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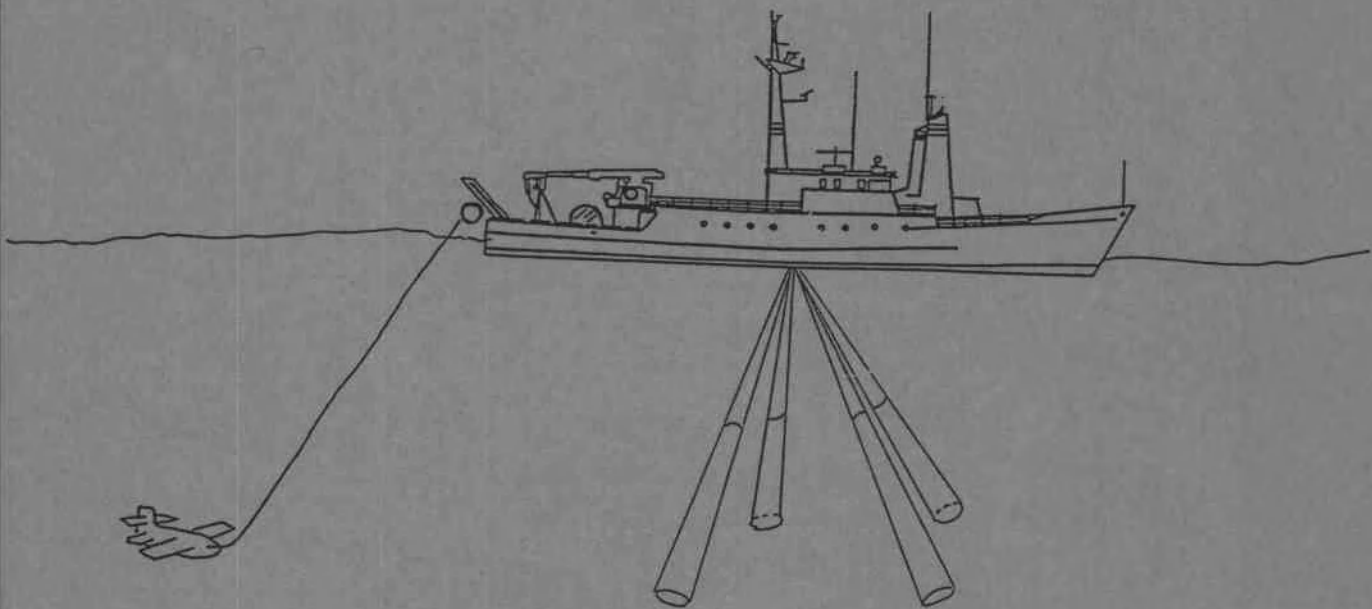

**SEASOAR and CTD Observations
During a COARE Surveys Cruise,
W9211A, 8 November to 8 December 1992**

by

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Introduction

An international Coupled Ocean-Atmosphere Response Experiment (COARE) was conducted in the warm-pool region of the western equatorial Pacific Ocean over a four-month period from November 1992 through February 1993 (Webster and Lukas, 1992). Most of the oceanographic and meteorological observations were concentrated in the Intensive Flux Array (IFA) centered at 1°45'S, 156°00'E. As part of this experiment, three survey cruises were conducted on the R/V Wecoma; each cruise included measurements of the temperature, salinity and velocity distribution in the upper 300 m of the ocean, and continuous meteorological measurements of wind, air temperature, humidity, etc. Most of these measurements were along a butterfly pattern that was sampled repeatedly during the three COARE Surveys cruises, W9211A and W9211B, and W9211C.

Our primary objective was to measure zonal and meridional gradients across the center of the IFA. We originally intended to sample along a larger pattern (with diagonals of 200 km) at the beginning and end of each cruise, and to sample a smaller pattern (diagonals of 100 km) as continuously as possible through the main portion of each cruise. Early in W9211A, we found that the smaller pattern was not large enough to span the actual positions of the profiling current meter array, and that frequent deviations from our initial choice of longitude would be necessary to avoid moorings and quasi-stationary ships. We therefore abandoned our plan of two separate sampling patterns, and instead chose one Standard Butterfly Pattern with a meridional section along 156°06'W and a zonal section along 1°50'S, connected in the southwestern and northeastern quadrants. Along this track, we measured the upper-ocean temperature and salinity by means of a towed undulating Seasoar vehicle (Figure 1) equipped with a SeaBird CTD system, while underway at 7-8 knots. CTD casts were made at the beginning and end of each tow, primarily to check calibration of the Seasoar sensors; additional CTD casts were occasionally made along portions of the standard sections while Seasoar was disabled. Water velocity along the ship's track was measured by means of the ship-borne acoustic Doppler current profiler.

This report summarizes the Seasoar and CTD observations from Wecoma's first COARE Surveys cruise, W9211A. It also provides a cruise narrative, and a brief description of the data processing procedures.

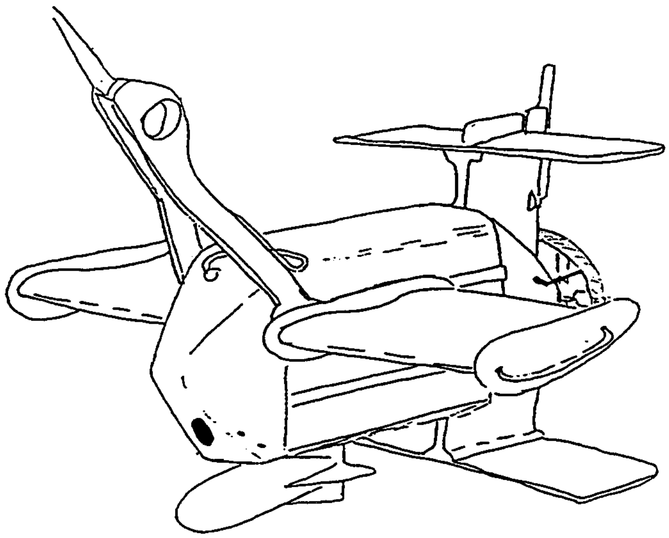


Figure 1. Sketch of the Seasoar vehicle used during W9211A. Inlet and outlet ports for the dual T-C SeaBird sensor ducts are on both sides of the lower nose. A SeaTech fluorometer was mounted just inside the larger hole in the nose. A 25-cm transmissometer was mounted on top during the first tow, but was later removed because of an irrepairable malfunction.

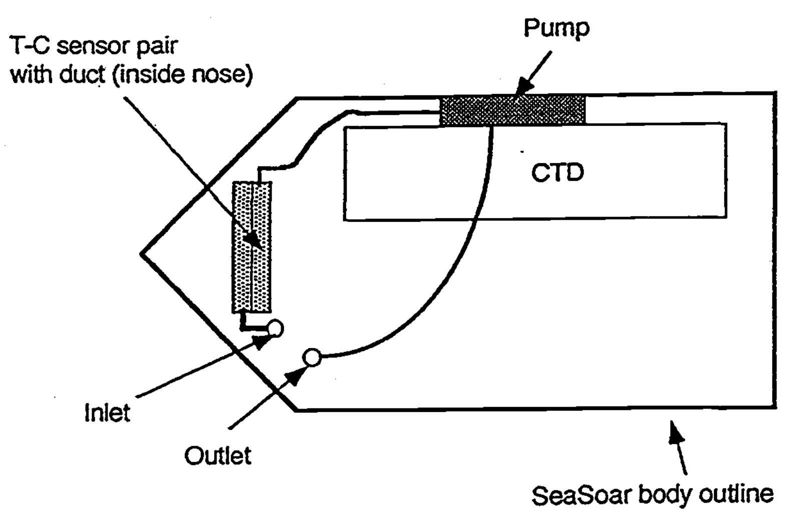


Figure 2. Schematic of the plumbing of the ducted T/C sensors inside the Seasoar vehicle. Primary sensor inlet and outlet ports were on the starboard side of the nose; secondary sensor ports were on the port side. The fluorometer was mounted internally as far forward as possible and below the CTD; its sampling volume was just inside the nose, immediately behind a 5-cm-diameter opening.

Cruise Narrative, W9211A

Wecoma departed from Guam about 0200 UTC, 8 November 1992, and began transit toward an Atlas Buoy at 0°N, 154°E; our intention was to repair an anemometer and install an optical rain gage after morning arrival on 12 November. En route, we made 20-minute ADCP calibration runs once per hour for 12 hours on 11 November. On arrival at the Atlas buoy, we found westerly winds too strong and seas too rough to service the buoy. We made a CTD cast alongside the buoy (Table 1), and then began transit to 1°N, 156°E. Cross-equatorial hydrographic sampling along 156°E consisted of CTD Stations 2 - 7, all to 500 dbar and at intervals of 20 nm (Table 1). CTD casts were made with an SBE 9/11*plus* CTD equipped with dual ducted temperature and conductivity sensors (Table 2). Temperature and salinity data from the first three stations were noisy because the air-venting plugs had been inadvertently omitted in both T/C ducts; the plugs were properly inserted before Station 4.

The Seasoar vehicle (Figure 1, 2) was equipped with an SBE 9/11*plus* CTD with dual ducted temperature and conductivity sensors (Table 2), a SeaTech Fluorometer (SN 48) with sensitivity set to "medium" and time constant set to 3 sec, and a SeaTech 25-cm Transmissometer. The Seasoar wings were set to have equal maximum travel (18°) for both ascent and descent.

Seasoar was deployed for Tow 1 at 00°39'S, 155°57'E at about 0200 UTC, 13 November, immediately after CTD Station 7. Our intention was to begin towing south, continue with one occupation of a Large Butterfly Pattern (with 200-km diagonals), and then continue with repeated occupations of a small butterfly pattern (with 100-km diagonals). The intended Large Butterfly Pattern had a meridional section along 155°56'E (from 0°56' S to 2°42' S), and a zonal section along 1°50' S (from 155°05'E to 156°49'E). At the request of scientists on Moana Wave, and to avoid repeated maneuvering around moorings, the longitude of the meridional section was changed to 156°06'E at about 1200 UTC, 13 November (Figure 3). While conducting this first Large Butterfly survey, we found that the intended 100-km diagonals of the smaller pattern would not span the actual positions of the profiling current meter array, and therefore changed our two-pattern plan to adopt a single intermediate-sized Standard Butterfly Pattern with diagonal length of 140 km (Figure 4). Cardinal waypoints of the Standard Butterfly Pattern are given in Table 3.

Seasoar sampling was generally from a few meters below the surface to a maximum of 280 or 300 m, except along a portion of the E2N quadrant where Seasoar was kept below 25 m while the ship's holding tanks were pumped. About ten hours after the beginning of Tow 1, temperature and salinity data from the primary (starboard) sensors developed a severe

Table 1. Summary of CTD Stations during W9211A.

Date	Time (UT)	Station No.	Latitude	Longitude	Wind Dir (T)	Wind Spd (kts)	Atmos. P. (mbar)
11 Nov	2058	1	00° 01.1'N	153° 59.6' E	255	28	1007.2
12 Nov	0819	2	01° 01.1'	156° 00.0'	240	23	1006.5
	1055	3	00° 40.0'	156° 00.0'	240	18	1007.8
	1335	4	00° 19.9'	156° 00.0'	240	16	1006.9
	1614	5	00° 02.0'	156° 00.1'	200	21	1005.8
	1909	6	00° 20.0'S	156° 00.0'	193	15	1006.9
	2248	7	00° 38.7'	155° 57.0'	200	16	1008.5
15 Nov	1817	8	02° 19.8'	155° 59.5'	245	3	1007.2
	2239	9	02° 16.3'	156° 00.4'	230	8	1009.7
16 Nov	0620	10	02° 26.2'	156° 06.2'	175	4	1006.7
	1126	11	02° 14.1'	155° 54.1'	095	7	1009.1
	1230	12	02° 09.9'	155° 50.0'	110	7	1009.1
	1333	13	02° 06.5'	155° 46.0'	110	6	1008.4
	1437	14	02° 02.5'	155° 41.7'	calm	0	1007.5
	1713	15	01° 58.0'	155° 37.7'	calm	0	1007.2
	1814	16	01° 54.0'	155° 34.0'	140	4	1008.5
	1940	17	01° 54.0'	155° 34.0'	100	3	1009.2
	2037	18	01° 50.0'	155° 30.0'	110	4	1009.7
	2137	19	01° 50.0'	155° 36.0'	135	6	1009.4
	2245	20	01° 50.1'	155° 42.2'	135	6	1007.5
17 Nov	0212	21	01° 50.0'	155° 47.9'	160	7	1007.5
20 Nov	2240	22	02° 02.0'	155° 42.1'	180	9	1010.2
20 Nov	2356	23	01° 58.1'	155° 37.9'	165	9	1010.0
21 Nov	0105	24	01° 54.1'	155° 34.1'	150	6	1009.3
22 Nov	1012	25	01° 14.0'	156° 06.1'	060	7	1011.0
25 Nov	0005	26	01° 24.7'	156° 16.6'	285	21	1009.1
	0119	27	01° 22.5'	156° 14.0'	260	16	1007.5
	0223	28	01° 18.6'	156° 10.1'	260	13	1007.0
	0348	29	01° 13.9'	156° 06.1'	260	14	1006.5
28 Nov	1931	30	01° 48.7'	156° 07.8'	250	6	1011.6
29 Nov	0545	31	01° 49.8'S	155° 52.0'	290	5	1008.9
4 Dec	0008	32	04° 51.4'N	156° 06.9' E	080	18	1010.4

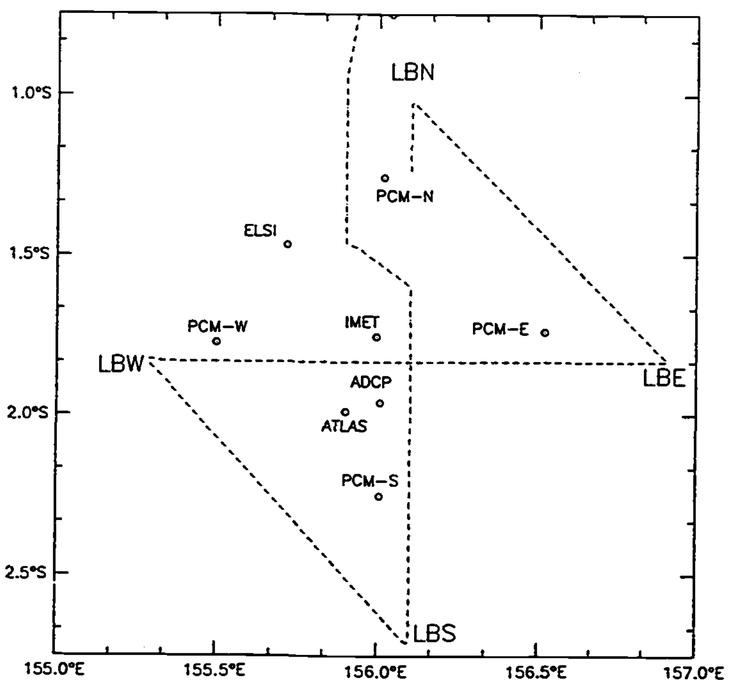


Figure 3. Ship's track during the Large Butterfly Pattern, 13-15 November 1992, with moorings of the COARE Intensive Flux Array. The longitude of the meridional section (originally 155.9 W) was changed to 156.1 W at the request of scientists on Moana Wave.

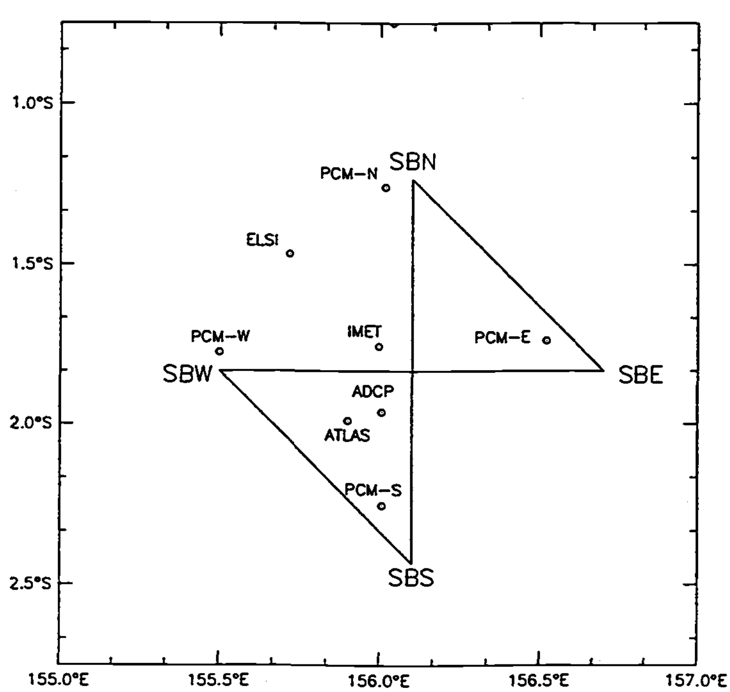


Figure 4. The Standard Butterfly Pattern in relation to the moorings of the COARE Intensive Flux Array.

Table 2. Instruments and sensors used for CTD, and Seasoar sampling, W9211A, with date of most recent manufacturer's pre-cruise calibration.

System (Instrument)	Sensor		Pre-Cruise Calibration Date
CTD (SBE *9/11 plus* SN 0256)	P		5 Mar 92
	T1	1367	6 Oct 92 (modified 2 Dec 92)
	T2	1369	6 Oct 92 (modified 2 Dec 92)
	C1	1030	16 Sept 92
	C2	1041	16 Sept 92
Seasoar (SBE *9/11 plus* SN 2843)			
	P		5 Mar 92
	C1	1018	17 Apr 92
	C2	1021	24 Apr 92
	T1	1364	27 Mar 92 (modified 2 Dec 92)
	T2	1366	27 Mar 92 (modified 2 Dec 92)

Table 3. Waypoints for the Standard Butterfly Pattern used for Seasoar sections in the COARE Intensive Flux Array throughout most of the three COARE Surveys cruises. Sampling was normally southward from SBN to SBS along 156°06'E (section N2S), northwestward from SBS to SBW (section S2W), eastward along 1°50'S from SBW to SBE (section W2E), and northwestward from SBW to SBN (section E2N).

Waypoint	Latitude	Longitude
SBN	1°14'S	156°06'E
SBS	2°26'S	156°06'E
SBW	1°50'S	155°30'E
SBE	1°50'S	156°42'E

hysteresis, indicating a plumbing or pump failure. Pressure spikes occurred occasionally but otherwise data acquisition was satisfactory. After completing the Large Butterfly Pattern (Table 4), we continued with the Standard Butterfly Pattern. The data signal became intermittent at 1602 UTC on 15 Nov, and ceased at 1625 UTC, 15 Nov, soon after the turn at SBS. Seasoar was immediately recovered, and we made a CTD cast (Station 8) for comparison with the Seasoar CTD data. After recovery of the Seasoar vehicle at the end of Tow 1 we found that conductors in the sea cable had shorted out; since spare conductors seemed to be intact, the CTD was connected to these instead. We also replaced the SBE pump for the primary temperature and conductivity sensors with a spare (the original pump had failed). The transmissometer was removed from the Seasoar vehicle since it was not providing useful data, apparently because of insufficient temperature compensation.

While Seasoar was being prepared for Tow 2, we made a CTD cast (Station 9) alongside the PCM-S mooring at 2°15'S, 156°00'E. We then returned to SBS to make another CTD cast (Station 10) for comparison with the beginning of Tow 2. Very soon after the Seasoar deployment at 0715 UTC, 16 Nov, the data signal was again interrupted, and Tow 2 was aborted, with Seasoar recovered on deck about 0900 UTC. Since it was clear that diagnosing and repairing the problem would take more than a few hours, we continued sampling along the Standard Butterfly track by making closely-spaced CTD stations, and made plans to rendezvous with Moana Wave (to transfer cables needed to test instruments on the COARE IMET buoy). A series of CTD casts to 300 m at 10 km intervals along the S2W section (Stations 11-18, Table 1) was interrupted by the need to reterminate the CTD/rosette cable after flooding of the conducting swivel at Station 16 (aborted at 135 m). CTD sampling along the W2E section (Stations 18-20) continued until the rendezvous with Moana Wave at 0130 UTC, 17 Nov.

After the rendezvous we returned to the W2E line to make a pre-tow CTD comparison cast (Station 21). Seasoar was deployed at 1°50'S, 155°48'E at about 0330 UTC, 17 Nov, and sampling resumed along the W2E section (Table 5). Sampling along the Standard Butterfly pattern continued through 18 and 19 November (Table 5). The data acquisition system stopped unexpectedly at about 1122 UTC, 11 November, and it took several minutes to restart; the resulting 4-minute data gap was filled with values of 1.0e35. Seasoar continued to work well until 1856 UTC, 20 Nov, when we again lost data signal. The vehicle was brought aboard for repairs, and we continued sampling along S2W with closely spaced CTD casts to 300 m (Stations 22-24). Since the weather was fair, and forecast to remain the same, we decided to transit to the Atlas mooring at 0°N, 154°E to repair its anemometer and install a rain gage, but first we continued ADCP sampling to the center of the butterfly pattern. We arrived at the mooring about 1930 UTC, 21 Nov, and had finished servicing it by 2100 UTC.

Table 4. Times (UTC) of standard waypoints during Seasoar Tow 1 of W9211A. Waypoints for the Large Butterfly Pattern (Figure 3) were: LBN (1°01'S, 155°56'E on 13 Nov, and 1°01'S, 156°06'E on 15 Nov), LBS (2°42'S, 156°06'E), LBW (1°50'S, 155°14'E), and LBE (1°50'S, 156°55'E). Positions of waypoints of the Standard Butterfly Pattern (Figure 4) are listed in Table 3.

Date	Start/ End	LBN	SBN	SBS	LBS	LBW	LBE
Nov 13	0207	0550	0755*	1938	2145		
Nov 14						0635	1950
Nov 15		0424	0627	1534			
Nov 15	1601						

* The 13 November position (1°14'S, 155°56'E) was 10 nm west of the standard SBN position adopted later.

Table 5. Times (UTC) of standard waypoints during Seasoar Tow 3 of W9211A. Positions of waypoints are given in Table 3.

Date	start/end	SBN	SBS	SBW	SBE
Nov 17	0329				1038
Nov 17		1652			
Nov 18			0118	0723	1647
Nov 18		2325			
Nov 19			0754	1422	2310
Nov 20		0605	1508		
Nov 20	1856				

Table 6. Times (UTC) of standard waypoints during Seasoar Tow 4 of W9211A. Positions of waypoints are given in Table 3.

Date	start/end	SBN	SBS	SBW	SBE
Nov 22	1107	1107	2032		
Nov 23				0242	1206
Nov 23		1854			
Nov 24			0258	0925	1755
Nov 24	2335				

When we arrived back at SBN, we first did a pre-tow CTD cast (Station 25, Table 1) and then deployed Seasoar at 1107 UTC, 22 Nov to begin Tow 4 Table 6). Seasoar functioned normally for about 54 hours, though the data signal from the fluormometer began to fade and grow increasingly noisy at about 2100 UTC, 23 Nov. At about 1630 UTC, 24 Nov, the Seasoar flight characteristics changed abruptly with a decrease in both maximum depth and maximum cable tension. Check of the resistance of the hydraulic unit indicated it did not have a seawater leak. For more than five hours, we continued to undulate Seasoar between 220 m and the surface (or 20 m while the ship was pumping tanks, 2130 to 2210 UTC), occasionally slowing the ship to obtain measurements at greater depths. Our aim was to complete the survey pattern and reach the northern waypoint (SBN) before recovering Seasoar. However, winds were strengthening at about 2250 UTC, so we stopped towing and recovered the vehicle while seas were moderate. When Seasoar was recovered on deck at 2335 UTC, 24 Nov, it was obvious that the upper horizontal tail fin had overflexed and was severely cracked on both sides of the tail. CTD Station 26 was made immediately after recovery, and three additional CTD casts (Stations 27-29, Table 1) were made before arriving at SBN at 0345 UTC, 25 November.

The Seasoar vehicle was readily repaired by replacing the upper tail fin with a spare. Since the fluorometer lamp was weak and flashing erratically, it was disconnected from the Seasoar CTD, though left in place at the bottom of the Seasoar vehicle. After a pre-tow CTD comparison cast (Station 29), Seasoar was deployed at SBN at about 0430, 25 Nov, and Tow 5 began southward toward SBS (Table 7). We continued sampling along the Standard Butterfly Pattern, for more than three days (Table 7), with only a minor interruption at about 0600 UTC to obtain salinity samples from R/V Franklin via small boat; we continued to tow Seasoar at 3-6 kts during the rendezvous. Tow 5 ended part-way along the E2N section after abrupt loss of control signal to the vehicle at 1725 UTC, 28 Nov. The vehicle was recovered at about 1900 UTC, and a post-tow comparison CTD cast (Station 30, Table 1) was made immediately afterward.

While the Seasoar cable was reterminated, Wecoma ran some short lines southeast of the IMET mooring to make small-scale surface salinity observations in the wake of recent squalls. Since both the lower and upper tail fins on the Seasoar vehicle were severely warped, both were replaced with PVC spares. After repairs were complete, we returned to a point on the W2E section farther west of the end of Tow 5, and there made a pre-tow CTD comparison cast (Station 31, Table 1), deployed Seasoar at about 0640 UTC, and began Tow 6 westward toward SBE (Table 8). We continued sampling along the Standard Butterfly Pattern in the usual direction until 1330 UTC, 1 Dec, when we arrived at SBS (Table 8). Since there was not sufficient time left in the cruise to complete the butterfly pattern we continued south to 02° 40'S, and then turned northward again to sample along 156° 06' E. Seasoar

Table 7. Times (UTC) of standard waypoints during Seasoar Tow 5 of W9211A. Positions of waypoints are given in Table 2.

Date	start/end	SBN	SBS	SBW	SBE
Nov 25	0435	0435	1431	2120	
Nov 26					0525
Nov 26		1242	2215		
Nov 27				0505	1353
Nov 27		2102			
Nov 28			0645	1330	
Nov 28	1902				

Table 8. Times (UTC) of standard waypoints during Seasoar Tow 6 of W9211A. Positions of waypoints are given in Table 2.

Date	start/end	SBN	SBS	SBW	SBE
Nov 29	0645				1323
Nov 29		2023			
Nov 30			0550	1225	2123
Dec 1		0421	1330		
Dec 1			1734		
Dec 2		0229			
Dec 3	2348				

Table 9. Summary of Seasoar tows, W9211A, showing variables measured (pressure, temperature, conductivity, fluorescence, light transmission), and the parameters used for at-sea data processing and analysis (the T-C offset in scans, and the amplitude α and time constant β for the thermal mass correction.

Tow No.	Start Time	Stop Time	Duration of tow (hrs)	Parameters Measured	T/C Pair used for At-Sea Analysis (offset, α, β)
1	11/13/0206	11/15/1621	61	P, T2, C2, F, trans*	T2,C2 (2, 0.03, 9.0)
2	11/16/0723	11/16/0810	0	P, T1, C1, T2, C2, F, trans	
3	11/17/0330	11/20/1855	87	P, T1, C1, T2, C2, F	T2, C2 (3.25, 0.04, 12.0)
4	11/22/1109	11/24/2335	59	P, T1, C1, T2, C2, F*	T1, C1 (4.75, 0.04, 12.0)
5	11/25/0430	11/28/1902	84	P, T1, C1, T2, C2	T2, C2 (3.25, 0.045, 8.0)
6	11/29/0640	12/03/2348	112	P, T1, C1, T2, C2	T2, C2 (3.25, 0.045, 8.0)

*Transmissometer provided no usable data; fluorometer began to fail about 2100 UTC, 23 Nov
Total towing time: 403 hours, 16.8 days

sampling continued northward across the equator to 4°48'N, 156°06'E where the vehicle was recovered at 2348 UTC, 3 December. CTD Station 32 (Table 1) was completed immediately after recovery.

Wecoma arrived in Pohnpei at about 2300 UTC, 4 Dec, to disembark some personnel and departed there at about 0600 UTC, 5 Dec for the transit to Guam. Wecoma arrived in Guam at 2300 UTC, 8 Dec.

Underway measurements were made continuously through most of the cruise. These include: Acoustic Doppler Current Profile measurements of water velocity relative to the ship and accompanying GPS position data (E. Firing, P. Hacker and R. Lukas, University of Hawaii); temperature and salinity of water at 2 m and 5 m depth (C. Paulson, Oregon State University); near-surface salinity of water pumped from a buoyant hose (G. Lagerloef, SAIC); and a broad spectrum of meteorological observations (C. Paulson) including sonic inertial dissipation (J. Edson, Woods Hole Oceanographic Institution).

Members of the scientific party included Marc Willis and Mike Hill, (both Wecoma Marine Technicians), Adriana Huyer, Clayton Paulson, Michael Kosro, Fred Bahr, Lynn deWitt, Robert O'Malley, Eric Antonissen (all from Oregon State University), Peter Hacker, Craig Huhta, Sean Kennan, Jeff Snyder and Steve Azevedo (all from University of Hawaii).

Seasoar Data Acquisition and Preliminary Processing

Raw 24 Hz CTD data from the Seasoar vehicle and GPS position and time data were acquired by an IBM compatible PC, which also set flags in the data stream to indicate missing GPS data and to record keystrokes marking the once-per-hour collection of a salinity sample from the throughflow system. The raw data were simultaneously recorded on optical disk by PC and on a Sun Sparc workstation. The PC displayed time series of subsampled temperature (both sensors), conductivity (both sensors) and pressure in real time; it also displayed accumulated temperature data for 6-8 hours as a vertical section (color raster). One-second averages of position, CTD temperature (both sensors), conductivity (both sensors), salinity (both sensor pairs), and pressure were calculated on the Sparc workstation, using the most recent manufacturer's calibration (Table 2). For each tow, the preliminary salinity for each sensor pair was calculated using a fixed offset between temperature and salinity, and a fixed value for the amplitude and time constant of the thermal mass of the conductivity cell, but these parameters were changed from one tow to another (Table 9). Time-series and vertical profile plots of the one-second data were made at the end of each hour. The 1-second preliminary data were used to average the temperature and salinity data over 3 km in the horizontal and 2 dbar in the vertical, and these gridded values were used to plot vertical sections for each leg of the Standard Butterfly pattern.

CTD Data Acquisition, Calibration and Data Processing

All CTD/rosette casts were made with an SBE 9/11-plus CTD system equipped with dual ducted temperature and conductivity sensors (Table 2). CTD casts to 500 dbar were made primarily to monitor the calibration of the Seasoar data, and were therefore made before and after each Seasoar tow, with as little delay as possible. Additional CTD casts to 300 dbar were made to complet sections or continue sampling while Seasoar was inoperable. Raw 24 Hz CTD data were acquired on an IBM compatible PC using the SEASAVE module of SEASOFT version 4.015 (Anon., 1992); temperature and conductivity data were recorded from both pumped sensor ducts. At each station a few salinity samples were collected for *in situ* calibration of the conductivity sensors; CTD values at the sample depth (calculated from the most recent manufacturer's pre-cruise calibration) were recorded both by pressing the F5 key at the time of rosette firing and manually on the station log sheets. Samples were analyzed on a Guildline Autosal salinometer that was standardized with IAPSO Standard Water P-119 at the beginning and end of each batch of about 36 samples. Comparison of 88 pairs of sample and CTD salinity values showed systematic differences, indicating that a correction to the CTD conductivity data was required. To determine this correction, we first calculated the *in situ* conductivity of the sample from the sample salinity and the CTD temperature, compared this "sample conductivity" to the CTD conductivity, and regressed the differences on the sample conductivity. This comparison indicated the CTD conductivity should be corrected by

$$C_c = -0.00221 + 1.00090981\ C_o$$

This formula was used to reprocess the CTD data. Remaining differences between corrected CTD and sample salinity data (88 pairs, with a mean of 0.001 psu and a standard deviation of 0.005 psu) were not significantly different from zero.

CTD data were processed on an IBM-compatible PC using applicable SEASOFT modules. Since there was no significant difference between the data from the two sensor pairs, we processed data from the primary sensors only. The configuration files were edited with the SEACON module to incorporate the conductivity slope and offset determined from the *in situ* calibration samples. The DATCNV module of SEASOFT was used with the pre-cruise calibration constants to calculate 24 Hz values of pressure, temperature and conductivity from the raw frequencies. When necessary, the output data file was edited to remove any spikes and any values inadvertently recorded before the pressure minimum at the beginning of the cast. The CELLTM module was used to correct for the thermal mass of the conductivity cell, assumed to have a thermal anomaly amplitude of 0.03 and a time constant of

9 seconds. Ascending portions of the 24-Hz data file were removed by LOOPEDIT with the minimum velocity set to 0.0 m/s. The remaining data were averaged to 1 dbar values using BINAVG. The final processed data files consist of 1 dbar values of pressure, temperature and conductivity. These processed data files were transferred to a SUN computer where we used standard algorithms (Fofonoff and Millard, 1983) to calculate salinity, potential temperature, density anomaly (sigma-theta), specific volume anomaly, and geopotential anomaly (dynamic height). Where appropriate, comments are included in the file headers to indicate particular problems with a specific cast.

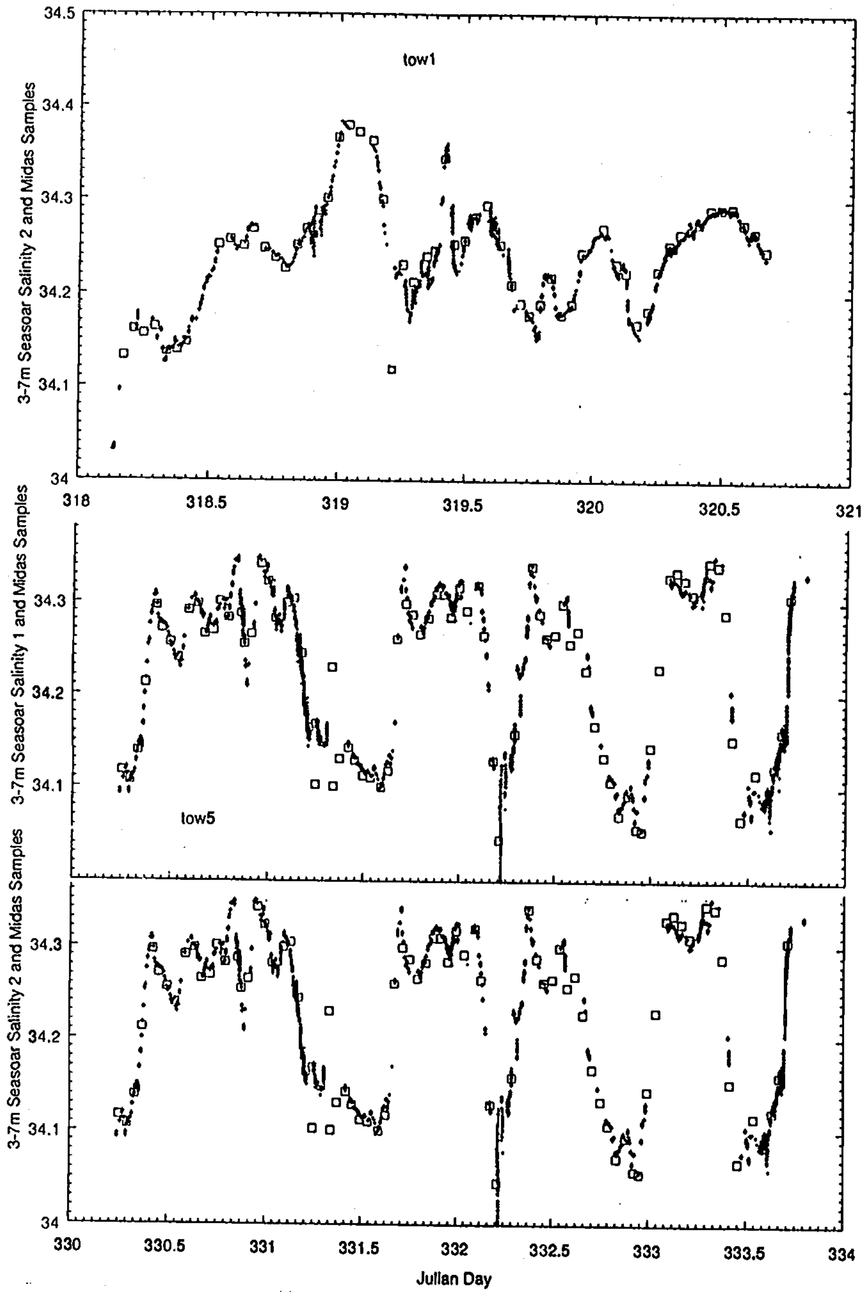
Seasoar Conductivity Calibration

Salinity samples were collected about once per hour from a throughflow system in Wecoma's wetlab from1100 UTC, 11 November until 2300 UTC, 3 December 1992. This system pumps water from the seachest at a depth of 5 m in the ship's hull, through a tank containing SBE temperature and conductivity sensors; samples are drawn from a point just beyond this tank. The 120 ml glass sample bottles were rinsed three times before filling, and closed with screw-on plastic caps with conical polyethylene liners. Samples were further sealed by wrapping parafilm around the base of the cap. Samples were analyzed at sea on an Autosal salinometer, usually within 2-3 days after collection; the salinometer was standardized with IAPSO Standard Water P-119 at the beginning and end of each batch of about 24 samples.

Additional *in situ* calibration for these conductivity sensors (#1018 and #1021) were available from the succeeding cruise, W9211B (Kosro et al., 1994). During the first half of that cruise, these sensors were used in Seasoar, but during the second half they were installed in the conventional CTD/rosette package. The combined CTD-Seasoar and sample comparison from W9211B indicated it was necessary to apply an offset as well a multiplier correction for both conductivity sensors:

$$C1 = -0.00192 + 1.000255\ C1(\text{observed}) \qquad \text{(Eq. 1a)}$$
$$C2 = -0.00225 + 1.000617\ C2\ (\text{observed}) \qquad \text{(Eq. 1b)}$$

These conductivity calibrations were incorporated in the reprocessing of the Seasoar data. Time series of the hourly salinity samples and time series of the reprocessed Seasoar data from the 3-7 m depth range (Figure 5) show very similar variations. For a quantitative comparison between the salinity samples and the Seasoar data, we selected Seasoar values that were both within 7 minutes of the time of the salinity sample and within a depth range of 3.0 to 5.5 m. For each salinity sample, we calculated a bottle conductivity using the appropriate Seasoar temperature and the sample salinity, and then compared this sample conductivity to the directly measured conductivity; a few pairs with very large differences were eliminated from the comparison. The comparisons for Tows 1, 5 and 6 show no significant difference between the sample and Seasoar values for either sensor pair



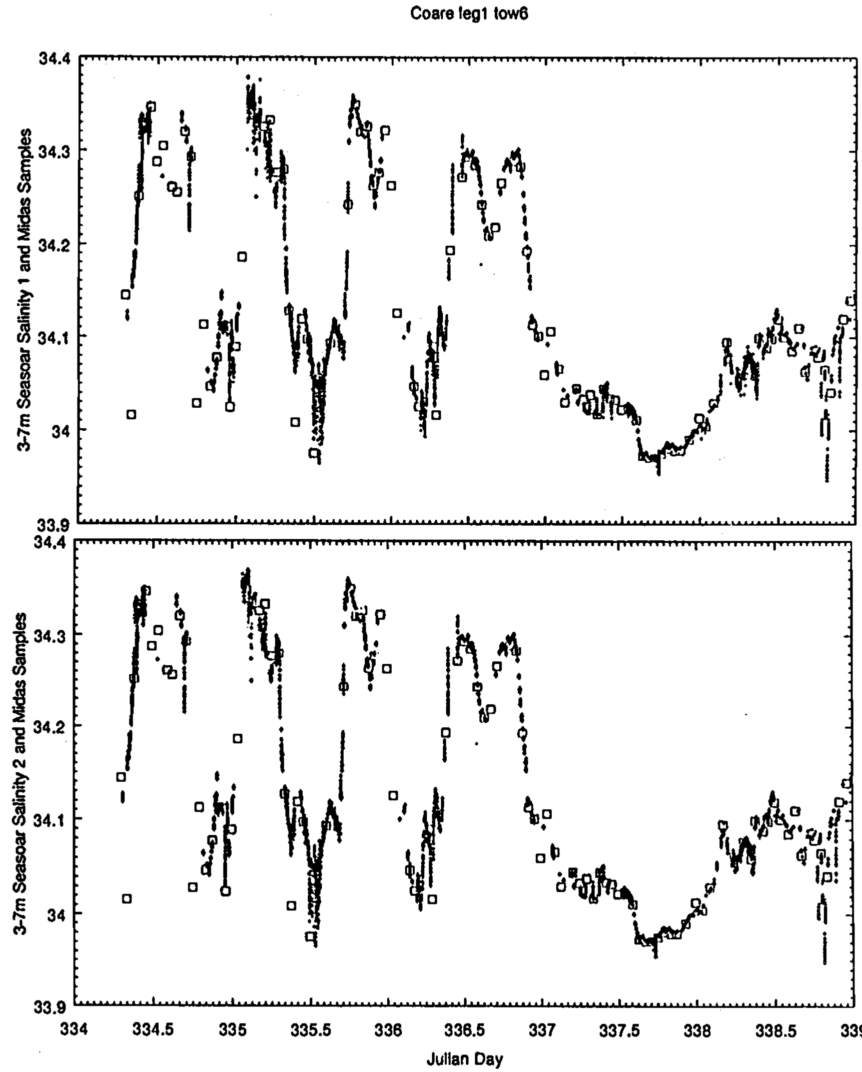


Figure 5(a) Time series of hourly salinity samples from the ship's intake at 5 m (squares) and of near-surface (3-7.99 m) Seasoar salinity (dots), for Seasoar Tow 1 (secondary sensor duct only, upper left) and for Tows 5 (left) and 6 (right) of W9211A.

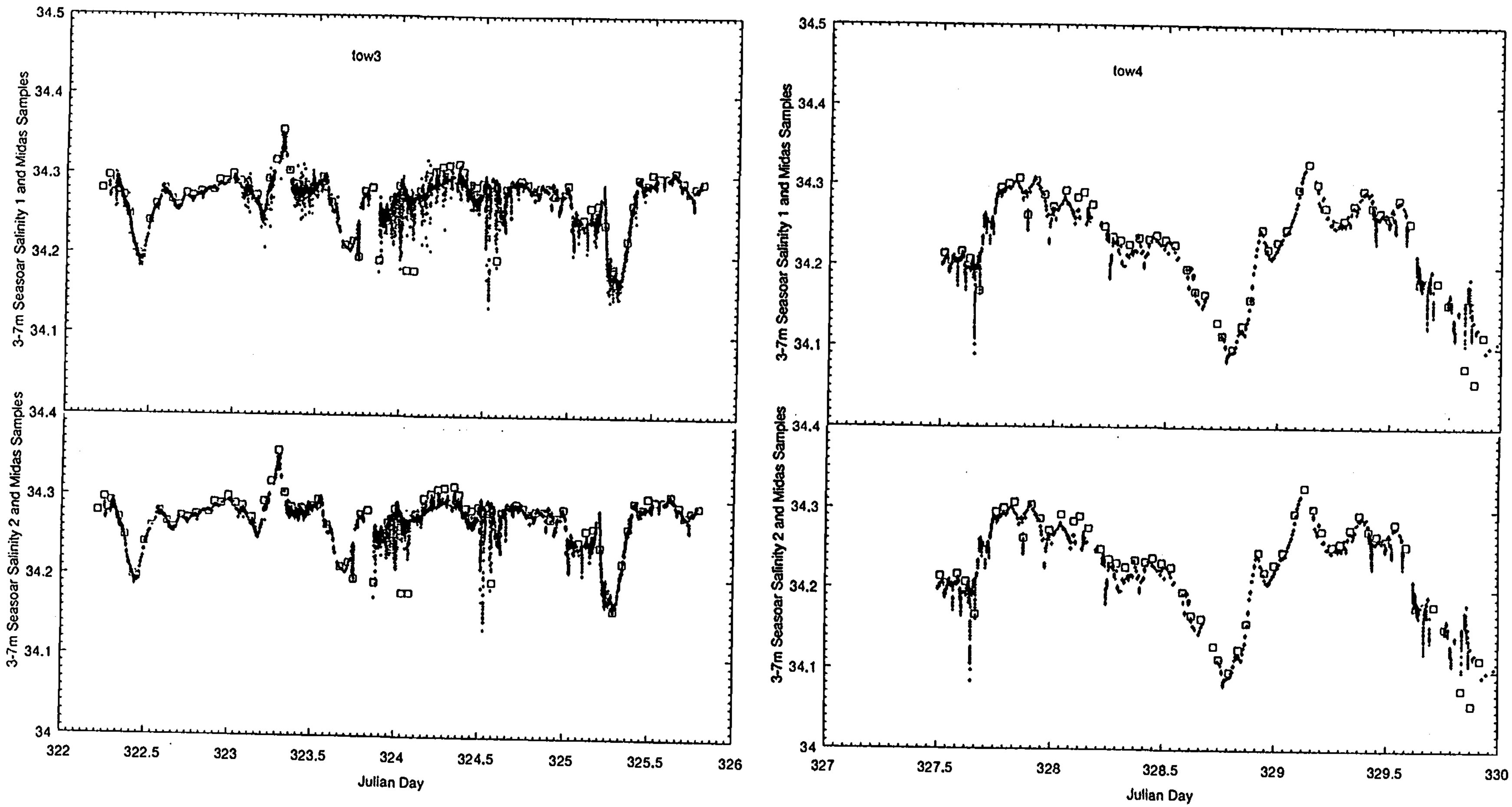


Figure 5(b) Time series of salinity samples from the ship's intake at 5 m (squares) and near-surface (3-7.99 m) Seasoar salinity (dots), for Seasoar Tows 3 (left) and 4 (right) of W9211A. These Seasoar values were calculated with the same conductivity correction equations as used for Tows 1,5 and 6. Remaining systematic differences were subsequently removed by applying a further conductivity multiplier.

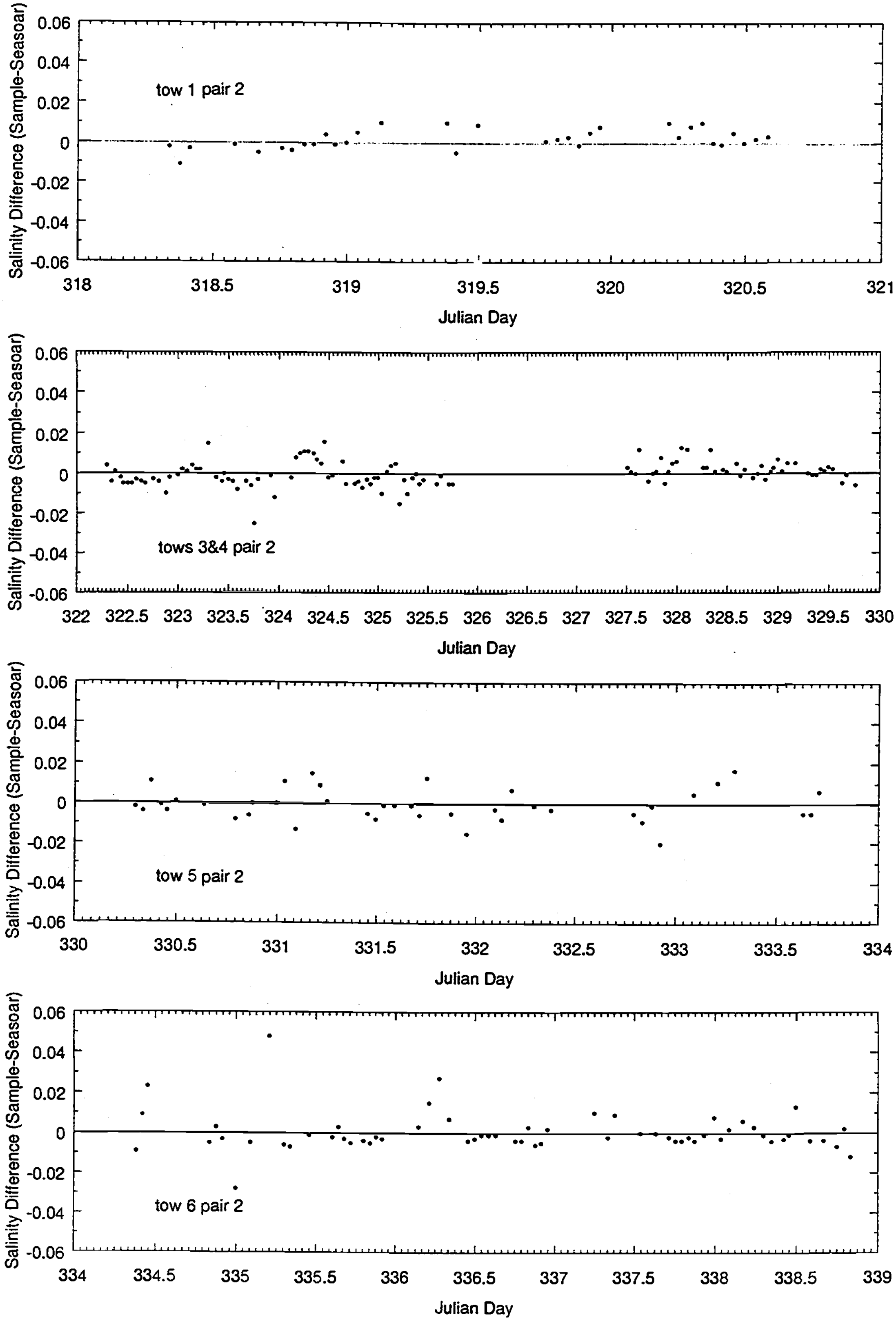


Figure 6. Time series of salinity differences between the 5-m samples and the matching corrected Seasoar data, for the preferred (secondary) sensor pair, during Tows 1,3,4, 5 and 6 of W9211A.

(Figure 5a, Table 10). However, the comparisons for Tows 3 and 4 indicated that significant differences remained, and that these were similar for the two tows. We therefore pooled the data from Tows 3 and 4 to determine a correction for the processed data from the secondary sensor pair (preferred over primary pair, because data was less noisy):

$$C2 \text{ (corrected)} = 1.0006320\ C2. \qquad \text{(Eq. 2)}$$

This correction was applied only to the data from Tows 3 and 4, and is equivalent to using a value of 1.0007807 for the conductivity multiplier (Table 10). Time series of the remaining difference between the sample salinity and the SeaBird salinity from the preferred sensor pair (Figure 6) show no obvious systematic error.

Table 10. Correction constants (offset a and multiplier k) adopted for reprocessing data from the Seasoar conductivity sensors. Also shown are the average and standard deviations of the salinity differences between the sample values and the corrected Seasoar data.

						Average		Std. Dev.	
Tow	N	a1	k1	a2	k2	S1	S2	S1	S2
1	33	--	--	-0.00225	1.0006174	--	+0.001	--	0.004
5	40	-0.00192	1.0005133	-0.00225	1.0006174	-0.001	-0.001	0.008	0.008
6	60	-0.00192	1.0005133	-0.00225	1.0006174	+0.000	+0.000	0.008	0.008
3	57	-0.00192	1.0005133	-0.00225	1.0006174	+0.006	+0.005	0.007	0.006
4	41	-0.00192	1.0005133	-0.00225	1.0006174	+0.008	+0.006	0.004	0.004
3-4	111			-0.00225	1.0007807		+0.000		0.006

Post-processing of Seasoar Data

As discussed in our earlier Seasoar data report (Huyer et al., 1993), salinity data derived from SeaBird ducted temperature and conductivity sensors are subject to errors from three separate sources (Larson, 1992): (1) poor alignment of the 24 Hz temperature and conductivity data, (2) poor compensation for the transfer of heat between the mantle of the conductivity cell and the water flowing through it, and (3) mismatch of the effective time constants of the temperature and conductivity measurements. These sources of error are minimized in a normal SeaBird CTD, by pumping the water through the ducted pair at a fixed rate. Even though we used the standard SeaBird sensor duct with high-speed SeaBird pumps, the flow rate through the sensors mounted inside the Seasoar vehicle was apparently not constant, presumably because of dynamic pressure gradients along the skin of the Seasoar vehicle; these gradients seem to vary with vehicle attitude (ascending vs. descending), and with the relative currents enountered by the vehicle (Huyer et al., 1993).

Seasoar data were processed using the same general procedures outlined in the Seasoar data report for W9211C (Huyer et al., 1993), i. e., by first determining the lags between 24-Hz temperature and conductivity by cross-correlation for consecutive data segments with specified depth ranges, and using the lag calculated for each segment to offset the 24-Hz conductivity data relative to the temperature data within that segment; by applying appropriate calibration equations to the conductivity data; by applying Lueck's (1990) correction for the thermal mass of the conductivity cell, with the value of the amplitude parameter related to the T-C offset for each data segment; and finally block averaging the data to 2-Hz values.

Configuration files for reprocessing the raw 24-Hz Seasoar data contained the manufacturer's pre-cruise calibration constants for the pressure, temperature and conductivity sensors, modified by a conductivity offset and multiplier for both the primary sensor pair (Equation 1a, above) and the secondary sensor pair (Equation 1b, above).

The first step in reprocessing was to compute lagged correlations between first-differenced temperature and conductivity for each sensor pair, separately for ascending and descending profiles, and separately for three depth ranges: 50 to 120 dbar, 120 to 180 dbar, and 180 to 240 dbar, provided the segment contains at least 72 scans. Correlations are calculated for ±12 lags; the maximum correlation was almost always ≥0.85. The fractional value of the lag at maximum correlation is determined by fitting a parabola to the cross-correlation values. The resulting time series of the optimum primary and secondary alignment offsets (ξ_1 and ξ_2) for each tow are shown in Appendix A. The edited values of the alignment offset were applied sequentially in reprocessing the 24-Hz T/C data. To reprocess data from depths shallower than 50 m, we used the value determined from the preceding 120 to 50 dbar layer; for data deeper than 240 m, we used the value determined from the preceding 180 to 240 dbar layer; short segments with unreasonably large lags were processed with the lag obtained for the succeeding data segment.

To correct the 24-Hz conductivity data for the thermal mass of the conductivity cell, we used the standard recursive algorithm provided by SeaBird:

dt = temperature - previous temperature

$ctm = - b$ * previous $ctm + a * dcdt * dt$

corrected conductivity = conductivity + ctm

where $a = 2\alpha / (0.0417\beta + 2)$, $dcdt = 0.1 + 0.0006$ (temperature - 20), $\beta = 1/\tau$ and $b = 1 - 2a/\alpha$. We used a fixed value for the thermal anomaly time constant ($\tau = 10$ sec), and variable values for the thermal anomaly amplitude depending on the alignment offset:

$\alpha_1 = 0.03$ if $\xi_1 \le 0$

$\alpha_1 = 0.03 + 0.03(\xi_1 / R_1)$ if $\xi_1 > 0$

$\alpha_2 = 0.03$ if $\xi_2 \le 1.75$

$\alpha_2 = 0.03 + 0.03(\xi_2 - 1.75)/5.5$ if $\xi_2 > 1.75$

where the value of R_1 was 2.75 for Tow3 and 5.5 for Tows 4-6.

Short gaps in the raw data files (typically 10 seconds long) were filled with values of 1.0e35. During Tow 1, there were numerous pressure spikes, and the data for these lines were also set to 1.0e35; spurious values of primary conductivity that occurred after the failure of the SeaBird pump were also set to 1.0e35. On 13 November, there was a three-hour period with almost no GPS data in the Seasoar data stream; the missing data was filled by linearly interpolating the 2-minute GPS data captured by the ADCP data acquisitions system.

The corrected and realigned 24 Hz temperature and conductivity data were used to calculate 24-Hz salinity, and these were block-averaged to yield 2-Hz values stored in hourly files. Profile plots of the reprocessed data from both sensor pairs showed that the data from the secondary sensors were of generally higher quality for all five Seasoar tows. Comparison of the processed data with salinity samples from the ships 5-m intake (Figure 5a,b), showed that the processed Seasoar data from Tows 1, 5 and 6 was in good agreement with the sample values, but data from Tows 3 and 4 were not. We therefore applied a further conductivity correction (Equation 2, above) to the 2-Hz data from the secondary sensor pair for Tows 3 an 4, and recalculated salinity for these tows. Differences between the corrected Seaoar salinity data and the sample salinities (Figure 6) show no significant systematic calibration errors.

Comparison between reprocessed data from ascending and descending portions of the Seasoar trajectory showed very little difference (e.g., Figure 7); salinity data from both descending and ascending profiles appears to be of high quality.

Data Presentation

Successive hourly files of the reprocessed 2-Hz data were joined and clipped to yield a single data file for each section of the Standard Butterfly Pattern (Tables 11 and 12). Final processed data files contain unfiltered GPS latitude and longitude; pressure; temperature, salinity and sigma-t from the better sensor pair; date and time; an integer representing flags (to indicate collection of a water sample from 5-m intake (thousands digit set to 1), missing GPS data filled by linear interpolation (tens digit set to 1), and to indicate port or starboard intake for the T/C sensor pair (ones digit set to 1 or 0, respectively)); and two additional columns for the output voltage from the transmissometer and fluorometer channels (which read uniformally zero after these instruments were disconnected). The 2-Hz data were further block-averaged to yield 1-second averages. As for the two other COARE Surveys cruises, W9211C and W9211B, when salinity data from descending profiles was of poorer quality than data from ascending profiles (Huyer et al., 1993; Kosro et al, 1994) , we prepared two sets of data files: one containing ascending data only, and one containing the complete (ascending and descending) data set.

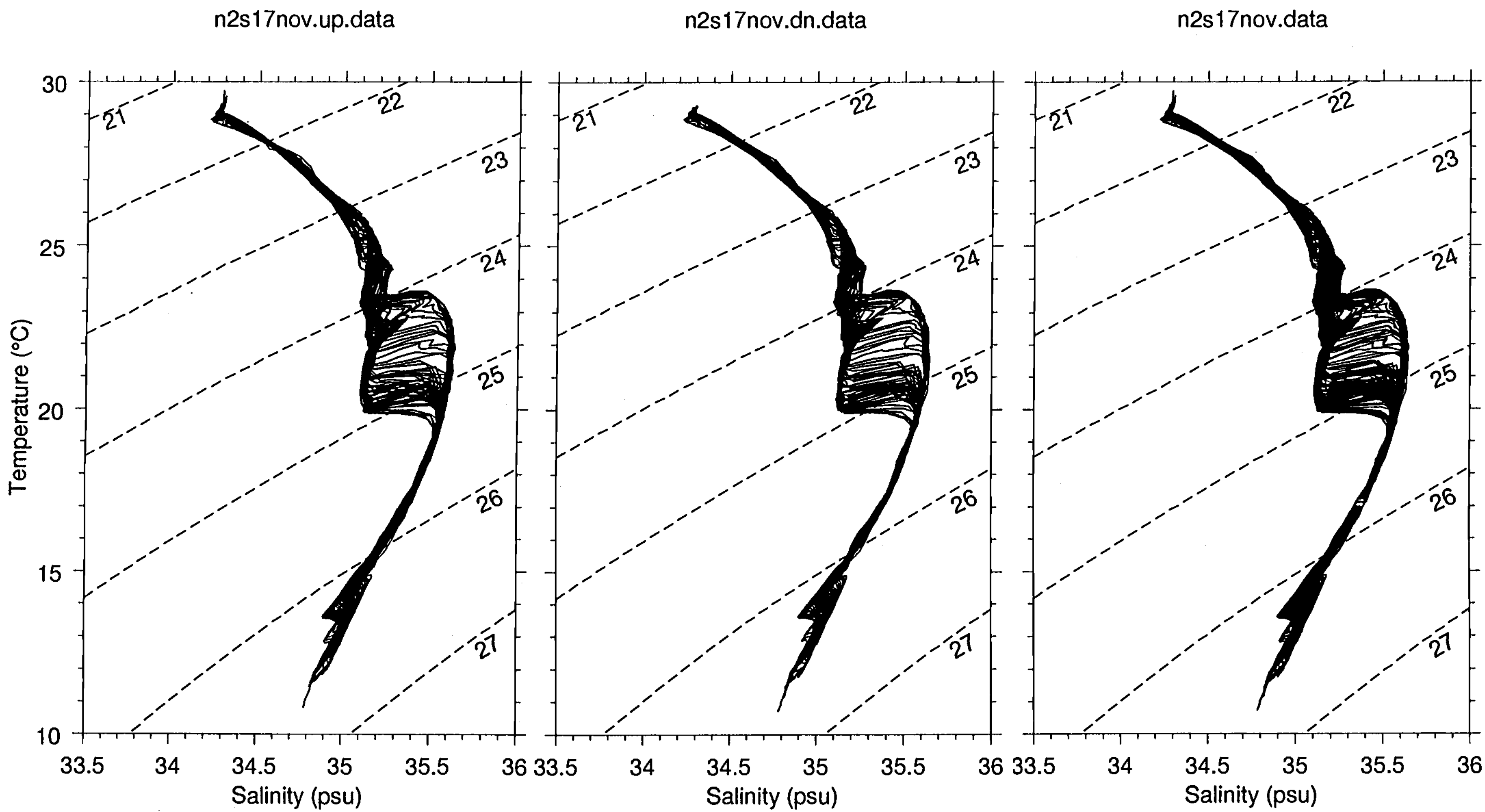


Figure 7. T-S diagrams for the N2S section beginning 1652 UTC, 17 November 1992, using data from ascending profiles only, descending profiles only, and both ascending and descending profiles.

We present consecutive figures of the Seasoar trajectory (time series of pressure, latitude and longitude) along each section. We also present summary figures of all of the 1-second data for each of the four standard sections as follows: ensembles of temperature profiles (both ascending and descending), salinity profiles (ascending profiles only), and T-S diagrams (for ascending profiles only). Vertical distributions of the temperature, salinity and sigma-t along each section were plotted using Don Denbo's PlotPlus program with a vertical grid spacing of 2 dbar and a horizontal spacing of 1 nm, and with a value of CAY= 5 for the smoothing parameter (combined spline and laplacian filter). For the temperature sections, we used both ascending and descending data. For the salinity and sigma-t sections, we used only ascending data for all tows. In the cases that partial Seasoar sections were continued with closely-spaced CTD stations, the plots of the temperature, salinity and sigma-t distributions include CTD data. Ensemble profiles of the fluorometer voltage for sections before 24 November are shown in Appendix C.

CTD/Seasoar Comparison

T-S diagrams for the beginning and end of each Seasoar Tow are shown in Appendix B. Each diagram shows the T-S curve from both the conventional CTD cast and the preferred Seasoar sensors during Seasoar deployment or recovery. Seasoar deployment profiles are generally noisier than either the CTD profiles or Seasoar recovery profiles, probably because the Seasoar vehicle is tilted nose-upward during both deployment and recovery; since the ship is moving very slowly, observations during deployment are sometimes within the turbulent wake of the descending vehicle.

Acknowledgments

COARE Survey cruises on Wecoma were undertaken jointly by scientists from the University of Hawaii (R. Lukas, P. Hacker, and E. Firing) and Oregon State University (A. Huyer, M. Kosro and C. Paulson). Seasoar watchstanders on this cruise included personnel from both institutions (Peter Hacker, Jeff Snyder, Craig Huhta and Steve Azevedo from UH; Jane Huyer, Mike Kosro, Bob O'Malley, Mike Hill, and Marc Willis from OSU). We are deeply indebted to Wecoma's Marine Technicians: Marc Willis, Brian Wendler, Mike Hill and Tim Holt; this work would not have been possible without their skill and dedication. We are grateful to Nordeen Larson of SeaBird Electronics for his advice on installing the SeaBird sensors in the Seasoar vehicle and on data processing principles. Sean Kennan analyzed most of the salinity samples. Our COARE Survey cruises were supported by the National Science Foundation through its Ocean Sciences Division and by NOAA's Office of Global Programs under TOGA.

Table 11. Times (UTC) of meridional and zonal sections of the Standard Butterfly pattern. All N2S sections (except the first, see Figure 3) were southward along 15°06'E from SBN (1°14'S) to SBS (2°26'S), and all W2E sections were eastward along 1°50'S from SBW (155°30'E) to SBE (156°42'E).

N2S (SBN to SBS)	W2E (SBW to SBE)
0755 to 1938, 13 Nov	0814 to 1808 14 Nov
0627 to 1534, 15 Nov	0329 to 1038, 17 Nov*
1652, 17 Nov to 0118, 18 Nov	0723 to 1647, 18 Nov
2325, 18 Nov to 0754, 19 Nov	1422 to 2310, 19 Nov
0605 to 1508, 20 Nov	
1107 to 2032, 22 Nov	0242 to 1206, 23 Nov
1854, 23 Nov to 0258, 24 Nov	0925 to 1755, 24 Nov
0435 to 1431, 25 Nov	2120, 25 Nov to 0525, 26 Nov
1242 to 2215, 26 Nov	0505 to 1353, 27 Nov
2102, 27 Nov to 0645, 28 Nov	1330 to 1902, 28 Nov*
	0645 to 1323, 29 Nov*
2023, 29 Nov to 0550, 30 Nov	1225 to 2123, 30 Nov
0421 to 1330, 1 Dec	
1734, 1 Dec to 0229, 2 Dec**	

* partial section only, completed with CTD stations.
** section was northward from SBS to SBN

Table 12. Times (UTC) of diagonal sections of the Standard Butterfly pattern: S2W between SBS (2°26'S, 156°06'E) and SBW (1°50'S, 155°30'E); and E2N between SBE (1°50'S, 156°42'E) and SBN (1°14'S, 156°06'E). During most E2N sections Seasoar was kept below 20 for about 12 km.

S2W (SBS to SBW)	E2N (SBE to SBN)
1534 to 1601, 15 Nov*	1038 to 1652, 17 Nov
0118 to 0723, 18 Nov	1647 to 2325, 18 Nov
0754 to 1422, 19 Nov	2310, 19 Nov to 0605, 20 Nov
1508 to 1856, 20 Nov*	
2032, 22 Nov to 0242, 23 Nov	1206 to 1854, 23 Nov
0258 to 0925, 24 Nov	1755 to 2335, 24 Nov
1431 to 2120, 25 Nov	0525 to 1242, 26 Nov
2215, 26 Nov to 0505, 27 Nov	1353 to 2102, 27 Nov
0645 to 1330, 28 Nov	1323 to 2023, 29 Nov
0550 to 1225, 30 Nov	2123, 30 Nov to 0421, 1 Dec

* partial section only, completed with CTD stations.

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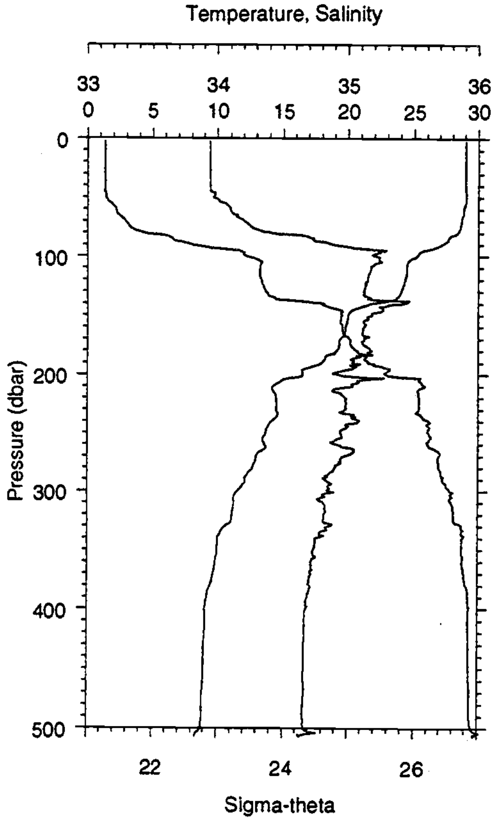
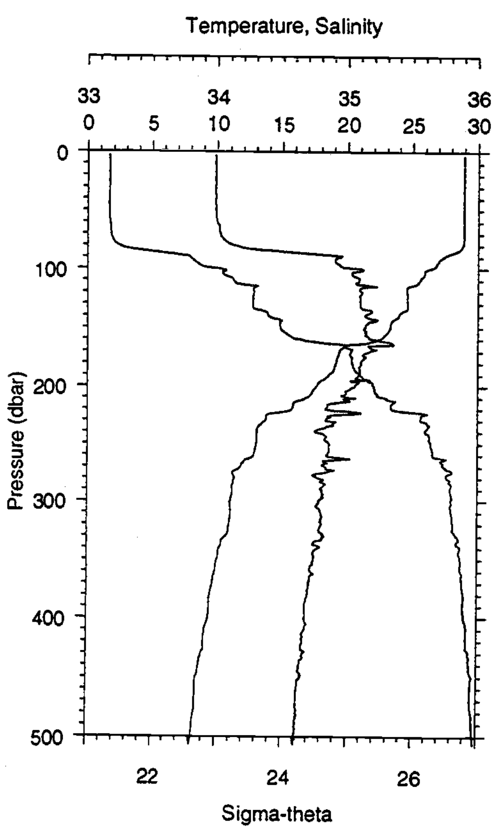
CTD DATA



STA NO 1 LAT: 0 1.1 N LONG: 153 59.6 E
11 NOV 1992 2058 GMT DEPTH 3300

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.000	33.941	28.999	21.271	651.0	0.130
10	28.997	33.942	28.995	21.274	651.2	0.651
20	28.996	33.942	28.991	21.275	651.6	1.302
30	29.009	33.942	29.002	21.272	652.4	1.954
40	29.012	33.942	29.002	21.272	652.8	2.607
50	29.048	33.967	29.036	21.279	652.6	3.259
60	28.860	34.096	28.845	21.439	637.7	3.904
70	28.684	34.201	28.667	21.577	625.0	4.537
80	28.349	34.411	28.330	21.846	599.7	5.154
90	27.158	34.890	27.138	22.593	528.6	5.713
100	25.216	35.218	25.194	23.448	447.2	6.190
110	24.447	35.175	24.423	23.650	428.4	6.621
120	24.310	35.149	24.285	23.671	426.7	7.049
130	24.018	35.117	23.991	23.734	421.1	7.473
140	21.670	35.416	21.642	24.635	335.4	7.872
150	19.998	35.185	19.971	24.912	309.1	8.191
160	19.801	35.122	19.772	24.916	309.0	8.502
170	19.388	35.126	19.357	25.027	298.8	8.809
180	19.076	35.181	19.044	25.149	287.4	9.105
190	18.016	35.030	17.983	25.300	273.2	9.383
200	16.522	34.940	16.490	25.589	245.6	9.634
225	14.521	34.987	14.487	26.074	199.7	10.140
250	13.654	34.938	13.618	26.220	186.2	10.622
275	12.885	34.928	12.847	26.368	172.5	11.069
300	11.569	34.843	11.530	26.556	154.7	11.482
325	11.086	34.811	11.045	26.621	148.9	11.859
350	10.021	34.734	9.980	26.748	136.7	12.203
375	9.632	34.707	9.590	26.793	132.7	12.540
400	9.087	34.676	9.043	26.858	126.7	12.861
425	9.059	34.669	9.013	26.857	127.3	13.180
450	8.996	34.662	8.947	26.862	127.2	13.498
475	8.892	34.659	8.840	26.877	126.2	13.814
500	8.758	34.665	8.704	26.903	124.1	14.129
505	8.364	34.624	8.311	26.932	121.1	14.189

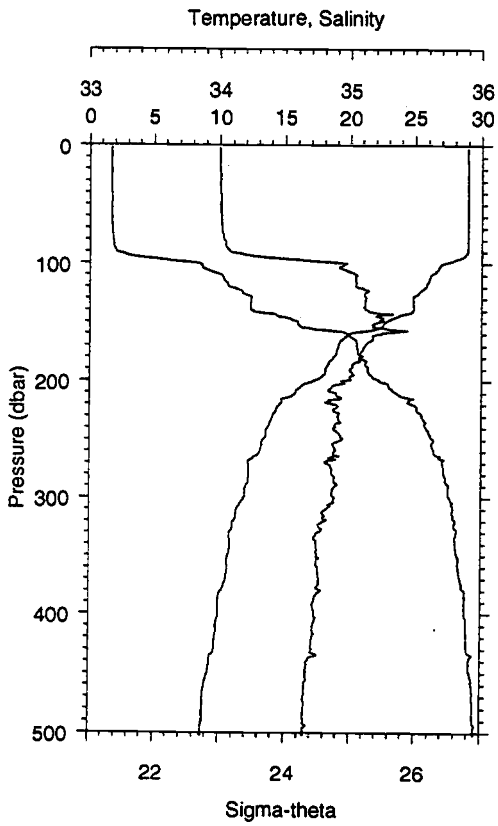
air vent plug missing from tc duct
t, s data noisy



STA NO 2 LAT: 1 1.1 N LONG: 156 0.1 E
12 NOV 1992 819 GMT DEPTH 2262

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
3	28.927	33.985	28.926	21.330	645.5	0.194
10	28.929	33.987	28.926	21.330	645.8	0.646
20	28.928	33.988	28.923	21.332	646.1	1.292
30	28.933	33.987	28.926	21.331	646.7	1.938
40	28.937	33.989	28.927	21.332	647.1	2.585
50	28.938	33.989	28.926	21.332	647.5	3.232
60	28.941	34.001	28.927	21.341	647.1	3.880
70	28.938	34.024	28.921	21.360	645.8	4.526
80	28.838	34.125	28.819	21.470	635.8	5.169
90	27.306	34.950	27.285	22.591	528.8	5.758
100	26.271	35.099	26.248	23.033	487.0	6.276
110	25.536	35.084	25.512	23.250	466.7	6.752
120	24.561	35.110	24.535	23.566	436.8	7.200
130	24.590	35.095	24.562	23.547	439.0	7.638
140	23.893	35.129	23.863	23.781	417.1	8.067
150	23.230	35.130	23.199	23.977	398.8	8.469
160	22.343	35.222	22.311	24.300	368.2	8.858
170	19.389	35.164	19.358	25.055	296.1	9.176
180	19.129	35.107	19.097	25.079	294.1	9.472
190	18.595	35.081	18.561	25.196	283.3	9.762
200	17.657	35.058	17.623	25.410	263.0	10.033
225	13.821	34.886	13.789	26.144	192.7	10.635
250	13.040	34.865	13.005	26.288	179.5	11.100
275	11.221	34.837	11.186	26.615	148.2	11.519
300	11.075	34.783	11.037	26.600	150.2	11.897
325	10.939	34.790	10.899	26.631	147.8	12.269
350	10.102	34.753	10.061	26.749	136.7	12.620
375	9.671	34.712	9.628	26.790	133.0	12.957
400	9.430	34.680	9.385	26.805	131.9	13.288
425	9.097	34.659	9.050	26.843	128.6	13.611
450	8.543	34.650	8.495	26.924	121.0	13.922
475	8.473	34.621	8.423	26.913	122.4	14.227
500	8.200	34.611	8.148	26.946	119.5	14.529
507	8.096	34.608	8.044	26.960	118.2	14.612

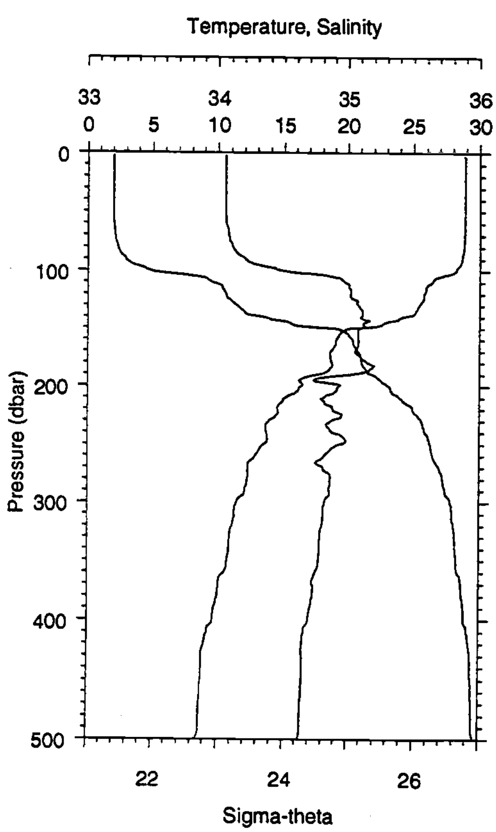
air vent plug missing from t-c duct
t, s data noisy



STA NO 3 LAT: 0 40.0 N LONG: 156 0.1 E
12 NOV 1992 1055 GMT DEPTH 2250

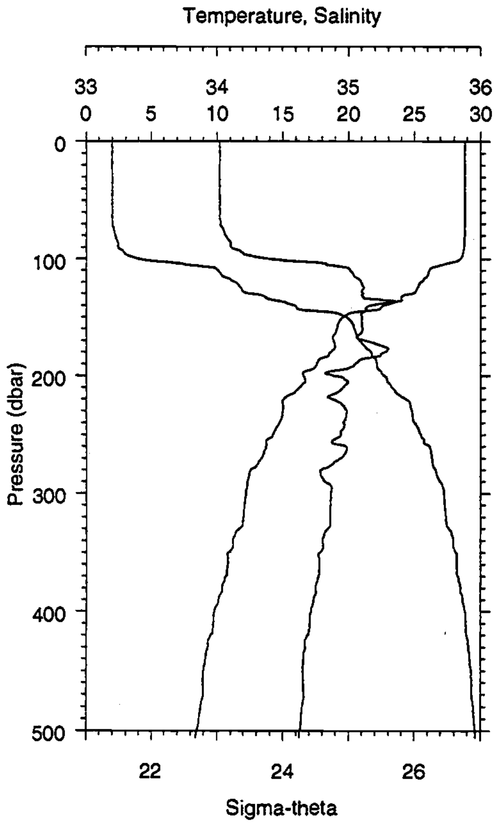
P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	28.914	34.001	28.913	21.345	644.0	0.129
10	28.921	34.001	28.919	21.344	644.5	0.644
20	28.928	34.001	28.923	21.342	645.1	1.289
30	28.929	34.002	28.922	21.343	645.5	1.935
40	28.931	34.003	28.922	21.344	645.9	2.580
50	28.934	34.003	28.921	21.344	646.4	3.226
60	28.939	34.009	28.924	21.347	646.5	3.873
70	28.941	34.012	28.924	21.350	646.8	4.519
80	28.937	34.030	28.918	21.365	645.8	5.166
90	28.899	34.076	28.878	21.413	641.6	5.810
100	27.089	34.971	27.066	22.677	521.1	6.407
110	26.163	35.053	26.139	23.032	487.5	6.915
120	25.793	35.048	25.767	23.144	477.3	7.398
130	24.860	35.118	24.832	23.483	445.2	7.855
140	24.856	35.139	24.825	23.501	443.9	8.301
150	22.685	35.212	22.654	24.195	377.8	8.707
160	19.938	35.240	19.909	24.970	303.9	9.058
170	19.061	35.110	19.031	25.098	291.9	9.353
180	18.648	35.066	18.616	25.170	285.3	9.643
190	18.059	34.996	18.026	25.264	276.6	9.923
200	17.104	34.927	17.071	25.442	259.7	10.193
225	14.332	34.872	14.299	26.026	204.1	10.759
250	13.332	34.934	13.297	26.282	180.2	11.238
275	12.275	34.858	12.238	26.433	166.1	11.675
300	11.881	34.881	11.842	26.527	157.6	12.081
325	11.015	34.761	10.974	26.595	151.3	12.464
350	10.672	34.748	10.629	26.646	146.8	12.837
375	10.361	34.761	10.317	26.712	141.0	13.199
400	9.960	34.726	9.913	26.753	137.3	13.543
425	9.705	34.712	9.656	26.786	134.6	13.882
450	9.193	34.665	9.143	26.833	130.2	14.211
475	8.810	34.654	8.758	26.886	125.3	14.527
500	8.677	34.646	8.623	26.901	124.3	14.840
499	8.678	34.643	8.624	26.898	124.5	14.827

air vent plug missing from t-c duct
t, s data noisy



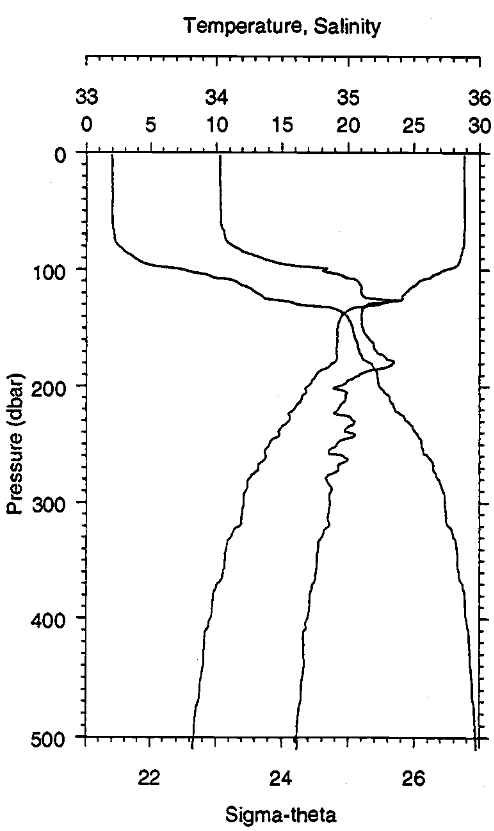
STA NO 4 LAT: 0 19.9 N LONG: 156 0.1 E
12 NOV 1992 1335 GMT DEPTH 2000

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	28.854	34.052	28.854	21.403	638.4	0.128
10	28.864	34.053	28.862	21.401	639.0	0.639
20	28.867	34.053	28.862	21.401	639.5	1.278
30	28.868	34.053	28.861	21.401	639.9	1.918
40	28.870	34.053	28.860	21.402	640.4	2.558
50	28.871	34.053	28.859	21.402	640.8	3.198
60	28.873	34.060	28.859	21.408	640.7	3.839
70	28.859	34.076	28.842	21.426	639.5	4.479
80	28.807	34.108	28.788	21.468	635.9	5.117
90	28.652	34.204	28.631	21.591	624.6	5.748
100	28.190	34.493	28.166	21.961	589.6	6.359
110	26.381	34.980	26.356	22.909	499.3	6.891
120	25.813	35.022	25.786	23.118	479.7	7.377
130	25.401	35.087	25.373	23.295	463.2	7.850
140	24.126	35.096	24.096	23.687	426.1	8.303
150	20.159	35.090	20.131	24.797	320.0	8.691
160	19.073	35.080	19.044	25.073	294.0	8.993
170	18.642	35.053	18.612	25.161	285.8	9.284
180	18.752	35.157	18.720	25.214	281.2	9.567
190	17.614	35.003	17.582	25.378	265.7	9.843
200	16.316	34.929	16.284	25.629	241.7	10.096
225	14.418	34.951	14.385	26.068	200.2	10.649
250	13.453	34.932	13.418	26.256	182.7	11.125
275	12.299	34.861	12.262	26.431	166.3	11.566
300	11.460	34.823	11.422	26.561	154.1	11.971
325	10.965	34.790	10.925	26.626	148.4	12.349
350	10.755	34.778	10.713	26.655	146.1	12.717
375	10.096	34.735	10.052	26.737	138.4	13.073
400	9.694	34.700	9.648	26.778	134.8	13.413
425	8.926	34.648	8.880	26.862	126.7	13.739
450	8.815	34.651	8.767	26.883	125.1	14.053
475	8.668	34.641	8.617	26.898	124.1	14.364
500	8.457	34.627	8.404	26.920	122.2	14.674
499	8.469	34.628	8.416	26.919	122.3	14.661



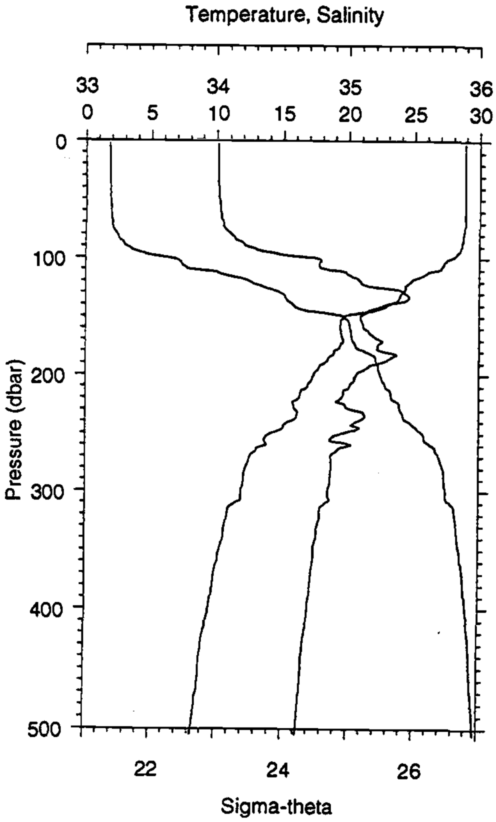
STA NO 5 LAT: 0 2.0 N LONG: 156 0.2 E
12 NOV 1992 1614 GMT DEPTH 2000

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
1	28.795	34.021	28.795	21.399	638.7	0.064
10	28.801	34.021	28.799	21.398	639.3	0.639
20	28.815	34.022	28.810	21.395	640.0	1.279
30	28.809	34.021	28.802	21.397	640.3	1.919
40	28.809	34.021	28.800	21.398	640.7	2.560
50	28.817	34.022	28.805	21.397	641.3	3.201
60	28.822	34.024	28.807	21.398	641.7	3.842
70	28.822	34.027	28.805	21.401	641.9	4.484
80	28.802	34.065	28.783	21.437	638.9	5.124
90	28.765	34.106	28.743	21.481	635.2	5.761
100	28.457	34.403	28.433	21.806	604.5	6.385
110	26.126	35.013	26.102	23.013	489.3	6.921
120	25.494	35.095	25.468	23.272	465.0	7.401
130	24.736	35.114	24.708	23.517	441.9	7.857
140	22.618	35.166	22.590	24.179	378.9	8.266
150	19.539	35.100	19.512	24.967	303.7	8.609
160	19.080	35.103	19.052	25.088	292.5	8.905
170	18.844	35.129	18.814	25.169	285.2	9.195
180	18.569	35.262	18.537	25.340	269.2	9.472
190	17.572	35.046	17.540	25.421	261.6	9.737
200	16.582	34.885	16.549	25.533	250.9	9.995
225	15.022	34.955	14.988	25.941	212.5	10.578
250	14.233	34.942	14.196	26.102	197.7	11.094
275	13.116	34.881	13.078	26.286	180.5	11.561
300	12.203	34.867	12.164	26.455	164.6	11.990
325	11.991	34.860	11.948	26.491	161.8	12.399
350	10.877	34.784	10.834	26.638	147.8	12.784
375	10.554	34.764	10.508	26.680	144.1	13.151
400	9.821	34.716	9.775	26.769	135.7	13.501
425	9.333	34.669	9.286	26.813	131.7	13.837
450	8.997	34.654	8.947	26.856	127.8	14.162
475	8.859	34.655	8.807	26.879	126.0	14.480
500	8.462	34.629	8.409	26.921	122.2	14.791
503	8.427	34.626	8.374	26.924	121.9	14.828



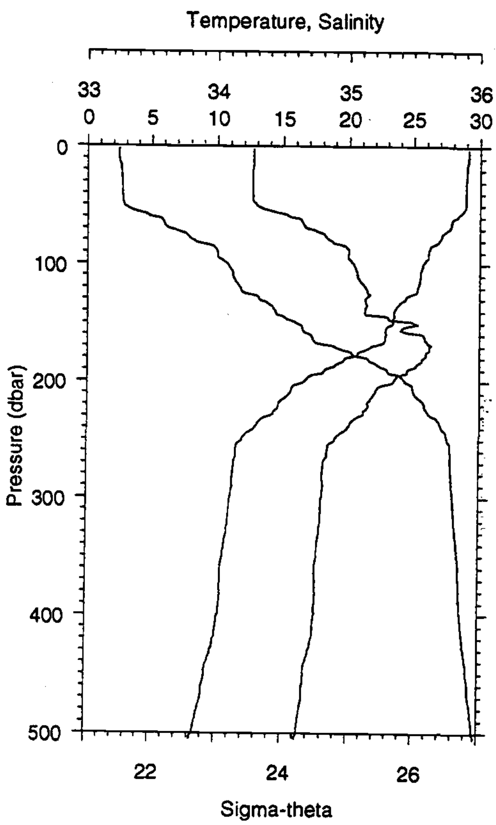
STA NO 6 LAT: 0 20.0 N LONG: 156 0.1 E
12 NOV 1992 1909 GMT DEPTH 1950

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	28.824	34.027	28.823	21.395	639.2	0.128
10	28.812	34.028	28.810	21.400	639.1	0.639
20	28.829	34.028	28.824	21.395	640.1	1.279
30	28.834	34.029	28.826	21.395	640.5	1.919
40	28.836	34.030	28.826	21.396	641.0	2.560
50	28.838	34.033	28.826	21.399	641.2	3.201
60	28.837	34.035	28.823	21.401	641.4	3.842
70	28.824	34.059	28.807	21.424	639.6	4.483
80	28.758	34.129	28.739	21.500	632.9	5.121
90	28.503	34.350	28.482	21.750	609.3	5.742
100	27.305	34.828	27.281	22.500	538.0	6.328
110	25.346	35.075	25.322	23.302	461.7	6.830
120	24.334	35.102	24.309	23.628	430.8	7.275
130	22.169	35.137	22.143	24.284	368.5	7.681
140	19.457	35.099	19.431	24.987	301.4	8.000
150	19.178	35.111	19.151	25.069	294.0	8.297
160	19.161	35.167	19.133	25.116	289.8	8.589
170	19.113	35.219	19.083	25.168	285.2	8.876
180	18.707	35.337	18.675	25.362	267.1	9.156
190	17.620	35.087	17.587	25.441	259.7	9.419
200	16.934	34.919	16.901	25.477	256.4	9.677
225	15.588	34.975	15.553	25.831	223.2	10.279
250	14.061	34.914	14.025	26.116	196.2	10.797
275	12.876	34.879	12.839	26.332	176.0	11.262
300	12.110	34.863	12.071	26.469	163.2	11.681
325	11.328	34.815	11.287	26.580	152.9	12.082
350	10.669	34.766	10.627	26.661	145.4	12.451
375	9.959	34.727	9.915	26.754	136.7	12.807
400	9.578	34.696	9.532	26.794	133.1	13.144
425	9.107	34.667	9.060	26.848	128.2	13.468
450	8.863	34.656	8.814	26.879	125.5	13.786
475	8.502	34.634	8.452	26.918	122.0	14.097
500	8.318	34.617	8.265	26.934	120.8	14.400
509	8.253	34.615	8.200	26.942	120.1	14.508



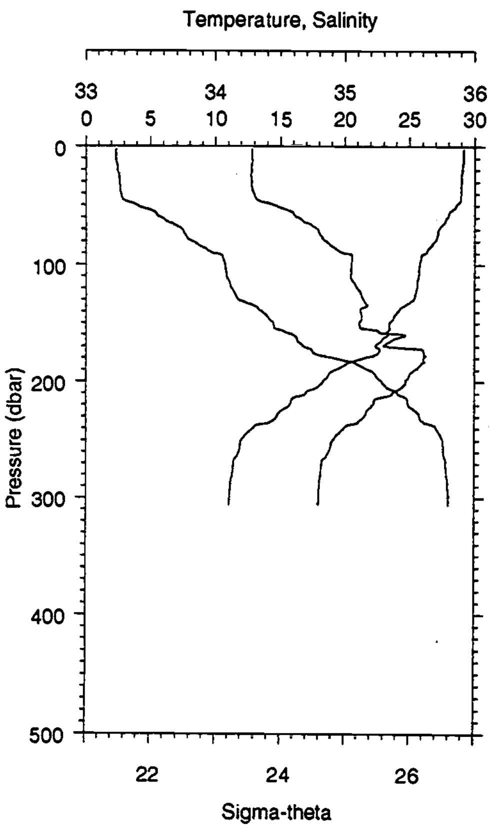
STA NO 7 LAT: 0 38.8 N LONG: 155 57.0 E
12 NOV 1992 2248 GMT DEPTH 2000

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	28.883	34.009	28.882	21.361	642.4	0.128
10	28.879	34.009	28.877	21.364	642.6	0.642
20	28.867	34.008	28.862	21.367	642.7	1.285
30	28.870	34.009	28.863	21.368	643.1	1.928
40	28.871	34.013	28.862	21.372	643.3	2.571
50	28.873	34.020	28.861	21.377	643.2	3.215
60	28.872	34.028	28.858	21.384	643.0	3.858
70	28.862	34.051	28.845	21.405	641.5	4.500
80	28.792	34.114	28.772	21.477	635.1	5.139
90	28.643	34.227	28.621	21.611	622.7	5.768
100	27.886	34.751	27.862	22.254	561.5	6.369
110	26.981	34.846	26.956	22.618	527.1	6.910
120	24.743	35.090	24.717	23.497	443.4	7.385
130	24.028	35.429	24.000	23.968	398.9	7.807
140	22.970	35.271	22.942	24.157	381.1	8.197
150	19.677	35.089	19.650	24.923	307.9	8.548
160	19.361	35.116	19.332	25.026	298.5	8.849
170	19.589	35.238	19.558	25.060	295.7	9.146
180	18.932	35.266	18.900	25.252	277.7	9.436
190	18.146	35.226	18.113	25.419	262.0	9.702
200	17.374	35.059	17.340	25.479	256.4	9.961
225	15.832	34.972	15.797	25.773	228.7	10.573
250	14.066	34.947	14.030	26.140	194.0	11.115
275	12.423	34.873	12.387	26.417	167.7	11.565
300	11.924	34.847	11.885	26.493	160.9	11.973
325	10.817	34.783	10.777	26.647	146.3	12.355
350	10.318	34.744	10.277	26.705	141.0	12.716
375	9.871	34.721	9.827	26.763	135.7	13.061
400	9.503	34.698	9.458	26.808	131.8	13.396
425	9.087	34.671	9.040	26.855	127.5	13.720
450	8.845	34.655	8.796	26.880	125.4	14.036
475	8.571	34.639	8.521	26.911	122.7	14.347
500	8.309	34.623	8.257	26.939	120.3	14.651
503	8.262	34.620	8.210	26.944	119.8	14.687



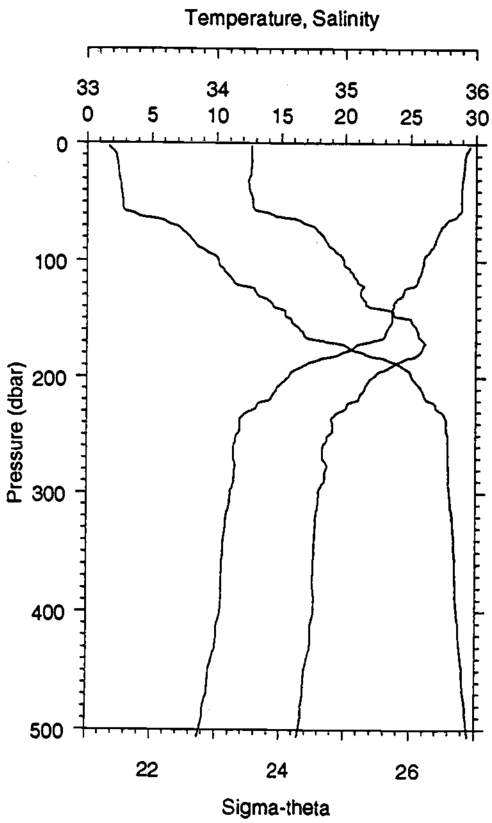
STA NO 8 LAT: 2 19.8 S LONG: 155 59.5 E
15 NOV 1992 1817 GMT DEPTH 1750

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.091	34.268	29.090	21.487	630.4	0.126
10	29.110	34.268	29.107	21.481	631.4	0.631
20	28.985	34.263	28.980	21.520	628.1	1.260
30	28.951	34.261	28.944	21.531	627.5	1.888
40	28.939	34.263	28.930	21.537	627.4	2.516
50	28.922	34.292	28.910	21.565	625.2	3.142
60	28.235	34.557	28.221	21.992	584.8	3.749
70	27.694	34.691	27.678	22.269	558.7	4.317
80	26.925	34.859	26.906	22.643	523.3	4.854
90	26.120	34.995	26.100	23.001	489.6	5.356
100	25.719	35.035	25.697	23.156	475.2	5.841
110	25.531	35.064	25.507	23.237	467.9	6.311
120	25.316	35.127	25.290	23.351	457.4	6.775
130	24.387	35.124	24.359	23.630	431.1	7.221
140	23.513	35.122	23.483	23.887	406.9	7.637
150	23.438	35.505	23.407	24.200	377.6	8.032
160	22.858	35.575	22.825	24.422	356.8	8.399
170	21.715	35.624	21.682	24.782	322.6	8.748
180	19.710	35.571	19.677	25.284	274.9	9.050
190	18.181	35.459	18.148	25.588	245.9	9.312
200	16.654	35.349	16.621	25.873	218.8	9.543
225	14.387	35.116	14.354	26.202	187.5	10.045
250	11.961	34.900	11.928	26.525	156.5	10.467
275	11.321	34.811	11.287	26.577	151.9	10.849
300	11.101	34.803	11.064	26.611	149.2	11.226
325	10.875	34.789	10.835	26.641	146.8	11.596
350	10.557	34.768	10.515	26.682	143.3	11.958
375	10.351	34.759	10.306	26.711	141.0	12.313
400	10.191	34.753	10.143	26.735	139.3	12.665
425	9.830	34.726	9.781	26.776	135.7	13.009
450	9.275	34.678	9.224	26.830	130.6	13.341
475	8.875	34.660	8.823	26.881	125.9	13.662
500	8.387	34.629	8.334	26.932	121.0	13.970
504	8.166	34.614	8.114	26.954	118.8	14.018



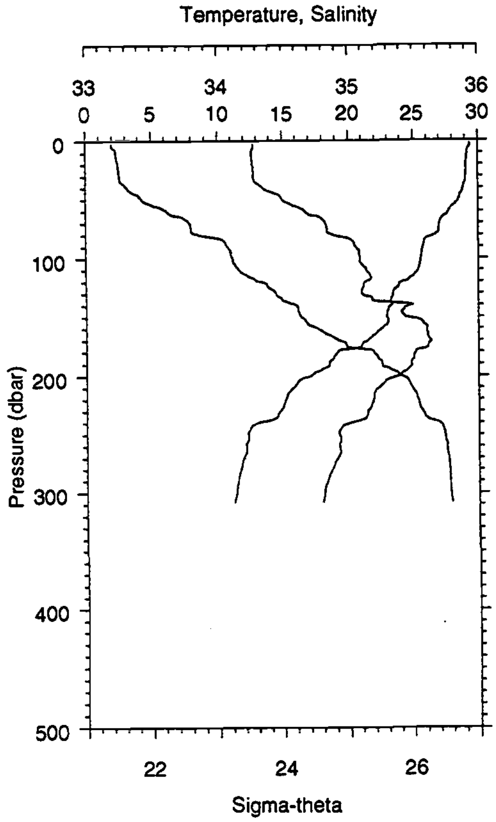
STA NO 9 LAT: 2 16.3 S LONG: 156 0.5 E
15 NOV 1992 2239 GMT DEPTH 1750

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.179	34.282	29.178	21.468	632.2	0.126
10	29.165	34.282	29.162	21.473	632.1	0.632
20	29.110	34.280	29.105	21.491	630.9	1.263
30	28.994	34.280	28.987	21.530	627.6	1.892
40	28.962	34.296	28.952	21.554	625.8	2.519
50	28.584	34.459	28.572	21.802	602.5	3.138
60	27.880	34.638	27.866	22.169	567.9	3.720
70	27.248	34.790	27.232	22.487	537.8	4.273
80	26.918	34.854	26.900	22.642	523.5	4.806
90	26.240	34.996	26.220	22.963	493.2	5.314
100	25.769	35.055	25.746	23.155	475.3	5.793
110	25.687	35.049	25.662	23.177	473.6	6.267
120	25.545	35.101	25.518	23.261	466.1	6.737
130	25.292	35.146	25.264	23.373	455.8	7.199
140	24.081	35.124	24.052	23.722	422.8	7.635
150	23.473	35.111	23.442	23.892	406.9	8.050
160	23.369	35.472	23.335	24.196	378.4	8.447
170	22.438	35.343	22.404	24.366	362.4	8.818
180	21.415	35.609	21.380	24.855	316.1	9.162
190	19.235	35.538	19.201	25.382	265.8	9.448
200	18.290	35.473	18.255	25.572	247.8	9.704
225	15.047	35.170	15.013	26.101	197.4	10.256
250	12.030	34.903	11.997	26.515	157.5	10.695
275	11.403	34.817	11.368	26.566	153.0	11.084
300	11.122	34.800	11.085	26.605	149.8	11.461
304	11.098	34.796	11.061	26.606	149.7	11.521



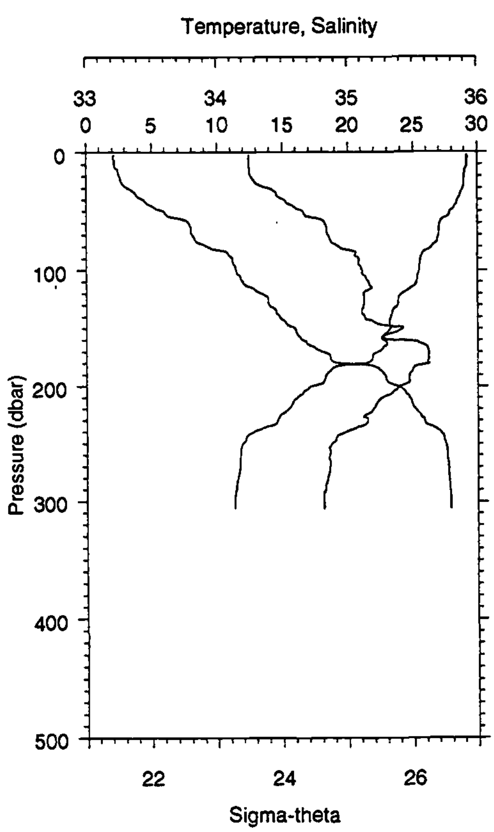
STA NO 10 LAT: 2 26.2 S LONG: 156 6.2 E
16 NOV 1992 620 GMT DEPTH 1750

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.500	34.264	29.499	21.346	643.9	0.129
10	29.196	34.265	29.193	21.450	634.3	0.640
20	29.101	34.264	29.096	21.482	631.7	1.273
30	28.993	34.247	28.986	21.506	630.0	1.904
40	28.917	34.251	28.907	21.535	627.6	2.532
50	28.912	34.274	28.900	21.555	626.2	3.159
60	28.633	34.422	28.619	21.759	607.1	3.781
70	27.457	34.746	27.441	22.388	547.4	4.357
80	27.024	34.836	27.005	22.595	528.0	4.893
90	26.551	34.910	26.531	22.801	508.7	5.414
100	25.996	34.989	25.974	23.035	486.8	5.909
110	25.808	35.050	25.783	23.140	477.2	6.393
120	25.461	35.104	25.434	23.289	463.4	6.862
130	24.349	35.116	24.321	23.636	430.6	7.303
140	23.688	35.185	23.658	23.884	407.2	7.718
150	23.554	35.502	23.523	24.164	381.0	8.110
160	23.185	35.551	23.152	24.309	367.6	8.486
170	21.805	35.604	21.771	24.742	326.5	8.842
180	19.634	35.560	19.601	25.295	273.8	9.138
190	16.838	35.360	16.807	25.837	221.9	9.383
200	15.594	35.215	15.563	26.014	205.0	9.593
225	13.108	35.015	13.077	26.390	169.2	10.064
250	11.599	34.881	11.567	26.579	151.2	10.456
275	11.448	34.855	11.413	26.587	151.0	10.833
300	11.091	34.800	11.054	26.611	149.2	11.210
325	10.757	34.778	10.718	26.654	145.6	11.578
350	10.574	34.766	10.532	26.678	143.8	11.940
375	10.434	34.756	10.389	26.695	142.6	12.297
400	10.362	34.766	10.314	26.715	141.2	12.653
425	10.033	34.743	9.983	26.754	137.8	13.001
450	9.476	34.692	9.425	26.808	132.8	13.339
475	9.210	34.679	9.157	26.842	129.9	13.669
500	8.810	34.654	8.755	26.886	125.8	13.989
505	8.695	34.645	8.641	26.898	124.7	14.052



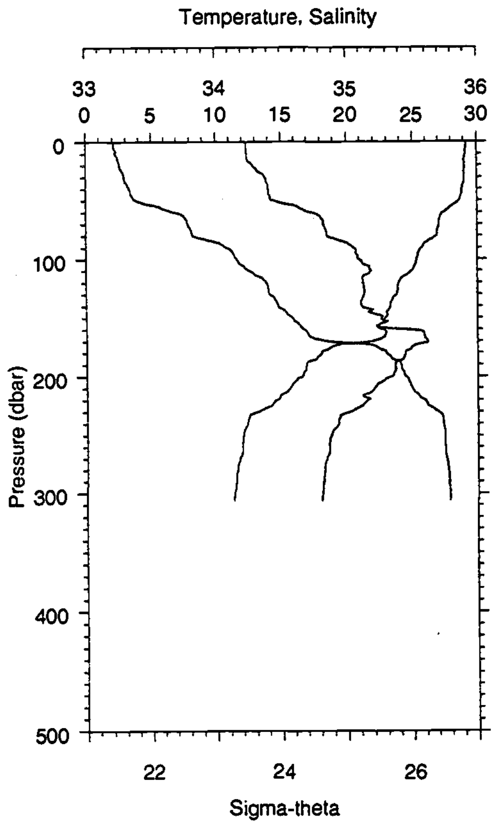
STA NO 11 LAT: 2 14.2 S LONG: 155 54.1 E
19 NOV 1992 1126 GMT DEPTH

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.365	34.275	29.365	21.400	638.7	0.128
10	29.152	34.264	29.150	21.464	633.0	0.637
20	29.074	34.271	29.069	21.496	630.4	1.269
30	29.039	34.279	29.032	21.514	629.1	1.899
40	28.851	34.356	28.842	21.635	618.0	2.524
50	28.519	34.503	28.507	21.857	597.3	3.131
60	27.740	34.676	27.726	22.243	560.8	3.710
70	27.046	34.829	27.030	22.581	528.8	4.252
80	26.703	34.889	26.685	22.737	514.4	4.778
90	25.764	35.057	25.744	23.158	474.6	5.262
100	25.617	35.090	25.594	23.229	468.2	5.733
110	25.416	35.137	25.392	23.326	459.3	6.198
120	24.308	35.132	24.282	23.659	427.9	6.644
130	23.420	35.105	23.393	23.901	405.2	7.058
140	23.368	35.499	23.339	24.216	375.6	7.452
150	22.941	35.433	22.910	24.289	369.0	7.824
160	22.539	35.604	22.507	24.535	345.9	8.184
170	21.489	35.632	21.456	24.851	316.1	8.514
180	19.156	35.519	19.123	25.387	264.9	8.809
190	18.529	35.485	18.496	25.521	252.4	9.067
200	17.100	35.392	17.066	25.800	225.8	9.307
225	15.071	35.172	15.037	26.097	197.7	9.824
250	12.287	34.923	12.254	26.481	160.8	10.271
275	11.816	34.889	11.781	26.545	155.2	10.666
300	11.373	34.813	11.336	26.569	153.3	11.051
307	11.220	34.803	11.182	26.589	151.5	11.158



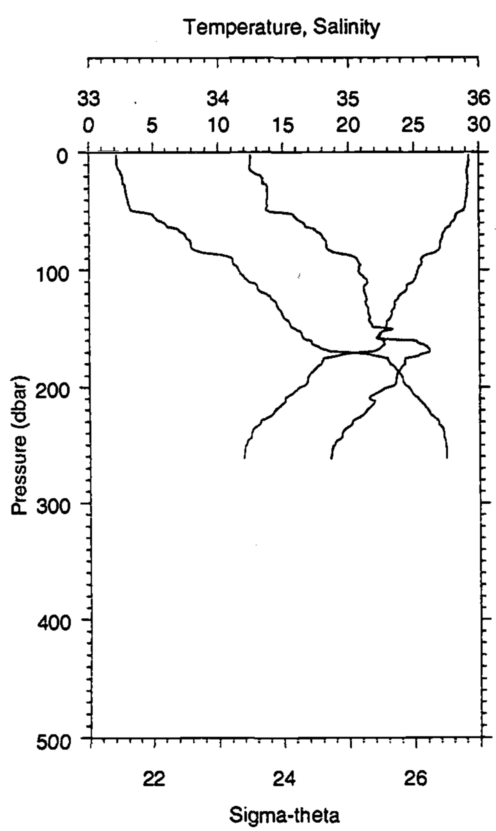
STA NO 12 LAT: 2 9.9 S LONG: 155 50.0 E
16 NOV 1992 1230 GMT DEPTH

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.198	34.247	29.198	21.435	635.4	0.127
10	29.198	34.246	29.195	21.435	635.7	0.636
20	28.992	34.262	28.988	21.517	628.4	1.268
30	28.924	34.402	28.916	21.645	616.6	1.893
40	28.466	34.516	28.456	21.883	594.3	2.498
50	27.858	34.657	27.846	22.189	565.4	3.081
60	27.082	34.824	27.068	22.566	529.9	3.630
70	26.978	34.847	26.962	22.617	525.4	4.157
80	26.432	34.929	26.414	22.852	503.4	4.675
90	25.566	35.083	25.546	23.239	466.8	5.155
100	25.455	35.110	25.433	23.294	462.0	5.620
110	25.242	35.163	25.218	23.399	452.4	6.077
120	24.156	35.120	24.131	23.695	424.4	6.518
130	23.780	35.120	23.753	23.807	414.1	6.934
140	23.272	35.132	23.243	23.965	399.4	7.340
150	23.229	35.421	23.198	24.197	377.8	7.730
160	22.786	35.405	22.754	24.313	367.1	8.104
170	22.258	35.618	22.224	24.626	337.7	8.458
180	21.263	35.626	21.228	24.910	310.8	8.785
190	18.319	35.469	18.286	25.562	248.5	9.045
200	17.142	35.390	17.109	25.789	226.9	9.288
225	14.868	35.137	14.834	26.114	196.0	9.816
250	11.953	34.870	11.920	26.504	158.5	10.254
275	11.677	34.850	11.642	26.541	155.5	10.646
300	11.356	34.813	11.318	26.572	153.0	11.031
305	11.352	34.813	11.314	26.573	153.0	11.107



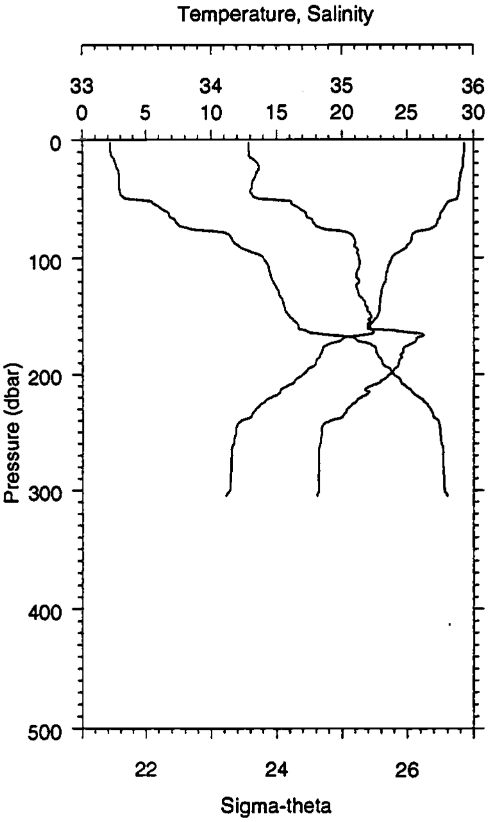
STA NO 13 LAT: 2 6.6 S LONG: 155 46.0 E
16 NOV 1992 1333 GMT DEPTH

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
1	29.213	34.238	29.213	21.423	636.5	0.064
10	29.178	34.239	29.176	21.436	635.6	0.636
20	29.076	34.284	29.071	21.505	629.6	1.267
30	29.079	34.380	29.072	21.577	623.1	1.893
40	28.892	34.404	28.882	21.658	615.8	2.513
50	28.651	34.451	28.639	21.774	605.1	3.126
60	27.446	34.746	27.432	22.390	546.7	3.702
70	27.058	34.829	27.042	22.578	529.1	4.235
80	26.889	34.856	26.871	22.653	522.4	4.761
90	25.743	35.055	25.723	23.163	474.1	5.255
100	25.335	35.097	25.313	23.321	459.4	5.720
110	24.907	35.182	24.883	23.516	441.2	6.172
120	23.915	35.124	23.890	23.770	417.3	6.600
130	23.751	35.131	23.724	23.823	412.6	7.014
140	23.272	35.114	23.243	23.951	400.7	7.419
150	22.892	35.259	22.862	24.171	380.2	7.809
160	22.744	35.465	22.712	24.371	361.6	8.180
170	21.898	35.616	21.864	24.726	328.1	8.532
180	18.093	35.442	18.062	25.597	244.7	8.798
190	16.951	35.362	16.920	25.812	224.3	9.032
200	16.589	35.339	16.556	25.880	218.0	9.254
225	14.176	35.108	14.143	26.241	183.7	9.758
250	12.021	34.879	11.989	26.498	159.1	10.169
275	11.628	34.831	11.593	26.535	156.0	10.565
300	11.383	34.812	11.345	26.566	153.6	10.952
305	11.363	34.810	11.324	26.569	153.5	11.028



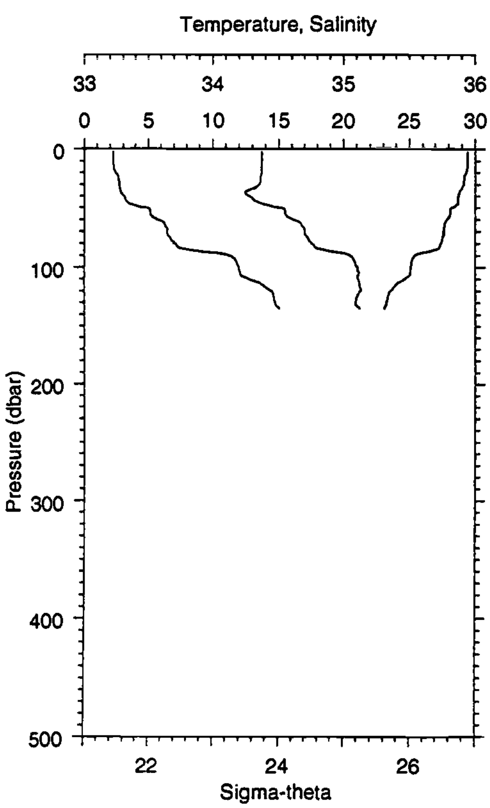
STA NO 14 LAT: 2 2.5 S LONG: 155 41.8 E
16 NOV 1992 1437 GMT DEPTH 1900

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.219	34.250	29.219	21.431	635.8	0.127
10	29.194	34.248	29.192	21.438	635.5	0.636
20	29.144	34.334	29.139	21.520	628.1	1.268
30	29.122	34.381	29.115	21.563	624.5	1.895
40	29.000	34.378	28.990	21.603	621.1	2.518
50	28.674	34.397	28.662	21.726	609.8	3.136
60	27.882	34.660	27.868	22.185	566.3	3.718
70	27.218	34.795	27.202	22.501	536.5	4.269
80	27.017	34.832	26.999	22.593	528.1	4.801
90	25.599	35.062	25.579	23.213	469.3	5.306
100	25.318	35.079	25.296	23.312	460.2	5.771
110	24.959	35.137	24.935	23.466	445.9	6.225
120	24.084	35.121	24.058	23.717	422.3	6.658
130	23.484	35.138	23.457	23.907	404.6	7.069
140	23.205	35.163	23.176	24.008	395.3	7.469
150	23.010	35.333	22.980	24.193	378.1	7.856
160	22.660	35.517	22.628	24.434	355.5	8.225
170	20.779	35.614	20.746	25.032	298.7	8.568
180	17.903	35.430	17.873	25.634	241.1	8.823
190	16.985	35.365	16.953	25.806	224.8	9.055
200	16.256	35.293	16.224	25.923	213.9	9.277
225	13.943	35.093	13.911	26.279	180.1	9.770
250	12.135	34.887	12.102	26.482	160.7	10.186
262	11.944	34.860	11.910	26.498	159.4	10.378



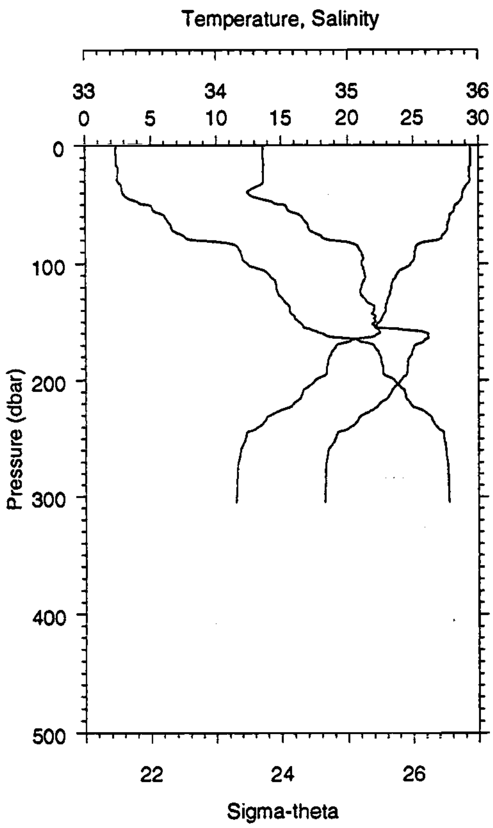
STA NO 15 LAT: 1 58.0 S LONG: 155 37.8 E
16 NOV 1992 1713 GMT DEPTH 1900

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.275	34.288	29.274	21.441	634.8	0.127
10	29.267	34.289	29.265	21.444	634.9	0.635
20	29.193	34.357	29.189	21.521	628.0	1.267
30	29.005	34.341	28.998	21.573	623.5	1.892
40	28.916	34.309	28.907	21.578	623.4	2.516
50	28.722	34.372	28.710	21.691	613.1	3.137
60	27.632	34.703	27.618	22.298	555.5	3.709
70	27.282	34.778	27.266	22.468	539.7	4.256
80	25.417	35.067	25.399	23.272	463.2	4.766
90	24.981	35.091	24.962	23.424	449.1	5.223
100	23.810	35.127	23.789	23.802	413.3	5.654
110	23.501	35.120	23.478	23.888	405.5	6.062
120	23.325	35.126	23.300	23.944	400.6	6.466
130	23.017	35.124	22.991	24.032	392.6	6.862
140	22.895	35.177	22.866	24.108	385.8	7.251
150	22.702	35.223	22.672	24.199	377.5	7.633
160	22.170	35.199	22.138	24.332	365.2	8.003
170	19.980	35.569	19.949	25.211	281.5	8.331
180	18.476	35.471	18.444	25.523	251.8	8.592
190	17.984	35.437	17.951	25.620	242.8	8.840
200	17.039	35.365	17.006	25.794	226.4	9.074
225	13.902	35.091	13.870	26.286	179.4	9.583
250	11.887	34.846	11.854	26.498	159.1	10.000
275	11.553	34.823	11.518	26.543	155.3	10.391
300	11.446	34.822	11.408	26.562	154.0	10.779
305	11.248	34.868	11.210	26.635	147.1	10.855



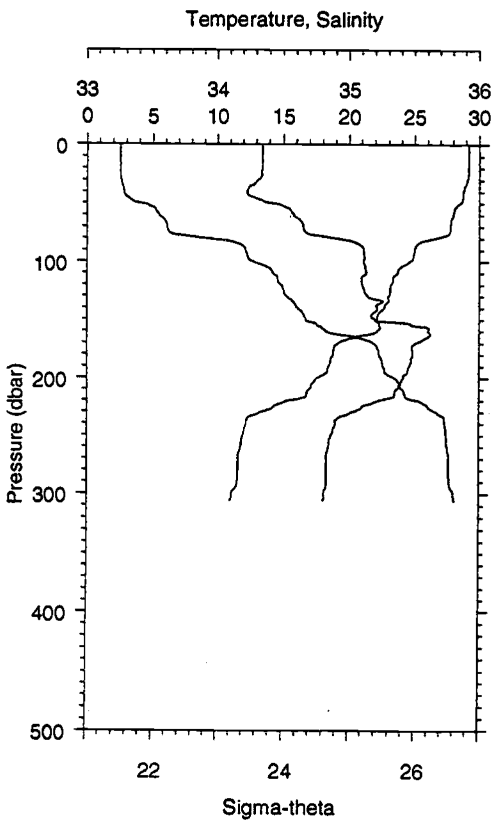
STA NO 16 LAT: 1 54.0 S LONG: 155 34.0 E
16 NOV 1992 1814 GMT DEPTH 1900

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.436	34.372	29.436	21.449	634.0	0.127
10	29.436	34.372	29.434	21.450	634.4	0.634
20	29.327	34.369	29.322	21.485	631.5	1.268
30	29.113	34.351	29.106	21.544	626.3	1.895
40	28.740	34.279	28.730	21.615	620.0	2.520
50	28.210	34.532	28.198	21.980	585.4	3.131
60	27.884	34.615	27.870	22.149	569.7	3.711
70	27.631	34.700	27.615	22.297	556.1	4.270
80	27.412	34.756	27.393	22.410	545.7	4.823
90	25.414	35.051	25.394	23.261	464.6	5.339
100	25.100	35.105	25.078	23.399	452.0	5.795
110	24.598	35.111	24.575	23.555	437.4	6.244
120	23.510	35.127	23.486	23.891	405.7	6.663
130	23.228	35.093	23.202	23.947	400.7	7.066
135	23.079	35.125	23.052	24.015	394.4	7.265



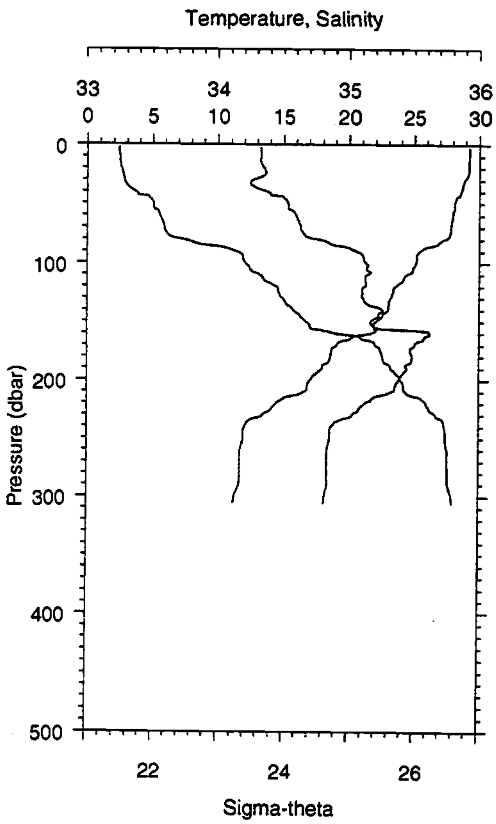
STA NO 17 LAT: 1 54.0 S LONG: 155 34.0 E
17 NOV 1992 1940 GMT DEPTH 1900

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
1	29.359	34.367	29.359	21.471	631.9	0.063
10	29.365	34.367	29.363	21.470	632.4	0.632
20	29.278	34.366	29.273	21.499	630.1	1.264
30	29.288	34.366	29.281	21.497	630.8	1.895
40	28.785	34.244	28.776	21.573	623.9	2.522
50	28.236	34.522	28.224	21.964	587.0	3.133
60	27.776	34.655	27.762	22.215	563.4	3.710
70	27.597	34.706	27.581	22.312	554.6	4.268
80	26.896	34.863	26.878	22.655	522.2	4.810
90	25.121	35.101	25.102	23.389	452.5	5.277
100	24.796	35.104	24.775	23.490	443.2	5.727
110	23.704	35.129	23.681	23.835	410.6	6.153
120	23.316	35.100	23.291	23.927	402.2	6.558
130	23.050	35.127	23.024	24.025	393.3	6.957
140	22.861	35.195	22.832	24.131	383.5	7.344
150	22.416	35.210	22.386	24.270	370.7	7.722
160	22.299	35.616	22.267	24.612	338.5	8.081
170	19.100	35.511	19.070	25.395	263.8	8.380
180	18.571	35.473	18.539	25.501	253.9	8.639
190	18.385	35.455	18.351	25.534	251.1	8.891
200	17.528	35.408	17.494	25.709	234.6	9.138
225	15.065	35.190	15.031	26.113	196.2	9.684
250	12.237	34.899	12.204	26.472	161.7	10.121
275	11.658	34.830	11.623	26.529	156.7	10.519
300	11.575	34.825	11.537	26.541	156.1	10.910
305	11.527	34.824	11.488	26.549	155.5	10.987



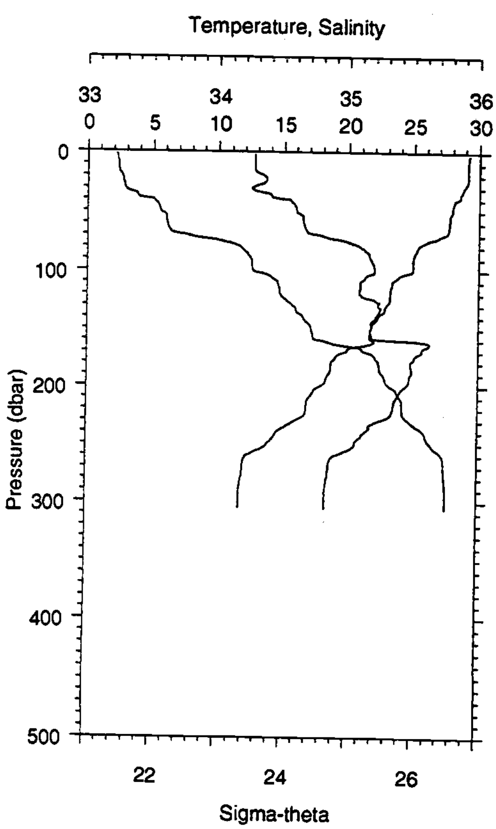
STA NO 18 LAT: 1 50.0 S LONG: 155 30.0 E
16 NOV 1992 2037 GMT DEPTH 1950

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
1	29.182	34.342	29.182	21.512	627.9	0.063
10	29.183	34.342	29.181	21.512	628.3	0.628
20	29.180	34.342	29.175	21.514	628.7	1.257
30	29.079	34.309	29.071	21.524	628.2	1.885
40	28.769	34.228	28.759	21.567	624.5	2.512
50	28.478	34.427	28.466	21.814	601.4	3.130
60	27.992	34.579	27.978	22.088	575.6	3.713
70	27.775	34.649	27.759	22.211	564.2	4.281
80	26.493	34.903	26.475	22.813	507.1	4.833
90	24.989	35.110	24.970	23.435	448.0	5.296
100	24.589	35.112	24.567	23.558	436.6	5.740
110	23.673	35.130	23.650	23.845	409.7	6.160
120	23.166	35.101	23.141	23.971	398.0	6.563
130	22.954	35.138	22.928	24.060	389.9	6.958
140	22.646	35.219	22.617	24.211	375.9	7.340
150	22.130	35.198	22.100	24.341	363.8	7.708
160	22.145	35.605	22.113	24.647	335.2	8.055
170	19.181	35.510	19.150	25.374	265.8	8.350
180	18.778	35.483	18.746	25.457	258.2	8.610
190	18.462	35.458	18.429	25.517	252.7	8.865
200	17.601	35.412	17.567	25.695	236.0	9.113
225	14.332	35.102	14.299	26.204	187.3	9.659
250	12.002	34.864	11.969	26.490	159.9	10.075
275	11.656	34.830	11.621	26.530	156.6	10.471
300	11.169	34.810	11.132	26.604	149.9	10.859
306	11.052	34.805	11.014	26.622	148.3	10.948



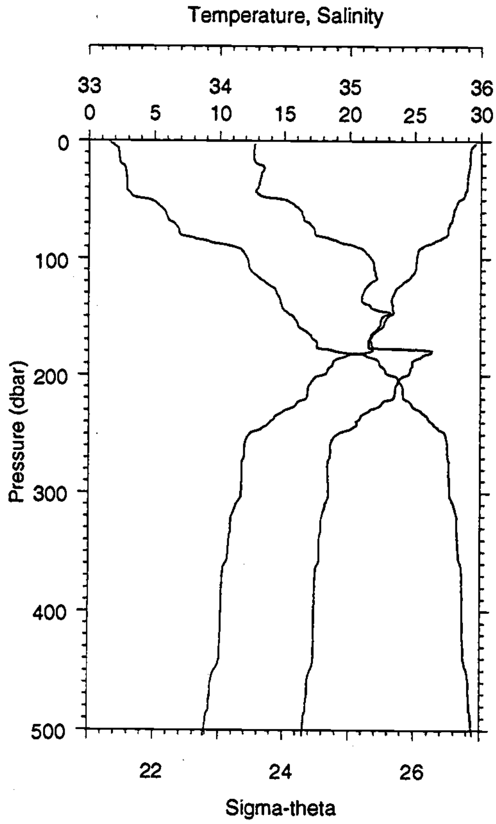
STA NO 19 LAT: 1 50.0 S LONG: 155 36.0 E
16 NOV 1992 2137 GMT DEPTH 1900

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.234	34.321	29.234	21.479	631.2	0.126
10	29.221	34.321	29.219	21.484	631.1	0.631
20	29.199	34.350	29.195	21.514	628.7	1.262
30	28.874	34.264	28.866	21.558	624.9	1.889
40	28.621	34.375	28.611	21.726	609.3	2.508
50	28.136	34.534	28.124	22.006	583.0	3.102
60	27.985	34.594	27.971	22.101	574.3	3.681
70	27.844	34.628	27.828	22.173	567.9	4.252
80	27.332	34.764	27.314	22.442	542.6	4.814
90	25.427	35.057	25.407	23.262	464.6	5.318
100	25.125	35.129	25.103	23.409	451.0	5.773
110	24.419	35.136	24.396	23.628	430.4	6.216
120	23.509	35.121	23.484	23.886	406.1	6.636
130	23.139	35.105	23.112	23.983	397.3	7.038
140	22.949	35.254	22.921	24.150	381.7	7.428
150	22.009	35.160	21.979	24.347	363.2	7.800
160	21.621	35.623	21.590	24.807	319.8	8.149
170	19.060	35.502	19.030	25.399	263.4	8.430
180	18.577	35.482	18.546	25.506	253.4	8.686
190	17.961	35.446	17.929	25.633	241.6	8.934
200	17.096	35.378	17.062	25.790	226.7	9.168
225	14.065	35.075	14.032	26.239	183.9	9.686
250	11.928	34.854	11.896	26.496	159.3	10.100
275	11.692	34.833	11.656	26.525	157.1	10.494
300	11.299	34.817	11.261	26.586	151.7	10.883
306	11.189	34.812	11.151	26.602	150.2	10.974



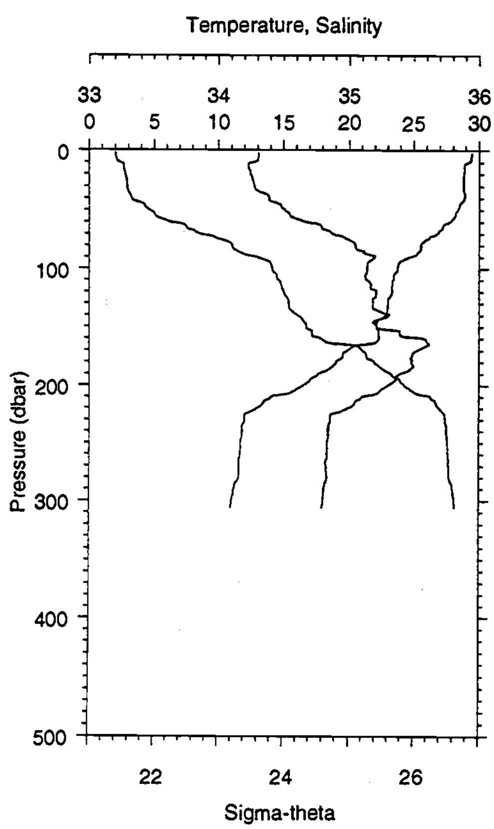
STA NO 20 LAT: 1 50.1 S LONG: 155 42.2 E
16 NOV 1992 2245 GMT DEPTH 1840

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.251	34.269	29.251	21.434	635.5	0.127
10	29.157	34.268	29.154	21.465	632.9	0.634
20	29.165	34.345	29.160	21.522	627.9	1.266
30	28.812	34.250	28.805	21.568	623.9	1.892
40	28.159	34.544	28.150	22.005	582.6	2.502
50	27.966	34.601	27.954	22.112	572.8	3.078
60	27.772	34.653	27.758	22.215	563.4	3.644
70	27.163	34.793	27.147	22.517	535.0	4.202
80	25.308	35.093	25.290	23.324	458.2	4.693
90	24.947	35.169	24.928	23.493	442.5	5.142
100	24.940	35.200	24.918	23.519	440.5	5.583
110	23.334	35.091	23.311	23.914	403.0	6.000
120	23.192	35.091	23.167	23.956	399.4	6.401
130	22.877	35.226	22.851	24.149	381.4	6.792
140	22.274	35.208	22.246	24.308	366.6	7.167
150	21.751	35.174	21.722	24.429	355.4	7.527
160	21.906	35.474	21.875	24.614	338.2	7.879
170	19.740	35.568	19.709	25.273	275.5	8.181
180	18.716	35.479	18.684	25.469	257.0	8.444
190	18.472	35.479	18.439	25.531	251.4	8.699
200	17.887	35.442	17.853	25.648	240.5	8.947
225	16.703	35.327	16.666	25.845	222.2	9.514
250	13.818	35.060	13.782	26.280	180.7	10.010
275	11.935	34.855	11.900	26.496	159.9	10.423
300	11.724	34.834	11.685	26.521	158.1	10.820
306	11.727	34.834	11.688	26.520	158.3	10.915



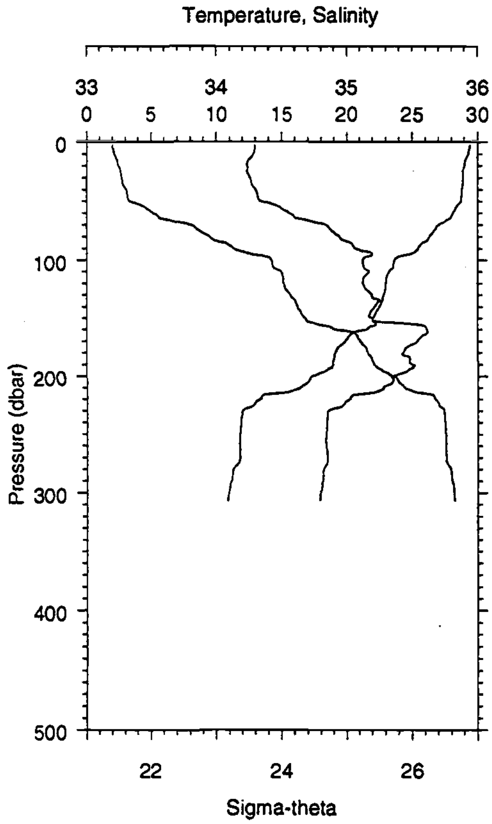
STA NO 21 LAT: 1 50.0 S LONG: 155 48.0 E
17 NOV 1992 212 GMT DEPTH 1750

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.571	34.270	29.571	21.327	645.7	0.129
10	29.166	34.263	29.164	21.458	633.5	0.638
20	29.131	34.301	29.126	21.500	630.1	1.271
30	28.964	34.320	28.956	21.570	623.7	1.896
40	28.902	34.297	28.892	21.575	623.8	2.520
50	28.302	34.516	28.291	21.938	589.5	3.135
60	27.890	34.637	27.876	22.164	568.3	3.713
70	27.598	34.701	27.581	22.308	555.0	4.277
80	27.413	34.742	27.395	22.399	546.8	4.827
90	25.557	35.060	25.537	23.224	468.3	5.335
100	25.163	35.168	25.141	23.427	449.3	5.790
110	25.051	35.192	25.027	23.480	444.6	6.237
120	24.267	35.173	24.242	23.702	423.8	6.672
130	23.461	35.106	23.434	23.889	406.2	7.085
140	23.332	35.158	23.303	23.968	399.2	7.487
150	22.960	35.257	22.929	24.151	382.2	7.880
160	22.456	35.217	22.424	24.265	371.6	8.258
170	21.541	35.149	21.508	24.470	352.3	8.618
180	21.608	35.623	21.572	24.812	320.2	8.962
190	18.769	35.483	18.735	25.459	258.4	9.236
200	17.926	35.443	17.891	25.639	241.3	9.487
225	15.950	35.246	15.915	25.958	211.3	10.048
250	12.372	34.912	12.338	26.456	163.3	10.514
275	11.765	34.838	11.729	26.516	158.0	10.915
300	11.709	34.843	11.670	26.530	157.2	11.309
325	10.885	34.788	10.845	26.639	147.0	11.688
350	10.711	34.775	10.669	26.660	145.5	12.054
375	10.239	34.743	10.194	26.718	140.3	12.409
400	10.169	34.737	10.122	26.726	140.1	12.759
425	10.117	34.738	10.067	26.736	139.6	13.109
450	9.663	34.711	9.611	26.792	134.5	13.455
475	9.271	34.682	9.218	26.835	130.6	13.785
500	8.874	34.658	8.820	26.879	126.5	14.107
505	8.800	34.655	8.745	26.888	125.7	14.170



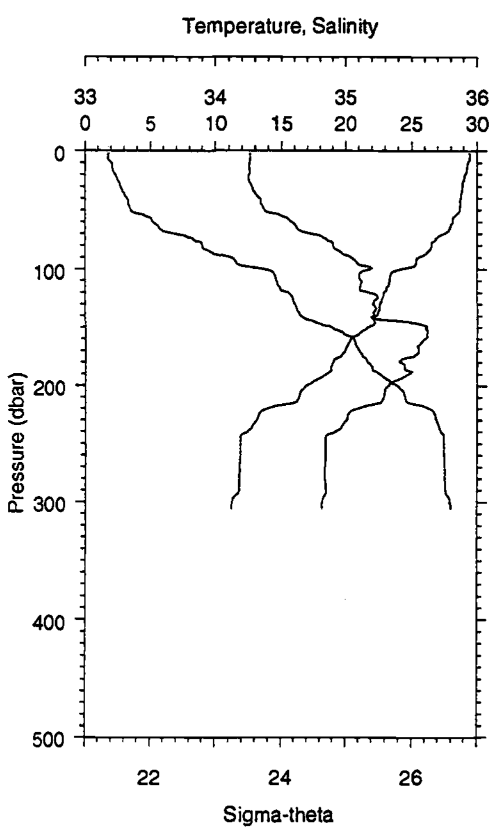
STA NO 22 LAT: 2 2.0 S LONG: 155 42.1 E
20 NOV 1992 2240 GMT DEPTH

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.420	34.304	29.419	21.403	638.4	0.128
10	29.153	34.269	29.151	21.467	632.7	0.637
20	28.846	34.244	28.841	21.552	625.1	1.264
30	28.813	34.272	28.806	21.585	622.4	1.888
40	28.872	34.386	28.863	21.651	616.5	2.508
50	28.322	34.510	28.310	21.927	590.6	3.110
60	27.721	34.672	27.707	22.246	560.5	3.689
70	26.743	34.878	26.727	22.714	516.1	4.222
80	25.569	35.047	25.551	23.210	469.1	4.708
90	24.683	35.199	24.664	23.595	432.7	5.167
100	23.754	35.139	23.733	23.827	410.9	5.584
110	23.400	35.143	23.377	23.934	401.1	5.990
120	23.340	35.212	23.315	24.004	394.8	6.388
130	23.015	35.184	22.988	24.078	388.2	6.779
140	22.870	35.309	22.841	24.215	375.5	7.163
150	22.134	35.215	22.104	24.354	362.6	7.530
160	22.338	35.589	22.306	24.581	341.5	7.884
170	19.860	35.526	19.829	25.210	281.6	8.193
180	19.051	35.487	19.019	25.390	264.6	8.467
190	17.672	35.390	17.640	25.660	238.9	8.720
200	16.522	35.299	16.490	25.865	219.4	8.949
225	12.060	34.865	12.030	26.479	160.2	9.410
250	11.746	34.838	11.713	26.518	157.1	9.807
275	11.603	34.831	11.568	26.540	155.6	10.198
300	11.045	34.807	11.008	26.624	148.0	10.577
306	10.963	34.797	10.925	26.631	147.3	10.665



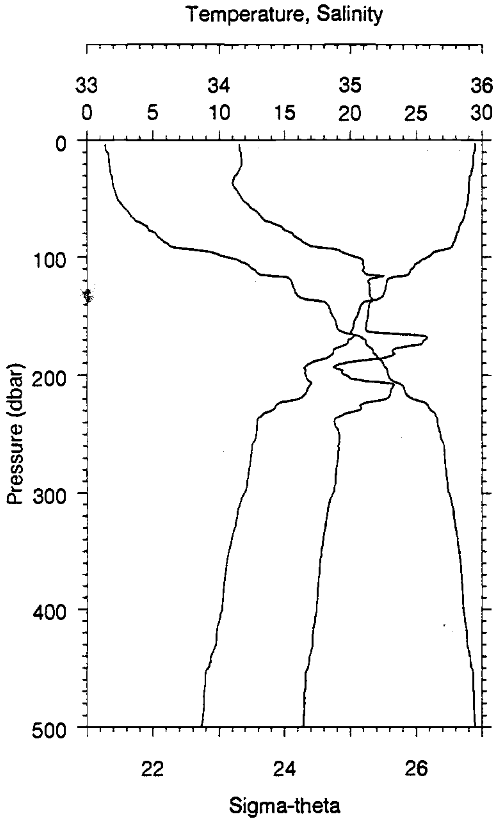
STA NO 23 LAT: 1 58.1 S LONG: 155 38.0 E
20 NOV 1992 2356 GMT DEPTH

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.407	34.297	29.407	21.403	638.5	0.128
10	29.305	34.288	29.303	21.431	636.2	0.638
20	28.995	34.237	28.991	21.496	630.3	1.271
30	28.895	34.258	28.888	21.546	626.0	1.898
40	28.786	34.304	28.776	21.618	619.7	2.522
50	28.716	34.347	28.704	21.675	614.7	3.140
60	28.098	34.558	28.084	22.037	580.4	3.734
70	26.979	34.837	26.963	22.609	526.2	4.294
80	26.309	34.940	26.291	22.899	498.9	4.807
90	25.439	35.068	25.419	23.266	464.2	5.288
100	23.656	35.125	23.635	23.846	409.1	5.722
110	23.281	35.178	23.259	23.995	395.3	6.127
120	23.029	35.124	23.005	24.028	392.5	6.520
130	22.847	35.198	22.821	24.137	382.6	6.909
140	22.524	35.217	22.496	24.244	372.8	7.286
150	22.056	35.200	22.026	24.364	361.6	7.654
160	21.538	35.613	21.507	24.823	318.3	7.997
170	19.850	35.535	19.819	25.219	280.7	8.287
180	19.118	35.431	19.085	25.330	270.3	8.561
190	18.939	35.506	18.905	25.434	260.8	8.826
200	17.305	35.344	17.271	25.714	234.0	9.076
225	12.864	34.972	12.833	26.405	167.6	9.577
250	11.784	34.841	11.752	26.513	157.6	9.976
275	11.687	34.846	11.652	26.536	156.0	10.370
300	10.936	34.796	10.899	26.635	146.8	10.744
307	10.859	34.789	10.821	26.644	146.1	10.847



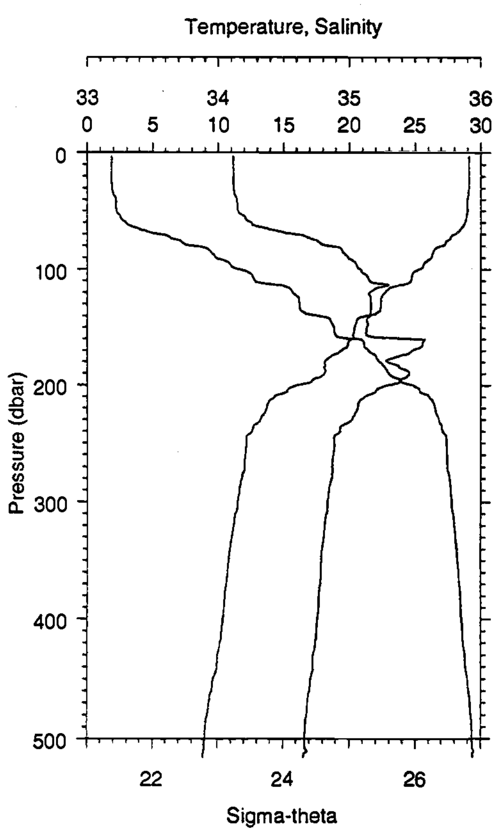
STA NO 24 LAT: 1 54.1 S LONG: 155 34.1 E
21 NOV 1992 105 GMT DEPTH

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.403	34.259	29.402	21.375	641.1	0.128
10	29.333	34.258	29.331	21.399	639.2	0.642
20	29.103	34.253	29.098	21.473	632.6	1.279
30	28.925	34.274	28.918	21.549	625.8	1.908
40	28.761	34.332	28.751	21.648	616.8	2.530
50	28.678	34.369	28.666	21.703	611.9	3.144
60	28.140	34.580	28.126	22.040	580.2	3.737
70	27.488	34.730	27.472	22.365	549.5	4.307
80	26.531	34.903	26.513	22.801	508.2	4.829
90	25.518	35.045	25.499	23.225	468.1	5.324
100	24.185	35.183	24.164	23.733	420.0	5.778
110	23.358	35.120	23.335	23.929	401.6	6.183
120	22.907	35.184	22.883	24.109	384.8	6.581
130	22.631	35.212	22.604	24.210	375.6	6.960
140	22.311	35.210	22.283	24.299	367.4	7.332
150	21.642	35.613	21.613	24.793	320.7	7.679
160	20.373	35.597	20.343	25.127	289.1	7.983
170	19.948	35.551	19.917	25.205	282.0	8.269
180	19.028	35.410	18.996	25.337	269.6	8.545
190	18.524	35.475	18.490	25.514	253.0	8.807
200	16.944	35.326	16.911	25.786	227.1	9.047
225	13.269	35.017	13.237	26.359	172.2	9.560
250	11.889	34.846	11.856	26.497	159.1	9.972
275	11.820	34.842	11.784	26.508	158.8	10.369
300	11.283	34.818	11.246	26.589	151.4	10.762
306	11.227	34.815	11.188	26.598	150.7	10.852



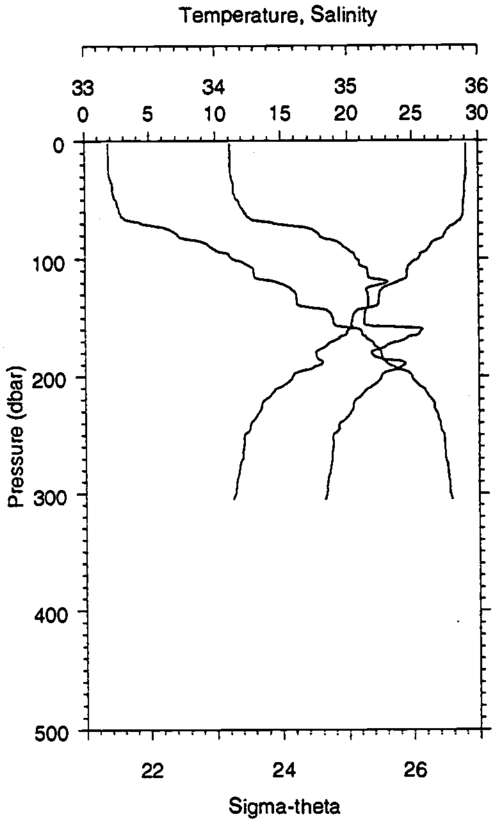
STA NO 25 LAT: 1 14.1 S LONG: 156 6.2 E
22 NOV 1992 1012 GMT DEPTH

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
3	29.433	34.155	29.432	21.288	649.6	0.195
10	29.390	34.164	29.387	21.309	647.8	0.650
20	29.318	34.171	29.313	21.340	645.4	1.296
30	29.076	34.117	29.069	21.380	641.9	1.940
40	28.990	34.113	28.980	21.407	639.9	2.581
50	28.944	34.175	28.932	21.470	634.3	3.218
60	28.726	34.278	28.712	21.620	620.4	3.847
70	28.470	34.382	28.453	21.784	605.2	4.461
80	28.057	34.561	28.038	22.054	579.8	5.053
90	27.752	34.682	27.731	22.246	561.9	5.626
100	25.865	35.049	25.842	23.121	478.5	6.143
110	24.682	35.097	24.658	23.520	440.8	6.598
120	22.799	35.138	22.775	24.105	385.2	7.014
130	22.594	35.144	22.568	24.168	379.5	7.397
140	20.833	35.142	20.806	24.656	333.2	7.757
150	20.511	35.134	20.482	24.737	325.8	8.087
160	20.207	35.118	20.177	24.806	319.5	8.408
170	19.829	35.559	19.798	25.243	278.4	8.709
180	18.719	35.322	18.687	25.348	268.5	8.983
190	16.947	34.953	16.916	25.499	253.9	9.244
200	16.626	34.965	16.594	25.584	246.1	9.493
225	14.373	35.078	14.340	26.176	190.0	10.051
250	12.828	34.915	12.793	26.369	171.7	10.496
275	12.363	34.899	12.326	26.448	164.7	10.913
300	11.904	34.867	11.865	26.512	159.0	11.320
325	11.253	34.814	11.212	26.592	151.7	11.706
350	10.723	34.780	10.680	26.662	145.4	12.078
375	10.395	34.759	10.350	26.704	141.7	12.436
400	10.214	34.744	10.166	26.724	140.3	12.789
425	9.754	34.713	9.705	26.778	135.4	13.131
450	9.168	34.678	9.118	26.847	128.8	13.462
475	8.836	34.652	8.785	26.881	125.8	13.779
500	8.647	34.643	8.593	26.903	124.0	14.092
501	8.632	34.642	8.578	26.905	123.9	14.104



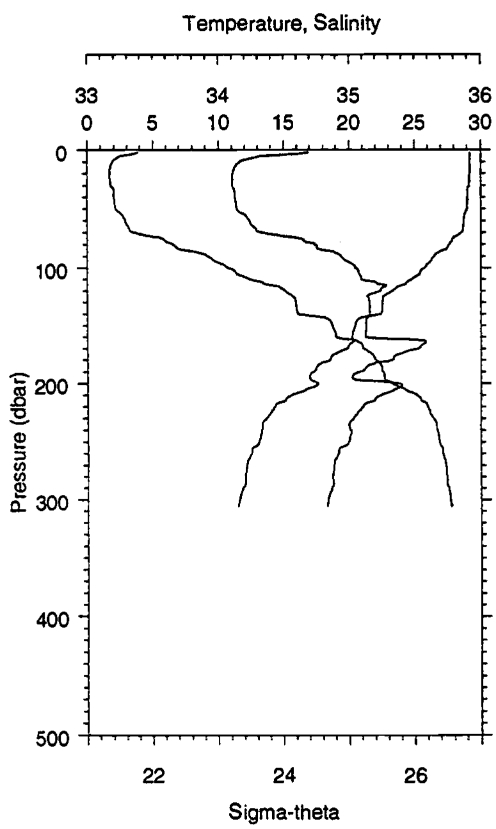
STA NO 26 LAT: 1 24.8 S LONG: 156 16.6 E
25 NOV 1992 5 GMT DEPTH 1800

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
3	29.091	34.115	29.090	21.372	641.5	0.192
10	29.089	34.116	29.087	21.374	641.6	0.641
20	29.097	34.116	29.092	21.372	642.3	1.283
30	29.090	34.118	29.083	21.377	642.3	1.926
40	28.970	34.145	28.960	21.438	636.9	2.566
50	28.960	34.154	28.948	21.449	636.3	3.202
60	28.771	34.257	28.756	21.589	623.4	3.834
70	28.034	34.583	28.017	22.077	577.1	4.439
80	27.104	34.842	27.086	22.573	530.1	4.990
90	26.238	34.991	26.218	22.961	493.4	5.493
100	25.288	35.084	25.266	23.326	458.9	5.969
110	24.673	35.153	24.649	23.565	436.5	6.411
120	22.716	35.154	22.692	24.140	381.8	6.812
130	22.378	35.162	22.352	24.244	372.3	7.186
140	21.195	35.154	21.168	24.566	341.8	7.553
150	20.364	35.131	20.336	24.774	322.3	7.880
160	20.127	35.575	20.097	25.176	284.4	8.198
170	19.373	35.472	19.342	25.295	273.3	8.477
180	18.163	35.293	18.132	25.465	257.2	8.741
190	18.158	35.455	18.125	25.591	245.6	8.992
200	16.005	35.288	15.973	25.976	208.8	9.223
225	13.520	35.044	13.489	26.328	175.2	9.689
250	12.173	34.889	12.140	26.476	161.2	10.106
275	11.938	34.876	11.903	26.512	158.4	10.507
300	11.542	34.839	11.504	26.558	154.5	10.898
325	11.161	34.813	11.120	26.609	150.1	11.278
350	10.849	34.789	10.806	26.646	146.9	11.649
375	10.587	34.773	10.542	26.681	144.0	12.012
400	10.381	34.759	10.333	26.707	142.1	12.370
425	10.109	34.739	10.059	26.738	139.4	12.723
450	9.622	34.707	9.571	26.796	134.1	13.066
475	9.264	34.683	9.211	26.836	130.5	13.397
500	8.996	34.665	8.941	26.865	128.0	13.718
516	8.886	34.656	8.830	26.876	127.1	13.922



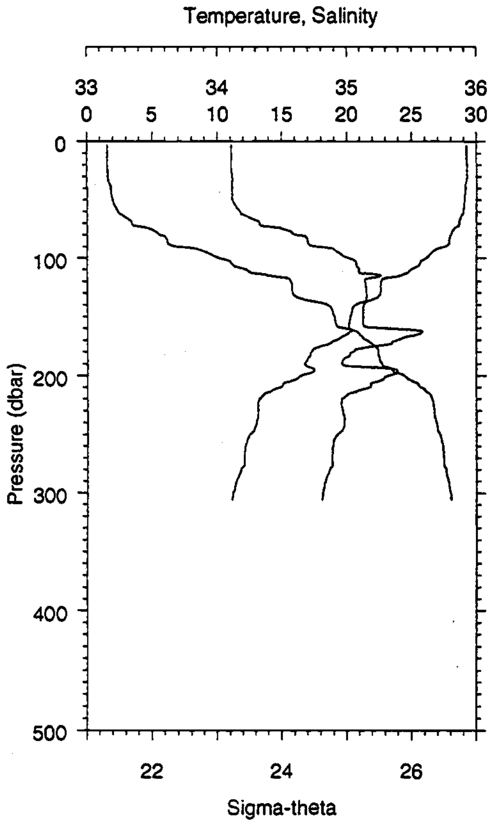
STA NO 27 LAT: 1 22.5 S LONG: 156 14.1 E
25 NOV 1992 119 GMT DEPTH 1880

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.100	34.114	29.099	21.368	641.8	0.128
10	29.107	34.112	29.105	21.365	642.4	0.642
20	29.100	34.114	29.095	21.370	642.5	1.285
30	29.078	34.120	29.071	21.383	641.7	1.927
40	28.978	34.136	28.968	21.428	637.8	2.566
50	28.911	34.171	28.899	21.477	633.6	3.203
60	28.865	34.221	28.851	21.531	628.9	3.834
70	28.350	34.446	28.333	21.871	596.8	4.453
80	27.400	34.786	27.381	22.437	543.1	5.014
90	26.316	34.972	26.295	22.921	497.2	5.532
100	25.485	35.070	25.463	23.254	465.8	6.011
110	24.625	35.154	24.601	23.580	435.0	6.457
120	23.790	35.310	23.765	23.947	400.4	6.884
130	22.442	35.158	22.416	24.222	374.4	7.268
140	22.172	35.162	22.144	24.302	367.1	7.642
150	20.372	35.131	20.343	24.772	322.4	7.975
160	20.056	35.574	20.026	25.194	282.7	8.288
170	18.843	35.403	18.813	25.378	265.3	8.565
180	17.611	35.186	17.581	25.518	252.0	8.823
190	17.949	35.442	17.917	25.633	241.6	9.071
200	15.838	35.260	15.807	25.992	207.1	9.293
225	13.511	35.041	13.479	26.328	175.2	9.767
250	12.171	34.885	12.138	26.474	161.5	10.190
275	11.854	34.871	11.819	26.524	157.3	10.590
300	11.483	34.835	11.444	26.566	153.7	10.979
305	11.294	34.822	11.255	26.591	151.3	11.055



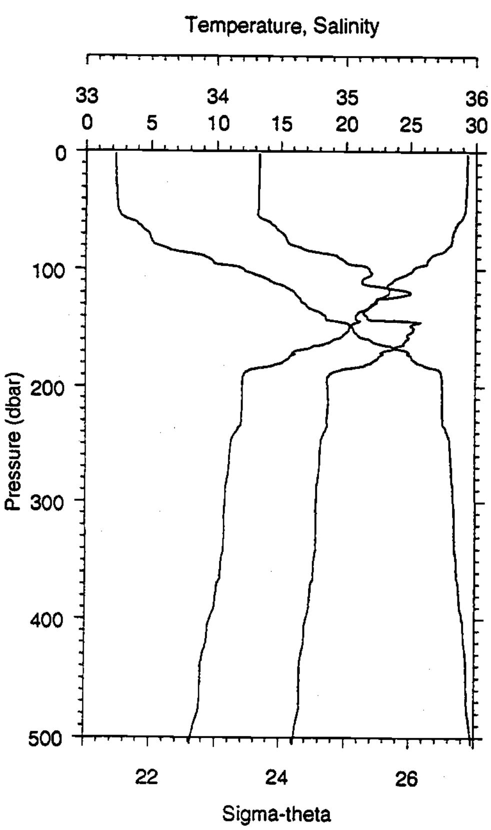
STA NO 28 LAT: 1 18.6 S LONG: 156 10.1 E
25 NOV 1992 223 GMT DEPTH 1950

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.183	34.695	29.182	21.777	602.6	0.121
10	29.184	34.165	29.182	21.379	641.1	0.623
20	29.176	34.111	29.171	21.342	645.2	1.267
30	29.127	34.108	29.120	21.357	644.2	1.912
40	29.037	34.127	29.027	21.402	640.3	2.553
50	28.985	34.141	28.973	21.430	638.1	3.192
60	28.756	34.238	28.742	21.580	624.2	3.822
70	28.582	34.343	28.565	21.717	611.6	4.442
80	27.681	34.744	27.663	22.314	554.9	5.020
90	26.502	34.942	26.481	22.841	504.9	5.552
100	25.787	35.048	25.764	23.144	476.3	6.042
110	24.782	35.093	24.759	23.487	444.0	6.503
120	23.318	35.236	23.293	24.029	392.4	6.916
130	22.538	35.154	22.512	24.192	377.3	7.299
140	22.388	35.158	22.360	24.238	373.3	7.675
150	20.447	35.130	20.419	24.751	324.5	8.011
160	20.229	35.125	20.200	24.806	319.6	8.332
170	19.806	35.527	19.774	25.224	280.1	8.623
180	18.530	35.331	18.498	25.402	263.3	8.892
190	17.280	35.077	17.248	25.515	252.5	9.147
200	17.636	35.385	17.602	25.666	238.7	9.396
225	14.022	35.063	13.989	26.239	183.9	9.904
250	13.092	34.996	13.057	26.379	170.9	10.343
275	12.107	34.882	12.071	26.484	161.1	10.754
300	11.628	34.842	11.590	26.544	155.9	11.151
306	11.497	34.833	11.458	26.562	154.3	11.244



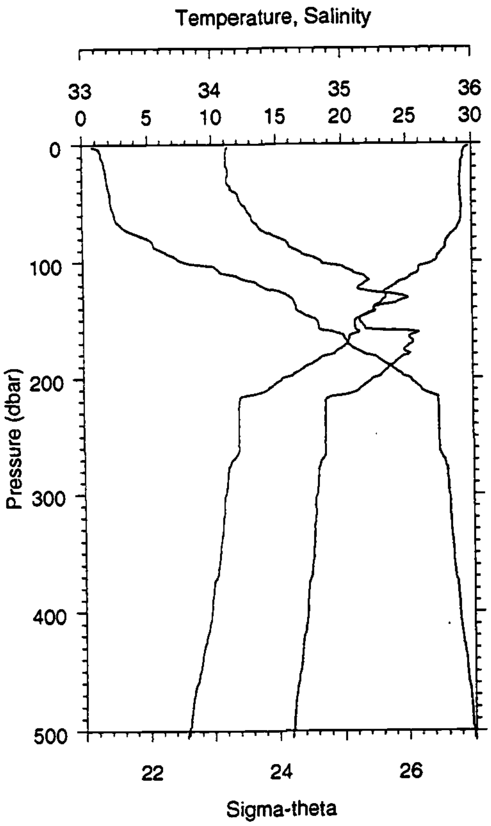
STA NO 29 LAT: 1 13.9 S LONG: 156 6.2 E
25 NOV 1992 348 GMT DEPTH 2000

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
3	29.225	34.109	29.224	21.323	646.2	0.194
10	29.228	34.110	29.225	21.323	646.5	0.646
20	29.229	34.110	29.225	21.323	646.9	1.293
30	29.227	34.117	29.220	21.330	646.8	1.940
40	29.109	34.114	29.100	21.368	643.6	2.585
50	29.042	34.115	29.030	21.392	641.8	3.228
60	28.938	34.178	28.923	21.475	634.3	3.866
70	28.624	34.326	28.607	21.691	614.1	4.489
80	27.990	34.605	27.971	22.109	574.5	5.082
90	27.558	34.755	27.537	22.363	550.7	5.645
100	26.102	35.010	26.080	23.018	488.4	6.155
110	24.926	35.093	24.902	23.443	448.2	6.624
120	22.689	35.140	22.665	24.138	382.0	7.039
130	22.611	35.151	22.585	24.169	379.5	7.419
140	20.668	35.132	20.642	24.693	329.6	7.780
150	20.257	35.126	20.229	24.798	319.9	8.104
160	20.191	35.308	20.162	24.955	305.4	8.421
170	19.112	35.388	19.081	25.299	272.9	8.706
180	17.285	35.044	17.255	25.488	254.7	8.966
190	16.771	34.959	16.740	25.546	249.4	9.219
200	16.455	35.321	16.423	25.898	216.3	9.455
225	13.160	34.955	13.128	26.333	174.6	9.930
250	12.521	34.922	12.488	26.434	165.4	10.358
275	12.081	34.885	12.045	26.492	160.4	10.763
300	11.208	34.813	11.171	26.600	150.4	11.151
306	11.118	34.807	11.080	26.611	149.4	11.241



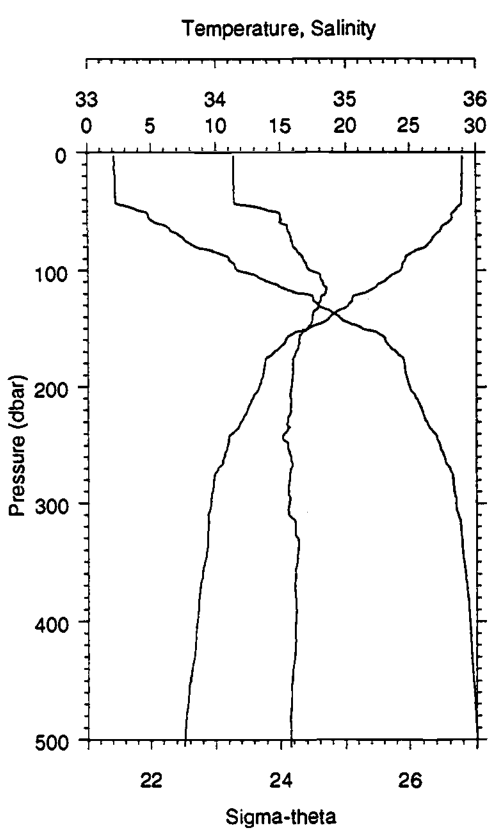
STA NO 30 LAT: 1 48.8 S LONG: 156 7.9 E
28 NOV 1992 1931 GMT DEPTH 1710

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.330	34.330	29.329	21.453	633.6	0.127
10	29.333	34.328	29.330	21.451	634.2	0.634
20	29.309	34.327	29.304	21.459	633.9	1.268
30	29.266	34.323	29.258	21.472	633.2	1.902
40	29.241	34.323	29.231	21.481	632.8	2.535
50	29.172	34.321	29.160	21.503	631.2	3.167
60	28.549	34.419	28.535	21.785	604.6	3.790
70	28.210	34.520	28.193	21.973	587.1	4.386
80	27.934	34.610	27.916	22.131	572.4	4.969
90	26.488	34.946	26.468	22.848	504.2	5.509
100	25.210	35.186	25.188	23.426	449.3	5.992
110	23.701	35.126	23.678	23.834	410.7	6.422
120	23.381	35.505	23.356	24.215	374.8	6.812
130	21.962	35.209	21.937	24.396	357.7	7.180
140	20.763	35.165	20.737	24.693	329.7	7.524
150	20.244	35.529	20.216	25.110	290.4	7.834
160	18.963	35.465	18.935	25.395	263.4	8.116
170	16.001	35.281	15.974	25.971	208.2	8.354
180	14.934	35.188	14.906	26.139	192.3	8.557
190	12.126	34.876	12.101	26.474	159.8	8.727
200	12.007	34.863	11.981	26.487	158.8	8.886
225	11.966	34.862	11.937	26.494	158.8	9.283
250	11.153	34.813	11.122	26.609	148.2	9.668
275	10.950	34.799	10.916	26.635	146.2	10.036
300	10.729	34.782	10.693	26.661	144.2	10.399
325	10.630	34.777	10.591	26.675	143.4	10.758
350	10.395	34.760	10.354	26.704	141.2	11.115
375	10.060	34.734	10.016	26.742	137.9	11.465
400	9.569	34.705	9.523	26.802	132.4	11.805
425	9.189	34.680	9.142	26.845	128.5	12.130
450	8.876	34.655	8.827	26.876	125.8	12.446
475	8.786	34.656	8.735	26.891	124.8	12.760
500	8.197	34.615	8.145	26.950	119.1	13.065
506	8.119	34.610	8.066	26.958	118.3	13.136



STA NO 31 LAT: 0149.1 N LONG: 155 52.0 E
29 NOV 1992 545 GMT DEPTH 1710

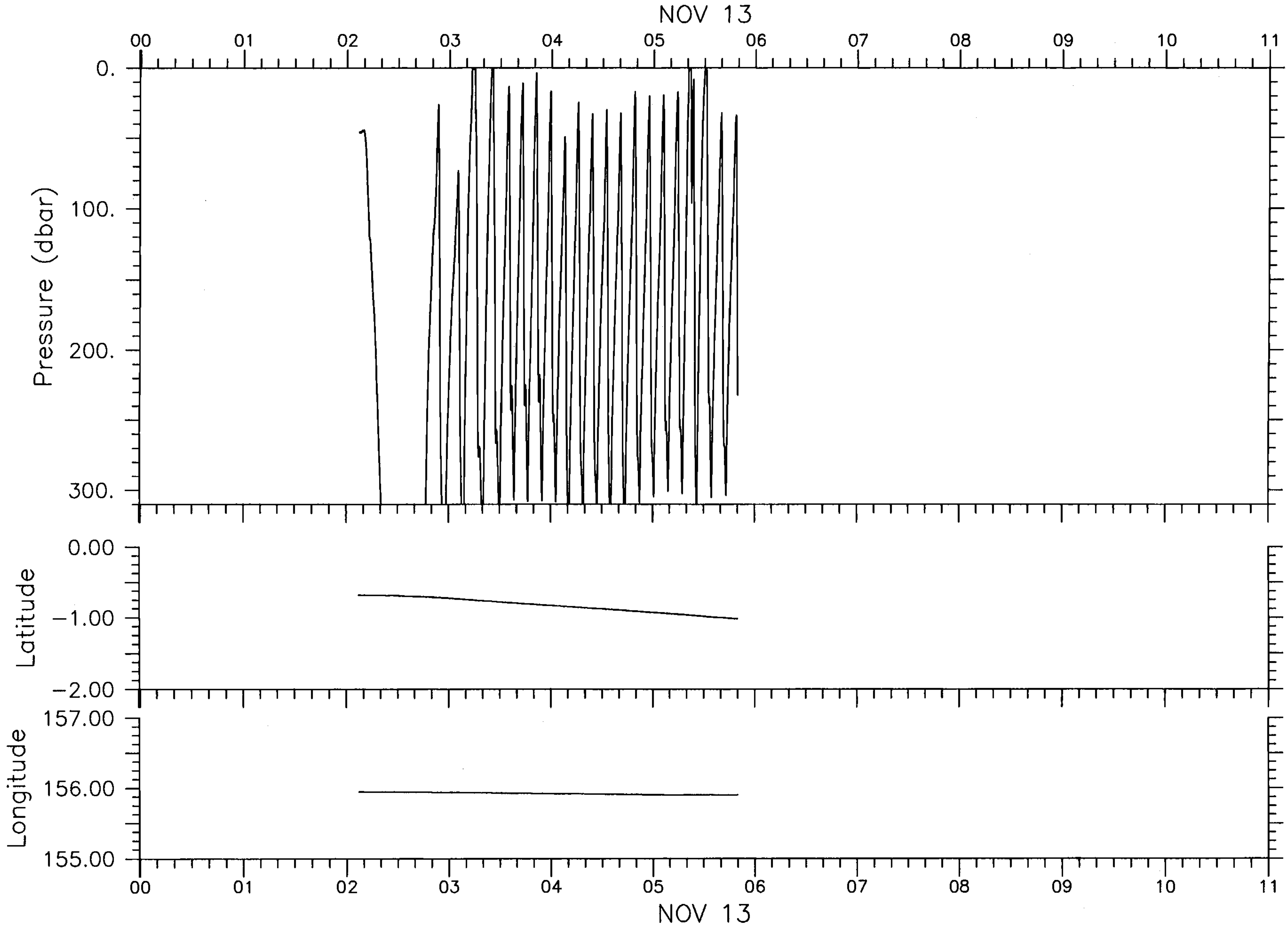
P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
2	29.781	34.129	29.781	21.151	662.6	0.133
10	29.351	34.114	29.348	21.285	650.1	0.655
20	29.219	34.126	29.215	21.339	645.4	1.302
30	29.134	34.119	29.127	21.363	643.6	1.946
40	29.149	34.186	29.140	21.409	639.7	2.588
50	29.201	34.234	29.189	21.428	638.3	3.227
60	29.190	34.304	29.176	21.485	633.3	3.864
70	28.971	34.360	28.954	21.601	622.7	4.493
80	28.188	34.533	28.170	21.990	585.9	5.100
90	27.812	34.656	27.791	22.206	565.7	5.676
100	27.171	34.848	27.148	22.558	532.5	6.225
110	25.866	35.099	25.841	23.159	475.4	6.720
120	24.163	35.157	24.138	23.721	422.0	7.164
130	23.383	35.488	23.356	24.202	376.5	7.562
140	22.398	35.239	22.370	24.297	367.7	7.933
150	21.019	35.132	20.990	24.598	339.1	8.289
160	21.295	35.547	21.264	24.839	316.7	8.623
170	20.435	35.550	20.403	25.075	294.5	8.924
180	19.143	35.516	19.111	25.388	264.8	9.206
190	17.199	35.364	17.168	25.754	229.8	9.451
200	15.490	35.238	15.459	26.054	201.1	9.669
225	12.028	34.869	11.999	26.488	159.4	10.110
250	12.006	34.865	11.973	26.490	159.9	10.509
275	11.326	34.821	11.291	26.583	151.3	10.902
300	10.992	34.798	10.955	26.627	147.7	11.274
325	10.731	34.777	10.691	26.658	145.2	11.640
350	10.485	34.763	10.443	26.691	142.4	11.999
375	10.001	34.730	9.957	26.749	137.2	12.351
400	9.773	34.718	9.726	26.778	134.8	12.691
425	9.325	34.683	9.277	26.826	130.5	13.023
450	8.858	34.660	8.809	26.883	125.1	13.341
475	8.290	34.621	8.240	26.940	119.6	13.646
500	7.927	34.601	7.876	26.980	116.0	13.943
506	7.852	34.598	7.800	26.988	115.3	14.012



