°14.2′	149.1	10.4	250	1.3	318	10.0	243	SATL	0.50	0.3	1.1	26
3	11	1973	2022	20° 9.1′	-160°19.4′	154.3	10.0	245	0.3	334	10.0	243	SATL	1.00	0.7	0.5	28
3	11	1973	2138	20° 3.7′	-160°31.6′	166.9	10.2	244	0.3	288	10.0	243	SATL	0.50	0.4	1.3	30
3	11	1973	22 0	20° 2.1′	-160°35.2′	170.7	9.7	244	0.3	288	9.5	243	C/S				31
3	11	1973	2330	19°55.8′	-160°49.2′	185.3	9.7	242	0.3	288	9.5	241	C/C				32
4	11	1973	0 0	19°53.5′	-160°53.8′	190.2	9.7	242	0.3	288	9.5	241					33
4	11	1973	128	19°46.9′	-161° 7.2′	204.4	9.6	244	0.6	320	9.5	241	SATL	0.00	1.3	3.8	35
4	11	1973	2 0	19°44.7′	-161°12.1′	209.5	10.1	244	0.6	320	10.0	241	C/S				36
4	11	1973	216	19°43.5′	-161°14.7′	212.2	9.3	239	0.8	88	10.0	241	SATL	1.00	0.5	0.8	38
4	11	1973	358	19°35.3′	-161°29.1′	288.1	9.8	238	0.5	133	10.0	241	SATL	1.50	1.4	1.7	40
4	11	1973	431	19°32.4′	-161°34.0′	233.5	9.8	241	0.5	133	10.0	244	C/C				41
4	11	1973	8 6	19°15.4′	-162° 6.6′	268.7	10.1	244	0.1	202	10.0	244	SATL	1.50	2.3	4.1	43
4	11	1973	9 0	19°11.4′	-162°15.2′	277.7	10.1	247	0.1	202	10.0	247	C/C				44
4	11	1973	924	19° 9.8′	-162°19.1′	281.7	9.9	246	0.3	127	10.0	247	SATL	1.50	0.1	1.3	46
4	11	1973	11 6	19° 2.9′	-162°35.3′	298.5	10.0	248	0.1	359	10.0	247	SATL	0.50	0.5	1.7	48
4	11	1973	1252	18°56.2′	-162°52.5′	316.1	9.7	245	0.5	125	10.0	247	SATL	0.25	0.3	1.8	50
4	11	1973	18 0	18°34.7′	-163°40.2′	366.1	9.4	243	0.9	118	10.0	247	SATL	1.50	2.6	5.1	52
4	11	1973	1915	18°29.3′	-163°51.3′	377.9	9.4	245	0.9	118	10.0	249	C/C				53
4	11	1973	1928	18°28.4′	-163°53.2′	380.0	9.9	245	0.8	146	10.0	249	SATL	1.50	1.4	1.5	55
4	11	1973	2046	18°22.9′	-164° 5.4′	392.8	9.3	245	1.0	113	10.0	249	SATL	1.50	1.1	1.3	57
4	11	1973	2232	18°15.9′	-164°21.1′	409.3	9.3	247	0.8	91	10.0	249	SATL	0.50	1.8	1.8	59
4	11	1973	2252	18°14.7′	-164°24.1′	412.4	9.5	247	0.6	106	10.0	249	SATL	1.50	0.3	0.3	61
5	11	1973	0 0	18°10.4′	-164°34.6′	423.2	9.5	247	0.6	106	10.0	249					62
5	11	1973	036	18° 8.2′	-164°40.1′	428.9	9.4	249	0.6	71	10.0	249	SATL	1.00	1.1	1.7	64
5	11	1973	258	18° 0.2′	-165° 1.9′	451.1	9.9	251	0.4	357	10.0	249	SATL	0.50	1.5	2.4	66
5	11	1973	4 0	17°56.9′	-165°12.1′	461.3	9.9	247	0.4	357	10.0	245	C/C				67
5	11	1973	544	17°50.2′	-165°28.6′	478.4	9.2	246	0.8	59	10.0	245	SATL	1.50	1.1	2.8	69
5	11	1973	640	17°46.6′	-165°36.8′	487.0	9.2	244	0.8	59	10.0	244	C/C				70
5	11	1973	712	17°44.5′	-165°41.5′	492.0	10.2	244	0.2	262	10.0	244	SATL	0.50	1.2	1.5	72
5	11	1973	1018	17°30.8′	-166°11.5′	523.7	10.0	243	0.3	164	10.0	244	SATL	1.50	0.8	3.1	74
5	11	1973	1045	17°28.7′	-166°15.7′	528.2	10.1	242	0.3	164	10.0	243	C/C				75
5	11	1973	12 4	17°22.4′	-166°27.9′	541.4	10.5	242	0.5	216	10.0	243	SATL	0.50	0.5	1.8	77
5	11	1973	1430	17°10.3′	-166°51.4′	566.9	10.1	242	0.2	184	10.0	243	SATL	1.00	1.3	2.4	79
5	11	1973	1714	16°57.4′	-167°16.9′	594.5	10.1	243	0.2	213	10.0	243	SATL	0.00	0.5	2.7	81
5	11	1973	1740	16°55.4′	-167°21.0′	598.9	10.1	245	0.2	213	10.0	246	C/C				82
5	11	1973	1838	16°51.3′	-167°30.3′	608.7	10.3	246	0.3	259	10.0	246	SATL	0.00	0.3	1.4	84
5	11	1973	1912	16°49.0′	-167°35.9′	614.5	10.3	245	0.3	259	10.0	244	C/C				85
5	11	1973	20 0	16°45.4′	-167°43.7′	622.8	10.9	243	0.9	229	10.0	244	SATL	0.00	0.5	1.4	87
5	11	1973	2142	16°36.9′	-168° 0.9′	641.4	9.8	240	0.6	138	10.0	244	SATL	0.50	1.6	1.7	89
5	11	1973	2250	16°31.4′	-168°11.0′	652.5	9.8	242	0.6	138	10.0	246	C/C				90
5	11	1973	2348	16°27.0′	-168°19.8′	662.0	10.3	246	0.3	249	10.0	246	SATL	1.50	1.4	2.1	92
6	11	1973	0 0	16°26.2′	-168°21.8′	664.1	10.3	246	0.3	249	10.0	246					93
6	11	1973	025	16°24.4′	-168°25.8′	668.4	10.3	252	0.3	249	10.0	252	C/C				94
6	11	1973	115	16°21.8′	-168°34.4′	677.0	10.3	246	0.3	249	10.0	246	C/C				95
6	11	1973	136	16°20.3′	-168°37.8′	680.6	10.3	249	0.6	310	10.0	246	SATL	0.50	0.6	1.8	97
6	11	1973	2 4	16°18.6′	-168°42.4′	685.3	9.5	149	0.6	310	10.0	248	C/C				98
6	11	1973	2 9	16°17.9′	-168°42.0′	686.1	8.3	149	0.6	310	8.8	148	C/S				99
6	11	1973	5 2	15°57.4′	-168°29.3′	710.0	8.9	147	0.2	84	8.8	148	SATL	0.25	2.0	3.4	101
6	11	1973	526	15°54.4′	-168°27.3′	713.5	6.5	146	0.2	84	6.4	148	C/S				102
6	11	1973	549	15°52.4′	-168°25.8′	716.0	9.0	318	0.2	84	9.1	317	C/CS				103
6	11	1973	555	15°53.0′	-168°26.5′	716.9	6.9	318	0.2	84	7.0	317	C/S				104
6	11	1973	558	15°53.3′	-168°26.7′	717.3	6.0	319	0.2	84	6.1	317	C/S				105
6	11	1973	6 0	15°53.4′	-168°26.8′	717.5	6.9	318	0.2	84	7.0	317	C/S				106
6	11	1973	616	15°54.8′	-168°28.1′	719.3	7.0	317	0.0	0	7.0	317	S314	1.50	0.3	1.2	108
6	11	1973	616	15°54.8′	-168°28.1′	719.3	0.0	0	0.0	0	0.0	500	STOP				109
8	11	1973	142	15°54.8′	-168°28.1′	719.3	1.1	293	1.1	293	0.0	500	DEP	1.50	0.1	43.4	111
8	11	1973	142	15°54.8′	-168°28.1′	719.3	7.9	144	1.1	293	8.8	140	U/W				112
8	11	1973	145	15°54.5′	-168°27.9′	719.7	8.4	139	1.1	293	9.4	136	C/CS				113
8	11	1973	250	15°47.6′	-168°21.6′	728.8	8.1	139	1.1	293	9.1	136	C/S				114
8	11	1973	255	15°47.1′	-168°21.1′	729.5	8.4	139	1.1	293	9.4	136	C/S				115
8	11	1973	310	15°45.5′	-168°19.7′	731.6	7.8	140	1.7	297	9.4	136	SATL	0.50	1.6	1.5	117
8	11	1973	510	15°33.5′	-168° 9.3′	747.3	8.4	138	1.0	298	9.4	136	SATL	0.50	3.5	2.0	119
8	11	1973	8 0	15°15.7′	-167°52.8′	771.1	8.1	139	1.3	299	9.4	136	SATL	1.00	3.0	2.8	121
8	11	1973	1126	14°54.7′	-167°33.8′	799.0	8.2	141	1.4	283	9.4	136	SATL	1.00	4.7	3.4	123
8	11	1973	1626	14°22.5′	-167° 7.3′	840.2	8.0	141	1.6	289	9.4	136	SATL	1.00	7.2	5.0	125
8	11	1973	1820	14°10.6′	-166°57.4′	855.5	7.6	140	1.9	298	9.4	136	SATL	1.50	3.0	1.9	127
8	11	1973	1914	14° 5.3′	-166°52.9′	862.3	7.6	137	1.9	298	9.4	133	C/C				128
8	11	1973	1922	14° 4.6′	-166°52.2′	863.3	8.0	141	1.9	275	9.4	133	SATL	0.50	2.0	1.0	130
8	11	1973	2012	13°59.4′	-166°47.9′	870.0	7.7	137	1.9	294	9.4	133	SATL	0.25	1.6	0.8	132
8	11	1973	2246	13°44.9′	-166°34.2′	889.6	7.9	137	1.6	293	9.4	133	SATL	0.25	4.8	2.6	134

TABLE 1 – *Continued*

DA	MO	YR	Time	Latitude	Longitude	Dist.	Actual Speed	Actual Course	Drift Speed	Drift Hed.	Dr Speed	Dr Course	Comment	Qlty.	Drift Dist.	Drift Time	No.
8	11	1973	1922	14° 4.6′	-166°52.2′	863.3	8.0	141	1.9	275	9.4	133	SATL	0.50	2.0	1.0	130
8	11	1973	2012	13°59.4′	-166°47.9′	870.0	7.7	137	1.9	294	9.4	133	SATL	0.25	1.6	0.8	132
8	11	1973	2246	13°44.9′	-166°34.2′	889.6	7.9	137	1.6	293	9.4	133	SATL	0.25	4.8	2.6	134
8	11	1973	2312	13°42.4′	-166°31.8′	893.1	7.9	137	1.7	293	9.4	133	SATL	1.00	0.7	0.4	136
9	11	1973	0 0	13°37.8′	-166°27.4′	899.4	7.9	137	1.7	293	9.4	133					137
9	11	1973	056	13°32.4′	-166°22.3′	906.7	8.0	138	1.6	285	9.4	133	SATL	1.50	3.0	1.7	139
9	11	1973	324	13°17.6′	-166° 8.7′	926.5	7.9	139	1.8	285	9.4	133	SATL	0.50	3.9	2.5	141
9	11	1973	7 6	12°55.6′	-165°49.0′	955.7	7.9	137	1.6	294	9.4	133	SATL	0.50	6.5	3.7	143
9	11	1973	720	12°54.3′	-165°47.7′	957.6	7.3	137	1.6	294	8.8	133	C/S				144
9	11	1973	840	12°47.1′	-165°40.9′	967.3	7.8	138	1.2	276	8.8	133	SATL	0.50	2.5	1.6	146
9	11	1973	930	12°42.2′	-165°36.5′	973.8	7.9	142	1.2	276	8.8	136	C/C				147
9	11	1973	1038	12°35.2′	-165°30.8′	982.8	8.4	140	0.7	260	8.8	136	SATL	0.25	2.5	2.0	149
9	11	1973	13 4	12°19.5′	-165°17.2′	1003.3	8.9	136	0.2	116	8.8	136	SATL	1.00	1.7	2.4	151
9	11	1973	1450	12° 8.2′	-165° 5.9′	1019.1	8.8	137	0.2	215	8.8	136	SATL	1.50	0.3	1.8	153
9	11	1973	1730	11°50.9′	-164°49.5′	1042.7	9.1	137	0.2	215	9.1	136	C/S				154
9	11	1973	1732	11°50.7′	-164°49.3′	1043.0	9.5	138	0.5	185	9.1	136	SATL	1.00	0.5	2.7	156
9	11	1973	1830	11°43.8′	-164°43.1′	1052.2	9.5	141	0.5	185	9.1	139	C/C				157
9	11	1973	1832	11°43.6′	-164°42.9′	1052.5	9.2	144	0.7	220	9.1	139	SATL	0.00	0.6	1.0	159
9	11	1973	1918	11°37.9′	-164°38.6′	1059.6	9.0	142	0.4	274	9.1	139	SATL	1.00	0.6	0.8	161
9	11	1973	2016	11°31.1′	-164°33.1′	1068.2	8.9	143	0.7	248	9.1	139	SATL	1.00	0.5	1.0	163
9	11	1973	2050	11°27.1′	-164°30.0′	1073.3	6.9	144	0.7	248	7.0	139	C/S				164
9	11	1973	2055	11°26.6′	-164°29.7′	1073.8	5.9	145	0.7	248	6.1	139	C/S				165
9	11	1973	2150	11°22.1′	-164°26.5′	1079.3	7.7	144	0.7	248	7.9	139	C/S				166
9	11	1973	2155	11°21.6′	-164°26.1′	1079.9	7.5	144	0.7	248	7.7	139	C/S				167
9	11	1973	2222	11°18.9′	-164°24.1′	1083.3	7.2	148	1.3	258	7.7	139	SATL	0.50	1.5	2.1	169
9	11	1973	2245	11°16.6′	-164°22.6′	1086.0	6.5	149	1.3	258	7.0	139	C/S				170
9	11	1973	2247	11°16.4′	-164°22.5′	1086.3	8.8	146	1.3	258	9.4	139	C/S				171
10	11	1973	0 0	11° 7.4′	-164°16.4′	1097.0	8.8	146	1.3	258	9.4	139					172
10	11	1973	0 6	11° 6.7′	-164°15.9′	1097.9	9.1	143	0.7	253	9.4	139	SATL	1.00	2.3	1.7	174
10	11	1973	040	11° 2.6′	-164°12.7′	1103.1	9.1	139	0.7	253	9.4	135	C/C				175
10	11	1973	129	10°57.0′	-164° 7.8′	1110.5	7.3	140	0.7	253	7.6	135	C/S				176
10	11	1973	236	10°50.7′	-164° 2.5′	1118.6	7.8	142	0.9	218	7.6	135	SATL	0.50	1.9	2.5	178
10	11	1973	315	10°46.7′	-163°59.3′	1123.7	4.2	148	0.9	218	4.0	135	C/S				179
10	11	1973	335	10°45.5′	-163°58.6′	1125.1	4.2	145	0.9	218	4.0	132	C/C				180
10	11	1973	345	10°45.0′	-163°58.1′	1125.8	7.7	139	0.9	218	7.6	132	C/S				181
10	11	1973	436	10°40.0′	-163°53.8′	1132.4	5.9	141	0.9	218	5.8	132	C/S				182
10	11	1973	449	10°39.0′	-163°52.9′	1133.6	7.7	139	0.9	218	7.6	132	C/S				183
10	11	1973	516	10°36.4′	-163°50.6′	1137.1	8.2	137	1.0	185	7.6	132	SATL	1.00	2.5	2.7	185
10	11	1973	7 2	10°25.7′	-163°40.6′	1151.7	8.1	137	0.9	189	7.6	132	SATL	1.00	1.8	1.8	187
10	11	1973	930	10°10.9′	-163°26.8′	1171.7	8.2	138	1.1	189	7.6	132	SATL	1.50	2.3	2.5	189
10	11	1973	1136	9°58.0′	-163°15.1′	1189.0	8.3	140	1.3	193	7.6	132	SATL	0.50	2.3	2.1	191
10	11	1973	12 6	9°54.8′	-163°12.4′	1193.2	8.4	146	1.3	193	7.6	139	C/C				192
10	11	1973	1230	9°52.0′	-163°10.5′	1196.5	8.3	140	1.3	193	7.6	132	C/C				193
10	11	1973	1410	9°41.5′	-163° 1.4′	1210.4	8.4	135	0.9	160	7.6	132	SATL	1.50	3.3	2.6	195
10	11	1973	1830	9°15.9′	-162°35.3′	1246.7	8.5	126	1.2	82	7.6	132	SATL	1.00	3.8	4.3	197
10	11	1973	1920	9°11.8′	-162°29.5′	1253.7	8.3	128	0.8	92	7.6	132	SATL	0.50	1.1	0.8	199
10	11	1973	2010	9° 7.5′	-162°24.0′	1260.6	8.2	132	0.8	92	7.6	136	C/C				200
10	11	1973	2250	8°52.9′	-162° 7.5′	1282.5	8.3	130	1.1	85	7.6	136	SATL	0.25	3.0	3.5	202
10	11	1973	23 3	8°51.7′	-162° 6.1′	1284.3	8.3	134	1.1	85	7.6	140	C/C				203
10	11	1973	2318	8°50.3′	-162° 4.6′	1286.4	8.2	134	1.0	85	7.6	140	SATL	0.25	0.5	0.5	205
11	11	1973	0 0	8°46.3′	-162° 0.4′	1292.1	8.2	134	1.0	85	7.6	140					206
11	11	1973	1 8	8°39.8′	-161°53.7′	1301.4	8.3	132	1.3	76	7.6	140	SATL	0.50	1.9	1.8	208
11	11	1973	132	8°37.6′	-161°51.2′	1304.7	8.0	130	1.4	60	7.6	140	SATL	1.50	0.6	0.4	210
11	11	1973	148	8°36.2′	-161°49.6′	1306.9	7.8	138	1.4	60	7.6	148	C/C				211
11	11	1973	428	8°20.9′	-161°35.4′	1327.6	8.1	138	1.4	74	7.6	148	SATL	0.25	4.2	2.9	213
11	11	1973	842	7°55.3′	-161°12.4′	1361.9	8.3	139	1.4	83	7.6	148	SATL	0.00	6.0	4.2	215
11	11	1973	920	7°51.3′	-161° 8.9′	1367.2	8.2	143	1.4	83	7.6	152	C/C				216
11	11	1973	1050	7°41.5′	-161° 1.4′	1379.5	8.2	148	0.8	112	7.6	152	SATL	1.00	3.1	2.1	218
11	11	1973	1236	7°29.1′	-160°53.7′	1394.0	7.8	142	1.3	64	7.6	152	SATL	1.00	1.5	1.8	220
11	11	1973	1351	7°21.4′	-160°47.7′	1403.7	7.9	136	1.3	64	7.6	145	C/C				221
11	11	1973	1742	6°59.6′	-160°26.3′	1434.2	8.1	134	1.6	68	7.6	145	SATL	1.00	6.6	5.1	223
11	11	1973	18 7	6°57.2′	-160°23.8′	1437.6	8.0	137	1.6	68	7.6	148	C/C				224
11	11	1973	1828	6°55.2′	-160°21.9′	1440.4	7.0	136	1.7	31	7.6	148	SATL	0.25	1.3	0.8	226
11	11	1973	1848	6°53.5′	-160°20.1′	1442.7	5.8	133	1.7	31	6.4	148	C/S				227
11	11	1973	1858	6°52.9′	-160°19.5′	1443.7	7.0	136	1.7	31	7.6	148	C/S				228
11	11	1973	1930	6°50.2′	-160°16.9′	1447.5	7.5	134	1.8	49	7.6	148	SATL	1.00	1.8	1.0	230
11	11	1973	20 0	6°47.6′	-160°14.2′	1451.2	7.4	138	1.8	49	7.6	152	C/C				231
11	11	1973	2156	6°36.9′	-160° 4.6′	1465.5	7.2	139	1.7	43	7.6	152	SATL	0.50	4.4	2.4	233
11	11	1973	2230	6°33.8′	-160° 1.9′	1469.6	7.2	138	1.8	43	7.6	152	SATL	1.50	1.0	0.6	235
12	11	1973	0 0	6°25.7′	-159°54.6′	1480.4	7.2	138	1.8	43	7.6	152					236
12	11	1973	014	6°24.5′	-159°53.5′	1482.1	6.7	144	1.4	15	7.6	152	SATL	1.50	3.2	1.7	238
12	11	1973	048	6°21.4′	-159°51.3′	1485.9	6.5	159	1.4	15	7.6	165	C/C				239
12	11	1973	214	6°12.8′	-159°47.9′	1495.2	6.3	165	1.3	345	7.6	165	SATL	0.50	2.8	2.0	241
12	11	1973	235	6°10.7′	-159°47.3′	1497.4	6.4	153	1.3	345	7.6	155	C/C				242
12	11	1973	358	6° 2.8′	-159°43.3′	1506.2	6.3	154	1.3	339	7.6	155	SATL	1.00	2.2	1.7	244
12	11	1973	522	5°54.8′	-159°39.4′	1515.1	6.5	157	1.2	324	7.6	155	SATL	1.50	1.8	1.4	246
12	11	1973	555	5°51.5′	-159°38.0′	1518.6	6.4	149	1.2	324	7.6	148	C/C				247
12	11	1973	6 4	5°50.7′	-159°37.5′	1519.6	6.5	151	1.2	313	7.6	148	SATL	0.50	0.9	0.7	249
12	11	1973	712	5°44.3′	-159°33.9′	1526.9	6.8	151	0.9	303	7.6	148	SATL	1.00	1.4	1.1	251
12	11	1973	745	5°41.0′	-159°32.1′	1530.7	6.8	148	0.9	303	7.6	145	C/C				252
12	11	1973	936	5°30.4′	-159°25.4′	1543.2	7.1	155	1.4	263	7.6	145	SATL	0.25	2.2	2.4	254
12	11	1973	10 6	5°27.2′	-159°23.9′	1546.8	7.0	149	0.8	287	7.6	145	SATL	0.00	0.7	0.5	256

