

## 2. GEOPHYSICAL PROFILING, ODP LEG 102<sup>1</sup>

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### INTRODUCTION

We obtained routine geophysical measurements during ODP Leg 102. On the first part of Leg 102, geophysical data were collected by the R/V *Fred H. Moore* during the site survey (Fig. 1) and by the *JOIDES Resolution* during the transit from Site 418 to Norfolk, Virginia (Fig. 2A). Underway-geophysics data were also collected on board *JOIDES Resolution* during the transit to the Azores (second part of Leg 102) from Norfolk to Ponta Delgada (Fig. 2B and 2C).

### GEOPHYSICAL PROFILING OBTAINED ON BOARD THE R/V FRED H. MOORE

While on site to participate in the borehole seismic experiment (see "Seismic-Line Interpretations" section), the R/V *Fred H. Moore* also ran a detailed seismic-reflection-profiling grid at 2-km line spacing out to 8 km from the site (Fig. 1). Additional coverage was obtained north of this survey to complete the region around Site 417. Ranges were obtained to a resolution of less than 10 m using Del Norte radar transponders, and bearings were obtained visually and from ship's radar on the bridge of the *Moore*. A total of 370 km of profiling was obtained.

The seismic source was an 80-in.<sup>3</sup> water gun (from U.S. Geological Survey, Woods Hole). The data were received on a single-channel streamer (from Woods Hole Oceanographic Institution) and on a five-channel streamer (from the University of Texas, Galveston). Hydrophone-array length on the latter streamer was 100 m. The data were recorded digitally in real time on the *Moore* using a DFS-IV acquisition system with a bandwidth of 5-148 Hz. Reflection records from channel 3 of the five-channel streamer are presented in Figure 3A-3V. Shot spacing is 10 shot points per in., and true amplitude scaling is at 0.002 in. per unit. The displayed data were band-pass filtered between 5 and 128 Hz (lines 3A and 3B), and between 5 and 140 Hz (lines 3C through 3V).

### UNDERWAY GEOPHYSICS DATA OBTAINED ON BOARD THE JOIDES RESOLUTION

The on-board instrumentation included two precision echosounders, magnetometer, seismic-reflection profilers, and a satellite navigation system. The instruments were maintained and operated by the ODP marine technicians, in cooperation with the scientific party and the officers and crew of SEDCO-FOREX, Inc.

Navigation data were collected on the bridge by a Magnavox MX702A. Positions were obtained with this system through 10 days of Leg 102. Approximately five "updated" Satnav fixes were available each day (Table 1).

Bathymetric data obtained during Leg 102 were poor owing to transducer problems; the data available are plotted in Figure 4A-4G. These bathymetric profiles were drawn on the basis of depth readings, recorded at 5-min intervals in the "underway geophysics log" forms. Because of technical and electronic problems during Leg 102, no magnetic data were recorded.

The seismic data were recorded on board the *JOIDES Resolution* with the following equipment. The seismic source was two 80-in.<sup>3</sup> seismic water guns. Two Teledyne streamers were mounted on winches at the fantail. Each contained 60 active sections, were 100 m long, and were towed approximately 500 m behind the vessel. External depth depressors (birds) set the towing depth. The hydrophone elements were combined to procure a single signal. The seismic-recording system, a super-micro 561 Masscomp computer, was the central unit to record and process the data acquisition and display. This computer processed data and displayed them in real time on a 15-in.-wide Printonix high-resolution graphic printer (160 dots/in.). The raw data were recorded on tapes.

Seismic data were also displayed in real time in analog format on two EDO 550 dry-paper recorders, using only streamers, amplifier, and two band-pass filters. EDO 1 was set on a 10-s sweep, and EDO 2 on a 5-s sweep (Table 2). In this report, we present the records of EDO 2 (Fig. 5A-5C in back pocket).

### ACKNOWLEDGMENTS

The scientific party of Leg 102 is grateful to Captain Ed Oonk of the *JOIDES Resolution* and to Captain Bruce Collins of the R/V *Fred H. Moore* and to their officers and crew for their excellent navigation and cooperative spirit. Thanks also go to the ODP group for their many hours of standing watch and to Mark Weiderspahn and Ali Tufayli of the University of Texas at Austin, who designed and wrote the seismic digital acquisition system.

Operations of the *Moore* were supported by NSF grant no. OCE/8416633.

<sup>1</sup> Salisbury, M. H., Scott, J. H., Auroux, C. A., et al., *Proc., Init. Repts. (Pt. A), ODP, 102*. (Also Woods Hole Institution of Oceanography Contribution 6284.)

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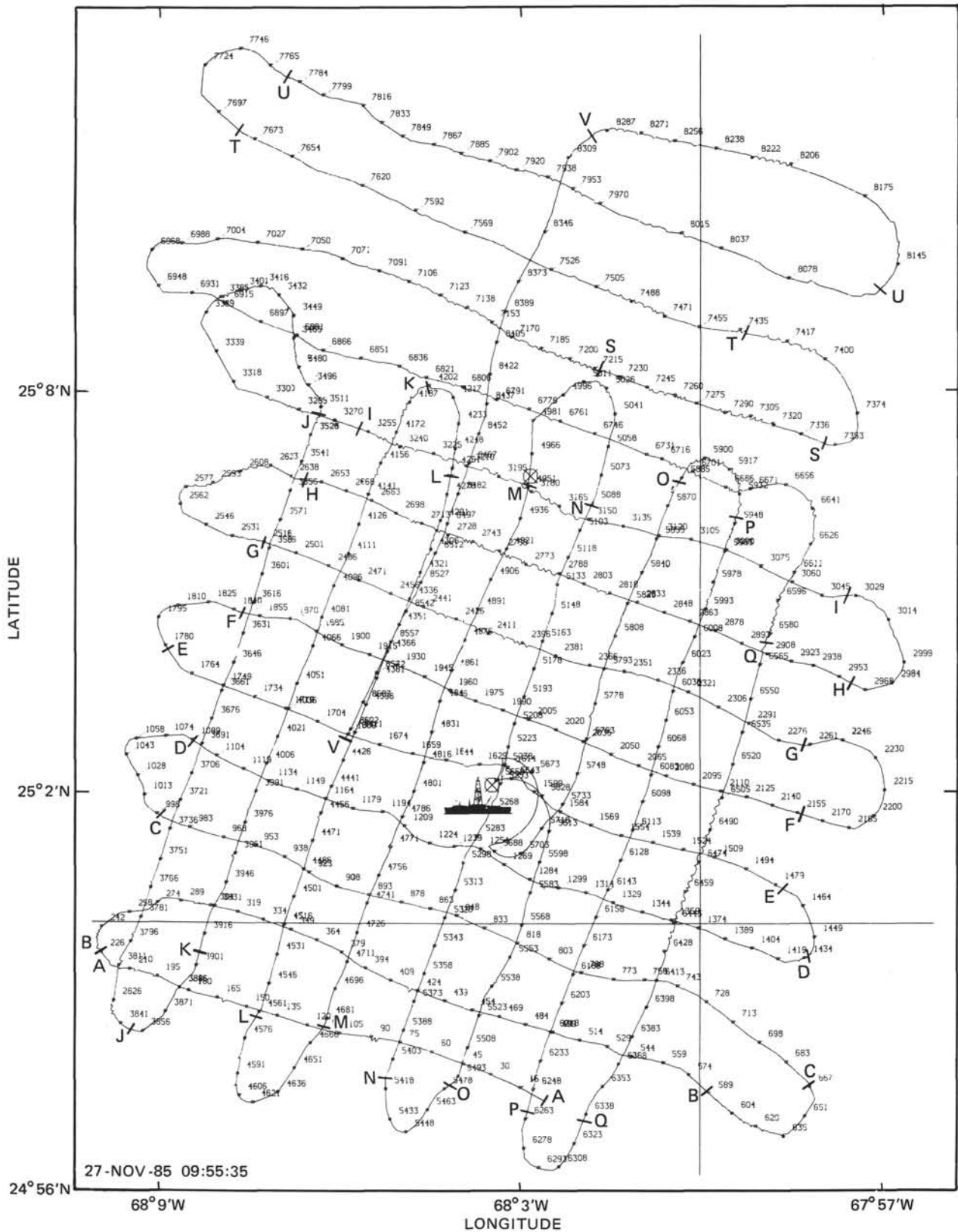


Figure 1. Map location of the site-seismic lines collected by the R/V *Fred H. Moore*. The numbers refer to the seismic-line shot points. Letters delimit portions of lines along which data were collected; e.g., data were collected between C and C but not between B and C or between C and D.

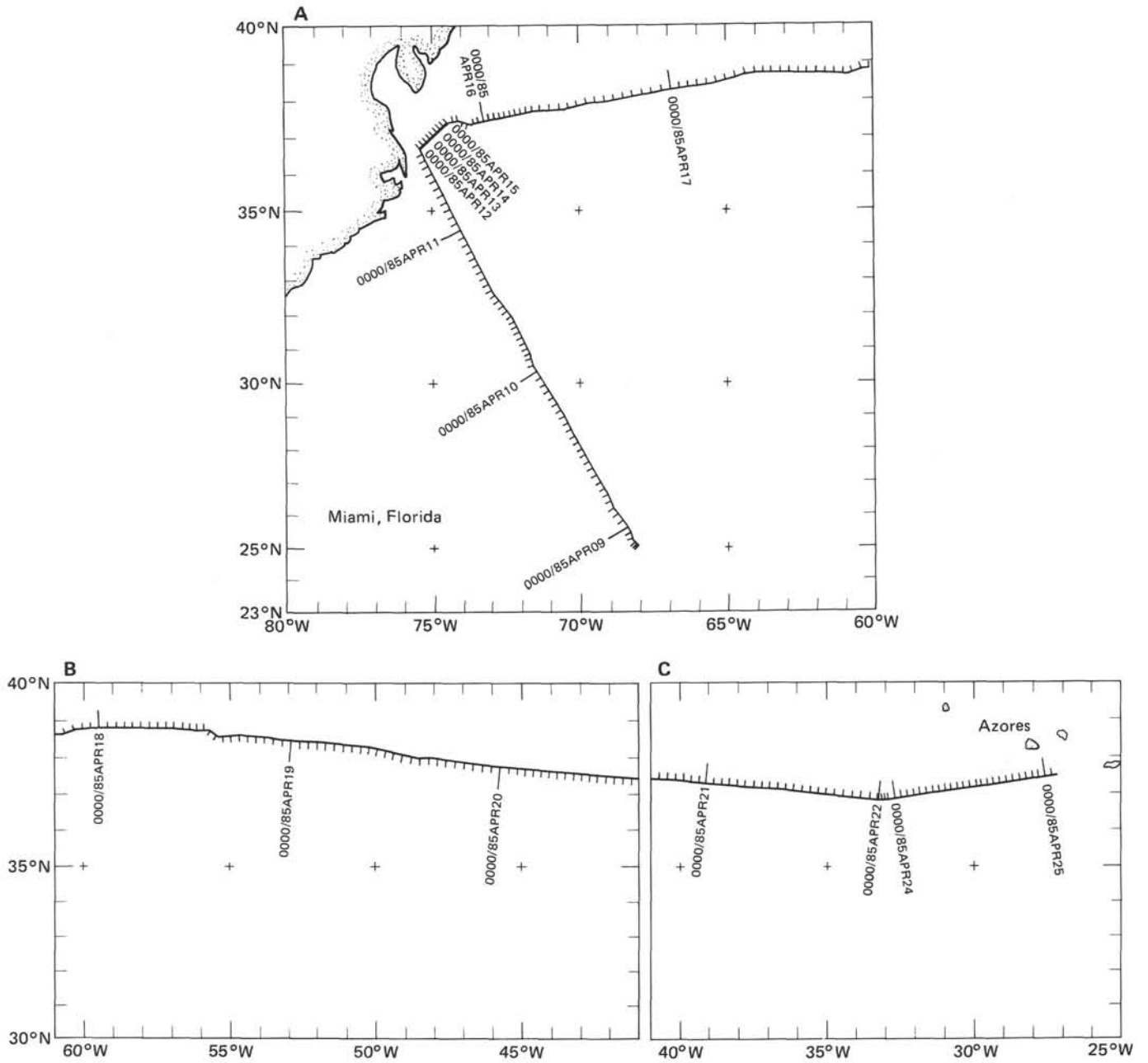
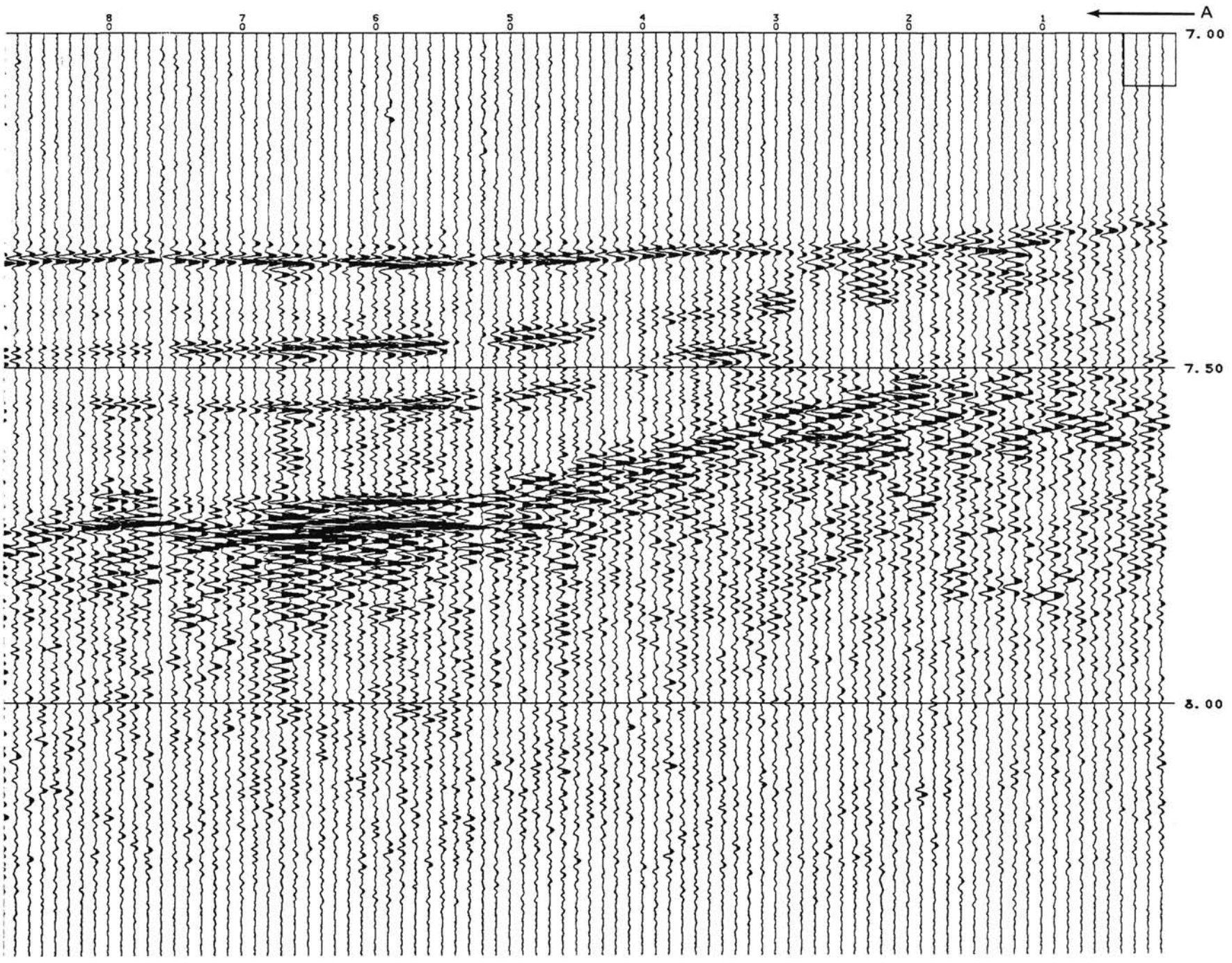


Figure 2. Track charts of *JOIDES Resolution* during Leg 102 (both parts) annotated with dates and hour ticks.





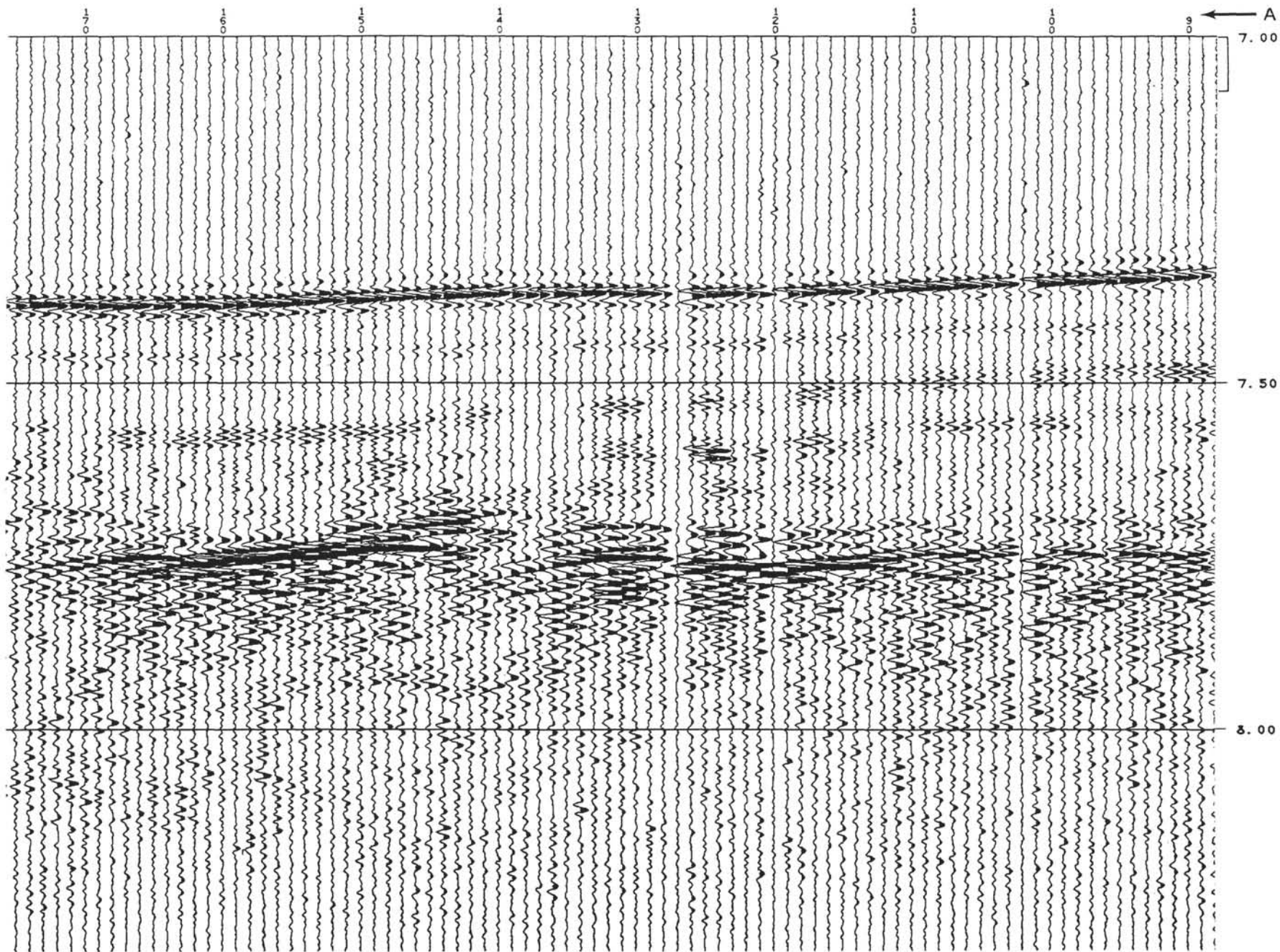


Figure 3. Five-channel seismic lines collected by the R/V *Fred H. Moore* during survey at Sites 418 and 417. Numbering of shot points on reflection profiles. Note: (1) SP 1 to 4067: Shot points are in sequential order; every 10th was annotated by the computer. (2) SP 4068 to 5089: Shot points are annotated by hand, every 10th shot point. (3) SP 5090 to 8606: Shot points are annotated by hand. Numbers printed by the computer are not shot-point numbers but are sequential numbers used to plot the data.

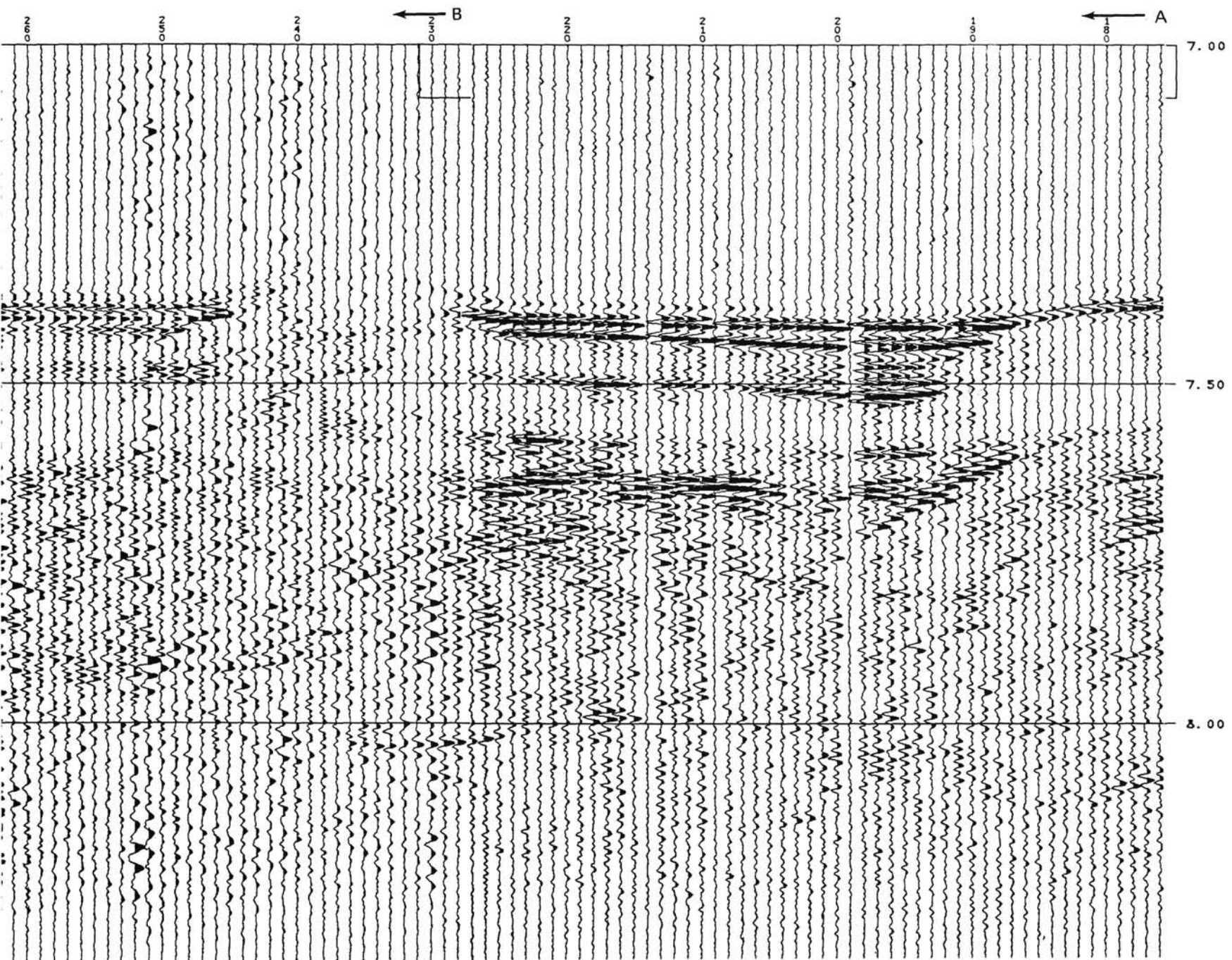
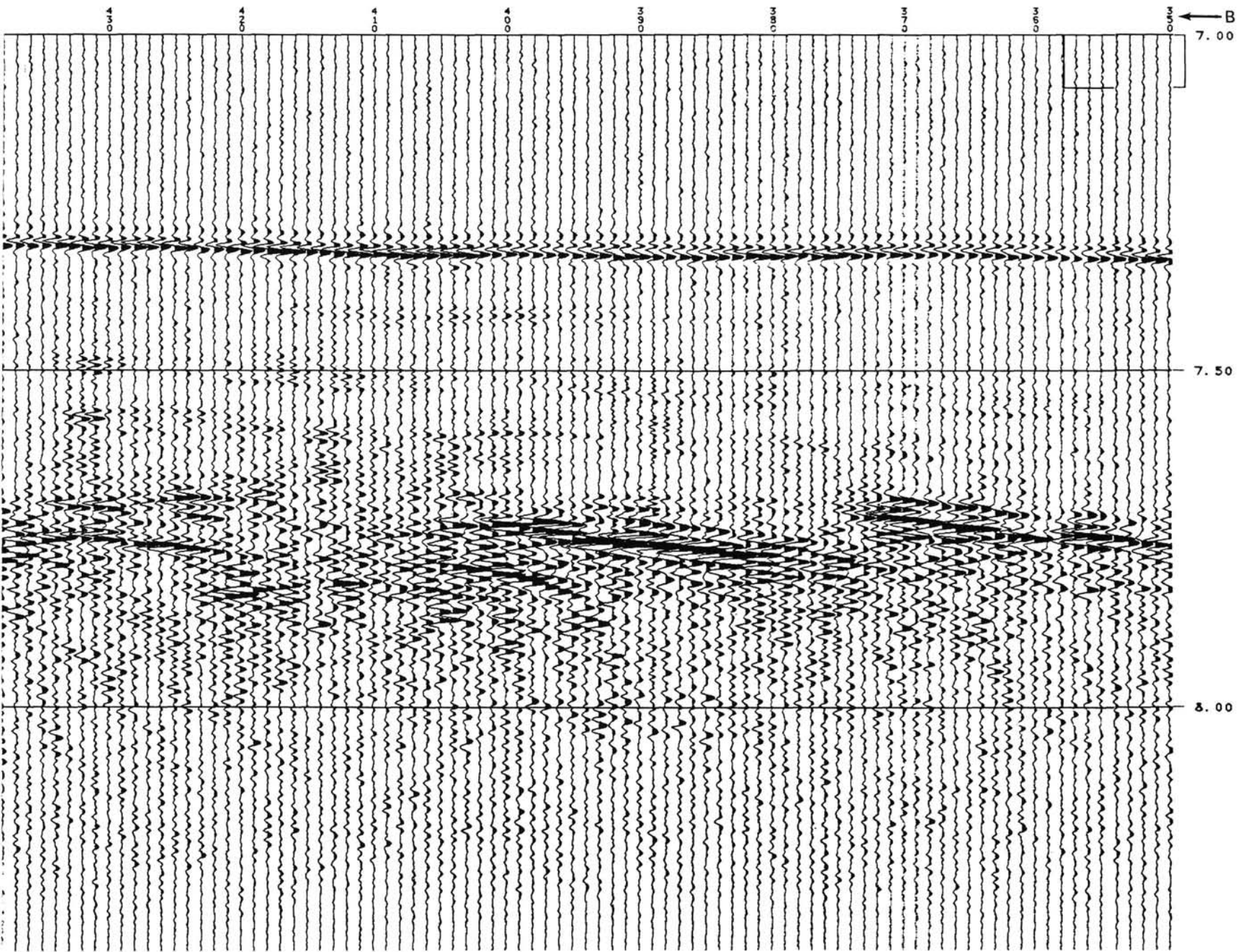






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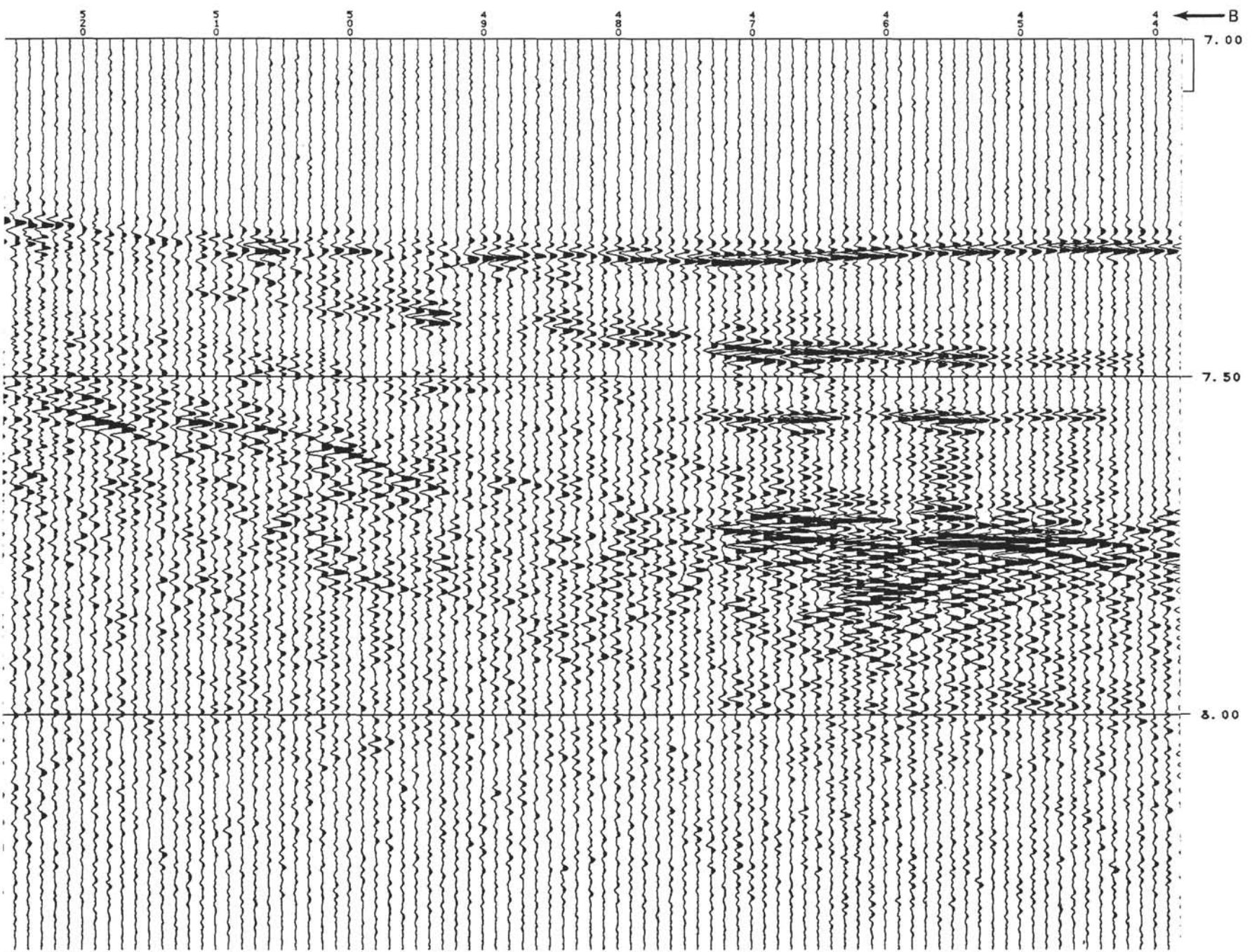
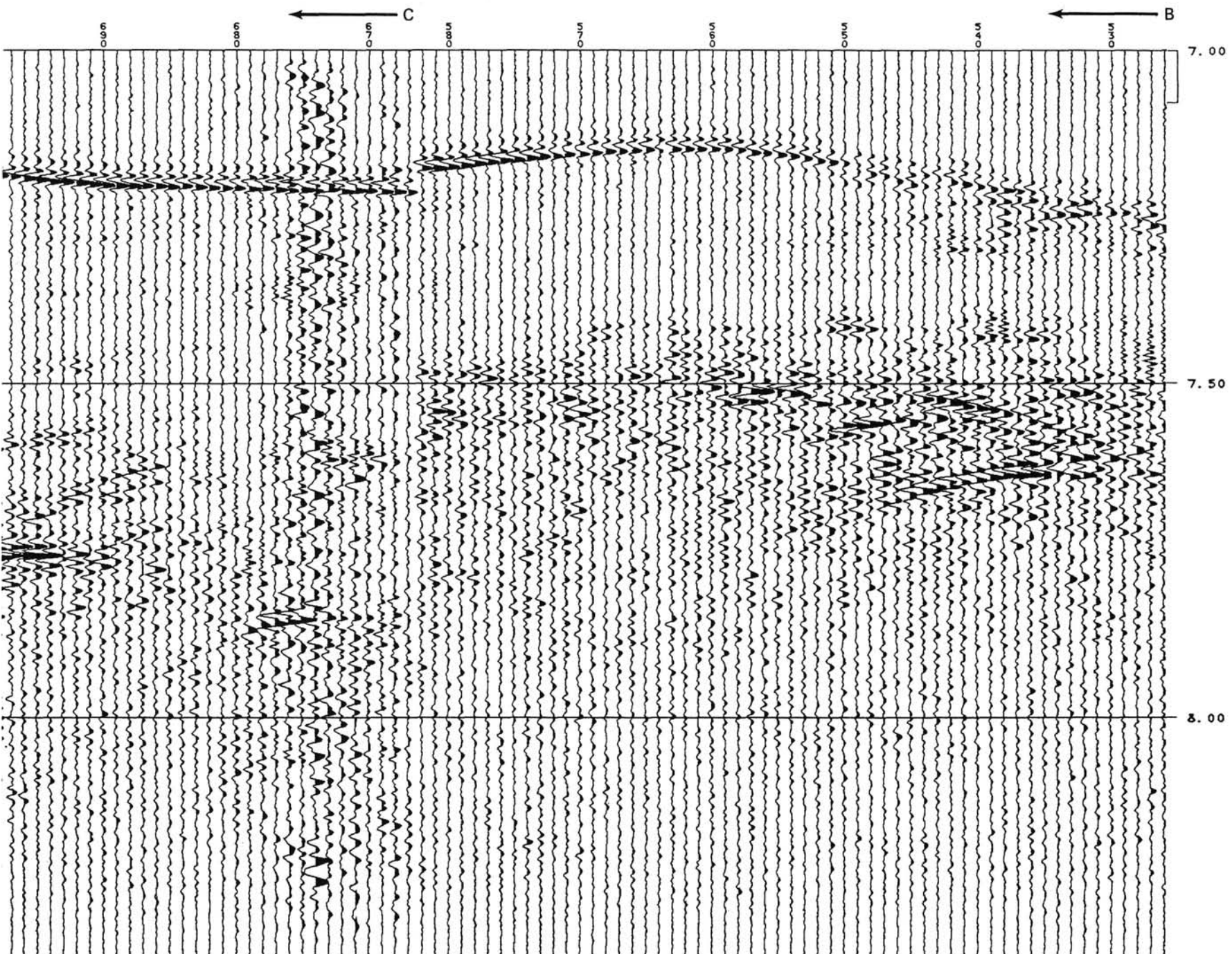


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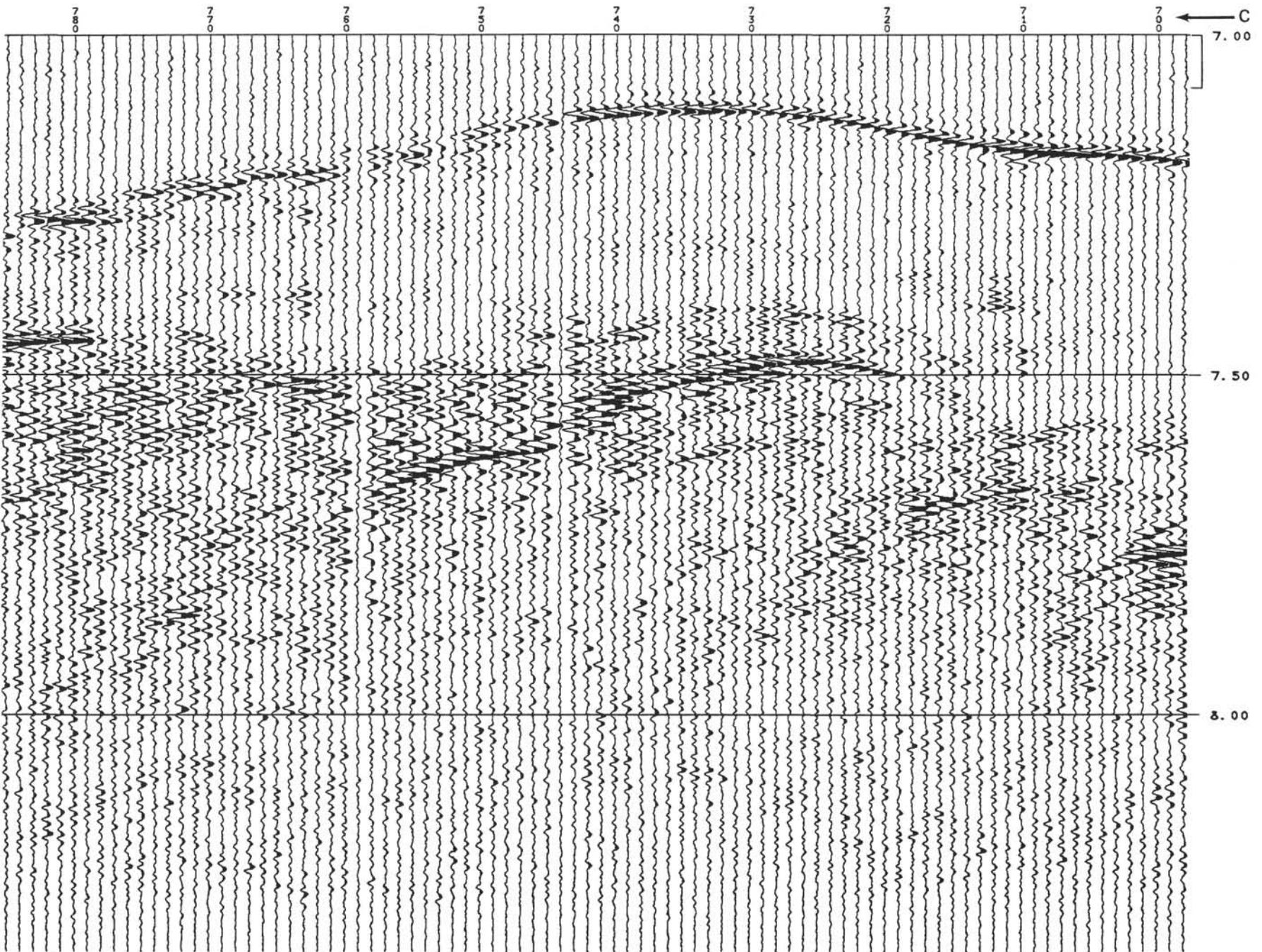
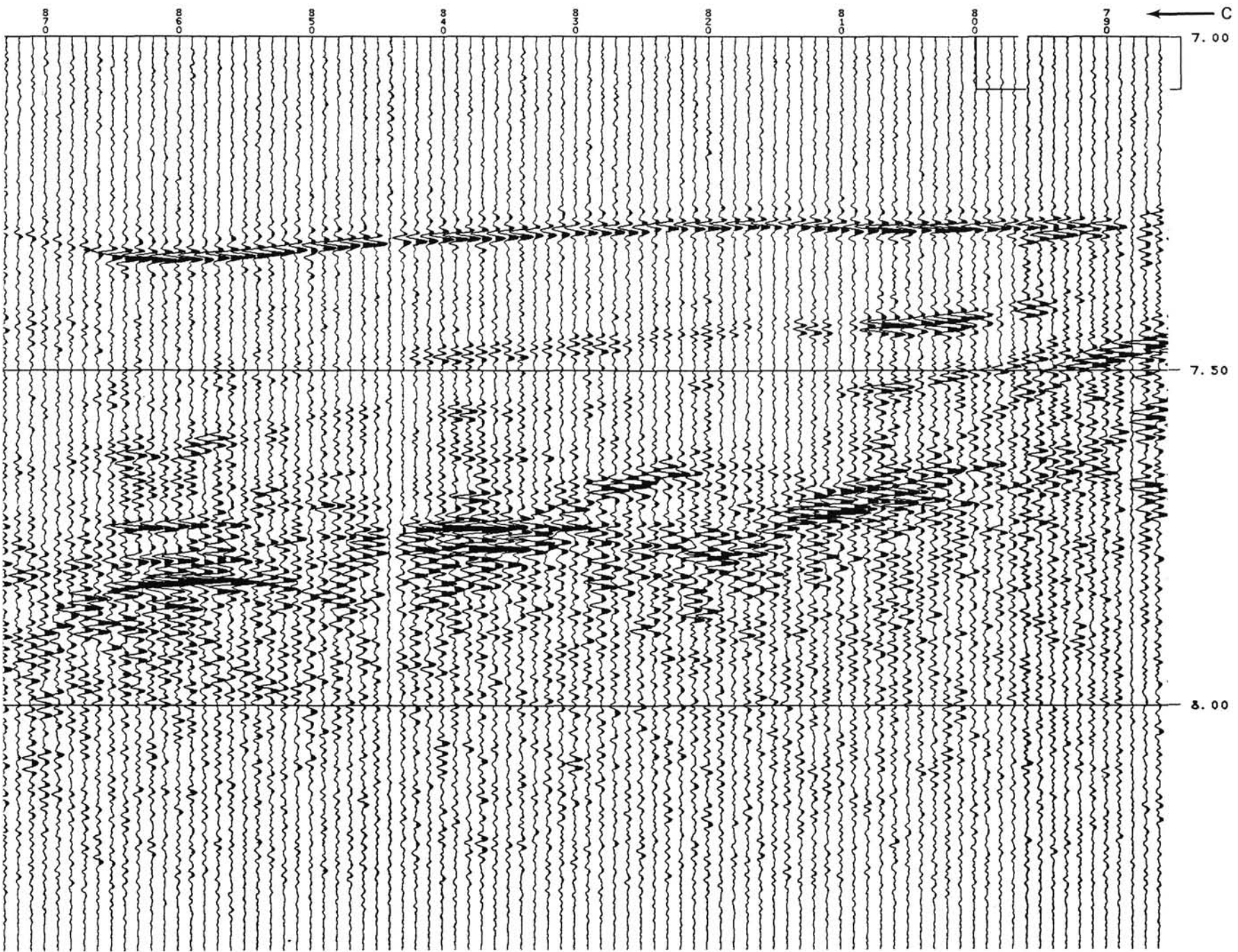