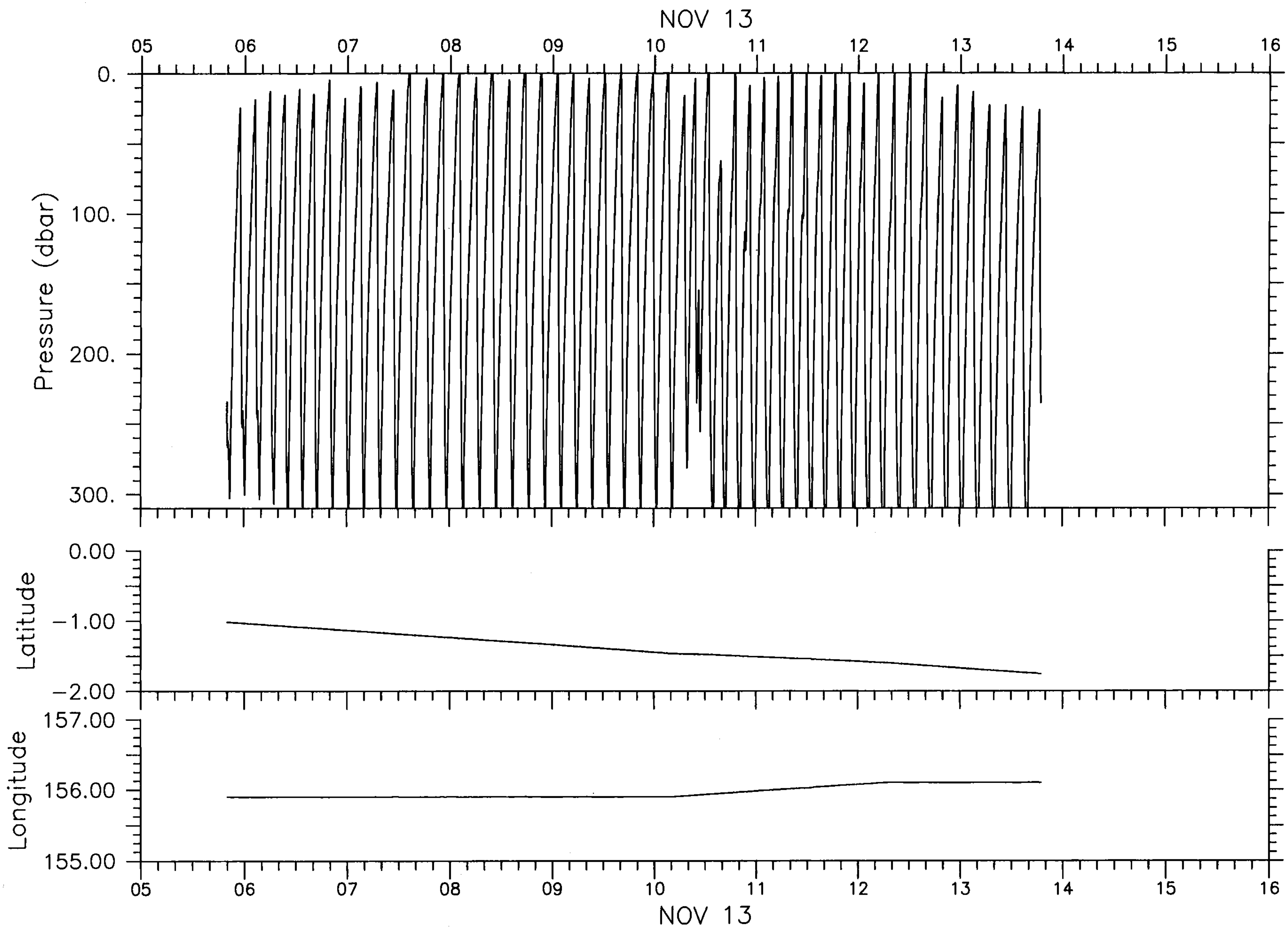
STA NO 32 LAT: 0451.0 N LONG: 156 7.0 E
04 DEC 1992 8 GMT DEPTH 2925

P (DB)	T (C)	S	POT T (C)	SIGMA THETA	SVA (CL/T)	DYN HT (J/KG)
3	28.974	34.141	28.973	21.431	635.8	0.191
10	28.967	34.142	28.964	21.435	635.8	0.636
20	28.939	34.143	28.934	21.445	635.3	1.272
30	28.930	34.144	28.923	21.449	635.3	1.907
40	28.920	34.147	28.910	21.456	635.2	2.543
50	28.329	34.472	28.317	21.896	593.5	3.163
60	27.764	34.507	27.750	22.107	573.7	3.748
70	26.917	34.569	26.901	22.427	543.6	4.304
80	26.171	34.595	26.153	22.682	519.5	4.836
90	24.661	34.668	24.642	23.200	470.4	5.325
100	24.292	34.715	24.271	23.347	456.8	5.789
110	22.906	34.821	22.884	23.833	410.7	6.220
120	21.266	34.842	21.243	24.308	365.5	6.610
130	20.153	34.787	20.129	24.567	341.1	6.959
140	18.758	34.739	18.733	24.891	310.4	7.283
150	17.140	34.698	17.115	25.256	275.7	7.578
160	15.352	34.638	15.328	25.622	240.8	7.830
170	14.500	34.614	14.474	25.789	225.0	8.065
180	13.805	34.590	13.779	25.917	212.9	8.282
190	13.660	34.589	13.633	25.946	210.4	8.494
200	13.361	34.579	13.334	26.000	205.5	8.702
225	12.188	34.560	12.159	26.218	185.0	9.188
250	10.904	34.554	10.873	26.451	162.9	9.622
275	9.885	34.566	9.854	26.638	145.3	10.009
300	9.586	34.563	9.552	26.686	141.1	10.367
325	9.326	34.611	9.290	26.767	133.9	10.710
350	9.101	34.624	9.062	26.814	129.8	11.040
375	8.727	34.608	8.686	26.861	125.6	11.359
400	8.524	34.614	8.482	26.898	122.4	11.668
425	8.342	34.609	8.297	26.922	120.5	11.971
450	8.022	34.586	7.976	26.953	117.7	12.269
475	7.778	34.576	7.730	26.981	115.2	12.559
500	7.619	34.577	7.569	27.006	113.2	12.845
506	7.587	34.578	7.537	27.011	112.8	12.912

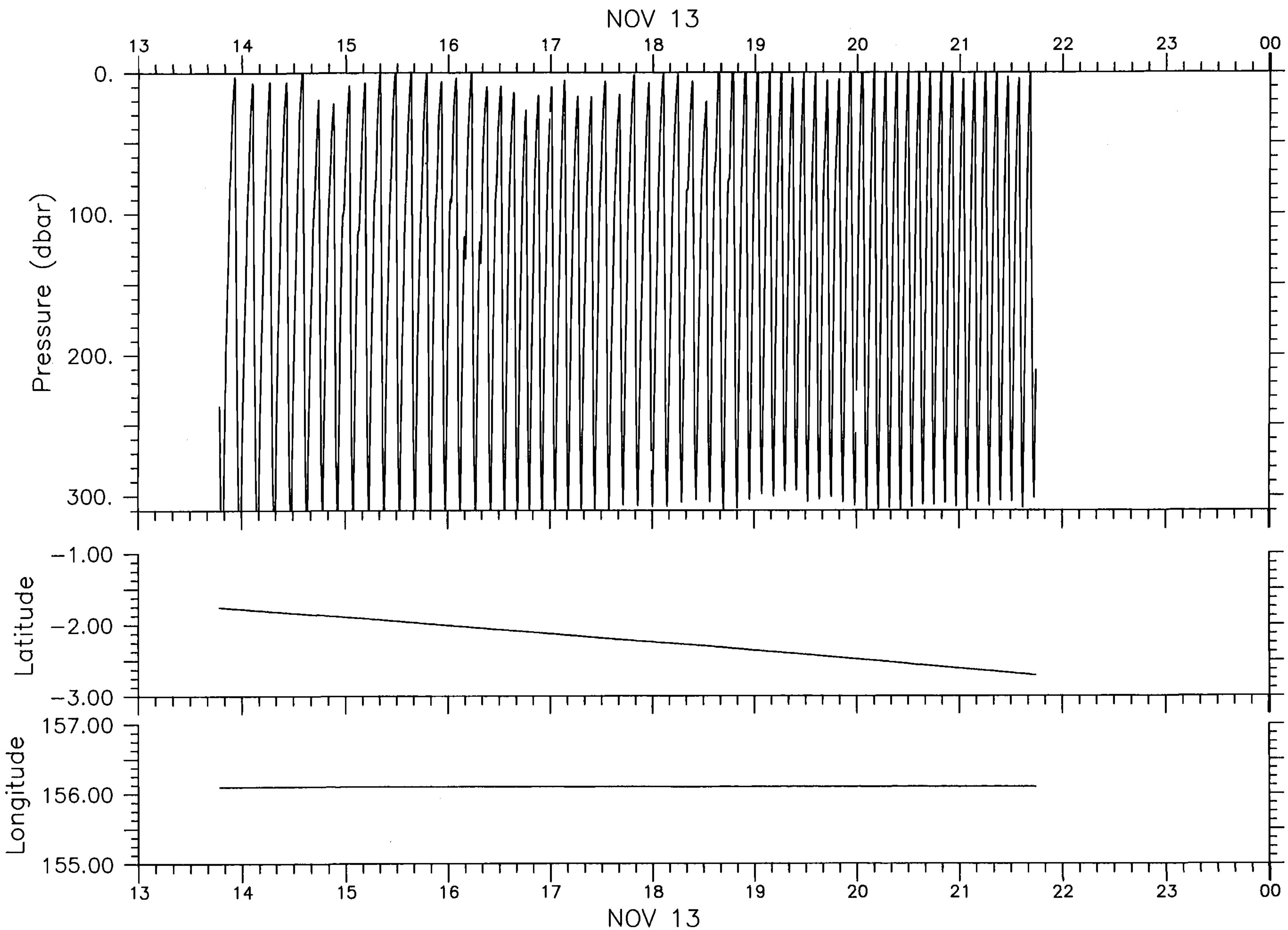
SEASOAR TRAJECTORIES



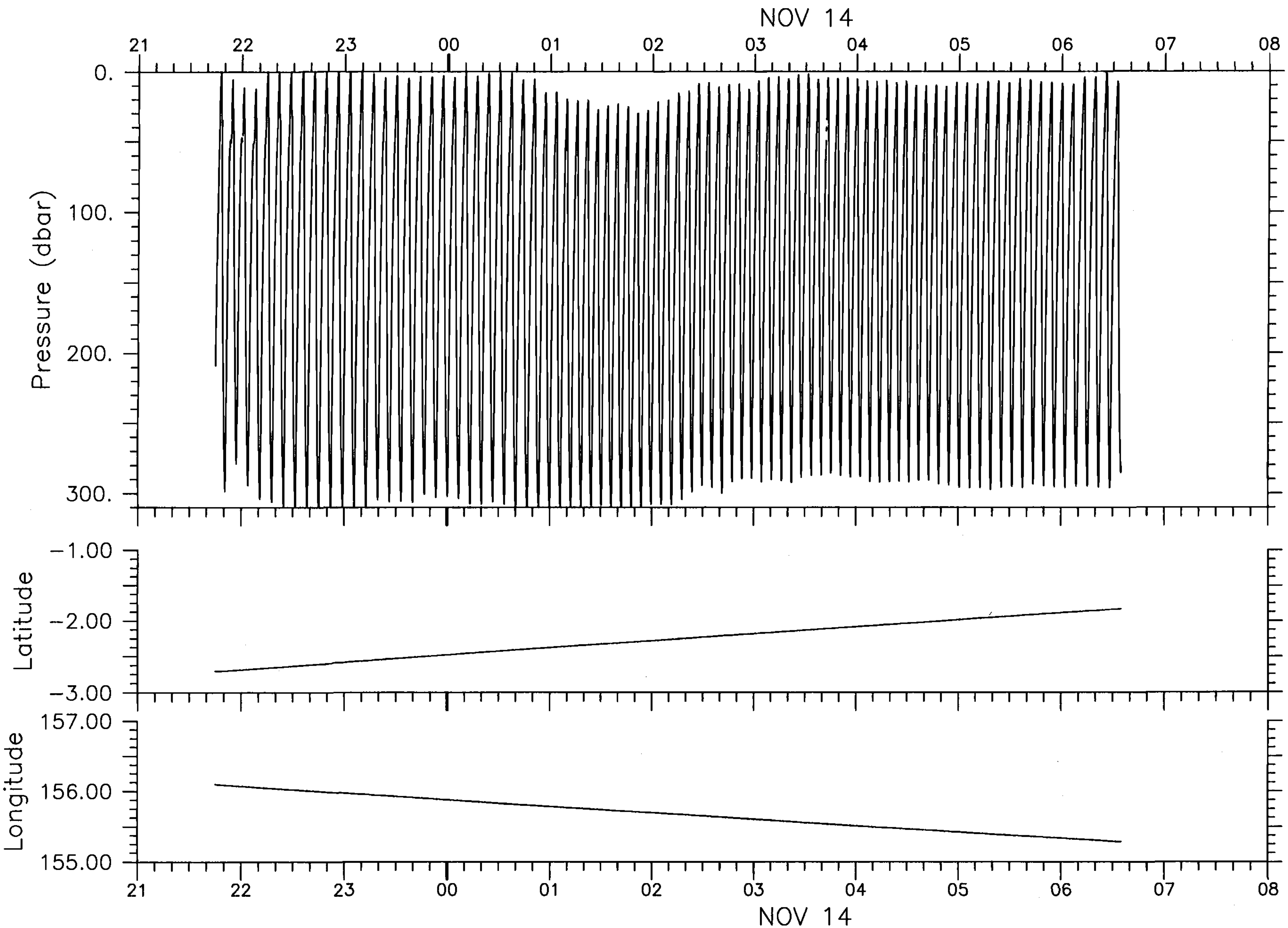
Begin Tow 1 to LBN



LBN to LBS, First Half



LBN to LBS, Second Half



NOV 14
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Pressure (dbar)
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200.
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Latitude
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-3.00
Longitude
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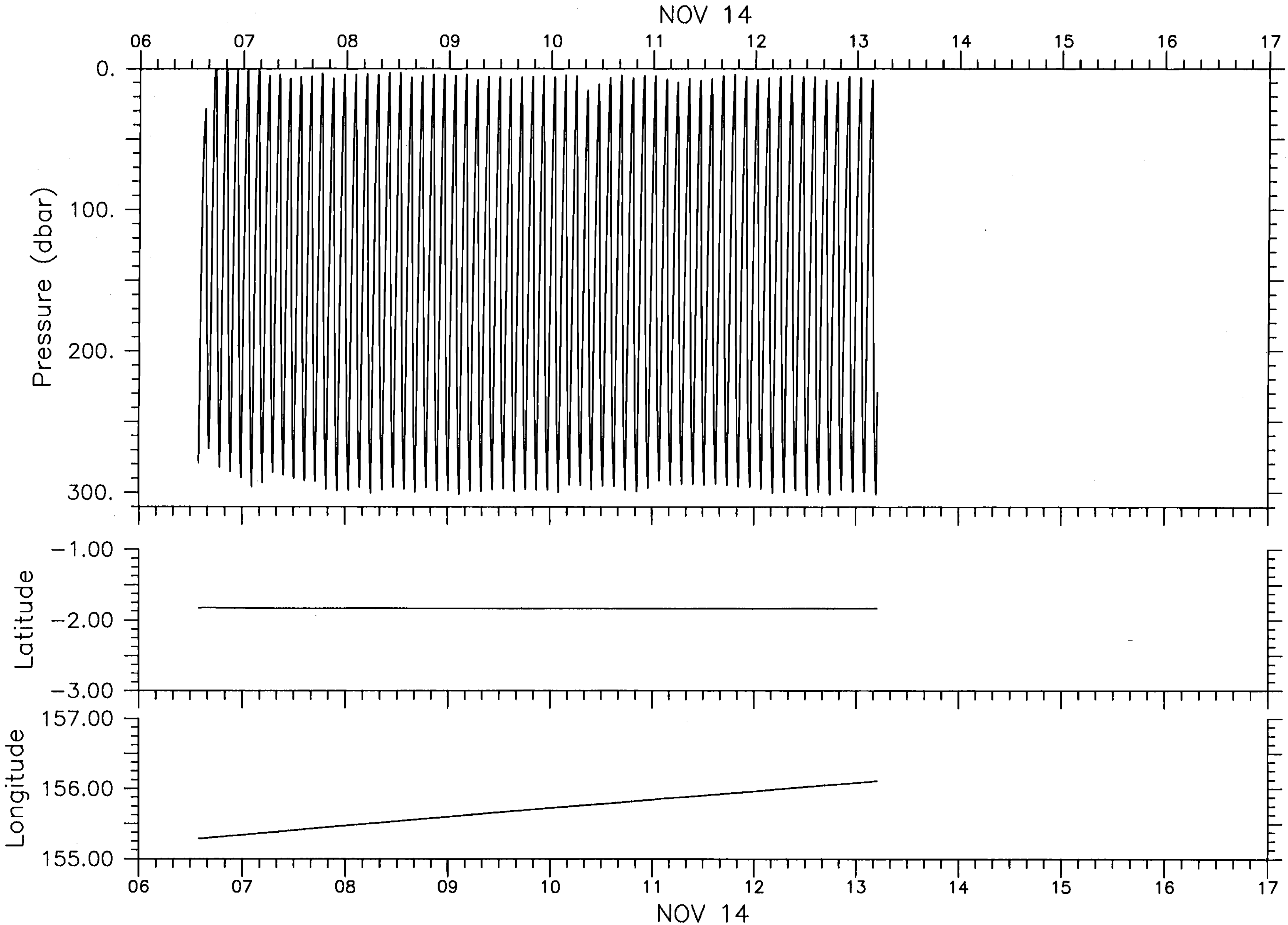
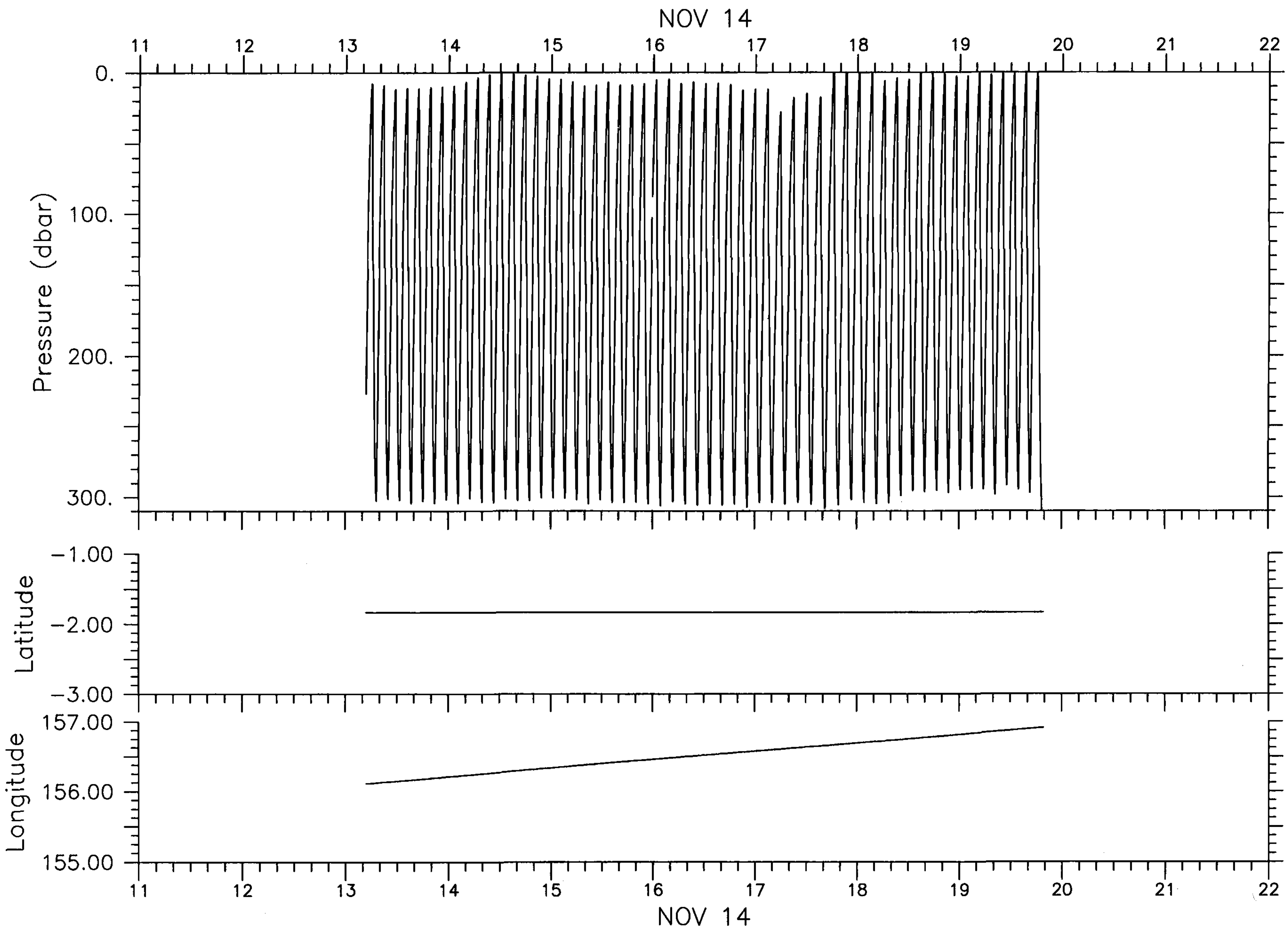
156.00
155.00
21 22 23 00 01 02 03 04 05 06 07 08
NOV 14

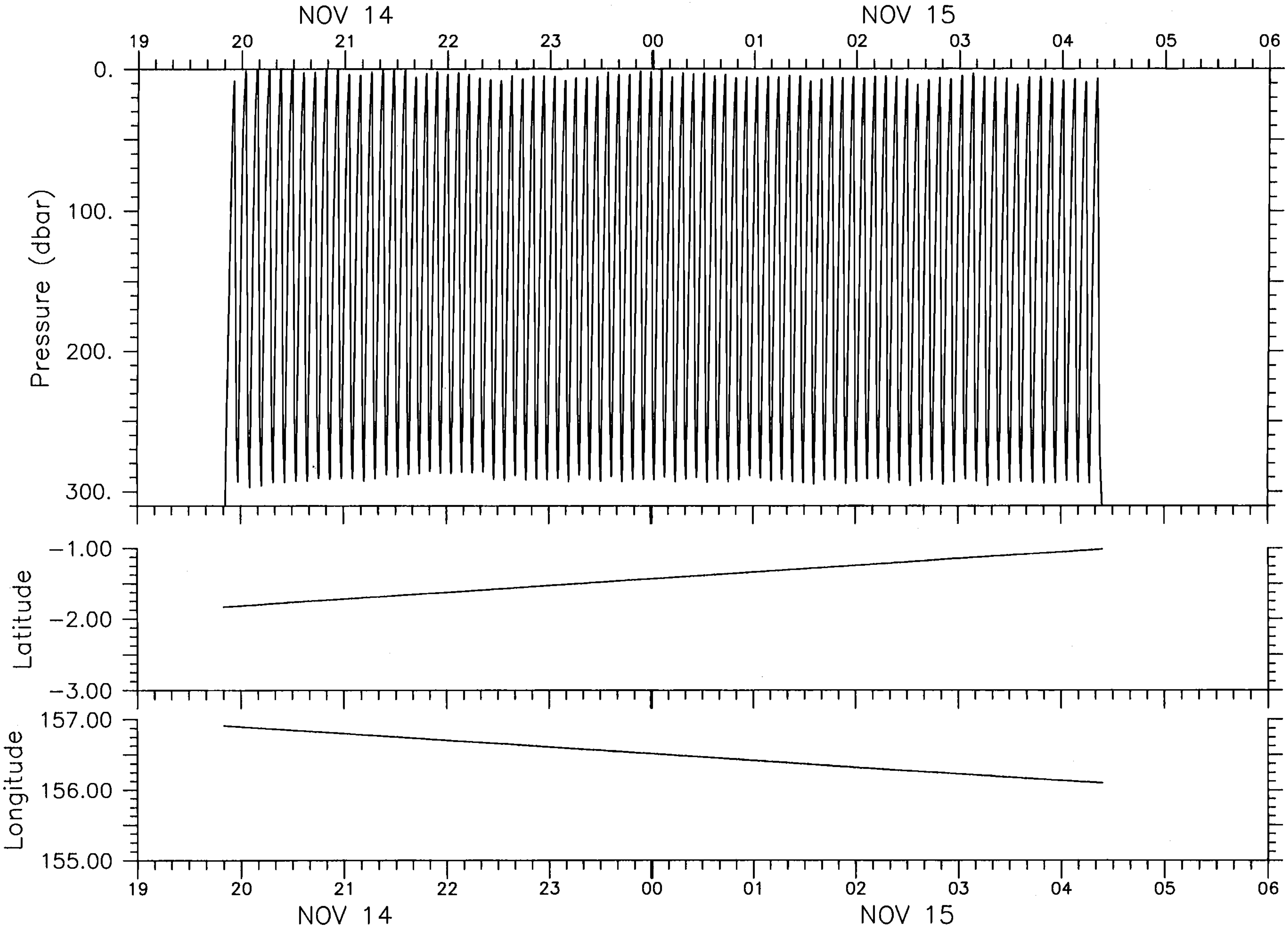
LBS to LBW



LBW to LBE, First Half



LBW to LBE, Second Half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Latitude
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Longitude
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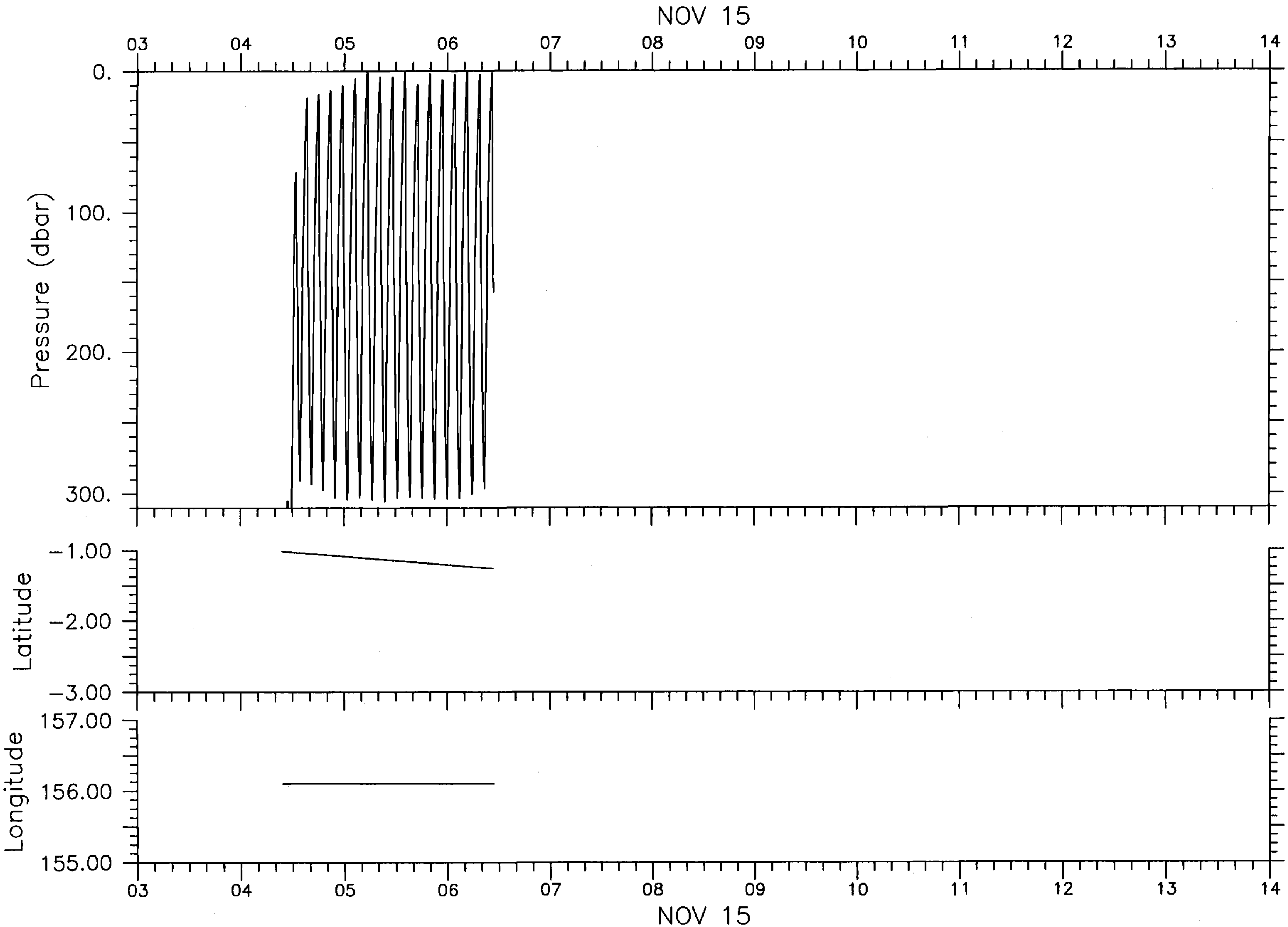
155.00

LBE to LBN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200.
300.
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-3.00
Latitude
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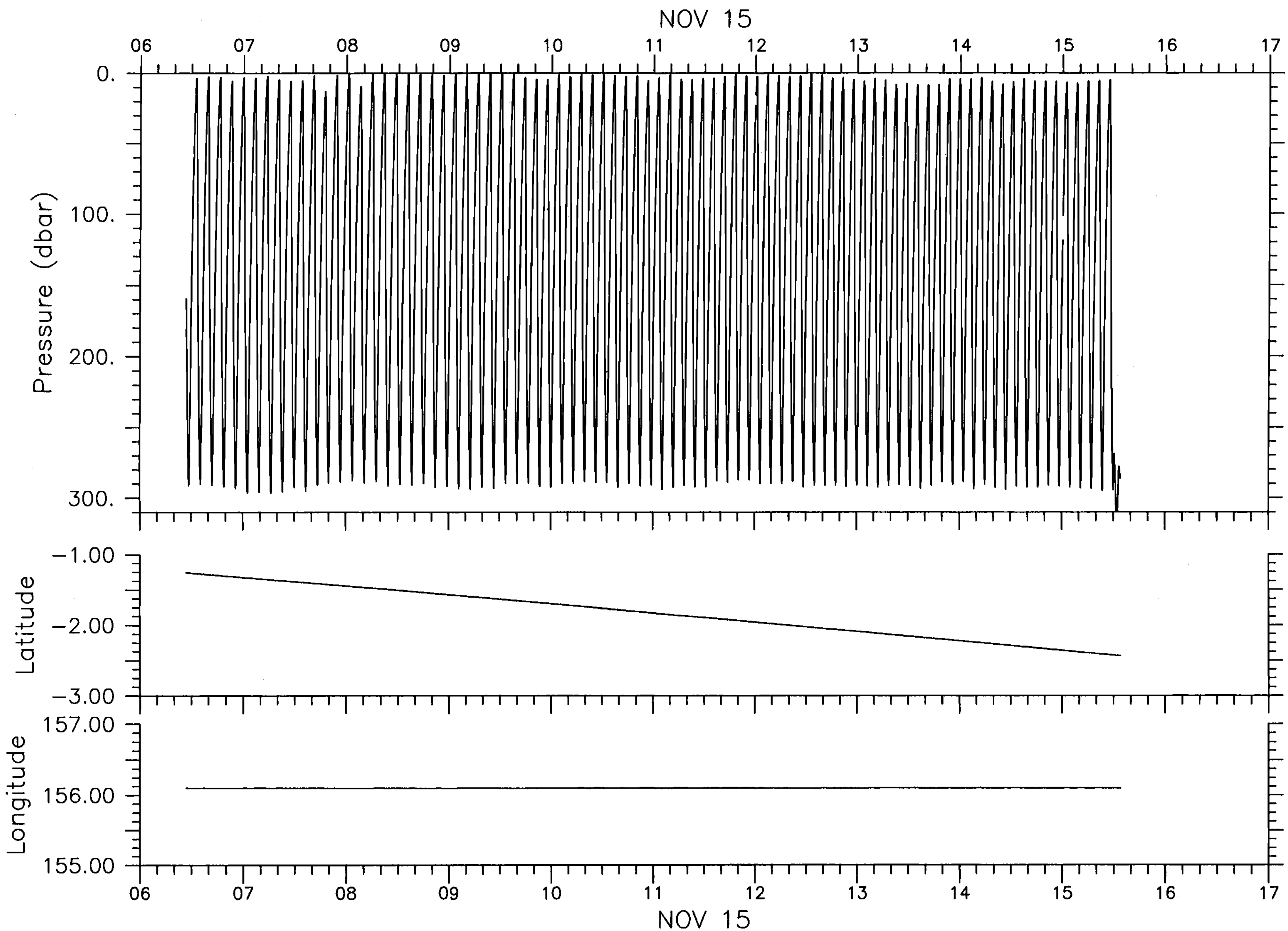
Longitude
NOV 15

LBN to SBN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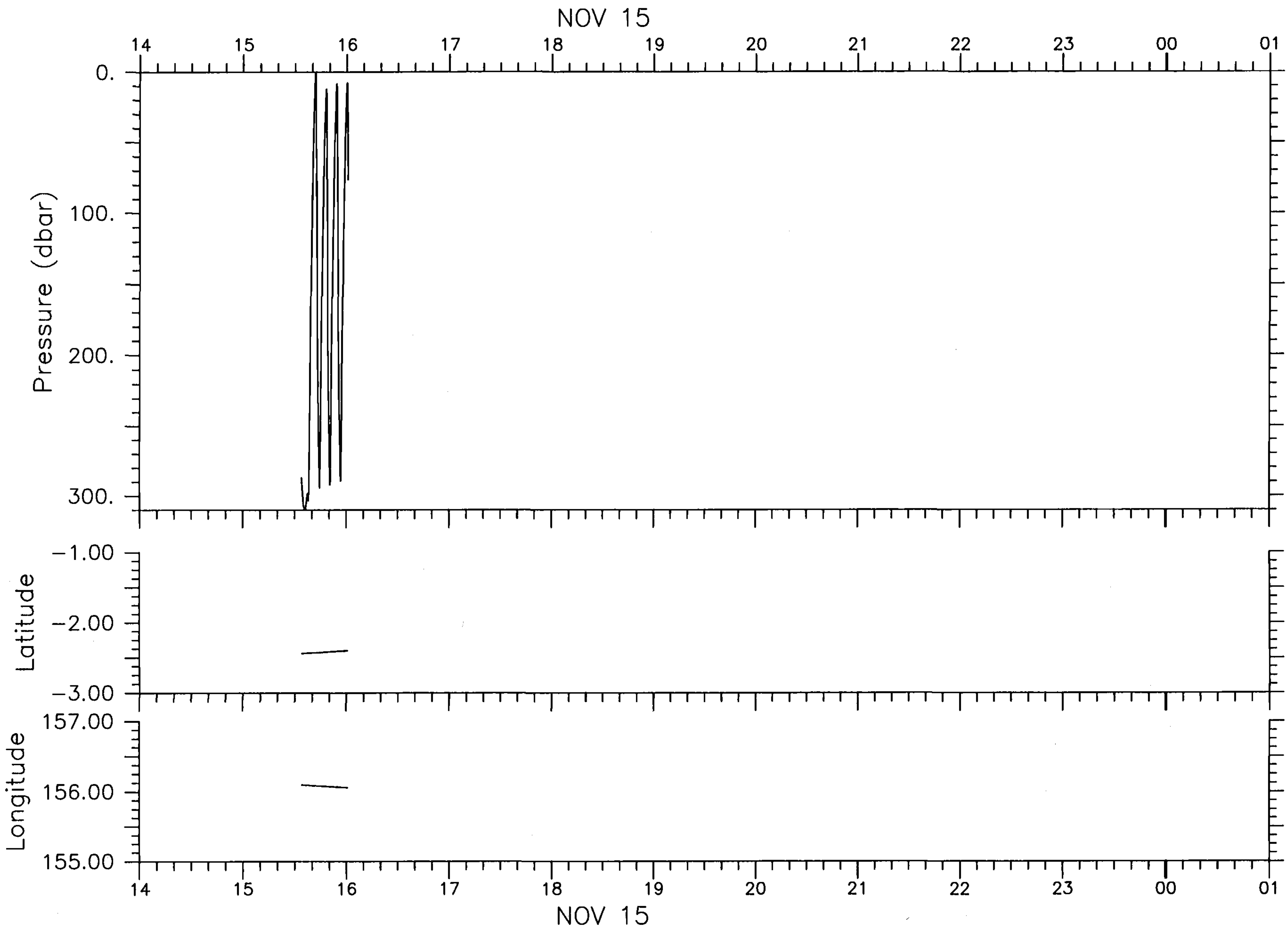
Longitude
NOV 15

N2S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Latitude
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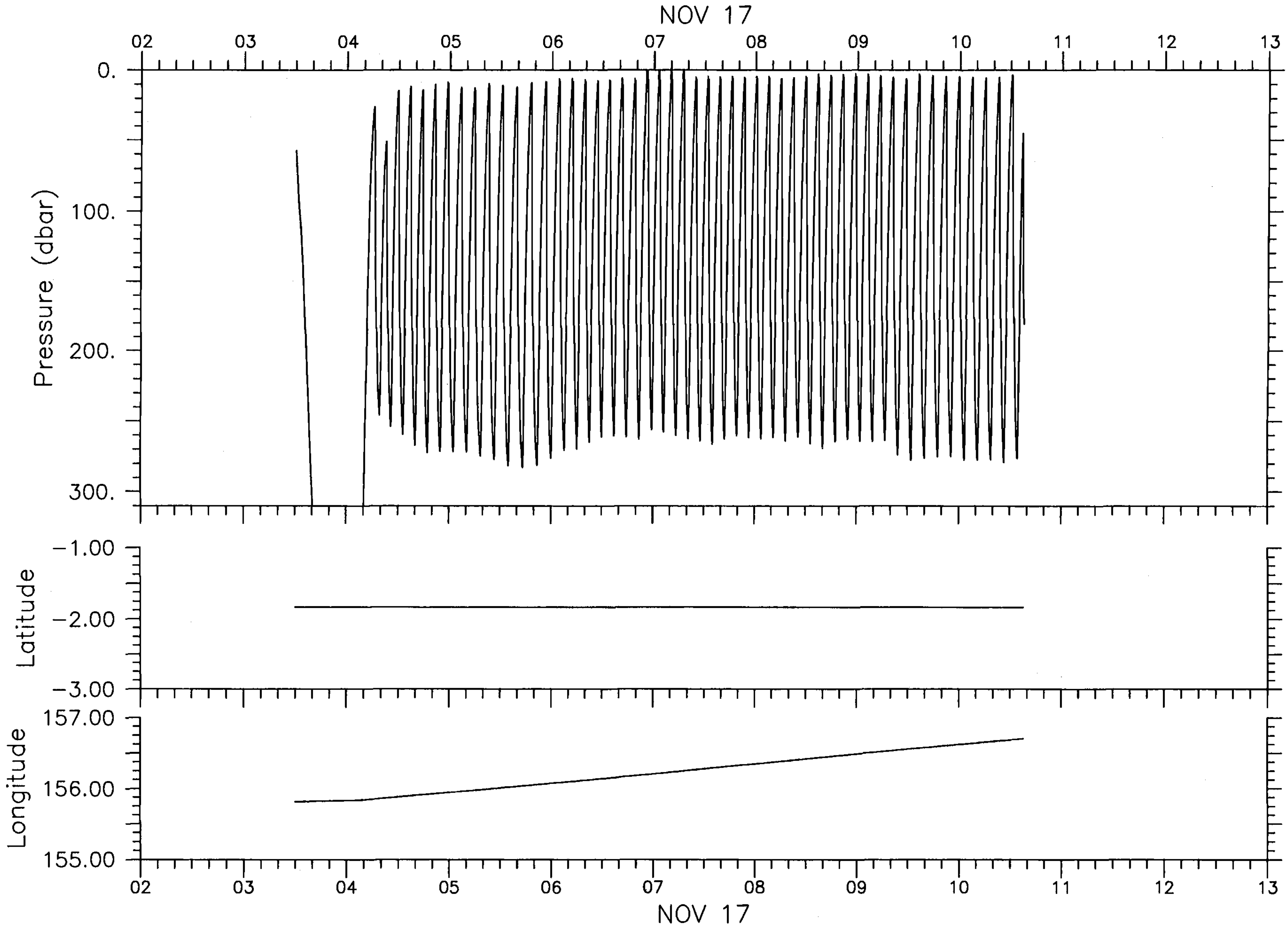
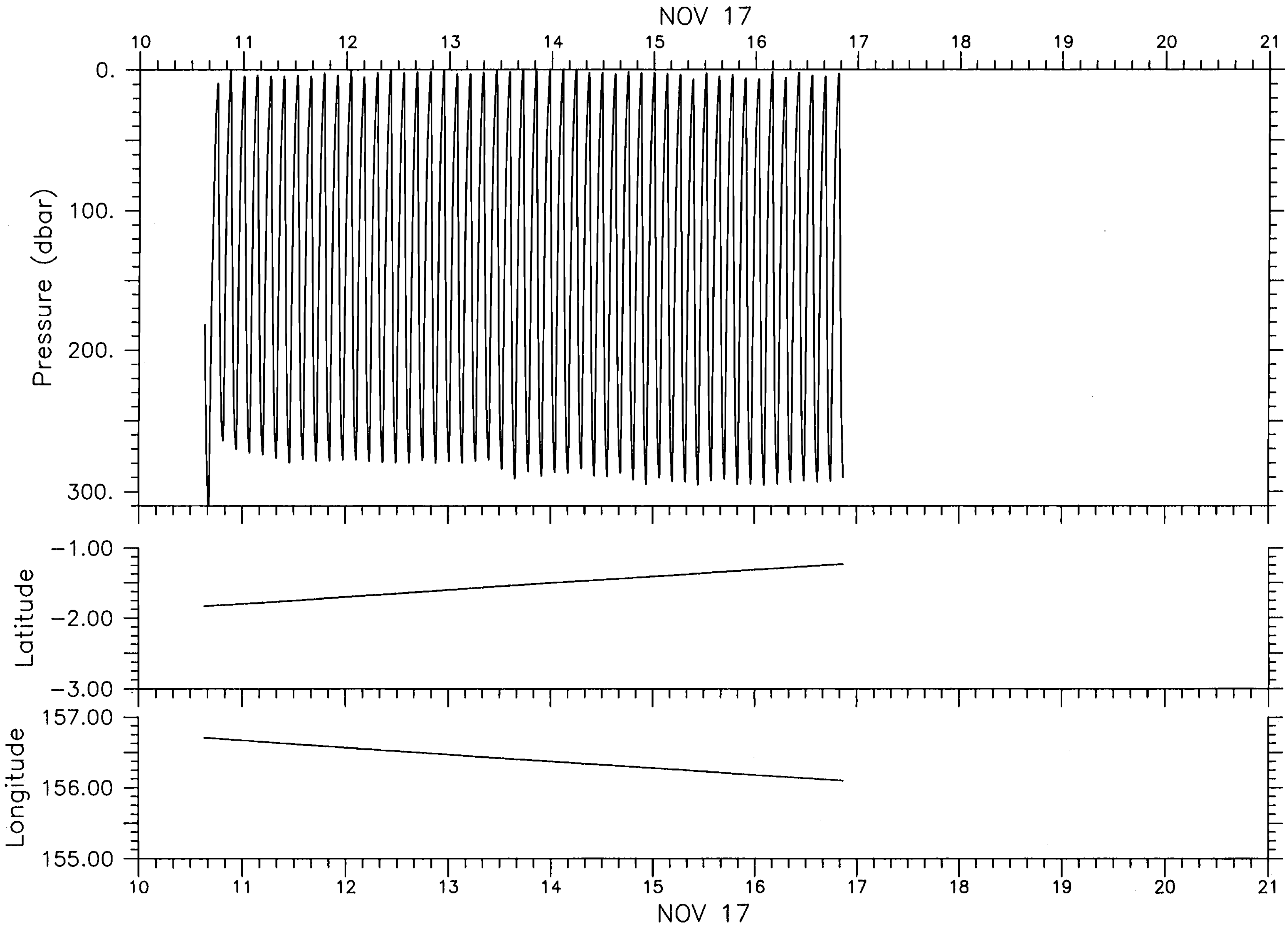
Longitude
NOV 15

S2W, End Tow 1



W2E, Begin Tow 3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200.
300.
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-3.00
Latitude
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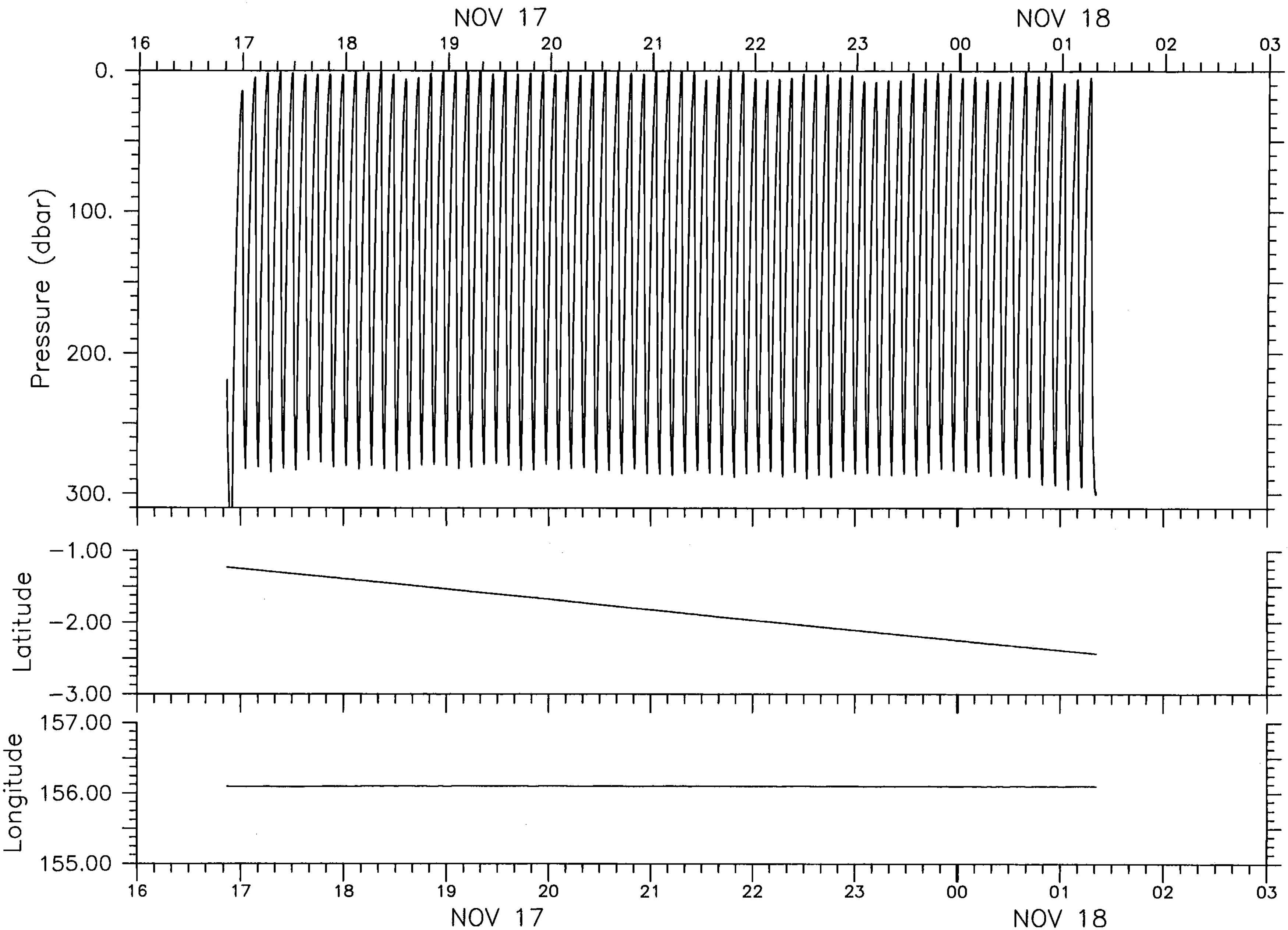
155.00
Longitude
NOV 17

E2N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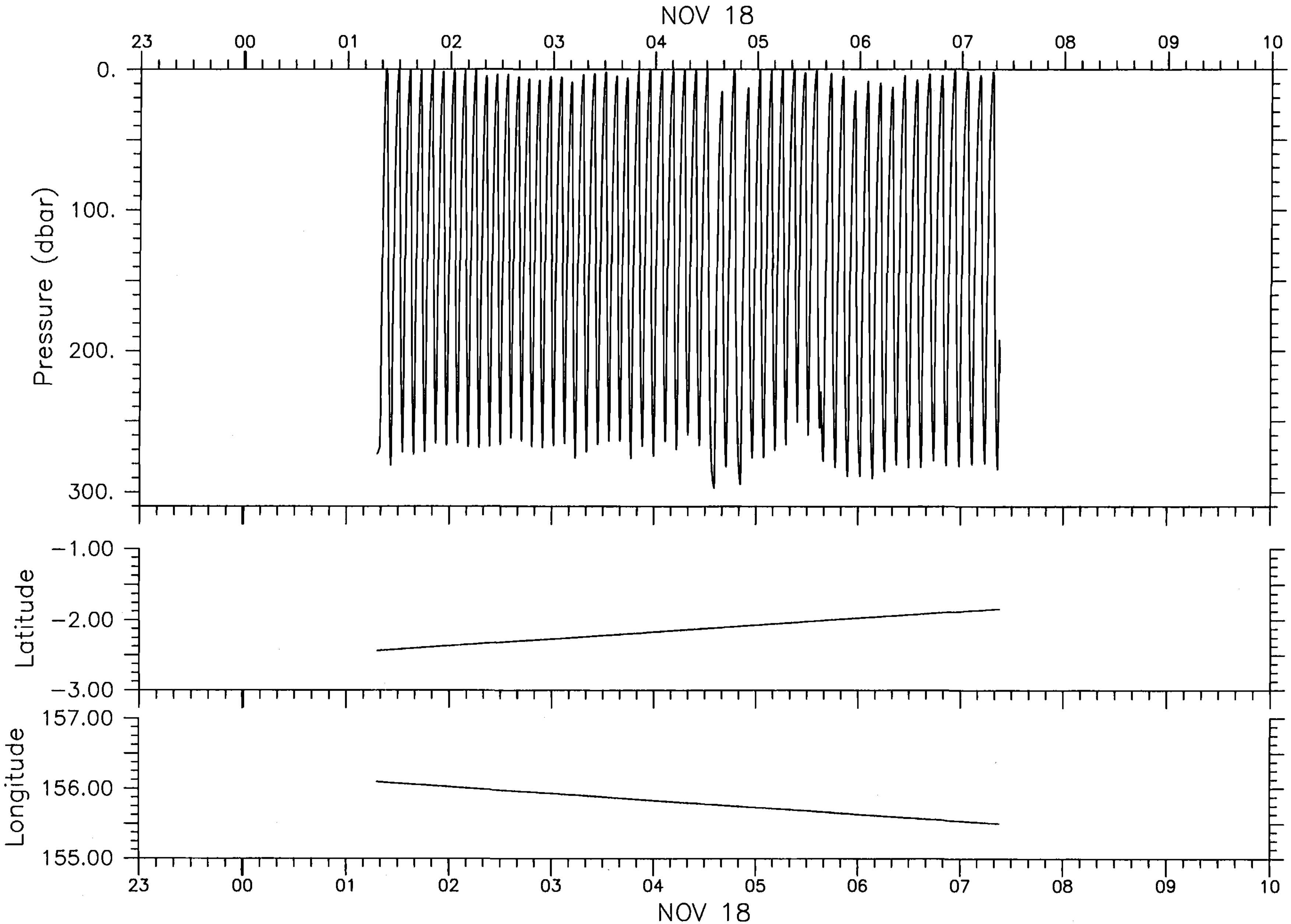
Longitude

N2S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Latitude
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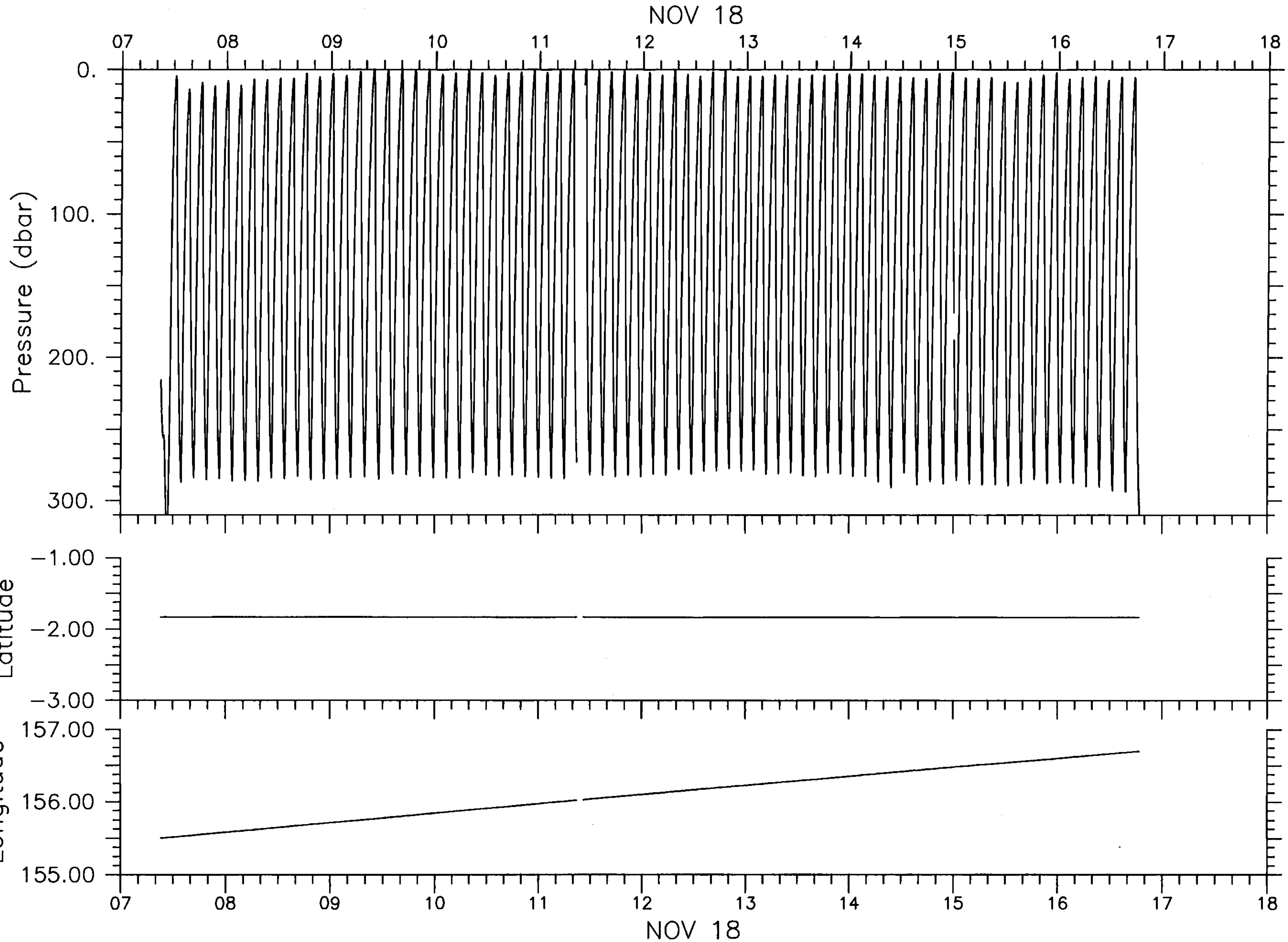
NOV 18

S2W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Latitude
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Longitude
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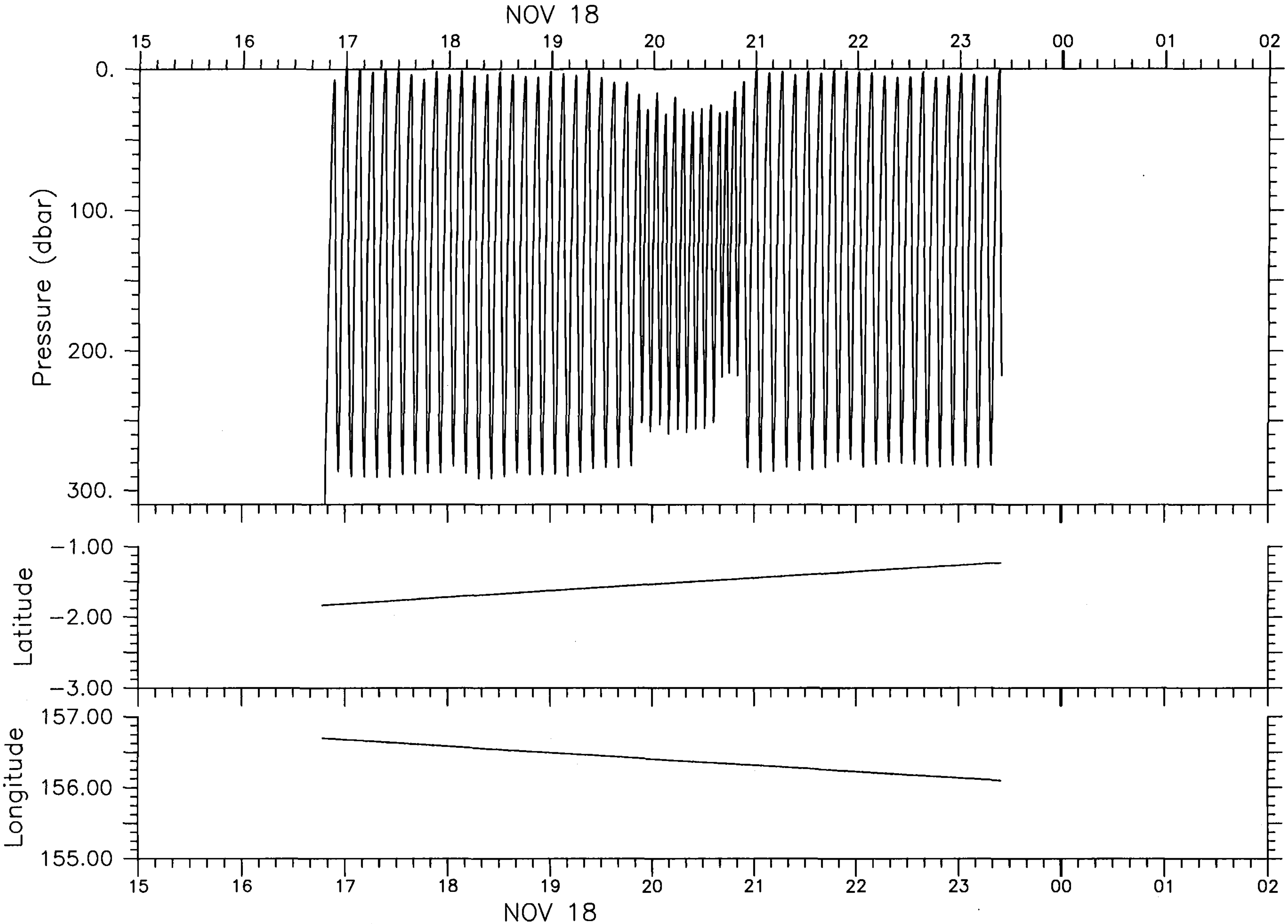
W2E



NOV 18
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Pressure (dbar)
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Latitude
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Longitude
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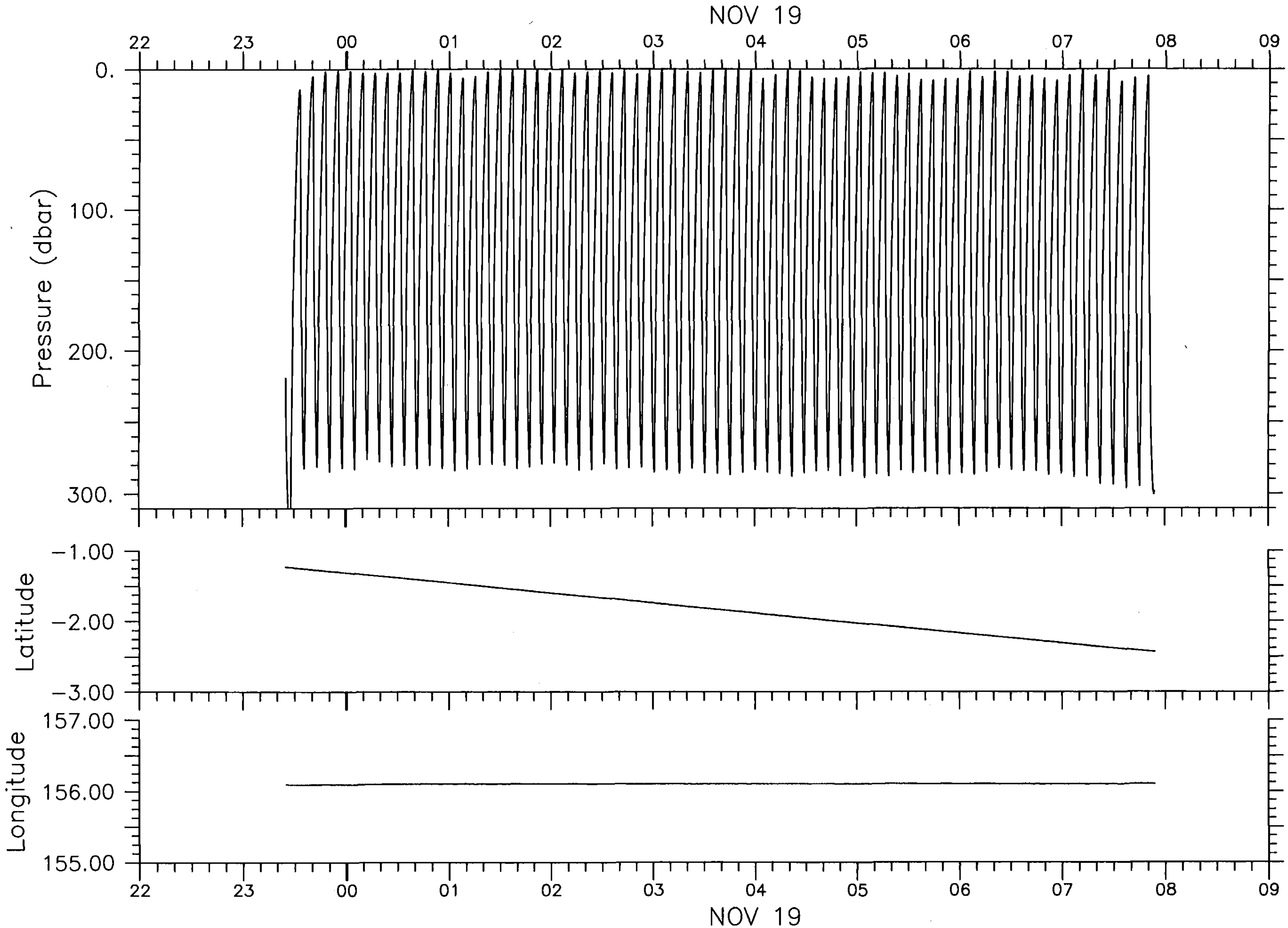
E2N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Longitude
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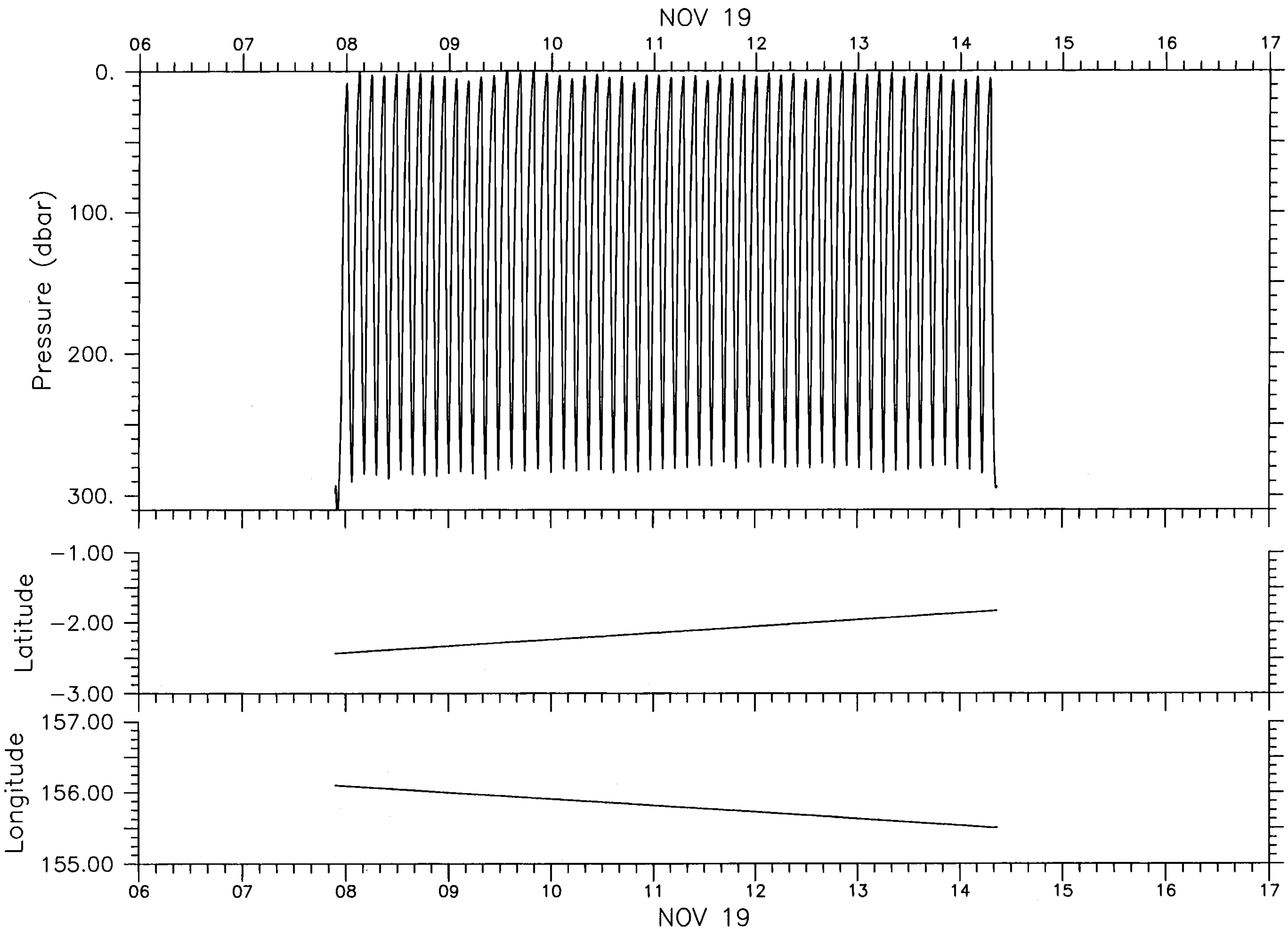
NOV 19

N2S


NOV 19
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Latitude
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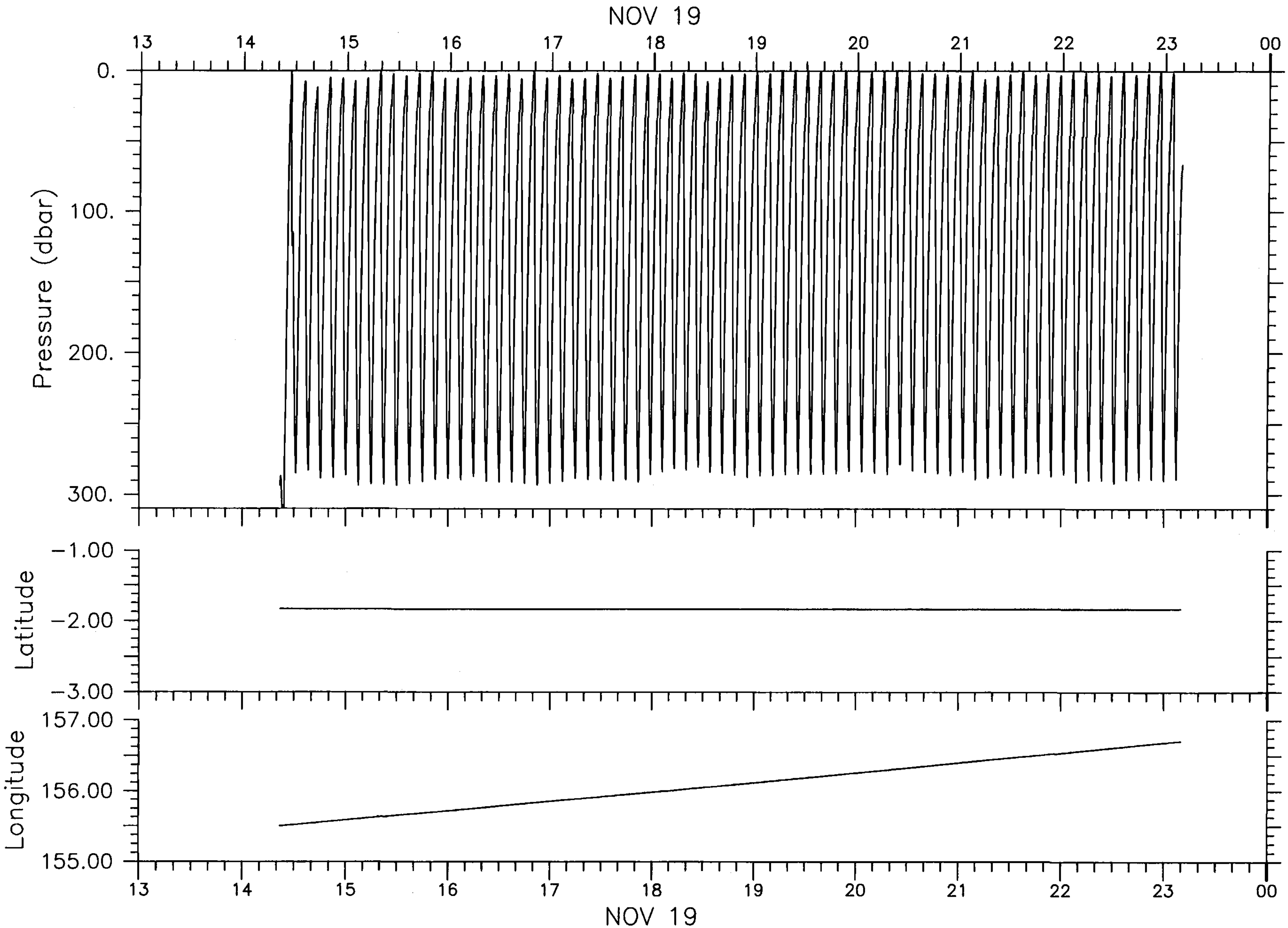
Longitude

S2W


NOV 19
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300.
Latitude
-1.00
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-3.00
Longitude
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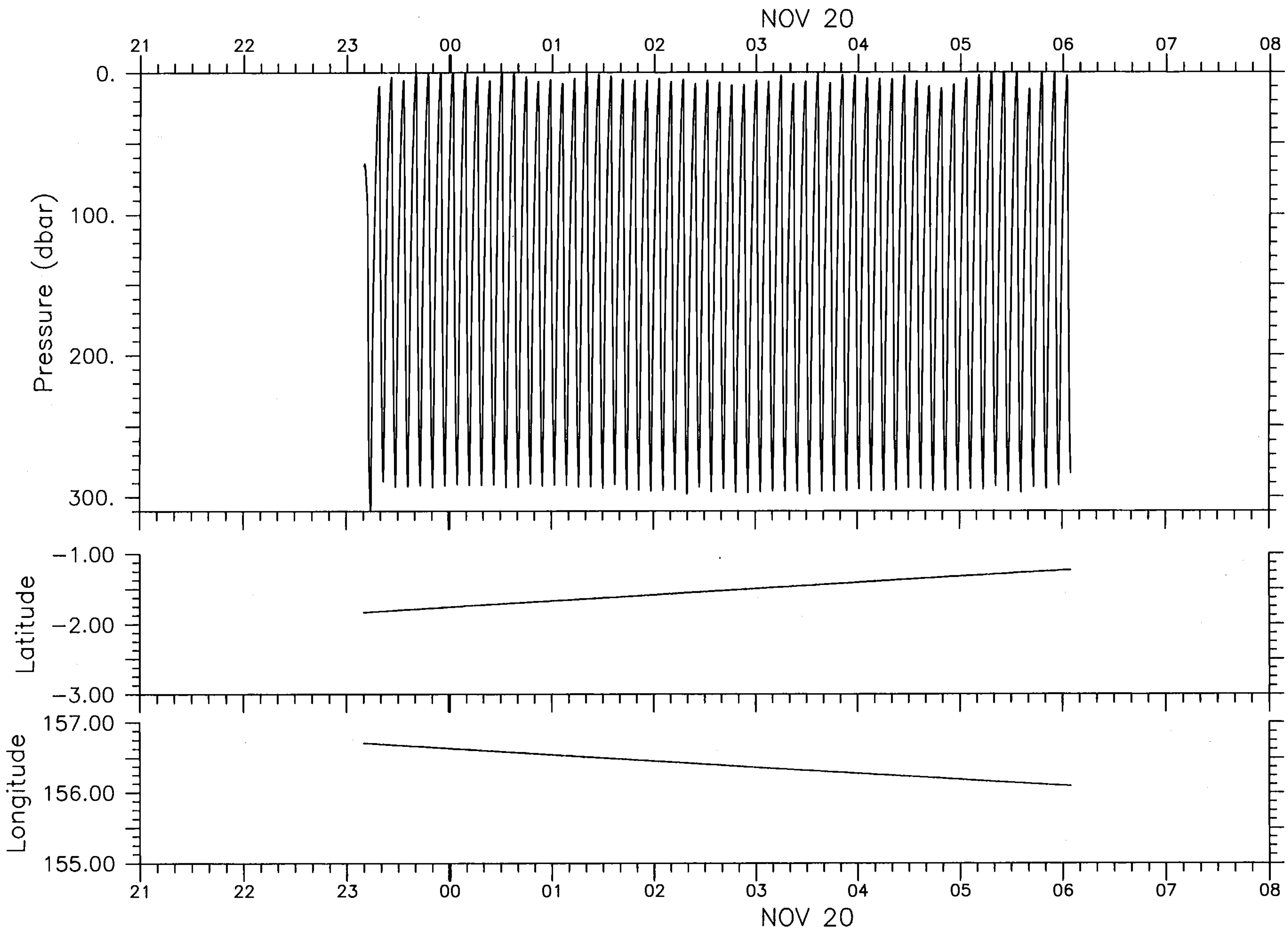
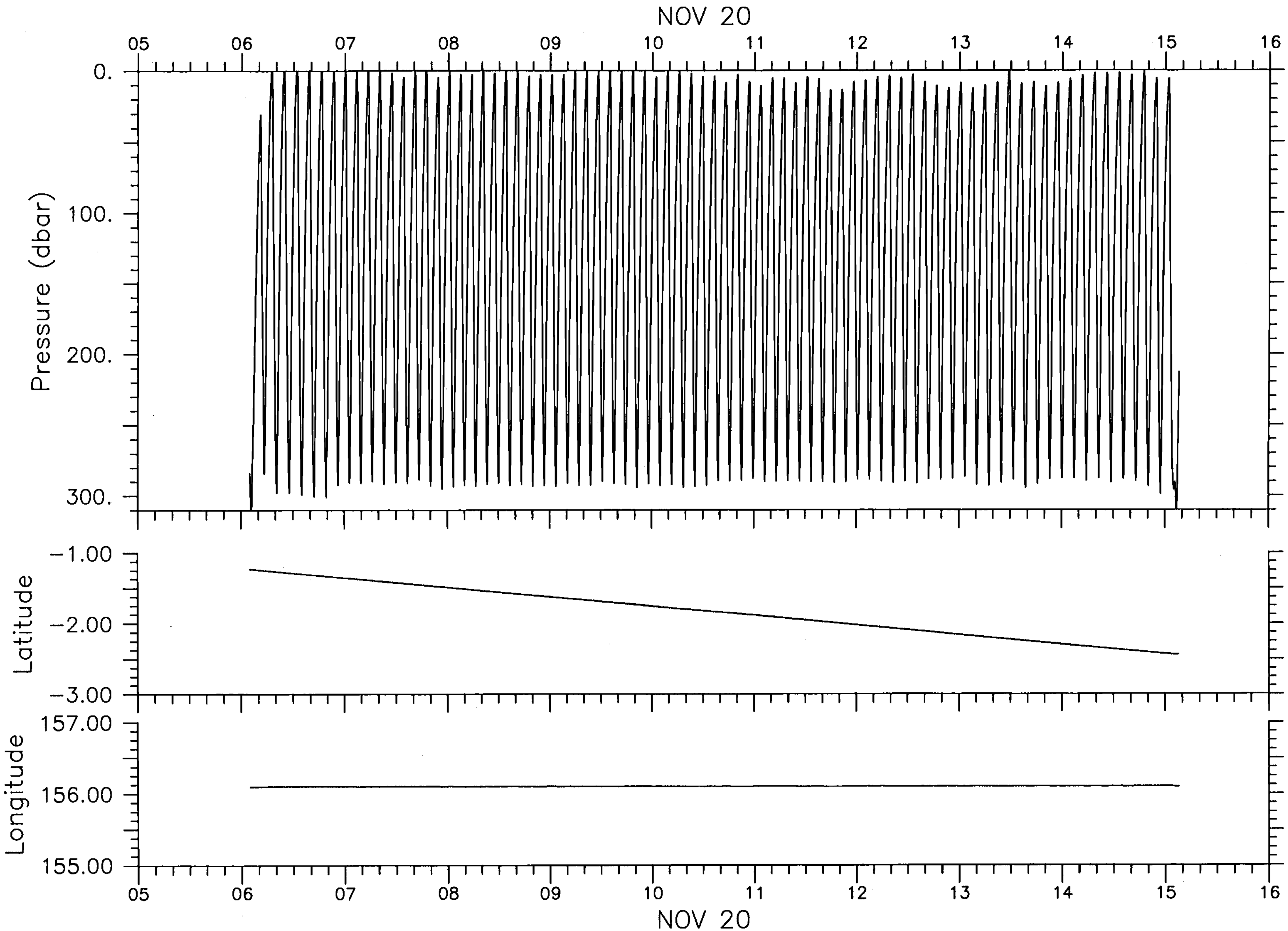
156.00
155.00
NOV 19

W2E

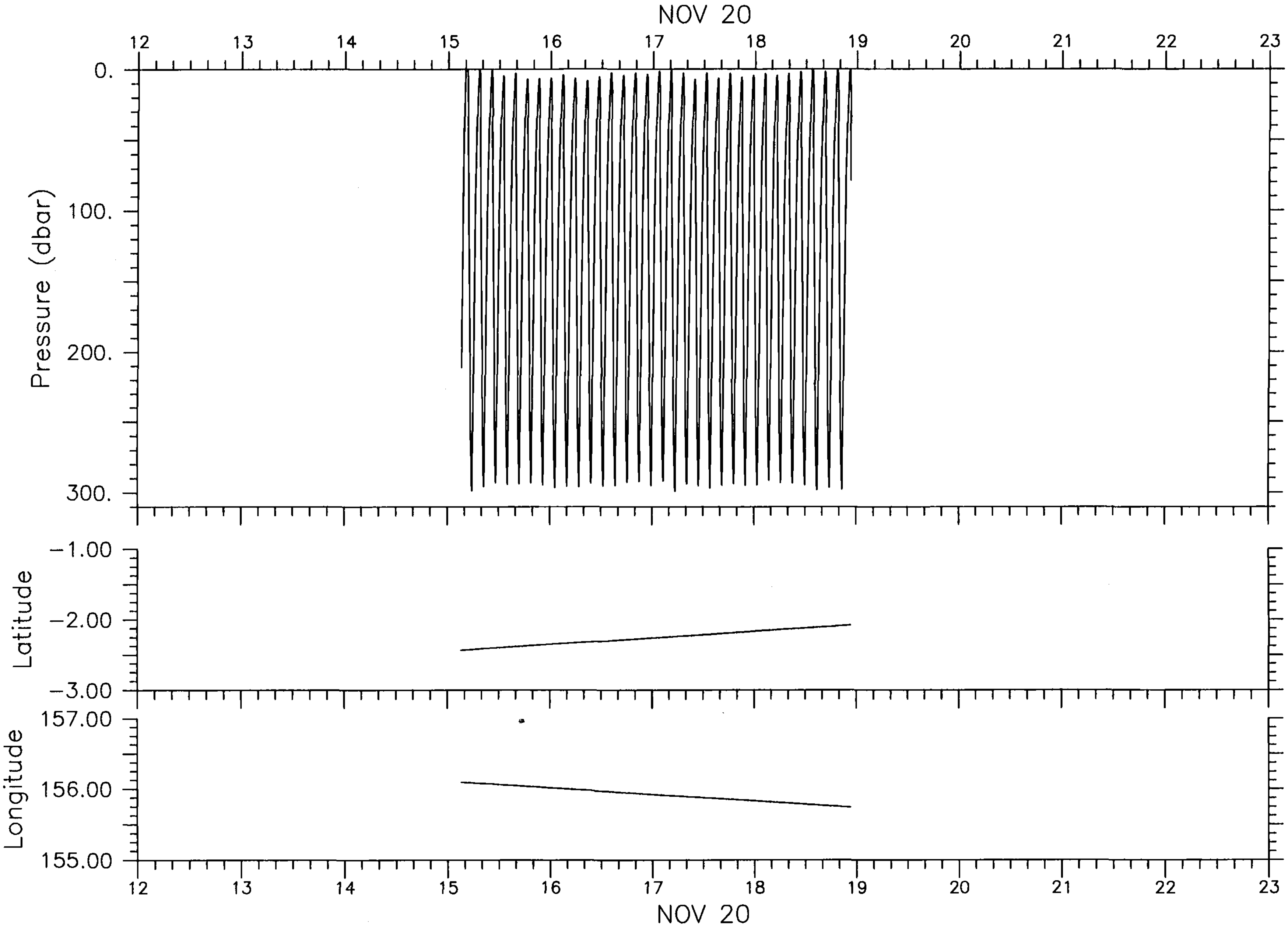


NOV 20
21
22
23
00
01
02
03
04
05
06
07
08
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude

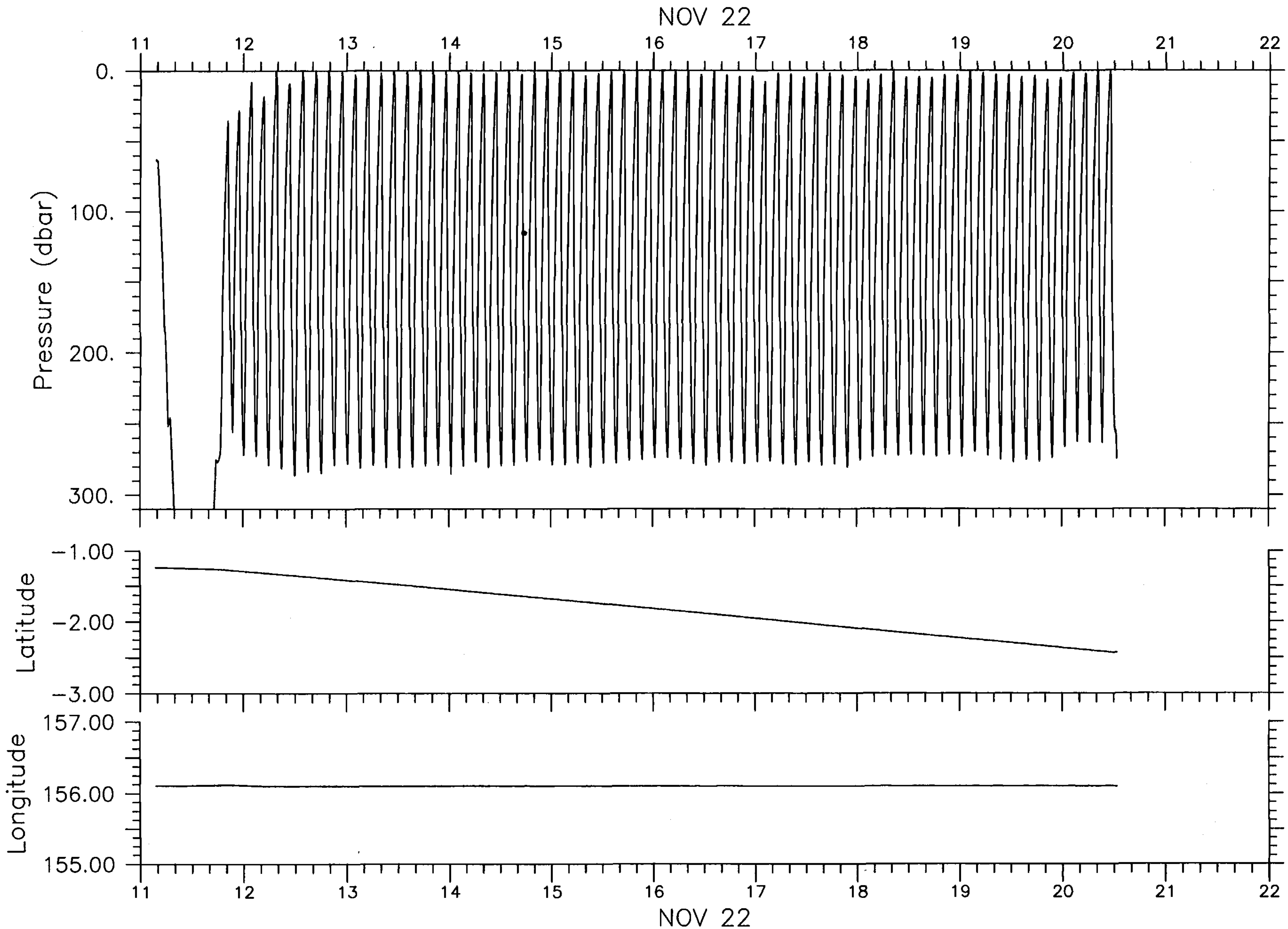
E2N


NOV 20
05 06 07 08 09 10 11 12 13 14 15 16
0.
100.
200.
300.
Pressure (dbar)
−1.00
−2.00
−3.00
Latitude
157.00
156.00
155.00
Longitude
05 06 07 08 09 10 11 12 13 14 15 16
NOV 20

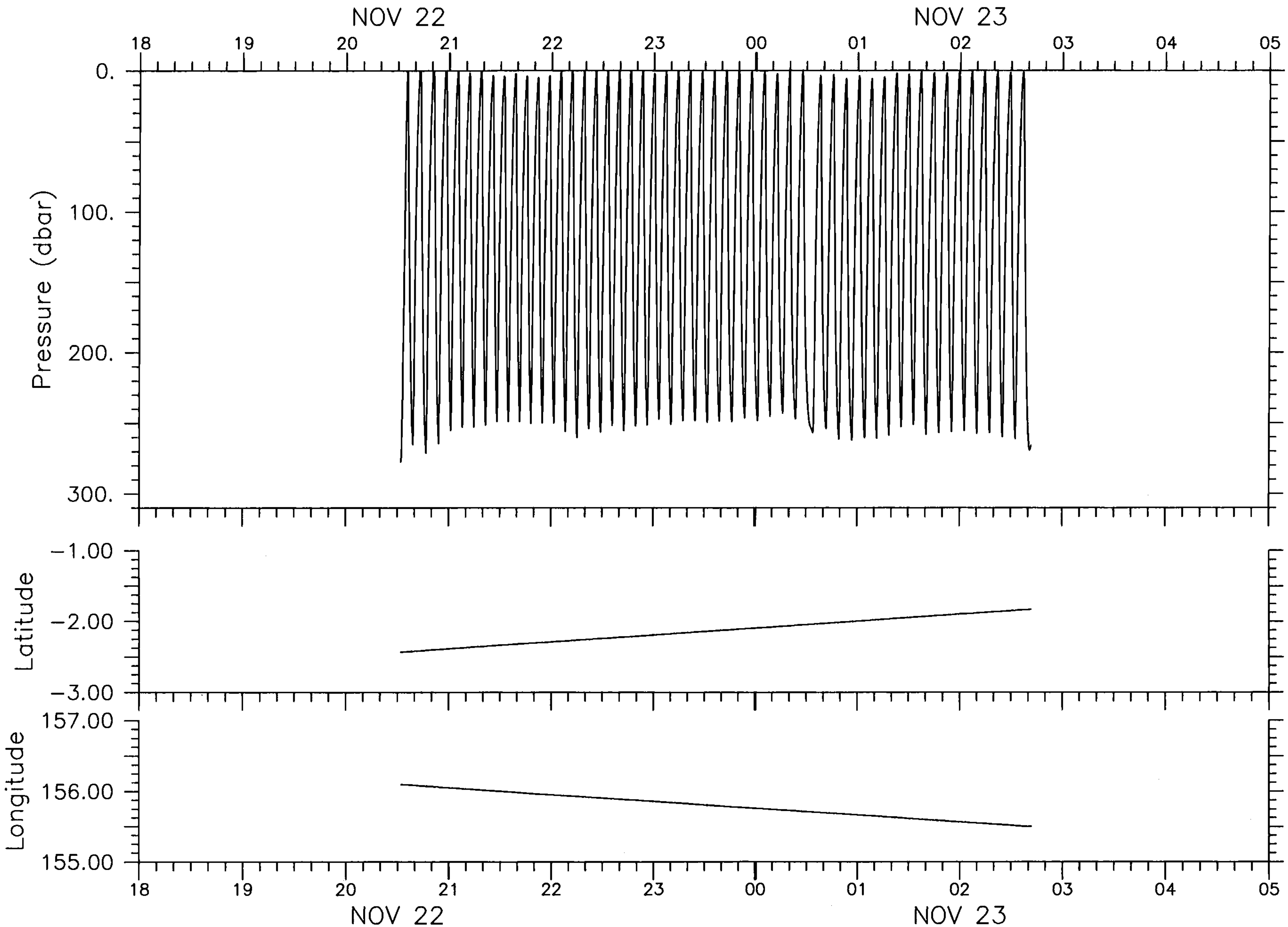
N2S


NOV 20
12
13
14
15
16
17
18
19
20
21
22
23
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
12
13
14
15
16
17
18
19
20
21
22
23
NOV 20

S2W

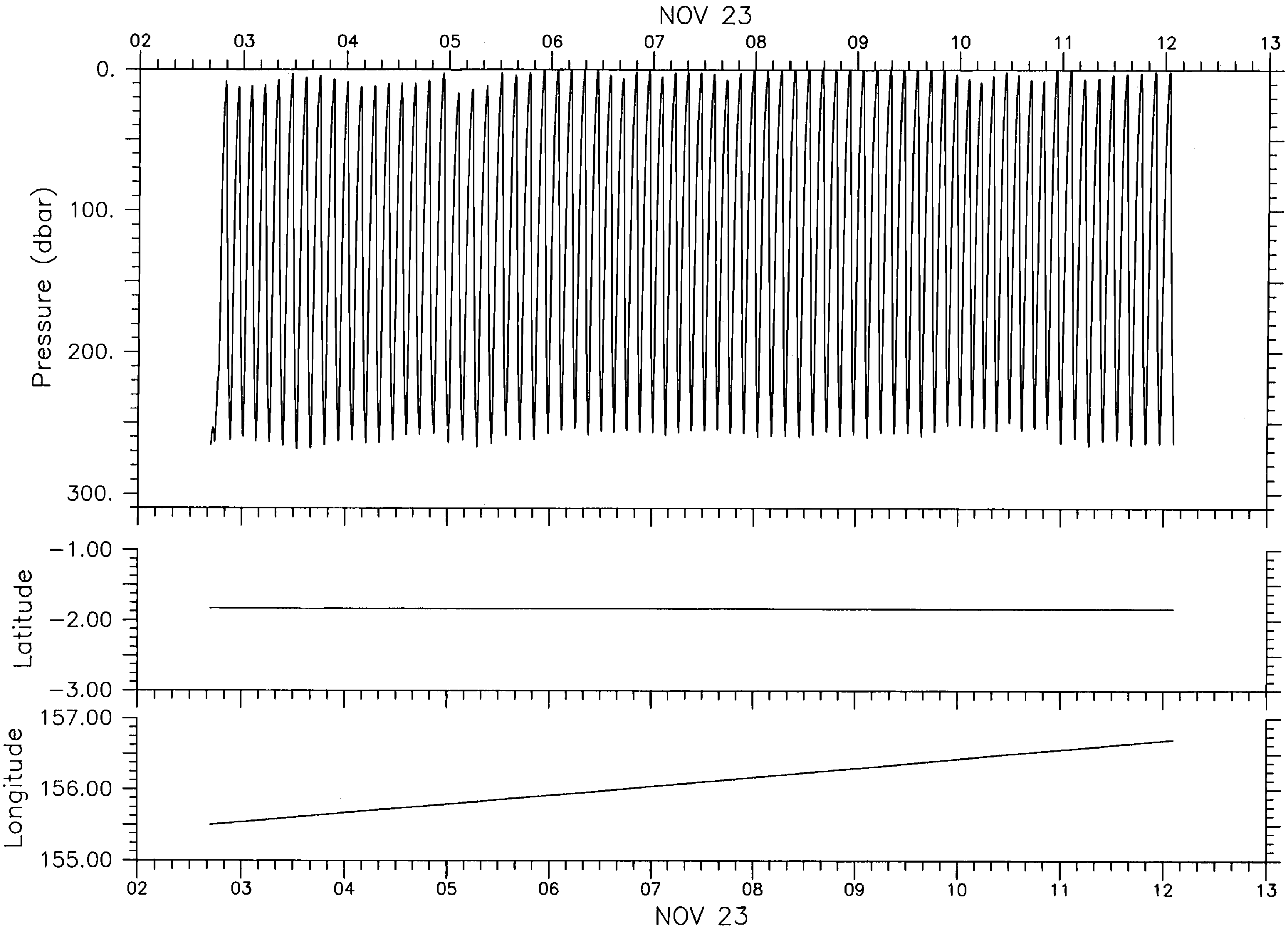

NOV 22
11
12
13
14
15
16
17
18
19
20
21
22
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude
11
12
13
14
15
16
17
18
19
20
21
22
NOV 22

N2S

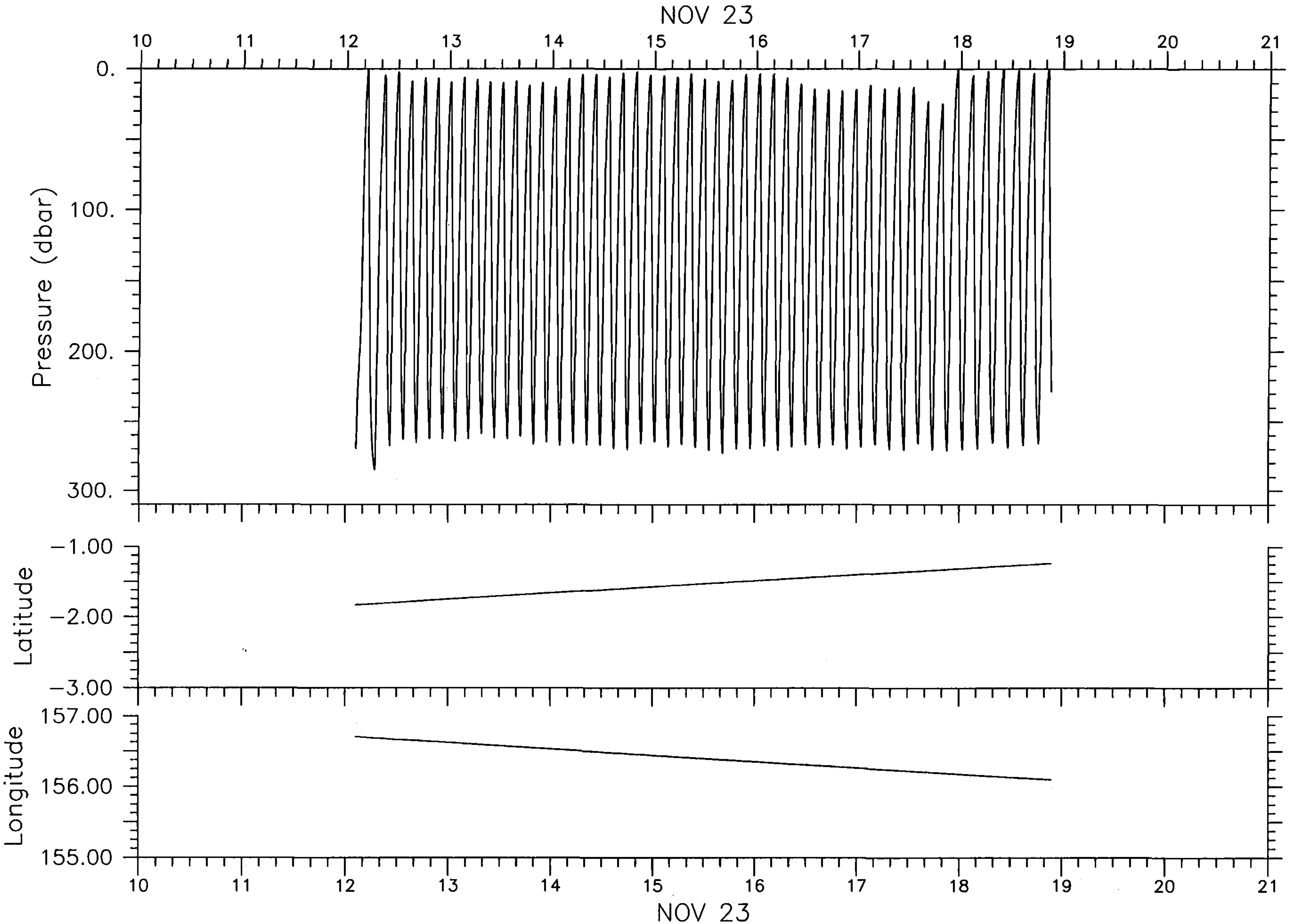


NOV 22
NOV 23
18
19
20
21
22
23
00
01
02
03
04
05
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude
18
19
20
21
22
23
00
01
02
03
04
05
NOV 22
NOV 23

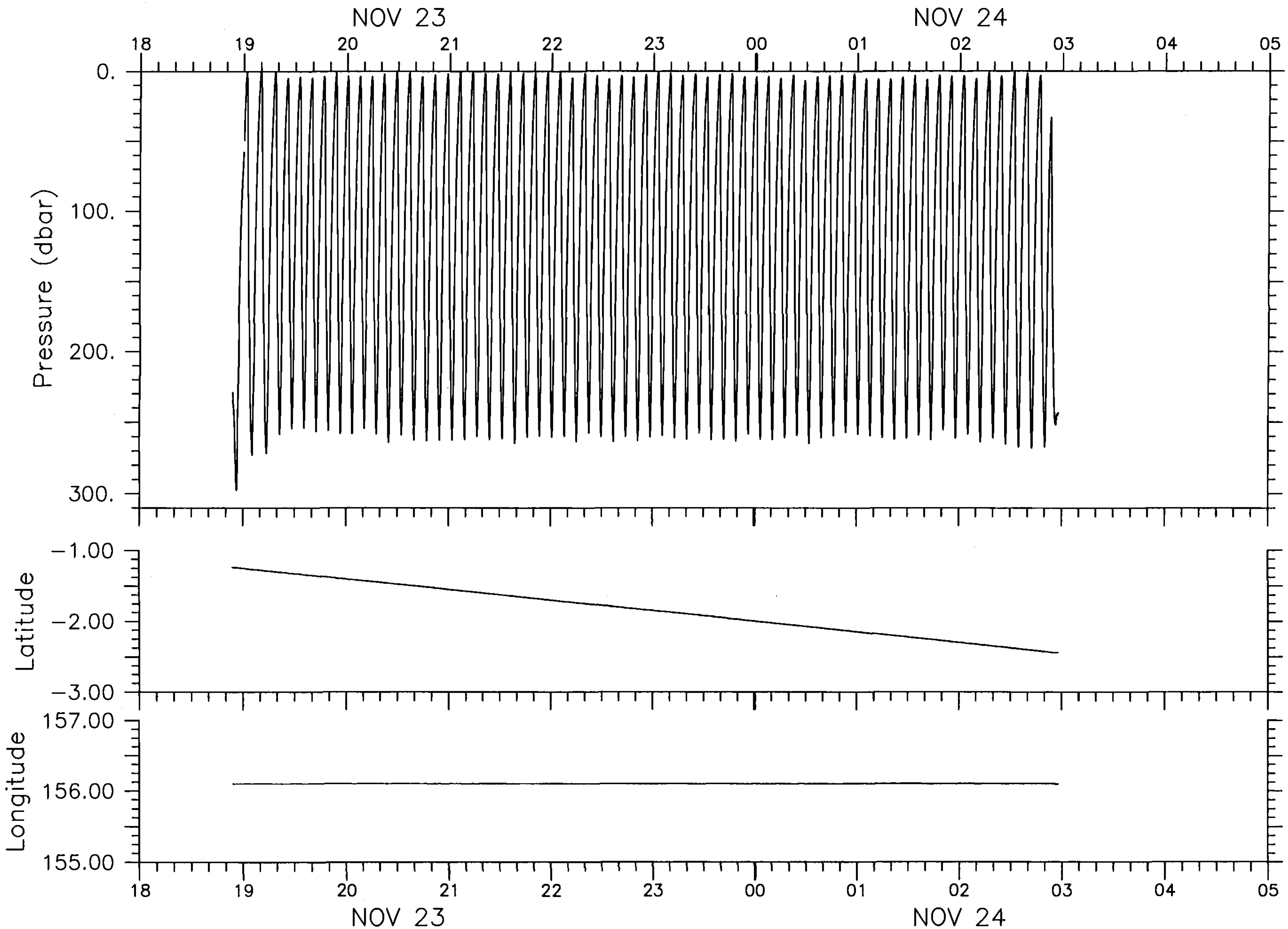
S2W


NOV 23
02
03
04
05
06
07
08
09
10
11
12
13
0.
100.
200.
300.
Pressure (dbar)
−1.00
−2.00
−3.00
Latitude
157.00
156.00
155.00
Longitude
NOV 23

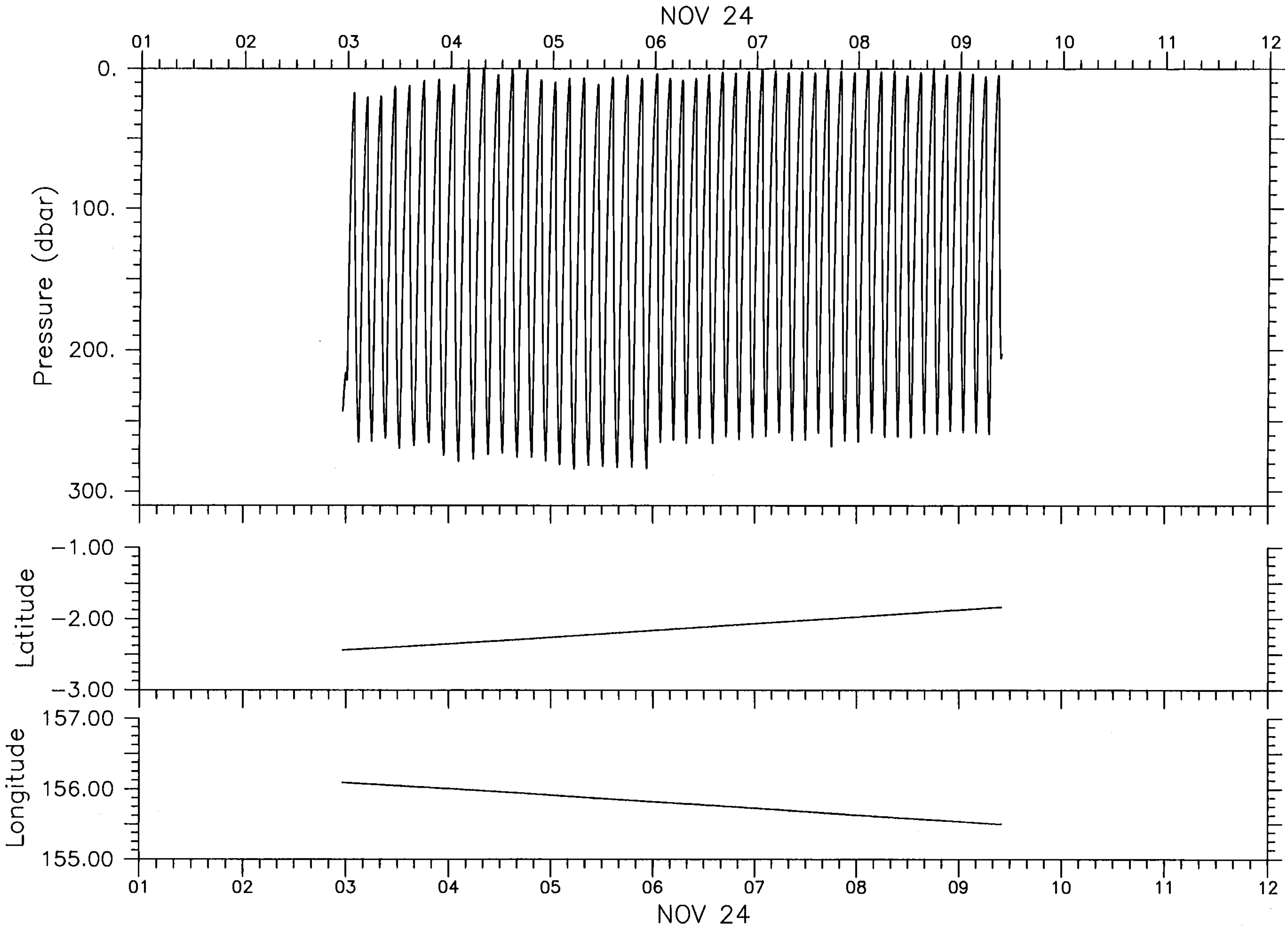
W2E


NOV 23
10
11
12
13
14
15
16
17
18
19
20
21
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude
NOV 23

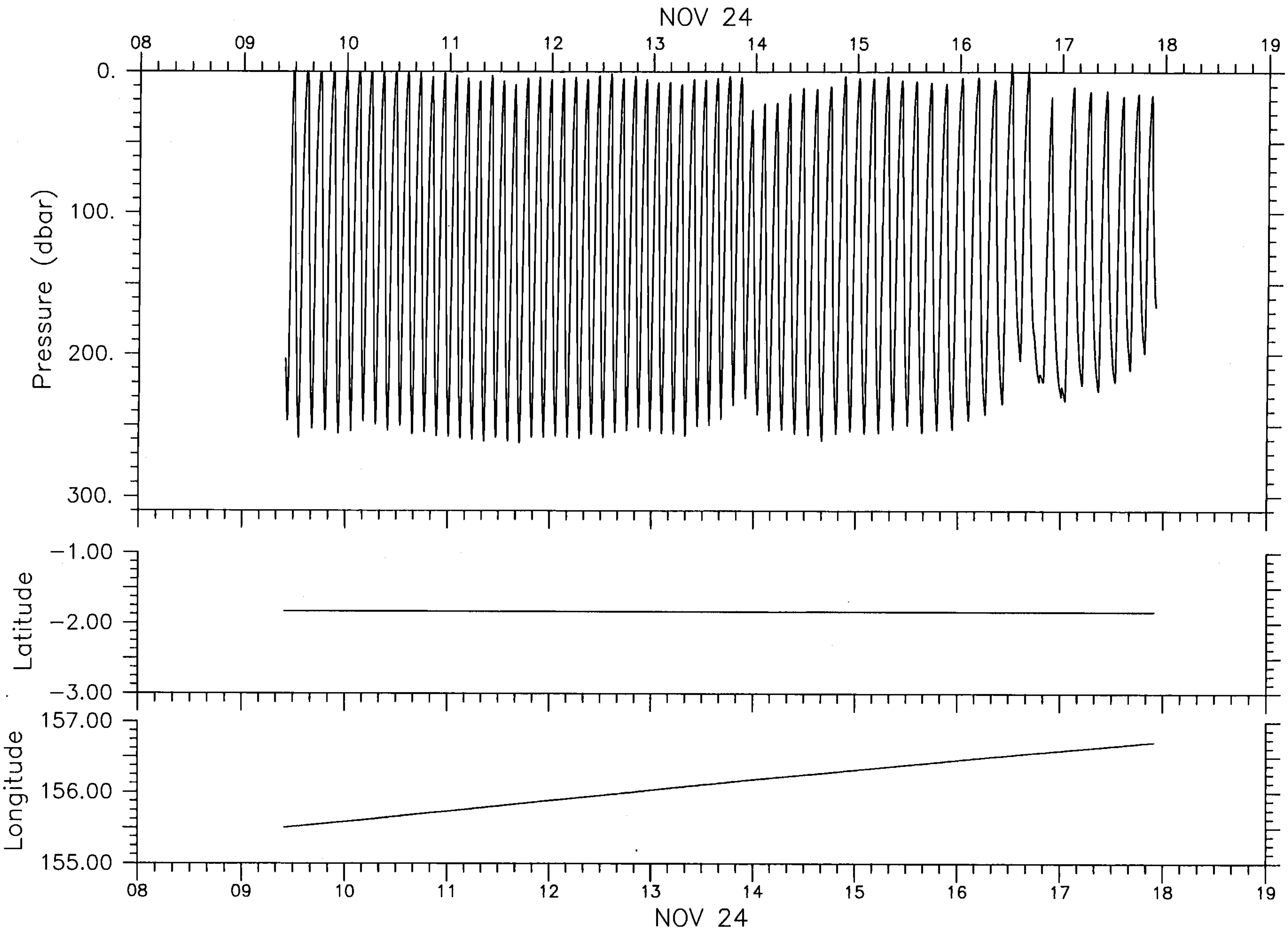
E2N


NOV 23
NOV 24
18 19 20 21 22 23 00 01 02 03 04 05
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00

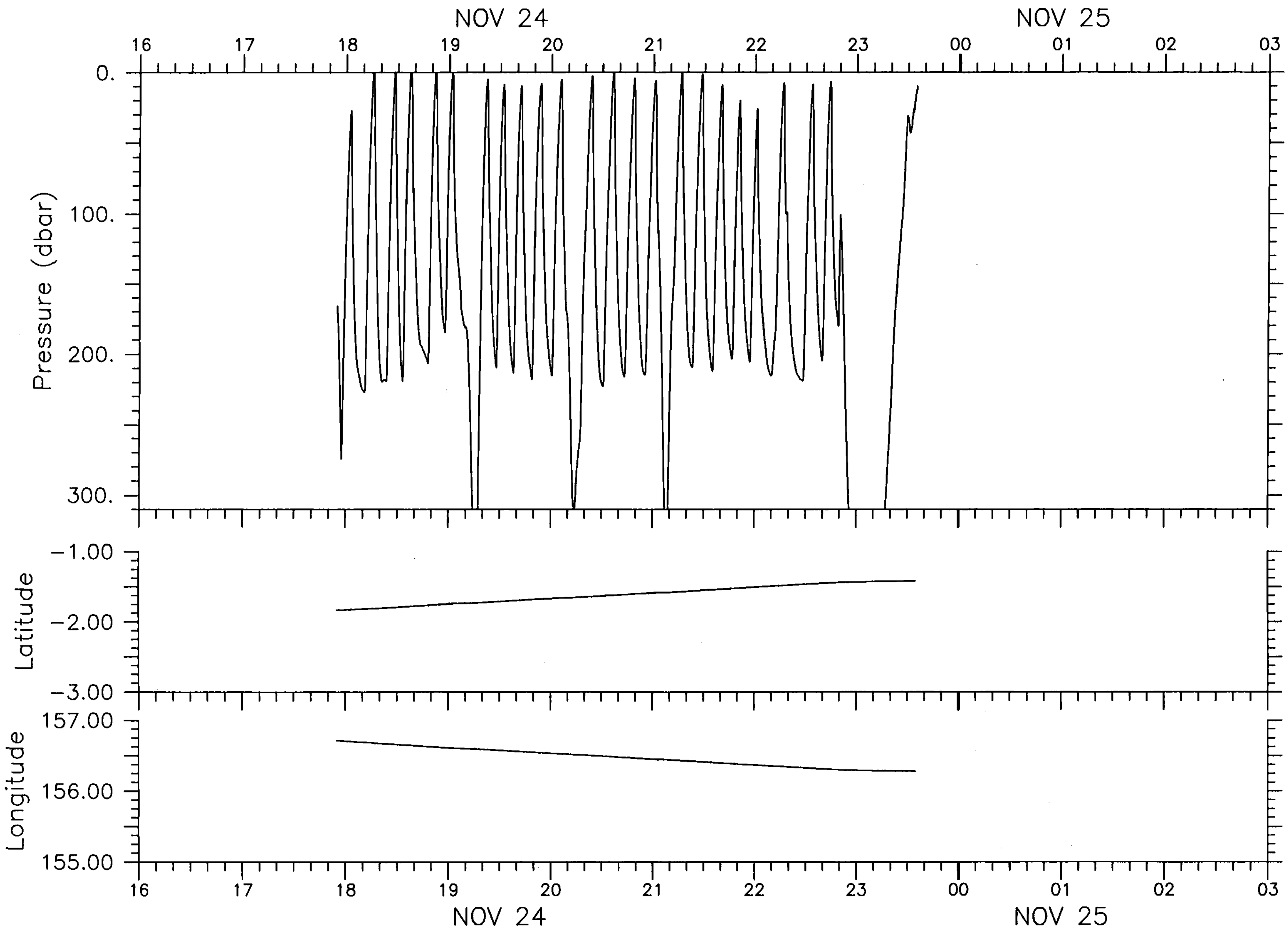
N2S


NOV 24
01
02
03
04
05
06
07
08
09
10
11
12
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00

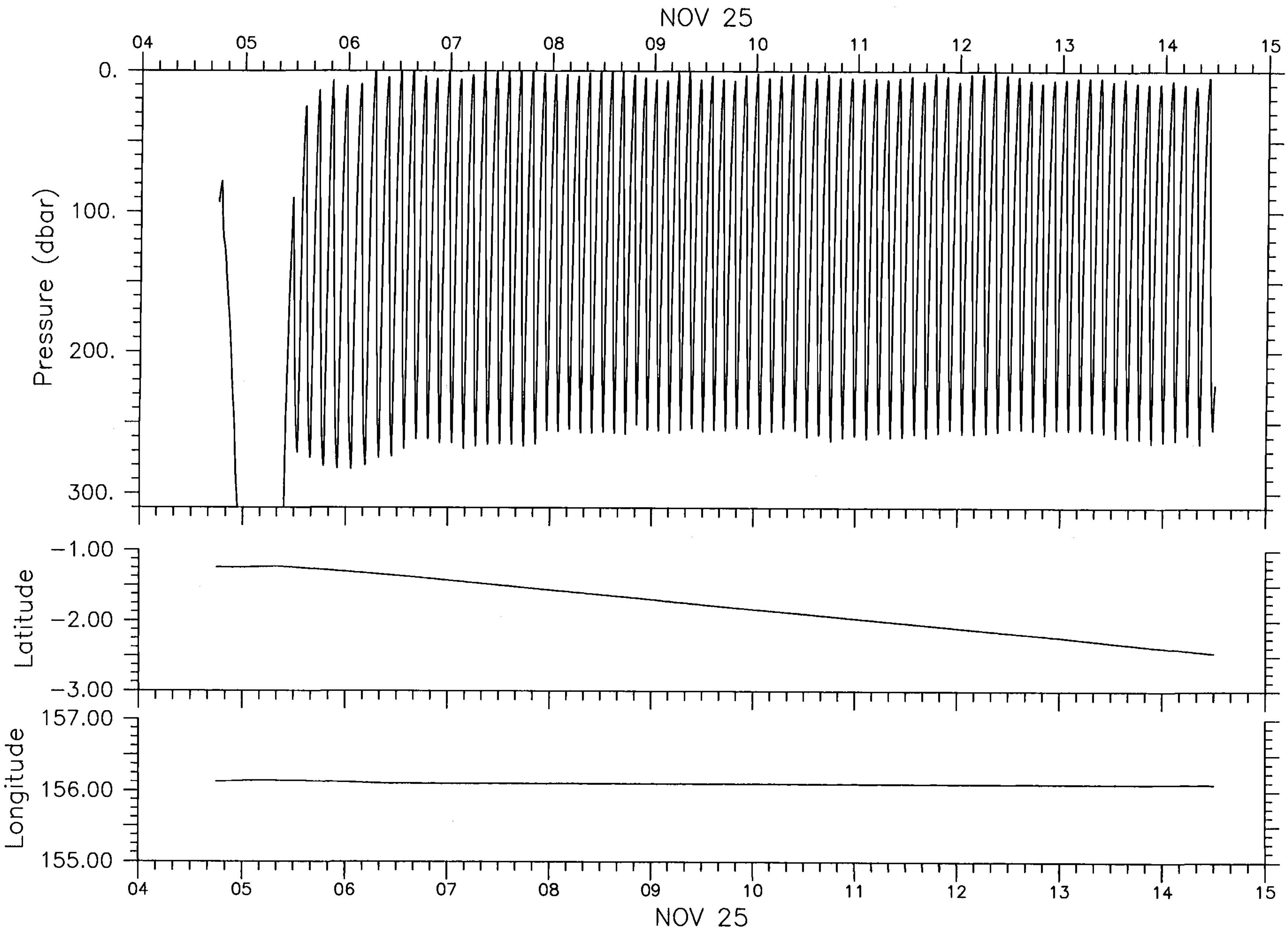
S2W


NOV 24
08
09
10
11
12
13
14
15
16
17
18
19
0.
100.
200.
300.
Pressure (dbar)
−1.00
−2.00
−3.00
Latitude
157.00
156.00
155.00
Longitude
NOV 24

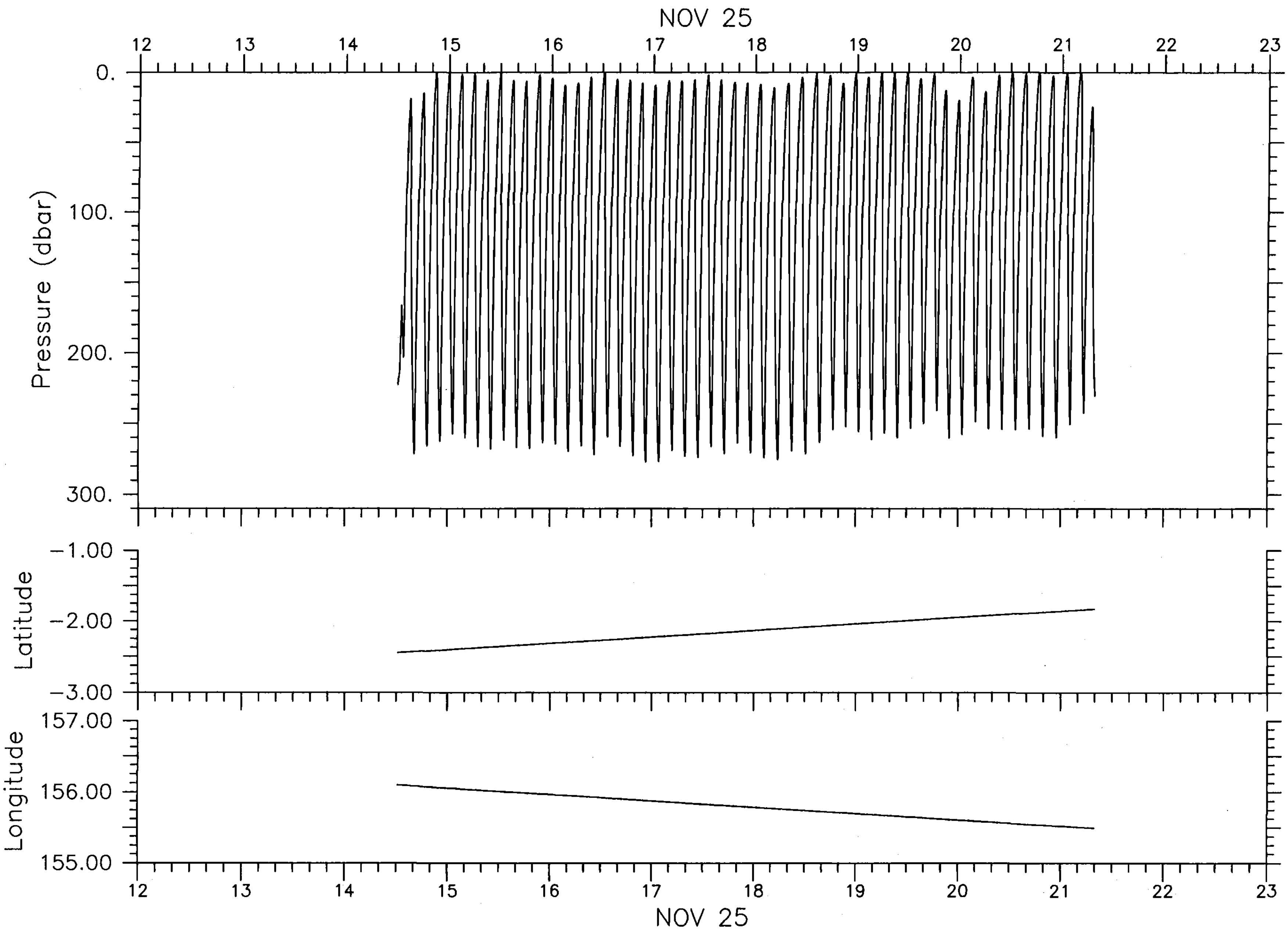
W2E


NOV 24
NOV 25
16 17 18 19 20 21 22 23 00 01 02 03
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
16 17 18 19 20 21 22 23 00 01 02 03
NOV 24
NOV 25

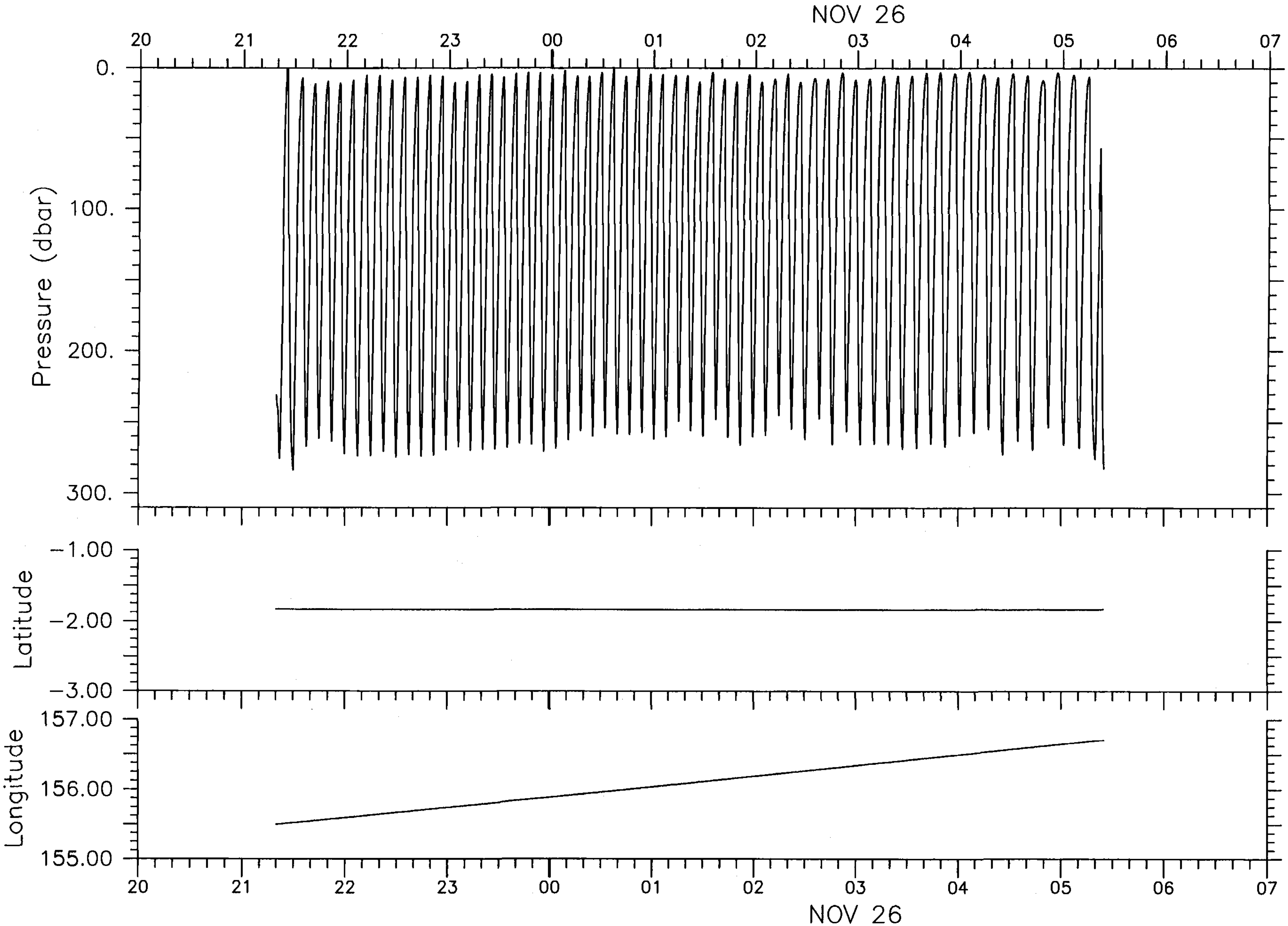
E2N


NOV 25
04
05
06
07
08
09
10
11
12
13
14
15
Pressure (dbar)
0.
100.
200.
300.
Latitude
−1.00
−2.00
−3.00
Longitude
157.00
156.00
155.00
04
05
06
07
08
09
10
11
12
13
14
15
NOV 25

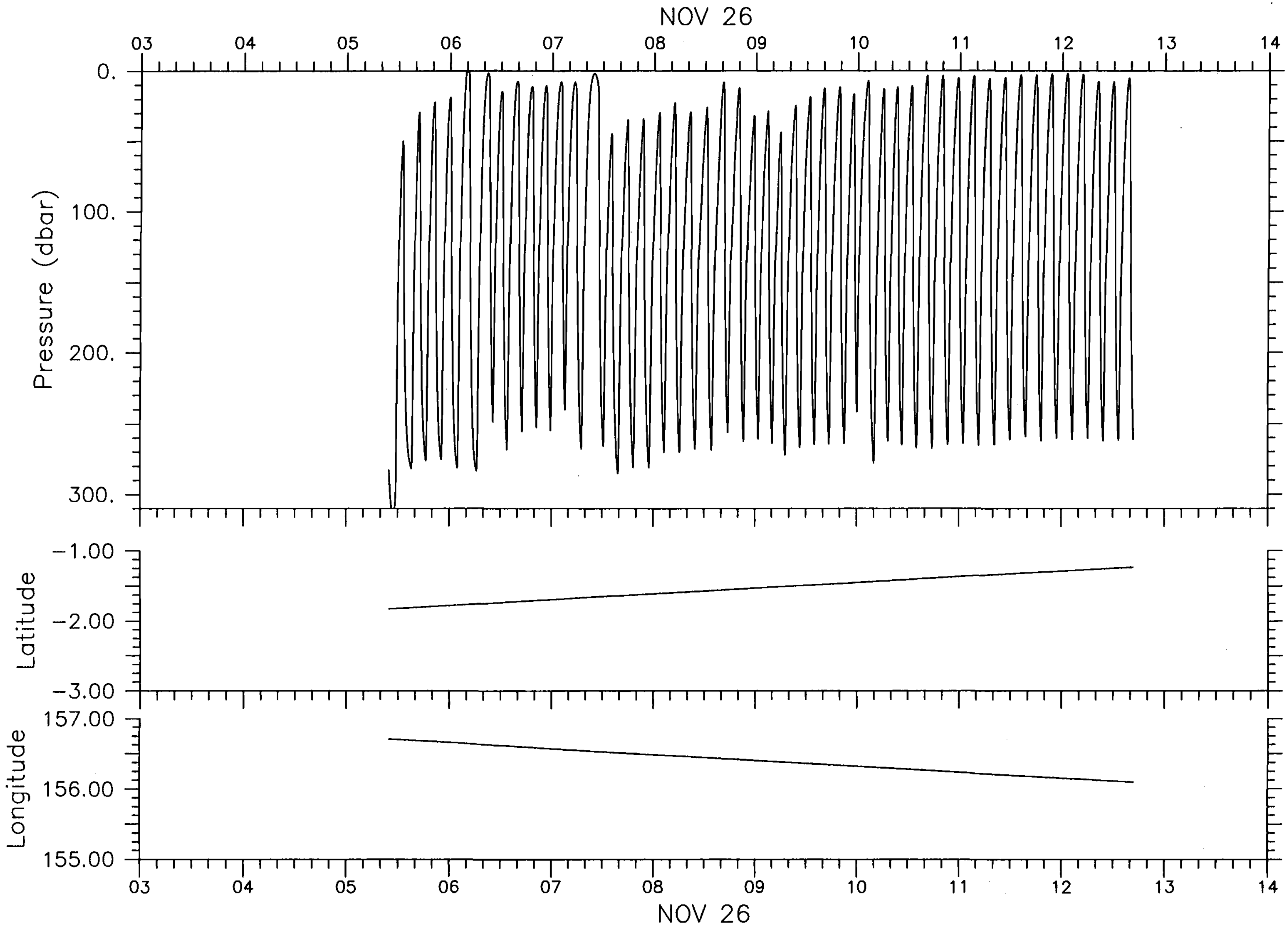
N2S


NOV 25
12
13
14
15
16
17
18
19
20
21
22
23
Pressure (dbar)
0.
100.
200.
300.
Latitude
−1.00
−2.00
−3.00
Longitude
157.00
156.00
155.00

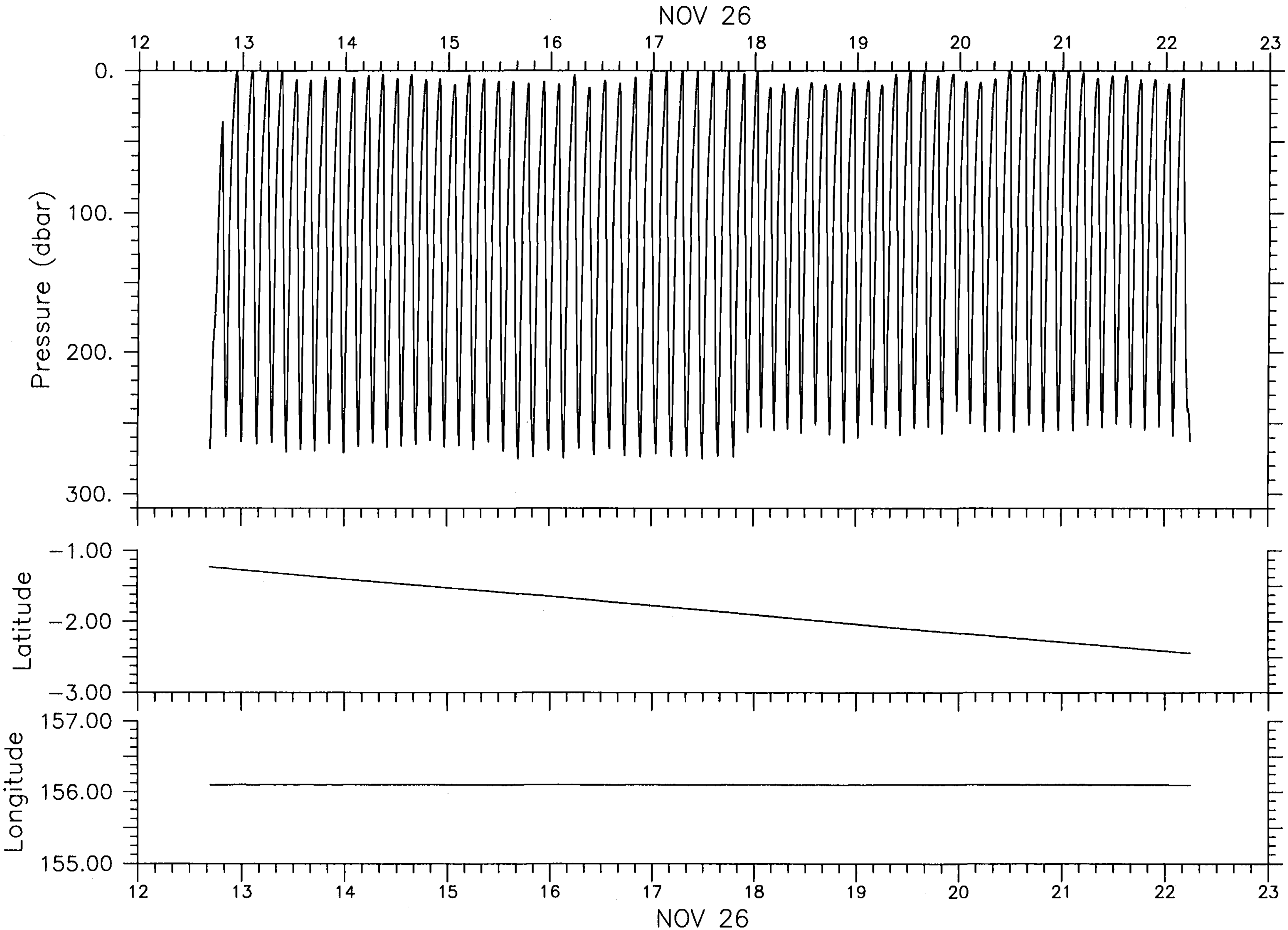
S2W


NOV 26
20
21
22
23
00
01
02
03
04
05
06
07
0.
100.
200.
300.
Pressure (dbar)
−1.00
−2.00
−3.00
Latitude
157.00
156.00
155.00
Longitude
20
21
22
23
00
01
02
03
04
05
06
07
NOV 26

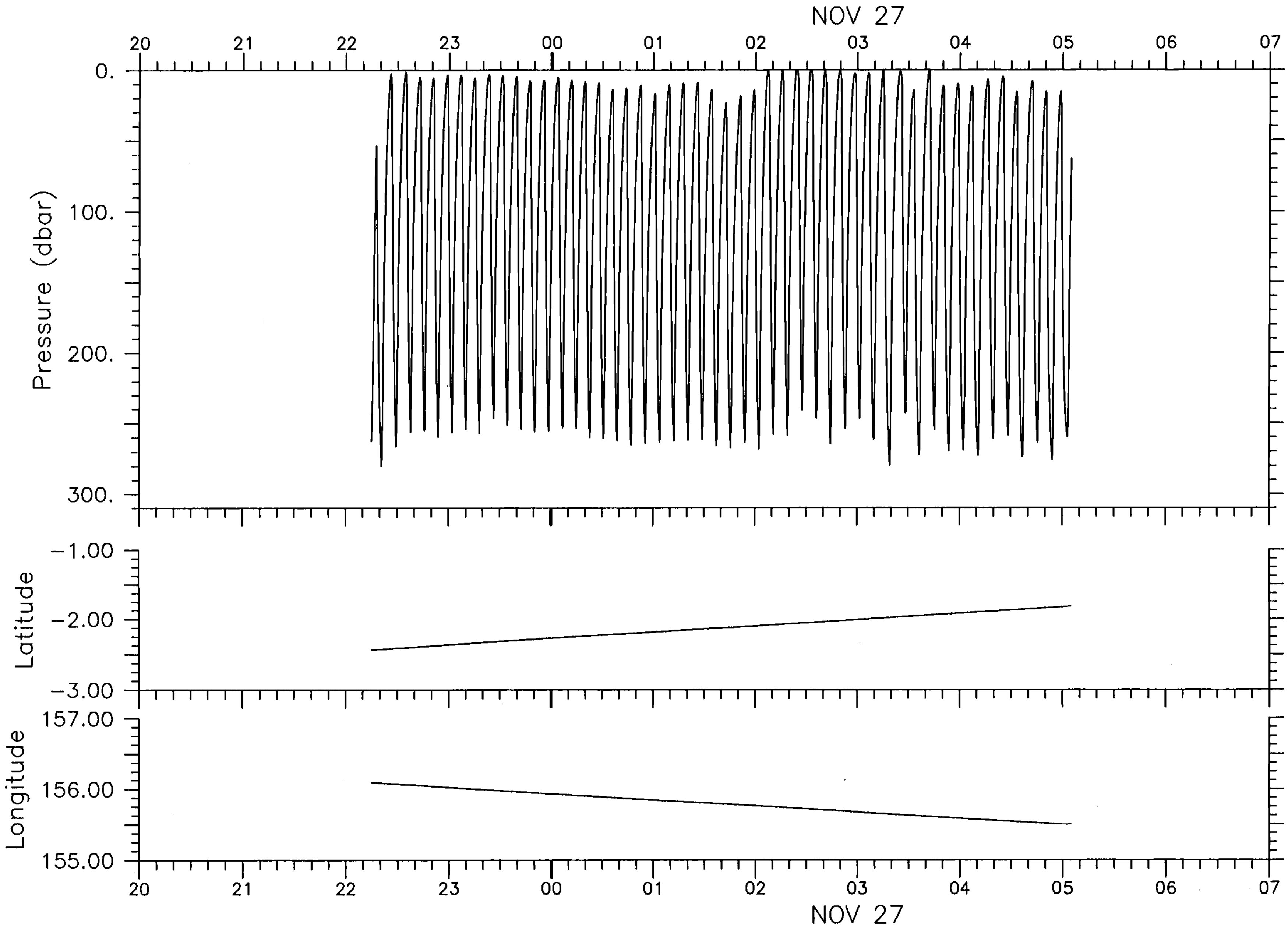
W2E


NOV 26
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
03
04
05
06
07
08
09
10
11
12
13
14
NOV 26

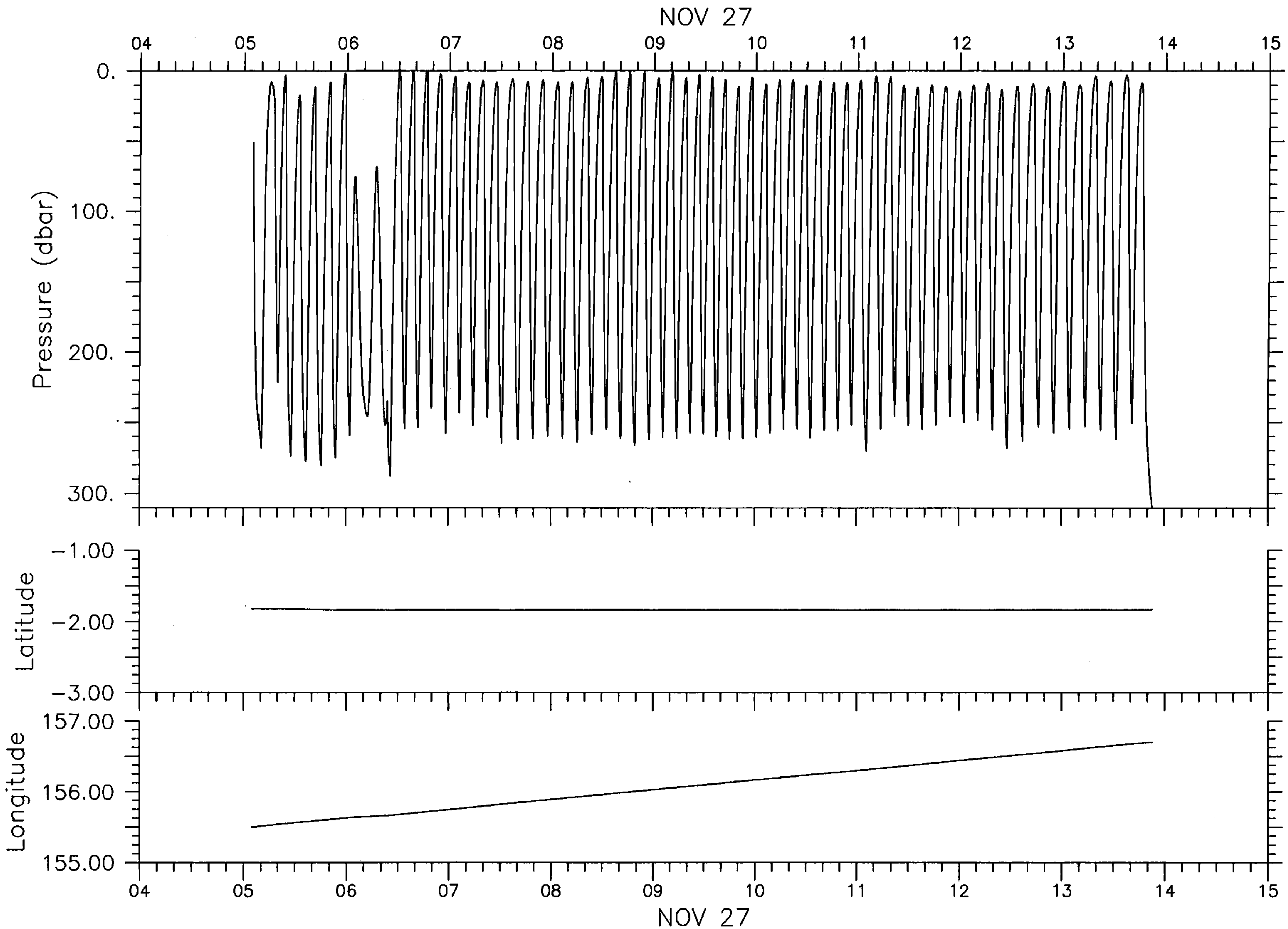
E2N


NOV 26
12
13
14
15
16
17
18
19
20
21
22
23
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
12
13
14
15
16
17
18
19
20
21
22
23
NOV 26

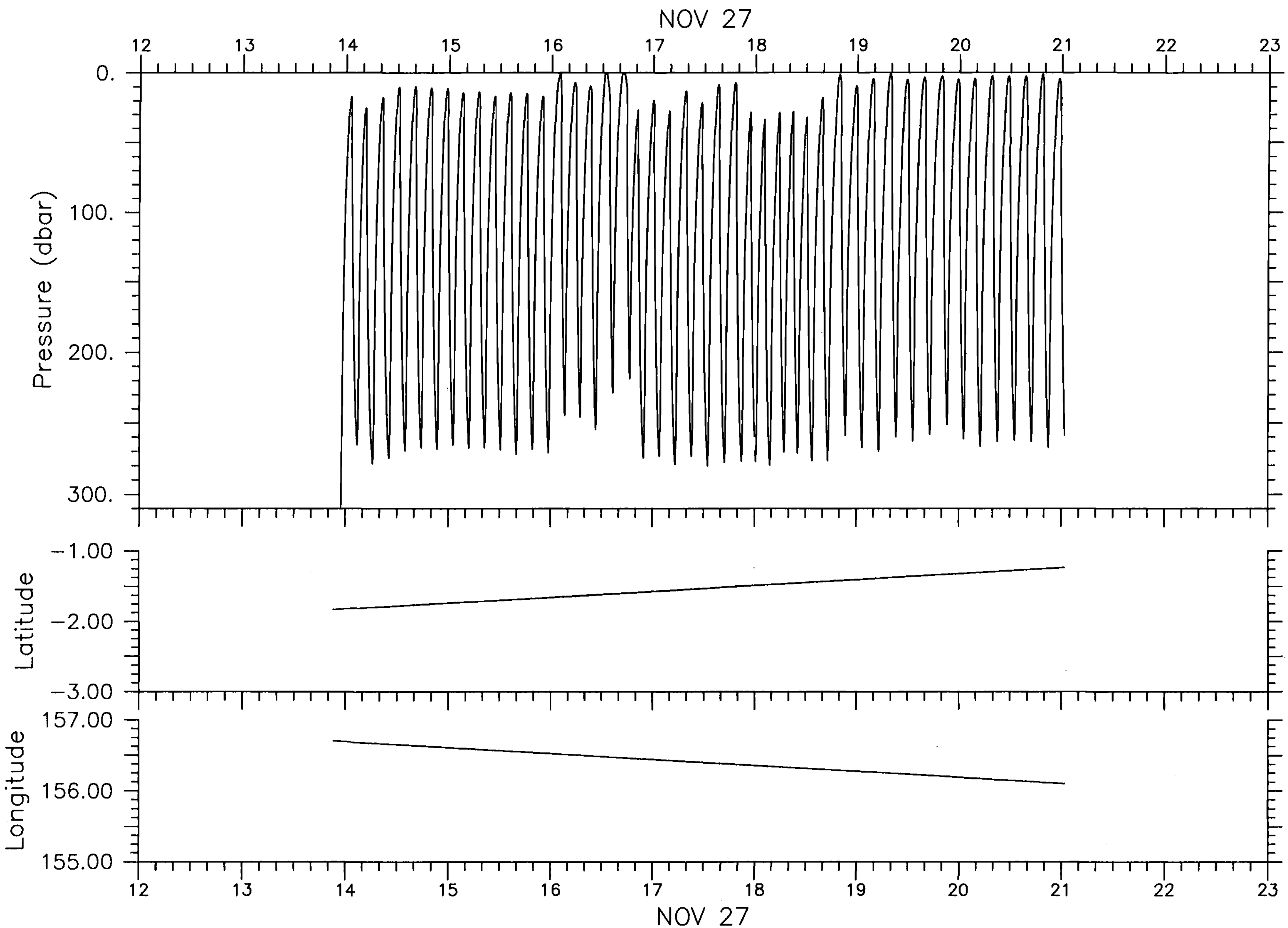
N2S


NOV 27
20
21
22
23
00
01
02
03
04
05
06
07
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
NOV 27

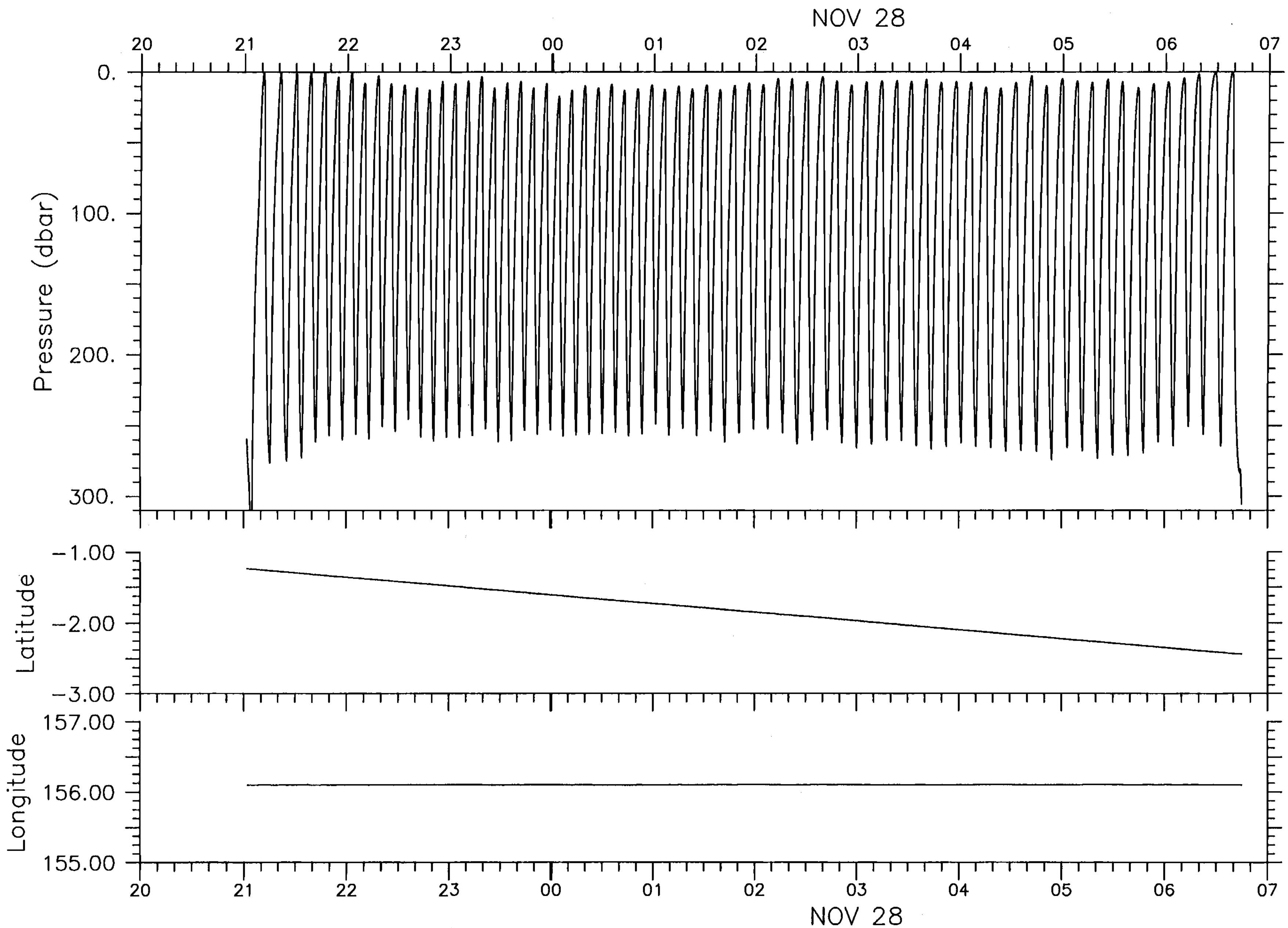
S2W


NOV 27
04
05
06
07
08
09
10
11
12
13
14
15
0.
100.
200.
300.
Pressure (dbar)
−1.00
−2.00
−3.00
Latitude
157.00
156.00
155.00
Longitude
NOV 27

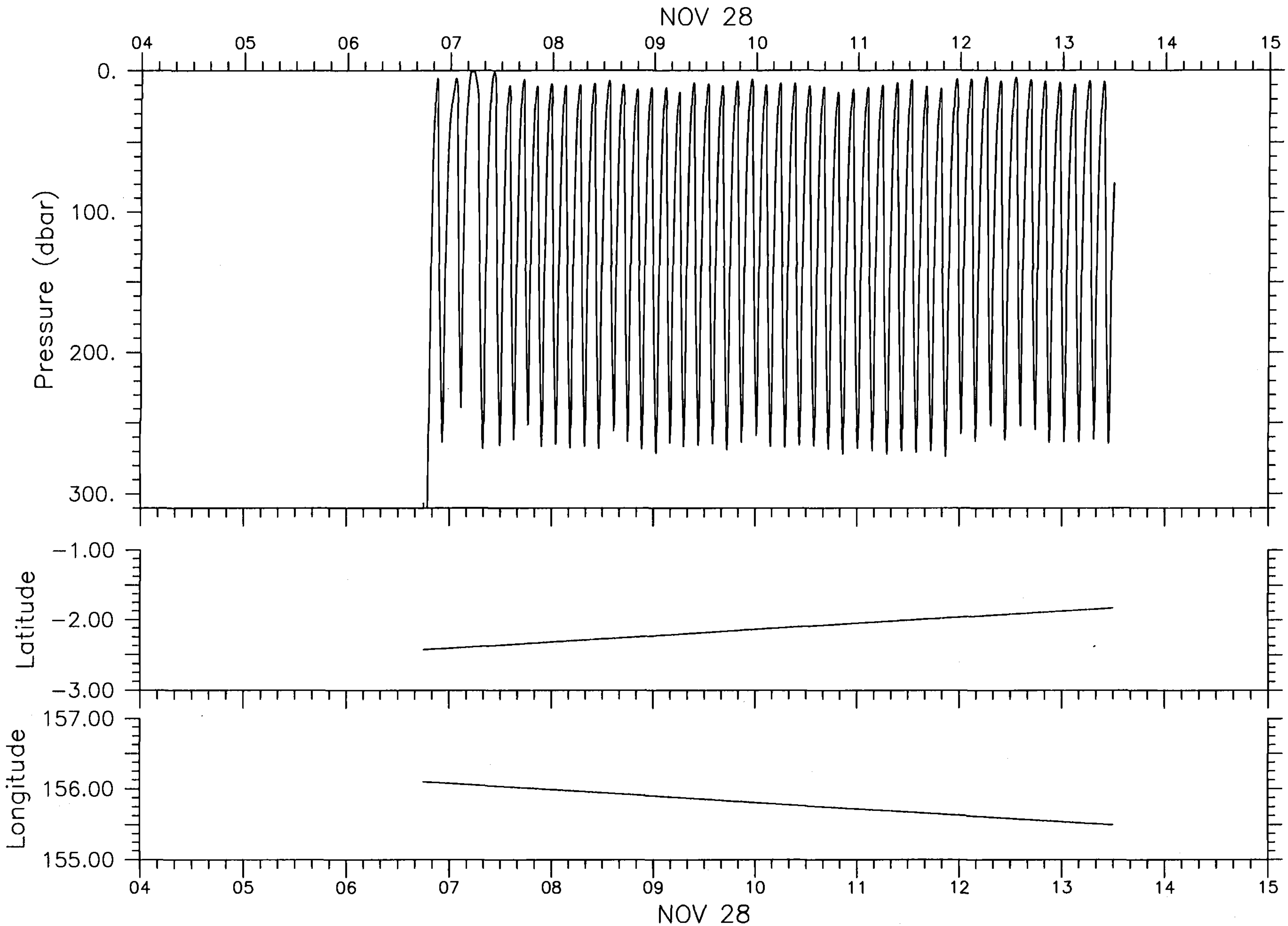
W2E


NOV 27
12 13 14 15 16 17 18 19 20 21 22 23
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
12 13 14 15 16 17 18 19 20 21 22 23
NOV 27

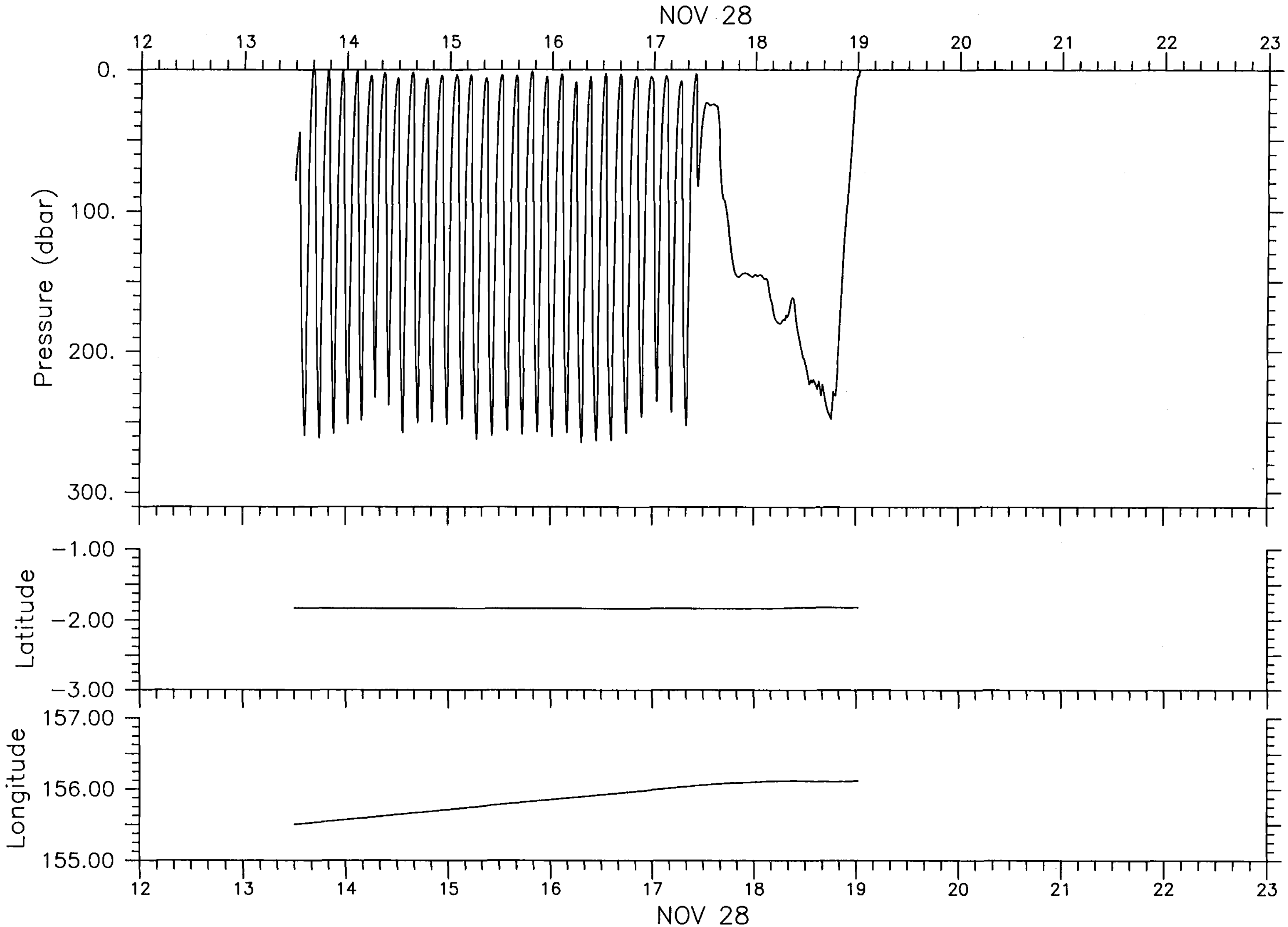
E2N


NOV 28
20
21
22
23
00
01
02
03
04
05
06
07
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude
NOV 28

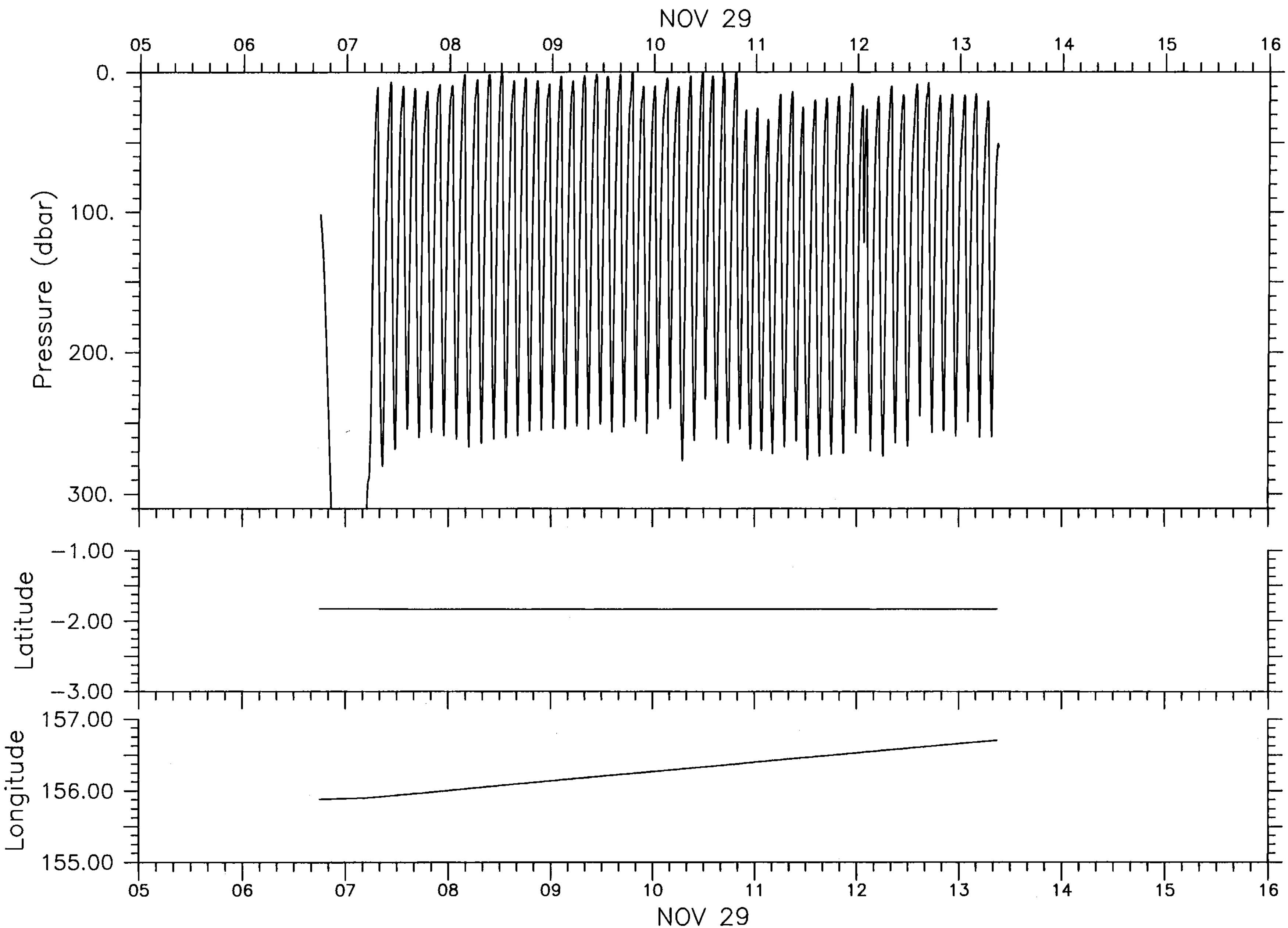
N2S


NOV 28
04
05
06
07
08
09
10
11
12
13
14
15
0.
100.
200.
300.
Pressure (dbar)
−1.00
−2.00
−3.00
Latitude
157.00
156.00
155.00
Longitude
NOV 28

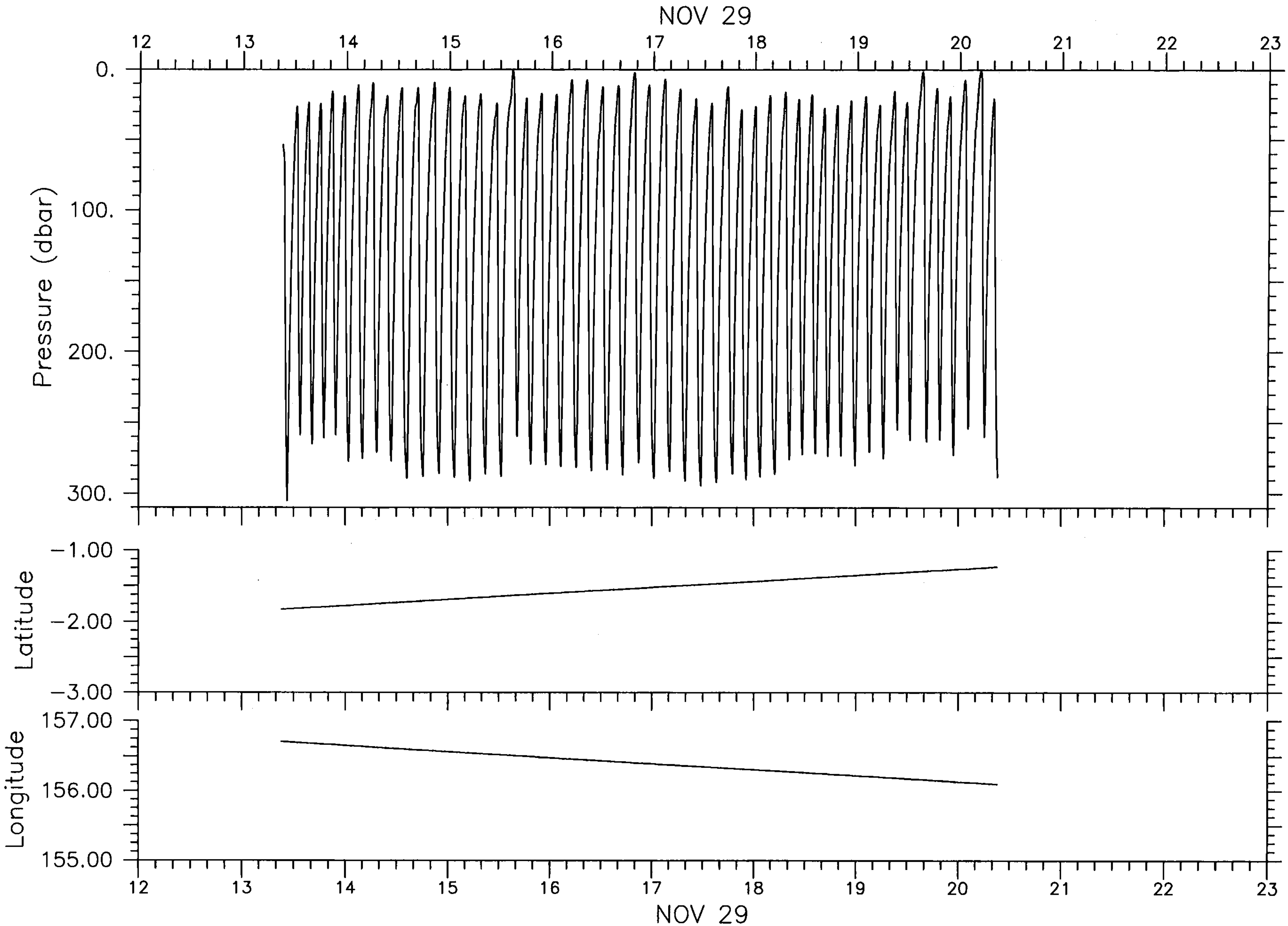
S2W


NOV 28
12
13
14
15
16
17
18
19
20
21
22
23
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude
NOV 28

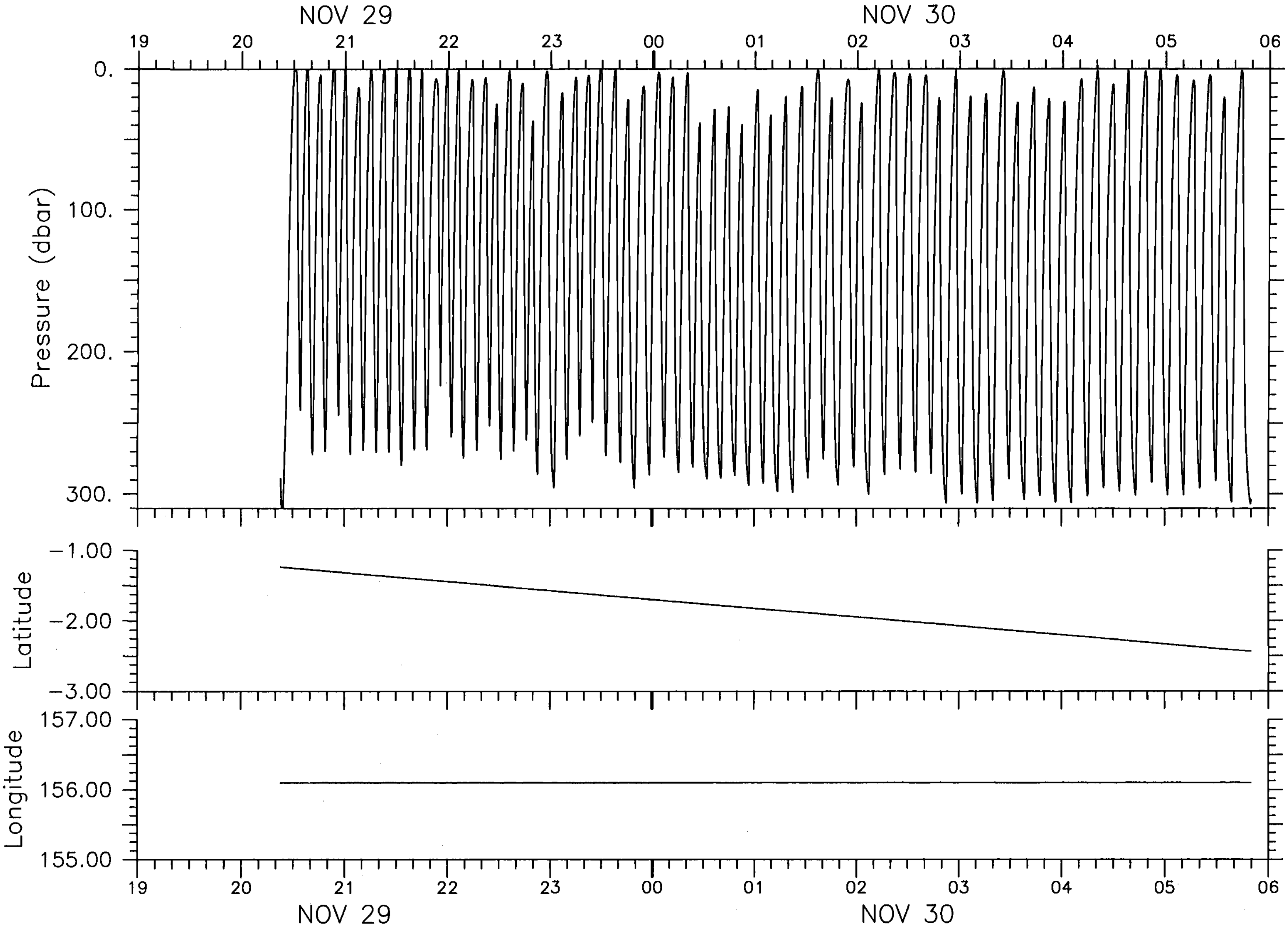
W2E


NOV 29
05
06
07
08
09
10
11
12
13
14
15
16
Pressure (dbar)
0.
100.
200.
300.
Latitude
−1.00
−2.00
−3.00
Longitude
157.00
156.00
155.00
NOV 29

