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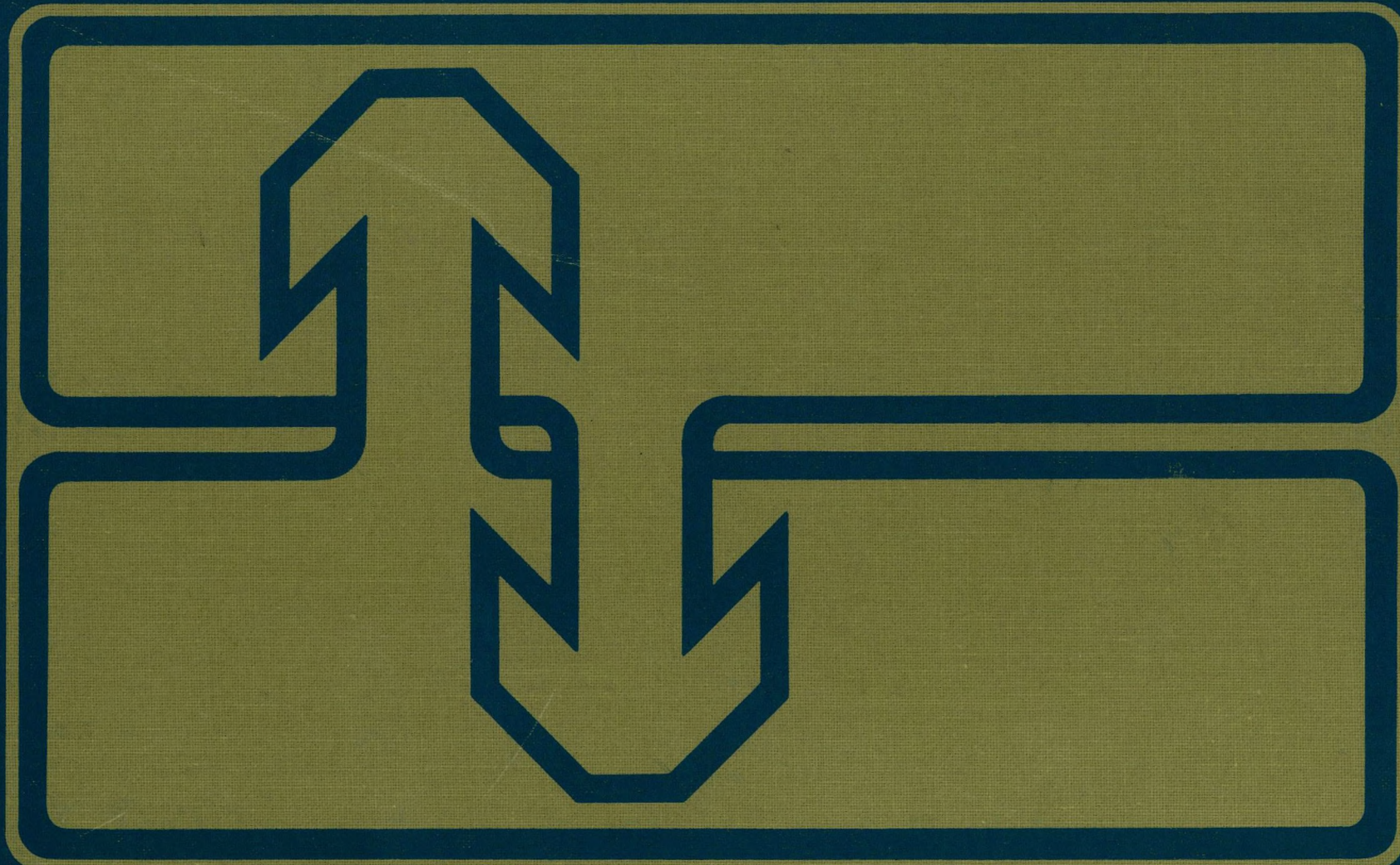
# BOMEX

Period III Upper  
Ocean Soundings

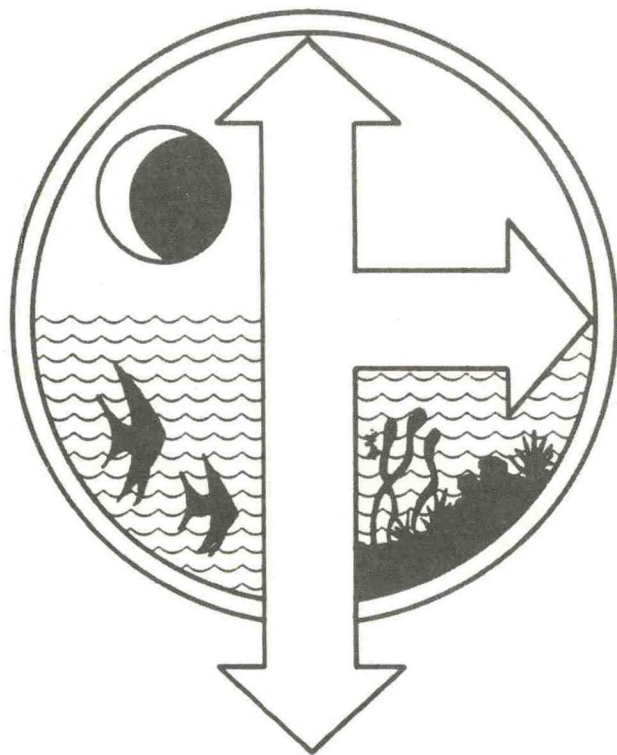
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# **BOMEX**

## **Period III Upper Ocean Soundings**

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Center for Experiment Design and Data Analysis

Rockville, Md.  
July 1972



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<b>1.</b>	<b>INTRODUCTION</b> .....	2
<b>2.</b>	<b>DATA COLLECTION</b> .....	4
	2.1 Instrumentation .....	5
	2.2 Observational Schedule .....	6
<b>3.</b>	<b>DATA PROCESSING</b> .....	7
	3.1 Digitizing and Preliminary Processing .....	8
	3.2 Digital Reduction and Editing .....	9
	3.3 Comparison of STD and Nansen Data .....	10
	3.4 Remarks .....	11
<b>4.</b>	<b>SALINITY, TEMPERATURE, AND SIGMA-t</b> .....	12
<b>5.</b>	<b>TEMPORAL VARIATIONS IN TEMPERATURE, SALINITY, AND SIGMA-t</b> .....	312
<b>6.</b>	<b>AVERAGE TEMPERATURE—SALINITY DIAGRAMS</b> .....	344
<b>7.</b>	<b>SPATIAL DISTRIBUTION OF TEMPERATURE, SALINITY, AND SIGMA-t</b> .....	350



# BOMEX

## Period III Upper Ocean Soundings

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# 1. INTRODUCTION

This atlas is designed to serve a threefold purpose: to present in graphical form a segment of the large volume of oceanographic data collected during the Barbados Oceanographic and Meteorological Experiment (BOMEX); to inform potential users of the quality and character of these data, which are now available from the BOMEX Temporary Archive; and to provide a new partial description of an important part of the tropical ocean that lies at the confluence of waters from many sources.

BOMEX was conducted from May 3 through July 28, 1969, over the Atlantic Ocean east of the island of Barbados. Ships, aircraft, buoys, satellites, and island stations were used for the large-scale field observations, which are described in detail in *BOMEX Field Observations and Basic Data Inventory* (BOMAP Office, 1971).

During the first three BOMEX Observation Periods—May 3 through May 15, May 24 through June 10, and June 19 through July 2—data were gathered in support of the Sea-Air Interaction Program, or BOMEX “Core Experiment,” which was designed for determining the rates of transfer of water vapor, heat, and momentum from the tropical ocean to the atmosphere (Holland 1972 a and b). Observations were made in the upper part of the ocean and in the lower atmosphere within a 500-km by 500-km square delineated by the fixed-ship stations shown in the accompanying figure.

As part of the Core Experiment, it was intended that data for formulating the oceanic energy budget would be provided by repeated sampling from the fixed ships of the physical parameters of the upper layers of the ocean, as well as current measurements from fixed buoys. To this end, plans called for salinity-temperature-depth (STD) soundings to be obtained from the fixed-ship stations and for current measurements to be made and recorded at several depths by moored buoys. The latter failed to yield complete data, but the STD soundings were found to be of generally good quality.

Data included in this atlas were collected during BOMEX Period III, June 19 through July 2, 1969. They consist of 297 STD soundings, from the surface to a depth of 1,000 m, which were made from the five fixed ships located at the corners and at the center of the array. Soundings were obtained eight times per day from the NOAA ships *Oceanographer* and *Discoverer* and the U.S. Coast Guard Cutter *Rockaway*, and four times daily from the NOAA ships *Rainier* and *Mt.*

*Mitchell*. In the sections that follow, observational procedures are described, the methods by which the data were reduced and edited are discussed, and comparisons are given between the data from the STD soundings and those obtained with hydrographic water sample bottles.

**The bathymetry** of the BOMEX square consists of a basin about 5,000 m deep in the eastern half, and a general east-west upward slope to about 2,000 m on the western boundary of the square. The northern part and the western slope of the “BOMEX Basin” are characterized by many features that rise more than 1 km above the sea floor (Shepard 1963). The BOMEX area lies northeast of the small Barbados Basin (Wust 1964), northwest of the Guiana Basin, and is bounded in the west by the Lesser Antillean arc and in the east by the Mid-Atlantic Ridge (Heezen and Tharp 1961).

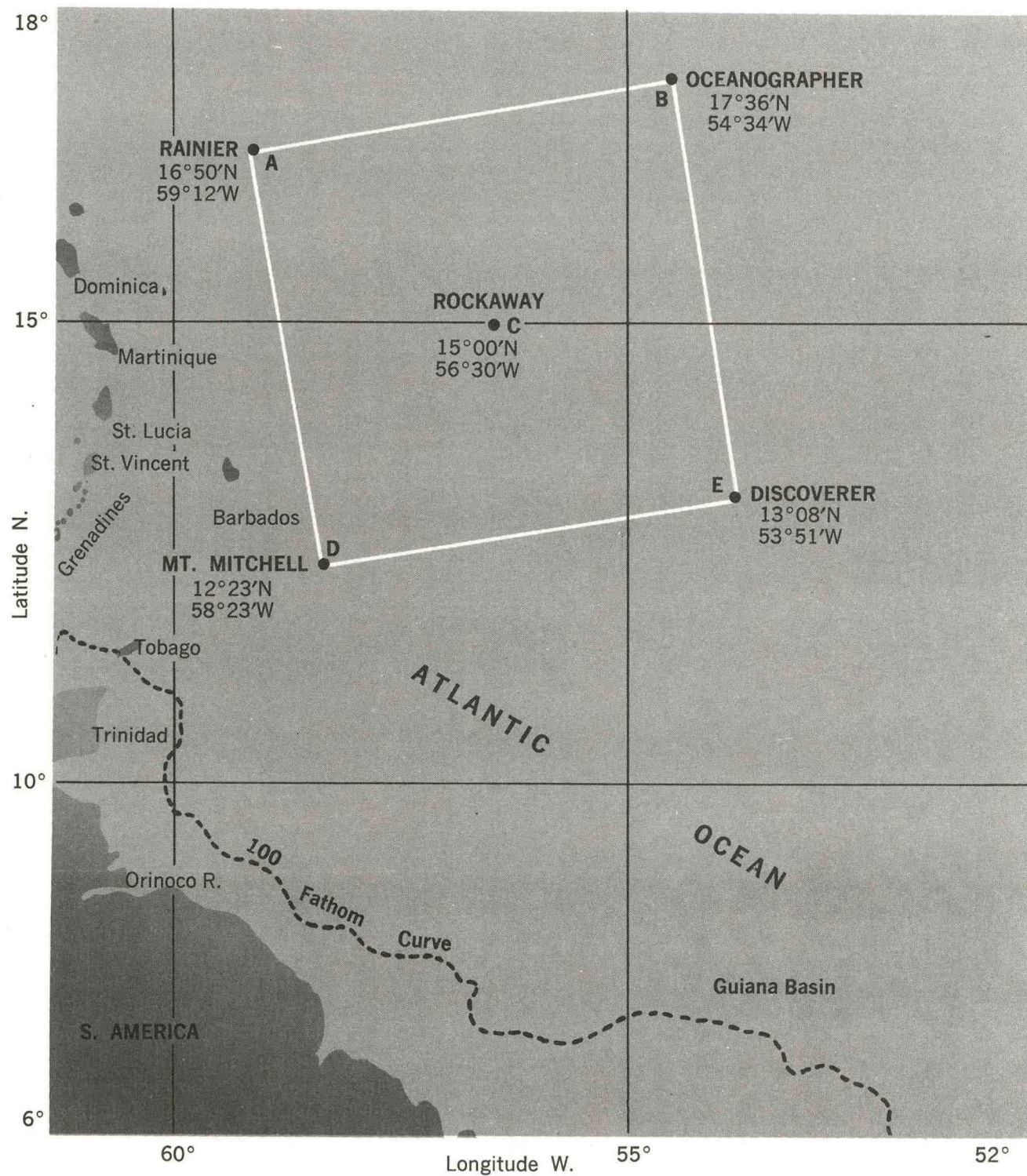
**The water** between about 200 and 600 m is typical of South Atlantic Central Water, while the deeper water appears to be Antarctic Intermediate Water that is channeled into the “BOMEX Basin” between the Mid-Atlantic Ridge and the northeastern coast of Brazil (Sverdrup et al. 1942; von Arx 1962). The surface waters contain contributions from the Atlantic Equatorial Current System—which has its western terminus near the BOMEX area—and, possibly, from the Amazon River (Landis 1971).

**Surface currents** in the area, which lies near the southern limit of the northeast trade winds, show a mean drift of 0.5 to 0.8 kt to the west-northwest (U.S. Naval Oceanographic Office 1969).

**Mean net insolation rates** measured by Eppley pyranometers averaged over three of the ships for BOMEX Period III were 543 ly/day before June 27 and 503 ly/day after June 27 (Delnore 1972). By net insolation is meant that part of the solar radiation which is found to enter the water after upward reflection by the sea surface has been accounted for

**The weather** from June 20 through June 26 was generally undisturbed, except for convective shower activity on June 21. On June 28 and 29 a large convective system that passed through the BOMEX array left the entire area slightly unsettled through the end of Period III. Cloud conditions during this time are documented in *BOMEX Period III High-Level Cloud Photography Atlas* (BOMAP Office 1971).





The BOMEX array, showing fixed-ship positions, June 21—July 2, 1969.



# 2. DATA COLLECTION

At the beginning of BOMEX, in early May 1969, each ship was on its assigned station, moored via a deep-sea anchor system. The *Rainier*, *Oceanographer*, *Mt. Mitchell*, and *Discoverer*, respectively, occupied positions ALFA, BRAVO, DELTA, and ECHO at the corners of the square array, and the *Rockaway* was stationed at position CHARLIE at the center of the array. Three of the mooring systems failed during the very first few days of BOMEX, and by the beginning of Period III only the *Oceanographer* and *Discoverer* still had their moorings, which subsequently also failed.

After mooring failure, the ships operated in a steam and drift mode to remain near their stations. A chronology of ship operations during Period III is given in table 1.

The times at which soundings were made are shown in the accompanying figure. No observations were made on June 27, because this was a maintenance and calibration day, and on June 30 the *Rockaway*, having occupied the center position in the array, was sent to replace the *Oceanographer*, which was forced into port. Soundings are also, however, missing for

Table 1. Chronology of ship operations during BOMEX Period III

Ship activity*					
Date 1969	Rainier	Oceanographer	Rockaway	Mt. Mitchell	Discoverer
June 19	Departed Bridgetown	Departed Bridgetown	Departed Bridgetown	Departed Bridgetown	Departed Bridgetown
20	On Station "A"	Moored on Station "B"	On Station "C"	On Station "D"	Moored on Station "E"
21	On Station "A"	Deep sea moor. failed	On Station "C"	On Station "D"	Deep sea moor. failed
22-25	On Station "A"	On Station "B"	On Station "C"	On Station "D"	On Station "E"
26	On Station "A"	On Station "B"	On Station "C"	Departed "D" to recover buoy, then returned	On Station "E"
27	On Station "A"; M&C Day*	On Station "B"; M&C Day*	On Station "C"; M&C Day*	On Station "D"; M&C Day*	On Station "E"; M&C Day*
28	On Station "A"	On Station "B"	On Station "C"	On Station "D"	On Station "E"
29	On Station "A"	On Station "B"	On Station "C"	Departed "D" to recover BLIP†, then returned	On Station "E"
30	On Station "A"	Departed for Bridgetown	Departed "C" for "B"; arrived at "B"	On Station "D"	On Station "E"
July 1	On Station "A"	Arrived in Bridgetown	On Station "B"	On Station "D"	On Station "E"
2	Departed for Bridgetown	In port at Bridgetown	Departed for Bridgetown	Departed for Bridgetown	Departed for Bridgetown
3	Arrived in Bridgetown	In port at Bridgetown	Arrived in Bridgetown	Arrived in Bridgetown	Arrived in Bridgetown

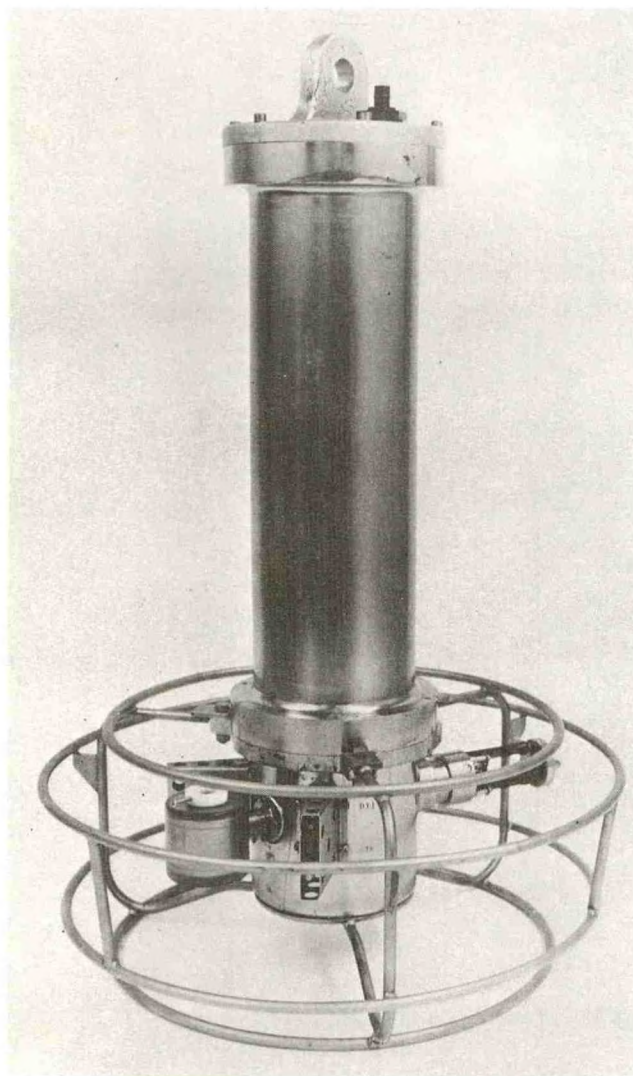
\* M&C Day = Maintenance and calibration day.

† BLIP = Boundary Layer Instrument Package, a sensor and telemetry device suspended from a tethered helium-filled balloon.

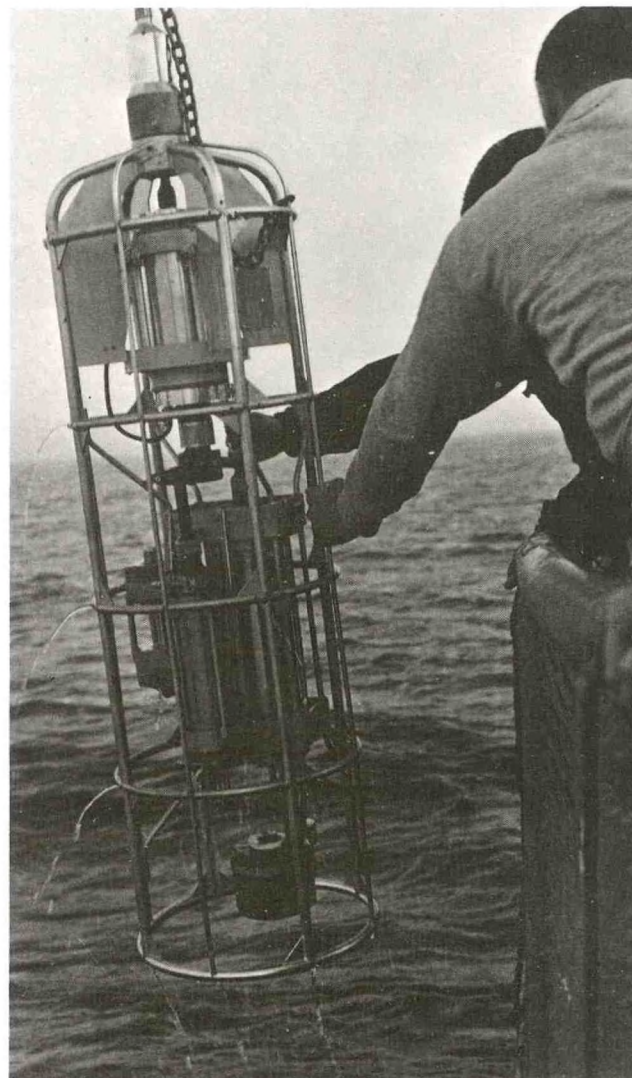








STD sensor package Model 9040, used aboard the **Mt. Mitchell** and **Rainier**. (The sound velocimeter shown was not used during BOMEX.)



STD sensor package Model 9006, used aboard the **Discoverer**, **Oceanographer**, and **Rockaway**.

## 2.2 OBSERVATIONAL SCHEDULE

From the three larger ships—the *Oceanographer*, *Rockaway*, and *Discoverer*—soundings were obtained at 0100, 0300, 0600, 0900, 1200, 1500, 1800, and 2100 GMT. From the *Rainier* and *Mt. Mitchell* soundings were made at 0100, 0600, 1200, and 1800 GMT. These schedules were maintained by each ship for the entire time that ship was on station, barring such difficulties as severe wire angle (forcing premature termination of the sounding) and interference between the STD soundings and other programs. The established procedure consisted of soaking the STD sensor system at the surface for 5 min, lowering it to 100 m at a rate of 20 m/min, and then letting it descend to 1,000 m at a rate of 40 to 50 m/min. These depths were determined from the pressure transducer's output. Salinity, temperature, and pressure were recorded on SCARD from the start of descent until the STD unit reached 1,000 m. No data were recorded during sensor retrieval.

Two Nansen sampling bottles were attached to the lowering cable for the casts at 2100 GMT on the *Rockaway* and at 0100 and 1200 GMT on the other four ships. One bottle was tripped at the surface and the other at 1,000 m. Results of the Nansen sampling were used for intercomparison with the STD temperatures and salinities at these two depths. (See sec. 3.3.)



# 3. DATA PROCESSING

## 3.1 DIGITIZING AND PRELIMINARY PROCESSING

After the end of the BOMEX field operations, the bulk of the tape playback and digitizing of the SCARD analog tapes was done at NASA's Computer Complex at Slidell, La. The tapes were played back at 16 times the recording speed, and discriminators were used to convert the tape signals to d-c voltages, which were then converted to digital signals and recorded on digital magnetic tape. Although this procedure was used successfully for the bulk of other types of BOMEX data, it proved unsatisfactory for the STD observations because the bandwidth of the salinity signal from the STD sensor exceeded the bandwidth of the discriminators available at Slidell. As a result, three discriminators were used for the salinity signal, leaving it up to the subsequent processing program to determine the right value. Apparently, conversion by the analog-to-digital converter was very rapid (on the order of micro-seconds), transferring to the resulting data the appreciable short-term instability of the Paraloc oscillator in the STD system. Flutter in the tape motion could cause the same type of scatter in the data. The conversion process also resulted in a depth resolution of about 2 m at a sample rate of 2 samples per second (2 sps).

In view of the difficulties encountered, the decision was made to attempt STD digitization at NASA's Mississippi Test Facility (MTF), which has a data acquisition system designed for acquiring large quantities of data during static test firing of various rocket stages. This 200-channel system is connected to a Beckman 410 computer and includes a number of counters that can develop a period average measurement of a signal, a fact of particular importance in STD digitizing, since it offers the possibility of measuring more precisely the frequency of the signal on the tape and of making the measurement reflect the average value of the frequency during the measuring interval.

The clock frequency used with the counters in initial experiments at MTF was 100 kHz (10- $\mu$ sec period), giving a precision of interval measurement of one part in 4,000, a precision insufficient for adequate rendition of STD data. Some improvement was effected by raising the clock frequency to 250 kHz, the maximum value supported by the acquisition system. With 120-ms counting intervals, this results in a precision of

one part in 30,000. The digitized signals also contained much more scatter than could be accounted for by quantization alone, and it soon became apparent that a variation in measured frequency of about one part in 3,000 was being introduced by tape flutter. A partial solution to this problem consisted of measuring the frequency of the reference signal from the tape, as well as the salinity, temperature, and pressure signals. Since the ideal frequency (3125.0 Hz) of the control track signal was known, it was possible to develop a corrected measure for any signal by use of

$$F_{\text{corrected}} = F_{\text{measured}} \frac{3125.0}{F_{\text{control track}}},$$

where F is the frequency for salinity, temperature, or pressure, in hertz.

## 3.2 DIGITAL REDUCTION AND EDITING

The magnetic tapes produced at MTF were further reduced and edited at NOAA's Center for Experiment Design and Data Analysis by a two-step process, with the basic aim of obtaining continuous time series of data for each sounding that could be used in subsequent analyses. Every effort was made to avoid changing the values of data points, and editing was therefore restricted to (1) deletions of out-of-range values, (2) linear interpolations of pressure, salinity, or temperature across not more than several seconds in time, and (3) inserting corrected time, date, and ship position, as well as descriptive comments, in the header information. Only a very small number of casts were deleted in their entirety.

Conversion from frequency to oceanographic quantities was effected during the first phase of the two-step digital reduction process by use of the linear equation

$$X = (F - Z) \times M + C,$$

where X is salinity (parts per thousand), temperature (degree Celsius), or pressure (decibars); F is the frequency (Hz) from the data tape; Z is the bias, or zero frequency (Hz); M is the slope (units of X per Hz) in the linear transform; and C is the y-intercept (units of X). Table 2 gives values of Z, M, and C for temperature and salinity and of Z and M for pressure; all Z and M values for each parameter for each ship were constant



throughout BOMEX Period III. Values of C are given both in the uncorrected form supplied by the manufacturer and used on the archived data tapes, and in the corrected form used in the compilation of this atlas. The corrections were determined by comparison with the Nansen data, as discussed in section 3.3.

Temperature and pressure were smoothed by means of a double running mean low-pass filter. Developed by Holland (1968), this filter has characteristics by which the response of both the pressure and the temperature sensor, including the effects of ship motion, could be preserved, but quantizing noise eliminated. The time control track originally recorded on SCARD was used to minimize the influence of variations in tape drive speed.

Second, in order to obtain a clean time series of salinity, pressure, and time, at a density of 8 sps, corrections were applied both to the header information and the data. Ships' bridge logs and scientific logs were scrutinized for verification of starting time and geographical position of each sounding, and any comments pertaining to sensor malfunctions or other conditions of importance in analyzing a particular sounding were added to the header information.

Regions of rapid changes, discontinuities, or out-of-range values in the salinity, temperature, and pressure data, as revealed by the printout produced during the first step of the reduction process, were examined in detail. Any clearly unreasonable values were eliminated, or, more frequently, replaced by machine-interpolated values. These procedures were used only when a small number of points were involved; if more extensive corrections were necessary, explanatory comments were inserted into the header information.

The proximity of the STD unit to the air-sea interface during the soaking period can be determined by inspection of the salinity and temperature data for values lying within certain ranges and by examination of the pressure data for oscillations corresponding to the rolling and pitching of the ship. In some 10 percent of the soundings, because of manual adjustments of the recording unit on deck, pressure values were either excessively high or low. All pressure data for these particular soundings were shifted to make the pressure during the soaking period read between 1 and 2 decibars.

The tapes resulting from this two-step reduction

and editing process consist of clean time series of all STD data obtained during BOMEX, with corrected and verified header information. There are several files on each tape, each file covering one sounding. The first record in each file contains the header information for that particular sounding; the remaining records contain the data, digitized at the rate of  $8\frac{1}{3}$  sps. Each data record consists of 20 BCD card images, and each image is made up of five triples, one triple constituting a pressure, a salinity, and a temperature. The format for each card image in standard FORTRAN is 5 (F6.2, F5.3, F5.3). A typical sounding requires about 130 records, of which the last is zero filled. The tapes are available in seven- or nine-channel configuration. A complete inventory of these data, ordering instructions, and costs are given in "BOMEX Temporary Archive: Description of Available Data" (de la Moriniere 1972), which also discusses in detail the procedures followed in processing the STD data.

The archived magnetic tapes do not include compensations for the "spiking" that occurs in the salinity as a result of the time-lag characteristics of the temperature sensor. In the preparation of this atlas, however, such compensation was effected by extracting from the salinity a value of conductivity based on the recorded temperature, obtaining a lag-corrected temperature, and calculating a new salinity.

The conductivity G was computed from salinity S without regard to pressure effects by means of the equation (Mosetti 1966)

$$G = (\alpha + \beta T^k) S^h,$$

and the corrected temperature  $\theta$  was obtained by assuming a simple lag constant for the temperature and solving

$$\frac{d\theta}{dt} = \frac{1}{\tau} (T - \theta),$$

where T is the recorded temperature,  $\tau$  is a time constant of 250 ms, considered a reasonable value (N. L. Brown 1970, private communication), and  $\alpha$ ,  $\beta$ , h, and k are suitably chosen constants.

The corrected salinity  $S_e$  is then

$$S_e = \left\{ \frac{(\alpha + \beta T^k)}{(\alpha + \beta \theta^k)} \right\}^{1/h} S,$$

where S is the original, uncorrected salinity.



Table 2. Calibration constants

Ship	Model	Serial No.	Z	M	C Uncorrected	C Corrected
<b>Rainier</b>						
Frame	9040	34				
Salinity sensor		5334	4995 Hz	0.00343%/Hz	30.0‰	30.020‰
Temperature sensor		5334	2127 Hz	0.01790°C/Hz	- 2.0°C	- 1.968°C
Pressure sensor (Range: 0-3,000 decibars)		5334	9712 Hz	1.915 decibars/Hz		
<b>Oceanographer</b>						
Frame	9006	01				
Salinity sensor		3033	4995 Hz	0.00343%/Hz	28.0‰	28.017‰
Temperature sensor		2253	2127 Hz	0.01790°C/Hz	- 2.0°C	- 1.992°C
Pressure sensor (Range: 0-4,000 decibars)		2297	9712 Hz	1.279 decibars/Hz		
<b>Rockaway</b>						
Frame	9006	00				
Salinity sensor		2706	4996 Hz	0.00344%/Hz	30.0‰	30.0‰
Temperature sensor		3603	2127 Hz	0.01790°C/Hz	- 2.0°C	- 2.067°C
Pressure sensor (Range: 0-1,500 decibars)		2638	9705 Hz	0.951 decibars/Hz		
<b>Mt. Mitchell</b>						
Frame	9040	19				
Salinity sensor		5319	4995 Hz	0.00343%/Hz	30.0‰	29.987‰
Temperature sensor		5319	2127 Hz	0.01790°C/Hz	- 2.0°C	- 2.498°C
Pressure sensor (Range: 0-3,000 decibars)		5319	9712 Hz	1.915 decibars/Hz		
<b>Discoverer</b>						
Frame	9006	34				
Salinity sensor		3031	4995 Hz	0.00343%/Hz	28.0‰	28.012‰
Temperature sensor		3689	2127 Hz	0.01790°C/Hz	- 2.0°C	- 1.931°C
Pressure sensor (Range: 0-4,000 decibars)		3550	9704 Hz	1.268 decibars/Hz		

This technique effectively reduces the salinity spiking that occurs as the sensor moves through layers of strong temperature gradient, but leaves data in low gradient regions virtually untouched.

After compensation for lag, the time series data were sorted by depth into 1,000-point arrays for each sounding. This was done by determining for each integer decibar level of pressure a salinity and temperature by averaging together all salinity and temperature values between 1/2 decibar above and 1/2 decibar below

the integer level. Only data of monotonically increasing depth were used. Since the data were originally obtained with the sensors moving at about 40 m/min and were later digitized at 8 sps, the data value at each integer level decibar is the average of approximately 12 data points on the time-series magnetic tapes.

In calculating sigma-t, the salinity-chlorinity relationship given in *International Oceanographic Tables* (National Institute of Oceanography of Great Britain and Unesco, 1966, p. 8 ff.) and the temperature-density



relationship as analyzed by the U.S. Navy Hydrographic Office (LaFond 1951, p. 14) were used.

### 3.3 COMPARISON OF STD AND NANSEN DATA

From all five ships, one surface and one 1,000-m sample were obtained with Nansen bottles attached to the lowering cable during at least one, and usually two, STD soundings daily. Comparison of these data, excluding the insufficiently documented Nansen salinity data from the *Rockaway*, yielded the mean differences between Nansen and STD temperatures and salinities shown in table 3. As noted in the preceding section, this comparison was also used in determining the corrected C (y-intercept) values for temperature and salinity listed in table 2, and served as the basis for obtaining the corrected values used in this atlas.

In the case of the C value for pressure, Nansen data were not used. Instead, a value was chosen for each sounding by shifting the initial pressure data to zero gage pressure at the air-sea interface. Any corrections other than zero are documented in the header information on the archived tapes and are also reflected in the graphic displays in this volume.

### 3.4 REMARKS

Various aspects of the BOMEX experience that may be of general significance in planning future large-scale programs have been discussed in some detail by Holland and Williams (1971). This experience as it relates to the STD data collection and processing procedures might bear brief mention here.

No preparation was made before the field operations for immediate processing of the SCARD tapes.

**Table 3.** Comparison of STD data with simultaneously obtained Nansen bottle data, showing the amount by which the STD readings were higher than those obtained from the Nansen bottles

Ship	Pressure (decibars)	Temperature			Salinity		
		Mean difference	Standard deviation of difference	No. of comparisons	Mean difference	Standard deviation of difference	No. of comparisons
Rainier	0	-0.034°C	0.039°C	14	+0.049‰	0.038‰	15
	1,000	-0.031°C	0.065°C	13	-0.089‰	0.064‰	13
Oceanographer	0	-0.020°C	0.021°C	15	-0.030‰	0.059‰	15
	1,000	+0.003°C	0.028°C	15	-0.005‰	0.192‰	15
Rockaway	0	+0.026°C	0.029°C	8			
	1,000	+0.107°C	0.108°C	9			
Mt. Mitchell	0	+0.610°C	0.028°C	21	-0.007‰	0.030‰	19
	1,000	+0.386°C	0.097°C	16	+0.033‰	0.028‰	16
Discoverer	0	-0.049°C	0.030°C	18	-0.036‰	0.026‰	18
	1,000	-0.087°C	0.069°C	12	+0.013‰	0.041‰	15



Deferment of such processing until the field operations had been completed accounts for many of the difficulties encountered in subsequent data reduction as outlined in the preceding sections.

The most common problem faced by the editors of the data was that of matching starting times of individual soundings on the magnetic tapes with similar information in the logbooks. Julian day numbers were not recorded on SCARD, as was the time of day, but were entered manually during the preliminary processing at MTF. This caused discrepancies that could have been avoided by use of a time code generator, with the output, including Julian day, recorded on tape.

Another problem was that of calibration constants for the various sensors. Each sensor had a transfer function, and knowledge of the constants for this transfer function was needed throughout the reduction and editing process. To make this knowledge available, provisions were made for recording the serial number of each sensor in the scientific logs kept aboard ship. Backup sensors were carried aboard all ships to minimize the effect of breakdowns, but changes in sensors were in many cases not recorded properly. Since complete perfection in manually entering such information in ships' logs cannot be expected, it would be desirable, from the standpoint of later data analysis, that sensors with identical calibration constants be placed aboard each ship, and ideally, that exchange of sensors among the ships be kept to an absolute minimum. Careful documentation of internal adjustment of a sensor's reference points to compensate for drift would also be helpful in subsequent reduction and editing of data.

At the conclusion of each of the four BOMEX Observation Periods, calibration teams visited the five ships then in port at Bridgetown, Barbados, for an over-the-side check of the STD sensors. These tests were carried out with extreme care and the recorded results would have been of value in eliminating some of the difficulties discussed above. They were, unfortunately, lost in transit from Barbados, which shows that even with good planning mistakes are bound to occur. Perhaps ways of reducing these mistakes to a minimum can be sought for future experiments.



## 4. SALINITY, TEMPERATURE, AND SIGMA-t

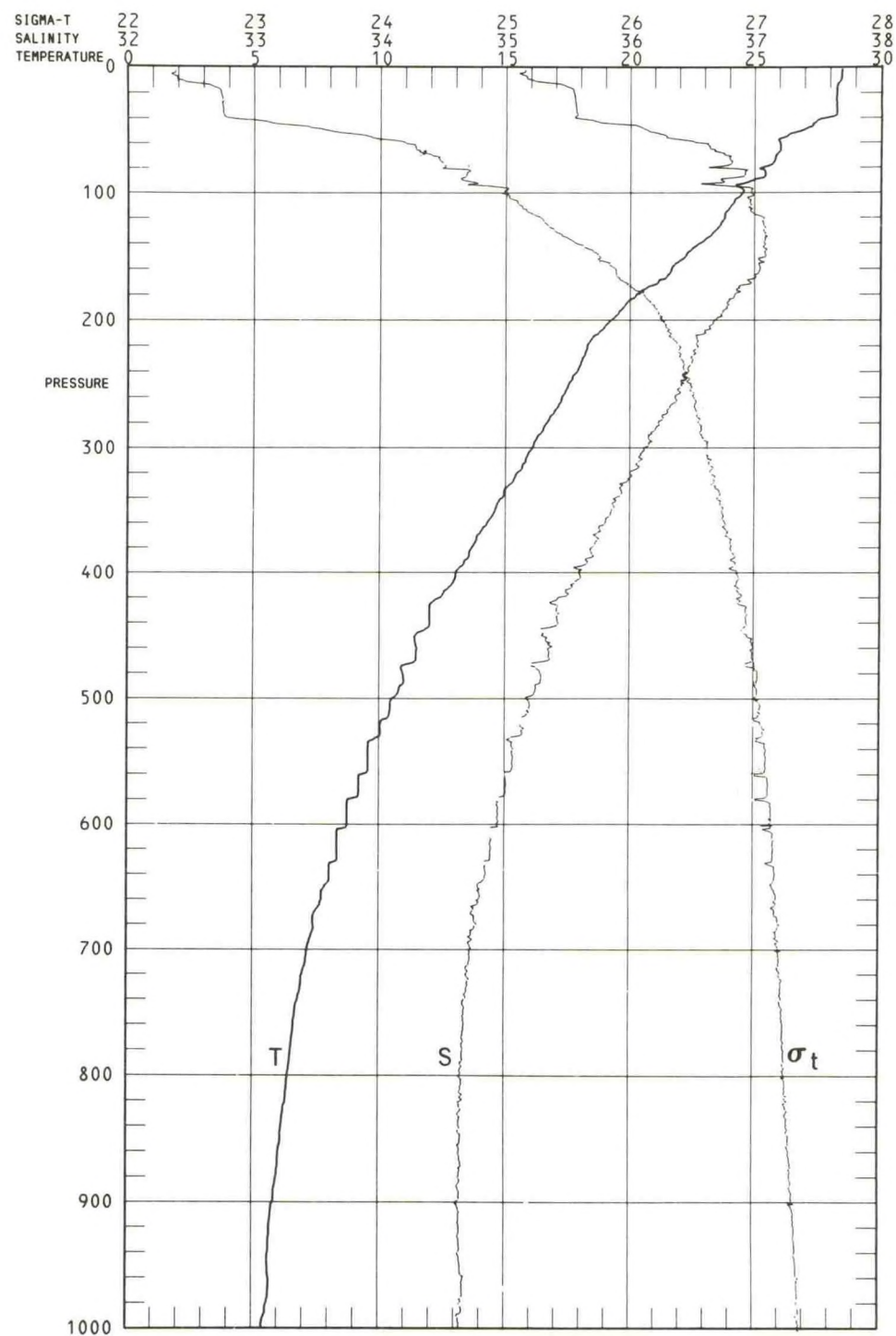
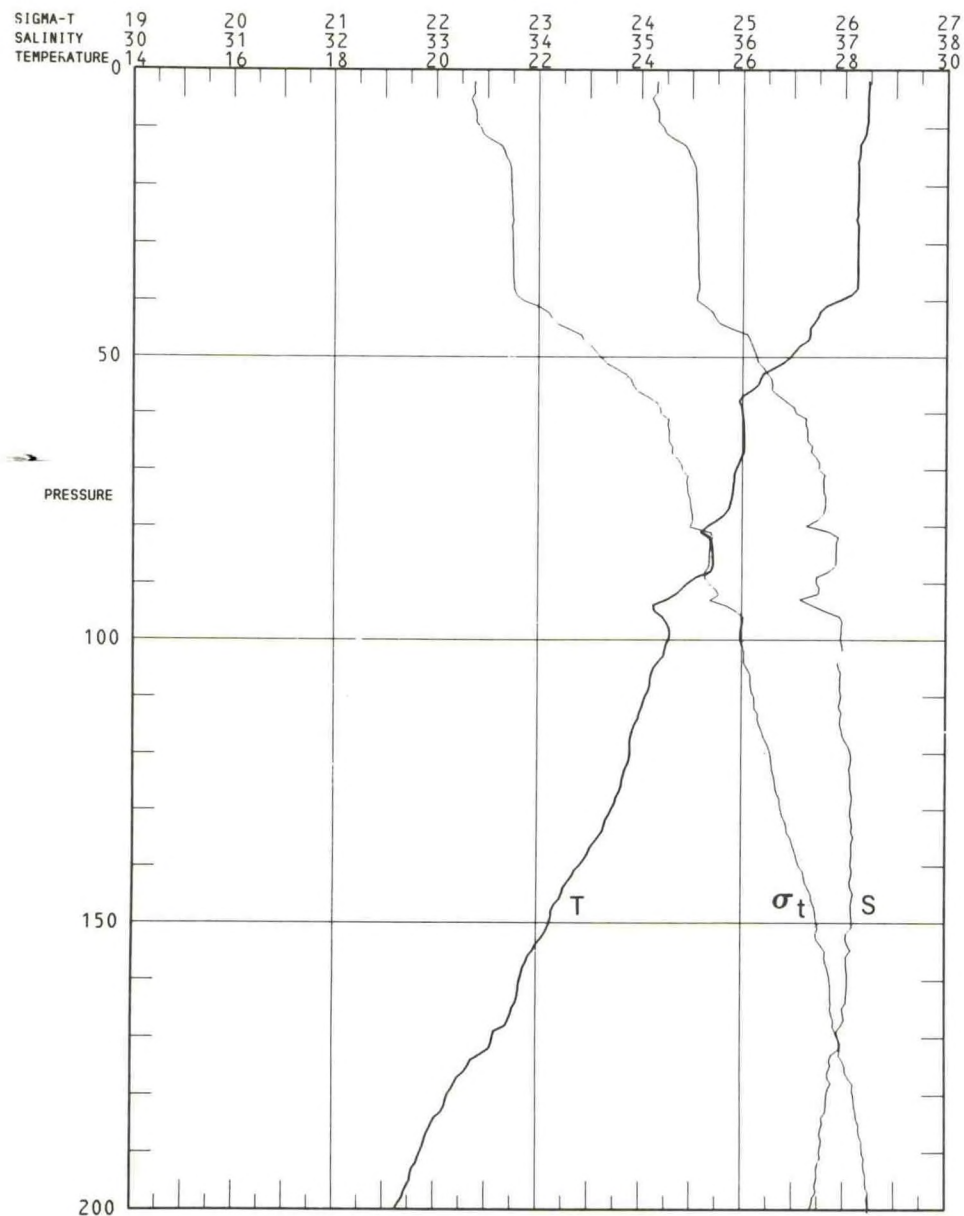
Profiles of salinity, temperature, and calculated sigma-t versus depth, arranged chronologically for each ship, are shown in this section. For each sounding, two plots are given: one extending from the surface to 200 decibars, and the other from the surface to 1,000 decibars. This format was chosen to allow inspection of the deep layers while avoiding serious loss of detail in the surface layer.

The resolution in salinity and sigma-t is finer for the 1,000-decibar plots than for the 200-decibar plots, at the expense of losing near-surface values of these parameters. However, the near-surface values can be obtained from the shallower plots, where better vertical resolution is available and the full ranges of near-surface salinity and sigma-t are displayed. A few soundings were made by some of the ships while enroute to their respective stations. Where adequate documentation of position exists, these soundings are included here.



RAINIER YEAR 1969 DAY 172 TIME 118 GMT LAT.16°18'N LON.059°14'W  
 PRESSURE CORRECTION OF +18.0 DECIBARS APPLIED TO THE ENTIRE CAST.  
 STD TAKEN ENROUTE TO STATION ALFA.

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

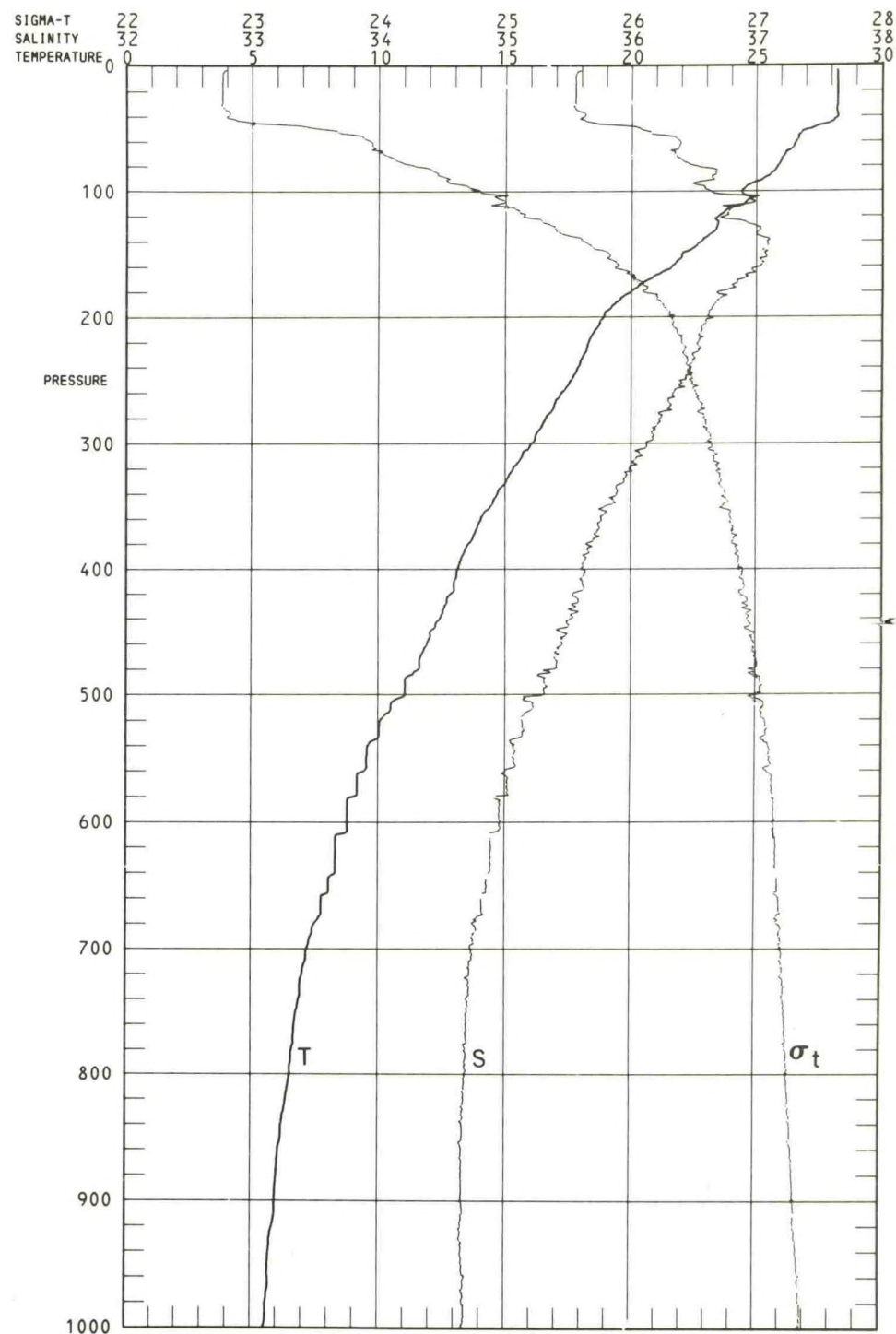
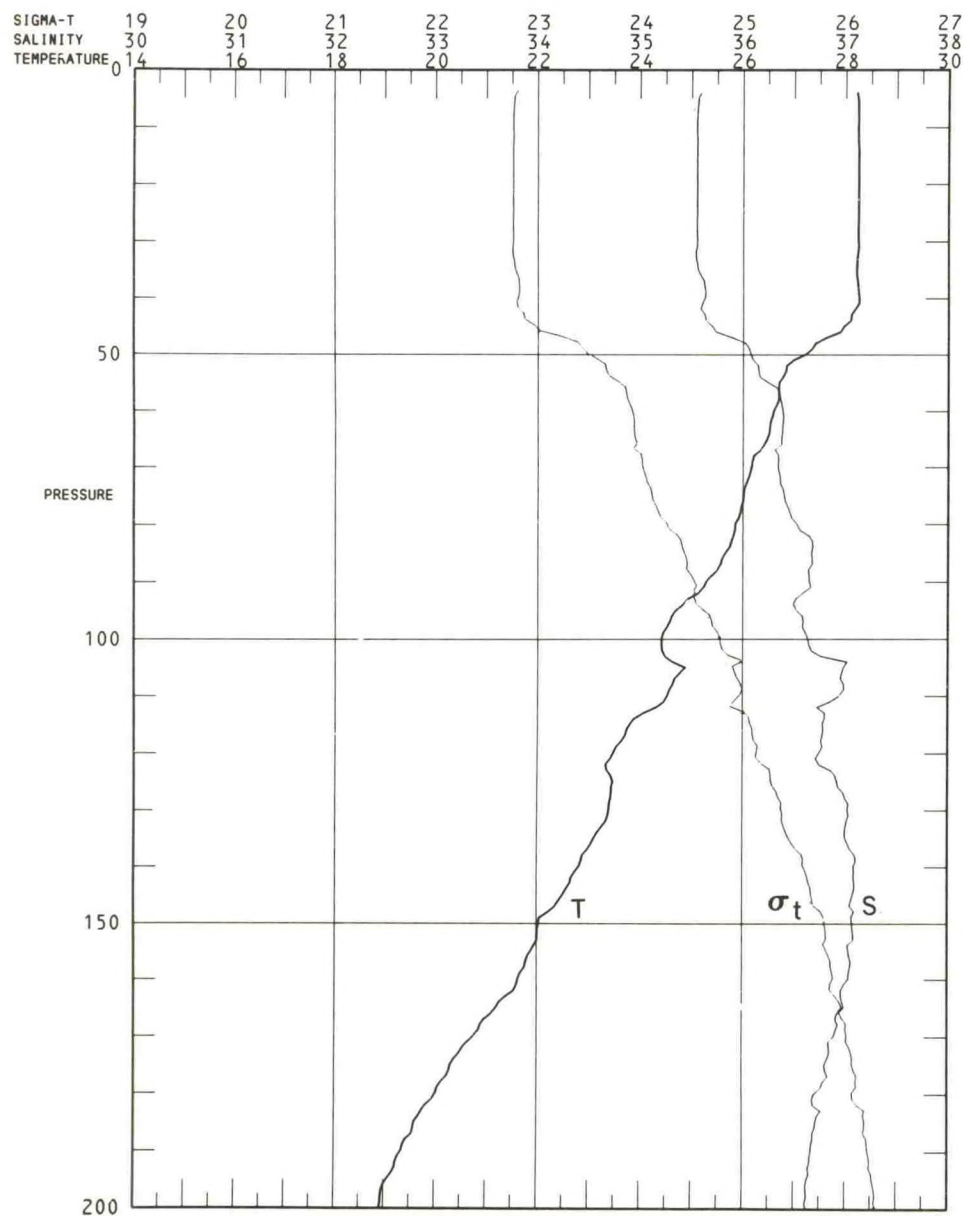


Rainier, June 21, 1969, 0118 GMT, 16°18'N 059°14'W



RAINIER YEAR 1969 DAY 172 TIME 612 GMT LAT.16°15'N LON.059°12'W  
PRESSURE CORRECTION OF +15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

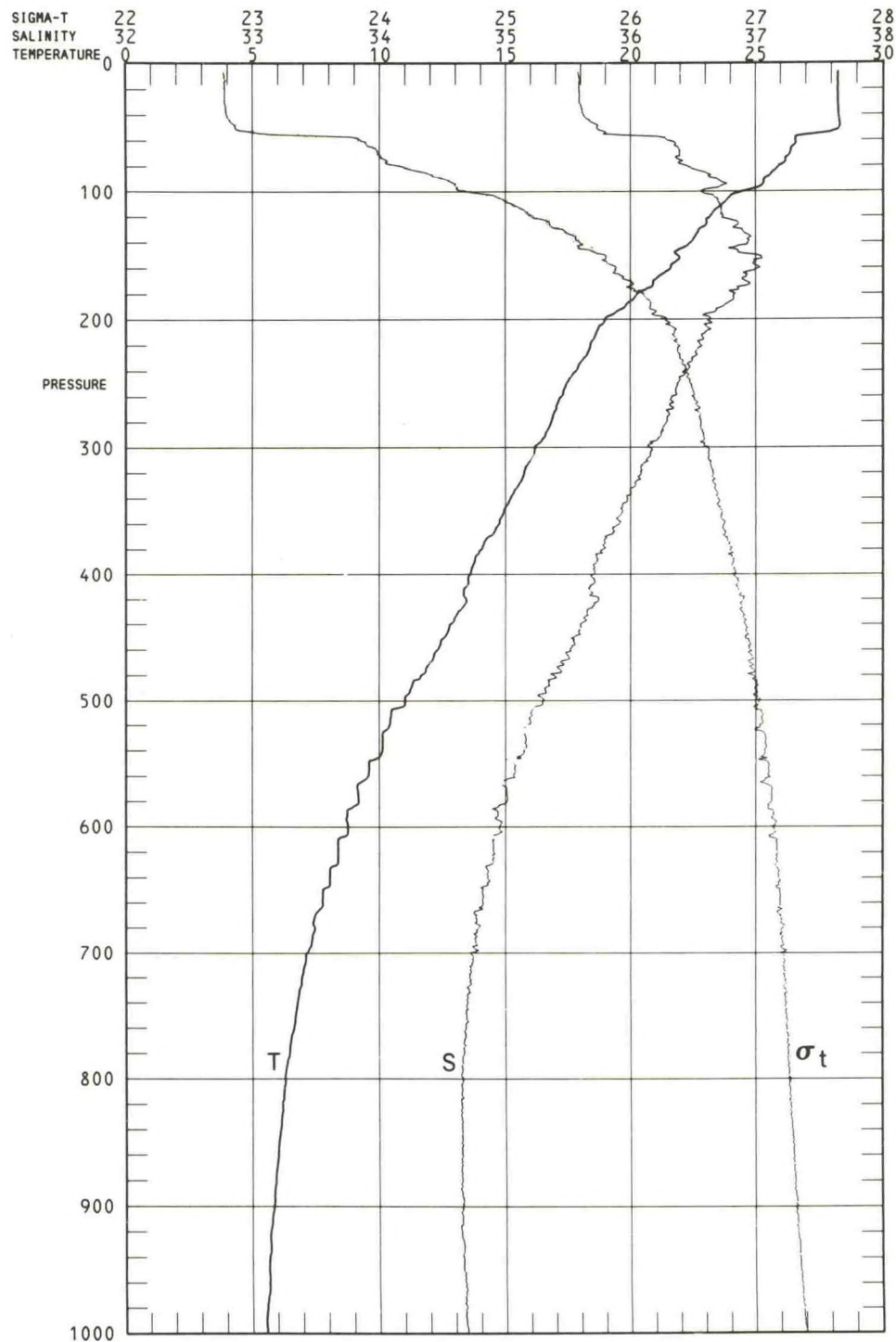
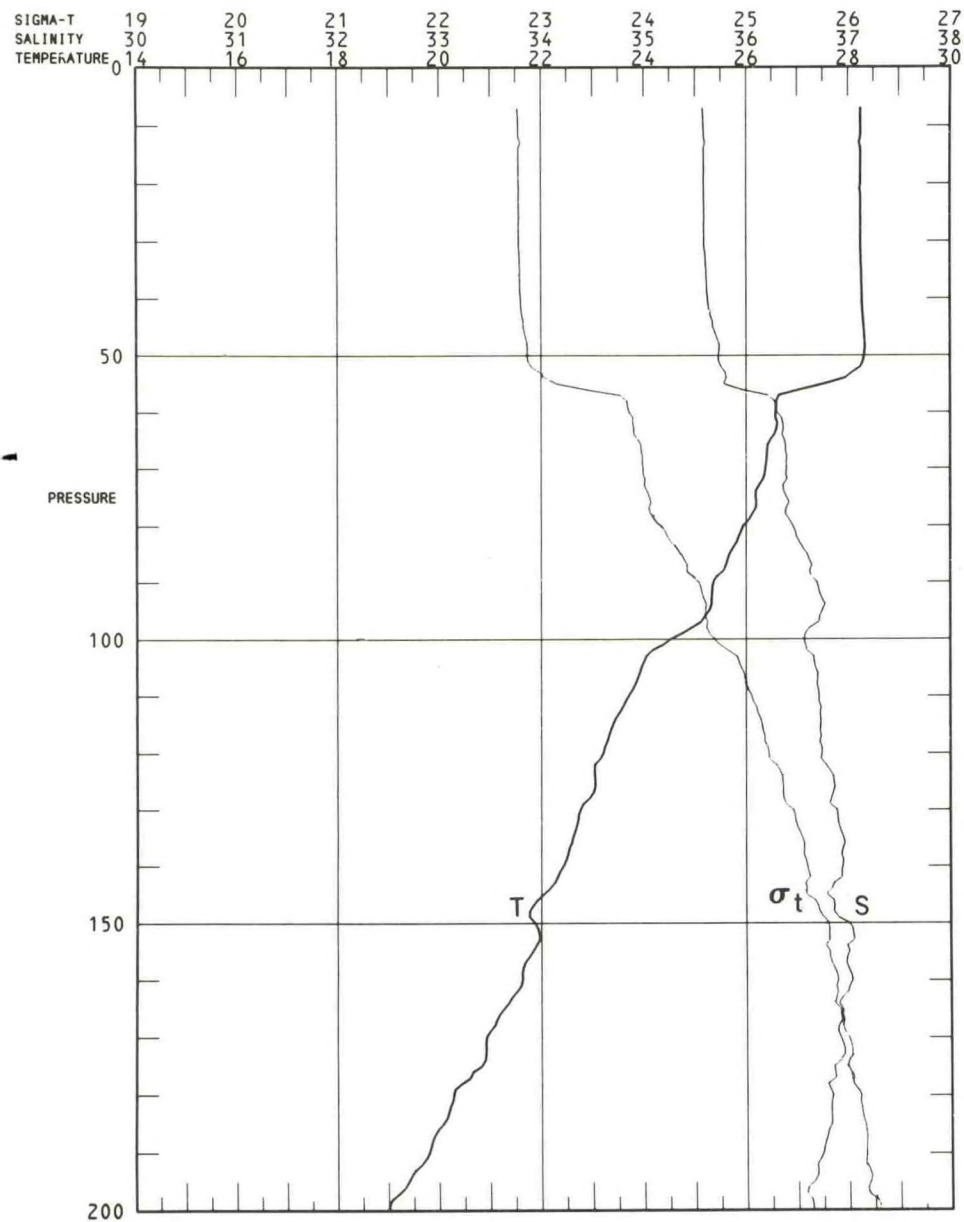


Rainier, June 21, 1969, 0612 GMT, 16°15'N 059°12'W



RAINIER YEAR 1969 DAY 172 TIME 1212 GMT LAT.16°49'N LON.059°11'W  
 PRESSURE CORRECTION OF +17.0 DECIBARS APPLIED TO THE ENTIRE CAST.

STD Depth-Sorted Plots  
 Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



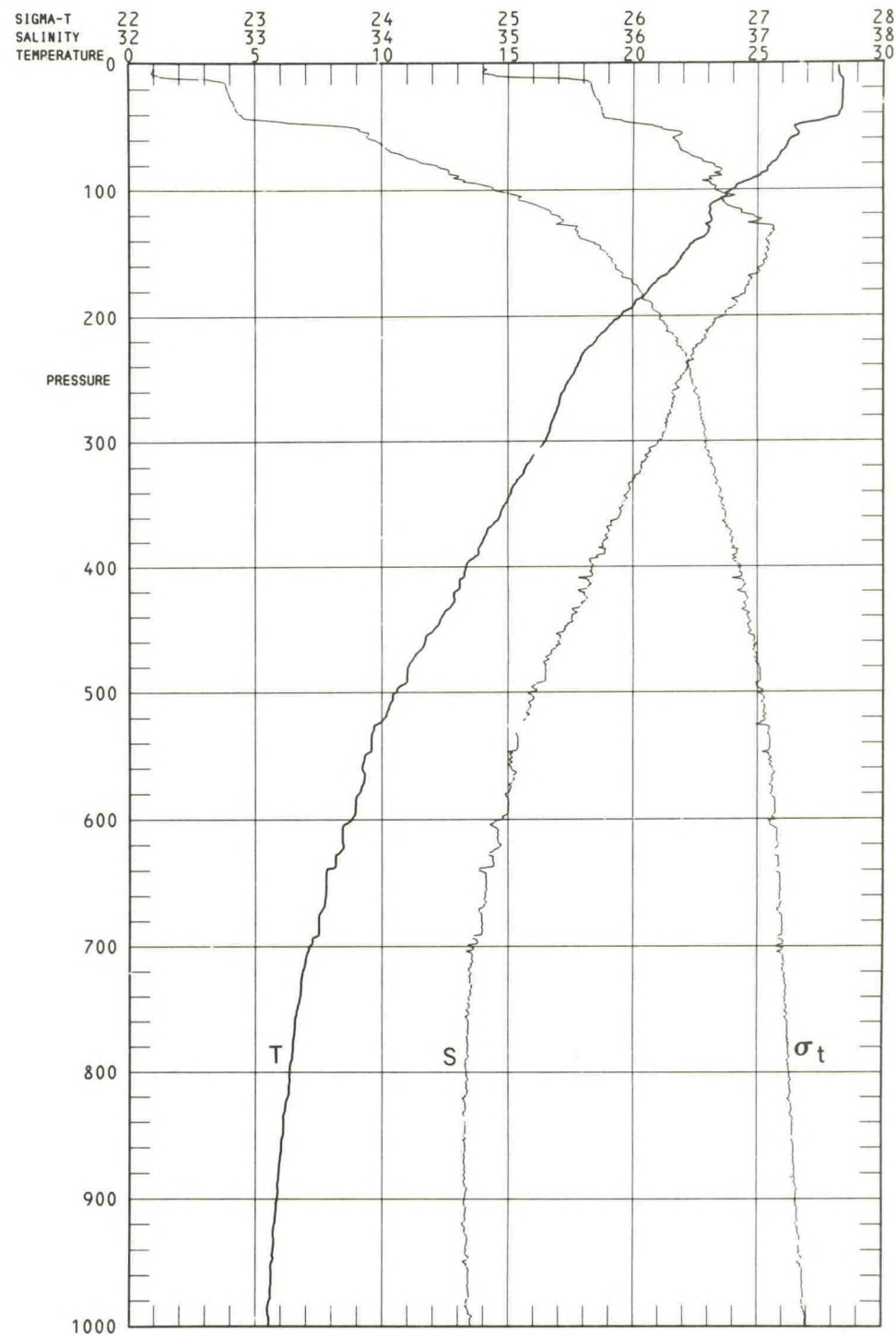
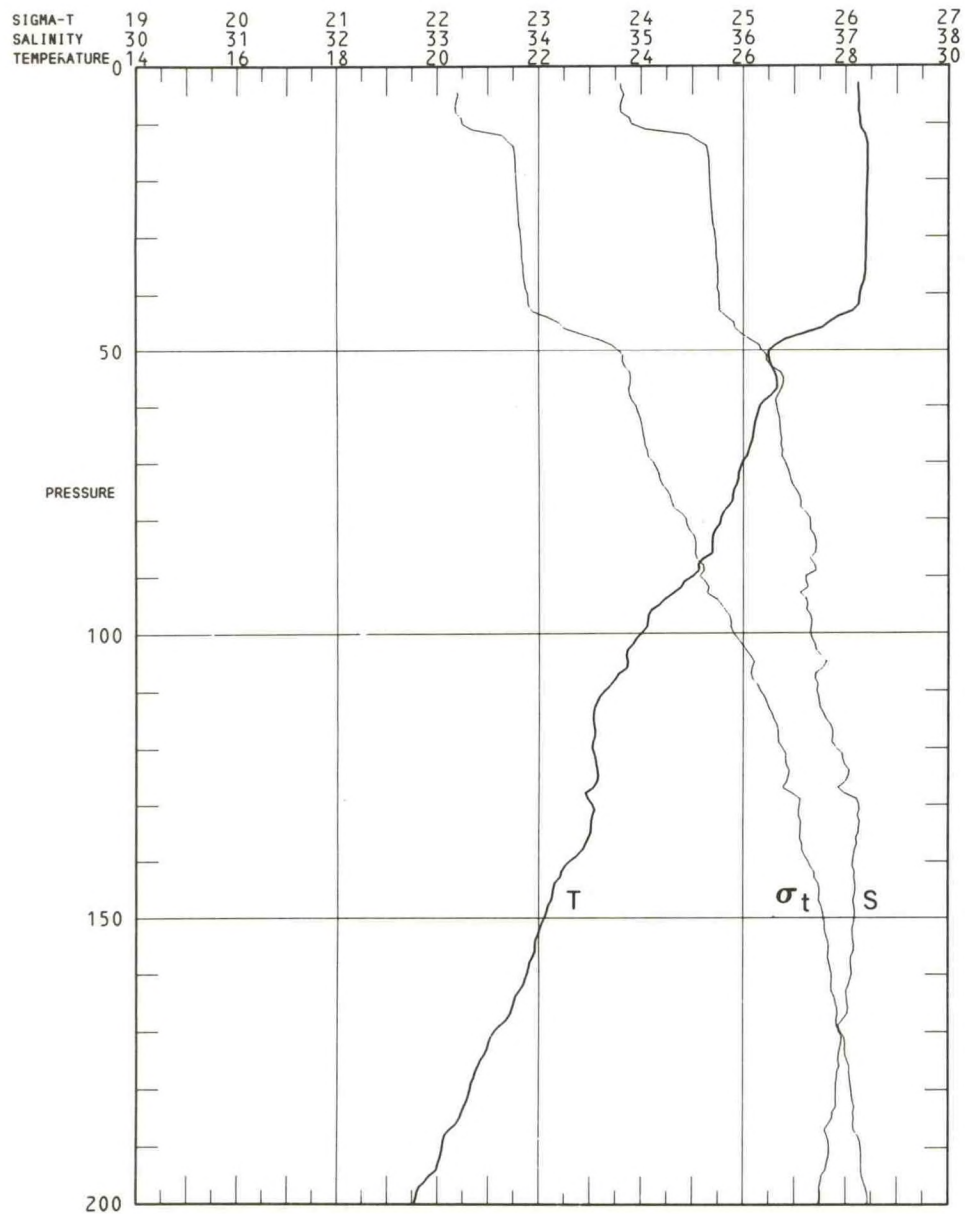
Rainier, June 21, 1969, 1212 GMT, 16°49'N 059°11'W



RAINIER YEAR 1969 DAY 173 TIME 120 GMT LAT.16°51'N LON.059°14'W  
 PRESSURE CORRECTION OF +17.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



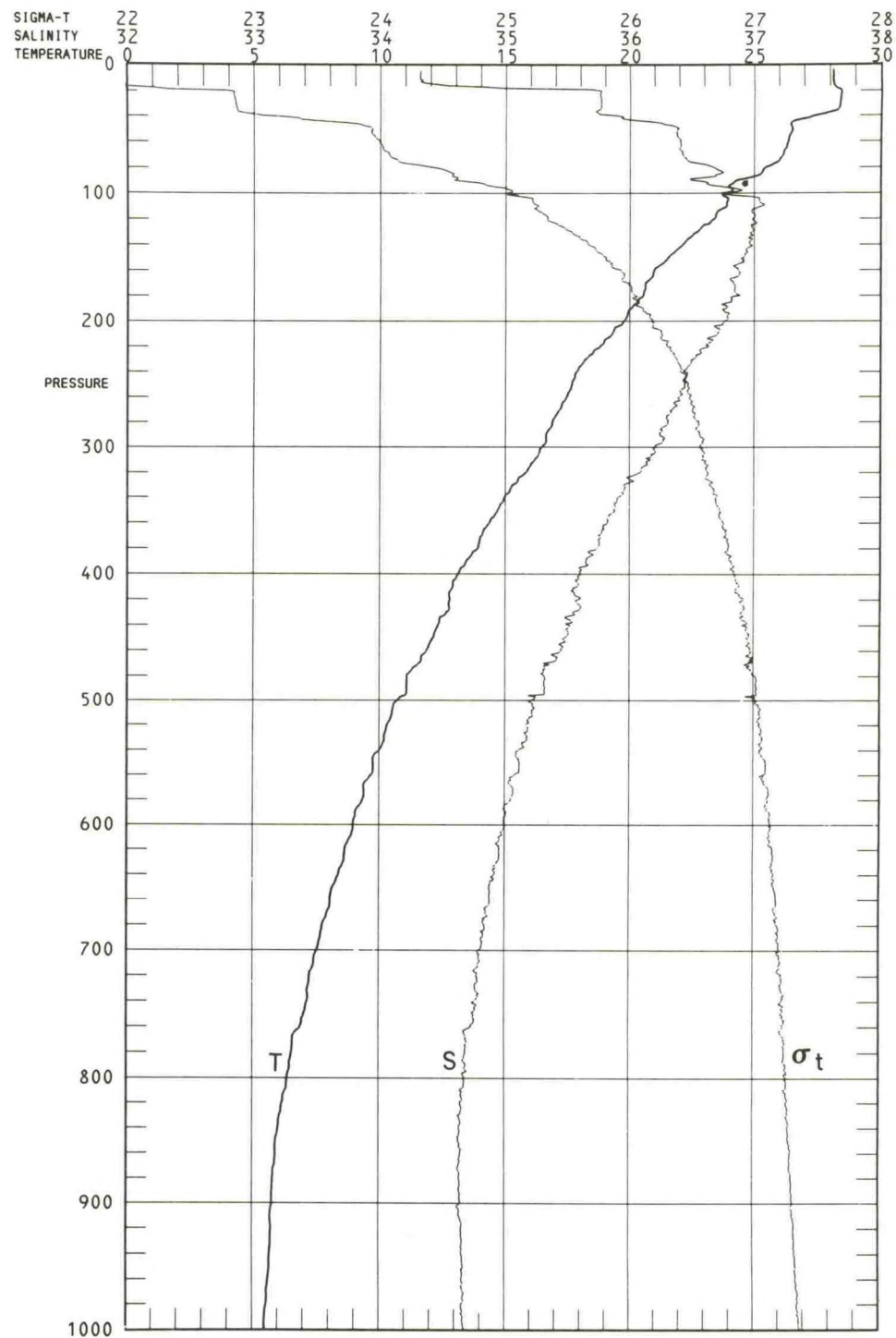
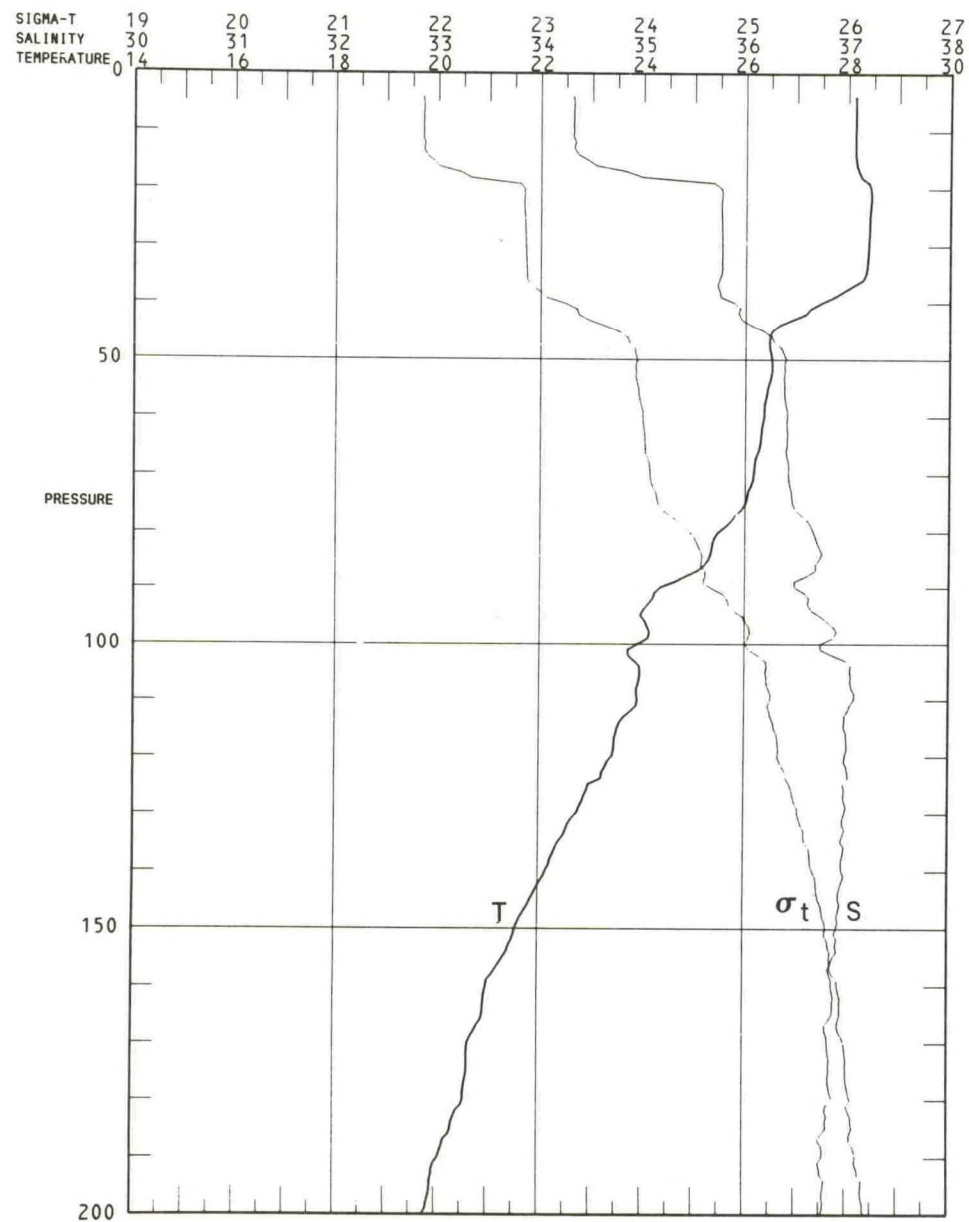
Rainier, June 22, 1969, 0120 GMT, 16°51'N 059°14'W



RAINIER YEAR 1969 DAY 173 TIME 1225 GMT LAT.16°45N LON.059°08W  
PRESSURE CORRECTION OF +17.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

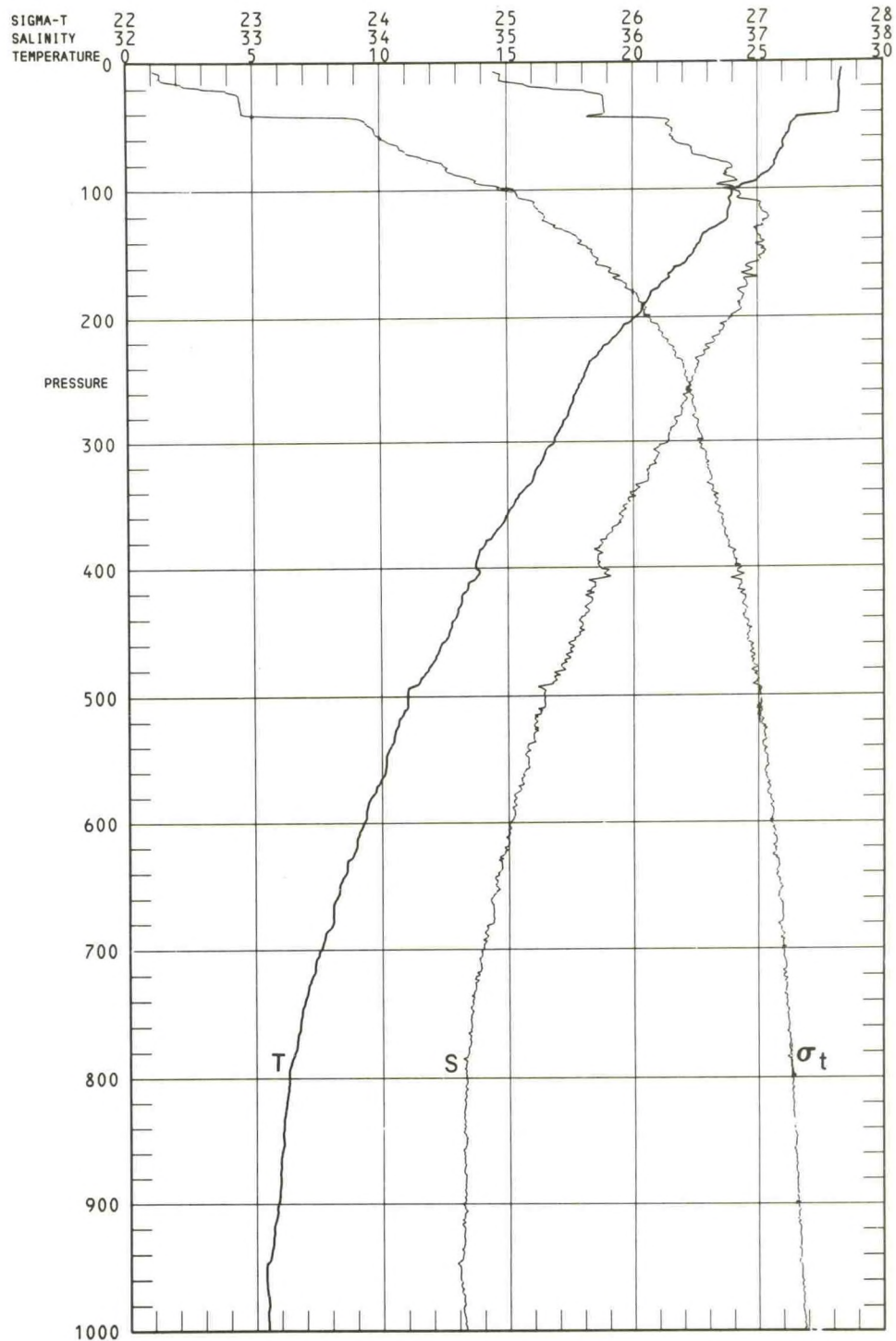
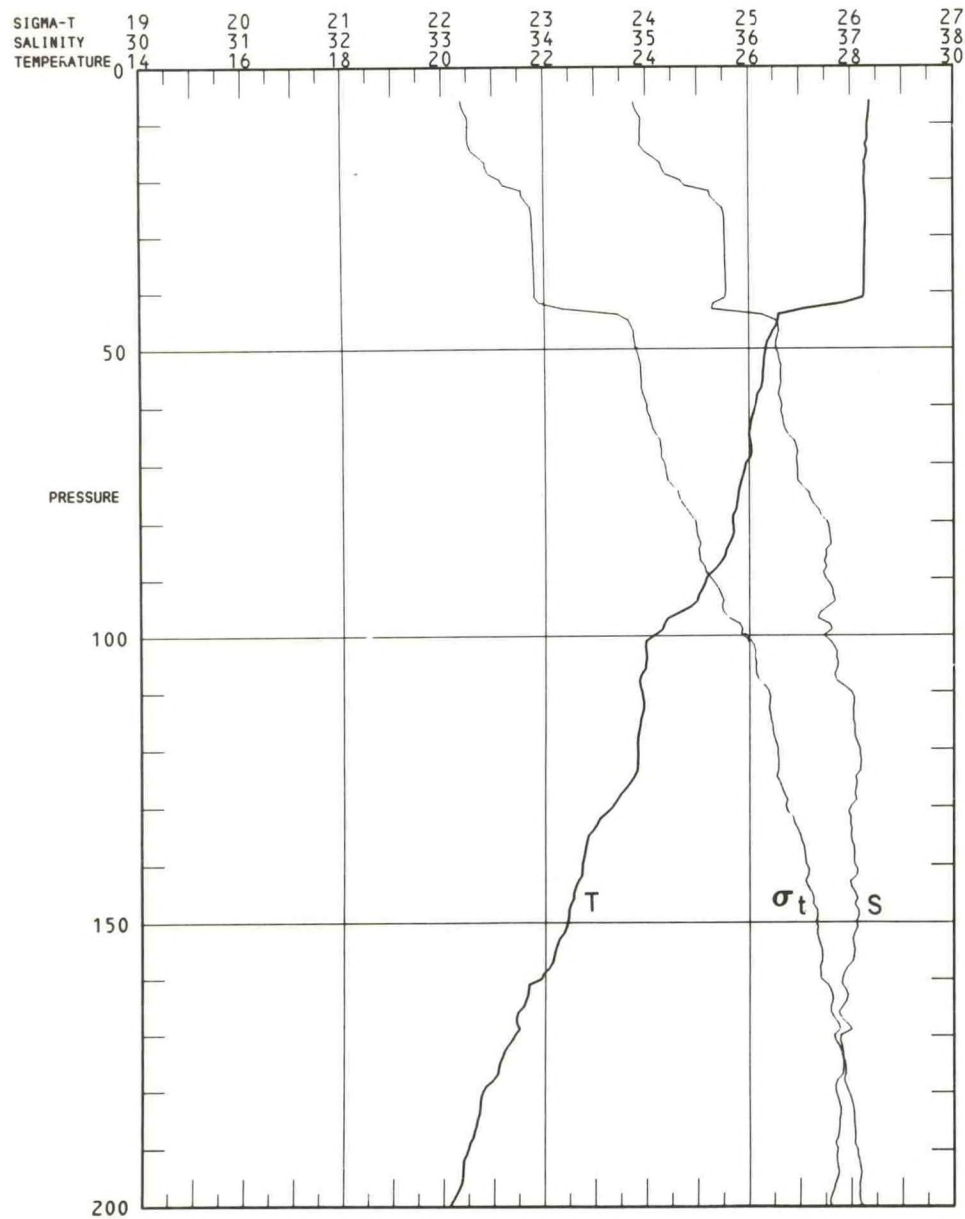


Rainier, June 22, 1969, 1225 GMT, 16°45'N 059°08'W



RAINIER YEAR 1969 DAY 173 TIME 1804 GMT LAT. 16°52'N LON. 059°05'W  
 PRESSURE CORRECTION OF +23.0 DECIBARS APPLIED TO THE ENTIRE CAST.

STD Depth-Sorted Plots  
 Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



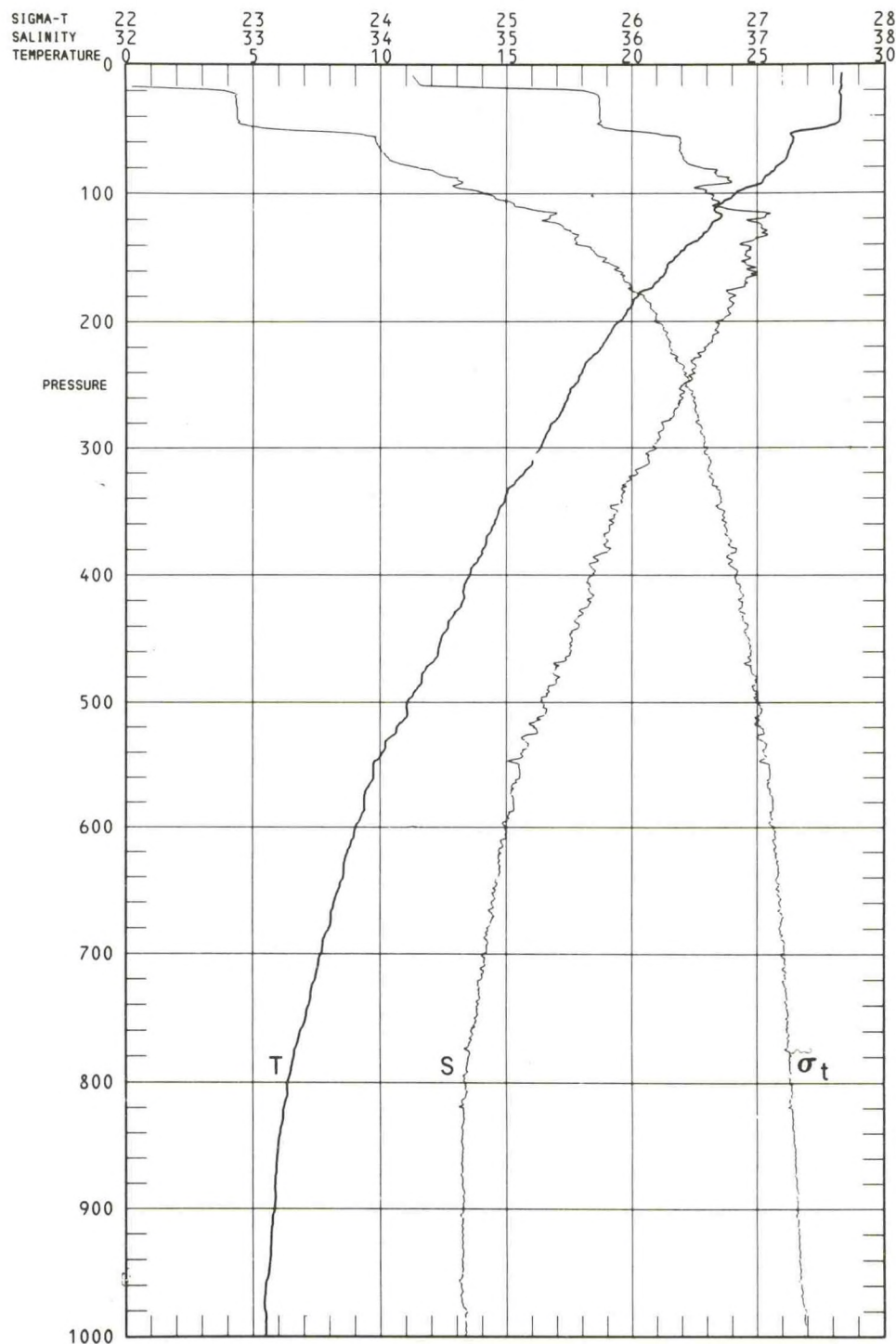
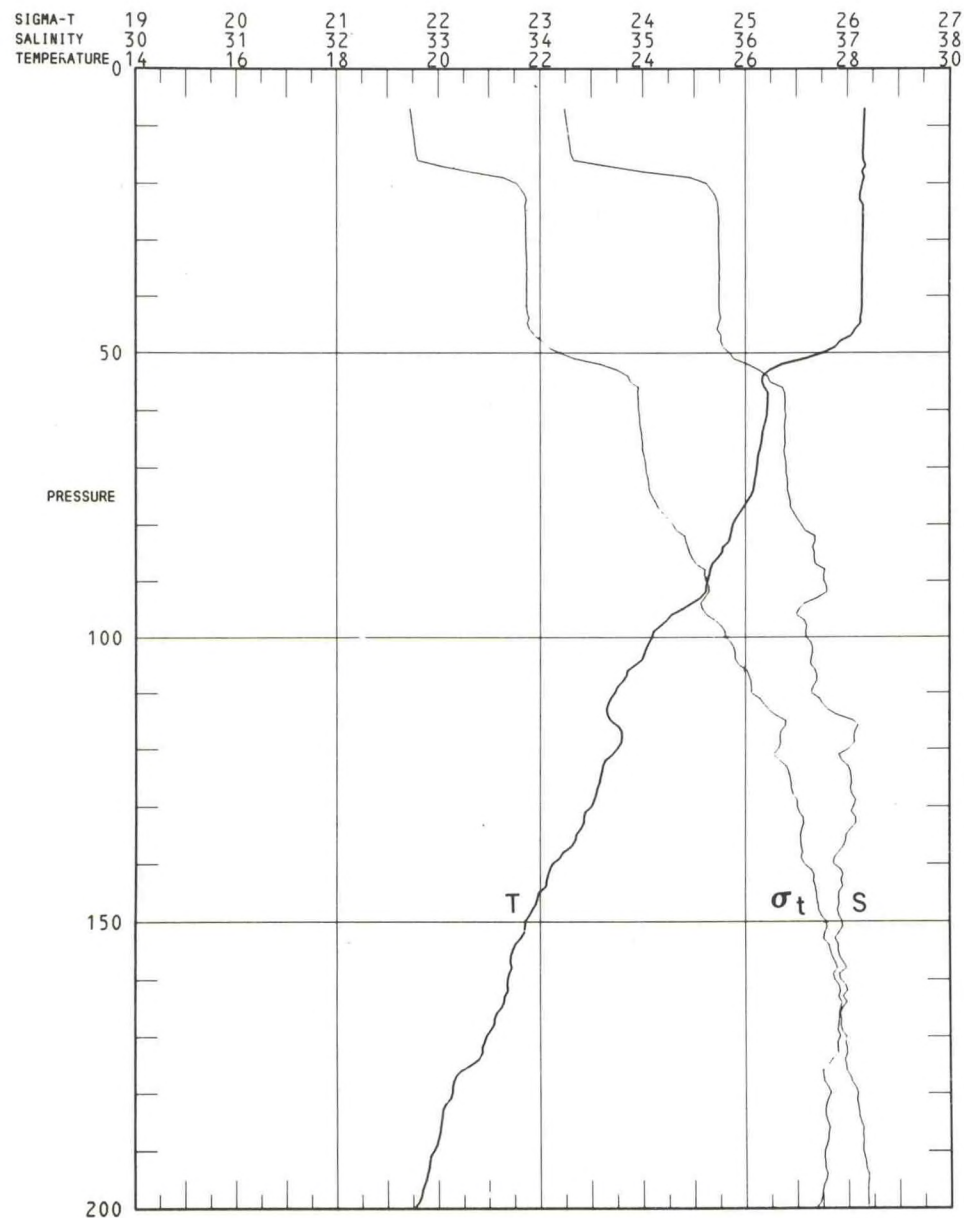
Rainier, June 22, 1969, 1804 GMT, 16°52'N 059°05'W



RAINIER YEAR 1969 DAY 174 TIME 117 GMT LAT.16°51'N LON.059°14'W  
 PRESSURE CORRECTION OF +20.0 DECIBARS APPLIED TO THE ENTIRE CAST.  
 PRESSURE JUMPED BY 3.55 DECIBARS AT 380 DECIBARS.  
 BAD TEMPERATURE BETWEEN 35 AND 381 DECIBARS.

# STD Depth-Sorted Plots

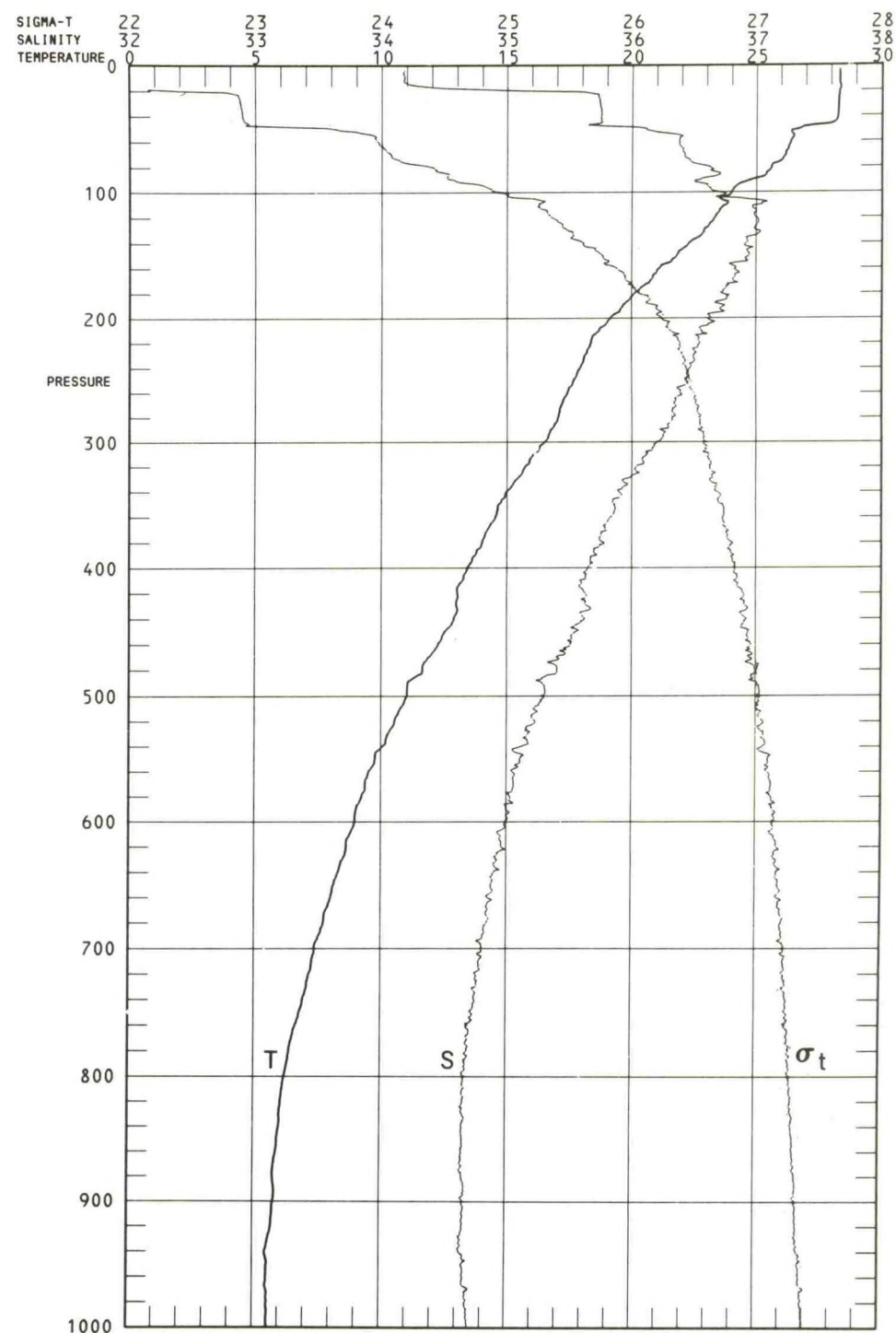
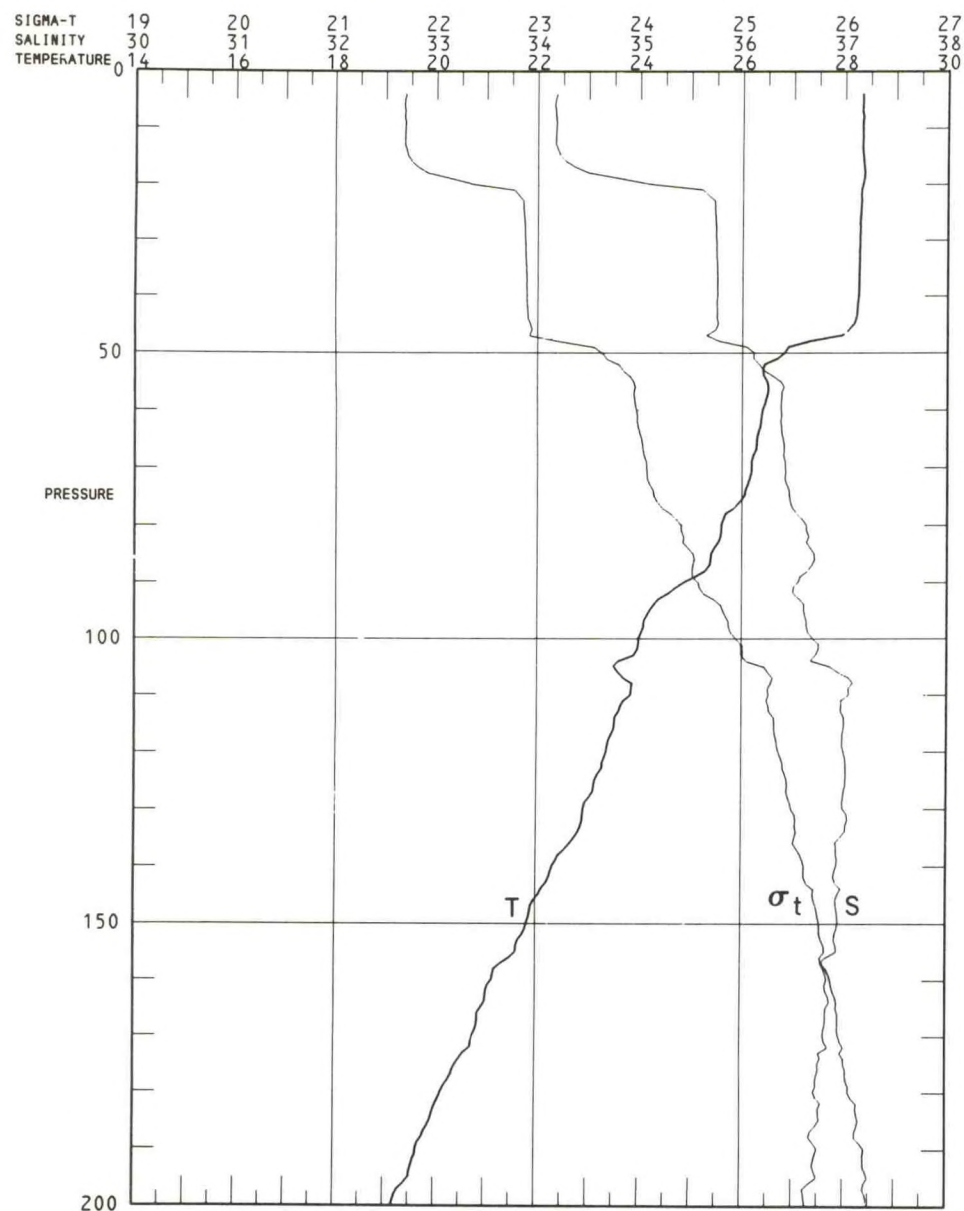
Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



Rainier, June 23, 1969, 0117 GMT, 16°51'N 059°14'W

RAINIER YEAR 1969 DAY 174 TIME 601 GMT LAT.16°49'N LON.059°13'W  
PRESSURE CORRECTION OF +20.0 DECIBARS APPLIED TO THE ENTIRE CAST.

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

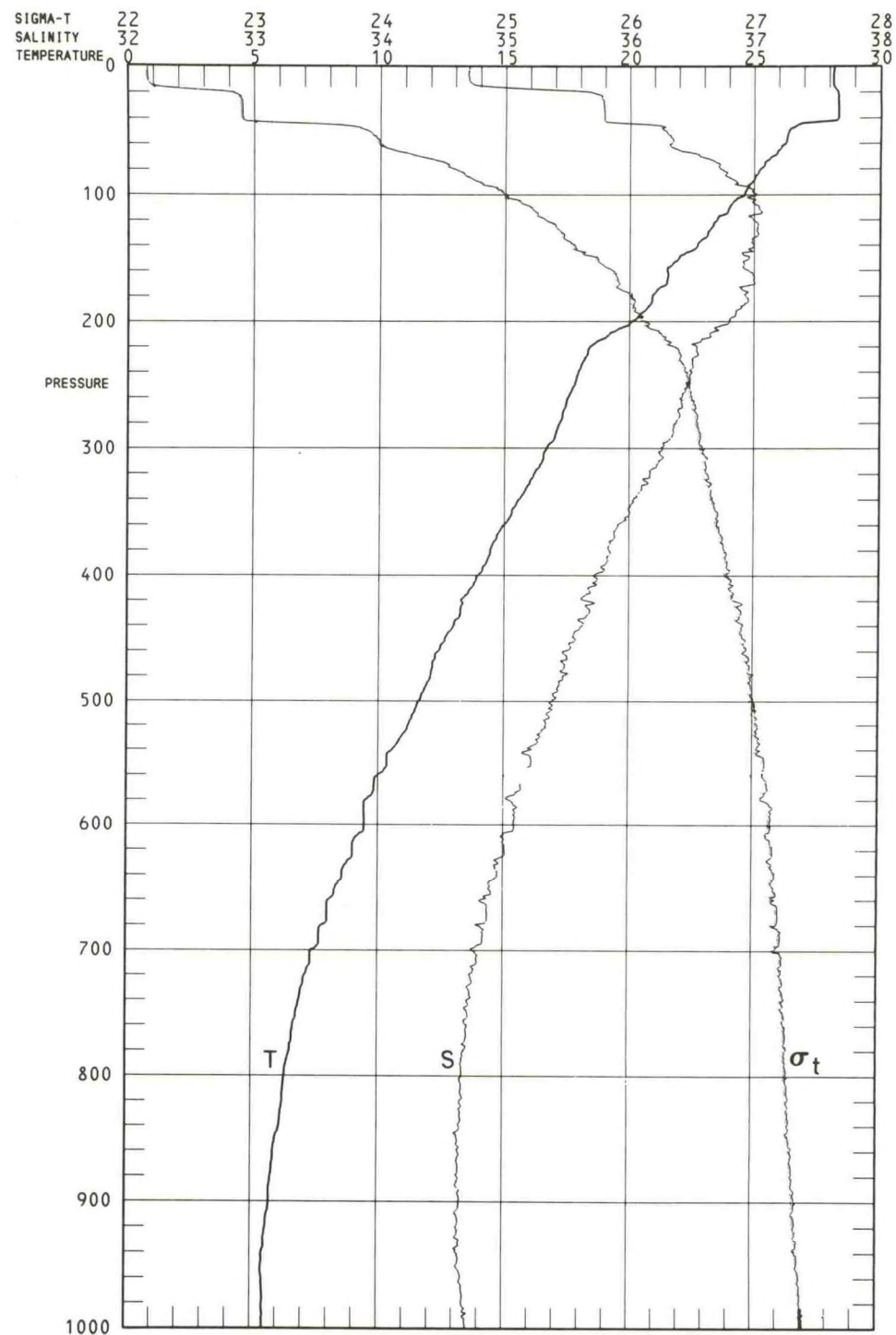
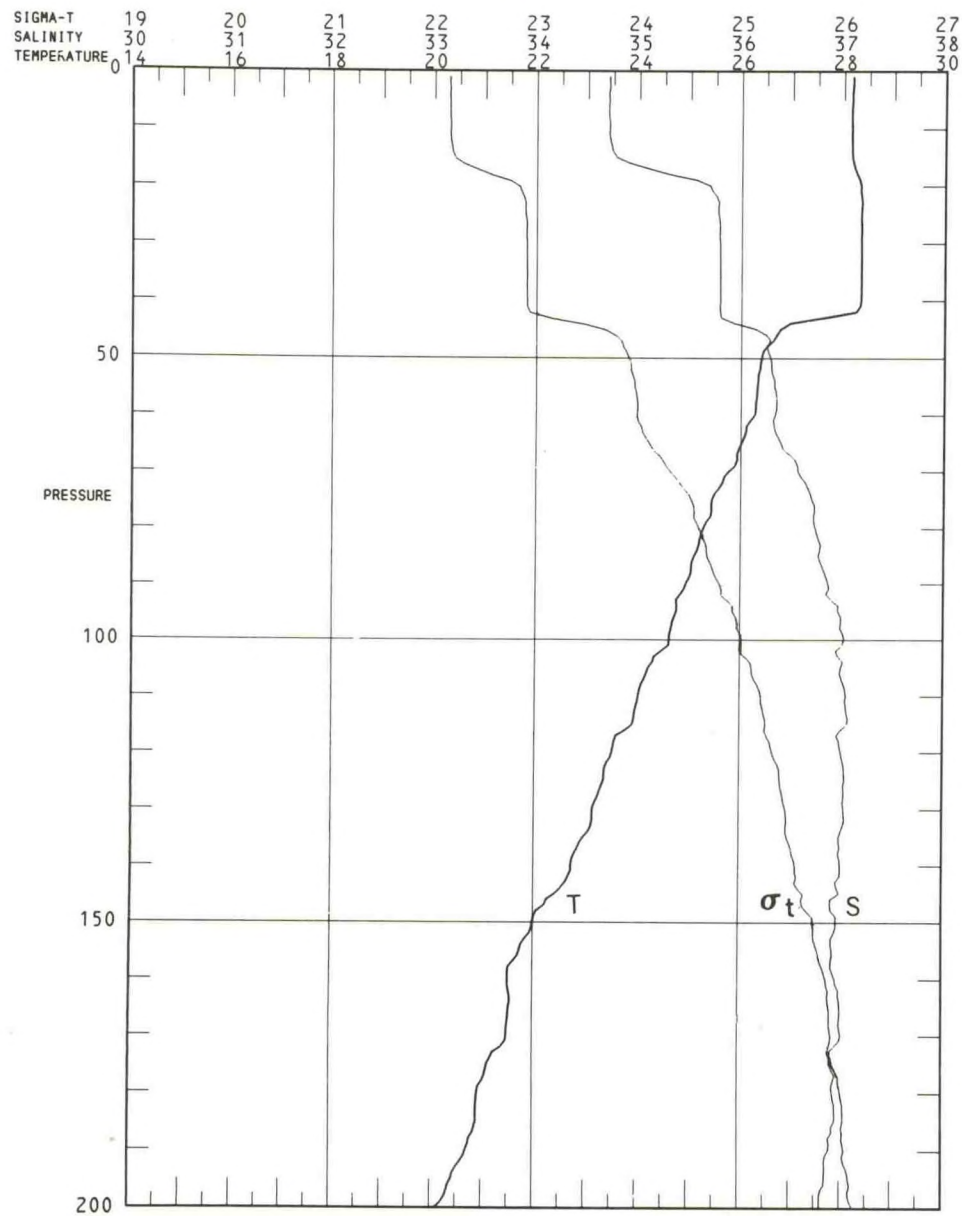


Rainier, June 23, 1969, 0601 GMT, 16°49'N 059°13'W



RAINIER YEAR 1969 DAY 174 TIME 1210 GMT LAT.16°51'N LON.059°06'W  
PRESSURE CORRECTION OF +18.0 DECIBARS APPLIED TO THE ENTIRE CAST.

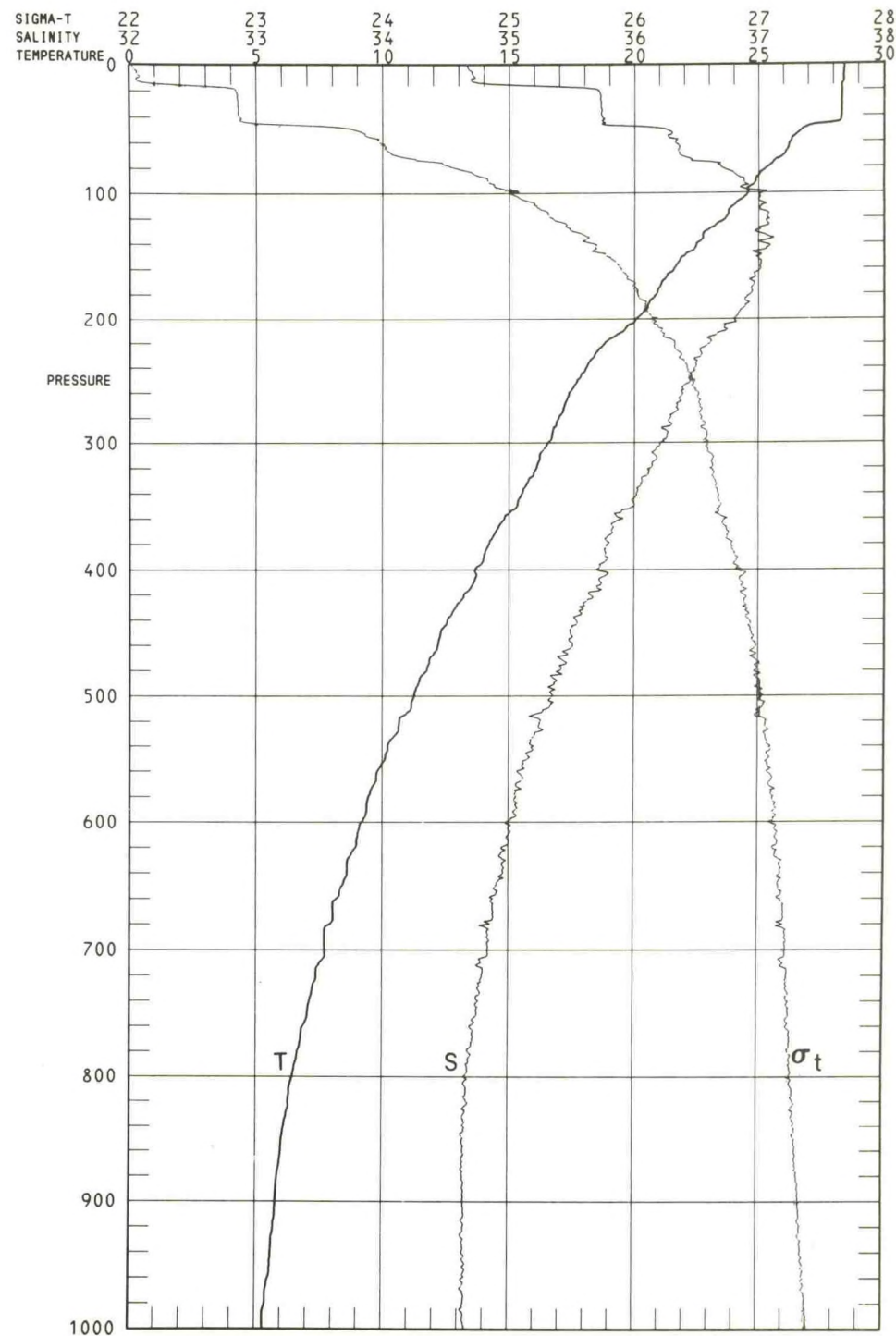
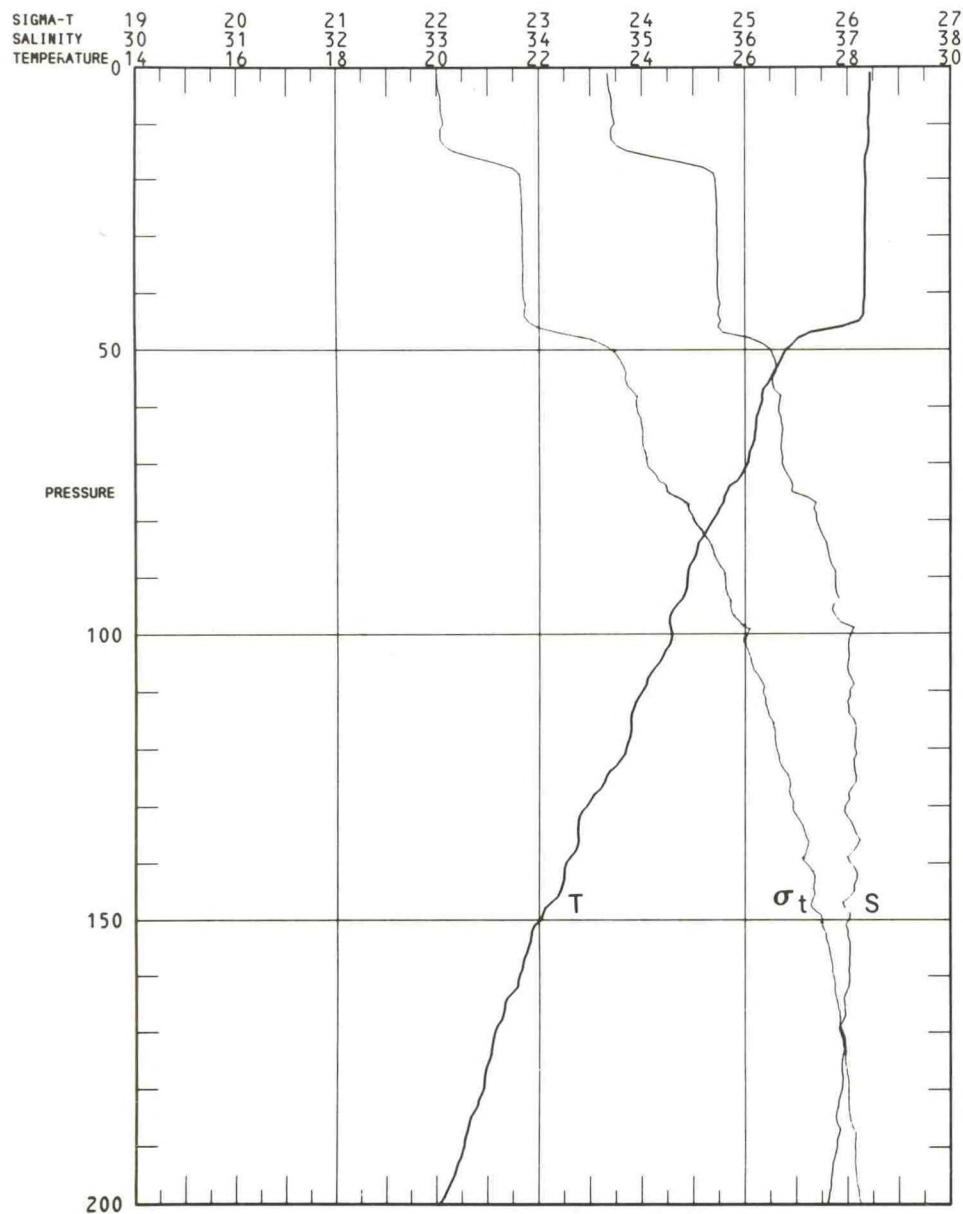
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rainier, June 23, 1969, 1210 GMT, 16°51'N 059°06'W

RAINIER YEAR 1969 DAY 174 TIME 1807 GMT LAT.16°30'N LONG.059°11'W  
PRESSURE CORRECTION OF +22.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



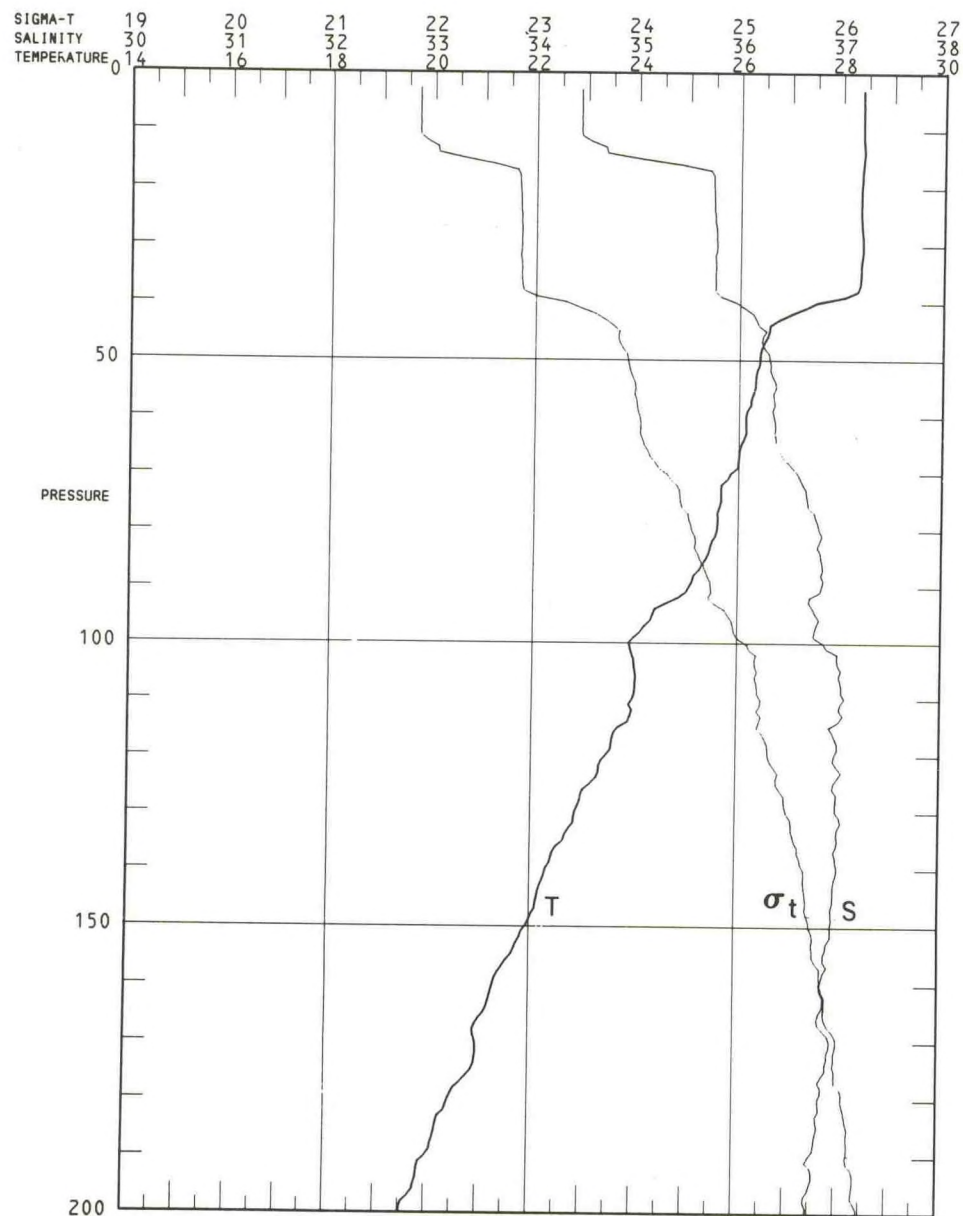
Rainier, June 23, 1969, 1807 GMT, 16°30'N 059°11'W



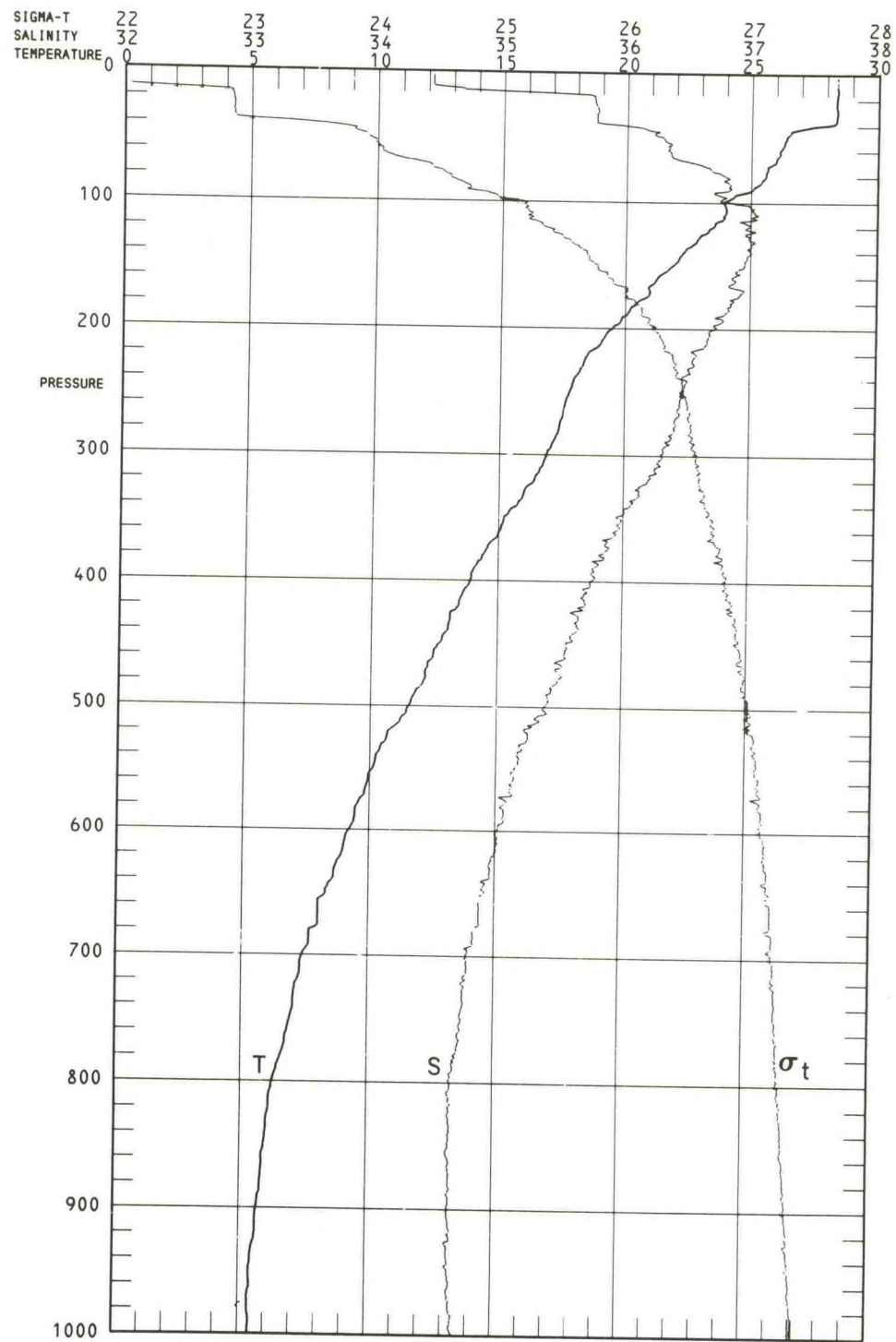
RAINIER YEAR 1969 DAY 175 TIME 111 GMT LAT.16°50'N LON.059°12'W  
 PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.  
 PRESSURE SENSOR ERRATIC AT START OF CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



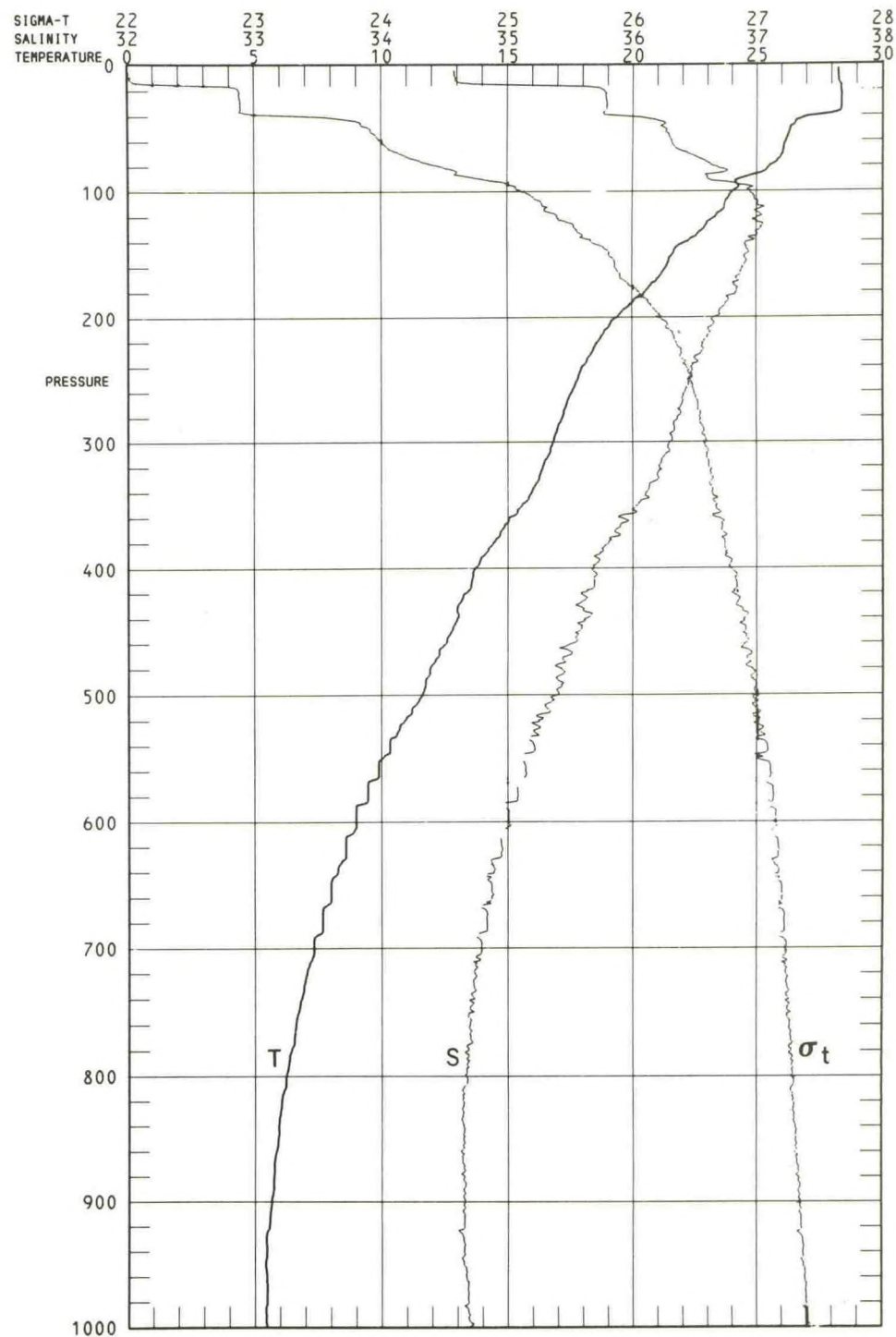
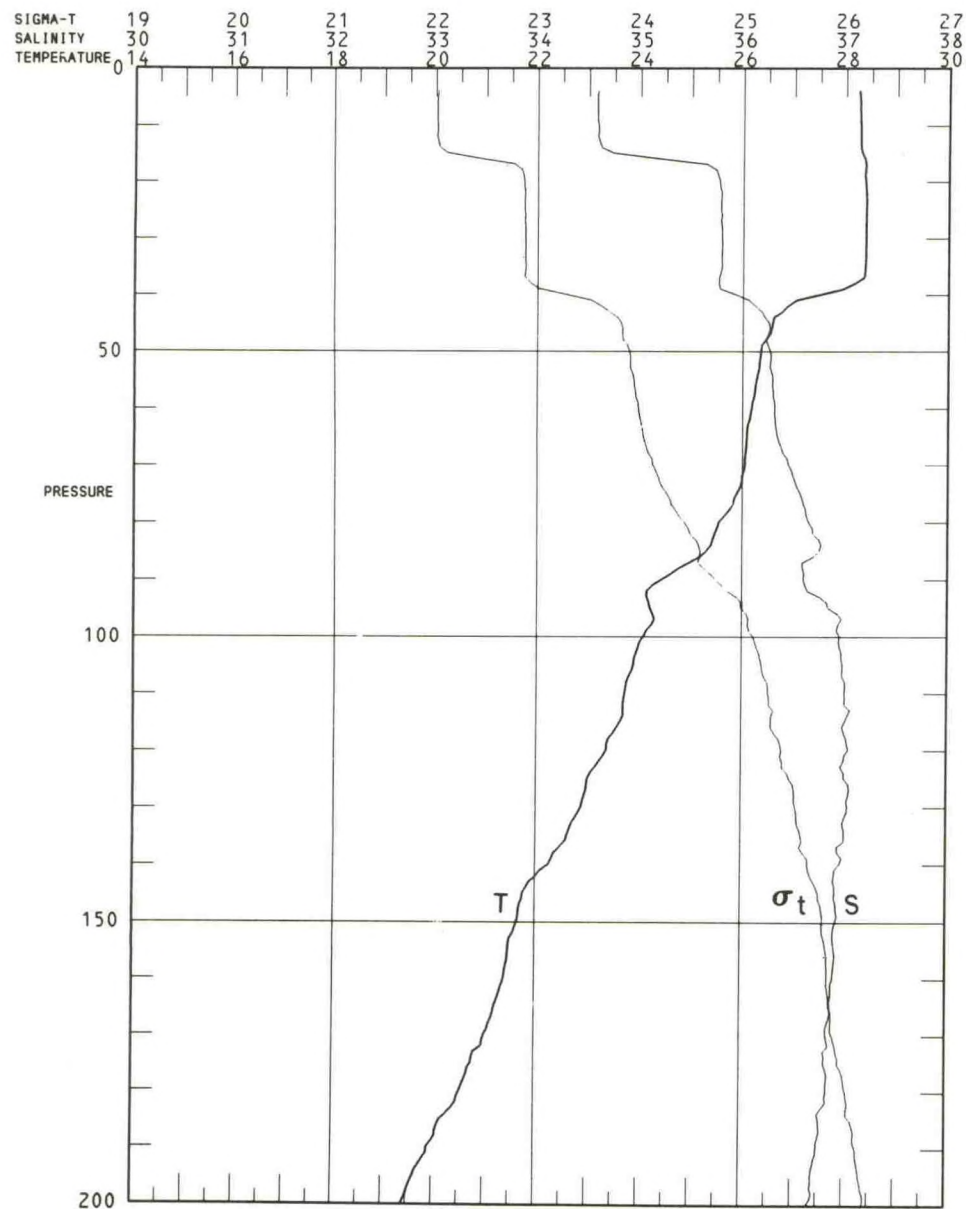
Rainier, June 24, 1969, 0111 GMT, 16°50'N 059°12'W



RAINIER YEAR 1969 DAY 175 TIME 606 GMT LAT.16°50N LON.059°12W  
PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



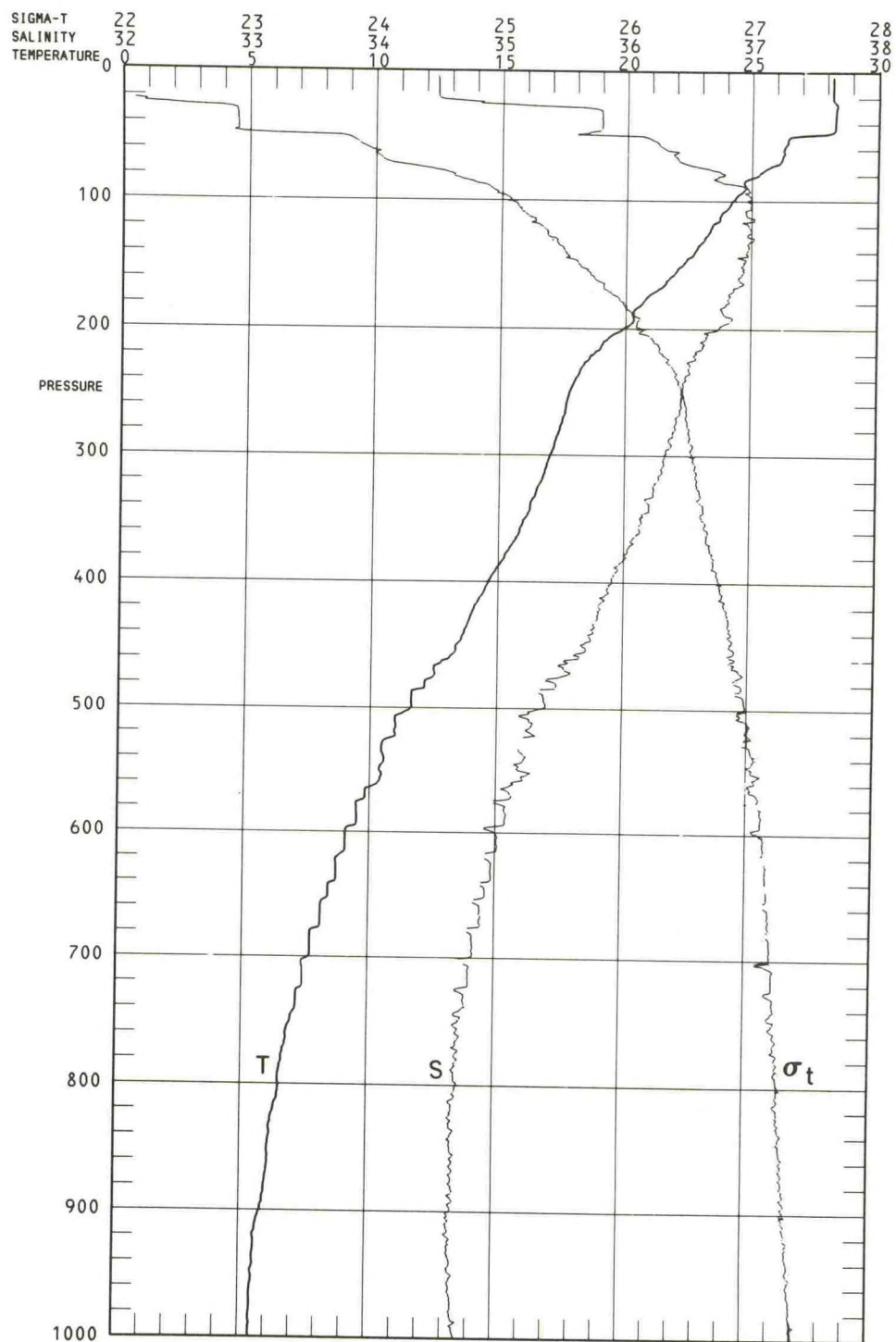
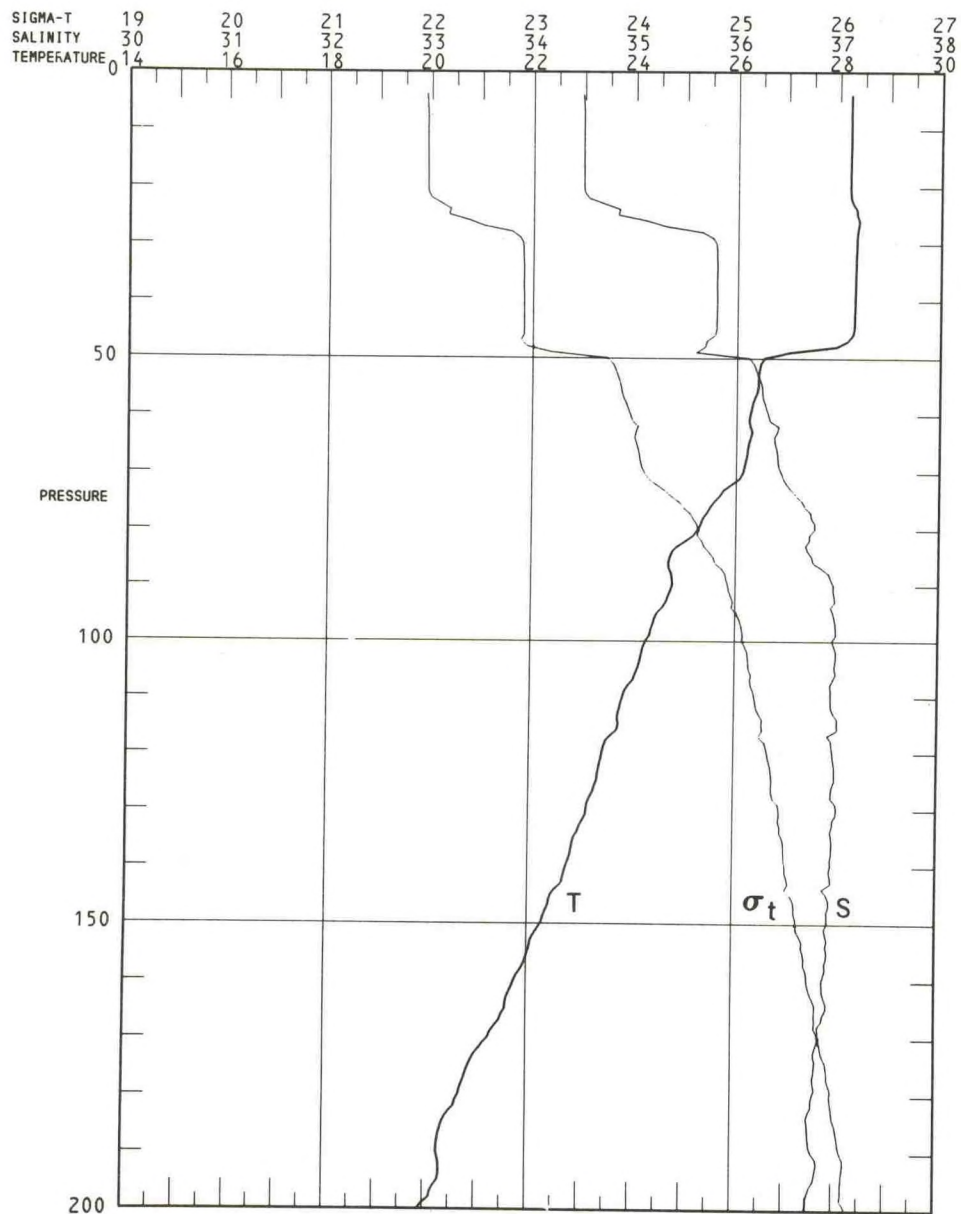
Rainier, June 24, 1969, 0606 GMT, 16°50'N 059°12'W



RAINIER YEAR 1969 DAY 175 TIME 1223 GMT LAT.16°50N LON.059°12W  
PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

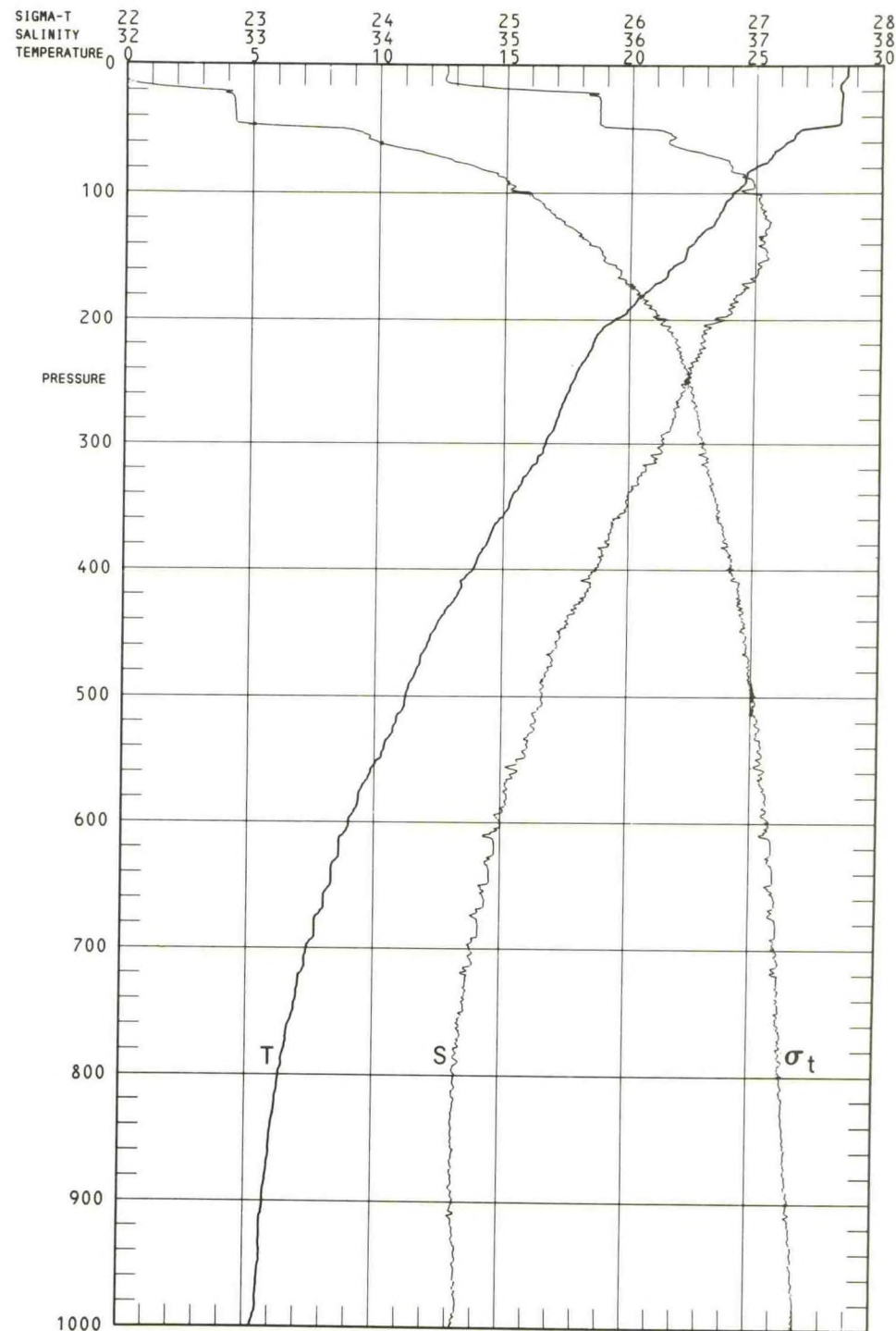
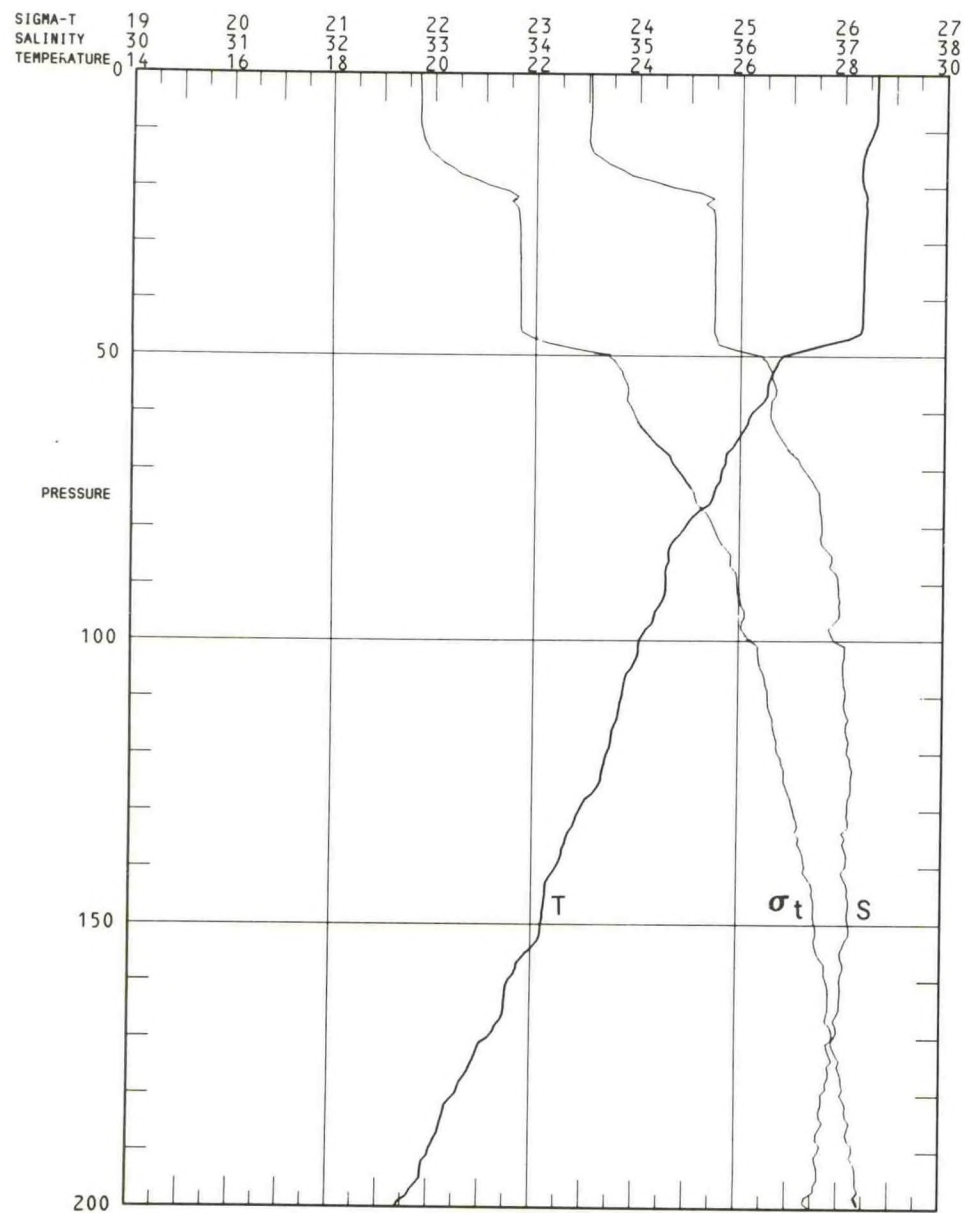


Rainier, June 24, 1969, 1223 GMT, 16°50'N 059°12'W

RAINIER YEAR 1969 DAY 175 TIME 1803 GMT LAT.16°50'N LON.059°12'W  
PRESSURE CORRECTION OF +21.0 DECIBARS APPLIED TO ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

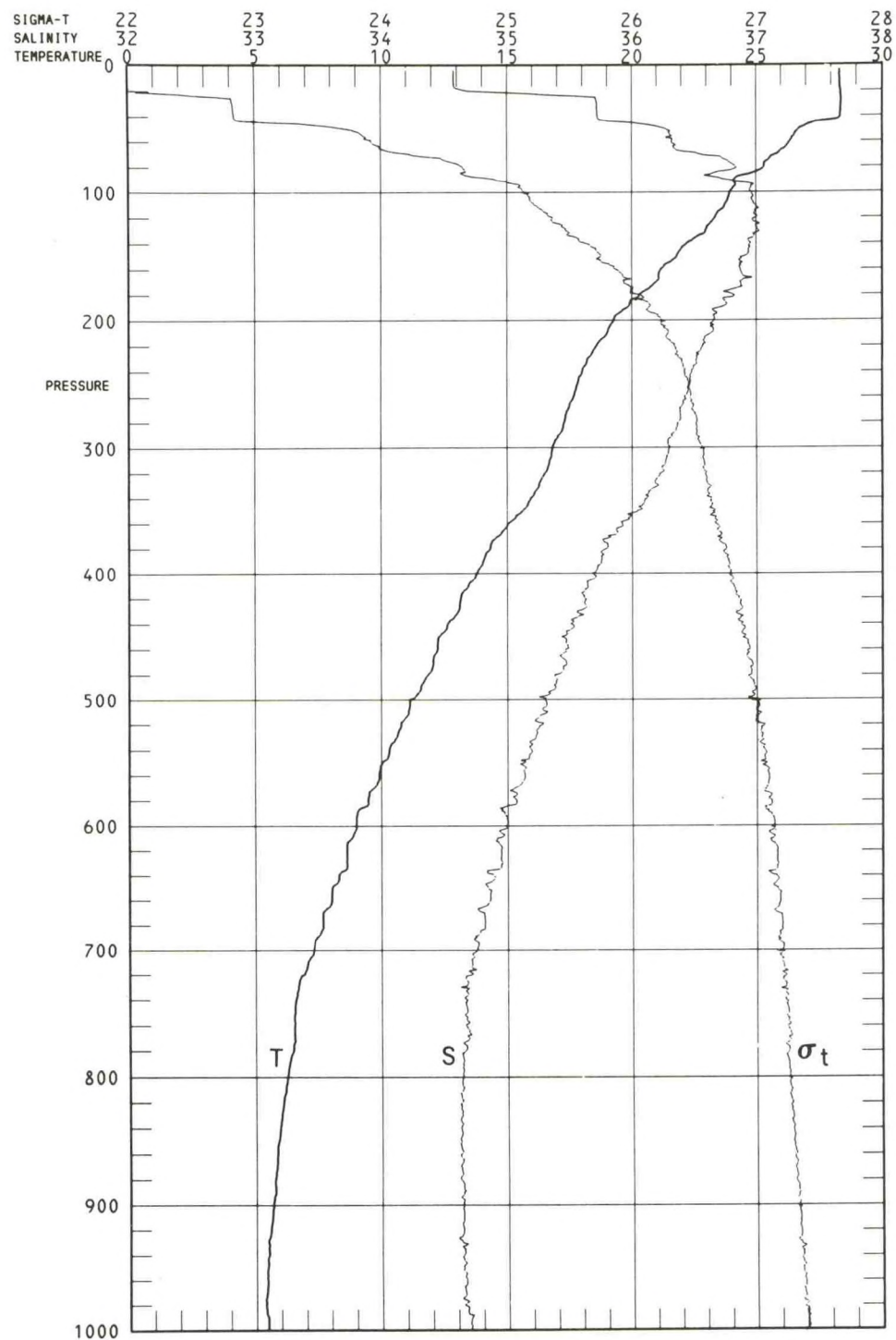
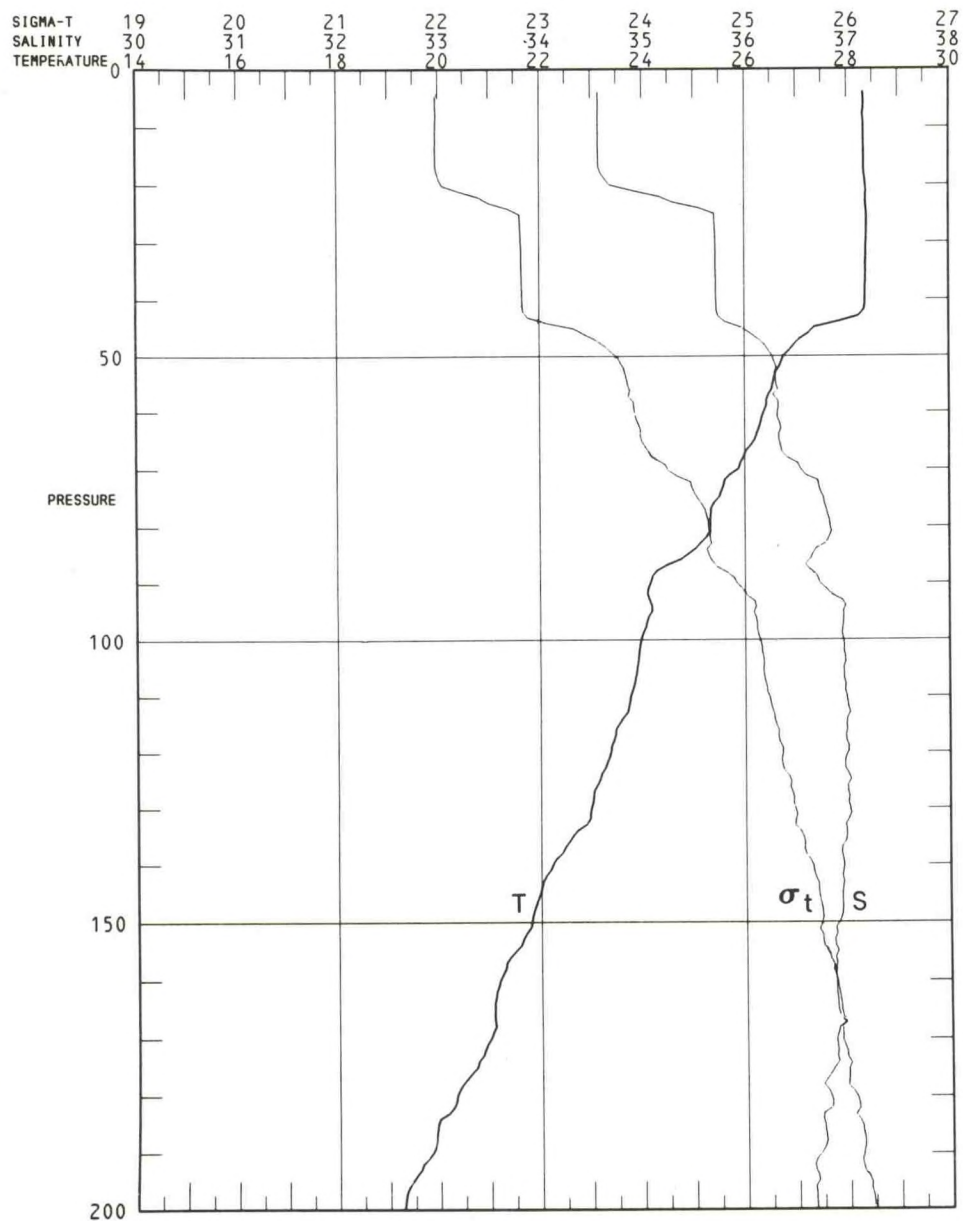


Rainier, June 24, 1969, 1803 GMT, 16°50'N 059°12'W



RAINIER YEAR 1969 DAY 176 TIME 0606 GMT LAT.16°50N LON.059°12W  
 PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.  
 BETWEEN 700 AND 730 DBARS SALINITY AND PRESSURE INTERPOLATED.

STD Depth-Sorted Plots  
 Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

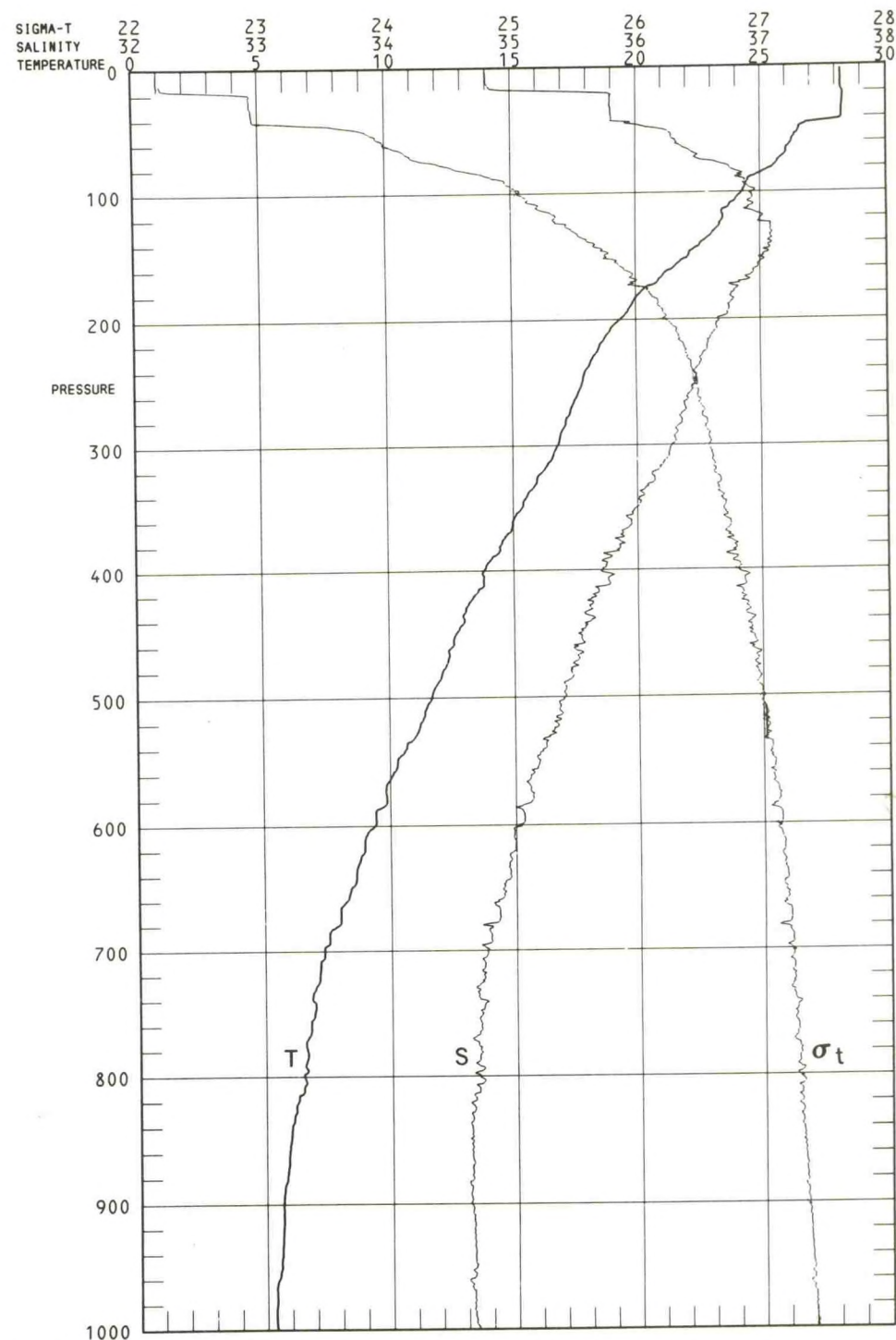
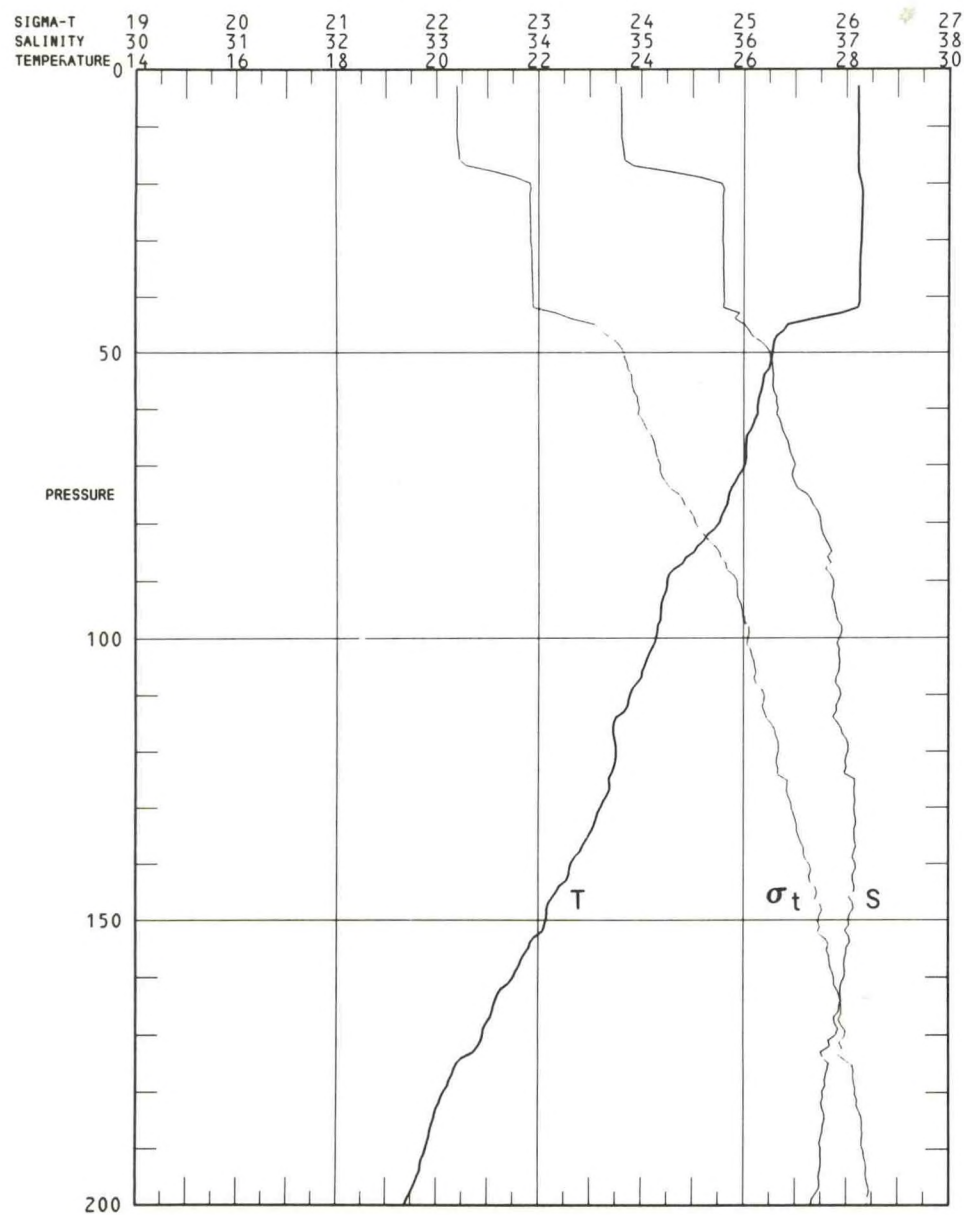


Rainier, June 25, 1969, 0606 GMT, 16°50'N 059°12'W

RAINIER YEAR 1969 DAY 176 TIME 1218 GMT LAT. 16°50'N LON. 059°12'W  
PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.

# STD Depth-Sorted Plots

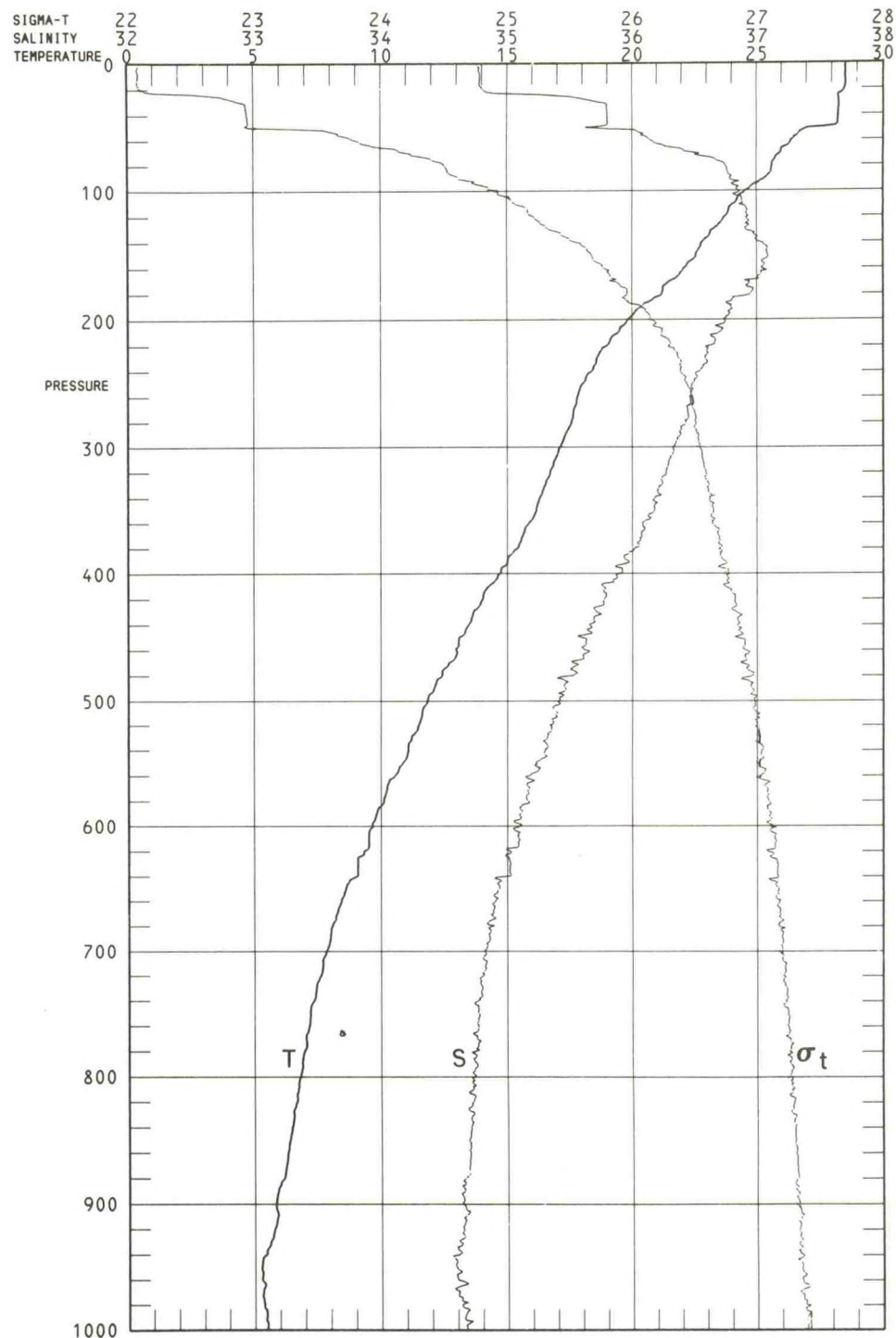
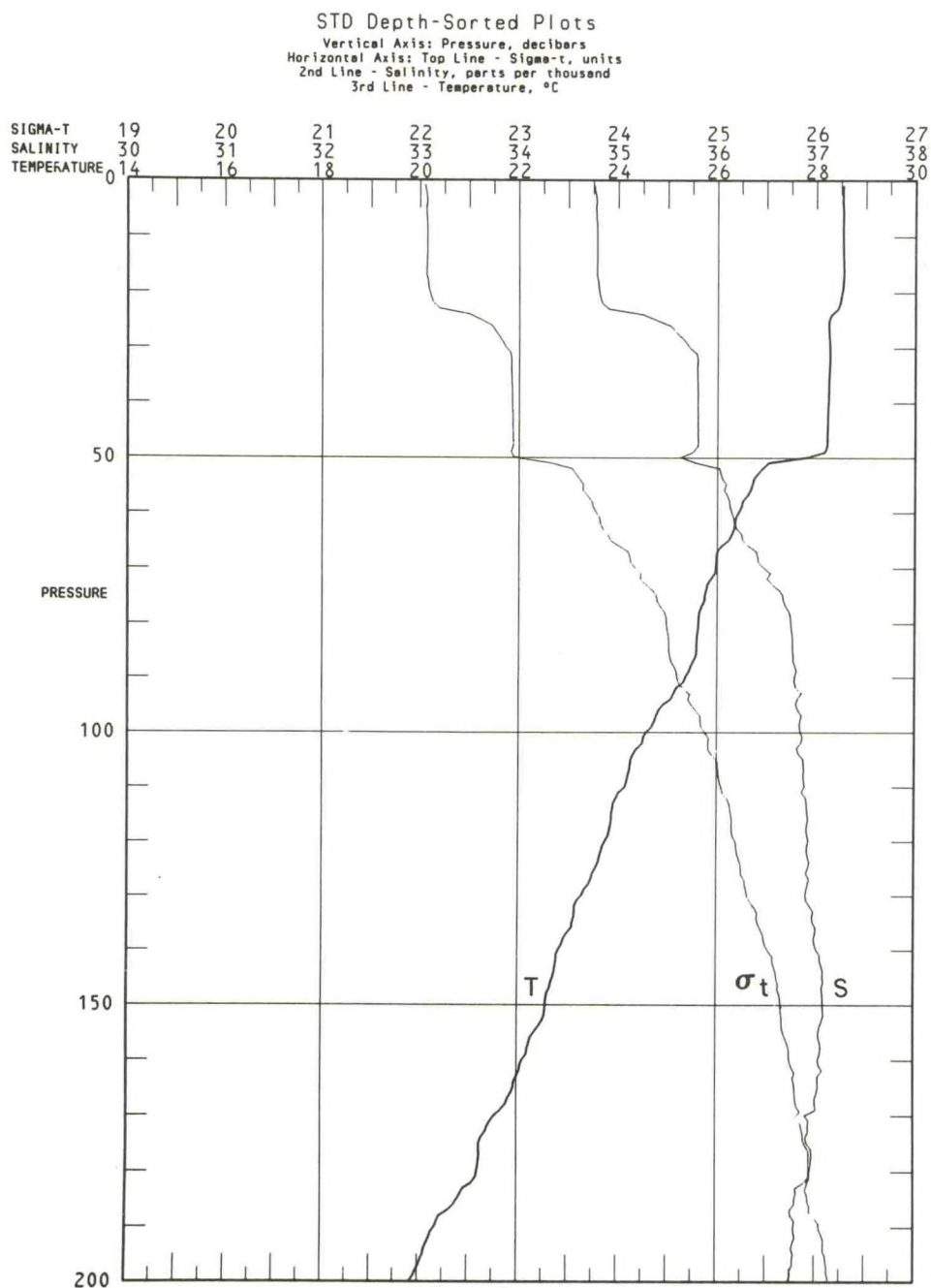
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rainier, June 25, 1969, 1218 GMT, 16°50'N 059°12'W



RAINIER YEAR 1969 DAY 176 TIME 1742 GMT LAT.16°50'N LON.059°12'W  
PRESSURE CORRECTION OF +26.0 DECIBARS APPLIED TO ENTIRE CAST.