TABLE 1 – *Continued*

DA	MO	YR	Time	Latitude	Longitude	Dist.	Actual Speed	Actual Course	Drift Speed	Drift Hed.	Dr Speed	Dr Course	Comment	Qlty.	Drift Dist.	Drift Time	No.
12	11	1973	1018	5°26.0′	-159°23.2′	1548.2	6.9	133	0.8	287	7.6	130	C/C				257
12	11	1973	1148	5°19.0′	-159°15.5′	1558.5	6.6	138	1.4	270	7.6	130	SATL	1.50	1.4	1.7	259
12	11	1973	1217	5°16.6′	-159°13.3′	1561.7	6.7	143	1.4	270	7.6	135	C/C				260
12	11	1973	1526	4°59.7′	-159° 0.7′	1582.8	6.8	146	1.6	259	7.6	135	SATL	0.50	5.1	3.6	262
12	11	1973	16 0	4°56.5′	-158°58.5′	1586.7	6.6	137	1.6	259	7.6	127	C/C				263
12	11	1973	1654	4°52.1′	-158°54.5′	1592.6	6.8	137	1.5	256	7.6	127	SATL	1.00	2.4	1.5	265
12	11	1973	1840	4°43.4′	-158°46.3′	1604.6	6.6	130	1.1	287	7.6	127	SATL	1.00	2.7	1.8	267
12	11	1973	1918	4°40.7′	-158°43.1′	1608.7	6.6	130	1.0	288	7.6	127	SATL	0.50	0.7	0.6	269
12	11	1973	21 4	4°33.2′	-158°34.1′	1620.4	6.7	129	0.9	289	7.6	127	SATL	0.25	1.9	1.8	271
12	11	1973	2127	4°31.6′	-158°32.1′	1623.0	6.7	134	0.9	289	7.6	131	C/C				272
12	11	1973	2142	4°30.4′	-158°30.9′	1624.7	6.8	135	1.0	282	7.6	131	SATL	0.25	0.7	0.6	274
12	11	1973	2147	4°30.0′	-158°30.5′	1625.3	6.8	138	1.0	282	7.6	134	C/C				275
12	11	1973	2251	4°24.6′	-158°25.7′	1632.5	6.8	137	1.0	282	7.6	133	C/C				276
12	11	1973	2328	4°21.5′	-158°22.8′	1636.7	6.8	144	1.6	259	7.6	133	SATL	1.00	1.7	1.8	278
13	11	1973	0 0	4°18.6′	-158°20.6′	1640.3	6.8	144	1.6	259	7.6	133					279
13	11	1973	028	4°16.0′	-158°18.8′	1643.5	9.1	247	1.6	259	7.6	245	C/C				280
13	11	1973	1 6	4°13.8′	-158°24.1′	1649.3	9.5	245	1.9	243	7.6	245	SATL	1.00	2.6	1.6	282
13	11	1973	145	4°11.2′	-158°29.7′	1655.5	8.0	245	1.9	243	6.1	245	C/S				283
13	11	1973	2 0	4°10.3′	-158°31.5′	1657.5	6.1	245	0.0	0	6.1	245	S315	1.50	1.8	0.9	285
13	11	1973	2 0	4°10.3′	-158°31.5′	1657.5	0.0	0	0.0	0	0.0	500	STOP				286
19	11	1973	15 2	4°10.3′	-158°31.5′	1657.5	2.0	283	2.0	283	0.0	500	DEP	1.50	0.1	157.0	288
19	11	1973	15 2	4°10.3′	-158°31.5′	1657.5	9.7	257	2.0	283	7.9	250	U/W				289
19	11	1973	15 5	4°10.2′	-158°32.0′	1657.9	8.8	257	2.0	283	7.0	250	C/S				290
19	11	1973	1634	4° 7.3′	-158°44.7′	1671.0	8.6	257	1.9	287	7.0	250	SATL	1.00	3.2	1.5	292
19	11	1973	1840	4° 3.4′	-159° 2.3′	1688.9	9.1	261	2.6	292	7.0	250	SATL	0.50	4.0	2.1	294
19	11	1973	19 6	4° 2.8′	-159° 6.2′	1692.9	9.2	264	2.6	292	7.0	254	C/C				295
19	11	1973	1944	4° 2.2′	-159°12.0′	1698.7	9.1	261	2.6	292	7.0	250	C/C				296
19	11	1973	1950	4° 2.1′	-159°12.9′	1699.6	6.2	267	2.6	292	4.0	250	C/S				297
19	11	1973	1951	4° 2.1′	-159°13.0′	1699.7	6.1	263	2.6	292	4.0	245	C/C				298
19	11	1973	1954	4° 2.0′	-159°13.3′	1700.0	9.6	257	2.6	292	7.6	245	C/S				299
19	11	1973	2022	4° 1.0′	-159°17.7′	1704.5	9.4	253	2.6	292	7.6	240	C/C				300
19	11	1973	2024	4° 0.9′	-159°18.0′	1704.8	8.6	245	1.3	280	7.6	240	SATL	1.00	4.6	1.7	302
19	11	1973	2027	4° 0.7′	-159°18.4′	1705.3	9.8	245	1.3	280	8.8	240	C/S				303
19	11	1973	2034	4° 0.2′	-159°19.4′	1706.4	9.8	240	1.3	280	8.8	235	C/C				304
19	11	1973	2048	3°59.1′	-159°21.4′	1708.7	8.0	242	1.3	280	7.0	235	C/S				305
19	11	1973	2050	3°59.0′	-159°21.6′	1708.9	7.8	233	1.3	280	7.0	225	C/C				306
19	11	1973	21 3	3°58.0′	-159°23.0′	1710.6	6.5	225	1.3	280	5.8	215	C/CS				307
19	11	1973	21 7	3°57.7′	-159°23.3′	1711.1	6.4	221	1.3	280	5.8	210	C/C				308
19	11	1973	2120	3°56.6′	-159°24.2′	1712.4	5.9	202	1.3	280	5.8	190	C/C				309
19	11	1973	2145	3°54.3′	-159°25.2′	1714.9	1.3	280	1.3	280	0.0	500	STOP				310
19	11	1973	2347	3°54.8′	-159°27.7′	1717.5	5.5	183	1.3	280	5.8	170	U/W				311
19	11	1973	2356	3°53.9′	-159°27.8′	1718.3	5.3	172	1.3	280	5.8	160	C/C				312
20	11	1973	0 0	3°53.6′	-159°27.7′	1718.7	5.3	172	1.3	280	5.8	160					313
20	11	1973	0 5	3°53.2′	-159°27.7′	1719.1	6.5	170	1.3	280	7.0	160	C/S				314
20	11	1973	011	3°52.5′	-159°27.5′	1719.8	7.3	210	1.3	280	7.0	200	C/C				315
20	11	1973	225	3°38.3′	-159°35.7′	1736.2	8.2	209	1.3	280	7.9	200	C/S				316
20	11	1973	228	3°38.0′	-159°35.9′	1736.6	9.1	208	1.3	280	8.8	200	C/S				317
20	11	1973	3 1	3°33.5′	-159°38.3′	1741.6	9.0	202	1.3	280	8.8	194	C/C				318
20	11	1973	412	3°23.7′	-159°42.3′	1752.2	8.9	211	2.6	290	8.8	194	SATL	1.50	10.1	7.8	320
20	11	1973	452	3°18.6′	-159°45.3′	1758.2	8.3	197	2.6	290	8.8	180	C/C				321
20	11	1973	548	3°11.2′	-159°47.6′	1765.9	7.7	195	2.5	304	8.8	180	SATL	0.50	4.2	1.6	323
20	11	1973	8 6	2°54.1′	-159°52.3′	1783.6	7.3	196	2.7	311	8.8	180	SATL	1.00	5.7	2.3	325
20	11	1973	841	2°50.0′	-159°53.5′	1787.9	6.5	172	2.7	311	8.8	160	C/C				326
20	11	1973	1042	2°37.0′	-159°51.6′	1801.0	6.7	173	2.8	307	8.8	160	SATL	0.50	7.2	2.6	328
20	11	1973	1056	2°35.5′	-159°51.4′	1802.6	6.3	100	2.8	307	8.8	108	C/C				329
20	11	1973	1110	2°35.2′	-159°50.0′	1804.0	6.1	109	2.8	307	8.8	115	C/C				330
20	11	1973	1130	2°34.5′	-159°48.0′	1806.1	6.1	117	2.8	307	8.8	120	C/C				331
20	11	1973	1336	2°28.8′	-159°36.6′	1818.9	6.7	119	2.1	304	8.8	120	SATL	1.00	8.0	2.9	333
20	11	1973	1520	2°23.2′	-159°26.4′	1830.5	6.5	123	2.3	291	8.8	120	SATL	1.00	3.7	1.7	335
20	11	1973	1732	2°15.4′	-159°14.4′	1844.8	6.1	124	2.7	290	8.8	120	SATL	1.00	5.2	2.2	337
20	11	1973	19 2	2°10.2′	-159° 6.8′	1854.0	6.4	127	2.5	282	8.8	120	SATL	1.50	4.1	1.5	339
20	11	1973	20 6	2° 6.1′	-159° 1.3′	1860.8	6.3	106	2.5	282	8.8	105	C/C				340
20	11	1973	2122	2° 3.9′	-158°53.7′	1868.8	7.0	103	1.8	292	8.8	105	SATL	1.00	6.0	2.3	342
20	11	1973	2218	2° 2.4′	-158°47.3′	1875.3	6.8	108	2.0	274	8.8	105	SATL	0.50	1.7	0.9	344
20	11	1973	2323	2° 0.1′	-158°40.3′	1882.7	7.3	143	2.0	274	8.8	133	C/C				345
21	11	1973	0 0	1°56.5′	-158°37.5′	1887.3	7.3	143	2.0	274	8.8	133					346
21	11	1973	0 6	1°55.9′	-158°37.1′	1888.0	5.9	151	3.7	284	8.8	133	SATL	0.25	3.7	1.8	348
21	11	1973	138	1°48.0′	-158°32.7′	1897.0	5.7	146	3.7	284	8.8	130	C/C				349
21	11	1973	246	1°42.6′	-158°29.1′	1903.5	5.0	153	4.7	285	8.8	130	SATL	1.00	9.8	2.7	351
21	11	1973	315	1°40.5′	-158°28.0′	1905.9	4.7	145	4.7	285	8.8	125	C/C				352
21	11	1973	5 8	1°33.3′	-158°22.9′	1914.7	5.1	141	4.1	286	8.8	125	SATL	0.50	11.1	2.4	354
21	11	1973	550	1°30.5′	-158°20.6′	1918.3	4.9	132	4.1	286	8.8	120	C/C				355
21	11	1973	824	1°22.1′	-158°11.3′	1930.9	5.1	145	4.7	273	8.8	120	SATL	1.00	13.6	3.3	357
21	11	1973	954	1°15.9′	-158° 6.9′	1938.5	5.1	145	4.7	272	8.8	120	SATL	1.50	7.1	1.5	359
21	11	1973	1025	1°13.7′	-158° 5.4′	1941.1	5.0	142	4.7	272	8.8	118	C/C				360
21	11	1973	1140	1° 8.8′	-158° 1.5′	1947.4	5.0	140	4.5	274	8.8	118	SATL	0.50	8.3	1.8	362
21	11	1973	1410	0°59.2′	-157°53.4′	1960.0	5.2	137	4.2	275	8.8	118	SATL	1.50	11.4	2.5	364
21	11	1973	1644	0°49.6′	-157°44.3′	1973.2	5.4	136	4.0	273	8.8	118	SATL	1.50	10.9	2.6	366
21	11	1973	1810	0°44.0′	-157°38.9′	1981.0	5.2	136	4.2	275	8.8	118	SATL	0.50	5.8	1.4	368
21	11	1973	1848	0°41.6′	-157°36.6′	1984.3	5.4	136	4.0	273	8.8	118	SATL	0.25	2.7	0.6	370
21	11	1973	2034	0°34.7′	-157°29.9′	1993.9	5.8	139	3.9	267	8.8	118	SATL	1.00	7.1	1.8	372
21	11	1973	22 0	0°28.5′	-157°24.4′	2002.2	5.9	141	3.9	267	8.8	120	C/C				373

TABLE 1 – *Continued*

DA	MO	YR	Time	Latitude	Longitude	Dist.	Actual Speed	Actual Course	Drift Speed	Drift Hed.	Dr Speed	Dr Course	Comment	Qlty	Drift Dist.	Drift Time	No.
21	11	1973	2320	0°22.3′	-157°19.5′	2010.1	6.1	140	3.8	266	8.8	120	SATL	0.25	11.0	2.8	375
22	11	1973	0 0	0°19.2′	-157°16.9′	2014.1	6.1	140	3.8	266	8.8	120					376
22	11	1973	138	0°11.6′	-157°10.6′	2024.0	6.3	138	3.4	264	8.8	120	SATL	0.25	8.7	2.3	378
22	11	1973	420	0°-1.2′	-156°59.2′	2041.1	6.6	136	3.0	264	8.8	120	SATL	0.25	9.3	2.7	380
22	11	1973	443	0°-3.0′	-156°57.4′	2043.7	8.2	355	3.0	264	8.8	15	C/C				381
22	11	1973	557	0°-7.1′	-156°58.3′	2053.8	11.8	268	3.0	264	8.8	270	C/C				382
22	11	1973	6 6	0° 7.0′	-157° 0.1′	2055.6	10.6	266	1.9	248	8.8	270	SATL	0.50	5.4	1.8	384
22	11	1973	658	0° 6.4′	-157° 9.3′	2064.8	6.9	123	1.9	248	8.2	112	C/CS				385
22	11	1973	7 2	0° 6.1′	-157° 8.9′	2065.2	3.9	132	1.9	248	5.0	112	C/S				386
22	11	1973	7 8	0° 5.9′	-157° 8.6′	2065.6	3.5	117	1.9	248	5.0	100	C/C				387
22	11	1973	723	0° 5.5′	-157° 7.8′	2066.5	3.9	115	1.9	248	5.4	100	C/S				388
22	11	1973	725	0° 5.4′	-157° 7.7′	2066.6	5.4	100	0.0	0	5.4	100	S316	1.50	2.6	1.3	390
22	11	1973	725	0° 5.4′	-157° 7.7′	2066.6	0.0	0	0.0	0	0.0	500	STOP				391
27	11	1973	4 5	0° 5.4′	-157° 7.7′	2066.6	1.7	273	1.7	273	0.0	500	DEP	1.50	0.1	116.7	393
27	11	1973	4 5	0° 5.4′	-157° 7.7′	2066.6	9.3	195	1.7	273	9.1	185	U/W				394
27	11	1973	540	0°-8.8′	-157°11.6′	2081.3	9.6	195	1.7	263	9.1	185	SATL	0.25	2.7	1.6	396
27	11	1973	6 0	0°-11.9′	-157°12.4′	2084.5	9.8	203	1.7	263	9.1	194	C/C				397
27	11	1973	626	0°-15.8′	-157°14.1′	2088.8	9.1	196	0.2	283	9.1	194	SATL	1.50	1.3	0.8	399
27	11	1973	720	0°-23.7′	-157°16.3′	2097.0	9.1	199	0.9	288	9.1	194	SATL	1.00	0.3	0.9	401
27	11	1973	753	0°-28.4′	-157°18.0′	2102.0	9.2	209	0.9	288	9.1	204	C/C				402
27	11	1973	816	0°-31.5′	-157°19.7′	2105.5	10.2	211	1.6	252	9.1	204	SATL	0.25	0.9	0.9	404
27	11	1973	1024	0°-50.3′	-157°30.8′	2127.4	9.9	209	1.2	255	9.1	204	SATL	1.50	3.4	2.1	406
27	11	1973	1130	0°-59.8′	-157°36.1′	2138.2	9.8	203	1.2	255	9.1	197	C/C				407
27	11	1973	1252	-1°12.1′	-157°41.3′	2151.6	9.9	204	1.4	256	9.1	197	SATL	0.50	2.9	2.5	409
27	11	1973	1434	-1°27.5′	-157°48.2′	2168.5	10.3	203	1.6	241	9.1	197	SATL	0.50	2.5	1.7	411
27	11	1973	1526	-1°35.7′	-157°51.7′	2177.4	10.4	204	1.8	244	9.1	197	SATL	0.50	1.4	0.9	413
27	11	1973	1712	-1°52.5′	-157°59.3′	2195.8	10.5	203	1.7	238	9.1	197	SATL	1.00	3.3	1.8	415
27	11	1973	18 0	-2° 0.2′	-158° 2.6′	2204.2	10.5	202	1.7	234	9.1	197	SATL	0.50	1.4	0.8	417
27	11	1973	1854	-2° 8.9′	-158° 6.2′	2213.6	10.4	202	1.6	233	9.1	197	SATL	1.00	1.5	0.9	419
27	11	1973	2042	-2°26.3′	-158°13.3′	2232.4	10.7	201	1.7	221	9.1	197	SATL	1.00	2.9	1.8	421
27	11	1973	2132	-2°34.6′	-158°16.4′	2241.3	10.7	202	1.7	221	9.1	199	C/C				422
27	11	1973	2158	-2°38.9′	-158°18.2′	2245.9	10.6	203	1.6	224	9.1	199	SATL	0.50	2.2	1.3	424
27	11	1973	2348	-2°56.8′	-158°25.7′	2265.3	10.5	201	1.4	214	9.1	199	SATL	0.50	3.0	1.8	426
28	11	1973	0 0	-2°58.8′	-158°26.4′	2267.4	10.5	201	1.4	214	9.1	199					427
28	11	1973	010	-3° 0.4′	-158°27.1′	2269.2	10.5	205	1.4	214	9.1	204	C/C				428
28	11	1973	2 4	-3°18.4′	-158°35.6′	2289.1	10.3	208	1.3	235	9.1	204	SATL	0.50	3.2	2.3	430
28	11	1973	446	-3°42.9′	-158°48.6′	2316.8	9.3	203	0.3	174	9.1	204	SATL	1.00	3.7	2.7	432
28	11	1973	530	-3°49.2′	-158°51.3′	2323.7	9.7	210	1.1	263	9.1	204	SATL	1.00	0.3	0.7	434
28	11	1973	530	-3°49.2′	-158°51.3′	2323.7	9.7	206	1.1	263	9.1	200	C/C				435
28	11	1973	628	-3°57.6′	-158°55.4′	2333.0	9.3	202	0.4	254	9.1	200	SATL	1.50	1.1	1.0	437
28	11	1973	720	-4° 5.1′	-158°58.4′	2341.0	9.8	206	1.2	259	9.1	200	SATL	1.00	0.4	0.9	439
28	11	1973	818	-4°13.6′	-159° 2.6′	2350.6	9.3	202	0.4	267	9.1	200	SATL	1.00	1.3	1.0	441
28	11	1973	818	-4°13.6′	-159° 2.6′	2350.6	9.3	204	0.4	267	9.1	202	C/C				442
28	11	1973	936	-4°24.6′	-159° 7.6′	2362.6	9.3	206	0.7	279	9.1	202	SATL	1.50	0.6	1.3	444
28	11	1973	1122	-4°39.3′	-159°14.9′	2379.0	9.1	203	0.1	310	9.1	202	SATL	1.00	1.3	1.8	446
28	11	1973	1322	-4°56.1′	-159°21.9′	2397.2	9.1	201	0.1	310	9.1	200	C/C				447
28	11	1973	1328	-4°56.9′	-159°22.2′	2398.1	9.0	203	0.5	298	9.1	200	SATL	0.50	0.2	2.1	449
28	11	1973	14 0	-5° 1.3′	-159°24.1′	2402.9	9.1	205	0.5	298	9.1	202	C/C				450
28	11	1973	1512	-5°11.2′	-159°28.7′	2413.8	9.9	205	0.9	232	9.1	202	SATL	0.00	0.9	1.7	452
28	11	1973	1620	-5°21.4′	-159°33.4′	2425.0	8.6	203	0.6	5	9.1	202	SATL	1.00	1.1	1.1	454
28	11	1973	17 8	-5°27.7′	-159°36.1′	2431.9	9.3	206	0.6	276	9.1	202	SATL	0.50	0.5	0.8	456
28	11	1973	18 0	-5°35.0′	-159°39.6′	2439.9	9.3	208	0.6	276	9.1	204	C/C				457
28	11	1973	1812	-5°36.6′	-159°40.5′	2441.8	9.1	206	0.3	302	9.1	204	SATL	1.00	0.7	1.1	459
28	11	1973	1854	-5°42.3′	-159°43.3′	2448.1	9.0	206	0.3	305	9.1	204	SATL	0.50	0.3	0.7	461
28	11	1973	1950	-5°49.9′	-159°47.0′	2456.6	9.1	206	0.3	289	9.1	204	SATL	0.25	0.3	0.9	463
28	11	1973	2114	-6° 1.4′	-159°52.6′	2469.3	8.8	207	0.6	322	9.1	204	SATL	0.25	0.5	1.4	465
28	11	1973	23 0	-6°15.3′	-159°59.8′	2485.0	8.9	208	0.7	308	9.1	204	SATL	0.25	1.1	1.8	467
29	11	1973	0 0	-6°23.2′	-160° 4.1′	2493.9	8.9	208	0.7	308	9.1	204					468
29	11	1973	056	-6°30.5′	-160° 8.1′	2502.3	9.0	209	0.8	303	9.1	204	SATL	0.50	1.4	1.9	470
29	11	1973	136	-6°35.7′	-160°11.0′	2508.3	9.0	206	0.8	303	9.1	201	C/C				471
29	11	1973	242	-6°44.6′	-160°15.4′	2518.1	8.8	206	0.9	315	9.1	201	SATL	0.50	1.5	1.8	473
29	11	1973	310	-6°48.3′	-160°17.2′	2522.2	8.7	202	0.9	315	9.1	197	C/C				474
29	11	1973	358	-6°54.7′	-160°19.9′	2529.2	8.7	203	1.0	316	9.1	197	SATL	1.00	1.2	1.3	476
29	11	1973	622	-7°13.9′	-160°28.0′	2550.0	8.9	204	1.1	304	9.1	197	SATL	0.25	2.4	2.4	478
29	11	1973	722	-7°22.0′	-160°31.6′	2558.8	8.2	200	1.0	353	9.1	197	SATL	1.50	1.1	1.0	480
29	11	1973	749	-7°25.5′	-160°32.9′	2562.8	8.3	203	1.0	353	9.1	200	C/C				481
29	11	1973	812	-7°28.4′	-160°34.1′	2565.7	9.4	205	0.9	270	9.1	200	SATL	0.25	0.8	0.8	483
29	11	1973	852	-7°34.1′	-160°36.8′	2572.0	8.8	204	0.7	320	9.1	200	SATL	0.25	0.6	0.7	485
29	11	1973	1012	-7°44.7′	-160°41.6′	2583.7	8.7	203	0.7	320	9.1	199	C/C				486
29	11	1973	1034	-7°47.7′	-160°42.9′	2586.9	9.0	202	0.6	303	9.1	199	SATL	1.50	1.3	1.7	488
29	11	1973	14 2	-8°16.5′	-160°54.9′	2618.0	9.3	201	0.5	261	9.1	199	SATL	1.00	2.0	3.5	490
29	11	1973	15 0	-8°24.9′	-160°58.2′	2627.1	9.4	206	0.5	261	9.1	204	C/C				491
29	11	1973	1538	-8°30.2′	-161° 0.9′	2633.0	9.1	205	0.2	283	9.1	204	SATL	0.50	0.8	1.6	493
29	11	1973	1724	-8°44.8′	-161° 7.9′	2649.1	9.5	207	0.6	252	9.1	204	SATL	1.50	0.4	1.8	495
29	11	1973	19 0	-8°58.4′	-161°14.8′	2664.4	9.2	206	0.3	272	9.1	204	SATL	1.00	1.0	1.6	497
29	11	1973	2052	-9°13.9′	-161°22.3′	2681.5	9.4	206	0.5	256	9.1	204	SATL	0.25	0.5	1.9	499
29	11	1973	22 6	-9°24.3′	-161°27.5′	2693.1	9.5	205	0.4	228	9.1	204	SATL	1.50	0.6	1.2	501
29	11	1973	2352	-9°39.5′	-161°34.7′	2709.9	9.3	205	0.3	252	9.1	204	SATL	0.50	0.8	1.8	503
30	11	1973	0 0	-9°40.6′	-161°35.2′	2711.2	9.3	205	0.3	252	9.1	204					504
30	11	1973	134	-9°53.8′	-161°41.6′	2725.7	9.1	206	0.3	292	9.1	204	SATL	1.00	0.6	1.7	506
30	11	1973	310	-10° 6.9′	-161°48.1′	2740.3	9.6	208	0.8	255	9.1	204	SATL	0.00	0.6	1.6	508
30	11	1973	452	-10°21.4′	-161°55.9′	2756.7	8.7	195	1.5	95	9.1	204	SATL	1.50	1.5	1.7	510