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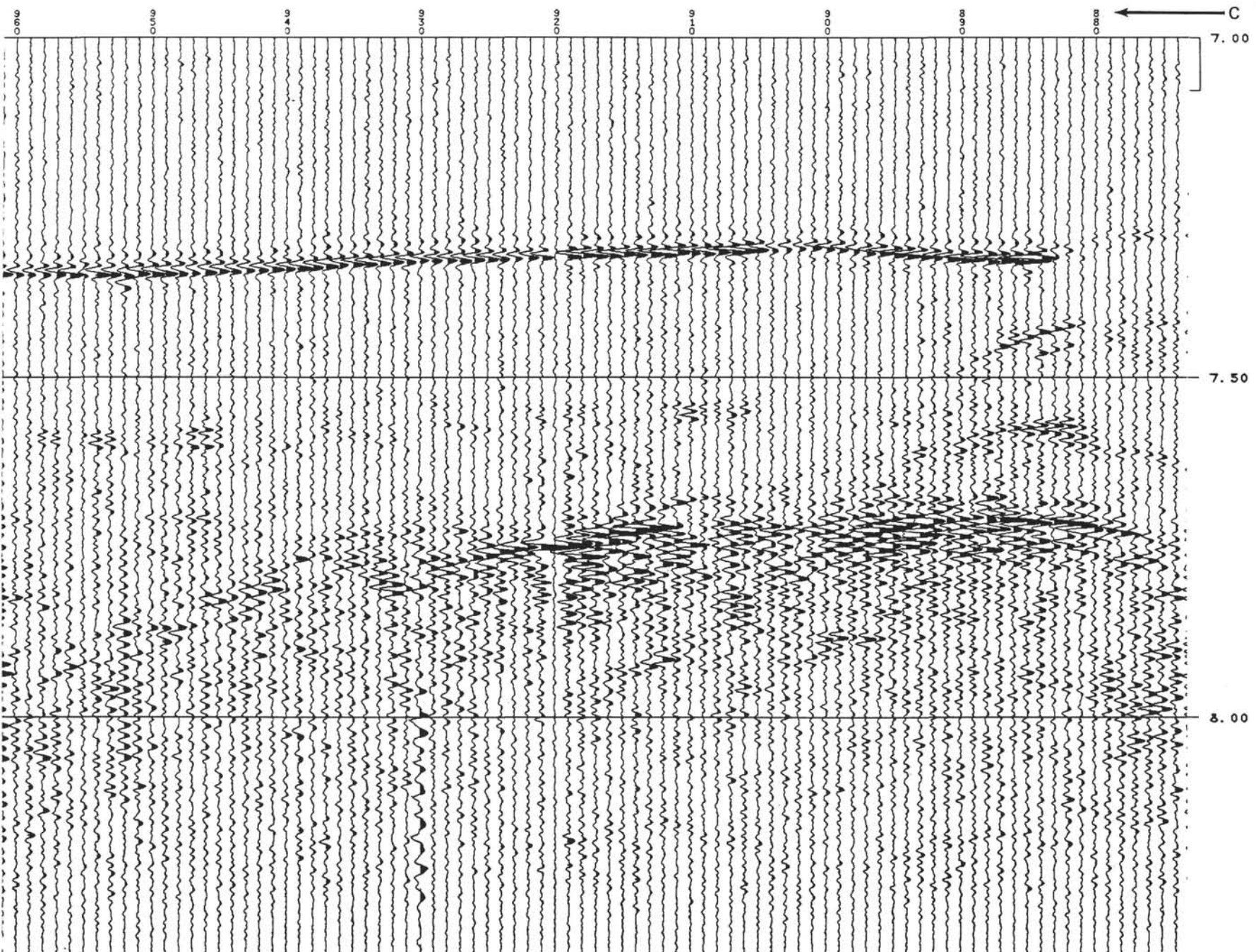
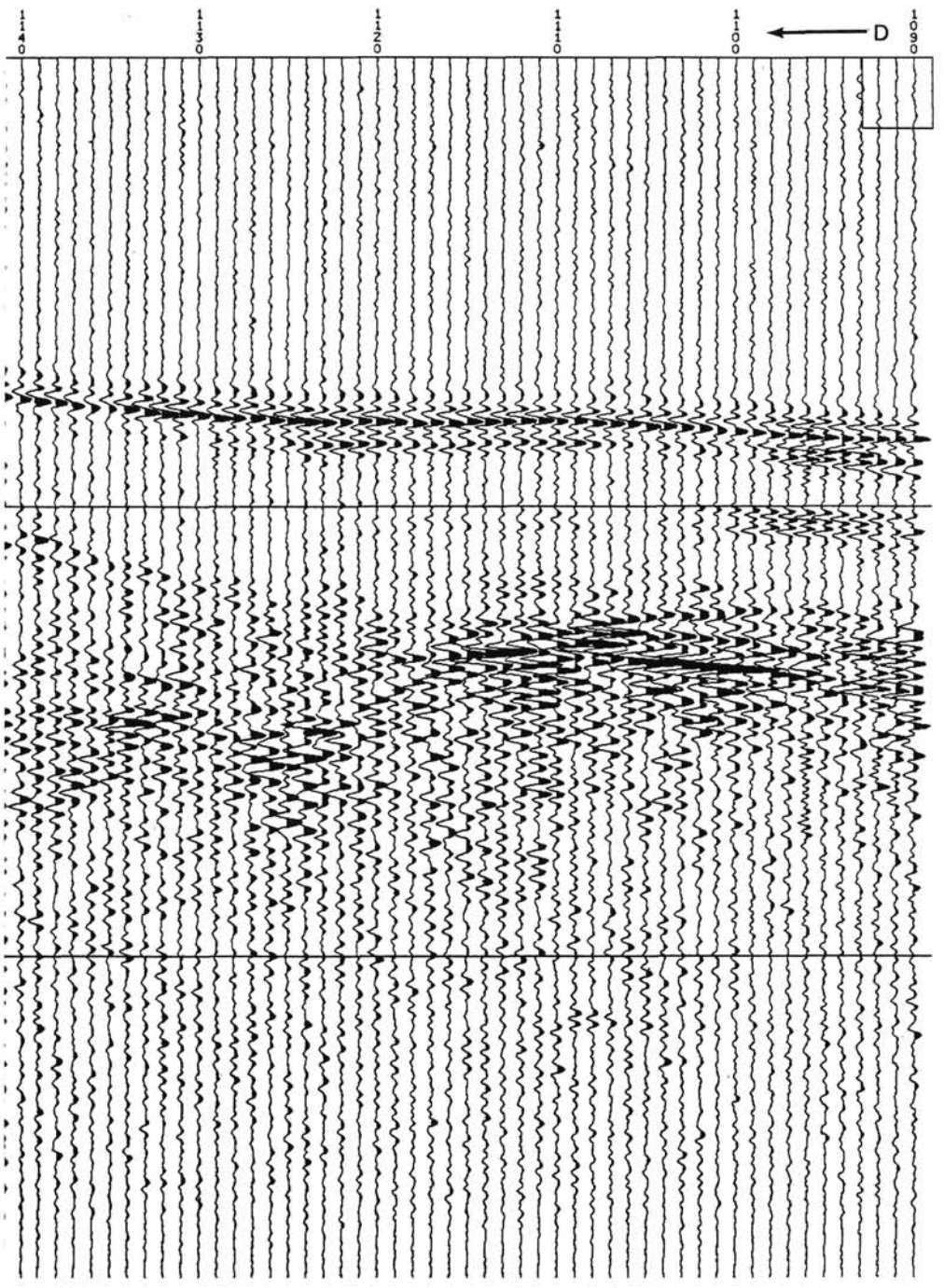
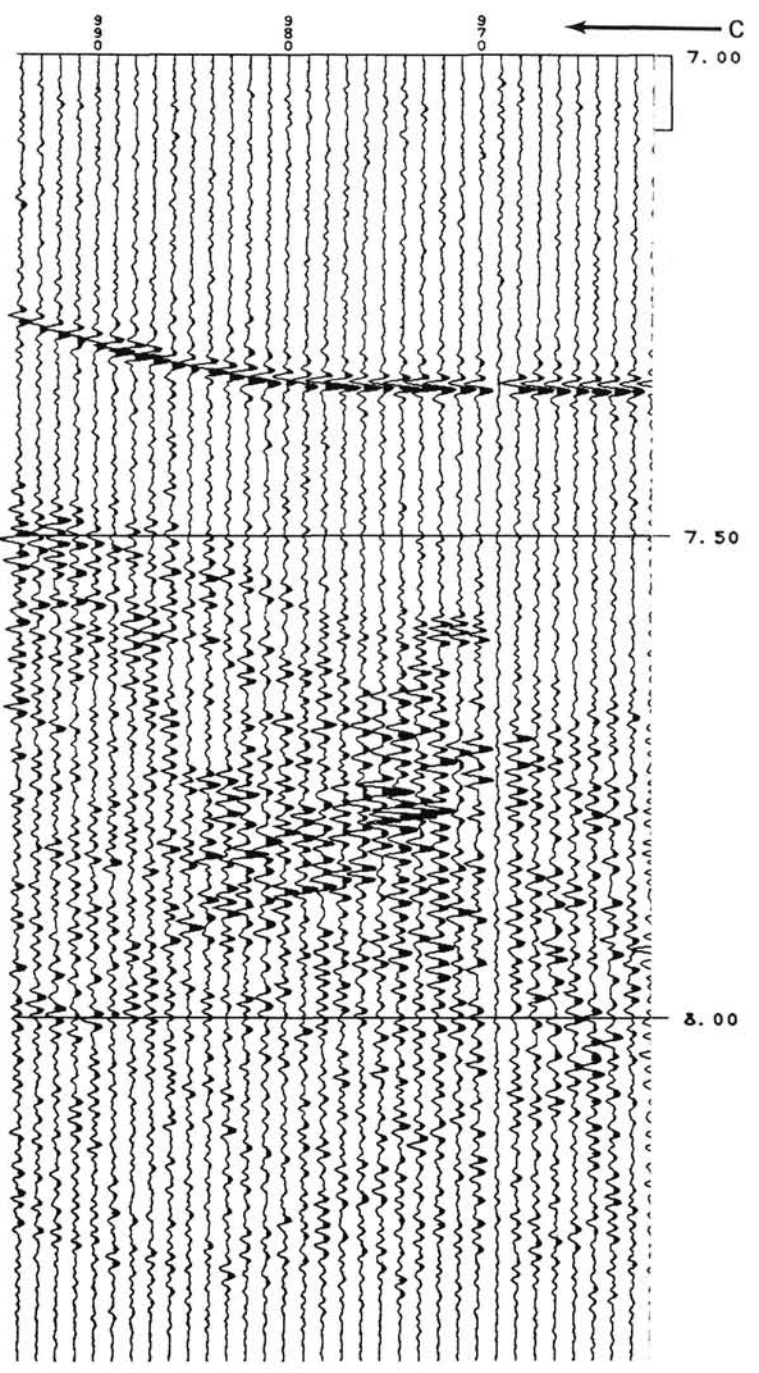


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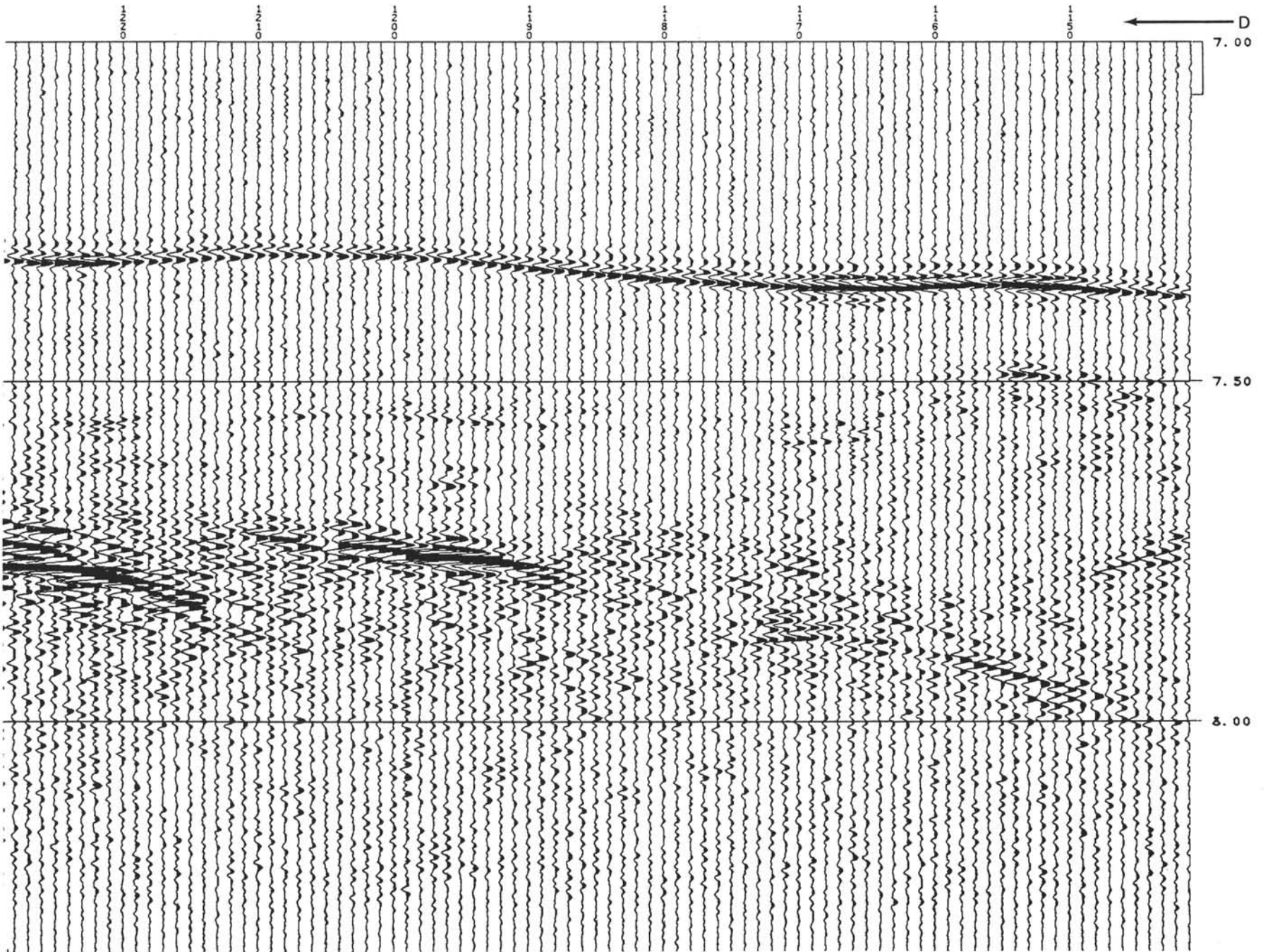
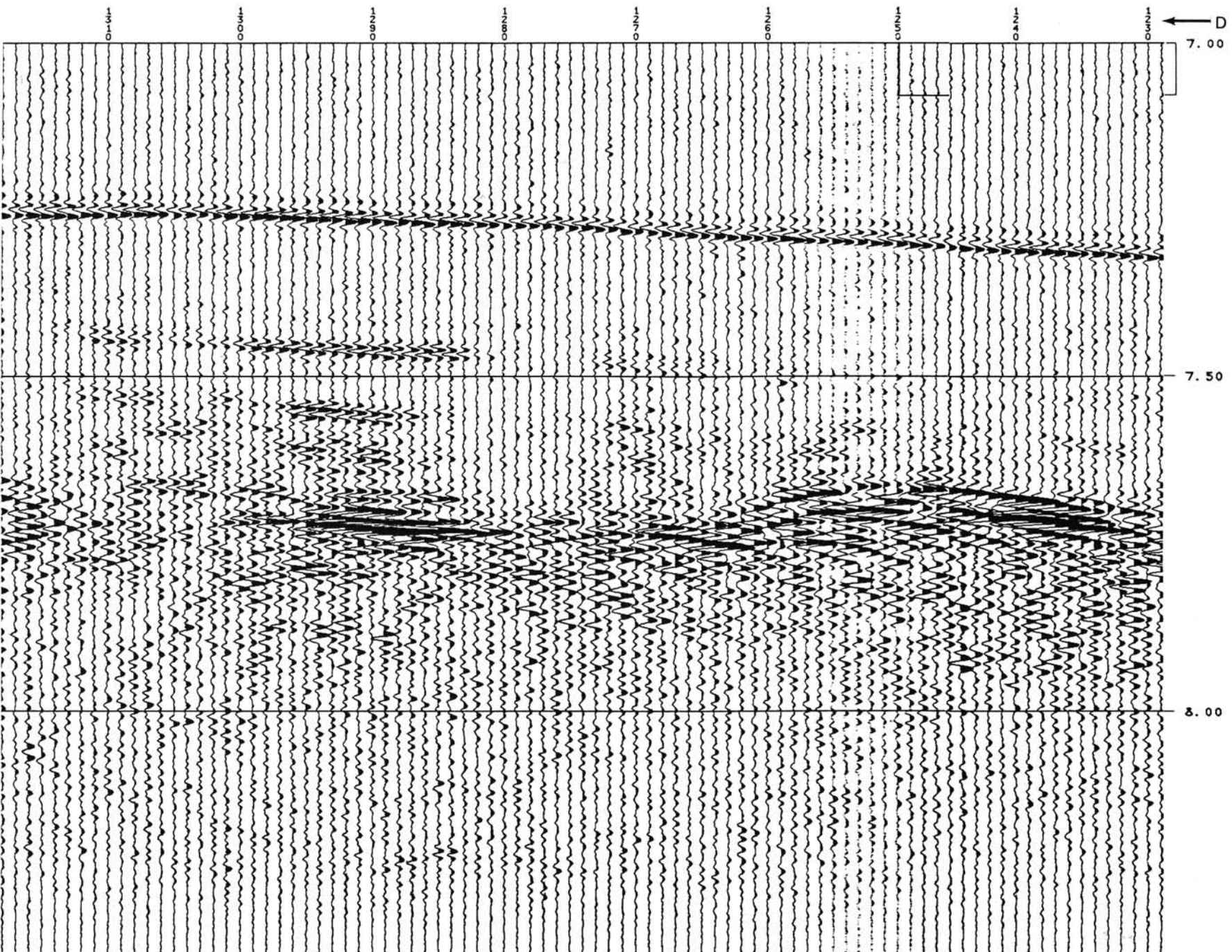


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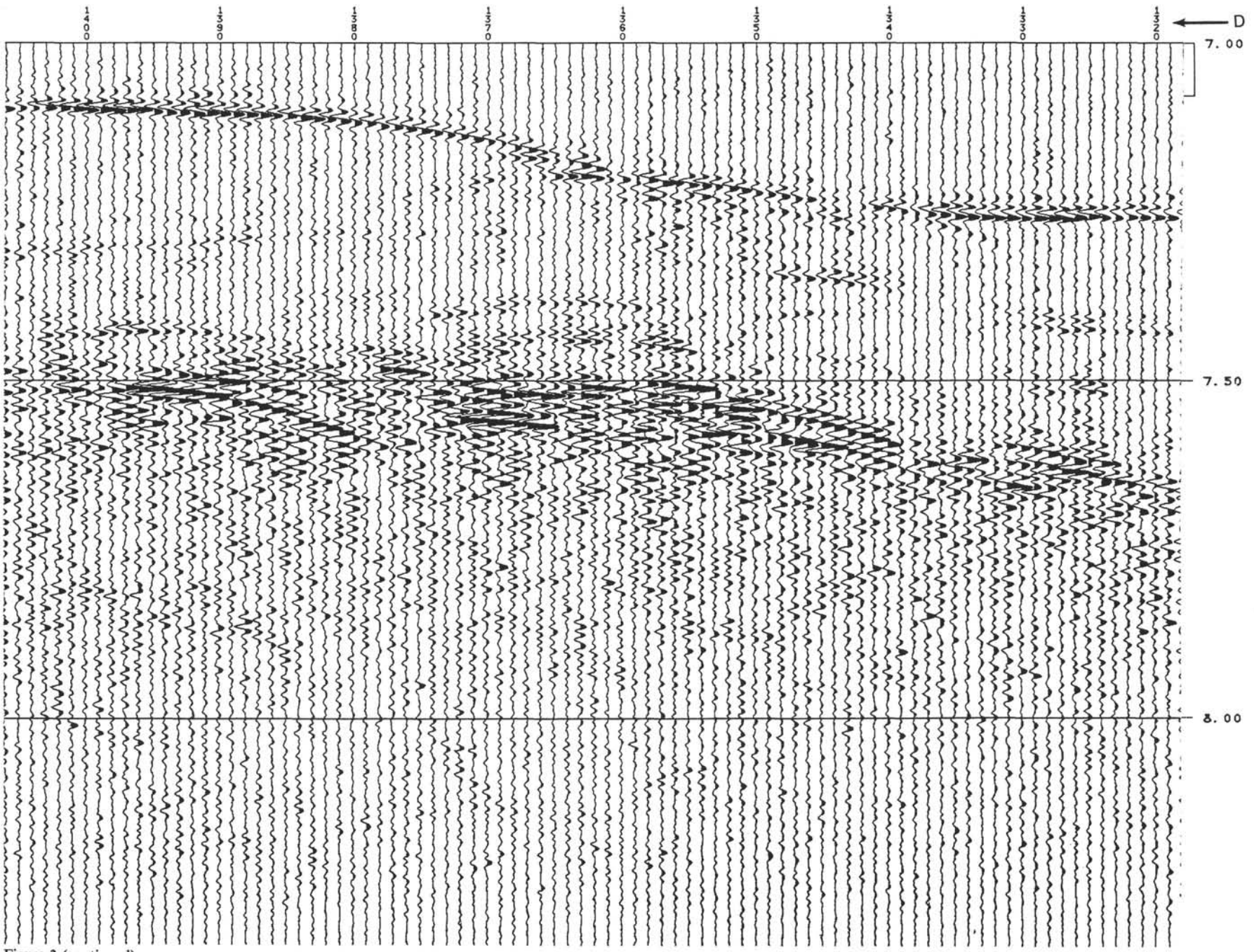
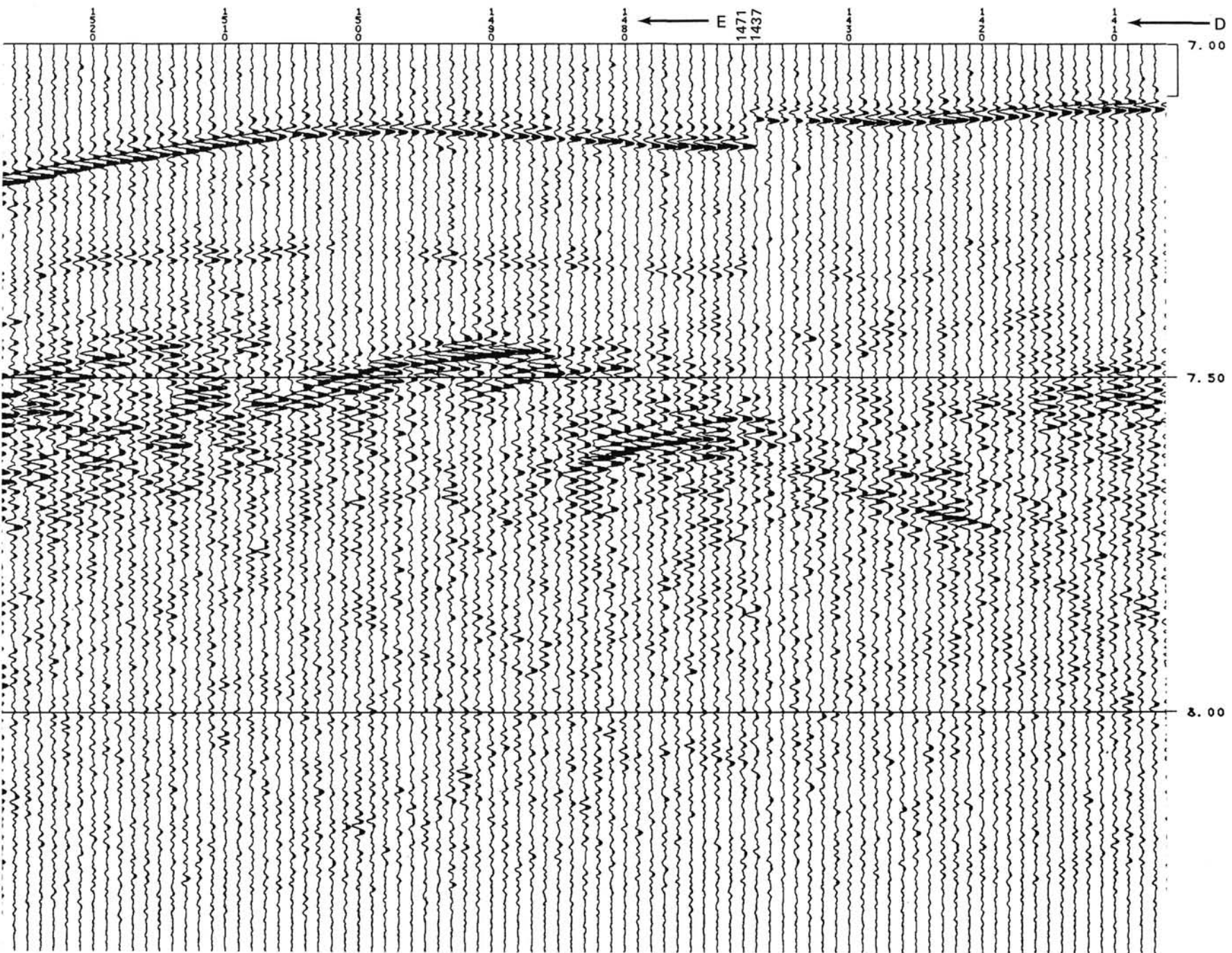


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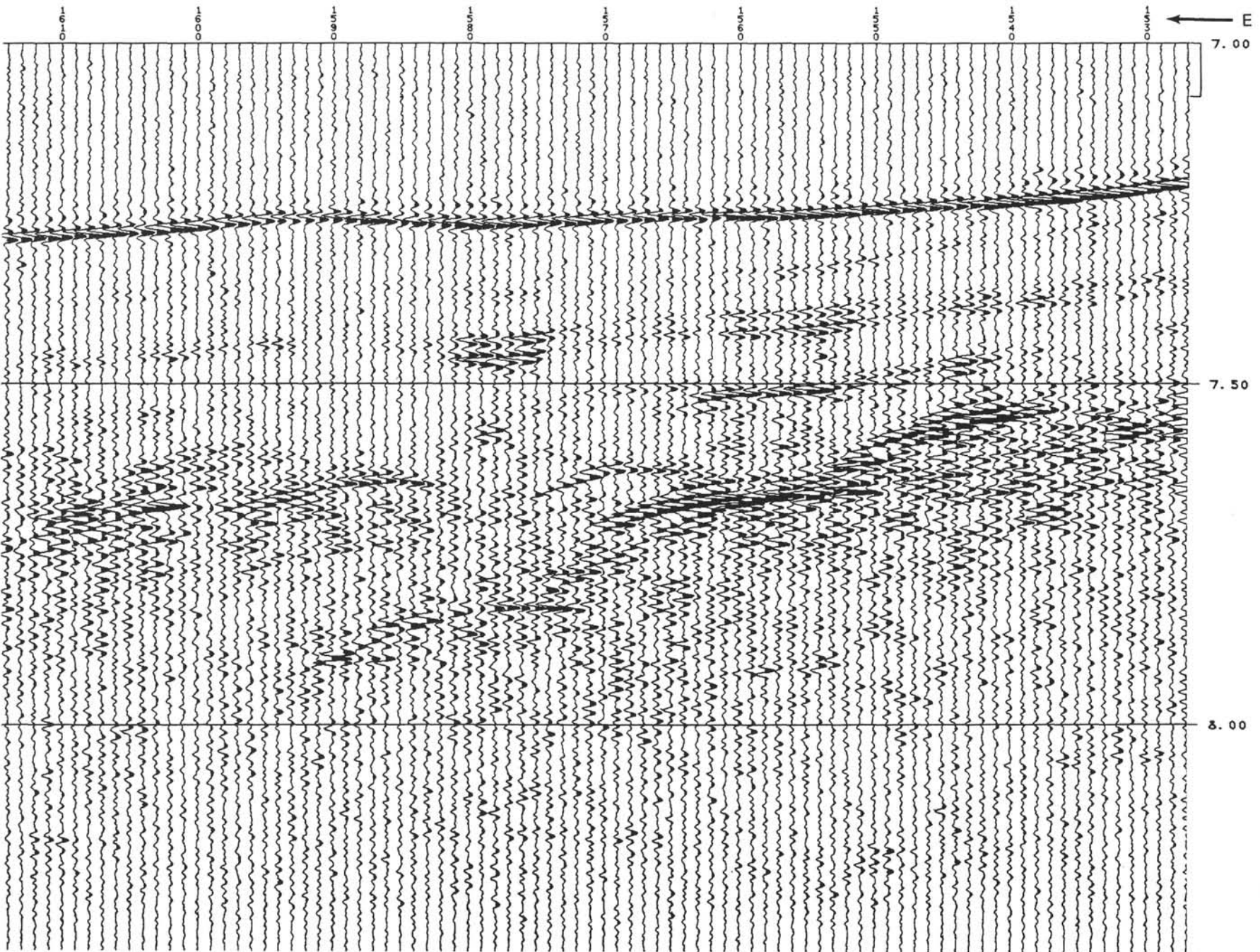
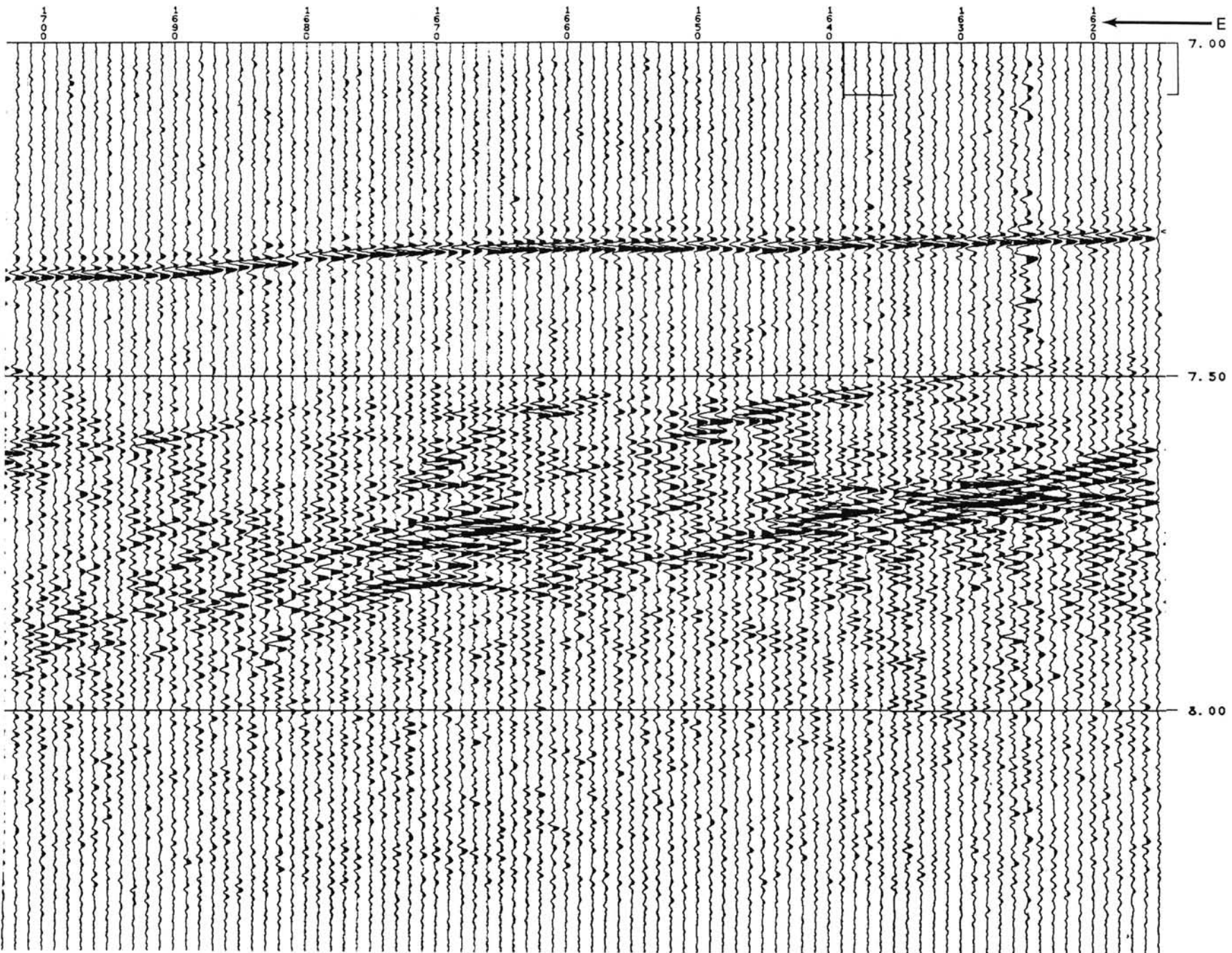


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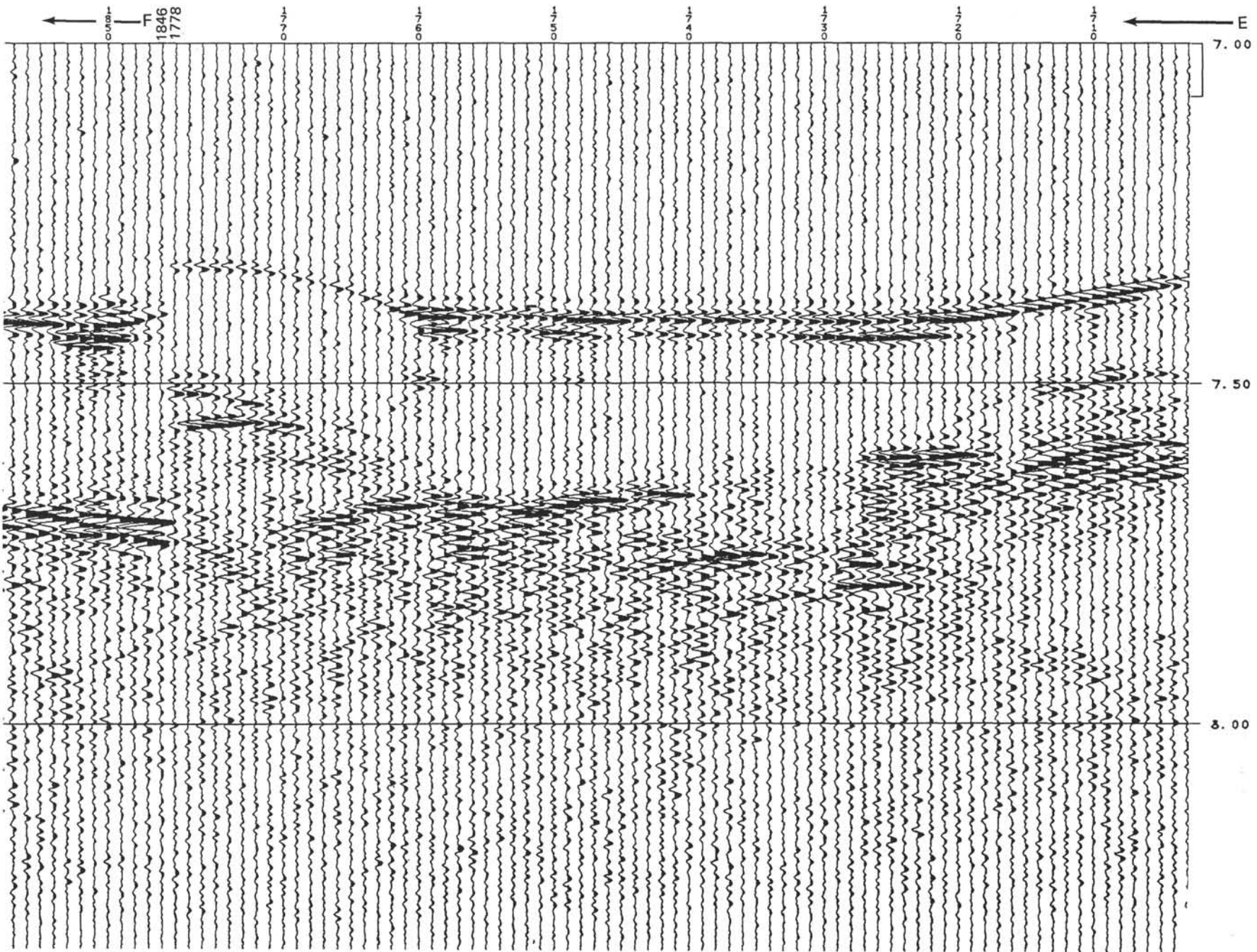
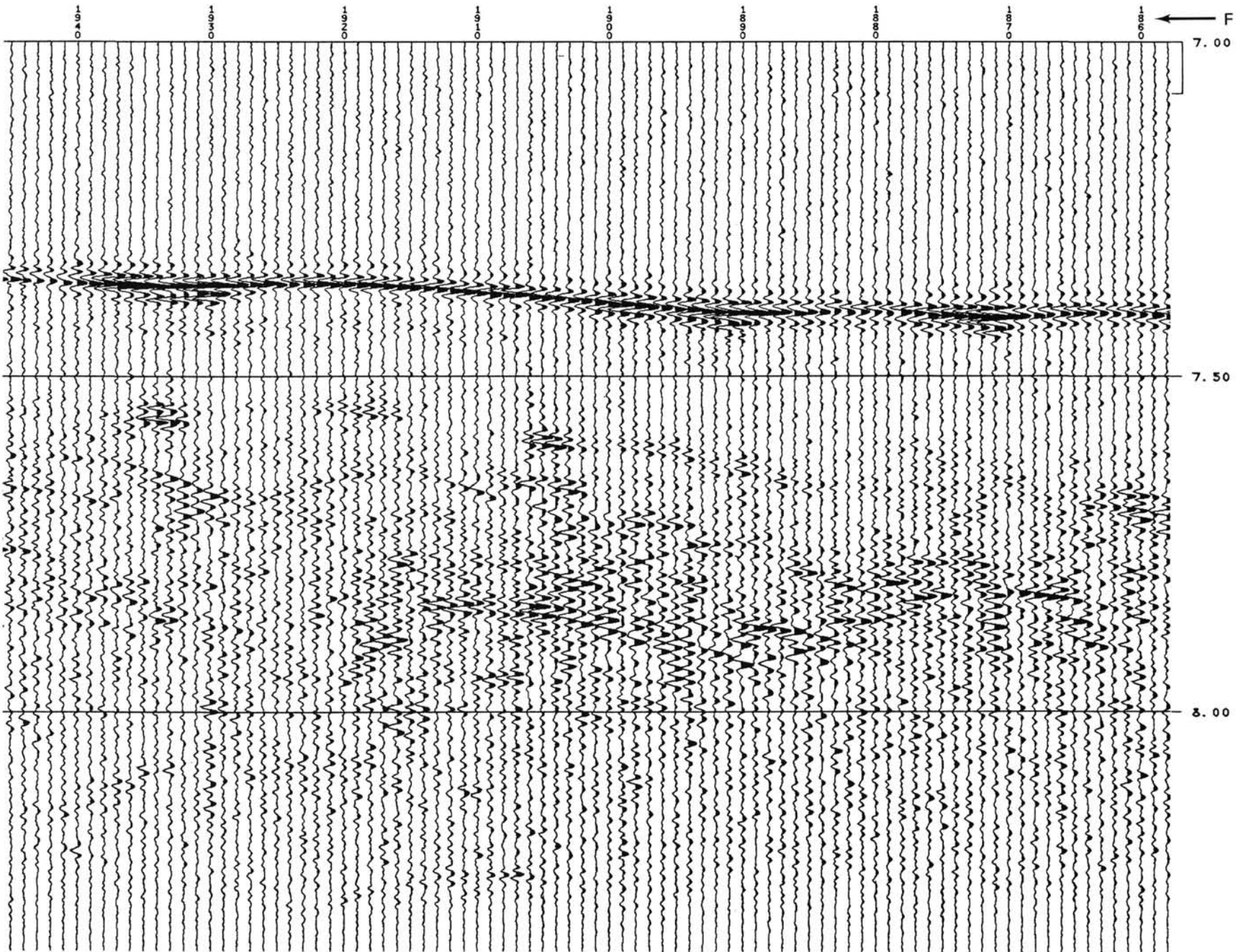


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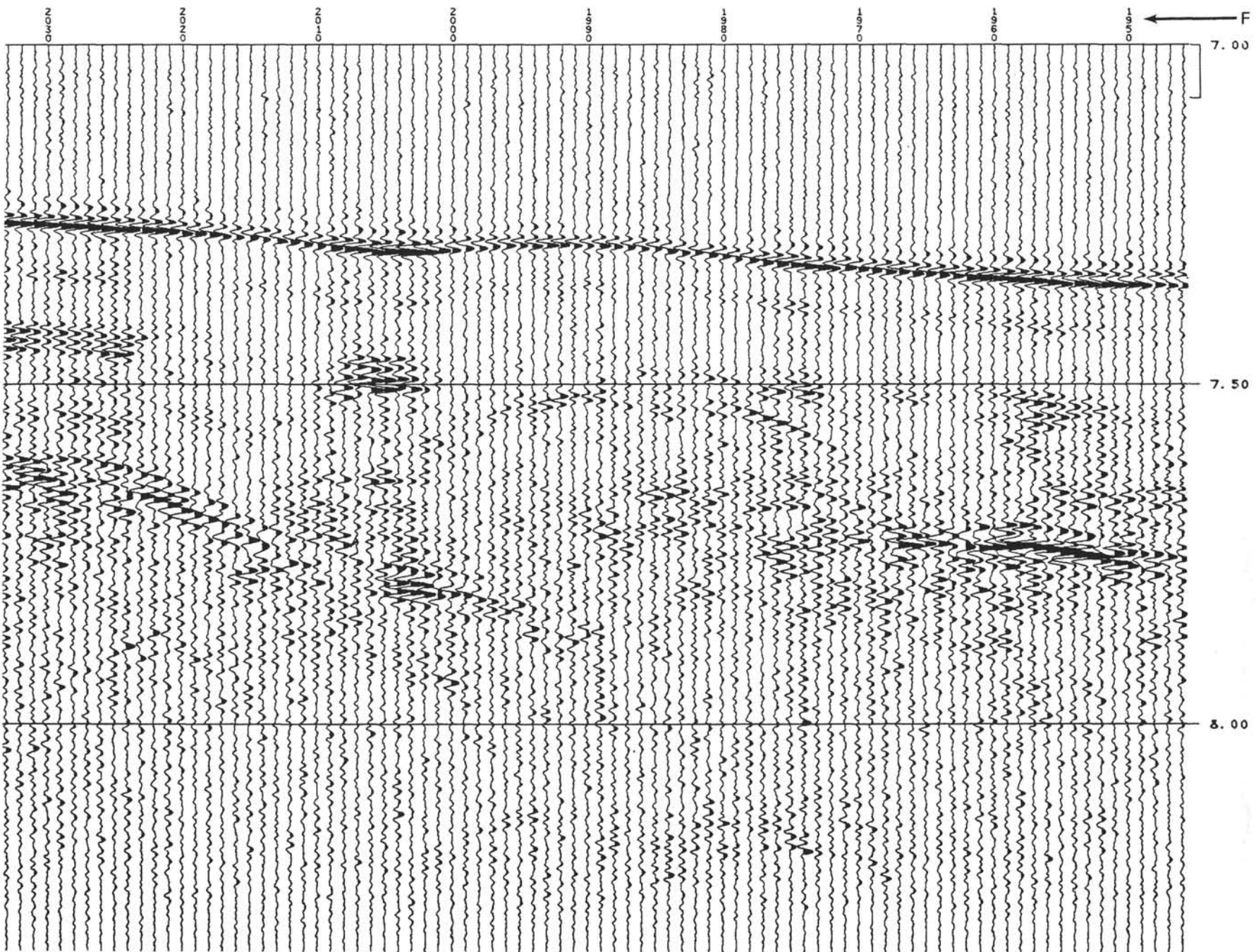
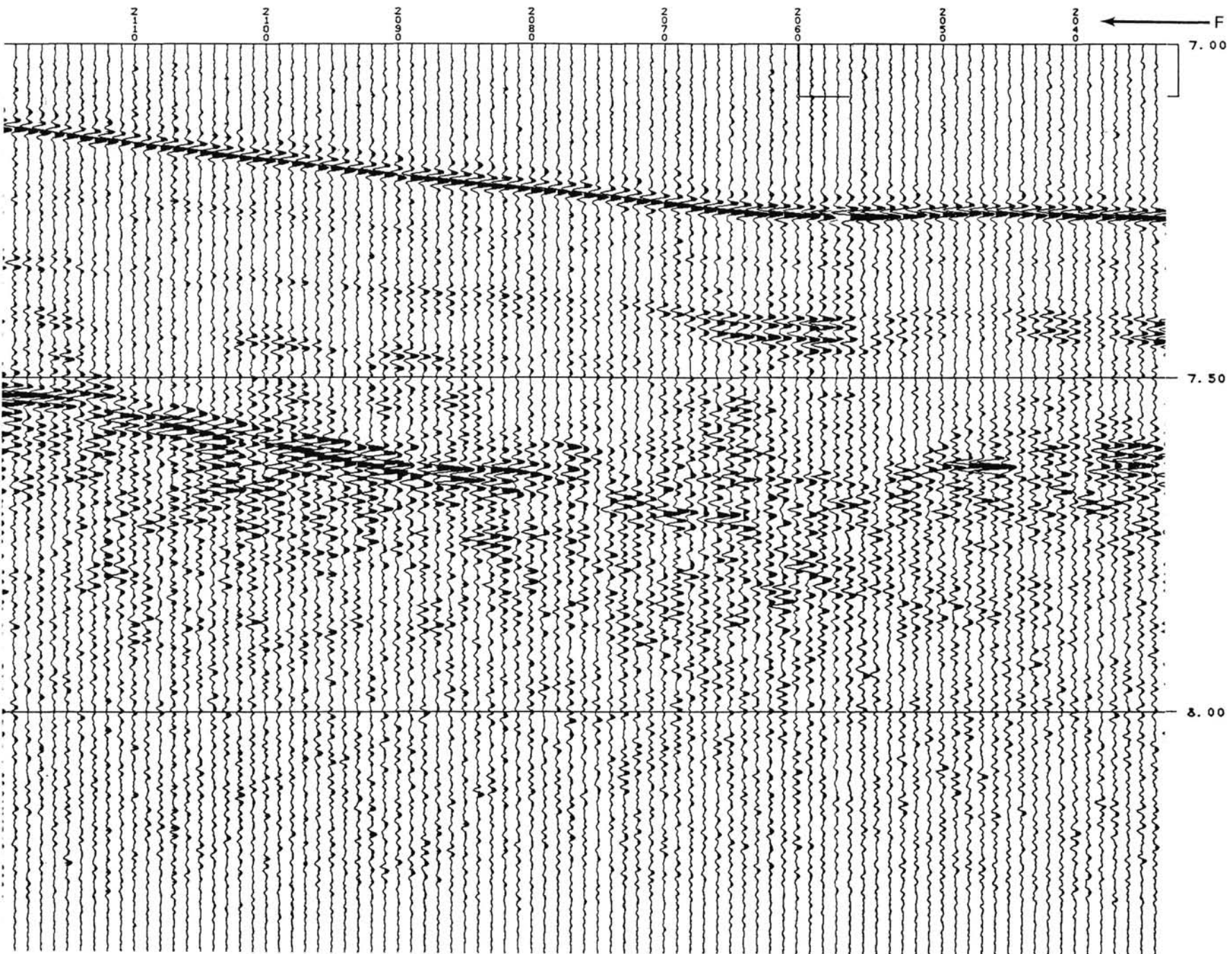