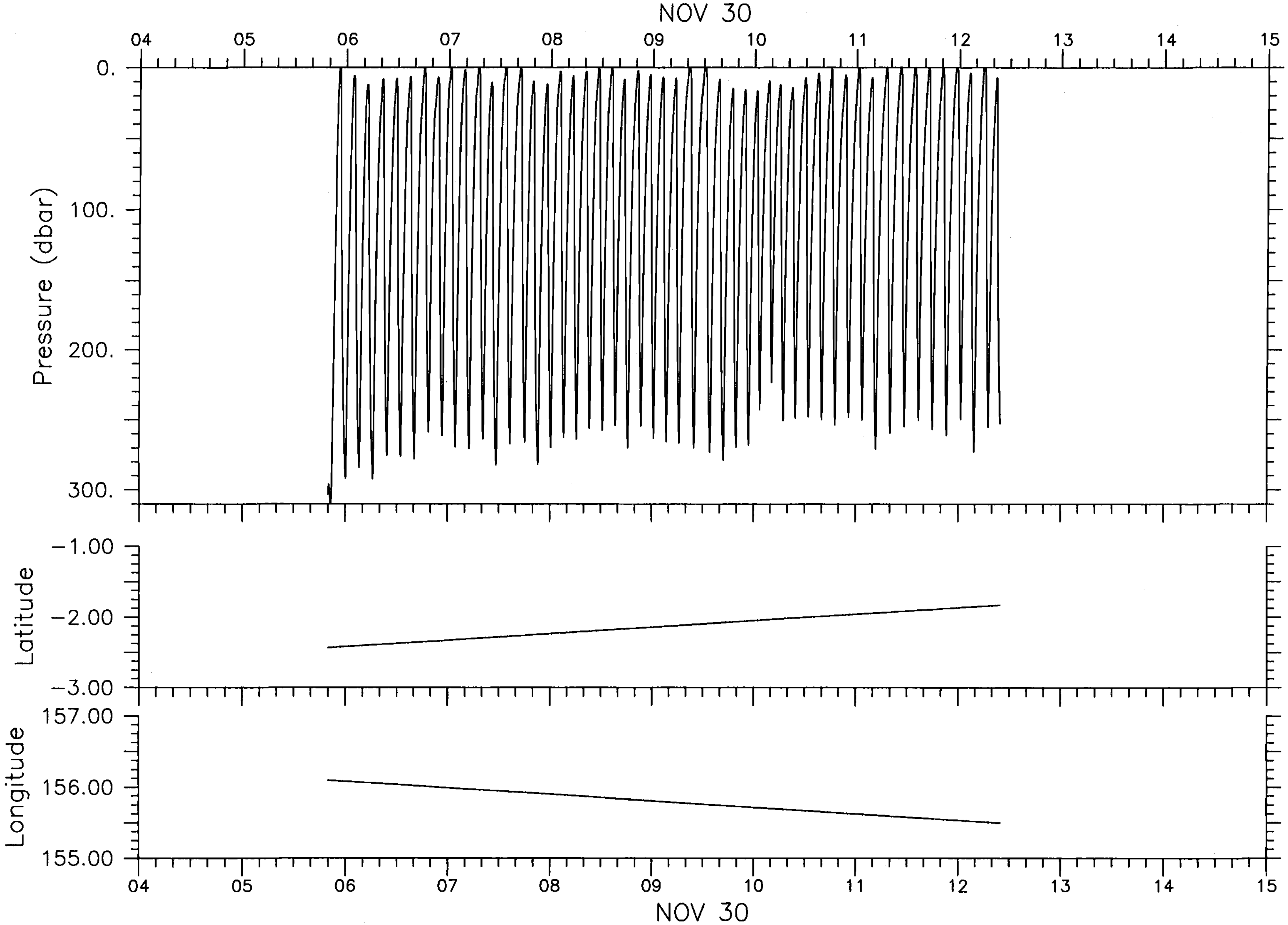
W2E


NOV 29
12
13
14
15
16
17
18
19
20
21
22
23
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
NOV 29

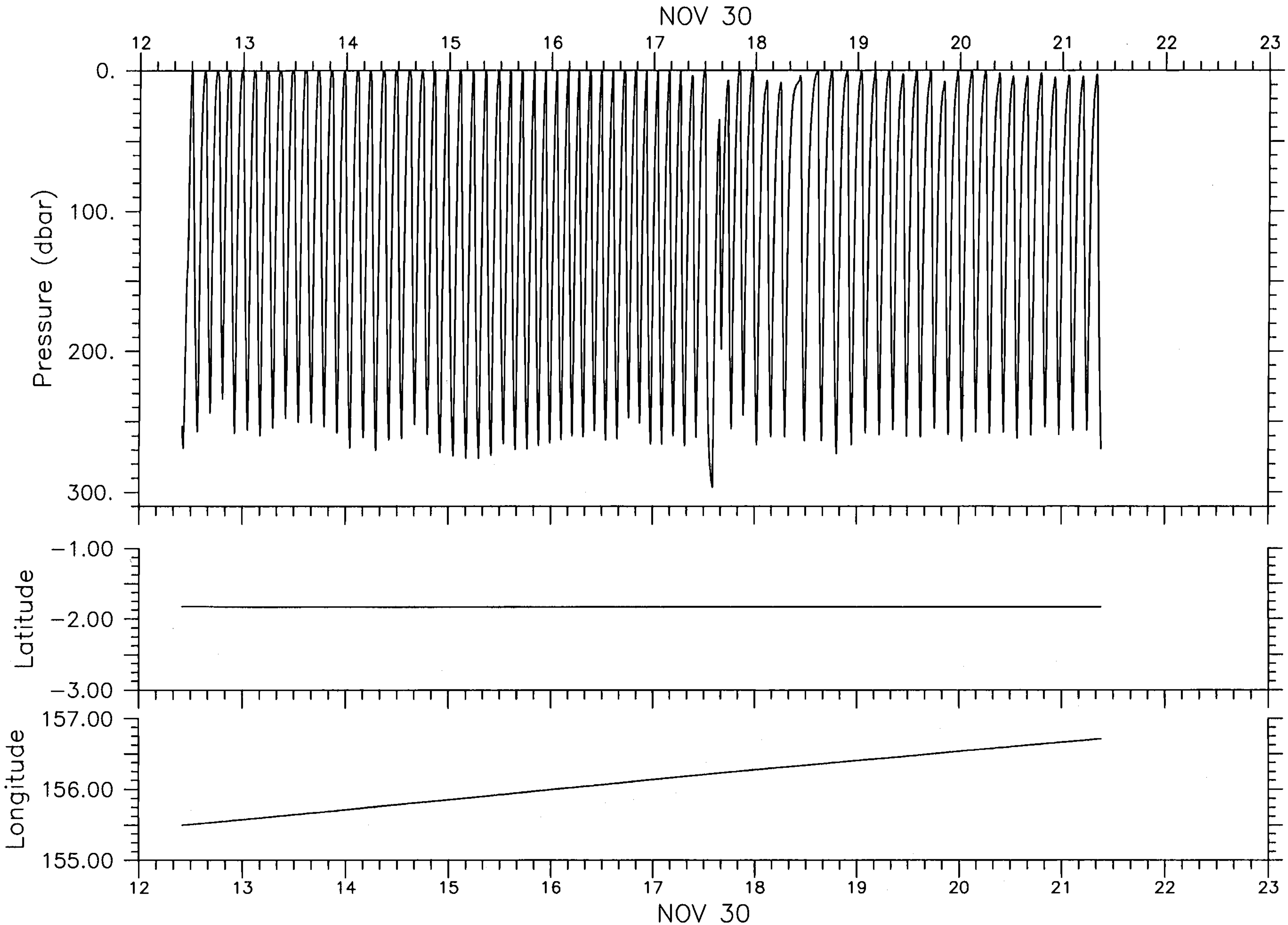
E2N


NOV 29
NOV 30
19 20 21 22 23 00 01 02 03 04 05 06
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00

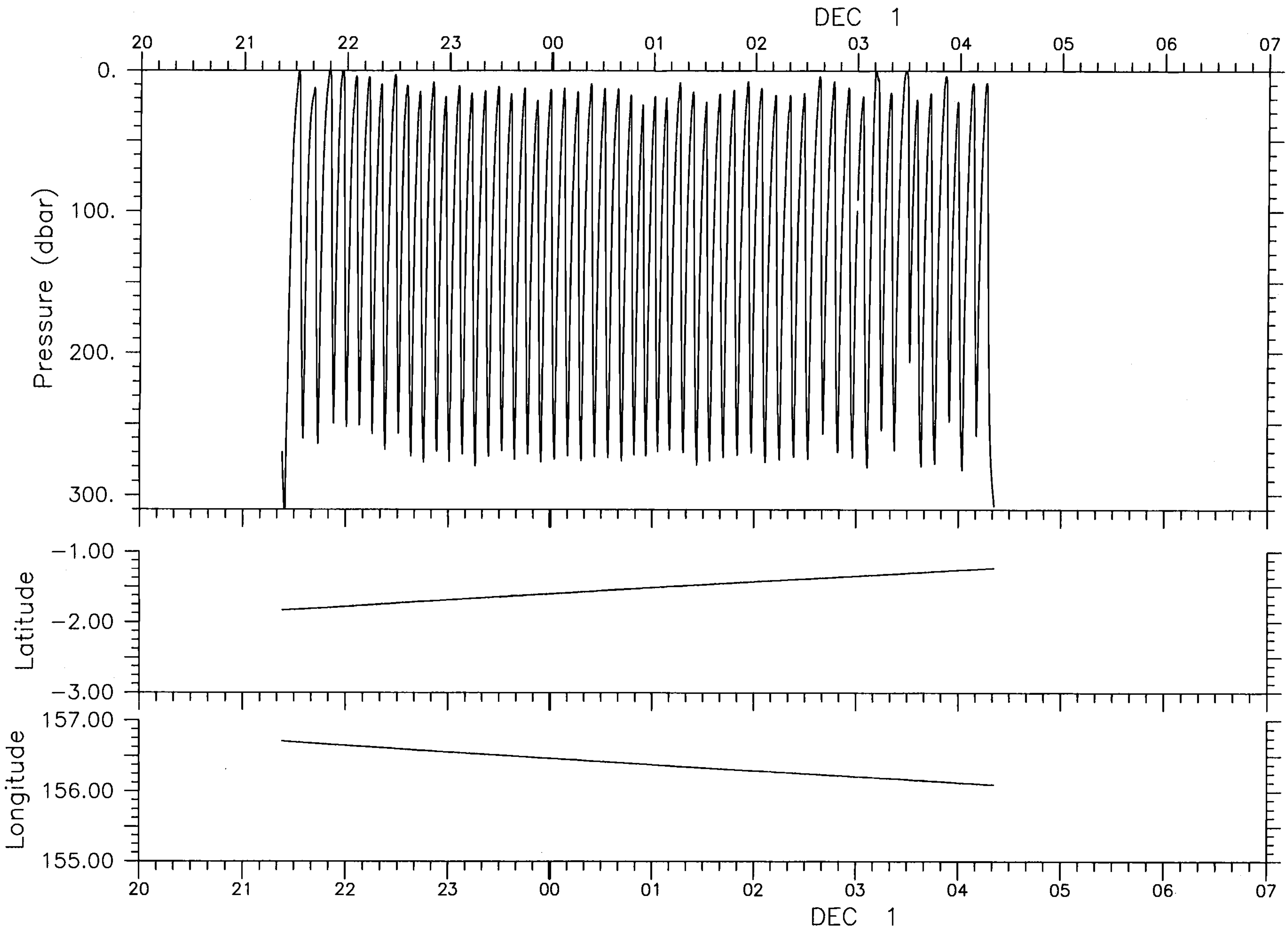
N2S


NOV 30
04 05 06 07 08 09 10 11 12 13 14 15
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
04 05 06 07 08 09 10 11 12 13 14 15
NOV 30

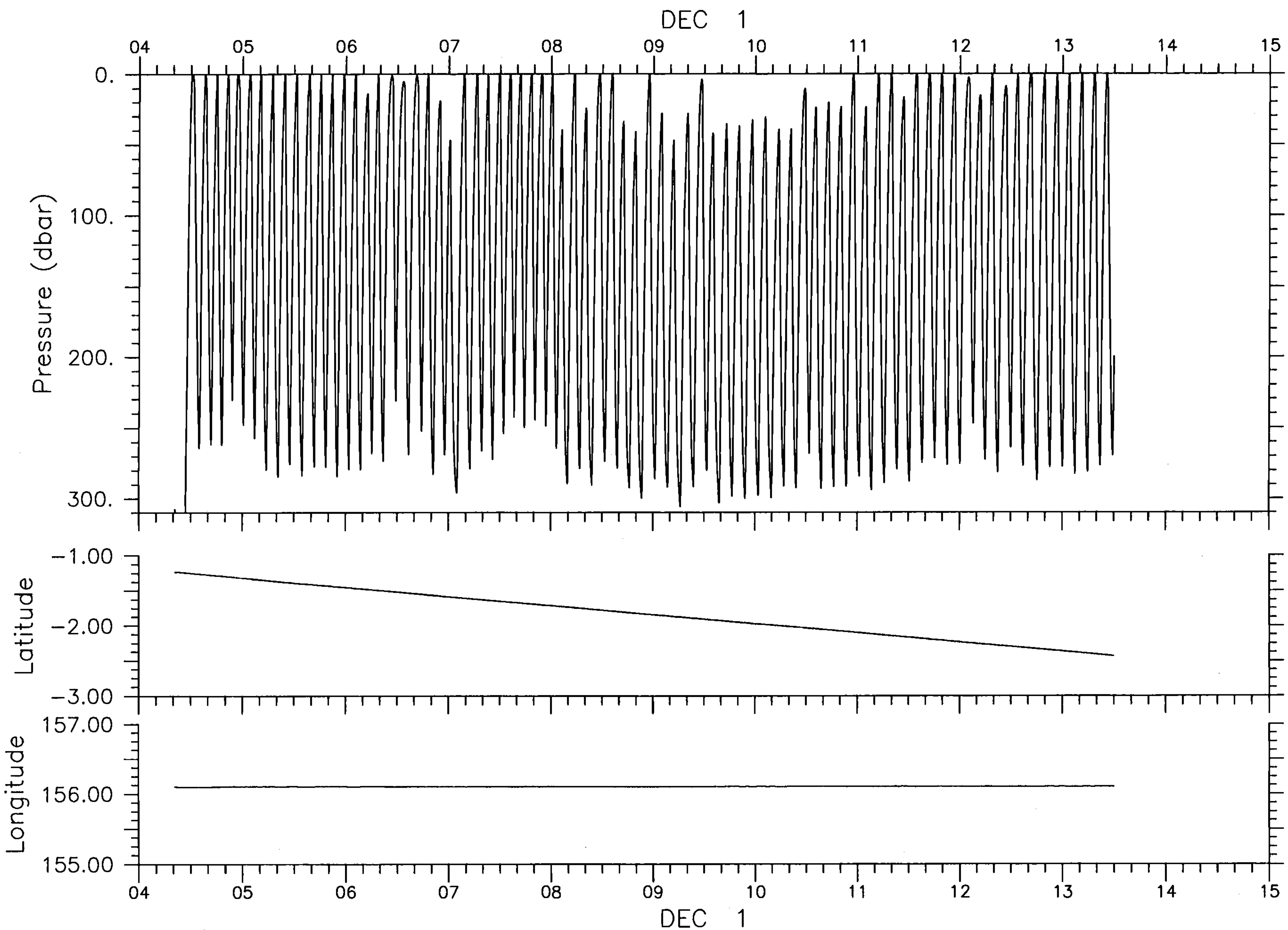
S2W


NOV 30
12
13
14
15
16
17
18
19
20
21
22
23
0.
100.
200.
300.
Pressure (dbar)
−1.00
−2.00
−3.00
Latitude
157.00
156.00
155.00
Longitude

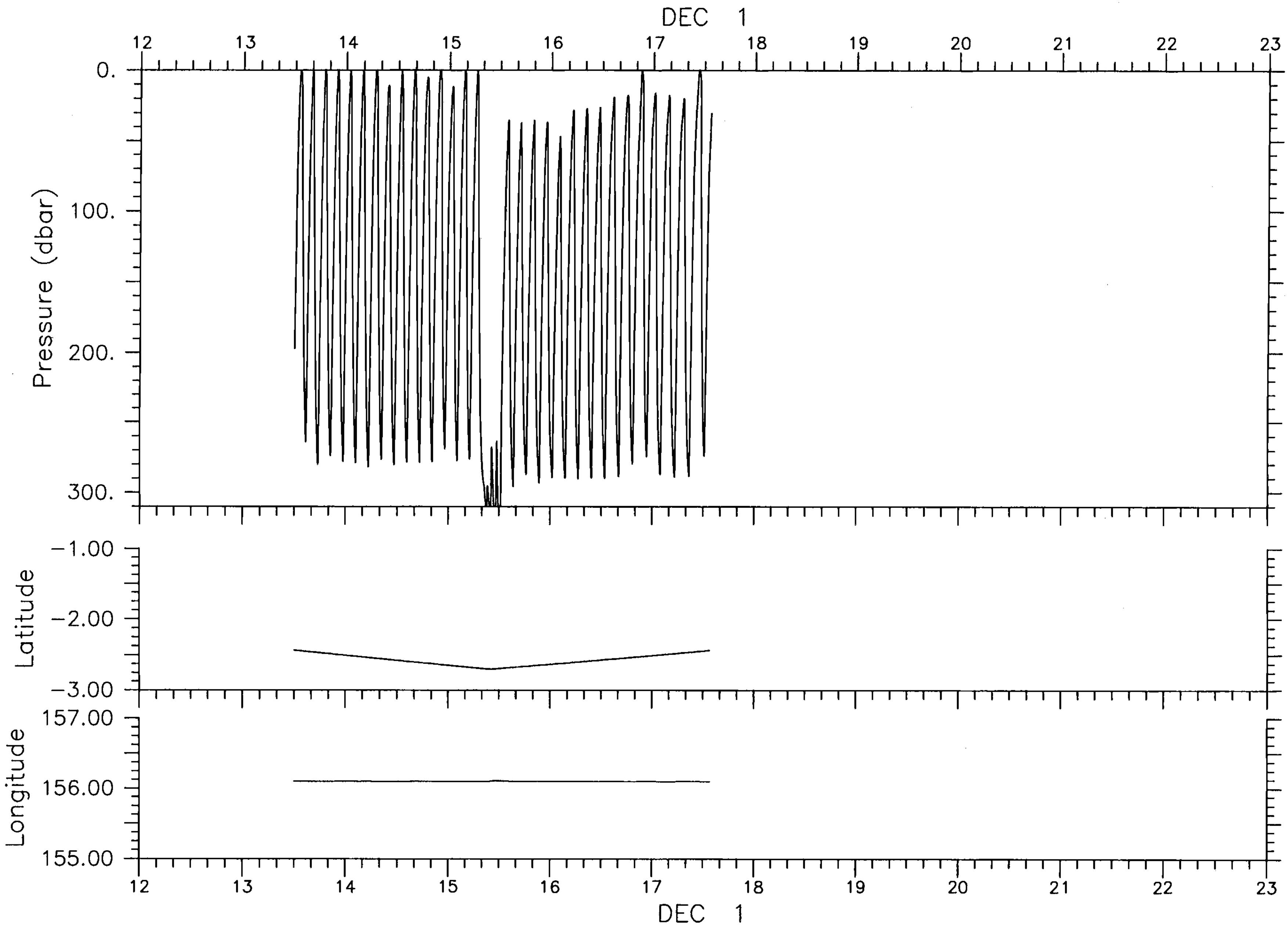
W2E


DEC 1
20
21
22
23
00
01
02
03
04
05
06
07
Pressure (dbar)
0.
100.
200.
300.
Latitude
-1.00
-2.00
-3.00
Longitude
157.00
156.00
155.00
20
21
22
23
00
01
02
03
04
05
06
07
DEC 1

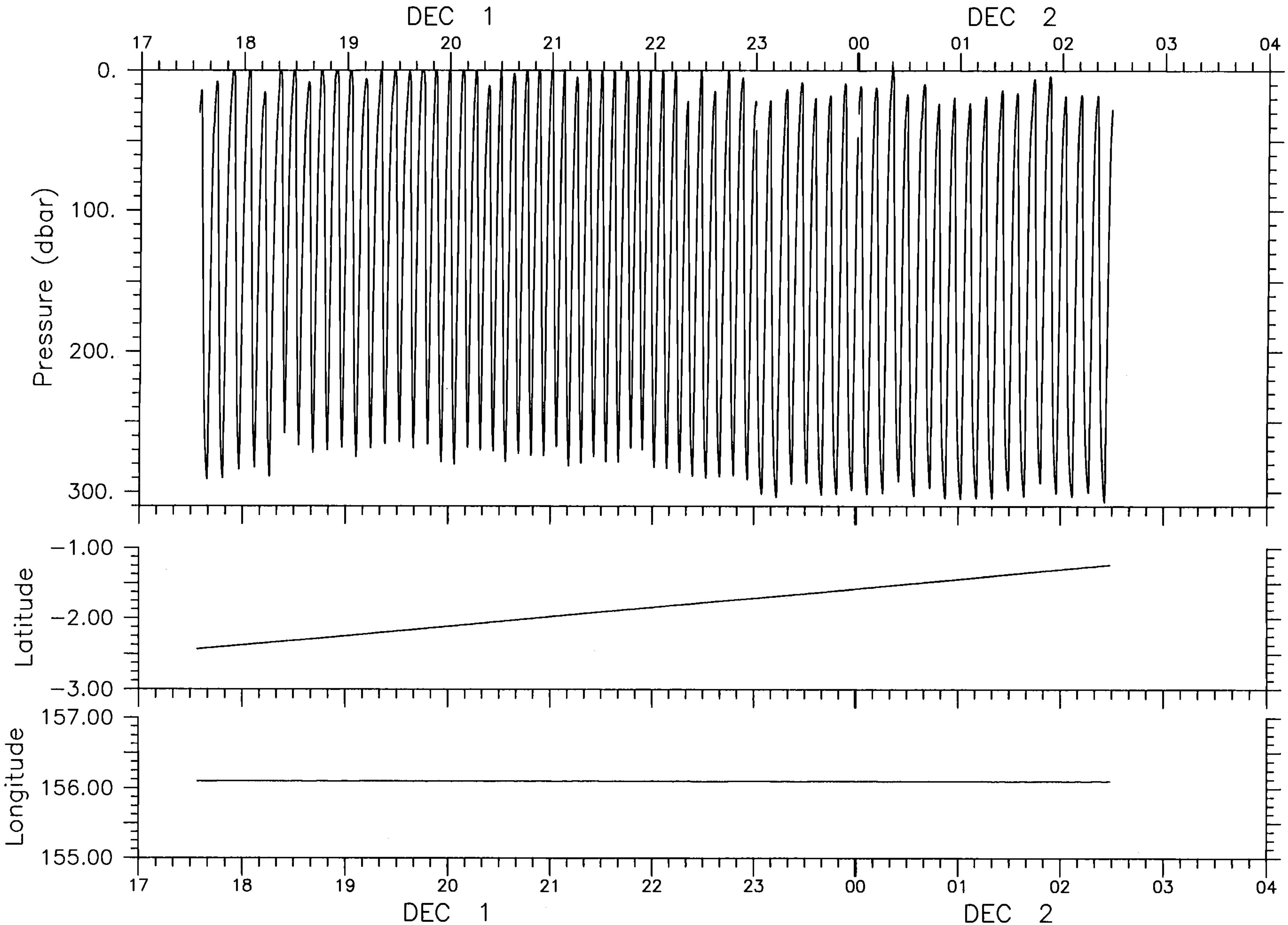
E2N


DEC 1
04
05
06
07
08
09
10
11
12
13
14
15
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude

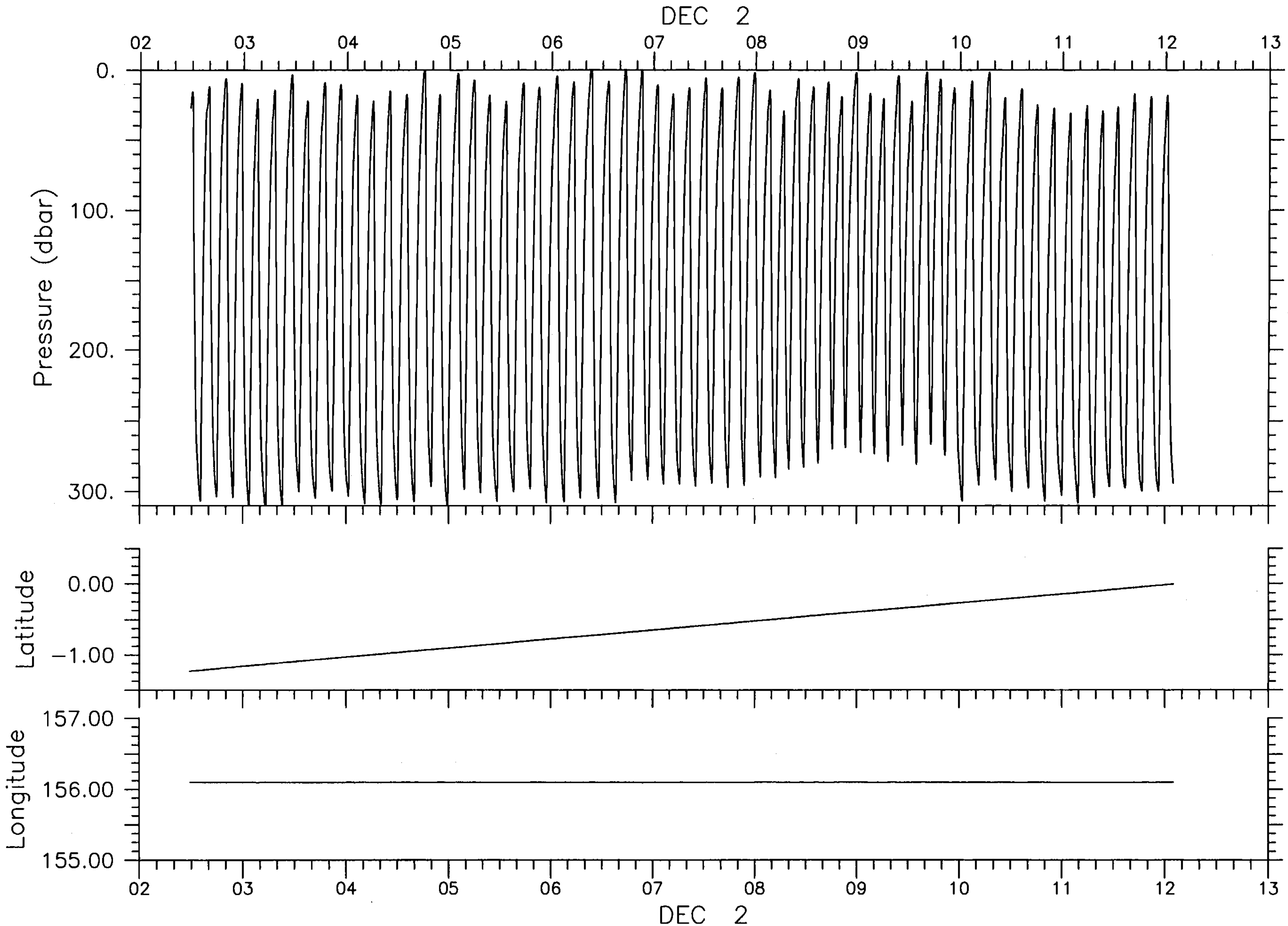
N2S



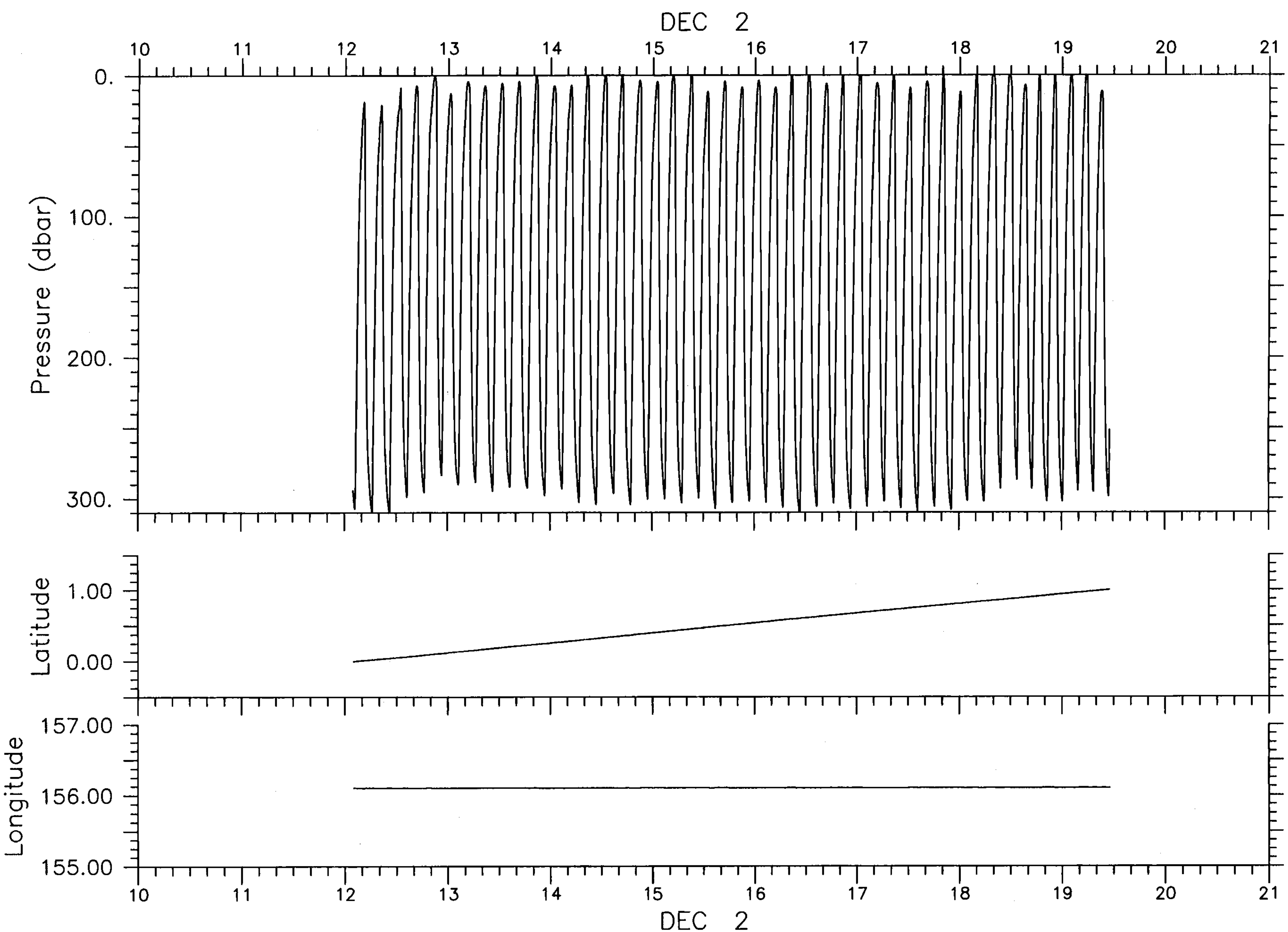
Southward Extension of N2S


DEC 1
DEC 2
17
18
19
20
21
22
23
00
01
02
03
04
0.
100.
200.
300.
Pressure (dbar)
-1.00
-2.00
-3.00
Latitude
157.00
156.00
155.00
Longitude

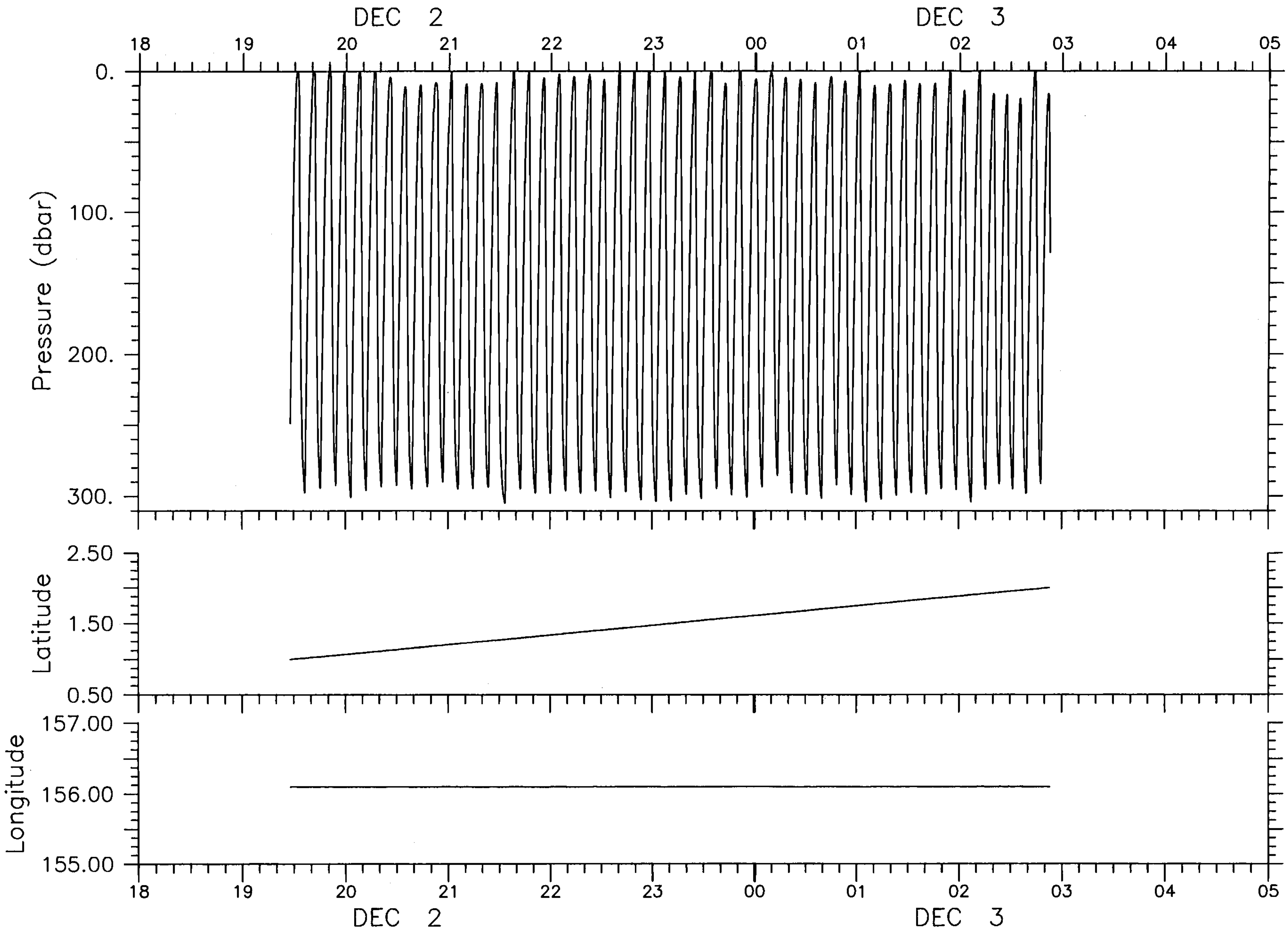
S2N



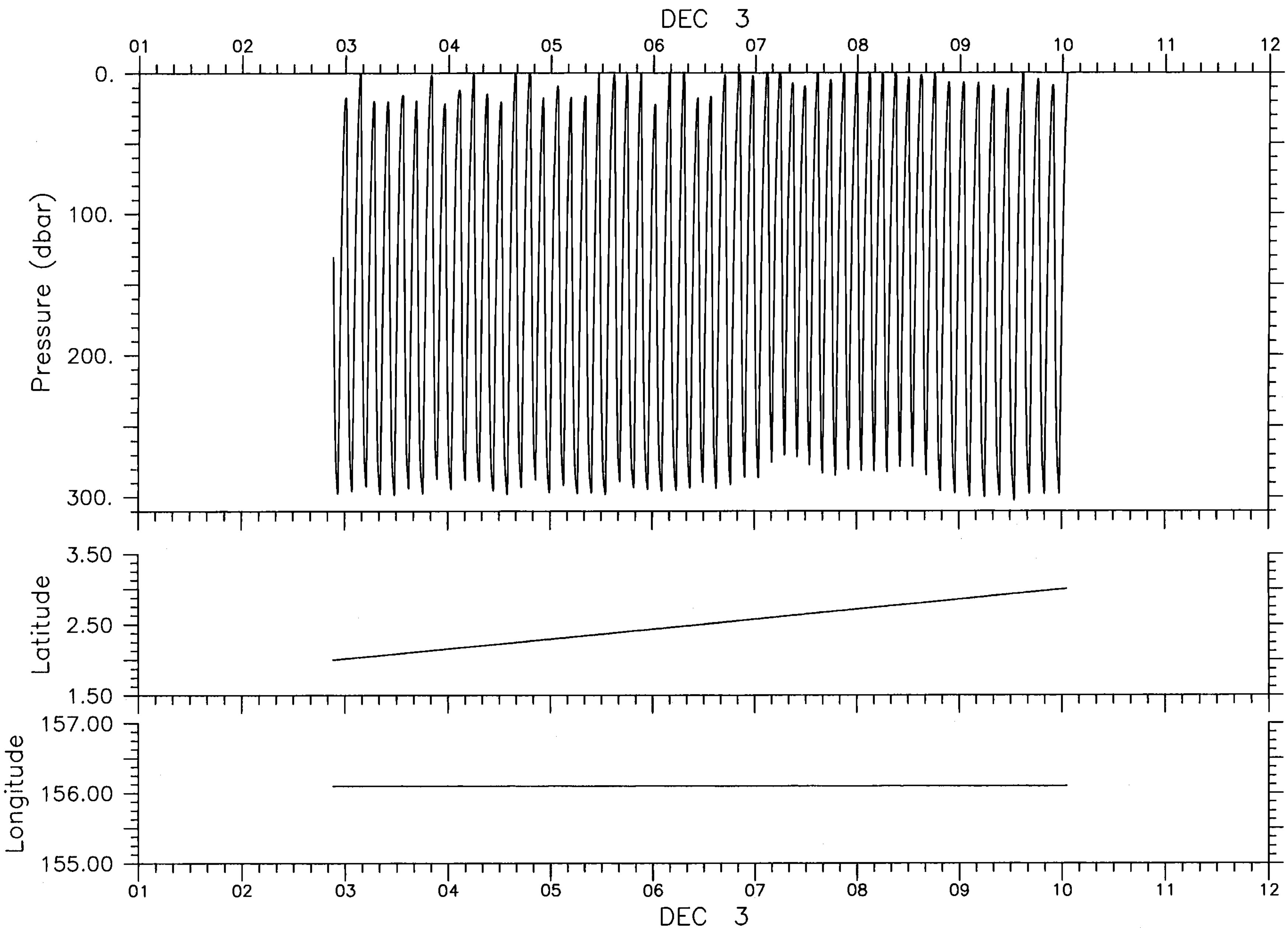
SBN to Equator



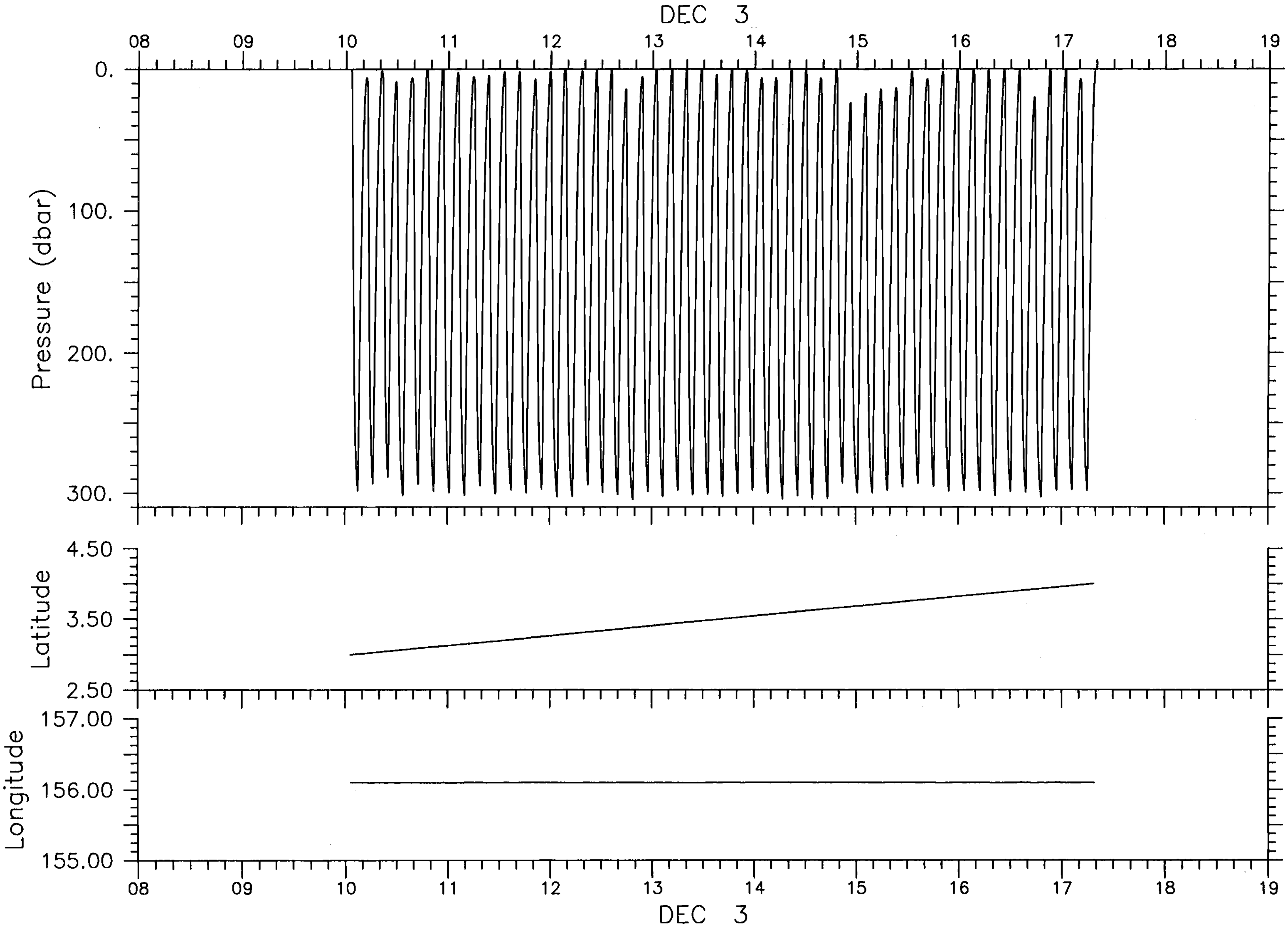
Equator to 1 N


DEC 2
DEC 3
18
19
20
21
22
23
00
01
02
03
04
05
0.
100.
200.
300.
Pressure (dbar)
2.50
1.50
0.50
Latitude
157.00
156.00
155.00
Longitude

1 N to 2 N

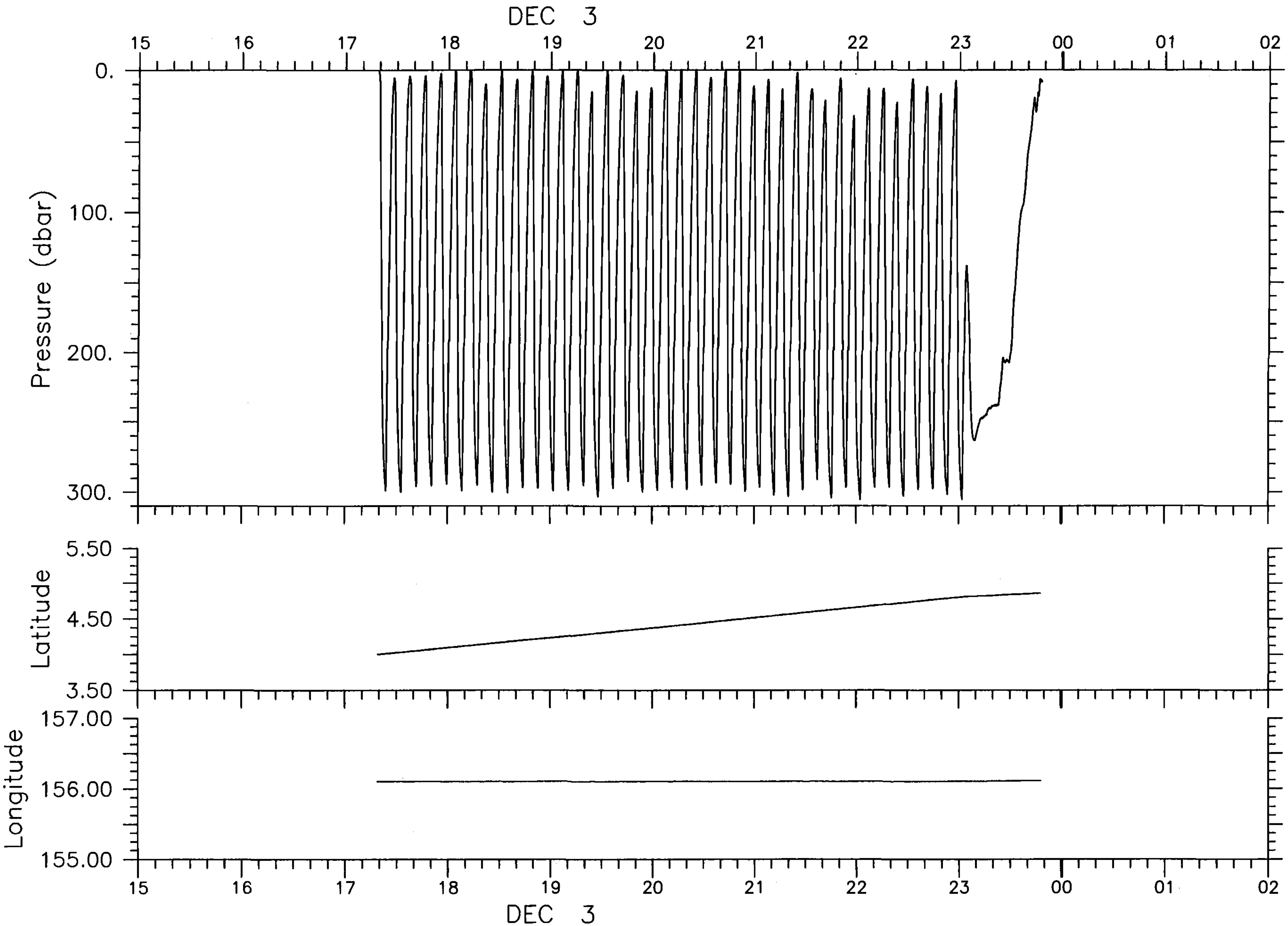

DEC 3
01
02
03
04
05
06
07
08
09
10
11
12
0.
100.
200.
300.
Pressure (dbar)
3.50
2.50
1.50
Latitude
157.00
156.00
155.00
Longitude
DEC 3

2 N to 3 N



DEC 3
08
09
10
11
12
13
14
15
16
17
18
19
0.
100.
200.
300.
Pressure (dbar)
4.50
3.50
2.50
Latitude
157.00
156.00
155.00
Longitude
DEC 3

3 N to 4 N

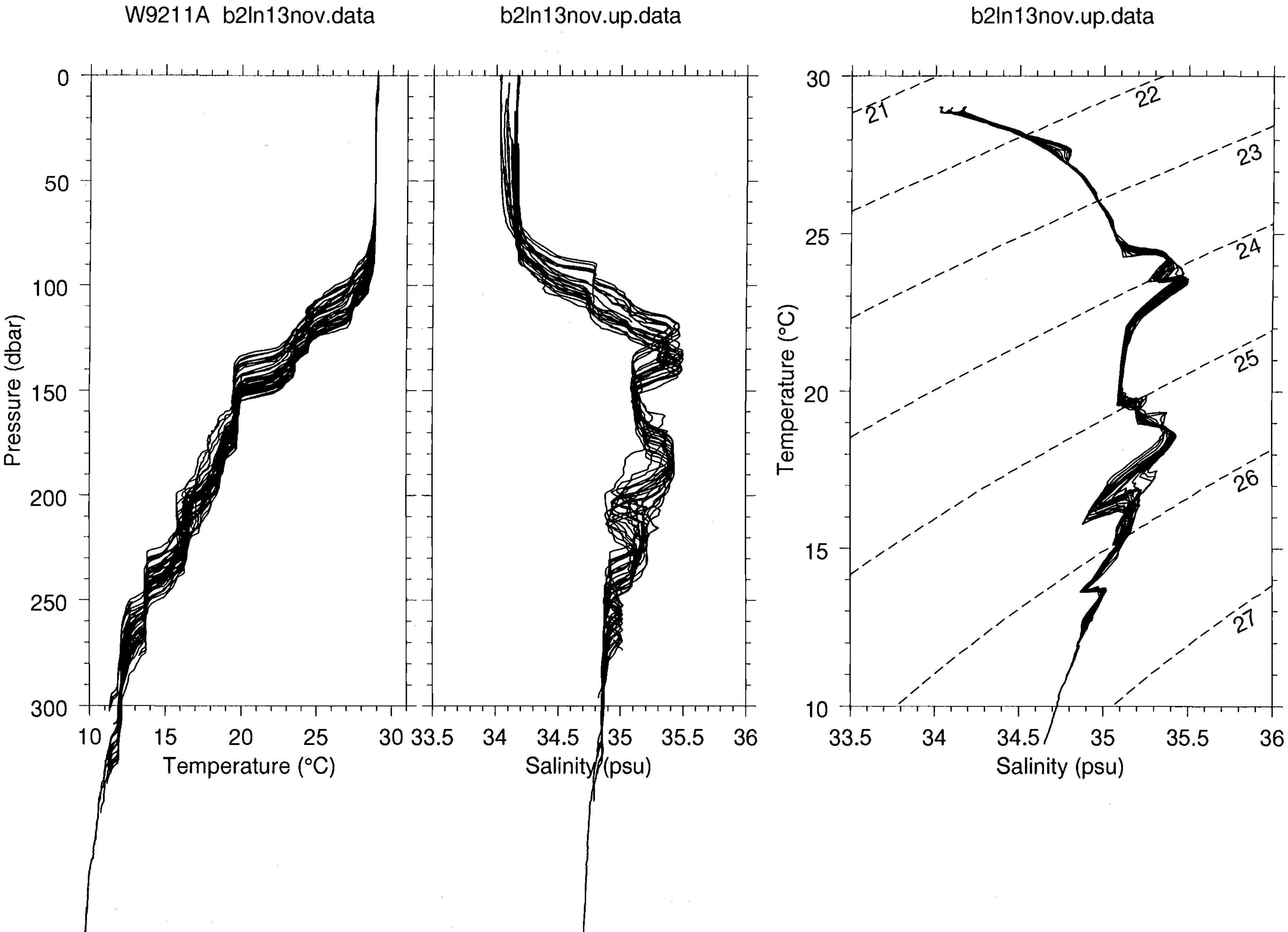

DEC 3
15 16 17 18 19 20 21 22 23 00 01 02
Pressure (dbar)
0.
100.
200.
300.
Latitude
5.50
4.50
3.50
Longitude
157.00
156.00
155.00
15 16 17 18 19 20 21 22 23 00 01 02
DEC 3

4 N to 5 N

ENSEMBLE PROFILES

OF

SEASOAR TEMPERATURE AND SALINITY


W9211A b2ln13nov.data
b2ln13nov.up.data
b2ln13nov.up.data
Pressure (dbar)
0
50
100
150
200
250
300
10
15
20
25
30
Temperature (°C)
33.5
34
34.5
35
35.5
36
Salinity (psu)
30
25
20
15
10
Temperature (°C)
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35.5
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Salinity (psu)
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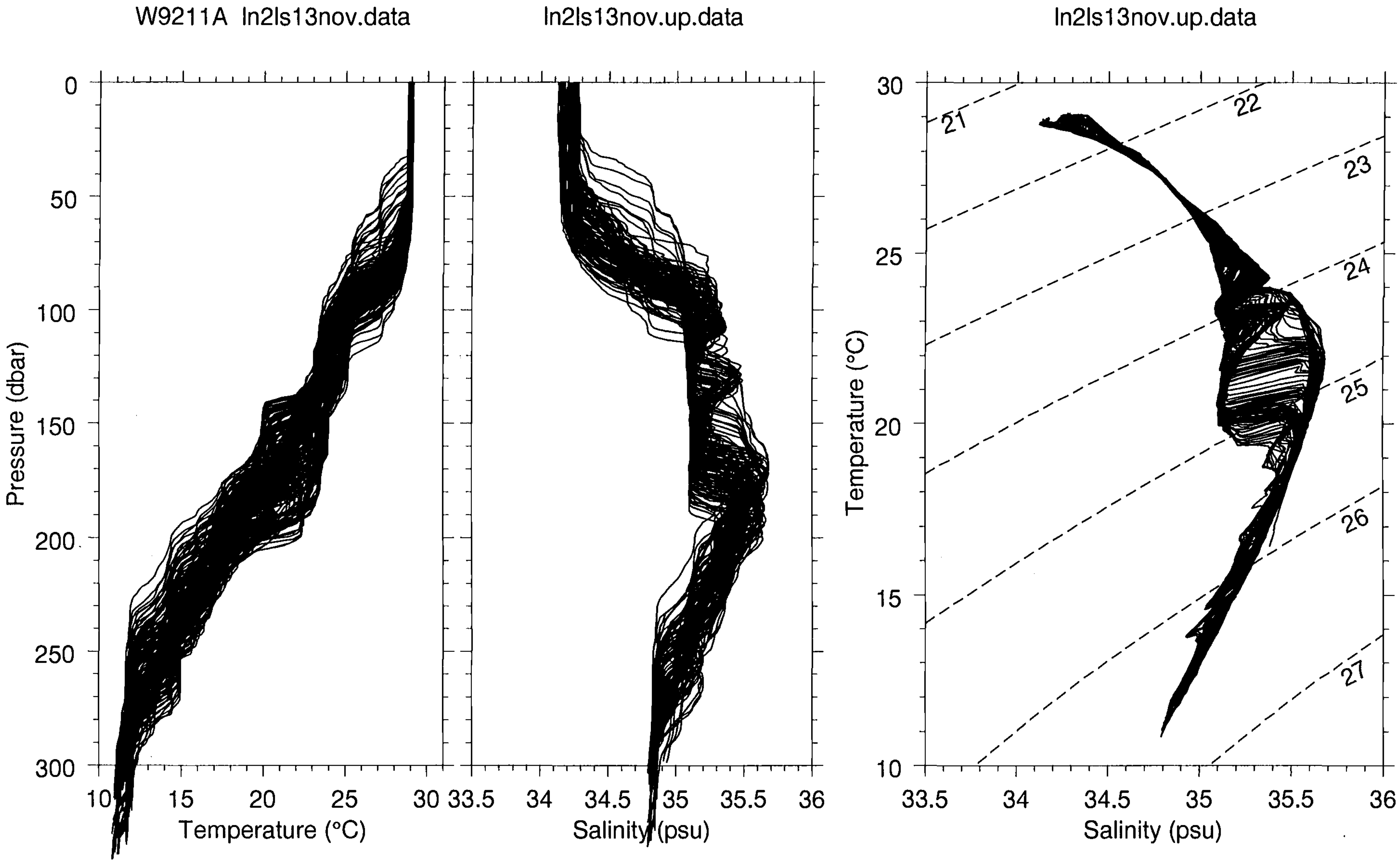

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Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
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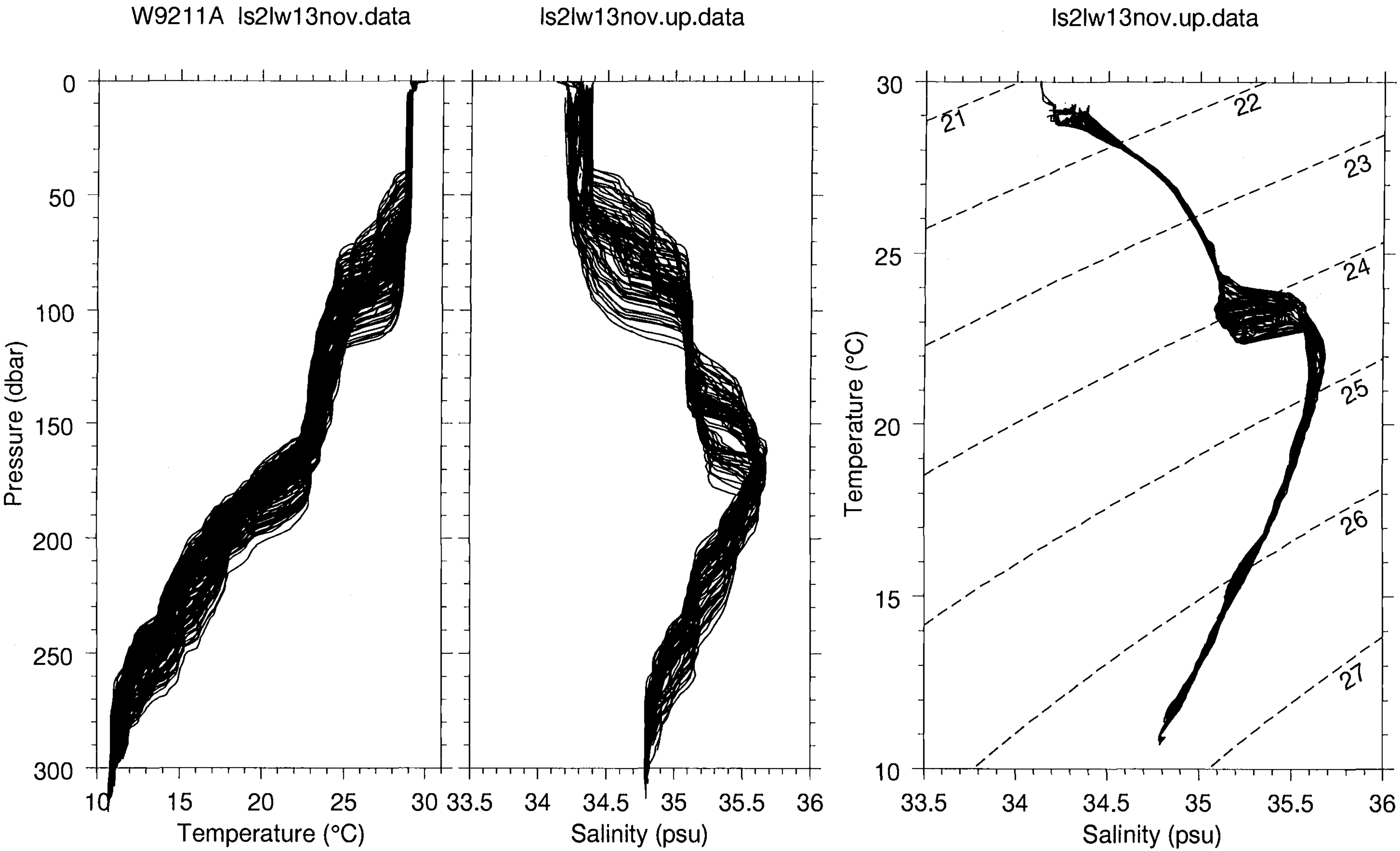
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Temperature (°C)
33.5
34
34.5
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35.5
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Salinity (psu)
30
25
20
15
10
Temperature (°C)
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Salinity (psu)
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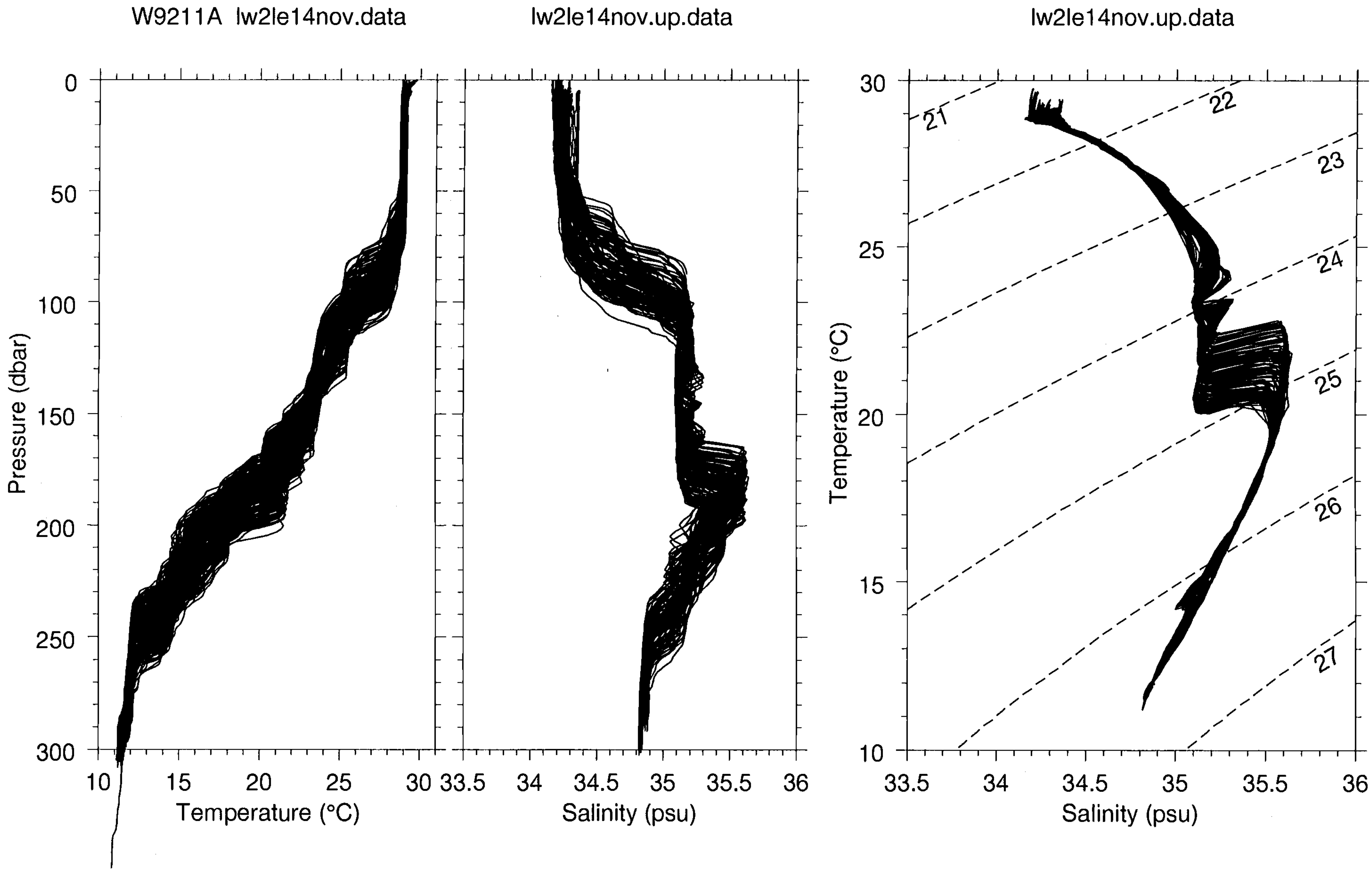
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lw2le14nov.up.data
lw2le14nov.up.data
Pressure (dbar)
Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
0
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250
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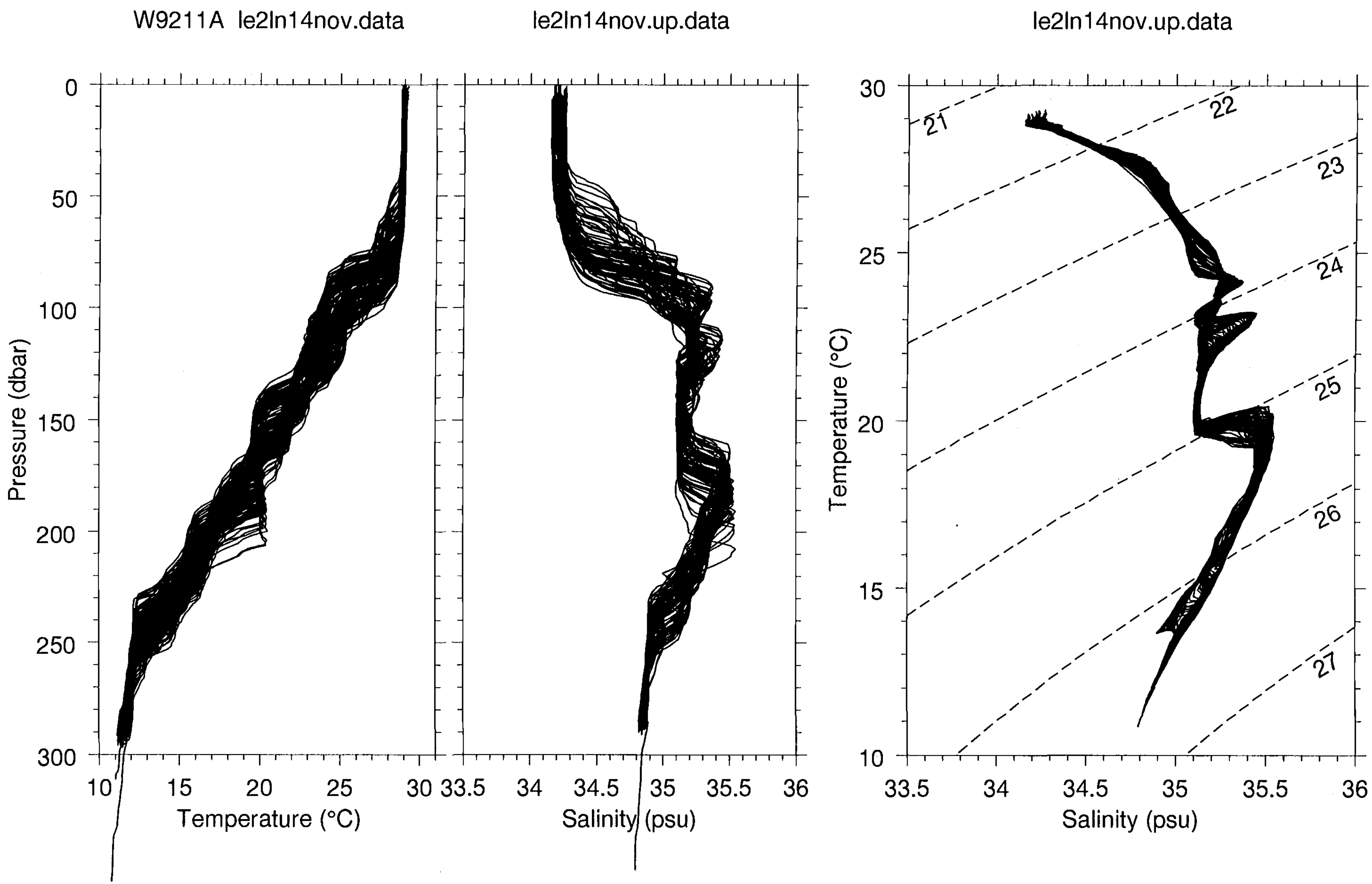
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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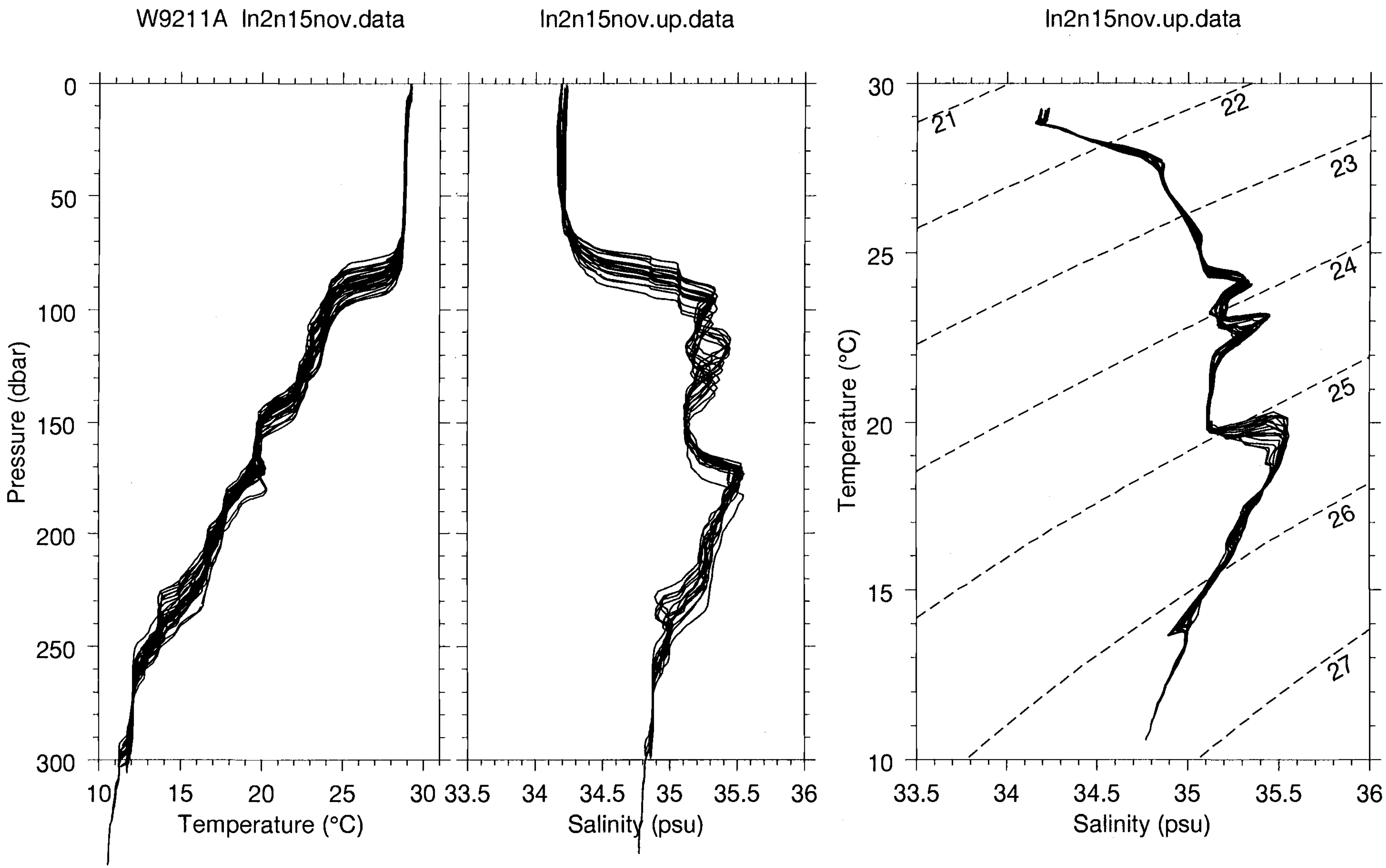
Salinity (psu)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Temperature (°C)
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35.5
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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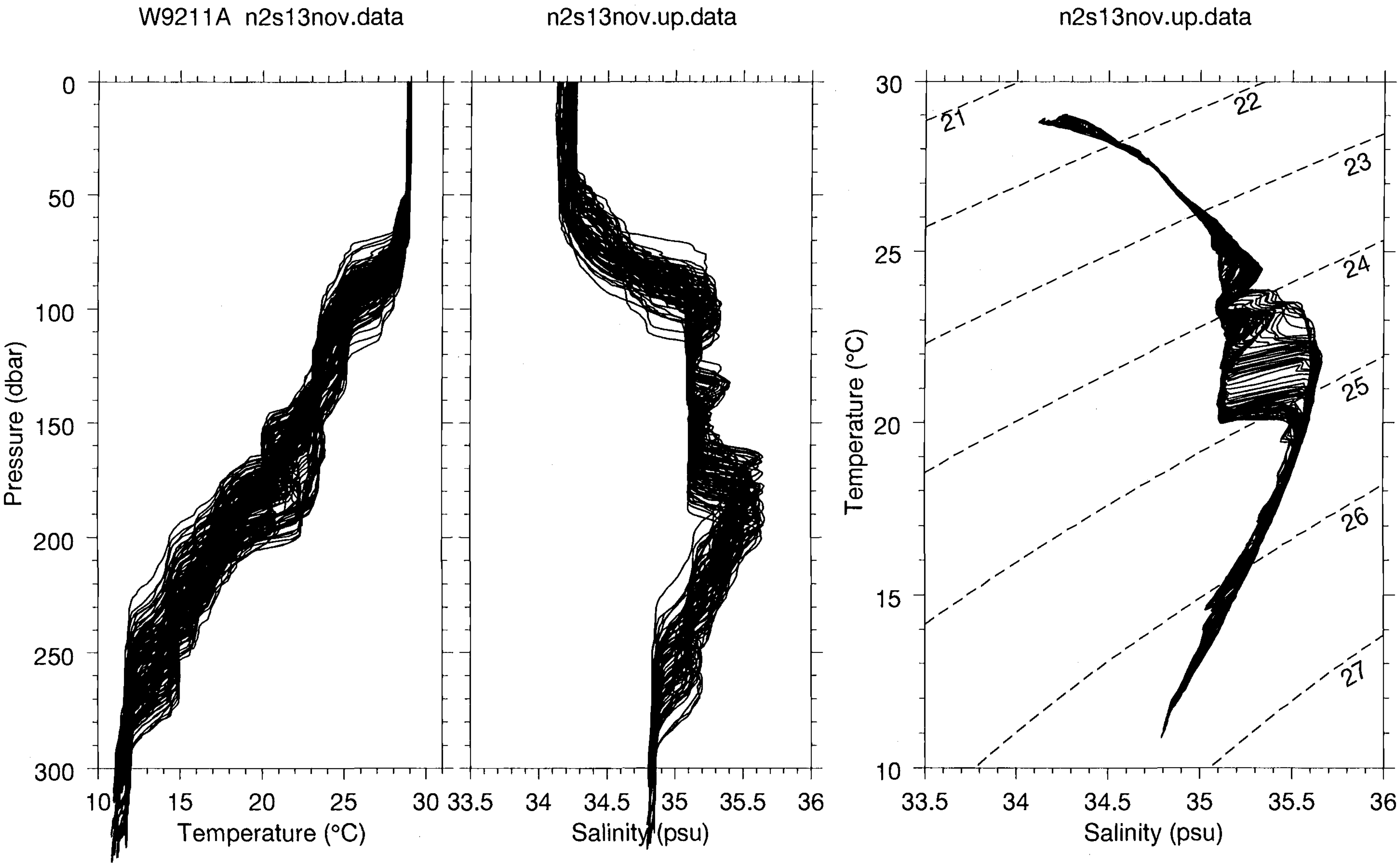

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Temperature (°C)
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35.5
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Salinity (psu)
Temperature (°C)
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35.5
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Salinity (psu)
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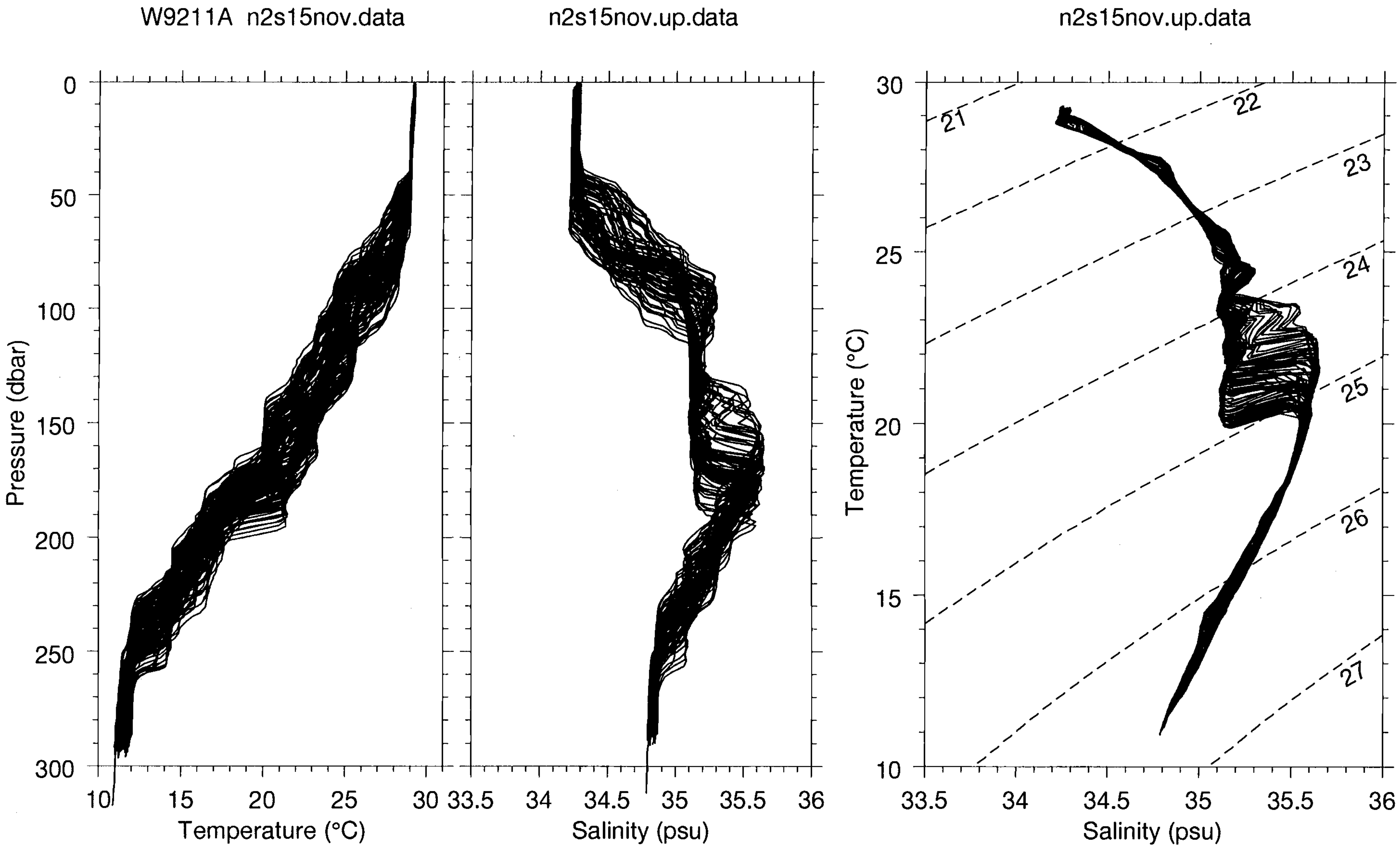
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Pressure (dbar)
Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
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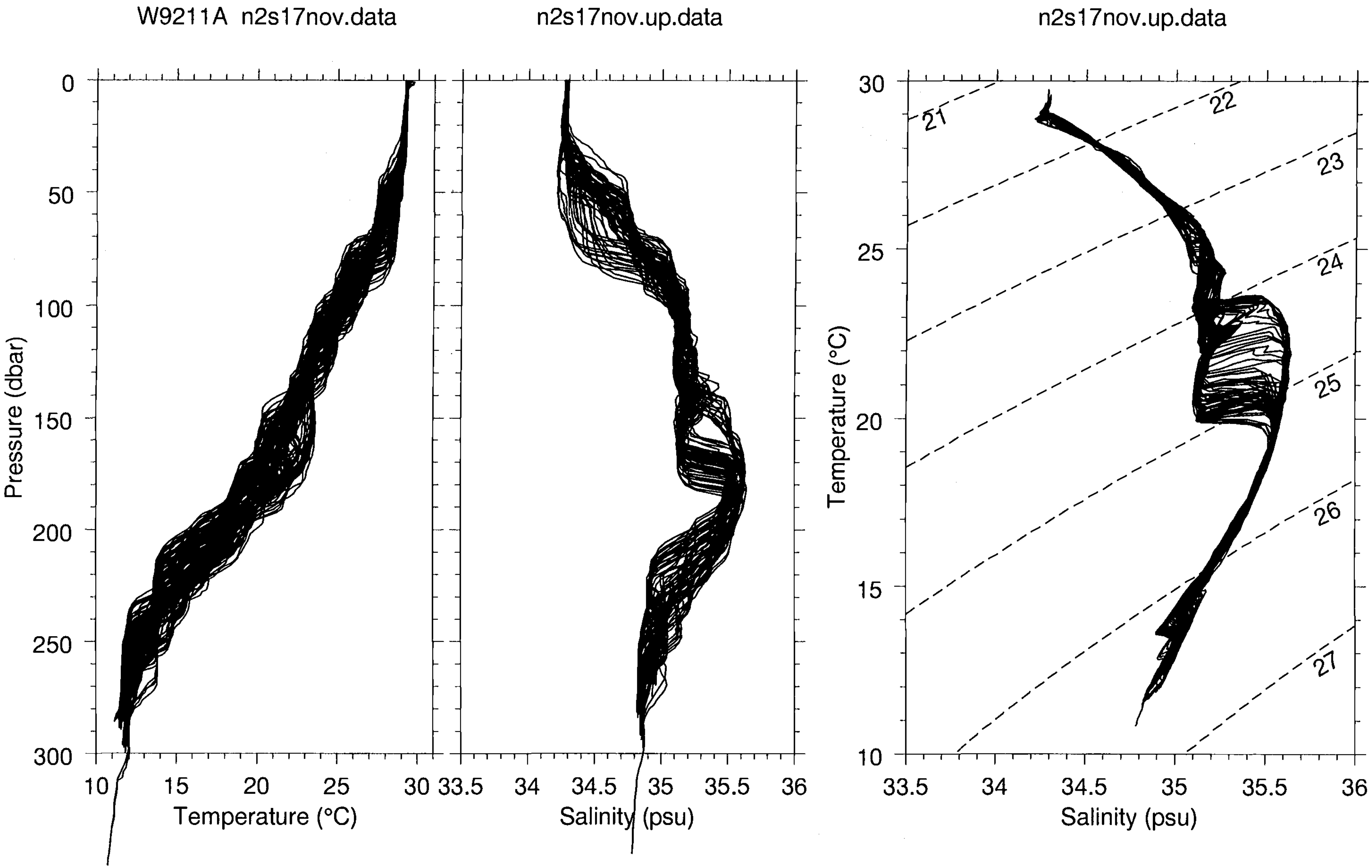

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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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35.5
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Salinity (psu)
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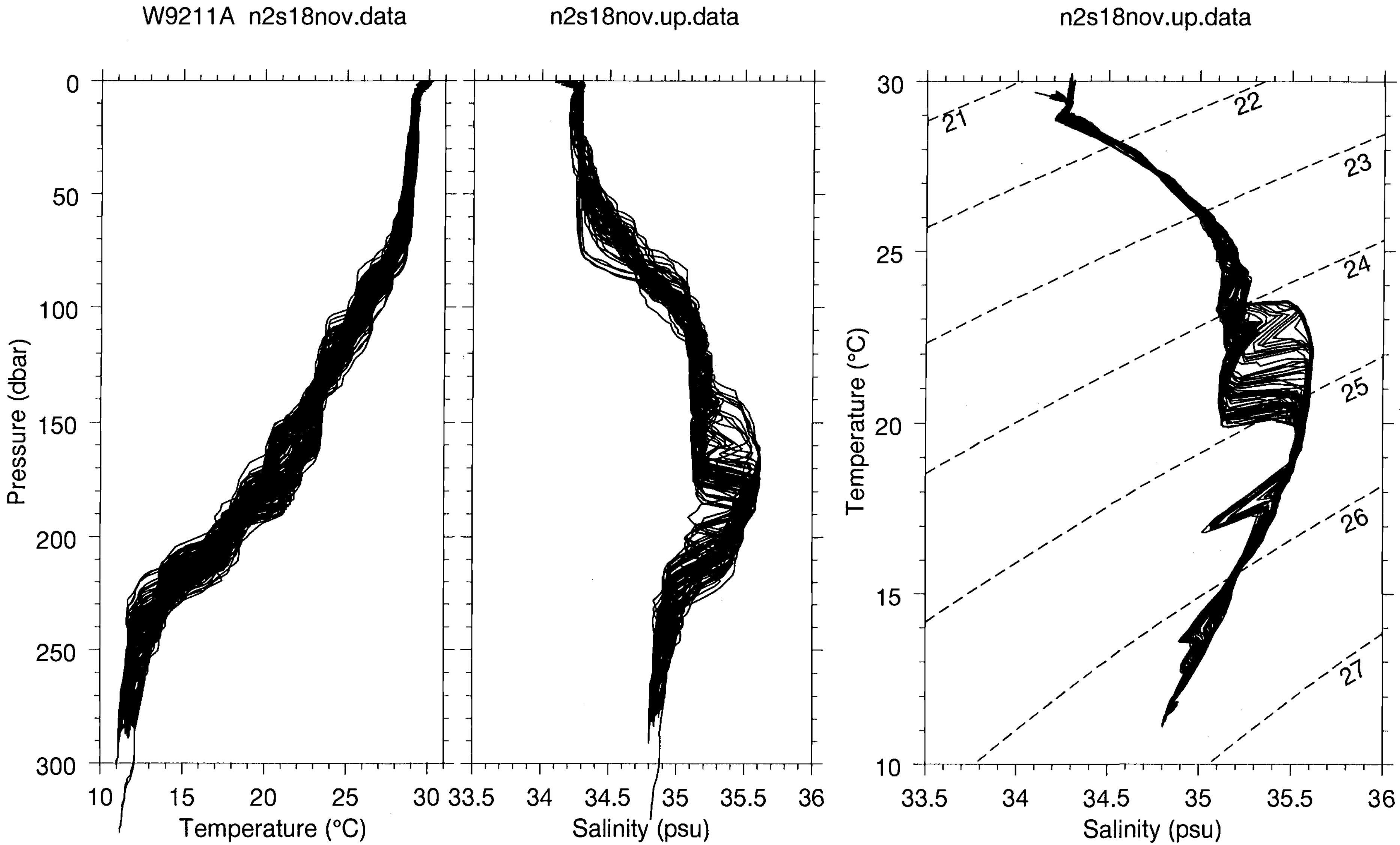
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n2s18nov.up.data
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Pressure (dbar)
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Temperature (°C)
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35.5
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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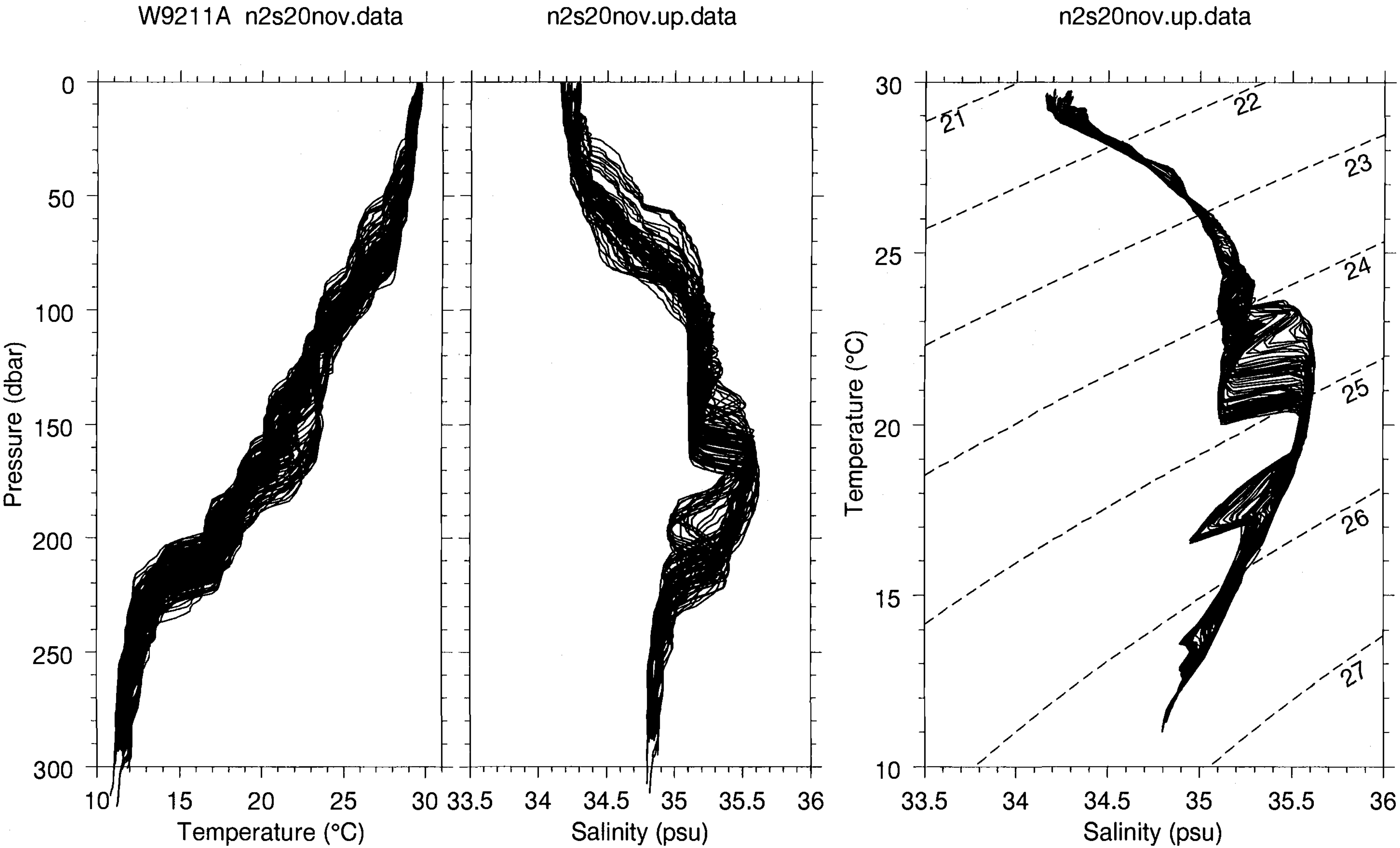
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n2s20nov.up.data
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Salinity (psu)
Temperature (°C)
Salinity (psu)
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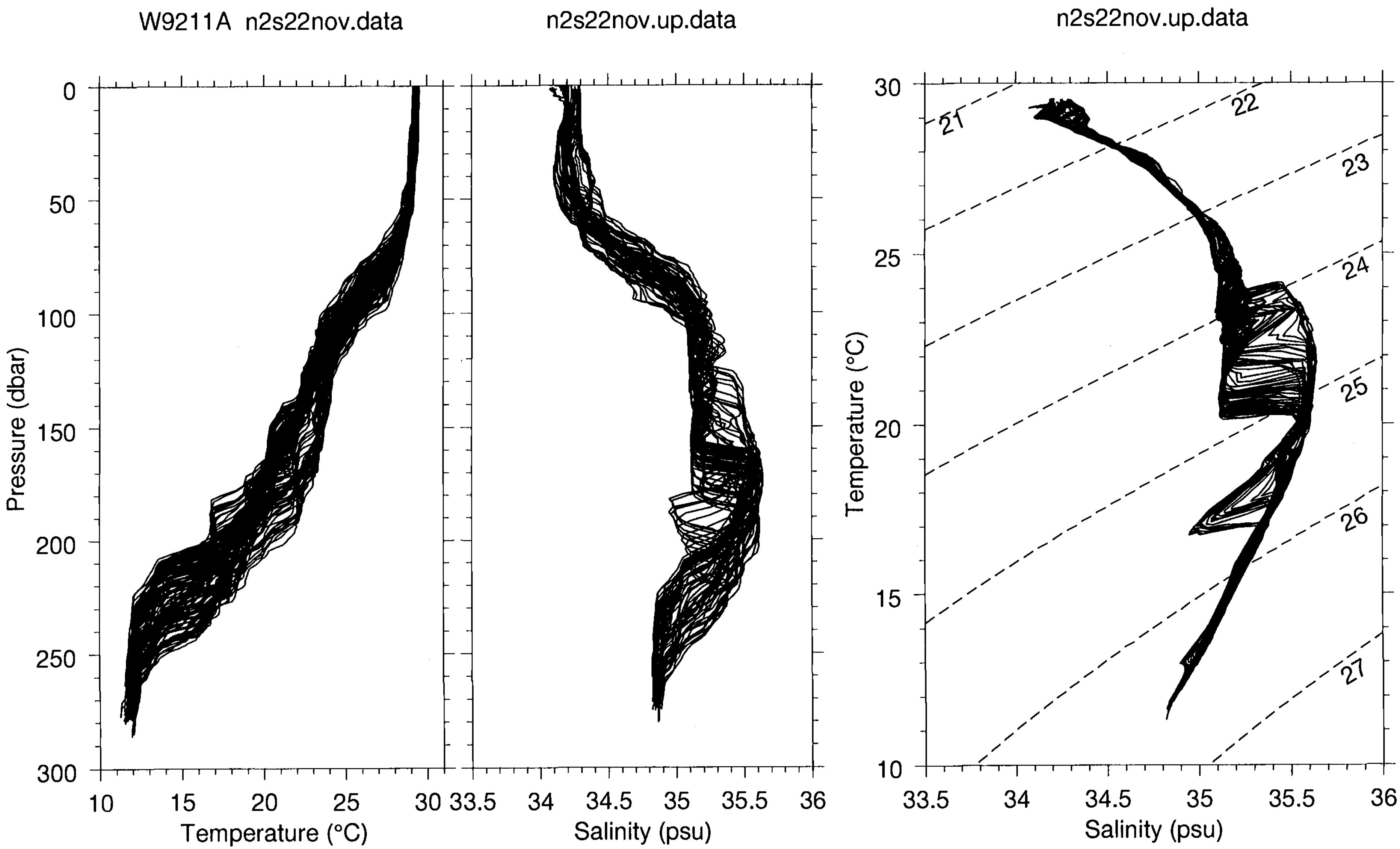
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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35.5
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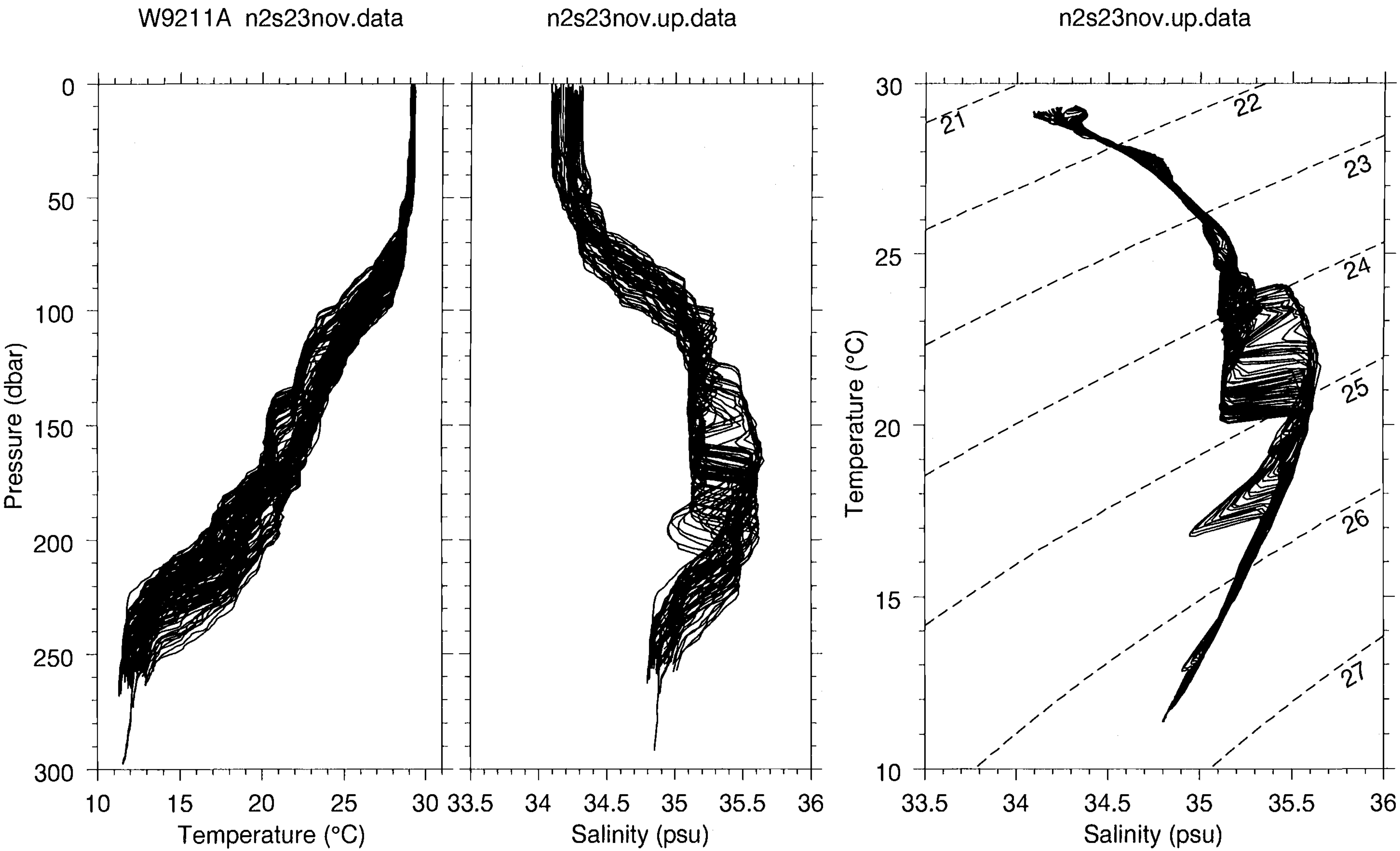
Salinity (psu)


W9211A n2s23nov.data
n2s23nov.up.data
n2s23nov.up.data
Pressure (dbar)
Temperature (°C)
Salinity (psu)
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Salinity (psu)
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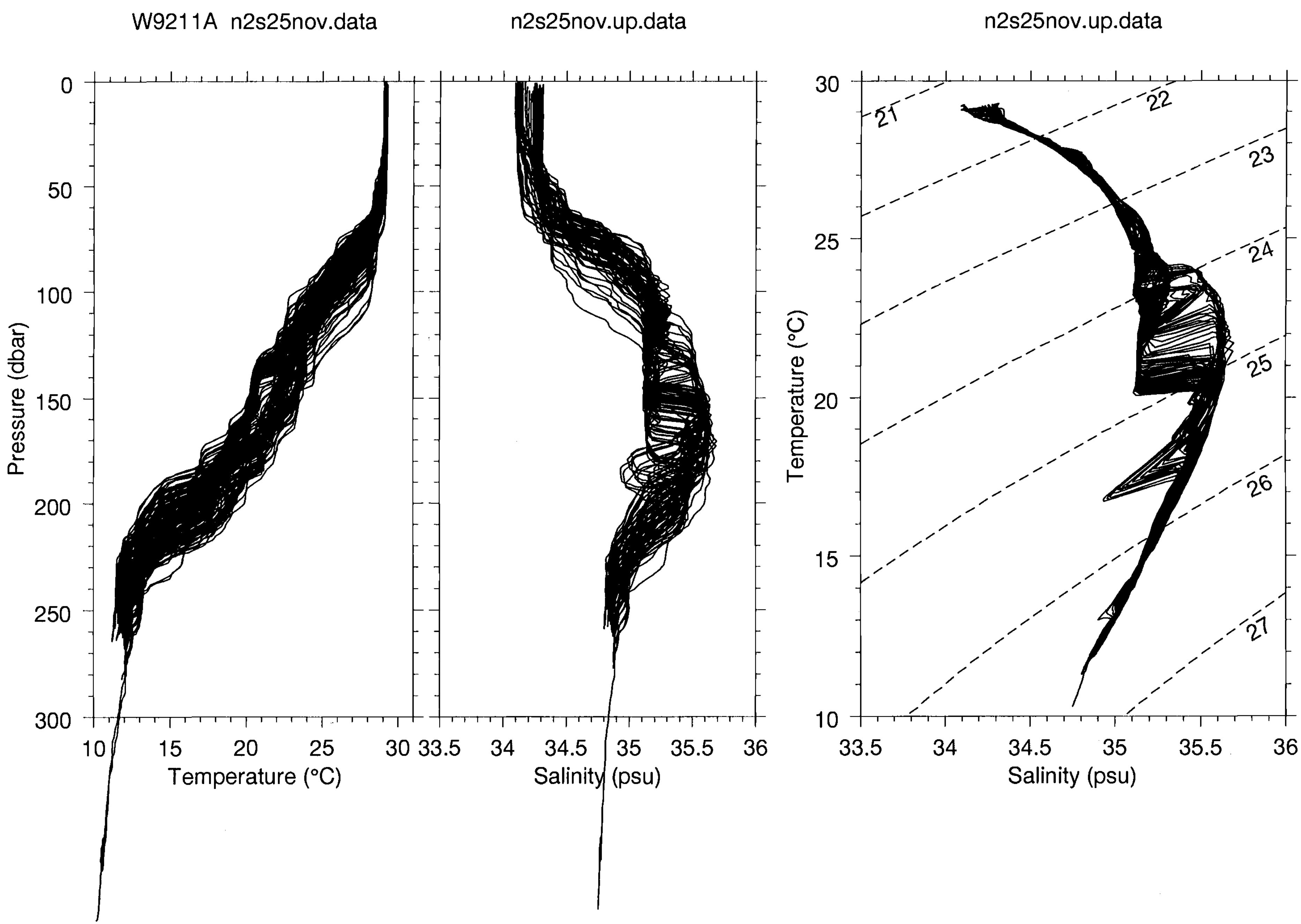

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Temperature (°C)
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35.5
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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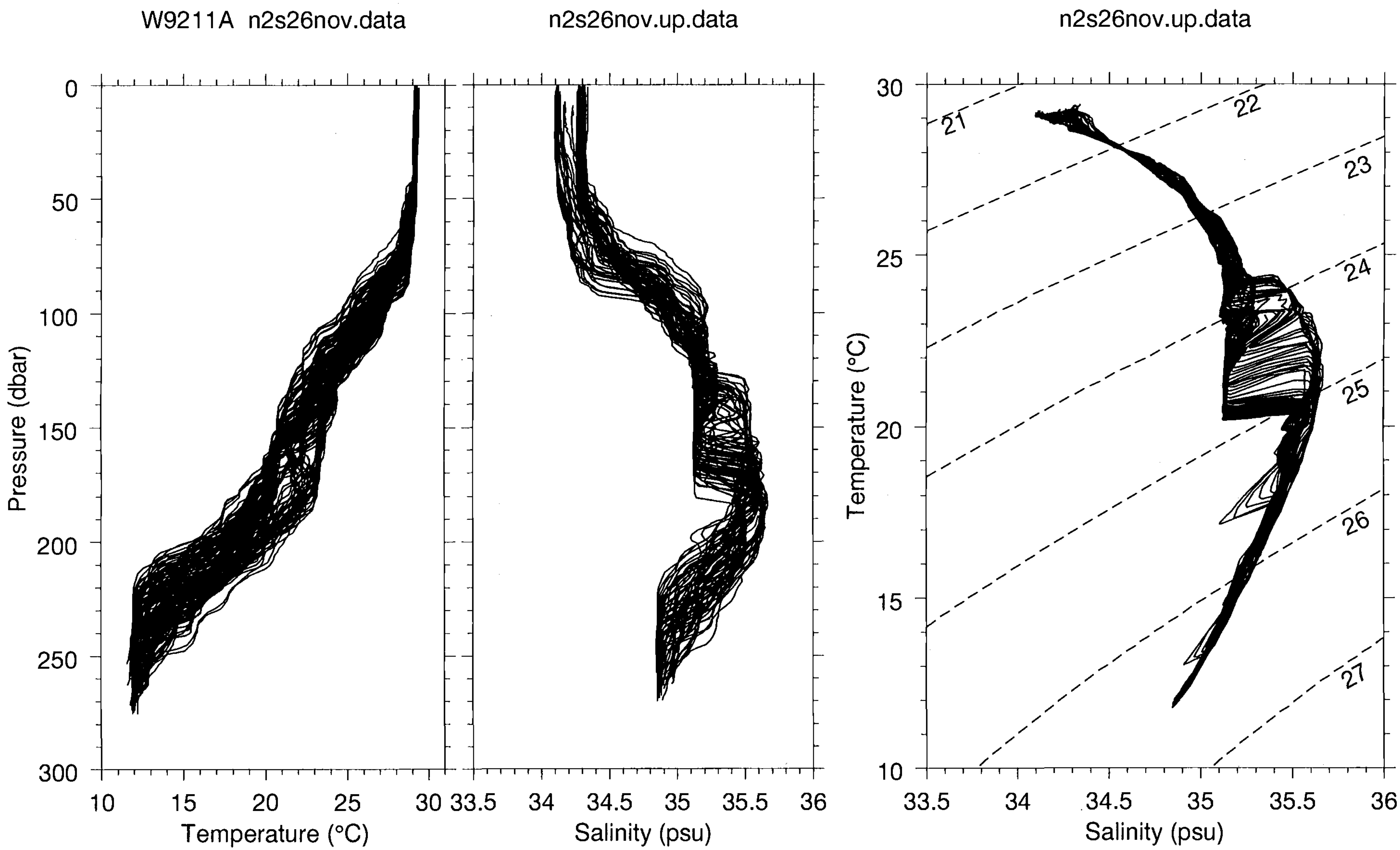
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Temperature (°C)
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35.5
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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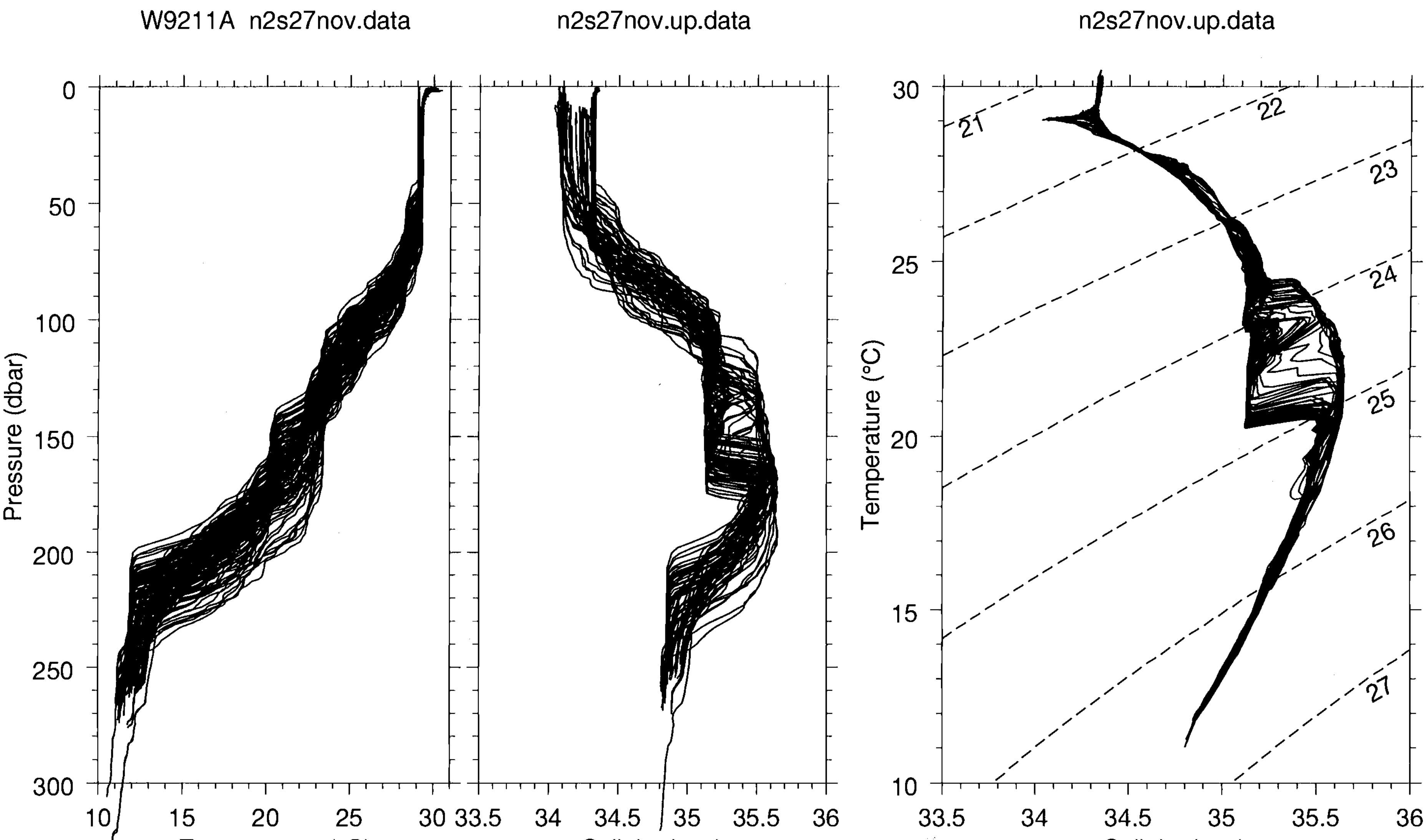
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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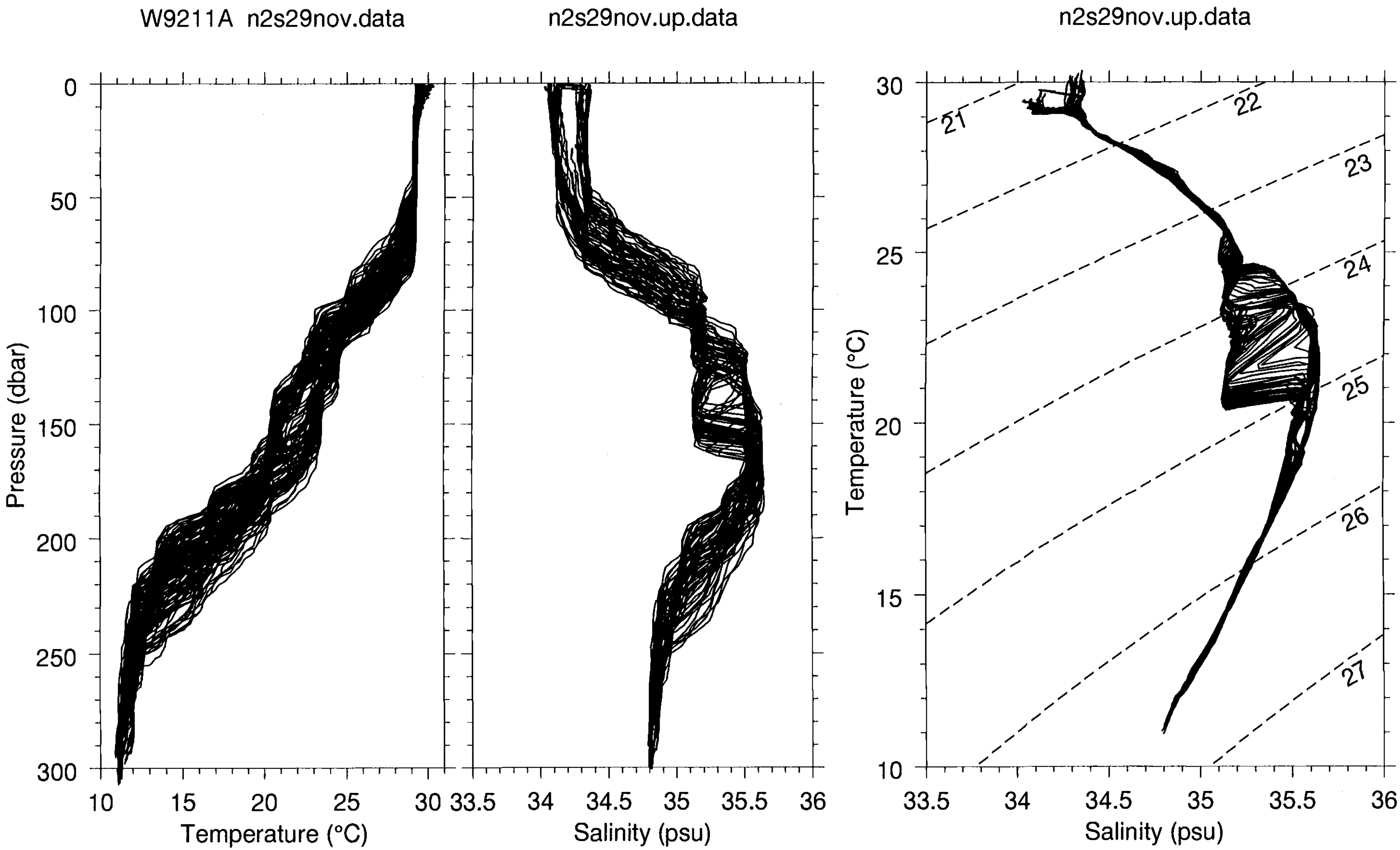
Salinity (psu)


W9211A n2s29nov.data
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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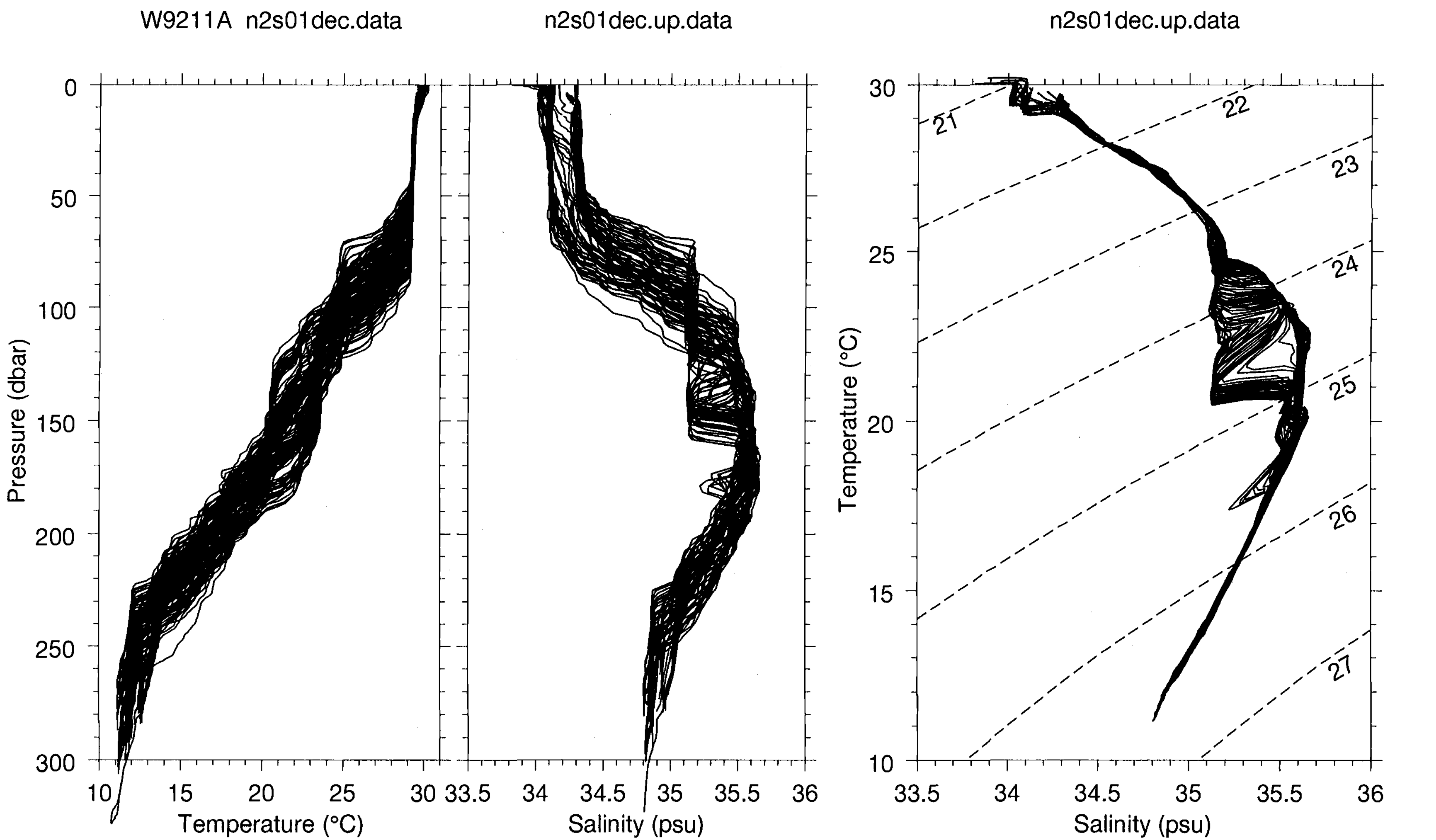
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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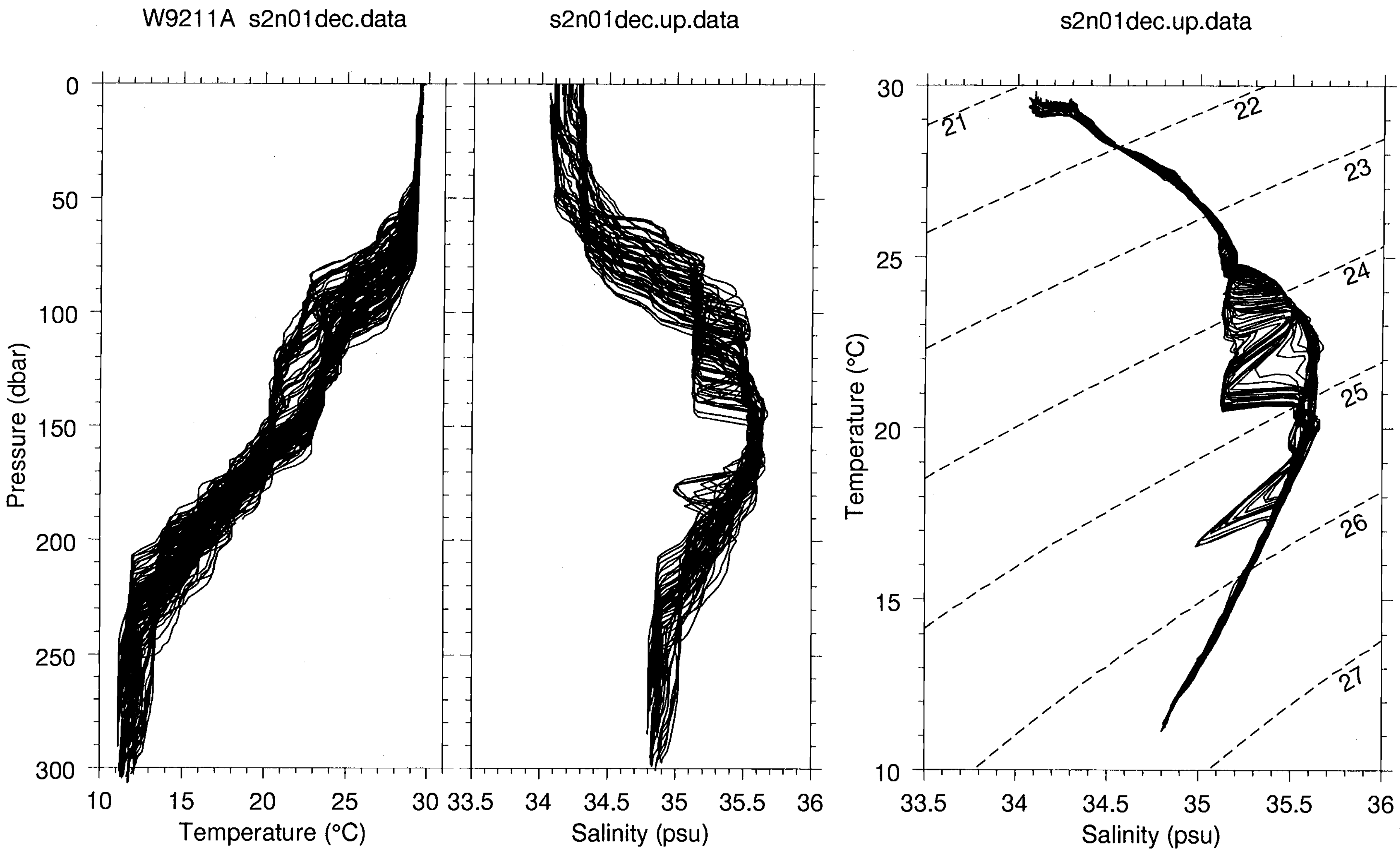
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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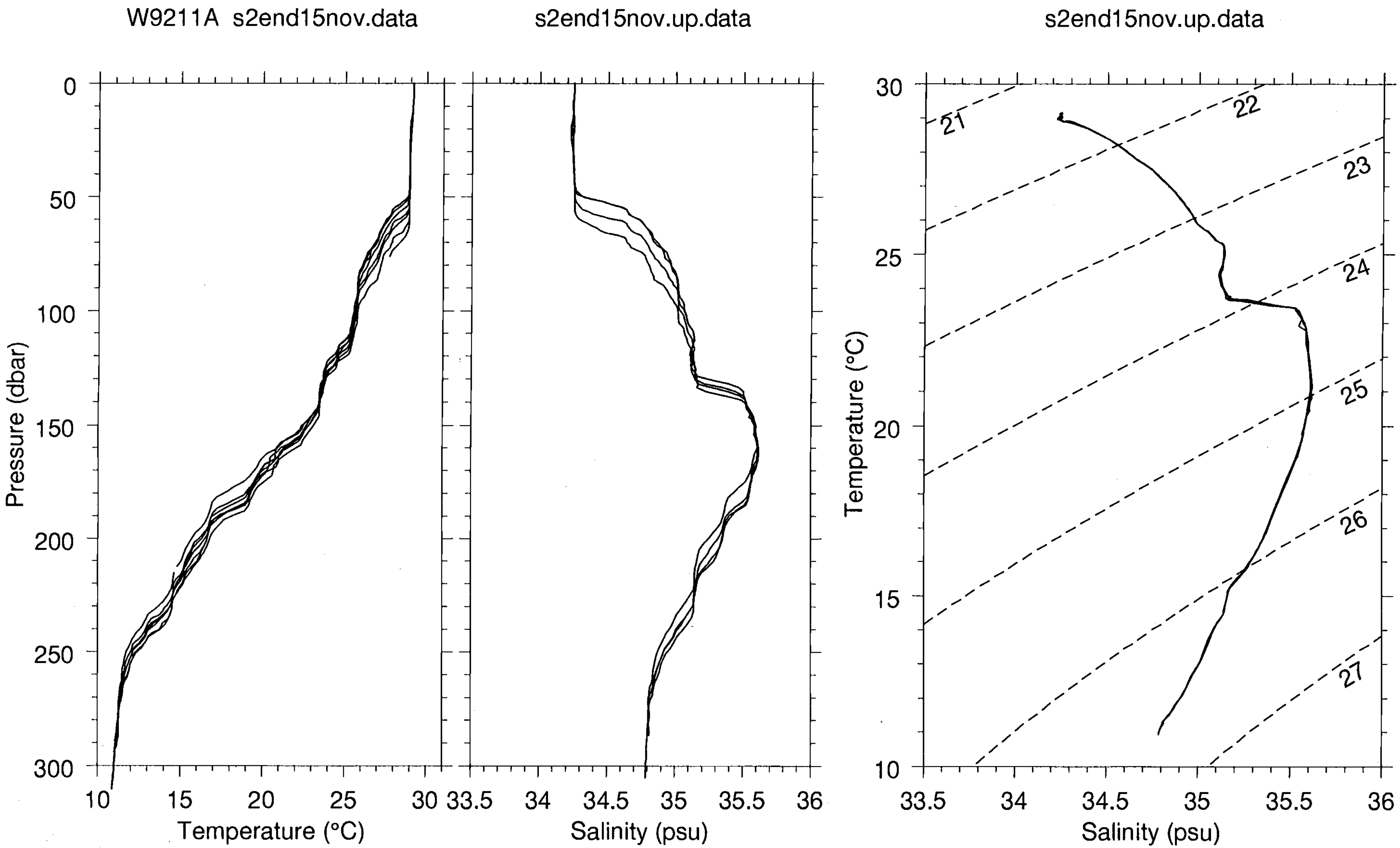
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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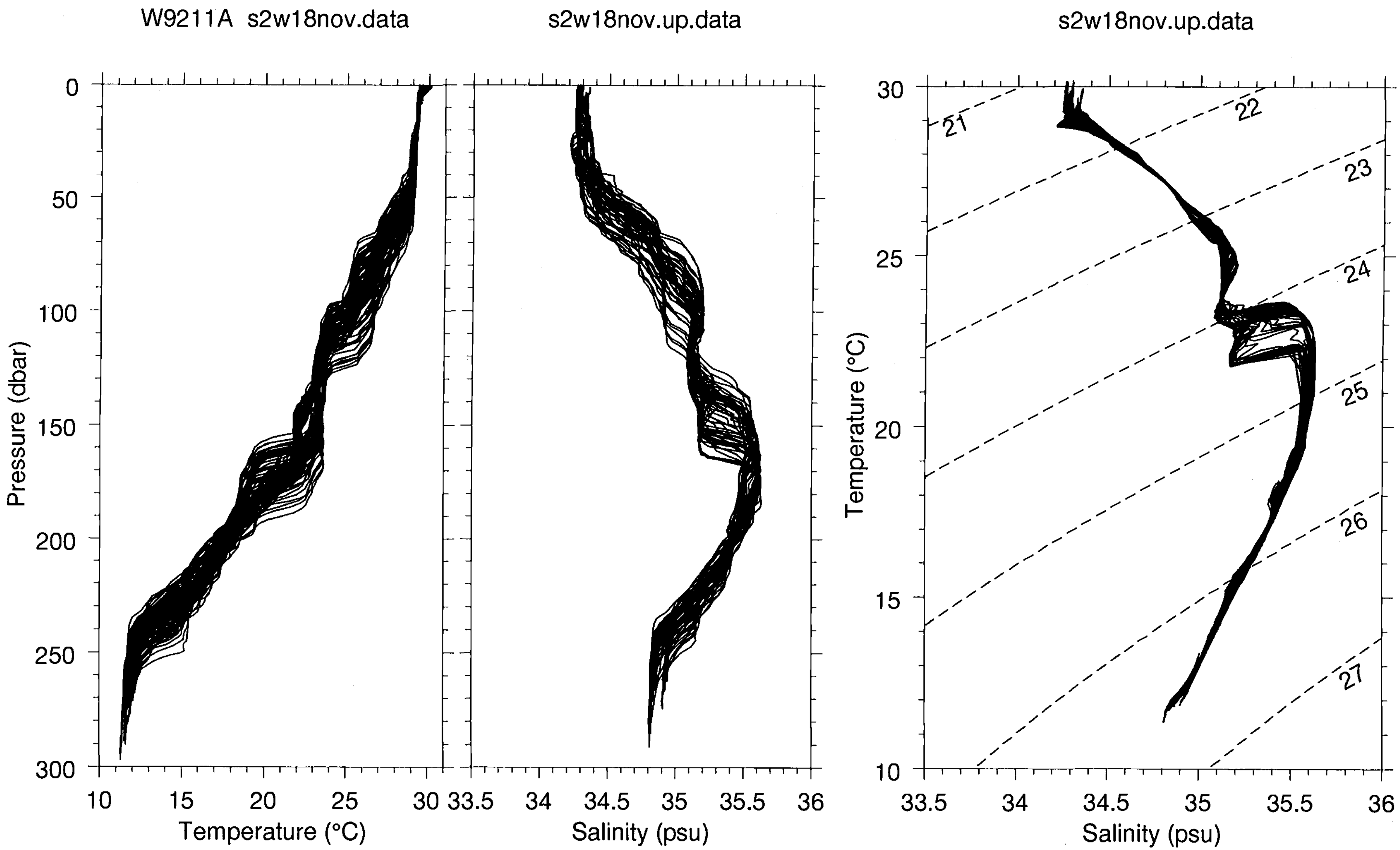
Salinity (psu)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Salinity (psu)
Temperature (°C)
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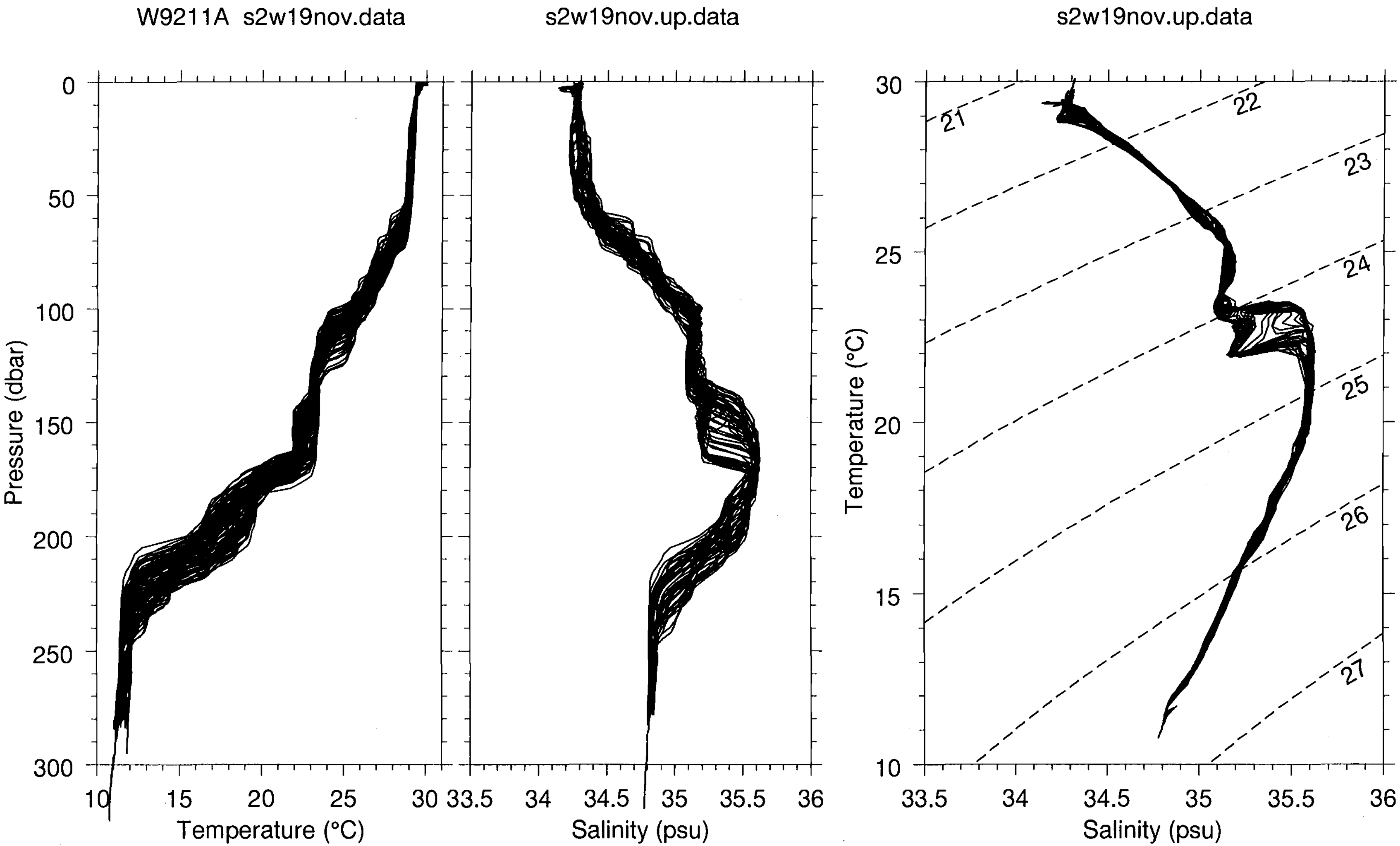
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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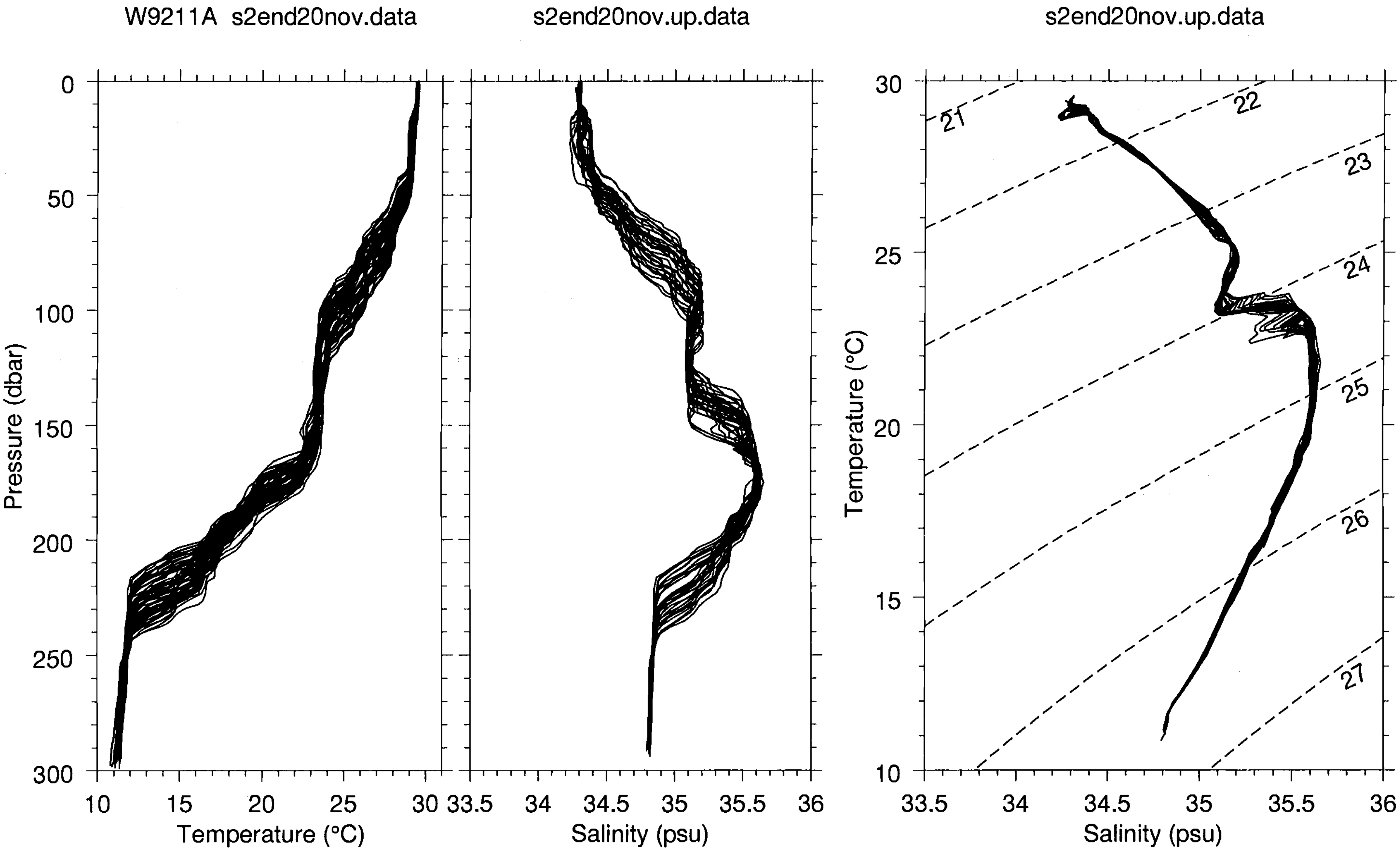
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Temperature (°C)
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35.5
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Salinity (psu)
Temperature (°C)
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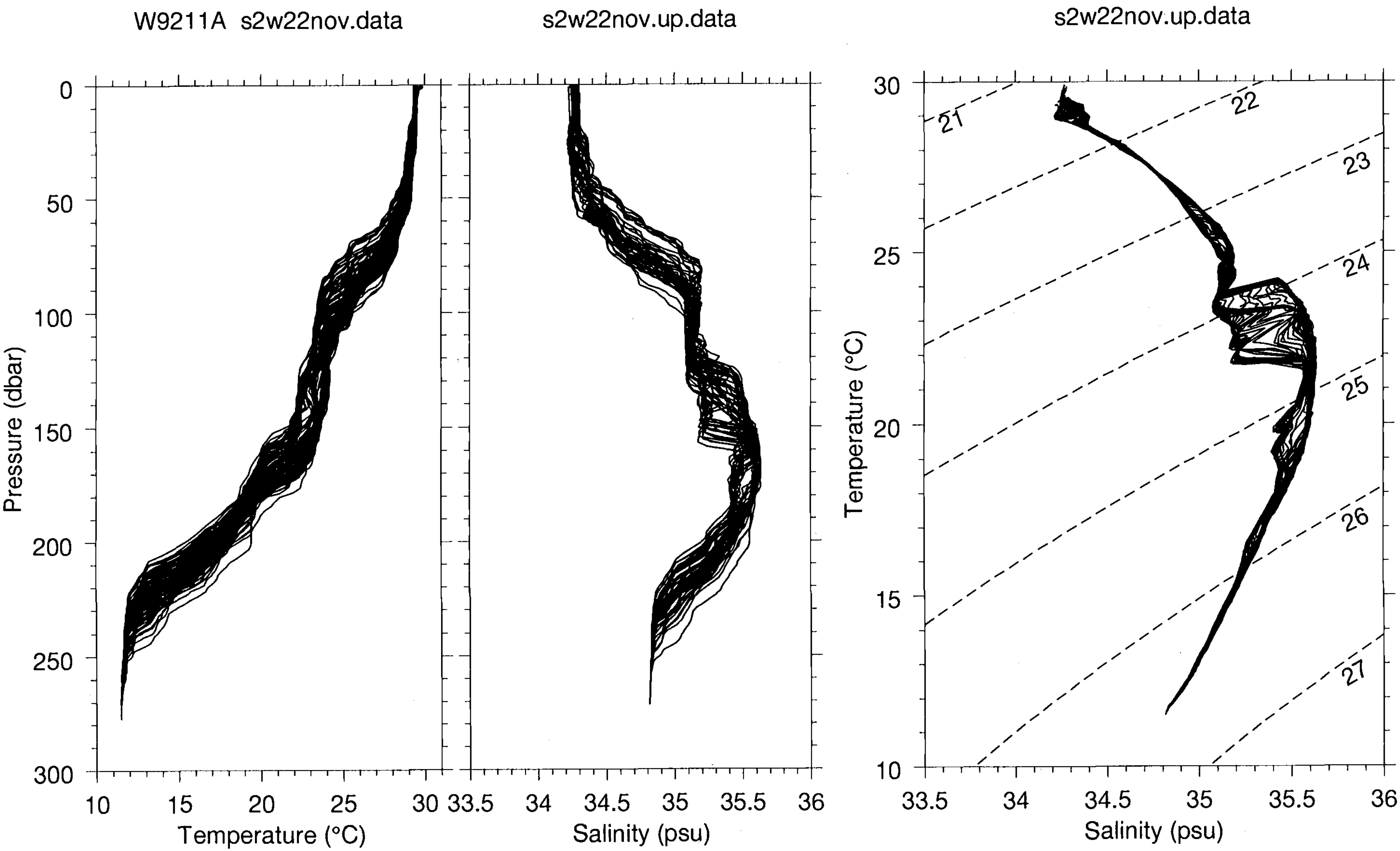
Salinity (psu)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Salinity (psu)
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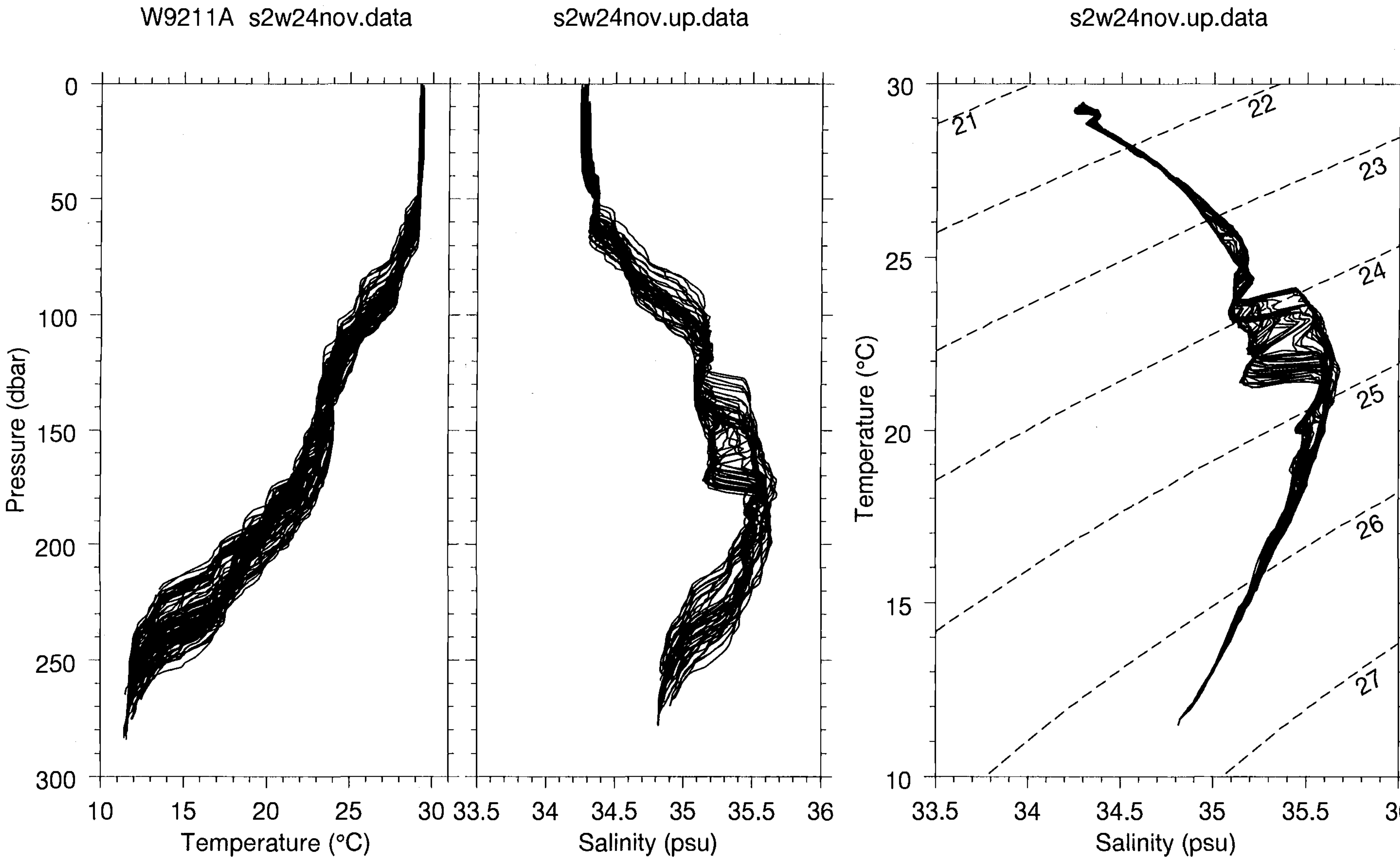
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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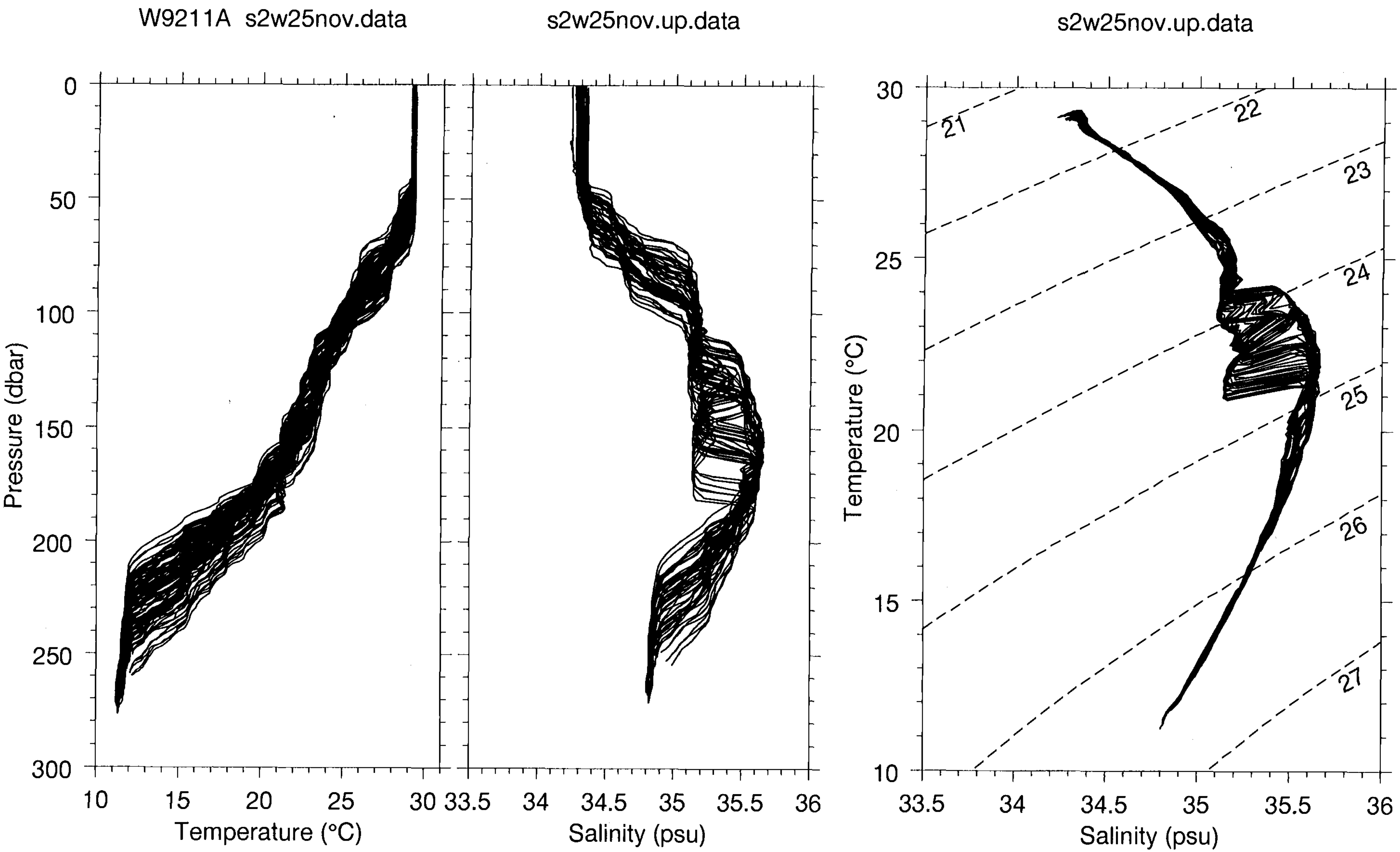
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Pressure (dbar)
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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35.5
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Salinity (psu)
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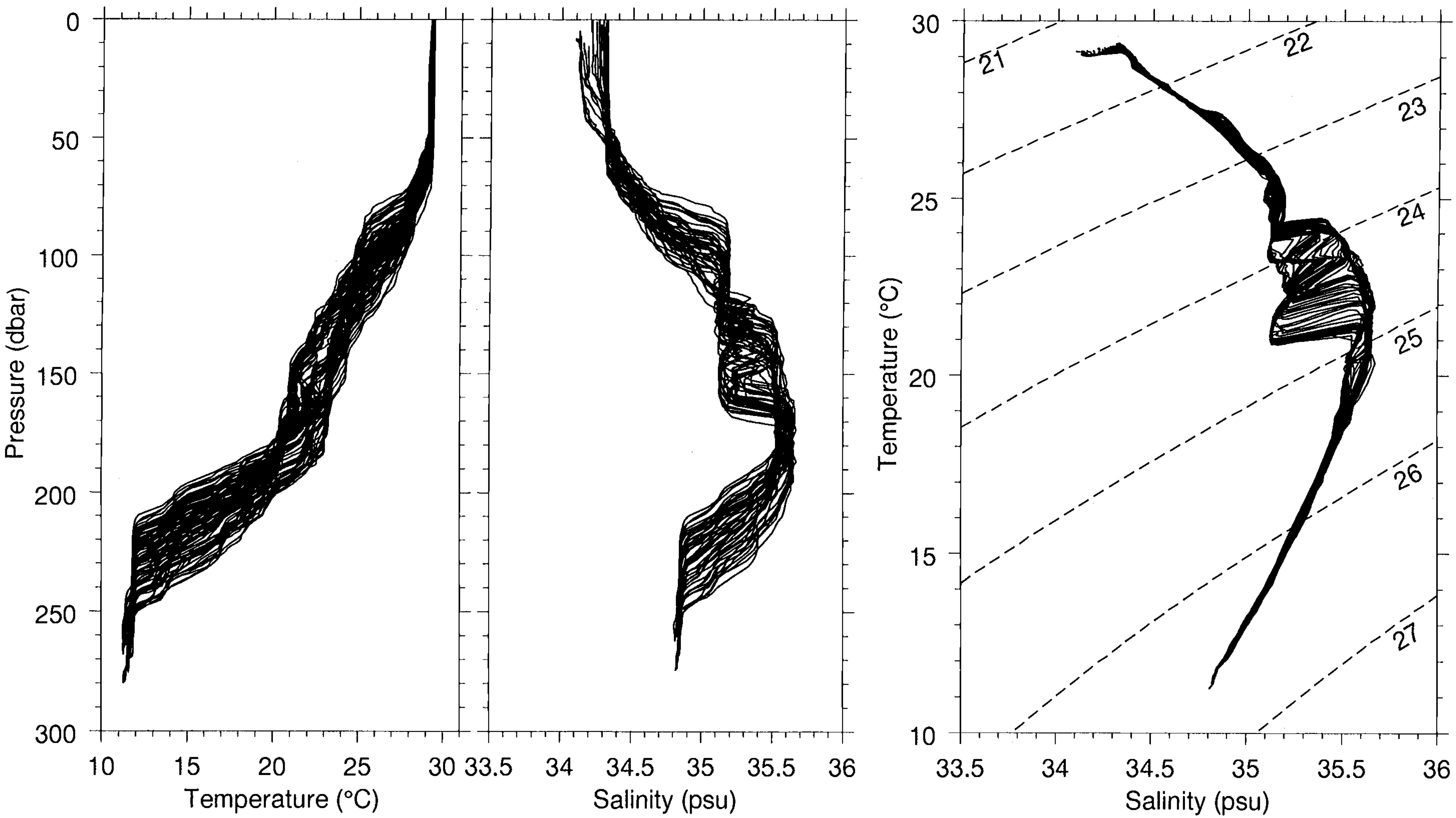
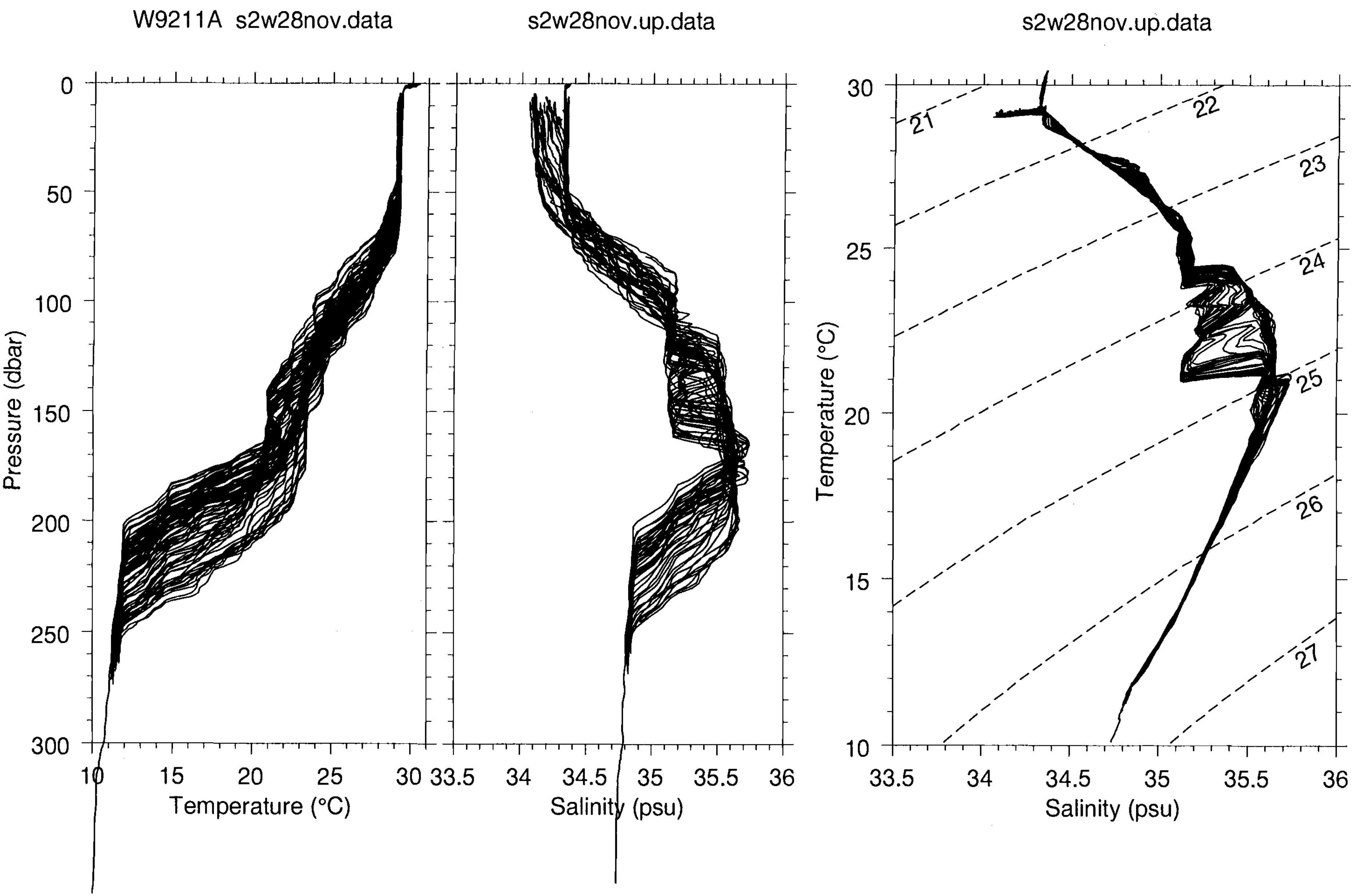
W9211A s2w26nov.data

s2w26nov.up.data

s2w26nov.up.data





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Temperature (°C)
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Salinity (psu)
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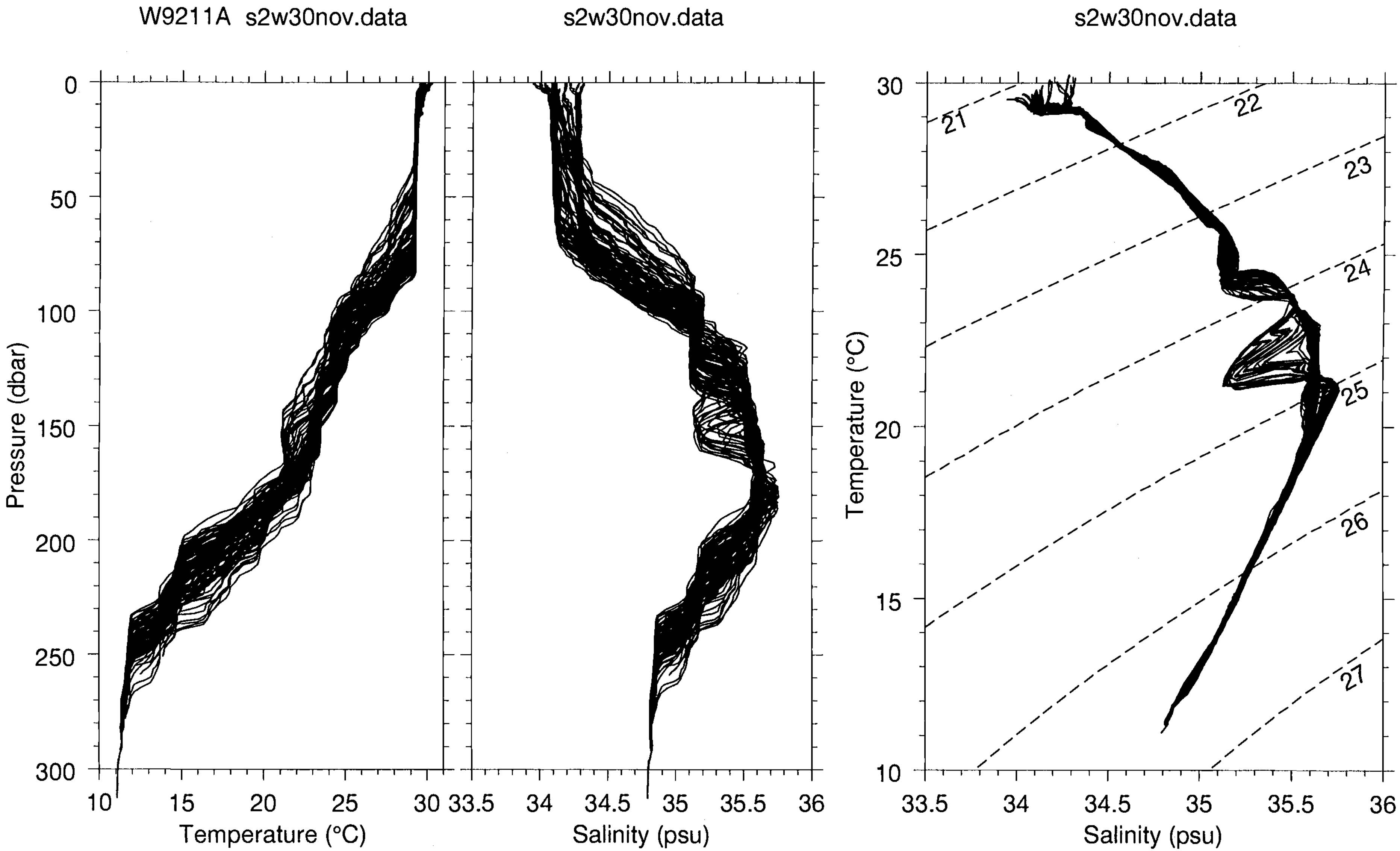
Salinity (psu)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Salinity (psu)
Temperature (°C)
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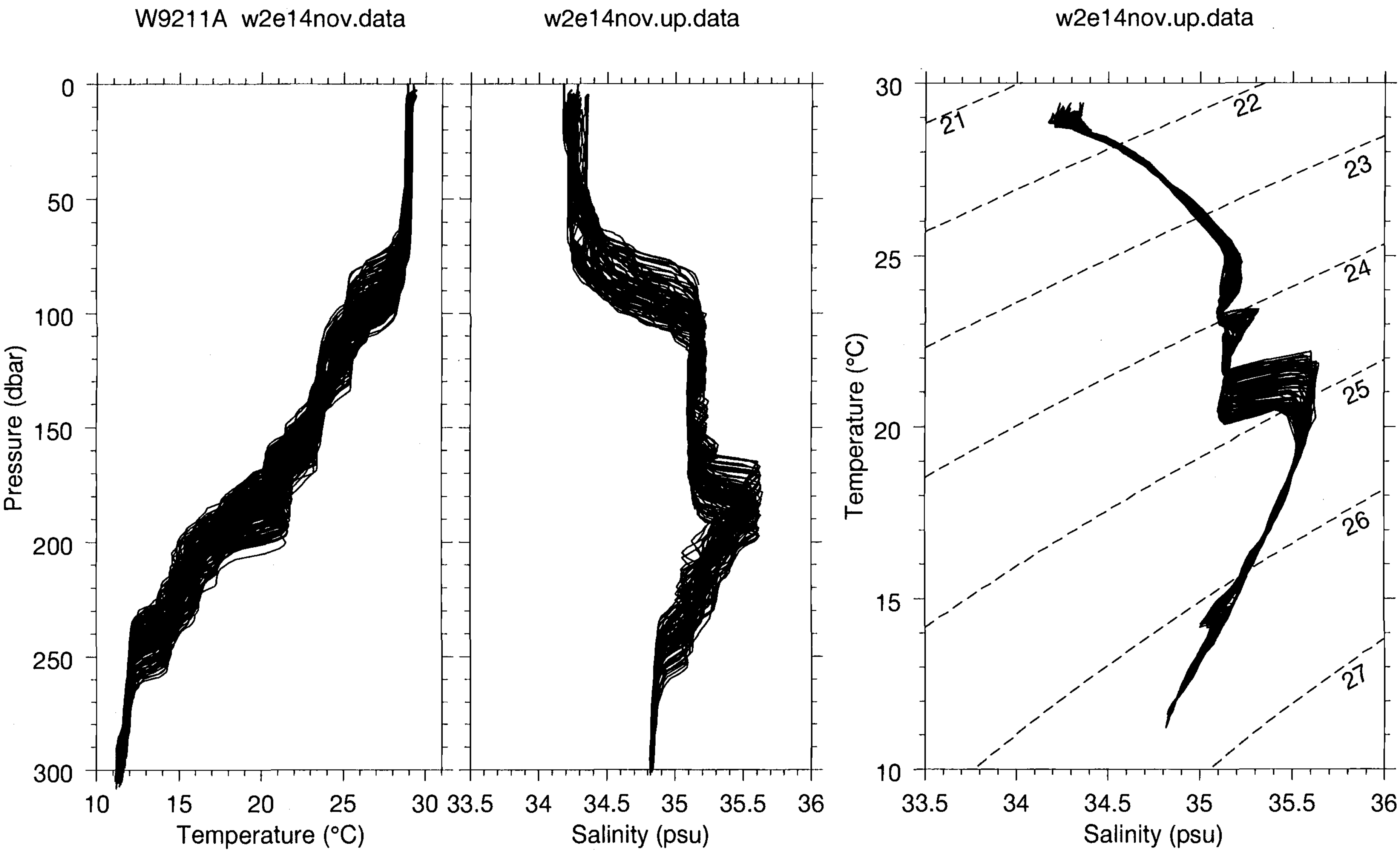
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Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
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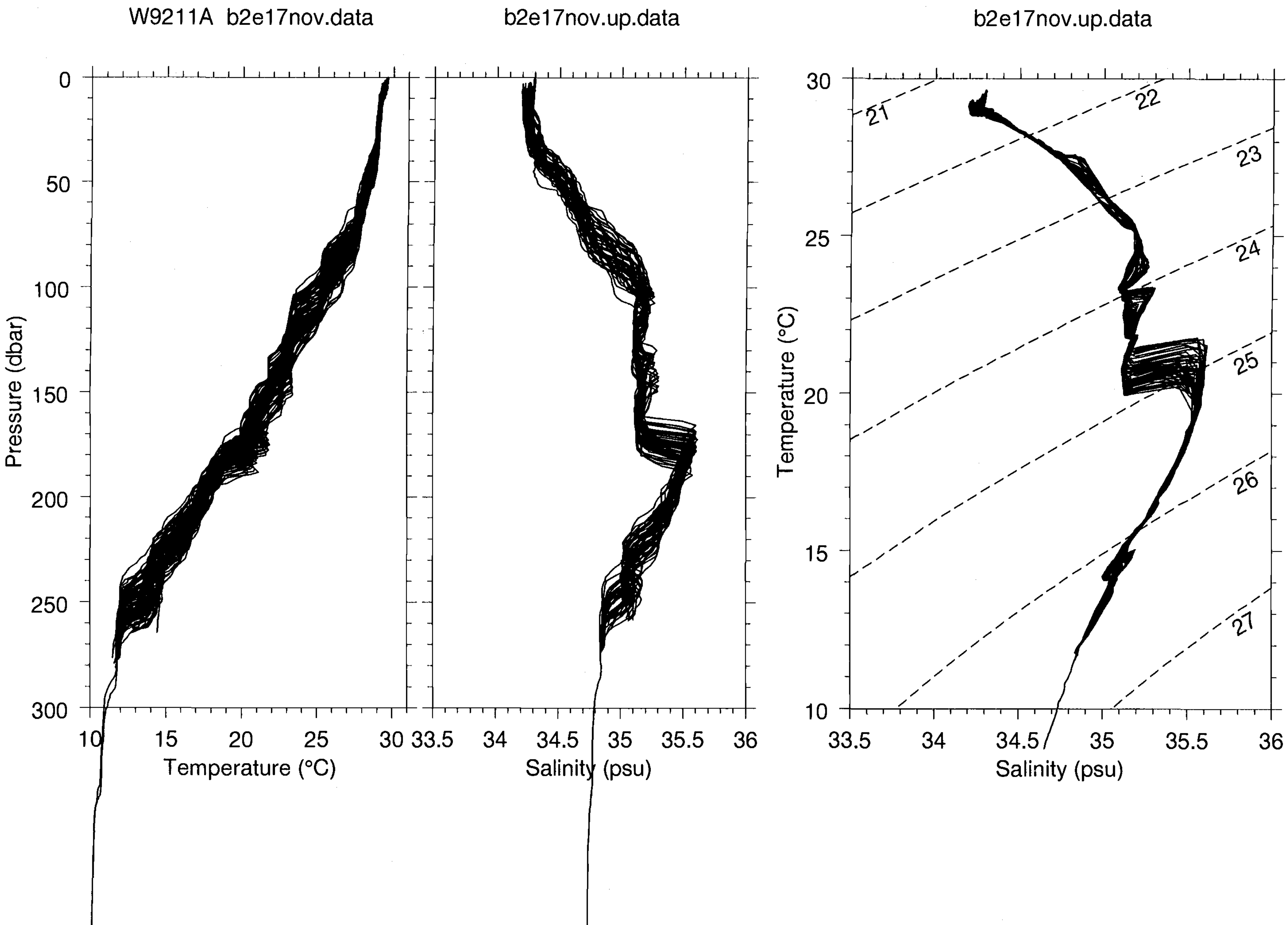
W9211A b2e17nov.data
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b2e17nov.up.data
Pressure (dbar)
Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
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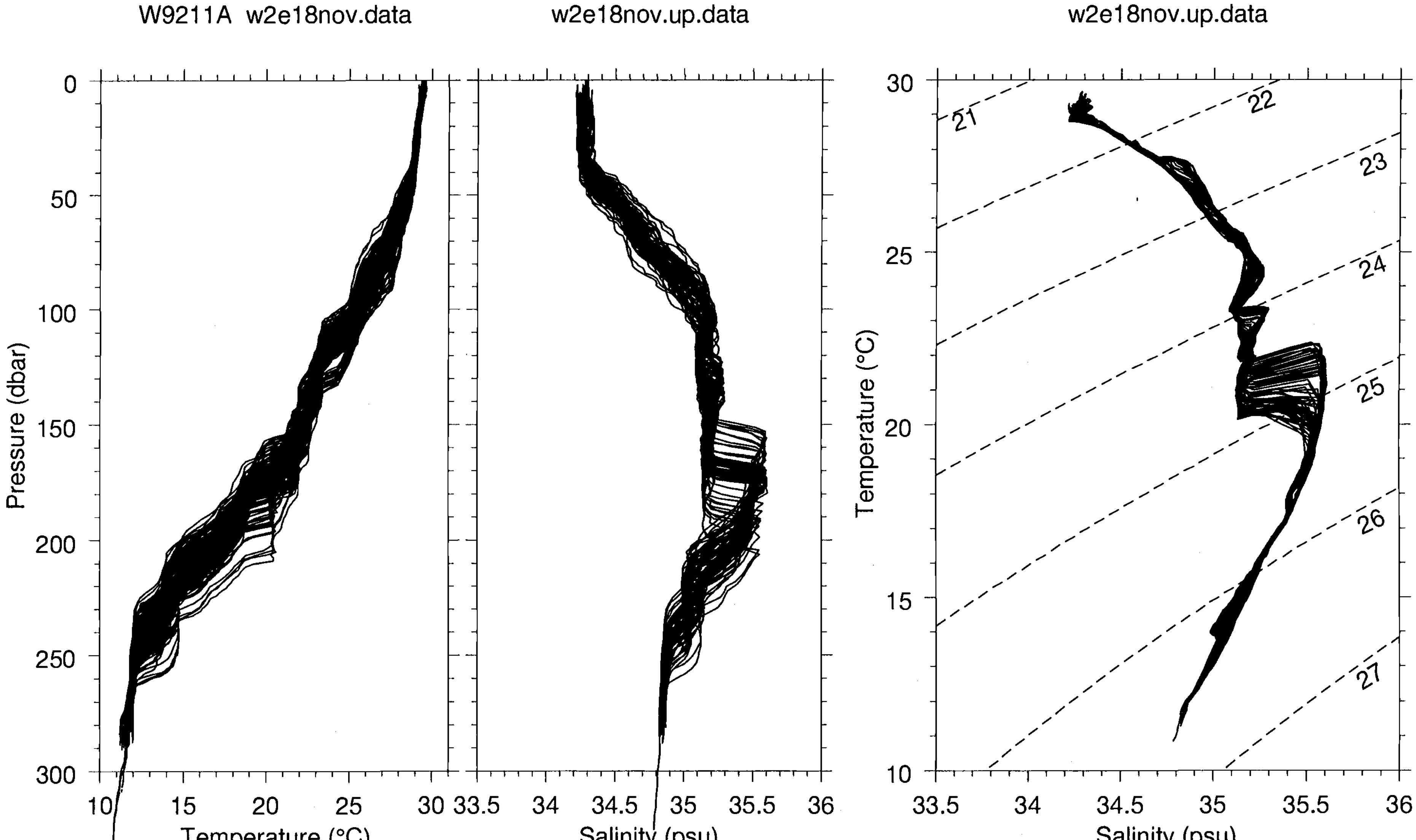