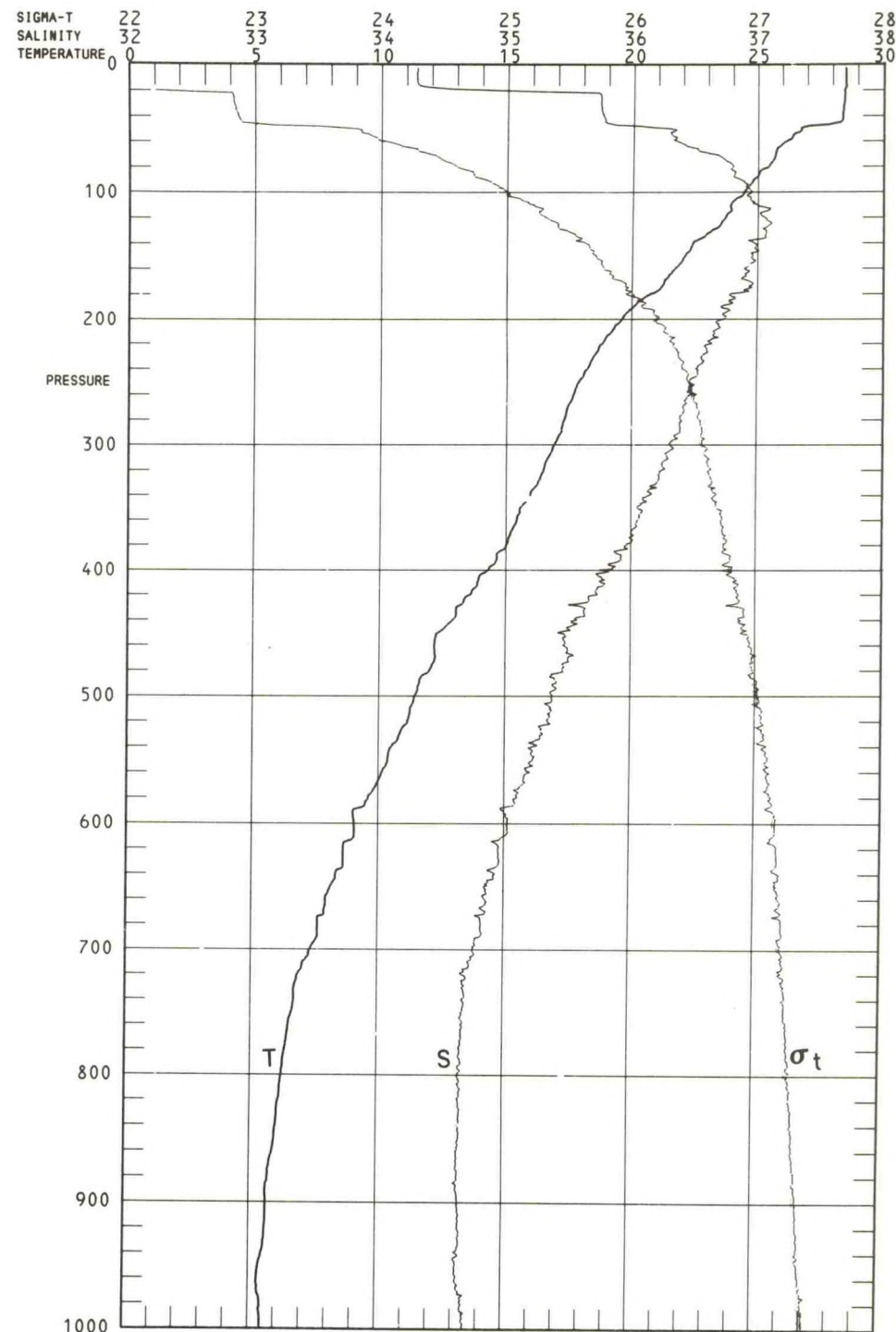
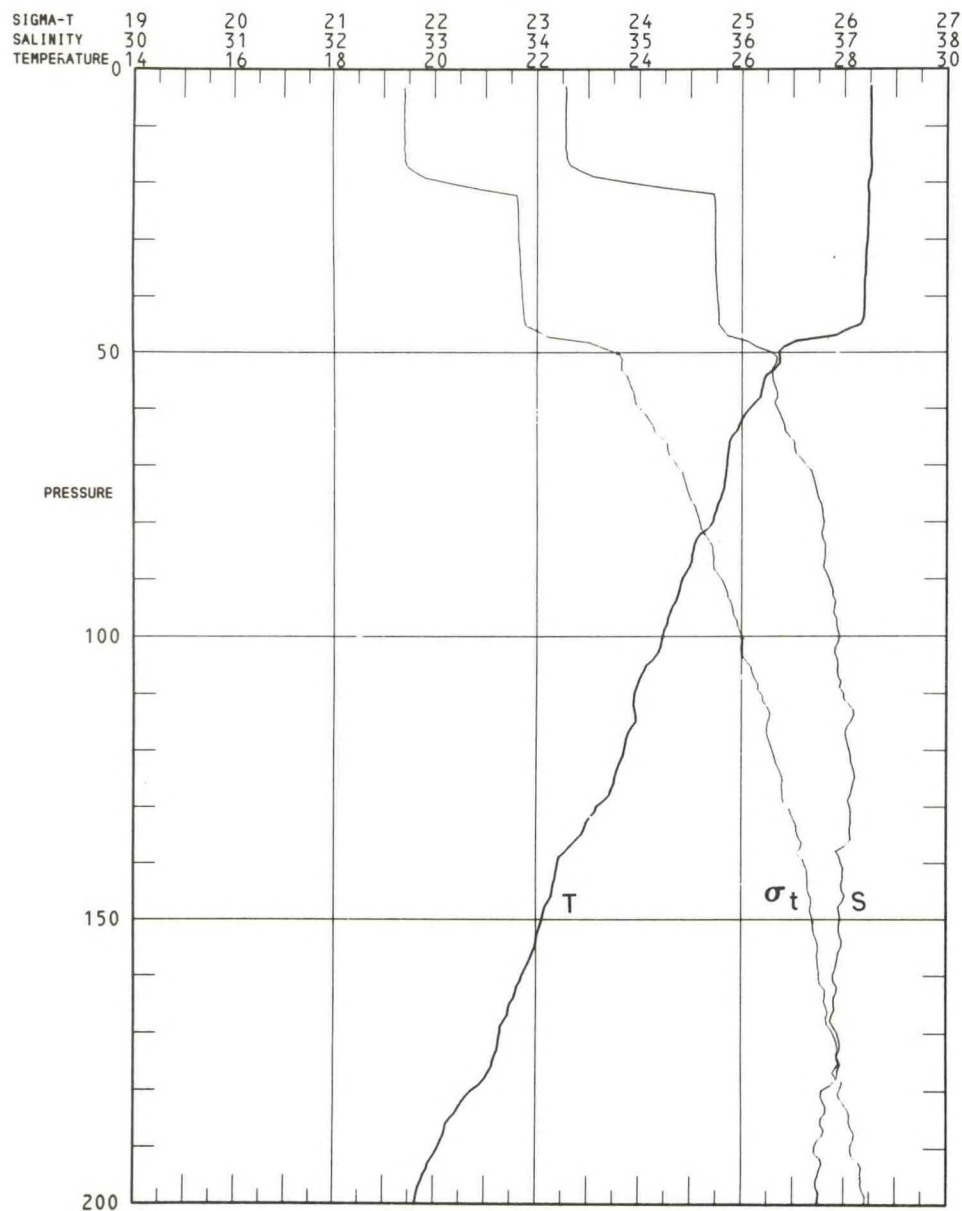


Rainier, June 25, 1969, 1742 GMT, 16°50'N 059°12'W

RAINIER YEAR 1969 DAY 177 TIME 105 GMT LAT.16°50N LON.059°12W  
PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

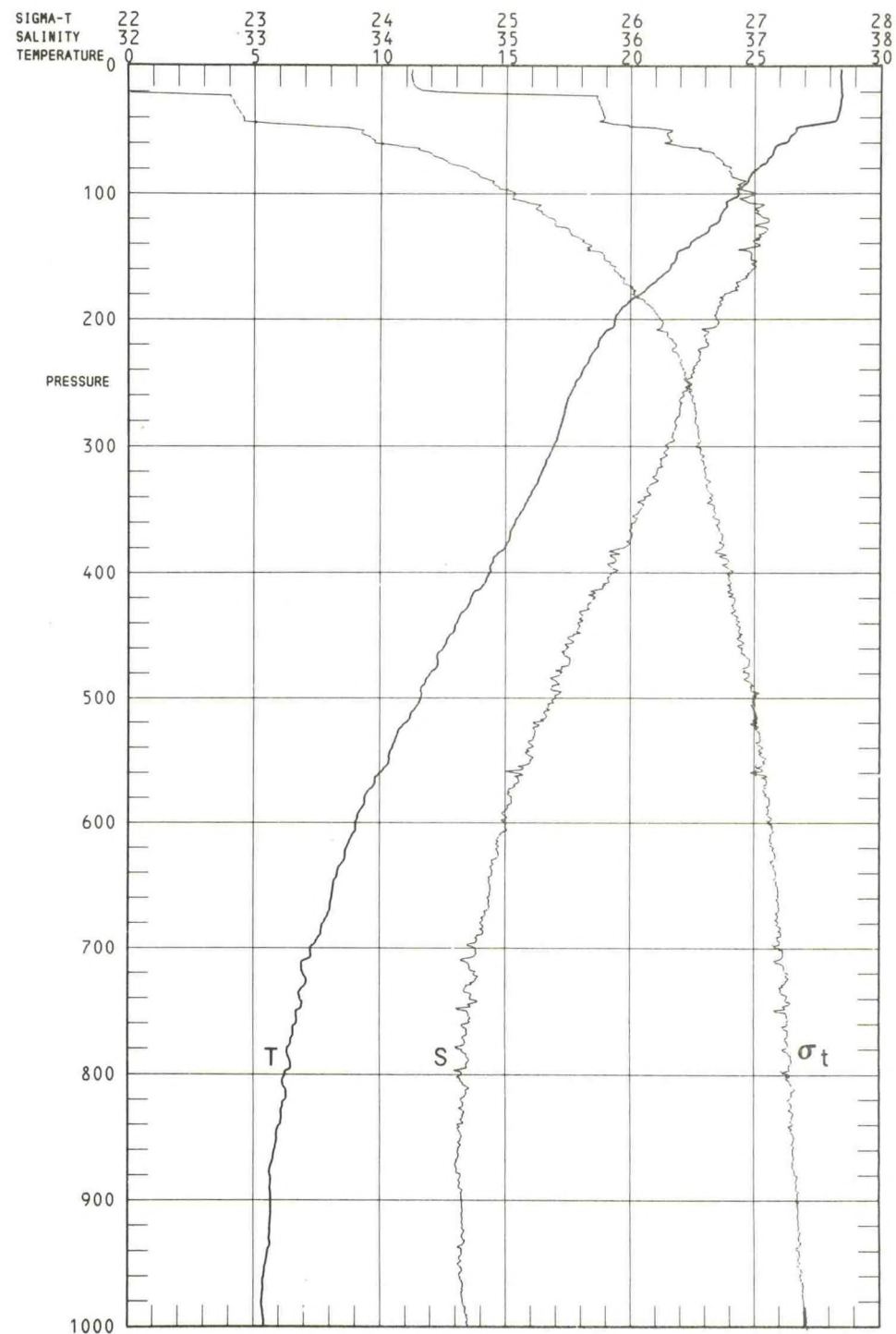
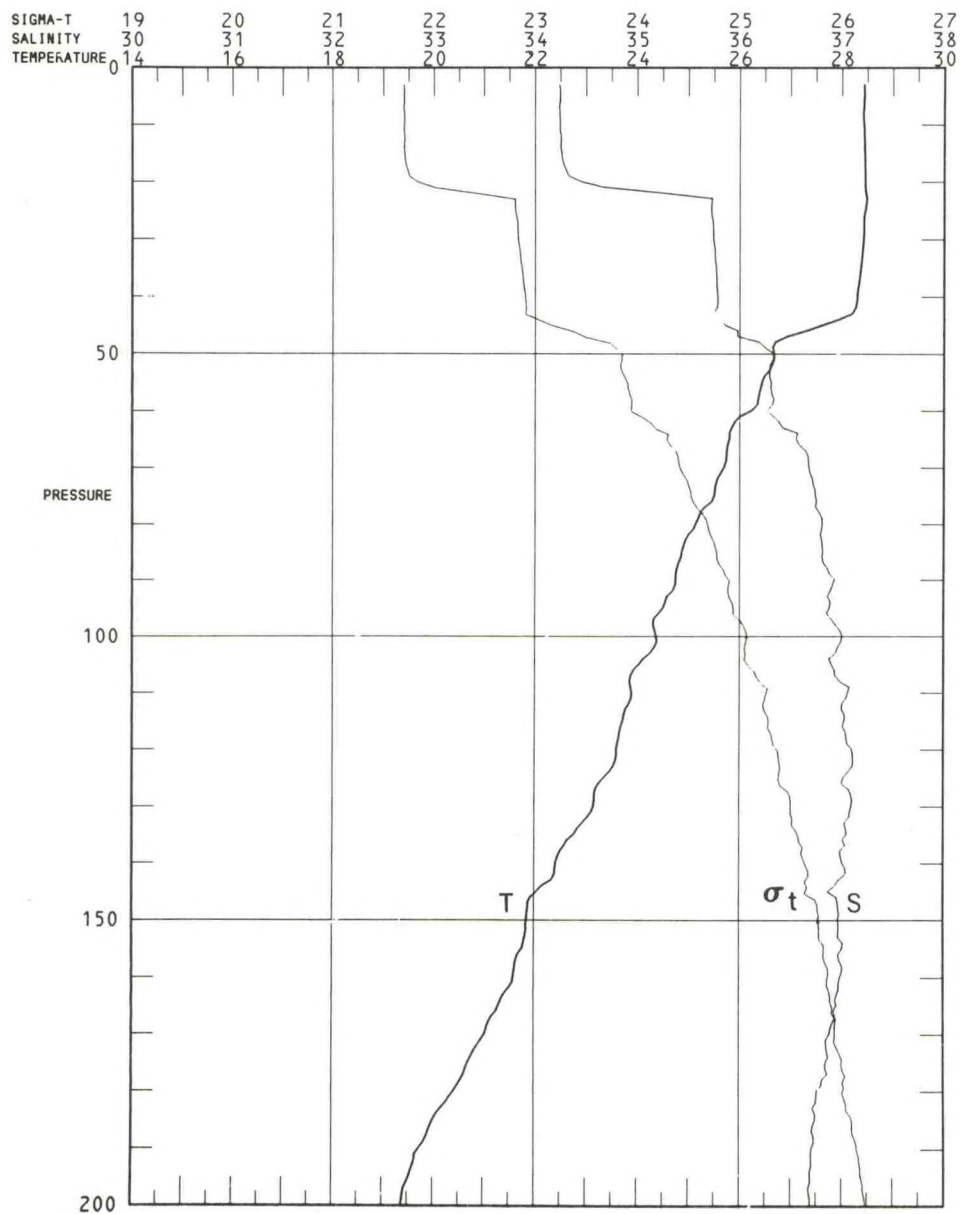


Rainier, June 26, 1969, 0105 GMT, 16°50'N 059°12'W



RAINIER YEAR 1969 DAY 177 TIME 608 GMT LAT. 16°50'N LON. 059°12'W  
 PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.

STD Depth-Sorted Plots  
 Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

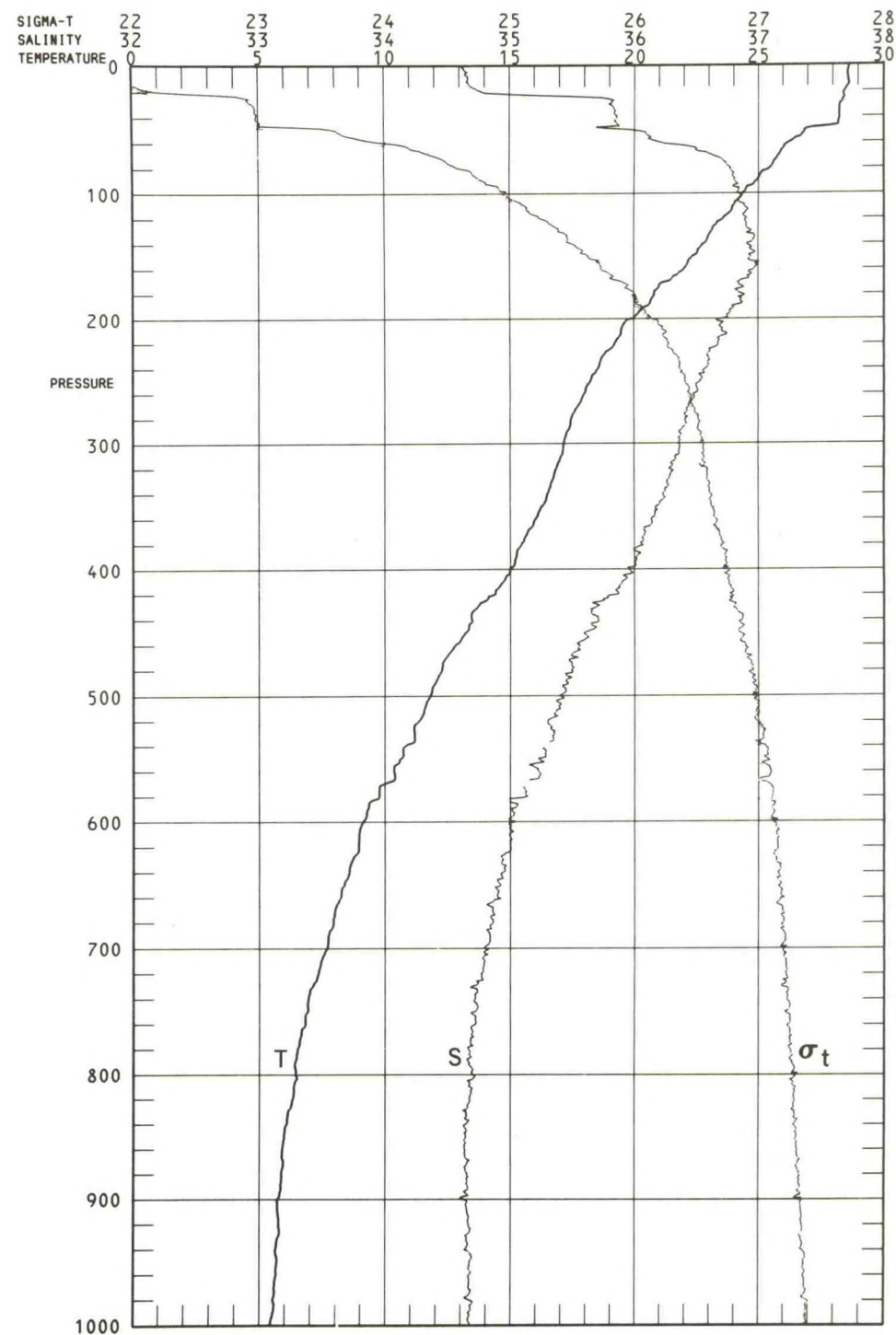
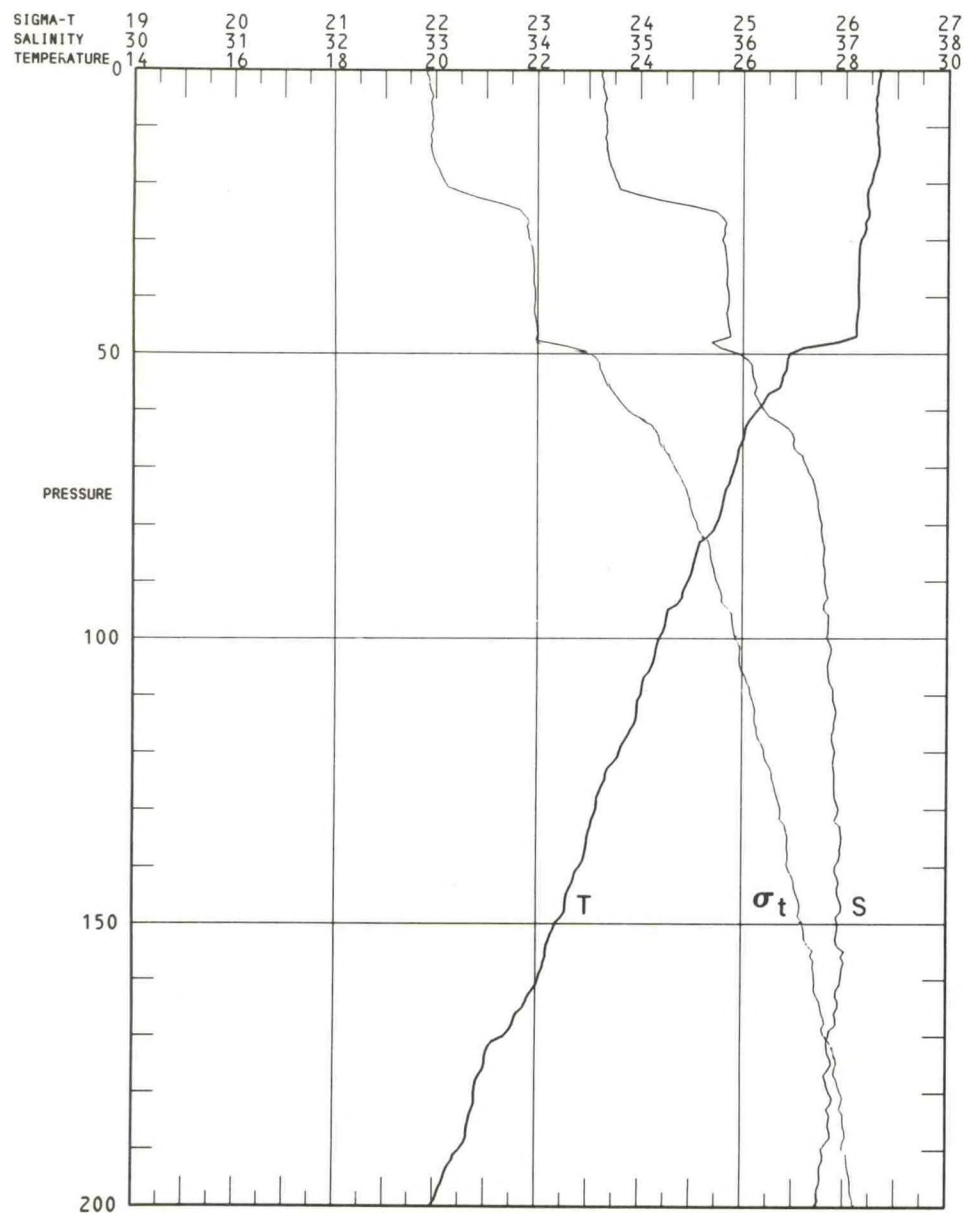


Rainier, June 26, 1969, 0608 GMT, 16°50'N 059°12'W

RAINIER YEAR 1969 DAY 177 TIME 1805 GMT LAT.16°50N LON.059°12W  
PRESSURE CORRECTION OF +26.0 DECIBARS APPLIED TO ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



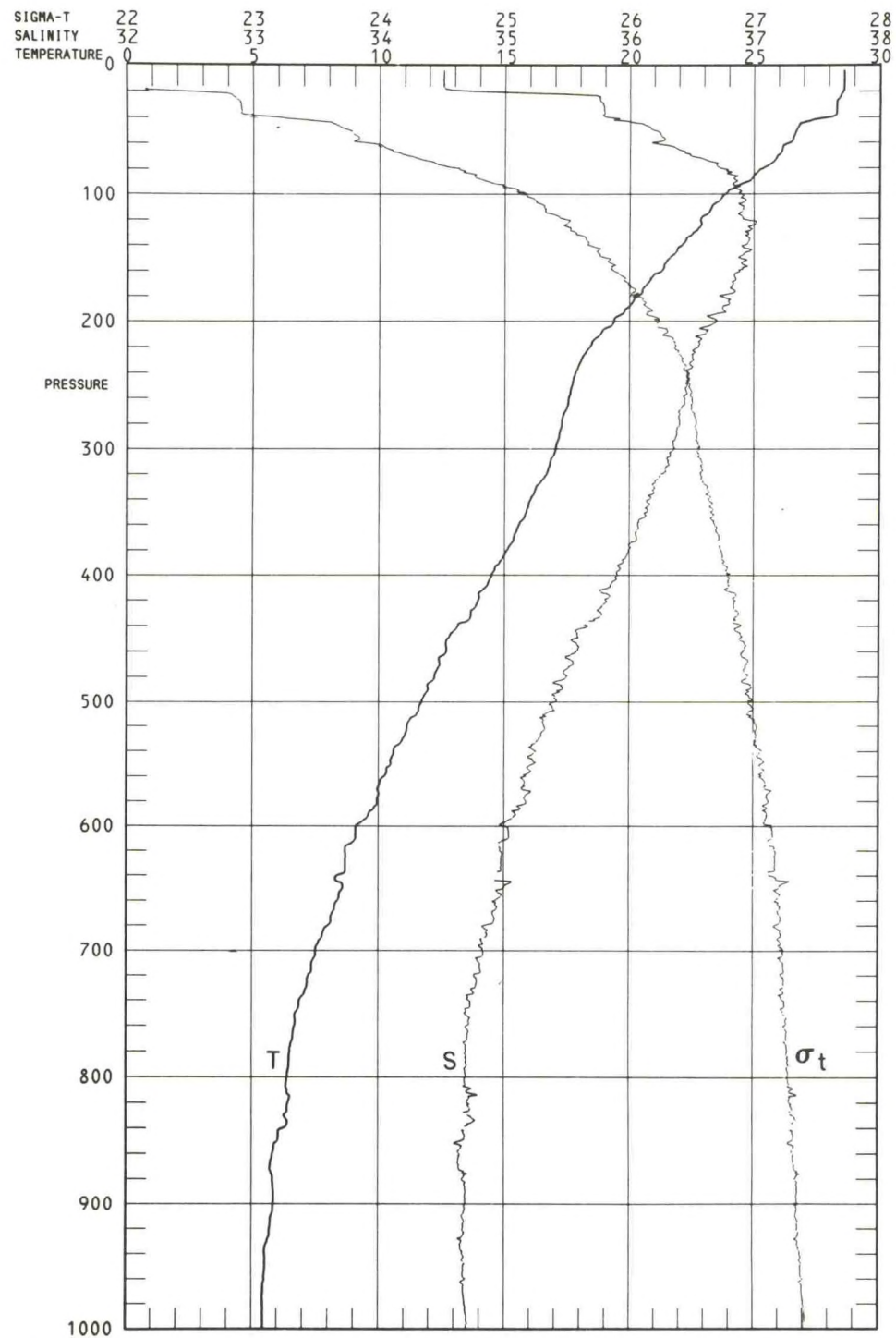
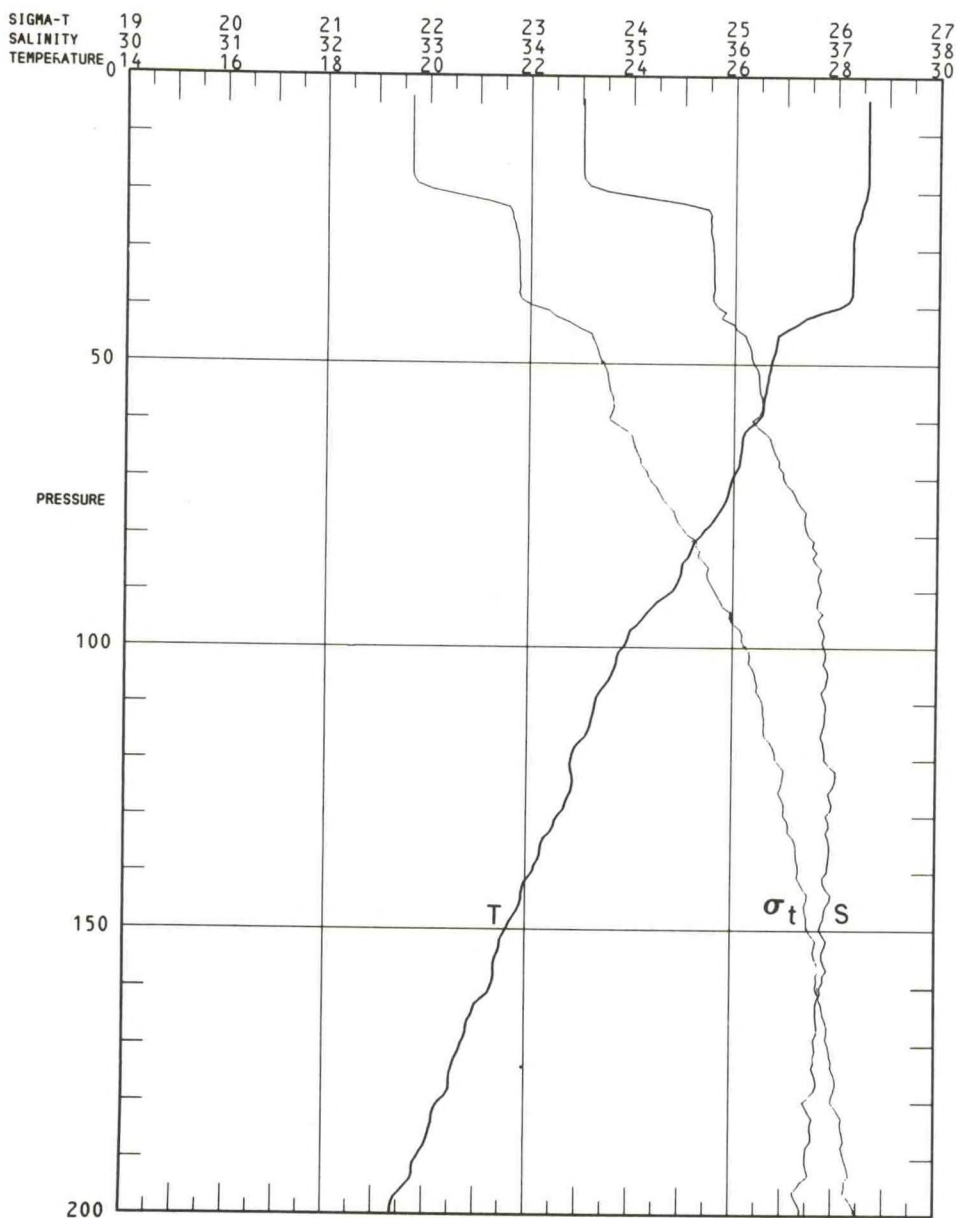
Rainier, June 26, 1969, 1805 GMT, 16°50'N 059°12'W



RAINIER YEAR 1969 DAY 179 TIME 109 GMT LAT.16°50'N LON.059°12'W  
 PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

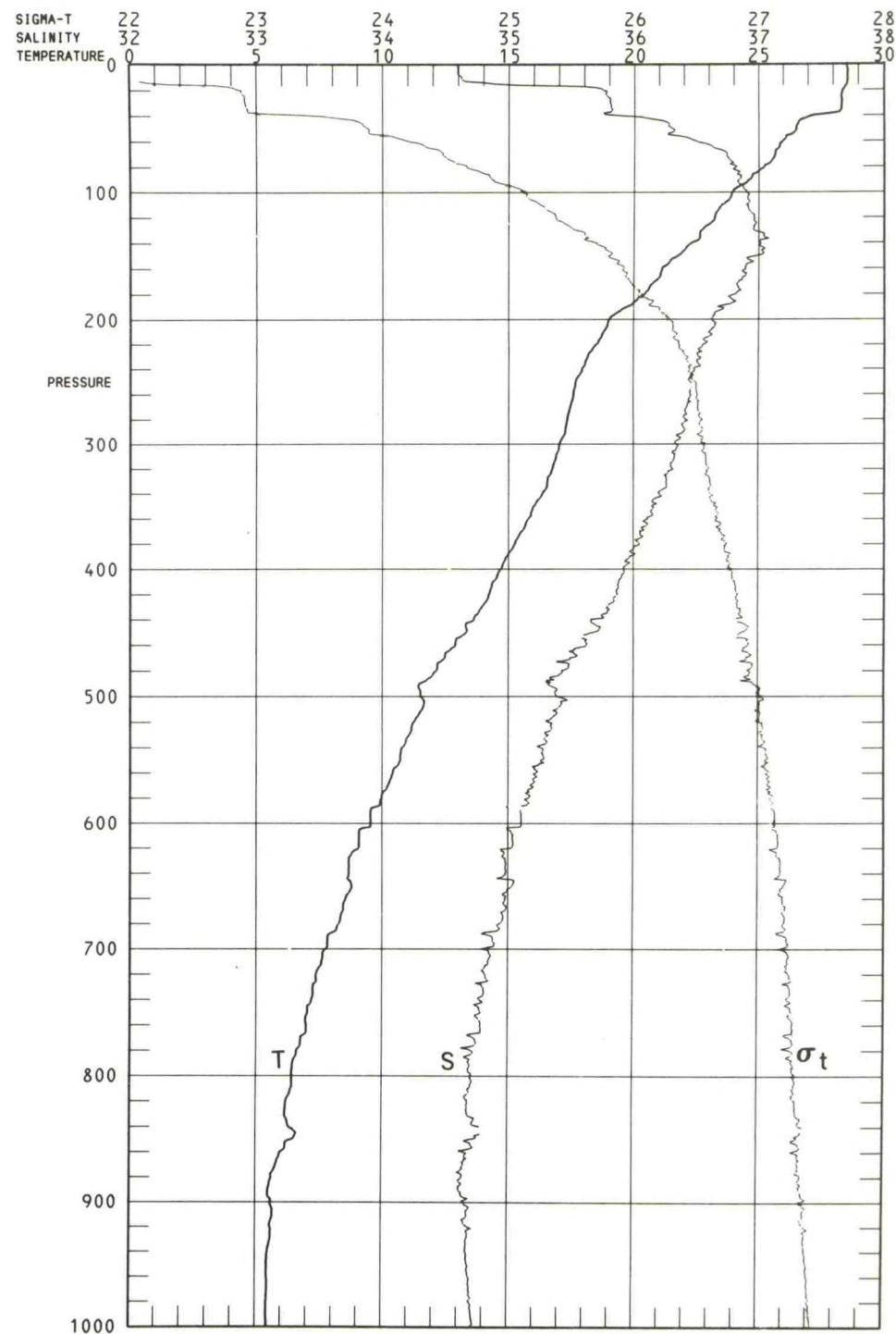
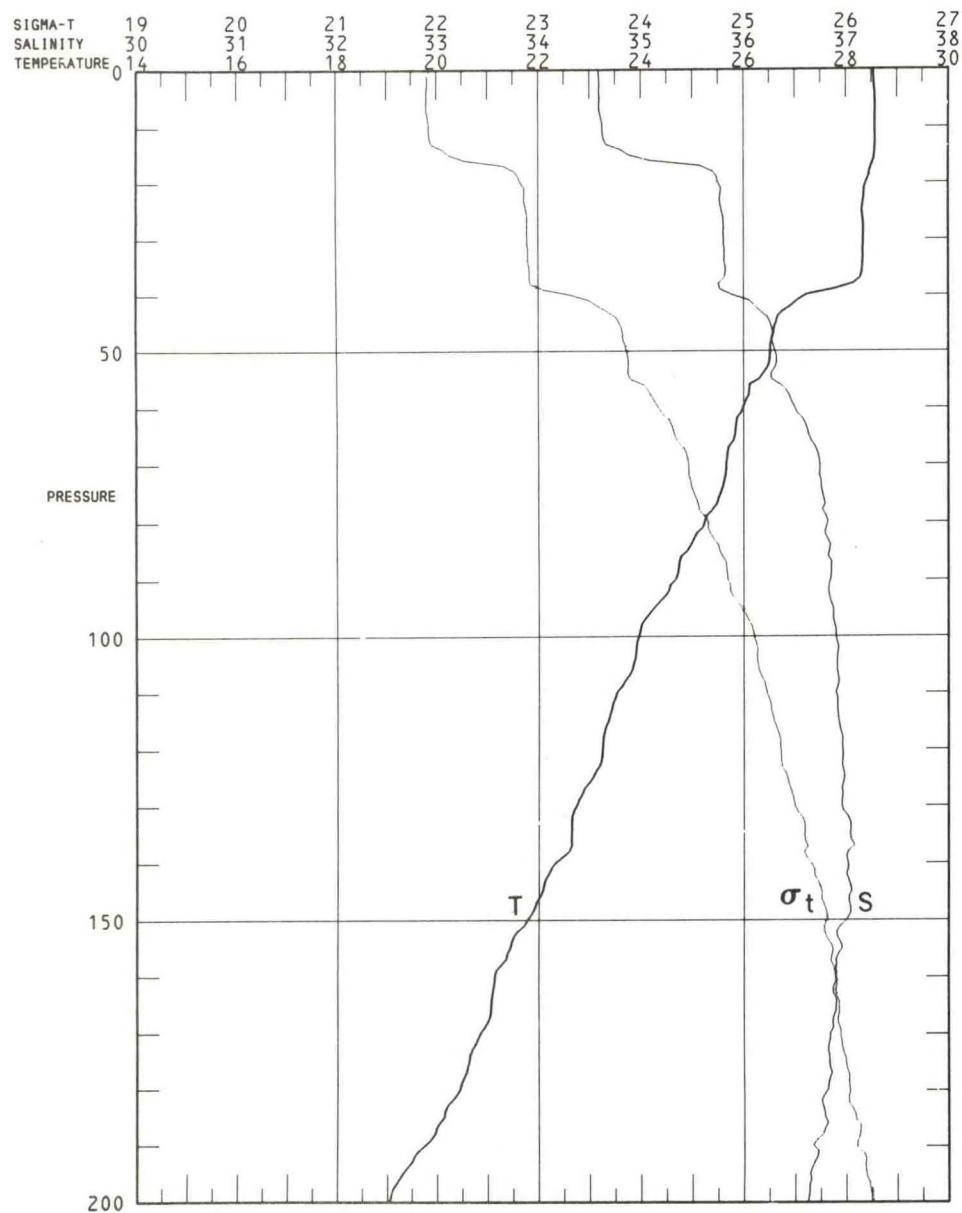


Rainier, June 28, 1969, 0109 GMT, 16°50'N 059°12'W

RAINIER YEAR 1969 DAY 179 TIME 559 GMT LAT.16°49'N LON.059°11'W  
PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



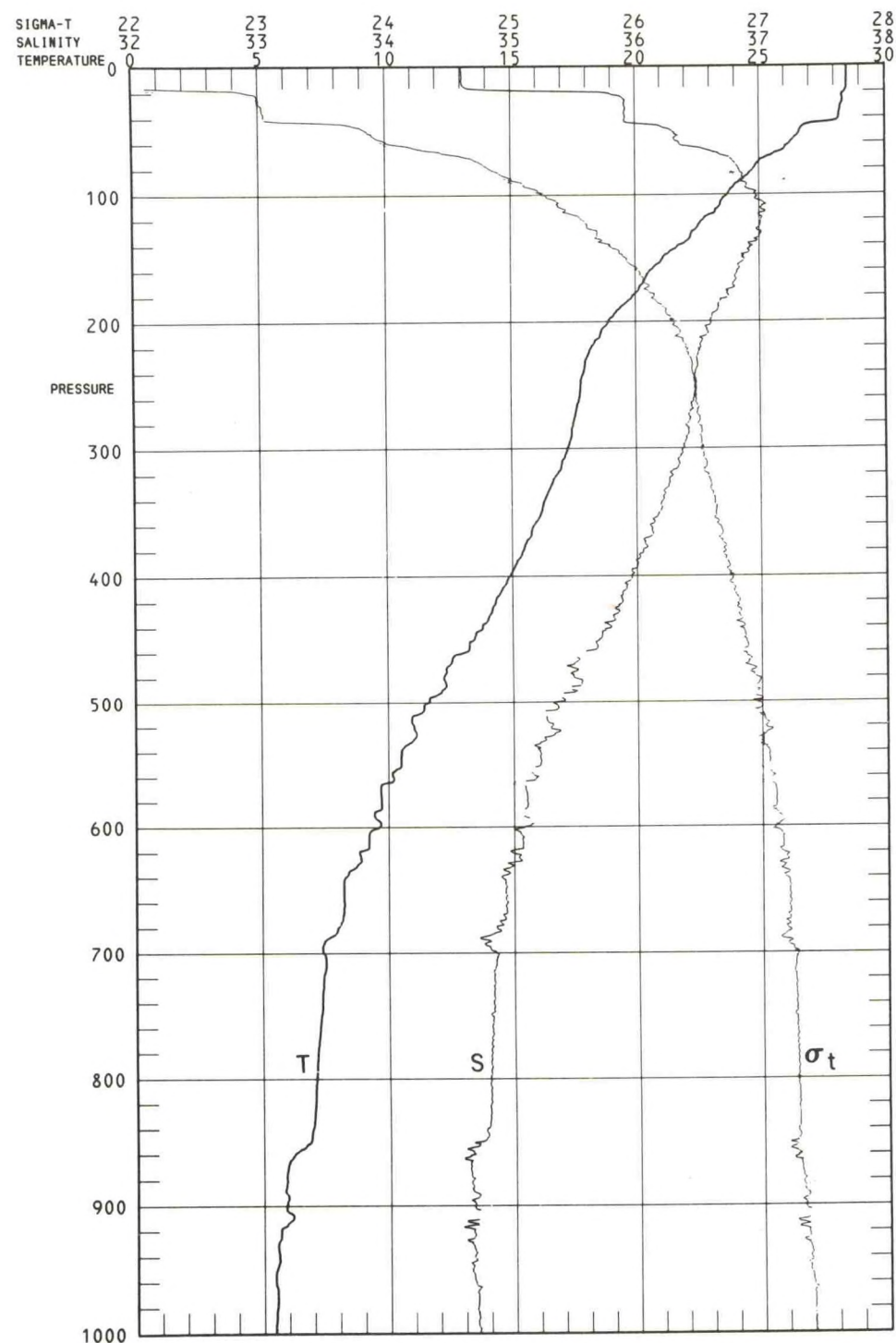
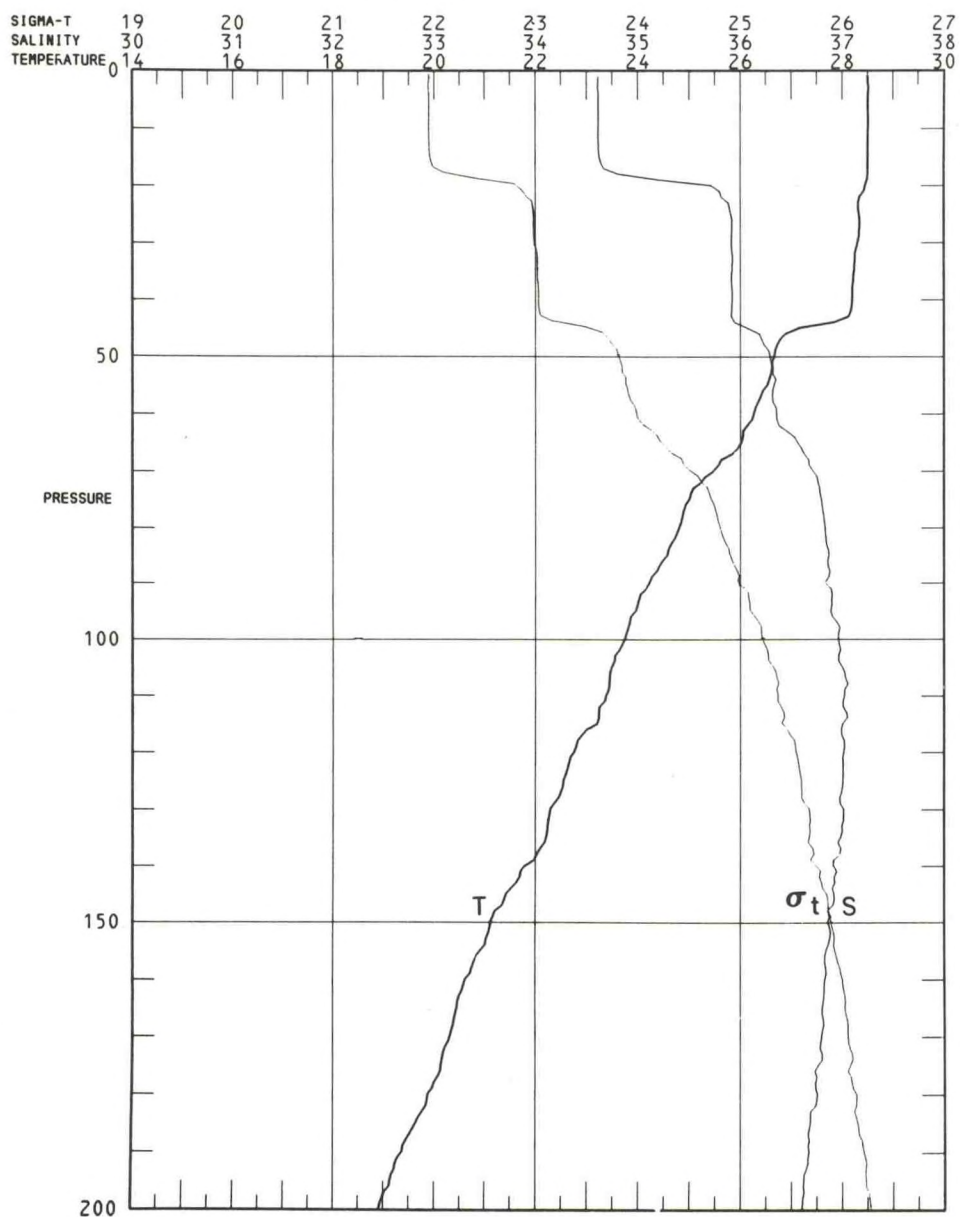
Rainier, June 28, 1969, 0559 GMT, 16°49'N 059°11'W



RAINIER YEAR 1969 DAY 179 TIME 1217 GMT LAT.16°49'N LON.059°11'W  
PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

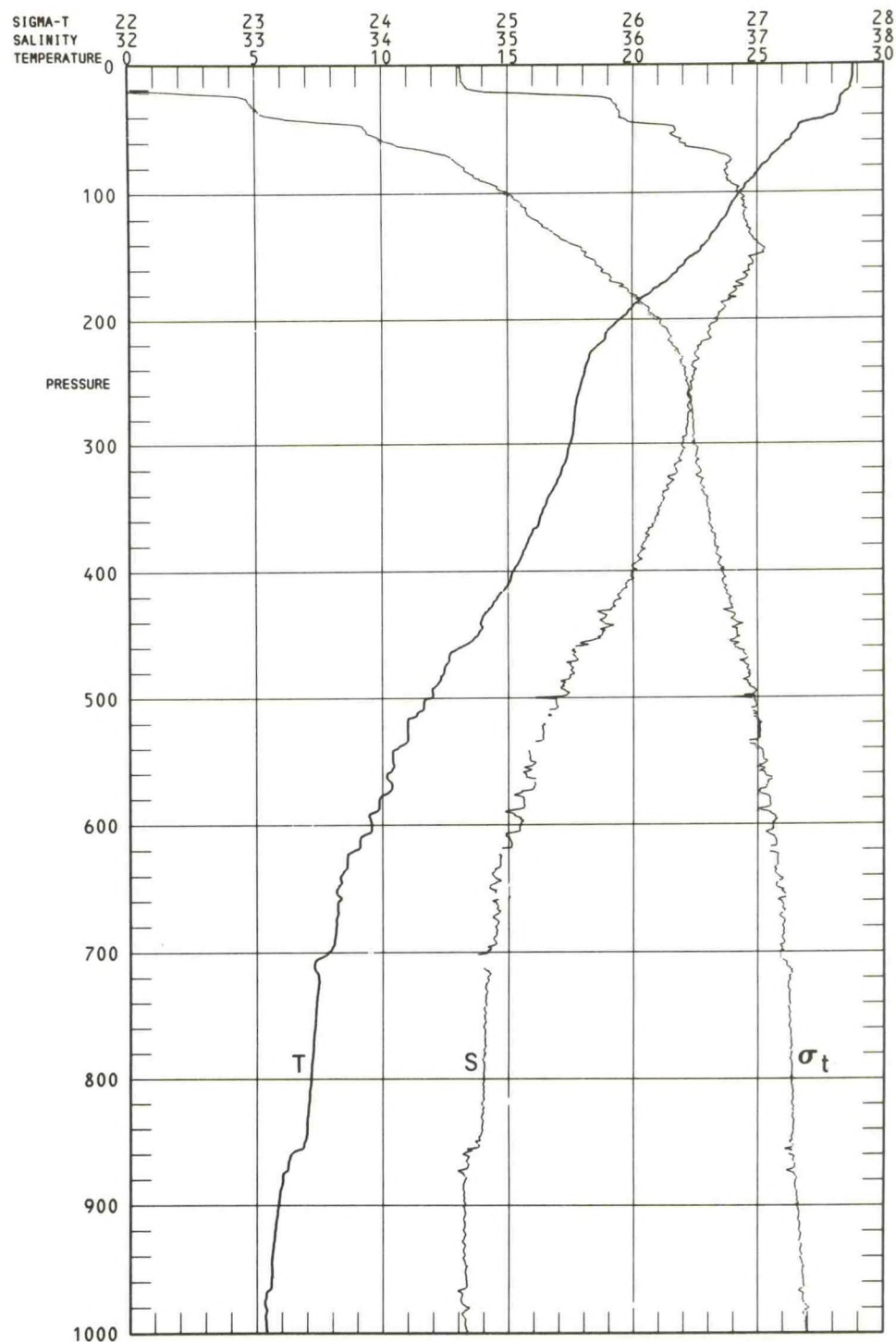
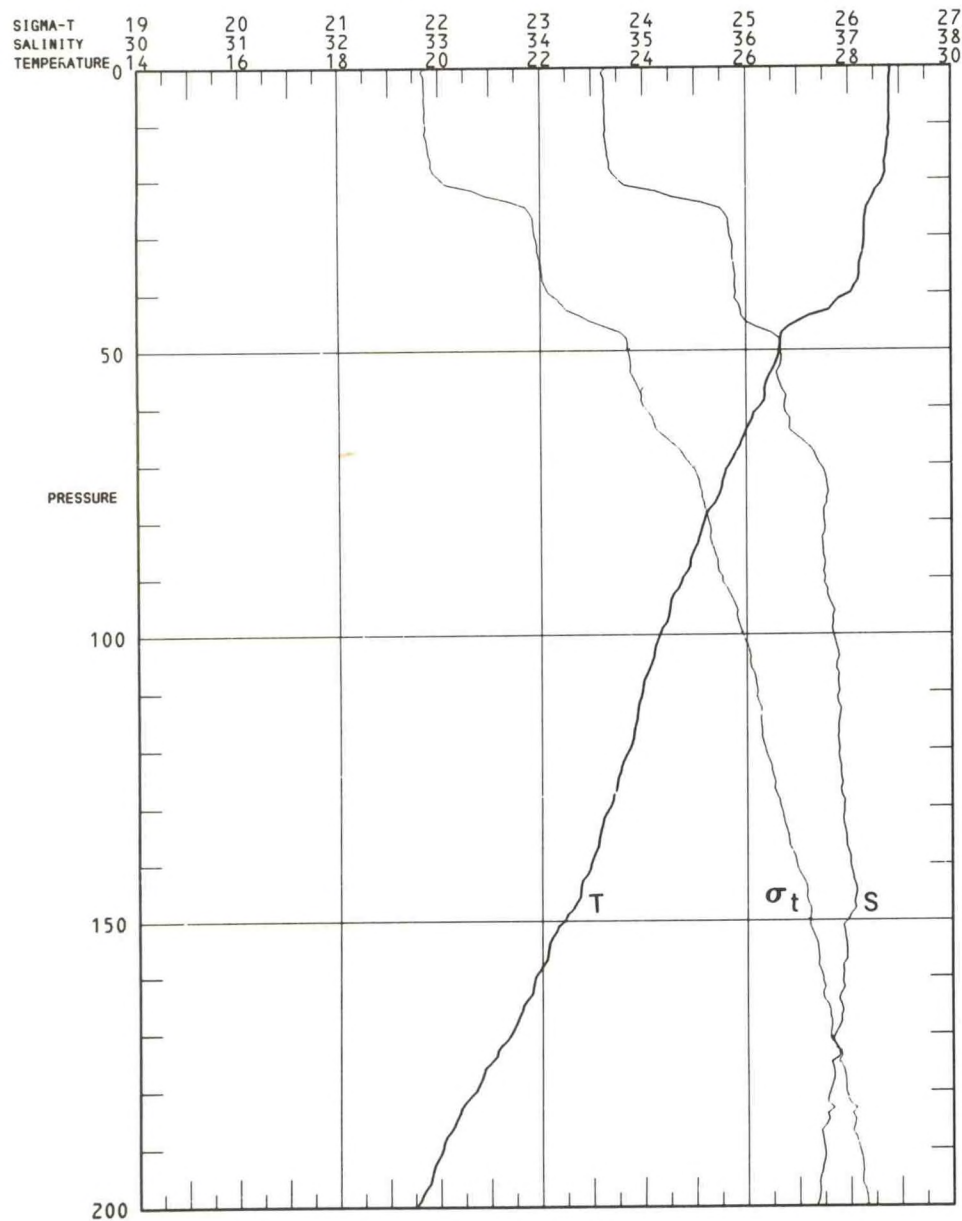


Rainier, June 28, 1969, 1217 GMT, 16°49'N 059°11'N

RAINIER YEAR 1969 DAY 179 TIME 1756 GMT LAT.16°50'N LON.059°13'W  
PRESSURE CORRECTION OF 23.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



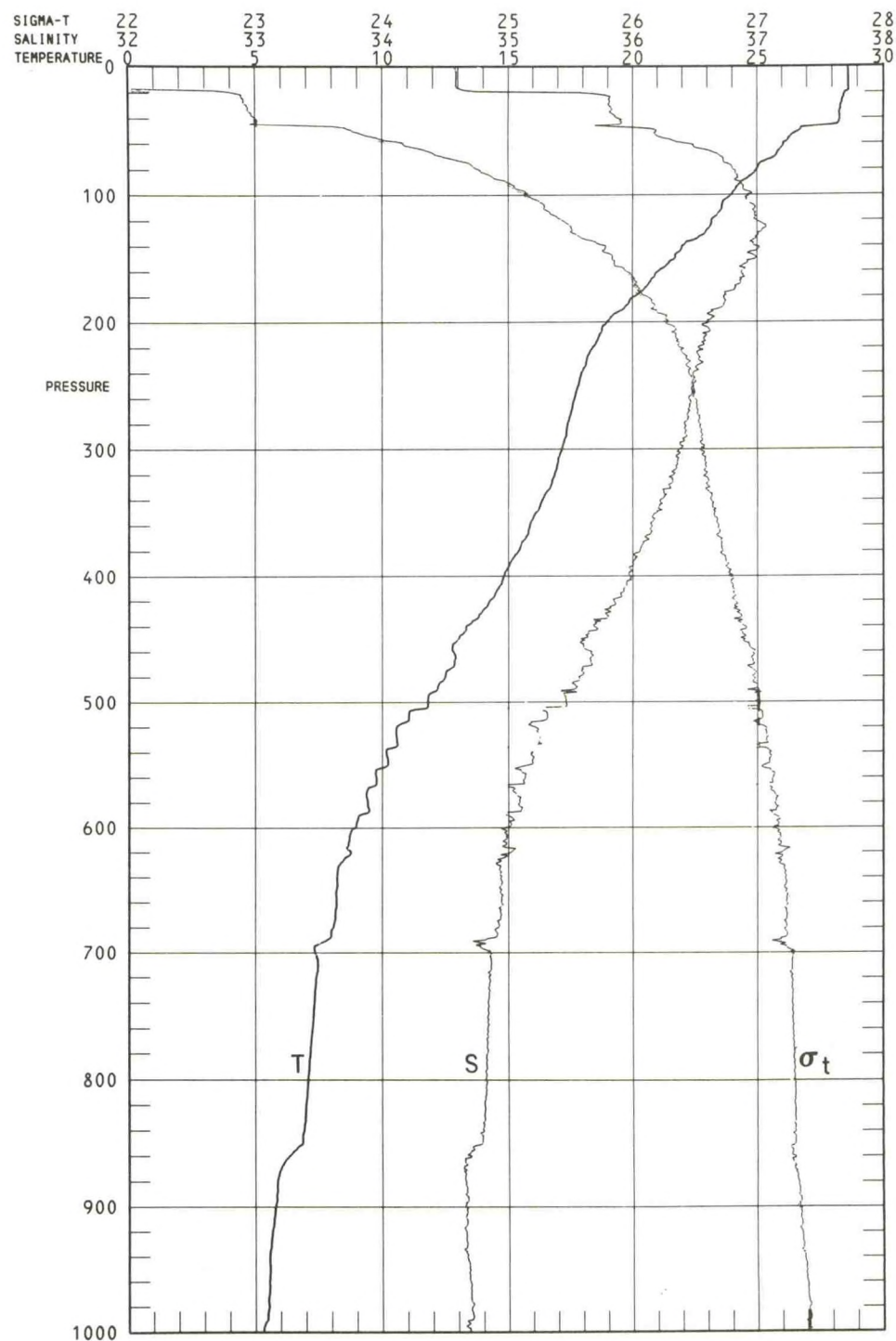
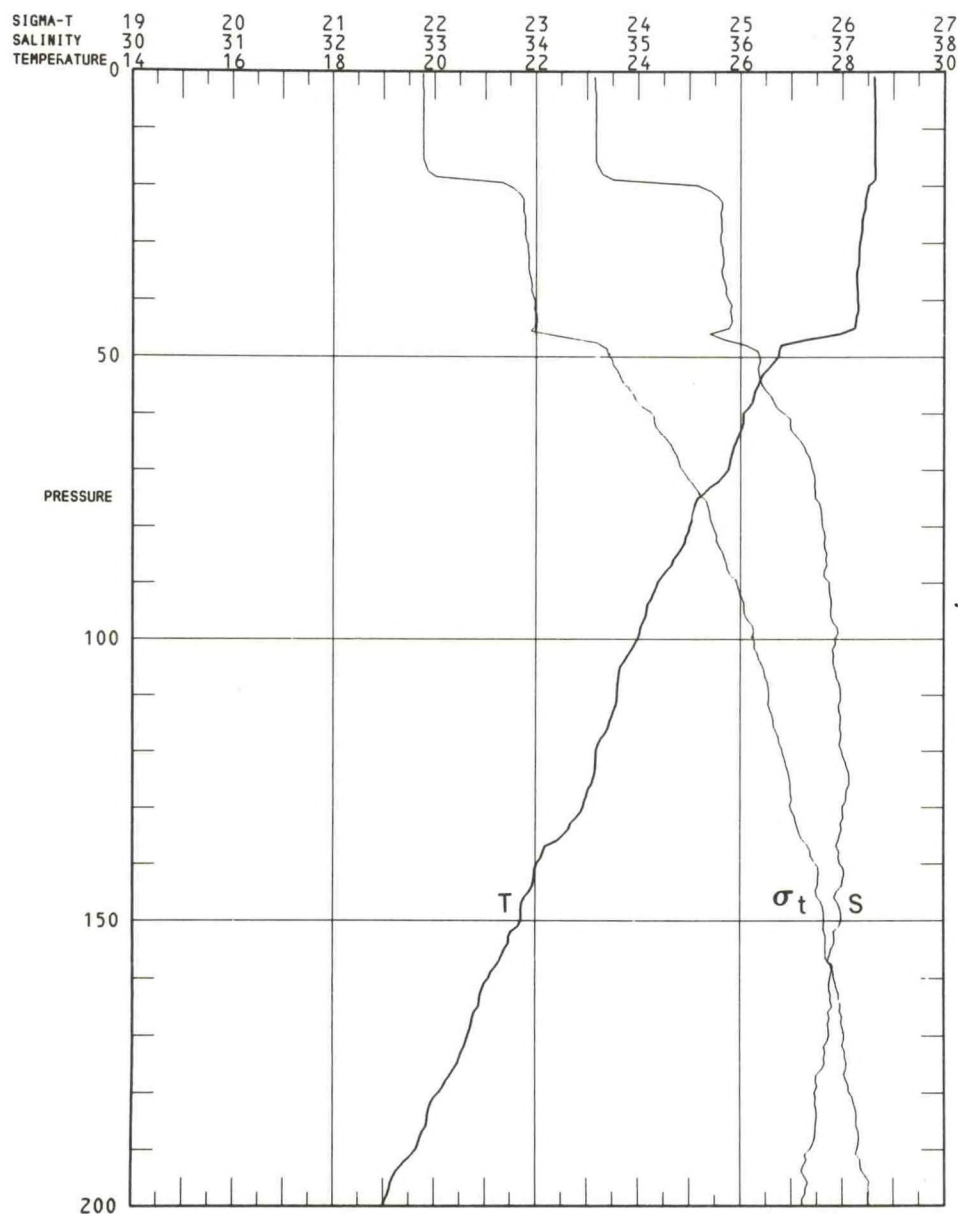
Rainier, June 28, 1969, 1756 GMT, 16°50'N 059°13'W



RAINIER YEAR 1969 DAY 180 TIME 106 GMT LAT.16°51'N LON.059°15'W  
 PRESSURE CORRECTION OF 17.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

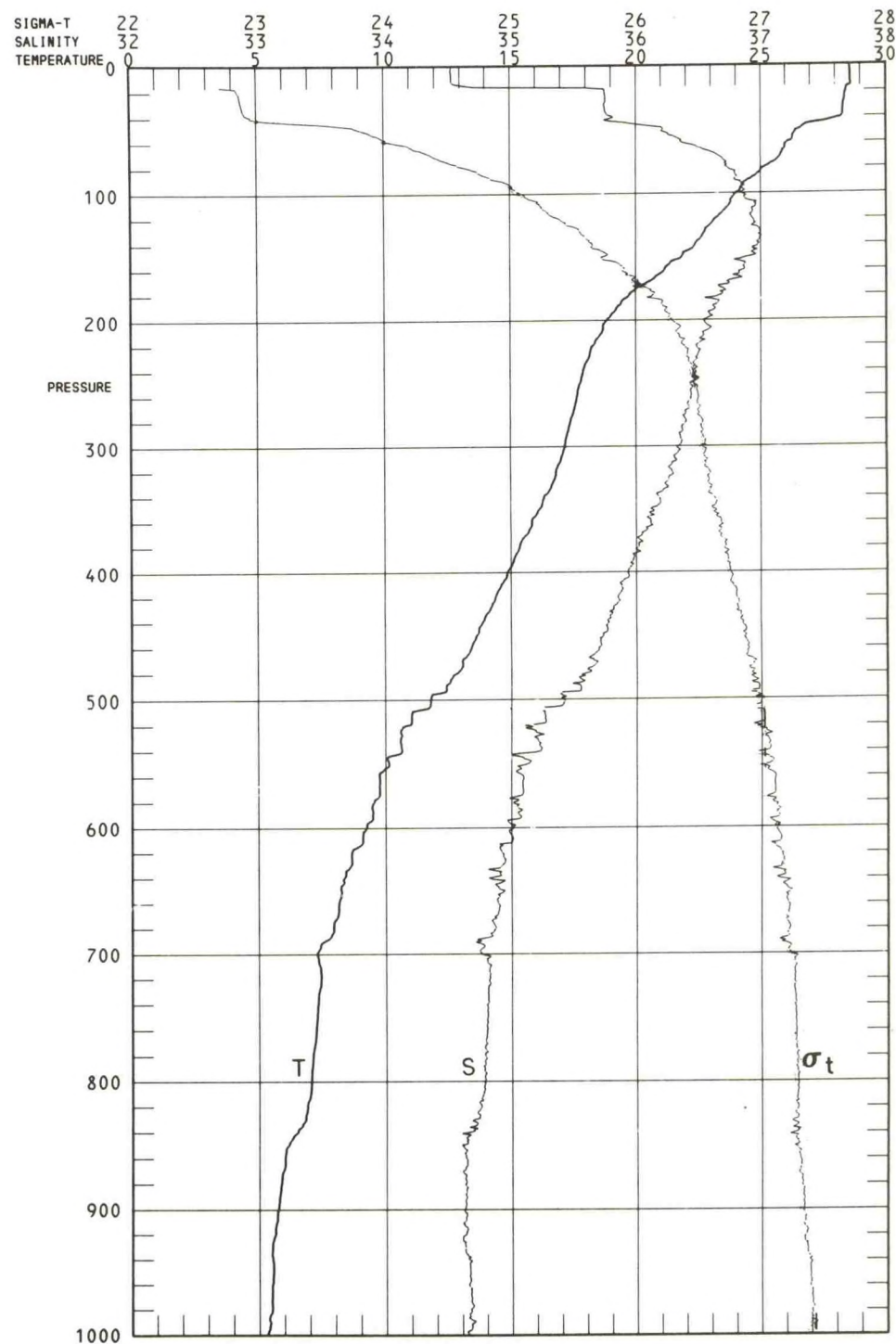
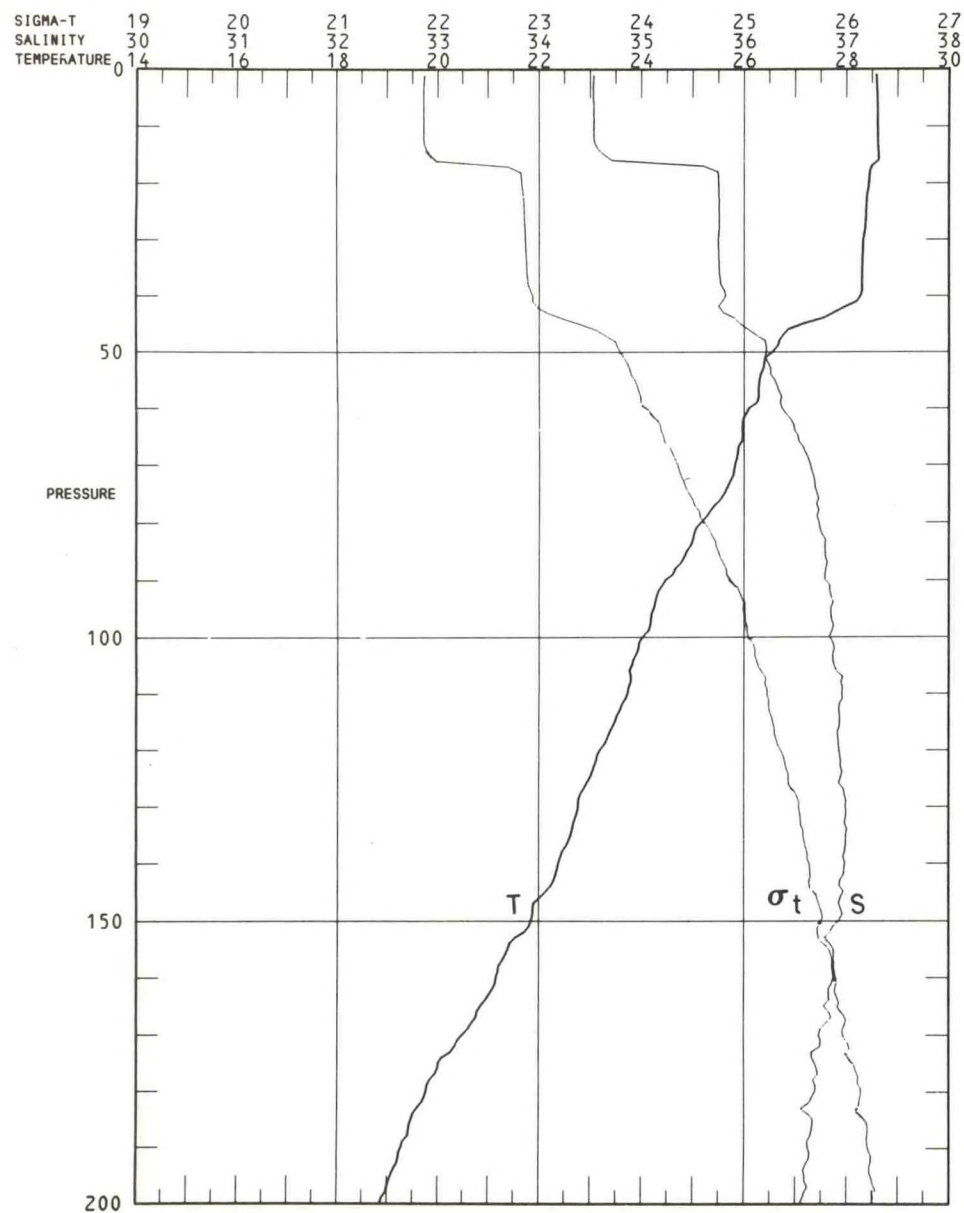


Rainier, June 29, 1969, 0106 GMT, 16°51'N 059°15'W

RAINIER YEAR 1969 DAY 180 TIME 557 GMT LAT.16°49'N LON.059°14'W  
PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

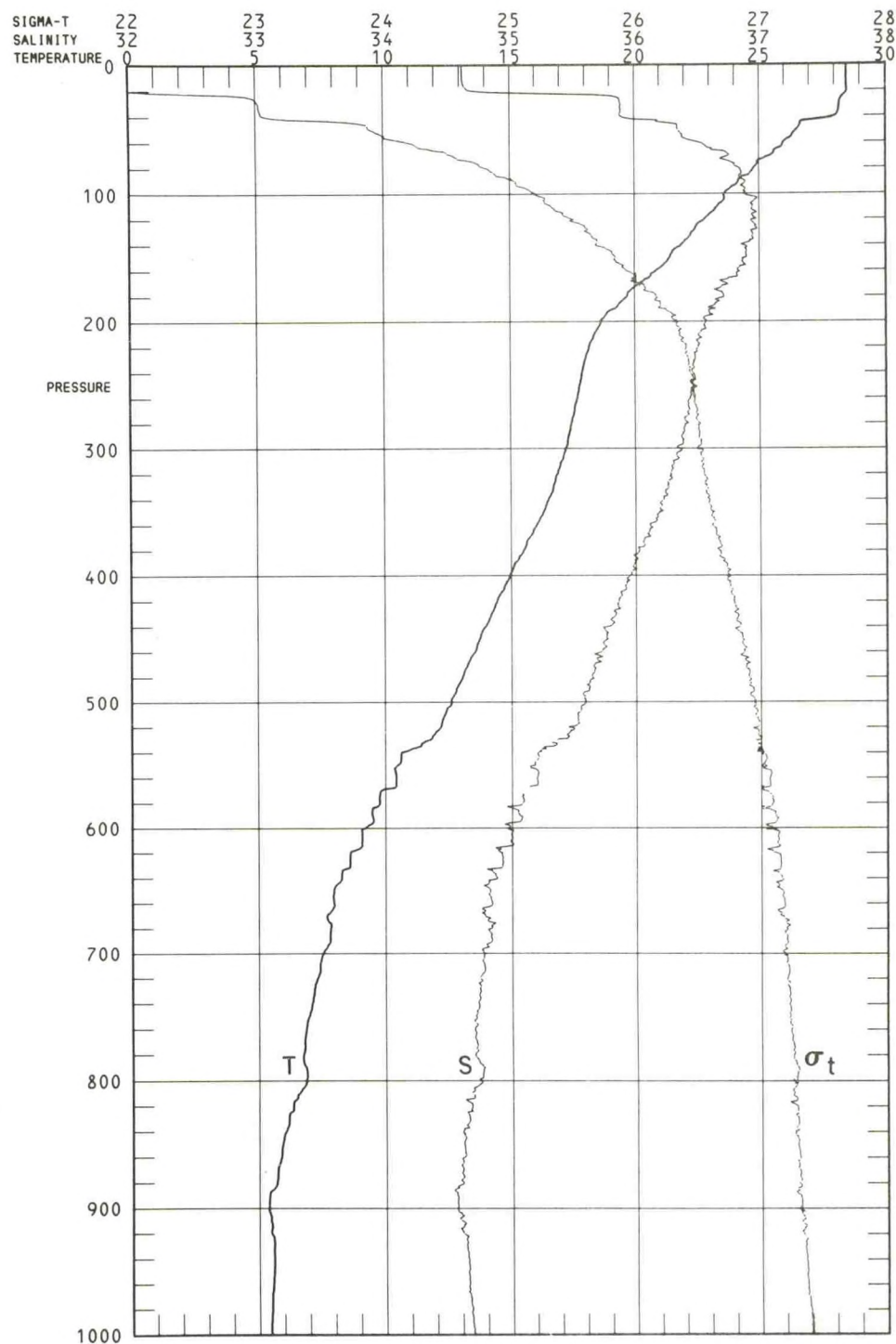
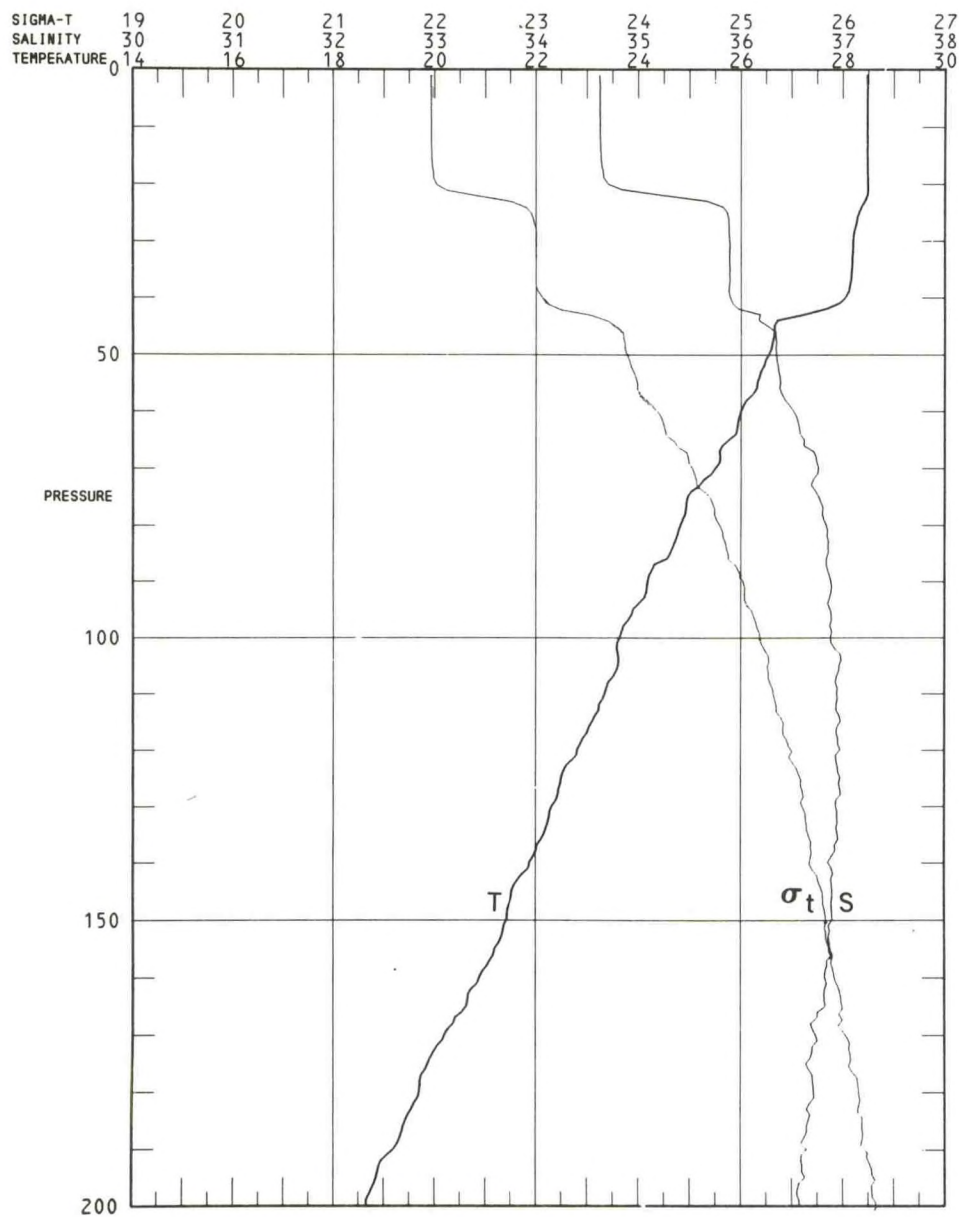


Rainier, June 29, 1969, 0557 GMT, 16°49'N 059°14'W



RAINIER YEAR 1969 DAY 180 TIME 1209 GMT LAT. 16°48'N LON. 059°09'W  
 PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

STD Depth-Sorted Plots  
 Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

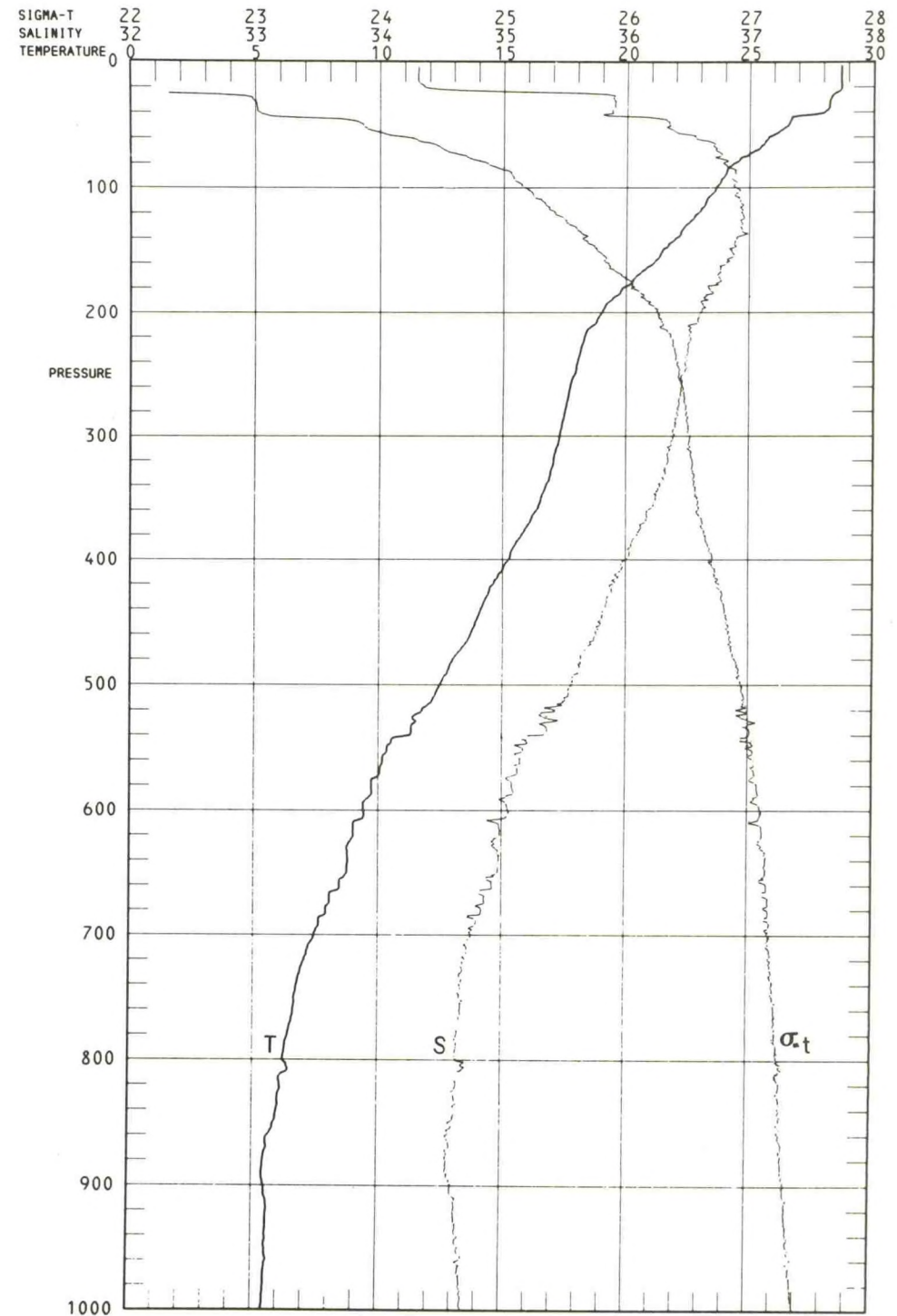
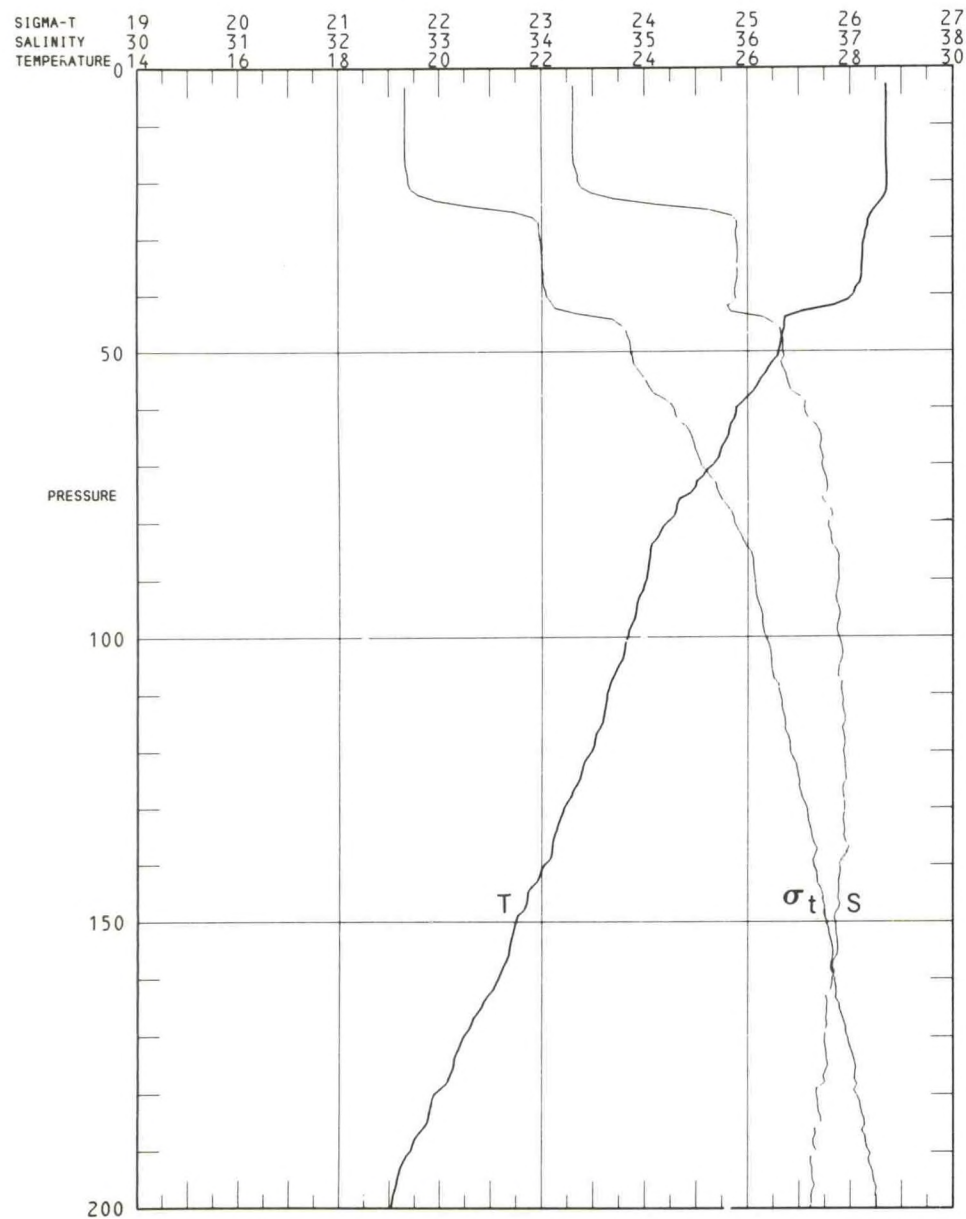


Rainier, June 29, 1969, 1209 GMT, 16°48'N 059°09'W

RAINIER YEAR 1969 DAY 181 TIME 104 GMT LAT.16°54'N LON.059°11'W  
 PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



Rainier, June 30, 1969, 0104 GMT, 16°54'N 059°11'W

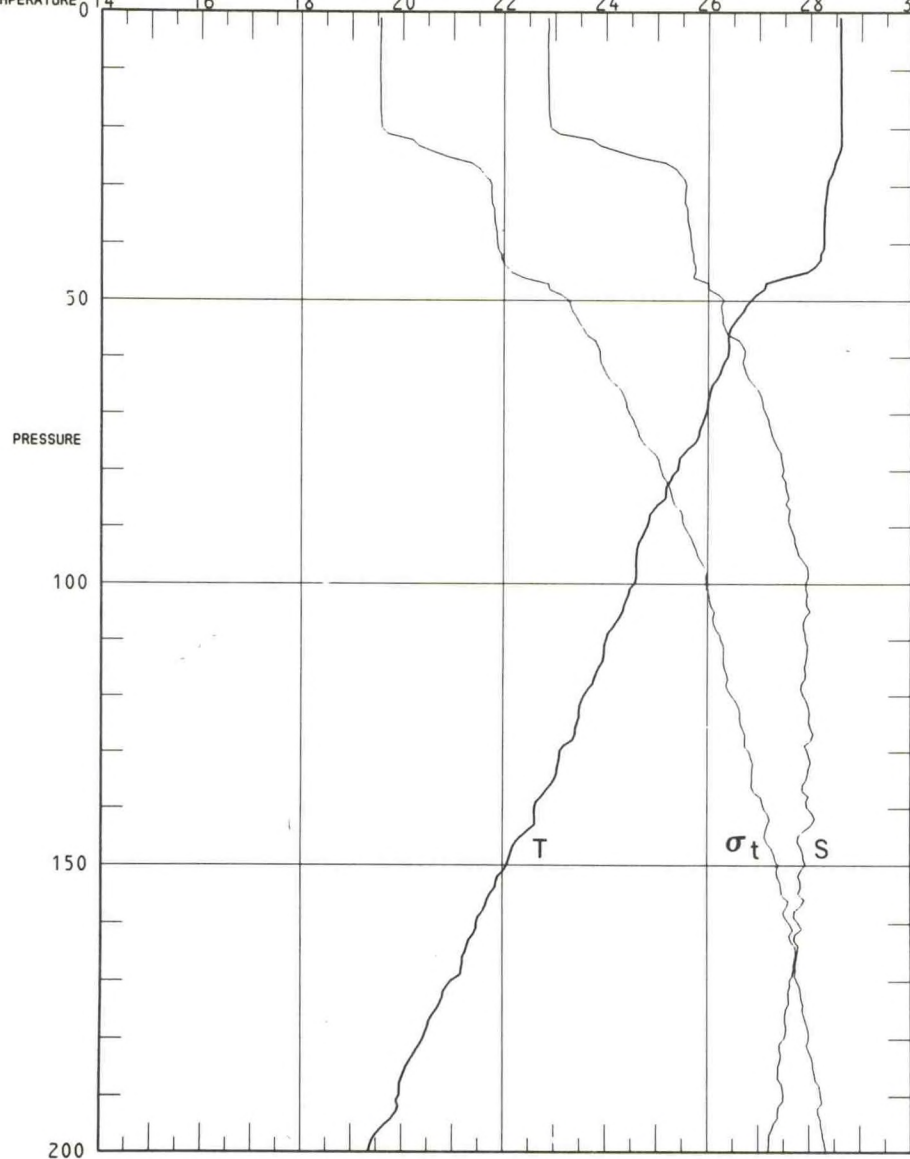


RAINIER YEAR 1969 DAY 181 TIME 559 GMT LAT.16°50N LONG.059°07W  
 PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

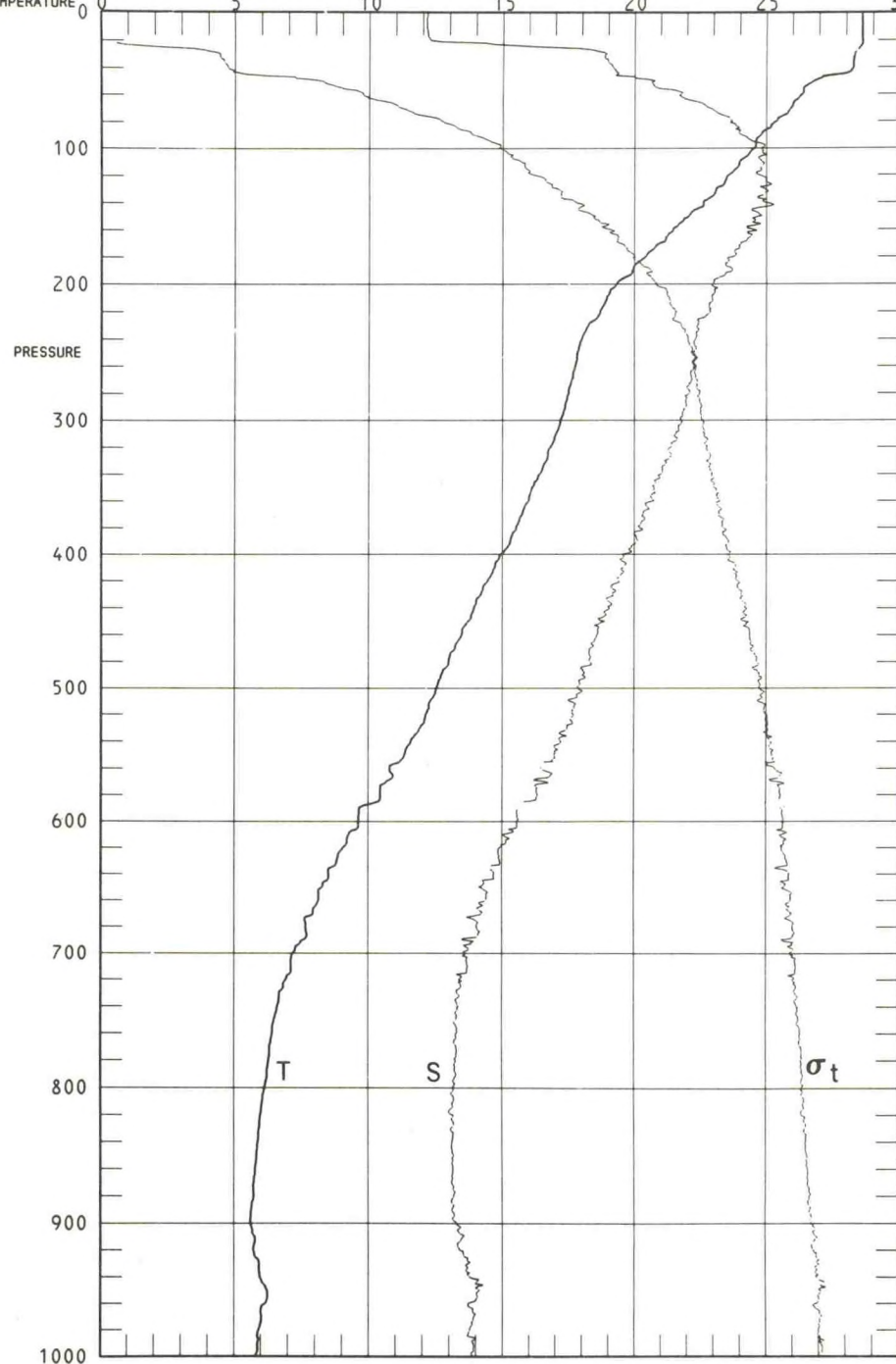
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

SIGMA-T	19	20	21	22	23	24	25	26	27
SALINITY	30	31	32	33	34	35	36	37	38
TEMPERATURE	14	16	18	20	22	24	26	28	30



SIGMA-T	22	23	24	25	26	27	28
SALINITY	32	33	34	35	36	37	38
TEMPERATURE	0	5	10	15	20	25	30

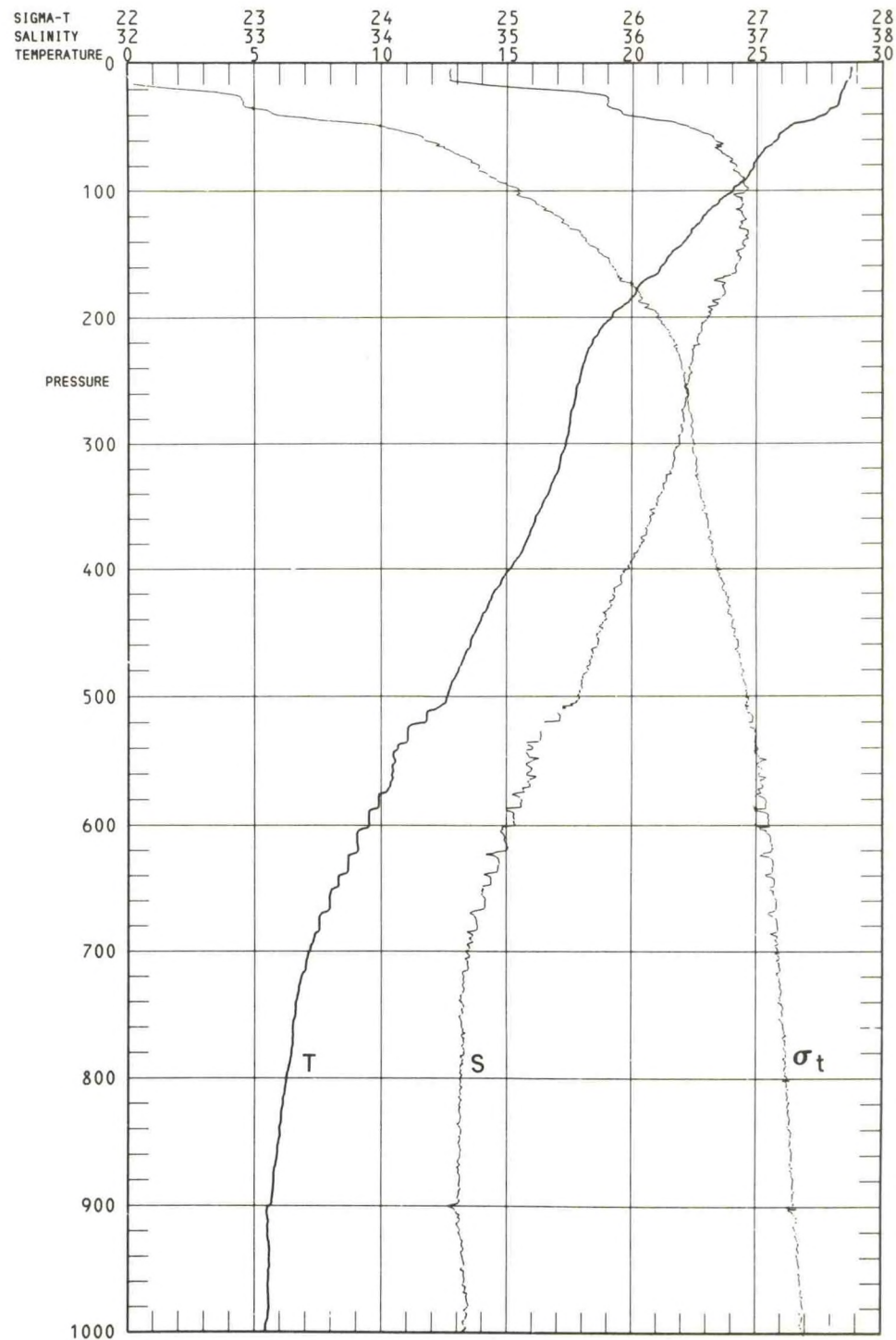
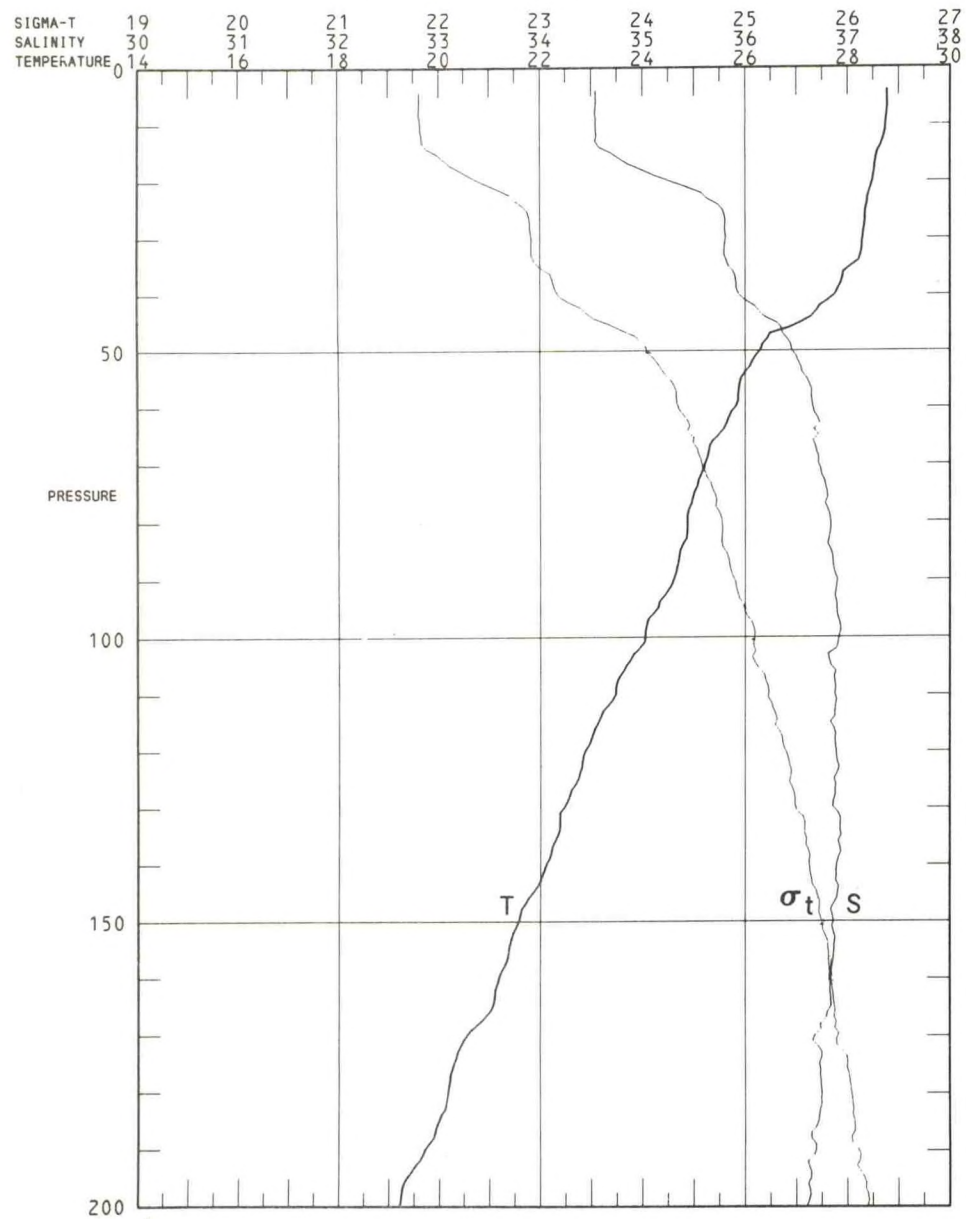


Rainier, June 30, 1969, 0559 GMT, 16°50'N 059°07'W

RAINIER YEAR 1969 DAY 181 TIME 1818 GMT LAT.16°50'N LON.059°12'W  
PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



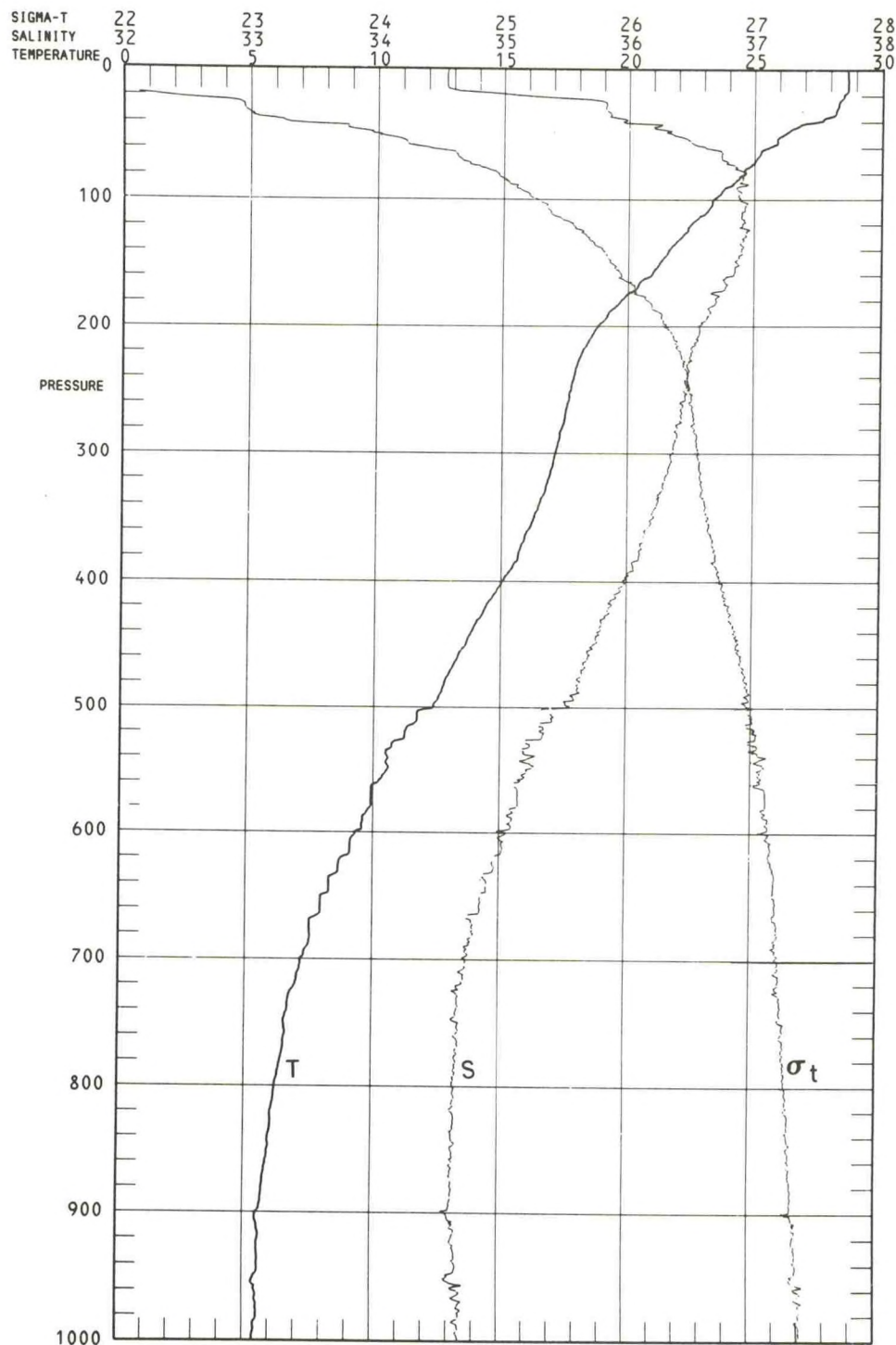
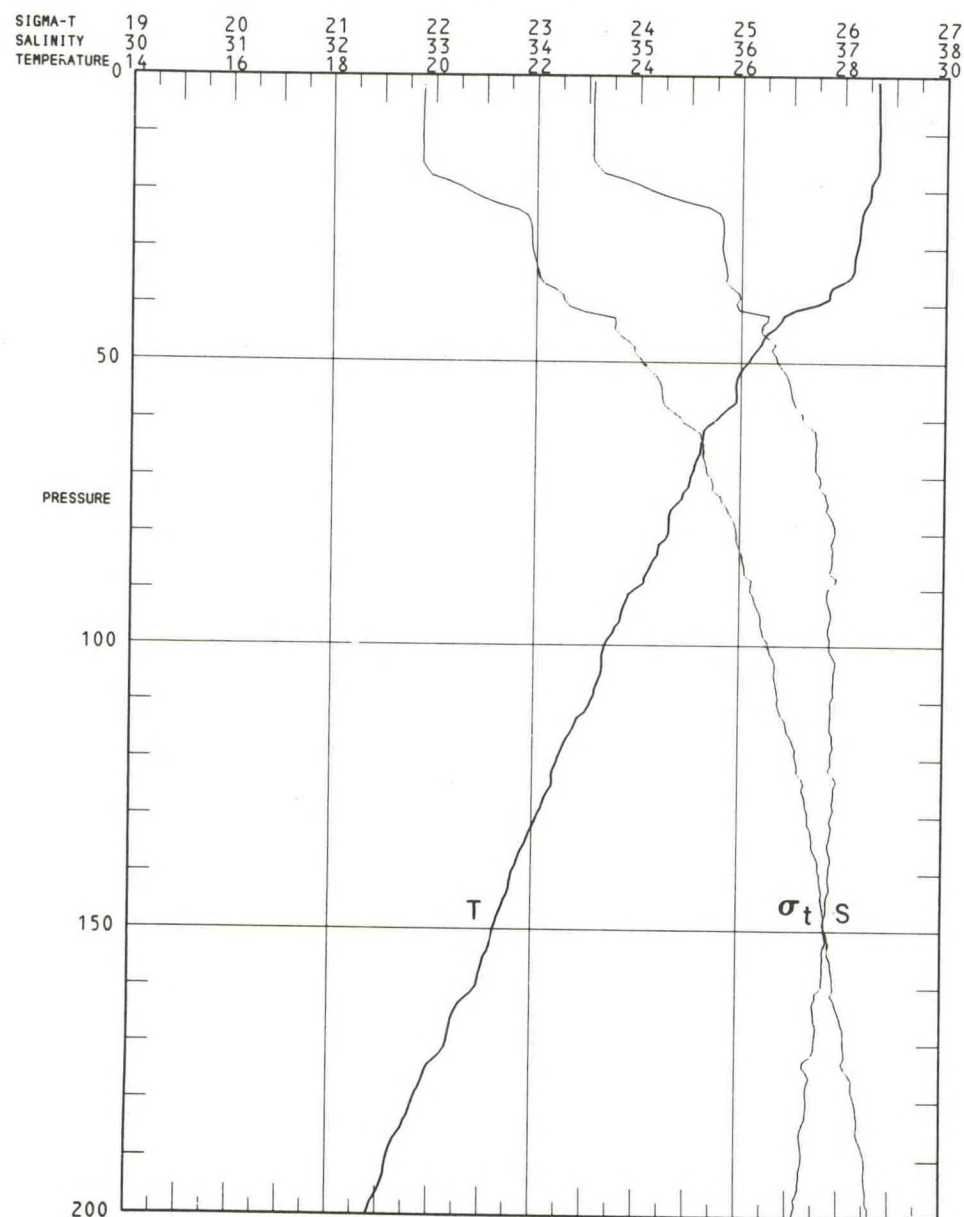
Rainier, June 30, 1969, 1818 GMT, 16°50'N 059°12'W



RAINIER YEAR 1969 DAY 182 TIME 047 GMT LAT.16°52'N LON.059°15'W  
 PRESSURE CORRECTION OF 16.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

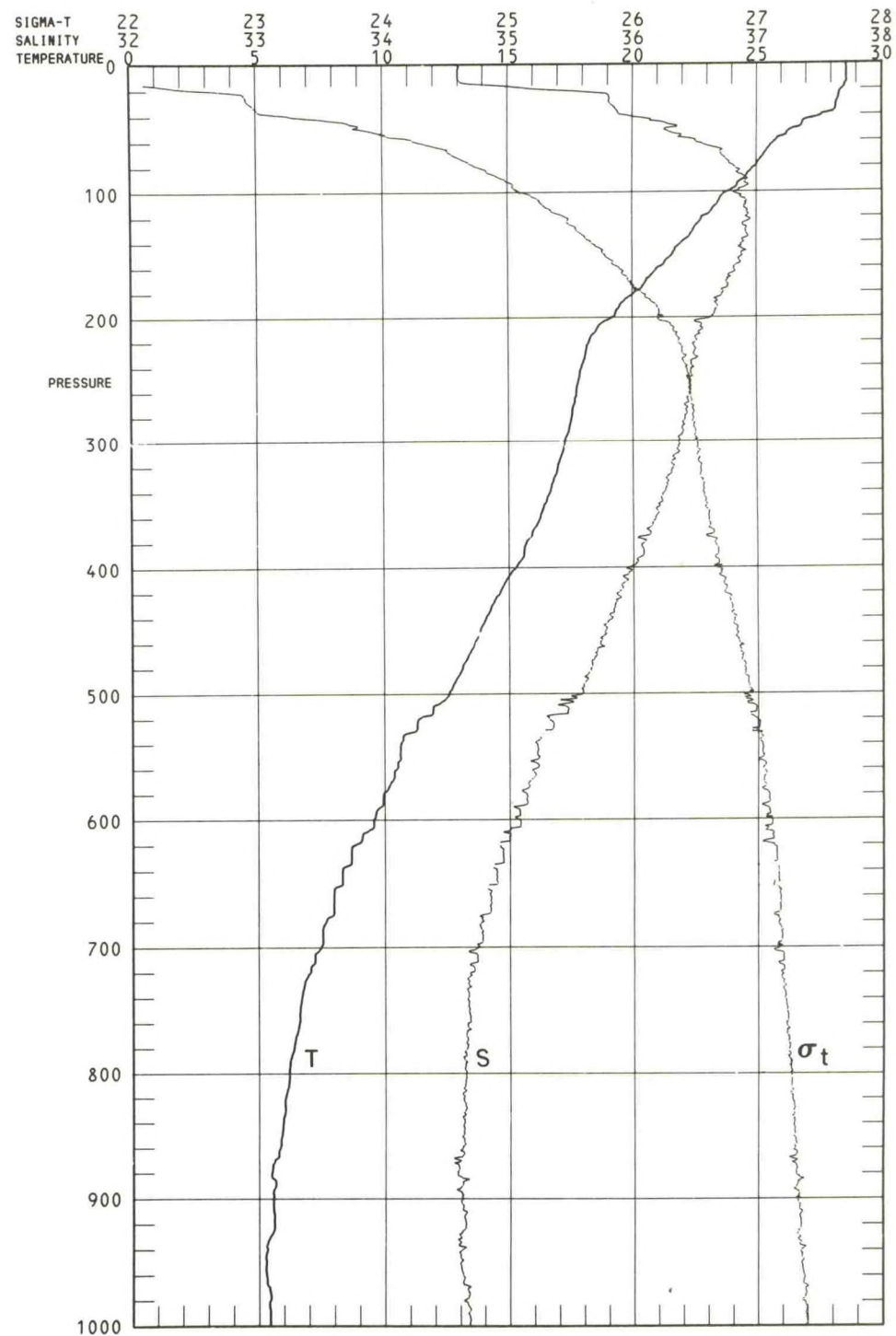
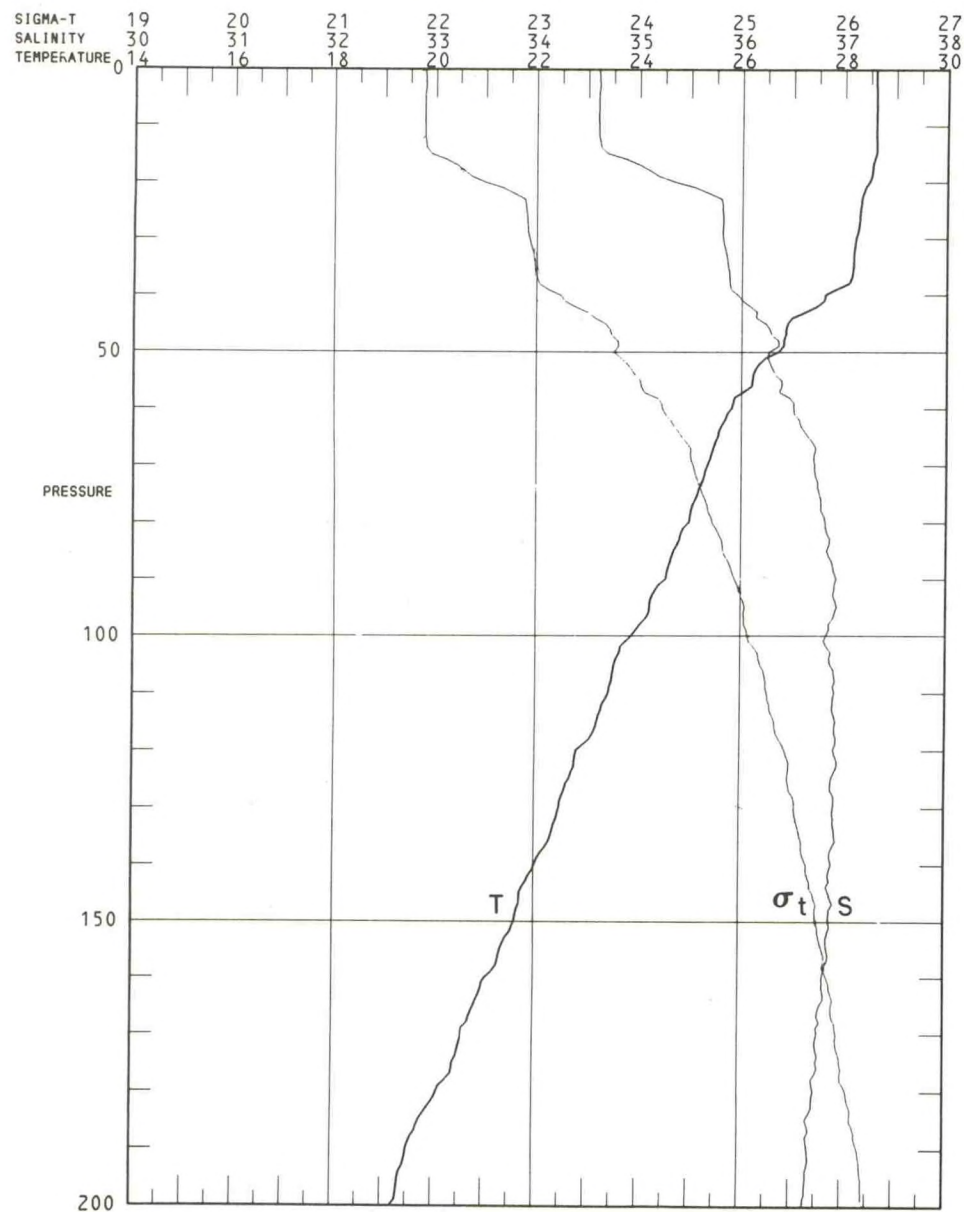


Rainier, July 1, 1969, 0047 GMT, 16°52'N 059°15'W

RAINIER YEAR 1969 DAY 182 TIME 603 GMT LAT. 16°50'N LONG. 059°15'W  
 PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



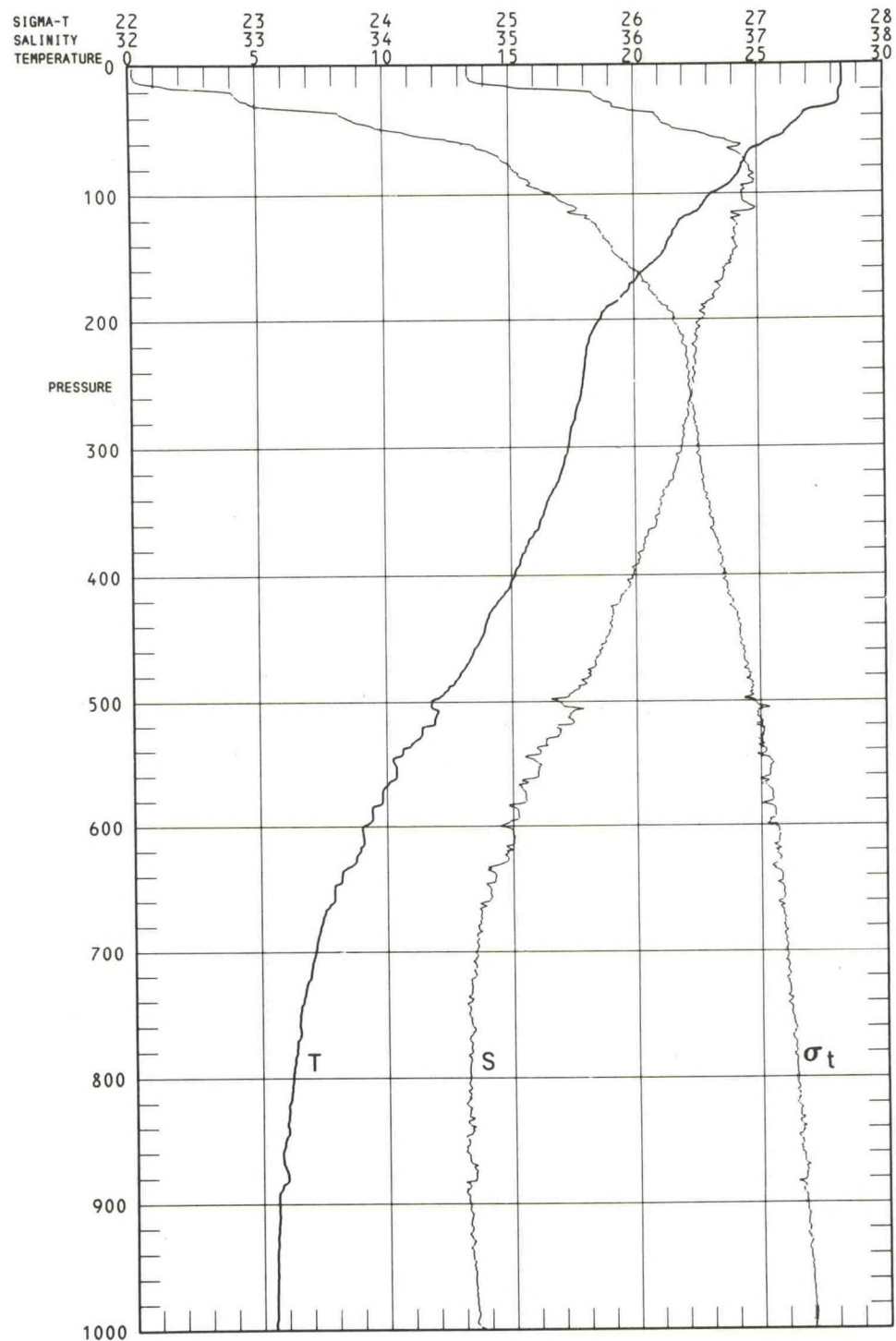
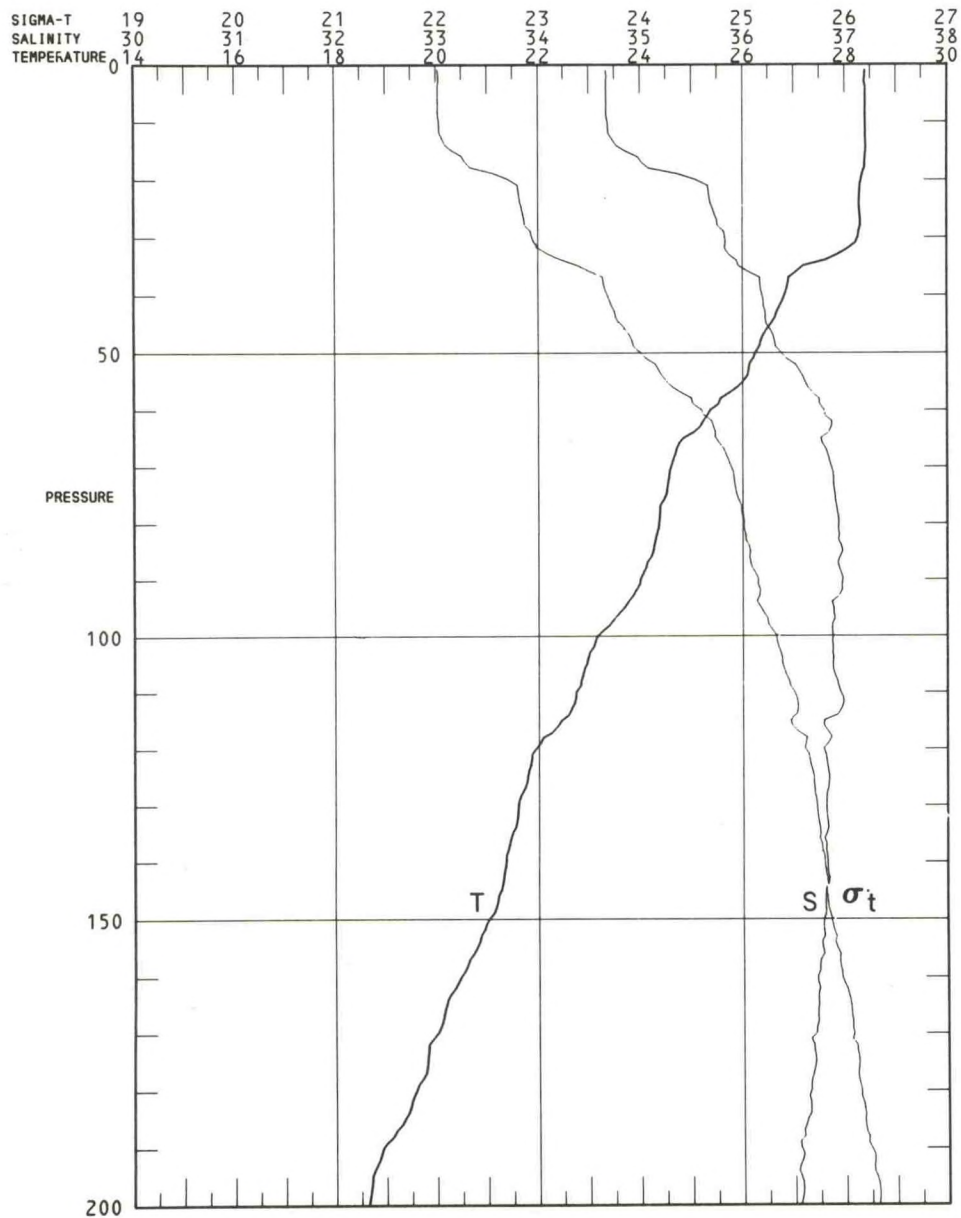
Rainier, July 1, 1969, 0603 GMT, 16°50'N 059°15'W



RAINIER YEAR 1969 DAY 182 TIME 1223 GMT LAT.16°50'N LON.059°11'W  
 PRESSURE CORRECTION OF 15.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C

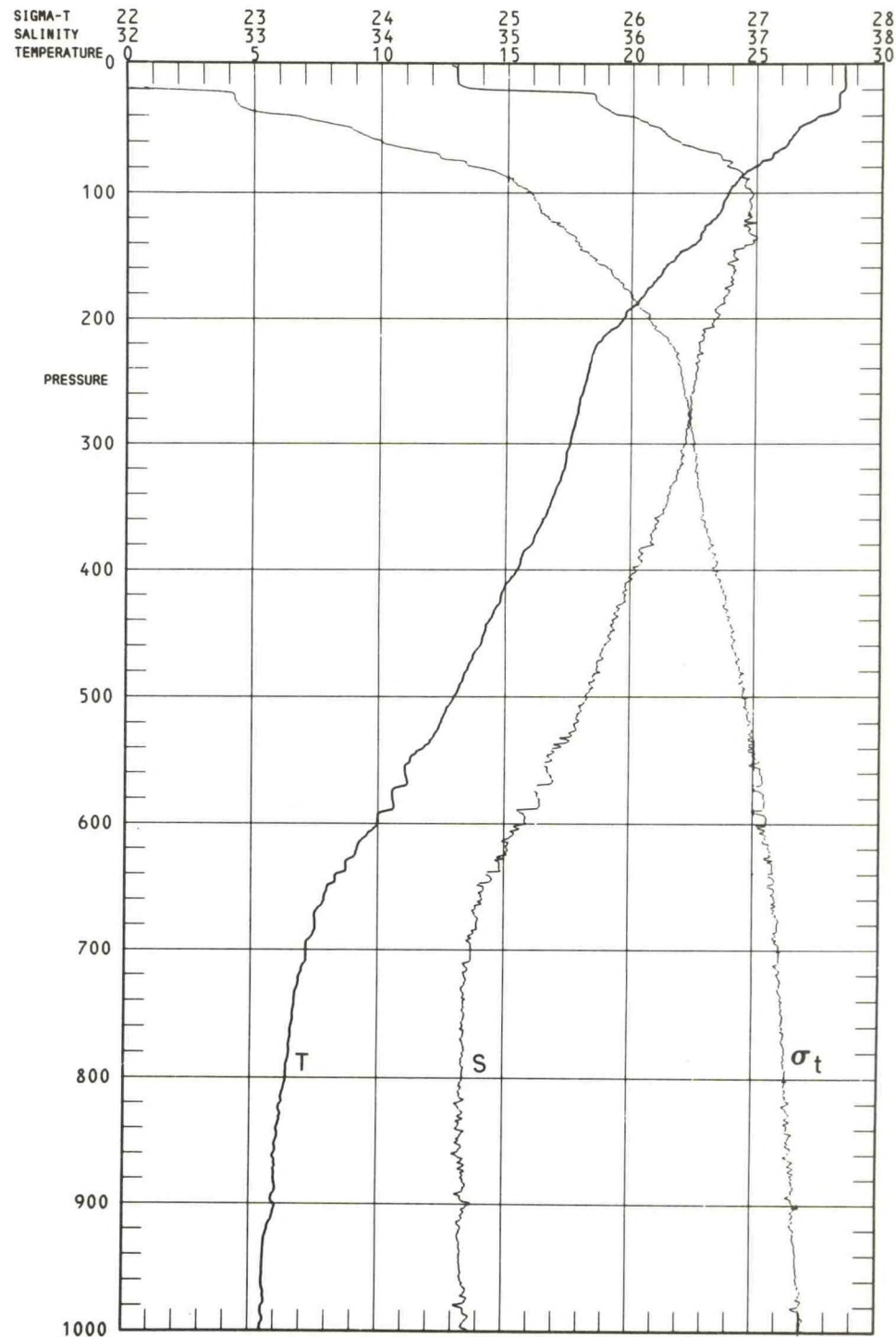
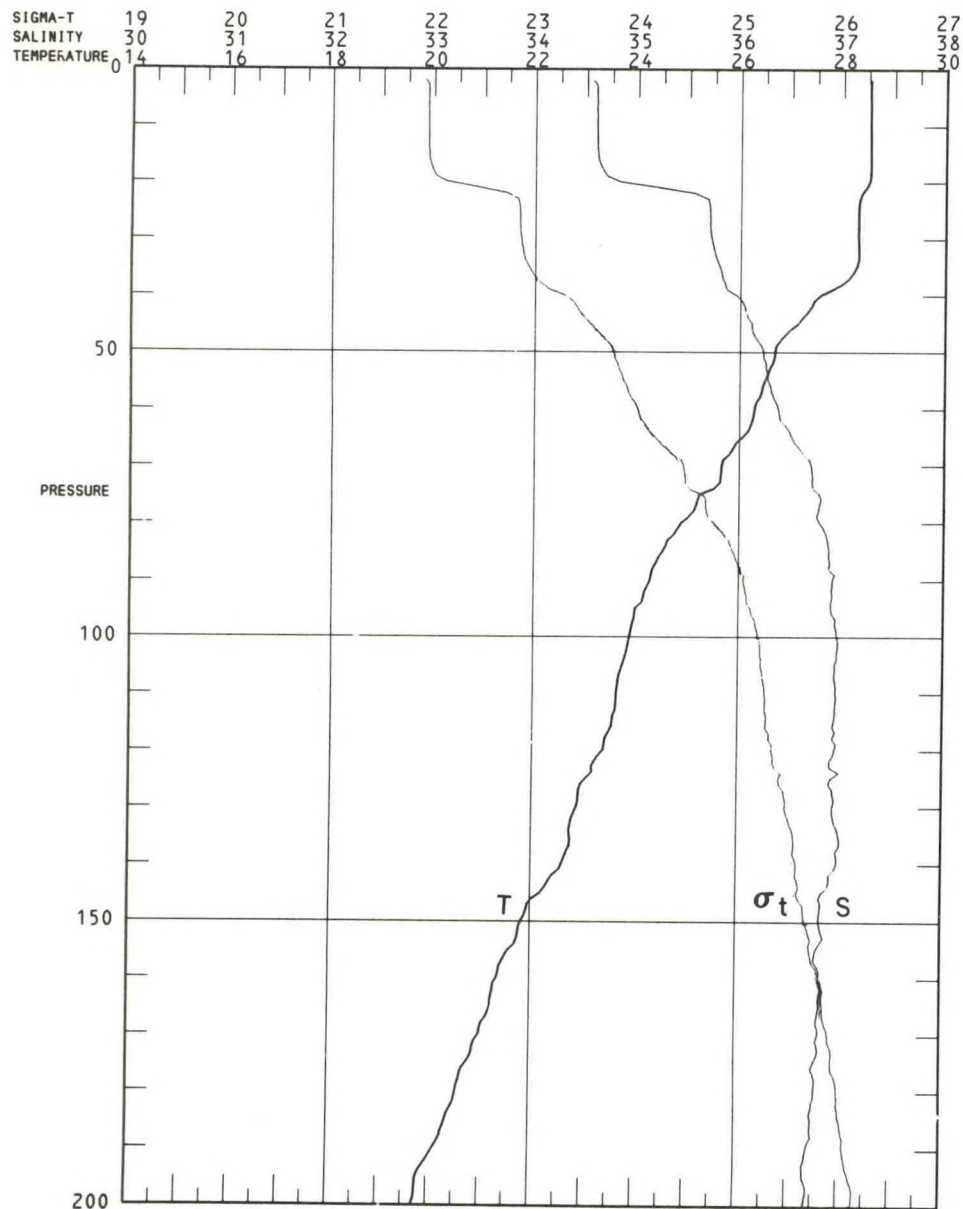


Rainier, July 1, 1969, 1223 GMT, 16°50'N 059°11'W

RAINIER YEAR 1969 DAY 182 TIME 1803 GMT LAT.16°50'N LON.059°13'W  
PRESSURE CORRECTION OF +19.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

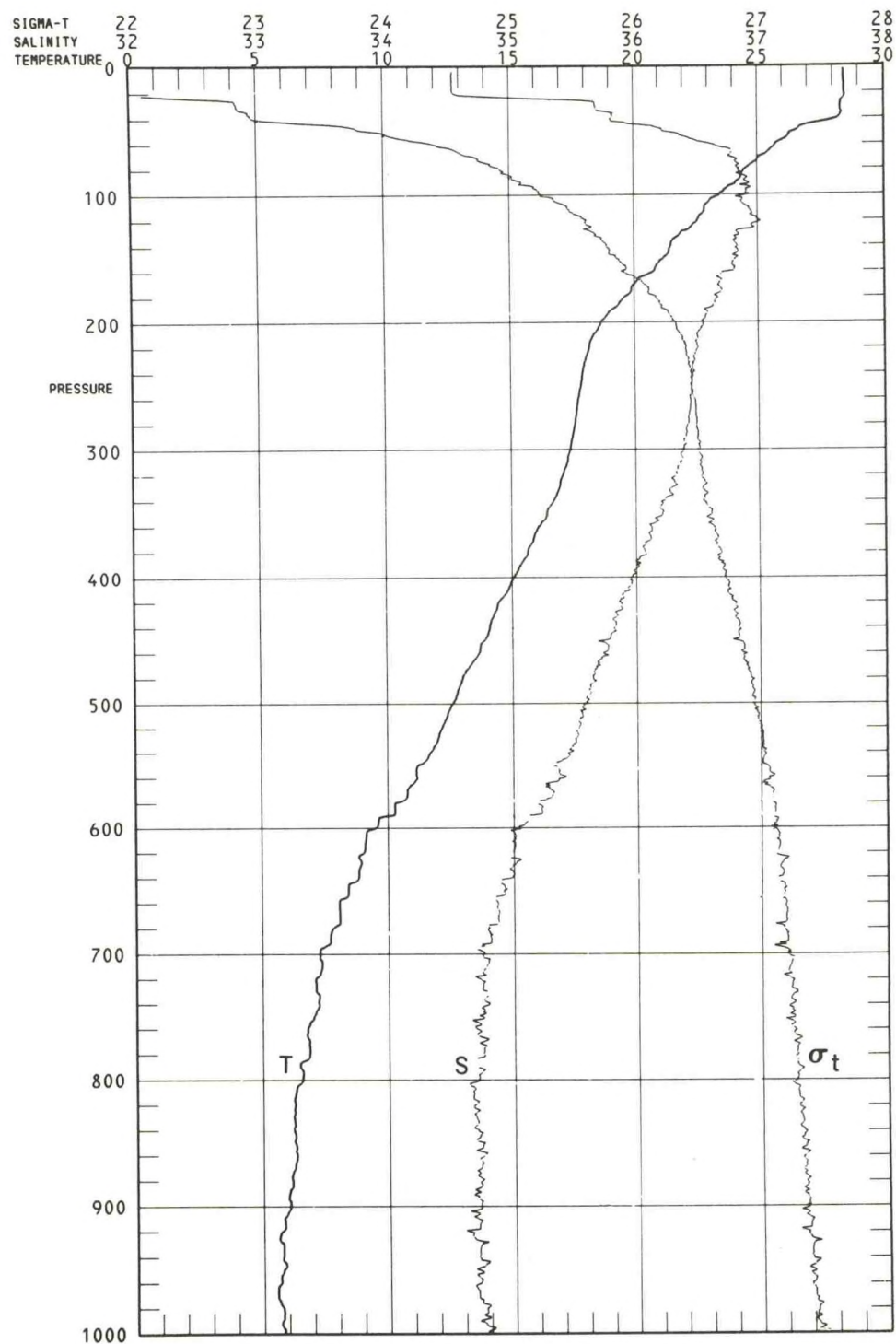
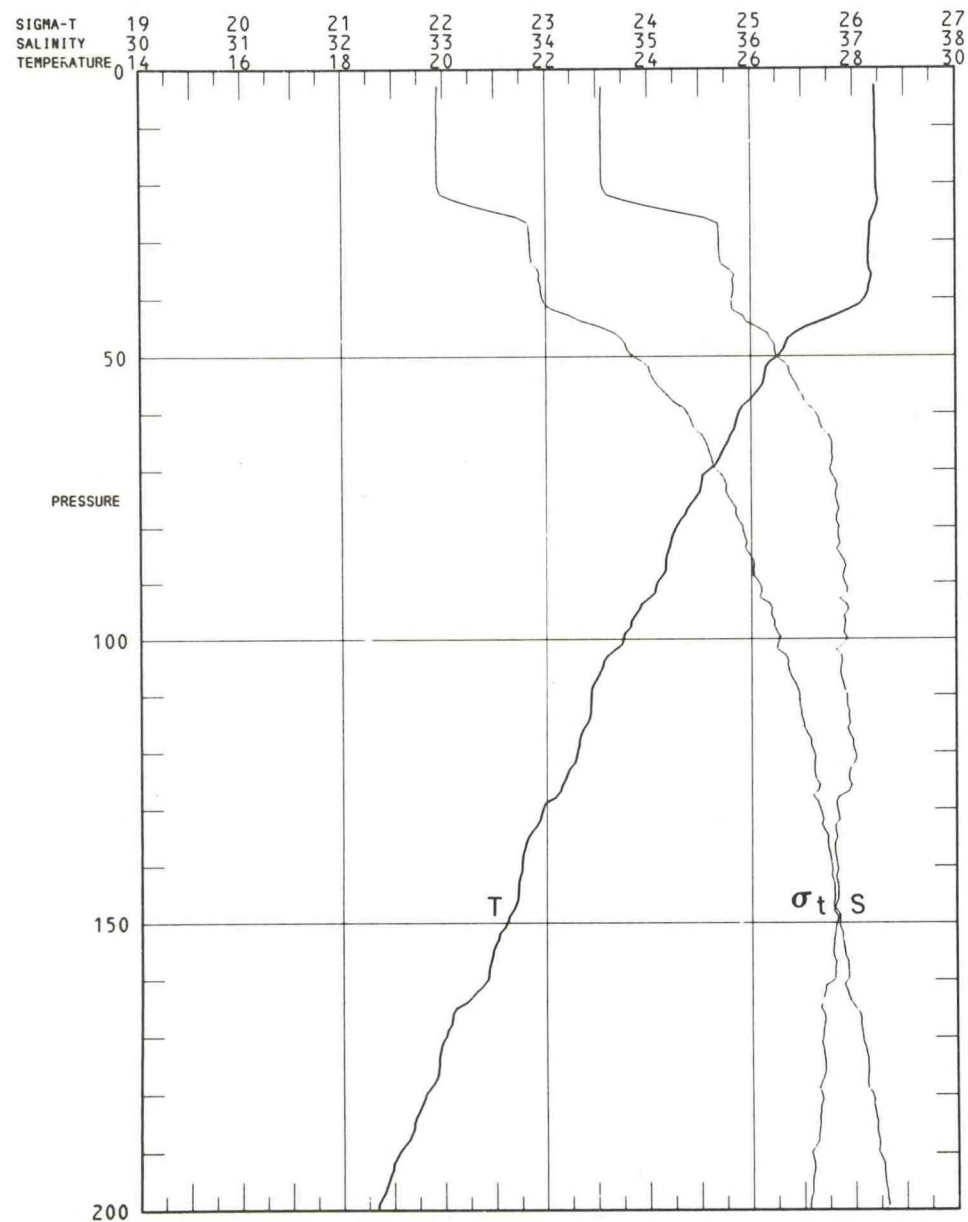


Rainier, July 1, 1969, 1803 GMT, 16°50'N 059°13'W



RAINIER YEAR 1969 DAY 183 TIME 121 GMT LAT.16°50N LON.059°07W  
 PRESSURE CORRECTION OF +18.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

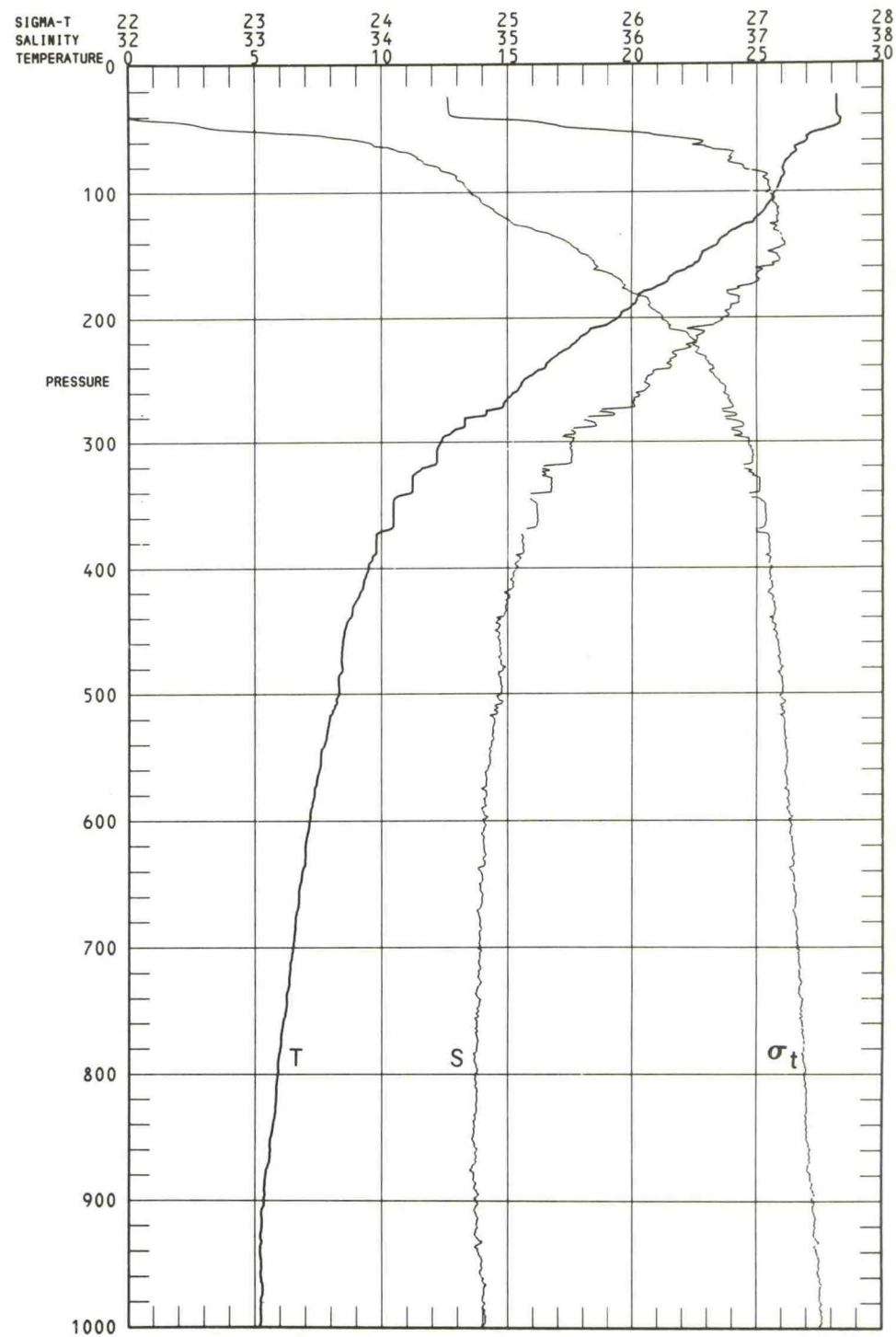
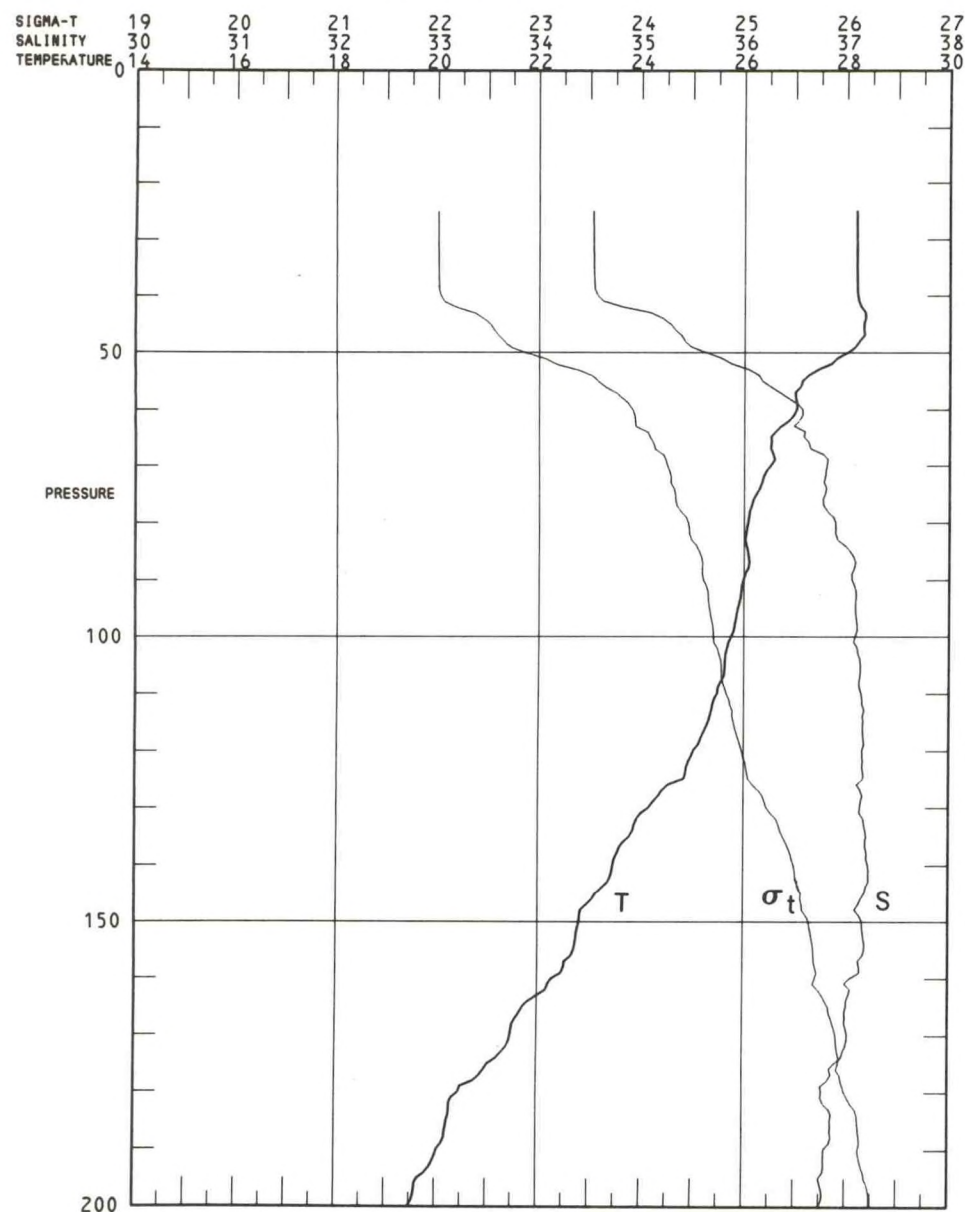


Rainier, July 2, 1969, 0121 GMT, 16°50'N 059°07'W

OCEANOGRAPHER YEAR 1969 DAY 171 TIME 1022 GMT LAT.16°00N LON.055°59W  
STD TAKEN ENROUTE TO STATION BRAVO.

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

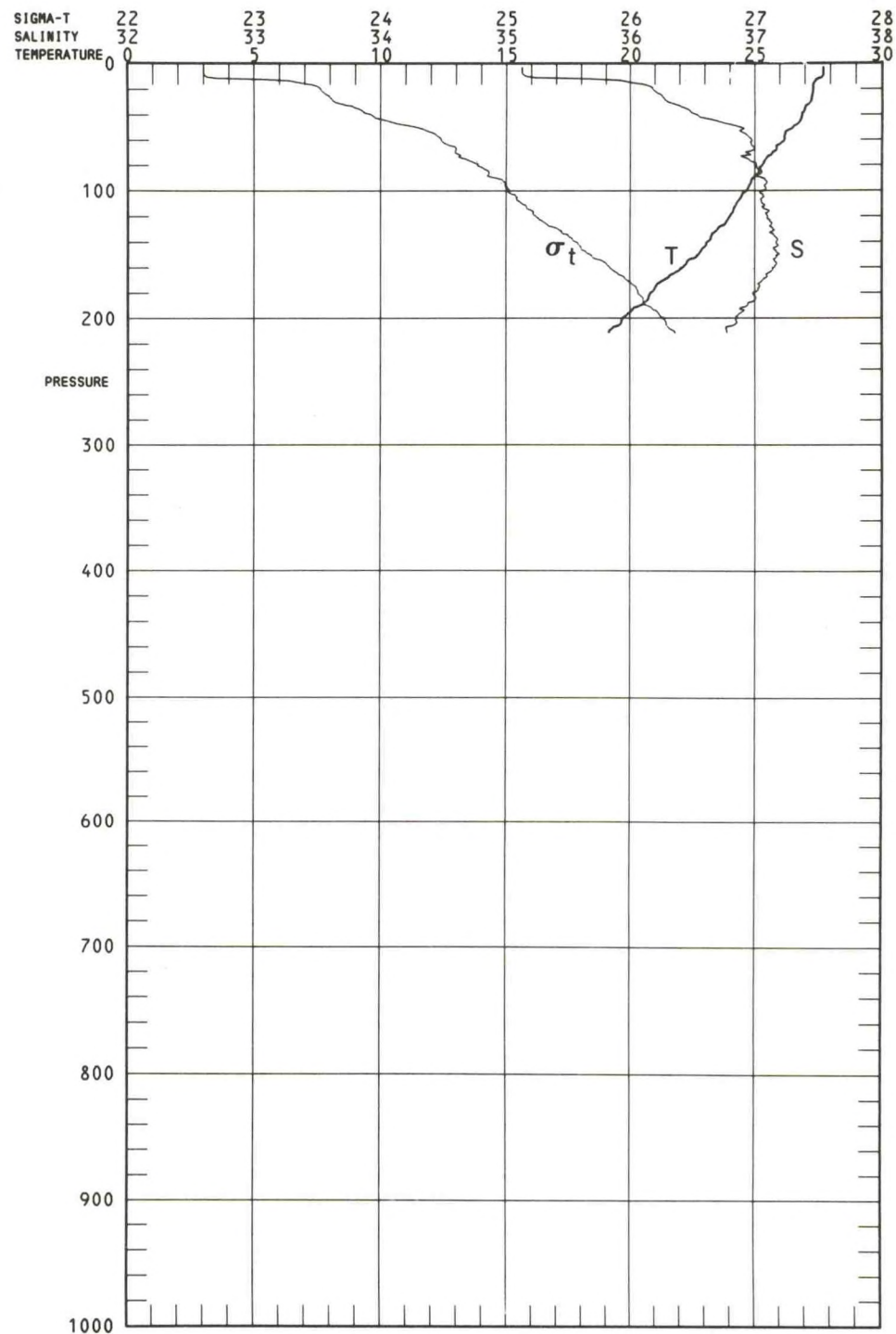
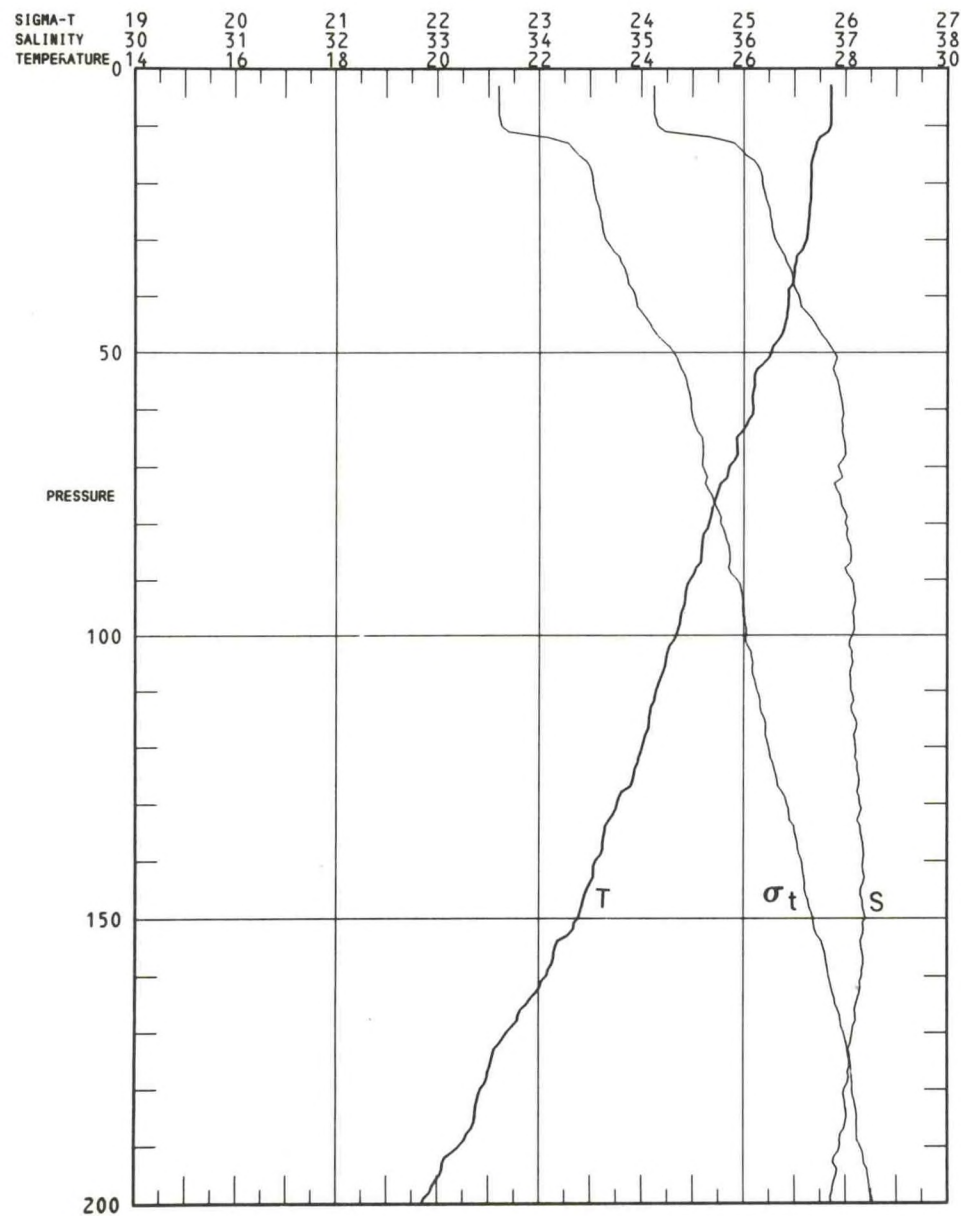


Oceanographer, June 20, 1969, 1022 GMT, 16°00'N 055°59'W



OCEANOGRAPHER YEAR 1969 DAY 172 TIME 051 GMT LAT.17°36N LON.054°38W  
CAST STOPPED AT 210 DECIBARS.