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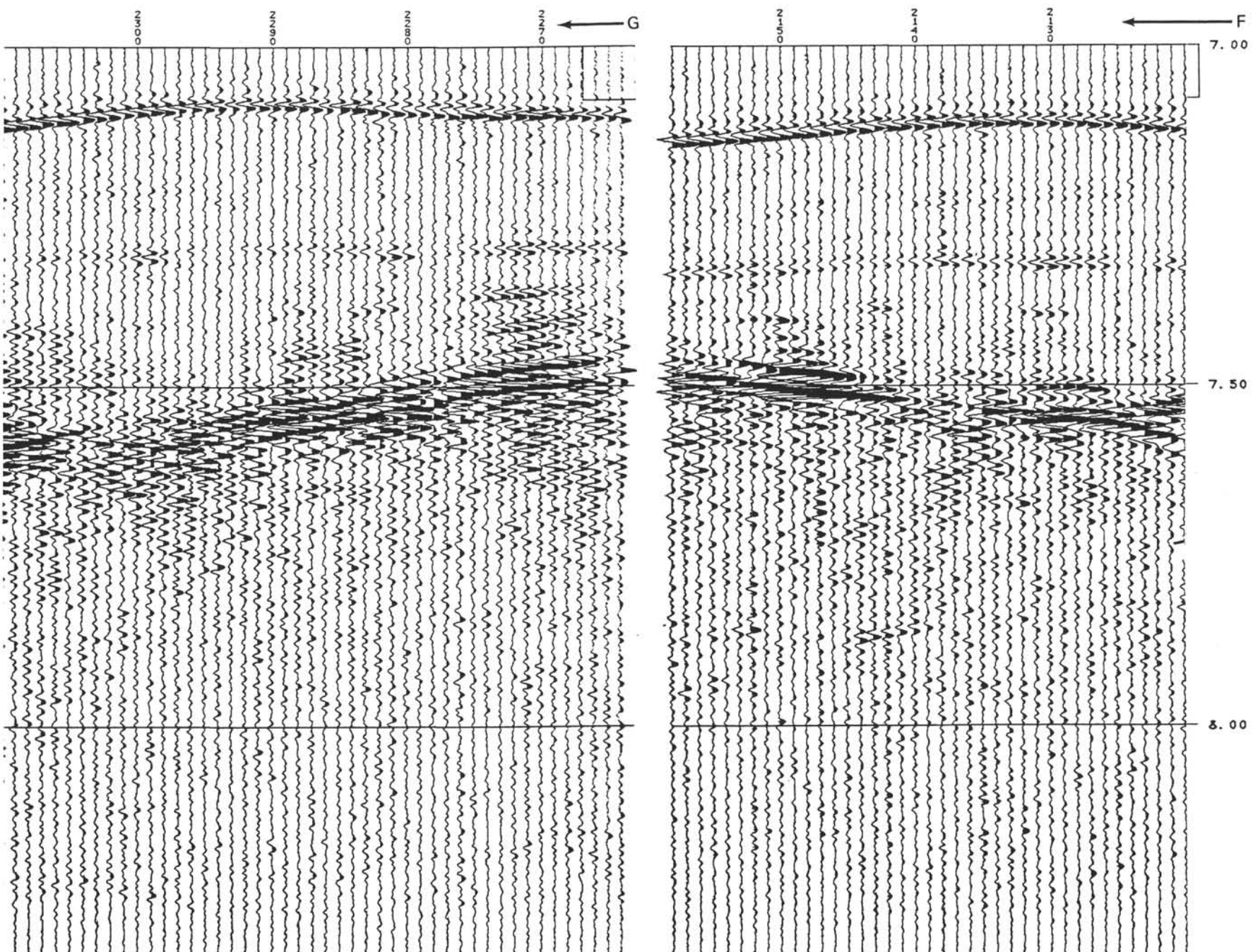
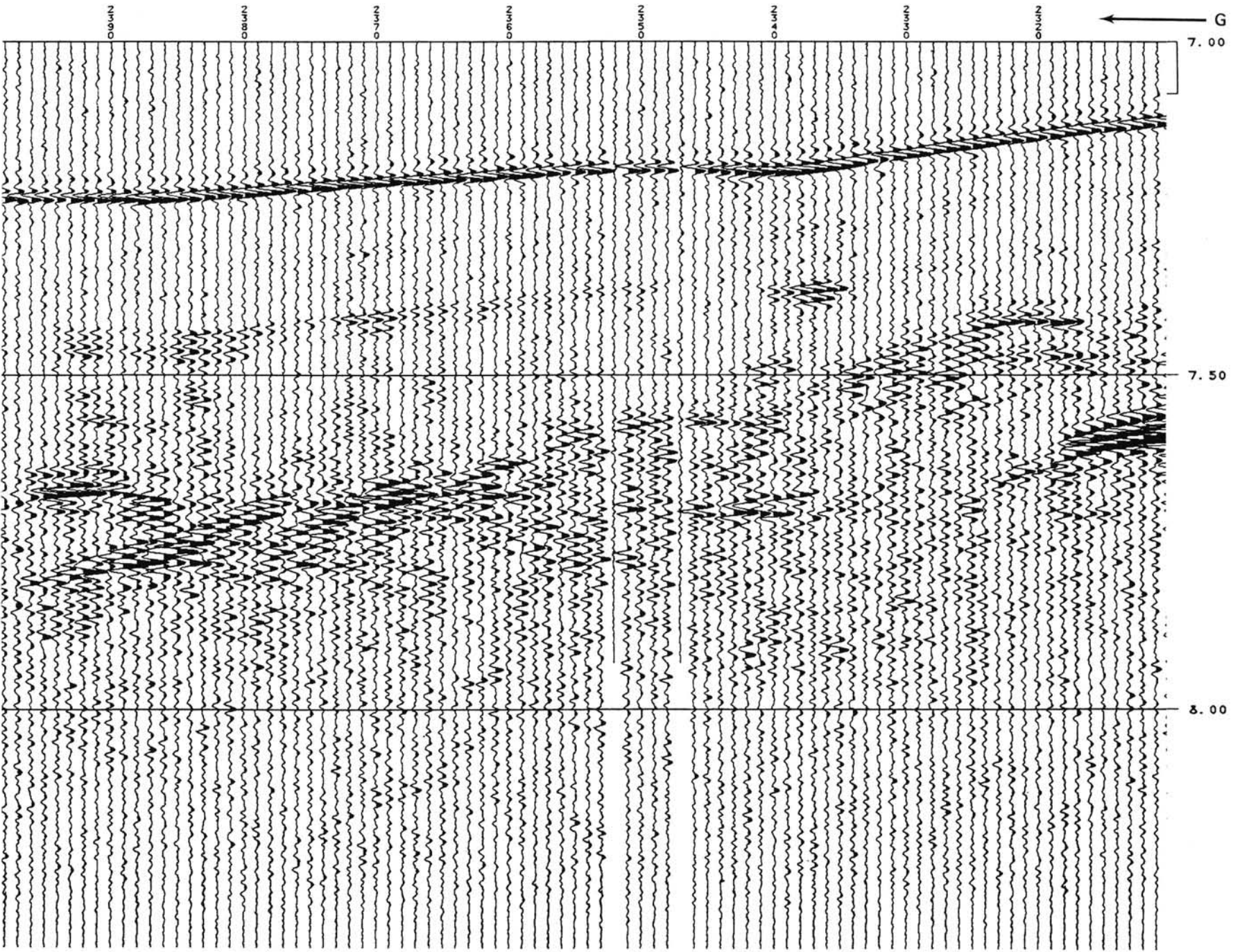


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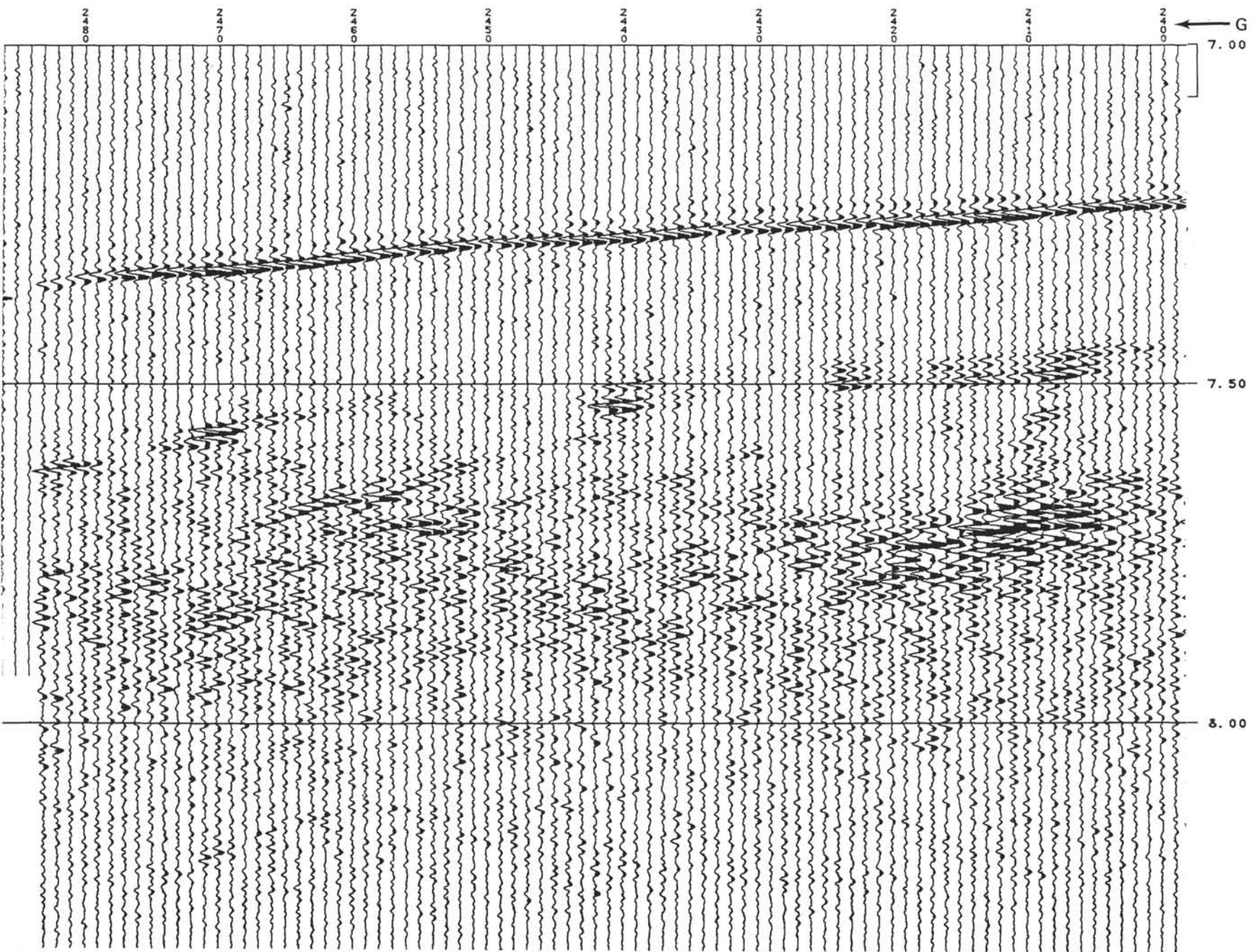
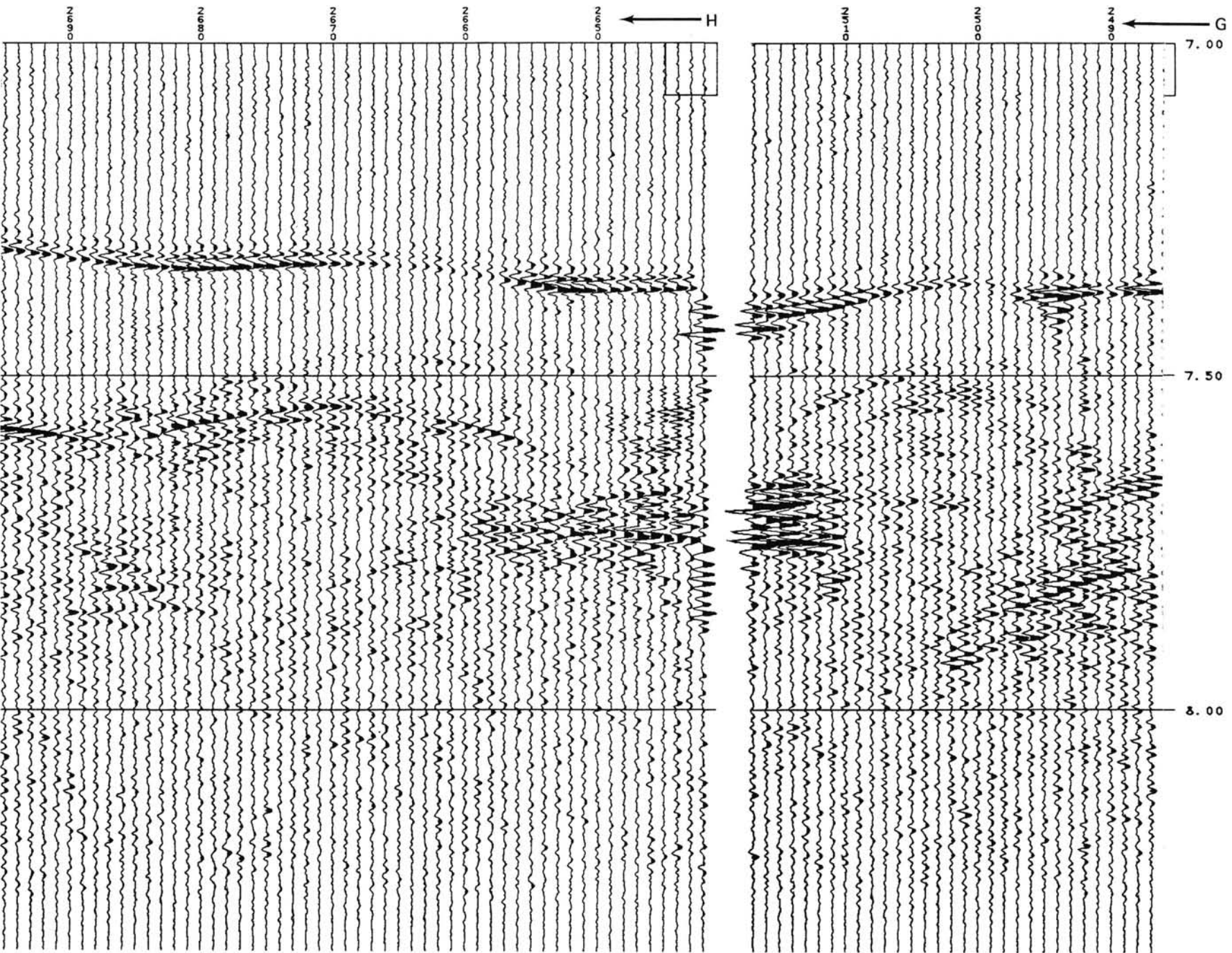


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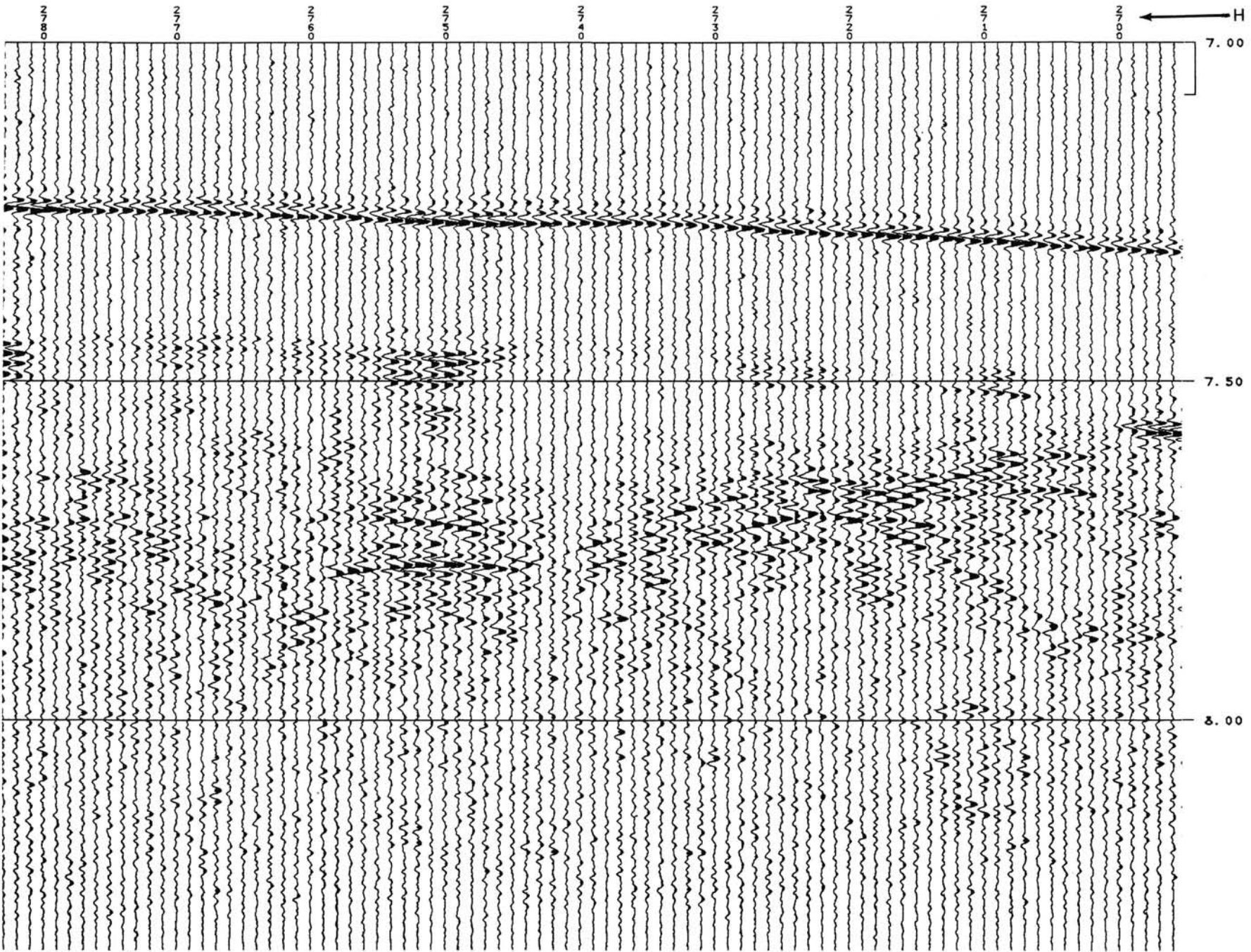
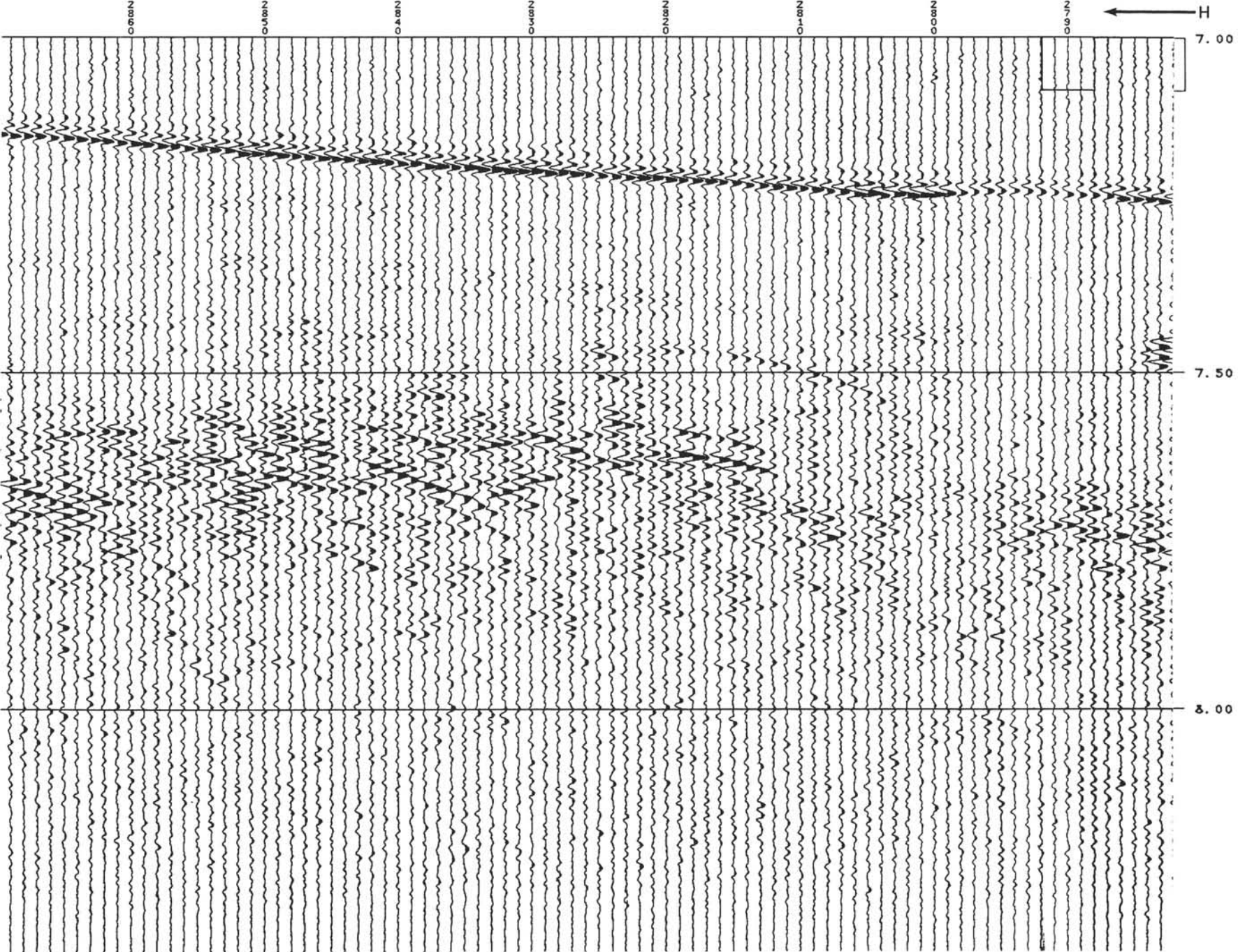


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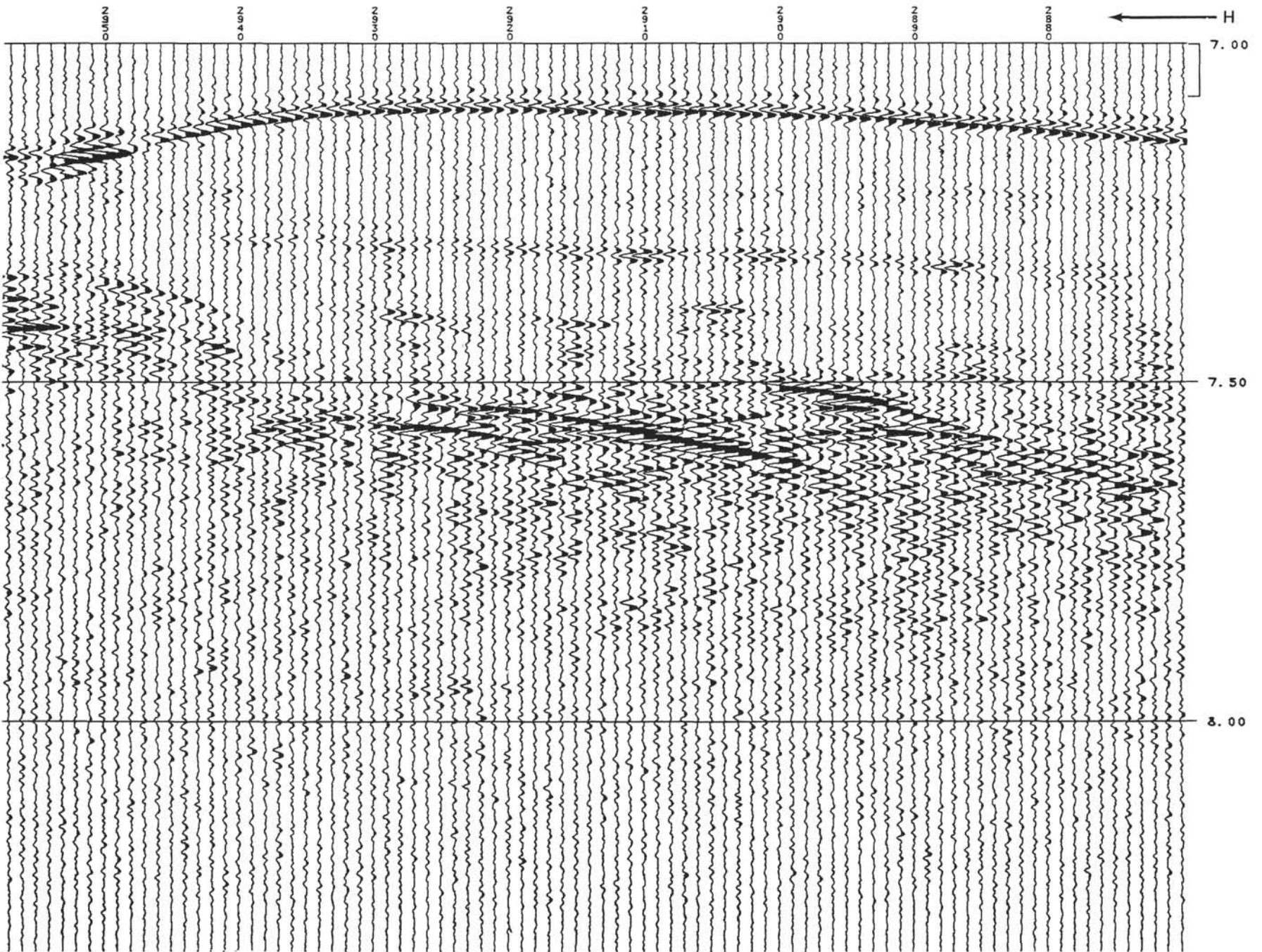
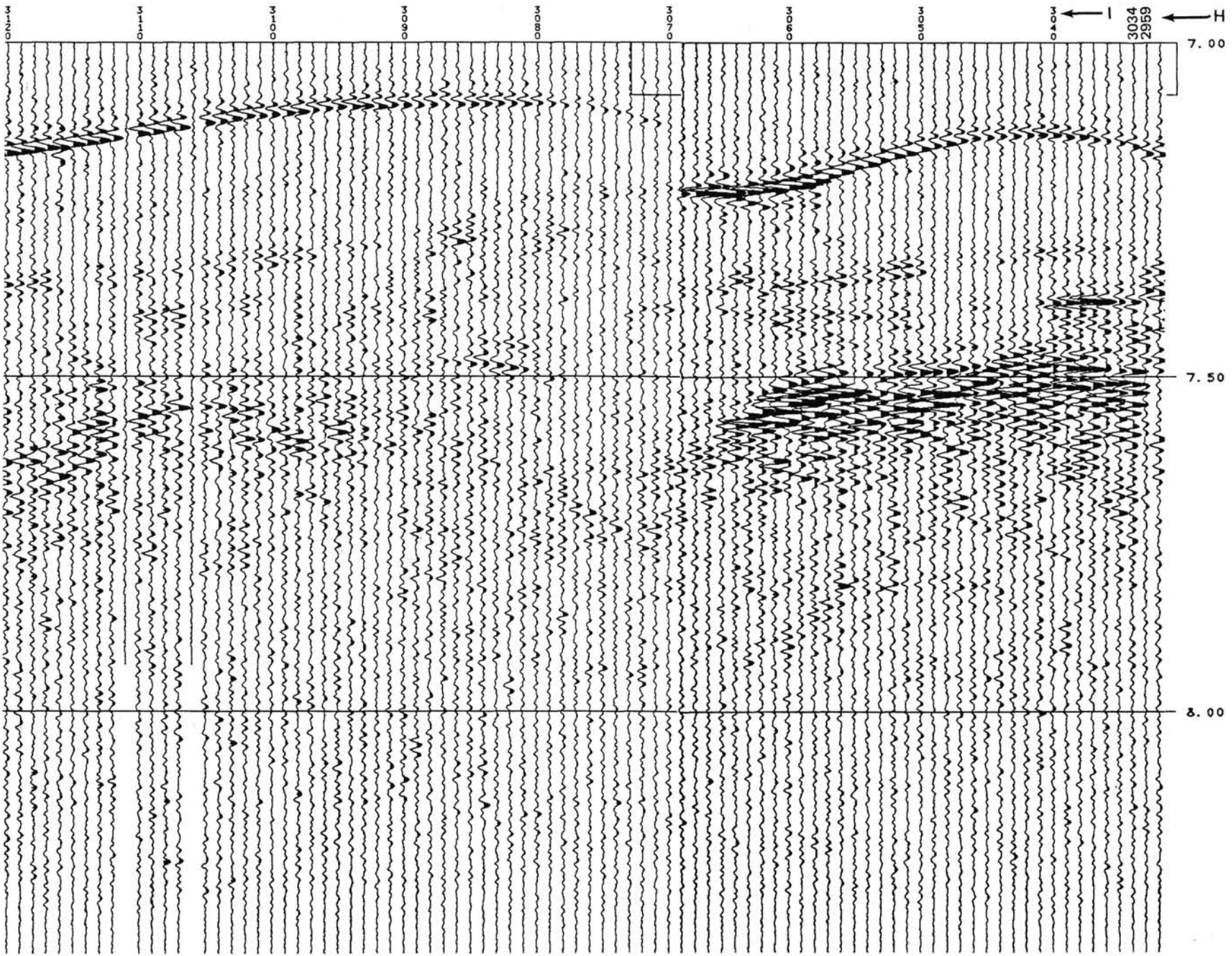


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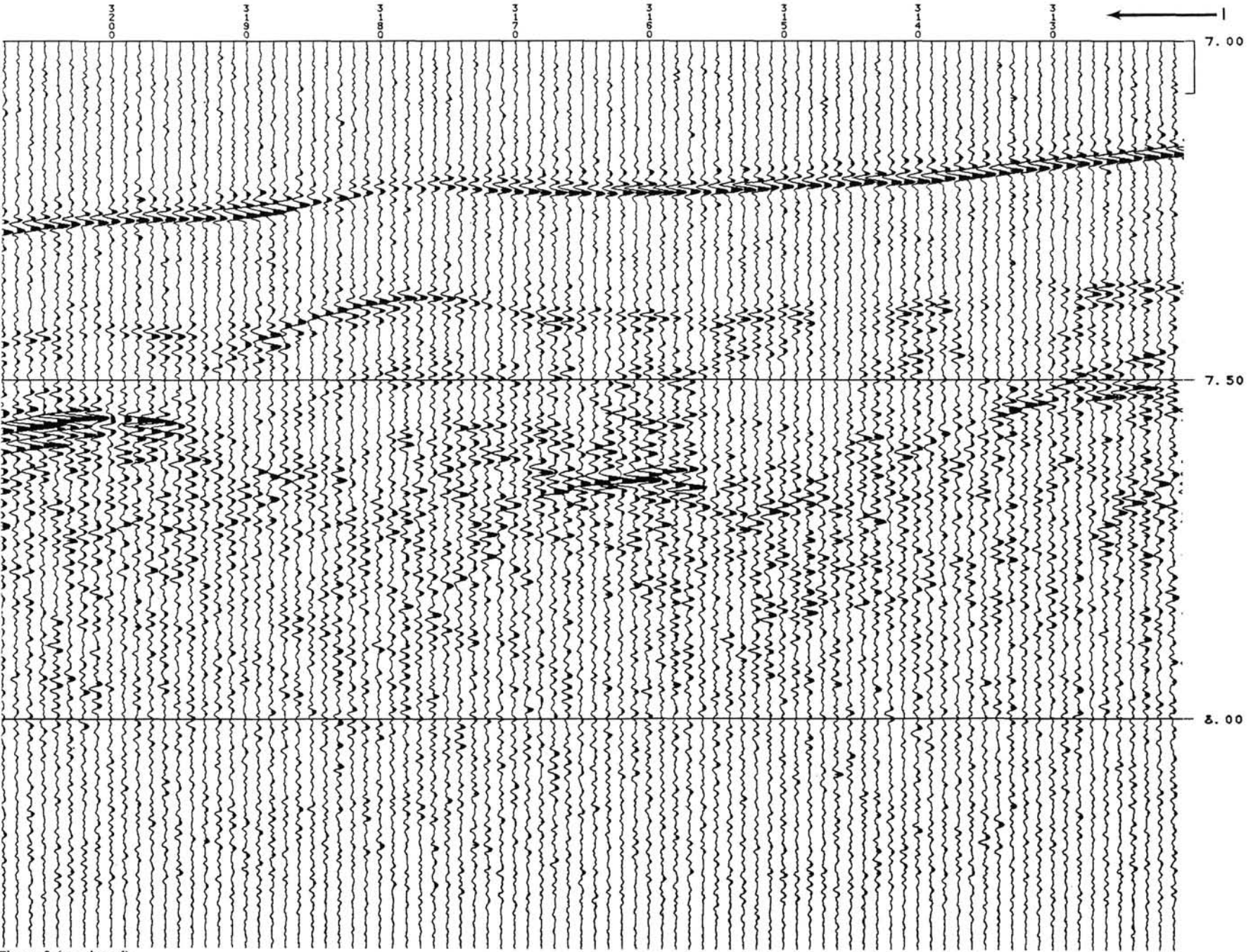
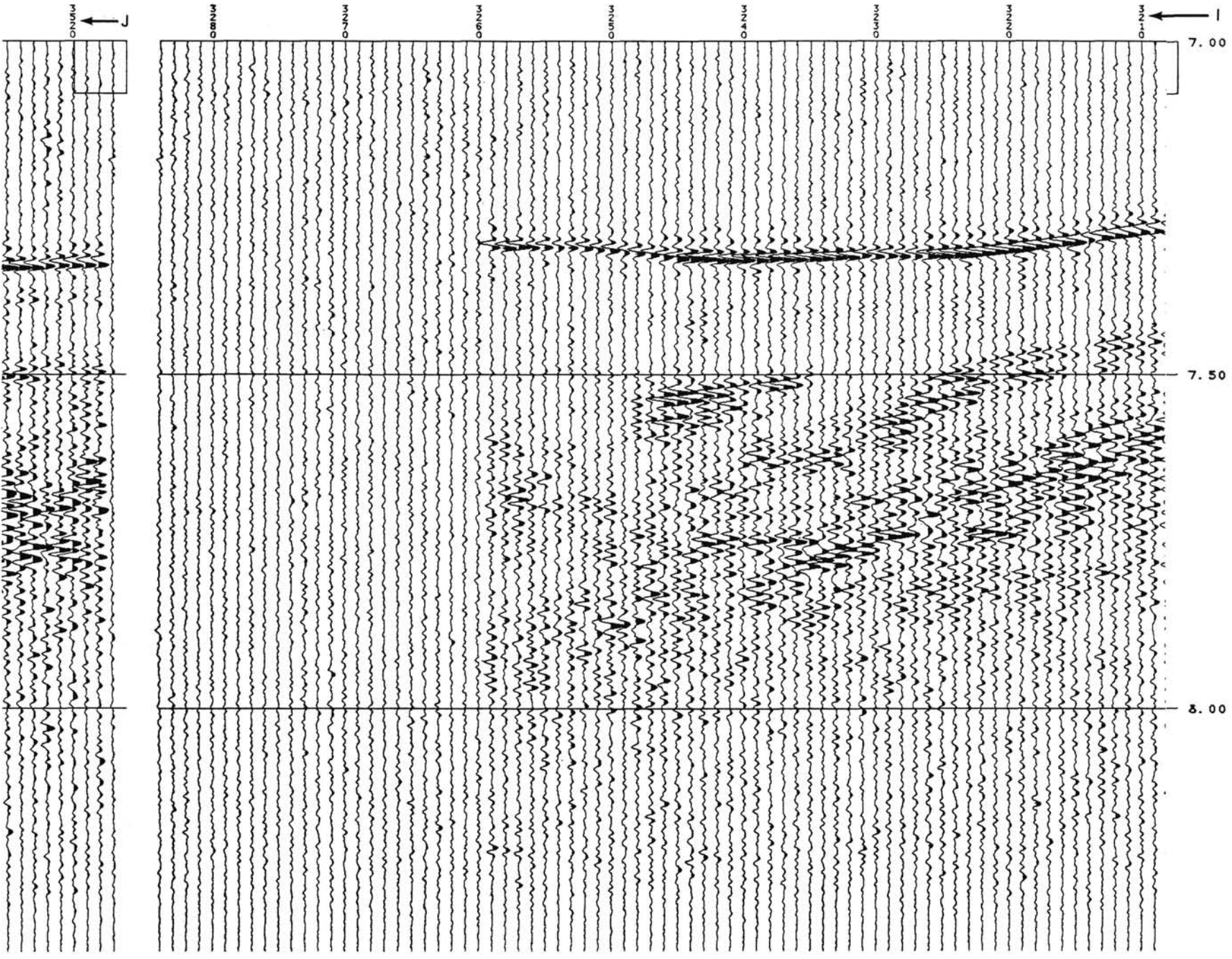


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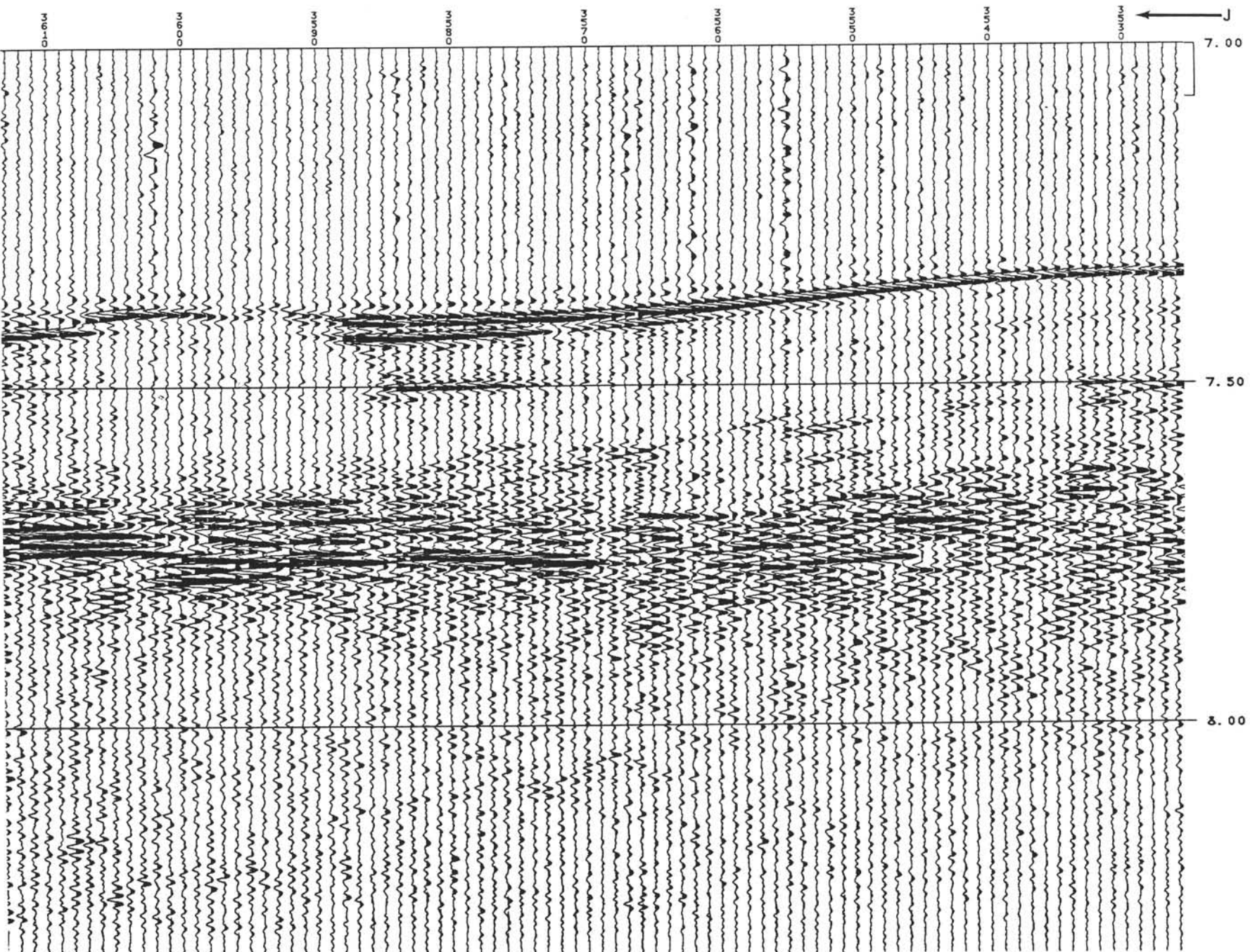
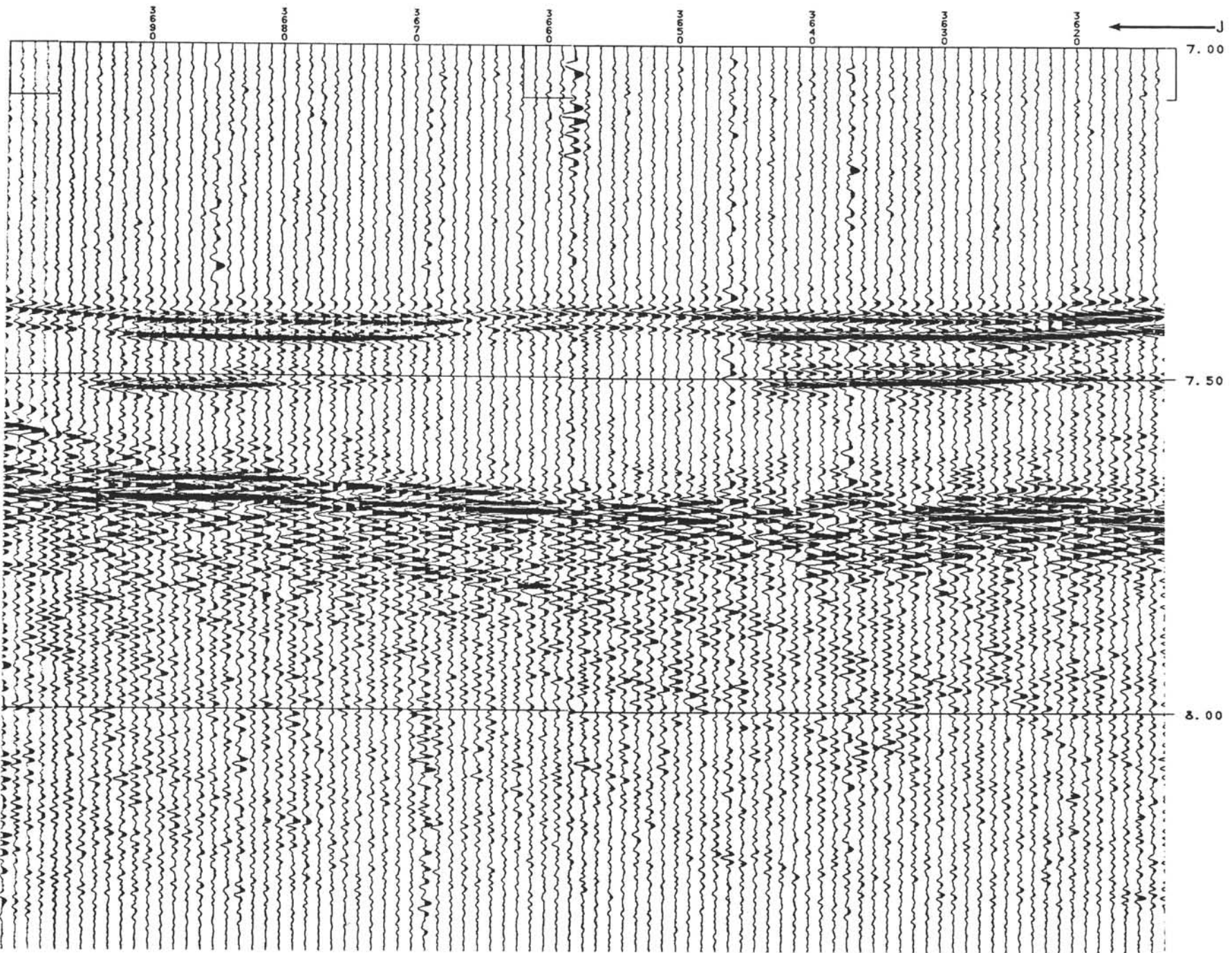