TABLE 1 – *Continued*

DA	MO	YR	Time	Latitude	Longitude	Dist.	Actual Speed	Actual Course	Drift Speed	Drift Hed.	Dr Speed	Dr Course	Comment	Qlty.	Drift Dist.	Drift Time	No.
30	11	1973	524	-10°25.9′	-161°57.1′	2761.4	9.3	202	0.4	144	9.1	204	SATL	1.00	0.8	0.5	512
30	11	1973	546	-10°29.1′	-161°58.4′	2764.8	9.1	233	0.4	144	9.1	235	C/C				513
30	11	1973	630	-10°33.1′	-162° 3.8′	2771.5	9.1	231	0.6	143	9.1	235	SATL	1.00	0.4	1.1	515
30	11	1973	710	-10°36.9′	-162° 8.6′	2777.5	9.3	232	0.5	170	9.1	235	SATL	1.50	0.5	0.7	517
30	11	1973	745	-10°40.2′	-162°13.0′	2783.0	9.3	240	0.5	170	9.1	243	C/C				518
30	11	1973	816	-10°42.6′	-162°17.2′	2787.7	9.5	244	0.5	268	9.1	243	SATL	1.00	0.6	1.1	520
30	11	1973	914	-10°46.6′	-162°25.6′	2796.9	8.8	145	0.5	268	9.1	143	C/C				521
30	11	1973	946	-10°50.5′	-162°22.9′	2801.7	8.7	144	0.4	301	9.1	143	SATL	0.50	0.7	1.5	523
30	11	1973	1134	-11° 3.2′	-162°13.5′	2817.4	10.7	141	1.4	130	9.1	143	SATL	1.00	0.8	1.8	525
30	11	1973	1140	-11° 4.0′	-162°12.8′	2828.4	7.7	310	1.4	130	9.1	310	C/C				526
30	11	1973	1150	-11° 3.2′	-162°13.8′	2819.7	5.6	310	1.4	130	7.0	310	C/S				527
30	11	1973	12 2	-11° 2.5′	-162°14.7′	2820.8	5.8	341	1.4	130	7.0	335	C/C				528
30	11	1973	12 7	-11° 2.0′	-162°14.9′	2821.3	5.7	335	1.4	130	7.0	330	C/C				529
30	11	1973	1229	-11° 0.1′	-162°15.8′	2823.4	7.0	330	0.0	0	7.0	330	S317	1.50	1.3	0.9	531
30	11	1973	1229	-11° 0.1′	-162°15.8′	2823.4	0.0	0	0.0	0	0.0	500	STOP				532
8	12	1973	428	-11° 0.1′	-162°15.8′	2823.4	0.3	231	0.3	231	0.0	500	DEP	1.50	0.1	184.0	534
8	12	1973	428	-11° 0.1′	-162°15.8′	2823.4	7.7	106	0.3	231	7.9	104	U/W				535
8	12	1973	446	-11° 0.7′	-162°13.5′	2825.7	9.2	102	0.3	231	9.4	100	C/CS				536
8	12	1973	642	-11° 4.3′	-161°55.8′	2843.5	9.0	102	0.5	244	9.4	100	SATL	1.50	0.8	2.2	538
8	12	1973	846	-11° 8.1′	-161°37.2′	2862.1	9.2	99	0.3	331	9.4	100	SATL	0.00	1.0	2.1	540
8	12	1973	936	-11° 9.3′	-161°29.4′	2869.8	9.2	102	0.3	331	9.4	103	C/C				541
8	12	1973	1026	-11°10.8′	-161°21.8′	2877.5	8.8	105	0.7	257	9.4	103	SATL	1.50	0.5	1.7	543
8	12	1973	11 0	-11°12.1′	-161°16.9′	2882.5	8.8	106	0.7	257	9.4	104	C/C				544
8	12	1973	1232	-11°15.8′	-161° 3.6′	2896.0	8.8	105	0.6	267	9.4	104	SATL	1.50	1.4	2.1	546
8	12	1973	13 6	-11°17.1′	-160°58.7′	2901.0	8.8	104	0.6	267	9.4	103	C/C				547
8	12	1973	1526	-11°22.1′	-160°38.4′	2921.5	9.2	105	0.3	231	9.4	103	SATL	1.50	1.9	2.9	549
8	12	1973	16 0	-11°23.4′	-160°33.2′	2926.8	9.2	102	0.3	231	9.4	101	C/C				550
8	12	1973	1648	-11°25.0′	-160°25.9′	2934.1	8.9	105	0.8	236	9.4	101	SATL	1.50	0.5	1.4	552
8	12	1973	1712	-11°25.9′	-160°22.4′	2937.7	9.1	104	0.5	227	9.4	101	SATL	1.50	0.4	0.4	554
8	12	1973	1824	-11°28.5′	-160°11.6′	2948.6	9.1	103	0.4	226	9.4	101	SATL	1.00	0.7	1.2	556
8	12	1973	2158	-11°36.0′	-159°39.2′	2981.2	8.9	104	0.7	242	9.4	101	SATL	0.25	1.7	3.6	558
9	12	1973	0 0	-11°40.3′	-159°21.3′	2999.2	8.9	104	0.7	242	9.4	101					559
9	12	1973	0 6	-11°40.5′	-159°20.4′	3000.1	7.9	105	1.6	259	9.4	101	SATL	0.50	1.5	2.1	561
9	12	1973	442	-11°50.2′	-158°44.6′	3036.5	8.2	107	1.6	247	9.4	101	SATL	0.25	7.6	4.6	563
9	12	1973	530	-11°52.1′	-158°38.2′	3043.0	8.1	105	1.6	247	9.4	99	C/C				564
9	12	1973	552	-11°52.9′	-158°35.3′	3046.0	7.8	102	1.6	263	9.4	99	SATL	1.50	1.9	1.2	566
9	12	1973	740	-11°55.9′	-158°21.2′	3060.1	8.1	103	1.5	257	9.4	99	SATL	1.00	3.0	1.8	568
9	12	1973	835	-11°57.5′	-158°13.8′	3067.5	8.0	99	1.5	257	9.4	96	C/C				569
9	12	1973	1140	-12° 1.6′	-157°48.9′	3092.2	8.0	99	1.5	258	9.4	96	SATL	1.50	5.9	4.0	571
9	12	1973	1326	-12° 3.9′	-157°34.7′	3106.3	8.5	98	1.0	255	9.4	96	SATL	1.50	2.7	1.8	573
9	12	1973	1438	-12° 5.4′	-157°24.4′	3116.5	8.5	97	0.9	267	9.4	96	SATL	1.00	1.3	1.2	575
9	12	1973	1615	-12° 7.1′	-157°10.4′	3130.2	8.5	101	0.9	267	9.4	100	C/C				576
9	12	1973	1734	-12° 9.3′	-156°59.2′	3141.4	8.2	100	1.2	277	9.4	100	SATL	1.00	2.7	2.9	578
9	12	1973	1920	-12°11.9′	-156°44.7′	3155.9	8.1	103	1.4	263	9.4	100	SATL	1.00	2.2	1.8	580
9	12	1973	1956	-12°13.0′	-156°39.9′	3160.7	8.1	109	1.4	263	9.4	105	C/C				581
9	12	1973	2230	-12°19.6′	-156°19.6′	3181.6	8.1	103	1.4	263	9.4	100	C/C				582
10	12	1973	0 0	-12°22.3′	-156° 7.5′	3193.7	8.1	103	1.4	263	9.4	100					583
10	12	1973	1 0	-12°24.1′	-155°59.4′	3201.8	8.6	101	0.8	275	9.4	100	SATL	0.50	7.9	5.7	585
10	12	1973	130	-12°24.9′	-155°55.1′	3206.1	8.6	99	0.8	275	9.4	99	C/C				586
10	12	1973	352	-12°28.2′	-155°34.6′	3226.4	7.4	103	2.1	266	9.4	99	SATL	1.50	2.4	2.9	588
10	12	1973	430	-12°29.2′	-155°29.9′	3231.1	7.4	110	2.1	266	9.4	105	C/C				589
10	12	1973	5 4	-12°30.7′	-155°25.9′	3235.3	8.1	108	1.3	265	9.4	105	SATL	0.50	2.6	1.2	591
10	12	1973	650	-12°35.2′	-155°11.9′	3249.6	7.7	108	1.8	273	9.4	105	SATL	1.00	2.4	1.8	593
10	12	1973	8 0	-12°37.9′	-155° 3.1′	3258.6	7.7	104	1.8	273	9.4	102	C/C				594
10	12	1973	850	-12°39.5′	-154°56.8′	3265.0	7.7	103	1.7	278	9.4	102	SATL	1.50	3.6	2.0	596
10	12	1973	1038	-12°42.6′	-154°42.9′	3278.9	7.6	103	1.8	279	9.4	102	SATL	0.25	3.1	1.8	598
10	12	1973	1218	-12°45.4′	-154°30.2′	3291.6	7.5	105	1.9	271	9.4	102	SATL	1.50	3.0	1.7	600
10	12	1973	1534	-12°51.7′	-154° 5.9′	3316.1	7.8	105	1.7	266	9.4	102	SATL	1.50	6.4	3.3	602
10	12	1973	1620	-12°53.3′	-154° 0.0′	3322.1	7.7	101	1.7	266	9.4	98	C/C				603
10	12	1973	1650	-12°54.0′	-153°56.1′	3326.0	7.5	102	2.0	262	9.4	98	SATL	0.50	2.2	1.3	605
10	12	1973	1828	-12°56.6′	-153°43.9′	3338.1	7.3	101	2.1	269	9.4	98	SATL	1.00	3.4	1.6	607
10	12	1973	2020	-12°59.1′	-153°30.1′	3351.8	7.7	102	1.8	261	9.4	98	SATL	1.00	4.0	1.9	609
10	12	1973	22 6	-13° 1.9′	-153°16.4′	3365.5	7.9	102	1.6	259	9.4	98	SATL	0.50	3.2	1.8	611
10	12	1973	23 5	-13° 3.5′	-153° 8.6′	3373.2	7.9	104	1.6	259	9.4	100	C/C				612
10	12	1973	2354	-13° 5.1′	-153° 2.2′	3379.7	7.8	104	1.7	261	9.4	100	SATL	0.50	3.0	1.8	614
11	12	1973	0 0	-13° 5.3′	-153° 1.4′	3380.4	7.8	104	1.7	261	9.4	100					615
11	12	1973	3 4	-13°11.1′	-152°37.7′	3404.3	7.9	105	1.7	254	9.4	100	SATL	1.00	5.6	3.2	617
11	12	1973	452	-13°14.9′	-152°23.6′	3418.5	7.9	102	1.6	268	9.4	100	SATL	0.50	3.1	1.8	619
11	12	1973	550	-13°16.5′	-152°16.0′	3426.1	7.8	99	1.6	268	9.4	97	C/C				620
11	12	1973	742	-13°18.8′	-152° 1.1′	3440.8	7.8	100	1.7	263	9.4	97	SATL	1.00	4.5	2.8	622
11	12	1973	8 4	-13°19.3′	-151°58.2′	3443.8	8.0	98	1.4	273	9.4	97	SATL	1.50	0.7	0.4	624
11	12	1973	950	-13°21.2′	-151°43.8′	3457.8	8.0	97	1.4	278	9.4	97	SATL	1.50	2.5	1.8	626
11	12	1973	1112	-13°22.5′	-151°32.7′	3468.6	7.9	99	1.6	265	9.4	97	SATL	1.00	2.0	1.4	628
11	12	1973	1145	-13°23.2′	-151°28.3′	3473.0	7.9	102	1.6	265	9.4	99	C/C				629
11	12	1973	1152	-13°23.4′	-151°27.4′	3473.9	7.8	101	1.6	268	9.4	99	SATL	1.00	1.1	0.7	631
11	12	1973	1446	-13°27.8′	-151° 4.6′	3496.5	7.7	100	1.7	275	9.4	99	SATL	1.50	4.8	2.9	633
11	12	1973	1634	-13°30.2′	-150°50.5′	3510.4	7.2	103	2.3	266	9.4	99	SATL	1.00	3.1	1.8	635
11	12	1973	1736	-13°31.9′	-150°43.1′	3517.8	7.9	104	1.7	253	9.4	99	SATL	1.00	2.5	1.0	637
11	12	1973	1926	-13°35.5′	-150°28.6′	3532.3	7.8	106	1.9	250	9.4	99	SATL	1.00	3.1	1.8	639
11	12	1973	20 4	-13°36.8′	-150°23.7′	3537.3	7.7	102	1.9	250	9.4	96	C/C				640
11	12	1973	2116	-13°38.8′	-150°14.4′	3546.5	7.8	103	1.9	245	9.4	96	SATL	1.50	3.6	1.8	642

TABLE 1 – *Continued*

DA	MO	YR	Time	Latitude	Longitude	Dist.	Actual Speed	Actual Course	Drift Speed	Drift Hed.	Dr Speed	Dr Course	Comment	Qlty.	Drift Dist.	Drift Time	No.
11	12	1973	2210	-13°40.4′	-150° 7.3′	3553.6	7.8	101	1.9	249	9.4	94	C/C				643
11	12	1973	2250	-13°41.4′	-150° 2.1′	3558.8	7.8	100	1.8	249	9.4	94	SATL	1.00	3.0	1.6	645
11	12	1973	2322	-13°42.1′	-149°57.9′	3562.9	7.8	99	1.8	249	9.4	94	SATL	1.00	1.0	0.5	647
12	12	1973	0 0	-13°42.9′	-149°52.8′	3567.9	7.8	99	1.8	249	9.4	94					648
12	12	1973	032	-13°43.6′	-149°48.6′	3572.1	7.7	97	1.8	259	9.4	94	SATL	0.50	2.1	1.2	650
12	12	1973	214	-13°45.3′	-149°35.3′	3585.1	7.6	101	2.0	247	9.4	94	SATL	1.50	3.1	1.7	652
12	12	1973	4 2	-13°47.9′	-149°21.4′	3598.8	7.9	104	2.1	235	9.4	94	SATL	1.00	3.7	1.8	654
12	12	1973	650	-13°53.1′	-148°59.4′	3620.8	8.0	101	1.8	241	9.4	94	SATL	0.50	6.0	2.8	656
12	12	1973	723	-13°53.9′	-148°55.0′	3625.2	7.9	96	1.8	241	9.4	90	C/C				657
12	12	1973	9 0	-13°55.3′	-148°41.9′	3638.0	7.3	95	2.2	252	9.4	90	SATL	1.50	3.9	2.2	659
12	12	1973	1150	-13°57.2′	-148°20.6′	3658.7	7.6	91	1.8	264	9.4	90	SATL	1.50	6.3	2.8	661
12	12	1973	13 7	-13°57.4′	-148°10.5′	3668.5	7.6	95	1.8	264	9.4	93	C/C				662
12	12	1973	1544	-13°59.2′	-147°50.0′	3688.5	8.1	93	1.3	276	9.4	93	SATL	0.50	7.0	3.9	664
12	12	1973	1625	-13°59.4′	-147°44.3′	3694.0	8.1	103	1.3	276	9.4	102	C/C				665
12	12	1973	1640	-13°59.9′	-147°42.3′	3696.0	7.5	104	1.9	273	9.4	102	SATL	1.50	1.3	0.9	667
12	12	1973	1830	-14° 3.3′	-147°28.5′	3709.8	7.6	103	1.8	279	9.4	102	SATL	0.25	3.5	1.8	669
12	12	1973	2028	-14° 6.6′	-147°13.4′	3724.9	7.6	103	1.8	278	9.4	102	SATL	1.00	3.5	2.0	671
12	12	1973	2155	-14° 9.1′	-147° 2.3′	3735.9	7.6	99	1.8	278	9.4	99	C/C				672
12	12	1973	2232	-14° 9.8′	-146°57.5′	3740.6	7.9	99	1.5	279	9.4	99	SATL	1.00	3.7	2.1	674
12	12	1973	2326	-14°10.9′	-146°50.3′	3747.7	7.8	101	1.7	269	9.4	99	SATL	0.50	1.4	0.9	676
12	12	1973	2356	-14°11.7′	-146°46.4′	3751.6	7.8	108	1.7	269	9.4	105	C/C				677
13	12	1973	0 0	-14°11.8′	-146°45.8′	3752.1	7.8	108	1.7	269	9.4	105					678
13	12	1973	2 0	-14°16.8′	-146°30.5′	3767.7	10.5	222	1.7	269	9.4	215	C/C				679
13	12	1973	222	-14°19.6′	-146°33.2′	3771.6	10.4	220	1.7	269	9.4	212	C/C				680
13	12	1973	4 6	-14°33.5′	-146°45.1′	3789.6	9.4	215	0.4	303	9.4	212	SATL	1.00	7.8	4.7	682
13	12	1973	426	-14°36.1′	-146°46.9′	3792.7	9.3	195	0.4	303	9.4	193	C/C				683
13	12	1973	440	-14°38.2′	-146°47.5′	3794.9	9.3	198	0.4	303	9.4	196	C/C				684
13	12	1973	516	-14°43.4′	-146°49.3′	3800.5	8.4	199	0.4	303	8.5	196	C/S				685
13	12	1973	558	-14°49.0′	-146°51.3′	3806.3	8.8	196	0.3	204	8.5	196	SATL	1.50	0.8	1.9	687
13	12	1973	657	-14°57.3′	-146°53.8′	3815.0	8.2	5	0.3	204	8.5	6	C/C				688
13	12	1973	722	-14°54.0′	-146°53.5′	3838.4	8.2	24	0.3	204	8.5	24	C/C				689
13	12	1973	757	-14°49.6′	-146°51.5′	3823.2	8.5	24	0.0	0	8.5	24	S318	1.50	0.7	2.0	691
13	12	1973	757	-14°49.6′	-146°51.5′	3823.2	0.0	0	0.0	0	0.0	500	STOP				692
16	12	1973	1345	-14°49.6′	-146°51.5′	3823.2	0.7	224	0.7	224	0.0	500	DEP	1.50	0.1	77.8	694
16	12	1973	1345	-14°49.6′	-146°51.5′	3823.2	8.3	218	0.7	224	7.6	217	U/W				695
16	12	1973	14 6	-14°51.9′	-146°53.3′	3826.1	10.1	206	0.7	224	9.4	205	C/CS				696
16	12	1973	1416	-14°53.4′	-146°54.1′	3827.8	9.2	203	0.3	79	9.4	205	SATL	1.50	0.4	0.5	698
16	12	1973	16 6	-15° 8.9′	-147° 1.0′	3844.7	9.0	207	0.5	351	9.4	205	SATL	1.00	0.7	1.8	700
16	12	1973	1721	-15°18.9′	-147° 6.3′	3855.9	9.0	219	0.5	351	9.4	217	C/C				701
16	12	1973	1824	-15°26.2′	-147°12.5′	3865.3	9.4	216	0.2	144	9.4	217	SATL	0.00	1.3	2.3	703
16	12	1973	1828	-15°26.7′	-147°12.9′	3866.0	9.4	243	0.2	144	9.4	244	C/C				704
16	12	1973	2152	-15°41.2′	-147°42.4′	3897.8	9.4	251	0.2	144	9.4	252	C/C				705
16	12	1973	2232	-15°43.2′	-147°48.5′	3904.1	9.4	251	0.2	157	9.4	252	SATL	1.00	0.7	4.0	707
16	12	1973	2322	-15°45.8′	-147°56.2′	3911.9	9.3	263	0.2	157	9.4	264	C/C				708
16	12	1973	1252	-15°46.3′	-148° 1.0′	3916.6	9.4	258	0.2	157	9.4	259	C/C				709
17	12	1973	0 0	-15°46.6′	-148° 2.3′	3917.8	9.4	258	0.2	157	9.4	259					710
17	12	1973	018	-15°47.2′	-148° 5.1′	3920.6	9.1	259	0.3	74	9.4	259	SATL	0.50	0.4	1.8	712
17	12	1973	020	-15°47.3′	-148° 5.4′	3920.9	9.1	252	0.3	74	9.4	252	C/C				713
17	12	1973	1 0	-15°49.1′	-148°11.4′	3927.0	9.2	291	0.3	74	9.4	290	C/C				714
17	12	1973	111	-15°48.5′	-148°13.0′	3928.7	9.3	311	0.3	74	9.4	310	C/C				715
17	12	1973	120	-15°47.6′	-148°14.1′	3930.1	9.2	301	0.3	74	9.4	300	C/C				716
17	12	1973	123	-15°47.4′	-148°14.5′	3930.5	9.2	291	0.3	74	9.4	290	C/C				717
17	12	1973	130	-15°47.0′	-148°15.6′	3931.6	9.1	270	0.3	74	9.4	270	C/C				718
17	12	1973	135	-15°47.0′	-148°16.4′	3932.4	9.1	250	0.3	74	9.4	250	C/C				719
17	12	1973	139	-15°47.2′	-148°17.0′	3933.0	9.2	229	0.3	74	9.4	230	C/C				720
17	12	1973	146	-15°47.9′	-148°17.8′	3934.0	9.7	227	0.5	167	9.4	230	SATL	0.00	0.5	1.5	722
17	12	1973	148	-15°48.1′	-148°18.0′	3934.3	9.8	215	0.5	167	9.4	217	C/C				723
17	12	1973	336	-16° 2.6′	-148°28.4′	3951.9	8.8	215	0.7	57	9.4	217	SATL	0.00	1.1	1.8	725
17	12	1973	4 2	-16° 5.7′	-148°30.7′	3055.7	9.2	215	0.4	97	9.4	217	SATL	0.50	0.3	0.4	727
17	12	1973	420	-16° 8.0′	-148°32.3′	3958.5	8.6	215	0.4	97	8.8	217	C/S				728
17	12	1973	546	-16°18.1′	-148°39.7′	3970.8	9.0	216	0.2	191	8.8	217	SATL	0.50	0.7	1.7	730
17	12	1973	9 0	-16°41.6′	-148°57.7′	4000.0	9.0	222	0.2	191	8.8	223	C/C				731
17	12	1973	1032	-16°51.8′	-149° 7.4′	4013.8	9.1	221	0.5	176	8.8	223	SATL	1.50	1.2	4.8	733
17	12	1973	1118	-16°57.1′	-149°12.2′	4020.8	9.2	213	0.5	176	8.8	215	C/C				734
17	12	1973	1132	-16°58.9′	-149°13.4′	4022.9	9.0	213	0.3	157	8.8	215	SATL	1.50	0.5	1.0	736
17	12	1973	12 0	-17° 2.4′	-149°15.8′	4027.1	9.0	209	0.3	157	8.8	211	C/C				737
17	12	1973	1215	-17° 4.4′	-149°17.0′	4029.4	9.3	209	0.3	157	9.1	211	C/S				738
17	12	1973	1222	-17° 5.3′	-149°17.5′	4030.4	9.0	211	0.1	22	9.1	211	SATL	0.00	0.3	0.8	740
17	12	1973	13 6	-17°11.0′	-149°21.1′	4037.1	9.0	214	0.1	22	9.1	214	C/C				741
17	12	1973	14 0	-17°17.7′	-149°25.8′	4045.2	5.7	214	0.1	22	5.8	214	C/S				742
17	12	1973	1417	-17°19.0′	-149°26.8′	4046.8	8.7	214	0.1	22	8.8	214	C/S				743
17	12	1973	1420	-17°19.4′	-149°27.0′	4047.2	8.7	221	0.1	22	8.8	221	C/C				744
17	12	1973	1435	-17°21.0′	-149°28.5′	4049.4	8.7	227	0.1	22	8.8	227	C/C				745
17	12	1973	1440	-17°21.5′	-149°29.1′	4050.1	8.7	227	0.0	0	8.8	227	DR	0.00	0.3	2.3	746

Previous accum miles 0.000 present accum dist. 4050.115 cruise DSDP33GC record no. 746
//End of all jobs 20 Feb. 74 01.953 hrs.