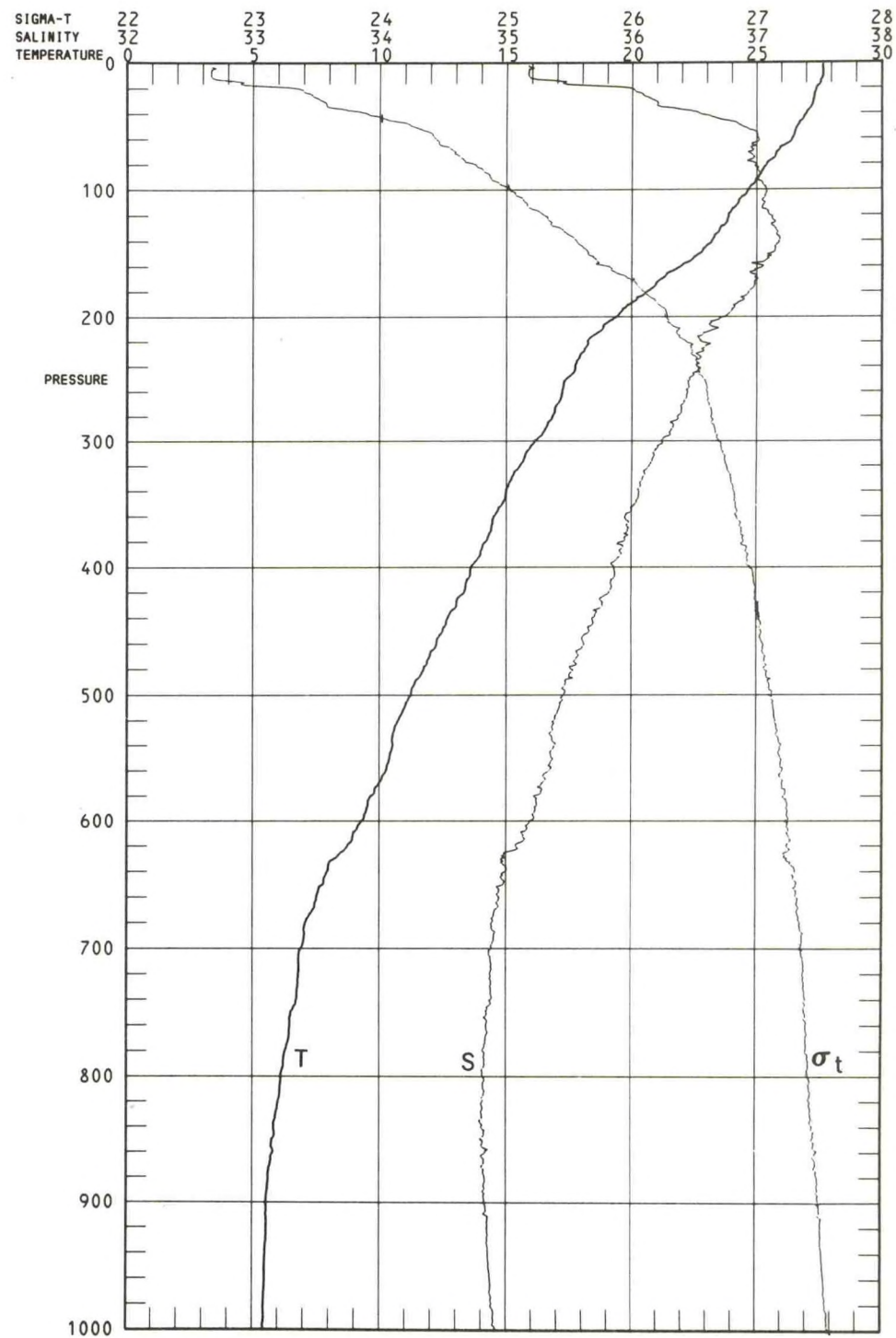
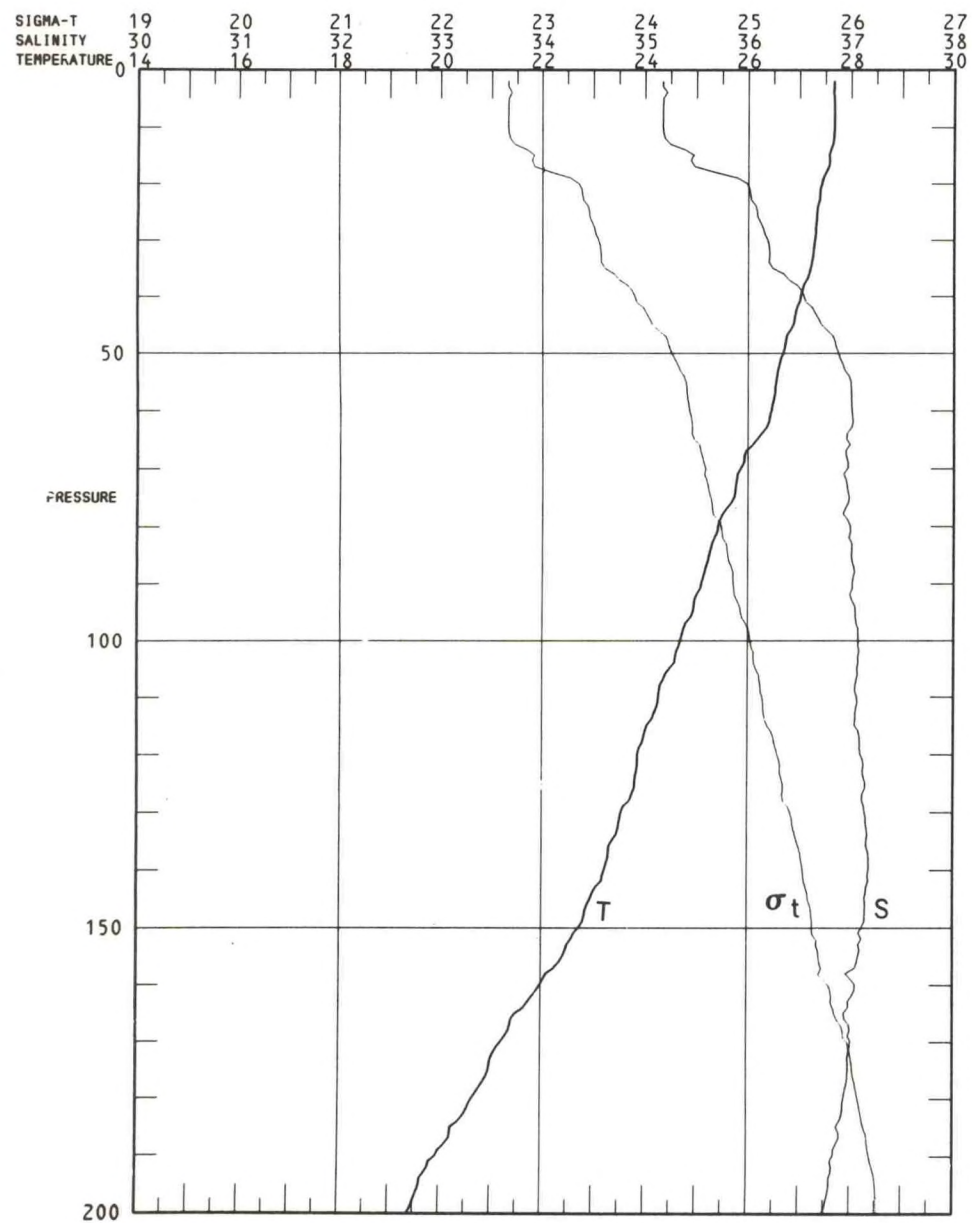
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 21, 1969, 0051 GMT, 17°36'N 054°38'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



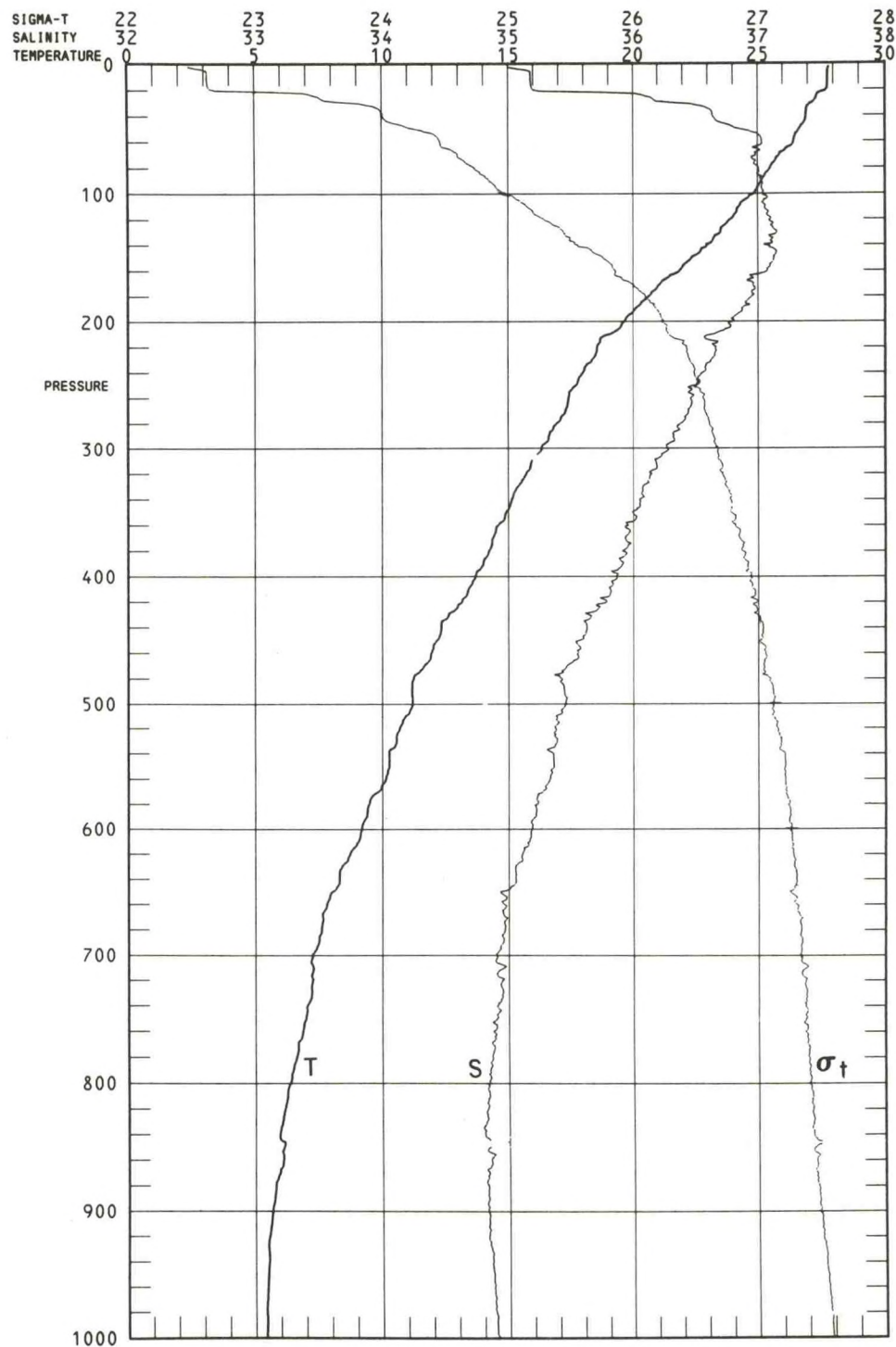
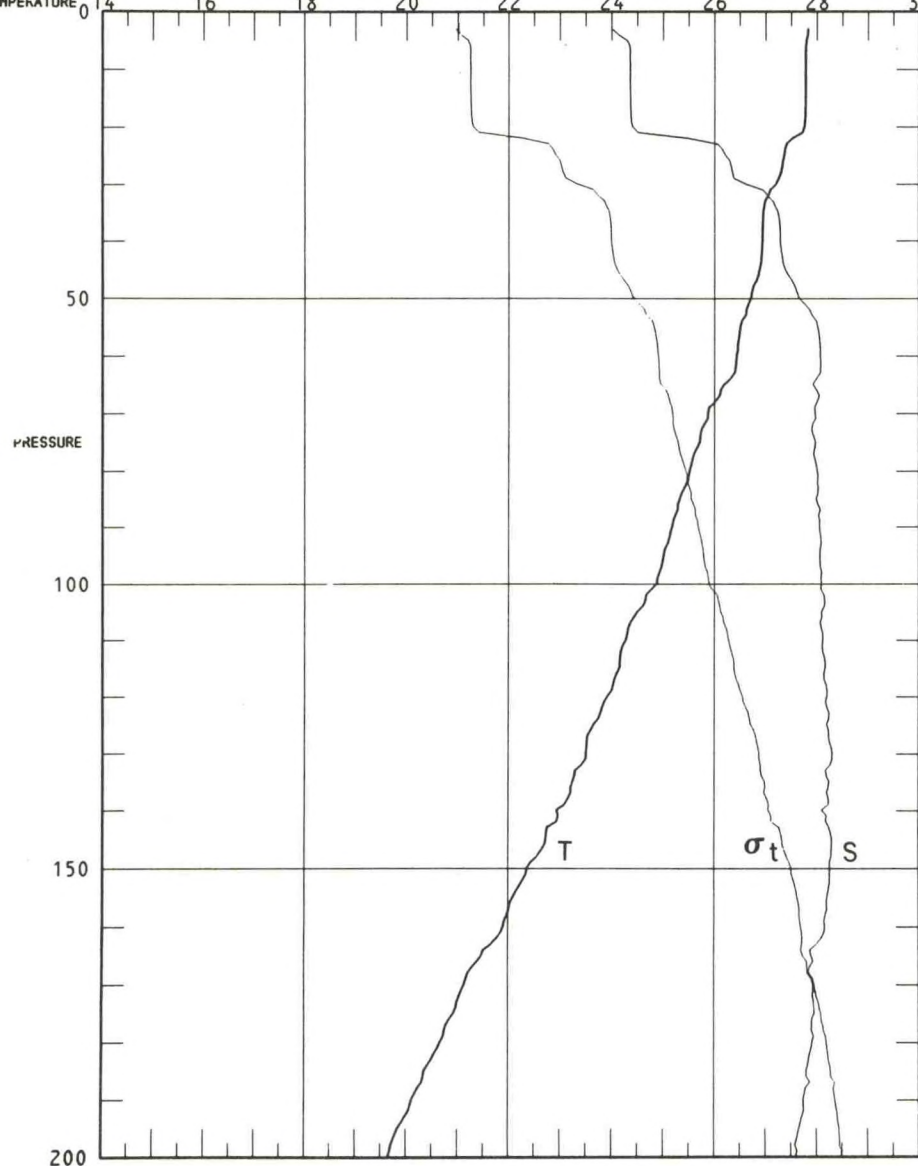
Oceanographer, June 21, 1969, 1530 GMT, 17°36'N 054°38'W



# STD Depth-Sorted Plots

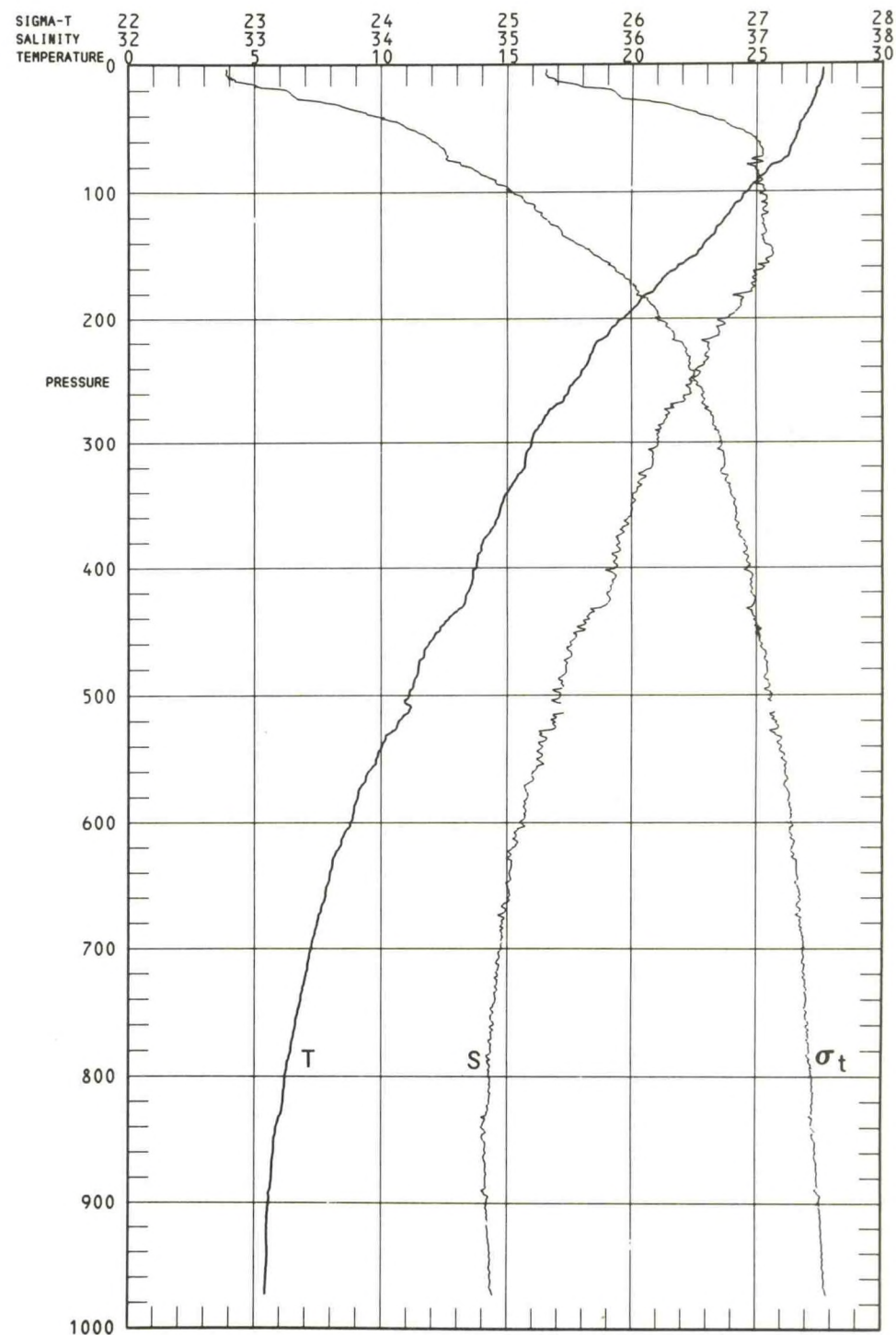
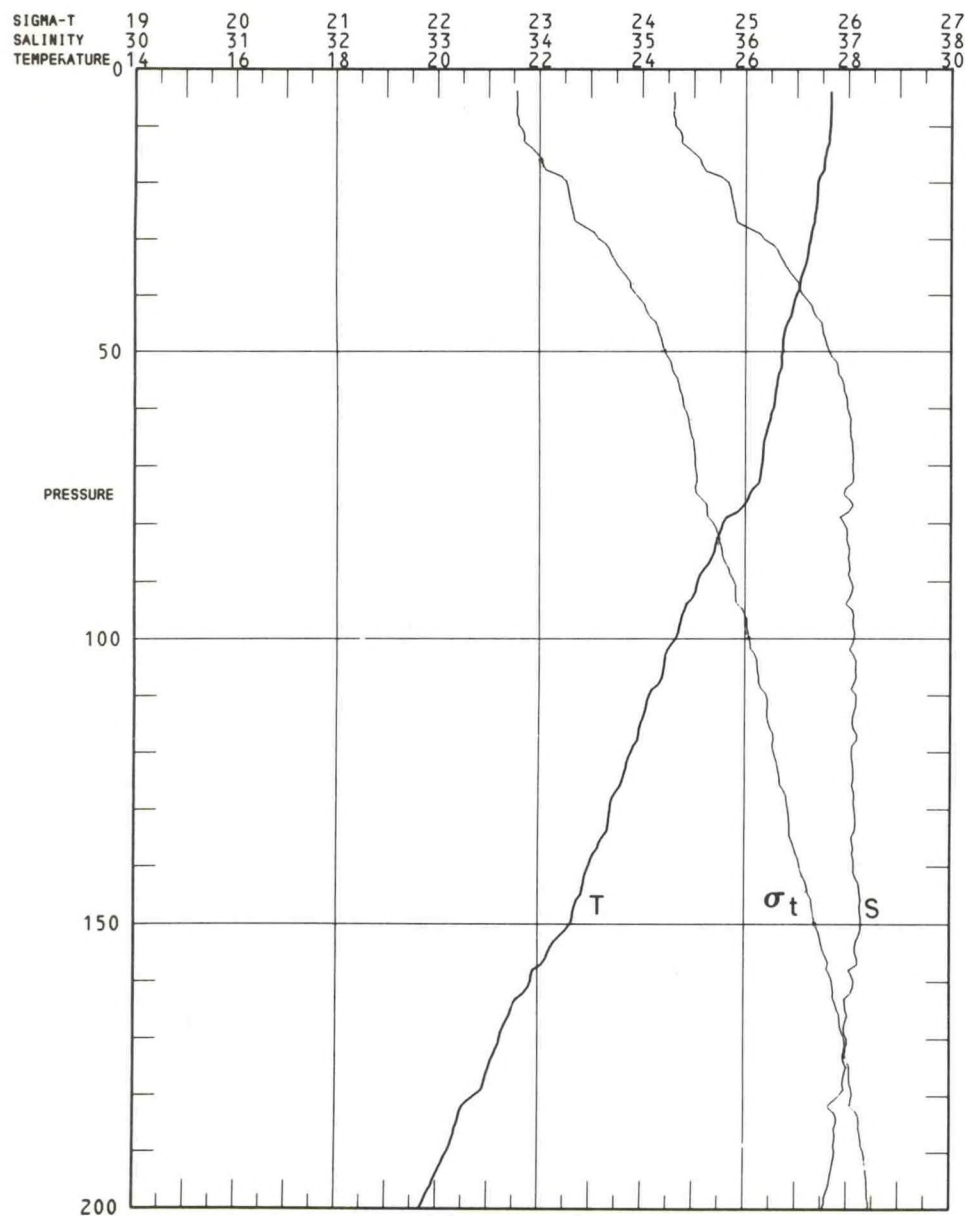
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

SIGMA-T	19	20	21	22	23	24	25	26	27
SALINITY	30	31	32	33	34	35	36	37	38
TEMPERATURE	14	16	18	20	22	24	26	28	30



Oceanographer, June 21, 1969, 1759 GMT, 17°36'N 054°38'W

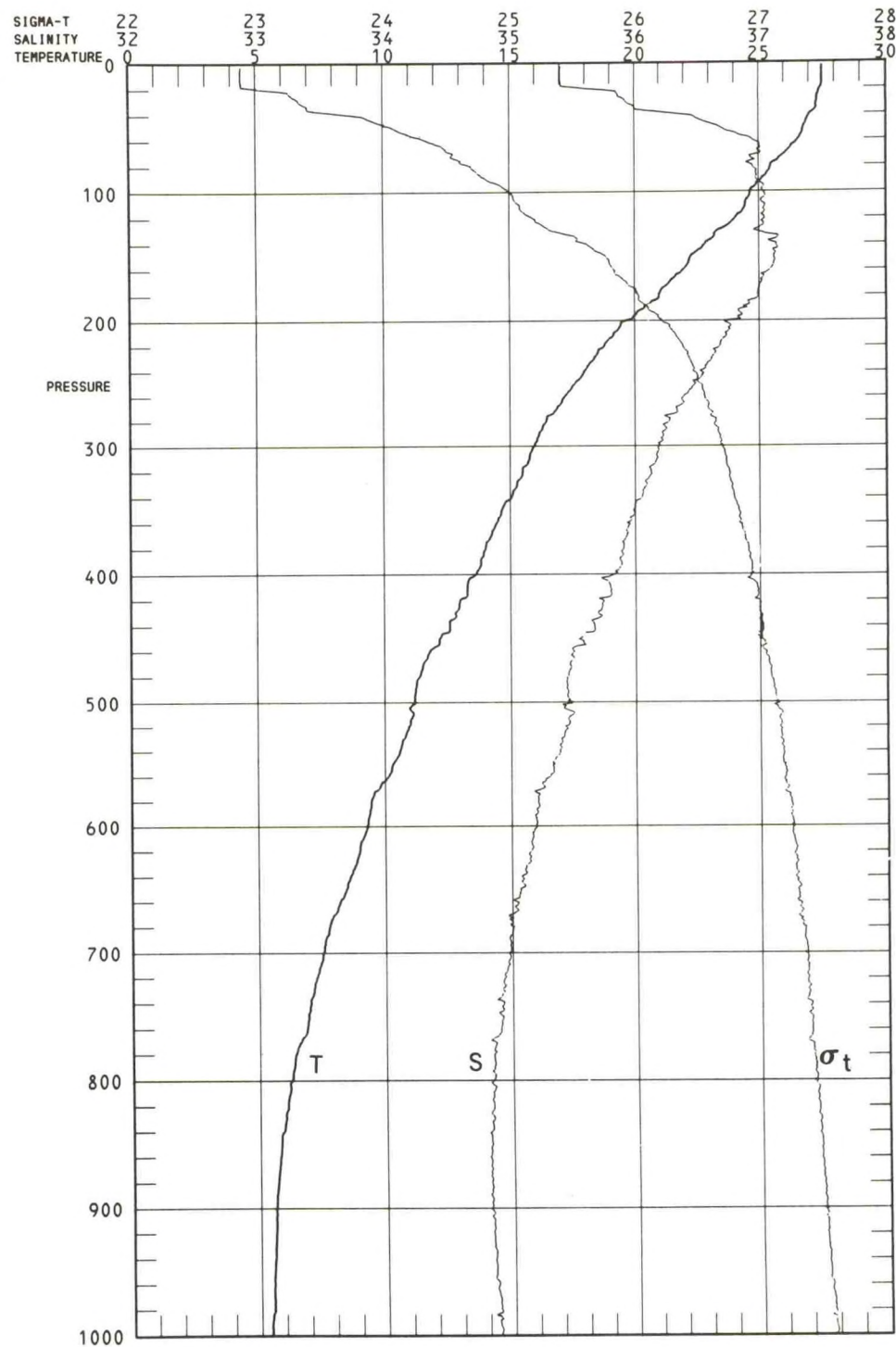
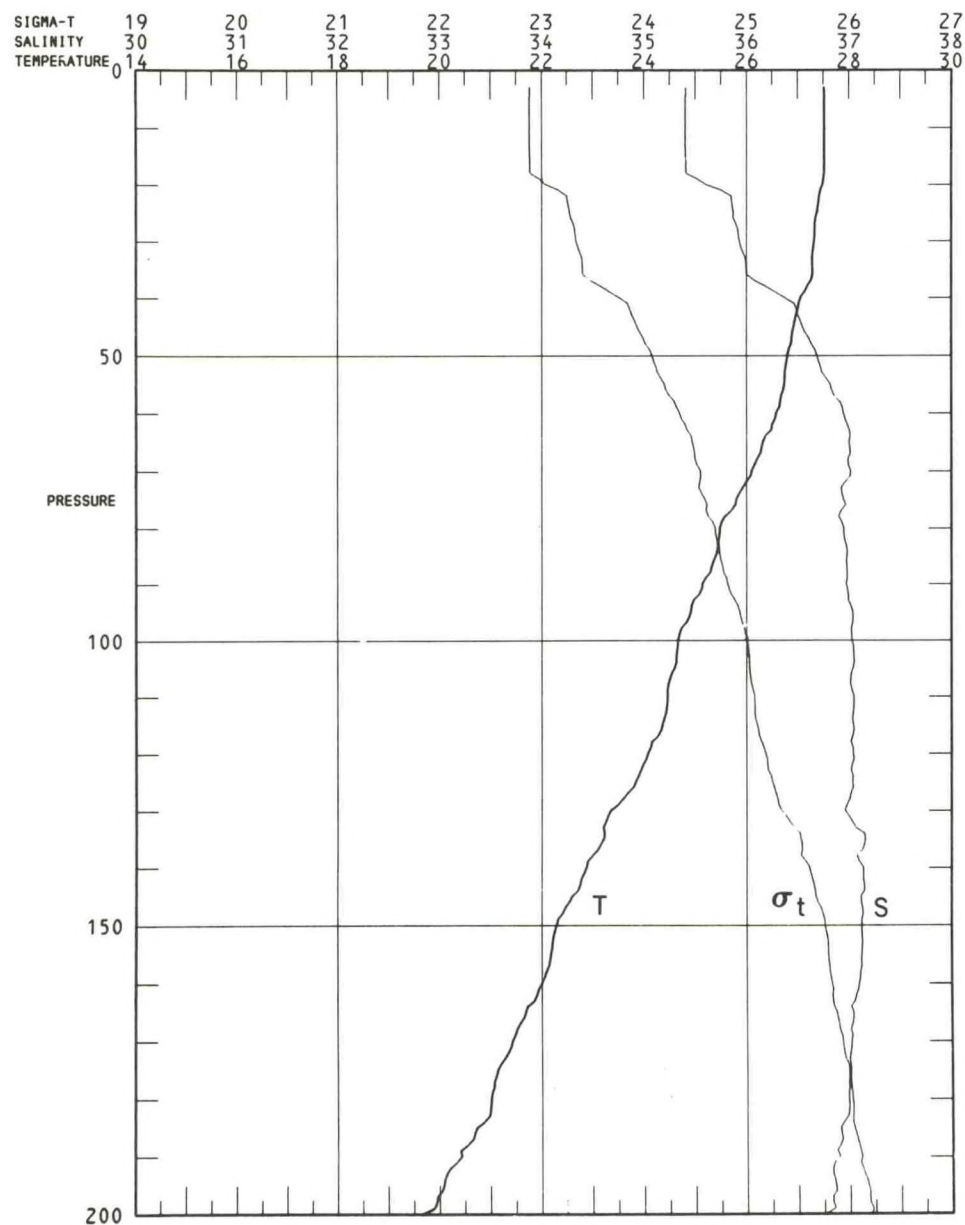
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 22, 1969, 0056 GMT, 17°34'N 054°41'W

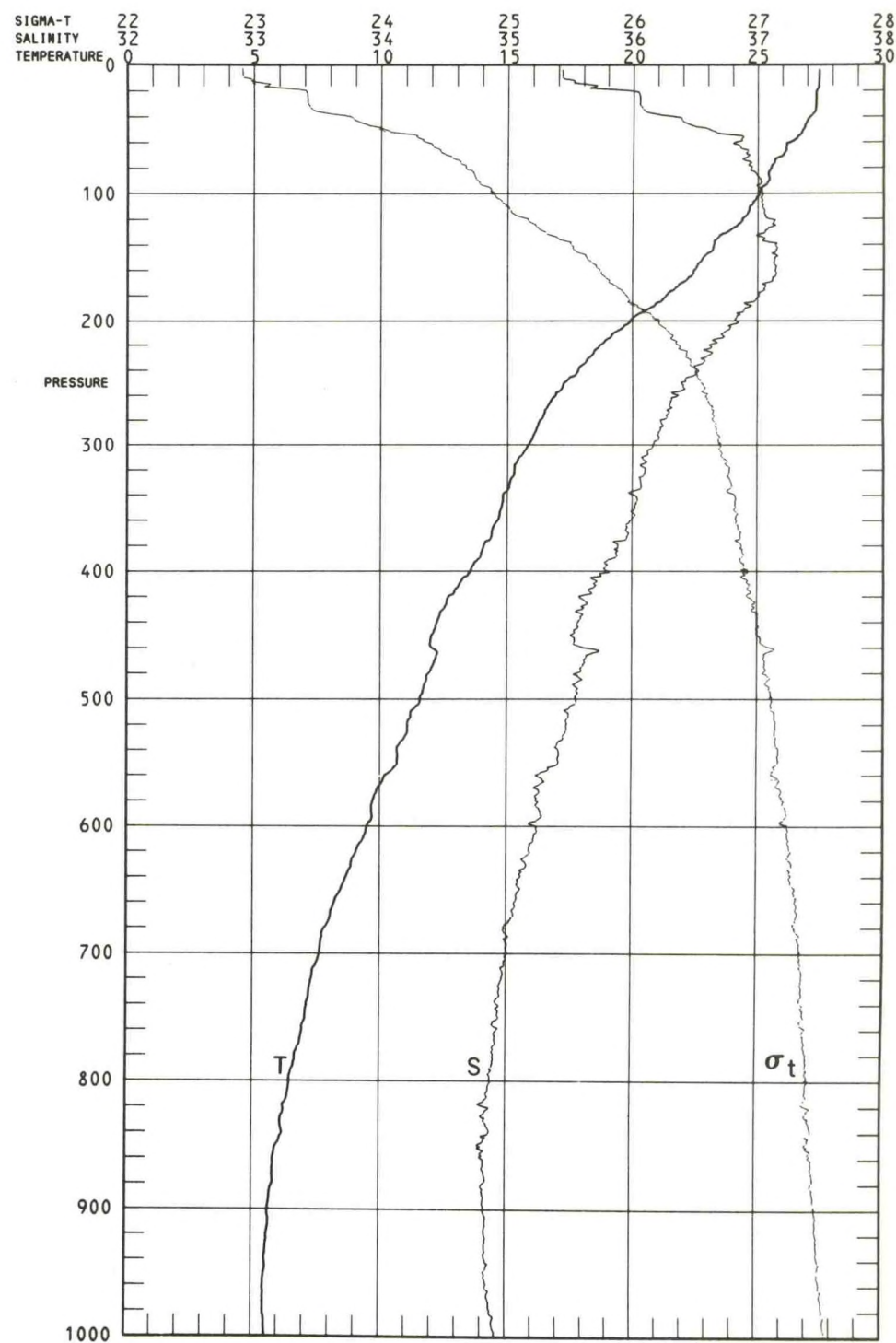
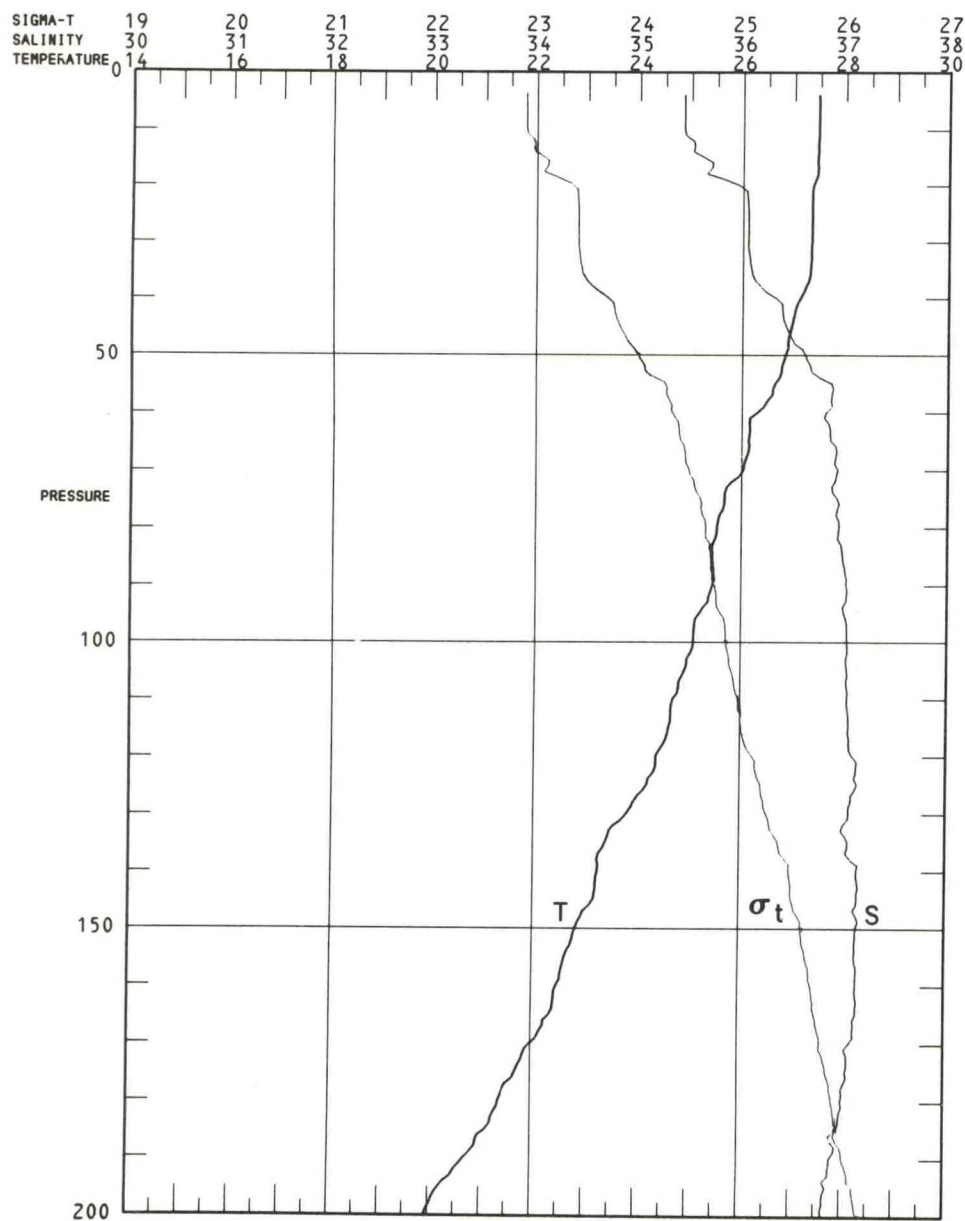


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 22, 1969, 0554 GMT, 17°37'N 054°42'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

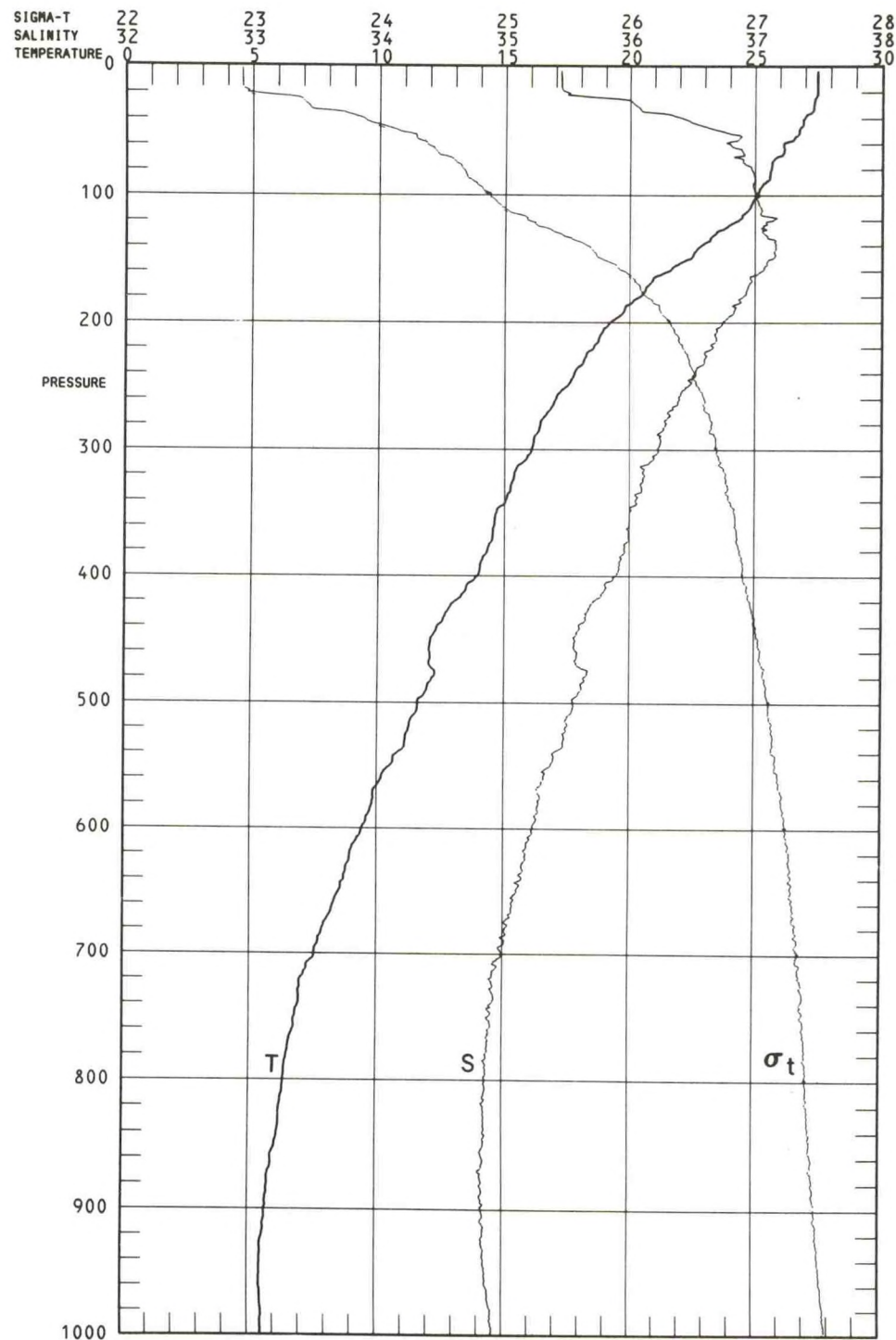
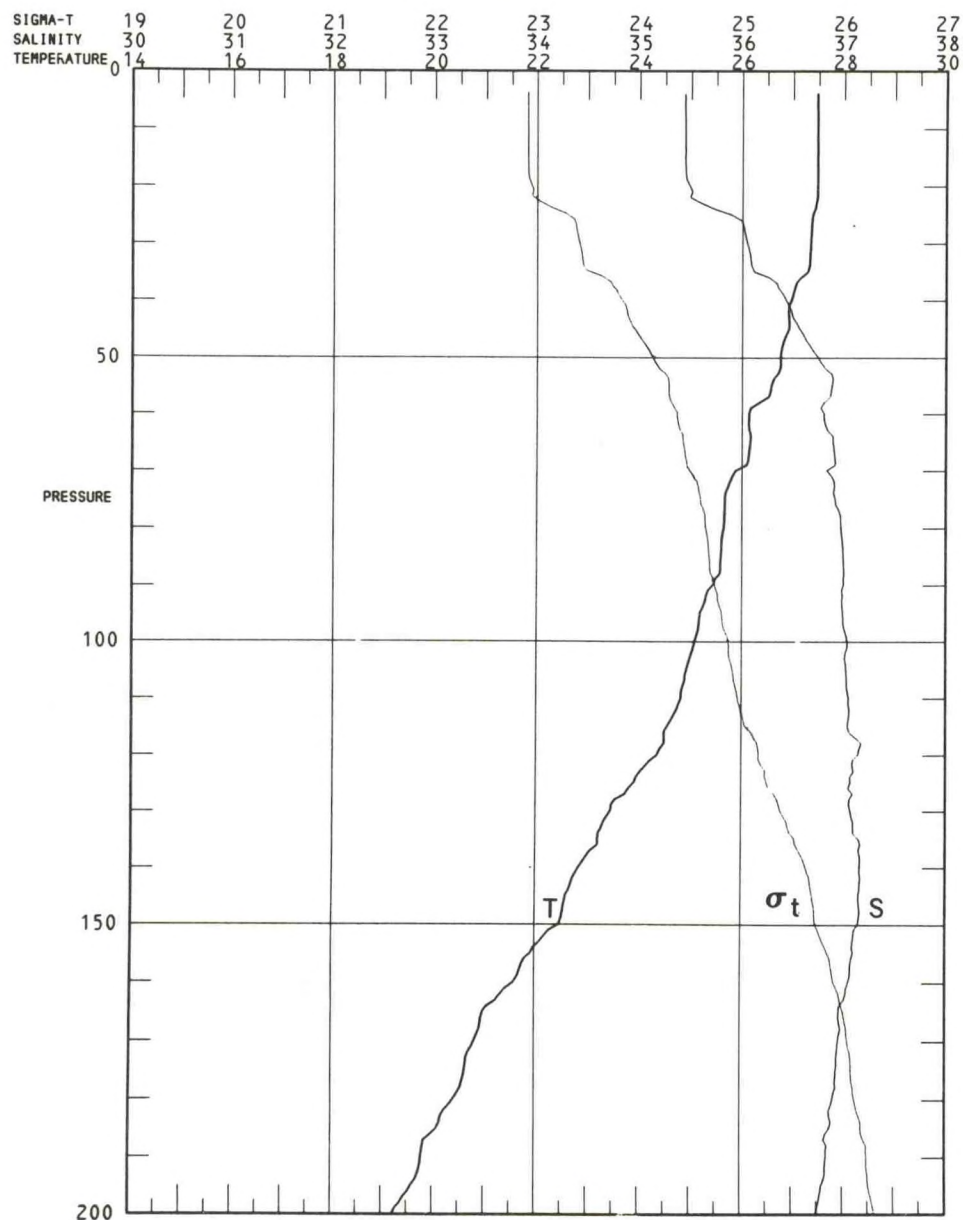


Oceanographer, June 22, 1969, 0904 GMT, 17°33'N 054°43'W



# STD Depth-Sorted Plots

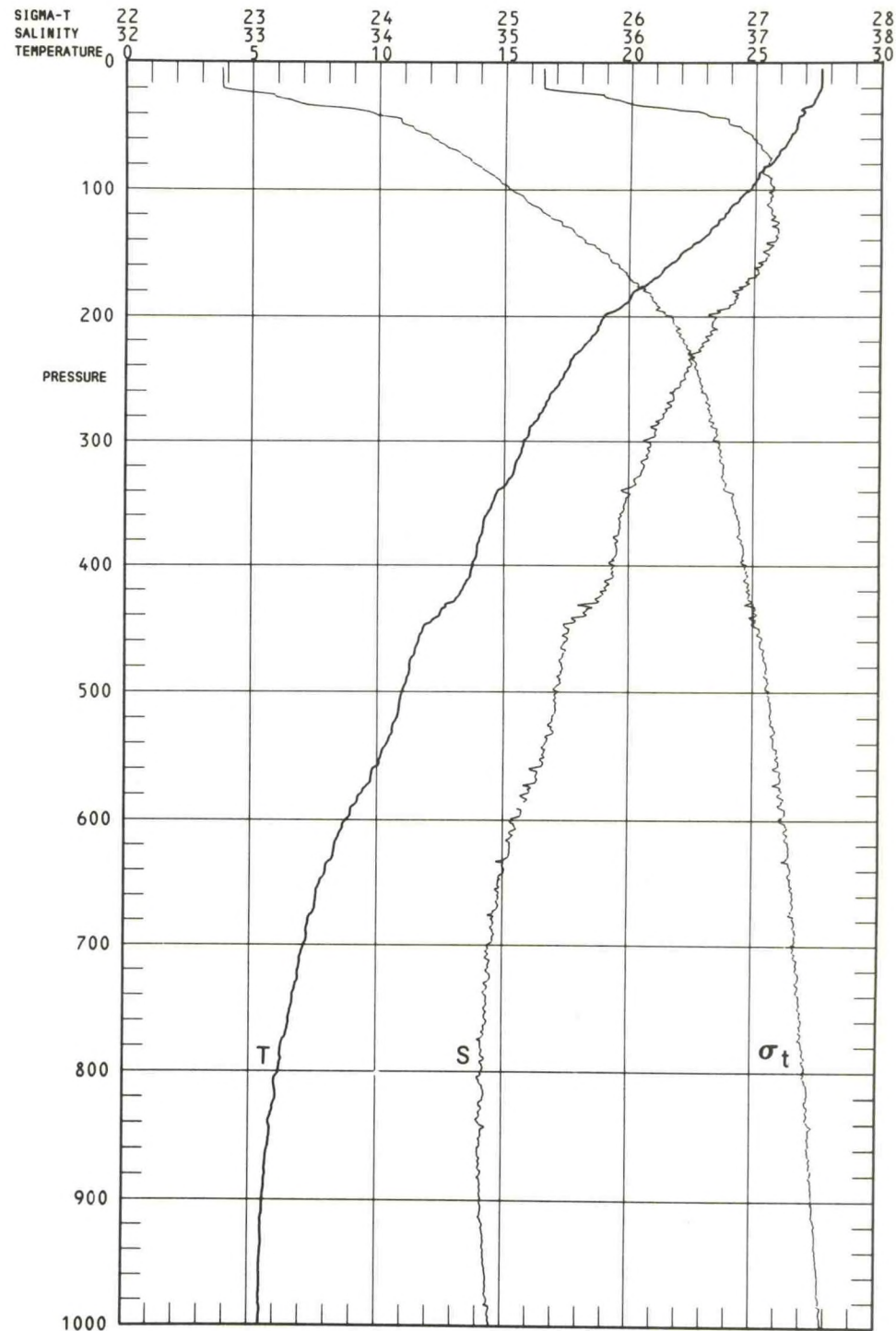
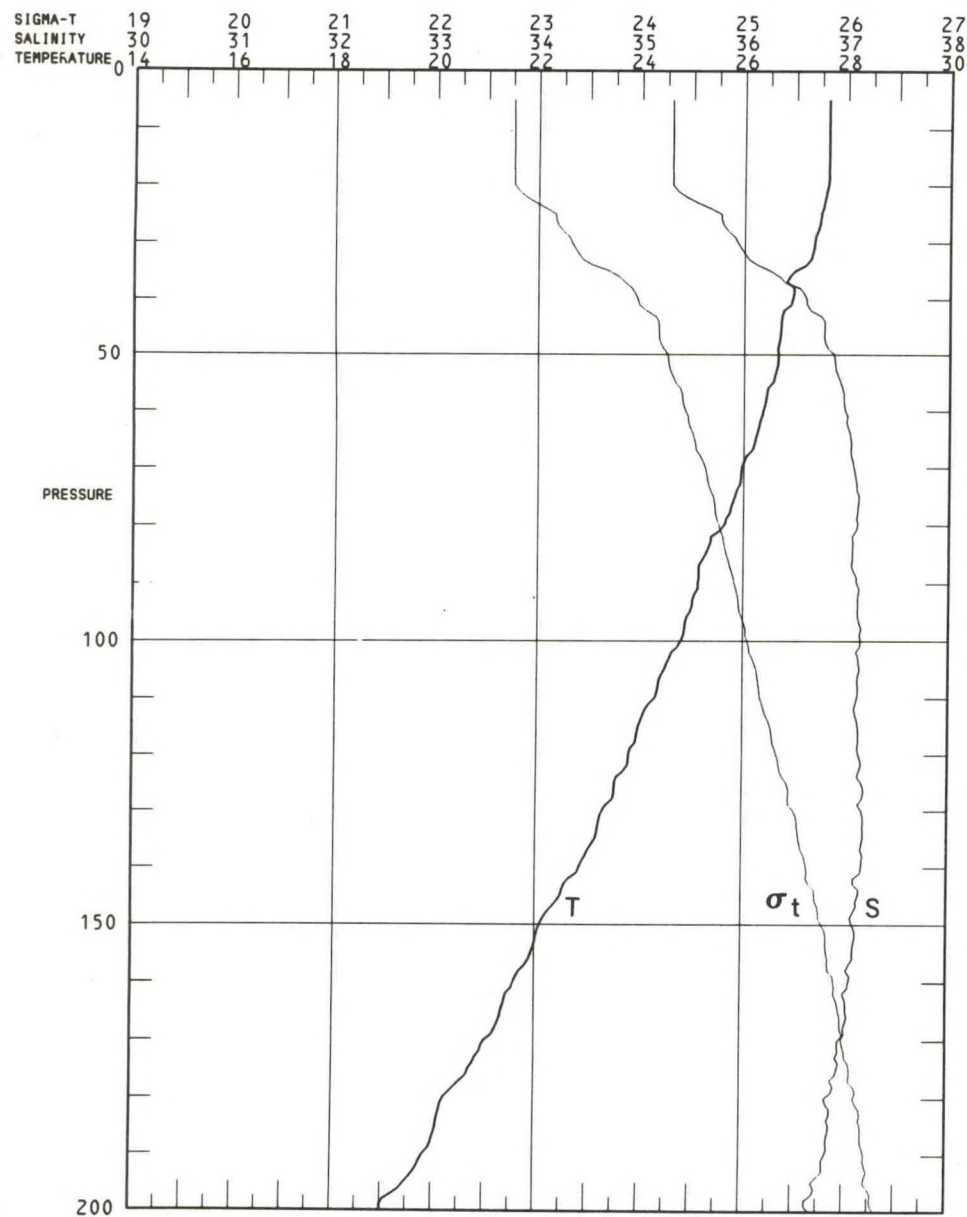
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 22, 1969, 1156 GMT, 17°32'N 054°41'W

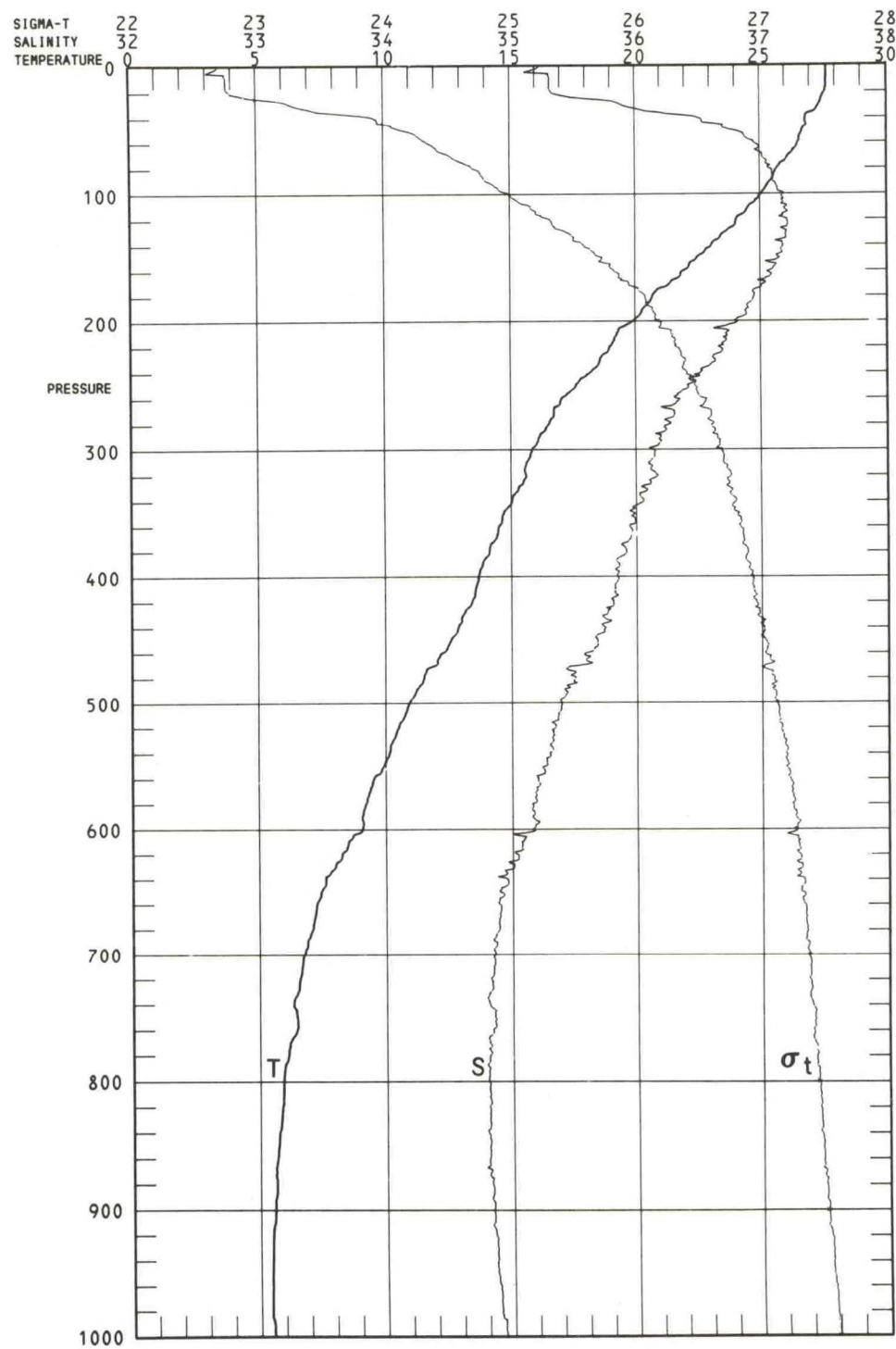
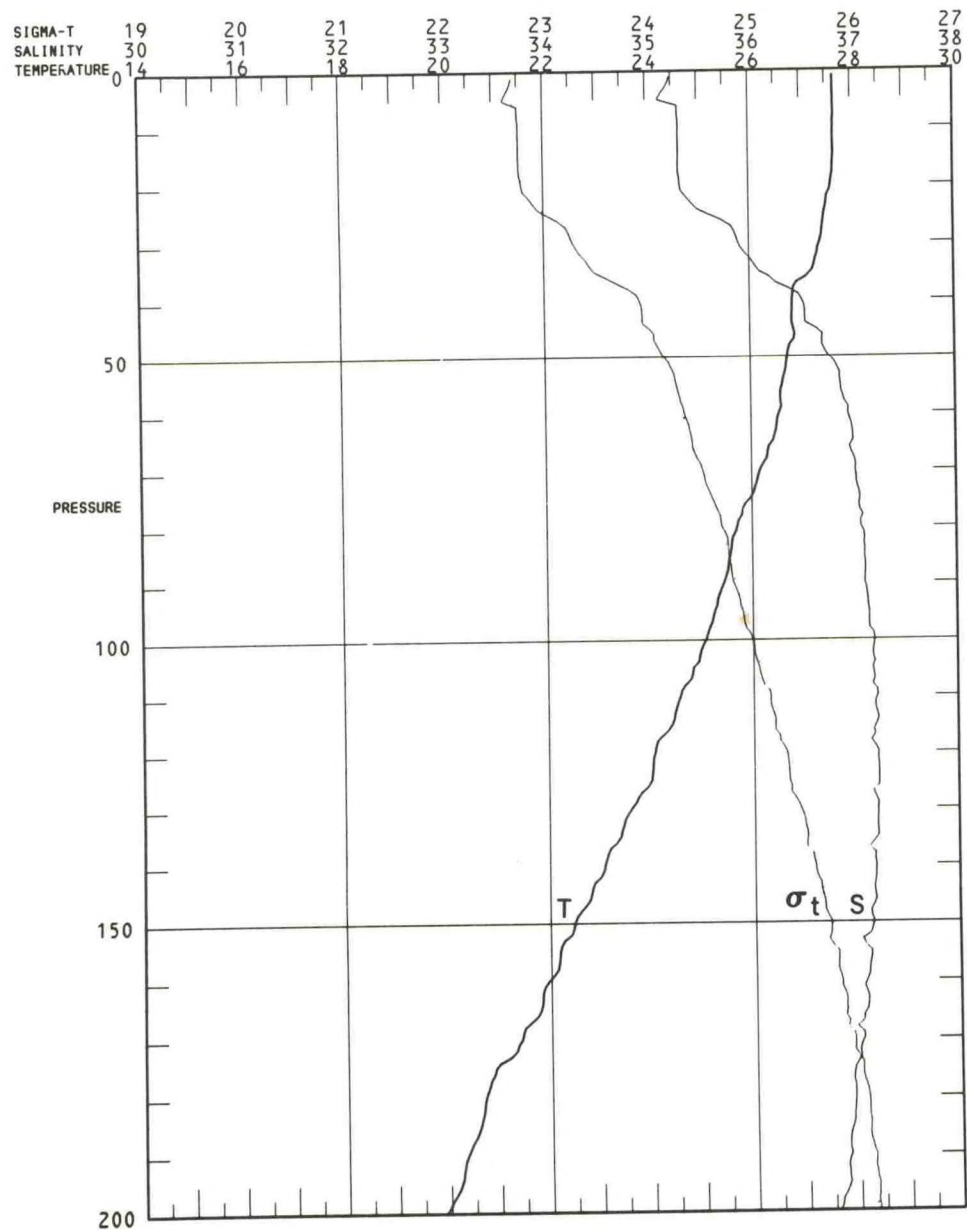
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



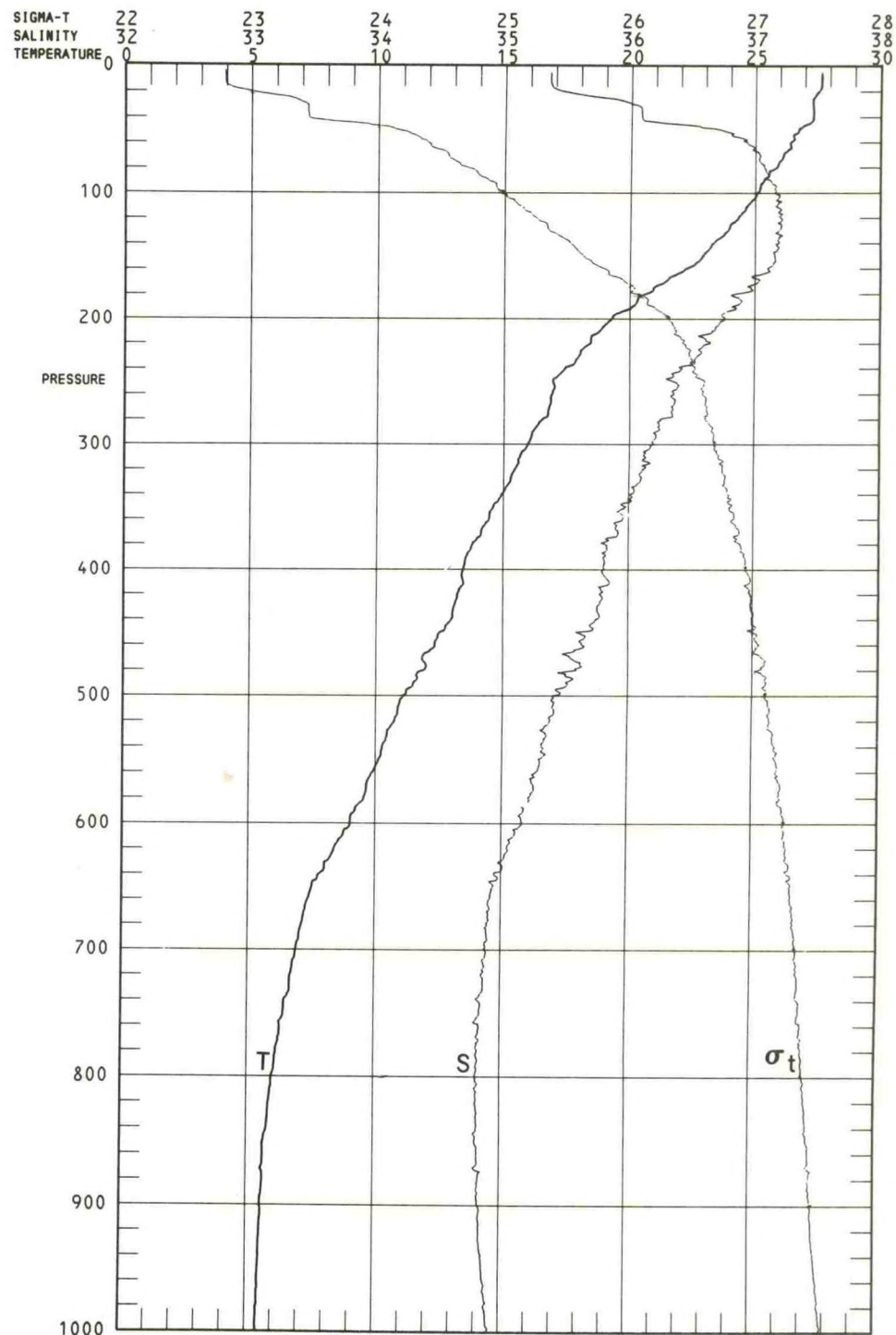
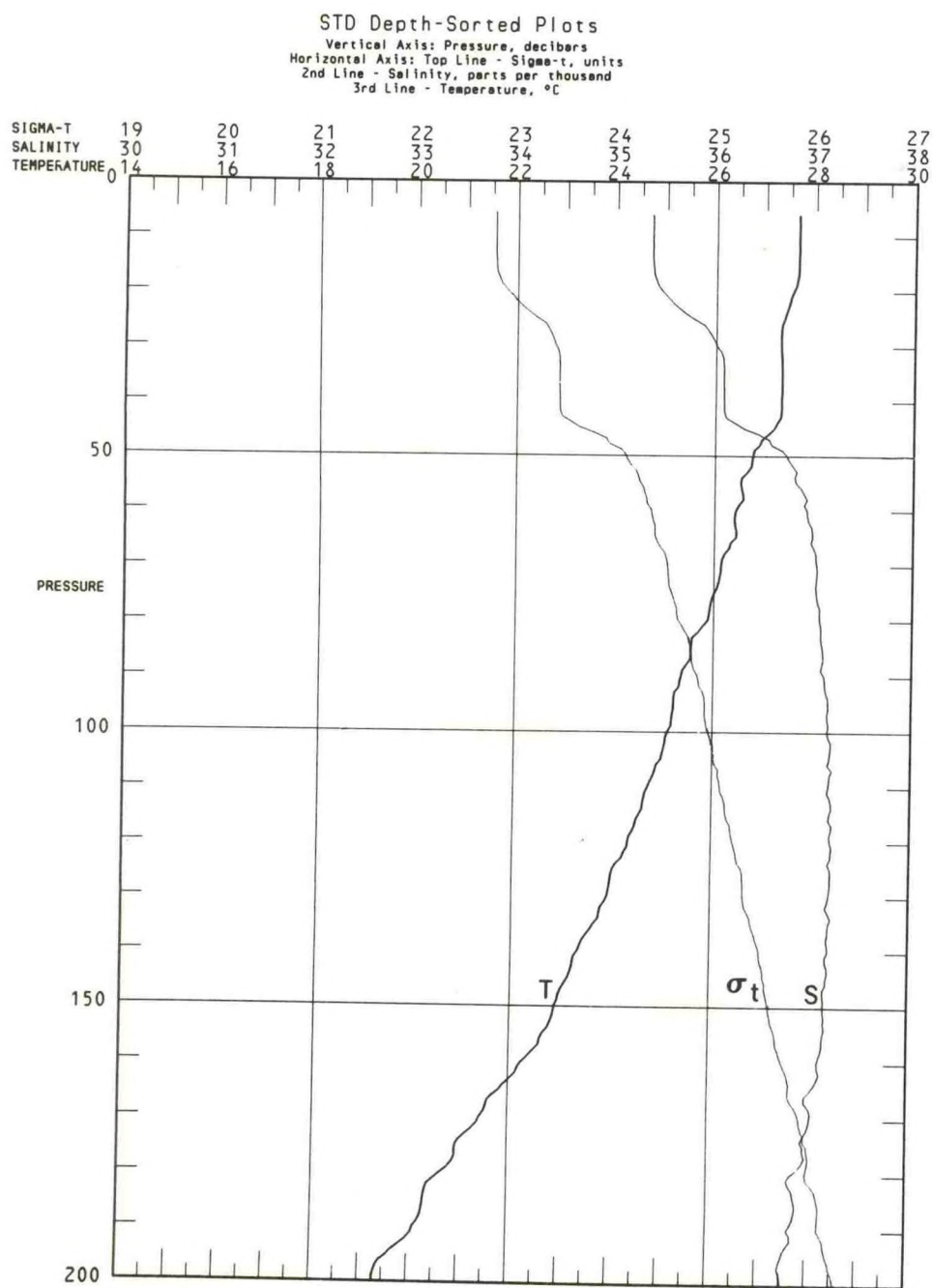
Oceanographer, June 22, 1969, 1513 GMT, 17°35'N 054°35'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



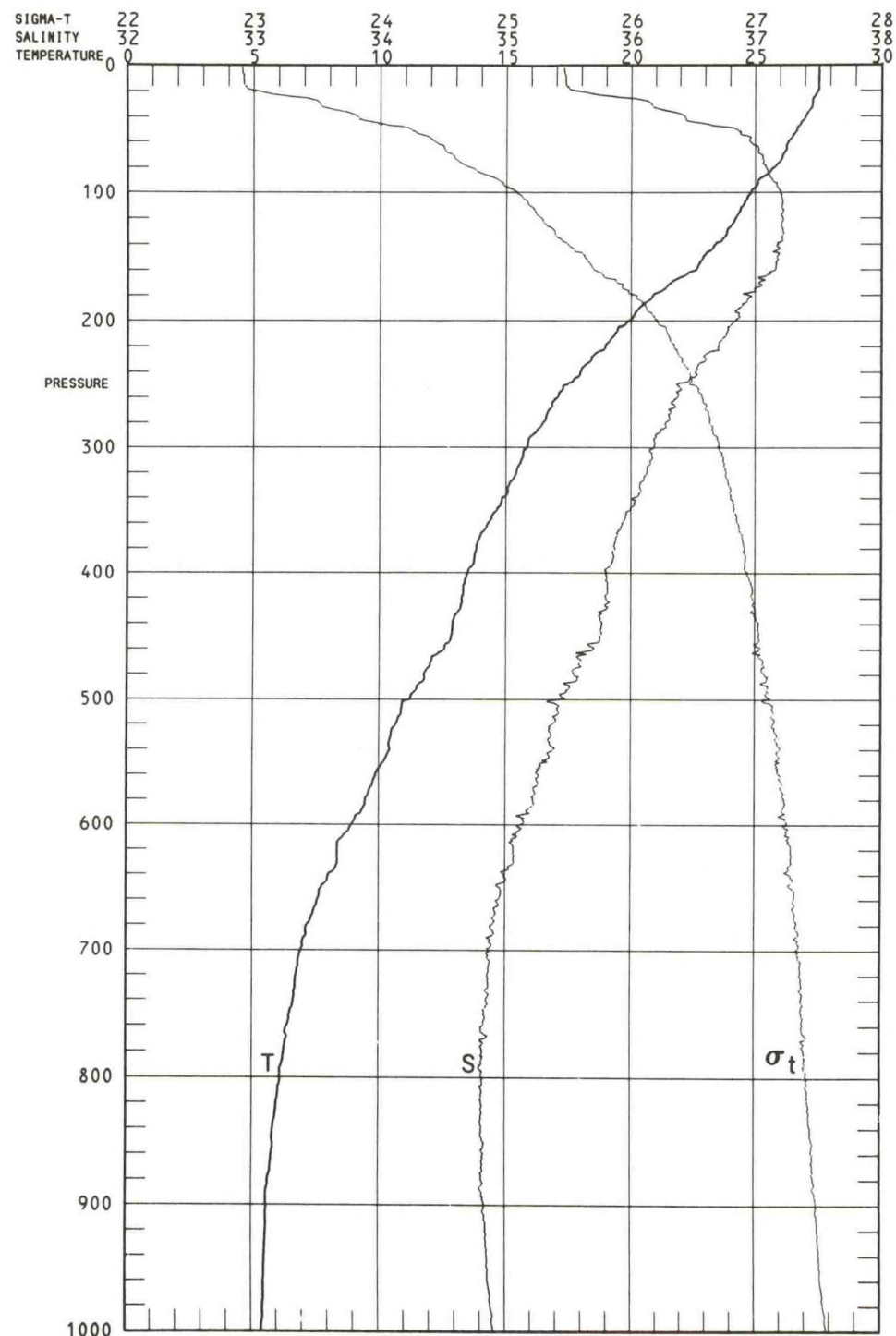
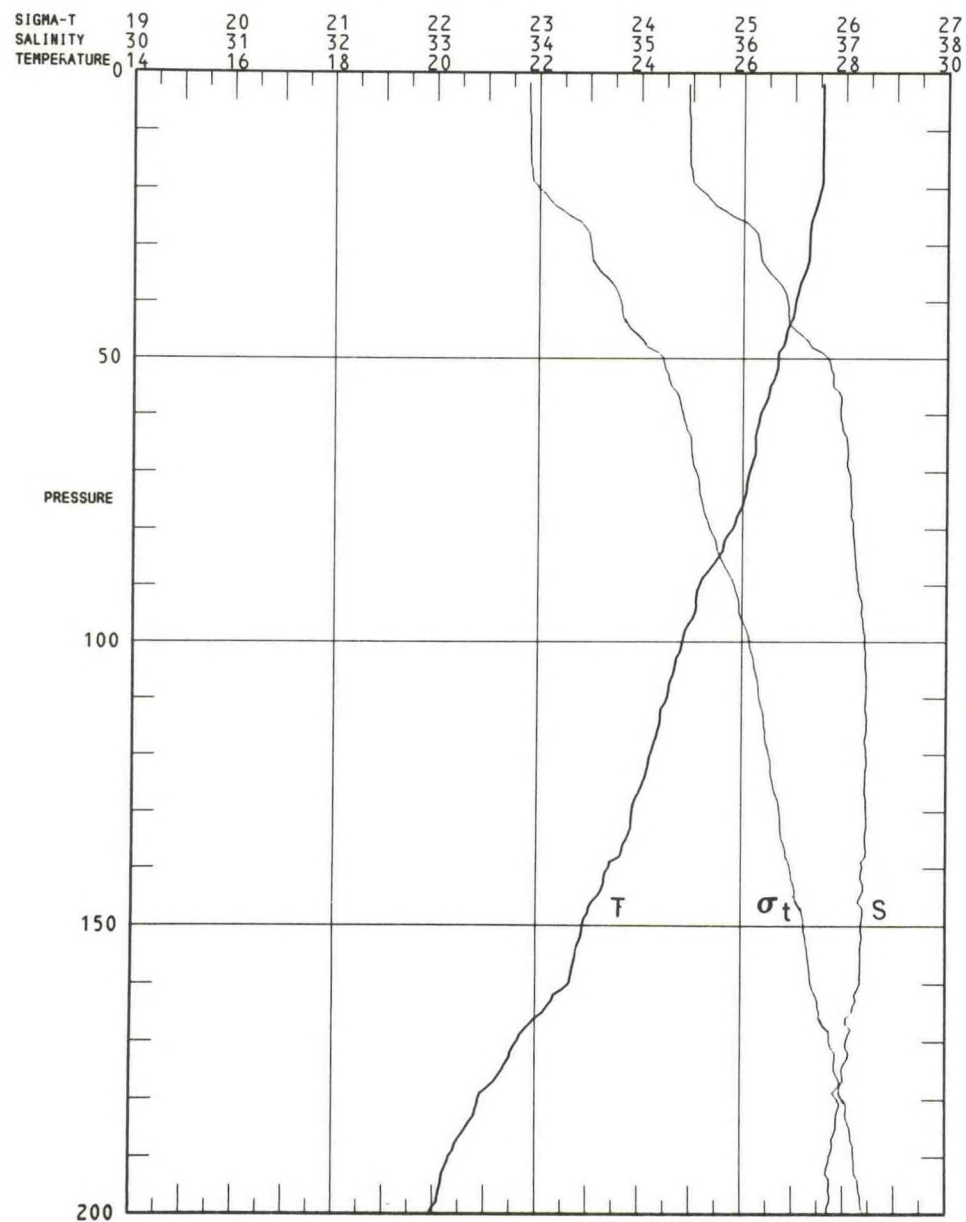
Oceanographer, June 22, 1969, 1803 GMT, 17°35'N 054°34'W





Oceanographer, June 22, 1969, 2107 GMT, 17°35'N 054°35'W

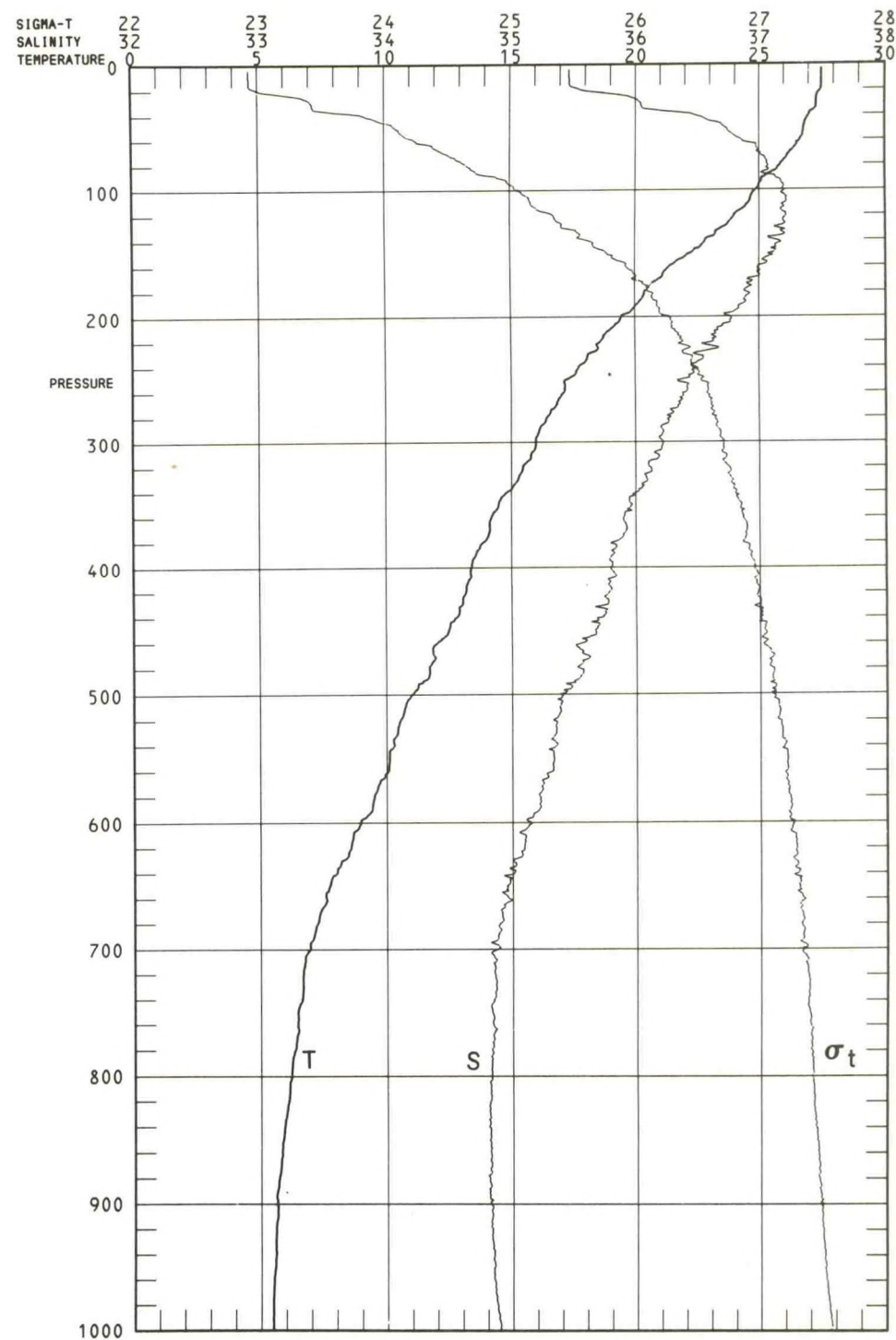
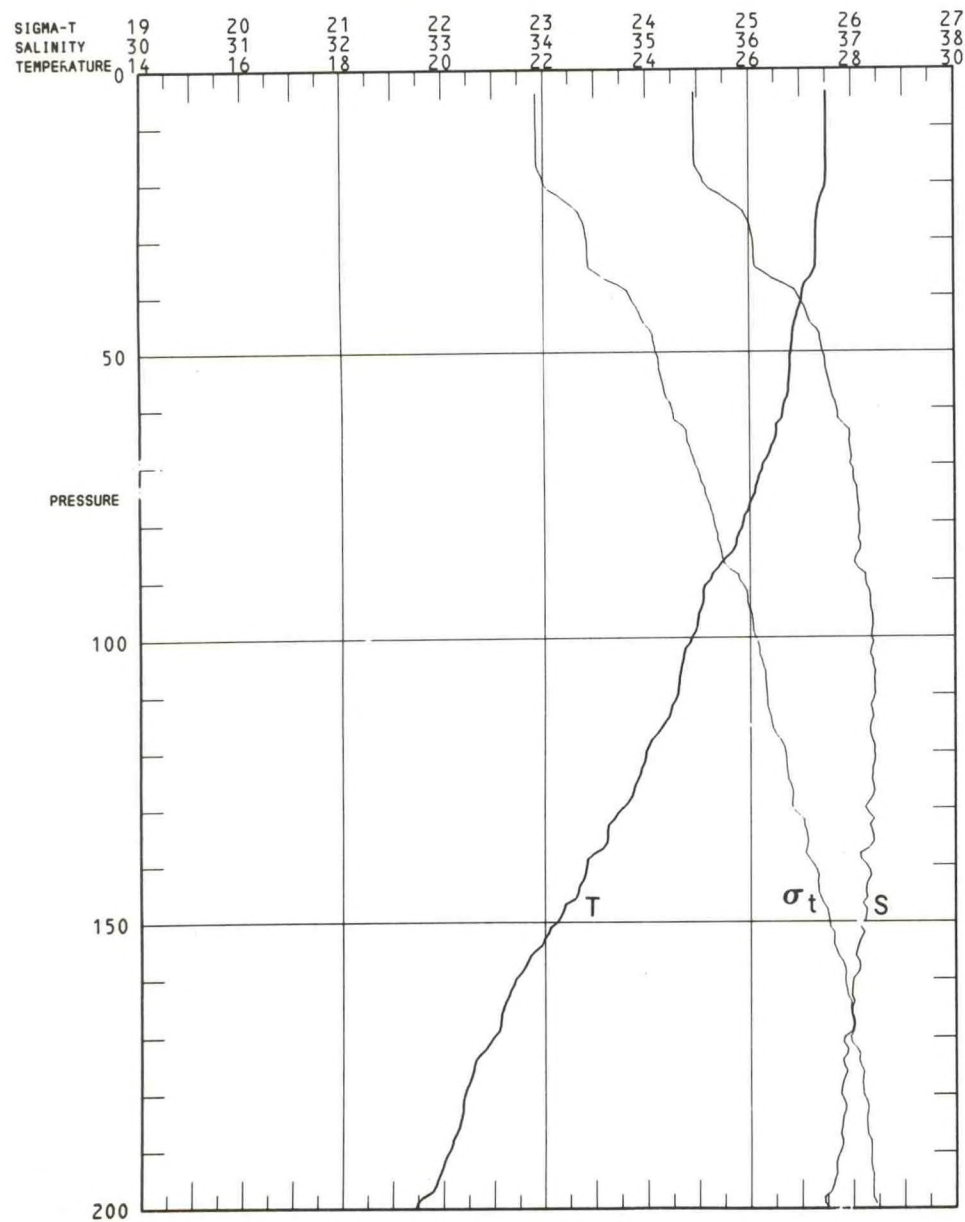
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 23, 1969, 0055 GMT, 17°38'N 054°40'W

# STD Depth-Sorted Plots

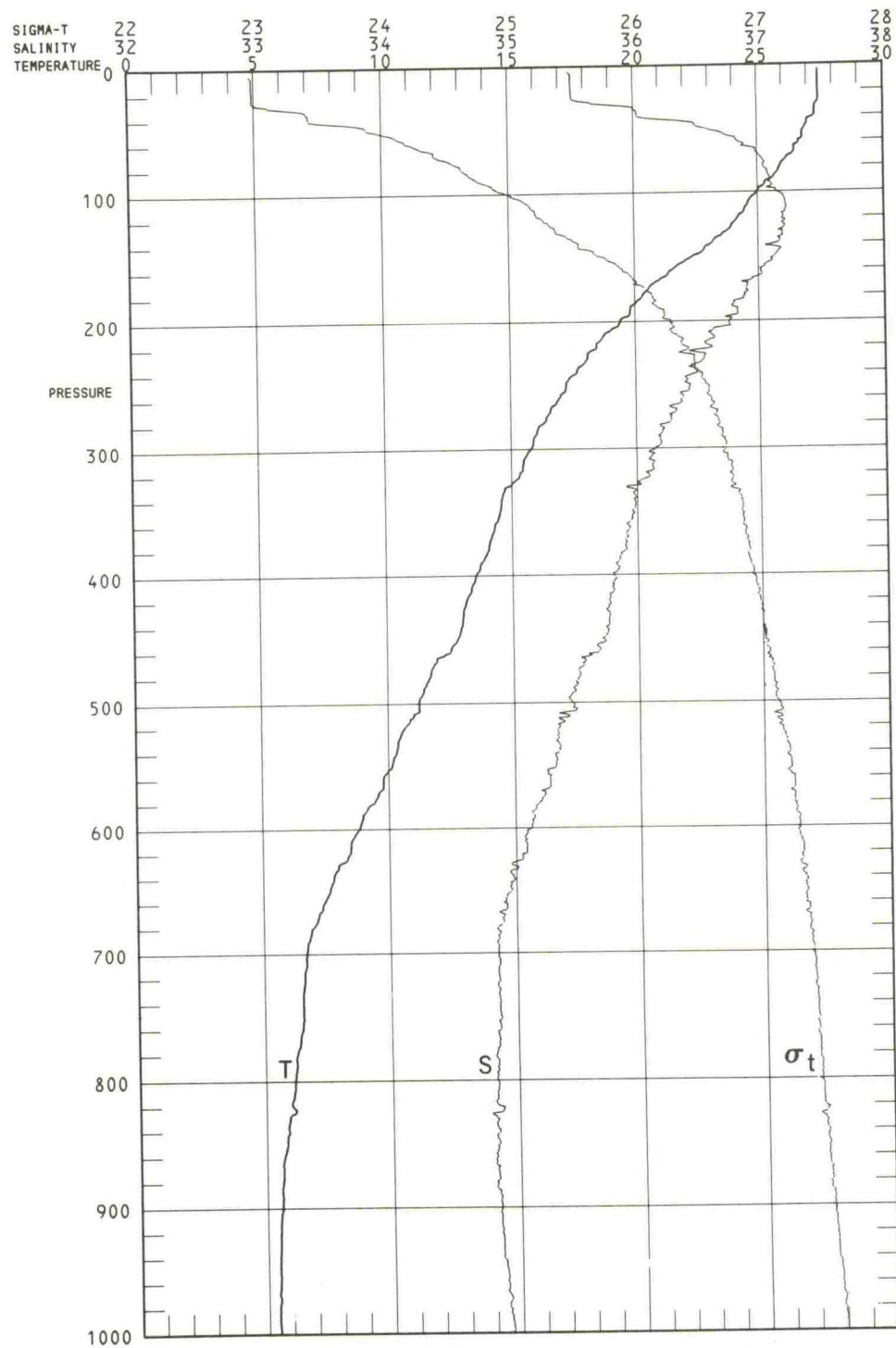
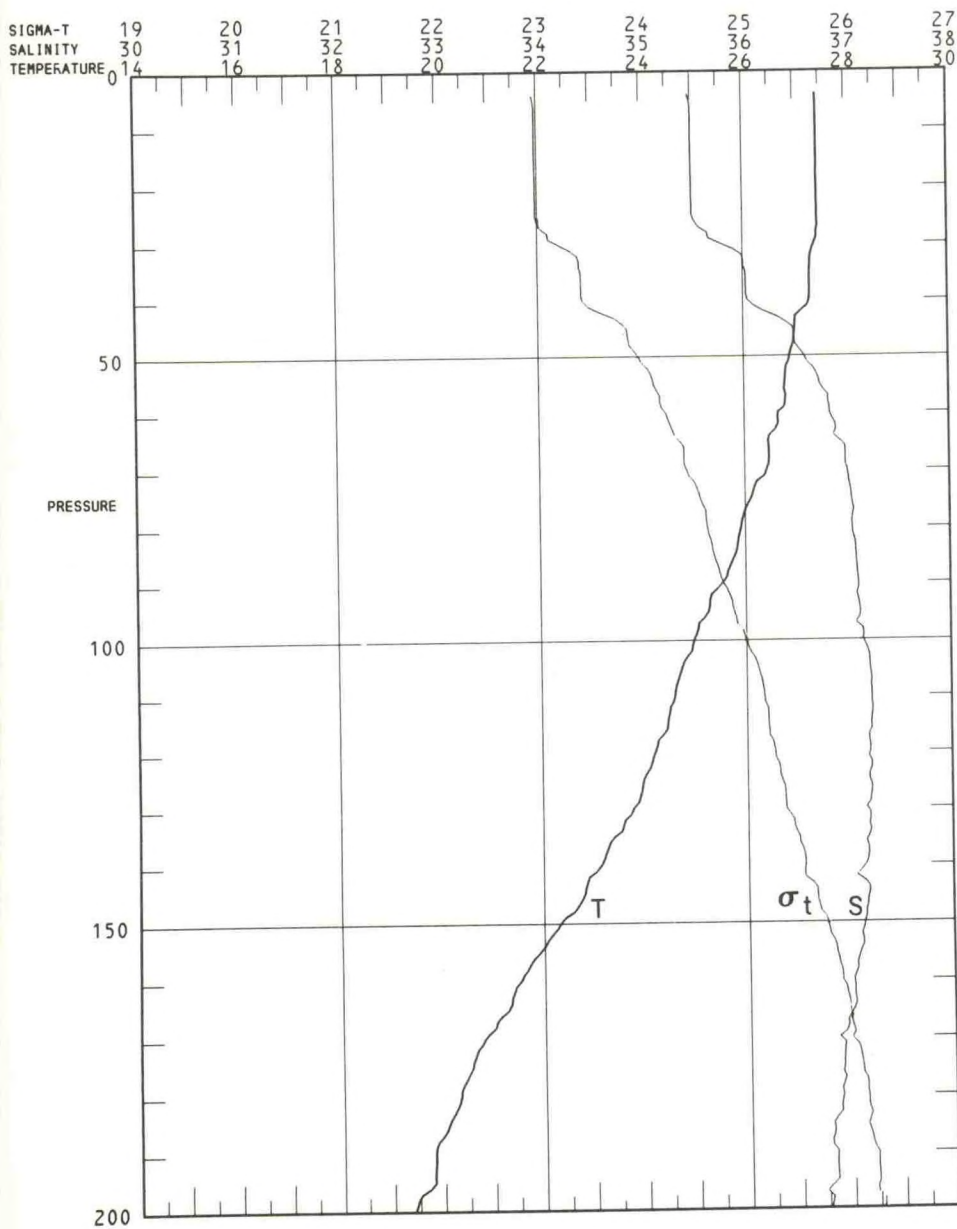
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



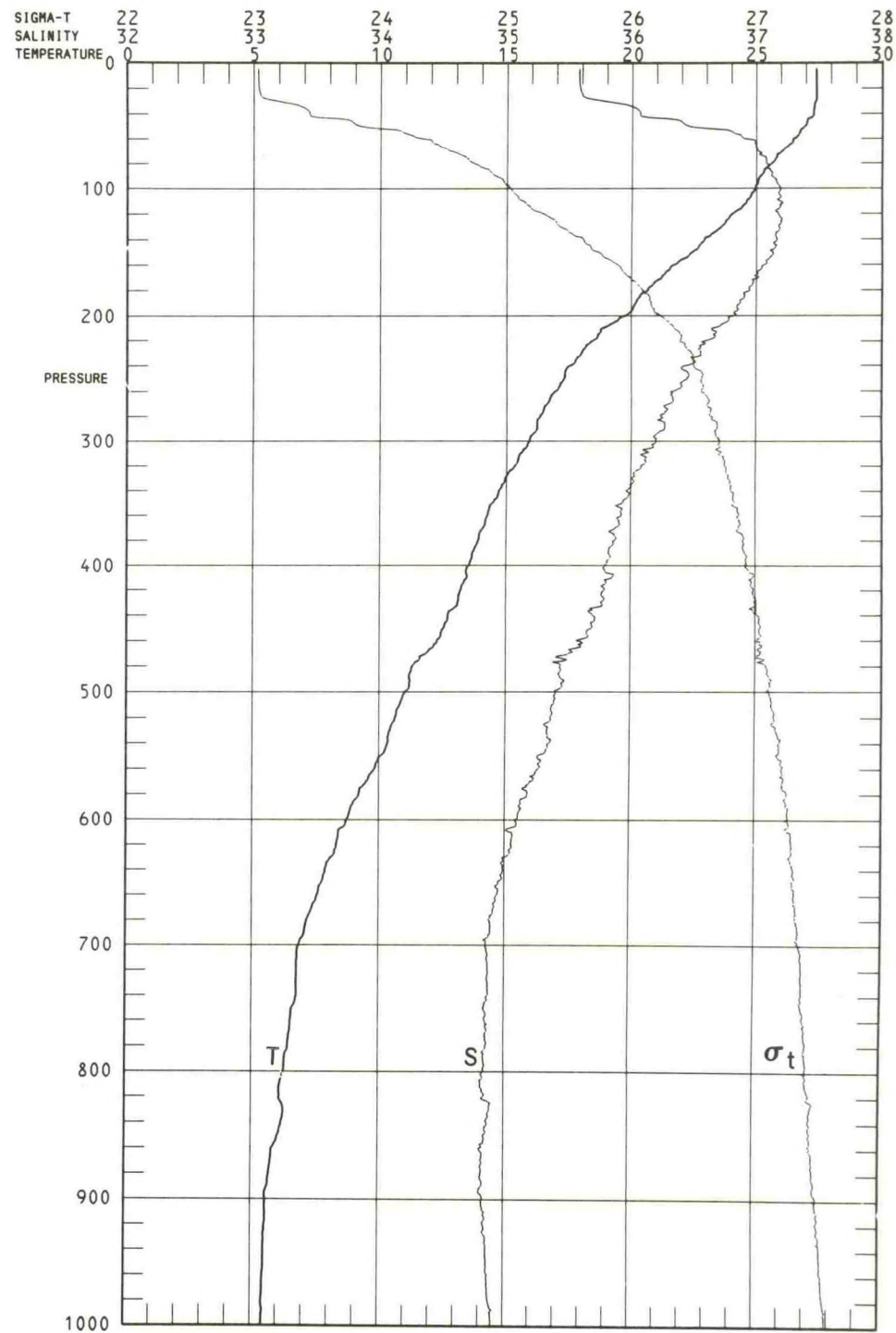
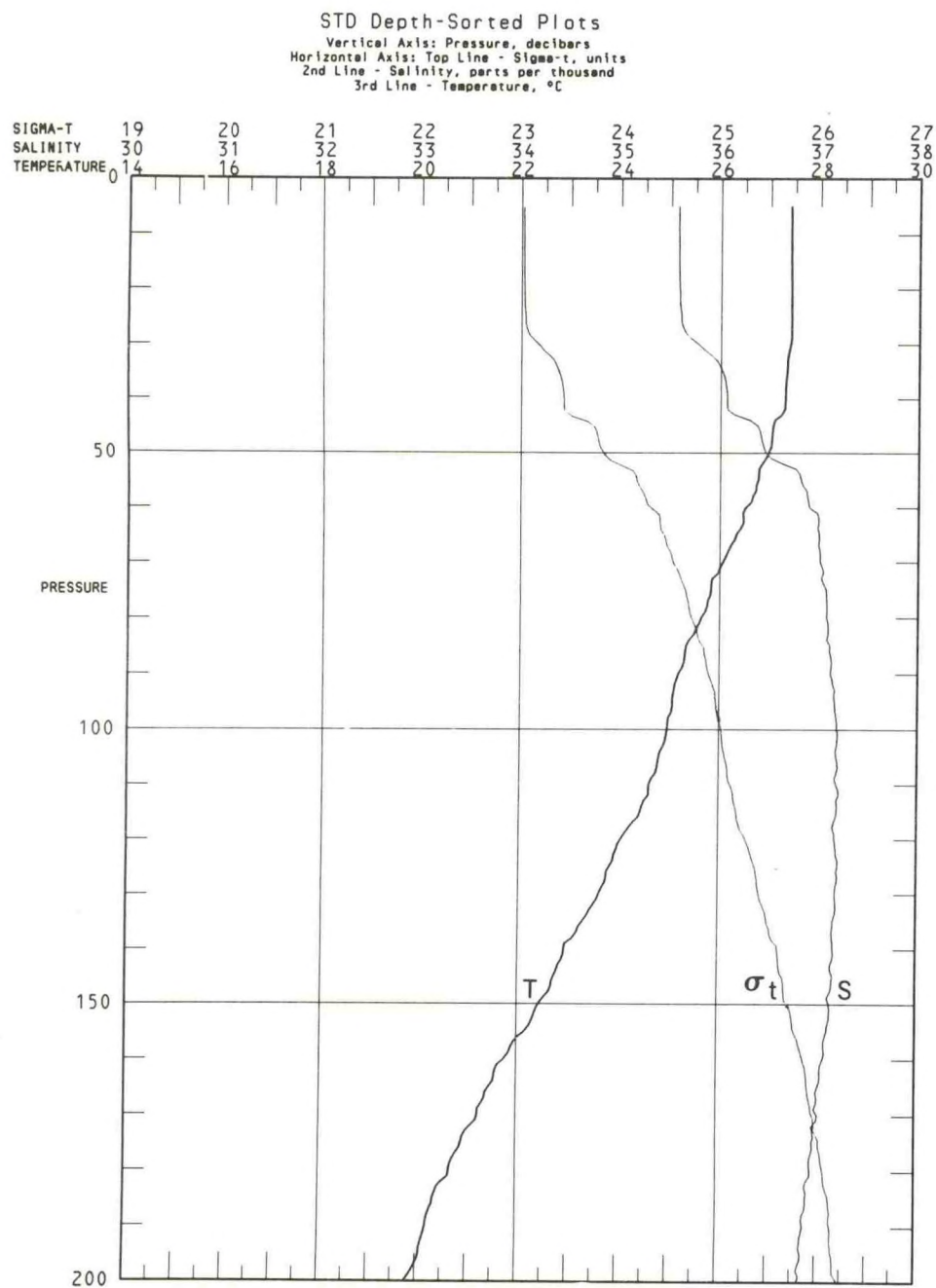
Oceanographer, June 23, 1969, 0312 GMT, 17°37'N 054°37'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

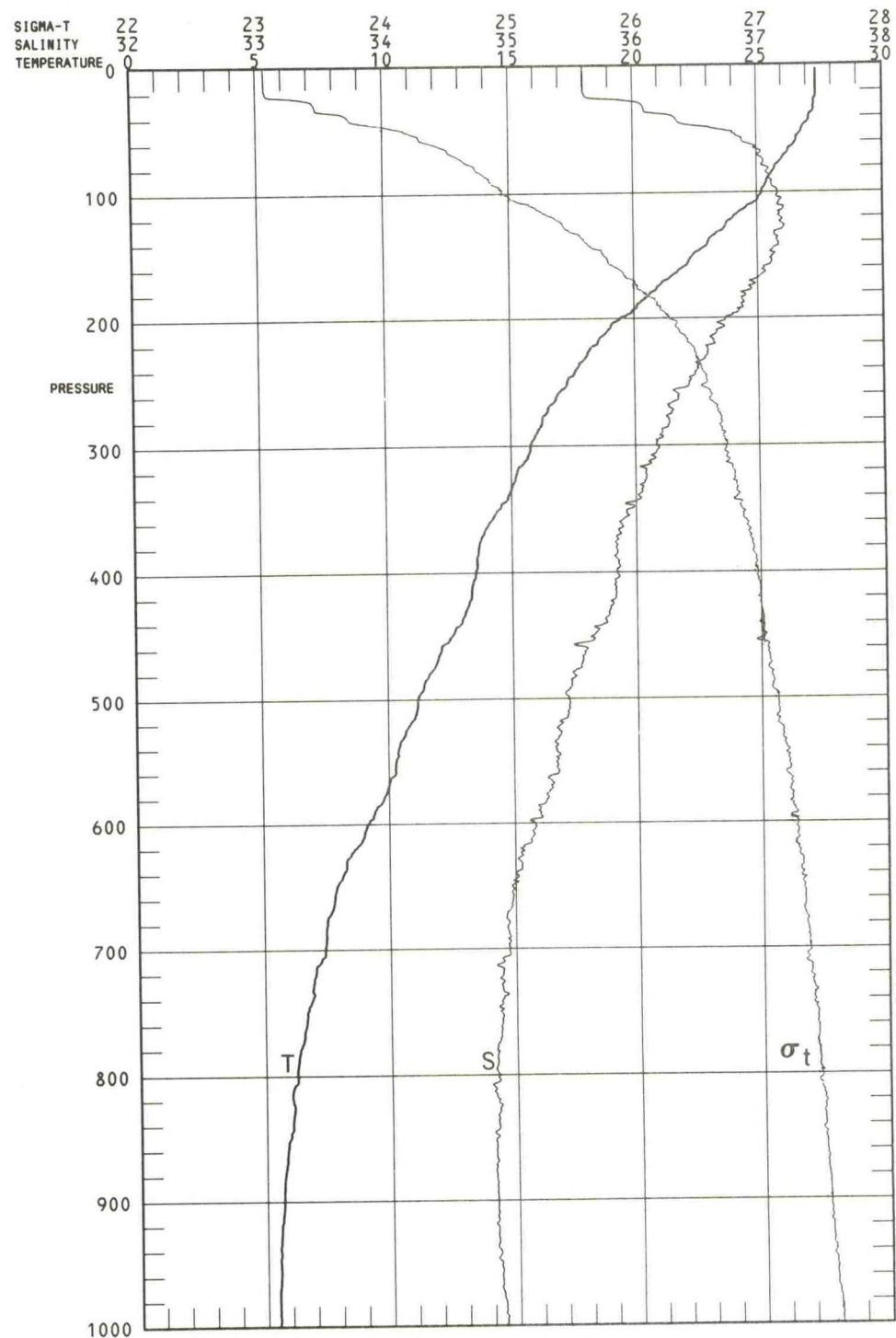
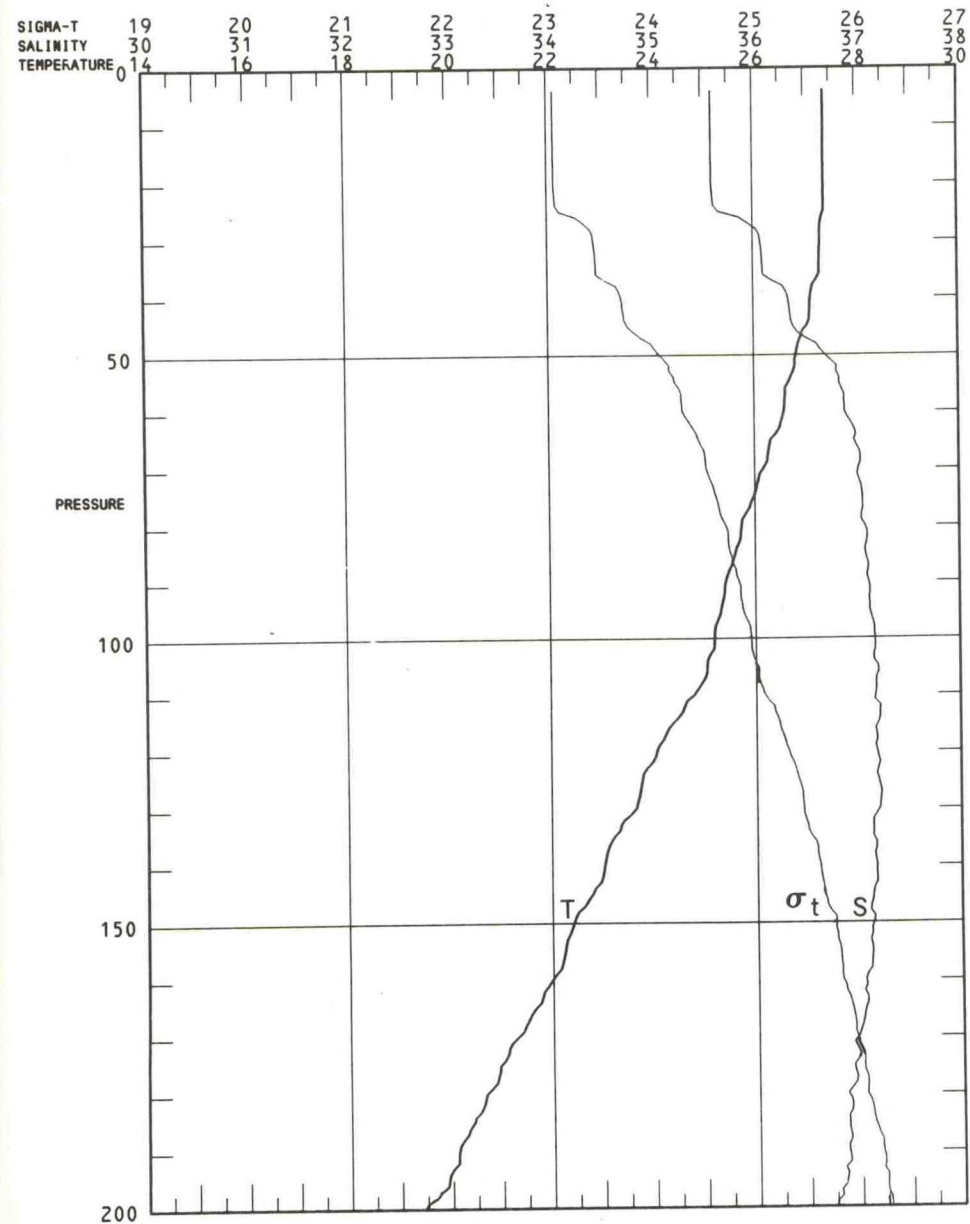


Oceanographer, June 23, 1969, 0608 GMT, 17°32'N 054°37'W



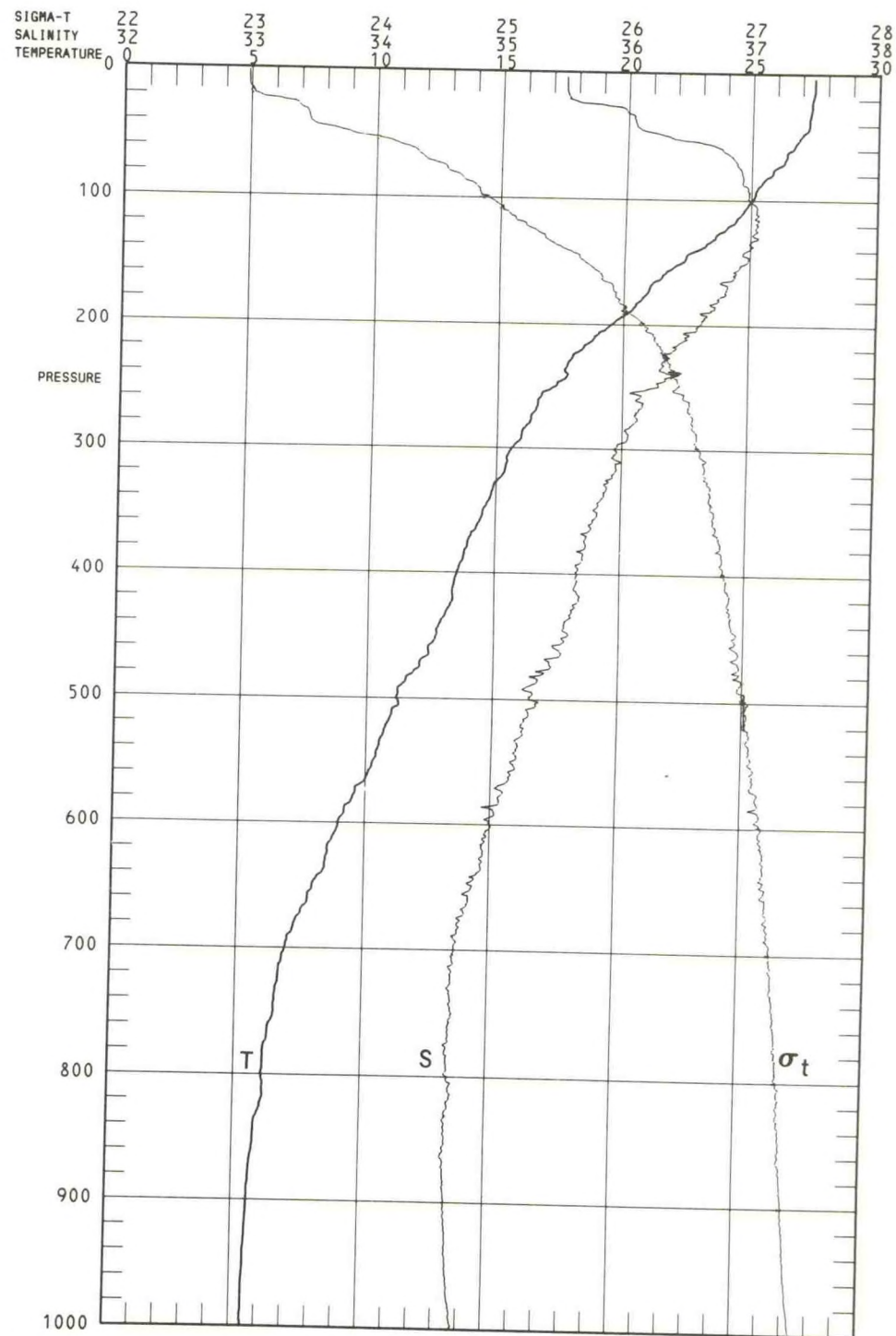
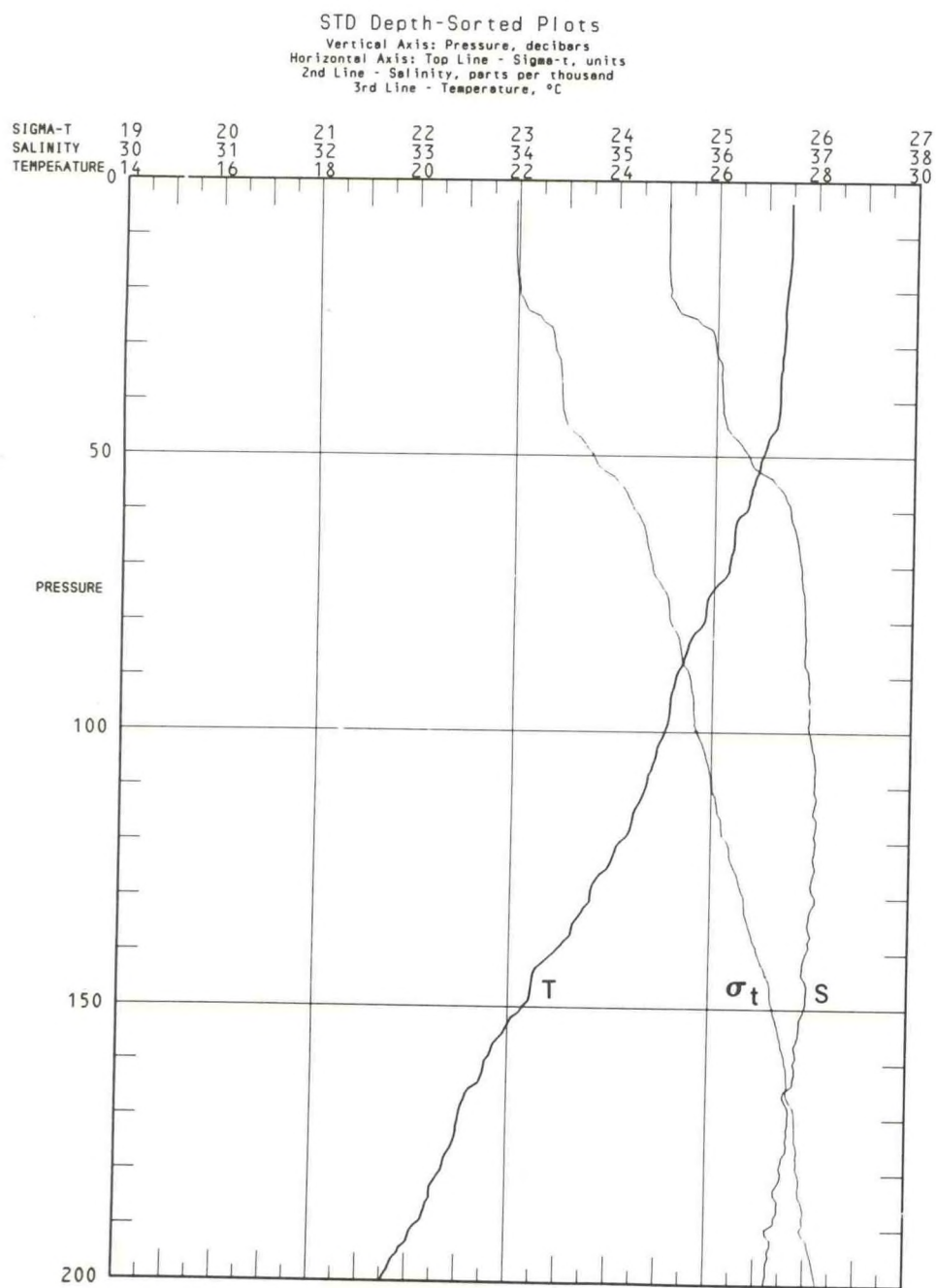
Oceanographer, June 23, 1969, 0911 GMT, 17°36'N 054°36'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 23, 1969, 1154 GMT, 17°36'N 054°36'W

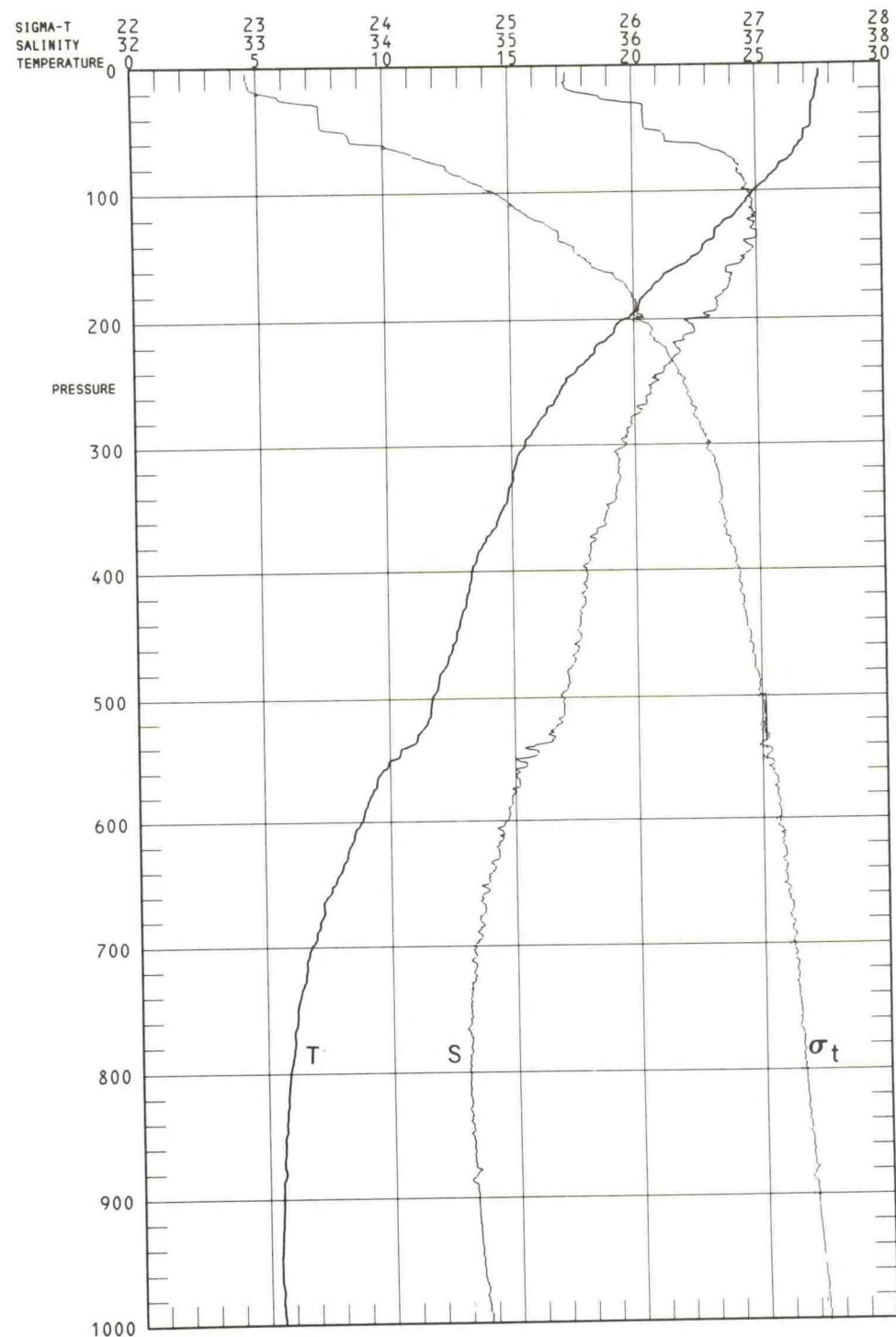
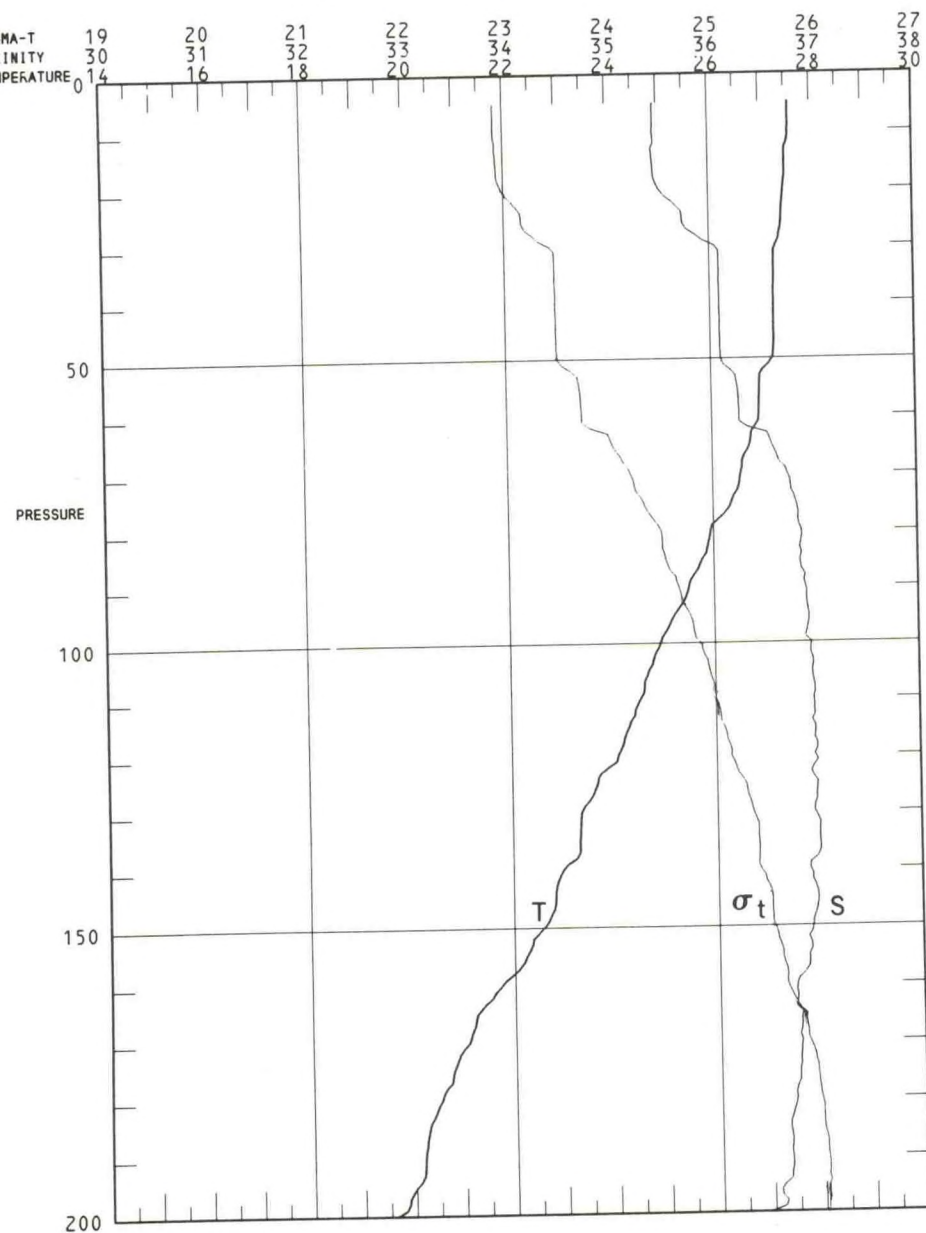




Oceanographer, June 23, 1969, 1512 GMT, 17°36'N 054°36'W

OCEANOGRAPHER YEAR 1969 DAY 174 TIME 1801 GMT LAT.17°36'N LONG.054°36'W

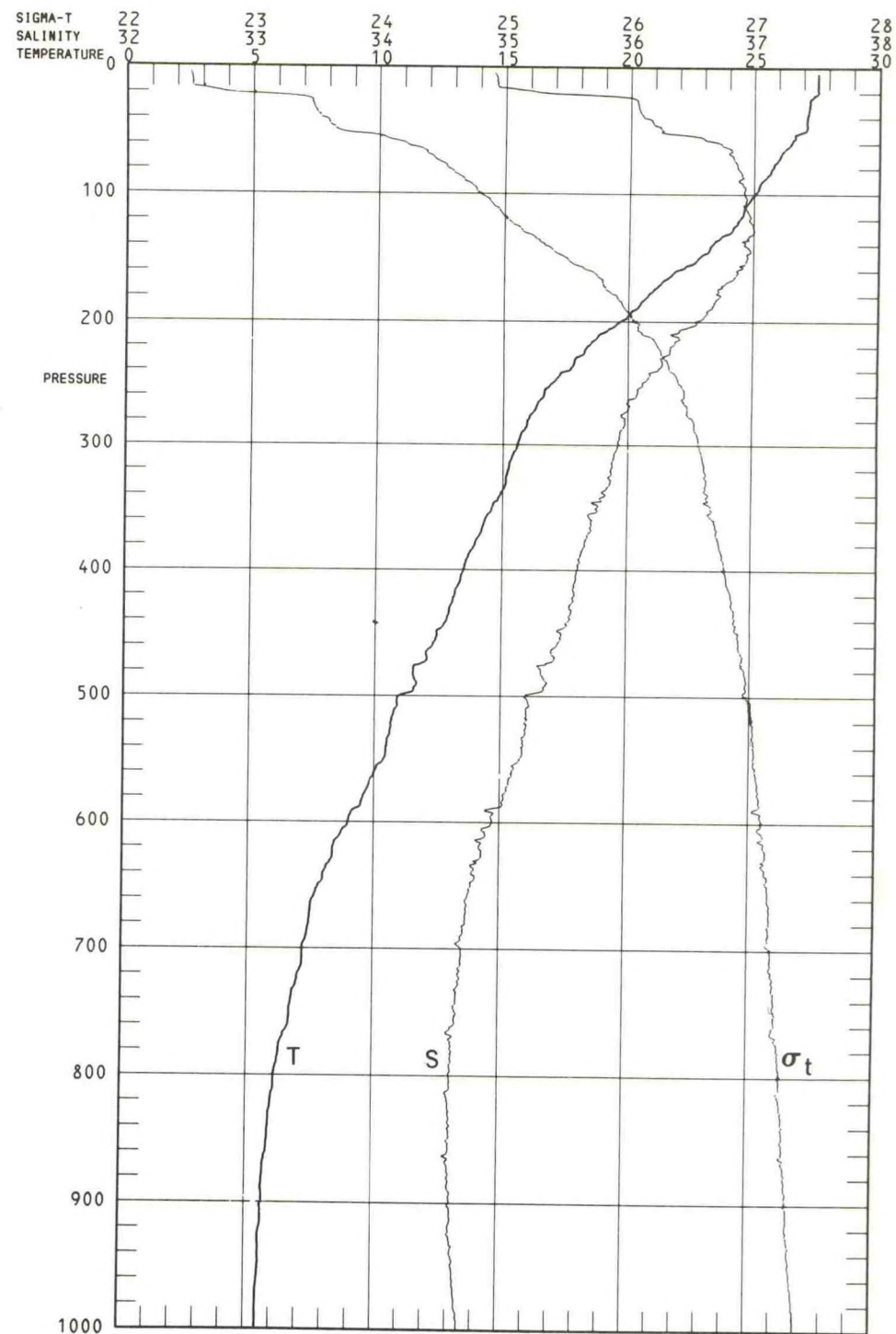
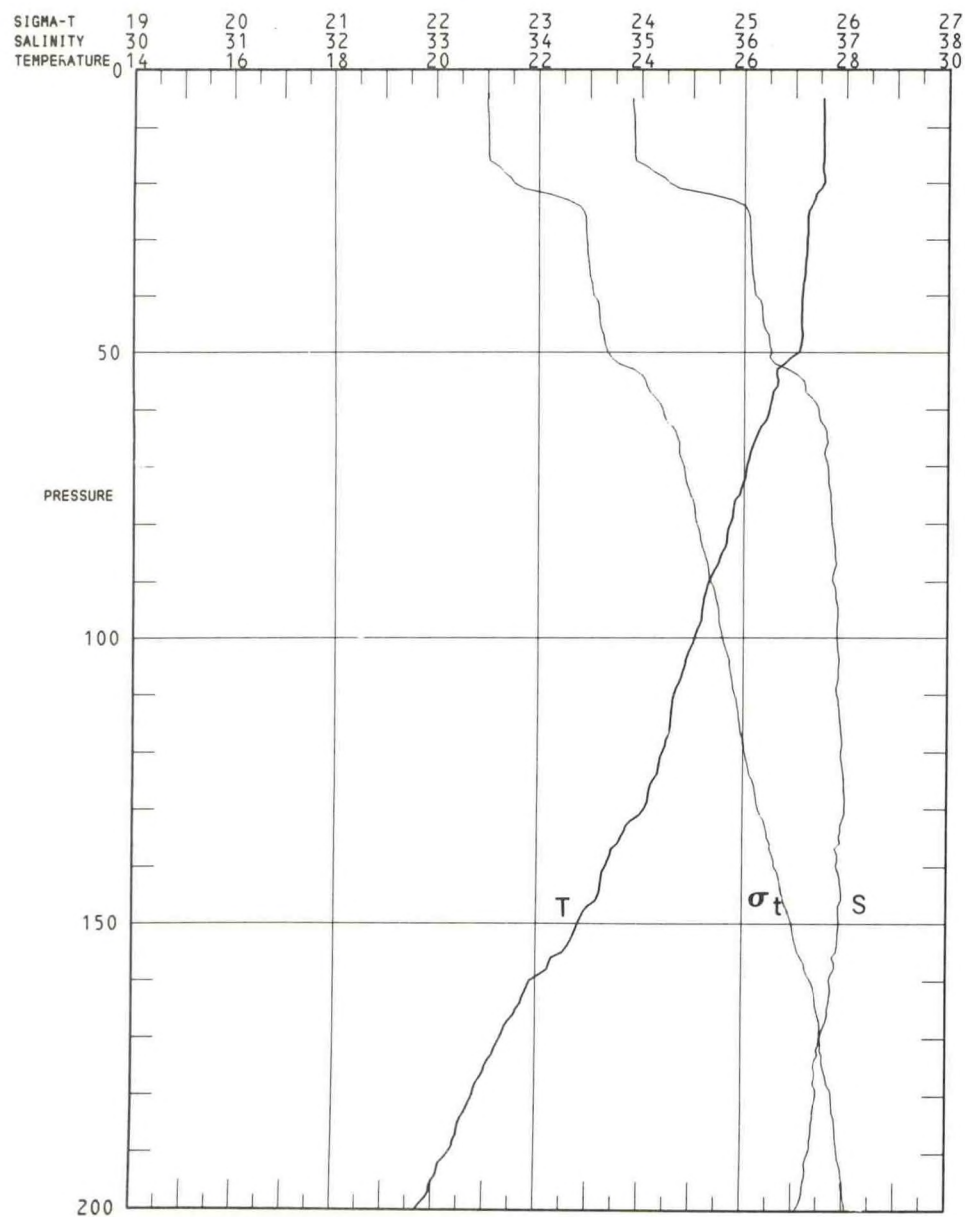
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 23, 1969, 1801 GMT, 17°36'N 054°36'W

# STD Depth-Sorted Plots

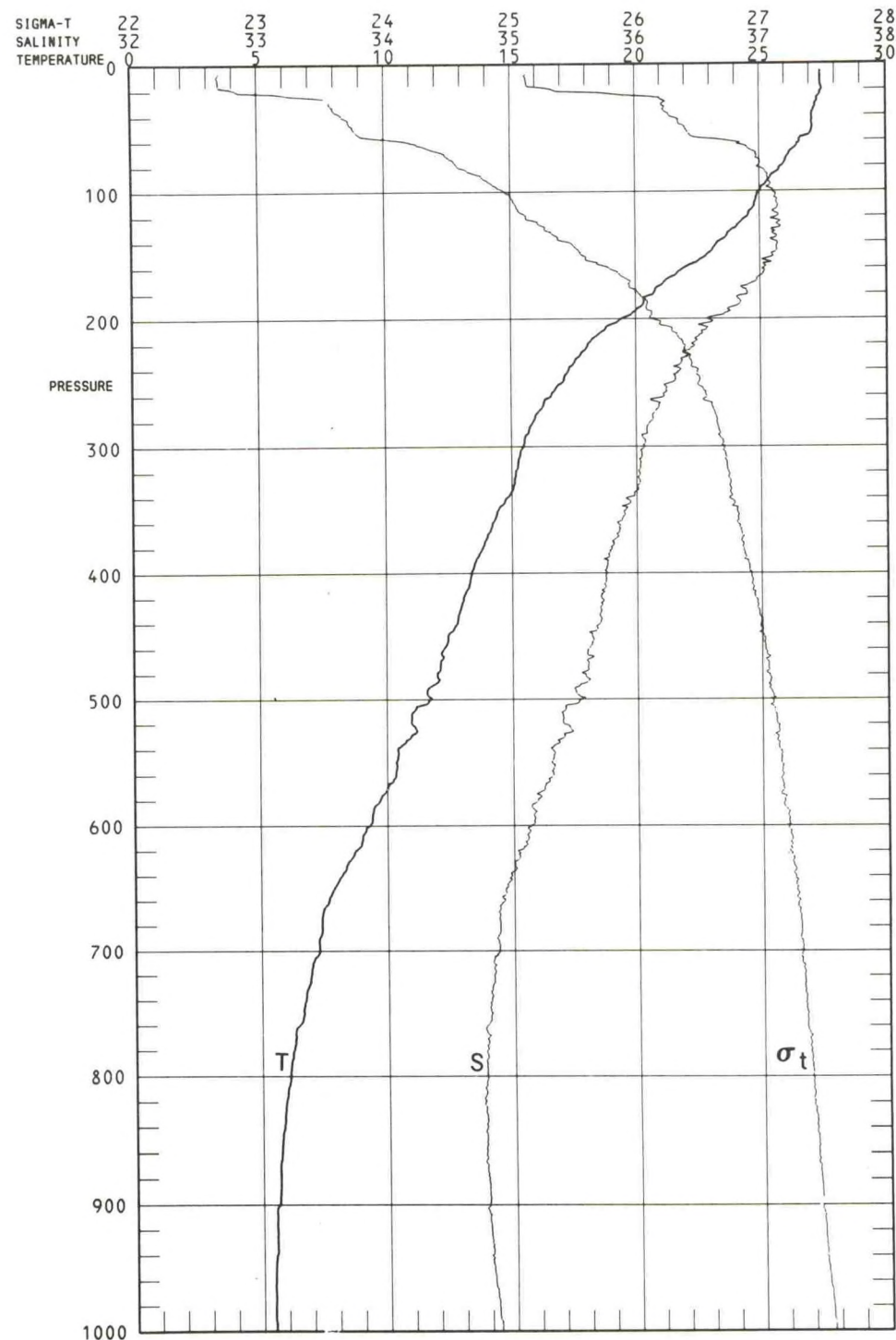
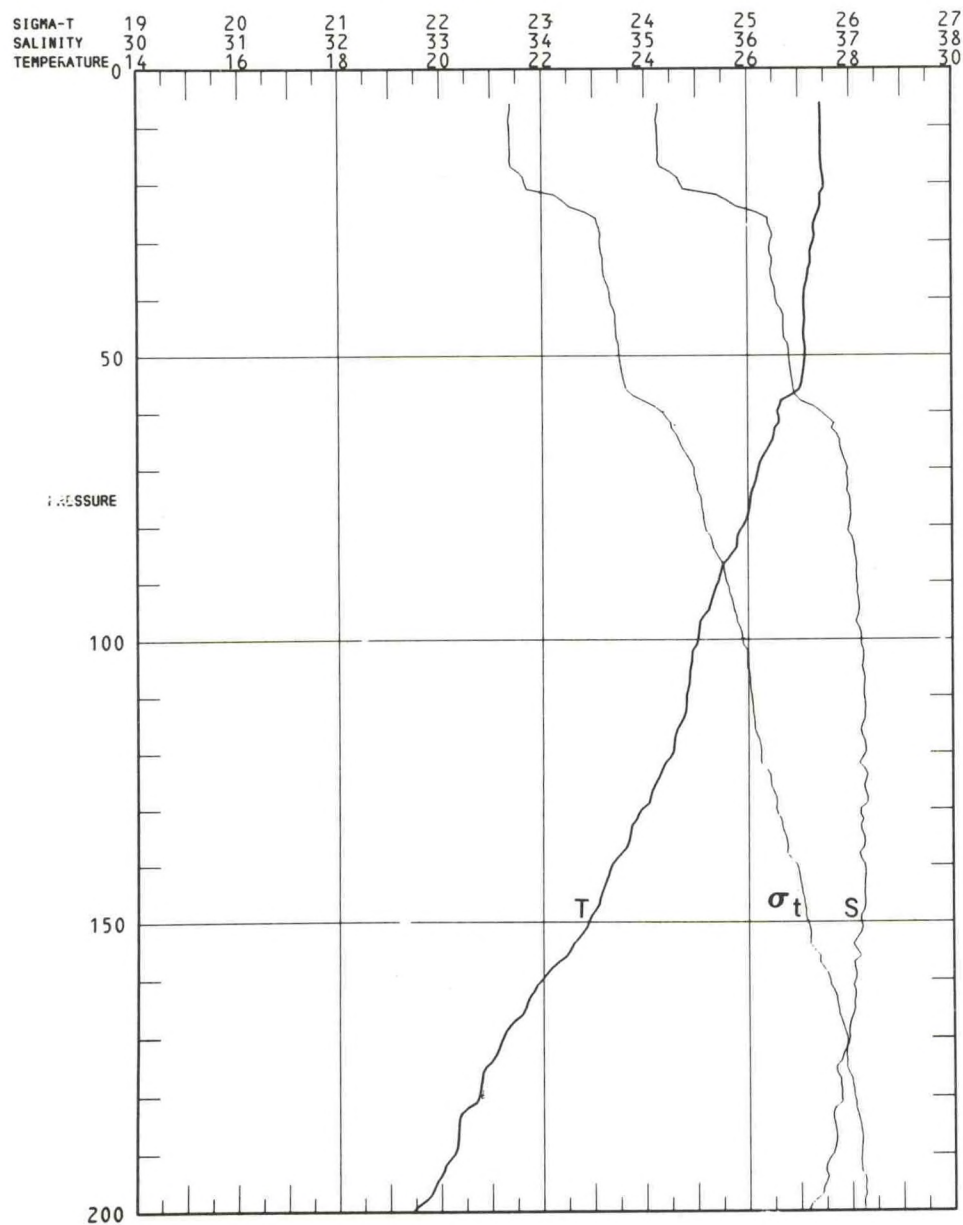
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



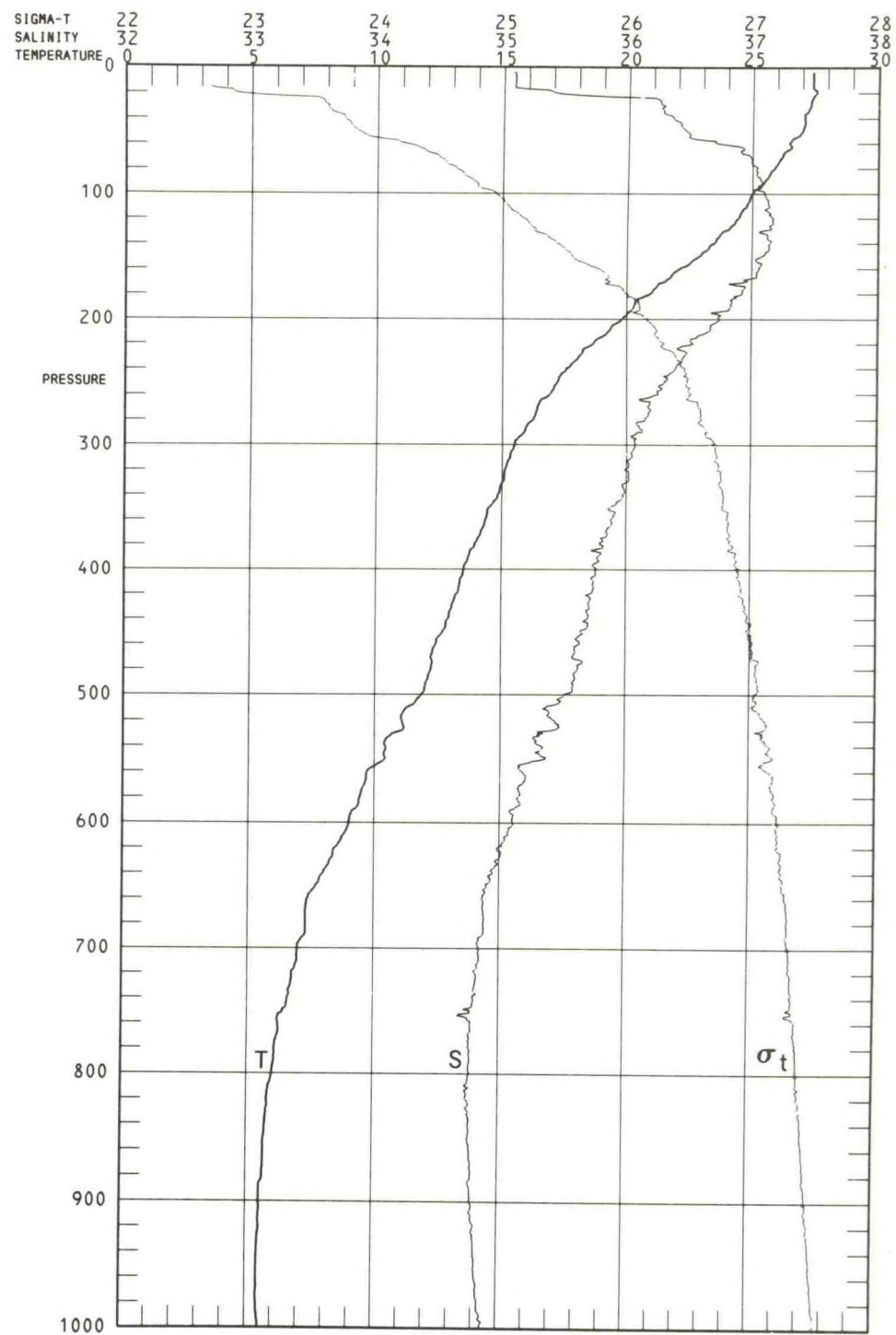
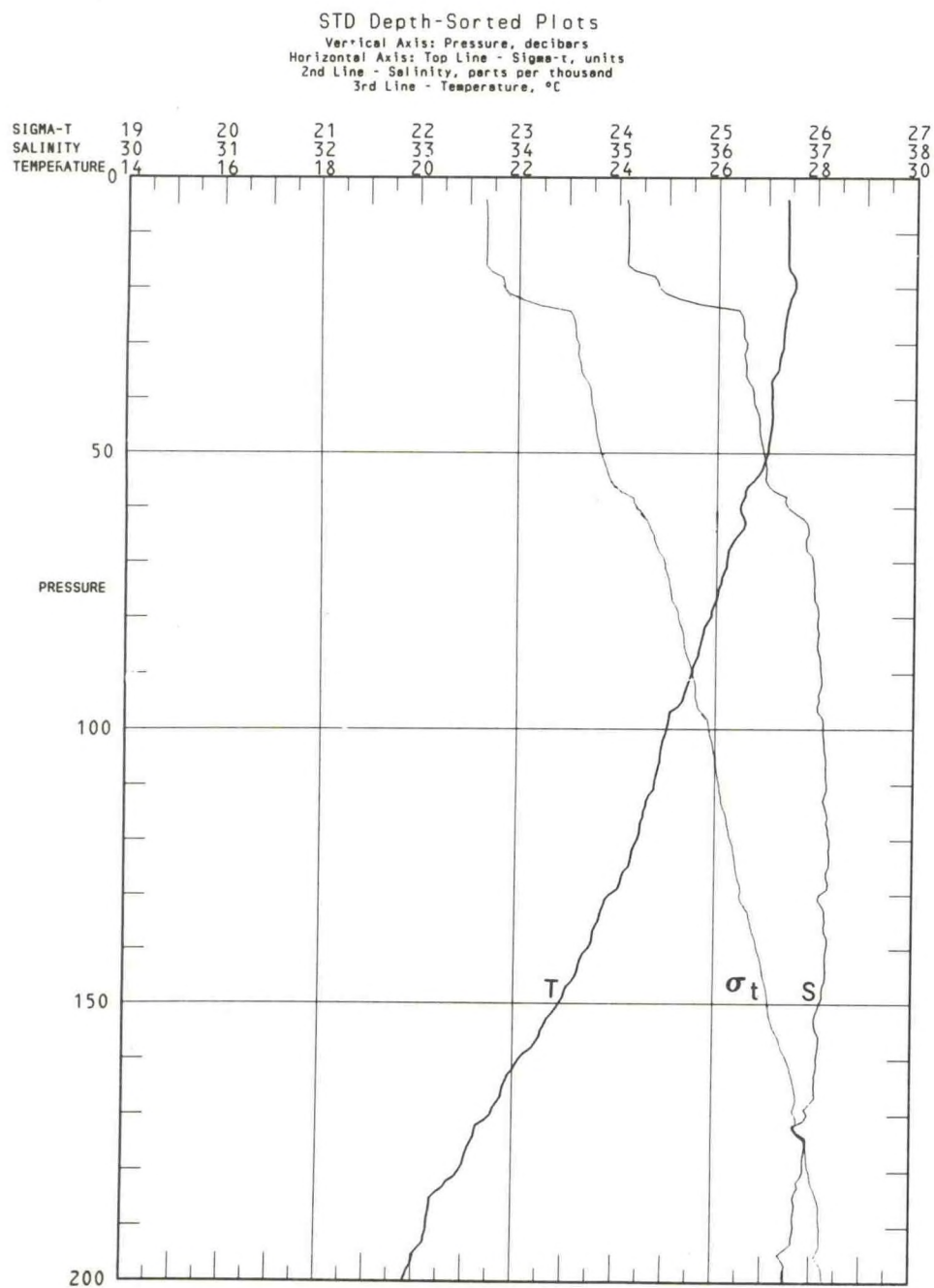
Oceanographer, June 24, 1969, 0055 GMT, 17°36'N 054°36'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

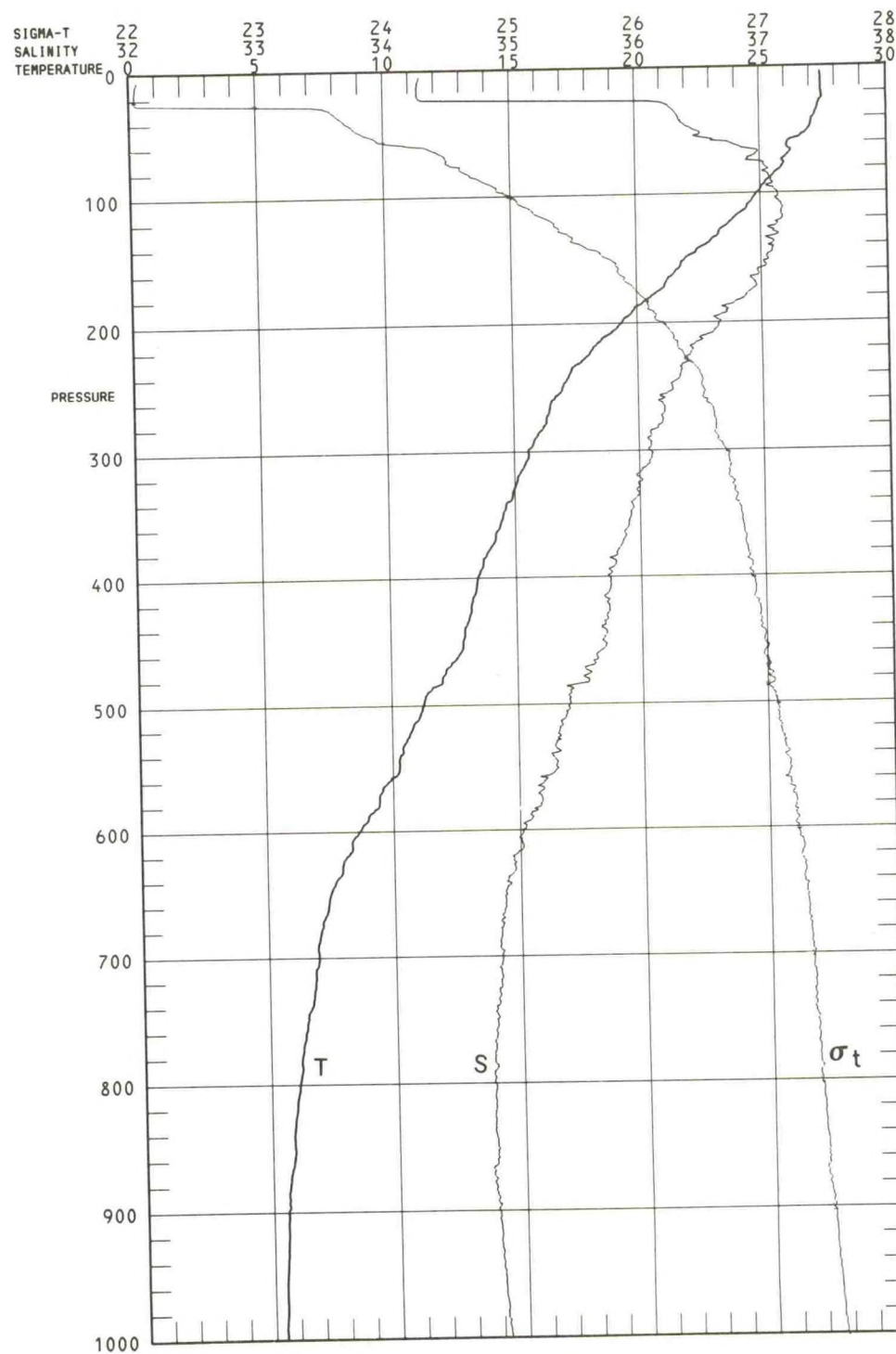
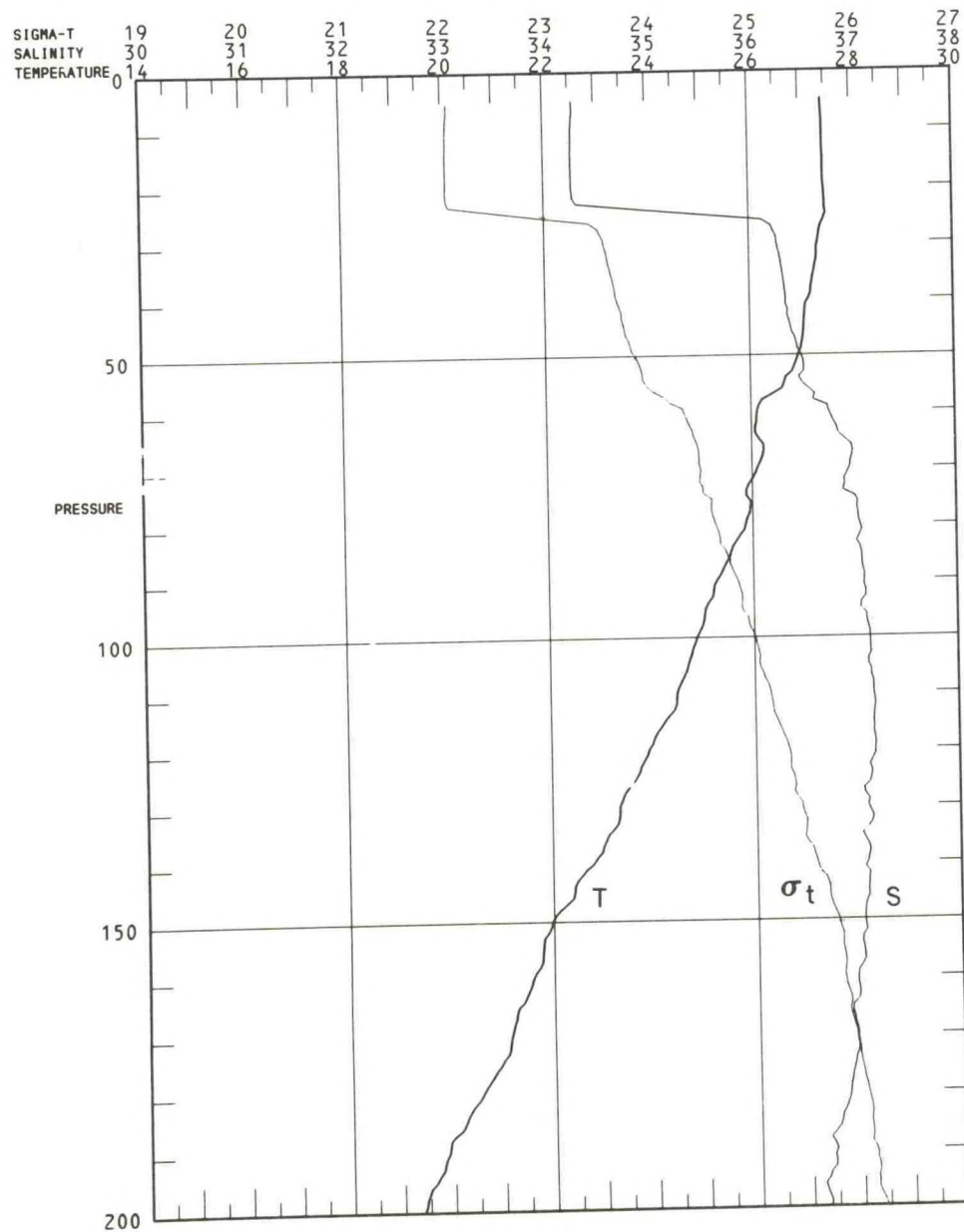


Oceanographer, June 24, 1969, 0308 GMT, 17°36'N 054°36'W



Oceanographer, June 24, 1969, 0559 GMT, 17°36'N 054°36'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

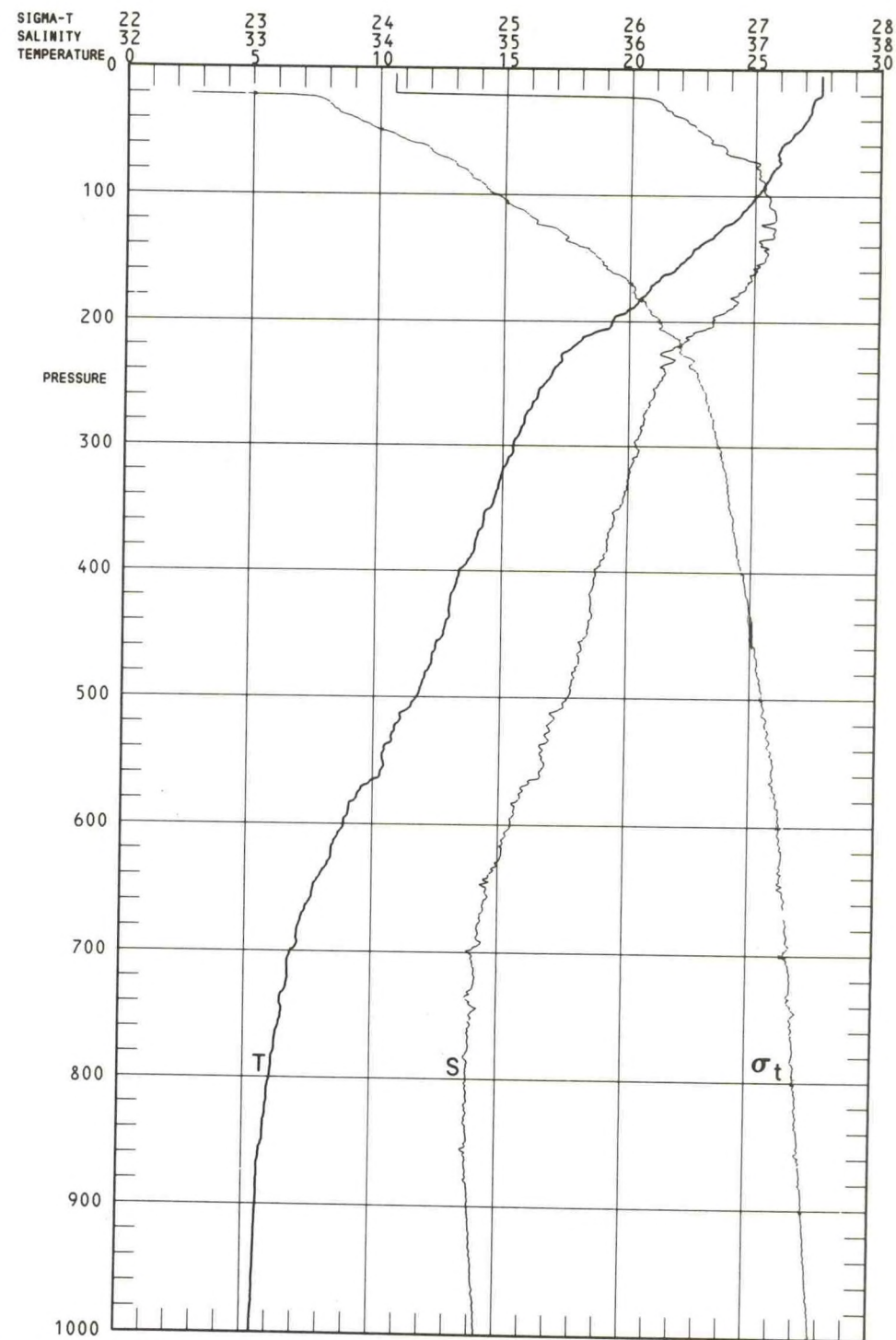
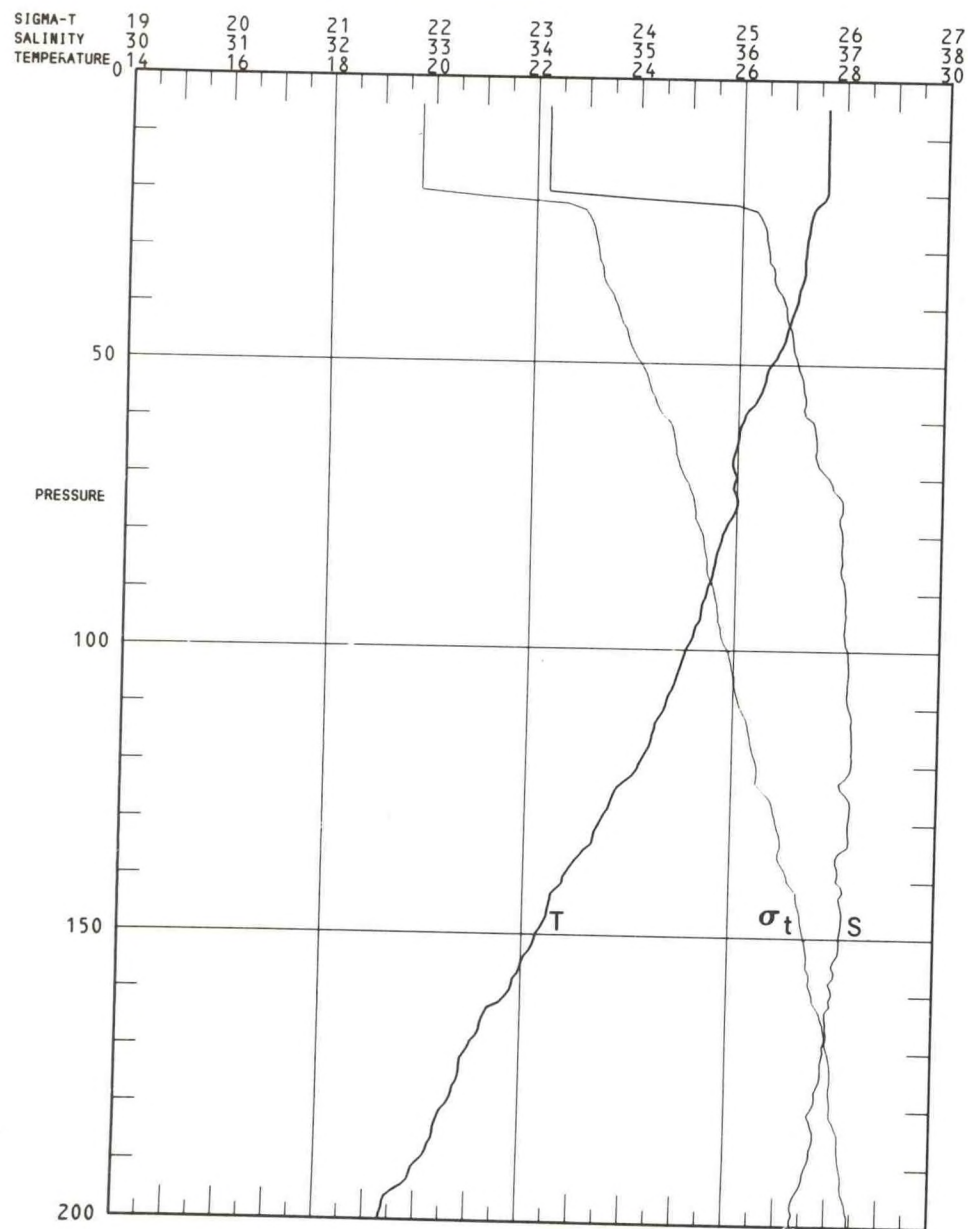


Oceanographer, June 24, 1969, 0905 GMT, 17°36'N 054°36'W



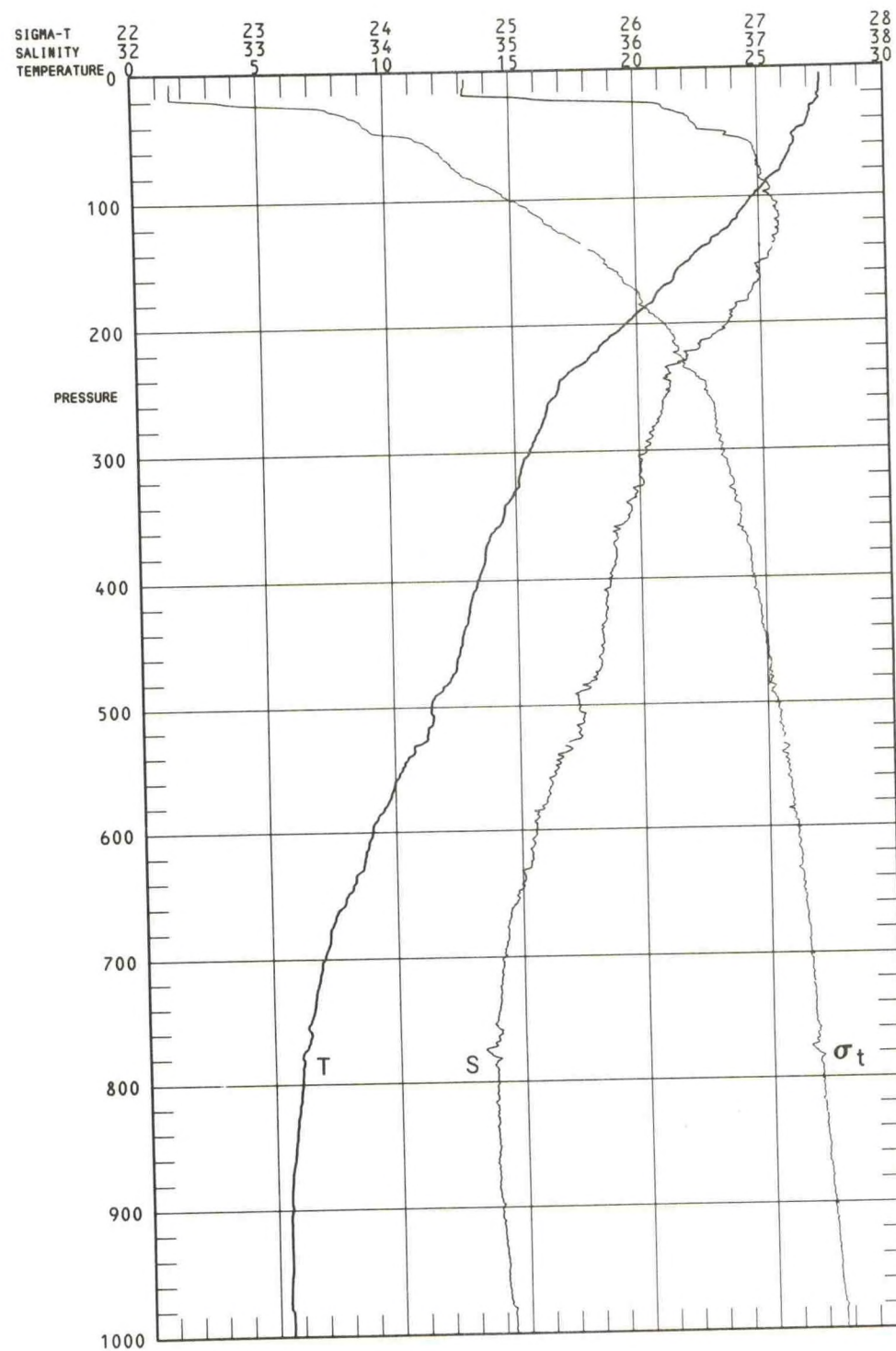
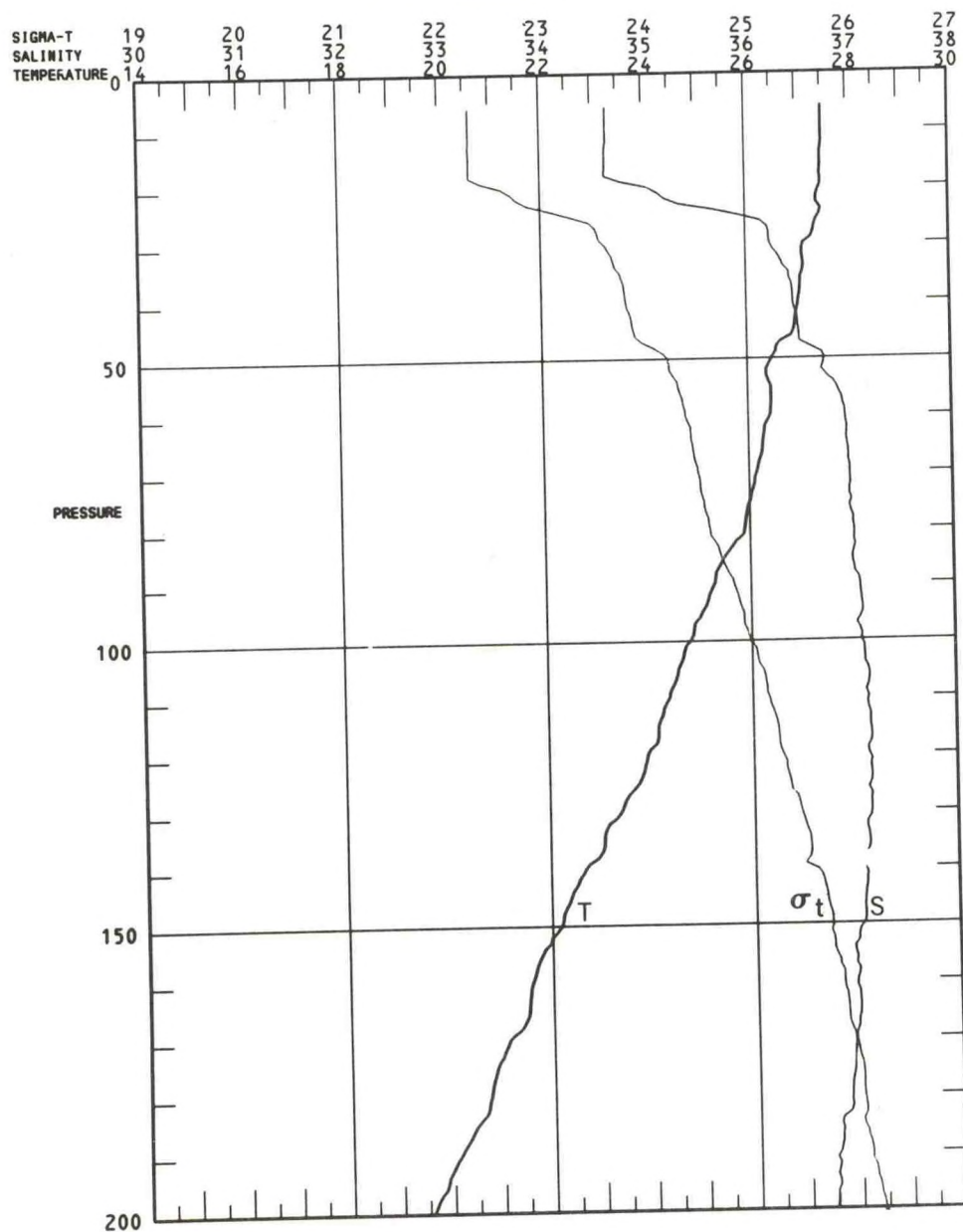
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



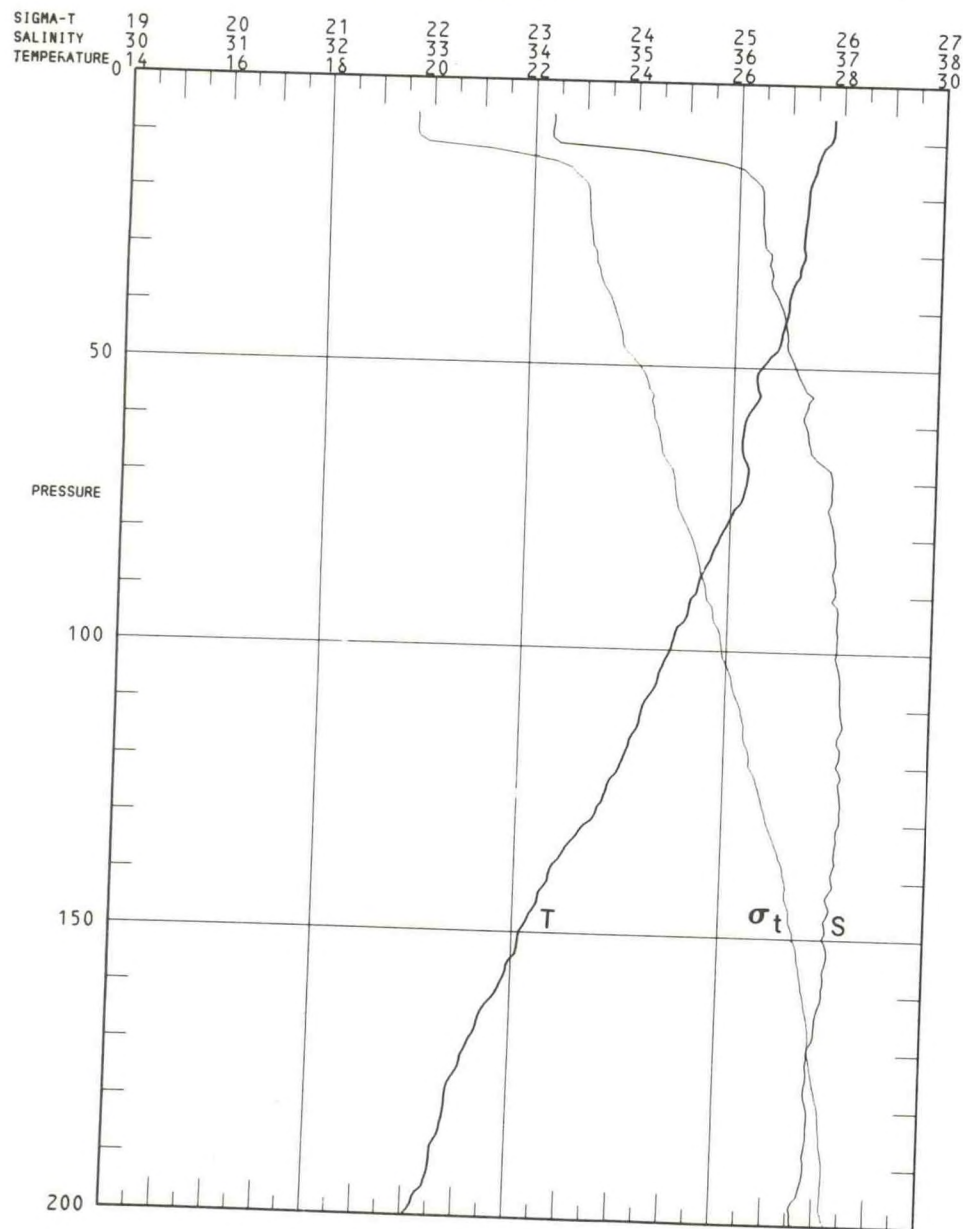
Oceanographer, June 24, 1969, 1157 GMT, 17°36'N 054°36'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

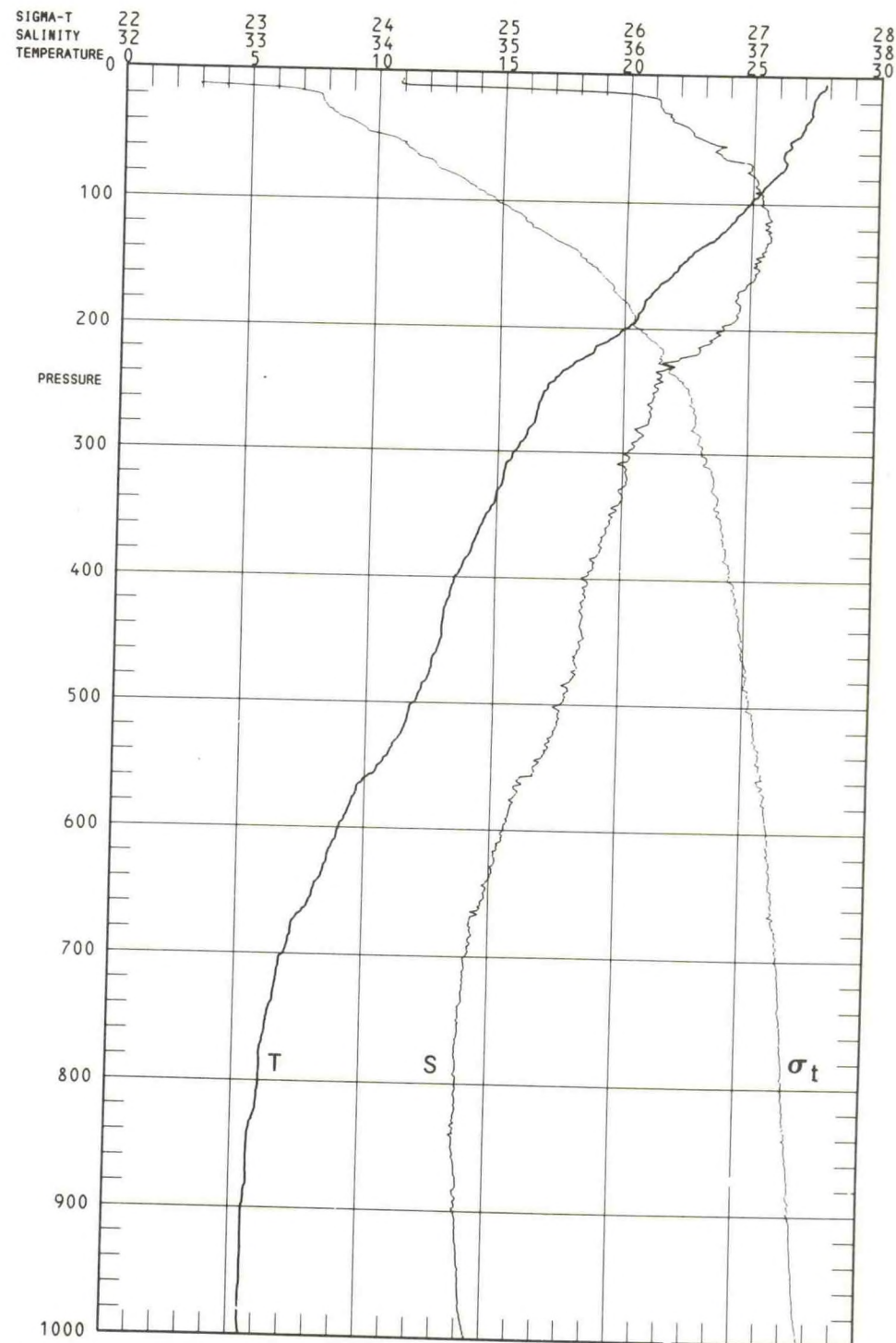


Oceanographer, June 24, 1969, 1514 GMT, 17°36'N 054°36'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

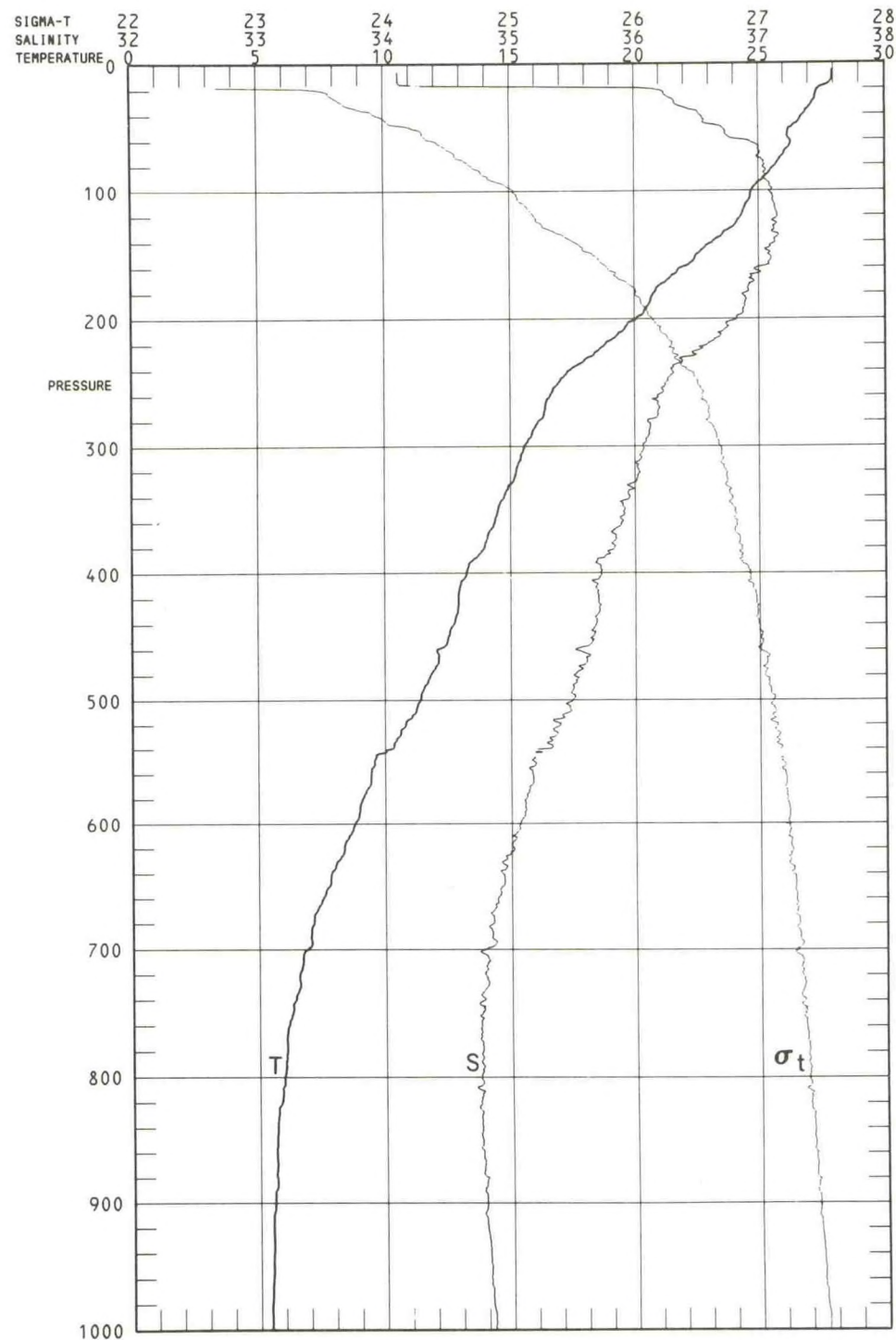
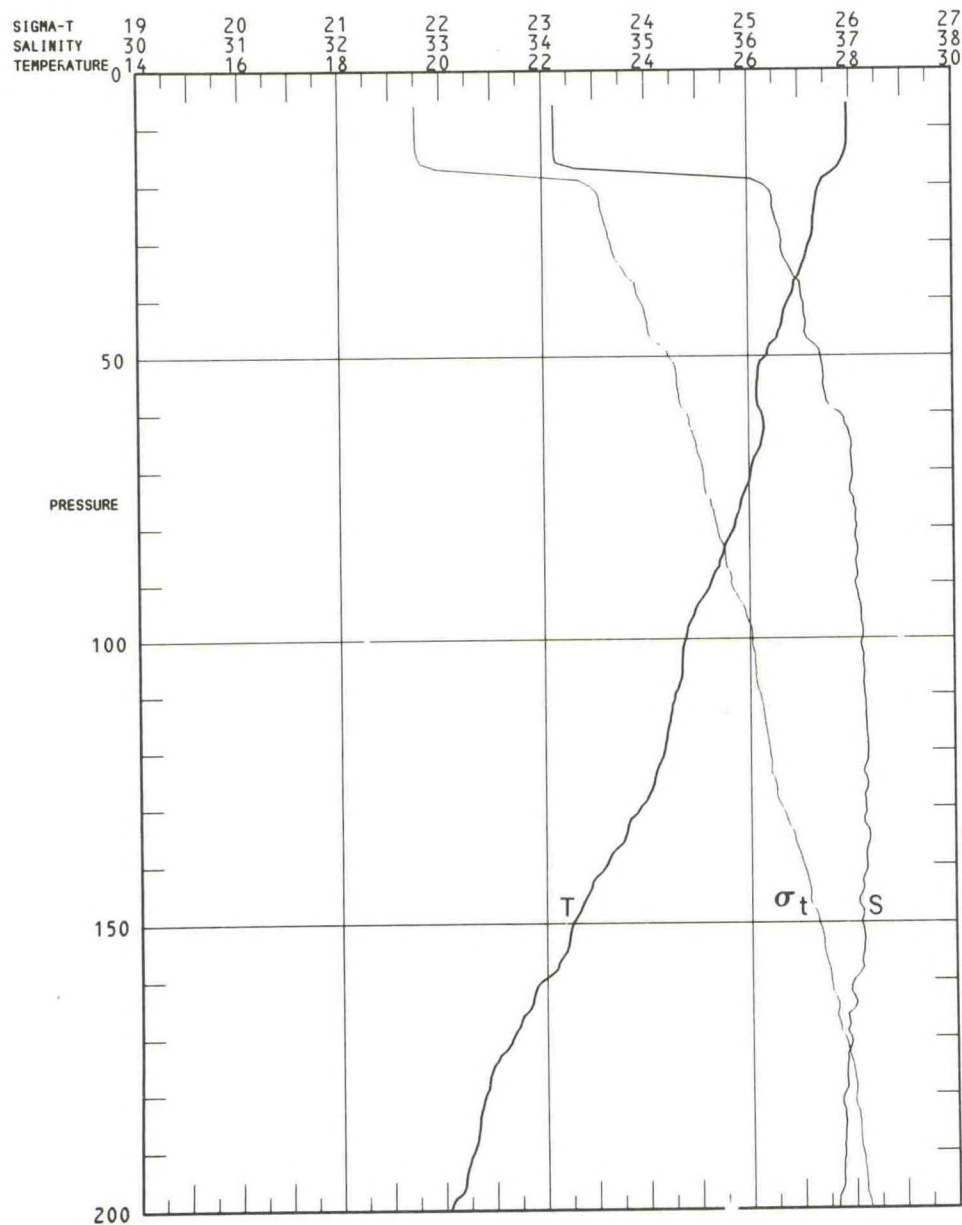


Oceanographer, June 24, 1969, 1800 GMT, 17°36'N 054°36'W

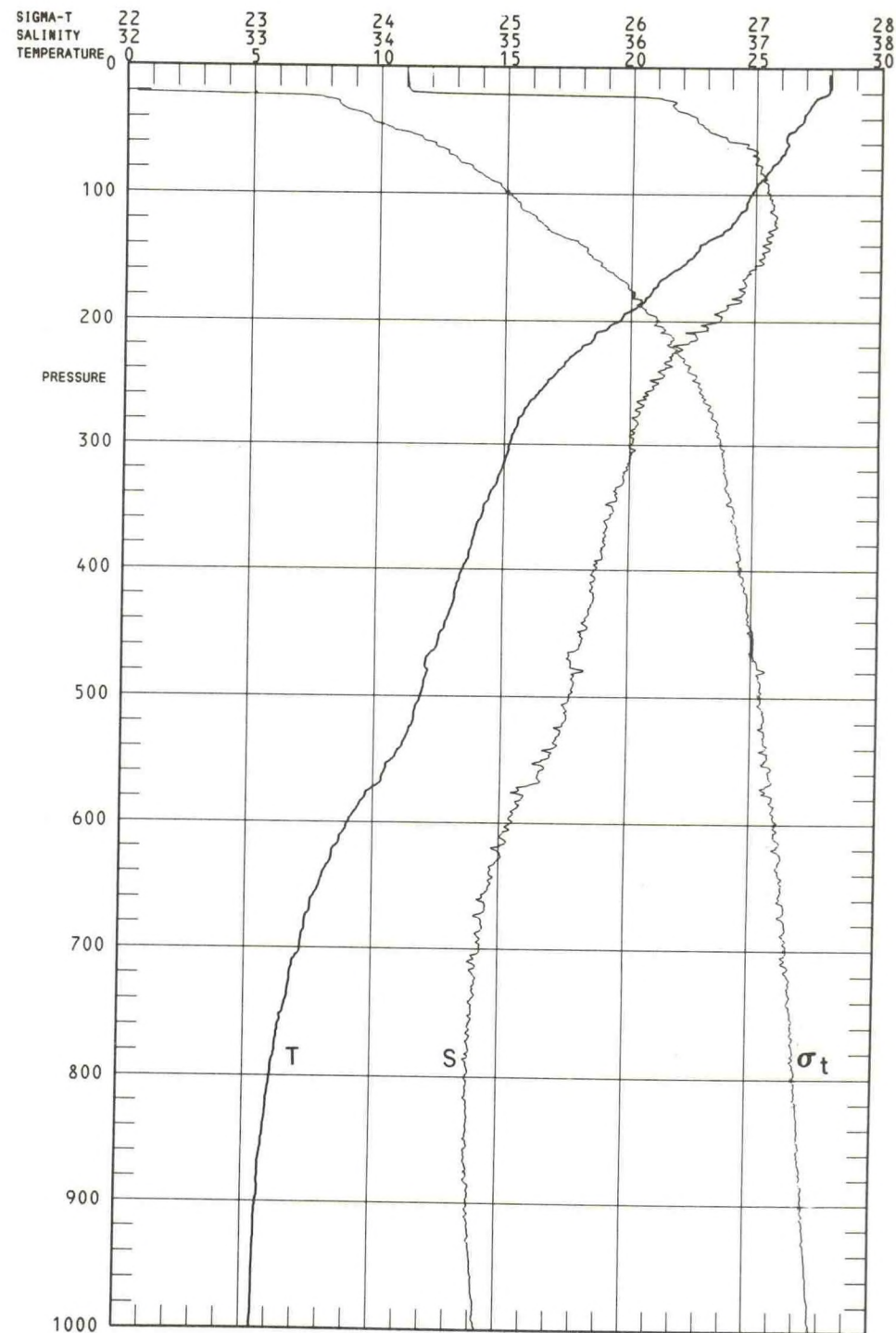
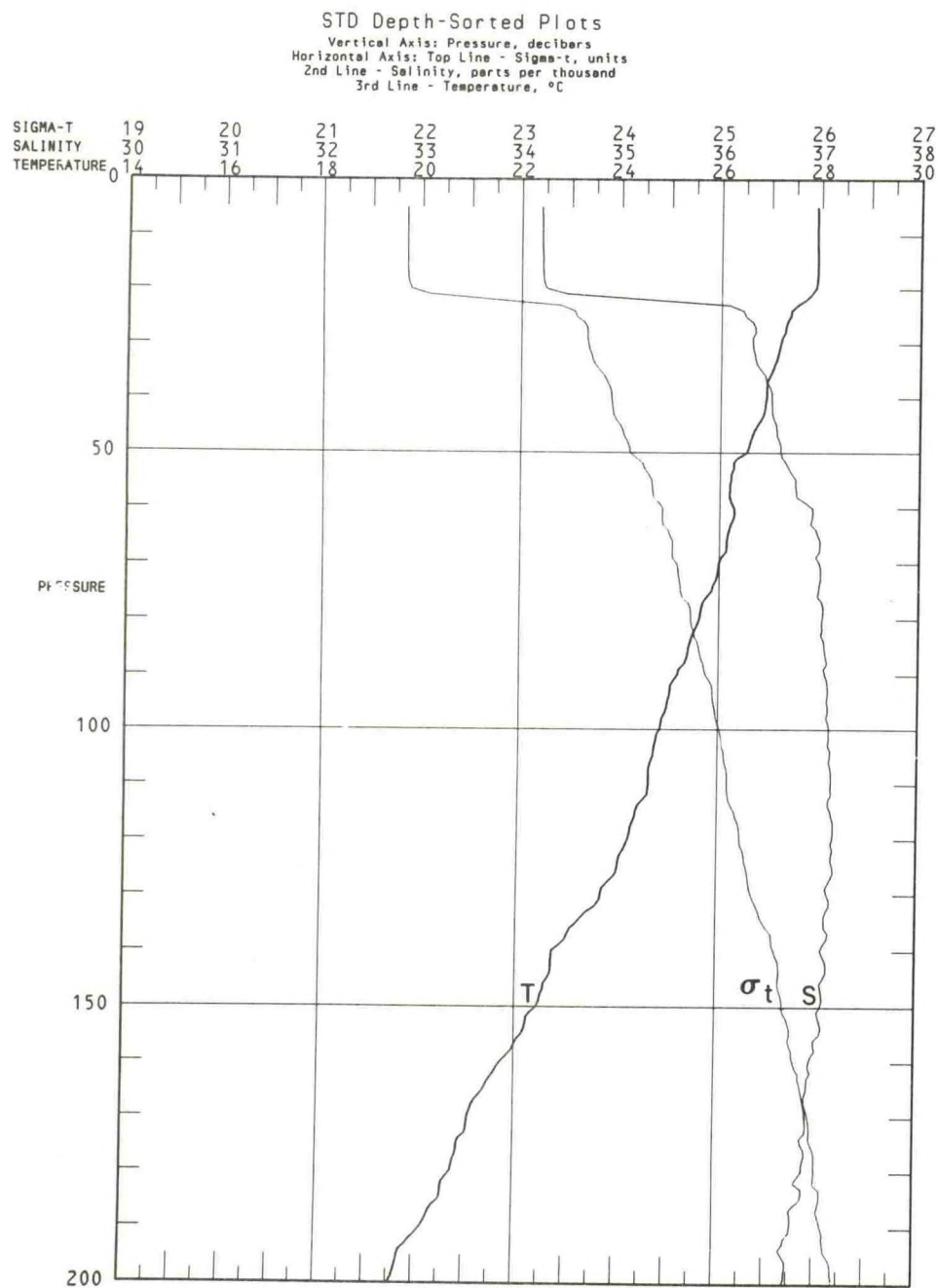




STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

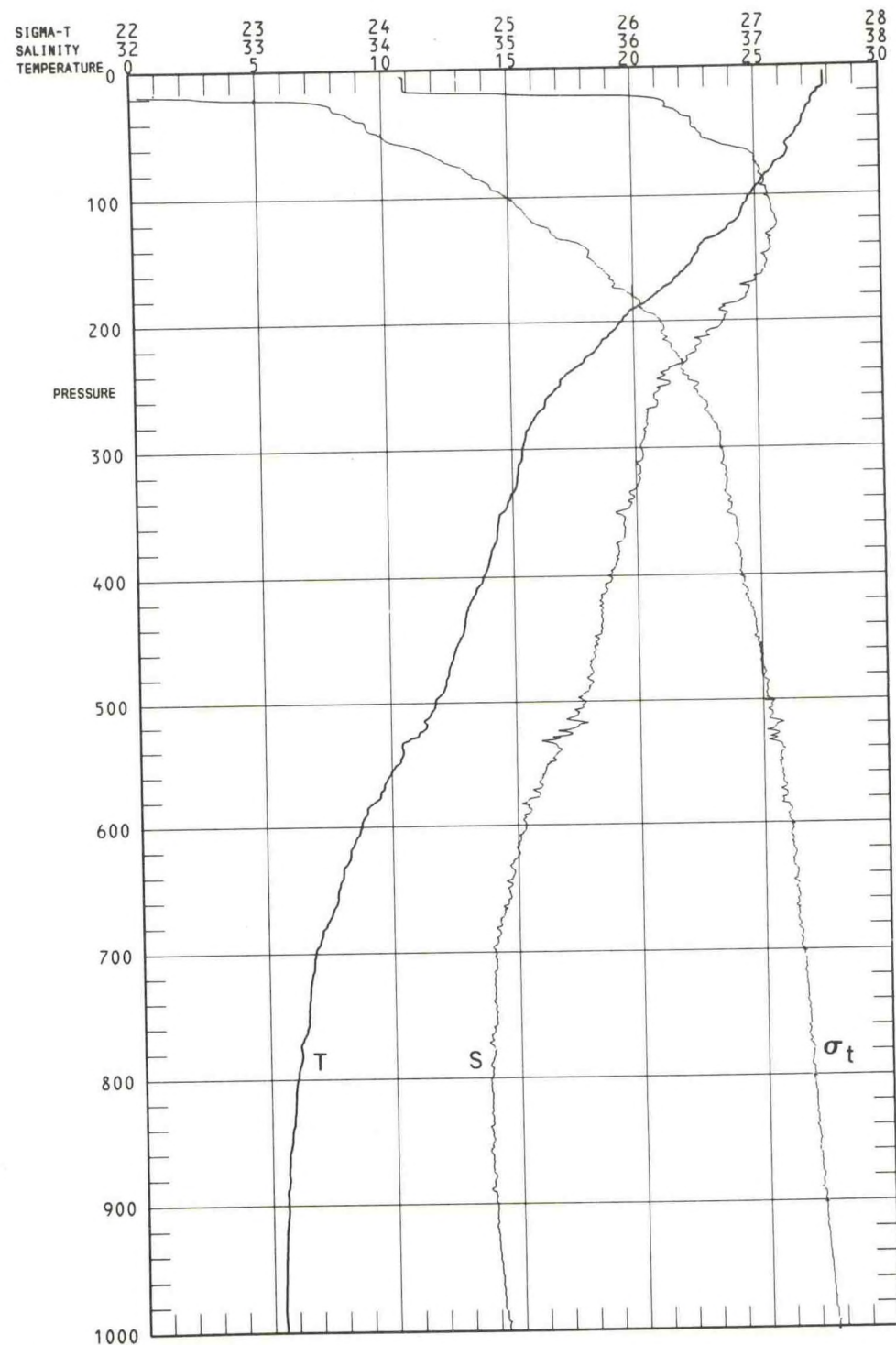
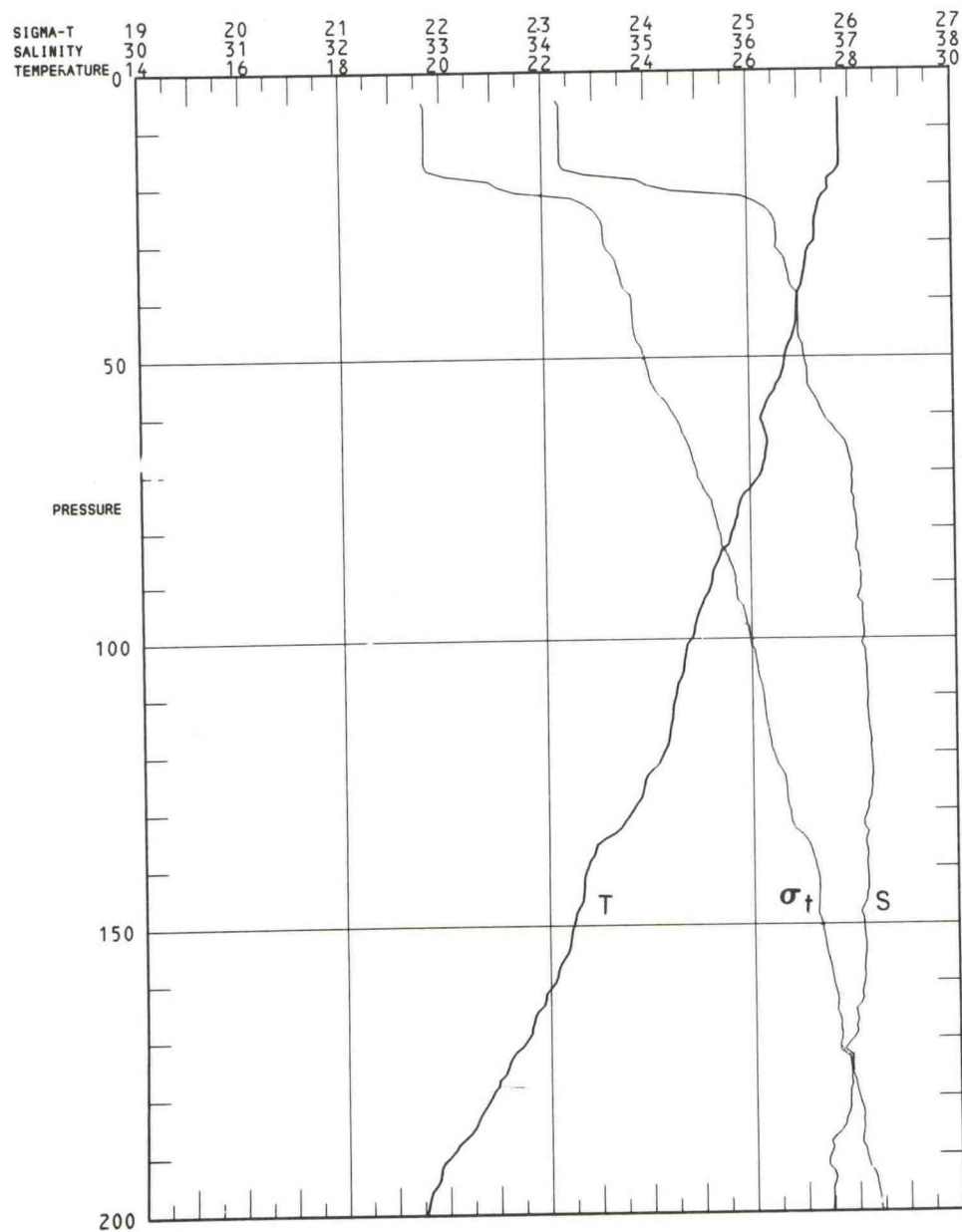


