

5. UNDERWAY GEOPHYSICAL MEASUREMENTS: *GLOMAR CHALLENGER* LEGS 45 AND 46

Philip D. Rabinowitz,¹ James R. Heirtzler,² Thomas D. Aitken,¹ and G. M. Purdy²

We present here the navigation and underway geophysical measurements (magnetics, bathymetry, and seismic profiling) obtained aboard *Glomar Challenger* during Legs 45 and 46. On both legs the ship left San Juan, Puerto Rico, and proceeded to sites on either side of the Mid-Atlantic Ridge crest on an approximate flow line near 23°N. The ship's track for Leg 45, which began at San Juan on 30 November 1975 and ended at San Juan on 20 January 1976, is shown in Figure 1. The ship's tracks for Leg 46, which began at San Juan on 28 January 1976 and ended at Las Palmas, Canary Islands, on 9 March 1976, are given in Figures 2 and 3. Dates and times for the first navigational fix of the day, progressive distance in hundreds of nautical miles along the ship's track, and site numbers are noted. Tables 1 and 2 list the positioning information for Legs 45 and 46, respectively, acquired underway by the satellite navigation system and used to plot the ship's tracks. Errors are generally less than 1 nautical mile (Talwani et al., 1966). Also listed in Tables 1 and 2 are the regional magnetic field values, computed at each navigation point using the reference field of Fabiano and Peddie (1969), and used to determine the magnetic anomaly profiles in Figures 4, 5, 6a to 6d, and 7a to 7d.

Magnetic anomalies, plotted normal to the ship's tracks from San Juan to Site 396, are given for Legs 45 and 46 in Figure 4. The zero level for the magnetic anomalies has been arbitrarily adjusted to avoid confusion and also to clarify the shorter wavelength positive-negative anomaly trends. Magnetic anomalies, plotted normal to the ship's track from Site 396 to Las Palmas for Leg 46, are given in Figure 5. In this diagram, the ship's track is the zero magnetic anomaly level. It has not been adjusted as in Figure 4. The three closely spaced tracks in Figure 4 allow us to identify some key sea-floor-spreading magnetic anomalies. The anomalies are identified according to the numbering system of Heirtzler et al. (1968) and LaBrecque et al. (1977). The anomaly identifications are aided by the larger data base given in Pitman and Talwani (1972). Since we have only one ship track line from Site 396 to Las Palmas, we feel it may be misleading to place anomaly identifications on the magnetic profile. The reader is referred to Pitman and Talwani (1972), Hayes and

Rabinowitz (1975), and Uchupi et al. (1976) for anomaly identifications in the eastern central Atlantic Ocean. Note the long wavelength (1000 to 1500 km) magnetic high observed east of 28°W and long wavelength magnetic low observed west of 28°W in Figure 5. These long wavelength anomalies are discussed in Uchupi et al. (1976).

Figures 6a to 6d and 7a to 7d show magnetic anomaly and bathymetric data plotted as functions of time, distance, latitude, and longitude, with the distance plotted as a linear function. The data processing procedure, including program listings, is given in Talwani (1969). The vertical scales show depth in uncorrected fathoms (assuming a sound speed of 800 fm/sec) under "D" and magnetic anomaly values in gammas under "M." On the lowermost scale at the bottom of the figure, distances are shown at intervals of 200 nautical miles. 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 noted above the distance scale listings. Navigational changes, which occur too frequently to be shown in the space available, or minor adjustments in course or speed, are indicated only by tick marks. At the top of the figures, from top to bottom, are shown time in days, time in hours, latitude in degrees, and longitude in degrees.

Seismic reflection profile records for Legs 45 and 46 are given in Figures 8-1 to 8-18 and 9-1 to 9-27, respectively. These data were recorded on dry-paper EDO recorders and in general were obtained using two airguns (20 and 40 in³ firing chambers) as a sound source. Depths are labeled on the sides of the records in two-way reflection time (1 sec = 400 fm water depth). Times and dates are listed on the bottom of the records to key into the navigation plots (Figures 1 to 3) and listings (Tables 1 and 2).

For detailed descriptions of the geophysical measurements in the vicinity of Sites 395 and 396, the reader is referred to Hussong, Fryer, et al.; Purdy, Rabinowitz, and Schouten; Purdy, Schouten, et al.; and Purdy and Rabinowitz all in this volume.

ACKNOWLEDGMENTS

The efforts of the laboratory technicians aboard D/V *Glomar Challenger*, under the direction of laboratory officers Michael Lehman (Leg 45) and Gerald Bode (Leg 46), is greatly appreciated. Two of us (P.D.R. and T.D.A.) were partially supported by IPOD Site Survey Management under Grant UC-NSF-C-482-2.

¹Lamont-Doherty Geological Observatory of Columbia University.

²Woods Hole Oceanographic Institution, Woods Hole, Massachusetts.

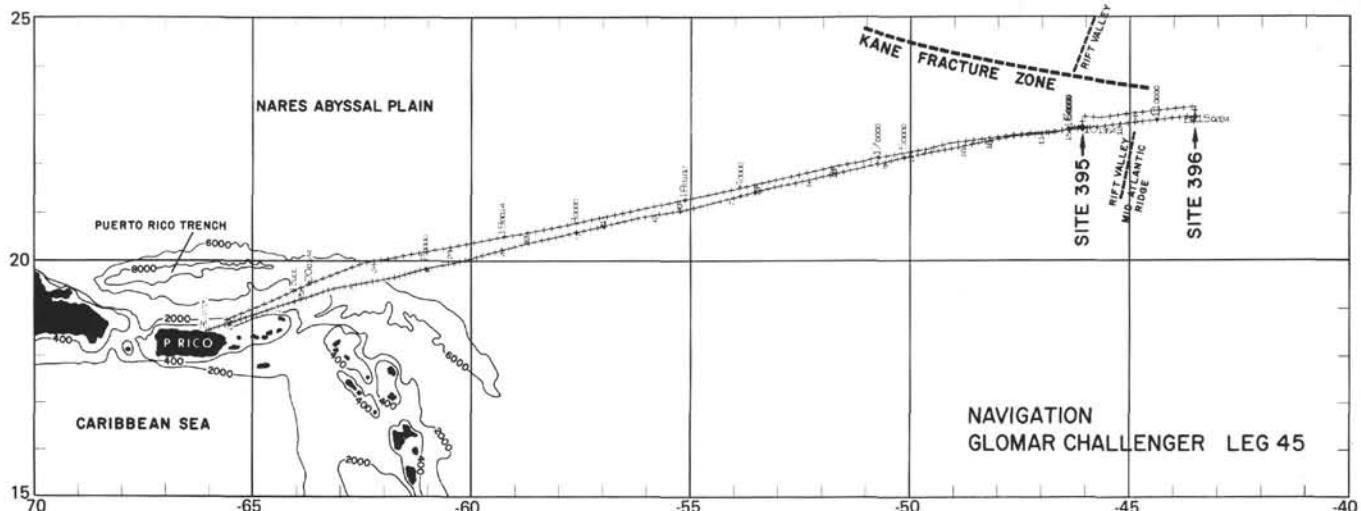


Figure 1. Track chart for Leg 45 of Glomar Challenger from San Juan, Puerto Rico, to San Juan, Puerto Rico. First navigation fix of every day and distance in hundreds of nautical miles along track are shown. Hour marks along track designated by "plus" marks. Generalized bathymetry after Uchupi (1971). Location of ridge axes and Kane fracture zone after Rabinowitz and Purdy (1976).

REFERENCES

- Fabiano, E. G. and Peddie, N. U., 1969. Grid values of total magnetic intensity I.G.R.F., 1965: *U.S. ESSA Tech. Rept.*, v. 38, p. 55.
- Hayes, D. E. and Rabinowitz, P. D., 1975. Mesozoic magnetic lineations and the magnetic quiet zone of the eastern North Atlantic: *Earth Planet. Sci. Lett.*, v. 28, p. 105-115.
- Heirtzler, J. R., Dickson, G. O., Herron, E. M., Pitman, W. C., III, and LePichon, X., 1968. Marine magnetic anomalies, geomagnetic field reversals, and motions of the ocean floor and continents: *J. Geophys. Res.*, v. 73, p. 2119-2136.
- LaBrecque, J. L., Kent, D. V., and Cande, S. C., 1977. Revised magnetic polarity time scale for the Late Cretaceous and Cenozoic: *Geology*, v. 5, no. 6, p. 330-335.
- Pitman, W. C., III, and Talwani, M., 1972. Sea floor spreading in the North Atlantic: *Geol. Soc. Am. Bull.*, v. 83, no. 3, p. 619-646.

Rabinowitz, P. D. and Purdy, G. M., 1976. The Kane fracture zone in the central western Atlantic ocean: *Earth Planet. Sci. Lett.*, v. 33, p. 21-26.

Talwani, M., 1969. A computer system for the reduction, storage, and display of underway data acquired at sea: *Lamont-Doherty Geological Observatory of Columbia University Tech. Rept. I*, CU-1-69 N00014-67-A-0108-0004, p. 348.

Talwani, M., Dorman, J., Worzel, J. L., and Bryan, G. M., 1966. Navigation at sea by satellite: *J. Geophys. Res.*, v. 71, p. 5891-5902.

Uchupi, E., 1971. Bathymetric atlas of the Atlantic, Caribbean, and Gulf of Mexico: *Woods Hole Oceanographic Institution Ref. No. 71-72*, Woods Hole, Mass.

Uchupi, E., Emery, K. O., Bowin, C. O., and Phillips, J. D., 1976. Continental margin off western Africa: Senegal to Portugal: *Am. Assoc. Petrol. Geol. Bull.*, p. 809-878.

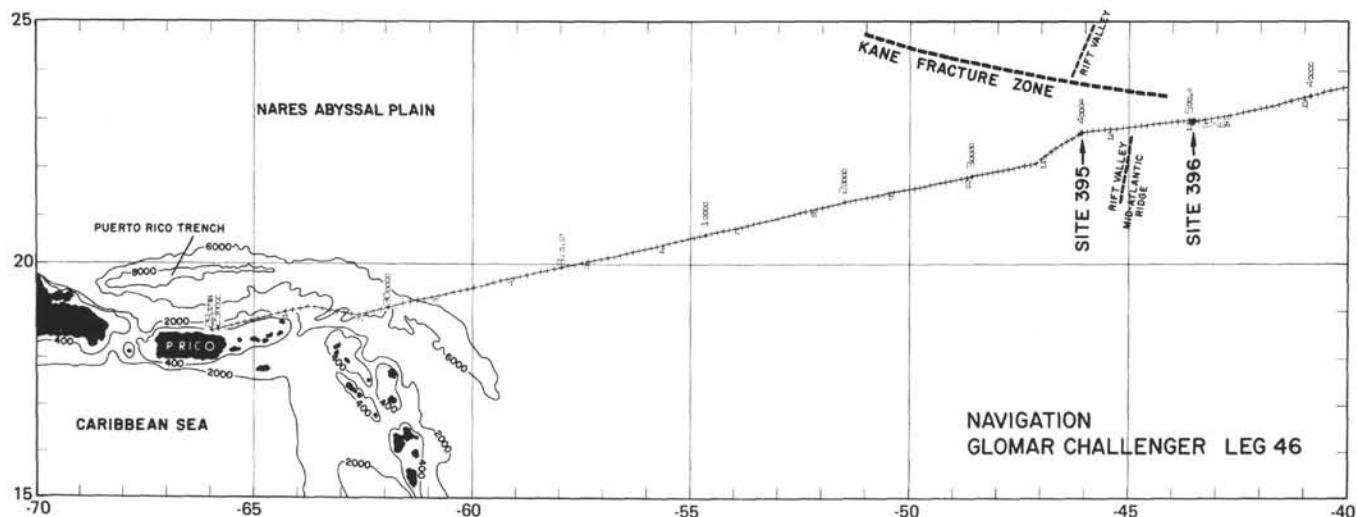


Figure 2. Track chart for Leg 46 of Glomar Challenger from San Juan, Puerto Rico, to Site 396. First navigation fix of every day and distance along track are noted. Hour mark along track designated by "plus" marks. Generalized bathymetry after Uchupi (1971). Location of ridge axes and Kane fracture zone after Rabinowitz and Purdy (1976).

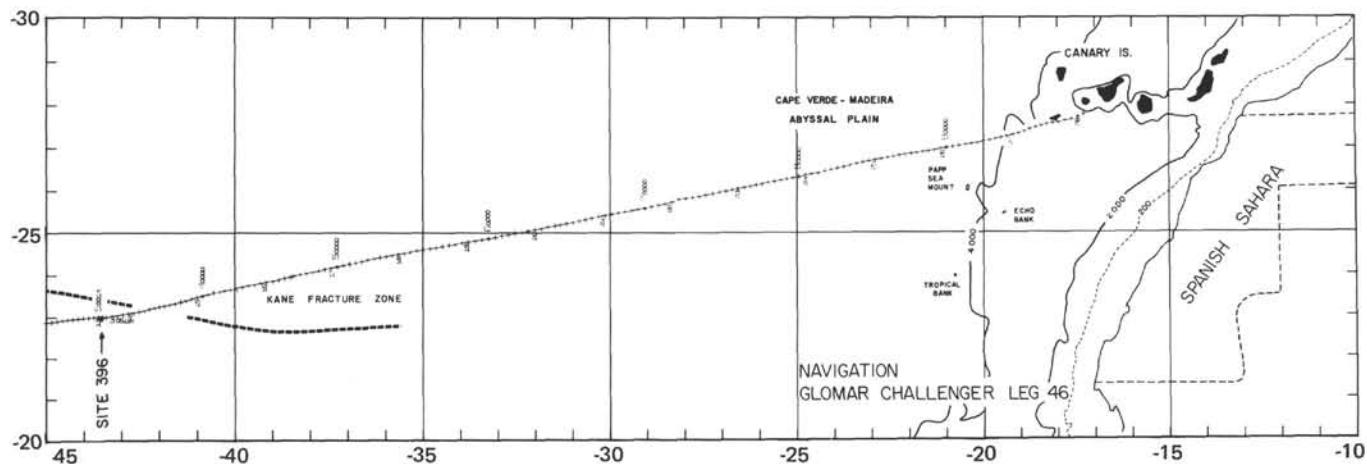


Figure 3. Track chart for Leg 46 of Glomar Challenger from Site 396 to Las Palmas, Canary Islands. First navigation fix of every day and distance along track are noted. Hour mark along track designated by "plus" marks. Generalized bathymetry after Uchupi (1971).

TABLE 1
Positioning Information (from satellite navigation system) and Magnetic Field Values, Leg 45

Day	Mon	Year	Time Zone	Time	Latitude	Longitude	Distance	Speed	Course	Regional Magnetic Field Value (Gammas)
30	11	1975	0.0	705	18°30.0'	-66°05.5'	0.0	5.8	71	42610.
30	11	1975	0.0	727	18°30.7'	-66°03.4'	2.1	6.1	68	42612.
30	11	1975	0.0	740	18°31.2'	-66°02.1'	3.4	6.5	68	42613.
30	11	1975	0.0	830	18°33.2'	-65°56.8'	8.8	7.1	72	42619.
30	11	1975	0.0	912	18°34.7'	-65°51.8'	13.8	7.4	72	42621.
30	11	1975	0.0	954	18°36.3'	-65°46.6'	19.0	7.4	71	42622.
30	11	1975	0.0	1154	18°41.2'	-65°31.8'	33.9	7.3	72	42631.
30	11	1975	0.0	1340	18°45.1'	-65°18.8'	46.8	6.3	71	42633.
30	11	1975	0.0	1400	18°45.8'	-65°16.7'	48.9	7.3	72	42634.
30	11	1975	0.0	1654	18°52.2'	-64°55.3'	70.1	7.1	71	42637.
30	11	1975	0.0	2002	18°59.3'	-64°32.9'	92.5	7.5	70	42642.
30	11	1975	0.0	2030	19°00.5'	-64°29.4'	96.0	7.5	73	42644.
30	11	1975	0.0	2340	19°07.5'	-64°05.4'	119.7	7.9	75	42641.
1	12	1975	0.0	000	19°08.2'	-64°02.7'	112.4	7.9	75	42640.
1	12	1975	0.0	124	19°11.1'	-63°51.4'	133.4	7.7	71	42633.
1	12	1975	0.0	520	19°21.0'	-63°20.9'	163.9	7.2	72	42637.
1	12	1975	0.0	600	19°22.5'	-63°16.1'	168.7	7.2	76	42636.
1	12	1975	0.0	706	19°24.4'	-63°07.9'	176.6	7.4	73	42629.
1	12	1975	0.0	726	19°25.1'	-63°05.4'	179.1	7.3	81	42627.
1	12	1975	0.0	752	19°25.6'	-63°02.1'	182.2	7.1	80	42621.
1	12	1975	0.0	902	19°27.0'	-62°53.5'	190.5	7.3	80	42607.
1	12	1975	0.0	1244	19°31.7'	-62°25.4'	217.4	7.3	80	42558.
1	12	1975	0.0	1708	19°37.1'	-61°52.0'	249.3	7.4	80	42497.
1	12	1975	0.0	1800	19°38.2'	-61°45.3'	255.7	7.3	76	42484.
1	12	1975	0.0	1856	19°39.9'	-61°38.3'	262.5	6.8	74	42477.
1	12	1975	0.0	2048	19°43.4'	-61°25.3'	275.2	7.0	74	42466.
1	12	1975	0.0	2305	19°47.9'	-61°08.9'	291.3	6.9	78	42453.
2	12	1975	0.0	000	19°49.2'	-61°02.3'	297.7	7.0	78	42442.
2	12	1975	0.0	028	19°49.9'	-60°58.9'	300.9	7.4	77	42437.
2	12	1975	0.0	330	19°54.8'	-60°35.6'	323.4	7.5	81	42401.
2	12	1975	0.0	430	19°56.0'	-60°27.7'	330.9	7.4	81	42384.
2	12	1975	0.0	500	19°56.6'	-60°23.8'	334.6	7.7	78	42375.
2	12	1975	0.0	518	19°57.1'	-60°21.4'	336.9	7.4	75	42372.
2	12	1975	0.0	616	19°58.9'	-60°14.0'	344.1	7.5	76	42362.
2	12	1975	0.0	812	20°02.4'	-59°59.1'	358.5	7.5	76	42342.
2	12	1975	0.0	832	20°03.0'	-59°56.5'	361.1	7.7	73	42338.
2	12	1975	0.0	912	20°04.5'	-59°51.3'	366.2	8.1	74	42334.
2	12	1975	0.0	958	20°06.2'	-59°44.9'	372.4	8.5	75	42327.
2	12	1975	0.0	1150	20°10.3'	-59°28.6'	388.3	8.6	75	42306.
2	12	1975	0.0	1336	20°14.2'	-59°13.0'	403.4	8.8	75	42285.
2	12	1975	0.0	1516	20°17.9'	-58°57.9'	418.1	9.0	76	42264.
2	12	1975	0.0	1700	20°21.8'	-58°41.7'	433.7	8.6	80	42240.
2	12	1975	0.0	1704	20°21.9'	-58°41.1'	434.3	8.8	78	42239.
2	12	1975	0.0	1804	20°23.7'	-58°31.9'	443.1	9.0	79	42220.
2	12	1975	0.0	1948	20°26.7'	-58°15.5'	458.8	8.9	78	42186.
2	12	1975	0.0	2035	20°28.2'	-58°08.2'	465.8	9.2	78	42172.
2	12	1975	0.0	2144	20°30.4'	-57°57.2'	476.3	8.9	76	42150.
2	12	1975	0.0	2334	20°34.2'	-57°40.3'	492.6	9.5	77	42120.
3	12	1975	0.0	000	20°35.1'	-57°36.0'	496.7	9.5	78	42112.
3	12	1975	0.0	120	20°37.8'	-57°22.8'	509.4	9.2	77	42085.
3	12	1975	0.0	242	20°40.6'	-57°09.7'	521.9	9.0	76	42060.
3	12	1975	0.0	428	20°44.4'	-56°53.2'	537.8	8.9	77	42031.
3	12	1975	0.0	906	20°53.5'	-56°10.3'	579.0	8.9	80	41944.
3	12	1975	0.0	1240	20°59.0'	-55°36.7'	610.8	8.9	81	41858.
3	12	1975	0.0	1430	21°01.6'	-55°19.5'	627.1	9.3	81	41811.
3	12	1975	0.0	1455	21°02.2'	-55°15.4'	631.0	9.1	81	41800.
3	12	1975	0.0	1616	21°04.2'	-55°02.4'	643.2	8.9	76	41765.
3	12	1975	0.0	1700	21°05.8'	-54°55.6'	649.8	8.9	75	41752.
3	12	1975	0.0	1840	21°09.7'	-54°40.3'	664.6	8.9	77	41725.
3	12	1975	0.0	2052	21°14.2'	-54°19.9'	684.1	8.5	81	41683.
3	12	1975	0.0	2114	21°14.7'	-54°16.6'	687.2	8.9	70	41673.
3	12	1975	0.0	2120	21°15.0'	-54°15.7'	688.1	7.8	77	41673.
3	12	1975	0.0	2140	21°15.6'	-54°13.0'	690.7	8.8	75	41667.
4	12	1975	0.0	000	21°20.9'	-53°51.7'	711.3	8.8	75	41627.
4	12	1975	0.0	415	21°30.5'	-53°13.0'	748.5	8.7	78	41554.
4	12	1975	0.0	438	21°31.2'	-53°09.5'	751.9	8.9	79	41546.
4	12	1975	0.0	618	21°34.0'	-52°53.8'	766.7	9.1	81	41505.
4	12	1975	0.0	646	21°34.7'	-52°49.3'	771.0	9.1	78	41492.
4	12	1975	0.0	806	21°37.2'	-52°36.5'	783.1	8.6	76	41461.

TABLE 1 - *Continued*

Day	Mon	Year	Time Zone	Time	Latitude	Longitude	Distance	Speed	Course	Regional Magnetic Field Value (Gammas)
4	12	1975	0.0	832	21°38.1'	-52°32.6'	786.9	9.0	77	41453.
4	12	1975	0.0	1144	21°44.5'	-52°02.3'	815.8	8.9	78	41383.
4	12	1975	0.0	1628	21°53.6'	-51°18.0'	857.9	8.9	79	41277.
4	12	1975	0.0	1736	21°55.5'	-51°07.3'	868.0	8.7	76	41249.
4	12	1975	0.0	1834	21°57.5'	-50°58.5'	876.4	9.0	77	41230.
4	12	1975	0.0	1918	21°59.0'	-50°51.6'	883.0	9.0	77	41214.
4	12	1975	0.0	2022	22°01.1'	-50°41.5'	892.6	8.6	76	41190.
4	12	1975	0.0	2330	22°07.5'	-50°13.3'	919.5	8.7	78	41128.
5	12	1975	0.0	000	22°08.4'	-50°08.7'	923.8	8.9	79	41116.
5	12	1975	0.0	118	22°10.6'	-49°56.5'	935.3	8.7	79	41084.
5	12	1975	0.0	250	22°13.1'	-49°42.4'	948.6	8.8	78	41046.
5	12	1975	0.0	350	22°14.9'	-49°33.1'	957.4	8.8	80	41022.
5	12	1975	0.0	514	22°17.1'	-49°20.0'	969.7	8.7	81	40986.
5	12	1975	0.0	656	22°19.4'	-49°04.3'	984.4	8.4	81	40939.
5	12	1975	0.0	722	22°20.0'	-49°00.4'	988.1	8.8	78	40927.
5	12	1975	0.0	910	22°23.4'	-48°43.6'	1004.0	8.8	79	40886.
5	12	1975	0.0	1050	22°26.3'	-48°28.1'	1018.6	8.8	78	40846.
5	12	1975	0.0	1215	22°28.8'	-48°14.9'	1031.1	8.8	81	40812.
5	12	1975	0.0	1236	22°29.3'	-48°11.6'	1034.2	8.9	80	40802.
5	12	1975	0.0	1538	22°34.2'	-47°42.9'	1061.1	9.4	82	40724.
5	12	1975	0.0	1600	22°34.7'	-47°39.2'	1064.6	9.3	86	40712.
5	12	1975	0.0	1724	22°35.7'	-47°25.1'	1077.6	8.9	85	40660.
5	12	1975	0.0	1910	22°37.1'	-47°08.2'	1093.3	9.0	85	40600.
5	12	1975	0.0	2058	22°38.4'	-46°50.7'	1109.5	8.9	85	40537.
5	12	1975	0.0	2130	22°38.8'	-46°45.6'	1114.2	8.3	77	40519.
5	12	1975	0.0	2236	22°40.8'	-46°35.9'	1123.4	8.6	75	40496.
5	12	1975	0.0	2300	22°41.7'	-46°32.3'	1126.8	8.1	75	40489.
6	12	1975	0.0	000	22°43.8'	-46°23.8'	1135.0	8.1	74	40472.
6	12	1975	0.0	022	22°44.6'	-46°20.7'	1137.9	7.9	74	40466.
6	12	1975	0.0	044	22°45.4'	-46°17.7'	1140.8	7.0	84	40461.
6	12	1975	0.0	052	22°45.5'	-46°16.7'	1141.7	5.4	84	40457.
6	12	1975	0.0	202	22°46.2'	-46°09.9'	1148.0	5.8	87	40435.
6	12	1975	0.0	221	22°46.3'	-46°07.9'	1149.9	5.9	110	40427.
6	12	1975	0.0	251	22°45.3'	-46°04.9'	1152.8	0.0	90	40405.
10	1	1976	0.0	1354	22°45.3'	-46°04.9'	1152.8	8.5	88	40398.
10	1	1976	0.0	1500	22°45.7'	-45°54.8'	1162.2	9.7	83	40358.
10	1	1976	0.0	1830	22°49.7'	-45°18.2'	1196.1	9.5	84	40240.
10	1	1976	0.0	2126	22°52.8'	-44°48.3'	1223.9	9.2	84	40142.
10	1	1976	0.0	2334	22°54.9'	-44°27.2'	1243.4	9.4	83	40073.
11	1	1976	0.0	000	22°55.4'	-44°22.8'	1247.5	9.4	84	40060.
11	1	1976	0.0	403	22°59.5'	-43°41.6'	1285.6	5.5	90	39926.
11	1	1976	0.0	404	22°59.5'	-43°41.5'	1285.7	9.7	90	39926.
11	1	1976	0.0	420	22°59.5'	-43°38.7'	1288.3	9.6	95	39914.
11	1	1976	0.0	449	22°59.1'	-43°33.7'	1292.9	6.7	94	39890.
11	1	1976	0.0	512	22°58.9'	-43°30.9'	1295.5	0.0	90	39876.
15	1	1976	0.0	224	22°58.9'	-43°30.9'	1295.5	10.6	196	39876.
15	1	1976	0.0	250	22°54.5'	-43°32.3'	1300.1	10.7	192	39840.
15	1	1976	0.0	310	22°51.0'	-43°33.1'	1303.7	8.5	6	39811.
15	1	1976	0.0	436	23°03.1'	-43°31.7'	1315.9	9.3	7	39918.
15	1	1976	0.0	500	23°06.8'	-43°31.2'	1319.6	9.4	11	39950.
15	1	1976	0.0	530	23°11.4'	-43°30.2'	1324.3	10.0	266	39989.
15	1	1976	0.0	556	23°11.1'	-43°34.9'	1328.6	10.4	264	40005.
15	1	1976	0.0	715	23°09.7'	-43°49.7'	1342.3	7.7	266	40054.
15	1	1976	0.0	725	23°09.6'	-43°51.1'	1343.6	10.5	264	40059.
15	1	1976	0.0	836	23°08.4'	-44°04.6'	1356.0	10.3	264	40104.
15	1	1976	0.0	1144	23°04.8'	-44°39.3'	1388.2	10.5	264	40216.
15	1	1976	0.0	1400	23°02.4'	-45°05.1'	1412.0	10.3	262	40302.
15	1	1976	0.0	1602	22°59.5'	-45°27.6'	1432.9	9.8	261	40371.
15	1	1976	0.0	1606	22°59.4'	-45°28.3'	1433.6	10.4	263	40373.
15	1	1976	0.0	1630	22°58.9'	-45°32.8'	1437.8	10.5	265	40387.
15	1	1976	0.0	1730	22°57.9'	-45°44.1'	1448.2	10.7	272	40426.
15	1	1976	0.0	1744	22°58.0'	-45°46.8'	1450.7	10.3	275	40439.
15	1	1976	0.0	1920	22°59.4'	-46°04.6'	1467.1	9.8	183	40528.
15	1	1976	0.0	2007	22°51.7'	-46°05.0'	1474.9	10.0	188	40458.
15	1	1976	0.0	2024	22°48.9'	-46°05.4'	1477.7	9.9	186	40433.
15	1	1976	0.0	2035	22°47.1'	-46°05.6'	1479.5	7.3	189	40417.
15	1	1976	0.0	2040	22°46.5'	-46°05.7'	1480.1	6.3	163	40412.
15	1	1976	0.0	2043	22°46.2'	-46°05.6'	1480.4	7.0	148	40409.
15	1	1976	0.0	2055	22°45.0'	-46°04.8'	1481.8	8.2	137	40394.

TABLE 1 - *Continued*

Day	Mon	Year	Time Zone	Time	Latitude	Longitude	Distance	Speed	Course	Regional Magnetic Field Value (Gammas)
15	1	1976	0.0	2057	22°44.8'	-46°04.6'	1482.1	0.3	231	40391.
15	1	1976	0.0	2220	22°44.5'	-46°05.0'	1482.6	7.3	263	40390.
15	1	1976	0.0	2240	22°44.2'	-46°07.6'	1485.0	9.9	263	40398.
16	1	1976	0.0	000	22°42.7'	-46°21.8'	1498.2	9.9	263	40445.
16	1	1976	0.0	120	22°41.2'	-46°36.0'	1511.3	9.9	265	40492.
16	1	1976	0.0	300	22°39.9'	-46°53.8'	1527.8	9.7	267	40557.
16	1	1976	0.0	312	22°39.8'	-46°55.9'	1529.8	10.4	267	40565.
16	1	1976	0.0	346	22°39.5'	-47°02.3'	1535.7	10.1	264	40590.
16	1	1976	0.0	408	22°39.1'	-47°06.3'	1539.4	10.1	266	40603.
16	1	1976	0.0	534	22°38.1'	-47°21.9'	1553.8	11.5	255	40662.
16	1	1976	0.0	536	22°38.0'	-47°22.3'	1554.2	10.3	263	40662.
16	1	1976	0.0	928	22°33.4'	-48°05.3'	1594.2	10.3	263	40806.
16	1	1976	0.0	1244	22°29.4'	-48°41.3'	1627.7	9.8	262	40926.
16	1	1976	0.0	1312	22°28.8'	-48°46.2'	1632.2	10.0	263	40941.
16	1	1976	0.0	1500	22°26.6'	-49°05.5'	1650.2	10.7	259	41005.
16	1	1976	0.0	1520	22°25.9'	-49°09.3'	1653.8	10.3	255	41015.
16	1	1976	0.0	1540	22°25.0'	-49°12.9'	1657.2	10.7	256	41022.
16	1	1976	0.0	1652	22°21.8'	-49°26.3'	1670.0	11.0	254	41050.
16	1	1976	0.0	1722	22°20.3'	-49°32.0'	1675.5	10.2	257	41061.
16	1	1976	0.0	1745	22°19.4'	-49°36.1'	1679.4	10.1	260	41070.
17	1	1976	0.0	000	22°08.7'	-50°43.5'	1742.7	10.2	261	41264.
17	1	1976	0.0	036	22°07.7'	-50°50.0'	1748.8	9.5	254	41283.
17	1	1976	0.0	150	22°04.4'	-51°02.2'	1760.6	10.3	259	41304.
17	1	1976	0.0	222	22°03.4'	-51°08.0'	1766.0	10.3	260	41320.
17	1	1976	0.0	412	22°00.2'	-51°28.1'	1785.0	10.3	260	41377.
17	1	1976	0.0	500	21°58.8'	-51°36.9'	1793.2	10.2	259	41402.
17	1	1976	0.0	600	21°56.8'	-51°47.7'	1803.4	10.5	257	41430.
17	1	1976	0.0	834	21°50.8'	-52°15.9'	1830.3	10.3	257	41495.
17	1	1976	0.0	1020	21°46.8'	-52°35.1'	1848.6	10.6	258	41540.
17	1	1976	0.0	1154	21°43.4'	-52°52.6'	1865.2	8.9	250	41583.
17	1	1976	0.0	1156	21°43.3'	-52°52.9'	1865.5	9.3	257	41584.
17	1	1976	0.0	1340	21°39.7'	-53°09.8'	1881.6	9.2	257	41622.
17	1	1976	0.0	1550	21°35.3'	-53°30.8'	1901.6	9.9	258	41670.
17	1	1976	0.0	1746	21°31.2'	-53°50.8'	1920.6	10.1	258	41716.
17	1	1976	0.0	2022	21°25.6'	-54°18.4'	1946.9	9.8	258	41780.
17	1	1976	0.0	2206	21°22.1'	-54°36.3'	1963.9	10.0	259	41822.
18	1	1976	0.0	102	21°16.4'	-55°07.3'	1993.4	9.9	258	41898.
18	1	1976	0.0	132	21°15.4'	-55°12.5'	1998.3	10.3	258	41910.
18	1	1976	0.0	340	21°10.8'	-55°35.5'	2020.3	10.0	260	41961.
18	1	1976	0.0	400	21°10.2'	-55°39.0'	2023.6	10.3	258	41970.
18	1	1976	0.0	508	21°07.7'	-55°51.2'	2035.2	10.1	258	41997.
18	1	1976	0.0	546	21°06.4'	-55°57.9'	2041.6	10.2	258	42012.
18	1	1976	0.0	1322	20°50.7'	-57°18.8'	2118.8	10.3	257	42190.
18	1	1976	0.0	1454	20°47.2'	-57°35.3'	2134.6	10.5	258	42222.
18	1	1976	0.0	1546	20°45.3'	-57°44.8'	2143.7	10.4	259	42241.
18	1	1976	0.0	1638	20°43.6'	-57°54.3'	2152.7	10.9	259	42262.
18	1	1976	0.0	1658	20°42.9'	-57°58.1'	2156.3	10.5	260	42271.
18	1	1976	0.0	1730	20°41.9'	-58°04.0'	2161.9	10.4	259	42284.
18	1	1976	0.0	1844	20°39.4'	-58°17.4'	2174.7	10.5	260	42312.
18	1	1976	0.0	2112	20°34.8'	-58°44.5'	2200.5	9.9	260	42373.
18	1	1976	0.0	2258	20°31.8'	-59°02.9'	2218.0	10.0	261	42415.
19	1	1976	0.0	014	20°29.9'	-59°16.3'	2230.7	9.9	258	42449.
19	1	1976	0.0	202	20°26.3'	-59°35.0'	2248.6	10.2	259	42484.
19	1	1976	0.0	602	20°18.8'	-60°17.8'	2289.4	10.2	259	42572.
19	1	1976	0.0	832	20°14.1'	-60°44.6'	2315.0	10.4	259	42624.
19	1	1976	0.0	1016	20°10.8'	-61°03.4'	2332.9	10.4	260	42660.
19	1	1976	0.0	1206	20°07.4'	-61°23.4'	2352.0	10.3	259	42699.
19	1	1976	0.0	1418	20°03.1'	-61°47.2'	2374.7	9.3	260	42741.
19	1	1976	0.0	1830	19°56.6'	-62°28.3'	2413.9	10.2	249	42820.
20	1	1976	0.0	144	19°30.6'	-63°41.3'	2487.4	10.3	246	42796.
20	1	1976	0.0	408	19°20.5'	-64°05.2'	2512.1	10.0	247	42768.
20	1	1976	0.0	456	19°17.3'	-64°13.0'	2520.1	10.4	248	42759.
20	1	1976	0.0	516	19°16.0'	-64°16.4'	2523.6	10.2	246	42757.
20	1	1976	0.0	552	19°13.5'	-64°22.3'	2529.7	10.4	247	42749.
20	1	1976	0.0	658	19°09.0'	-64°33.4'	2541.1	10.5	247	42737.
20	1	1976	0.0	922	18°59.3'	-64°58.0'	2566.3	10.6	249	42711.
20	1	1976	0.0	1300	18°45.4'	-65°36.1'	2604.9	10.6	249	42678.