//Job 02162 20 Feb. 74 01.977 hrs McConnell
//XEQ DTNAV FX 20 Feb. 74 01.977 hrs

C/C = course change
C/S = course speed

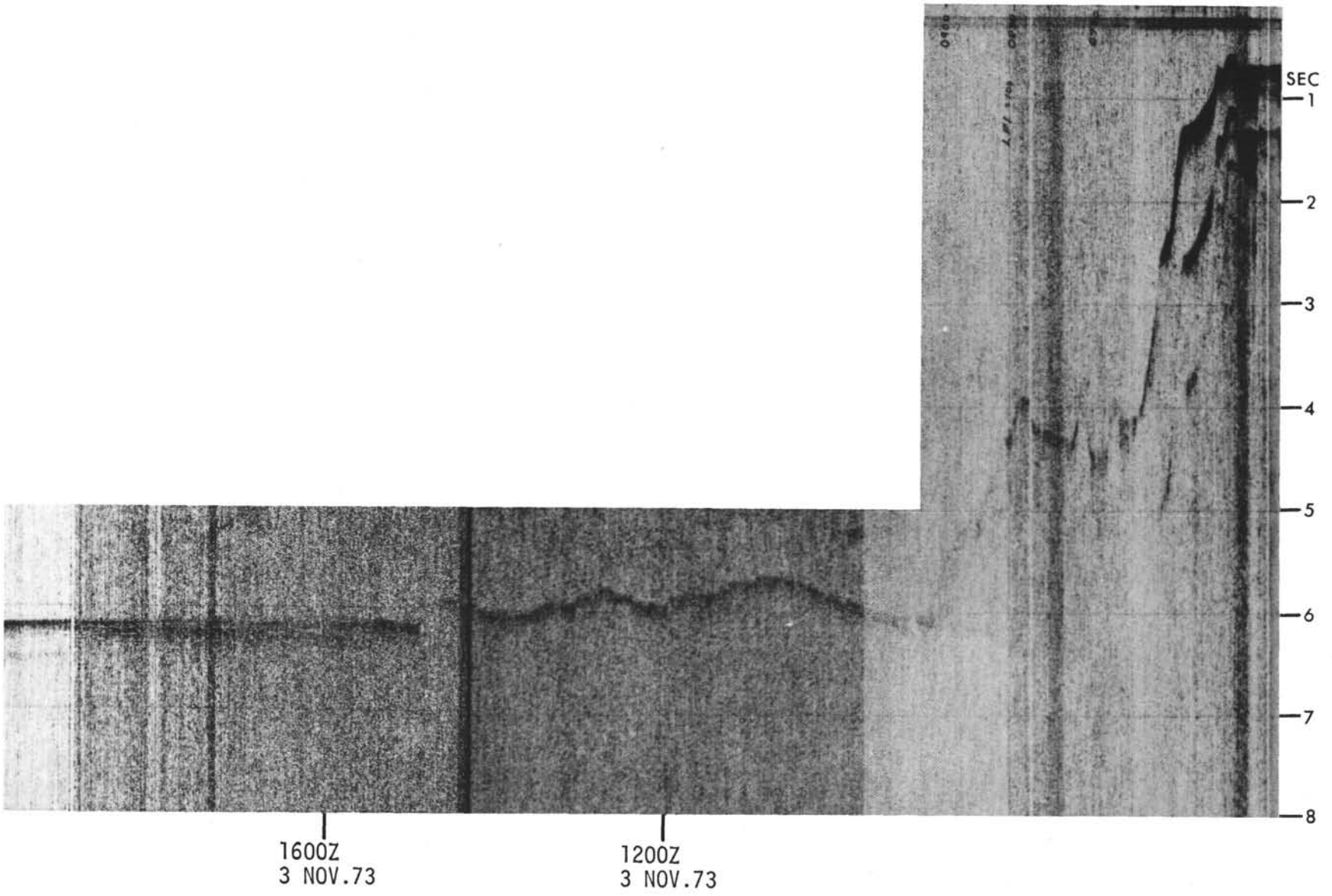


Figure 2. *Seismic profiles from Leg 33. These are the photographs of the originals from the No. 1 EDO which was kept set for a 10-sec sweep.*

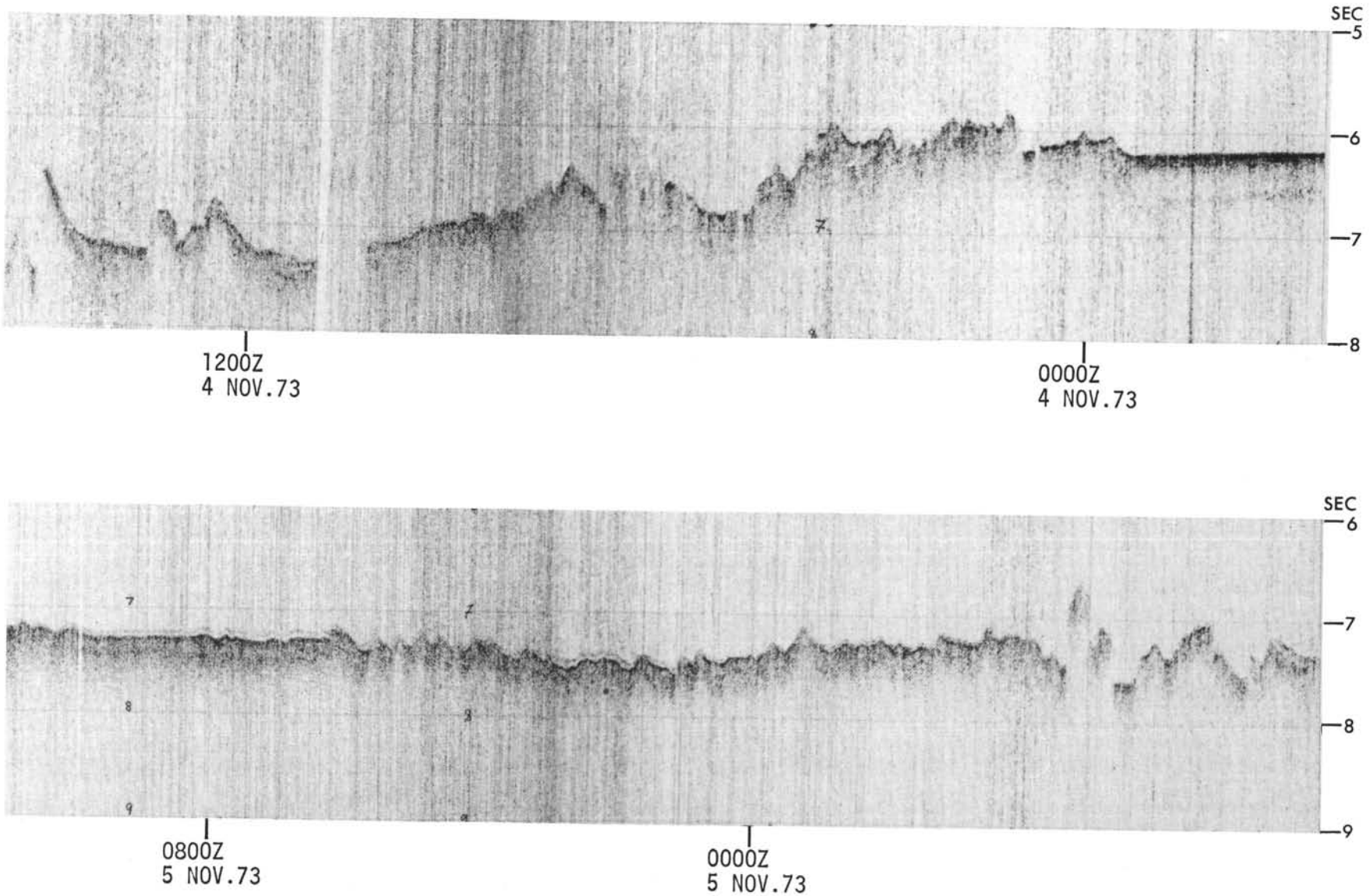


Figure 2. *(Continued).*

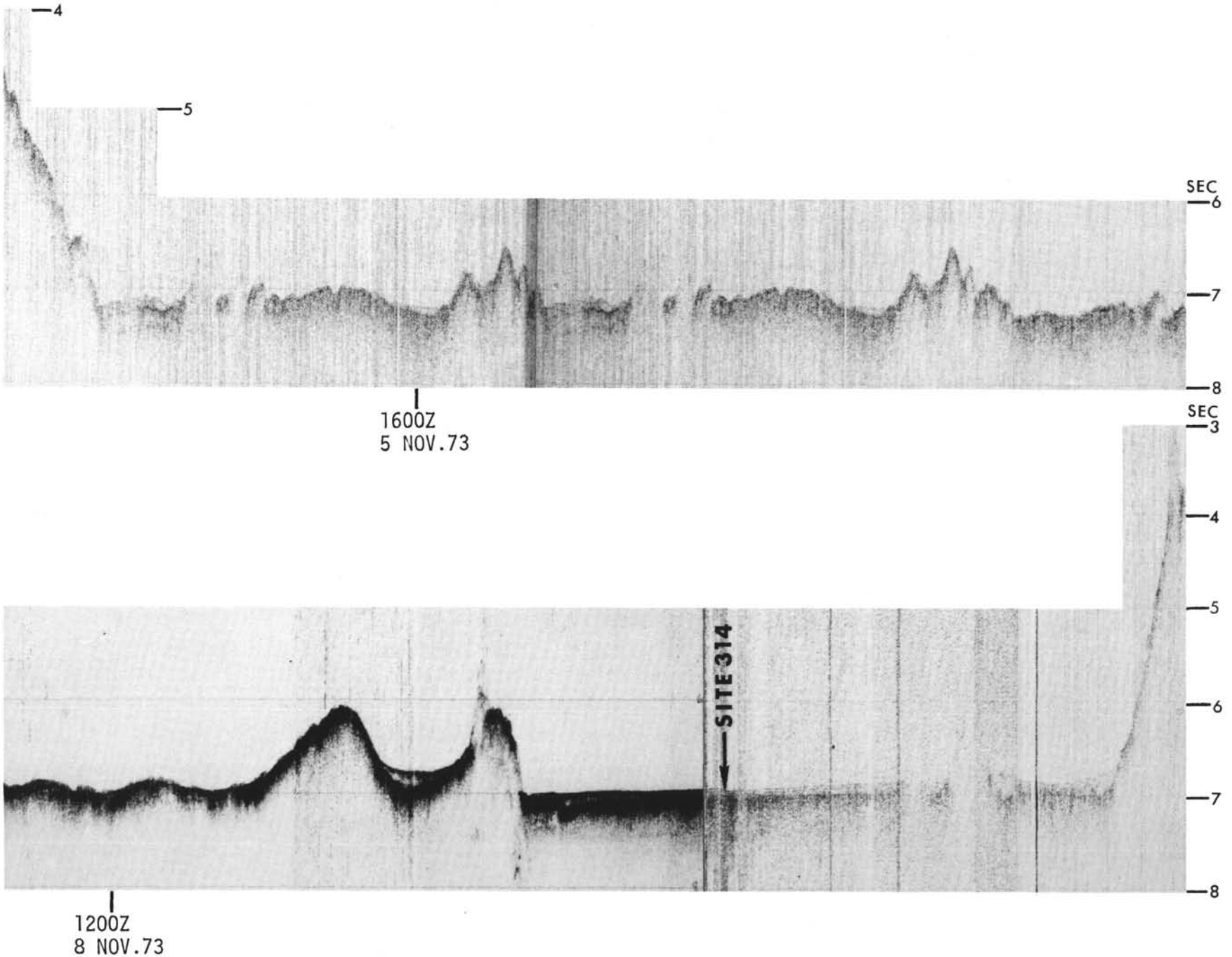


Figure 2. *(Continued).*

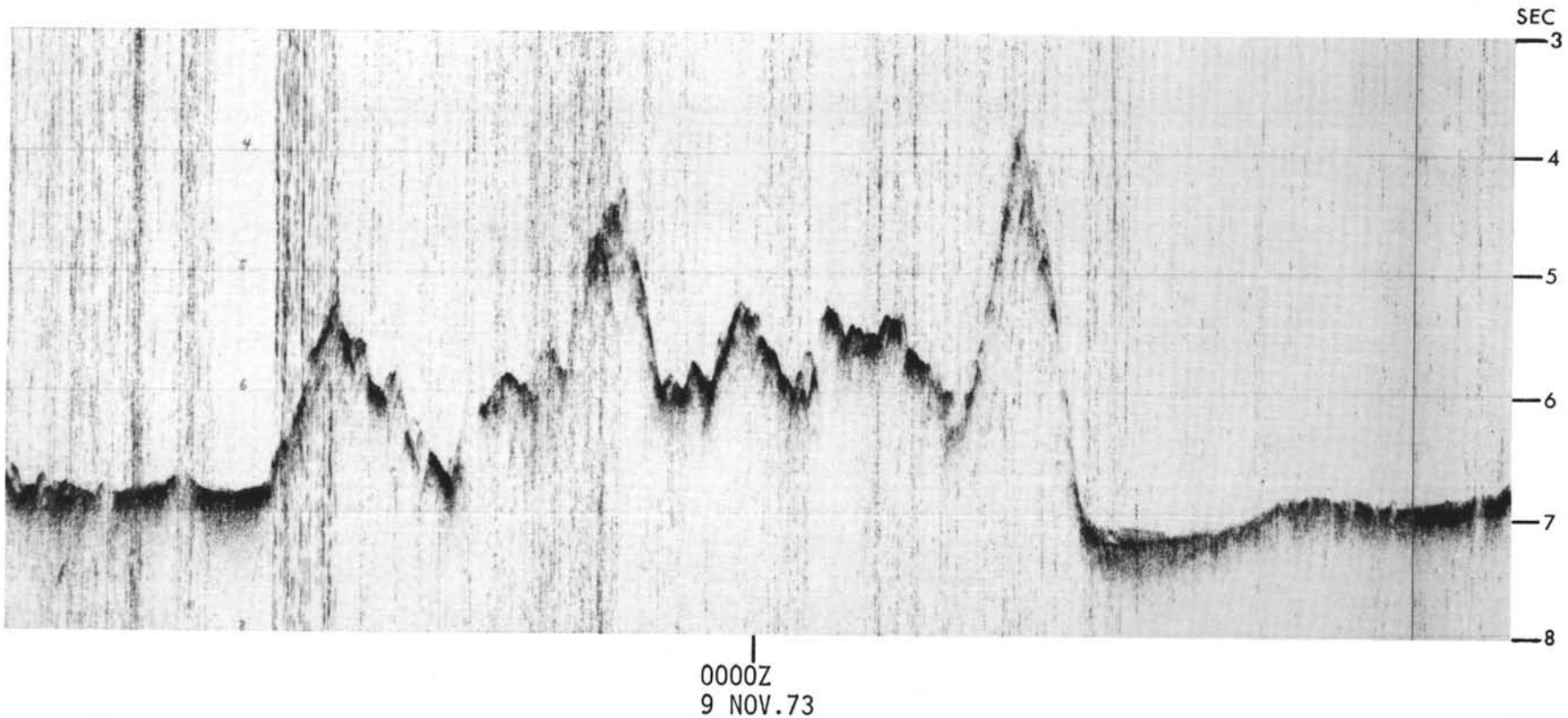


Figure 2. *(Continued).*

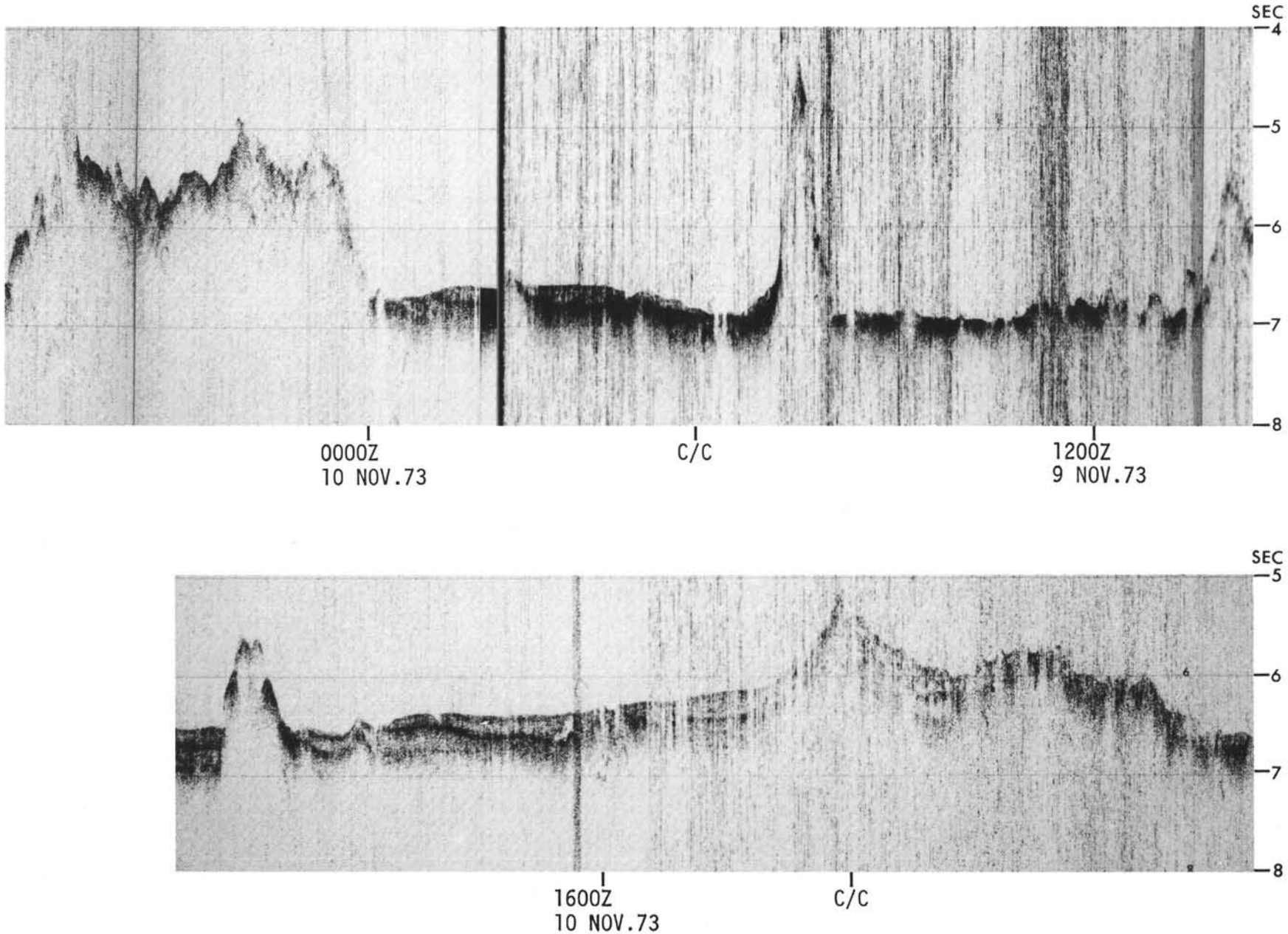


Figure 2. *(Continued).*

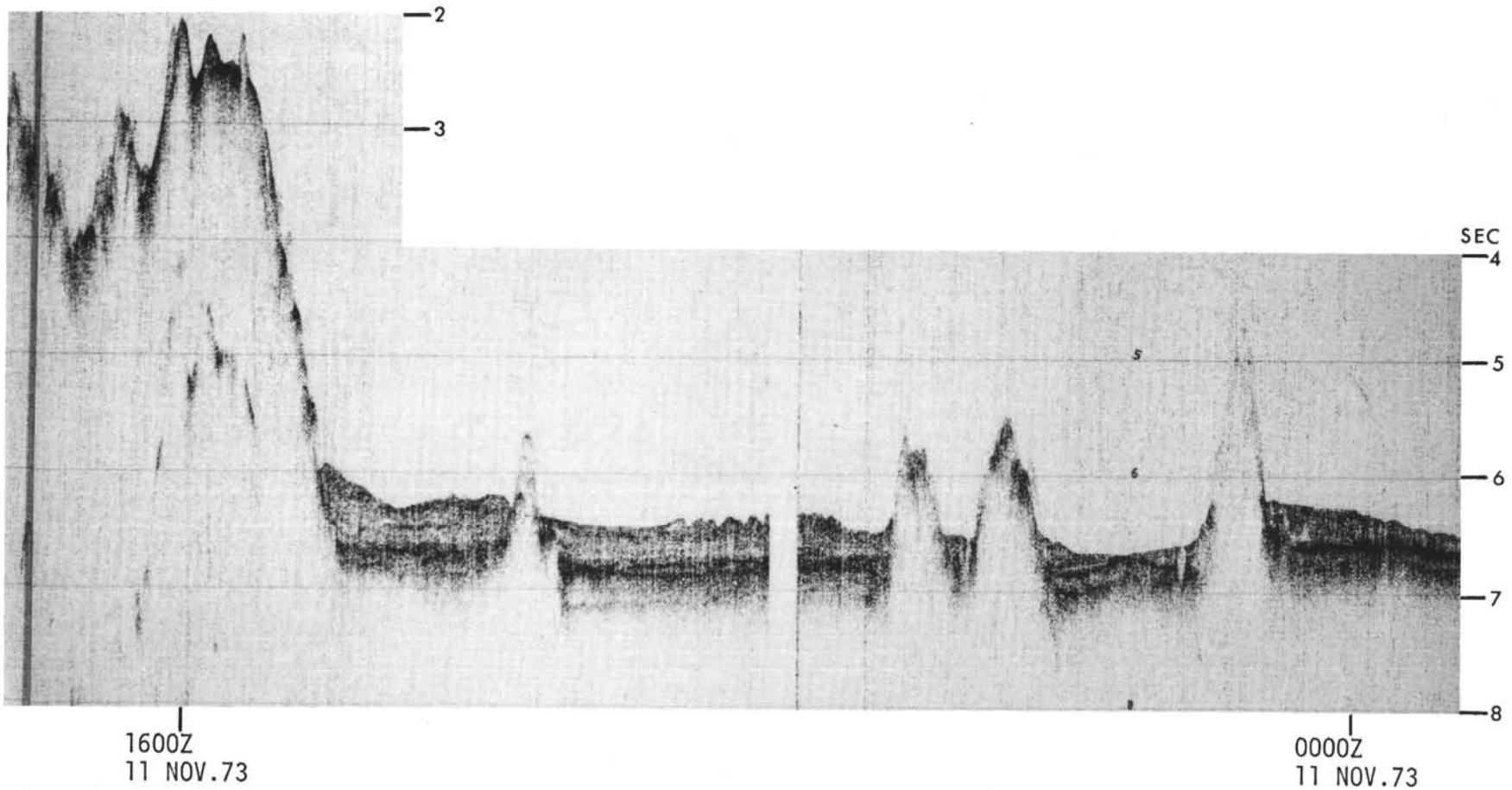


Figure 2. *(Continued).*

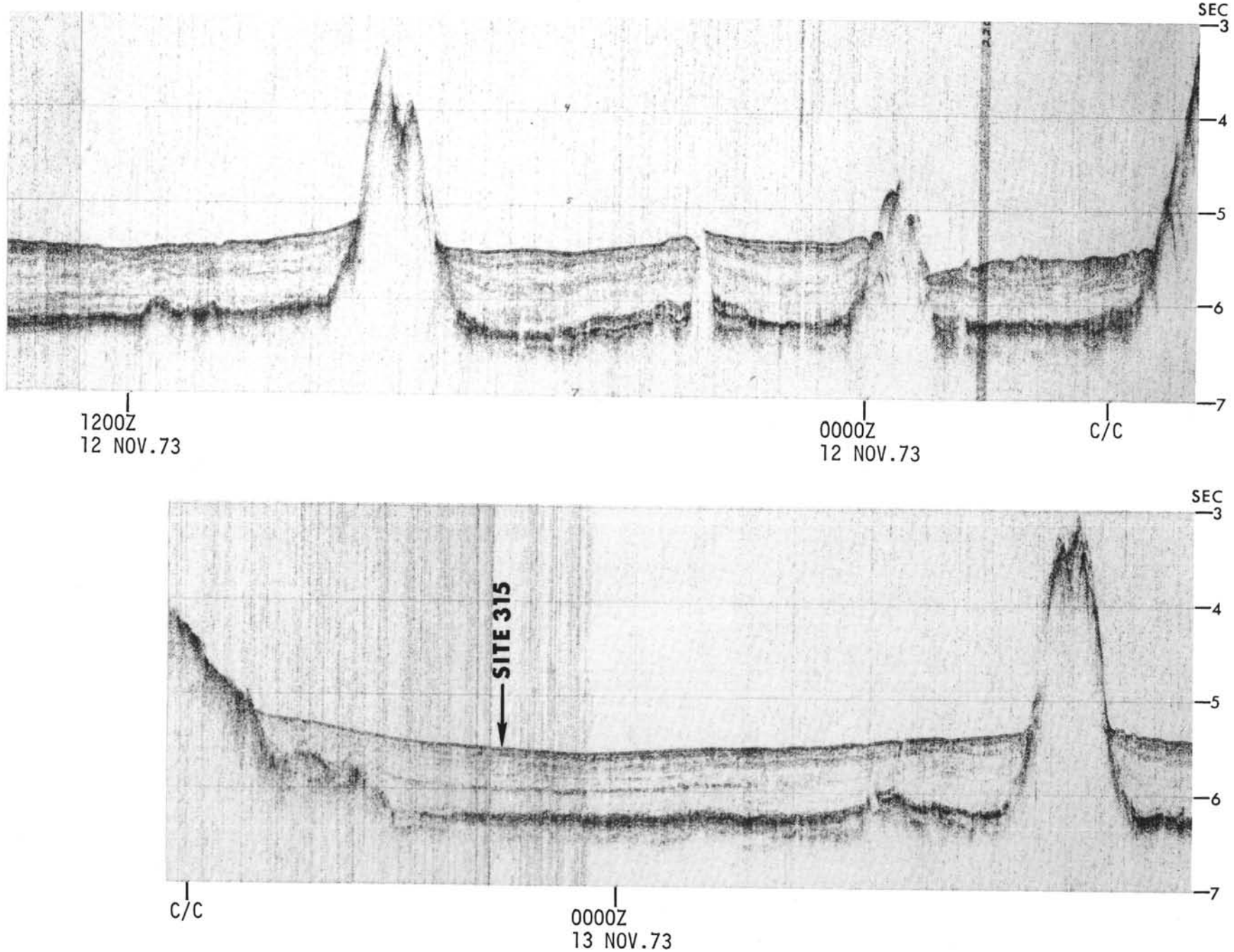
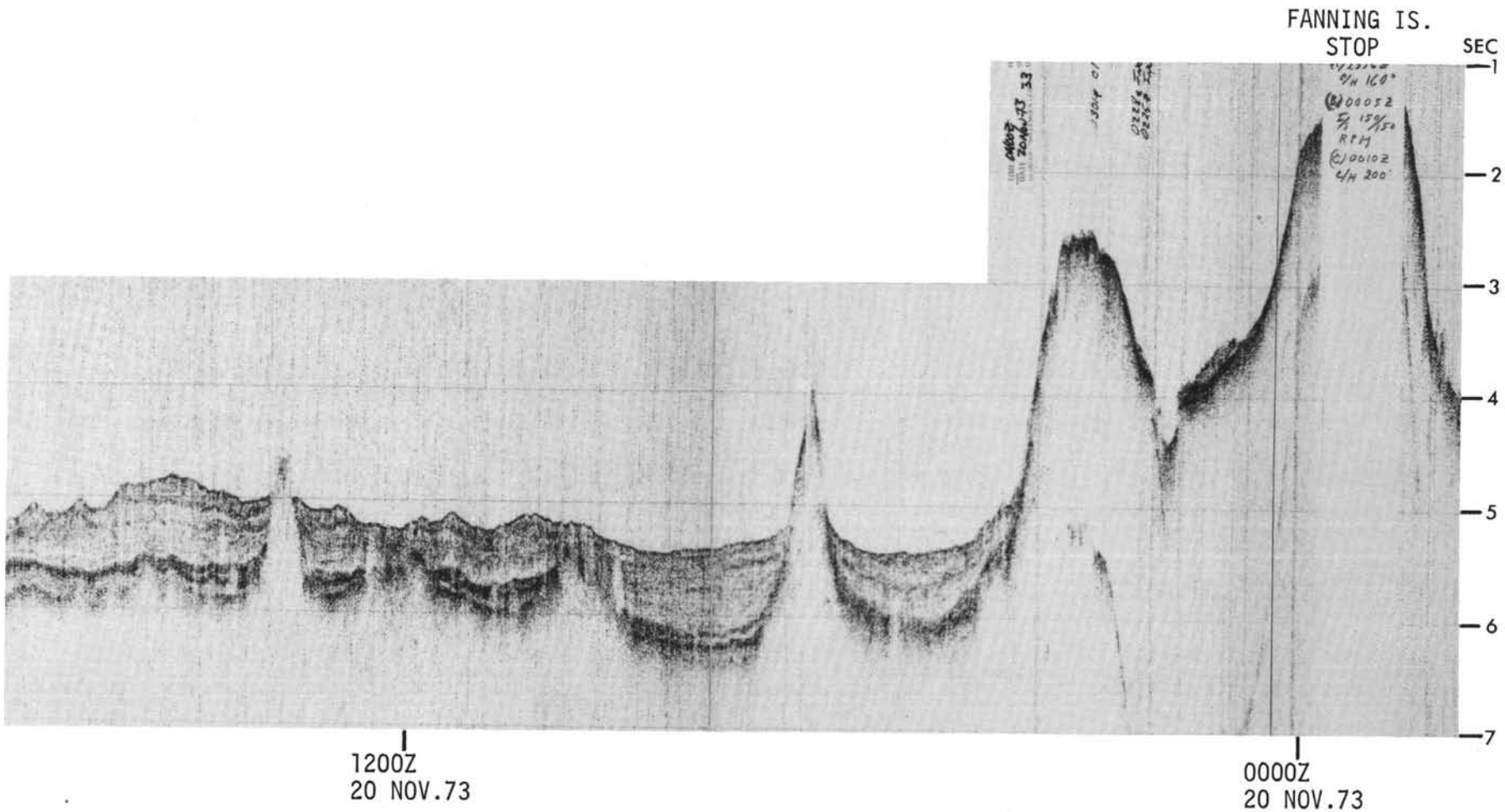