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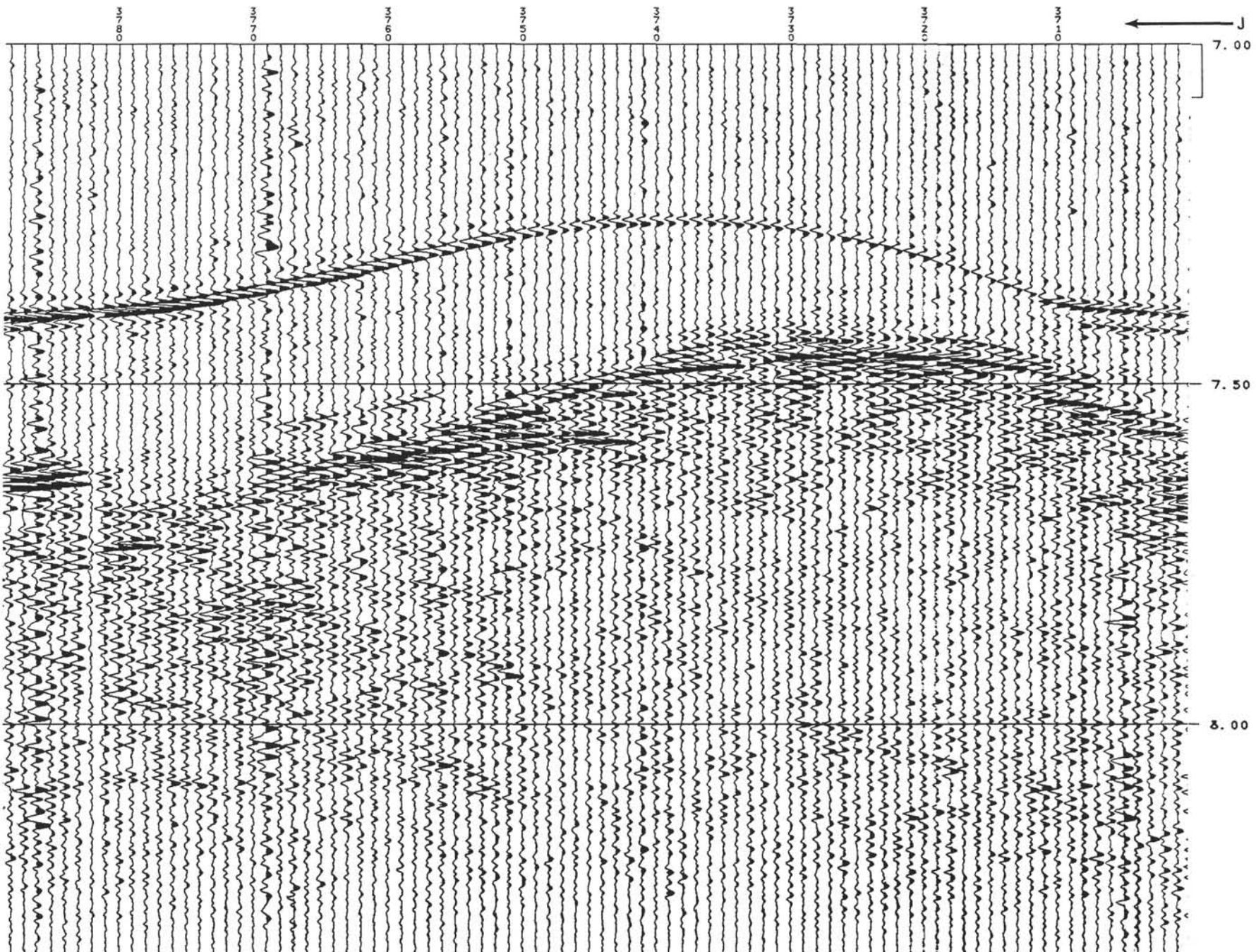


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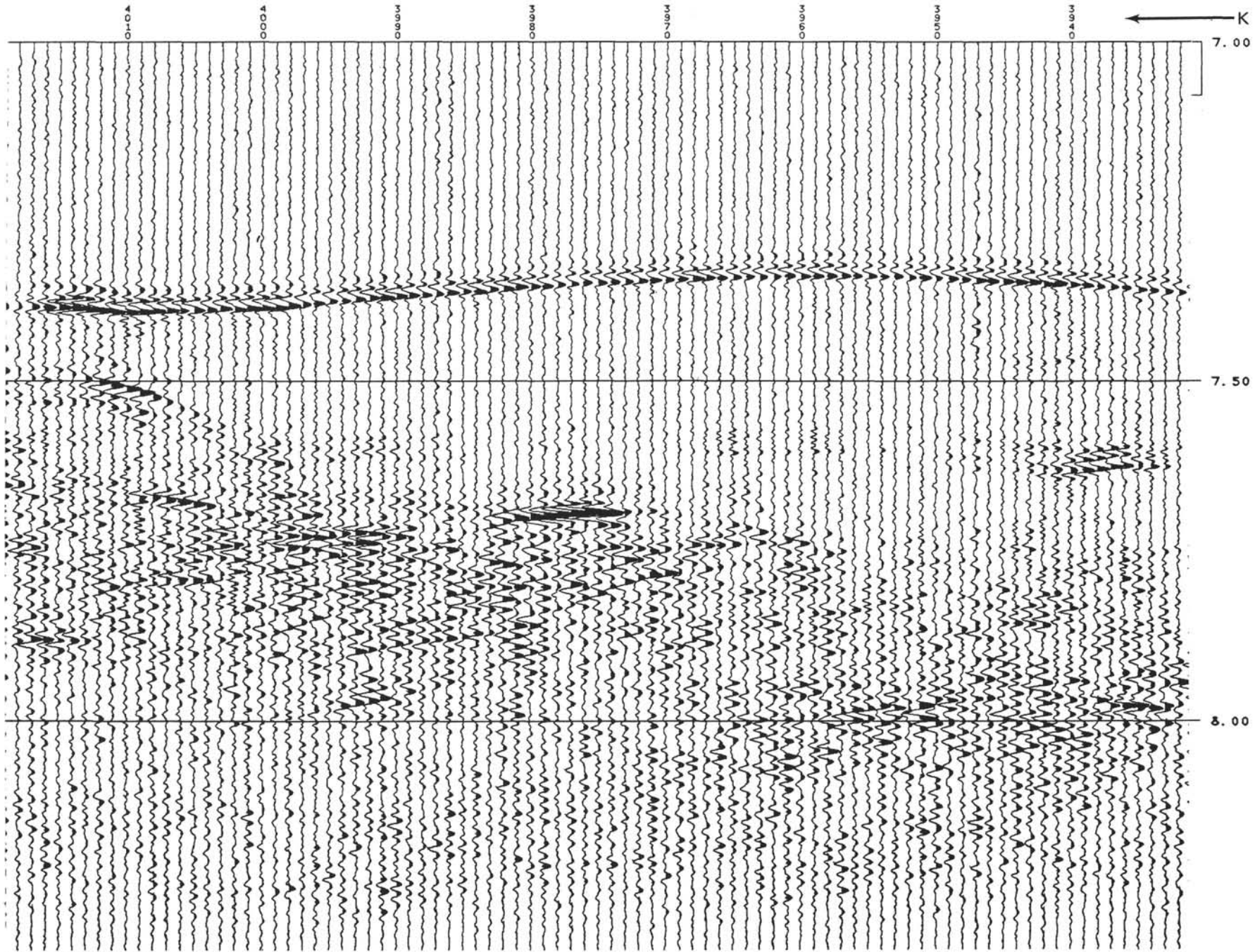
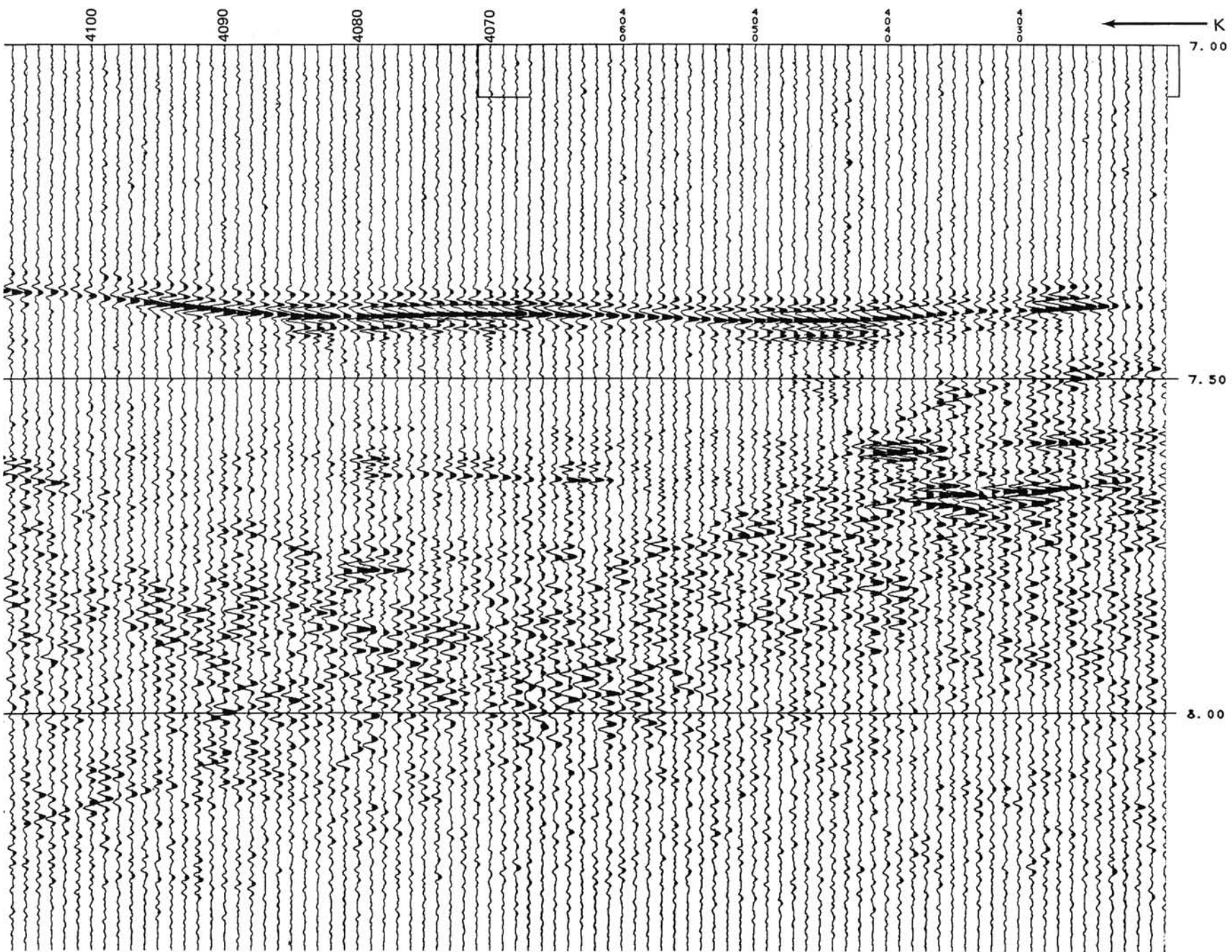


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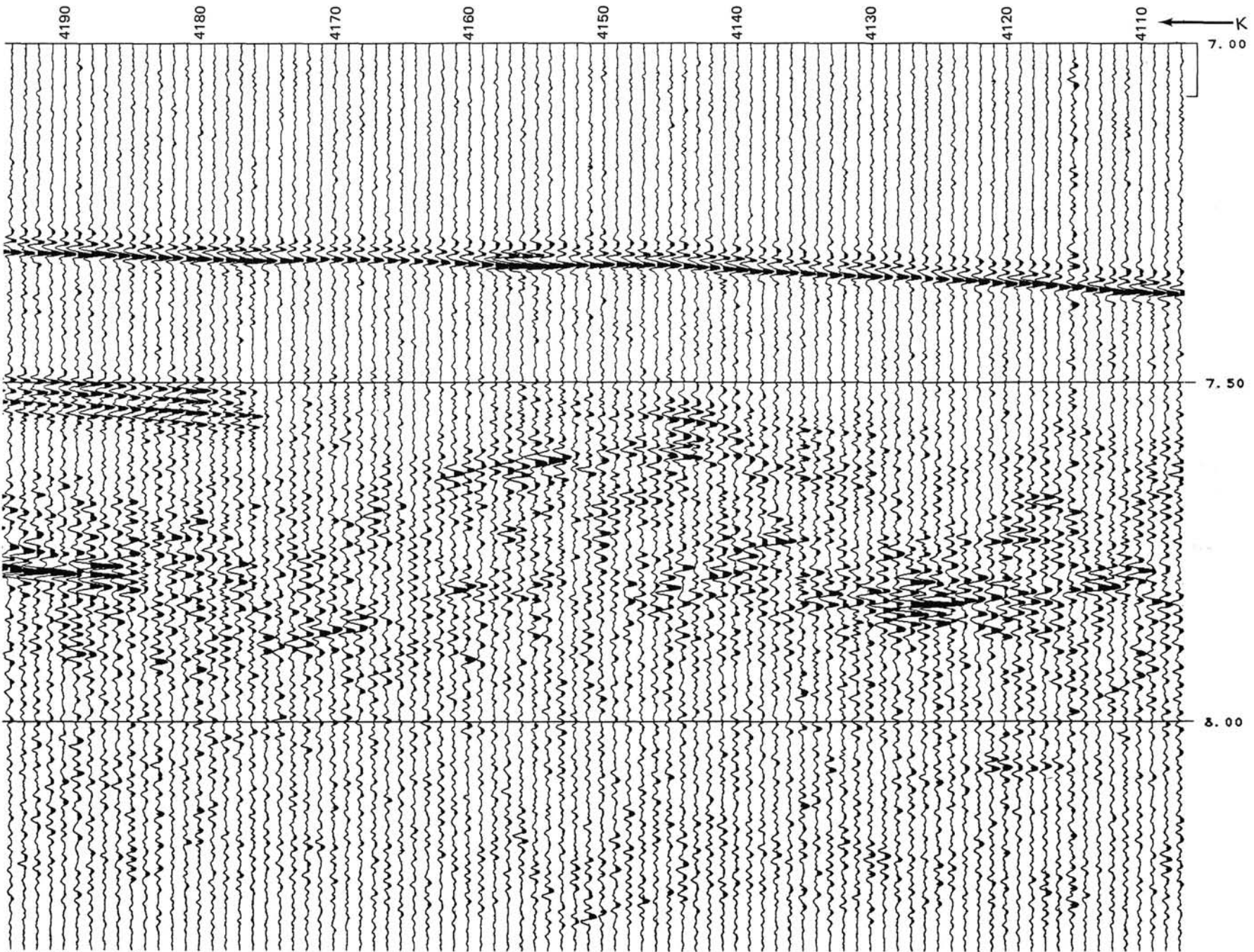
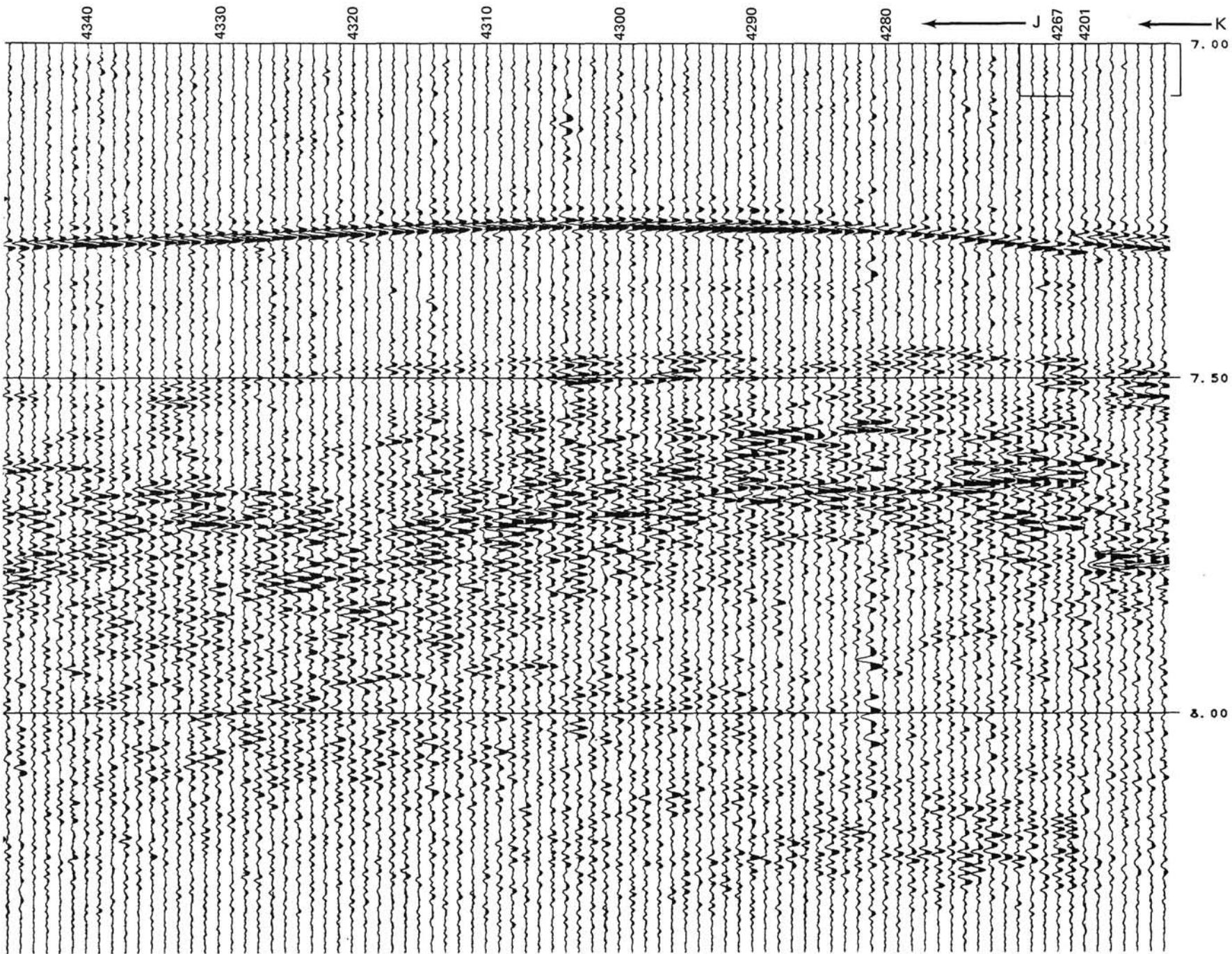


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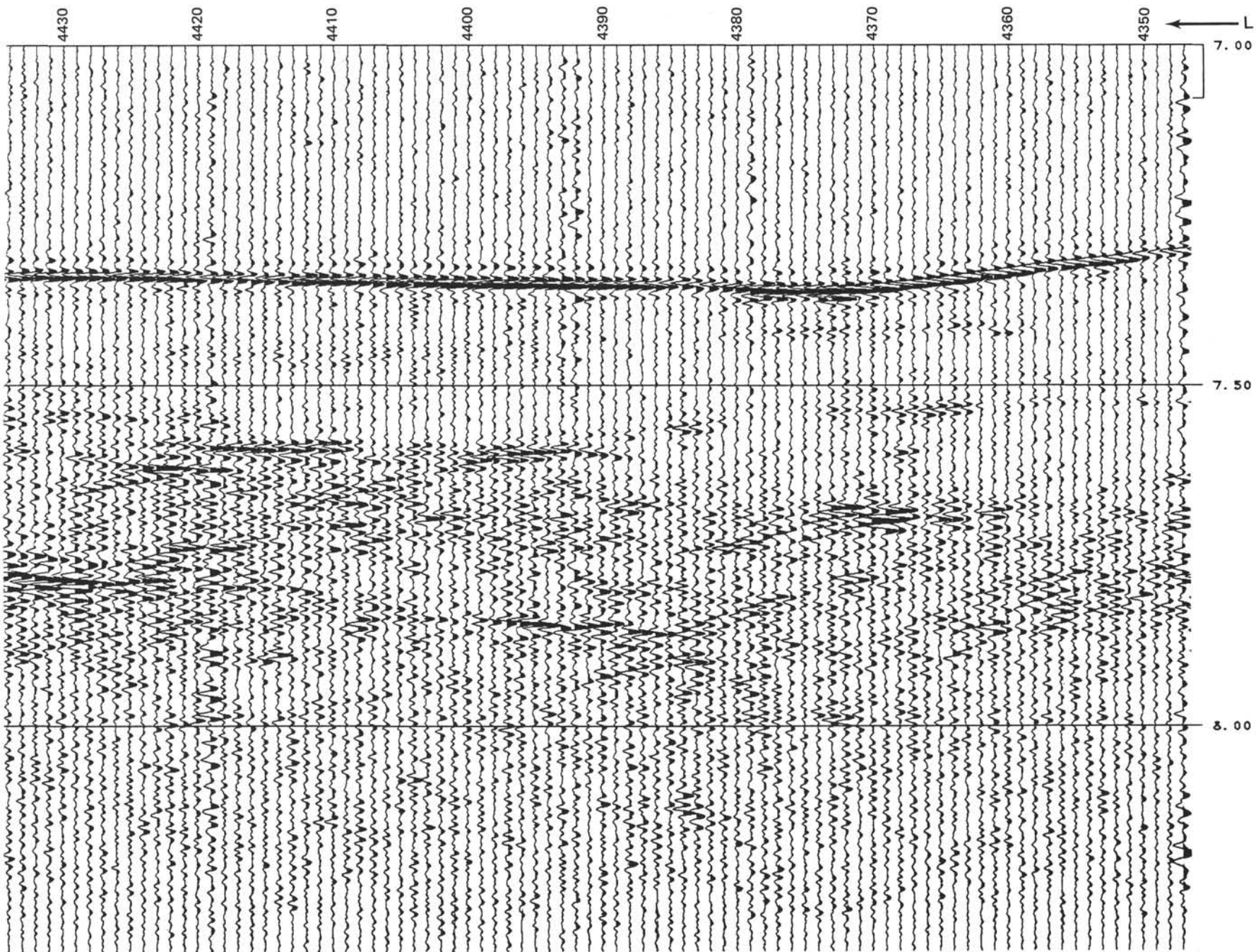
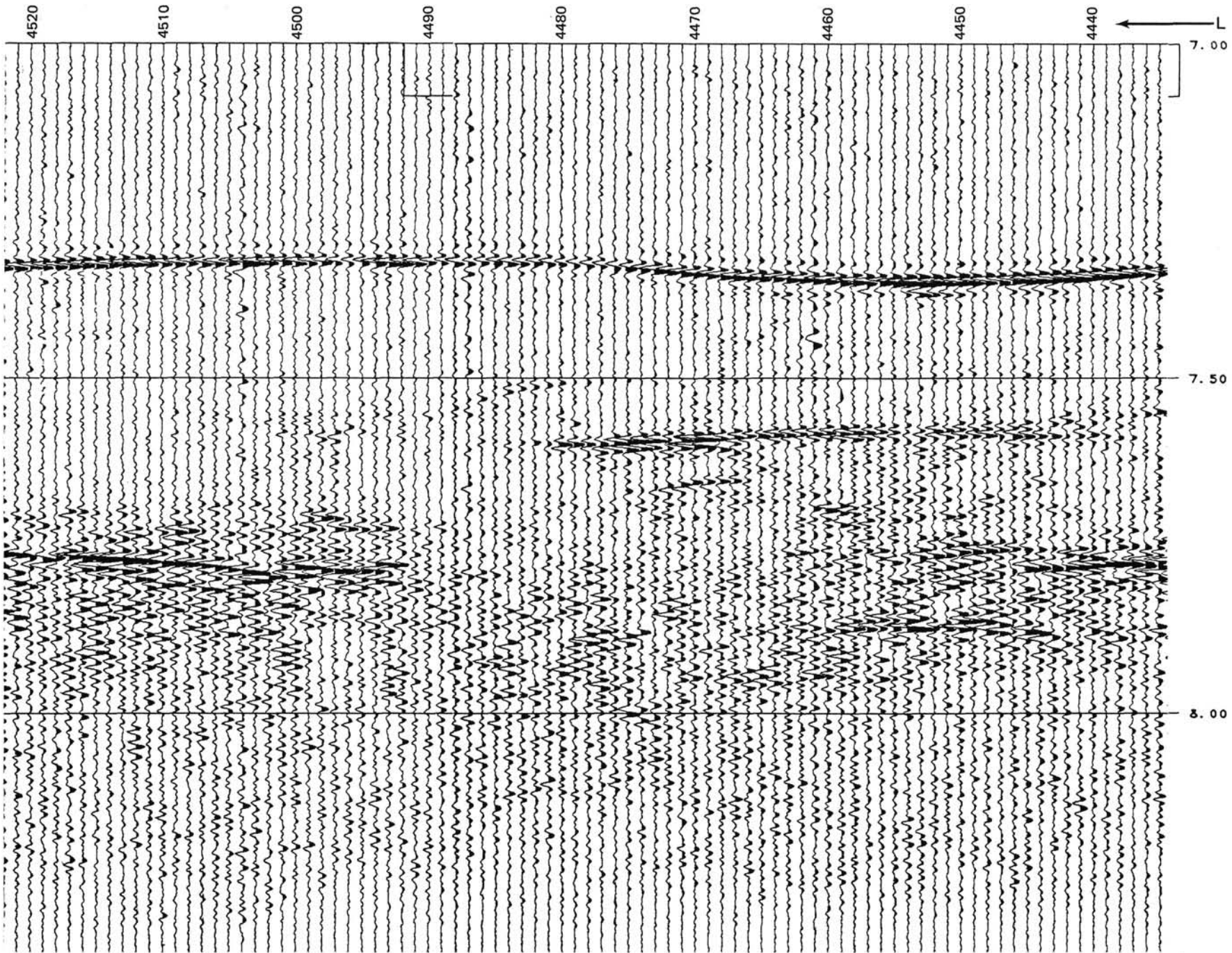


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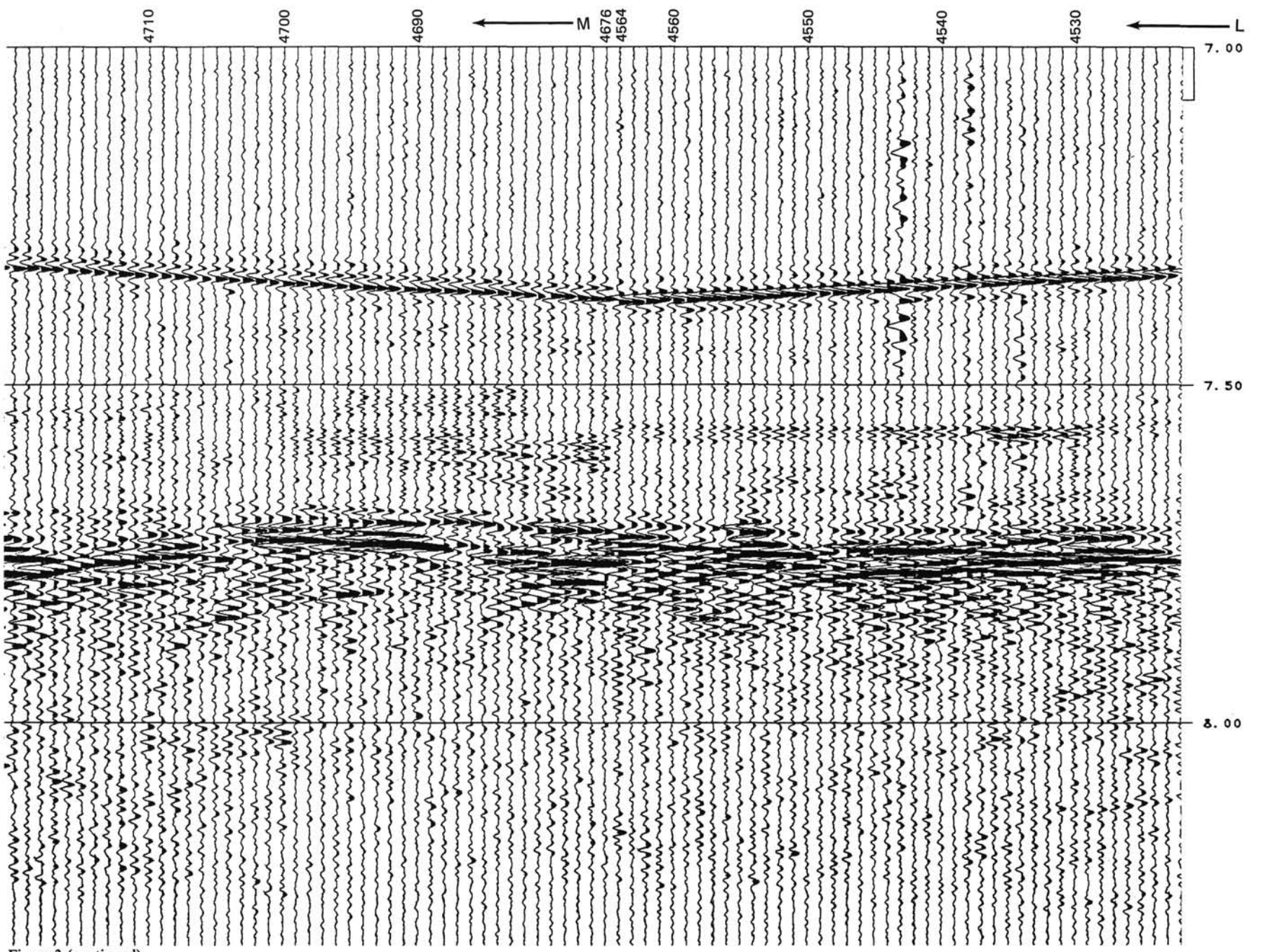
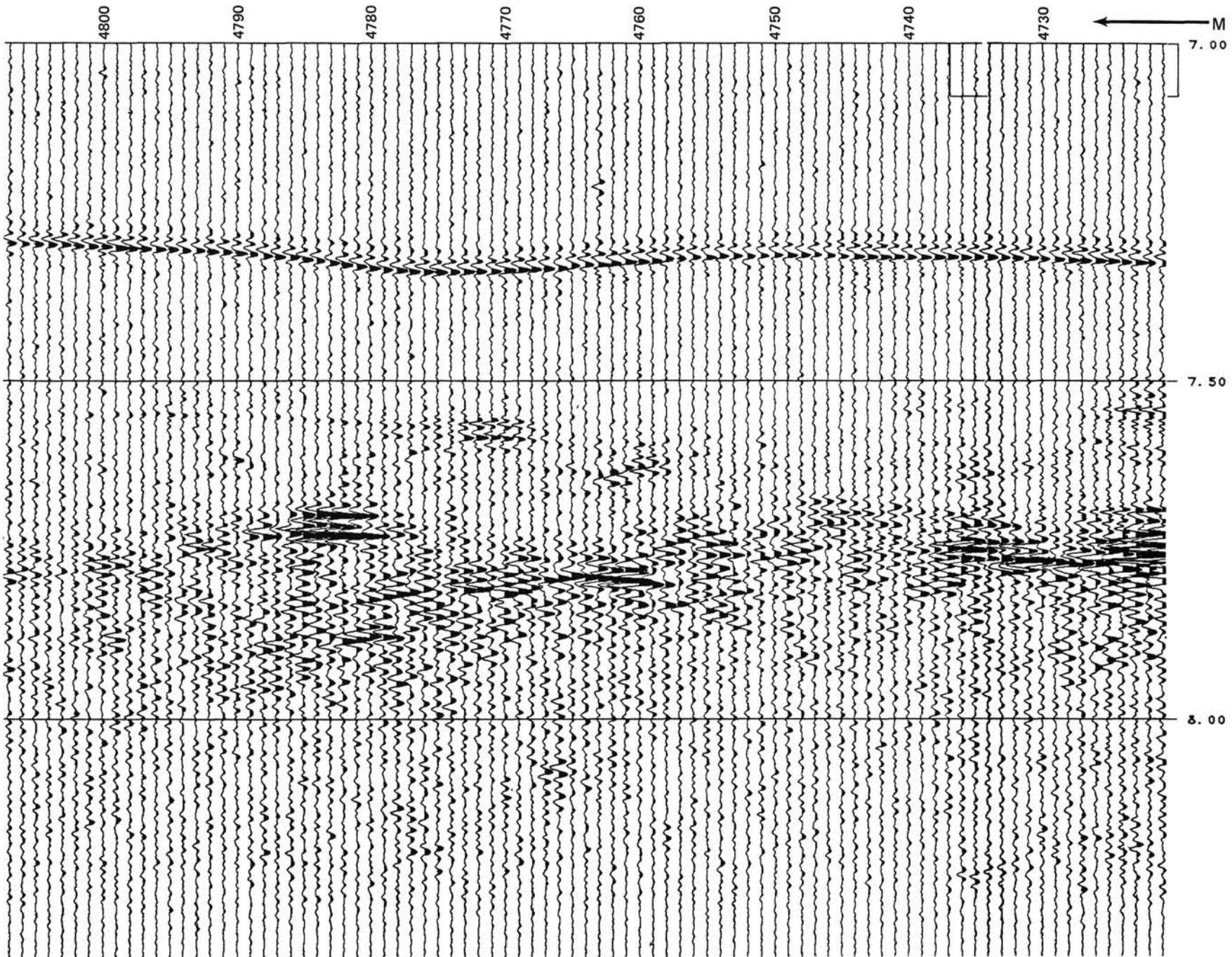


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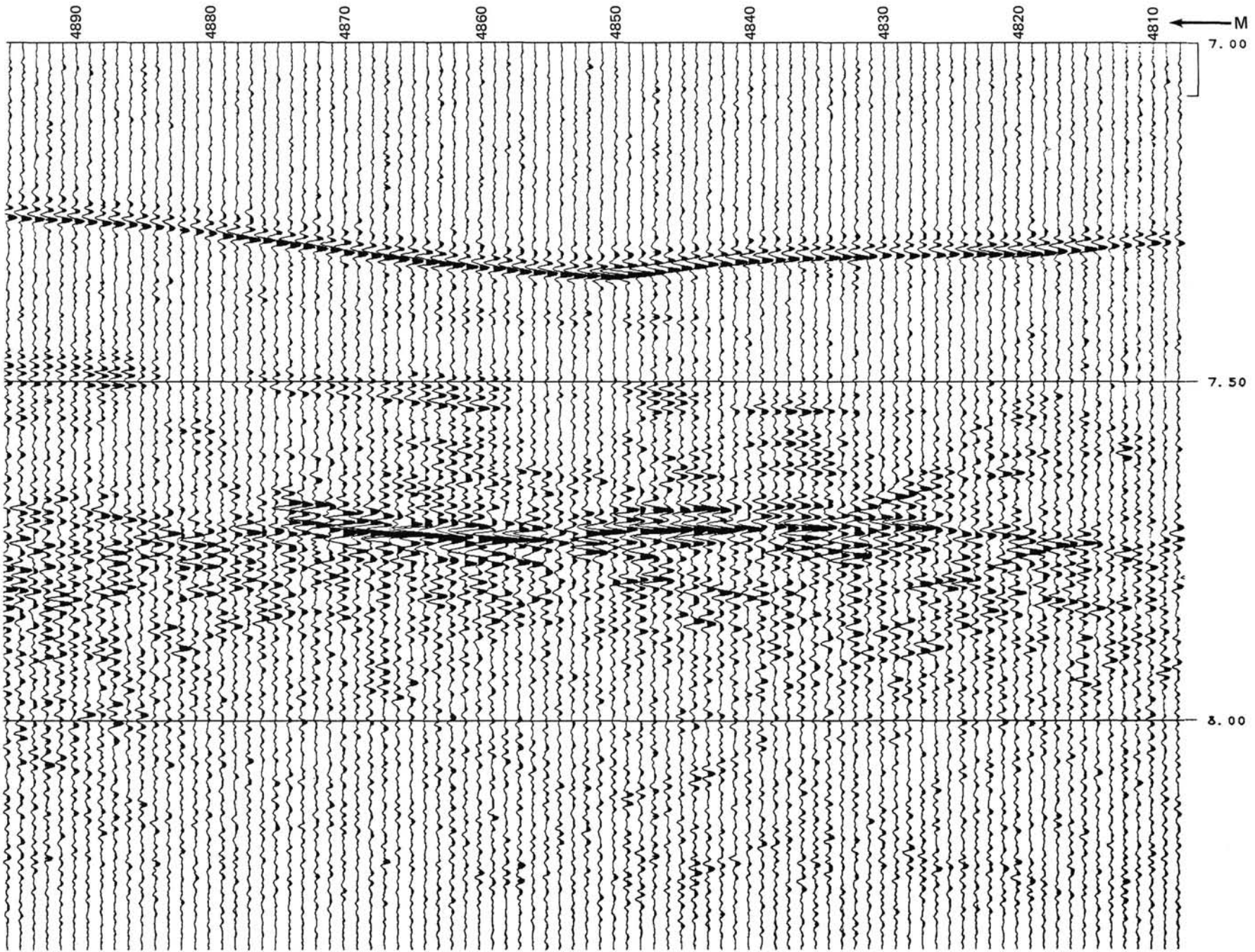
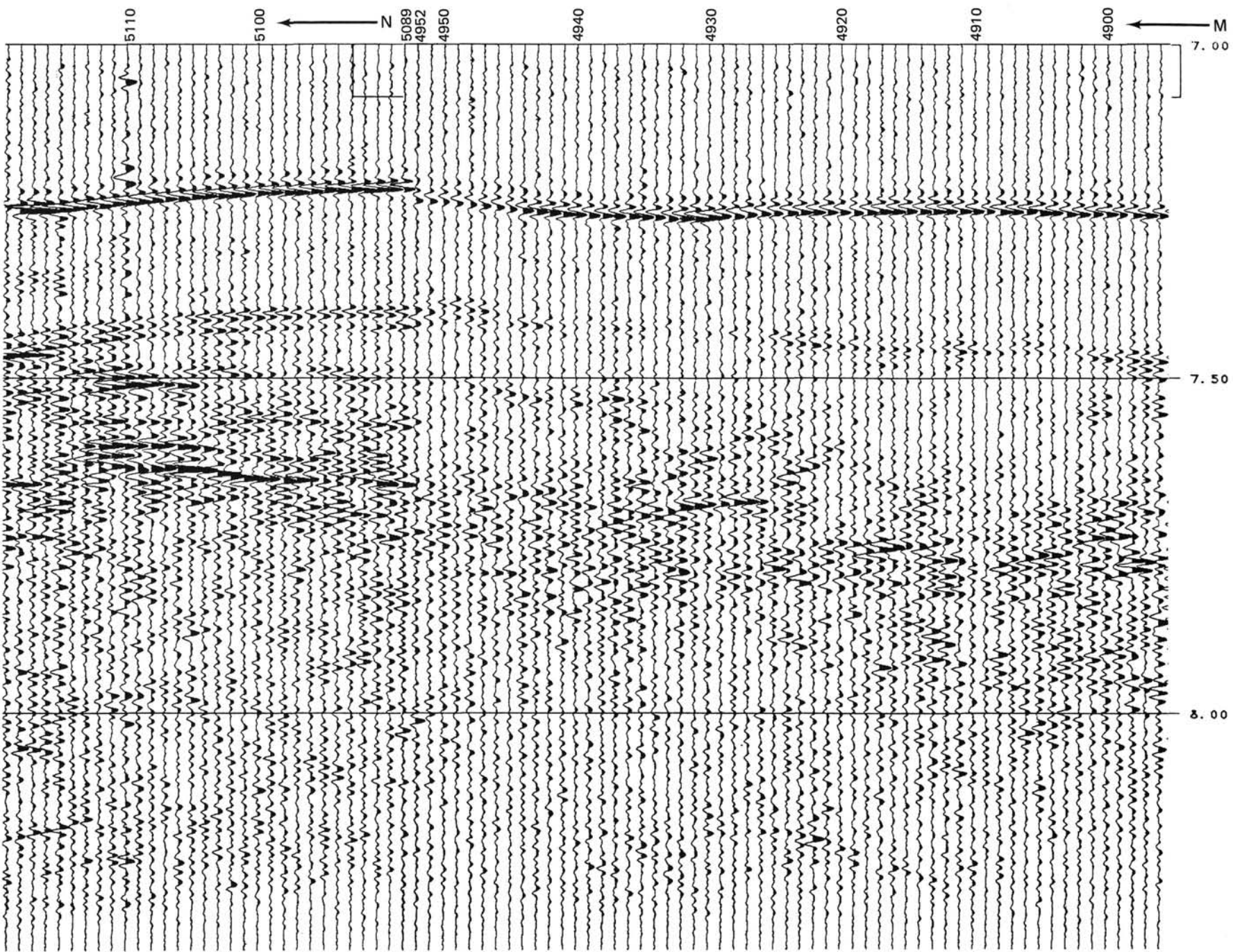