TABLE 2
Positioning Information (from satellite navigation system) and Magnetic Field Values, Leg 46

Day	Mon	Year	Time Zone	Time	Latitude	Longitude	Distance	Speed	Course	Regional Magnetic Field Value (Gammas)
28	1	1976	0.0	2238	18°35.2'	-65°59.9'	0.0	5.4	87	42637.
28	1	1976	0.0	2315	18°35.4'	-65°56.4'	3.3	9.7	78	42629.
28	1	1976	0.0	2318	18°35.5'	-65°55.9'	3.8	9.2	77	42628.
29	1	1976	0.0	000	18°37.0'	-65°49.3'	10.2	9.1	76	42625.
29	1	1976	0.0	312	18°44.0'	-65°19.3'	39.5	8.7	76	42610.
29	1	1976	0.0	812	18°54.7'	-64°34.7'	83.1	10.0	75	42586.
29	1	1976	0.0	1000	18°59.4'	-64°16.3'	101.1	9.3	78	42577.
29	1	1976	0.0	1106	19°01.6'	-64°05.7'	111.3	9.9	77	42566.
29	1	1976	0.0	1250	19°05.4'	-63°48.0'	128.5	10.3	76	42549.
29	1	1976	0.0	1312	19°06.3'	-63°44.1'	132.3	9.6	78	42545.
29	1	1976	0.0	1315	19°06.4'	-63°43.6'	132.8	9.8	101	42545.
29	1	1976	0.0	1456	19°03.3'	-63°26.5'	149.2	9.7	101	42455.
29	1	1976	0.0	1540	19°02.0'	-63°19.1'	156.3	9.4	100	42416.
29	1	1976	0.0	1956	18°55.1'	-62°37.1'	196.7	9.9	90	42200.
29	1	1976	0.0	2000	18°55.1'	-62°36.4'	197.3	10.3	75	42198.
29	1	1976	0.0	2142	18°59.6'	-62°18.5'	214.8	9.8	75	42183.
30	1	1976	0.0	000	19°05.5'	-61°55.6'	237.3	9.7	75	42165.
30	1	1976	0.0	038	19°07.1'	-61°49.3'	243.4	9.8	76	42160.
30	1	1976	0.0	202	19°10.5'	-61°35.2'	257.2	9.5	81	42145.
30	1	1976	0.0	222	19°11.0'	-61°31.9'	260.3	10.2	67	42138.
30	1	1976	0.0	225	19°11.2'	-61°31.4'	260.9	9.5	77	42139.
30	1	1976	0.0	306	19°12.7'	-61°24.7'	267.4	9.6	78	42130.
30	1	1976	0.0	420	19°15.2'	-61°12.5'	279.1	9.4	77	42112.
30	1	1976	0.0	452	19°16.3'	-61°07.3'	284.2	9.6	78	42105.
30	1	1976	0.0	902	19°24.7'	-60°25.9'	324.1	9.1	77	42040.
30	1	1976	0.0	1202	19°30.9'	-59°57.8'	351.3	9.6	78	41998.
30	1	1976	0.0	1226	19°31.7'	-59°53.8'	355.2	9.0	75	41992.
30	1	1976	0.0	1410	19°35.6'	-59°37.8'	370.8	8.7	76	41971.
30	1	1976	0.0	1454	19°37.1'	-59°31.2'	377.2	8.6	76	41961.
30	1	1976	0.0	1530	19°38.3'	-59°25.9'	382.3	8.5	76	41953.
30	1	1976	0.0	1638	19°40.6'	-59°16.0'	391.9	8.8	79	41939.
30	1	1976	0.0	1716	19°41.7'	-59°10.2'	397.5	8.9	77	41928.
30	1	1976	0.0	2000	19°47.1'	-58°44.9'	421.9	9.0	78	41885.
30	1	1976	0.0	2324	19°53.4'	-58°13.2'	452.4	9.1	77	41824.
31	1	1976	0.0	112	19°57.1'	-57°56.2'	468.8	9.0	78	41794.
31	1	1976	0.0	314	20°01.0'	-57°37.1'	487.1	9.5	79	41757.
31	1	1976	0.0	402	20°02.5'	-57°29.2'	494.7	8.6	79	41741.
31	1	1976	0.0	808	20°09.5'	-56°52.4'	530.0	8.2	78	41662.
31	1	1976	0.0	954	20°12.6'	-56°37.4'	544.4	8.3	76	41632.
31	1	1976	0.0	1114	20°15.2'	-56°26.0'	555.4	8.1	77	41612.
31	1	1976	0.0	1300	20°18.3'	-56°11.2'	569.6	7.9	77	41582.
31	1	1976	0.0	1426	20°20.8'	-55°59.5'	580.9	7.9	78	41558.
31	1	1976	0.0	1612	20°23.8'	-55°45.0'	594.8	8.4	77	41528.
31	1	1976	0.0	1954	20°31.0'	-55°12.9'	625.7	8.1	77	41466.
31	1	1976	0.0	2140	20°34.2'	-54°58.0'	640.0	7.8	76	41435.
31	1	1976	0.0	2236	20°36.0'	-54°50.5'	647.3	7.7	77	41421.
1	2	1976	0.0	000	20°38.4'	-54°39.2'	658.1	7.8	78	41397.
1	2	1976	0.0	022	20°39.0'	-54°36.2'	661.0	7.7	78	41391.
1	2	1976	0.0	208	20°41.9'	-54°21.9'	674.7	7.6	81	41359.
1	2	1976	0.0	232	20°42.4'	-54°18.7'	677.7	7.8	78	41350.
1	2	1976	0.0	312	20°43.5'	-54°13.3'	682.9	7.9	80	41338.
1	2	1976	0.0	346	20°44.3'	-54°08.6'	687.4	8.3	79	41326.
1	2	1976	0.0	500	20°46.2'	-53°57.9'	697.5	7.9	78	41299.
1	2	1976	0.0	534	20°47.1'	-53°53.2'	702.0	8.0	76	41288.
1	2	1976	0.0	714	20°50.4'	-53°39.4'	715.3	7.9	78	41262.
1	2	1976	0.0	858	20°53.3'	-53°25.0'	729.1	8.1	76	41229.
1	2	1976	0.0	1026	20°56.1'	-53°12.7'	740.9	7.7	77	41203.
1	2	1976	0.0	1212	20°59.2'	-52°58.6'	754.5	7.4	75	41173.
1	2	1976	0.0	1322	21°01.4'	-52°49.6'	763.2	7.5	77	41156.
1	2	1976	0.0	1502	21°04.3'	-52°36.6'	775.6	6.7	77	41127.
1	2	1976	0.0	1650	21°07.1'	-52°24.0'	787.7	7.3	81	41100.
1	2	1976	0.0	1722	21°07.7'	-52°19.9'	791.6	7.6	75	41088.
1	2	1976	0.0	1900	21°10.9'	-52°07.0'	804.0	7.2	78	41064.
1	2	1976	0.0	2044	21°13.5'	-51°53.9'	816.5	7.4	76	41032.
1	2	1976	0.0	2334	21°18.5'	-51°32.0'	837.5	7.1	77	40986.
1	2	1976	0.0	2356	21°19.1'	-51°29.3'	840.1	7.1	78	40980.
2	2	1976	0.0	000	21°19.2'	-51°28.8'	840.6	7.1	79	40979.

TABLE 2 - *Continued*

Day	Mon	Year	Time Zone	Time	Latitude	Longitude	Distance	Speed	Course	Regional Magnetic Field Value (Gammas)
2	2	1976	0.0	144	21°21.6'	-51°15.8'	852.9	7.1	79	40946.
2	2	1976	0.0	224	21°22.5'	-51°10.8'	857.7	7.3	79	40933.
2	2	1976	0.0	410	21°25.0'	-50°57.3'	870.5	7.1	79	40898.
2	2	1976	0.0	802	21°30.1'	-50°28.2'	898.1	6.7	79	40821.
2	2	1976	0.0	1124	21°34.3'	-50°04.4'	920.6	7.6	81	40757.
2	2	1976	0.0	1144	21°34.7'	-50°01.7'	923.1	6.7	81	40749.
2	2	1976	0.0	1330	21°36.6'	-49°49.1'	935.0	6.5	79	40713.
2	2	1976	0.0	1420	21°37.6'	-49°43.4'	940.4	6.7	77	40698.
2	2	1976	0.0	1444	21°38.2'	-49°40.6'	943.1	6.8	76	40691.
2	2	1976	0.0	1544	21°39.8'	-49°33.5'	949.8	6.5	79	40676.
2	2	1976	0.0	1604	21°40.2'	-49°31.2'	952.0	6.7	77	40669.
2	2	1976	0.0	1628	21°40.8'	-49°28.4'	954.7	6.7	79	40663.
2	2	1976	0.0	1948	21°45.2'	-49°04.9'	977.0	6.7	78	40603.
2	2	1976	0.0	2246	21°49.2'	-48°43.8'	997.0	6.8	77	40549.
3	2	1976	0.0	000	21°51.1'	-48°35.0'	1005.3	6.7	76	40529.
3	2	1976	0.0	034	21°52.0'	-48°31.0'	1009.2	6.7	81	40521.
3	2	1976	0.0	136	21°53.1'	-48°23.6'	1016.1	6.8	79	40499.
3	2	1976	0.0	708	22°00.1'	-47°43.9'	1053.6	6.9	78	40393.
3	2	1976	0.0	854	22°02.6'	-47°31.0'	1065.8	7.0	78	40361.
3	2	1976	0.0	1034	22°05.0'	-47°18.6'	1077.6	7.5	81	40331.
3	2	1976	0.0	1148	22°06.5'	-47°08.7'	1086.9	7.6	51	40302.
3	2	1976	0.0	1222	22°09.2'	-47°05.1'	1091.1	8.1	53	40312.
3	2	1976	0.0	1510	22°22.9'	-46°45.6'	1113.8	7.7	55	40358.
3	2	1976	0.0	1545	22°25.5'	-46°41.6'	1118.3	7.9	61	40365.
3	2	1976	0.0	1854	22°37.7'	-46°18.1'	1143.2	8.7	60	40379.
3	2	1976	0.0	2040	22°45.4'	-46°03.6'	1158.7	0.9	264	40389.
3	2	1976	0.0	2344	22°45.1'	-46°06.7'	1161.5	6.4	82	40400.
3	2	1976	0.0	2358	22°45.3'	-46°05.1'	1163.0	8.0	68	40395.
4	2	1976	0.0	004	22°45.6'	-46°04.3'	1163.8	7.4	82	40394.
4	2	1976	0.0	236	22°48.3'	-45°44.3'	1182.5	7.1	86	40334.
4	2	1976	0.0	258	22°48.5'	-45°41.5'	1185.0	8.8	70	40324.
4	2	1976	0.0	300	22°48.6'	-45°41.2'	1185.3	7.3	87	40324.
4	2	1976	0.0	444	22°49.2'	-45°27.4'	1198.1	7.8	87	40270.
4	2	1976	0.0	530	22°49.5'	-45°20.9'	1204.1	7.7	84	40246.
4	2	1976	0.0	614	22°50.1'	-45°14.8'	1209.7	7.9	82	40225.
4	2	1976	0.0	758	22°51.9'	-45°00.1'	1223.4	8.0	83	40180.
4	2	1976	0.0	948	22°53.7'	-44°44.4'	1238.0	7.9	83	40131.
4	2	1976	0.0	1000	22°53.9'	-44°42.7'	1239.5	7.6	83	40125.
4	2	1976	0.0	1134	22°55.3'	-44°29.8'	1251.5	8.3	84	40084.
4	2	1976	0.0	1154	22°55.6'	-44°26.8'	1254.3	7.6	84	40074.
4	2	1976	0.0	1328	22°56.9'	-44°13.9'	1266.2	7.7	83	40033.
4	2	1976	0.0	1422	22°57.7'	-44°06.4'	1273.2	7.6	84	40009.
4	2	1976	0.0	1446	22°58.0'	-44°03.1'	1276.2	7.6	82	39998.
4	2	1976	0.0	1516	22°58.5'	-43°59.0'	1280.1	7.7	84	39985.
4	2	1976	0.0	1610	22°59.2'	-43°51.5'	1287.0	7.6	84	39961.
4	2	1976	0.0	1632	22°59.5'	-43°48.5'	1289.8	7.7	82	39951.
4	2	1976	0.0	1802	23°01.1'	-43°36.1'	1301.3	9.0	78	39914.
4	2	1976	0.0	1842	23°02.4'	-43°29.7'	1307.3	8.7	185	39900.
4	2	1976	0.0	1929	22°55.6'	-43°30.3'	1314.2	6.0	0	39840.
4	2	1976	0.0	1930	22°55.7'	-43°30.3'	1314.3	7.3	354	39840.
4	2	1976	0.0	1944	22°57.4'	-43°30.5'	1316.0	6.6	352	39857.
4	2	1976	0.0	2007	22°59.9'	-43°30.9'	1318.5	7.4	272	39882.
4	2	1976	0.0	2028	23°00.0'	-43°33.7'	1321.1	6.1	191	39894.
4	2	1976	0.0	2042	22°58.6'	-43°34.0'	1322.5	5.1	88	39883.
4	2	1976	0.0	2110	22°58.7'	-43°31.4'	1324.9	4.8	103	39873.
4	2	1976	0.0	2143	22°58.1'	-43°28.6'	1327.5	4.6	340	39856.
4	2	1976	0.0	2150	22°58.6'	-43°28.8'	1328.1	7.9	264	39861.
4	2	1976	0.0	2157	22°58.5'	-43°29.8'	1329.0	7.8	254	39864.
4	2	1976	0.0	2225	22°57.5'	-43°33.6'	1332.6	5.1	343	39871.
4	2	1976	0.0	2236	22°58.4'	-43°33.9'	1333.6	4.8	106	39880.
4	2	1976	0.0	2254	22°58.0'	-43°32.4'	1335.0	4.9	96	39870.
4	2	1976	0.0	2318	22°57.8'	-43°30.3'	1337.0	5.0	83	39860.
4	2	1976	0.0	2328	22°57.9'	-43°29.4'	1337.8	7.8	280	39857.
5	2	1976	0.0	014	22°58.9'	-43°35.8'	1343.8	4.8	93	39893.
5	2	1976	0.0	038	22°58.8'	-43°33.7'	1345.7	4.6	104	39883.
5	2	1976	0.0	100	22°58.4'	-43°31.9'	1347.4	5.0	94	39872.
5	2	1976	0.0	131	22°58.2'	-43°29.1'	1350.0	7.4	281	39859.
5	2	1976	0.0	144	22°58.5'	-43°30.8'	1351.6	7.2	280	39868.

TABLE 2 - *Continued*

Day	Mon	Year	Time Zone	Time	Latitude	Longitude	Distance	Speed	Course	Regional Magnetic Field Value (Gammas)
5	2	1976	0.0	208	22°59.0'	-43°33.9'	1354.5	5.5	94	39886.
5	2	1976	0.0	223	22°58.9'	-43°32.4'	1355.9	5.2	82	39879.
5	2	1976	0.0	240	22°59.1'	-43°30.8'	1357.4	1.4	270	39874.
5	2	1976	0.0	244	22°59.1'	-43°30.9'	1357.4	0.0	180	39874.
3	3	1976	0.0	512	22°59.0'	-43°30.9'	1357.5	6.9	84	39868.
3	3	1976	0.0	520	22°59.1'	-43°29.9'	1358.5	8.2	80	39865.
3	3	1976	0.0	706	23°01.5'	-43°14.4'	1372.9	7.9	80	39824.
3	3	1976	0.0	828	23°03.3'	-43°02.8'	1383.8	8.1	81	39793.
3	3	1976	0.0	1112	23°06.8'	-42°39.1'	1405.8	8.0	78	39729.
3	3	1976	0.0	1330	23°10.7'	-42°19.6'	1424.2	7.8	78	39686.
3	3	1976	0.0	1348	23°11.2'	-42°17.1'	1426.5	7.6	78	39681.
3	3	1976	0.0	1706	23°16.5'	-41°50.6'	1451.5	8.1	78	39623.
3	3	1976	0.0	1852	23°19.4'	-41°35.4'	1465.7	8.1	74	39590.
3	3	1976	0.0	1952	23°21.6'	-41°26.9'	1473.8	8.2	74	39576.
3	3	1976	0.0	2136	23°25.5'	-41°12.0'	1488.1	8.3	75	39553.
4	3	1976	0.0	000	23°30.5'	-40°51.0'	1508.0	8.5	76	39517.
4	3	1976	0.0	018	23°31.1'	-40°48.3'	1510.5	8.3	77	39512.
4	3	1976	0.0	108	23°32.7'	-40°41.0'	1517.4	8.5	74	39498.
4	3	1976	0.0	204	23°34.9'	-40°32.7'	1525.3	8.8	78	39486.
4	3	1976	0.0	307	23°36.8'	-40°22.8'	1534.6	6.2	77	39465.
4	3	1976	0.0	347	23°37.7'	-40°18.4'	1538.7	8.8	78	39456.
4	3	1976	0.0	424	23°38.8'	-40°12.6'	1544.1	9.0	78	39444.
4	3	1976	0.0	700	23°43.6'	-39°47.6'	1567.5	8.9	80	39393.
4	3	1976	0.0	740	23°44.6'	-39°41.2'	1573.5	9.2	80	39377.
4	3	1976	0.0	926	23°47.5'	-39°23.8'	1589.7	8.9	77	39338.
4	3	1976	0.0	1104	23°50.7'	-39°08.3'	1604.2	9.0	80	39310.
4	3	1976	0.0	1206	23°52.3'	-38°58.3'	1613.5	9.0	79	39287.
4	3	1976	0.0	1248	23°53.5'	-38°51.5'	1619.8	8.4	77	39273.
4	3	1976	0.0	1500	23°57.5'	-38°31.8'	1638.3	5.6	78	39237.
4	3	1976	0.0	1510	23°57.7'	-38°30.8'	1639.2	2.8	72	39235.
4	3	1976	0.0	1645	23°59.1'	-38°26.2'	1643.6	5.7	74	39231.
4	3	1976	0.0	1700	23°59.5'	-38°24.7'	1645.0	8.4	78	39229.
4	3	1976	0.0	1756	24°01.2'	-38°16.3'	1652.9	9.0	79	39214.
4	3	1976	0.0	1902	24°03.1'	-38°05.7'	1662.8	9.2	78	39193.
4	3	1976	0.0	2328	24°11.4'	-37°22.1'	1703.4	9.3	78	39112.
5	3	1976	0.0	000	24°12.4'	-37°16.8'	1708.4	9.4	79	39103.
5	3	1976	0.0	016	24°12.9'	-37°14.1'	1710.9	9.4	79	39098.
5	3	1976	0.0	116	24°14.7'	-37°04.0'	1720.3	9.1	78	39079.
5	3	1976	0.0	204	24°16.2'	-36°56.2'	1727.5	9.1	78	39065.
5	3	1976	0.0	652	24°25.0'	-36°09.4'	1771.1	9.2	79	38984.
5	3	1976	0.0	838	24°28.1'	-35°51.8'	1787.4	8.9	81	38953.
5	3	1976	0.0	958	24°30.0'	-35°39.0'	1799.2	8.9	81	38928.
5	3	1976	0.0	1024	24°30.6'	-35°34.8'	1803.0	8.8	79	38919.
5	3	1976	0.0	1118	24°32.1'	-35°26.3'	1810.9	10.1	81	38905.
5	3	1976	0.0	1140	24°32.7'	-35°22.3'	1814.6	8.8	79	38897.
5	3	1976	0.0	1206	24°33.4'	-35°18.2'	1818.4	9.5	81	38890.
5	3	1976	0.0	1308	24°34.9'	-35°07.5'	1828.3	9.5	81	38869.
5	3	1976	0.0	1352	24°36.0'	-34°59.9'	1835.3	9.3	80	38854.
5	3	1976	0.0	1702	24°40.9'	-34°27.8'	1864.8	9.6	80	38796.
5	3	1976	0.0	2240	24°50.1'	-33°29.1'	1918.9	9.8	81	38697.
6	3	1976	0.0	000	24°52.2'	-33°14.9'	1932.0	10.0	81	38674.
6	3	1976	0.0	026	24°52.9'	-33°10.2'	1936.3	9.7	80	38666.
6	3	1976	0.0	420	24°59.7'	-32°29.0'	1974.3	9.7	80	38607.
6	3	1976	0.0	500	25°00.8'	-32°22.0'	1980.7	9.6	79	38596.
6	3	1976	0.0	606	25°02.8'	-32°10.5'	1991.3	10.0	79	38582.
6	3	1976	0.0	1000	25°10.1'	-31°28.1'	2030.4	7.5	80	38529.
6	3	1976	0.0	1116	25°11.8'	-31°17.8'	2039.9	6.8	79	38516.
6	3	1976	0.0	1125	25°12.0'	-31°16.7'	2040.9	9.9	78	38515.
6	3	1976	0.0	1216	25°13.8'	-31°07.6'	2049.3	9.7	79	38507.
6	3	1976	0.0	1300	25°15.2'	-30°59.9'	2056.4	9.7	78	38499.
6	3	1976	0.0	1606	25°21.3'	-30°27.5'	2086.3	9.8	79	38468.
6	3	1976	0.0	1754	25°24.7'	-30°08.4'	2103.9	9.6	78	38450.
6	3	1976	0.0	1912	25°27.2'	-29°54.9'	2116.4	9.9	80	38438.
6	3	1976	0.0	2220	25°32.6'	-29°21.1'	2147.4	9.2	80	38403.
6	3	1976	0.0	2238	25°33.1'	-29°18.1'	2150.1	9.8	80	38400.
7	3	1976	0.0	000	25°35.4'	-29°03.5'	2163.5	10.9	90	38386.
7	3	1976	0.0	002	25°35.4'	-29°03.1'	2163.8	9.9	78	38385.
7	3	1976	0.0	324	25°42.5'	-28°26.8'	2197.3	10.5	73	38364.

TABLE 2 - *Continued*

Day	Mon	Year	Time Zone	Time	Latitude	Longitude	Distance	Speed	Course	Regional Magnetic Field Value (Gammas)
7	3	1976	0.0	510	25°48.0'	-28°07.1'	2215.9	10.0	83	38368.
7	3	1976	0.0	700	25°50.1'	-27°46.8'	2234.3	9.5	78	38342.
7	3	1976	0.0	846	25°53.7'	-27°28.5'	2251.2	10.6	79	38335.
7	3	1976	0.0	928	25°55.1'	-27°20.4'	2258.6	10.1	80	38330.
7	3	1976	0.0	1112	25°58.1'	-27°01.3'	2276.0	9.3	79	38317.
7	3	1976	0.0	1148	25°59.2'	-26°55.2'	2281.6	8.9	78	38314.
7	3	1976	0.0	1514	26°05.3'	-26°21.9'	2312.1	8.6	79	38302.
7	3	1976	0.0	1658	26°08.1'	-26°05.5'	2327.1	9.4	79	38295.
7	3	1976	0.0	1705	26°08.3'	-26°04.3'	2328.2	11.0	77	38294.
7	3	1976	0.0	1710	26°08.5'	-26°03.3'	2329.1	9.9	79	38294.
7	3	1976	0.0	1730	26°09.1'	-25°59.7'	2332.4	7.4	80	38293.
7	3	1976	0.0	1815	26°10.1'	-25°53.6'	2338.0	10.2	80	38290.
7	3	1976	0.0	1822	26°10.3'	-25°52.3'	2339.2	9.2	79	38289.
7	3	1976	0.0	2006	26°13.2'	-25°34.9'	2355.1	9.0	78	38283.
7	3	1976	0.0	2114	26°15.3'	-25°23.8'	2365.2	9.2	80	38281.
7	3	1976	0.0	2152	26°16.3'	-25°17.4'	2371.1	9.1	80	38278.
7	3	1976	0.0	2248	26°17.8'	-25°08.1'	2379.5	9.1	79	38275.
7	3	1976	0.0	2328	26°19.0'	-25°01.5'	2385.6	9.4	80	38274.
8	3	1976	0.0	000	26°19.9'	-24°56.0'	2390.6	9.3	80	38272.
8	3	1976	0.0	034	26°20.8'	-24°50.2'	2395.9	9.6	80	38270.
8	3	1976	0.0	116	26°22.0'	-24°42.8'	2402.6	9.5	80	38268.
8	3	1976	0.0	245	26°24.5'	-24°27.4'	2416.6	9.5	78	38264.
8	3	1976	0.0	300	26°25.0'	-24°24.8'	2419.0	8.8	78	38264.
8	3	1976	0.0	310	26°25.3'	-24°23.2'	2420.5	9.5	77	38264.
8	3	1976	0.0	800	26°35.8'	-23°33.3'	2466.3	9.5	77	38277.
8	3	1976	0.0	940	26°39.3'	-23°16.0'	2482.2	8.5	77	38282.
8	3	1976	0.0	1015	26°40.4'	-23°10.6'	2487.1	8.5	79	38284.
8	3	1976	0.0	1038	26°41.0'	-23°07.0'	2490.4	9.3	79	38284.
8	3	1976	0.0	1118	26°42.2'	-23°00.2'	2496.6	9.1	80	38284.
8	3	1976	0.0	1152	26°43.1'	-22°54.5'	2501.8	8.8	78	38284.
8	3	1976	0.0	1226	26°44.1'	-22°49.0'	2506.8	9.1	81	38285.
8	3	1976	0.0	1306	26°45.0'	-22°42.3'	2512.8	8.5	80	38284.
8	3	1976	0.0	1734	26°51.6'	-22°00.2'	2551.0	8.5	82	38285.
8	3	1976	0.0	2102	26°55.6'	-21°27.3'	2580.6	8.4	76	38279.
8	3	1976	0.0	2148	26°57.1'	-21°20.3'	2587.0	8.2	78	38284.
8	3	1976	0.0	2236	26°58.5'	-21°13.1'	2593.6	8.8	83	38288.
8	3	1976	0.0	2334	26°59.5'	-21°03.6'	2602.1	8.3	82	38285.
9	3	1976	0.0	000	27°00.0'	-20°59.6'	2605.7	8.4	81	38285.
9	3	1976	0.0	022	27°00.5'	-20°56.2'	2608.8	9.3	81	38286.
9	3	1976	0.0	320	27°05.0'	-20°25.7'	2636.3	8.5	81	38292.
9	3	1976	0.0	506	27°07.4'	-20°09.0'	2651.4	9.2	82	38295.
9	3	1976	0.0	520	27°07.7'	-20°06.6'	2653.5	9.1	77	38296.
9	3	1976	0.0	526	27°07.9'	-20°05.6'	2654.4	8.9	80	38296.
9	3	1976	0.0	708	27°10.6'	-19°48.9'	2669.5	8.6	79	38303.
9	3	1976	0.0	815	27°12.5'	-19°38.3'	2679.2	8.6	77	38310.
9	3	1976	0.0	952	27°15.7'	-19°23.0'	2693.1	9.0	76	38323.
9	3	1976	0.0	1028	27°17.0'	-19°17.1'	2698.5	8.8	76	38329.
9	3	1976	0.0	1048	27°17.7'	-19°13.9'	2701.5	9.0	74	38332.
9	3	1976	0.0	1138	27°19.7'	-19°05.8'	2708.9	8.1	72	38343.
9	3	1976	0.0	1214	27°21.2'	-19°00.6'	2713.8	8.4	72	38351.
9	3	1976	0.0	1508	27°28.6'	-18°34.3'	2738.3	8.7	73	38393.
9	3	1976	0.0	1700	27°33.3'	-18°16.7'	2754.6	8.7	80	38419.
9	3	1976	0.0	1735	27°34.2'	-18°11.1'	2759.6	8.7	85	38423.
9	3	1976	0.0	1843	27°35.0'	-18°00.0'	2769.5	8.7	75	38422.
9	3	1976	0.0	2014	27°38.5'	-17°45.6'	2782.7	10.0	84	38442.
9	3	1976	0.0	2030	27°38.8'	-17°42.6'	2785.4	9.3	84	38443.
9	3	1976	0.0	2050	27°39.1'	-17°39.1'	2788.5	9.9	83	38443.
9	3	1976	0.0	2110	27°39.5'	-17°35.4'	2791.8	9.5	66	38444.
9	3	1976	0.0	2300	27°46.6'	-17°17.4'	2809.3	4.0	53	38493.
9	3	1976	0.0	2305	27°46.8'	-17°17.1'	2809.6			38494.

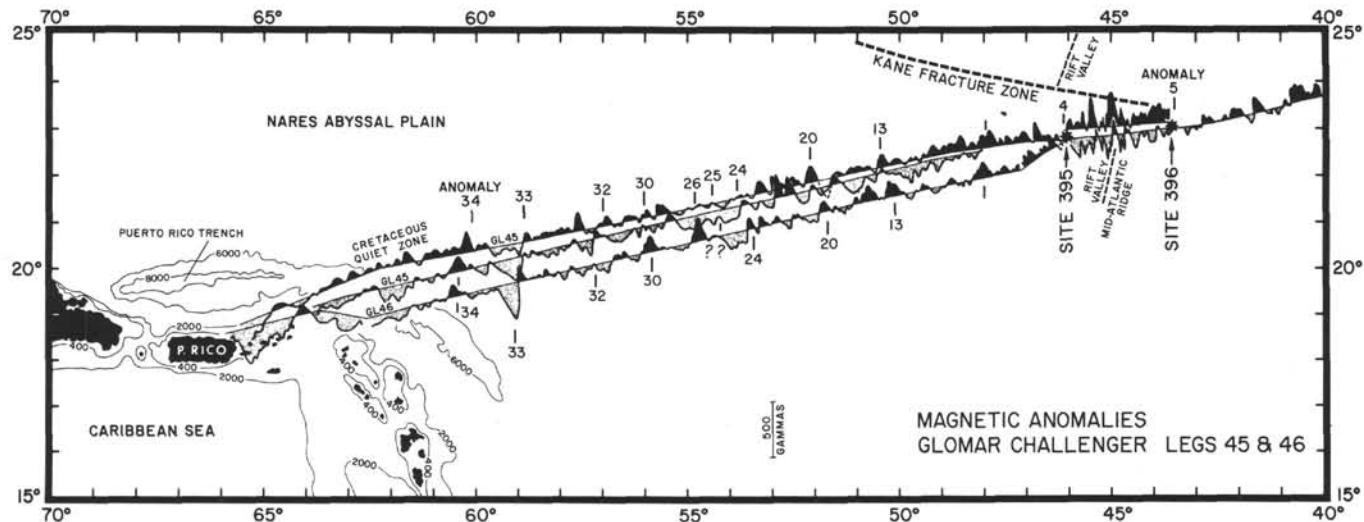


Figure 4. Magnetic anomalies plotted normal to ship's tracks for Glomar Challenger Legs 45 and 46 between San Juan, Puerto Rico, and Site 396. Magnetic anomaly numbering identification after Heirtzler et al. (1968) and LaBrecque et al. (1977).

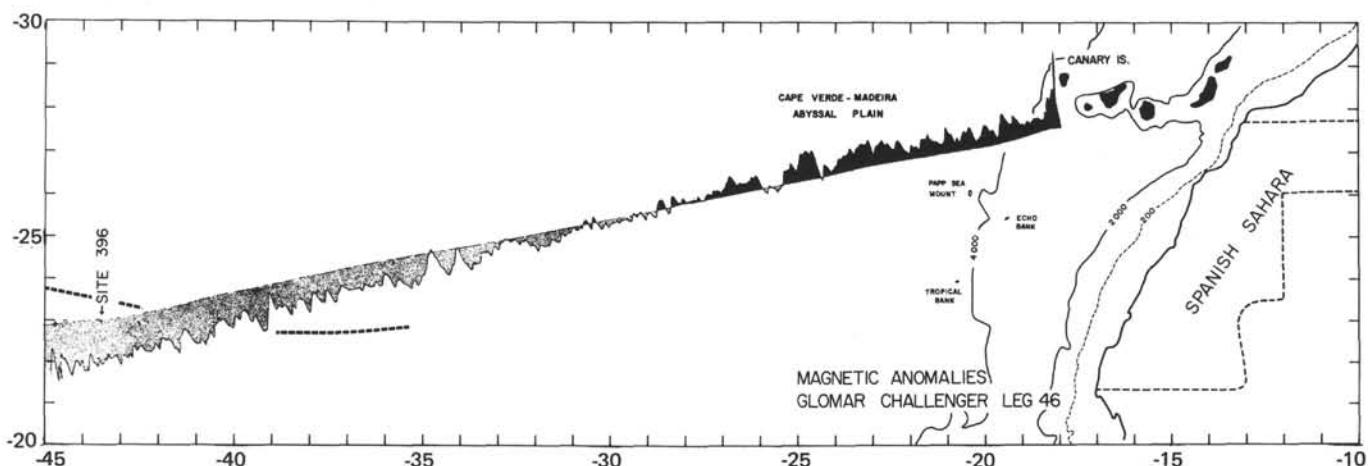


Figure 5. Magnetic anomalies plotted normal to ship's track for Glomar Challenger Leg 46 between Site 396 and Las Palmas, Canary Islands.