Figure 2. *(Continued)*



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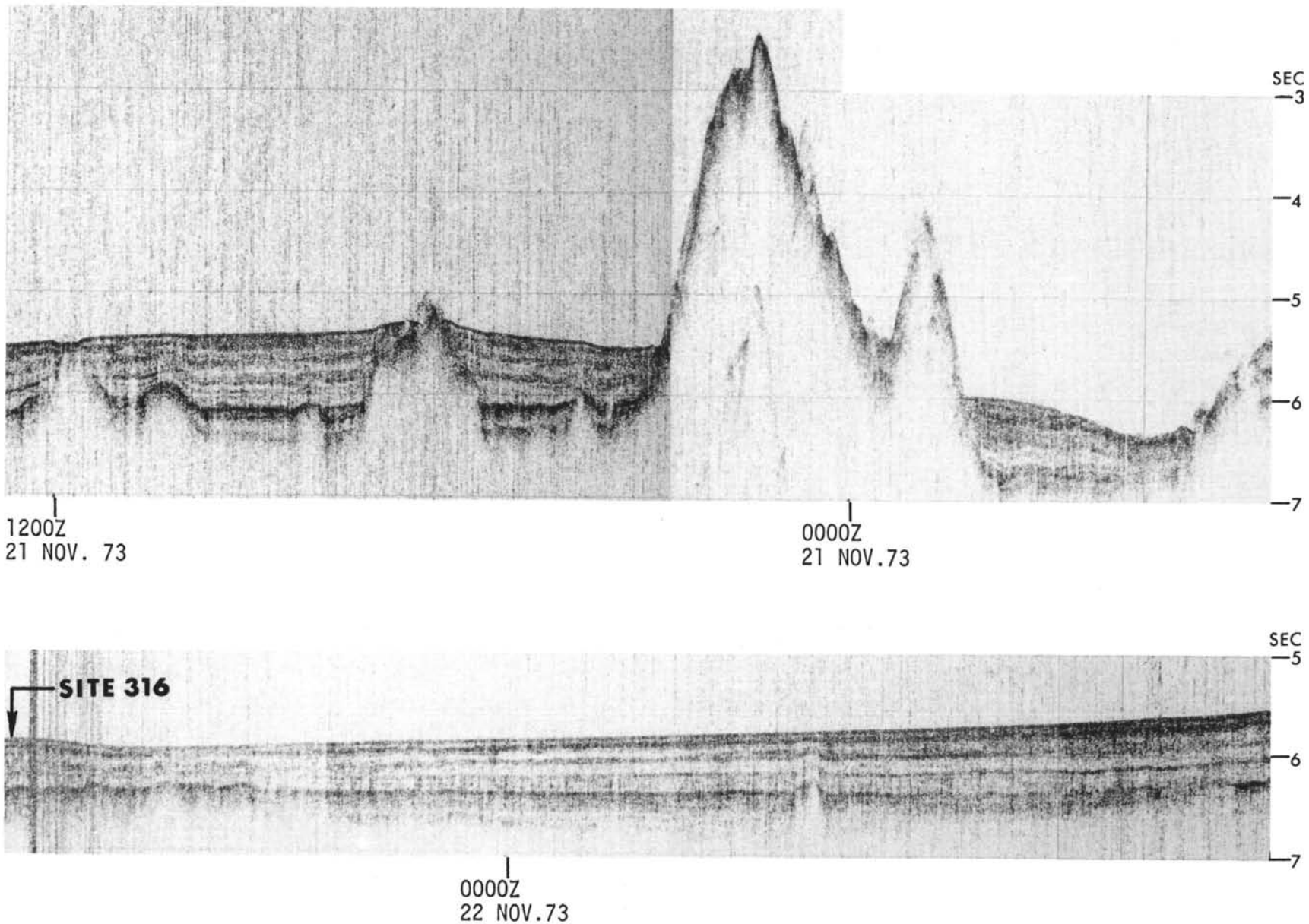

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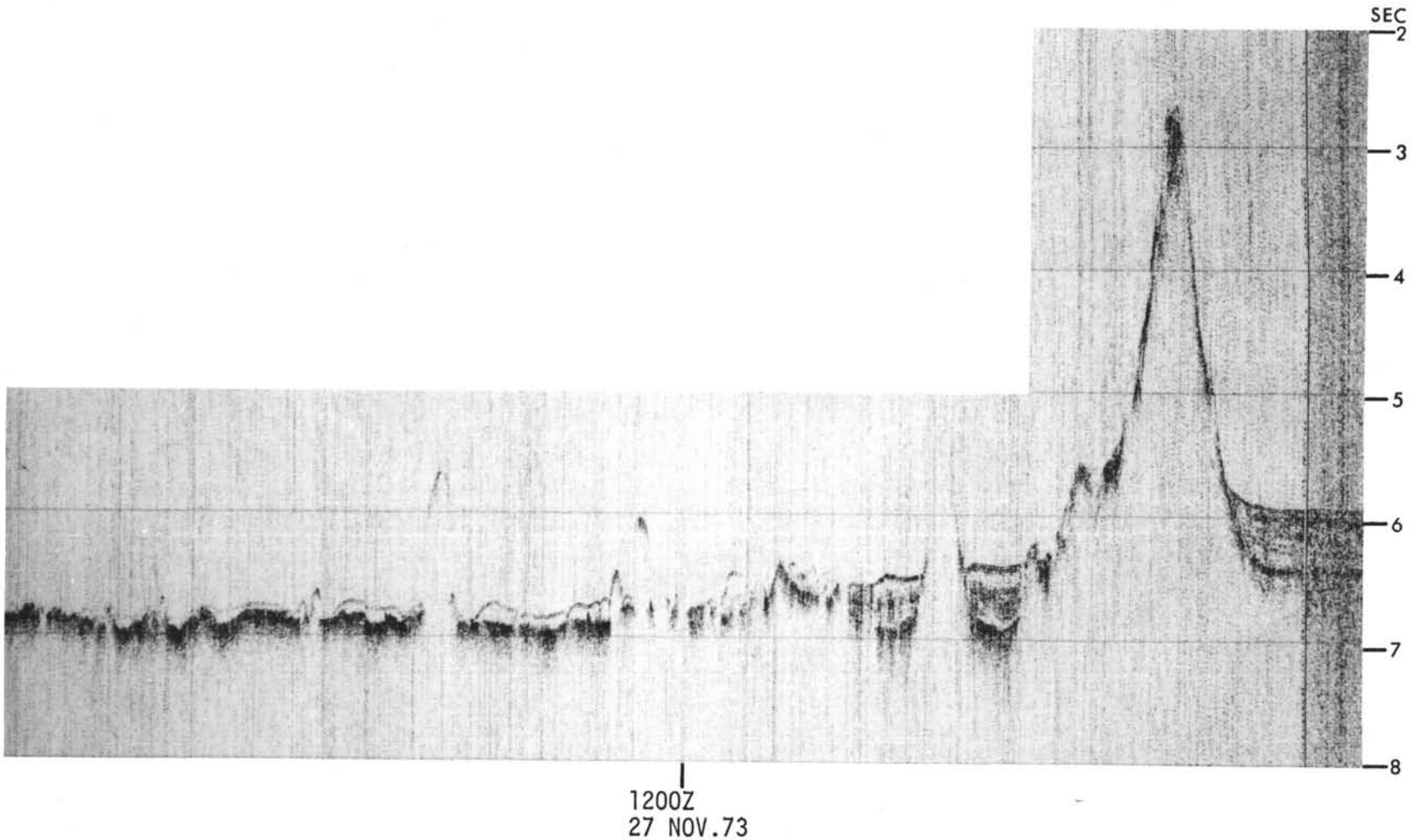

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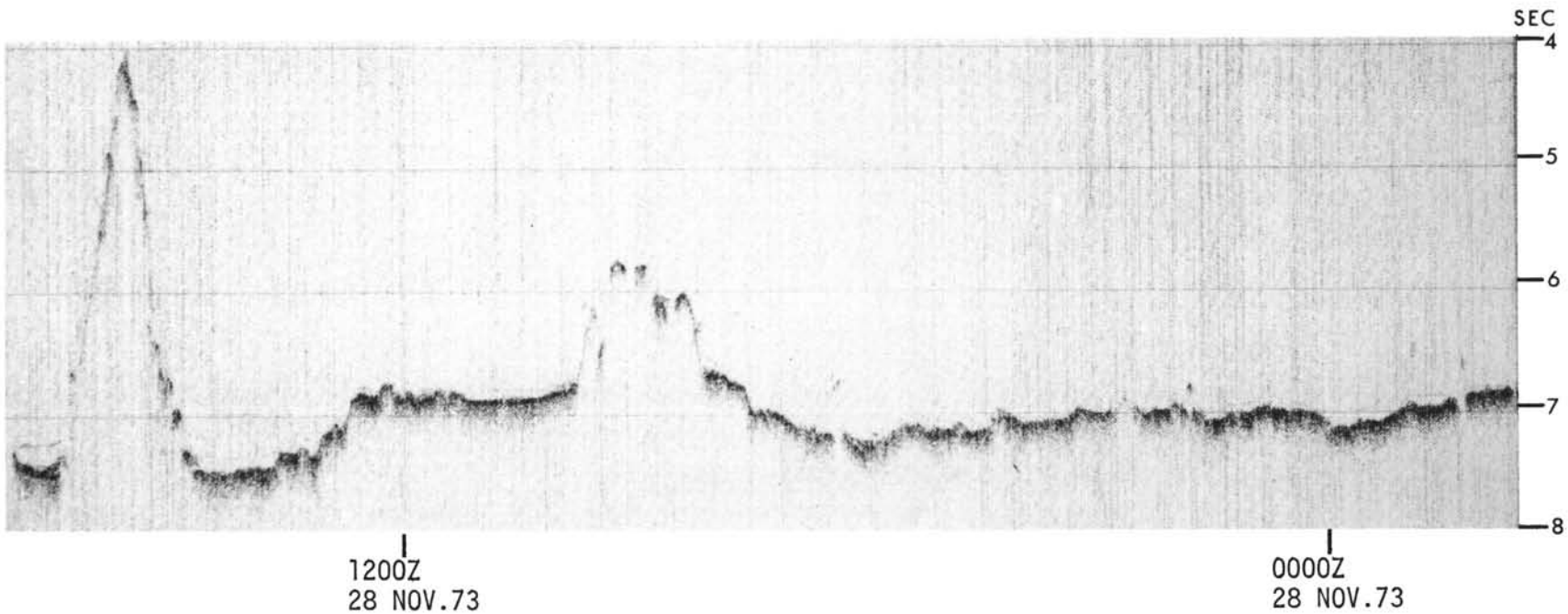

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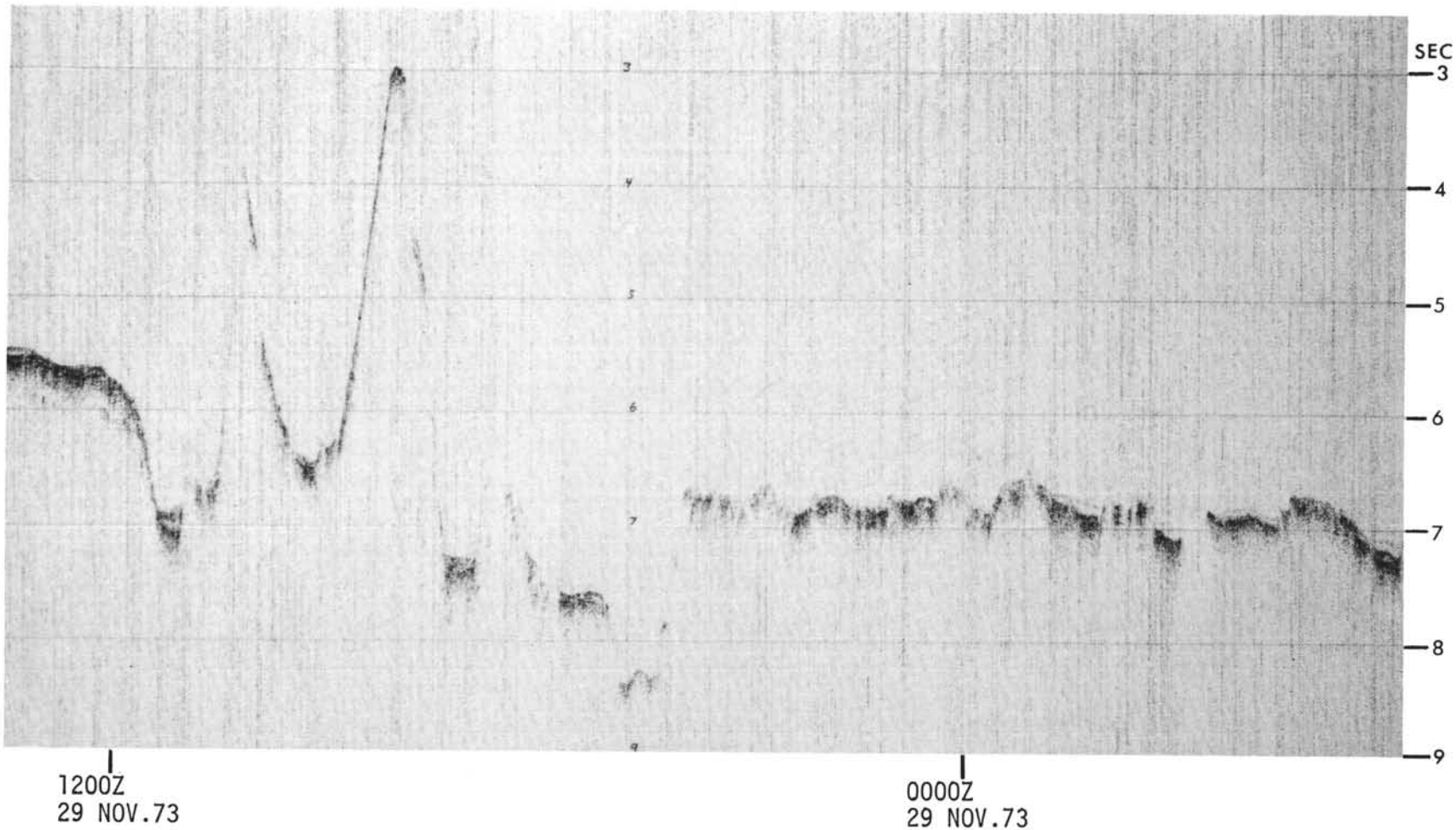

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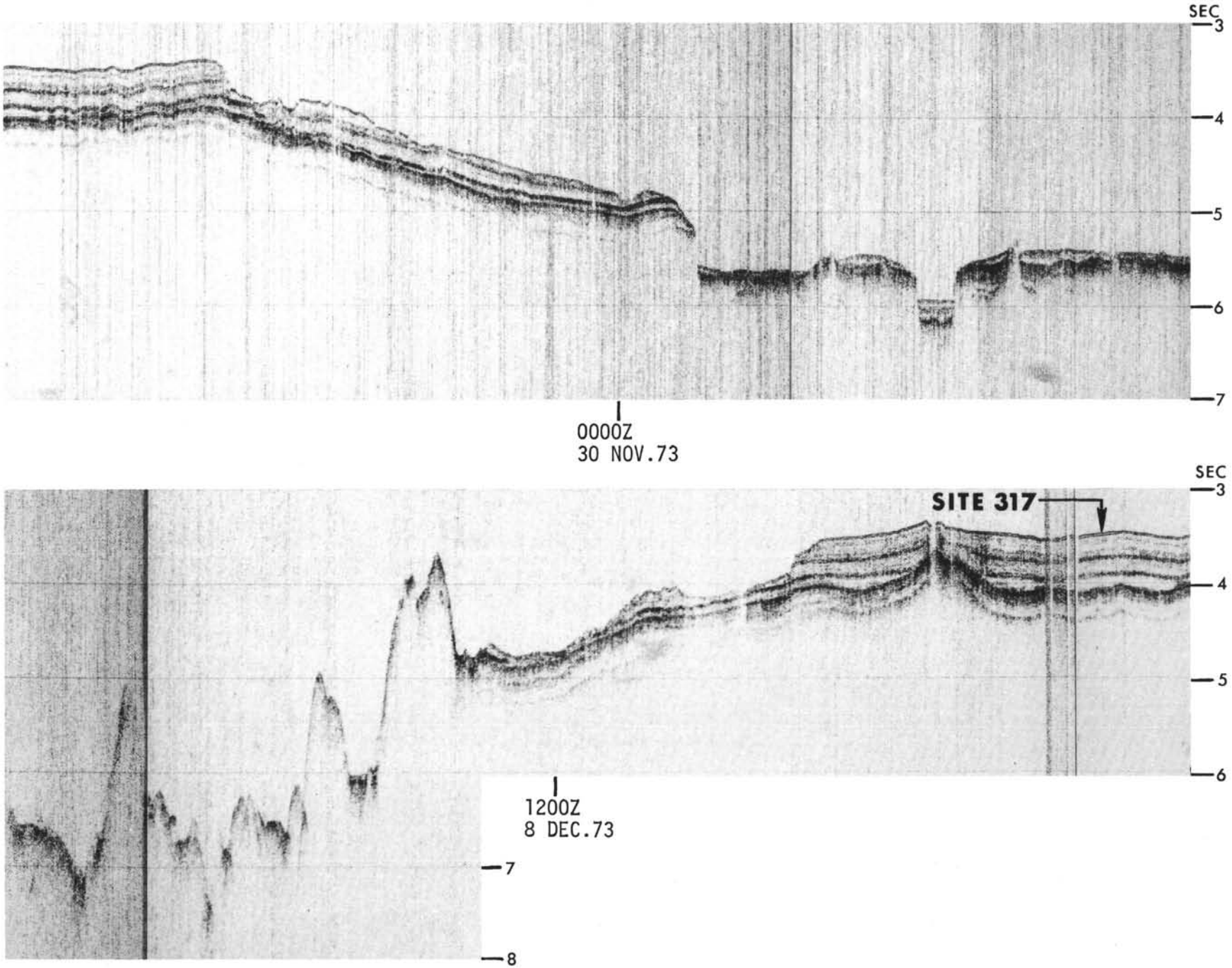

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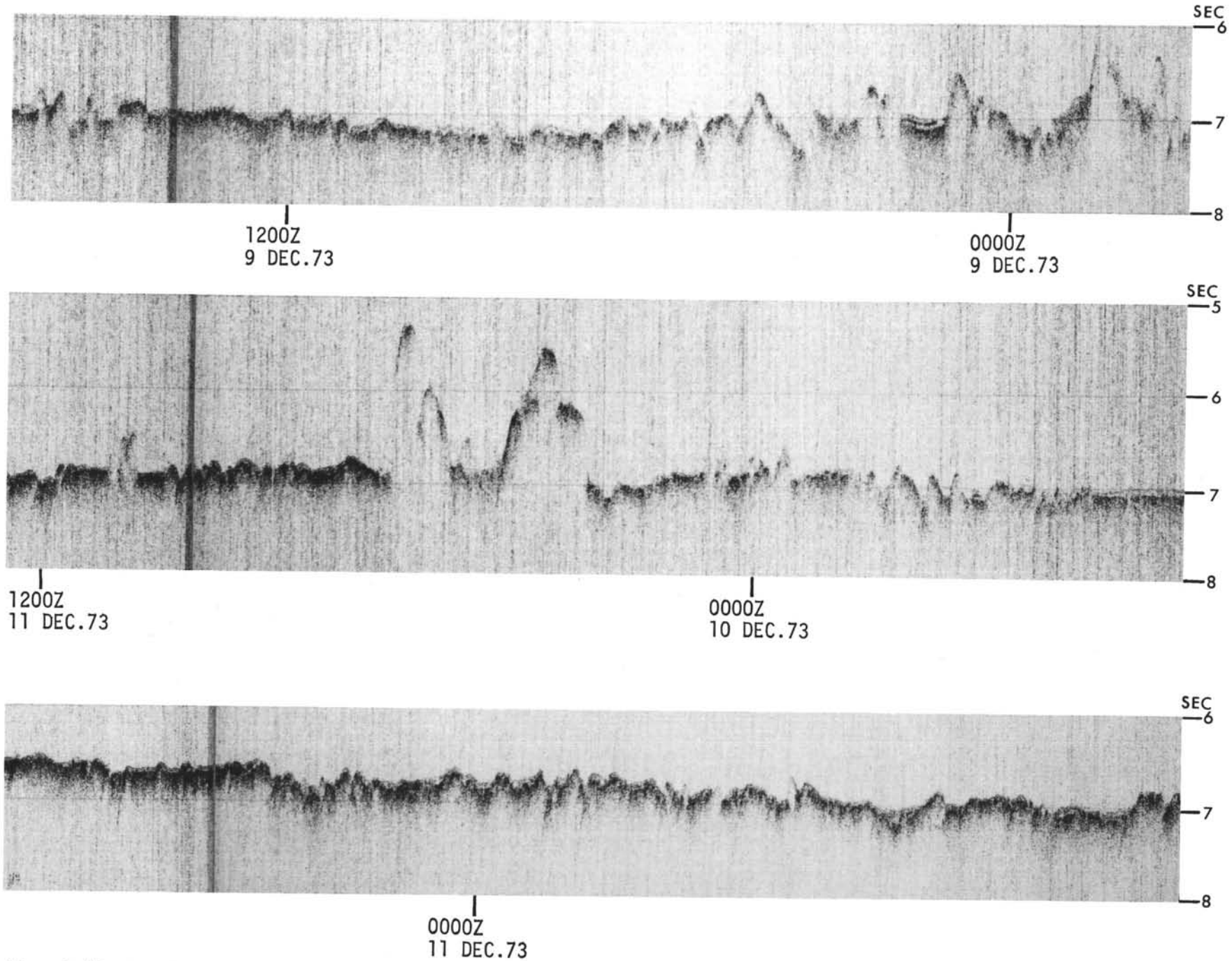