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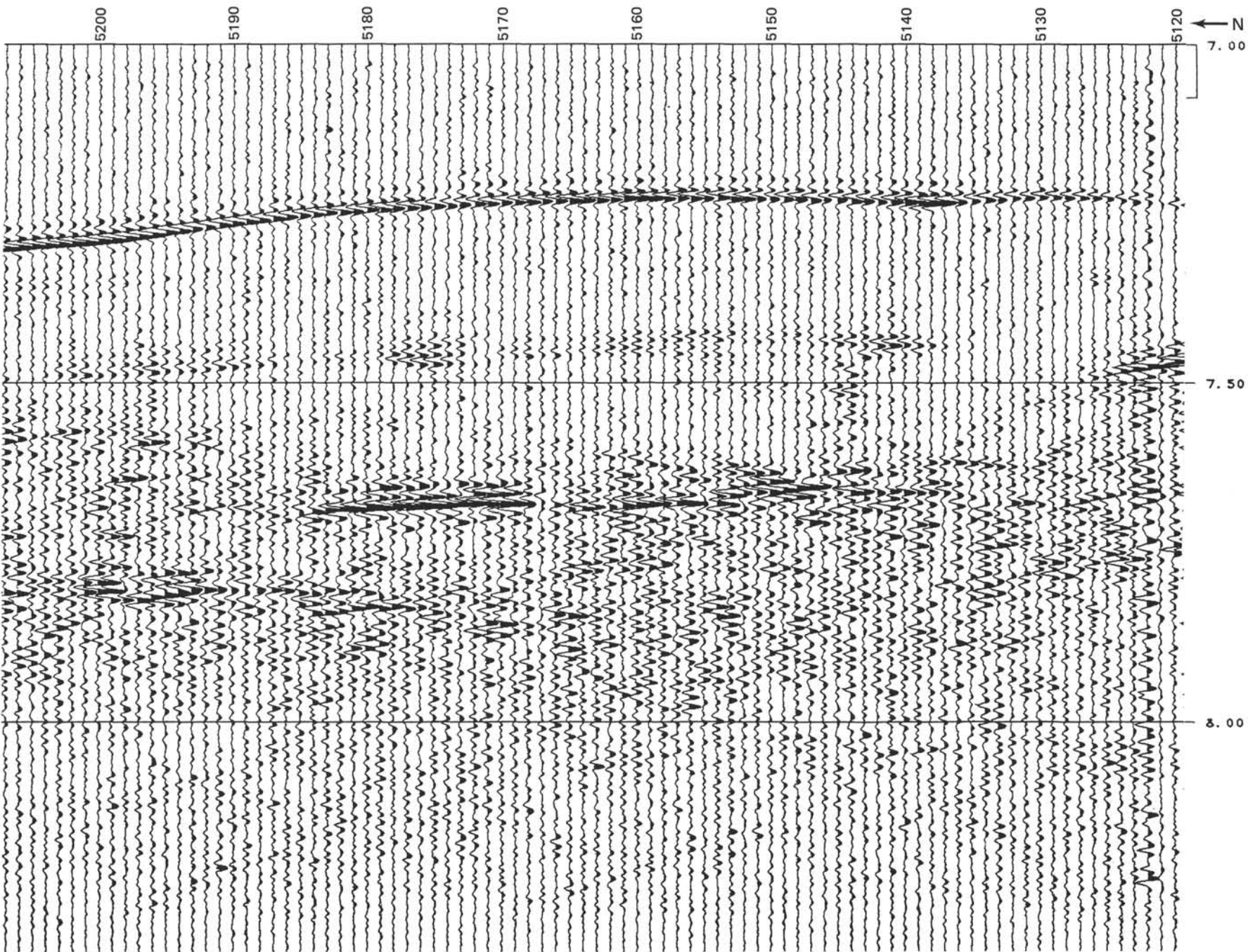
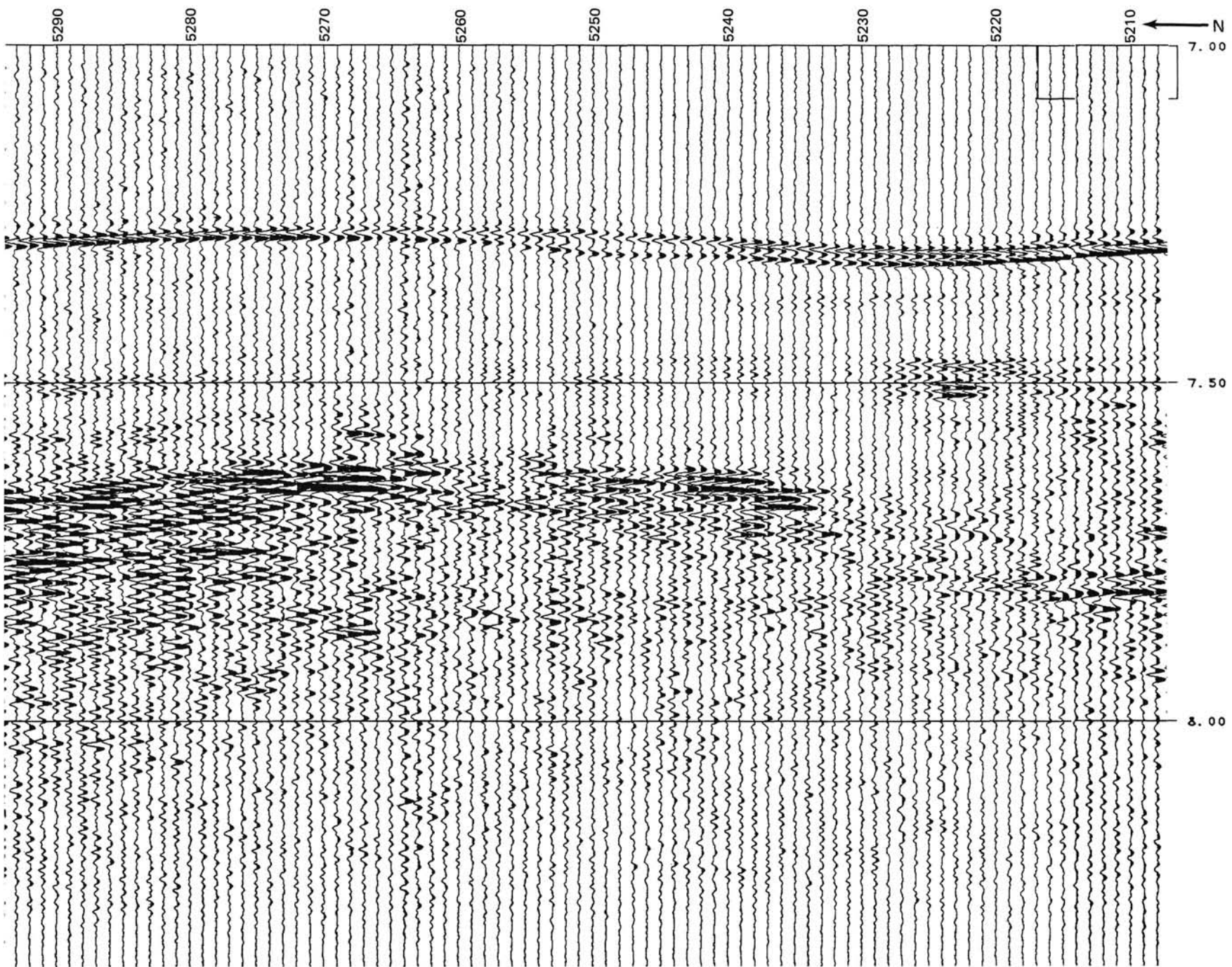


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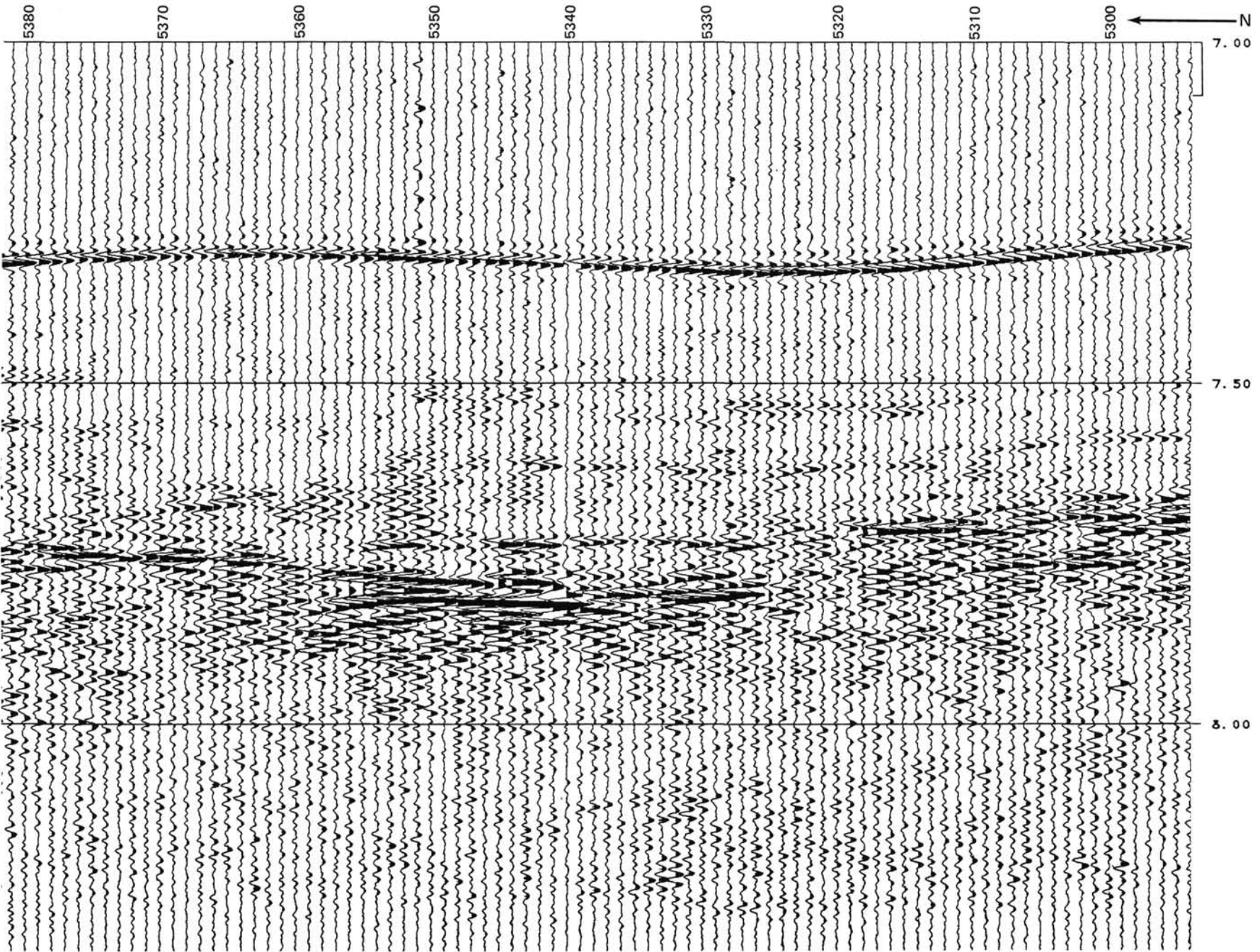
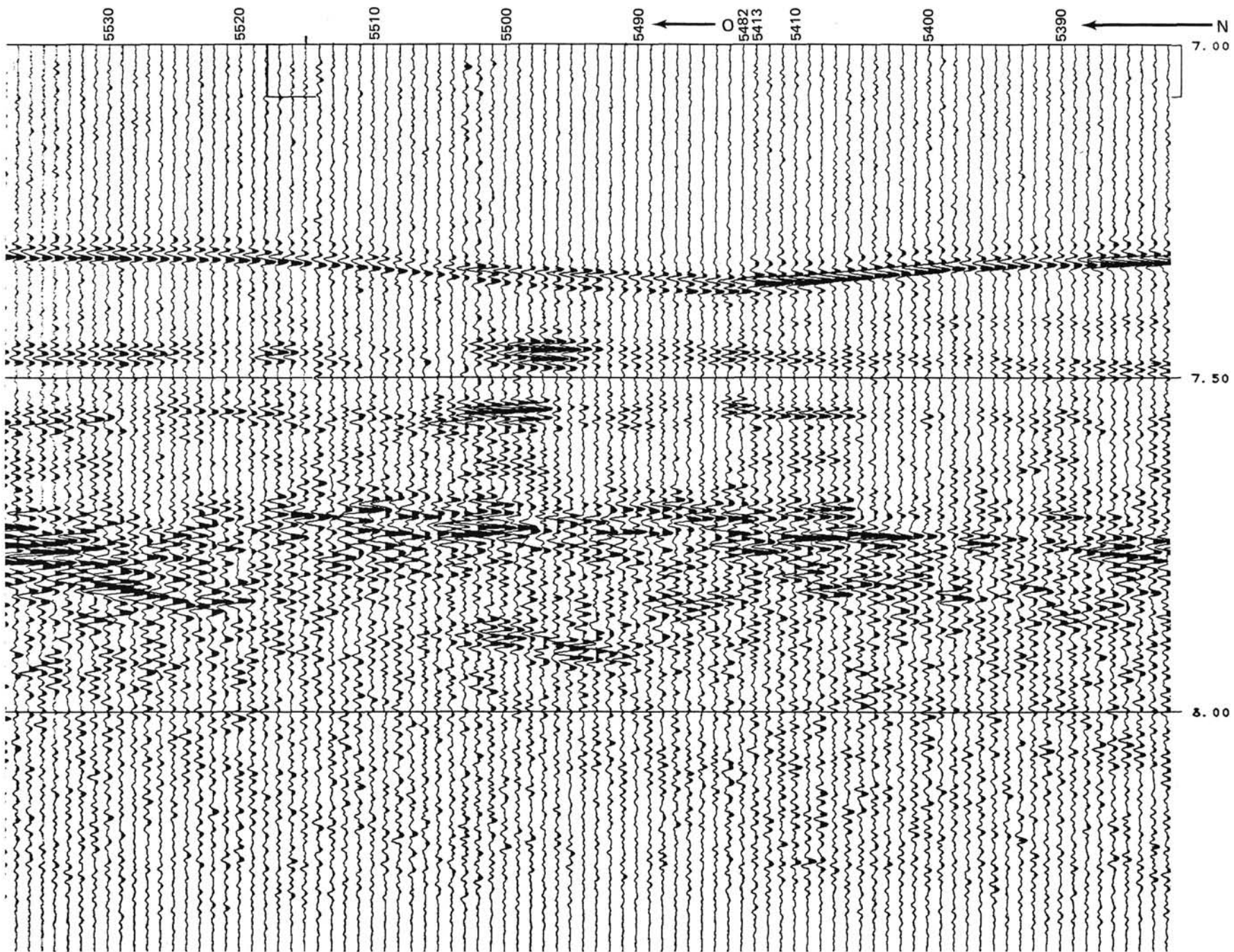


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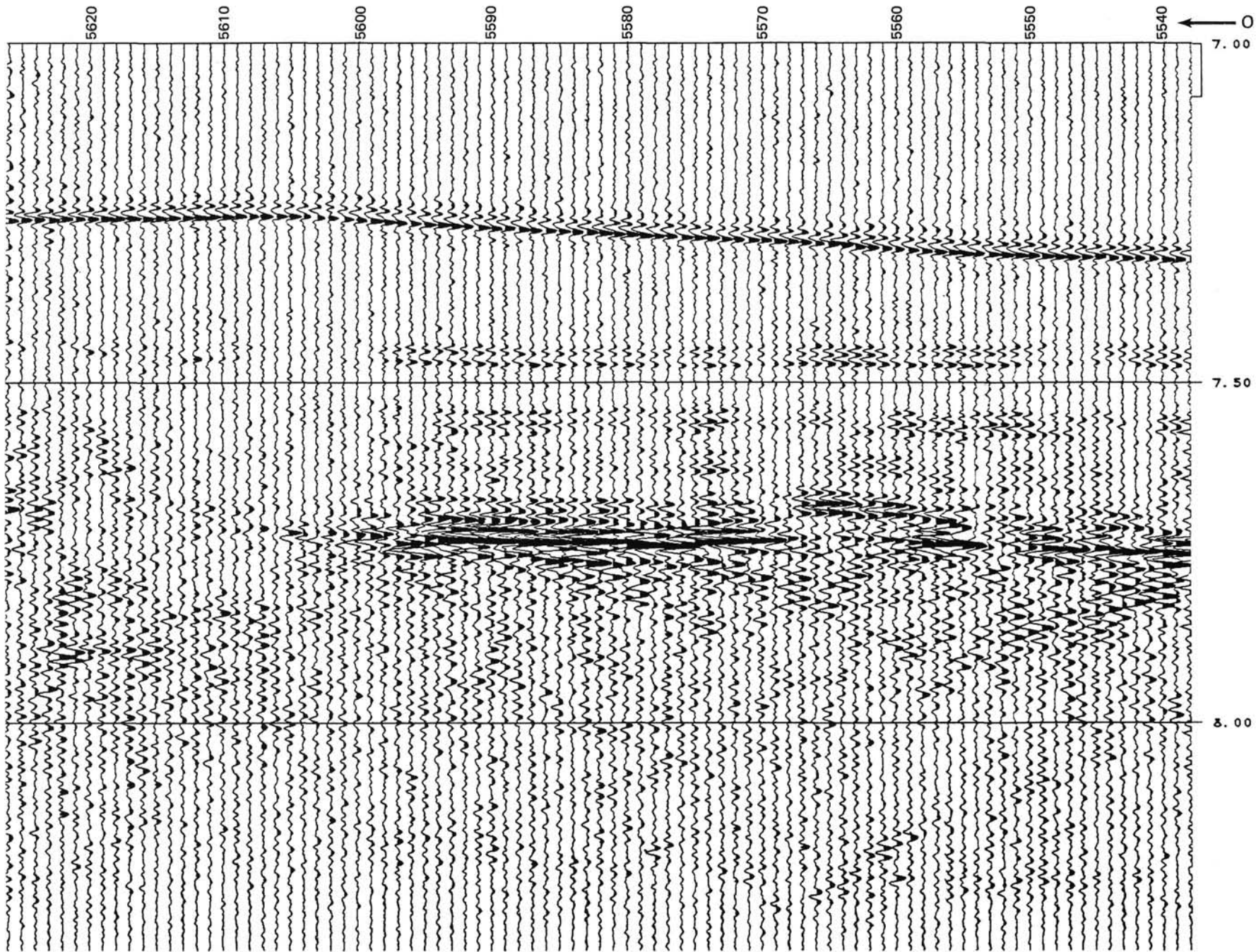
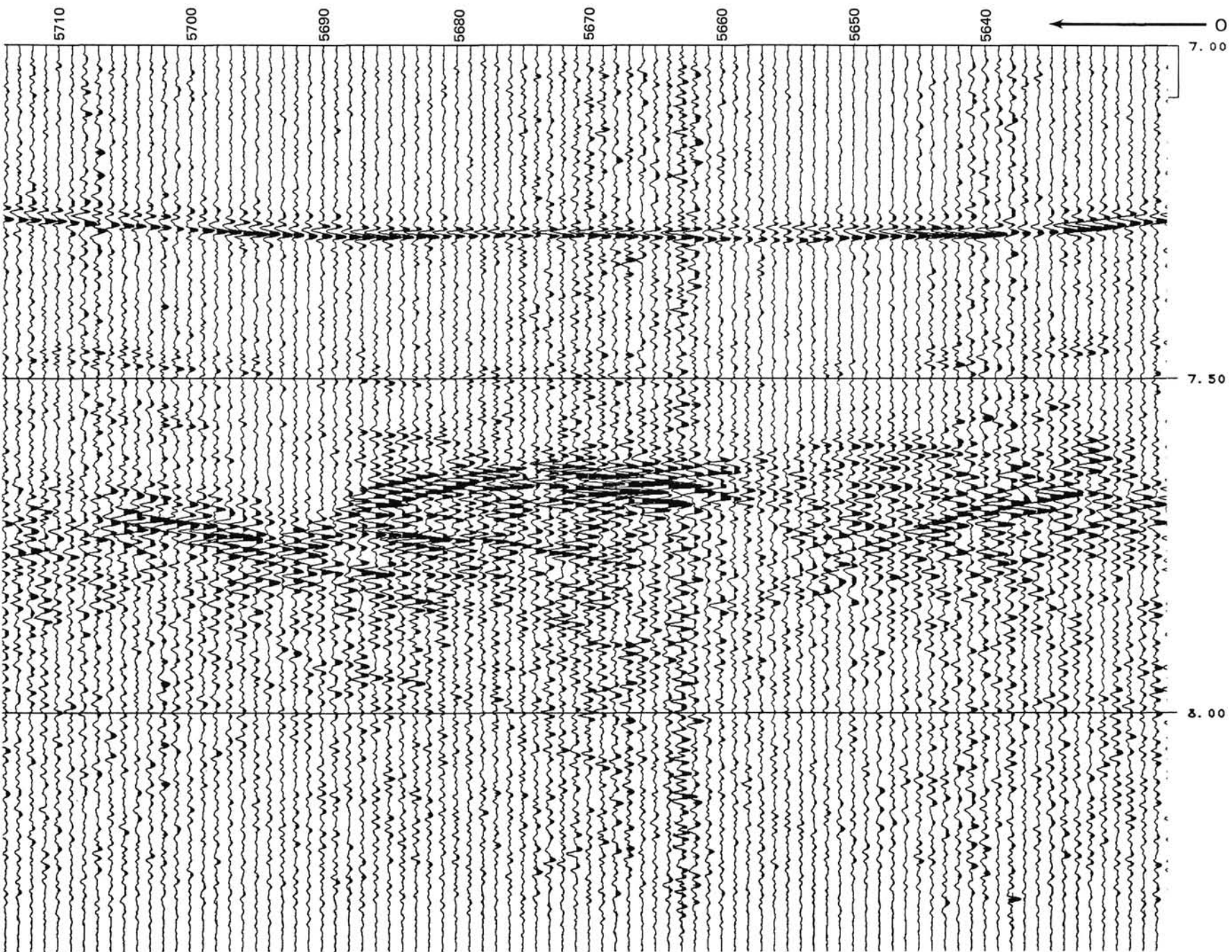


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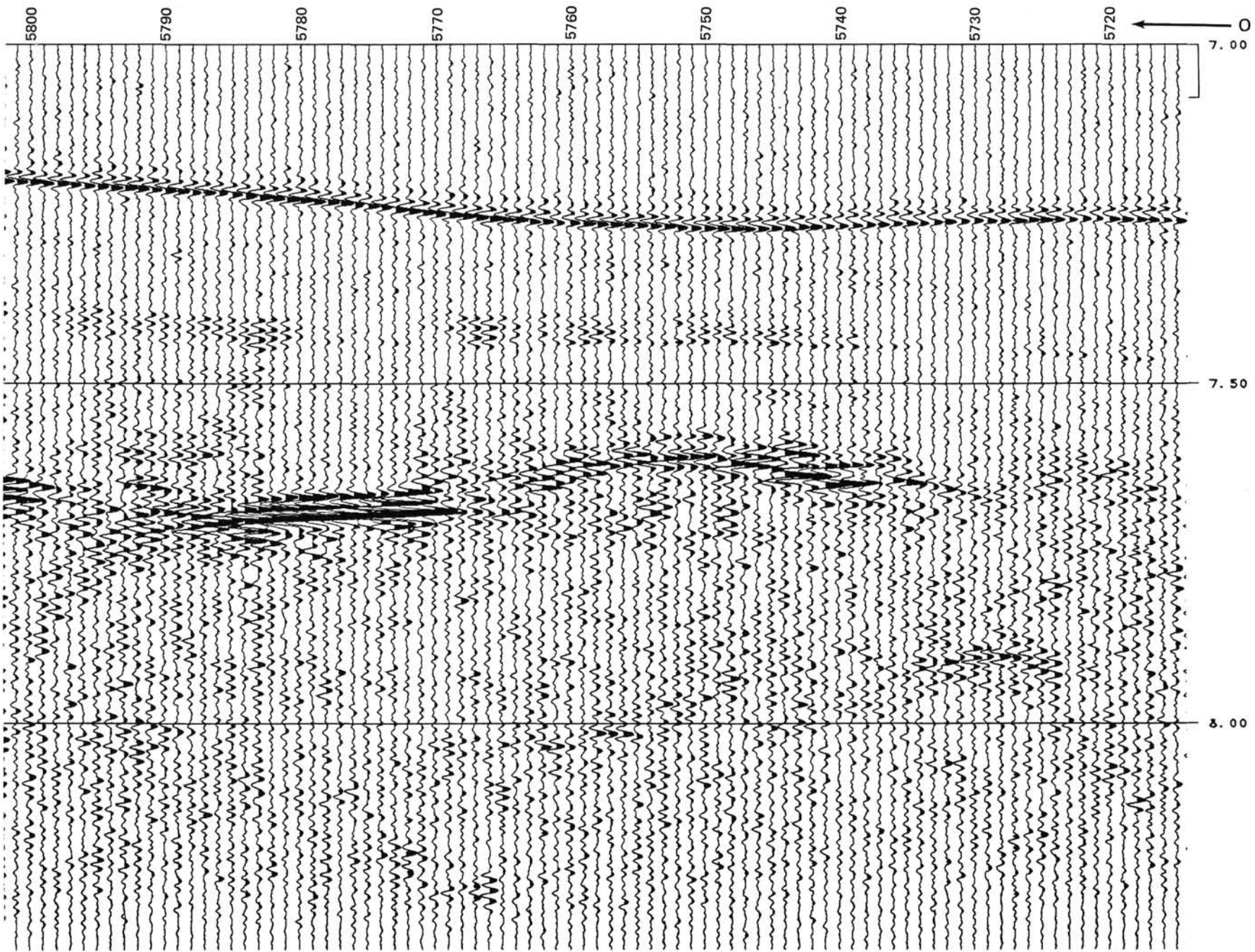
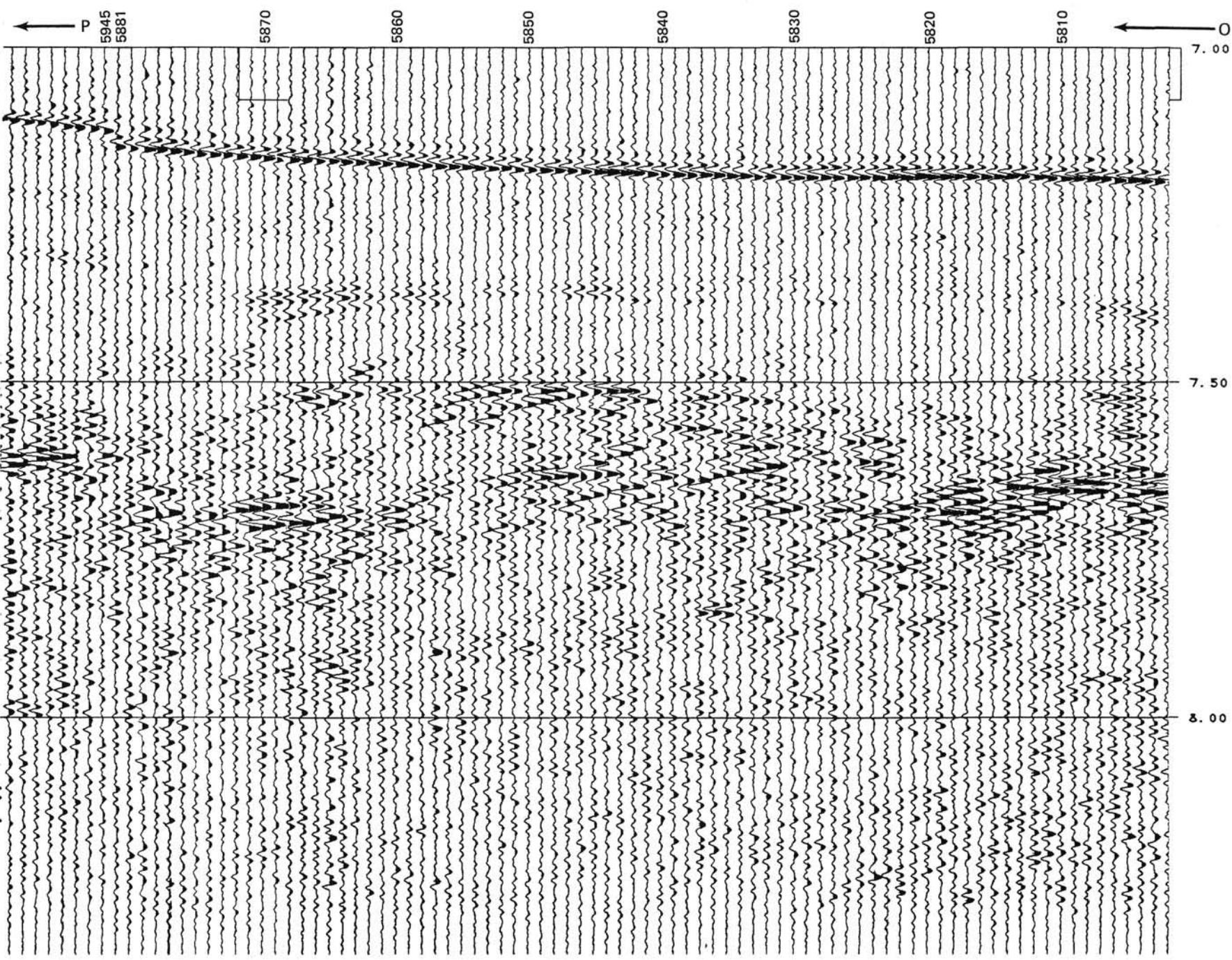


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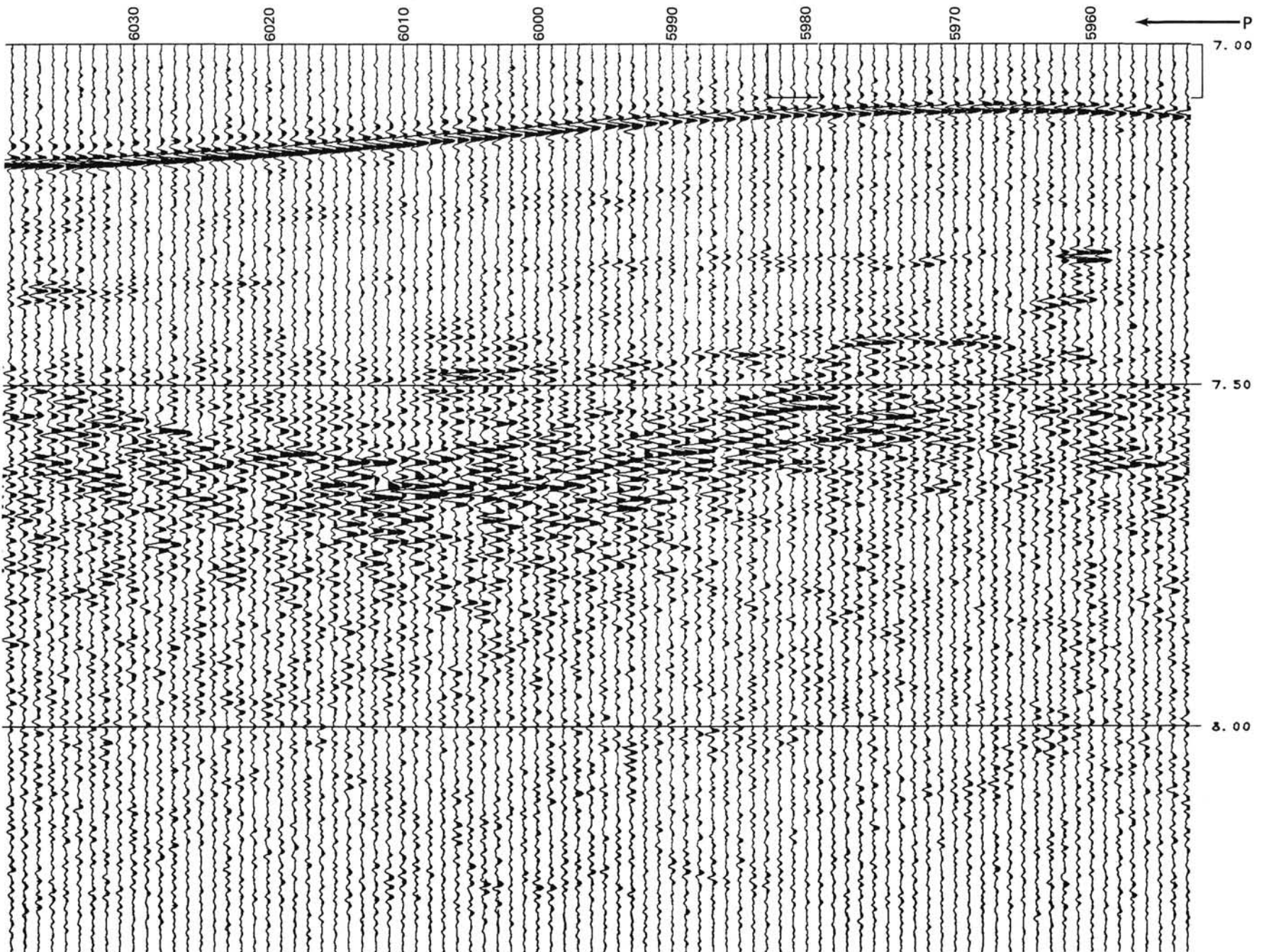
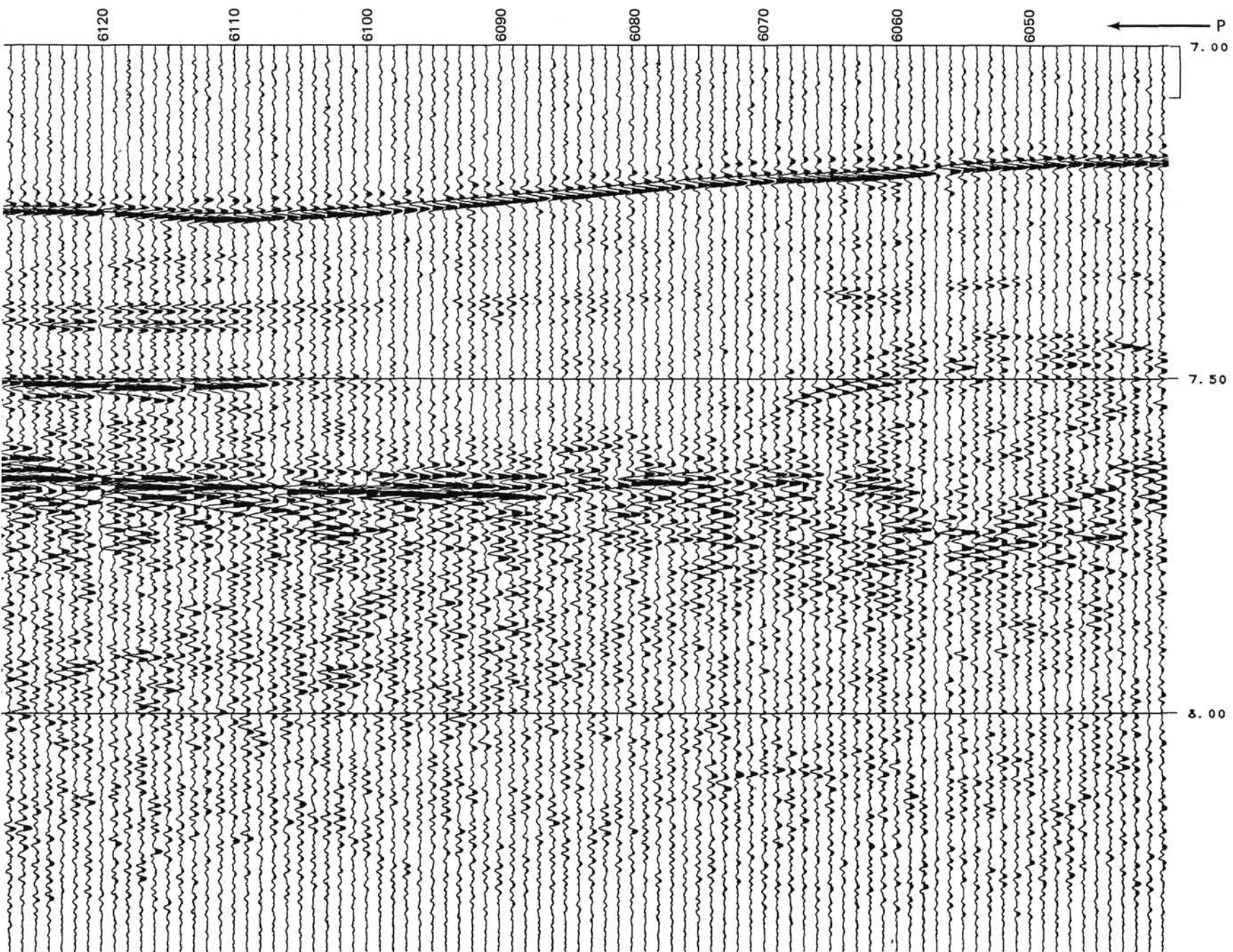


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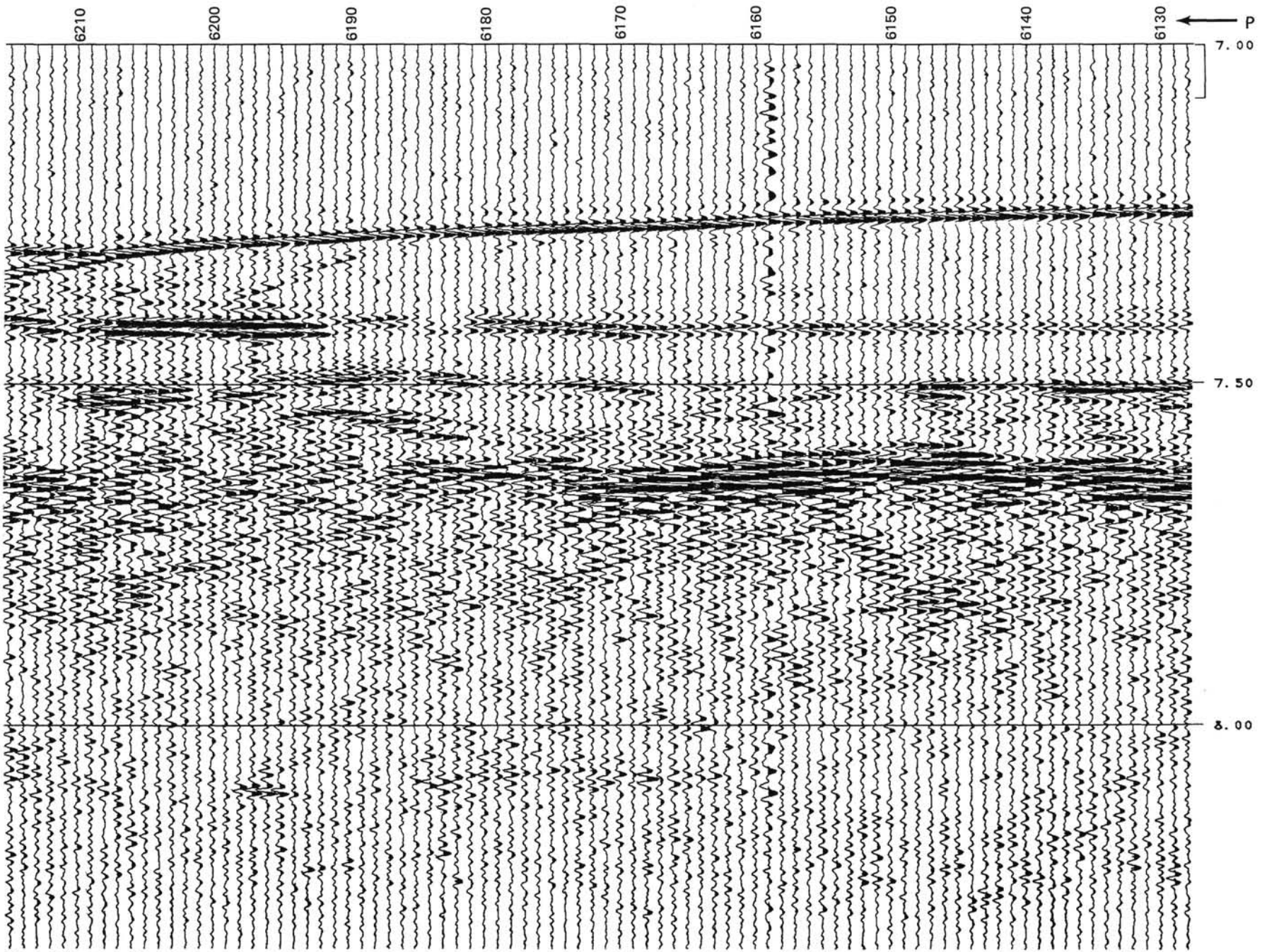
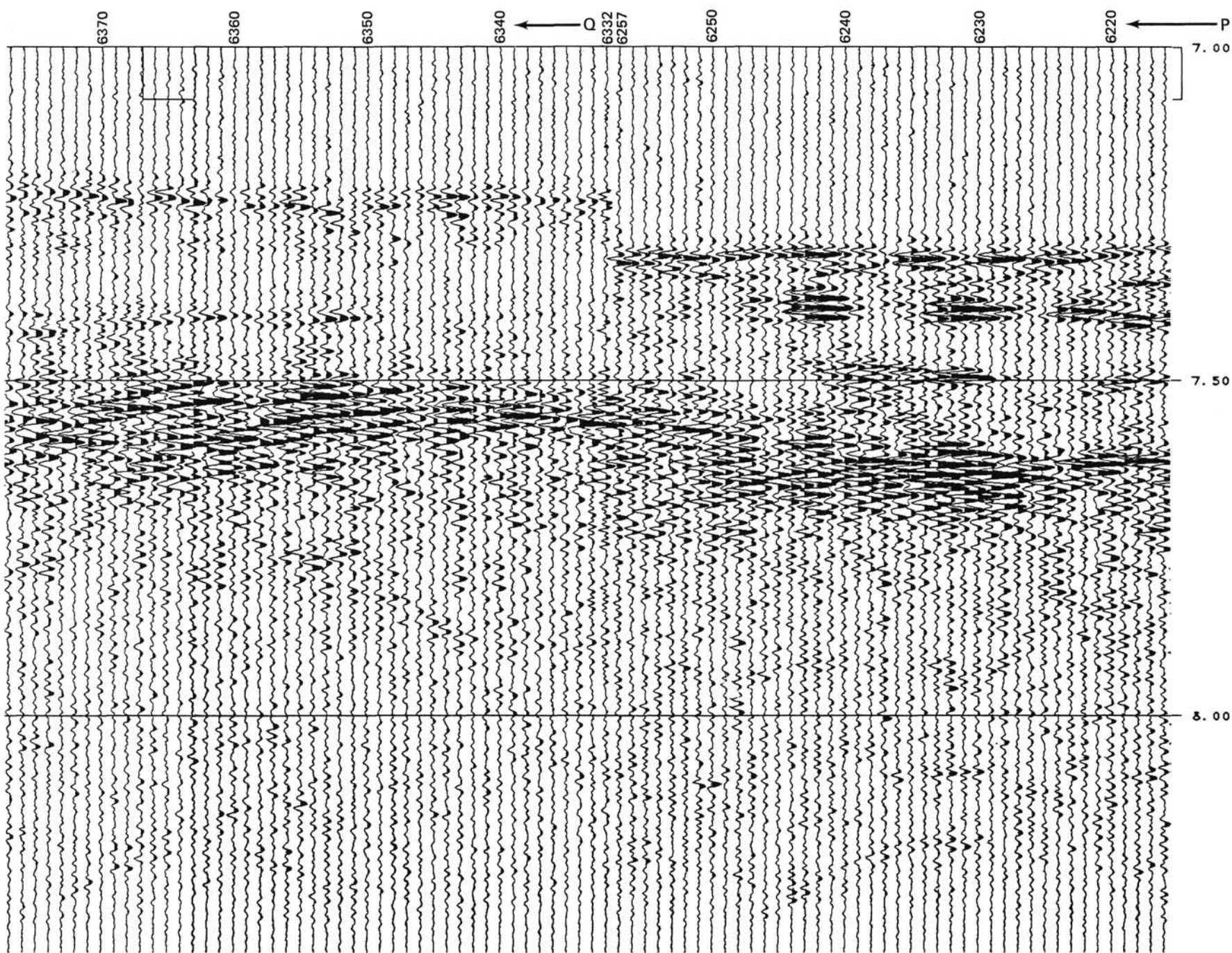