Oceanographer, June 24, 1969, 2106 GMT, 17°36'N 054°36'W



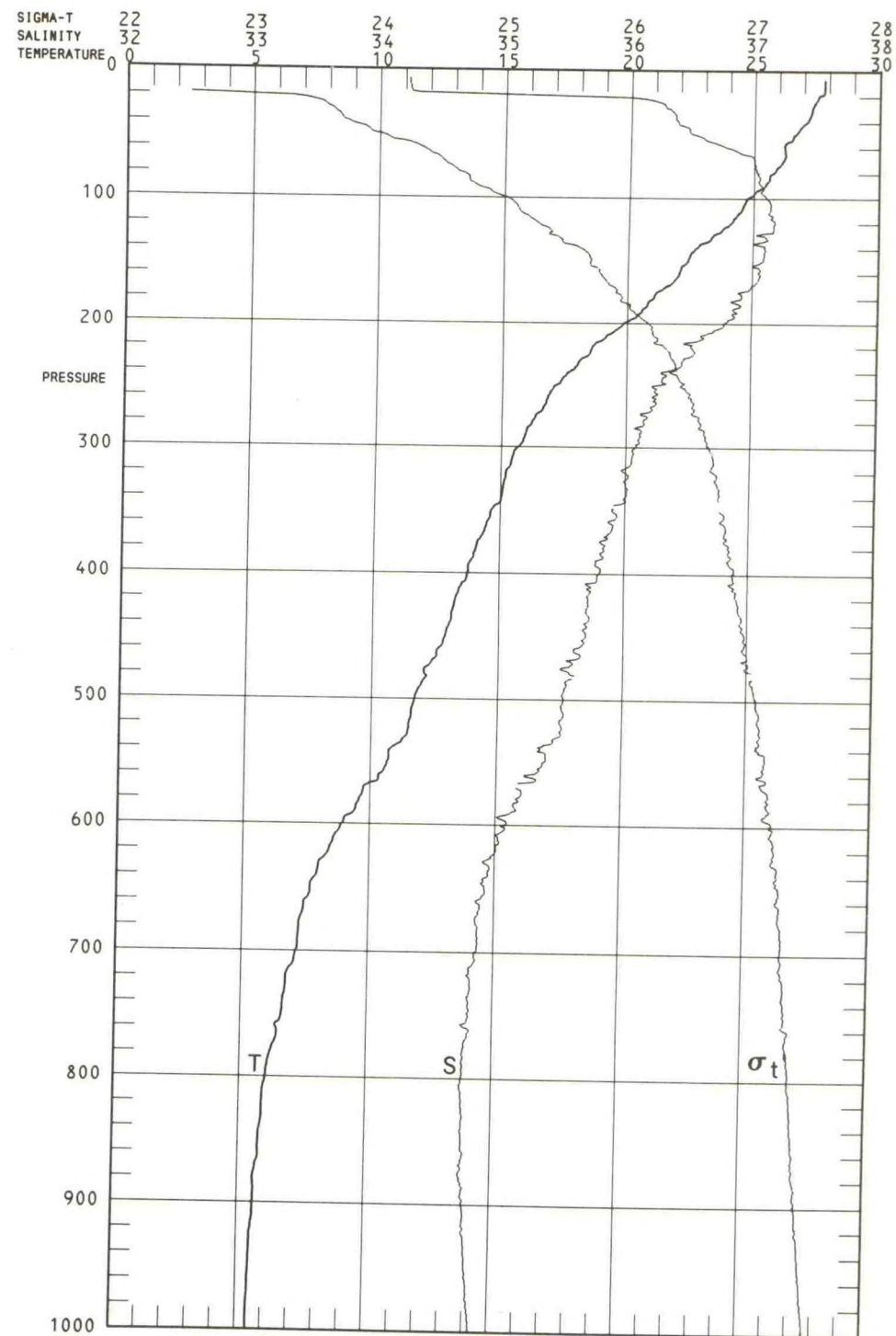
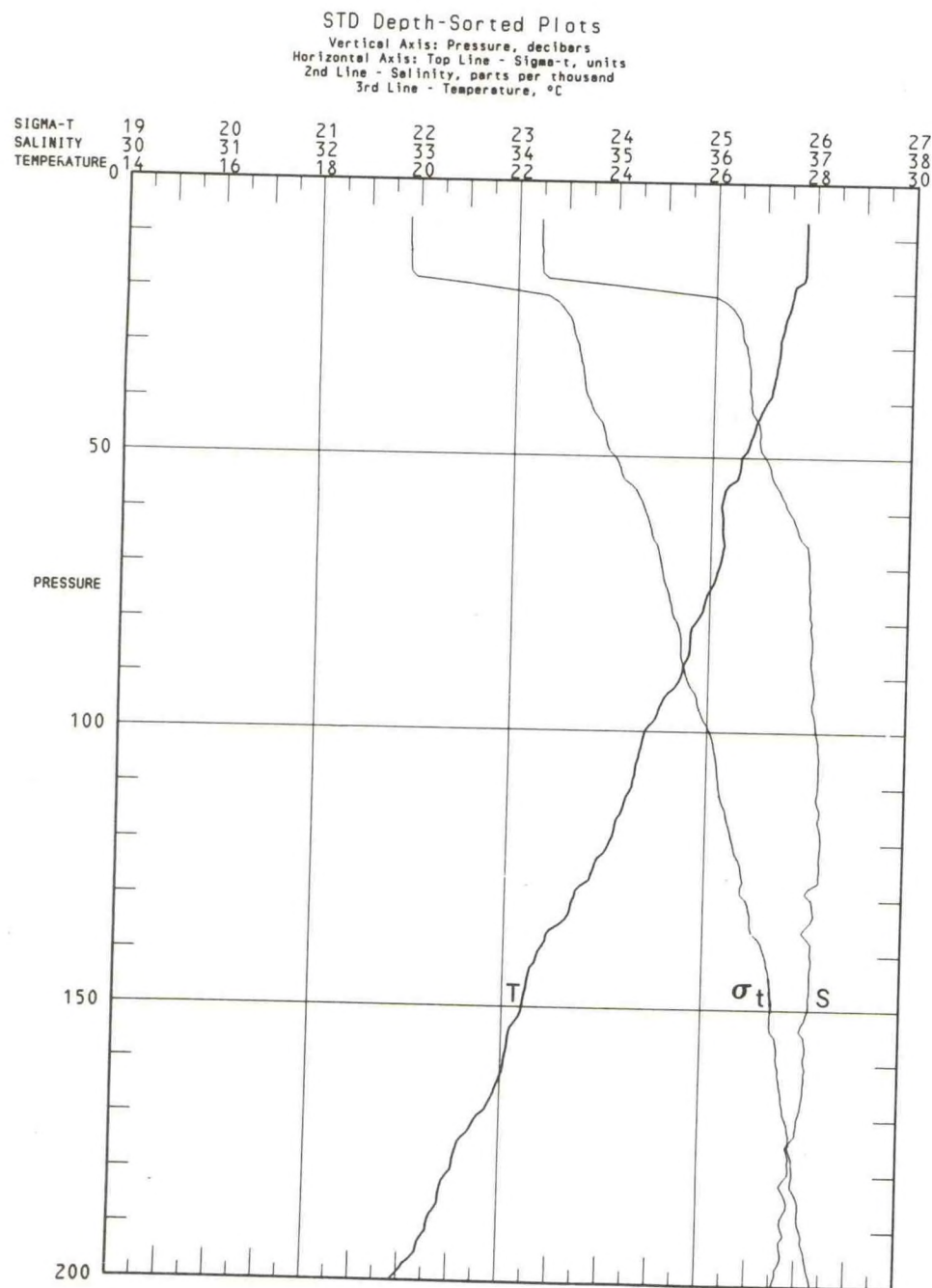
Oceanographer, June 25, 1969, 0053 GMT, 17°36'N 054°36'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



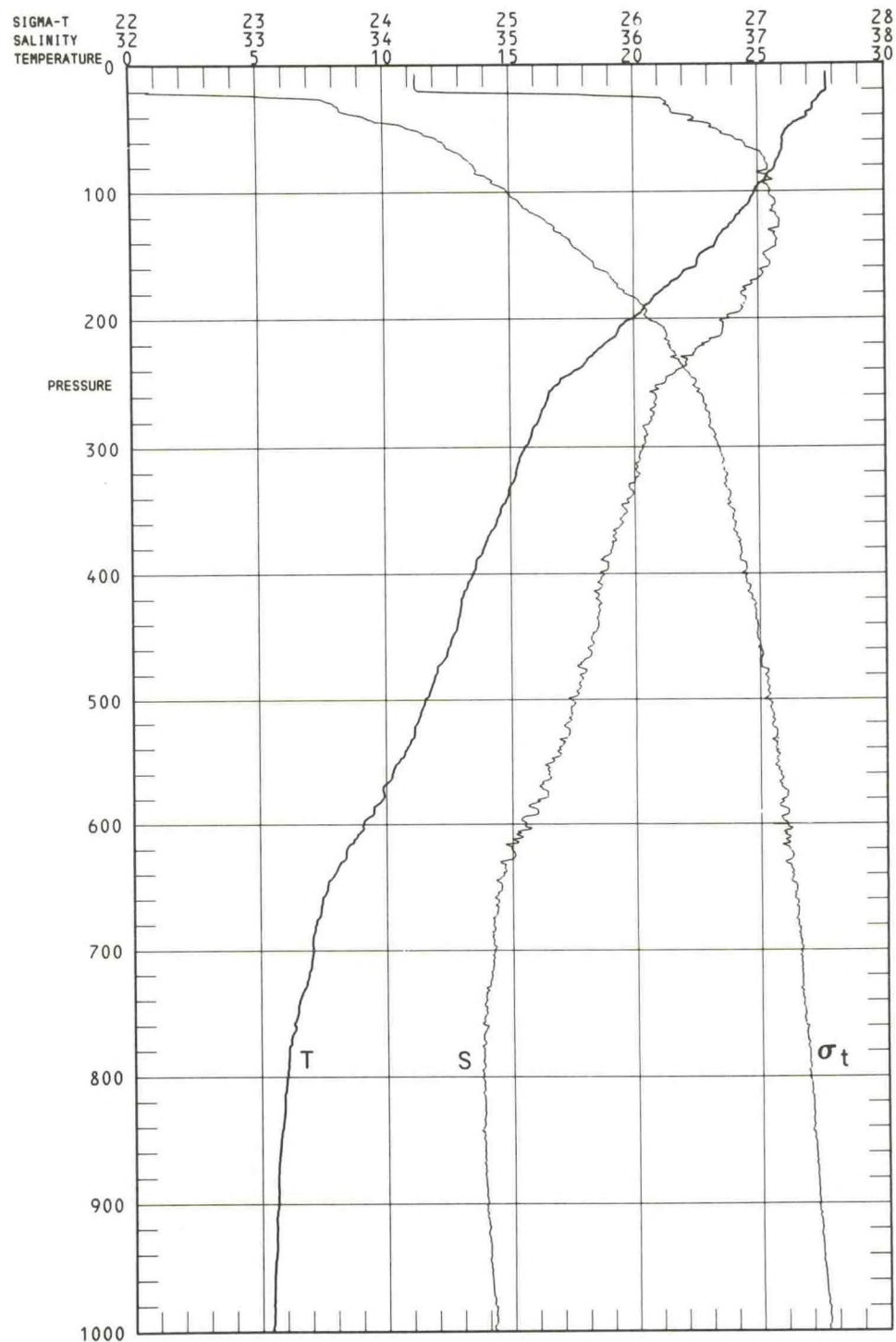
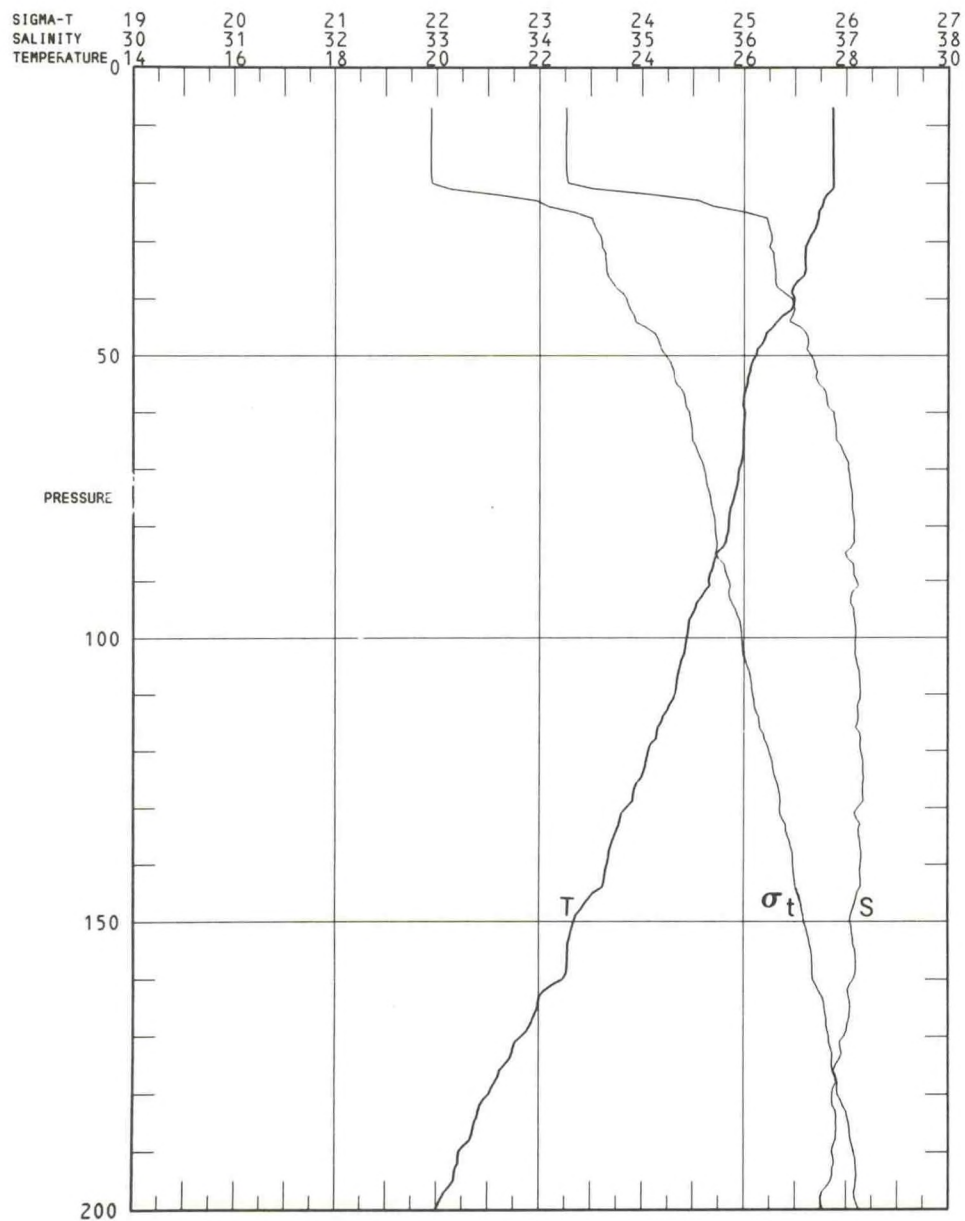
Oceanographer, June 25, 1969, 0309 GMT, 17°36'N 054°36'W





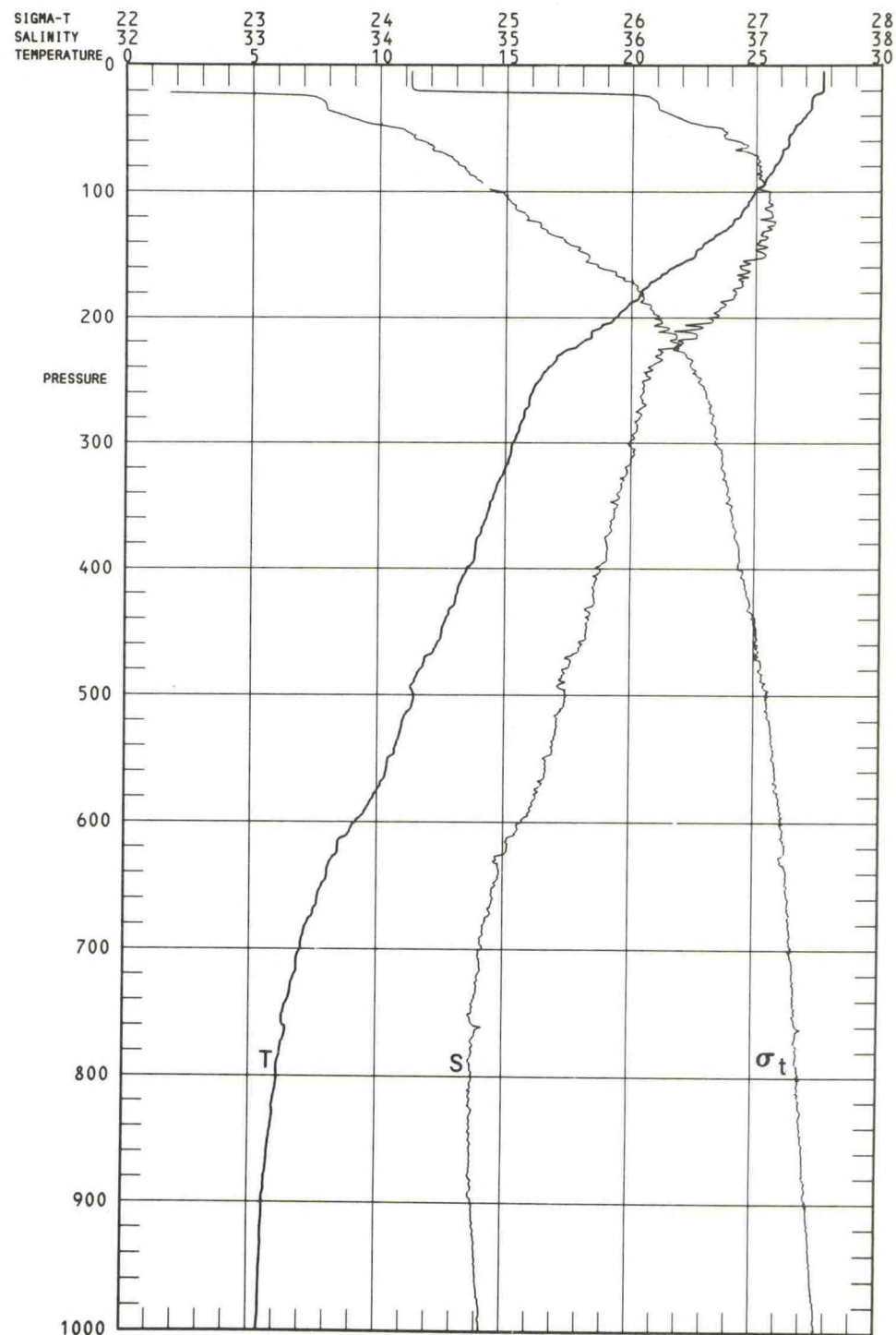
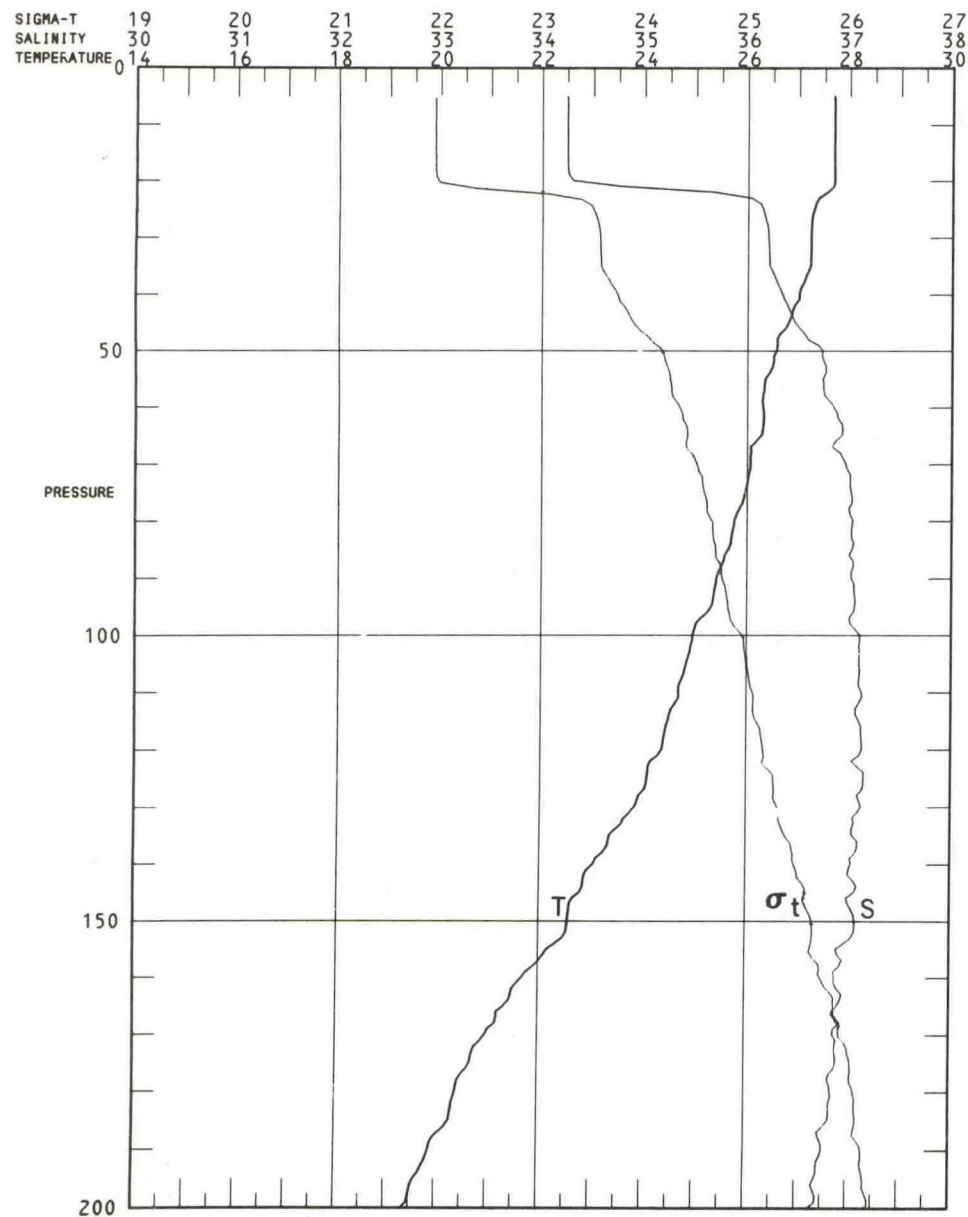
Oceanographer, June 25, 1969, 0600 GMT, 17°36'N 054°36'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 25, 1969, 0901 GMT, 17°36'N 054°34'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

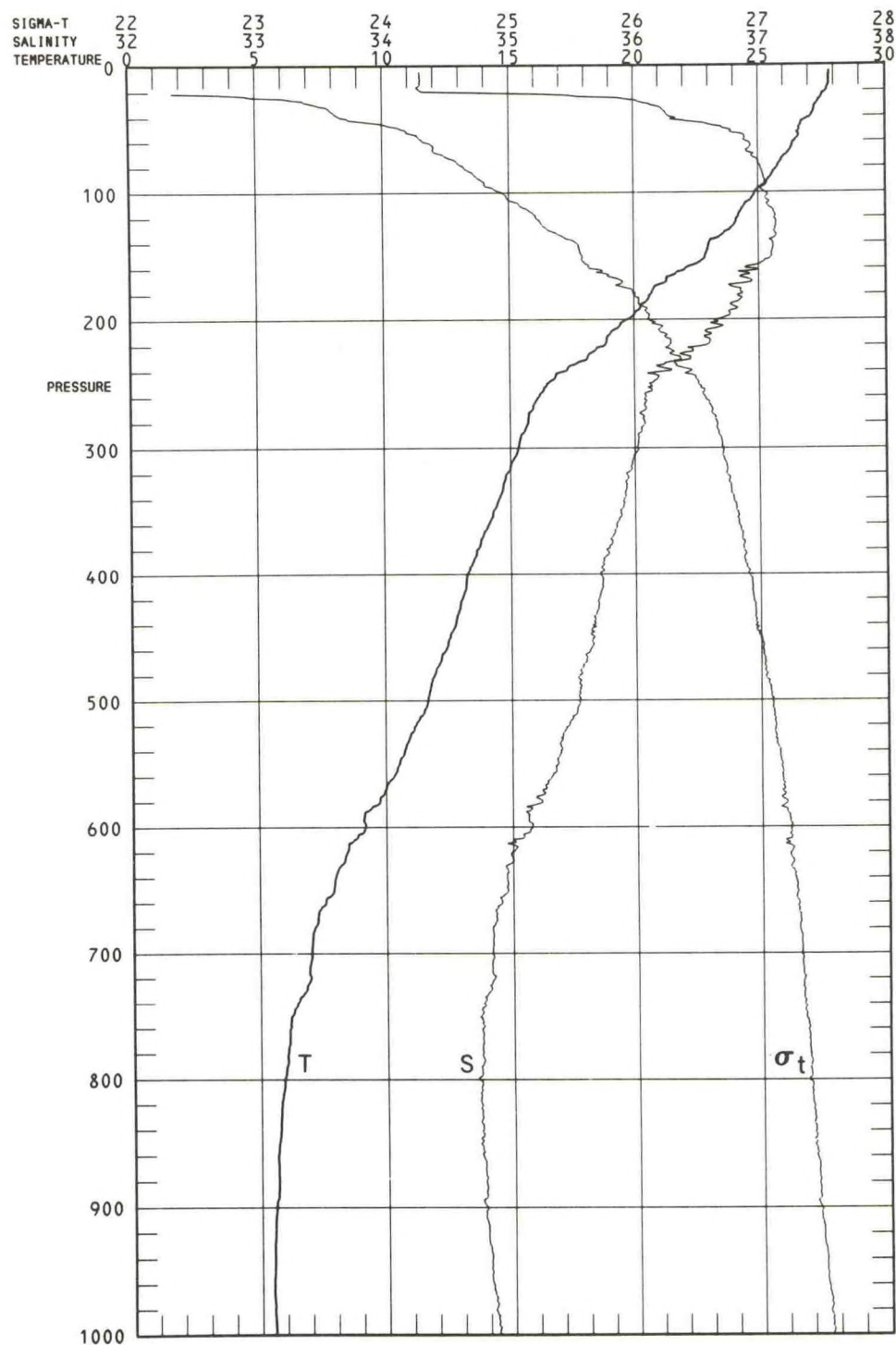
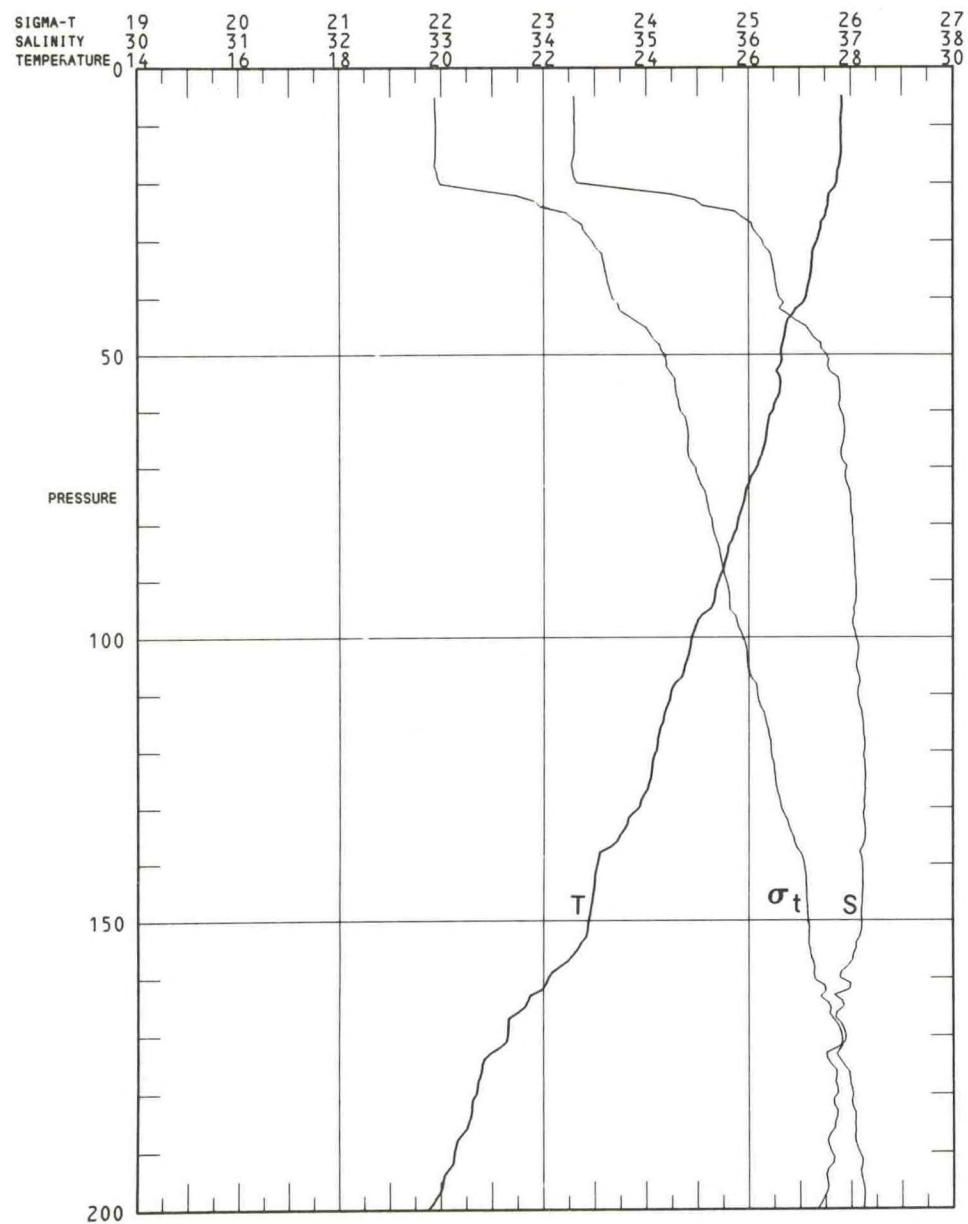


Oceanographer, June 25, 1969, 1154 GMT, 17°36'N 054°34'W



# STD Depth-Sorted Plots

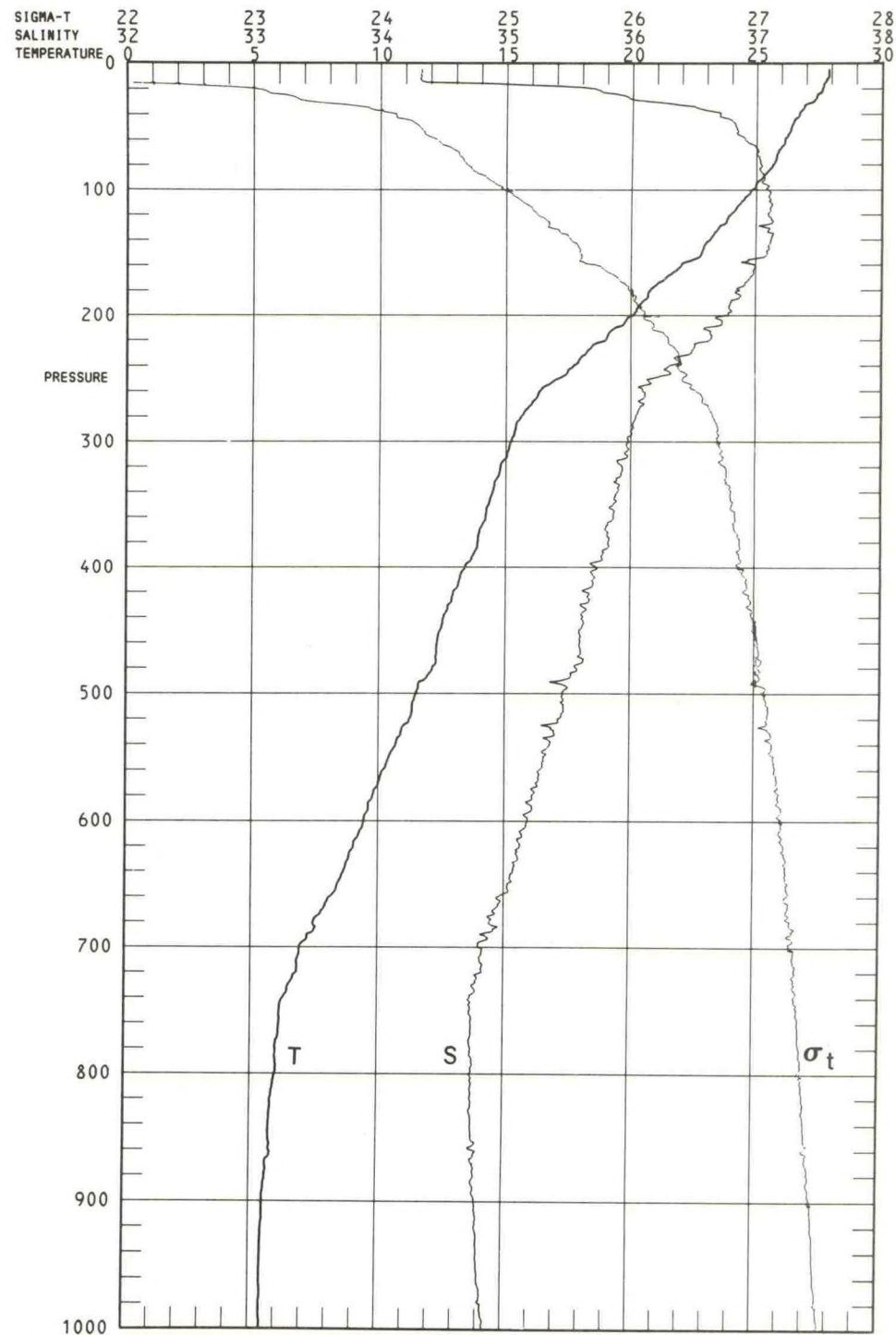
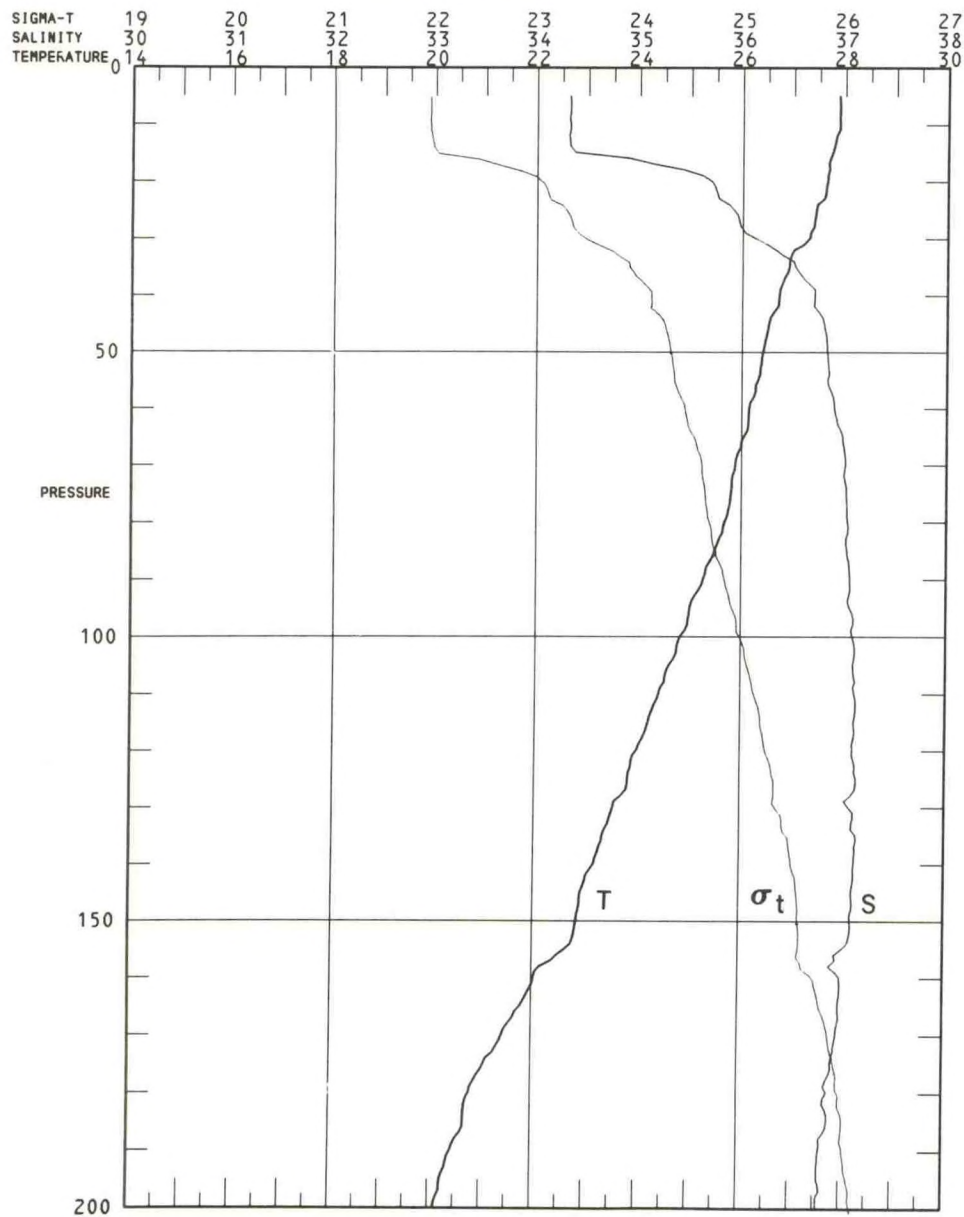
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 25, 1969, 1508 GMT, 17°36'N 054°34'W

# STD Depth-Sorted Plots

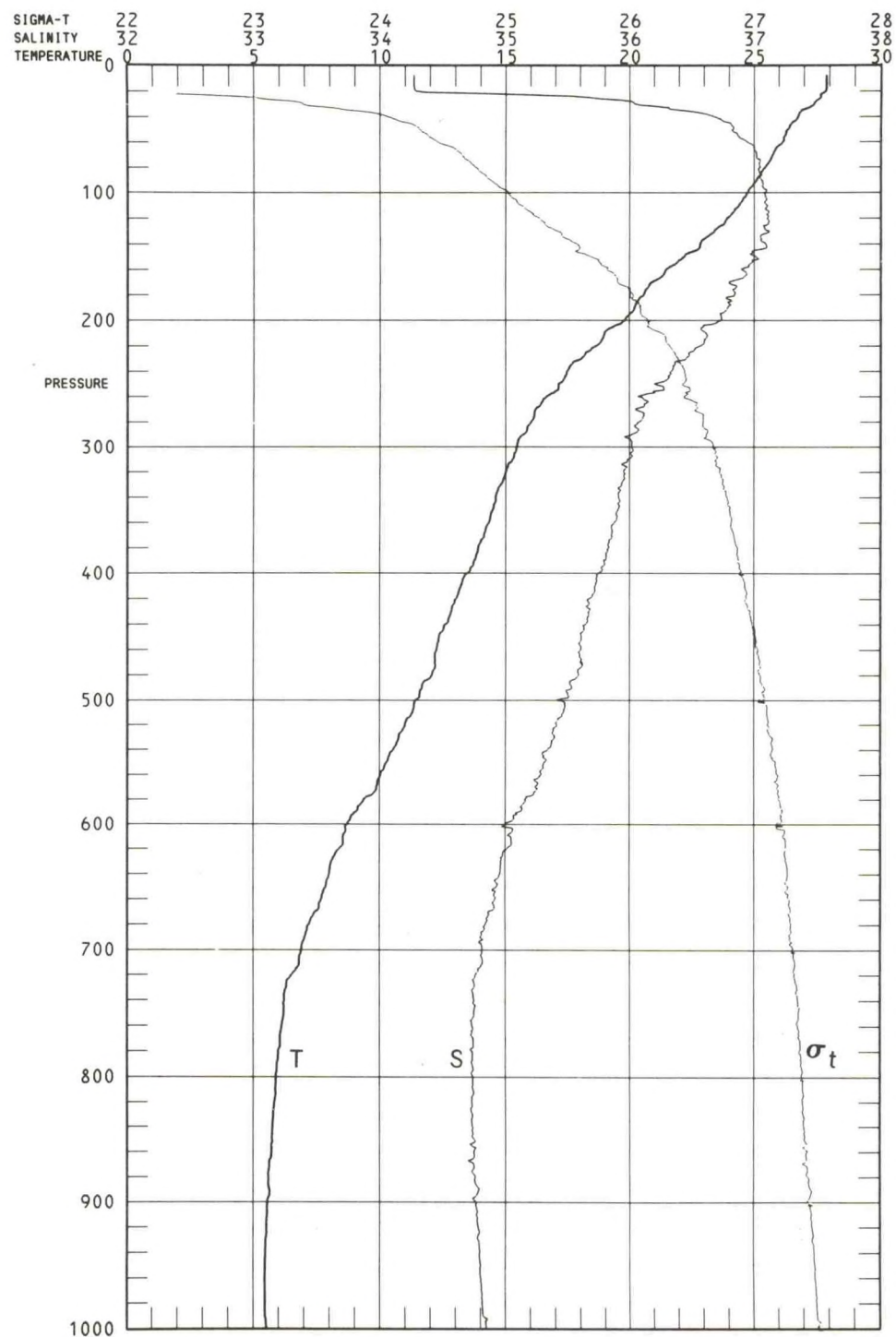
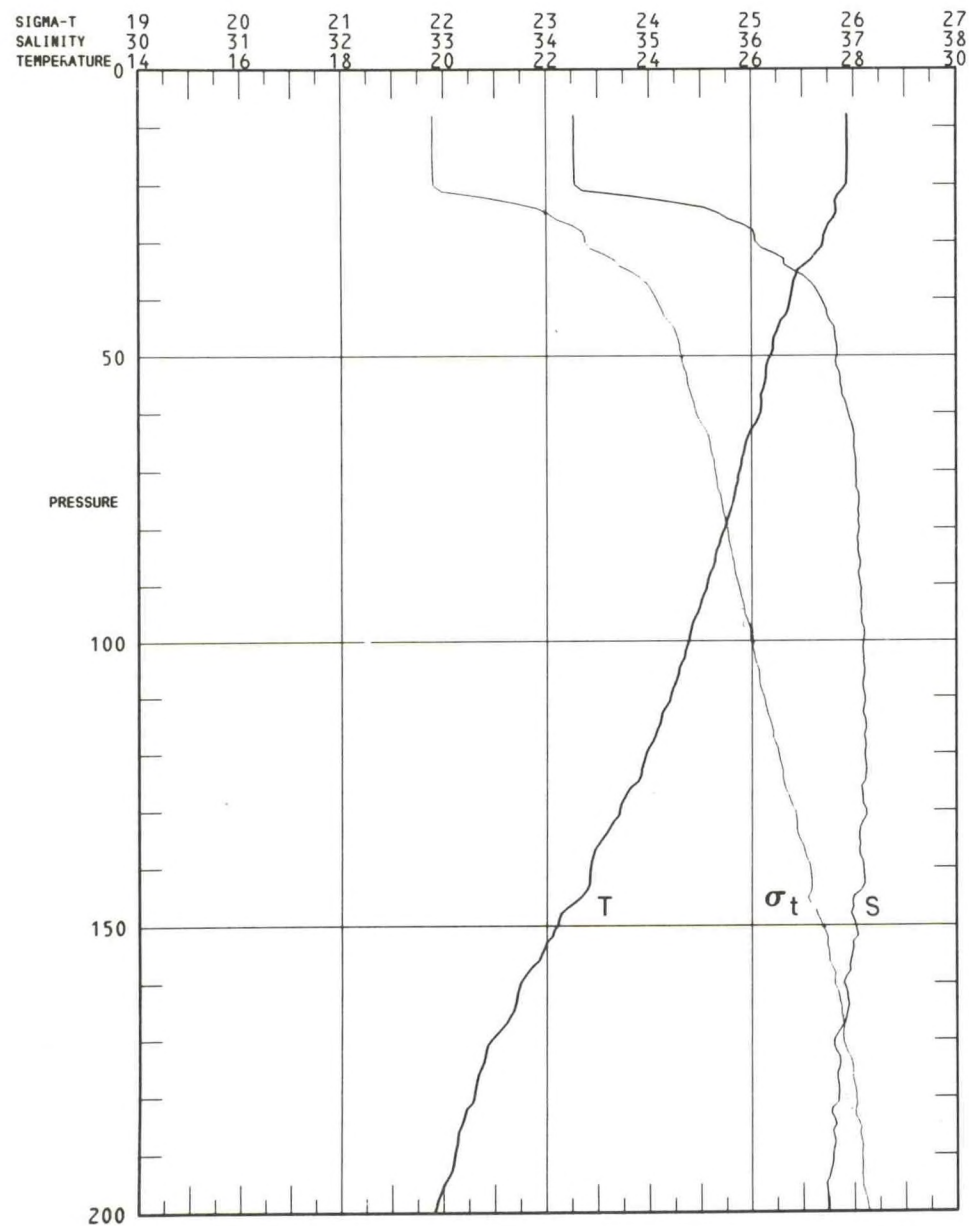
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 25, 1969, 1801 GMT, 17°36'N 054°34'W

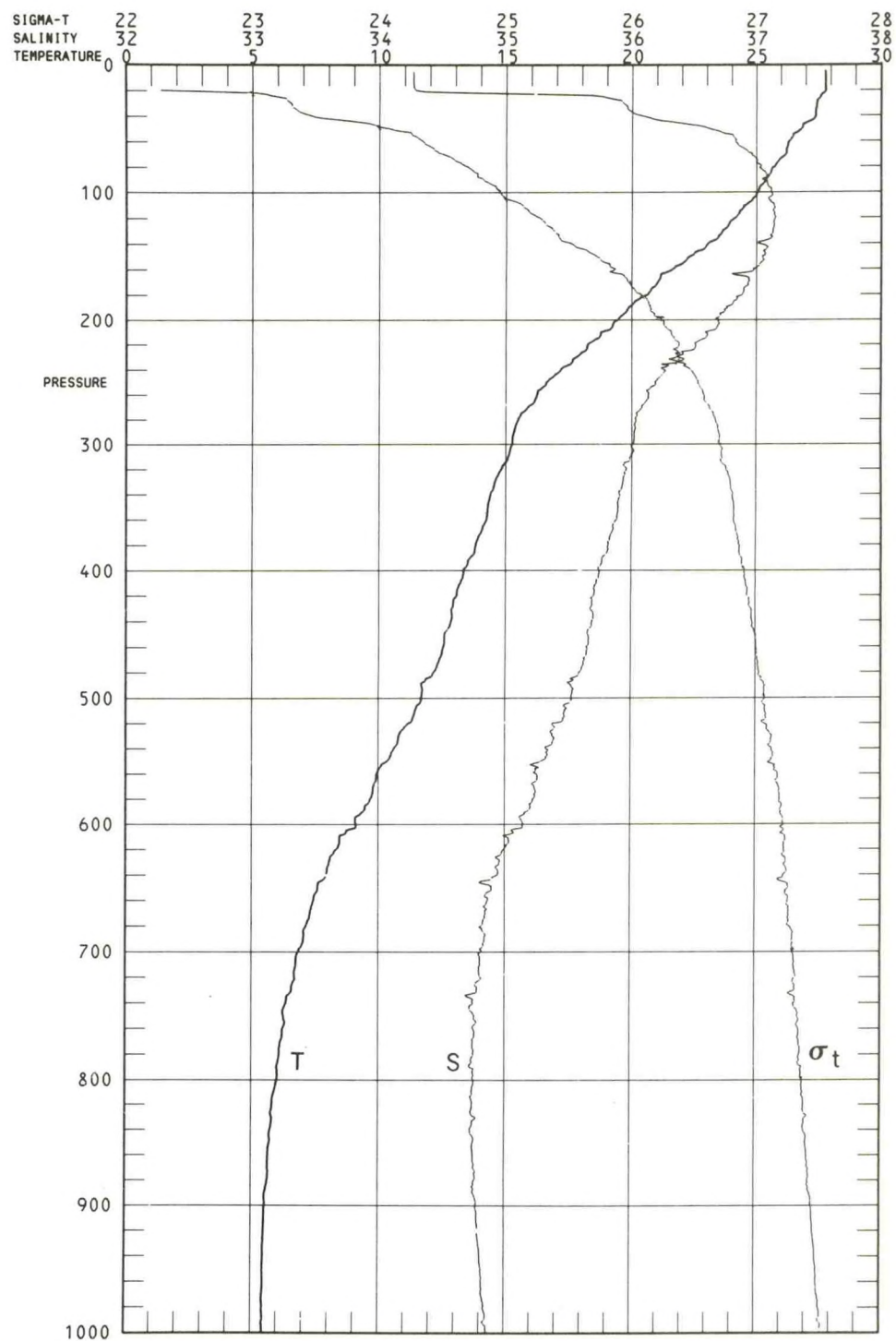
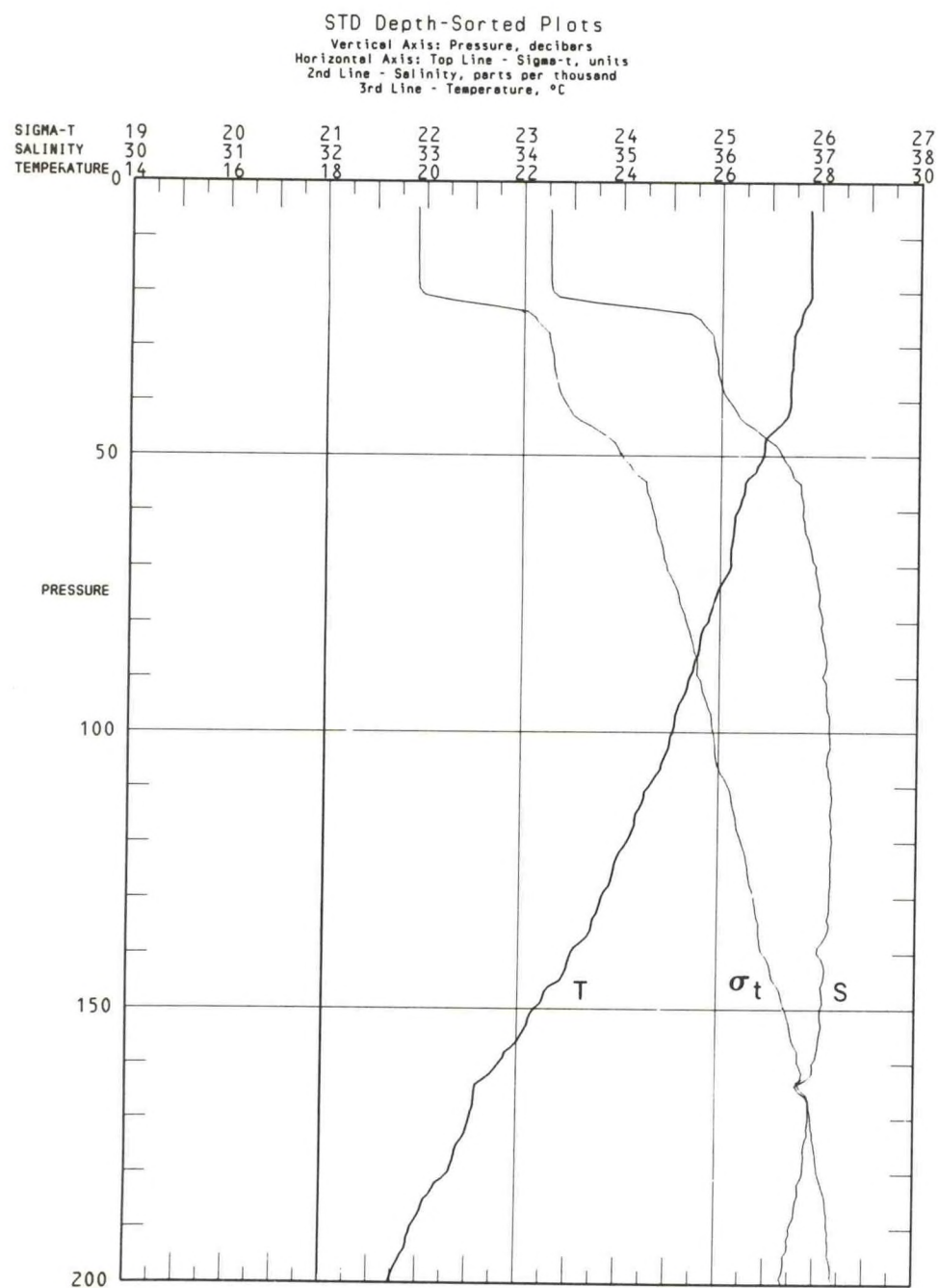
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



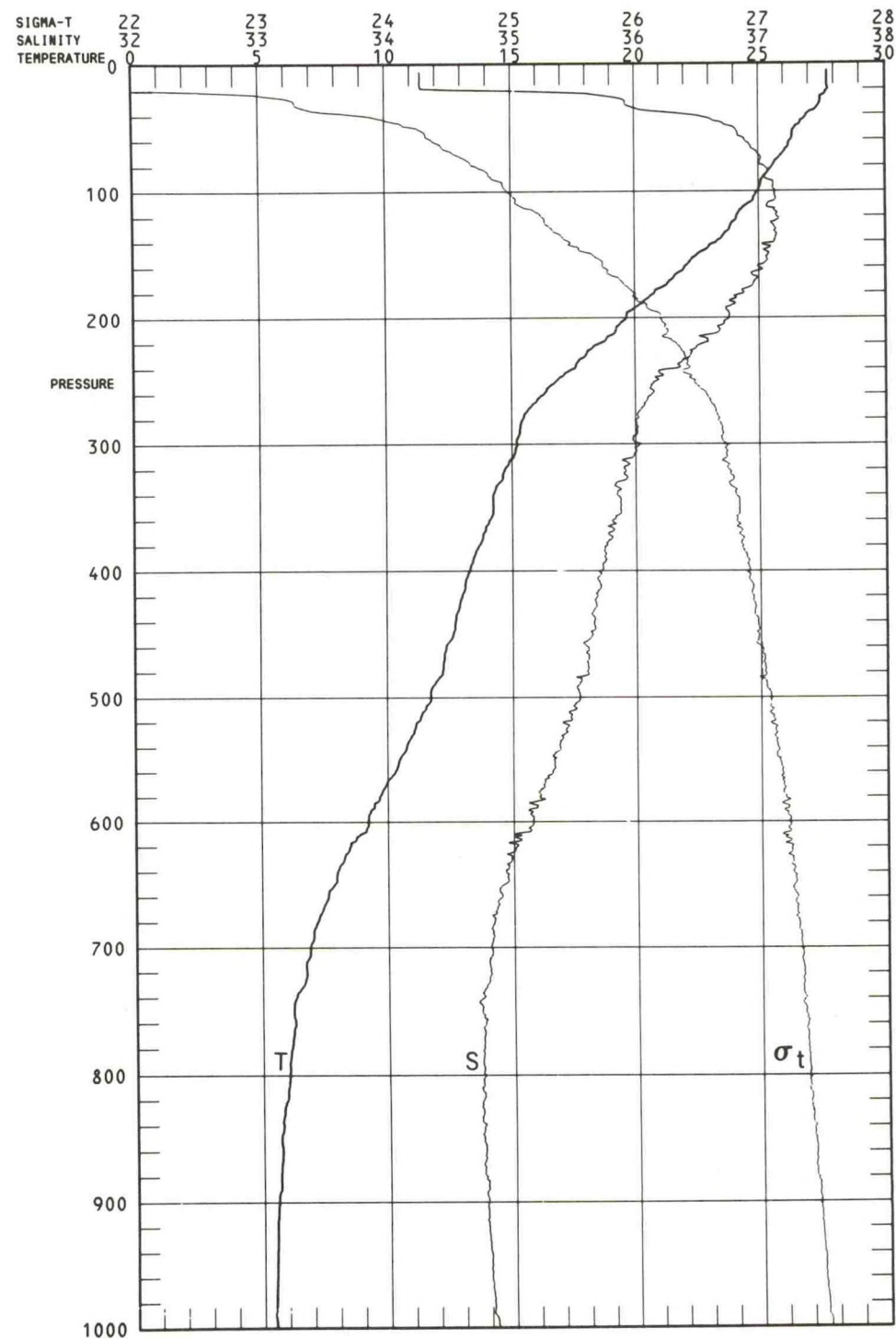
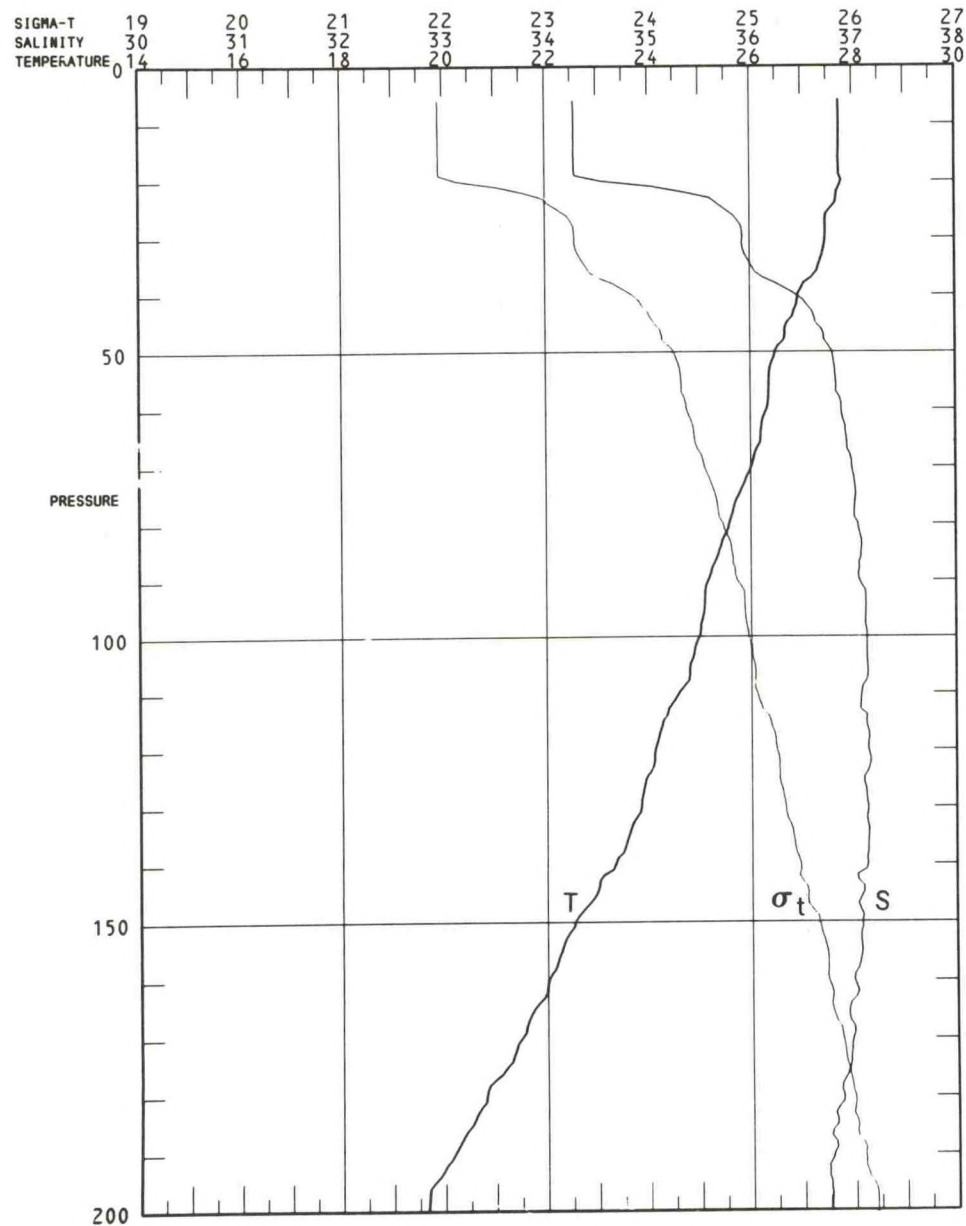
Oceanographer, June 25, 1969, 2110 GMT, 17°36'N 054°34'W





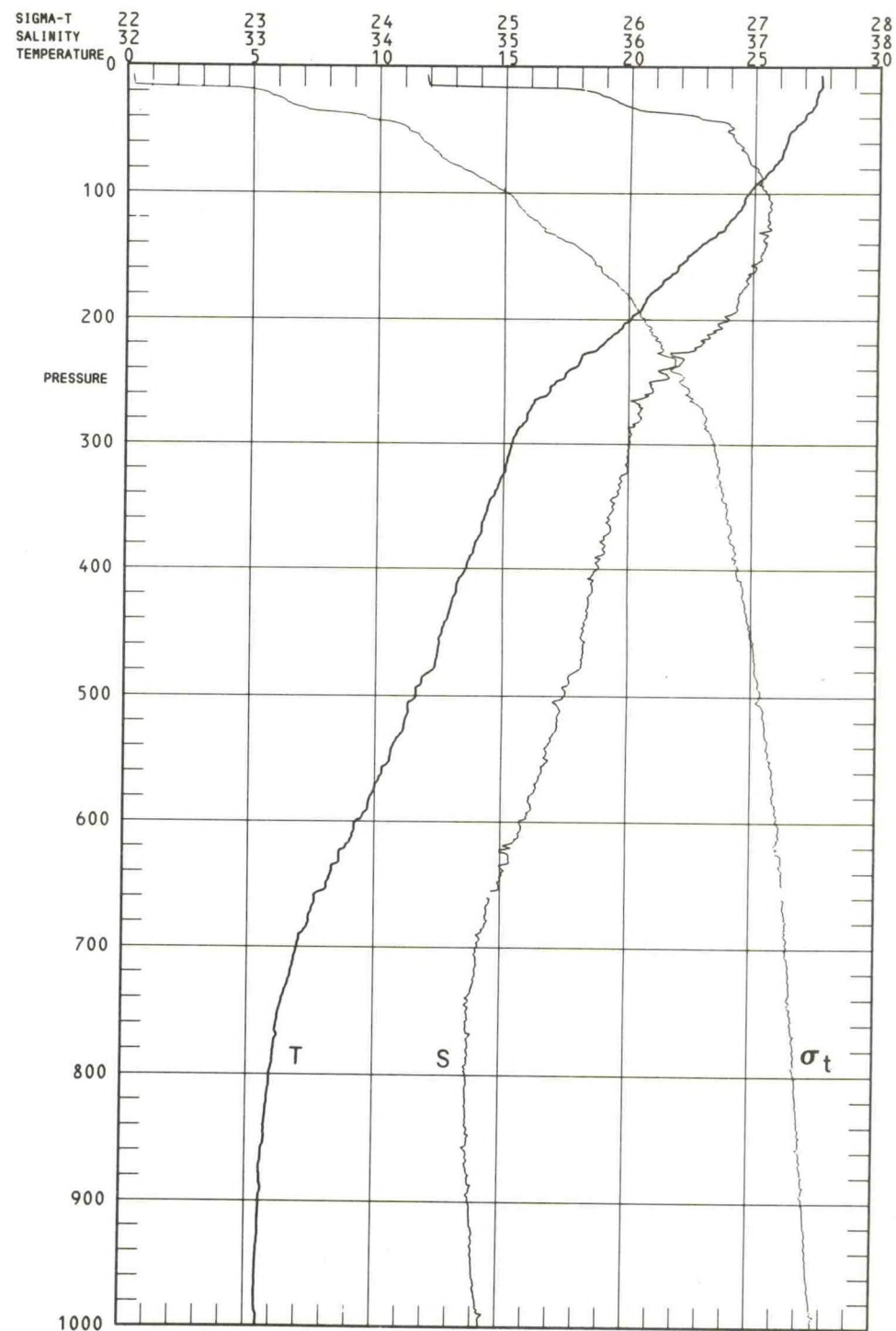
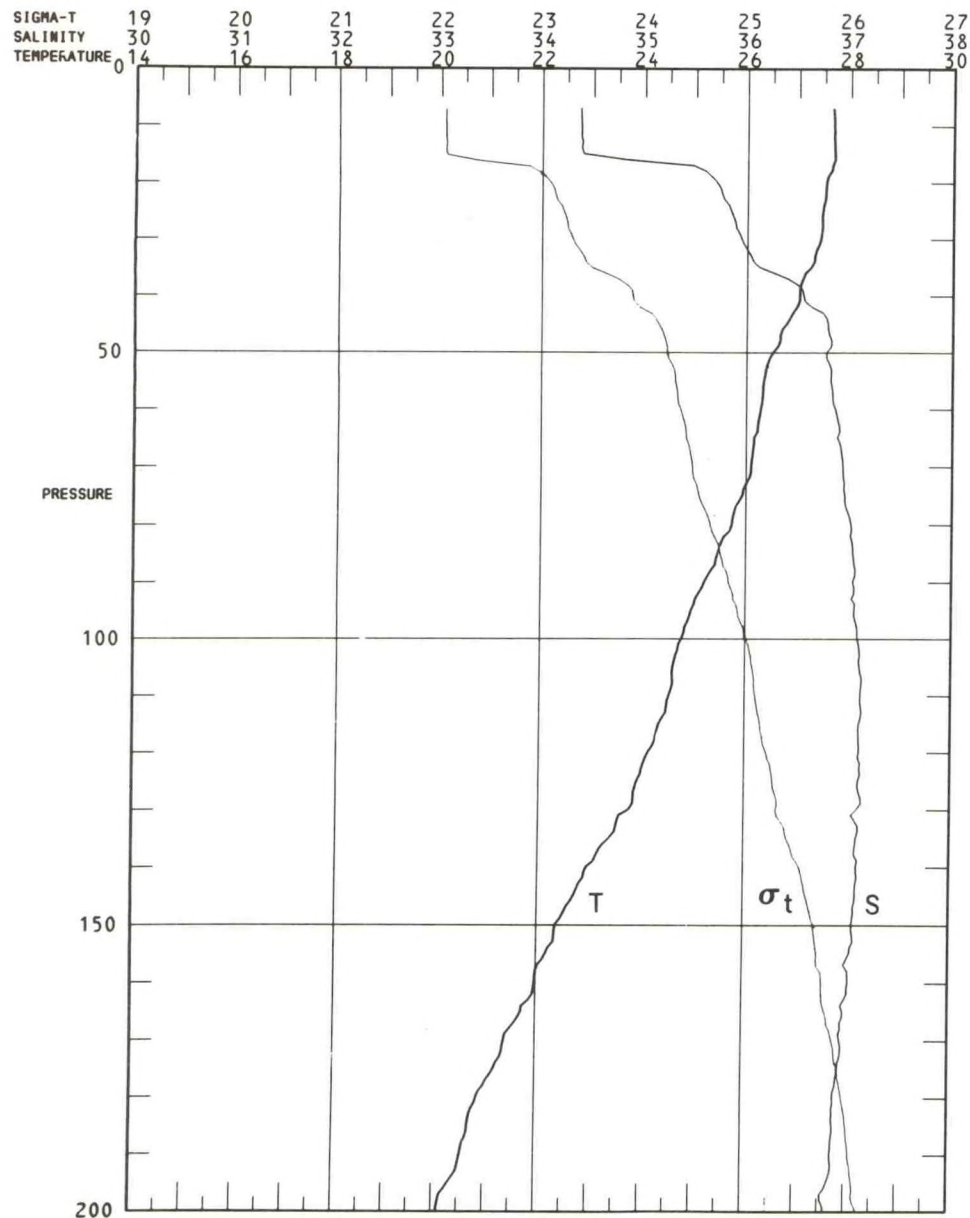
Oceanographer, June 26, 1969, 0055 GMT, 17°36'N 054°34'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 26, 1969, 0308 GMT, 17°36'N 054°34'W

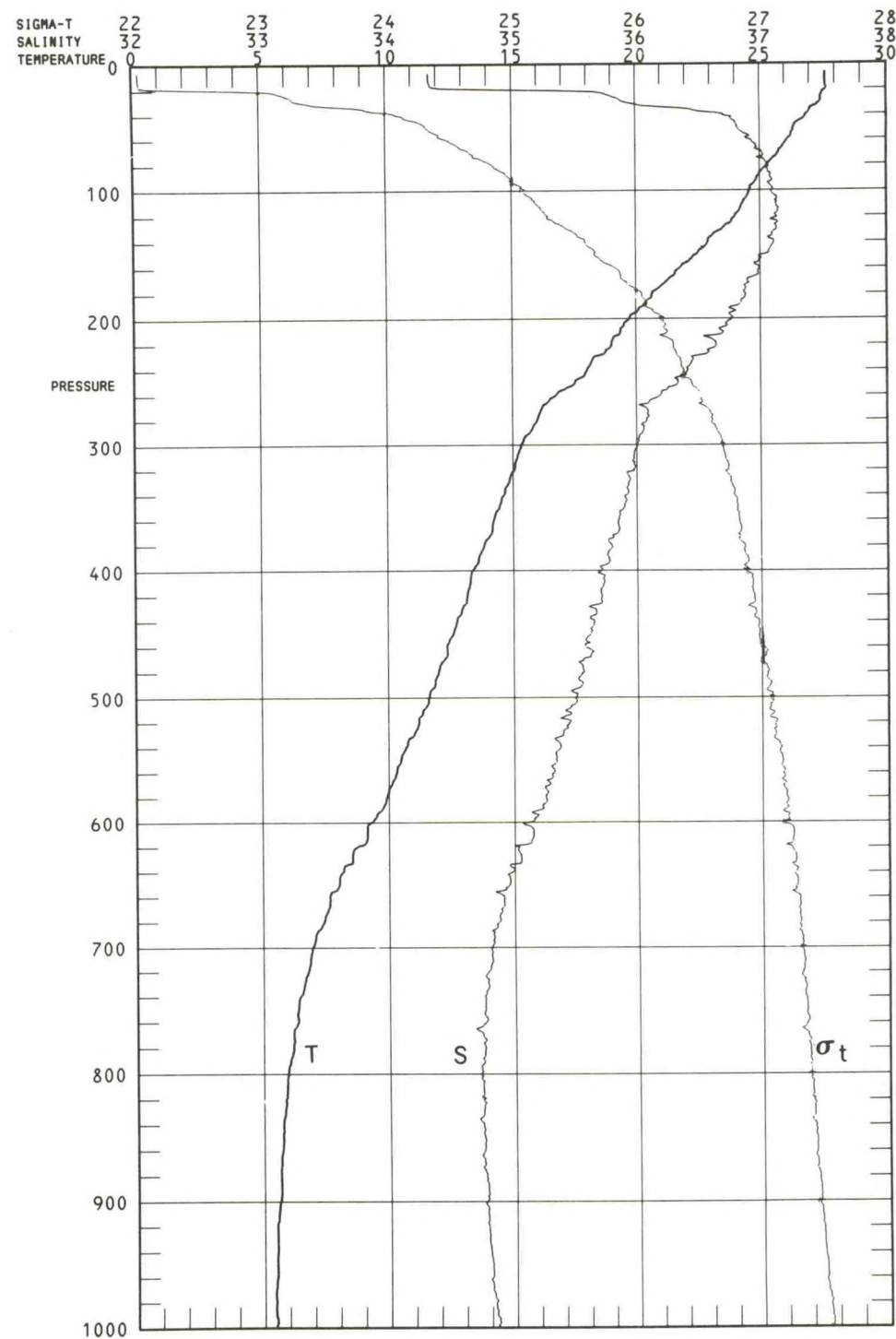
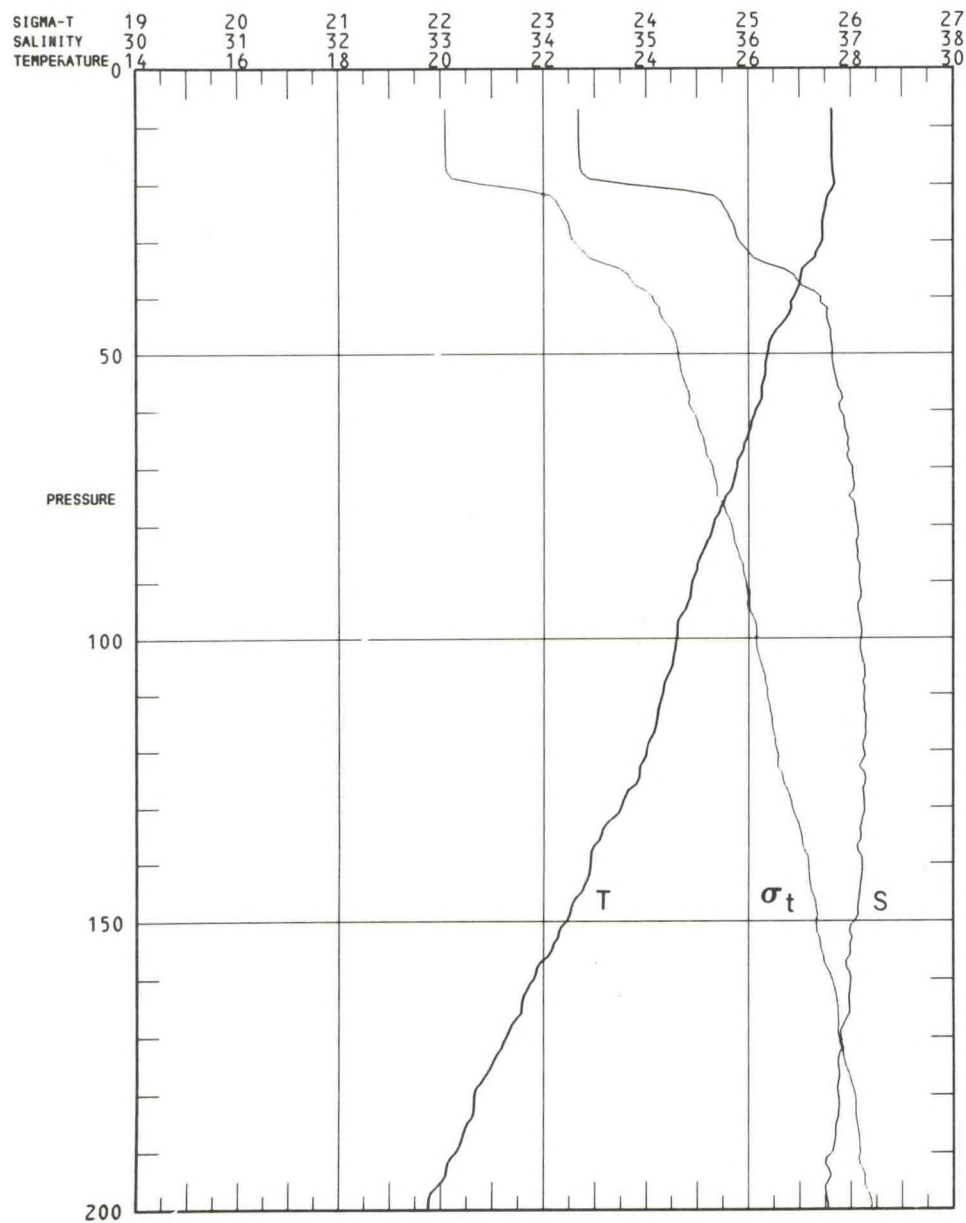
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 26, 1969, 0558 GMT, 17°36'N 054°34'W

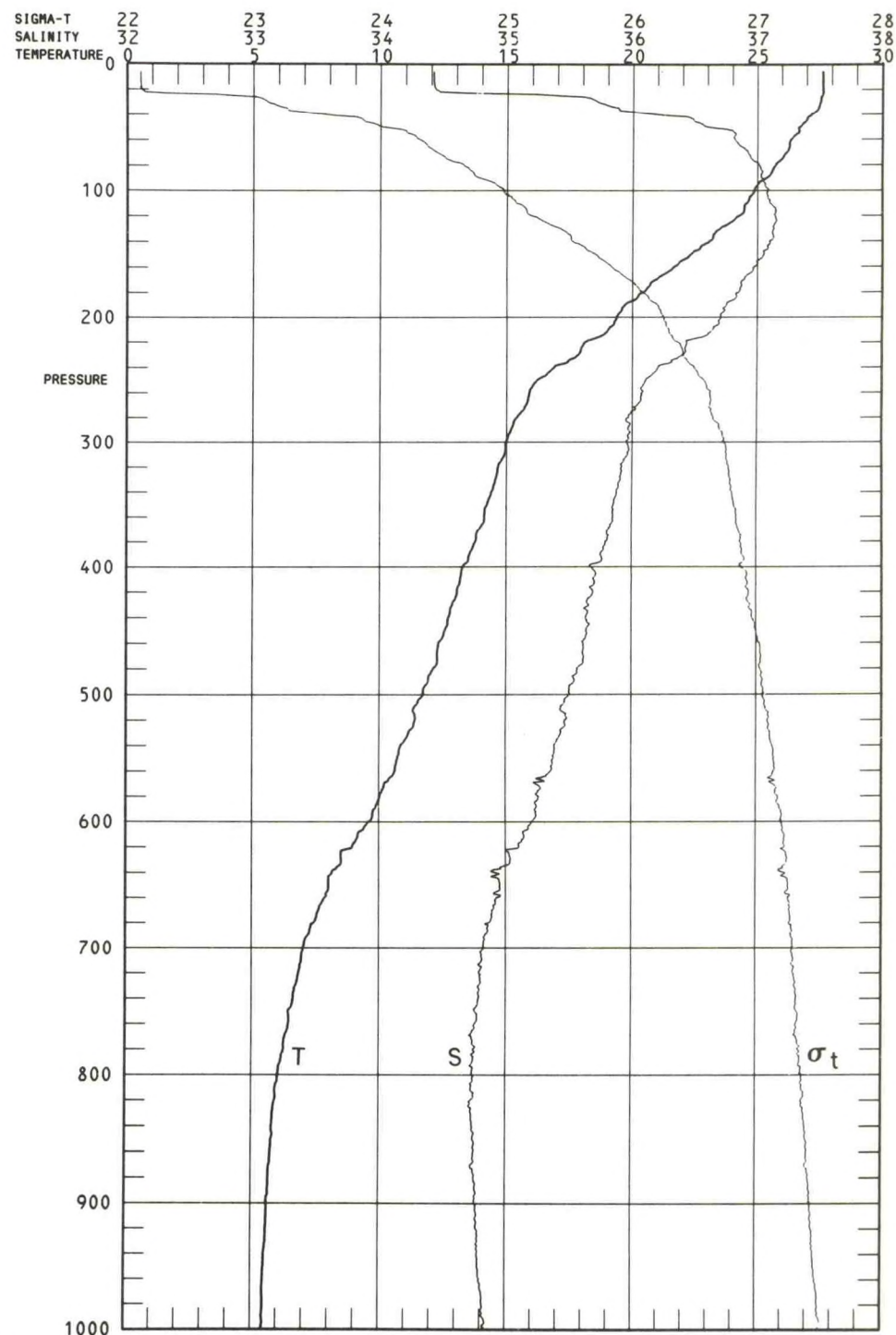
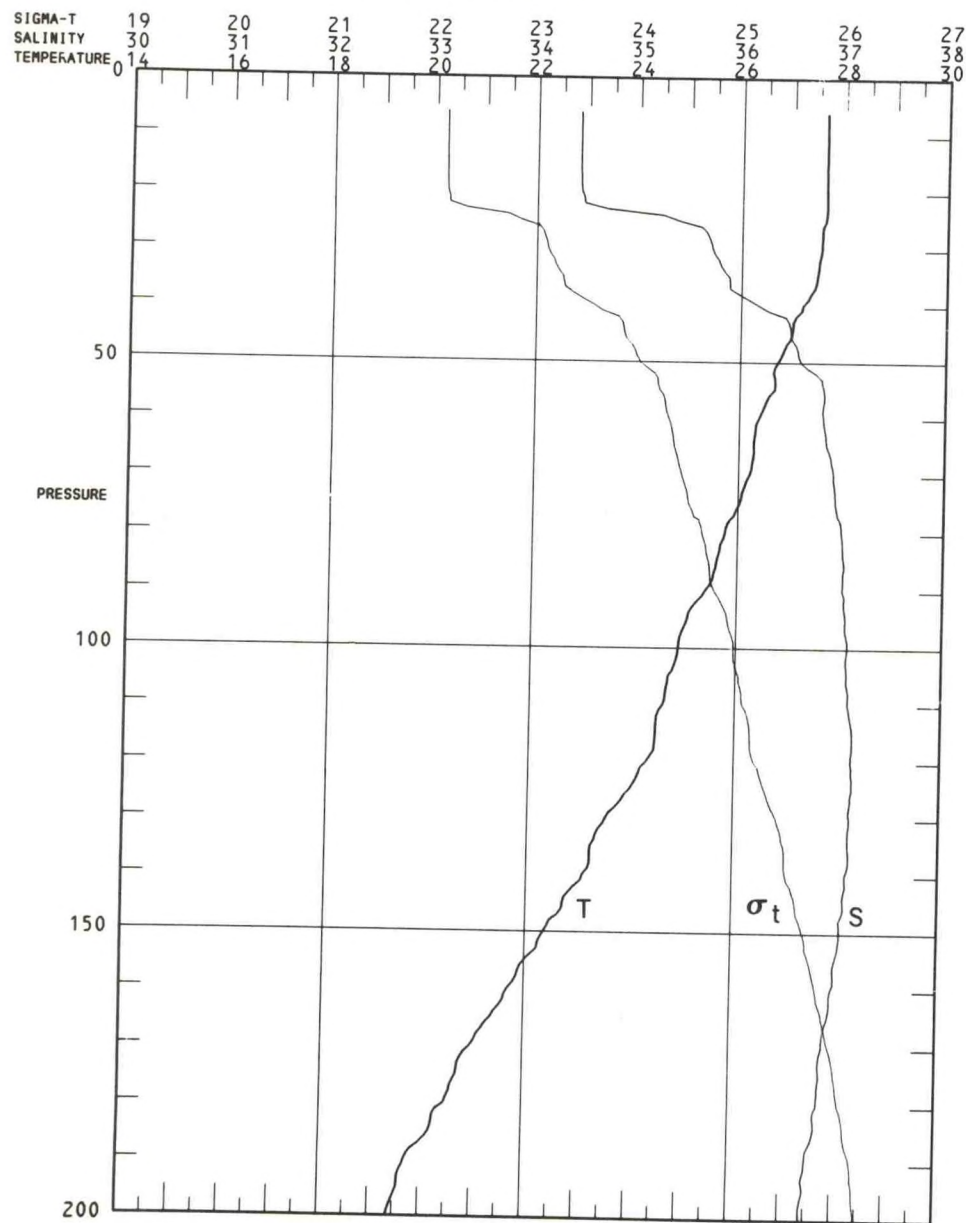


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



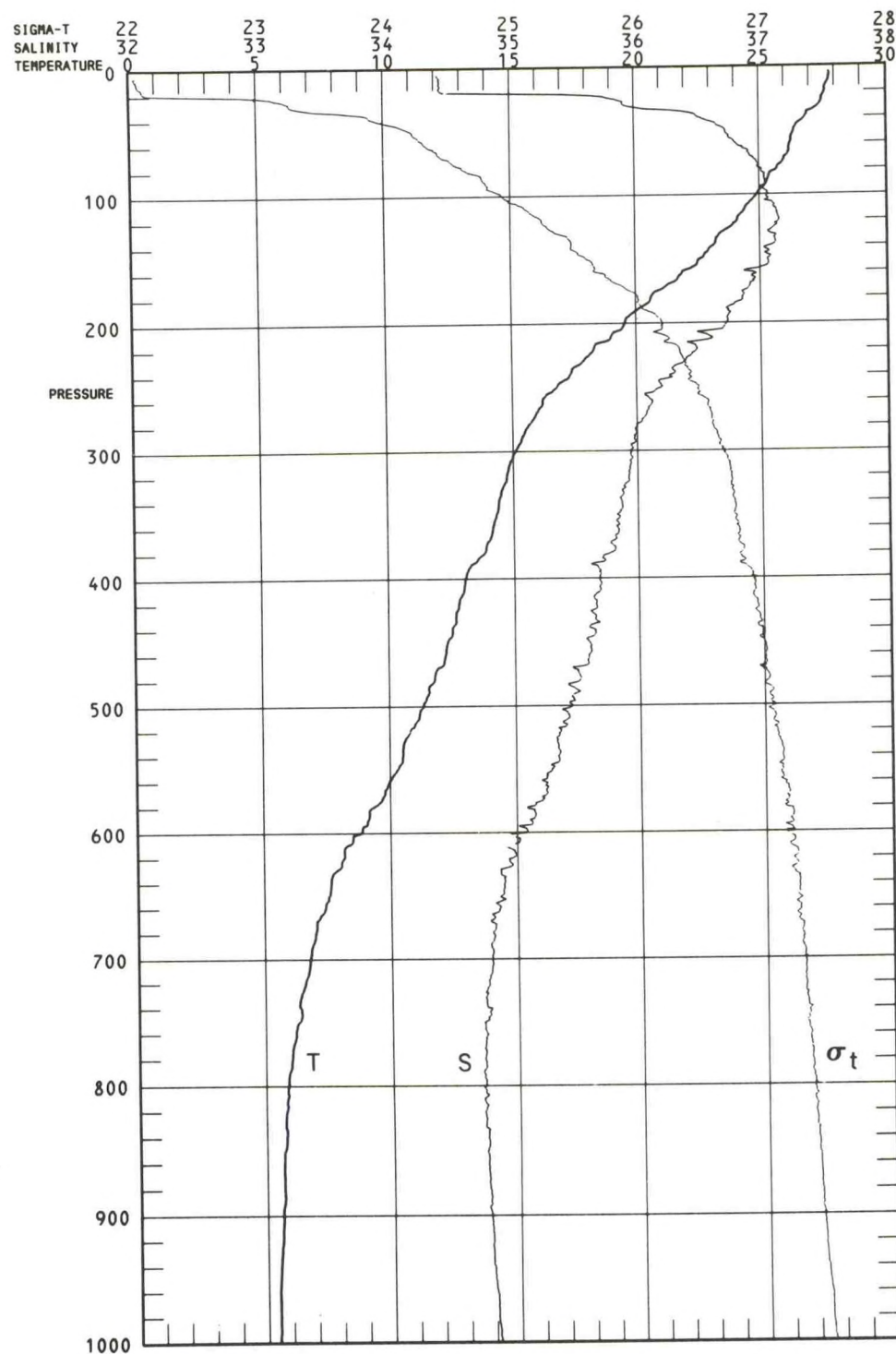
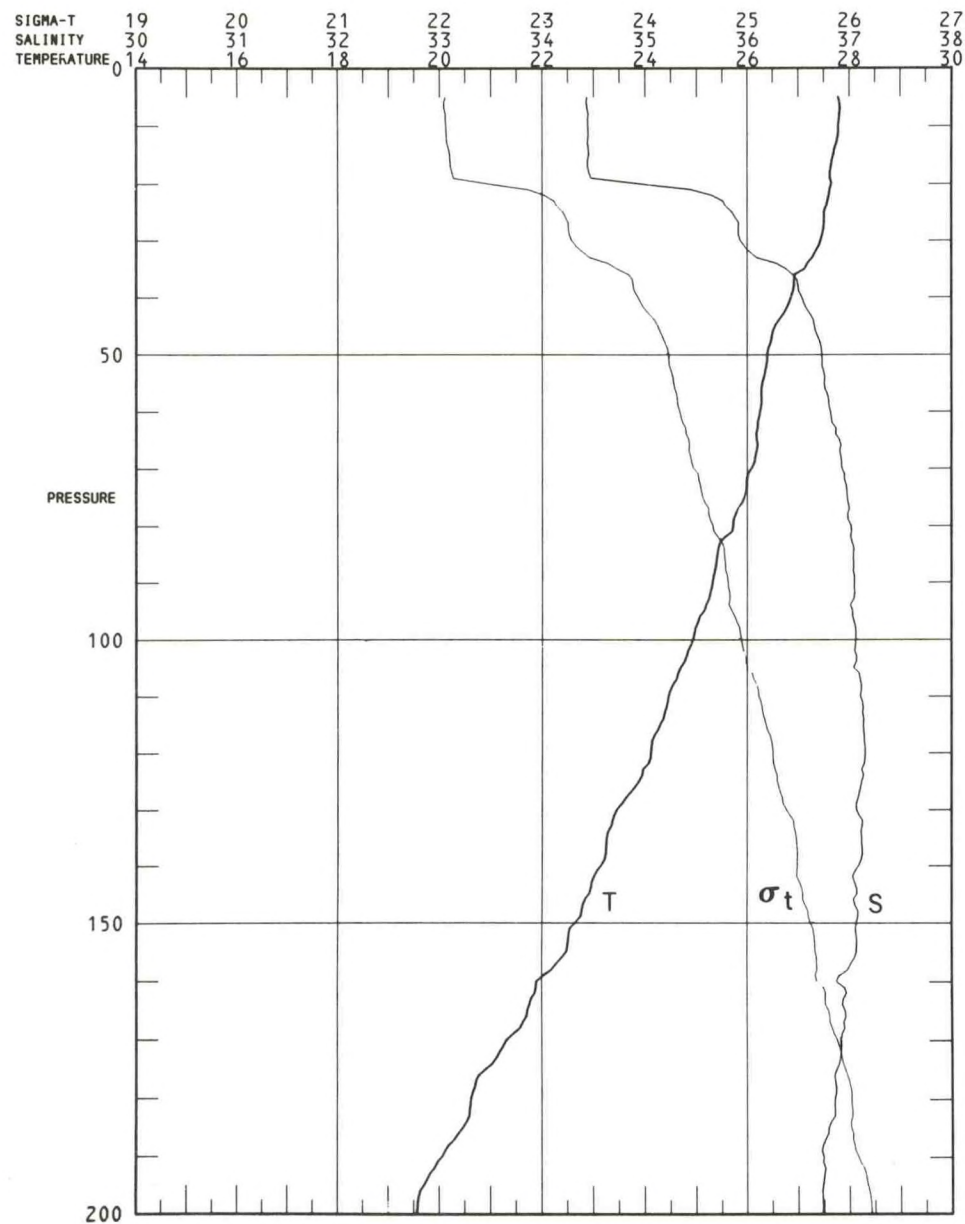
Oceanographer, June 26, 1969, 0903 GMT, 17°36'N 054°34'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Oceanographer, June 26, 1969, 1155 GMT, 17°36'N 054°34'W

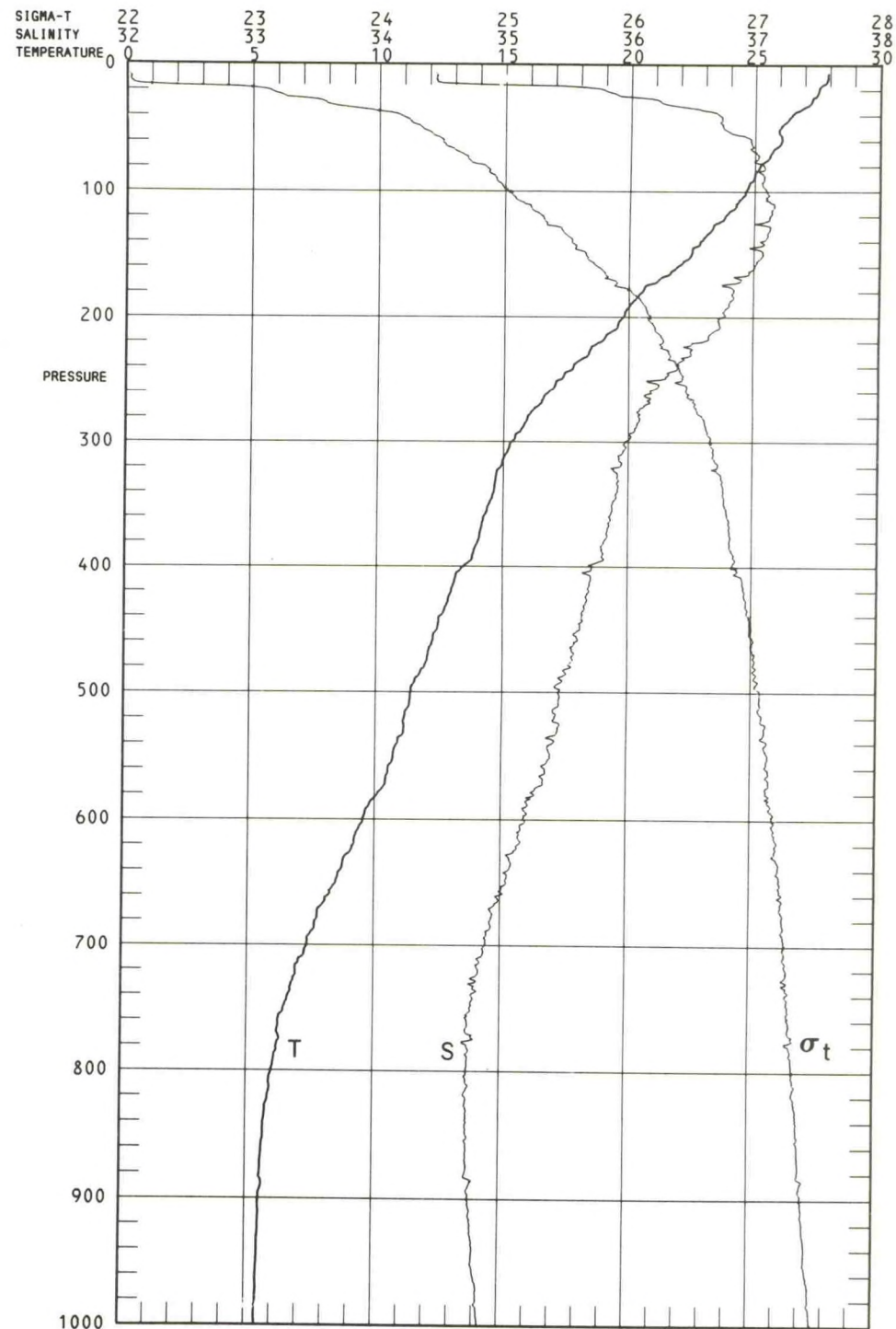
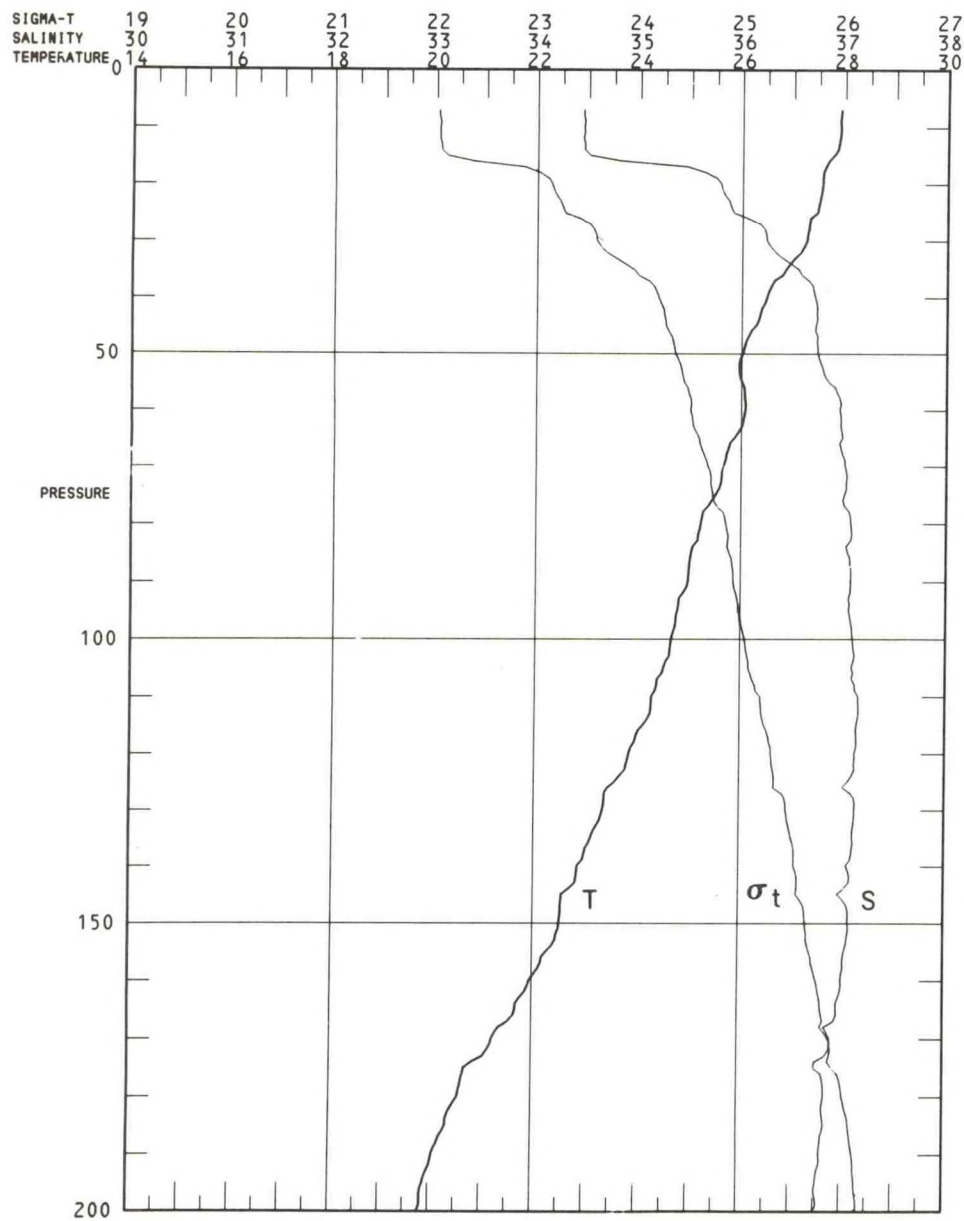
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 26, 1969, 1529 GMT, 17°36'N 054°34'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

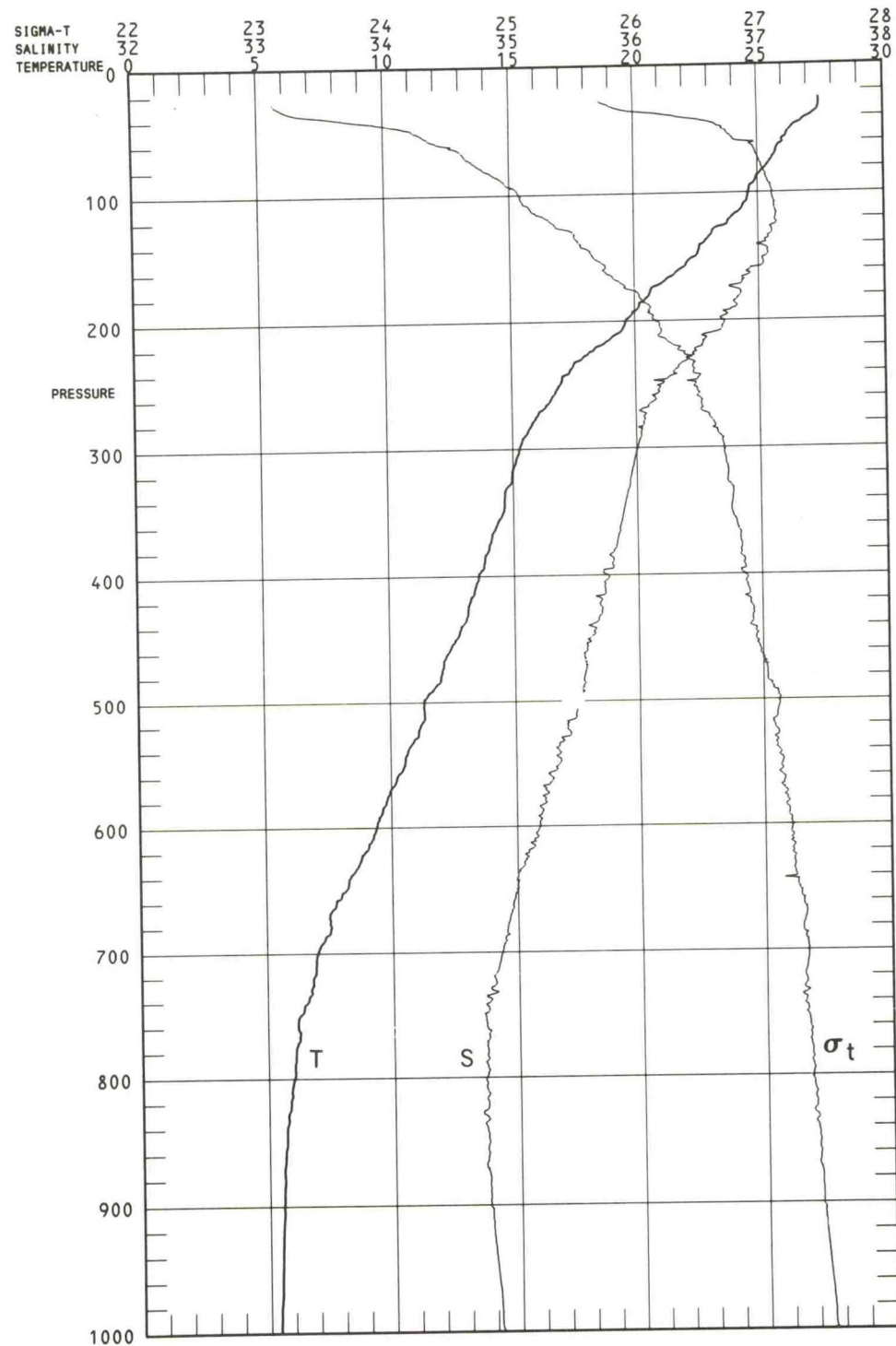
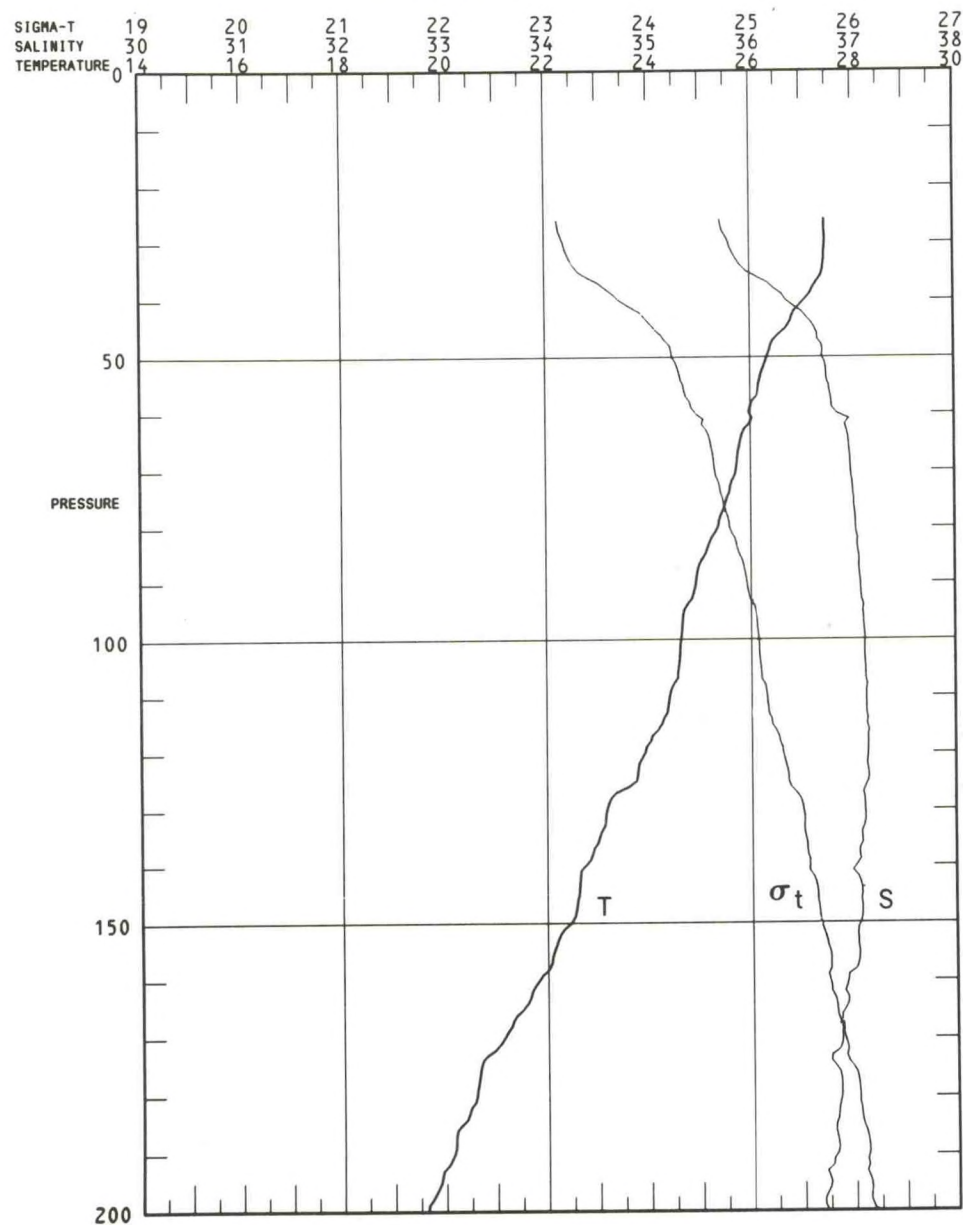


Oceanographer, June 26, 1969, 1800 GMT, 17°36'N 054°34'W

OCEANOGRAPHER YEAR 1969 DAY 177 TIME 2110 GMT LAT 17°36'N LON 054°34'W  
ERRATIC SALINITY SENSOR THROUGHOUT THE CAST.

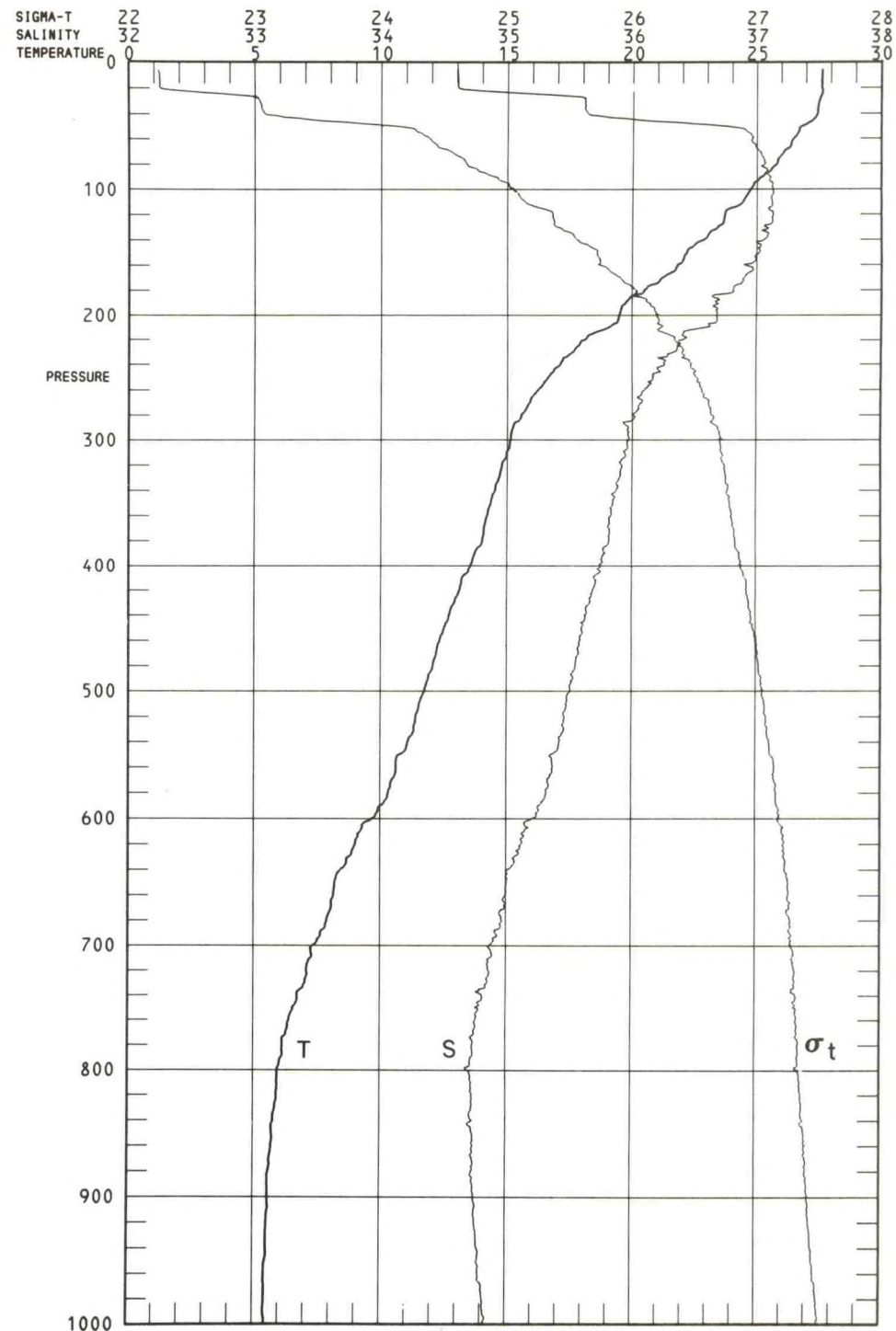
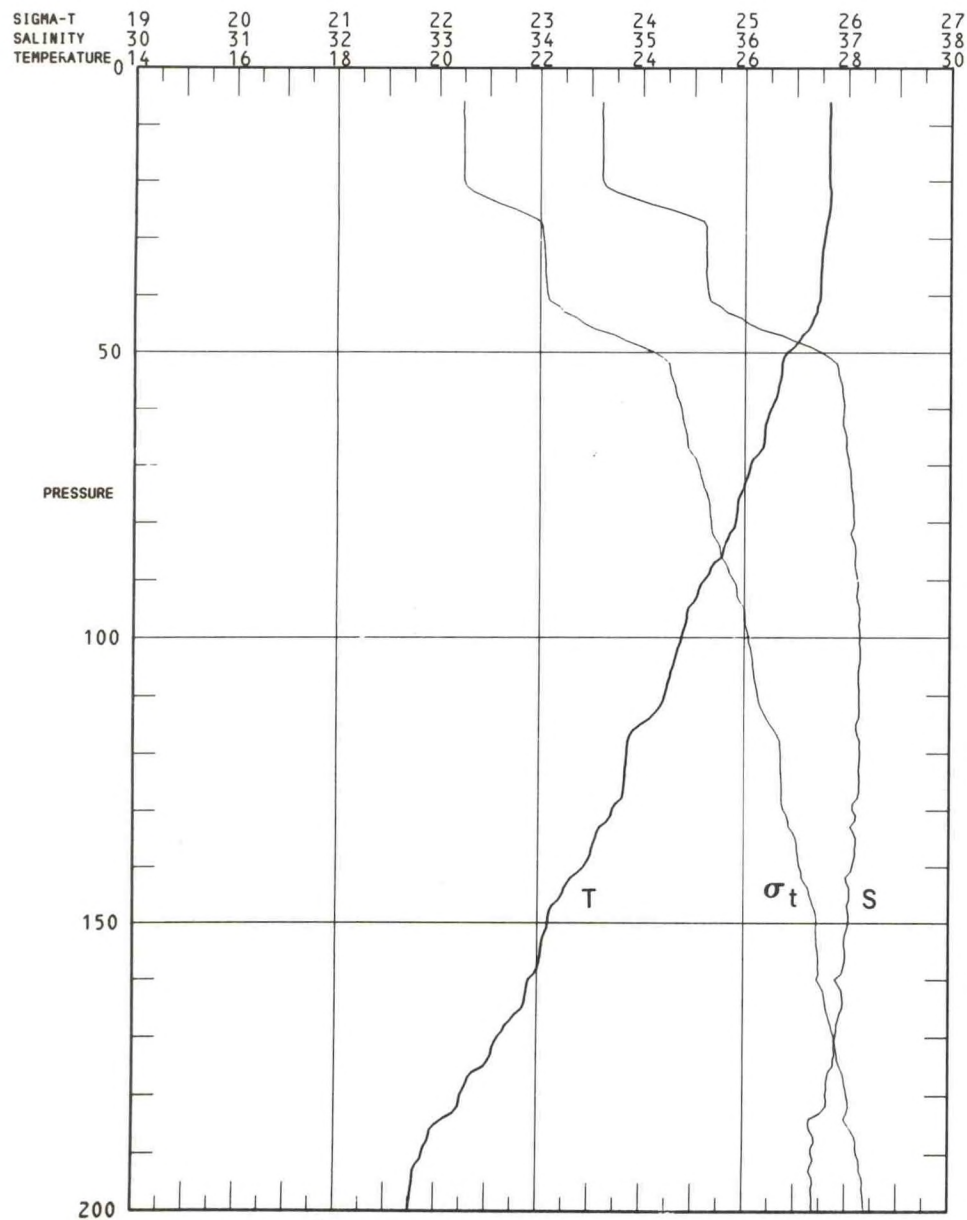
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 26, 1969, 2110 GMT, 17°36'N 054°34'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

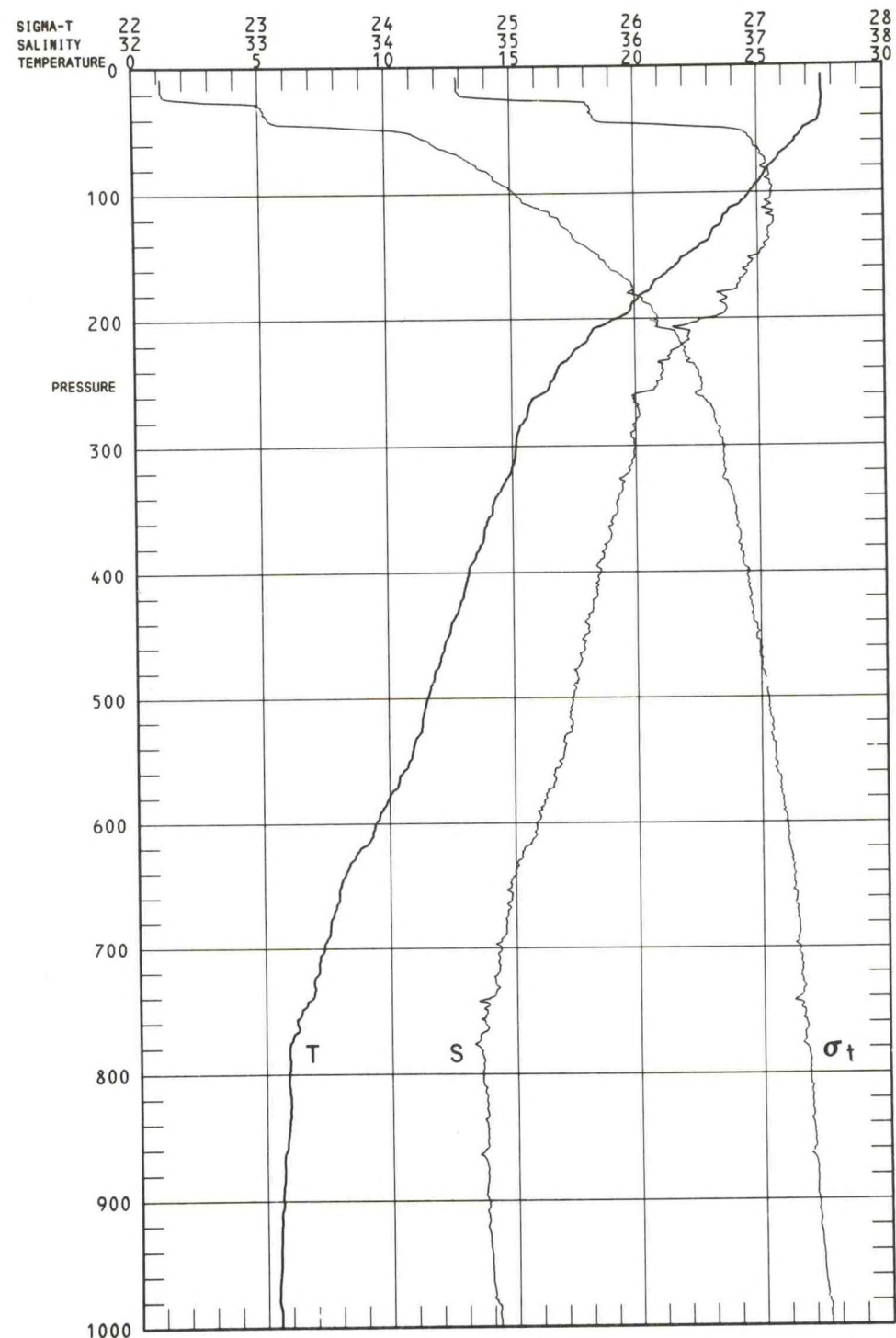
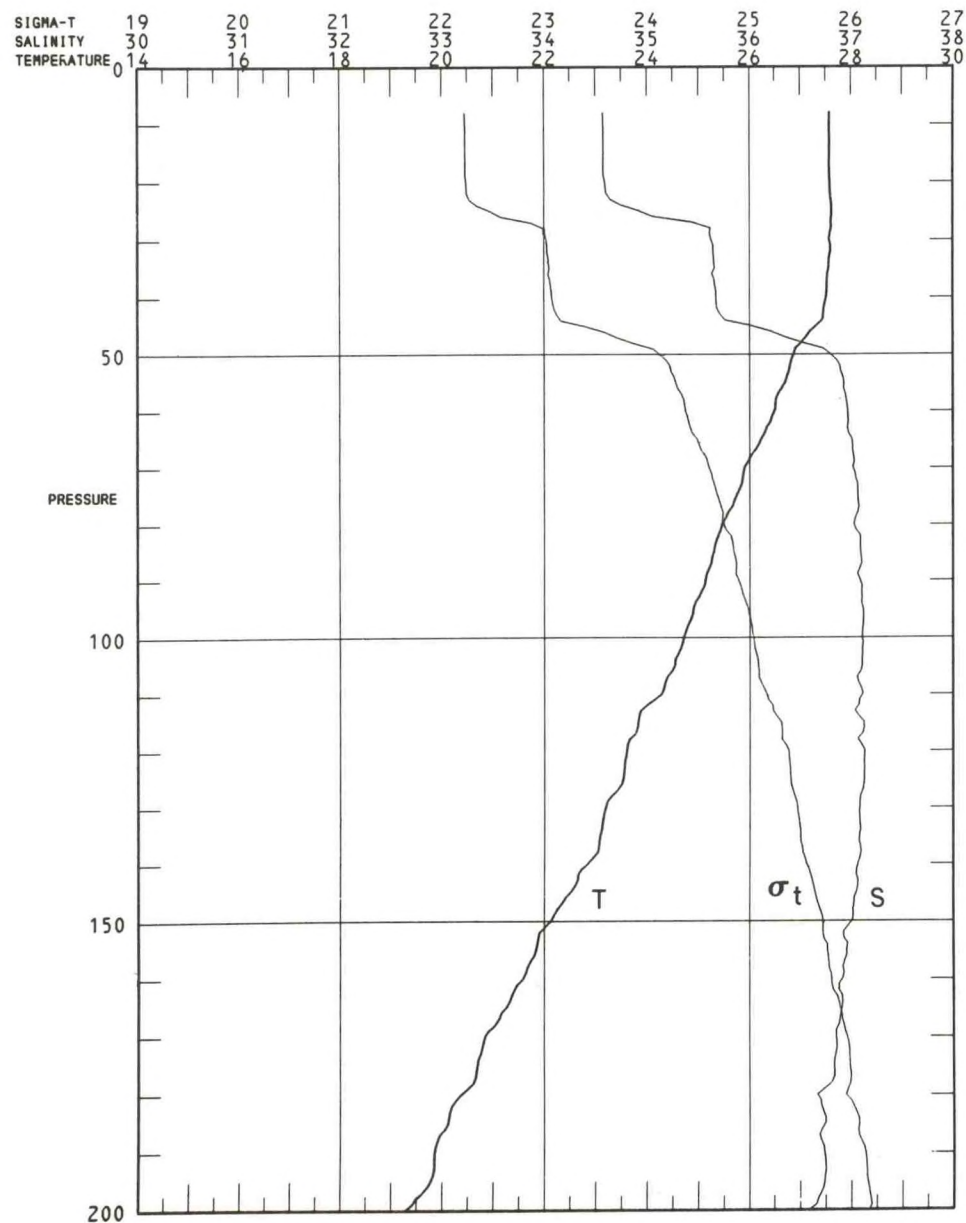


Oceanographer, June 28, 1969, 0051 GMT, 17°36'N 054°34'W



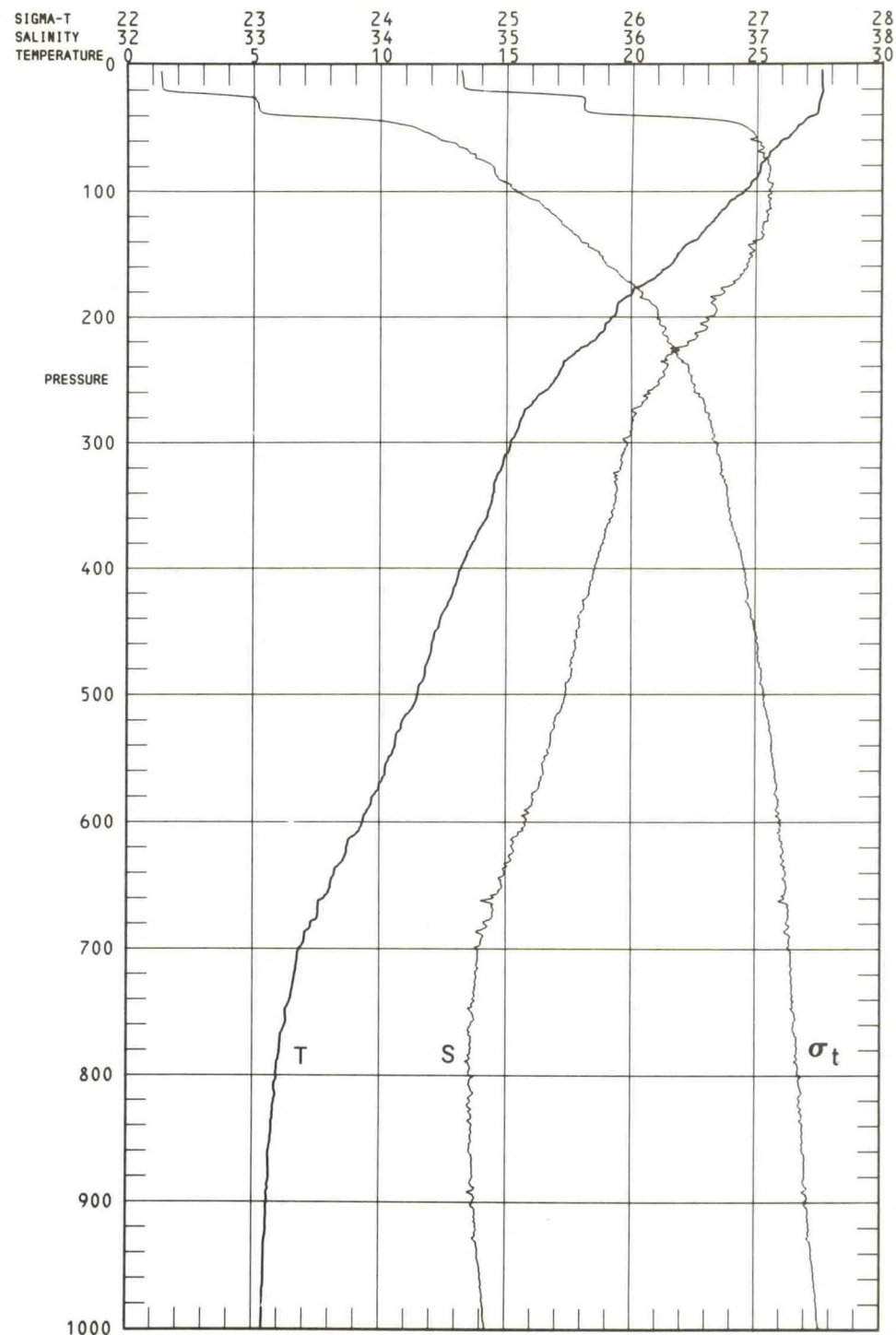
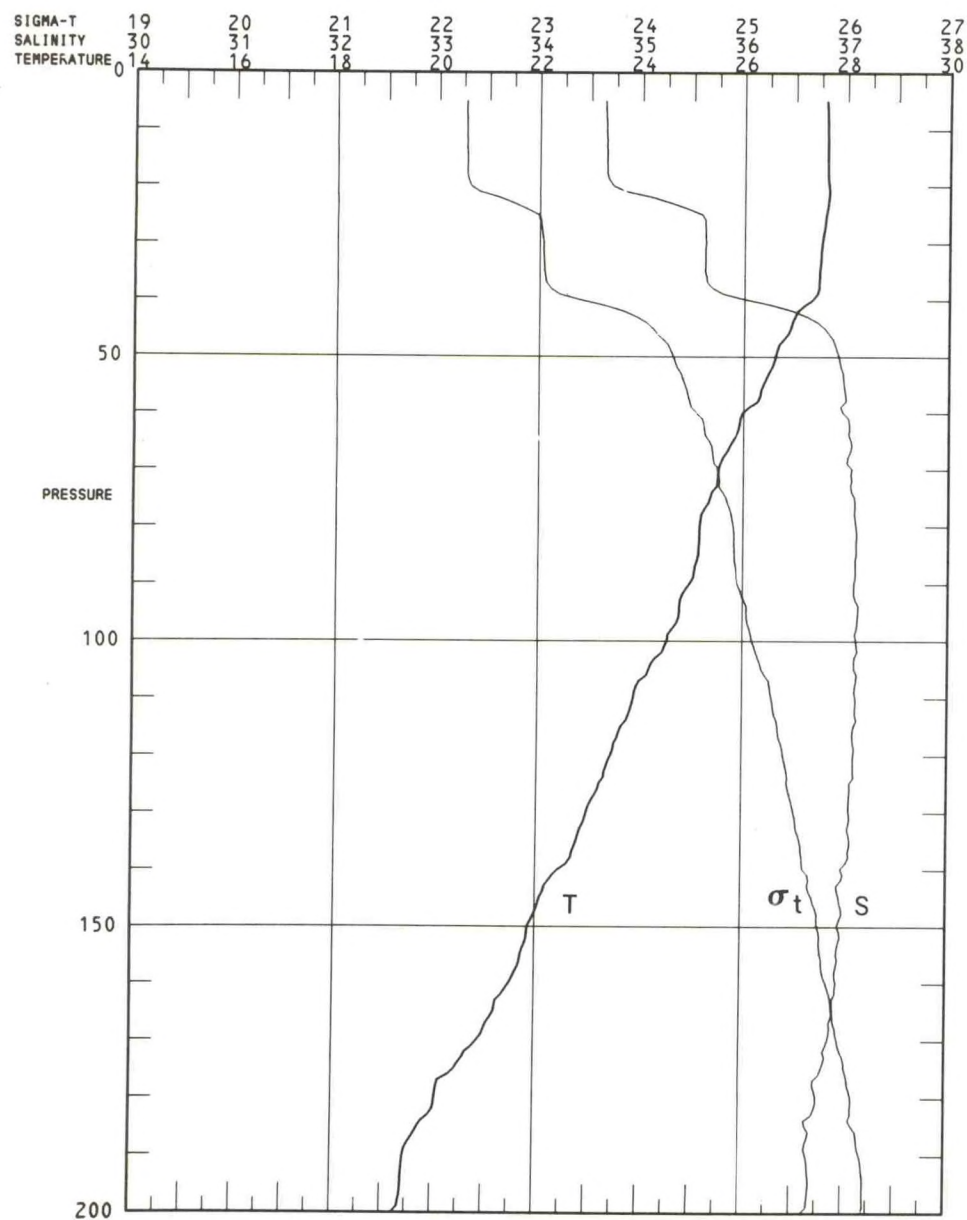
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 28, 1969, 0304 GMT, 17°36'N 054°34'W

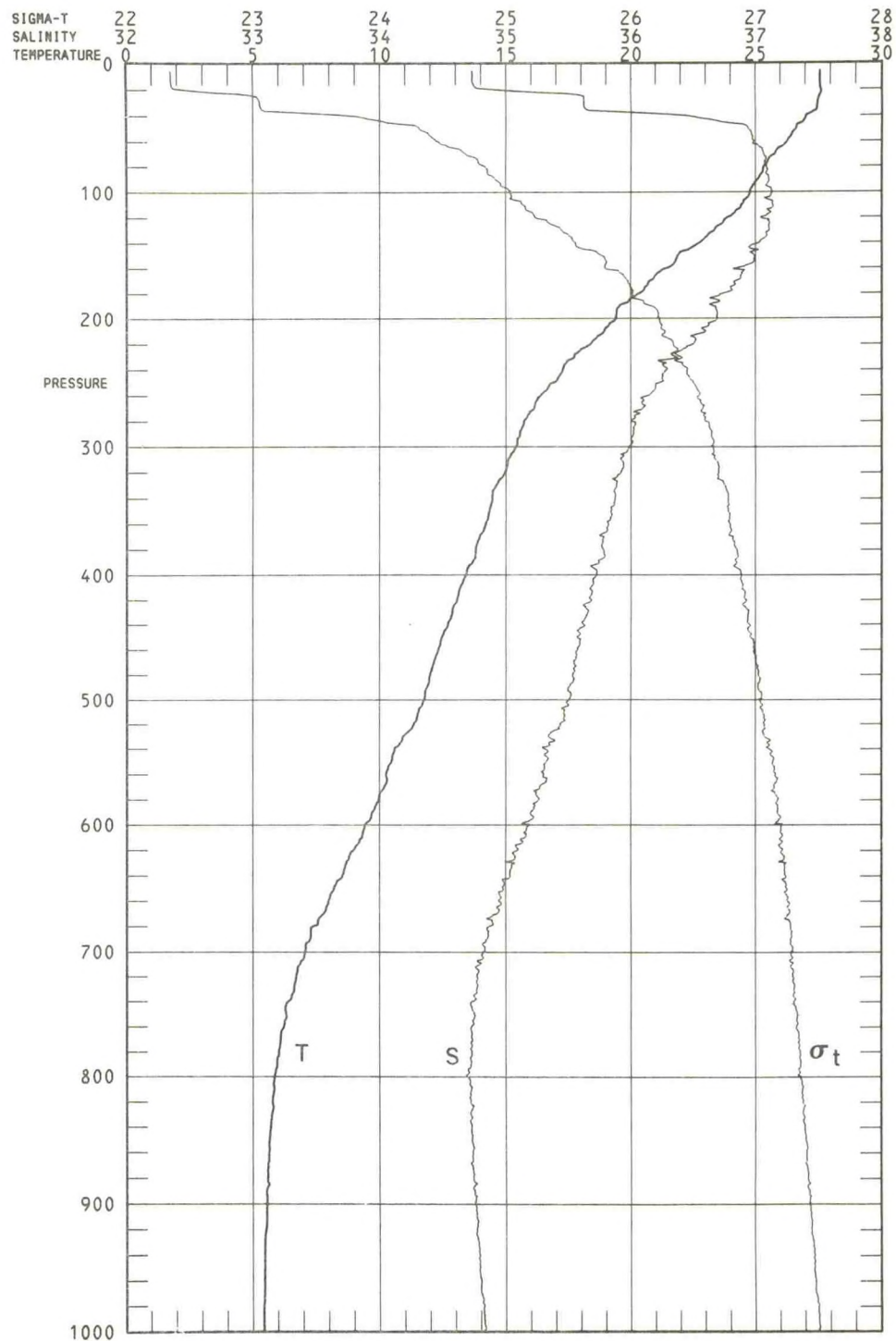
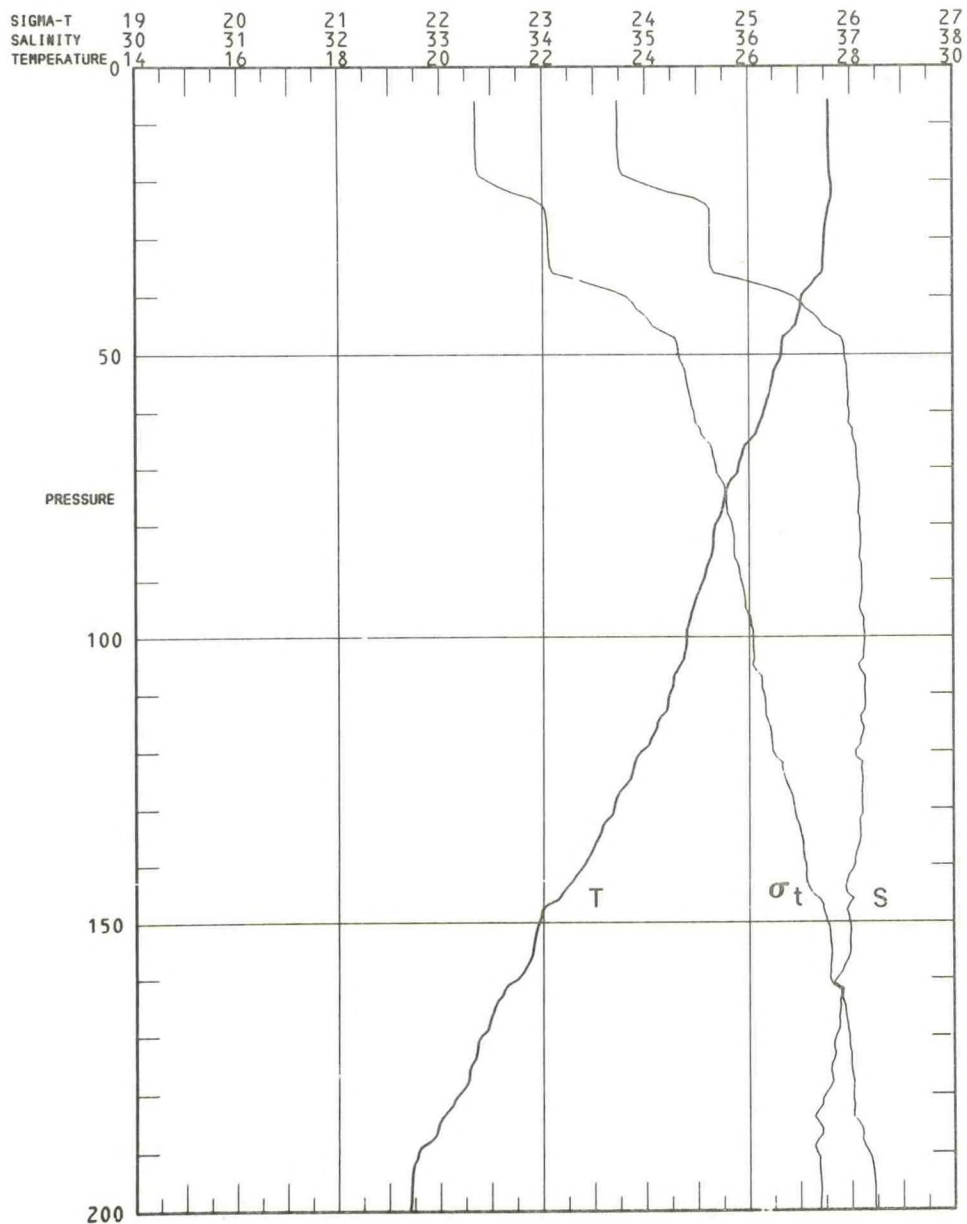
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 28, 1969, 0603 GMT, 17°36'N 054°34'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

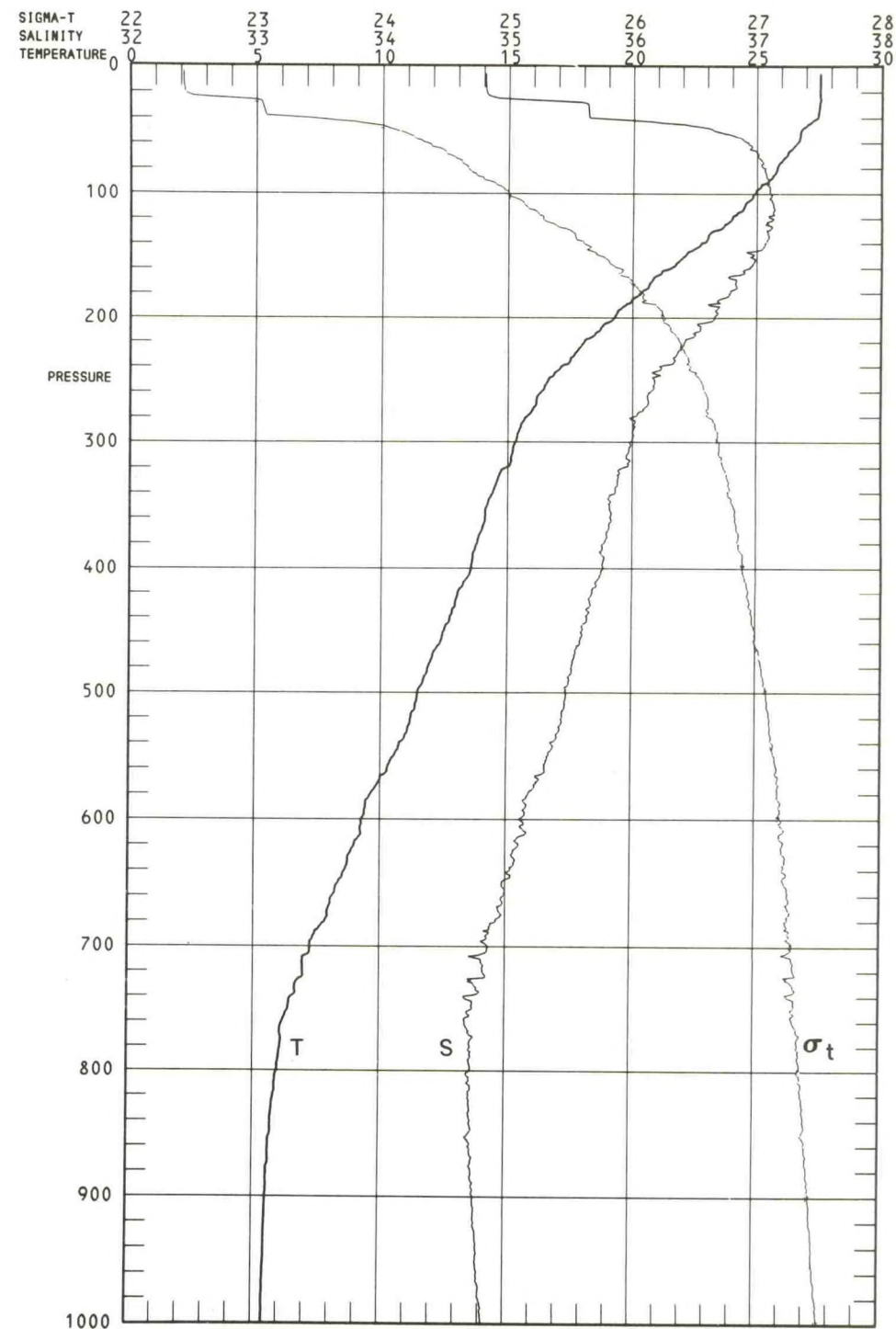
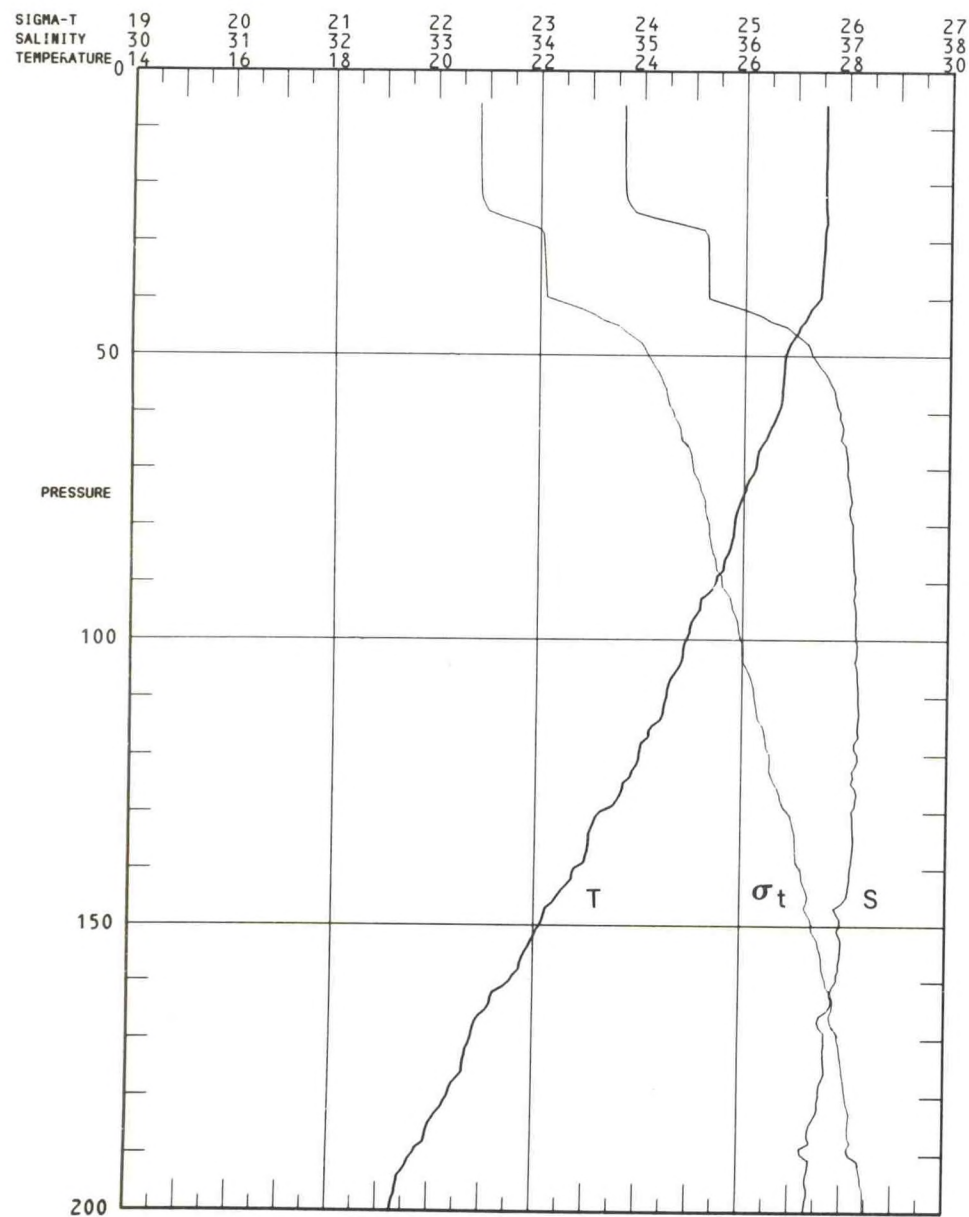


Oceanographer, June 28, 1969, 0905 GMT, 17°36'N 054°35'W



# STD Depth-Sorted Plots

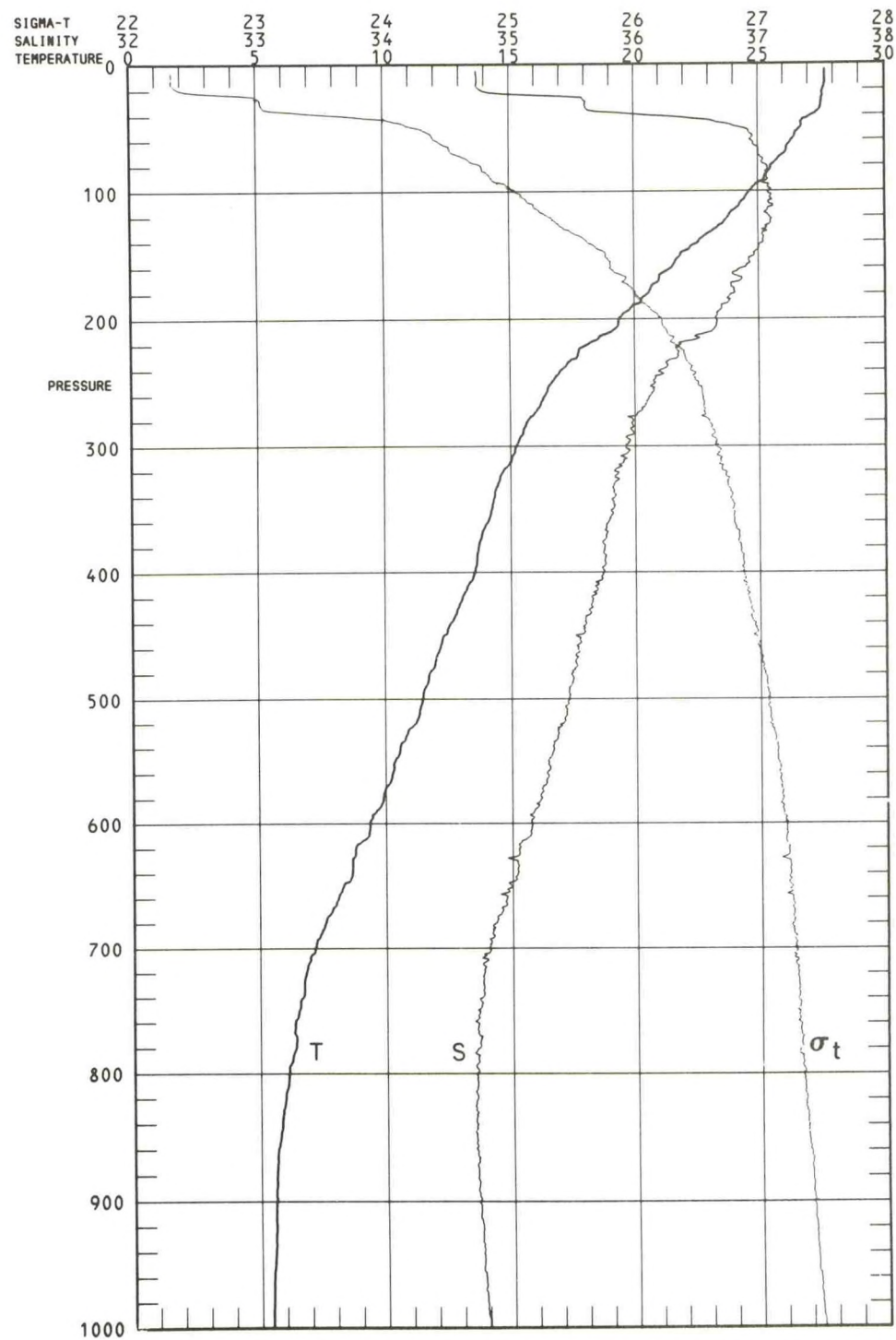
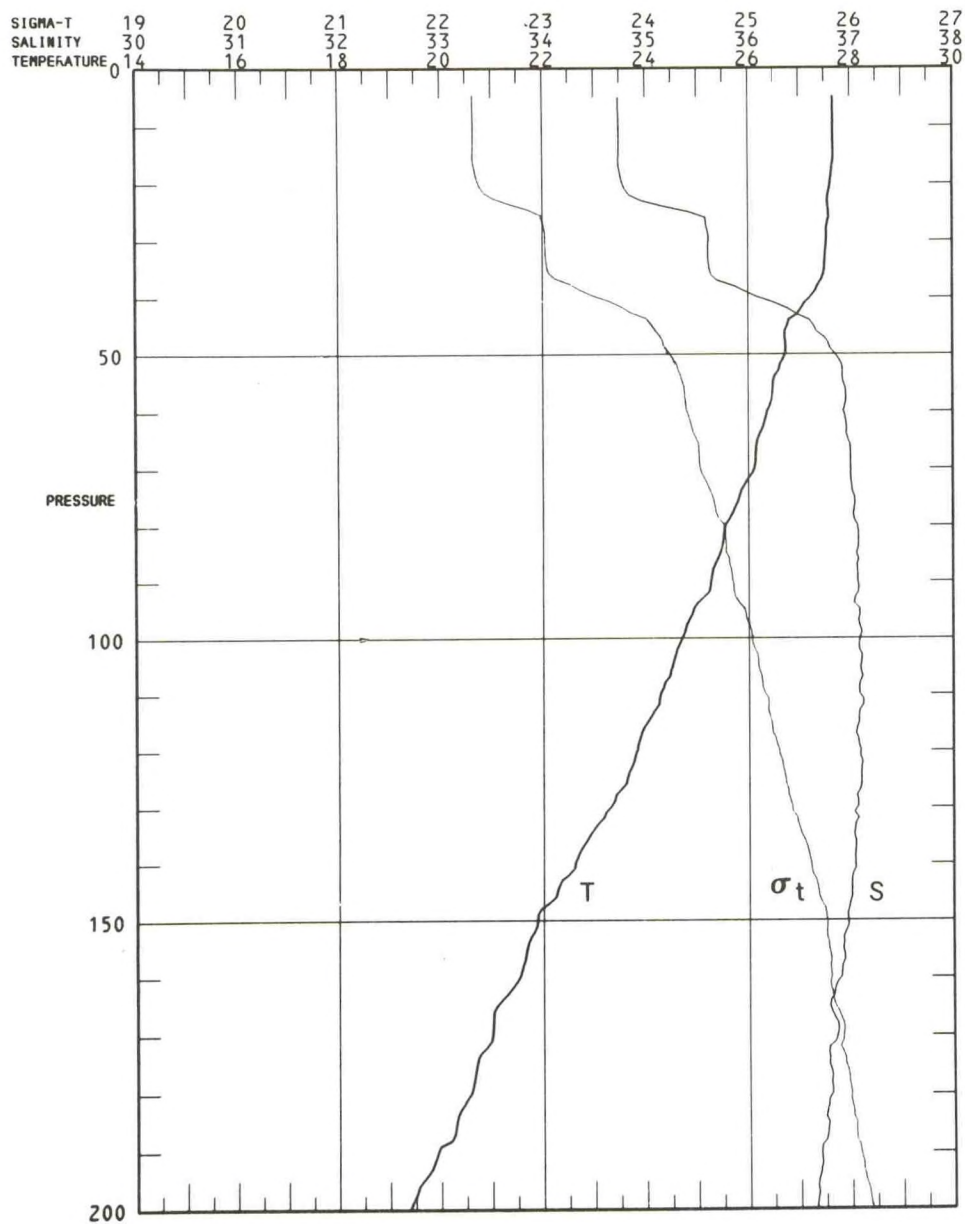
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 28, 1969, 1156 GMT, 17°37'N 054°37'W

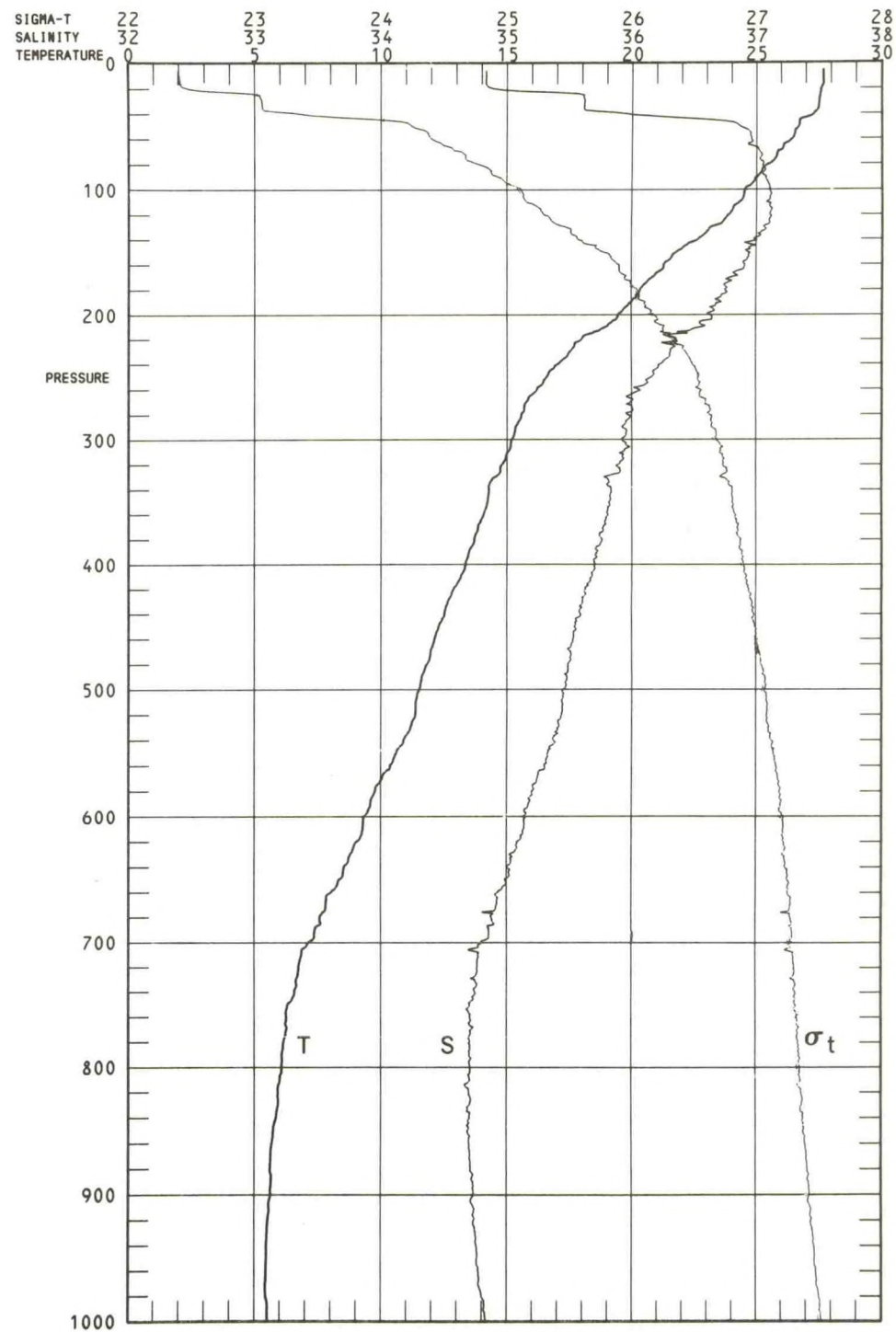
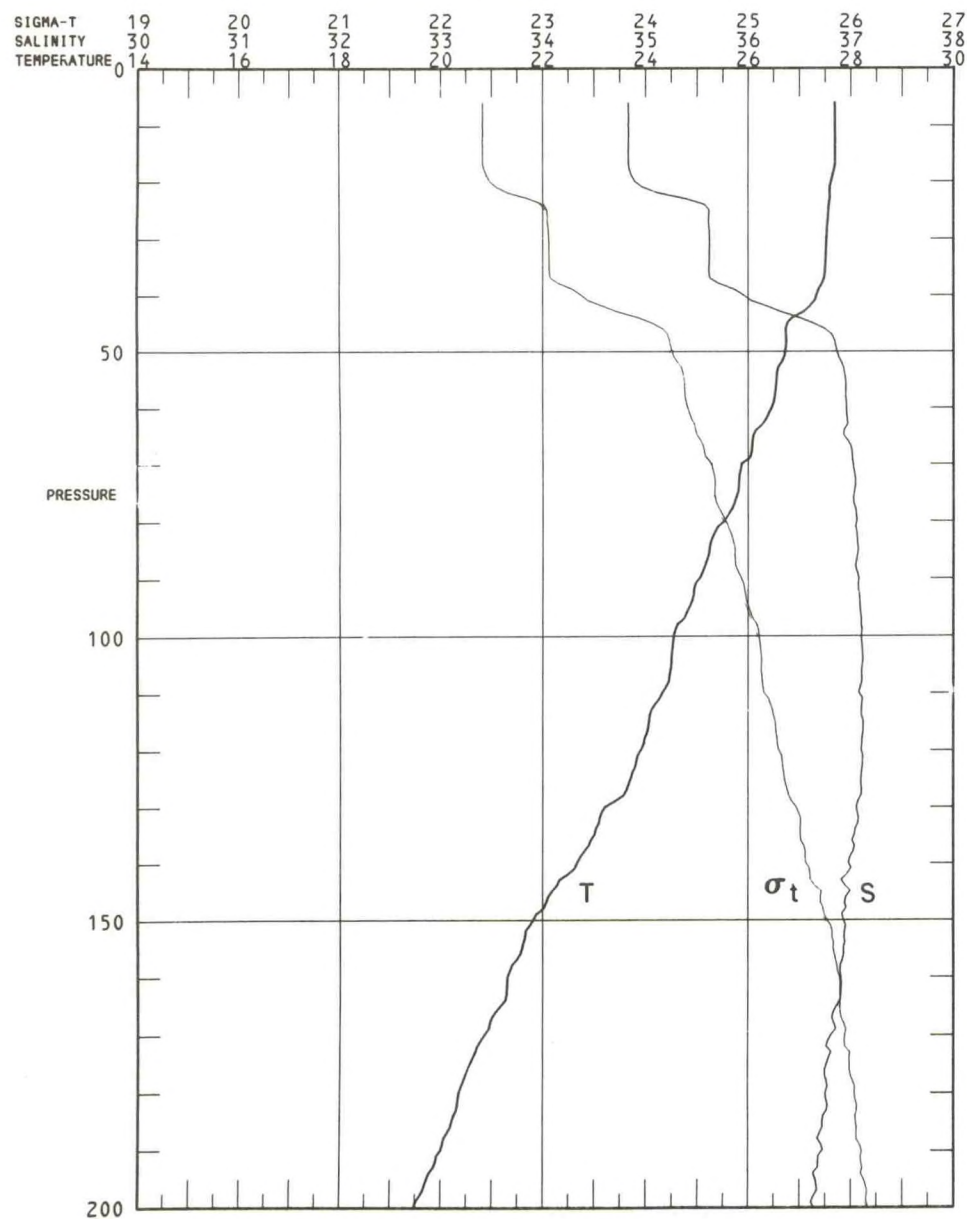
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 28, 1969, 1526 GMT, 17°37'N 054°38'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

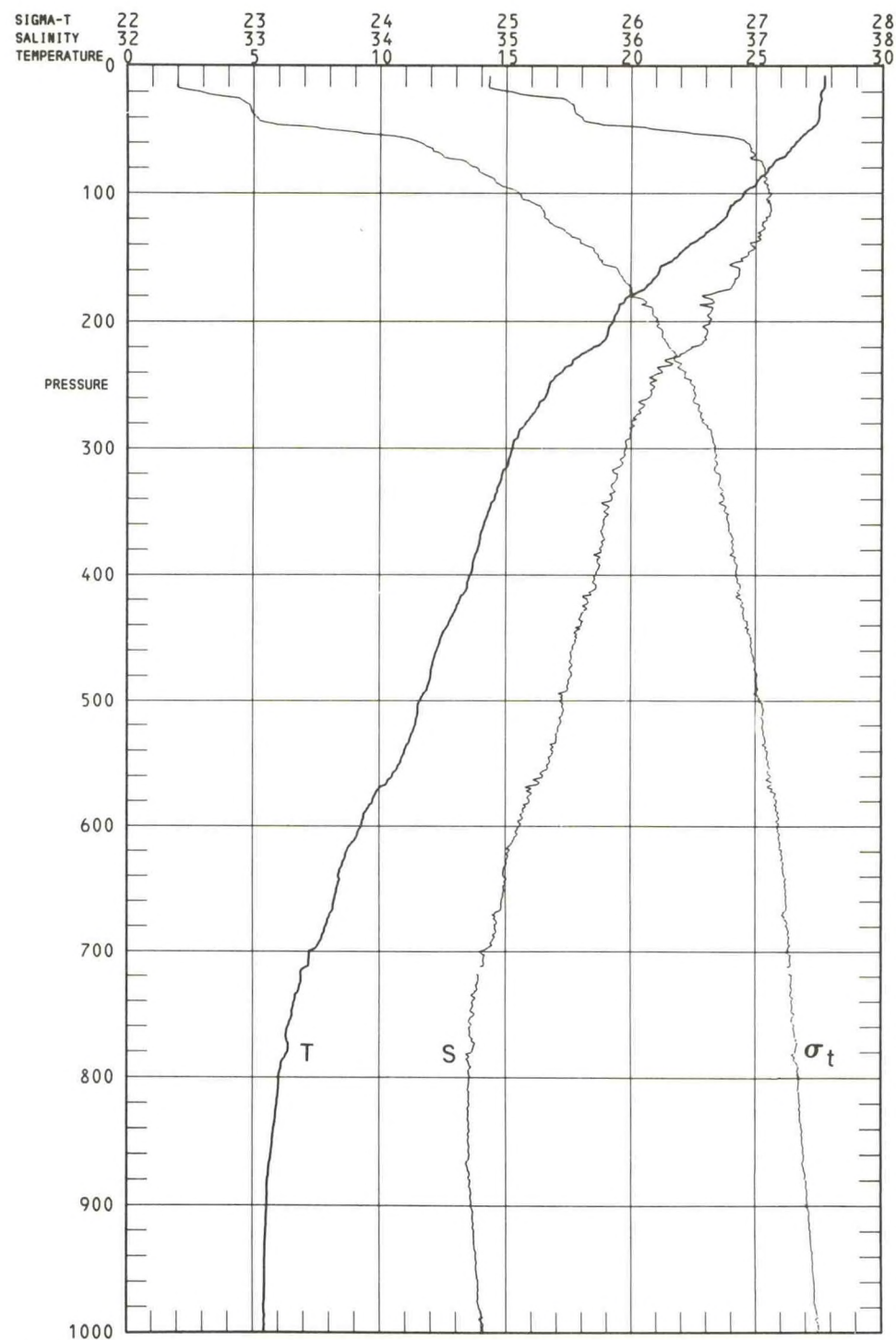
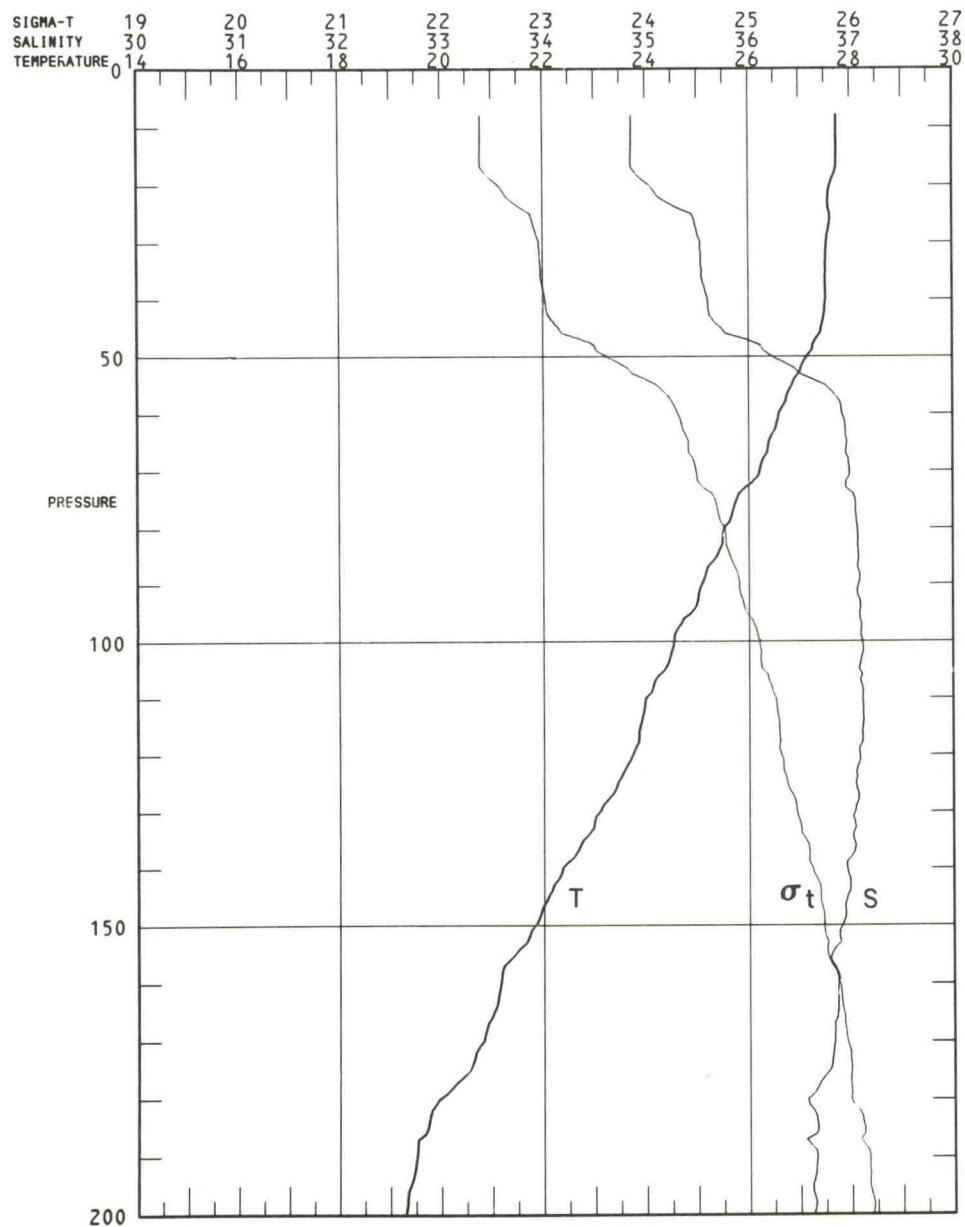


Oceanographer, June 28, 1969, 1801 GMT, 17°36'N 054°35'W



# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

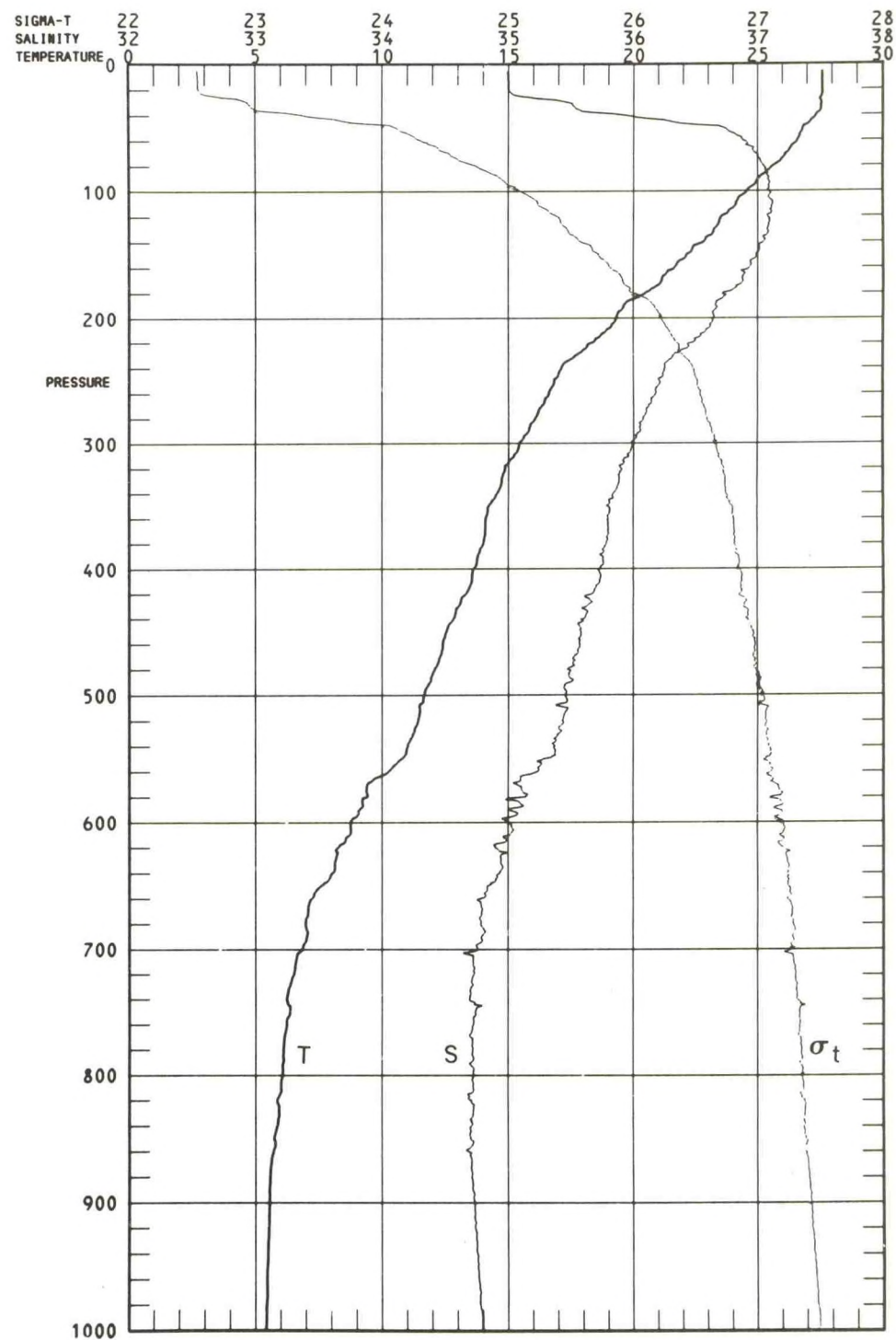
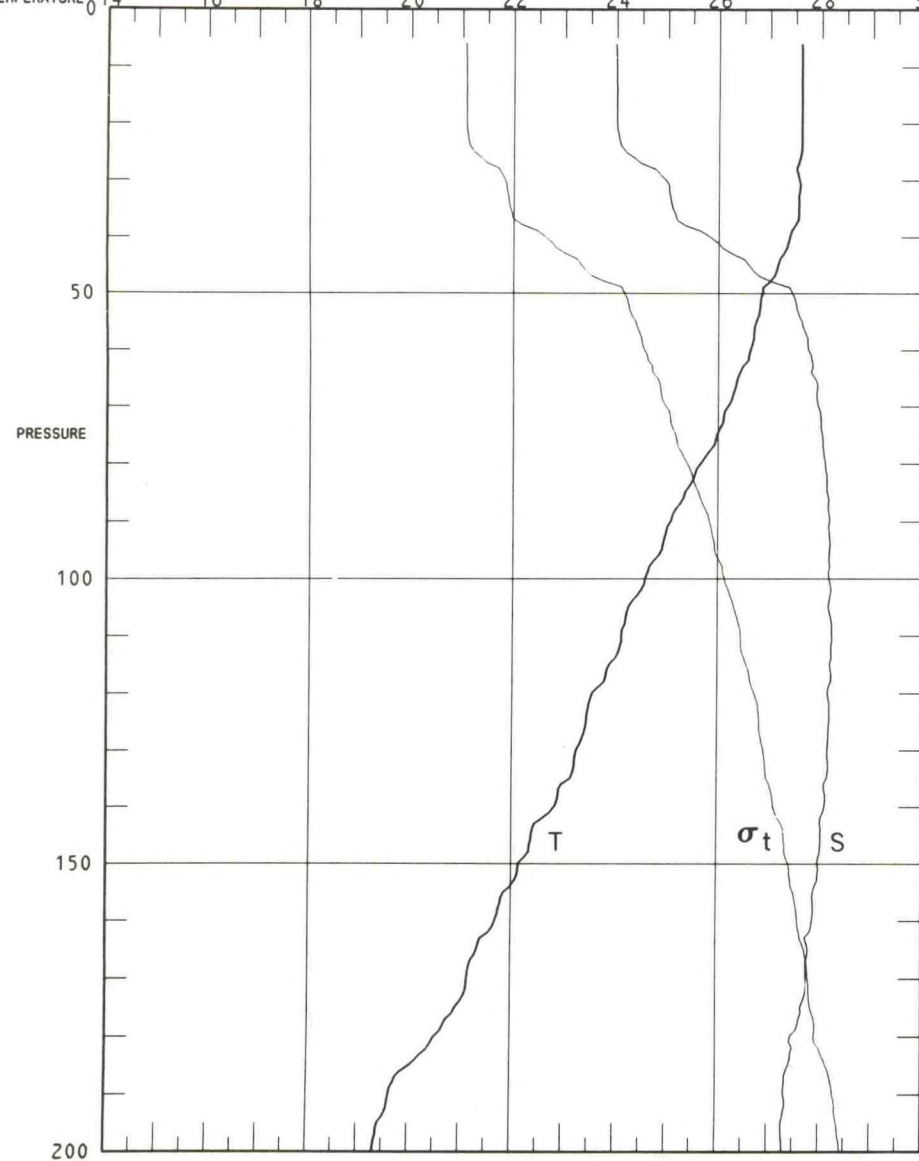