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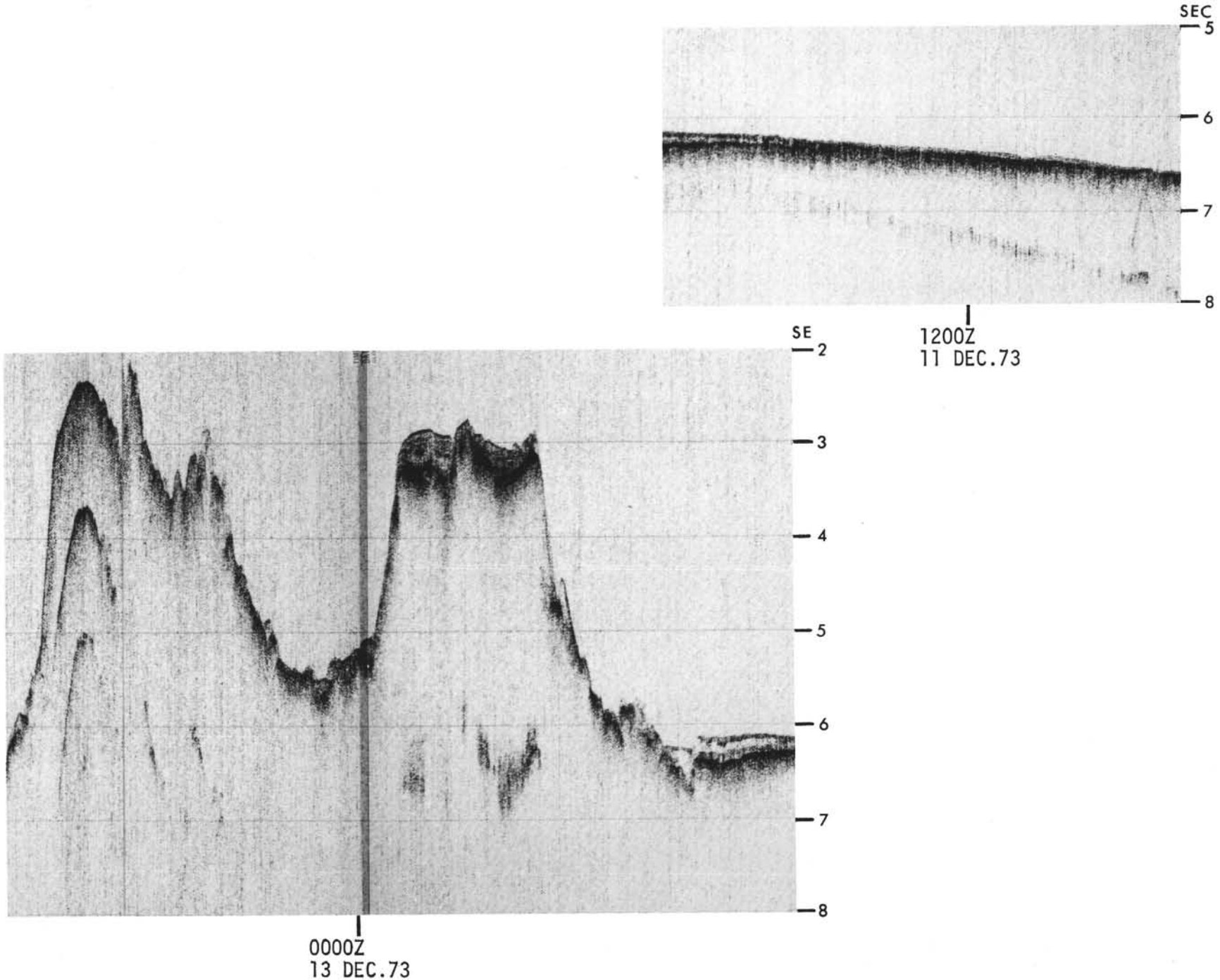

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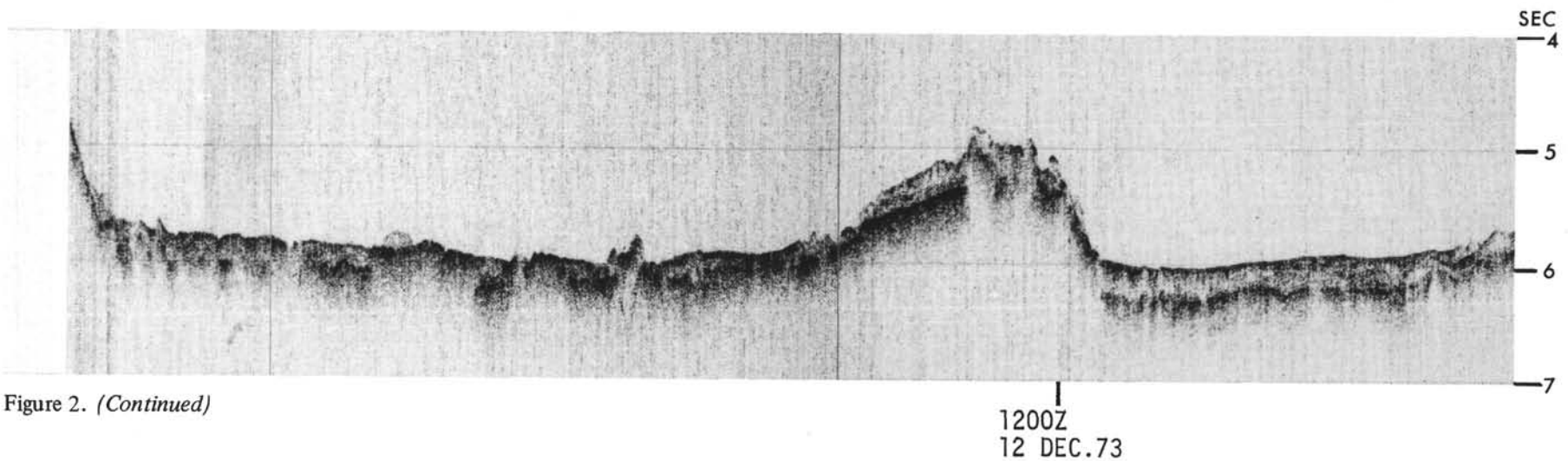

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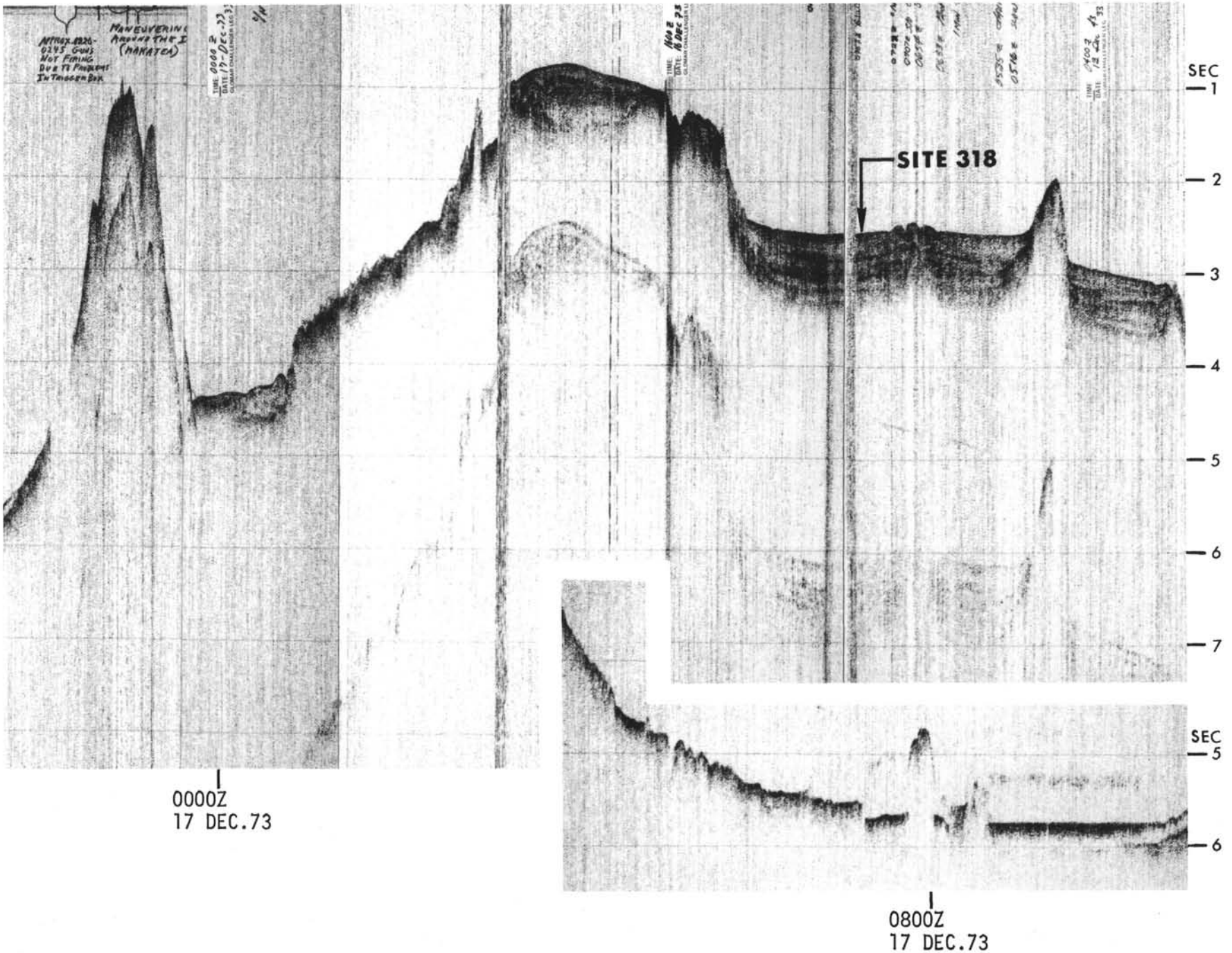

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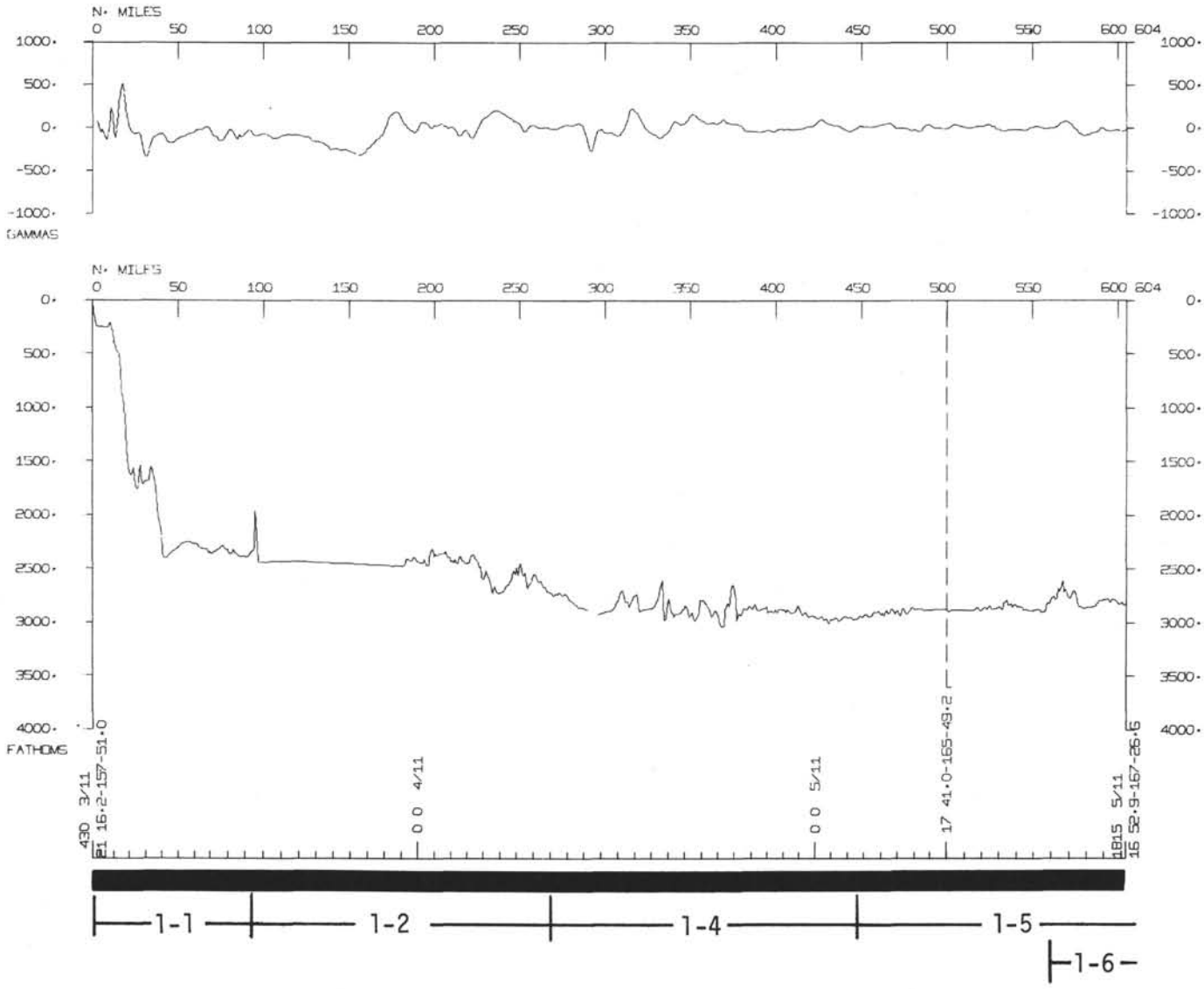

Figure 3. *Magnetic and bathymetric profiles from Leg 33 plotted against nautical miles from Honolulu (at top) and time (at bottom); seismic profiles are keyed to the time scale by roll and number.*

drilled on Leg 8 (Tracey, Sutton, et al., 1971). At that site the bottom assembly twisted off at 15 meters sub-bottom depth in mid-Eocene indurated clay and chert which was overlain by mixed Quaternary, Miocene, and Eocene radiolarian clay. Between this point and the ridge that forms the eastern boundary of the Line Islands trough (see Site 314 report) the bottom is characterized by a relatively flat, young, acoustically transparent layer.

The magnetic profile over the Hawaiian Arch has considerable relief, and beyond the arch the topography and magnetic profiles are both smooth. The age of the segment of the Pacific plate between Honolulu and Site 314 is between 90 and 110 m.y. (Larson and Chase, 1972), a time of magnetic stability (Baldwin et al., 1974). At Site 164, located between the Molokai and Clarion fracture zones (Figure 1), drilled on Leg 17 (Winterer, Ewing, et al., 1973), the basement age was found to be 100-115 m.y.

Site 314 to Site 315 (Figure 4b)

On leaving Site 314 *Glomar Challenger* steamed southeast parallel to the trend of the Line Islands chain. Sediment cover over acoustic basement, between Site 314 and the intersection of the ship's track with the extension of the Clarion Fracture Zone, is very thin. The effects of deep submarine erosion by bottom waters moving through the Line Islands chain are especially marked between the Clarion Fracture Zone and Site 315. The erosion is ascribed to late Cenozoic Antarctic bottom water activity; erosion at the present time may be negligible (Winterer, in preparation). Normark and Spiess (in press) note that episodic eastward flow of bottom water may be occurring at present with velocities occasionally sufficient to form ripples within the sandy sediments of the moat floor. At 1730 9 November 1973 ~0.2 sec of sections has been removed. At 0700 10 November 1973 a deep passage is seen where the entire

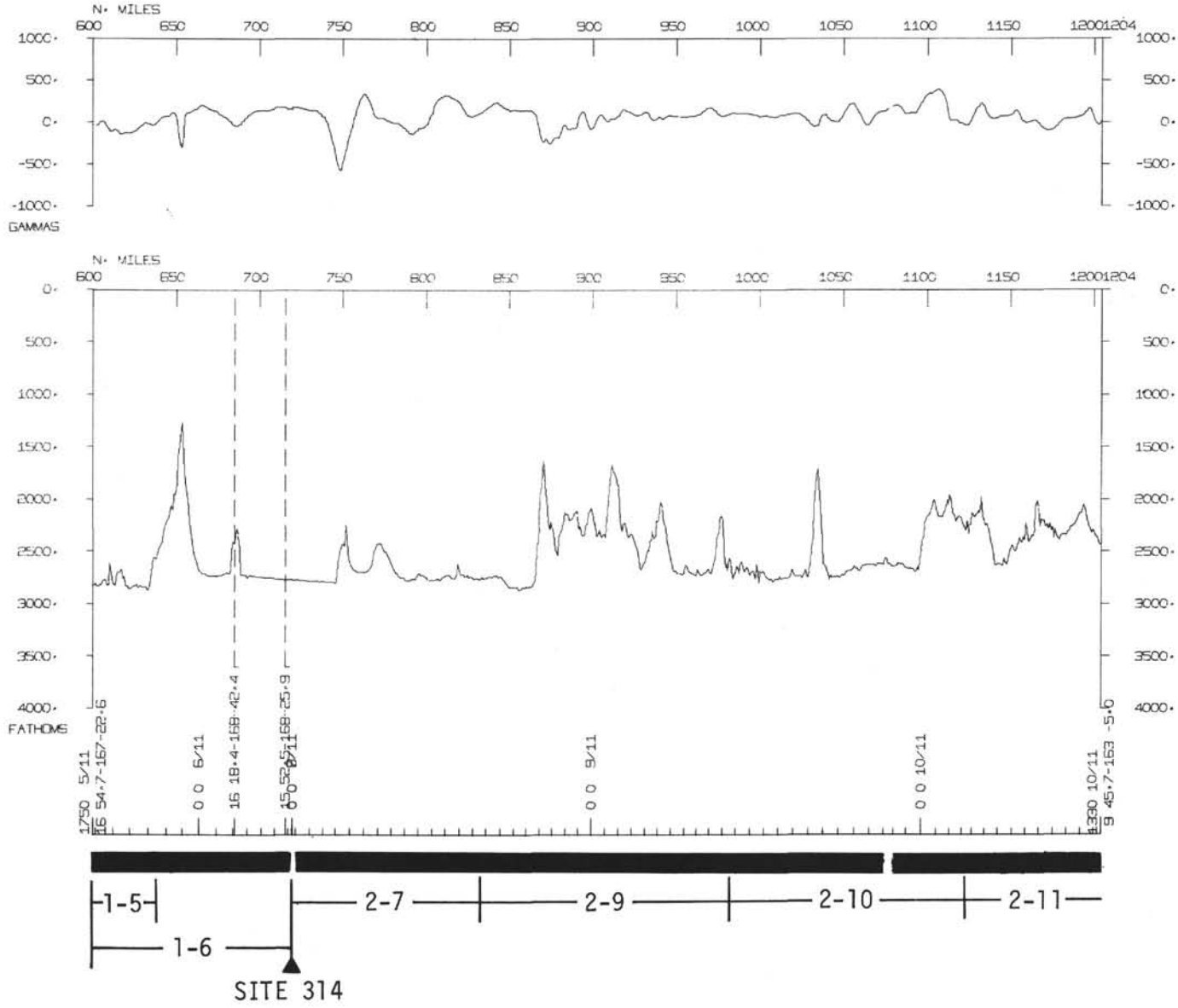

Figure 3. *(Continued)*

sediment cover over acoustic basement has been removed. Previous surveys across the Line Islands have also revealed such erosional features (Raff, 1973; seismic profile 3).

At the latitude of the Kingman Reef-Palmyra Island segment of the Line Islands Ridge (see Figure 1) the thickness of sediments above the 0.70-sec reflector increases markedly. This increase is probably related to an increase in biological productivity at this latitude. Another factor contributing to the thickness increase may be the numerous topographic highs that reach to within less than 1000 fathoms. Sediments swept from these would form turbidite contributions to the strata. At Site 165, drilled on the west flank of the Line Islands Ridge (Winterer, Ewing, et al., 1973) turbidites make up a significant fraction of the sediment column. The morphology of the sediments in the troughs from 0000 12 November 1973 to 1600 12 November 1973 indicates concentric draping of the sediments suggestive of a dominantly pelagic mode of deposition. The internal reflectors also drape over "basement" highs and maintain a rough parallelism. This "drape" morphology contrasts with the flat-lying character of dominantly turbidite sections.

From 0000 12 November 1973 to Site 315 the reflector stratigraphy is quite coherent. The 0.70-sec reflector that correlates with the Paleocene-Oligocene cherty chalk —Miocene chalk contact is a dominant feature; below this, the sequence is vague and the basalt "basement" may not be clearly recorded. Perhaps the high velocity limestones near the base of the sedimentary section form an acoustic mask over the basalt. Above the 0.70-sec reflector somewhat discontinuous reflectors such as the 0.40 sec may be related to ooze-chalk boundaries.

Site 315 to Site 316 (Figure 4c)

On leaving Site 315 we steamed to Fanning Island to drop off personnel and pick up spare parts. Buttressing

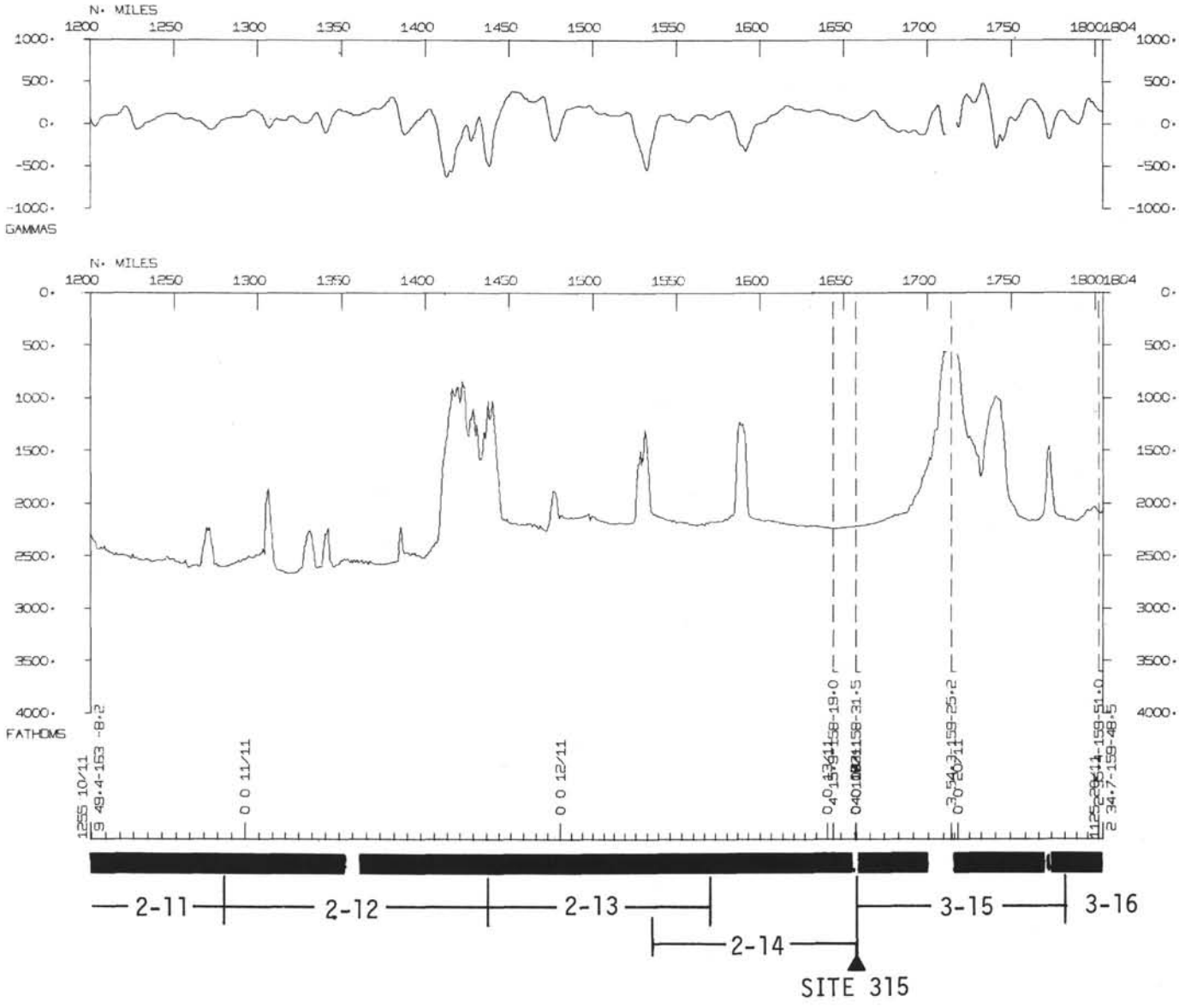

Figure 3. *(Continued)*

of deep reflectors against the Line Islands Ridge is apparent (1500 to 2000 19 November 1973). On leaving Fanning Island we crossed over a deep submarine canyon that drains to the west (0200 20 November 1973) from shelf depths around the southwest side of the island. In this area such drainages cut as deeply as 2 km into the archipelagic apron (Winterer, this volume). Between 1730 and 2323 20 November 1973 the ship's track crossed over the extension of the Nova-Canton trough. There, the section has been cut down to possibly the 0.475-sec reflector at Site 316, which is placed at a hiatus between Oligocene cherty chalk, dolomite and limestone, and Miocene chalk; the 0.70-sec reflector at Site 315 may correlate with the Site 316 0.475 reflector. A striking feature of the Christmas Island Trough is the systematic thinning of the post 0.475-sec reflector section. Individual reflectors can be traced virtually without interruption for 24 hr of steaming time. Basalt basement was not reached at this site, and there does not appear to be a definite reflector below the 0.71-sec reflector within the Cretaceous limestone section.