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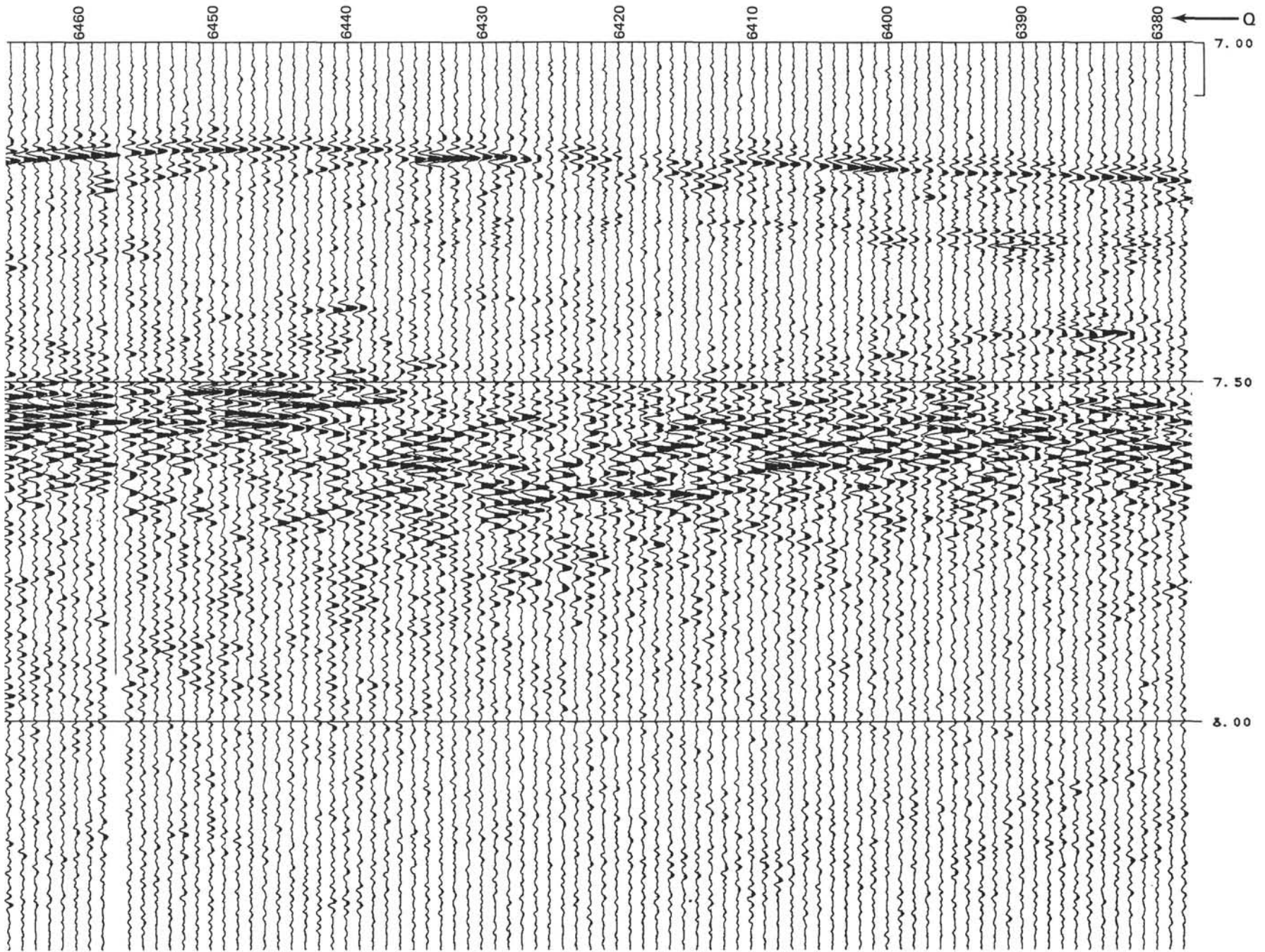
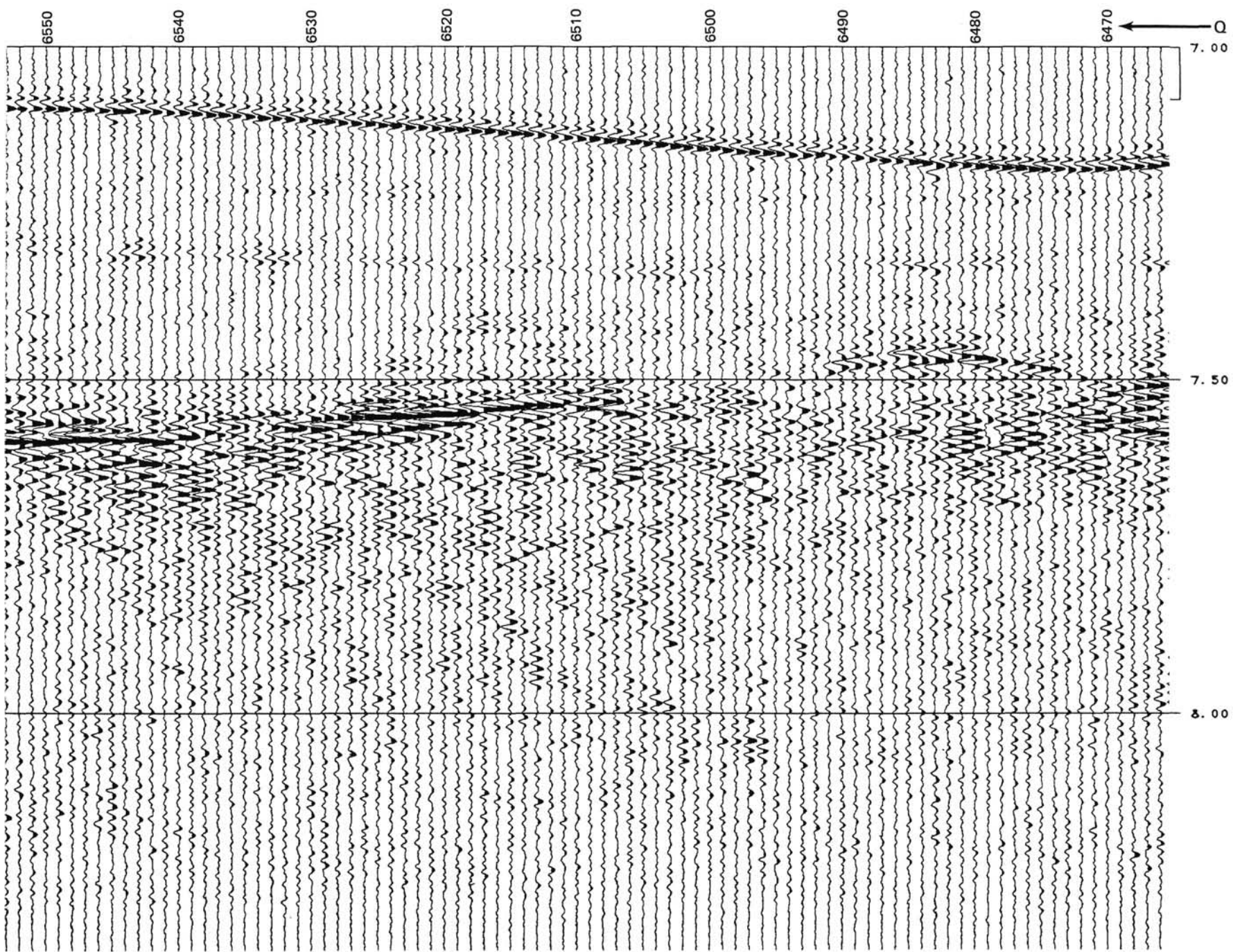


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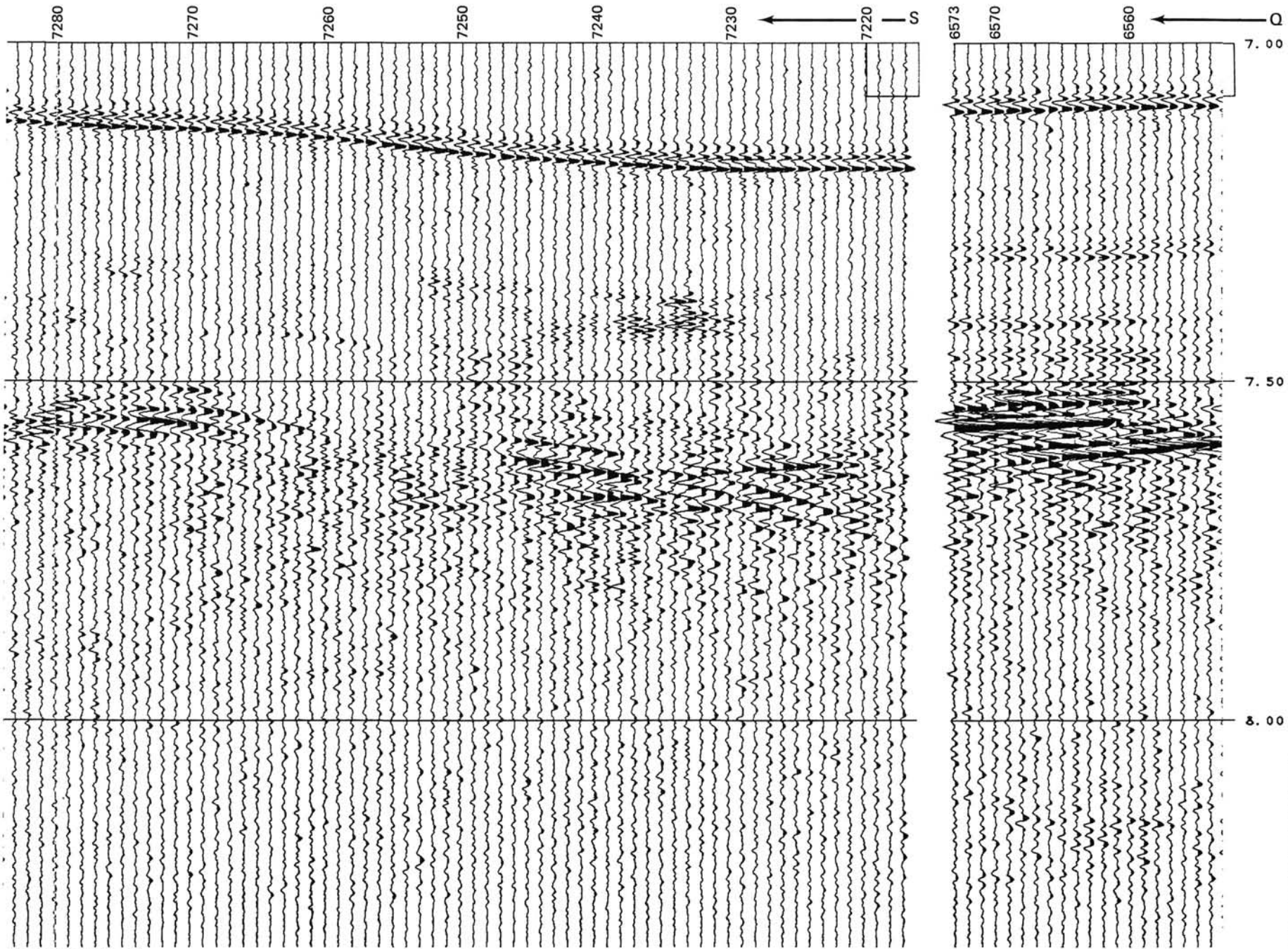
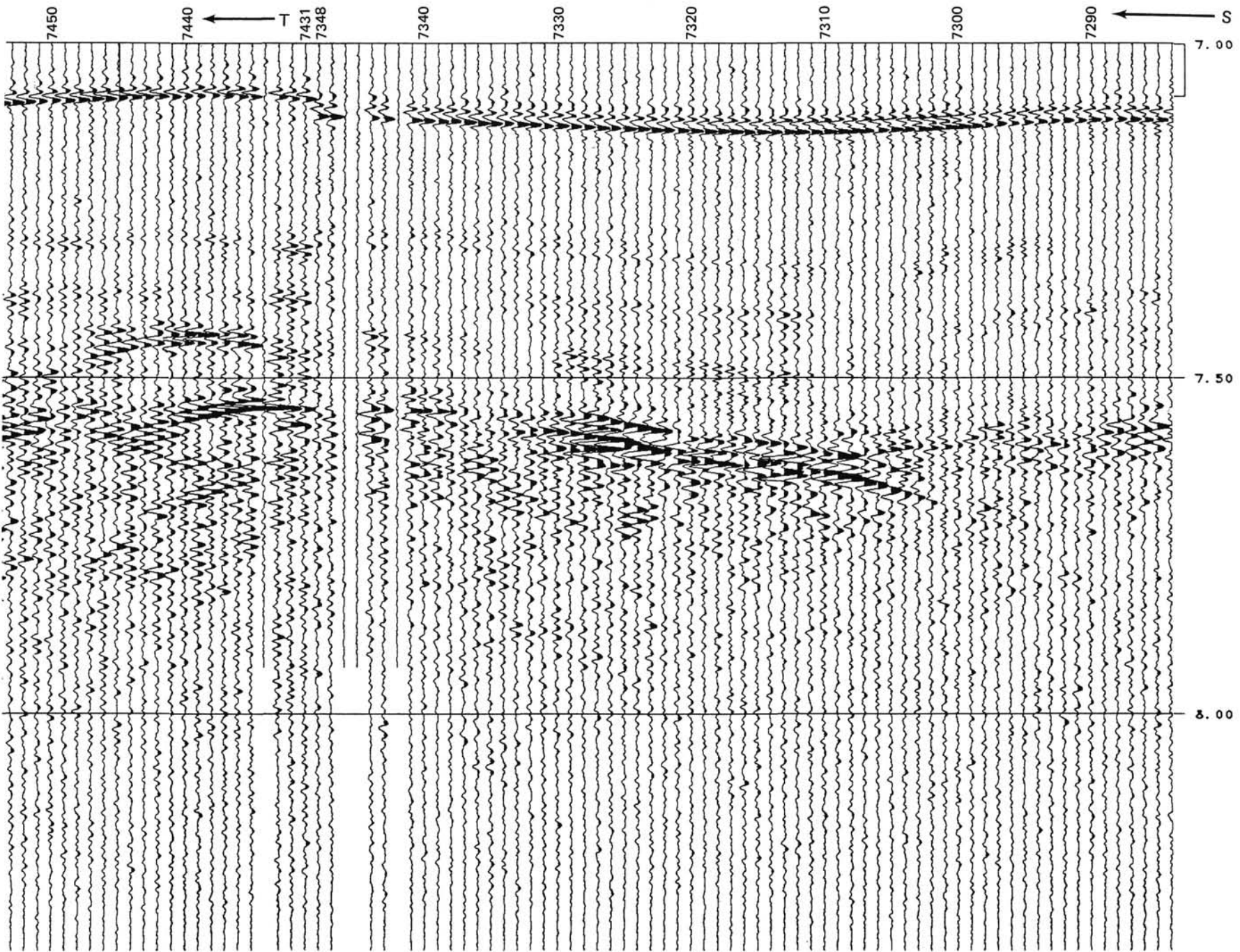


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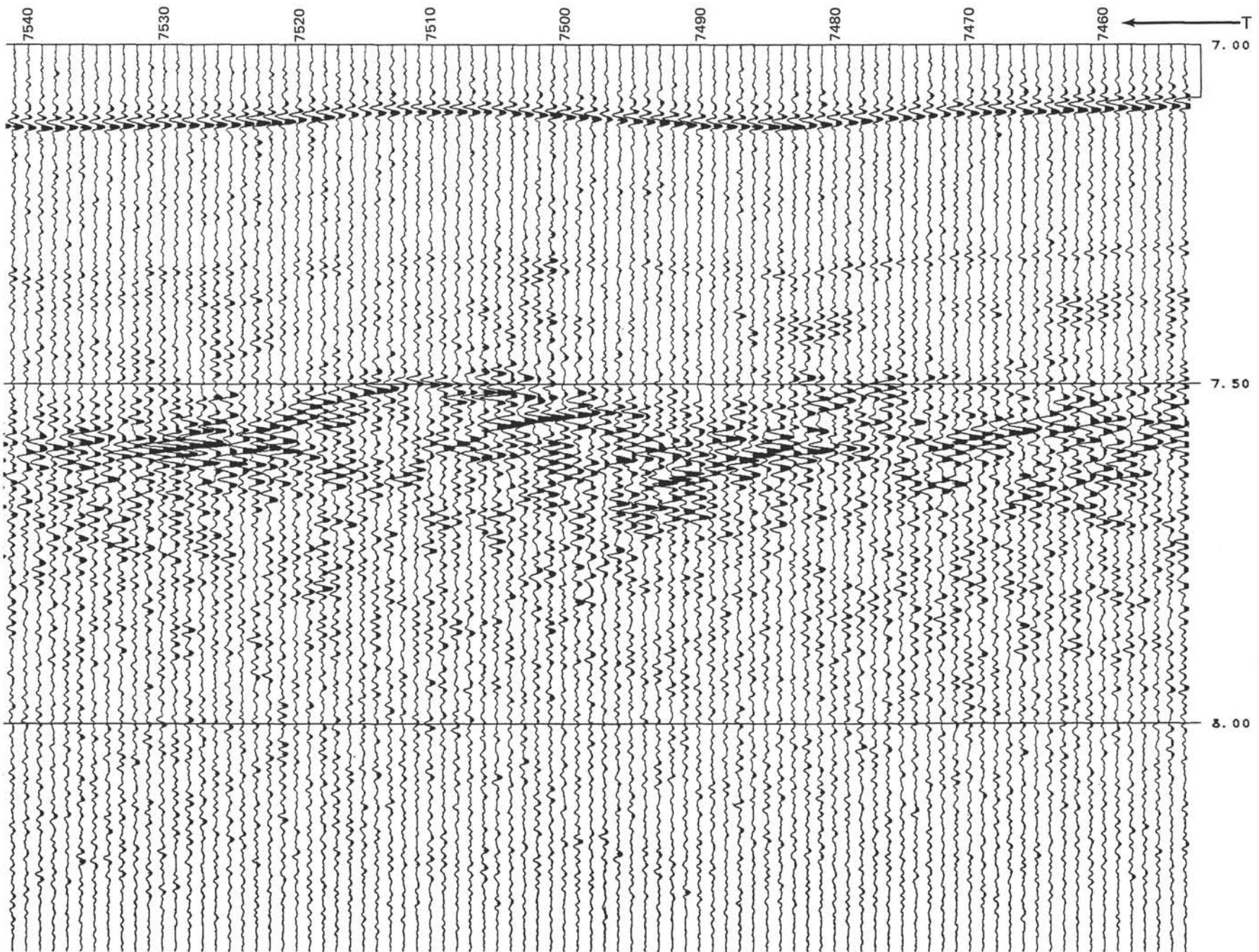
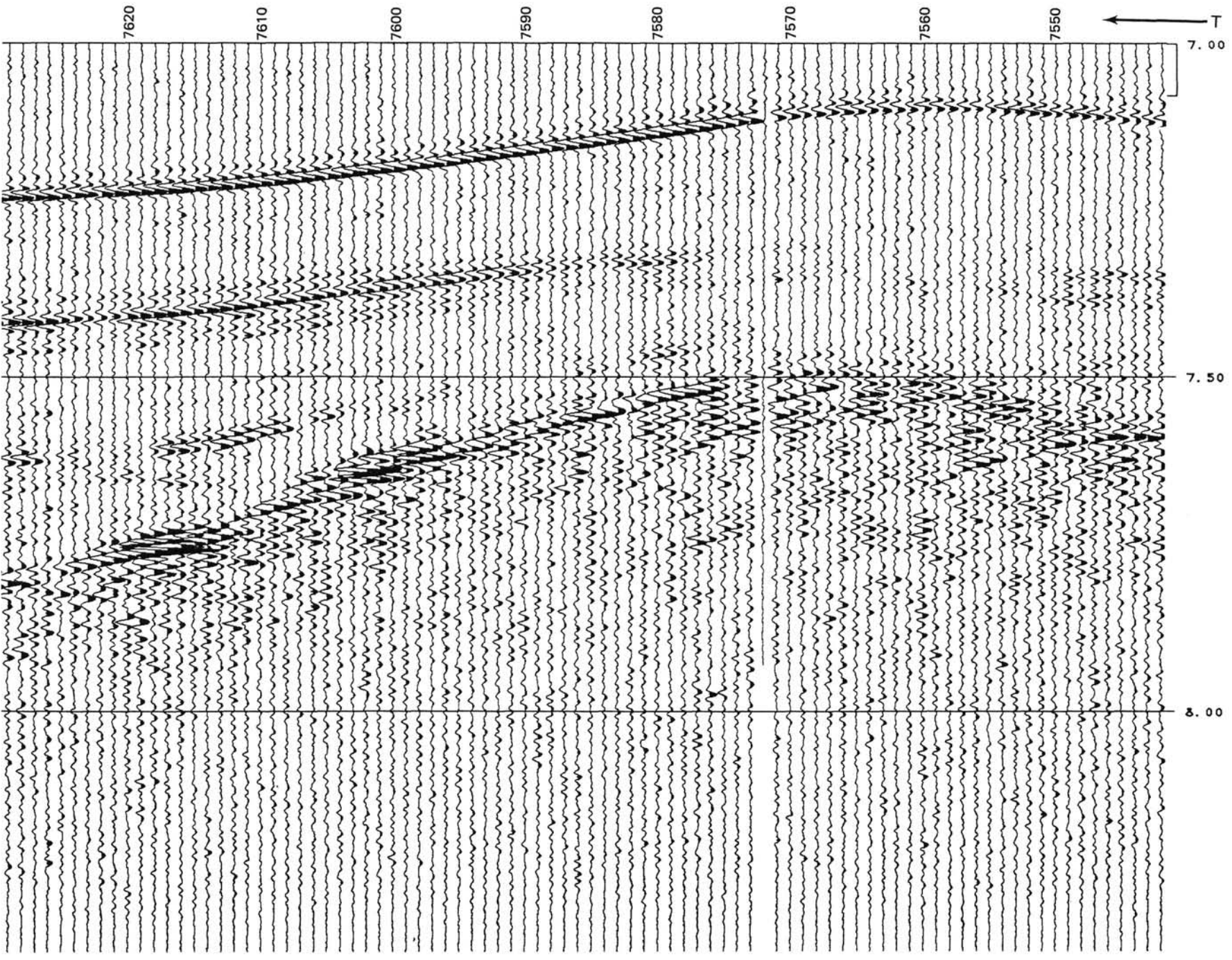


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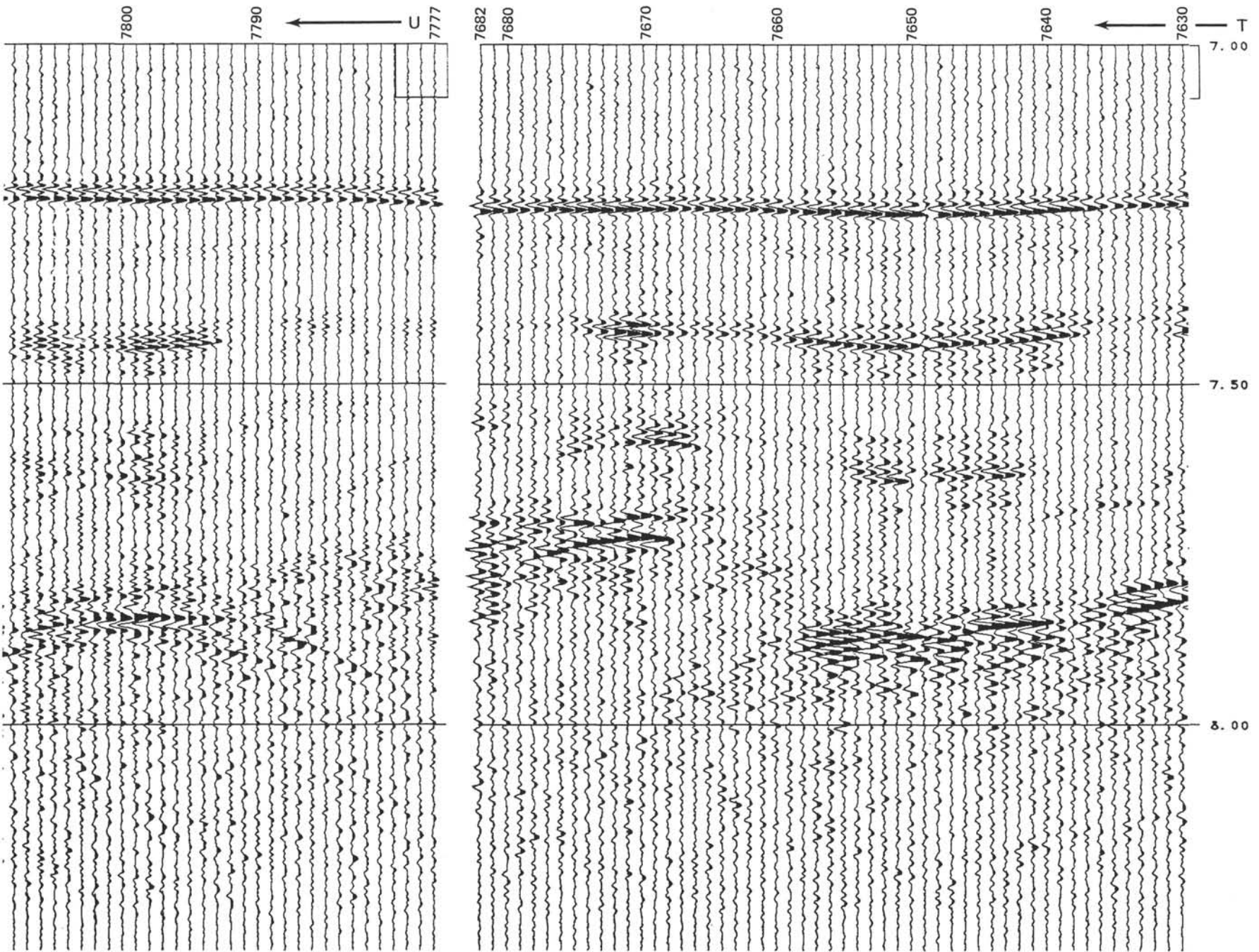
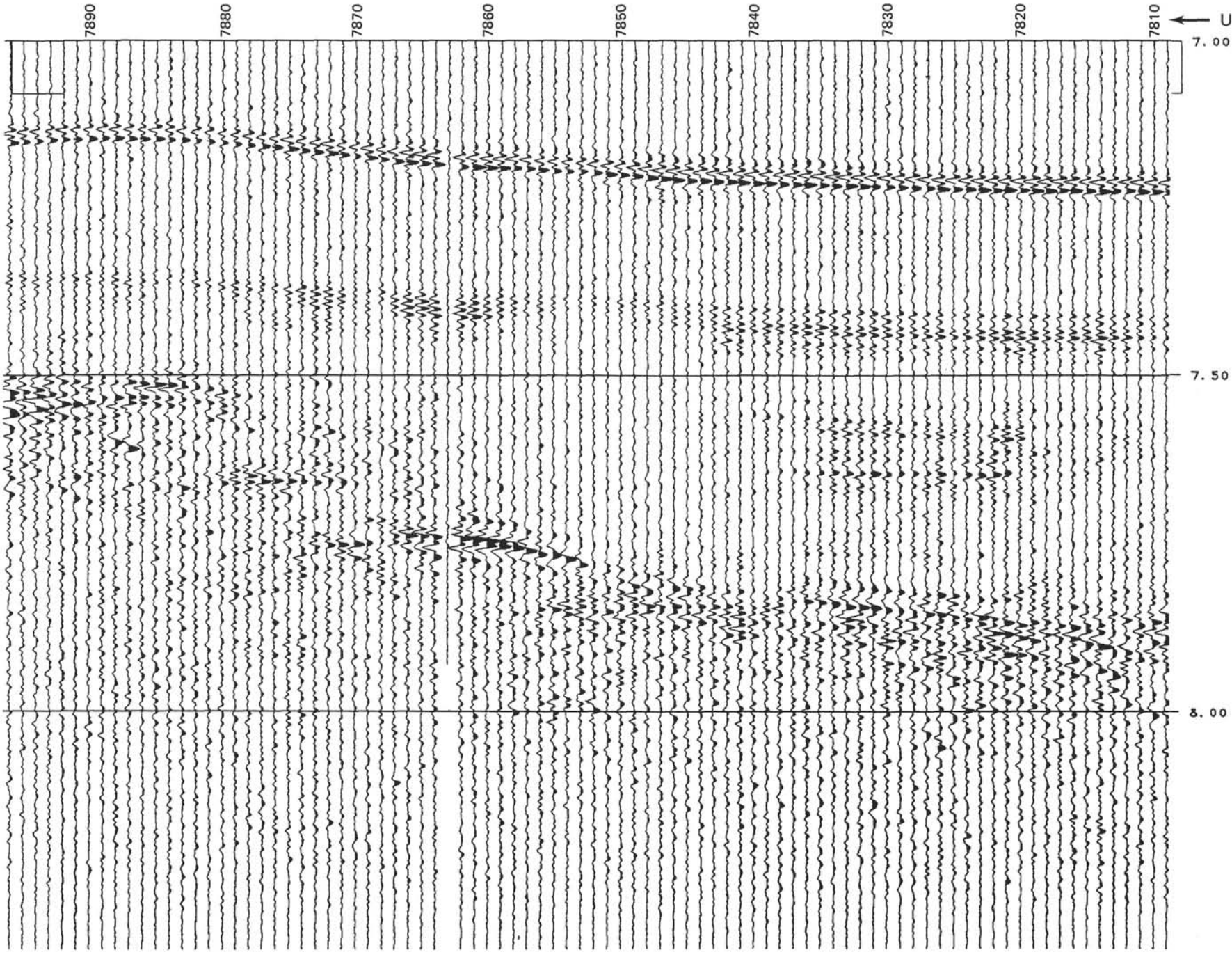


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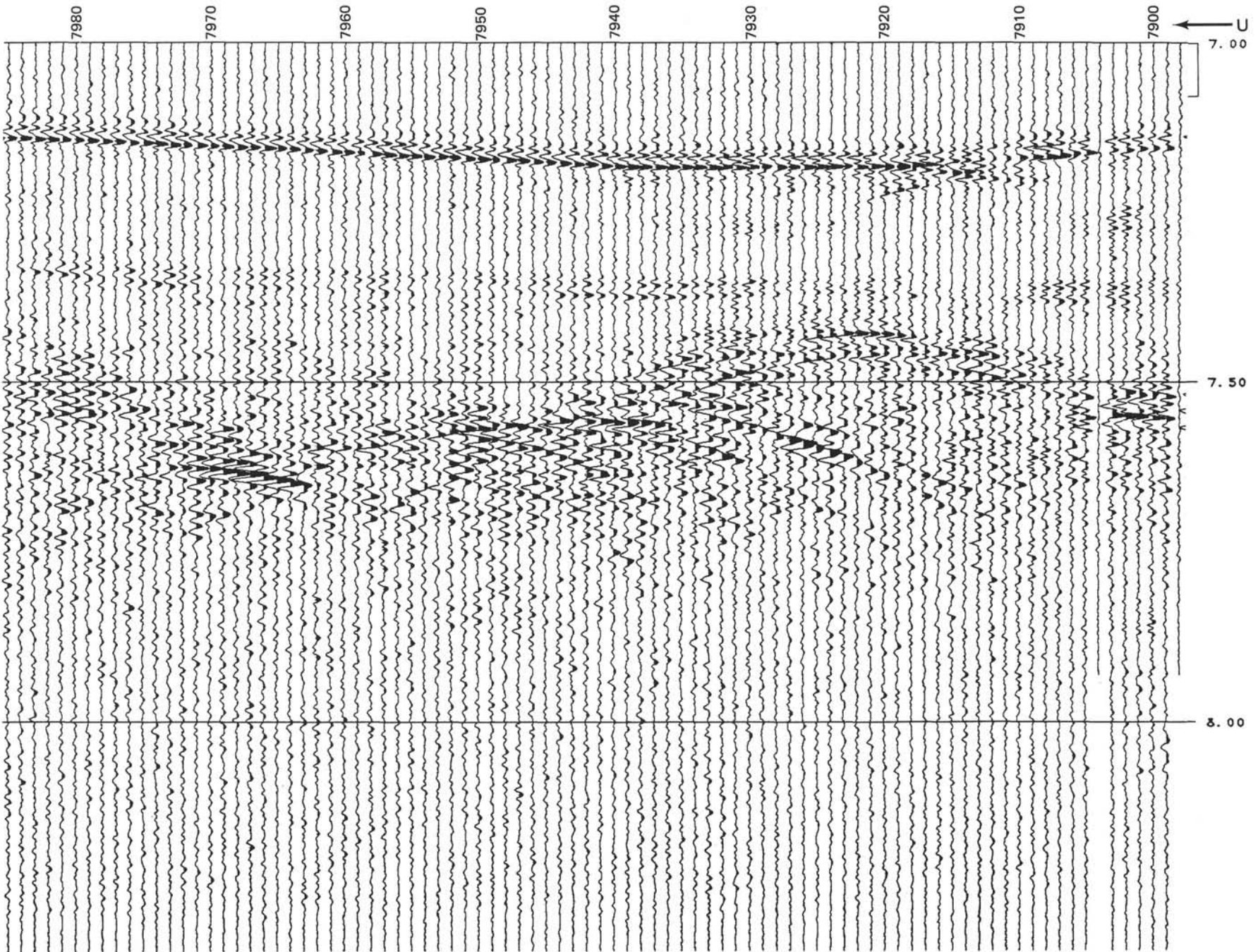
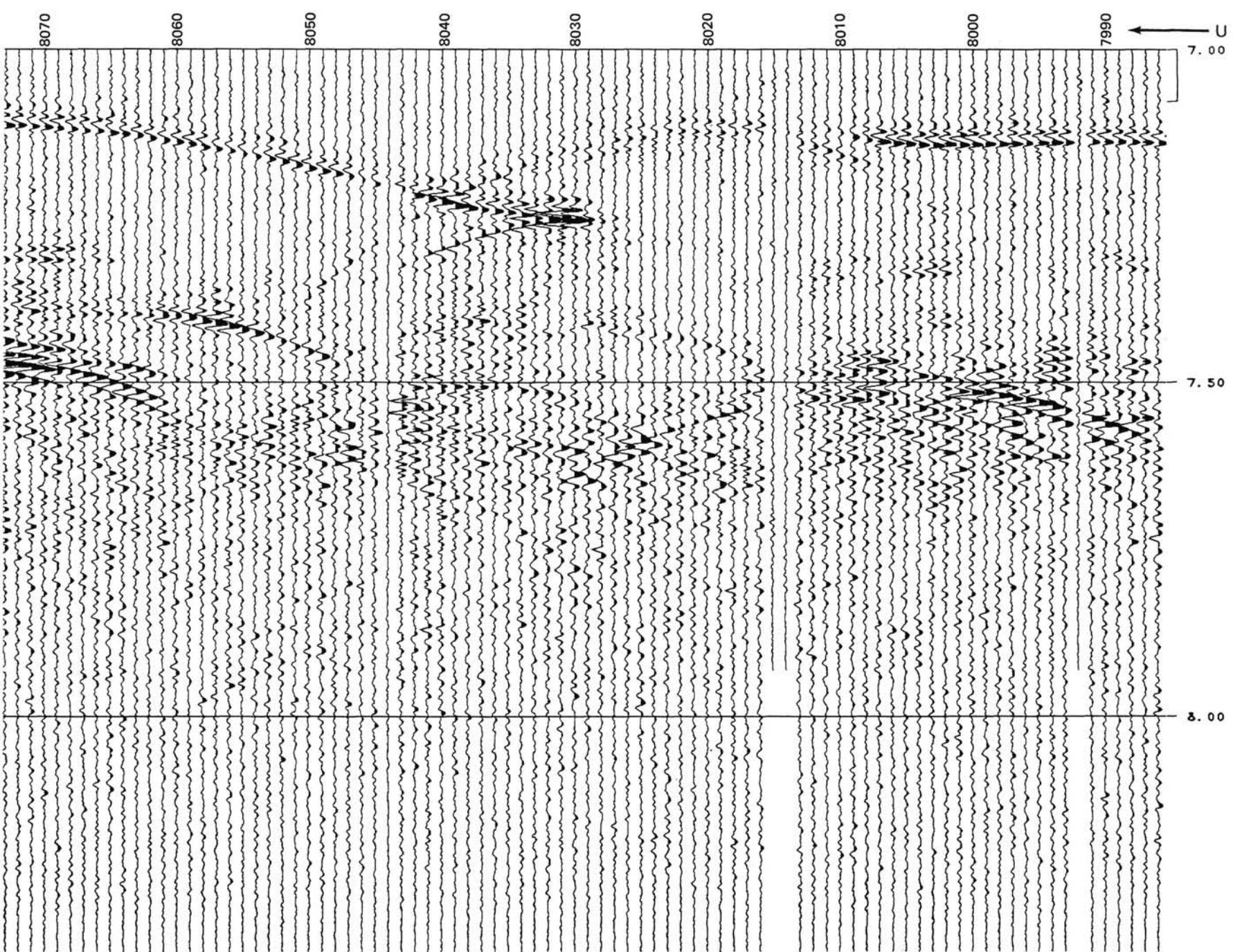


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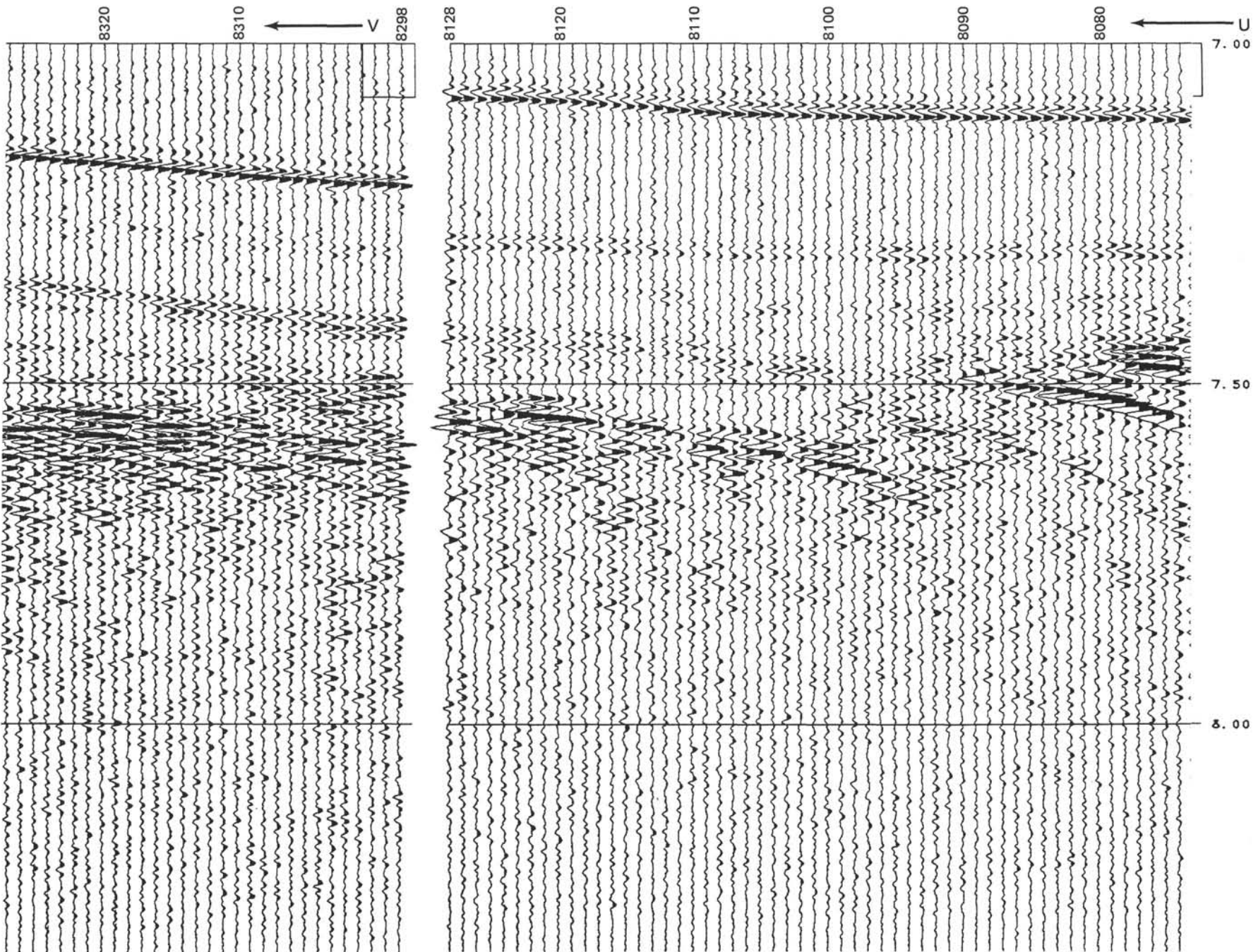
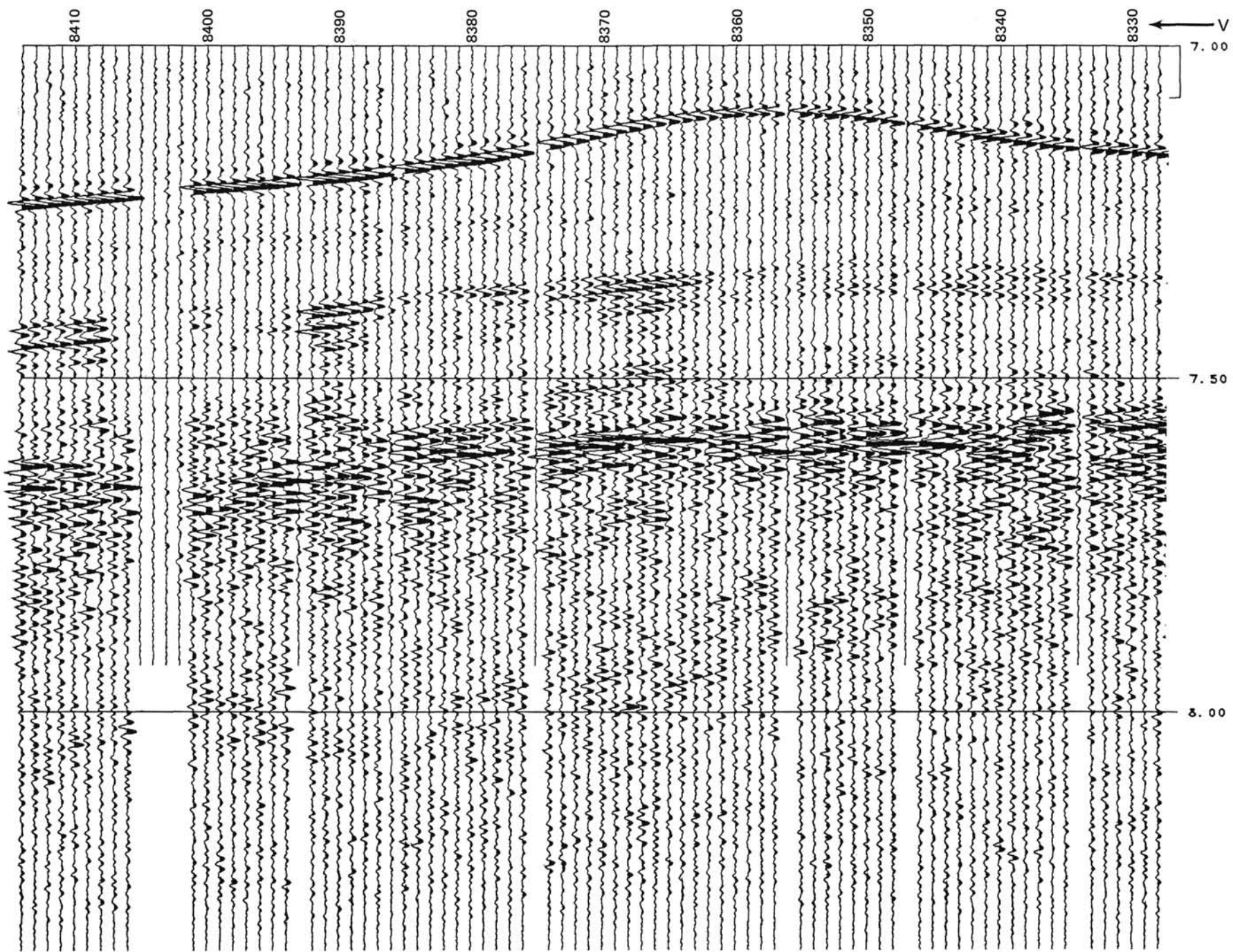