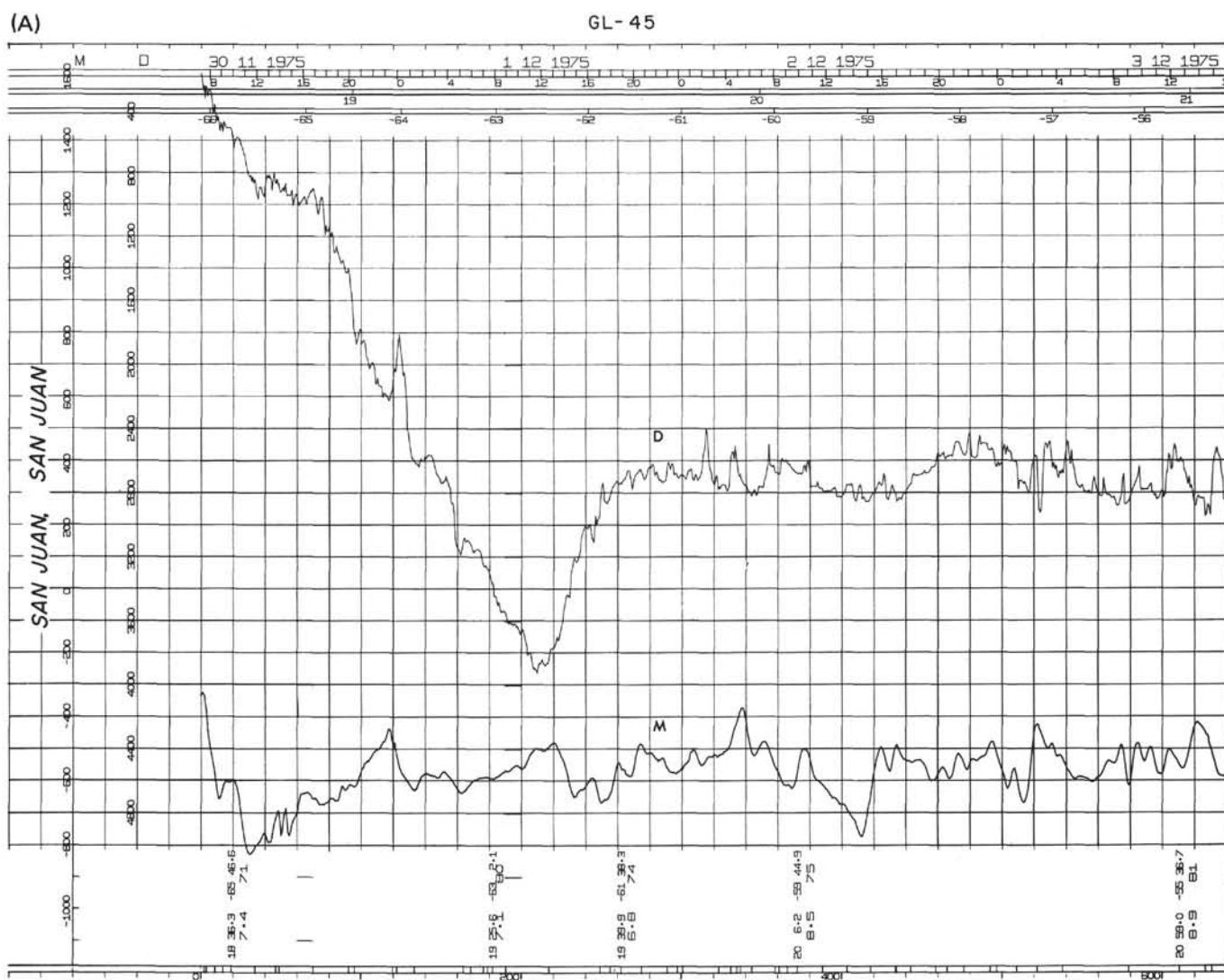


Figure 6. (A to D) Magnetic anomaly and bathymetric profiles along track of Leg 45 of Glomar Challenger. Plots and scales explained in text.

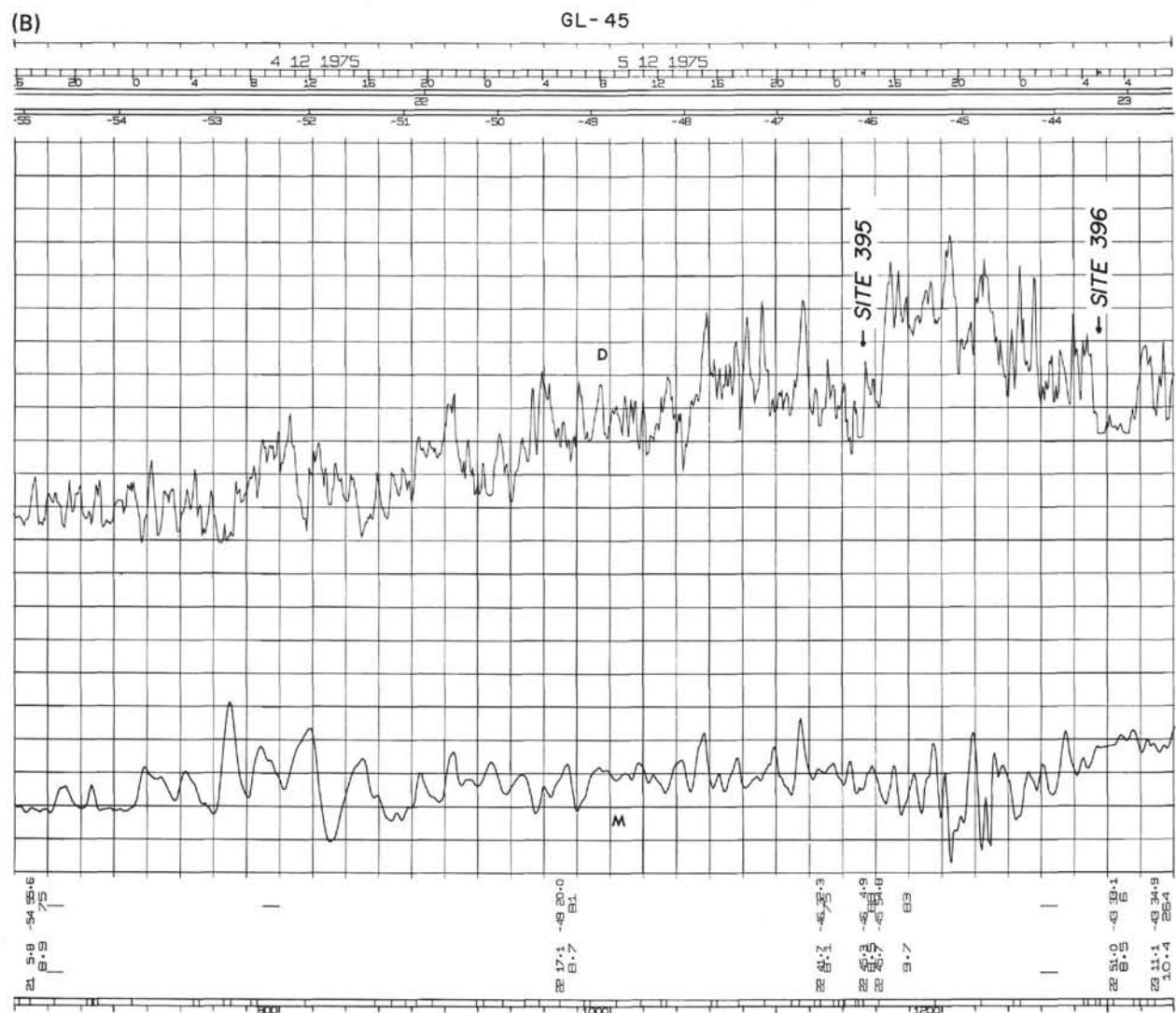


Figure 6. (Continued).

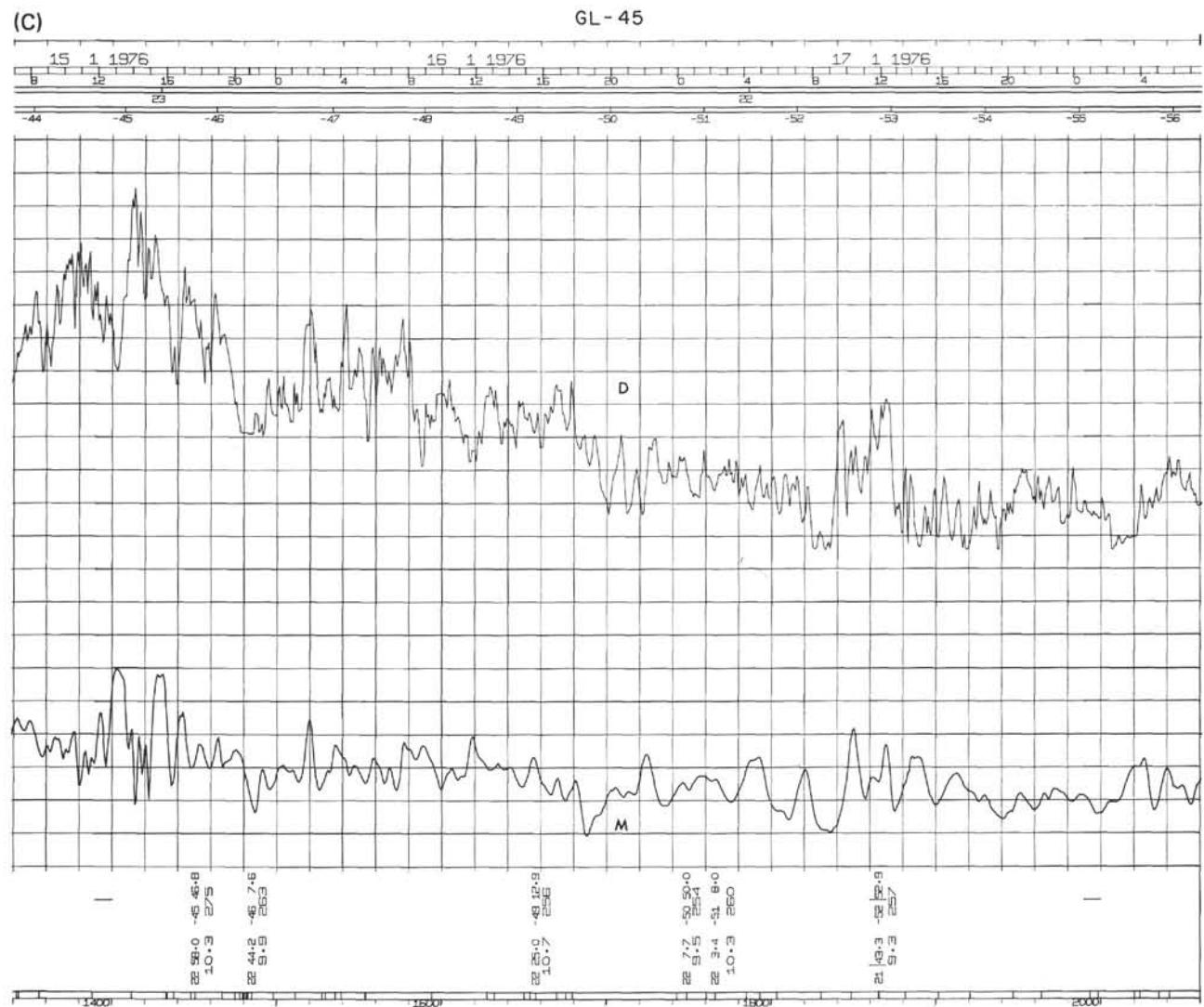


Figure 6. (Continued).

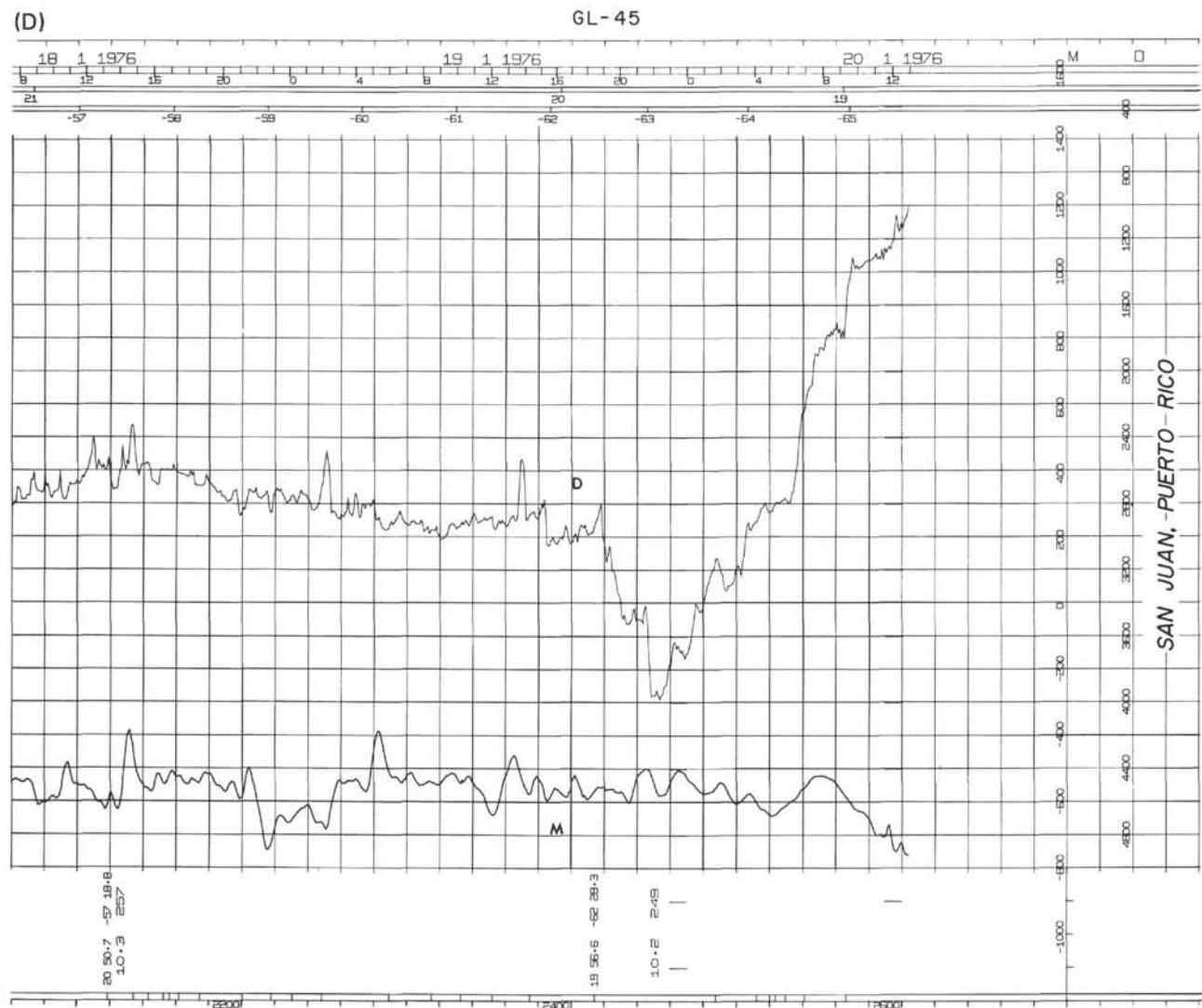


Figure 6. (Continued).

(A)

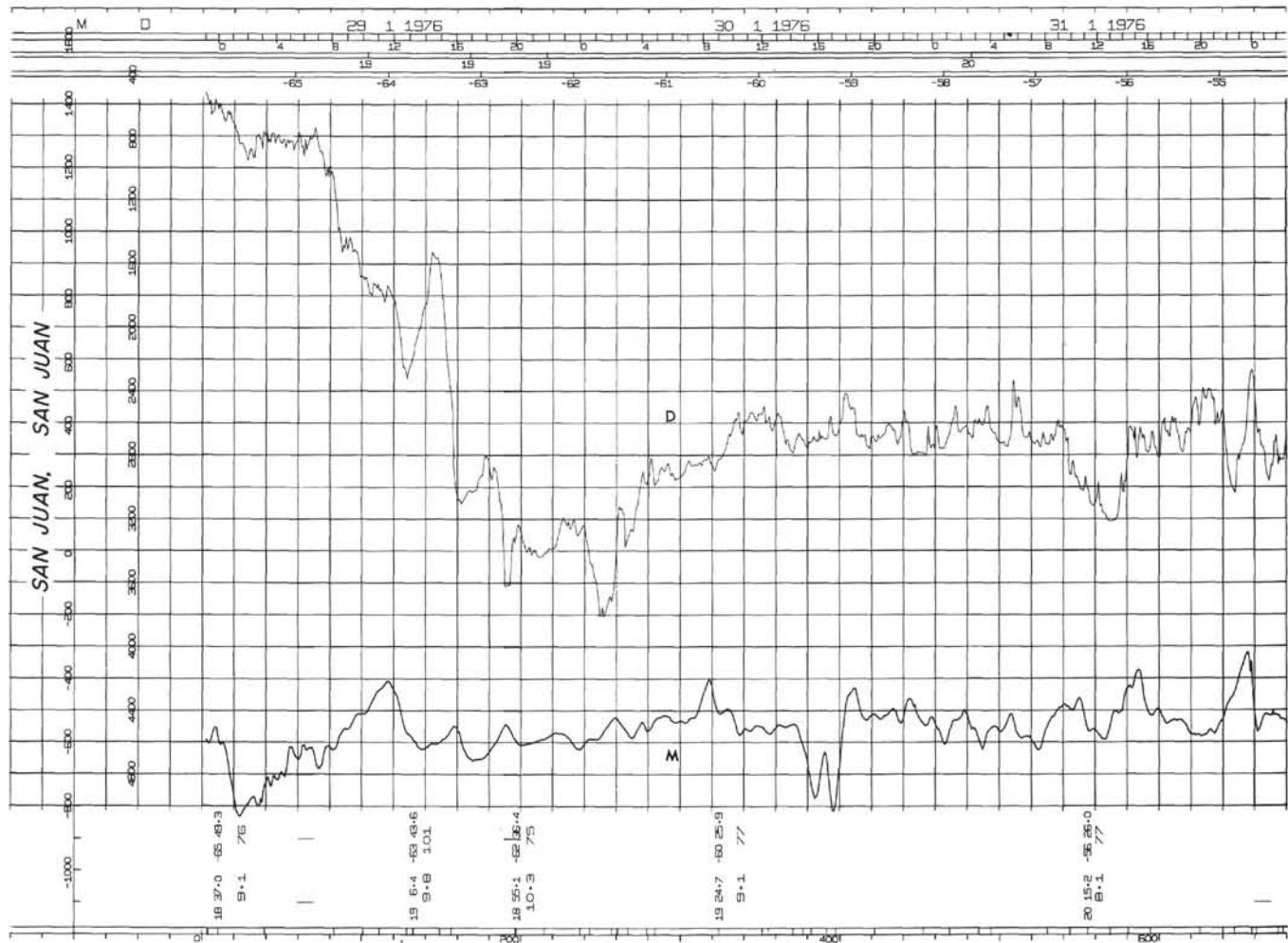


Figure 7. (A to D) Magnetic anomaly and bathymetric profiles along track of Leg 46 of Glomar Challenger. Plots and scales explained in text.

(B)

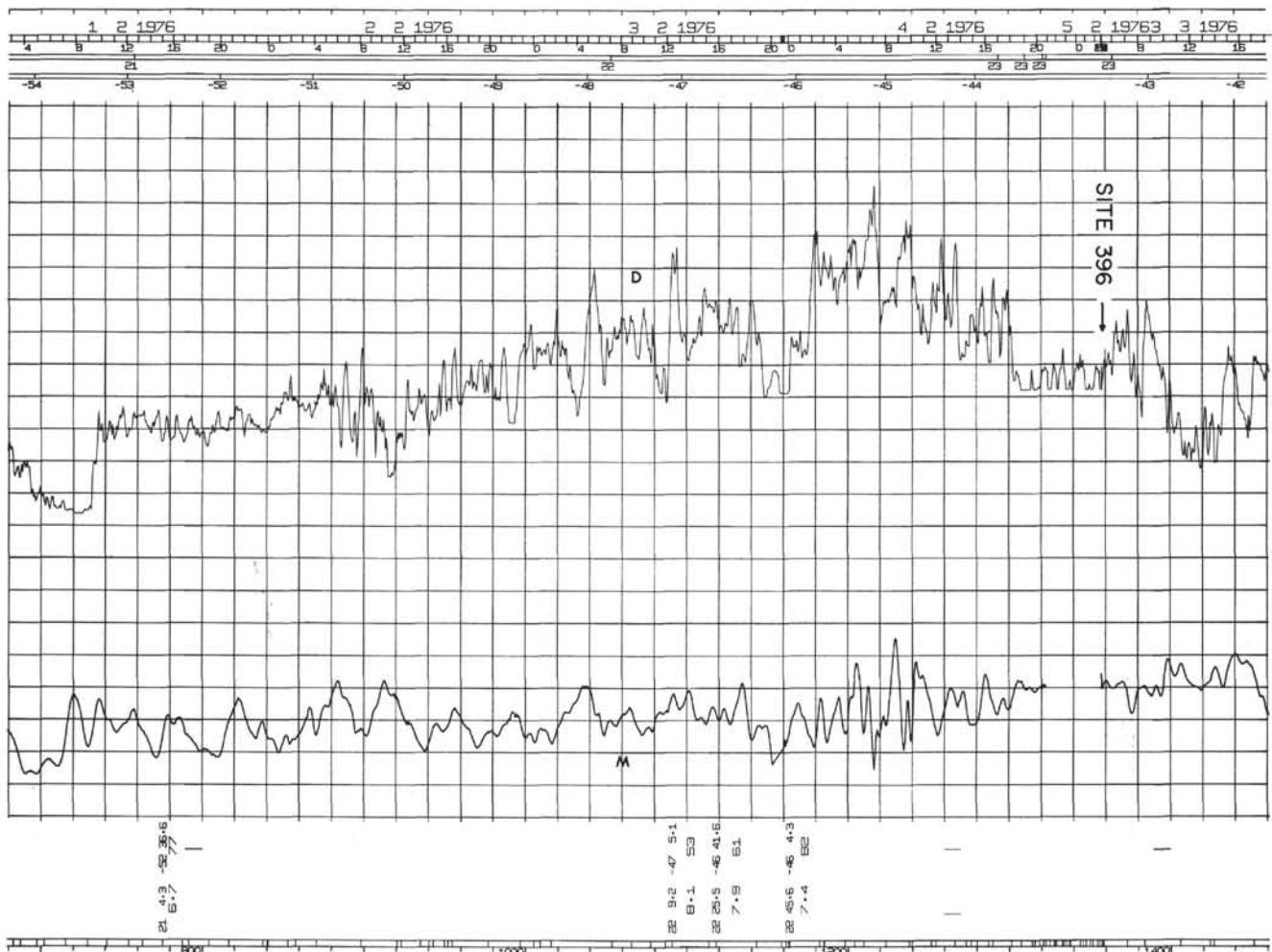


Figure 7. (Continued).

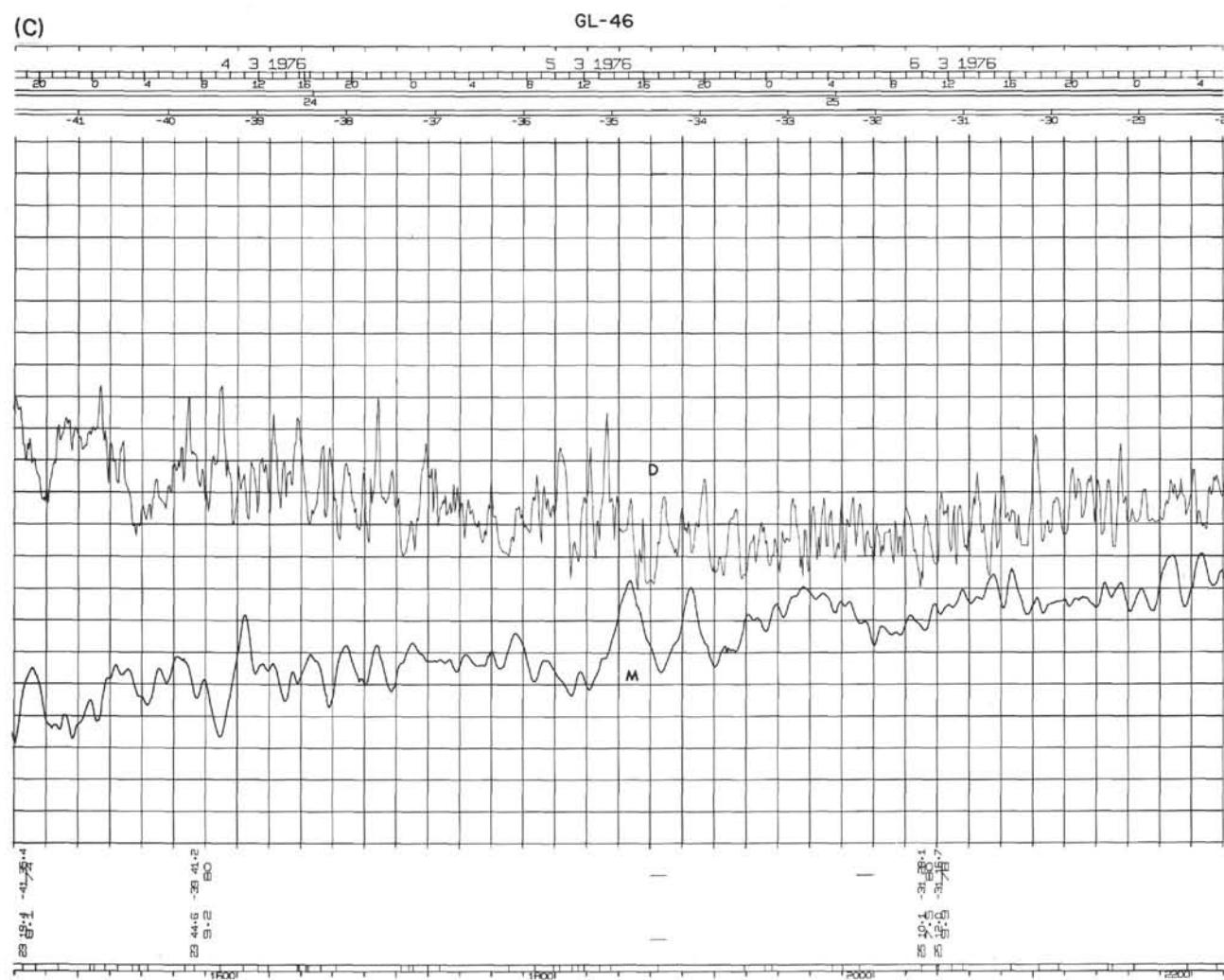


Figure 7. (Continued).

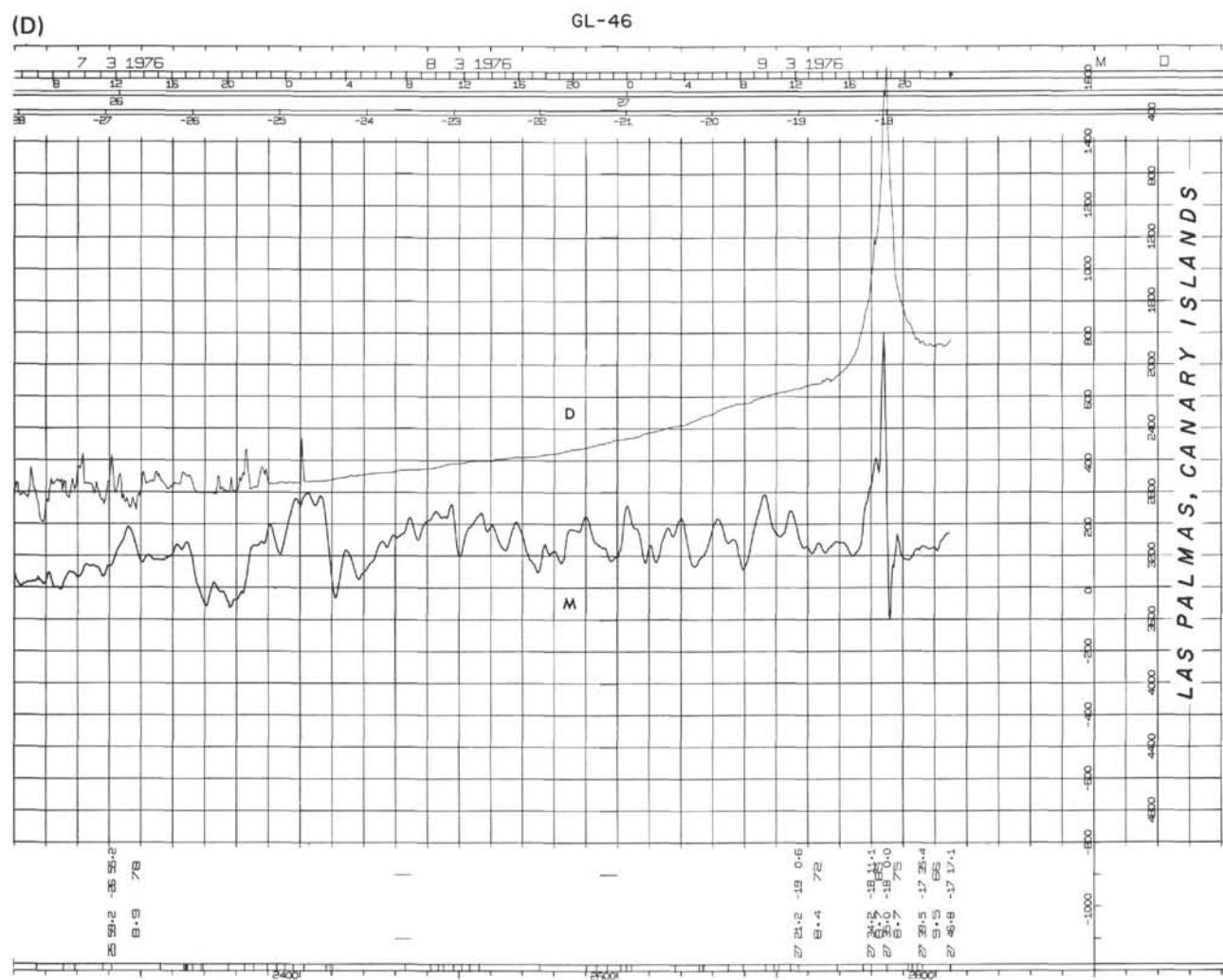


Figure 7. (Continued).

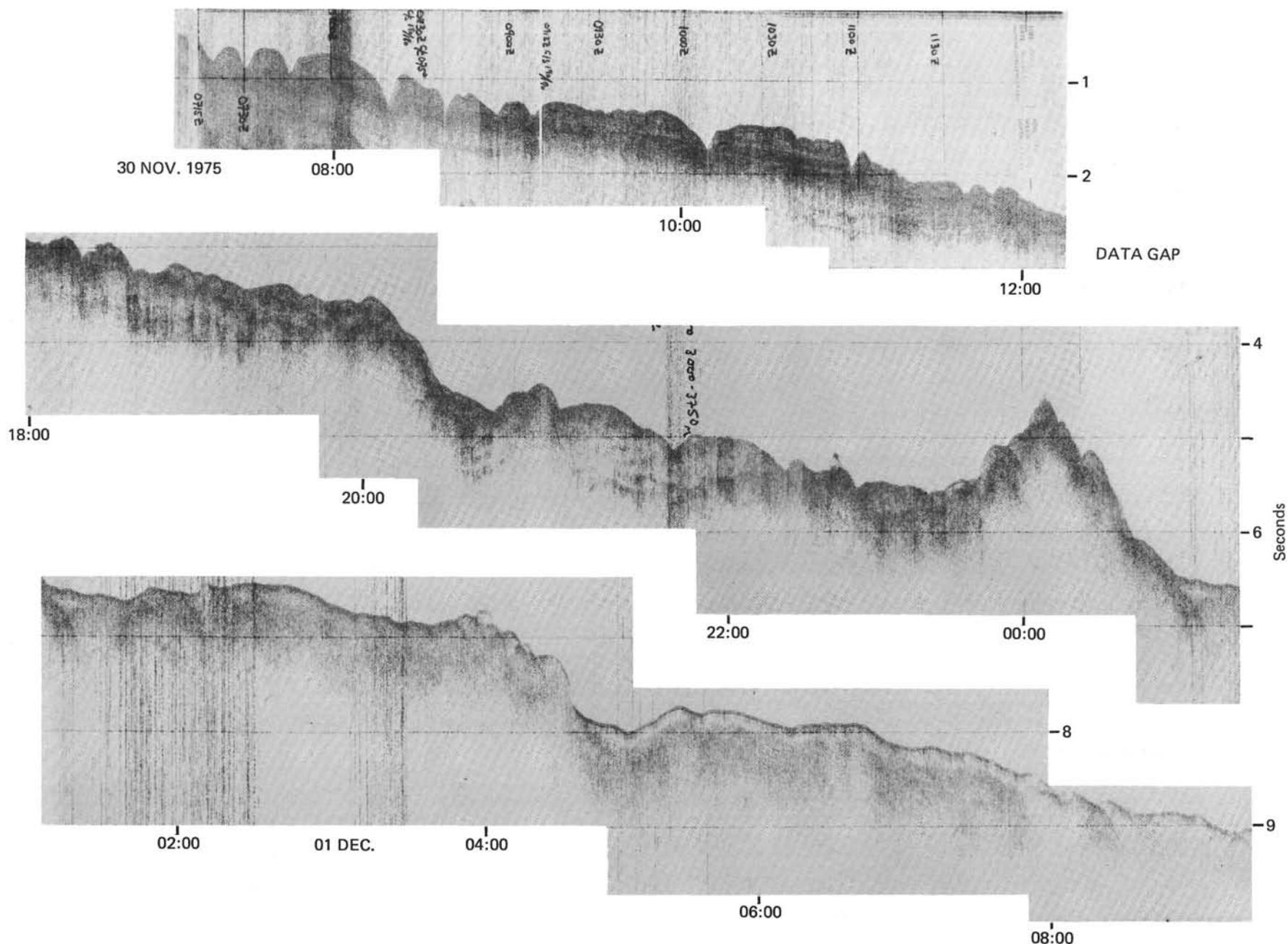


Figure 8. (8-1 to 8-18) Seismic reflection profiles along track of Leg 45 of Glomar Challenger.