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Pressure (dbar)
Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
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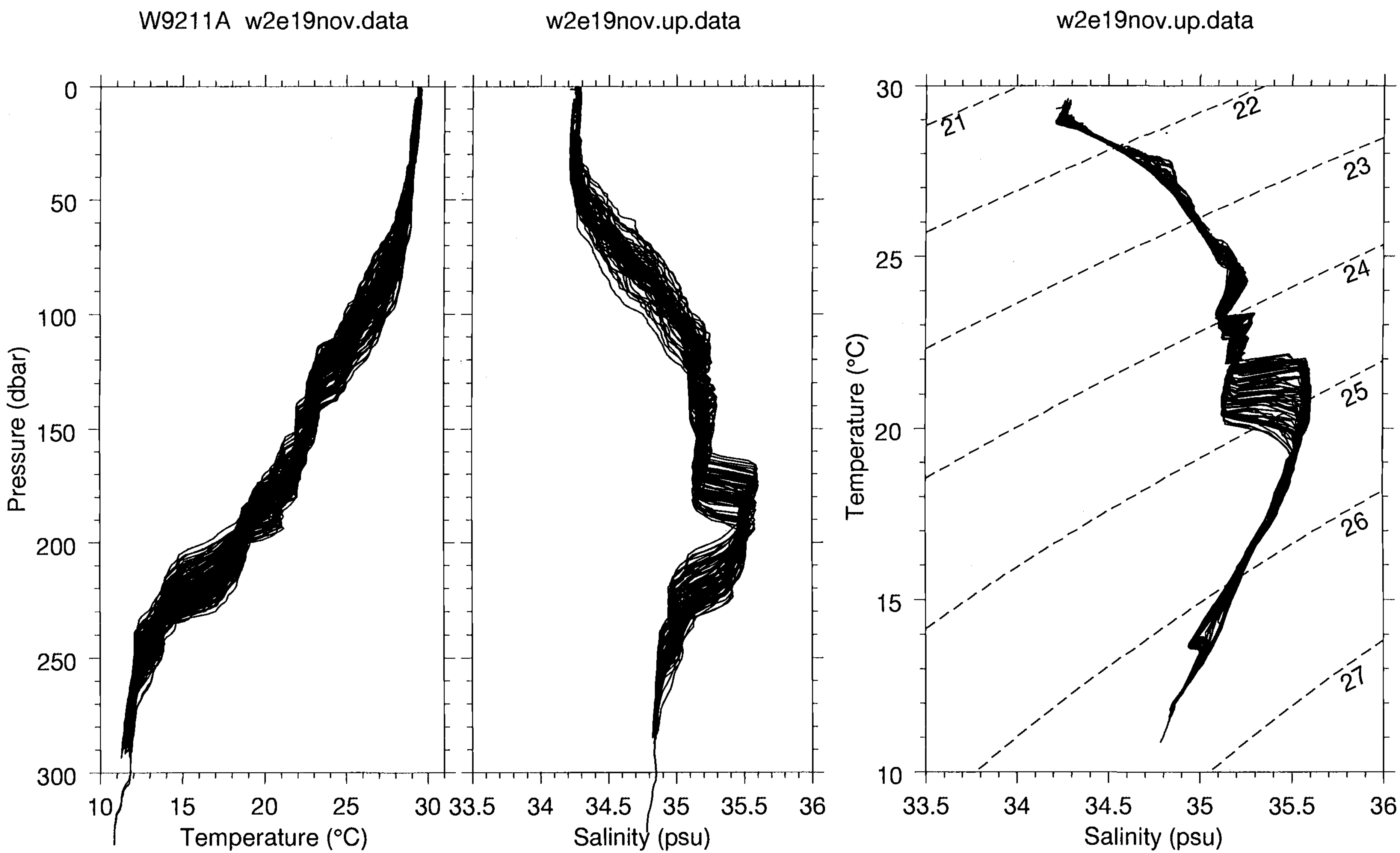

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200
250
300
10
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30
Temperature (°C)
33.5
34
34.5
35
35.5
36
Salinity (psu)
Temperature (°C)
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25
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35.5
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Salinity (psu)
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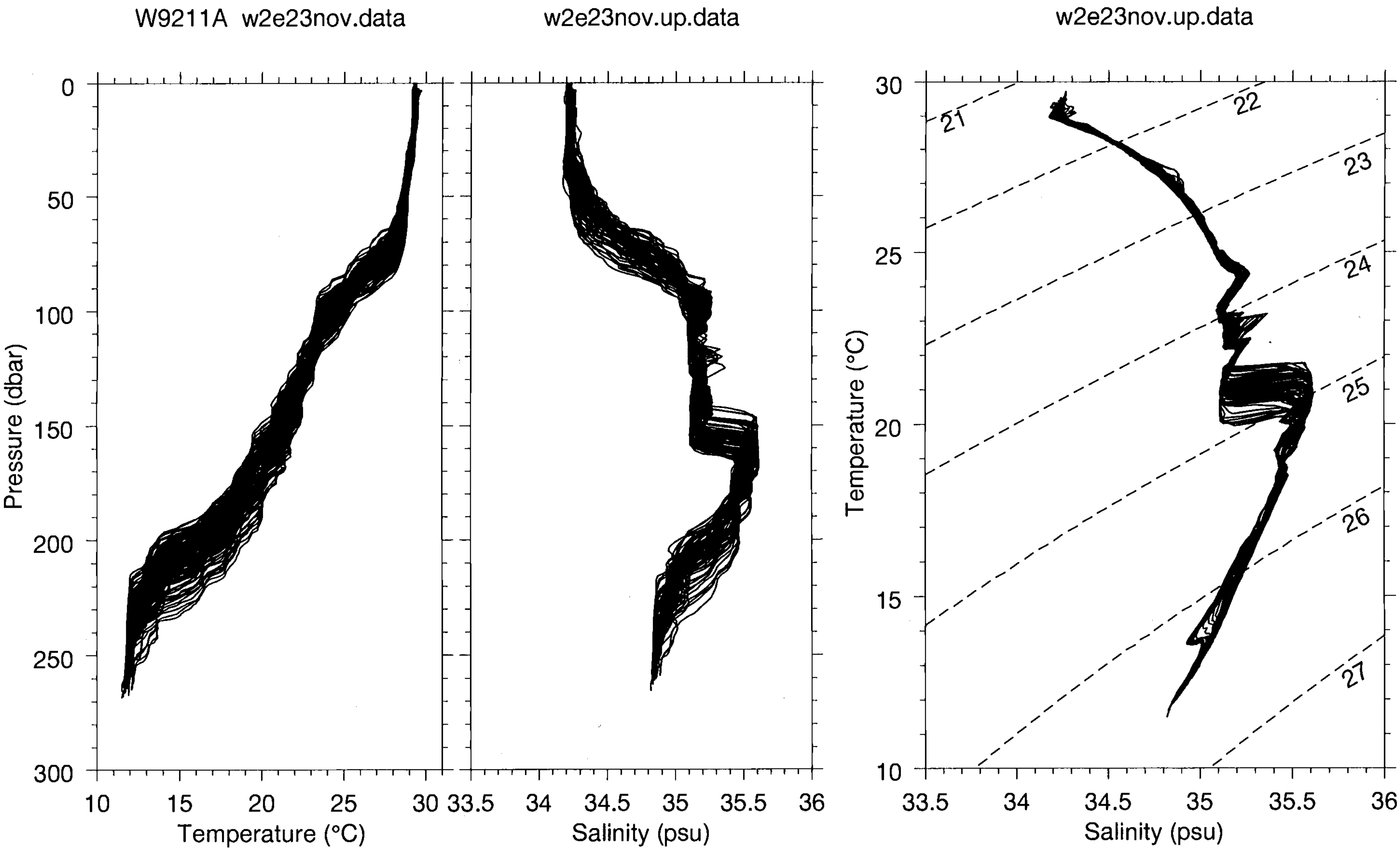
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Pressure (dbar)
Temperature (°C)
Salinity (psu)
Salinity (psu)
Temperature (°C)
0
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300
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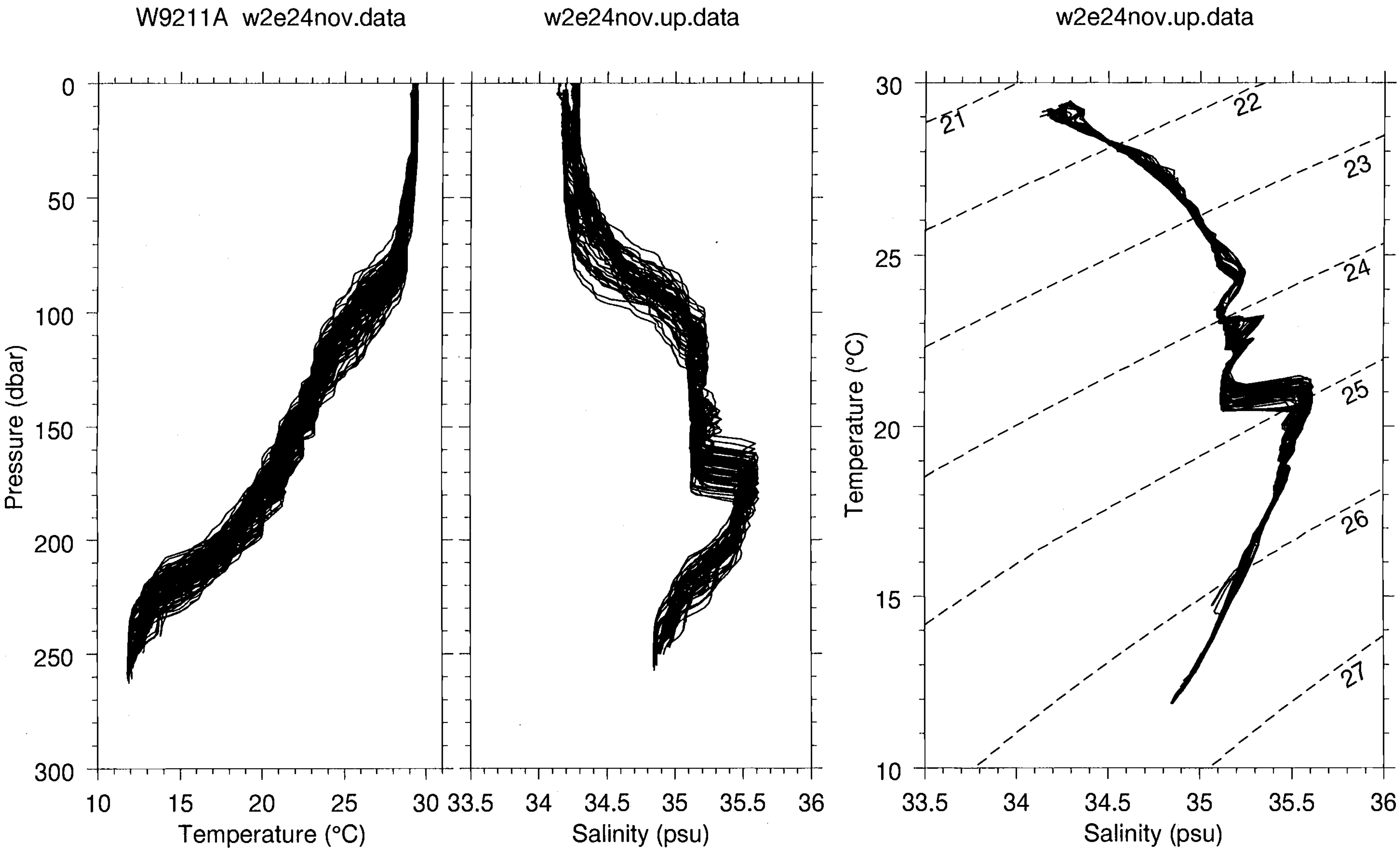
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25
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Temperature (°C)
33.5
34
34.5
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35.5
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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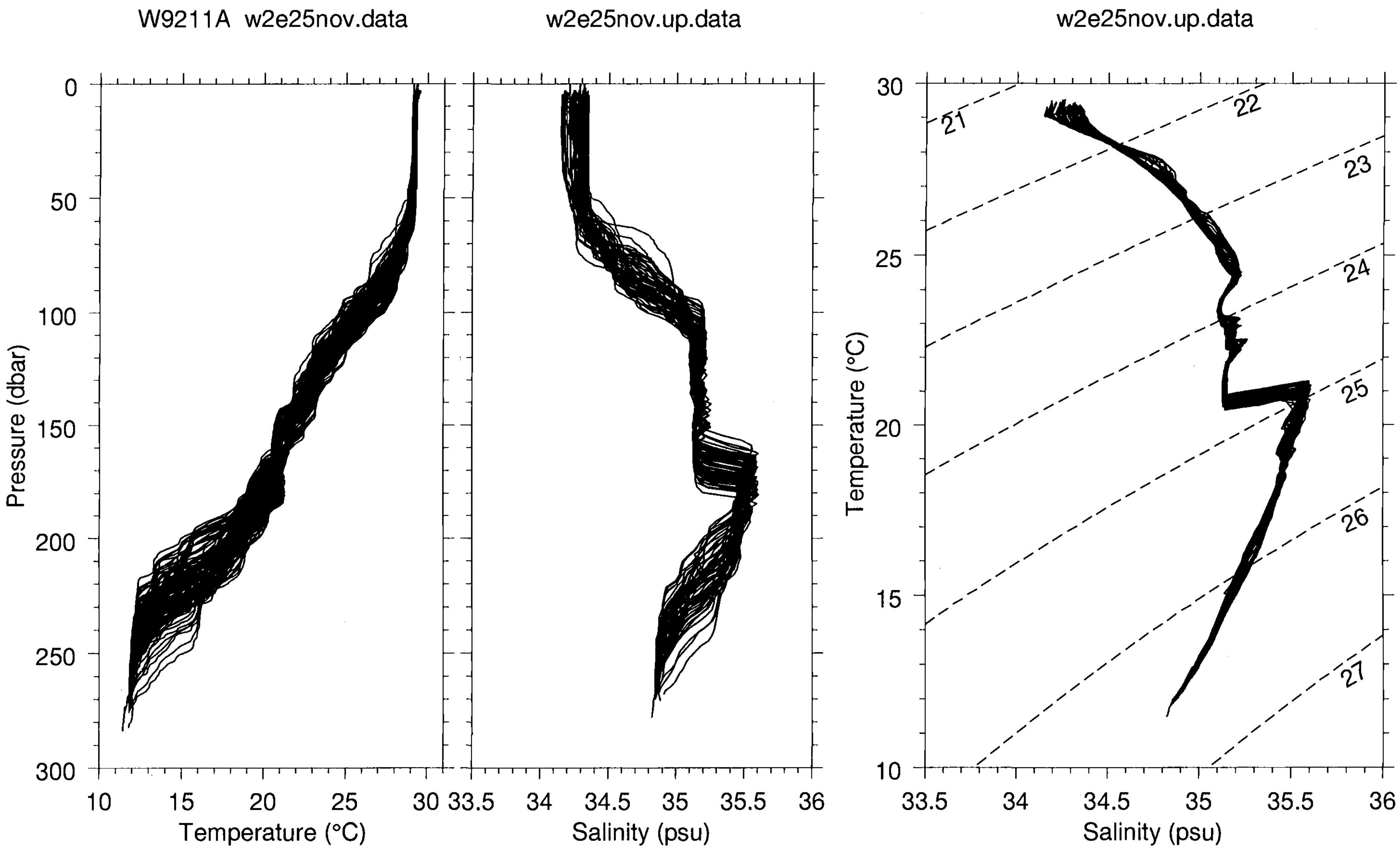
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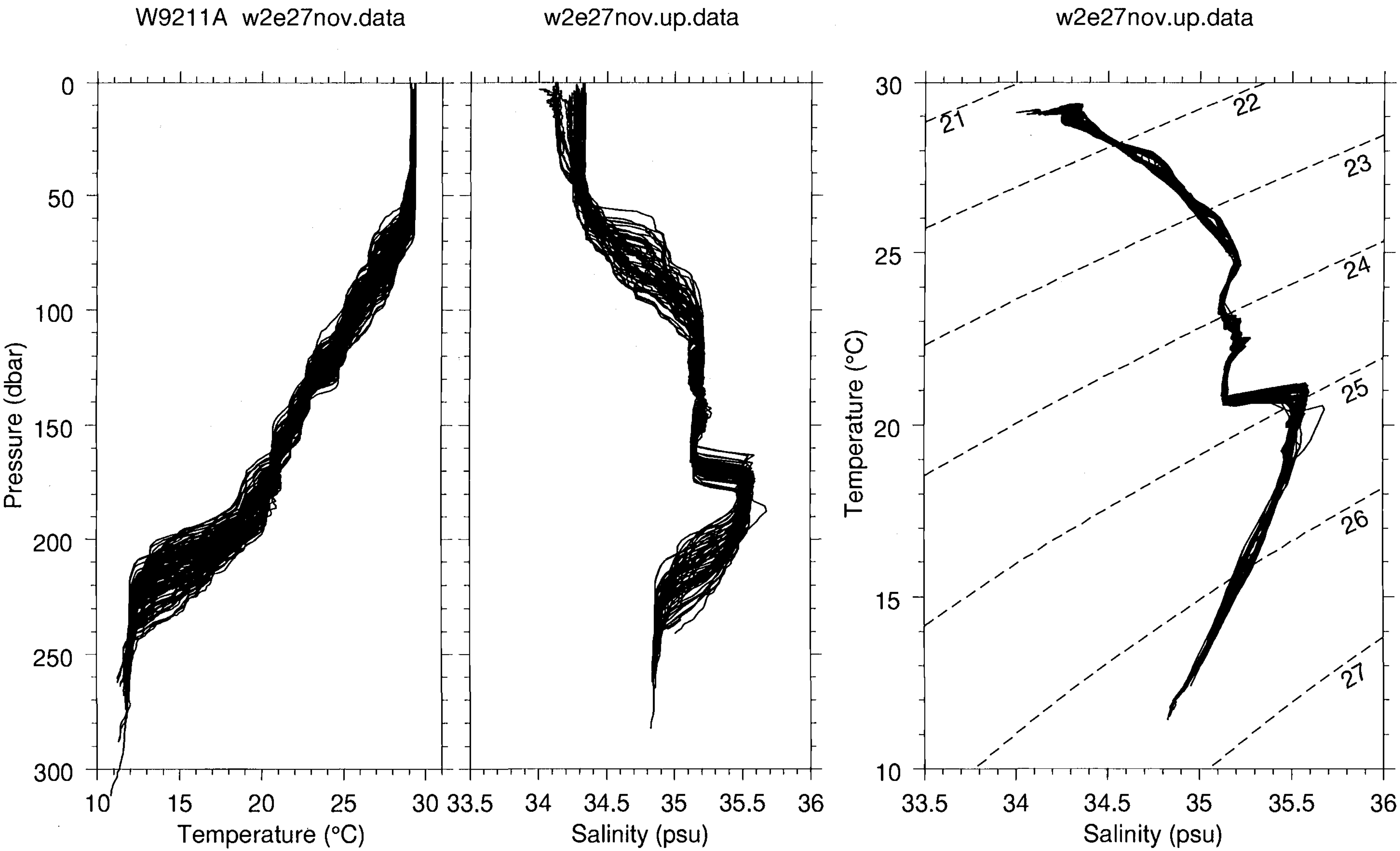
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Temperature (°C)
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35.5
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Salinity (psu)
Temperature (°C)
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35.5
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Salinity (psu)
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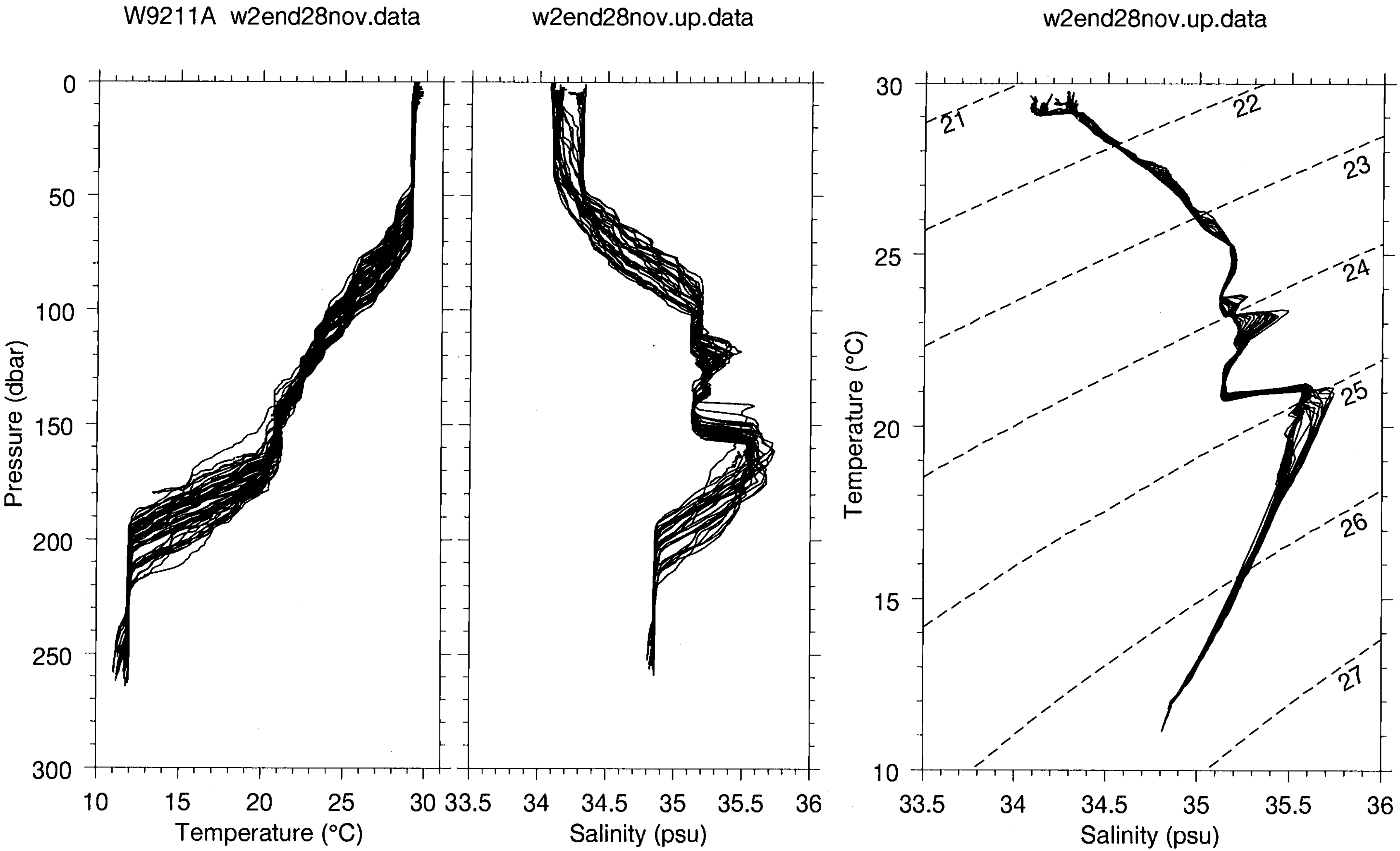

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Salinity (psu)
Temperature (°C)
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33.5
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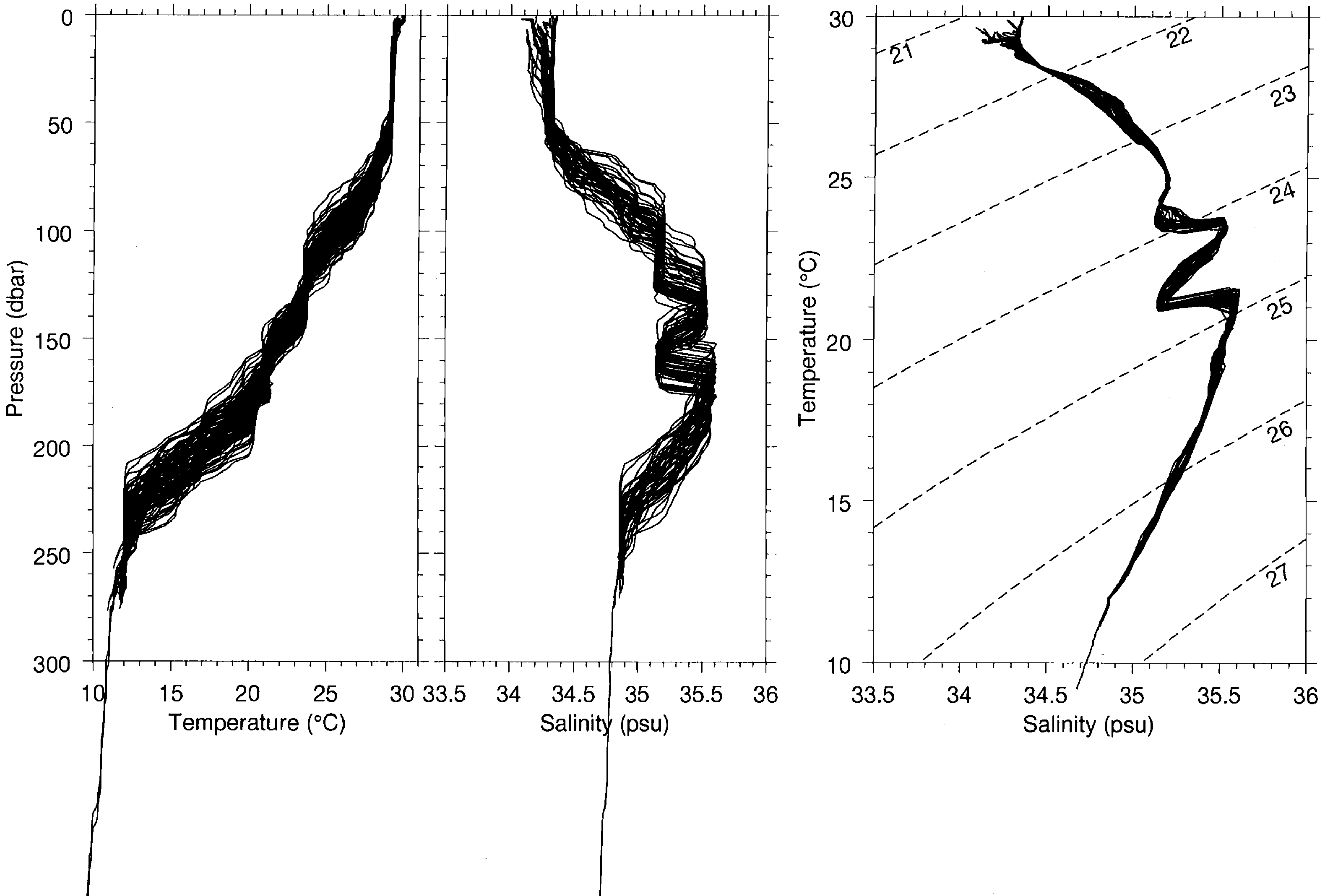
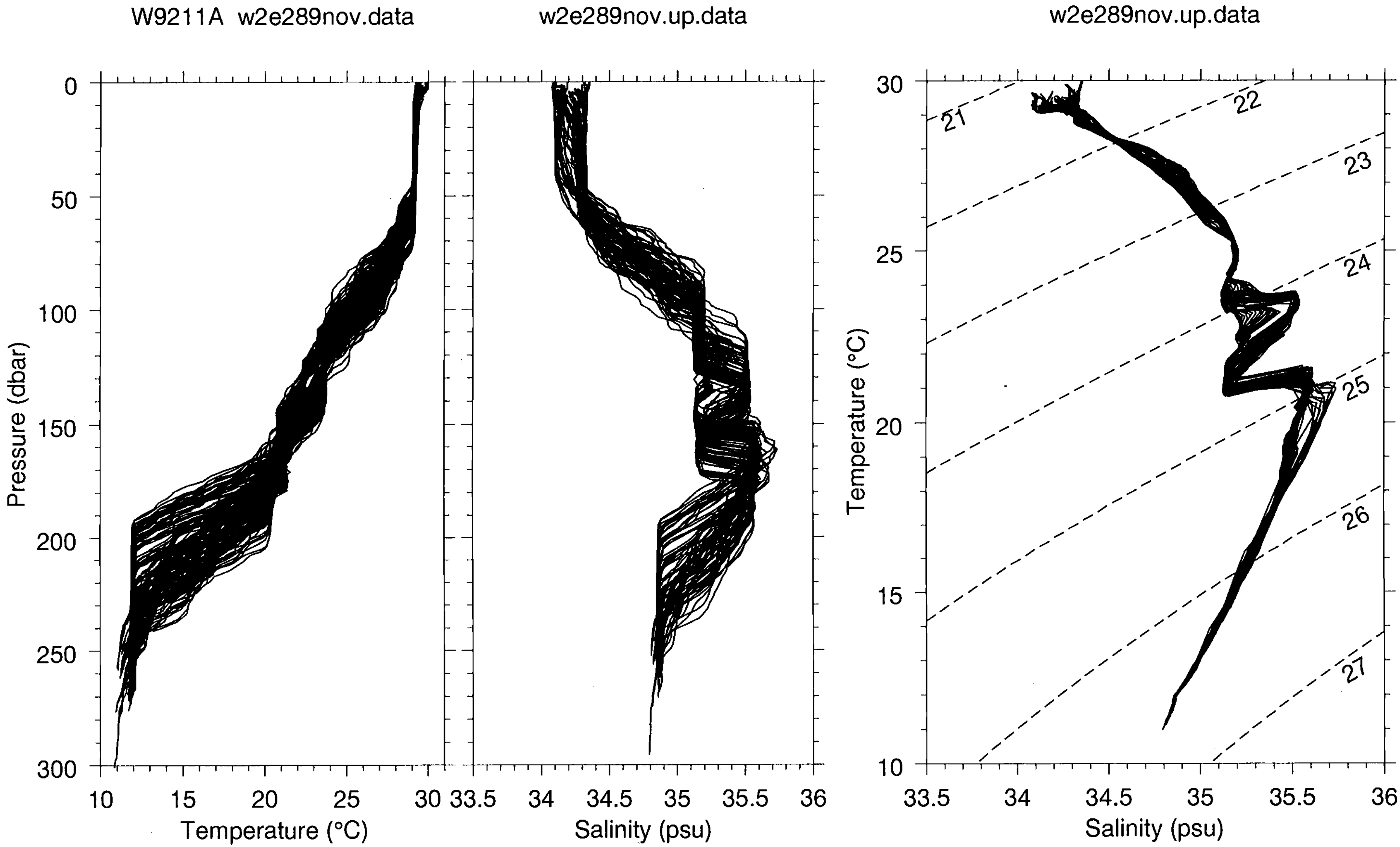
Salinity (psu)

W9211A b2e29nov.data

b2e29nov.up.data

b2e29nov.up.data

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w2e289nov.up.data
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Salinity (psu)
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Salinity (psu)
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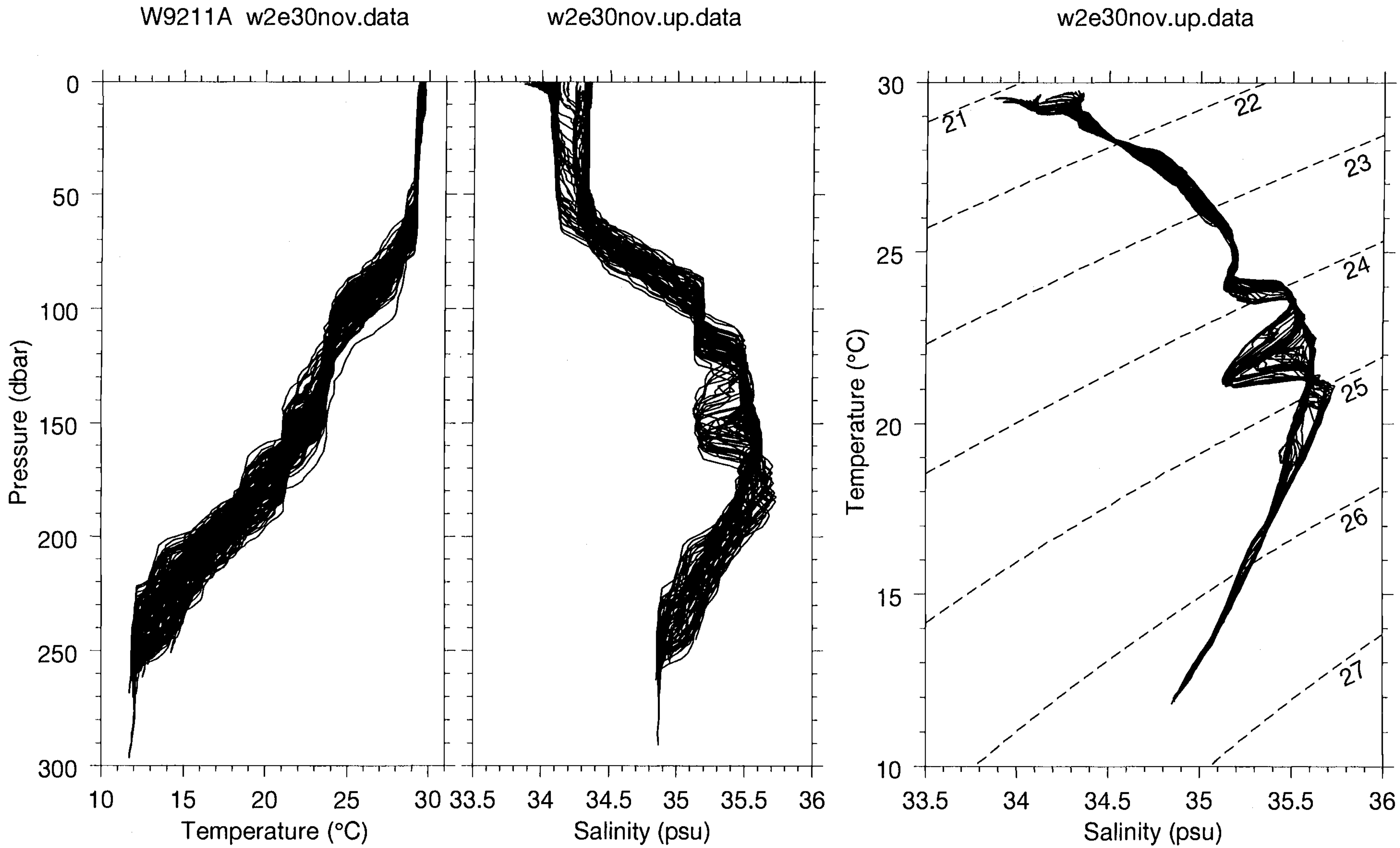
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w2e30nov.up.data
w2e30nov.up.data
Pressure (dbar)
0
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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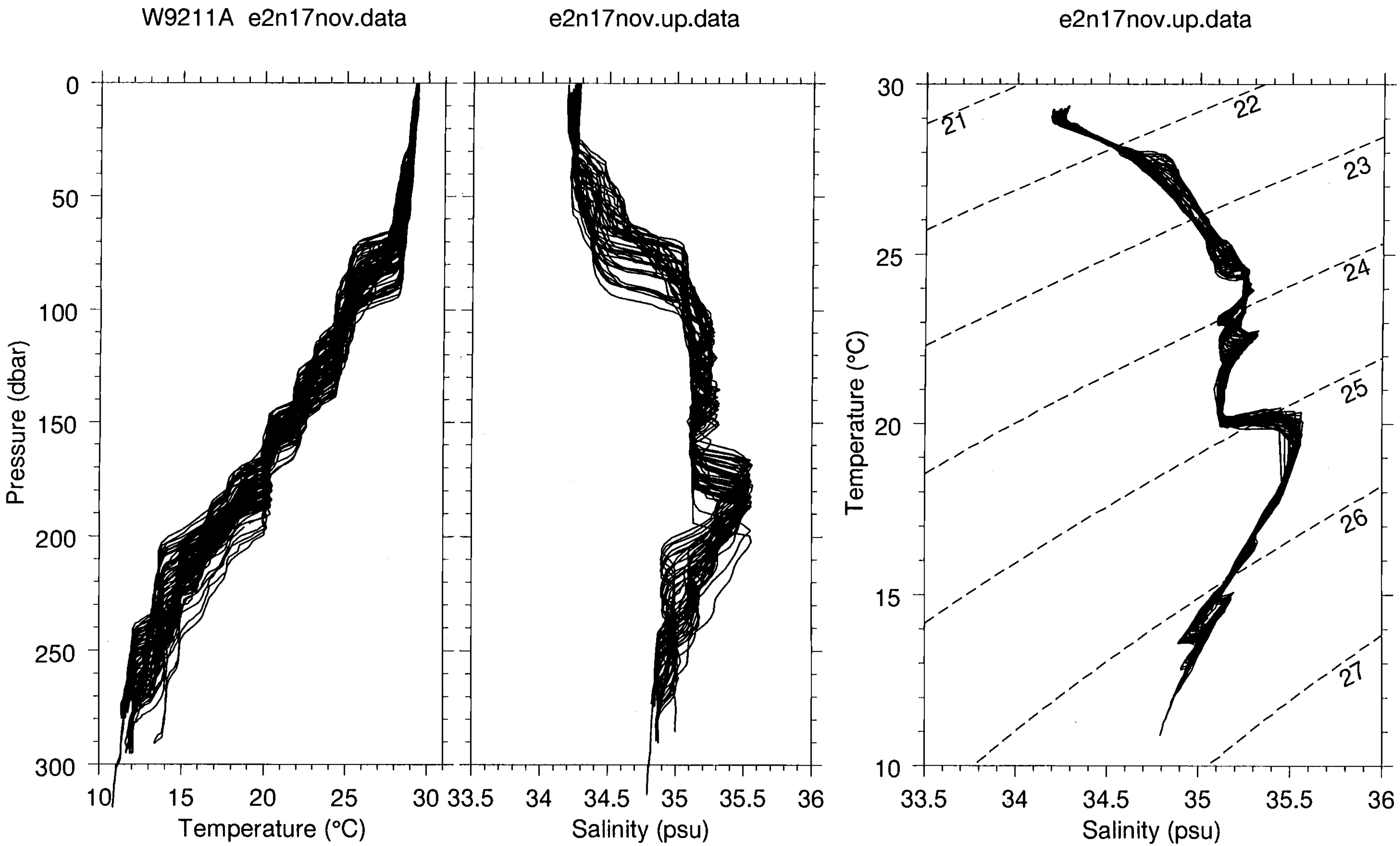
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Pressure (dbar)
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Salinity (psu)
Temperature (°C)
Salinity (psu)
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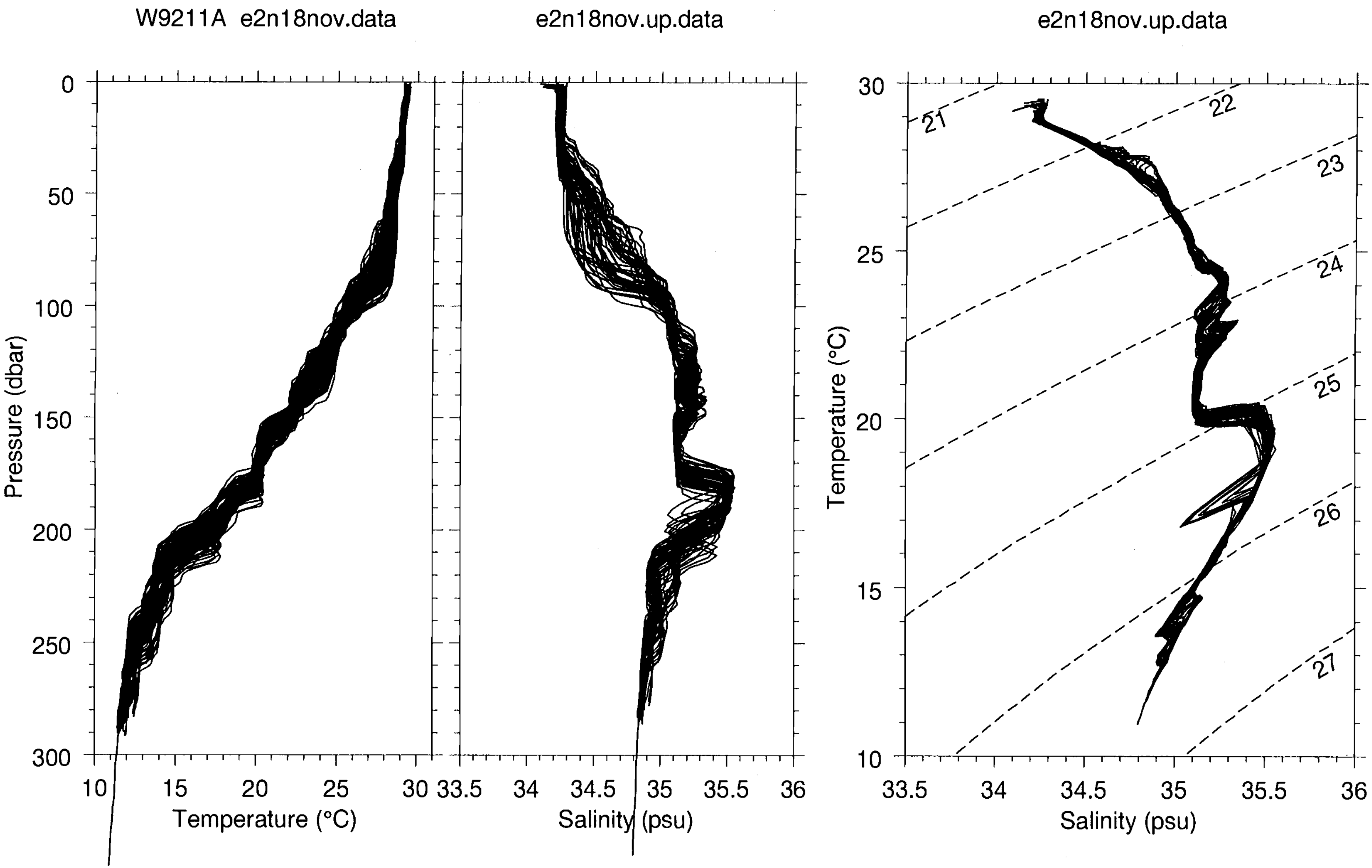

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Pressure (dbar)
Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
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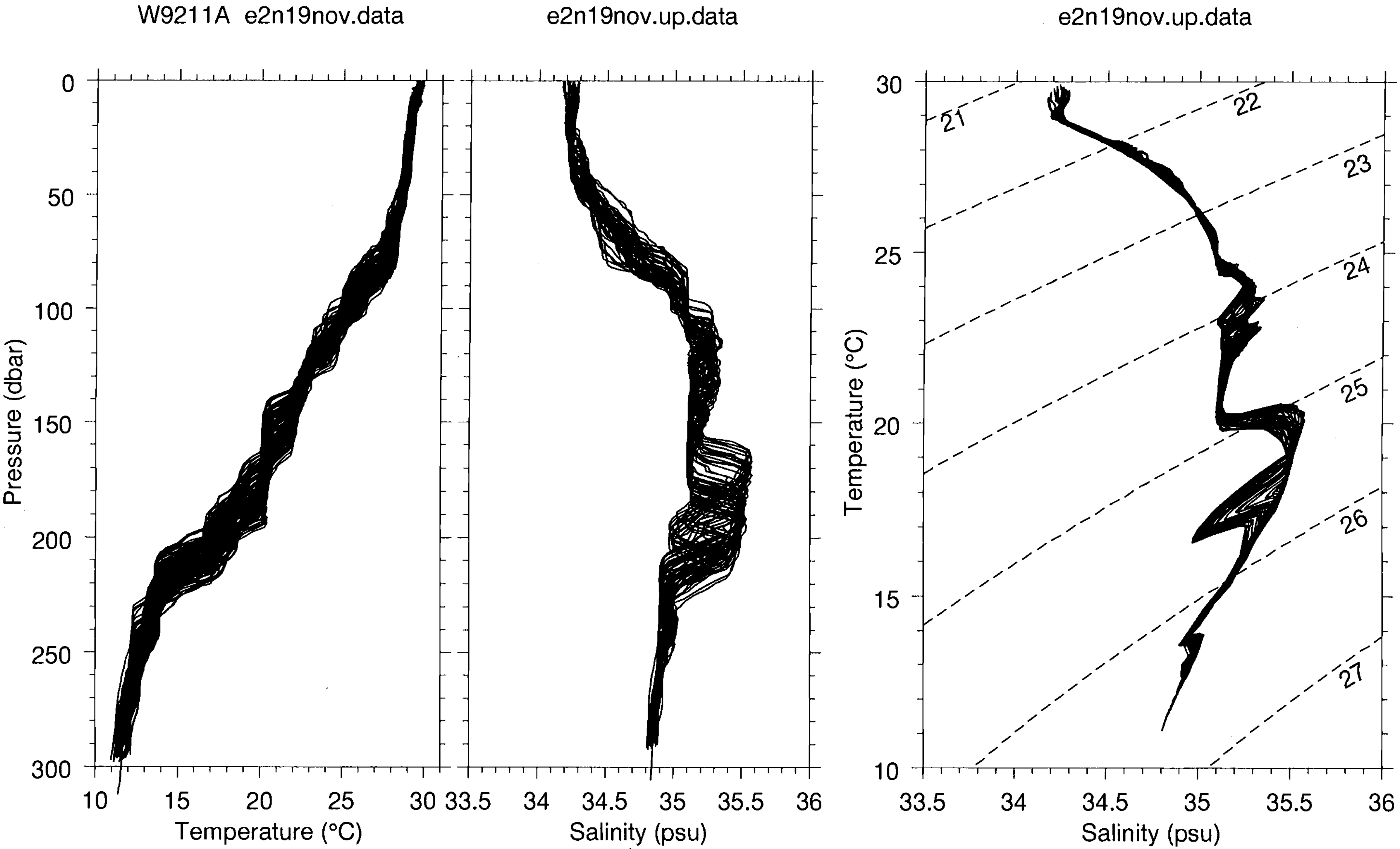
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Pressure (dbar)
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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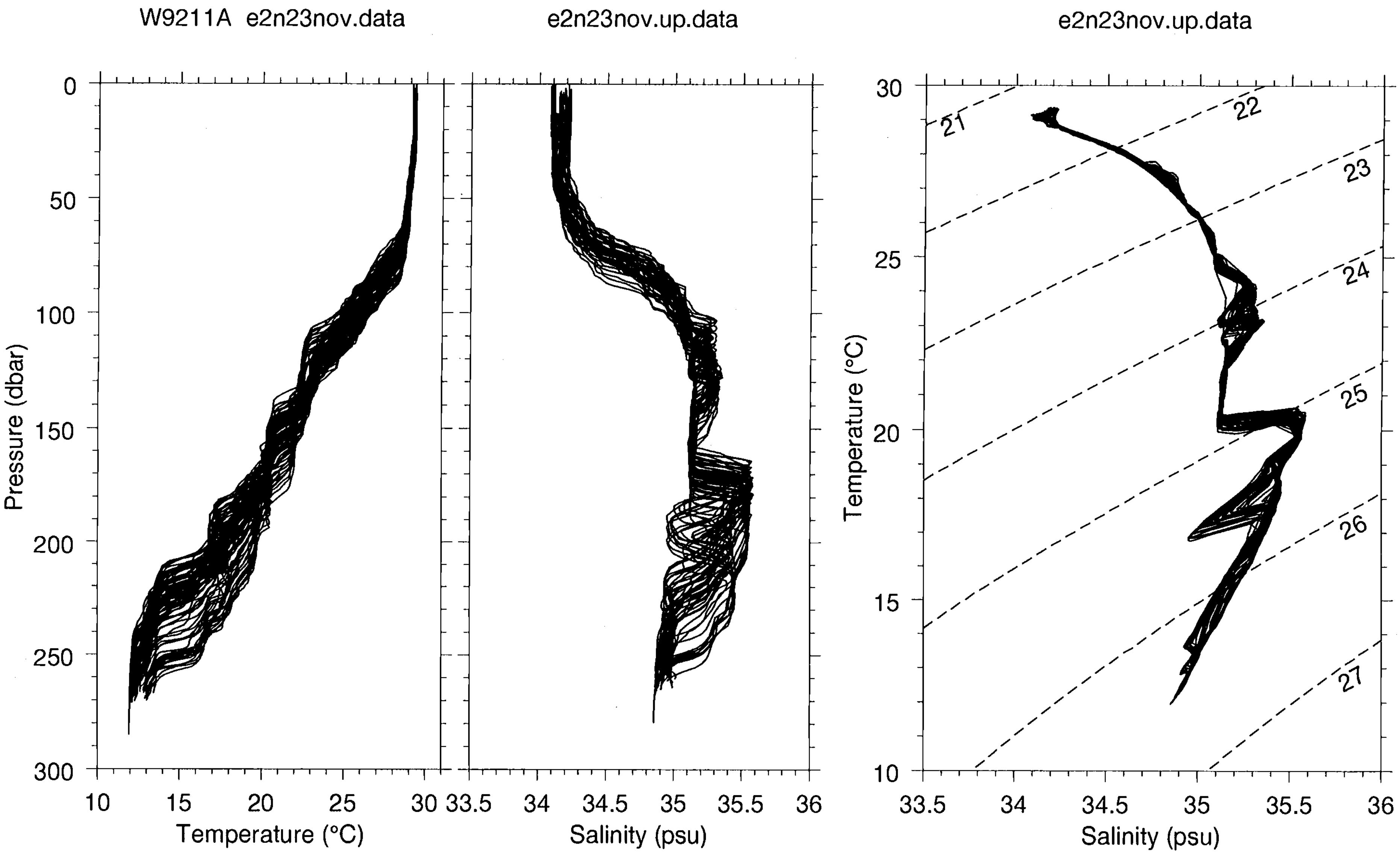
Salinity (psu)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e2n23nov.up.data
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Salinity (psu)
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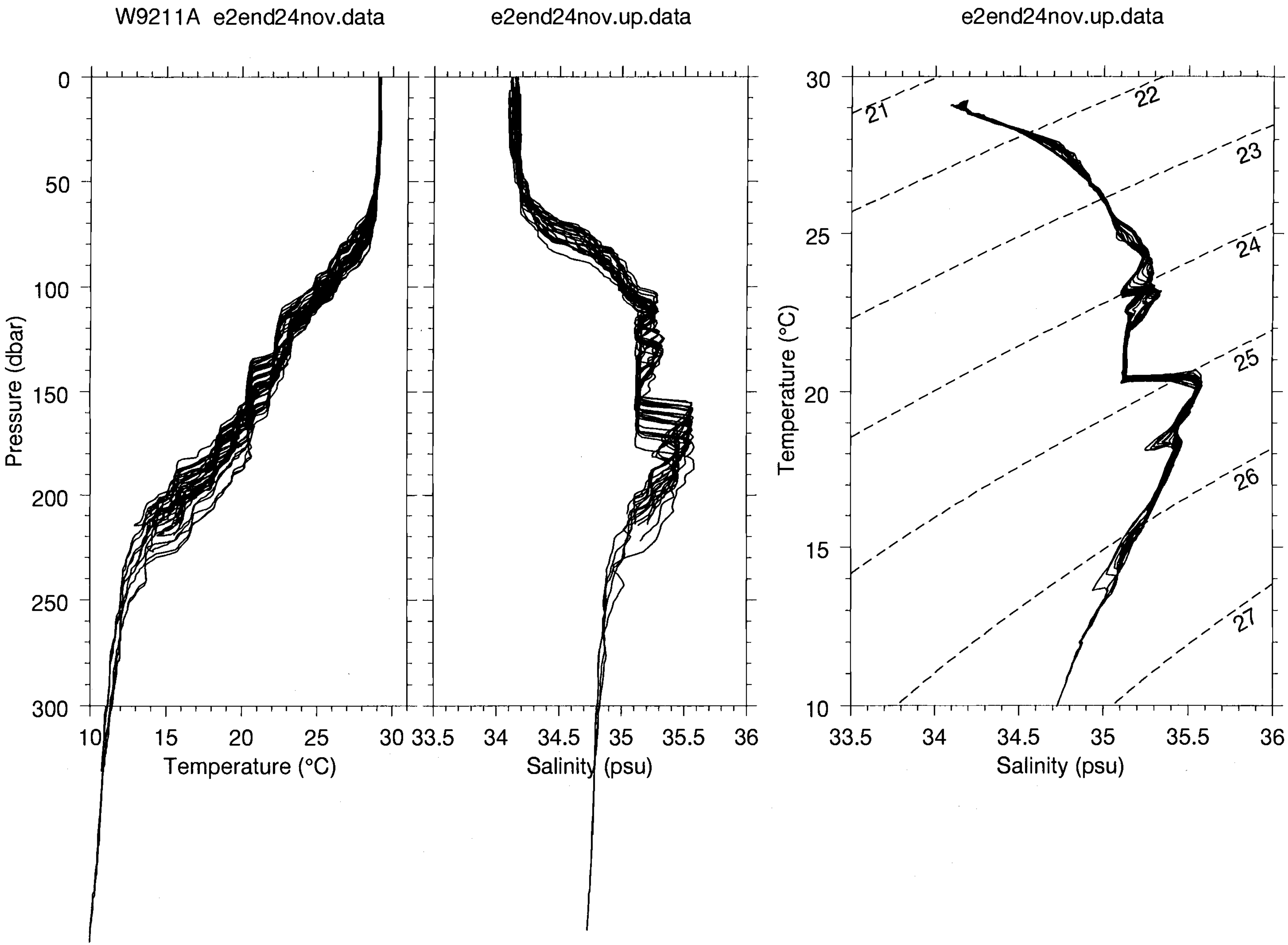
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Pressure (dbar)
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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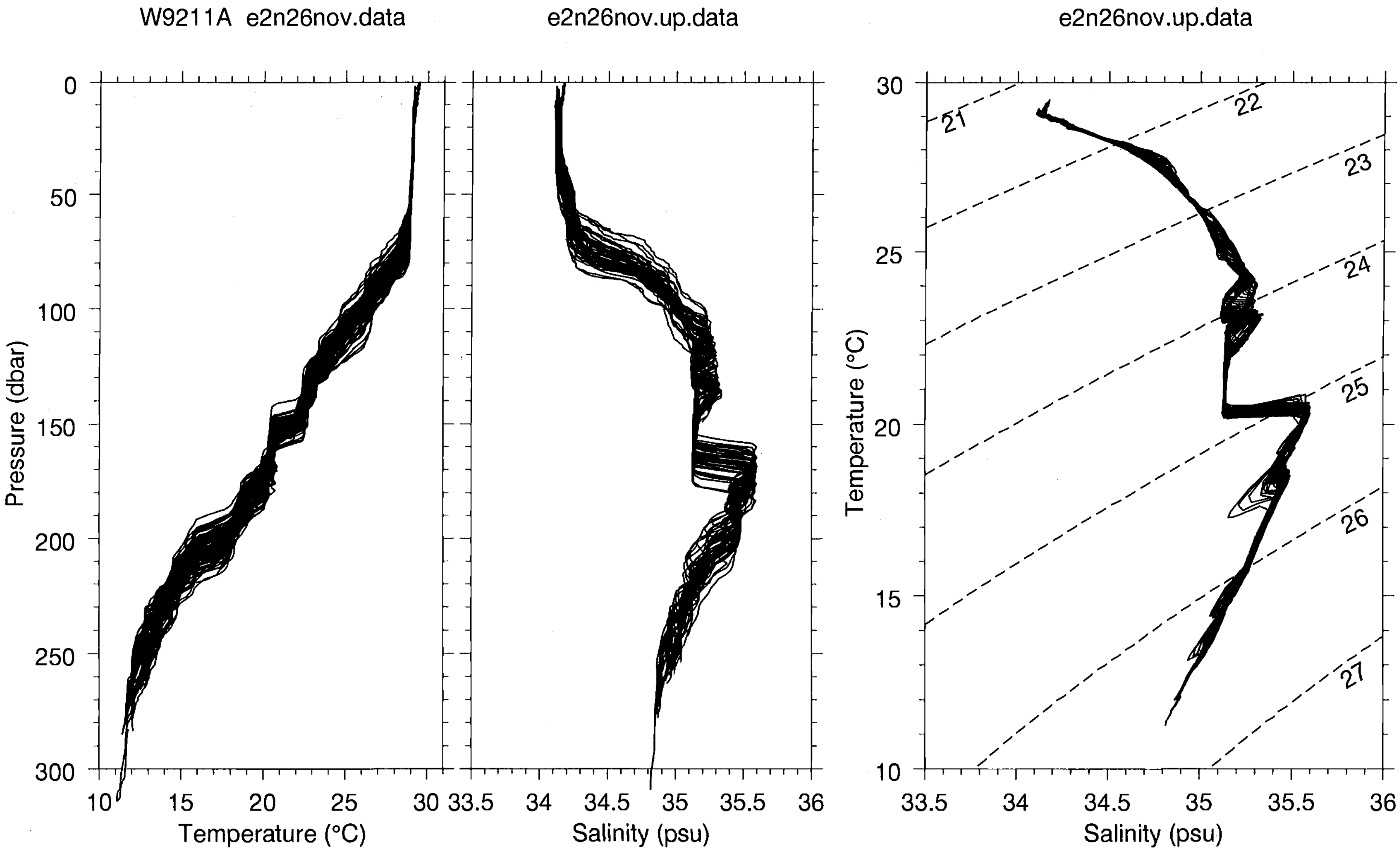

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Pressure (dbar)
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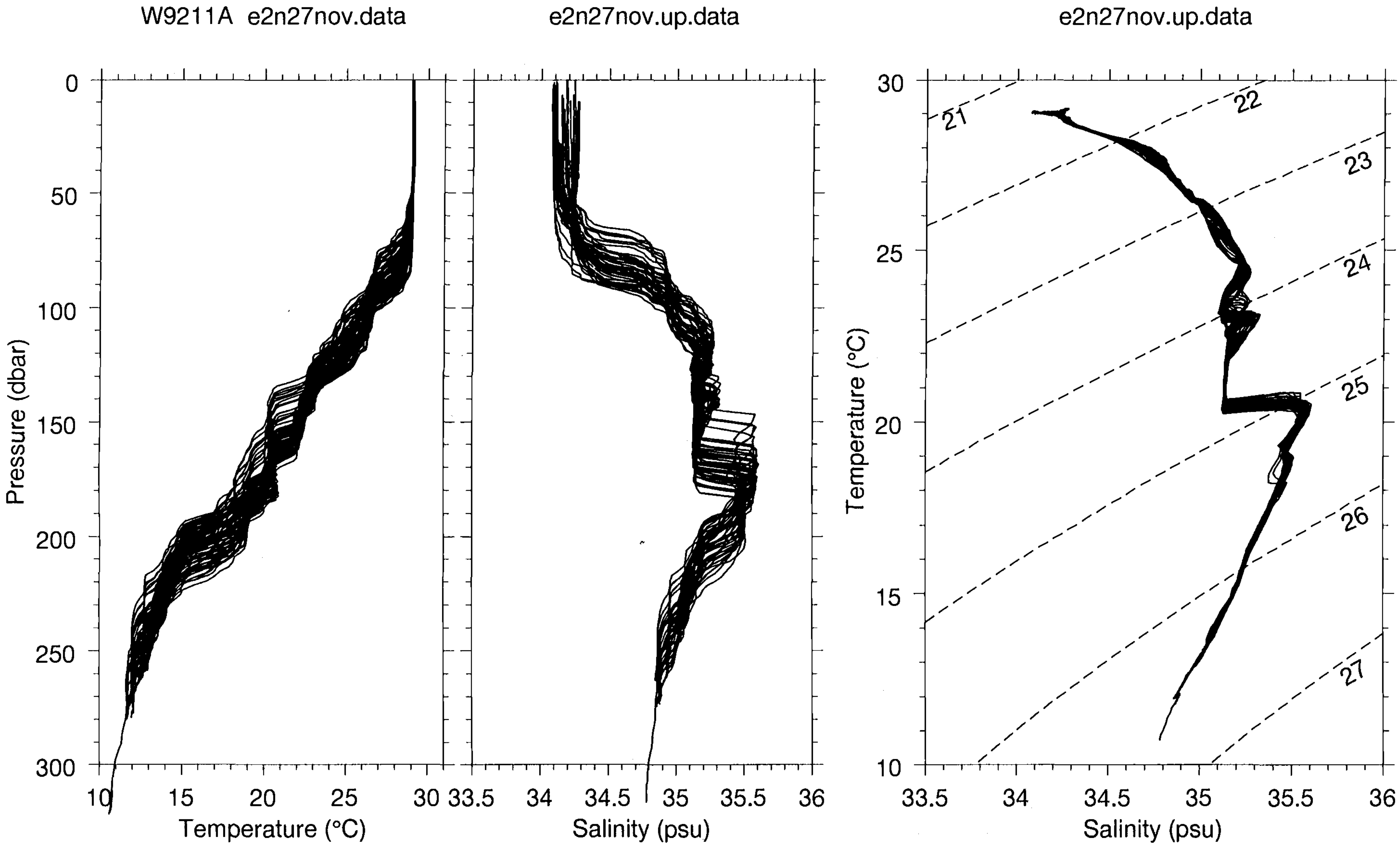
Salinity (psu)



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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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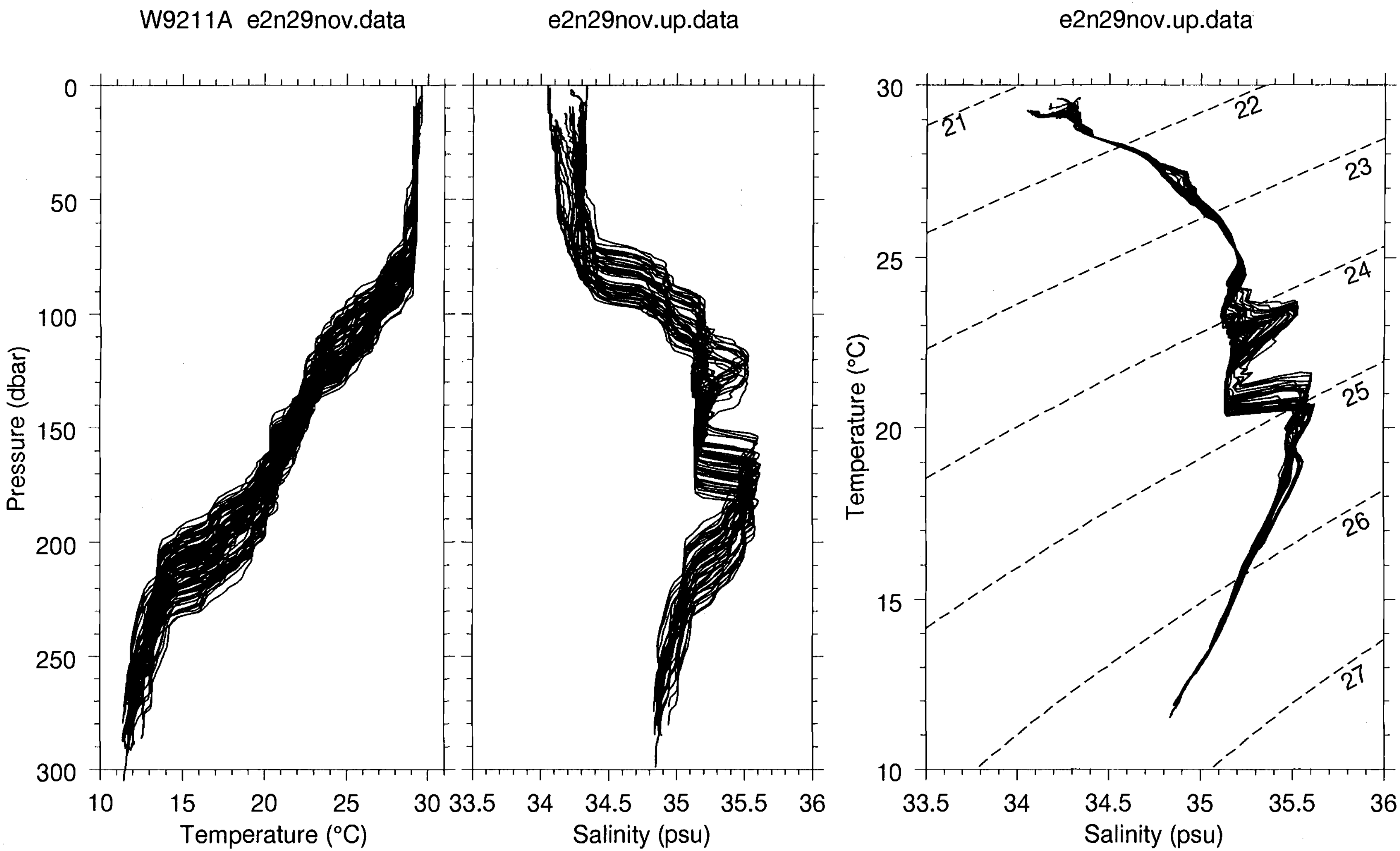
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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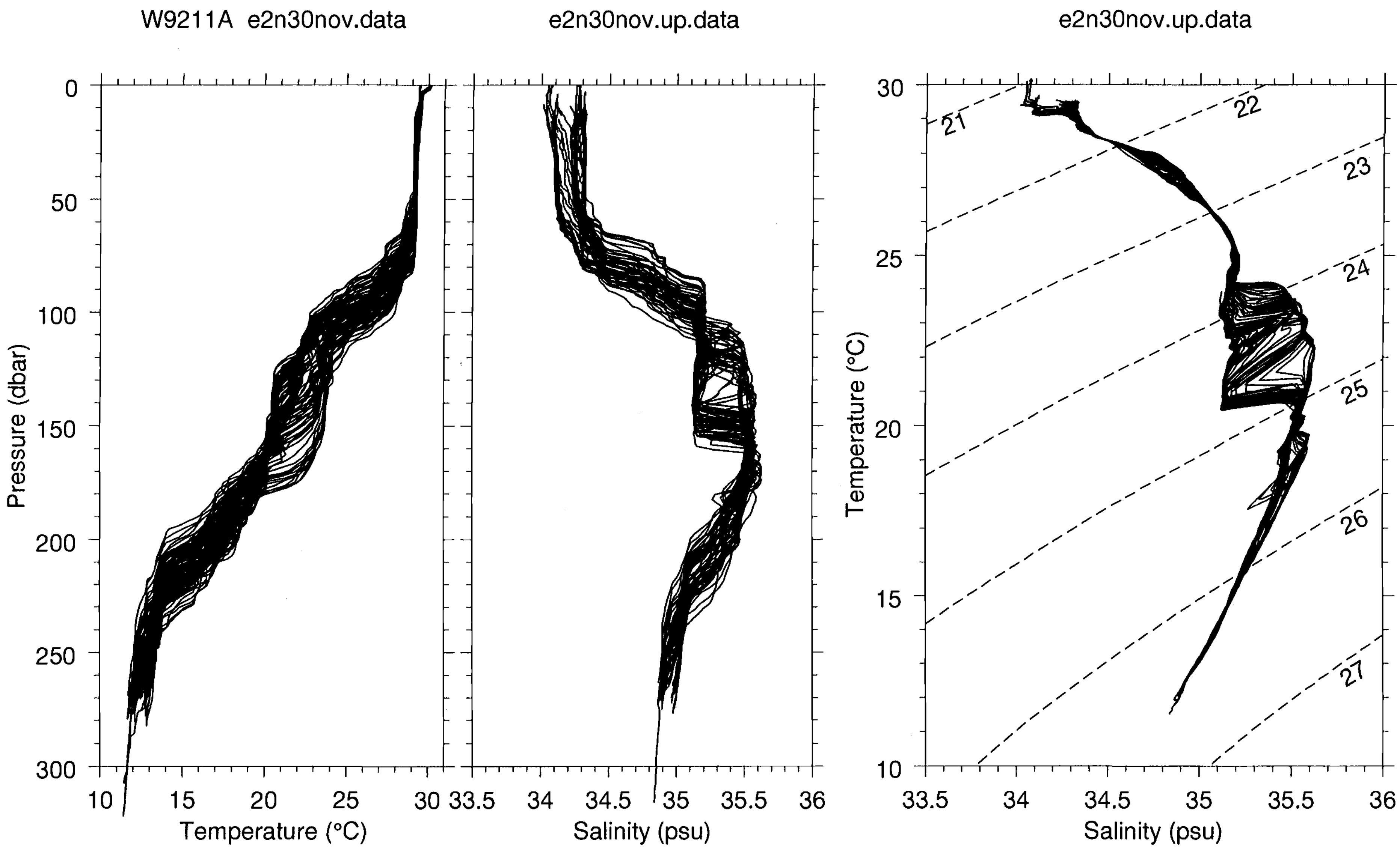
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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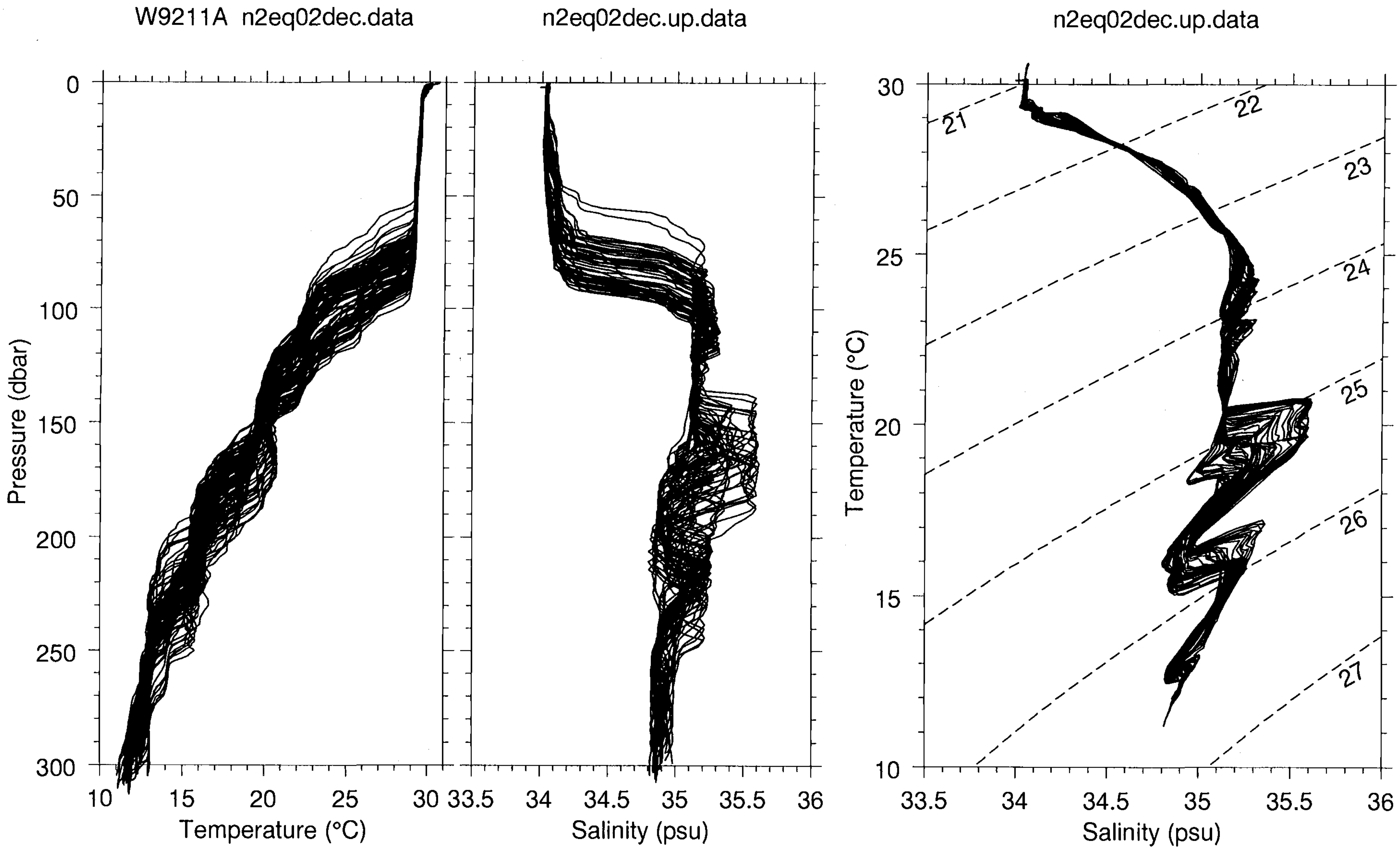
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Temperature (°C)
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Salinity (psu)
Temperature (°C)
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Salinity (psu)
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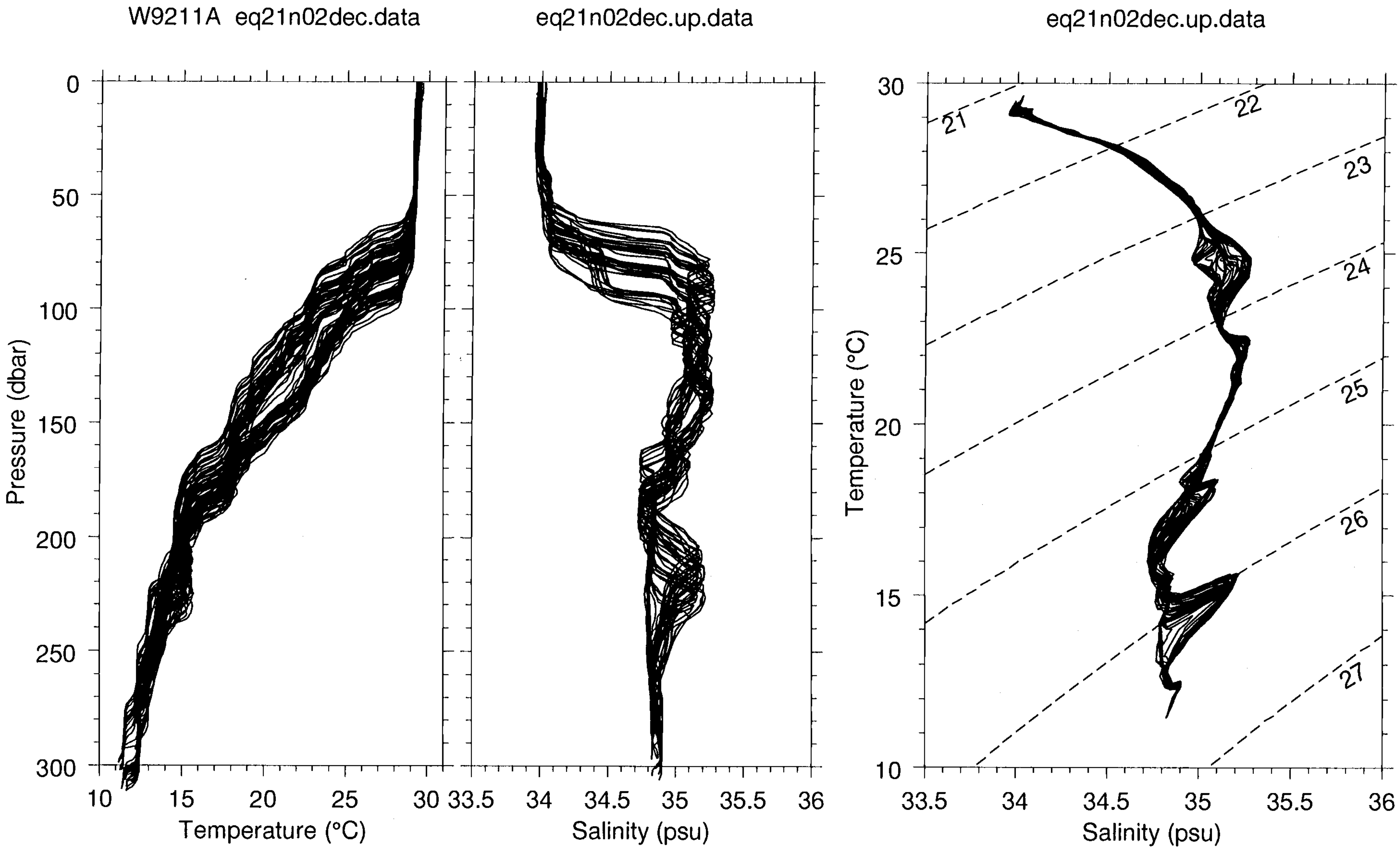
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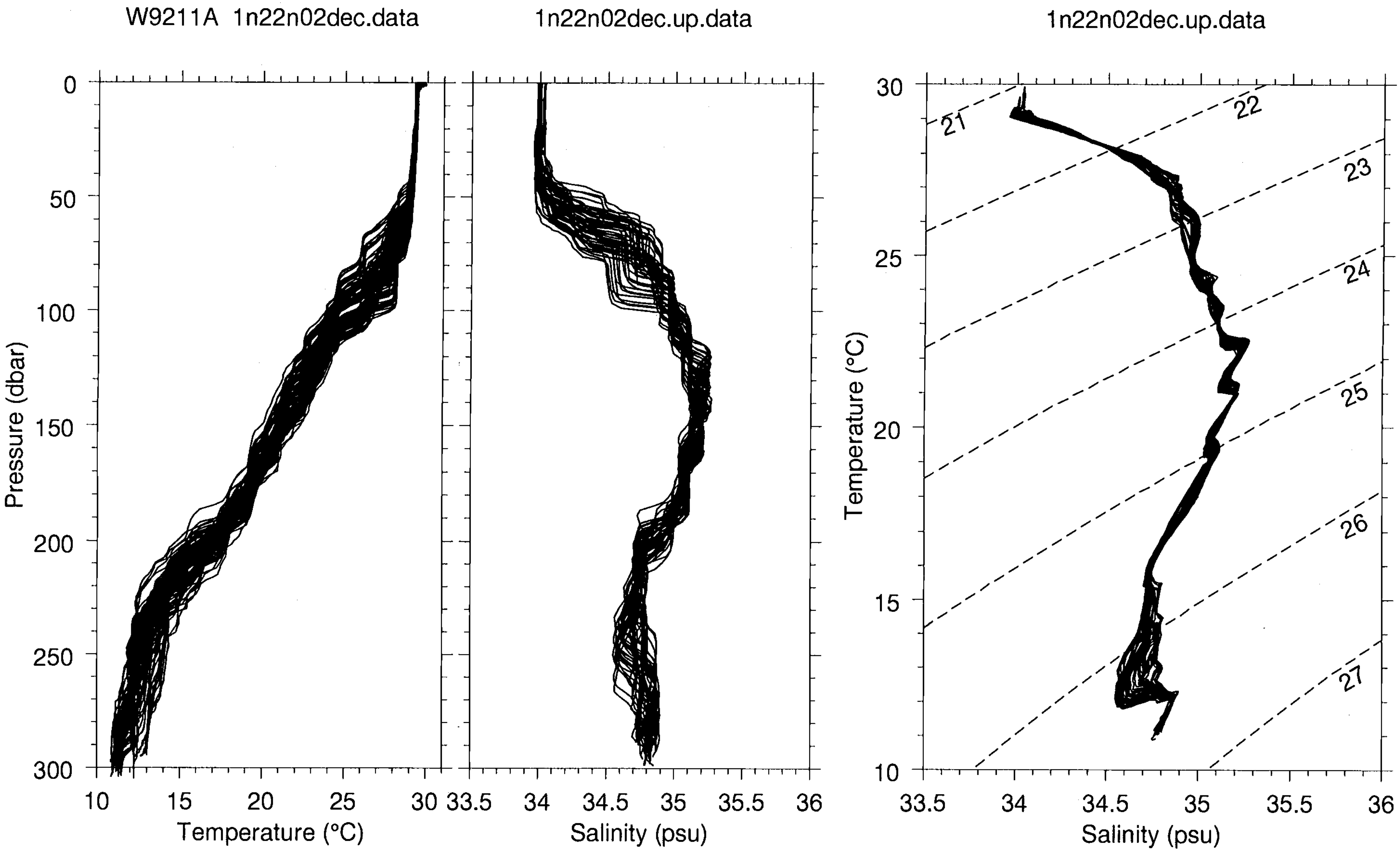
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Salinity (psu)
Temperature (°C)
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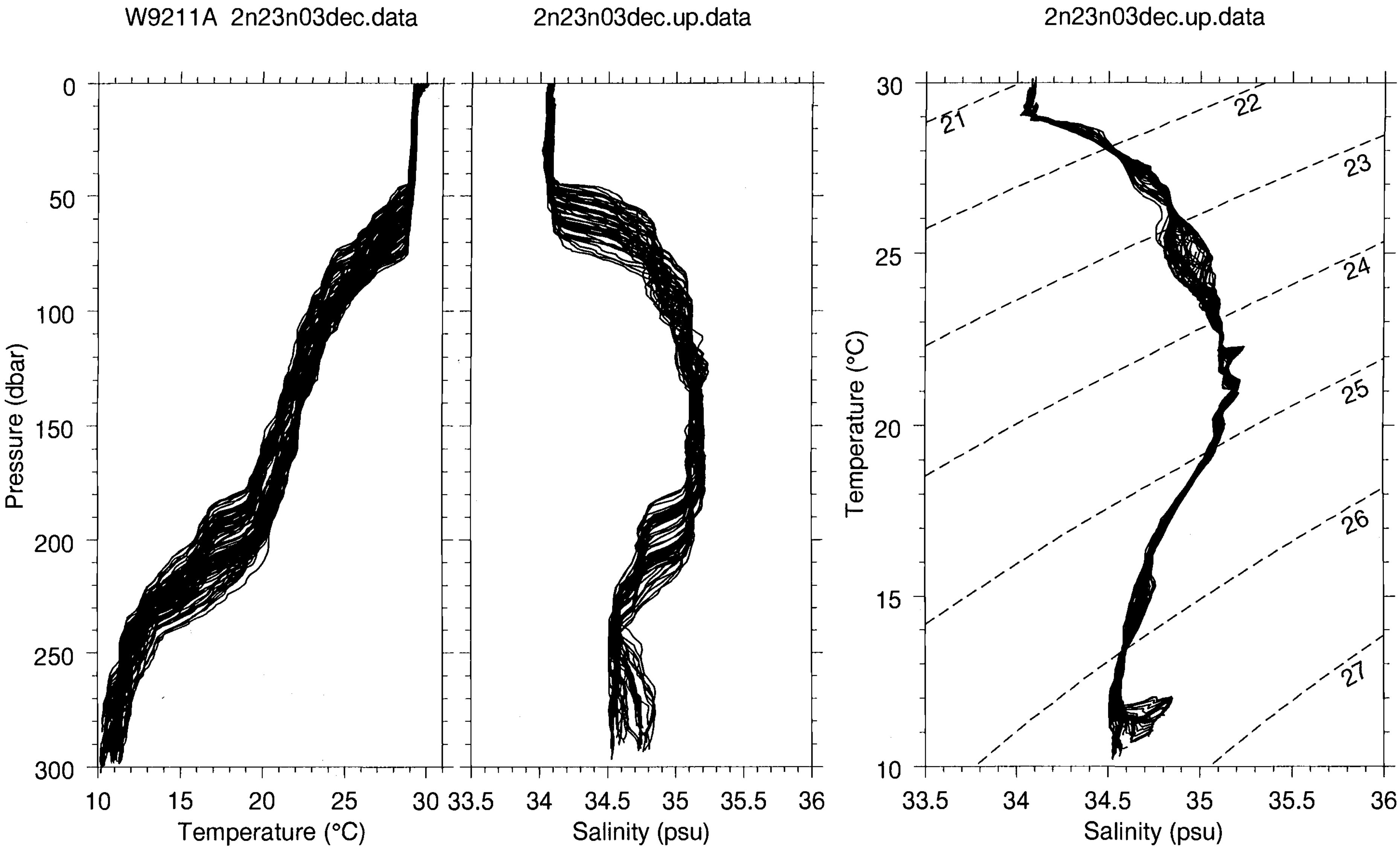

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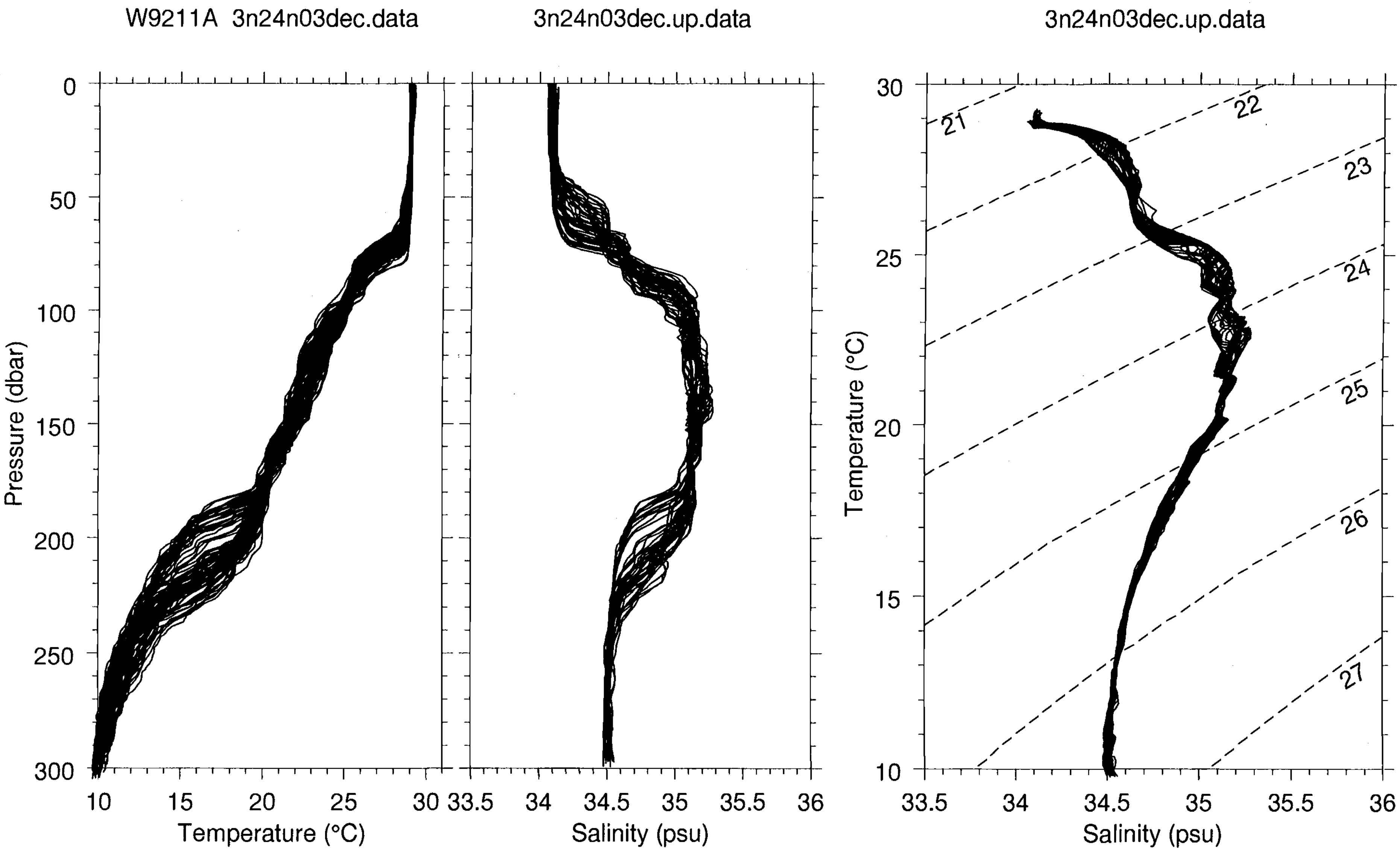
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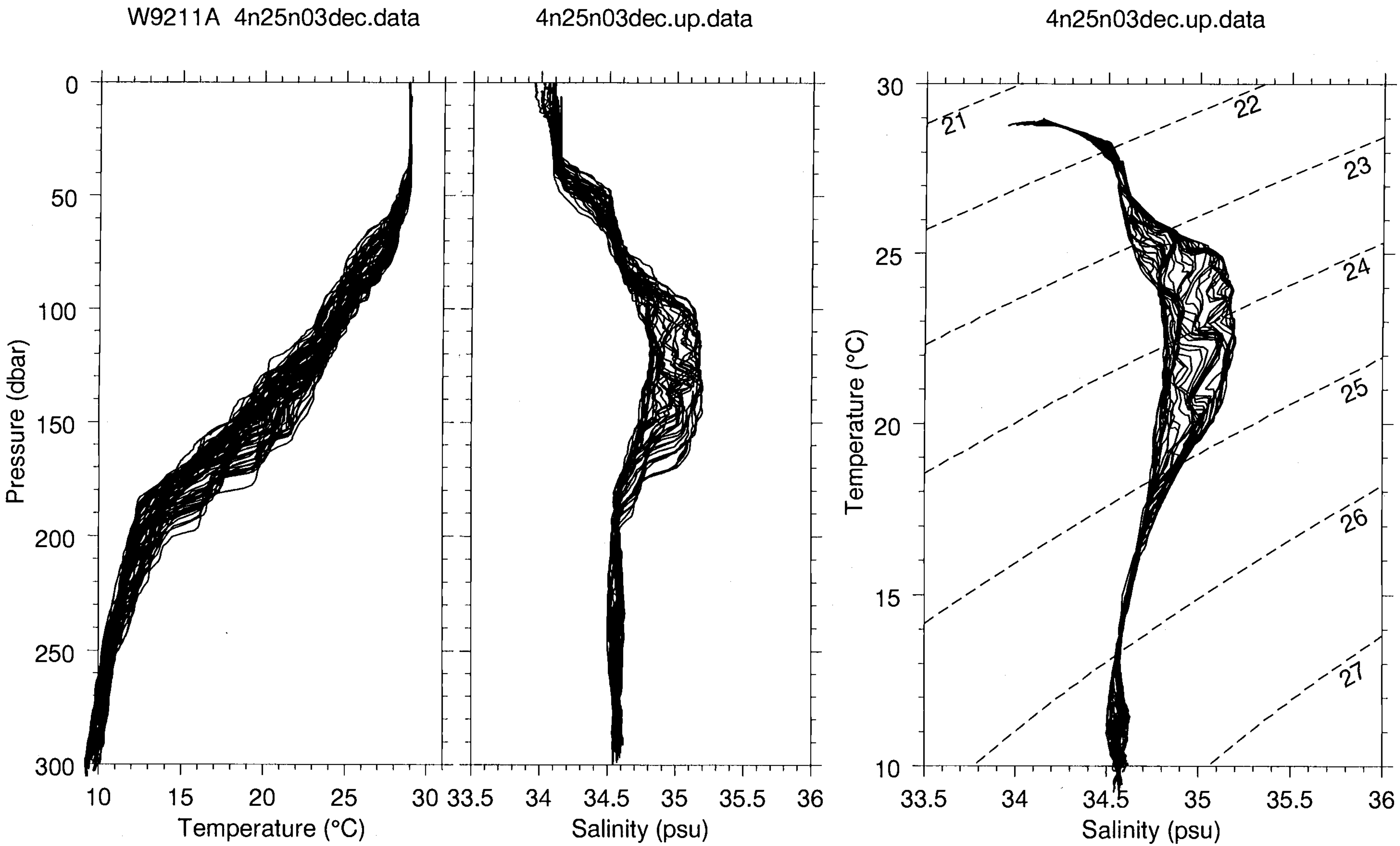
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Pressure (dbar)
Temperature (°C)
Salinity (psu)
Temperature (°C)
Salinity (psu)
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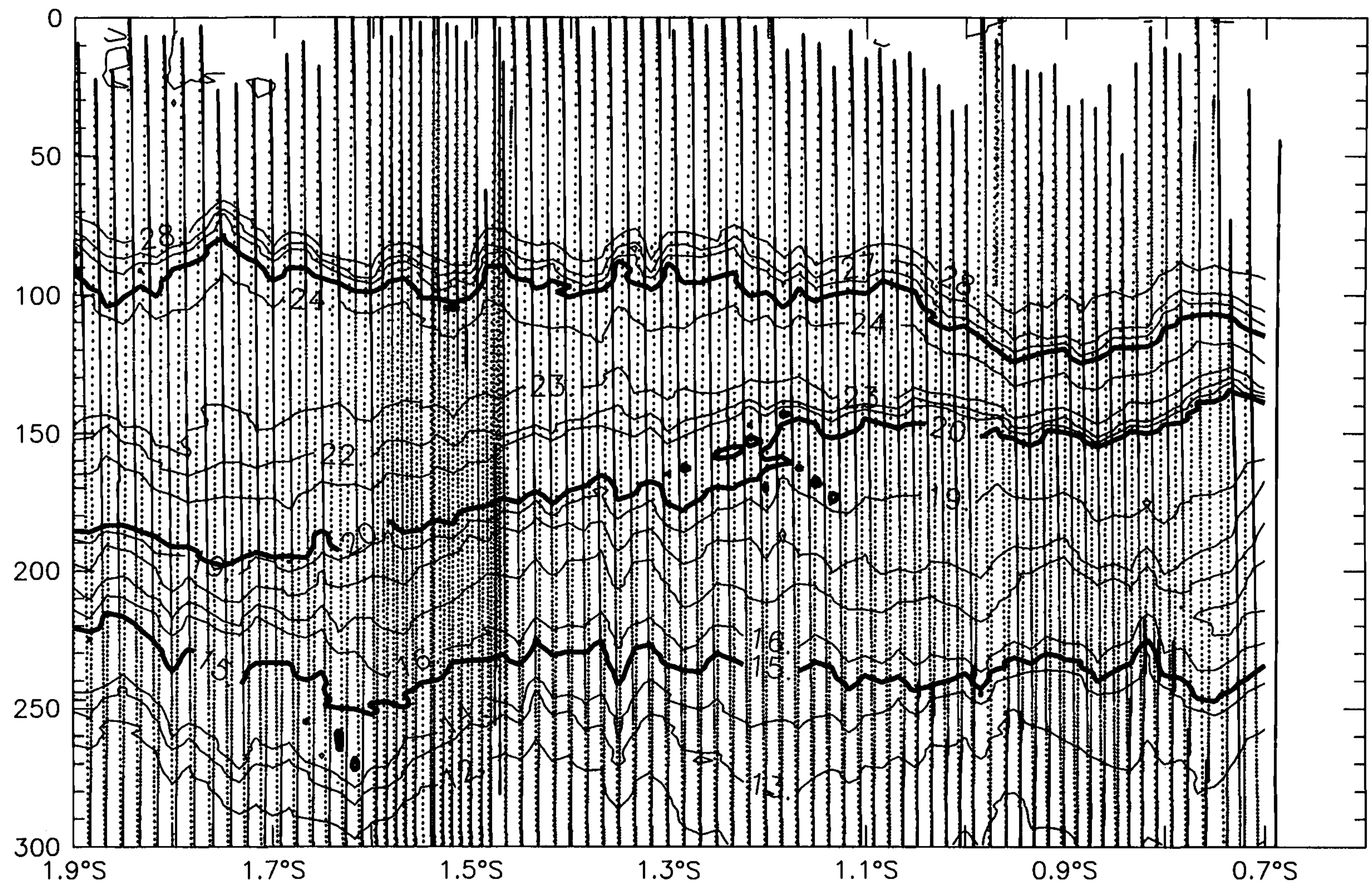
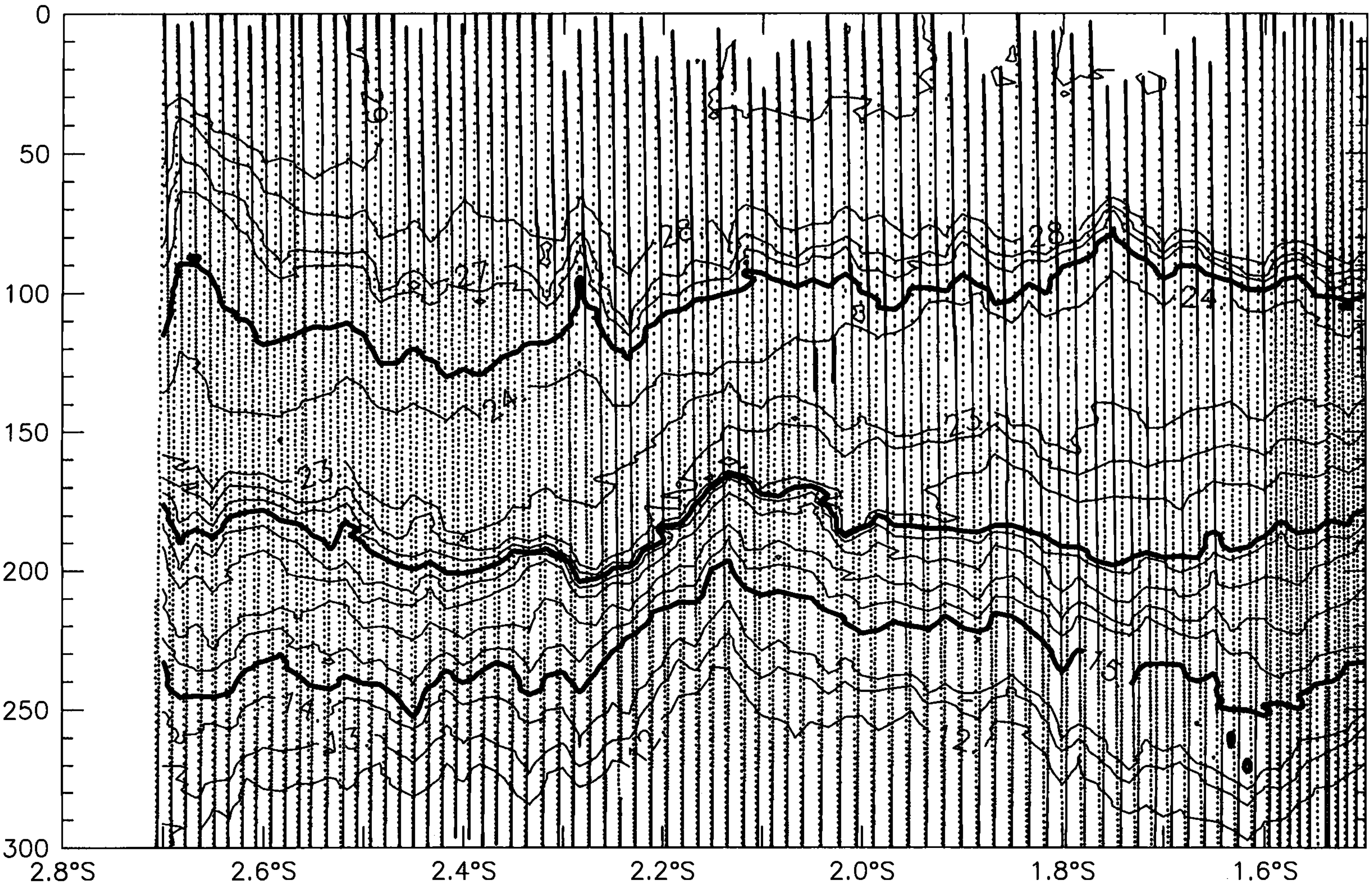
VERTICAL SECTIONS