Site 316 to Site 317 (Figure 4d)

On leaving Site 316 we steamed south-southwest in order to make the shortest distance to intersect the *Cato*-3 seismic profile along which our planned Site 317 lay. The well-stratified section of Tertiary carbonates so prominent around the Line Islands thinned rapidly as the water deepened; internal reflectors also disappeared. By 0530 28 November even the very thin, "transparent" layer had virtually disappeared as we crossed the northern part of the Central Basin. The thinning and disappearance of the internal reflectors is probably due to the systematic lessening with increasing depth of $CaCO_3$ content of the Tertiary section.

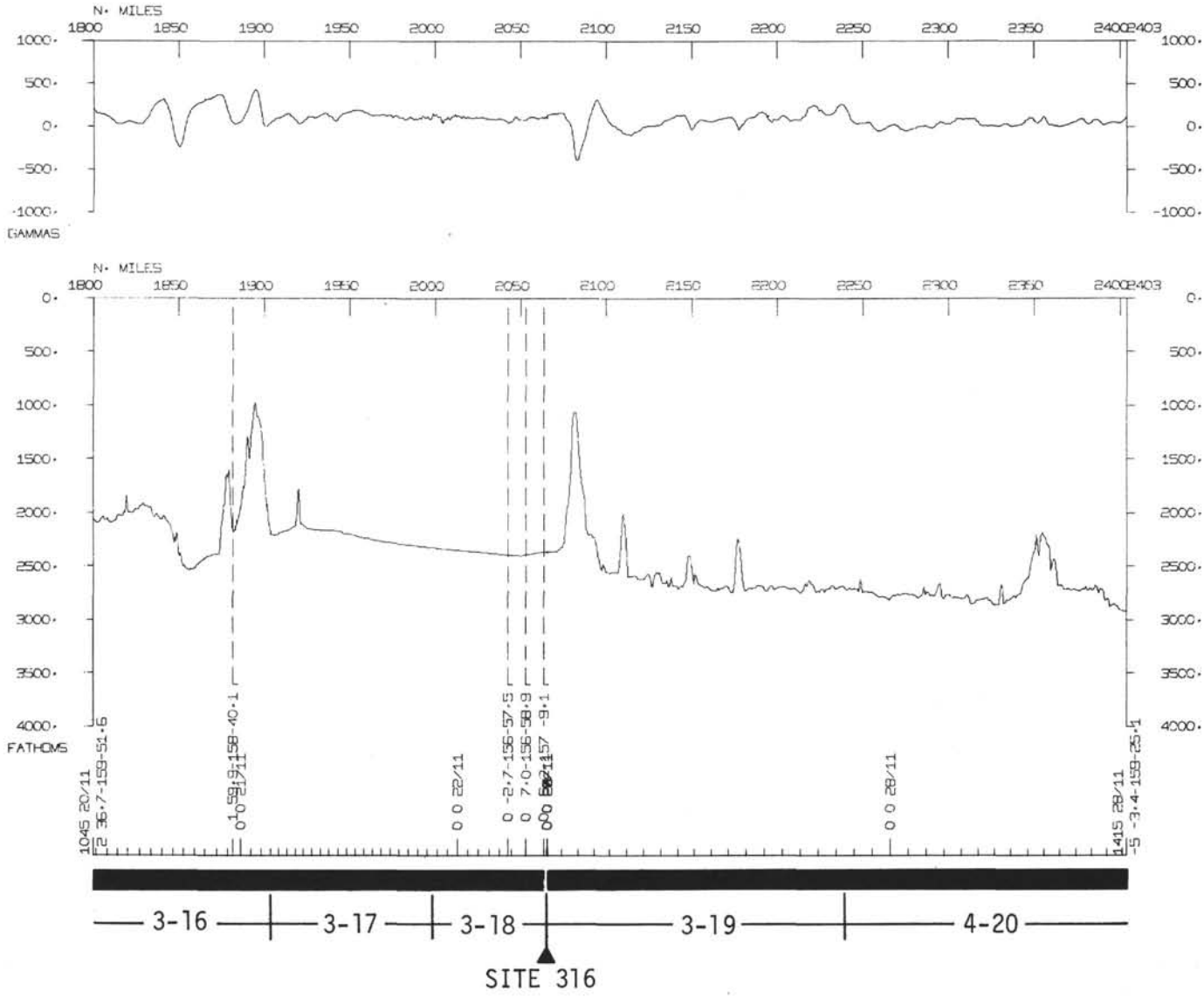

Figure 3. *(Continued)*

From 1330 28 November to ~2200 29 November the magnetic anomaly pattern is quite regular (Figure 3e); the pattern is very flat over the Manihiki Plateau.

At 1030 29 November the northwest boundary faults of the Manihiki Plateau were crossed. The water depth decreases in stepwise fashion as the plateau is approached and the sedimentary section thickens markedly. The section is locally influenced by deep erosional scars and probably local slumping. The topography and structural geology of the plateau is discussed in detail by Winterer et al. (1974). Their fig. 5 shows the *Cato*-3 profile used by us in planning the approach to Site 317; a detailed discussion will not be repeated here since our profile duplicates the *Cato*-3 line.

Site 317 to Site 318 (Figure 4e)

Leaving Site 317 *Glomar Challenger* steamed east-southeast over the eastern boundary faults of the Manihiki Plateau. Our course was approximately 25° more easterly than the *Cato*-3 track discussed by Winterer et al. (1974) but similar features were seen. A buried ridge over which the sediments have draped and compacted and upon which moating has taken place is prominent. Very deep erosion, probably down to the mid-Eocene cherty chalk (noted by "C" on Figure 4c) can be clearly seen. The basement rim is well marked as are the numerous faults.

The thickness of the pre-Eocene strata appears to be constant although the water depth increases markedly from 0455 8 December to 1200 8 December suggesting that the relief along this side of the plateau developed in post-Cretaceous time.

The Penrhyn Basin has a vanishingly thin sedimentary cover similar to the situation in the Central Basin between Sites 316 and 317. The sediments thicken systematically as the Tuamotu Ridge system is approached.

Approaching the Tuamotu Ridge our course was east-southeast (approximately 100°). Just northeast of our proposed Site 318 the Marquesas Fracture Zone trends

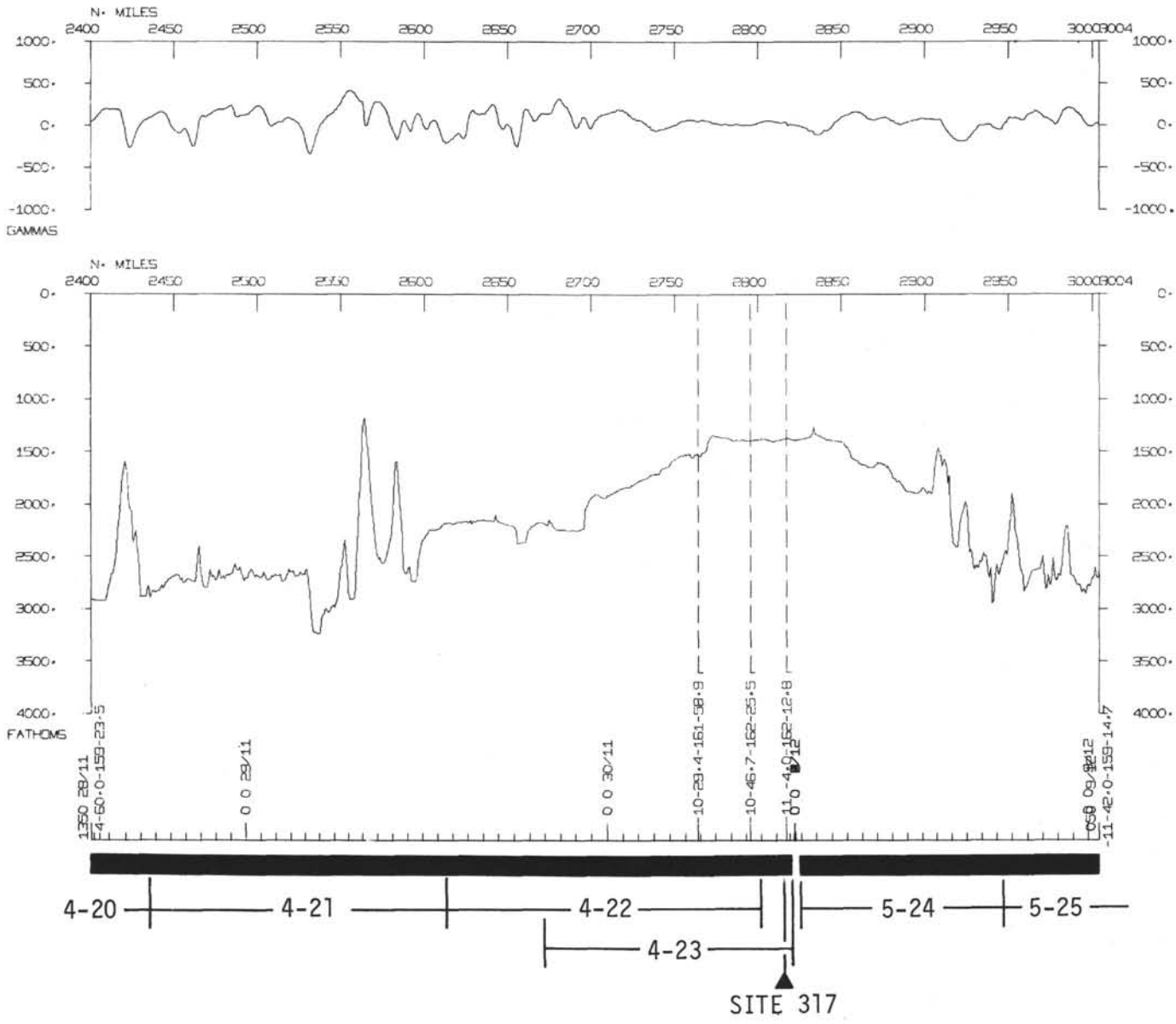

Figure 3. *(Continued)*

slightly south or west. We were therefore steaming at a very low angle to the fracture zone. The ridge crossed between 0900 and 1830 12 December probably is an unmapped extension of the Marquesas Fracture Zone. At 0200 13 December we crossed the scarp that borders the Tuamotu Ridge on its north side and crossed the perched, sediment-filled basin in which Site 318 is located. The internal reflector stratigraphy in this perched basin is irregular and vague, possibly due to the high percentage of the section that is turbiditic in nature. No attempt was made at this site to correlate the seismic profile with the drilling results.

Site 318 to Papeete (Figure 4f)

On leaving Site 318 *Glomar Challenger* steamed through the pass between the large atolls of Rangiroa and Arutua marked by 0.3+ sec of well-stratified sediment. Because we had a few hours of available steaming time we passed by Makatea Island thus crossing a possible fault zone between the subsiding line of the Tuamotu atolls and the emergent limestone island of Makatea, which has the morphology of an uplifted atoll (Chevalier, 1973).

The seismic gear was pulled aboard as we approached Tahiti and Leg 33 ended.

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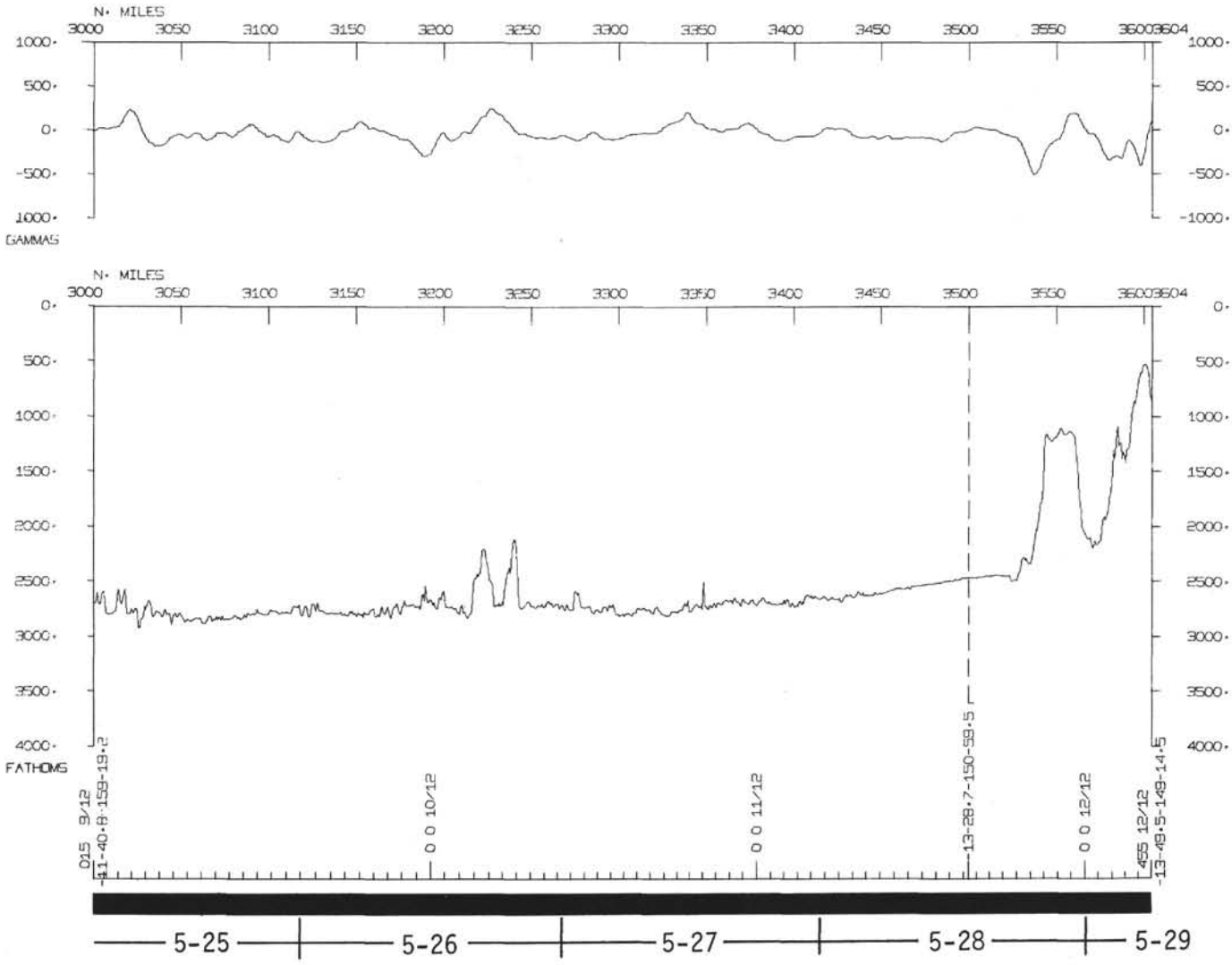

Figure 3. *(Continued)*

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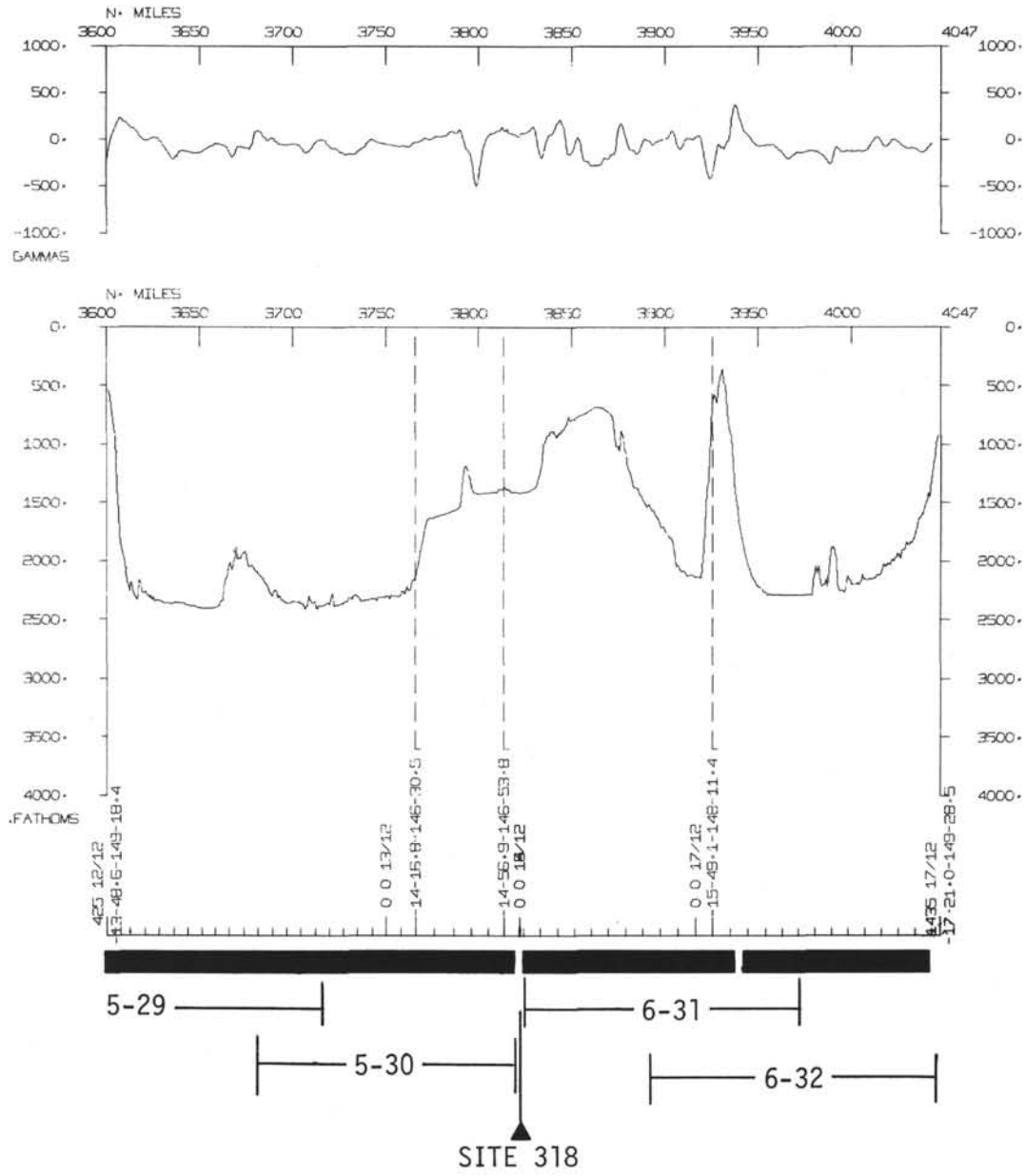

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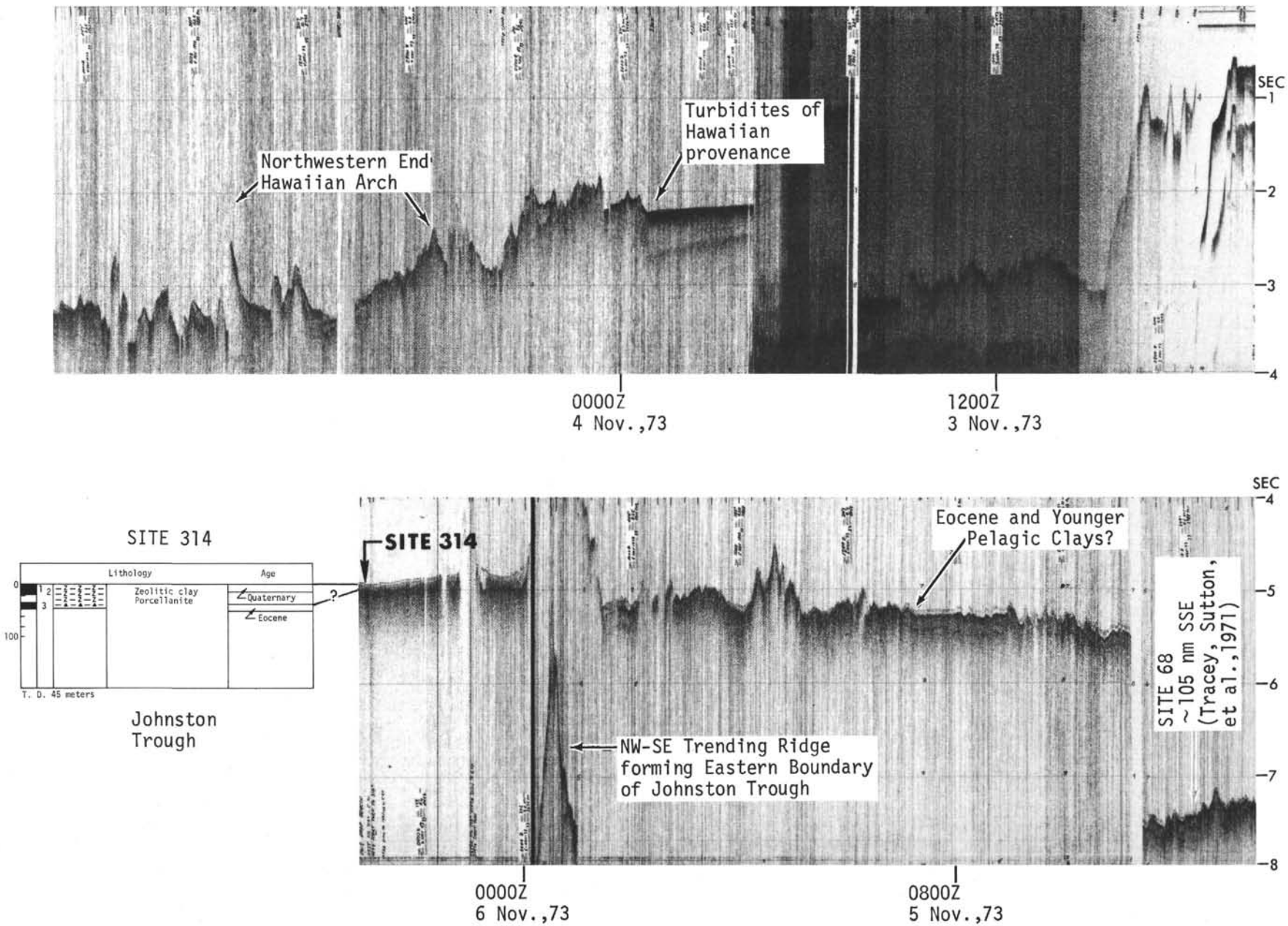
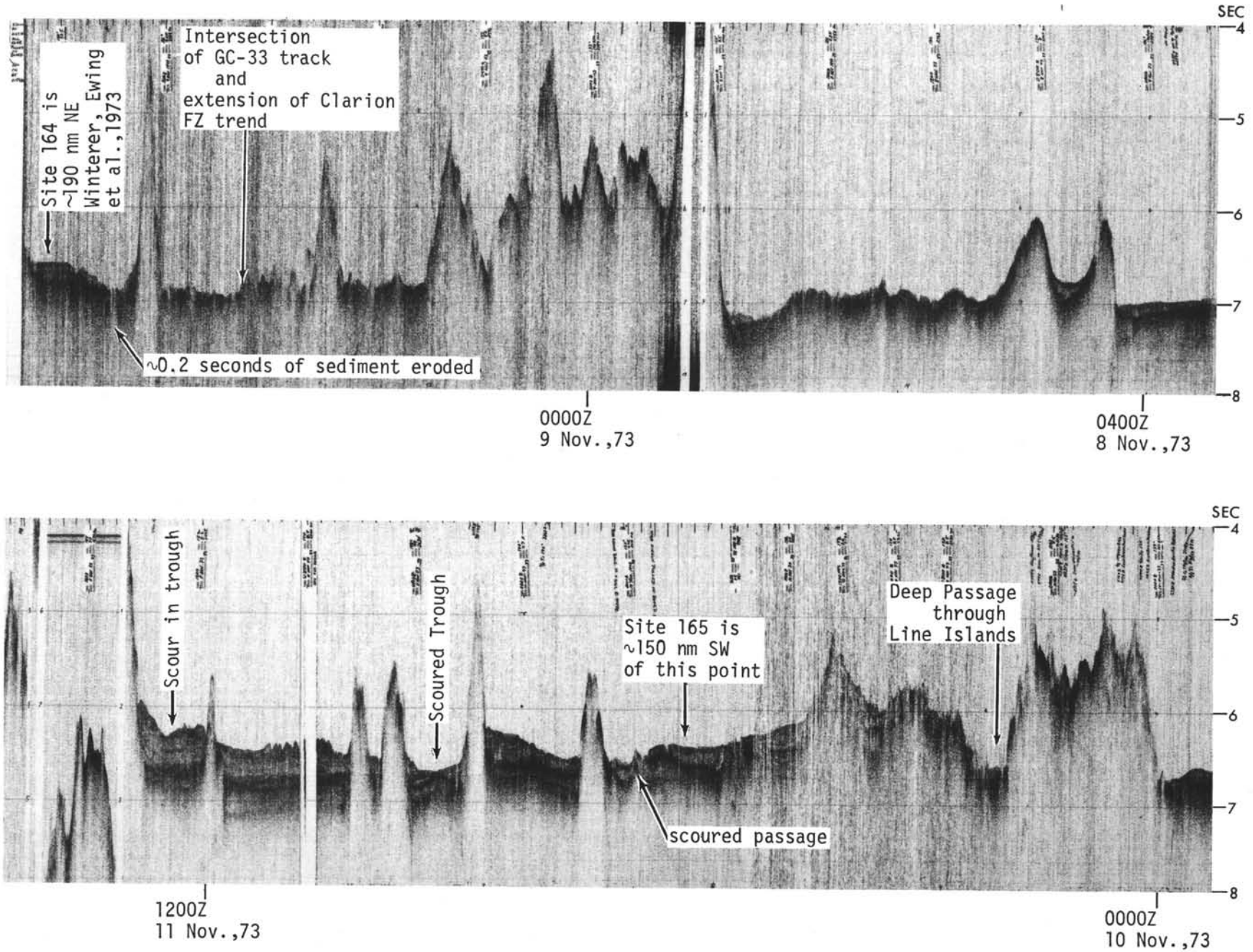