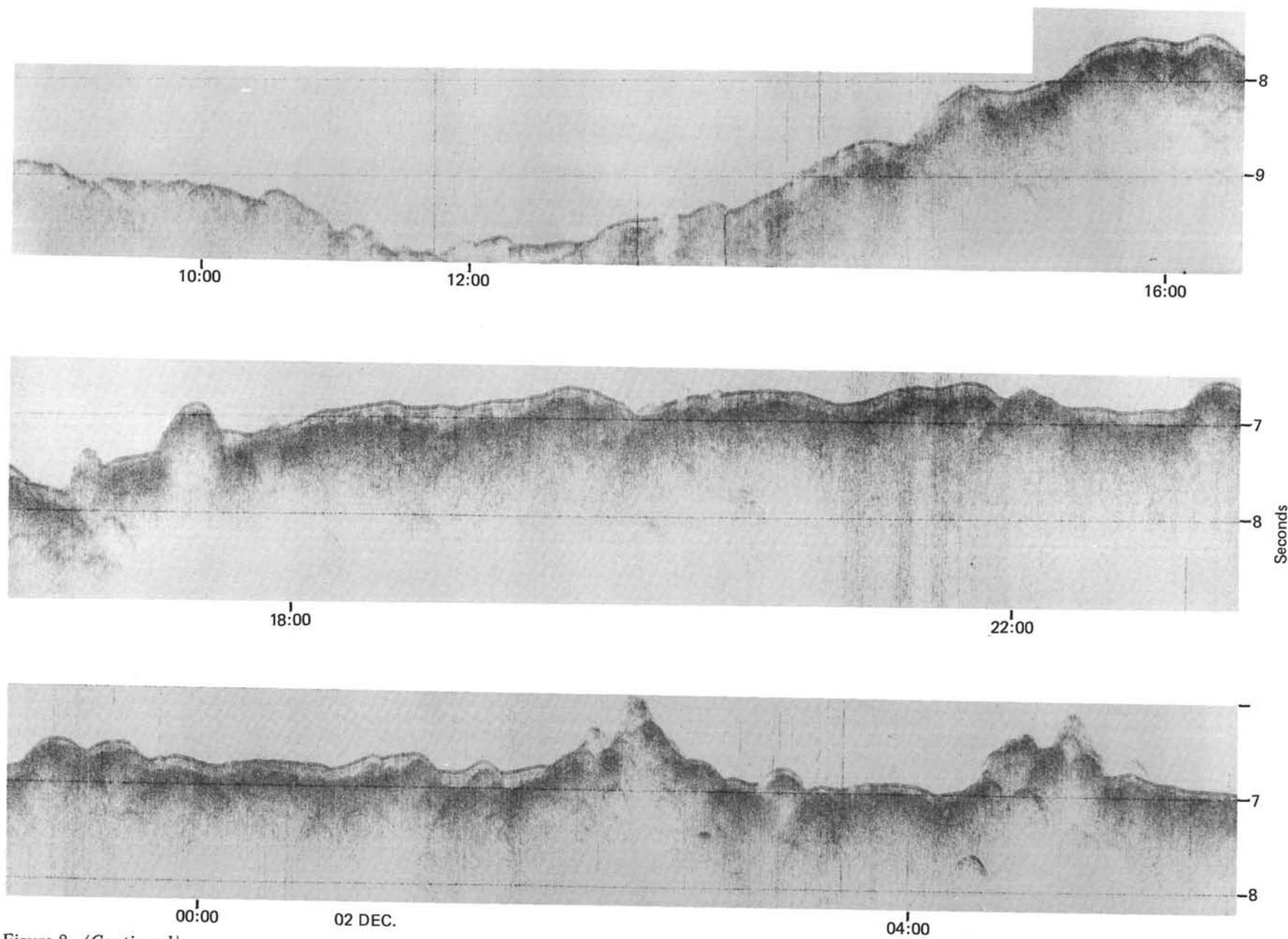


Figure 8. (Continued).

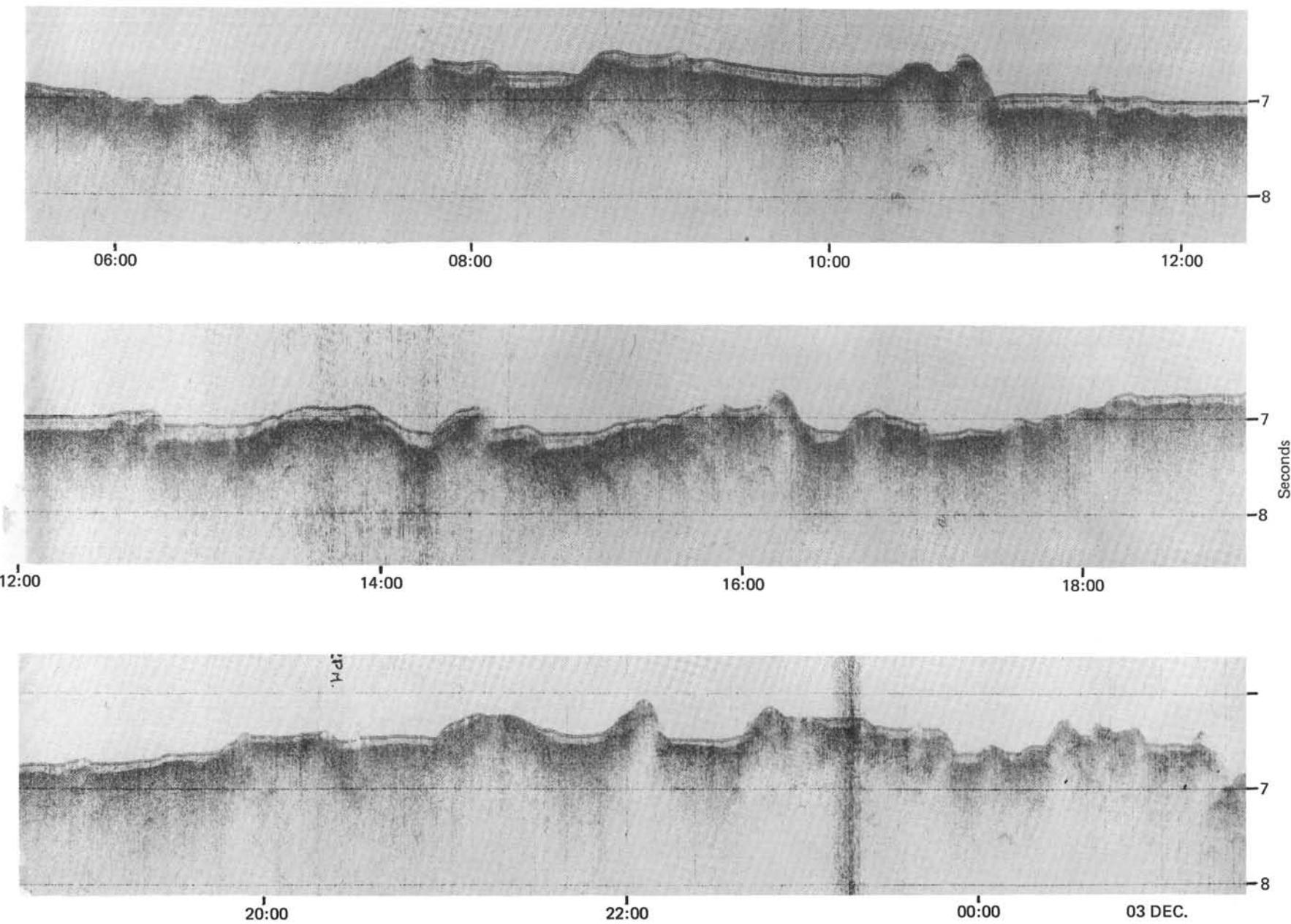


Figure 8. (Continued).

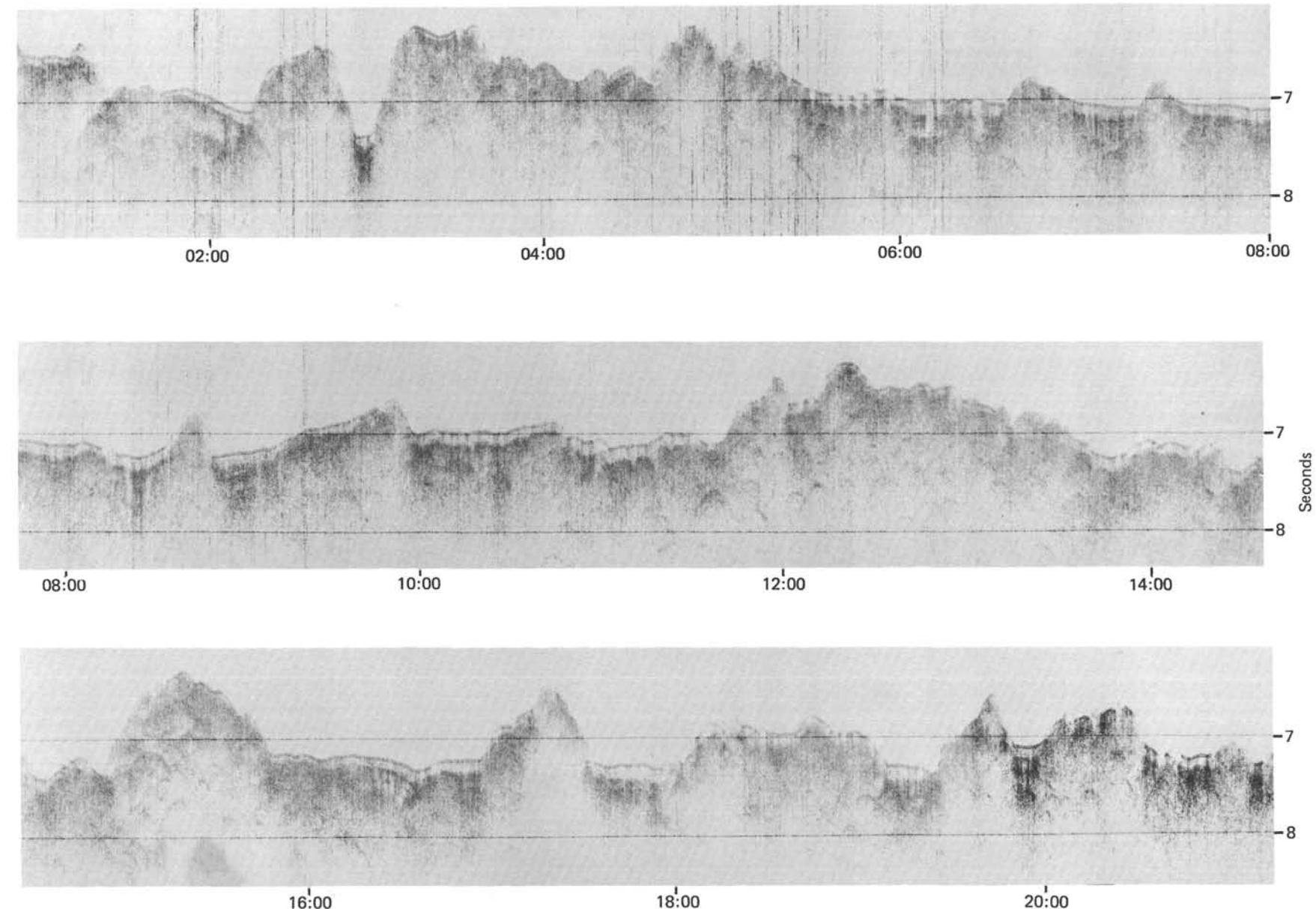


Figure 8. (Continued).

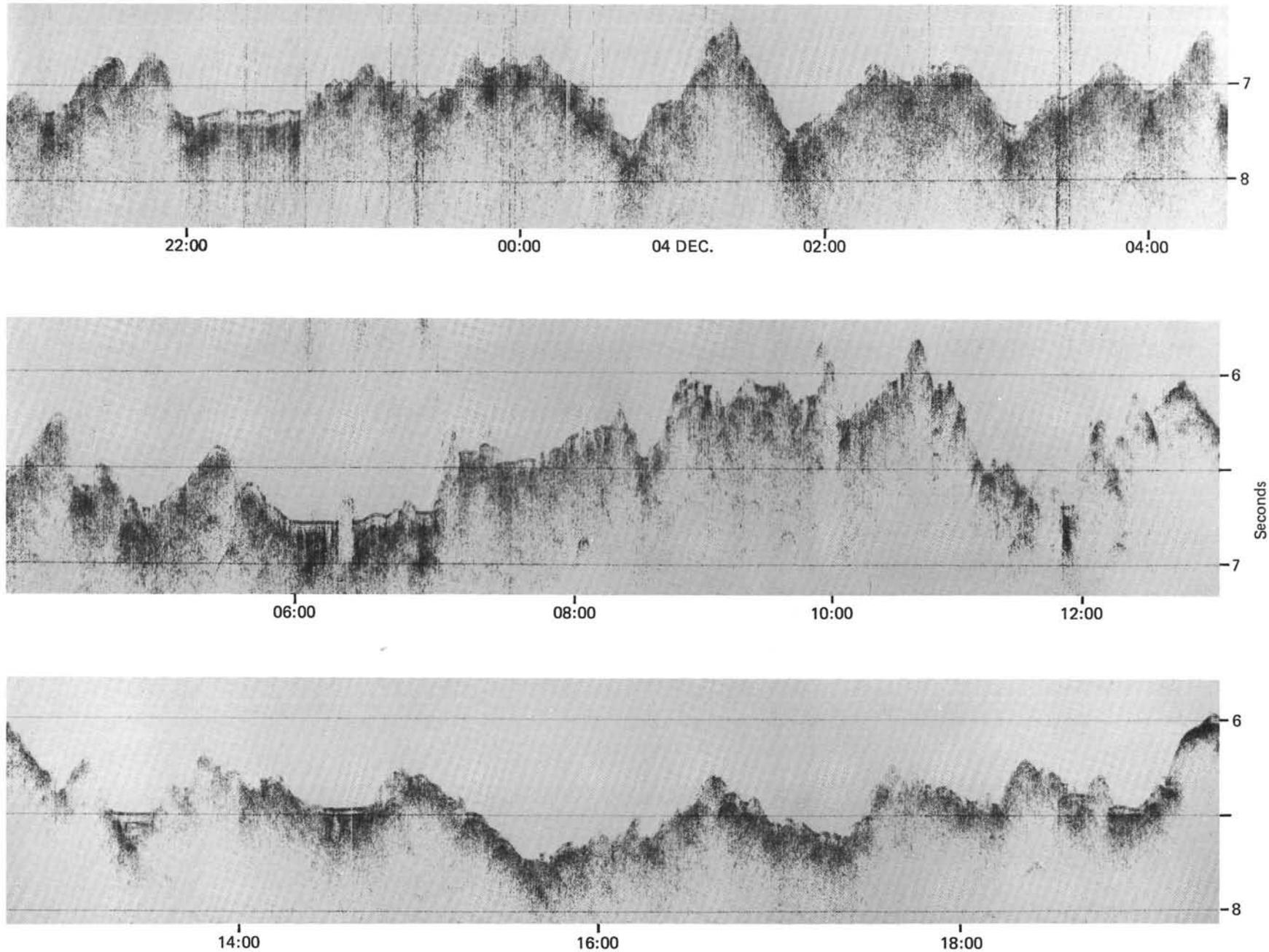


Figure 8. (Continued).

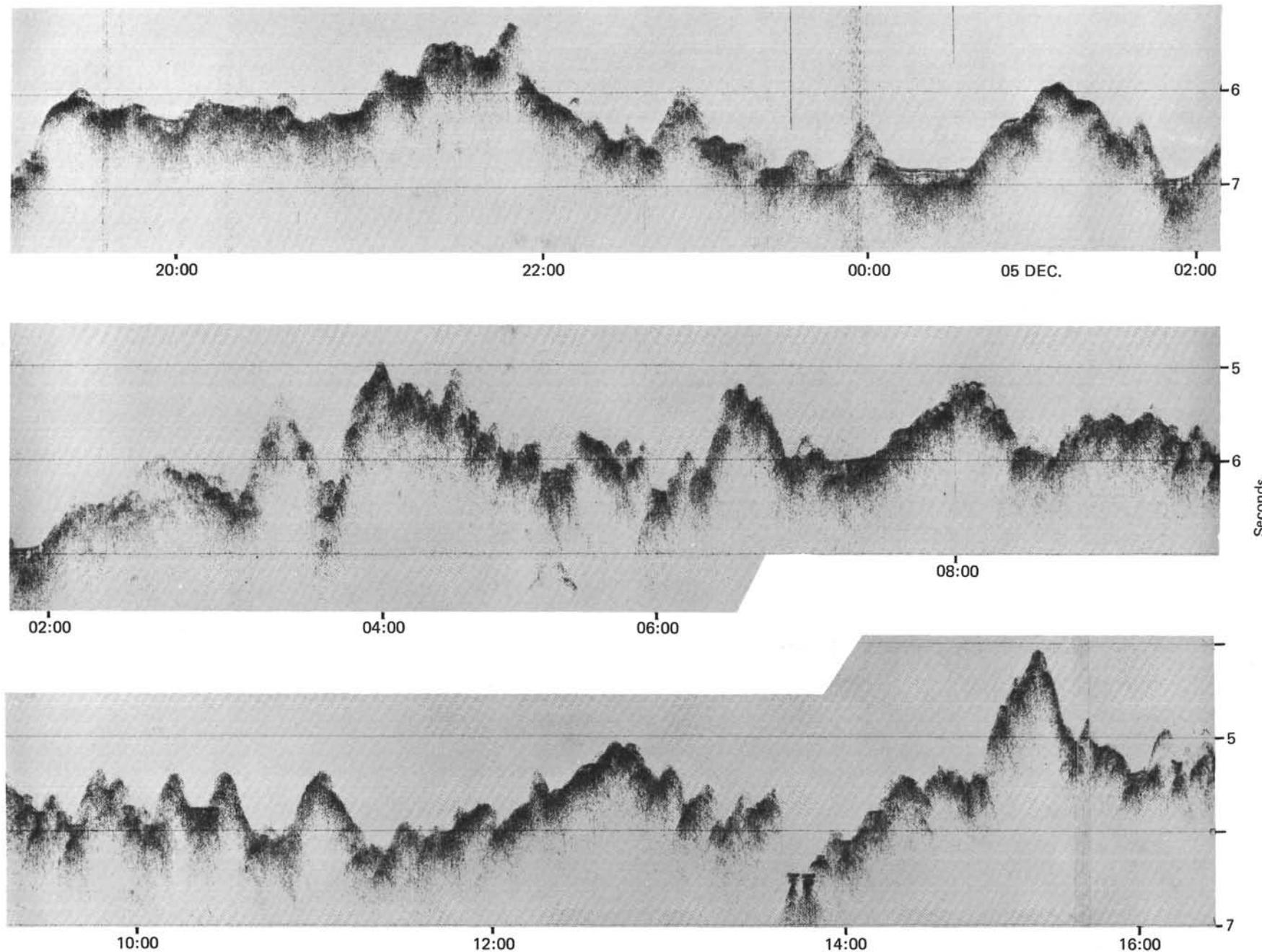


Figure 8. (Continued).

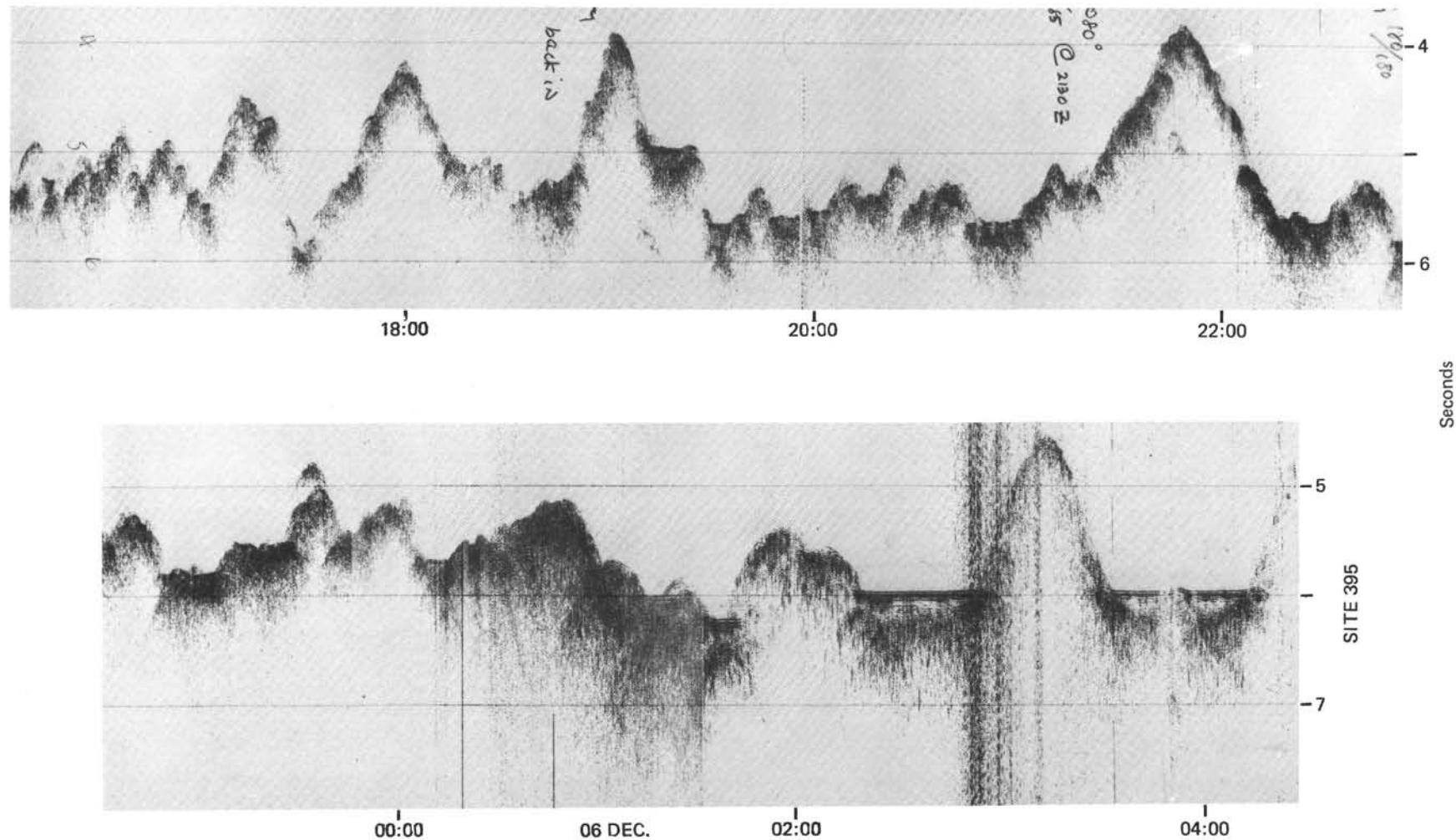
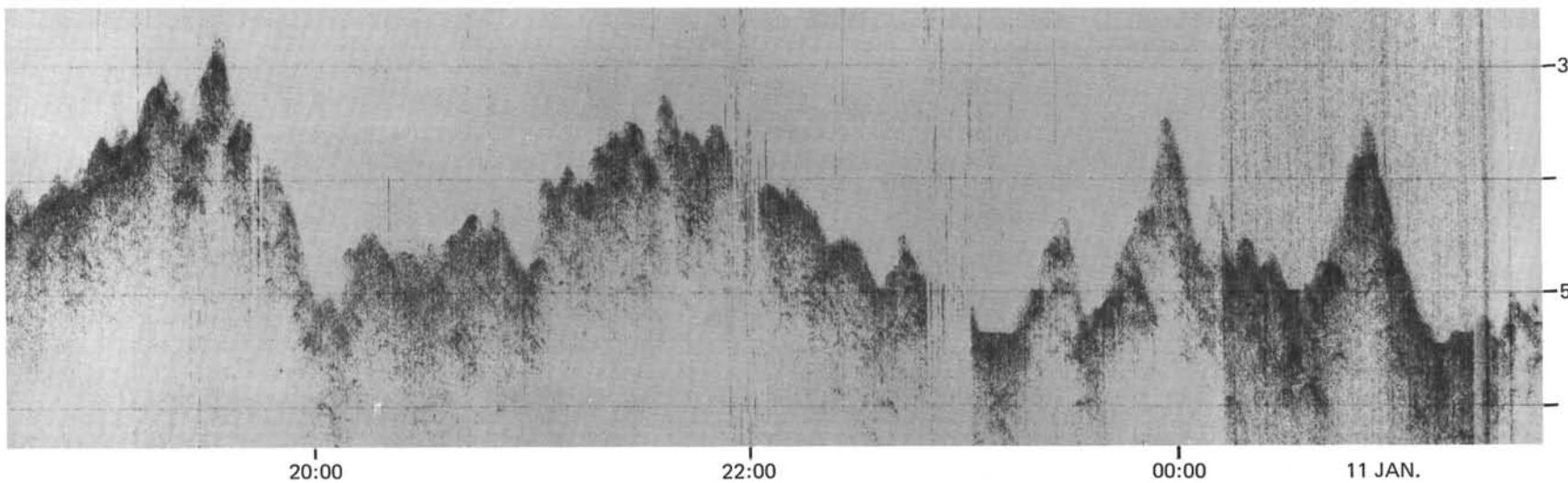
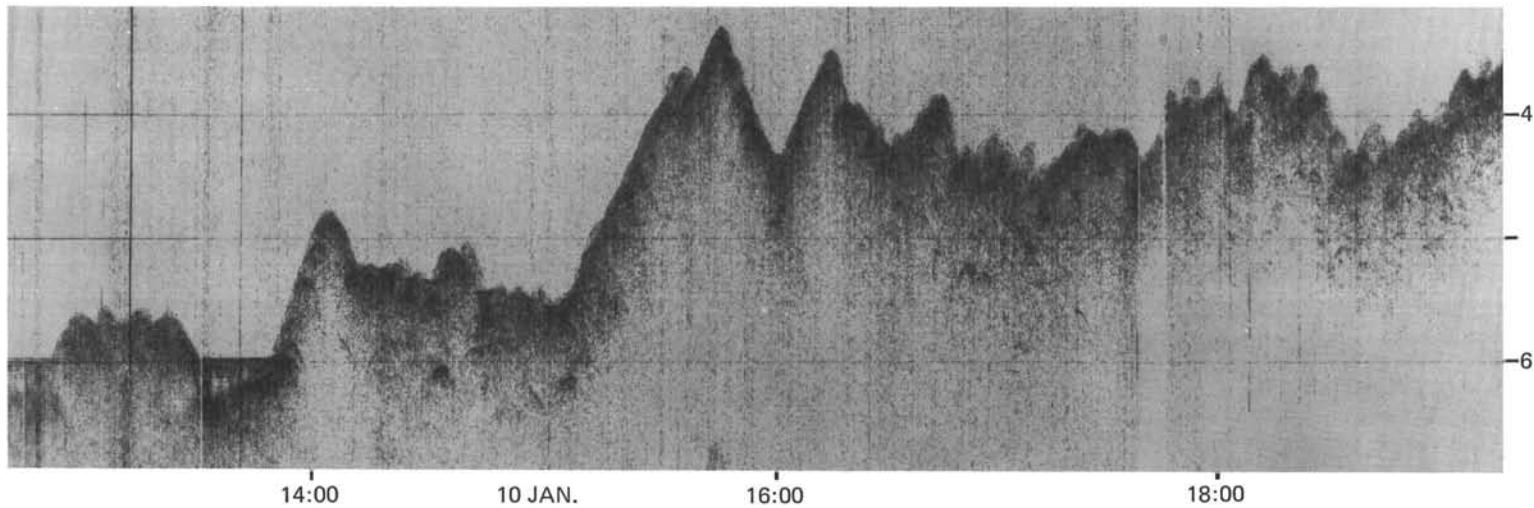


Figure 8. (Continued).

Seconds



14:00 10 JAN. 16:00 18:00



14:00 10 JAN. 16:00 18:00

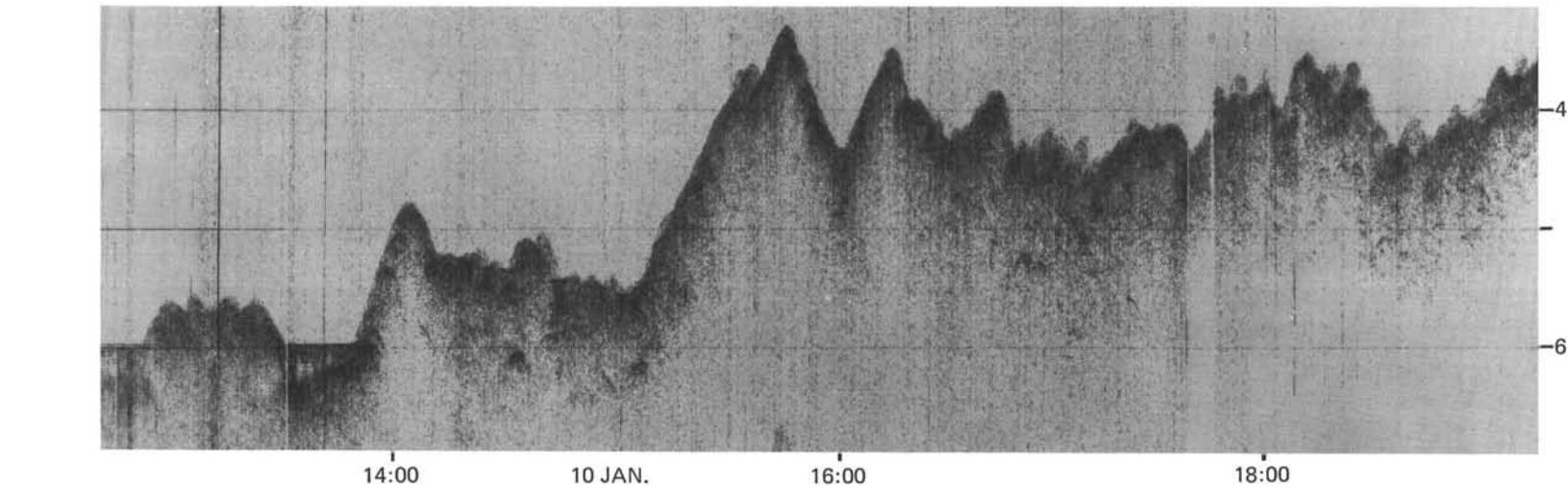


Figure 8. (Continued).

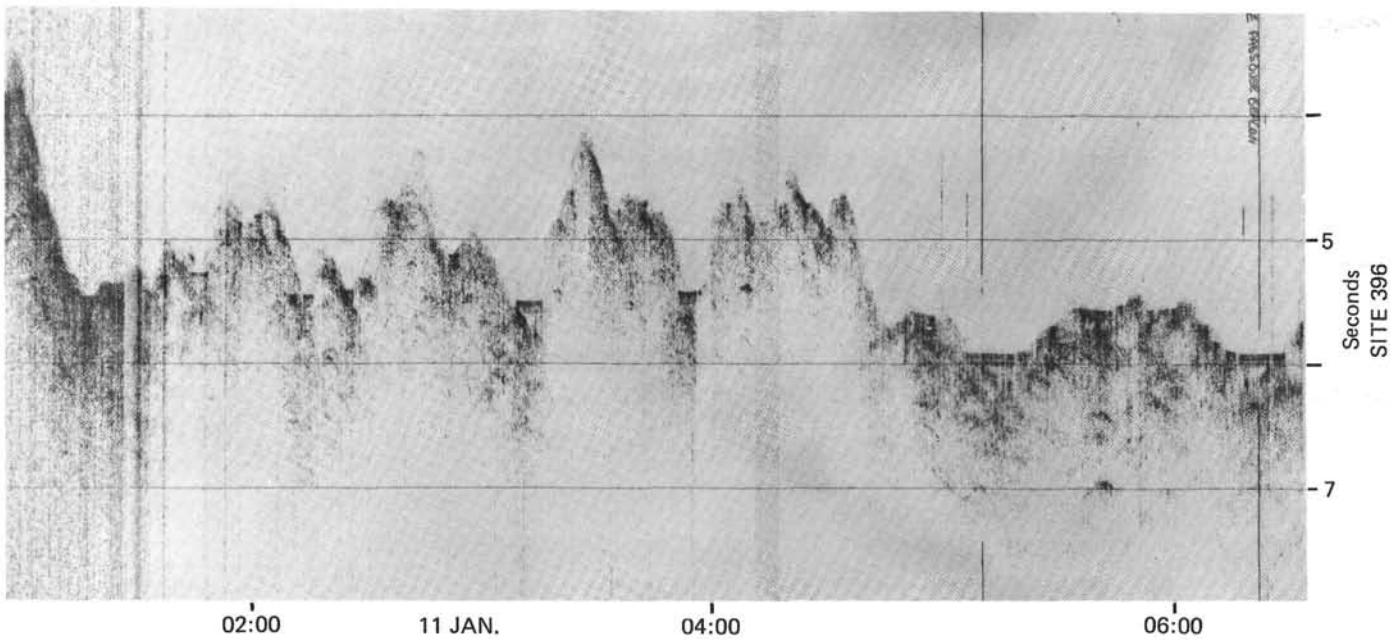


Figure 8. (Continued).