OF

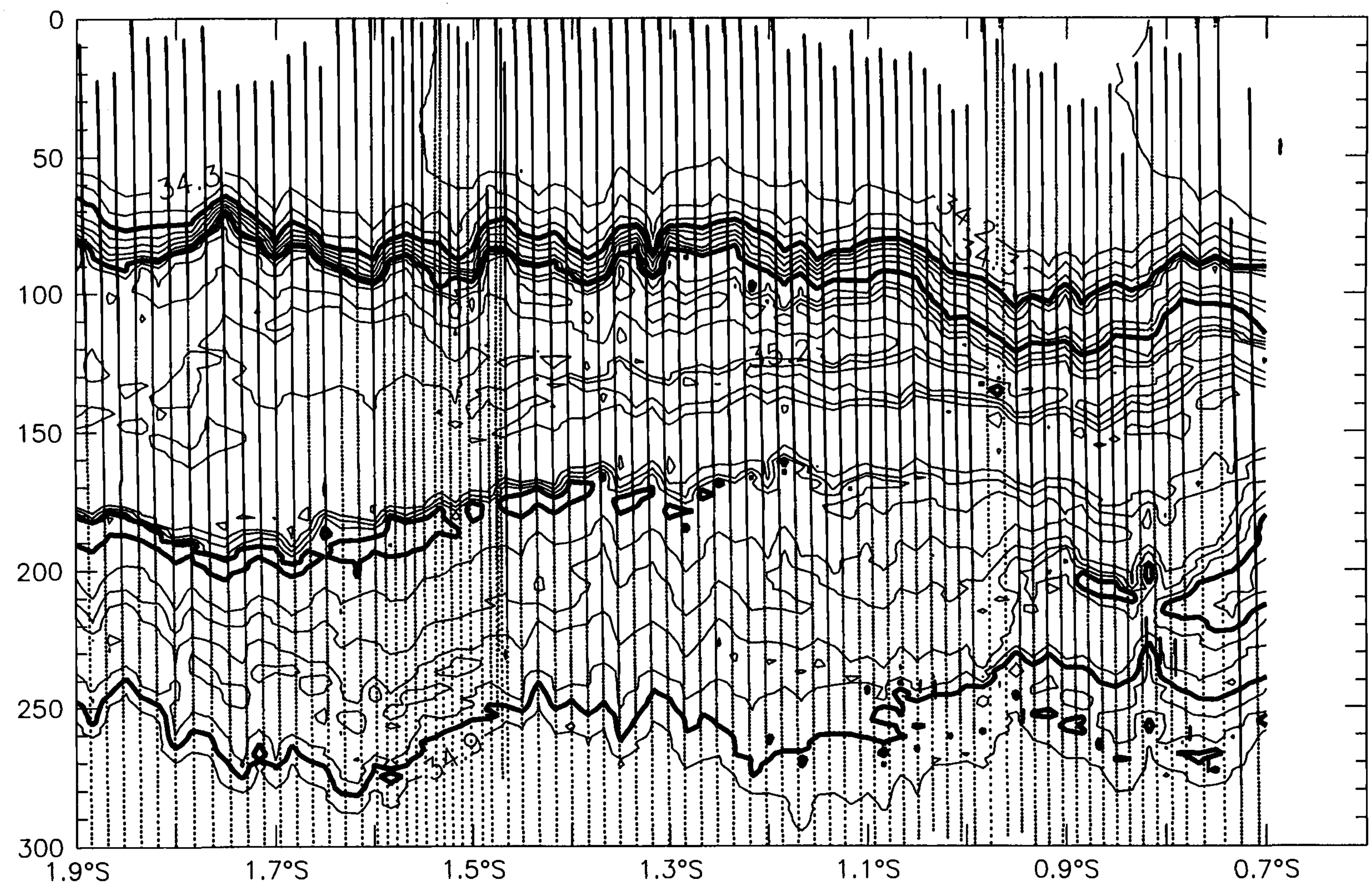
TEMPERATURE, SALINITY AND SIGMA-T



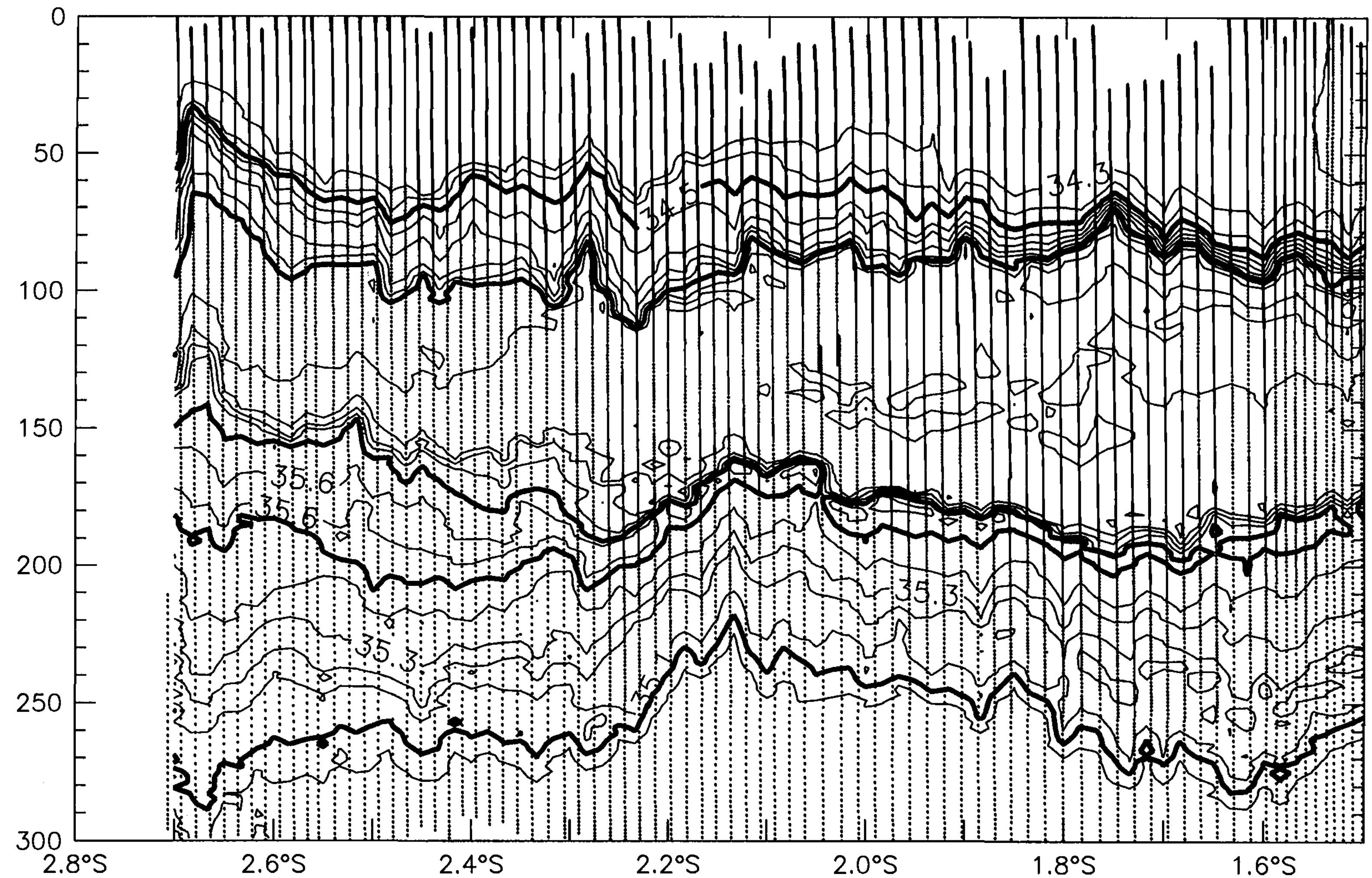
T(°C), LBN to LBS, 13 November 1992



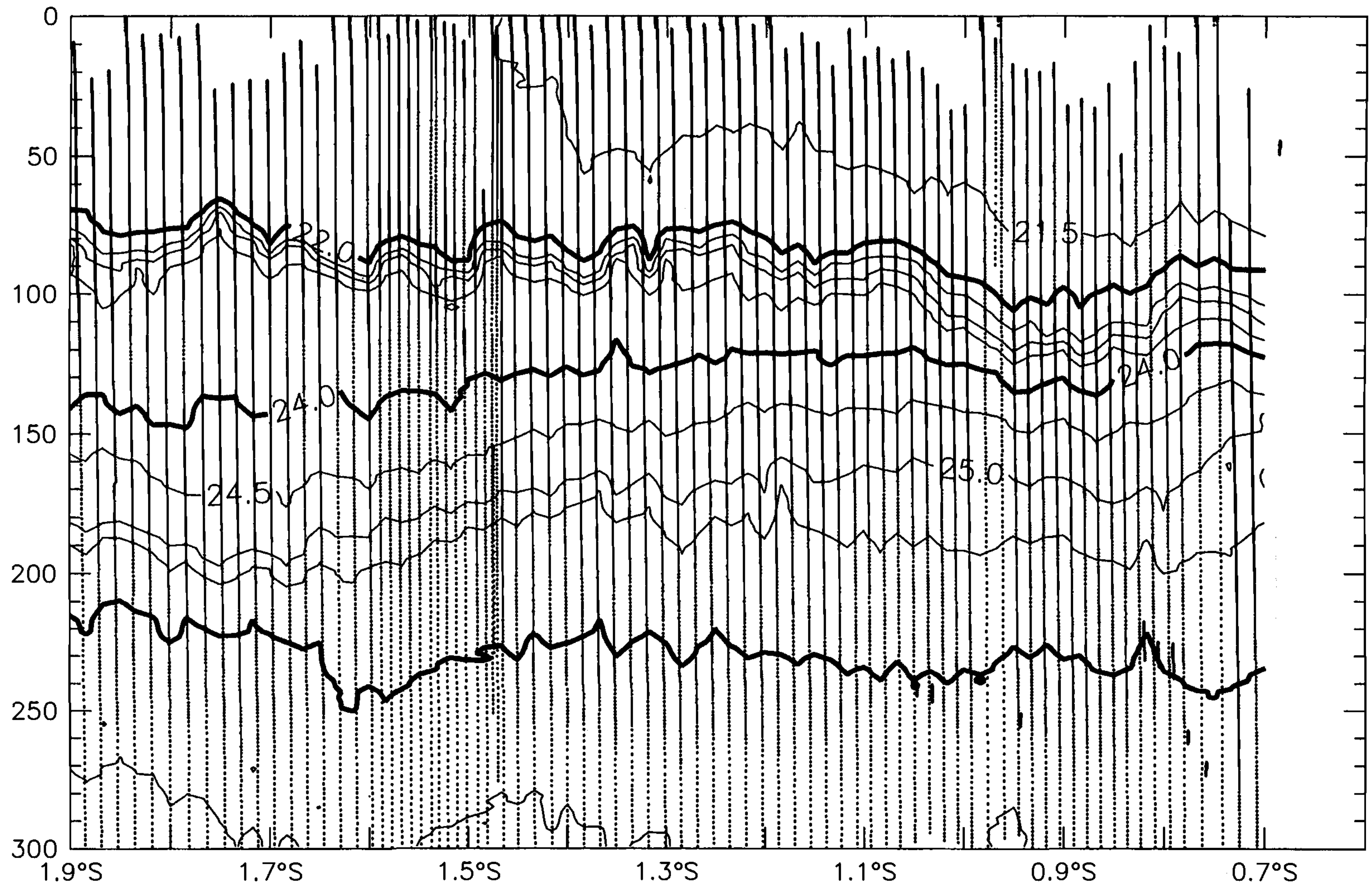
T(°C), LBN to LBS, 13 November 1992



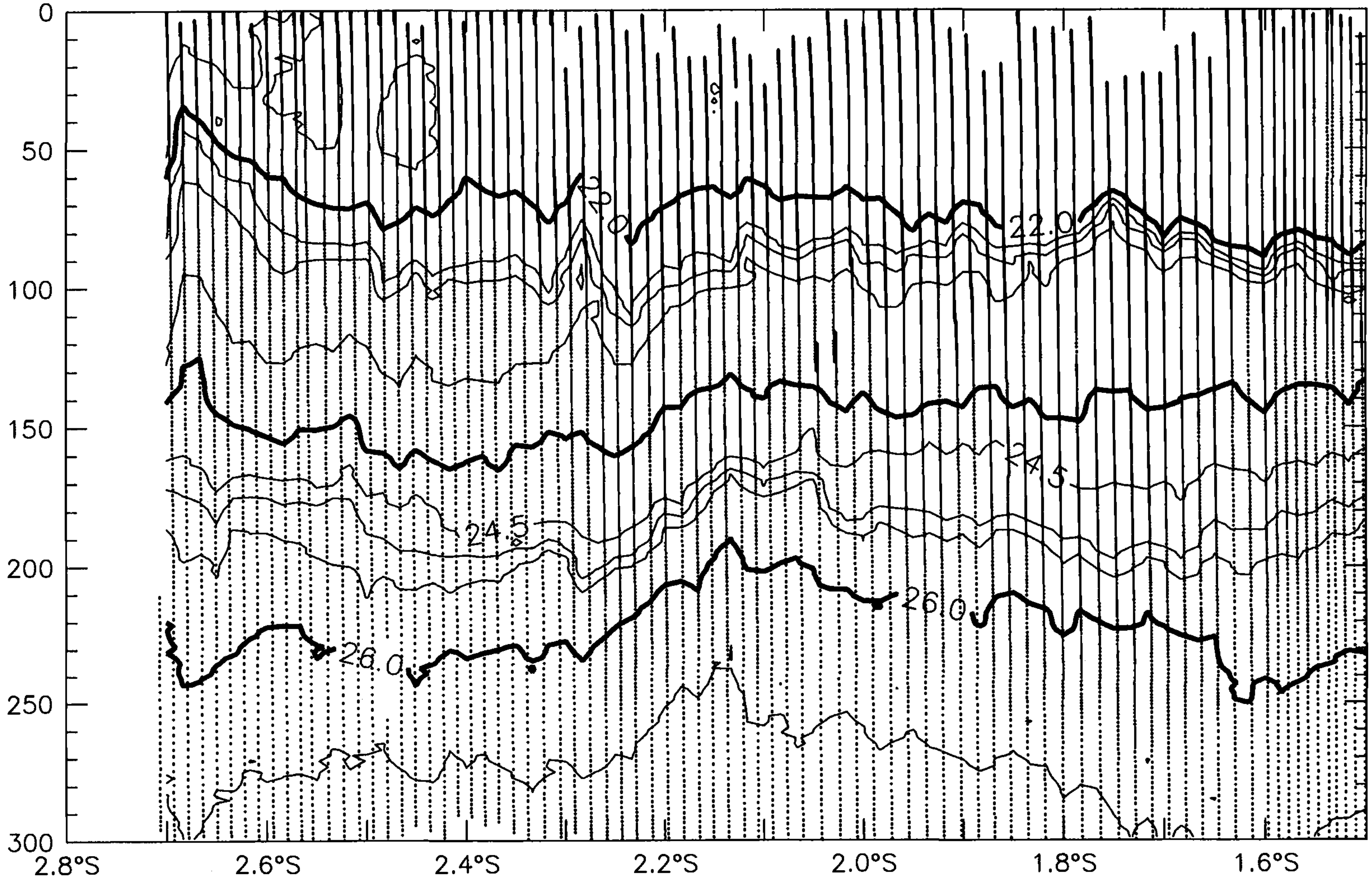
S(psu), LBN to LBS, 13 November 1992



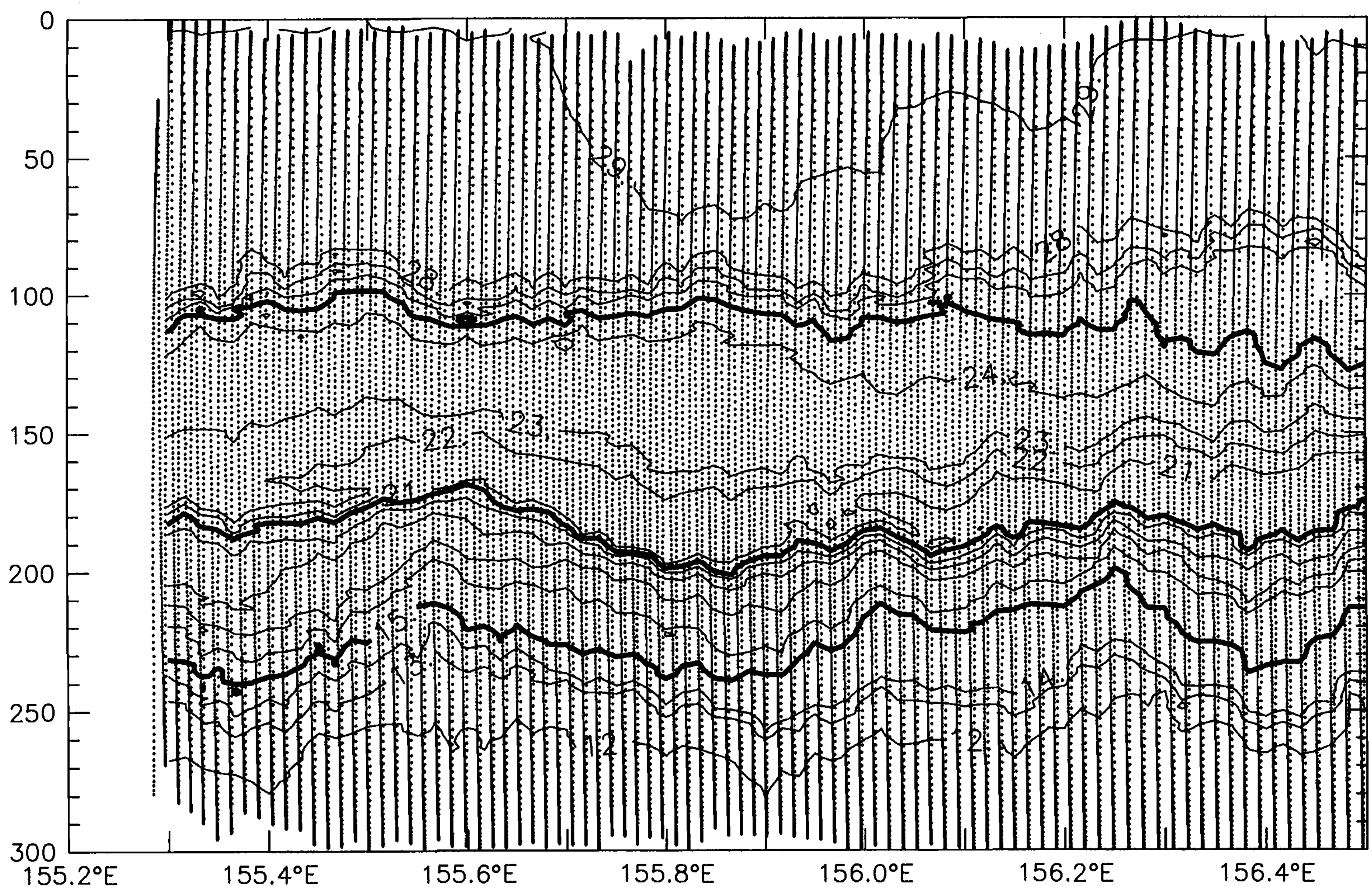
S(psu), LBN to LBS, 13 November 1992



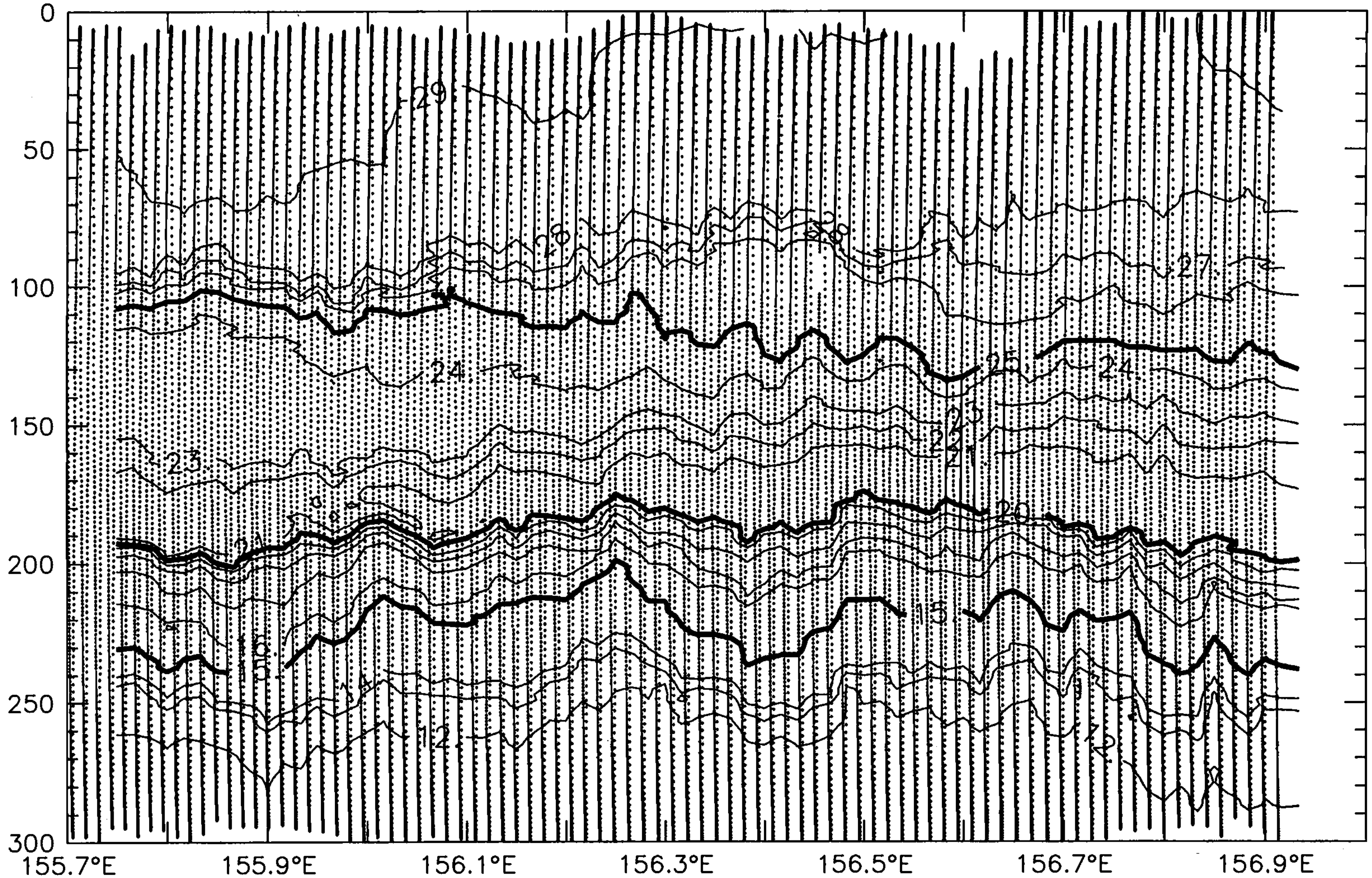
Sigma−t, LBN to LBS, 13 November 1992



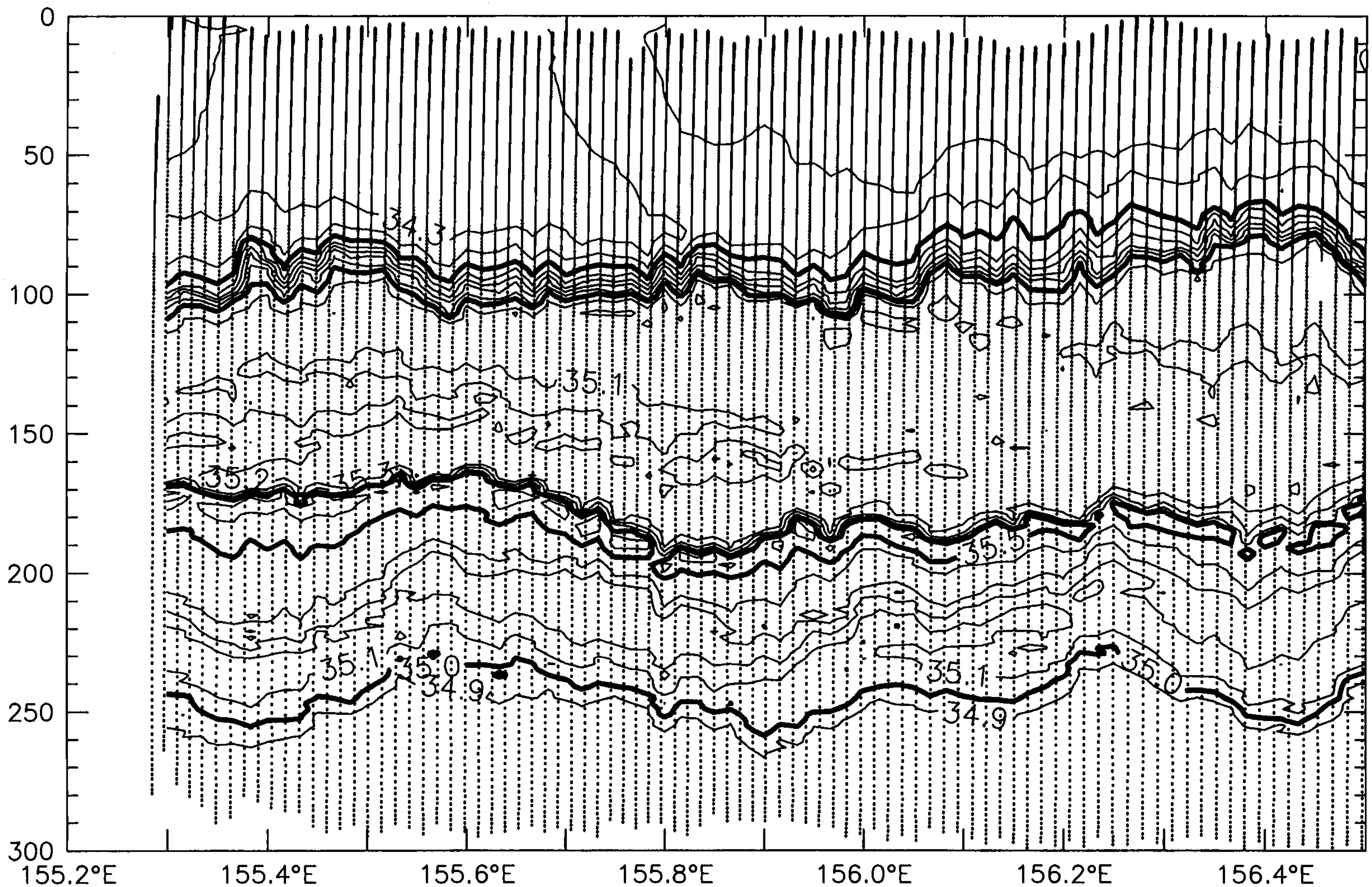
Sigma–t, LBN to LBS, 13 November 1992



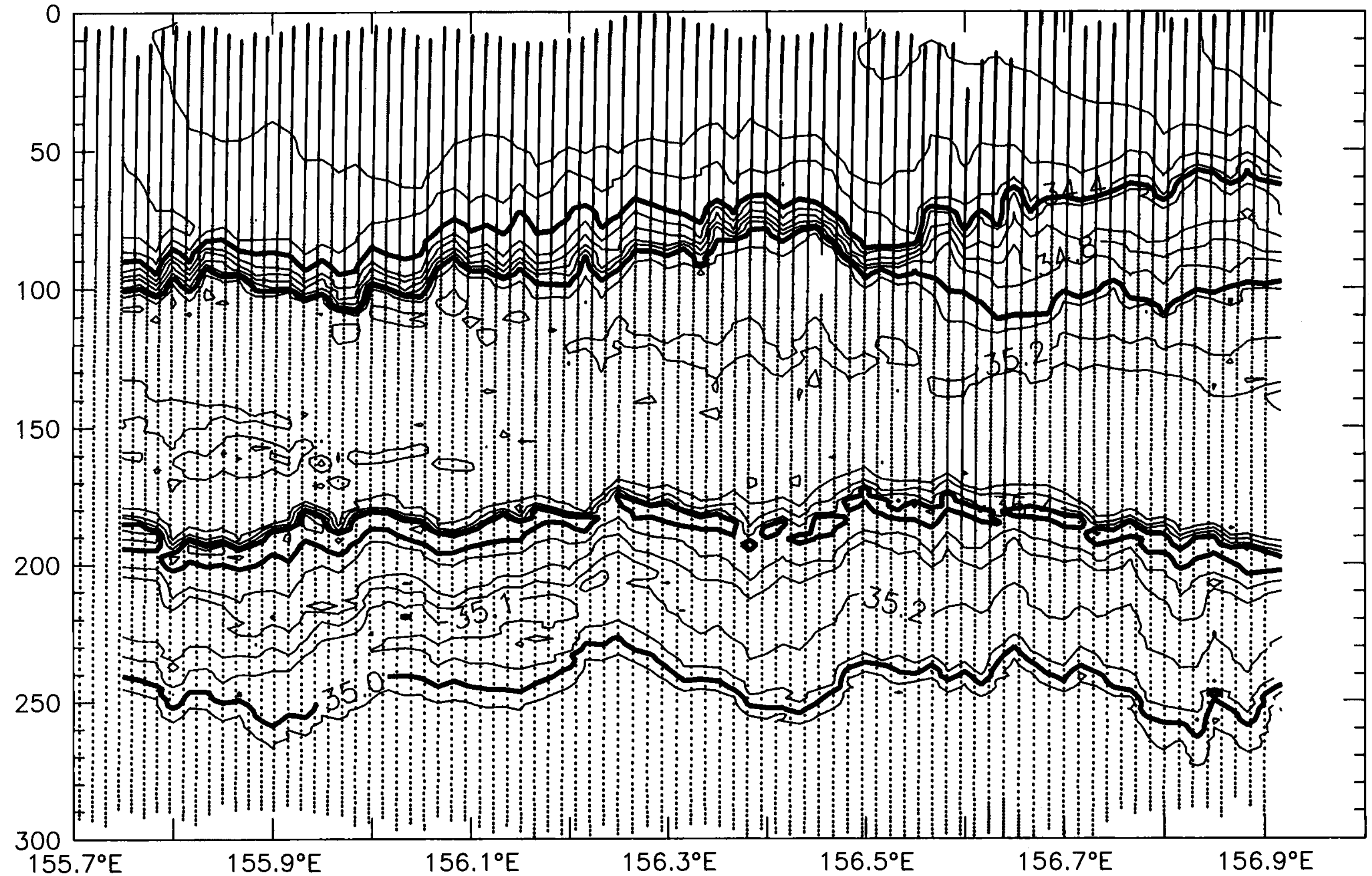
T(°C), LBW to LBE, 14 November 1992



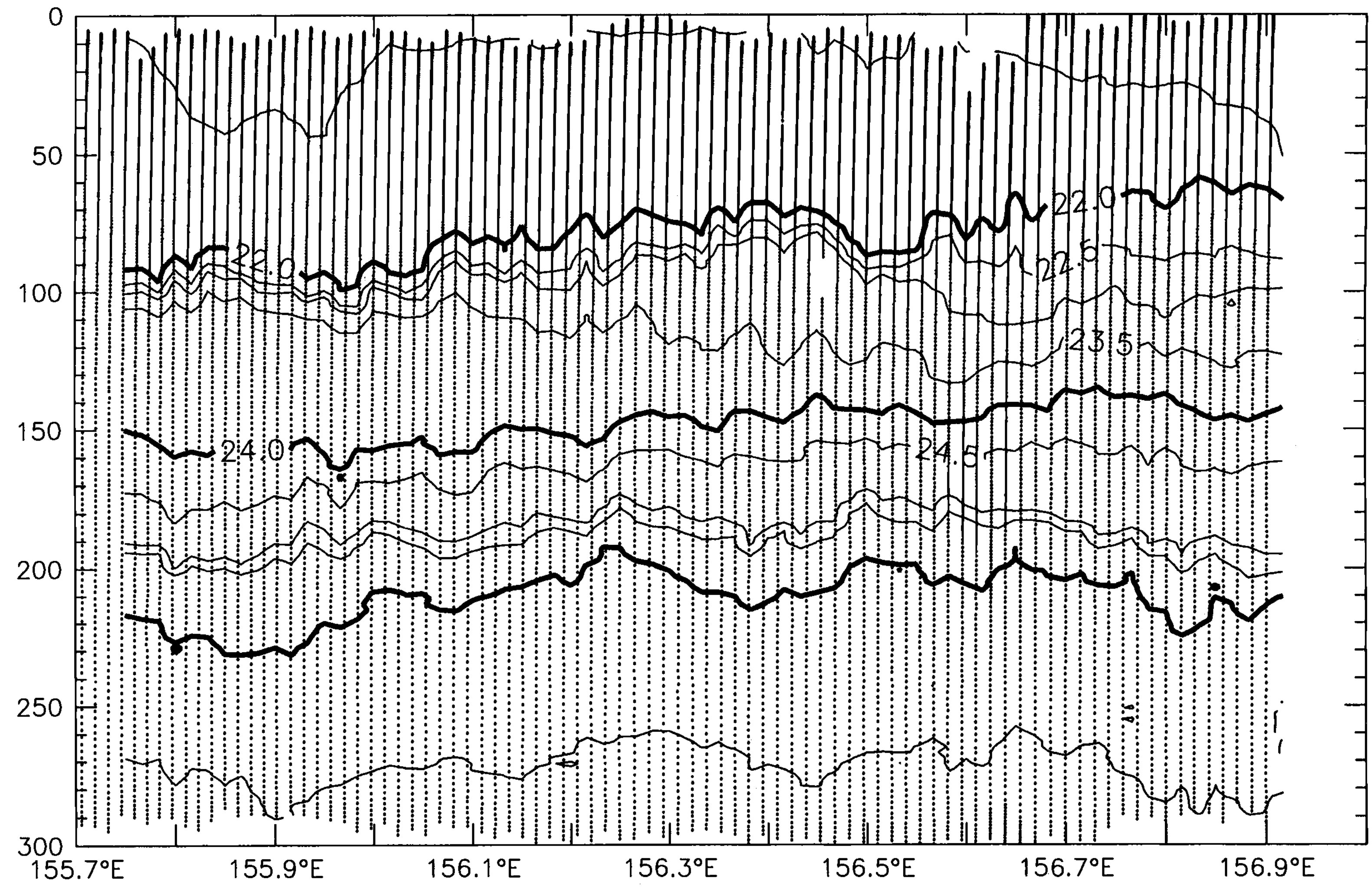
T(°C), LBW to LBE, 14 November 1992



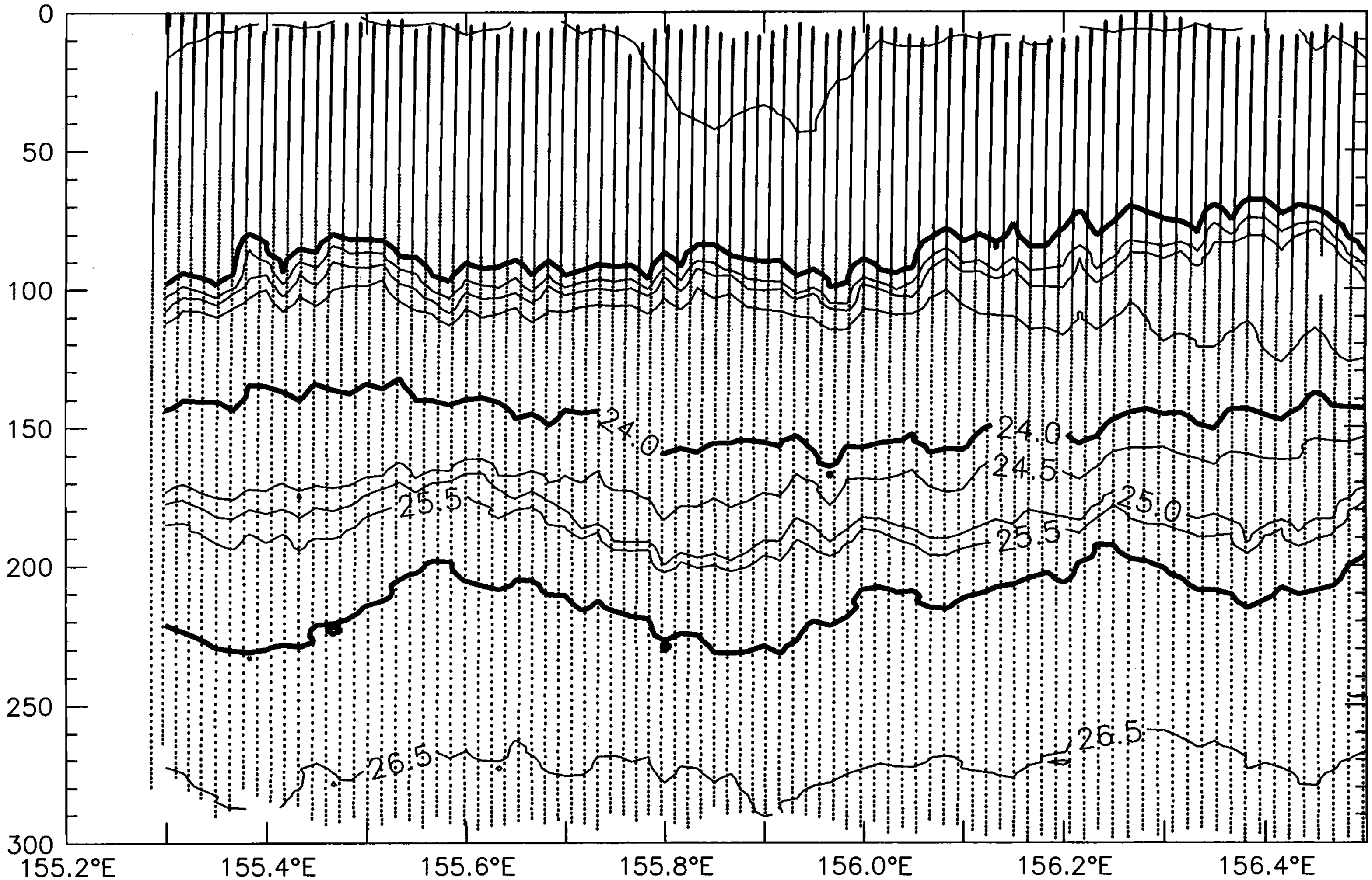
S(psu), LBW to LBE, 14 November 1992



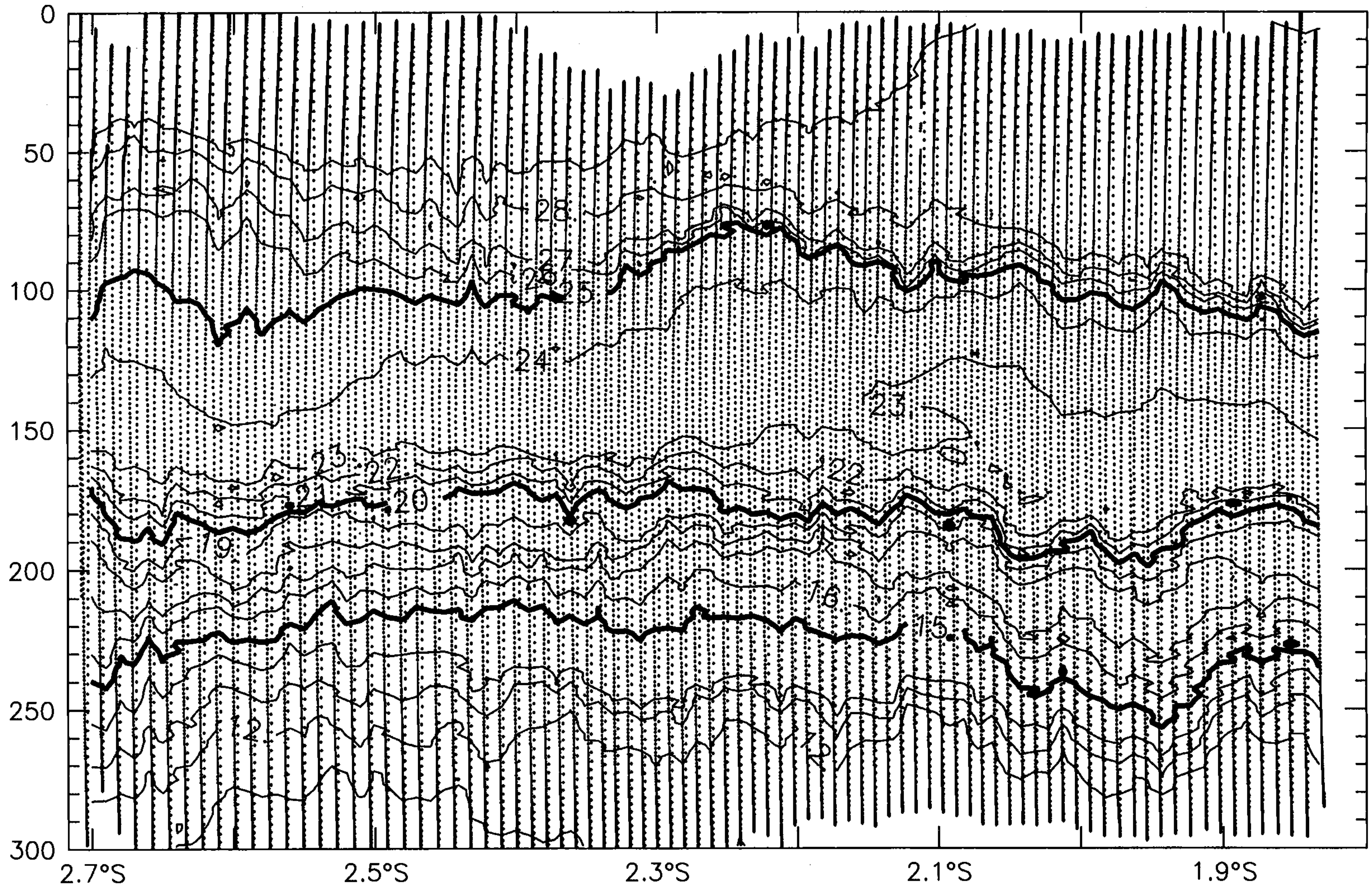
S(psu), LBW to LBE, 14 November 1992



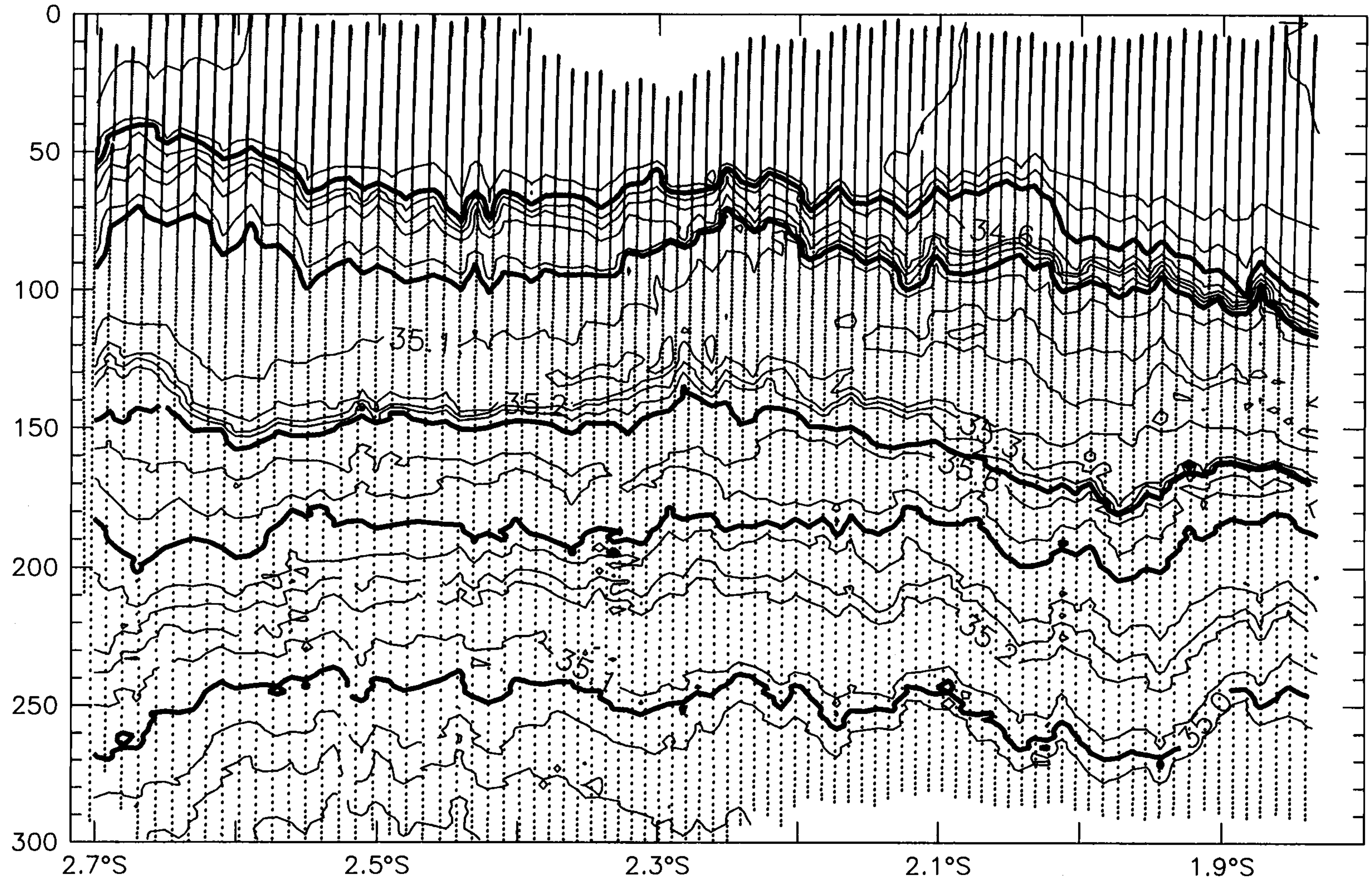
Sigma–t, LBW to LBE, 14 November 1992



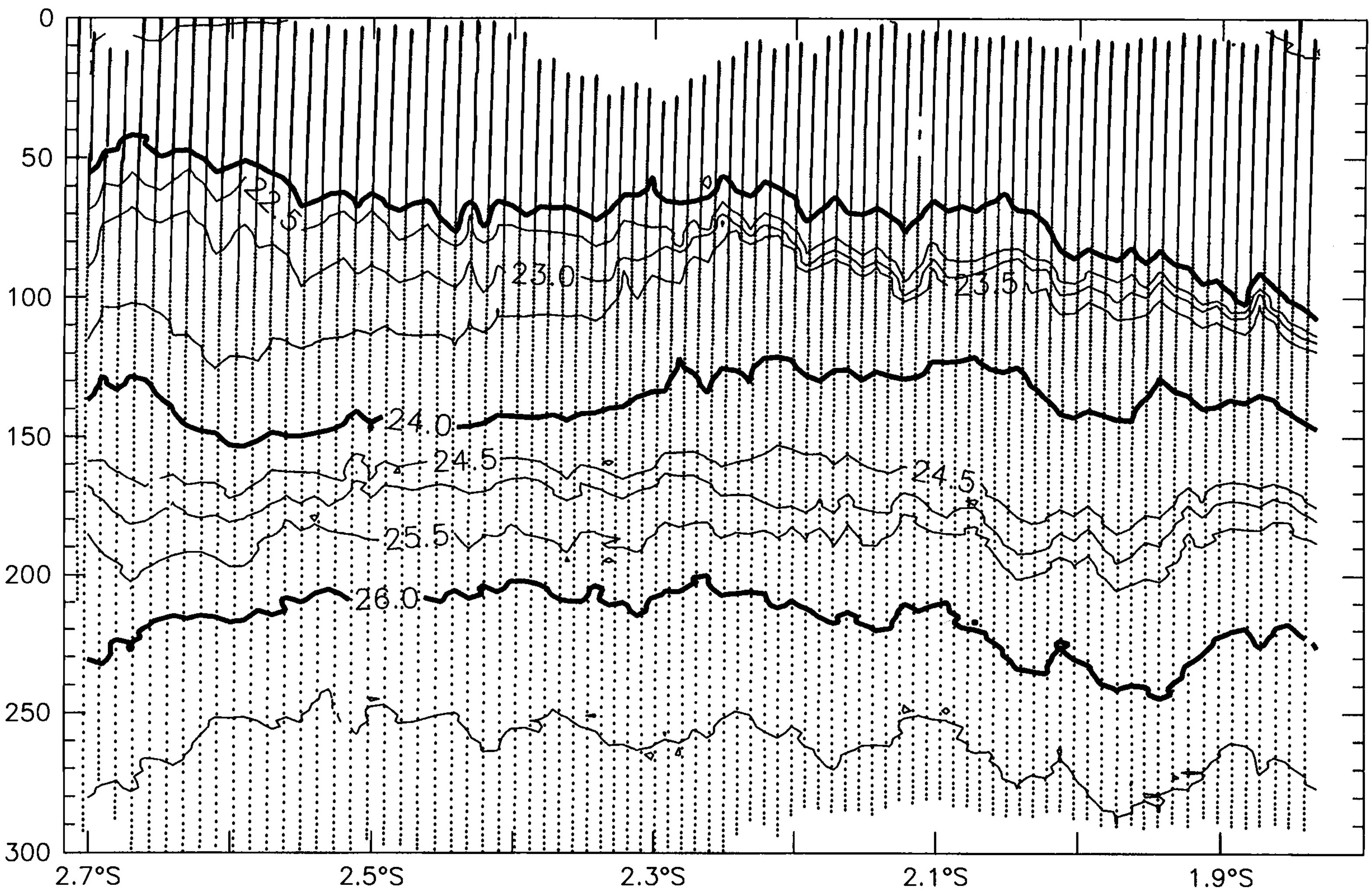
Sigma–t, LBW to LBE, 14 November 1992



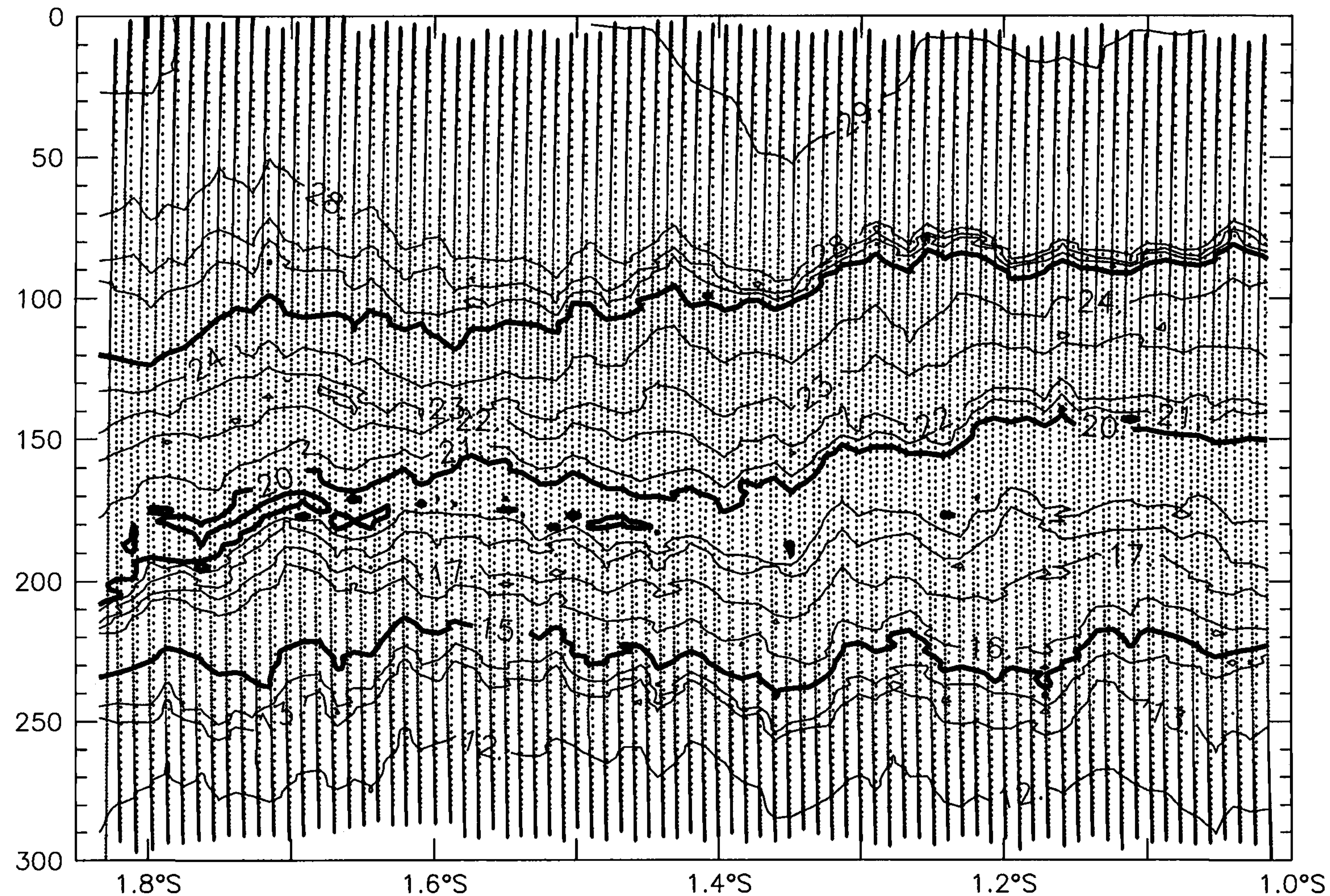
T(°C), LBS to LBW, 13 November 1992



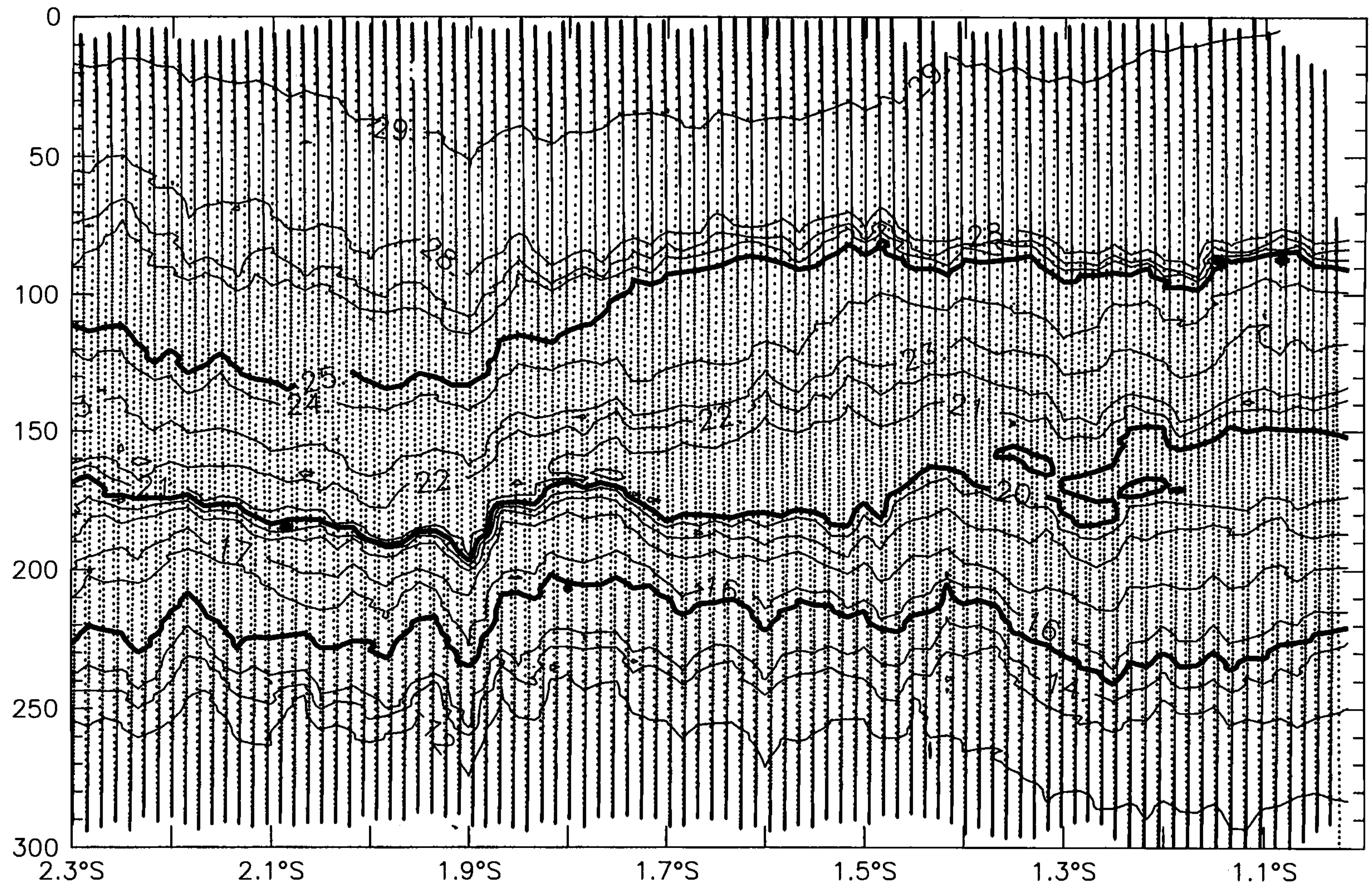
S(psu), LBS to LBW, 13 November 1992



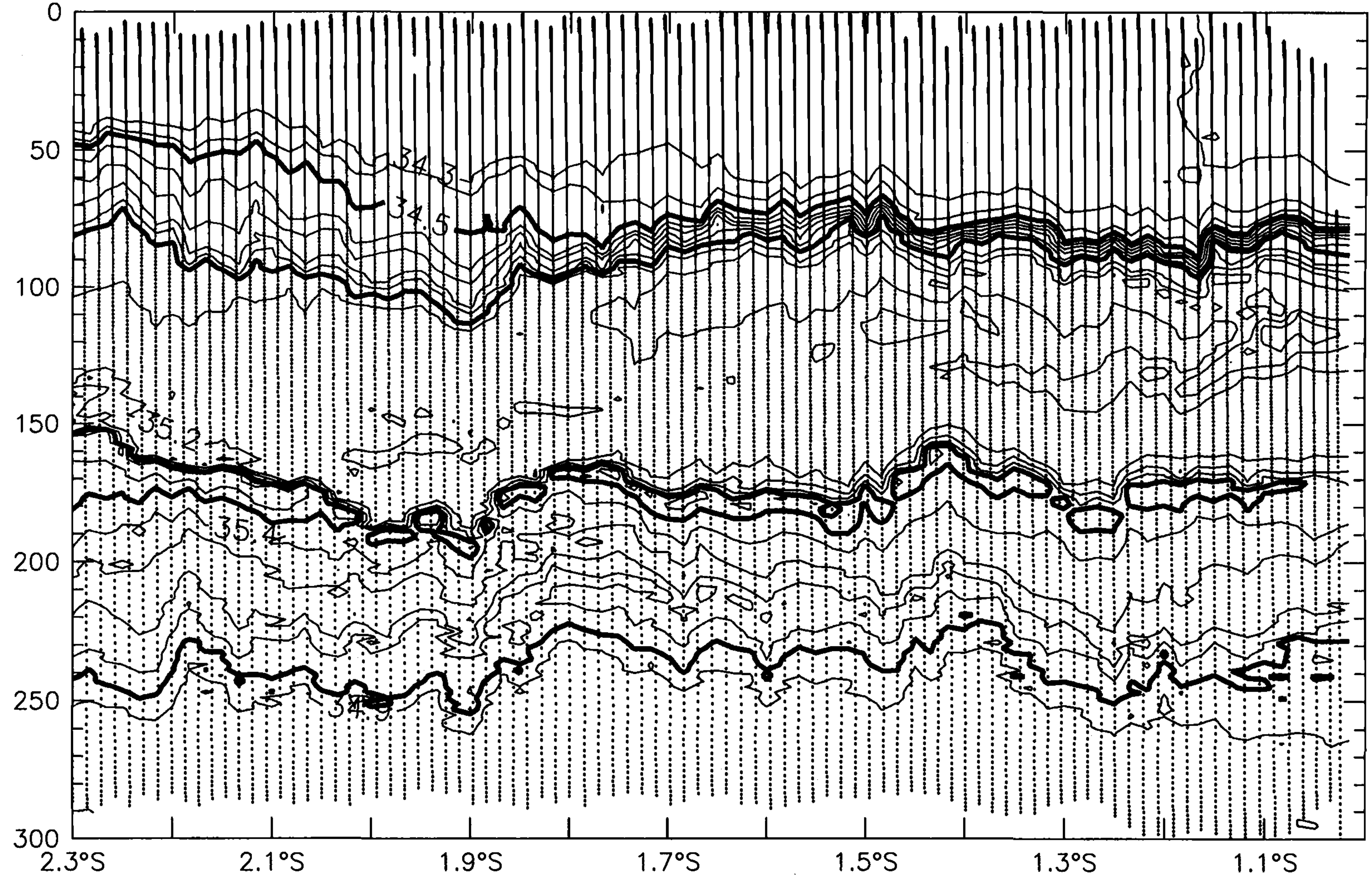
Sigma–t, LBS to LBW, 13 November 1992



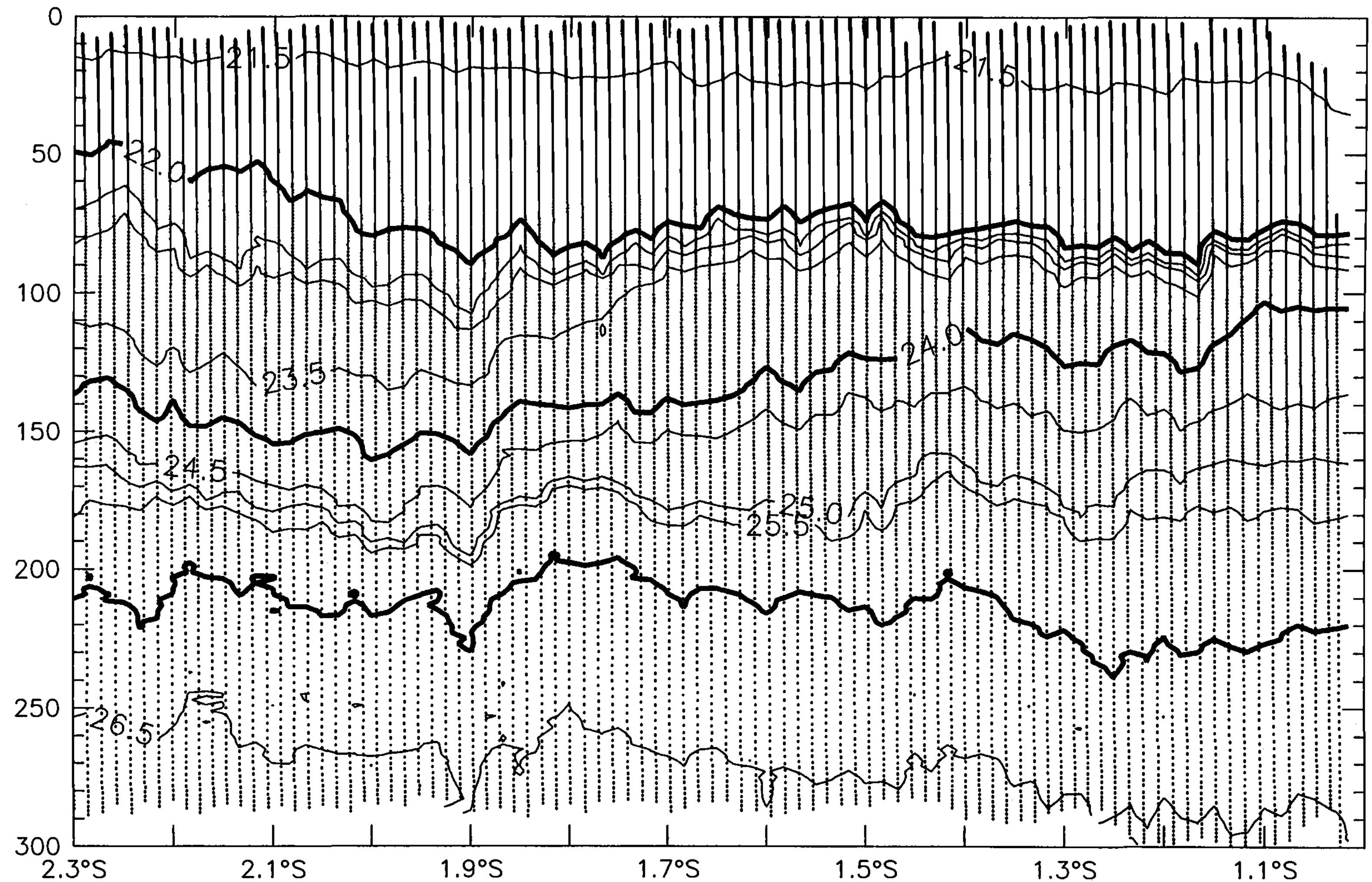
T(°C), LBE to LBN, 14 November 1992



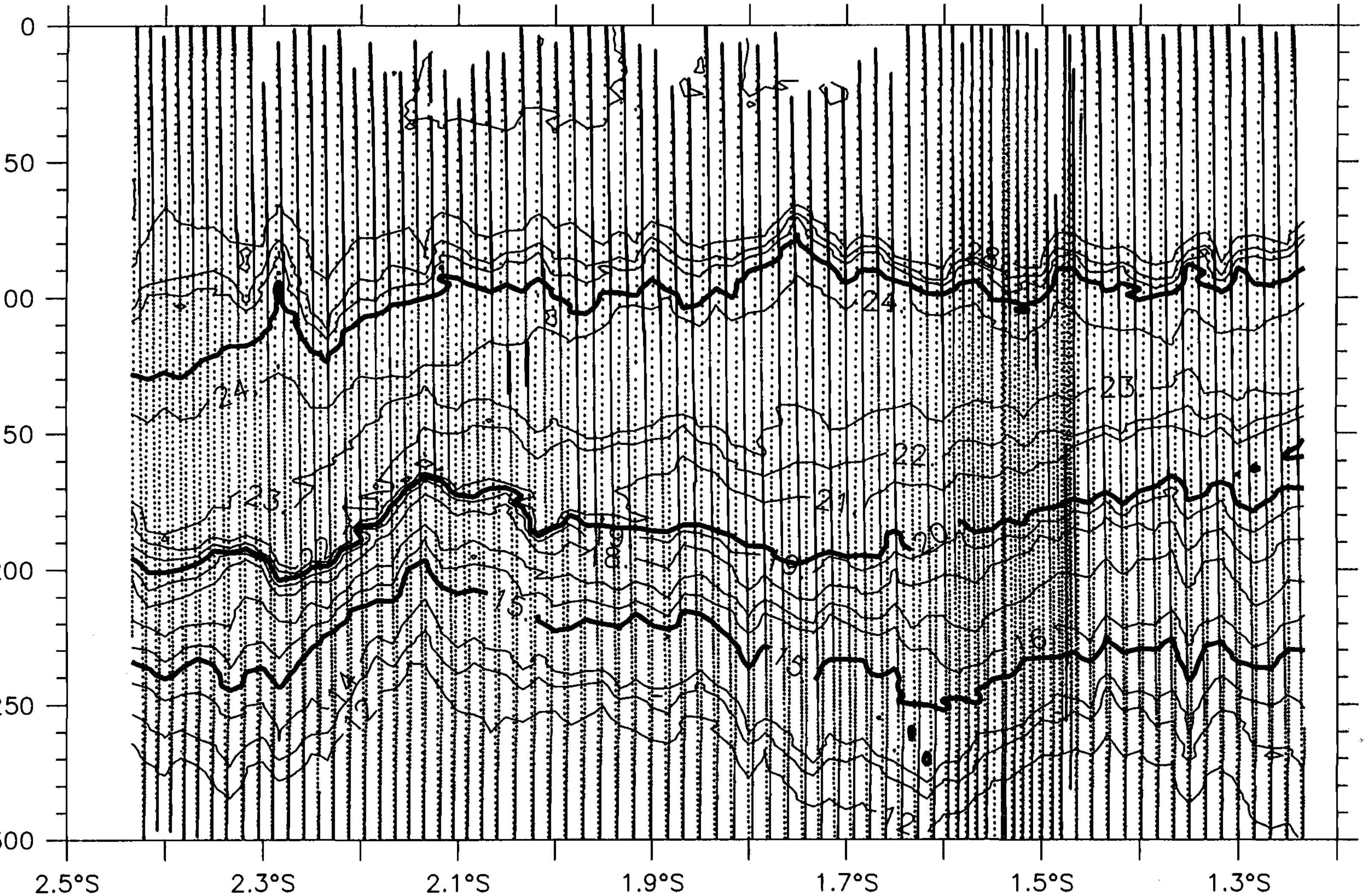
T(°C), LBN to SBS, 15 November 1992



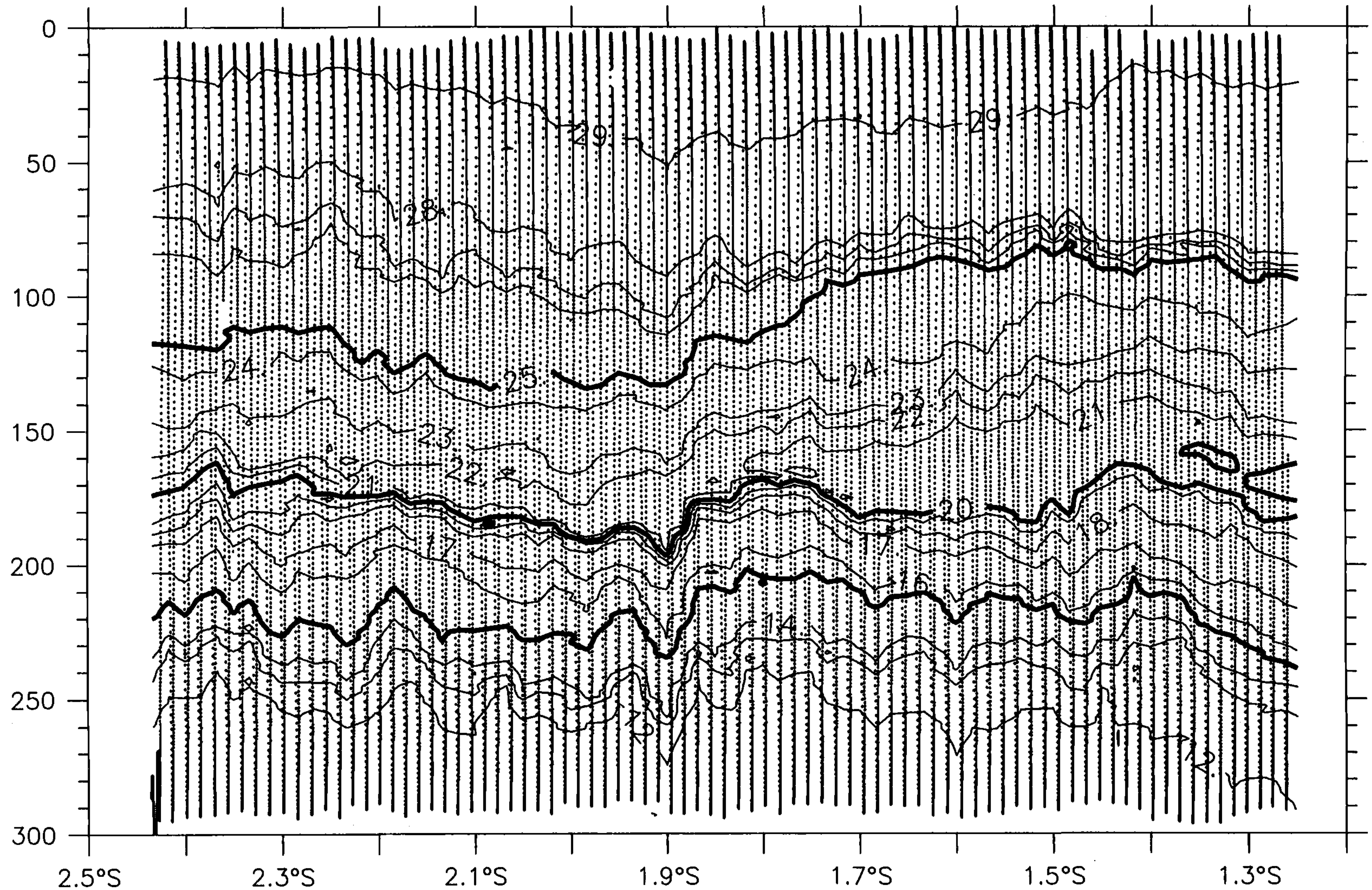
S(psu), LBN to SBS, 15 November 1992



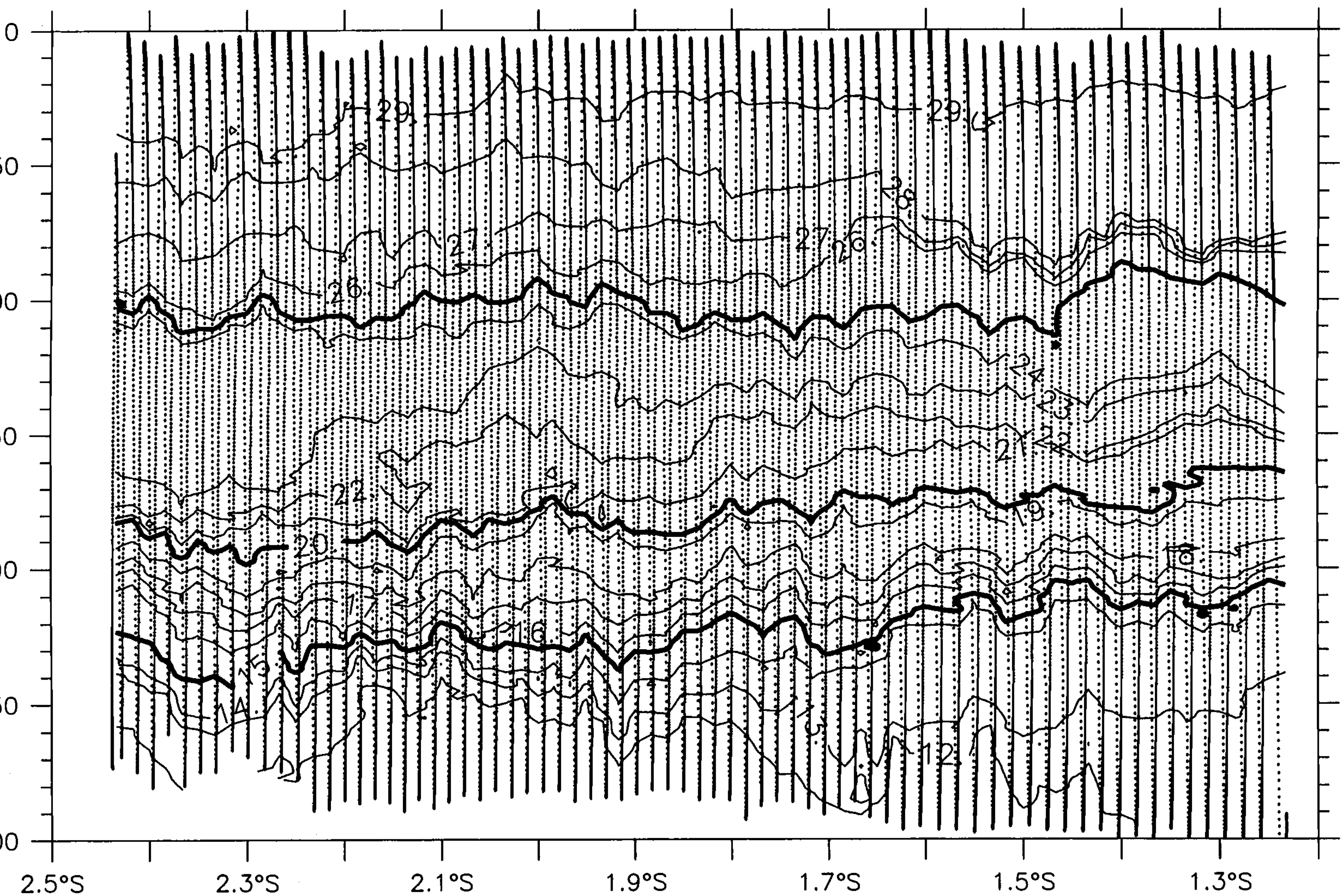
Sigma-t, LBN to SBS, 15 November 1992



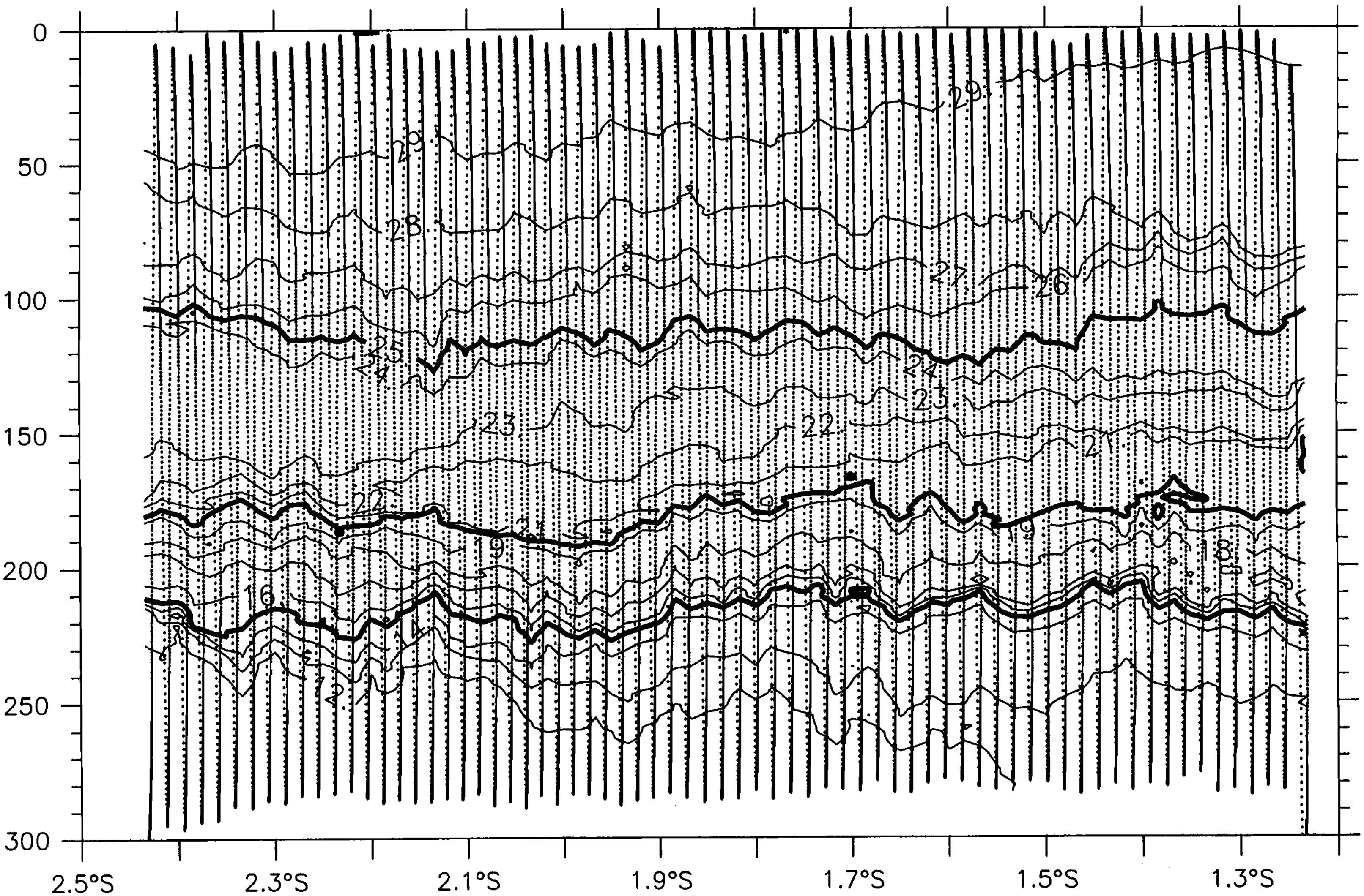
T(°C), N2S, 13 November 1992



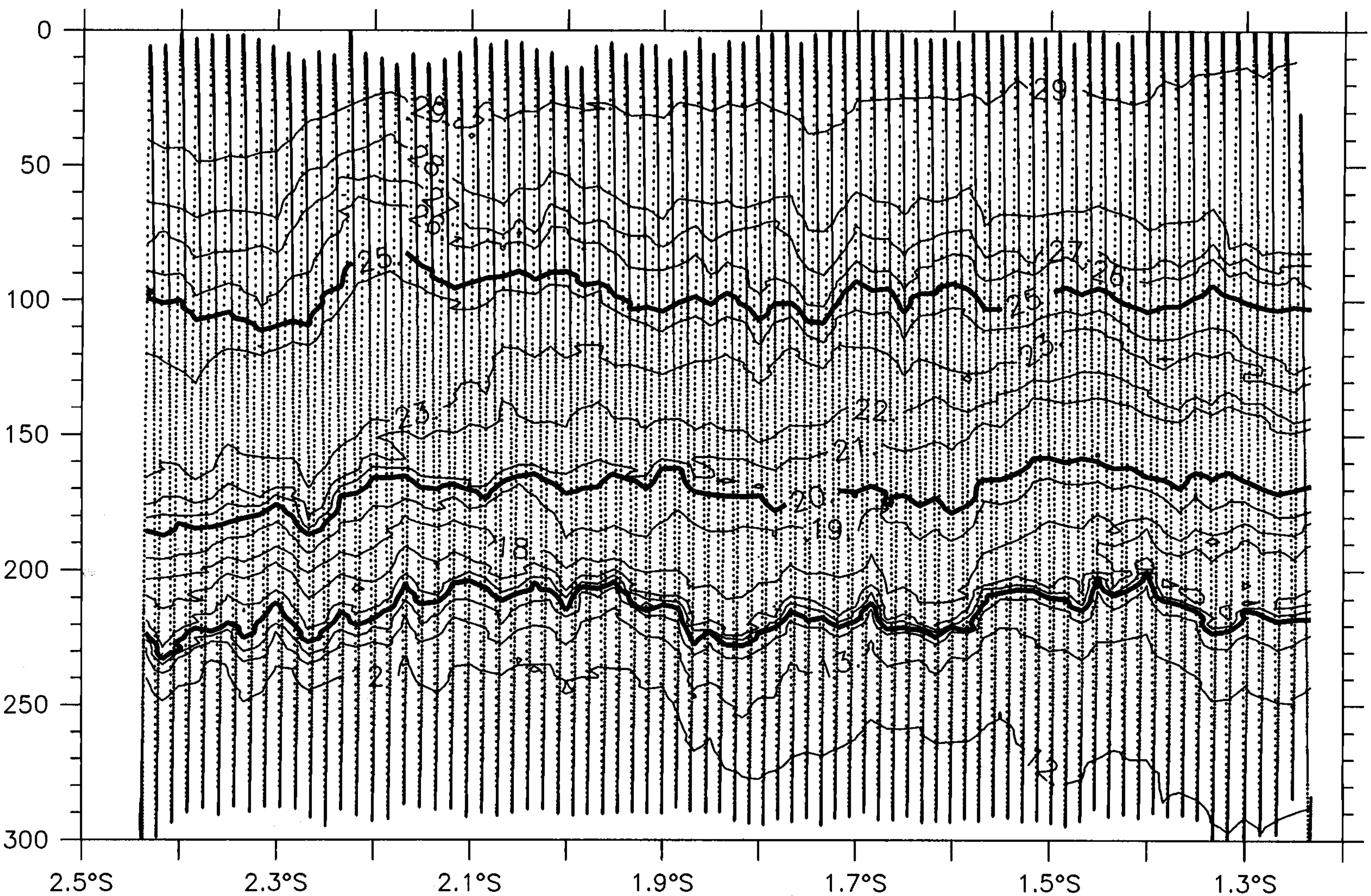
T(°C), N2S, 15 November 1992



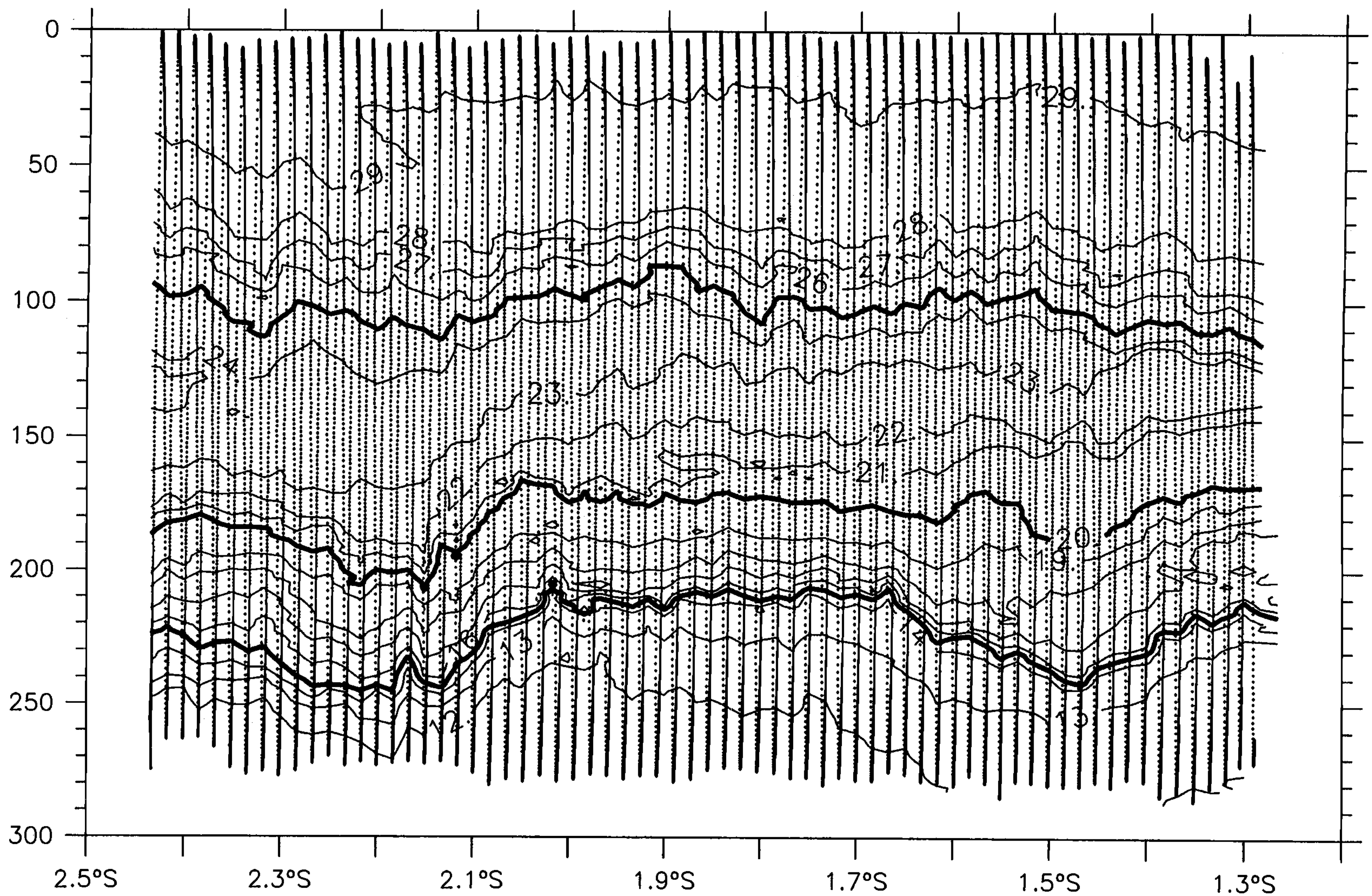
T(°C), N2S, 17 November 1992



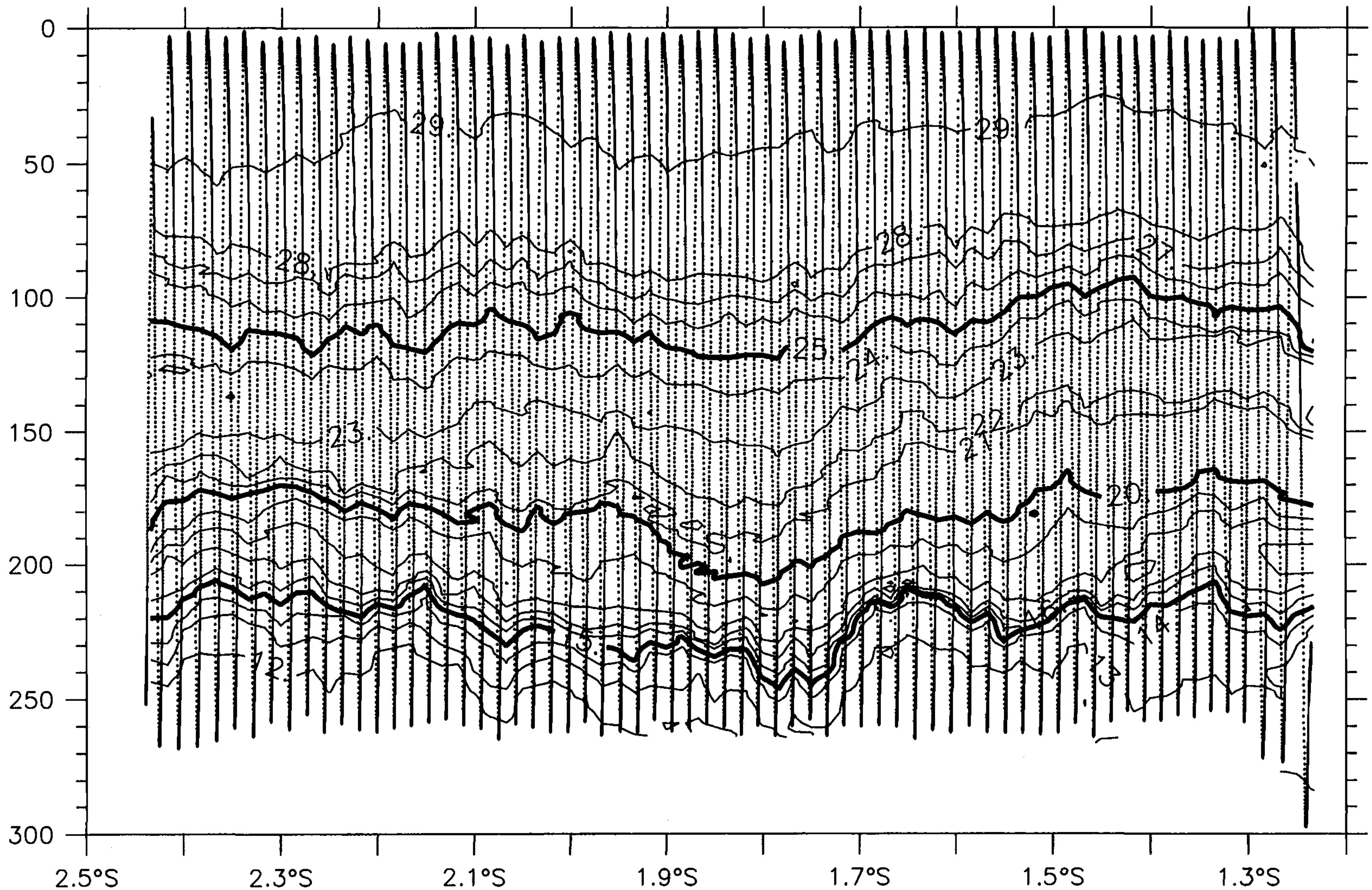
T(°C), N2S, 18 November 1992



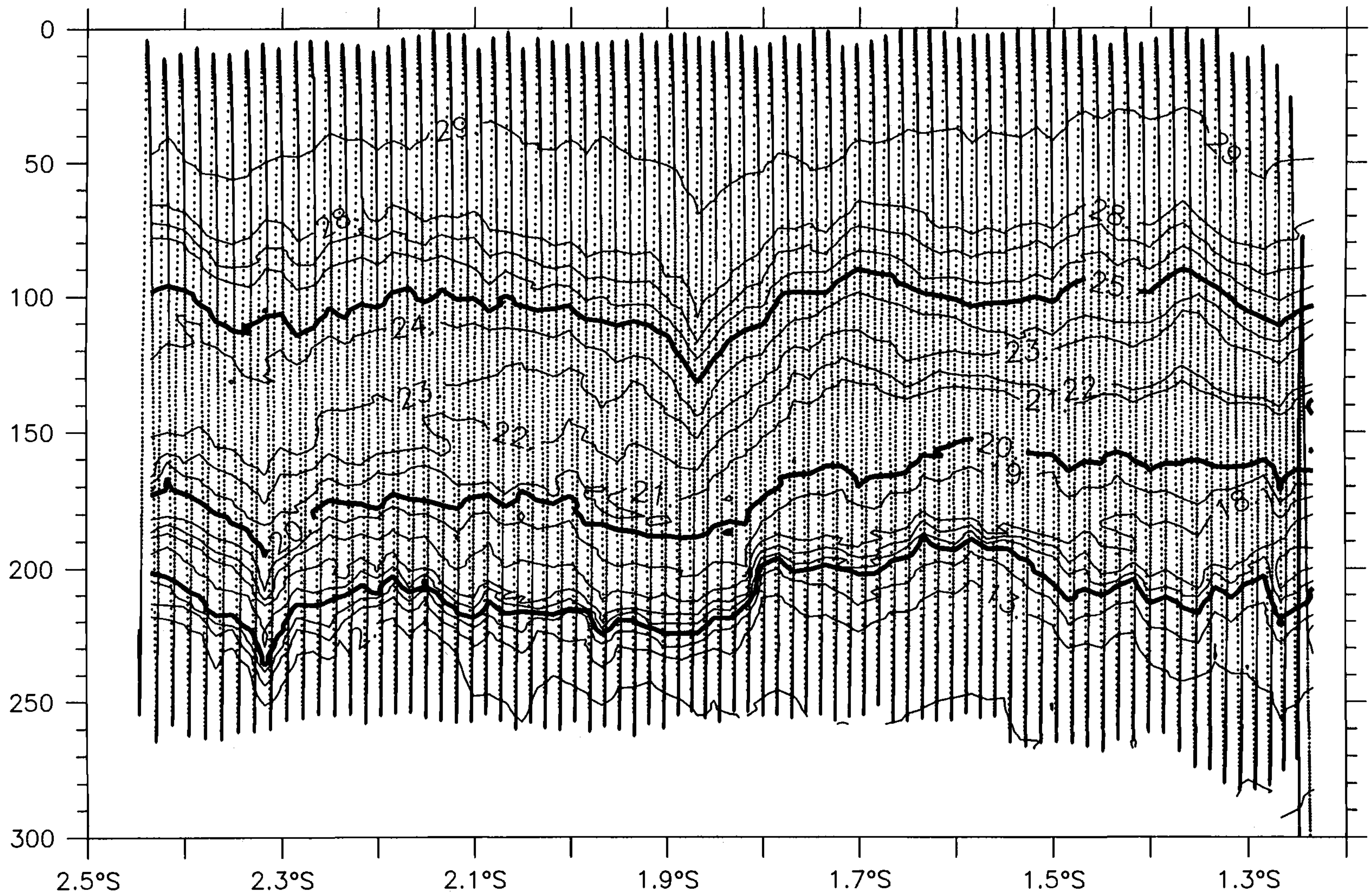
T(°C), N2S, 20 November 1992



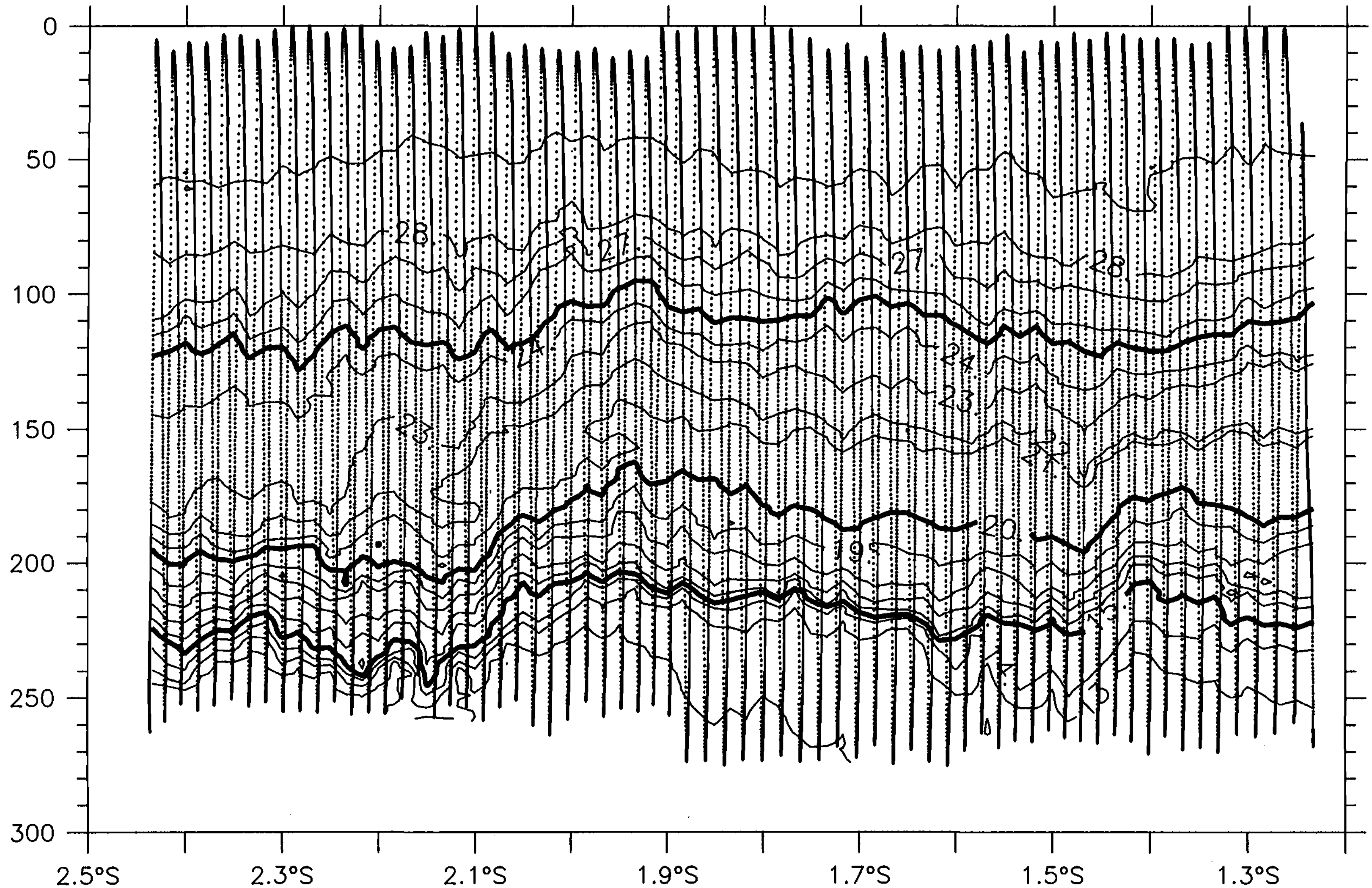
T(°C), N2S, 22 November 1992



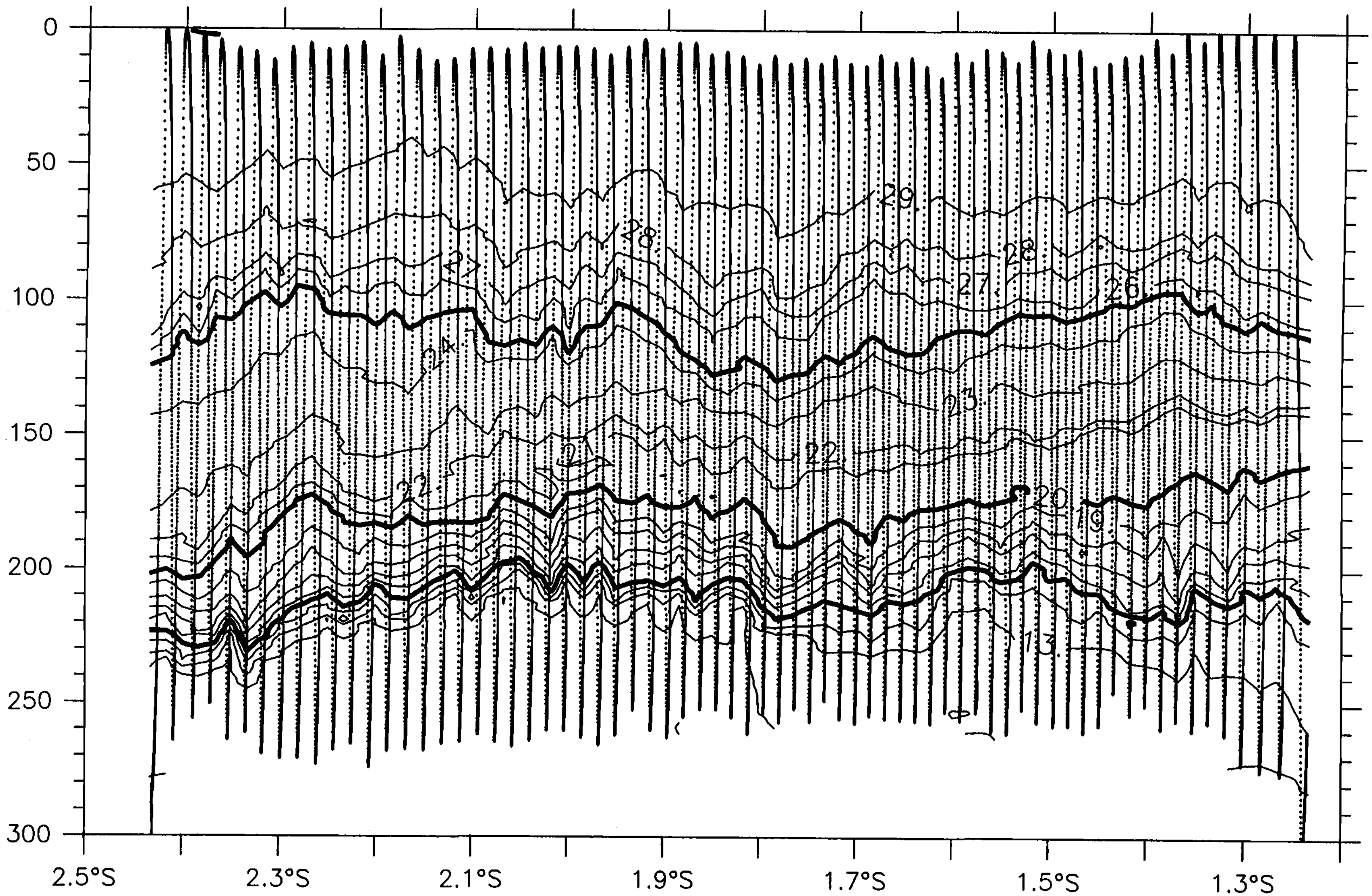
T(°C), N2S, 23 November 1992



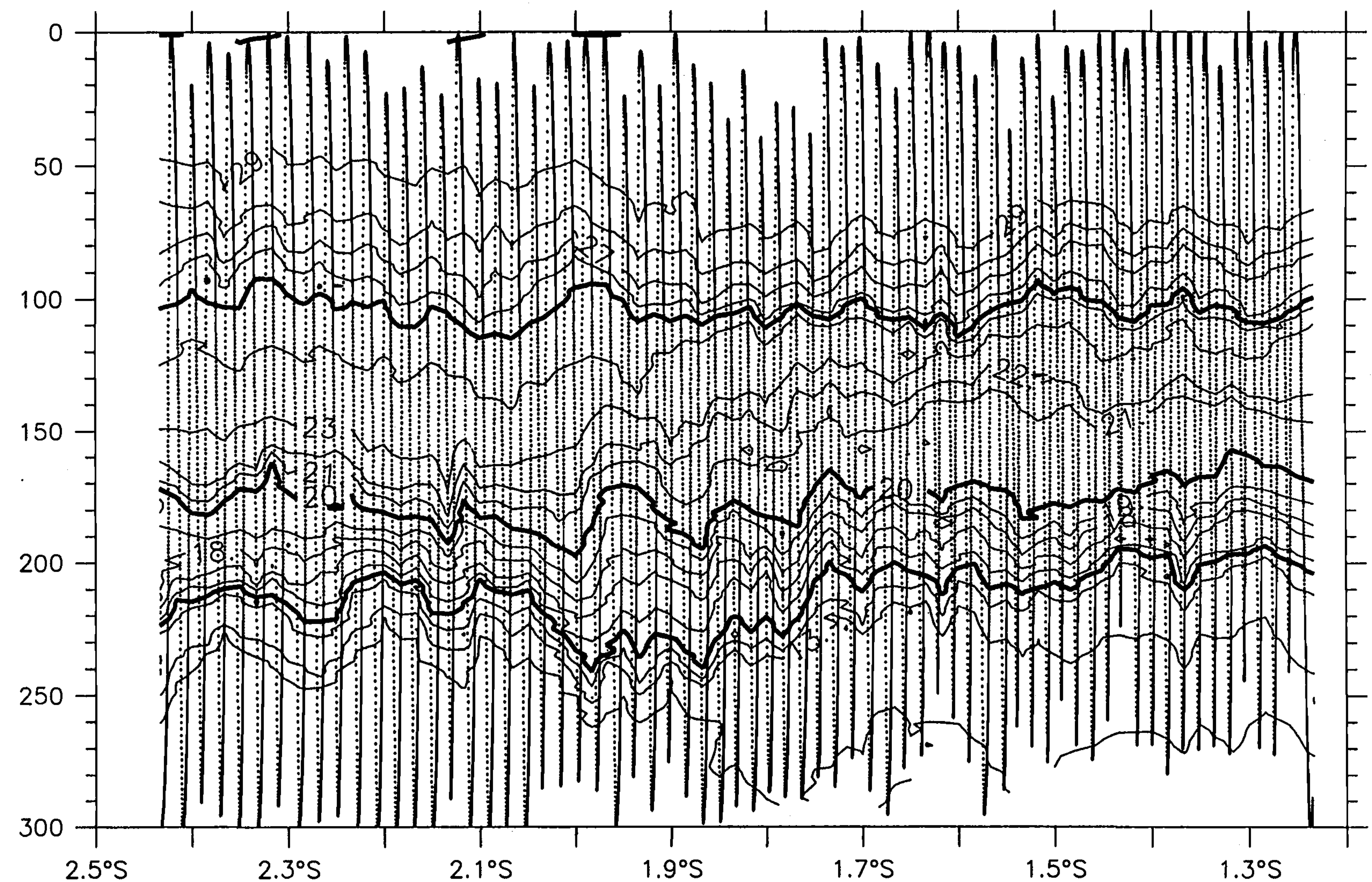
T(°C), N2S, 25 November 1992



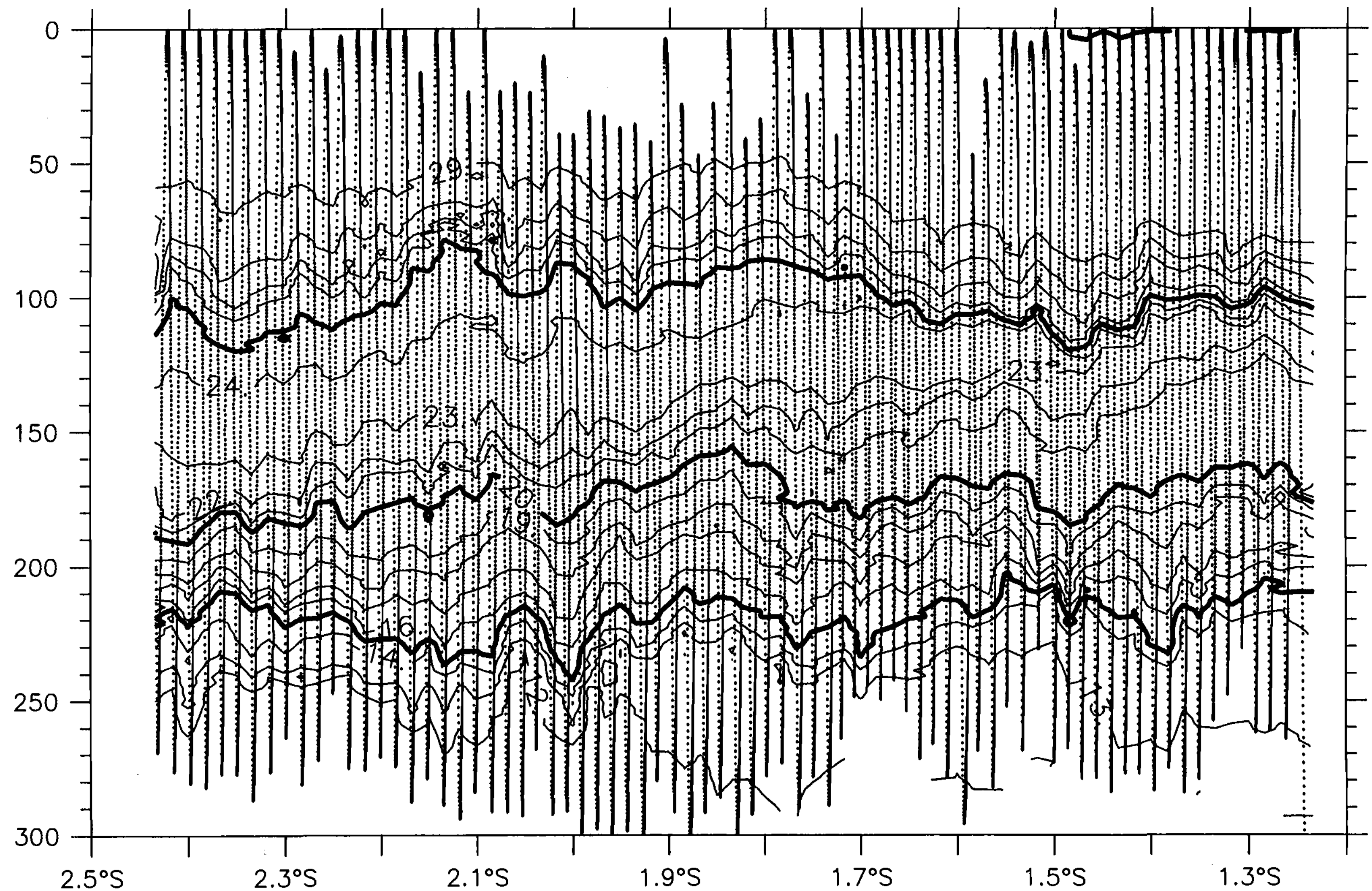
T(°C), N2S, 26 November 1992



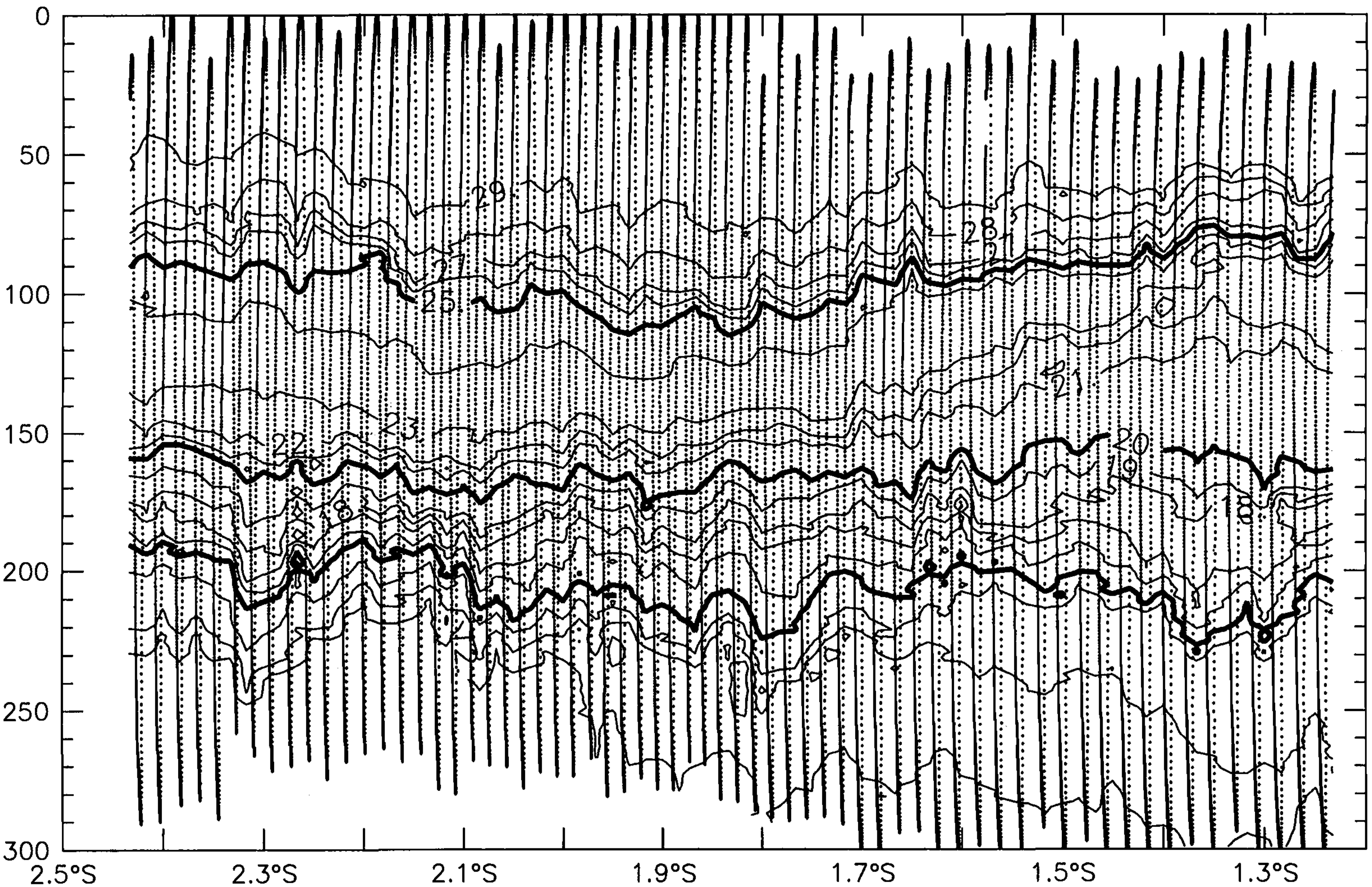
T(°C), N2S, 27 November 1992



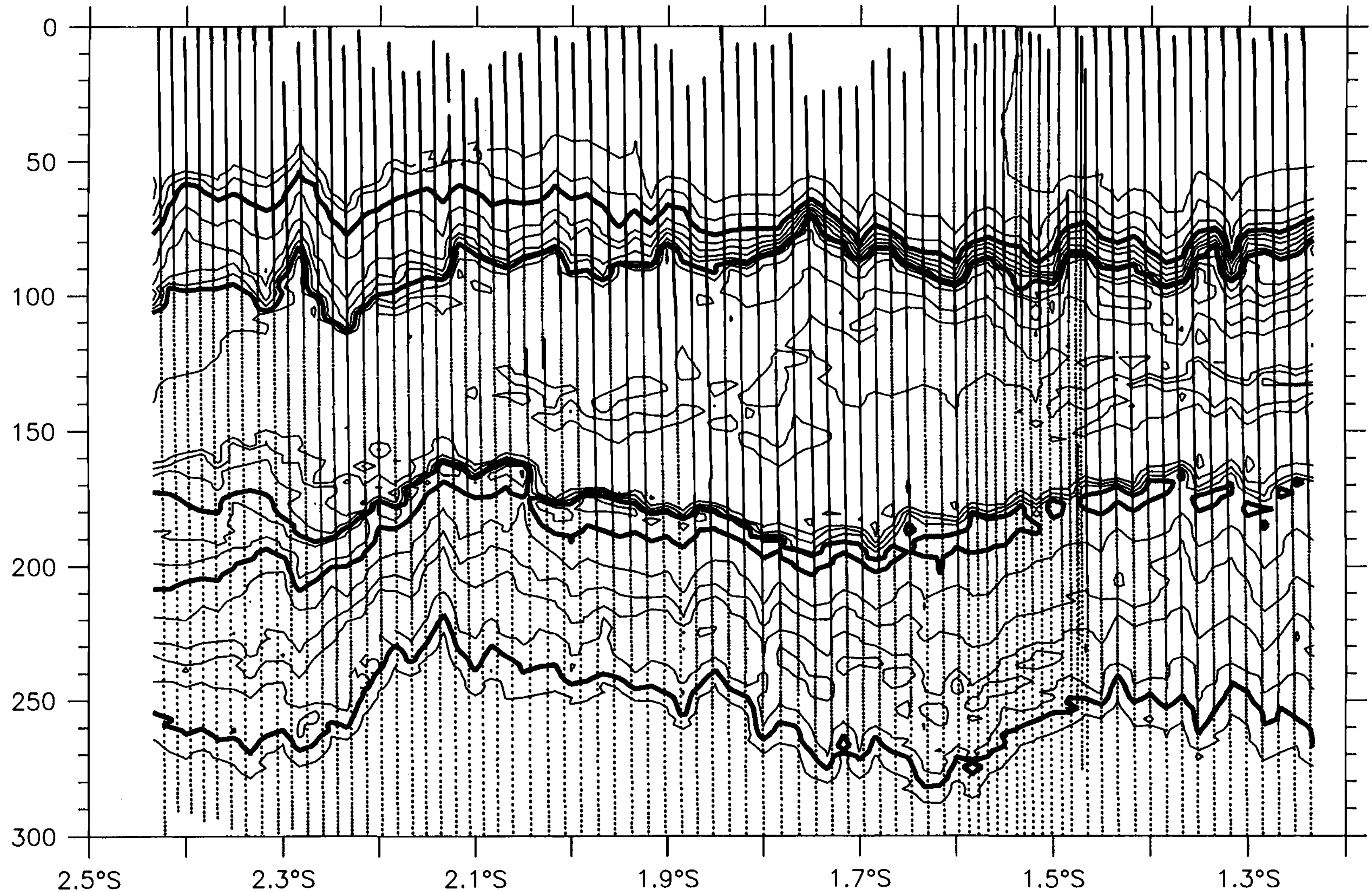
T(°C), N2S, 29 November 1992



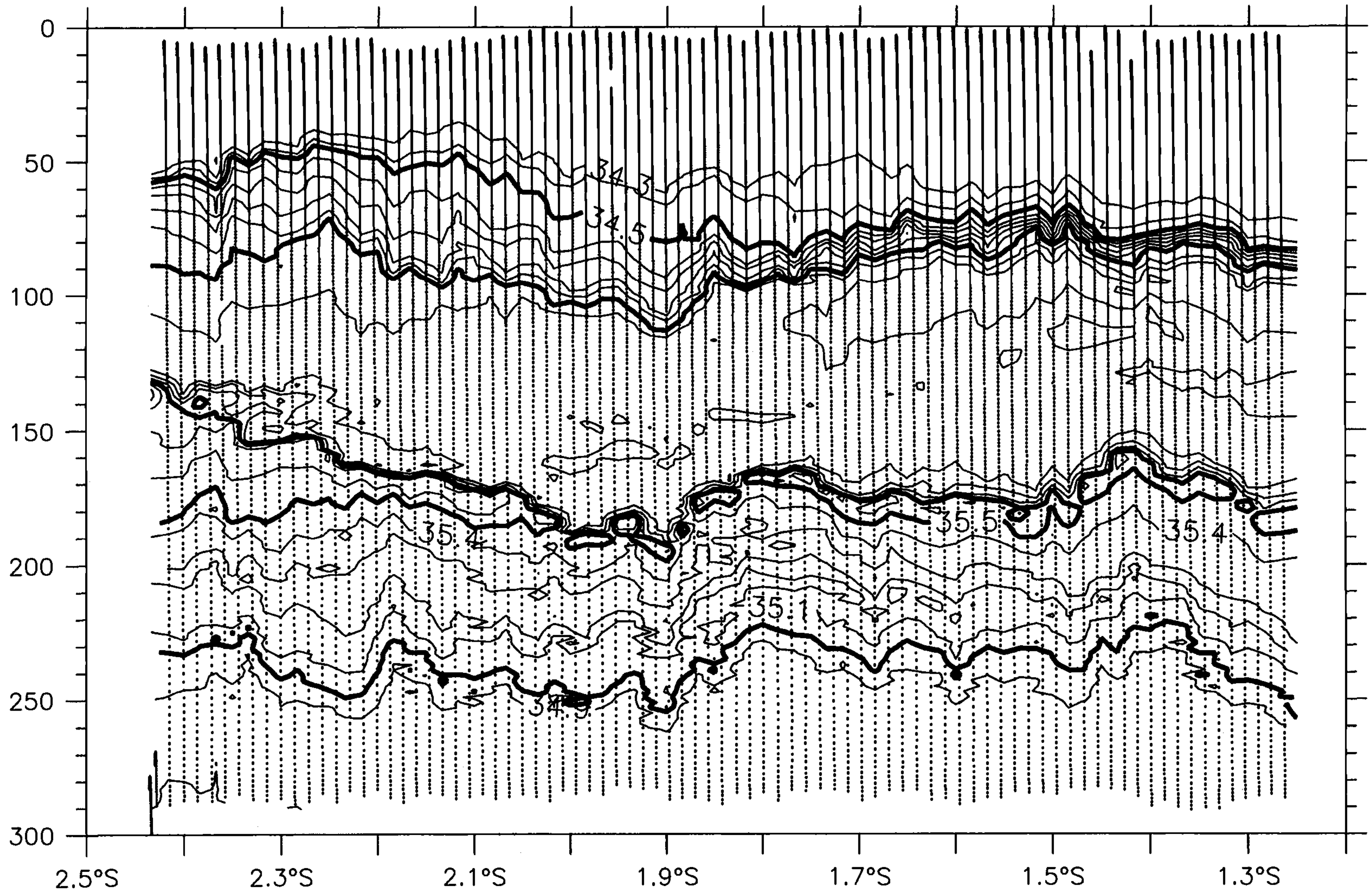
T(°C), N2S, 01 December 1992



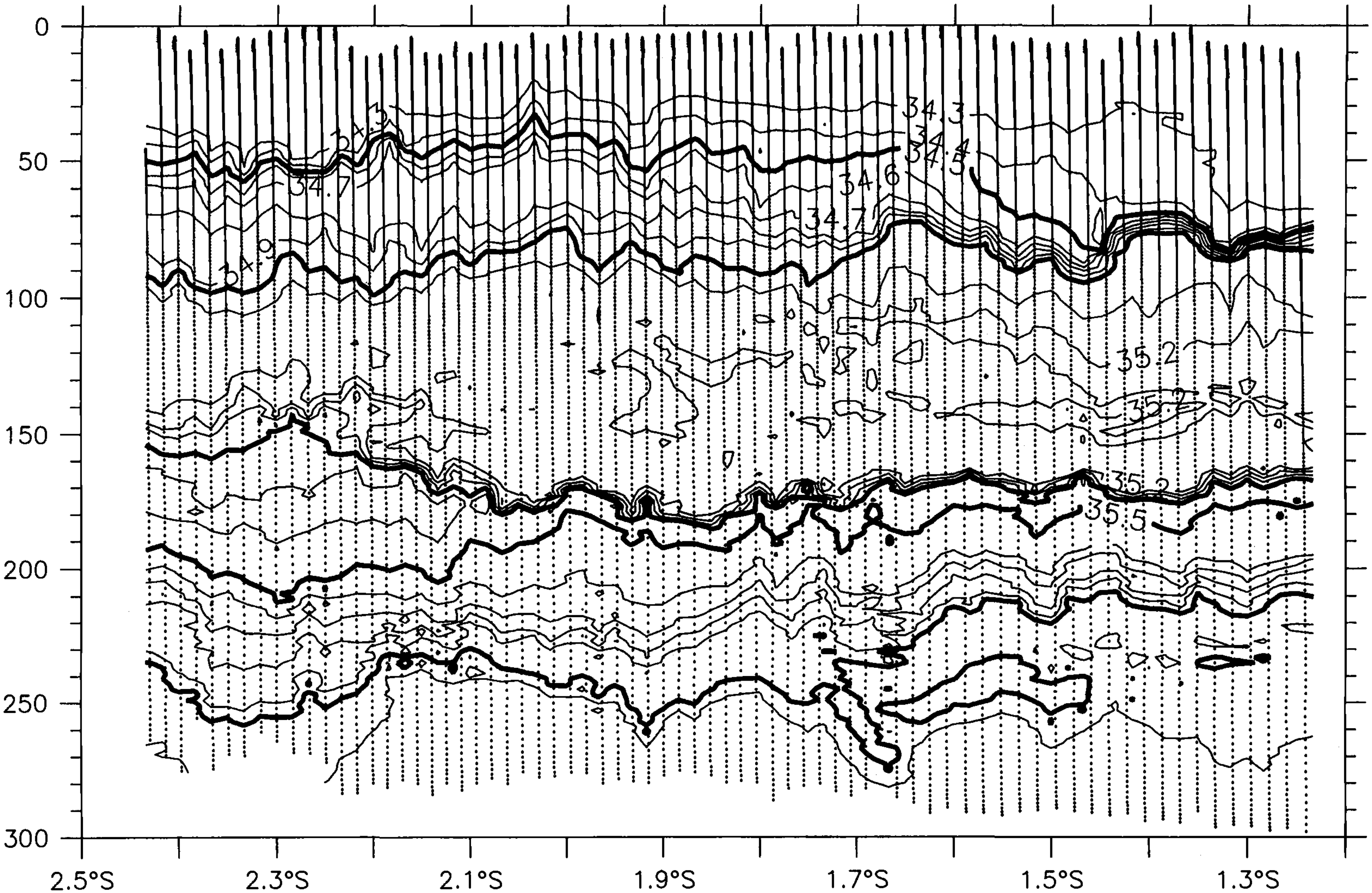
T(°C), S2N, 1 December 1992



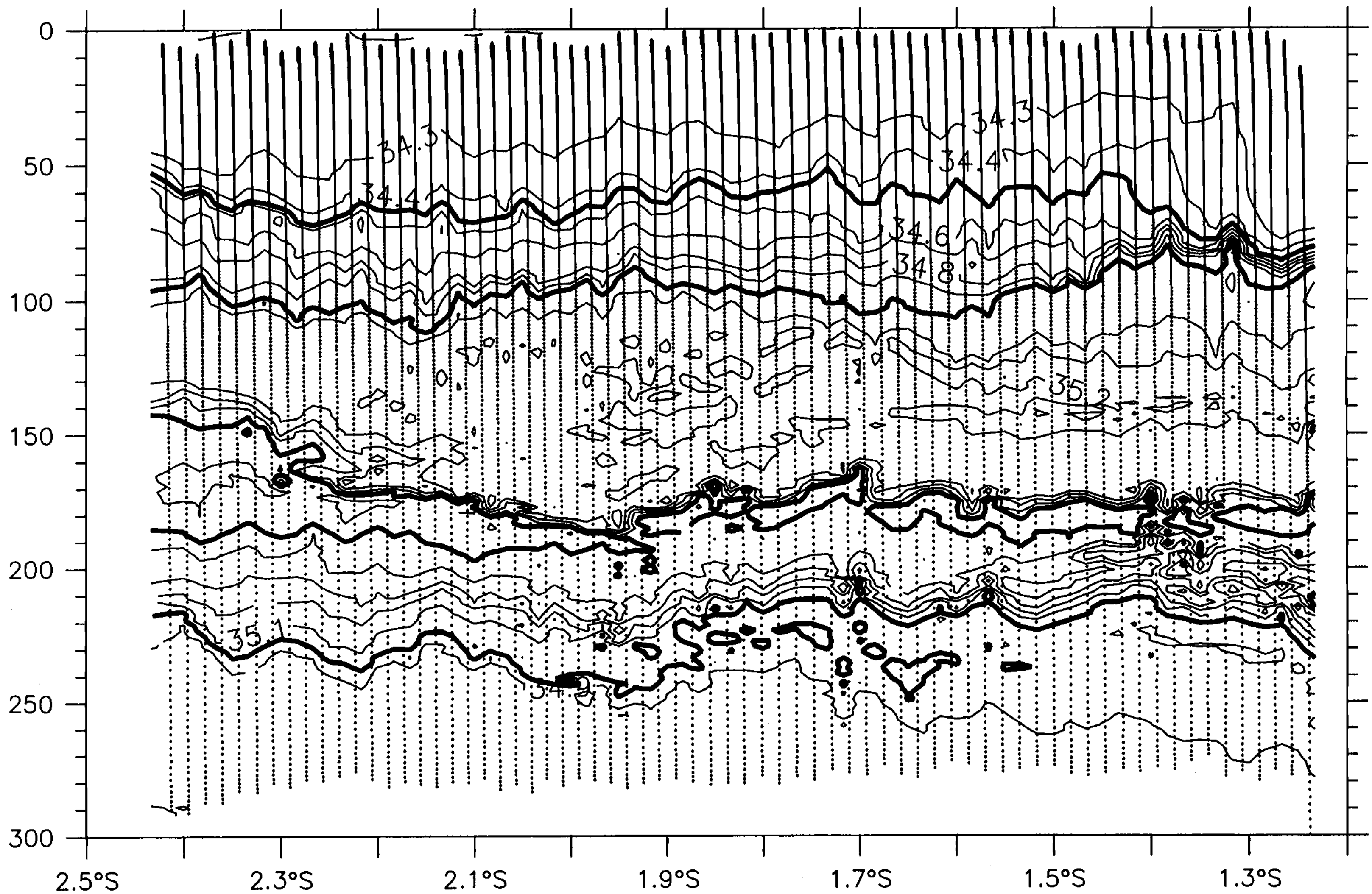
S(psu), N2S, 13 November 1992



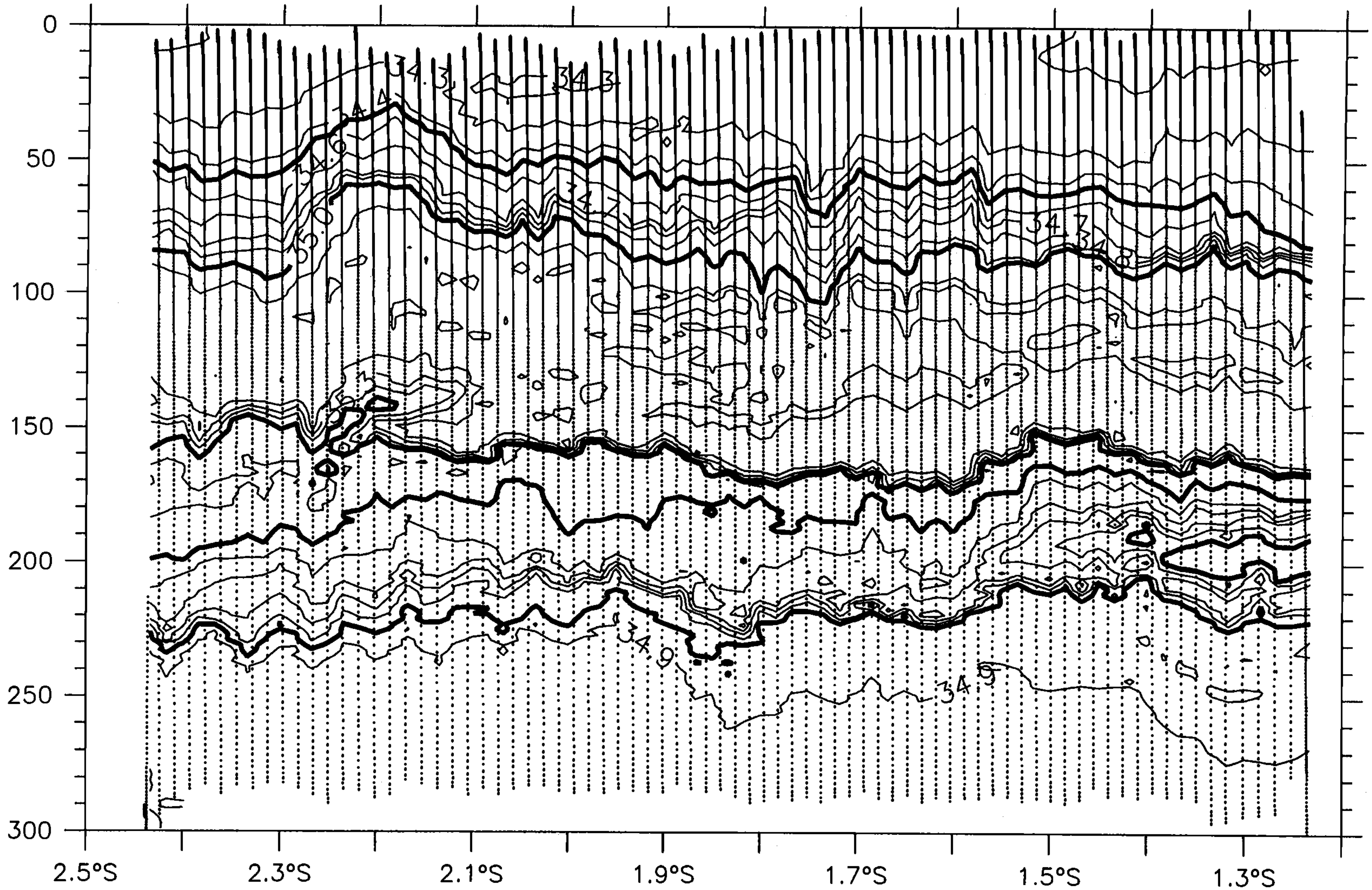
S(psu), N2S, 15 November 1992



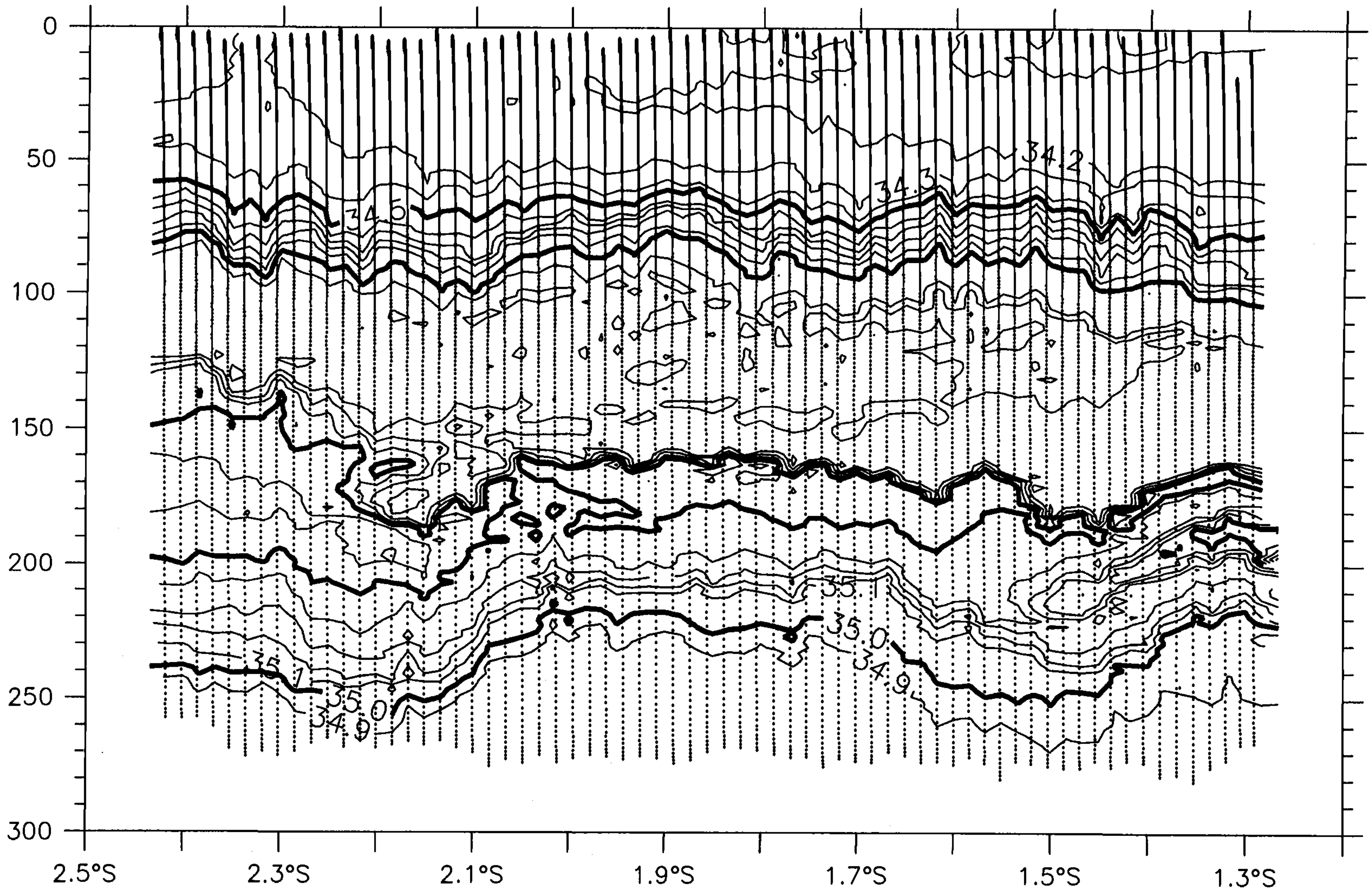
S(psu), N2S, 17 November 1992



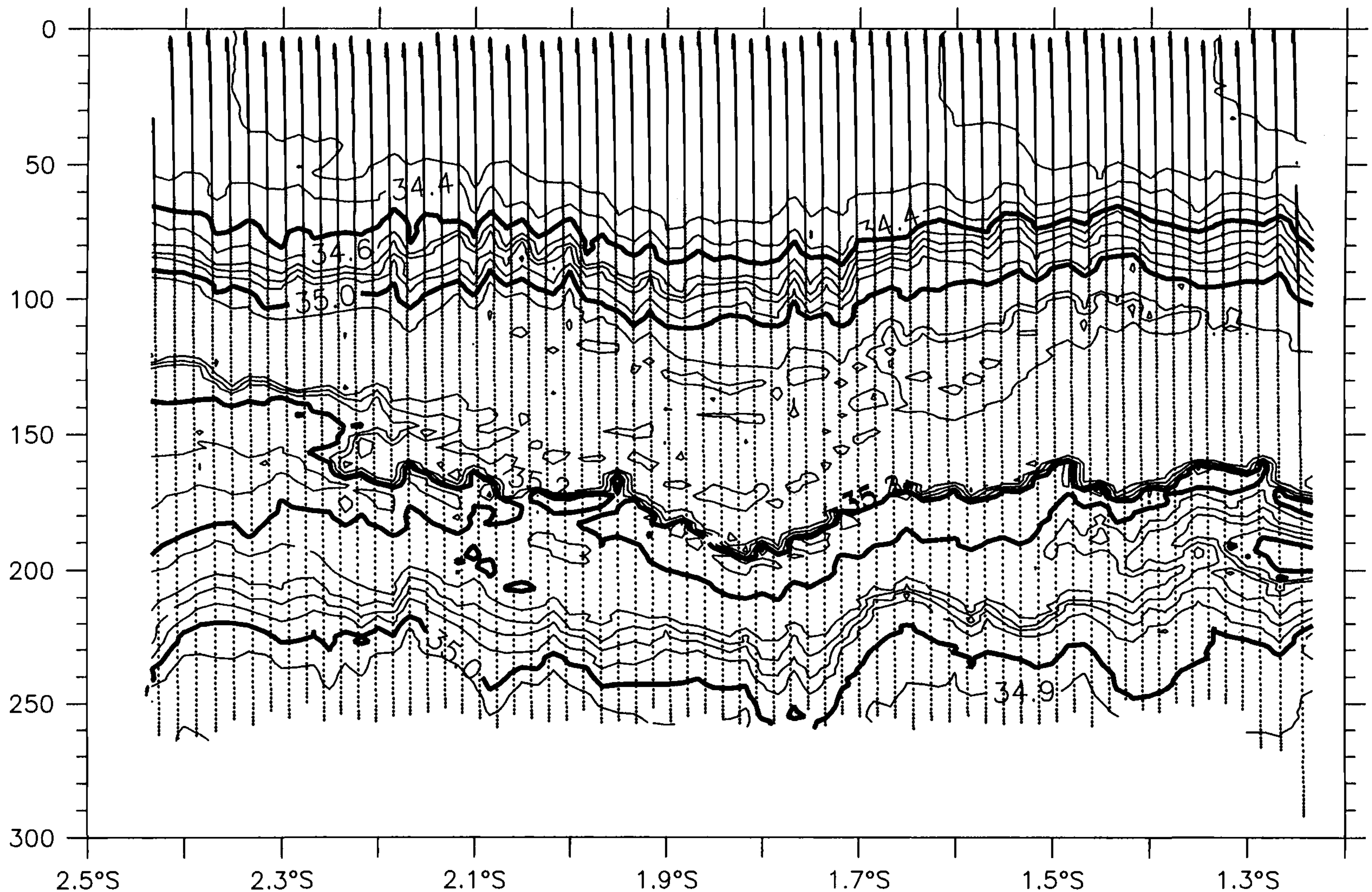
S(psu), N2S, 18 November 1992



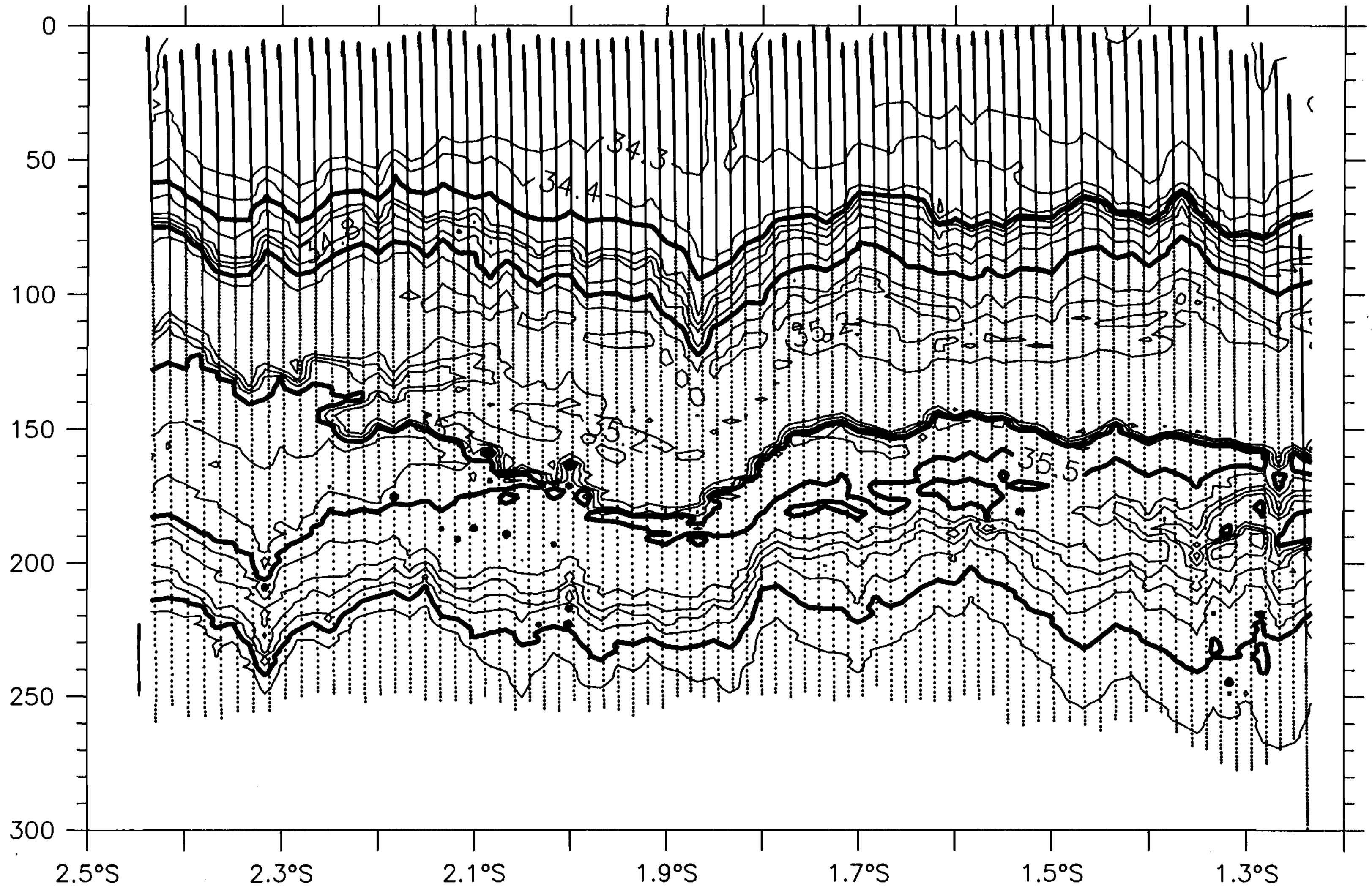
S(psu), N2S, 20 November 1992



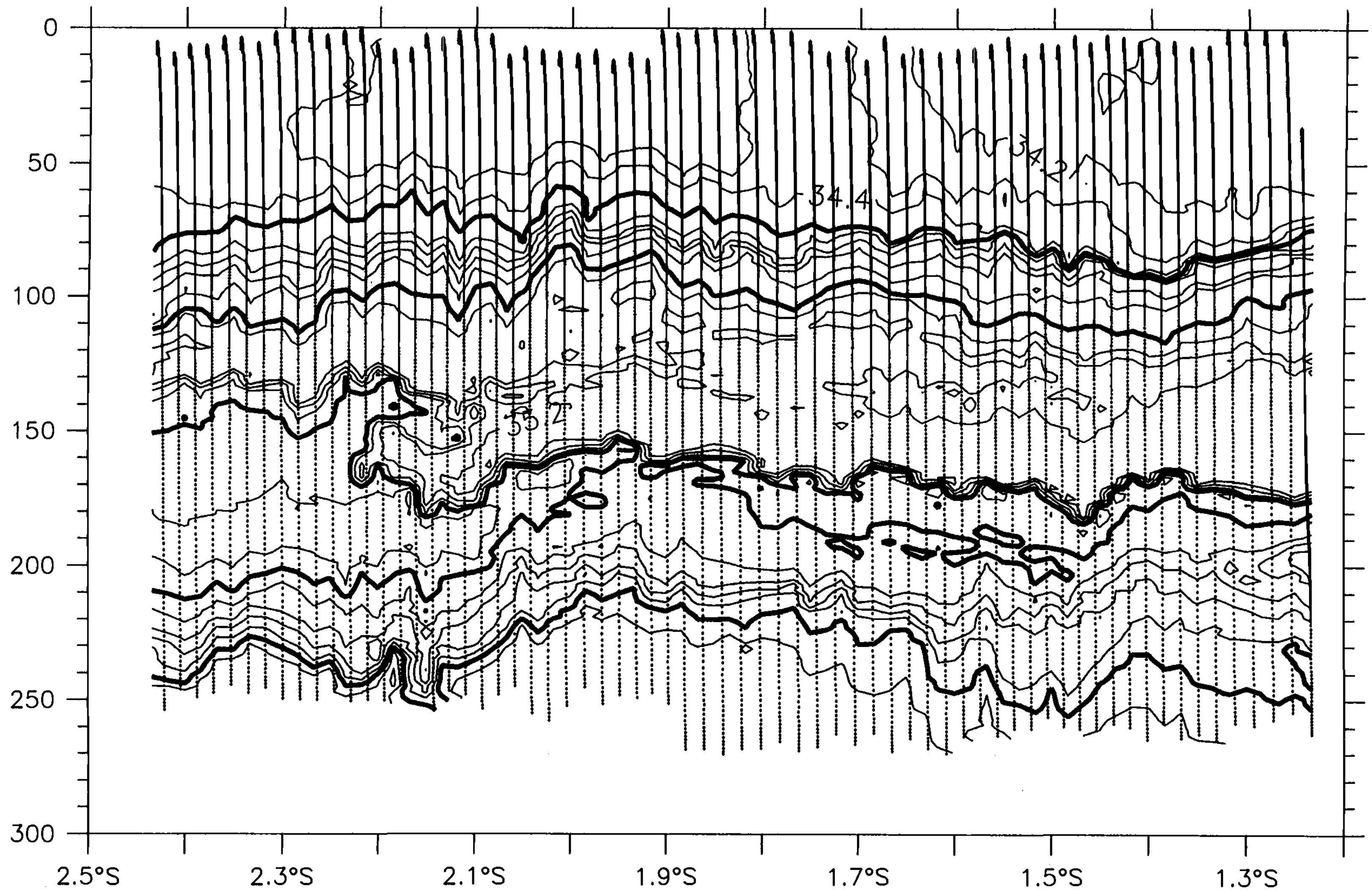
S(psu), N2S, 22 November 1992



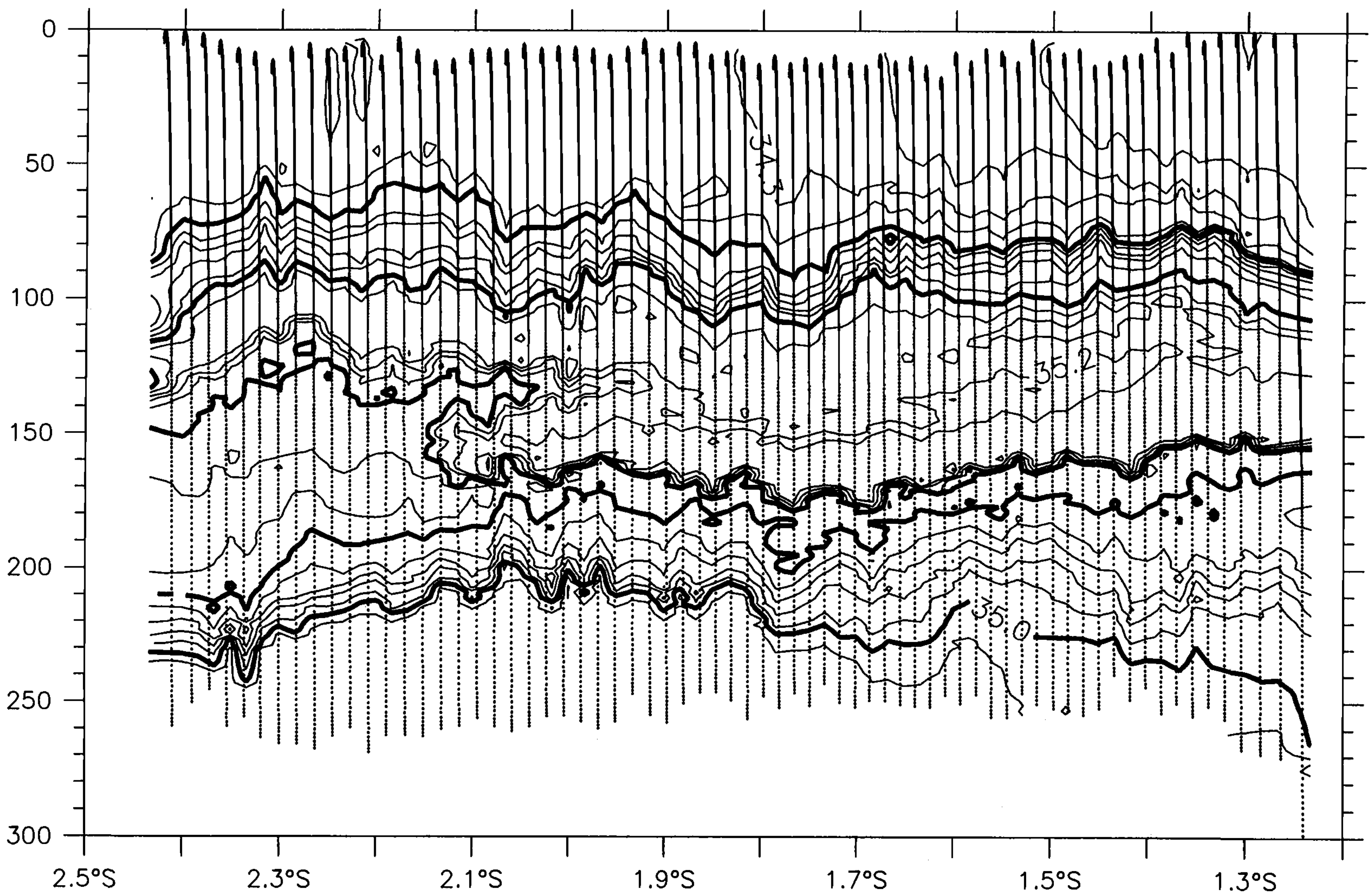
S(psu), N2S, 23 November 1992



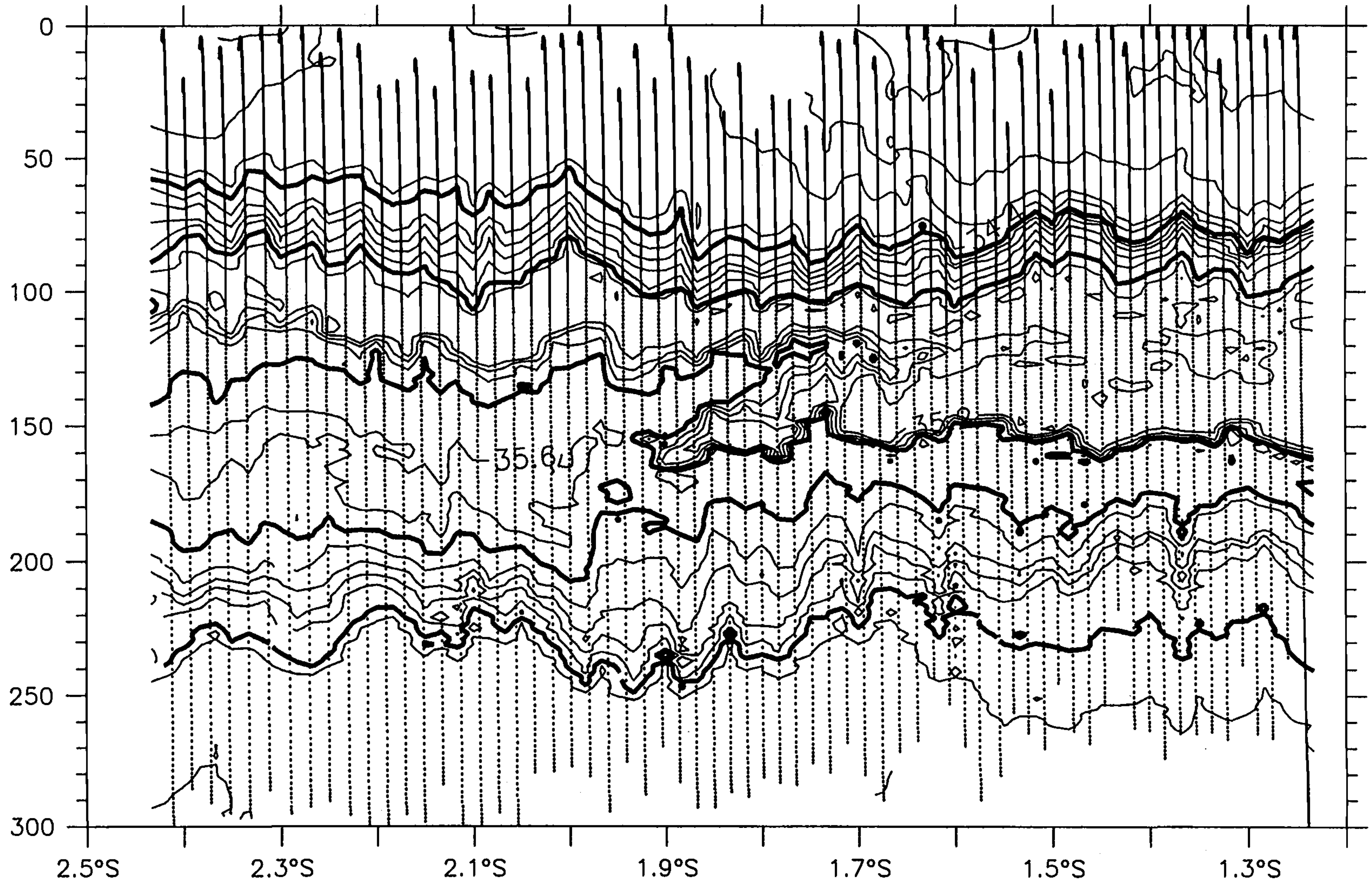
S(psu), N2S, 25 November 1992



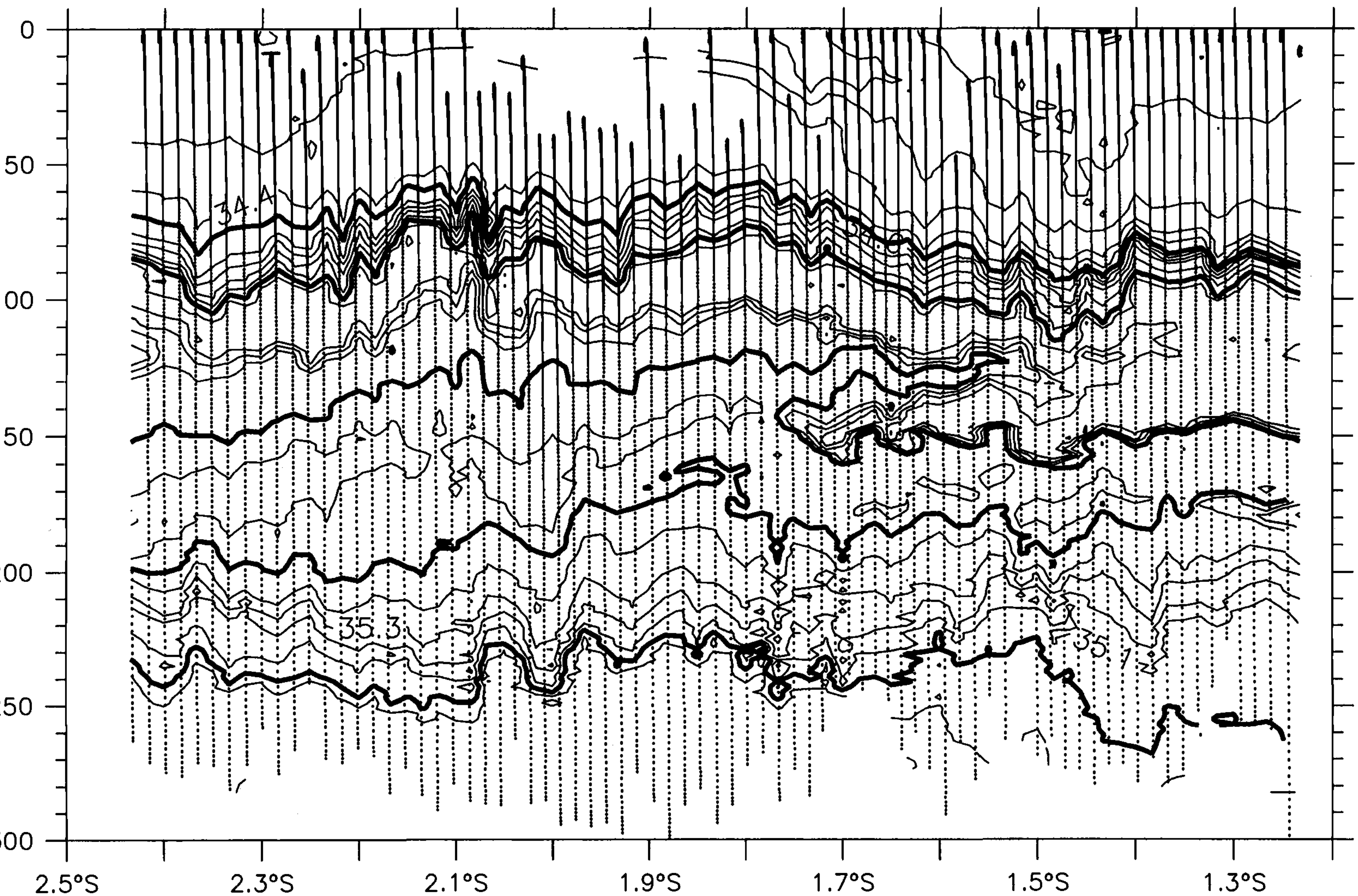
S(psu), N2S, 26 November 1992



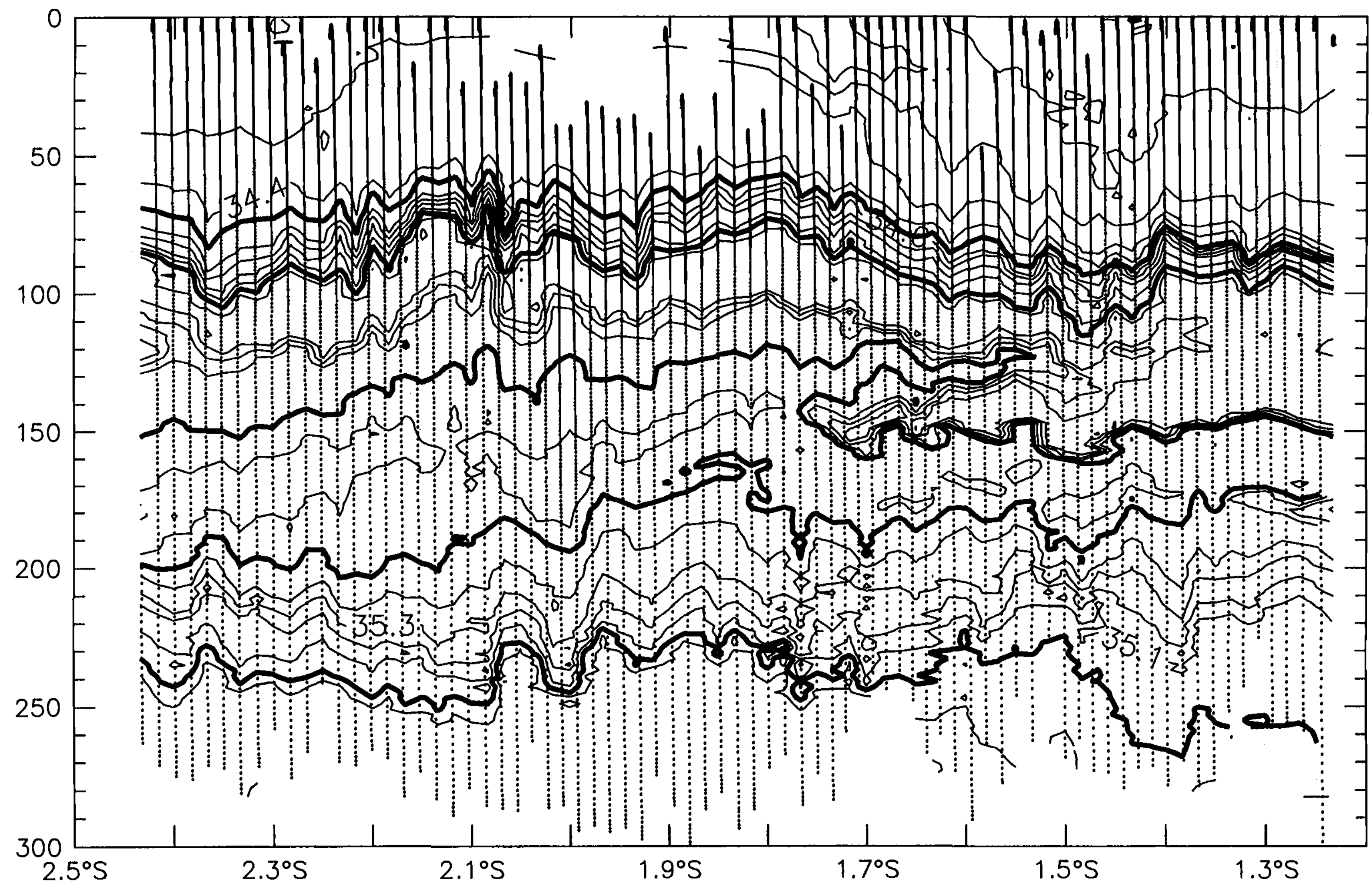
S(psu), N2S, 27 November 1992



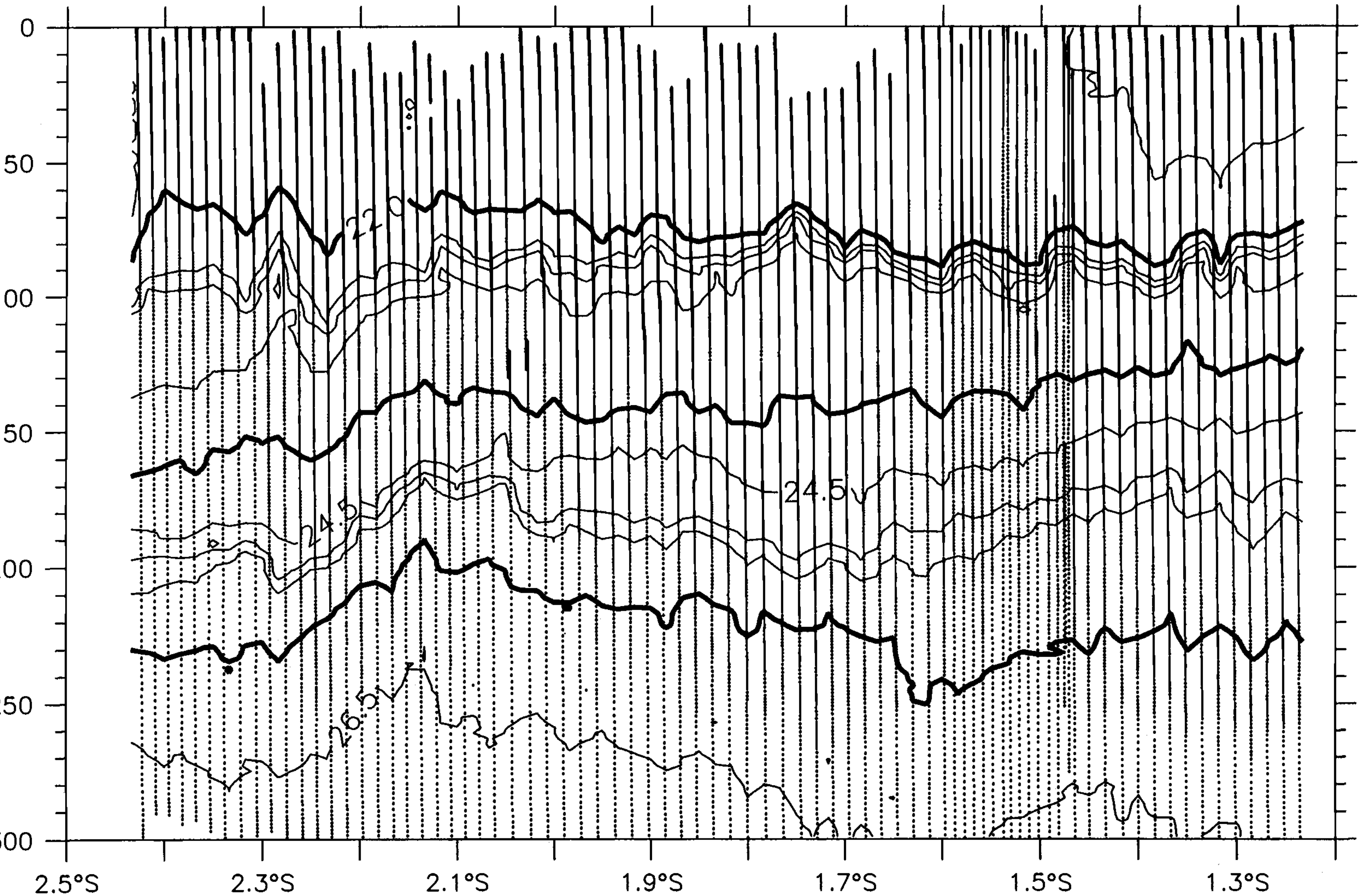
S(psu), N2S, 29 November 1992



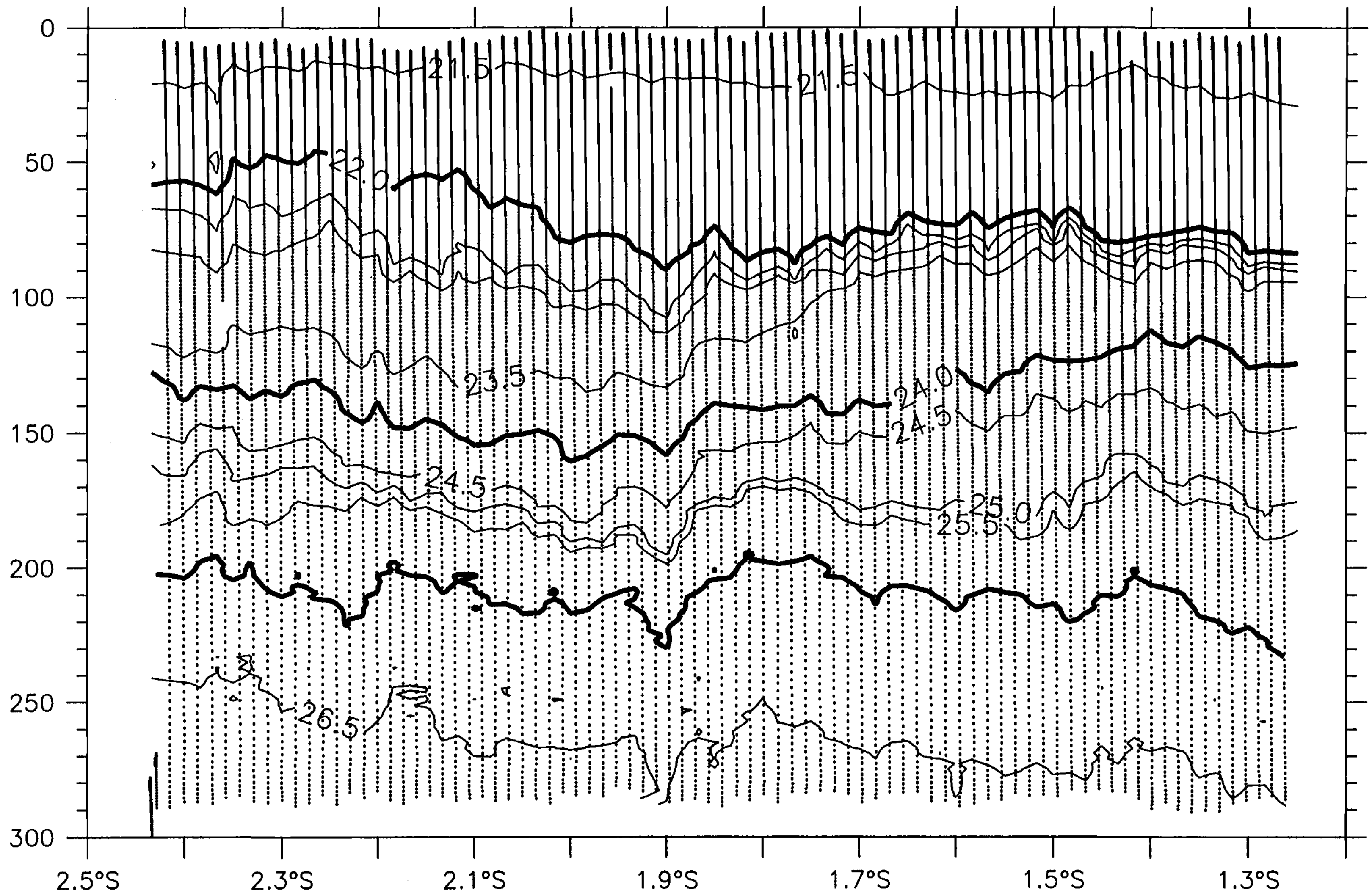
S(psu), N2S, 01 December 1992



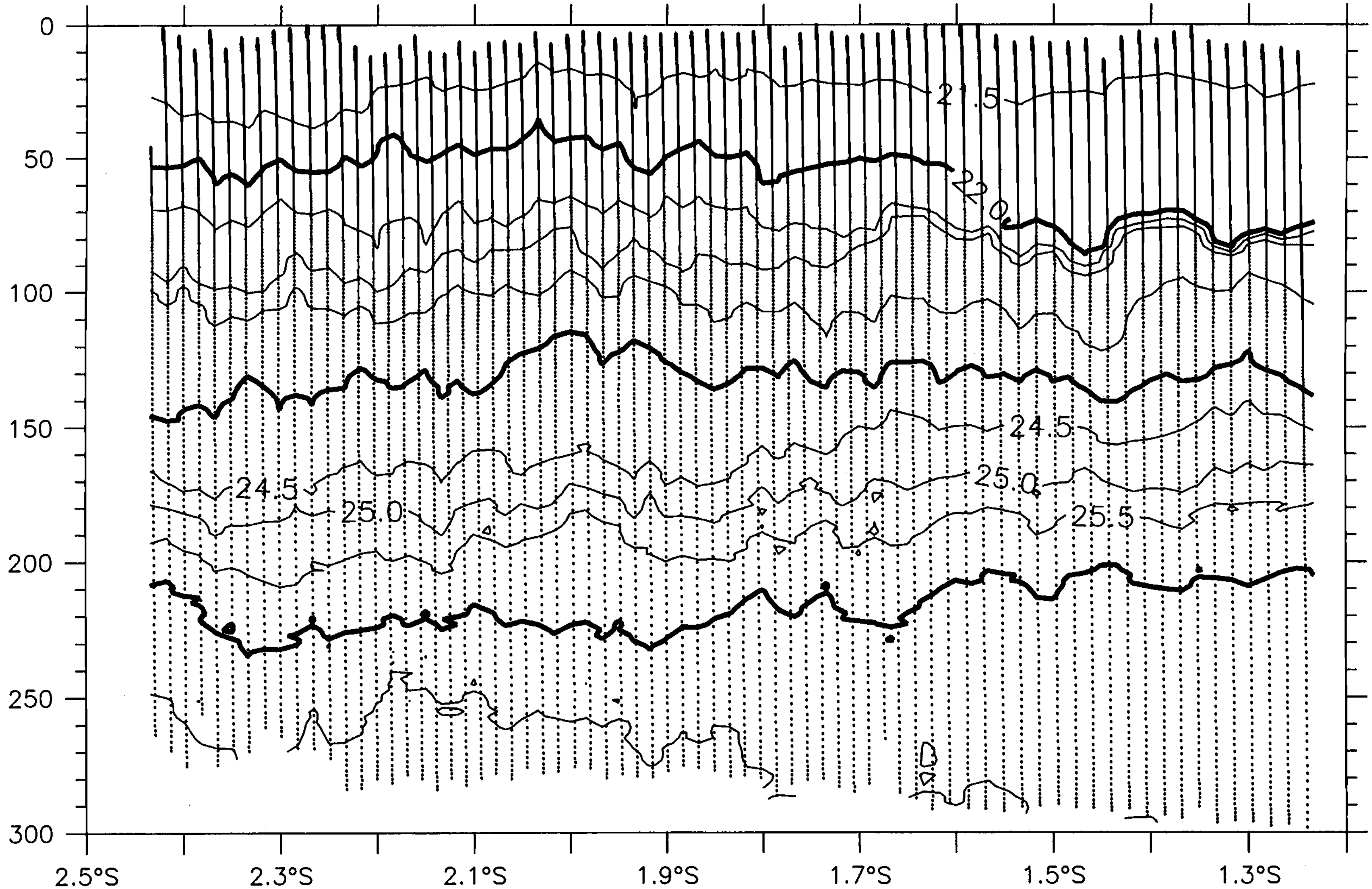
S(psu), S2N, 1 December 1992



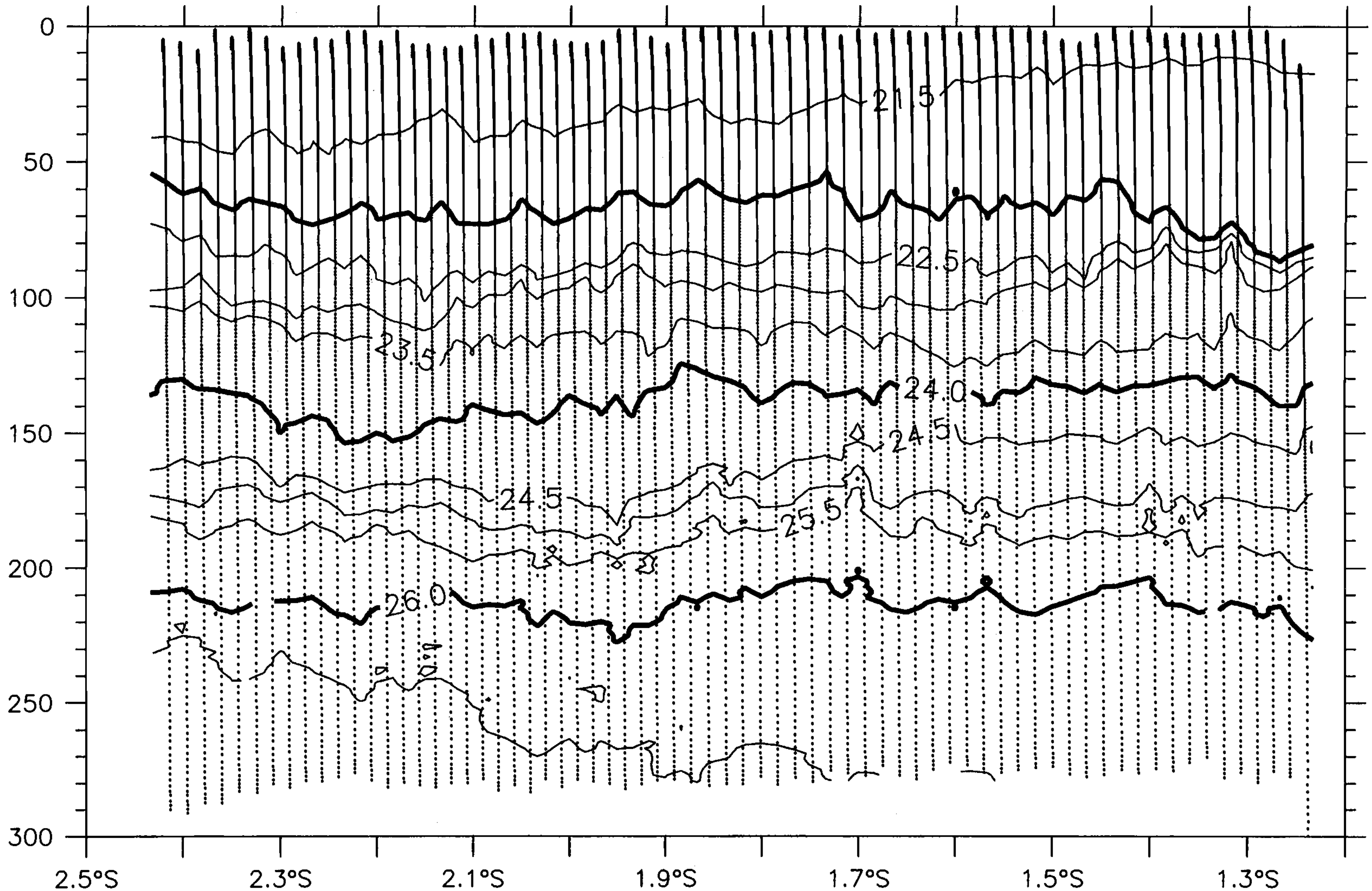
Sigma−t, N2S, 13 November 1992



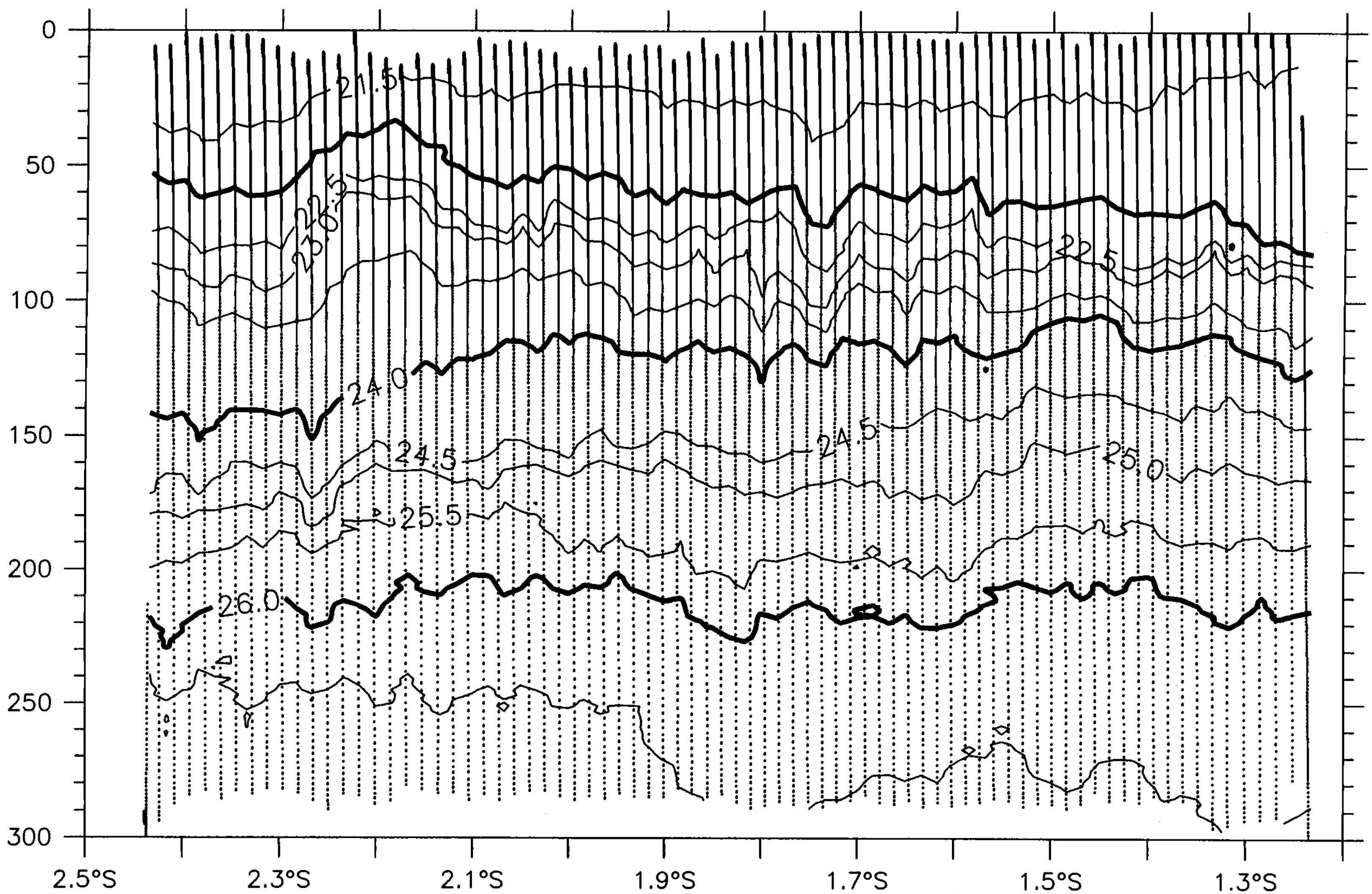
Sigma-t, N2S, 15 November 1992



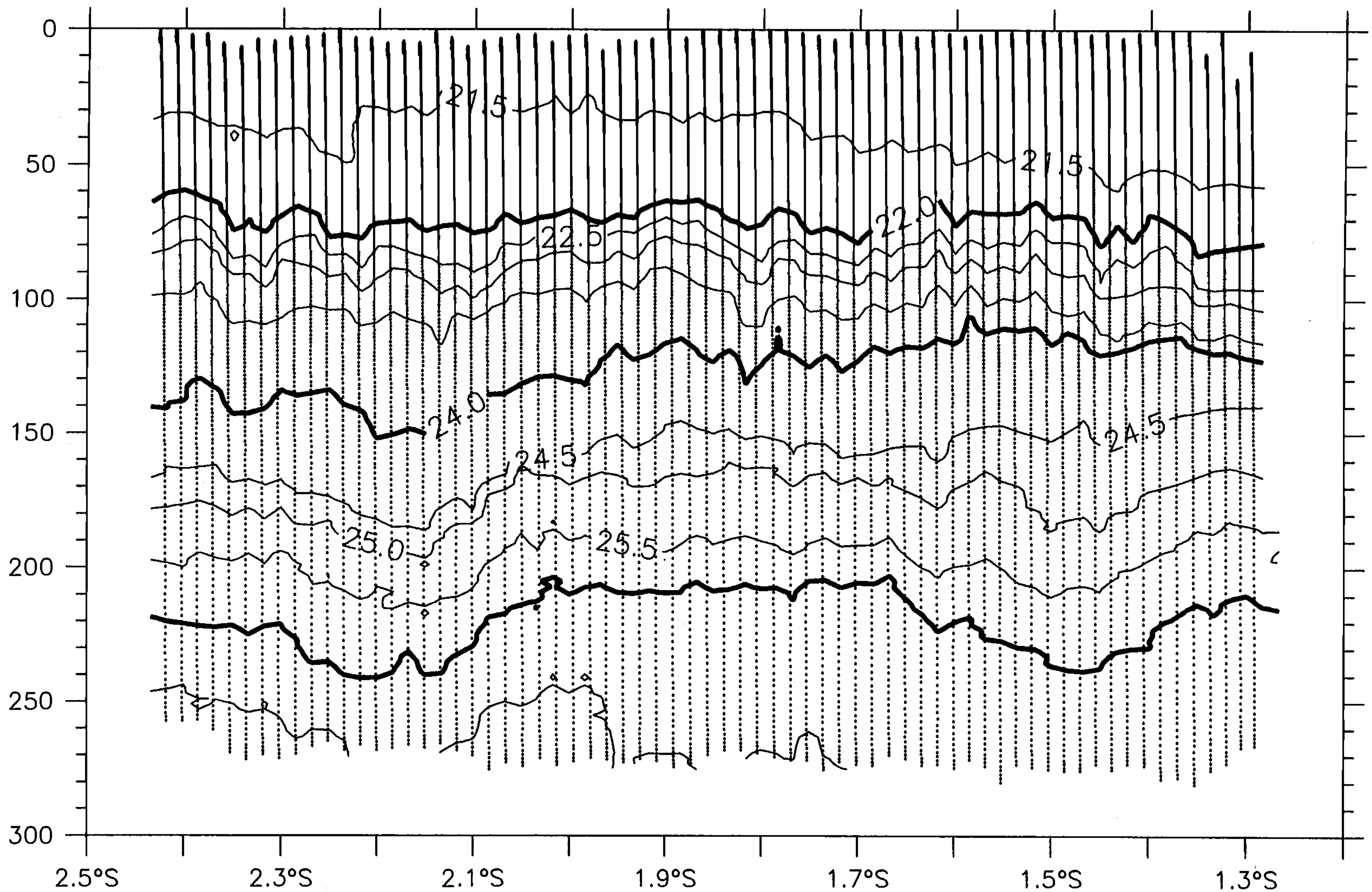
Sigma–t, N2S, 17 November 1992



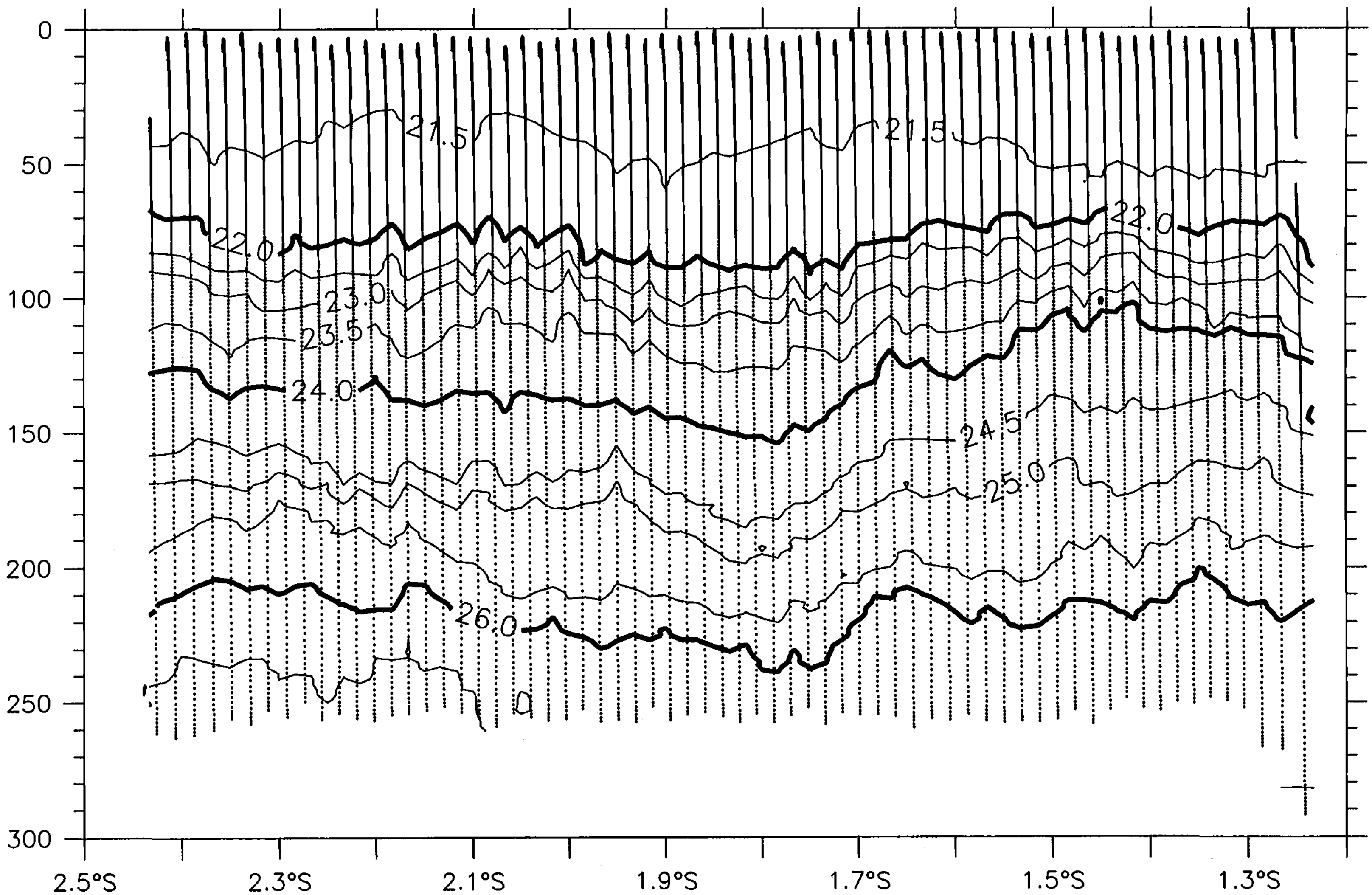
Sigma-t, N2S, 18 November 1992



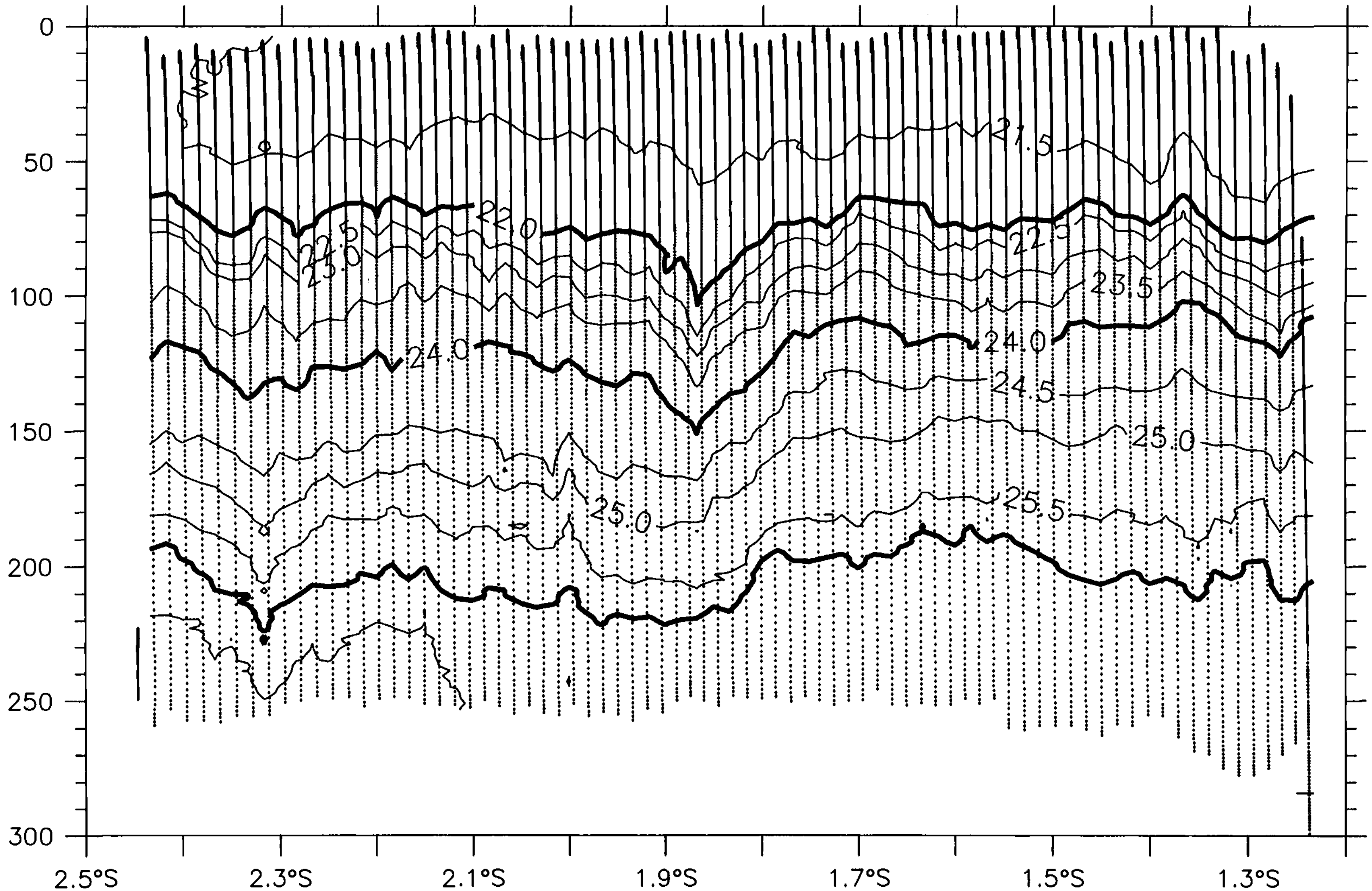
Sigma–t, N2S, 20 November 1992



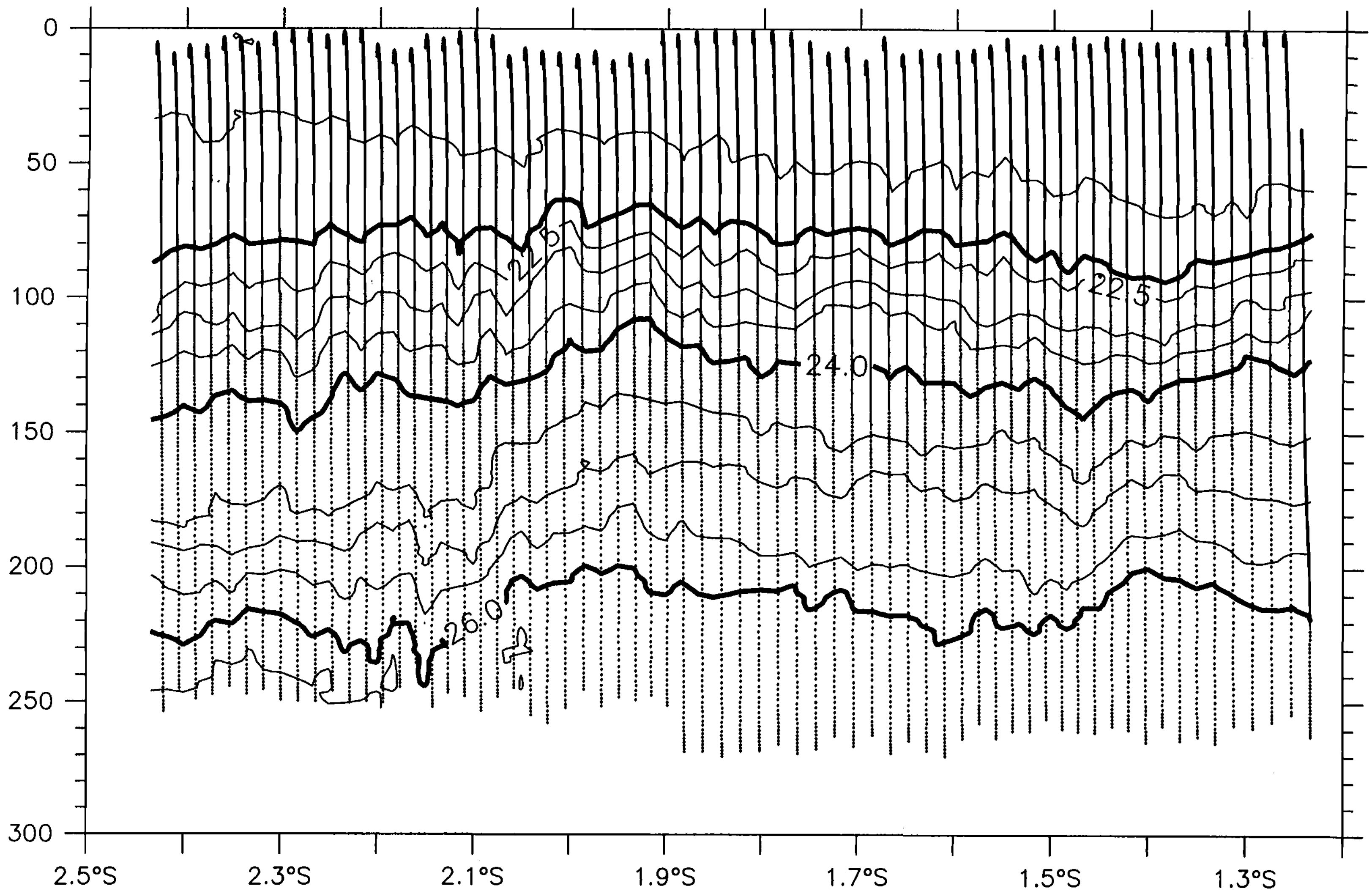
Sigma–t, N2S, 22 November 1992



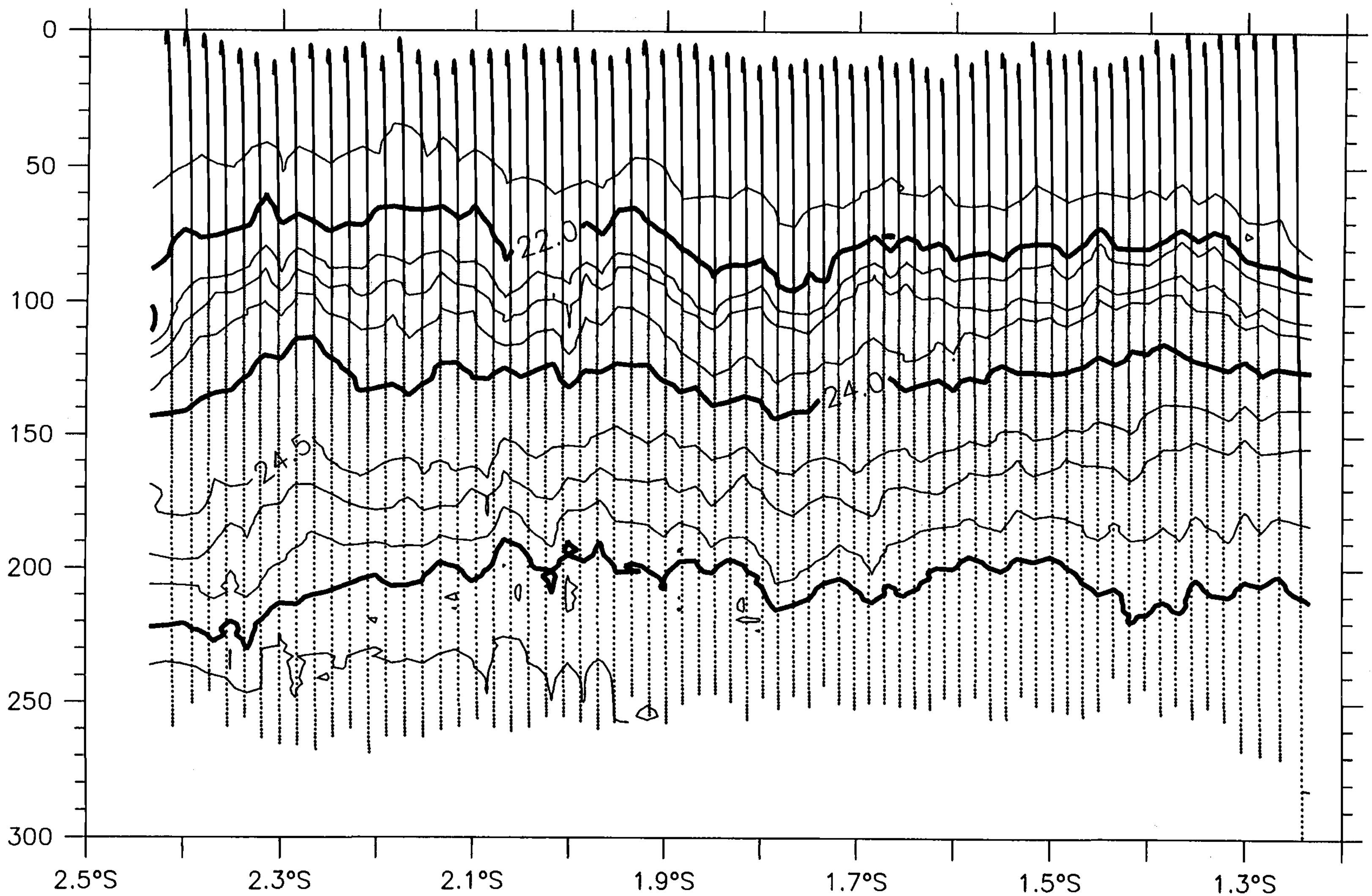
Sigma-t, N2S, 23 November 1992



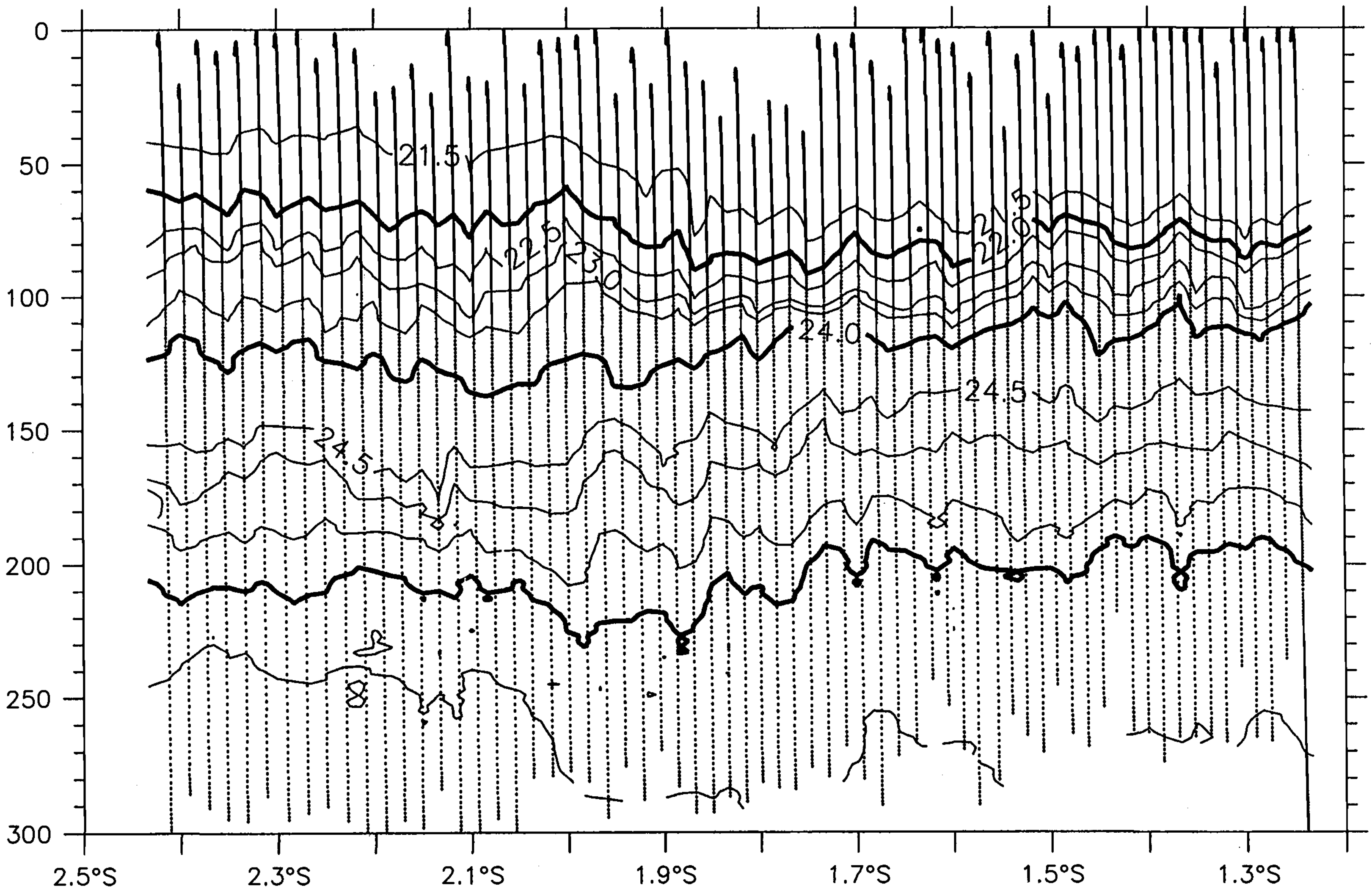
Sigma-t, N2S, 25 November 1992



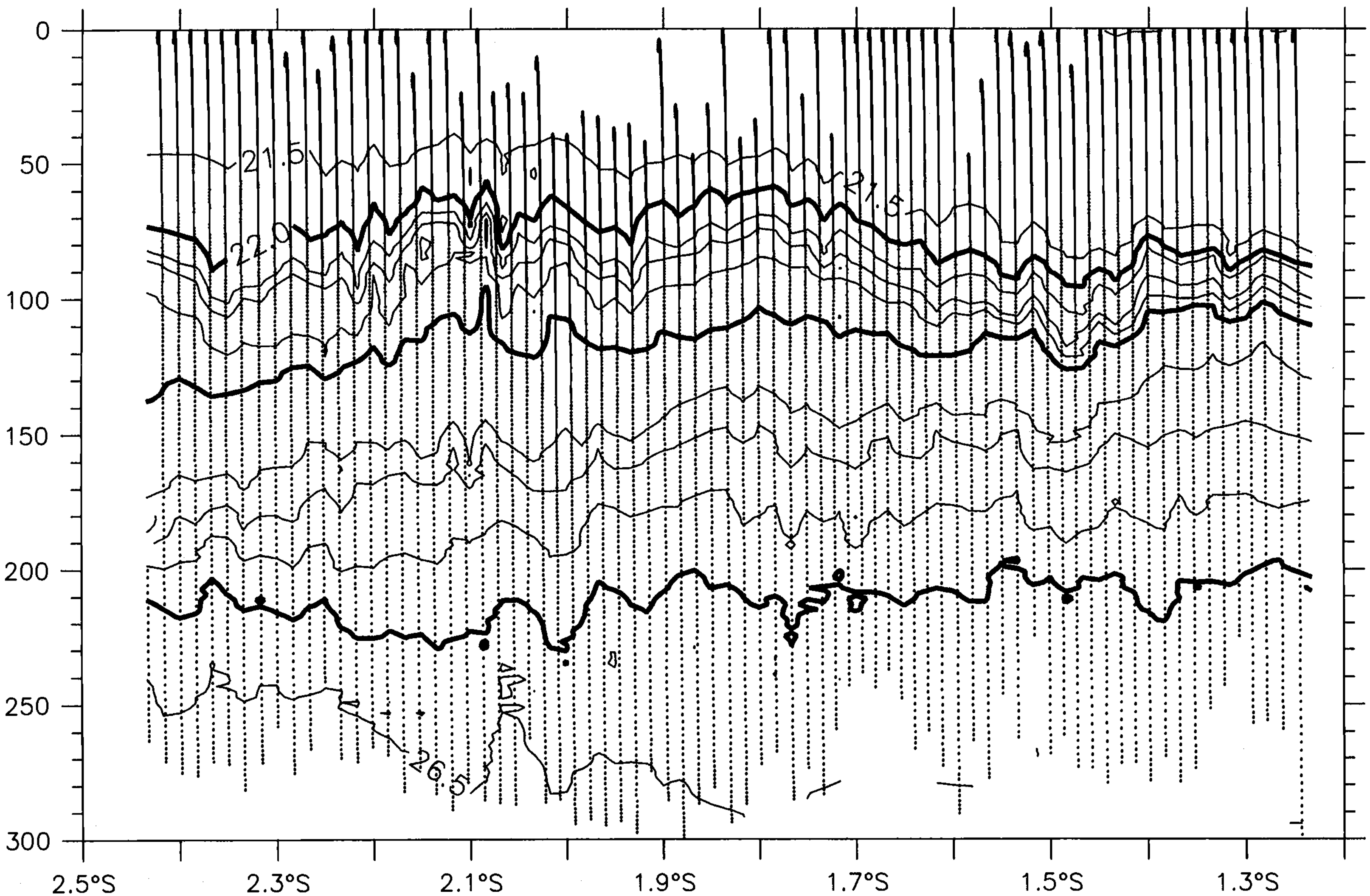
Sigma-t, N2S, 26 November 1992



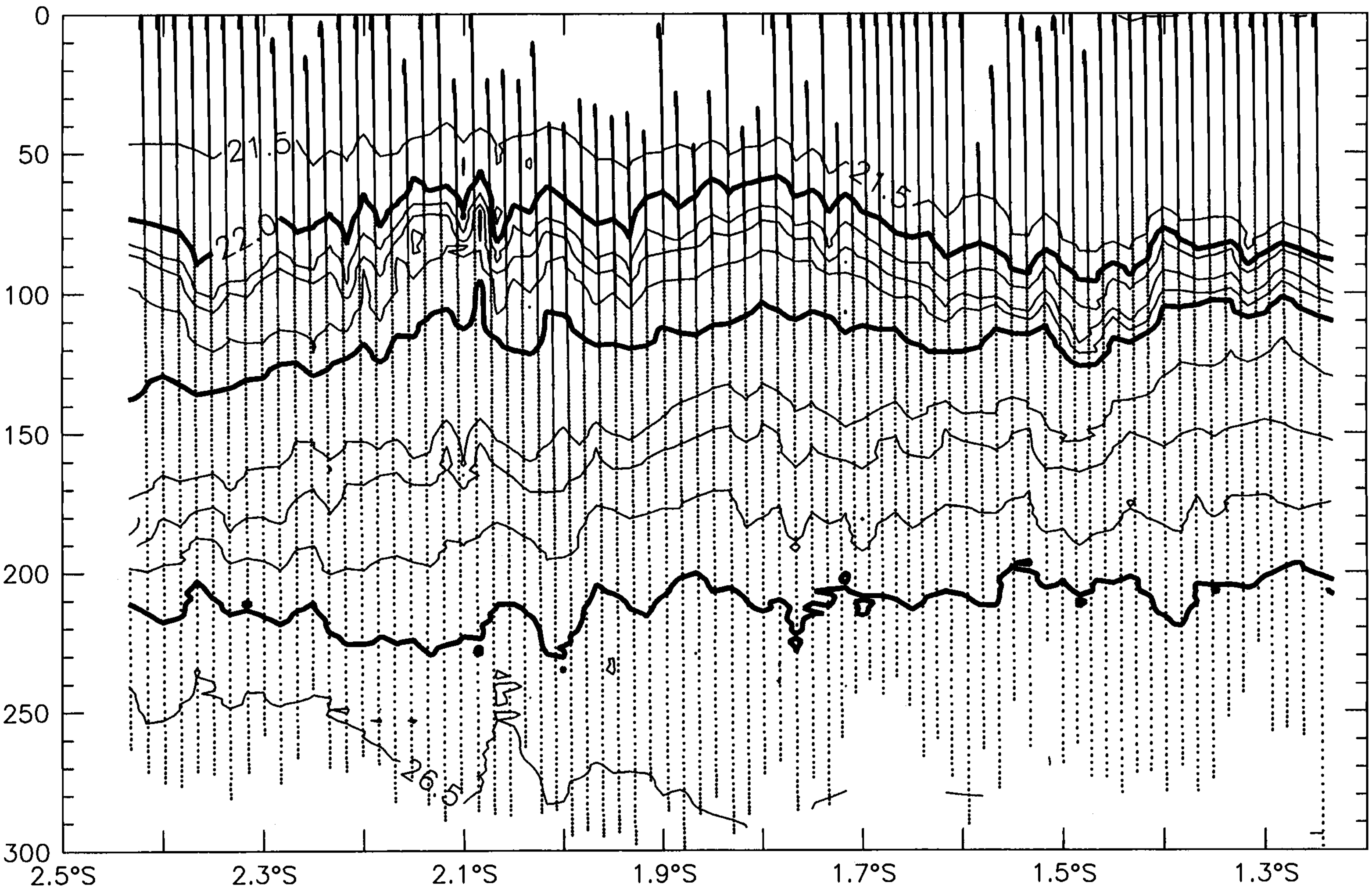