Oceanographer, June 28, 1969, 2107 GMT, 17°36'N 054°36'W

# STD Depth-Sorted Plots

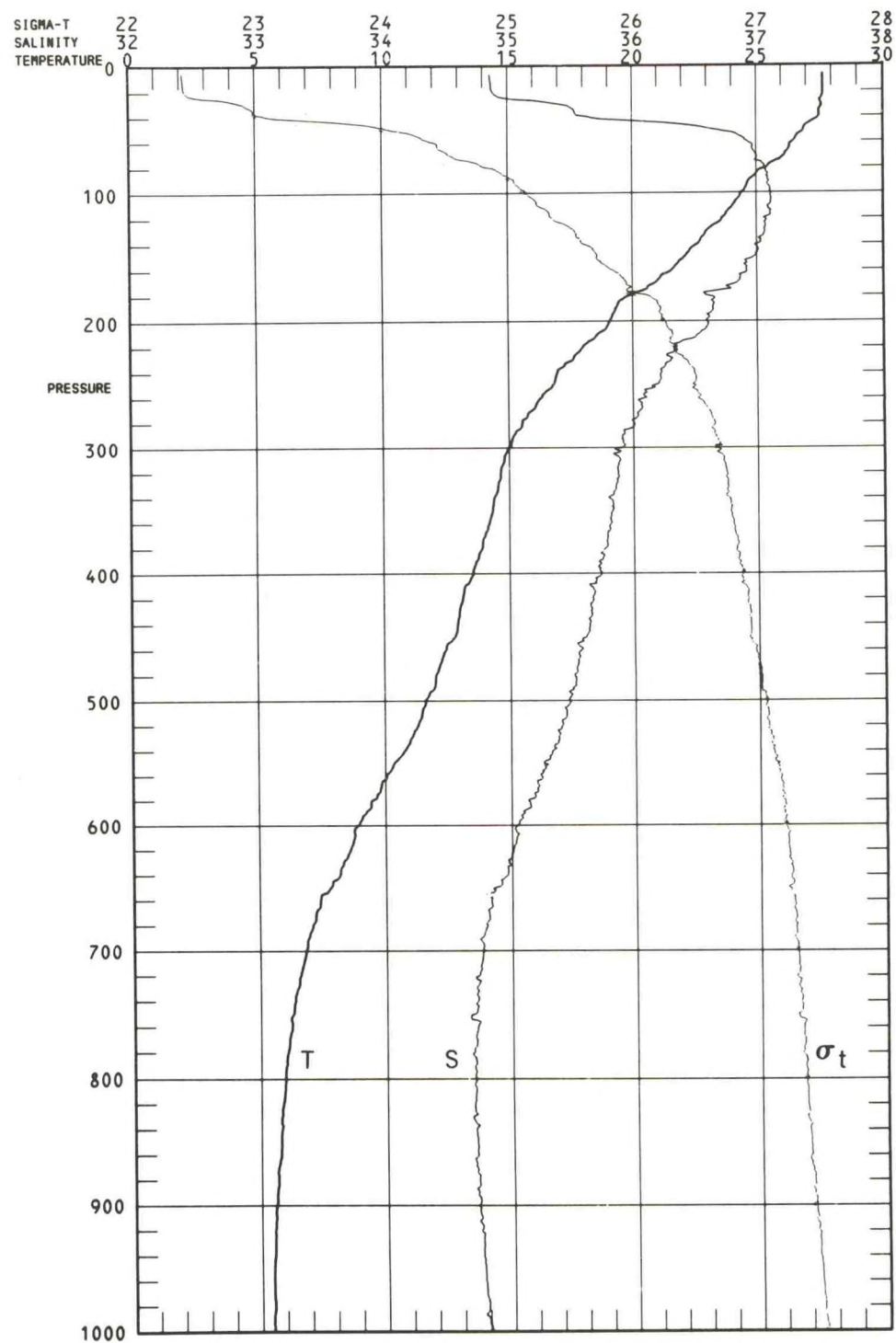
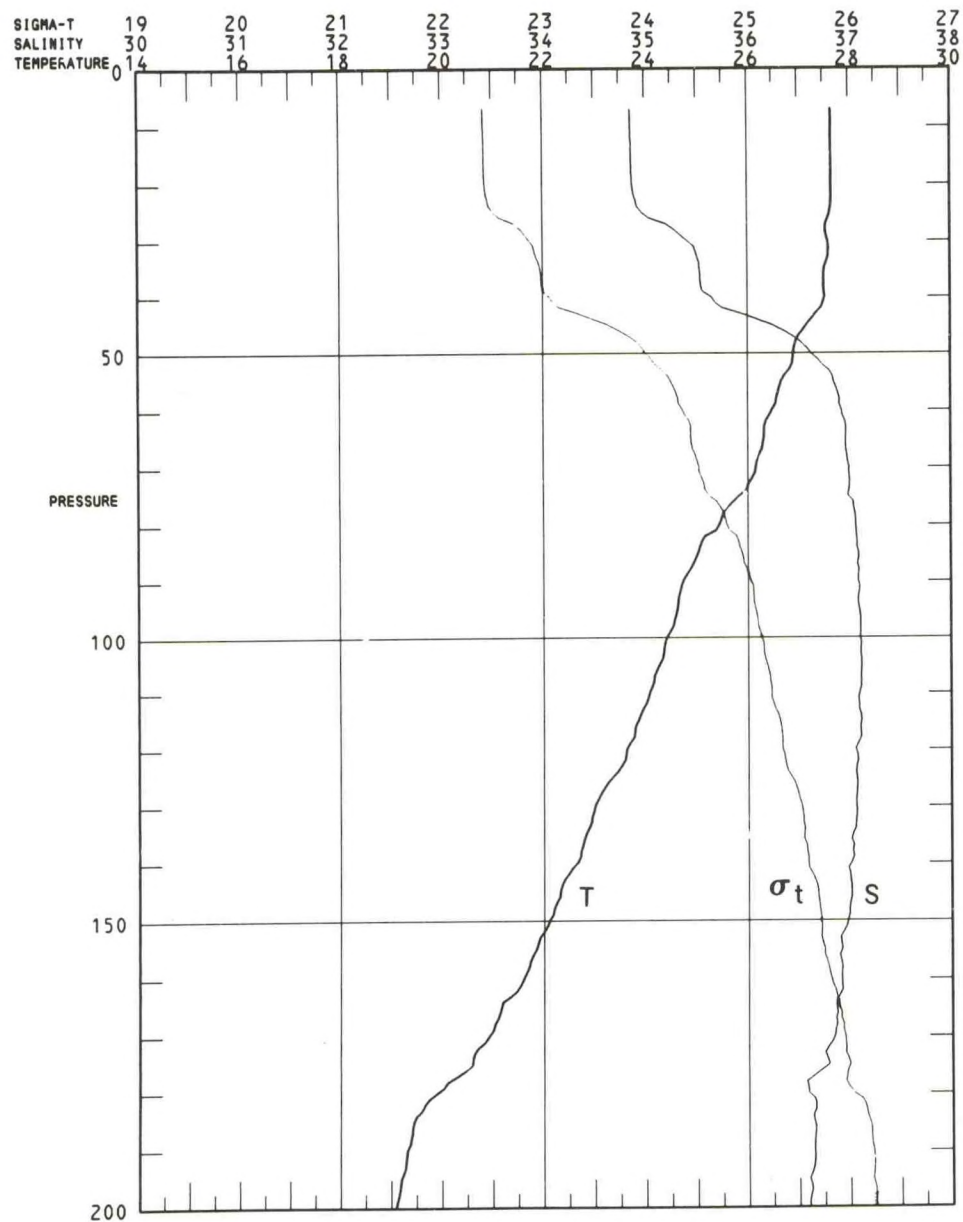
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

SIGMA-T	19	20	21	22	23	24	25	26	27
SALINITY	30	31	32	33	34	35	36	37	38
TEMPERATURE	14	16	18	20	22	24	26	28	30



Oceanographer, June 29, 1969, 0110 GMT, 17°37'N 054°39'W

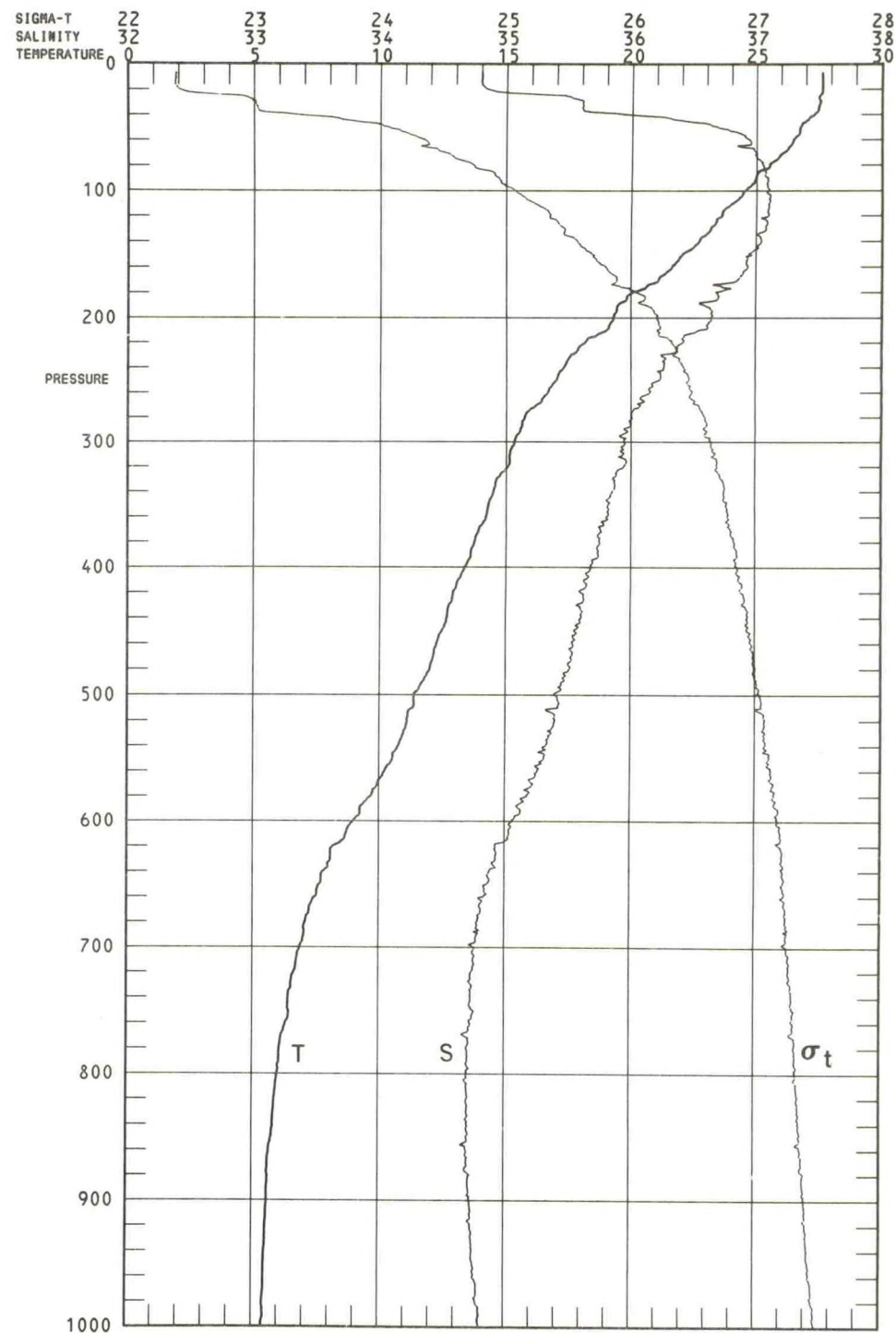
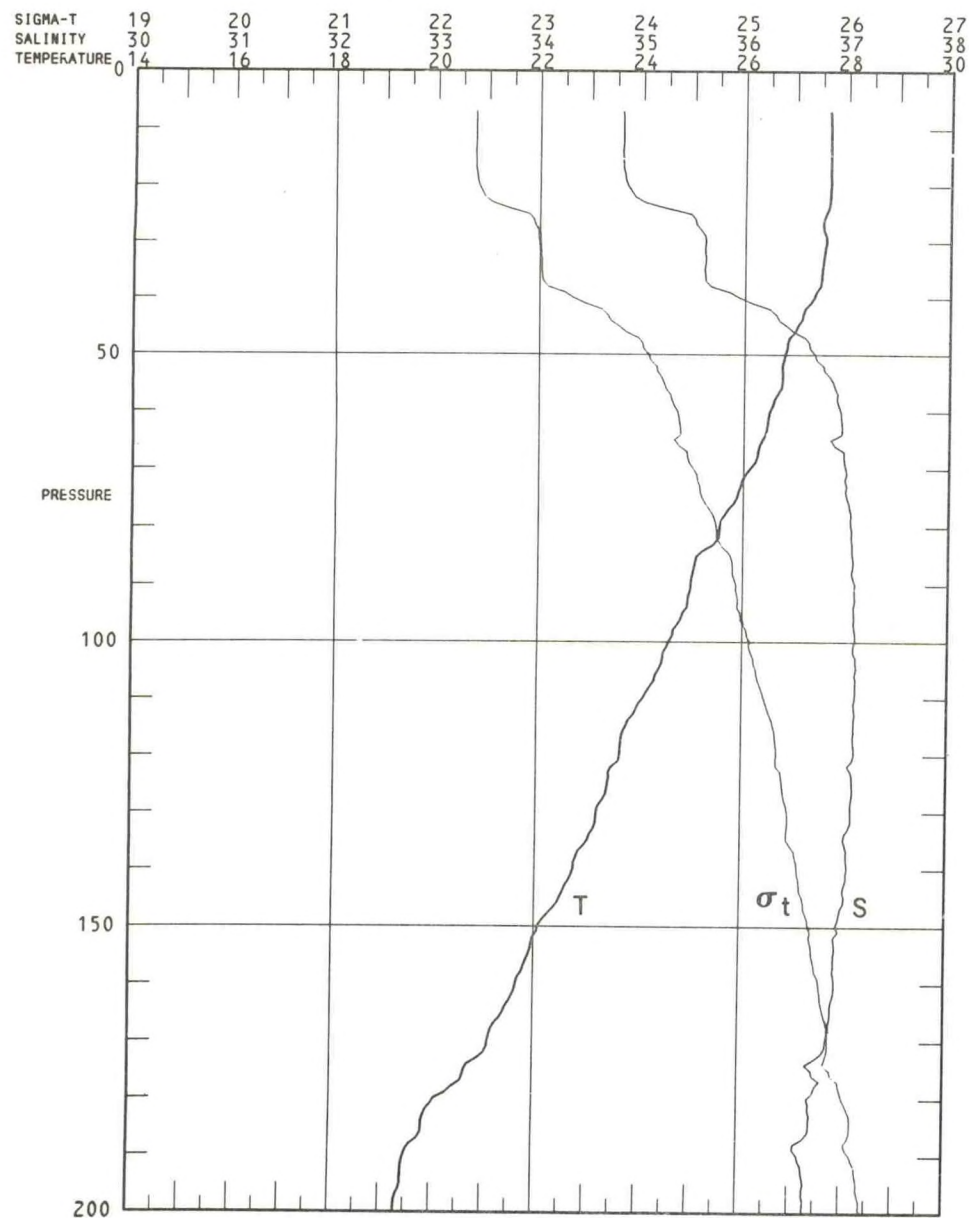
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 29, 1969, 0315 GMT, 17°36'N 054°36'W

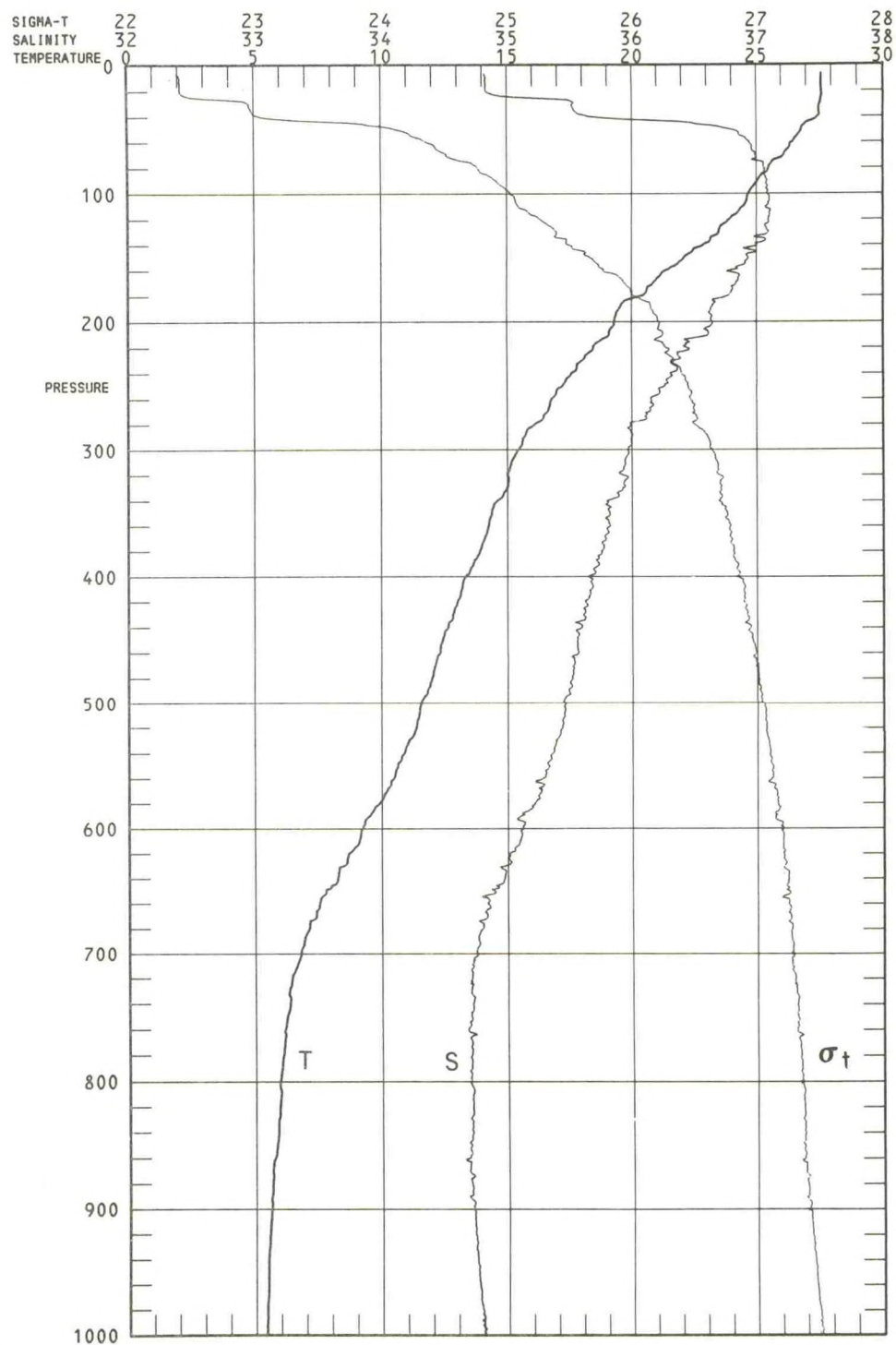
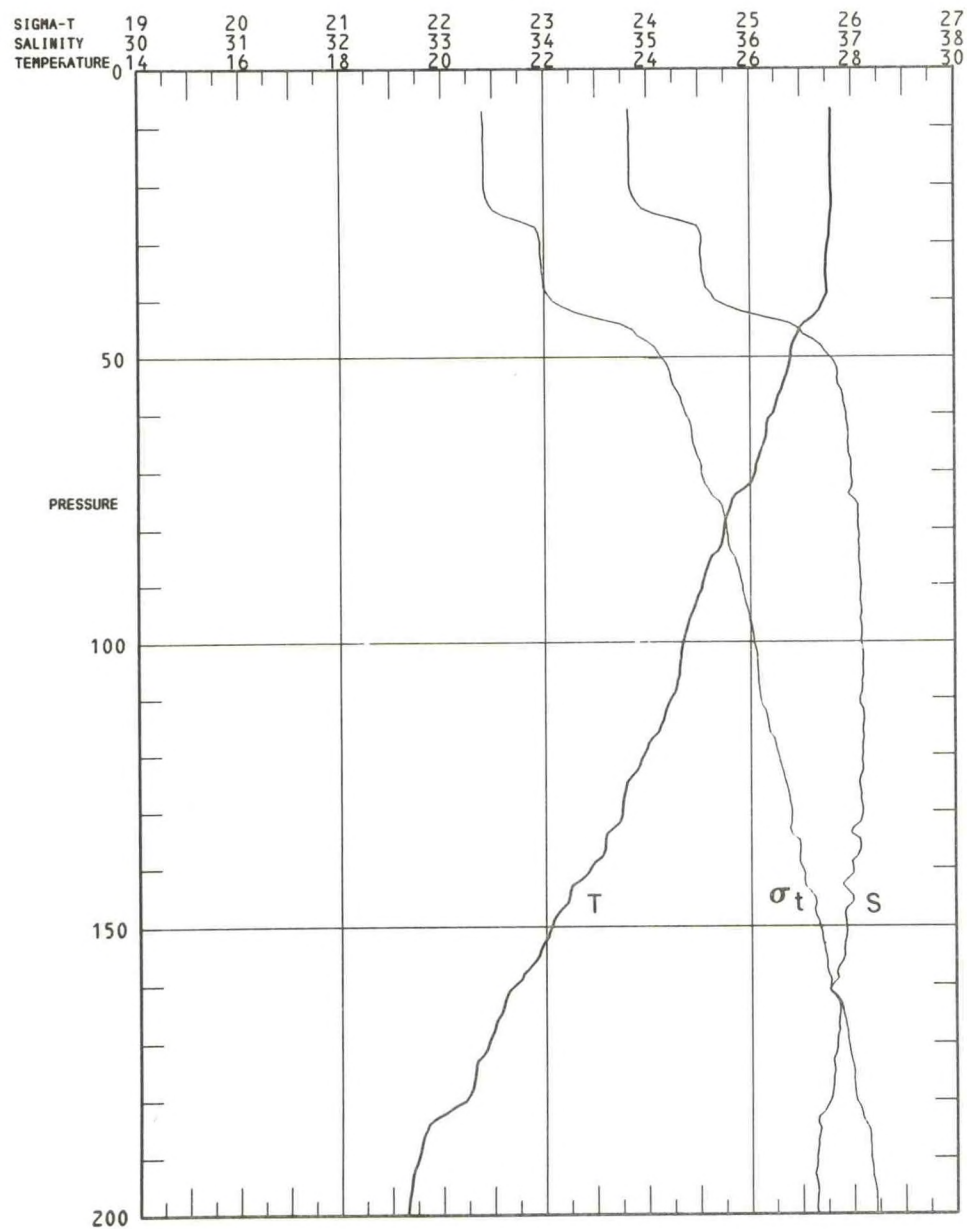


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



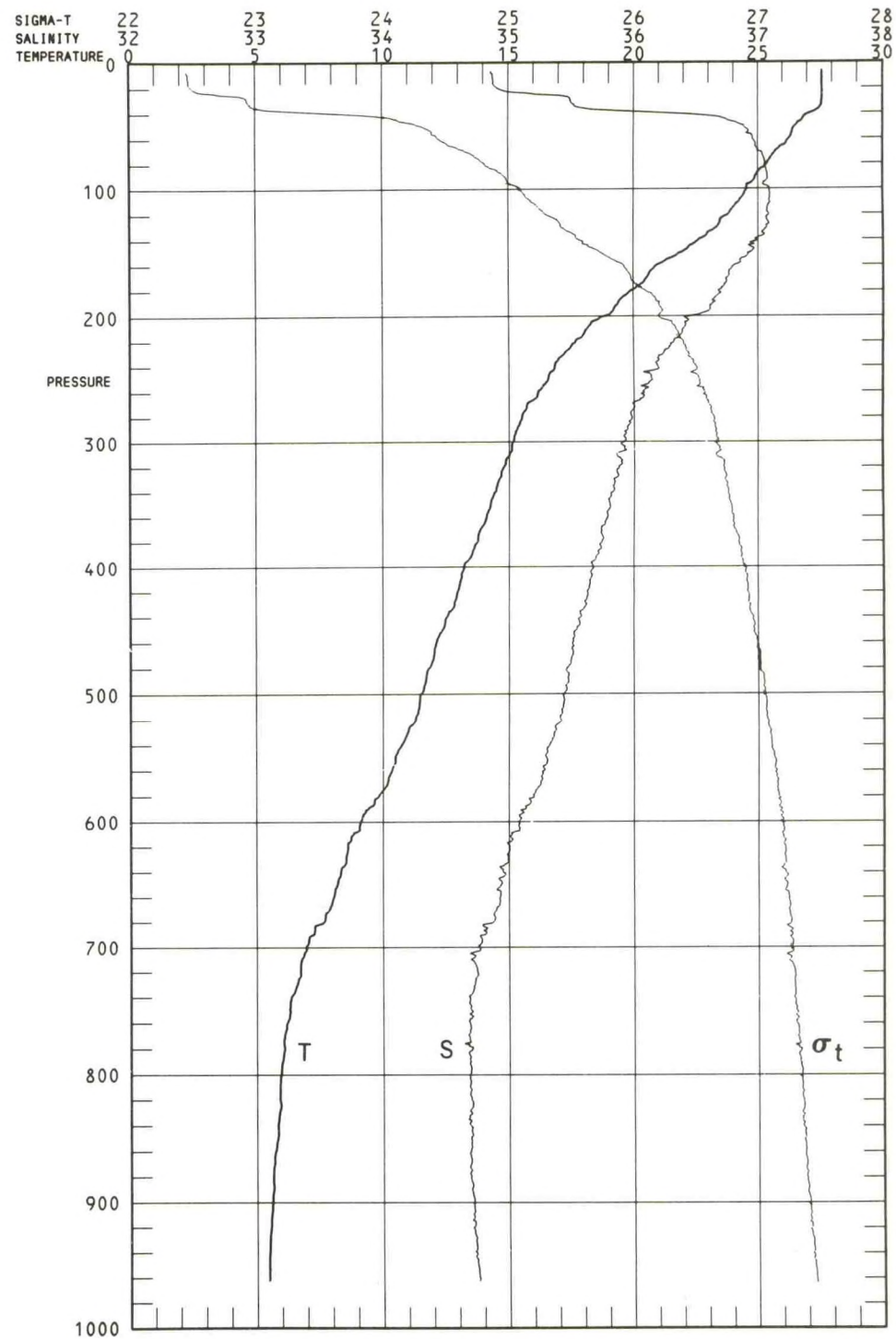
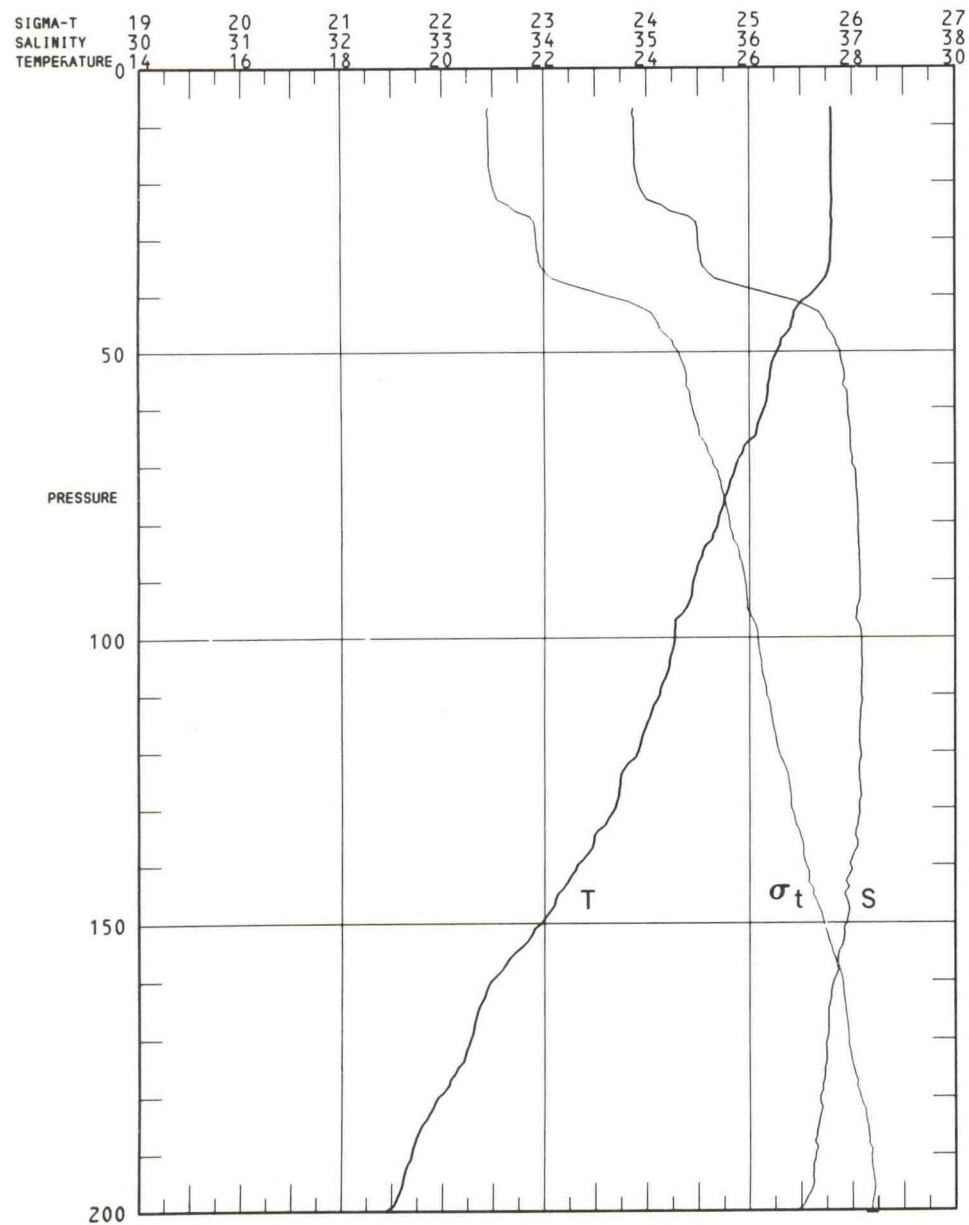
Oceanographer, June 29, 1969, 0601 GMT, 17°36'N 054°36'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 29, 1969, 0910 GMT, 17°36'N 054°35'W

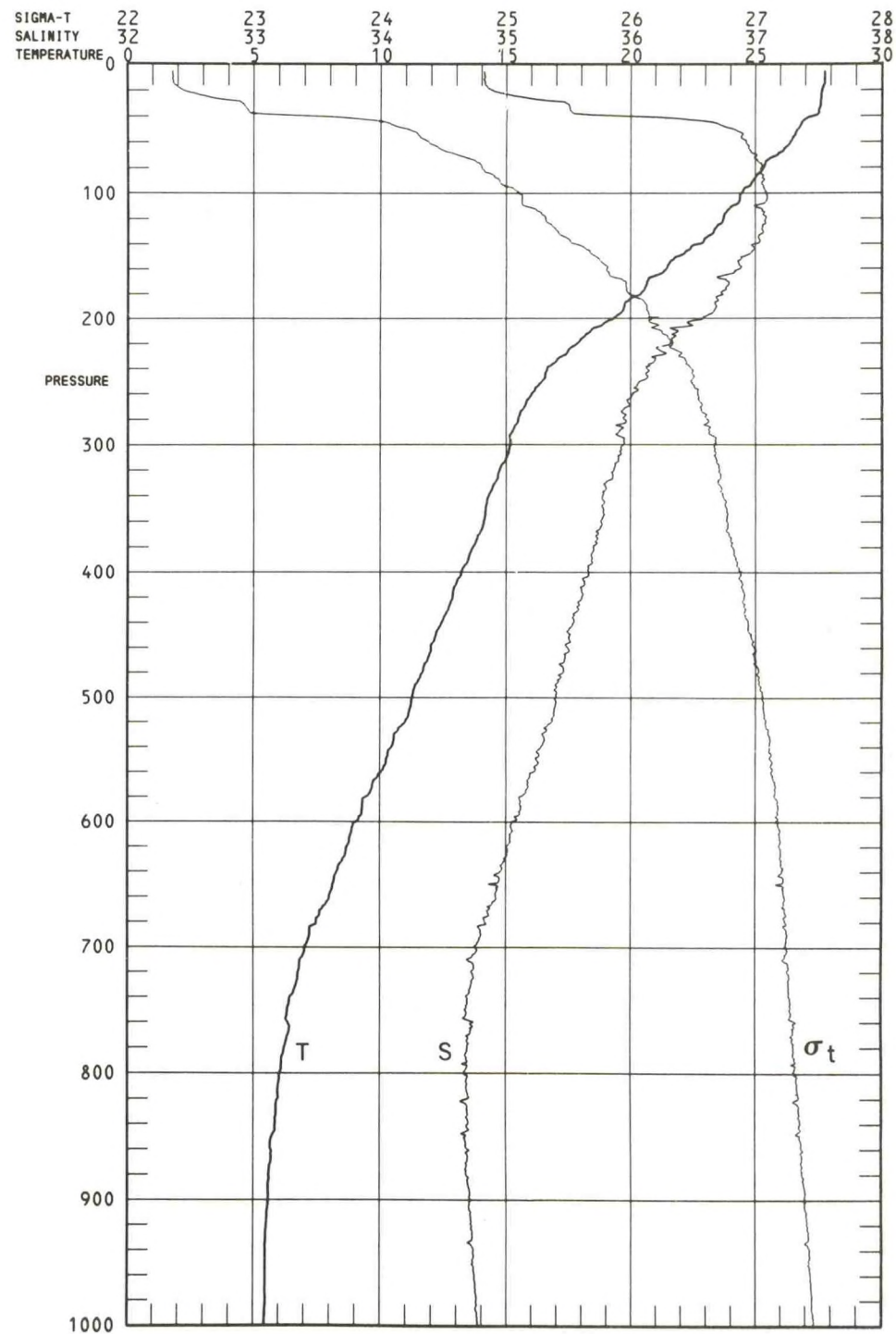
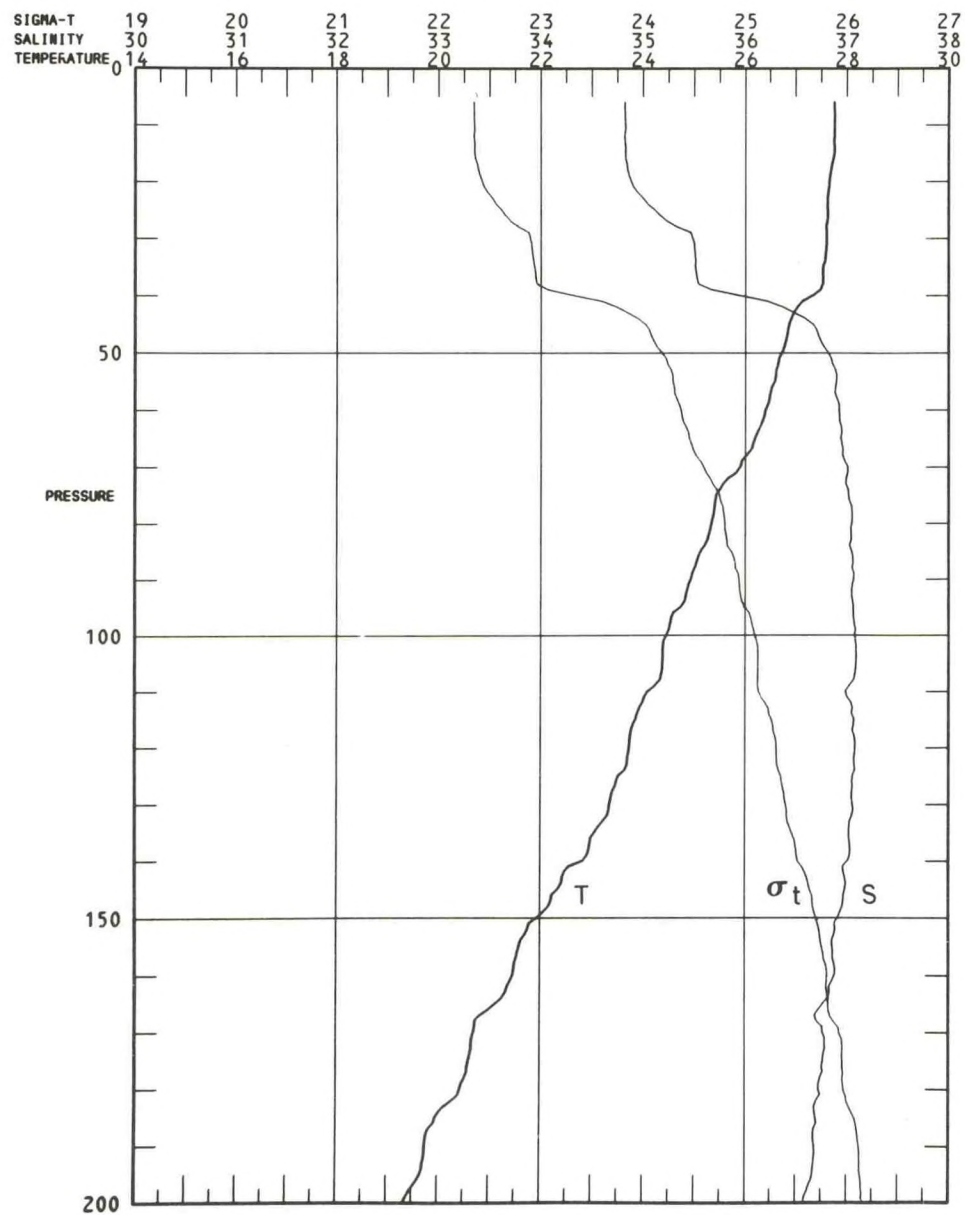
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 29, 1969, 1200 GMT, 17°36'N 054°36'W

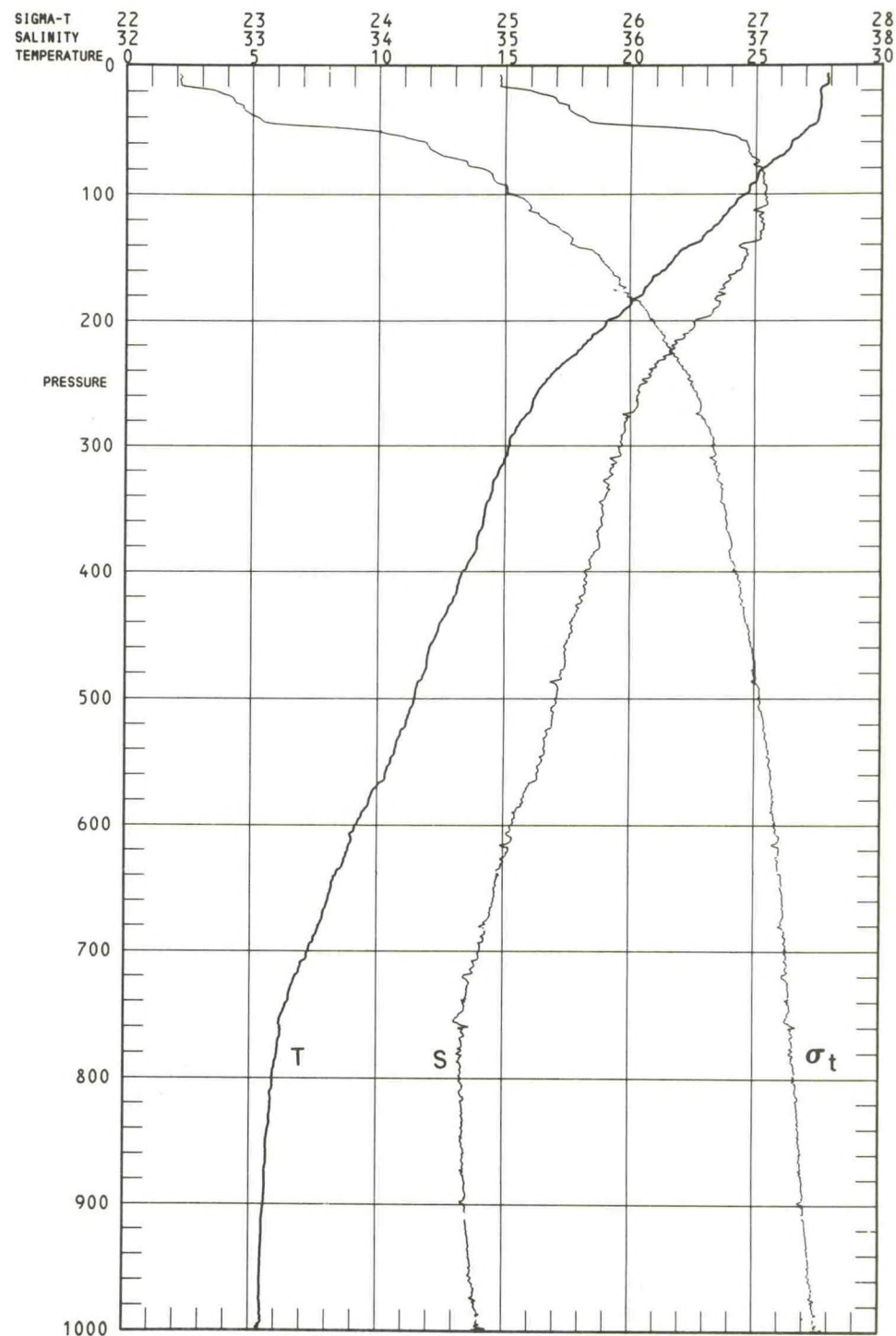
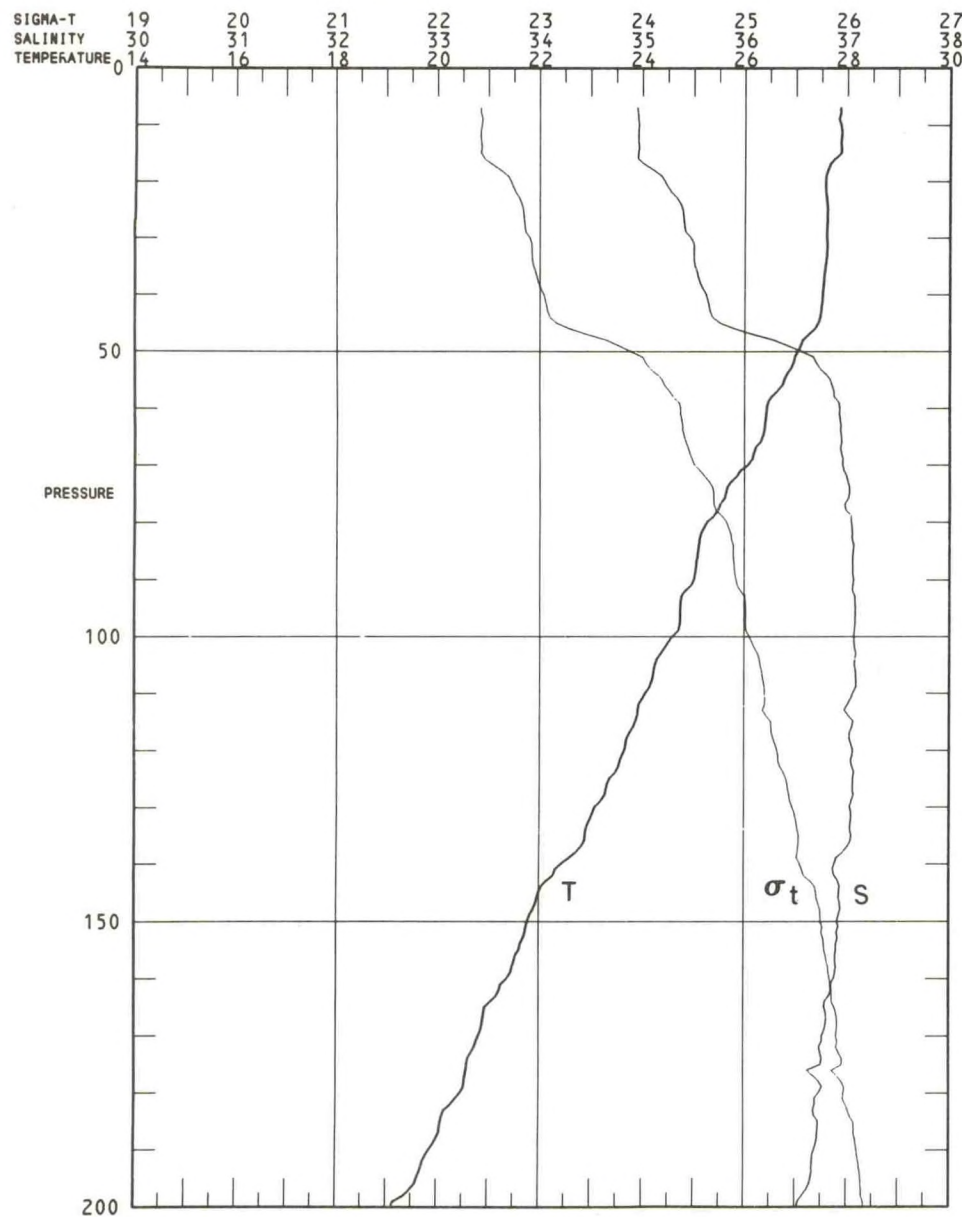


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 29, 1969, 1533 GMT, 17°36'N 054°36'W

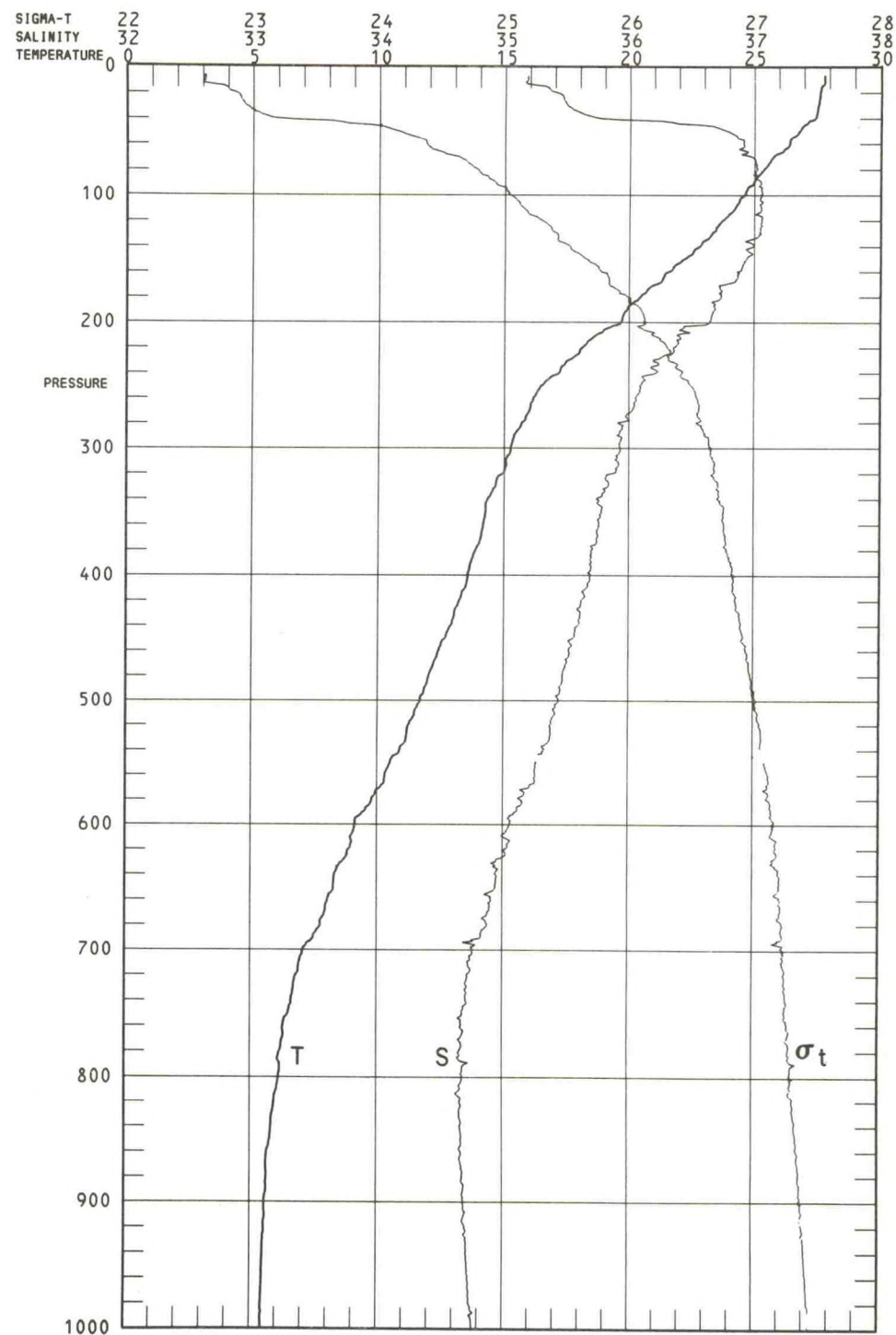
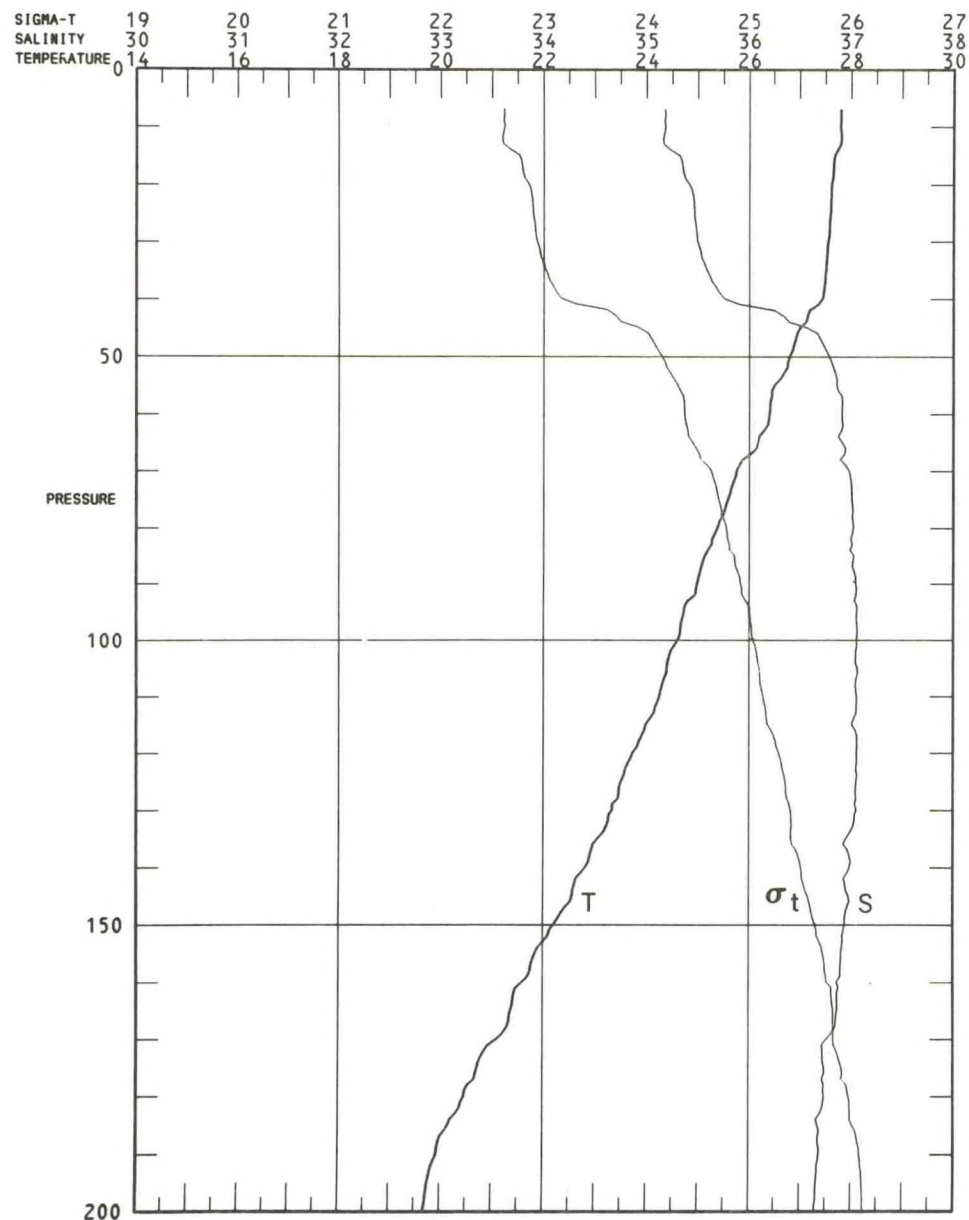
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 29, 1969, 1802 GMT, 17°37'N 054°36'W

# STD Depth-Sorted Plots

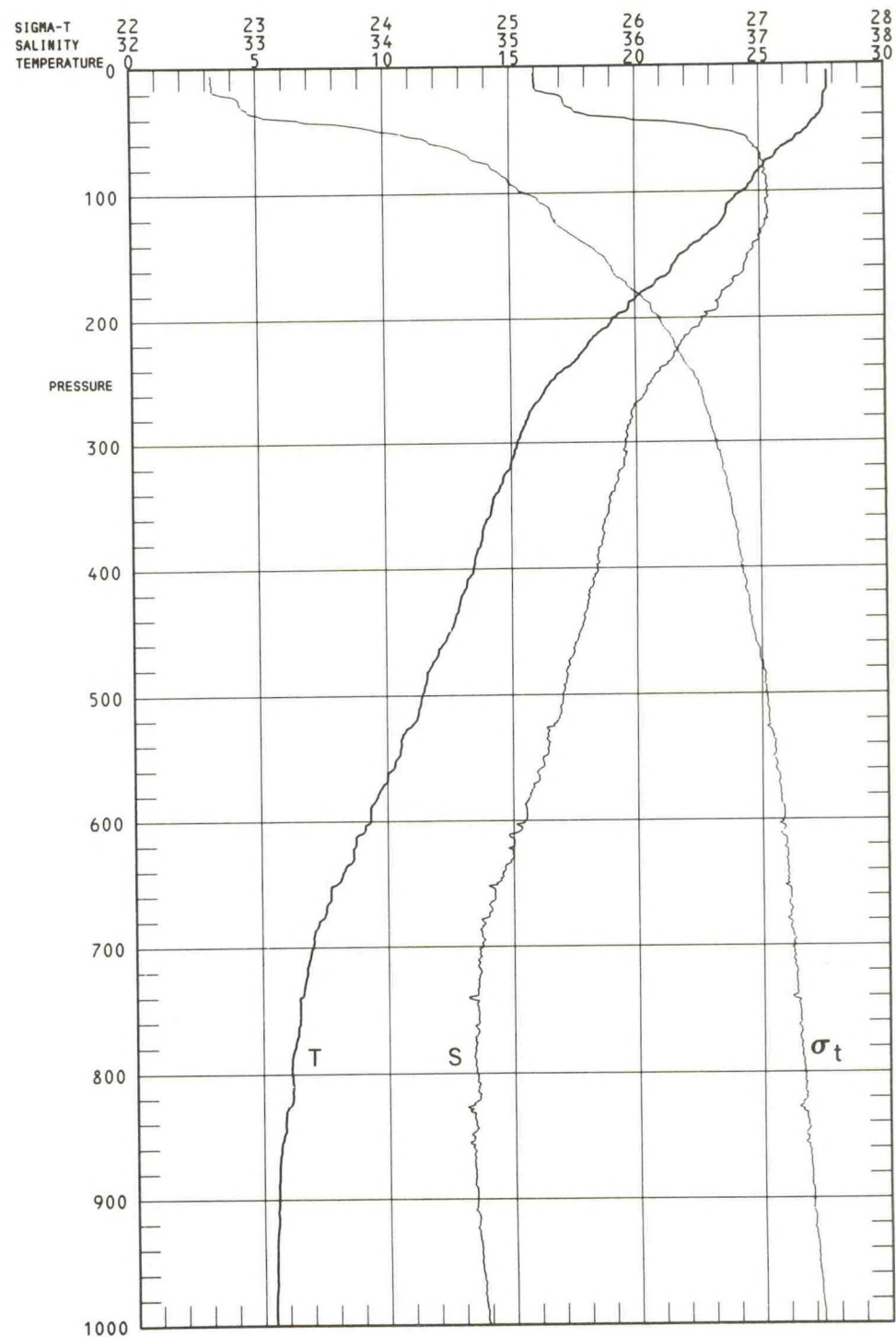
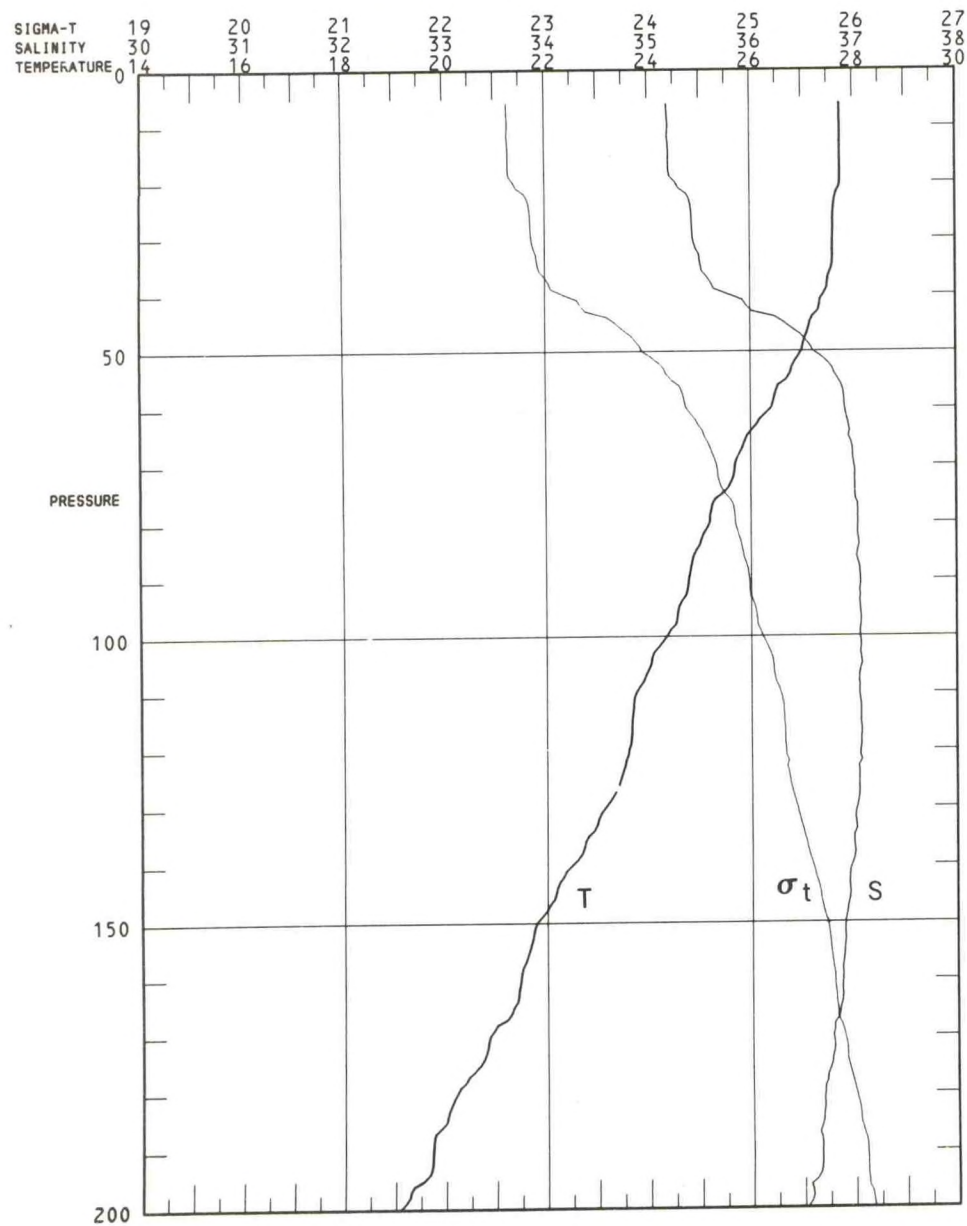
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 29, 1969, 2113 GMT, 17°36'N 054°36'W

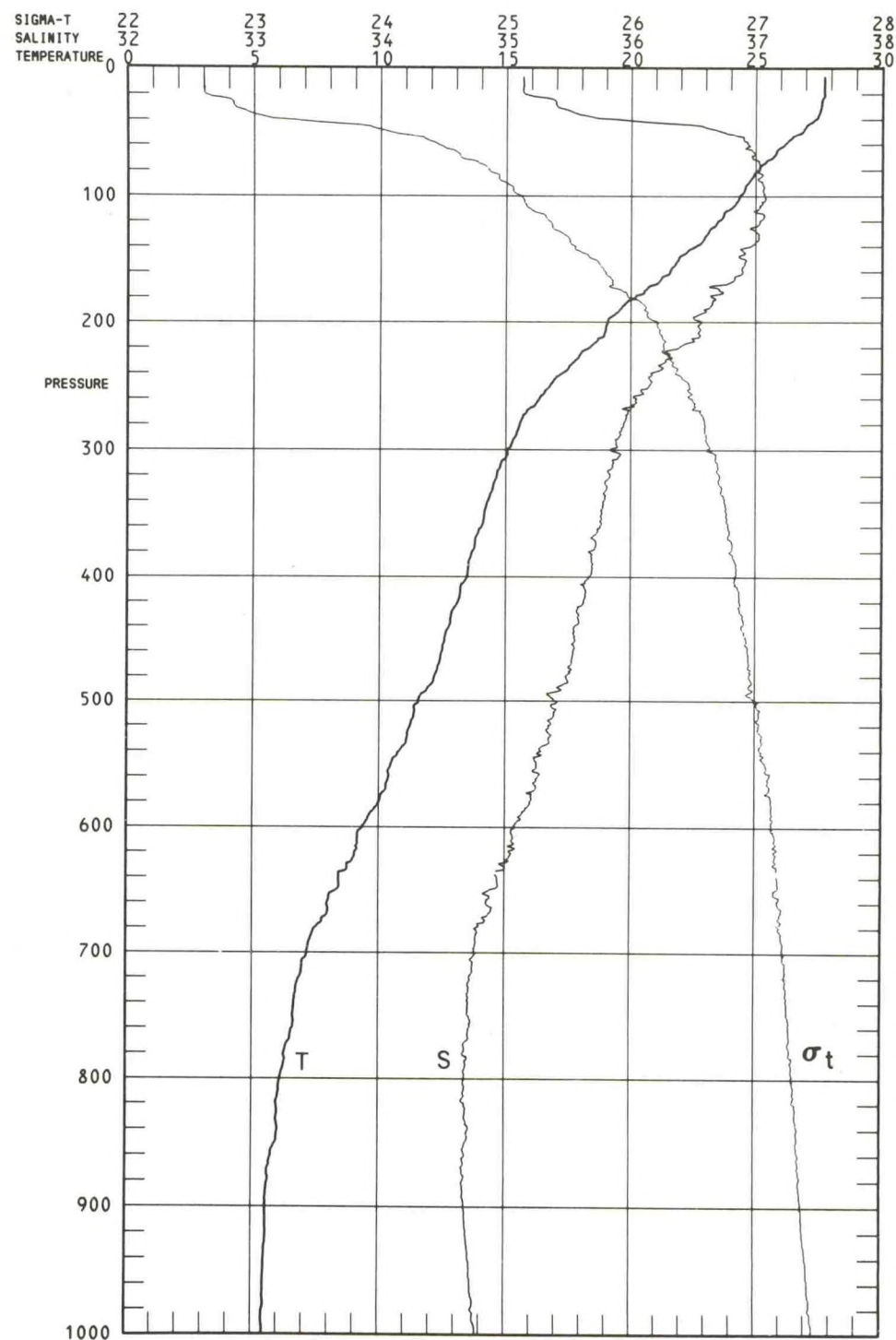
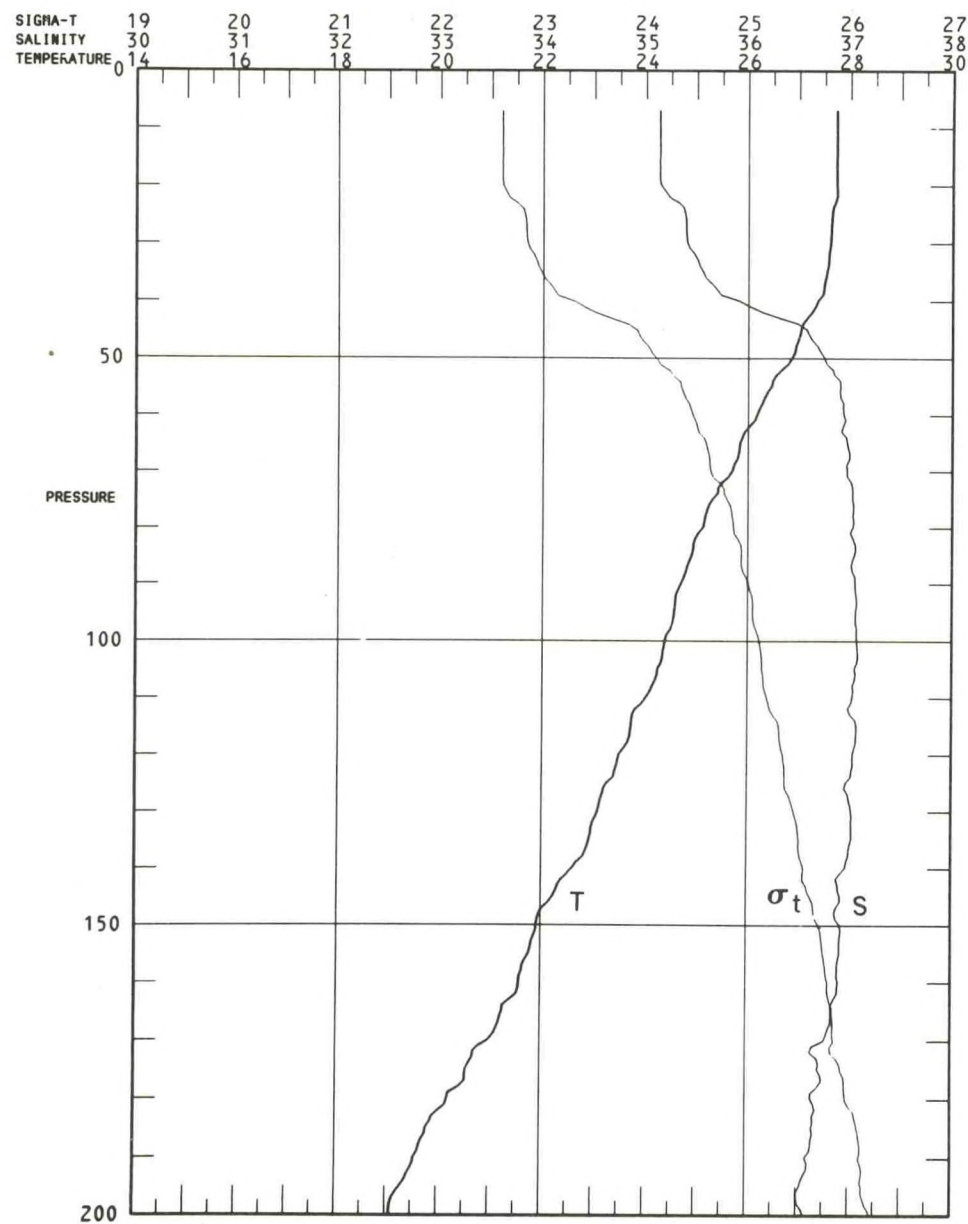


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



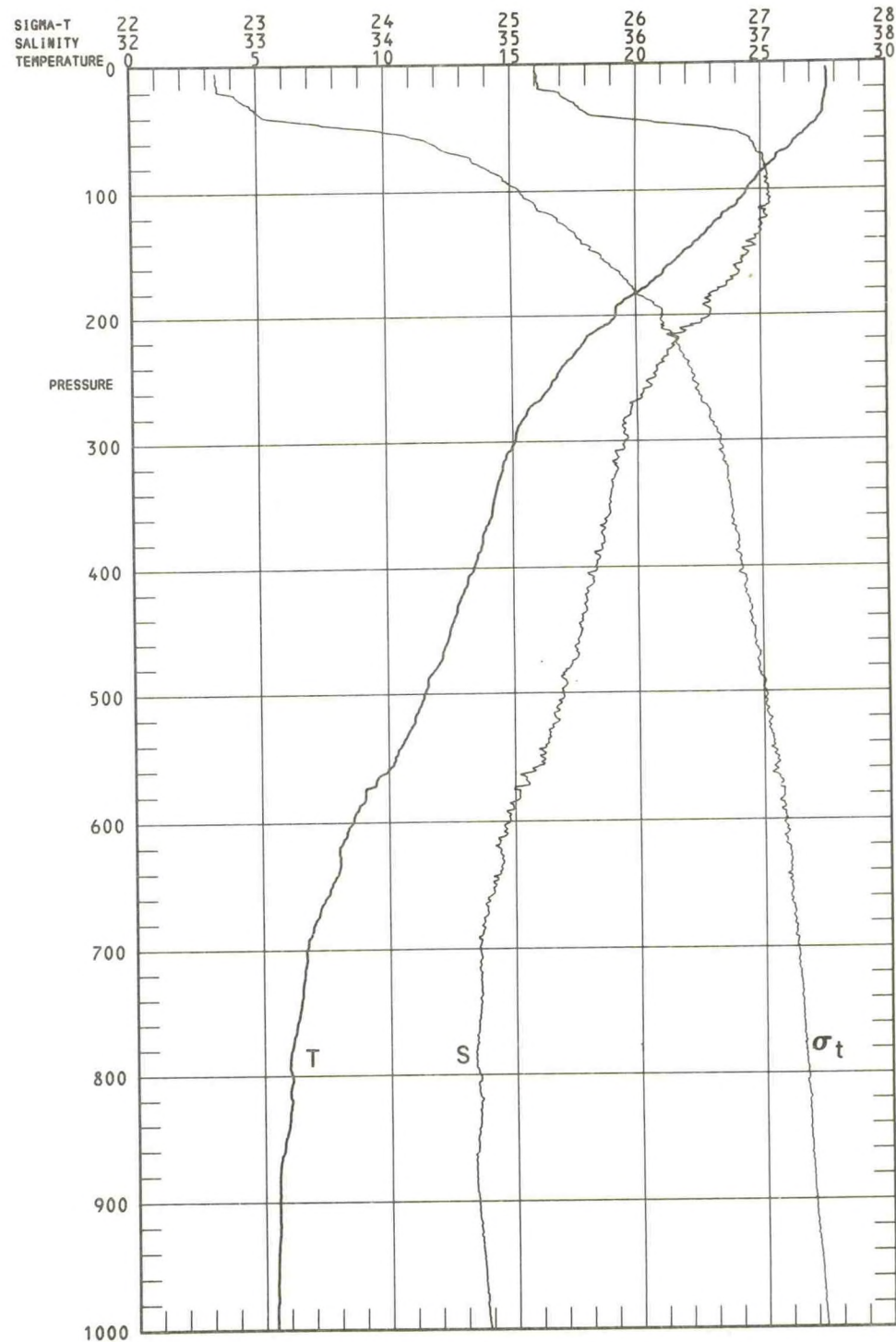
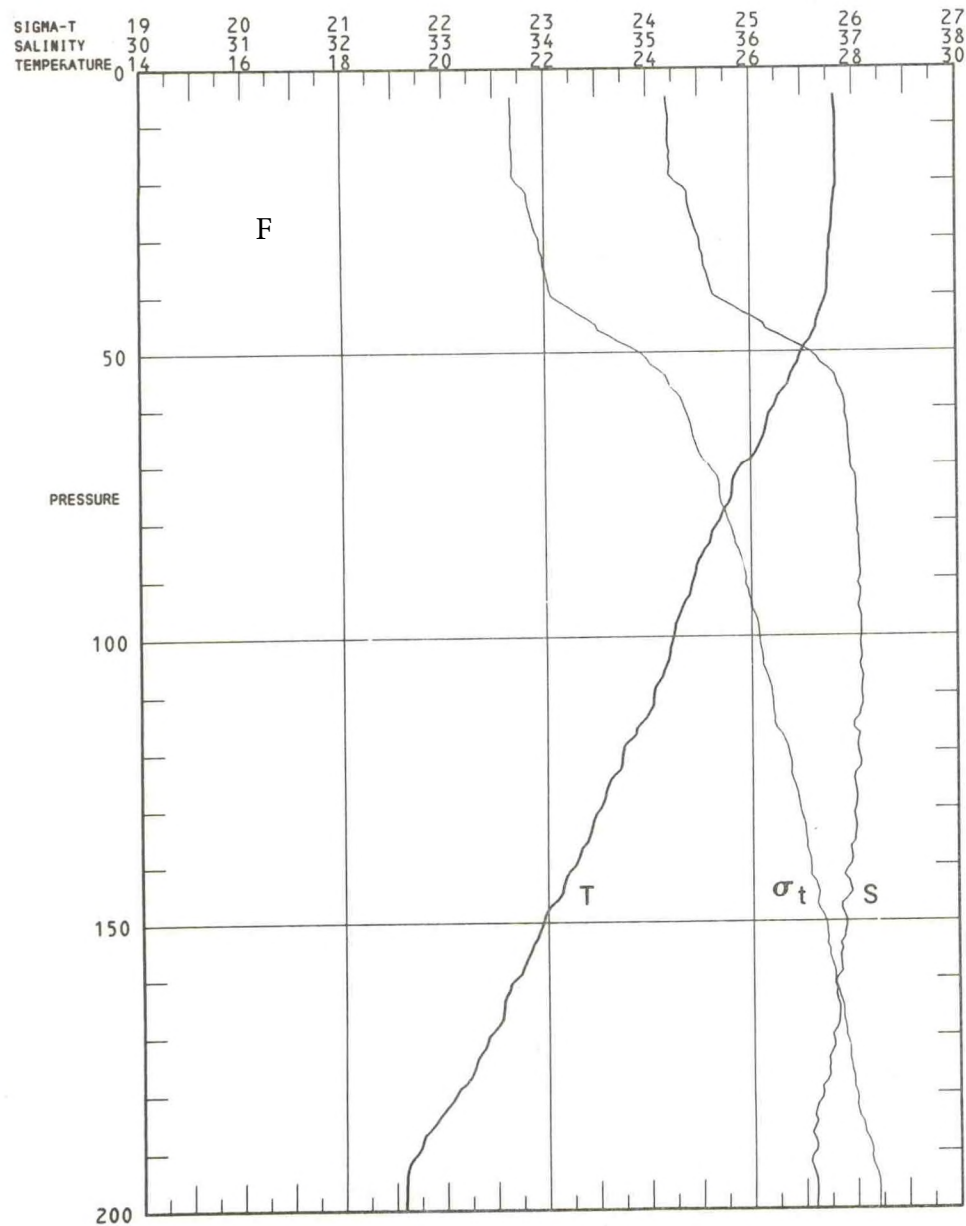
Oceanographer, June 30, 1969, 0118 GMT, 17°36'N 054°34'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Oceanographer, June 30, 1969, 0305 GMT, 17°36'N 054°34'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

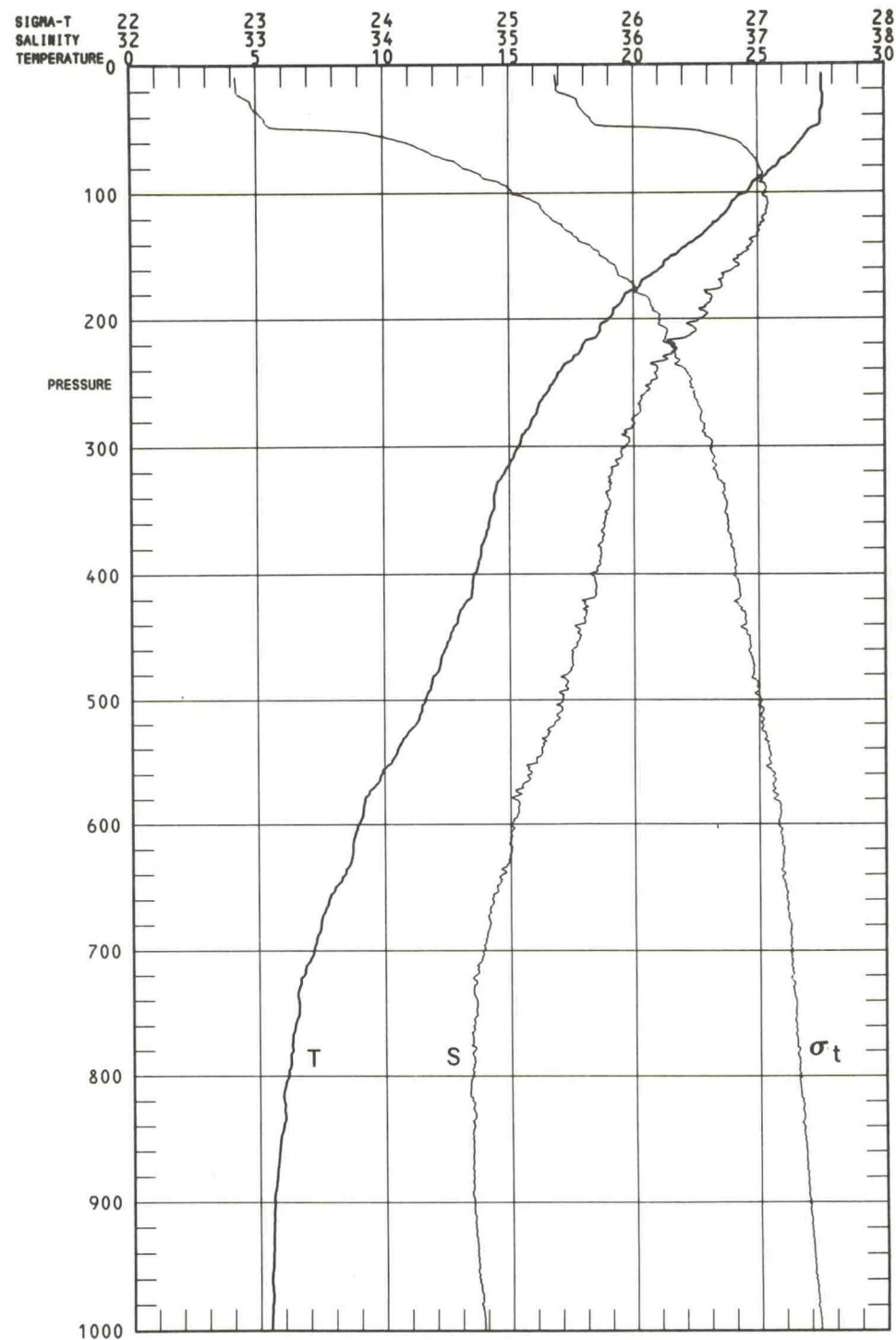
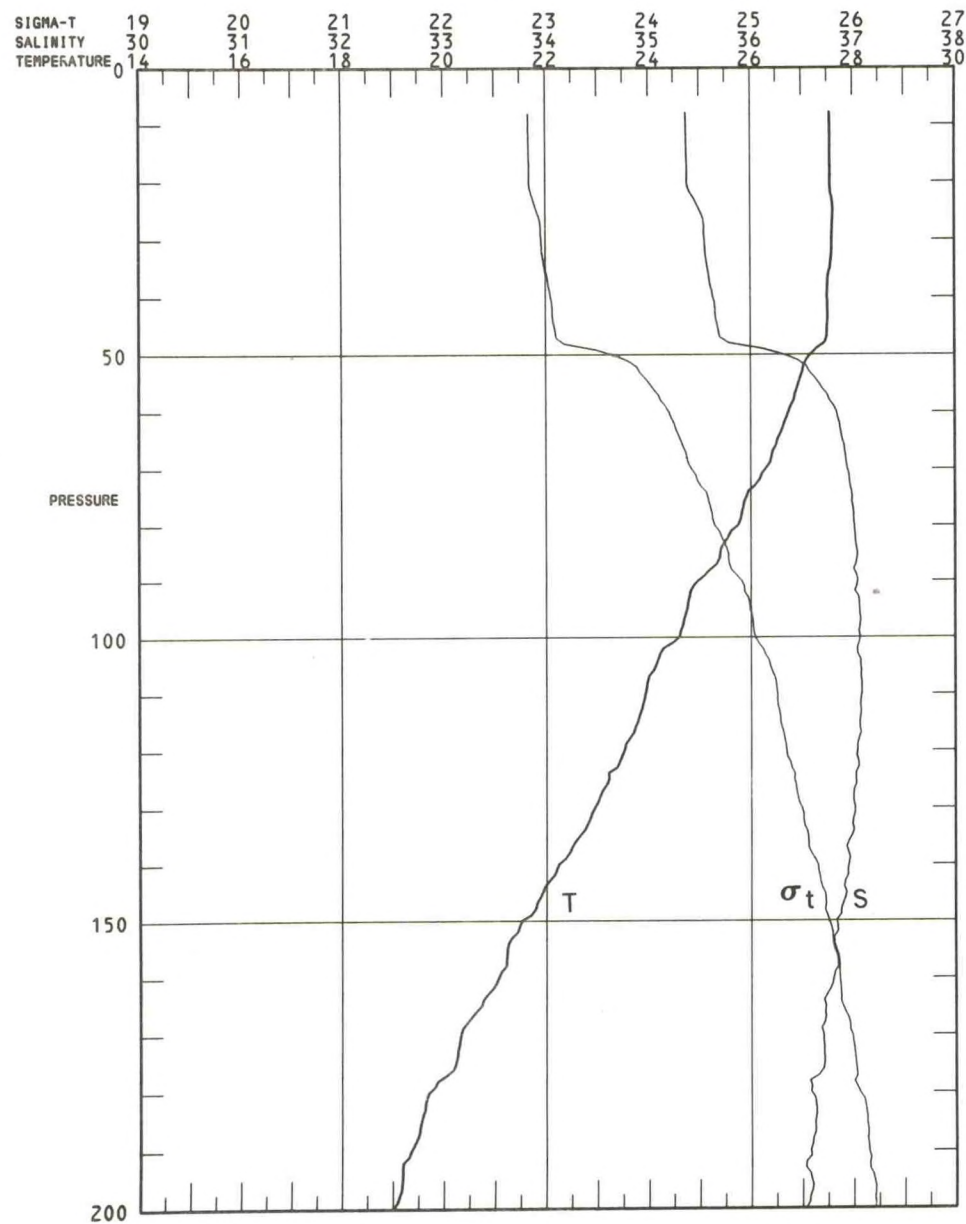


Oceanographer, June 30, 1969, 0601 GMT, 17°36'N 054°34'W

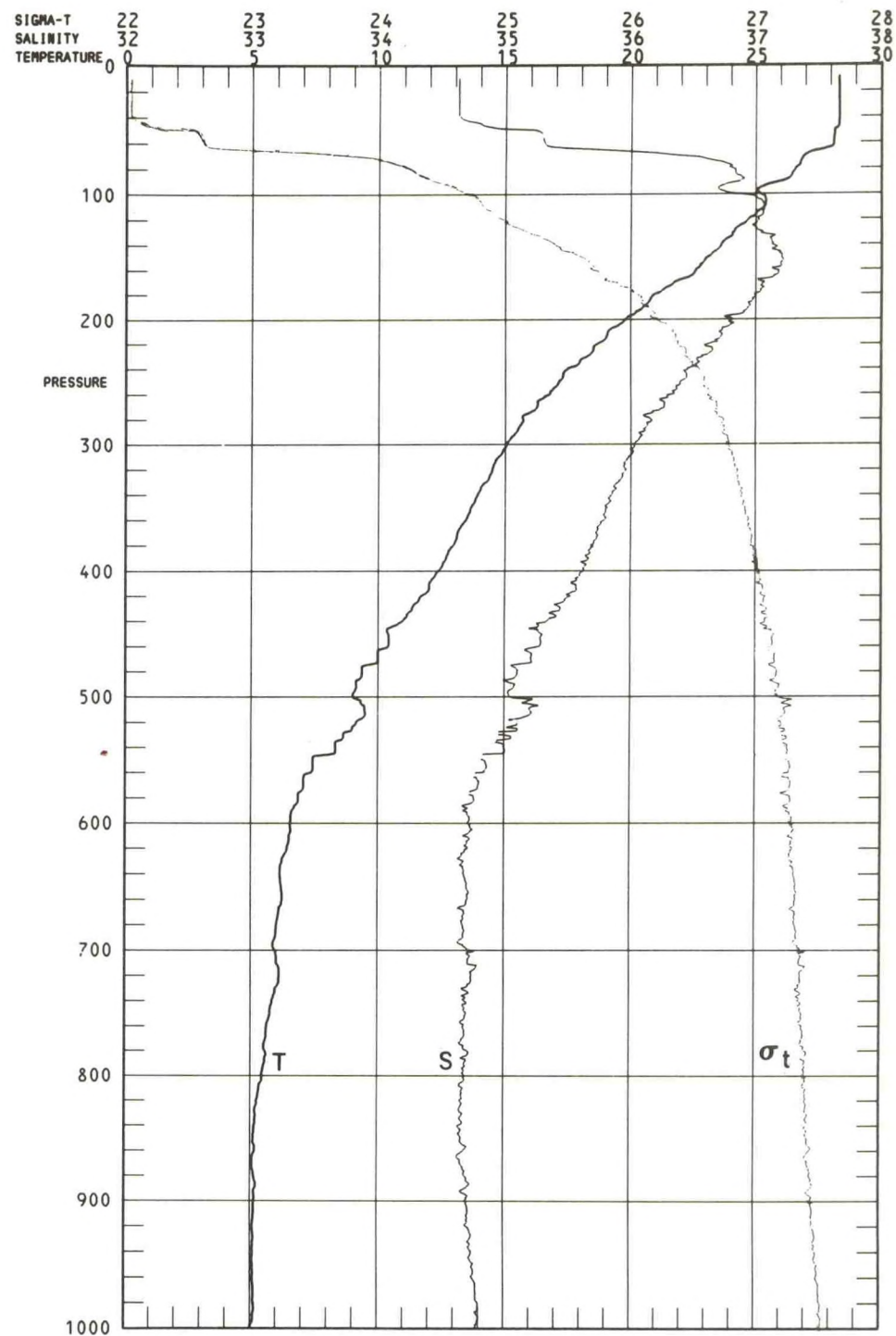
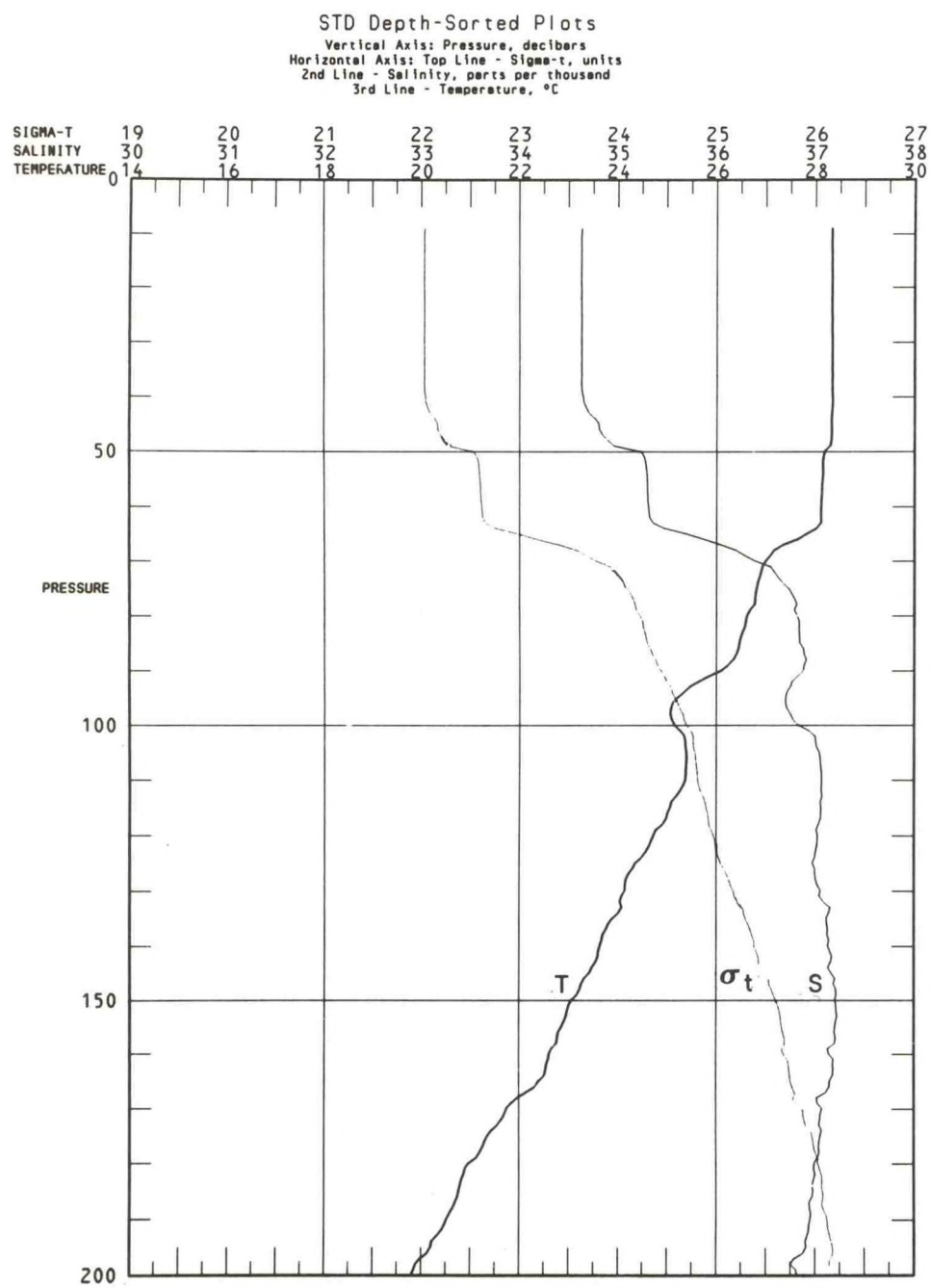


# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



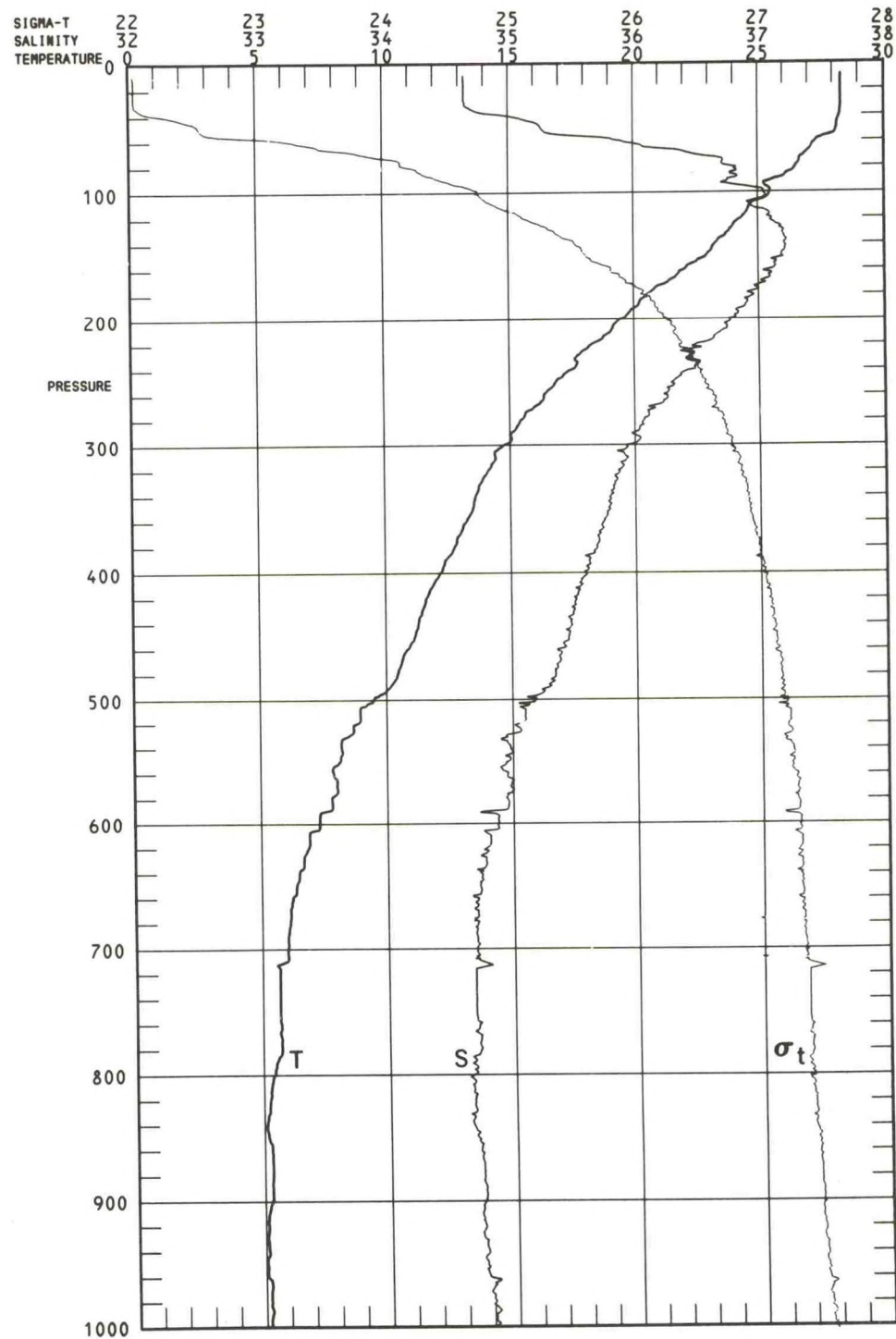
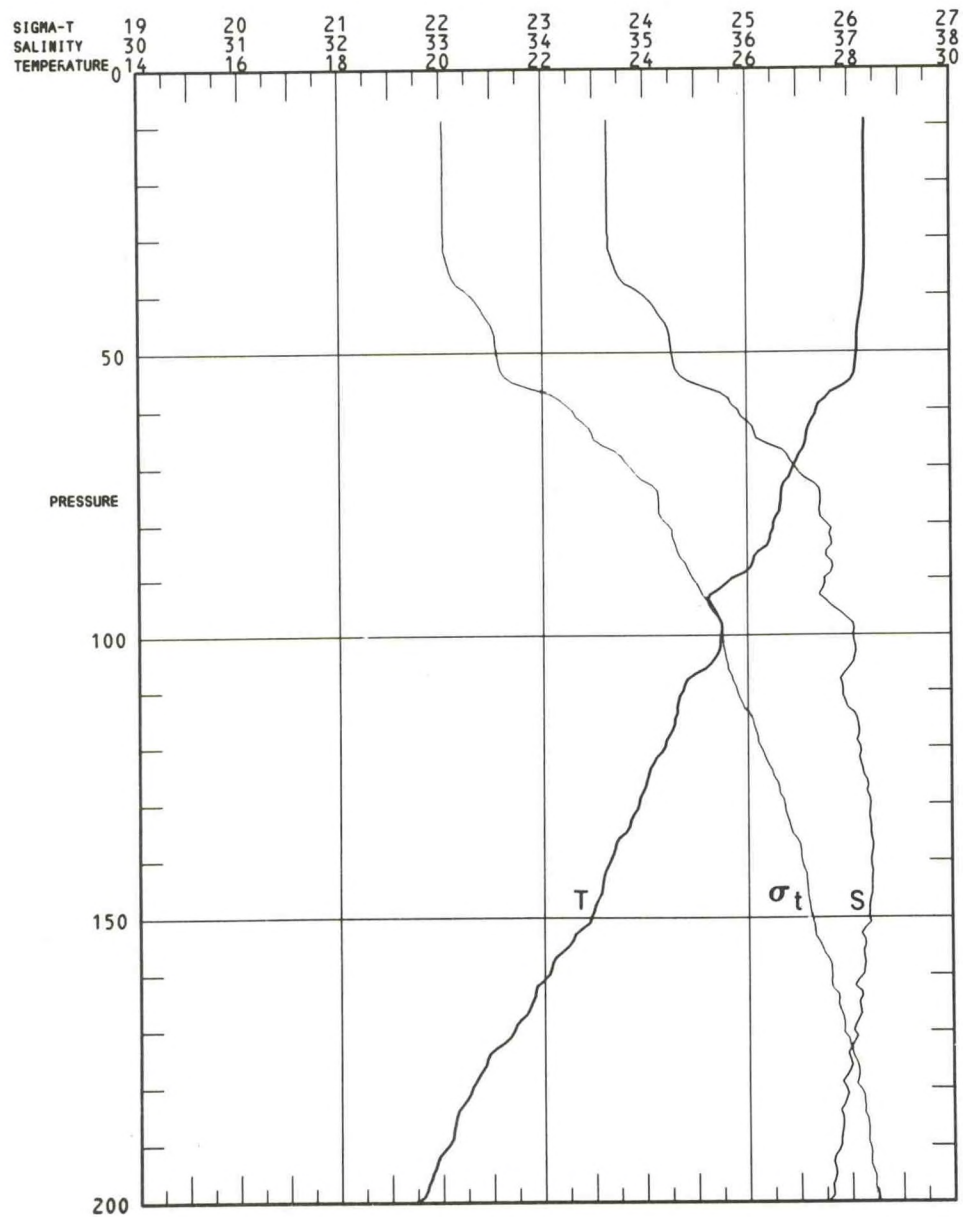
Oceanographer, June 30, 1969, 0910 GMT, 17°35'N 054°35'W



Rockaway, June 21, 1969, 0057 GMT, 15°23'N 056°30'W

ROCKAWAY YEAR 1969 DAY 172 TIME 303 GMT LAT.15°25'N LON.056°33'W  
TIME CODE GENERATOR SUSPECTED TO HAVE SLIPPED AT 702 DECIBARS.

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

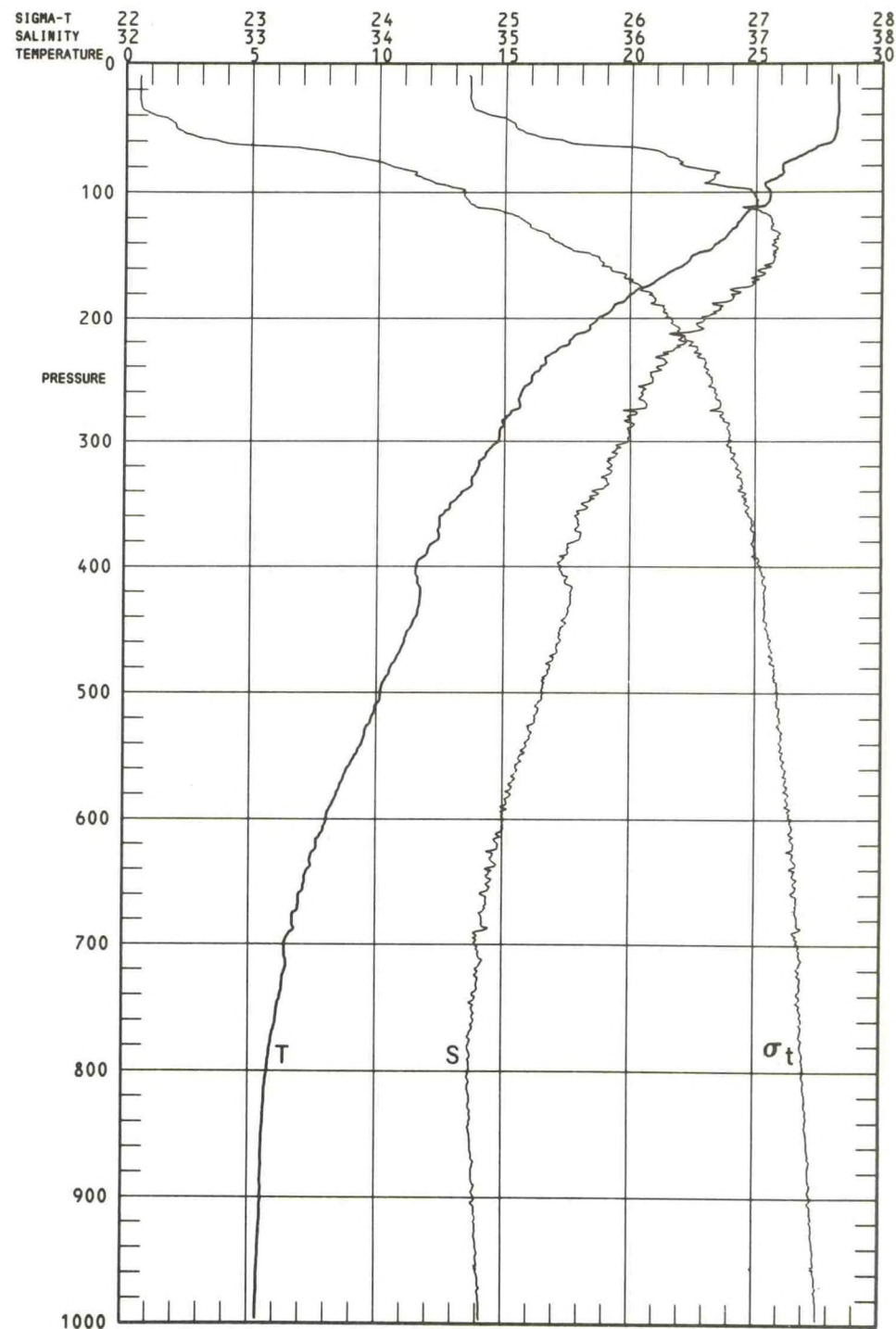
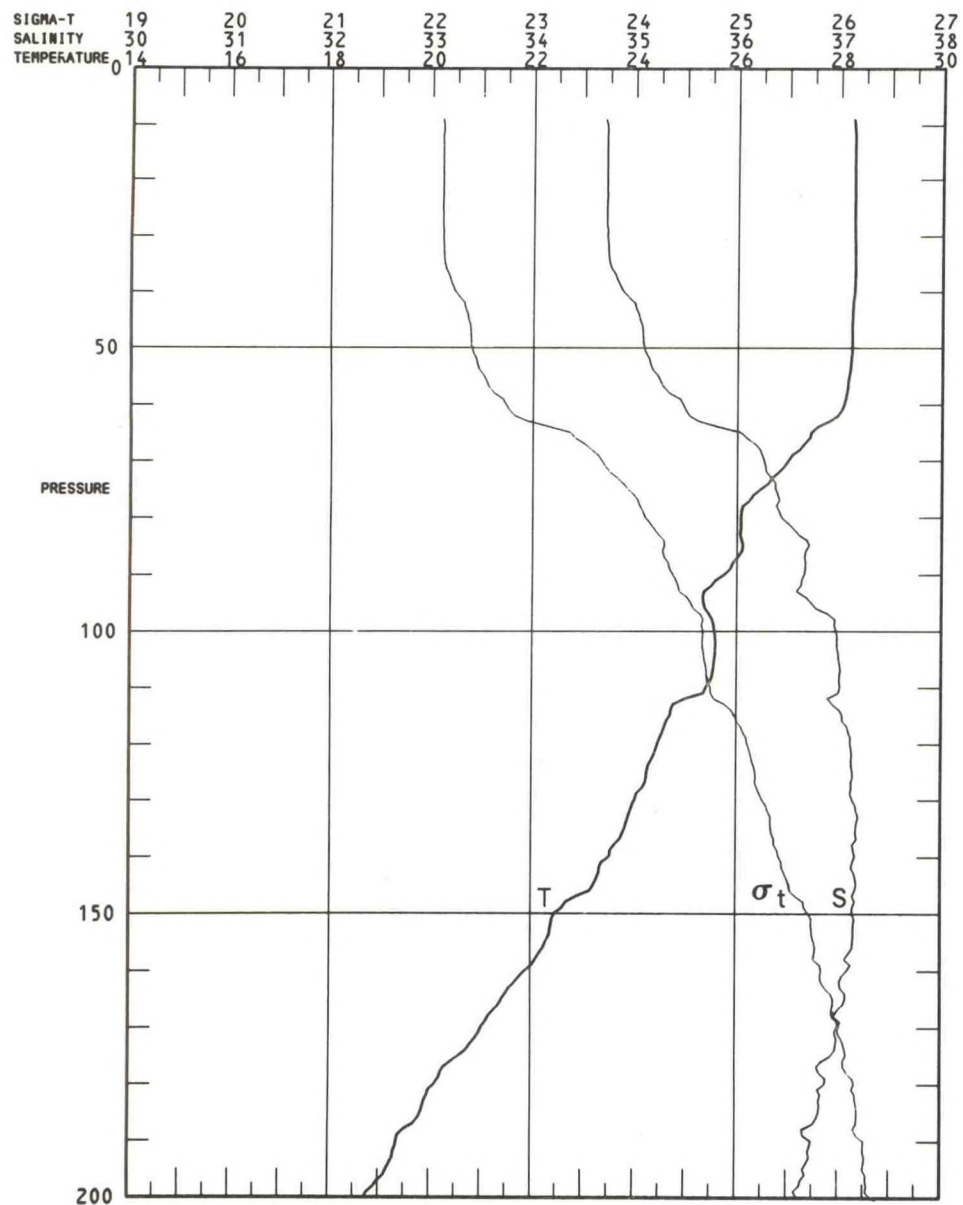


Rockaway, June 21, 1969, 0303 GMT, 15°25'N 056°33'W



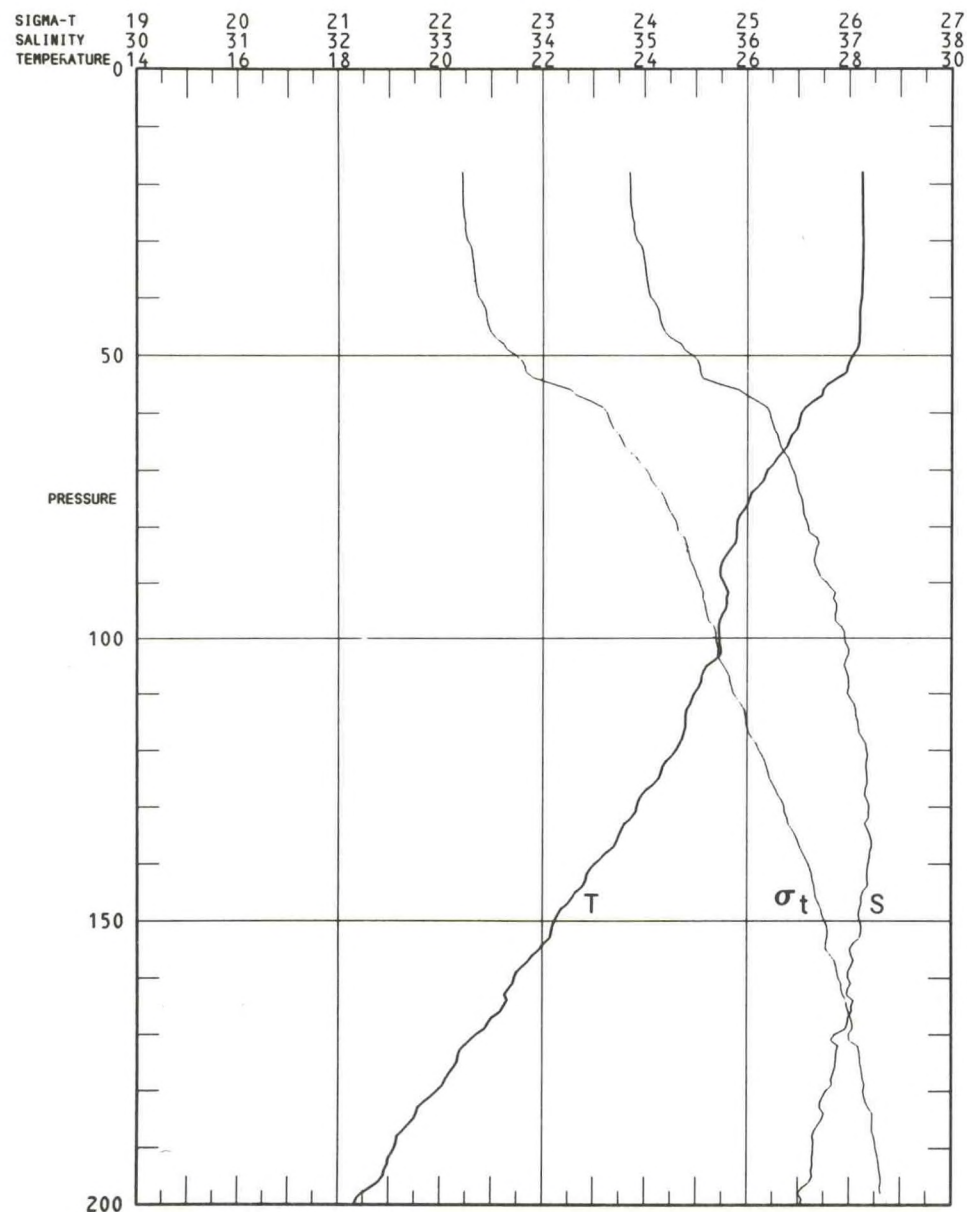
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

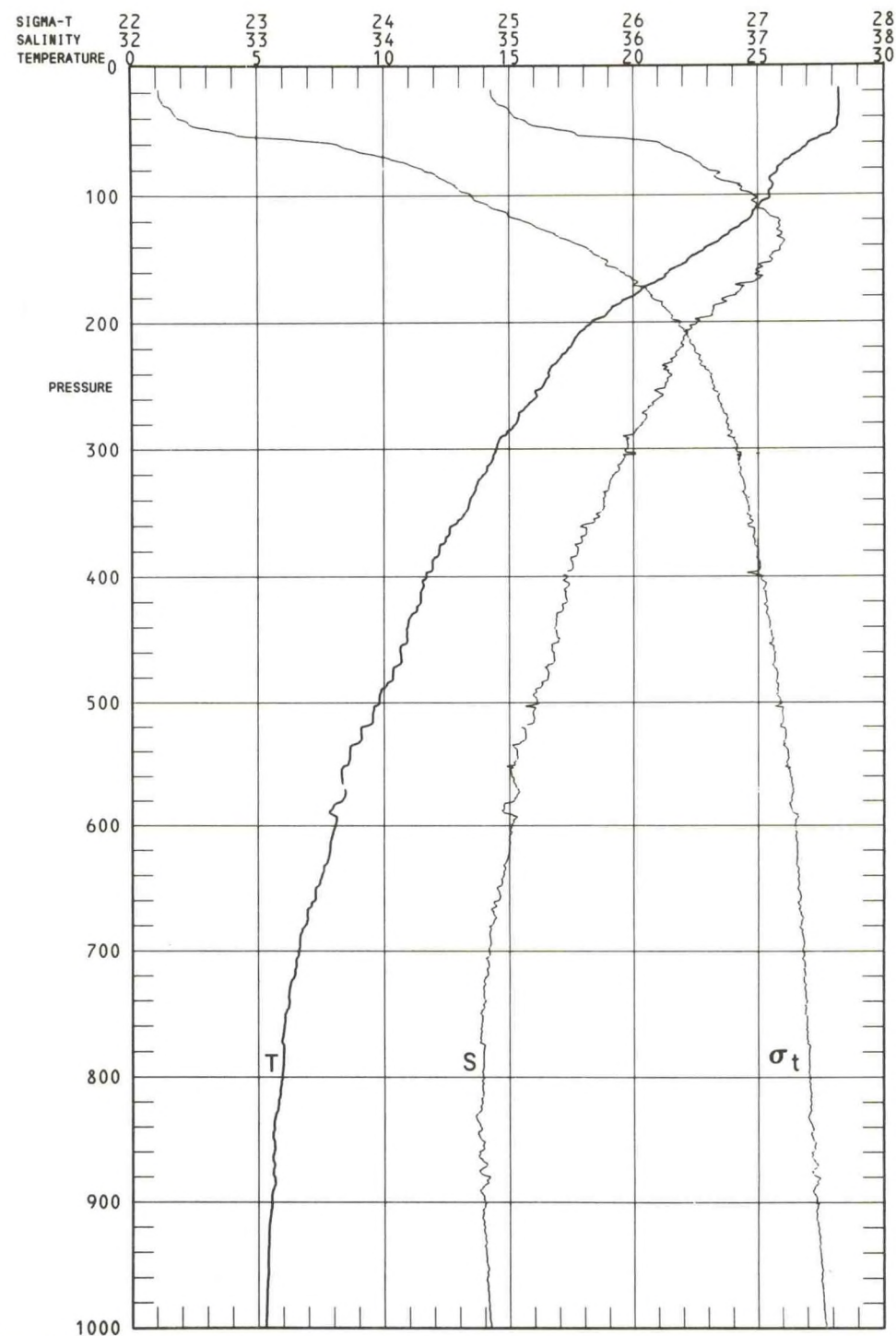


Rockaway, June 21, 1969, 0558 GMT, 15°25'N 056°33'W

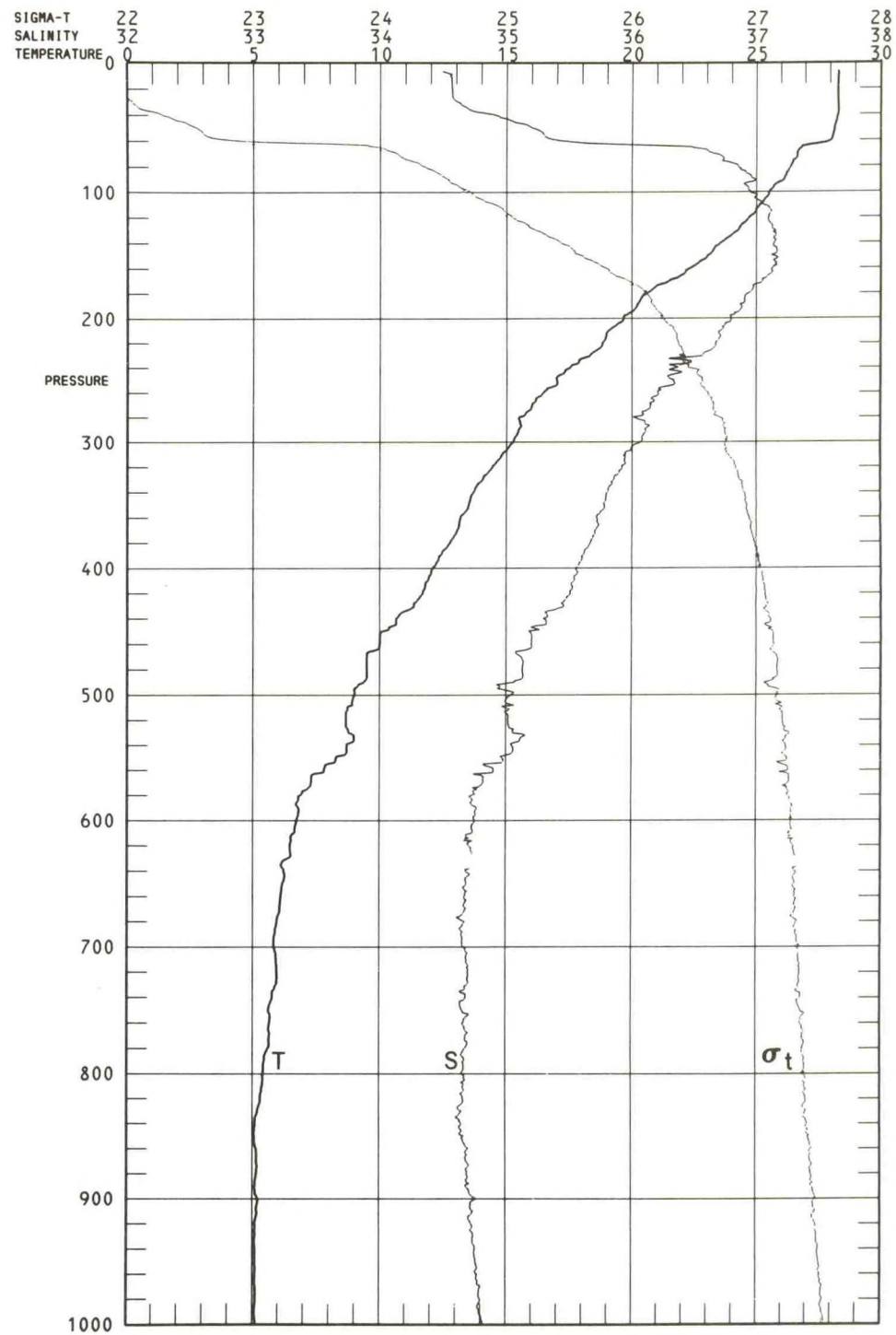
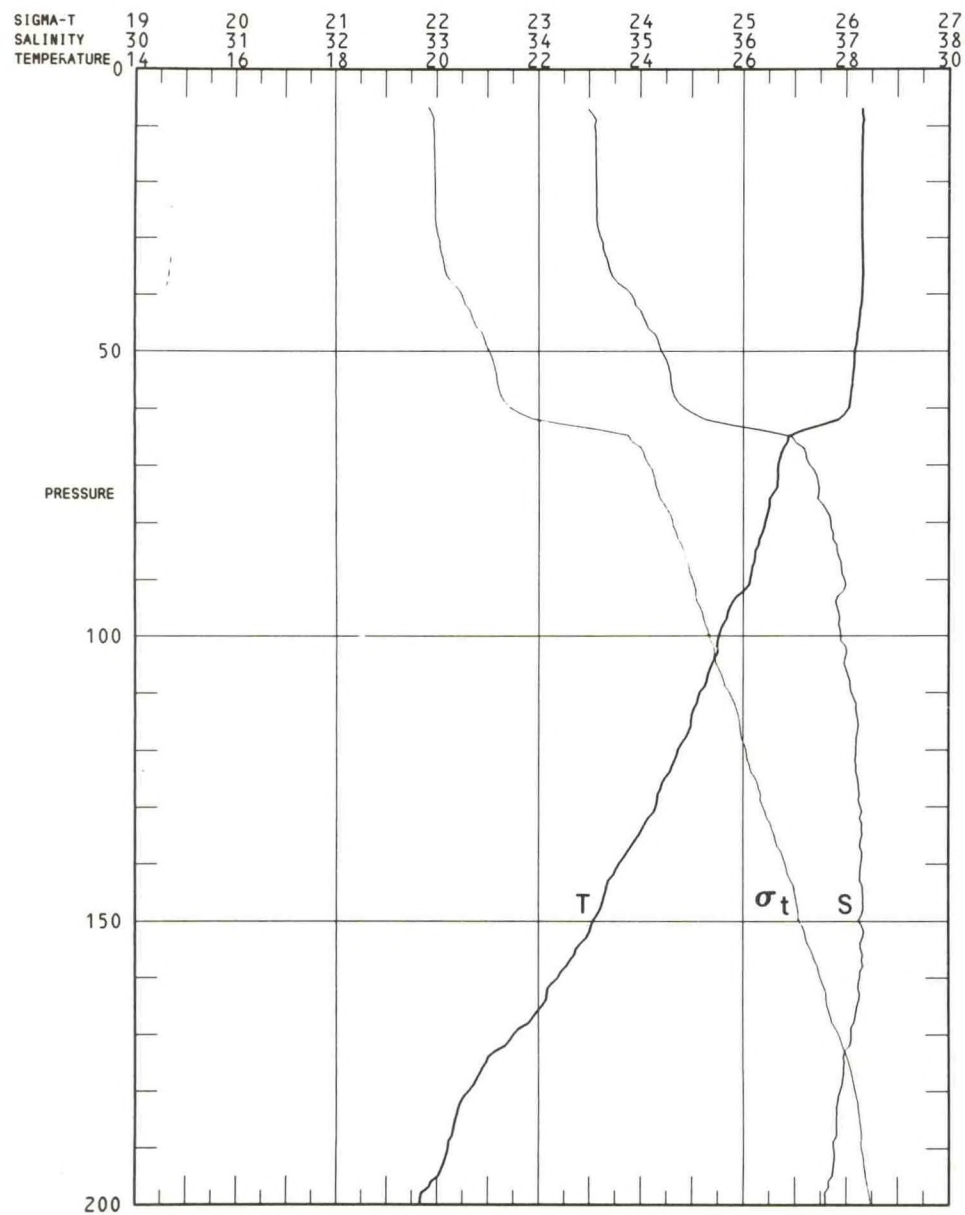
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 21, 1969, 0905 GMT, 15°25'N 056°33'W



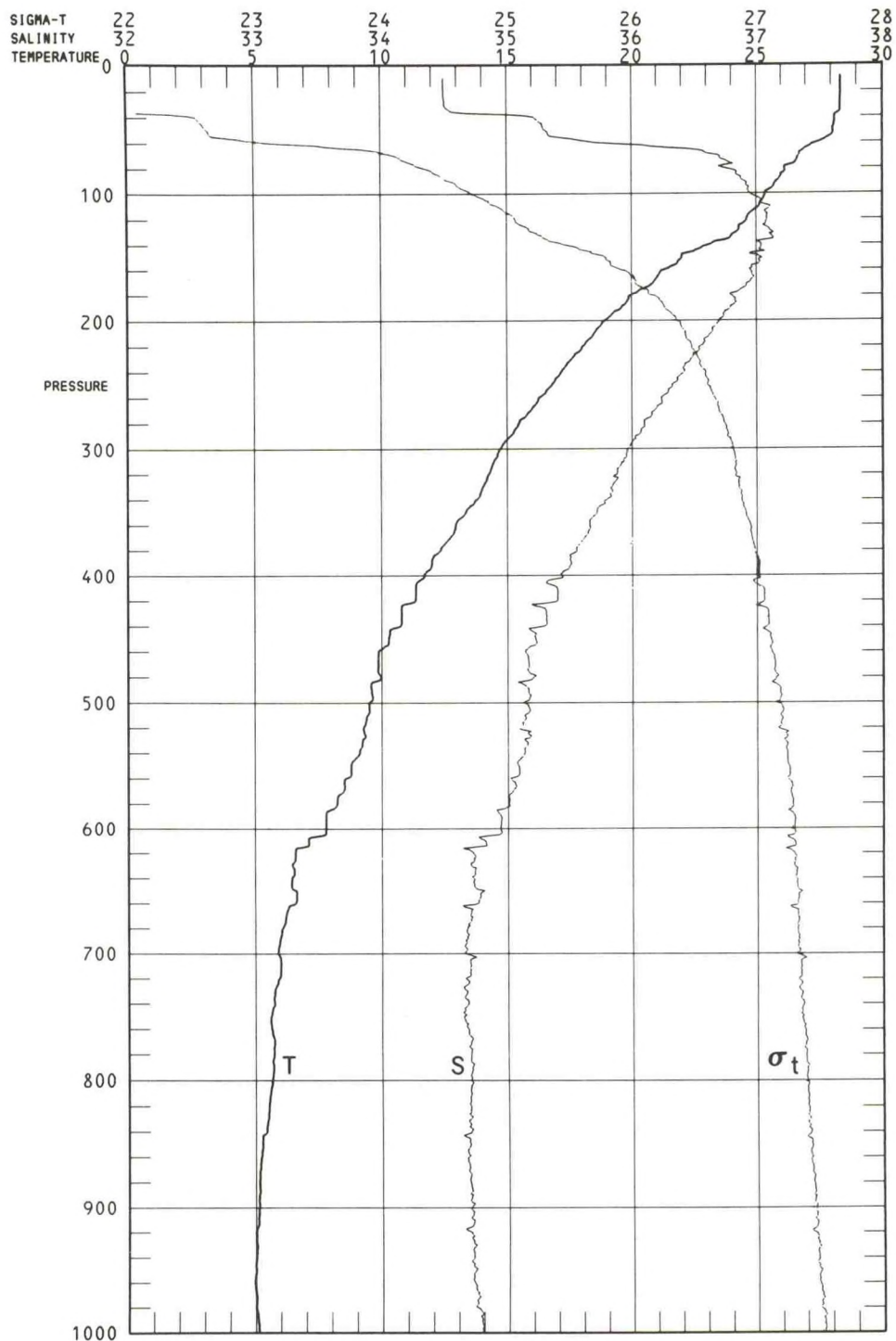
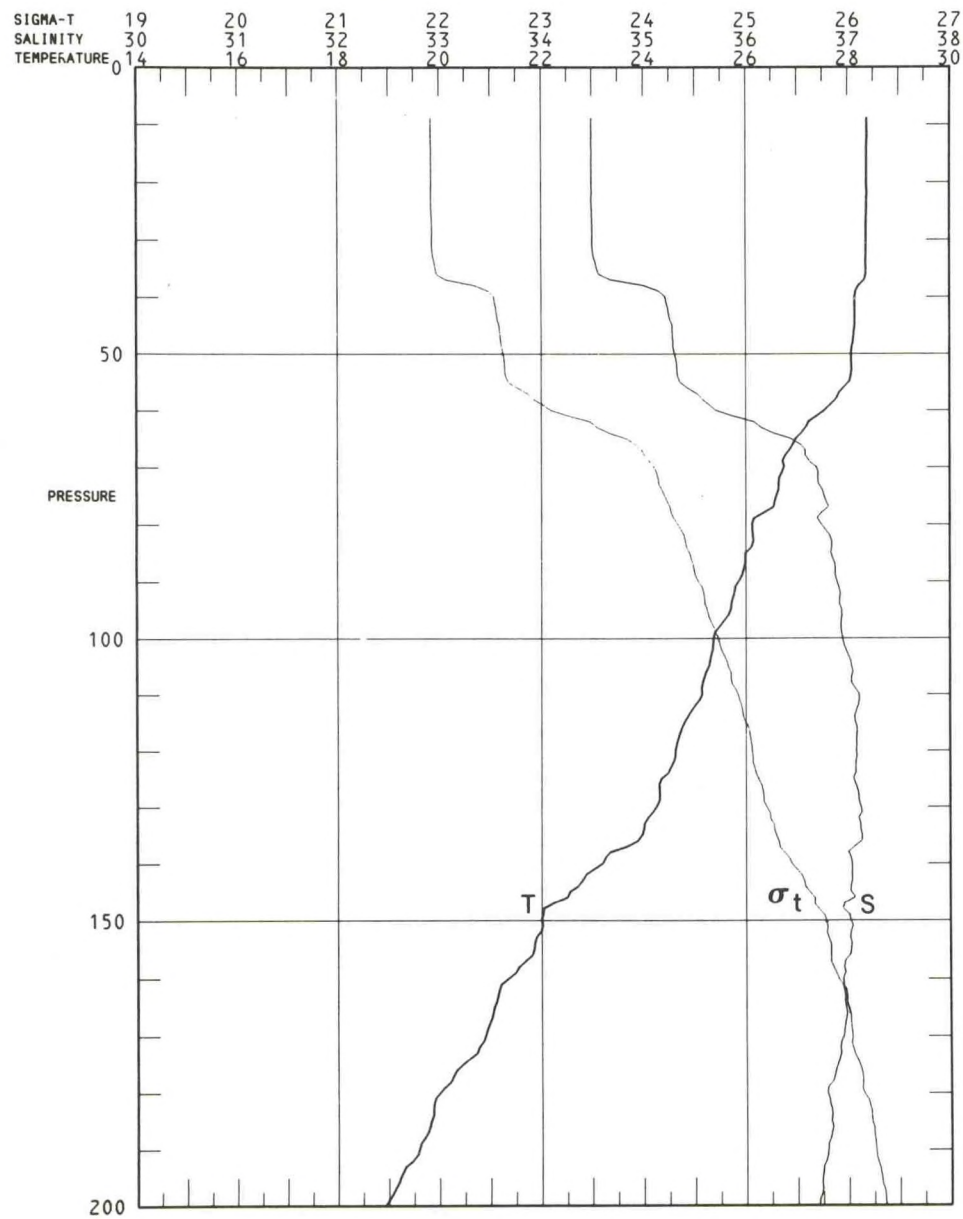
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 21, 1969, 1426 GMT, 15°23'N 056°35'W

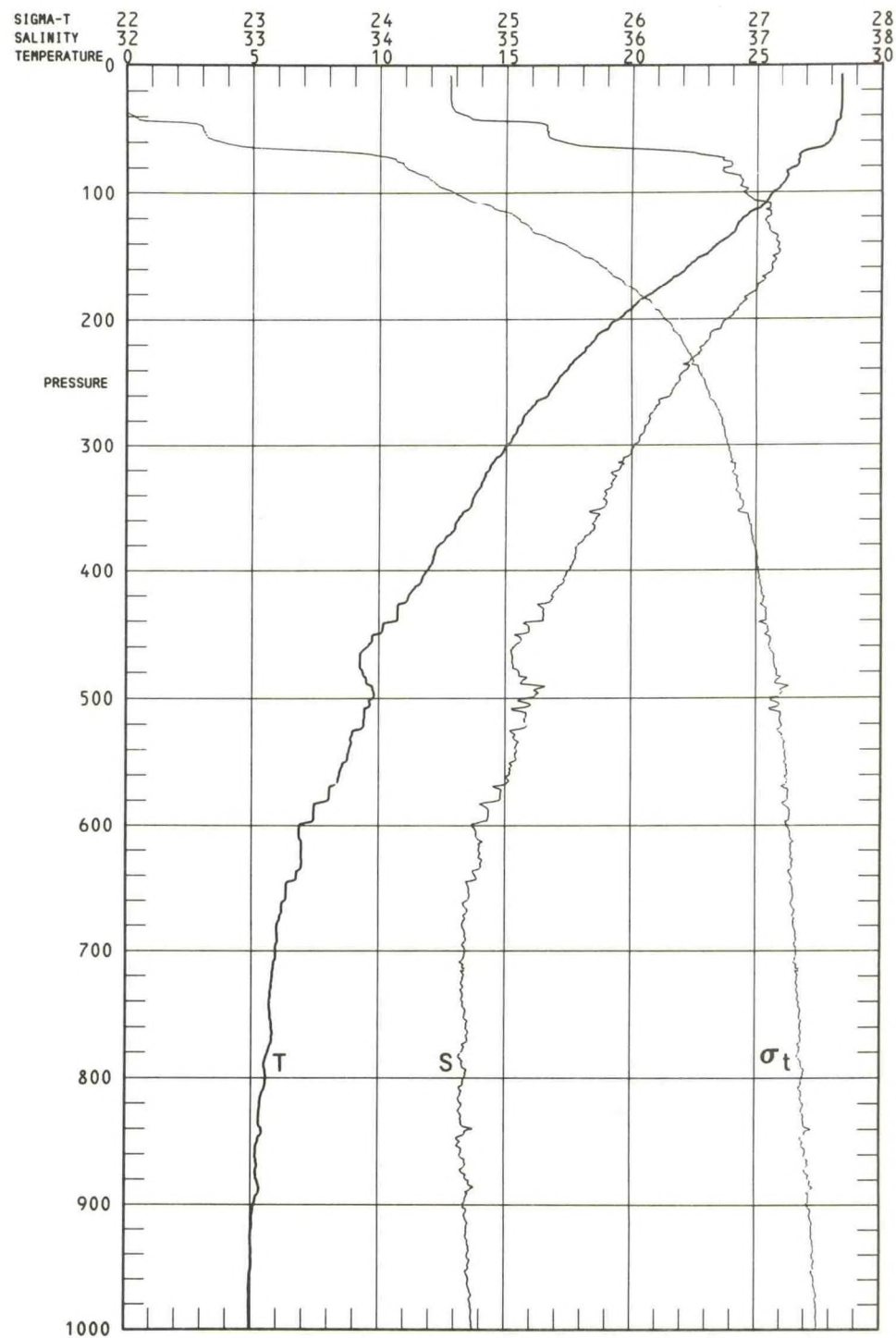
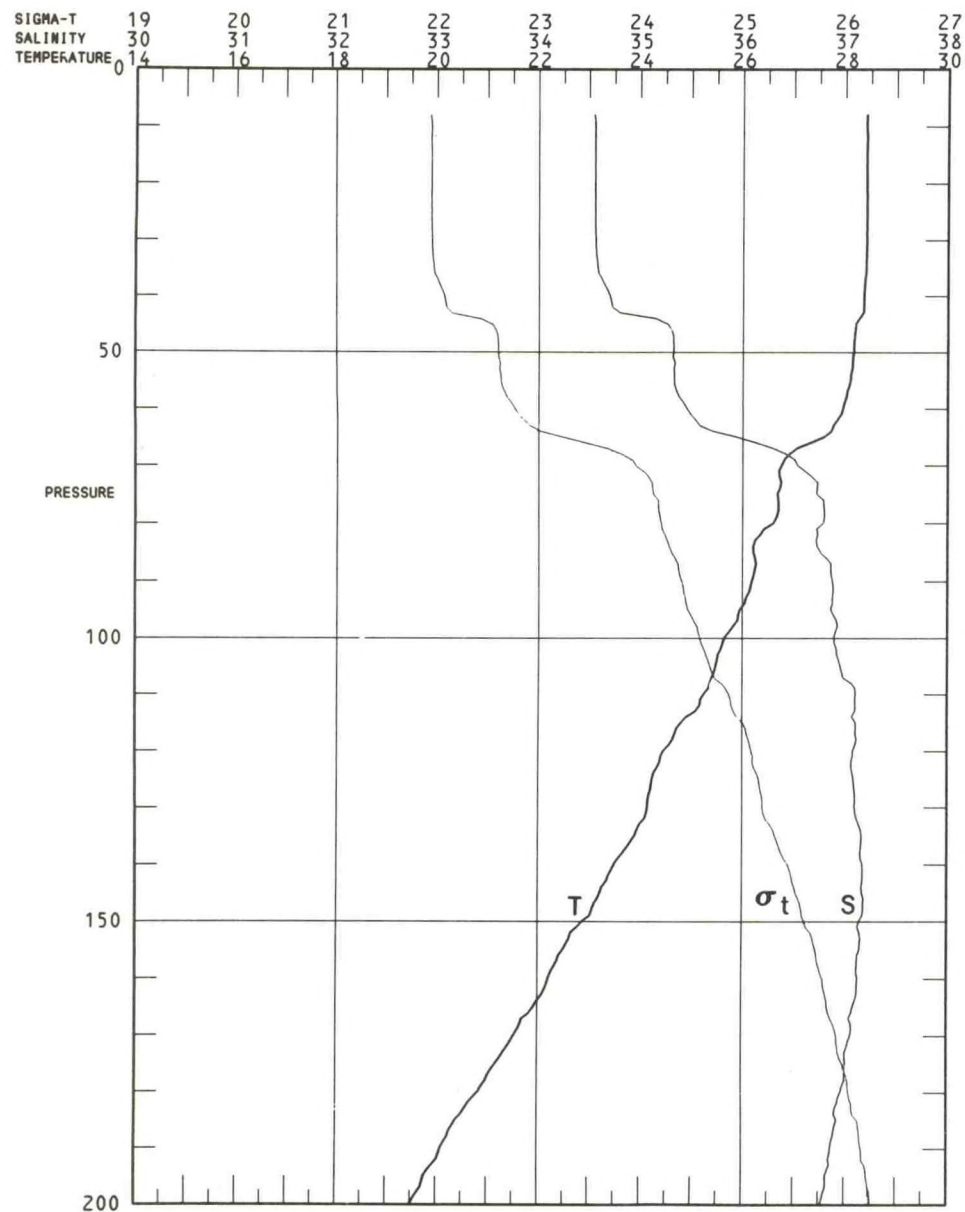


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 21, 1969, 1727 GMT, 15°19'N 056°31'W

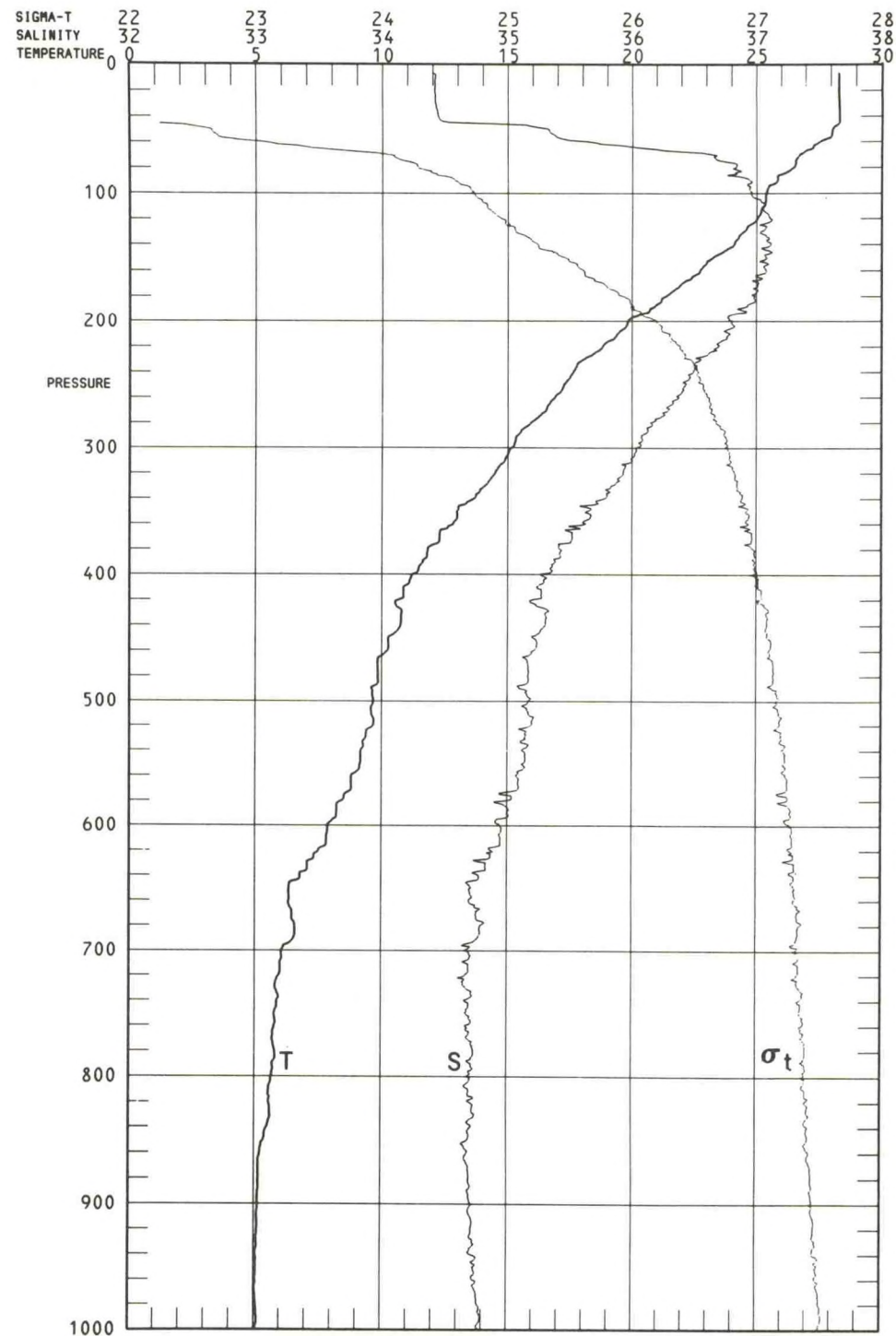
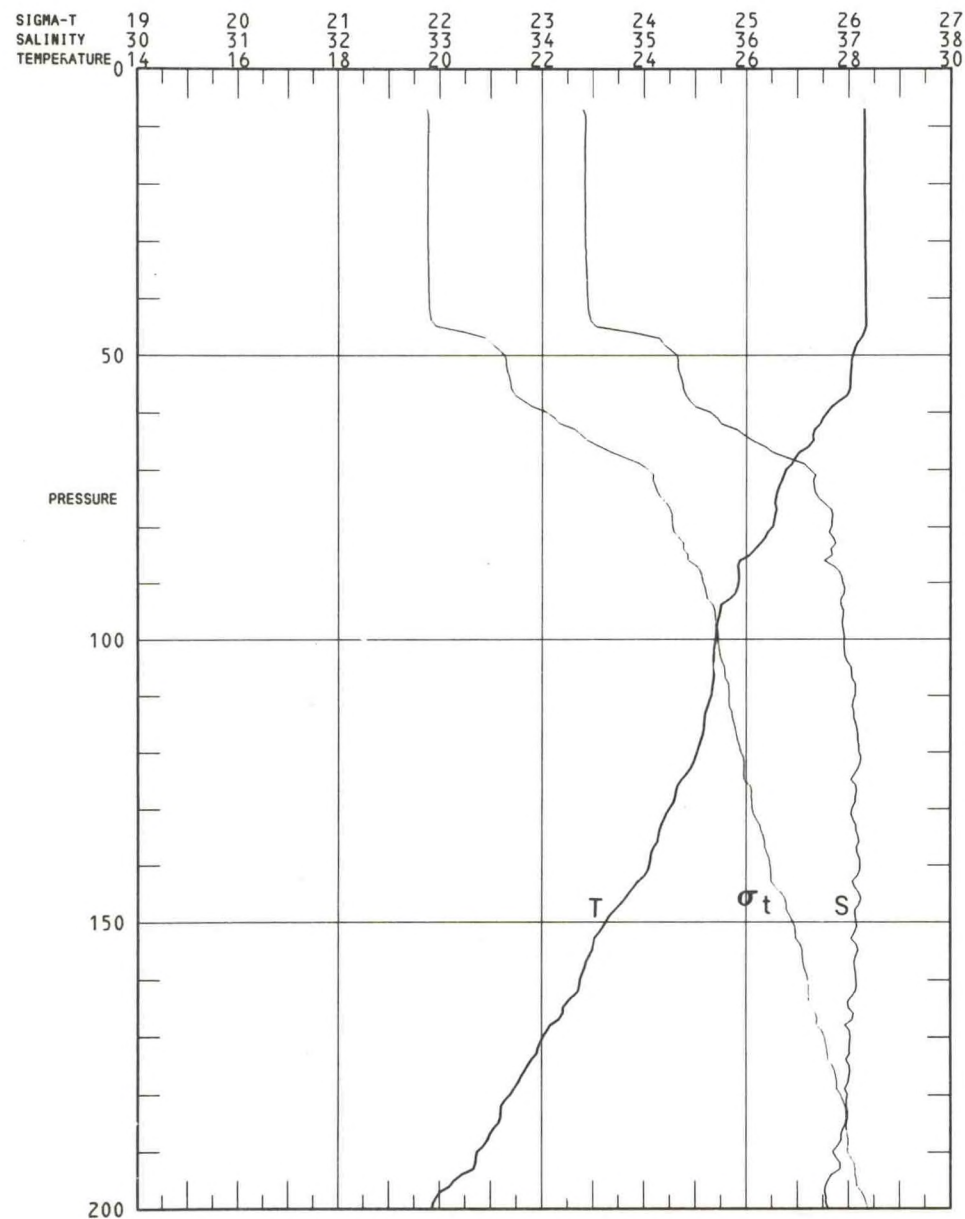
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 21, 1969, 2101 GMT, 15°19'N 056°31'W

# STD Depth-Sorted Plots

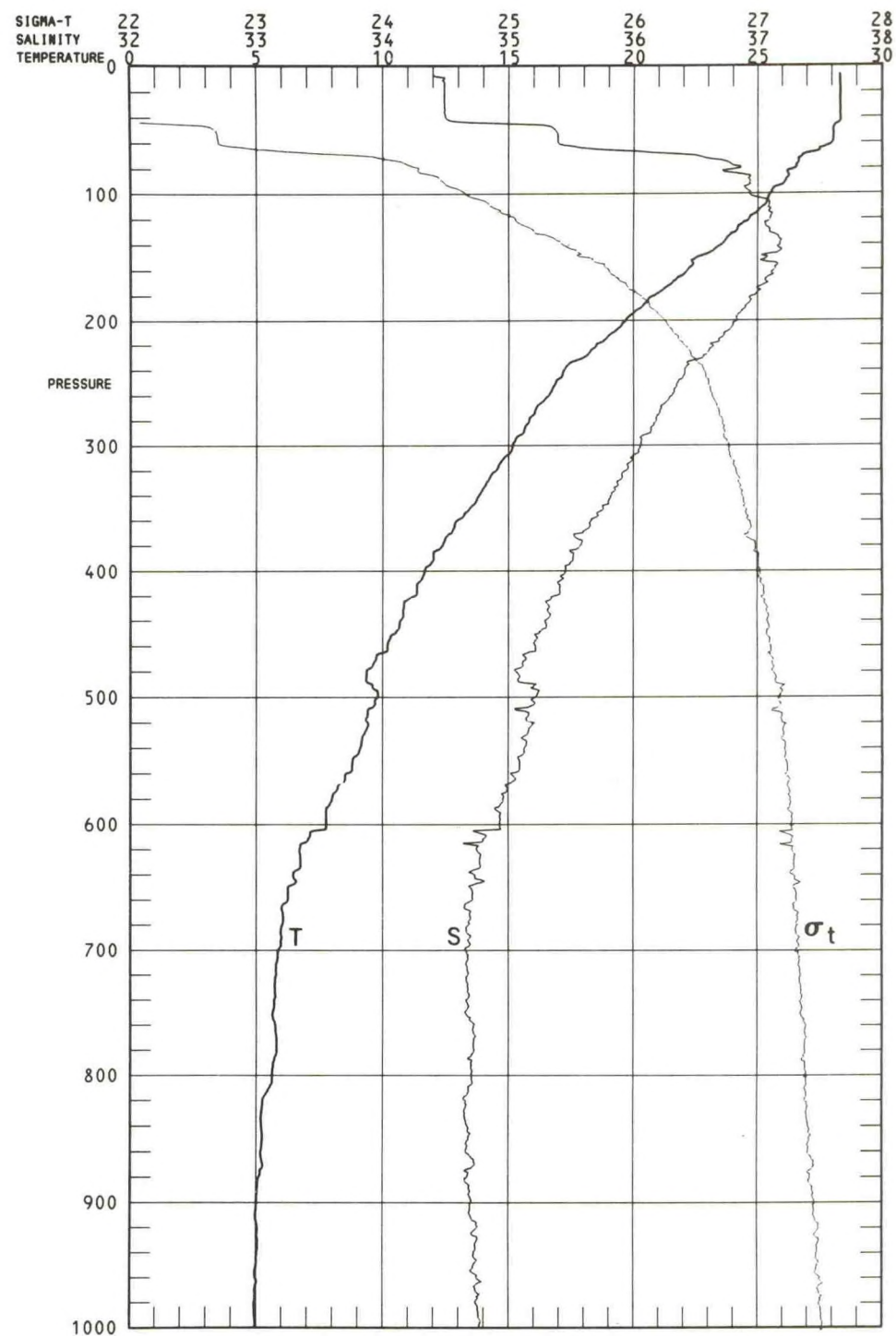
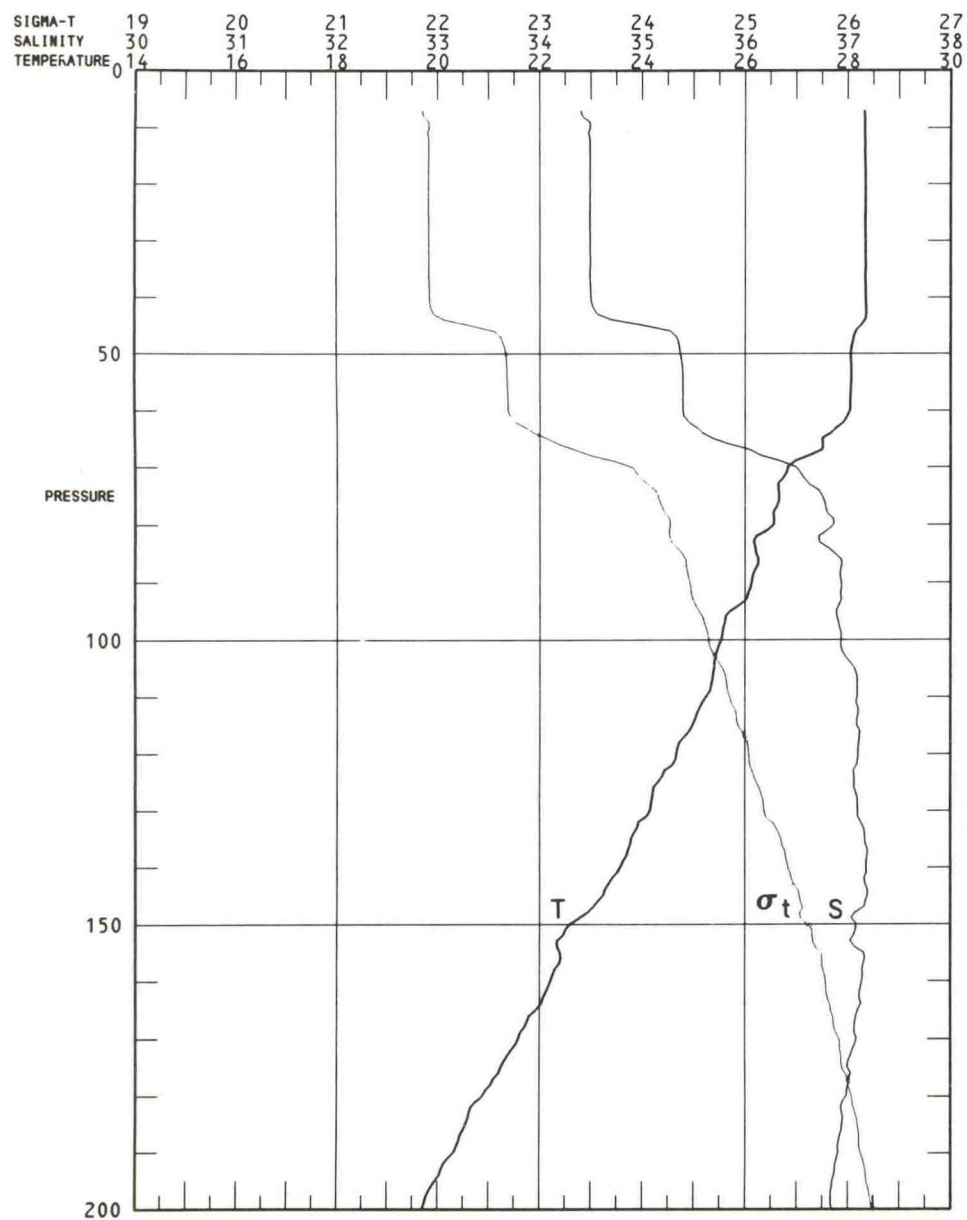
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 22, 1969, 0109 GMT, 15°17'N 056°29'W

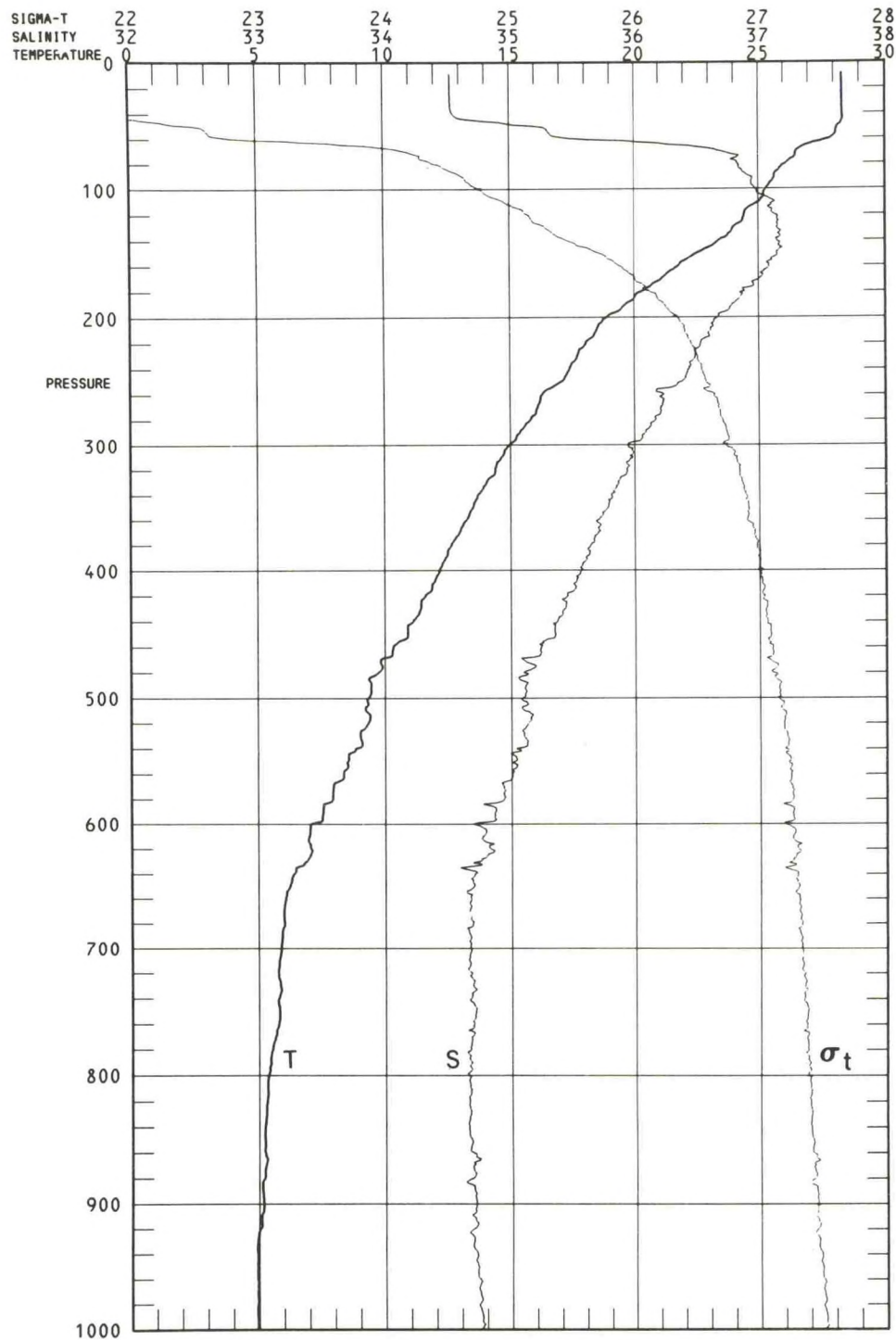
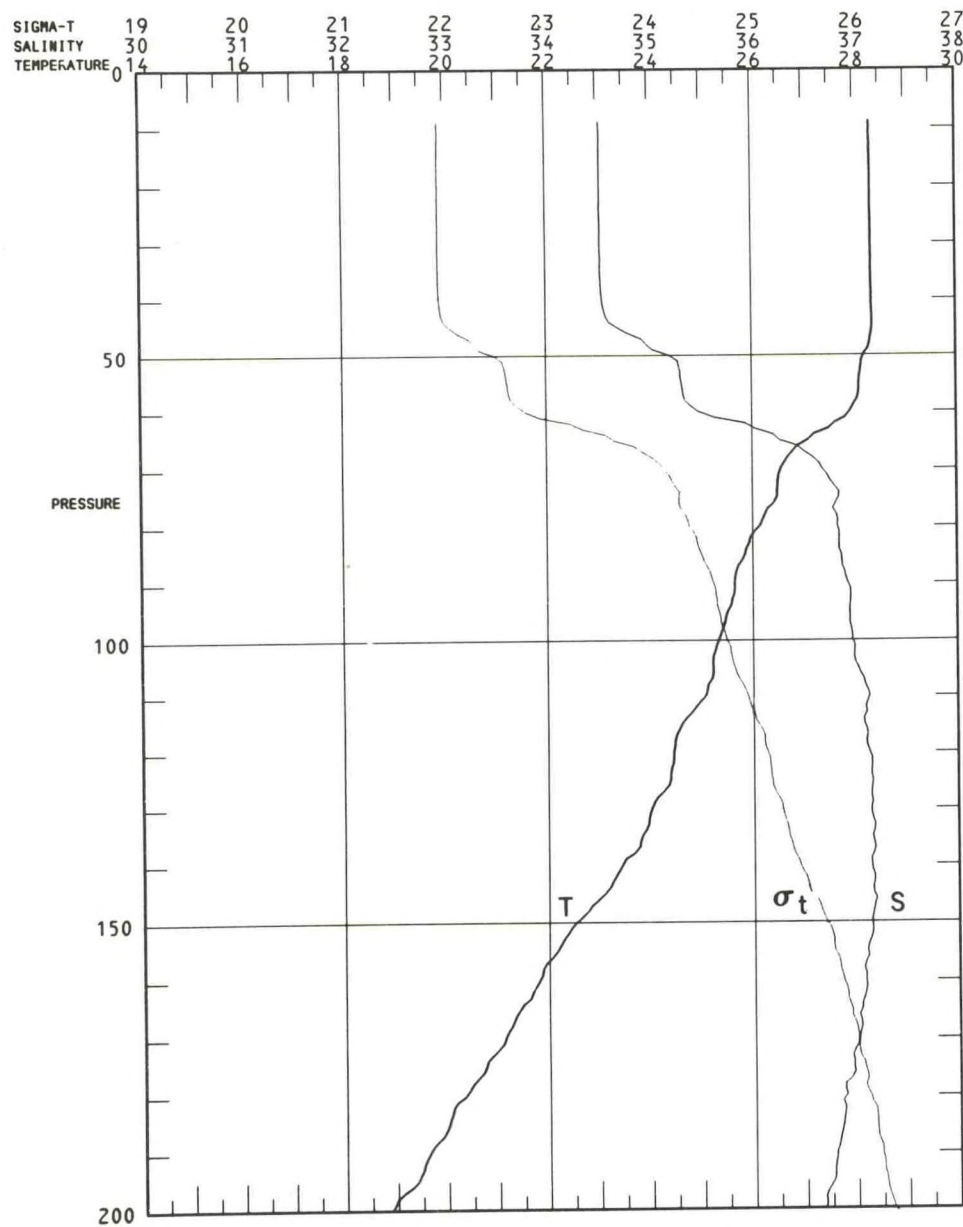


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



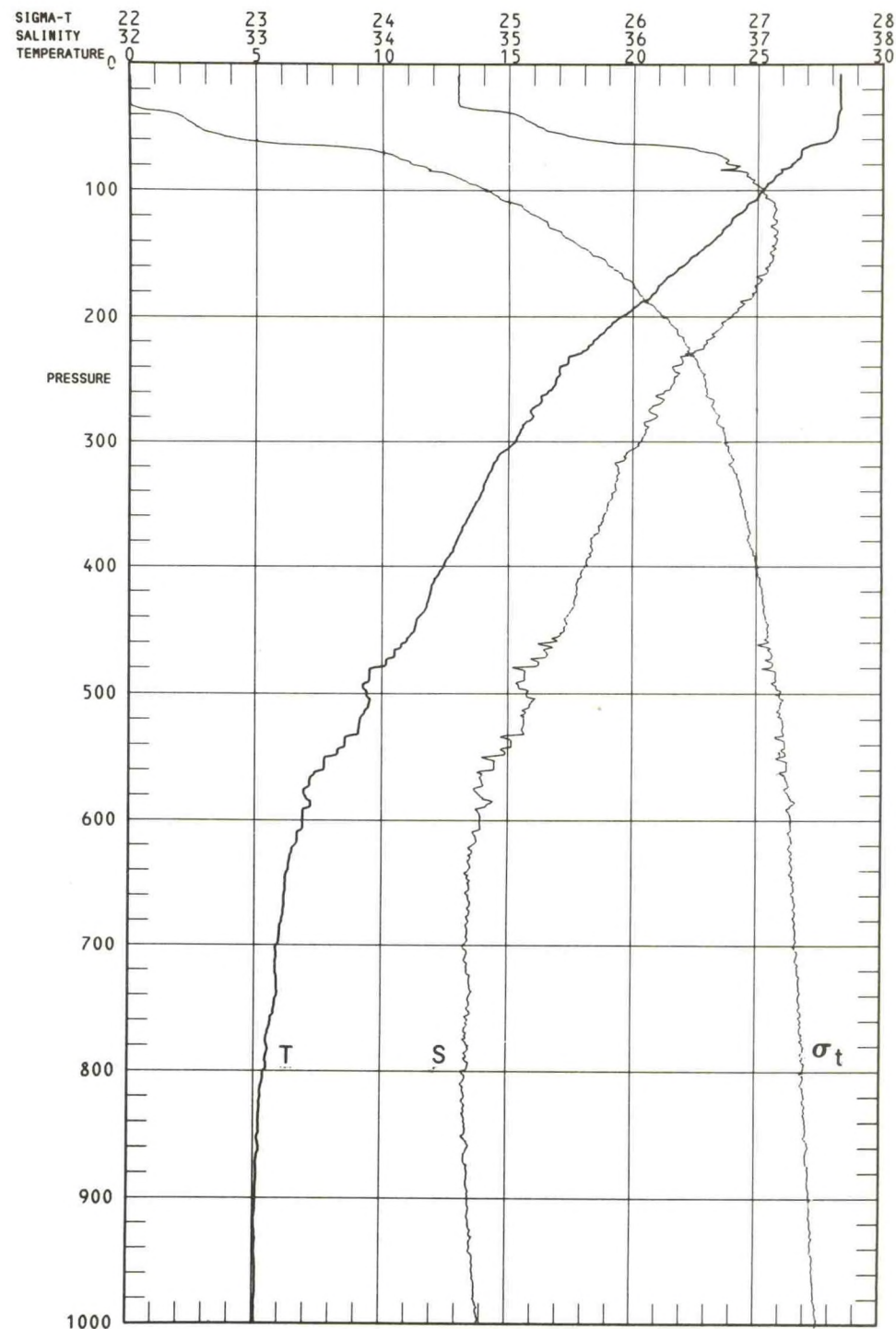
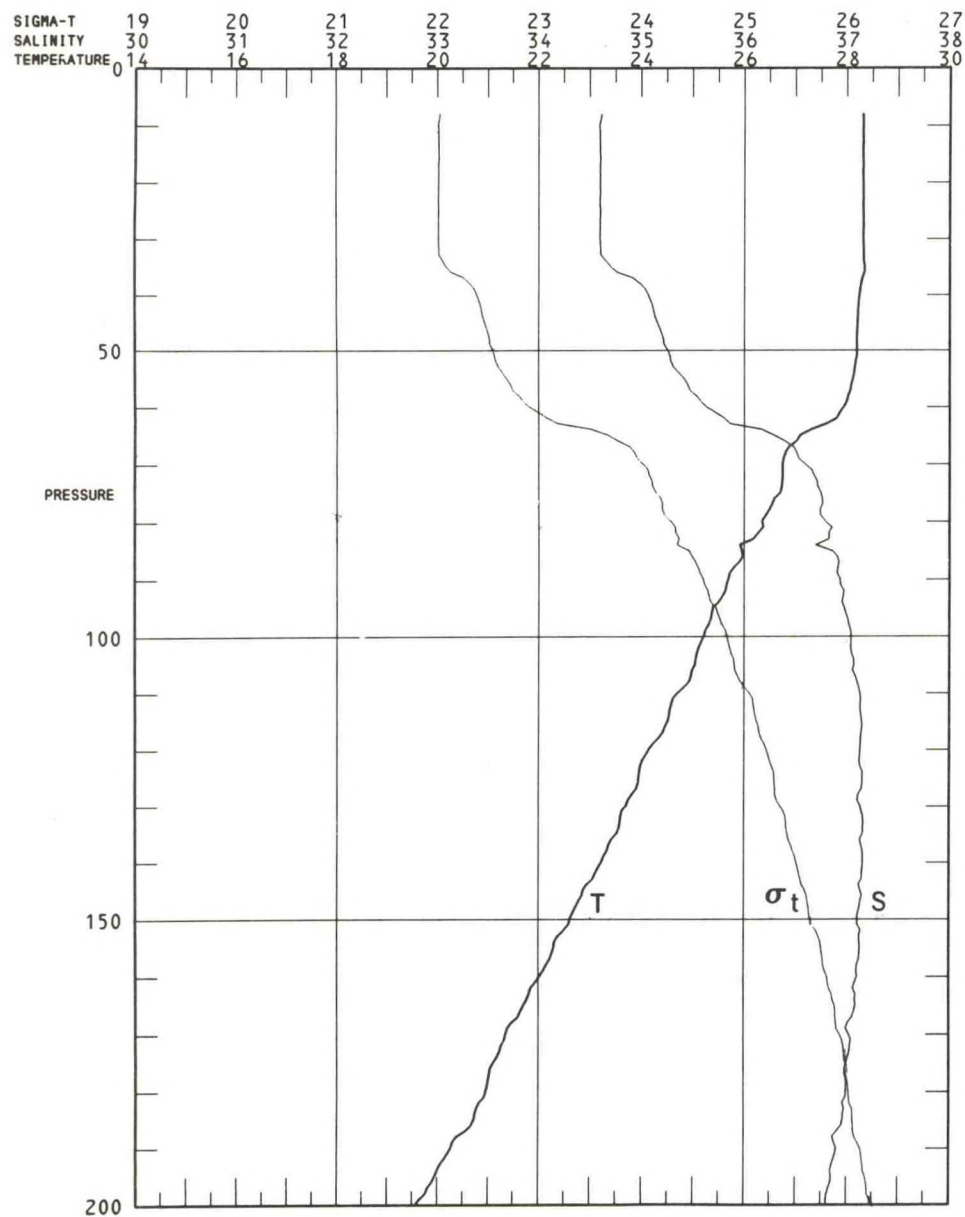
Rockaway, June 22, 1969, 0303 GMT, 15°19'N 056°30'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 22, 1969, 0602 GMT, 15°19'N 056°30'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



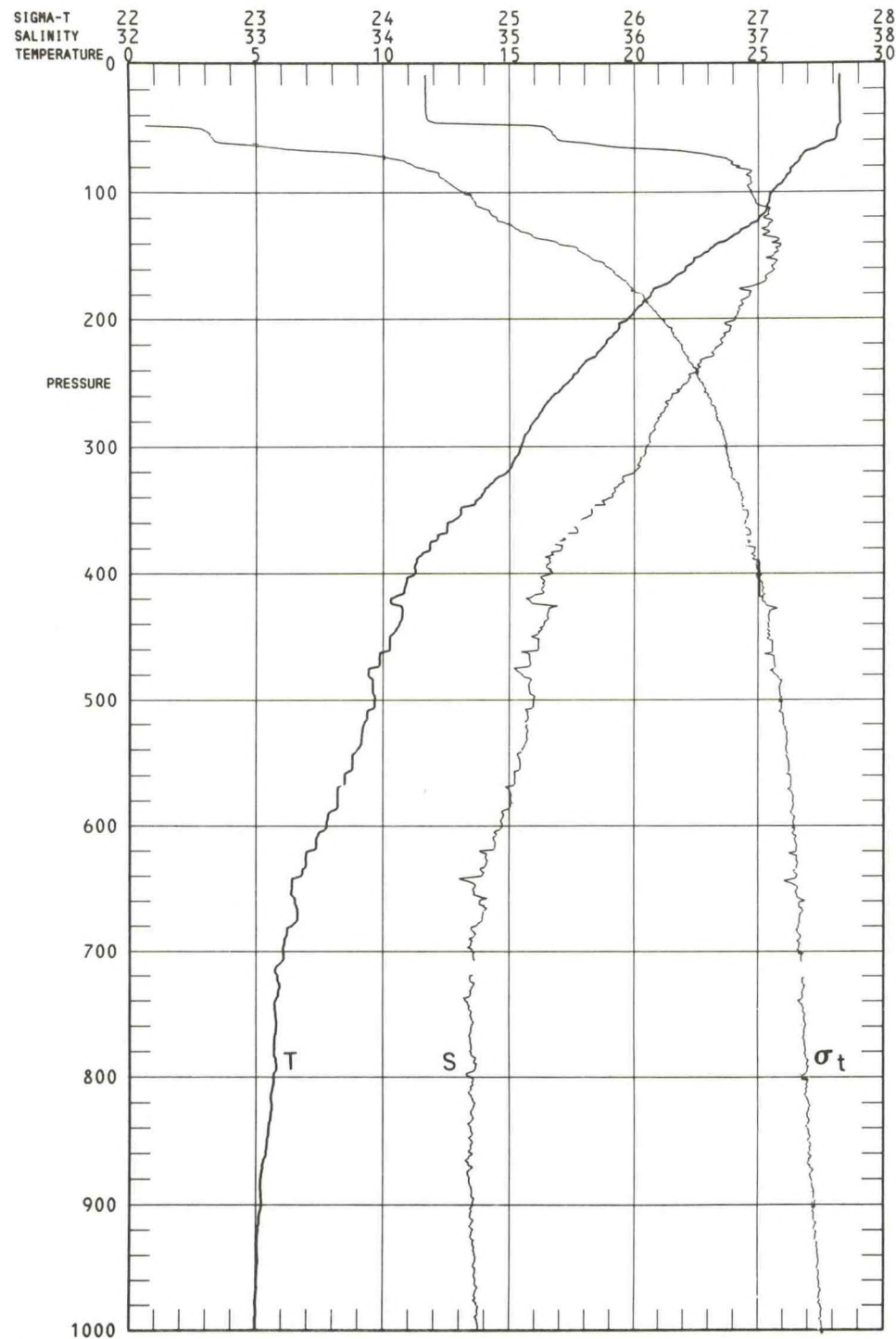
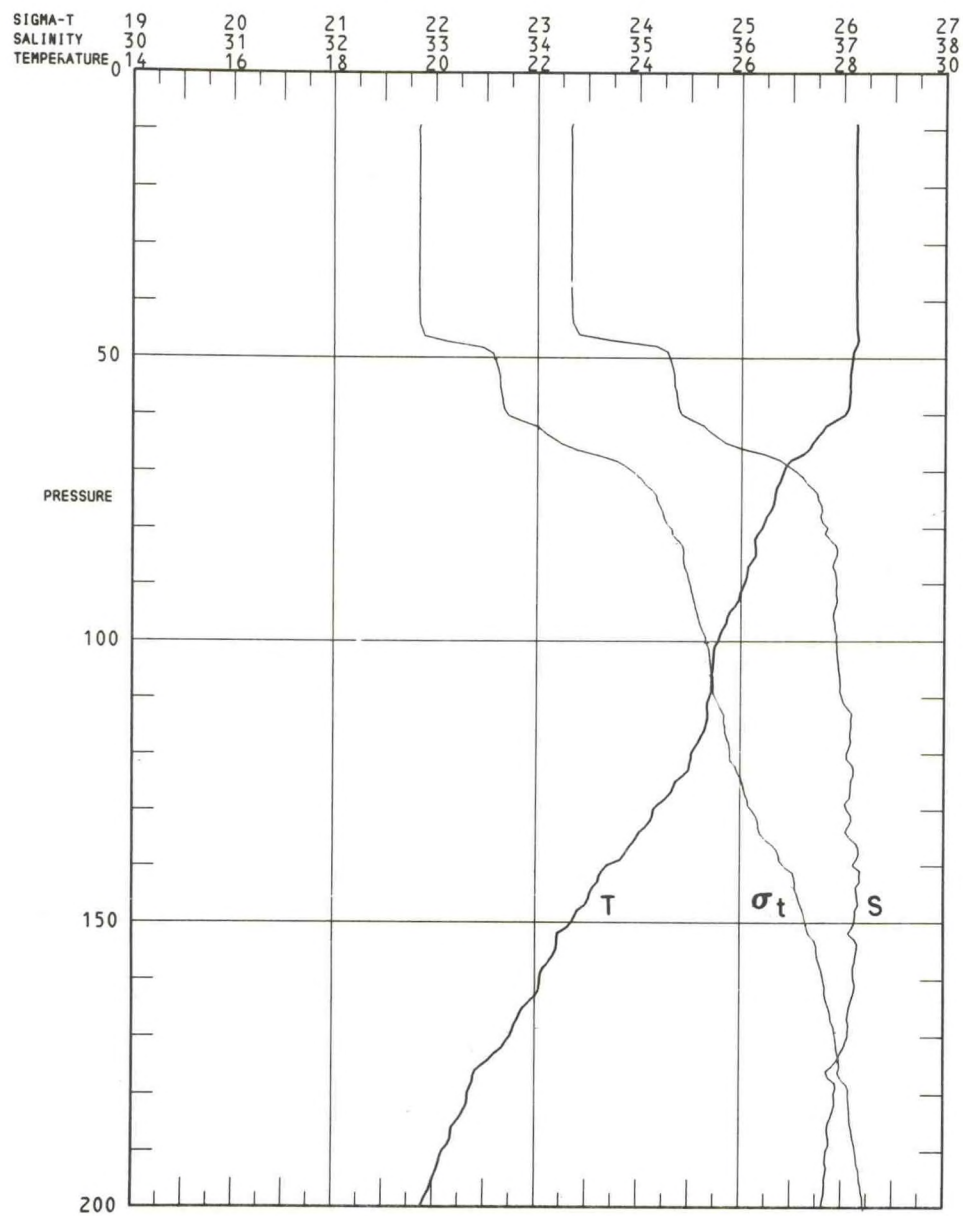
Rockaway, June 22, 1969, 0915 GMT, 15°19'N 056°30'W



ROCKAWAY YEAR 1969 DAY 173 TIME 1226 GMT LAT.15°21'N LONG.056°33'W  
TIME CODE GENERATOR SUSPECTED TO HAVE SLIPPED AT 695 DECIBARS.