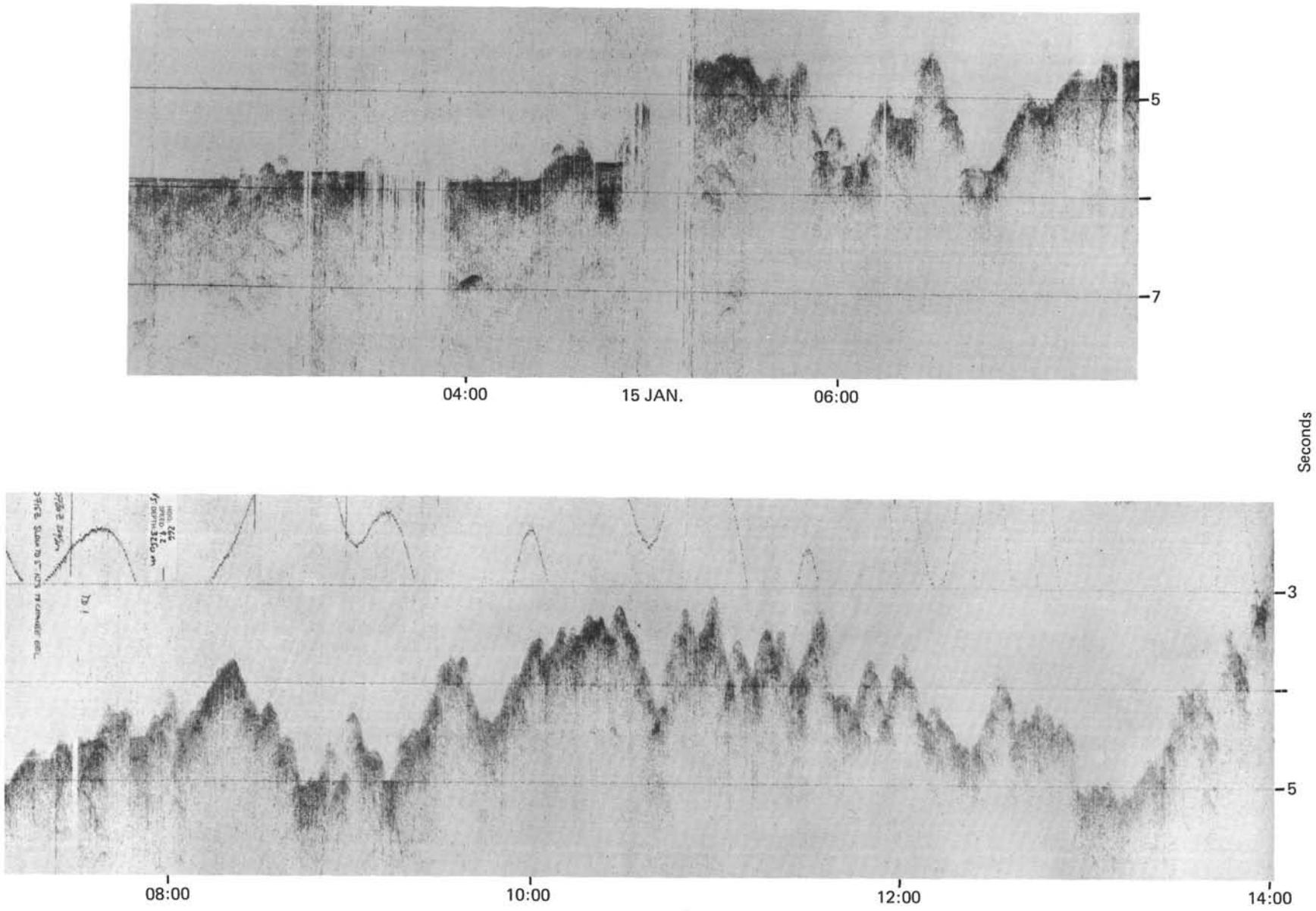


Figure 8. (Continued).

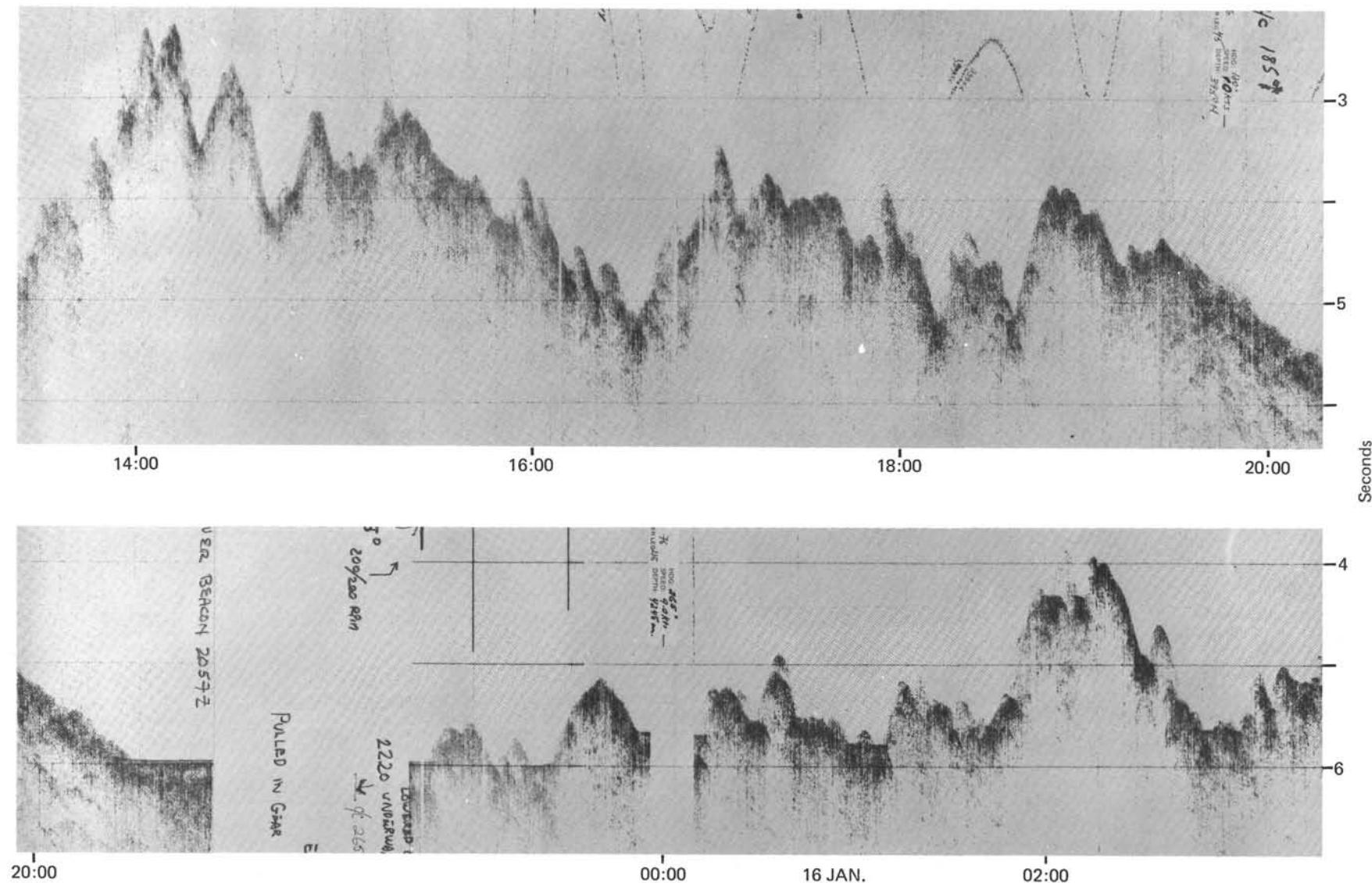


Figure 8. (Continued).

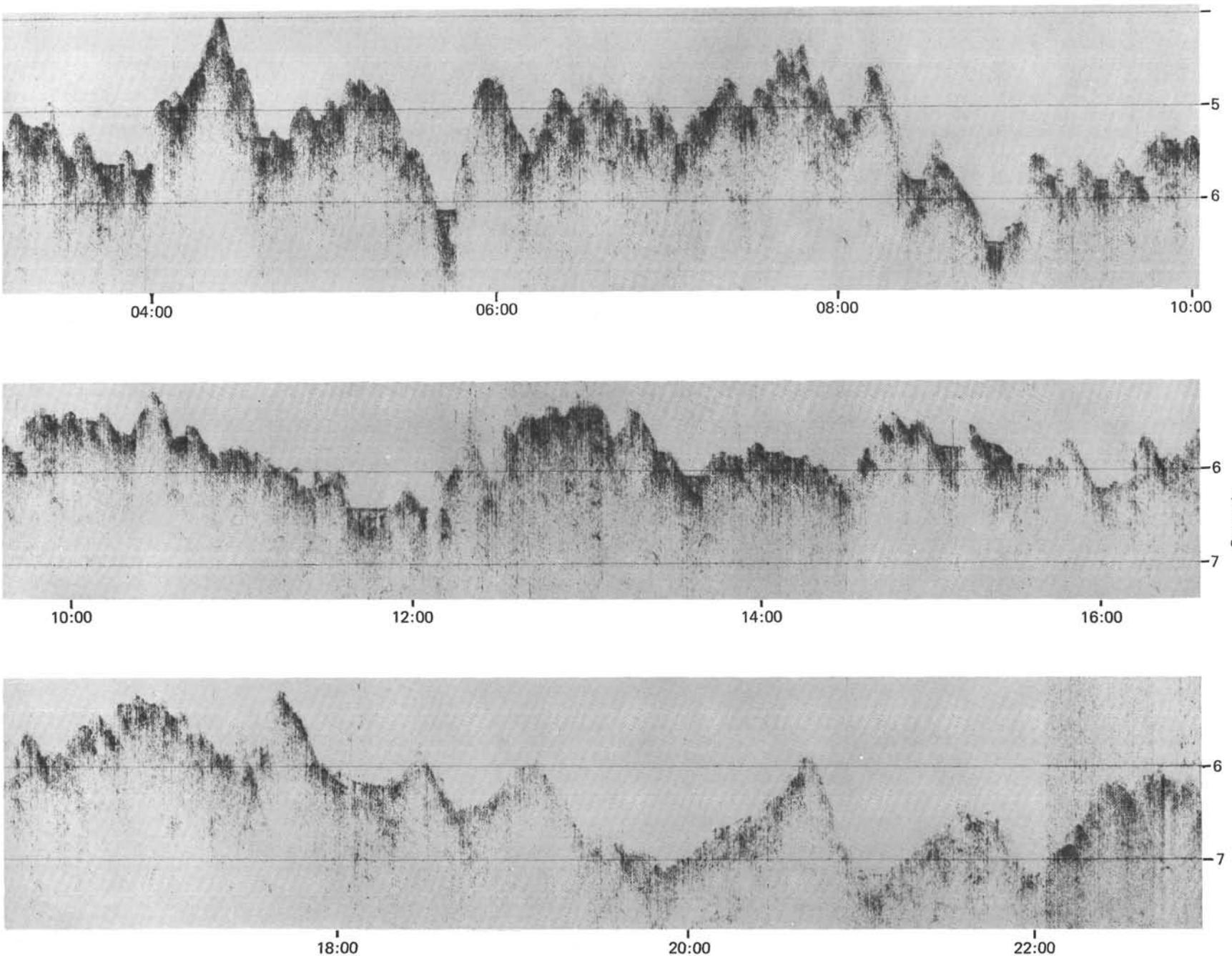


Figure 8. (Continued).

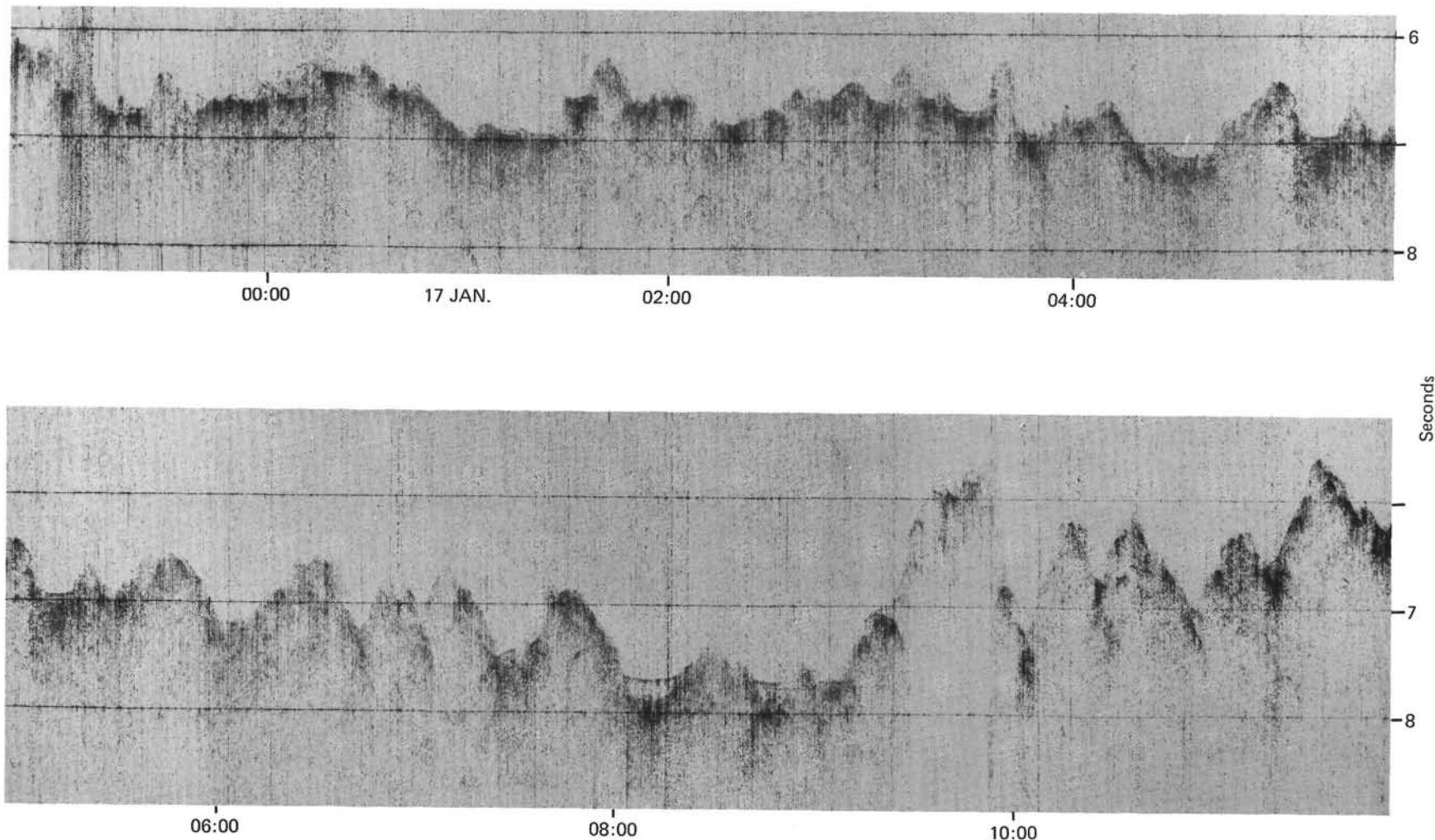


Figure 8. (Continued).

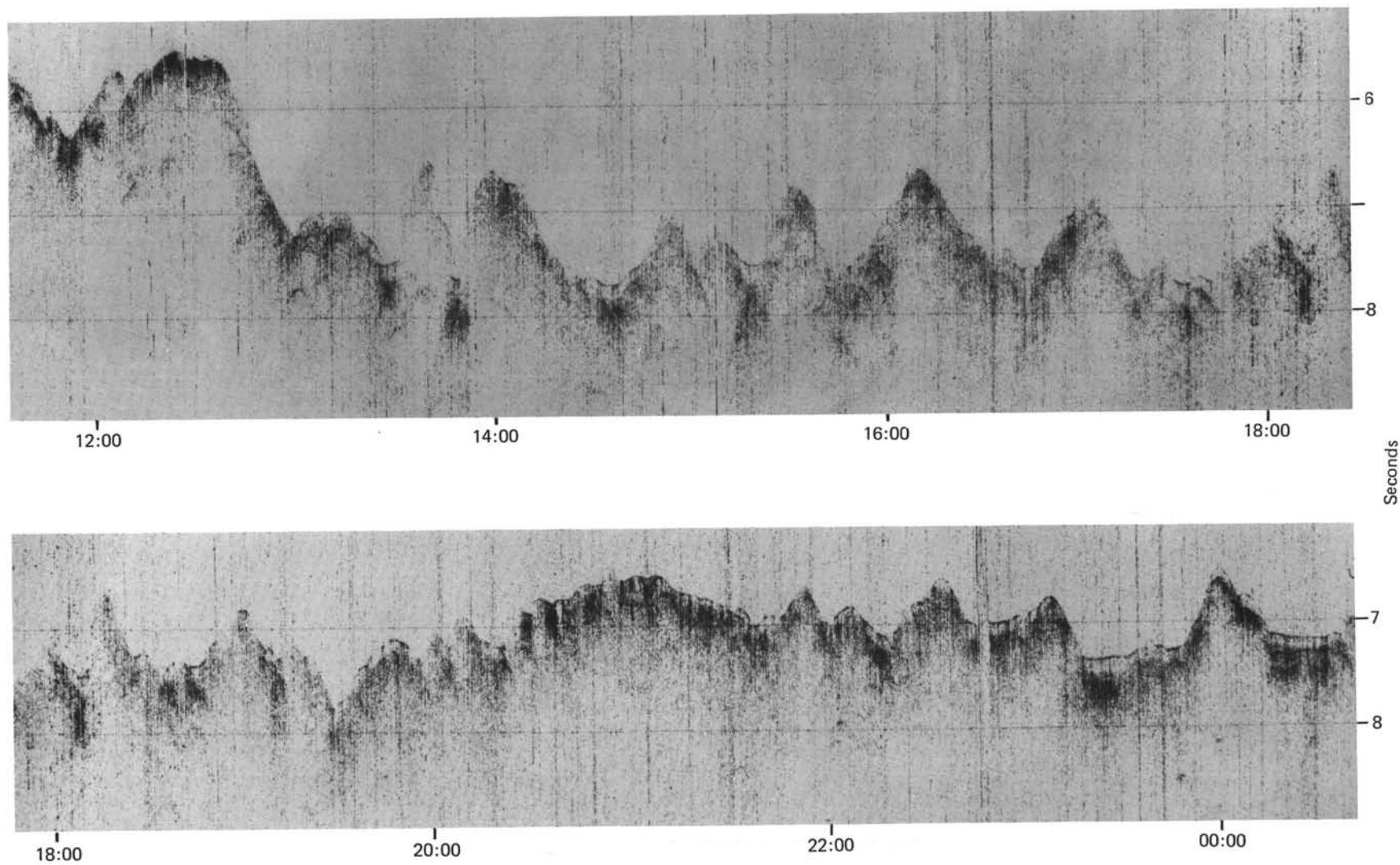


Figure 8. (*Continued*).

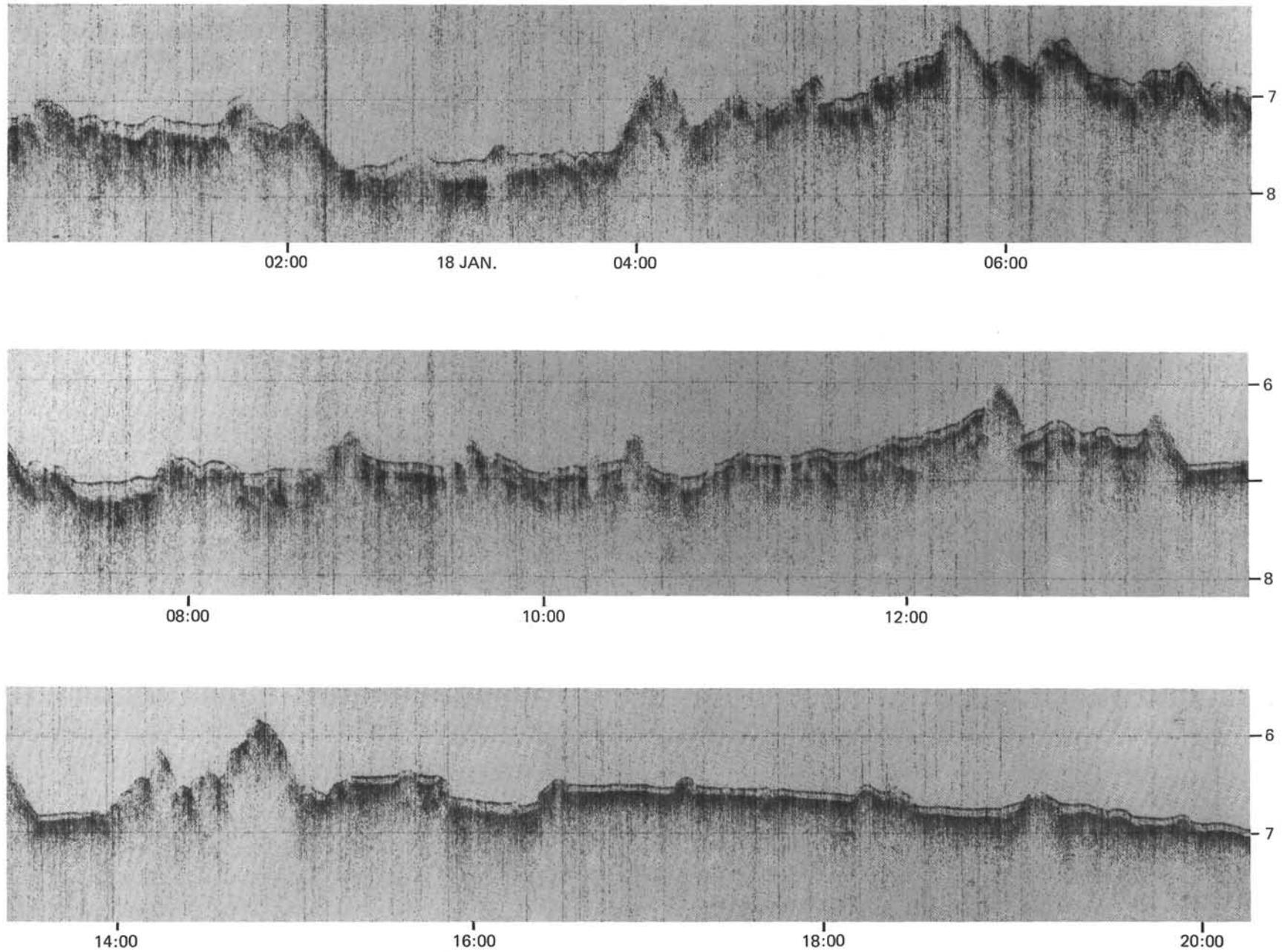


Figure 8. (Continued).

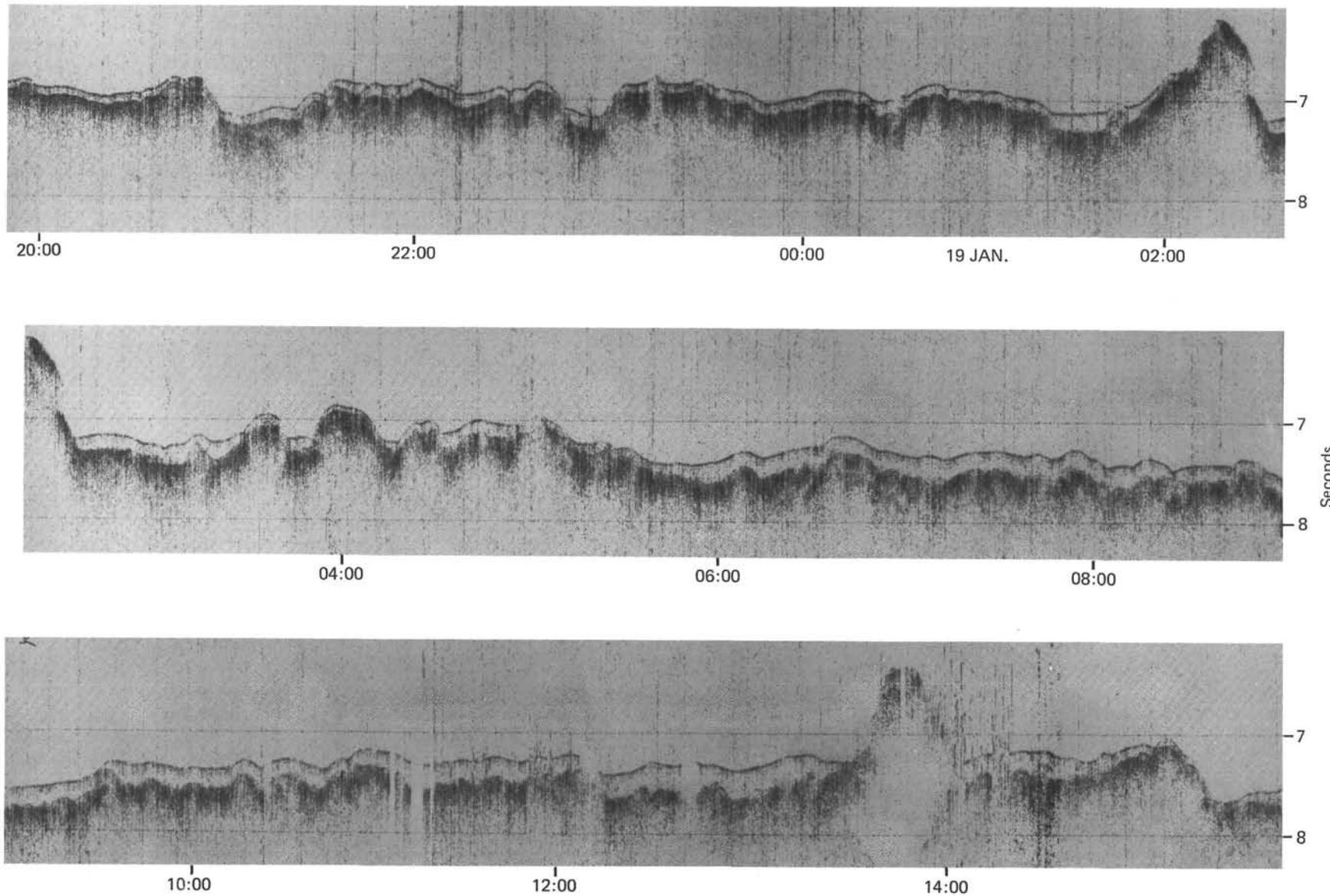


Figure 8. (Continued).

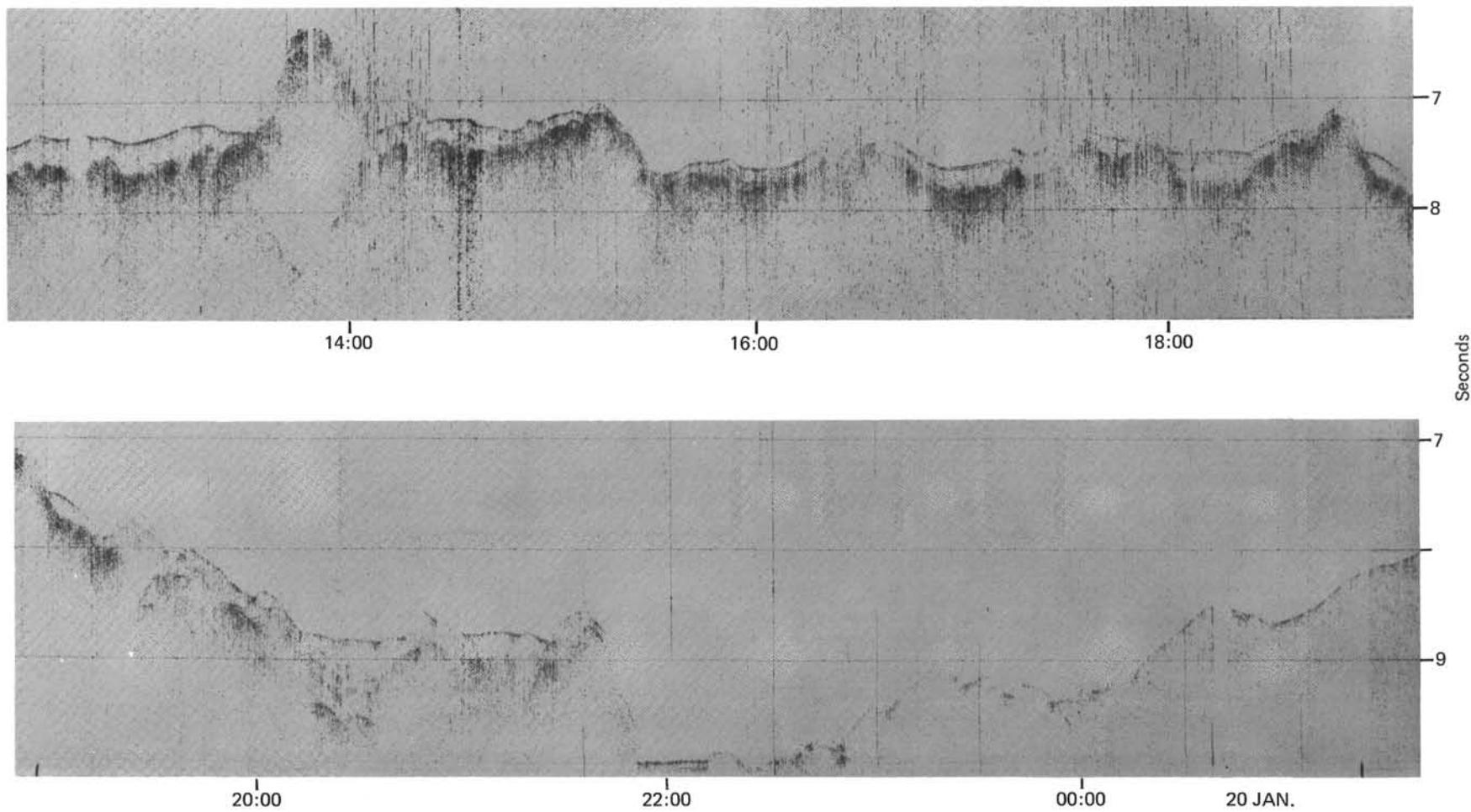


Figure 8. (Continued).

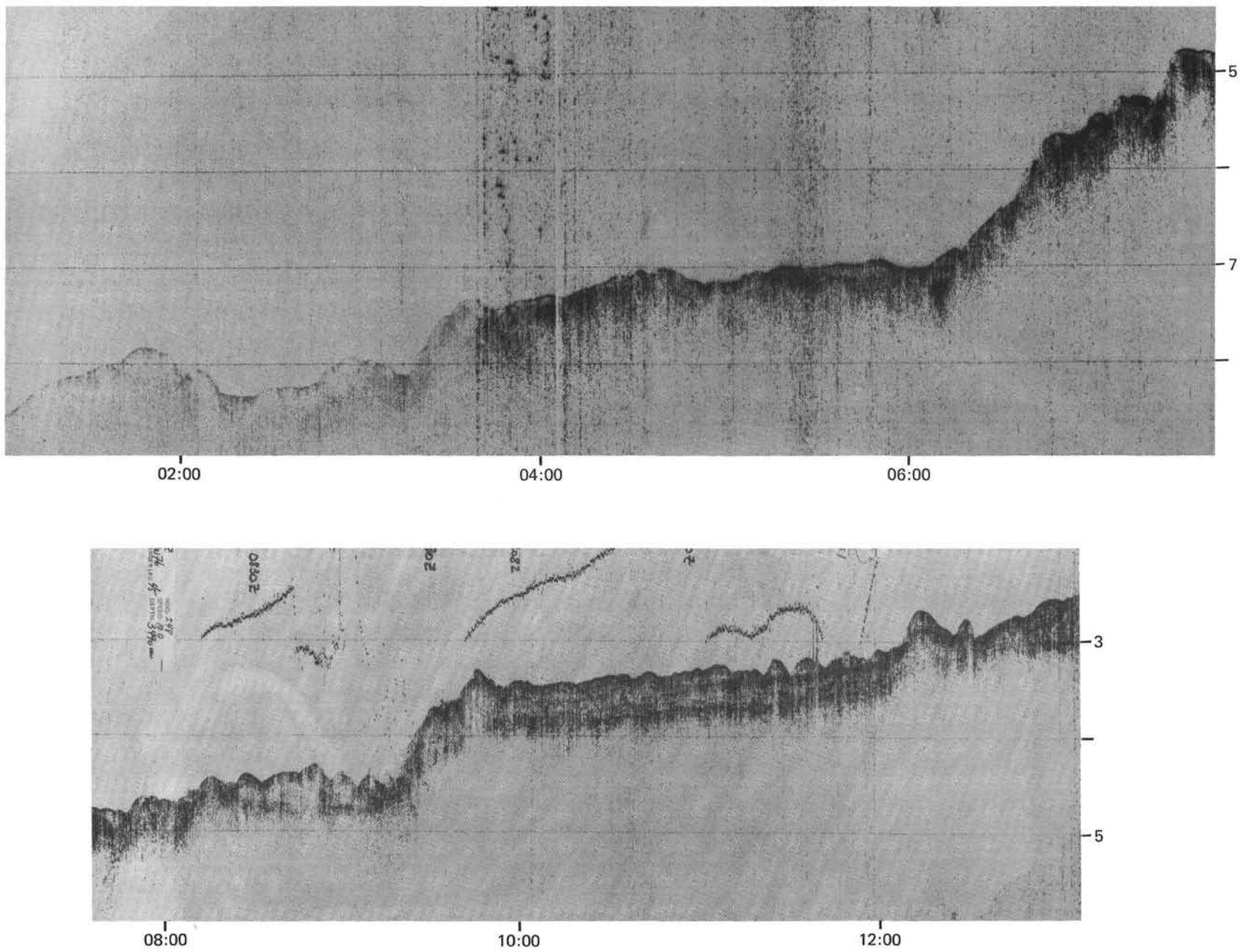


Figure 8. (Continued).