Sigma-t, N2S, 27 November 1992



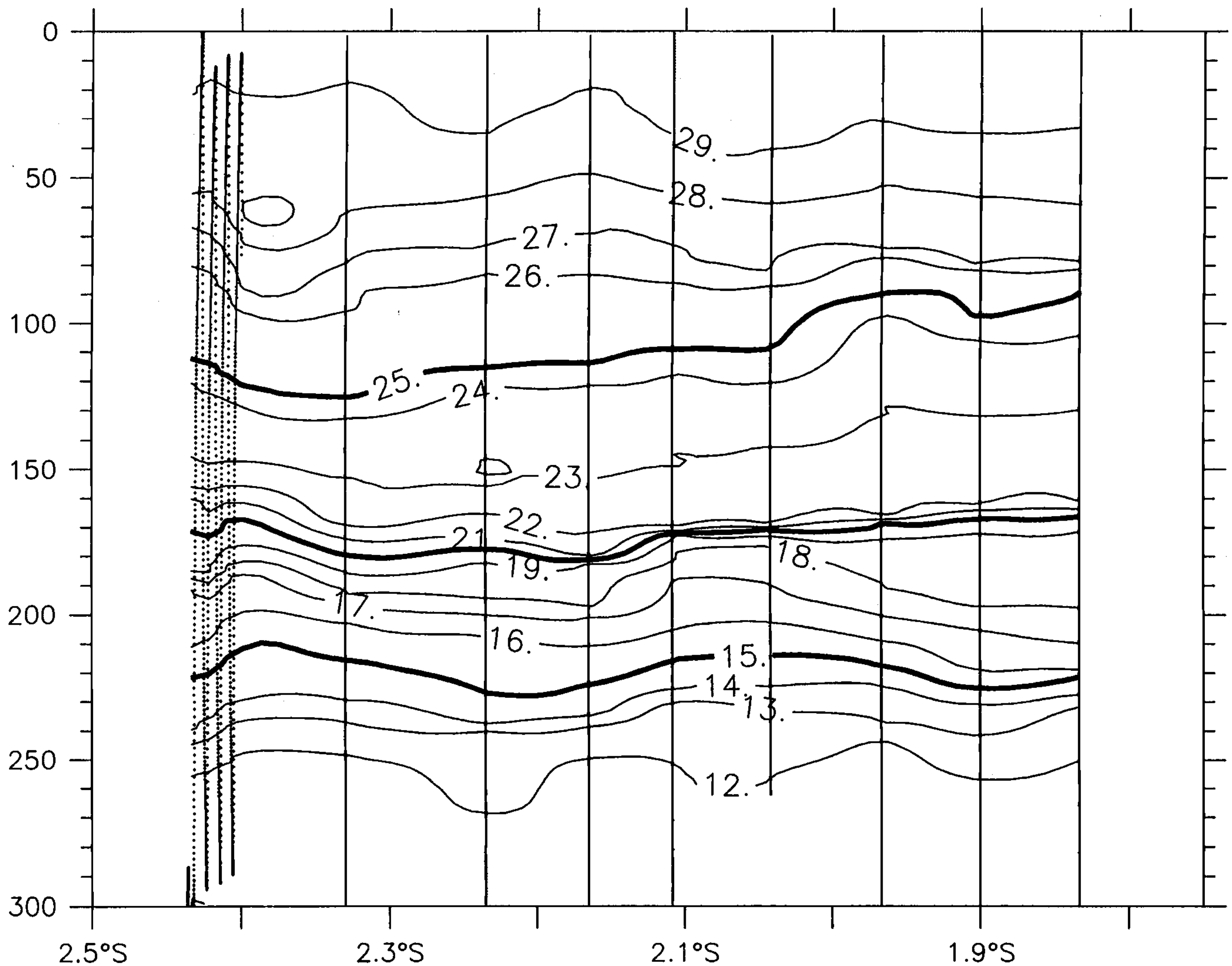
Sigma–t, N2S, 29 November 1992



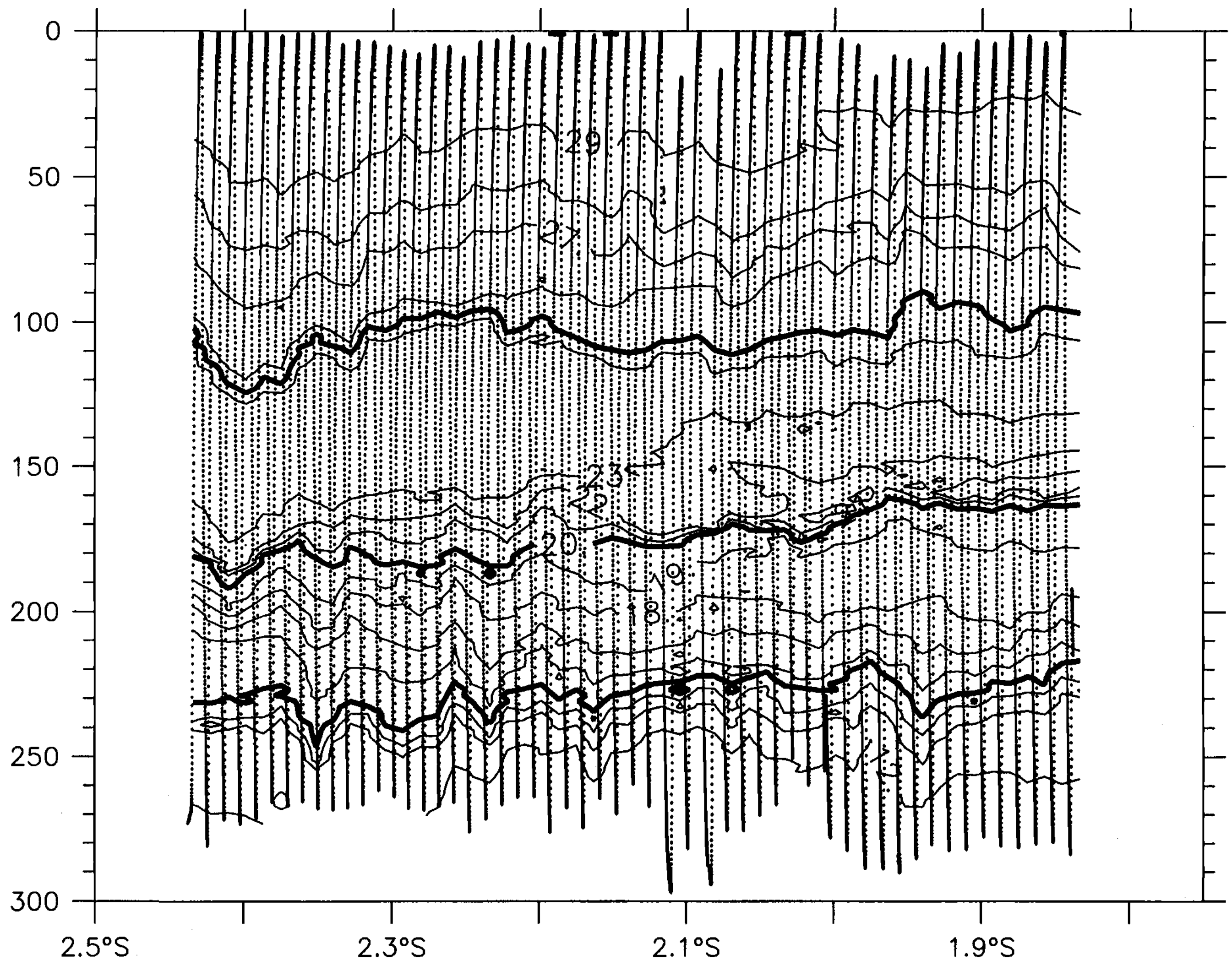
Sigma-t, N2S, 01 December 1992



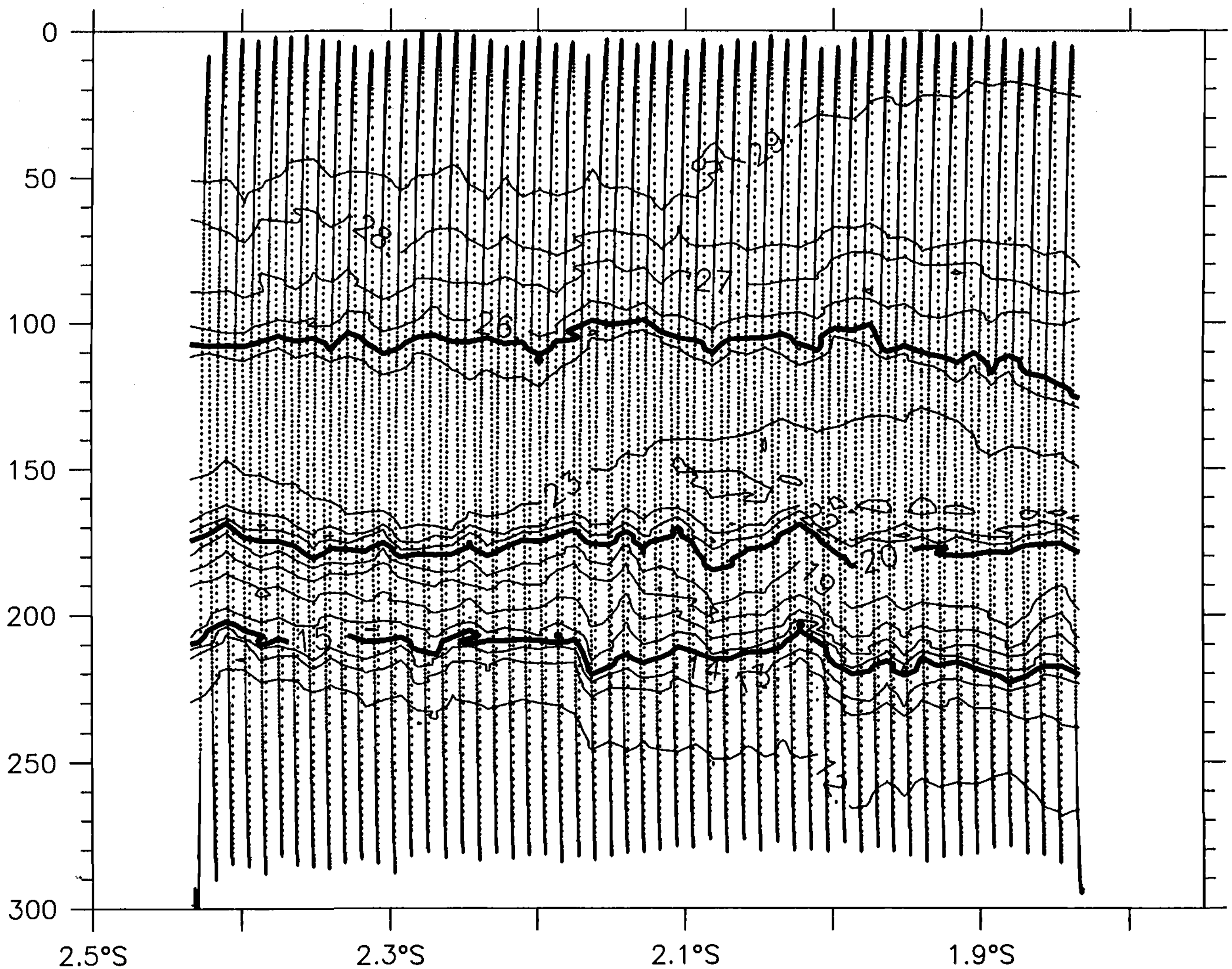
Sigma−t, S2N, 1 December 1992



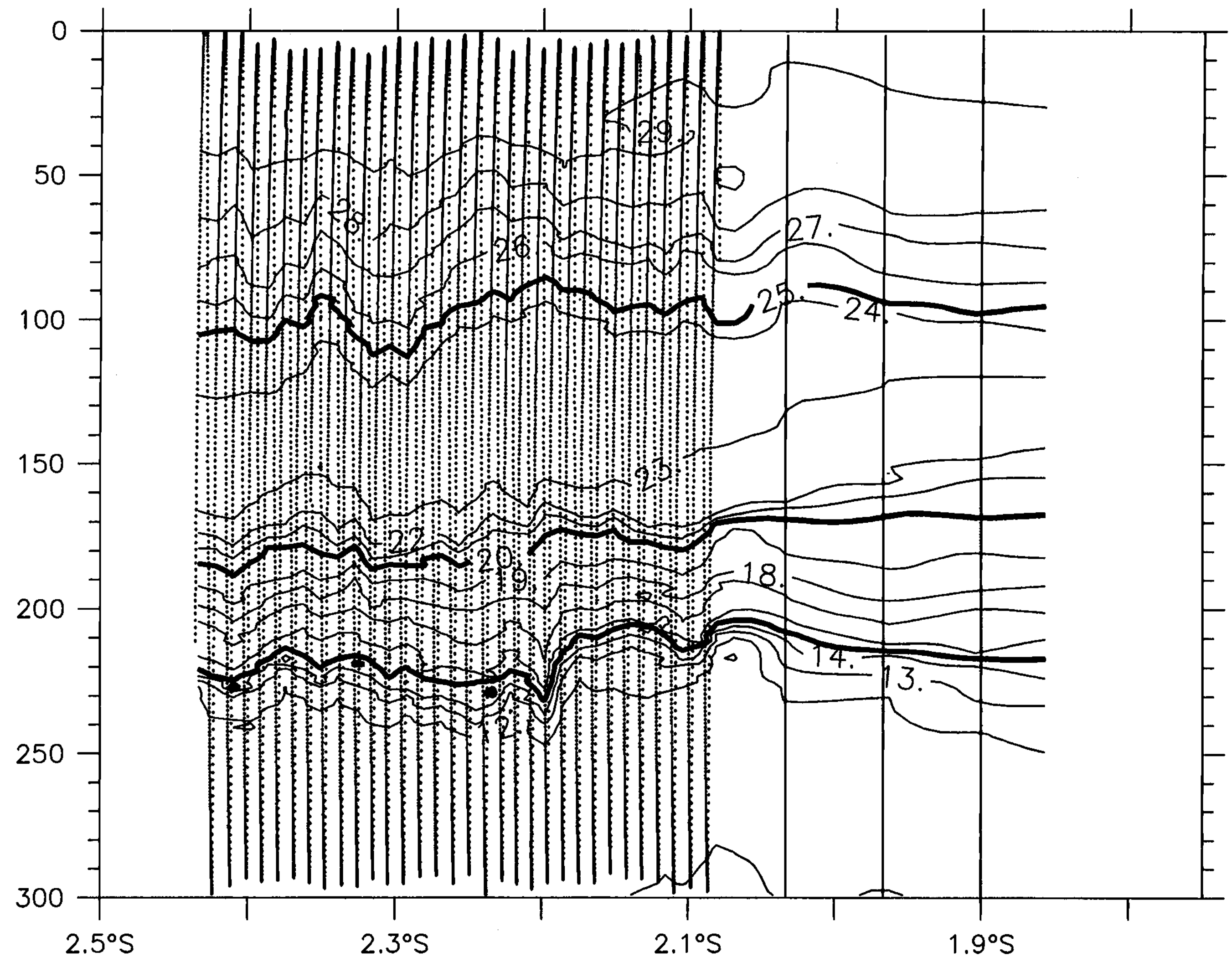
T(°C), S2W, 15 November 1992



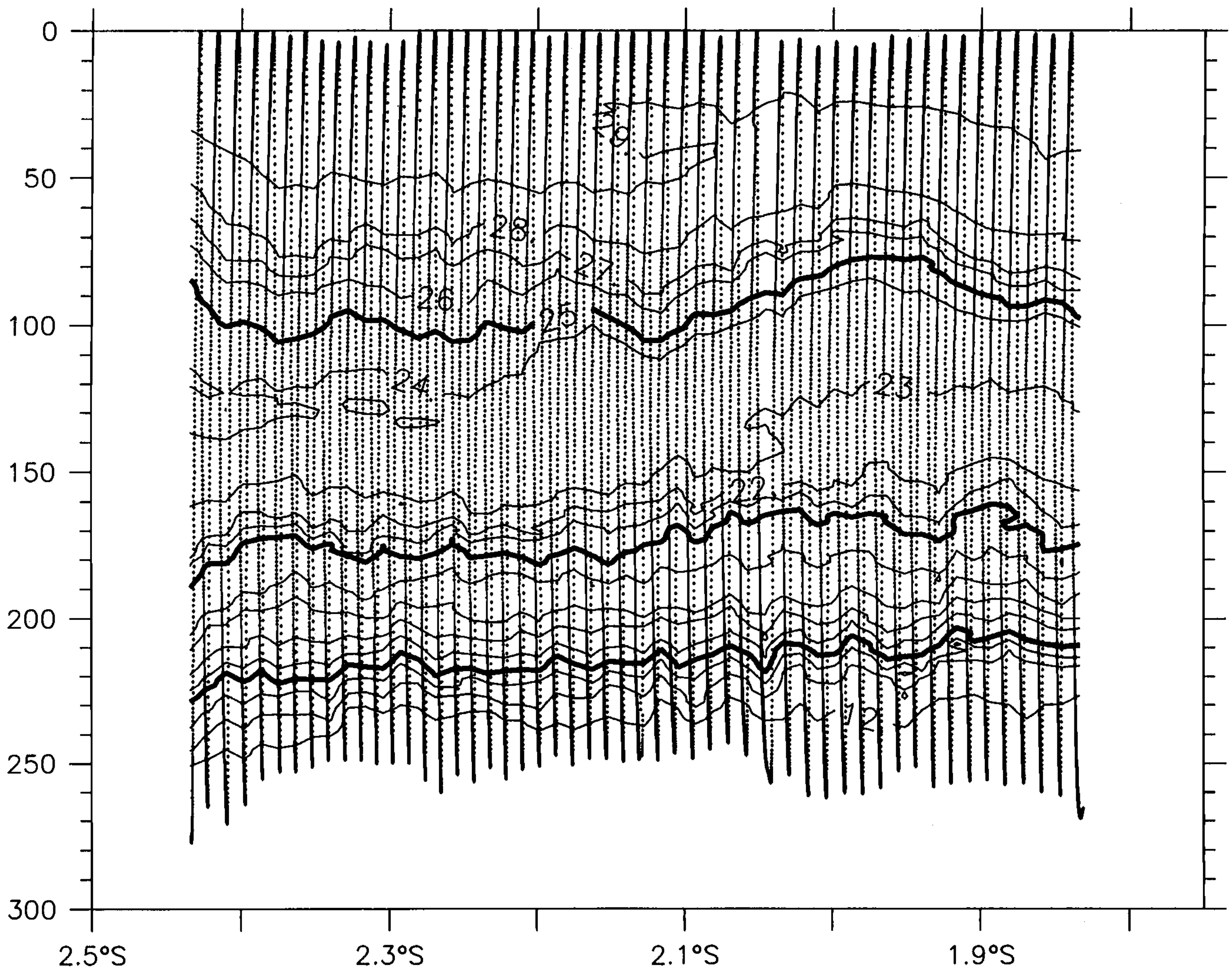
T(°C), S2W, 18 November 1992



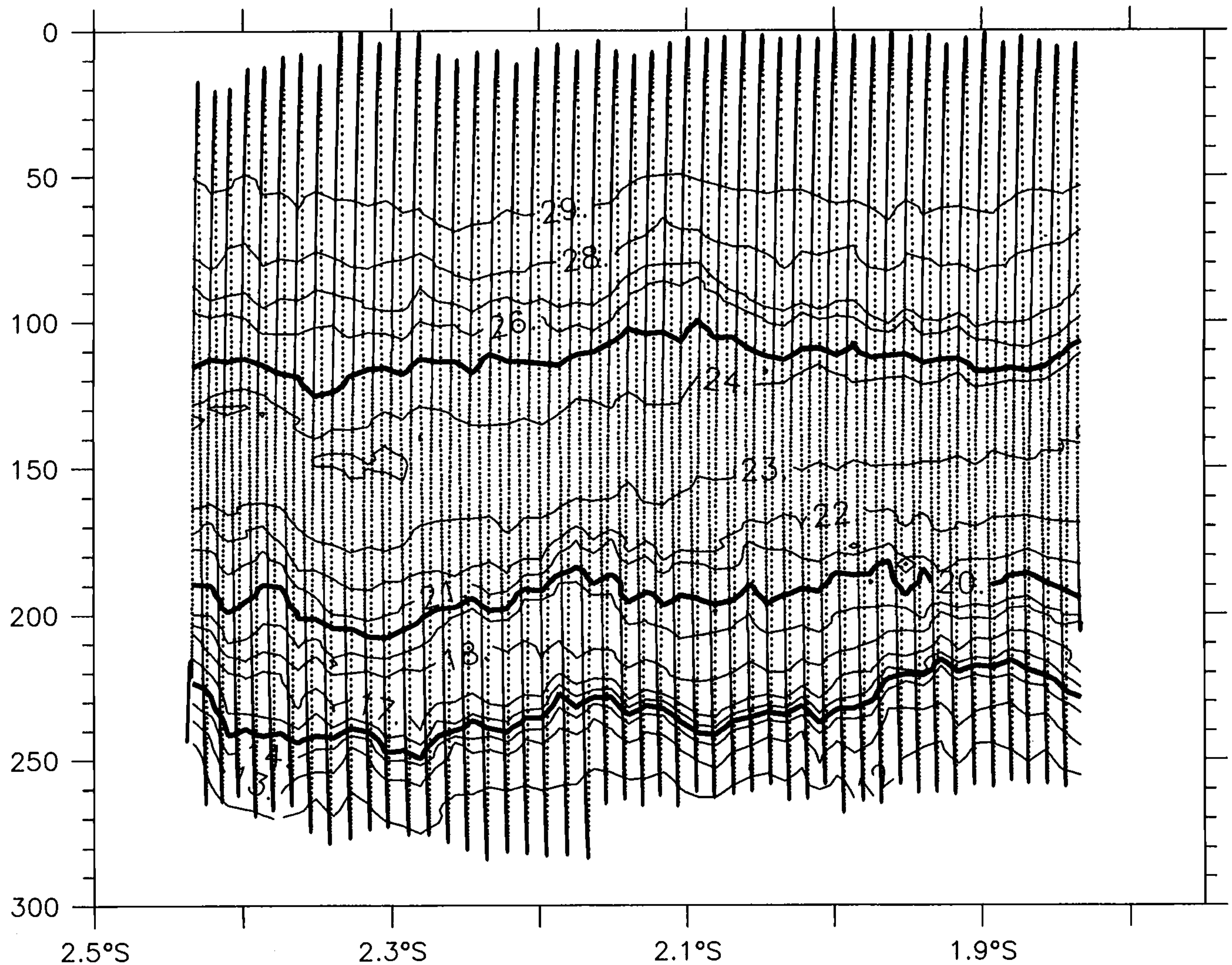
T(°C), S2W, 19 November 1992



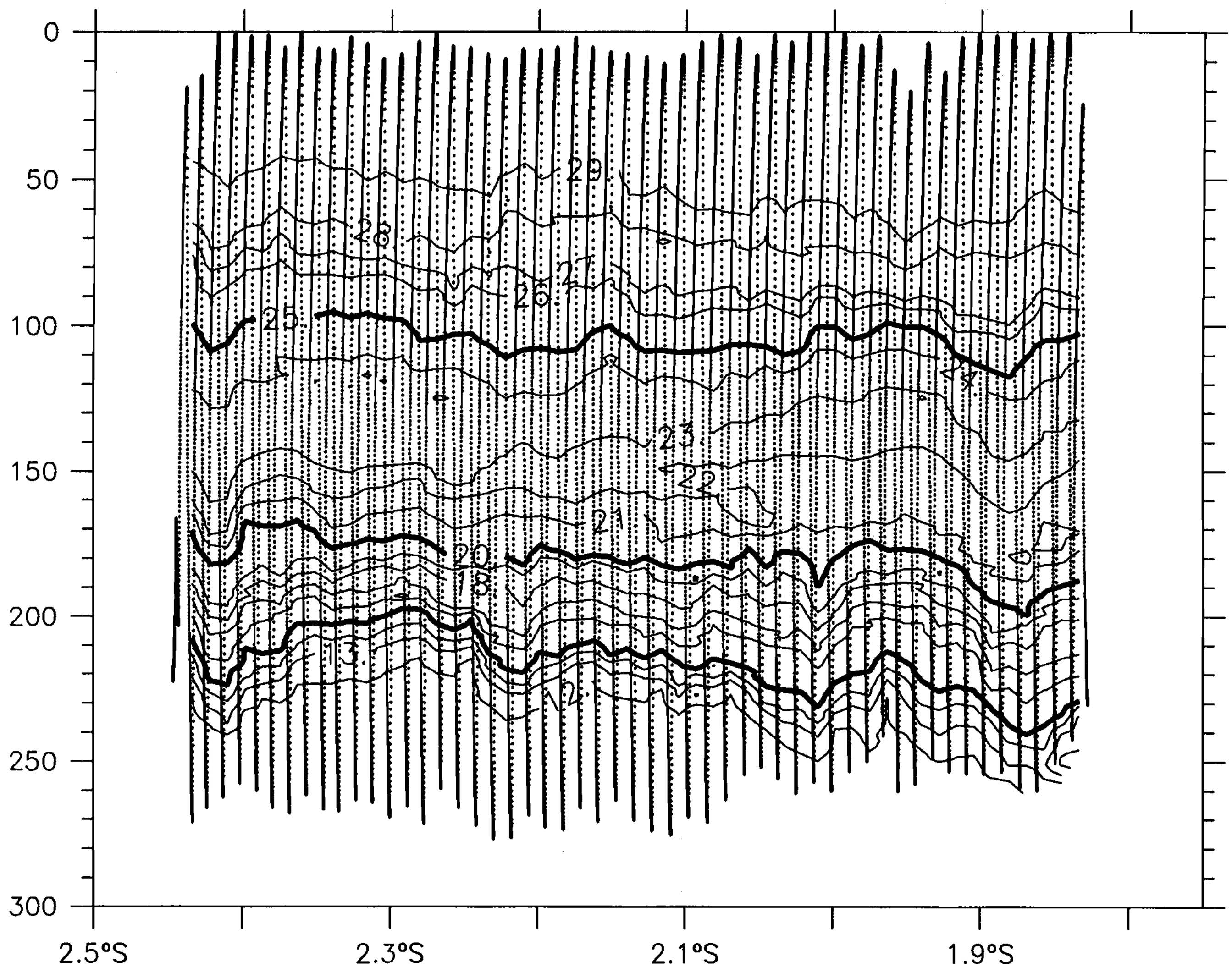
T(°C), S2W, 20 November 1992



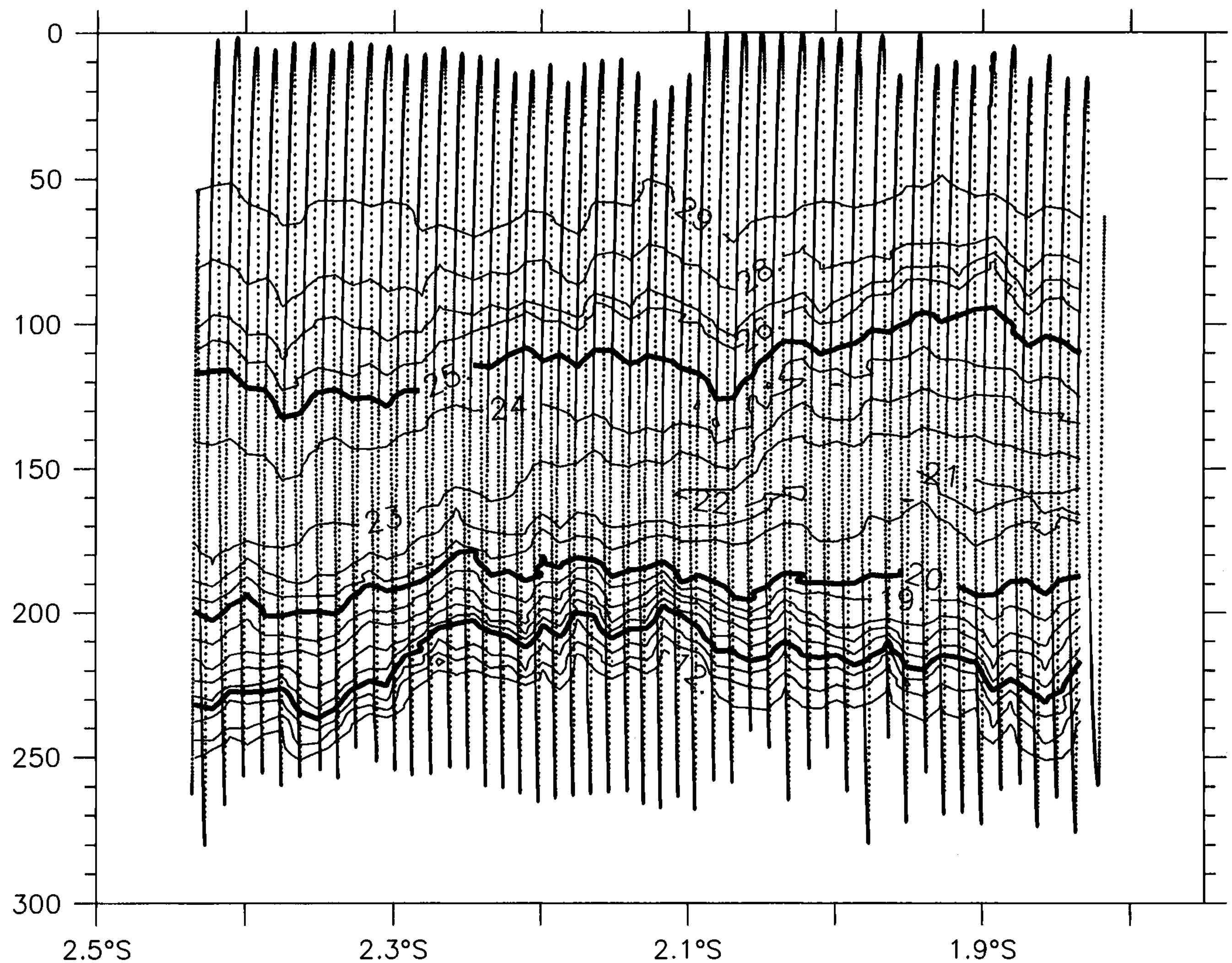
T(°C), S2W, 22 November 1992



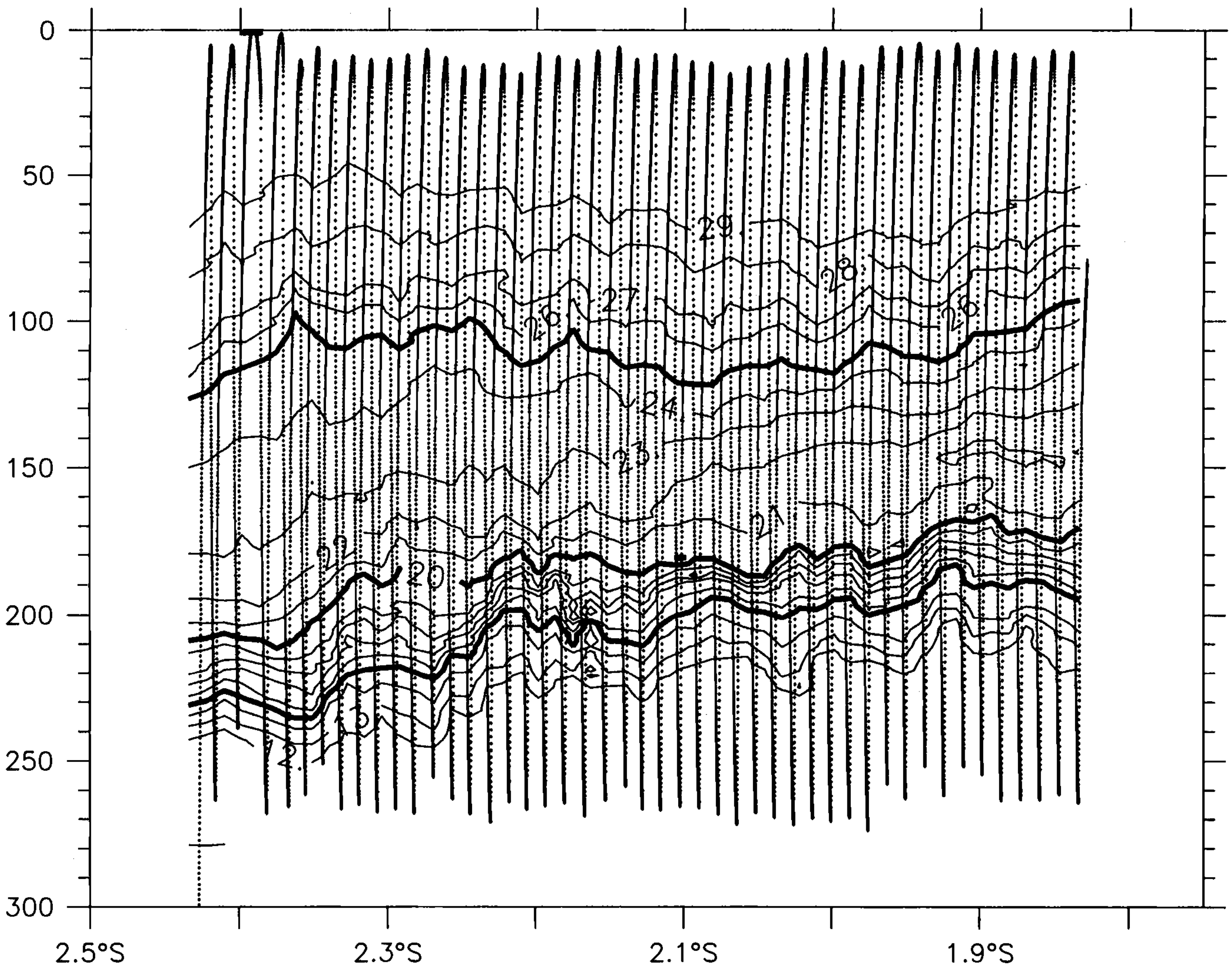
T(°C), S2W, 24 November 1992



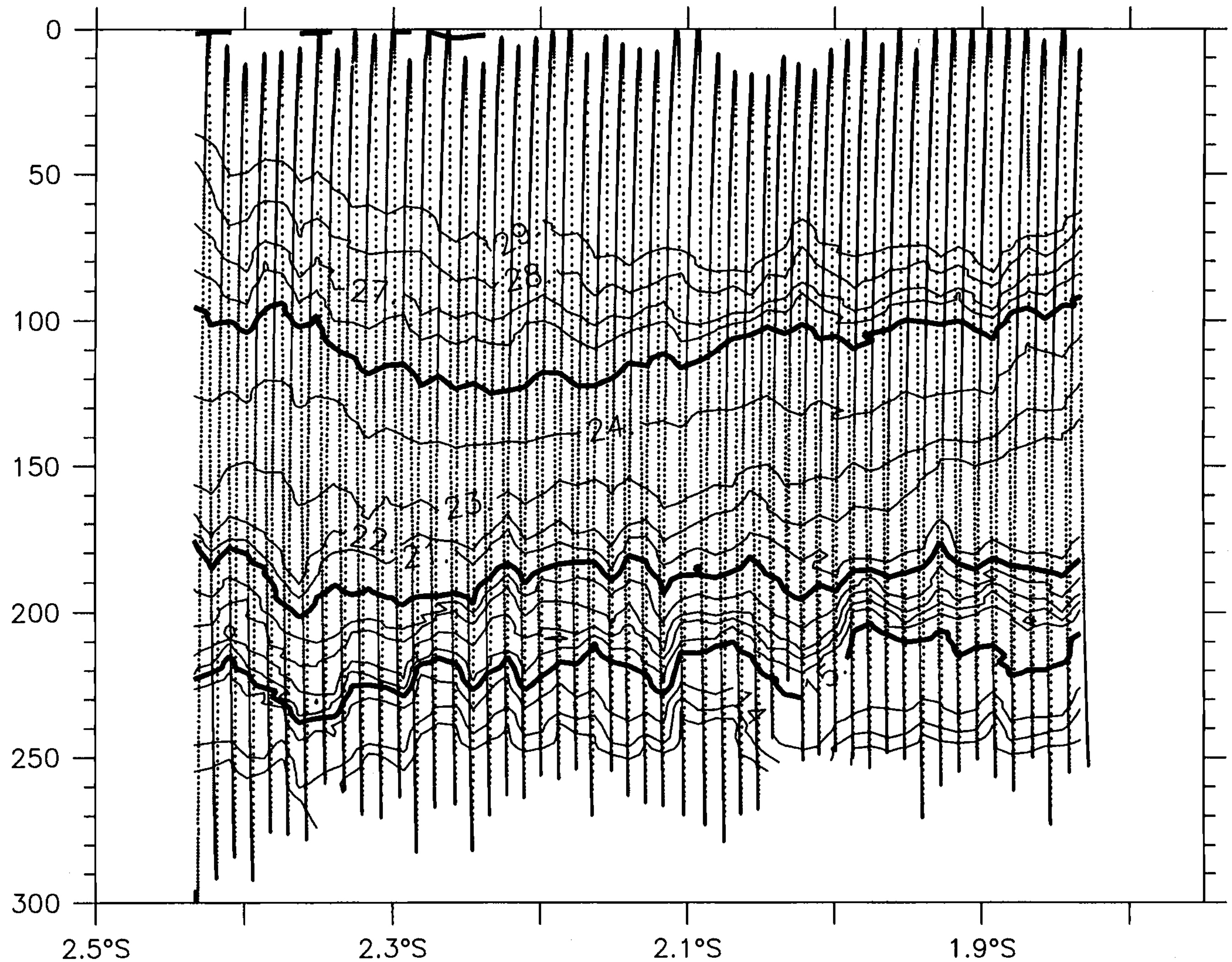
T(°C), S2W, 25 November 1992



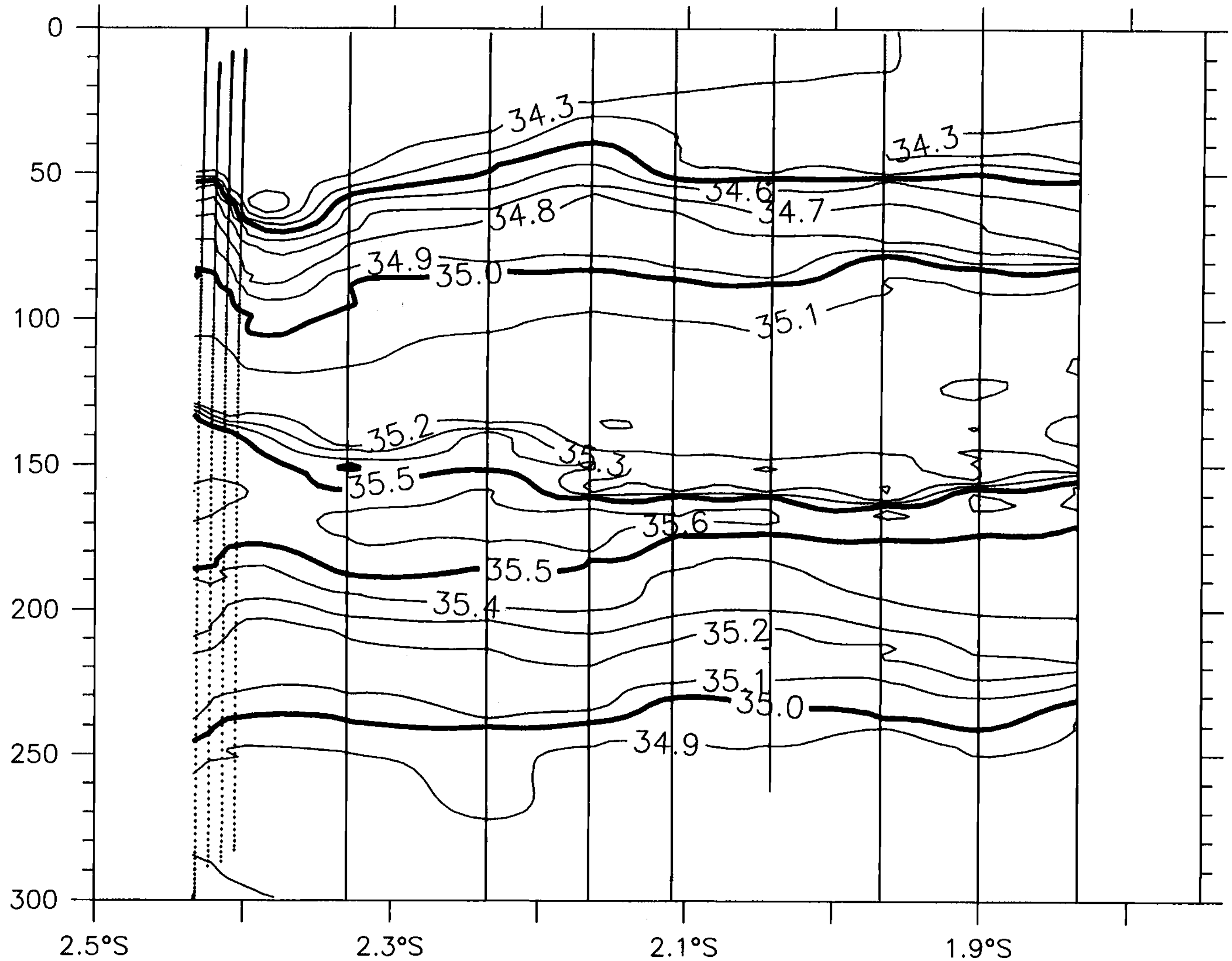
T(°C), S2W, 26 November 1992



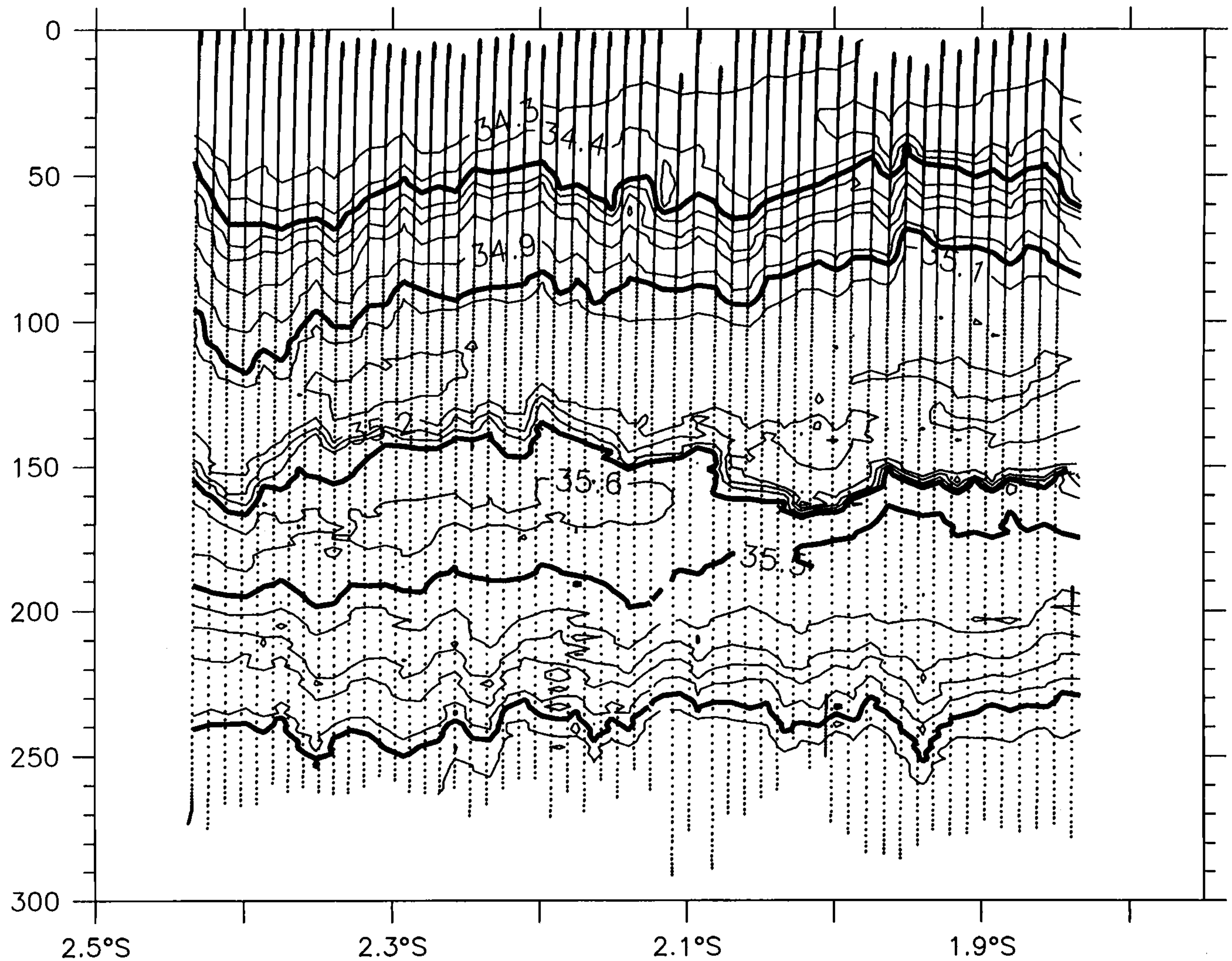
T(°C), S2W, 28 November 1992



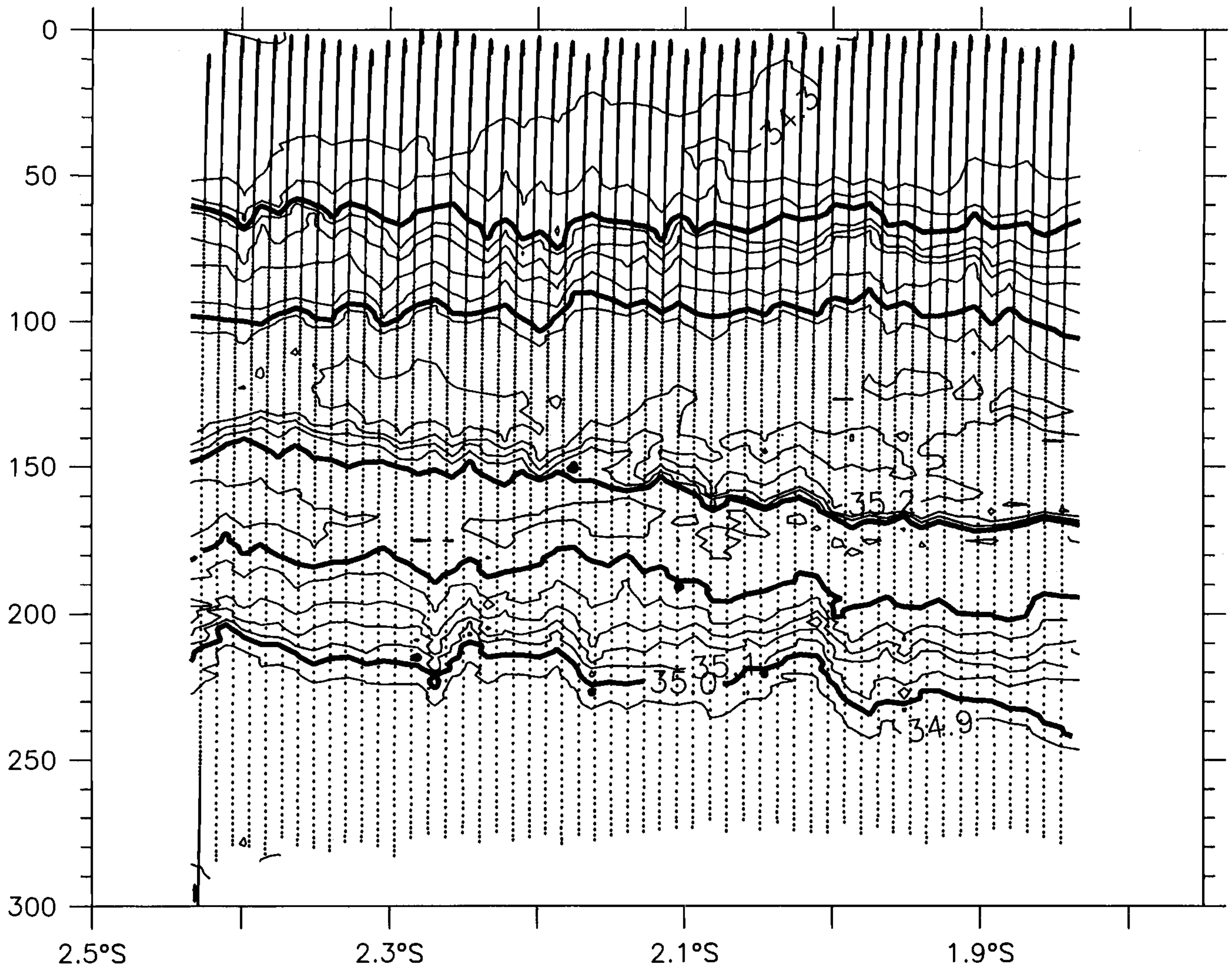
T(°C), S2W, 30 November 1992



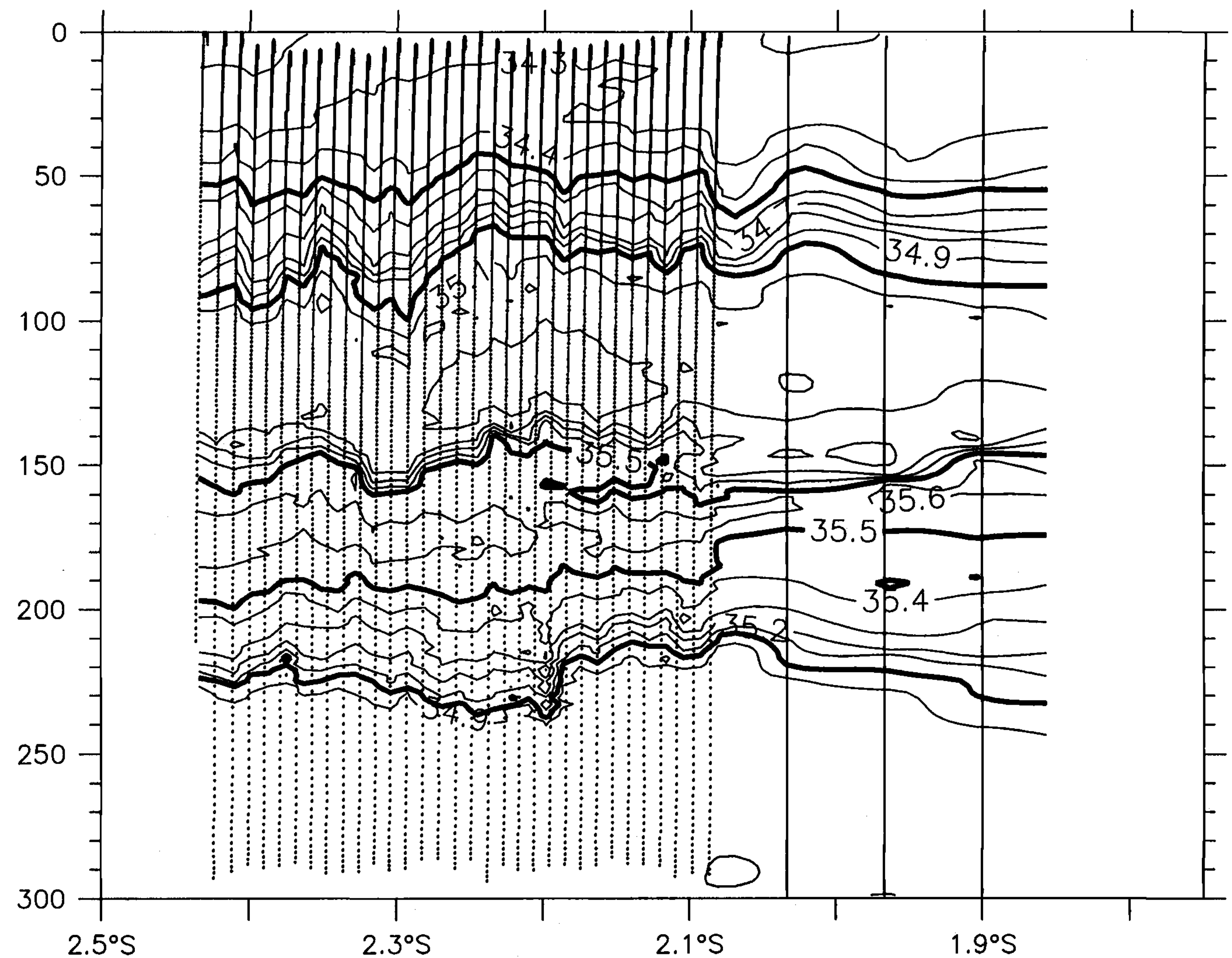
S(psu), S2W, 15 November 1992



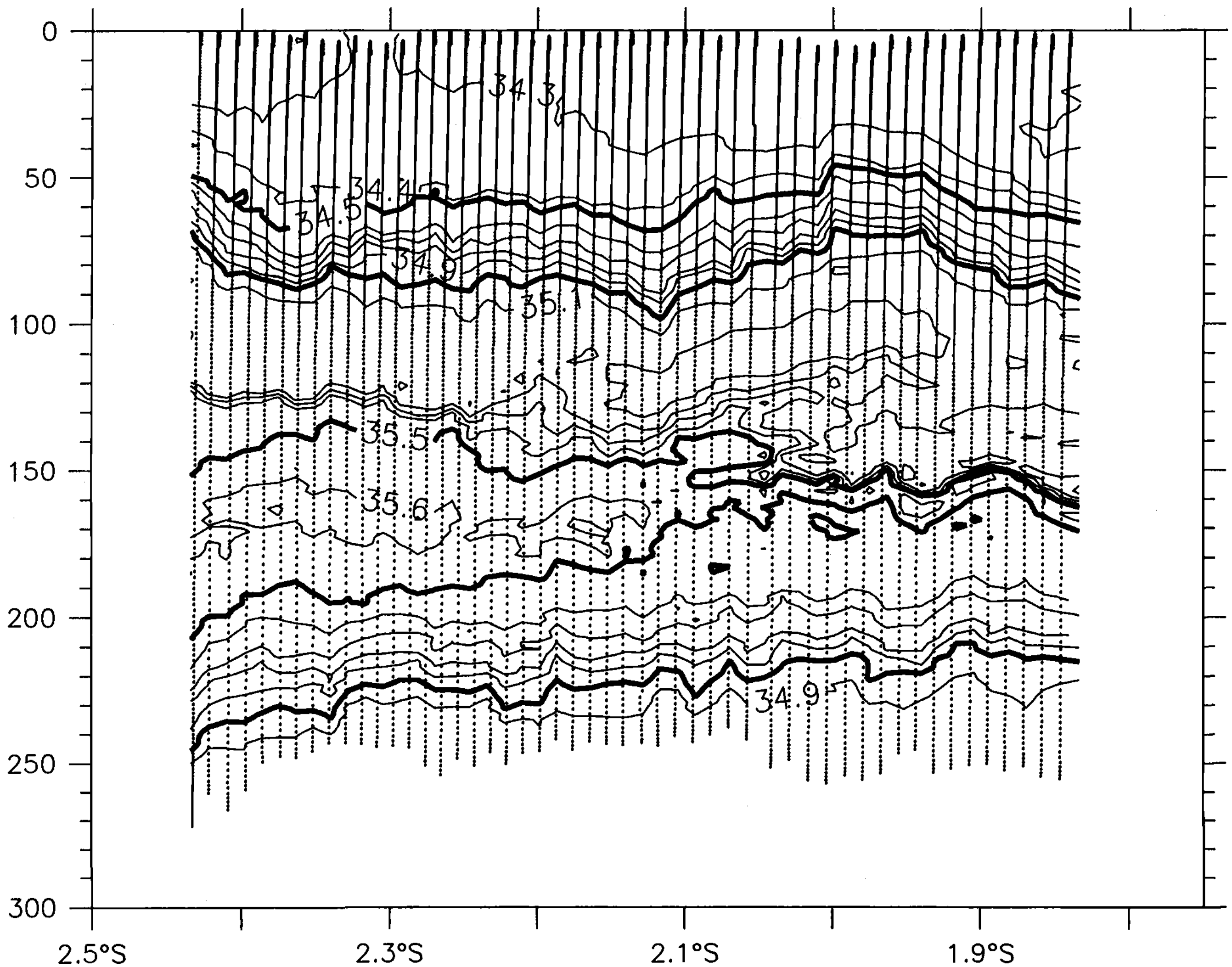
S(psu), S2W, 18 November 1992



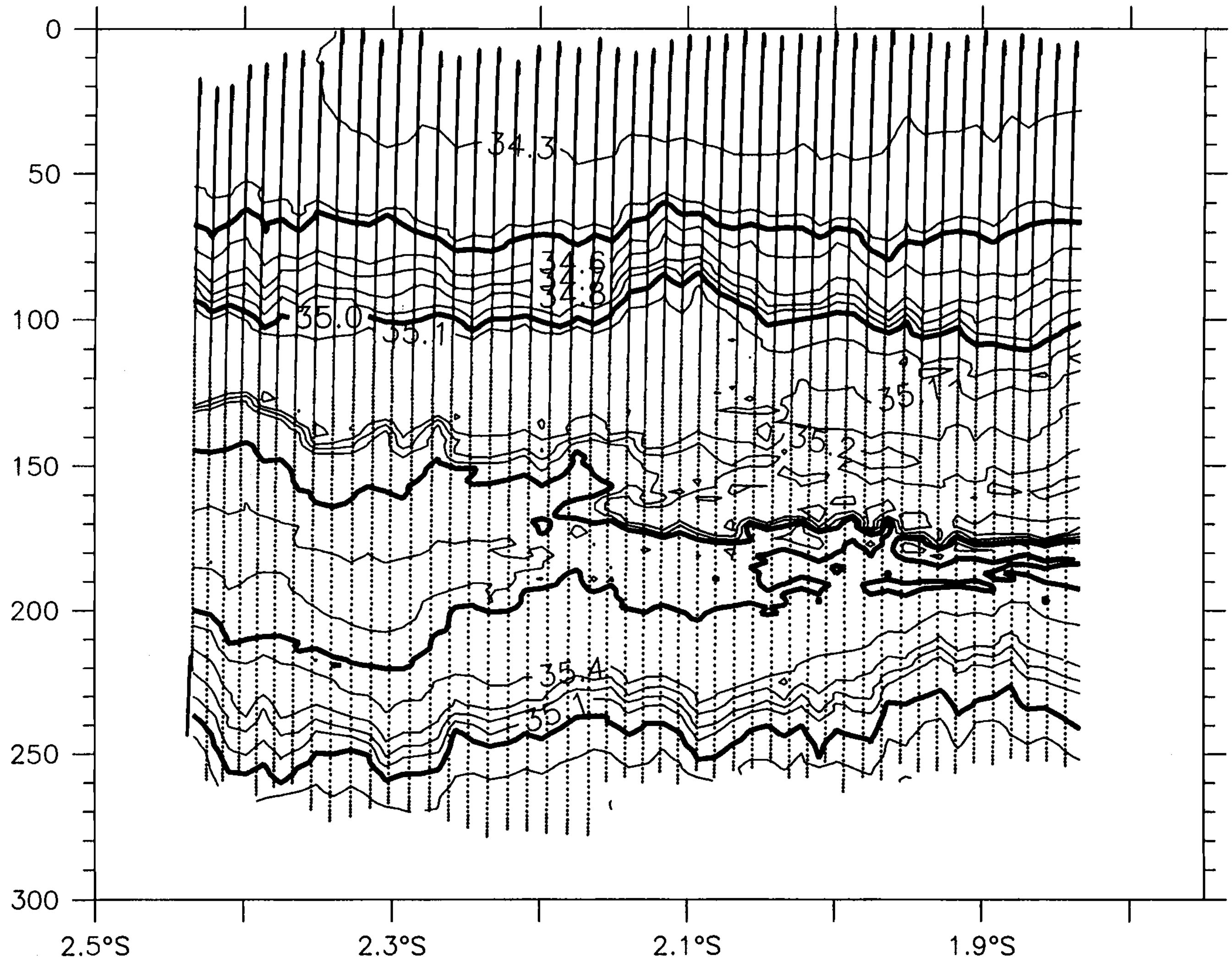
S(psu), S2W, 19 November 1992



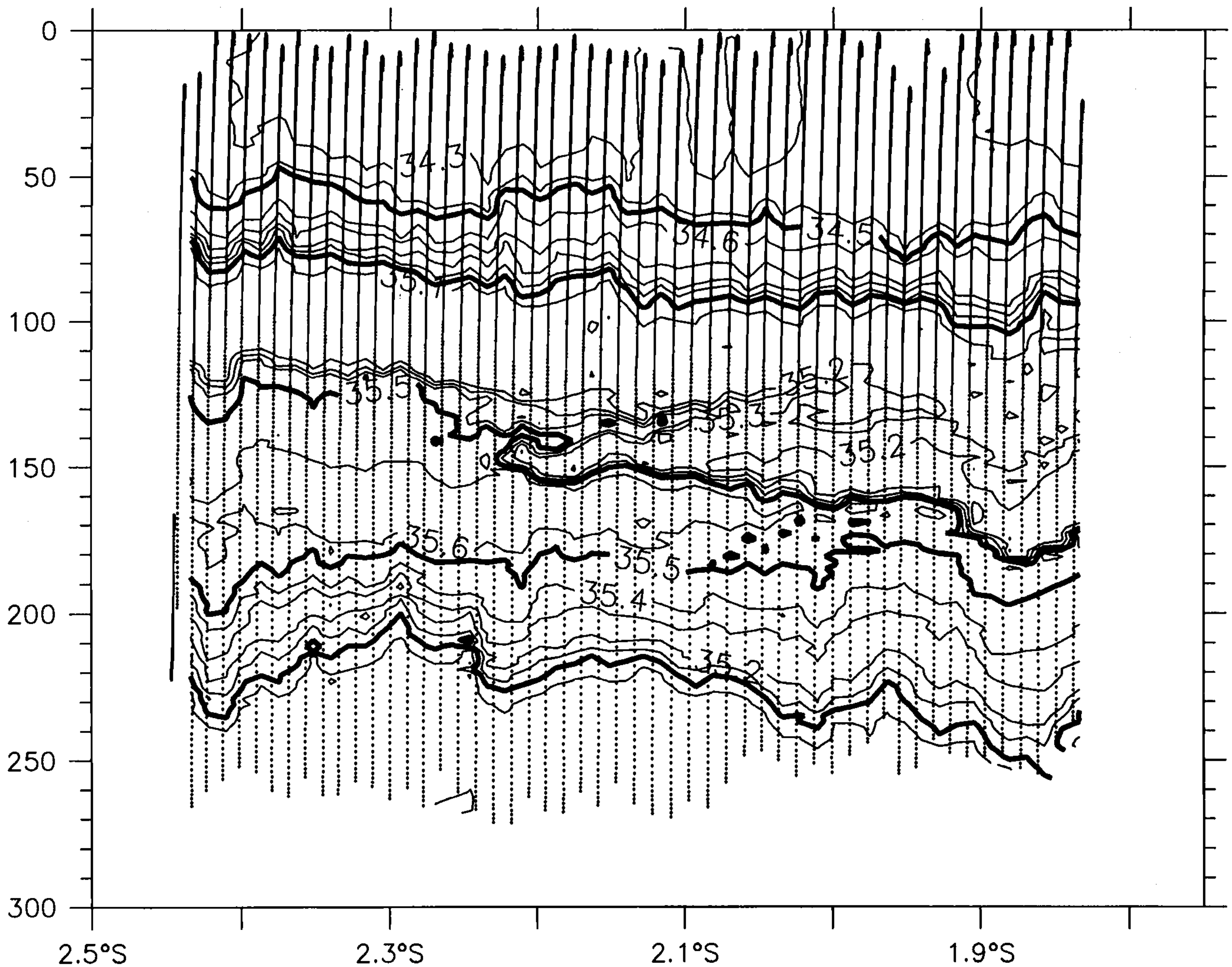
S(psu), S2W, 20 November 1992



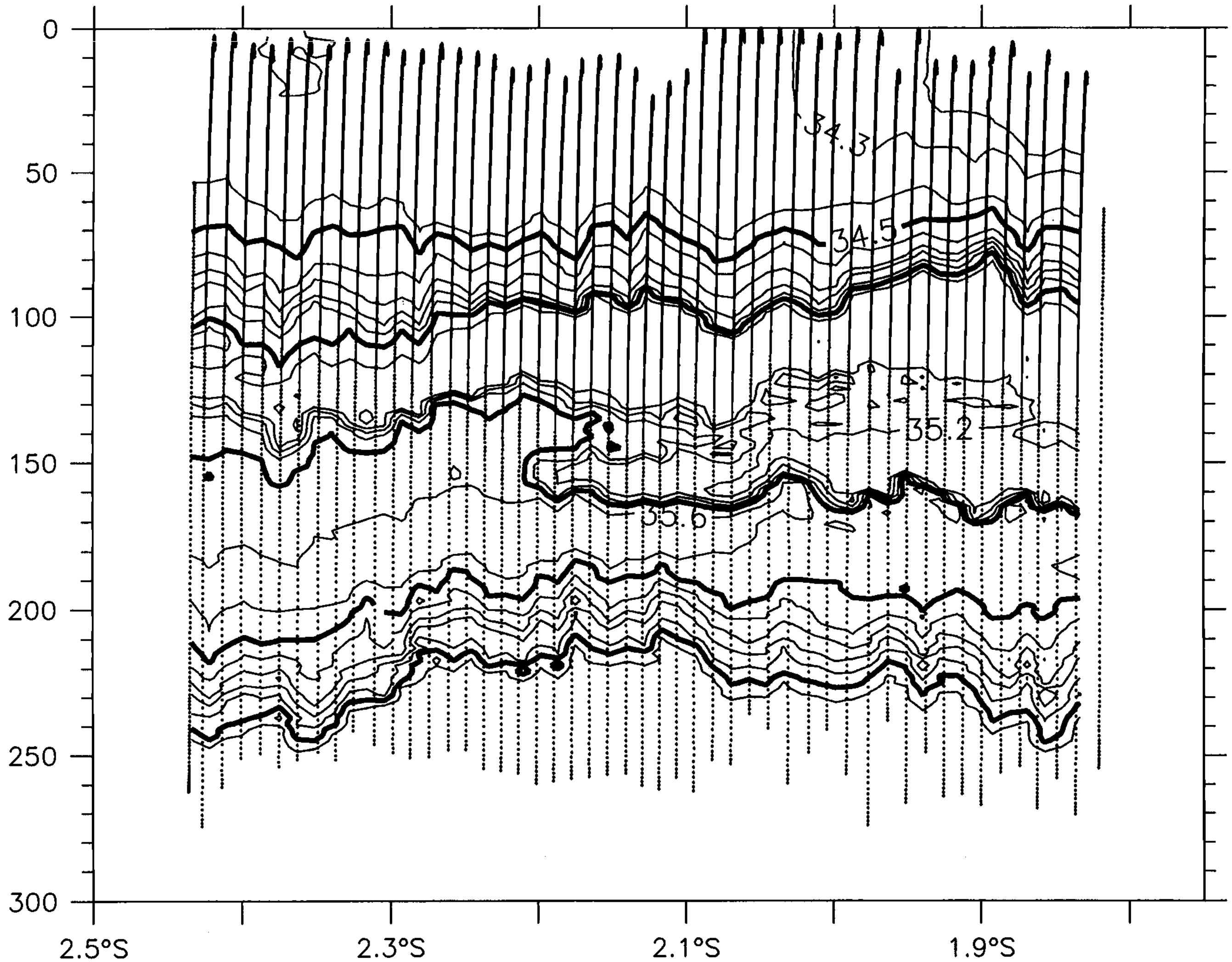
S(psu), S2W, 22 November 1992



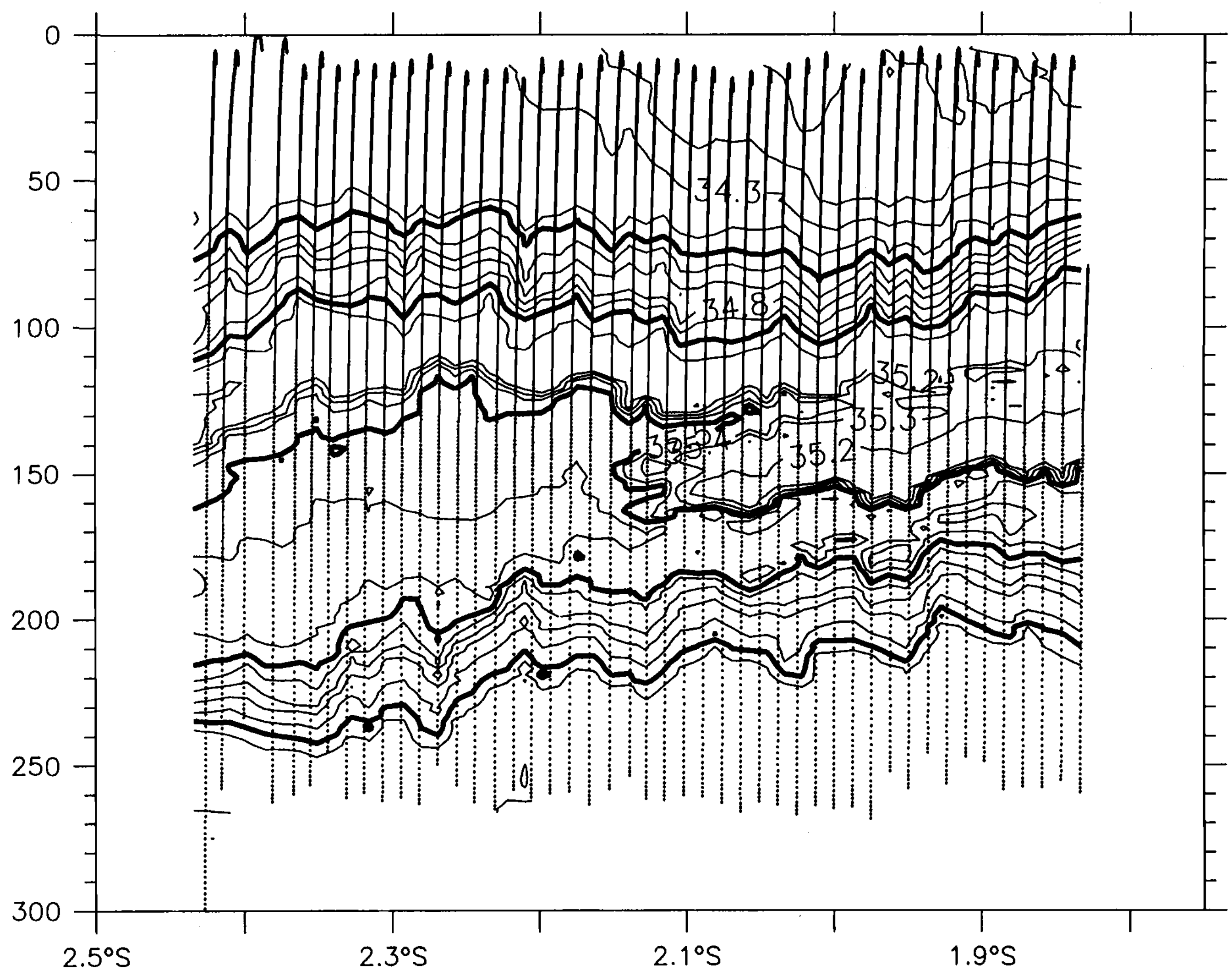
S(psu), S2W, 24 November 1992



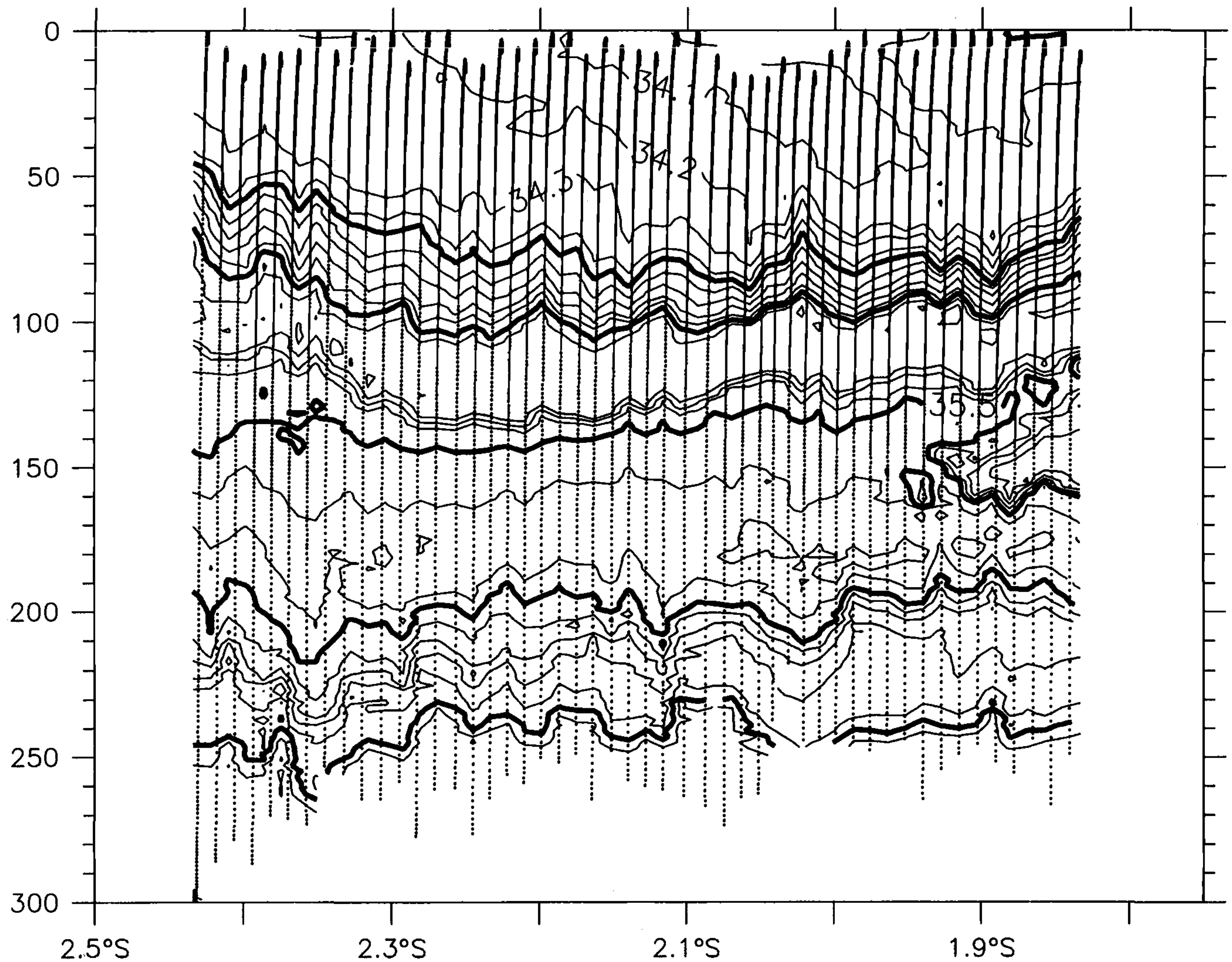
S(psu), S2W, 25 November 1992



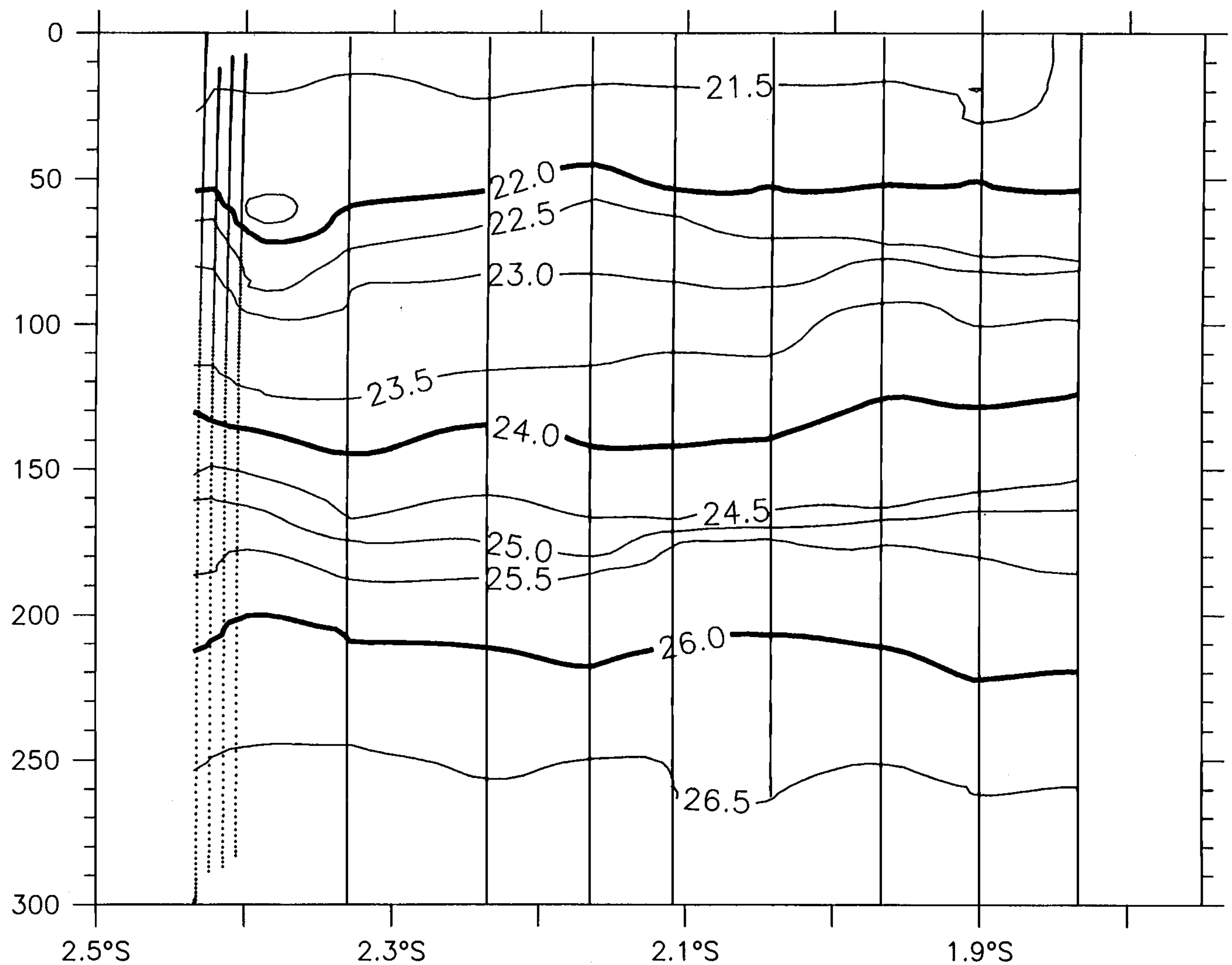
S(psu), S2W, 26 November 1992



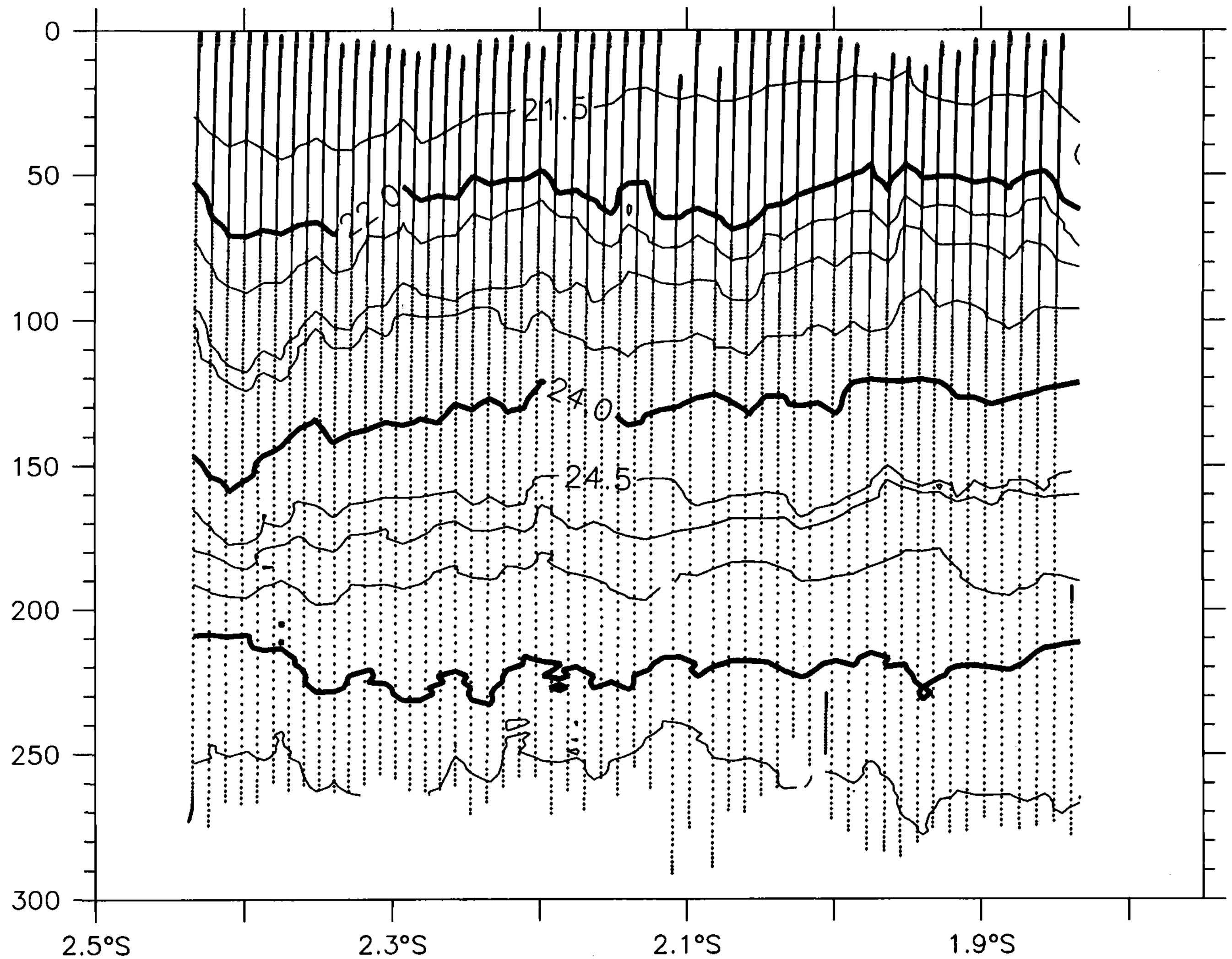
S(psu), S2W, 28 November 1992



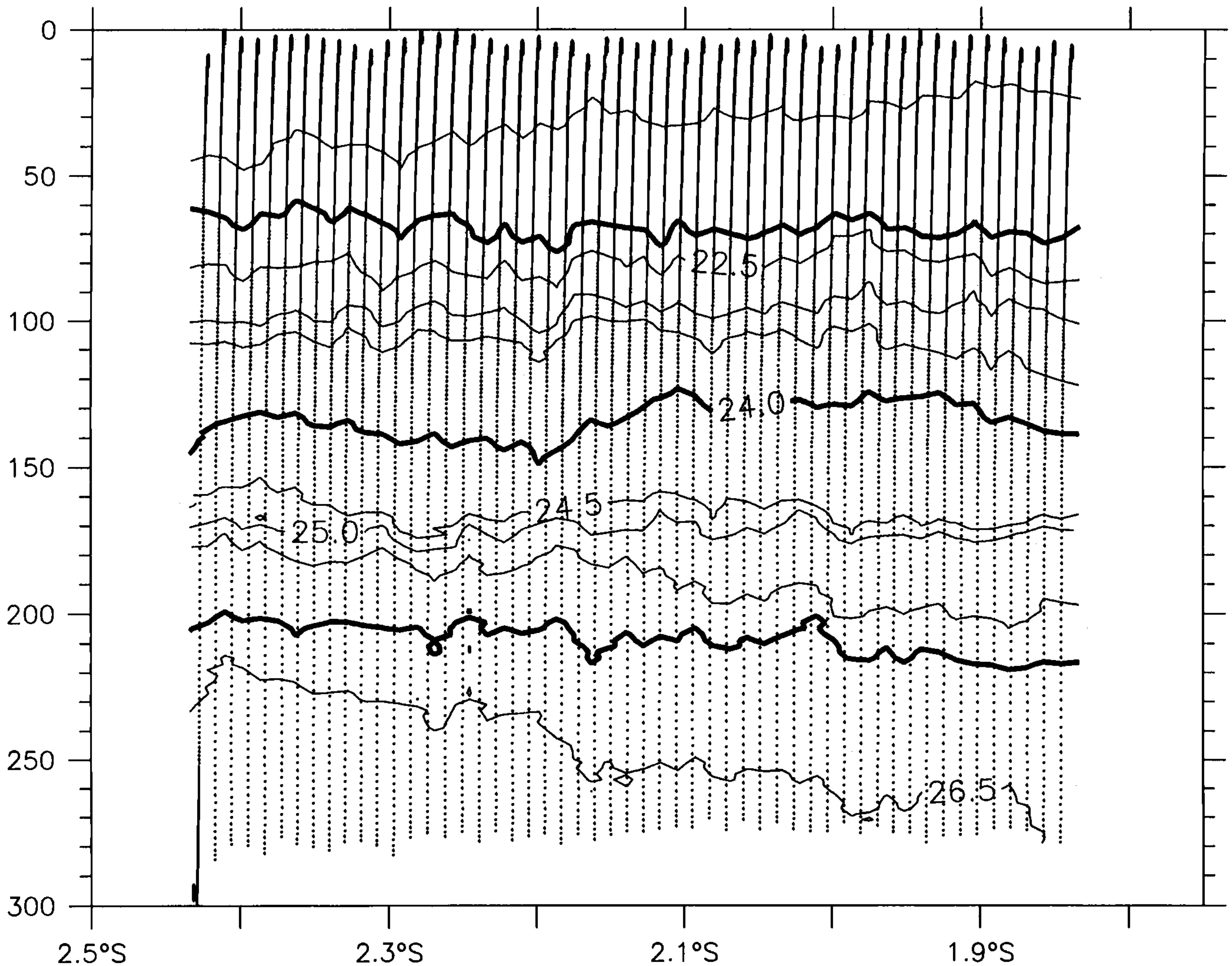
S(psu), S2W, 30 November 1992



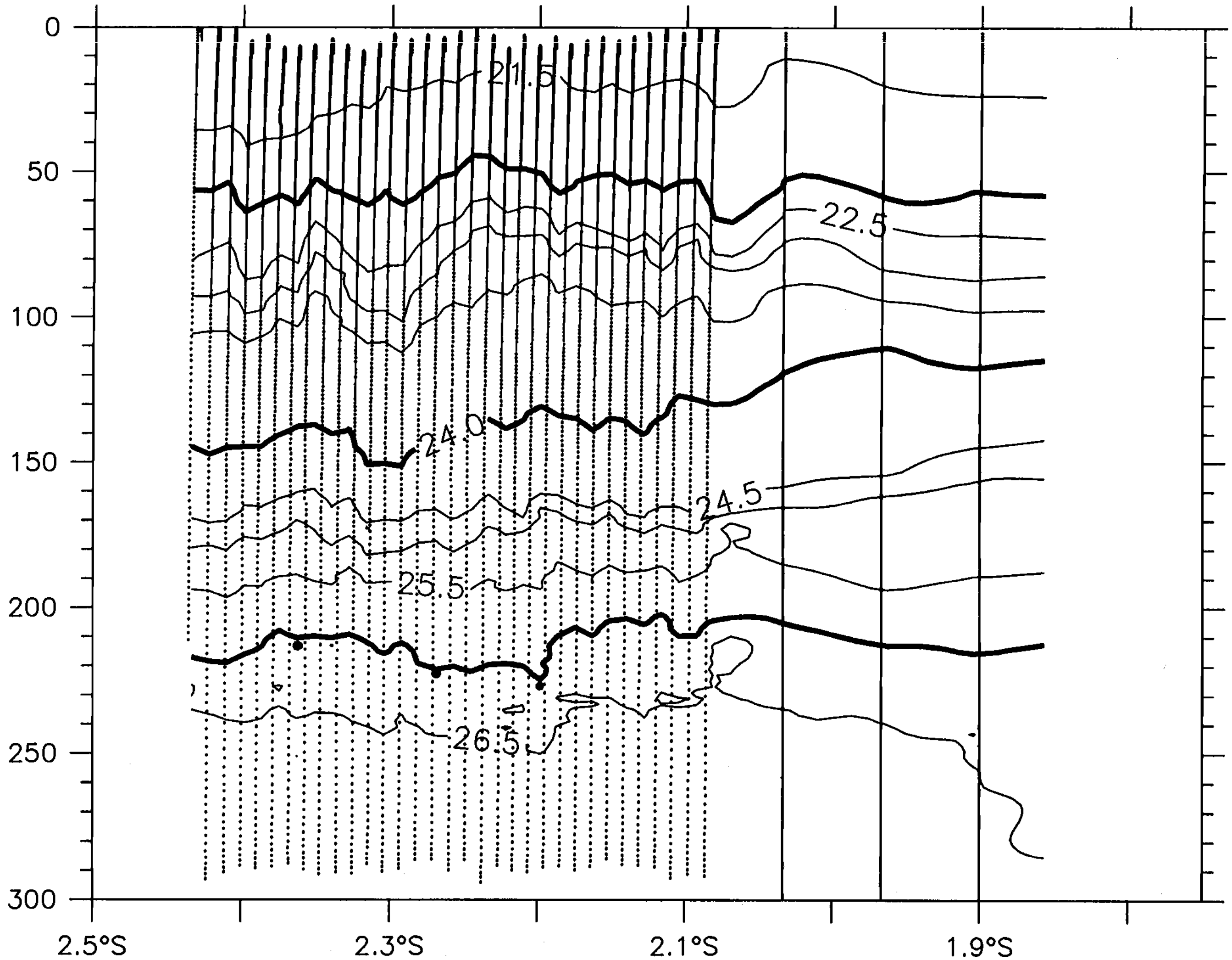
Sigma−t, S2W, 15 November 1992



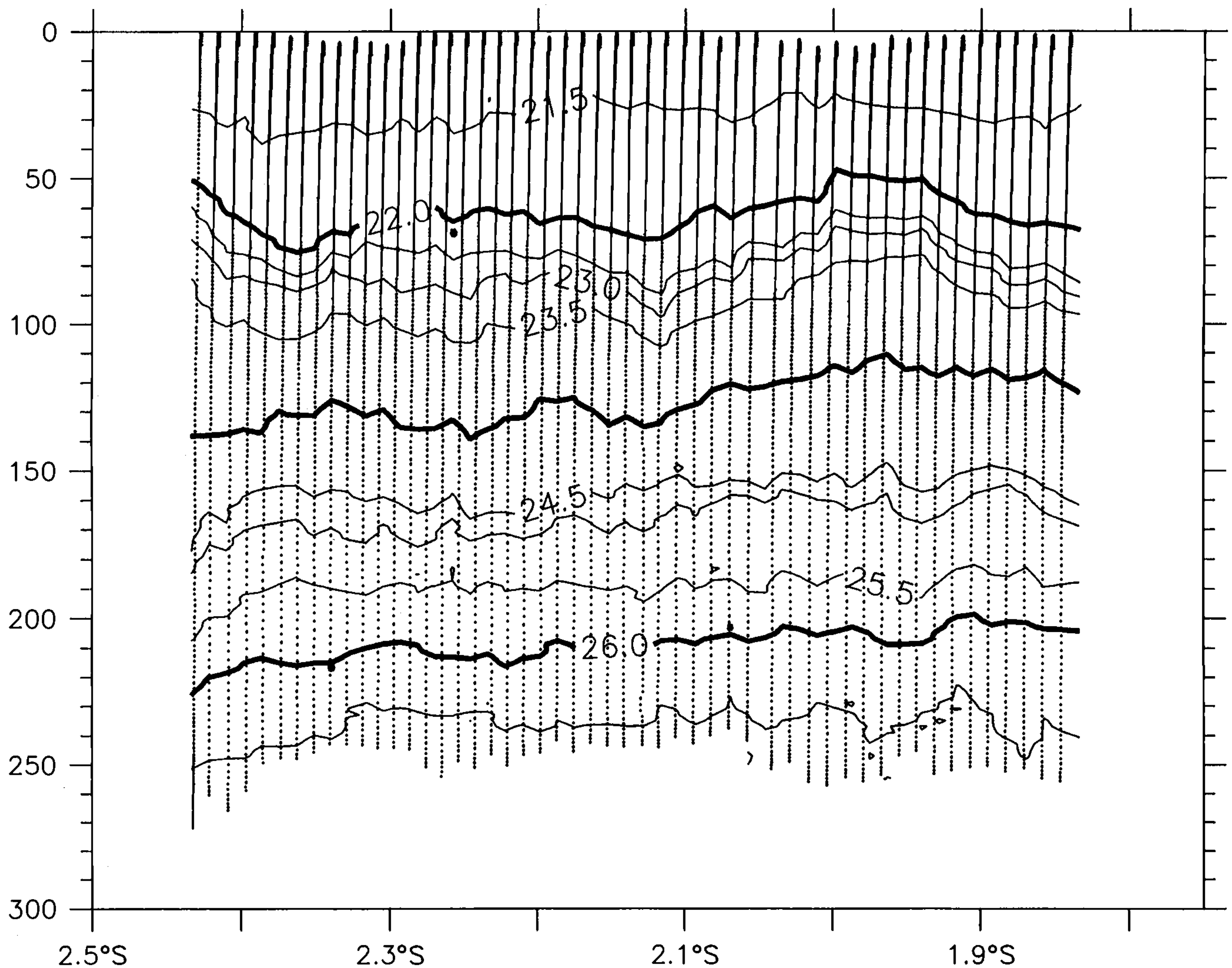
Sigma–t, S2W, 18 November 1992



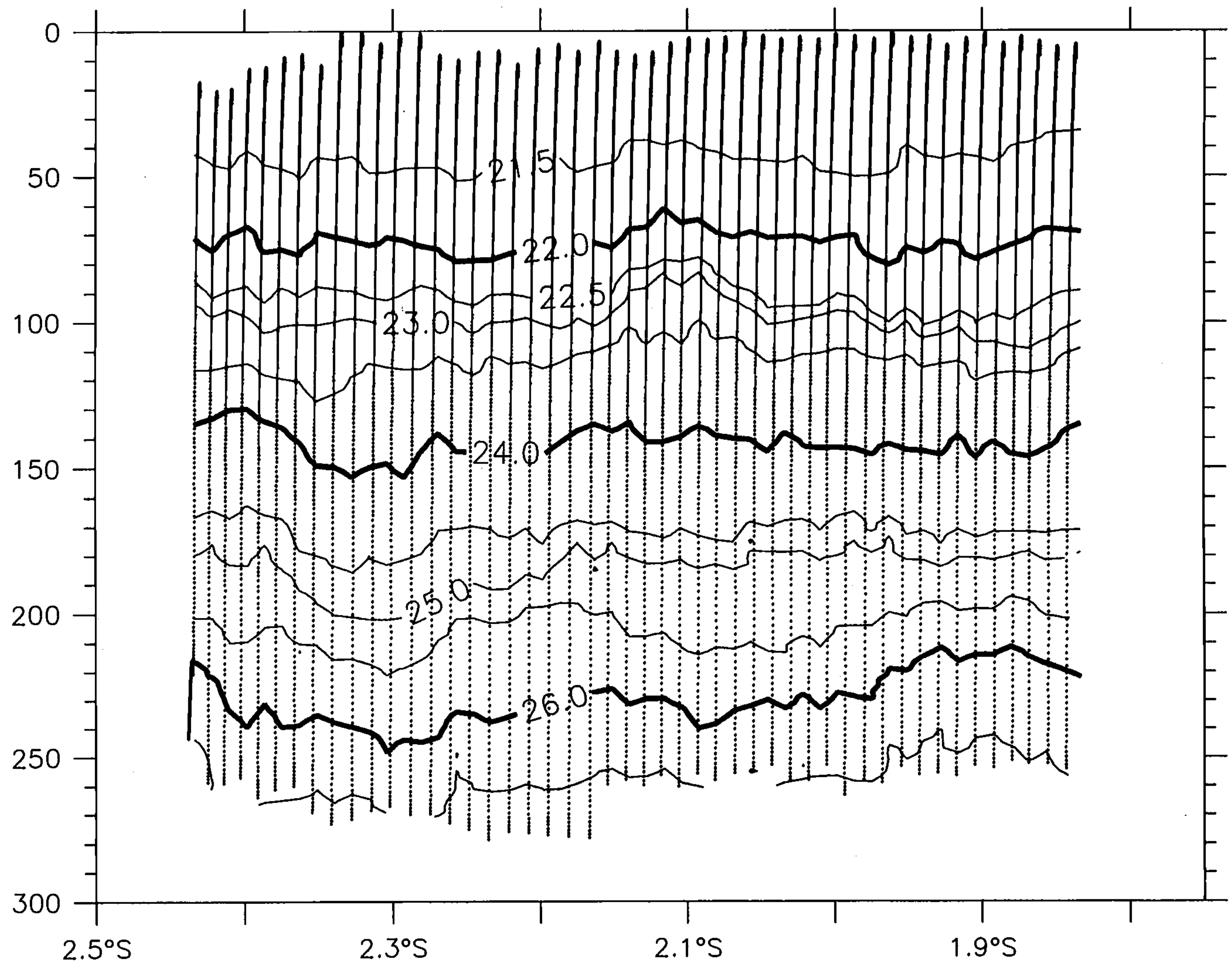
Sigma−t, S2W, 19 November 1992



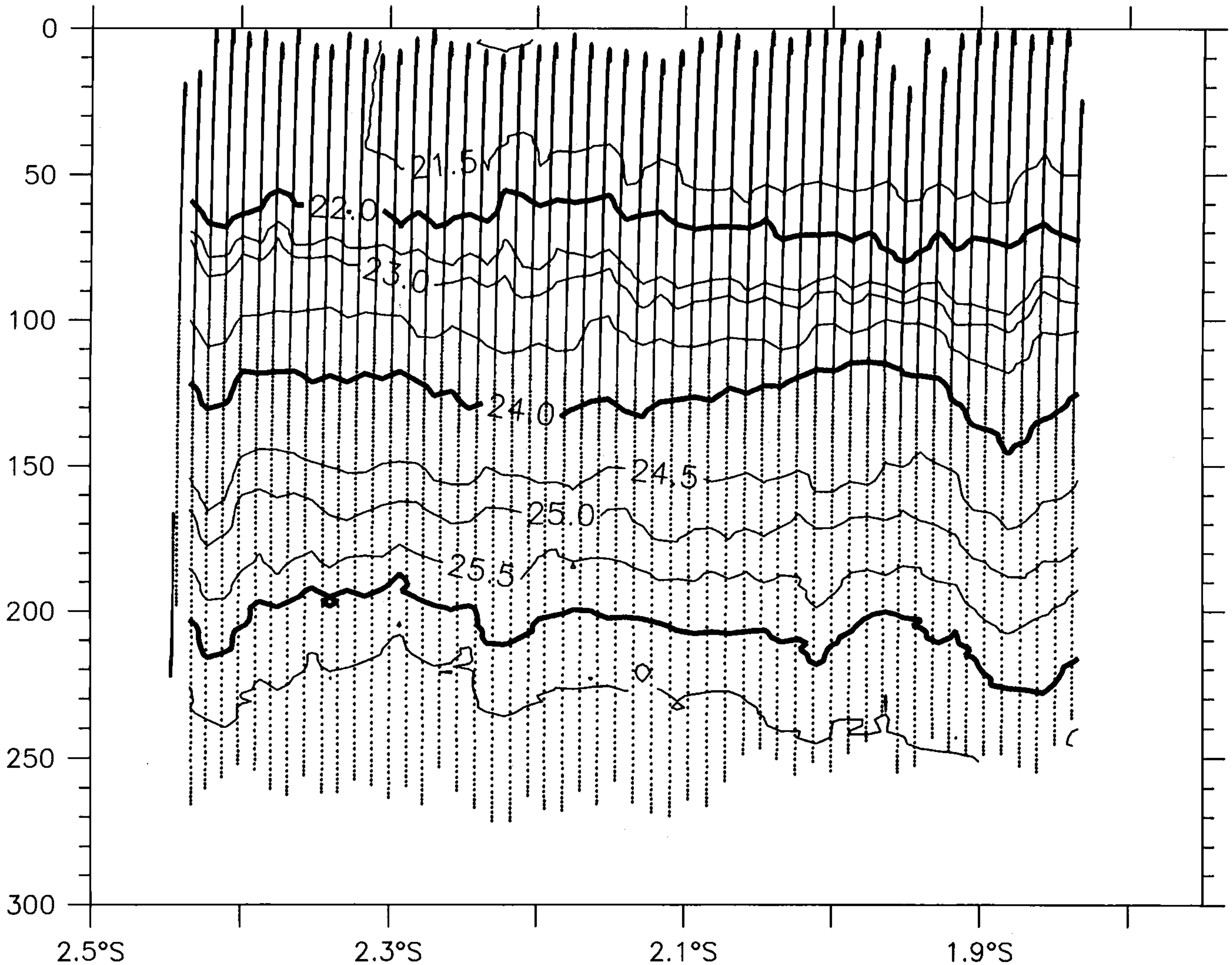
Sigma–t, S2W, 20 November 1992



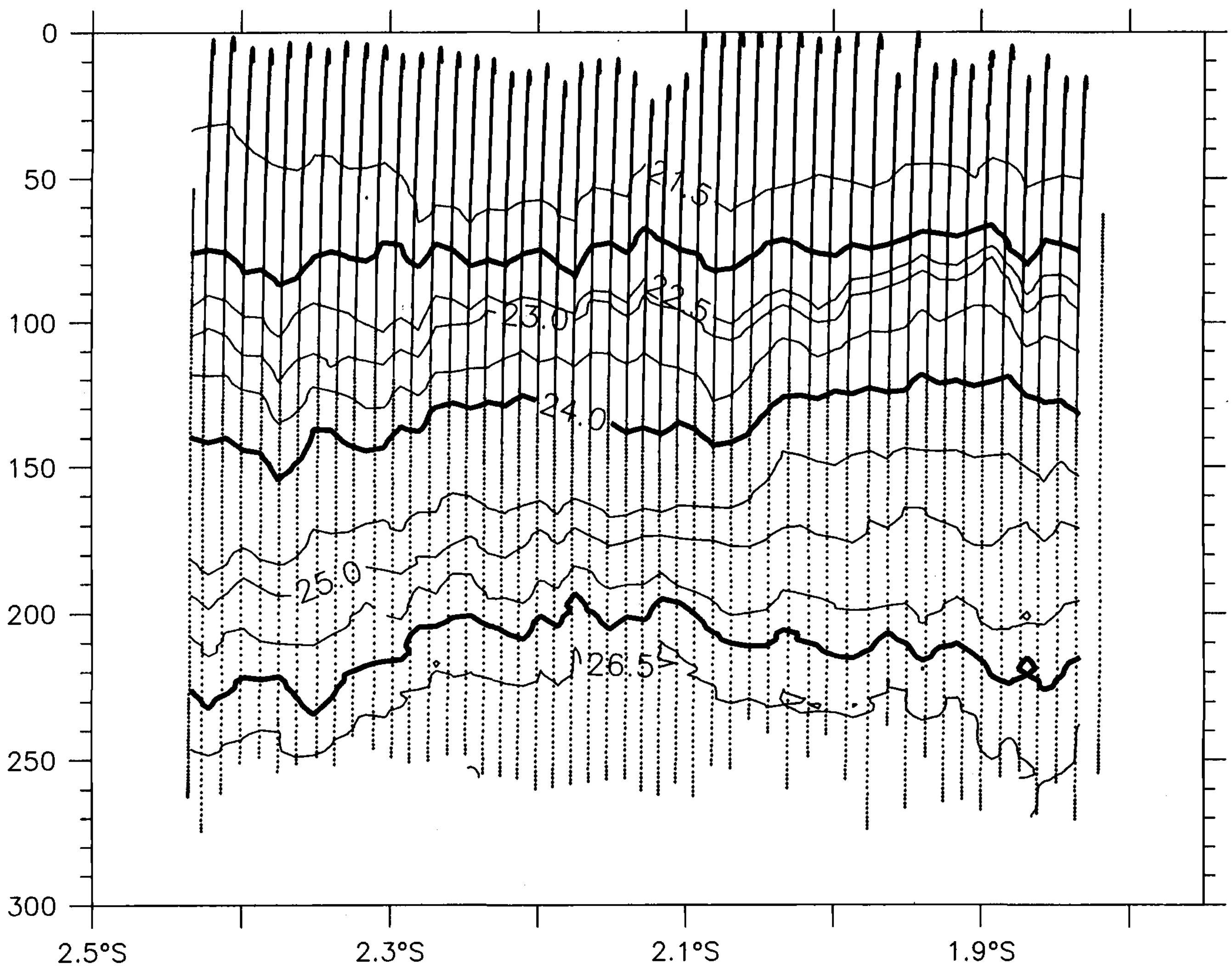
Sigma–t, S2W, 22 November 1992



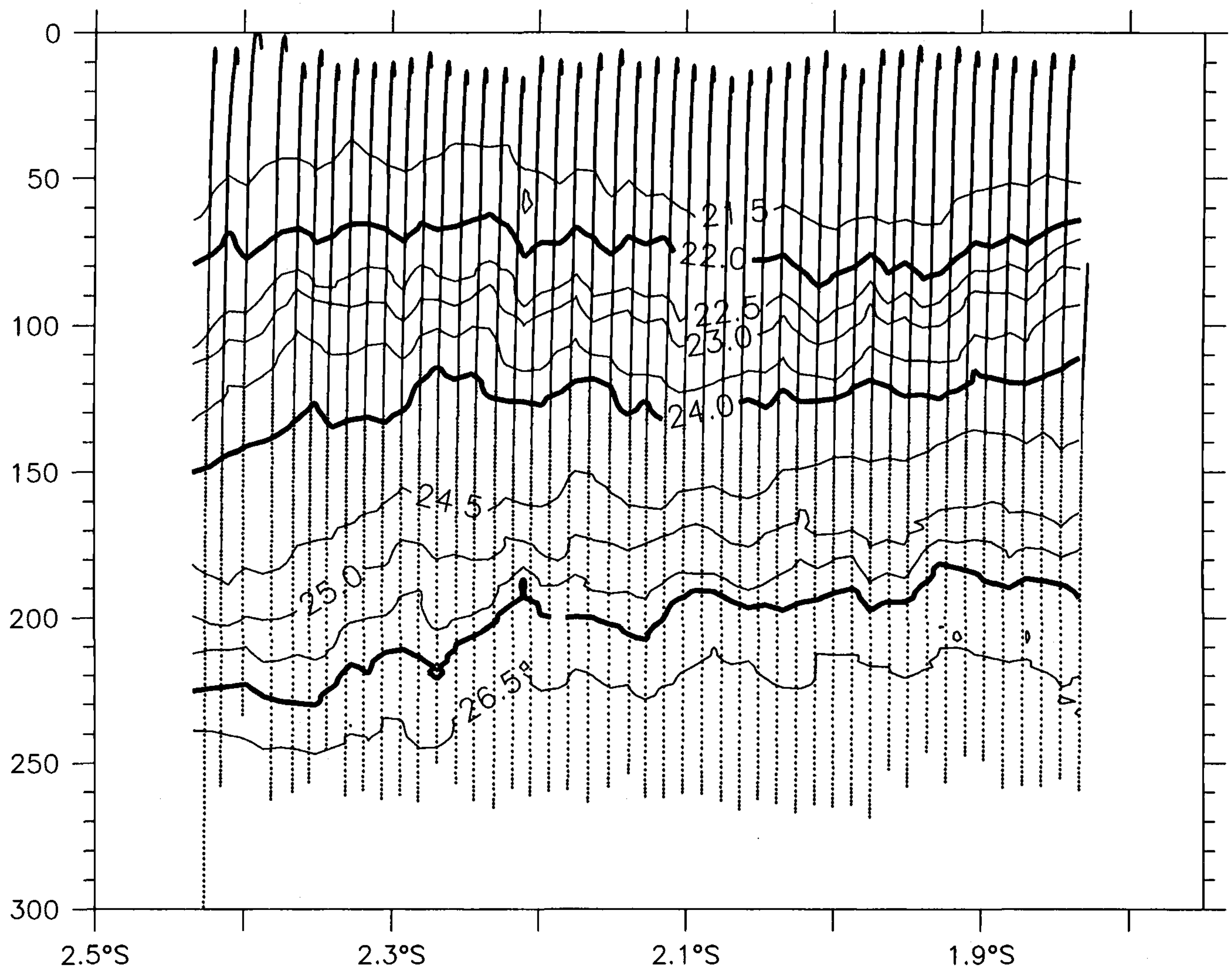
Sigma-t, S2W, 24 November 1992



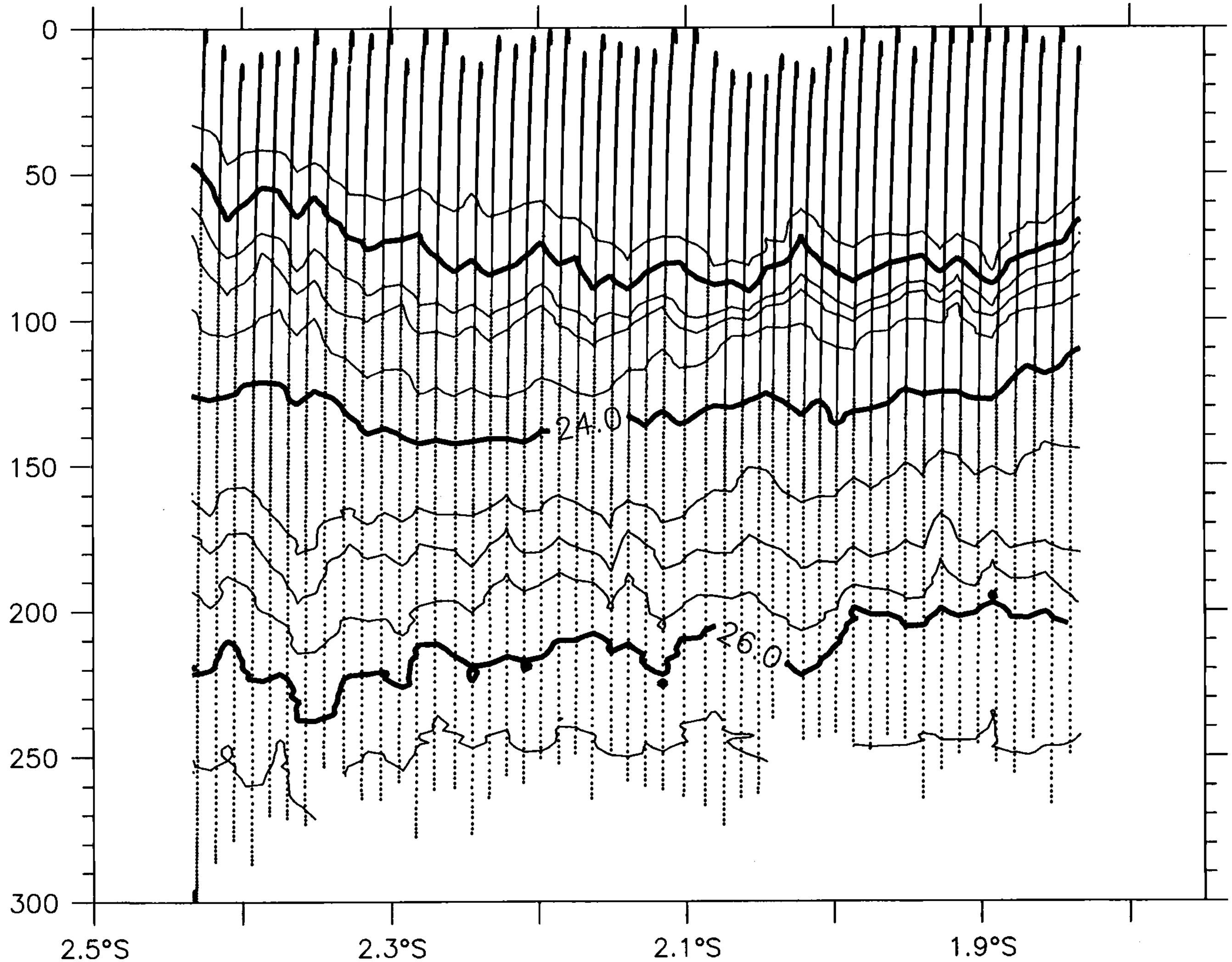
Sigma–t, S2W, 25 November 1992



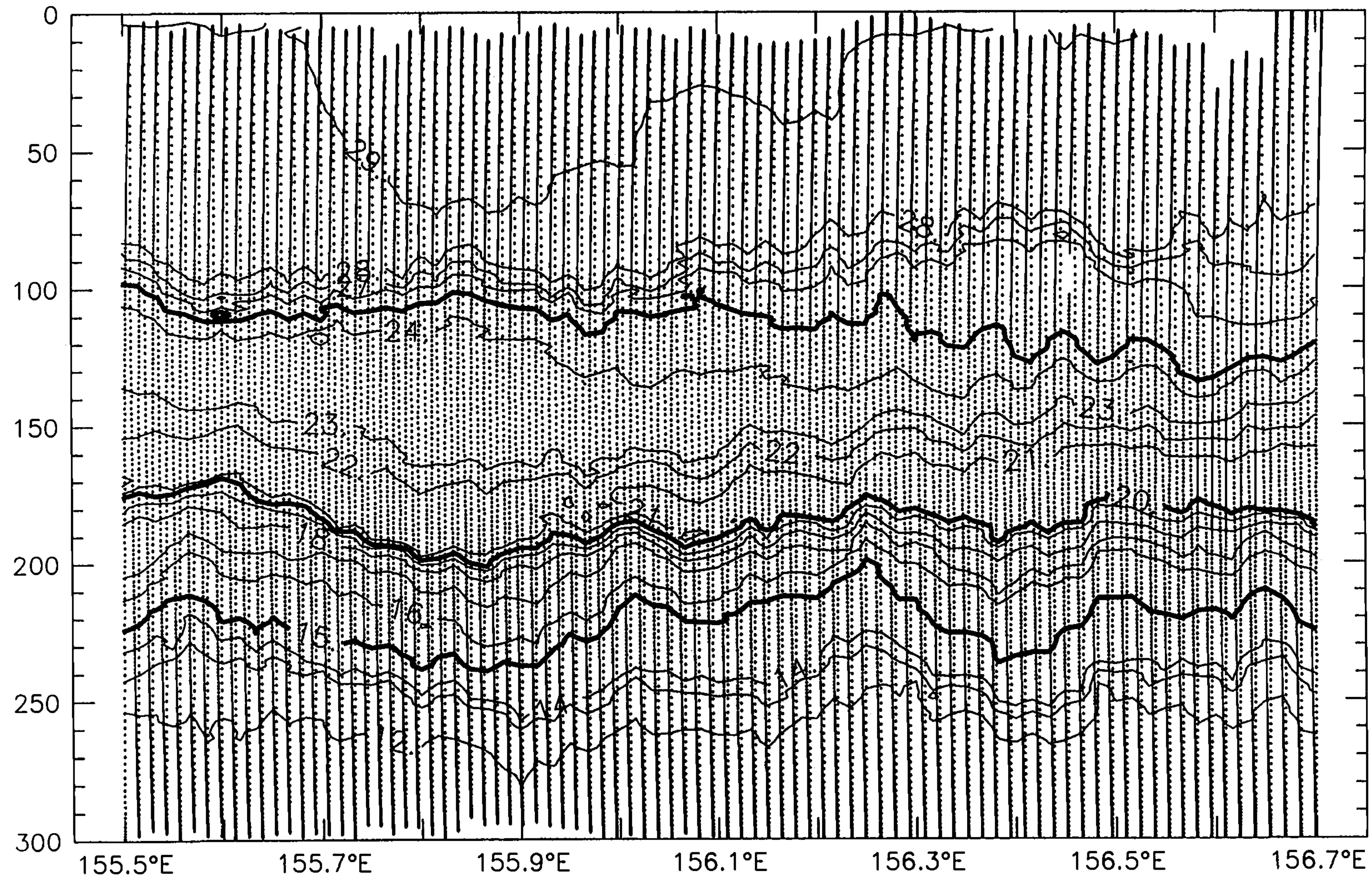
Sigma-t, S2W, 26 November 1992



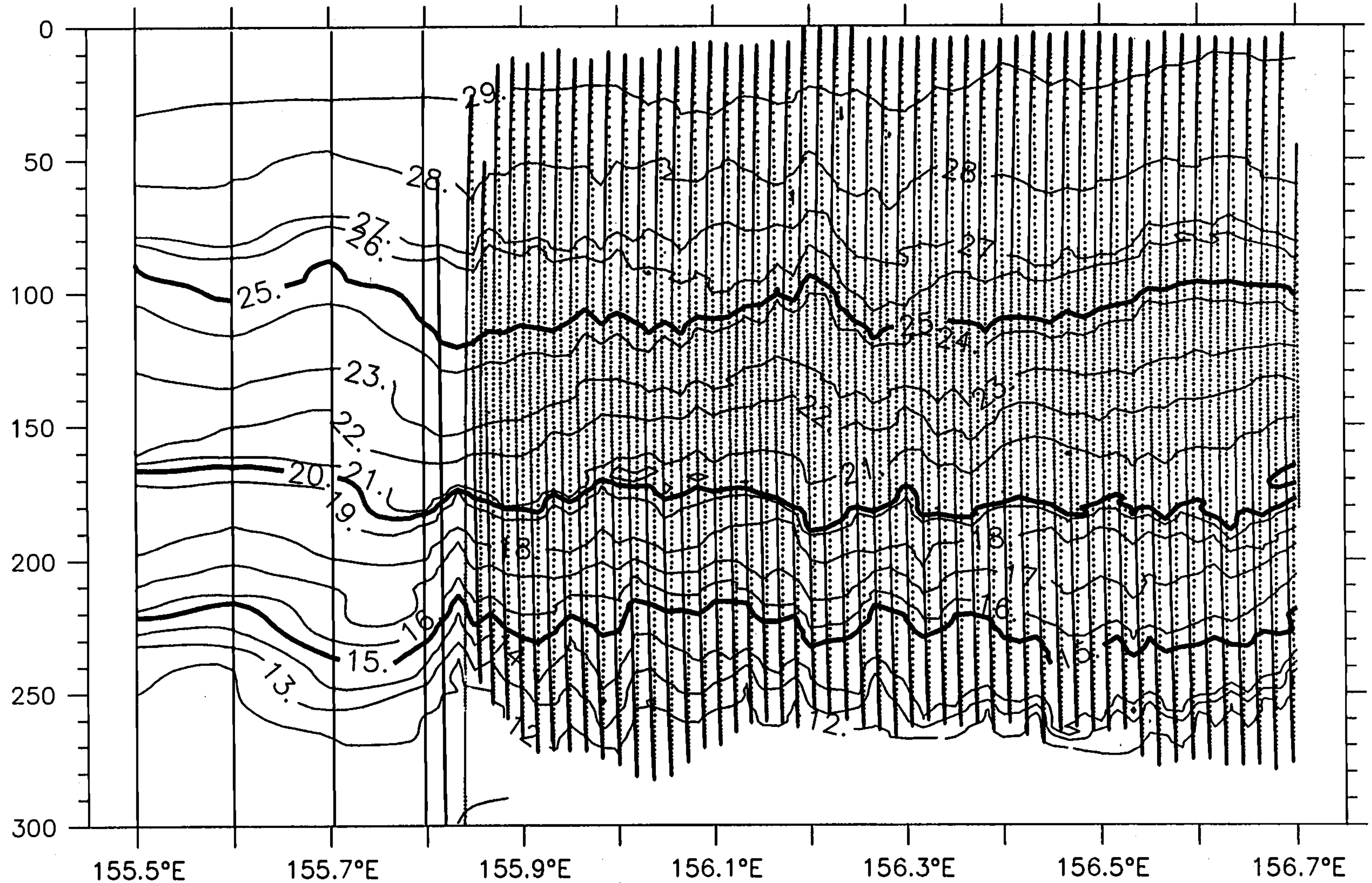
Sigma–t, S2W, 28 November 1992



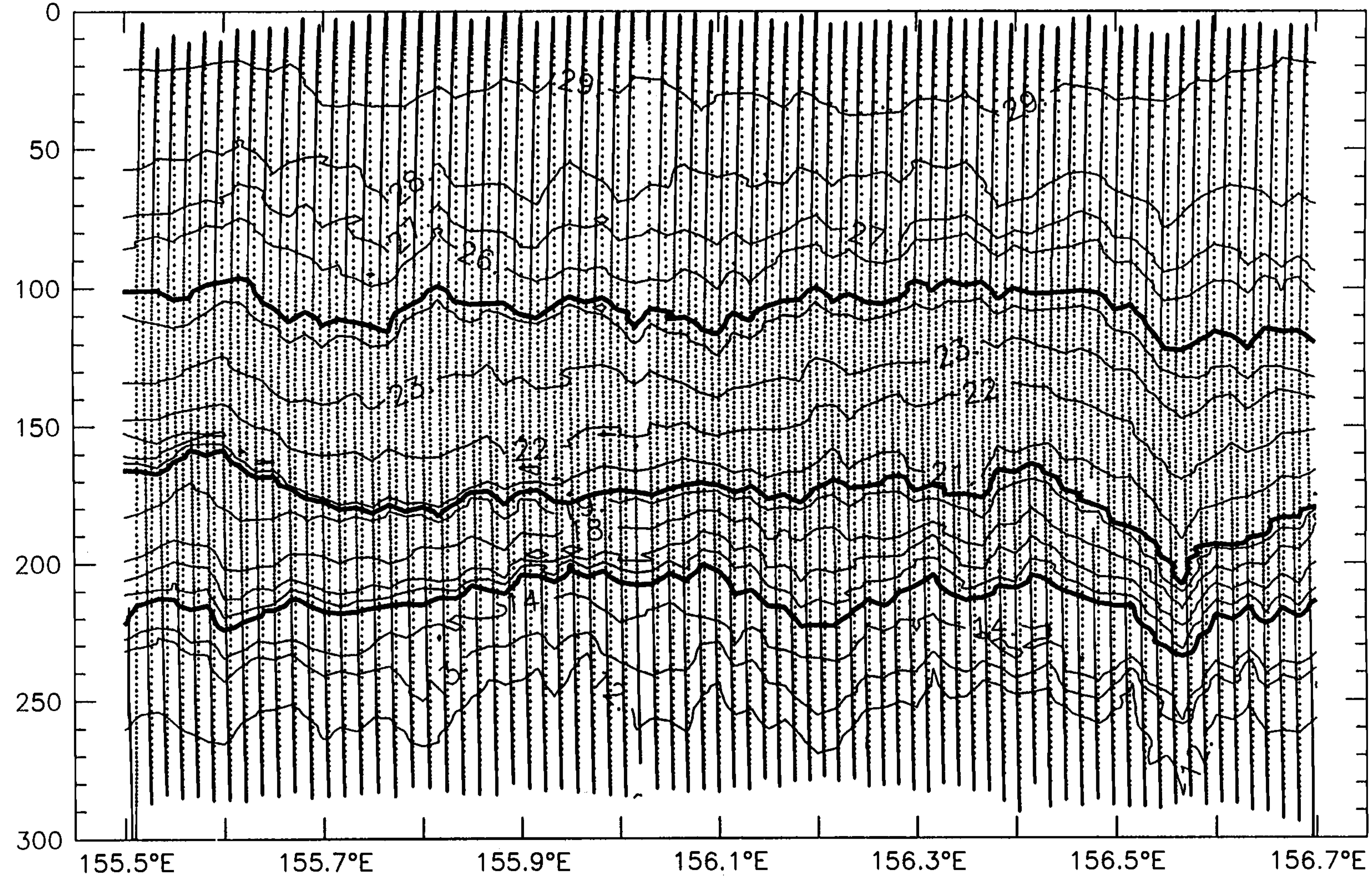
Sigma–t, S2W, 30 November 1992



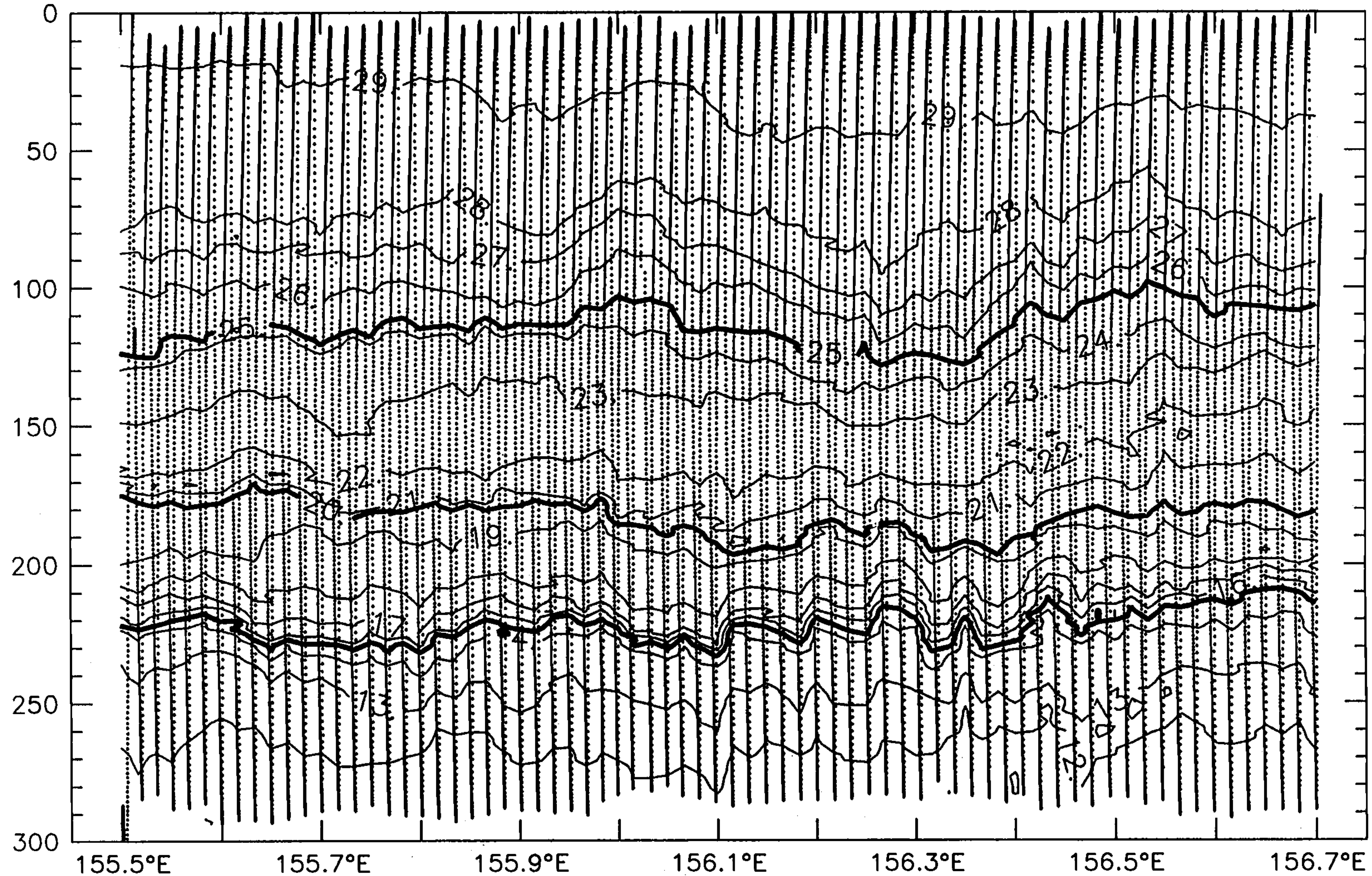
T(°C), W2E, 14 November 1992



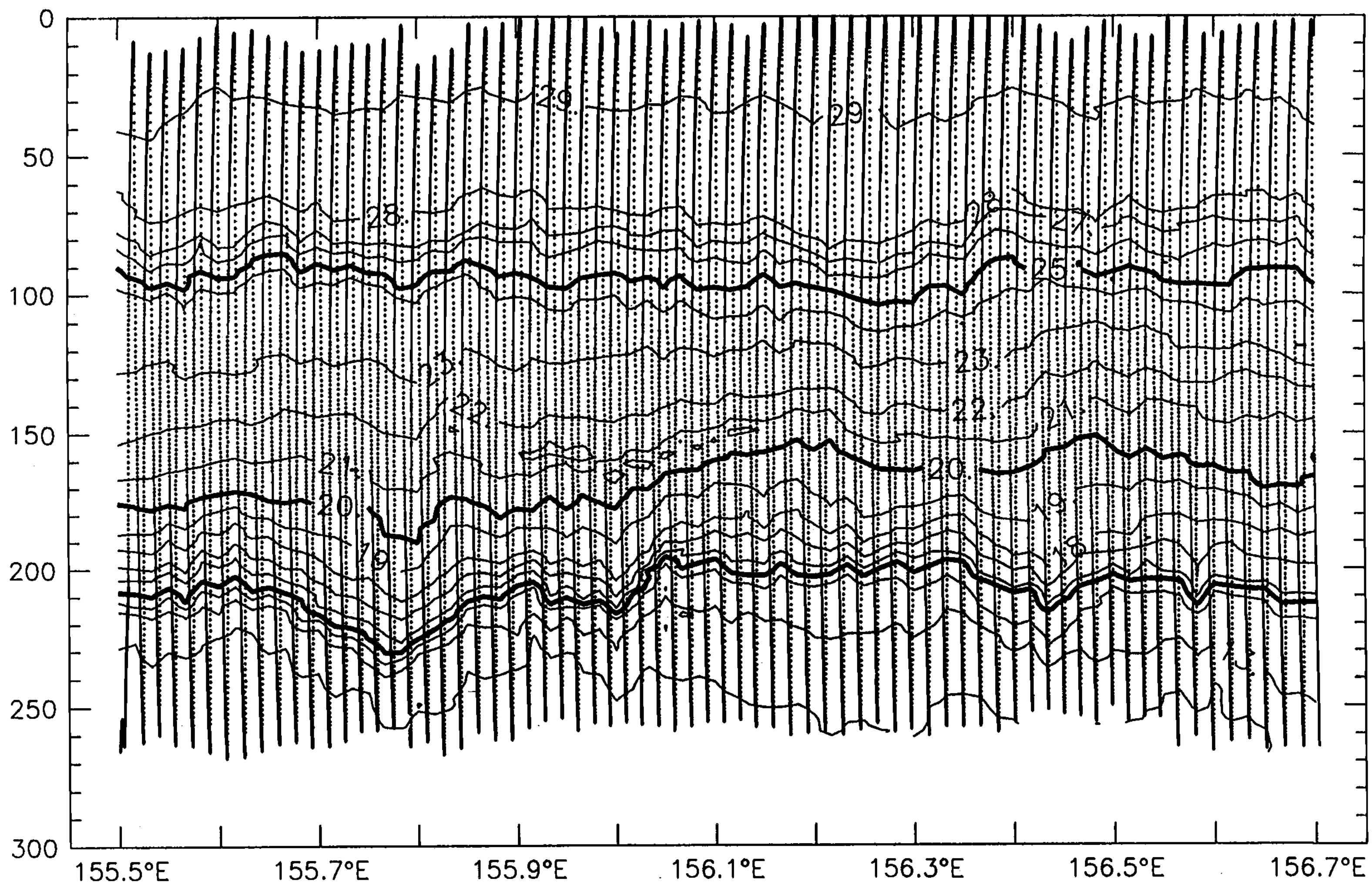
T(°C), W2E, 16 November 1992



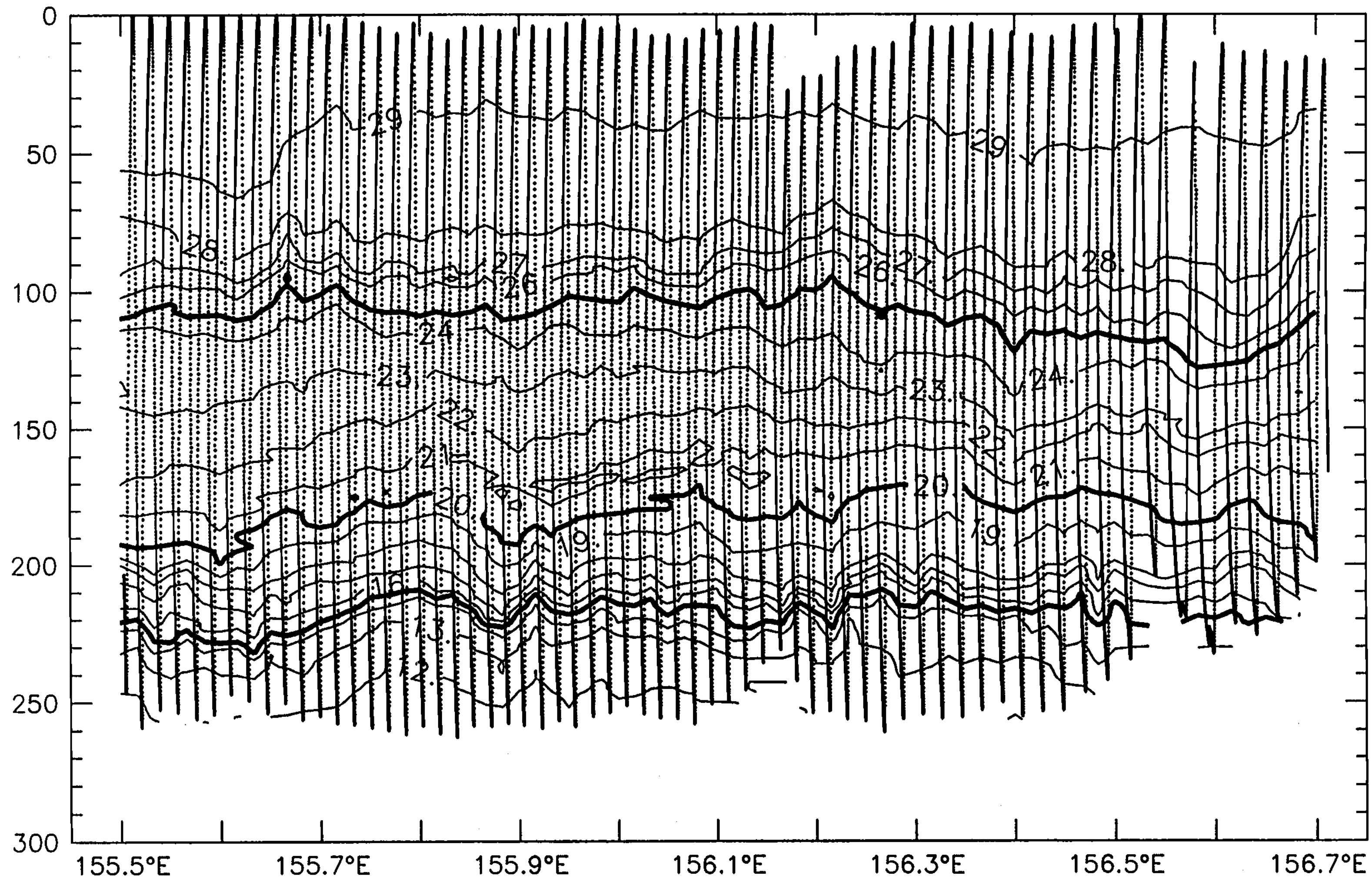
T(°C), W2E, 18 November 1992



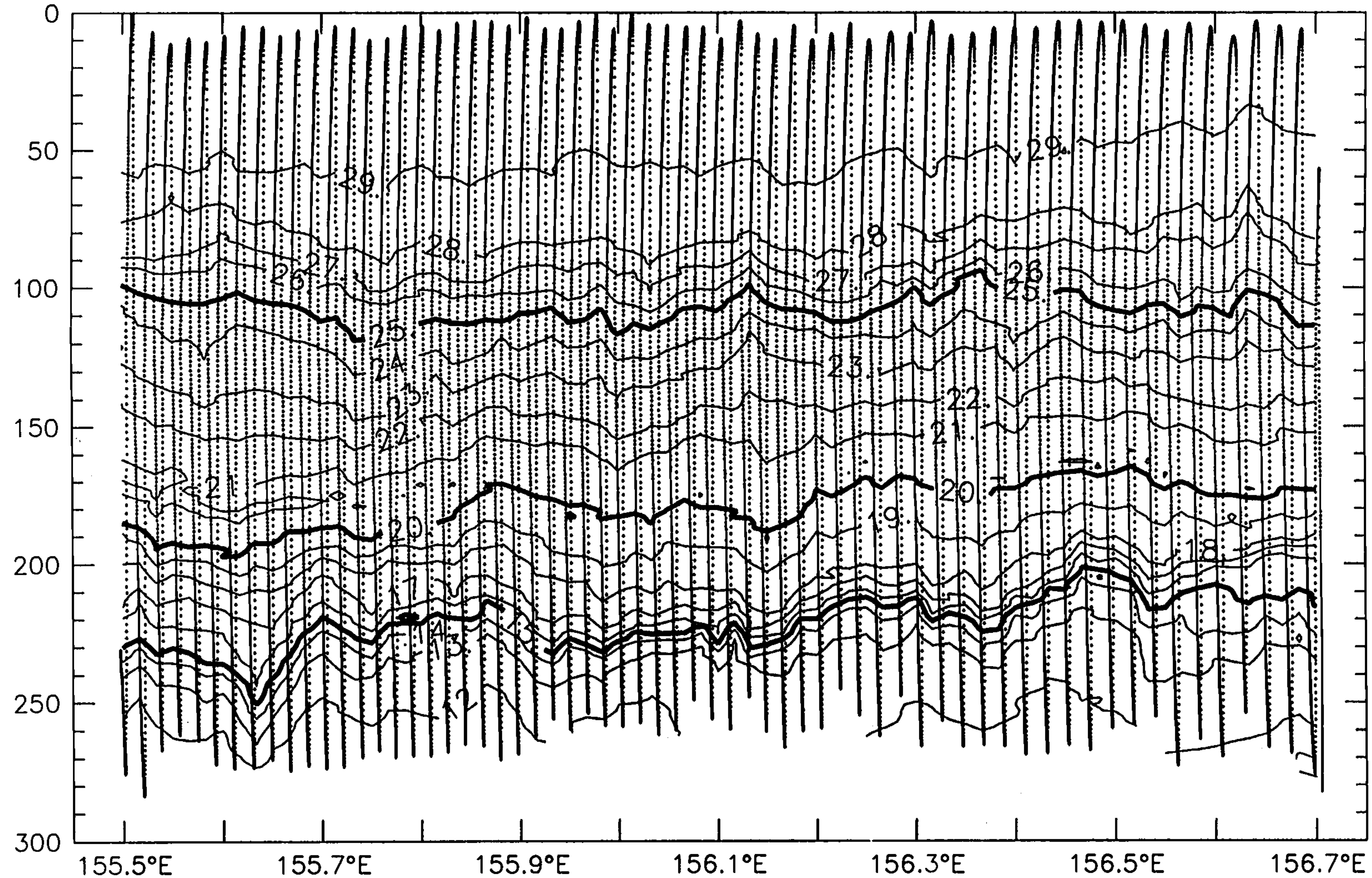
T(°C), W2E, 19 November 1992



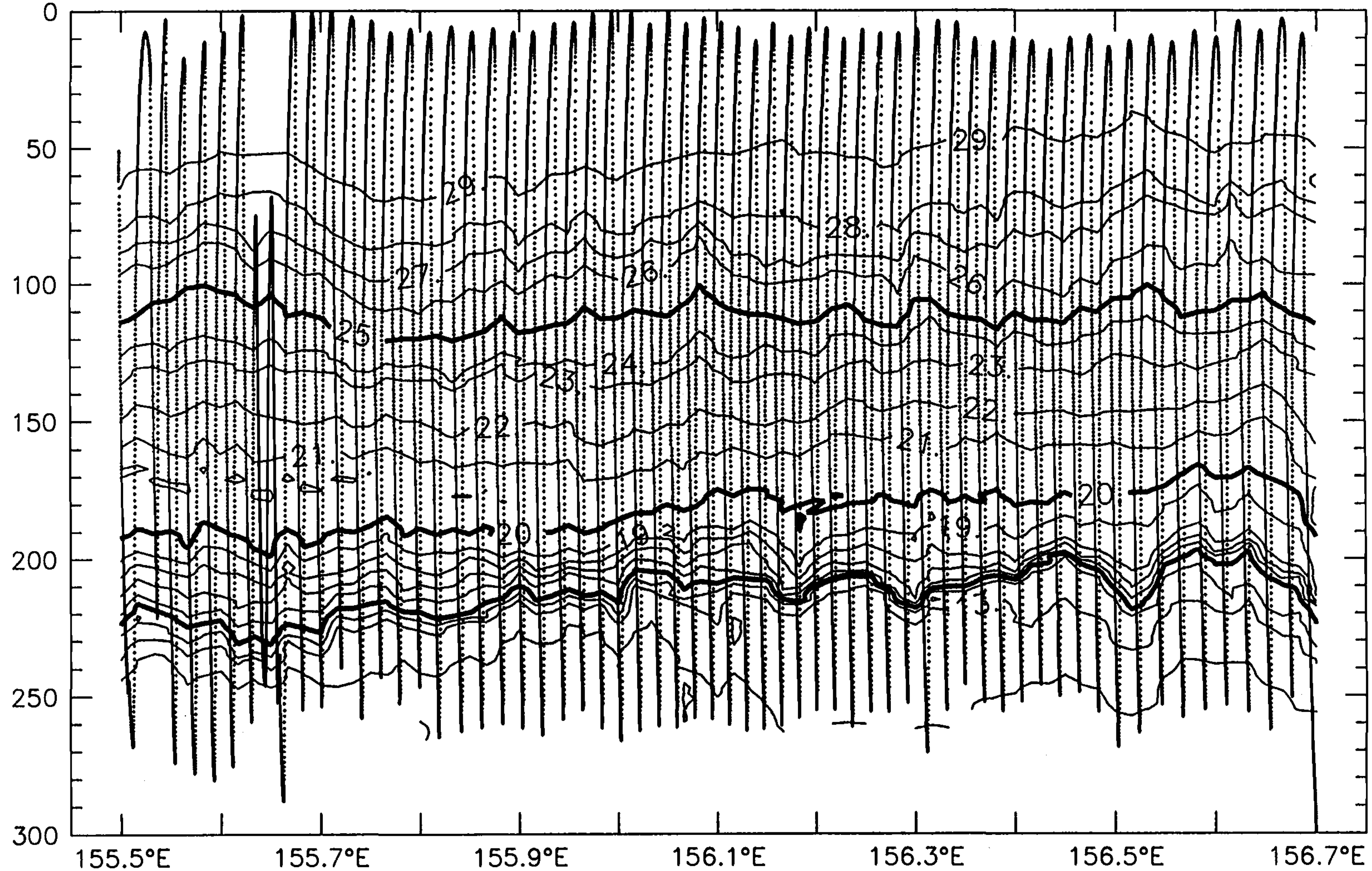
T(°C), W2E, 23 November 1992



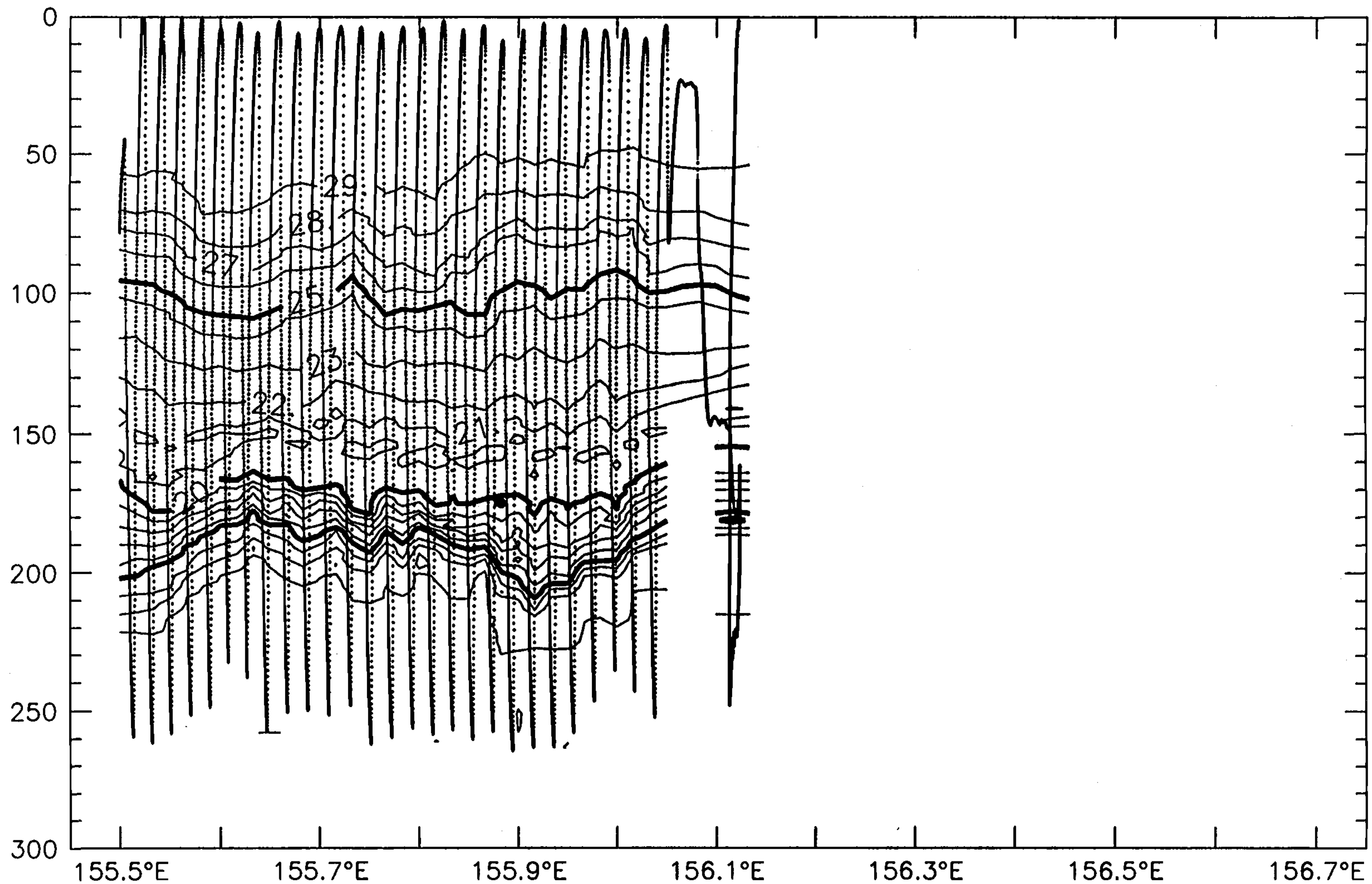
T(°C), W2E, 24 November 1992



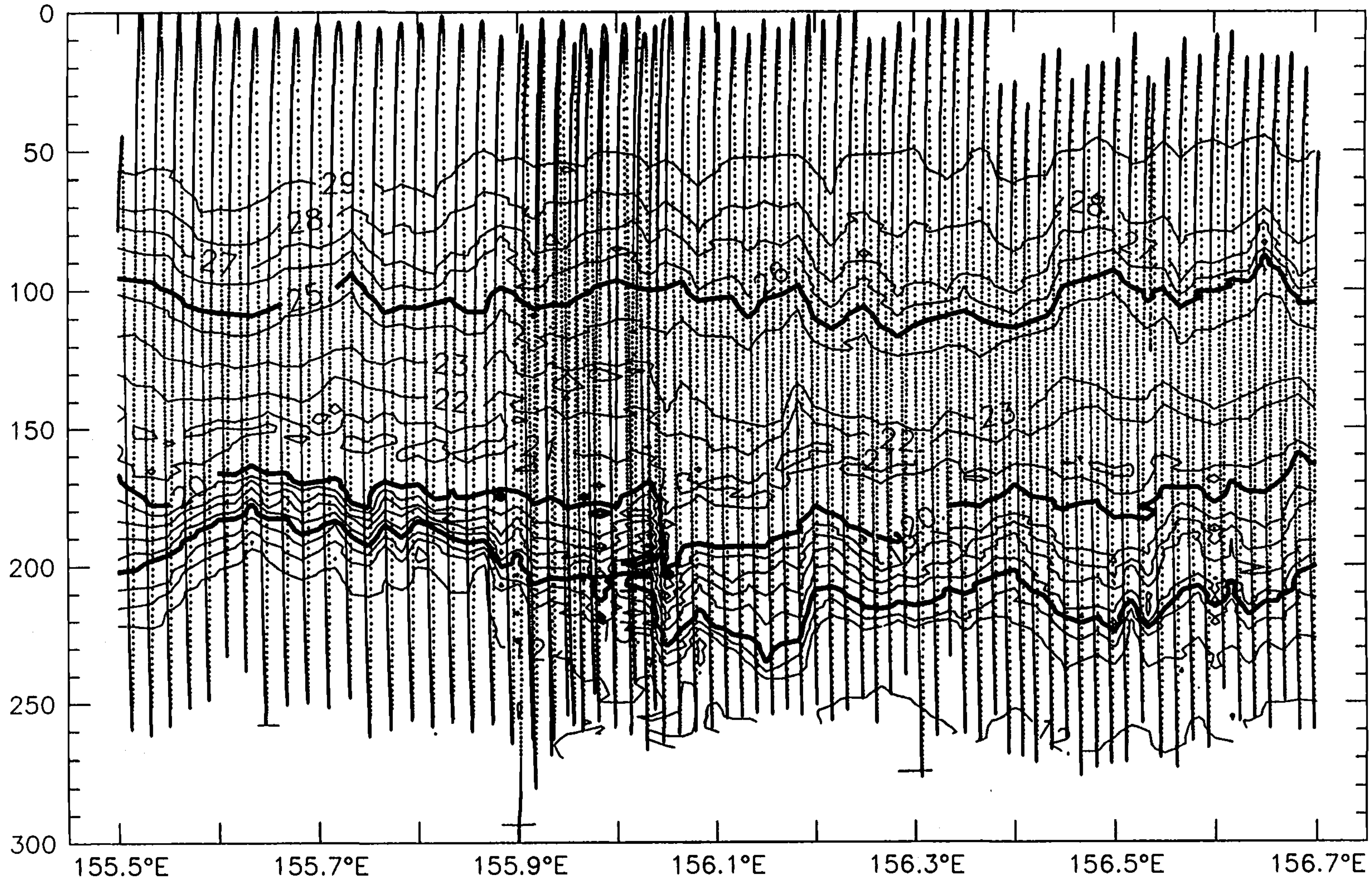
T(°C), W2E, 25 November 1992



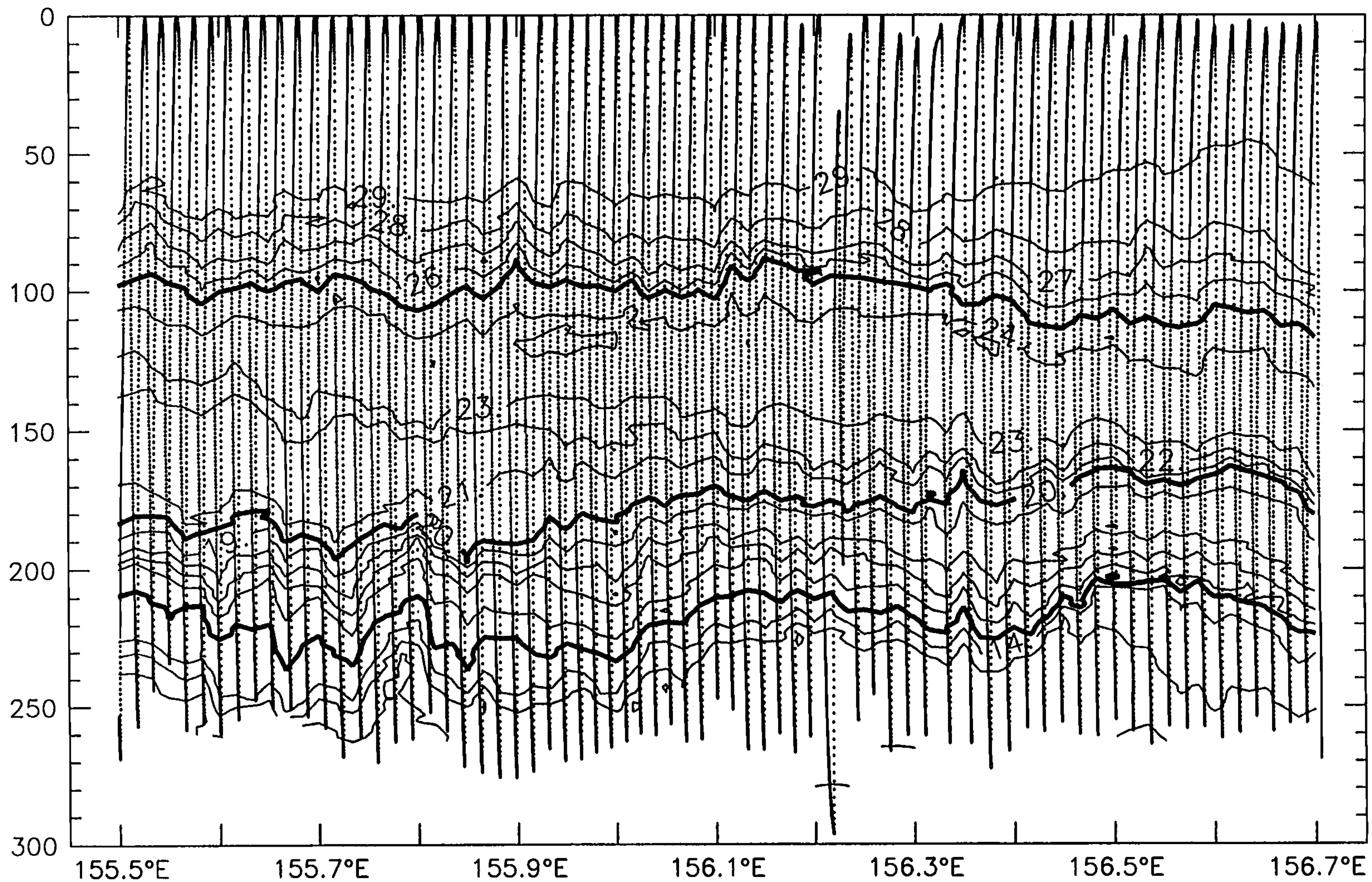
T(°C), W2E, 27 November 1992



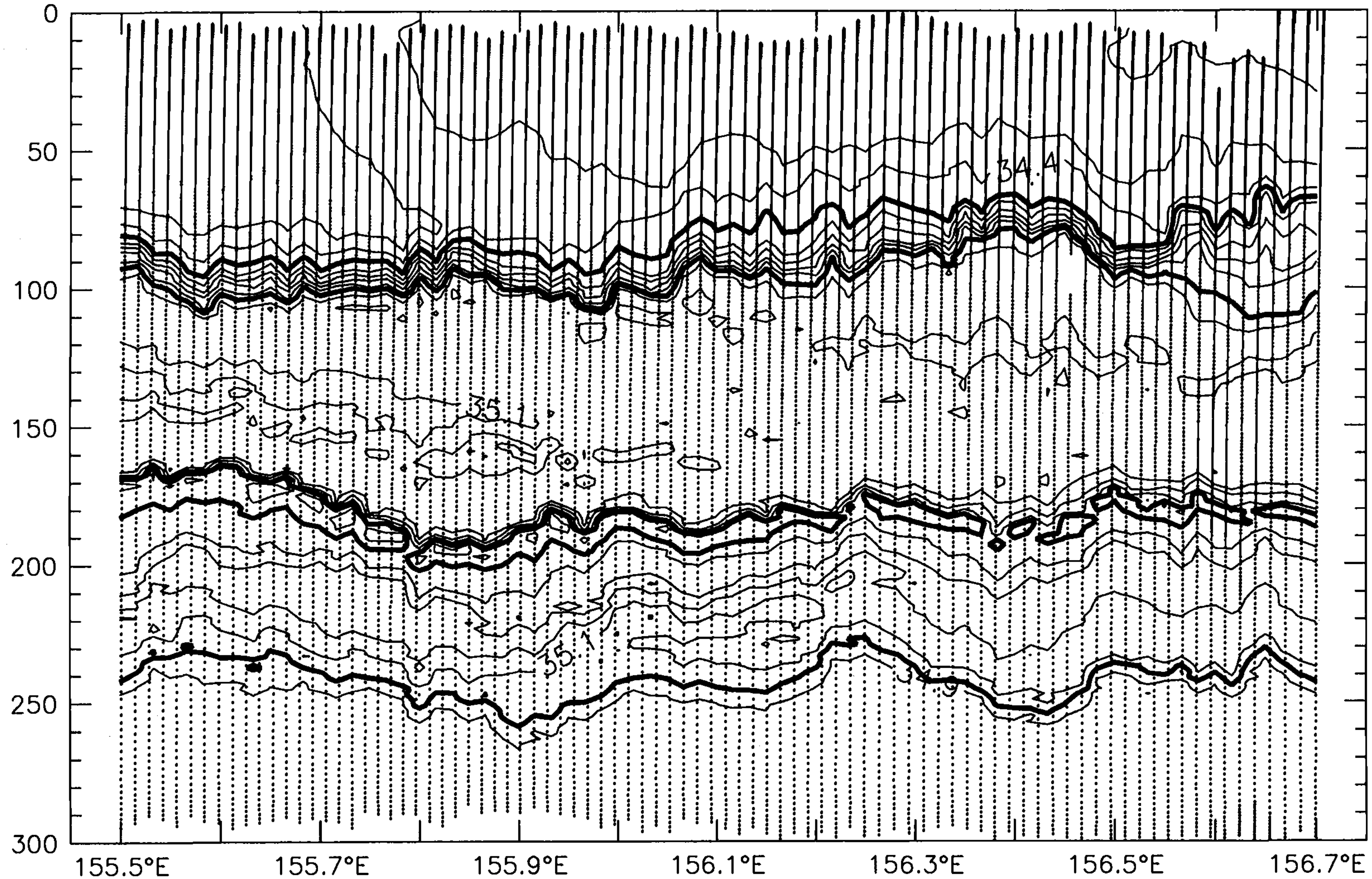
T(°C), W2E, 28 November 1992



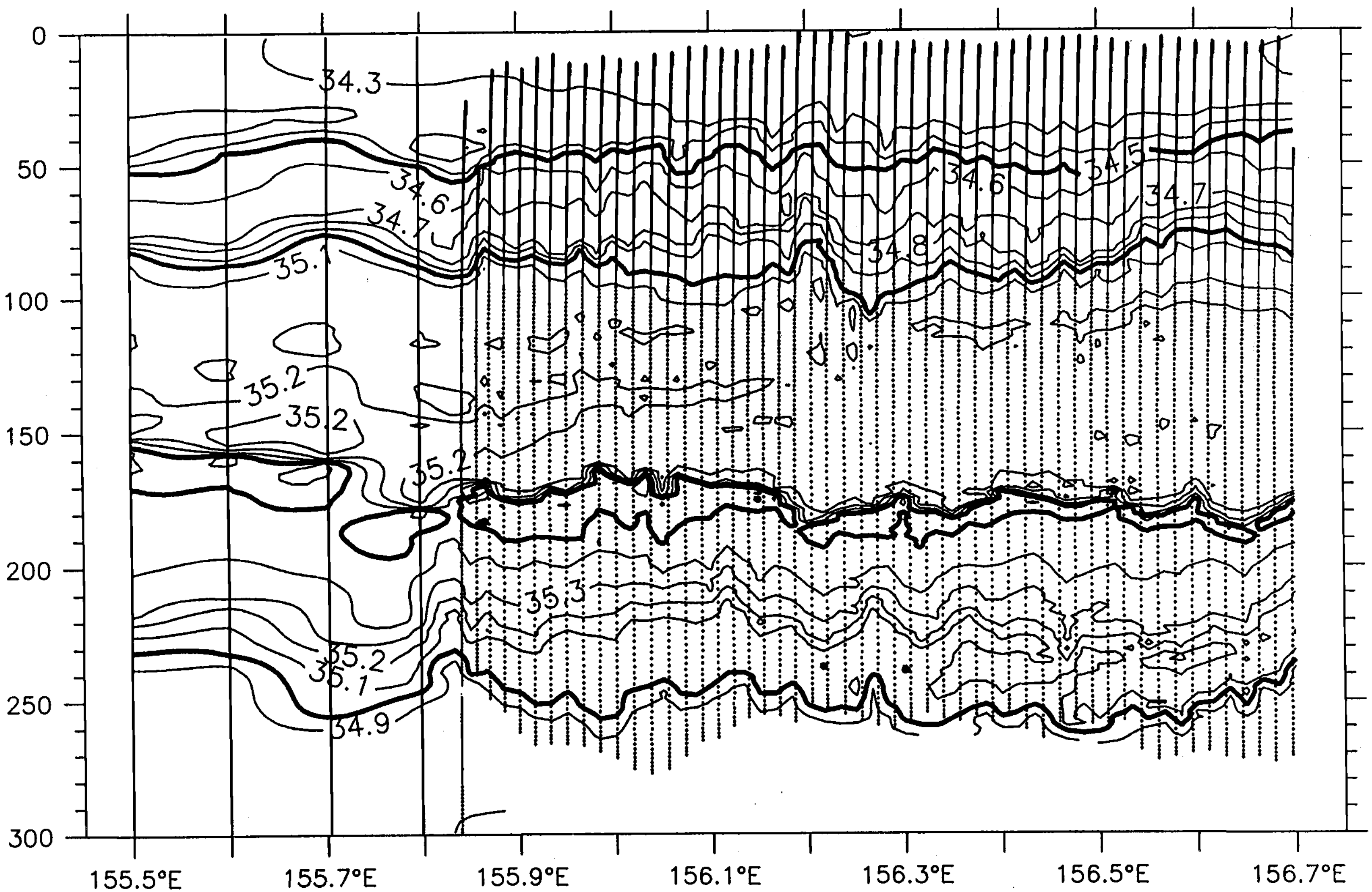
T(°C), W2E, 28–29 November 1992



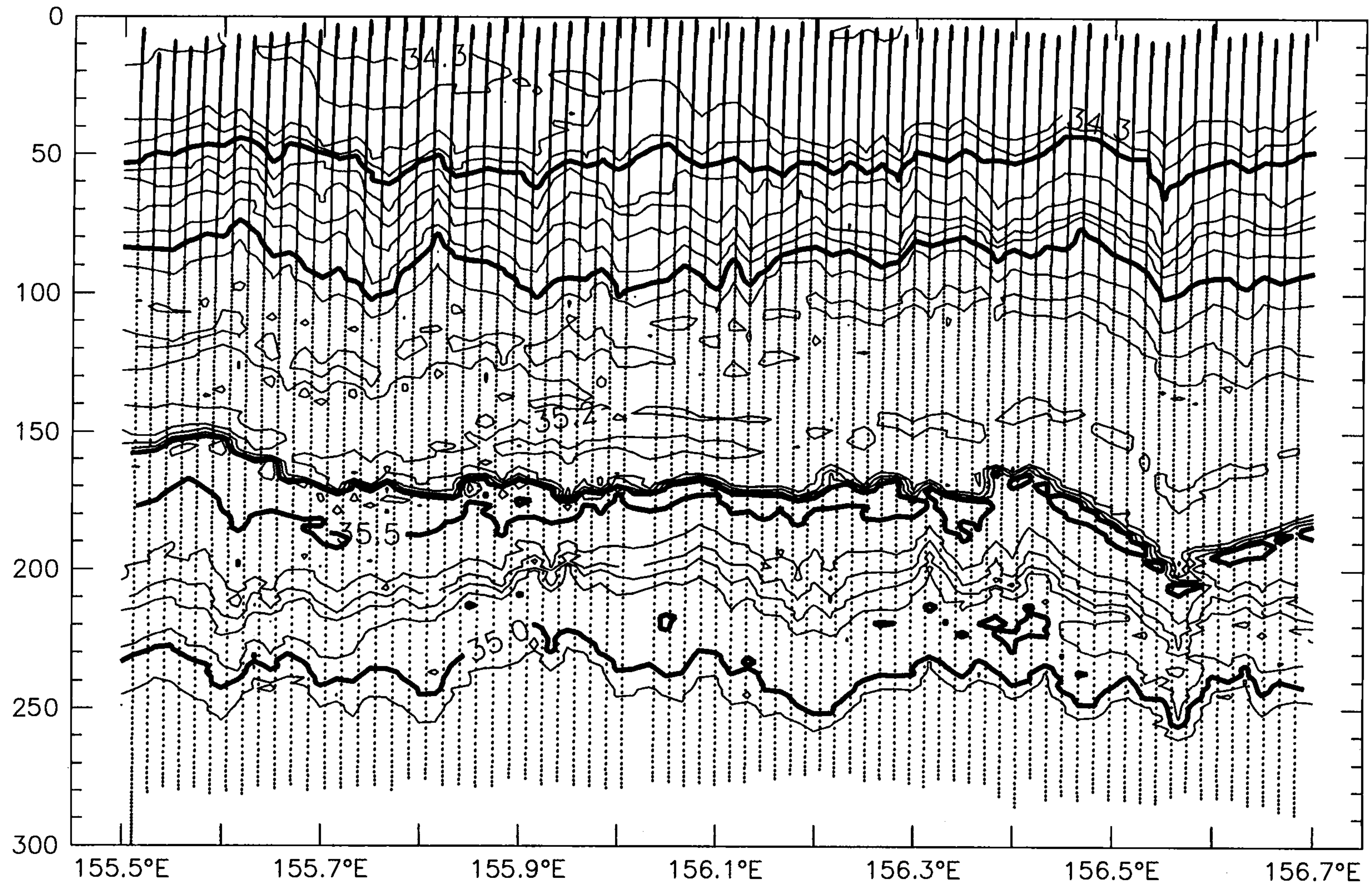
T(°C), W2E, 30 November 1992



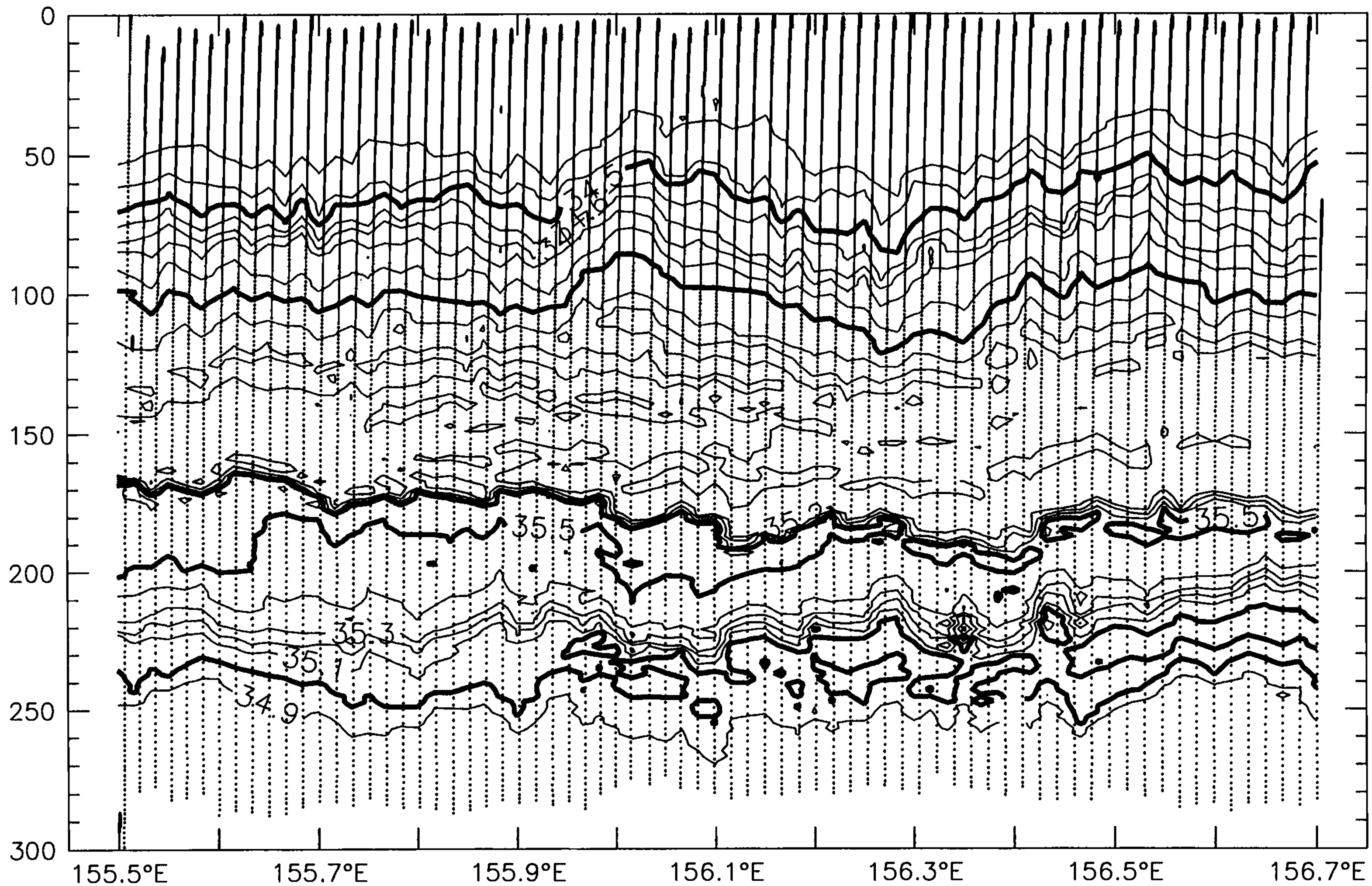
S(psu), W2E, 14 November 1992



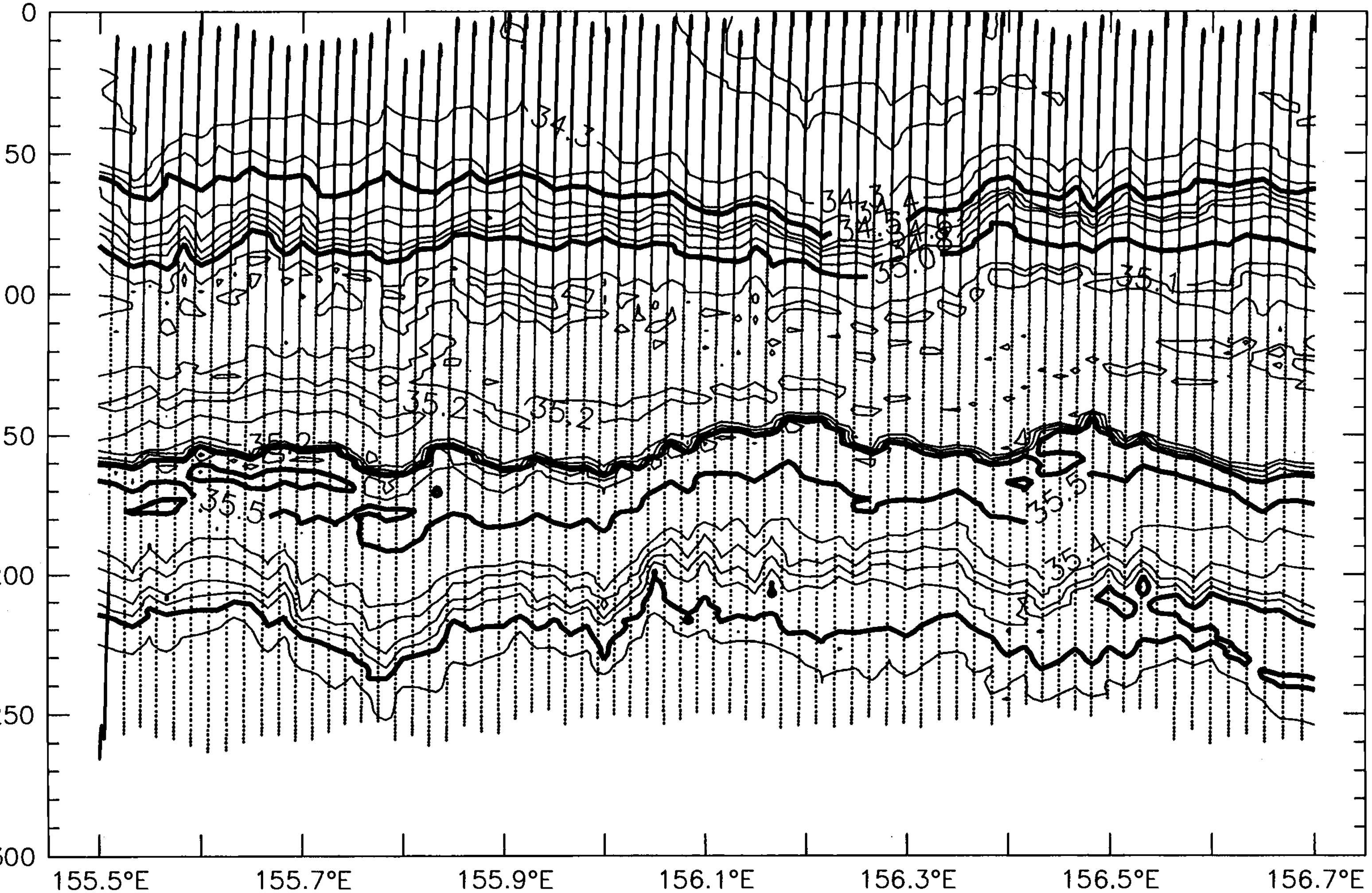
S(psu), W2E, 16 November 1992



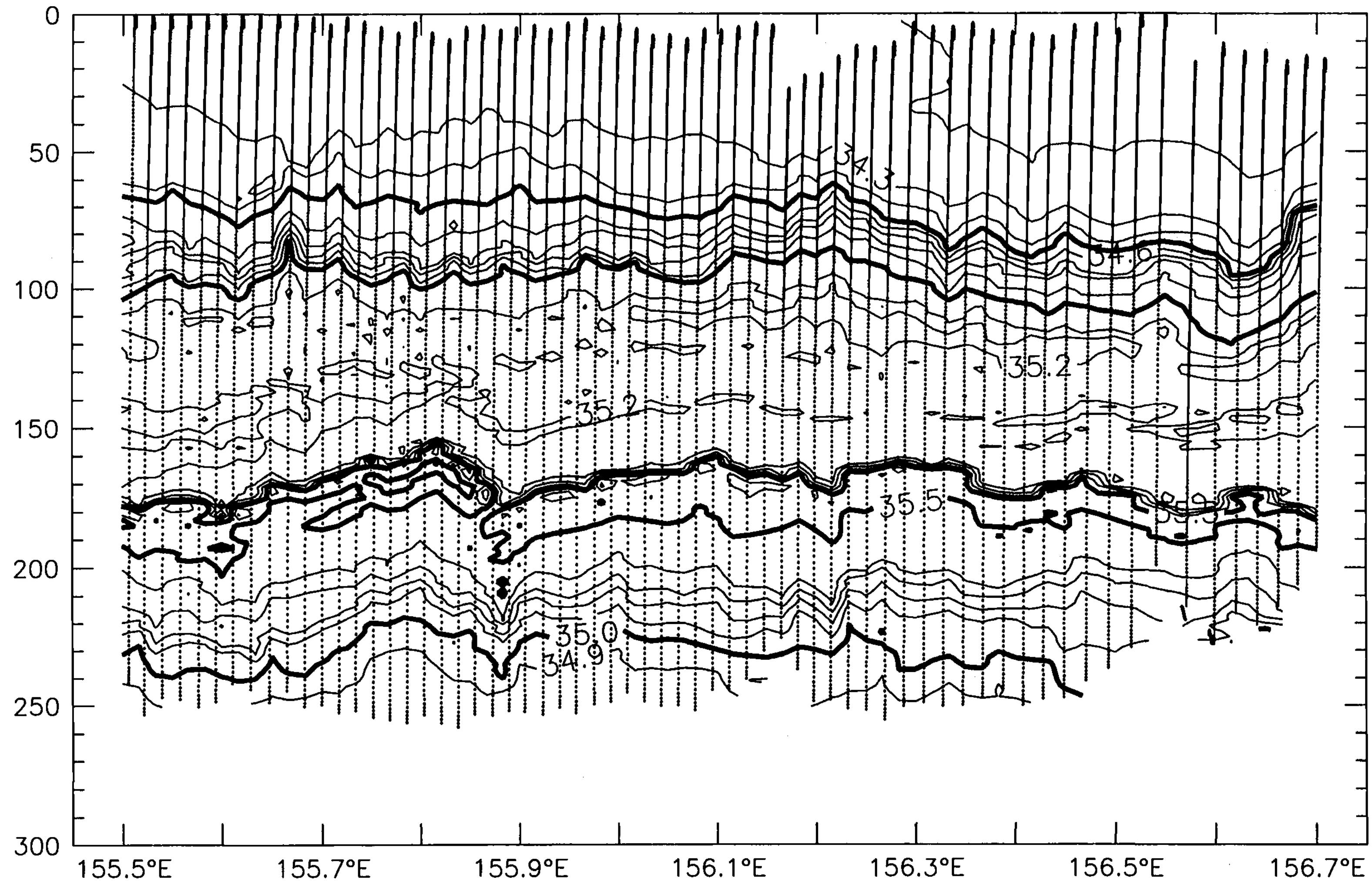
S(psu), W2E, 18 November 1992



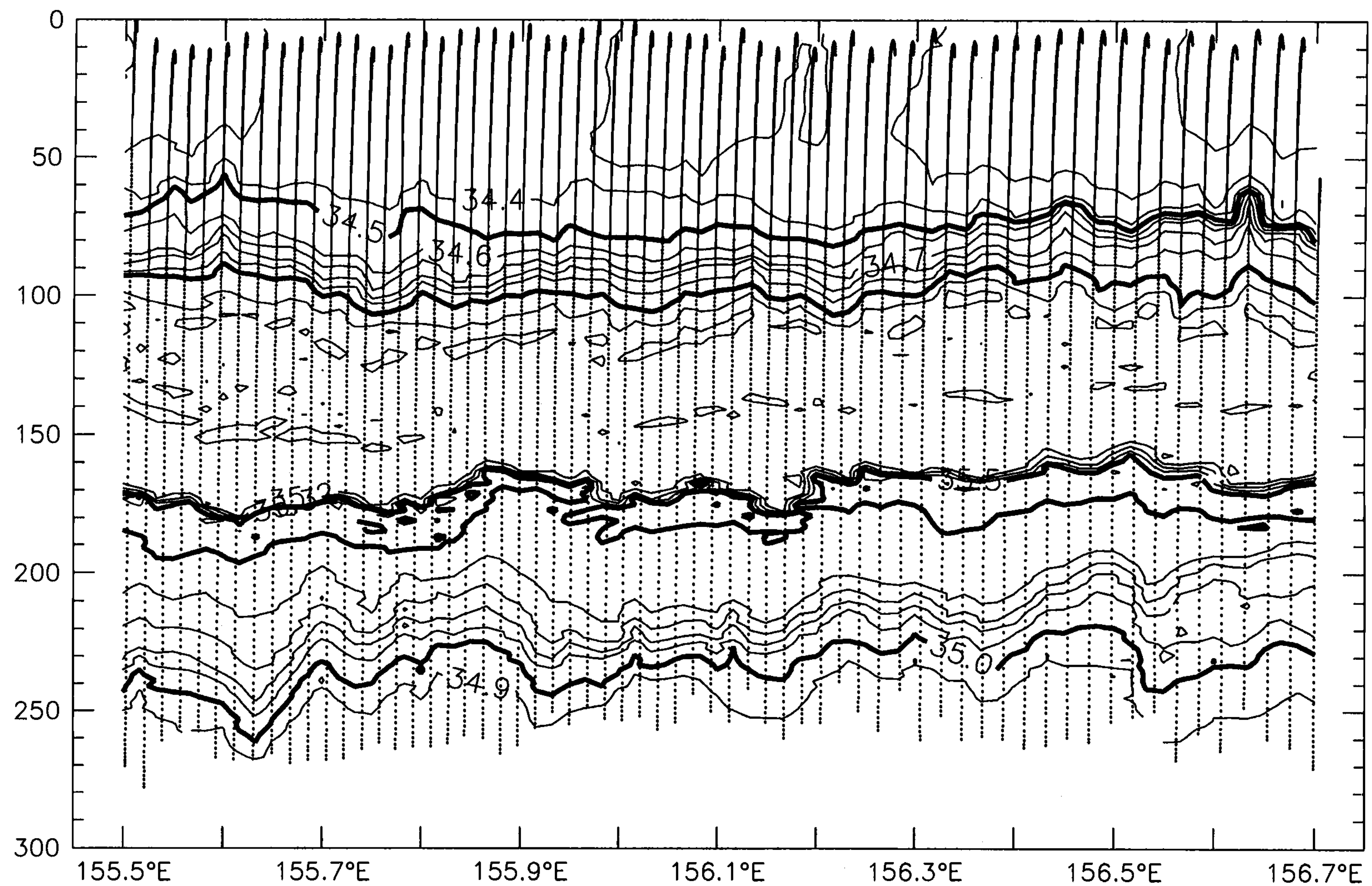
S(psu), W2E, 19 November 1992



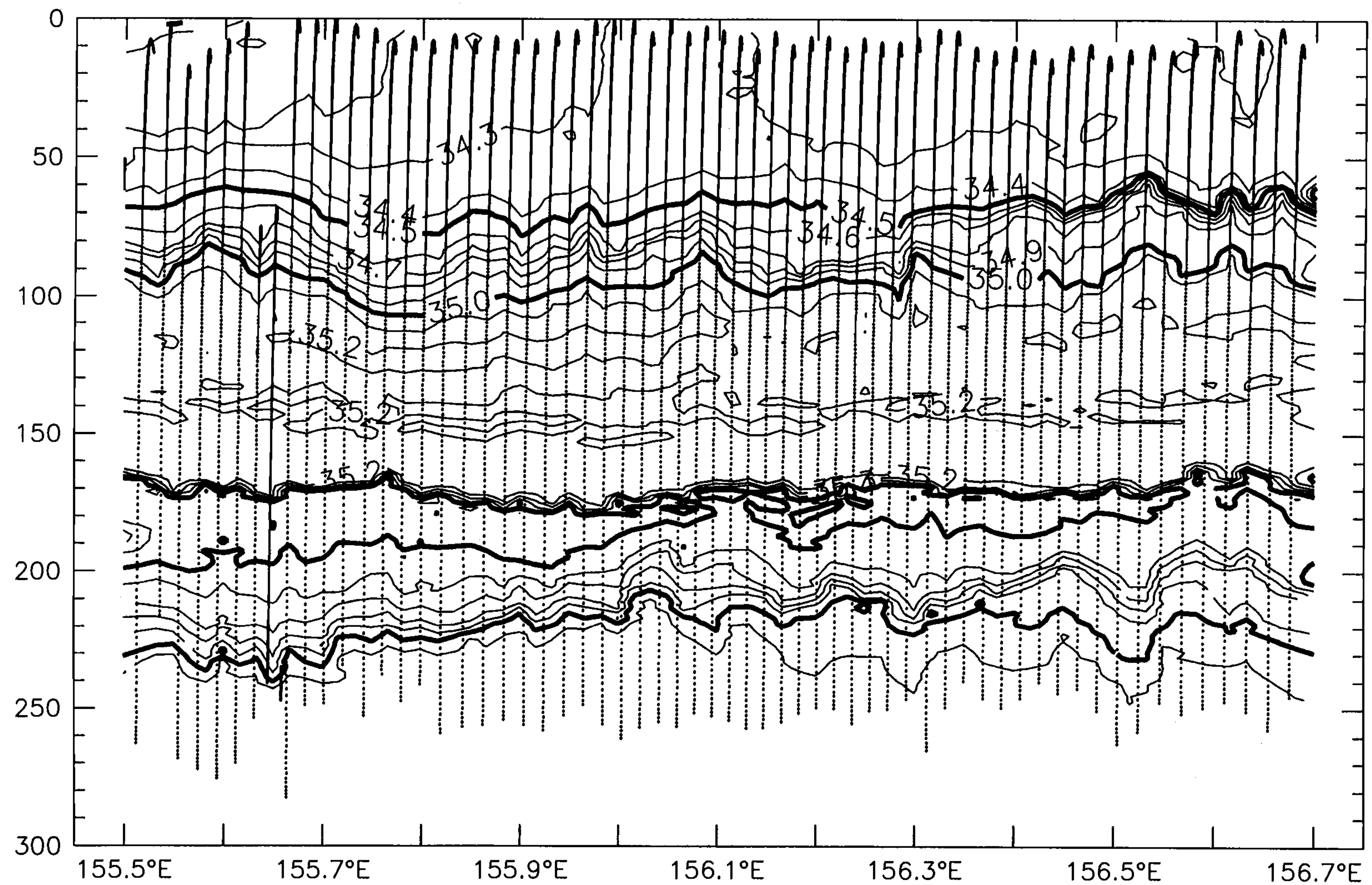
S(psu), W2E, 23 November 1992



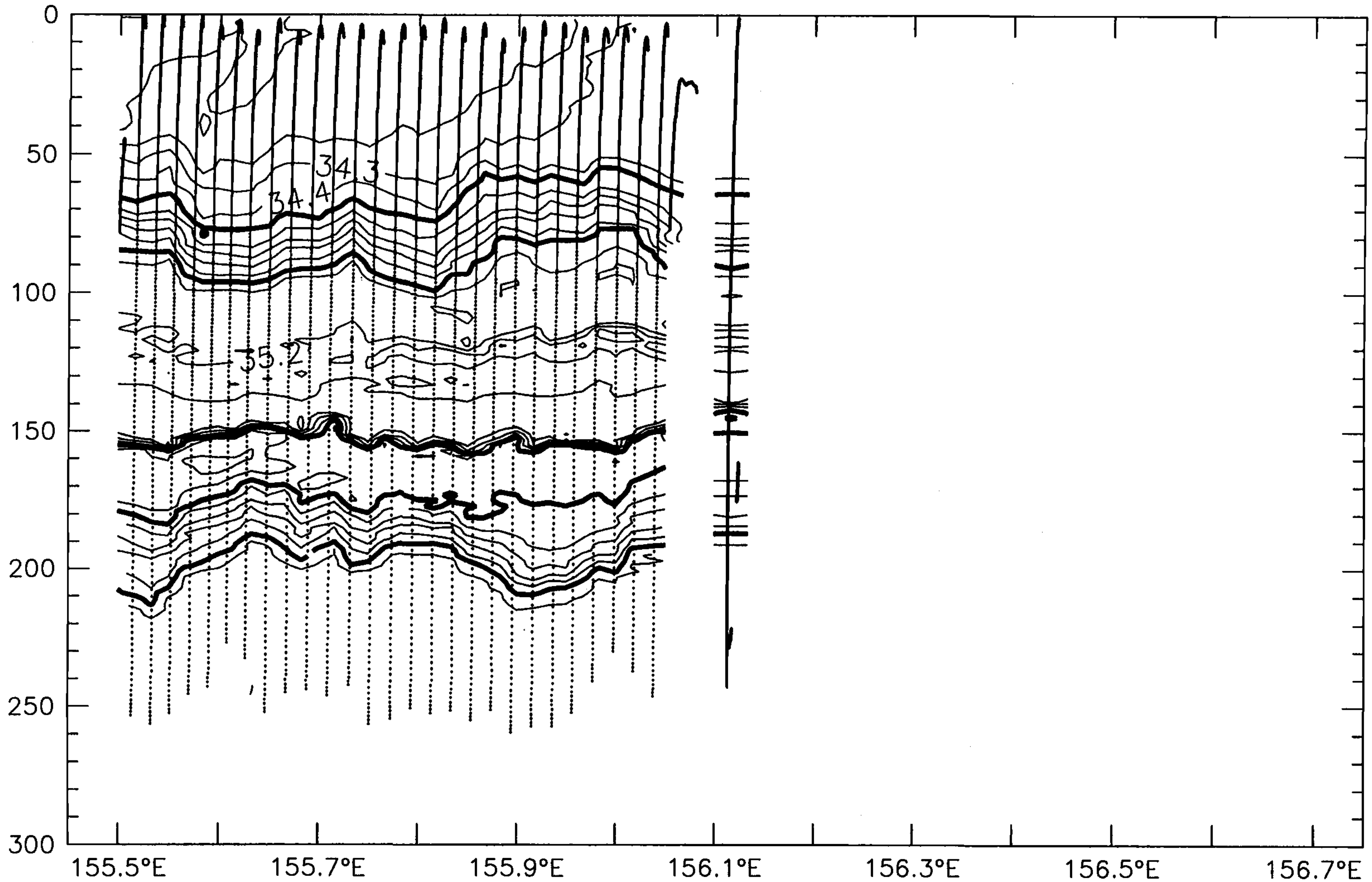
S(psu), W2E, 24 November 1992



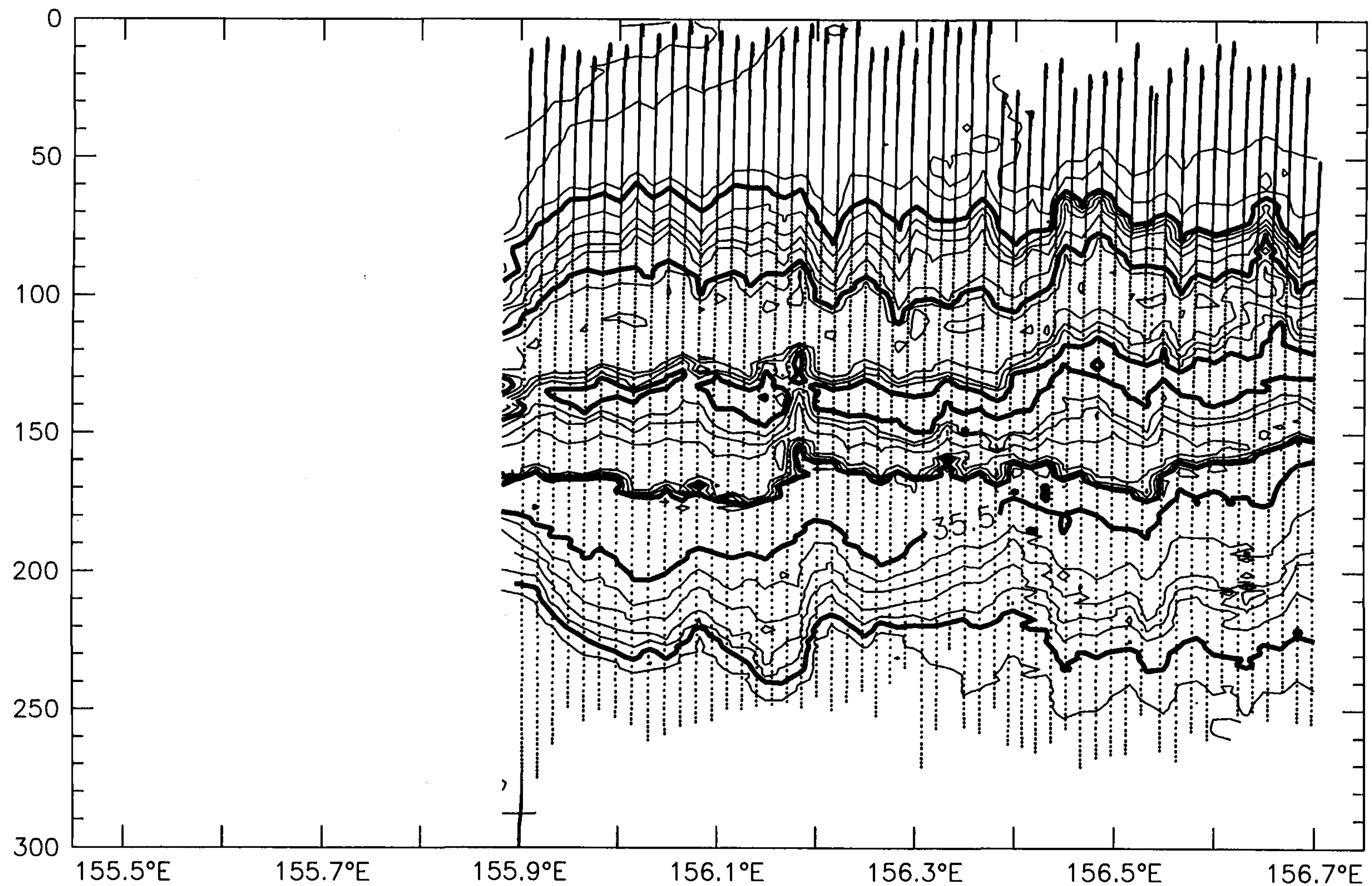
S(psu), W2E, 25 November 1992



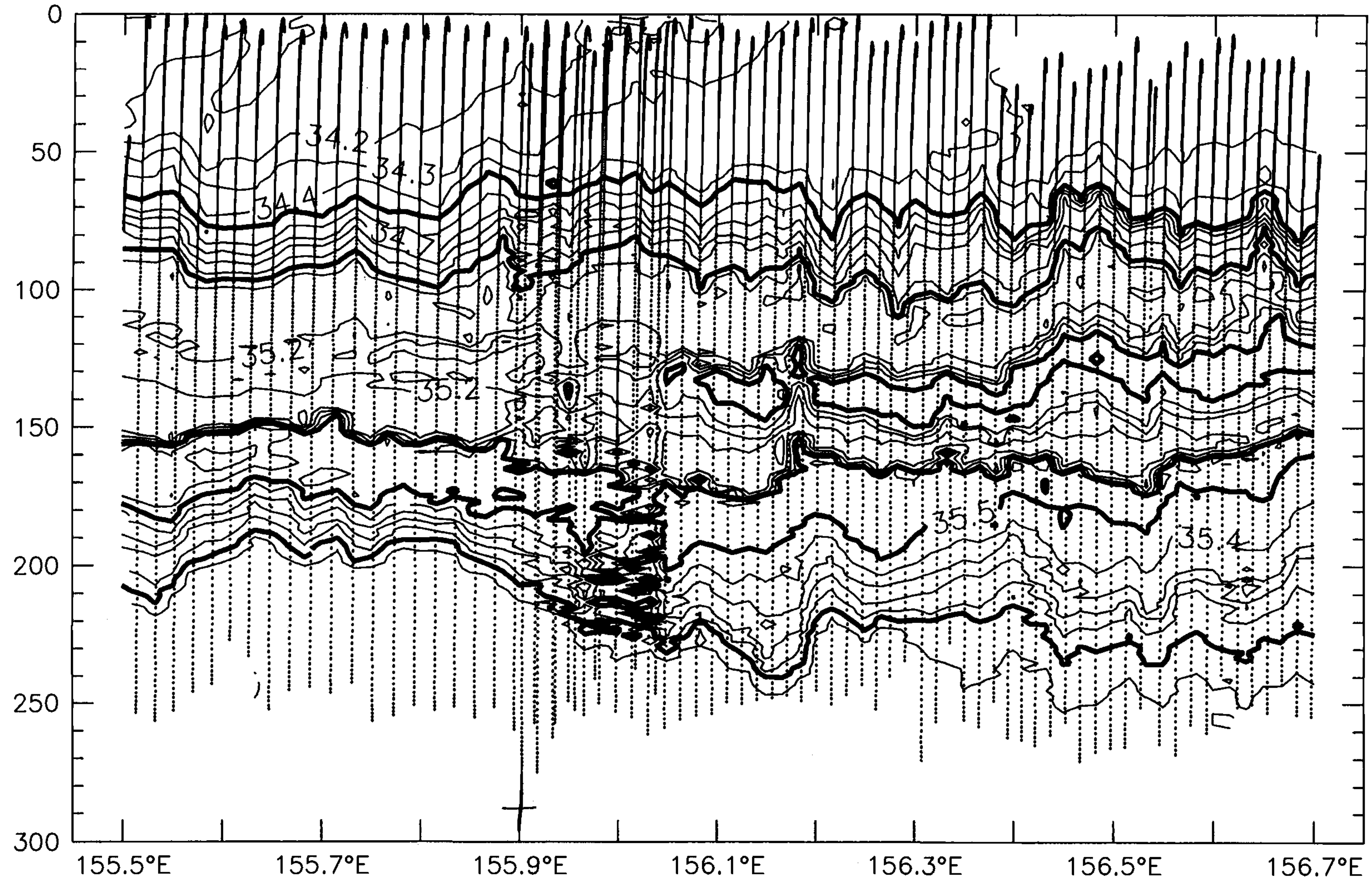
S(psu), W2E, 27 November 1992



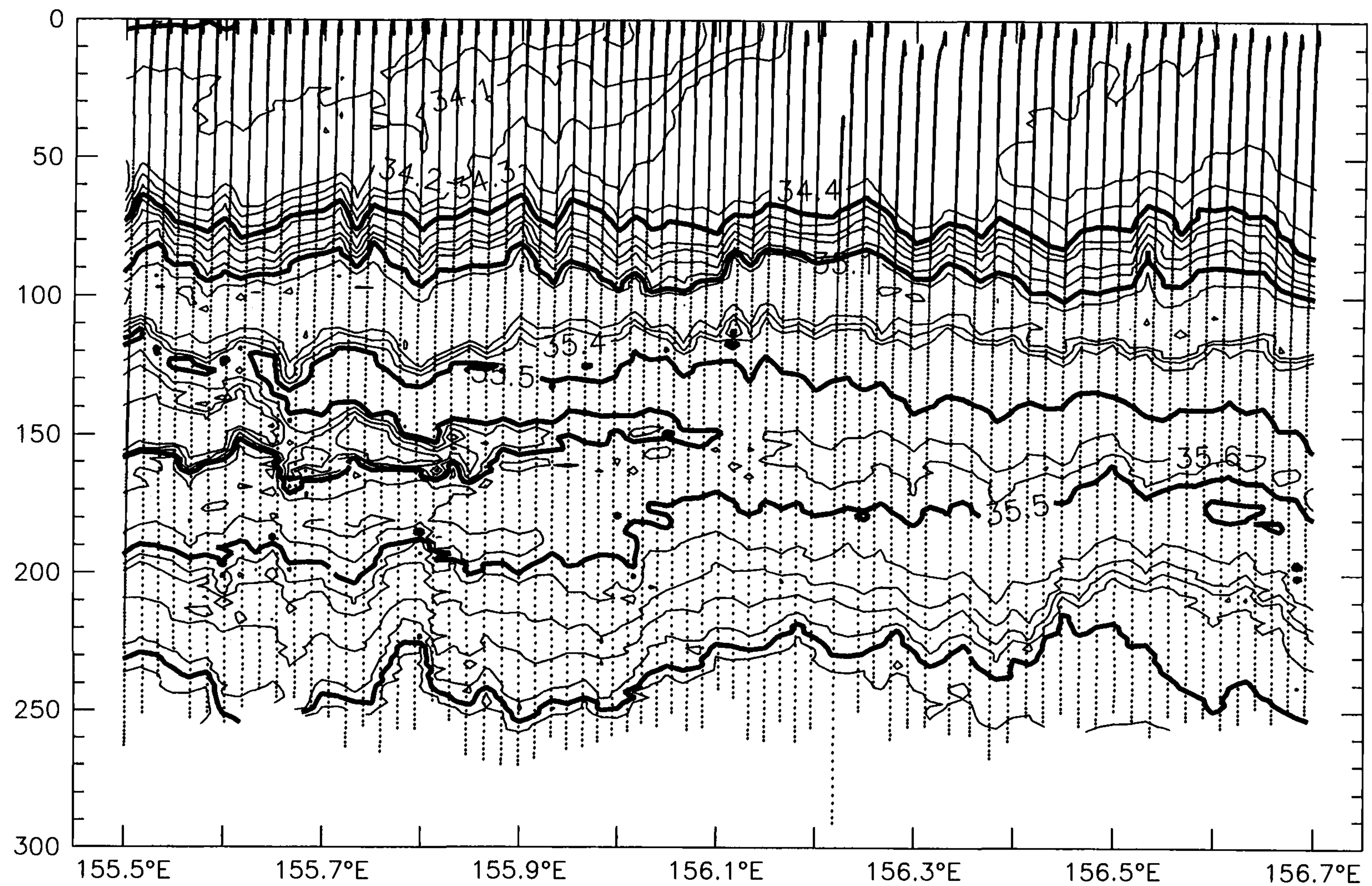
S(psu), W2E, 28 November 1992



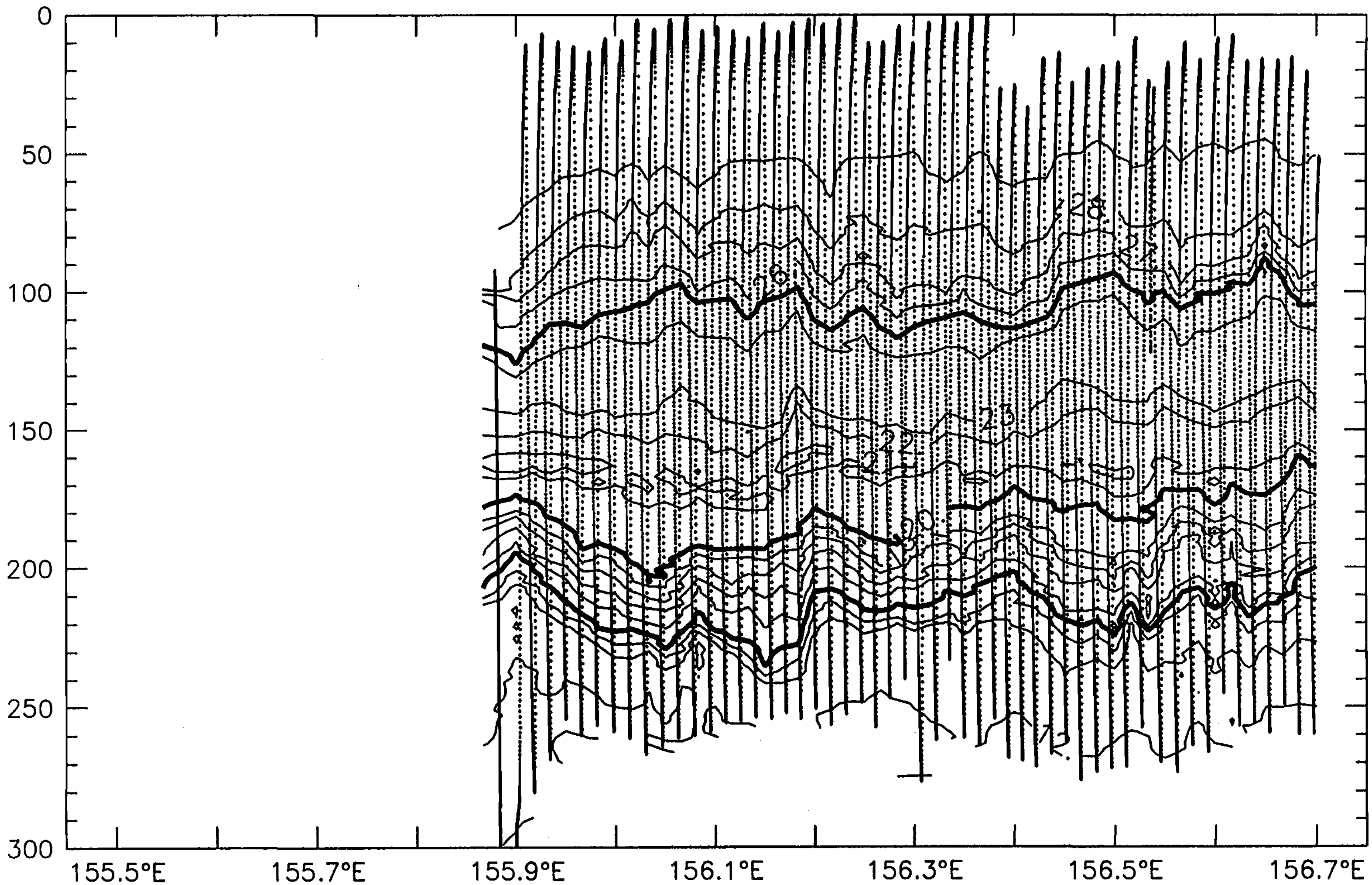
S(psu), W2E, 29 November 1992



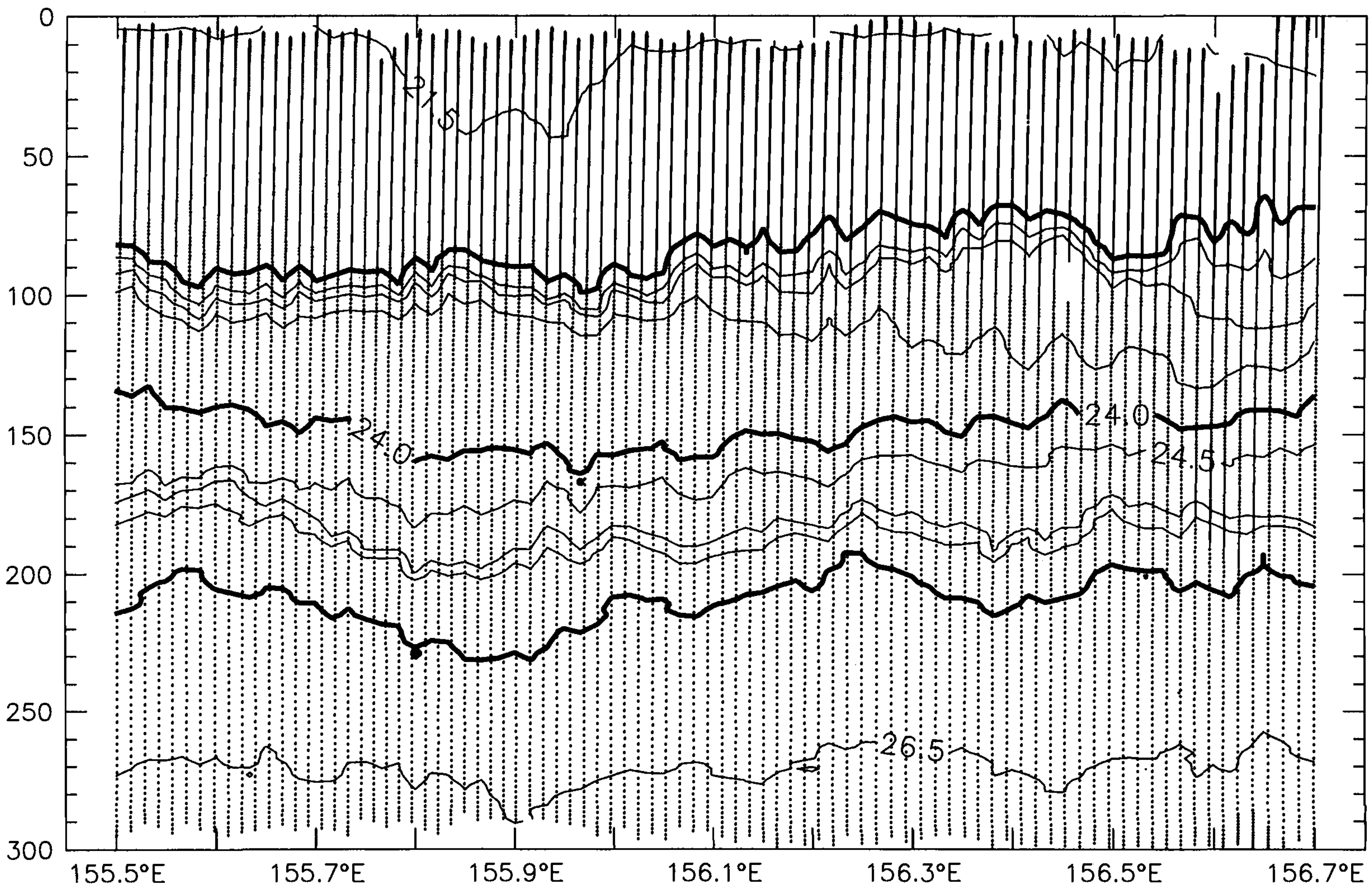
S(psu), W2E, 28–29 November 1992



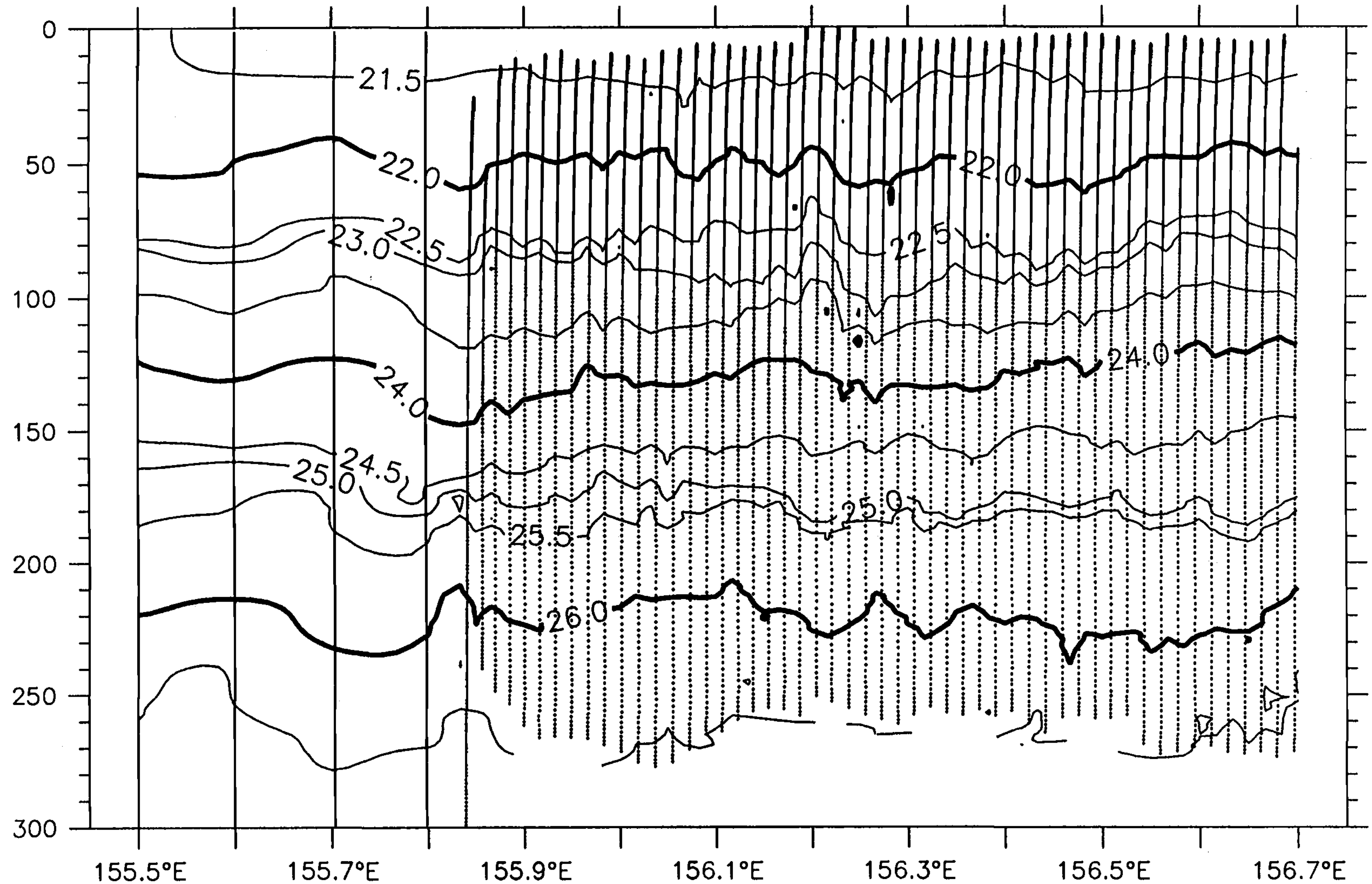
S(psu), W2E, 30 November 1992



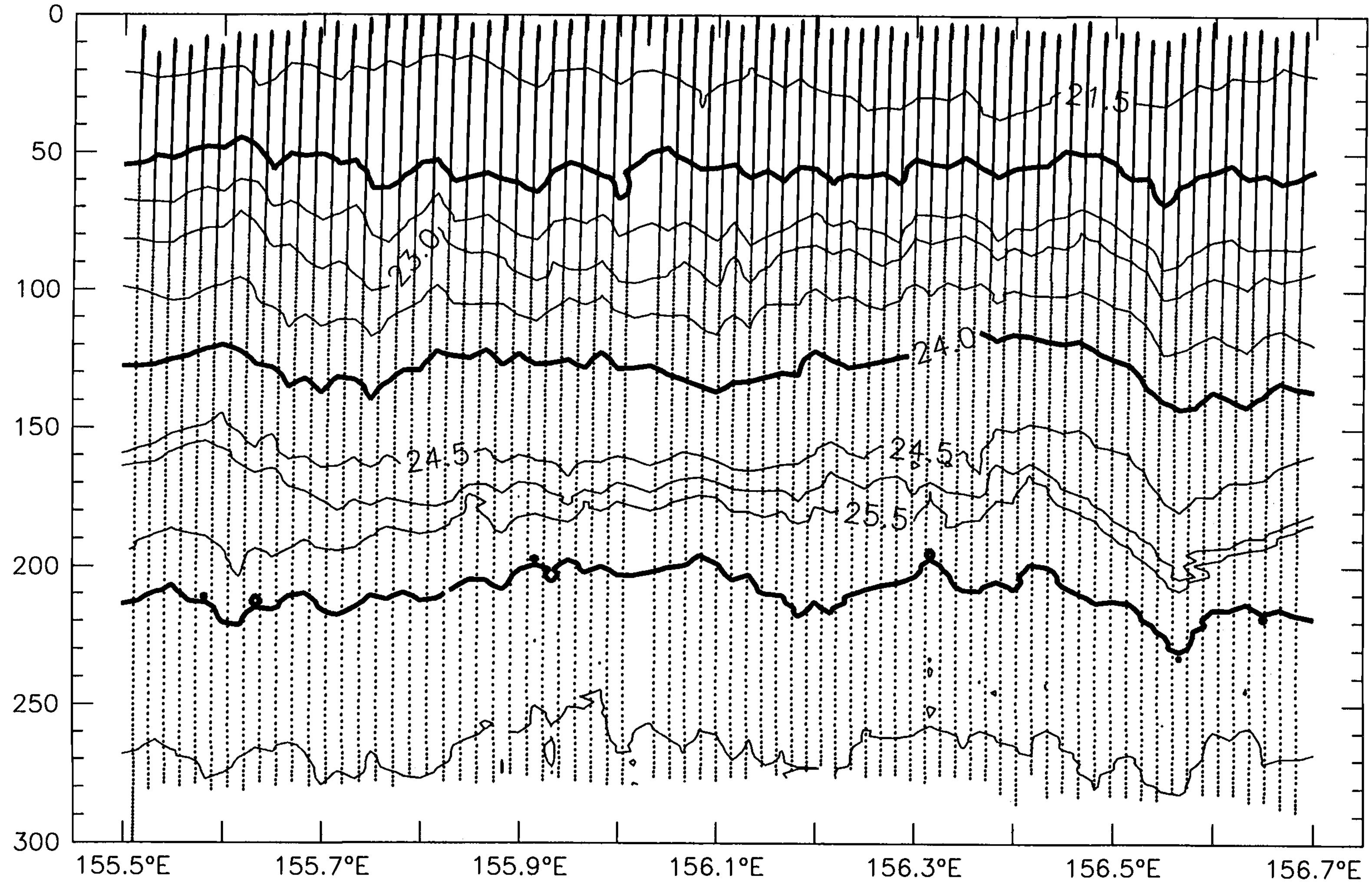