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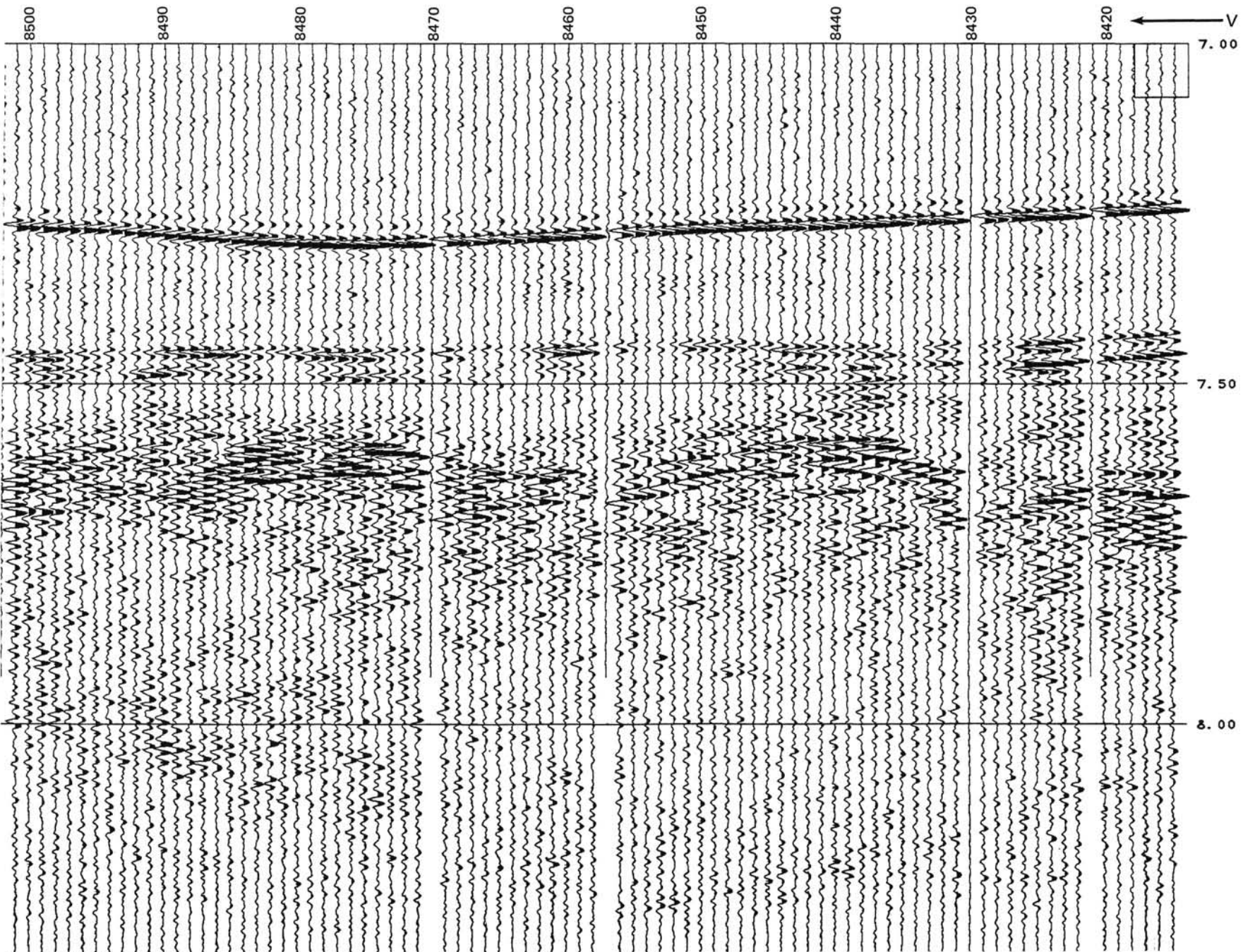
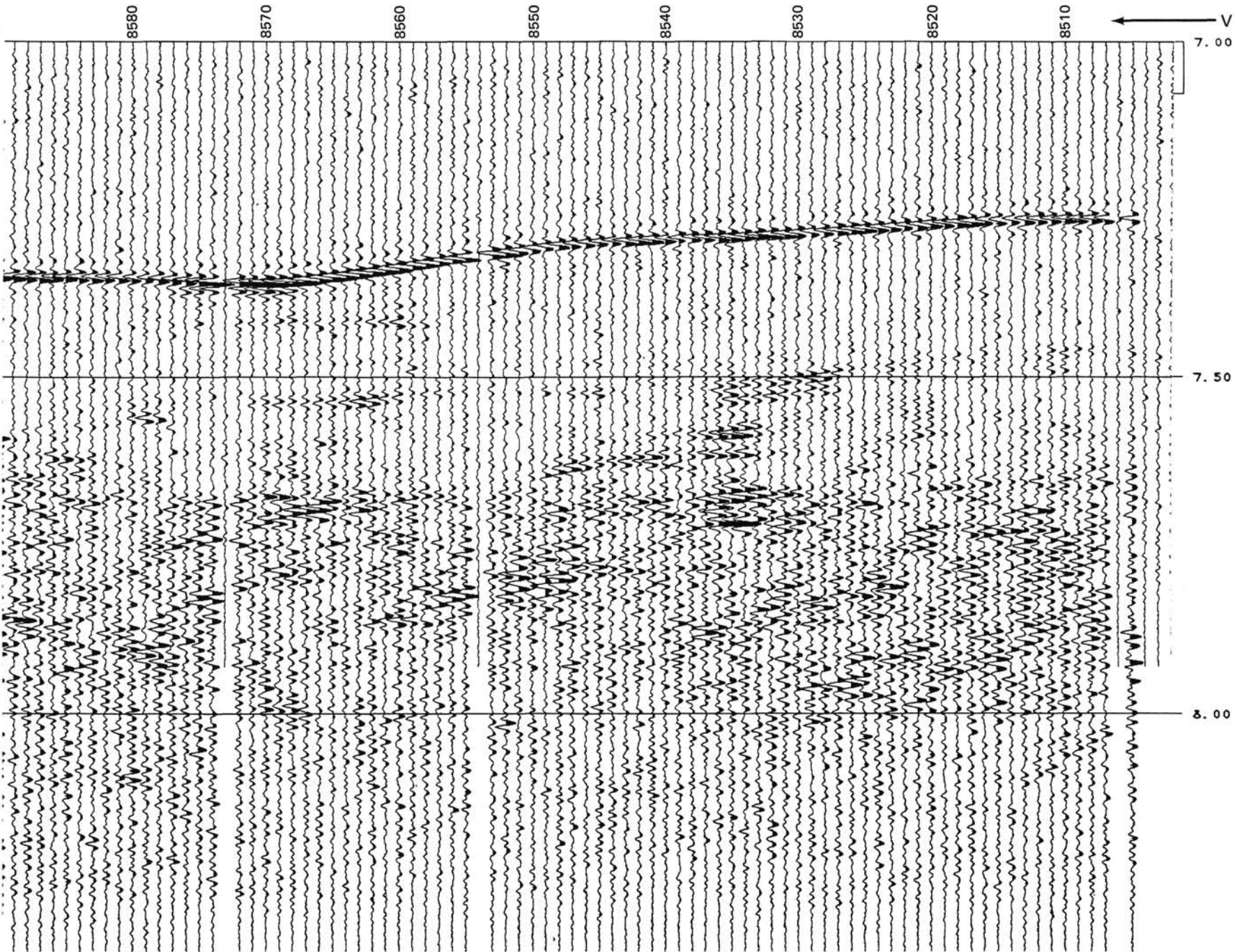


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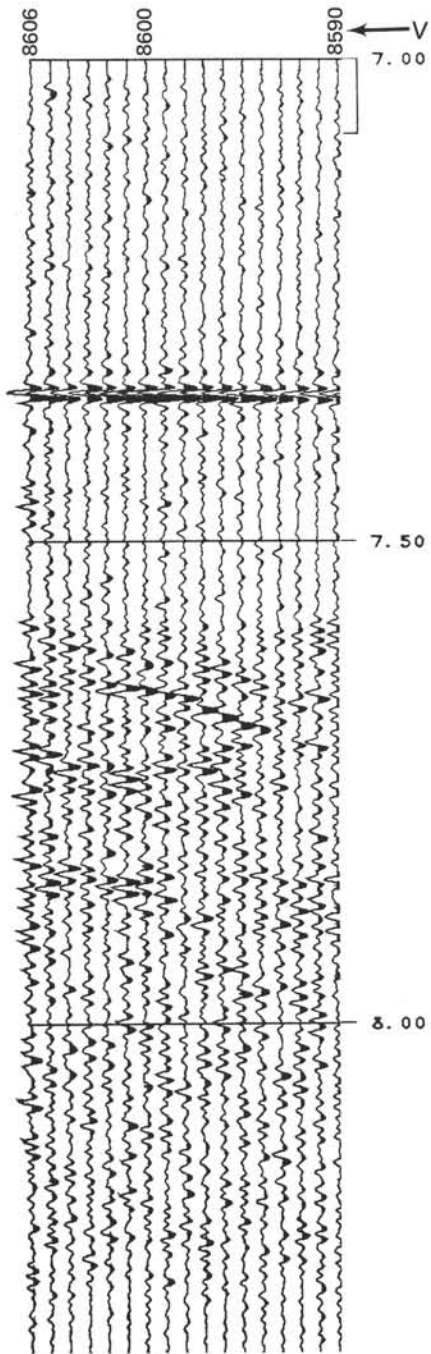
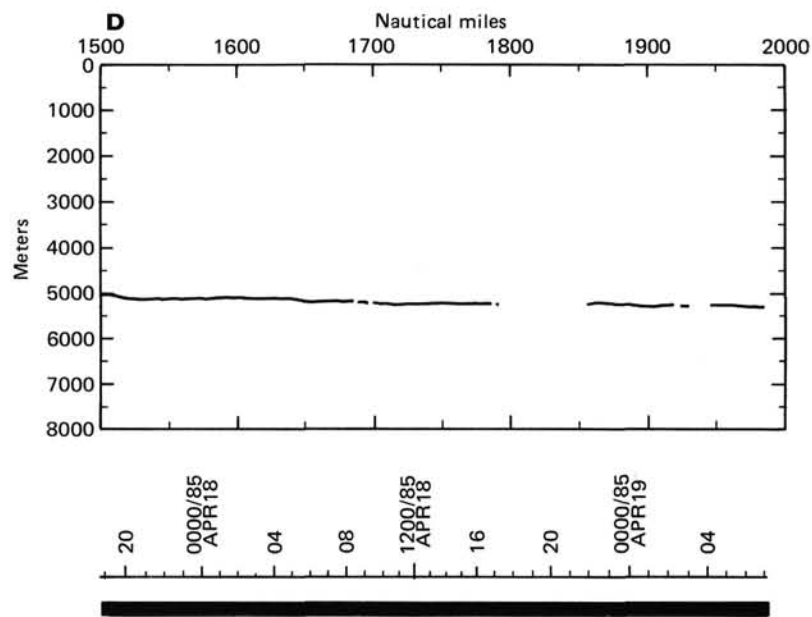
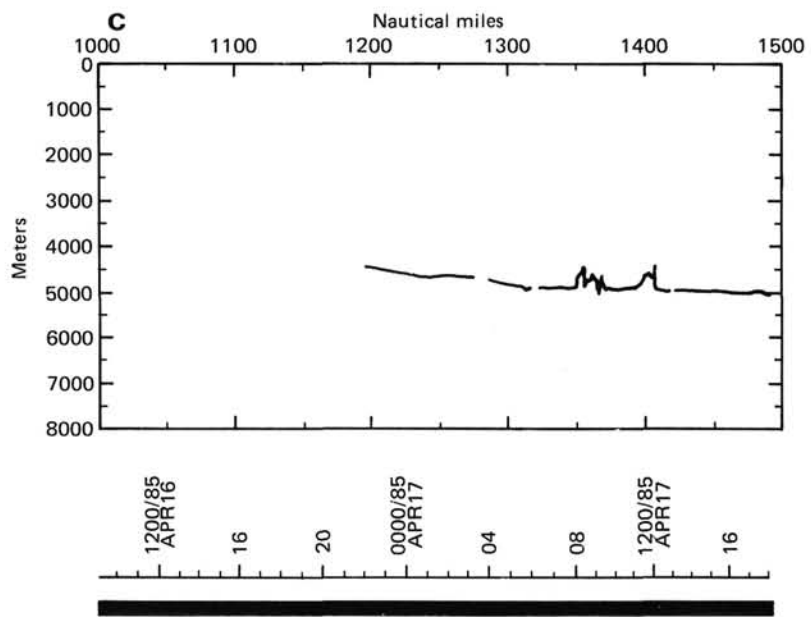
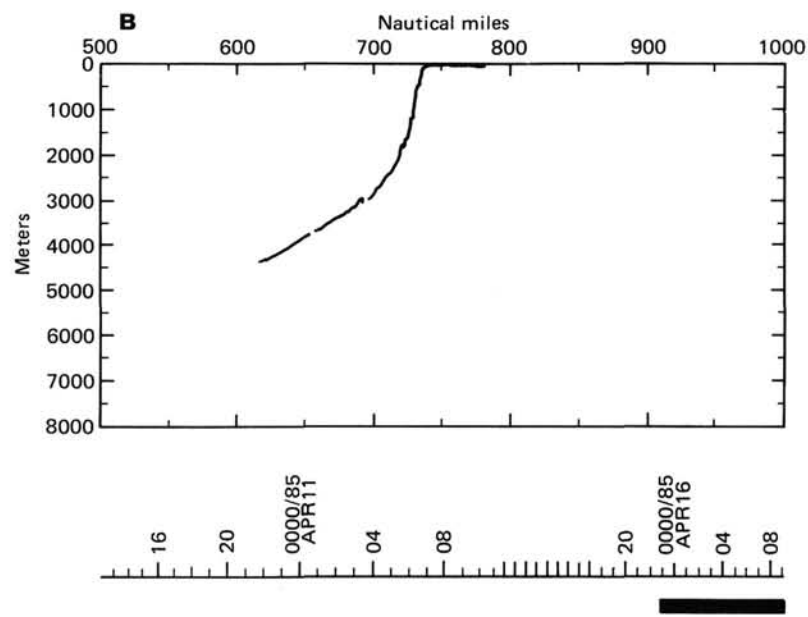
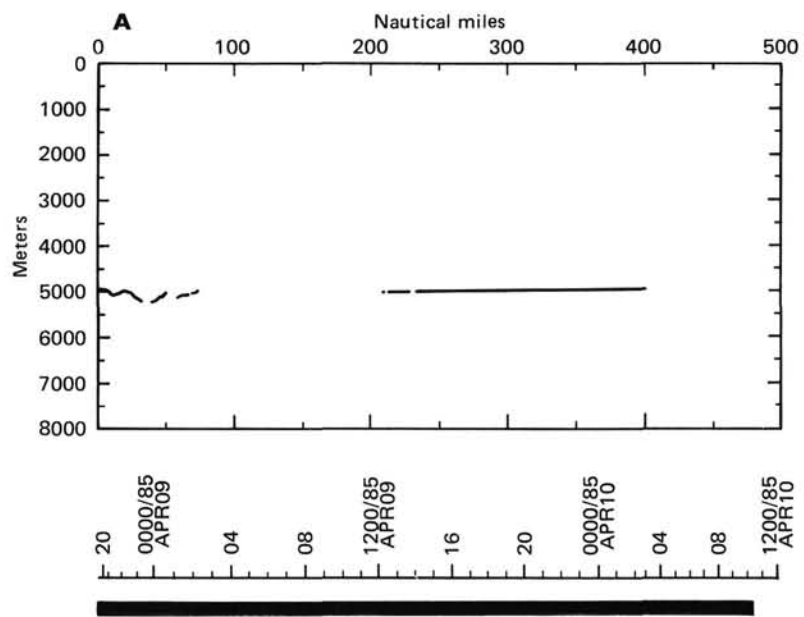


Figure 3 (continued).





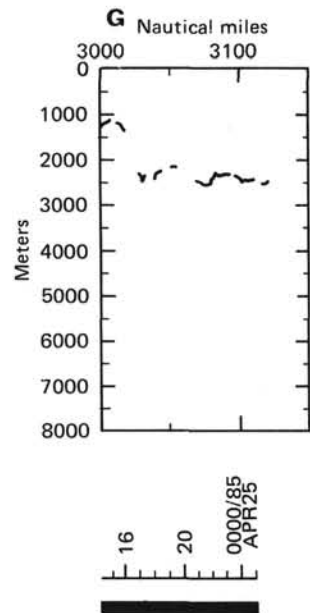
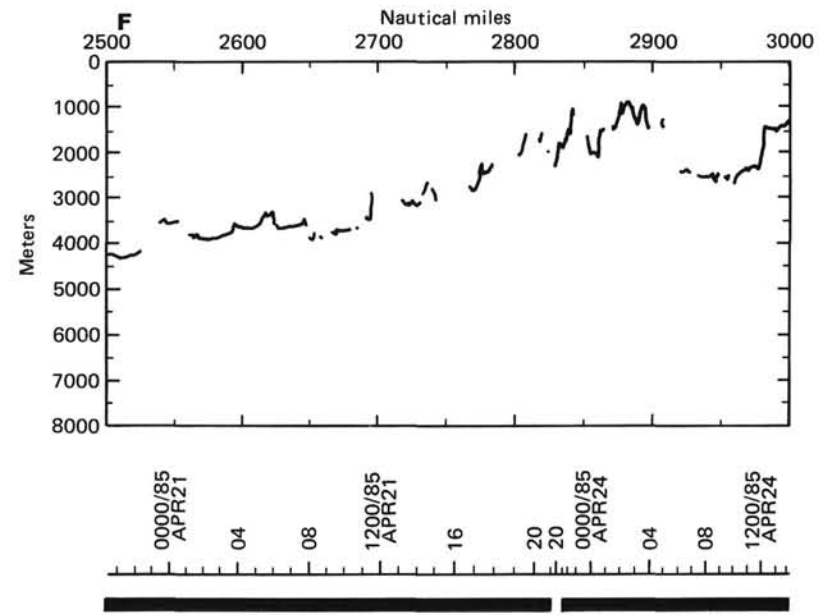
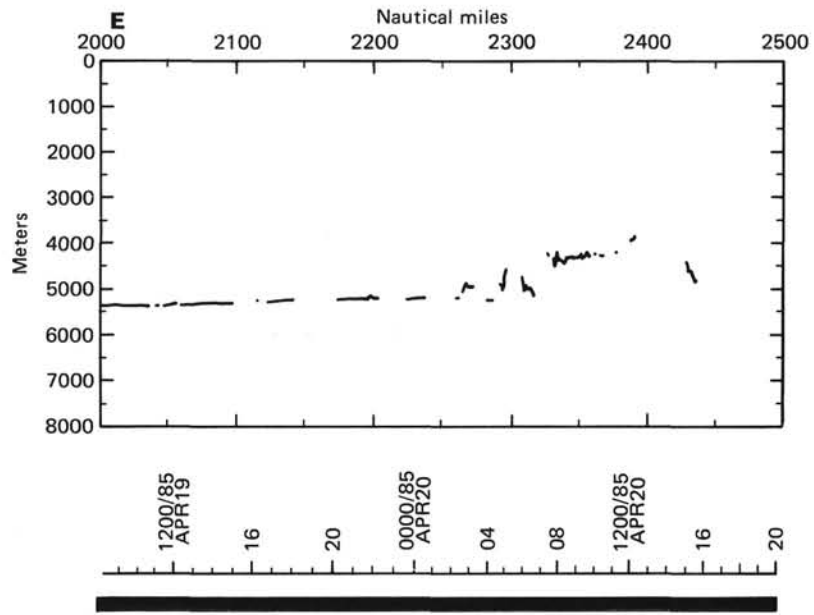


Figure 4. Depth profiles vs. distance collected on board *JOIDES Resolution* during Leg 102 (both parts). Time is annotated along the bottom of the profile. Section of track having seismic reflection-profile records shows a wide black line along the bottom of the profile.

Table 1. Navigation data for Leg 102.

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
8	4	1985	1849	25	2.10 N	68	3.44 W	0	4.2	315	2.2	96	6.0	302	418A
8	4	1985	2113	25	9.2	68	11.2	10.0	10.9	340	2.2	96	12.0	331	c/cs
8	4	1985	2246	25	25.17	68	17.46	26.9	12.0	331	0.0	39	12.0	331	satl
8	4	1985	2320	25	31.13	68	21.10	33.7	12.0	331	0.1	17	12.0	331	satl
9	4	1985	0000	25	38.16	68	25.39	41.8	15.0	330	3.0	324	12.0	331	satl
9	4	1985	0048	25	48.50	68	32.13	53.7	14.2	321	3.2	280	12.0	331	satl
9	4	1985	0208	26	3.21	68	45.36	72.7	13.6	326	2.0	293	12.0	331	satl
9	4	1985	0328	26	18.24	68	56.69	90.8	14.3	337	2.7	7	12.0	331	satl
9	4	1985	0400	26	25.26	68	59.96	98.4	13.2	337	1.8	23	12.0	331	satl
9	4	1985	0550	26	47.60	69	10.40	122.6	13.8	330	1.9	322	12.0	331	satl
9	4	1985	1018	27	41.05	69	45.43	184.5	13.2	332	1.3	345	12.0	331	satl
9	4	1985	1354	28	23.19	70	10.48	232.1	13.7	329	1.7	318	12.0	331	satl
9	4	1985	1446	28	33.38	70	17.35	243.9	13.8	336	2.2	6	12.0	331	satl
9	4	1985	1506	28	37.60	70	19.47	248.5	12.7	338	1.6	37	12.0	331	satl
9	4	1985	1608	28	49.78	70	25.17	261.7	13.7	330	1.7	326	12.0	331	satl
9	4	1985	1628	28	53.74	70	27.74	266.3	13.1	332	1.1	346	12.0	331	satl
9	4	1985	1756	29	10.68	70	37.94	285.4	13.4	328	1.5	307	12.0	331	satl
9	4	1985	2224	30	1.50	71	13.82	345.0	13.4	328	1.5	306	12.0	331	satl
10	4	1985	0002	30	20.13	71	27.16	366.9	13.1	332	1.1	340	12.0	331	satl
10	4	1985	0100	30	31.26	71	34.09	379.6	12.6	347	3.4	59	12.0	331	satl
10	4	1985	0148	30	41.07	71	36.79	389.7	14.2	333	2.3	341	12.0	331	satl
10	4	1985	0210	30	45.7	71	39.6	394.9	7.2	351	2.3	341	5.0	355	c/cs
10	4	1985	0230	30	48.1	71	40.0	397.3	5.5	348	2.3	341	3.3	353	c/cs
10	4	1985	0245	30	49.4	71	40.4	398.7	7.5	350	2.3	341	5.3	353	c/cs
10	4	1985	0300	30	51.3	71	40.8	400.5	11.0	336	2.3	341	8.7	335	c/cs
10	4	1985	0321	30	54.8	71	42.6	404.4	11.5	335	2.3	341	9.3	334	c/cs
10	4	1985	0338	30	57.77	71	44.14	407.7	11.2	330	2.0	314	9.3	334	satl
10	4	1985	0338	30	57.8	71	44.1	407.7	10.9	330	2.0	314	9.0	334	c/cs
10	4	1985	0401	31	1.4	71	46.6	411.8	10.6	331	2.0	314	8.7	335	c/cs
10	4	1985	0413	31	3.3	71	47.8	414.0	10.6	331	2.0	314	8.6	335	c/cs
10	4	1985	0443	31	7.9	71	50.7	419.2	10.5	331	2.0	314	8.5	335	c/cs
10	4	1985	0506	31	11.4	71	53.0	423.2	10.7	330	2.0	314	8.7	334	c/cs
10	4	1985	0520	31	13.5	71	54.5	425.7	10.4	331	2.0	314	8.5	335	c/cs
10	4	1985	0526	31	14.44	71	55.06	426.8	10.9	335	2.4	334	8.5	335	satl
10	4	1985	0546	31	17.7	71	56.9	430.4	10.7	335	2.4	334	8.2	335	c/cs
10	4	1985	0614	31	22.2	71	59.4	435.4	10.7	335	2.4	334	8.3	335	c/cs
10	4	1985	0626	31	24.2	72	0.4	437.5	10.3	335	2.4	334	7.9	335	c/cs
10	4	1985	0642	31	26.7	72	1.8	440.3	10.4	335	2.4	334	8.0	335	c/cs
10	4	1985	0650	31	27.9	72	2.5	441.7	10.4	335	2.4	334	8.0	335	c/cs
10	4	1985	0718	31	32.3	72	4.9	446.5	10.6	335	2.4	334	8.2	335	c/cs
10	4	1985	0732	31	34.6	72	6.2	449.0	10.7	335	2.4	334	8.2	335	c/cs
10	4	1985	0742	31	36.2	72	7.0	450.8	10.2	335	2.4	334	7.8	335	c/cs
10	4	1985	0752	31	37.7	72	7.9	452.5	10.5	335	2.4	334	8.1	335	c/cs
10	4	1985	0807	31	40.1	72	9.2	445.1	10.5	335	2.4	334	8.1	335	c/cs
10	4	1985	0817	31	41.7	72	10.1	456.8	10.7	336	2.4	334	8.3	336	c/cs
10	4	1985	0830	31	43.8	72	11.2	459.2	10.6	335	2.4	334	8.2	335	c/cs
10	4	1985	0858	31	48.2	72	13.7	464.1	10.7	335	2.4	334	8.3	335	c/cs
10	4	1985	0923	31	52.3	72	15.9	468.6	10.7	335	2.4	334	8.3	335	c/cs
10	4	1985	0935	31	54.2	72	17.0	470.7	10.3	335	2.4	334	7.9	335	c/cs
10	4	1985	0943	31	55.5	72	17.7	472.1	10.4	336	2.4	334	8.0	336	c/cs
10	4	1985	0954	31	57.20	72	18.63	474.0	11.3	325	3.8	300	8.0	336	satl
10	4	1985	0957	31	57.7	72	19.0	474.6	11.4	325	3.8	300	8.1	336	c/cs
10	4	1985	1021	32	1.4	72	22.1	479.2	11.2	324	3.8	300	7.8	335	c/cs
10	4	1985	1041	32	4.4	72	24.8	482.9	11.0	323	3.8	300	7.6	335	c/cs
10	4	1985	1047	32	5.3	72	25.5	484.0	11.3	324	3.8	300	8.0	335	c/cs
10	4	1985	1115	32	9.5	72	29.2	489.3	11.1	324	3.8	300	7.8	336	c/cs
10	4	1985	1125	32	11.1	72	30.5	491.1	11.4	324	3.8	300	8.0	335	c/cs
10	4	1985	1147	32	14.4	72	33.4	495.3	11.3	324	3.8	300	8.0	335	c/cs
10	4	1985	1205	32	17.1	72	35.8	498.7	11.4	324	3.8	300	8.1	335	c/cs
10	4	1985	1228	32	20.7	72	38.8	503.1	11.3	322	3.8	300	7.9	333	c/cs
10	4	1985	1258	32	25.2	72	42.9	508.7	11.4	322	3.8	300	8.0	333	c/cs
10	4	1985	1311	32	27.1	72	44.7	511.2	11.2	322	3.8	300	7.8	333	c/cs
10	4	1985	1326	32	29.3	72	46.7	514.0	11.4	322	3.8	300	8.0	333	c/cs
10	4	1985	1347	32	32.5	72	49.6	518.0	11.4	322	3.8	300	8.0	333	c/cs
10	4	1985	1354	32	33.54	72	50.58	519.3	9.5	329	1.6	311	8.0	333	satl
10	4	1985	1405	32	35.0	72	51.6	521.0	9.5	329	1.6	311	8.0	333	c/cs
10	4	1985	1425	32	37.8	72	53.6	524.2	9.6	329	1.6	311	8.1	333	c/cs
10	4	1985	1432	32	38.7	72	54.2	525.3	9.6	329	1.6	311	8.0	333	c/cs
10	4	1985	1444	32	40.4	72	55.4	527.3	9.5	329	1.6	311	8.0	333	c/cs
10	4	1985	1452	32	41.47	72	56.18	528.5	11.6	332	3.6	331	8.0	333	satl
10	4	1985	1501	32	43.0	72	57.1	530.3	11.8	332	3.6	331	8.2	333	c/cs
10	4	1985	1529	32	47.9	73	0.2	535.8	12.0	332	3.6	331	8.4	333	c/cs
10	4	1985	1551	32	51.8	73	2.6	540.2	12.1	332	3.6	331	8.4	333	c/cs
10	4	1985	1621	32	57.1	73	5.9	546.2	12.3	332	3.6	331	8.6	333	c/cs
10	4	1985	1637	33	0.0	73	7.7	549.5	12.5	332	3.6	331	8.9	333	c/cs
10	4	1985	1703	33	4.8	73	10.7	554.9	12.7	332	3.6	331	9.1	333	c/cs



Table 1 (continued).

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
10	4	1985	1733	33	10.5	73	14.3	561.3	12.8	332	3.6	331	9.1	333	c/cs
10	4	1985	1754	33	14.4	73	16.7	565.7	12.9	332	3.6	331	9.3	333	c/cs
10	4	1985	1823	33	20.0	73	20.2	572.0	13.1	333	3.6	331	9.5	334	c/cs
10	4	1985	1829	33	21.1	73	20.9	573.3	13.0	333	3.6	331	9.4	334	c/cs
10	4	1985	2010	33	40.7	73	32.8	595.2	13.3	333	3.6	331	9.7	334	c/cs
10	4	1985	2014	33	41.5	73	33.3	596.1	13.3	333	3.6	331	9.7	334	c/cs
11	4	1985	0930	36	18.81	75	9.88	772.2	9.9	338	0.6	47	9.7	334	satl
11	4	1985	0938	36	20.0	75	10.5	773.5	10.6	334	0.6	47	10.4	331	c/cs
11	4	1985	1008	36	24.8	75	13.4	778.8	10.7	334	0.6	47	10.5	331	c/cs
11	4	1985	1039	36	29.8	75	16.3	784.3	10.8	334	0.6	47	10.6	331	c/cs
11	4	1985	1046	36	30.9	75	17.0	785.6	10.8	334	0.6	47	10.7	331	c/cs
11	4	1985	1142	36	40.0	75	22.5	795.7	0.6	47	0.6	47	0	—	c/cs
15	4	1985	1720	37	24.4	74	22.4	861.1	8.6	78	0.6	47	8.1	80	c/cs
15	4	1985	1900	37	27.5	74	4.8	875.4	9.0	107	0.6	47	8.7	111	c/cs
15	4	1985	2130	37	20.8	73	38.1	897.6	9.8	74	0.6	47	9.2	76	c/cs
15	4	1985	2230	37	23.5	73	26.4	907.3	8.8	79	0.6	47	8.3	81	c/cs
16	4	1985	0924	37	42.39	71	28.70	1002.5	15.9	87	7.7	93	8.3	81	satl
16	4	1985	1214	37	44.91	70	31.89	1047.5	14.1	79	5.9	76	8.3	81	satl
16	4	1985	1400	37	49.7	70	0.9	1072.5	14.9	76	5.9	76	9.1	76	c/cs
16	4	1985	1520	37	54.44	69	36.38	1092.4	14.3	83	5.4	96	9.1	76	satl
16	4	1985	1630	37	56.4	69	15.3	1109.1	15.4	89	5.4	96	10.0	85	c/cs
16	4	1985	1706	37	56.57	69	3.62	1118.3	15.4	79	5.6	69	10.0	85	satl
16	4	1985	2303	38	13.5	67	9.2	1210.0	15.3	83	5.6	69	10.0	90	c/cs
16	4	1985	2323	38	14.1	67	2.7	1215.1	12.5	81	5.6	69	7.1	90	c/cs
16	4	1985	2324	38	14.2	67	2.5	1215.3	15.3	82	5.6	69	10.0	89	c/cs
16	4	1985	2329	38	14.3	67	0.8	1216.6	12.9	81	5.6	69	7.6	90	c/cs
16	4	1985	2330	38	14.4	67	0.6	1216.8	15.5	82	5.6	69	10.2	89	c/cs
16	4	1985	2346	38	14.9	66	55.4	1220.9	12.5	82	5.6	69	7.2	91	c/cs
16	4	1985	2347	38	15.0	66	55.1	1221.2	15.4	82	5.6	69	10.0	89	c/cs
16	4	1985	2352	38	15.1	66	53.5	1222.4	13.2	81	5.6	69	7.9	89	c/cs
16	4	1985	2353	38	15.2	66	53.2	1222.6	15.4	82	5.6	69	10.1	89	c/cs
17	4	1985	0001	38	15.5	66	50.6	1224.7	15.0	82	5.6	69	9.7	90	c/cs
17	4	1985	0414	38	23.8	65	30.9	1287.8	15.9	78	5.6	69	10.4	83	c/cs
17	4	1985	0418	38	24.0	65	29.6	1288.9	15.8	76	5.6	69	10.3	80	c/cs
17	4	1985	0427	38	24.5	65	26.6	1291.2	15.8	76	5.6	69	10.3	80	c/cs
17	4	1985	0509	38	27.2	65	12.9	1302.3	16.1	75	5.6	69	10.6	78	c/cs
17	4	1985	0537	38	29.1	65	3.7	1309.8	16.3	74	5.6	69	10.8	77	c/cs
17	4	1985	0605	38	31.2	64	54.3	1317.4	16.2	74	5.6	69	10.7	77	c/cs
17	4	1985	0635	38	33.4	64	44.4	1325.5	16.2	74	5.6	69	10.7	77	c/cs
17	4	1985	0702	38	35.3	64	35.4	1332.8	16.1	74	5.6	69	10.6	76	c/cs
17	4	1985	0715	38	36.3	64	31.1	1336.3	16.2	74	5.6	69	10.7	77	c/cs
17	4	1985	0726	38	37.1	64	27.5	1339.2	16.1	74	5.6	69	10.5	77	c/cs
17	4	1985	0733	38	37.6	64	25.1	1341.1	15.9	78	5.6	69	10.5	83	c/cs
17	4	1985	0803	38	39.2	64	15.2	1349.0	16.0	79	5.6	69	10.6	84	c/cs
17	4	1985	0808	38	39.5	64	13.5	1350.4	15.8	83	5.6	69	10.4	90	c/cs
17	4	1985	0831	38	40.3	64	5.9	1356.4	15.6	83	5.6	69	10.3	90	c/cs
17	4	1985	0848	38	40.8	64	0.3	1360.8	15.8	83	5.6	69	10.4	90	c/cs
17	4	1985	0900	38	41.21	63	56.66	1363.6	13.8	88	3.4	81	10.4	90	satl
17	4	1985	0918	38	41.4	63	51.4	1367.8	13.8	88	3.4	81	10.5	90	c/cs
17	4	1985	0923	38	41.4	63	49.9	1368.9	13.7	89	3.4	81	10.4	92	c/cs
17	4	1985	0924	38	41.4	63	49.6	1369.2	13.7	89	3.4	81	10.4	92	—
17	4	1985	1050	38	41.62	63	24.44	1388.8	12.6	89	2.4	75	10.4	92	satl
17	4	1985	1112	38	41.72	63	18.50	1393.4	14.1	91	3.7	90	10.4	92	satl
17	4	1985	1456	38	40.42	62	11.31	1445.9	13.9	91	3.6	87	10.4	92	satl
17	4	1985	1644	38	40.05	61	39.23	1470.9	14.6	94	4.3	100	10.4	92	satl
17	4	1985	1712	38	39.5	61	30.5	1477.8	14.6	94	4.3	100	10.4	91	c/cs
17	4	1985	1739	38	39.1	61	22.1	1484.4	14.7	94	4.3	100	10.4	91	c/cs
17	4	1985	1807	38	38.7	61	13.3	1491.2	14.5	94	4.3	100	10.2	92	c/cs
17	4	1985	1837	38	38.1	61	4.1	1498.5	14.5	94	4.3	100	10.3	92	c/cs
17	4	1985	1856	38	37.8	60	58.2	1503.1	14.7	94	4.3	100	10.4	91	c/cs
17	4	1985	1926	38	37.3	60	48.8	1510.4	14.9	93	4.3	100	10.6	90	c/cs
17	4	1985	1928	38	37.32	60	48.19	1510.9	15.1	74	5.7	44	10.6	90	satl
17	4	1985	1946	38	38.5	60	42.6	1515.4	15.3	69	5.7	44	10.4	83	c/cs
17	4	1985	1952	38	39.1	60	40.8	1517.0	14.3	68	5.7	44	9.4	82	c/cs
17	4	1985	1954	38	39.3	60	40.2	1517.4	15.5	69	5.7	44	10.6	82	c/cs
17	4	1985	2020	38	41.7	60	32.2	1524.1	15.3	72	5.7	44	10.6	86	c/cs
17	4	1985	2050	38	44.1	60	22.9	1531.8	15.3	72	5.7	44	10.6	86	c/cs
17	4	1985	2057	38	44.6	60	20.7	1533.6	15.3	69	5.7	44	10.4	83	c/cs
17	4	1985	2104	38	45.3	60	18.6	1535.3	15.2	72	5.7	44	10.5	86	c/cs
17	4	1985	2110	38	45.74	60	16.75	1536.9	13.5	86	2.9	84	10.5	86	satl
17	4	1985	2134	38	46.2	60	9.9	1542.2	13.4	86	2.9	84	10.5	86	c/cs
17	4	1985	2204	38	46.7	60	1.3	1549.0	13.4	86	2.9	84	10.5	86	c/cs
17	4	1985	2234	38	47.2	59	52.7	1555.7	13.5	86	2.9	84	10.6	86	c/cs
17	4	1985	2252	38	47.5	59	47.5	1559.7	13.4	86	2.9	84	10.4	86	c/cs
18	4	1985	0008	38	48.8	59	25.8	1576.7	13.3	88	2.9	84	10.4	89	c/cs

Table 1 (continued).

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
18	4	1985	0010	38	48.8	59	25.2	1577.2	13.2	90	2.9	84	10.3	91	c/cs
18	4	1985	0108	38	48.9	59	8.8	1589.9	13.4	91	2.9	84	10.5	93	c/cs
18	4	1985	0138	38	48.8	59	0.2	1596.6	13.3	92	2.9	84	10.4	94	c/cs
18	4	1985	0202	38	48.6	58	53.4	1602.0	13.3	92	2.9	84	10.4	94	c/cs
18	4	1985	0228	38	48.4	58	46.0	1607.7	13.2	91	2.9	84	10.3	93	c/cs
18	4	1985	0231	38	48.4	58	45.1	1608.4	12.4	92	2.9	84	9.5	95	c/cs
18	4	1985	0233	38	48.4	58	44.6	1608.8	13.5	91	2.9	84	10.6	93	c/cs
18	4	1985	0238	38	48.4	58	43.2	1609.9	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0308	38	48.3	58	34.6	1616.6	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0320	38	48.2	58	31.2	1619.3	12.9	92	2.9	84	10.0	94	c/cs
18	4	1985	0345	38	48.0	58	24.3	1624.6	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0415	38	47.9	58	15.8	1631.3	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0445	38	47.8	58	7.2	1637.9	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0508	38	47.7	58	0.7	1643.0	13.2	91	2.9	84	10.3	93	c/cs
18	4	1985	0538	38	47.6	57	52.2	1649.6	13.2	91	2.9	84	10.3	93	c/cs
18	4	1985	0608	38	47.4	57	43.7	1656.3	13.3	91	2.9	84	10.3	93	c/cs
18	4	1985	0636	38	47.3	57	35.8	1662.4	13.4	91	2.9	84	10.4	93	c/cs
18	4	1985	0706	38	47.2	57	27.2	1669.1	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0736	38	47.1	57	18.7	1675.8	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0805	38	47.0	57	10.4	1682.2	13.3	91	2.9	84	10.4	93	c/cs
18	4	1985	0835	38	46.8	57	1.9	1688.8	13.2	91	2.9	84	10.3	93	c/cs
18	4	1985	0905	38	46.7	56	53.5	1695.4	13.4	92	2.9	84	10.5	94	c/cs
18	4	1985	0924	38	46.6	56	48.1	1699.7	13.3	92	2.9	84	10.4	94	c/cs
18	4	1985	0943	38	46.4	56	42.7	1703.9	13.3	93	2.9	84	10.4	95	c/cs
18	4	1985	1028	38	45.98	56	29.90	1713.8	10.3	97	0.3	203	10.4	95	satl
18	4	1985	1038	38	45.8	56	27.7	1715.5	10.3	96	0.3	203	10.4	94	c/cs
18	4	1985	1052	38	45.6	56	24.6	1717.9	9.7	96	0.3	203	9.8	94	c/cs
18	4	1985	1055	38	45.5	56	24.0	1718.4	10.2	96	0.3	203	10.3	94	c/cs
18	4	1985	1115	38	45.2	56	19.7	1721.8	10.4	96	0.3	203	10.5	94	c/cs
18	4	1985	1135	38	44.8	56	15.3	1725.3	10.2	96	0.3	203	10.3	94	c/cs
18	4	1985	1142	38	44.72	56	13.74	1726.5	12.0	90	1.8	65	10.3	94	satl
18	4	1985	1148	38	44.7	56	12.2	1727.7	11.8	90	1.8	65	10.2	94	c/cs
18	4	1985	1205	38	44.7	56	7.9	1731.0	12.0	90	1.8	65	10.3	94	c/cs
18	4	1985	1233	38	44.8	56	0.7	1736.6	11.8	89	1.8	65	10.1	93	c/cs
18	4	1985	1238	38	44.8	55	59.5	1737.6	11.8	89	1.8	65	10.2	93	c/cs
18	4	1985	1250	38	44.8	55	56.5	1740.0	11.5	89	1.8	65	9.8	93	c/cs
18	4	1985	1256	38	44.9	55	55.0	1741.1	11.9	89	1.8	65	10.2	93	c/cs
18	4	1985	1304	38	44.9	55	53.0	1742.7	11.4	89	1.8	65	9.7	93	c/cs
18	4	1985	1307	38	44.9	55	52.2	1743.3	11.9	89	1.8	65	10.2	93	c/cs
18	4	1985	1334	38	45.0	55	45.4	1748.6	11.9	90	1.8	65	10.2	94	c/cs
18	4	1985	1343	38	45.0	55	43.1	1750.4	11.6	104	1.8	65	10.3	111	c/cs
18	4	1985	1345	38	44.9	55	42.6	1750.8	11.1	116	1.8	65	10.0	124	c/cs
18	4	1985	1349	38	44.6	55	41.8	1751.5	11.1	125	1.8	65	10.3	134	c/cs
18	4	1985	1411	38	42.3	55	37.5	1755.6	11.3	127	1.8	65	10.5	136	c/cs
18	4	1985	1530	38	33.3	55	22.4	1770.4	11.8	83	1.8	65	10.1	86	c/cs
18	4	1985	1622	38	34.63	55	9.36	1780.7	13.5	86	3.4	87	10.1	86	satl
18	4	1985	1749	38	35.9	54	44.4	1800.2	13.6	94	3.4	87	10.2	96	c/cs
18	4	1985	1750	38	35.9	54	44.1	1800.5	13.9	95	3.4	87	10.5	97	c/cs
18	4	1985	1804	38	35.6	54	39.9	1803.7	13.8	93	3.4	87	10.4	95	c/cs
18	4	1985	1818	38	35.4	54	35.8	1806.9	12.5	93	3.4	87	9.1	95	c/cs
18	4	1985	1820	38	35.4	54	35.3	1807.3	13.2	94	3.4	87	9.8	96	c/cs
18	4	1985	1825	38	35.3	54	33.9	1808.4	13.7	93	3.4	87	10.3	95	c/cs
18	4	1985	1832	38	35.2	54	31.9	1810.0	13.4	94	3.4	87	10.1	96	c/cs
18	4	1985	1837	38	35.2	54	30.4	1811.2	13.7	93	3.4	87	10.4	95	c/cs
18	4	1985	1859	38	34.9	54	24.0	1816.2	13.7	95	3.4	87	10.3	97	c/cs
18	4	1985	1902	38	34.8	54	23.1	1816.9	12.7	94	3.4	87	9.3	96	c/cs
18	4	1985	1904	38	34.8	54	22.6	1817.3	13.6	94	3.4	87	10.3	96	c/cs
18	4	1985	1913	38	34.7	54	20.0	1819.3	11.3	93	3.4	87	7.9	96	c/cs
18	4	1985	1914	38	34.7	54	19.7	1819.5	13.7	94	3.4	87	10.4	96	c/cs
18	4	1985	1920	38	34.6	54	18.0	1820.9	12.7	92	3.4	87	9.3	94	c/cs
18	4	1985	1922	38	34.6	54	17.4	1821.3	13.7	93	3.4	87	10.3	95	c/cs
18	4	1985	1938	38	34.4	54	12.8	1825.0	10.5	93	3.4	87	7.1	95	c/cs
18	4	1985	1939	38	34.4	54	12.6	1825.1	13.7	93	3.4	87	10.3	95	c/cs
18	4	1985	2002	38	34.1	54	5.9	1830.4	13.8	97	3.4	87	10.5	100	c/cs
18	4	1985	2004	38	34.0	54	5.3	1830.8	12.5	96	3.4	87	9.1	99	c/cs
18	4	1985	2006	38	34.0	54	4.8	1831.3	13.8	96	3.4	87	10.5	99	c/cs
18	4	1985	2023	38	33.6	53	59.8	1835.2	13.9	97	3.4	87	10.6	100	c/cs
18	4	1985	2031	38	33.3	53	57.4	1837.0	14.0	96	3.4	87	10.6	99	c/cs
18	4	1985	2042	38	33.1	53	54.2	1839.6	13.9	97	3.4	87	10.6	100	c/cs
18	4	1985	2112	38	32.2	53	45.3	1846.5	13.9	97	3.4	87	10.6	100	c/cs
18	4	1985	2142	38	31.4	53	36.5	1853.5	14.0	97	3.4	87	10.7	100	c/cs
18	4	1985	2206	38	30.70	53	29.39	1859.1	15.3	102	4.7	108	10.7	100	satl
18	4	1985	2211	38	30.4	53	27.8	1860.4	14.9	103	4.7	108	10.2	101	c/cs
18	4	1985	2220	38	29.9	53	25.0	1862.6	14.9	104	4.7	108	10.2	102	c/cs
18	4	1985	2222	38	29.8	53	24.4	1863.1	14.8	100	4.7	108	10.2	96	c/cs
18	4	1985	2224	38	29.7	53	23.8	1863.6	14.6	105	4.7	108	9.9	104	c/cs



Table 1 (continued).