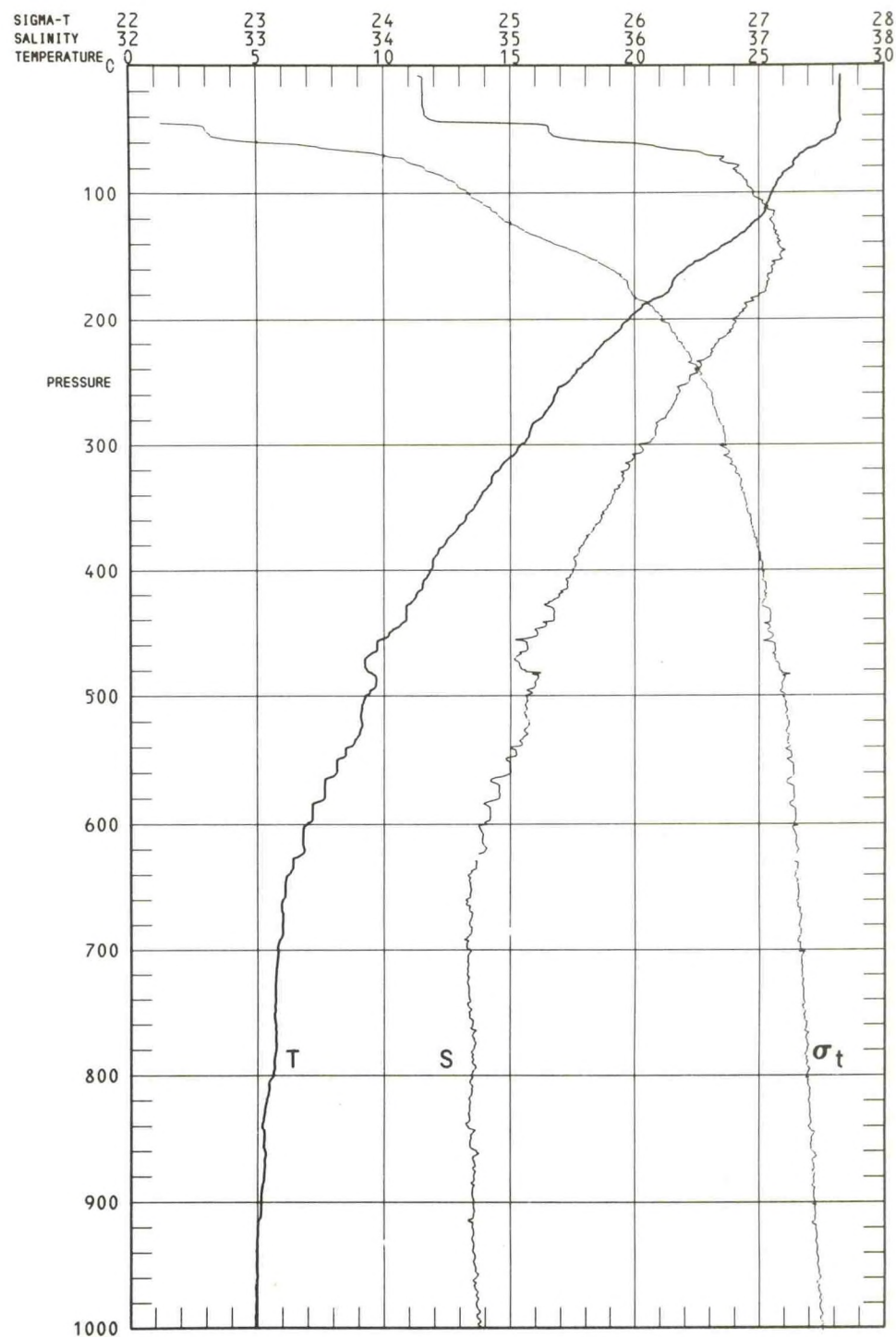
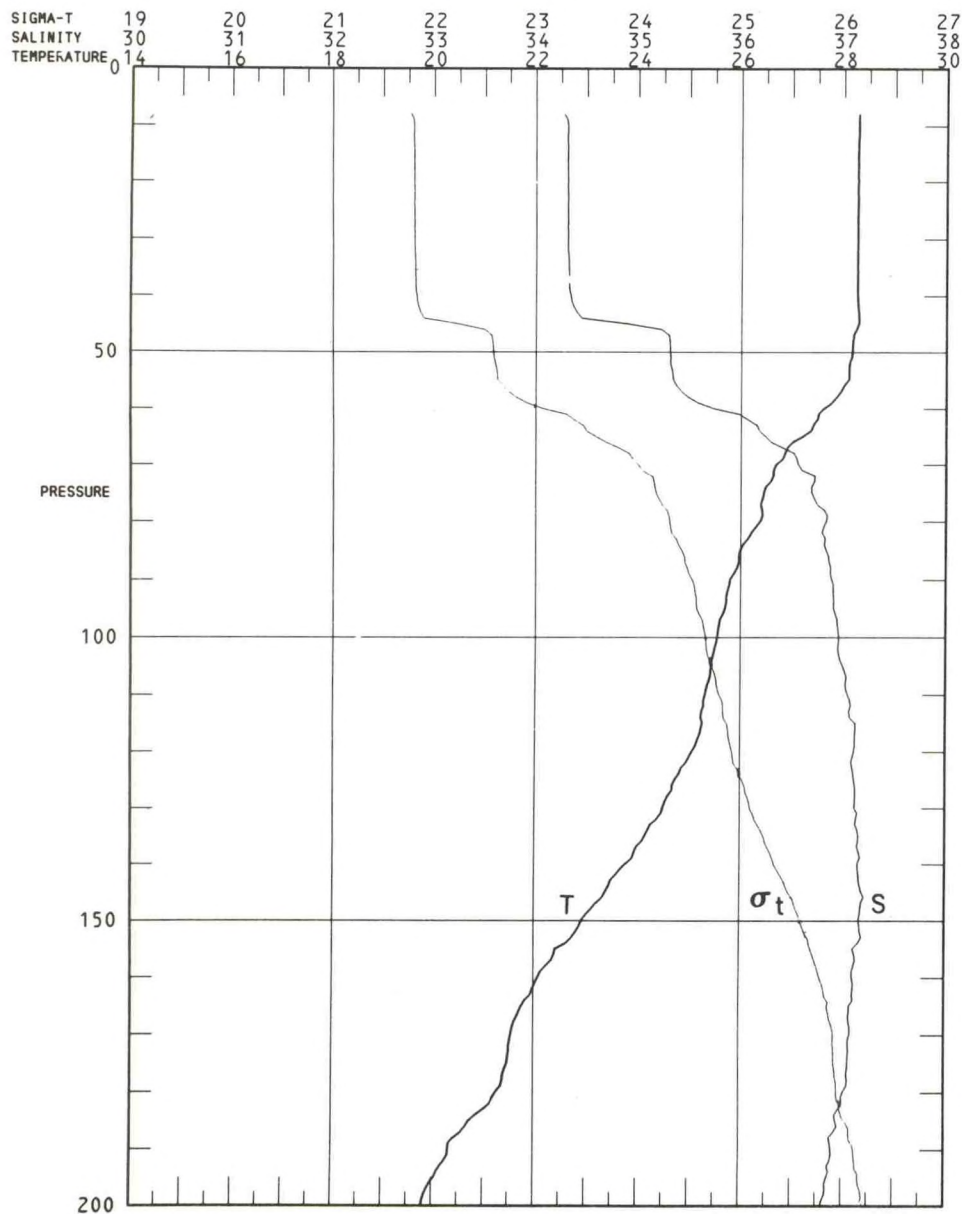
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



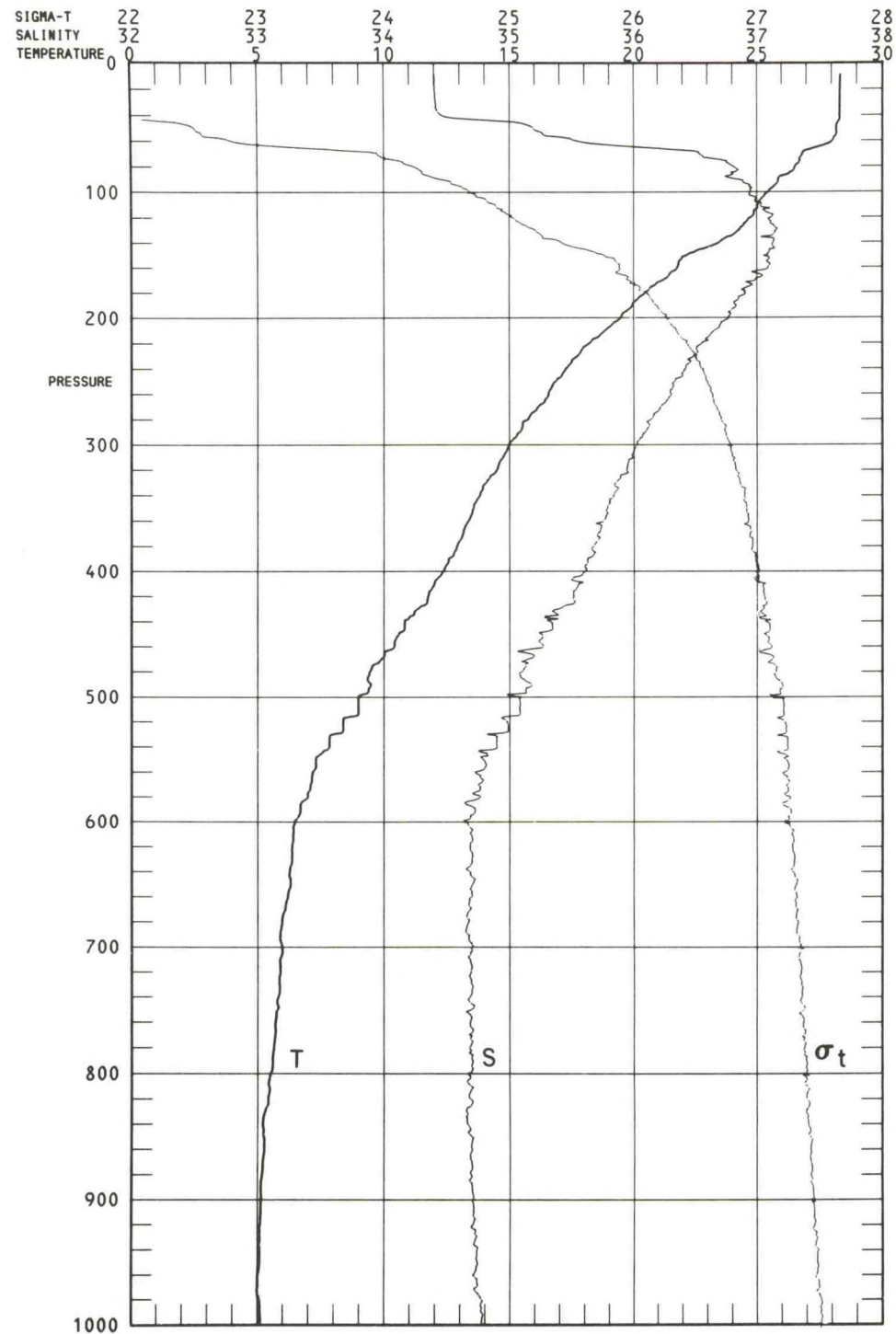
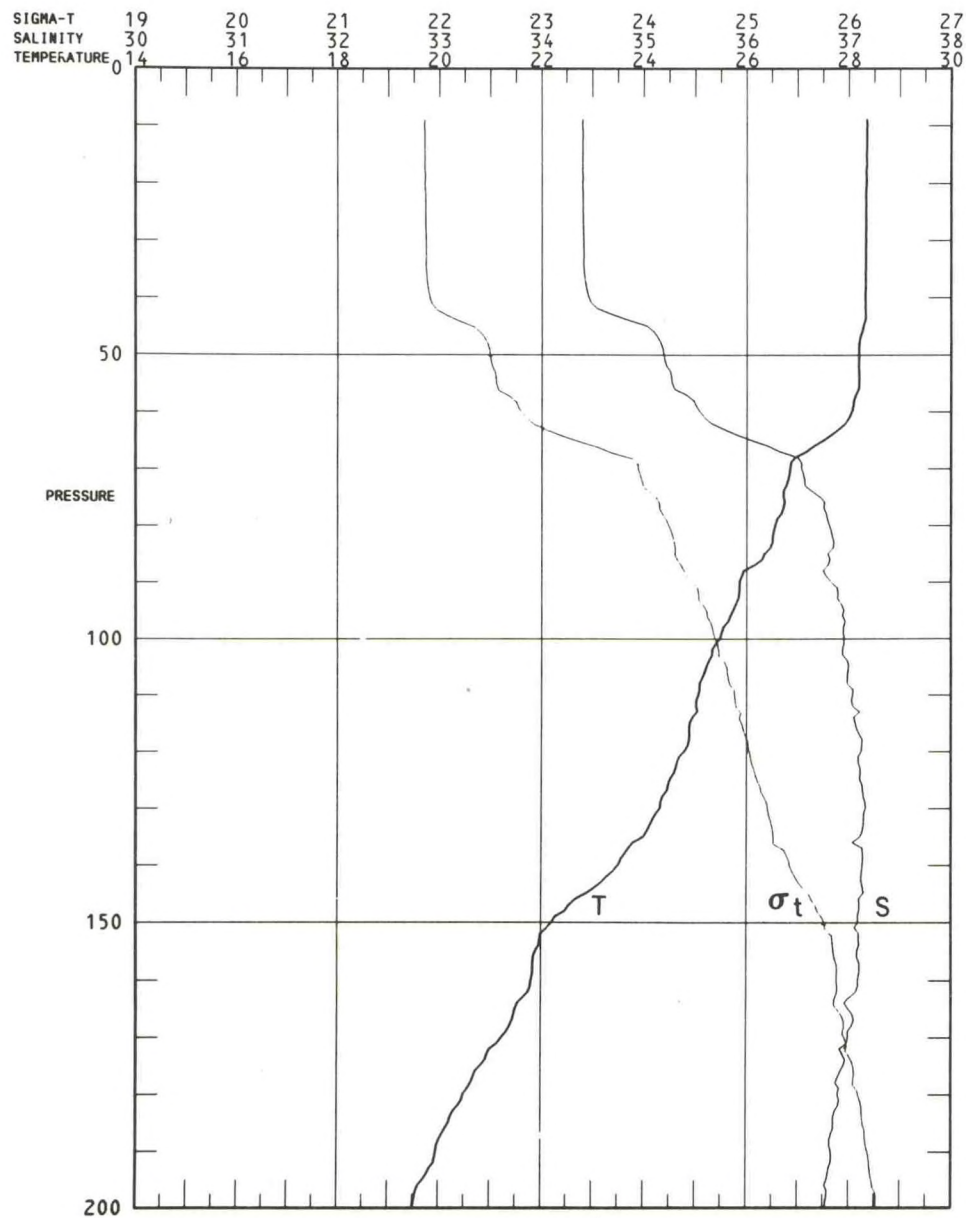
Rockaway, June 22, 1969, 1226 GMT, 15°21'N 056°33'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 22, 1969, 1425 GMT, 15°21'N 056°33'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

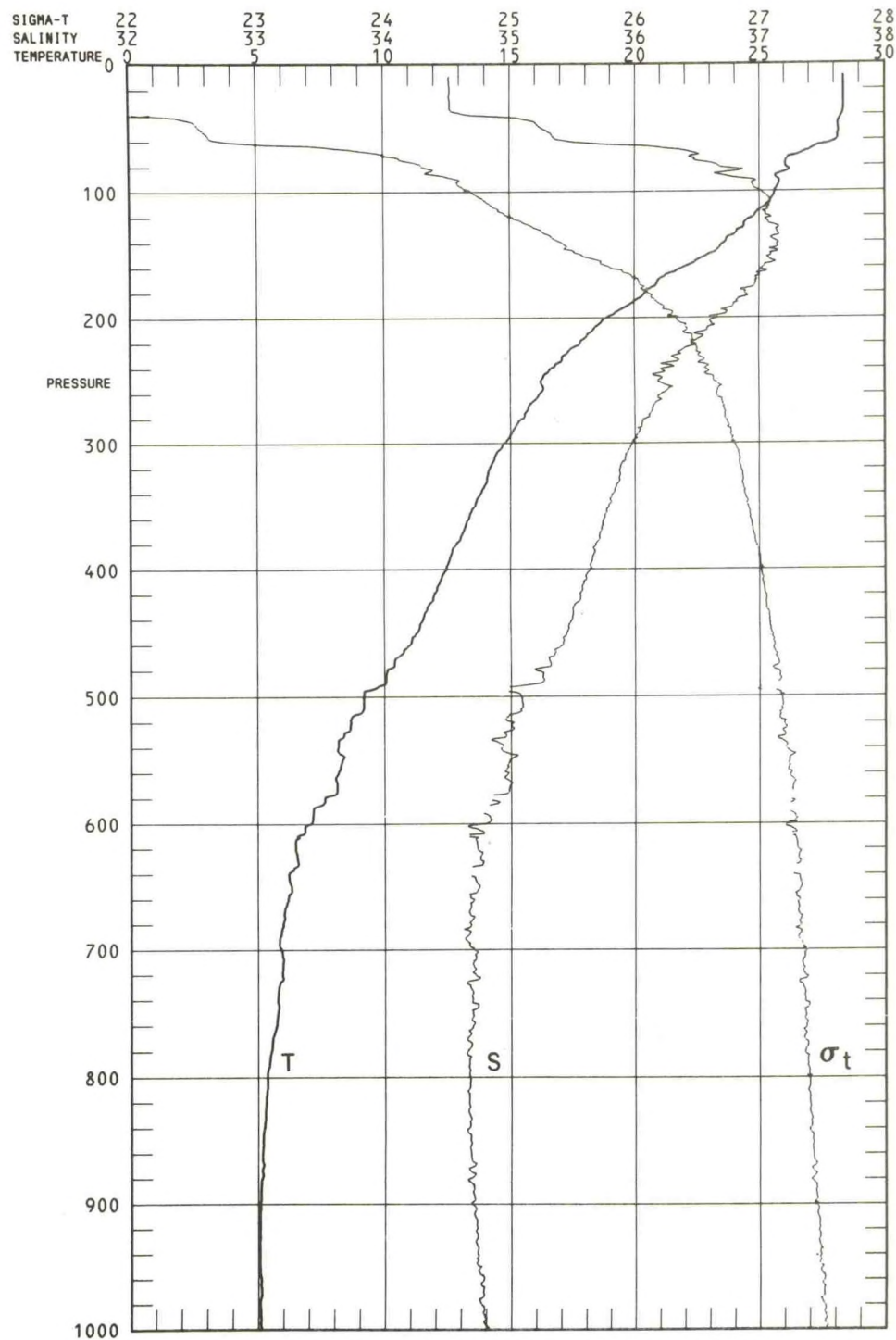
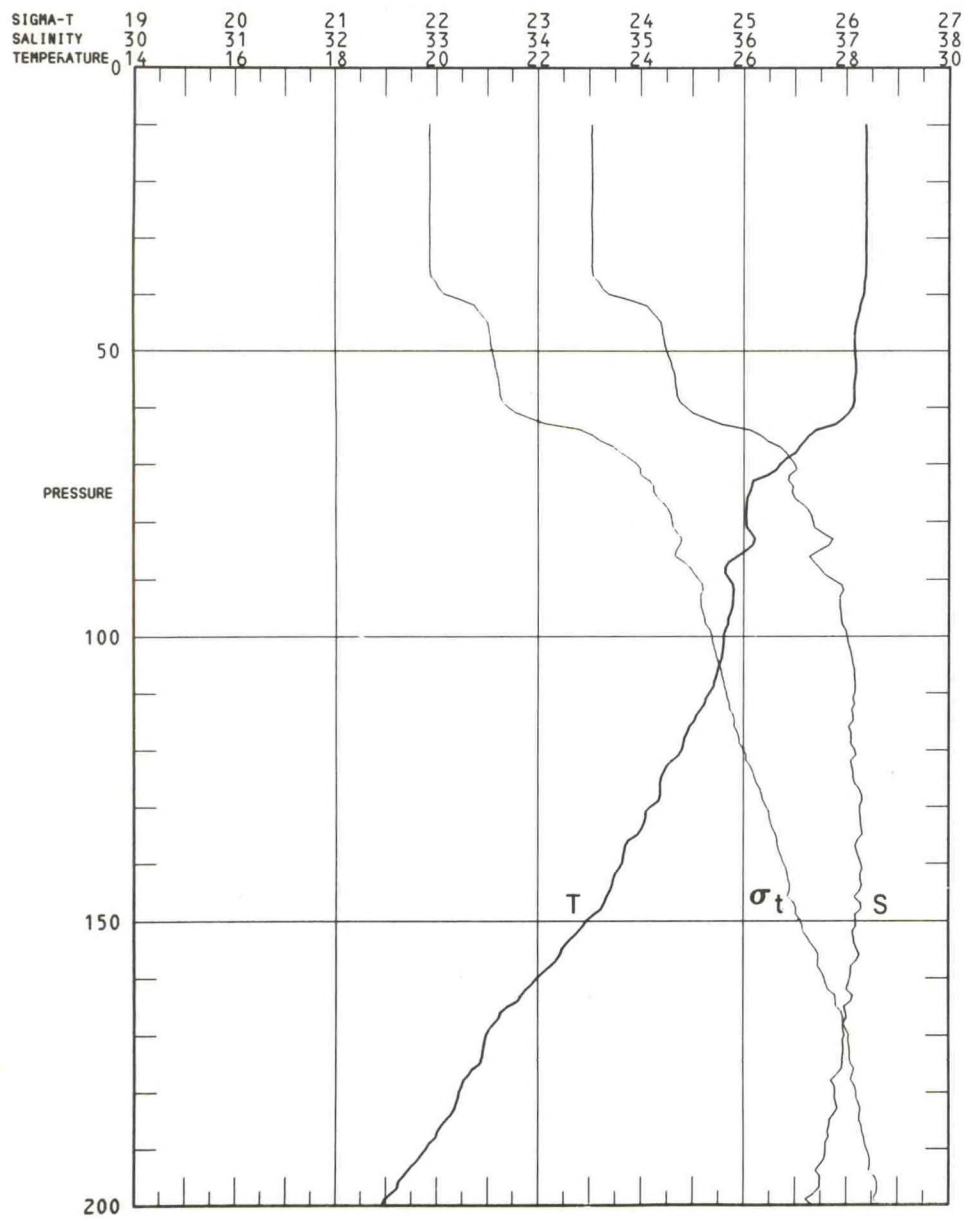


Rockaway, June 22, 1969, 1730 GMT, 15°21'N 056°33'W



# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

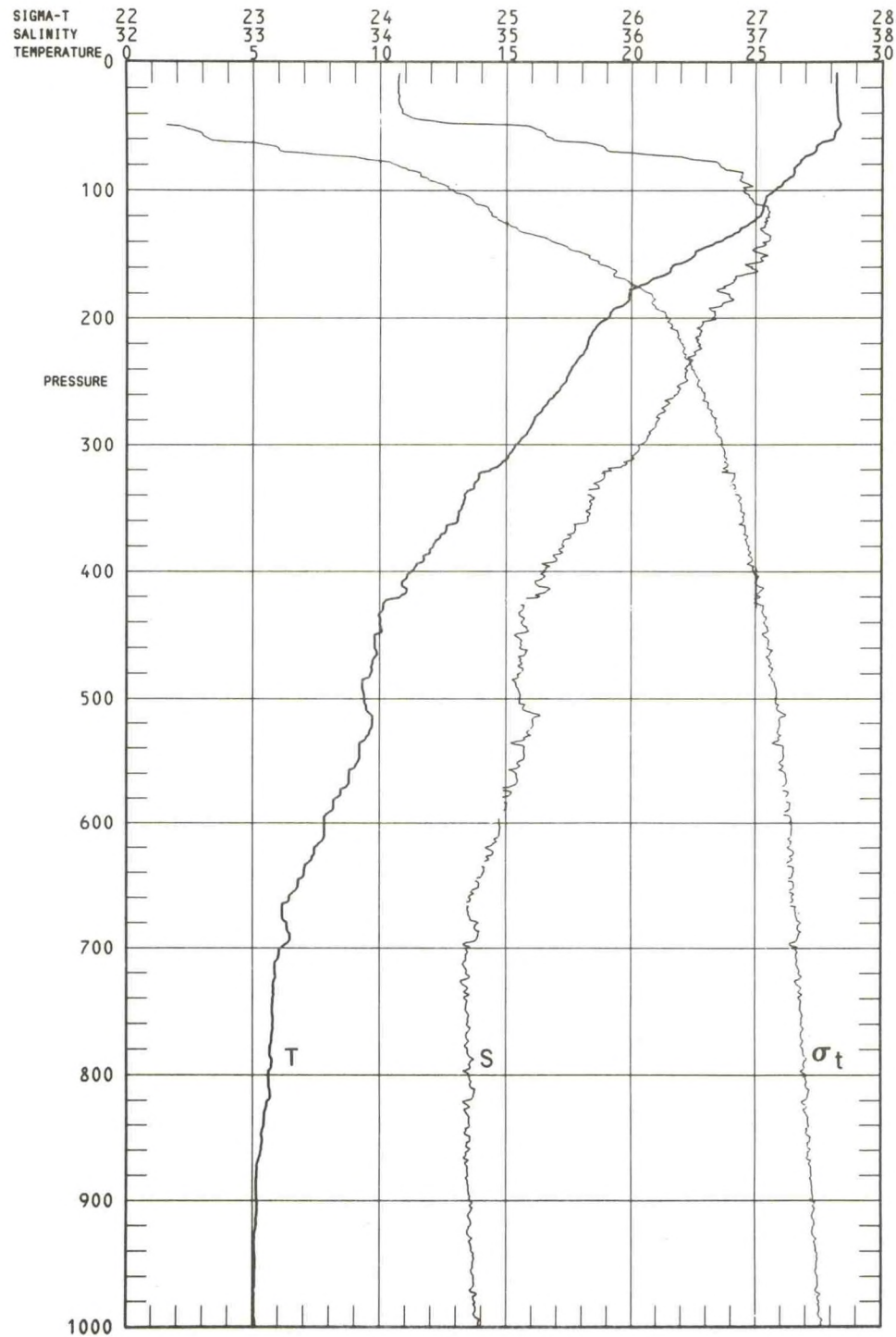
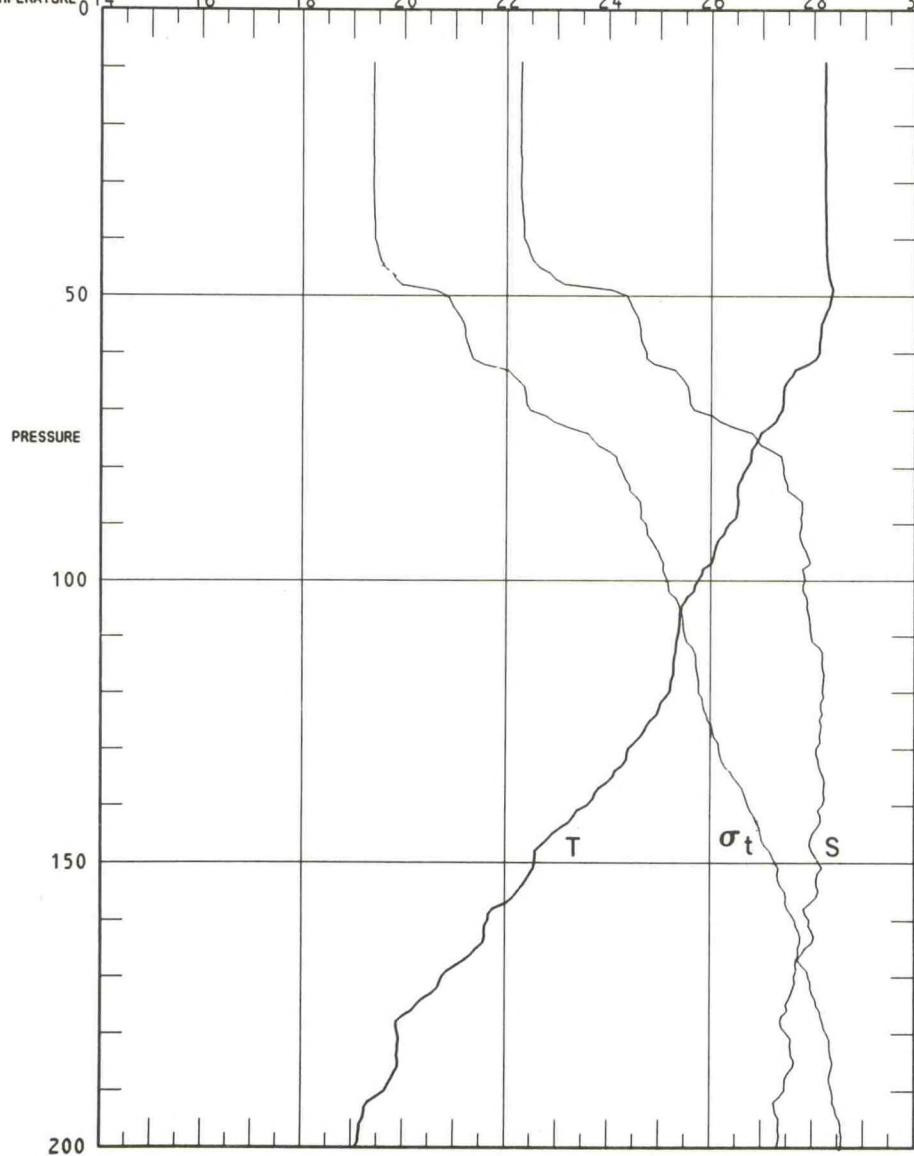


Rockaway, June 22, 1969, 2107 GMT, 15°21'N 056°33'W

# STD Depth-Sorted Plots

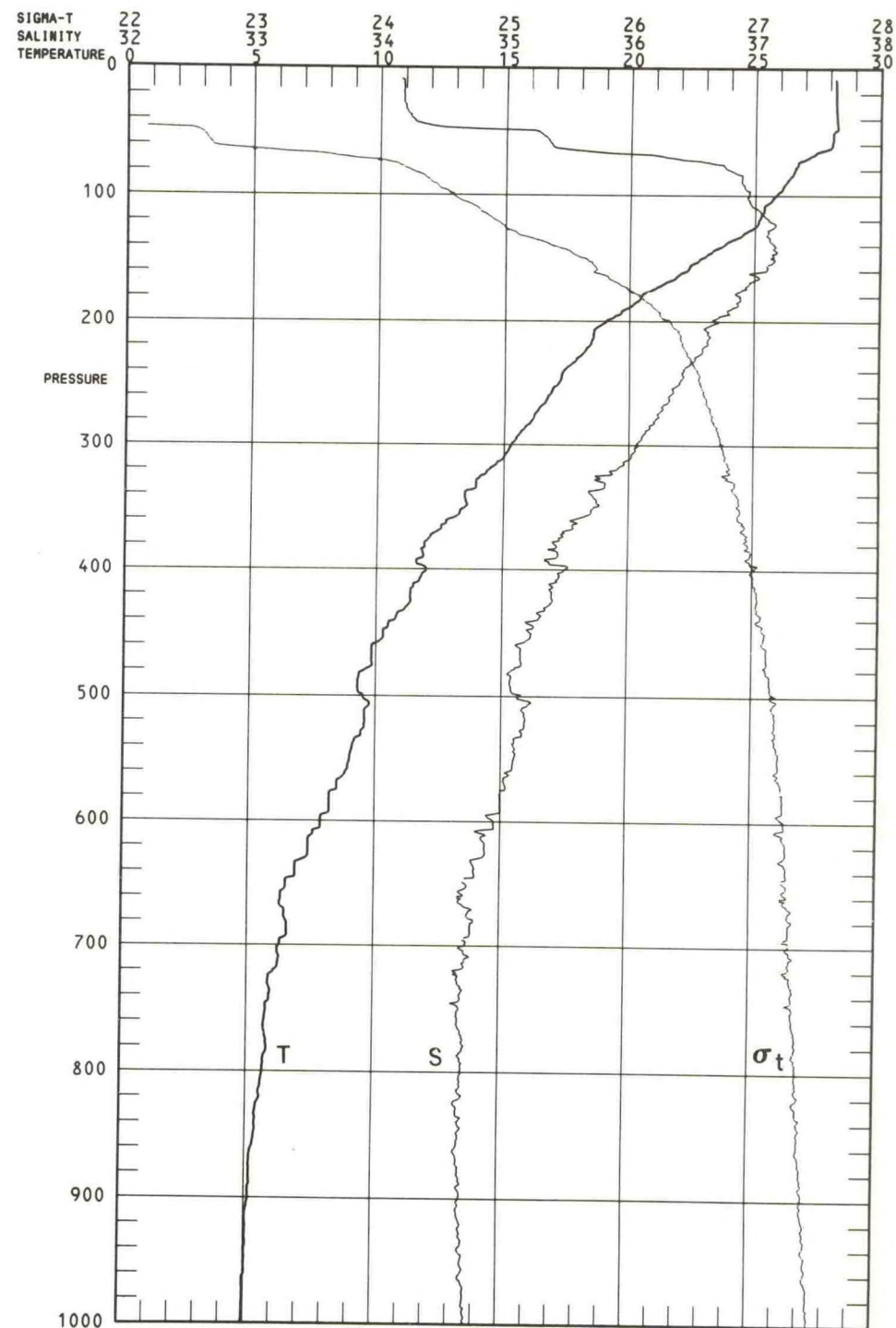
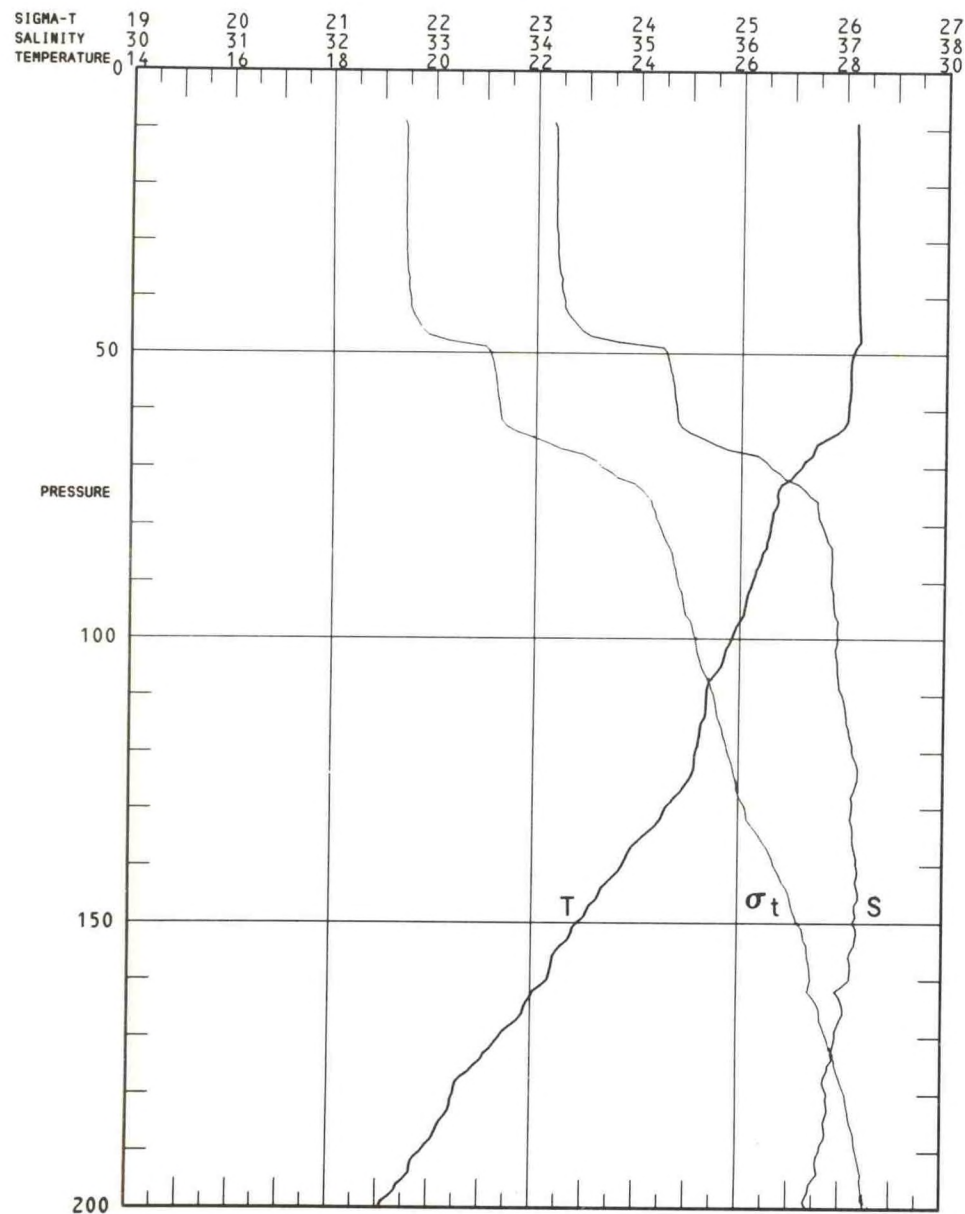
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

SIGMA-T	19	20	21	22	23	24	25	26	27
SALINITY	30	31	32	33	34	35	36	37	38
TEMPERATURE	14	16	18	20	22	24	26	28	30



Rockaway, June 23, 1969, 0103 GMT, 15°20'N 056°32'W

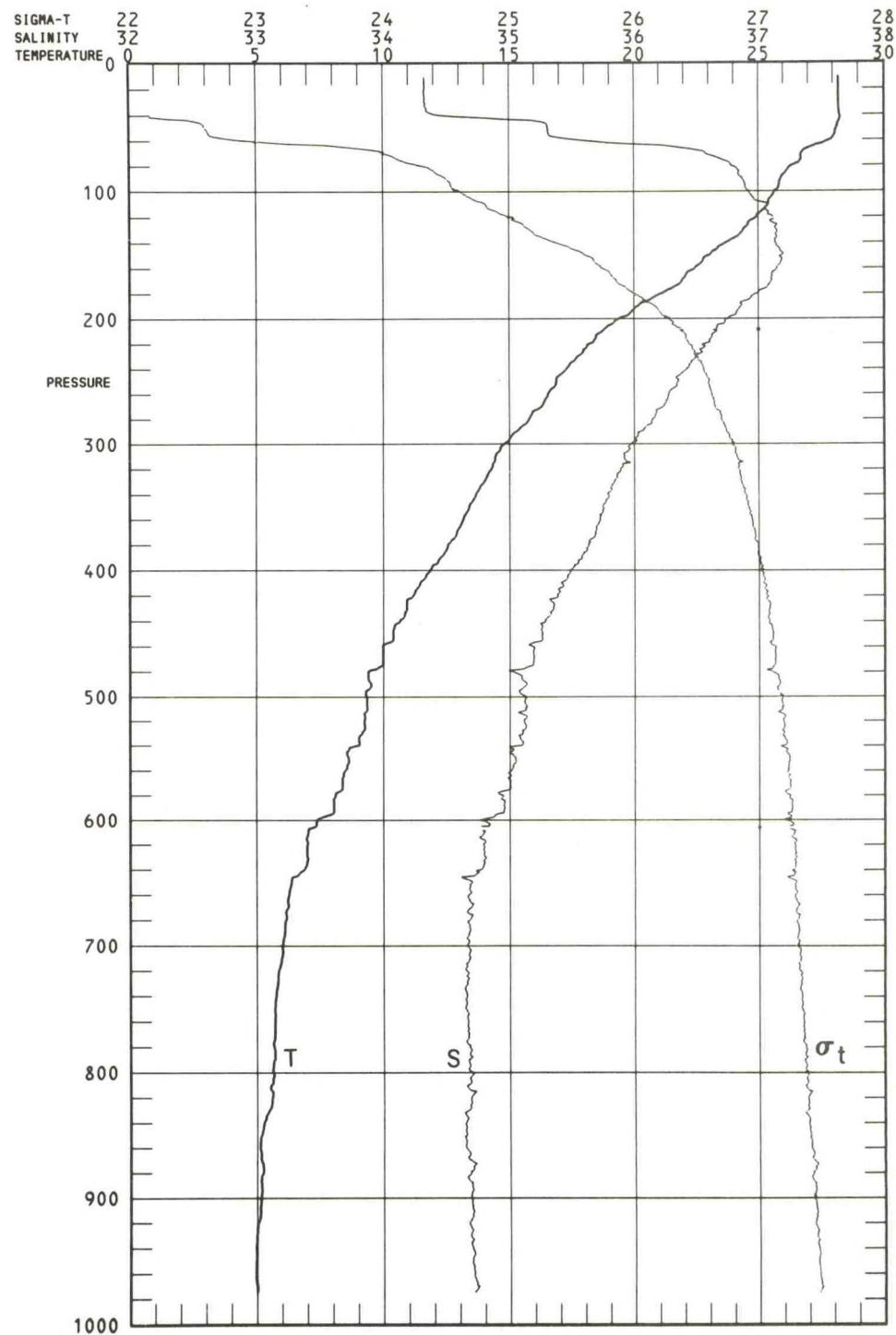
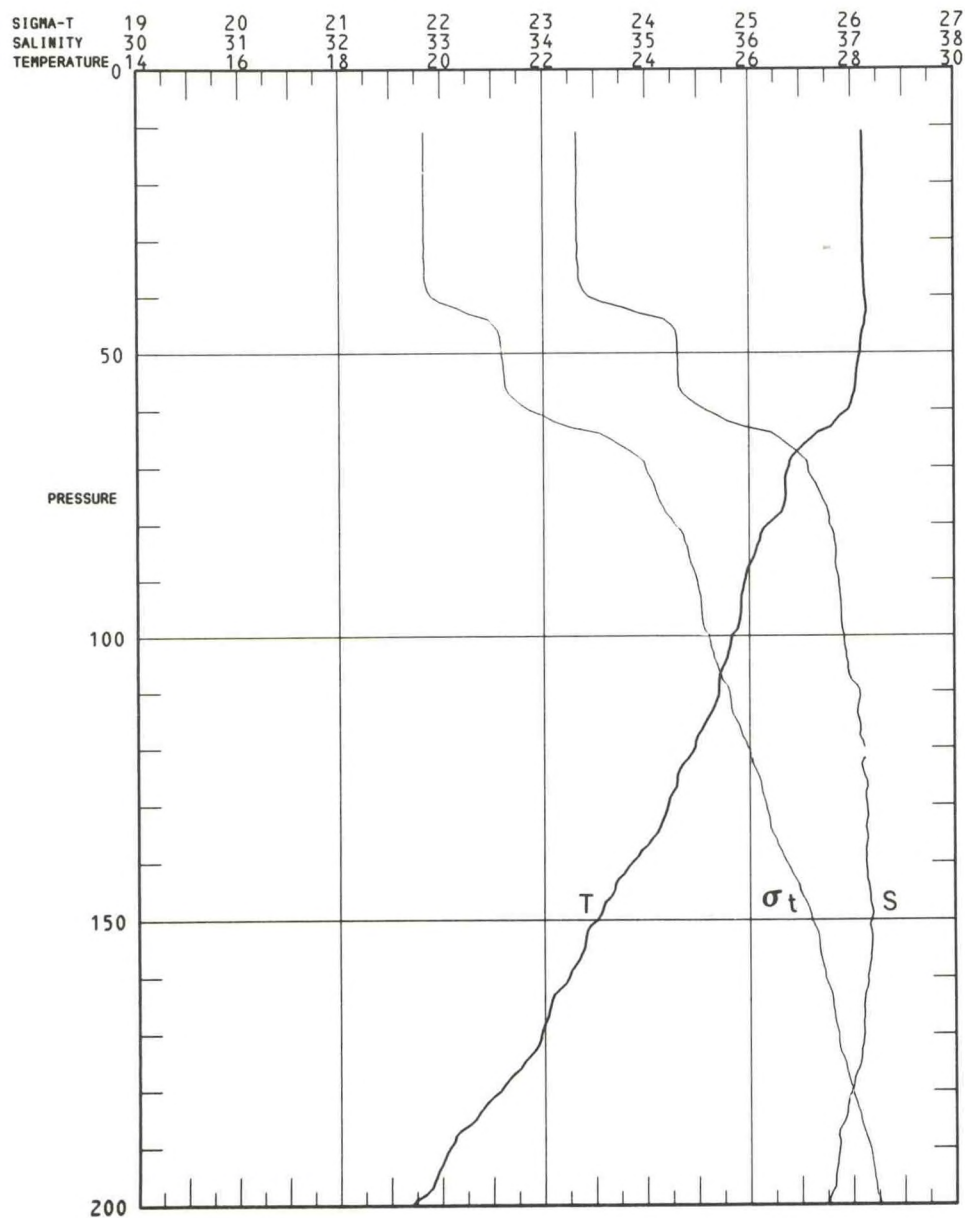
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



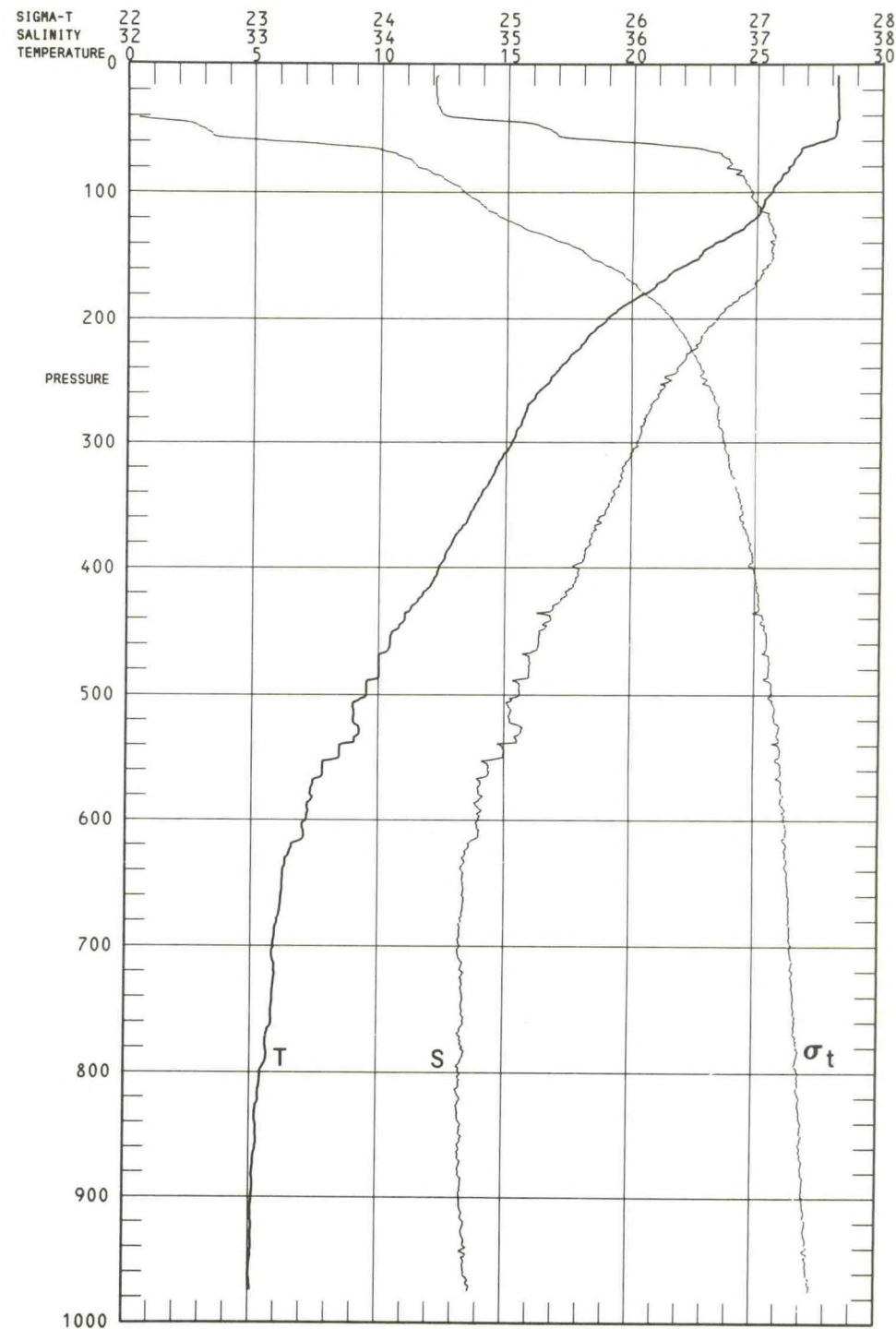
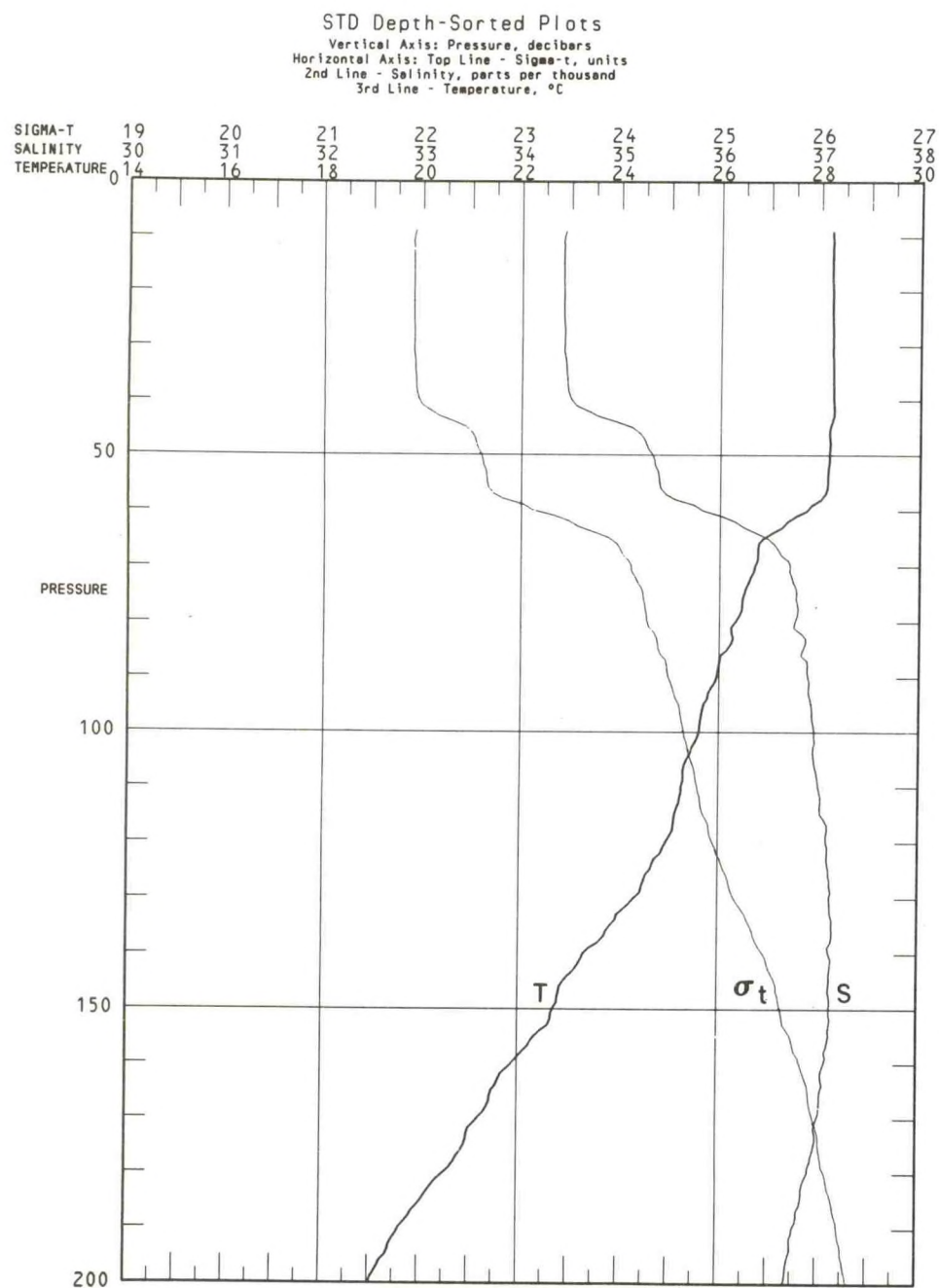
Rockaway, June 23, 1969, 0303 GMT, 15°00'N 056°30'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

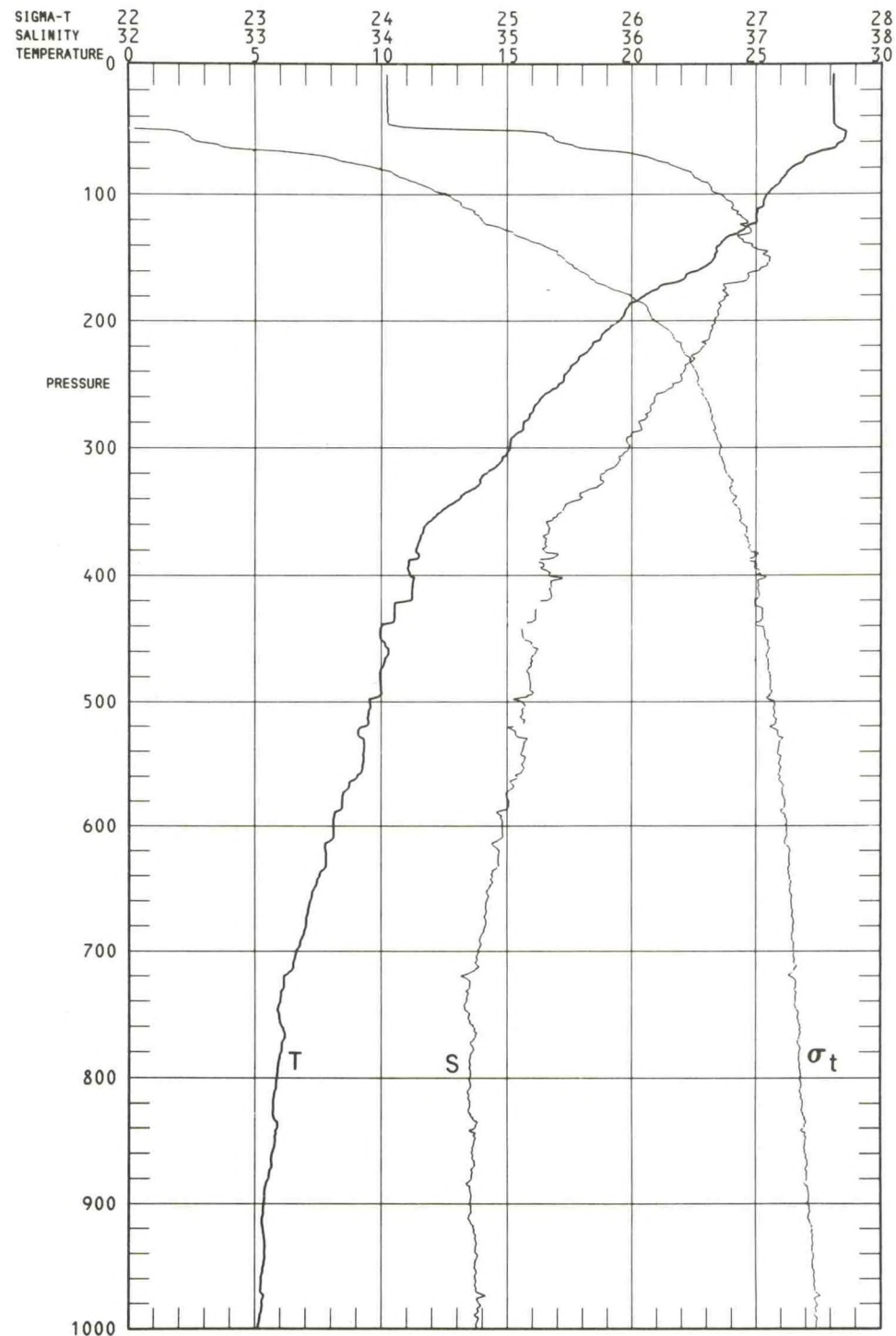
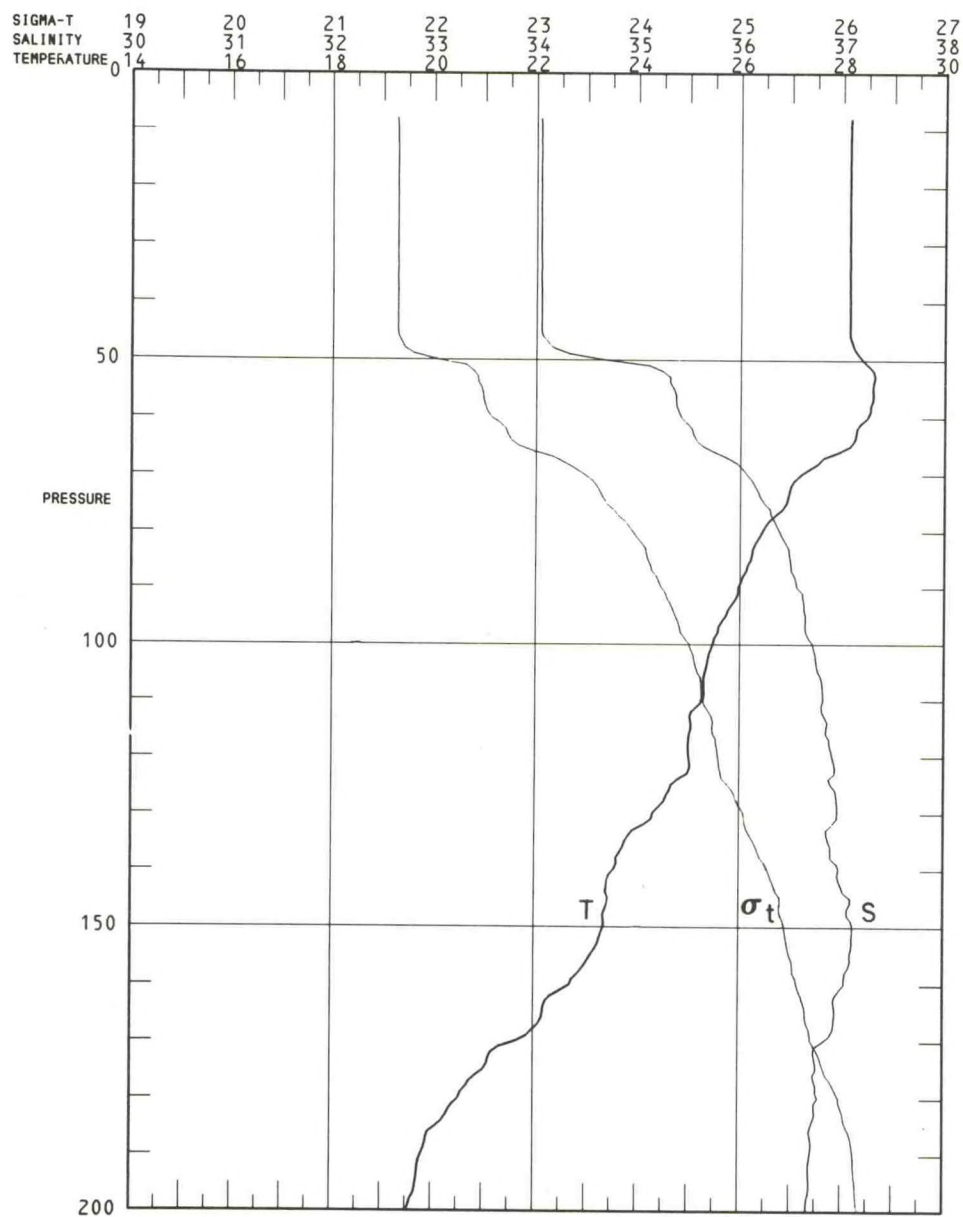


Rockaway, June 23, 1969, 0601 GMT, 15°00'N 056°30'W



Rockaway, June 23, 1969, 0908 GMT, 15°00'N 056°30'W

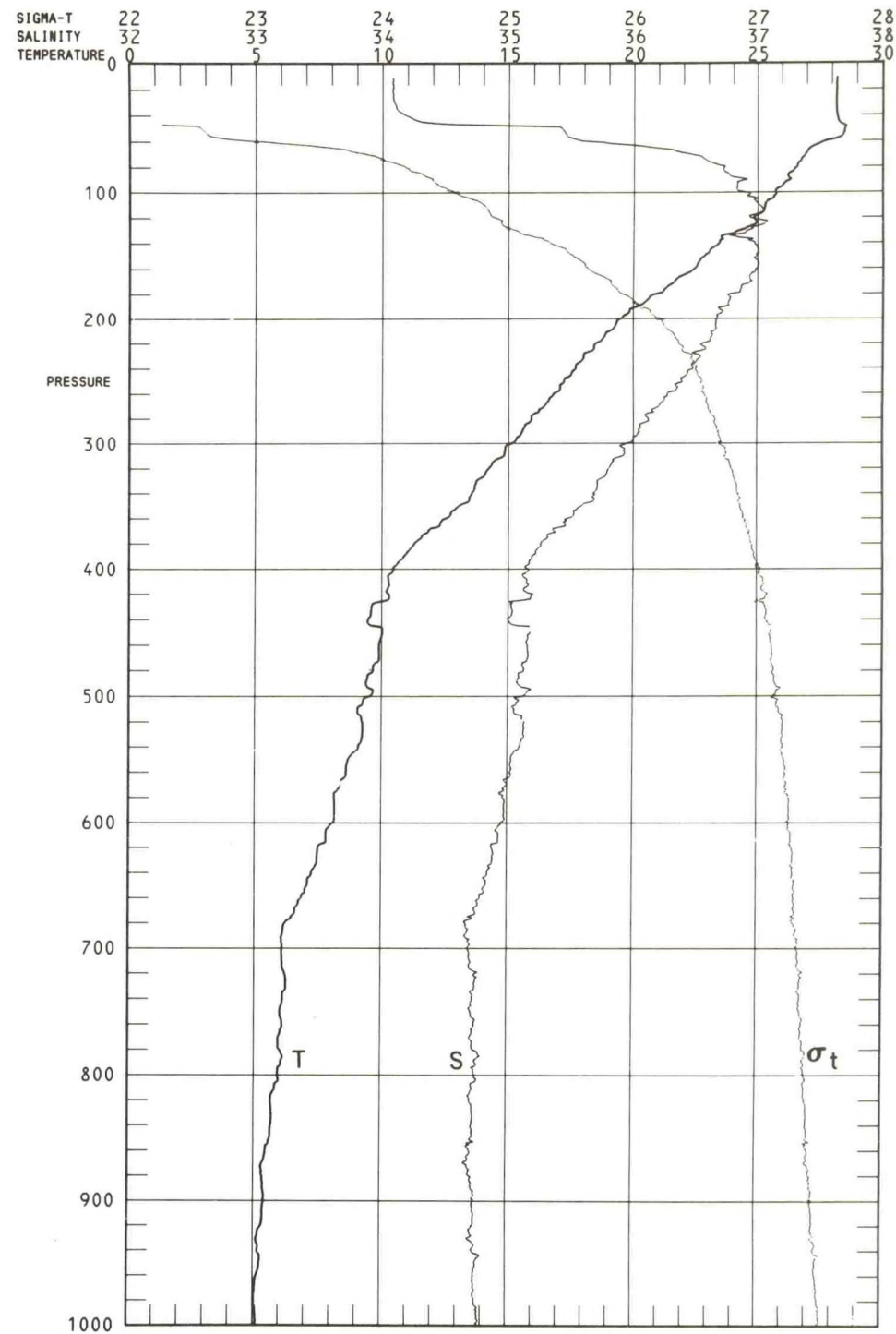
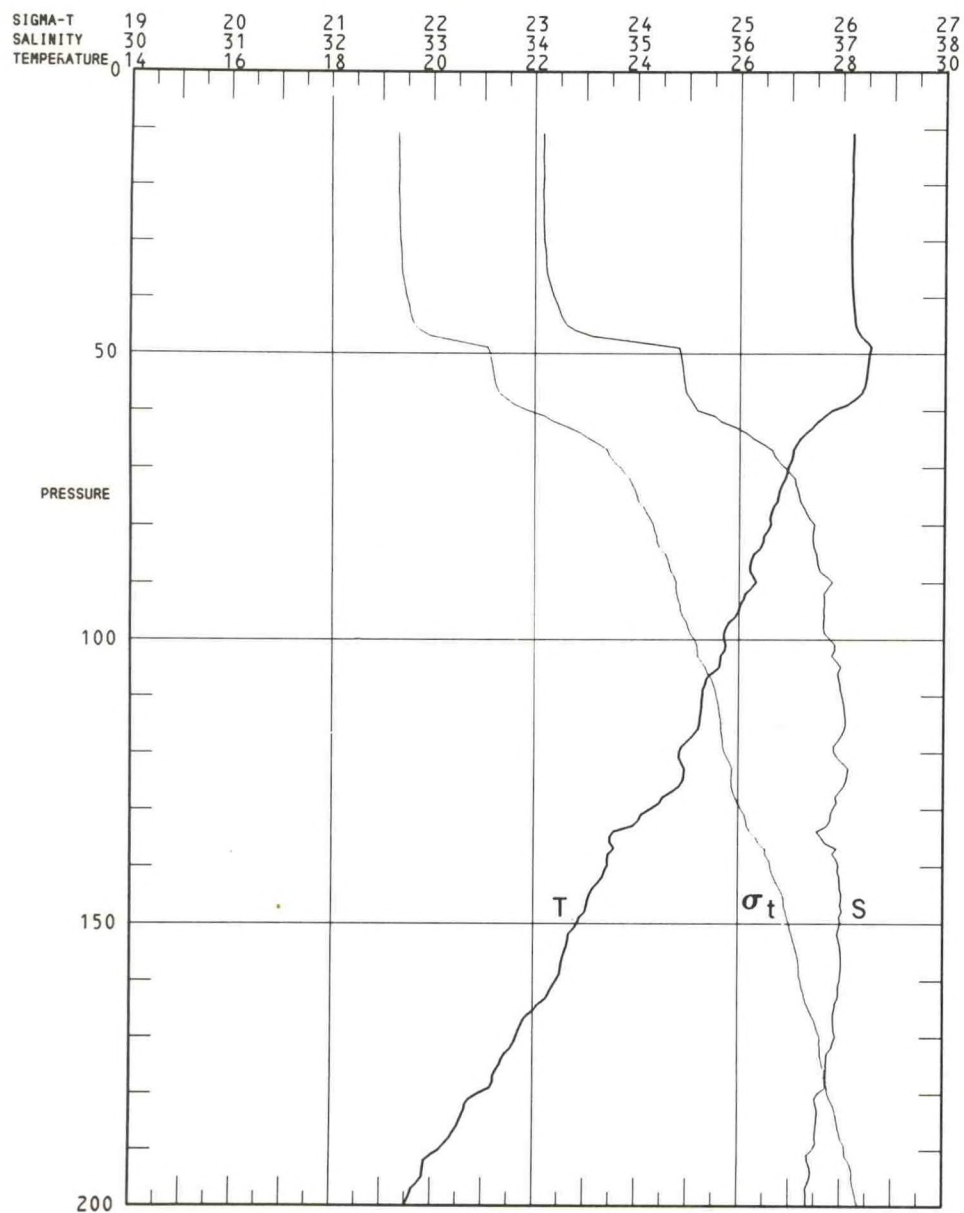
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 23, 1969, 1224 GMT, 15°00'N 056°30'W

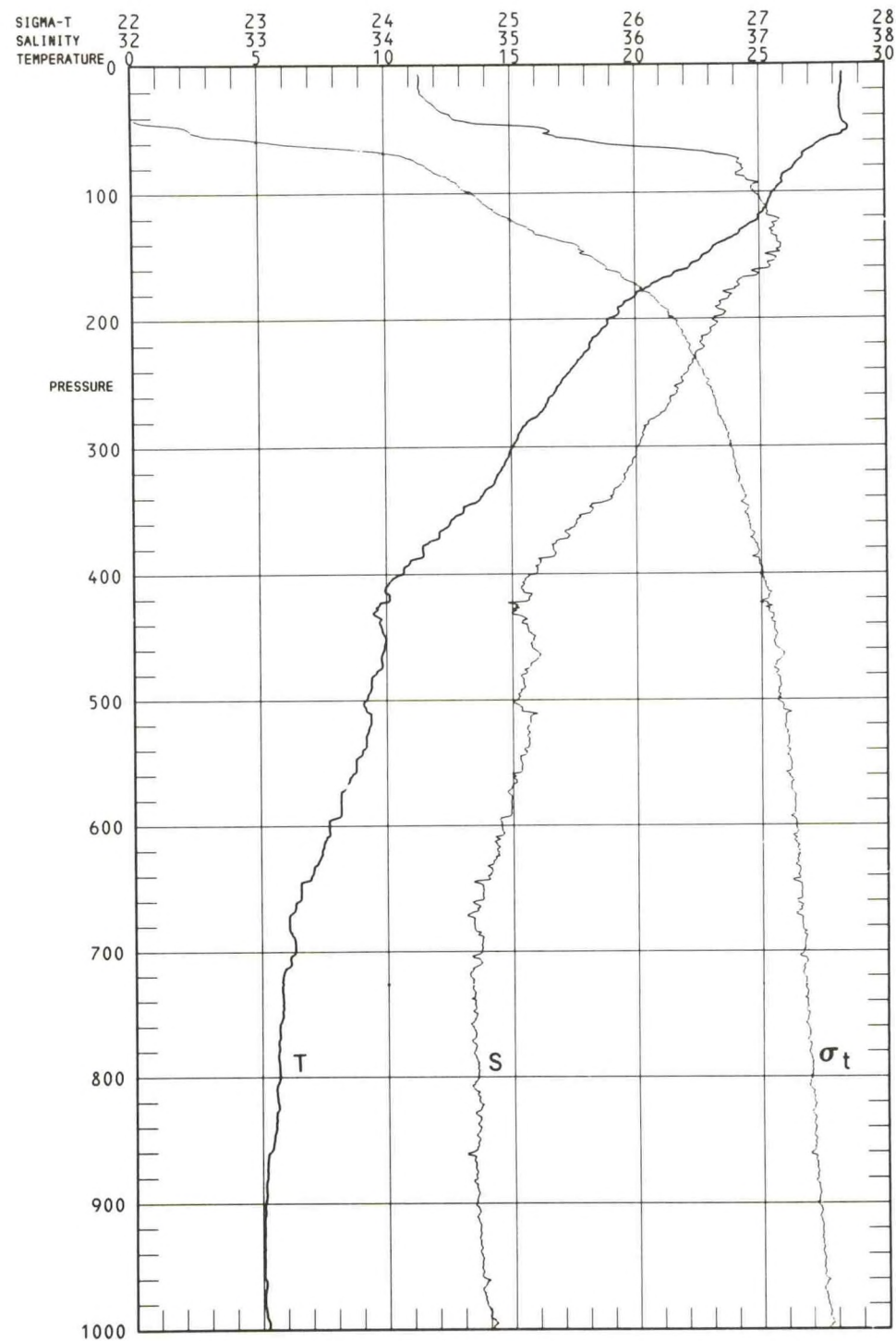
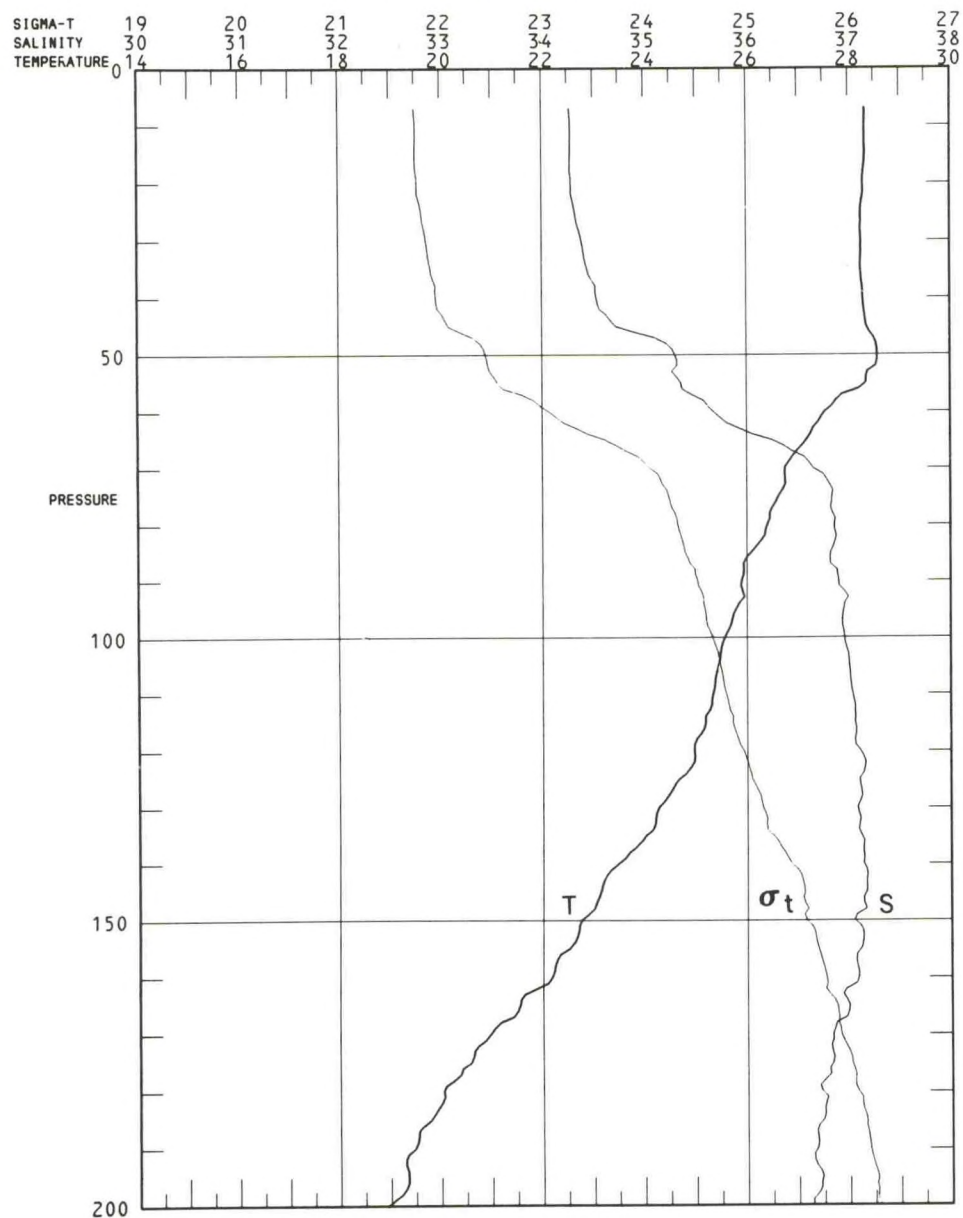


STD Depth-Sorted Plots  
 Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



Rockaway, June 23, 1969, 1458 GMT, 15°00'N 056°30'W

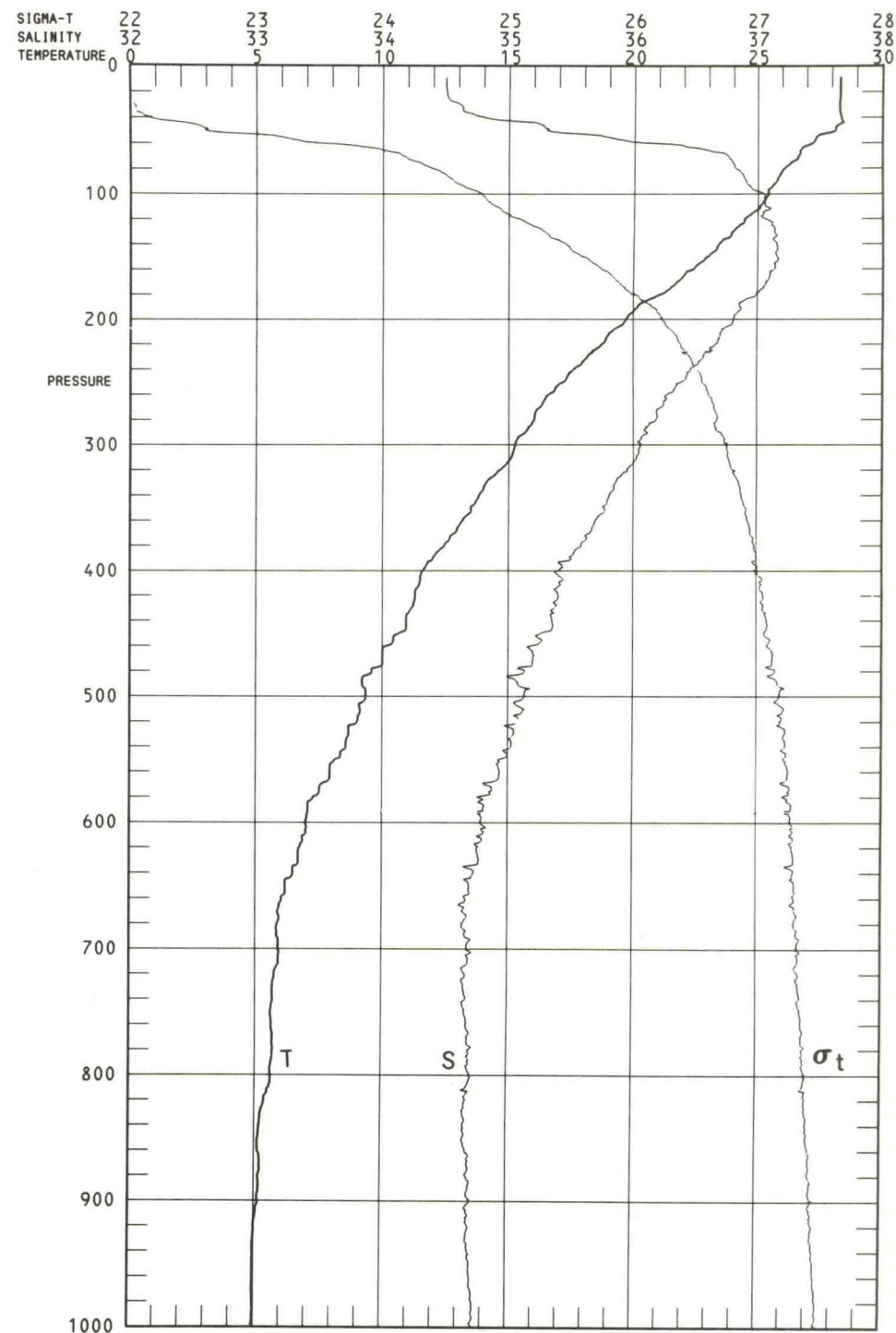
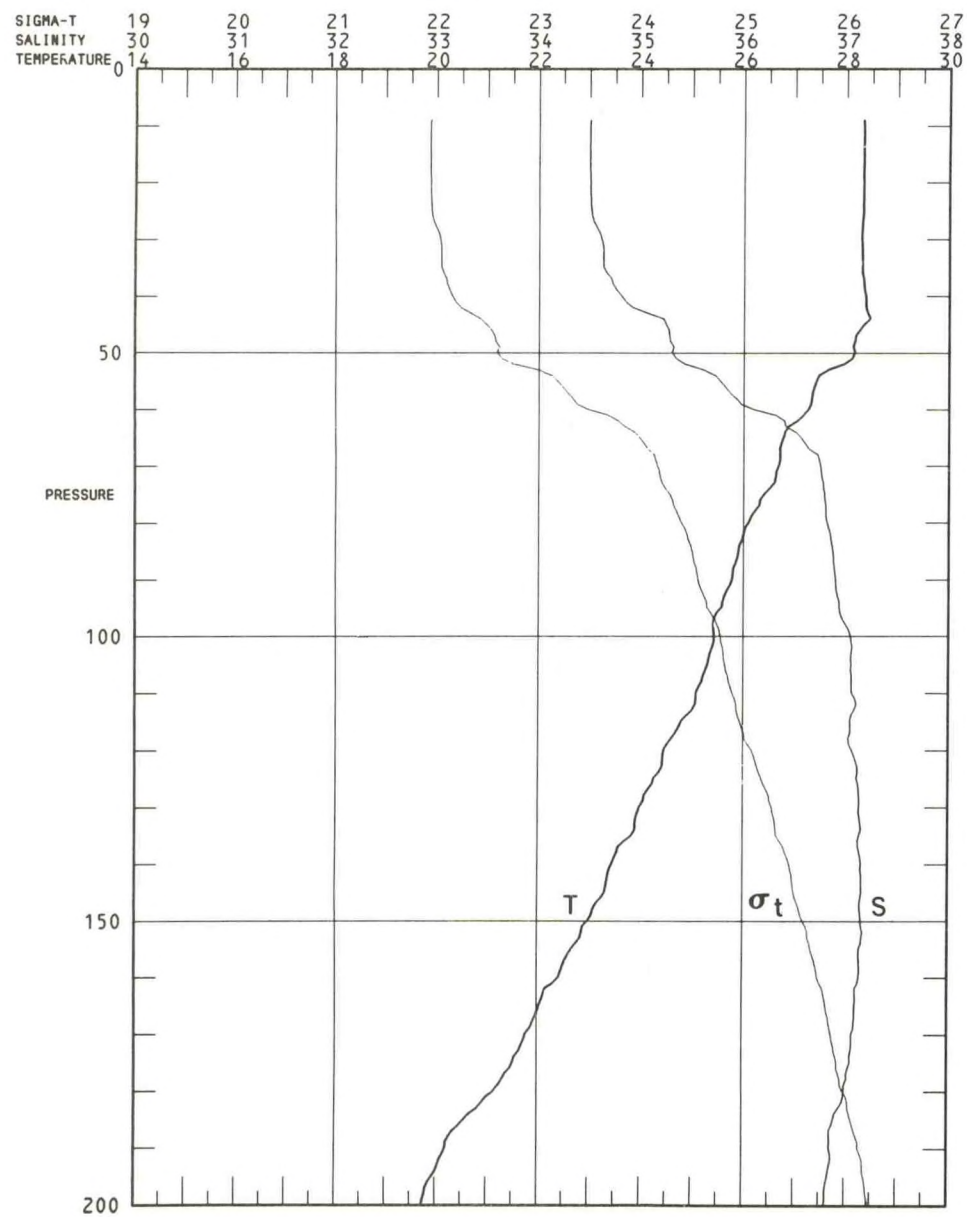
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 23, 1969, 1804 GMT, 15°00'N 056°30'W

# STD Depth-Sorted Plots

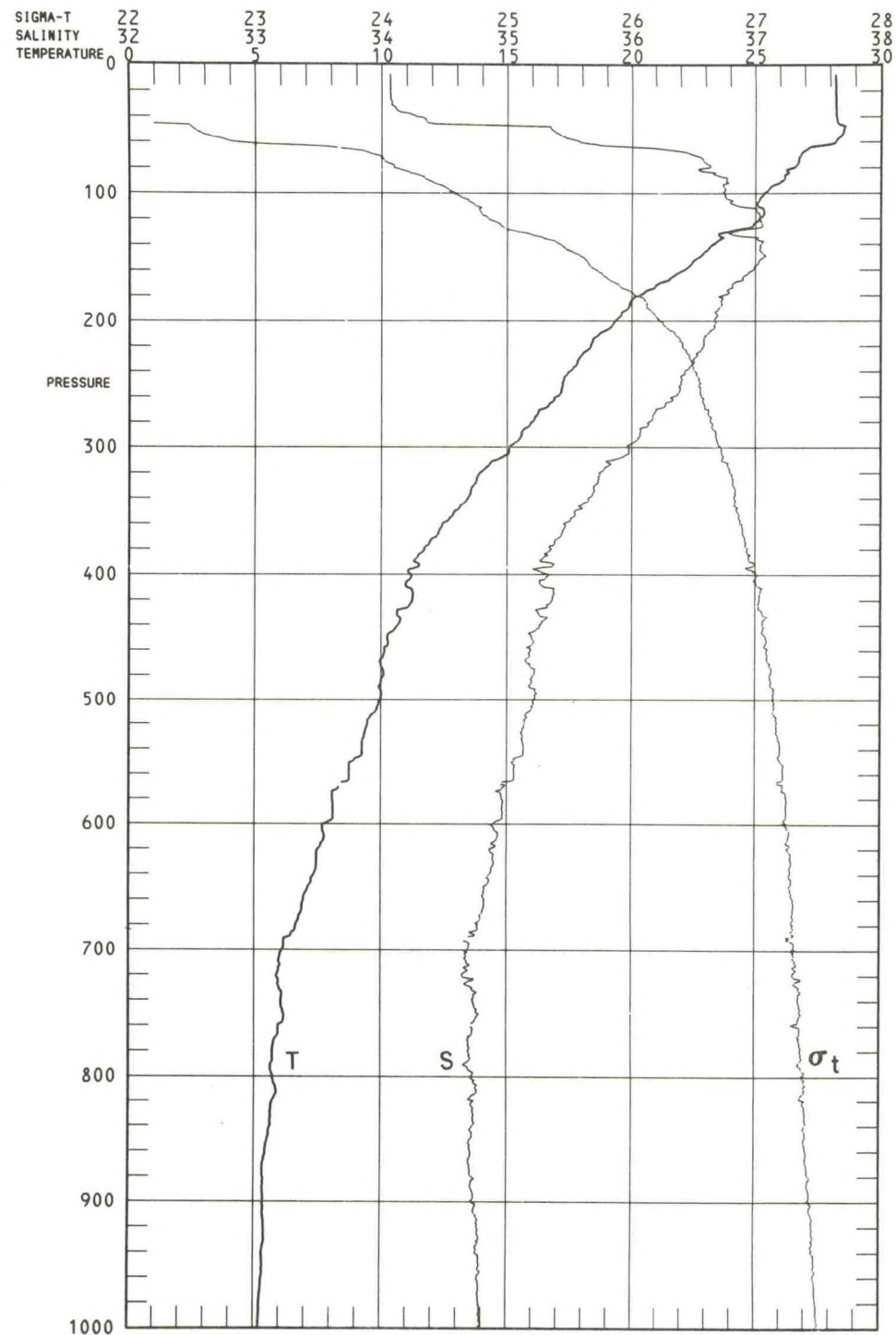
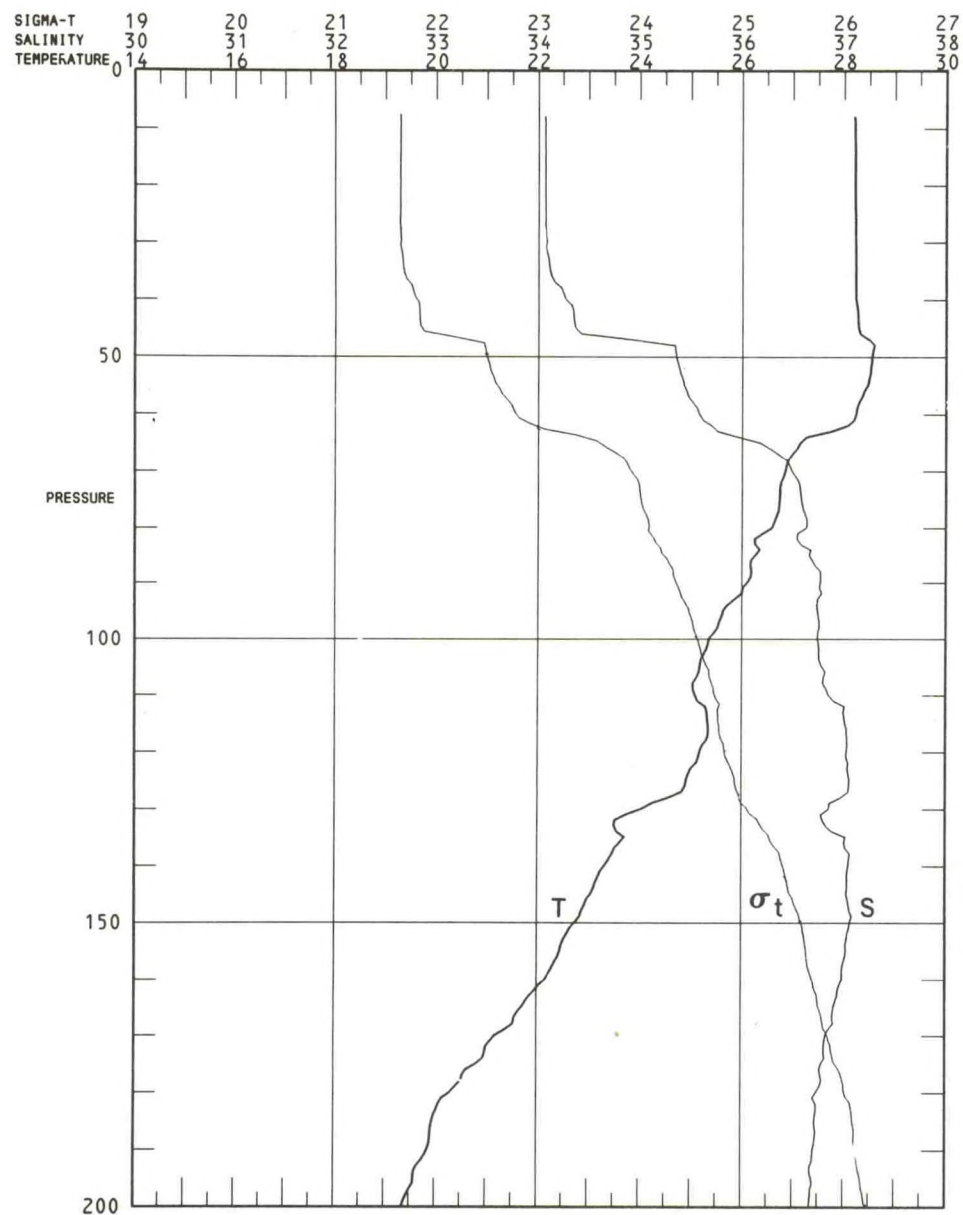
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line -  $\sigma_{\theta}$ -t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 23, 1969, 2109 GMT, 15°00'N 056°30'W

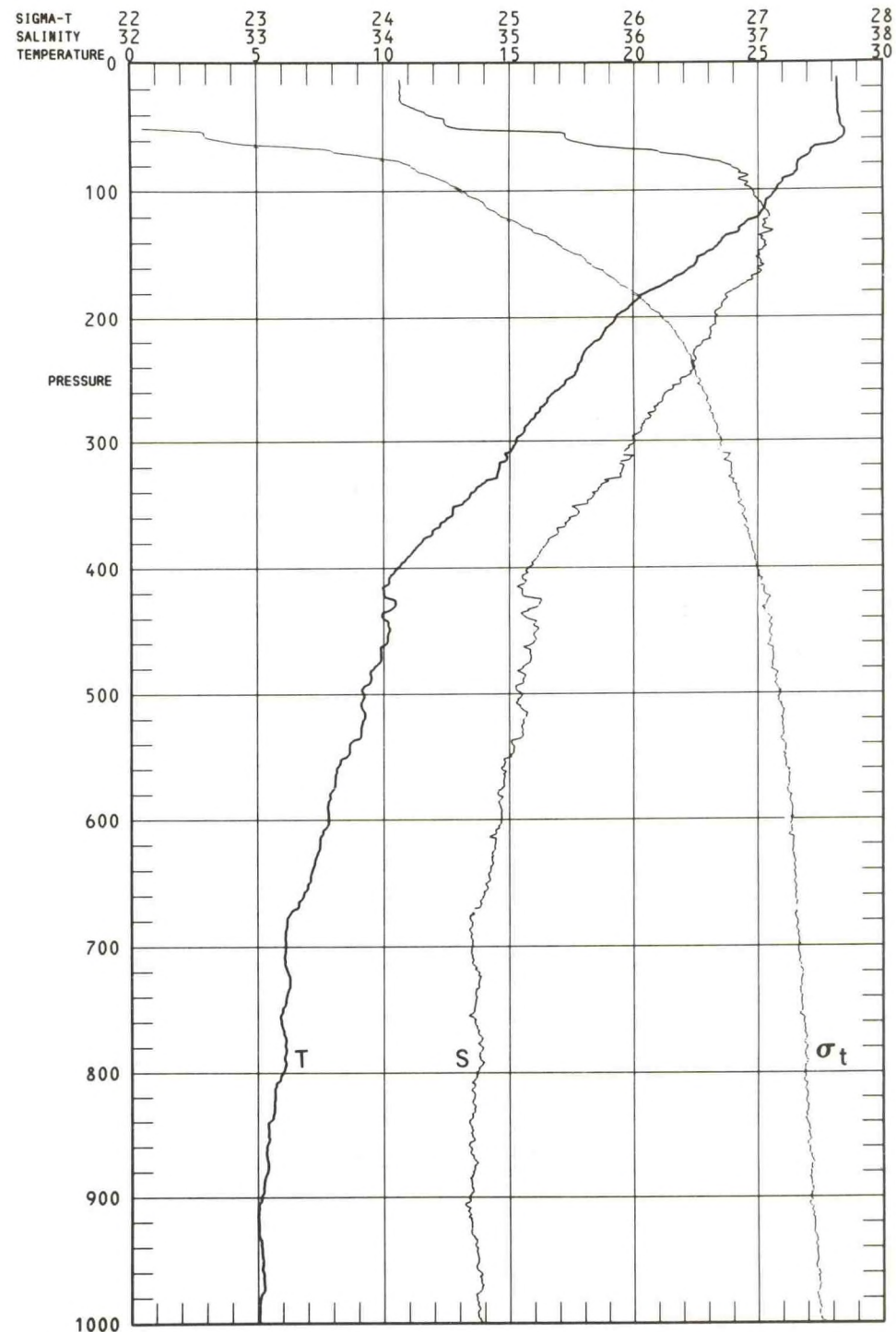
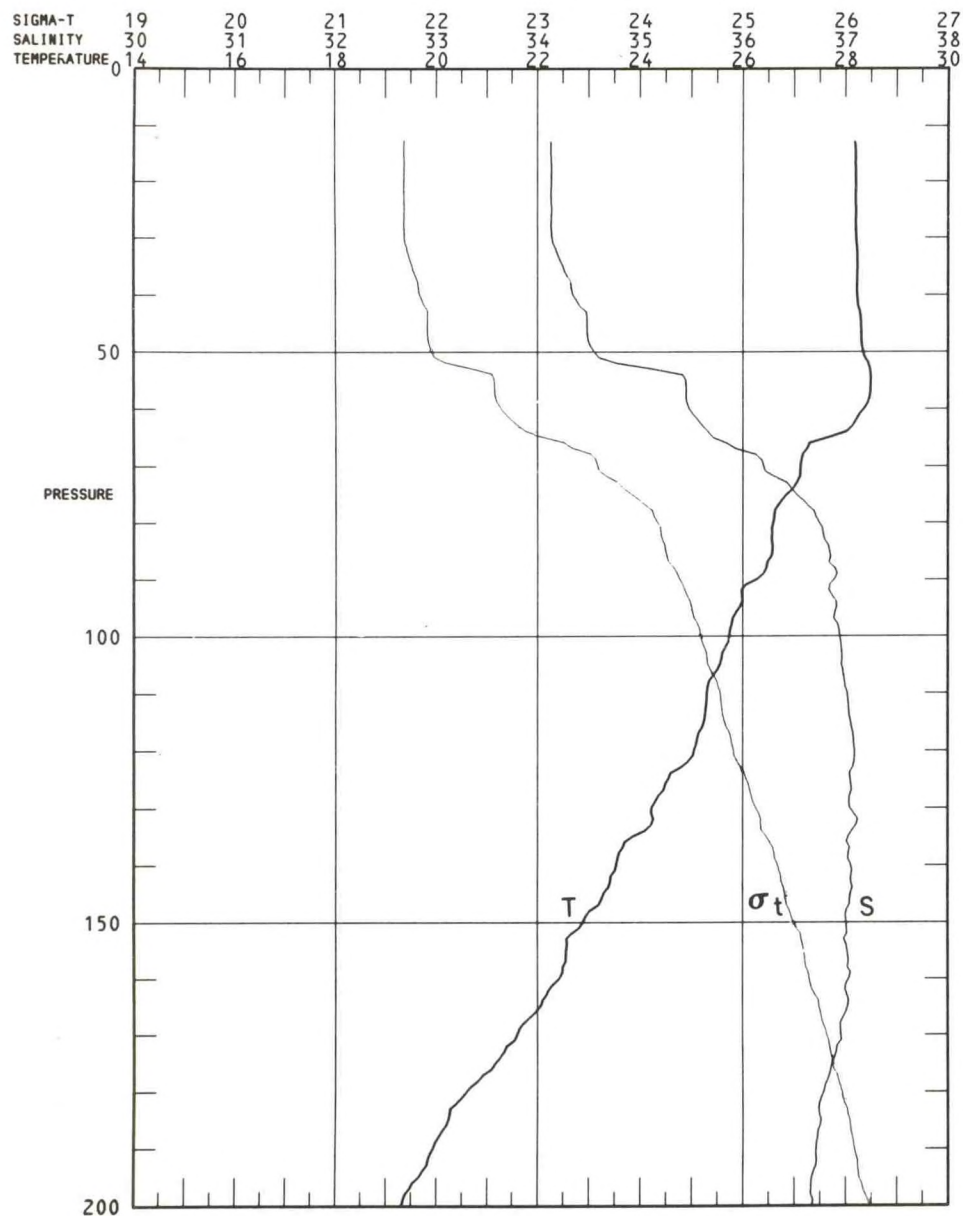


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



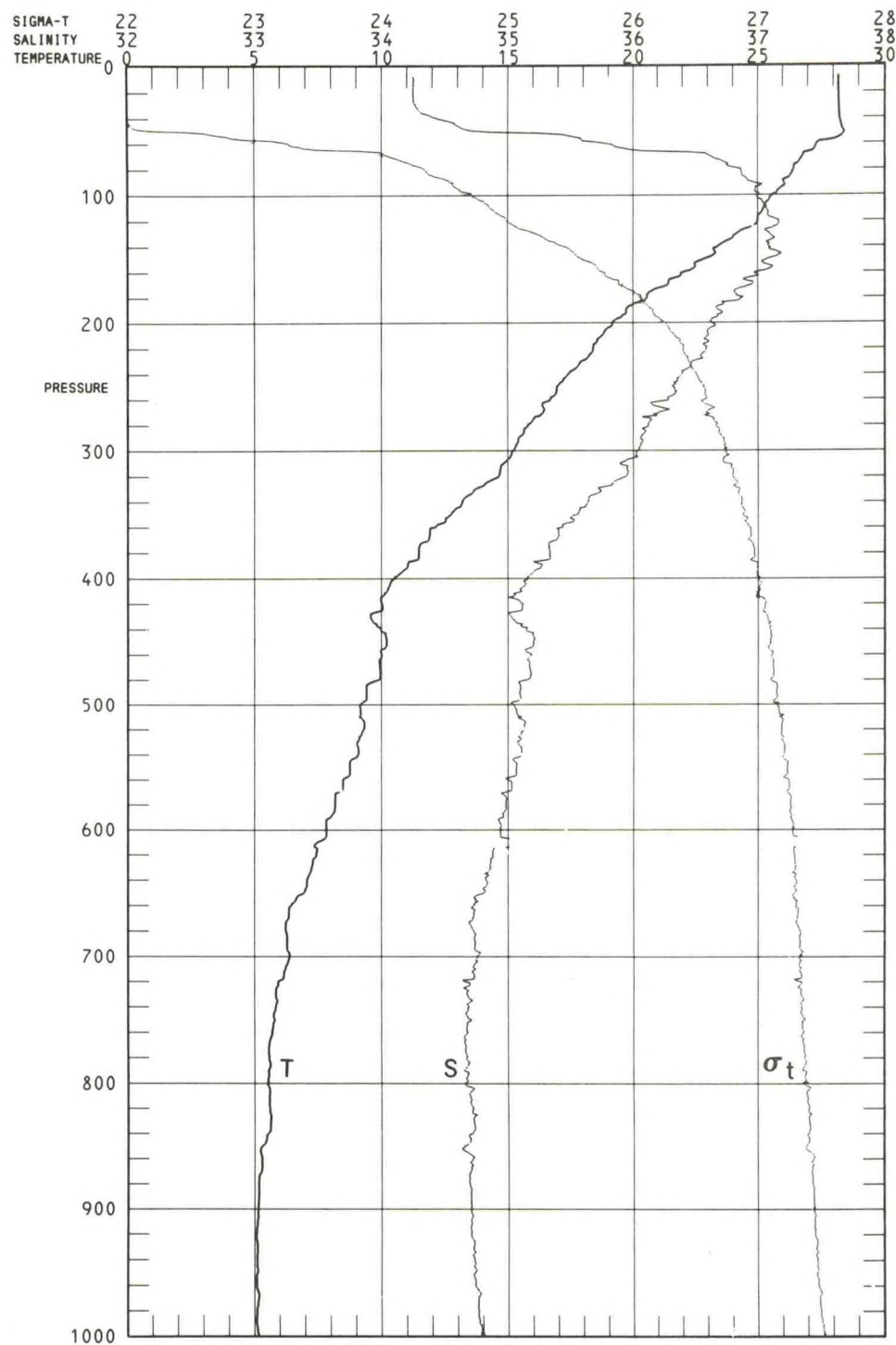
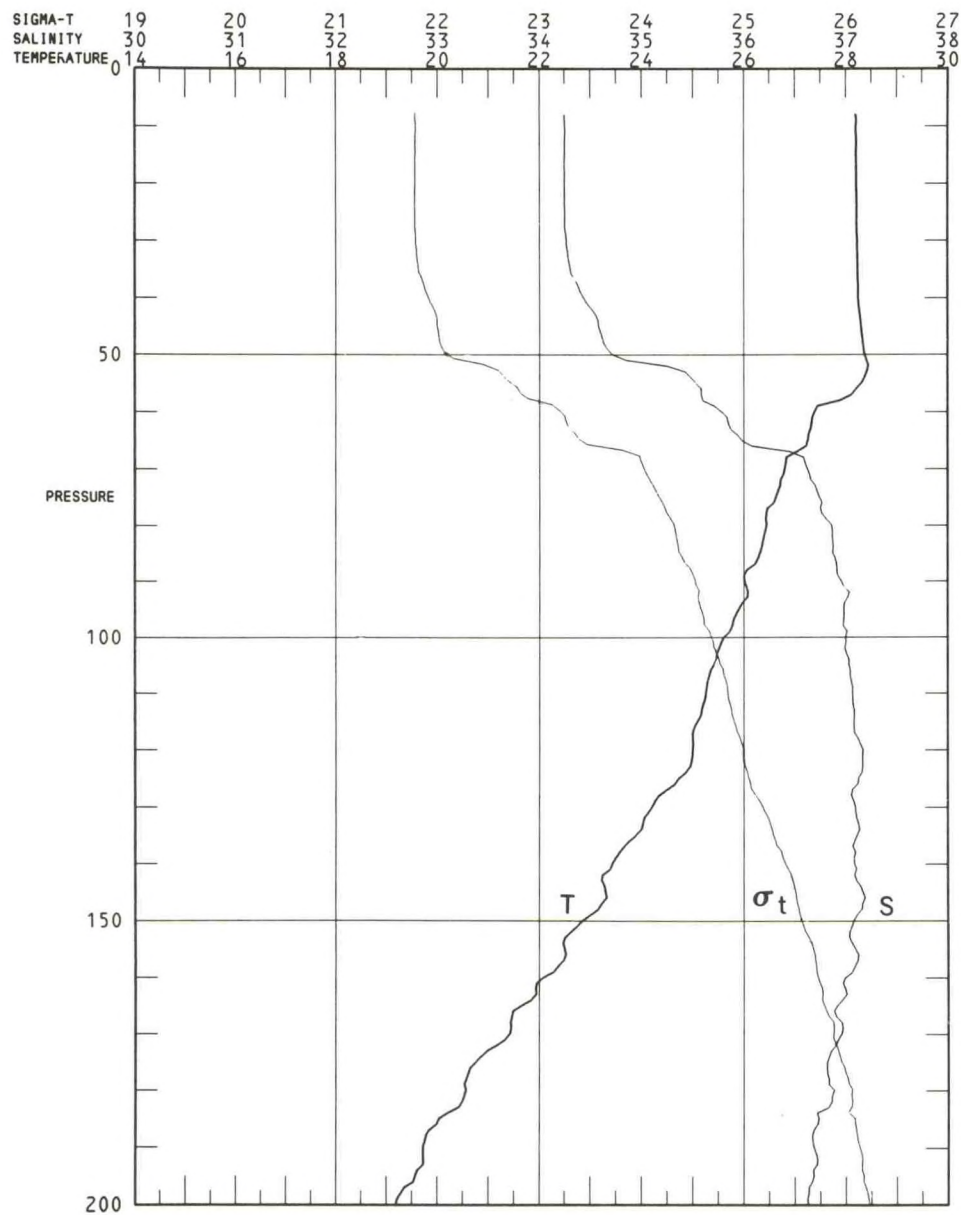
Rockaway, June 24, 1969, 0106 GMT, 15°00'N 056°30'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 24, 1969, 0322 GMT, 15°00'N 056°30'W

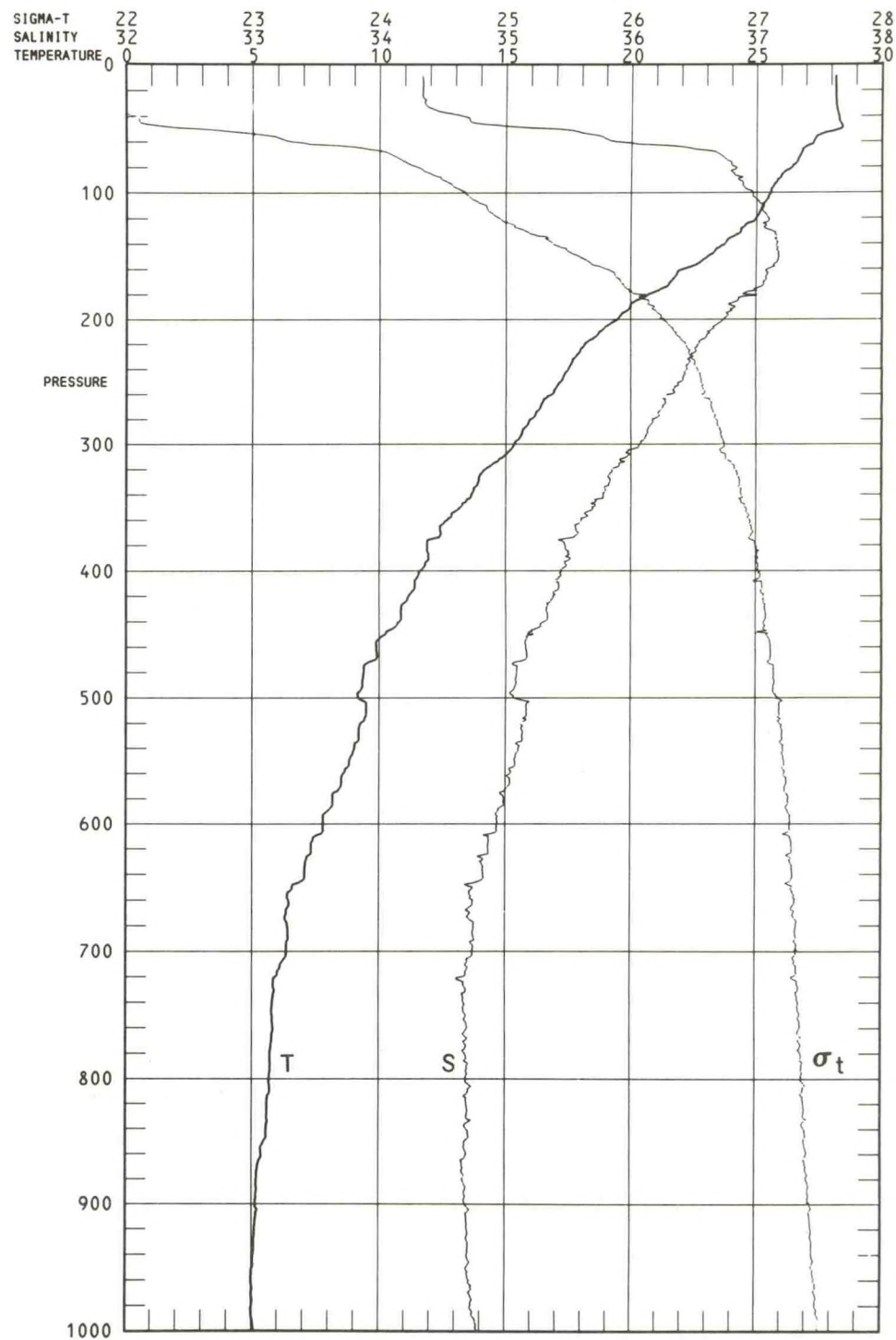
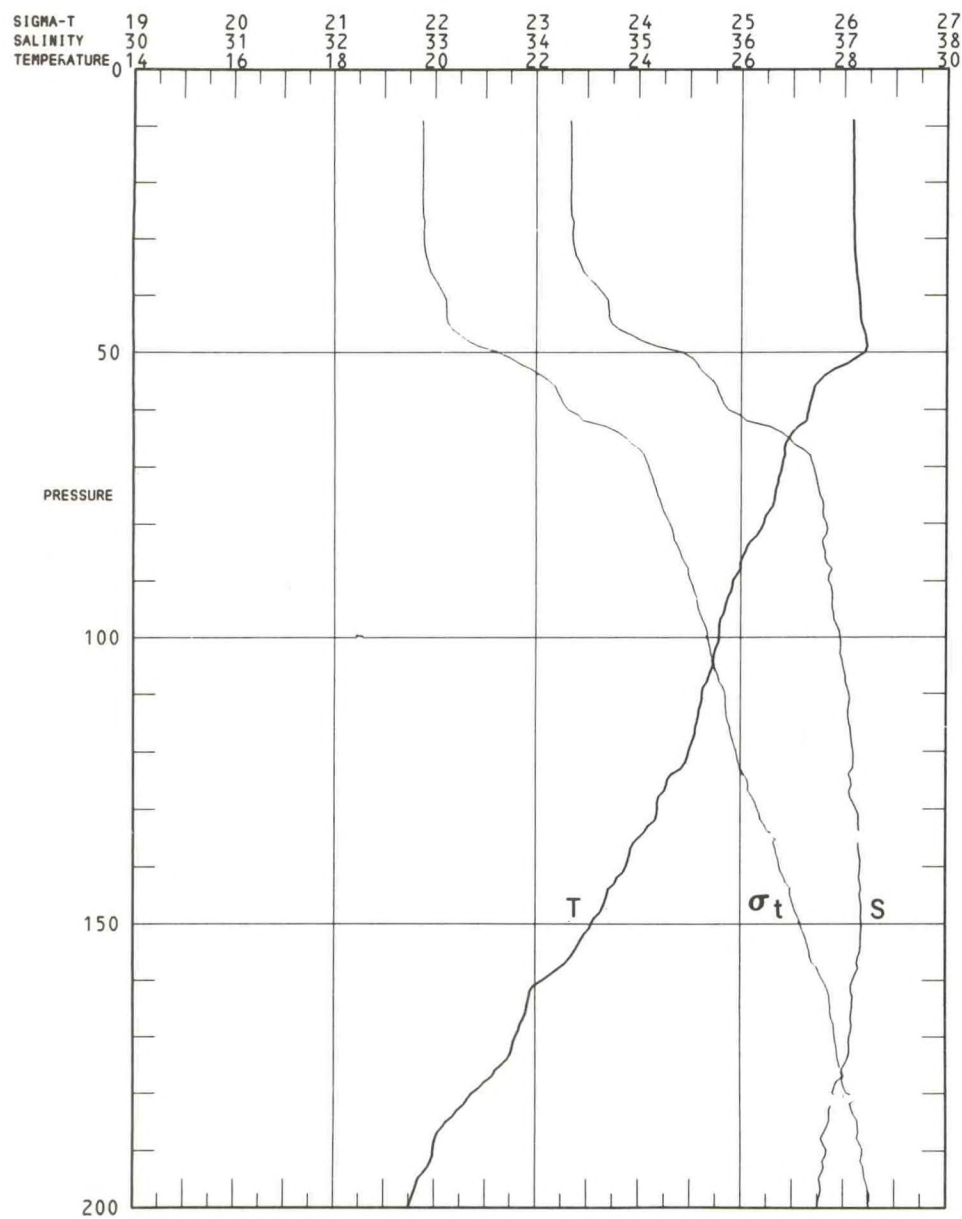
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 24, 1969, 0612 GMT, 15°00'N 056°30'W

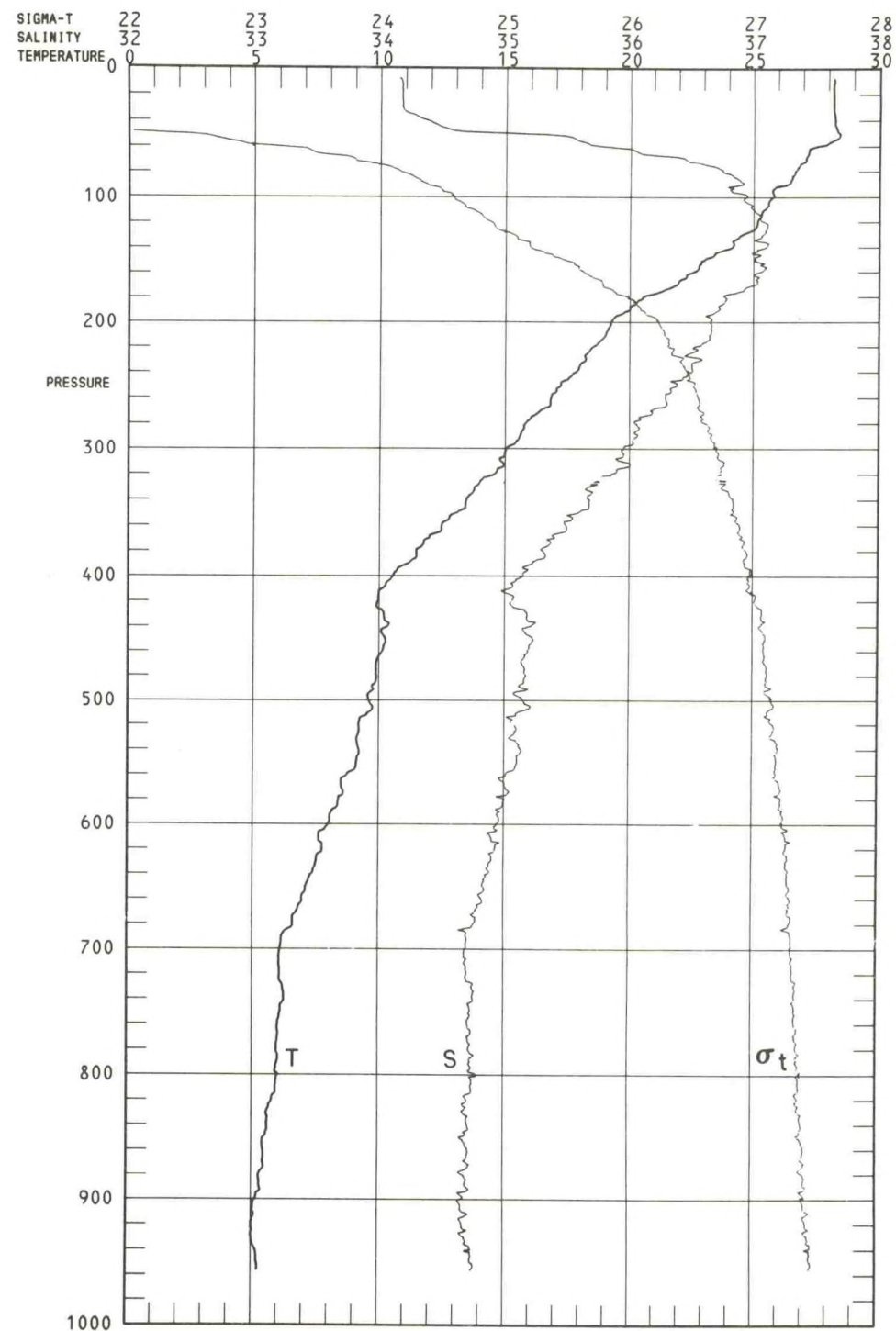
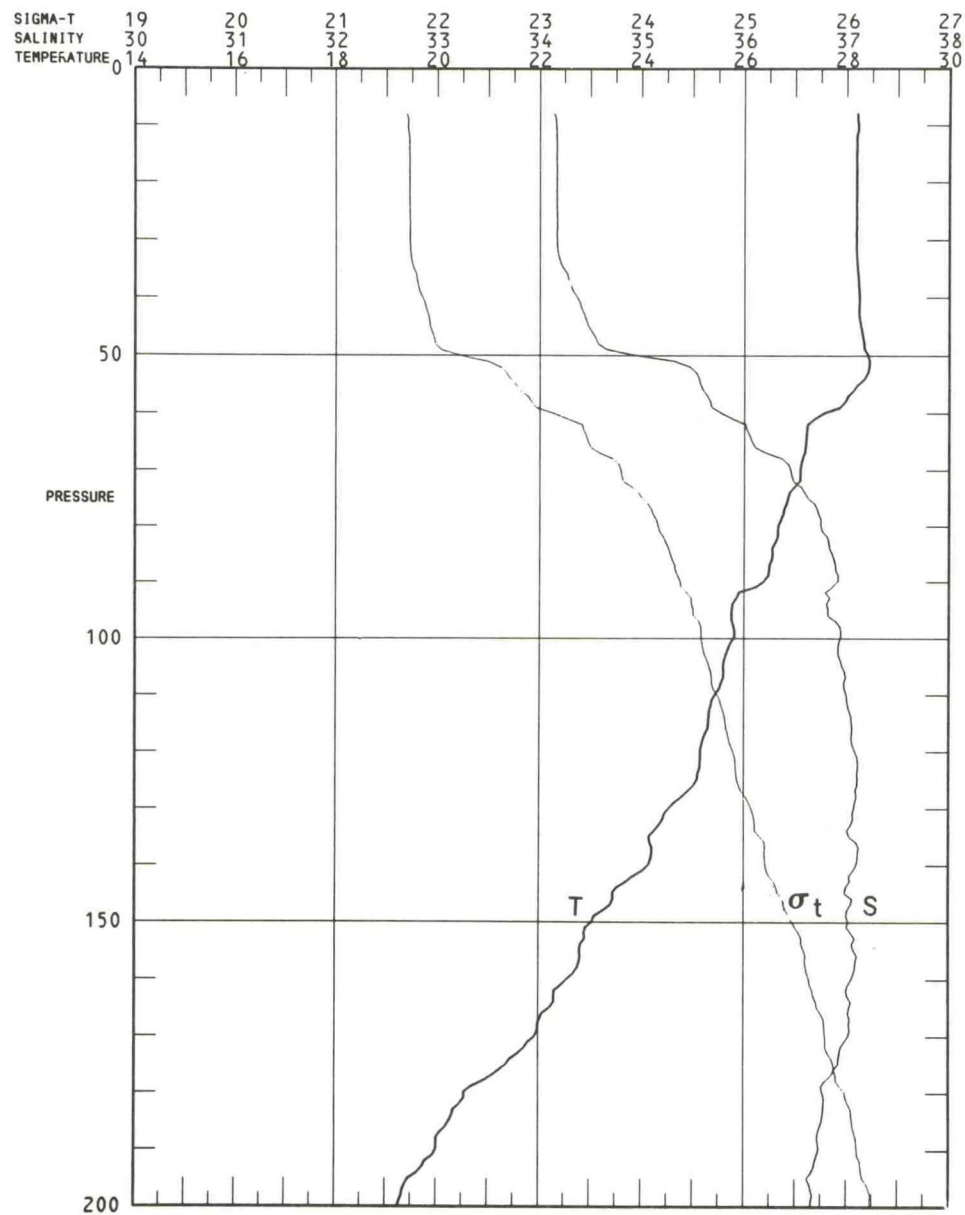


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 24, 1969, 0906 GMT, 15°00'N 056°30'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

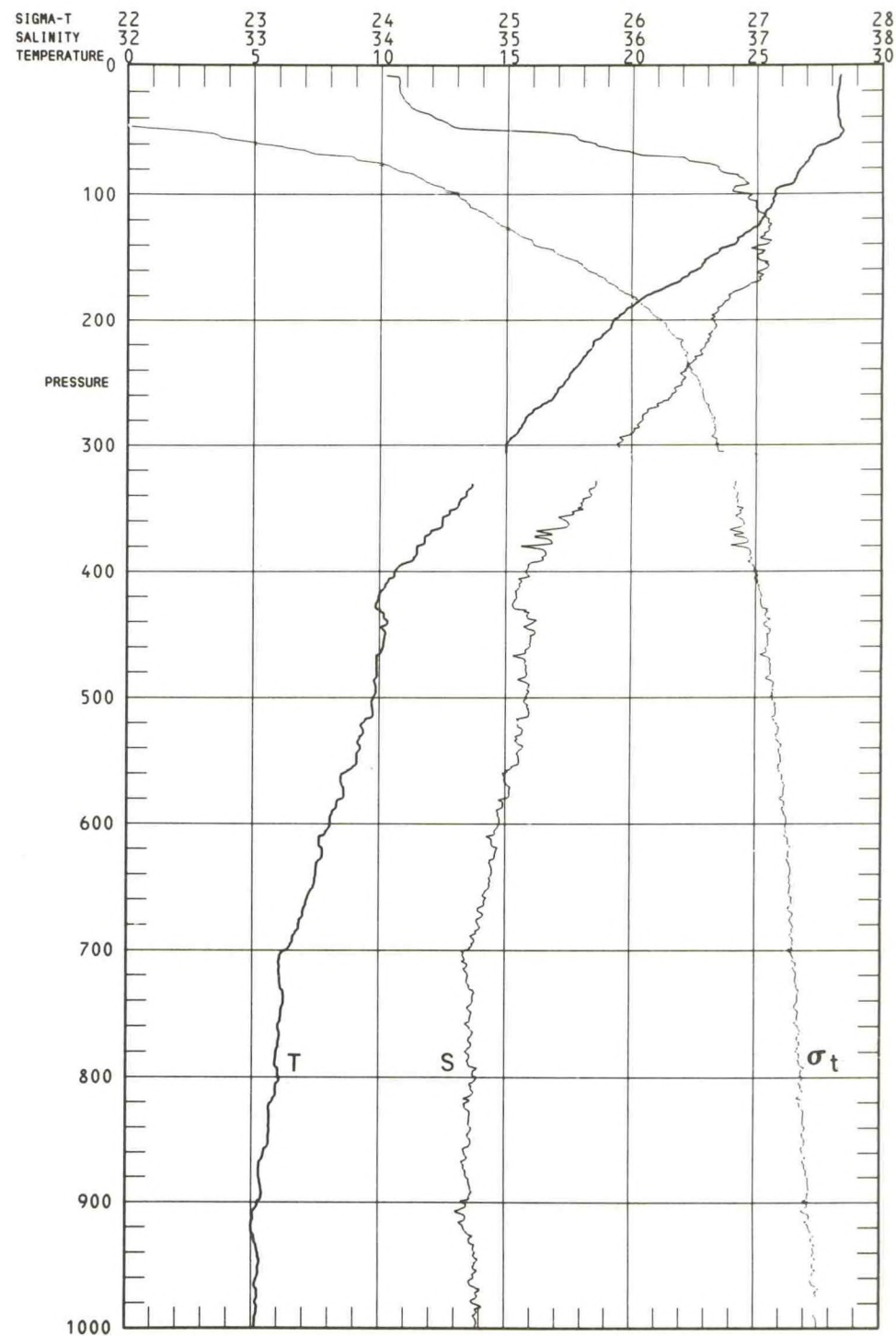
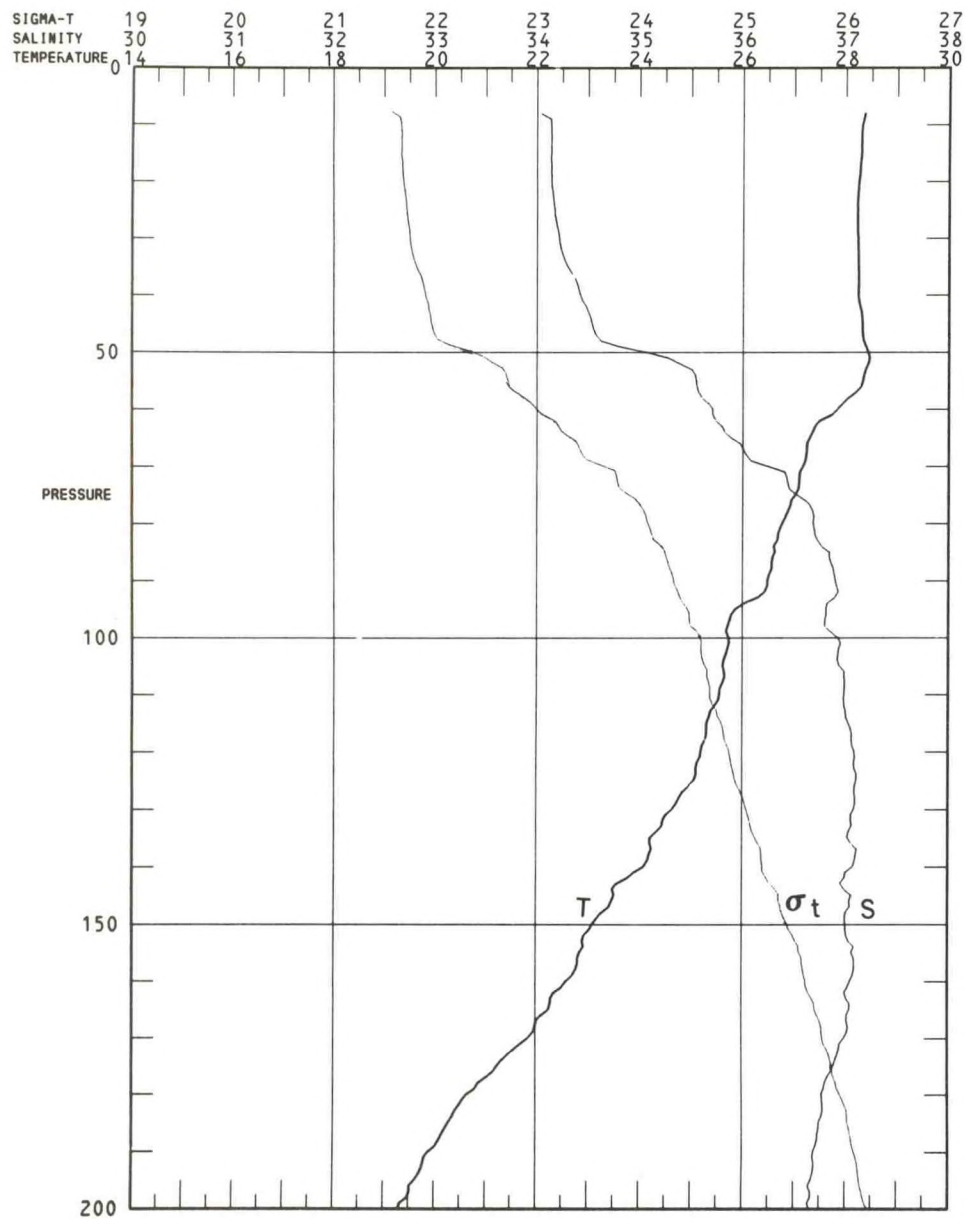


Rockaway, June 24, 1969, 1236 GMT, 15°00'N 056°30'W

ROCKAWAY YEAR 1969 DAY 175 TIME 1530 GMT LAT.15°00N LON.056°30W  
 ABRUPT DROP IN SALINITY AND TEMPERATURE NOTED AT 300 DBARS.  
 UNRELIABLE PRESSURES

# STD Depth-Sorted Plots

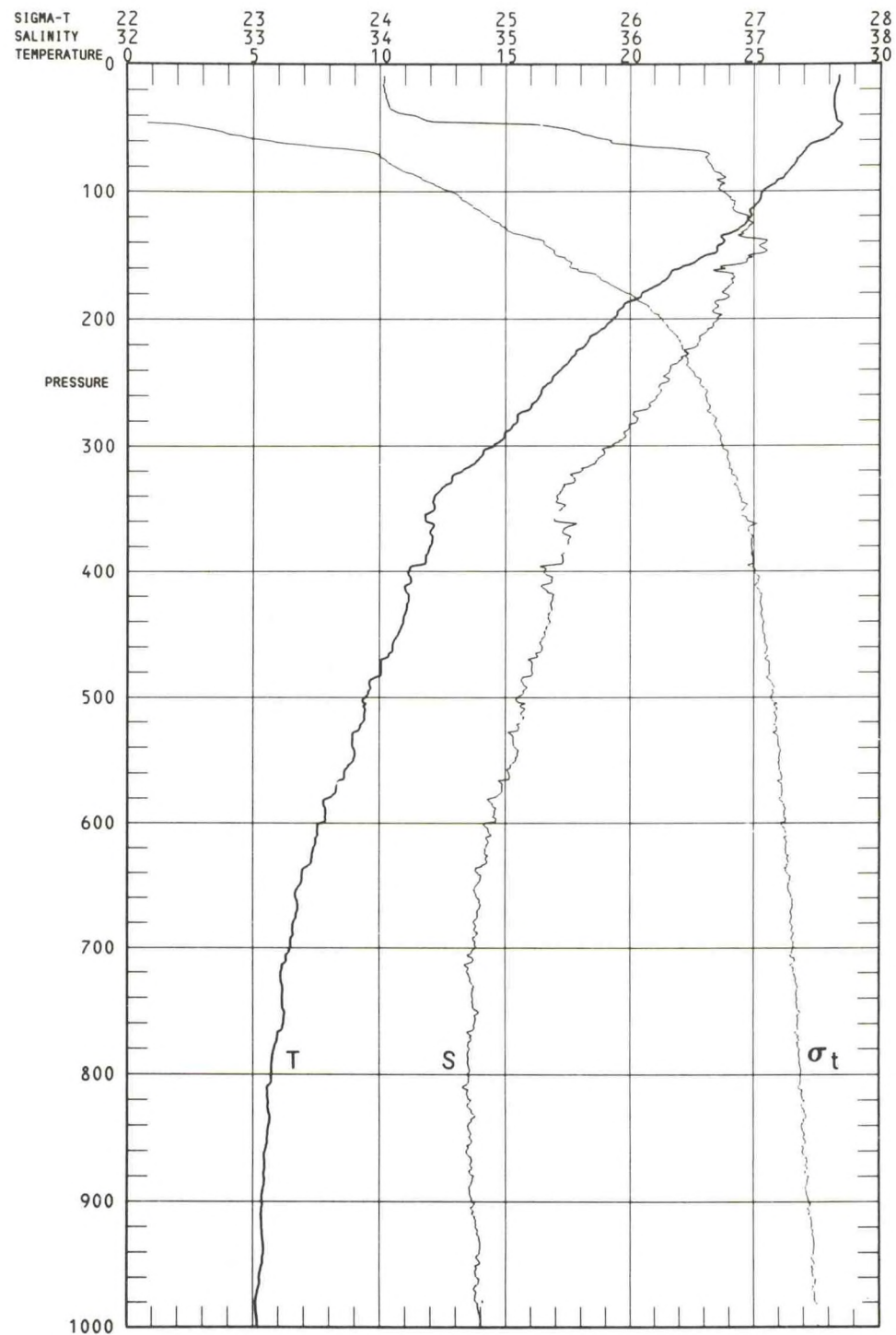
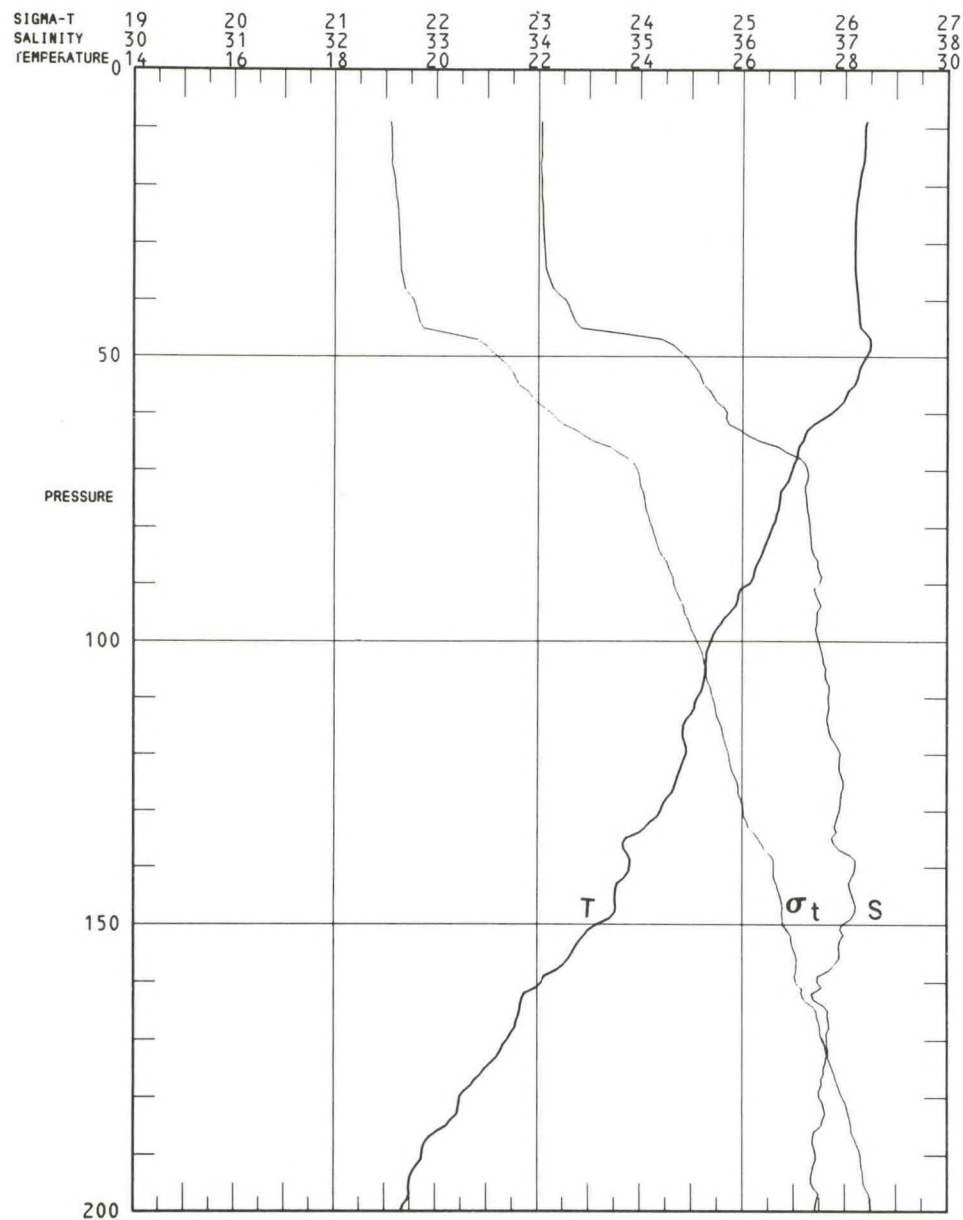
Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



Rockaway, June 24, 1969, 1530 GMT, 15°00'N 056°30'W



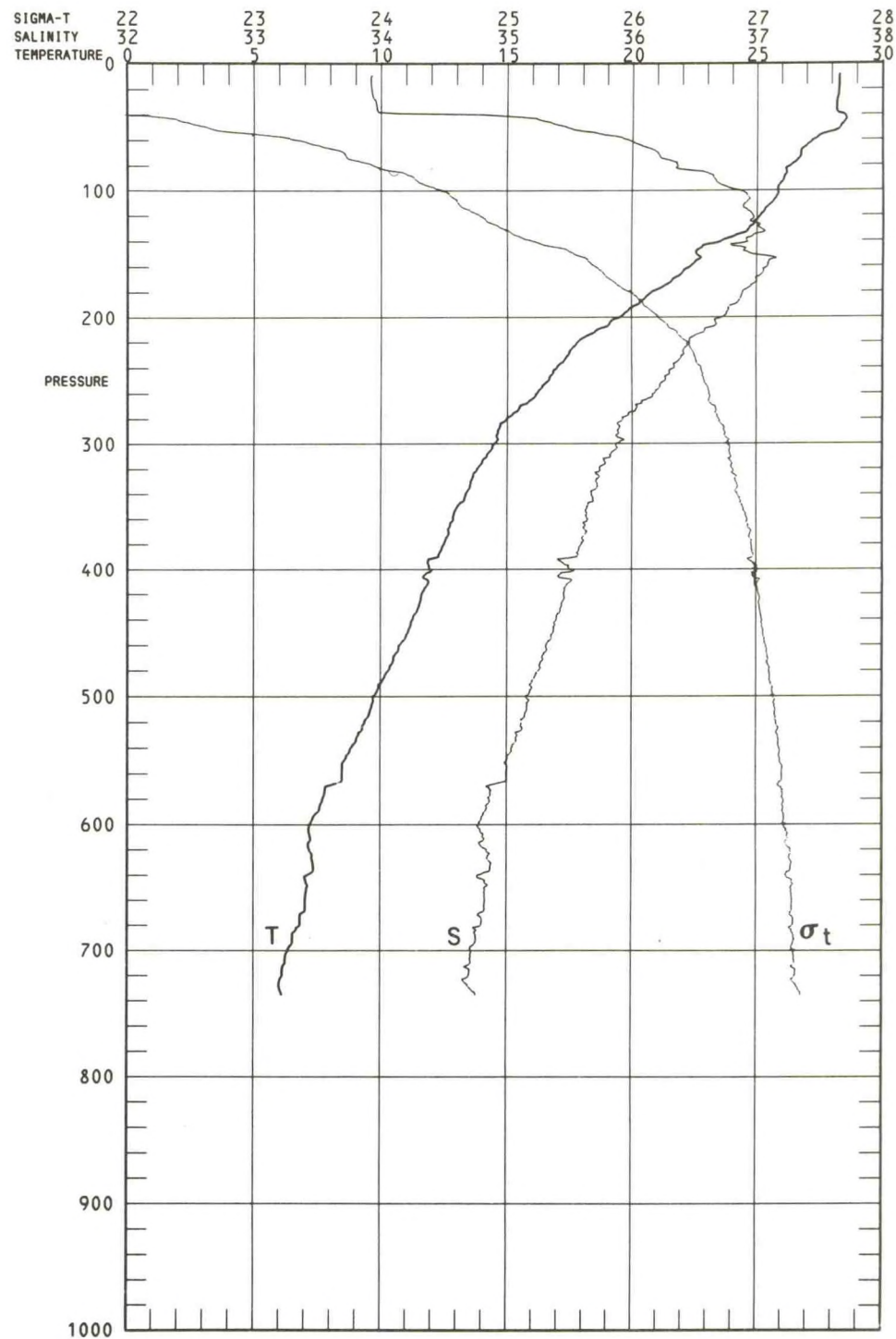
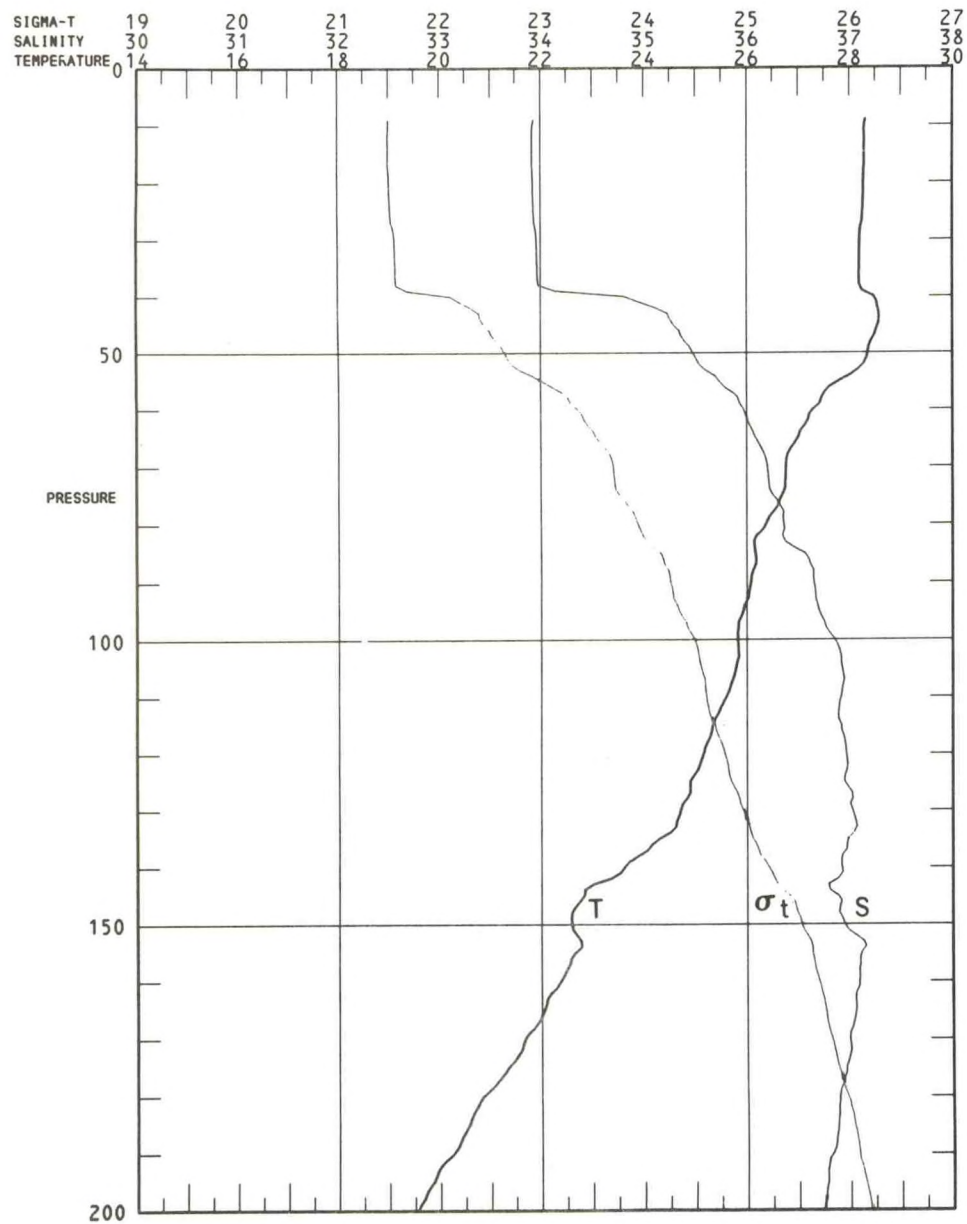
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 24, 1969, 1800 GMT, 15°00'N 056°30'W

ROCKAWAY YEAR 1969 DAY 175 TIME 2128 GMT LAT.15°00N LON.056°30W  
 ABRUPT CHANGES IN SALINITY AND IN TEMPERATURE NOTED AT 33 DECIBARS  
 CAST ENDED AT 729 DECIBARS

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

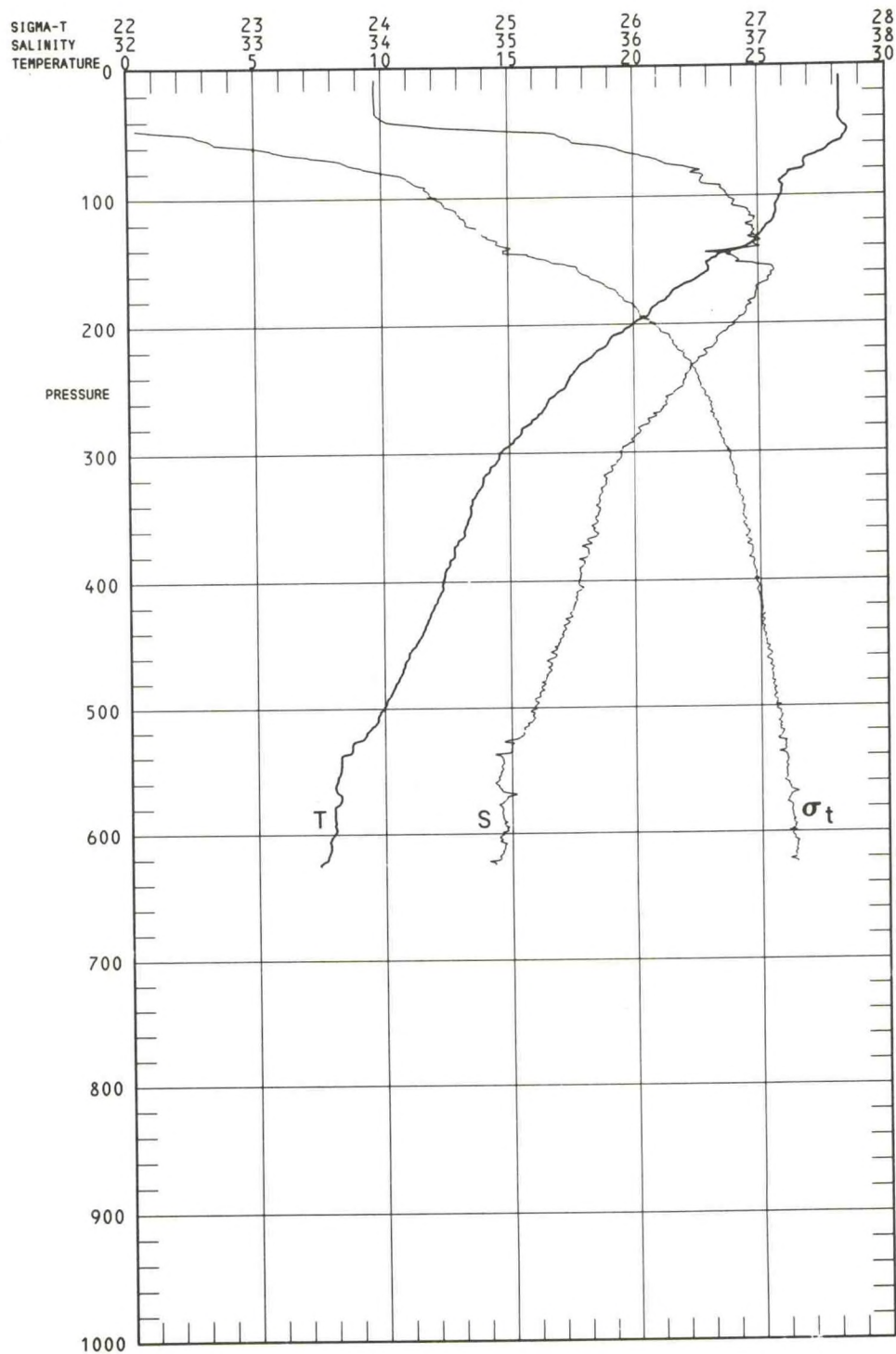
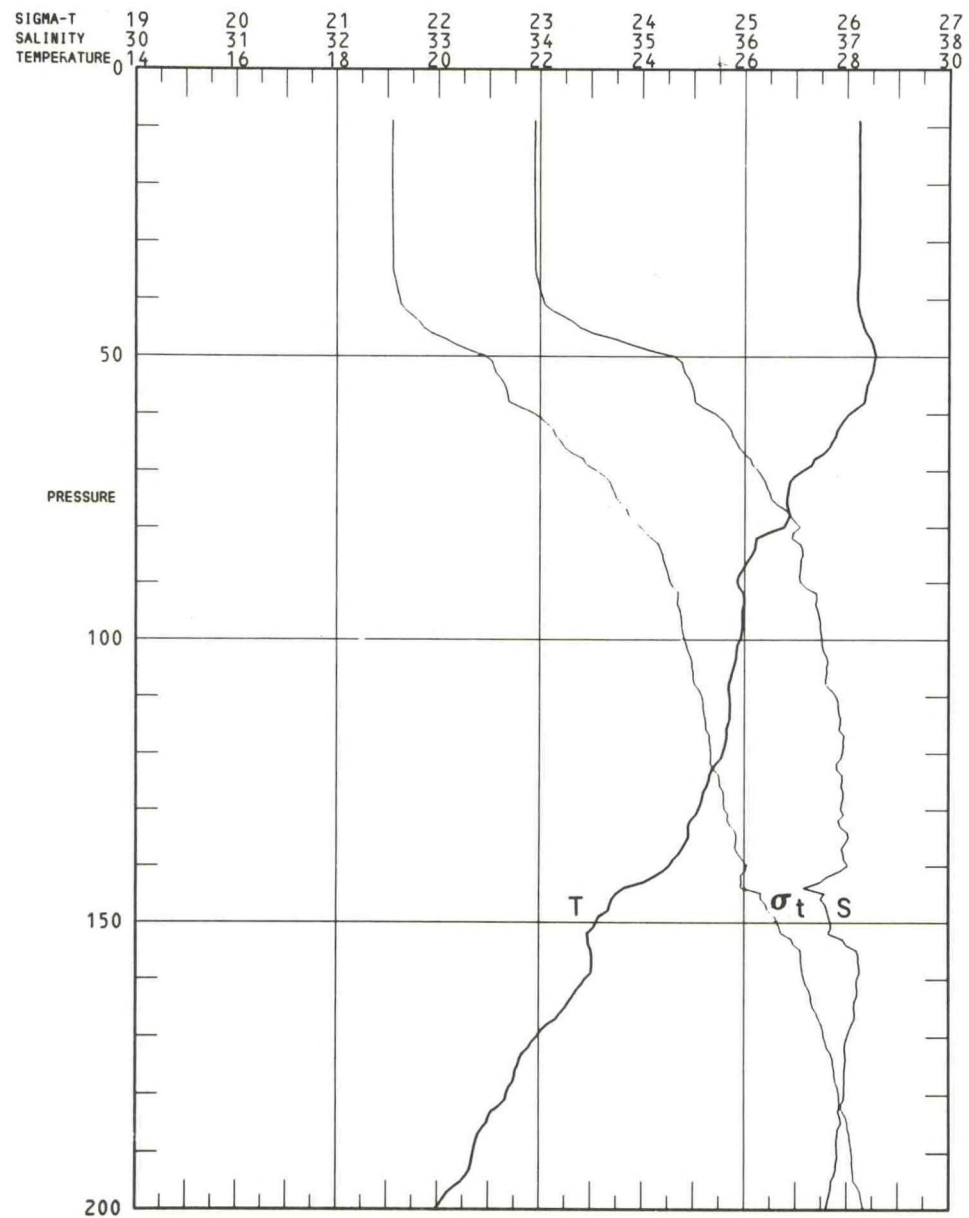


Rockaway, June 24, 1969, 2128 GMT, 15°00'N 056°30'W

ROCKAWAY YEAR 1969 DAY 176 TIME 104 GMT LAT.15°00N LON.056°30W  
CAST ENDED AT 617 DBARS.

# STD Depth-Sorted Plots

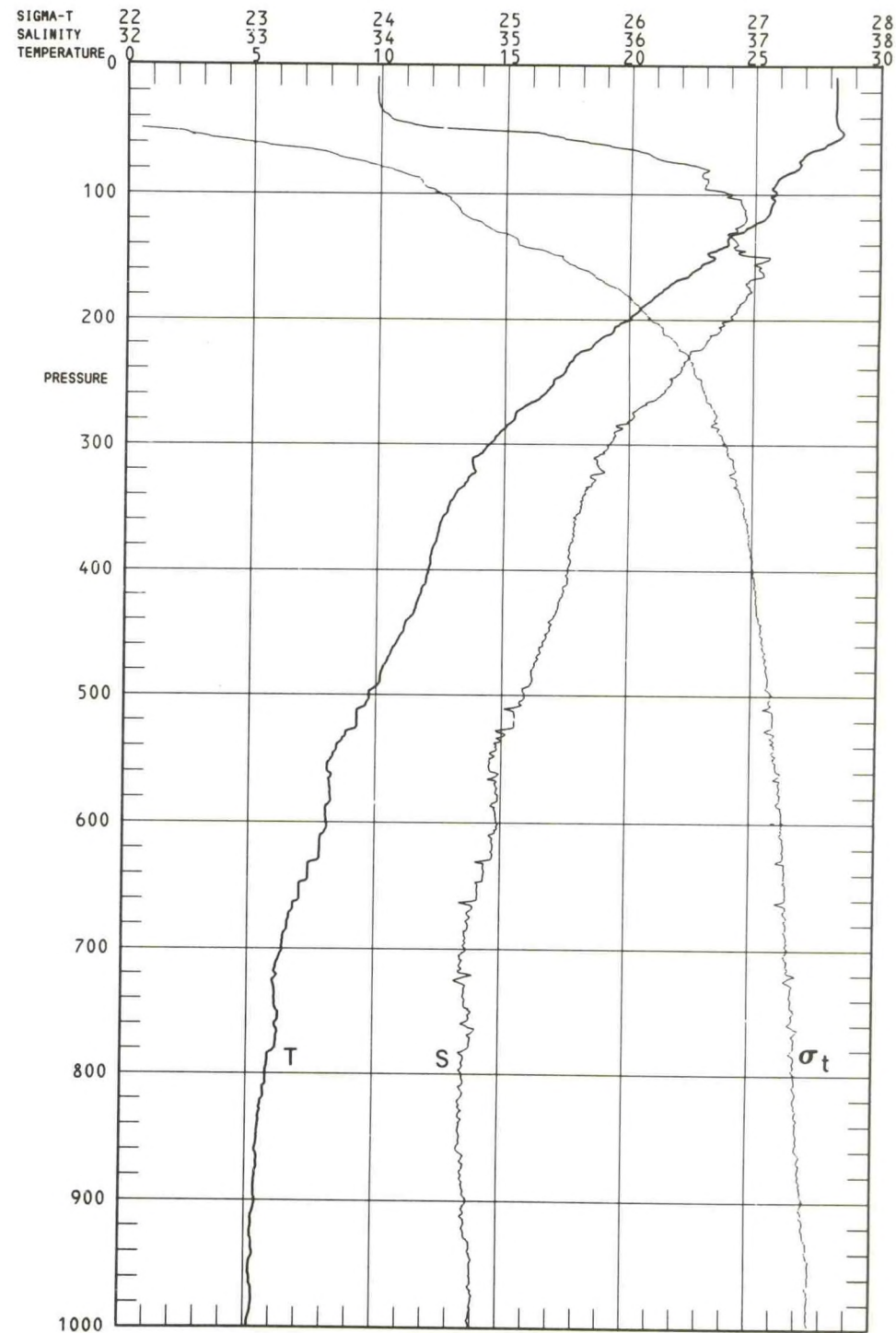
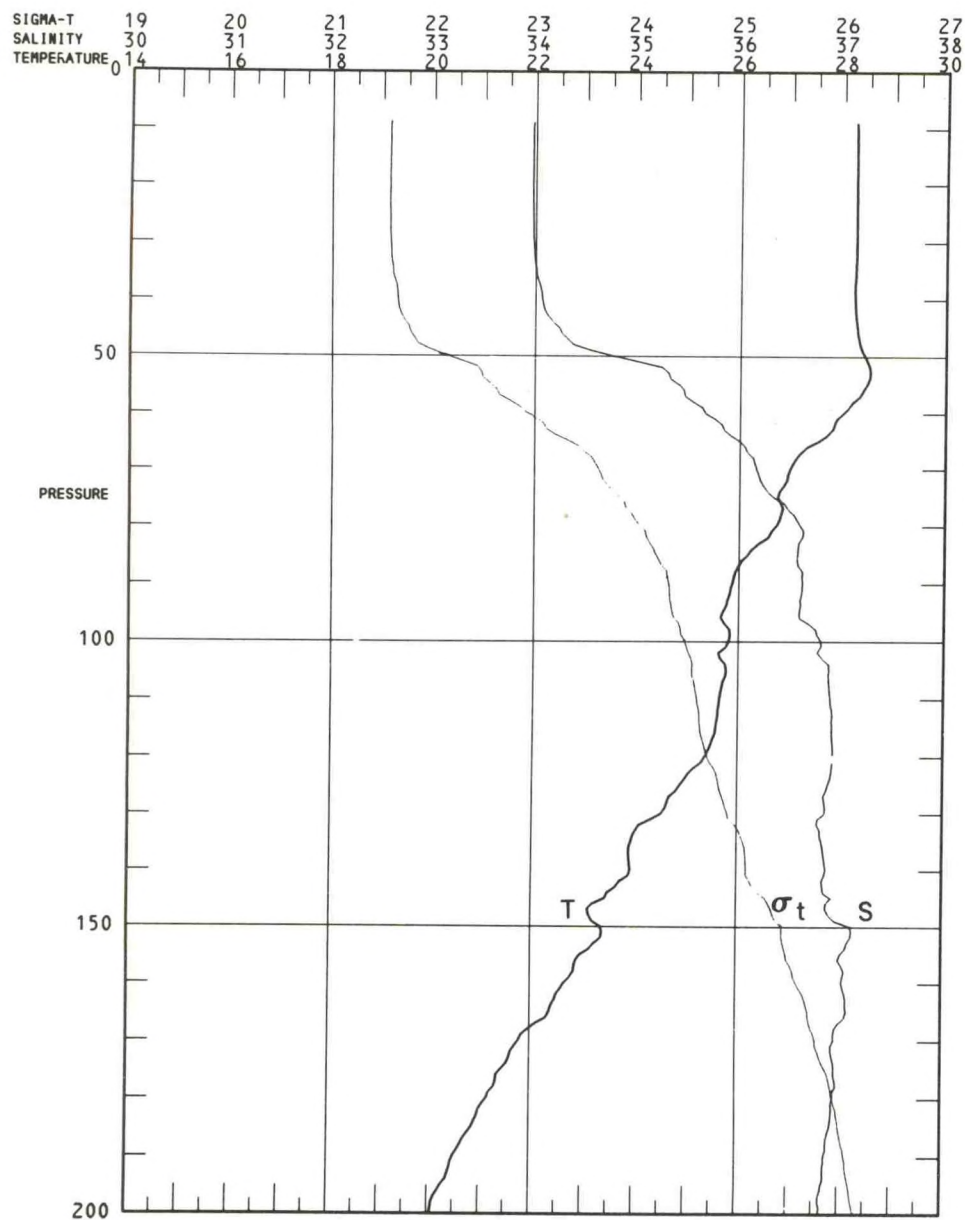
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 25, 1969, 0104 GMT, 15°00'N 056°30'W



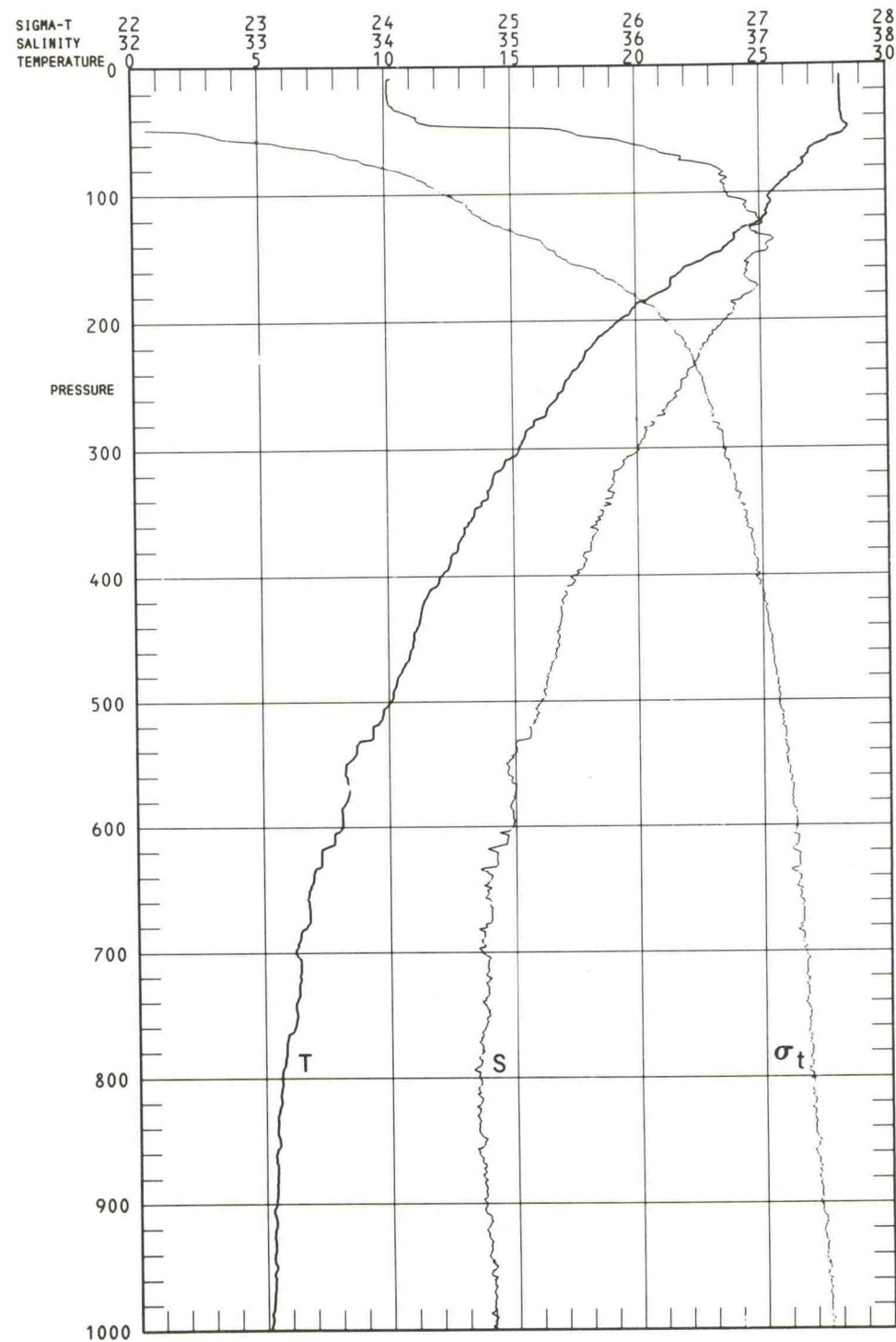
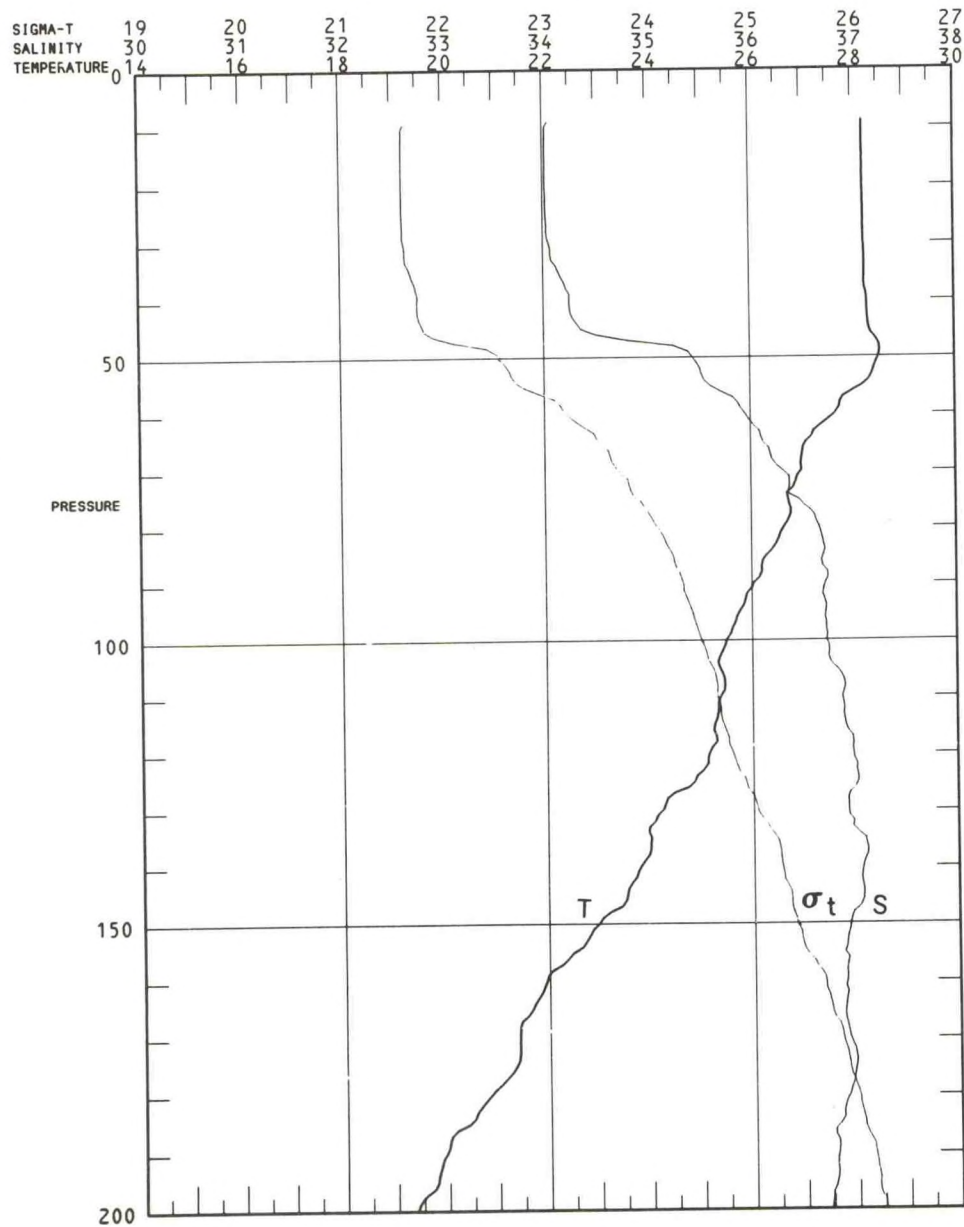
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 25, 1969, 0307 GMT, 15°00'N 056°30'W

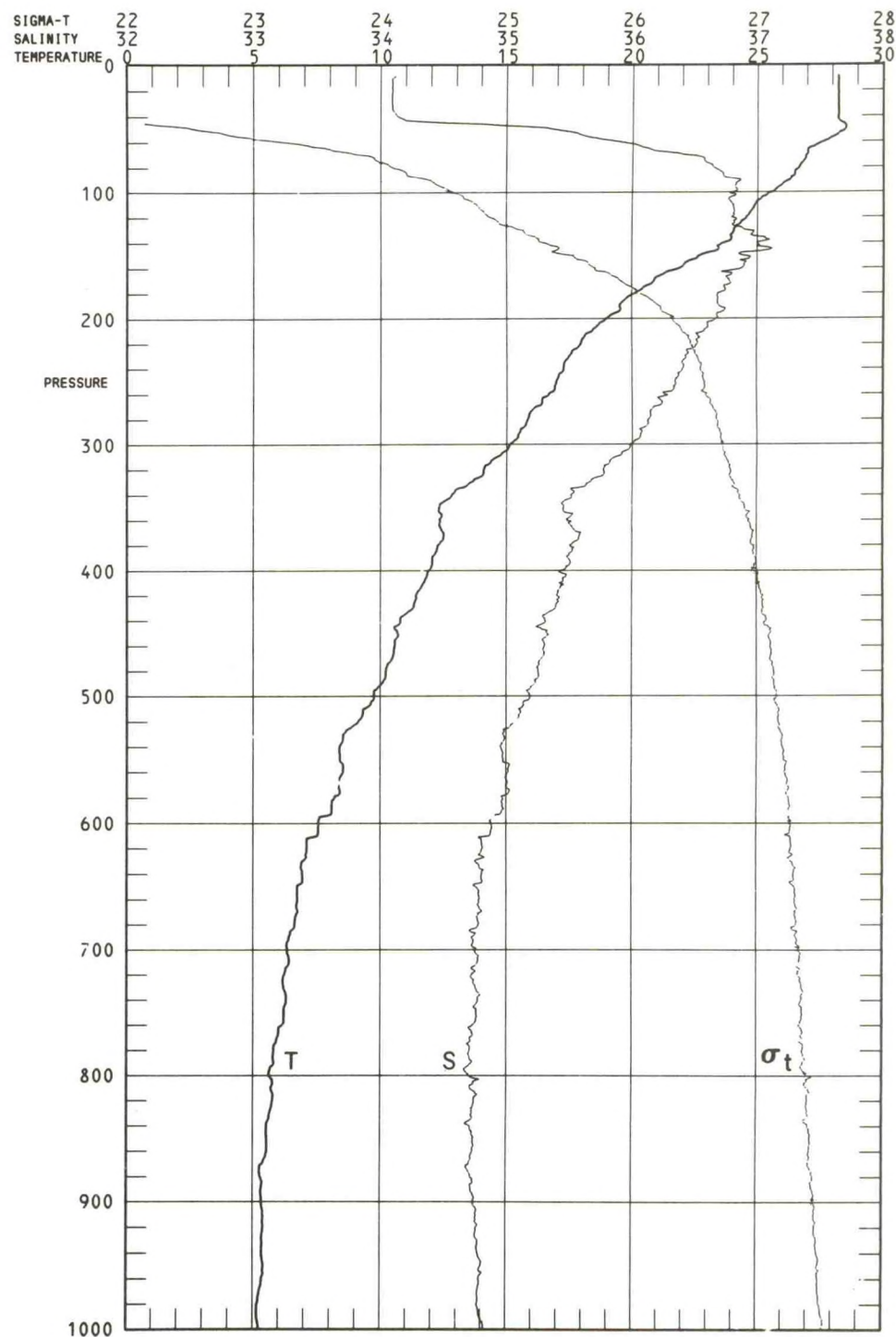
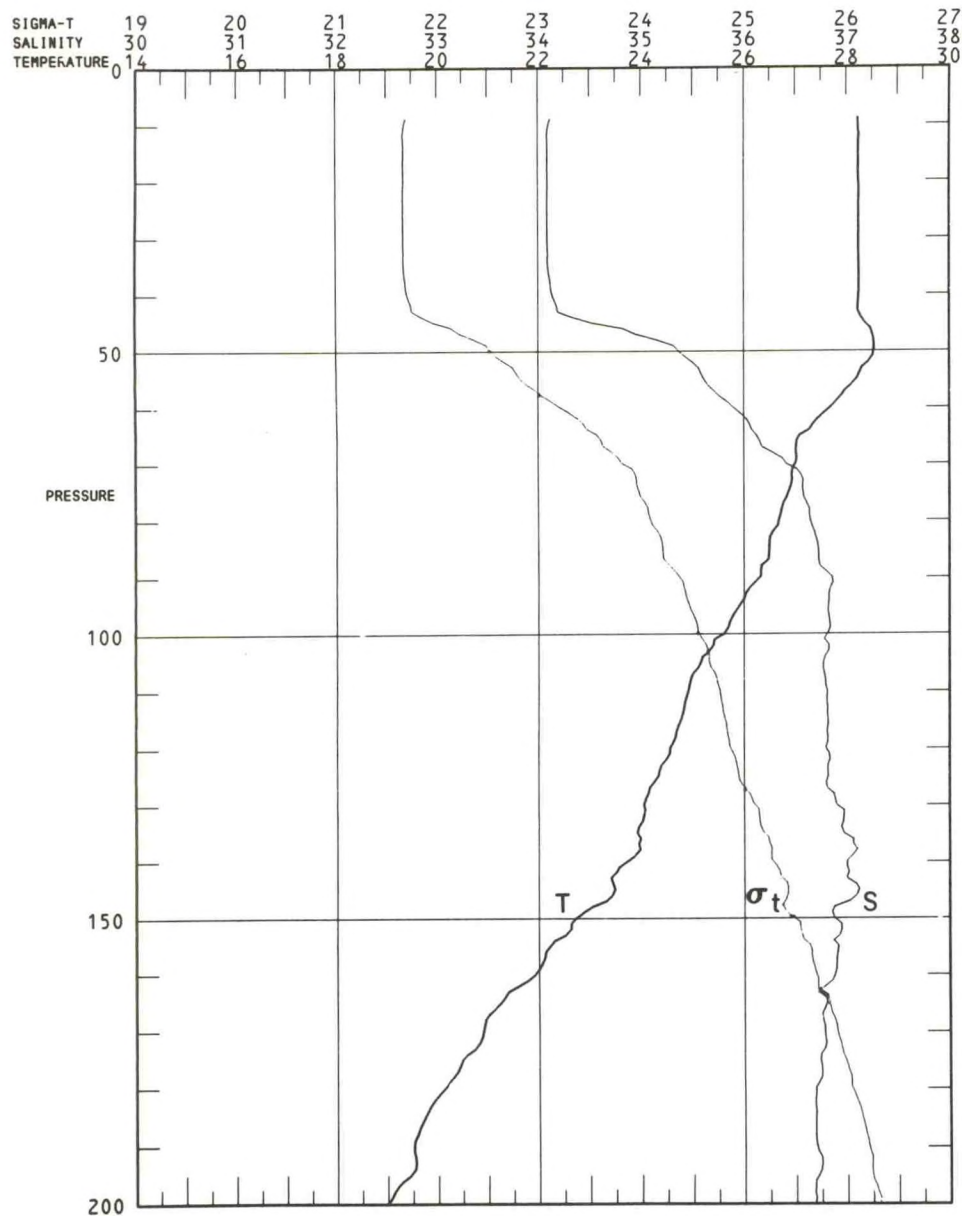
ROCKAWAY YEAR 1969 DAY 176 TIME 601 GMT LAT.15°00N LON.056°30W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 25, 1969, 0601 GMT, 15°00'N 056°30'W