Figure 4. *Seismic profiles taken on Leg 33 on the No. 2 EDO kept set for a 4-sec sweep. Annotated in terms of drill-site stratigraphy, acoustistratigraphy, physiography, and structure.*



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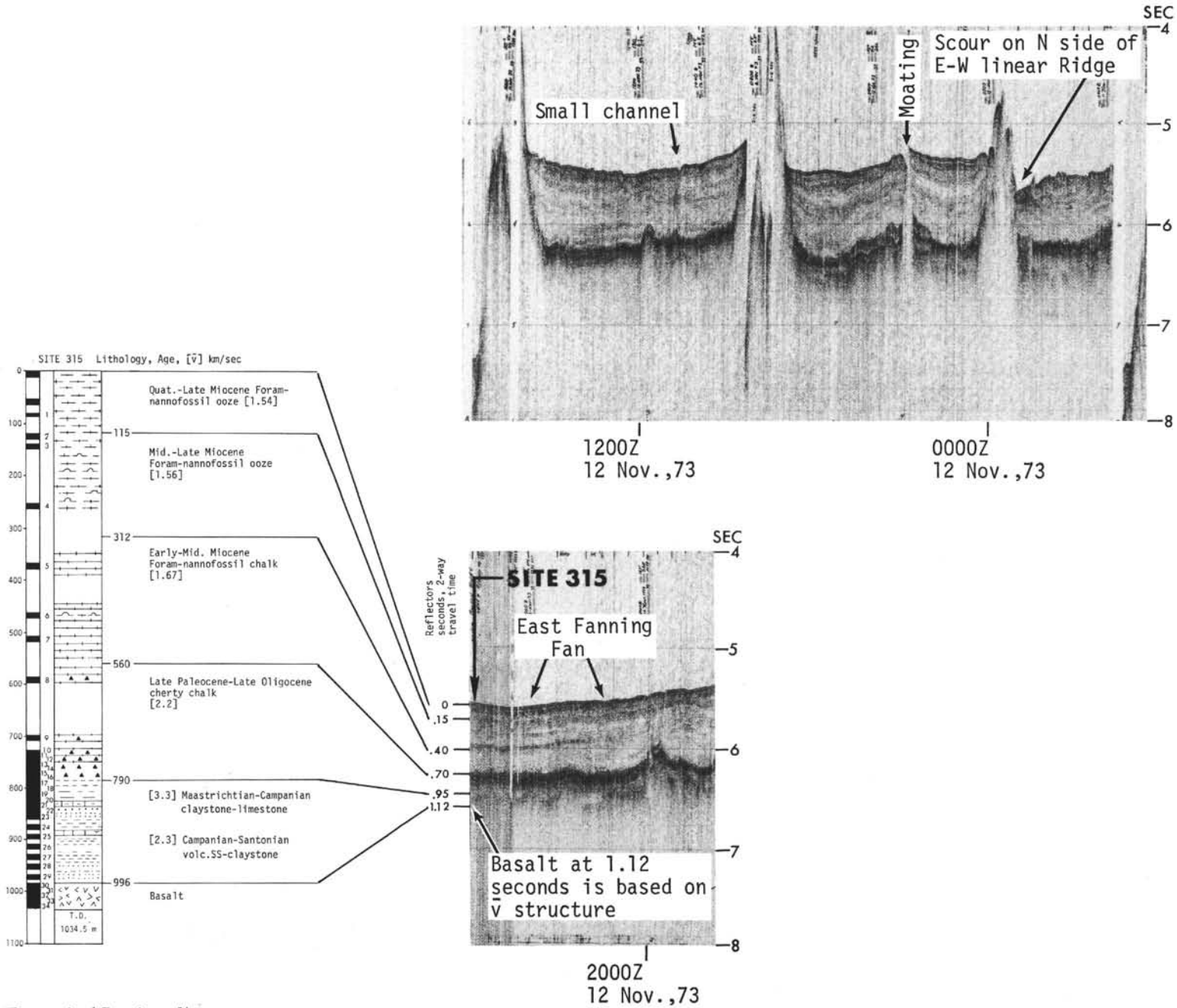

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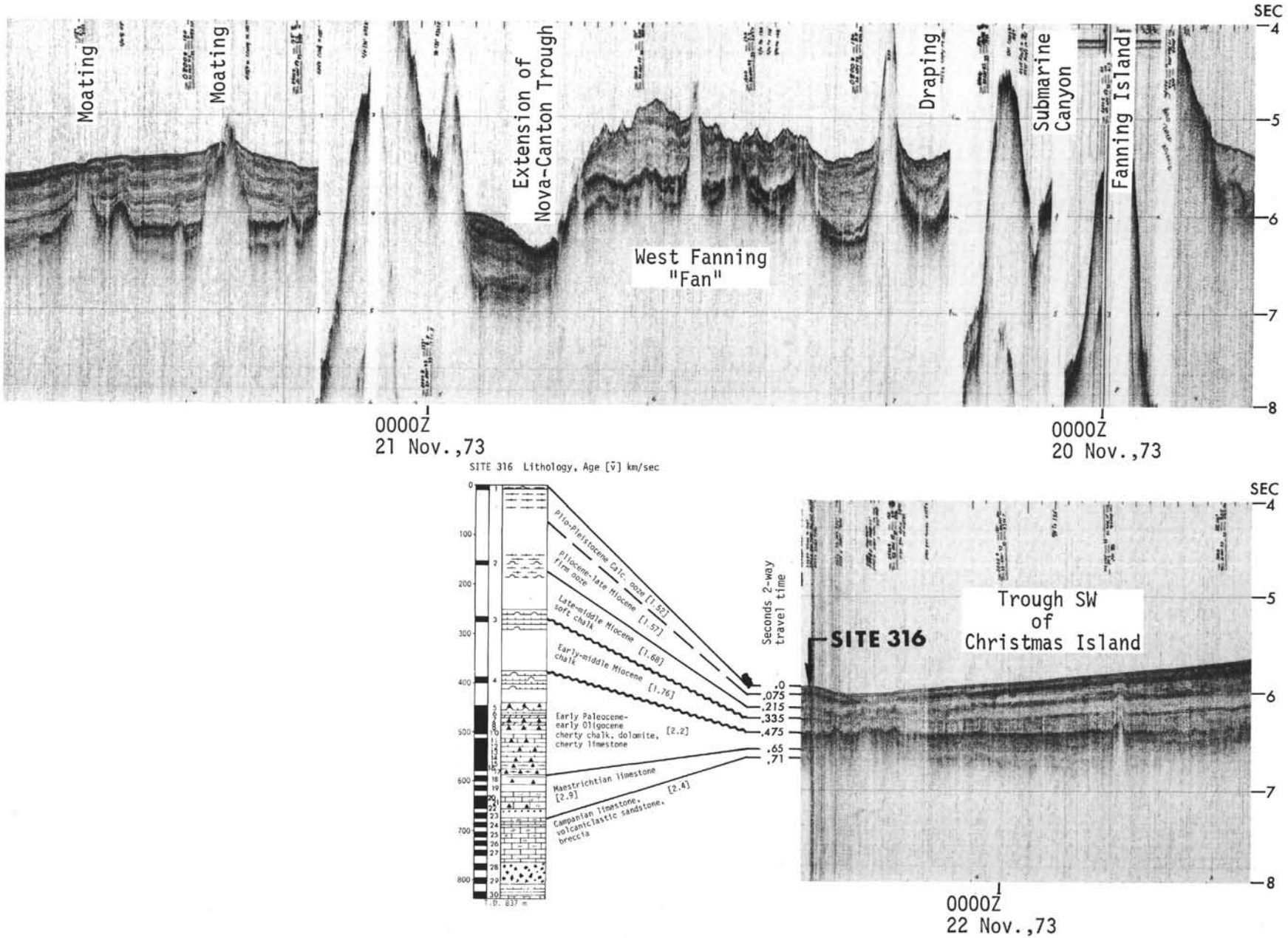

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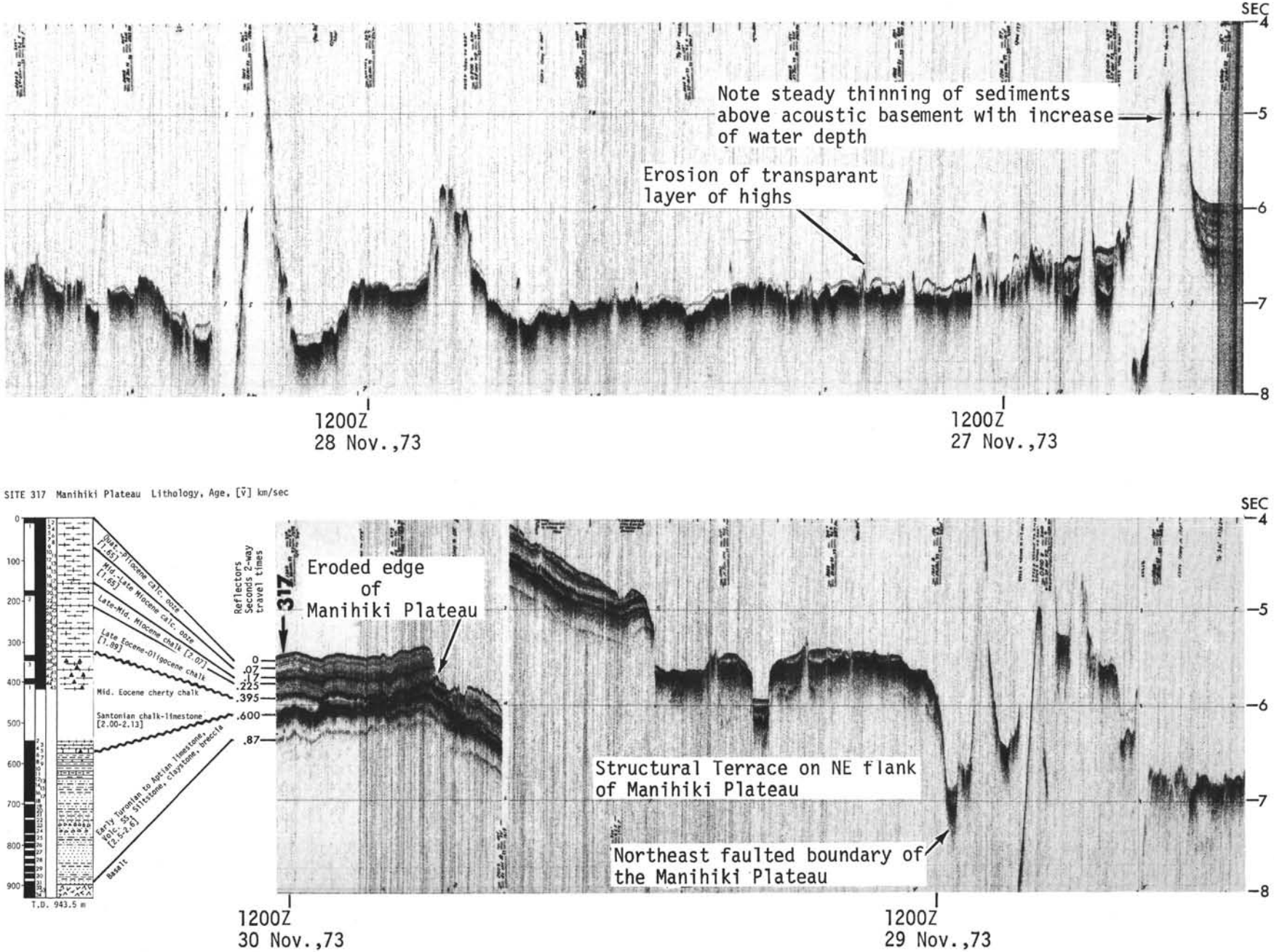

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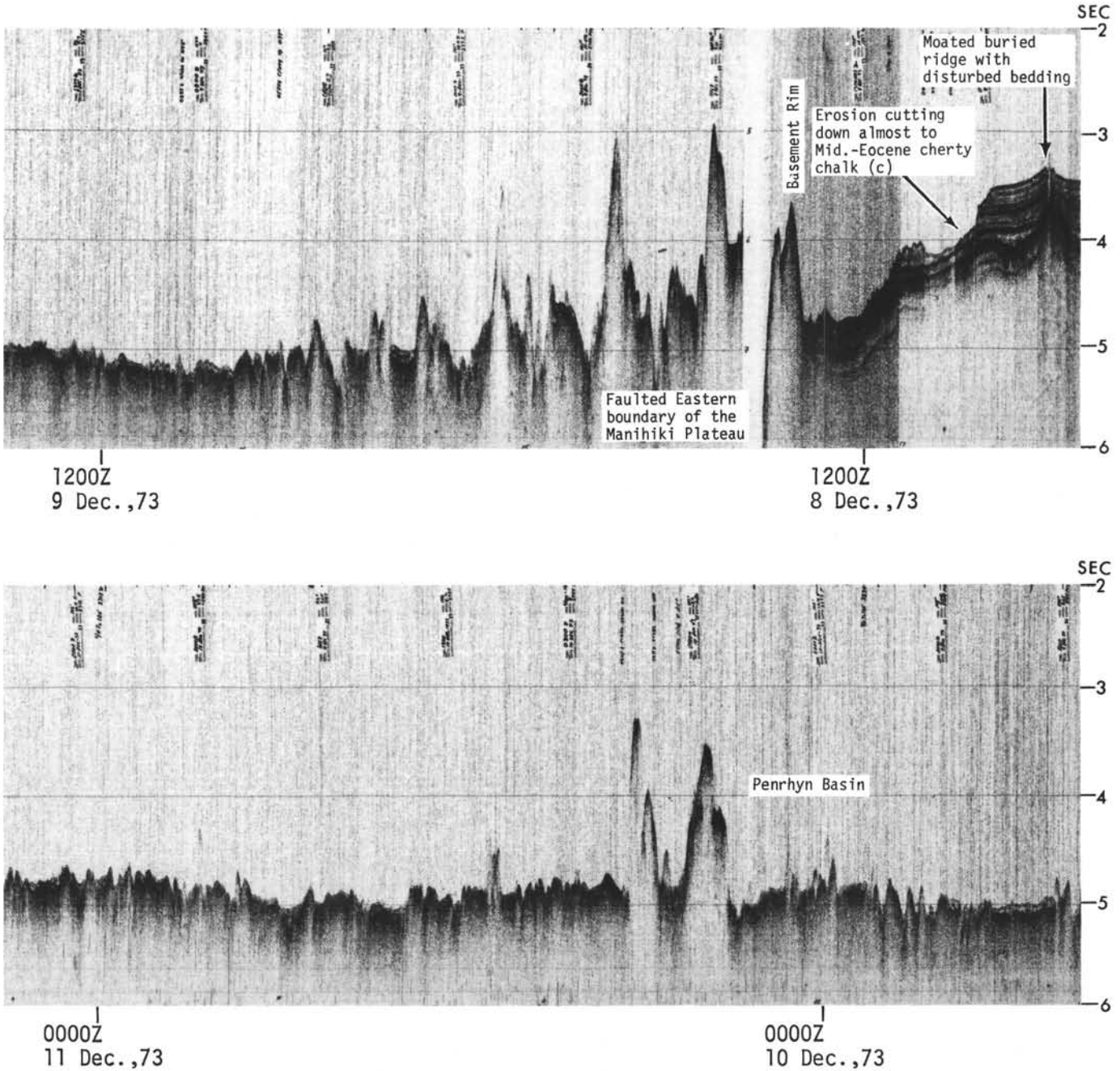

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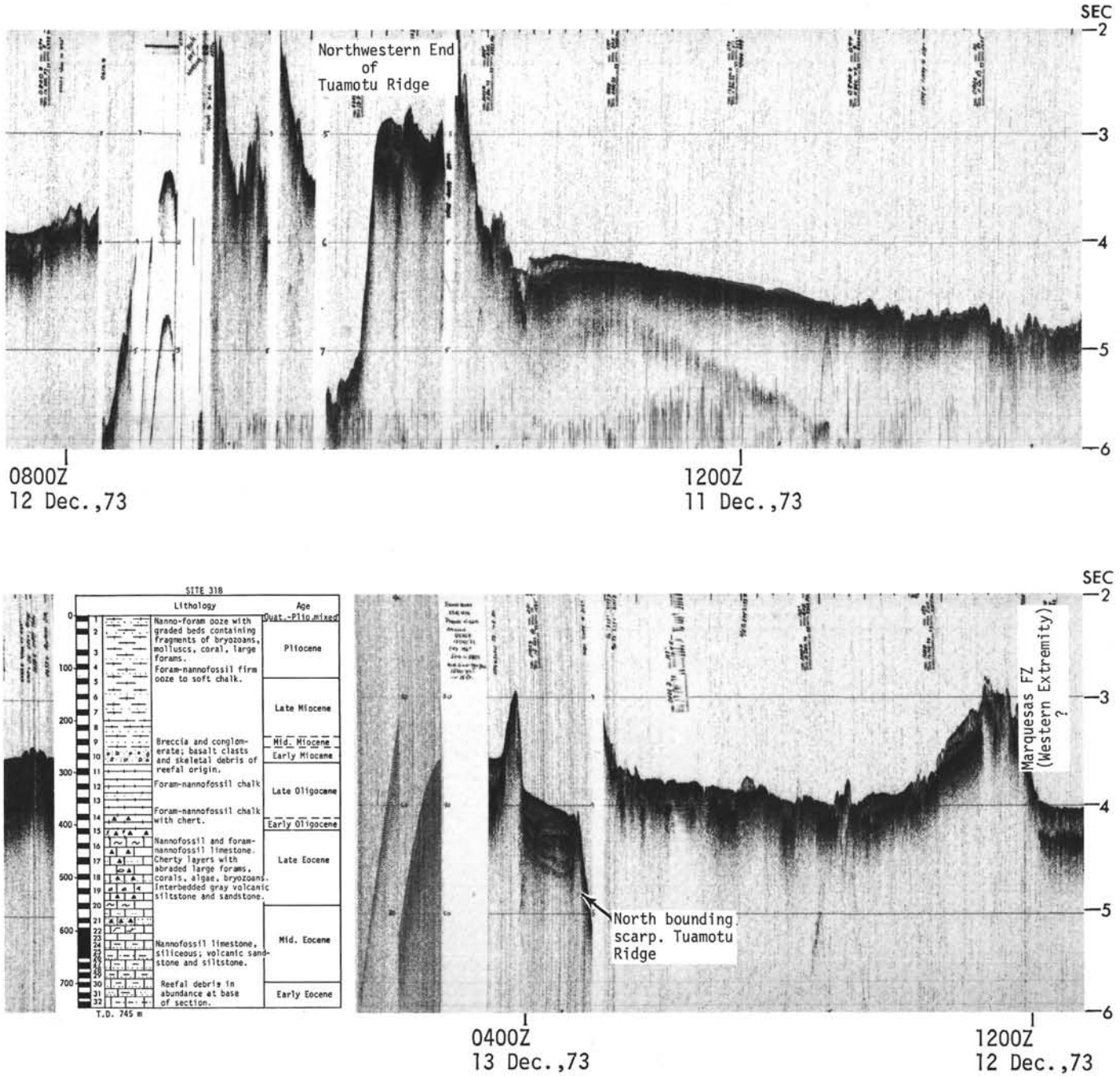

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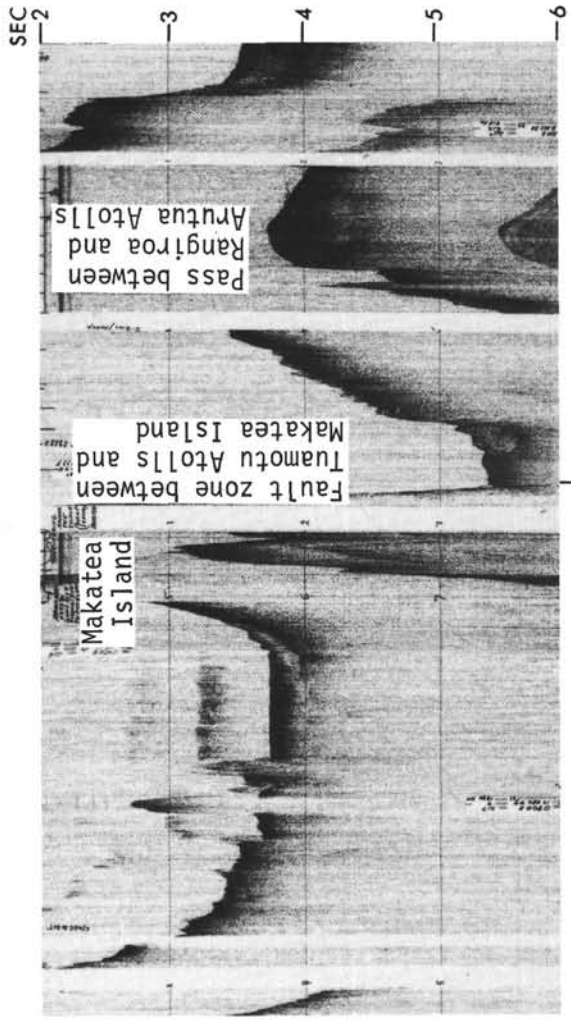

Figure 4. *(Continued)*