T(°C), W2E, 29 November 1992



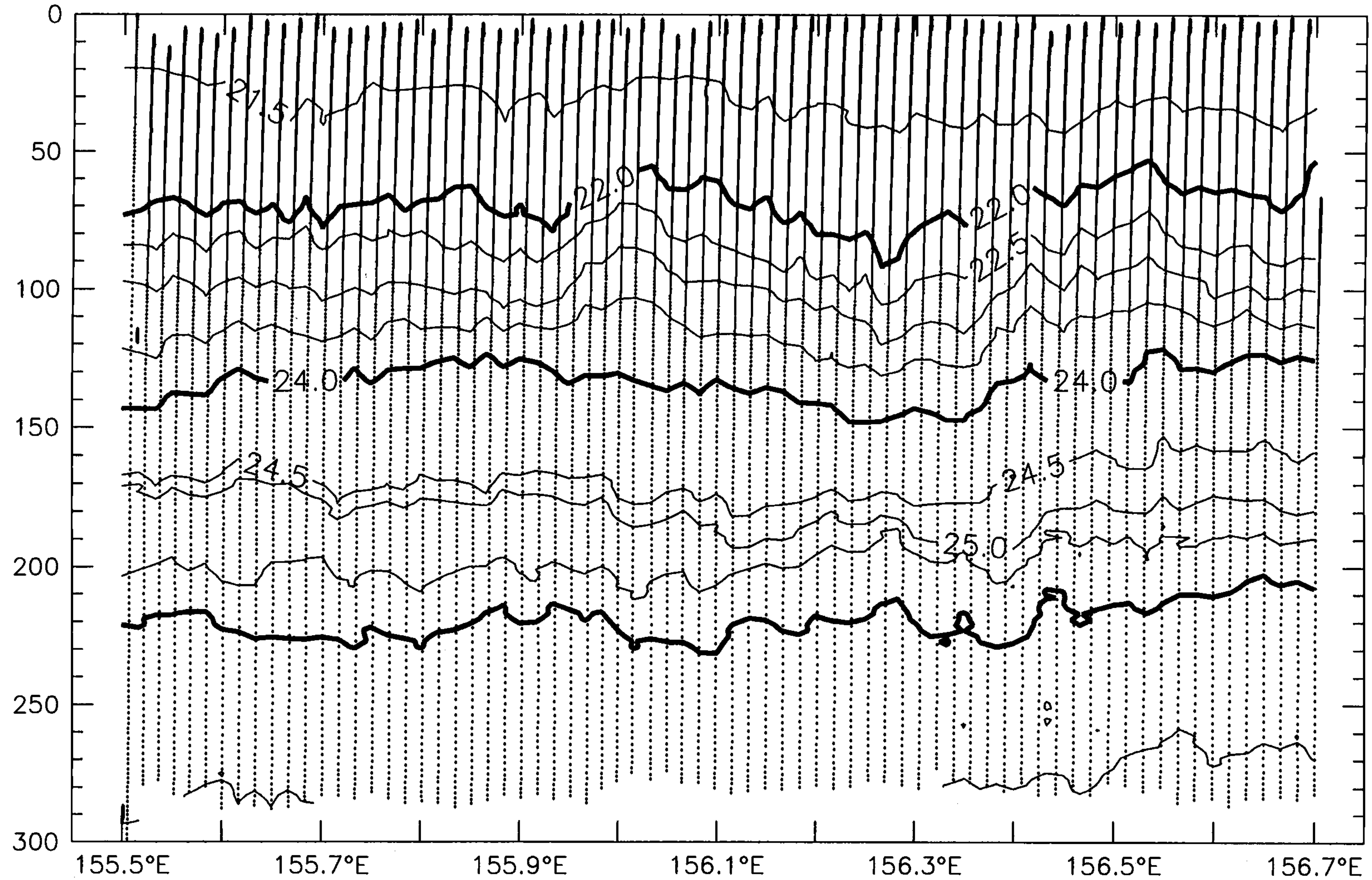
Sigma–t, W2E, 14 November 1992



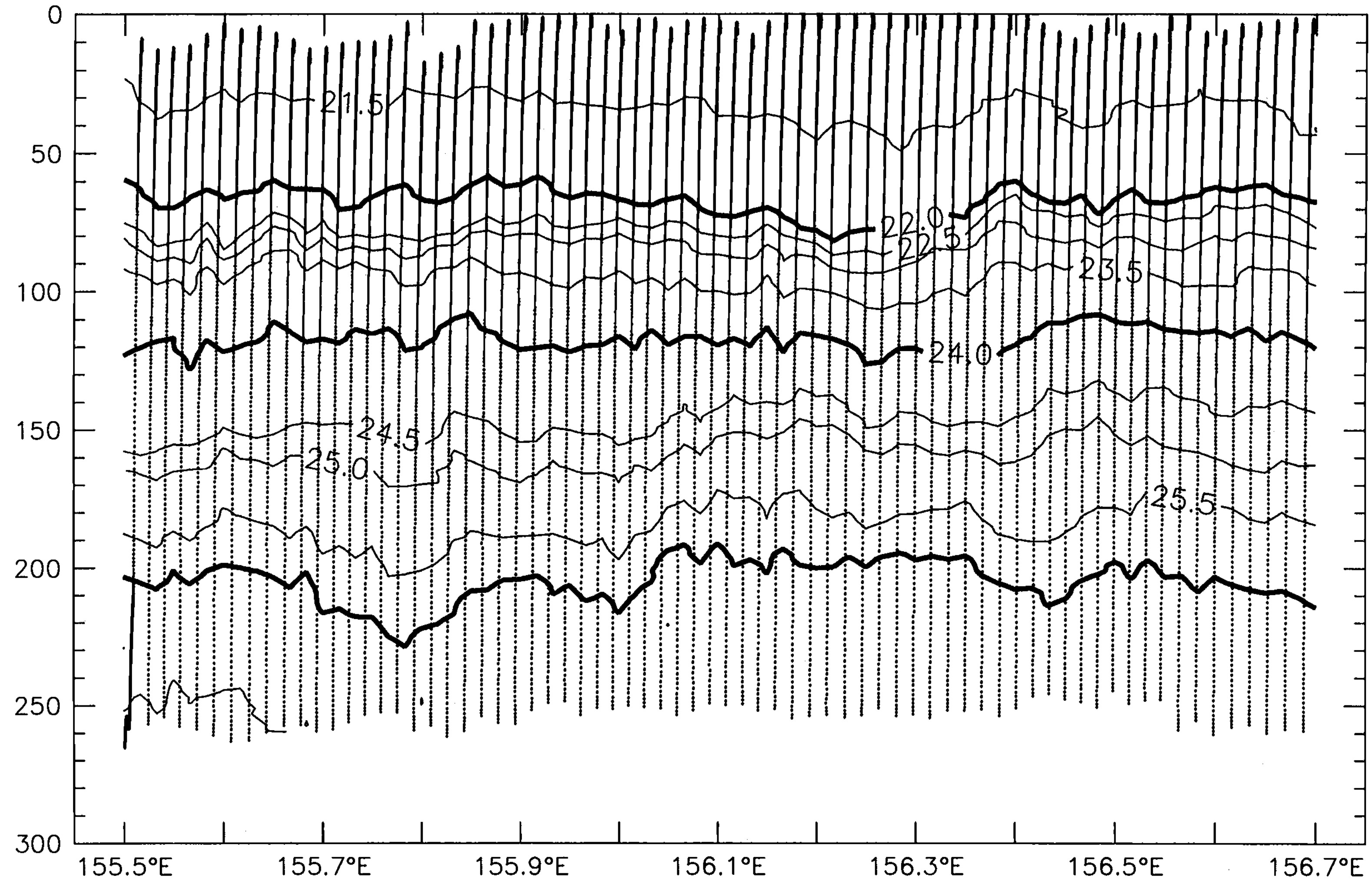
Sigma-t, W2E, 16 November 1992



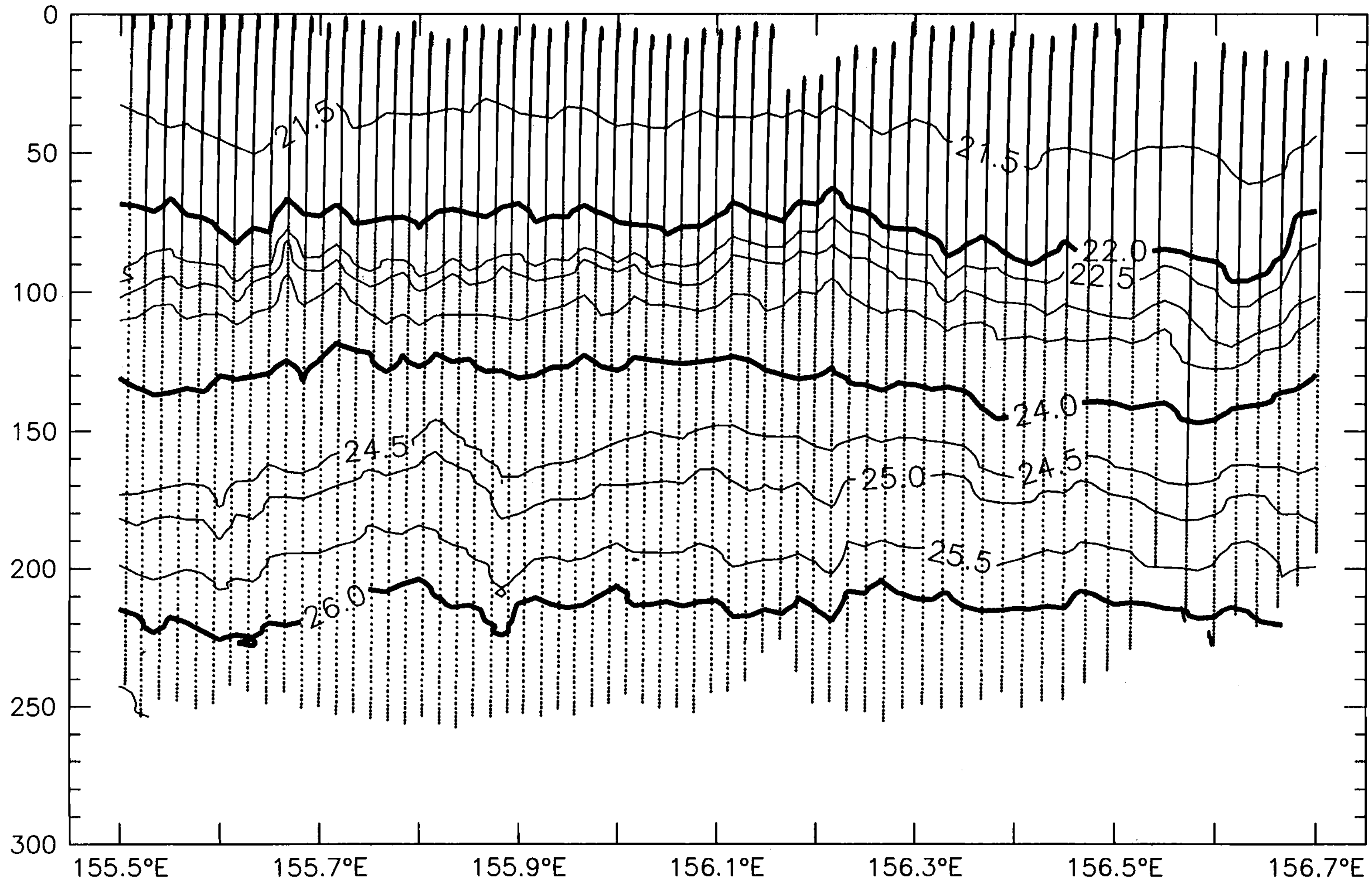
Sigma–t, W2E, 18 November 1992



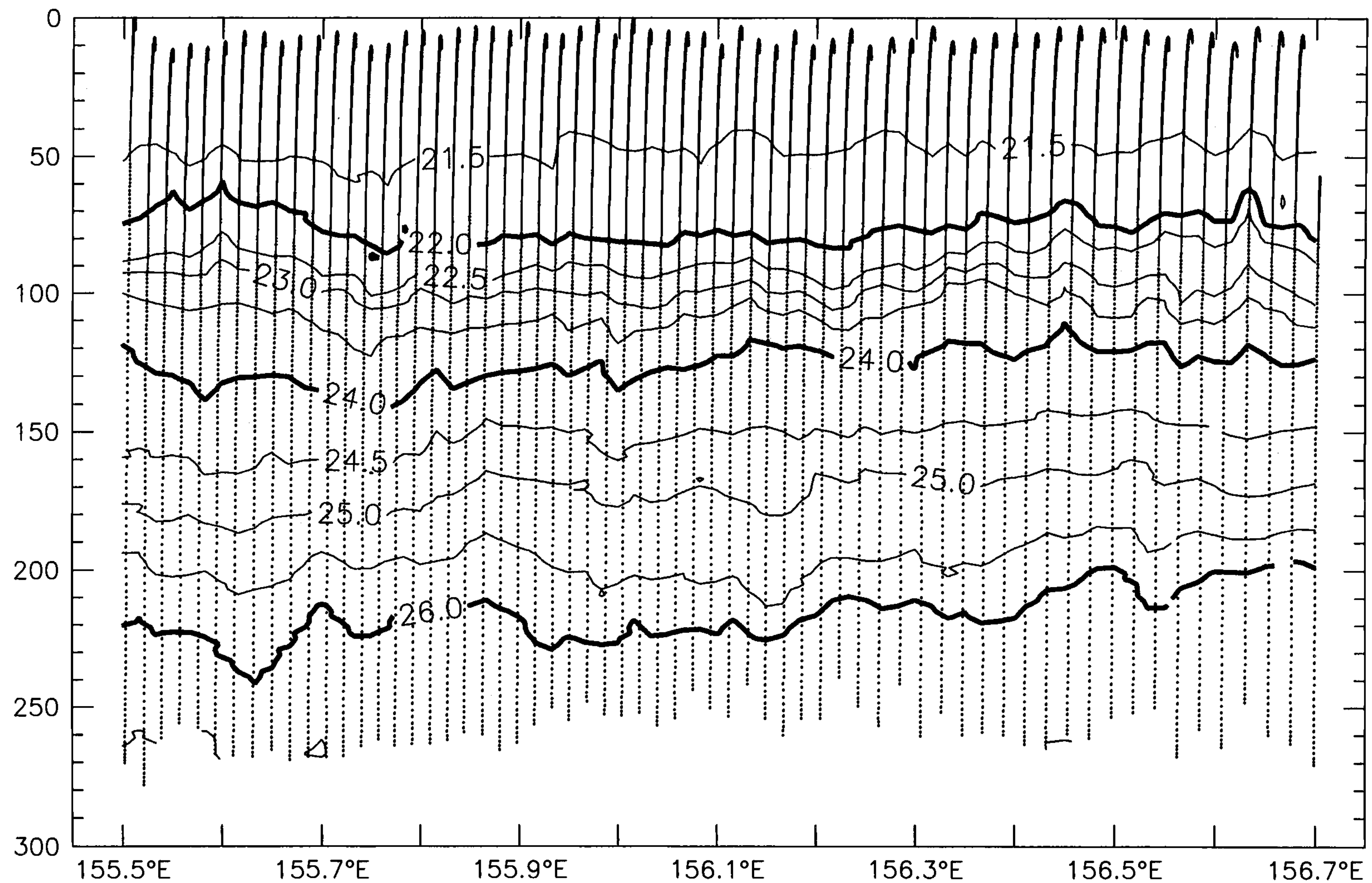
Sigma–t, W2E, 19 November 1992



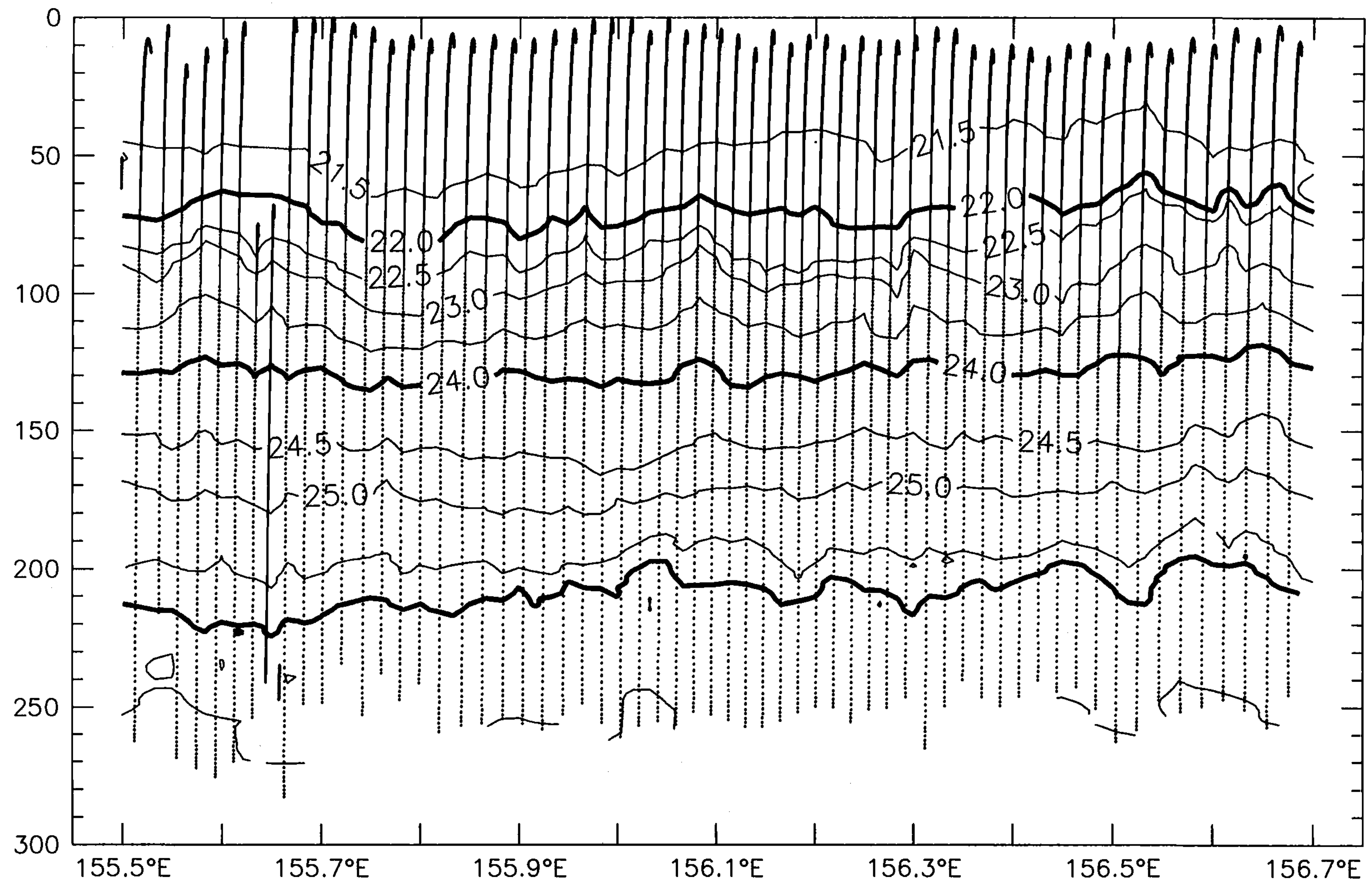
Sigma–t, W2E, 23 November 1992



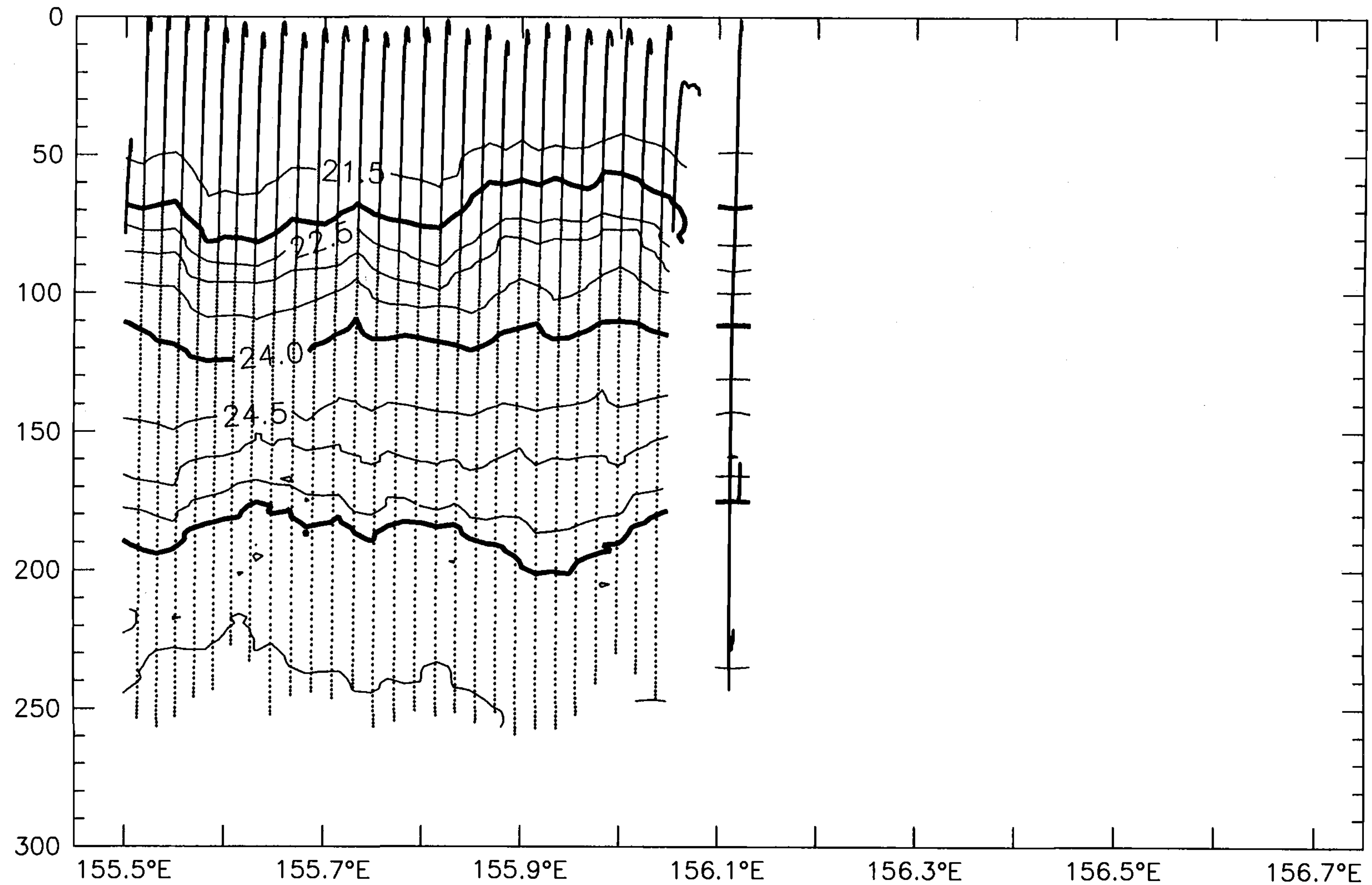
Sigma-t, W2E, 24 November 1992



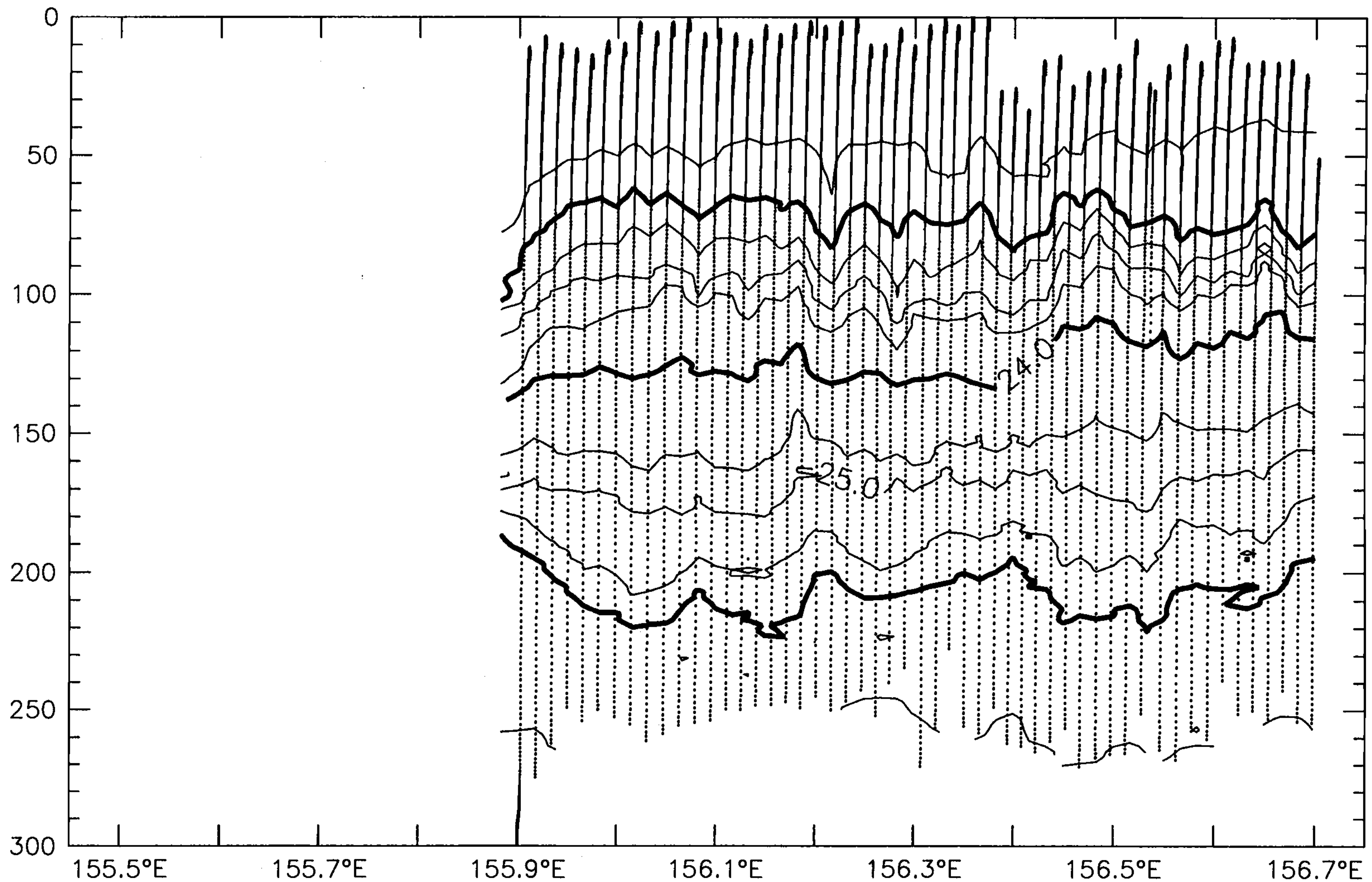
Sigma–t, W2E, 25 November 1992



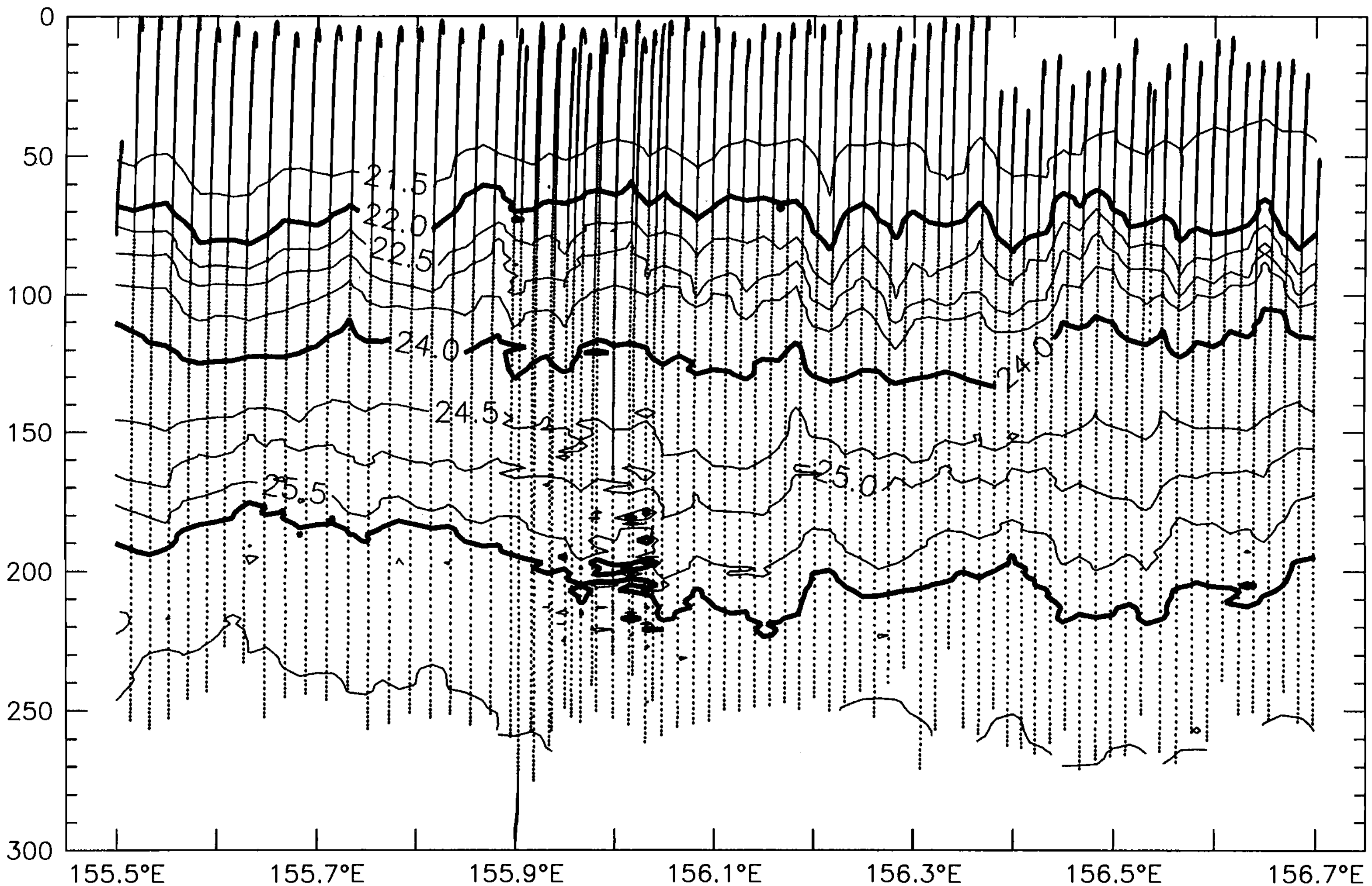
Sigma–t, W2E, 27 November 1992



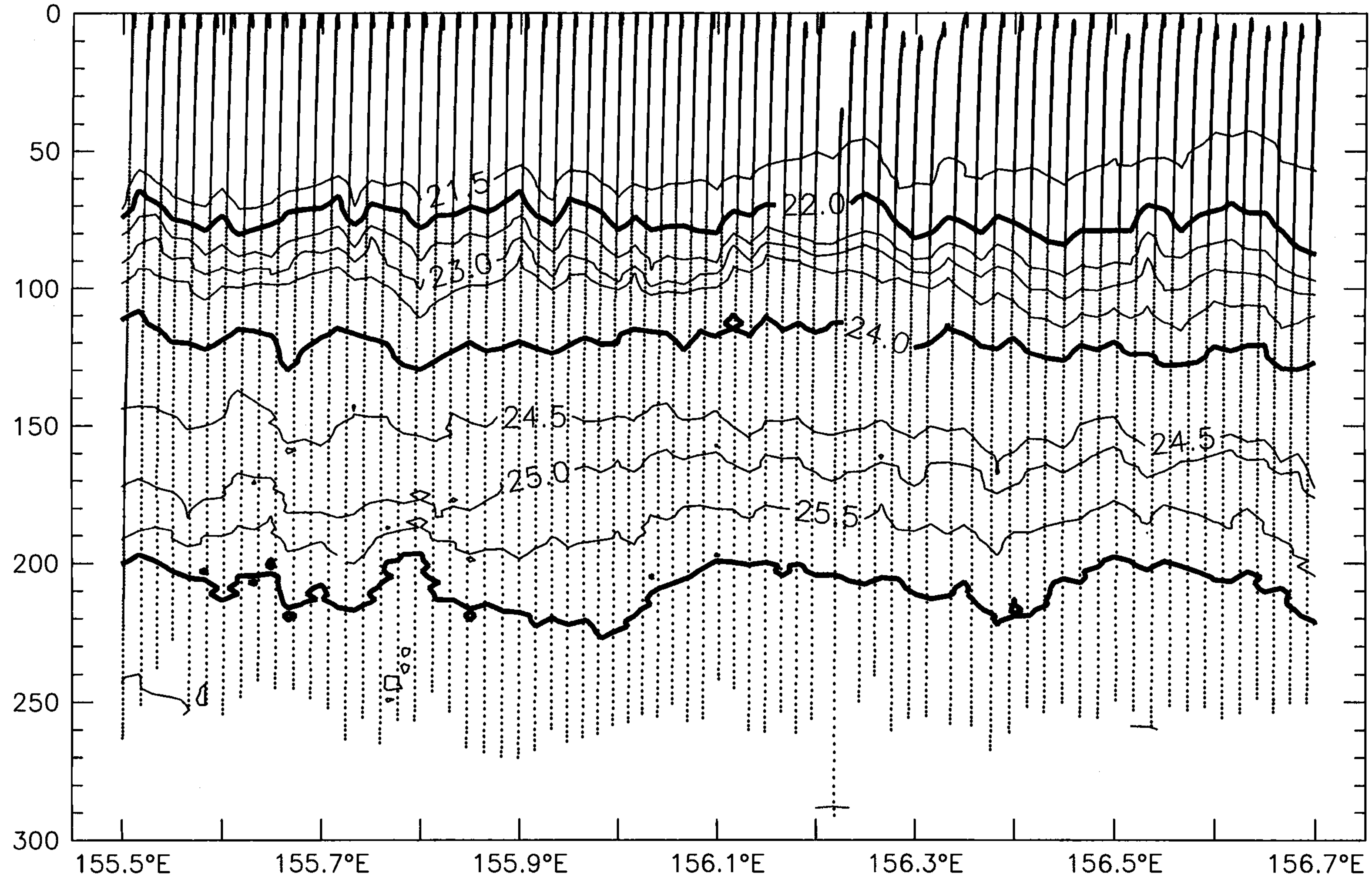
Sigma–t, W2E, 28 November 1992



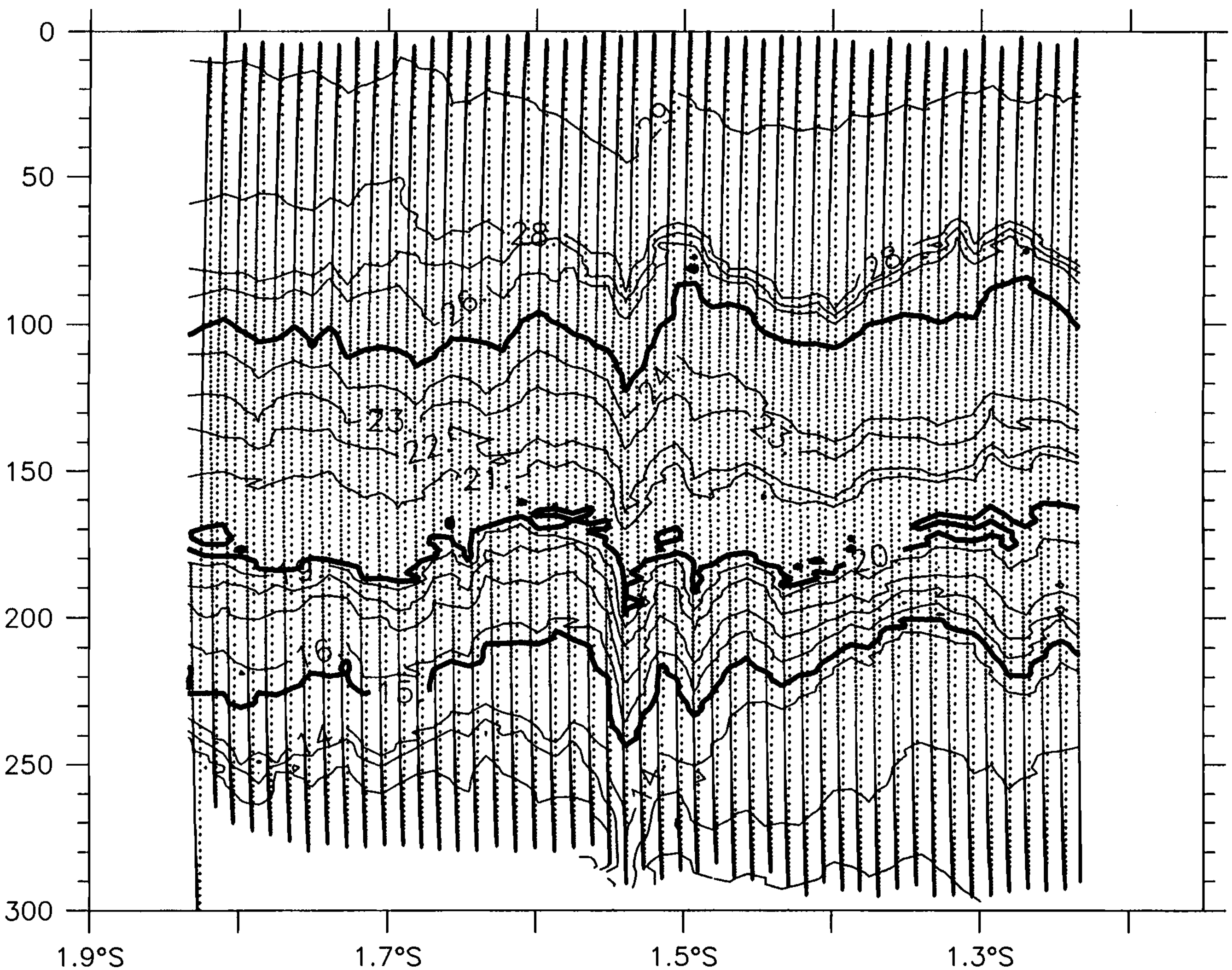
Sigma–t, W2E, 29 November 1992



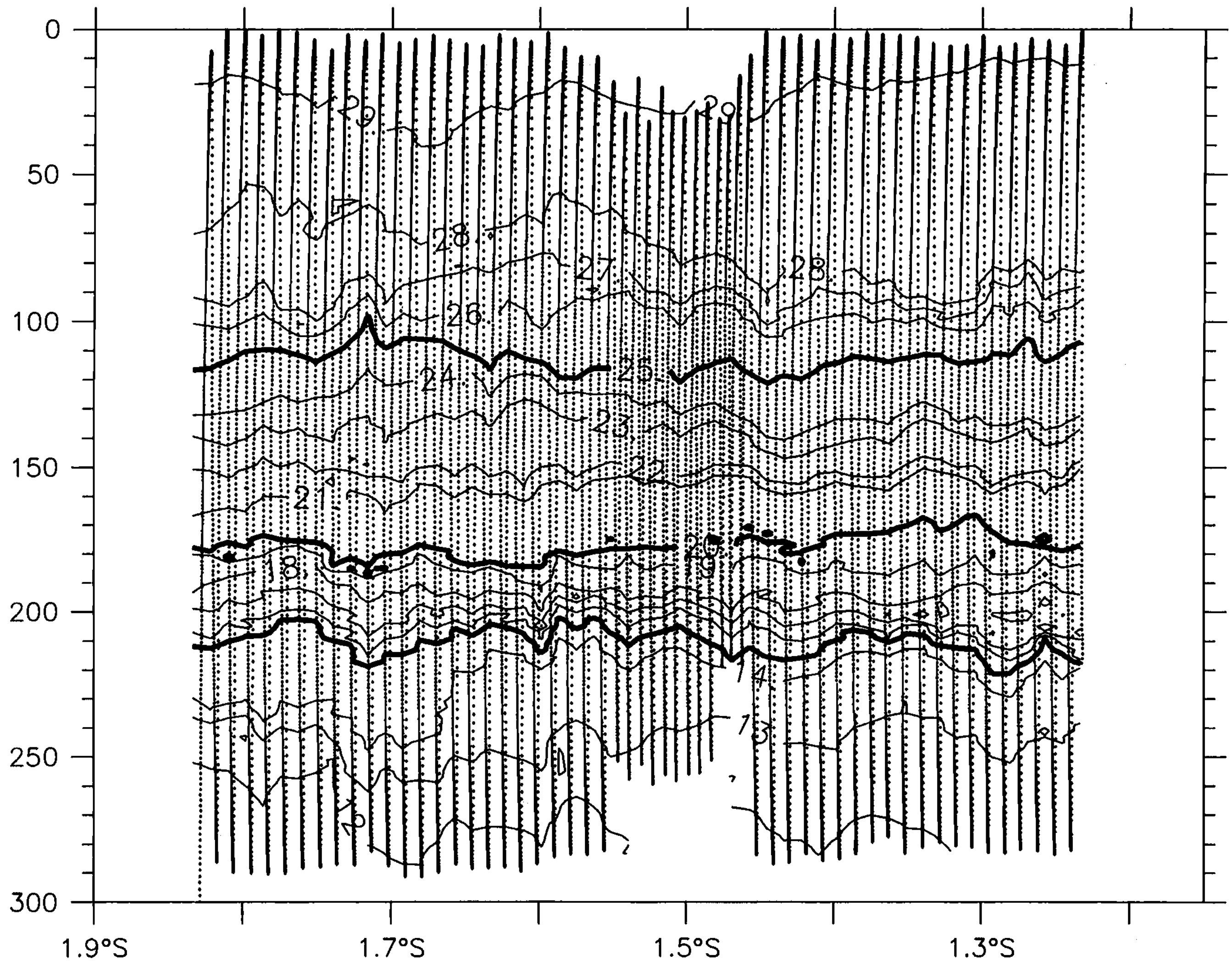
Sigma–t, W2E, 28–29 November 1992



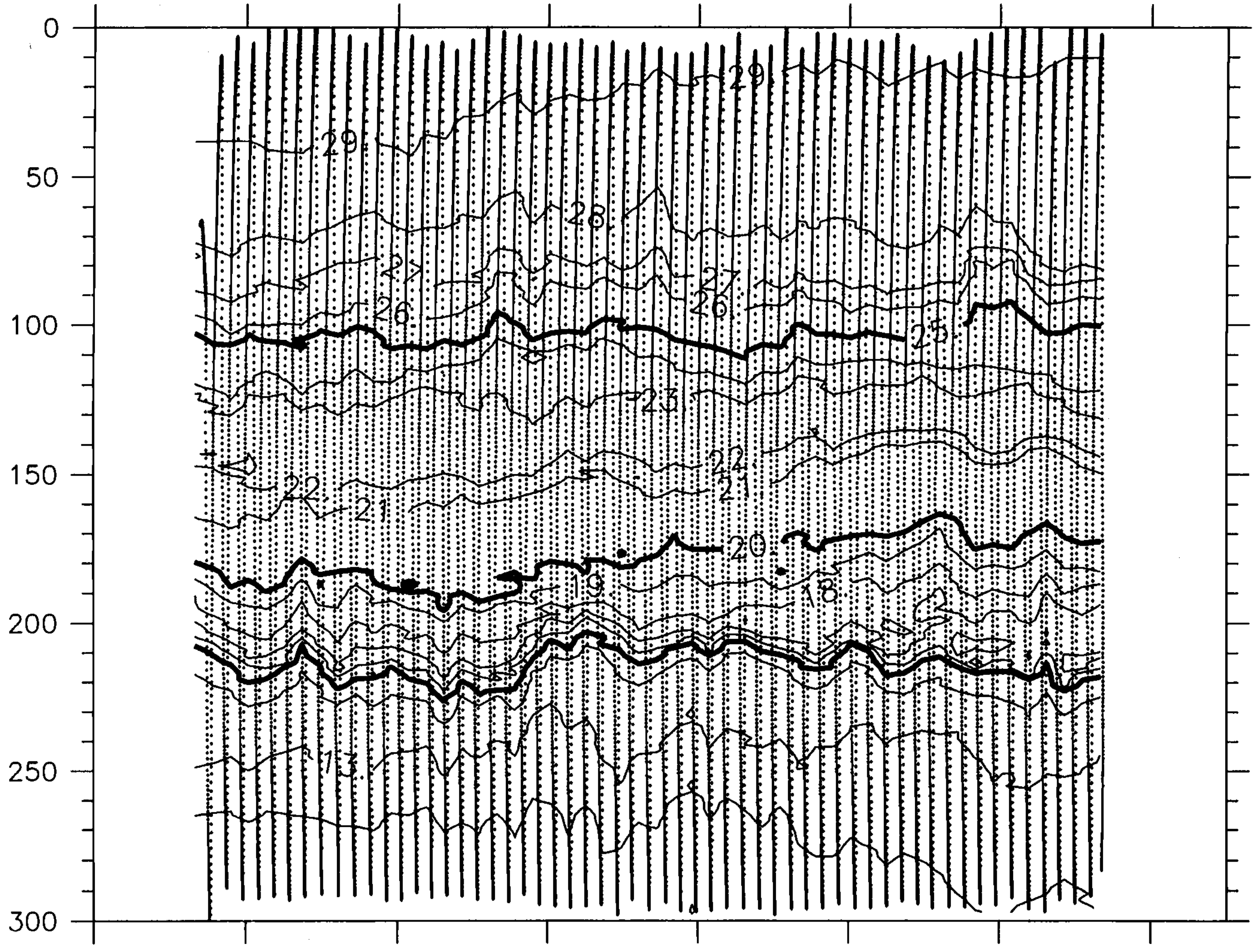
Sigma–t, W2E, 30 November 1992



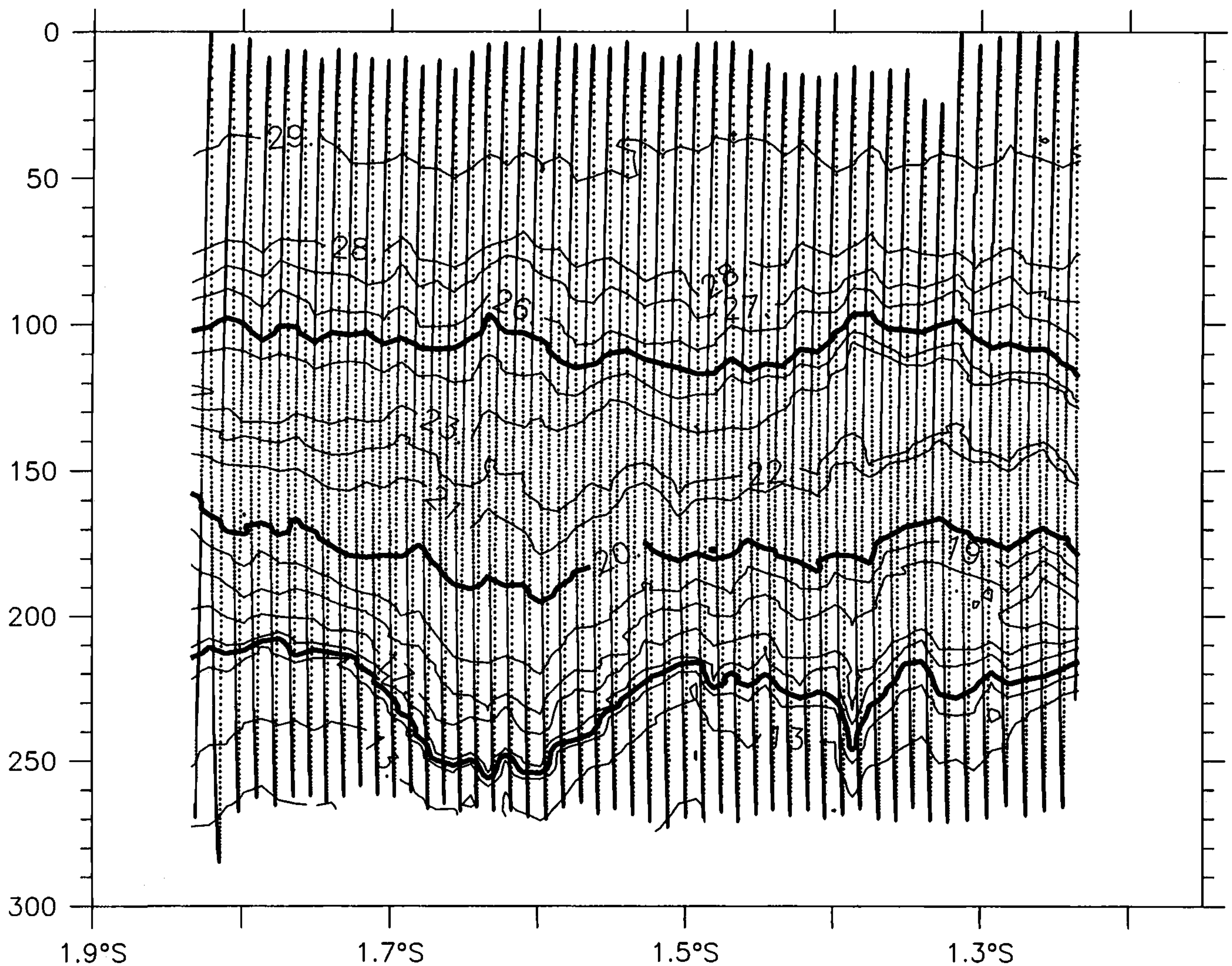
T(°C), E2N, 17 November 1992



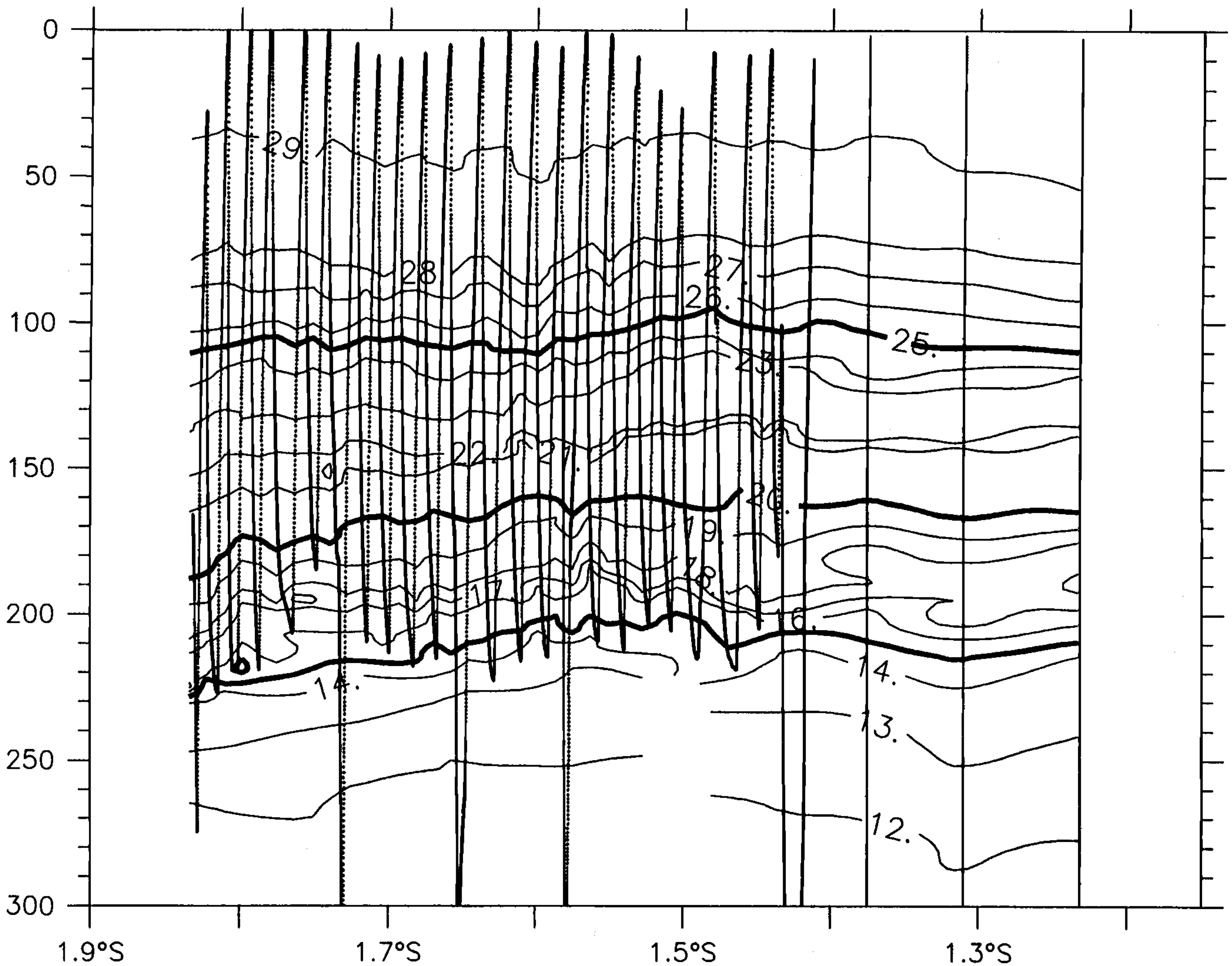
T(°C), E2N, 18 November 1992



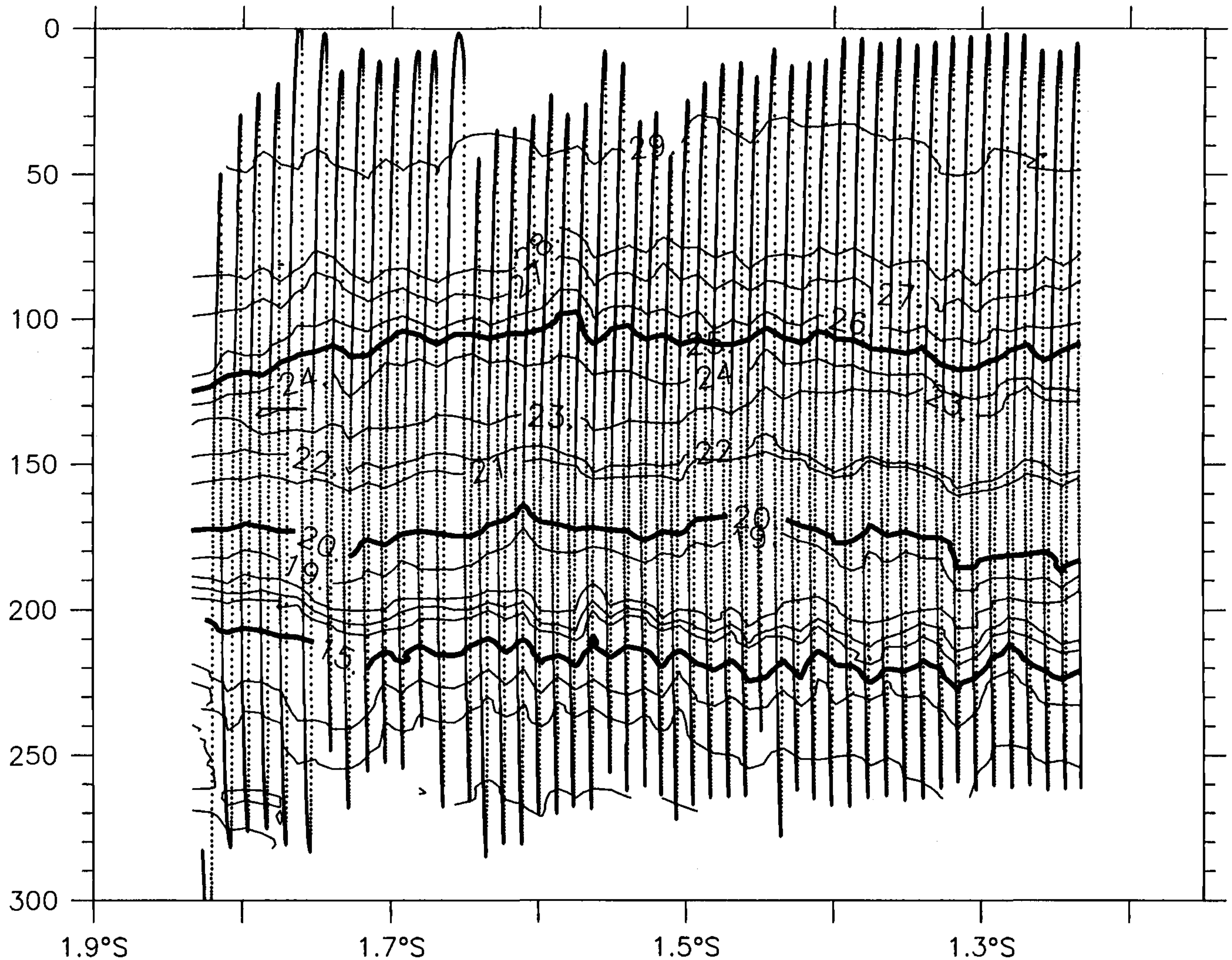
T(°C), E2N, 19 November 1992



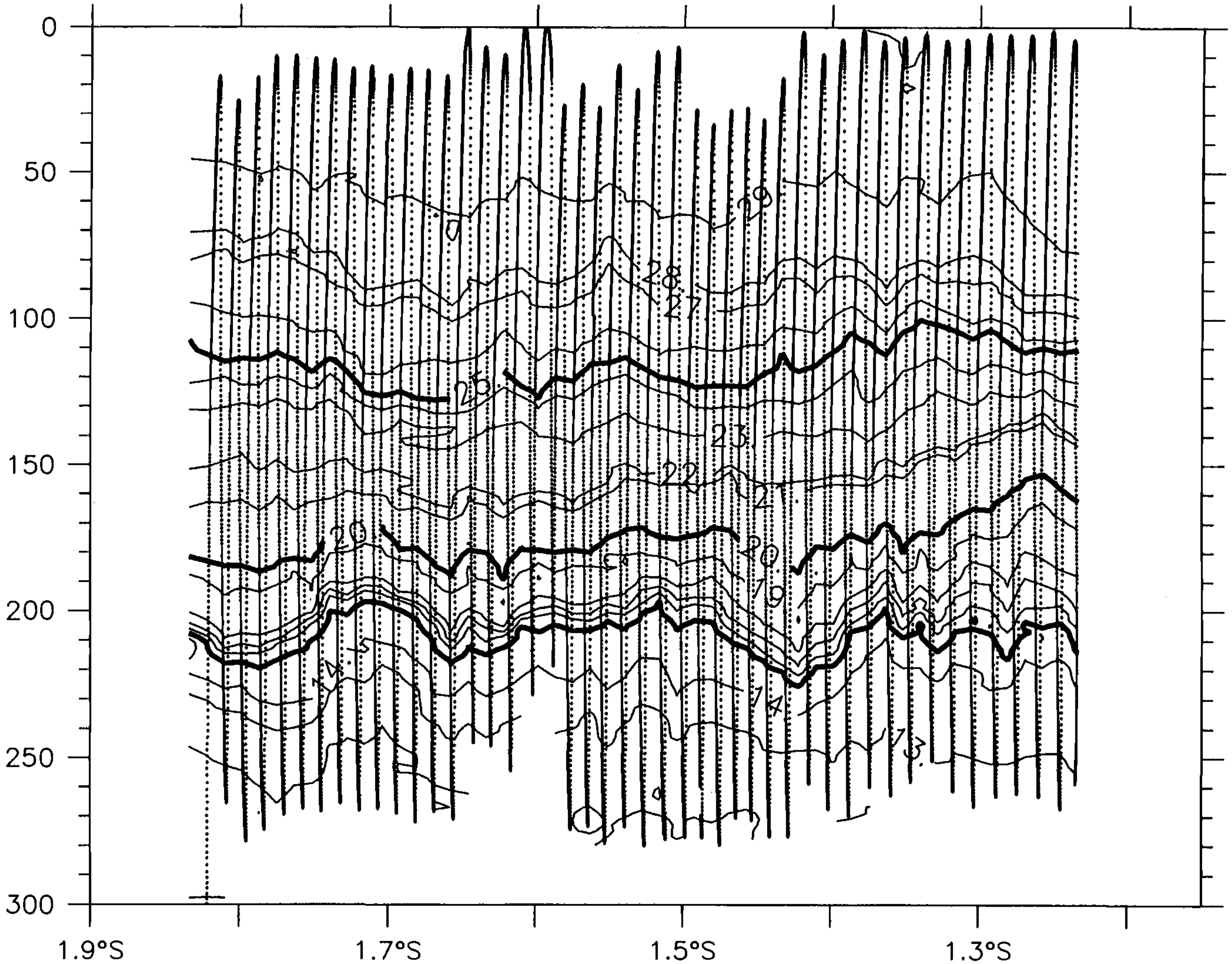
T(°C), E2N, 23 November 1992



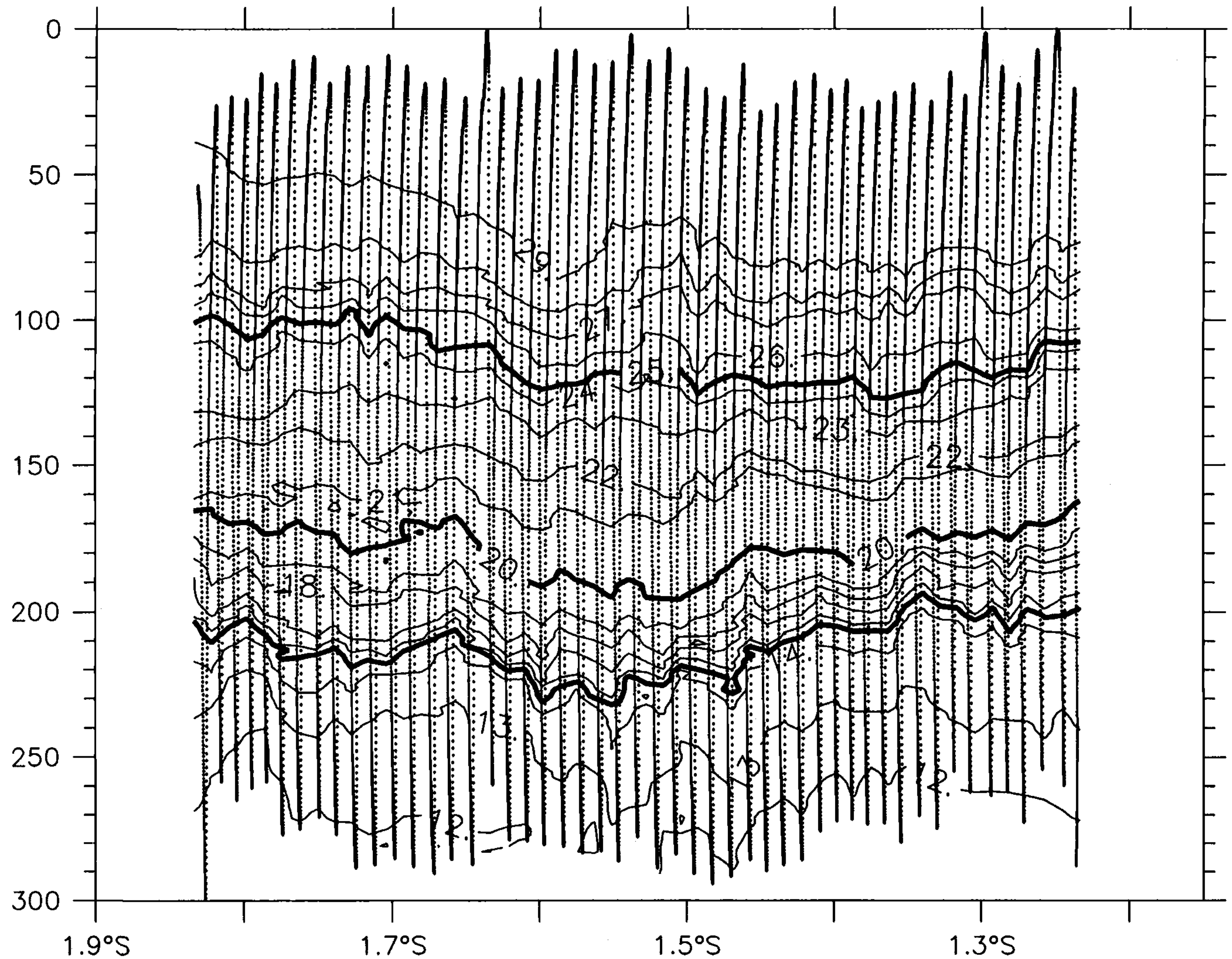
T(°C), E2N, 24 November 1992



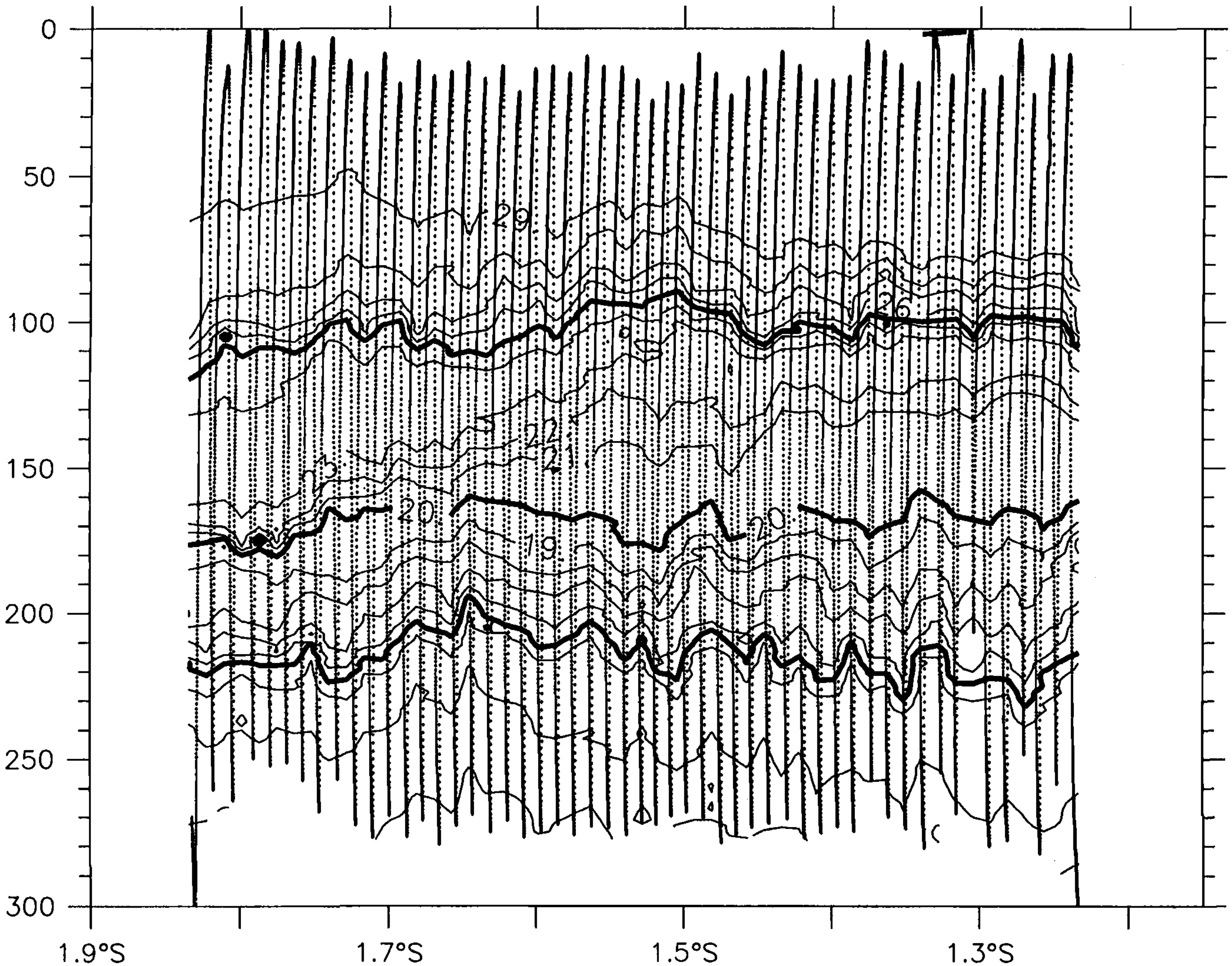
T(°C), E2N, 26 November 1992



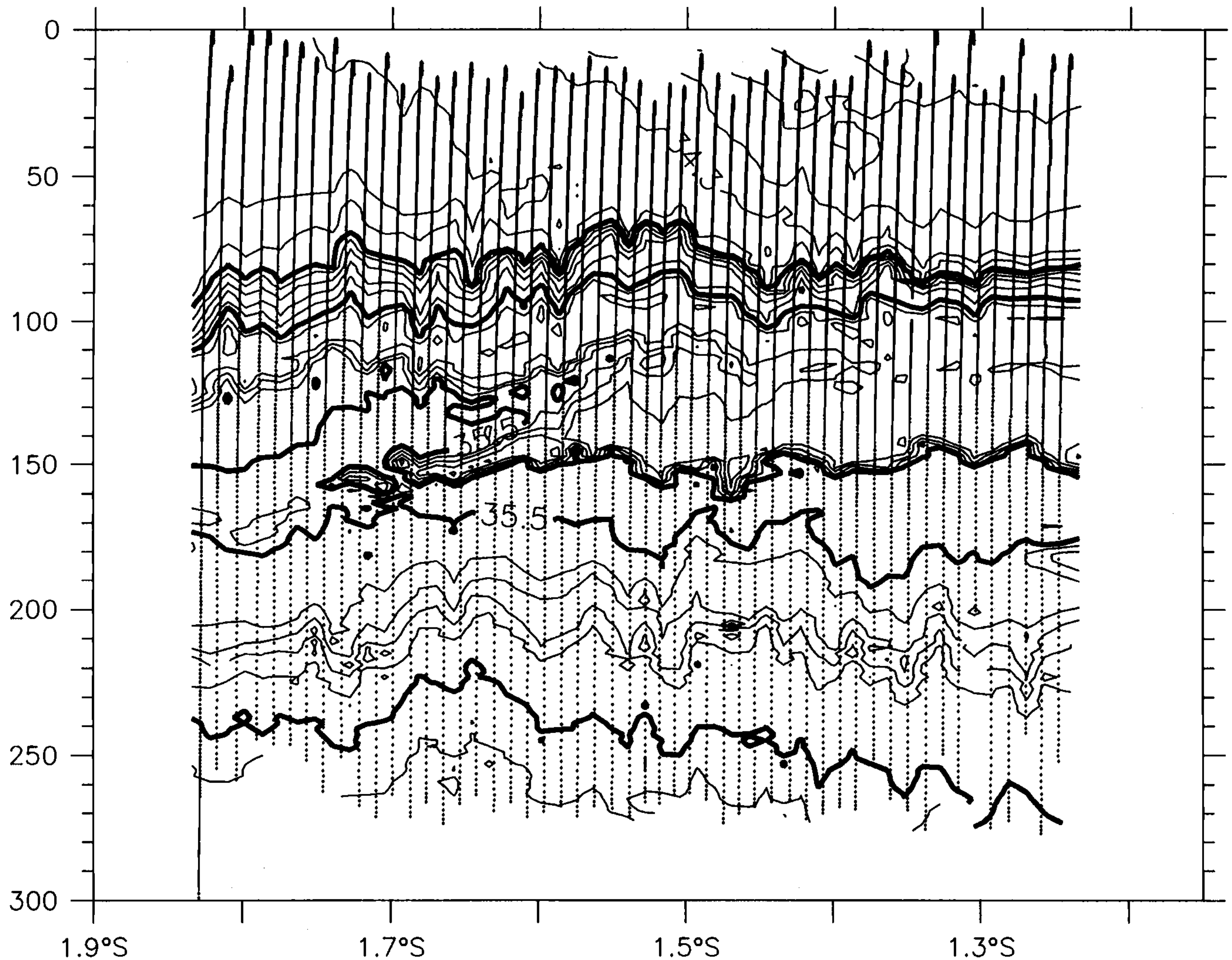
T(°C), E2N, 27 November 1992



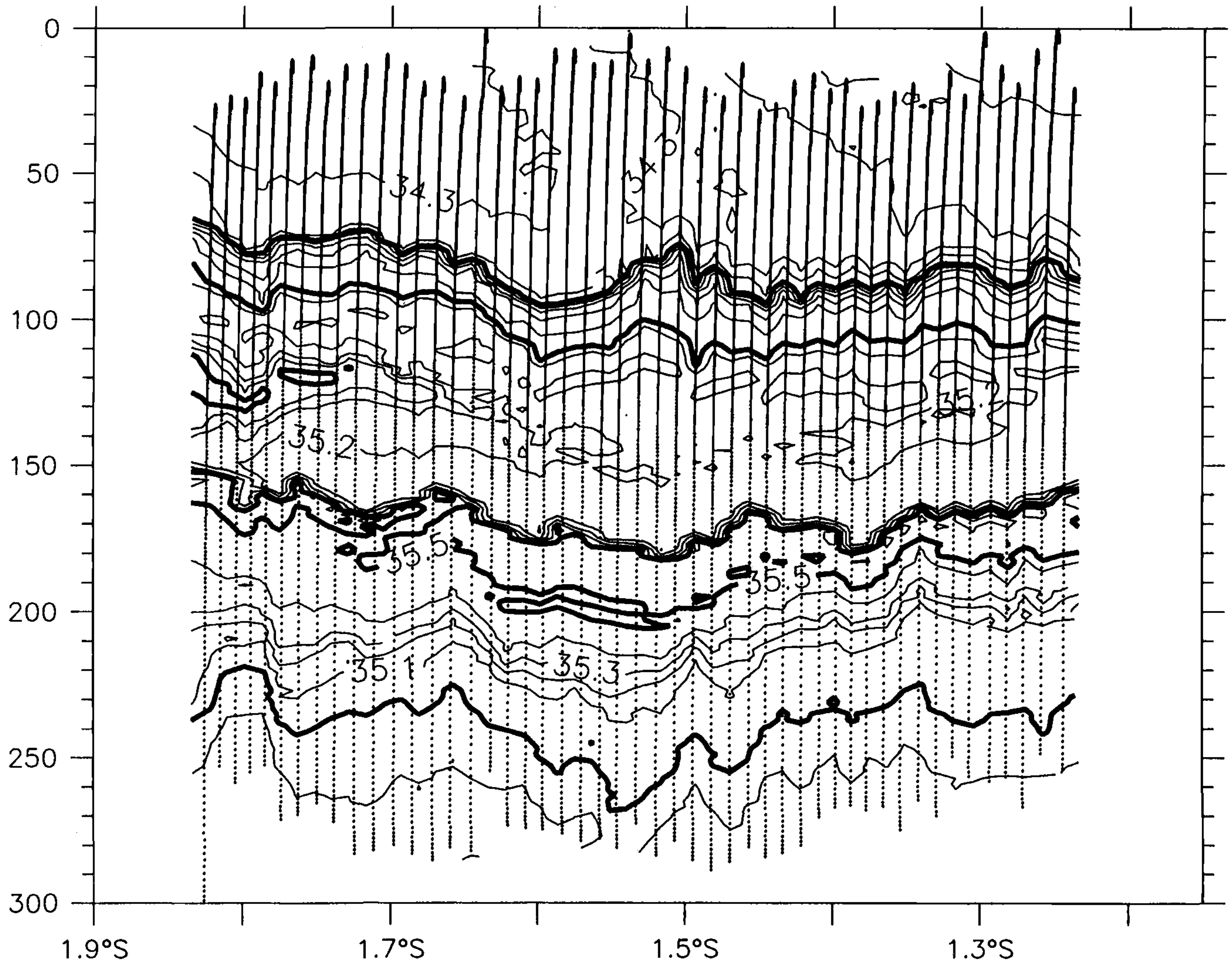
T(°C), E2N, 29 November 1992



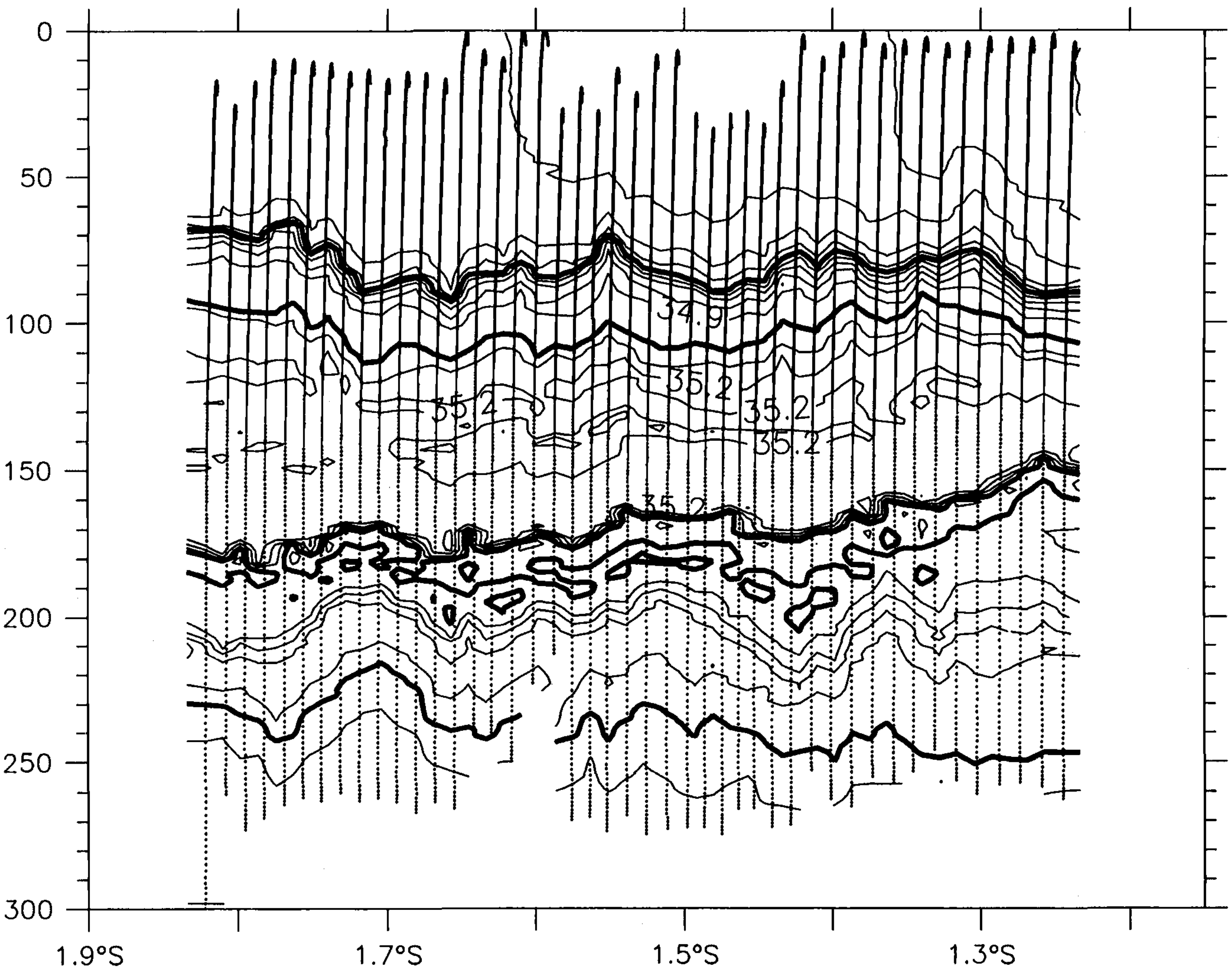
T(°C), E2N, 30 November 1992



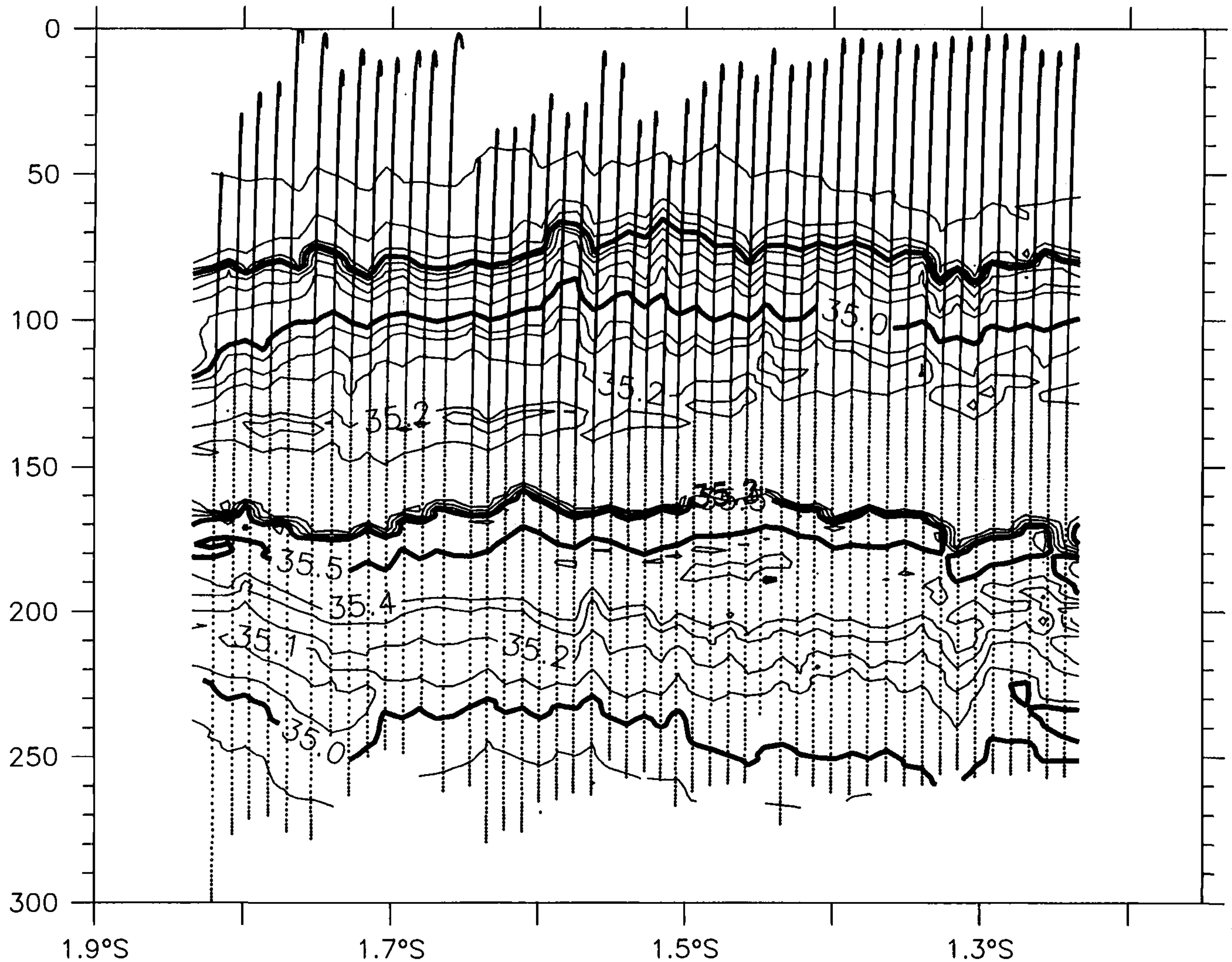
S(psu), E2N, 30 November 1992



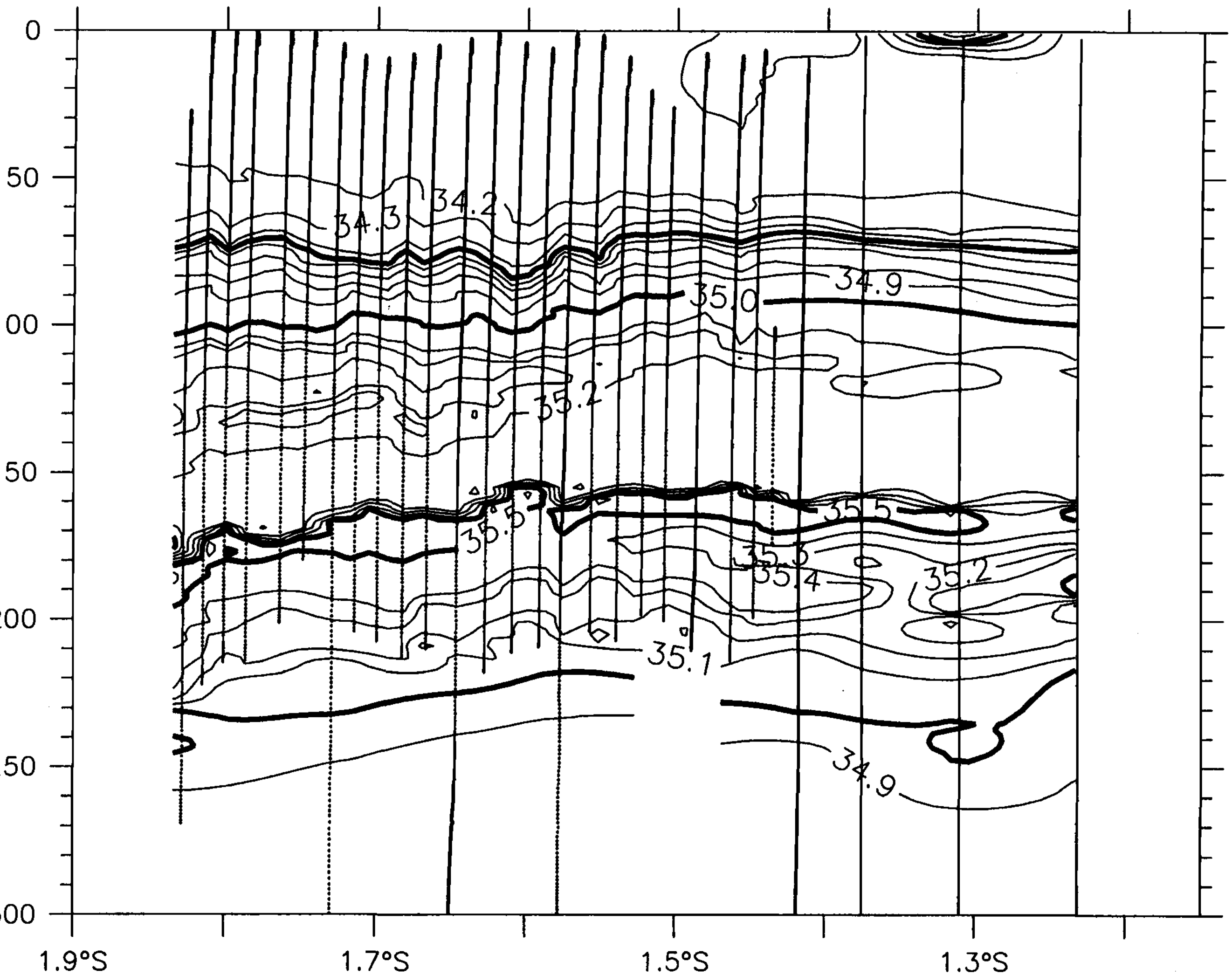
S(psu), E2N, 29 November 1992



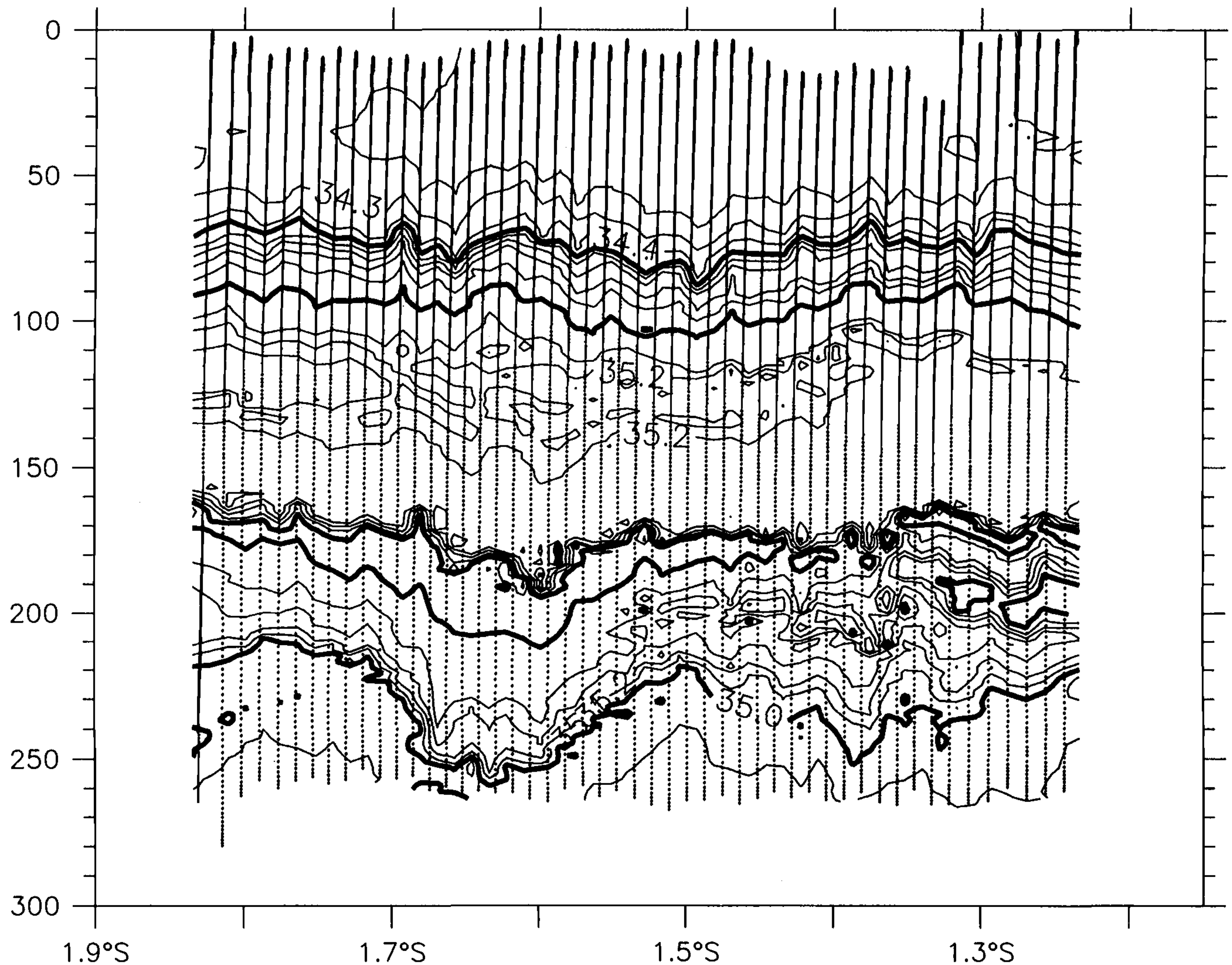
S(psu), E2N, 27 November 1992



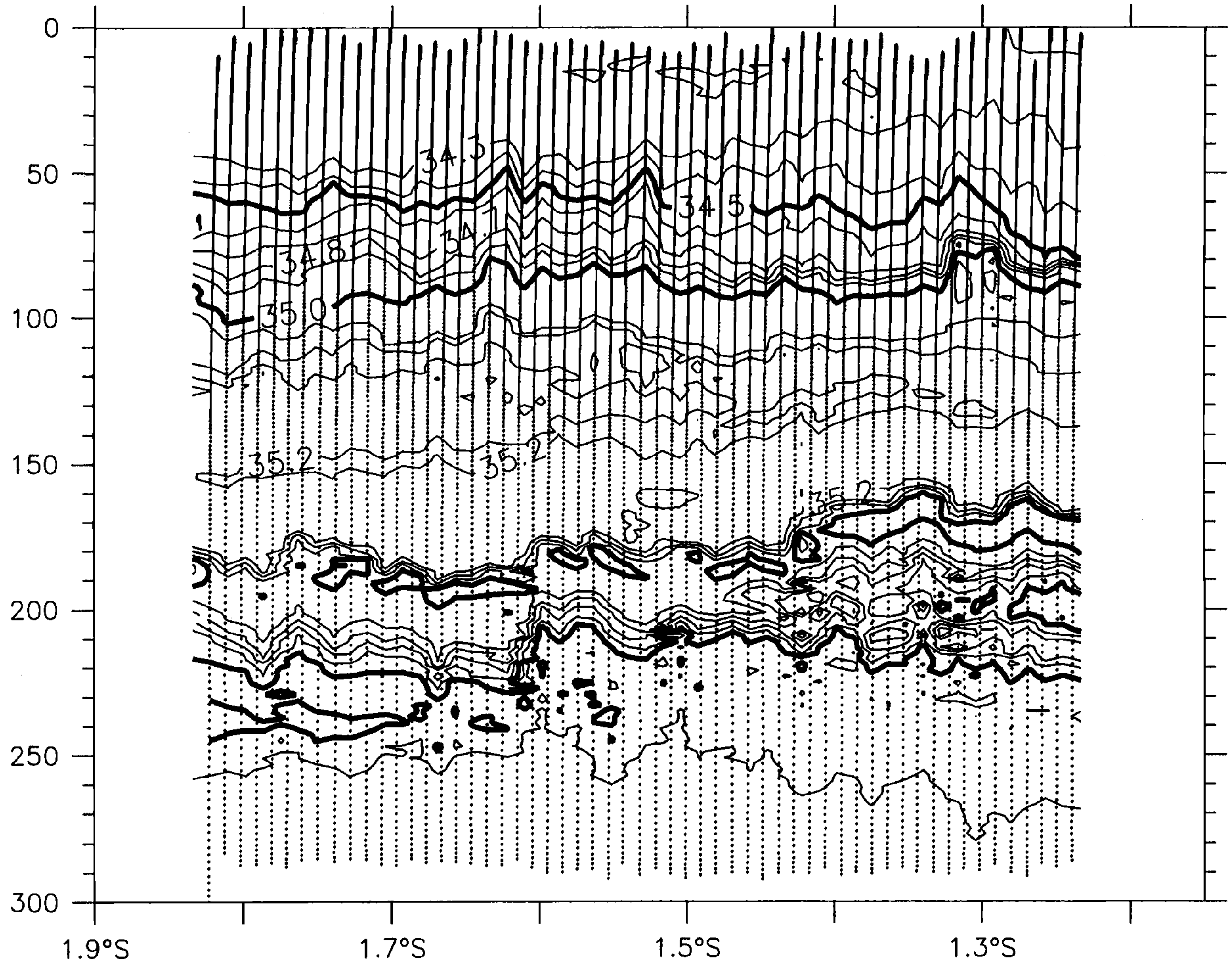
S(psu), E2N, 26 November 1992



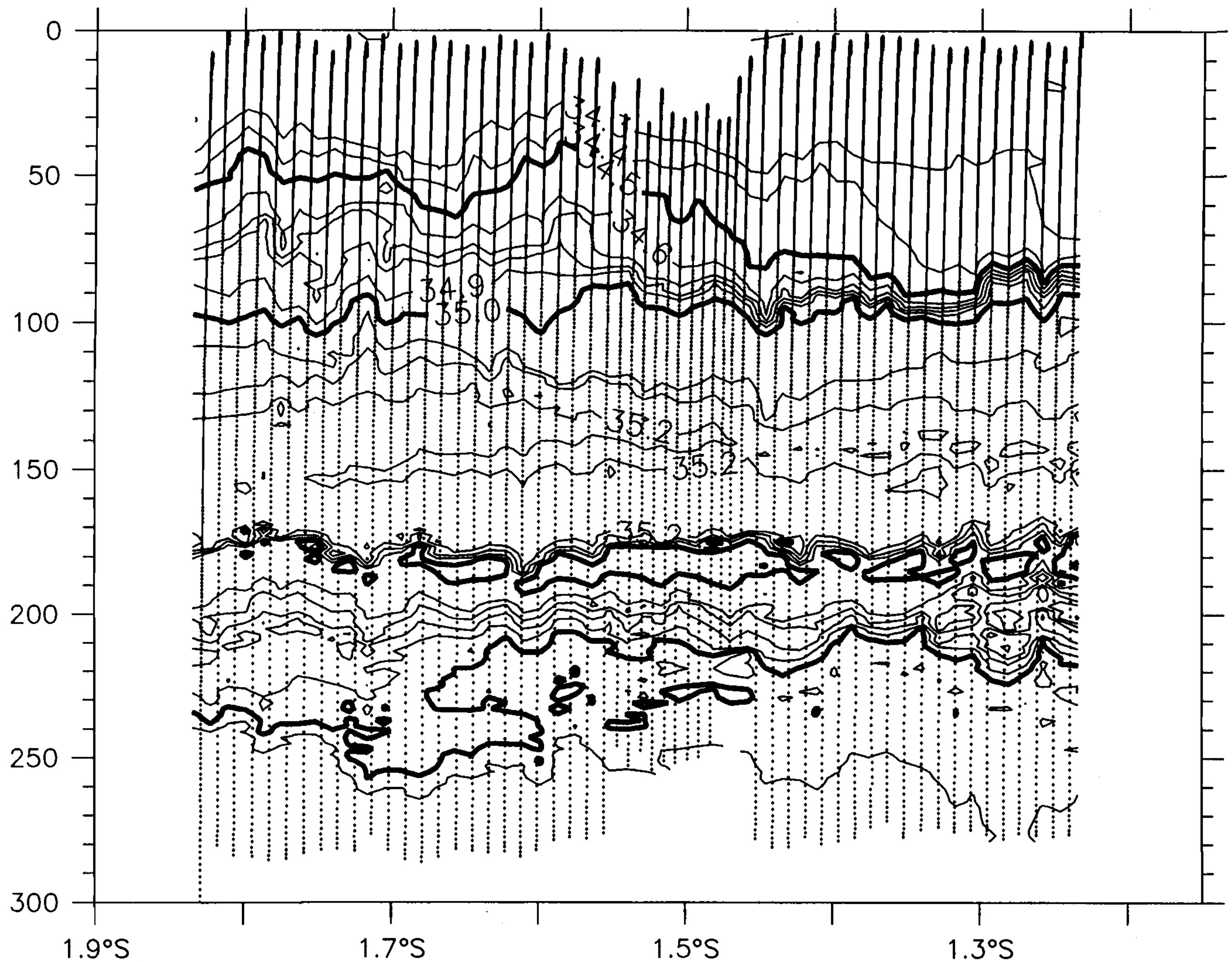
S(psu), E2N, 24 November 1992



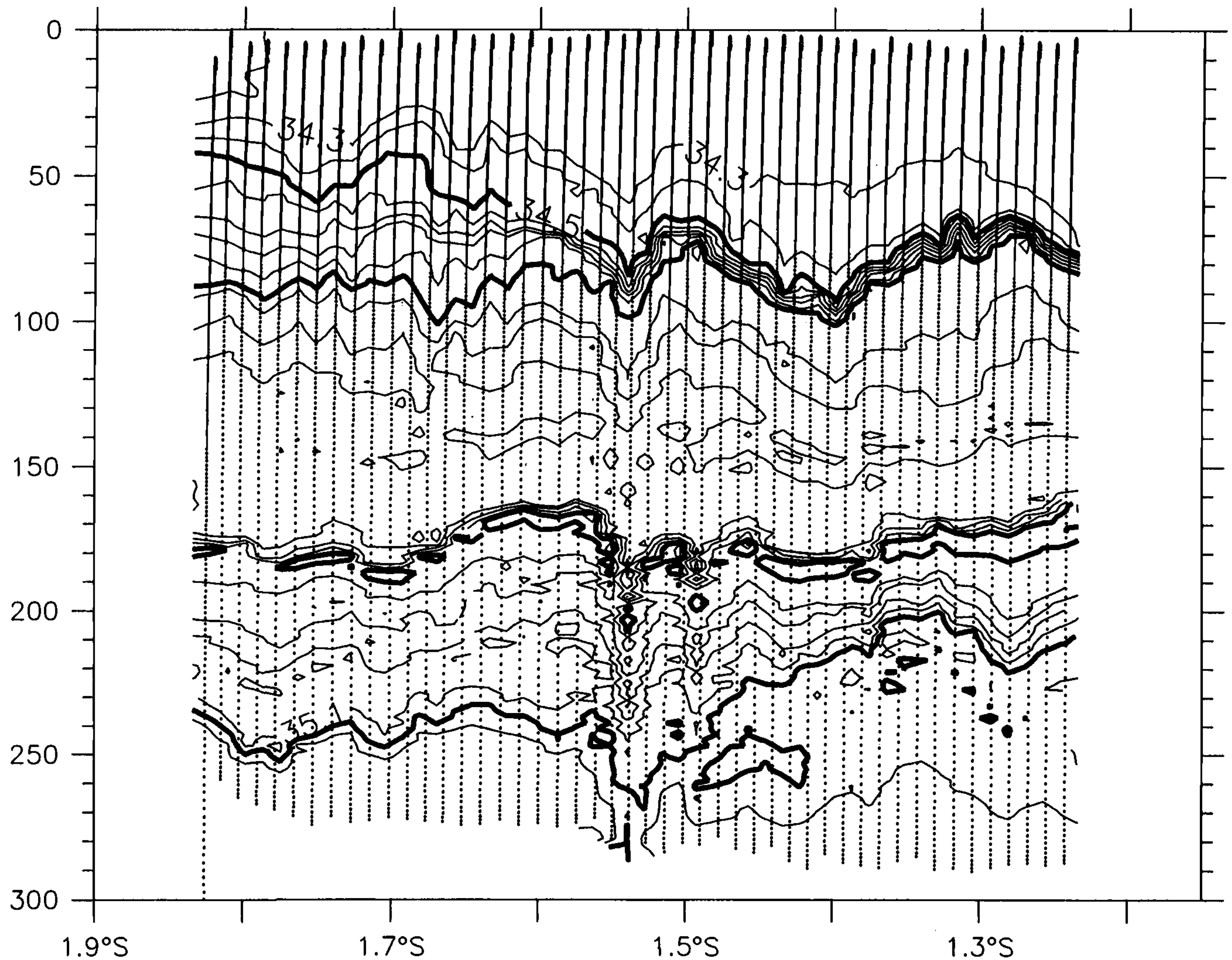
S(psu), E2N, 23 November 1992



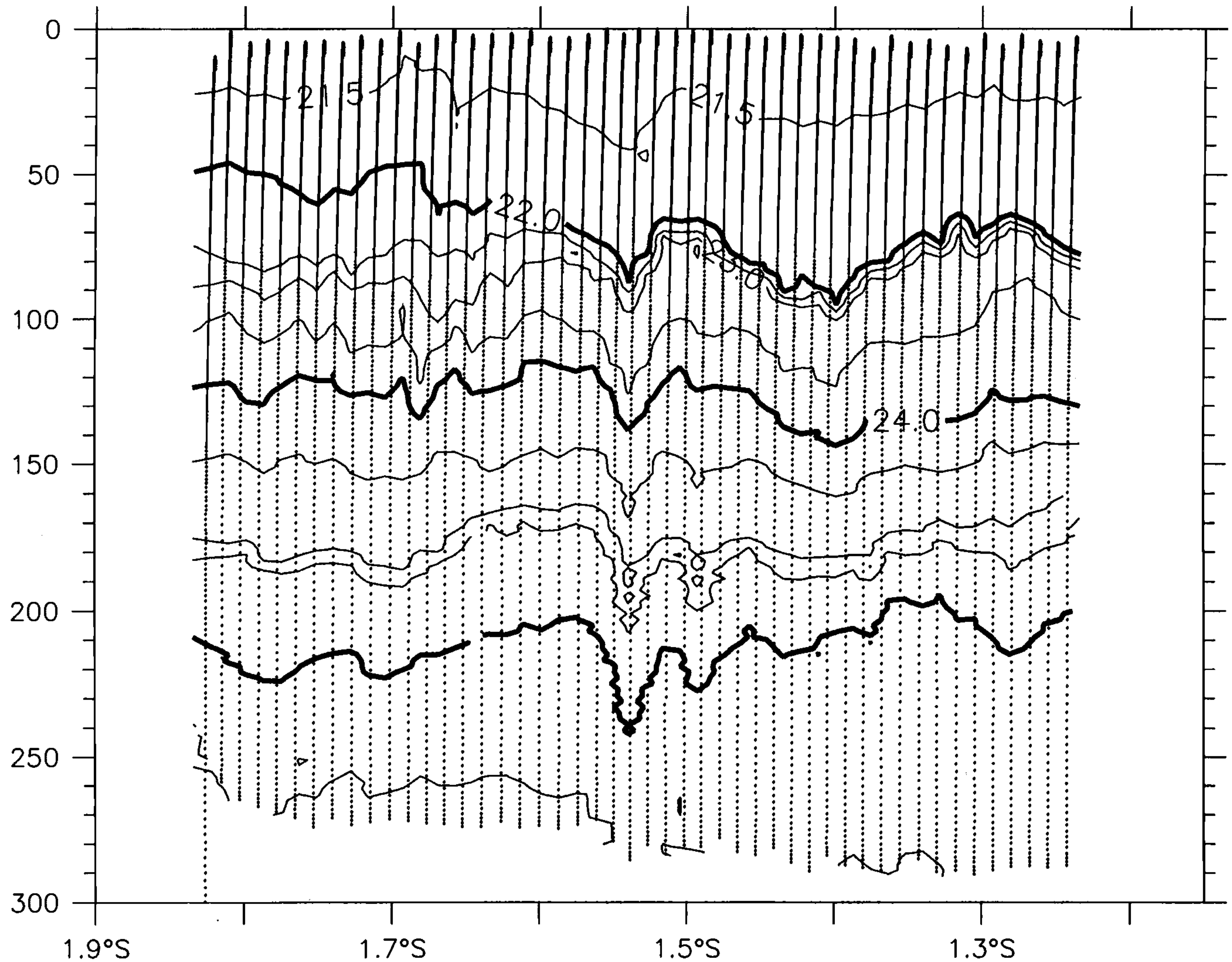
S(psu), E2N, 19 November 1992



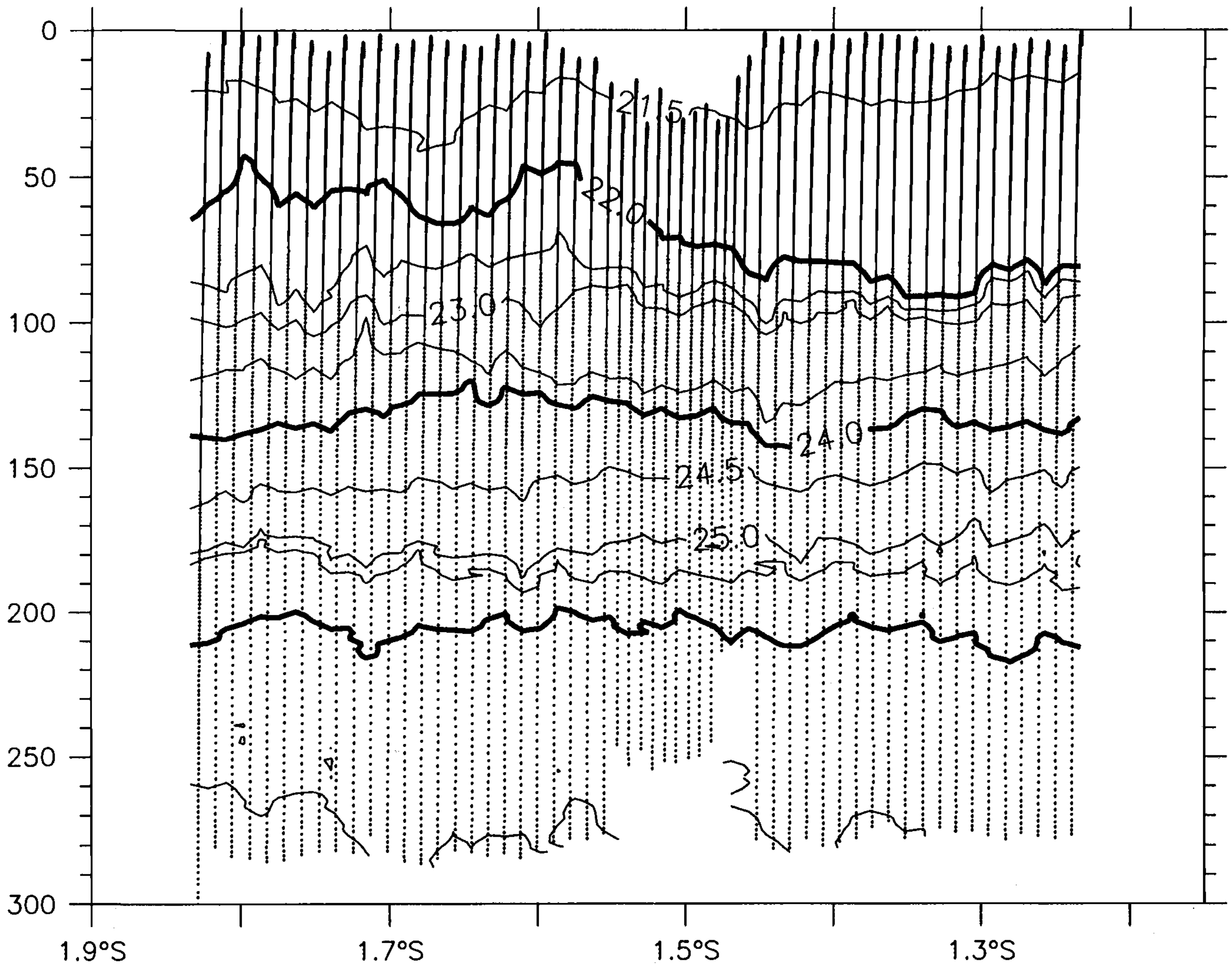
S(psu), E2N, 18 November 1992



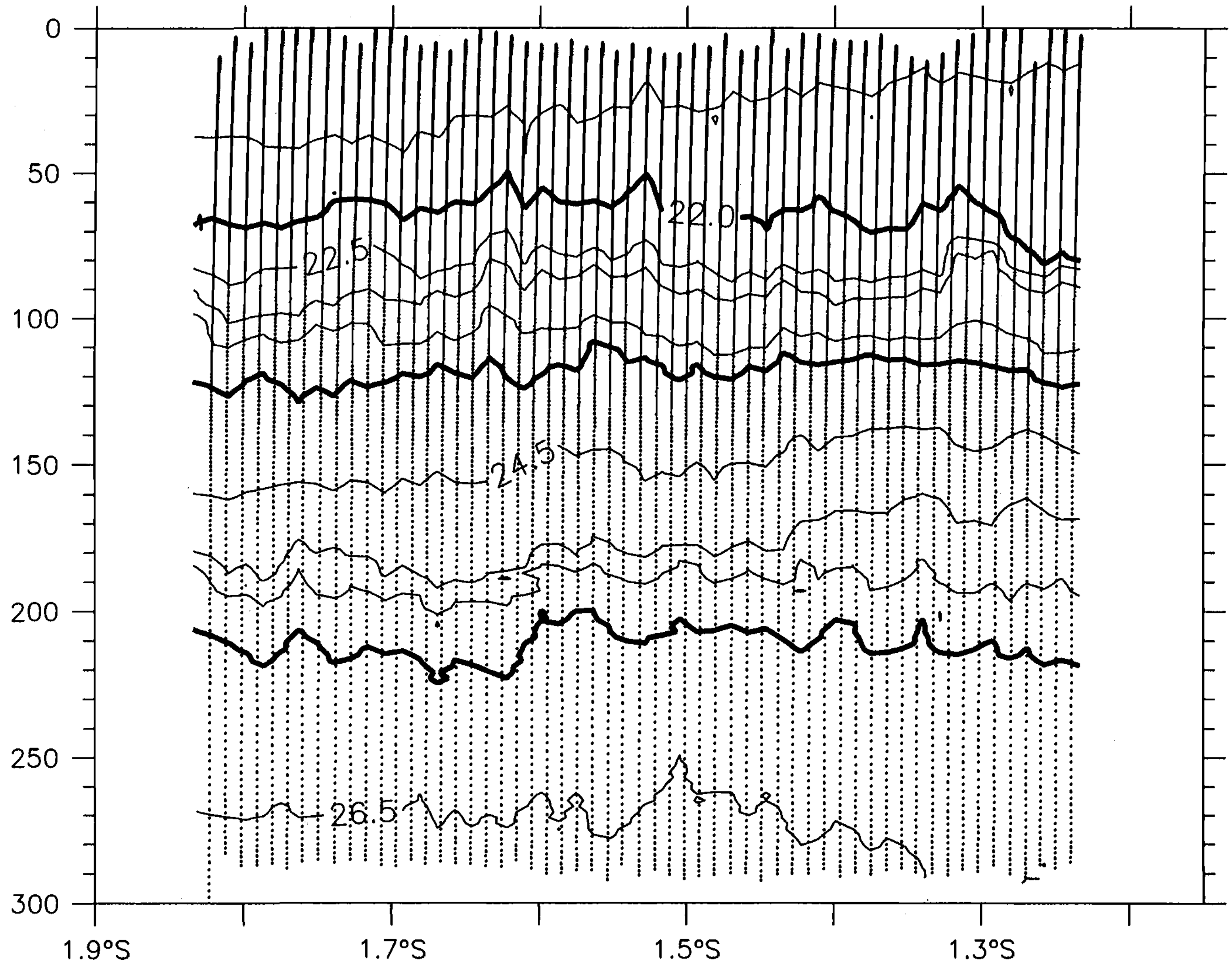
S(psu), E2N, 17 November 1992



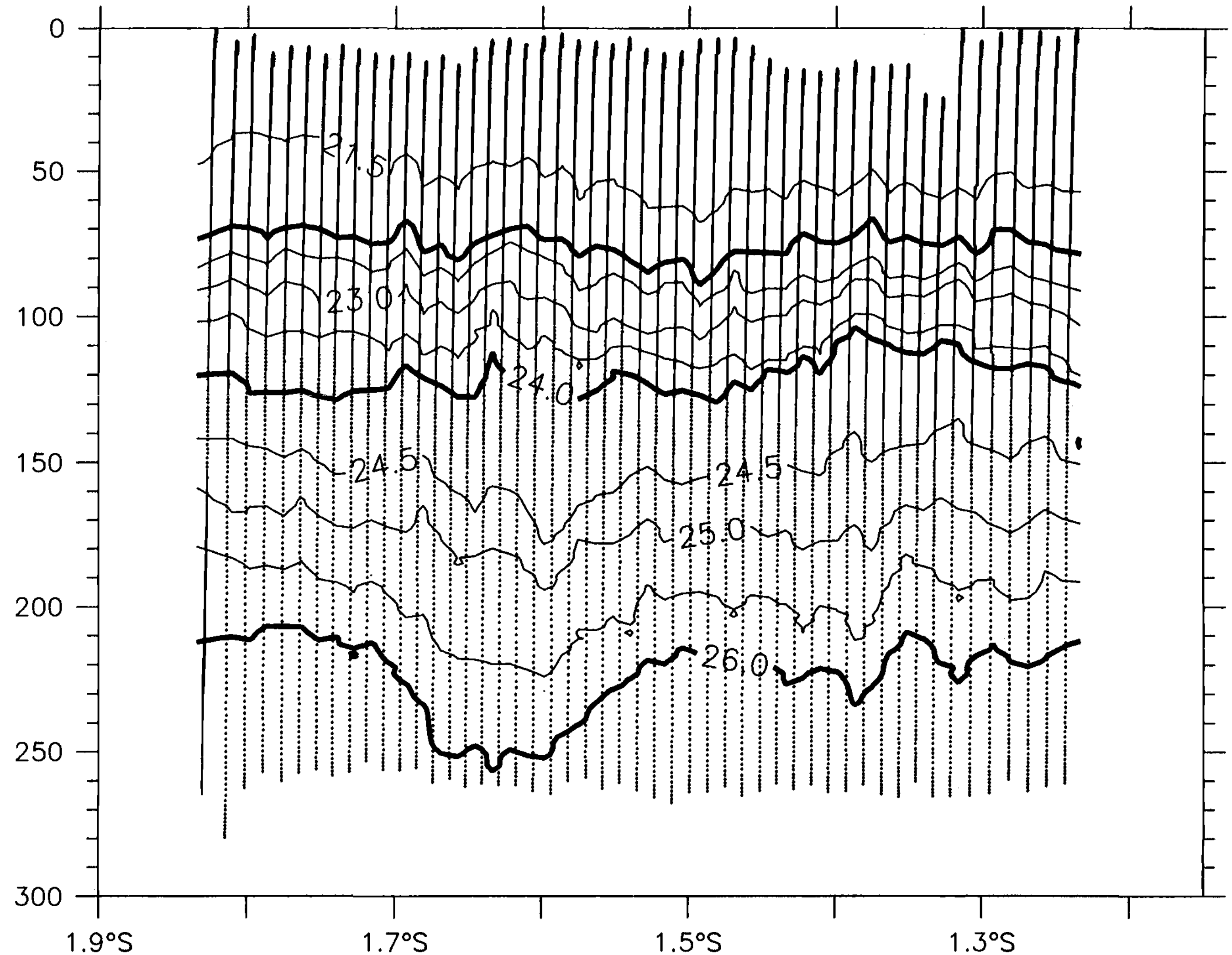
Sigma–t, E2N, 17 November 1992



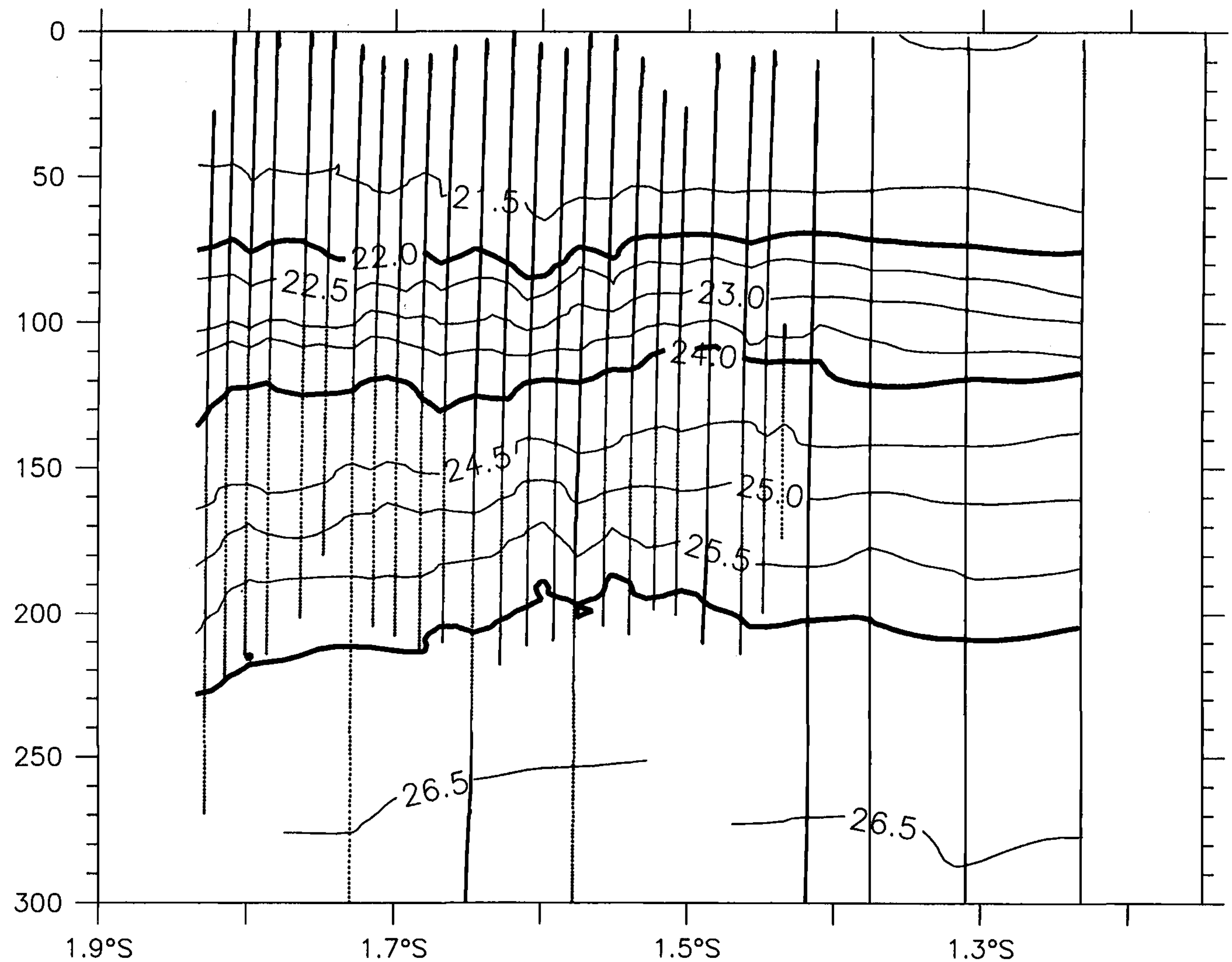
Sigma−t, E2N, 18 November 1992



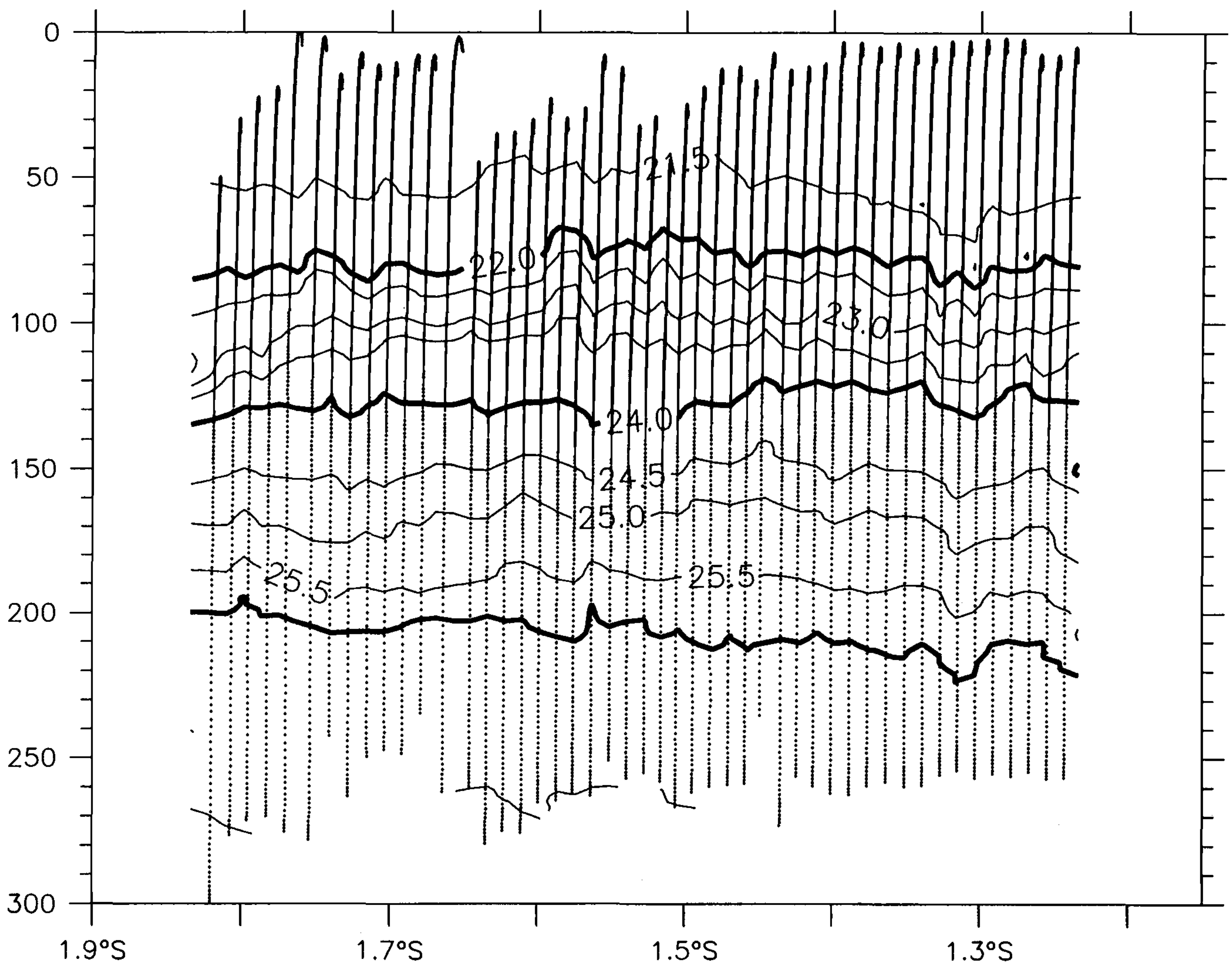
Sigma–t, E2N, 19 November 1992



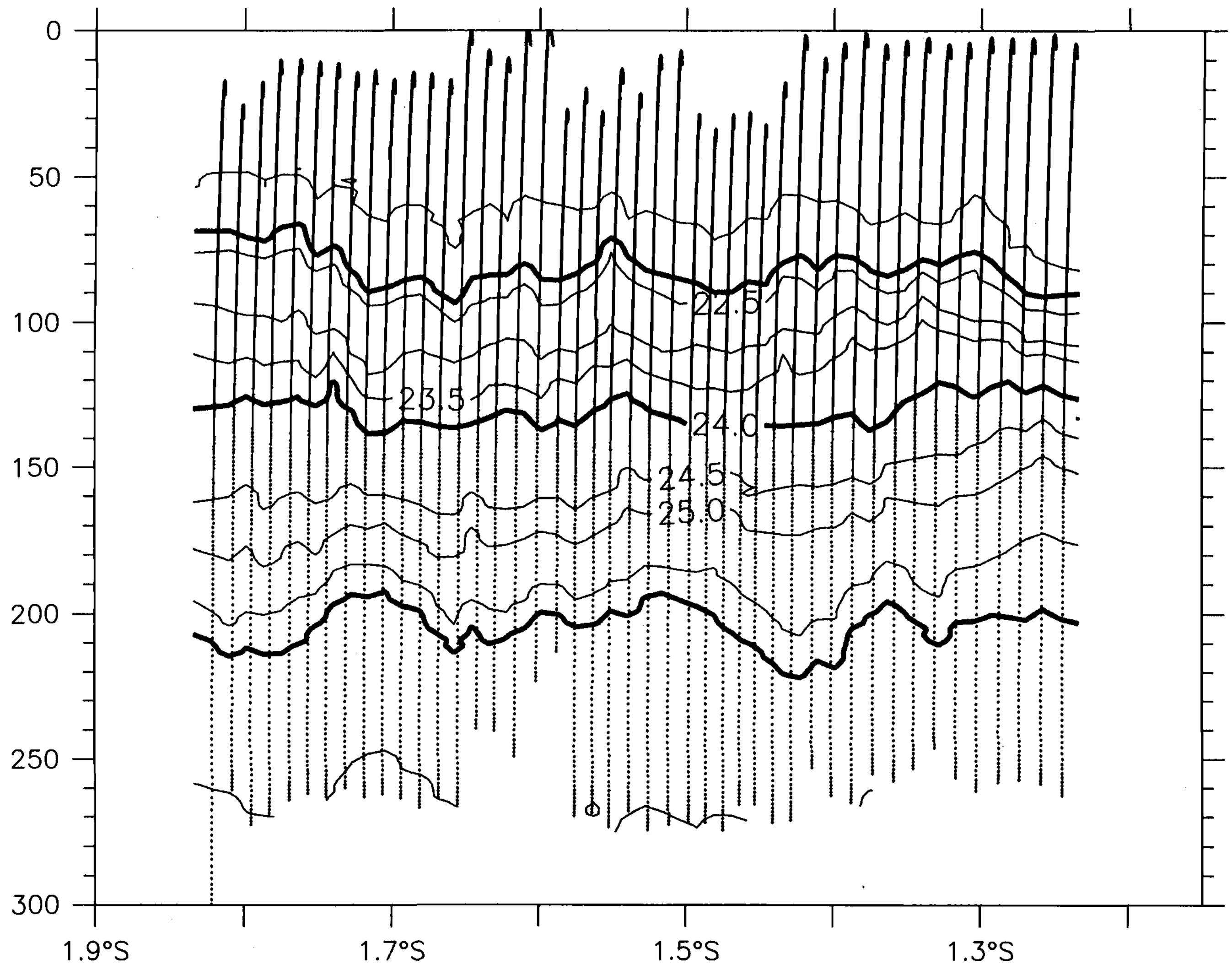
Sigma-t, E2N, 23 November 1992



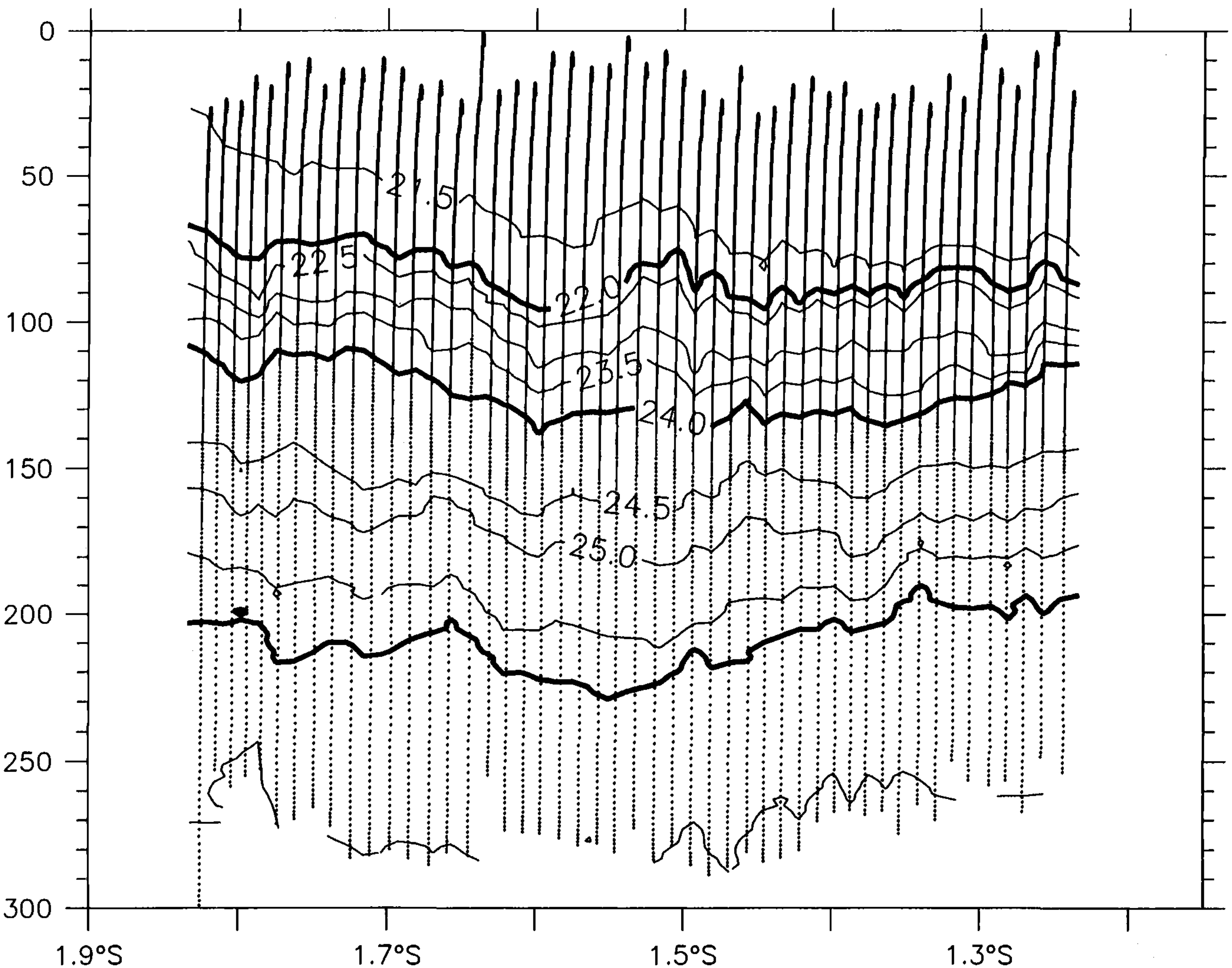
Sigma-t, E2N, 24 November 1992



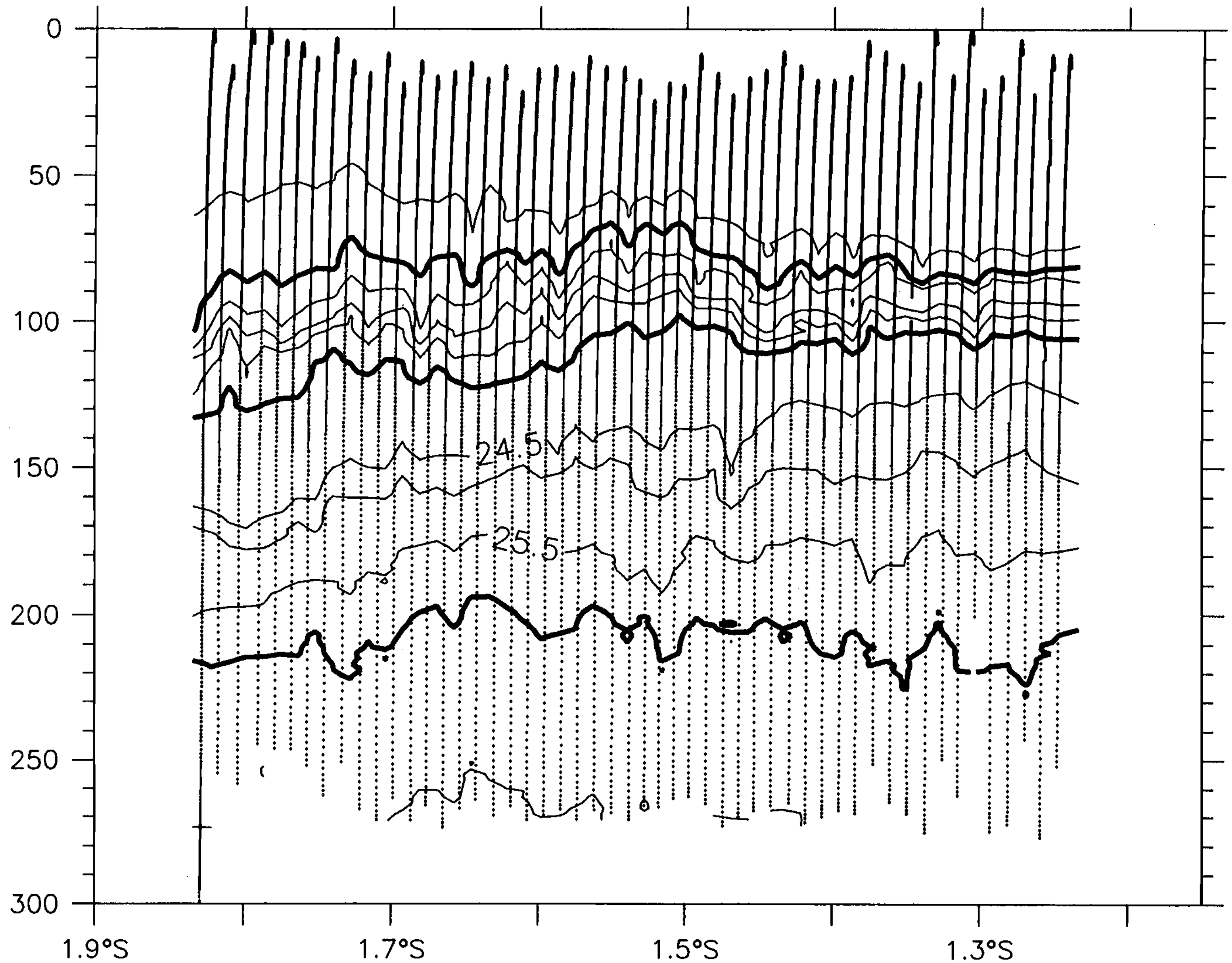
Sigma–t, E2N, 26 November 1992



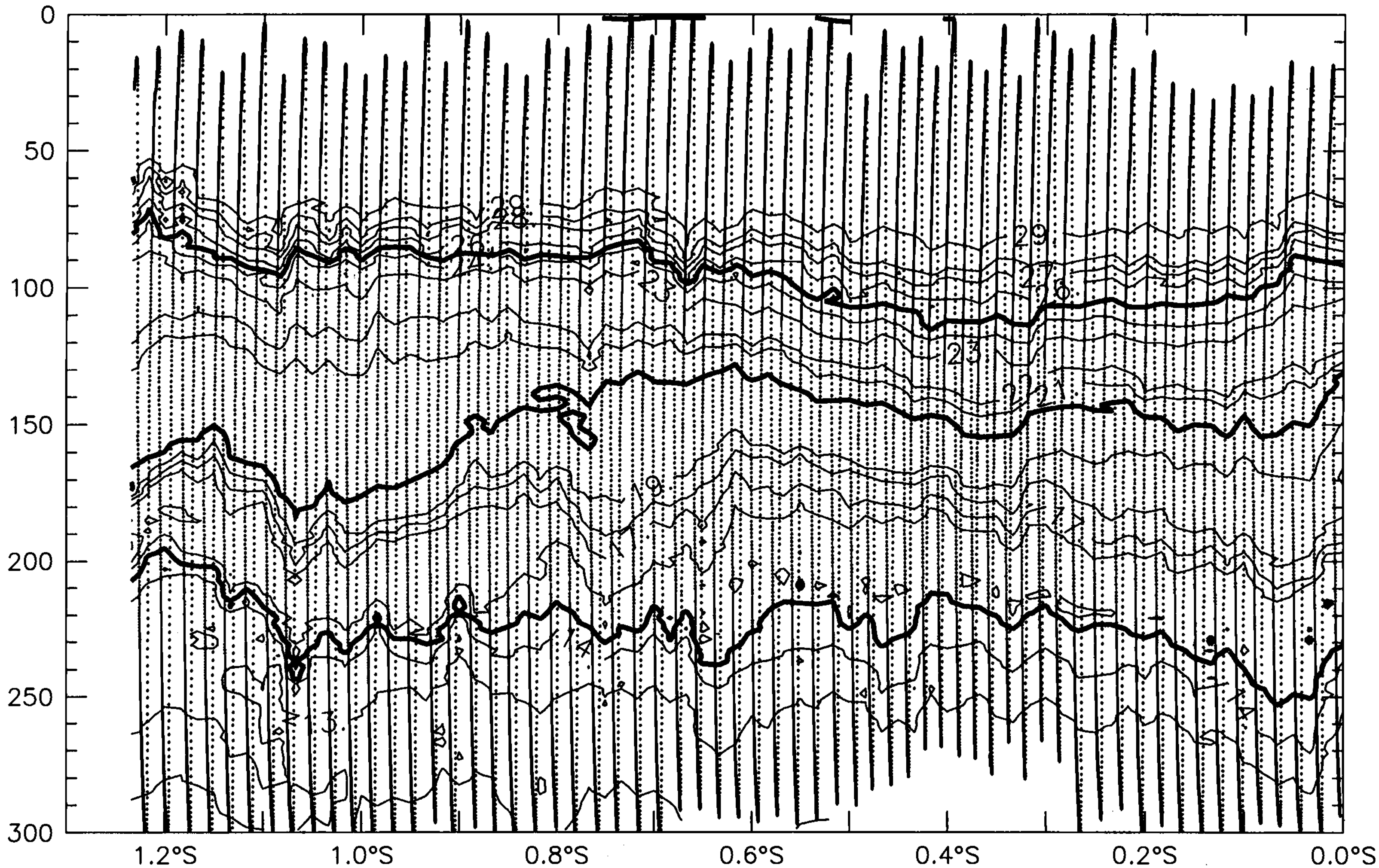
Sigma–t, E2N, 27 November 1992



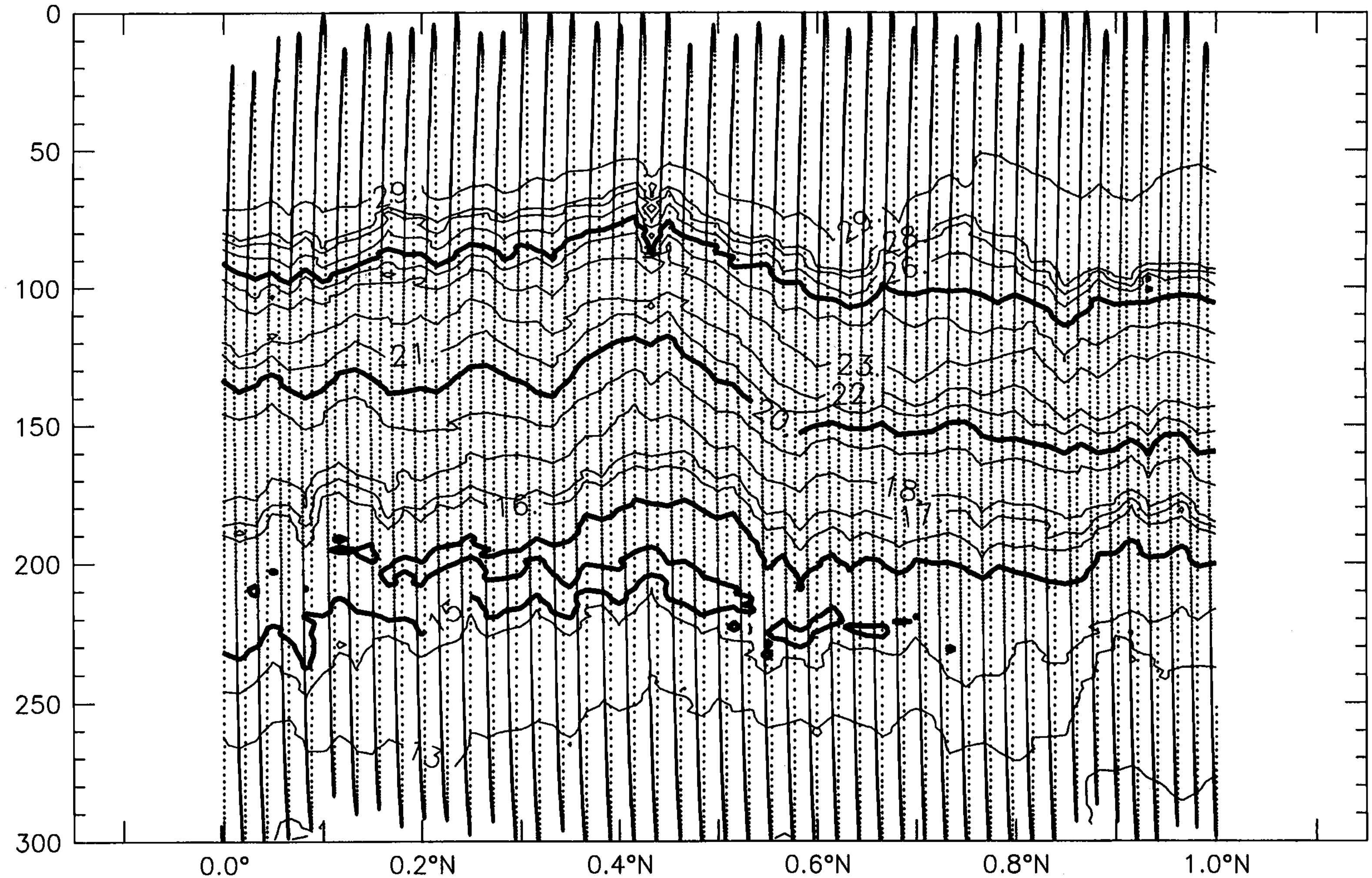
Sigma–t, E2N, 29 November 1992



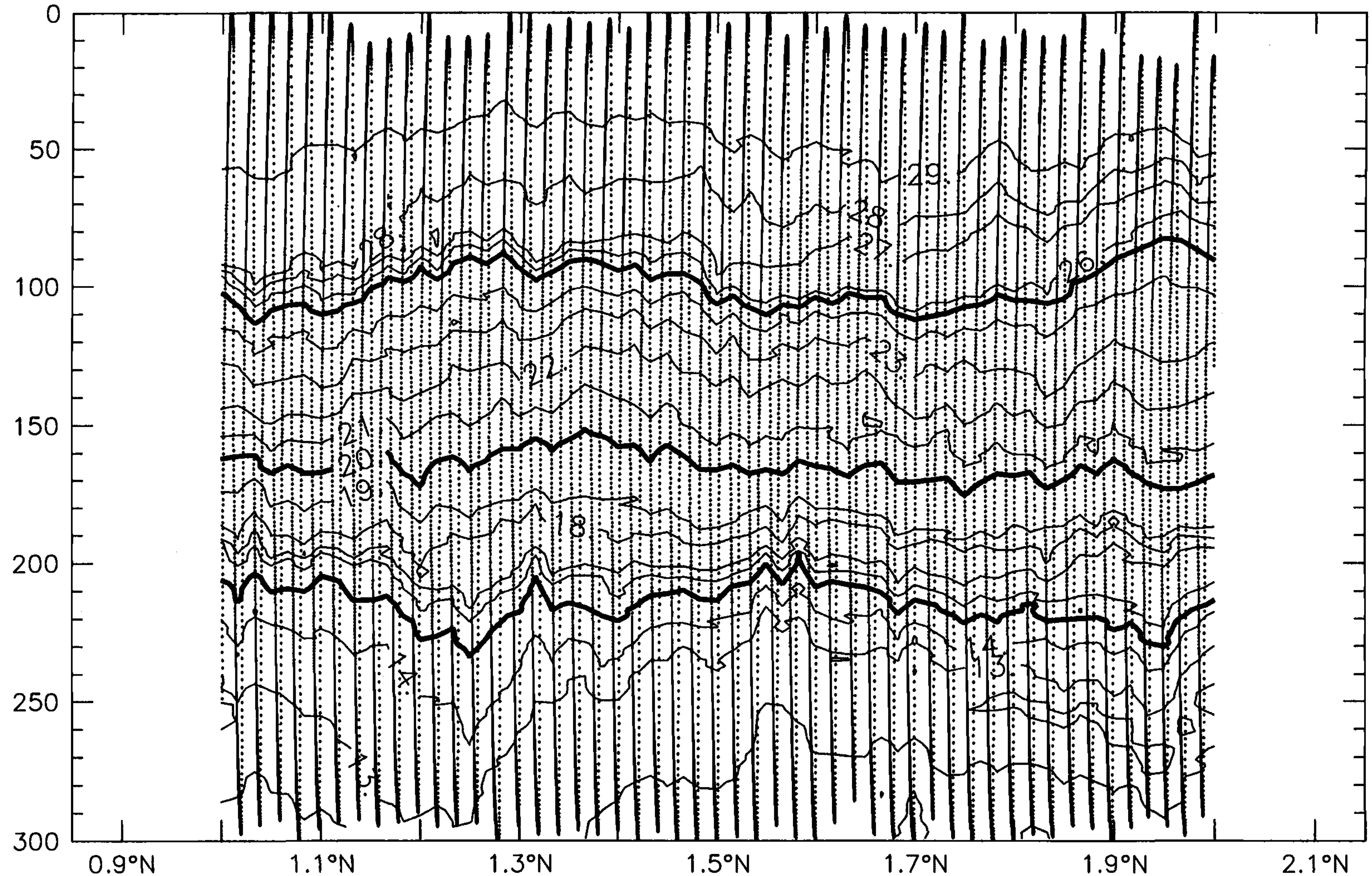
Sigma−t, E2N, 30 November 1992



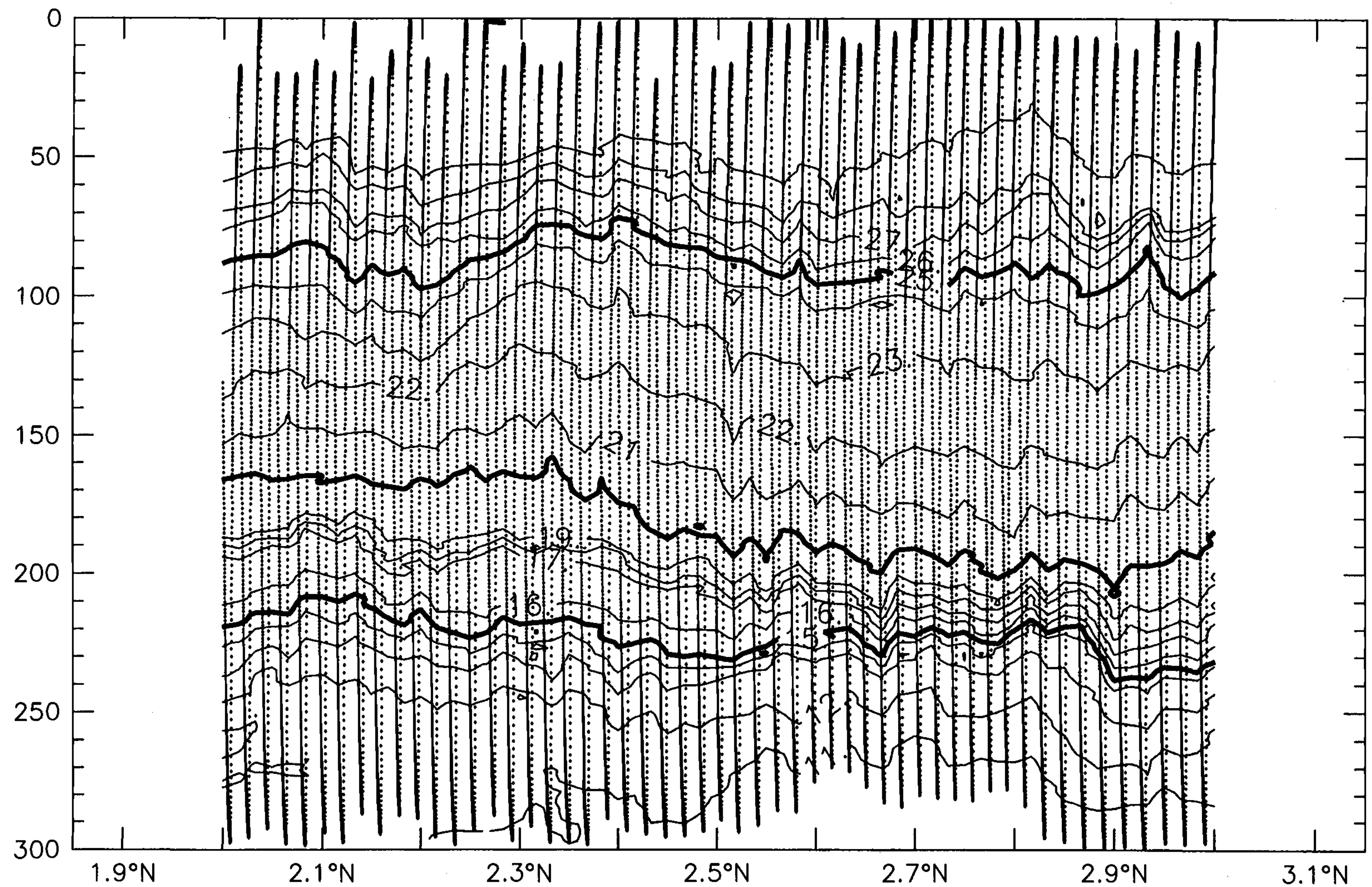
T(°C), SBN to Equator, 2 December 1992



T(°C), Equator to 1 N, 2 December 1992

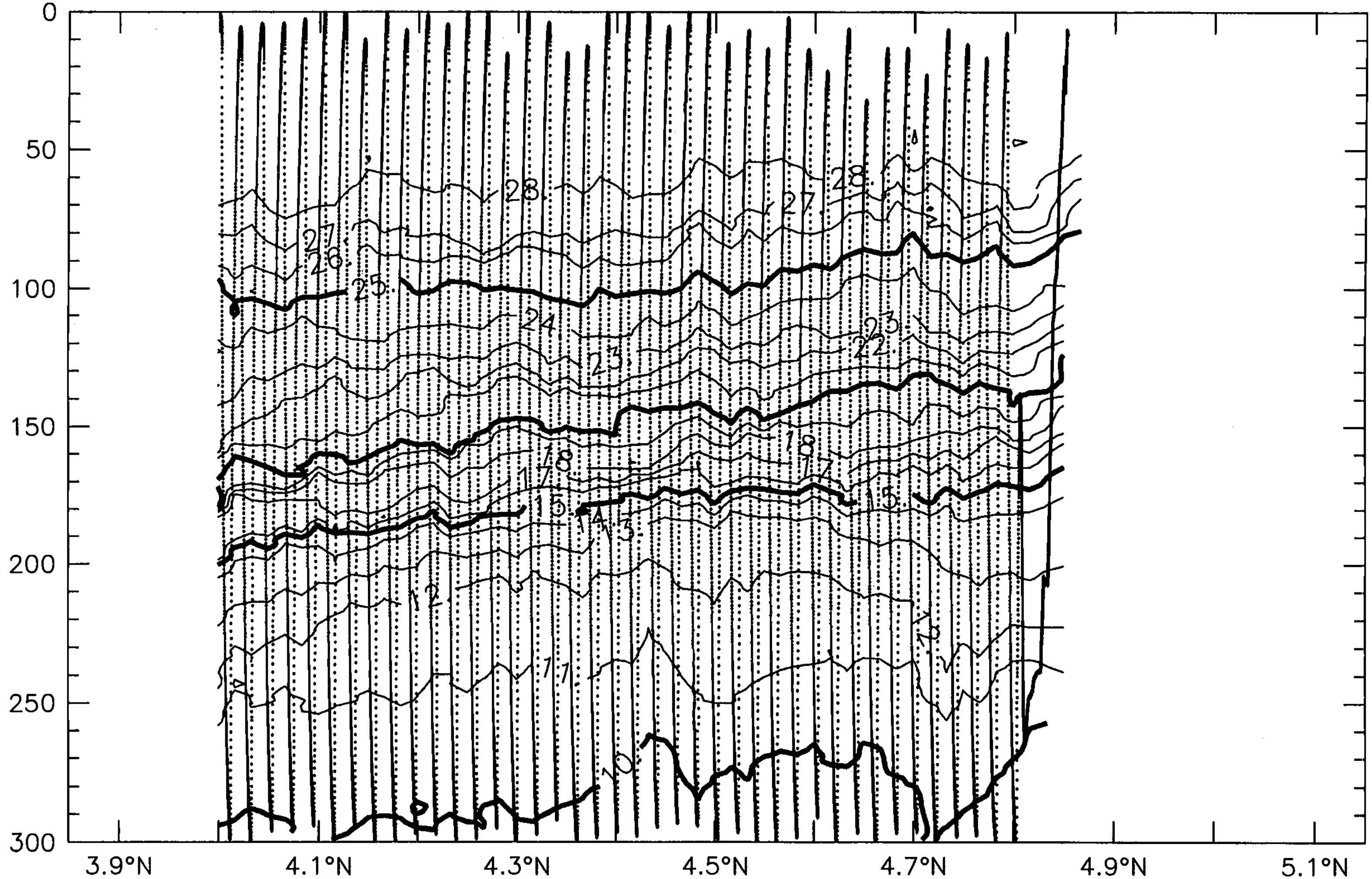


T(°C), 1 N to 2 N, 2 December 1992

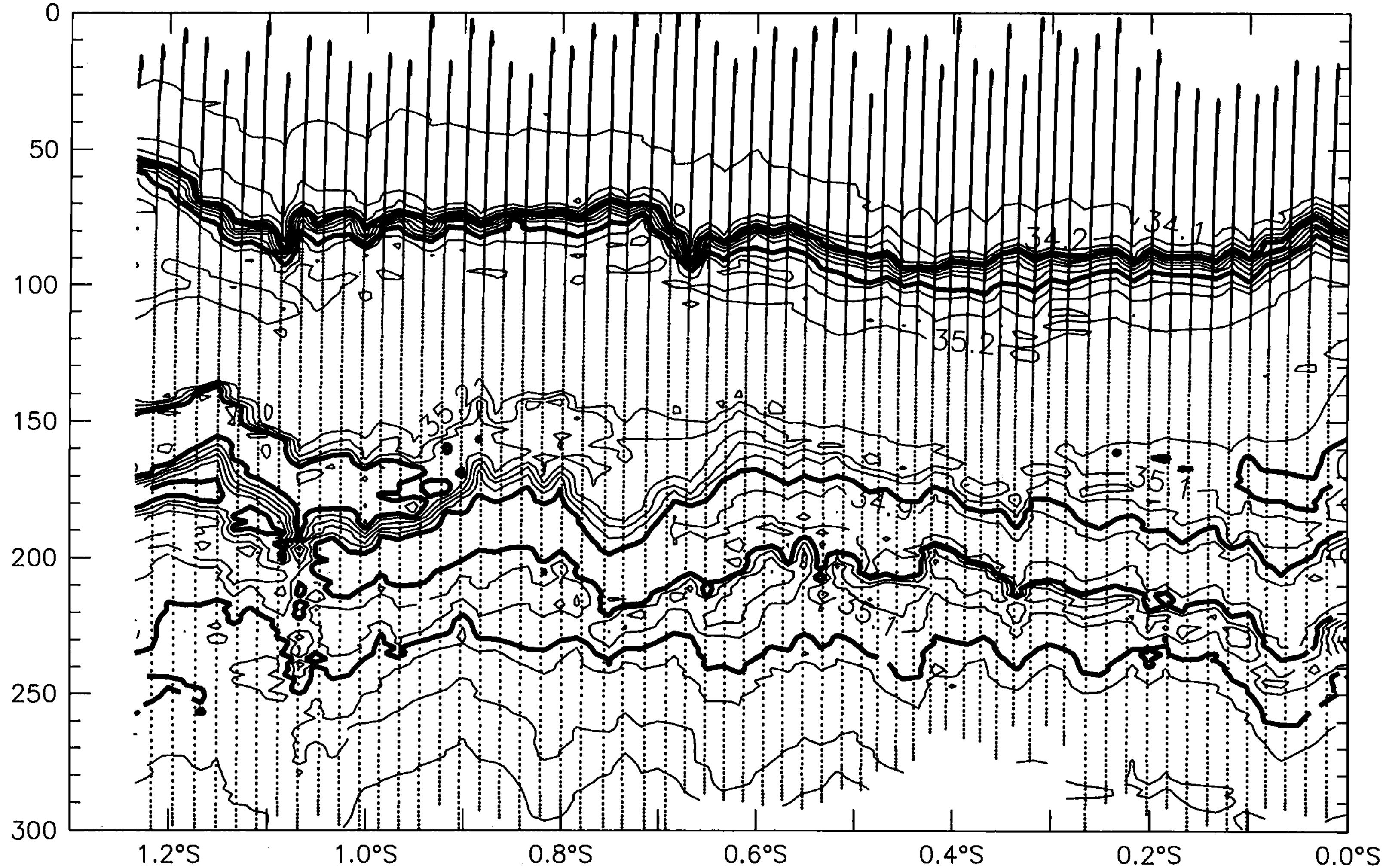


T(°C), 2 N to 3 N, 3 December 1992

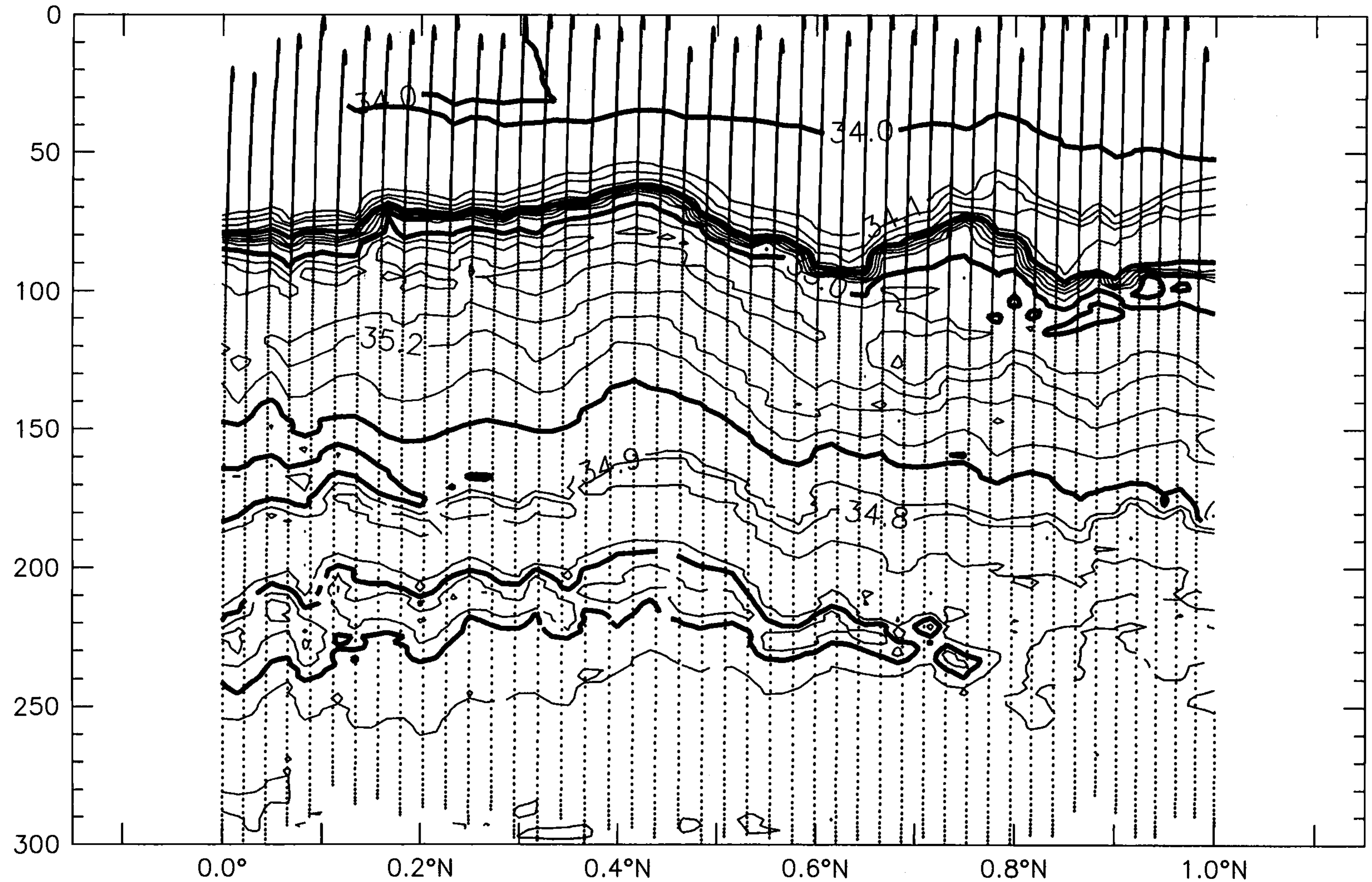
T(°C), 3 N to 4 N, 3 December 1992



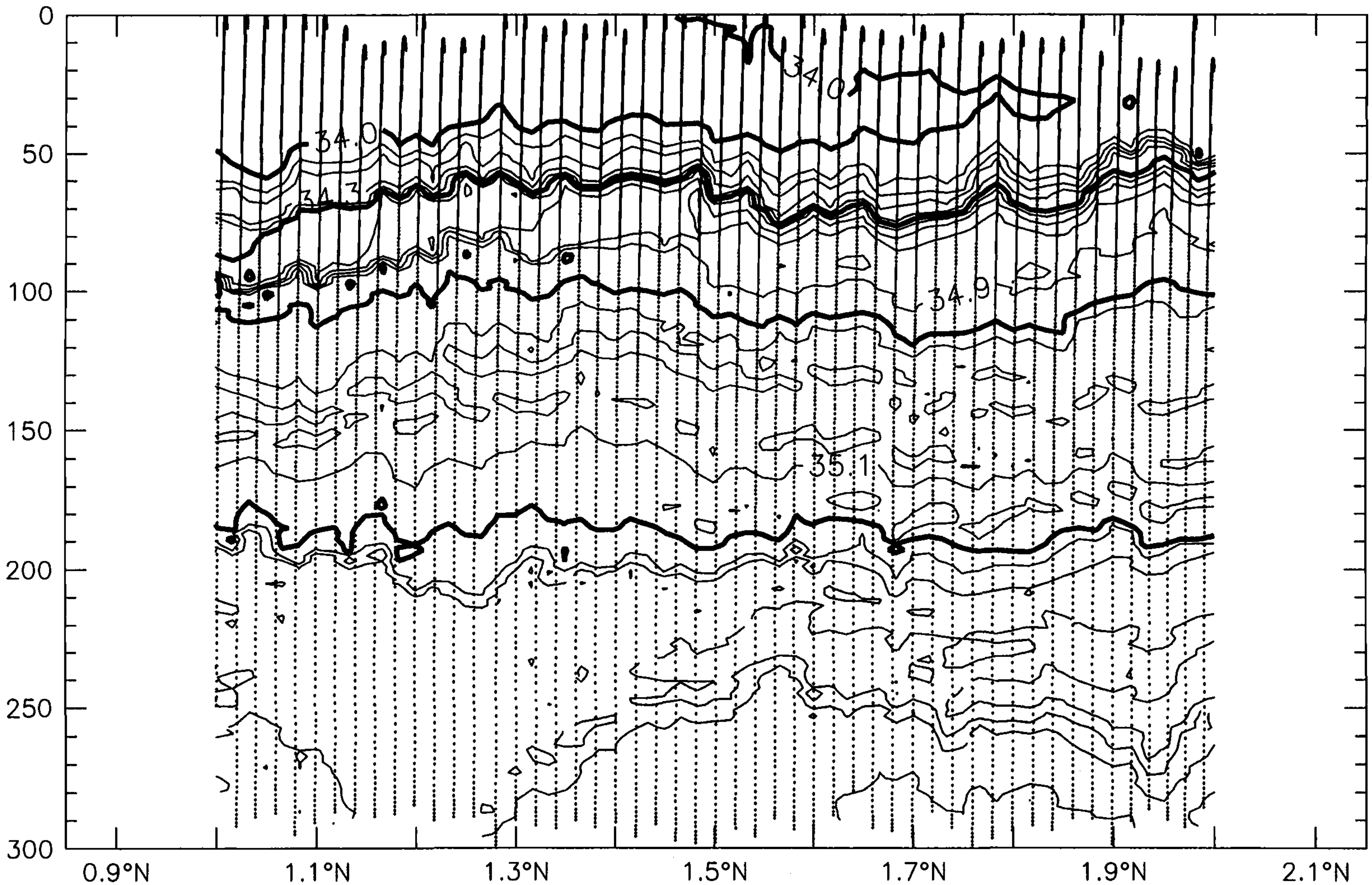
T(°C), 4 N to 5 N, 3 December 1992



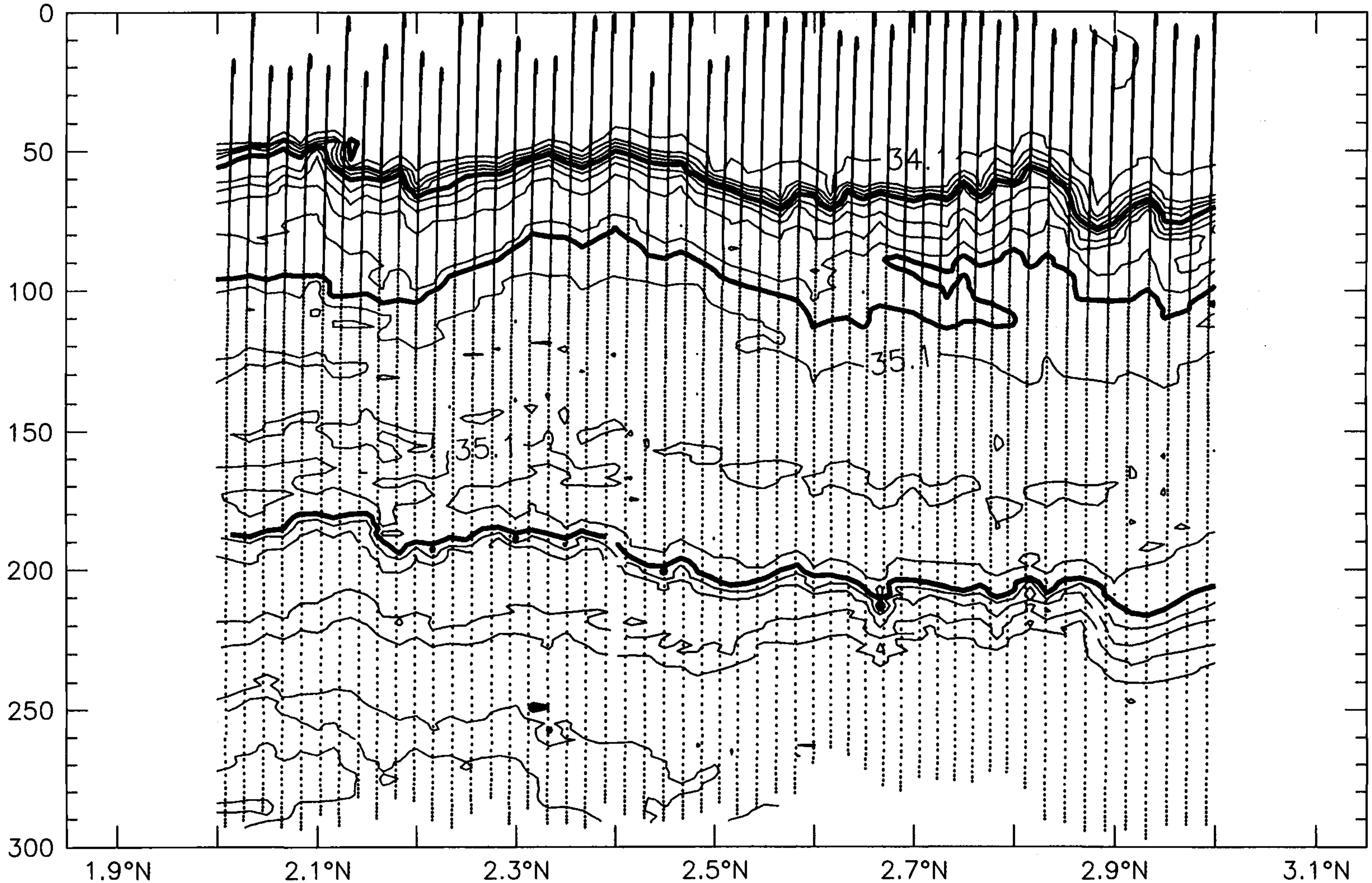
S(psu), SBN to Equator, 2 December 1992



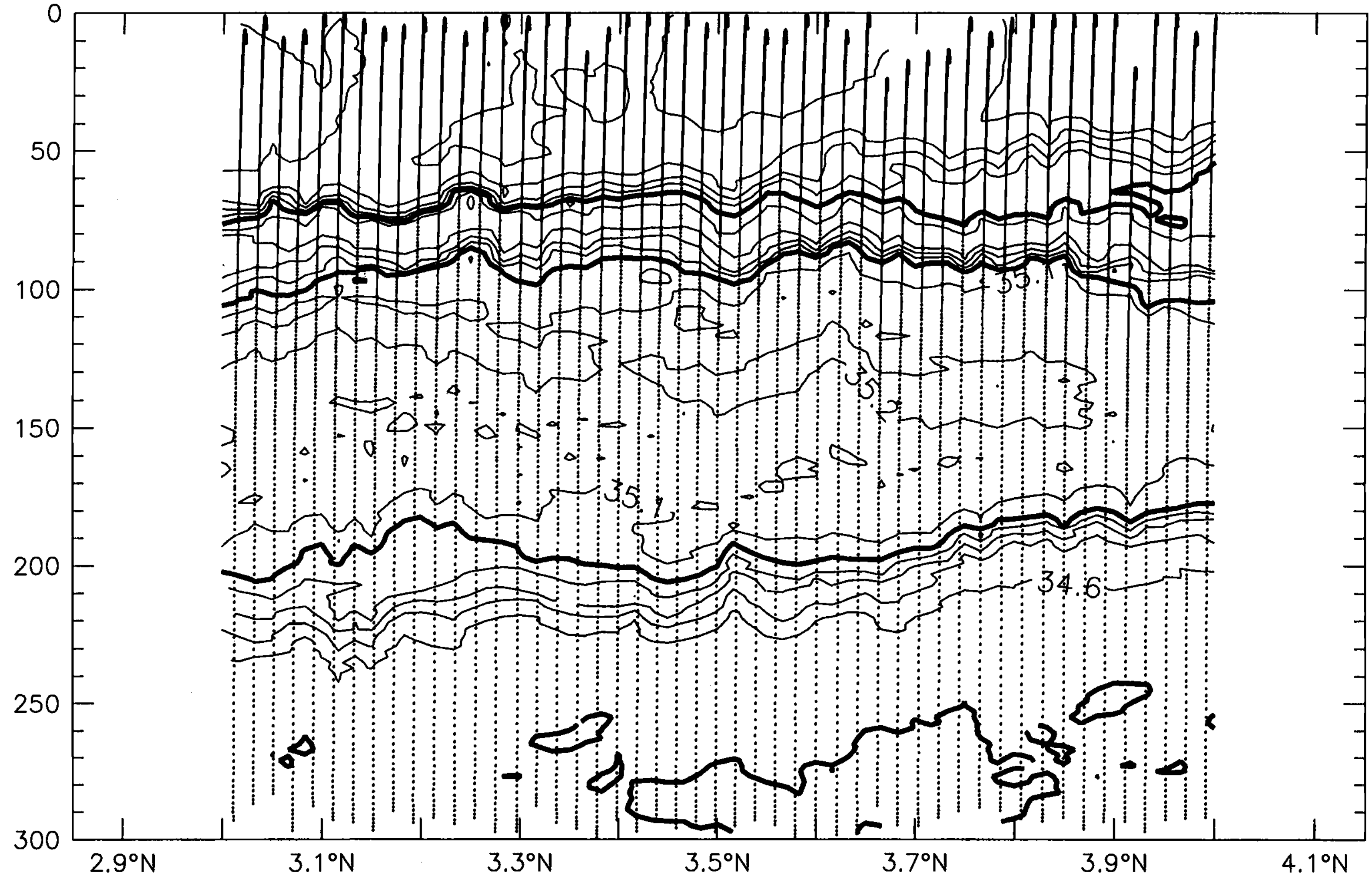
S(psu), Equator to 1 N, 2 December 1992



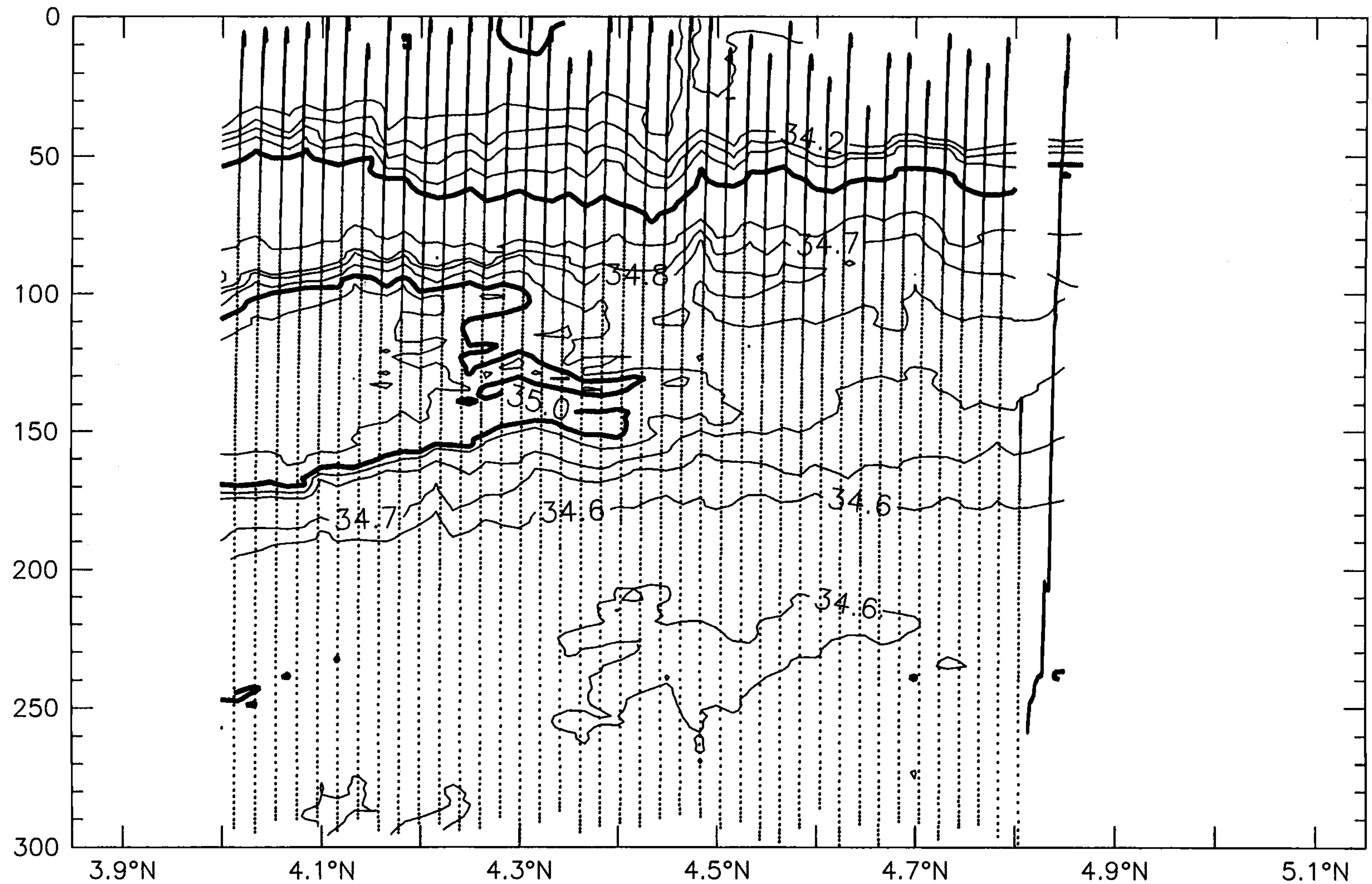
S(psu), 1 N to 2 N, 2 December 1992



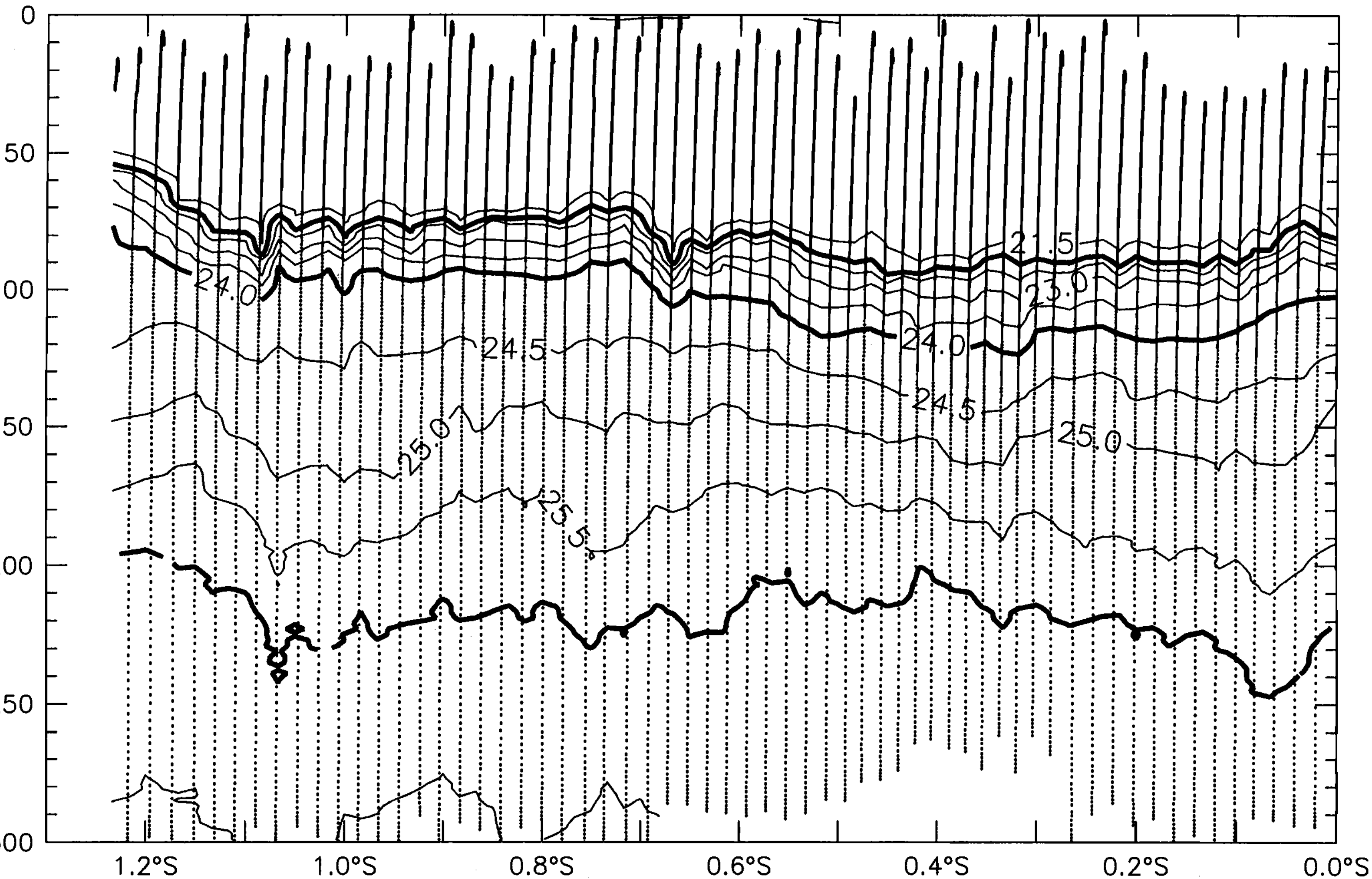
S(psu), 2 N to 3 N, 3 December 1992



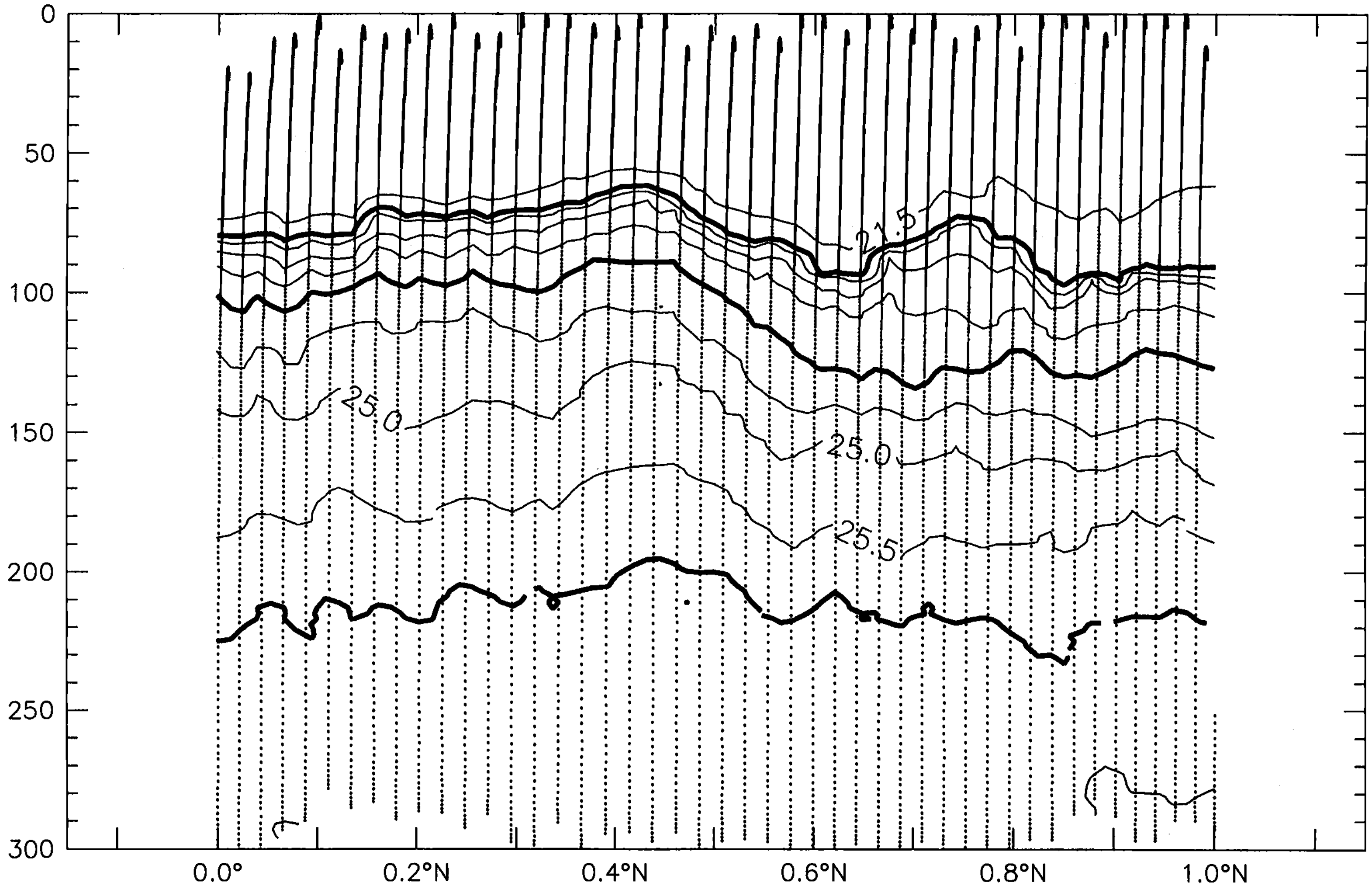
S(psu), 3 N to 4 N, 3 December 1992



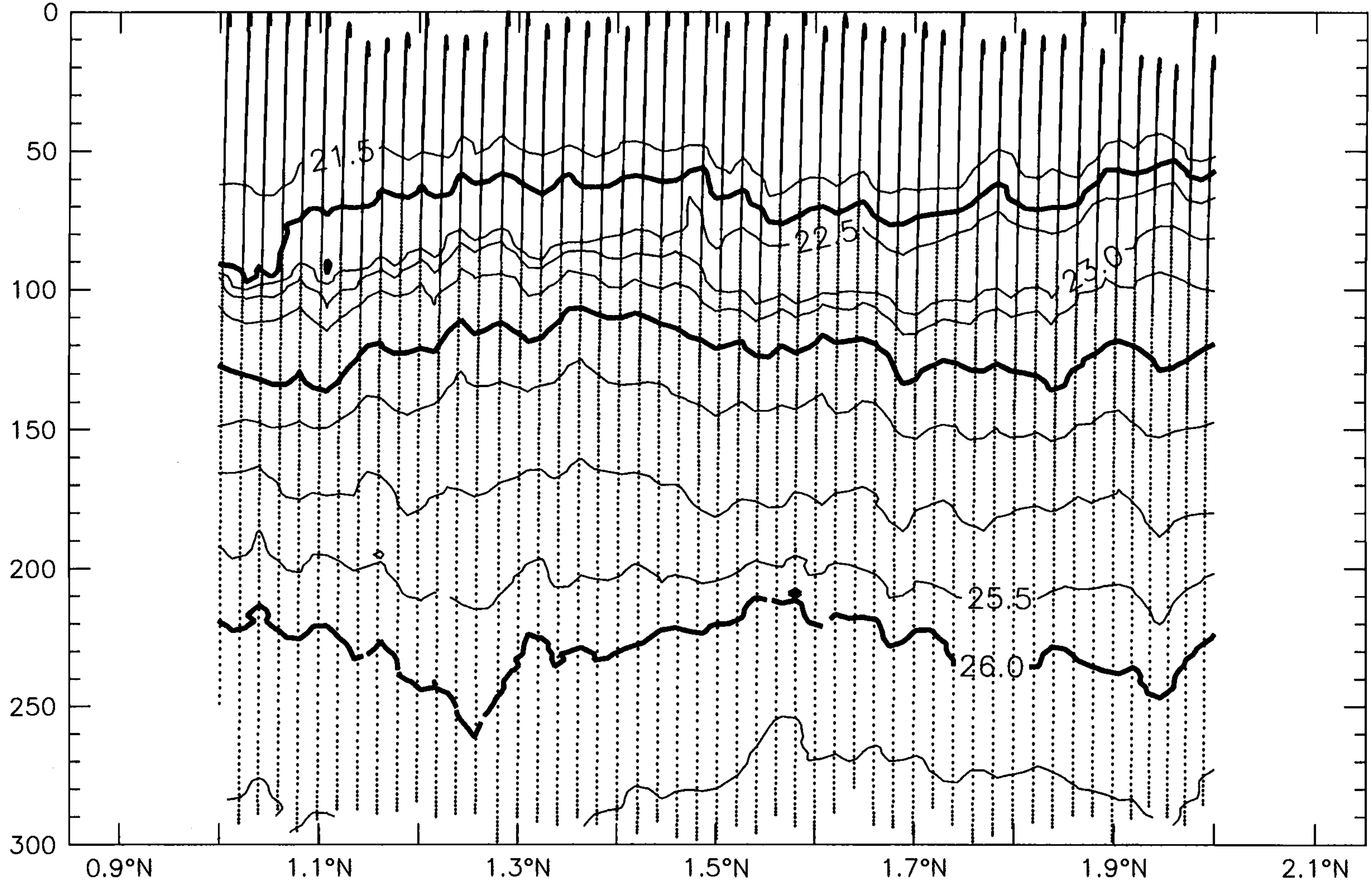
S(psu), 4 N to 5 N, 3 December 1992



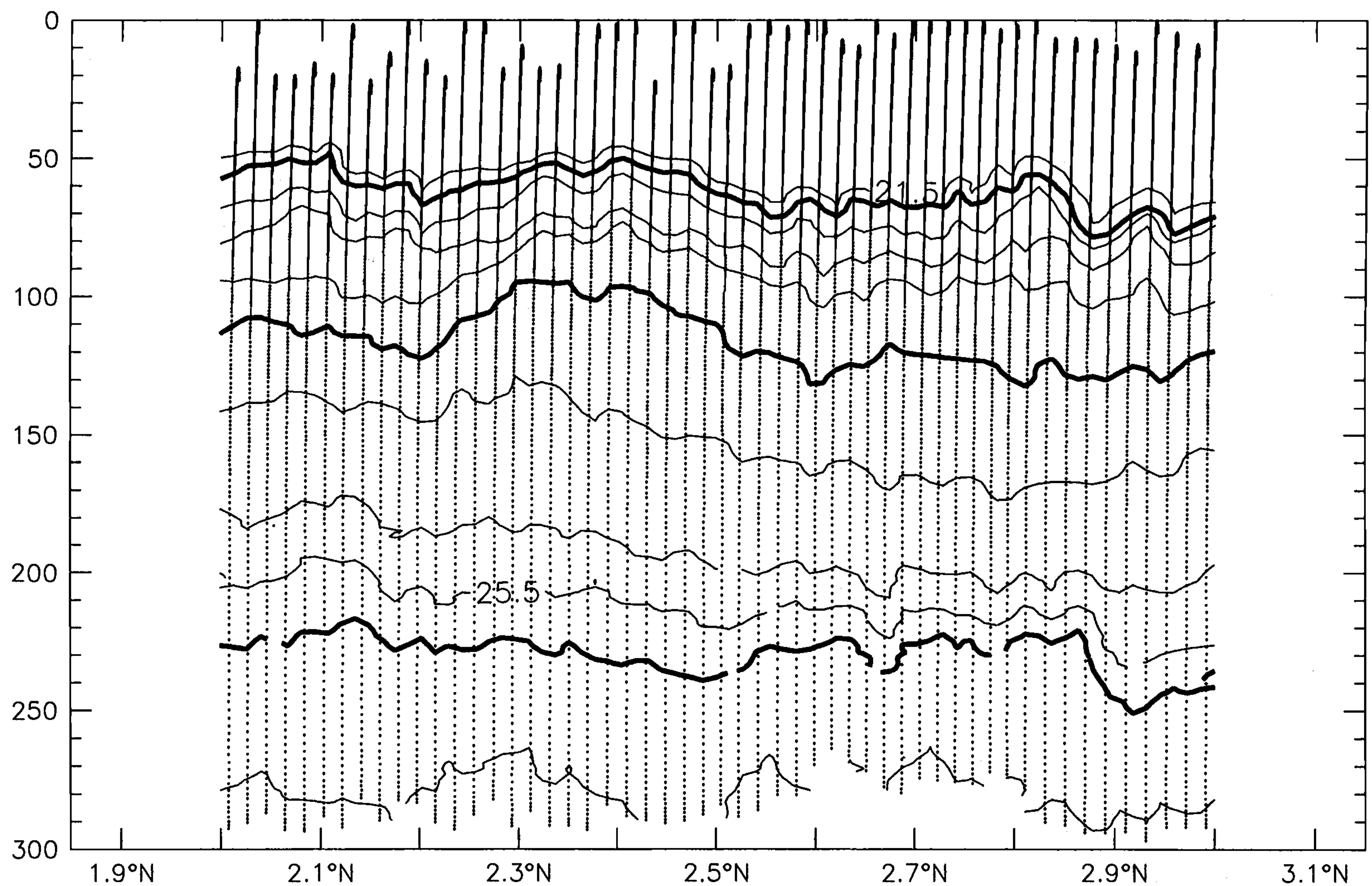
Sigma–t, SBN to Equator, 2 December 1992



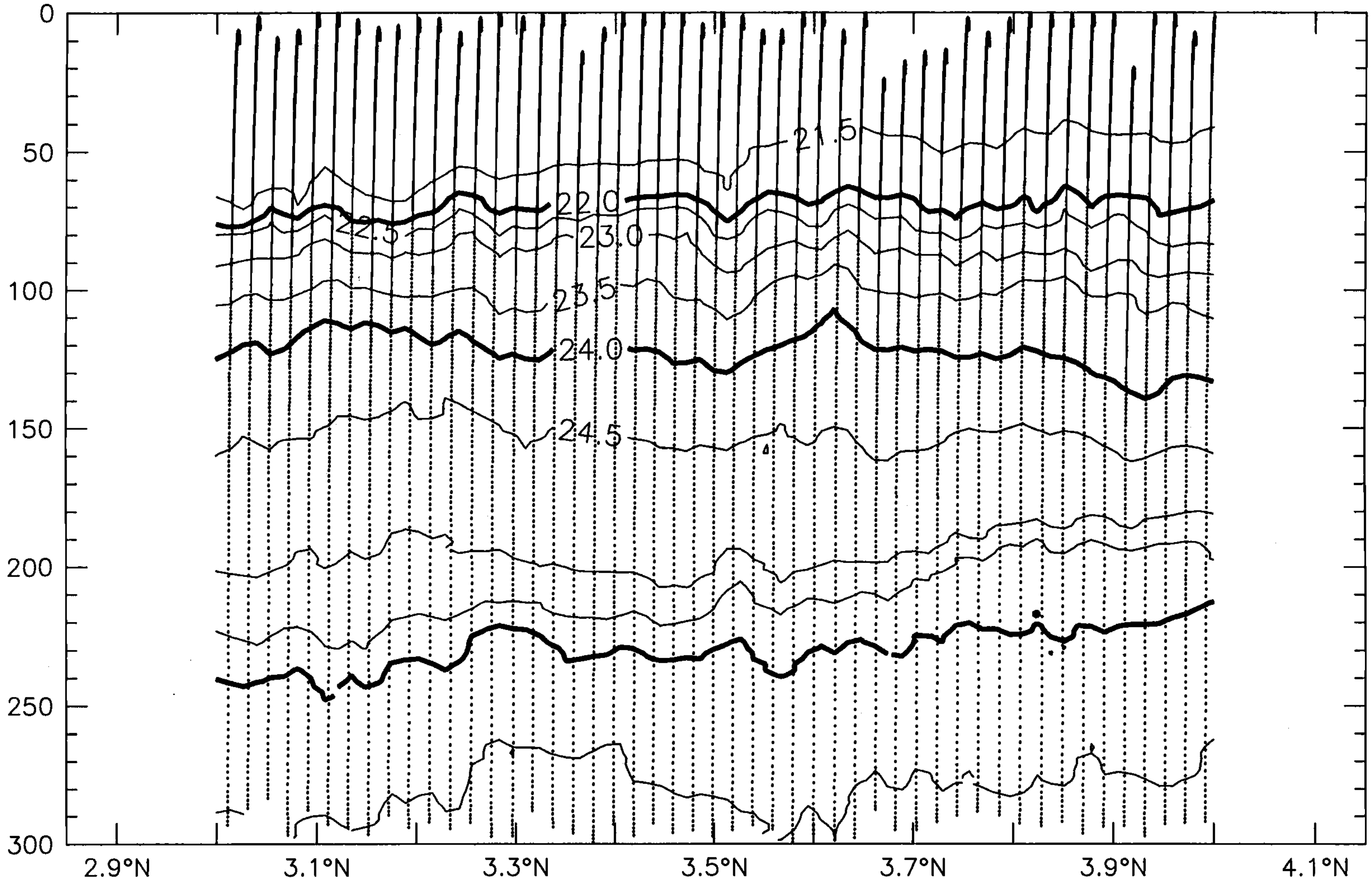
Sigma–t, Equator to 1 N, 2 December 1992



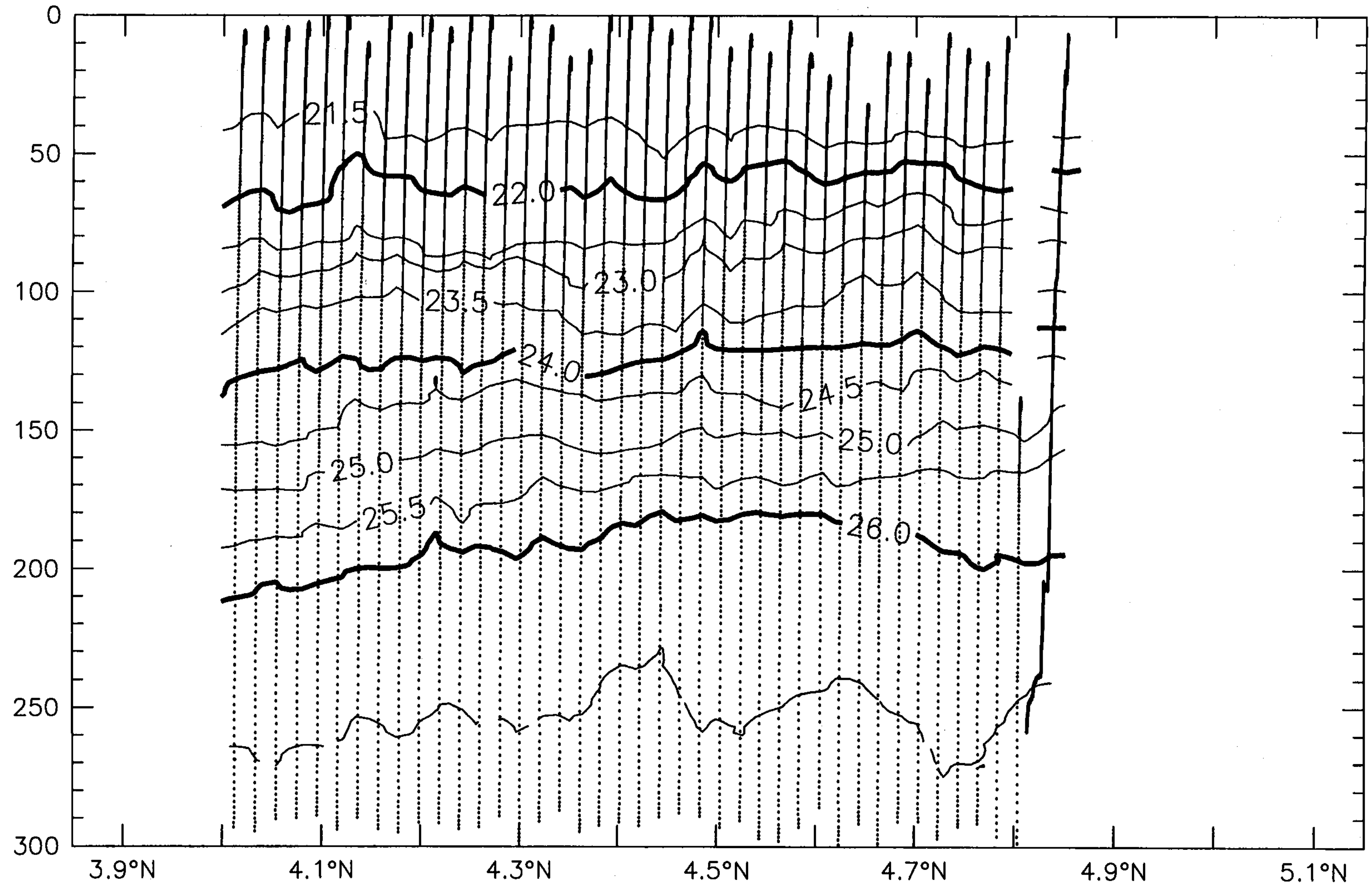
Sigma–t, 1 N to 2 N, 2 December 1992



Sigma–t, 2 N to 3 N, 3 December 1992



Sigma–t, 3 N to 4 N, 3 December 1992

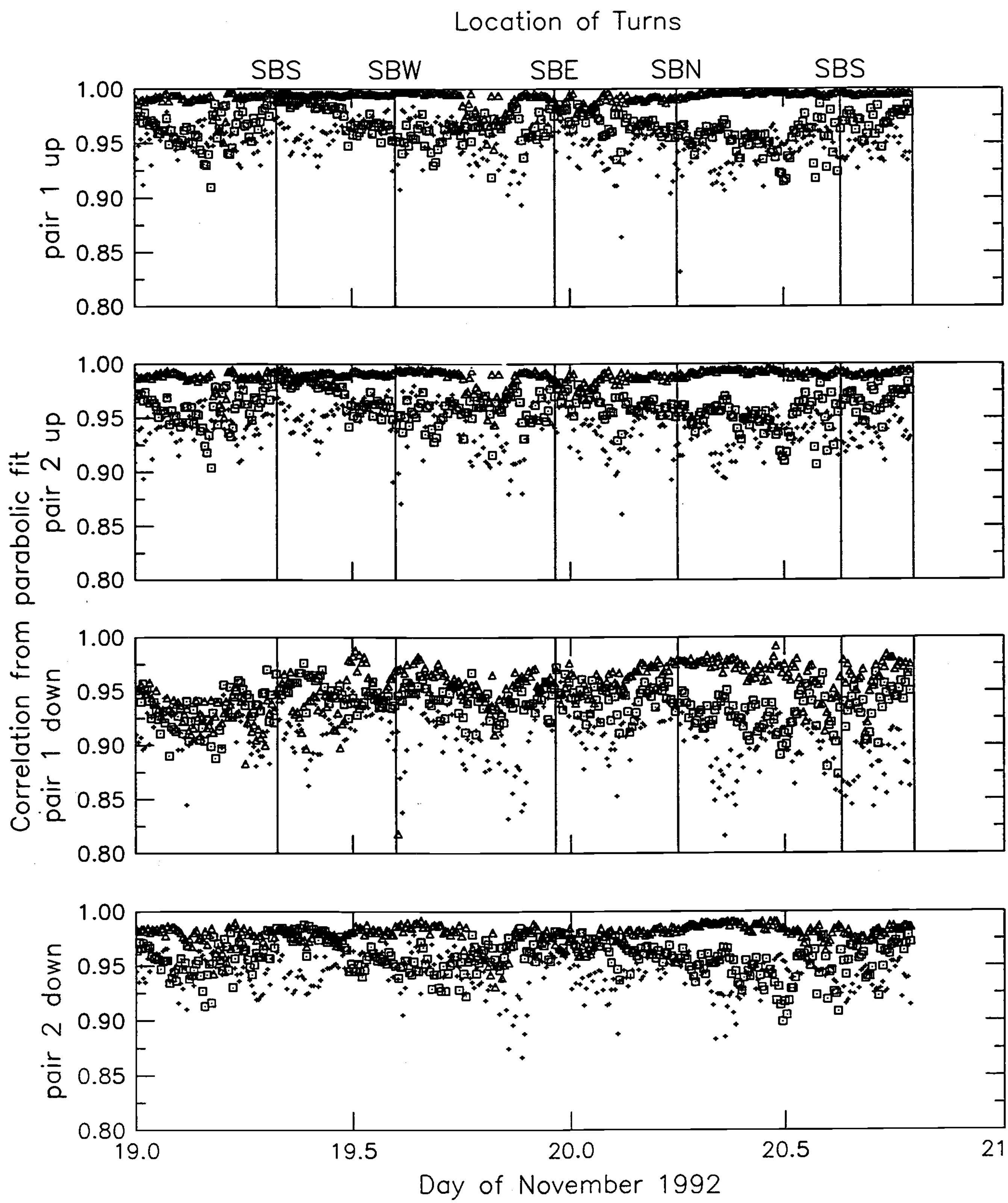