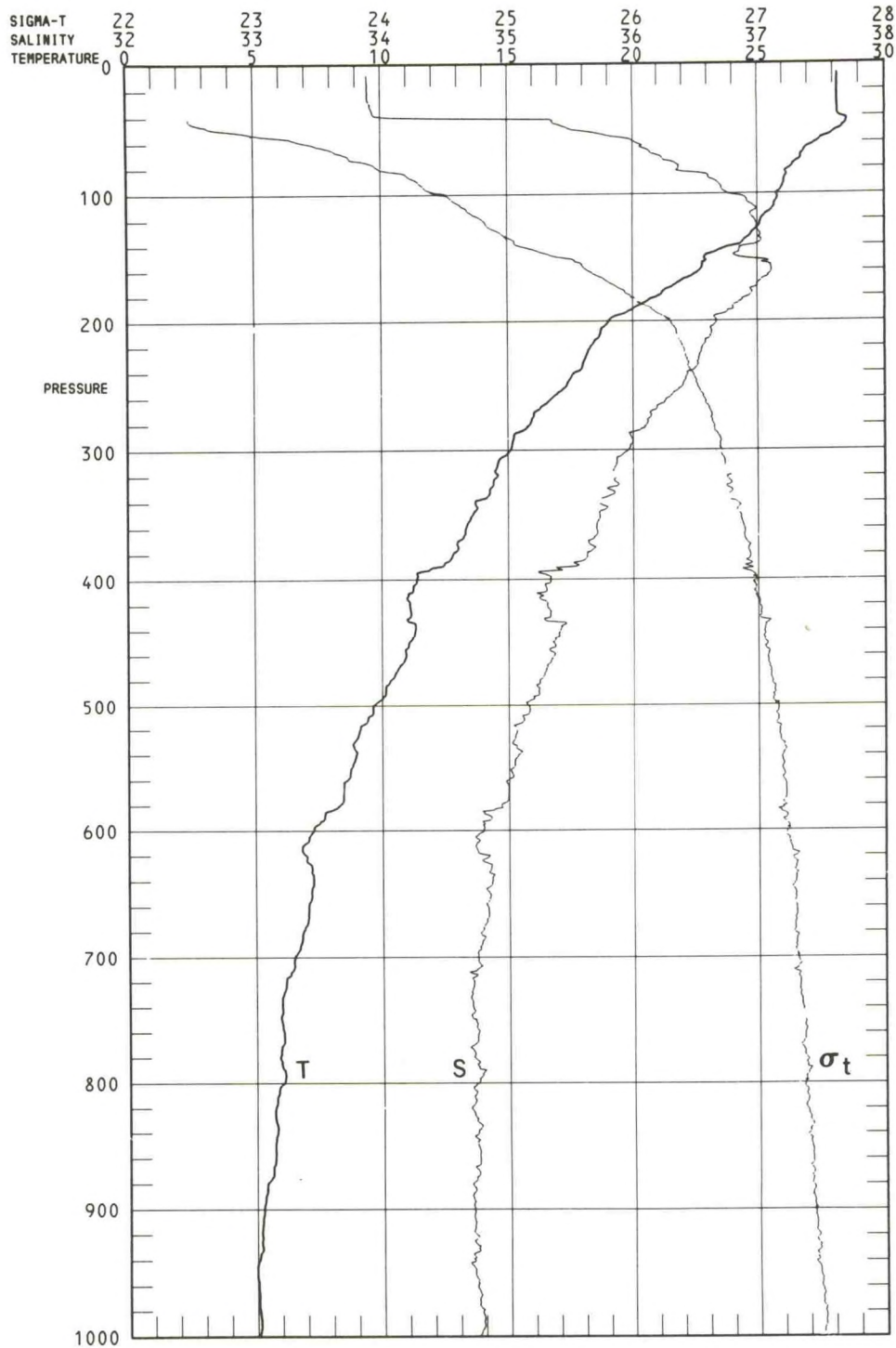
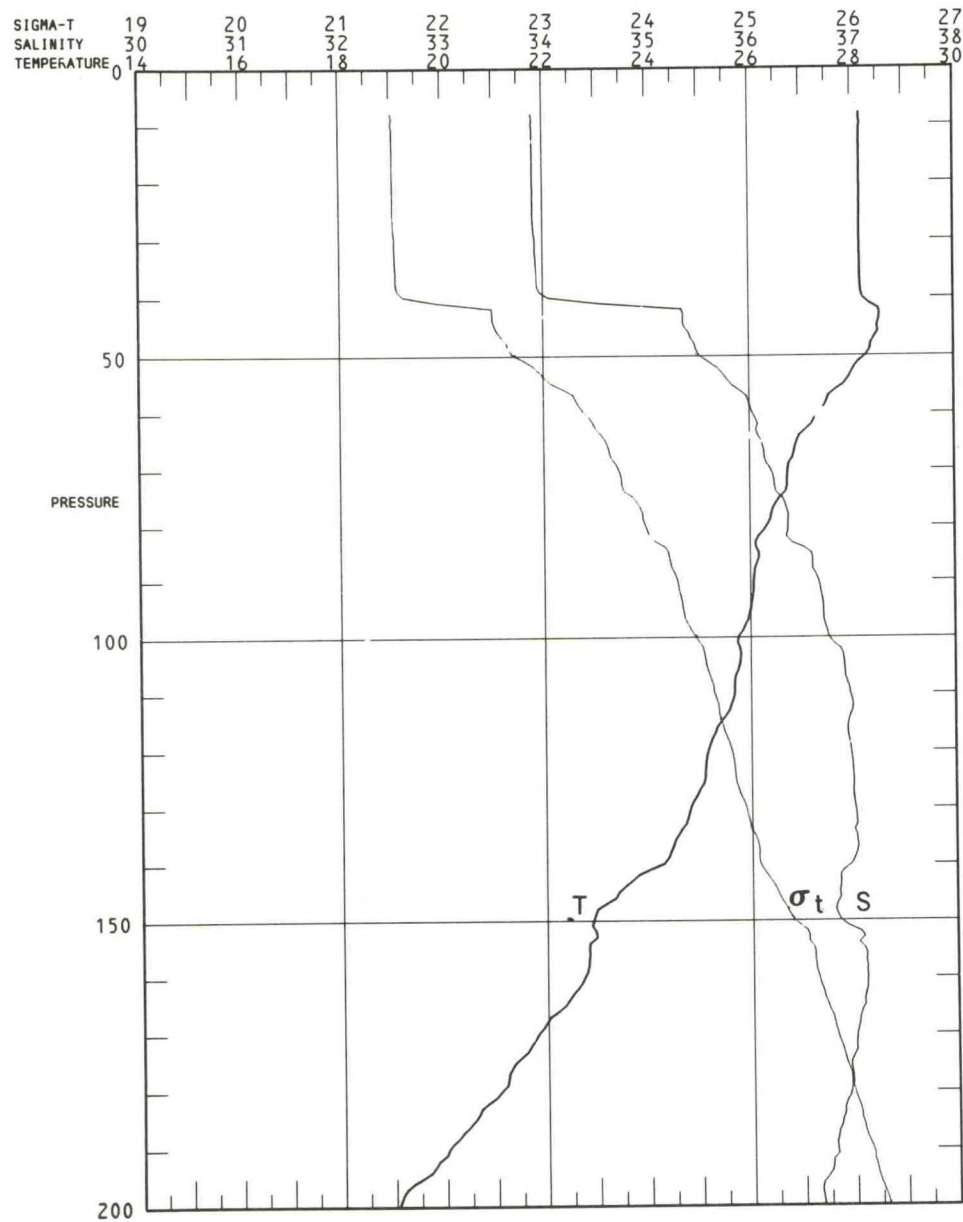
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 25, 1969, 0903 GMT, 15°00'N 056°30'W



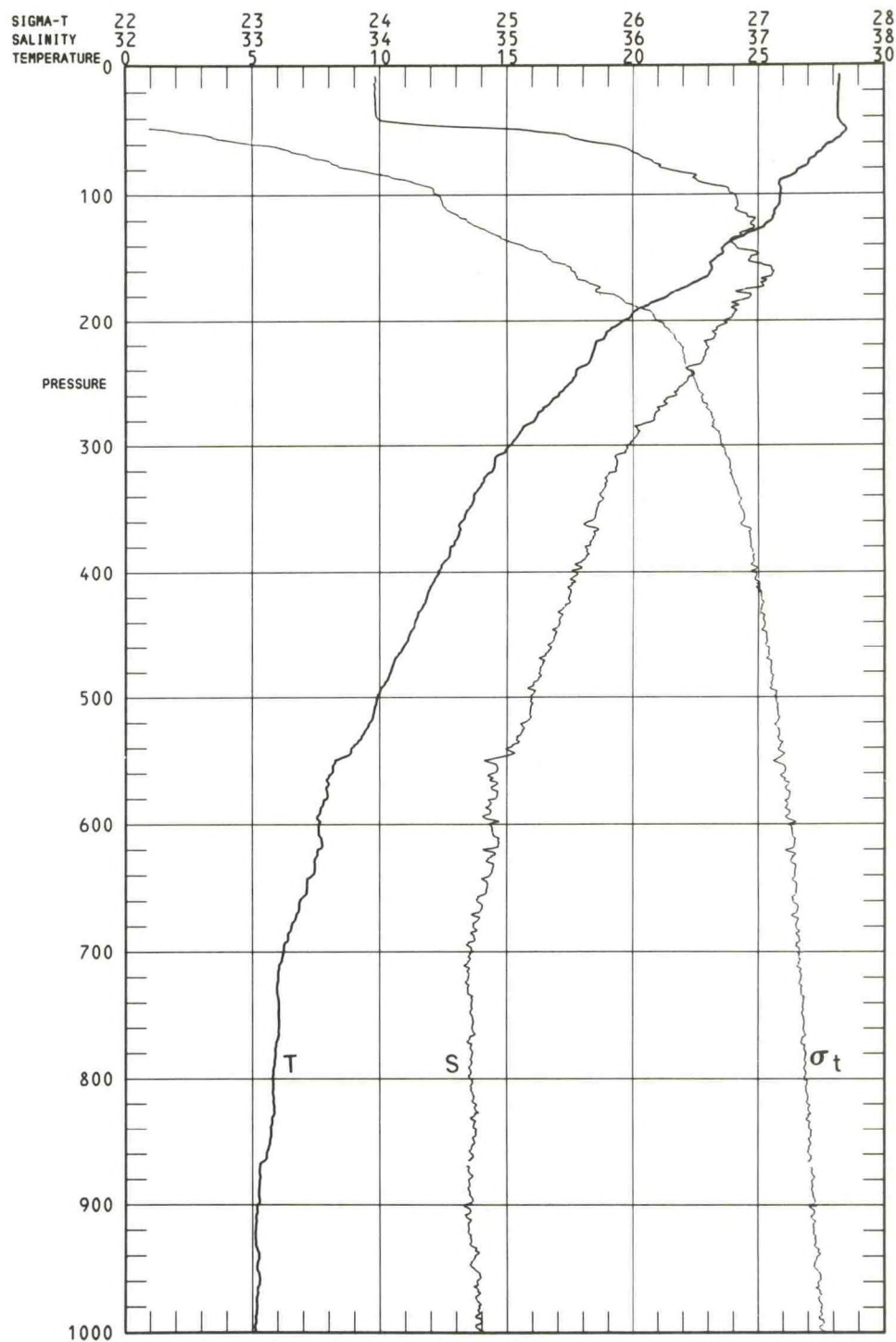
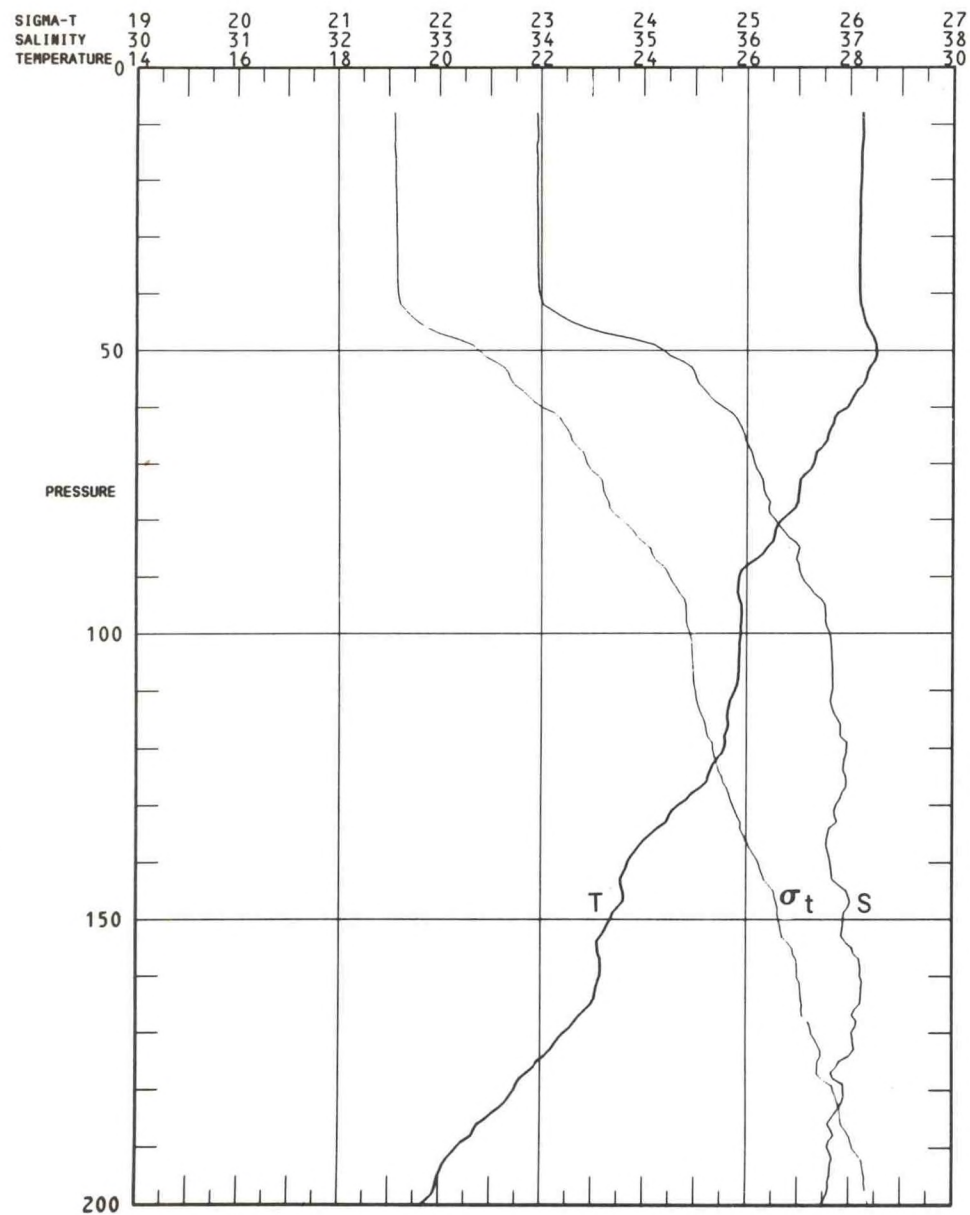
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 25, 1969, 1225 GMT, 15°00'N 056°30'W

# STD Depth-Sorted Plots

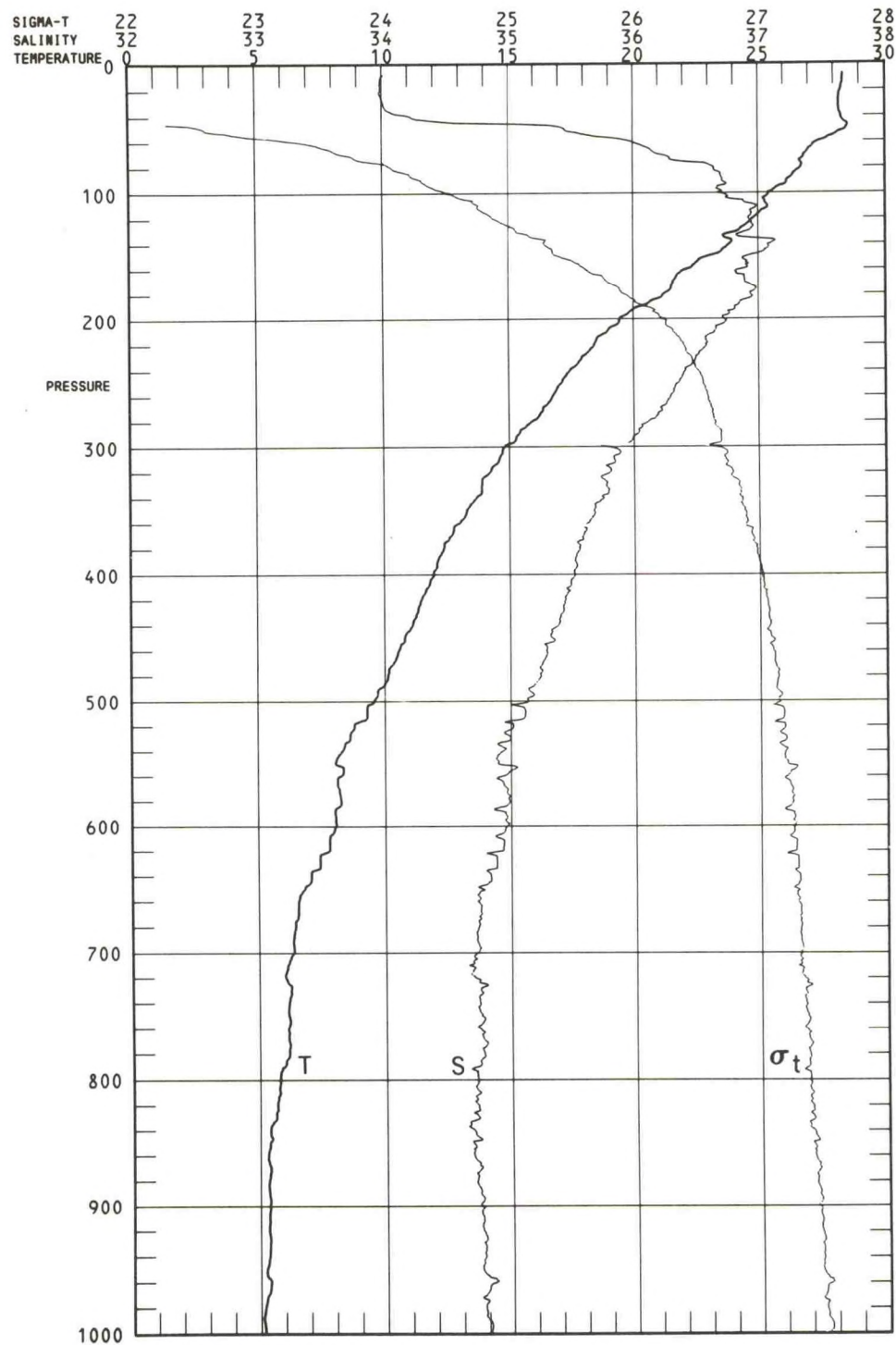
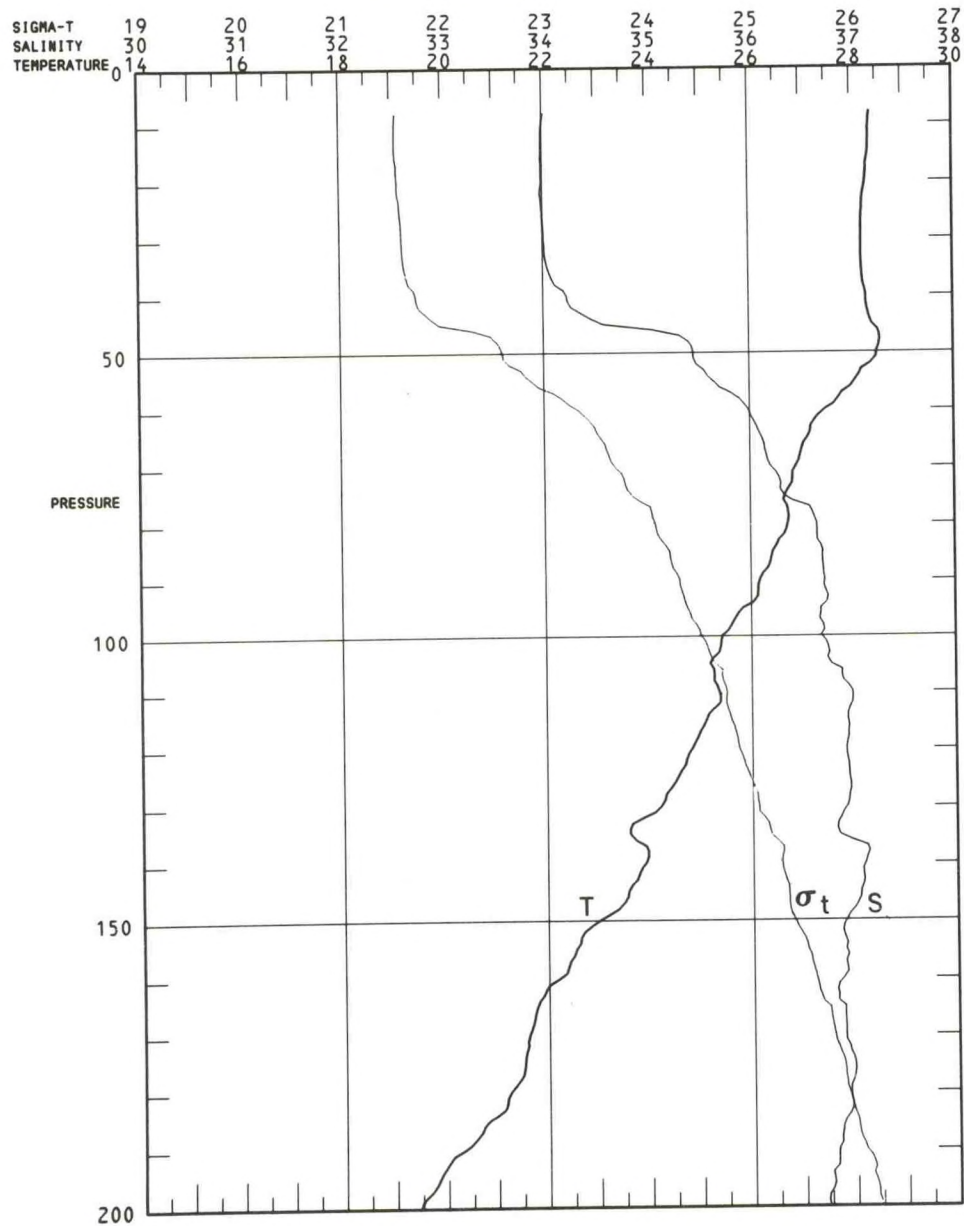
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 25, 1969, 1503 GMT, 15°24'N 056°34'W

ROCKAWAY YEAR 1969 DAY 176 TIME 1759 GMT LAT 15°24'N LON 056°34'W

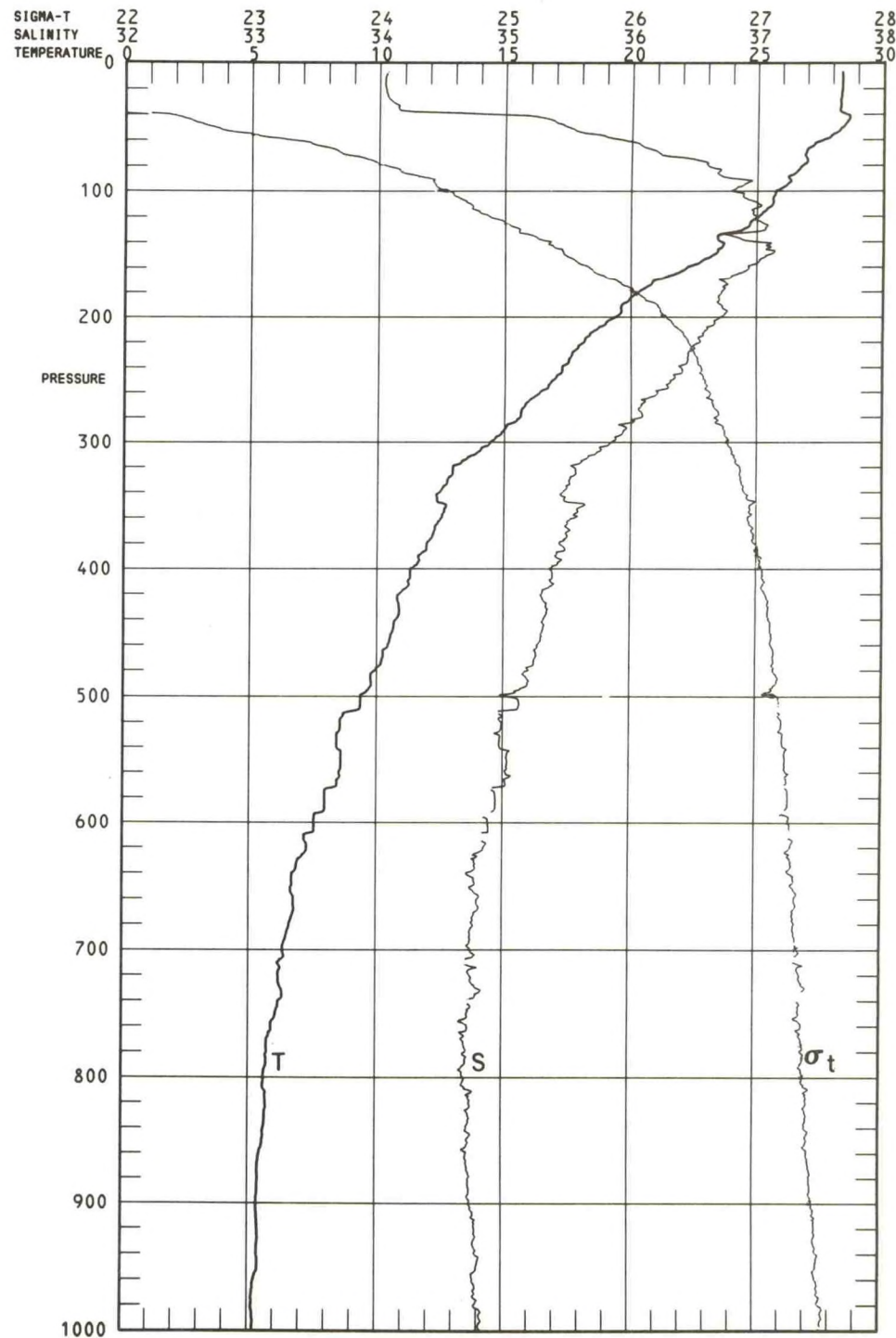
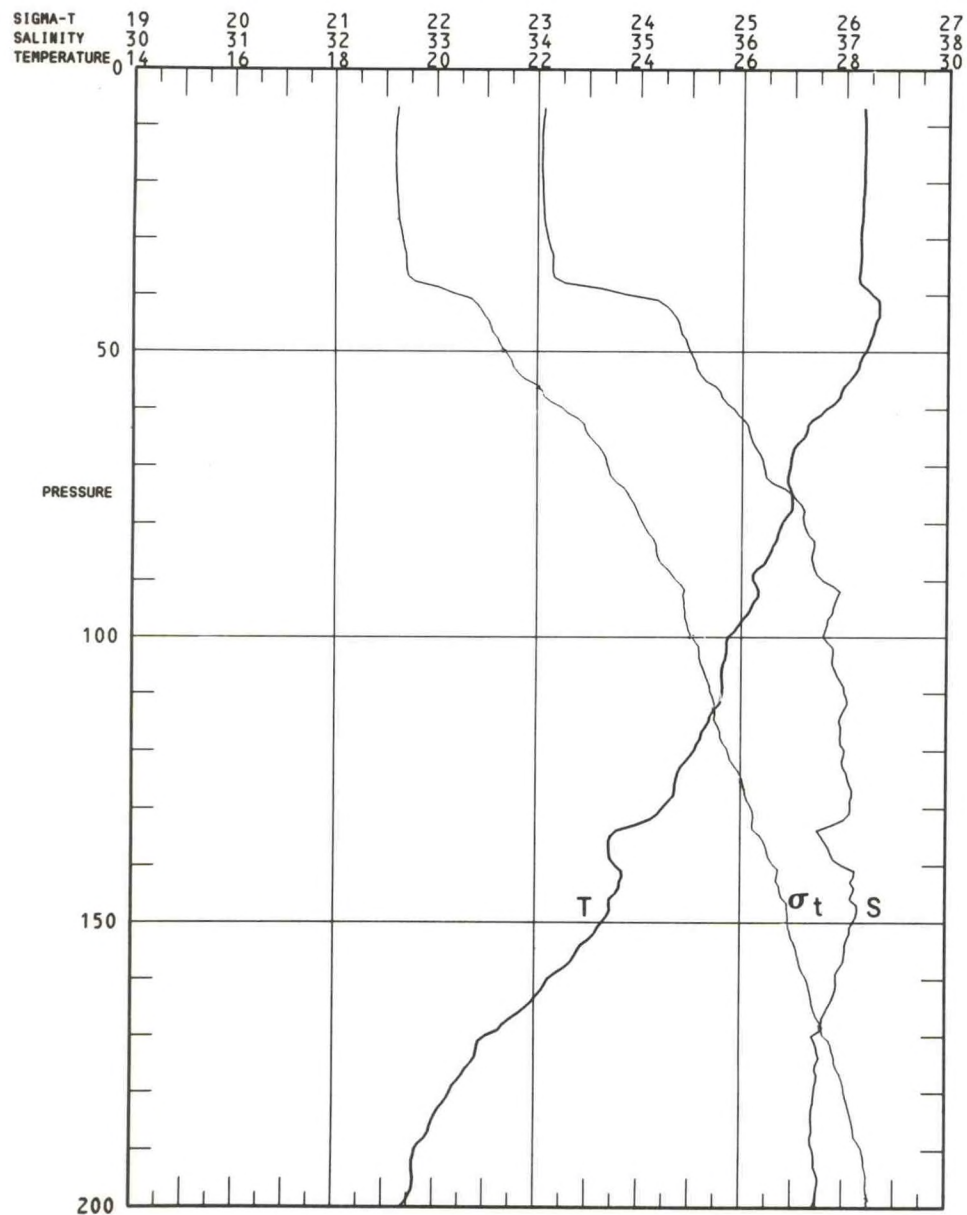
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Rockaway, June 25, 1969, 1759 GMT, 15°24'N 056°34'W

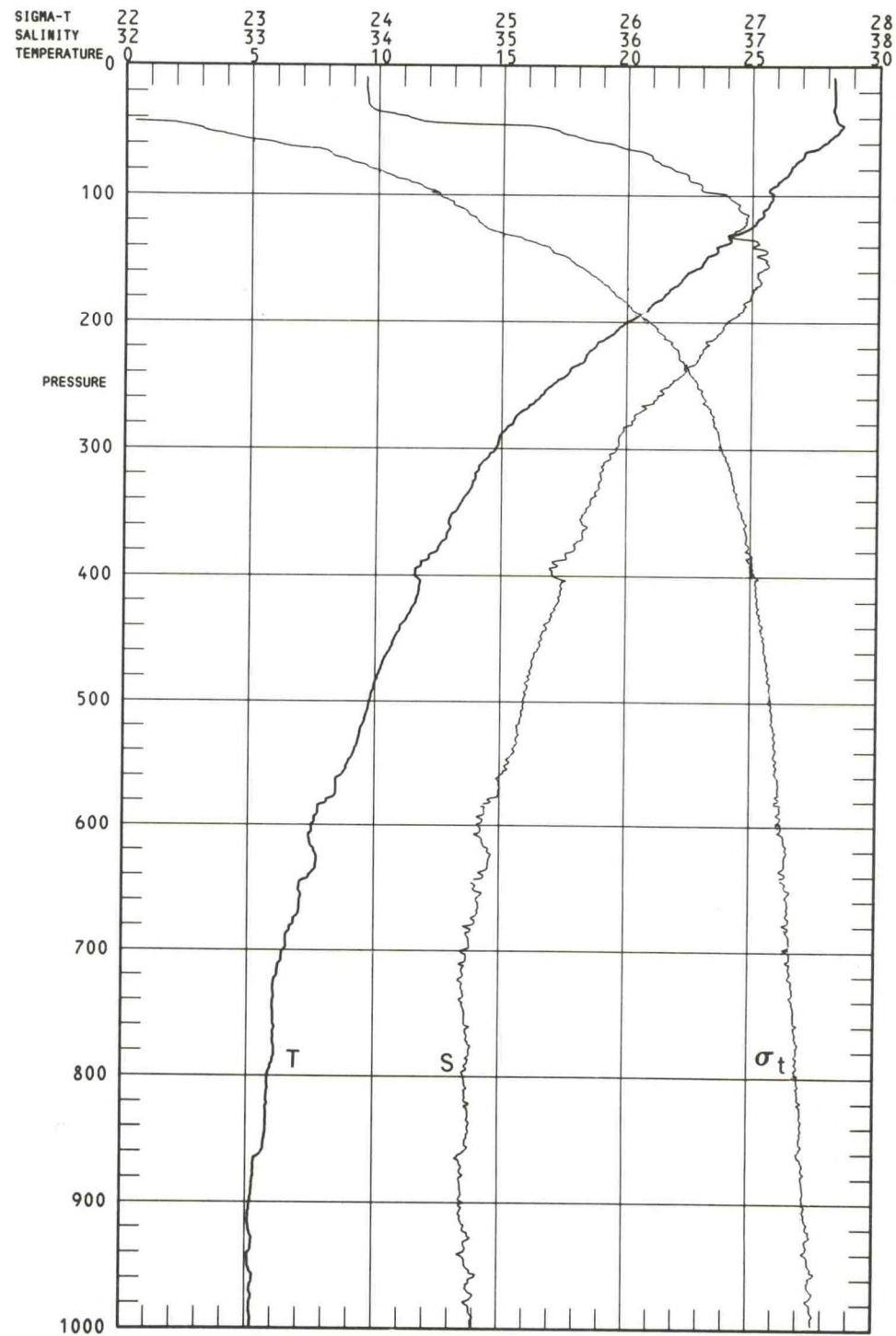
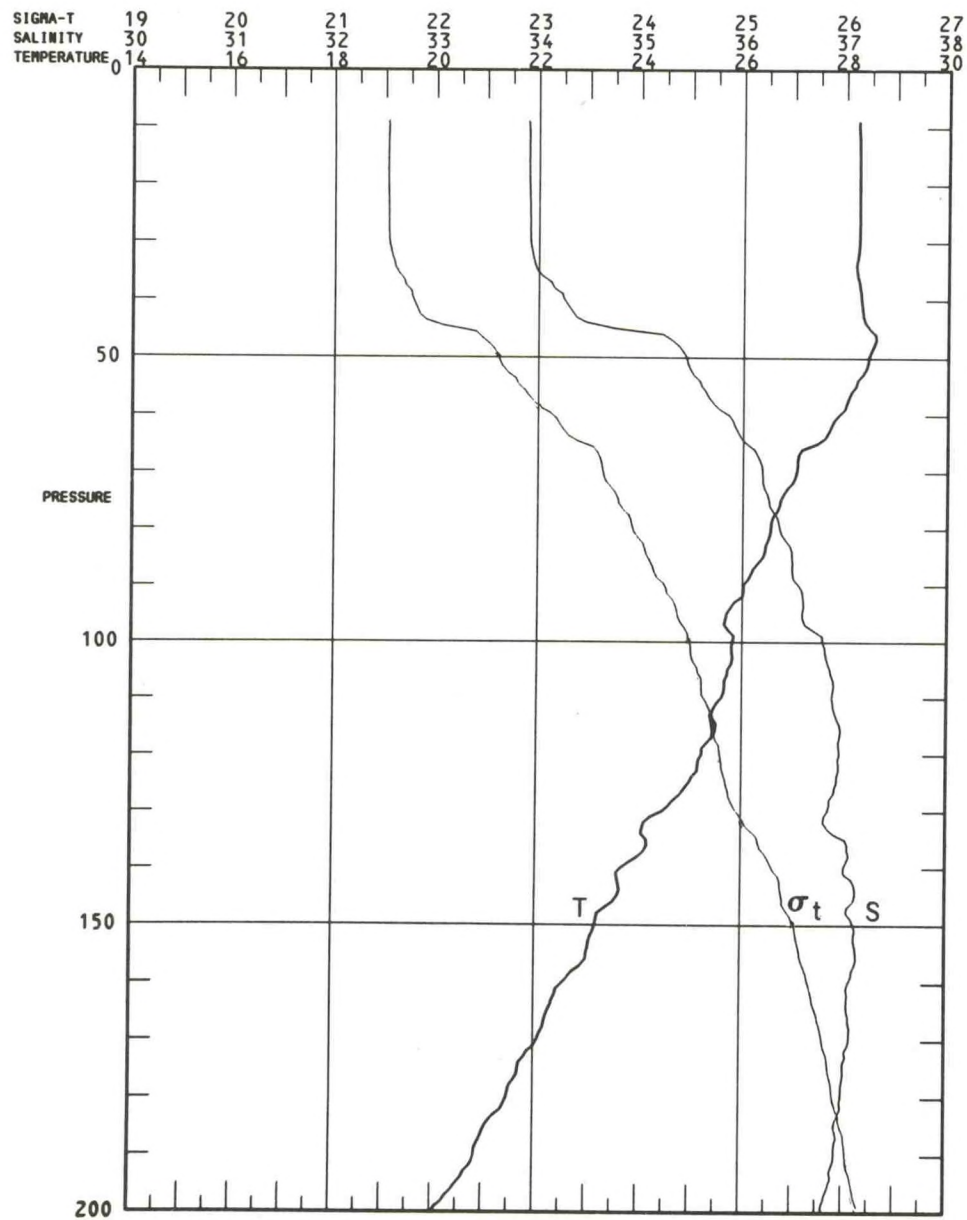


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



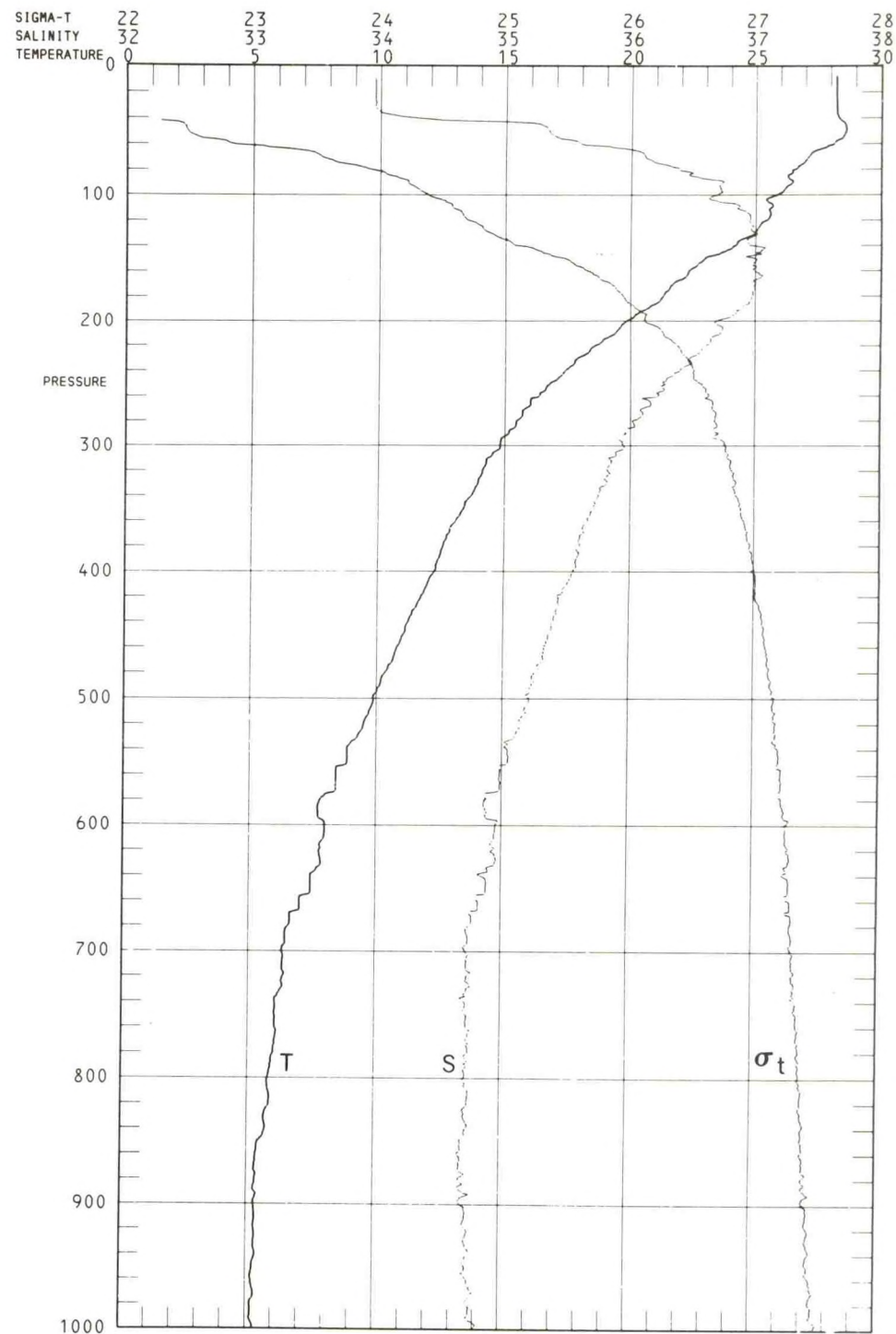
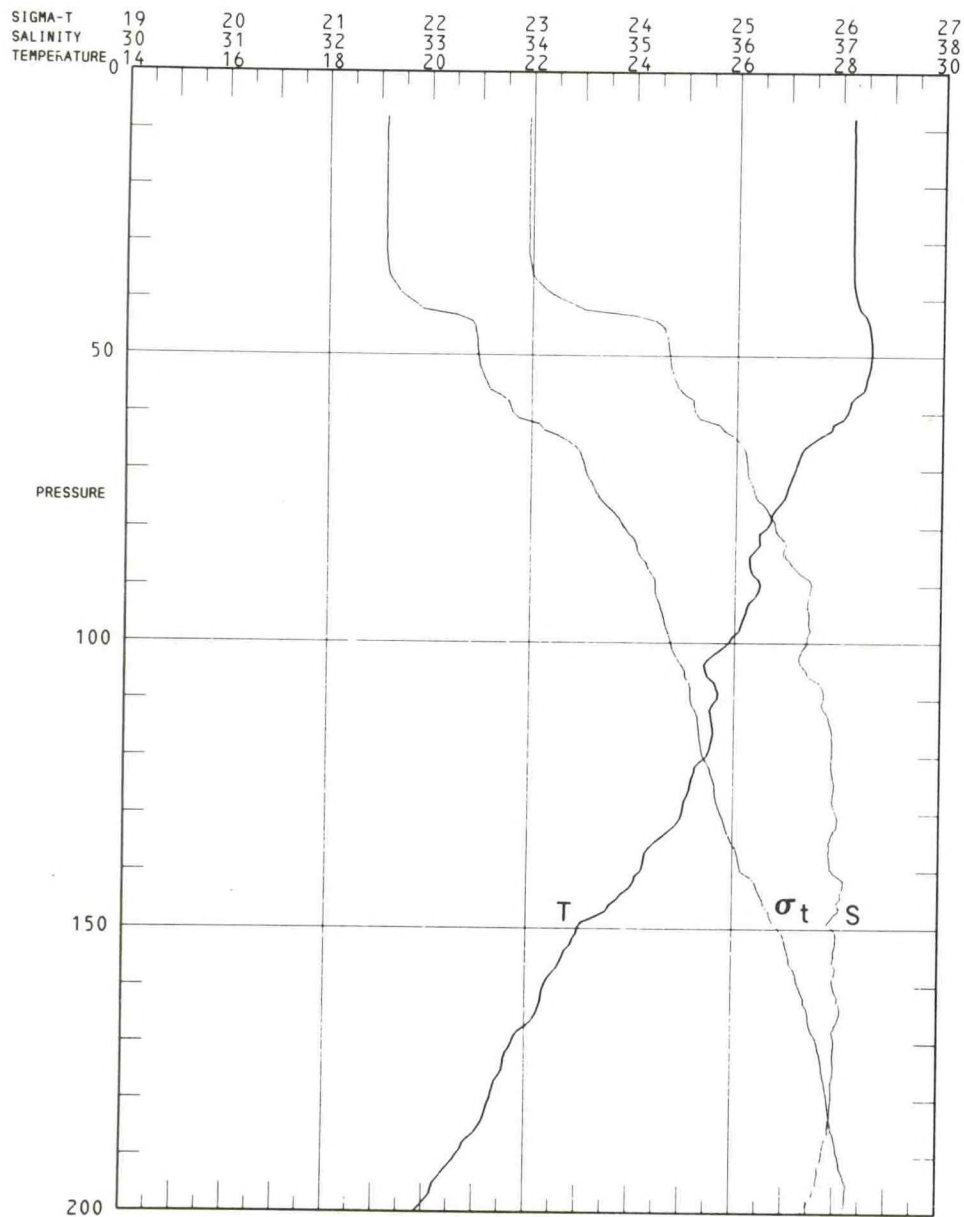
Rockaway, June 25, 1969, 2104 GMT, 15°24'N 056°34'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 26, 1969, 0105 GMT, 15°24'N 056°34'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

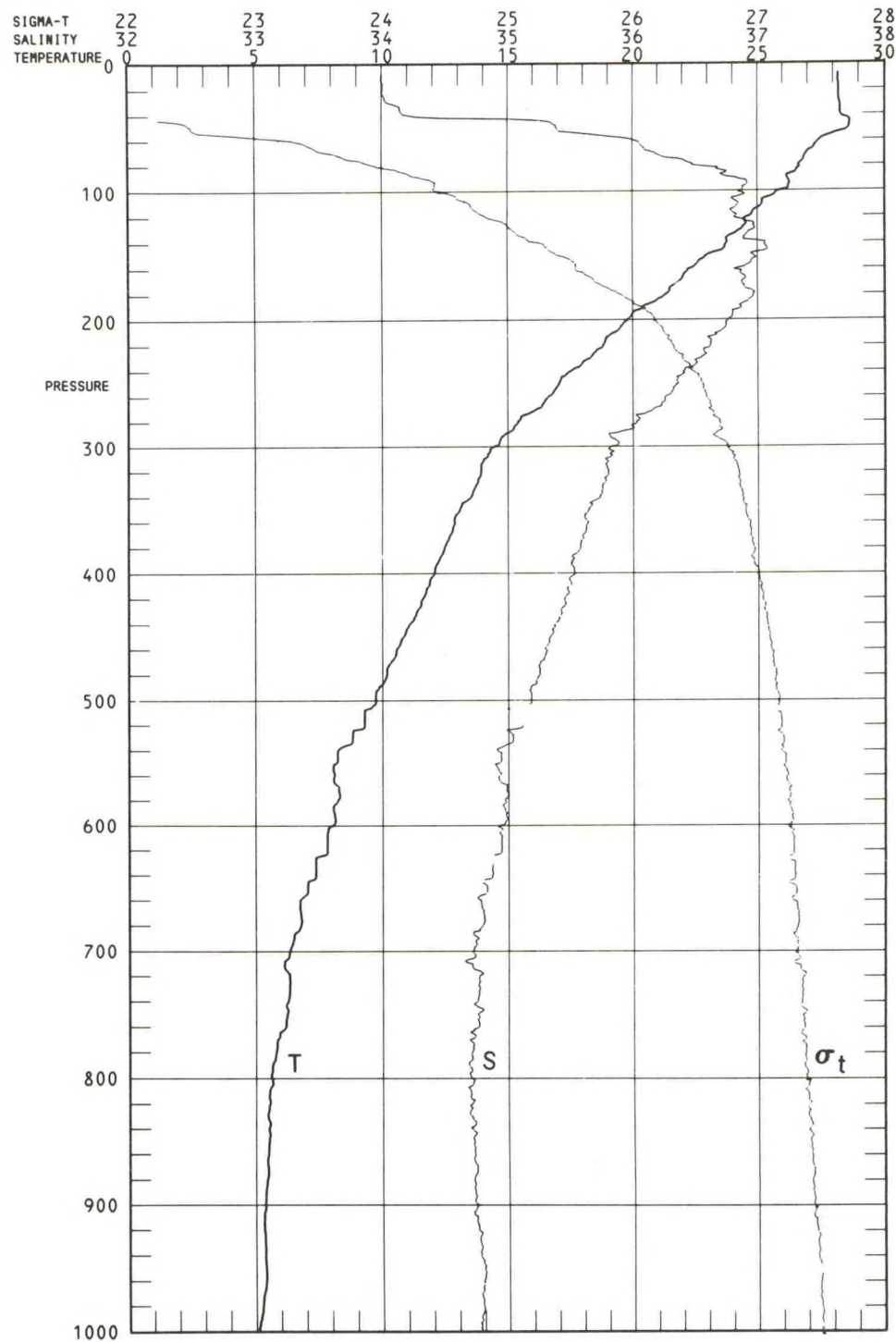
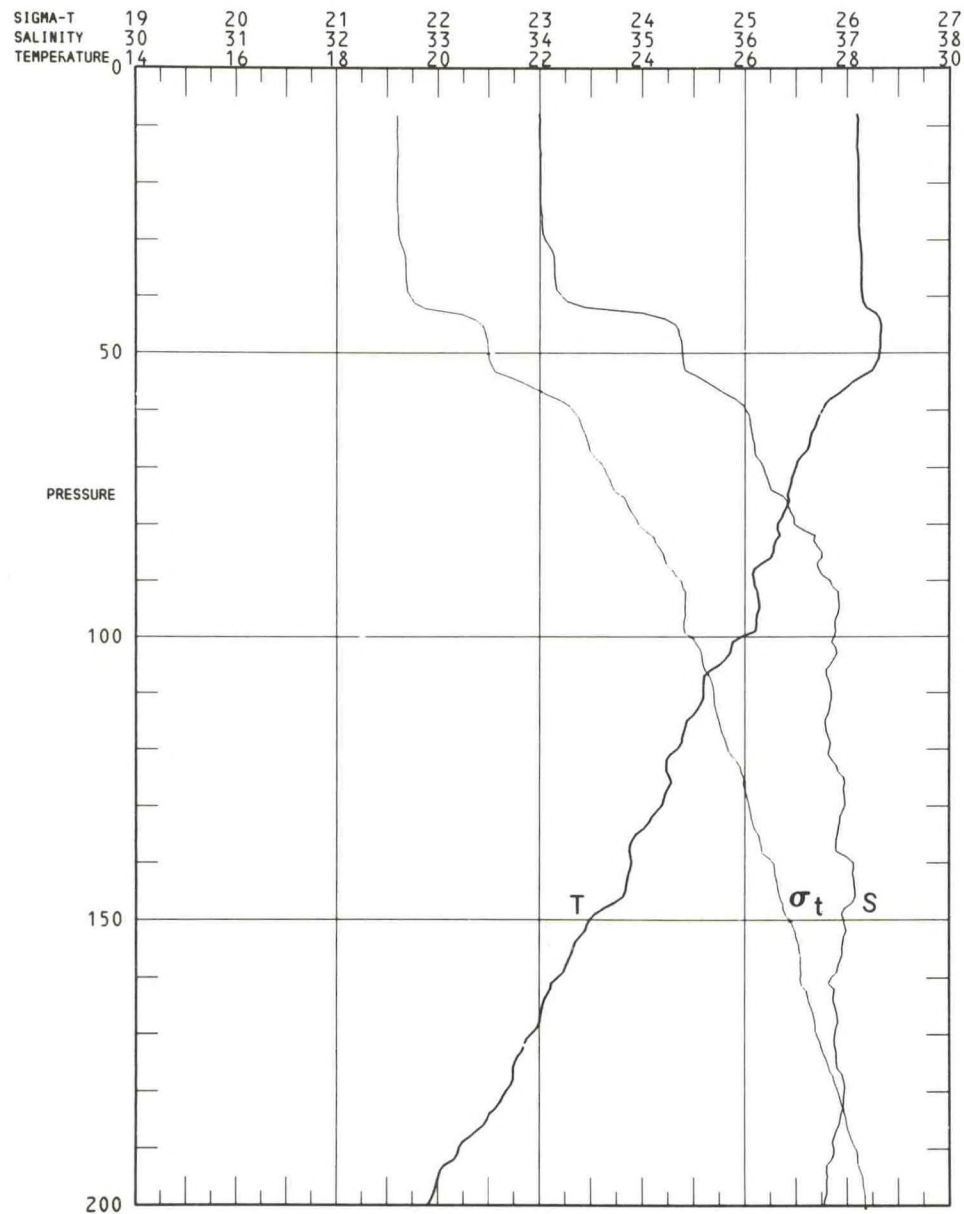


Rockaway, June 26, 1969, 0304 GMT, 15°20'N 056°33'W



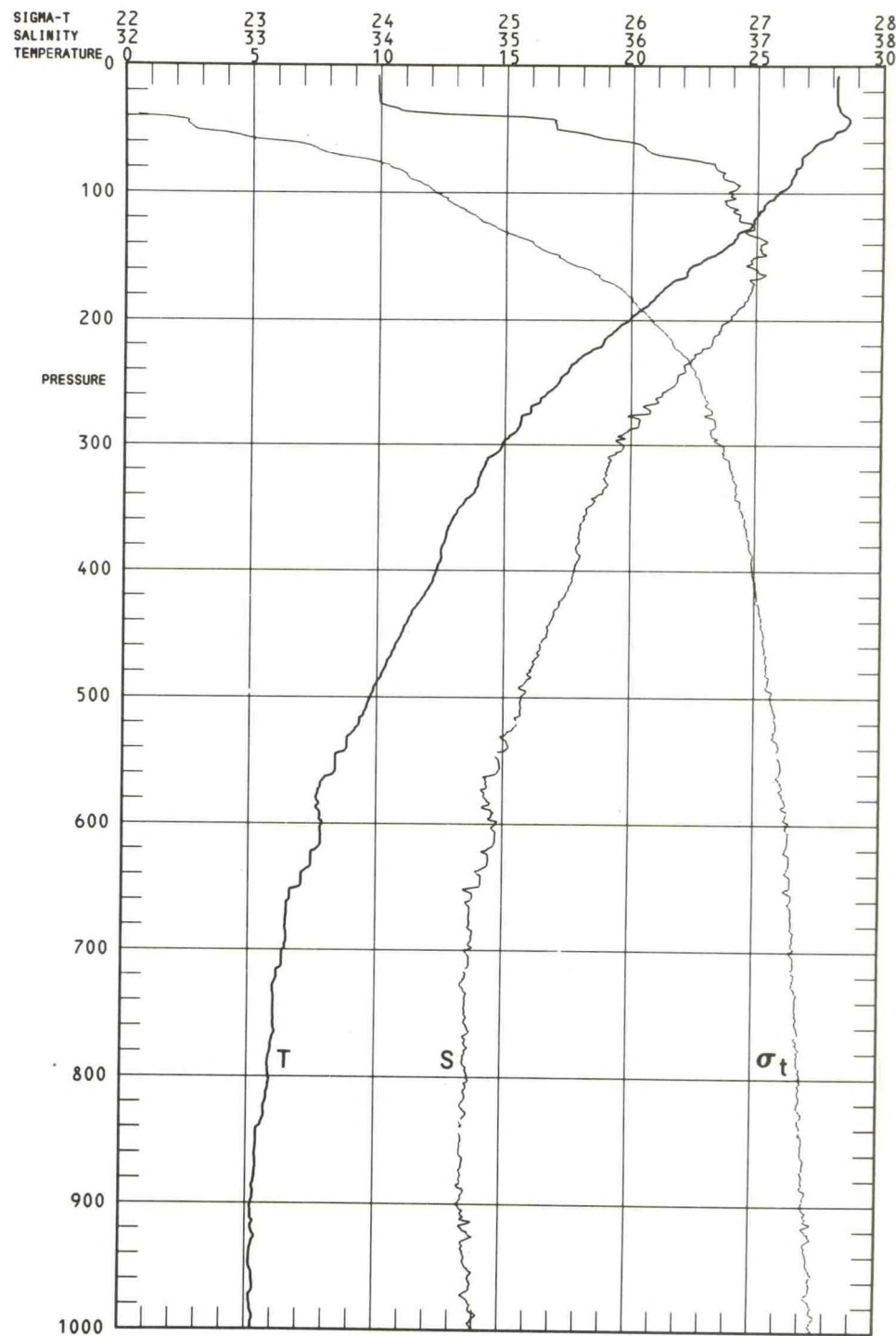
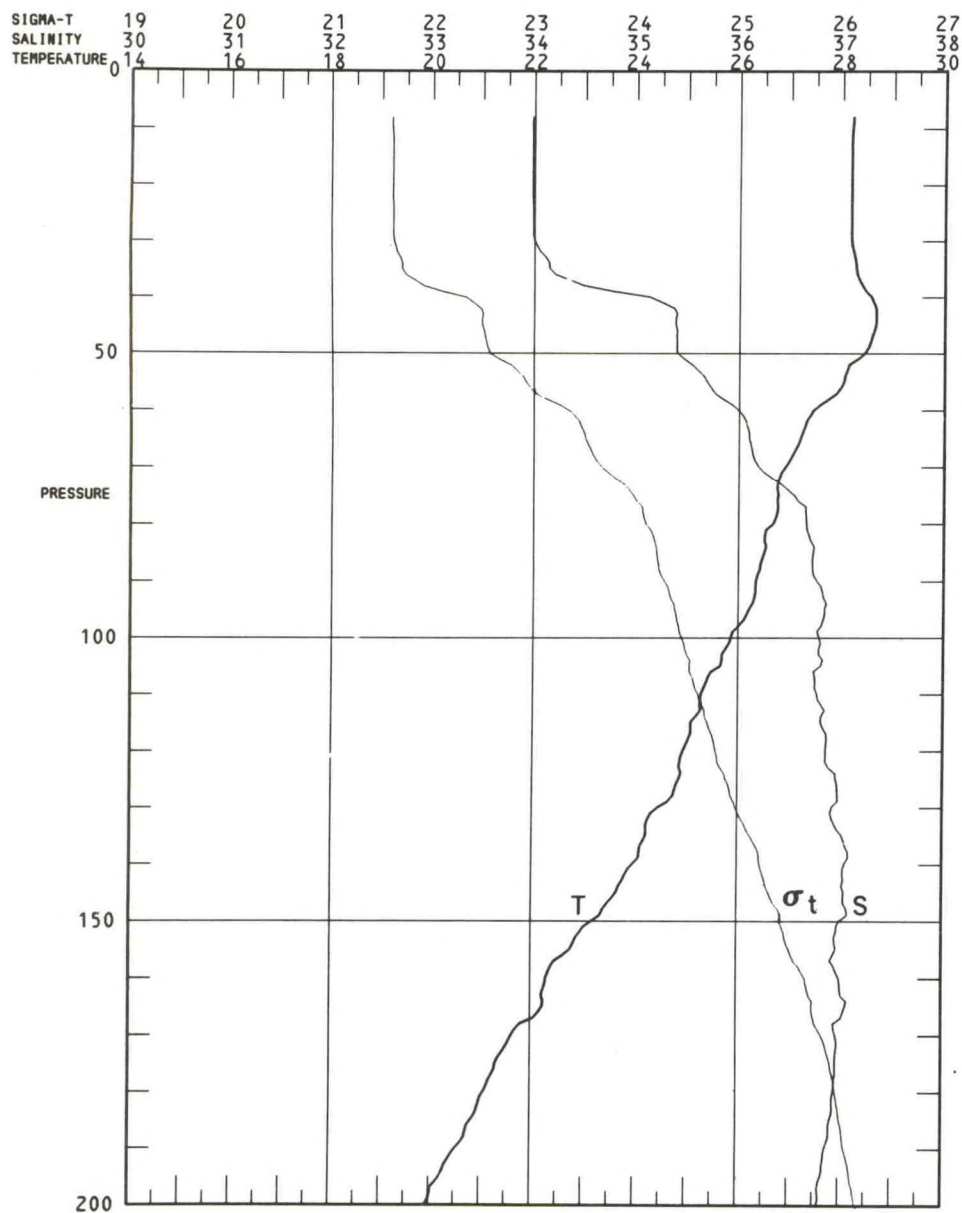
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 26, 1969, 0603 GMT, 15°22'N 056°36'W

STD Depth-Sorted Plots  
 Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



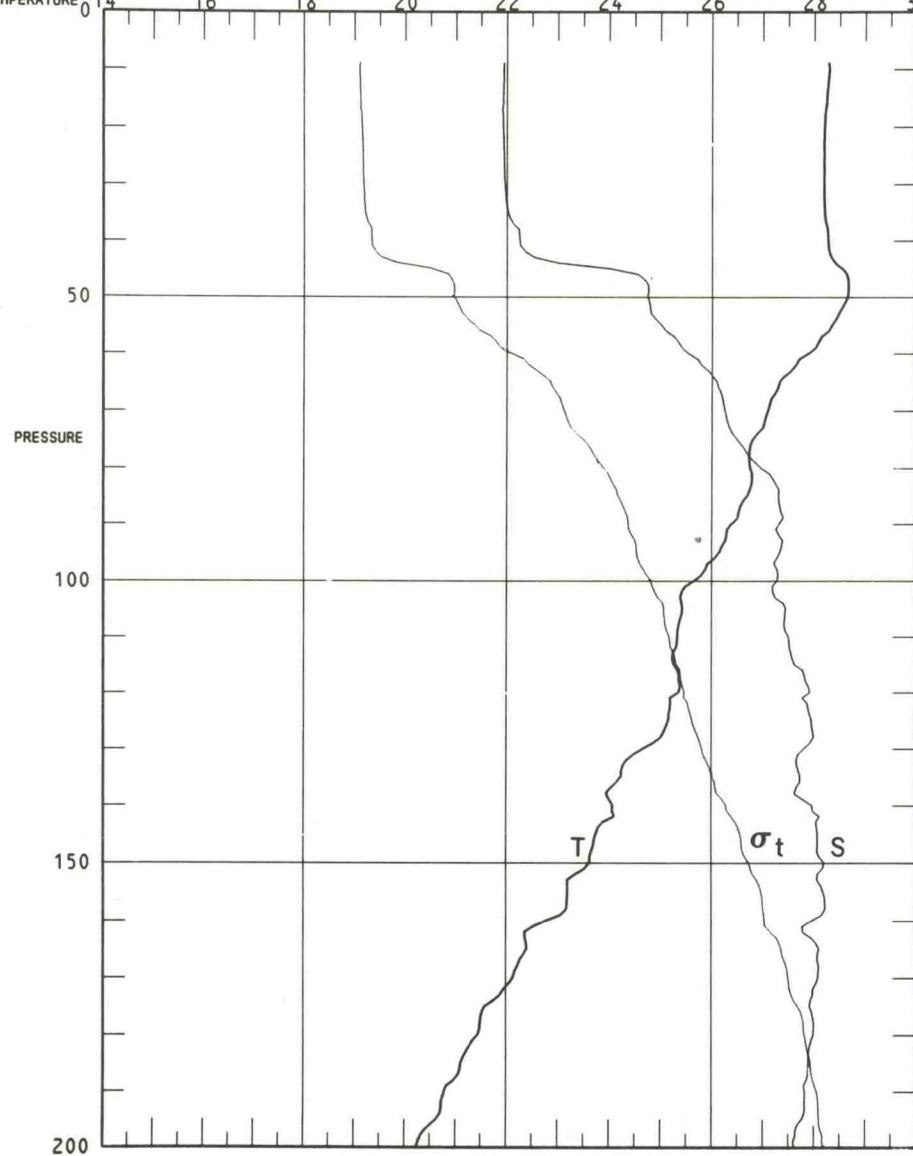
Rockaway, June 26, 1969, 1218 GMT, 15°22'N 056°34'W

ROCKAWAY YEAR 1969 DAY 177 TIME 1502 GMT LAT.15°23'N LON.056°34'W

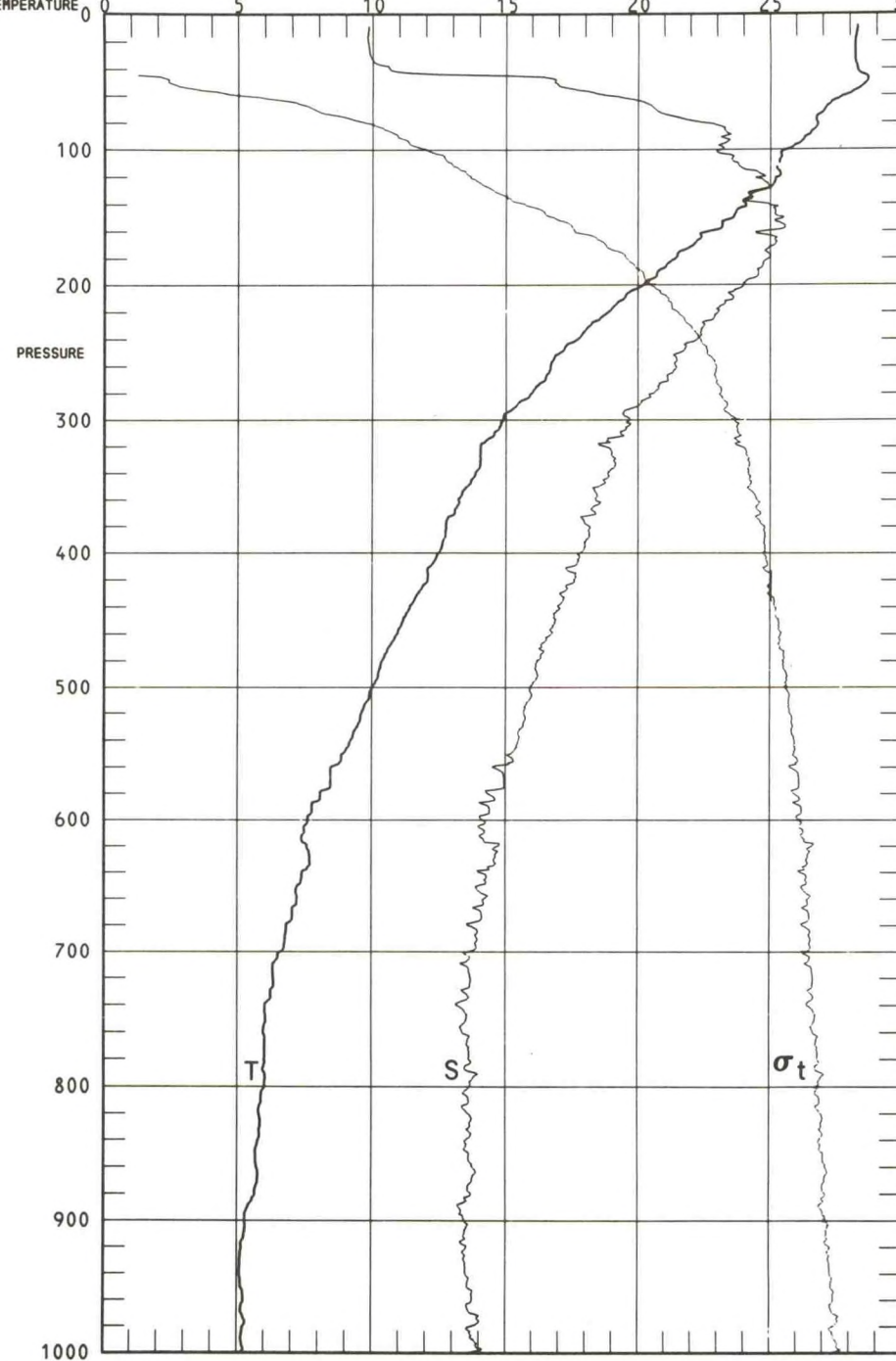
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

SIGMA-T	19	20	21	22	23	24	25	26	27
SALINITY	30	31	32	33	34	35	36	37	38
TEMPERATURE	14	16	18	20	22	24	26	28	30



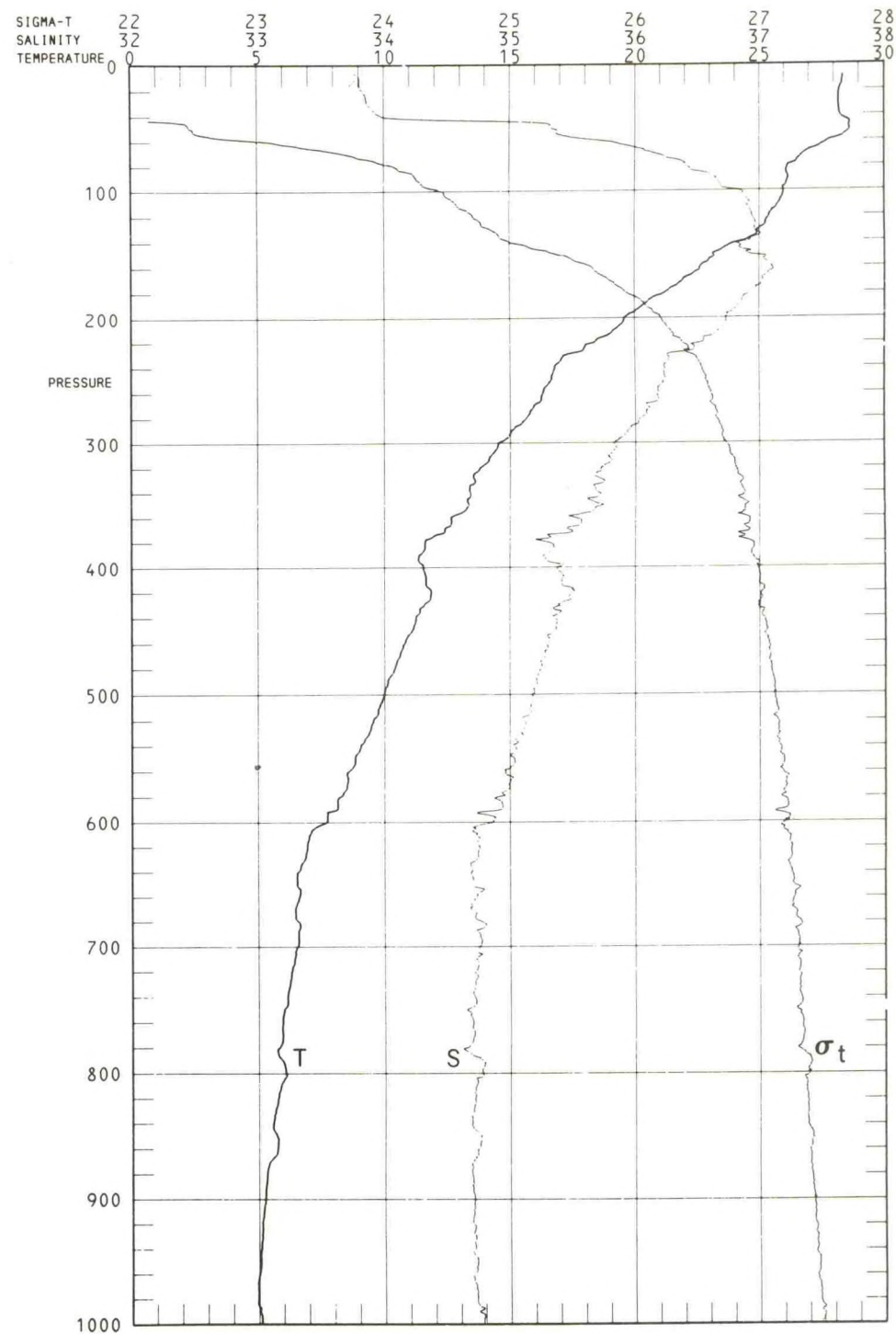
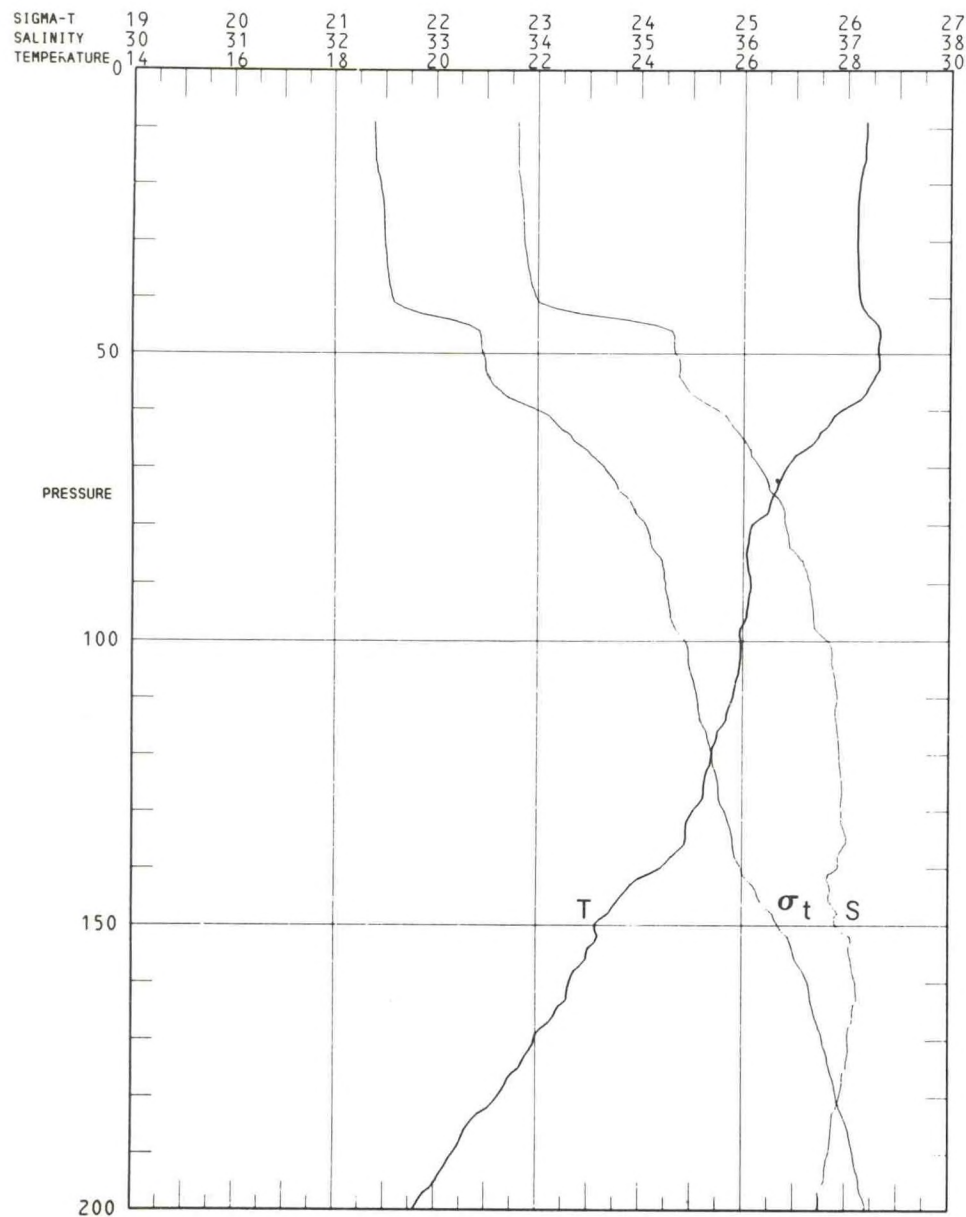
SIGMA-T	22	23	24	25	26	27	28
SALINITY	32	33	34	35	36	37	38
TEMPERATURE	0	5	10	15	20	25	30



Rockaway, June 26, 1969, 1502 GMT, 15°23'N 056°34'W

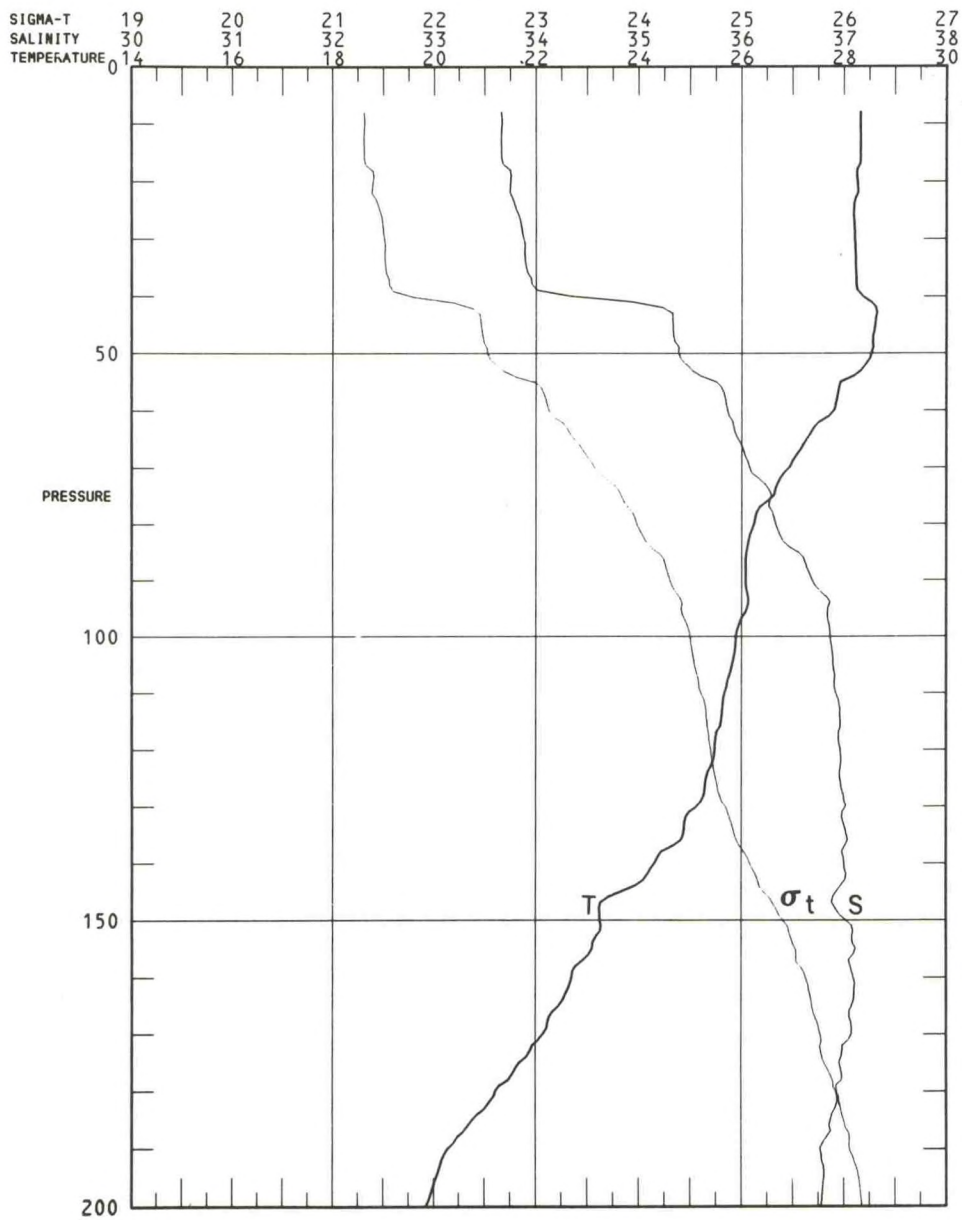


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

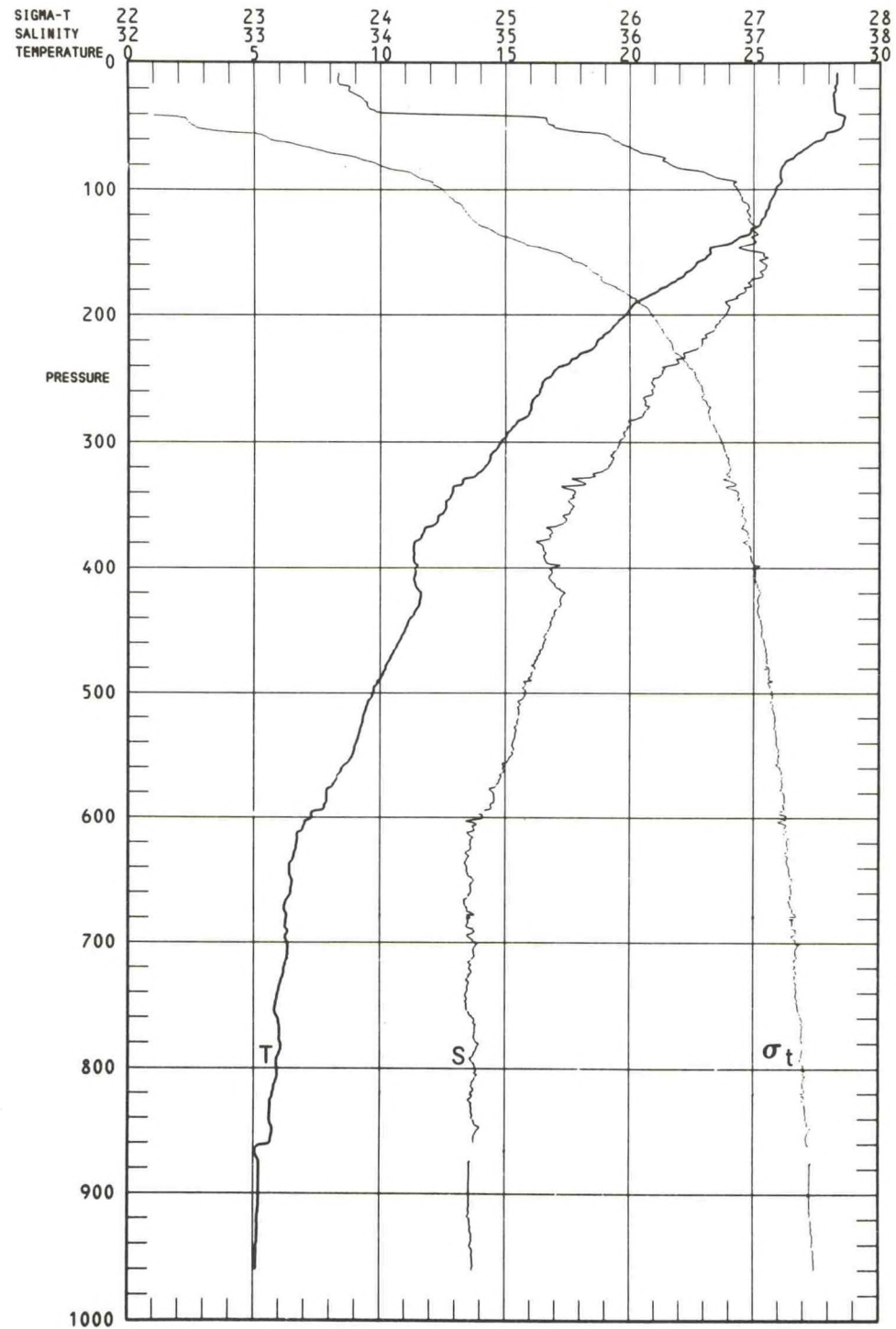


Rockaway, June 26, 1969, 1726 GMT, 15°21'N 056°32'W

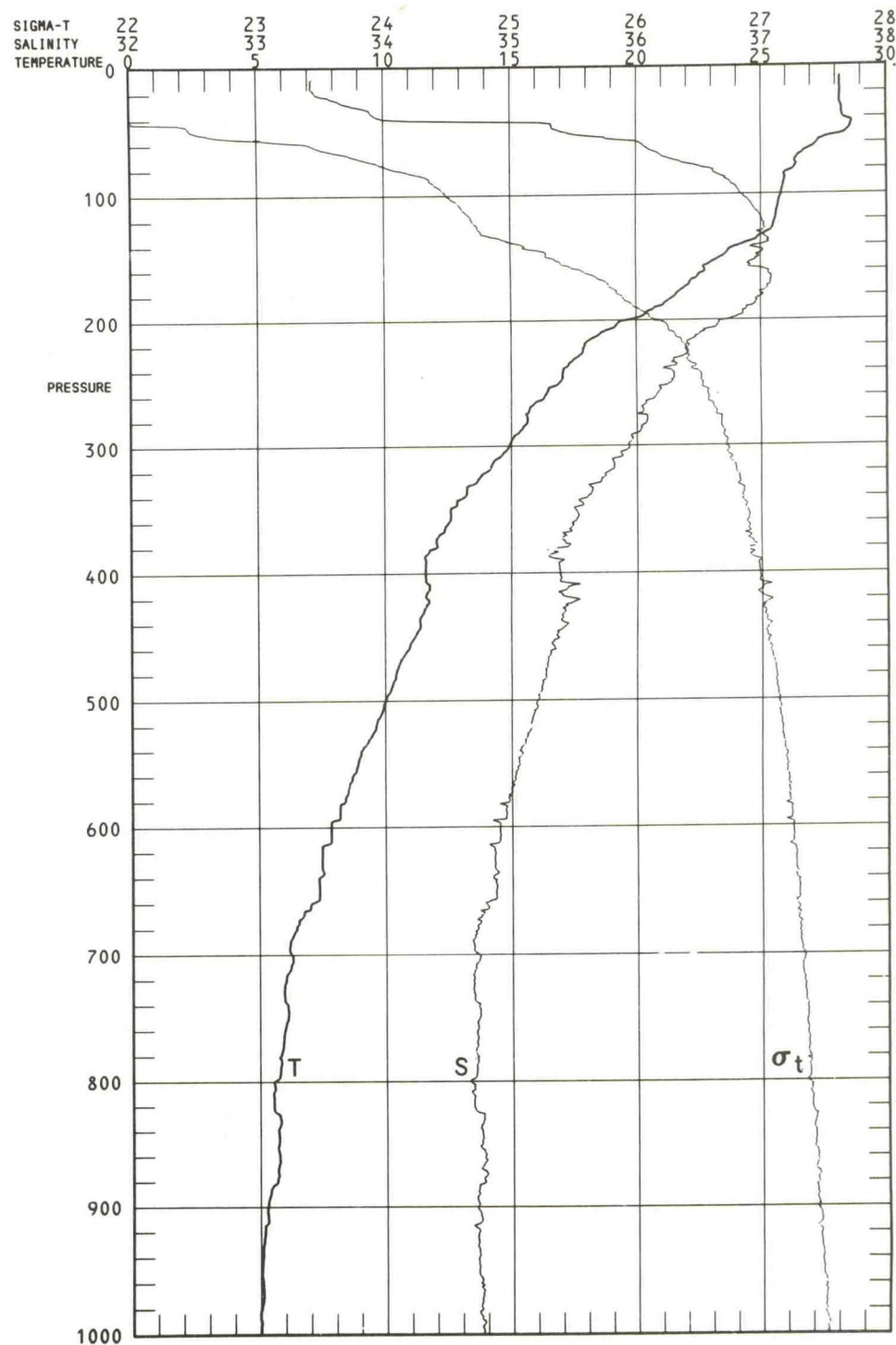
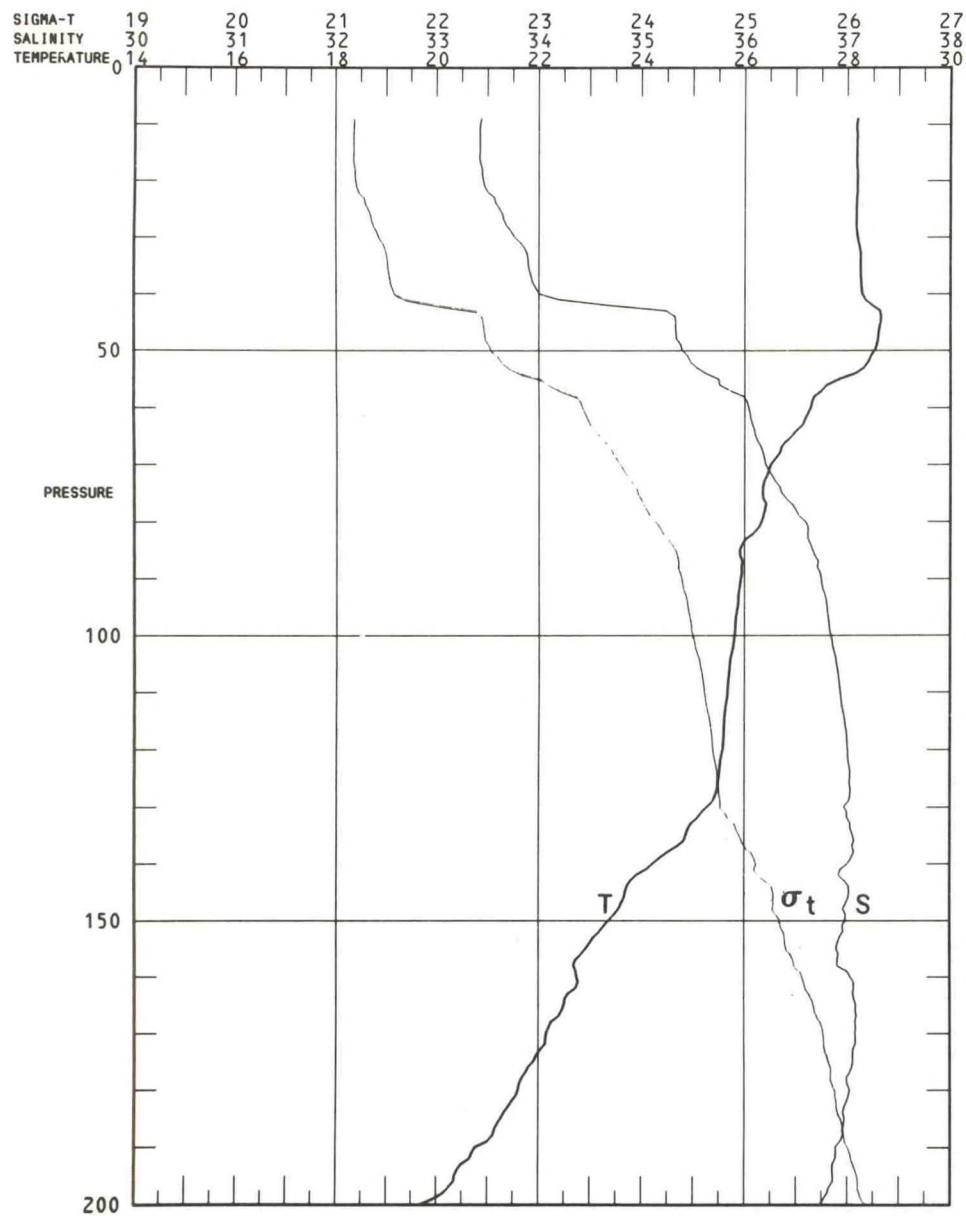
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 26, 1969, 2102 GMT, 15°16'N 056°30'W



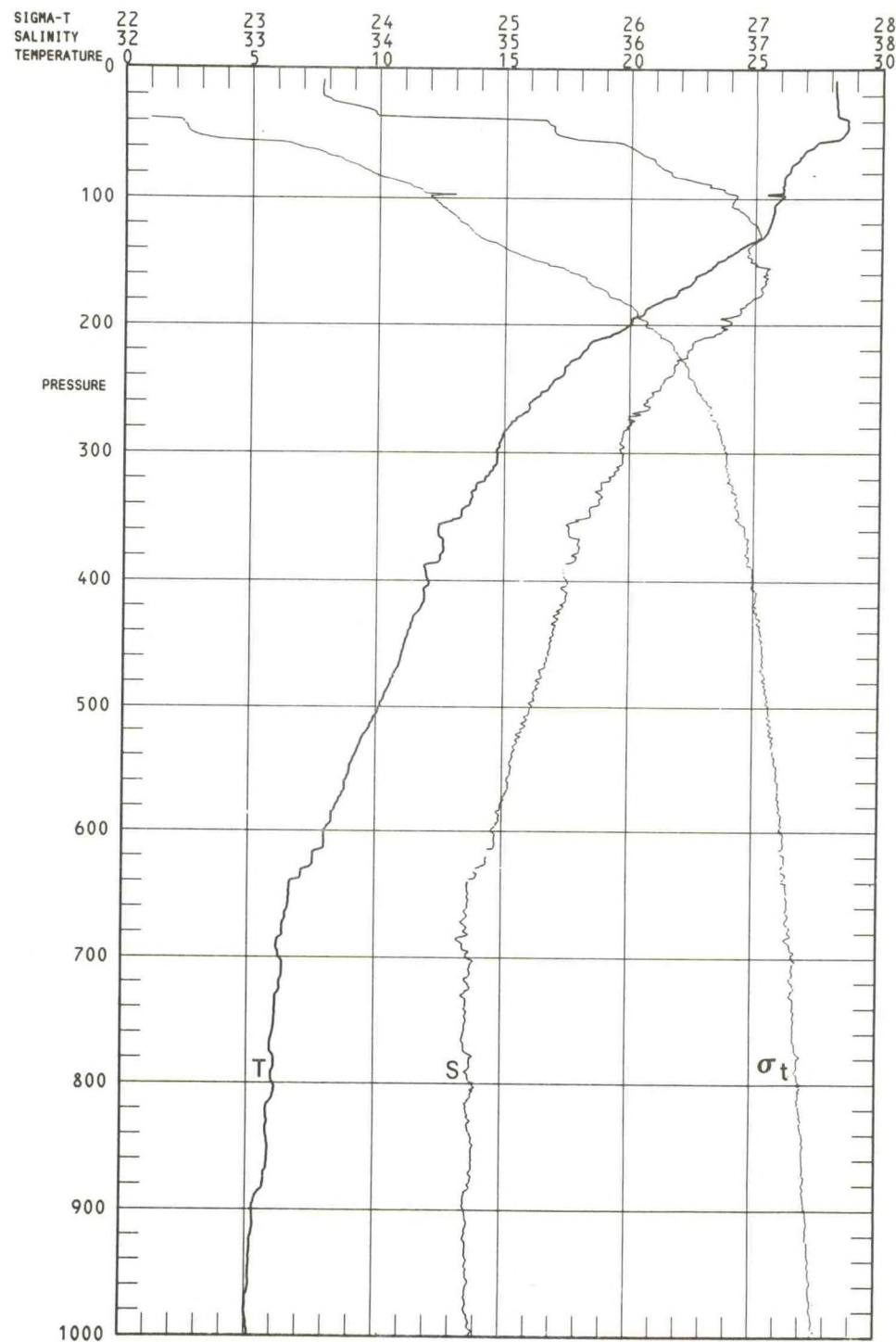
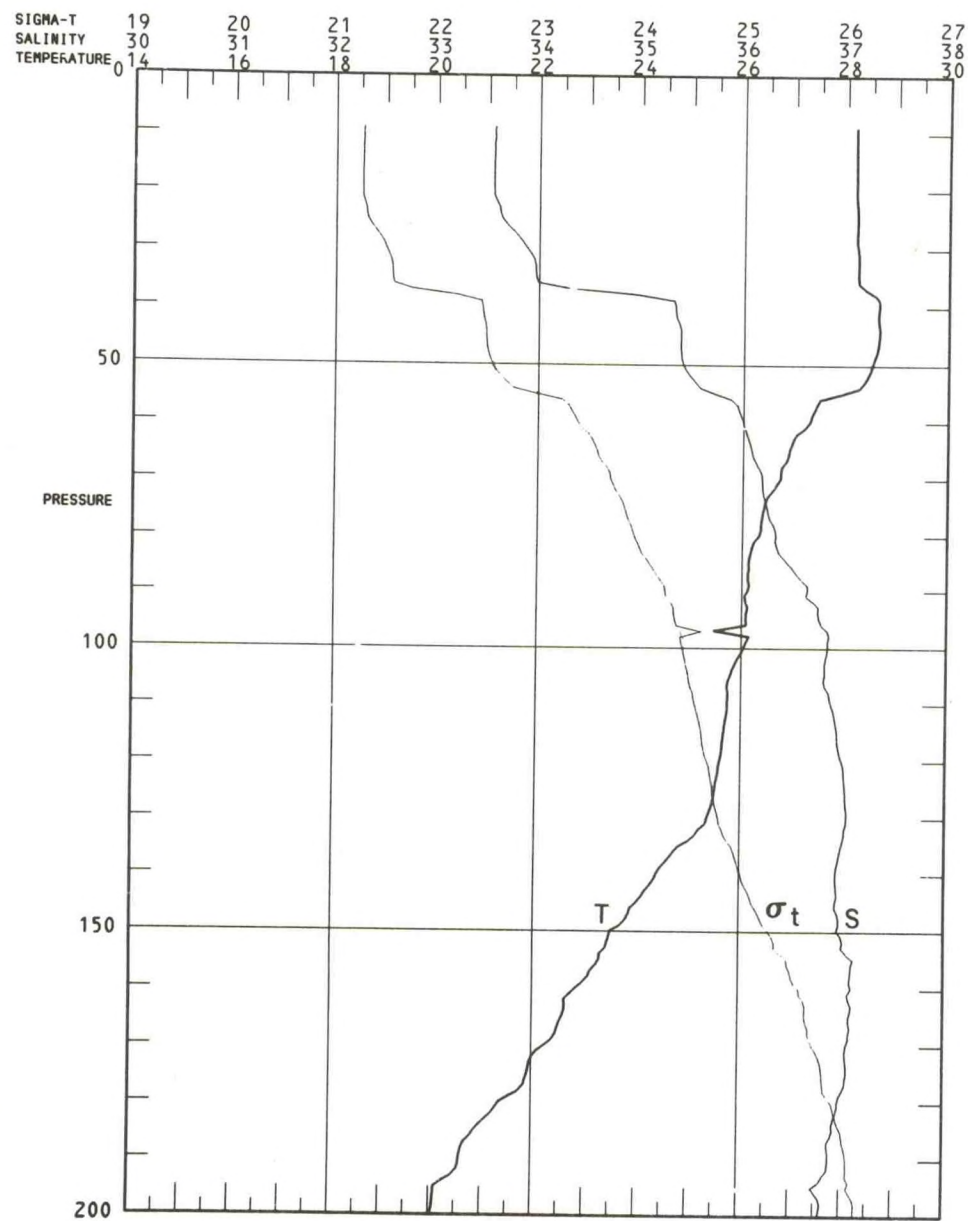
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 28, 1969, 0100 GMT, 15°18'N 056°33'W

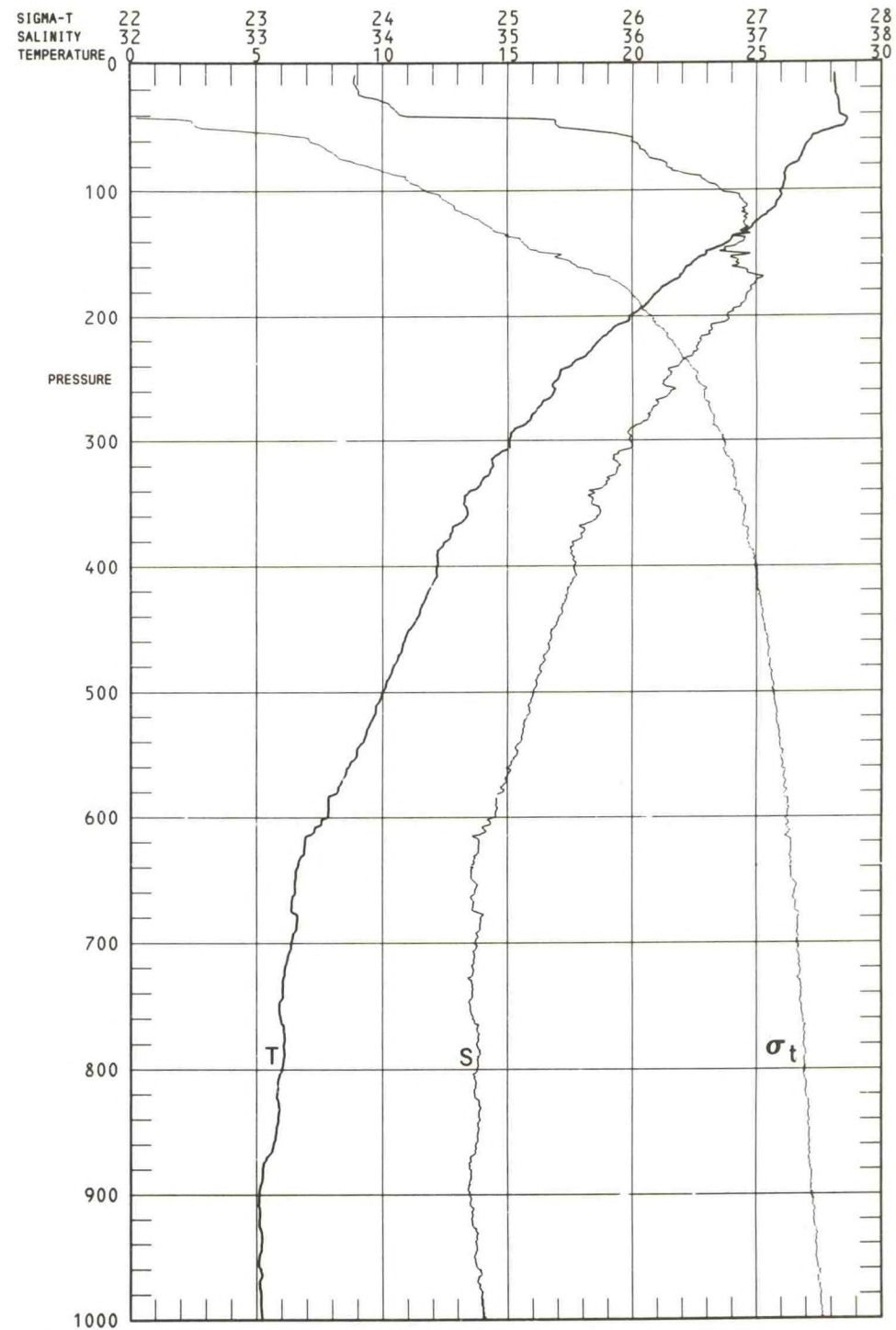
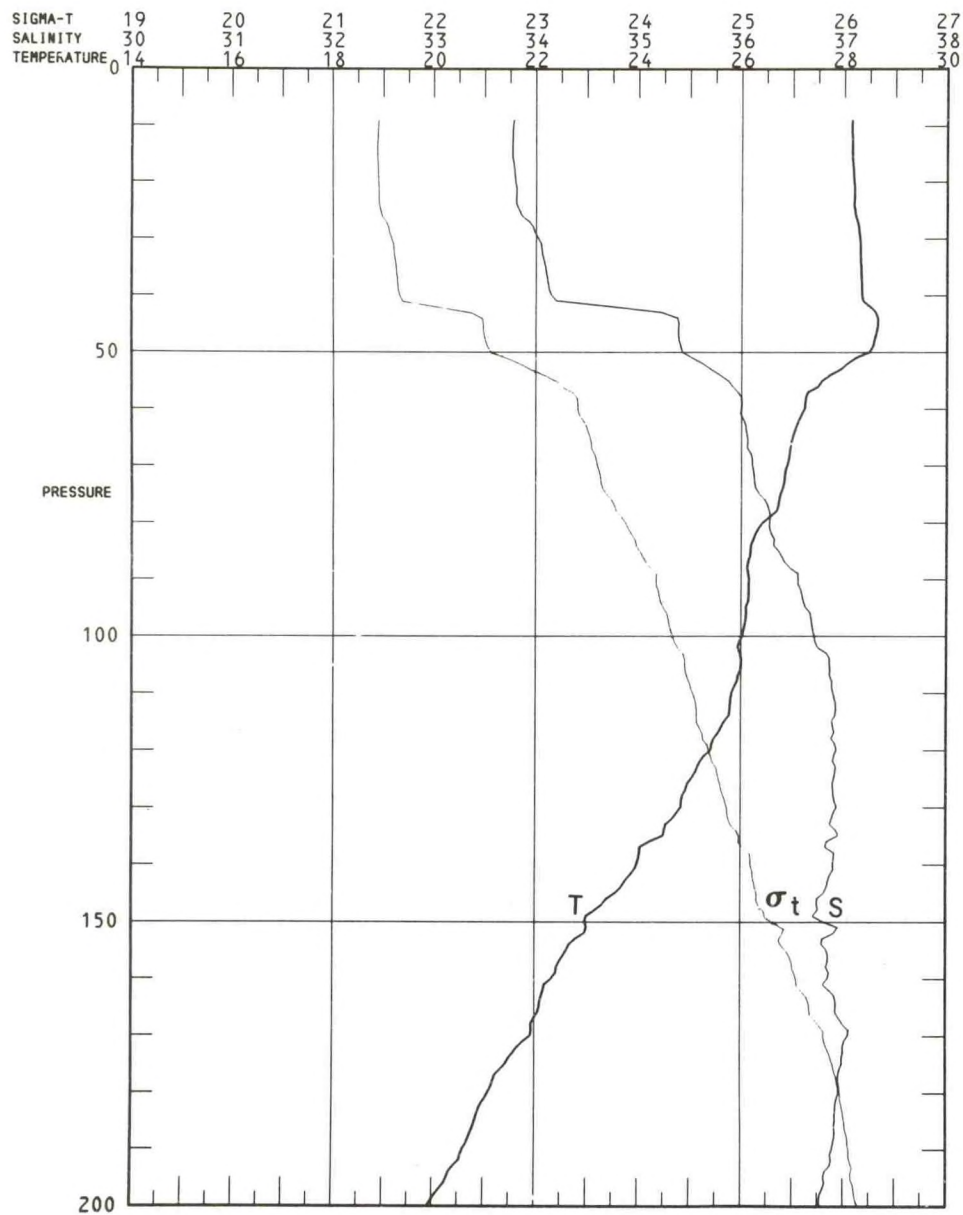


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 28, 1969, 0255 GMT, 15°19'N 056°35'W

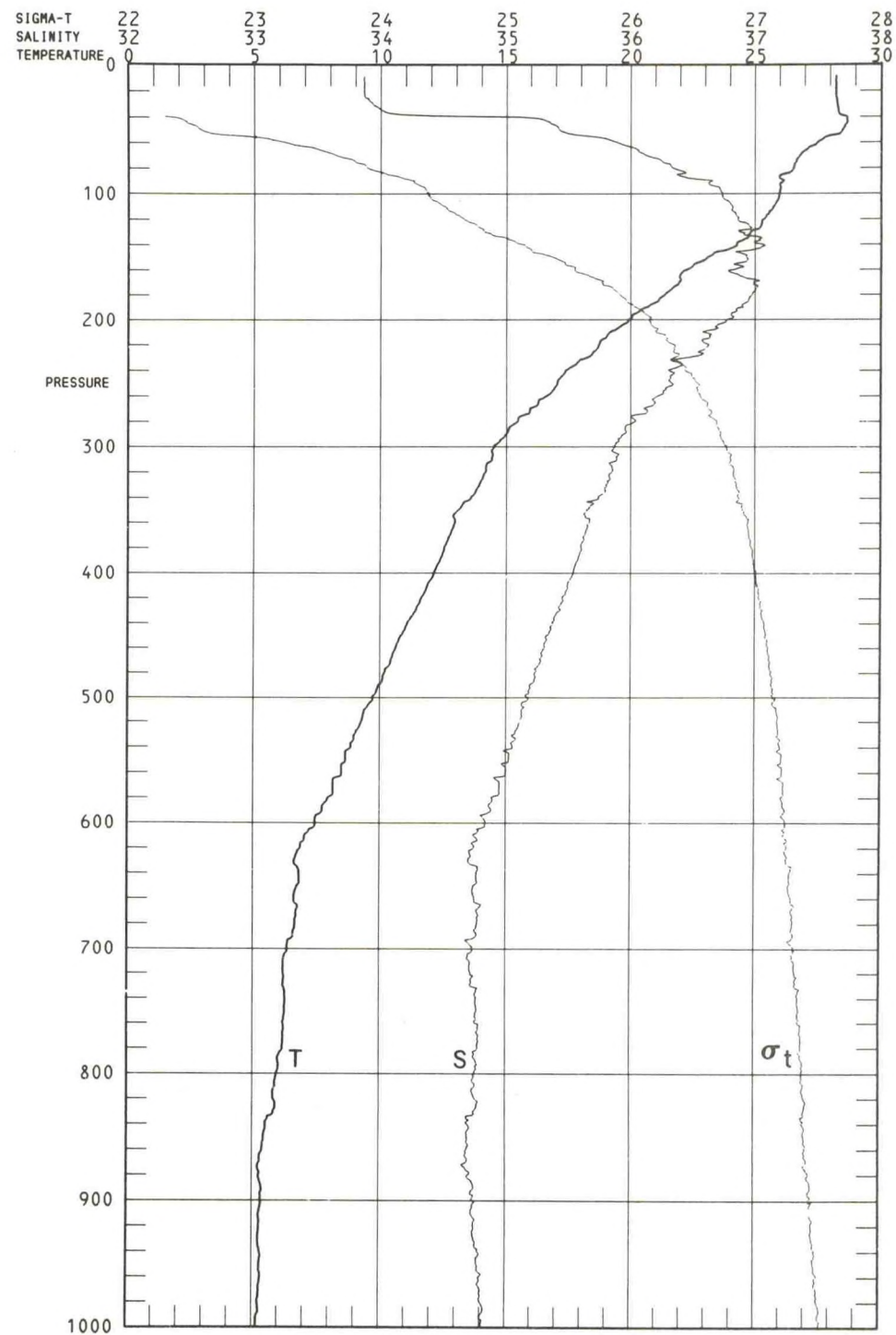
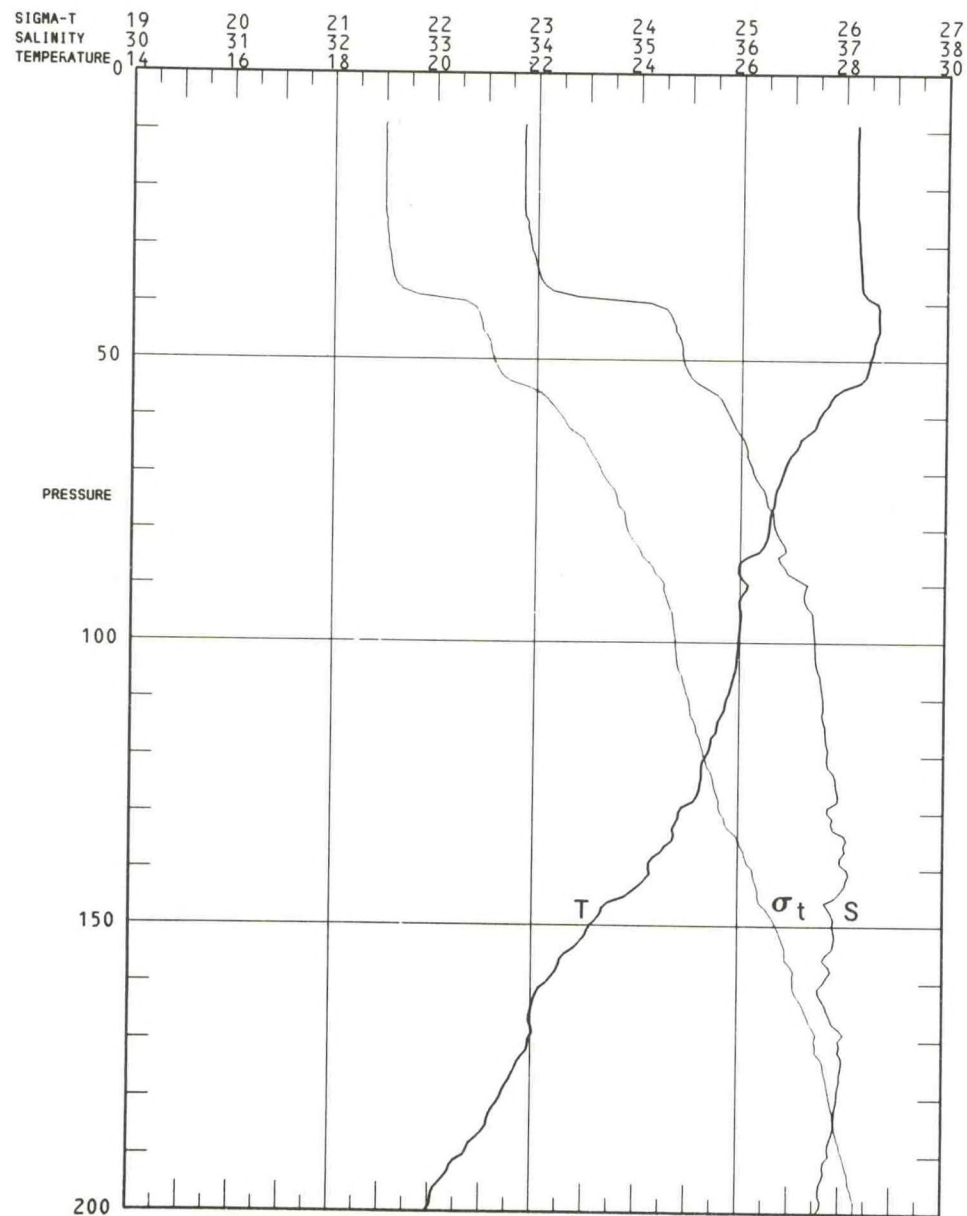
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 28, 1969, 0601 GMT, 15°21'N 056°39'W

ROCKAWAY YEAR 1969 DAY 179 TIME 0829 GMT LAT 15°23'N LON 056°41'W

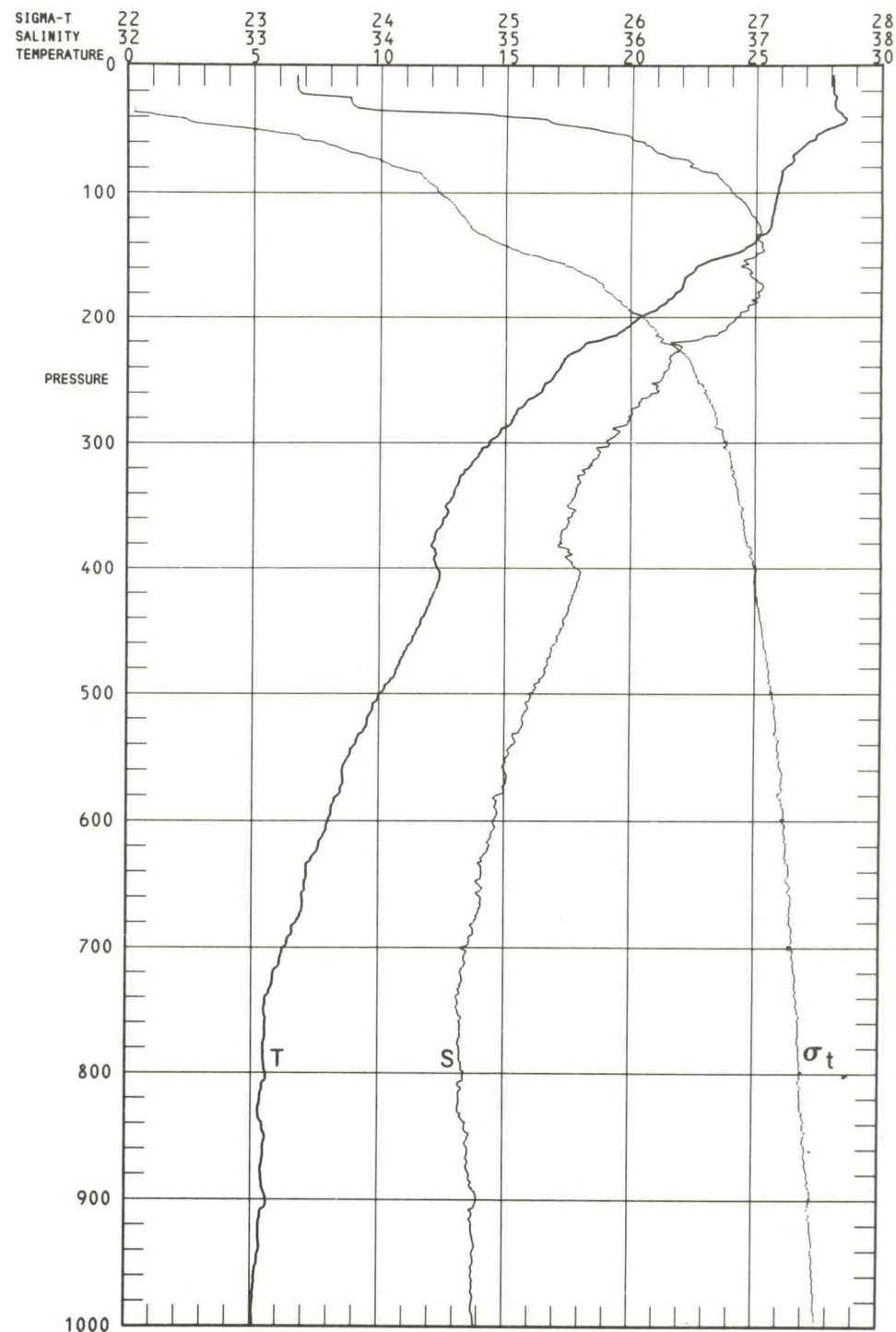
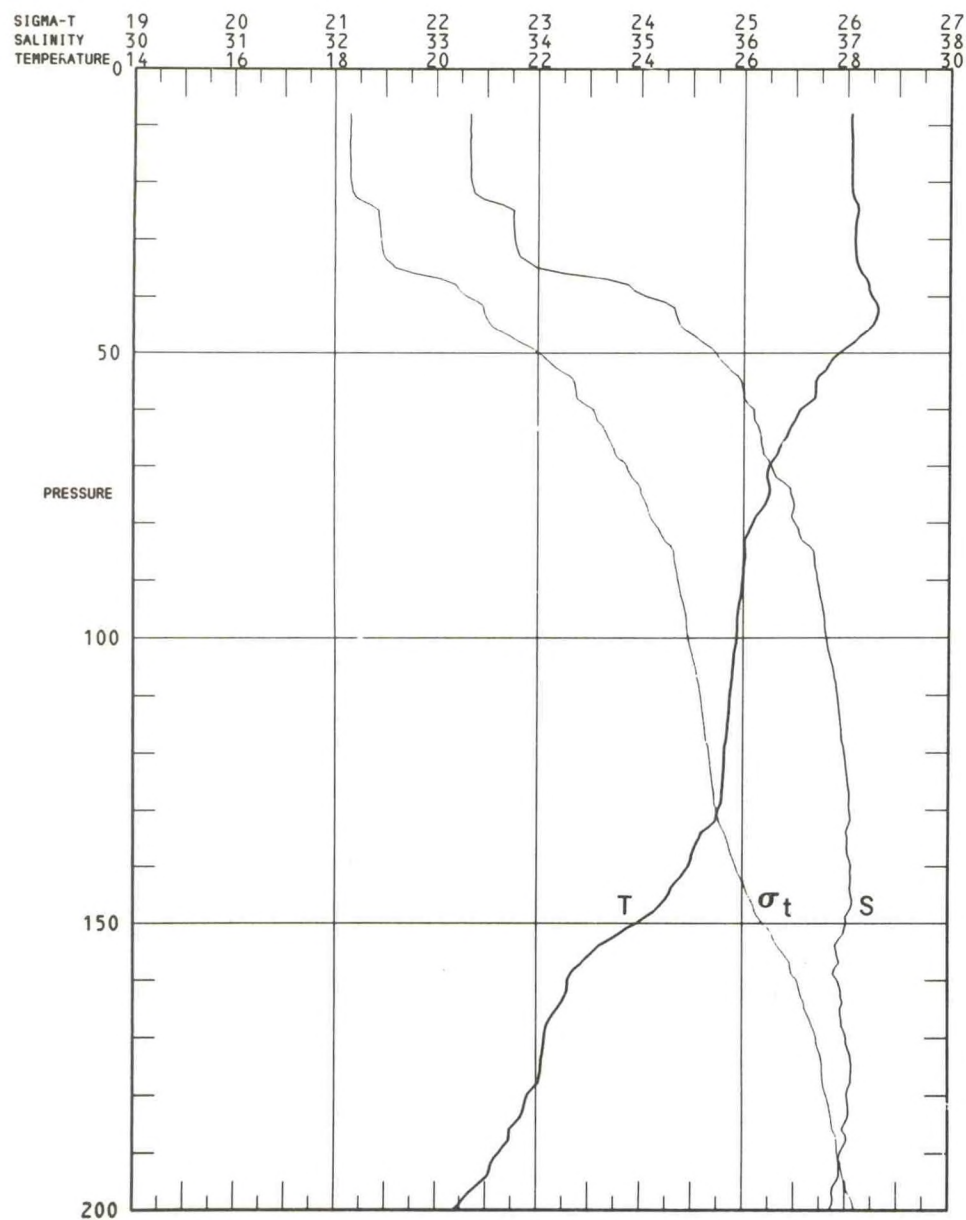
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Rockaway, June 28, 1969, 0829 GMT, 15°23'N 056°41'W

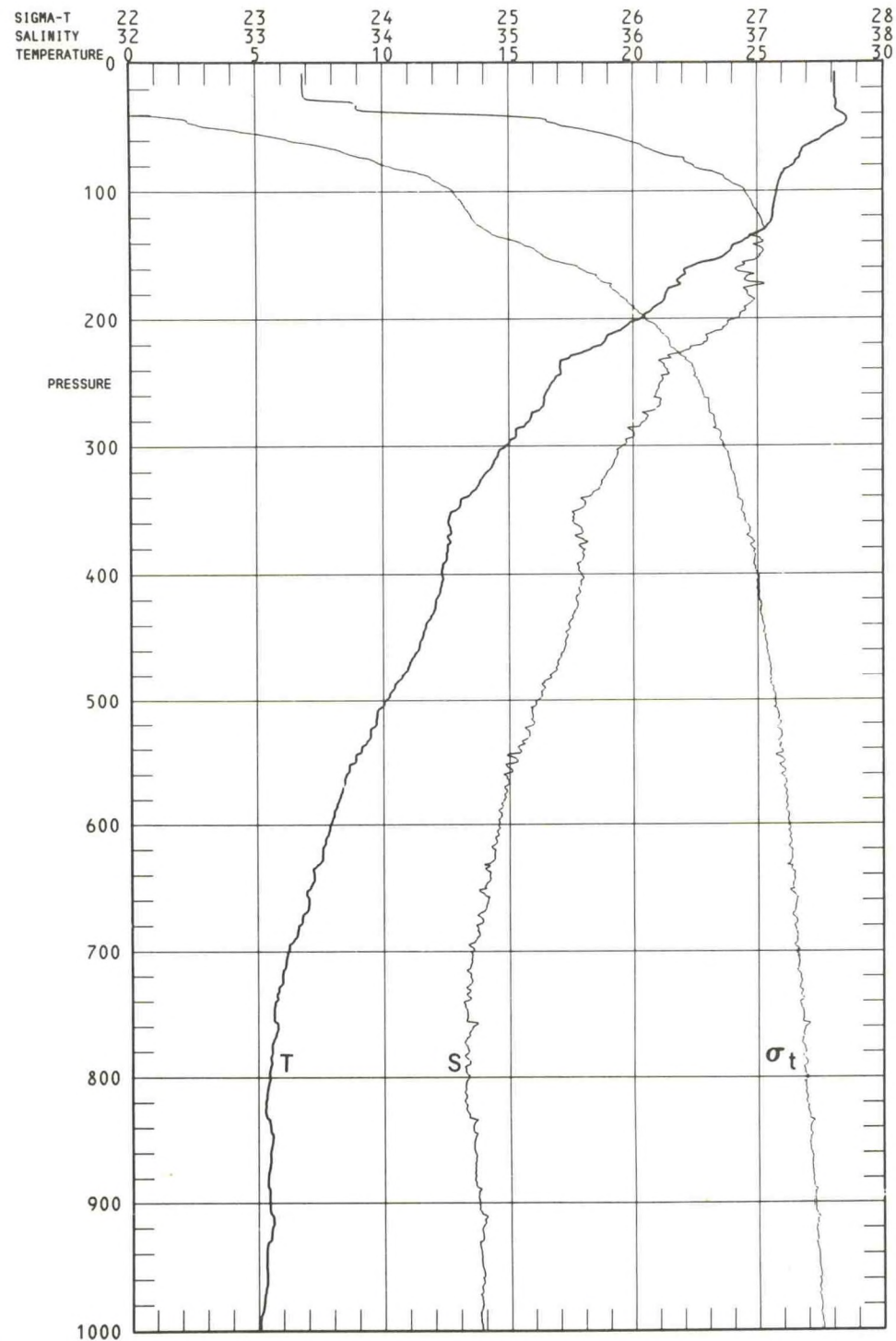
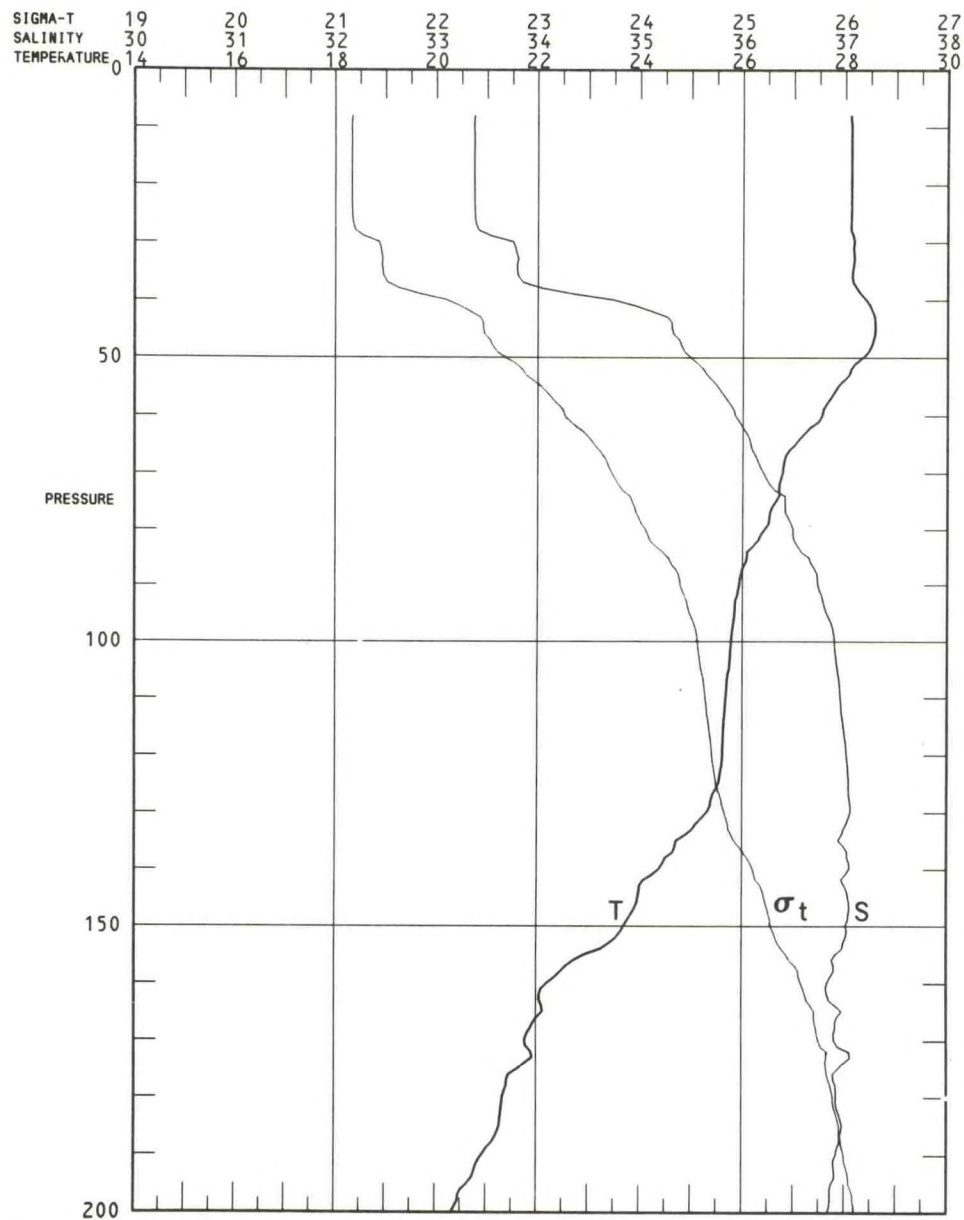


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 28, 1969, 1223 GMT, 15°18'N 056°27'W

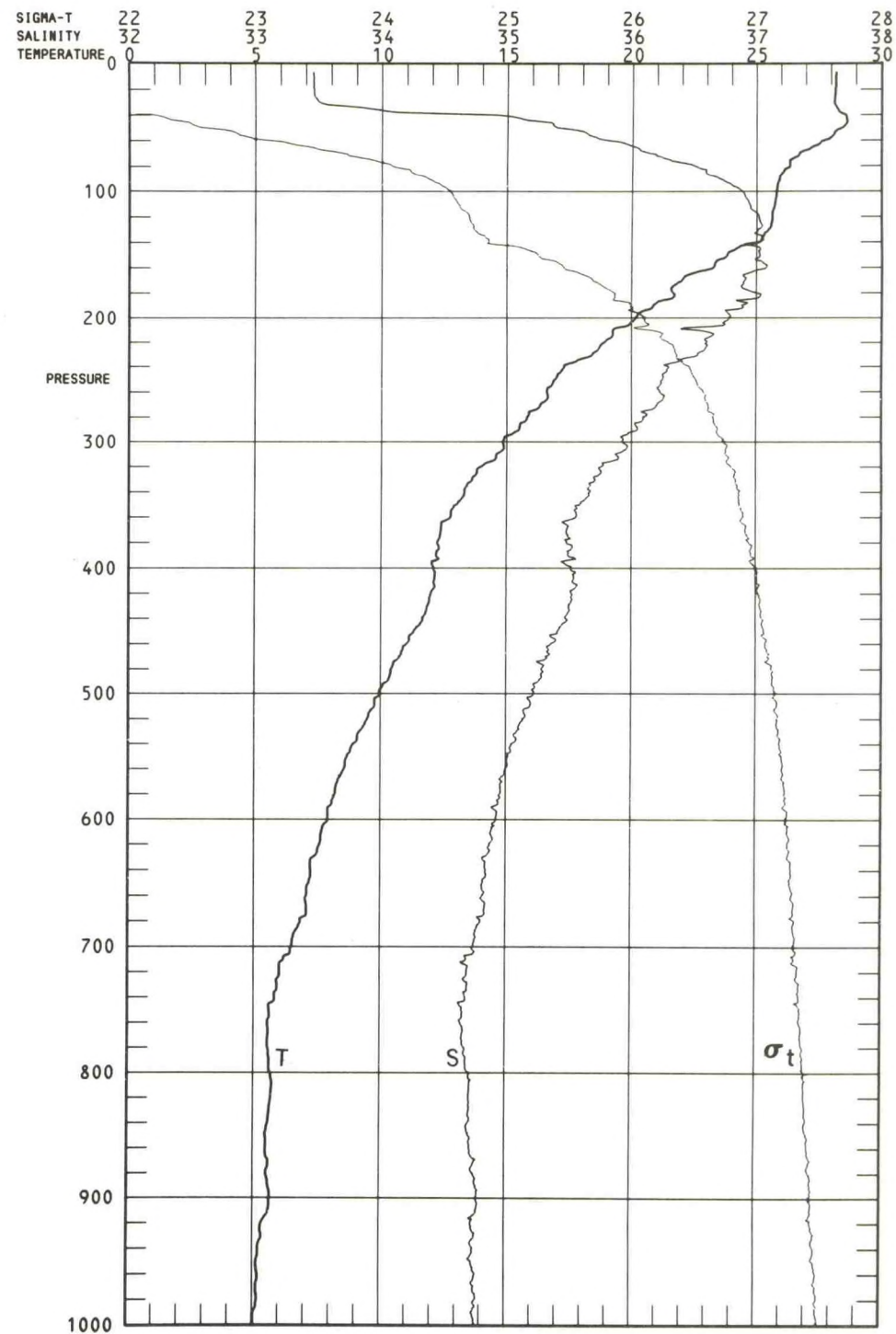
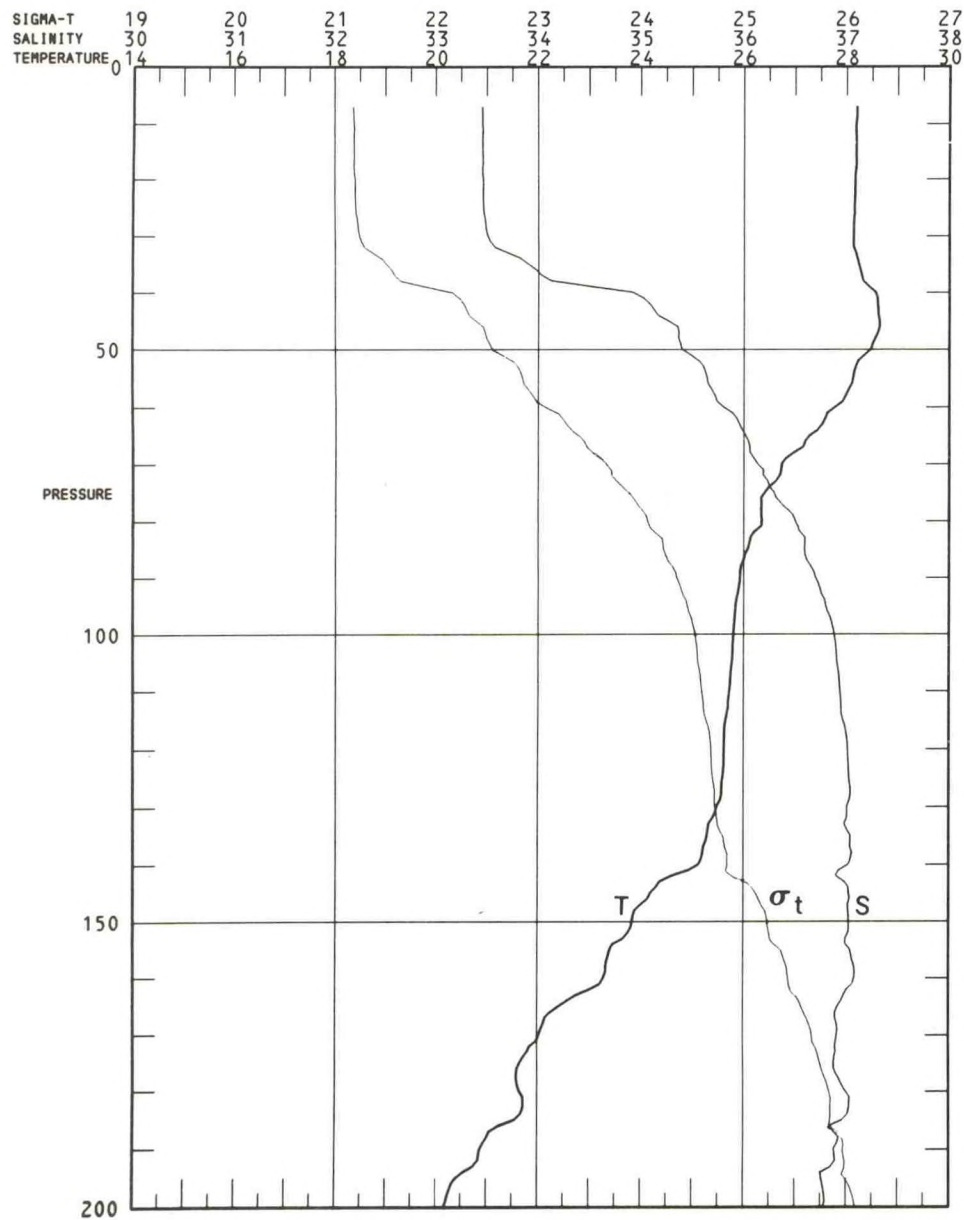
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 28, 1969, 1456 GMT, 15°17'N 056°28'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

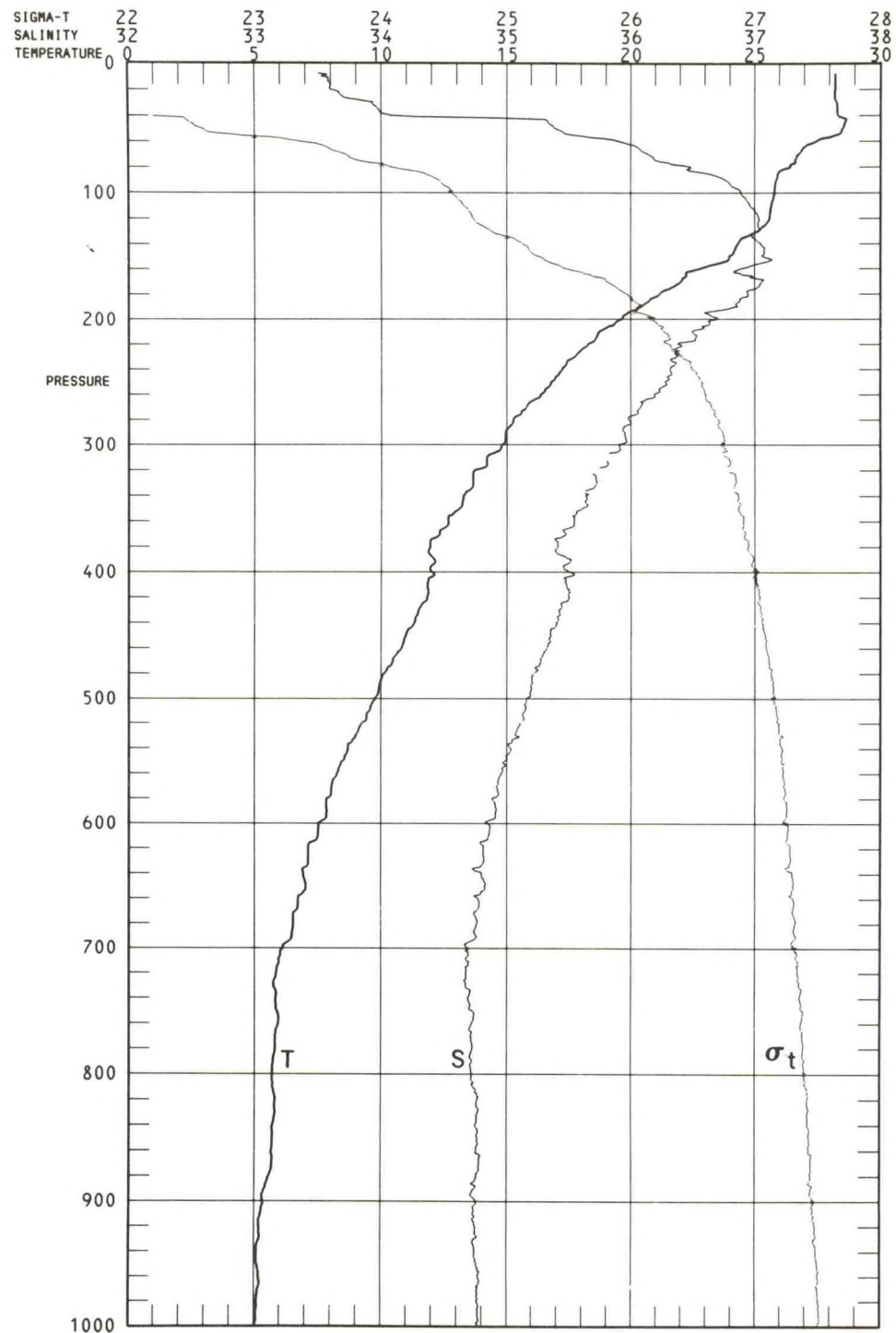
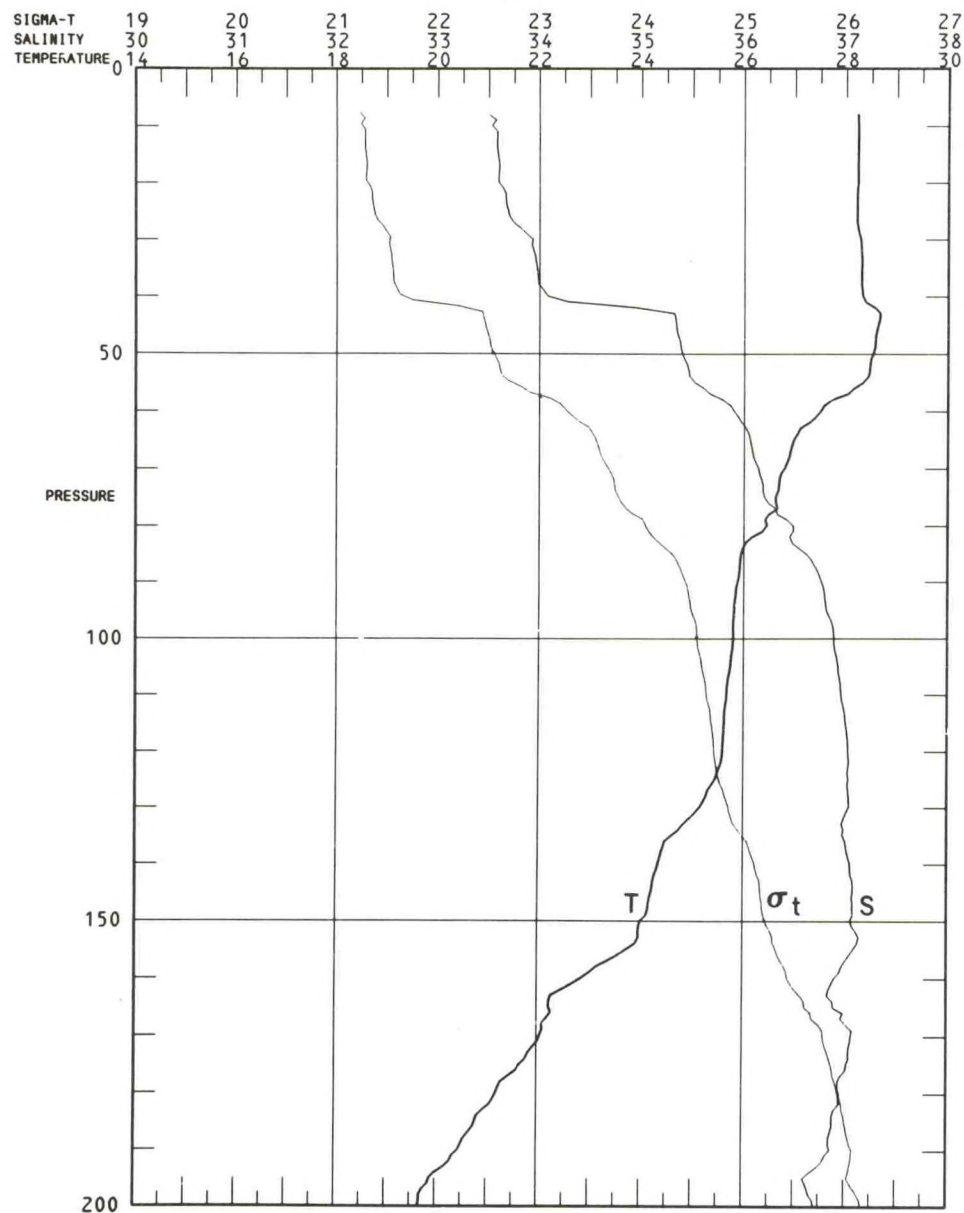


Rockaway, June 28, 1969, 1803 GMT, 15°18'N 056°28'W

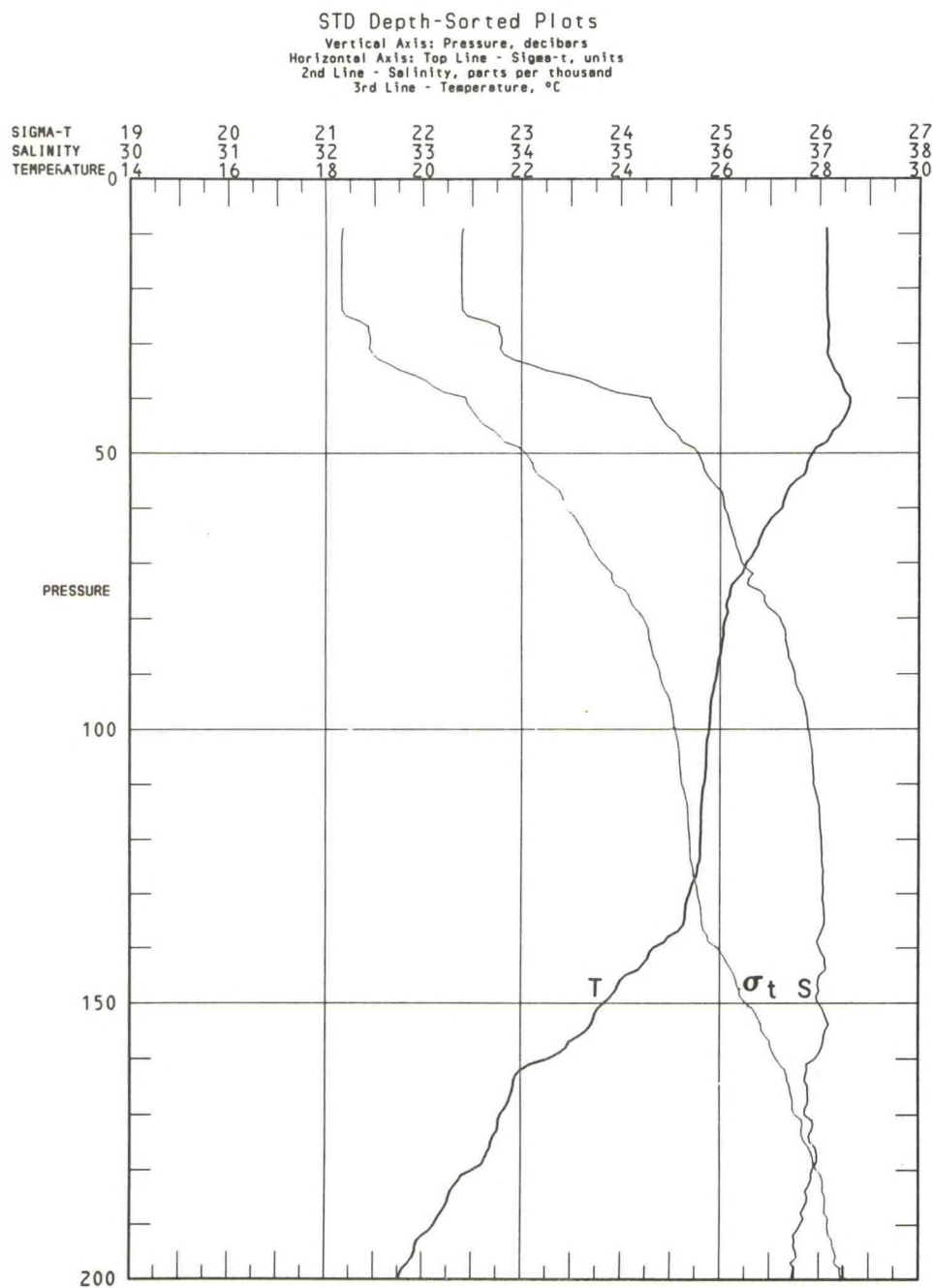
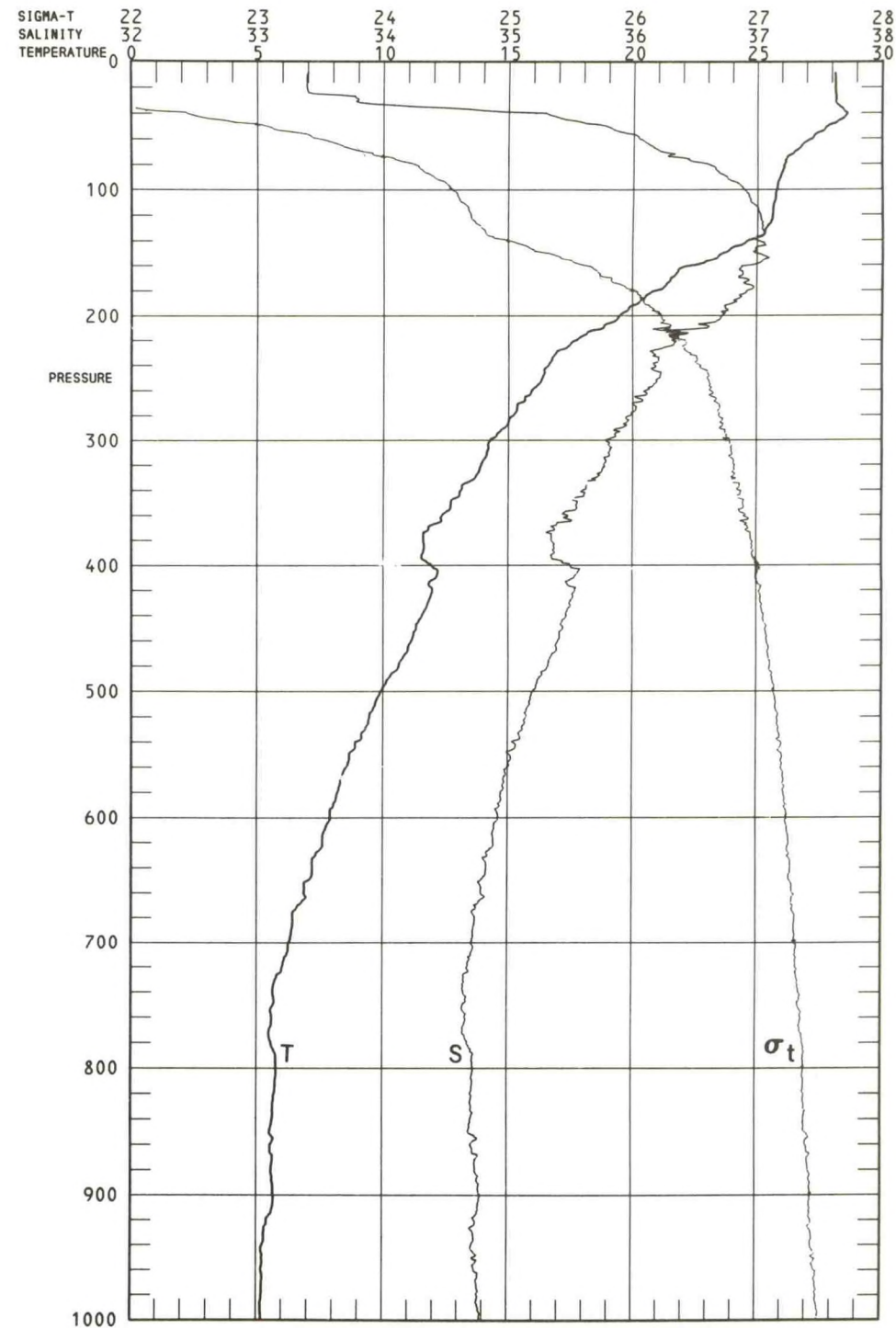


# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



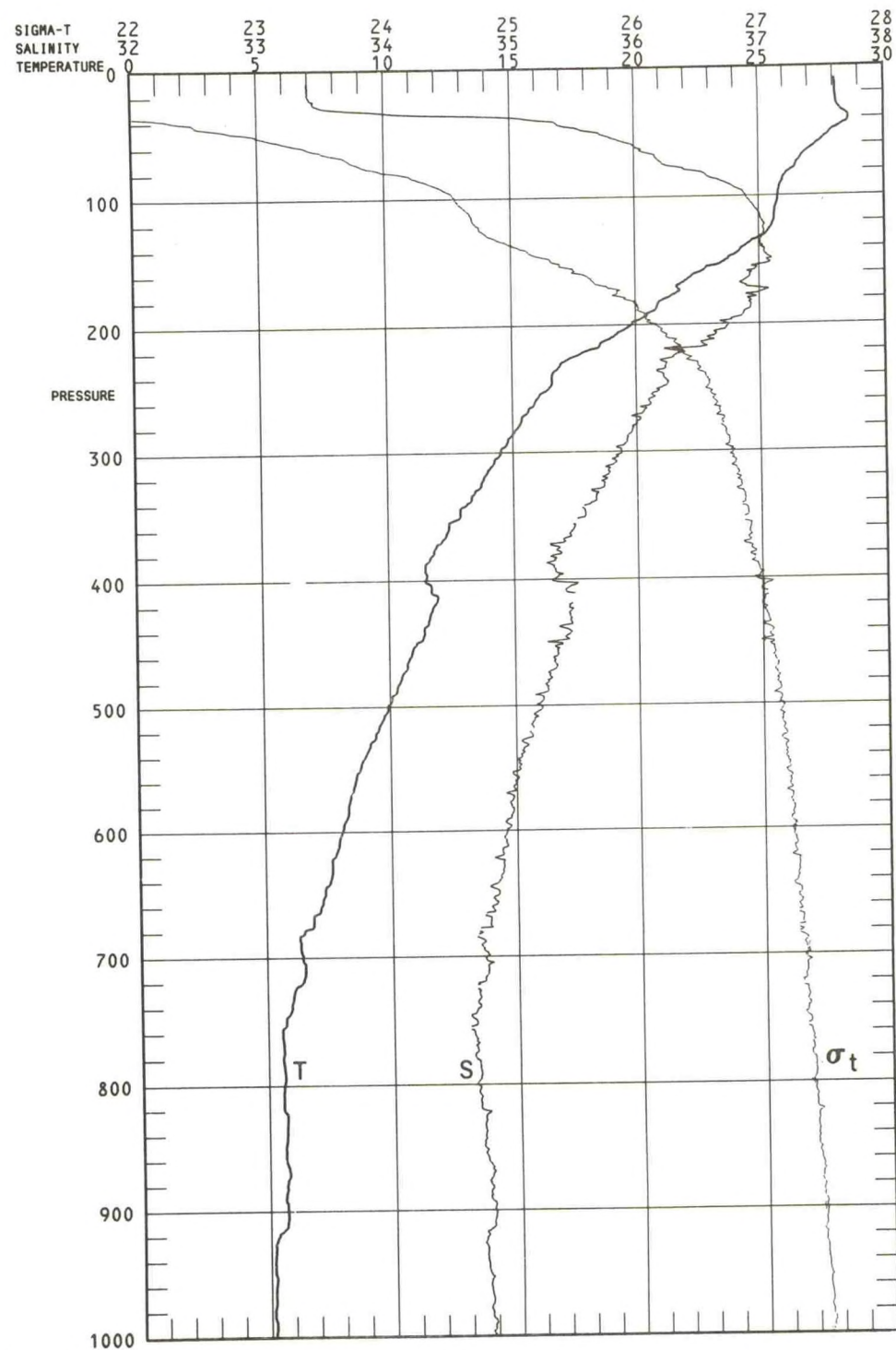
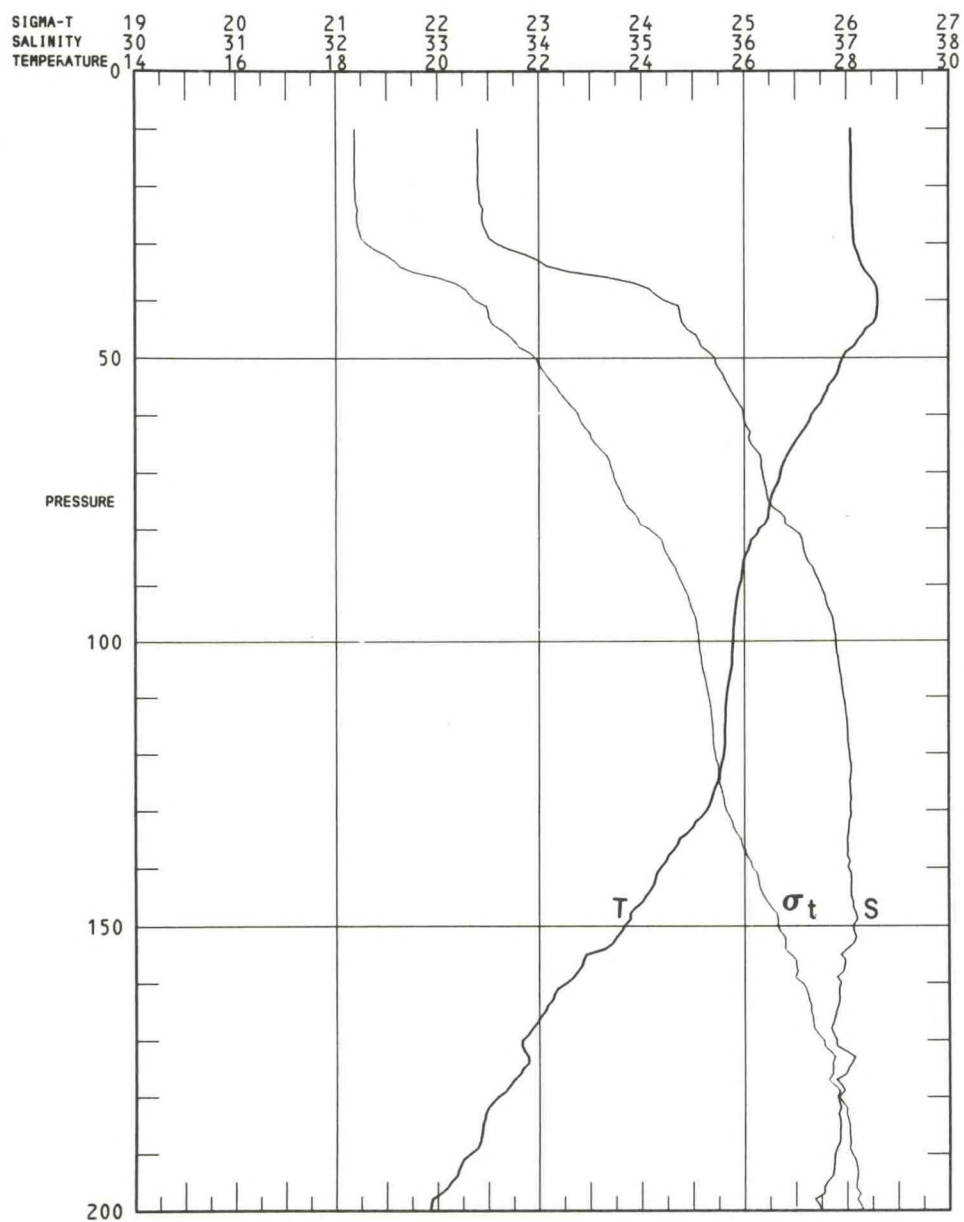
Rockaway, June 28, 1969, 2100 GMT, 15°19'N 056°35'W



Rockaway, June 29, 1969, 0053 GMT, 15°20'N 056°28'W

ROCKAWAY YEAR 1969 DAY 180 TIME 0307 GMT LAT 15°20'N LON 056°31'W

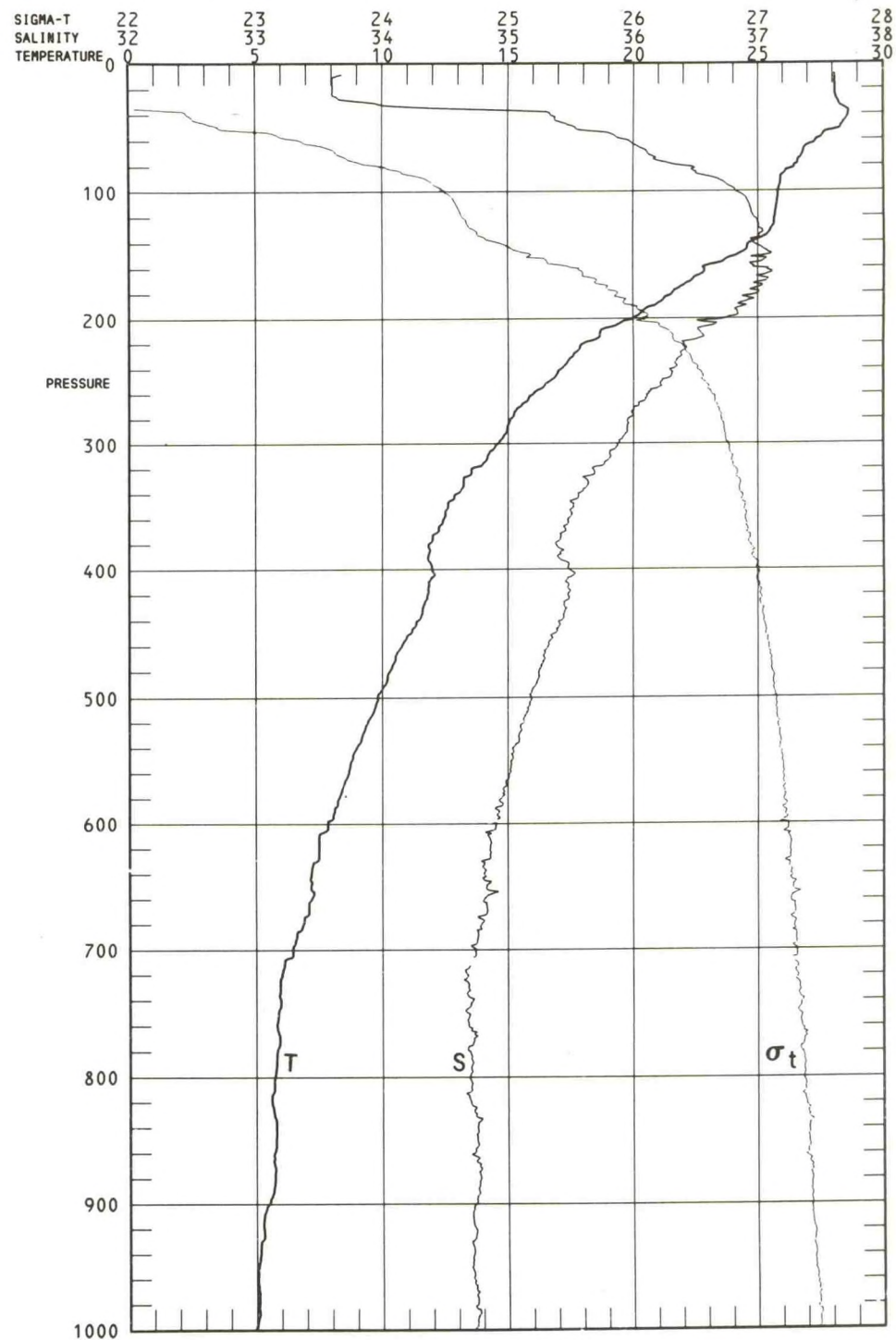
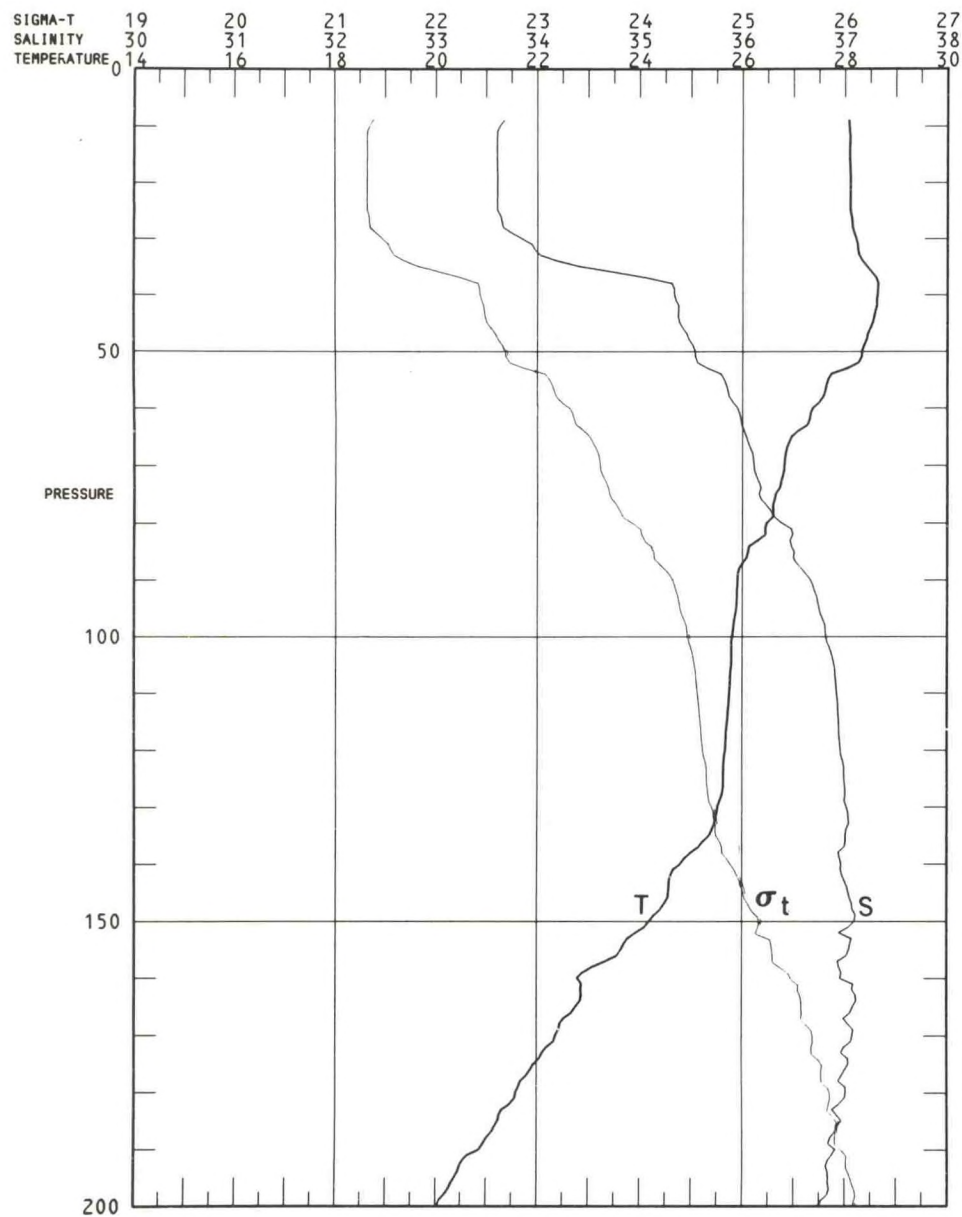
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 29, 1969, 0307 GMT, 15°20'N 056°31'W

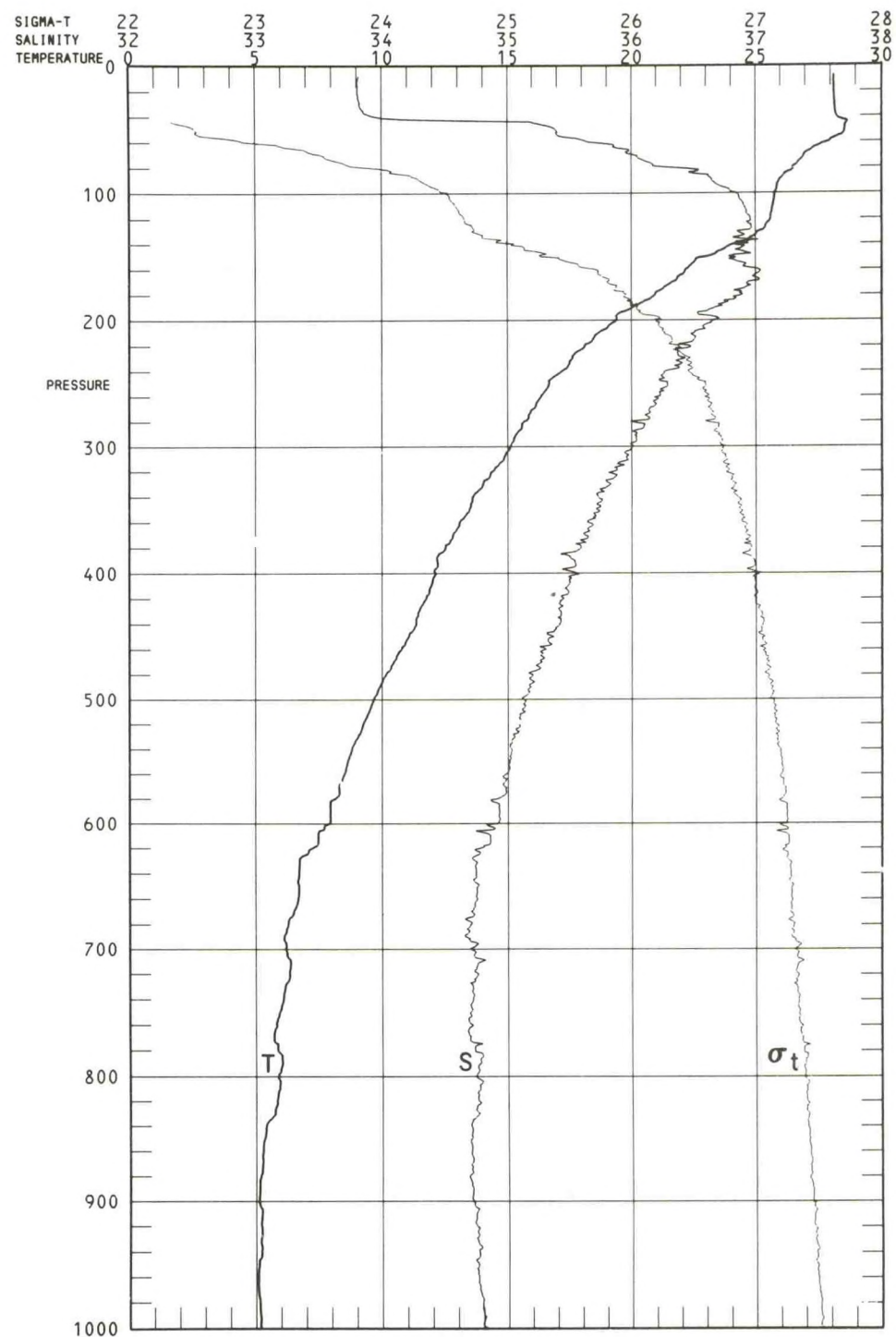
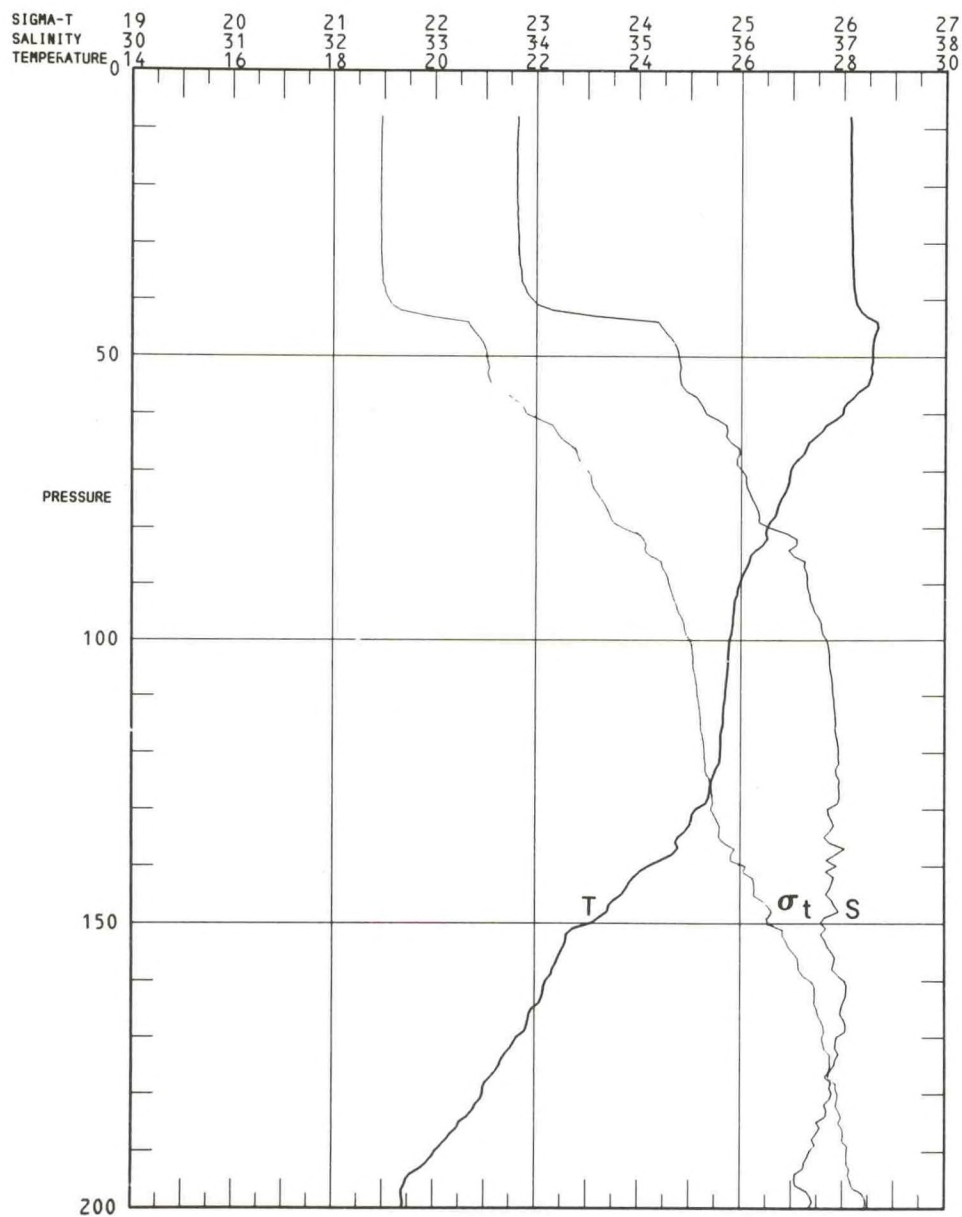