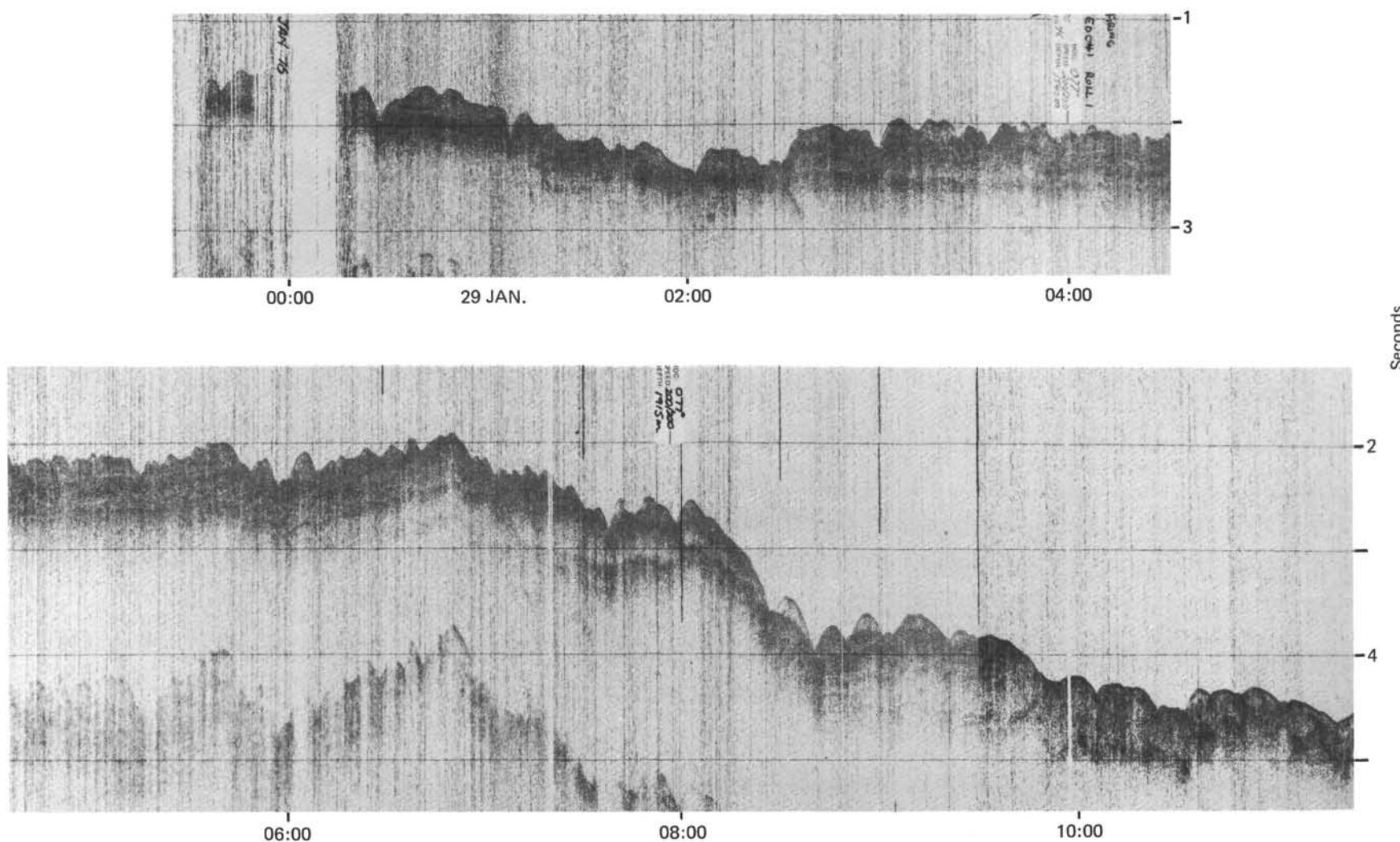


Figure 9. (9-1 to 9-27) Seismic reflection profiles along track of Leg 46 of Glomar Challenger.

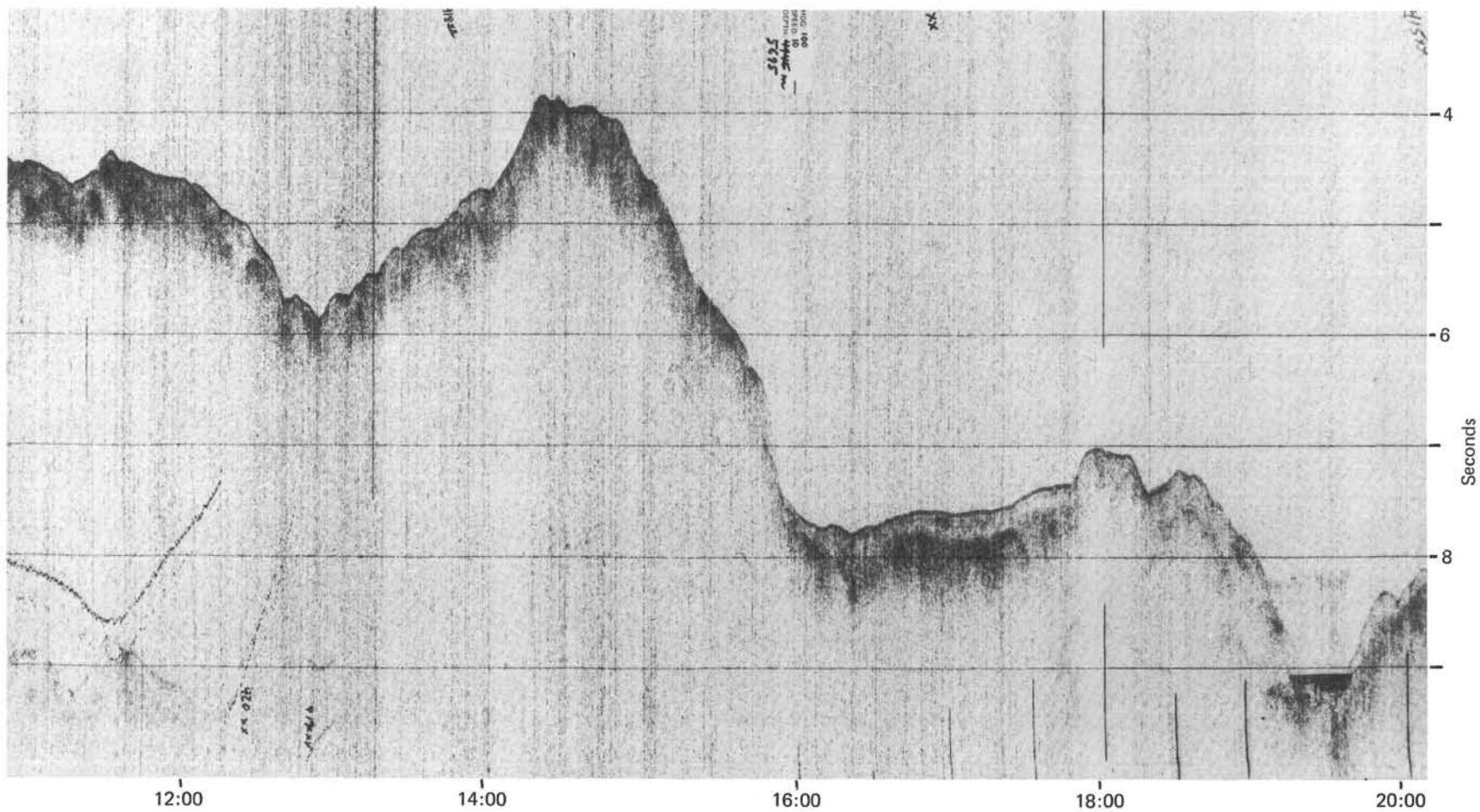


Figure 9. (Continued)

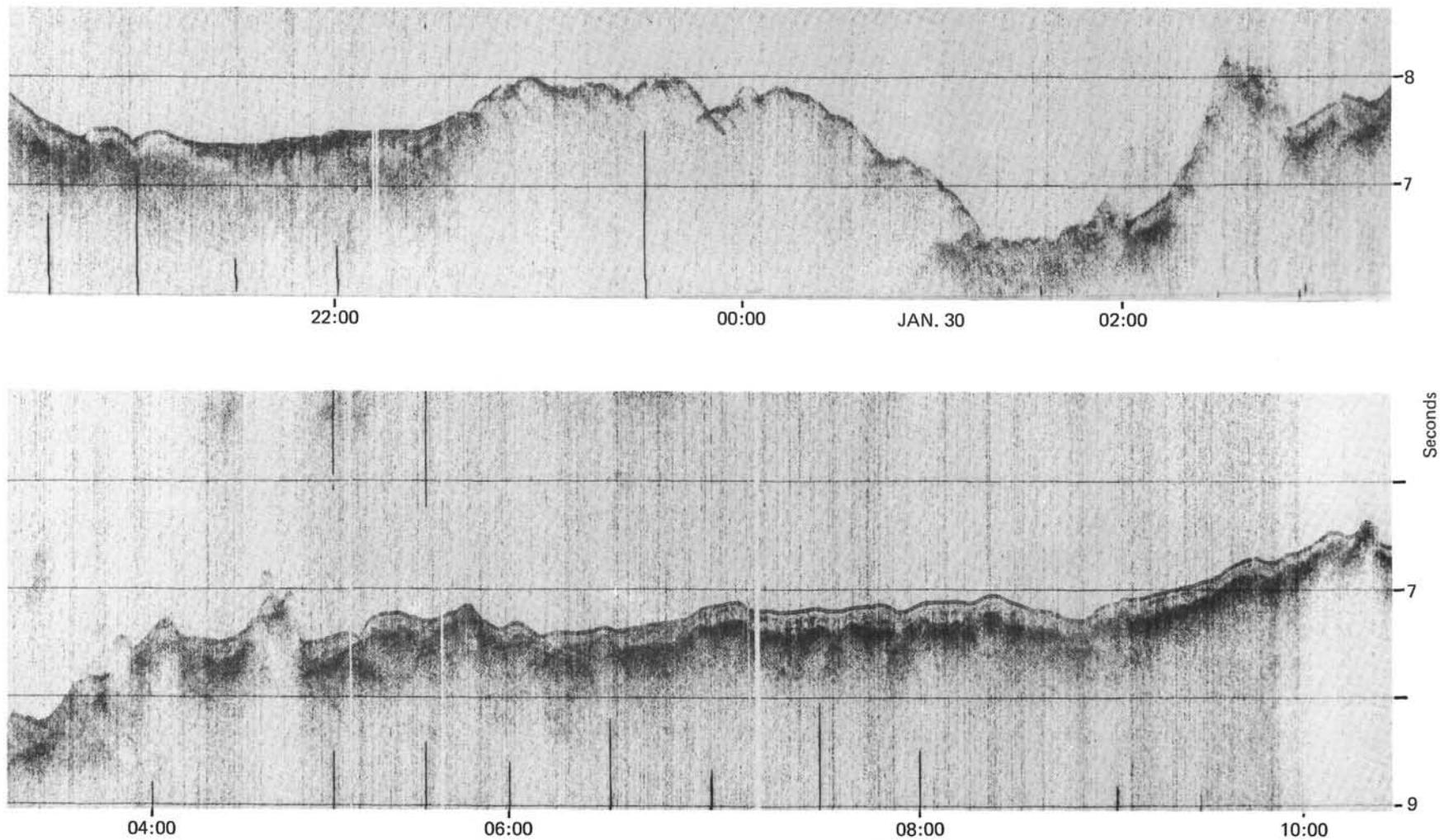


Figure 9. (Continued).

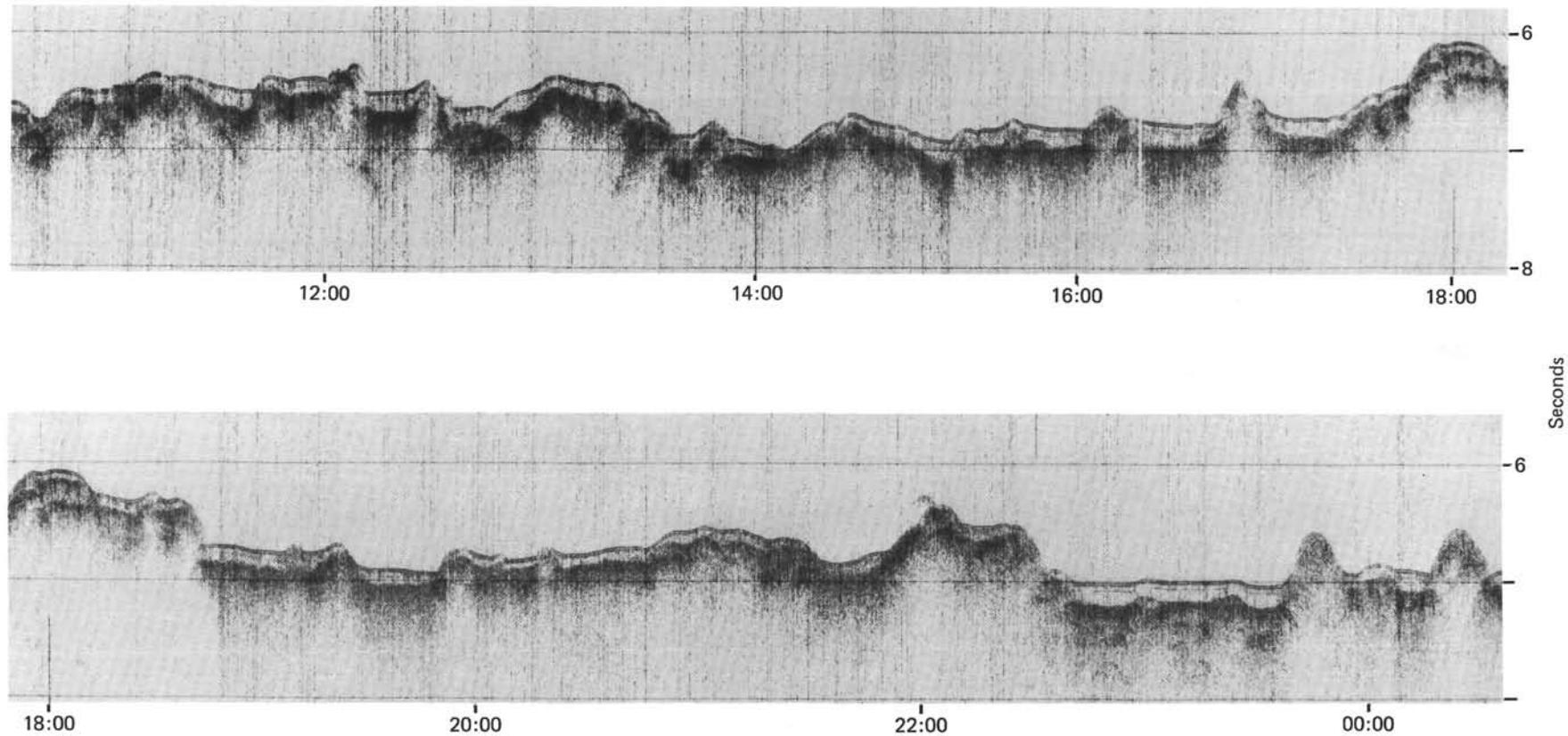


Figure 9. (Continued).

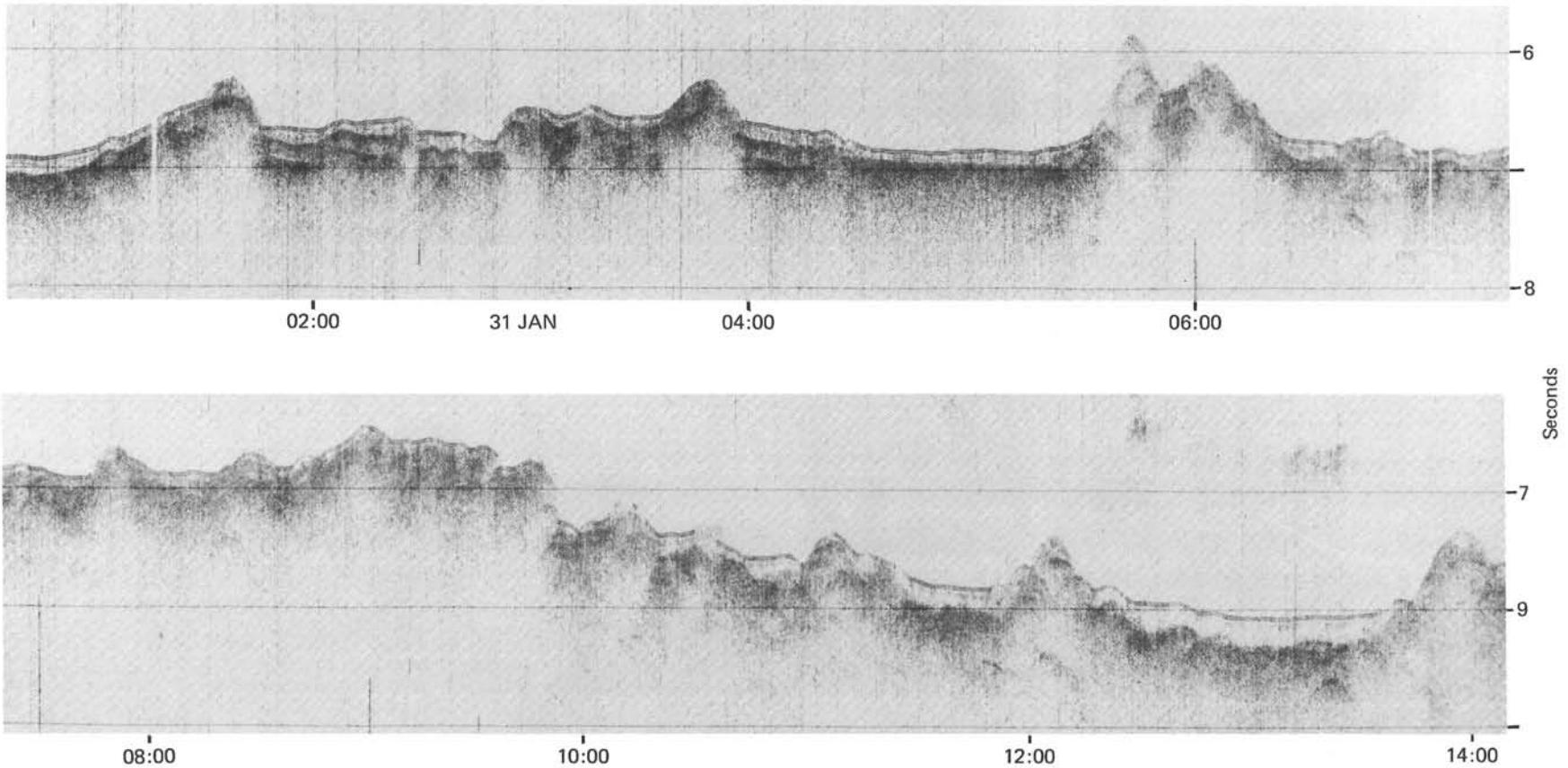


Figure 9. (Continued).

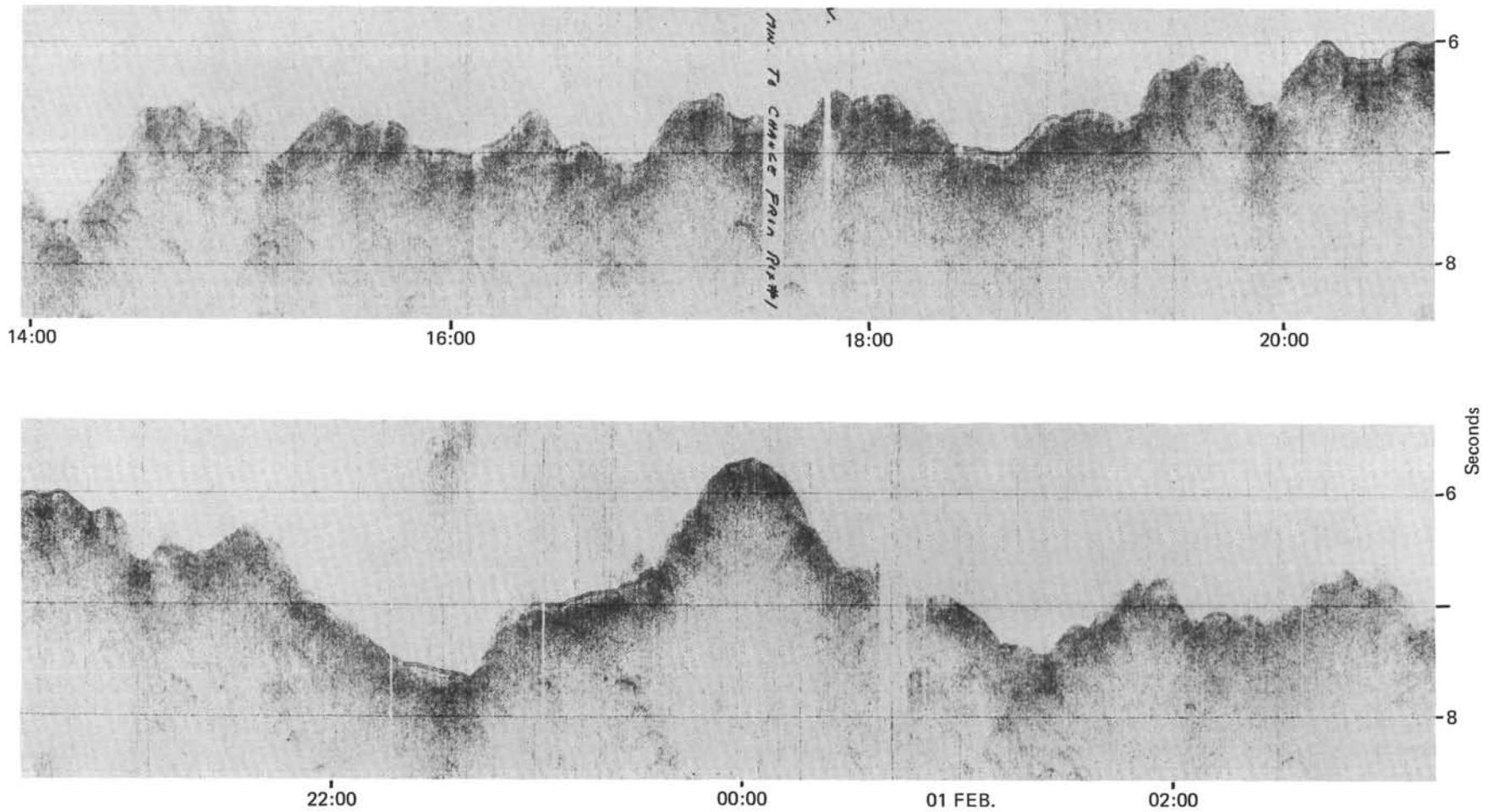


Figure 9. (Continued)

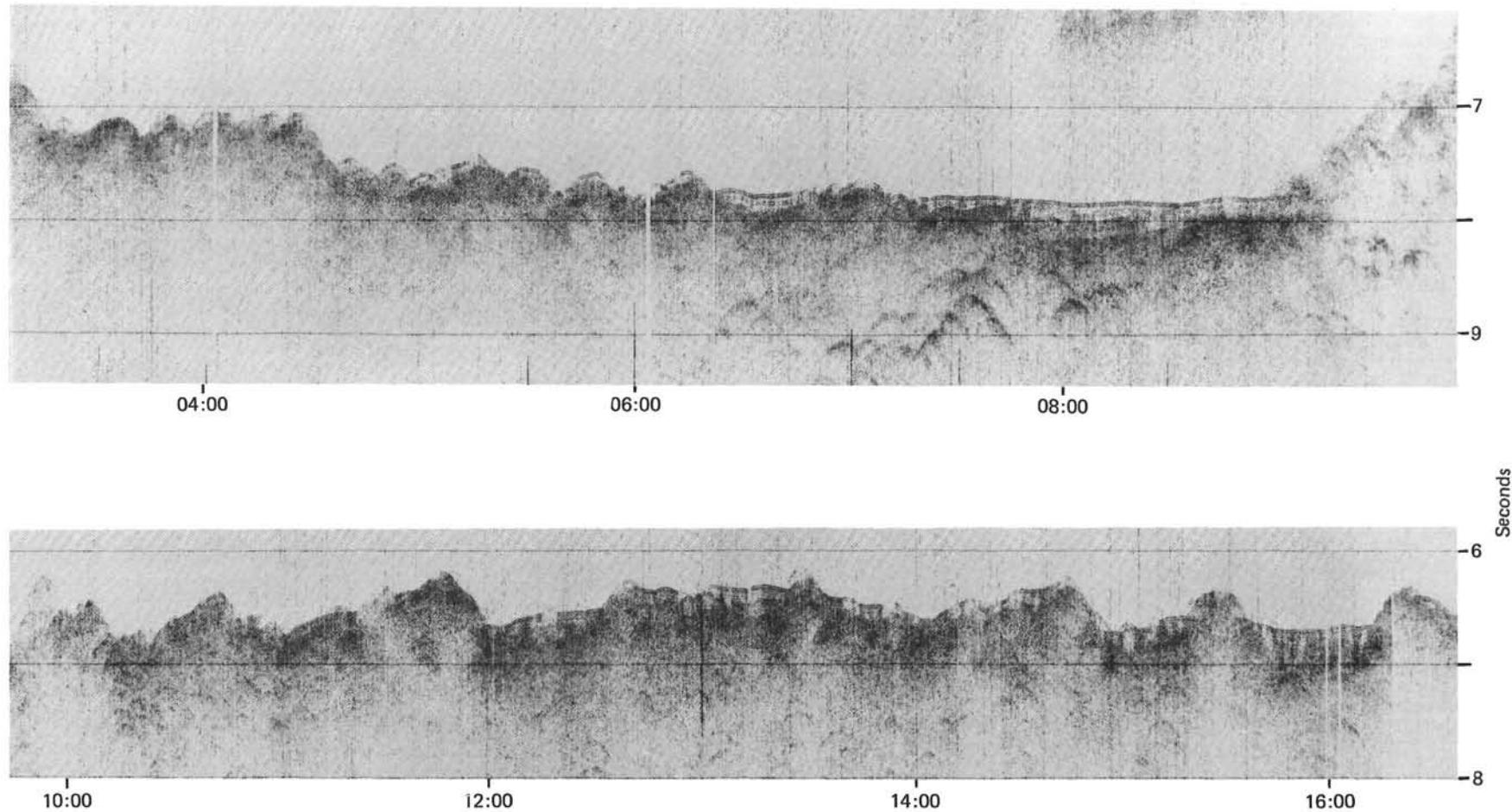


Figure 9. (Continued).

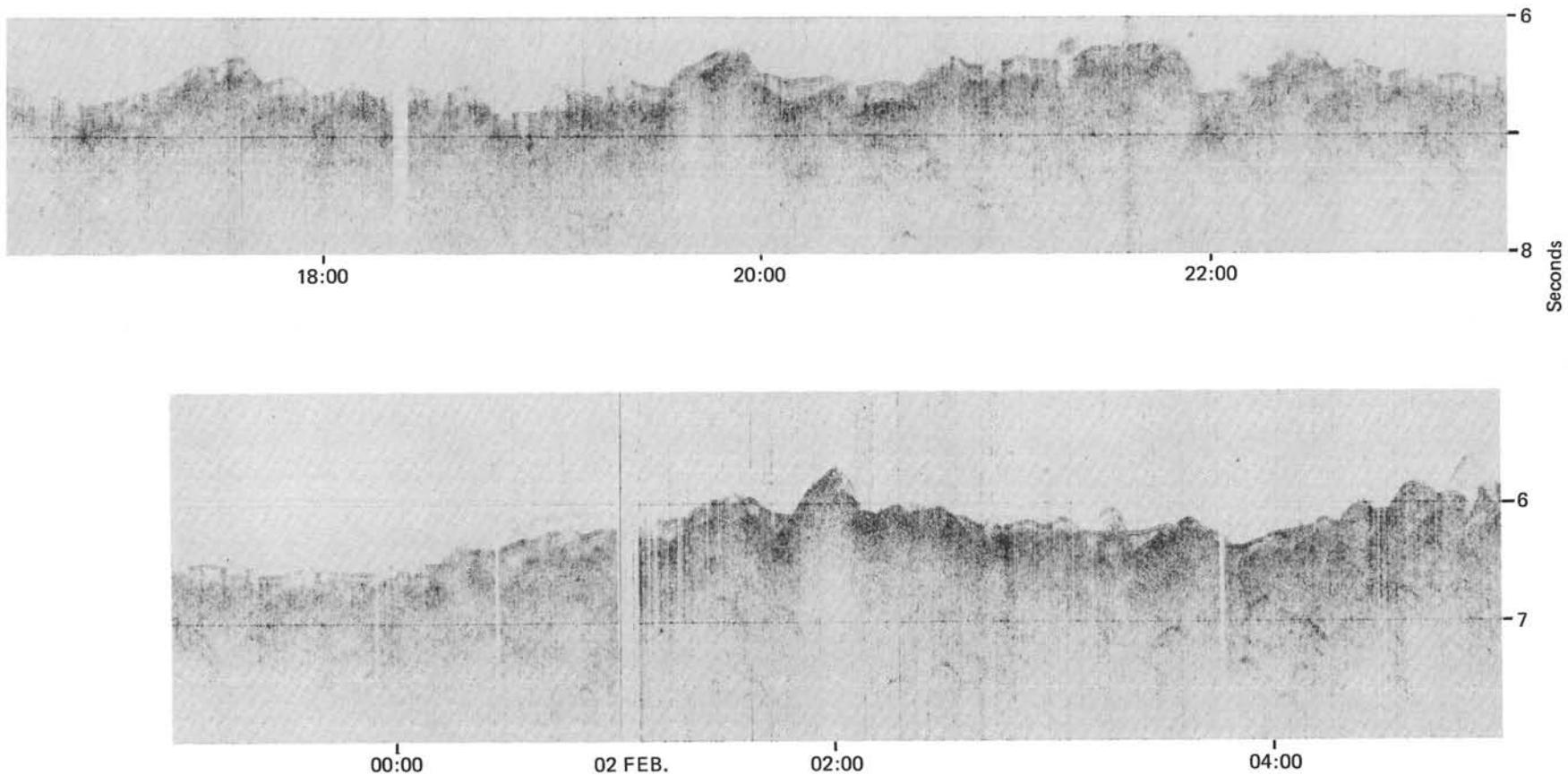


Figure 9. (Continued).

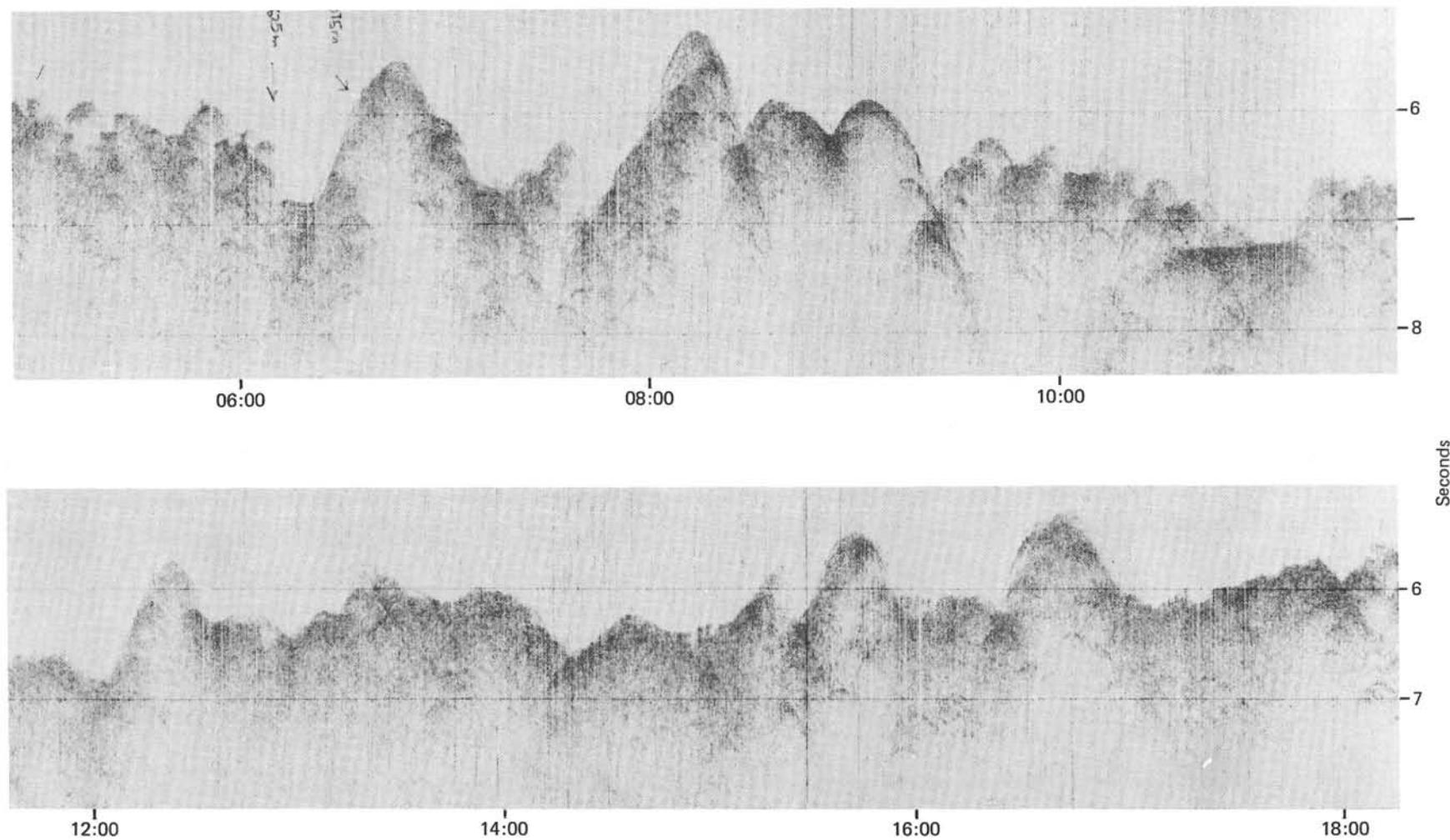


Figure 9. (Continued).