Sigma–t, 4 N to 5 N, 3 December 1992

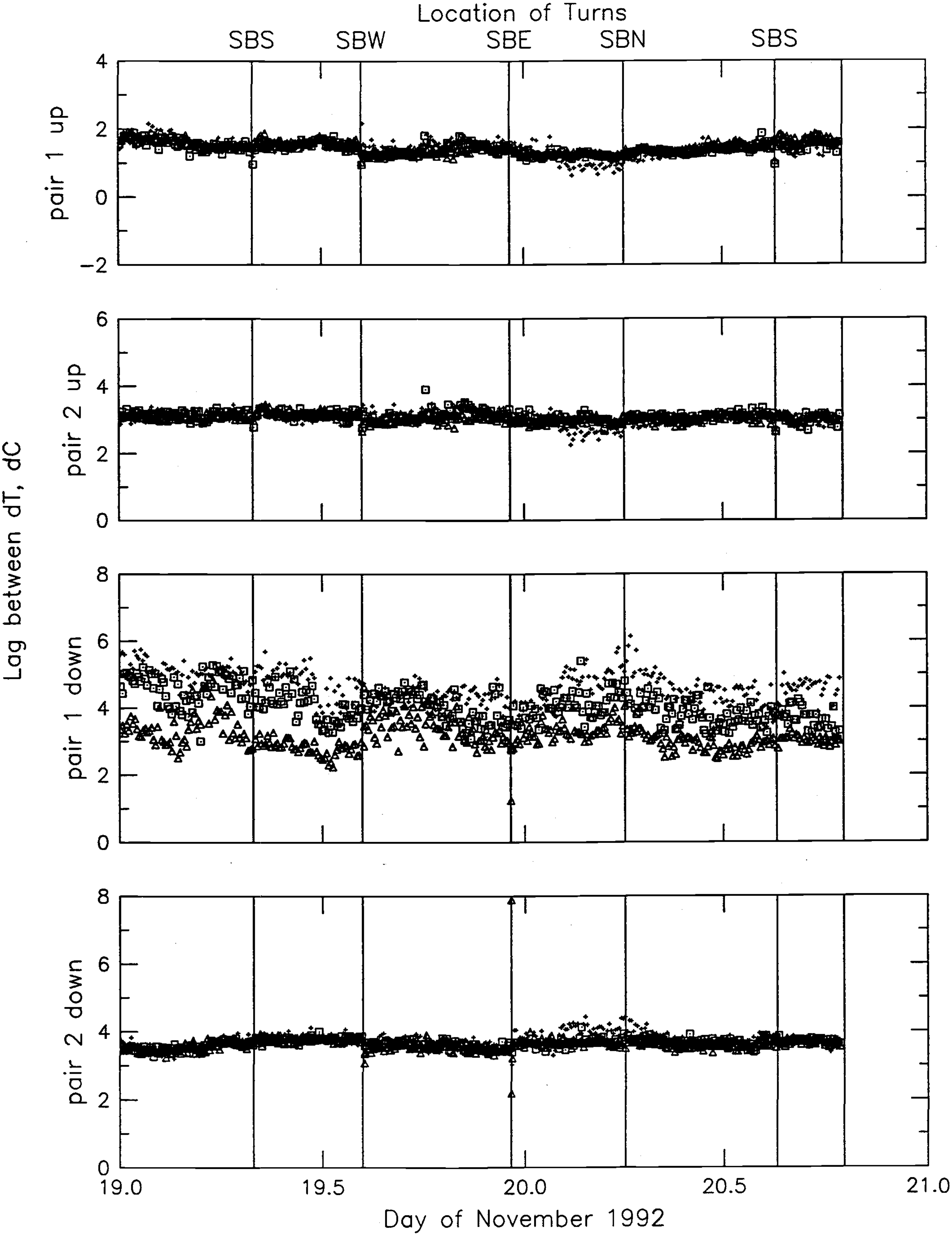
APPENDIX A:

Time Series of Lag of Maximum T/C Correlation

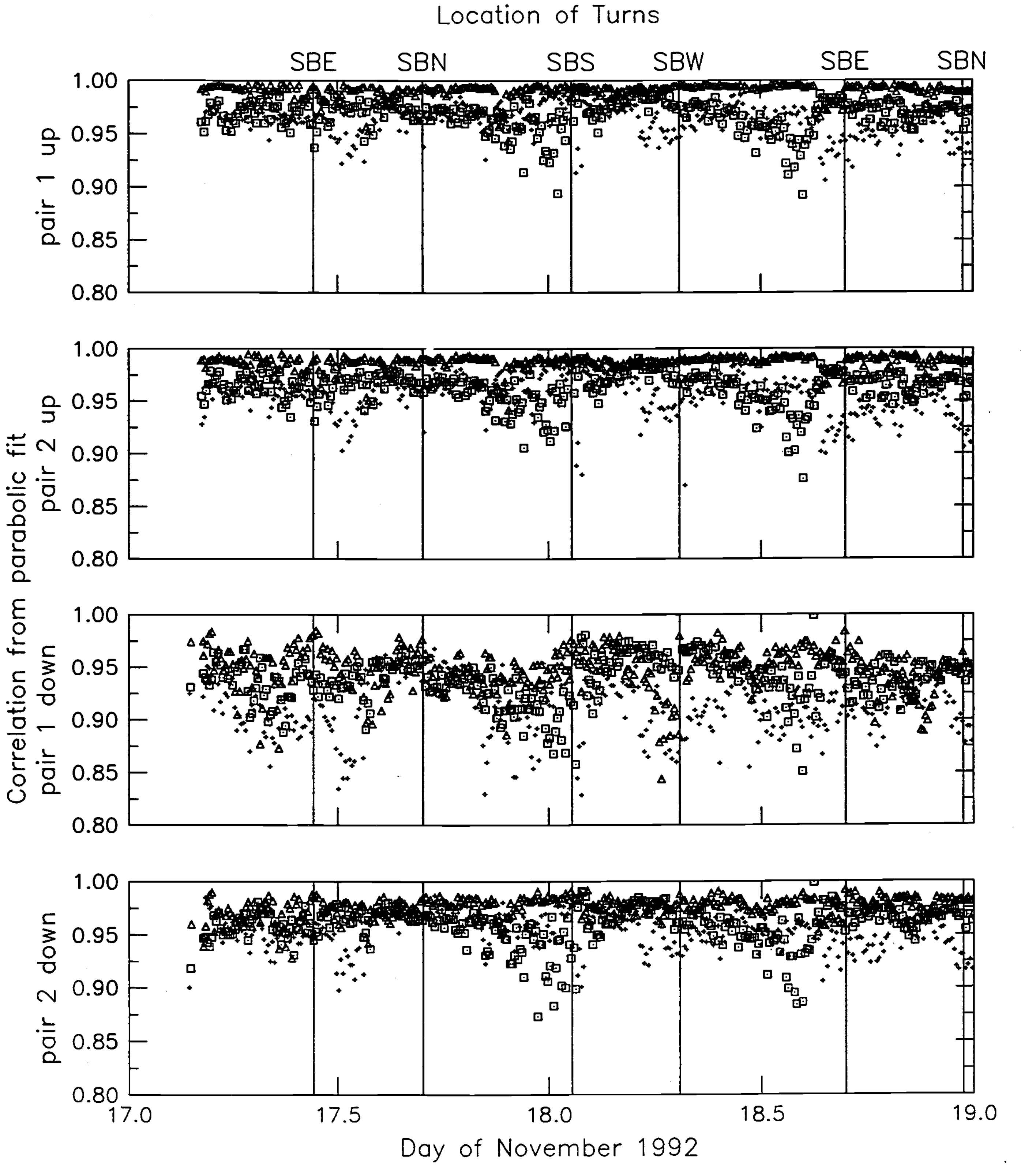
for Seasoar Tows 1, 3-6



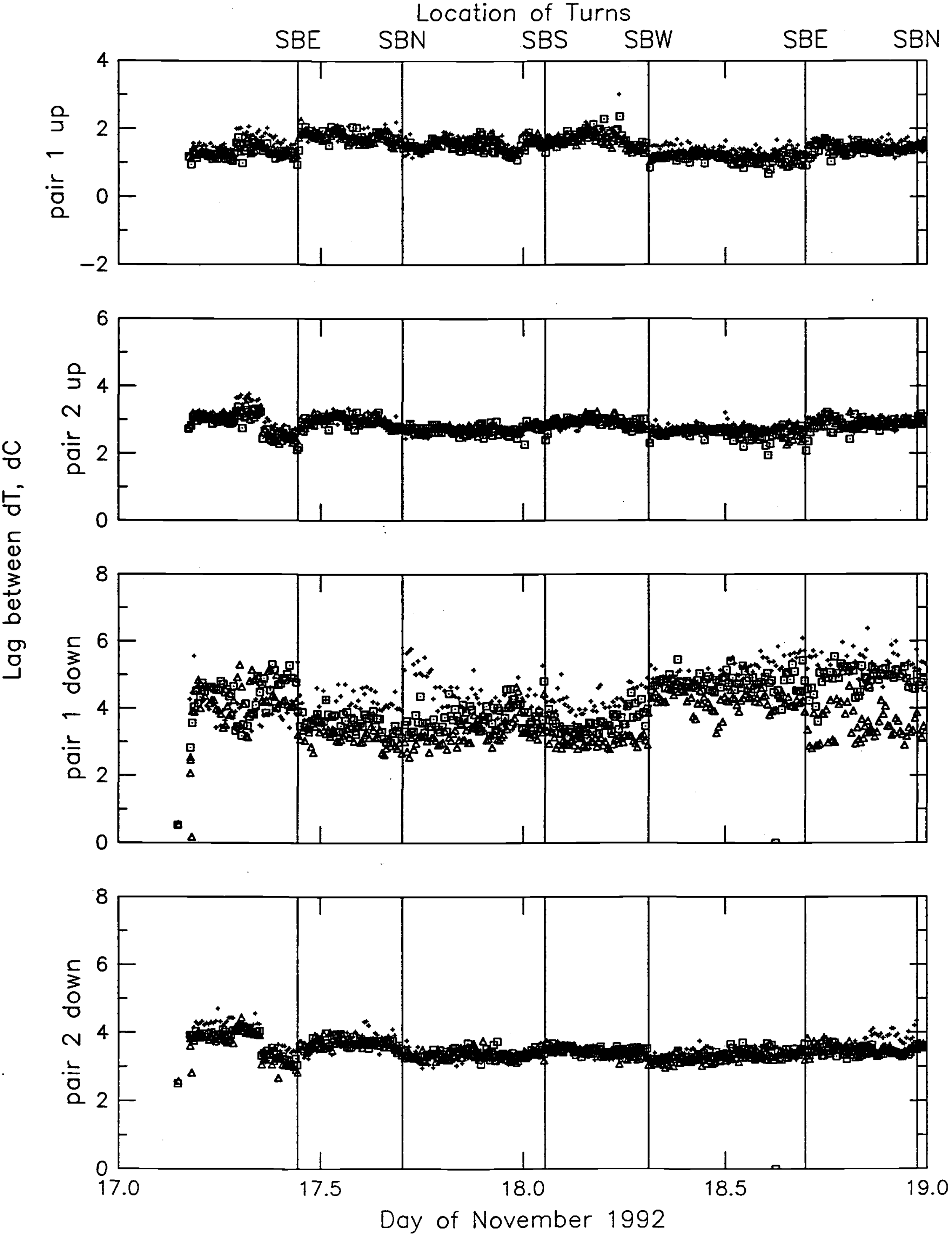
Leg 1 Tow 3, 50−120 db (plus), 120−180 db (square), 180−240 db (triangl



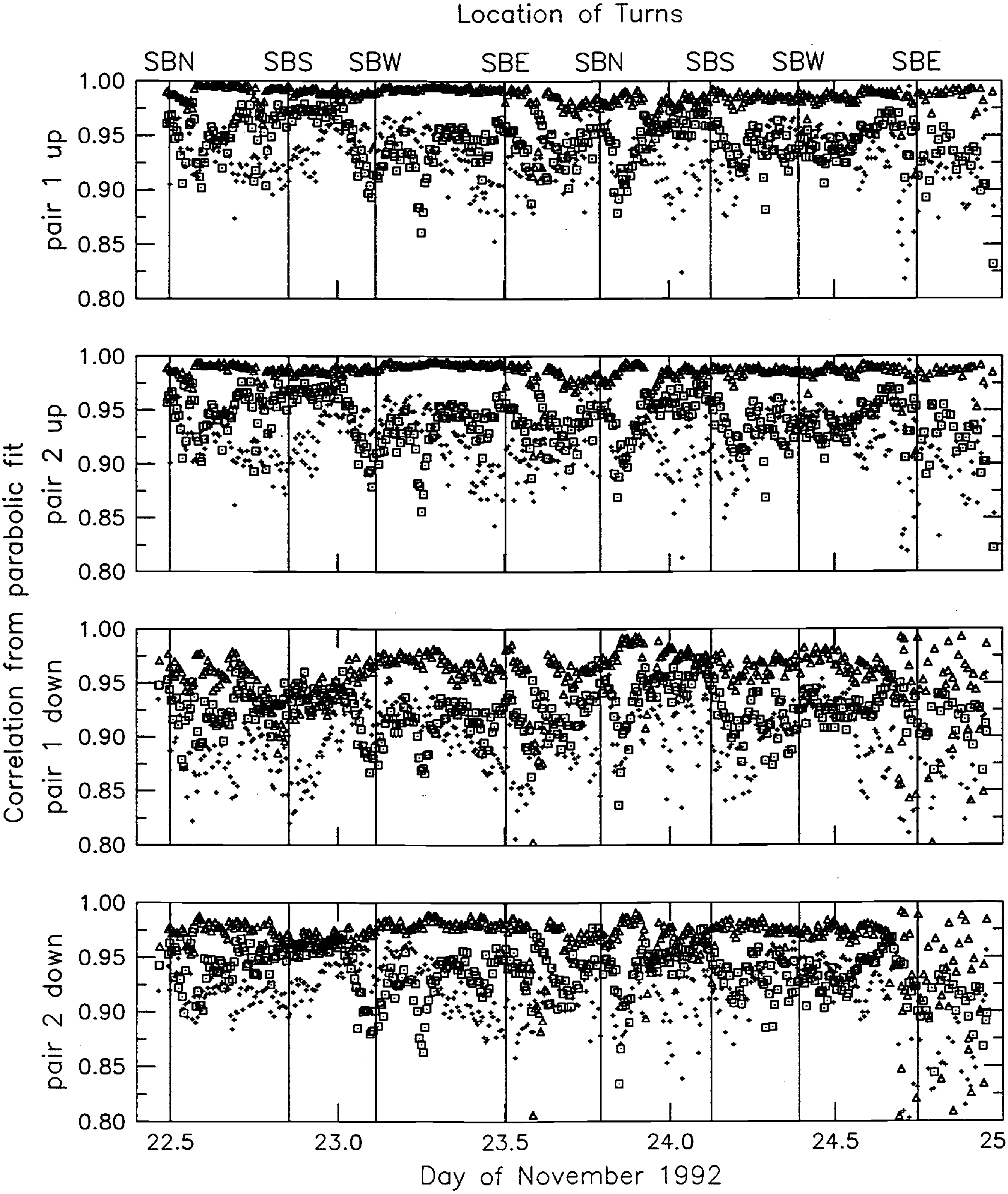
Leg 1 Tow 3, 50−120 db (plus), 120−180 db (square), 180−240 db (triangle



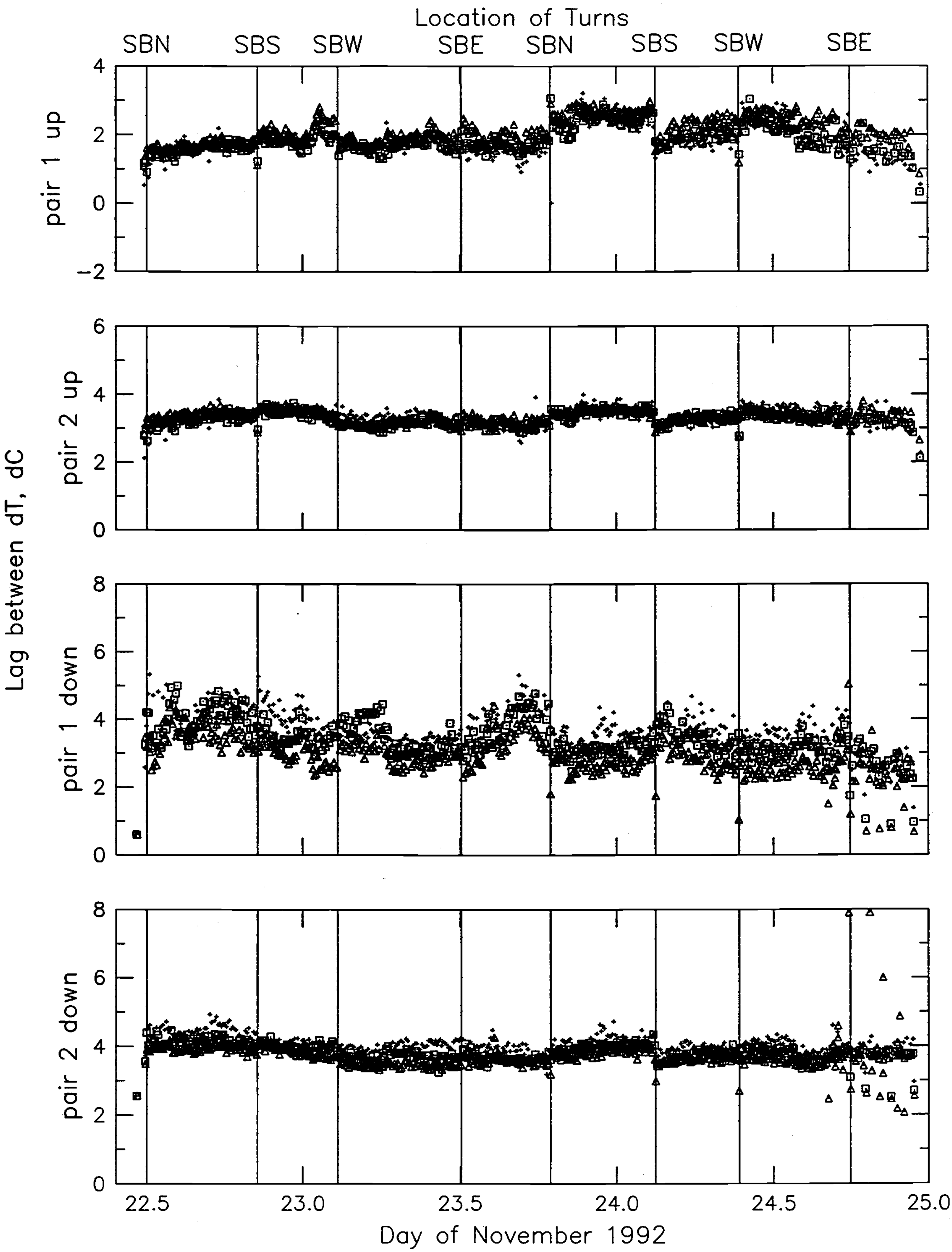
Leg 1 Tow 3, 50−120 db (plus), 120−180 db (square), 180−240 db (triangl



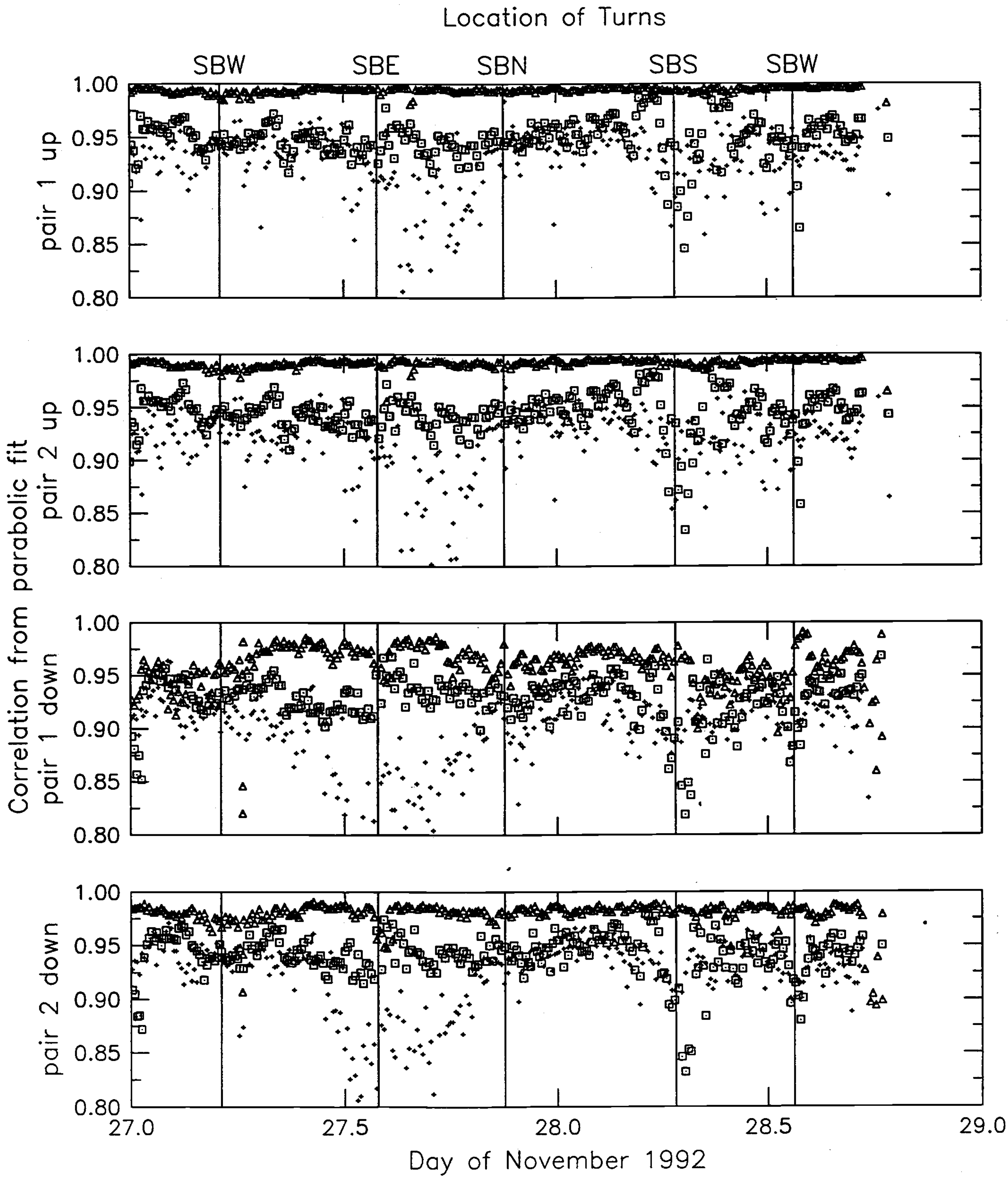
Leg 1 Tow 3, 50–120 db (plus), 120–180 db (square), 180–240 db (triangle



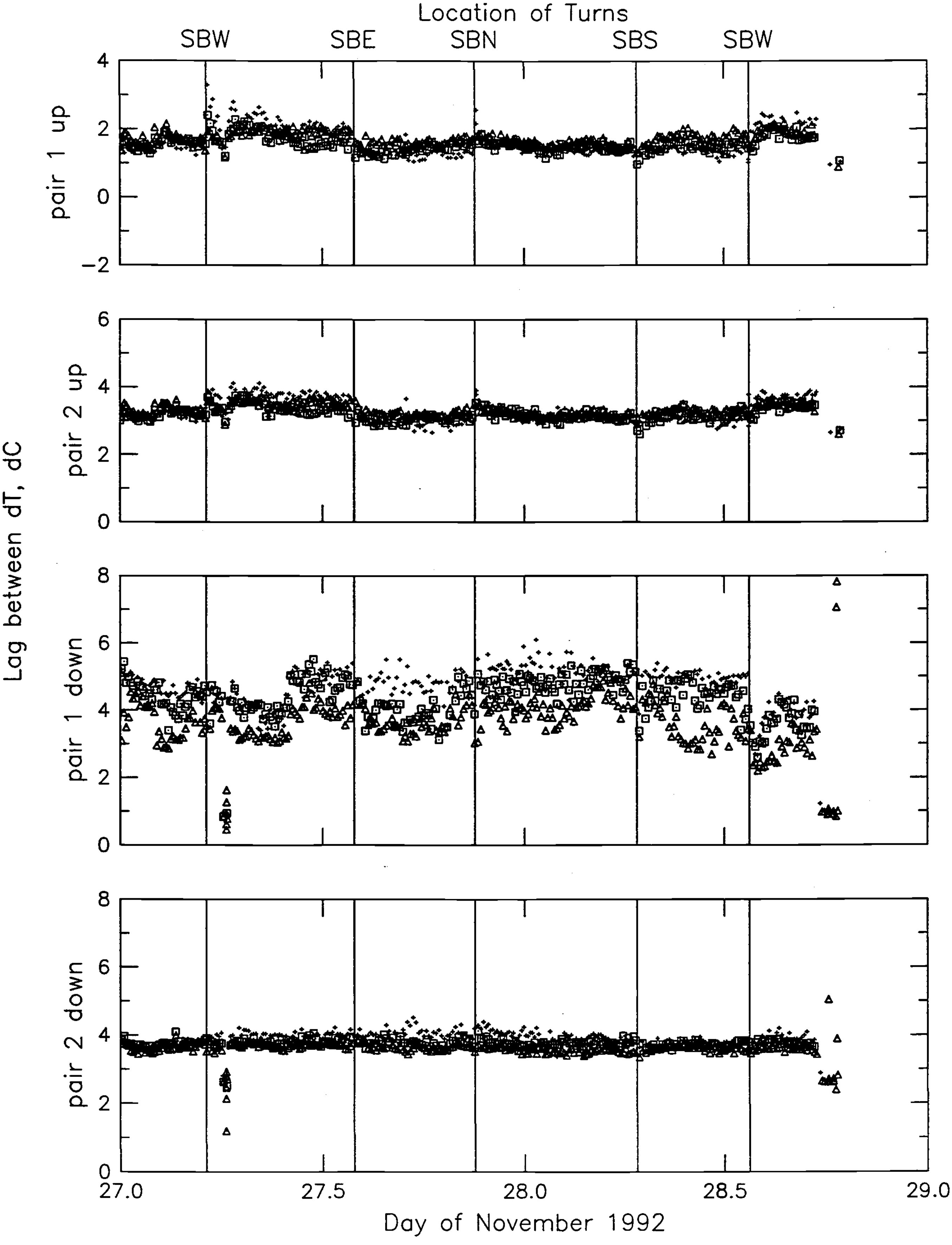
Leg 1 Tow 4, 50–120 db (plus), 120–180 db (square), 180–240 db (triangle



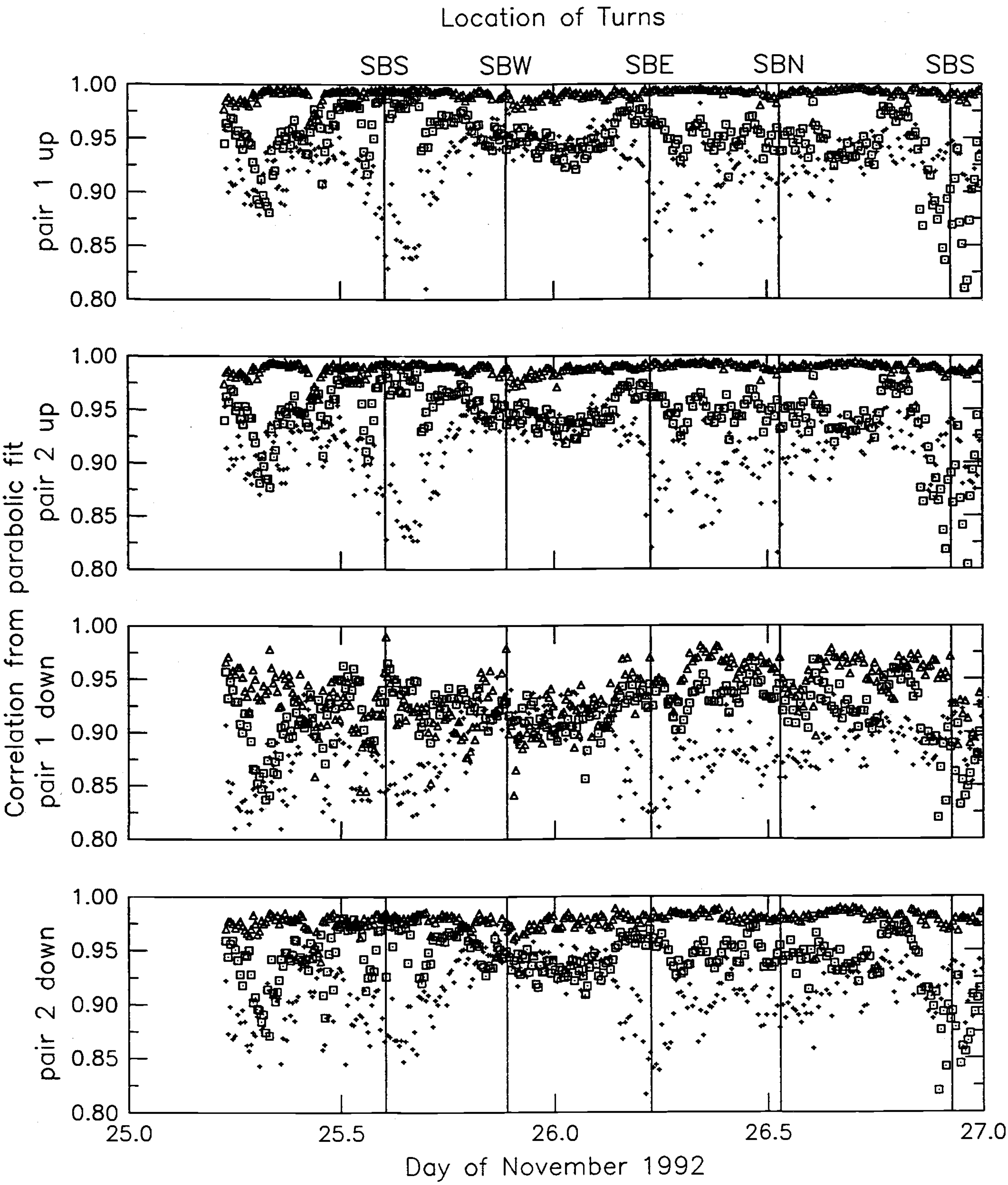
Leg 1 Tow 4, 50−120 db (plus), 120−180 db (square), 180−240 db (triangle



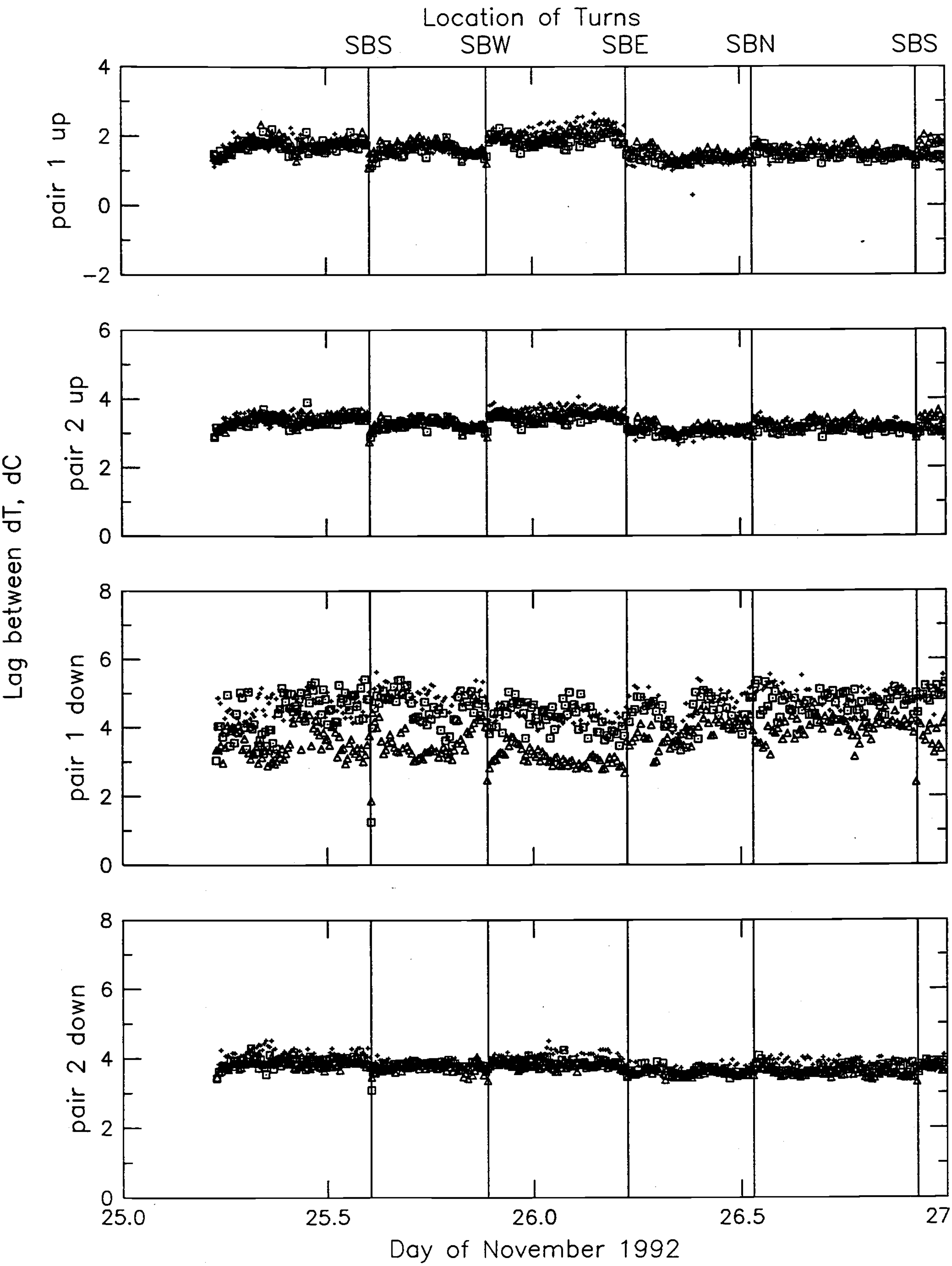
Leg 1 Tow 5, 50−120 db (plus), 120−180 db (square), 180−240 db (triangle



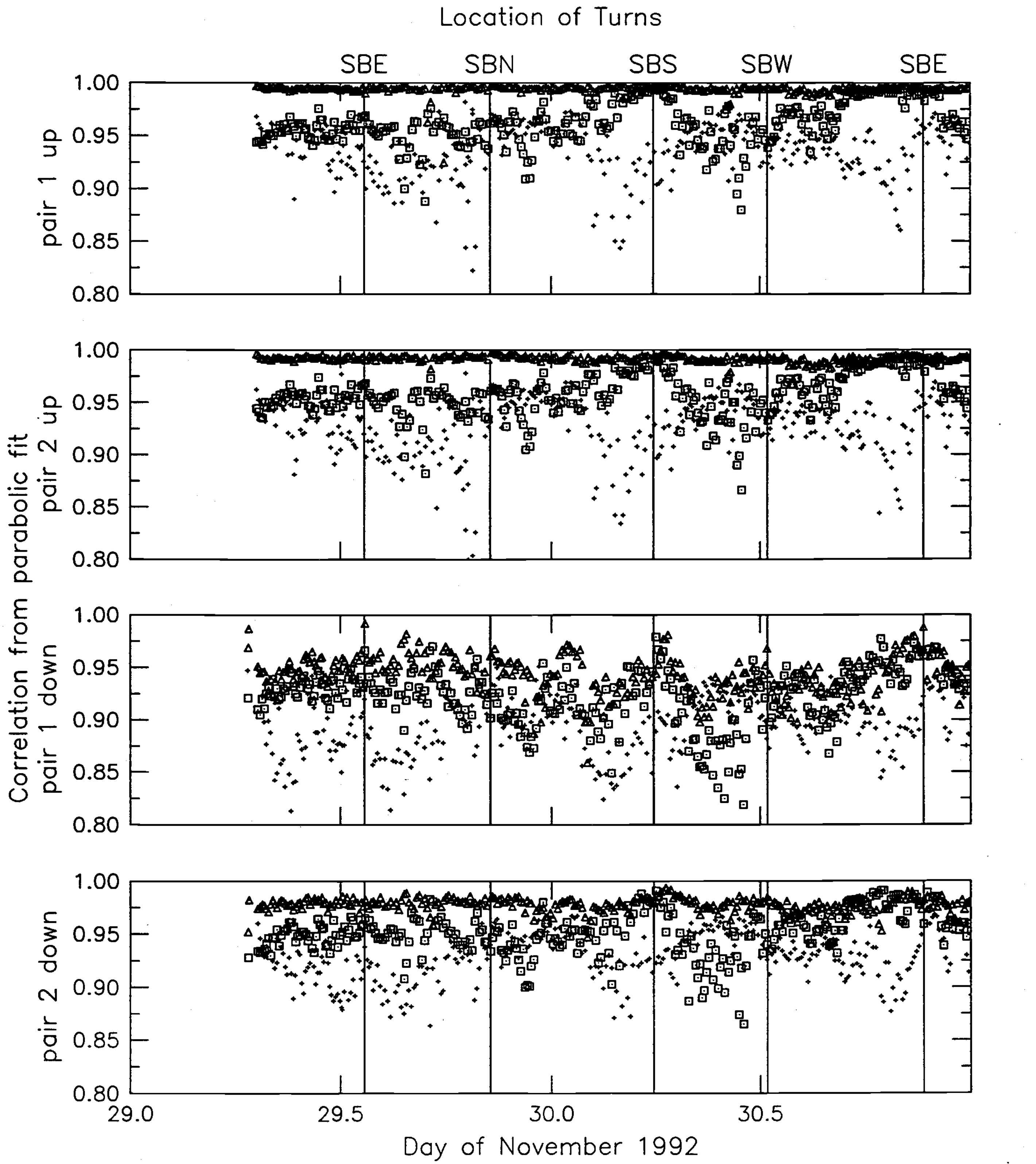
Leg 1 Tow 5, 50–120 db (plus), 120–180 db (square), 180–240 db (triangle



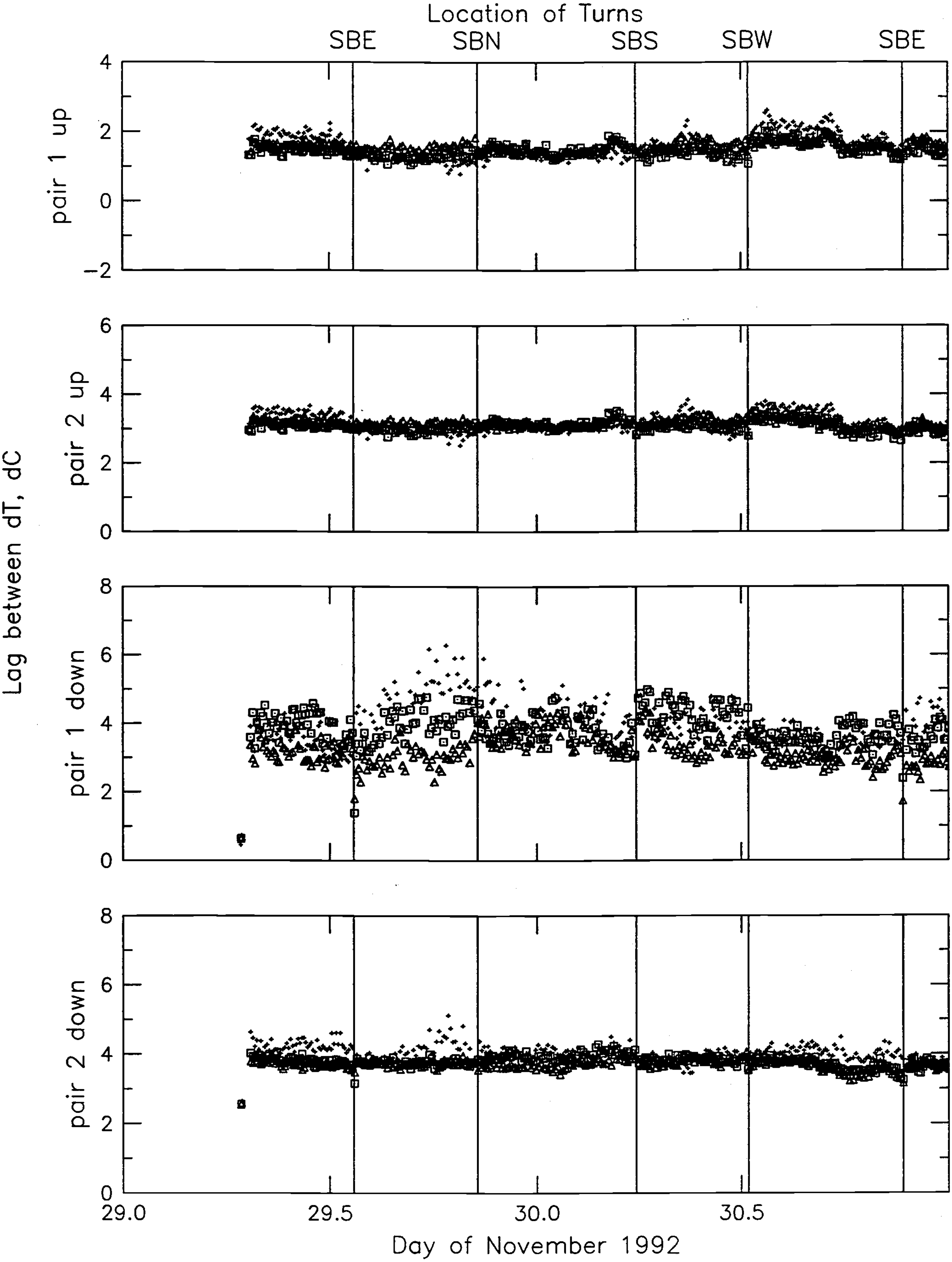
Leg 1 Tow 5, 50–120 db (plus), 120–180 db (square), 180–240 db (triangle



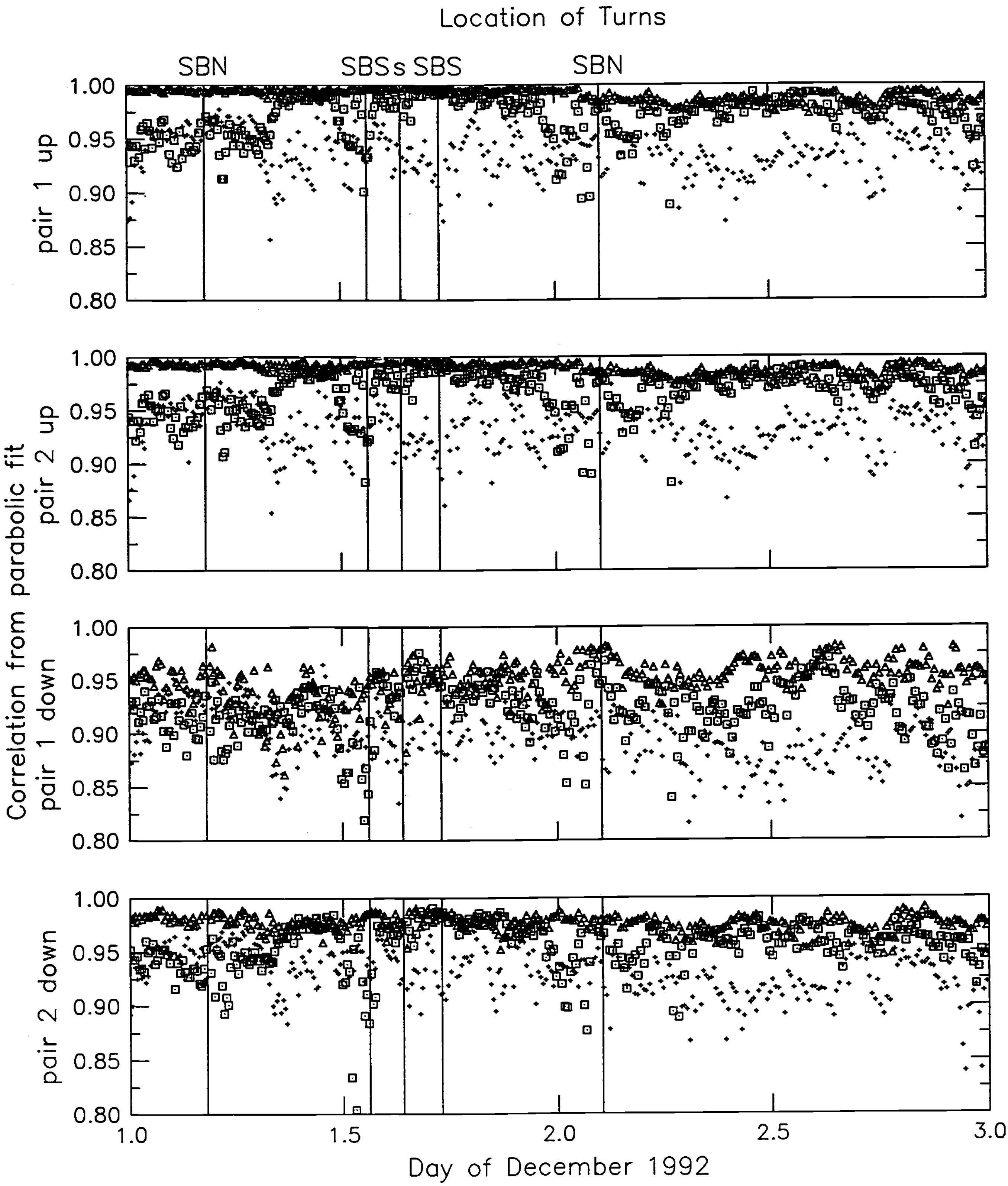
Leg 1 Tow 5, 50–120 db (plus), 120–180 db (square), 180–240 db (triangle



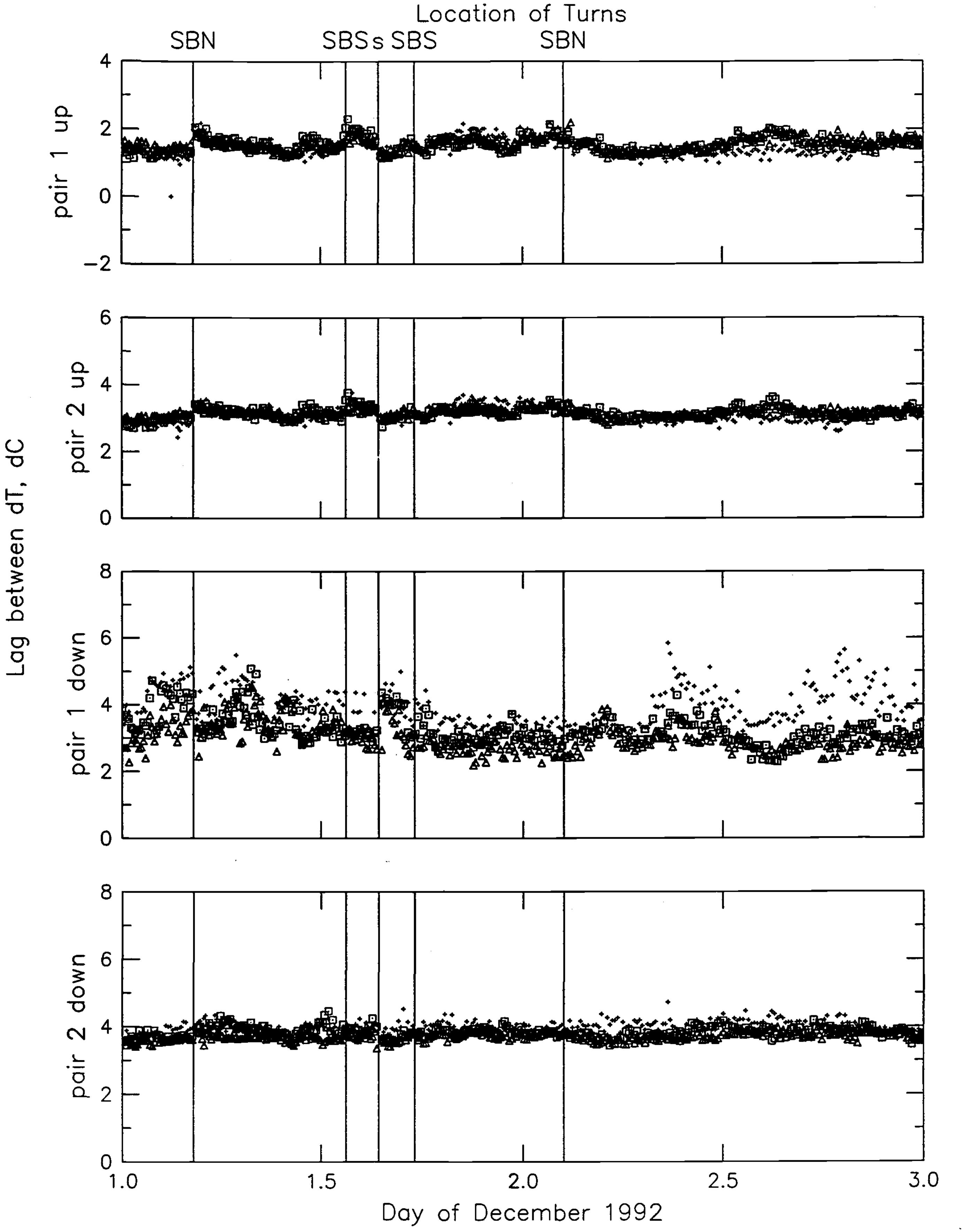
Leg 1 Tow 6, 50–120 db (plus), 120–180 db (square), 180–240 db (triangle



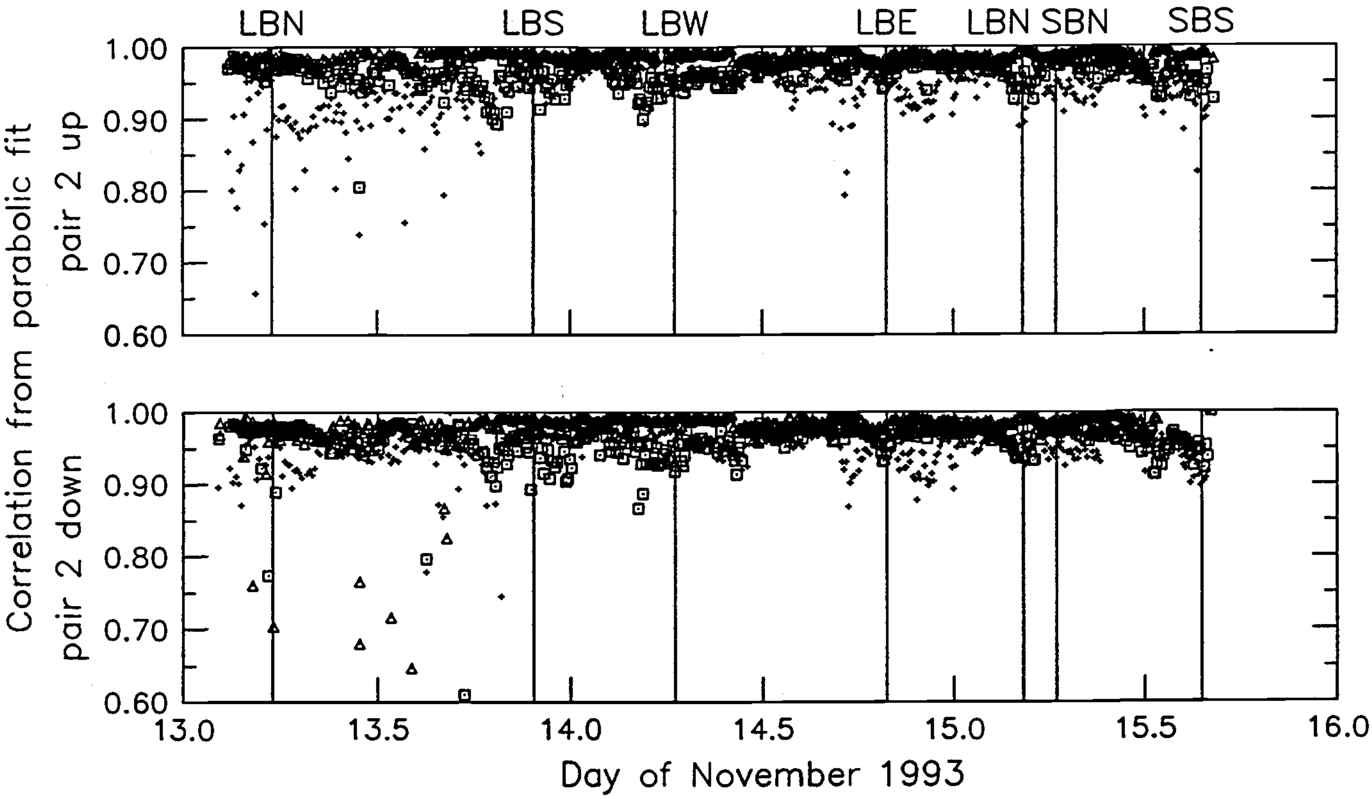
Leg 1 Tow 6, 50−120 db (plus), 120−180 db (square), 180−240 db (triangle



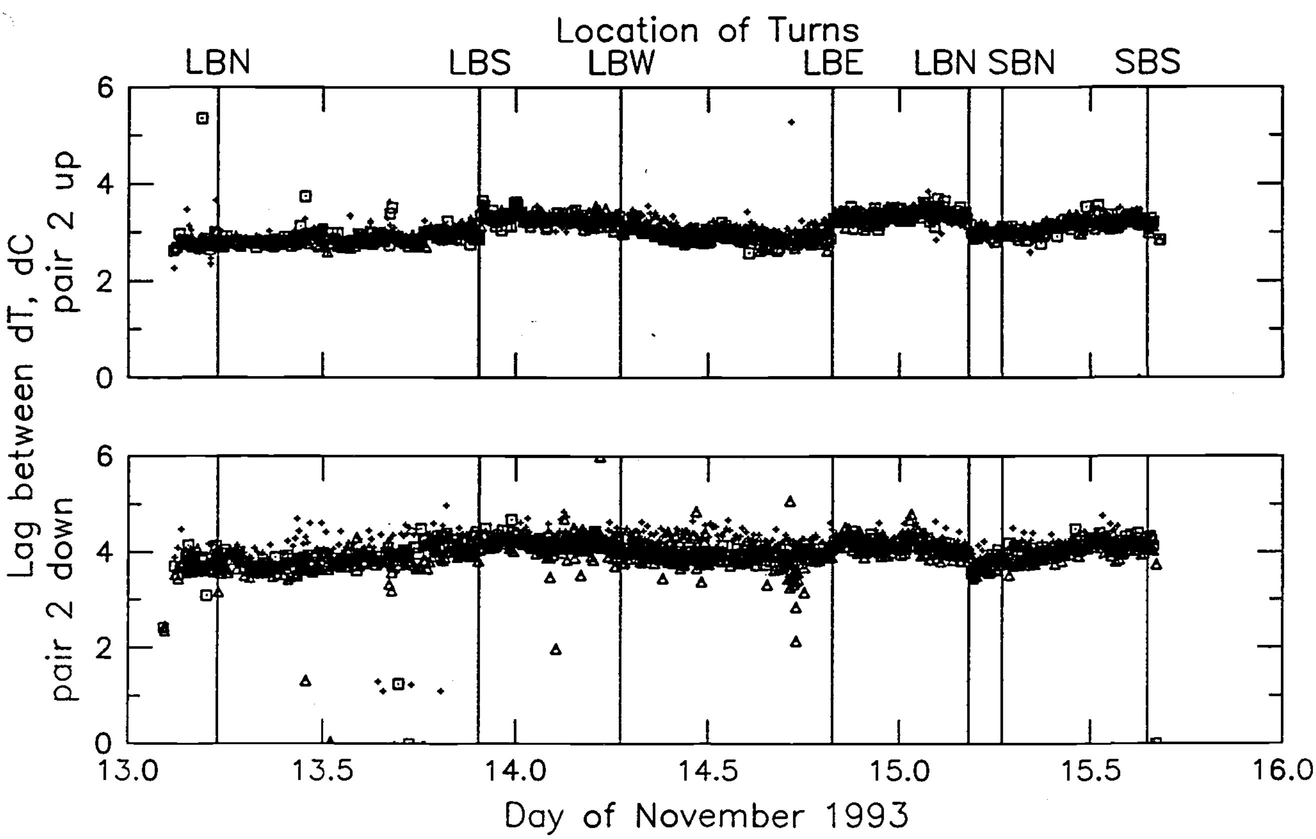
Leg 1 Tow 6, 50−120 db (plus), 120−180 db (square), 180−240 db (triangl



Leg 1 Tow 6, 50–120 db (plus), 120–180 db (square), 180–240 db (triangle



Leg 1 Tow 1, 50−120 db (plus), 120−180 db (square), 180−240 db (triangle)



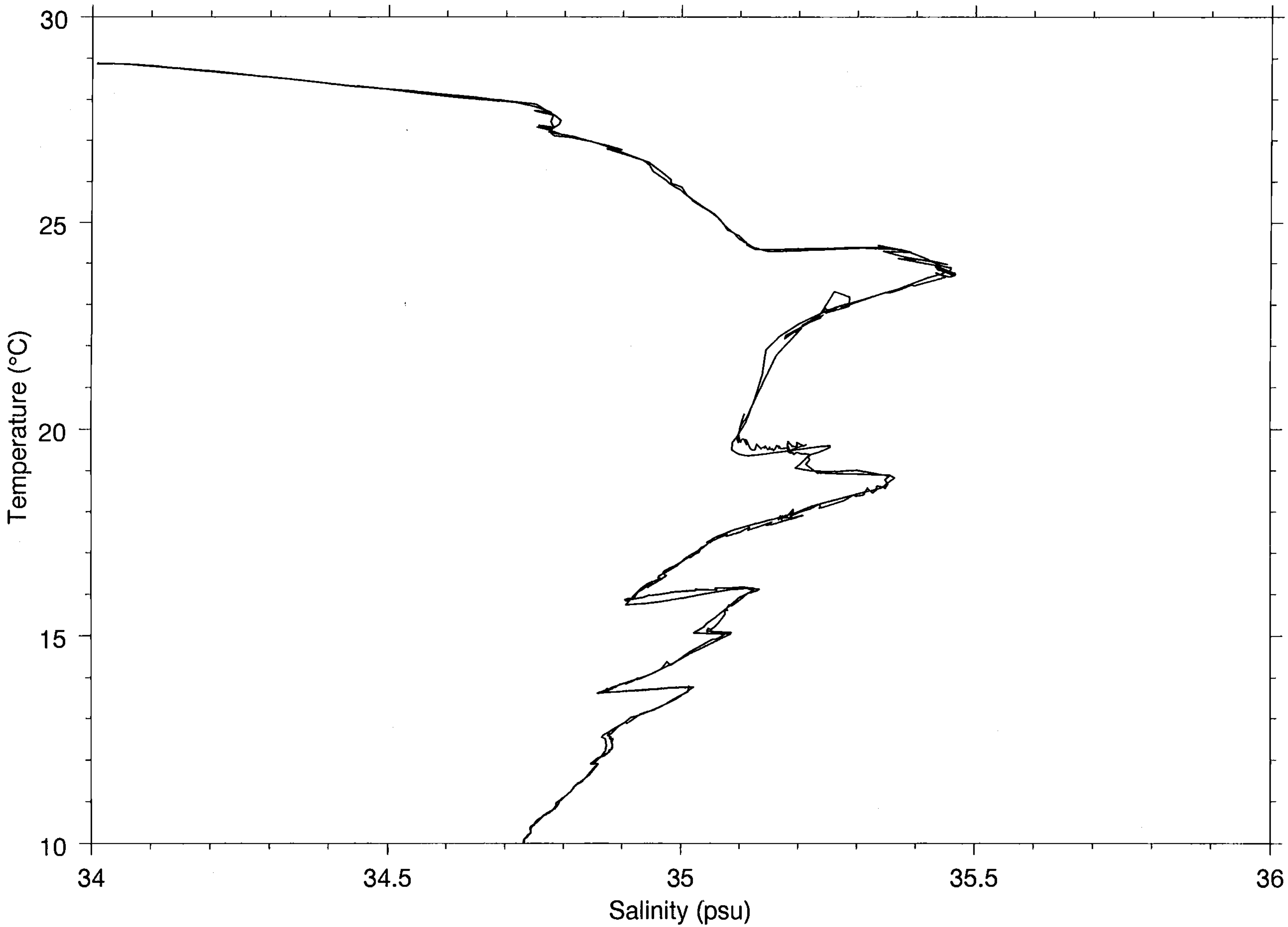
Leg 1 Tow 1, 50−120 db (plus), 120−180 db (square), 180−240 db (triangle)

APPENDIX B:

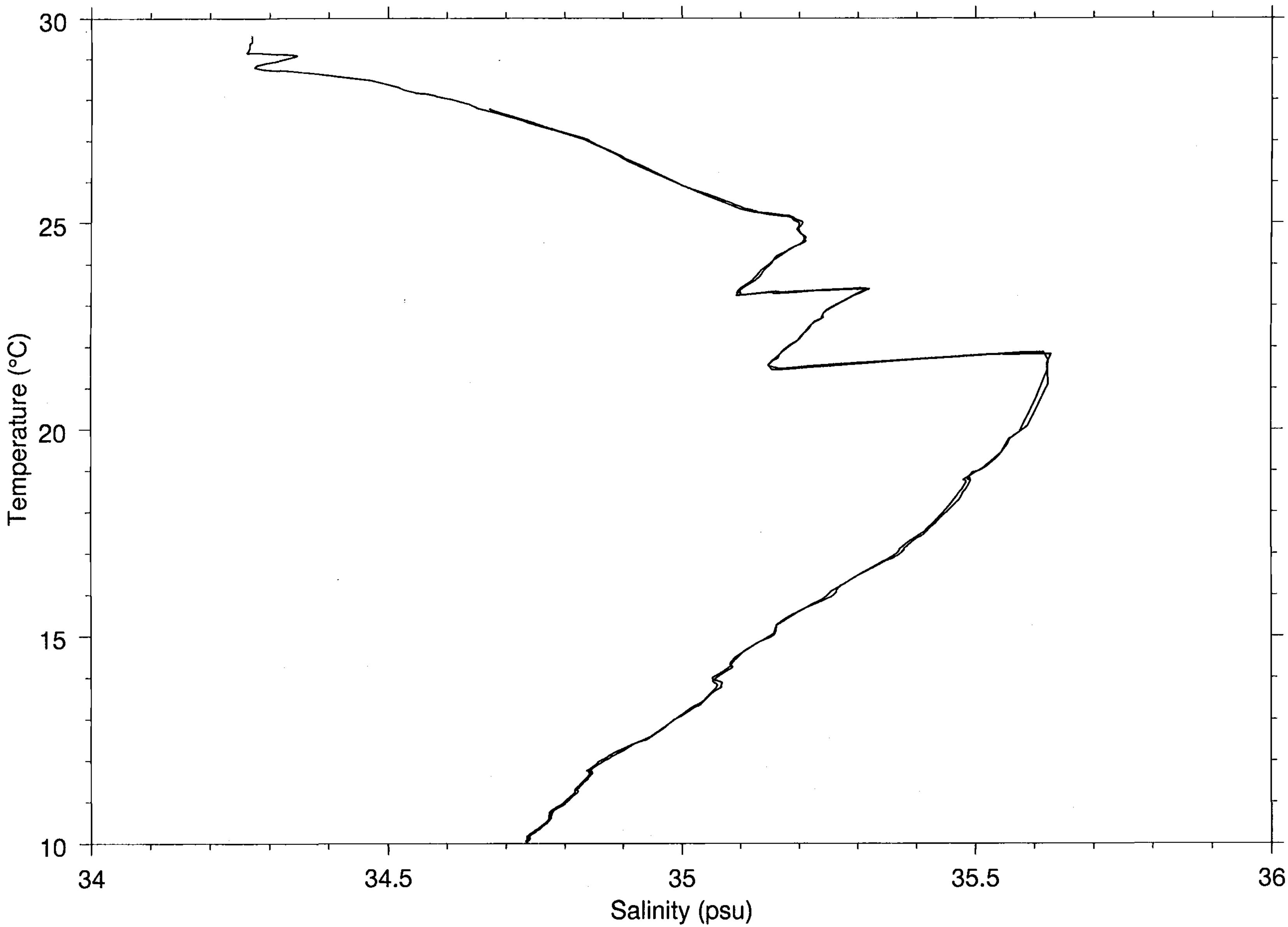
T-S Diagrams from CTD and Seasoar

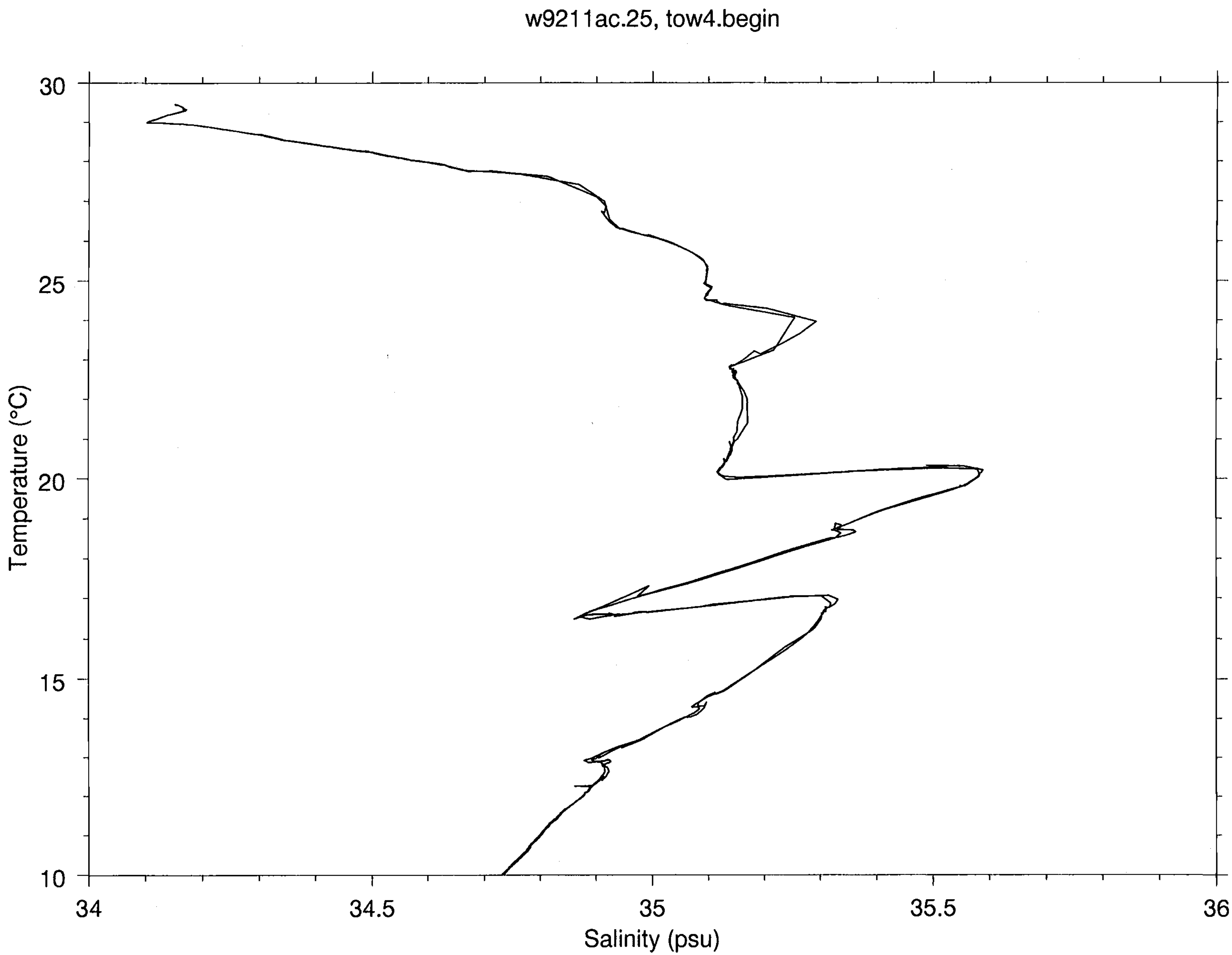
at Start and End of Tows 1, 3-6.

w9211ac.7, tow1.begin

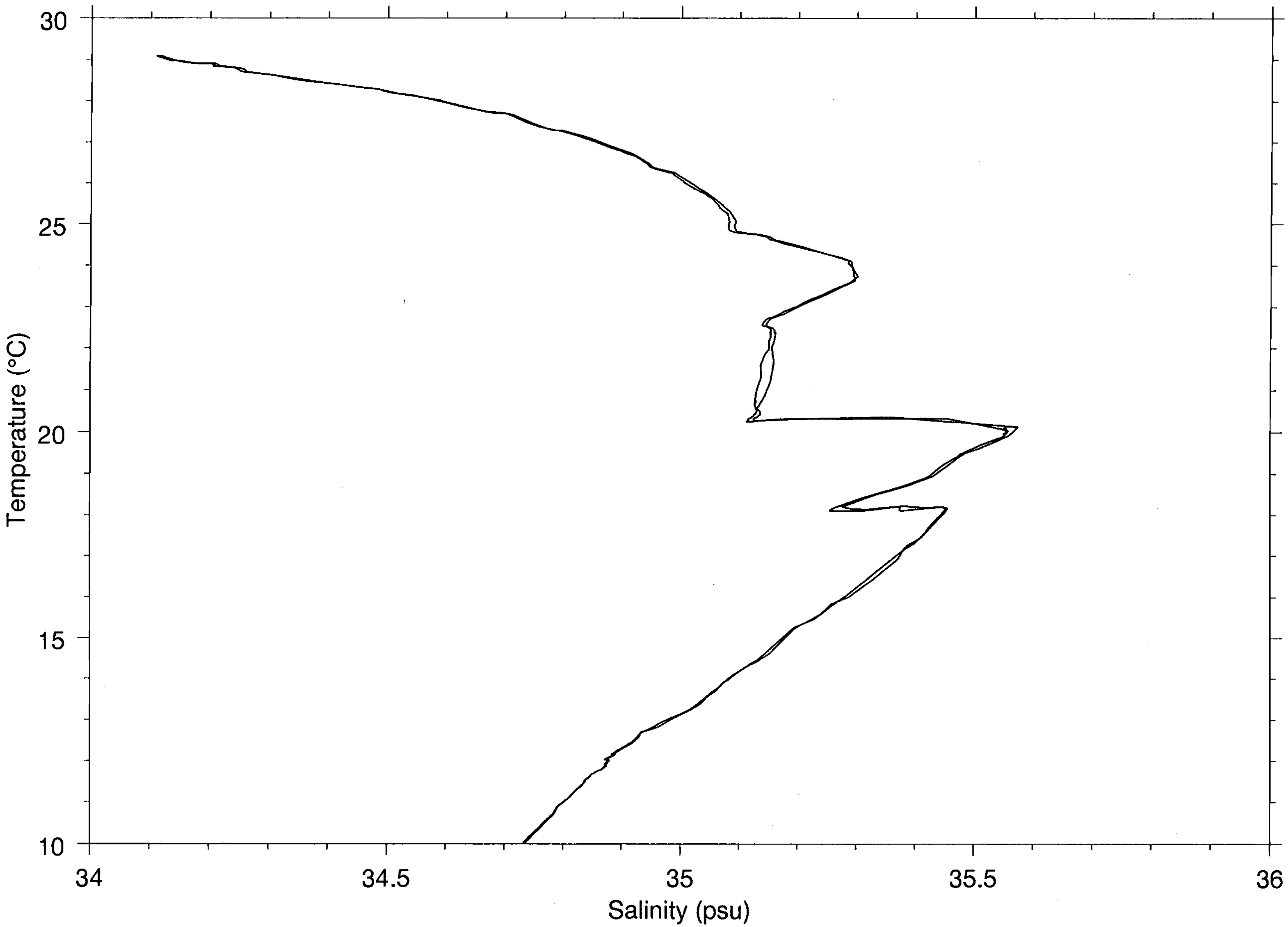


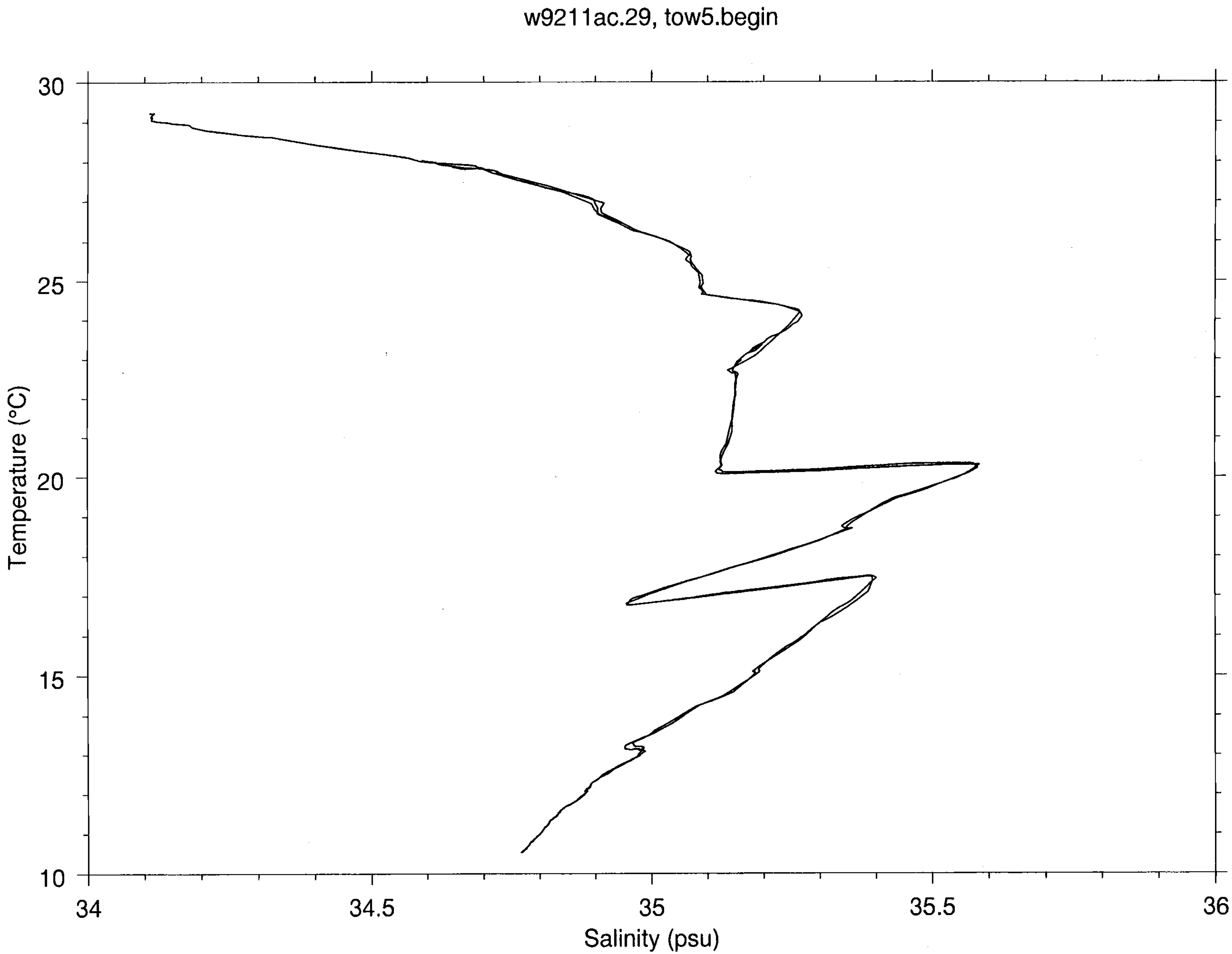
w9211ac.21, tow3.begin



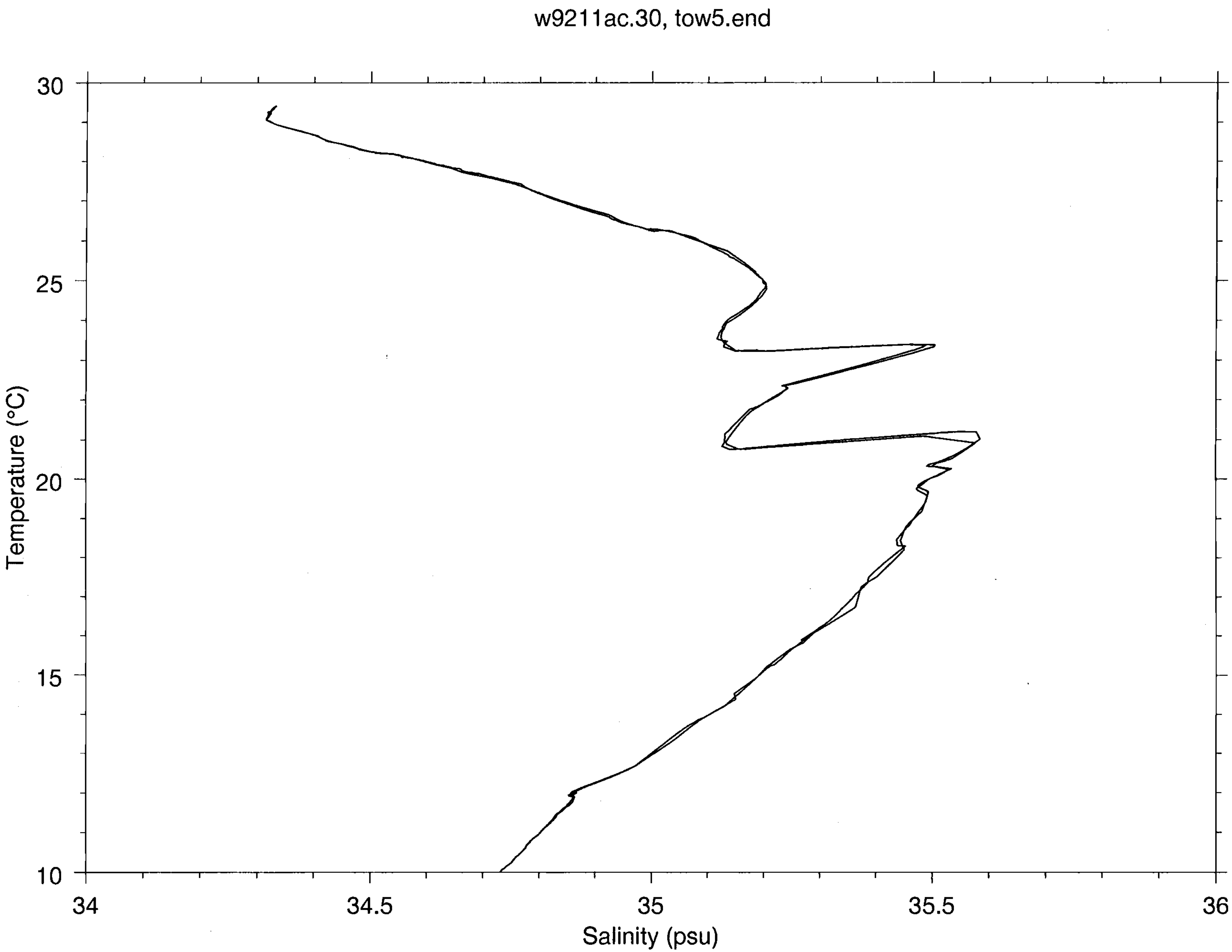

w9211ac.25, tow4.begin
30
25
20
15
10
Temperature (°C)
34
34.5
35
35.5
36
Salinity (psu)

w9211ac.26, tow4.end

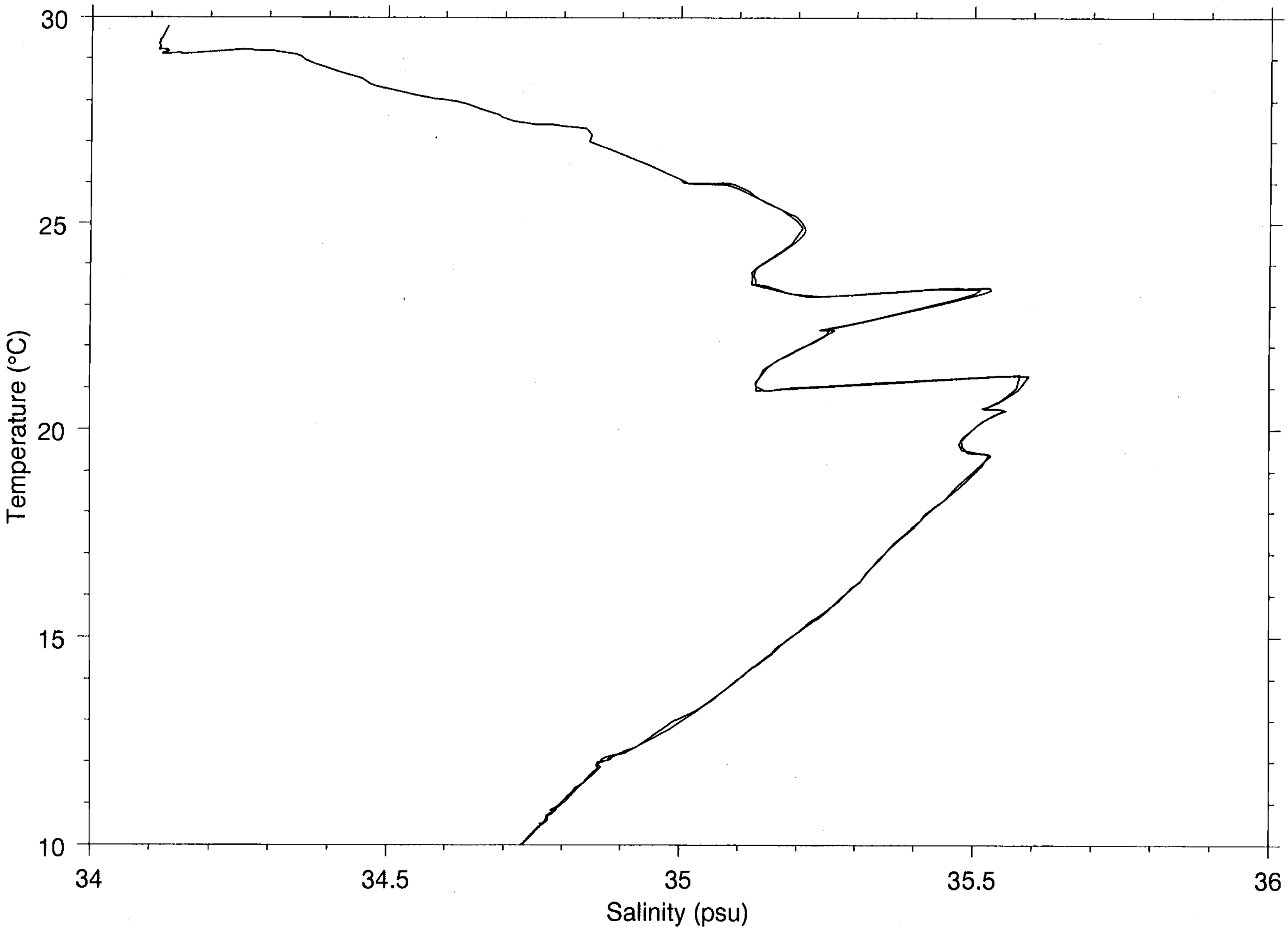


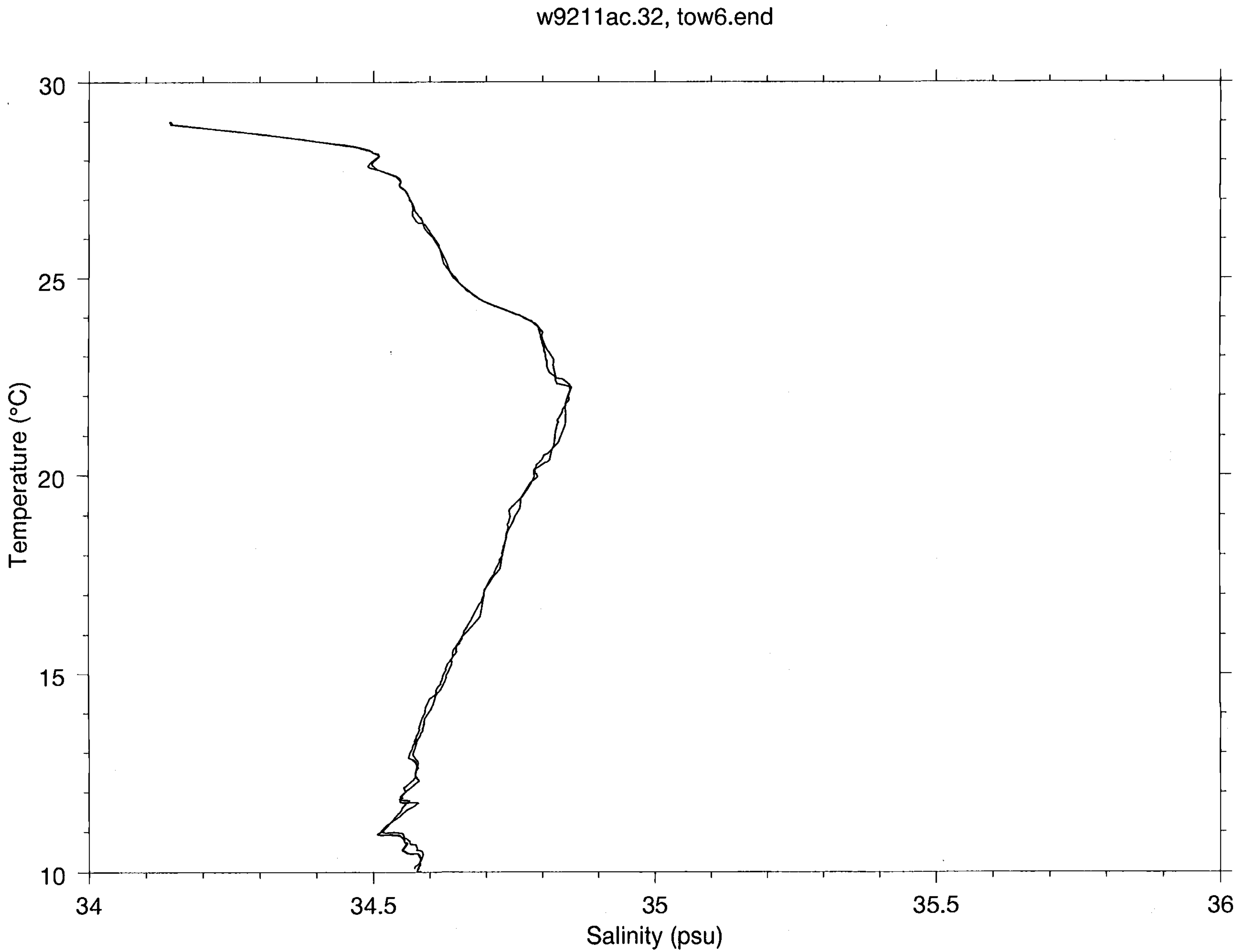


w9211ac.29, tow5.begin
30
25
20
15
10
Temperature (°C)
34
34.5
35
35.5
36
Salinity (psu)


w9211ac.30, tow5.end
Temperature (°C)
Salinity (psu)
30
25
20
15
10
34
34.5
35
35.5
36

w9211ac.31, tow6.begin



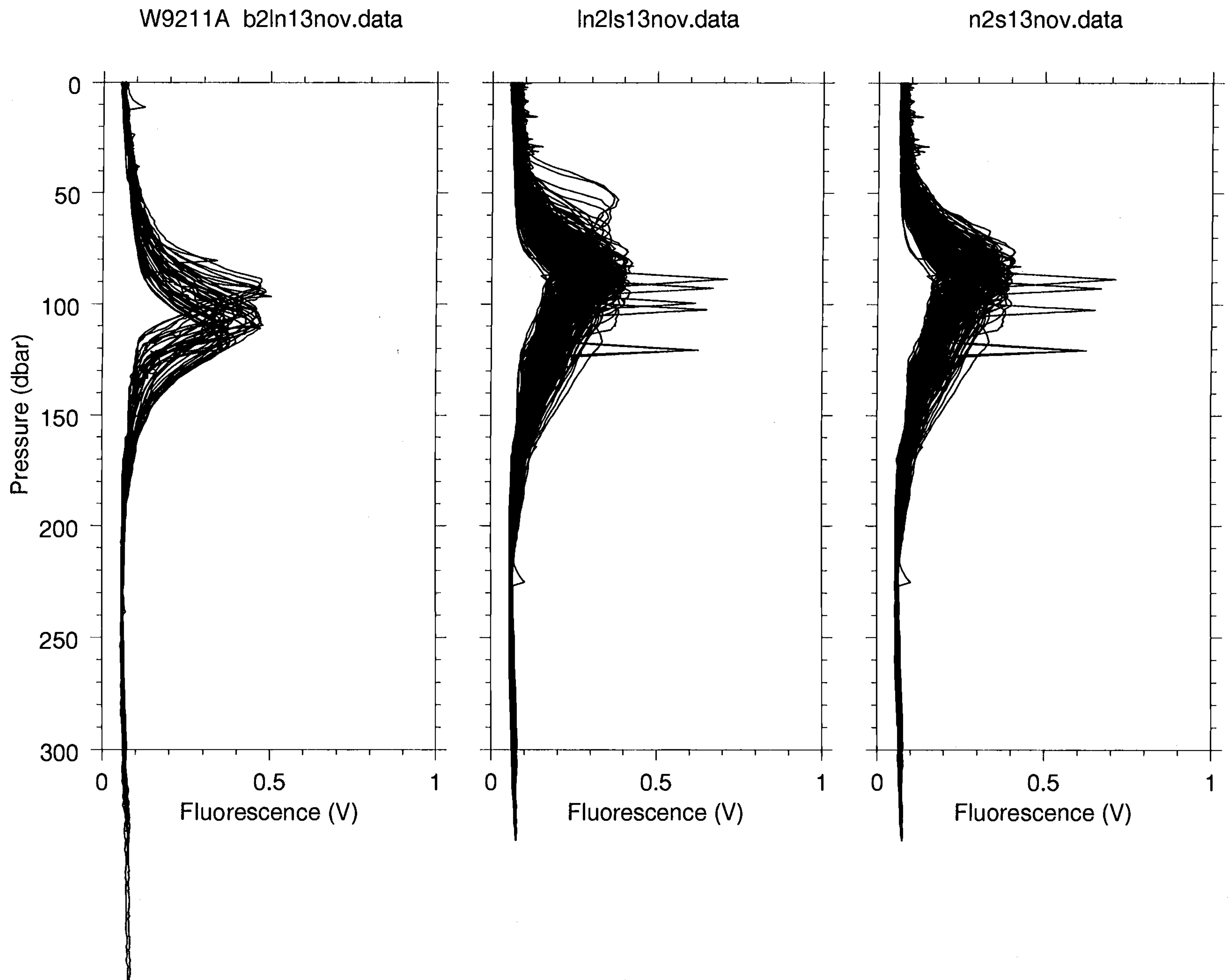

w9211ac.32, tow6.end
Temperature (°C)
30
25
20
15
10
34
34.5
35
35.5
36
Salinity (psu)

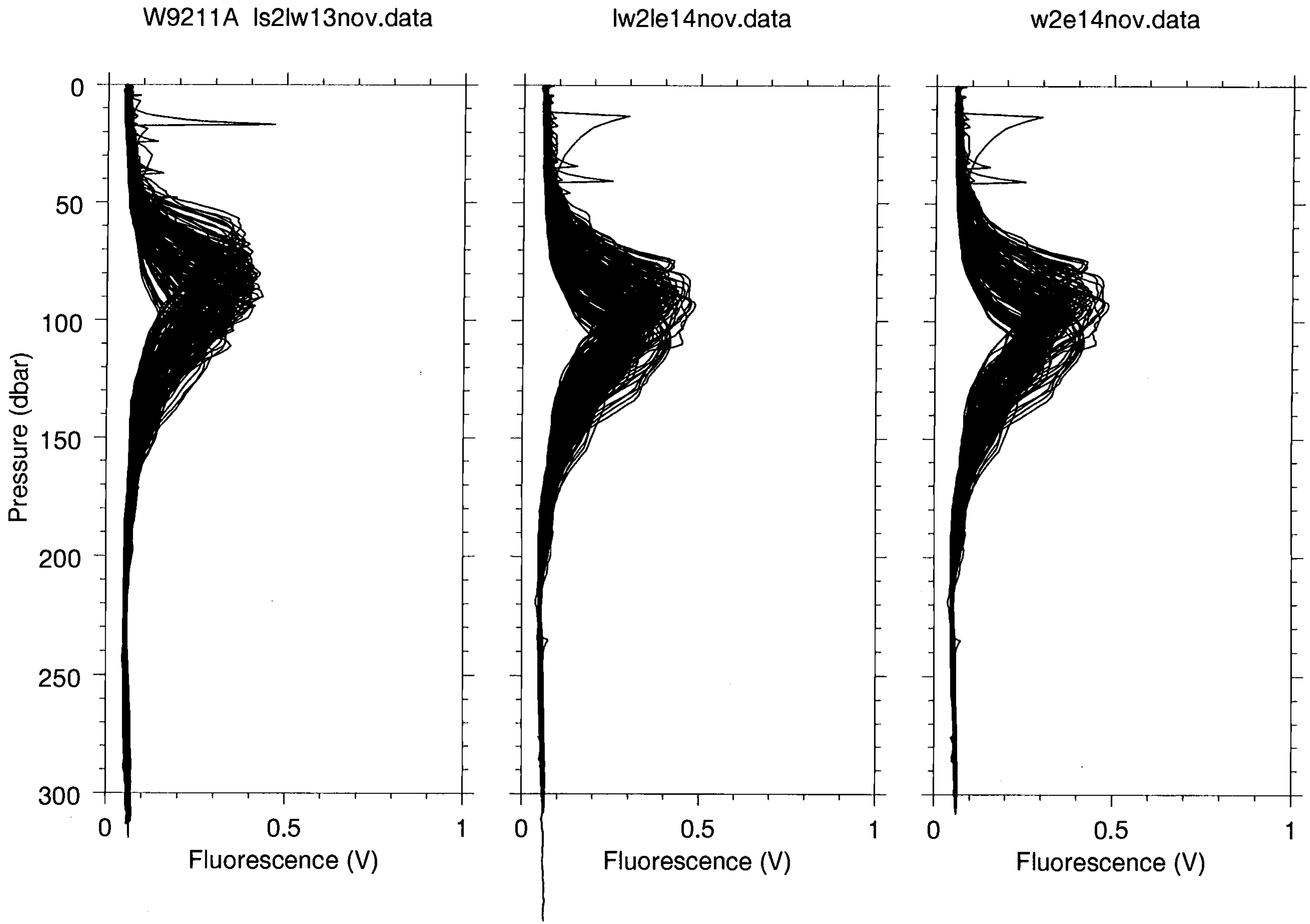
APPENDIX C:

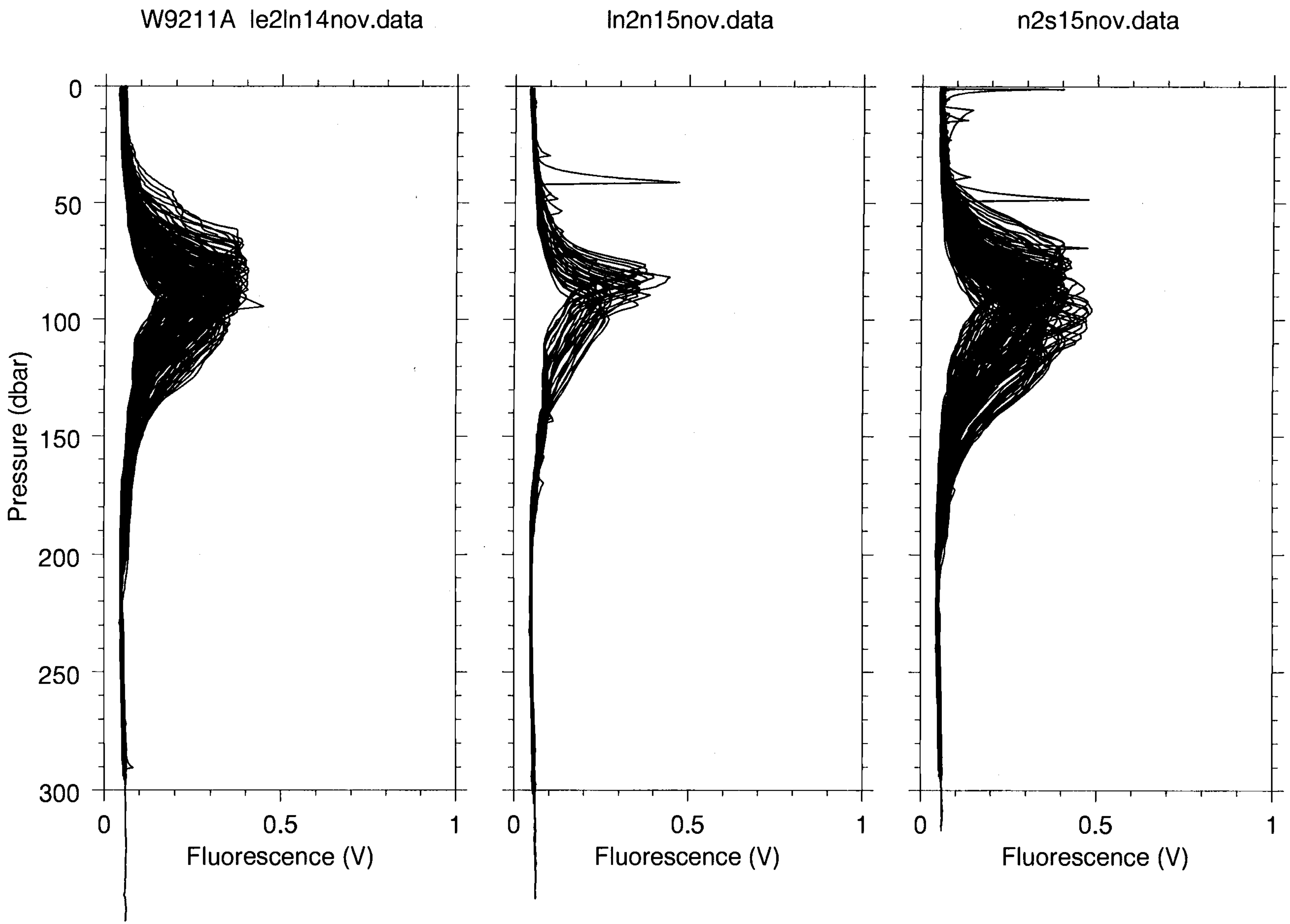
Profiles of Fluorescence Voltage

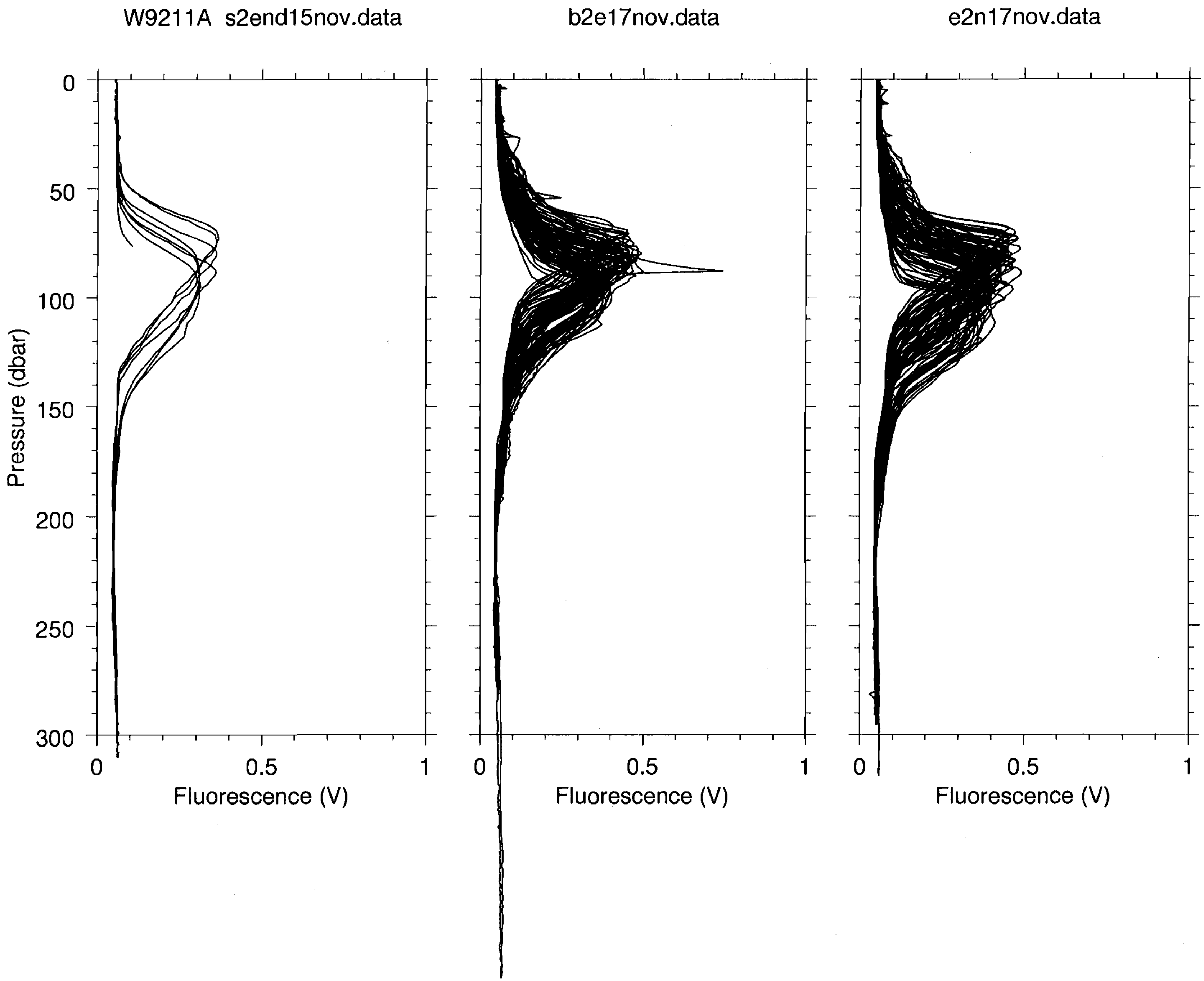
For Seasoar Tows 1, 3, 4

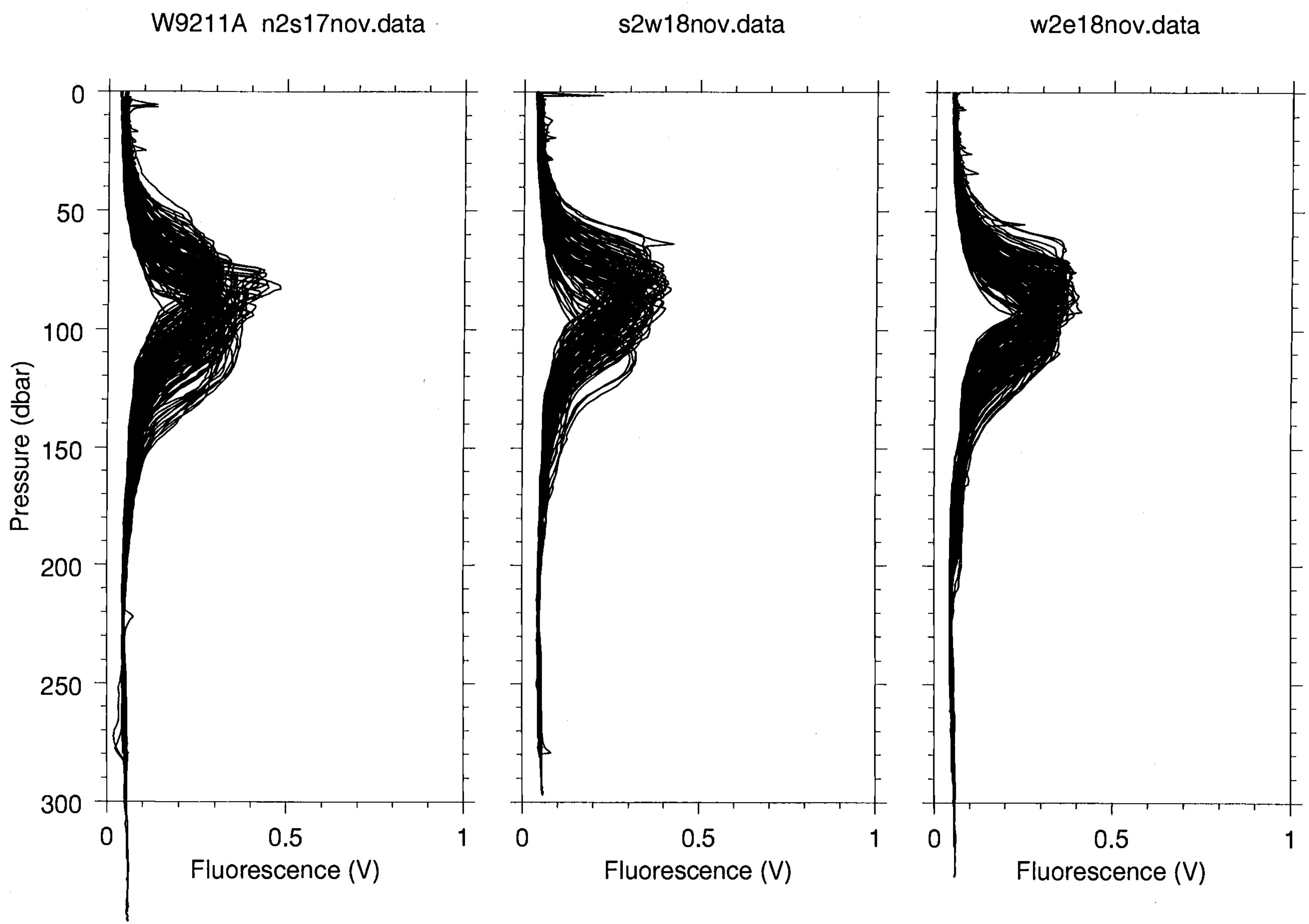
(until signal fades, 23 November)

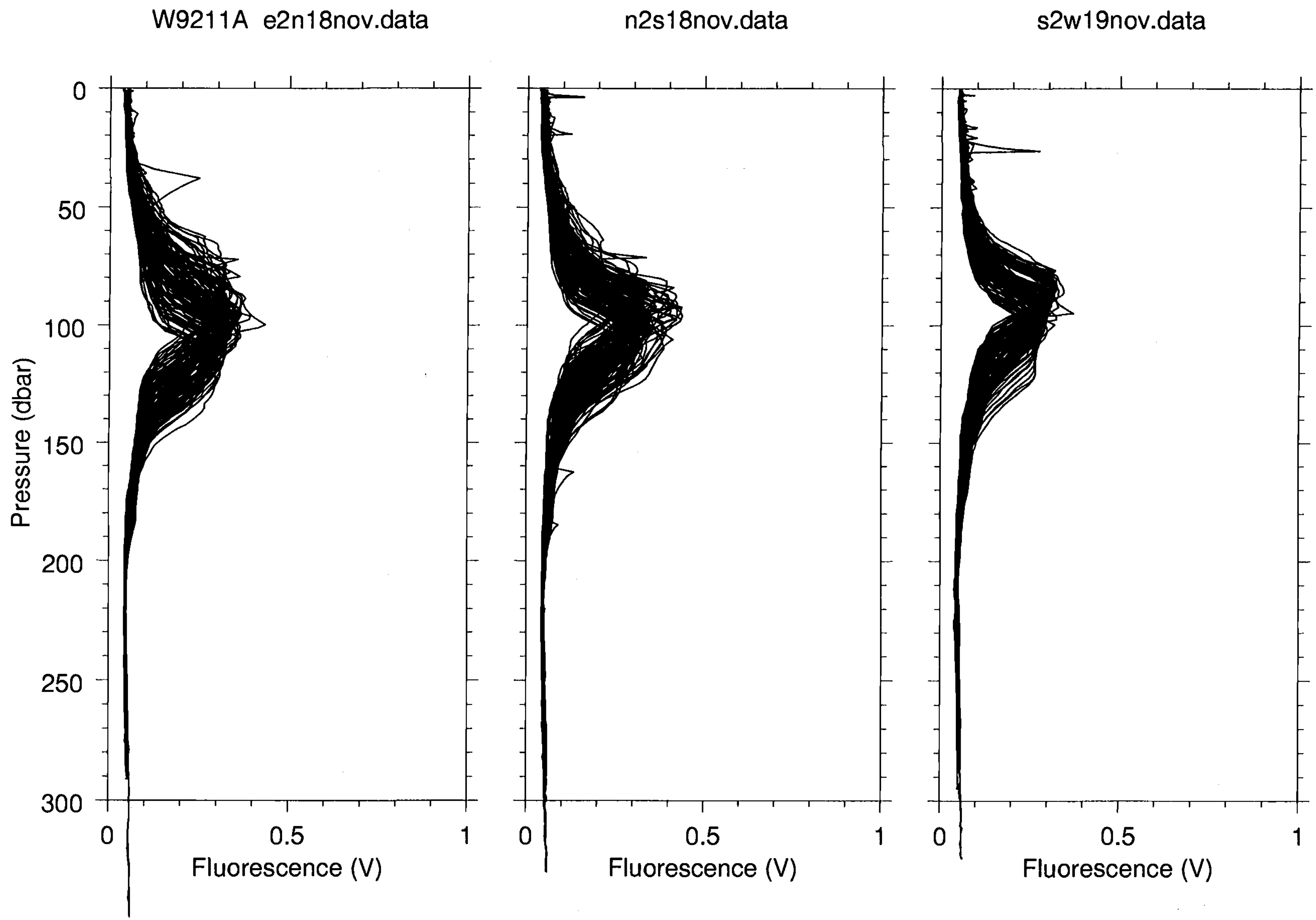

W9211A b2ln13nov.data
ln2ls13nov.data
n2s13nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)


W9211A ls2lw13nov.data
lw2le14nov.data
w2e14nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)

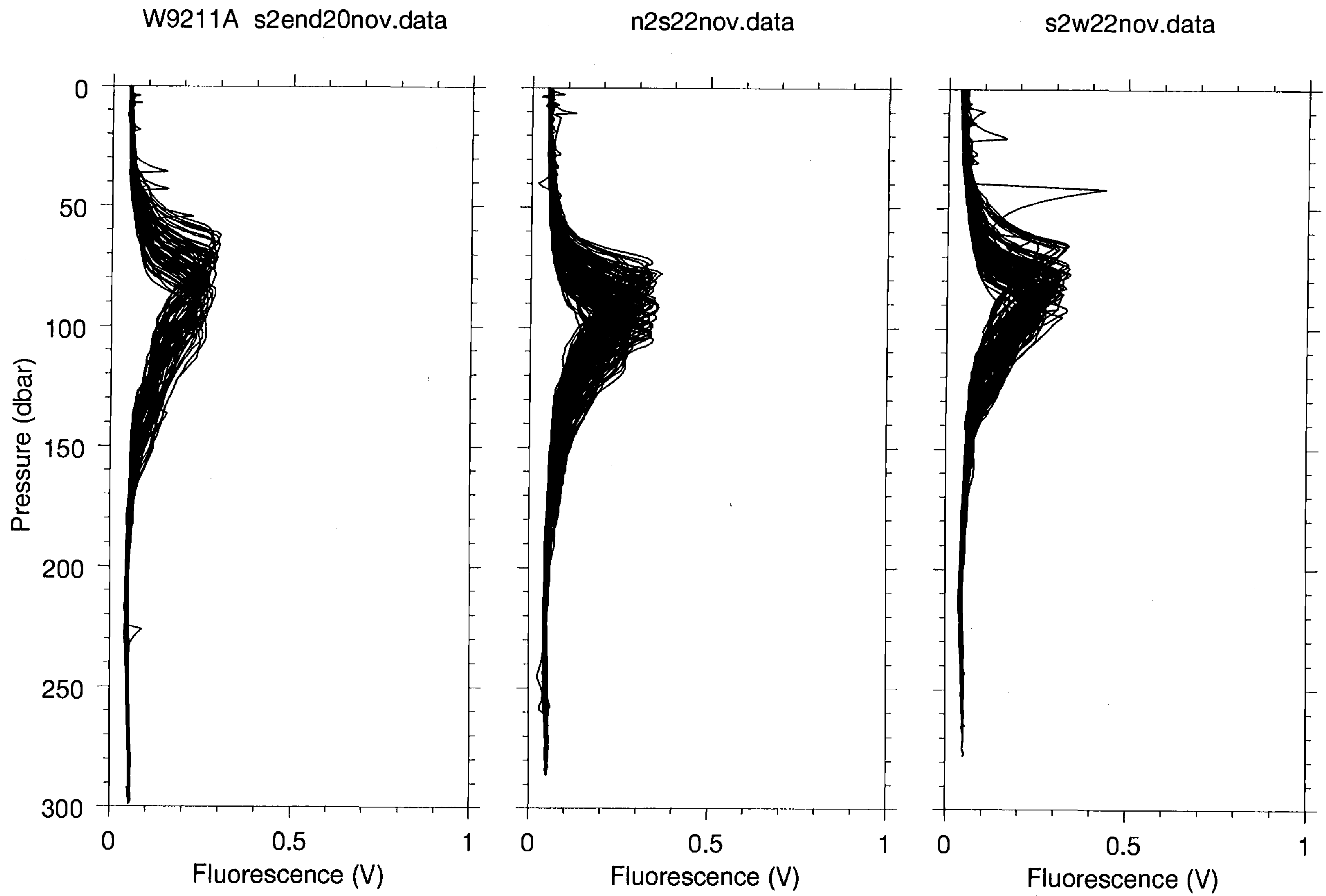

W9211A le2ln14nov.data
ln2n15nov.data
n2s15nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)

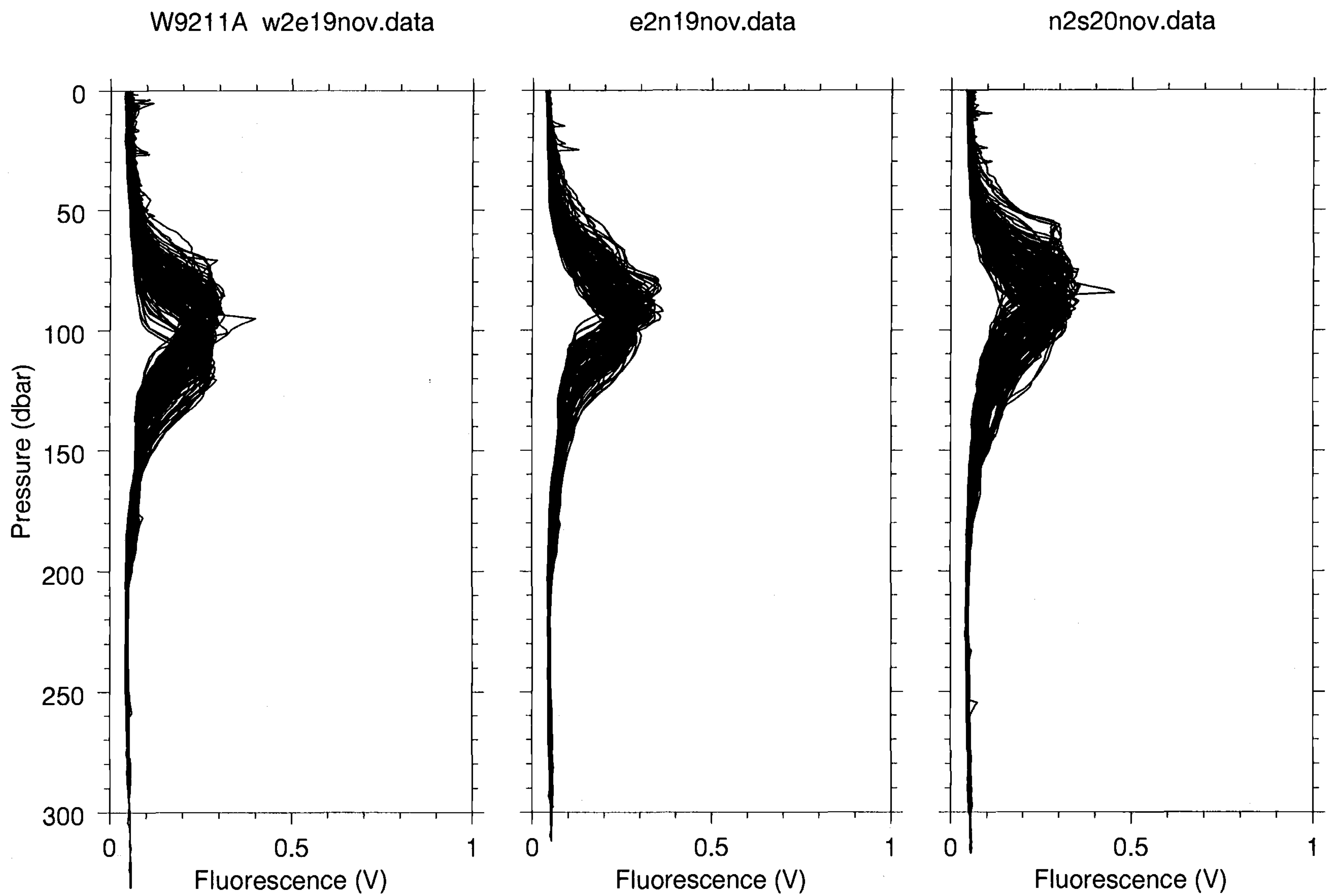

W9211A s2end15nov.data
b2e17nov.data
e2n17nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)

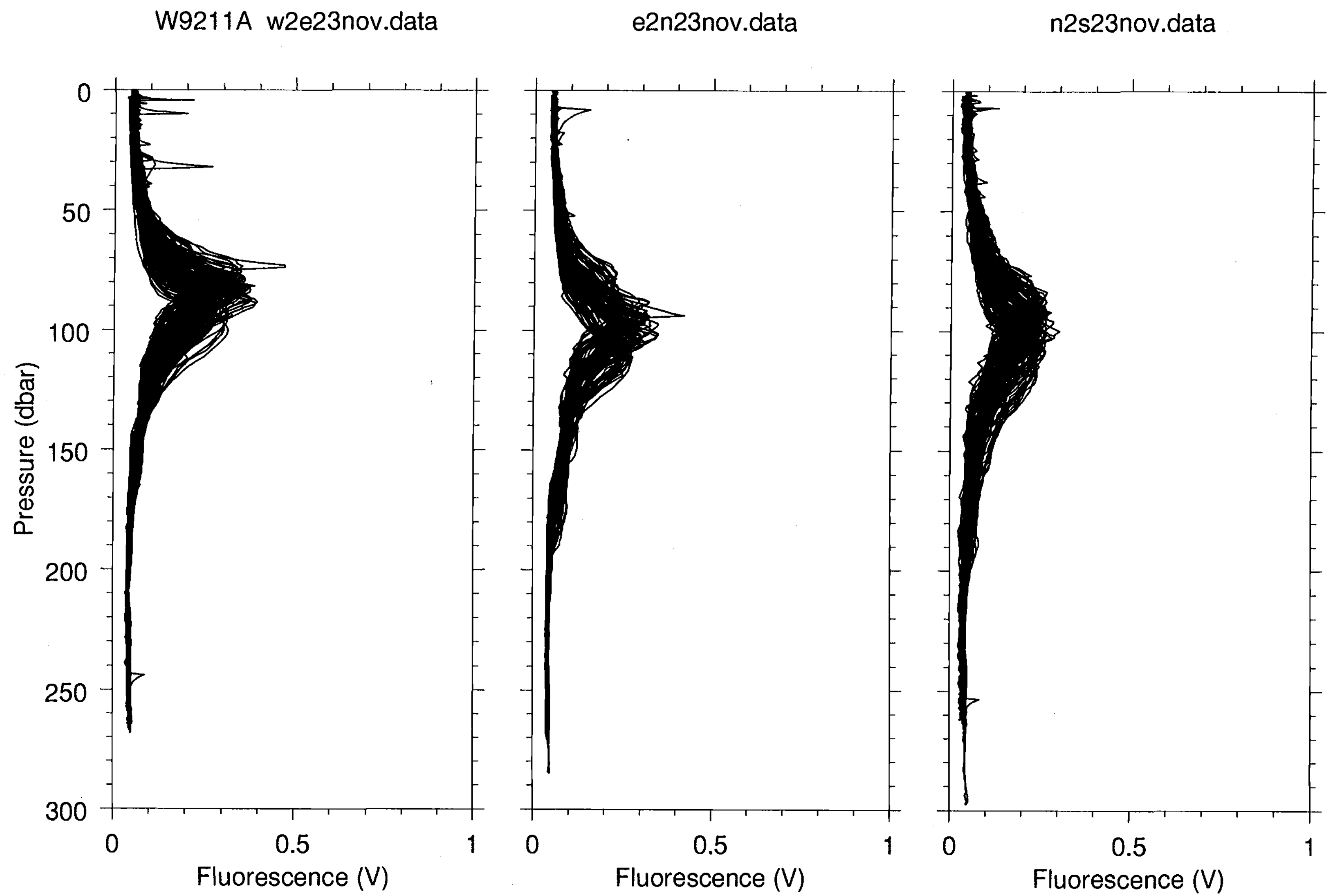

W9211A n2s17nov.data
s2w18nov.data
w2e18nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)



W9211A e2n18nov.data
n2s18nov.data
s2w19nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)


W9211A s2end20nov.data
n2s22nov.data
s2w22nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)


W9211A w2e19nov.data
e2n19nov.data
n2s20nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)


W9211A w2e23nov.data
e2n23nov.data
n2s23nov.data
Pressure (dbar)
0
50
100
150
200
250
300
0
0.5
1
Fluorescence (V)
Fluorescence (V)
Fluorescence (V)