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
18	4	1985	2226	38	29.6	53	23.2	1864.1	15.3	101	4.7	108	10.7	98	c/cs
18	4	1985	2242	38	28.83	53	18.07	1868.2	14.4	94	3.8	83	10.7	98	satl
18	4	1985	2254	38	28.6	53	14.4	1871.0	14.4	93	3.8	83	10.7	97	c/cs
18	4	1985	2310	38	28.4	53	9.5	1874.9	14.4	93	3.8	83	10.7	97	c/cs
18	4	1985	2340	38	27.9	53	0.3	1882.1	14.5	94	3.8	83	10.8	97	c/cs
19	4	1985	0000	38	27.7	52	54.2	1886.9	14.2	93	3.8	83	10.5	96	c/cs
19	4	1985	0006	38	27.6	52	52.4	1888.3	14.3	93	3.8	83	10.6	96	c/cs
19	4	1985	0022	38	27.4	52	47.5	1892.1	14.3	93	3.8	83	10.7	97	c/cs
19	4	1985	0052	38	27.0	52	38.4	1899.3	14.4	93	3.8	83	10.7	96	c/cs
19	4	1985	0122	38	26.6	52	29.2	1906.5	14.4	93	3.8	83	10.7	96	c/cs
19	4	1985	0152	38	26.3	52	20.1	1913.7	14.4	93	3.8	83	10.8	97	c/cs
19	4	1985	0222	38	25.8	52	10.9	1920.9	14.3	96	3.8	83	10.7	100	c/cs
19	4	1985	0252	38	25.1	52	1.8	1928.0	14.3	96	3.8	83	10.6	100	c/cs
19	4	1985	0322	38	24.4	51	52.8	1935.1	14.3	96	3.8	83	10.7	100	c/cs
19	4	1985	0352	38	23.7	51	43.7	1942.3	14.2	96	3.8	83	10.6	100	c/cs
19	4	1985	0422	38	23.0	51	34.7	1949.4	14.2	96	3.8	83	10.6	101	c/cs
19	4	1985	0452	38	22.2	51	25.7	1956.4	14.2	96	3.8	83	10.6	100	c/cs
19	4	1985	0522	38	21.5	51	16.7	1963.5	14.2	96	3.8	83	10.5	101	c/cs
19	4	1985	0552	38	20.7	51	7.8	1970.6	14.1	96	3.8	83	10.5	101	c/cs
19	4	1985	0622	38	19.9	50	58.9	1977.6	14.0	95	3.8	83	10.4	99	c/cs
19	4	1985	0623	38	19.9	50	58.6	1977.9	14.0	96	3.8	83	10.4	101	c/cs
19	4	1985	0729	38	18.2	50	39.0	1993.3	13.9	96	3.8	83	10.3	101	c/cs
19	4	1985	0731	38	18.2	50	38.5	1993.8	14.1	96	3.8	83	10.5	101	c/cs
19	4	1985	0801	38	17.4	50	29.5	2000.8	14.1	96	3.8	83	10.4	100	c/cs
19	4	1985	0816	38	17.03	50	25.08	2004.3	13.4	97	3.0	87	10.4	100	satl
19	4	1985	0826	38	16.8	50	22.3	2006.5	13.4	98	3.0	87	10.5	101	c/cs
19	4	1985	0848	38	16.1	50	16.1	2011.4	13.4	98	3.0	87	10.5	101	c/cs
19	4	1985	0905	38	15.5	50	11.3	2015.2	13.2	103	3.0	87	10.3	107	c/cs
19	4	1985	0916	38	15.02	50	8.28	2017.7	13.2	103	3.0	89	10.3	107	satl
19	4	1985	0921	38	14.8	50	6.9	2018.8	13.3	103	3.0	89	10.4	107	c/cs
19	4	1985	0943	38	13.7	50	0.9	2023.6	13.4	103	3.0	89	10.6	107	c/cs
19	4	1985	1000	38	12.8	49	56.1	2027.4	13.3	103	3.0	89	10.4	107	c/cs
19	4	1985	1004	38	12.62	49	55.04	2028.3	13.4	103	3.1	88	10.4	107	satl
19	4	1985	1030	38	11.3	49	47.9	2034.1	13.3	103	3.1	88	10.4	107	c/cs
19	4	1985	1034	38	11.14	49	46.76	2035.0	12.7	103	2.4	85	10.4	107	satl
19	4	1985	1049	38	10.4	49	42.8	2038.2	12.7	103	2.4	85	10.4	107	c/cs
19	4	1985	1100	38	9.91	49	39.95	2040.5	13.3	103	3.0	89	10.4	107	satl
19	4	1985	1111	38	9.4	49	36.9	2042.9	13.4	103	3.0	89	10.5	107	c/cs
19	4	1985	1141	38	7.9	49	28.6	2049.6	13.5	103	3.0	89	10.6	107	c/cs
19	4	1985	1211	38	6.3	49	20.3	2056.4	13.4	103	3.0	89	10.6	107	c/cs
19	4	1985	1220	38	5.89	49	17.77	2058.4	14.6	104	4.1	97	10.6	107	satl
19	4	1985	1241	38	4.6	49	11.5	2063.5	14.6	103	4.1	97	10.6	106	c/cs
19	4	1985	1257	38	3.7	49	6.6	2067.4	14.6	98	4.1	97	10.6	99	c/cs
19	4	1985	1322	38	2.8	48	59.0	2073.5	14.7	99	4.1	97	10.6	100	c/cs
19	4	1985	1352	38	1.7	48	49.7	2080.9	14.8	99	4.1	97	10.7	100	c/cs
19	4	1985	1413	38	0.9	48	43.3	2086.0	14.8	98	4.1	97	10.7	99	c/cs
19	4	1985	1443	37	59.8	48	34.0	2093.4	14.8	99	4.1	97	10.7	100	c/cs
19	4	1985	1513	37	58.6	48	24.7	2100.8	14.7	98	4.1	97	10.6	99	c/cs
19	4	1985	1514	37	58.58	48	24.42	2101.1	13.6	88	3.8	56	10.6	99	satl
19	4	1985	1542	37	58.8	48	16.4	2107.4	13.7	85	3.8	56	10.6	95	c/cs
19	4	1985	1600	37	59.16	48	11.14	2111.6	14.5	95	3.8	95	10.6	95	satl
19	4	1985	1602	37	59.1	48	10.5	2112.1	14.2	96	3.8	95	10.4	96	c/cs
19	4	1985	1614	37	58.8	48	6.9	2114.9	14.6	96	3.8	95	10.8	96	c/cs
19	4	1985	1623	37	58.6	48	4.2	2117.1	14.5	97	3.8	95	10.7	98	c/cs
19	4	1985	1653	37	57.7	47	55.0	2124.3	14.6	97	3.8	95	10.7	98	c/cs
19	4	1985	1723	37	56.8	47	45.9	2131.6	14.6	97	3.8	95	10.8	98	c/cs
19	4	1985	1738	37	56.3	47	41.3	2135.3	12.0	97	3.8	95	8.1	98	c/cs
19	4	1985	1739	37	56.3	47	41.0	2135.5	14.6	98	3.8	95	10.8	99	c/cs
19	4	1985	1800	37	55.6	47	34.6	2140.6	11.3	97	3.8	95	7.5	98	c/cs
19	4	1985	1801	37	55.5	47	34.4	2140.8	14.6	98	3.8	95	10.8	99	c/cs
19	4	1985	1831	37	54.5	47	25.2	2148.1	14.6	99	3.8	95	10.8	100	c/cs
19	4	1985	1840	37	54.18	47	22.47	2150.3	14.9	97	4.2	90	10.8	100	satl
19	4	1985	1845	37	54.0	47	20.9	2151.5	15.0	97	4.2	90	10.8	100	c/cs
19	4	1985	1915	37	53.1	47	11.5	2159.0	14.9	97	4.2	90	10.7	100	c/cs
19	4	1985	1945	37	52.1	47	2.1	2166.4	14.9	97	4.2	90	10.7	100	c/cs
19	4	1985	2013	37	51.2	46	53.4	2173.4	14.6	103	4.2	90	10.5	108	c/cs
19	4	1985	2018	37	51.0	46	51.9	2174.6	14.8	98	4.2	90	10.6	101	c/cs
19	4	1985	2040	37	50.2	46	45.1	2180.0	14.7	97	4.2	90	10.6	100	c/cs
19	4	1985	2056	37	49.7	46	40.2	2184.0	14.8	97	4.2	90	10.6	99	c/cs
19	4	1985	2117	37	49.1	46	33.7	2189.1	14.8	97	4.2	90	10.6	99	c/cs
19	4	1985	2147	37	48.3	46	24.4	2196.5	14.7	95	4.2	90	10.6	97	c/cs
19	4	1985	2201	37	48.0	46	20.0	2200.0	14.8	95	4.2	90	10.6	97	c/cs
19	4	1985	2231	37	47.3	46	10.7	2207.4	14.6	96	4.2	90	10.4	98	c/cs
19	4	1985	2252	37	46.8	46	4.3	2212.5	14.8	95	4.2	90	10.6	97	c/cs
19	4	1985	2322	37	46.1	45	55.0	2219.9	14.8	95	4.2	90	10.6	97	c/cs

Table 1 (continued).

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
19	4	1985	2348	37	45.5	45	46.9	2226.3	14.8	96	4.2	90	10.6	98	c/cs
20	4	1985	0000	37	45.2	45	43.2	2229.2	14.8	96	4.2	90	10.6	98	c/cs
20	4	1985	0008	37	45.04	45	40.72	2231.2	13.6	94	3.1	82	10.6	98	satl
20	4	1985	0018	37	44.9	45	37.9	2233.5	13.6	94	3.1	82	10.6	98	c/cs
20	4	1985	0048	37	44.3	45	29.3	2240.2	13.5	94	3.1	82	10.6	98	c/cs
20	4	1985	0118	37	43.8	45	20.8	2247.0	13.5	94	3.1	82	10.6	98	c/cs
20	4	1985	0124	37	43.72	45	19.06	2248.4	14.3	92	4.0	76	10.6	98	satl
20	4	1985	0136	37	43.62	45	15.43	2251.2	13.0	95	2.5	81	10.6	98	satl
20	4	1985	0148	37	43.4	45	12.2	2253.8	12.9	95	2.5	81	10.5	98	c/cs
20	4	1985	0218	37	42.9	45	4.0	2260.3	12.9	95	2.5	81	10.5	98	c/cs
20	4	1985	0248	37	42.3	44	55.9	2266.7	12.9	95	2.5	81	10.5	98	c/cs
20	4	1985	0318	37	41.8	44	47.8	2273.2	12.9	96	2.5	81	10.5	99	c/cs
20	4	1985	0348	37	41.2	44	39.7	2279.6	12.9	96	2.5	81	10.5	99	c/cs
20	4	1985	0418	37	40.5	44	31.6	2286.1	12.9	96	2.5	81	10.5	99	c/cs
20	4	1985	0448	37	39.9	44	23.5	2292.5	13.0	96	2.5	81	10.6	99	c/cs
20	4	1985	0518	37	39.3	44	15.3	2299.0	13.0	96	2.5	81	10.6	99	c/cs
20	4	1985	0529	37	39.0	44	12.3	2301.4	13.0	96	2.5	81	10.6	99	c/cs
20	4	1985	0530	37	39.0	44	12.0	2301.6	13.0	96	2.5	81	10.6	99	—
20	4	1985	0535	37	38.9	44	10.7	2302.7	13.0	96	2.5	81	10.6	99	c/cs
20	4	1985	0605	37	38.3	44	2.5	2309.2	13.0	95	2.5	81	10.6	98	c/cs
20	4	1985	0635	37	37.7	43	54.4	2315.7	13.0	96	2.5	81	10.6	99	c/cs
20	4	1985	0650	37	37.4	43	50.3	2318.9	13.1	95	2.5	81	10.7	98	c/cs
20	4	1985	0716	37	36.9	43	43.2	2324.6	13.0	95	2.5	81	10.6	98	c/cs
20	4	1985	0723	37	36.8	43	41.3	2326.1	9.8	95	2.5	81	7.4	99	c/cs
20	4	1985	0724	37	36.8	43	41.1	2326.3	12.9	95	2.5	81	10.5	98	c/cs
20	4	1985	0736	37	36.6	43	37.8	2328.8	13.0	96	2.5	81	10.6	99	c/cs
20	4	1985	0740	37	36.5	43	36.7	2329.7	12.2	95	2.5	81	9.8	99	c/cs
20	4	1985	0743	37	36.4	43	36.0	2330.3	12.8	95	2.5	81	10.4	98	c/cs
20	4	1985	0752	37	36.27	43	33.54	2332.2	13.5	94	3.2	81	10.4	98	satl
20	4	1985	0804	37	36.1	43	30.1	2334.9	11.4	93	3.2	81	8.4	98	c/cs
20	4	1985	0805	37	36.1	43	29.9	2335.1	13.7	94	3.2	81	10.7	98	c/cs
20	4	1985	0808	37	36.0	43	29.0	2335.8	13.7	94	3.2	81	10.6	98	c/cs
20	4	1985	0820	37	35.8	43	25.6	2338.5	10.8	93	3.2	81	7.8	98	c/cs
20	4	1985	0821	37	35.8	43	25.4	2338.7	13.6	94	3.2	81	10.6	98	c/cs
20	4	1985	0826	37	35.73	43	23.95	2339.8	13.5	95	3.0	84	10.6	98	satl
20	4	1985	0826	37	35.7	43	23.9	2339.8	12.6	95	3.0	84	9.7	98	c/cs
20	4	1985	0828	37	35.7	43	23.4	2340.3	13.5	95	3.0	84	10.6	98	c/cs
20	4	1985	0835	37	35.6	43	21.4	2341.8	12.8	95	3.0	84	9.9	98	c/cs
20	4	1985	0838	37	35.5	43	20.6	2342.5	13.5	95	3.0	84	10.6	98	c/cs
20	4	1985	0901	37	35.1	43	14.1	2347.7	12.4	95	3.0	84	9.5	99	c/cs
20	4	1985	0903	37	35.0	43	13.6	2348.1	13.5	96	3.0	84	10.6	99	c/cs
20	4	1985	0916	37	34.7	43	9.9	2351.0	10.7	95	3.0	84	7.8	99	c/cs
20	4	1985	0917	37	34.7	43	9.7	2351.2	13.6	95	3.0	84	10.7	98	c/cs
20	4	1985	0925	37	34.6	43	7.4	2353.0	11.2	95	3.0	84	8.3	99	c/cs
20	4	1985	0926	37	34.54	43	7.19	2353.2	10.3	94	2.1	73	8.3	99	satl
20	4	1985	0926	37	34.5	43	7.2	2353.2	12.6	94	2.1	73	10.6	98	c/cs
20	4	1985	0932	37	34.5	43	5.6	2354.4	9.8	92	2.1	73	7.8	97	c/cs
20	4	1985	0933	37	34.4	43	5.4	2354.6	12.5	95	2.1	73	10.6	99	c/cs
20	4	1985	0944	37	34.26	43	2.51	2356.9	14.9	94	4.5	83	10.6	99	satl
20	4	1985	0957	37	34.0	42	58.4	2360.1	14.9	94	4.5	83	10.5	98	c/cs
20	4	1985	1010	37	33.82	42	54.38	2363.4	12.7	96	2.2	87	10.5	98	satl
20	4	1985	1014	37	33.7	42	53.3	2364.2	12.8	96	2.2	87	10.6	98	c/cs
20	4	1985	1044	37	33.1	42	45.3	2370.6	12.8	96	2.2	87	10.6	98	c/cs
20	4	1985	1110	37	32.47	42	38.31	2376.2	12.9	95	2.3	83	10.6	98	satl
20	4	1985	1111	37	32.4	42	38.0	2376.4	12.3	95	2.3	83	10.0	98	c/cs
20	4	1985	1114	37	32.4	42	37.3	2377.0	12.9	96	2.3	83	10.7	99	c/cs
20	4	1985	1126	37	32.1	42	34.0	2379.6	12.8	95	2.3	83	10.5	98	c/cs
20	4	1985	1133	37	32.0	42	32.1	2381.1	12.9	95	2.3	83	10.6	98	c/cs
20	4	1985	1157	37	31.5	42	25.7	2386.2	12.9	95	2.3	83	10.6	98	c/cs
20	4	1985	1158	37	31.47	42	25.42	2386.4	13.3	95	2.7	84	10.6	98	satl
20	4	1985	1227	37	30.9	42	17.3	2392.9	13.3	96	2.7	84	10.6	99	c/cs
20	4	1985	1236	37	30.70	42	14.84	2394.9	13.8	97	3.2	89	10.6	99	satl
20	4	1985	1257	37	30.1	42	8.8	2399.7	13.8	96	3.2	89	10.7	98	c/cs
20	4	1985	1302	37	30.0	42	7.3	2400.9	13.3	96	3.2	89	10.1	99	c/cs
20	4	1985	1305	37	30.0	42	6.5	2401.5	13.9	97	3.2	89	10.7	99	c/cs
20	4	1985	1326	37	29.4	42	0.4	2406.4	10.7	95	3.2	89	7.5	98	c/cs
20	4	1985	1327	37	29.4	42	0.2	2406.6	13.8	97	3.2	89	10.6	99	c/cs
20	4	1985	1346	37	28.88	41	54.75	2410.9	14.0	95	3.5	83	10.6	99	satl
20	4	1985	1352	37	28.8	41	53.0	2412.3	13.0	94	3.5	83	9.6	98	c/cs
20	4	1985	1356	37	28.7	41	51.9	2413.2	14.1	94	3.5	83	10.6	98	c/cs
20	4	1985	1426	37	28.2	41	43.1	2420.2	14.1	95	3.5	83	10.7	99	c/cs
20	4	1985	1443	37	27.8	41	38.0	2424.2	14.0	95	3.5	83	10.6	99	c/cs
20	4	1985	1459	37	27.5	41	33.4	2428.0	13.0	95	3.5	83	9.6	100	c/cs
20	4	1985	1502	37	27.4	41	32.5	2428.6	13.3	95	3.5	83	9.9	99	c/cs
20	4	1985	1524	37	27.0	41	26.4	2433.5	13.6	95	3.5	83	10.2	99	c/cs
20	4	1985	1536	37	26.81	41	22.99	2436.2	13.3	93	3.3	74	10.2	99	satl



Table 1 (continued).

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
20	4	1985	1548	37	26.7	41	19.7	2438.9	12.9	93	3.3	74	9.8	99	c/cs
20	4	1985	1554	37	26.6	41	18.0	2440.1	13.3	93	3.3	74	10.3	99	c/cs
20	4	1985	1624	37	26.3	41	9.6	2446.8	13.3	93	3.3	74	10.3	99	c/cs
20	4	1985	1645	37	26.0	41	3.8	2451.5	10.1	90	3.3	74	7.0	98	c/cs
20	4	1985	1646	37	26.0	41	3.6	2451.7	13.3	93	3.3	74	10.2	99	c/cs
20	4	1985	1656	37	25.9	41	0.8	2453.9	13.2	93	3.3	74	10.1	99	c/cs
20	4	1985	1709	37	25.8	40	57.2	2456.7	13.4	93	3.3	74	10.4	99	c/cs
20	4	1985	1711	37	25.8	40	56.6	2457.2	12.2	92	3.3	74	9.1	99	c/cs
20	4	1985	1713	37	25.7	40	56.1	2457.6	13.3	93	3.3	74	10.3	99	c/cs
20	4	1985	1743	37	25.4	40	47.7	2464.3	13.4	93	3.3	74	10.3	99	c/cs
20	4	1985	1813	37	25.1	40	39.3	2470.9	13.4	92	3.3	74	10.3	98	c/cs
20	4	1985	1818	37	25.02	40	37.90	2472.1	13.4	92	3.3	74	10.3	98	satl
20	4	1985	1822	37	25.0	40	36.8	2473.0	13.3	94	3.3	74	10.3	100	c/cs
20	4	1985	1828	37	24.9	40	35.1	2474.3	13.4	93	3.3	74	10.3	99	c/cs
20	4	1985	1850	37	24.6	40	28.9	2479.2	13.4	94	3.3	74	10.4	100	c/cs
20	4	1985	1912	37	24.3	40	22.8	2484.1	13.3	94	3.3	74	10.3	100	c/cs
20	4	1985	1919	37	24.2	40	20.8	2485.7	13.4	94	3.3	74	10.4	100	c/cs
20	4	1985	1949	37	23.8	40	12.4	2492.4	13.5	93	3.3	74	10.4	99	c/cs
20	4	1985	2015	37	23.5	40	5.0	2498.2	13.4	86	3.3	74	10.2	90	c/cs
20	4	1985	2017	37	23.5	40	4.5	2498.6	13.3	94	3.3	74	10.3	100	c/cs
20	4	1985	2026	37	23.38	40	1.98	2500.6	13.3	98	3.0	93	10.3	100	satl
20	4	1985	2050	37	22.6	39	55.4	2505.9	13.2	100	3.0	93	10.3	102	c/cs
20	4	1985	2114	37	21.68	39	48.84	2511.2	12.3	98	2.2	78	10.3	102	satl
20	4	1985	2120	37	21.5	39	47.3	2512.5	12.3	97	2.2	78	10.3	101	c/cs
20	4	1985	2144	37	20.9	39	41.1	2517.4	12.3	96	2.2	78	10.2	100	c/cs
20	4	1985	2211	37	20.3	39	34.2	2522.9	12.2	96	2.2	78	10.1	100	c/cs
20	4	1985	2235	37	19.8	39	28.1	2527.8	12.2	96	2.2	78	10.2	100	c/cs
20	4	1985	2258	37	19.31	39	22.23	2532.5	12.3	97	2.3	82	10.2	100	satl
20	4	1985	2305	37	19.1	39	20.4	2534.0	12.4	97	2.3	82	10.2	100	c/cs
20	4	1985	2335	37	18.4	39	12.7	2540.2	12.4	96	2.3	82	10.2	99	c/cs
21	4	1985	0000	37	17.9	39	6.2	2545.3	12.4	96	2.3	82	10.2	99	c/cs
21	4	1985	0005	37	17.8	39	4.9	2546.4	12.3	96	2.3	82	10.1	99	c/cs
21	4	1985	0035	37	17.1	38	57.2	2552.5	12.4	96	2.3	82	10.2	99	c/cs
21	4	1985	0105	37	16.5	38	49.5	2558.7	12.3	96	2.3	82	10.1	99	c/cs
21	4	1985	0112	37	16.36	38	47.69	2560.2	12.7	96	2.7	84	10.1	99	satl
21	4	1985	0135	37	15.9	38	41.6	2565.0	12.7	96	2.7	84	10.1	99	c/cs
21	4	1985	0205	37	15.2	38	33.7	2571.4	12.7	96	2.7	84	10.1	99	c/cs
21	4	1985	0235	37	14.5	38	25.7	2577.7	12.7	96	2.7	84	10.1	99	c/cs
21	4	1985	0302	37	13.93	38	18.58	2583.4	13.1	95	3.1	80	10.1	99	satl
21	4	1985	0305	37	13.9	38	17.8	2584.1	13.1	94	3.1	80	10.1	98	c/cs
21	4	1985	0335	37	13.4	38	9.6	2590.6	13.1	95	3.1	80	10.1	99	c/cs
21	4	1985	0405	37	12.9	38	1.4	2597.2	13.1	94	3.1	80	10.1	98	c/cs
21	4	1985	0435	37	12.5	37	53.2	2603.7	13.1	94	3.1	80	10.1	98	c/cs
21	4	1985	0443	37	12.4	37	51.0	2605.5	13.2	94	3.1	80	10.3	98	c/cs
21	4	1985	0554	37	11.3	37	31.4	2621.1	13.2	94	3.1	80	10.2	98	c/cs
21	4	1985	0624	37	10.9	37	23.2	2627.6	13.1	94	3.1	80	10.2	98	c/cs
21	4	1985	0654	37	10.5	37	15.0	2634.2	13.1	94	3.1	80	10.2	98	c/cs
21	4	1985	0724	37	10.0	37	6.8	2640.8	13.1	94	3.1	80	10.2	98	c/cs
21	4	1985	0754	37	9.6	36	58.6	2647.3	13.1	94	3.1	80	10.2	98	c/cs
21	4	1985	0824	37	9.2	36	50.4	2653.9	13.1	94	3.1	80	10.2	98	c/cs
21	4	1985	0854	37	8.7	36	42.2	2660.4	13.1	95	3.1	80	10.1	99	c/cs
21	4	1985	0903	37	8.6	36	39.7	2662.4	13.0	96	3.1	80	10.1	101	c/cs
21	4	1985	0920	37	8.20	36	35.14	2666.1	12.9	97	2.9	85	10.1	101	satl
21	4	1985	0933	37	7.8	36	31.6	2668.9	13.0	97	2.9	85	10.2	101	c/cs
21	4	1985	1002	37	7.02	36	23.86	2675.1	13.5	98	3.4	88	10.2	101	satl
21	4	1985	1003	37	7.0	36	23.6	2675.4	13.5	98	3.4	88	10.2	101	c/cs
21	4	1985	1033	37	6.1	36	15.2	2682.1	13.5	98	3.4	88	10.2	101	c/cs
21	4	1985	1103	37	5.1	36	6.8	2688.8	13.5	98	3.4	88	10.2	101	c/cs
21	4	1985	1110	37	4.92	36	4.88	2690.4	13.1	97	3.0	85	10.2	101	satl
21	4	1985	1133	37	4.3	35	58.7	2695.4	13.1	97	3.0	85	10.2	101	c/cs
21	4	1985	1203	37	3.4	35	50.5	2701.9	13.1	97	3.0	85	10.2	101	c/cs
21	4	1985	1233	37	2.6	35	42.4	2708.5	13.1	97	3.0	85	10.2	101	c/cs
21	4	1985	1259	37	1.9	35	35.4	2714.2	13.1	97	3.0	85	10.2	101	c/cs
21	4	1985	1402	37	0.1	35	18.3	2727.9	13.2	95	3.0	85	10.3	98	c/cs
21	4	1985	1432	36	59.5	35	10.1	2734.5	13.2	95	3.0	85	10.3	98	c/cs
21	4	1985	1502	36	59.0	35	1.9	2741.1	13.1	95	3.0	85	10.2	98	c/cs
21	4	1985	1514	36	58.74	34	58.59	2743.7	14.4	97	4.2	94	10.2	98	satl
21	4	1985	1528	36	58.3	34	54.4	2747.1	14.3	96	4.2	94	10.1	97	c/cs
21	4	1985	1530	36	58.3	34	53.8	2747.5	14.5	97	4.2	94	10.2	99	c/cs
21	4	1985	1643	36	56.0	34	32.0	2765.1	14.5	96	4.2	94	10.2	97	c/cs
21	4	1985	1713	36	55.2	34	23.0	2772.4	14.5	97	4.2	94	10.3	98	c/cs
21	4	1985	1743	36	54.4	34	14.0	2779.6	14.5	96	4.2	94	10.3	97	c/cs
21	4	1985	1750	36	54.2	34	11.9	2781.3	14.7	97	4.2	94	10.4	98	c/cs
21	4	1985	1757	36	54.0	34	9.8	2783.0	14.5	97	4.2	94	10.2	98	c/cs
21	4	1985	1833	36	53.0	33	59.0	2791.7	14.5	96	4.2	94	10.3	97	c/cs
21	4	1985	1903	36	52.2	33	50.0	2799.0	14.5	97	4.2	94	10.3	98	c/cs

Table 1 (continued).

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
21	4	1985	1913	36	51.9	33	47.0	2801.4	14.6	97	4.2	94	10.3	98	c/cs
21	4	1985	2023	36	49.9	33	25.9	2818.4	14.4	95	4.2	94	10.2	96	c/cs
21	4	1985	2048	36	49.3	33	18.4	2824.4	12.2	94	4.2	94	8.0	94	c/cs
21	4	1985	2050	36	49.3	33	17.9	2824.8	9.7	95	4.2	94	5.5	96	c/cs
21	4	1985	2052	36	49.3	33	17.5	2825.1	8.8	96	4.2	94	4.5	98	c/cs
21	4	1985	2053	36	49.3	33	17.3	2825.3	4.2	94	4.2	94	0	—	c/cs
21	4	1985	2110	36	49.19	33	15.80	2826.5	0	90	0	90	0	—	arch
21	4	1985	2110	36	49.2	33	15.8	2826.5	0	90	0	90	0	—	arch
23	4	1985	1930	36	49.19	33	15.80	2826.5	1.5	82	1.5	82	0	—	arch
23	4	1985	1930	36	49.2	33	15.8	2826.5	4.7	90	1.5	82	3.2	93	c/cs
23	4	1985	2113	36	49.2	33	5.6	2834.6	4.2	86	1.5	82	2.7	88	c/cs
23	4	1985	2143	36	49.4	33	3.0	2836.7	4.3	86	1.5	82	2.8	88	c/cs
23	4	1985	2213	36	49.5	33	0.3	2838.9	4.3	86	1.5	82	2.8	88	c/cs
23	4	1985	2239	36	49.7	32	58.0	2840.7	7.1	88	1.5	82	5.6	90	c/cs
23	4	1985	2241	36	49.7	32	57.7	2841.0	9.4	87	1.5	82	7.8	88	c/cs
23	4	1985	2245	36	49.7	32	56.9	2841.6	10.3	81	1.5	82	8.7	81	c/cs
23	4	1985	2255	36	50.0	32	54.8	2843.3	10.6	81	1.5	82	9.1	81	c/cs
23	4	1985	2325	36	50.8	32	48.3	2848.6	10.6	81	1.5	82	9.0	81	c/cs
23	4	1985	2355	36	51.6	32	41.8	2853.9	10.6	81	1.5	82	9.1	81	c/cs
24	4	1985	0000	36	51.7	32	40.7	2854.8	10.6	81	1.5	82	9.1	81	c/cs
24	4	1985	0025	36	52.4	32	35.2	2859.2	10.5	81	1.5	82	9.0	81	c/cs
24	4	1985	0055	36	53.2	32	28.7	2864.5	10.5	81	1.5	82	9.0	81	c/cs
24	4	1985	0125	36	54.0	32	22.2	2869.7	10.5	81	1.5	82	9.0	81	c/cs
24	4	1985	0135	36	54.3	32	20.0	2871.5	10.4	81	1.5	82	8.9	81	c/cs
24	4	1985	0142	36	54.5	32	18.5	2872.7	10.6	81	1.5	82	9.0	81	c/cs
24	4	1985	0155	36	54.8	32	15.7	2875.0	10.6	81	1.5	82	9.1	81	c/cs
24	4	1985	0200	36	54.9	32	14.6	2875.8	10.6	81	1.5	82	9.0	81	c/cs
24	4	1985	0225	36	55.6	32	9.2	2880.2	10.5	82	1.5	82	9.0	82	c/cs
24	4	1985	0231	36	55.8	32	7.9	2881.3	10.5	81	1.5	82	9.0	81	c/cs
24	4	1985	0301	36	56.6	32	1.3	2886.6	10.5	81	1.5	82	9.0	81	c/cs
24	4	1985	0331	36	57.4	31	54.9	2891.8	10.4	81	1.5	82	8.9	81	c/cs
24	4	1985	0401	36	58.2	31	48.4	2897.0	10.4	81	1.5	82	8.9	81	c/cs
24	4	1985	0431	36	59.0	31	42.0	2902.2	10.5	81	1.5	82	9.0	81	c/cs
24	4	1985	0500	36	59.7	31	35.7	2907.3	10.5	82	1.5	82	9.0	82	c/cs
24	4	1985	0530	37	0.5	31	29.2	2912.6	10.5	82	1.5	82	8.9	82	c/cs
24	4	1985	0600	37	1.2	31	22.7	2917.8	10.4	82	1.5	82	8.9	82	c/cs
24	4	1985	0630	37	1.9	31	16.2	2923.0	10.5	82	1.5	82	8.9	82	c/cs
24	4	1985	0700	37	2.6	31	9.7	2928.3	10.4	82	1.5	82	8.9	82	c/cs
24	4	1985	0722	37	3.1	31	4.9	2932.1	7.8	80	1.5	82	6.2	80	c/cs
24	4	1985	0725	37	3.2	31	4.5	2932.5	6.1	81	1.5	82	4.6	81	c/cs
24	4	1985	0732	37	3.3	31	3.6	2933.2	8.4	82	1.5	82	6.9	82	c/cs
24	4	1985	0736	37	3.4	31	2.9	2933.8	10.1	82	1.5	82	8.6	82	c/cs
24	4	1985	0745	37	3.6	31	1.0	2935.3	10.3	82	1.5	82	8.8	82	c/cs
24	4	1985	0815	37	4.3	30	54.6	2940.5	10.3	82	1.5	82	8.8	82	c/cs
24	4	1985	0845	37	5.0	30	48.2	2945.6	10.3	83	1.5	82	8.8	83	c/cs
24	4	1985	1122	37	8.3	30	14.6	2972.6	10.4	82	1.5	82	8.9	82	c/cs
24	4	1985	1152	37	9.1	30	8.1	2977.8	10.4	82	1.5	82	8.8	82	c/cs
24	4	1985	1213	37	9.6	30	3.6	2981.4	10.4	82	1.5	82	8.9	82	c/cs
24	4	1985	1243	37	10.3	29	57.1	2986.6	10.4	82	1.5	82	8.9	82	c/cs
24	4	1985	1303	37	10.8	29	52.8	2990.1	8.2	80	1.5	82	6.6	80	c/cs
24	4	1985	1306	37	10.8	29	52.3	2990.5	5.9	80	1.5	82	4.3	79	c/cs
24	4	1985	1313	37	11.0	29	51.5	2991.2	5.5	80	1.5	82	4.0	79	c/cs
24	4	1985	1330	37	11.2	29	49.5	2992.8	8.1	82	1.5	82	6.5	82	c/cs
24	4	1985	1333	37	11.3	29	49.0	2993.2	10.3	82	1.5	82	8.7	82	c/cs
24	4	1985	1341	37	11.5	29	47.3	2994.5	10.7	81	1.5	82	9.2	81	c/cs
24	4	1985	1411	37	12.3	29	40.7	2999.9	10.6	81	1.5	82	9.1	81	c/cs
24	4	1985	1441	37	13.1	29	34.1	3005.2	10.6	81	1.5	82	9.1	81	c/cs
24	4	1985	1511	37	13.9	29	27.5	3010.5	7.3	78	1.5	82	5.7	77	c/cs
24	4	1985	1514	37	14.0	29	27.1	3010.9	5.9	80	1.5	82	4.4	79	c/cs
24	4	1985	1525	37	14.2	29	25.7	3012.0	6.5	81	1.5	82	4.9	80	c/cs
24	4	1985	1537	37	14.4	29	24.1	3013.3	8.7	81	1.5	82	7.2	81	c/cs
24	4	1985	1540	37	14.5	29	23.6	3013.7	10.6	82	1.5	82	9.1	82	c/cs
24	4	1985	1553	37	14.8	29	20.7	3016.0	10.8	82	1.5	82	9.3	82	c/cs
24	4	1985	1623	37	15.5	29	14.0	3021.4	10.8	82	1.5	82	9.3	82	c/cs
24	4	1985	1653	37	16.3	29	7.2	3026.8	10.9	82	1.5	82	9.3	82	c/cs
24	4	1985	1723	37	17.0	29	0.5	3032.3	10.9	82	1.5	82	9.3	82	c/cs
24	4	1985	1753	37	17.8	28	53.7	3037.7	10.8	82	1.5	82	9.3	82	c/cs
24	4	1985	1823	37	18.5	28	47.0	3043.1	10.7	82	1.5	82	9.1	82	c/cs
24	4	1985	1848	37	19.1	28	41.4	3047.6	10.6	82	1.5	82	9.1	82	c/cs
24	4	1985	1918	37	19.9	28	34.8	3052.9	10.5	81	1.5	82	8.9	81	c/cs
24	4	1985	1946	37	20.6	28	28.8	3057.7	10.4	80	1.5	82	8.9	80	c/cs
24	4	1985	2002	37	21.1	28	25.3	3060.5	10.4	81	1.5	82	8.9	81	c/cs
24	4	1985	2032	37	21.9	28	18.8	3065.7	10.5	82	1.5	82	8.9	82	c/cs
24	4	1985	2102	37	22.6	28	12.3	3071.0	10.5	82	1.5	82	9.0	82	c/cs



Table 1 (continued).

Day	Month	Year	Time (UTC) <sup>a</sup>	North latitude		West longitude		Cumulative distance (n. mi)	Actual		Drift		Dead reckoning		Comments <sup>b</sup>
				deg	min	deg	min		Speed (kt)	Course (deg)	Speed (kt)	Heading (deg)	Speed (kt)	Course (deg)	
24	4	1985	2112	37	22.8	28	10.1	3072.7	10.5	82	1.5	82	9.0	82	c/cs
24	4	1985	2117	37	22.9	28	9.0	3073.6	9.2	343	1.5	82	9.6	334	c/cs
24	4	1985	2118	37	23.1	28	9.1	3073.7	10.4	81	1.5	82	8.9	81	c/cs
24	4	1985	2150	37	23.9	28	2.2	3079.3	10.3	81	1.5	82	8.7	81	c/cs
24	4	1985	2220	37	24.7	27	55.8	3084.4	10.1	80	1.5	82	8.6	80	c/cs
24	4	1985	2250	37	25.6	27	49.5	3089.5	10.1	80	1.5	82	8.6	80	c/cs
24	4	1985	2320	37	26.4	27	43.2	3094.5	10.3	80	1.5	82	8.8	80	c/cs
24	4	1985	2350	37	27.3	27	36.8	3099.7	10.4	81	1.5	82	8.9	81	c/cs
25	4	1985	0000	37	27.5	27	34.7	3101.4	10.4	81	1.5	82	8.9	81	c/cs
25	4	1985	0014	37	27.9	27	31.6	3103.9	10.2	80	1.5	82	8.7	80	c/cs
25	4	1985	0037	37	28.6	27	26.8	3107.8	10.2	80	1.5	82	8.7	80	c/cs
25	4	1985	0107	37	29.4	27	20.4	3112.9	10.2	80	1.5	82	8.7	80	c/cs
25	4	1985	0137	37	30.3	27	14.1	3118.0	10.0	80	1.5	82	8.5	80	c/cs
25	4	1985	0155	37	30.8	27	10.3	3121.0	9.9	80	1.5	82	8.4	79	c/cs
25	4	1985	0915	37	44.00	25	40.00	3193.8	9.9	80	0	0	8.4	79	port

<sup>a</sup> UTC = Universal Coordinated Time.

<sup>b</sup> c/cs = change of course; satl = satellite navigation; arch = on site Archie.

**Table 2. Real-time recording parameters on board *JOIDES Resolution*.**

	ED01	ED02
Line 1: Site 418 to Norfolk		
High Cut:	<sup>a</sup> 320-340 Hz	<sup>a</sup> 300-340 Hz
Low Cut:	<sup>a</sup> 80-120 Hz	<sup>a</sup> 80-120 Hz
Gain:		
Amp:	<sup>a</sup> 70-90 dB	<sup>a</sup> 70-90 dB
Recorder:	Full	Full
Line 2: Norfolk to Site Archie		
High Cut:	<sup>a</sup> 300-340 Hz	<sup>a</sup> 250-340 Hz
Low Cut:	<sup>a</sup> 80-120 Hz	<sup>a</sup> 80-120 Hz
Gain:		
Amp:	70 dB	70 dB
Recorder:	Full	Full
Line 3: Site Archie to Ponta Delgada		
High Cut:	<sup>a</sup> 250-340 Hz	<sup>a</sup> 320-340 Hz
Low Cut:	<sup>a</sup> 20-100 Hz	<sup>a</sup> 70-90 Hz
Gain:		
Amp:	80 dB	80 dB
Recorder:	Full	Full

<sup>a</sup> Change during the acquisition; for detail, see Figure 5A-5F.