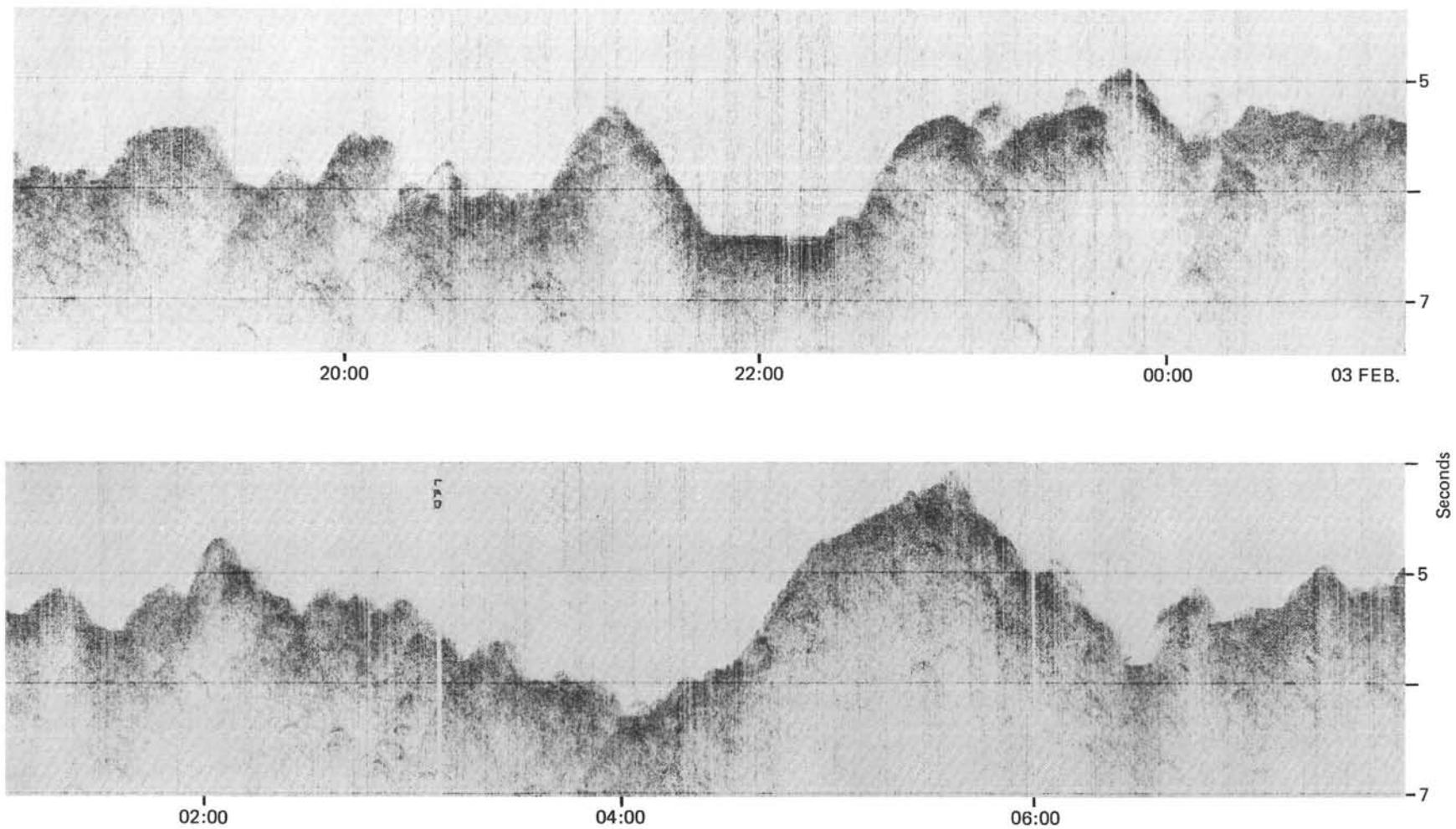


Figure 9. (Continued).

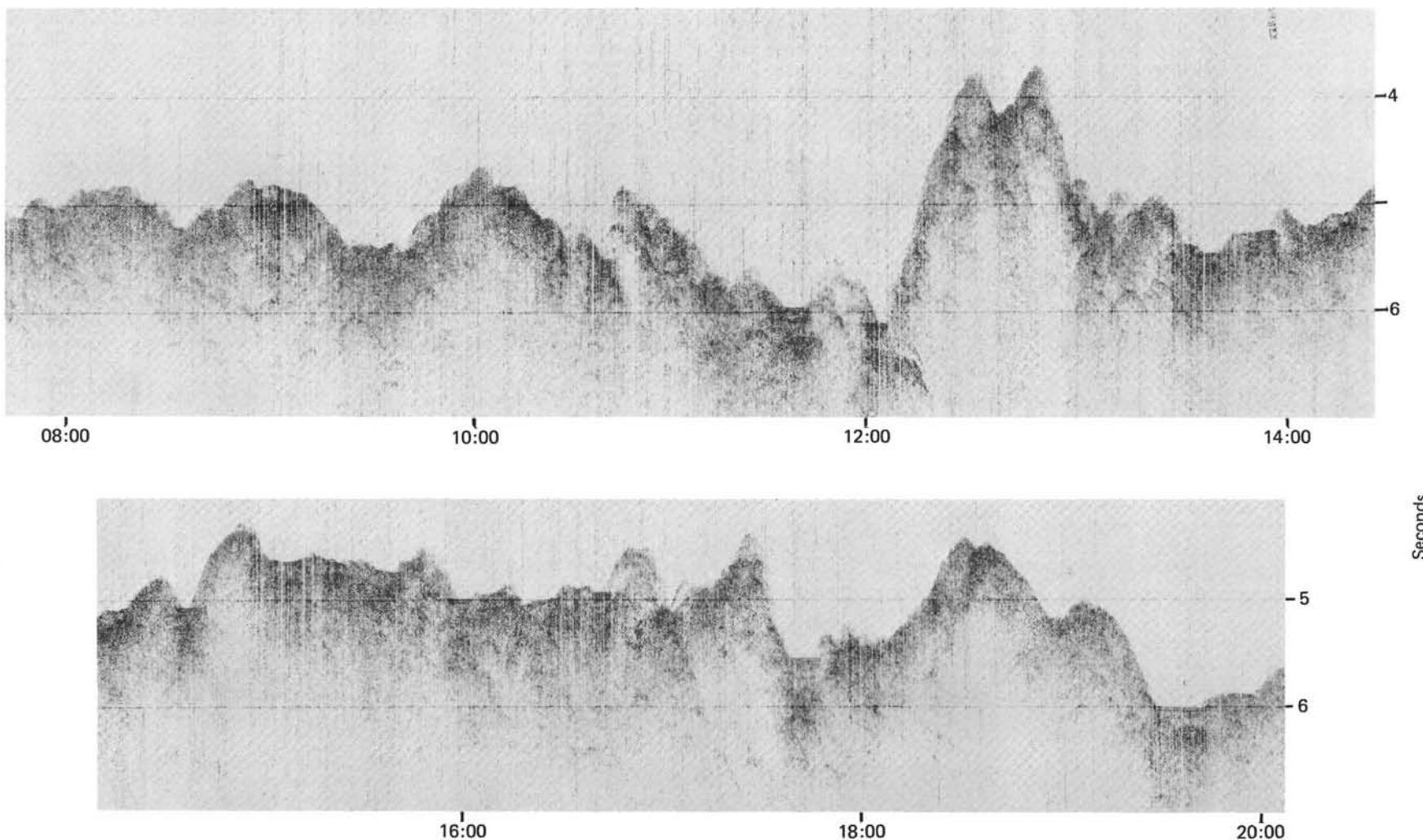


Figure 9. (*Continued*).

Seconds

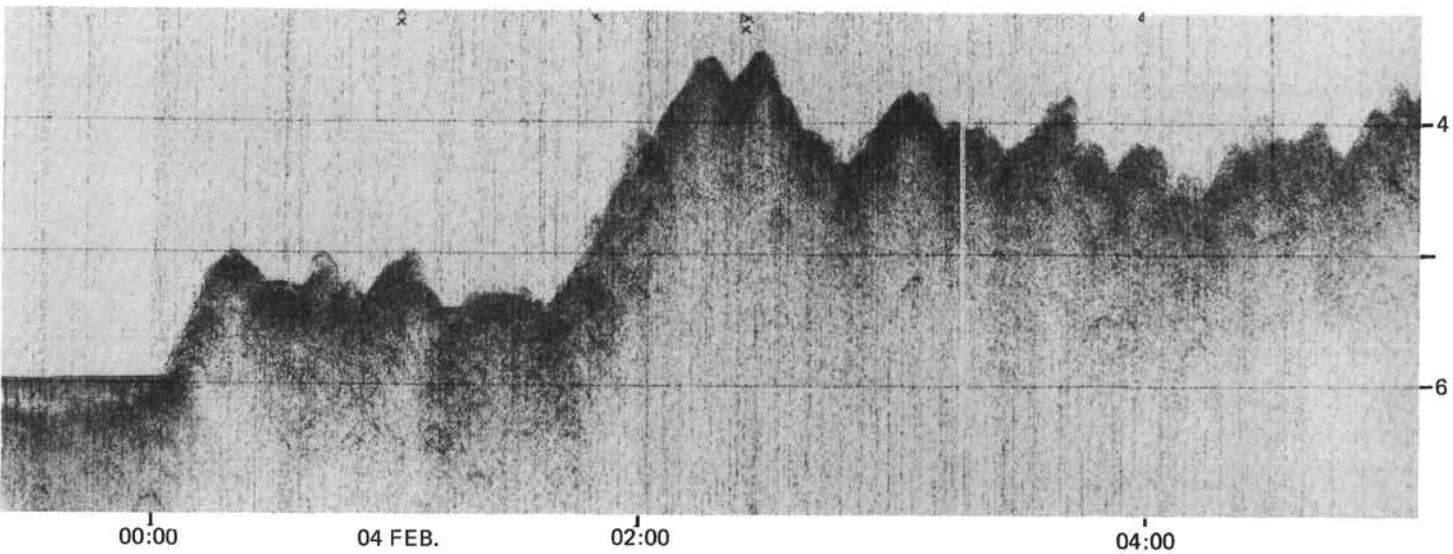
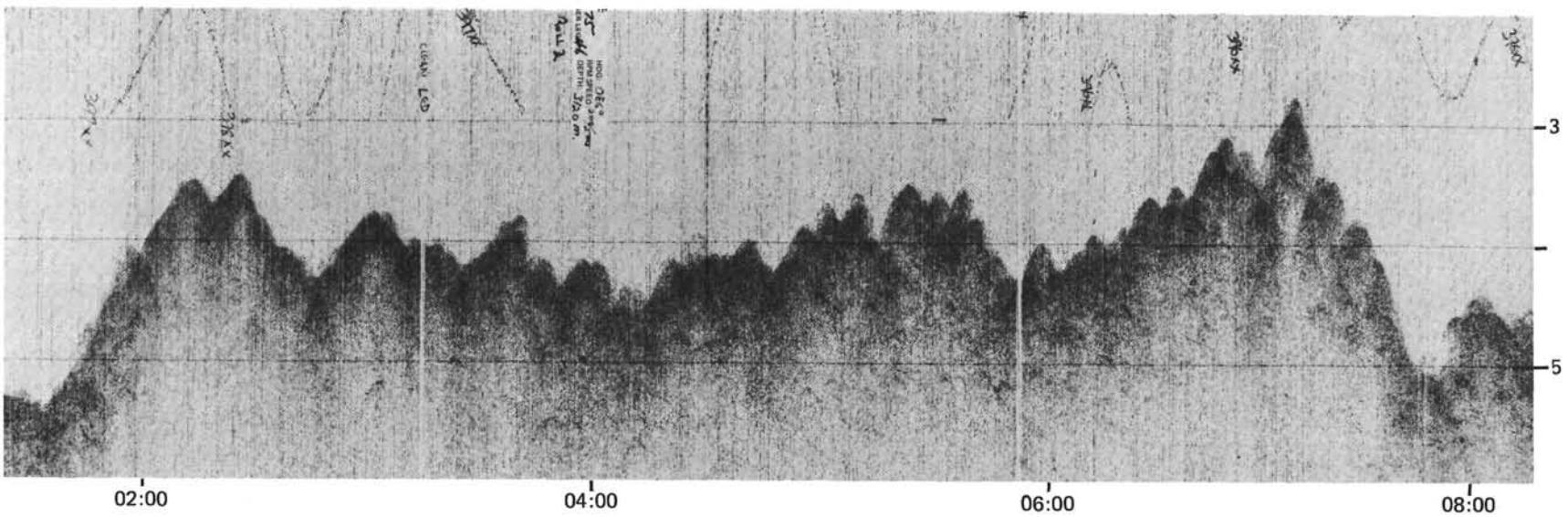


Figure 9. (Continued).

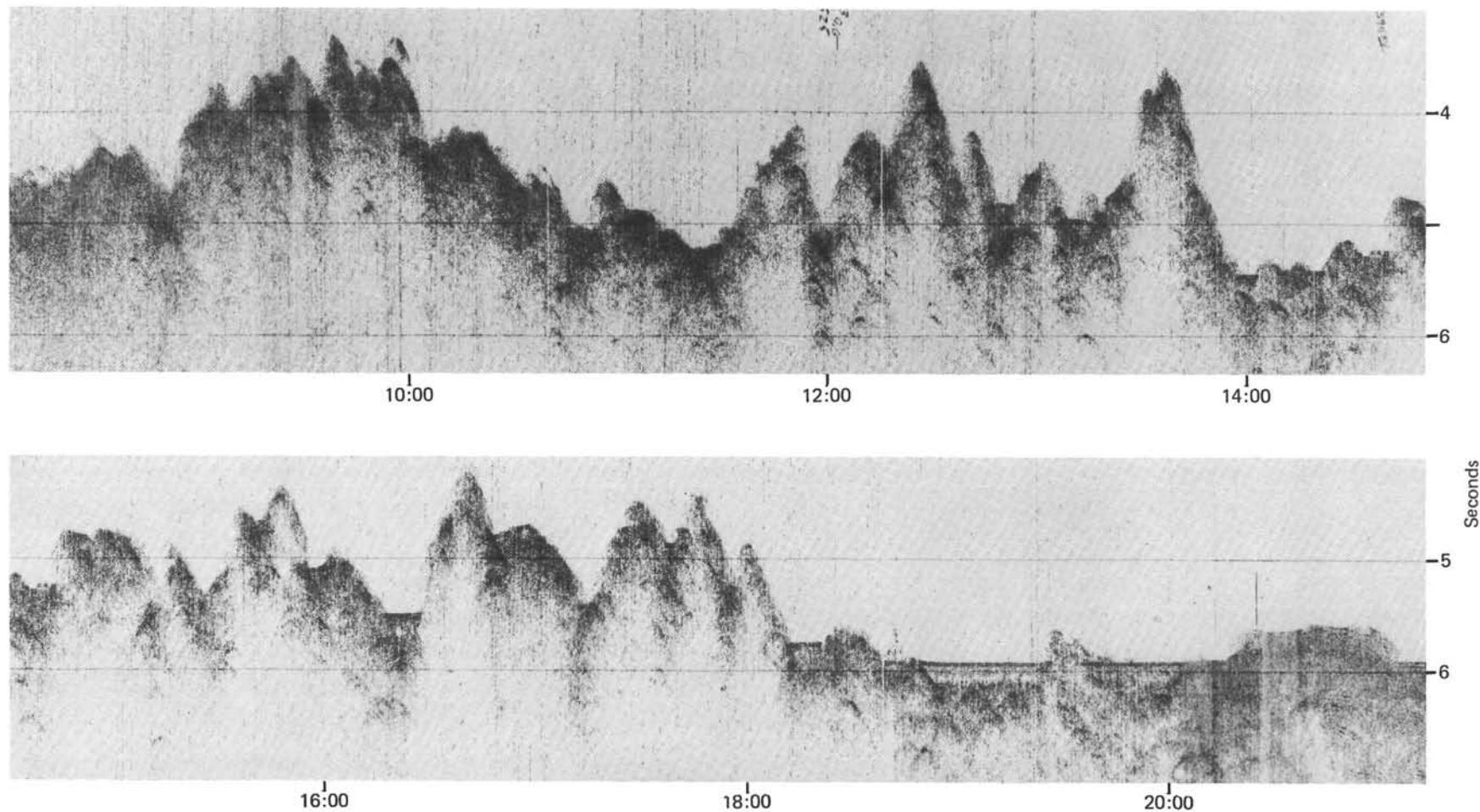


Figure 9. (Continued).

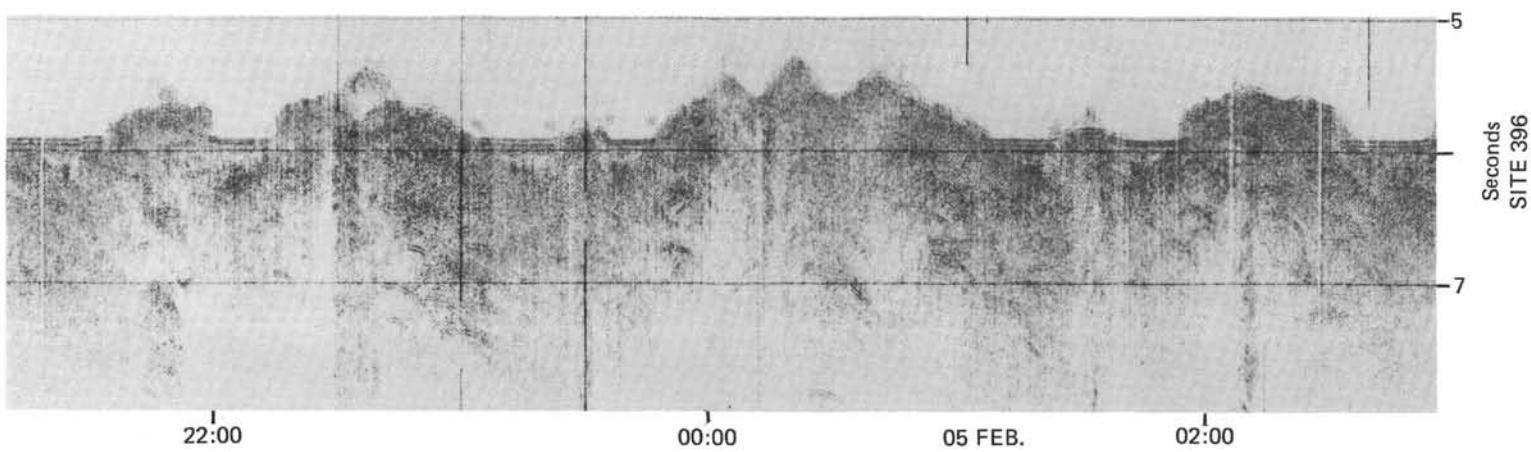


Figure 9. (*Continued*).

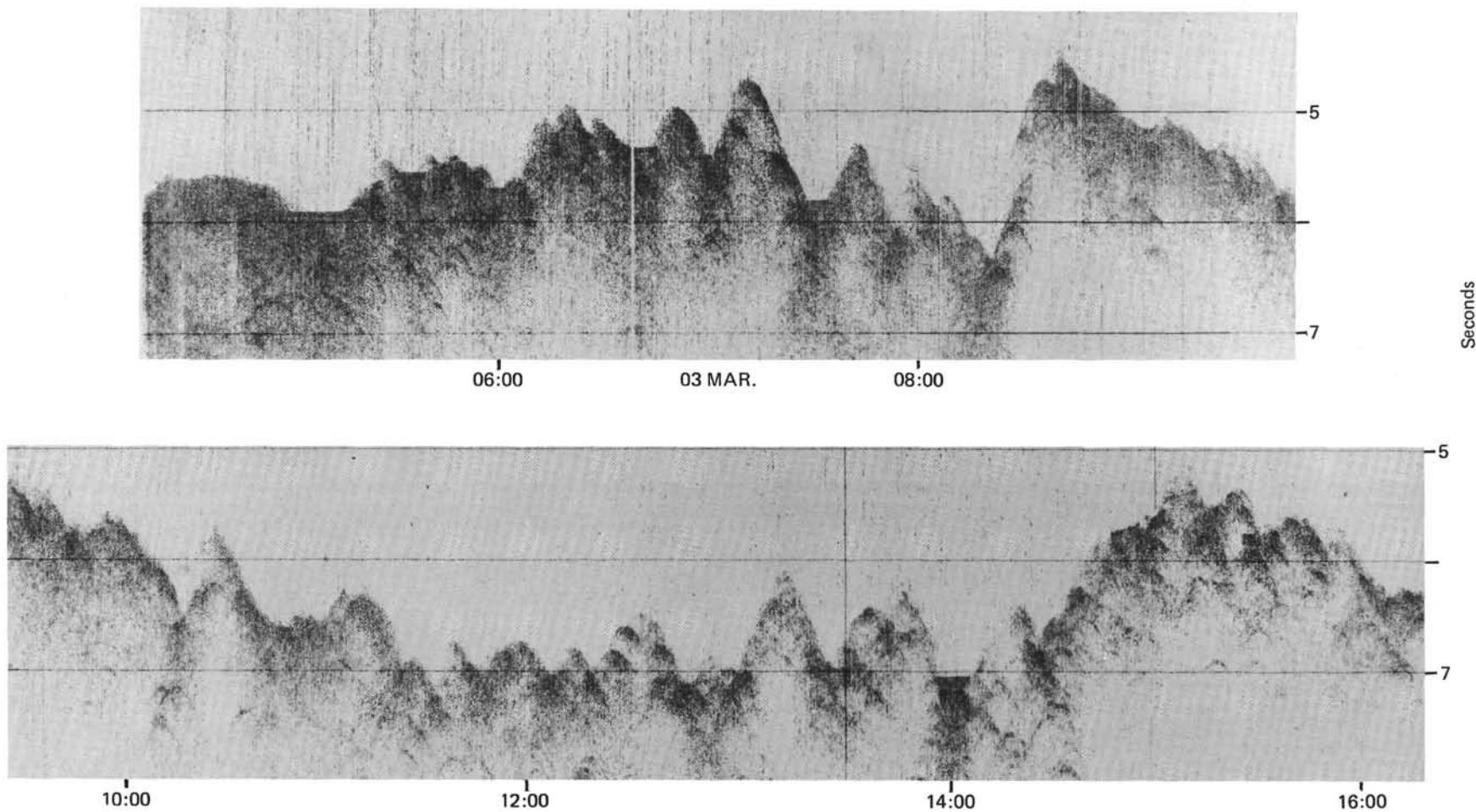


Figure 9. (Continued).

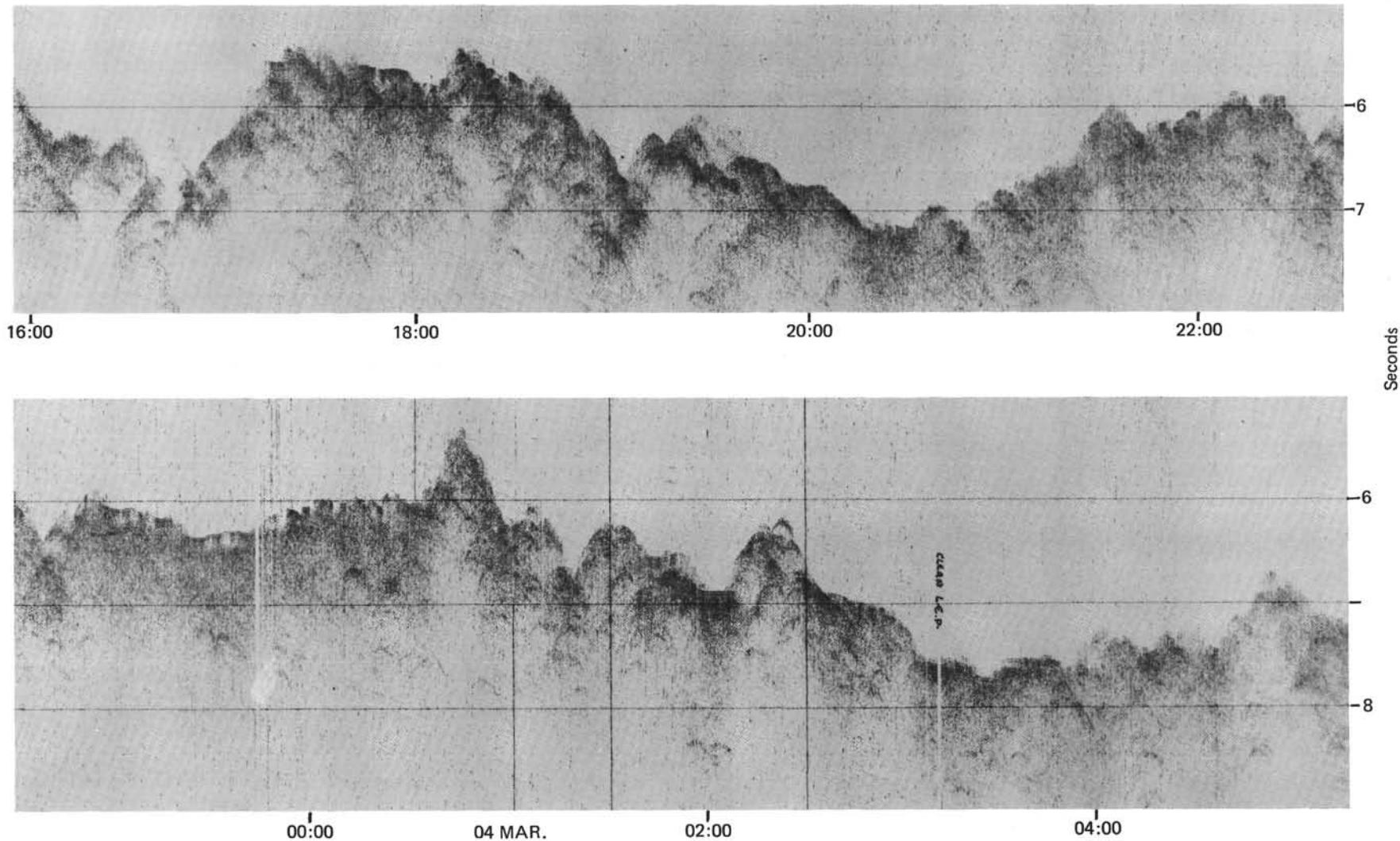


Figure 9. (Continued).

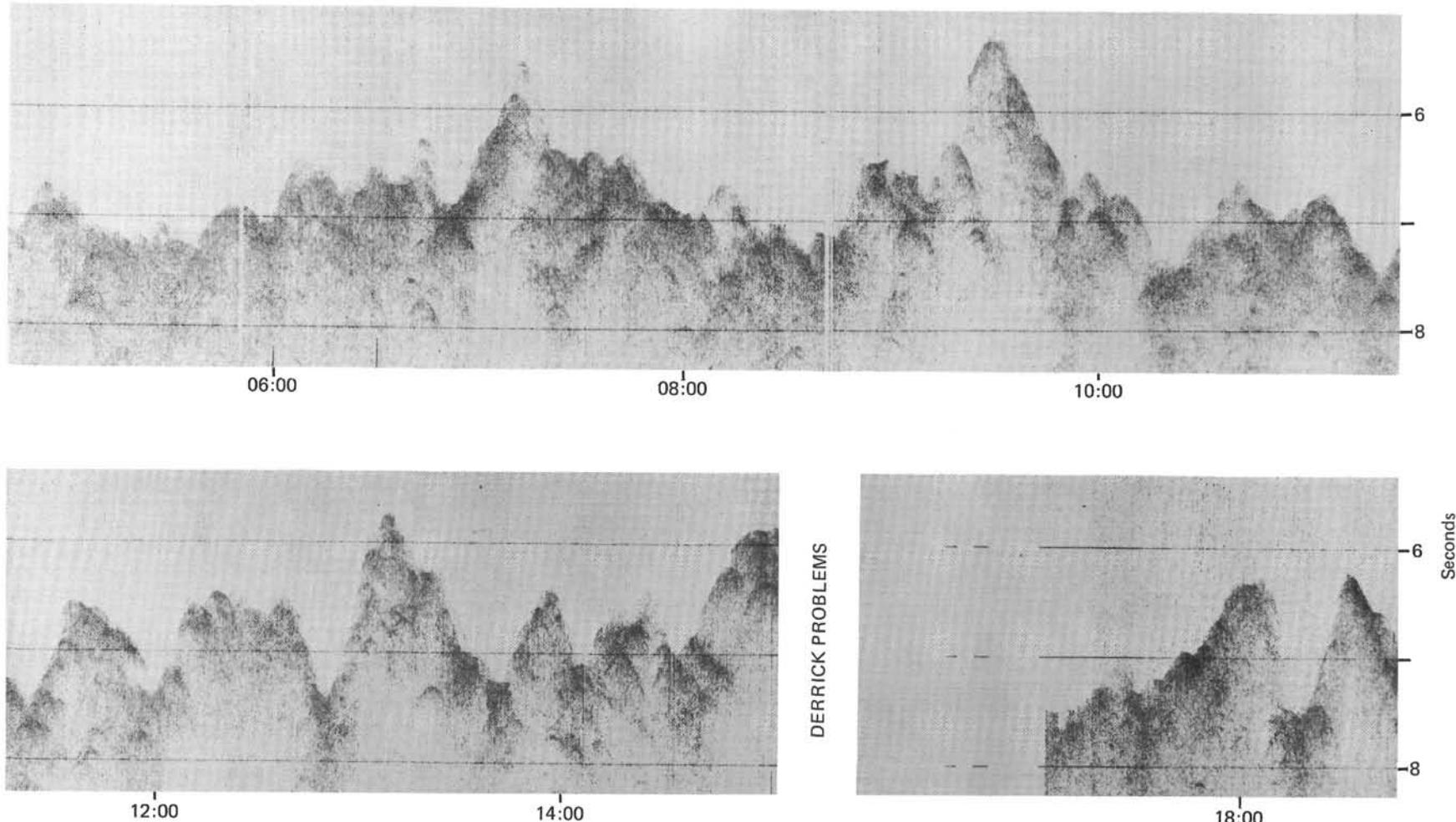


Figure 9. (Continued).

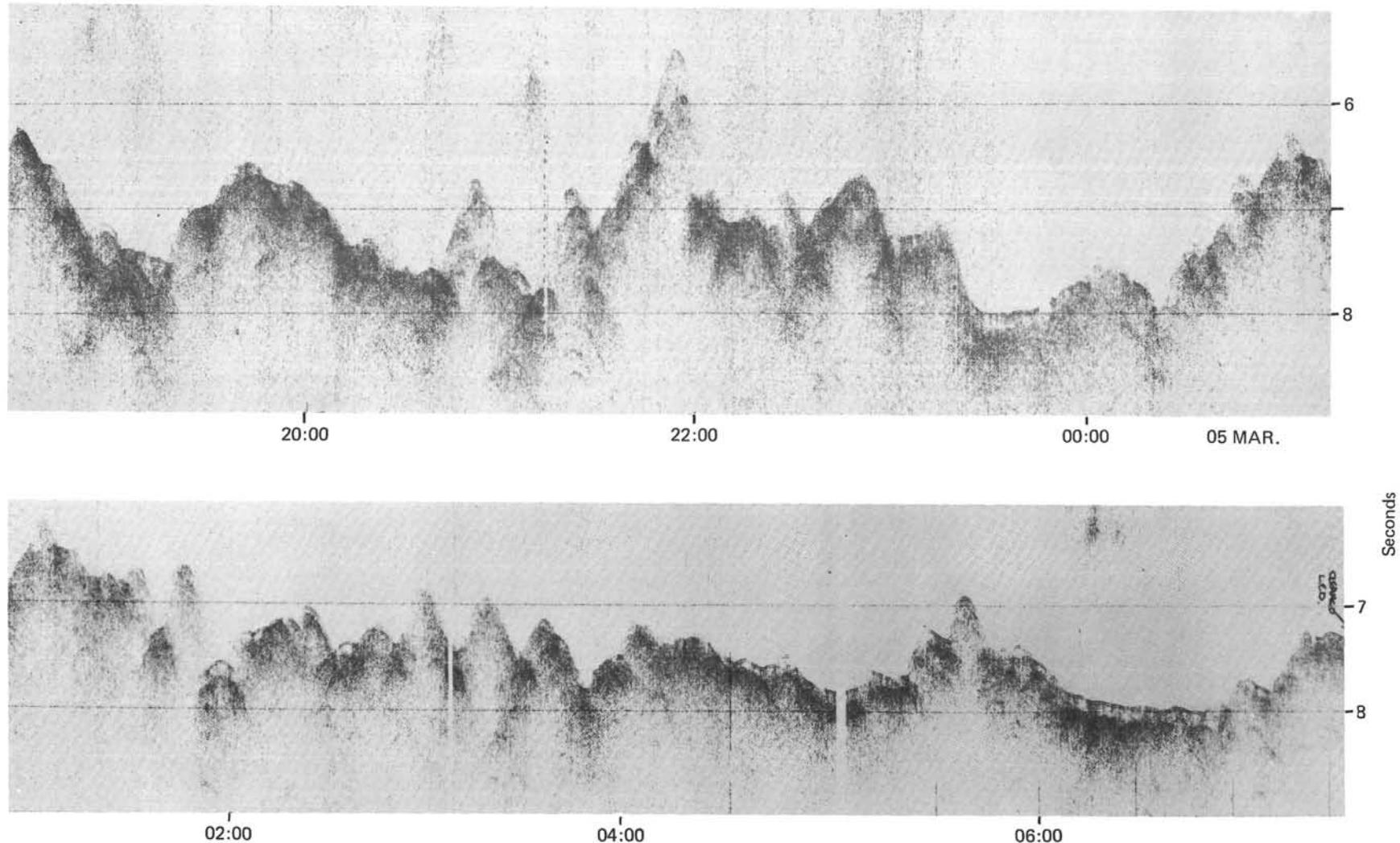


Figure 9. (Continued).

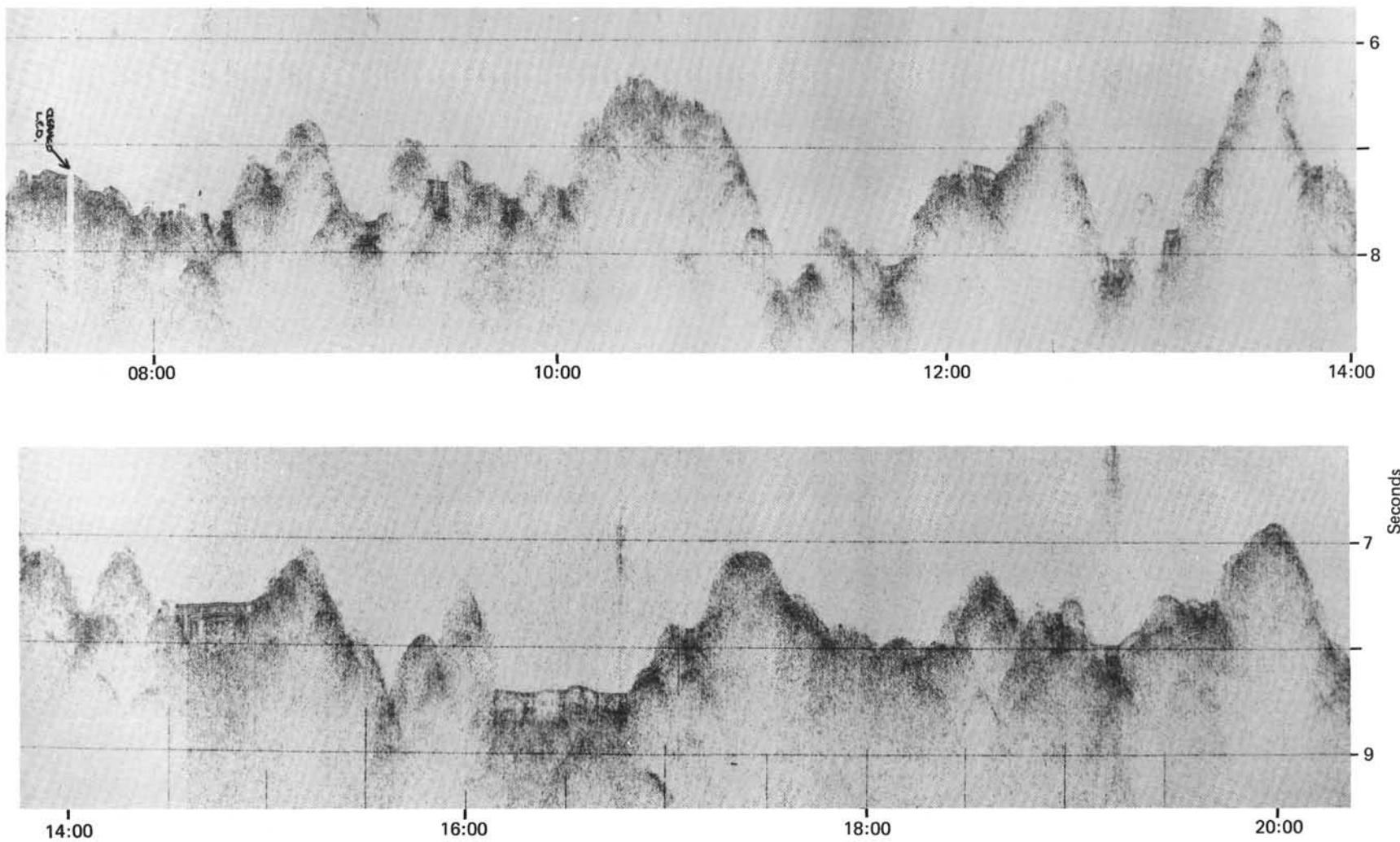


Figure 9. (Continued).

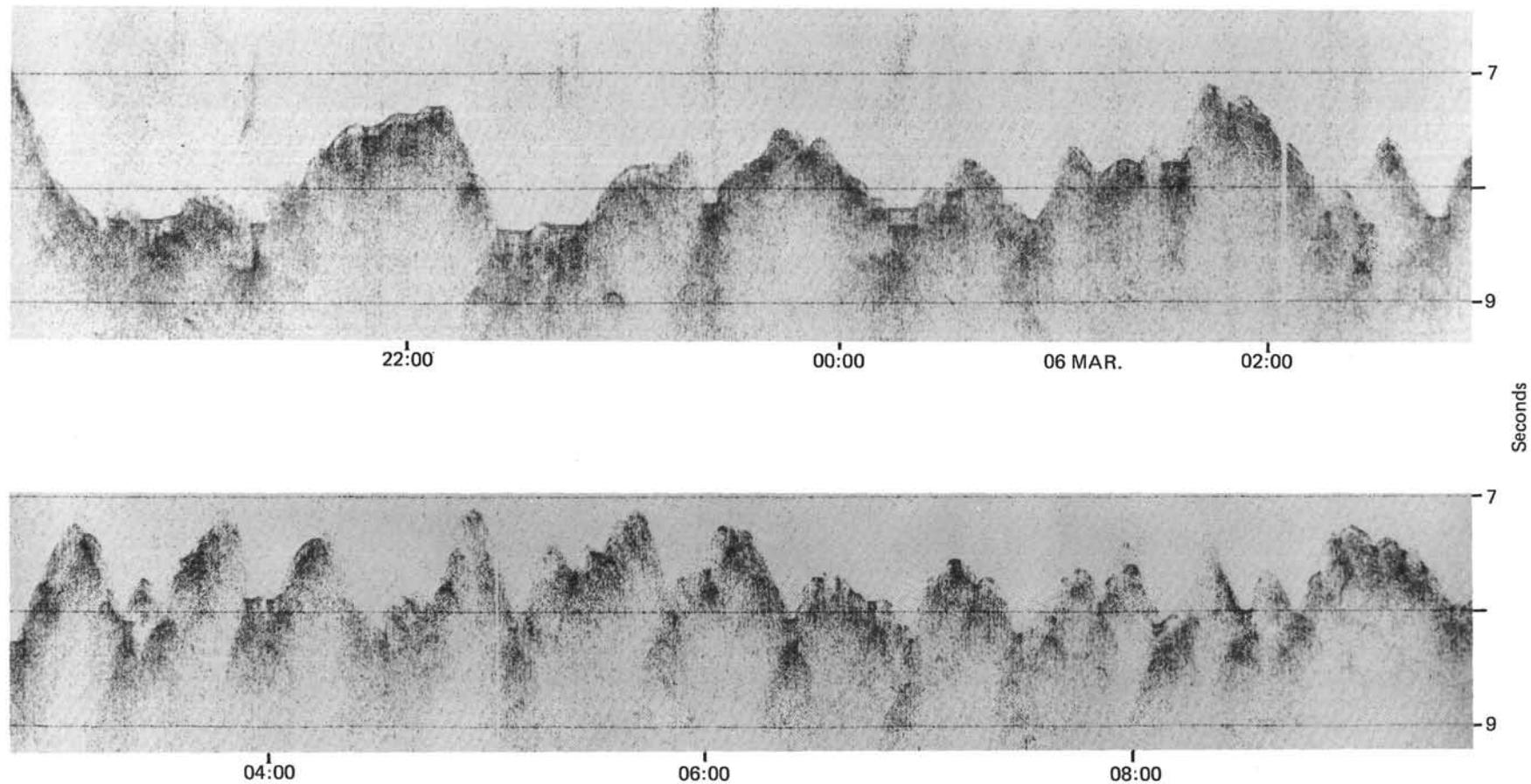


Figure 9. (Continued).

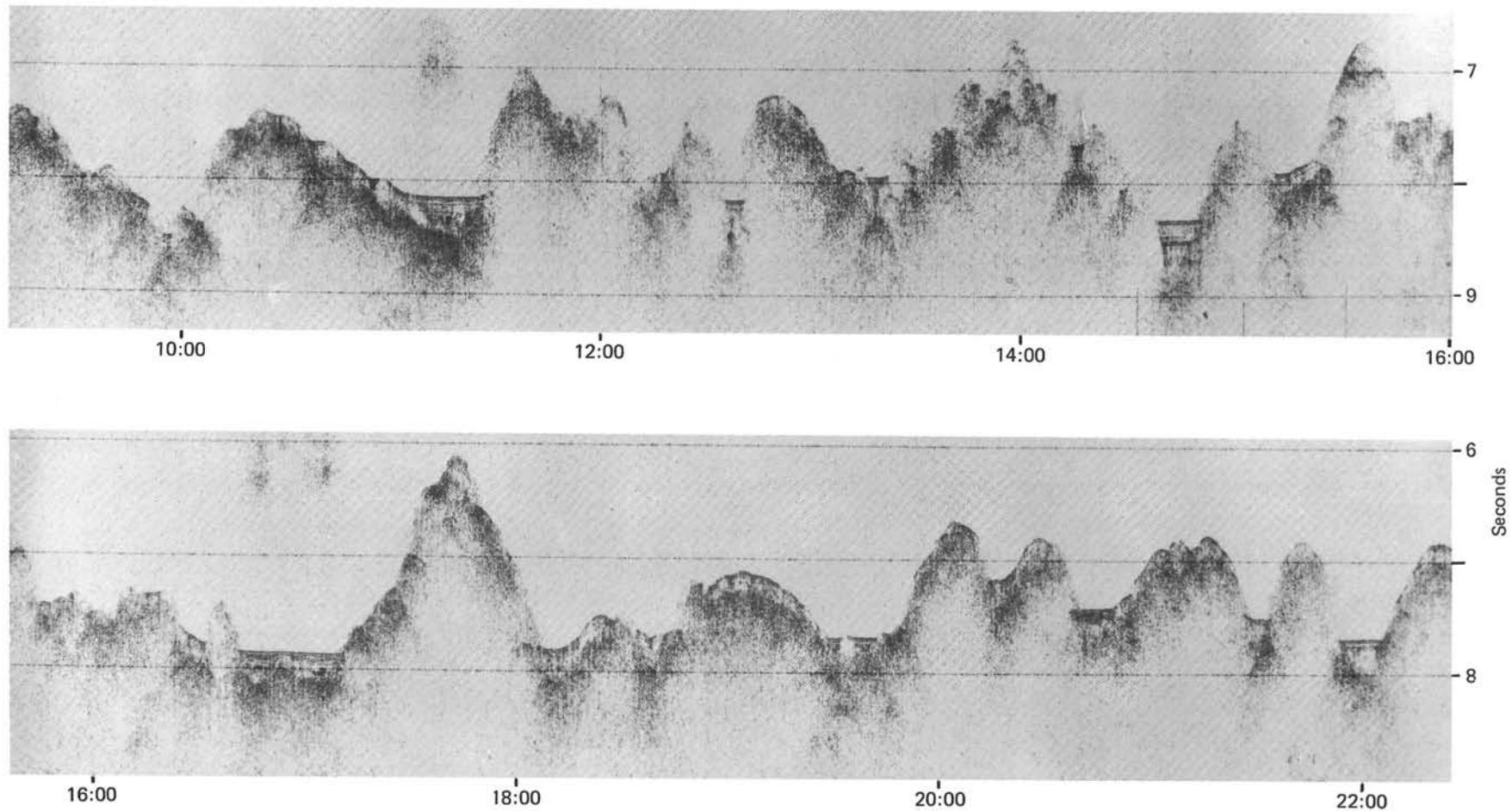


Figure 9. (Continued).

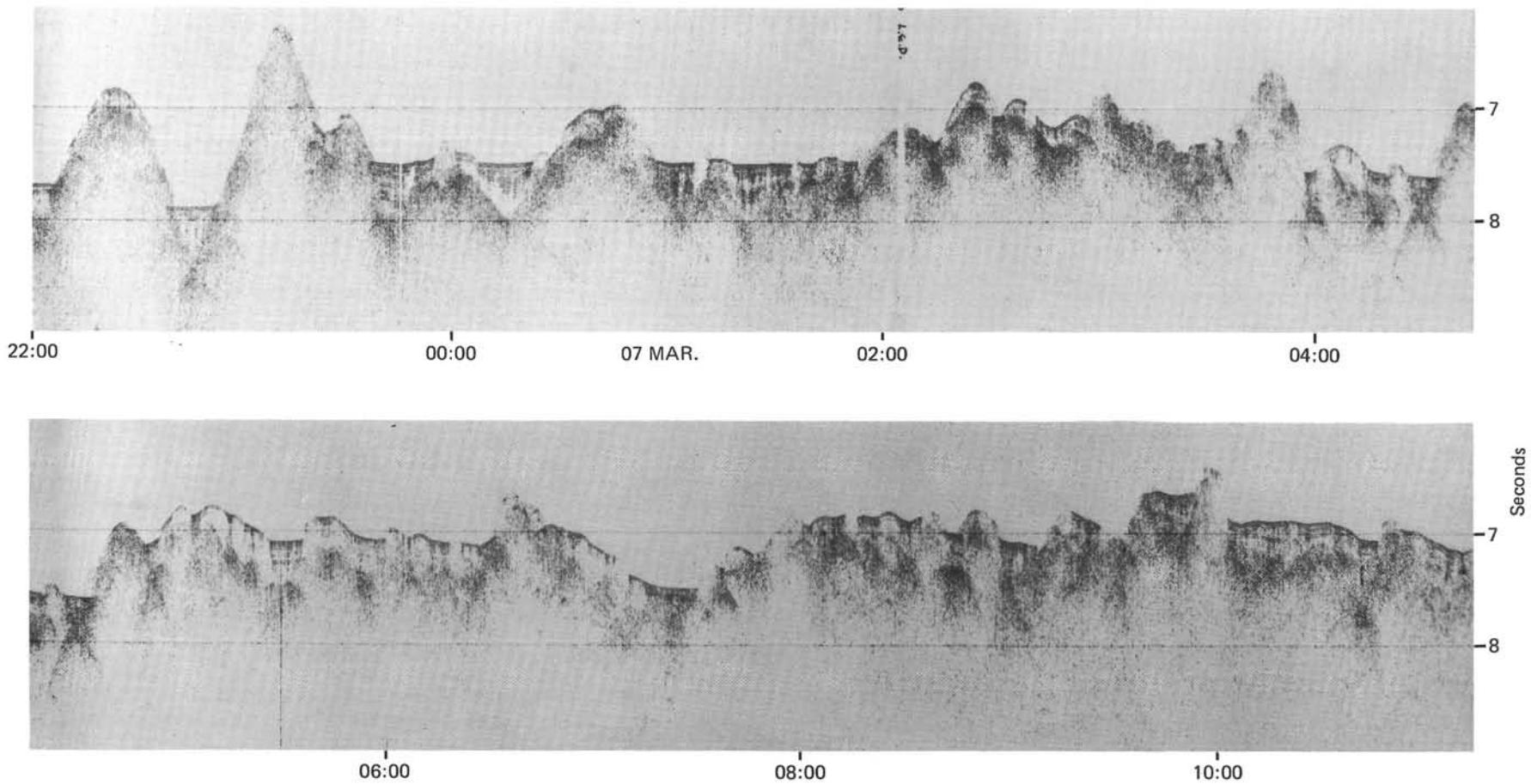


Figure 9. (Continued).

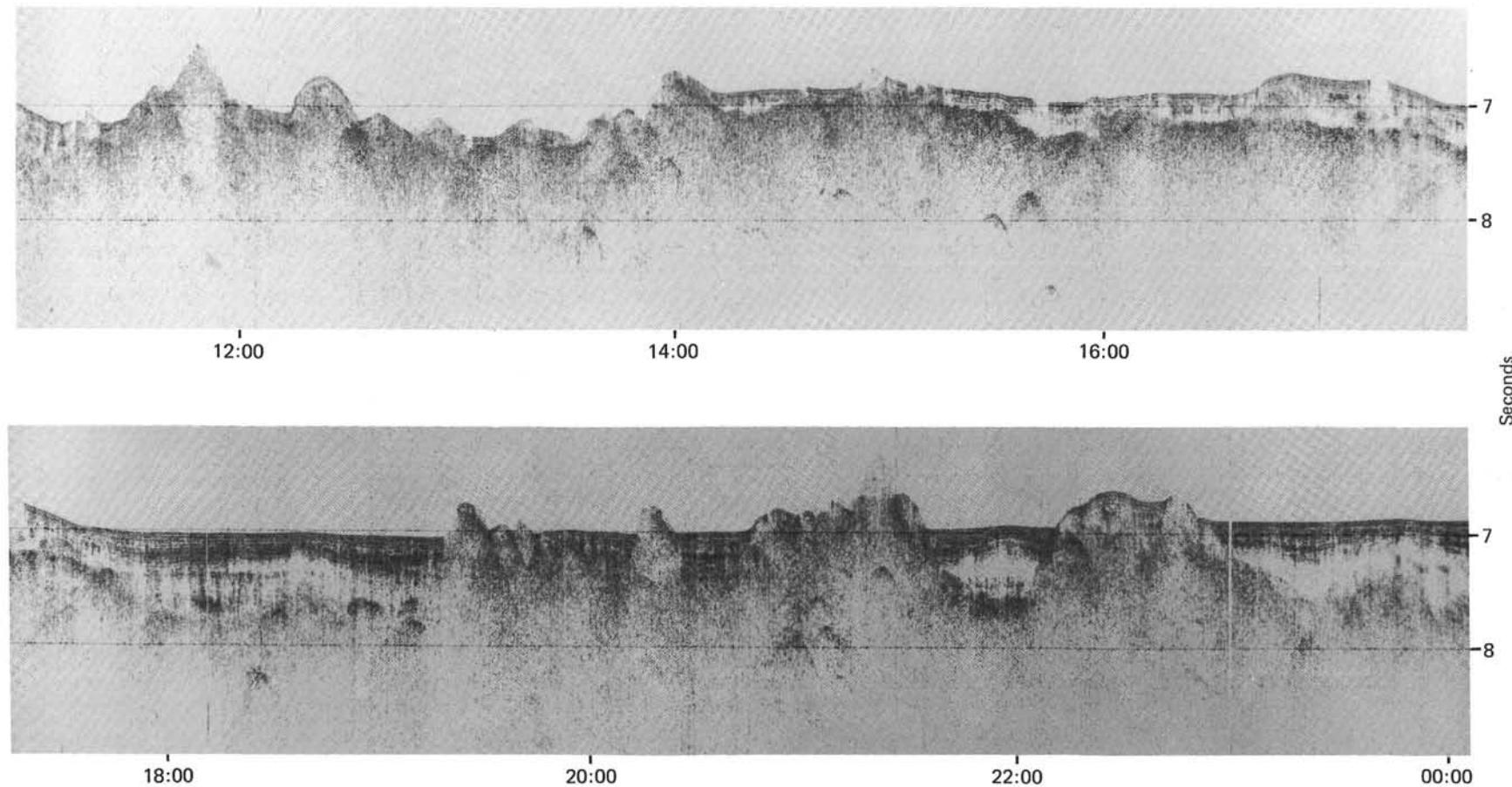


Figure 9. (Continued).

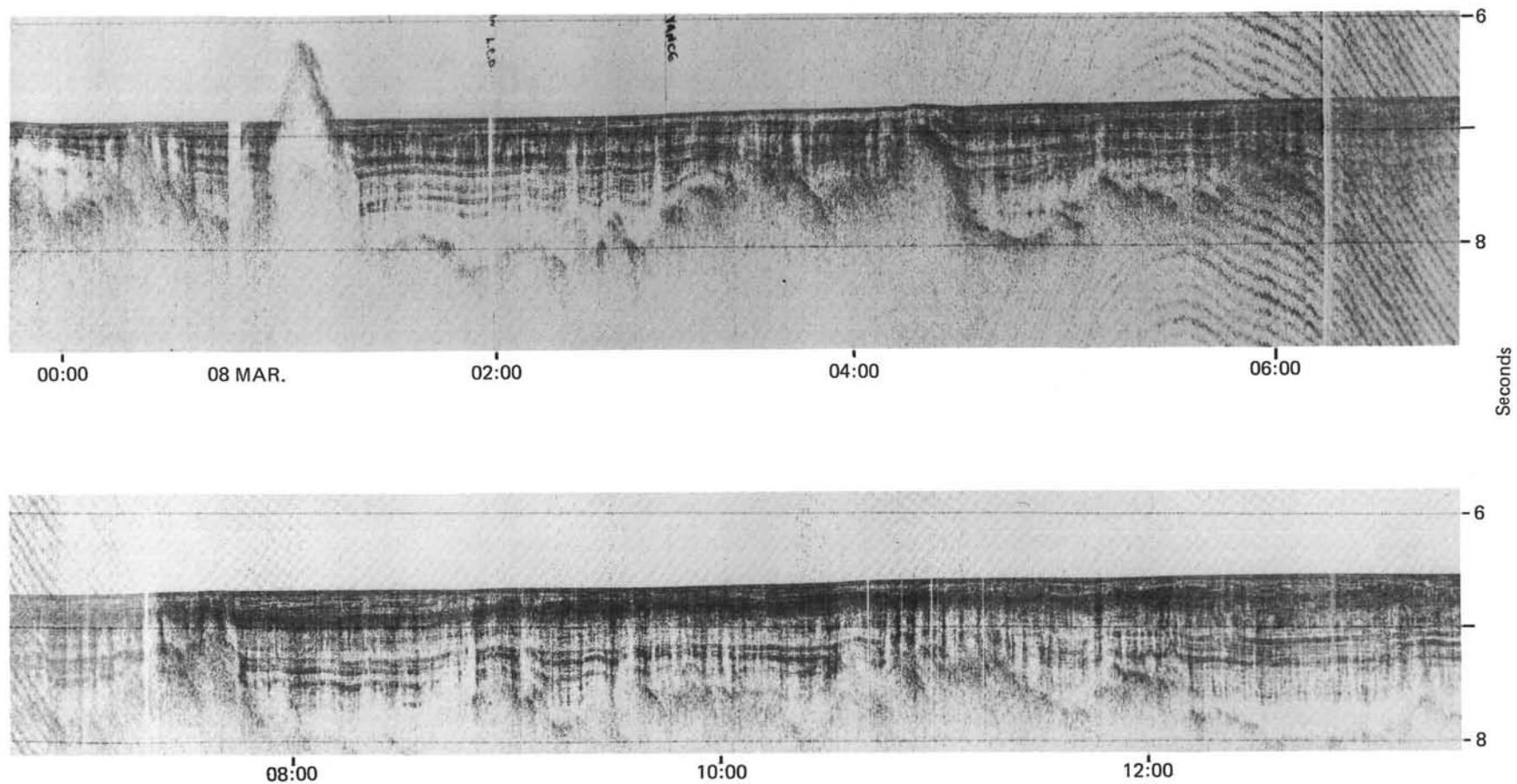


Figure 9. (*Continued*).

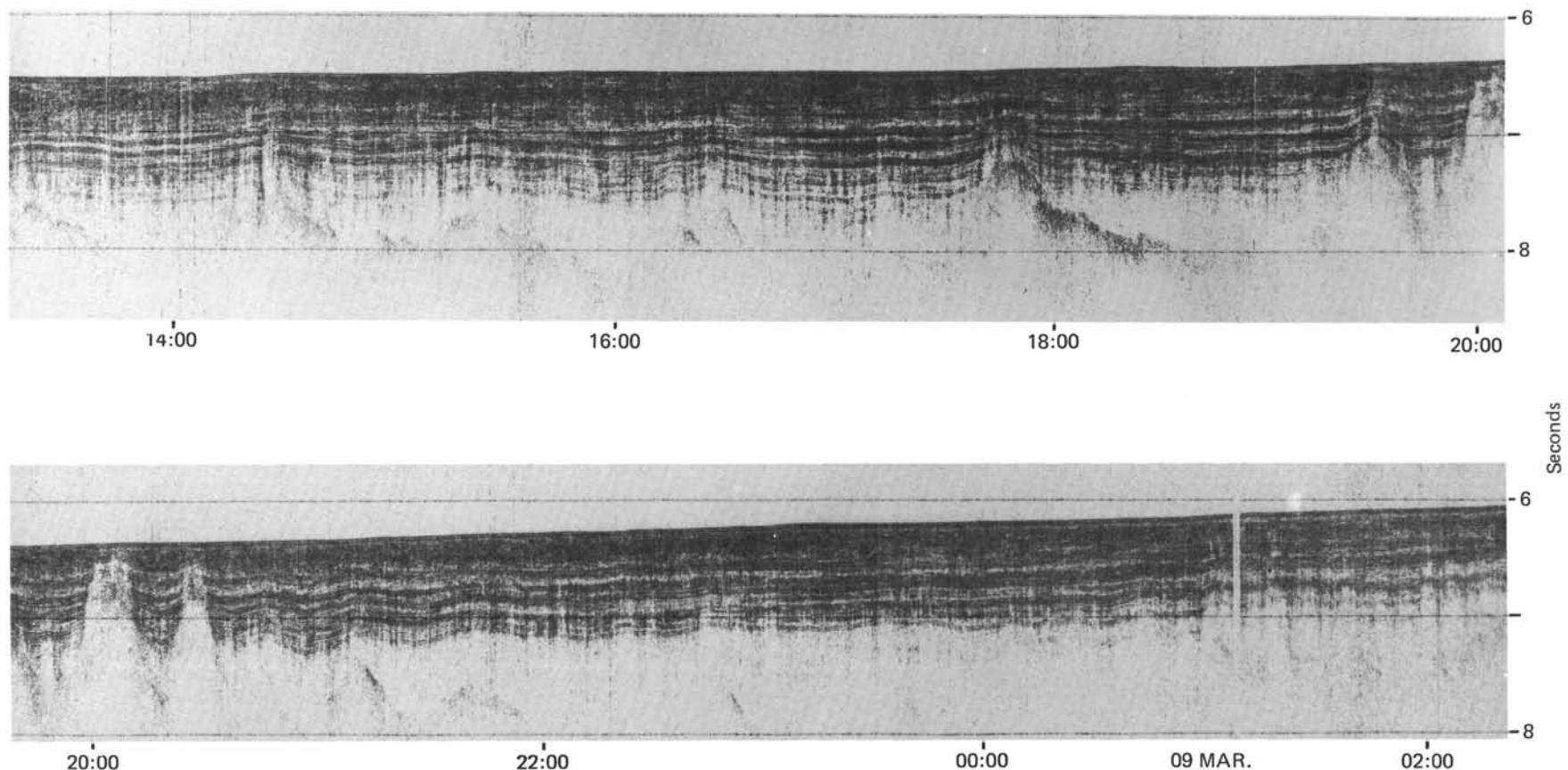


Figure 9. (*Continued*).

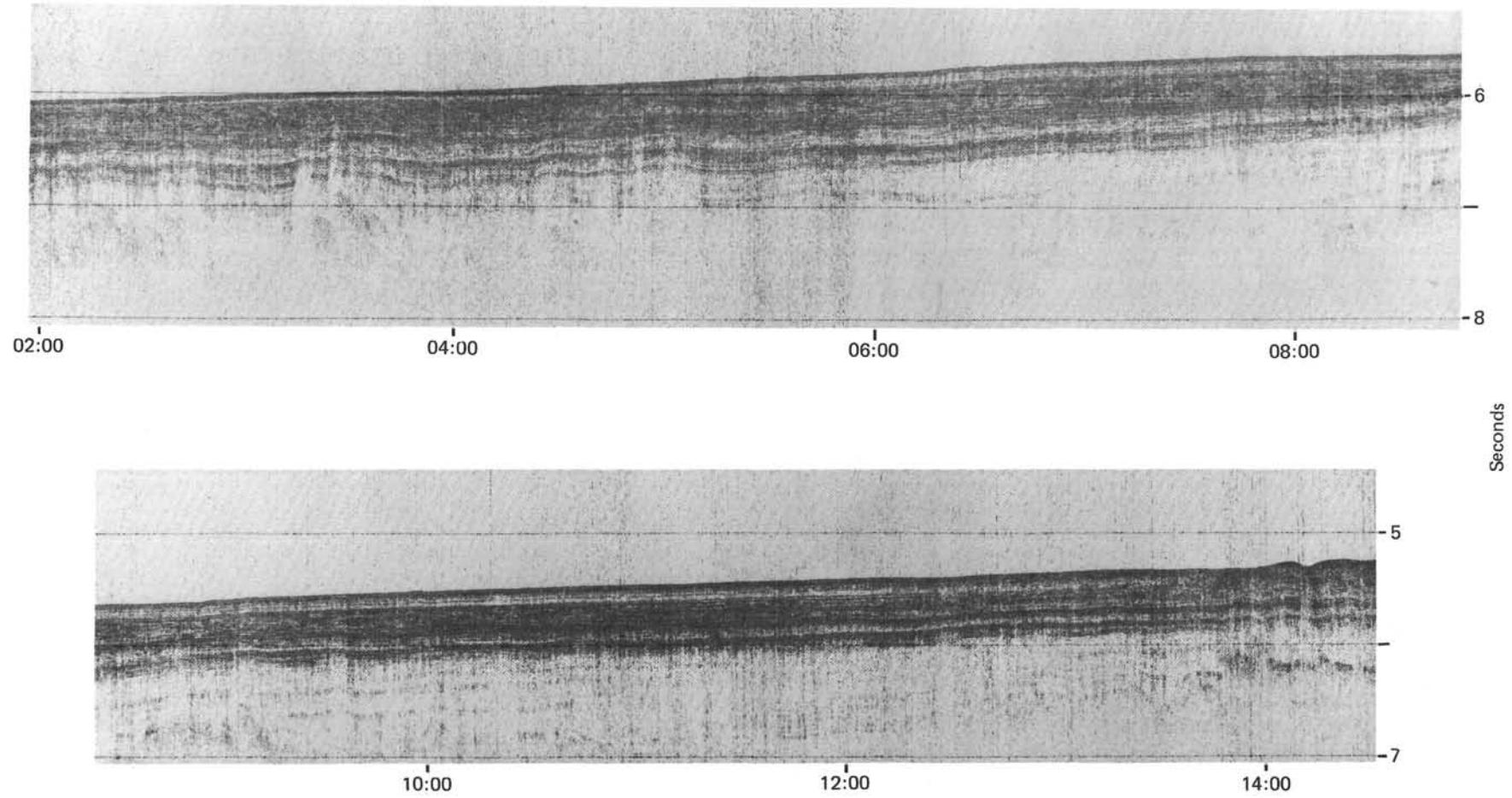


Figure 9. *(Continued).*

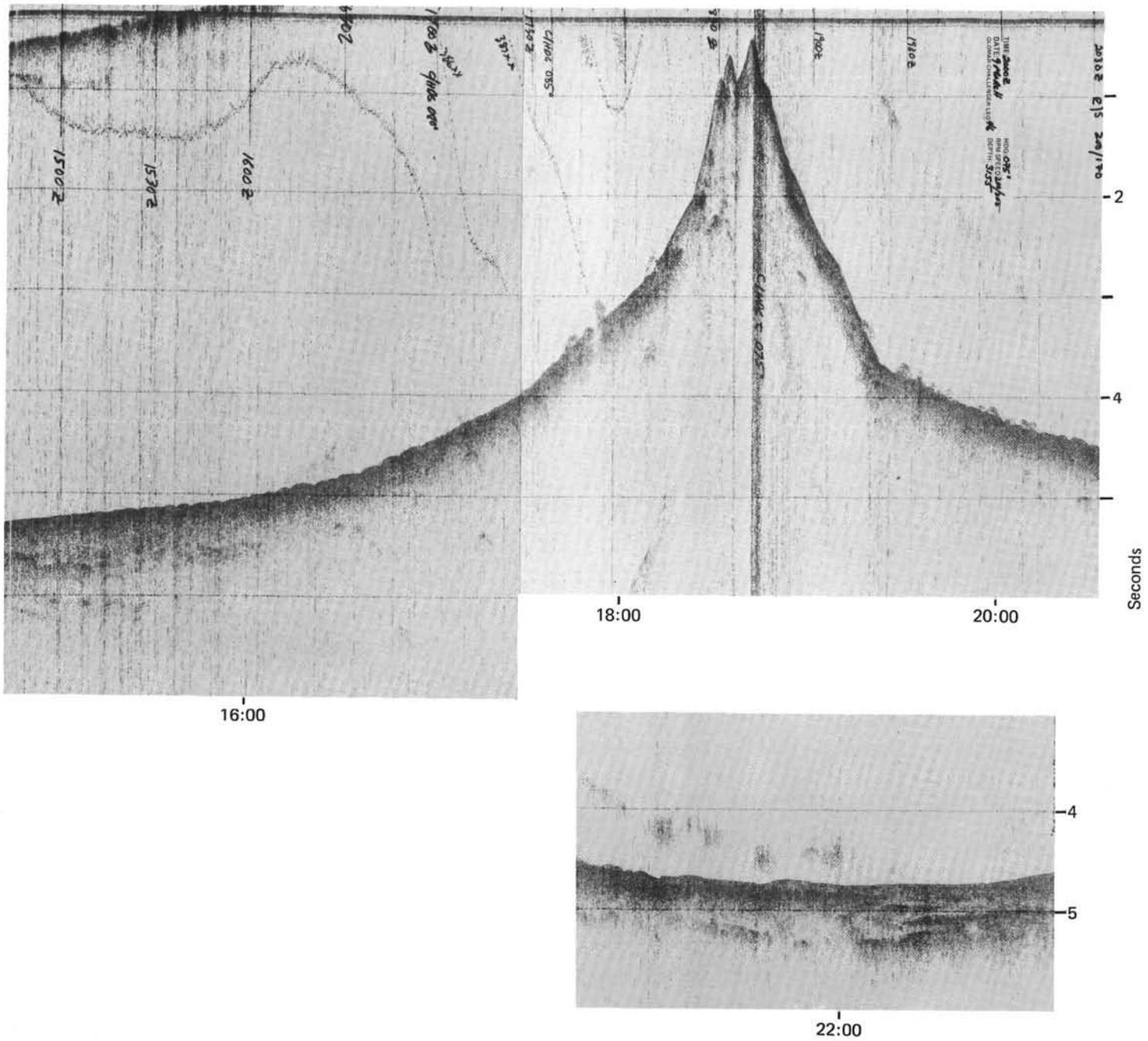


Figure 9. (Continued).