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



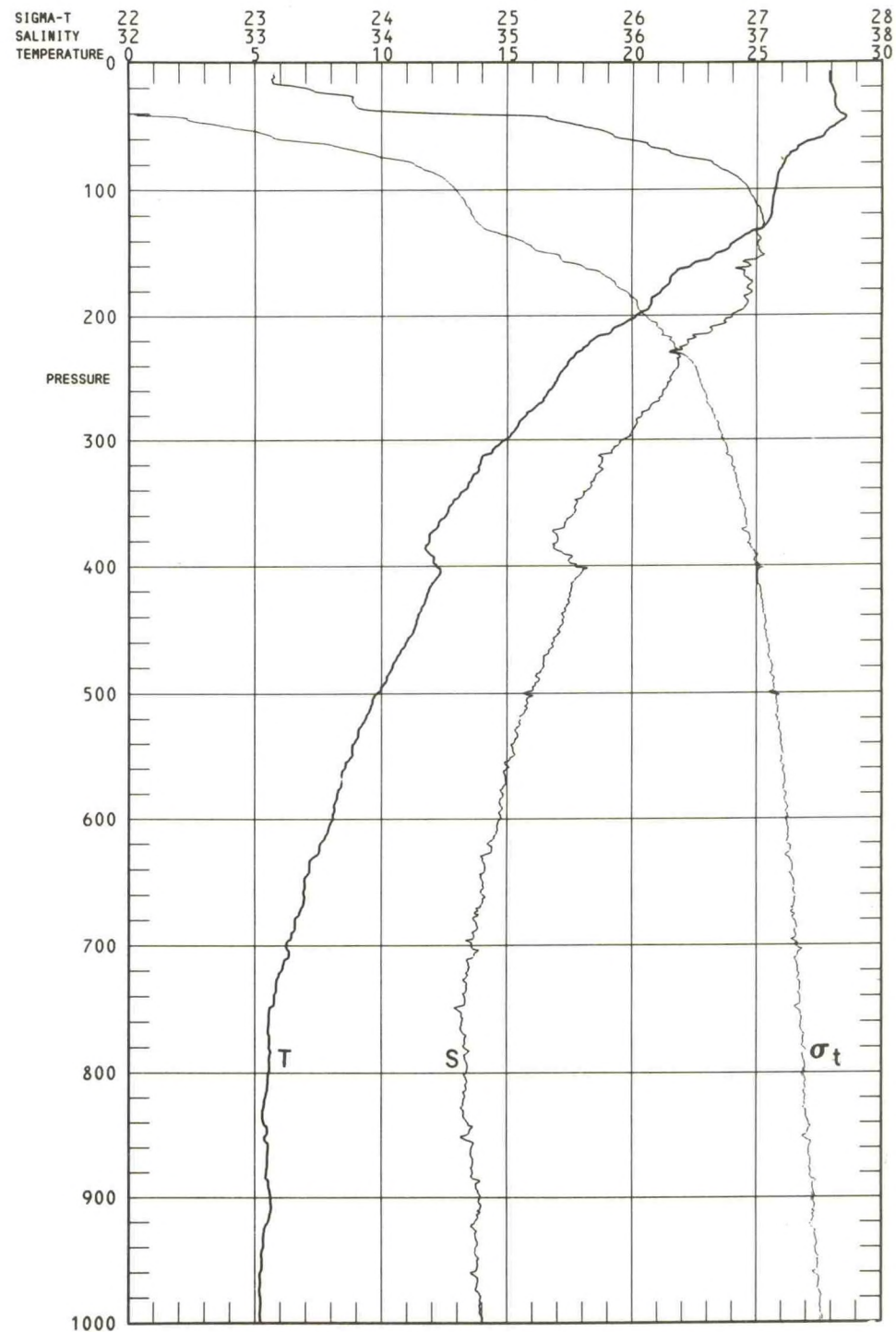
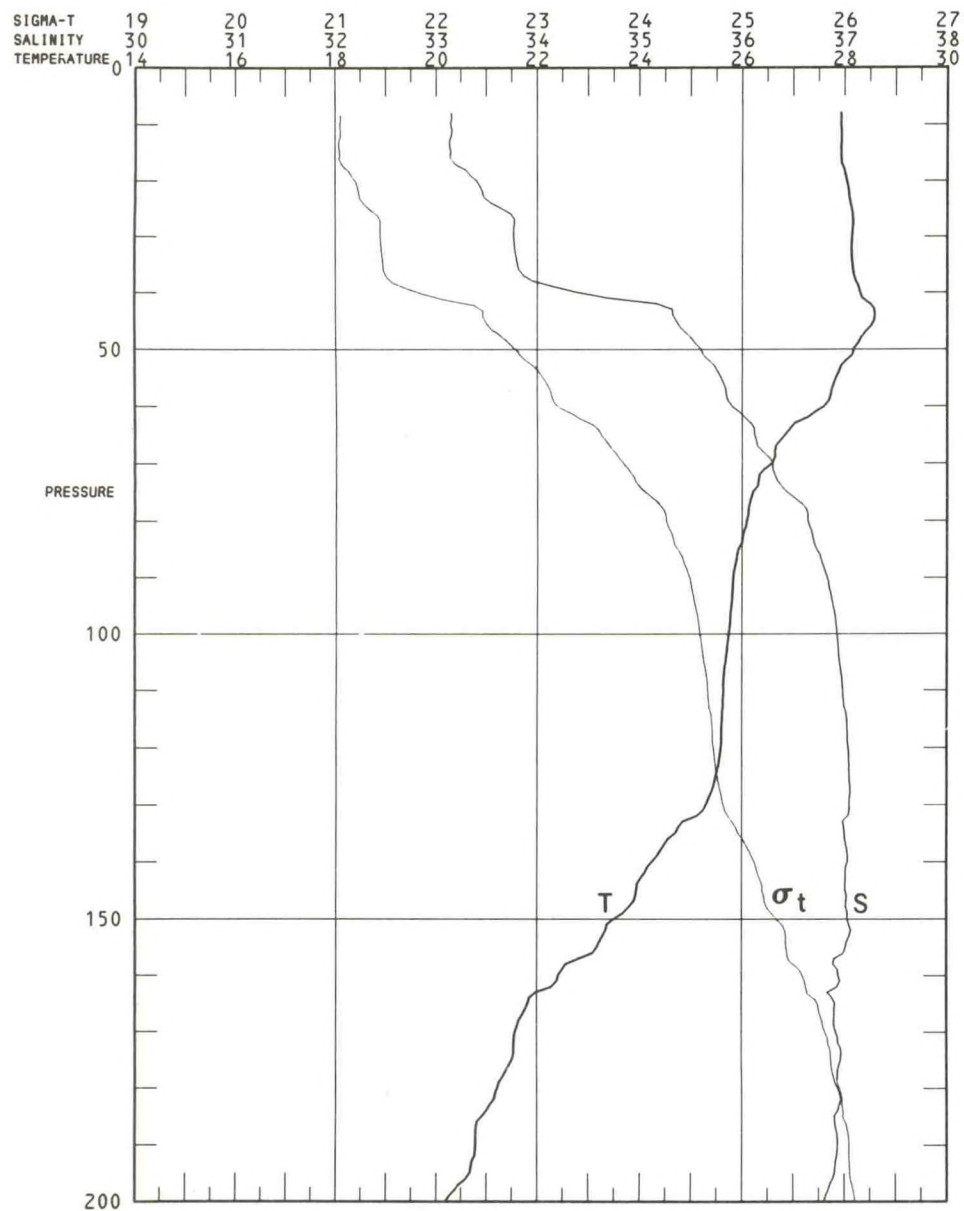
Rockaway, June 29, 1969, 0607 GMT, 15°21'N 056°36'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 29, 1969, 0905 GMT, 15°23'N 056°41'W

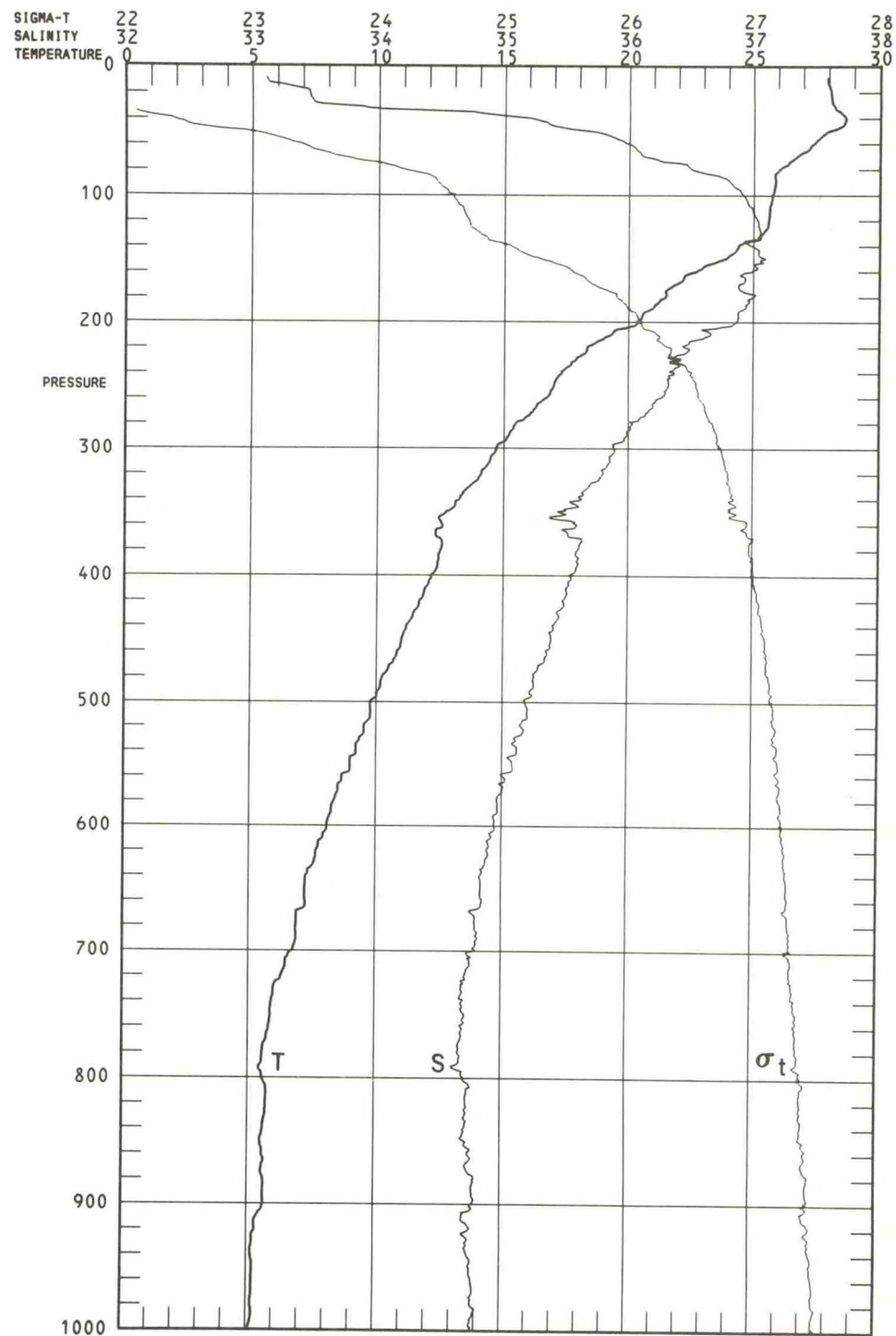
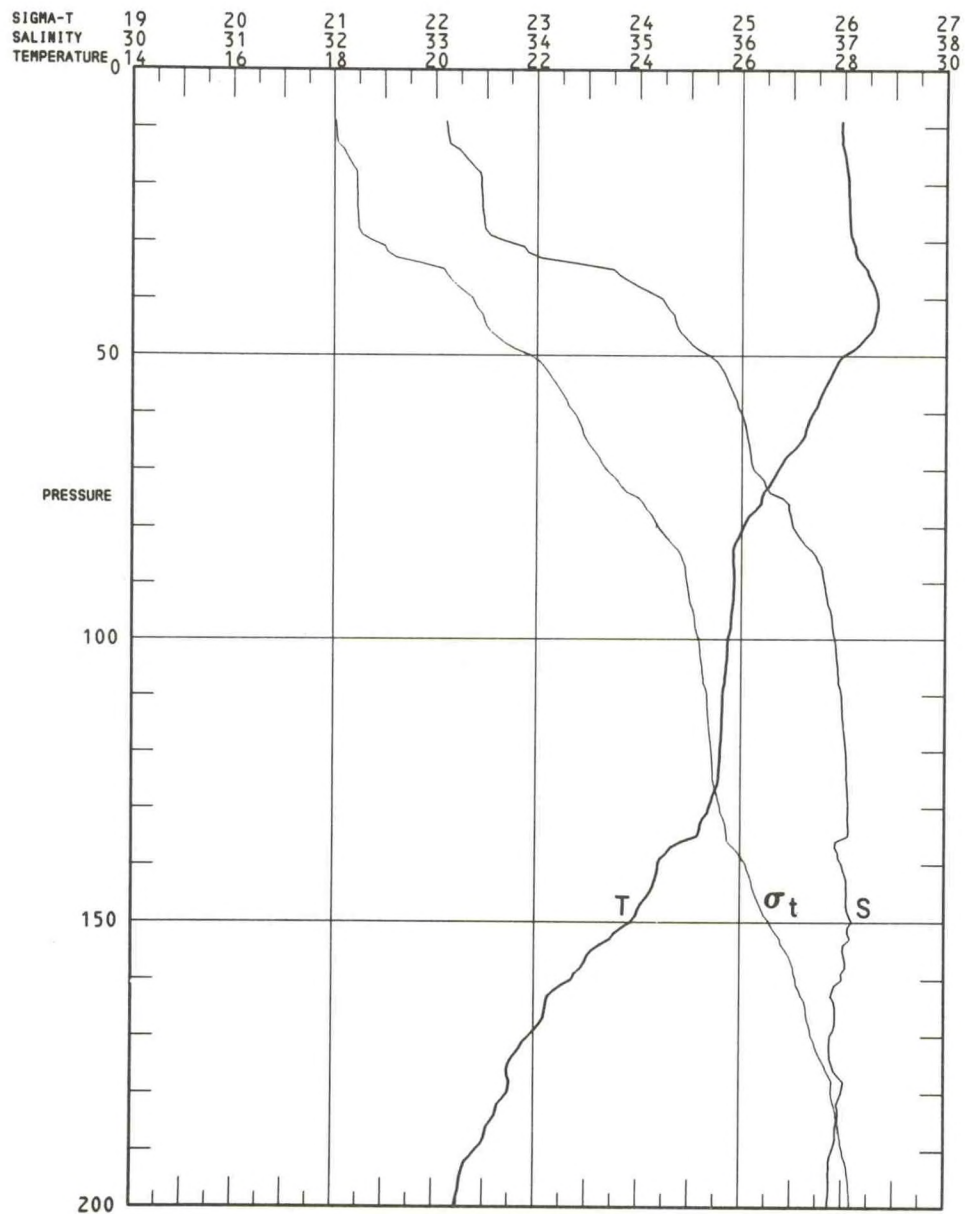
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 29, 1969, 1227 GMT, 15°20'N 056°29'W

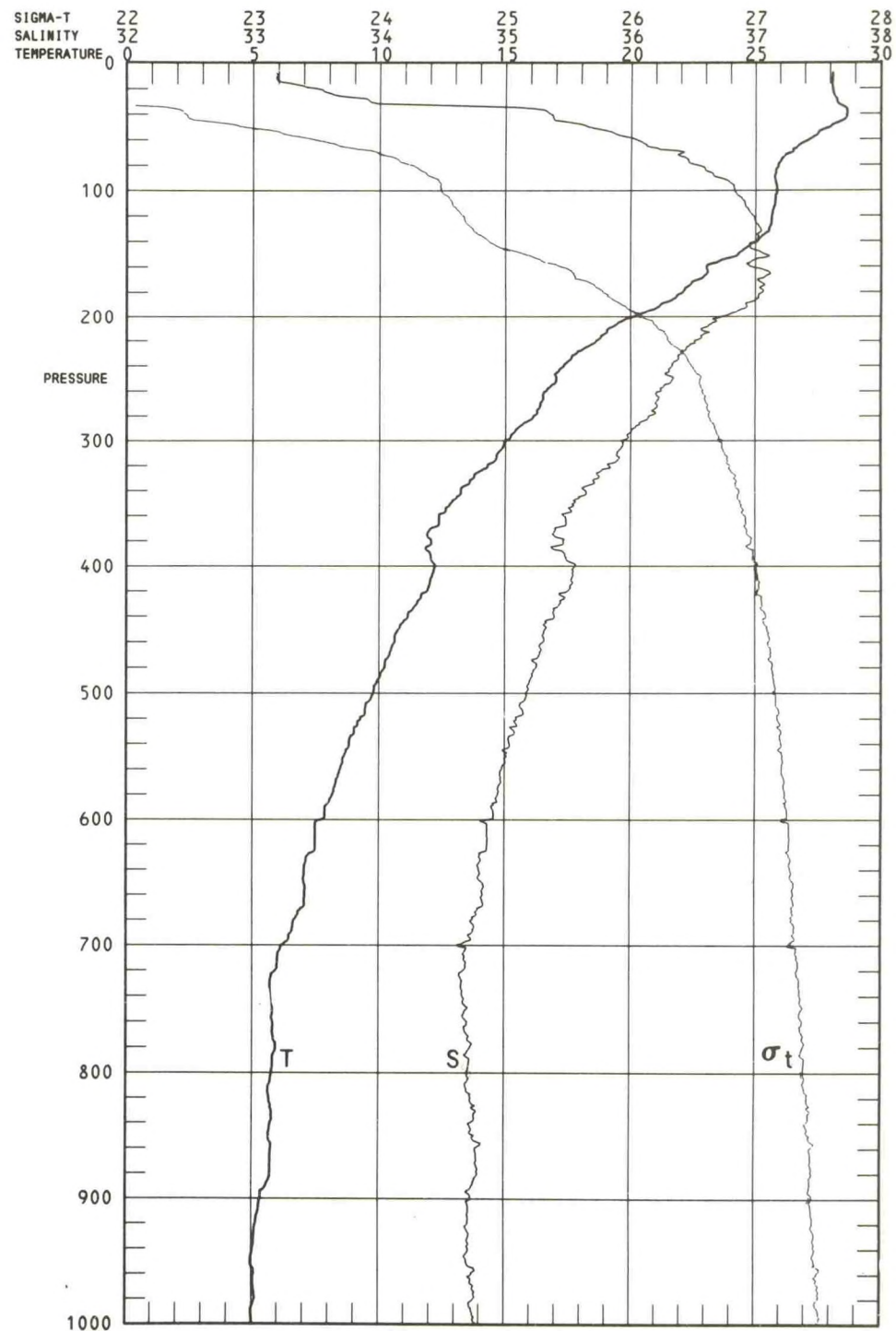
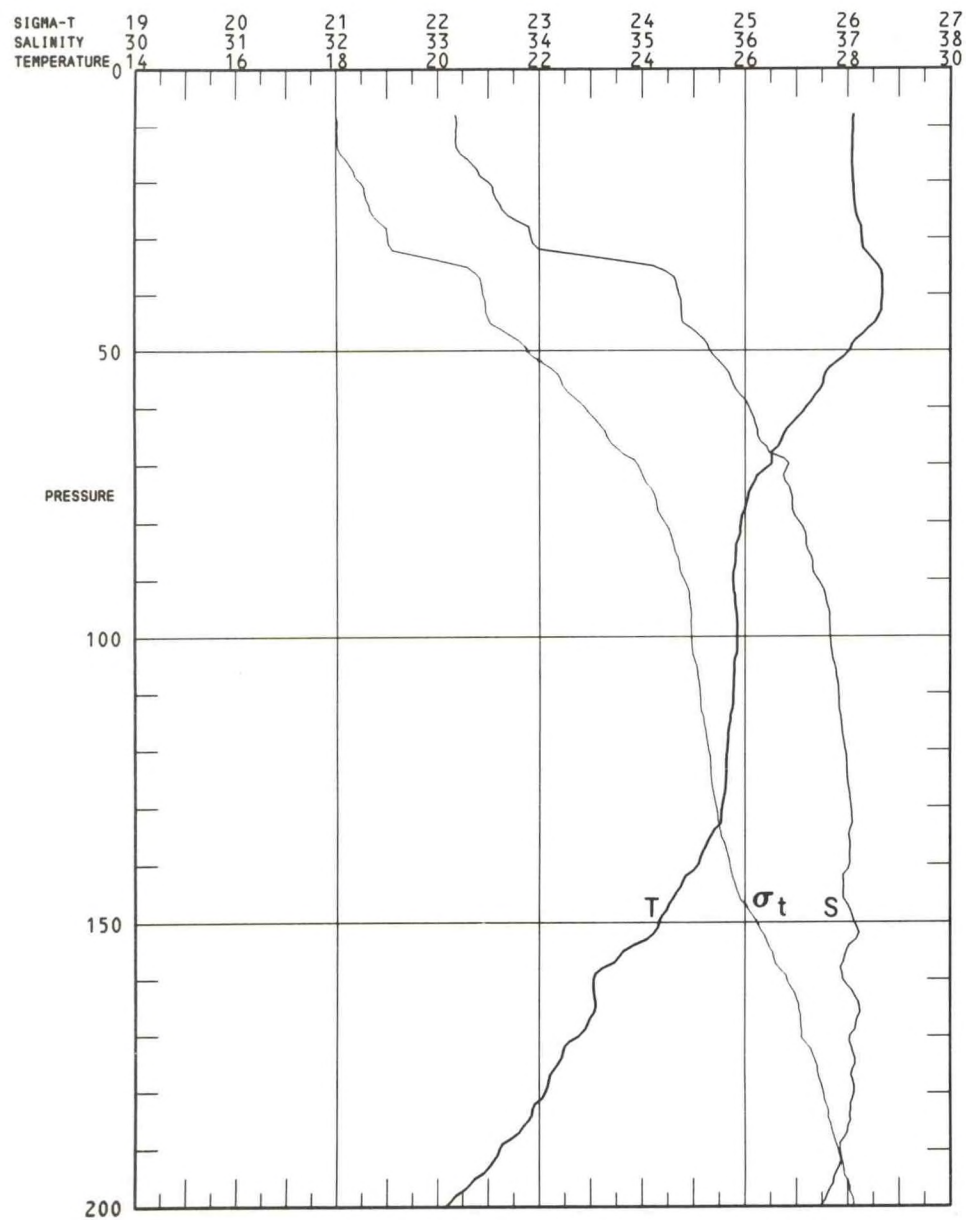


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



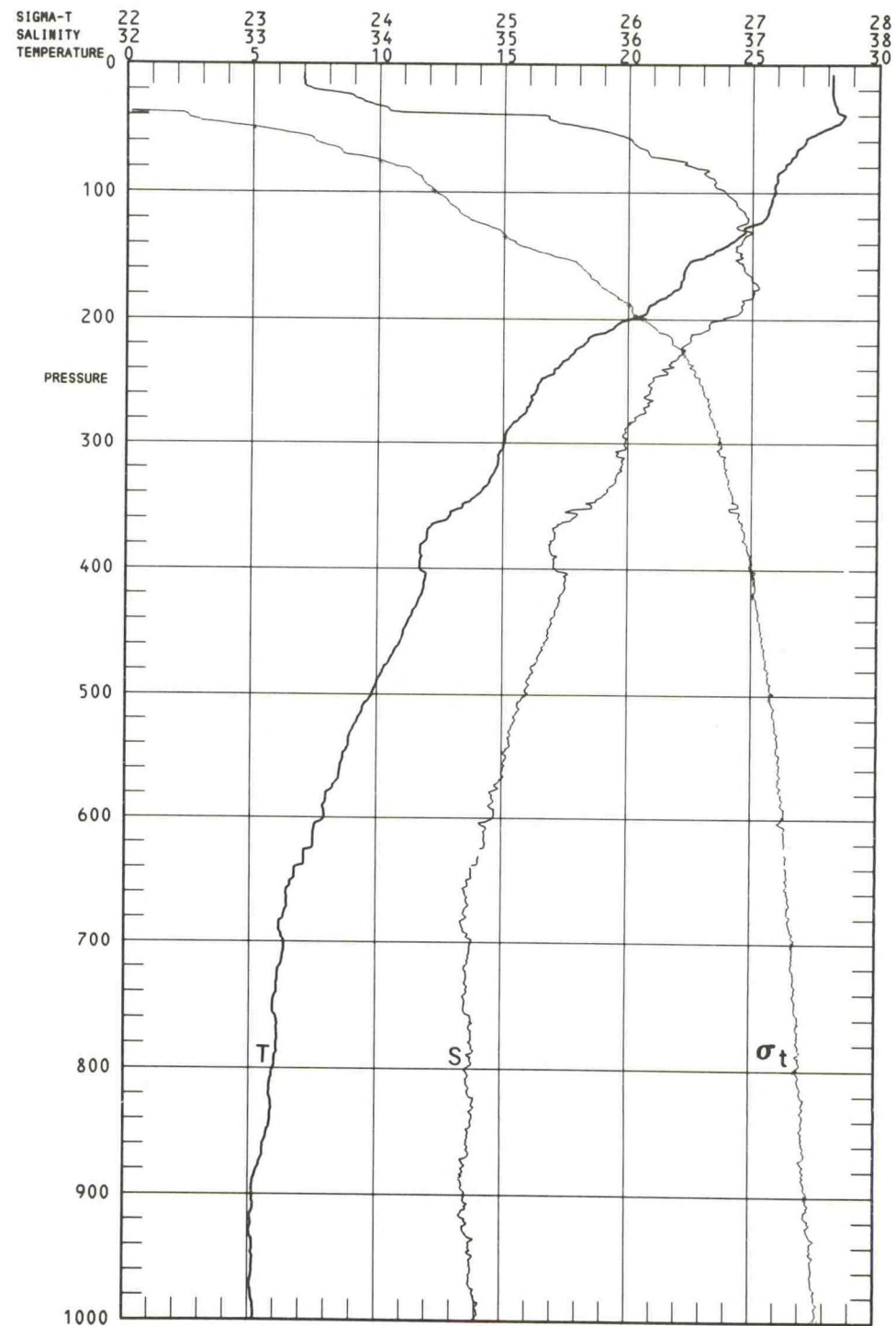
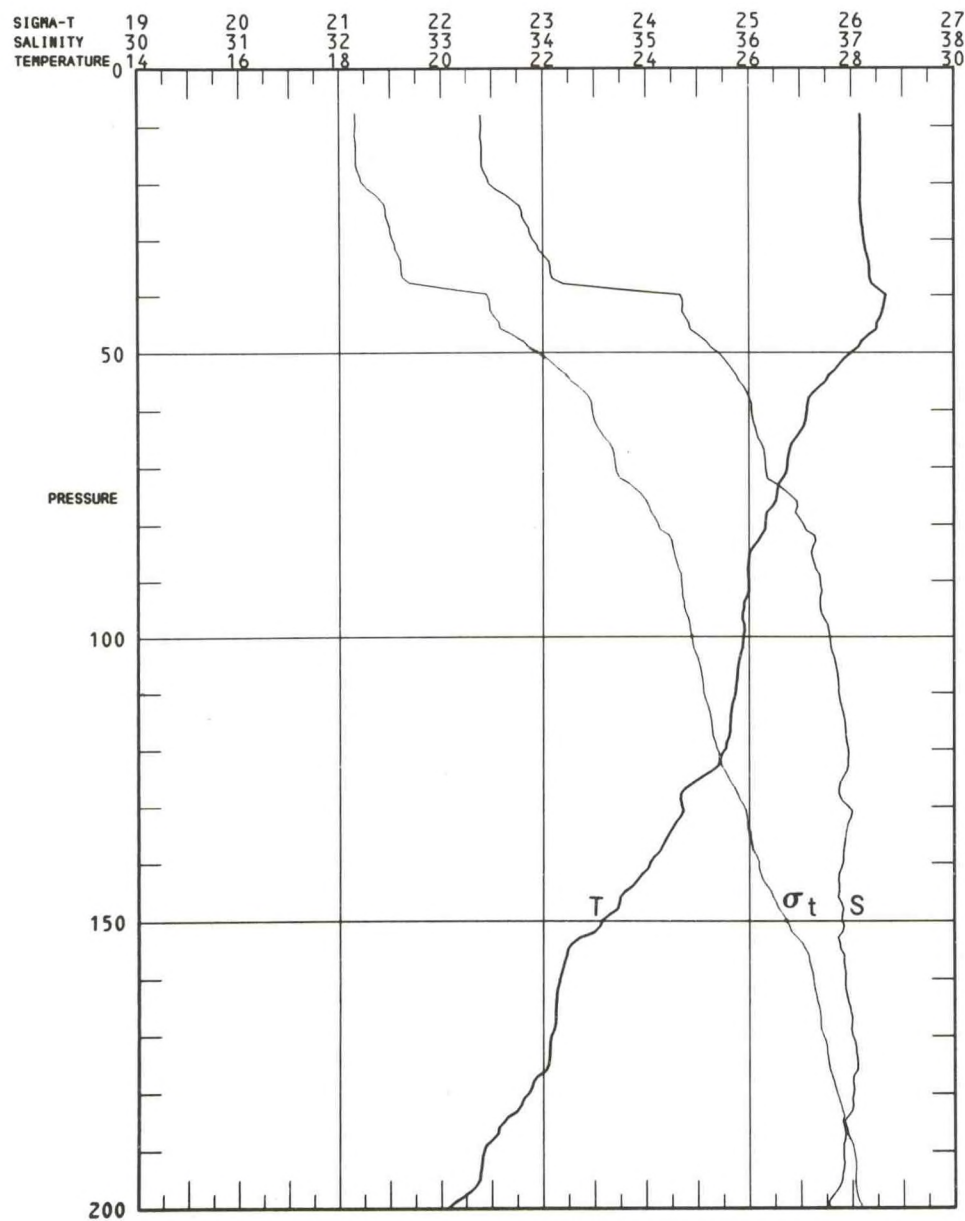
Rockaway, June 29, 1969, 1519 GMT, 15°21'N 056°31'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 29, 1969, 1800 GMT, 15°23'N 056°38'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

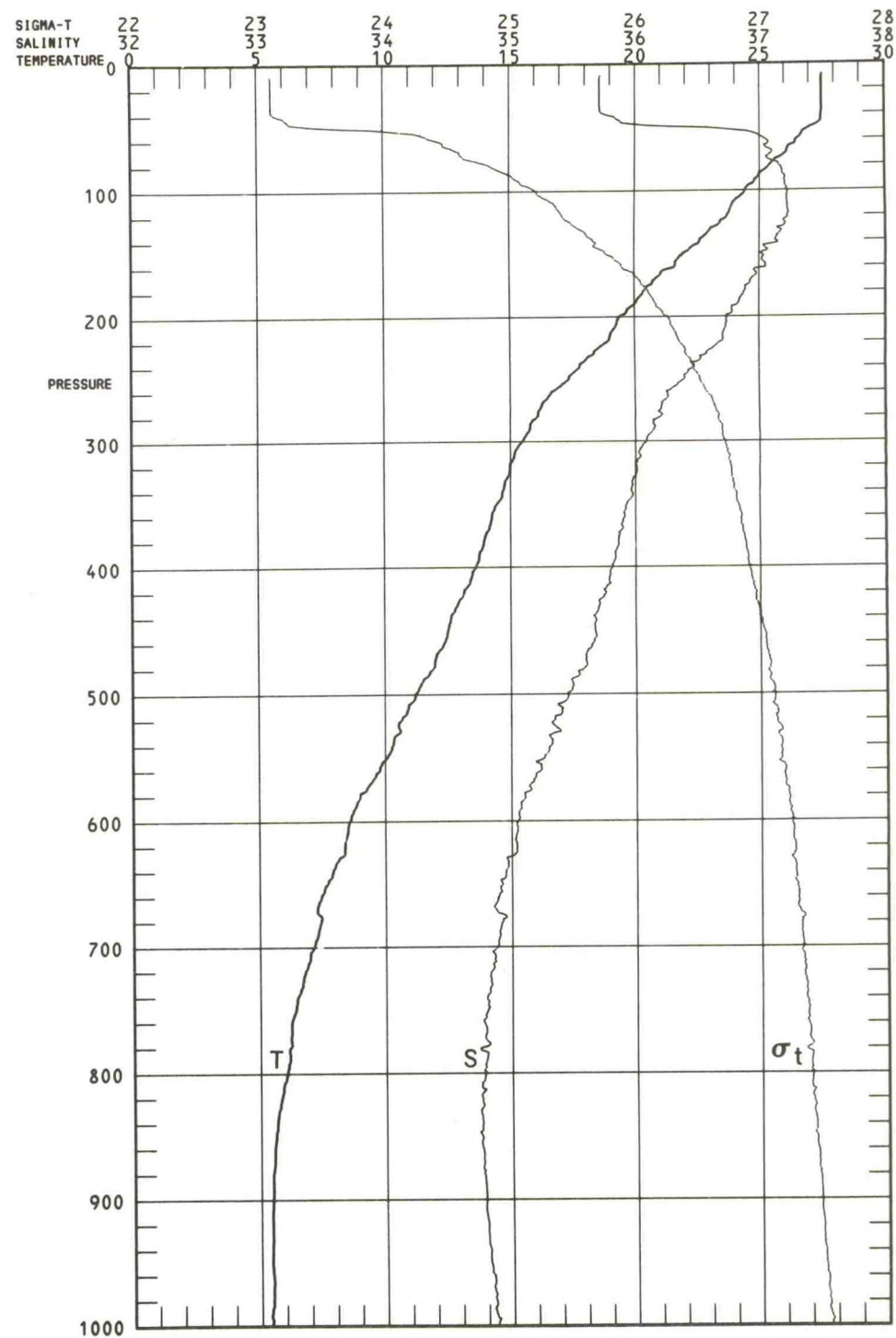
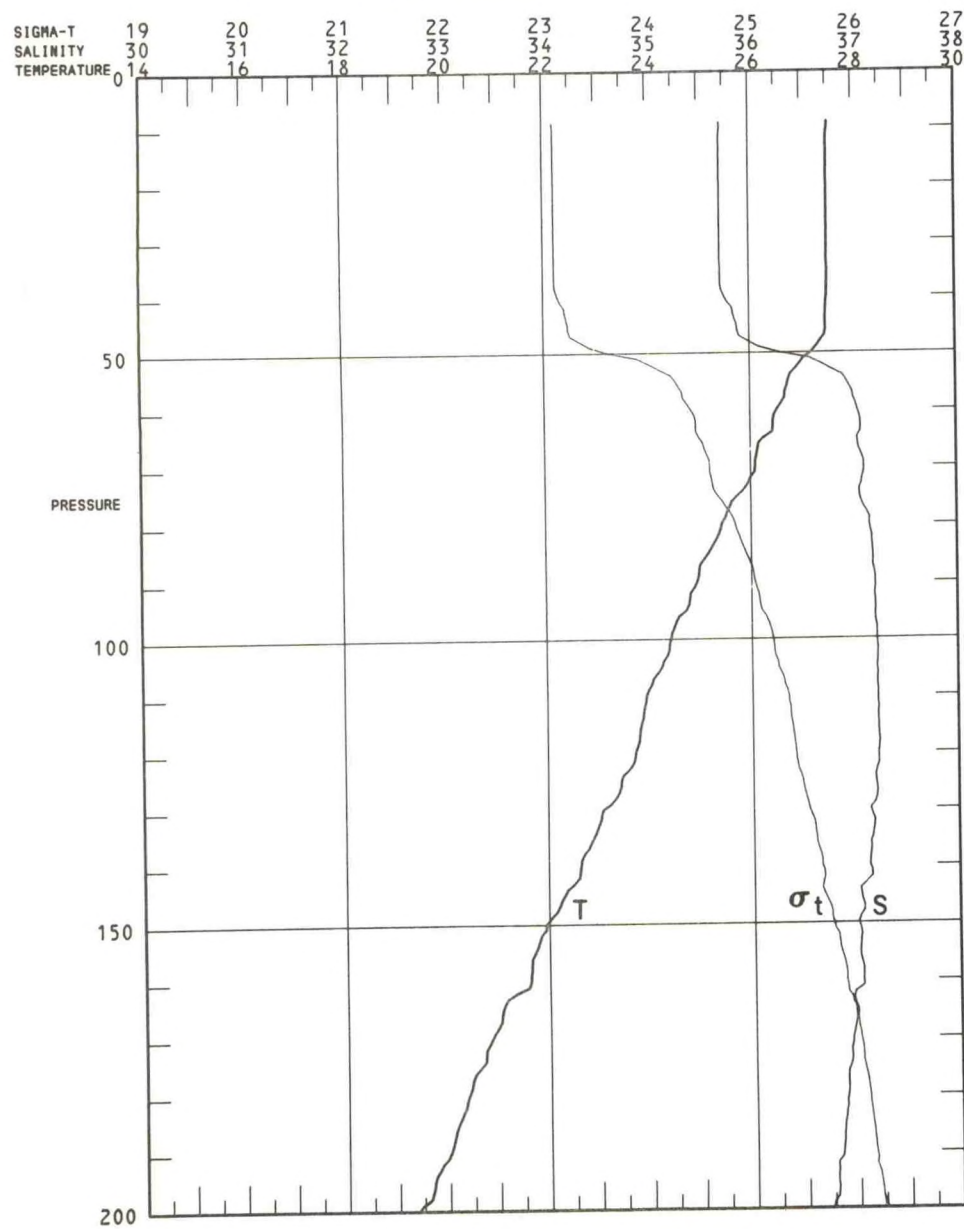


Rockaway, June 29, 1969, 2103 GMT, 15°26'N 056°43'W



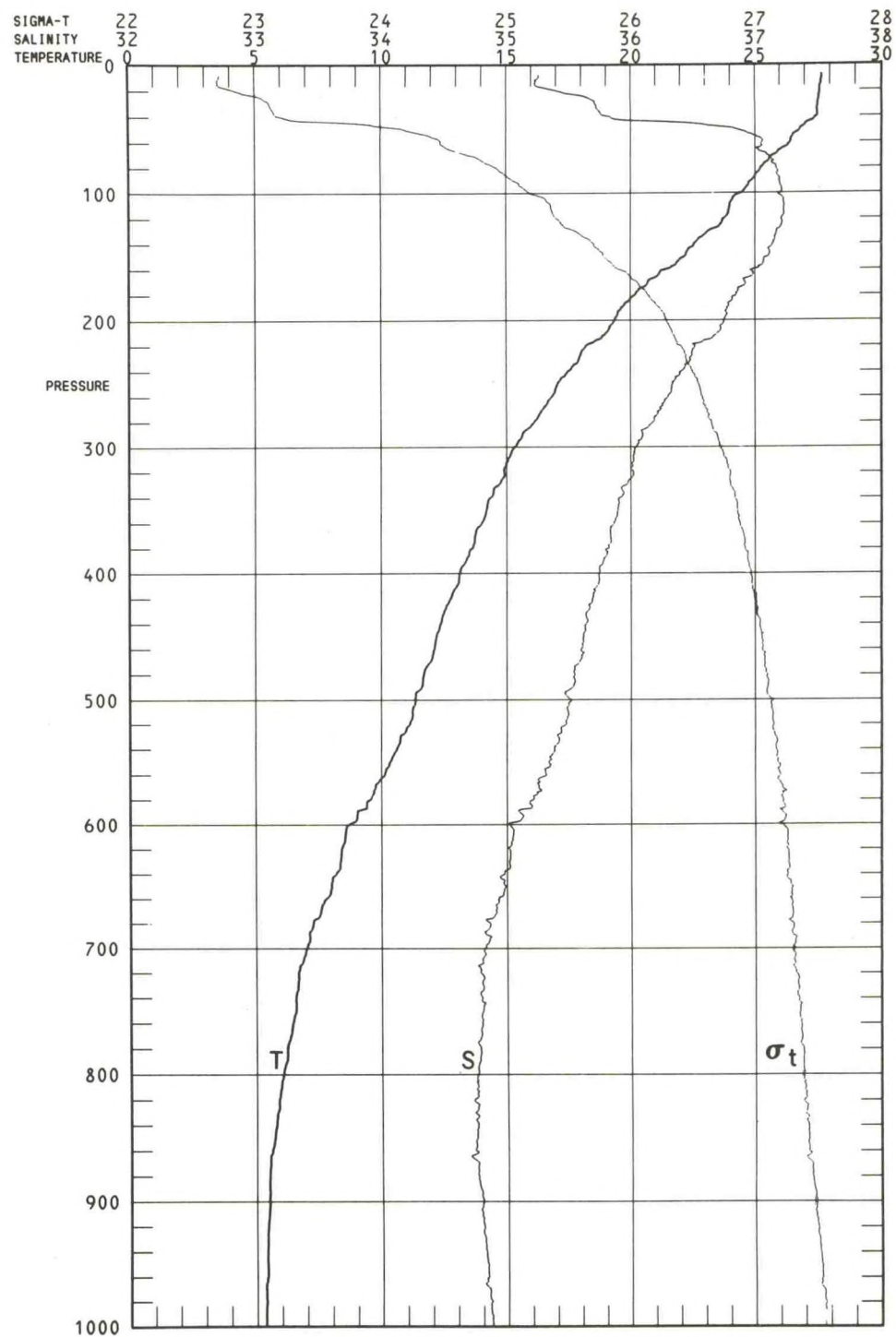
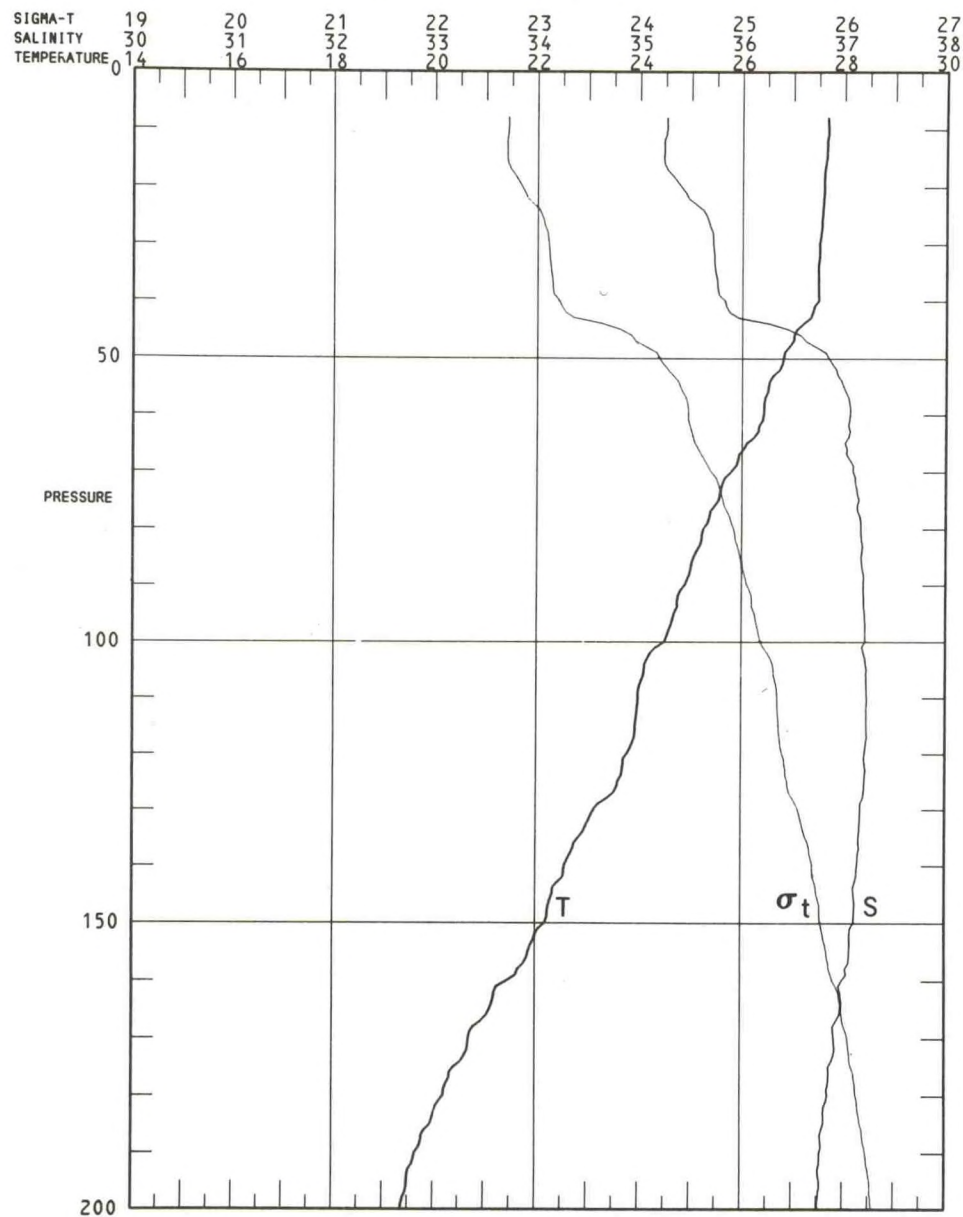
ROCKAWAY YEAR 1969 DAY 181 TIME 1201 GMT LAT 17°33'N LON 054°37'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



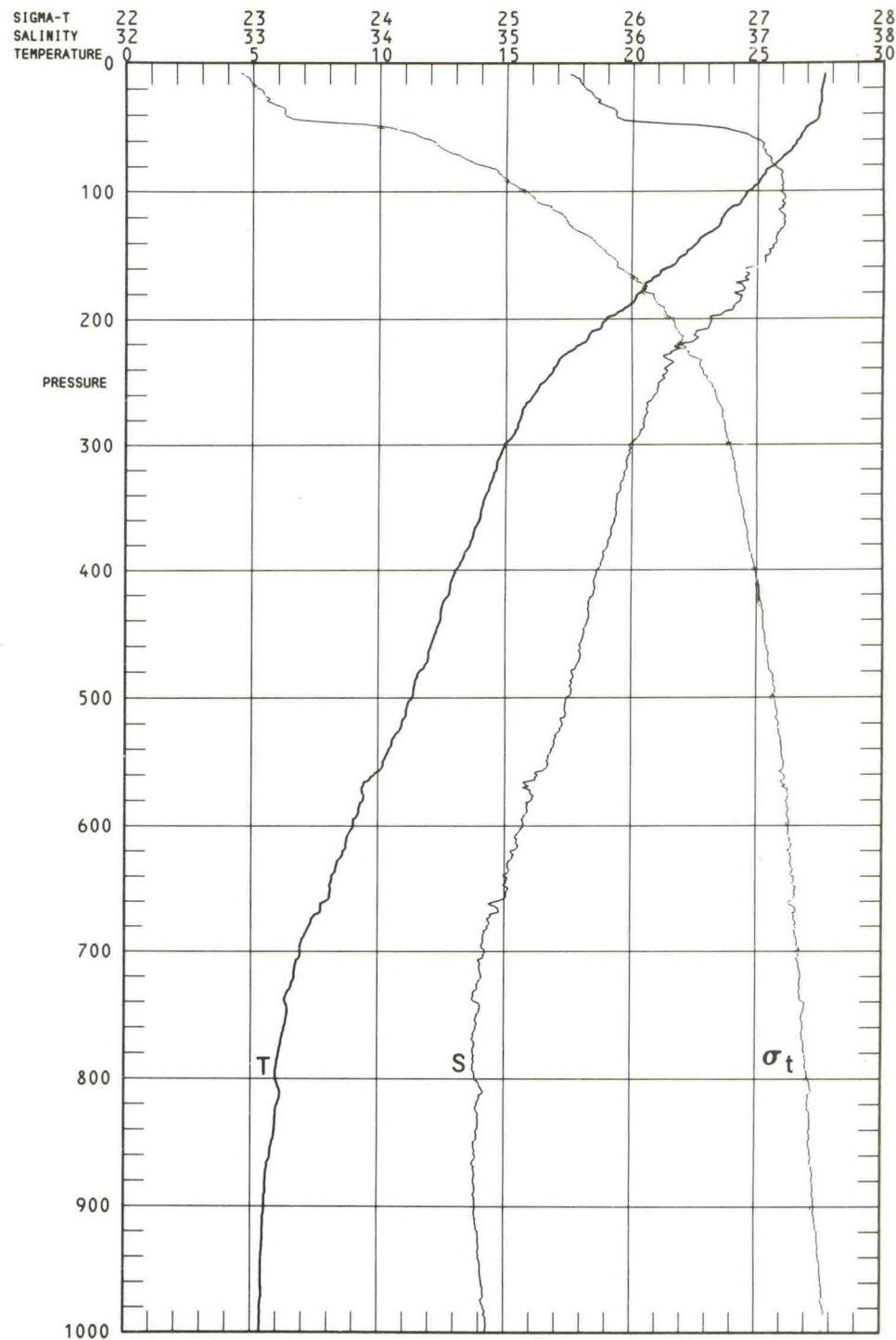
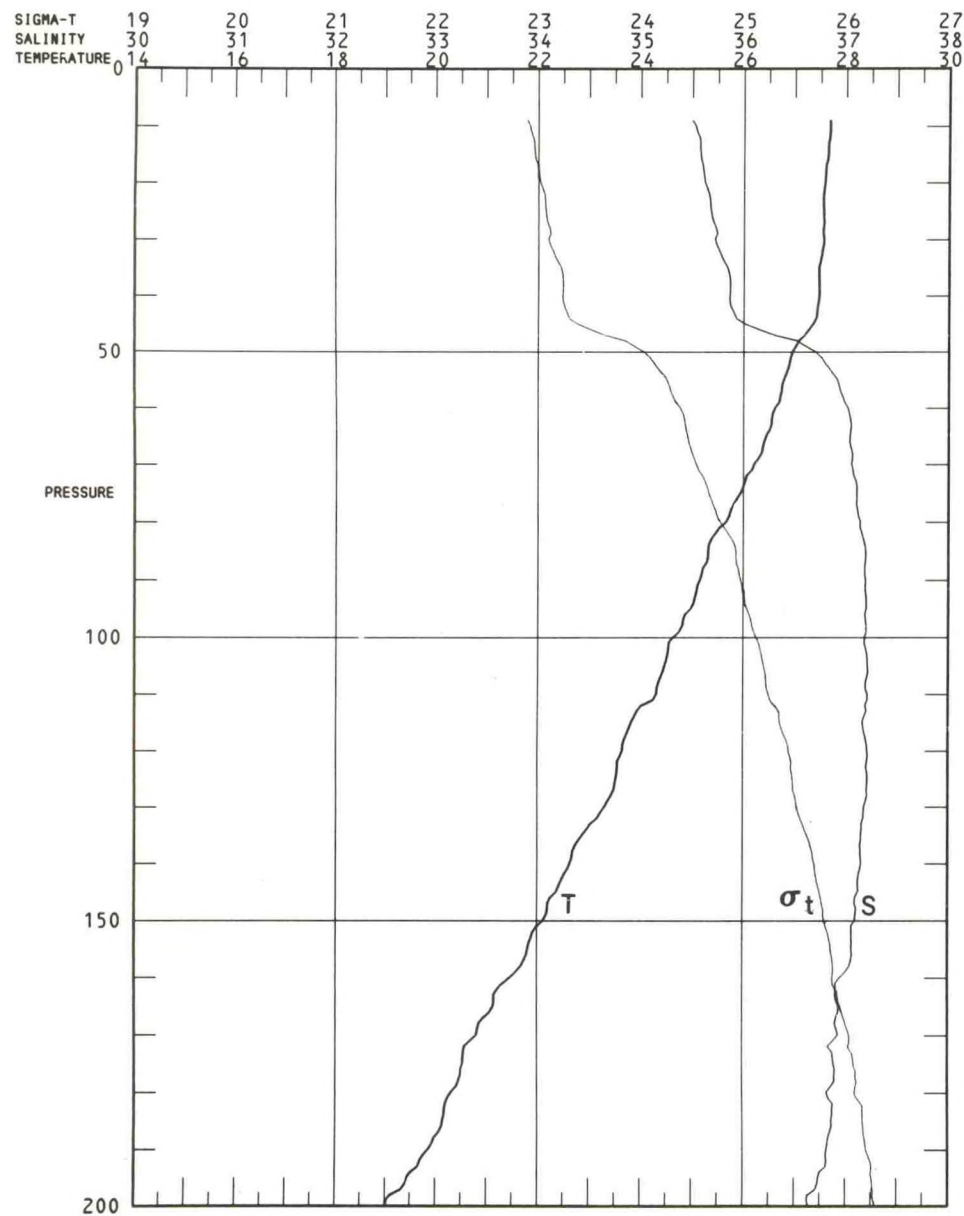
Rockaway, June 30, 1969, 1201 GMT, 17°33'N 056°37'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 30, 1969, 1459 GMT. 17°35'N 054°35'W

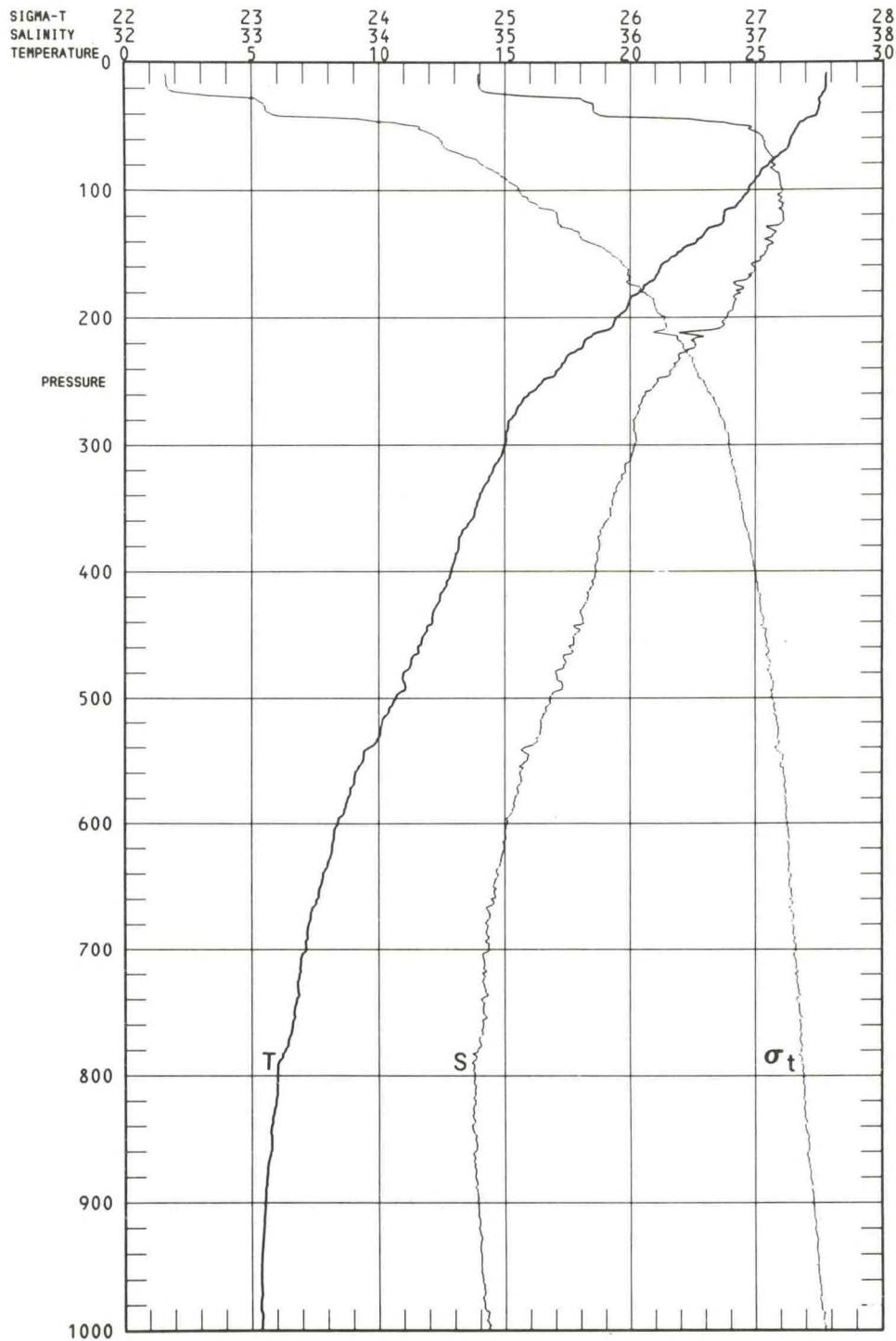
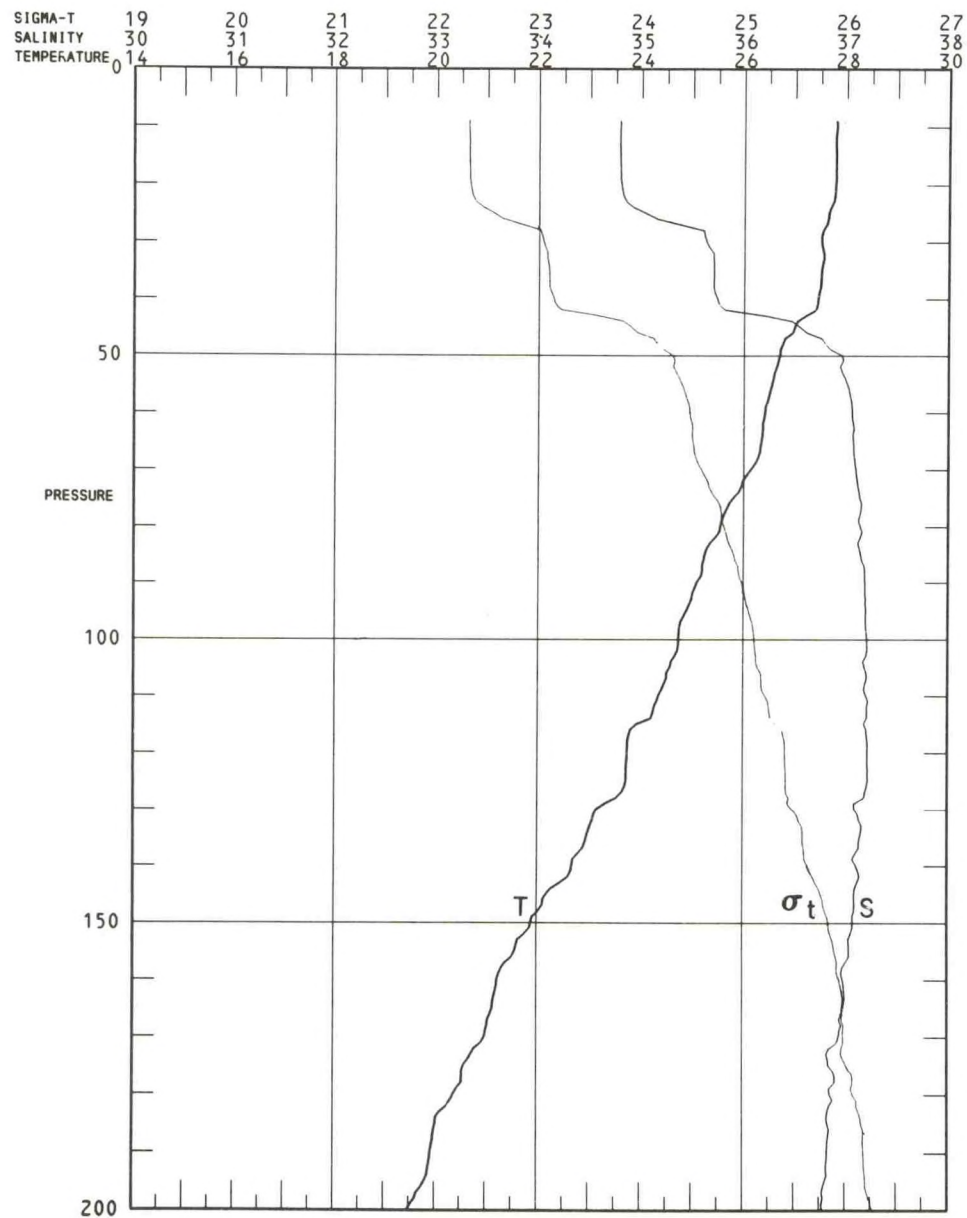
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 30, 1969, 1804 GMT, 17°37'N 054°37'W

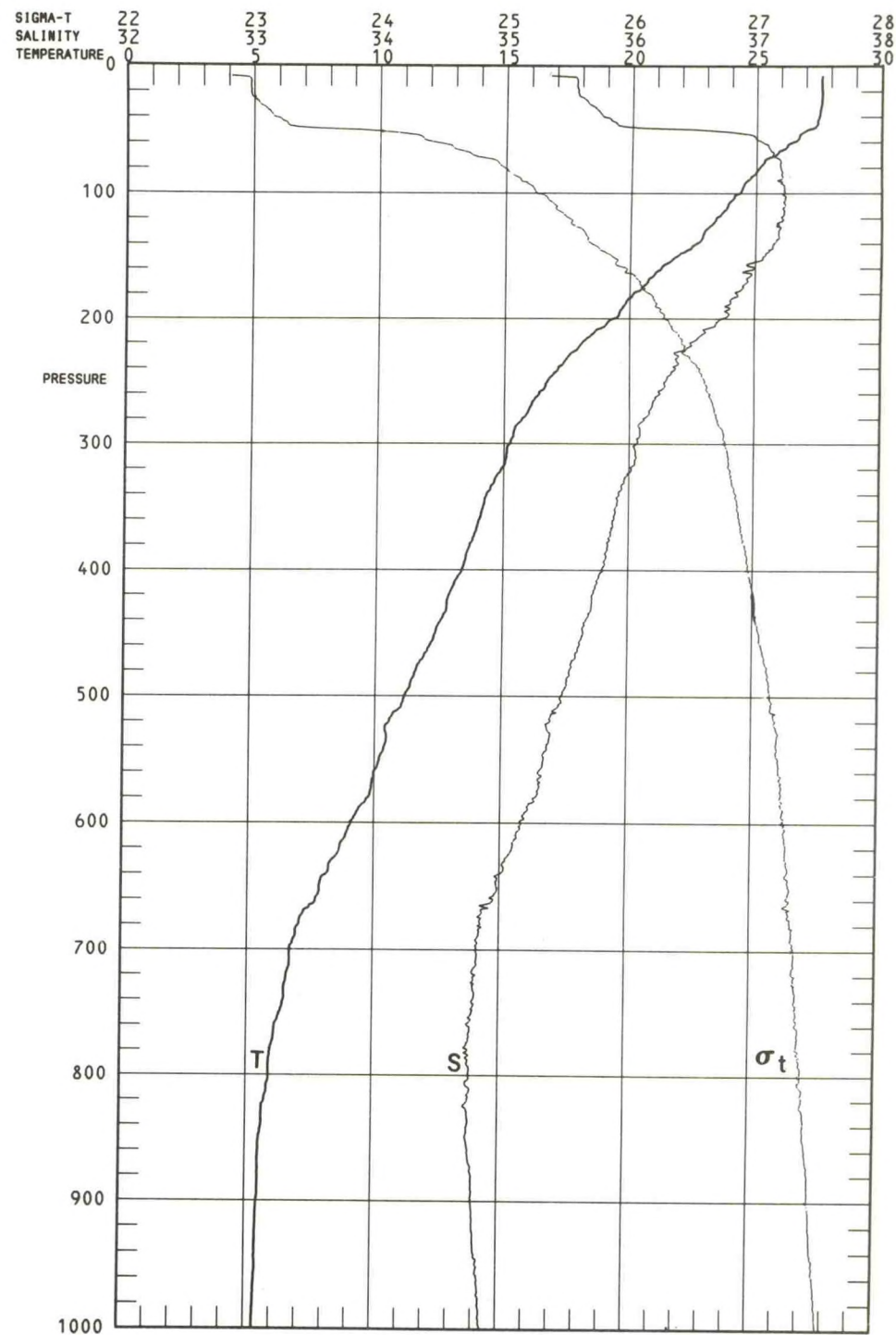
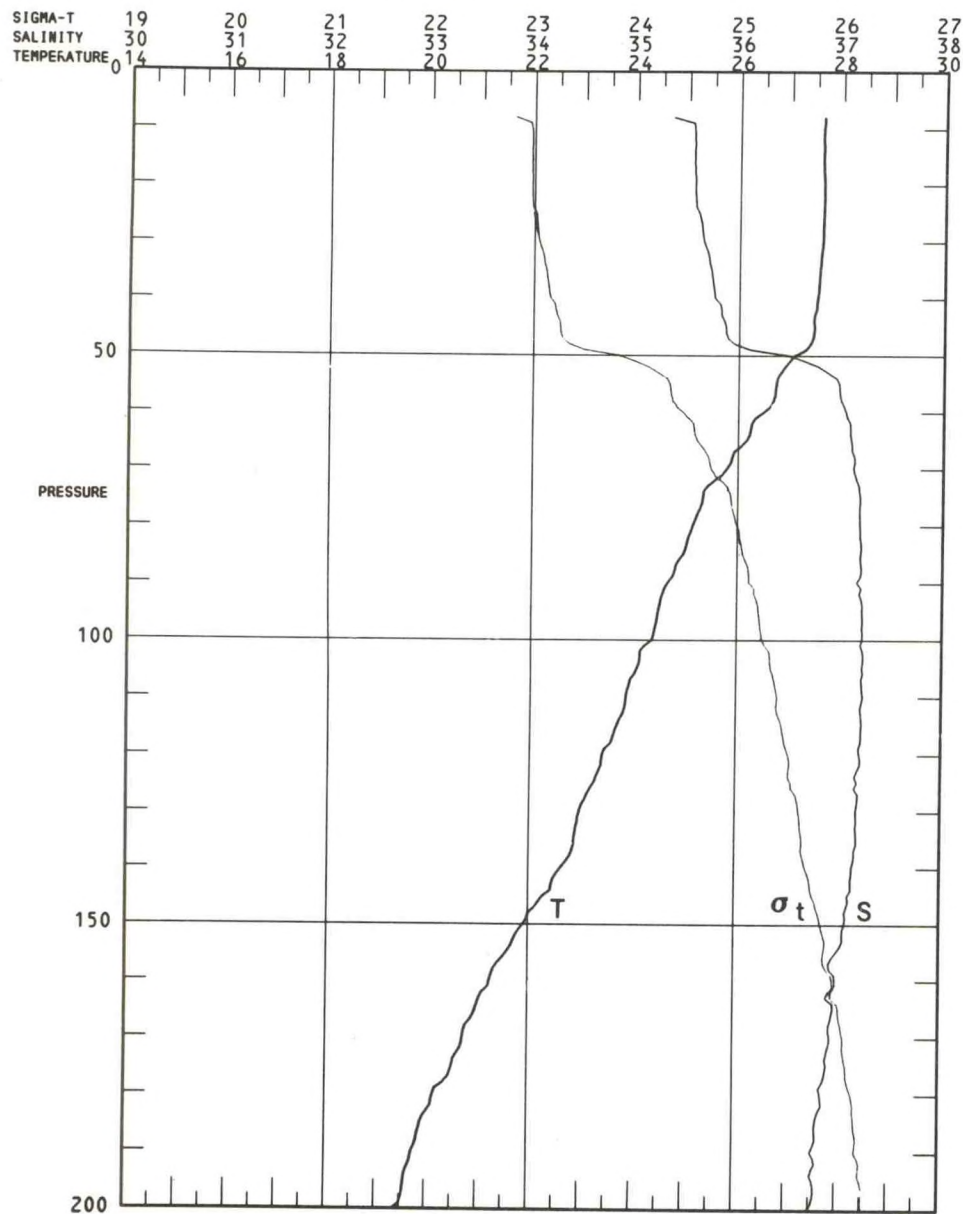


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, June 30, 1969, 2058 GMT, 17°37'N 054°30'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

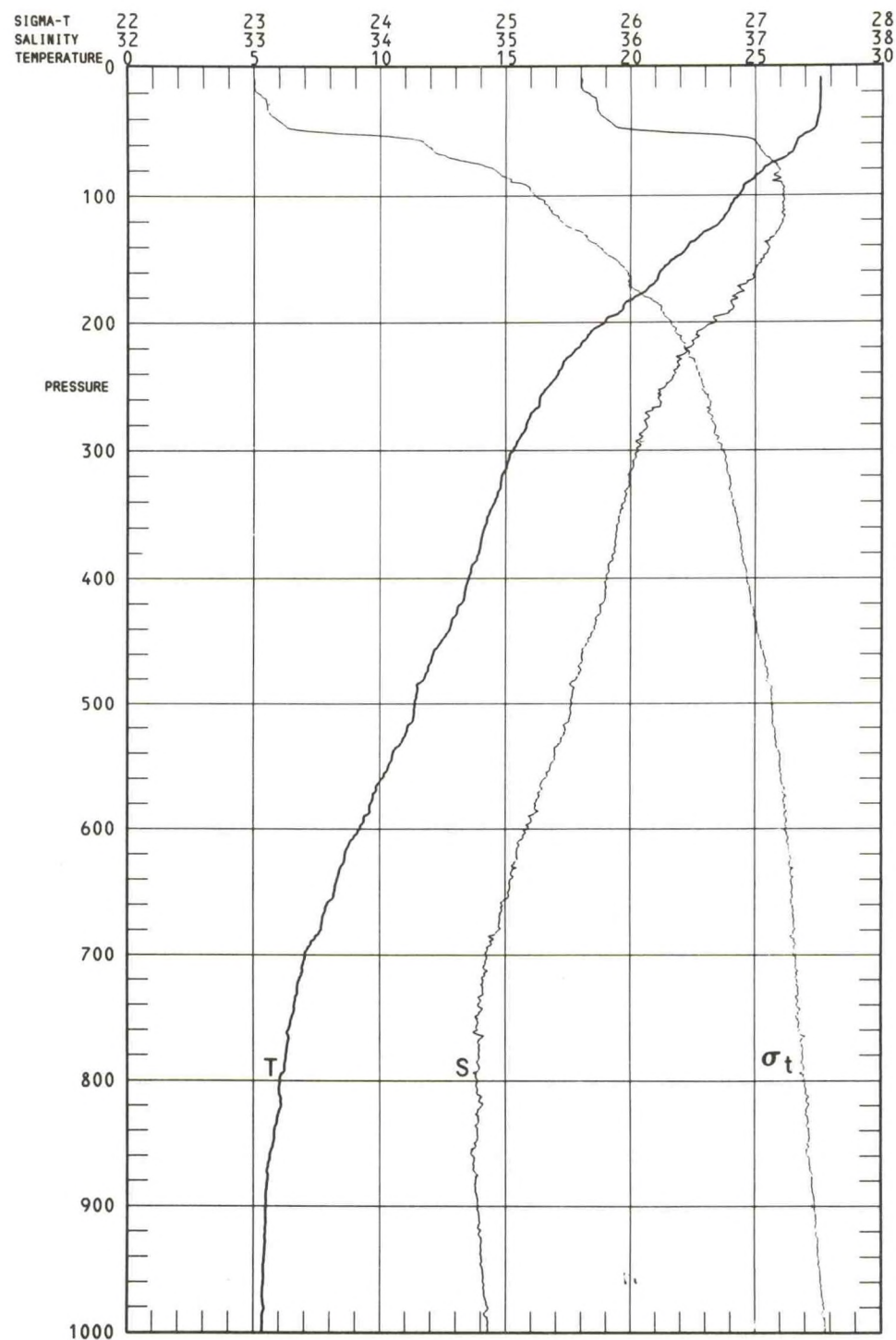
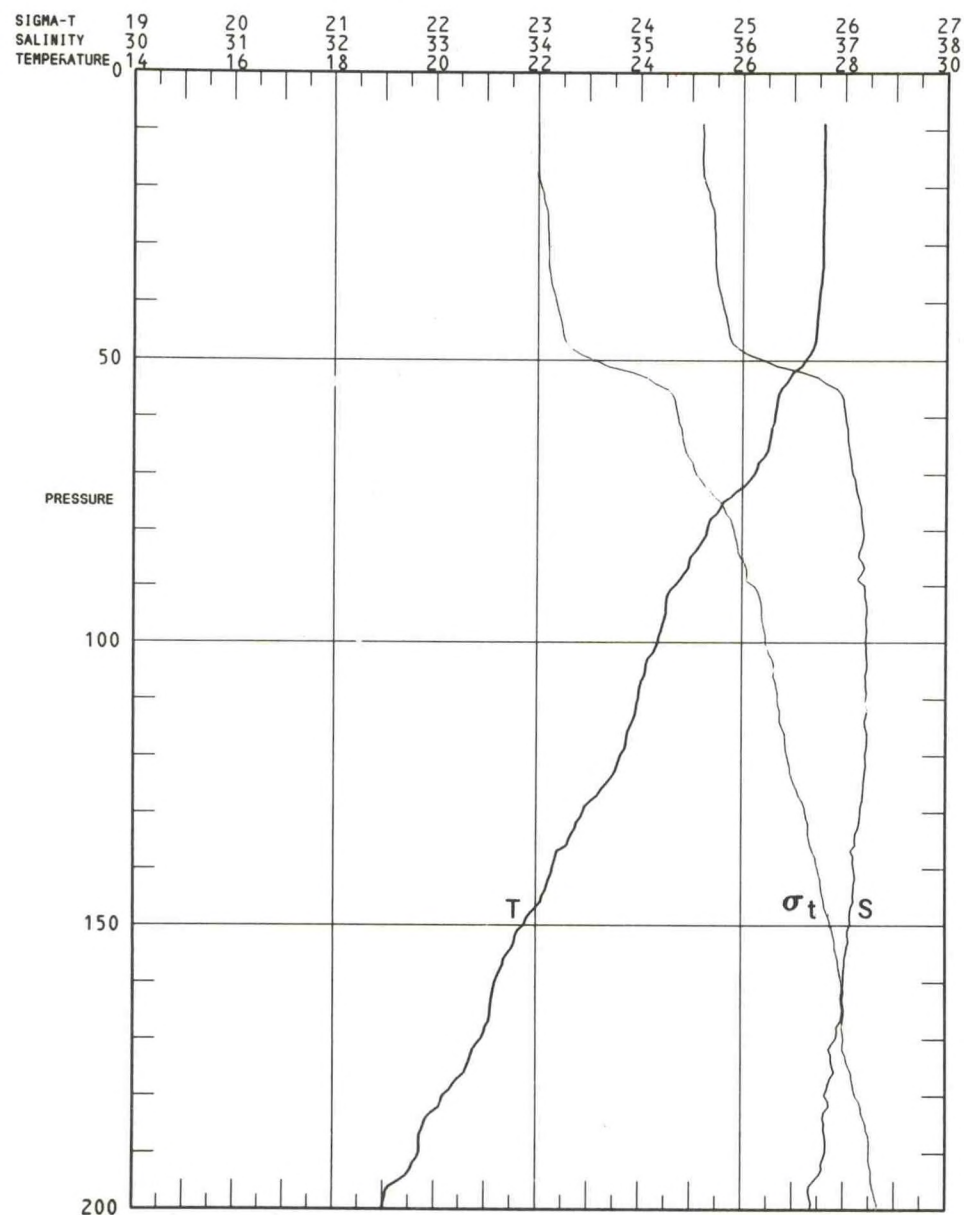


Rockaway, July 1, 1969, 0056 GMT, 17°35'N 054°35'W

ROCKAWAY YEAR 1969 DAY 182 TIME 258 GMT LAT.17°35'N LON.054°36'W

# STD Depth-Sorted Plots

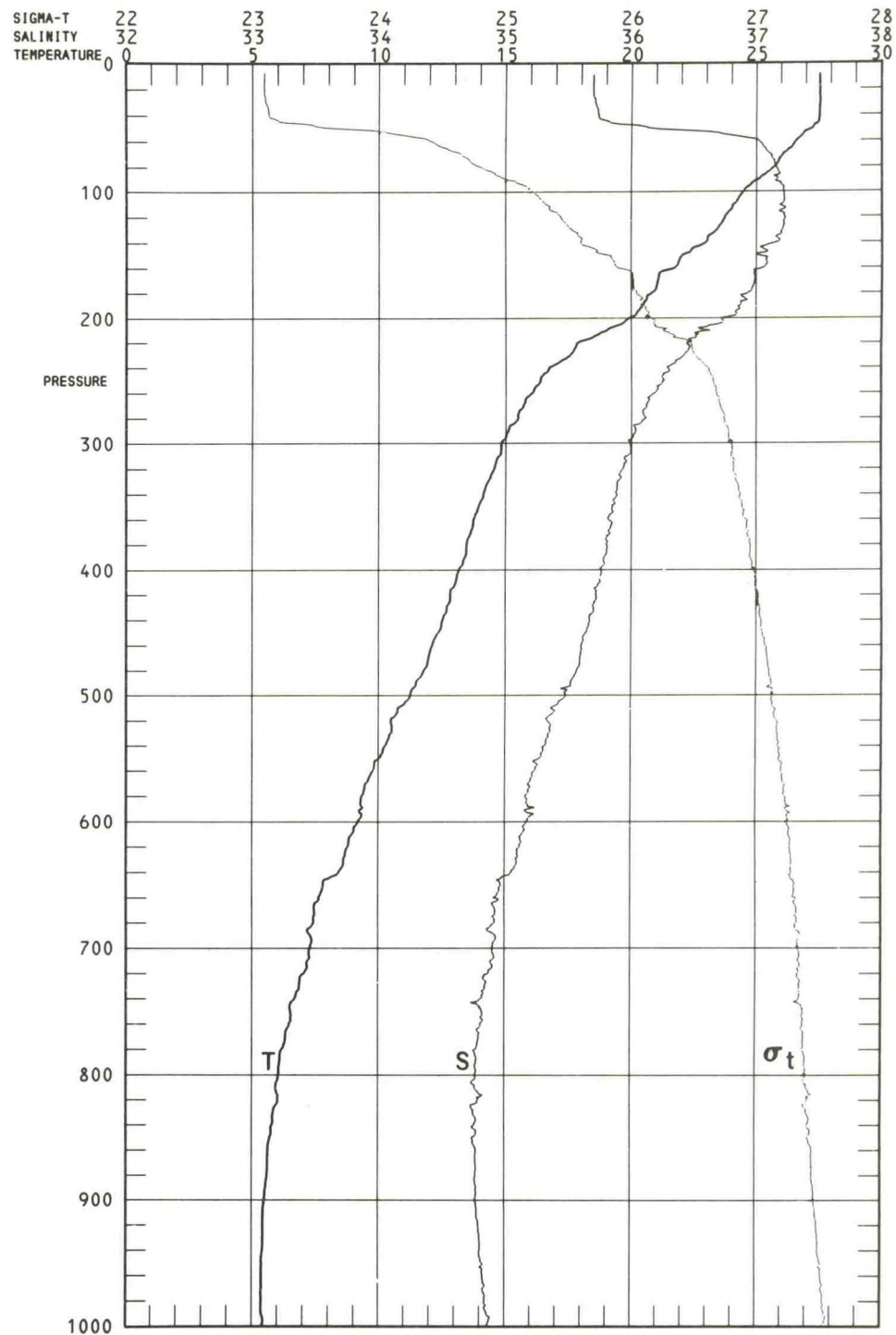
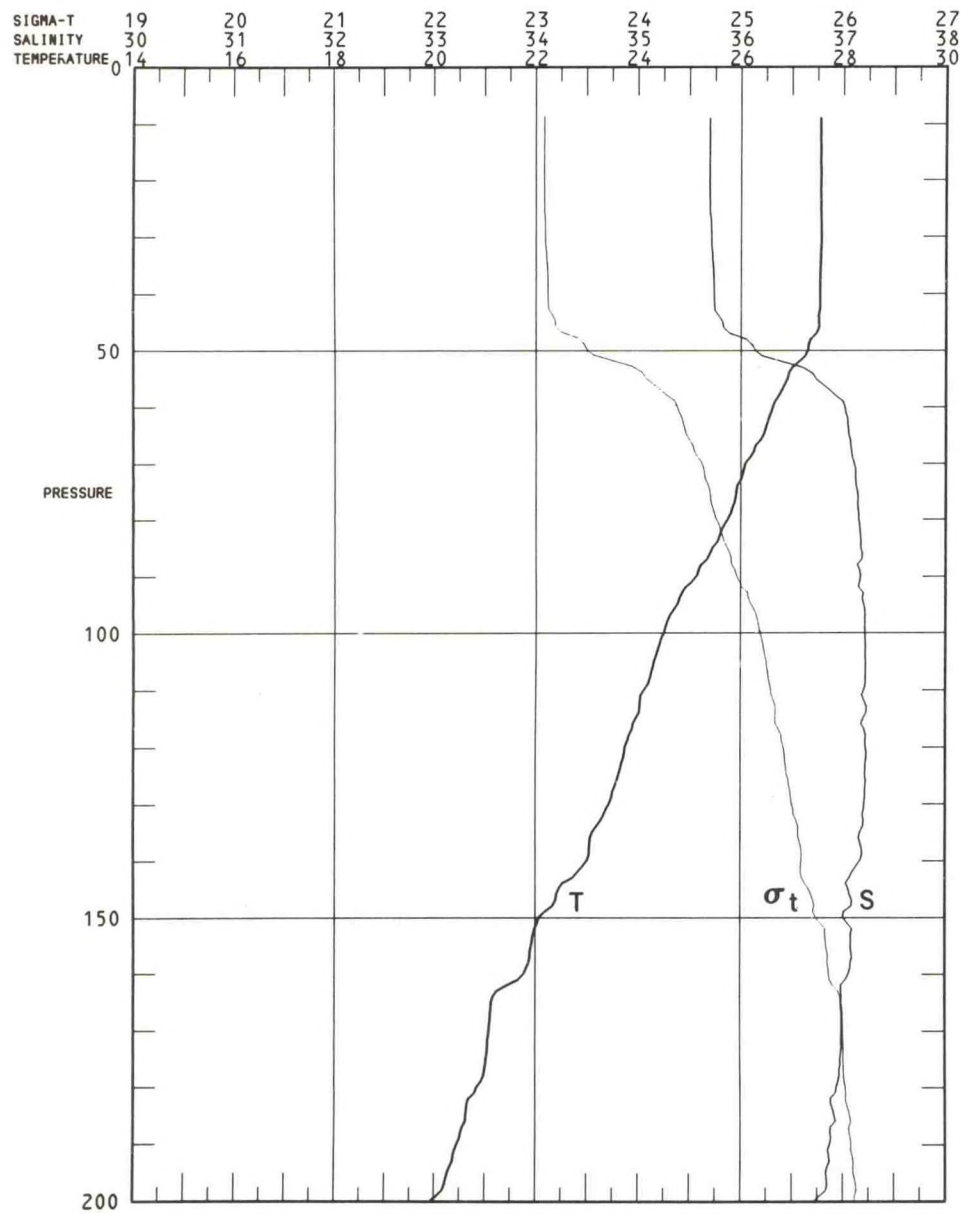
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 1, 1969, 0258 GMT, 17°35'N 054°36'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



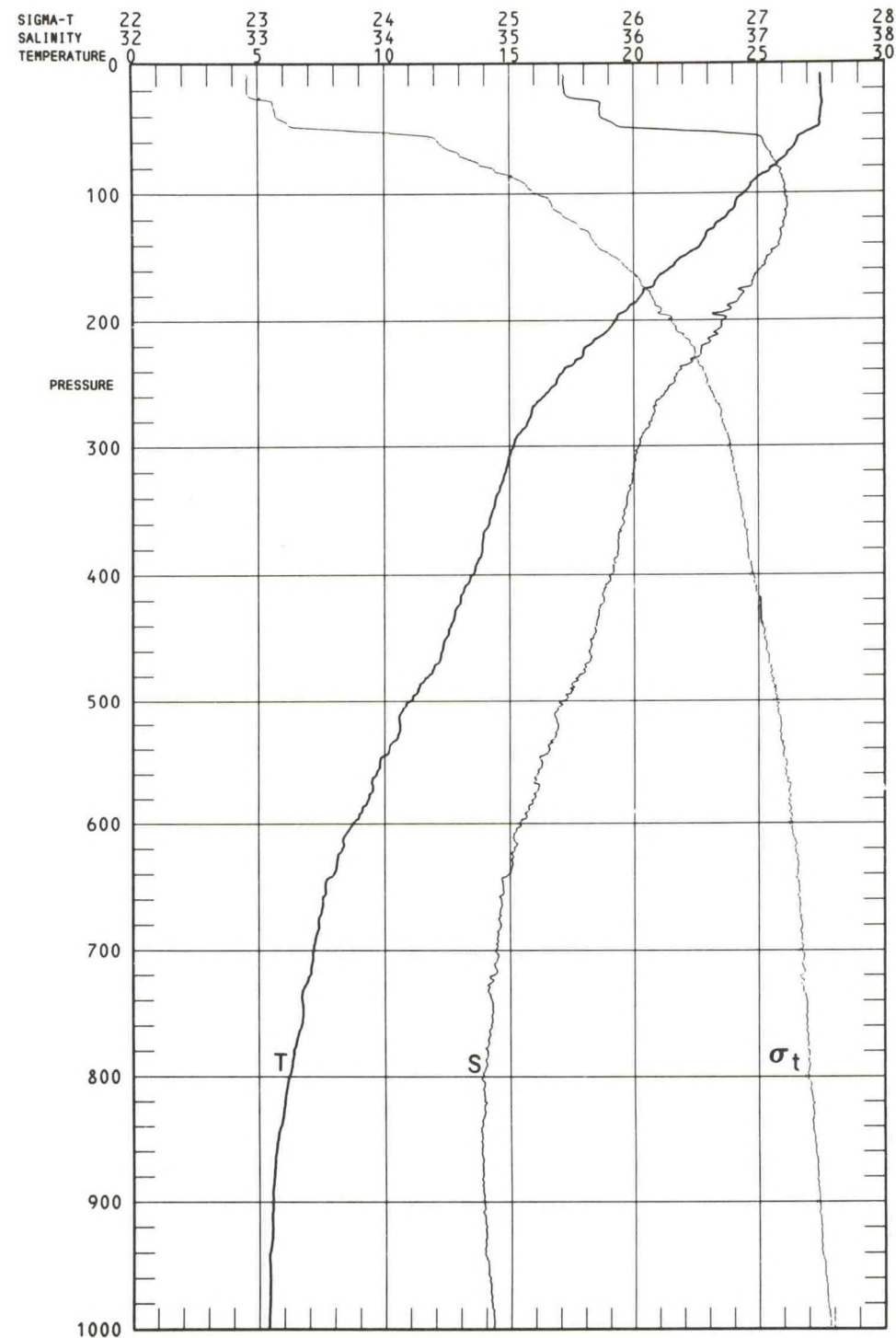
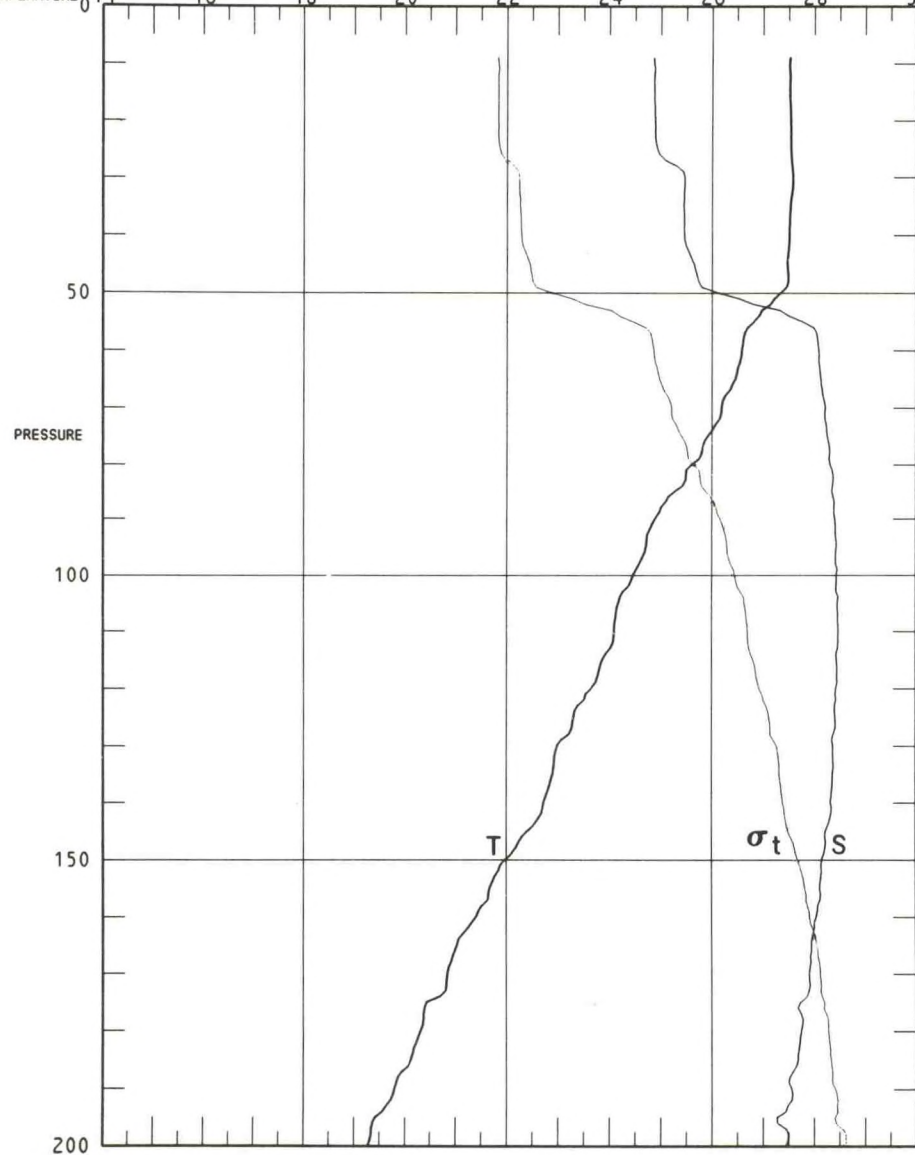
Rockaway, July 1, 1969, 0558 GMT, 17°34'N 054°37'W

ROCKAWAY YEAR 1969 DAY 182 TIME 902 GMT LAT.17°30N LON.054°34W

# STD Depth-Sorted Plots

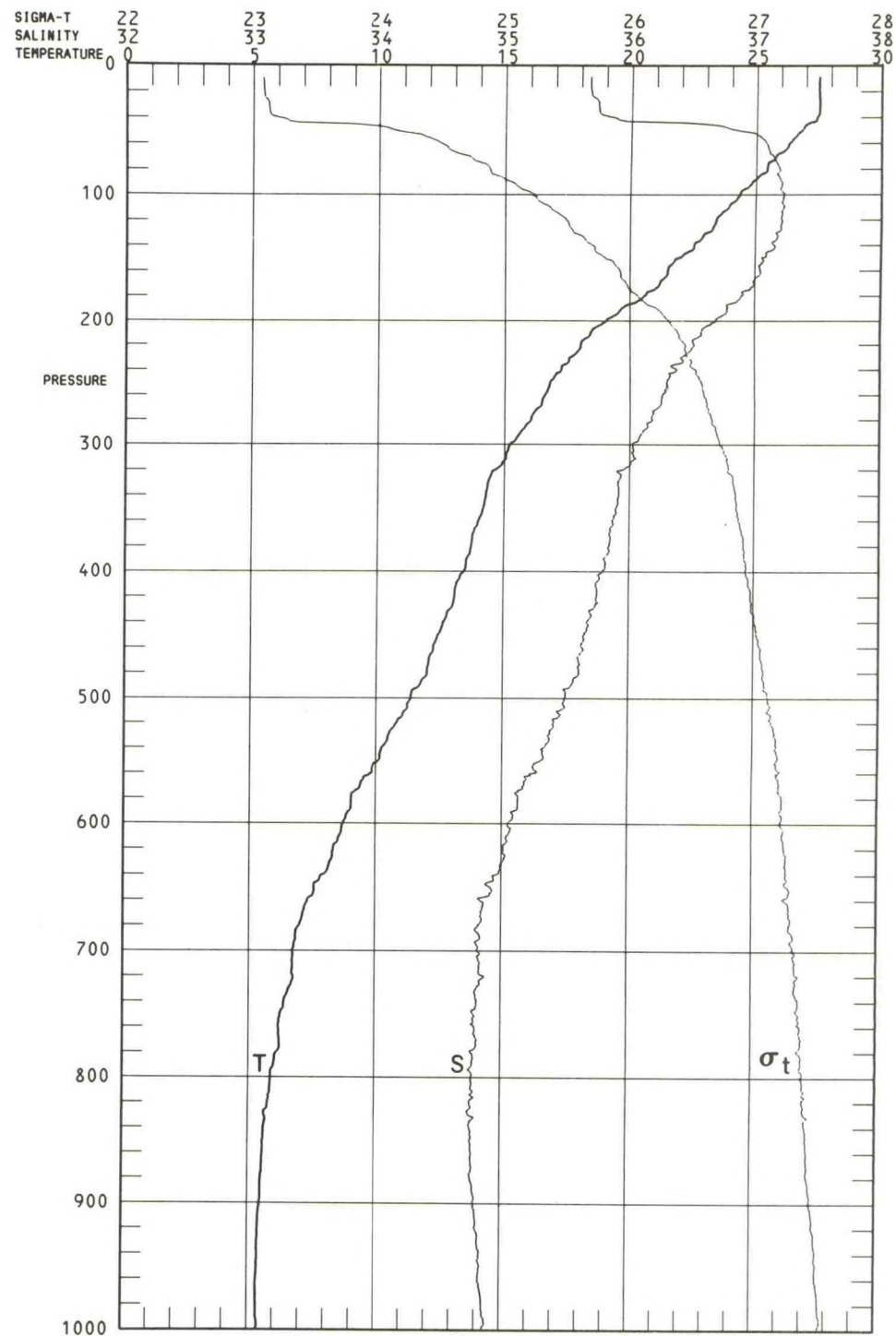
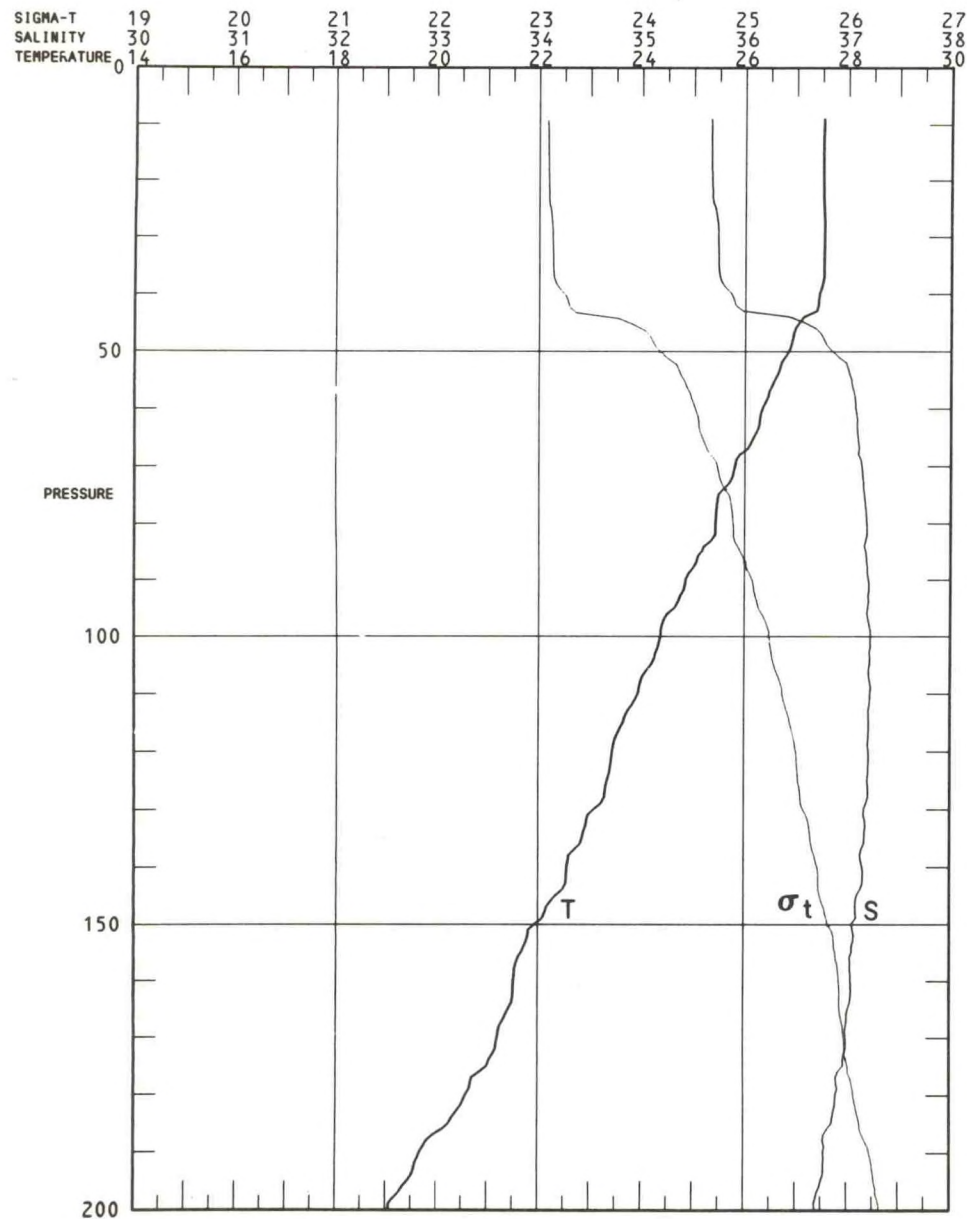
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

SIGMA-T	19	20	21	22	23	24	25	26	27
SALINITY	30	31	32	33	34	35	36	37	38
TEMPERATURE	14	16	18	20	22	24	26	28	30



Rockaway, July 1, 1969, 0902 GMT, 17°30'N 054°34'W

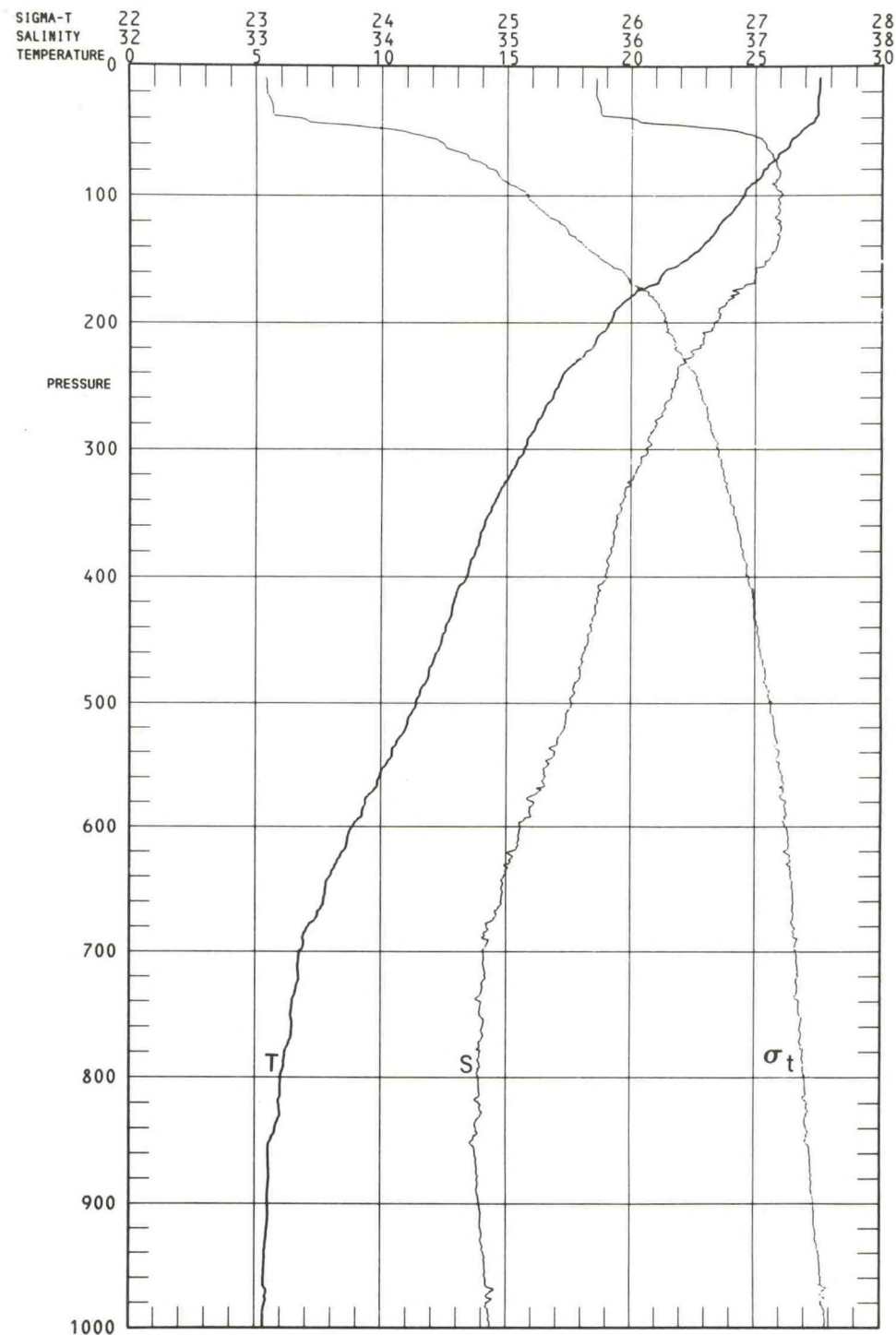
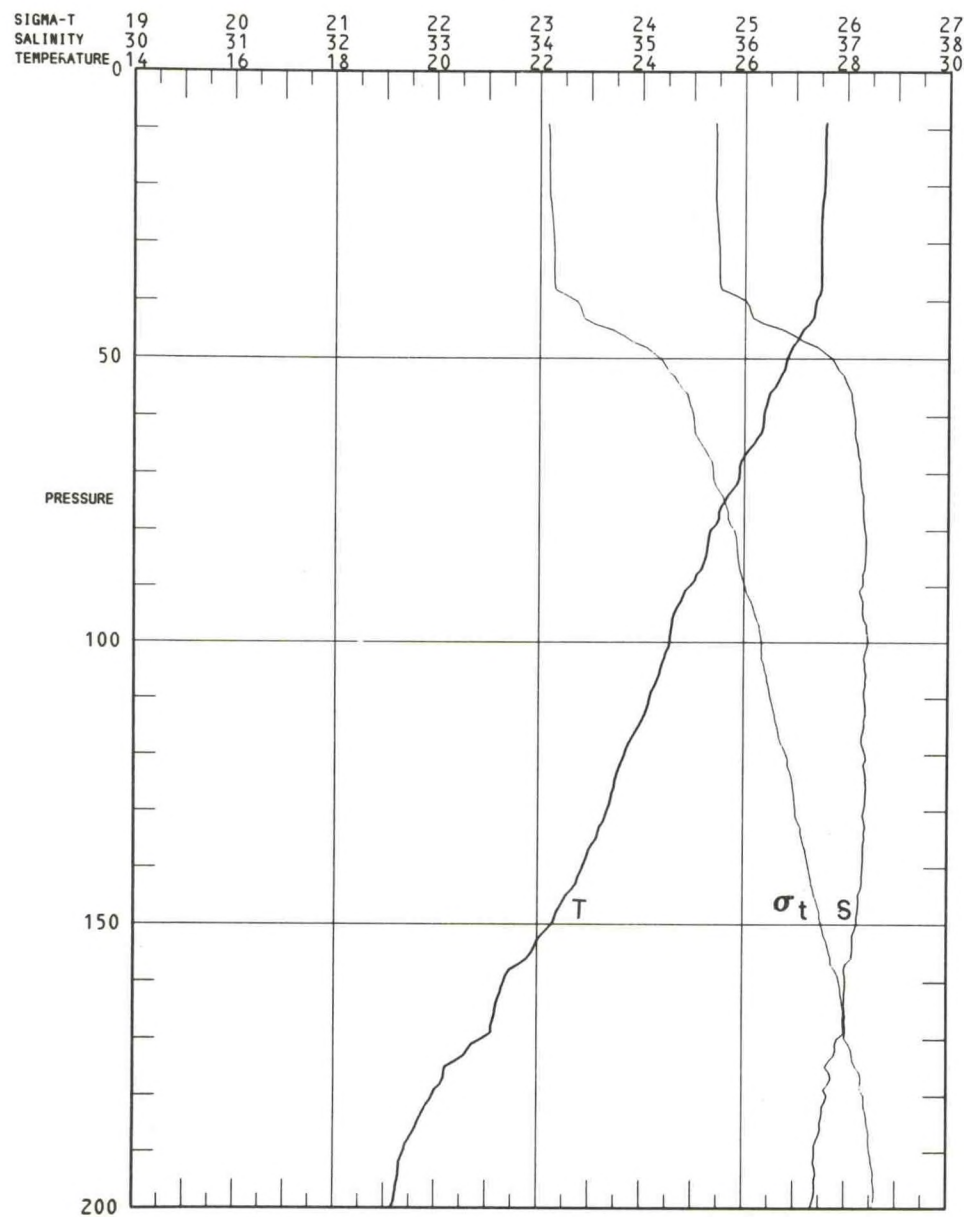
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 1, 1969, 1205 GMT, 17°36'N 054°35'W

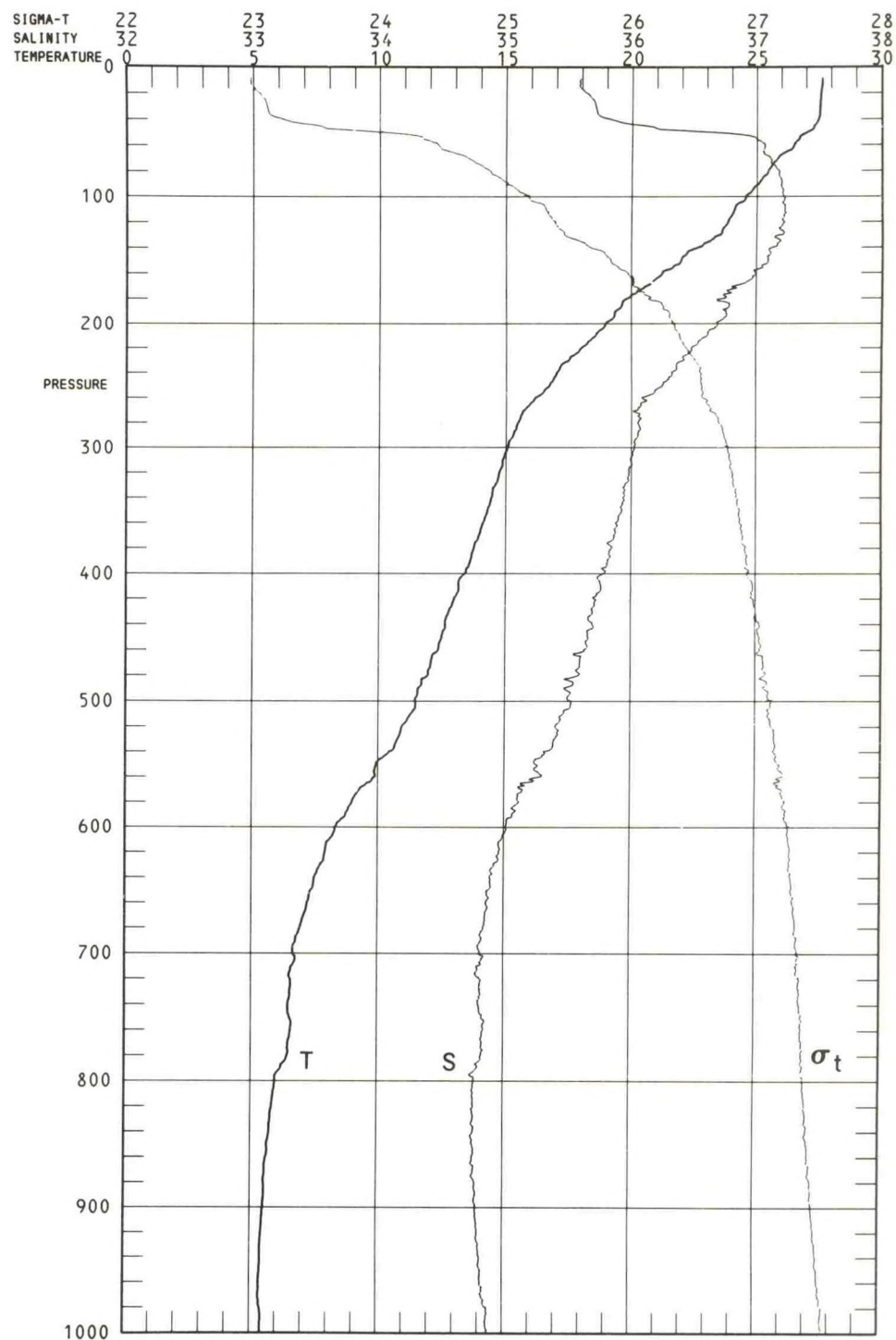
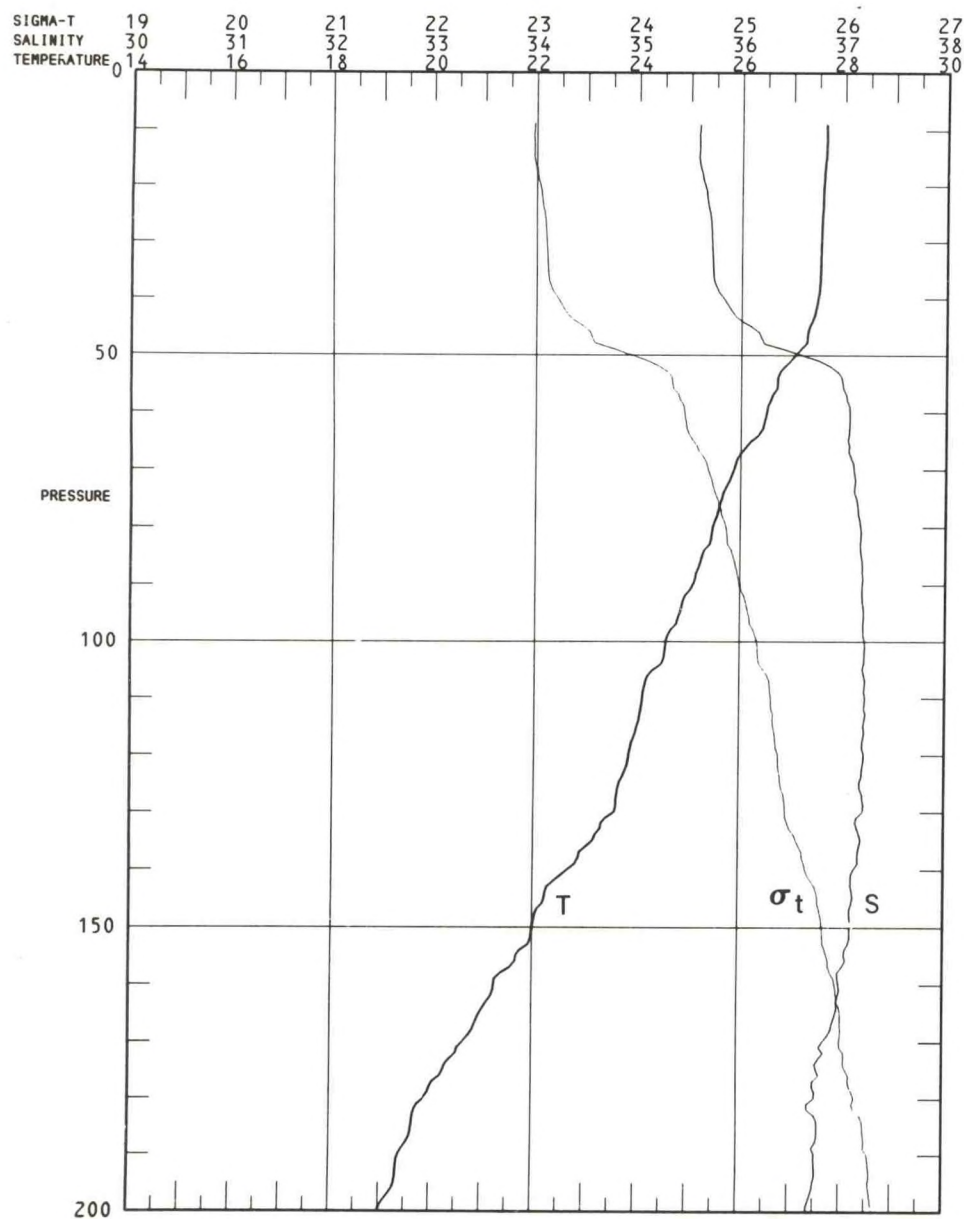


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 1, 1969, 1456 GMT, 17°37'N 054°37'W

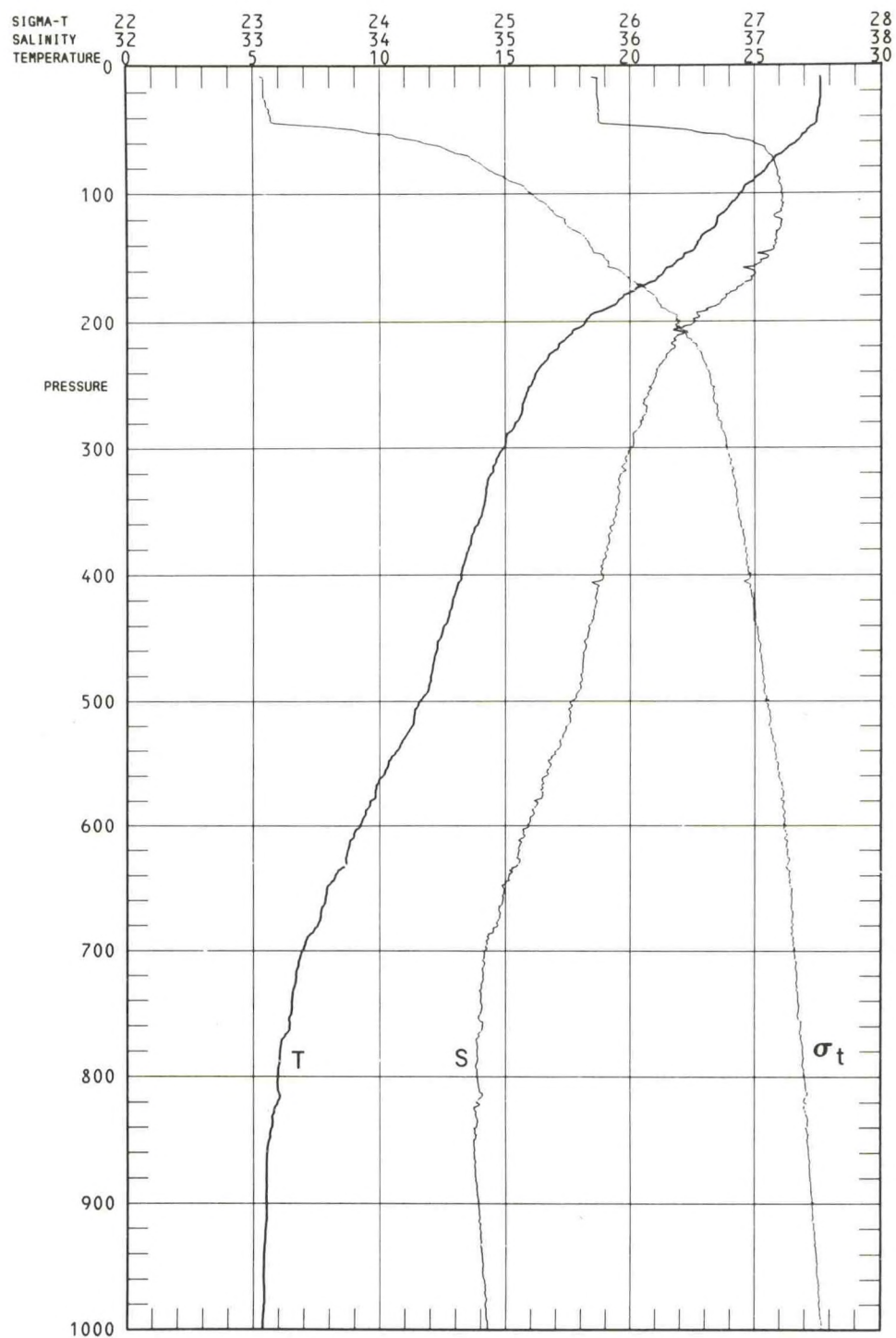
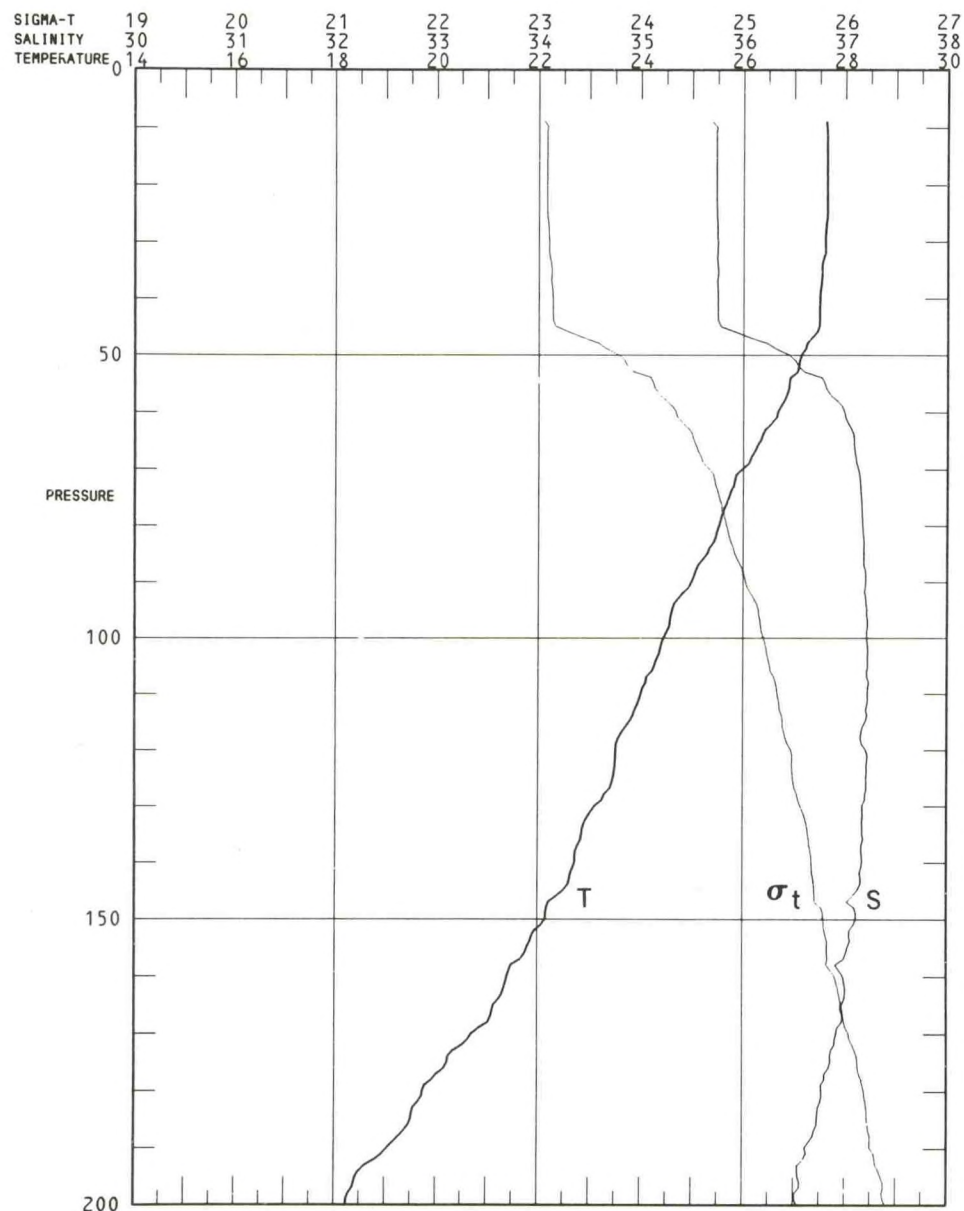
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 1, 1969, 1758 GMT, 17°38'N 054°33'W

# STD Depth-Sorted Plots

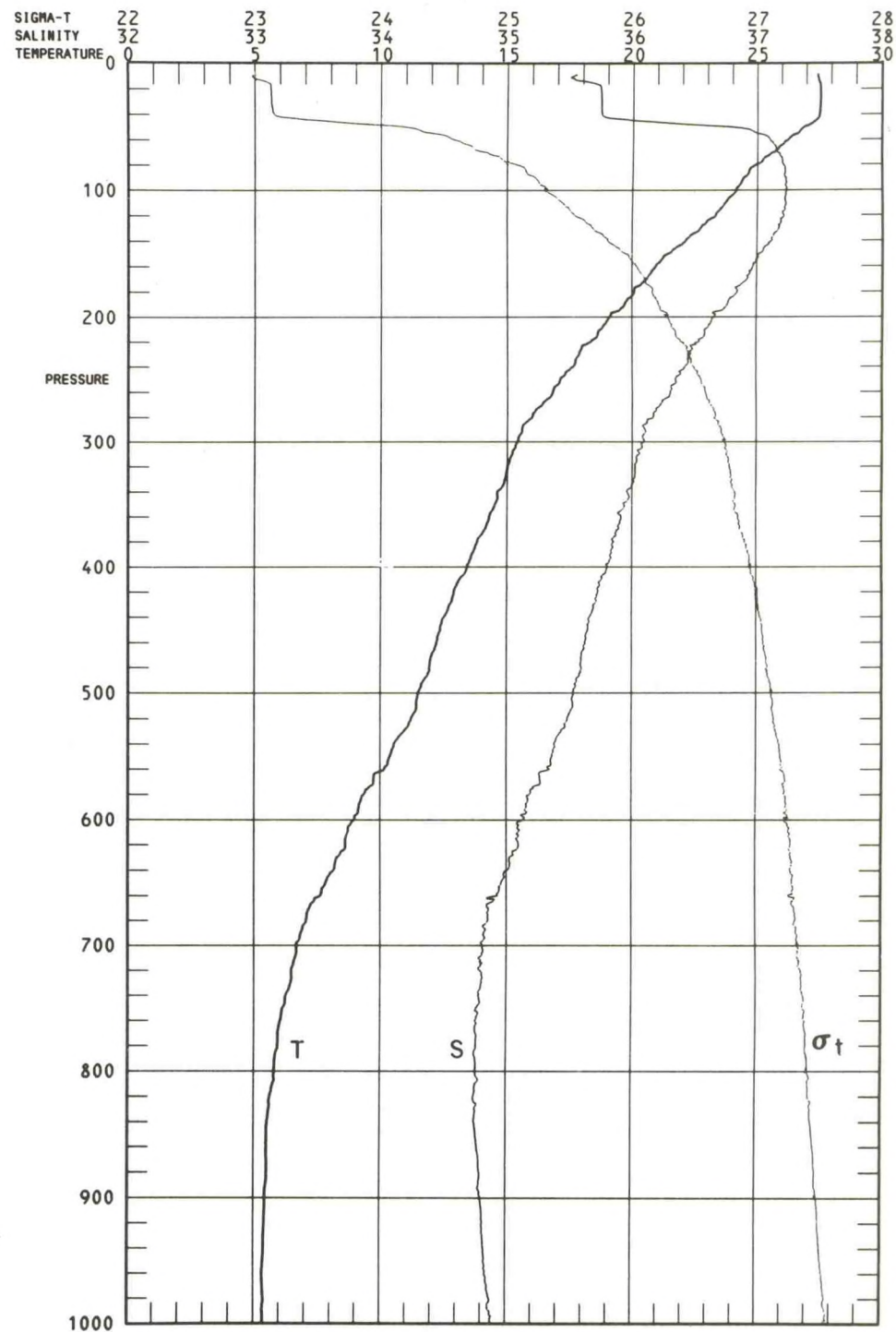
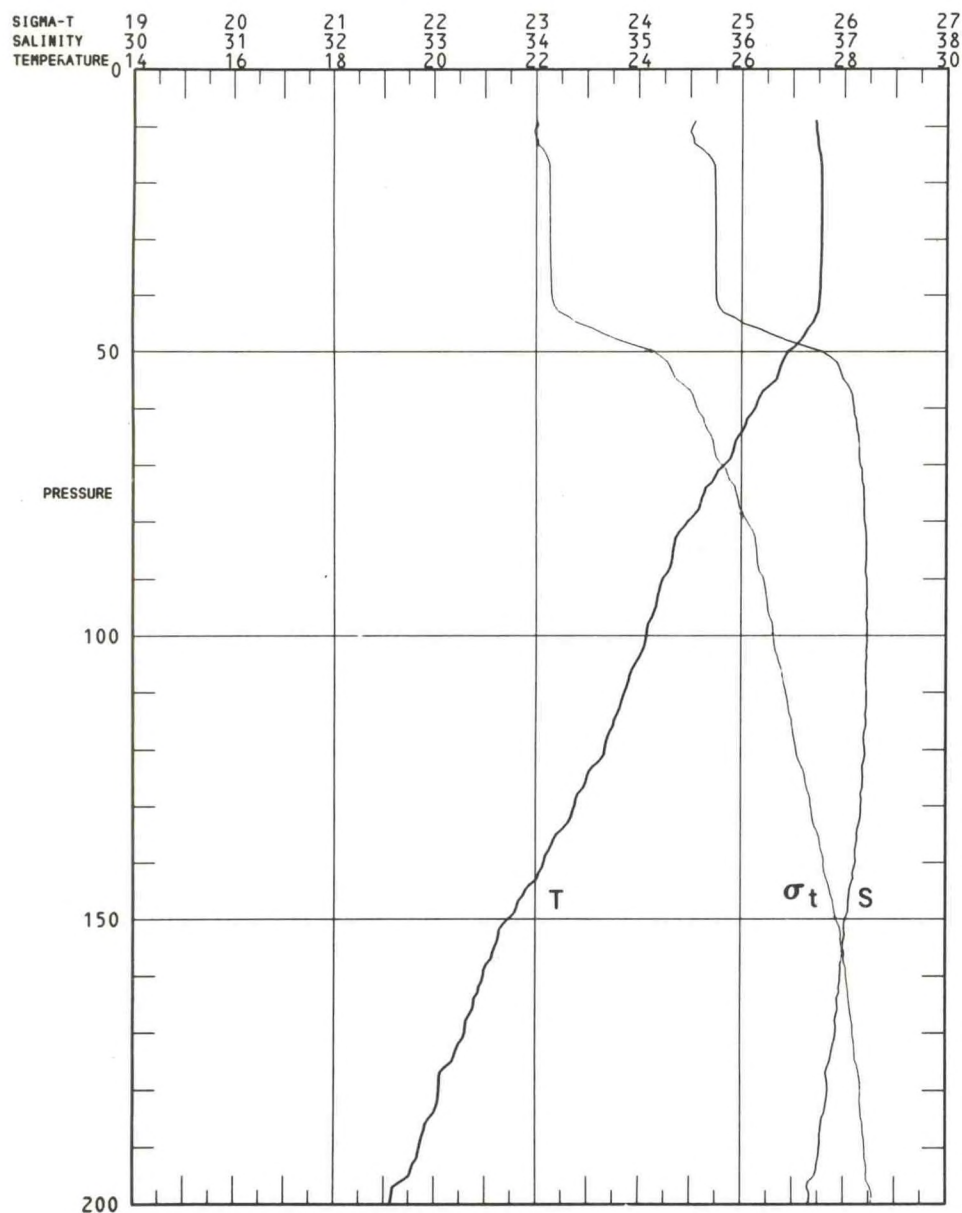
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 1, 1969, 2056 GMT, 17°39'N 054°35'W



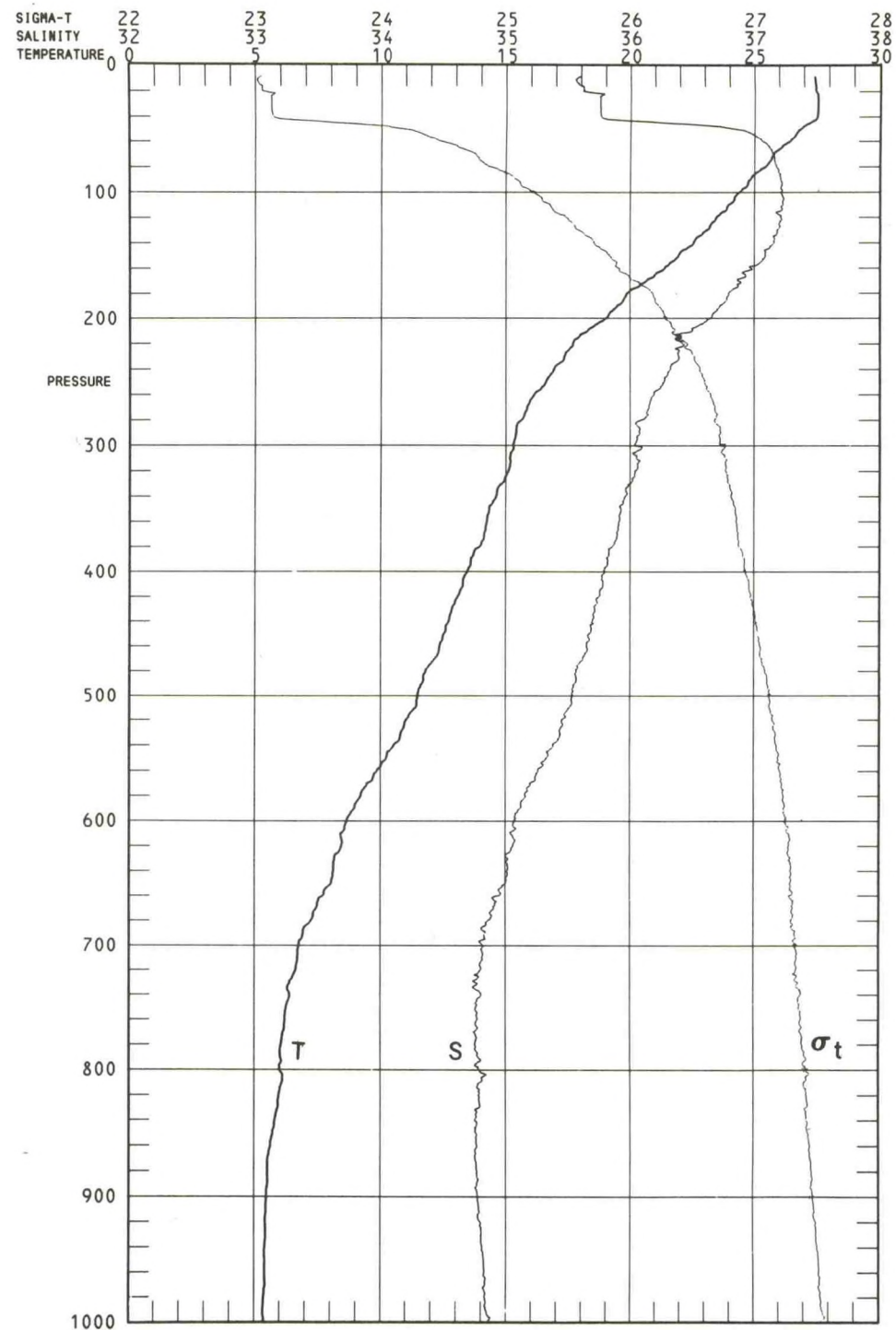
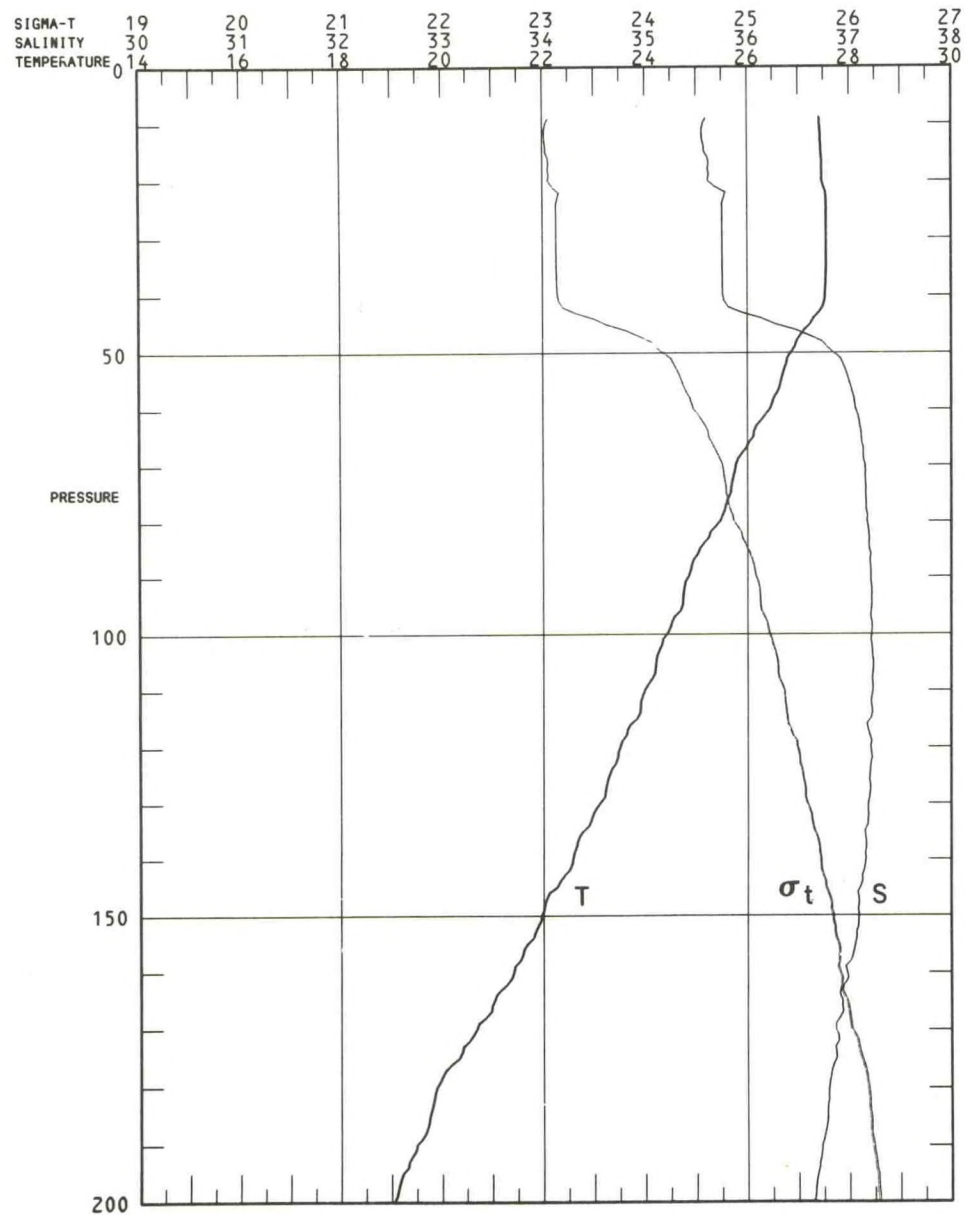
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 2, 1969, 0105 GMT, 17°40'N 054°33'W

ROCKAWAY YEAR 1969 DAY 183 TIME 301 GMT LAT.17°39'N LONG.054°38'W

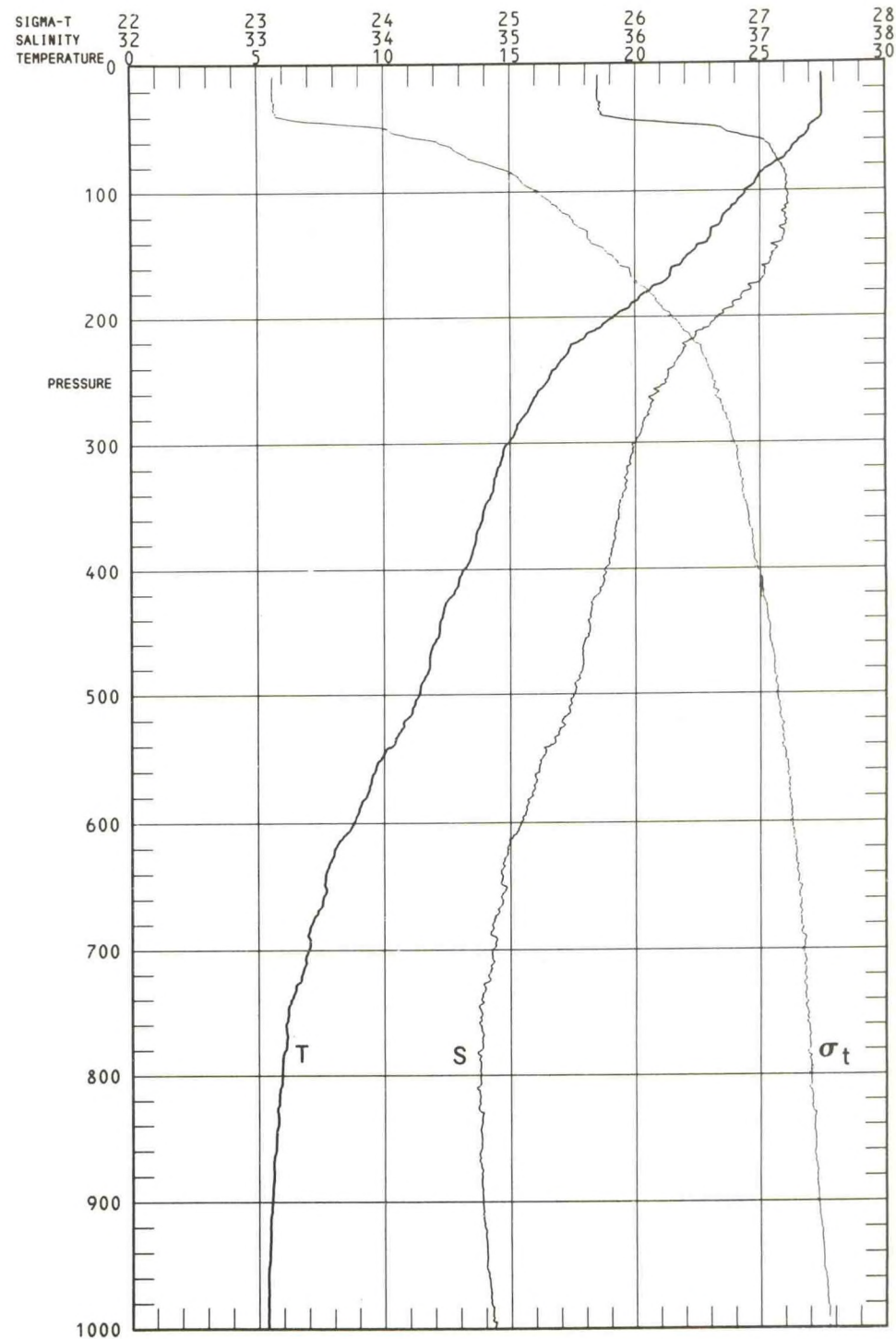
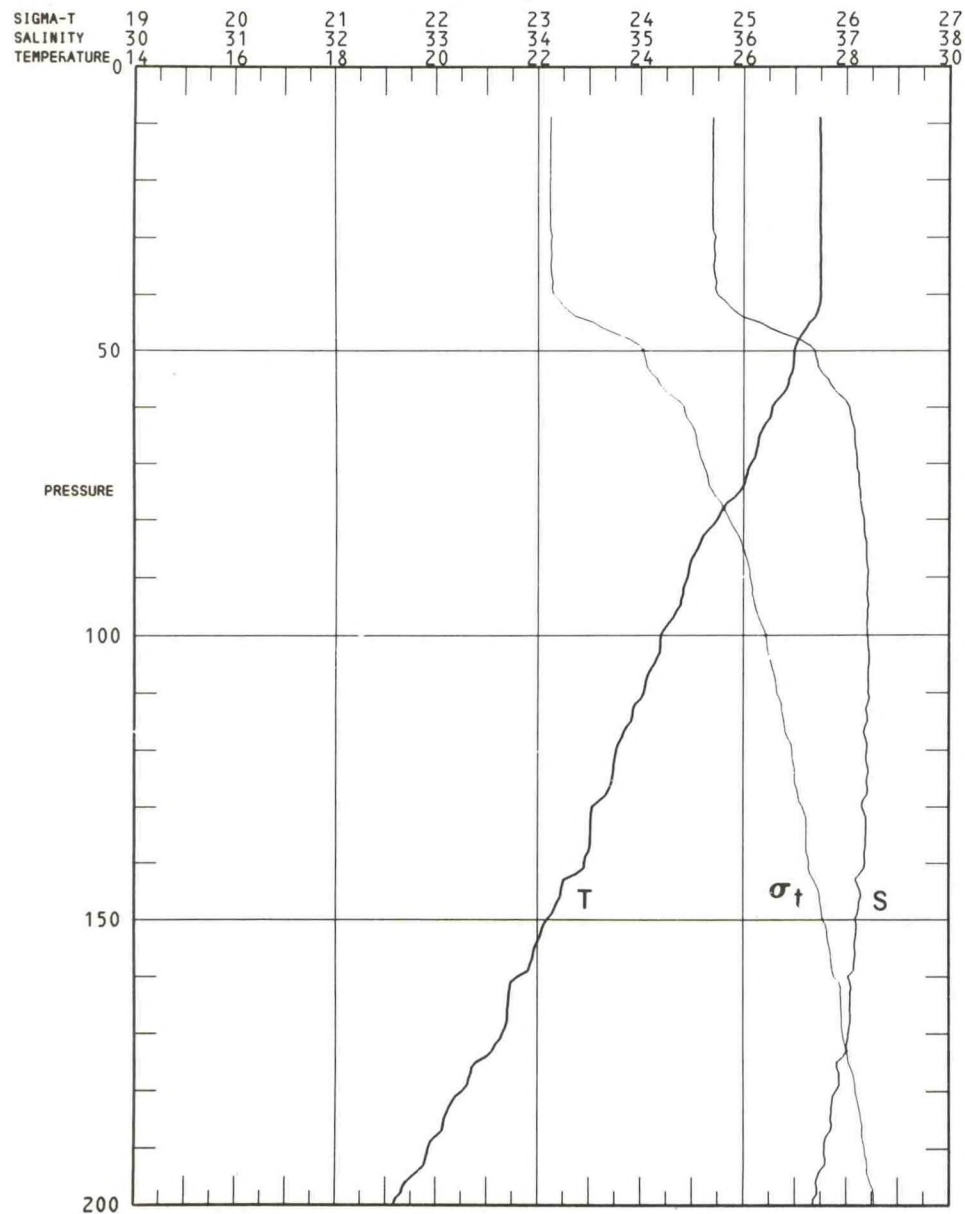
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 2, 1969, 0301 GMT, 17°39'N 054°38'W

# STD Depth-Sorted Plots

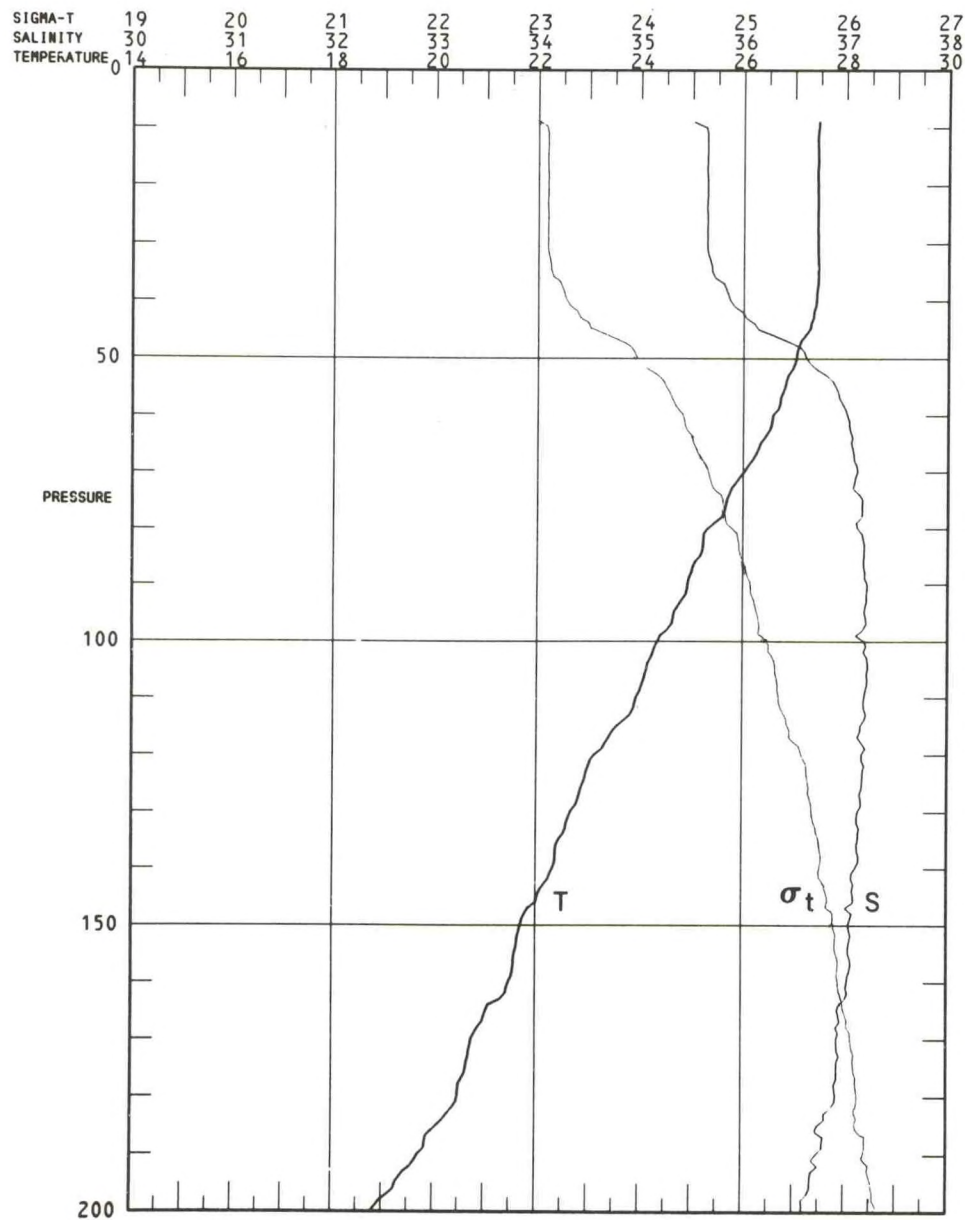
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



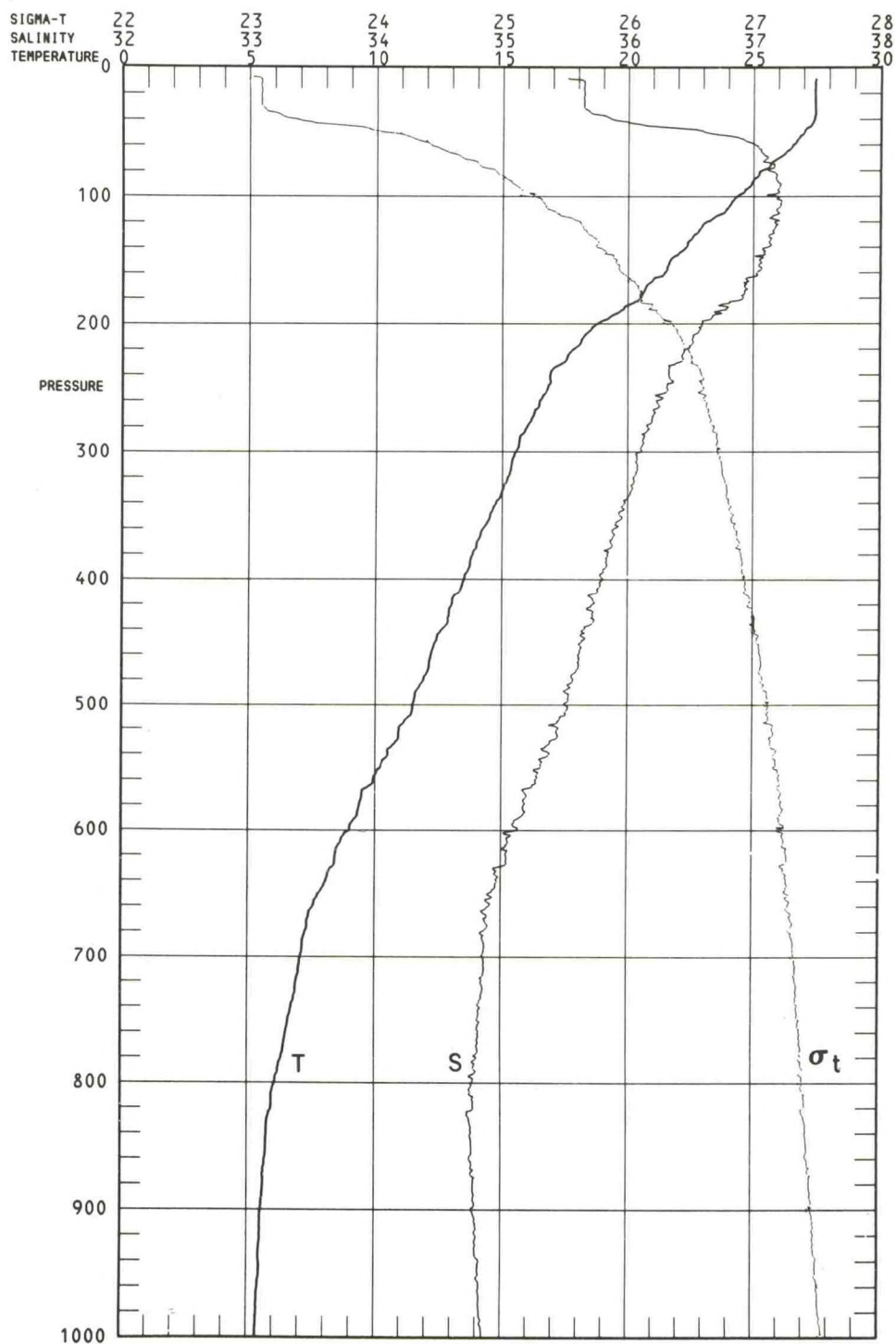
Rockaway, July 2, 1969, 0601 GMT, 17°38'N 054°41'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

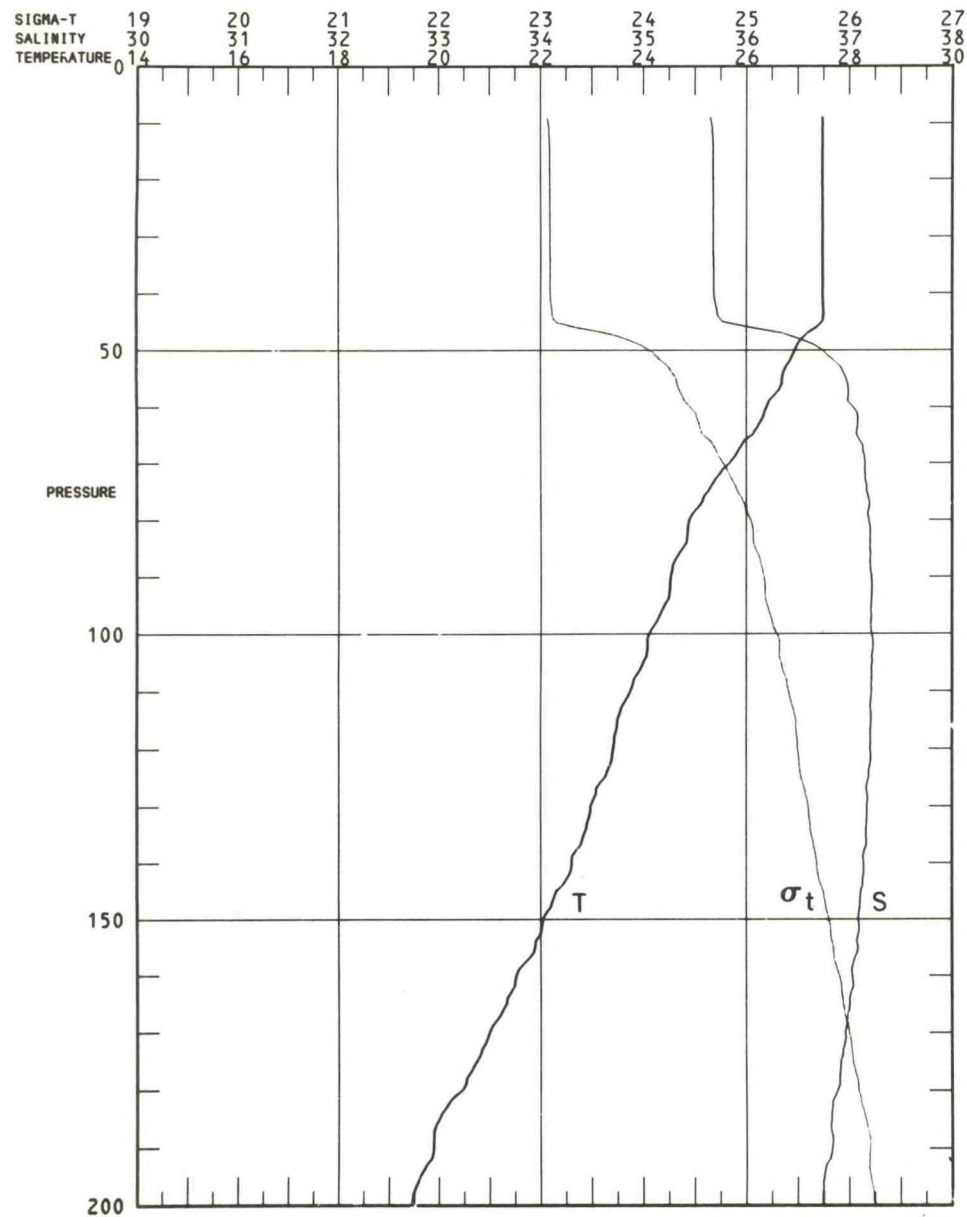


Rockaway, July 2, 1969, 0900 GMT, 17°37'N 054°45'W

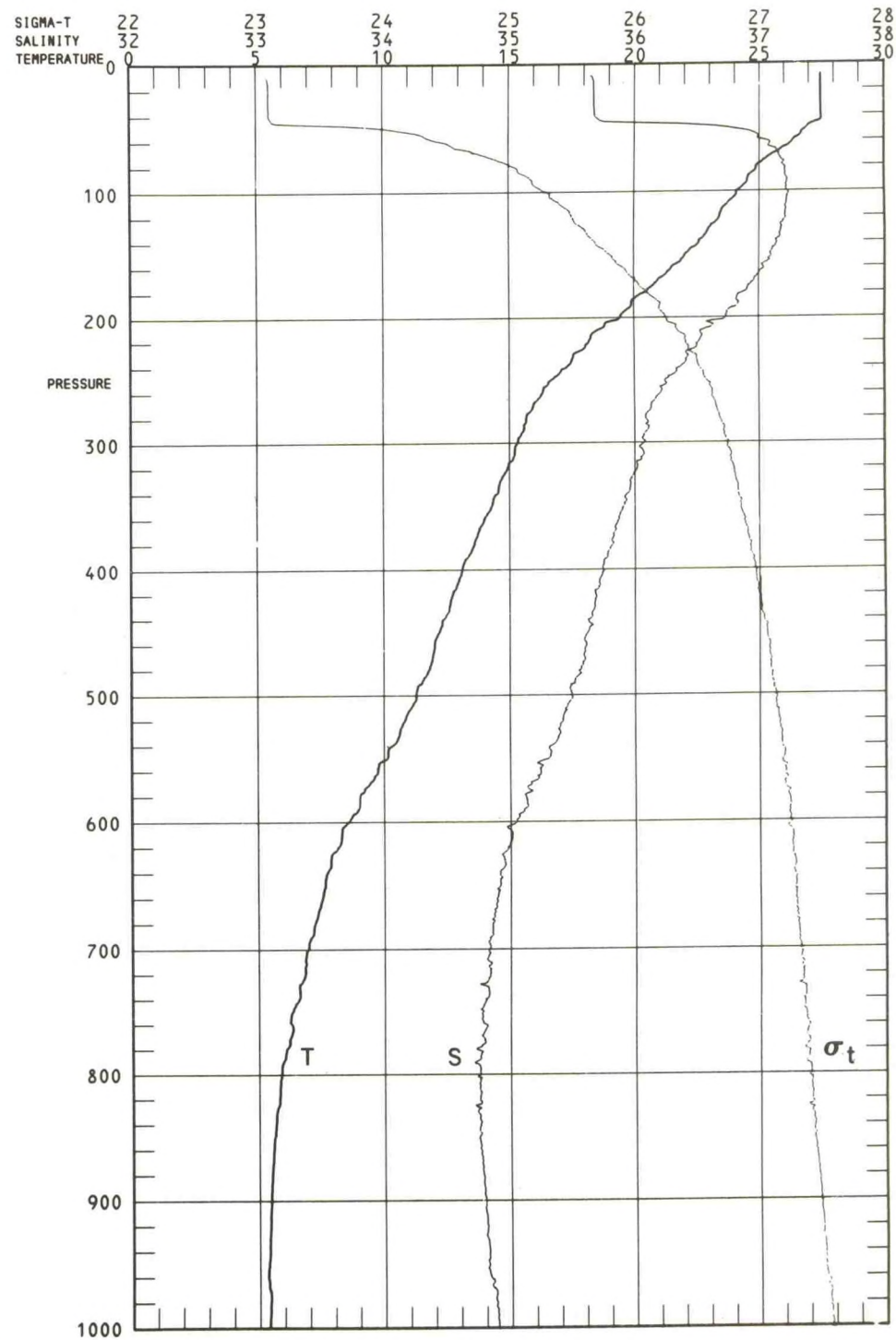


# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Rockaway, July 2, 1969, 1228 GMT, 17°36'N 054°35'W



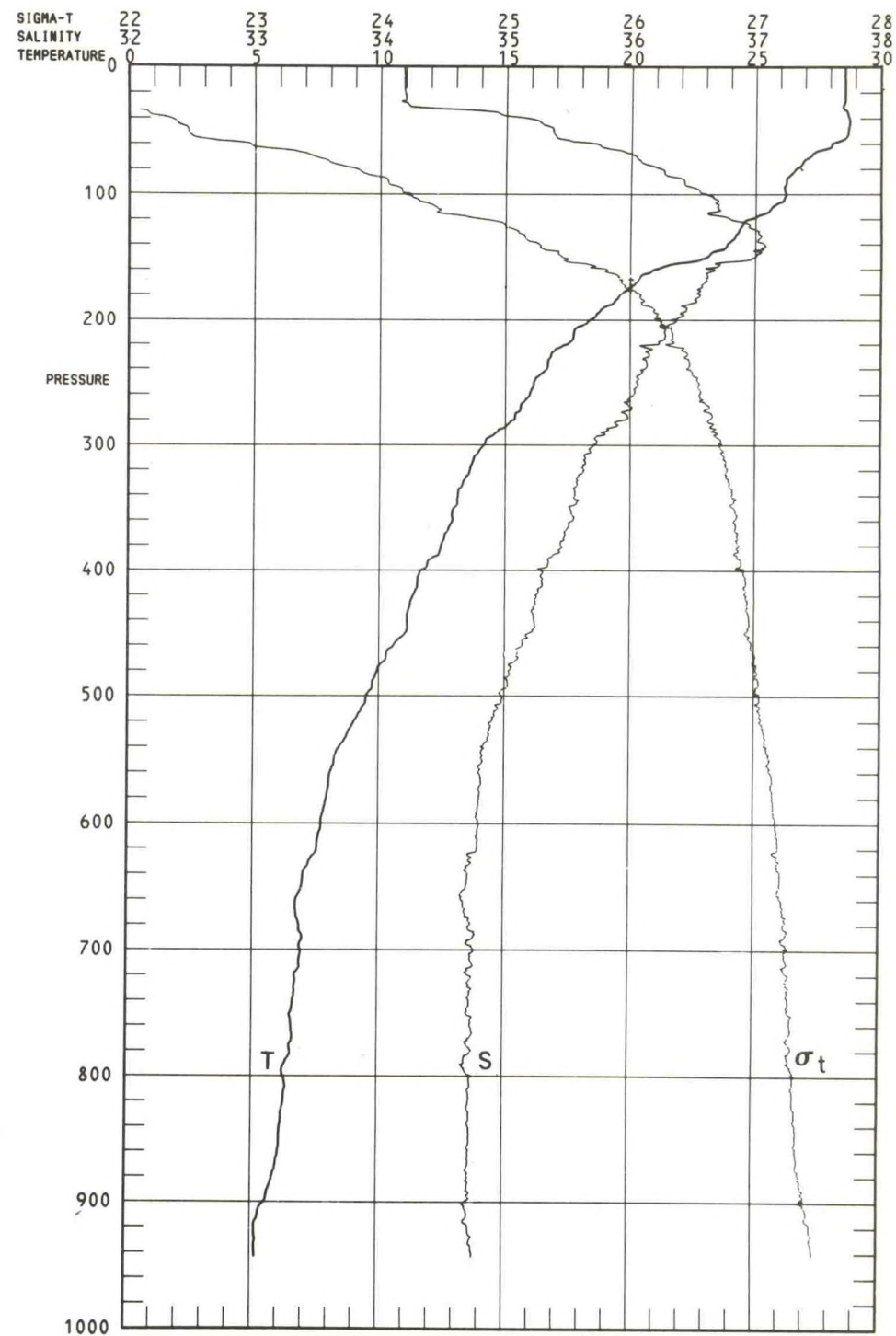
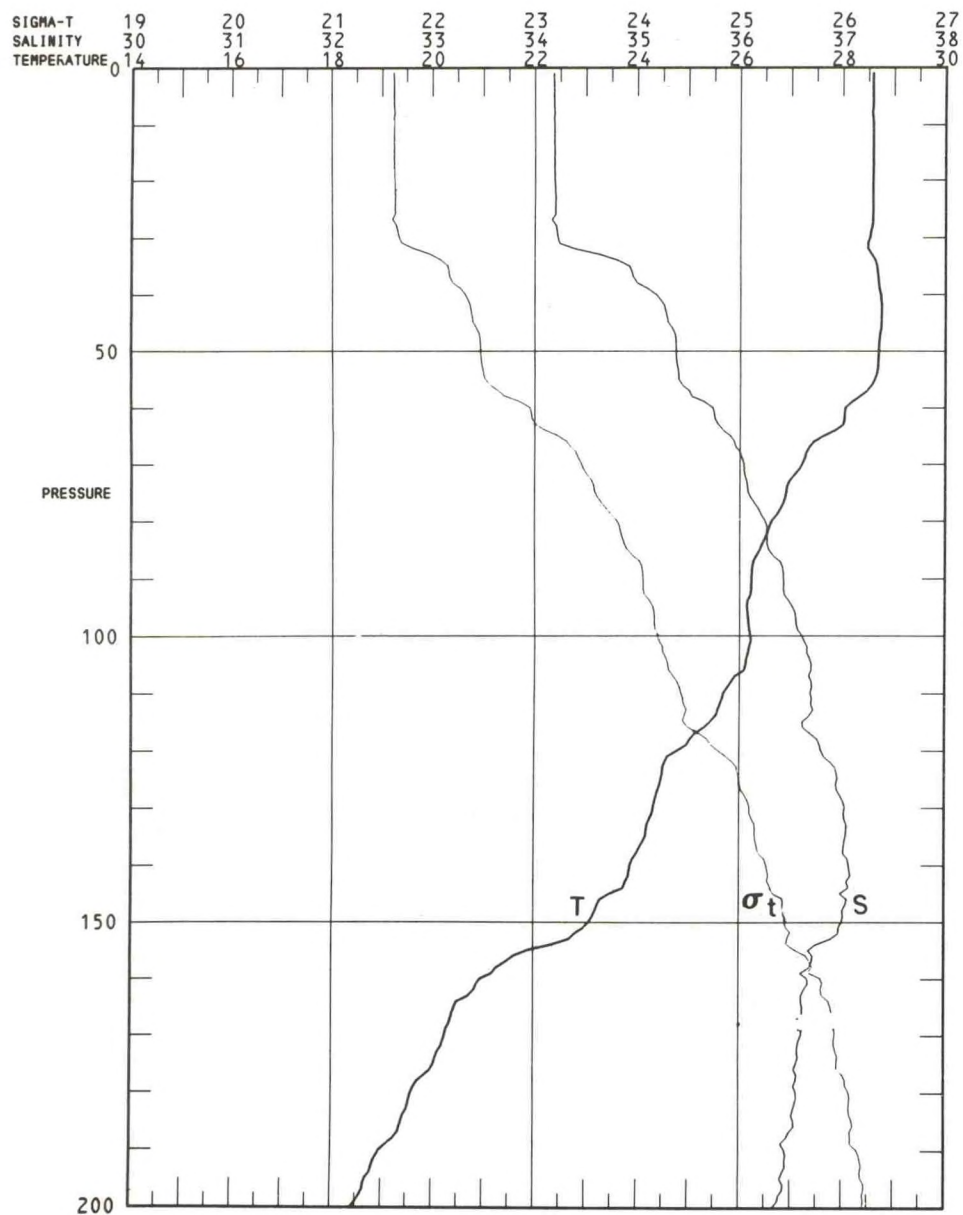




MT. MITCHELL YEAR 1969 DAY 171 TIME 0130 GMT LAT 12°50'N LON 059°15'W  
THIS STD CAST TAKEN EN ROUTE FROM BARBADOS TO BOMEX STATION DELTA.

# STD Depth-Sorted Plots

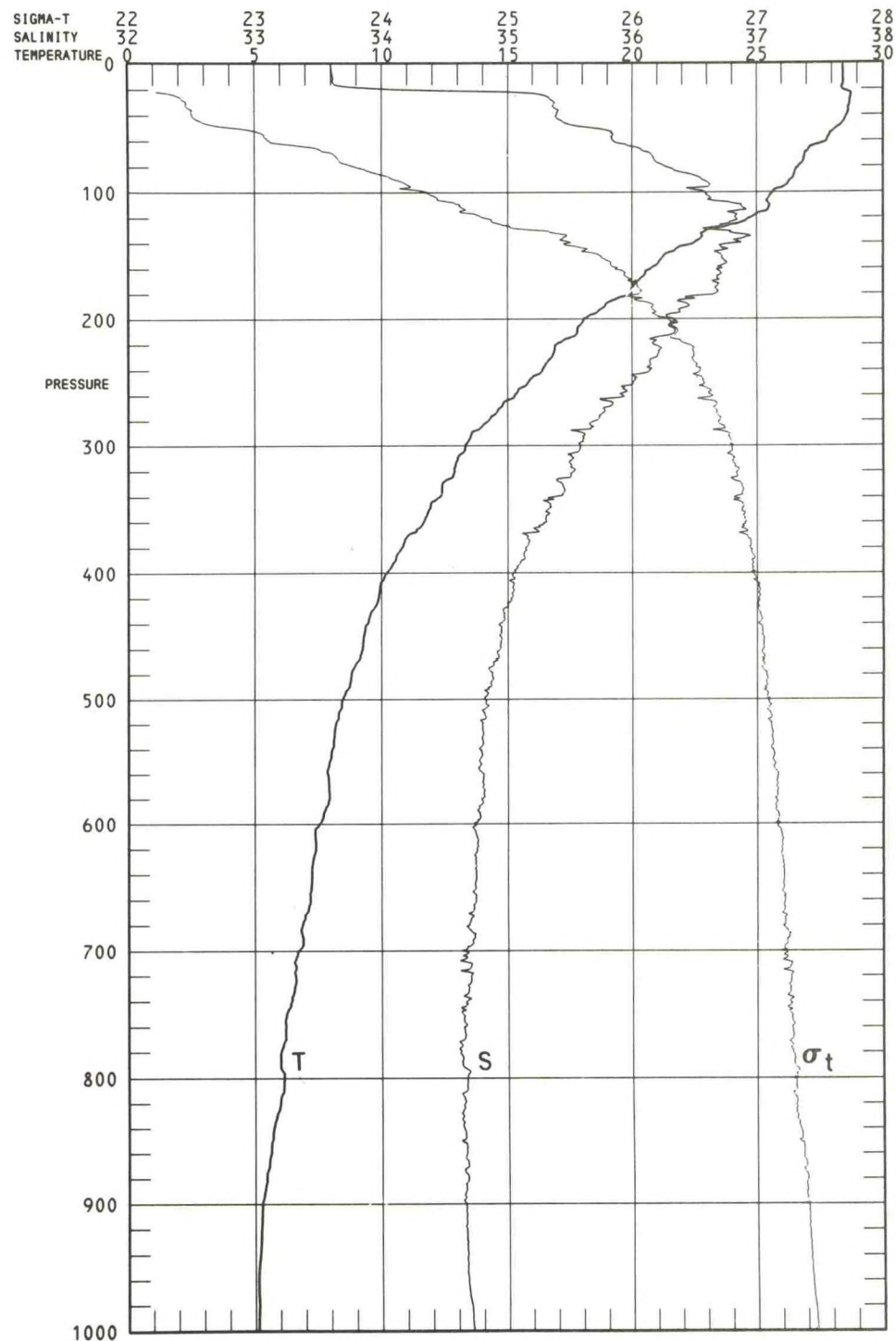
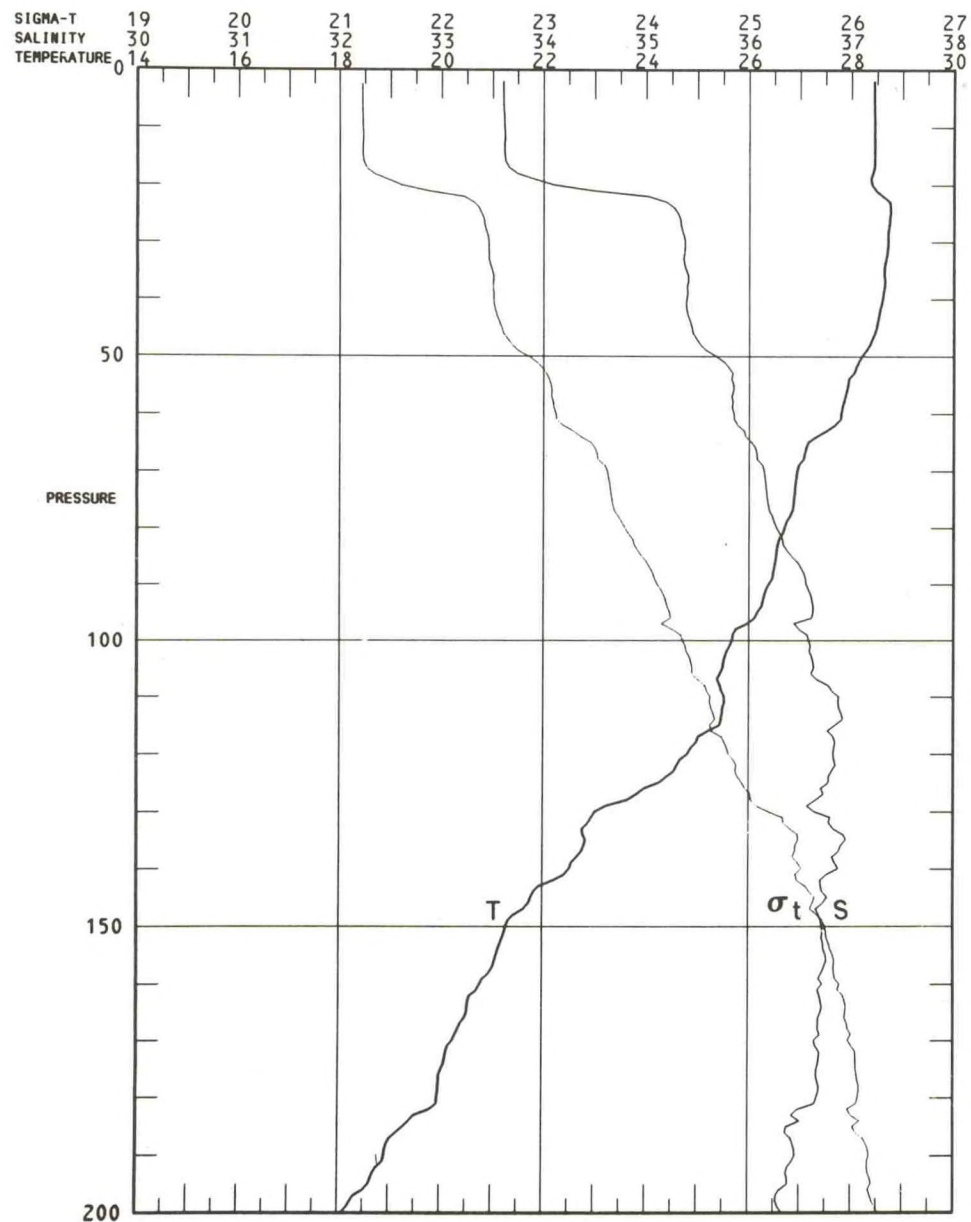
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 20, 1969, 0130 GMT, 12°50'N 059°15'W

MT. MITCHELL YEAR 1969 DAY 171 TIME 0415 GMT LAT 13°01'N LON 059°47'W  
THIS STD CAST TAKEN EN ROUTE FROM BARBADOS TO BOMEX STATION DELTA.

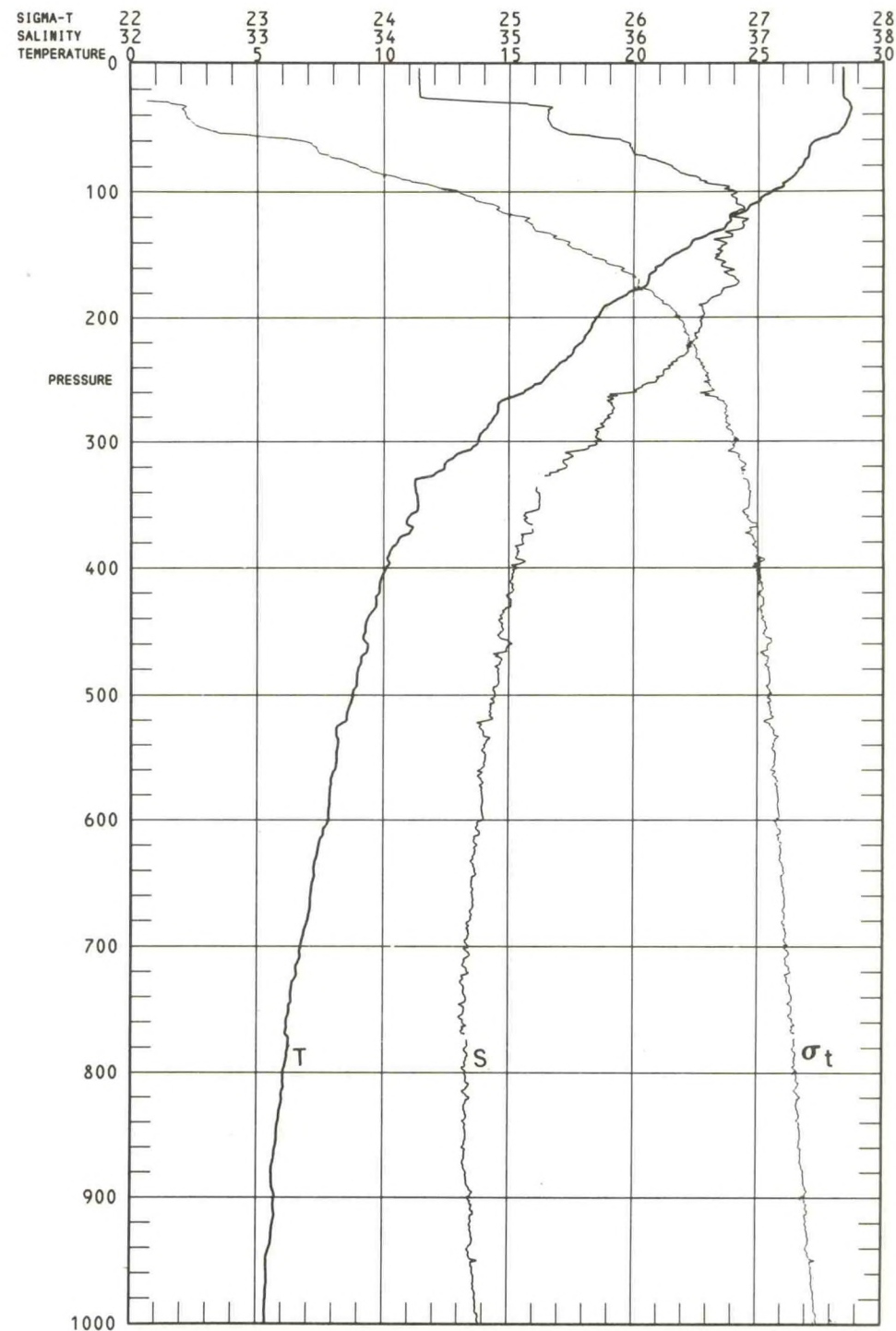
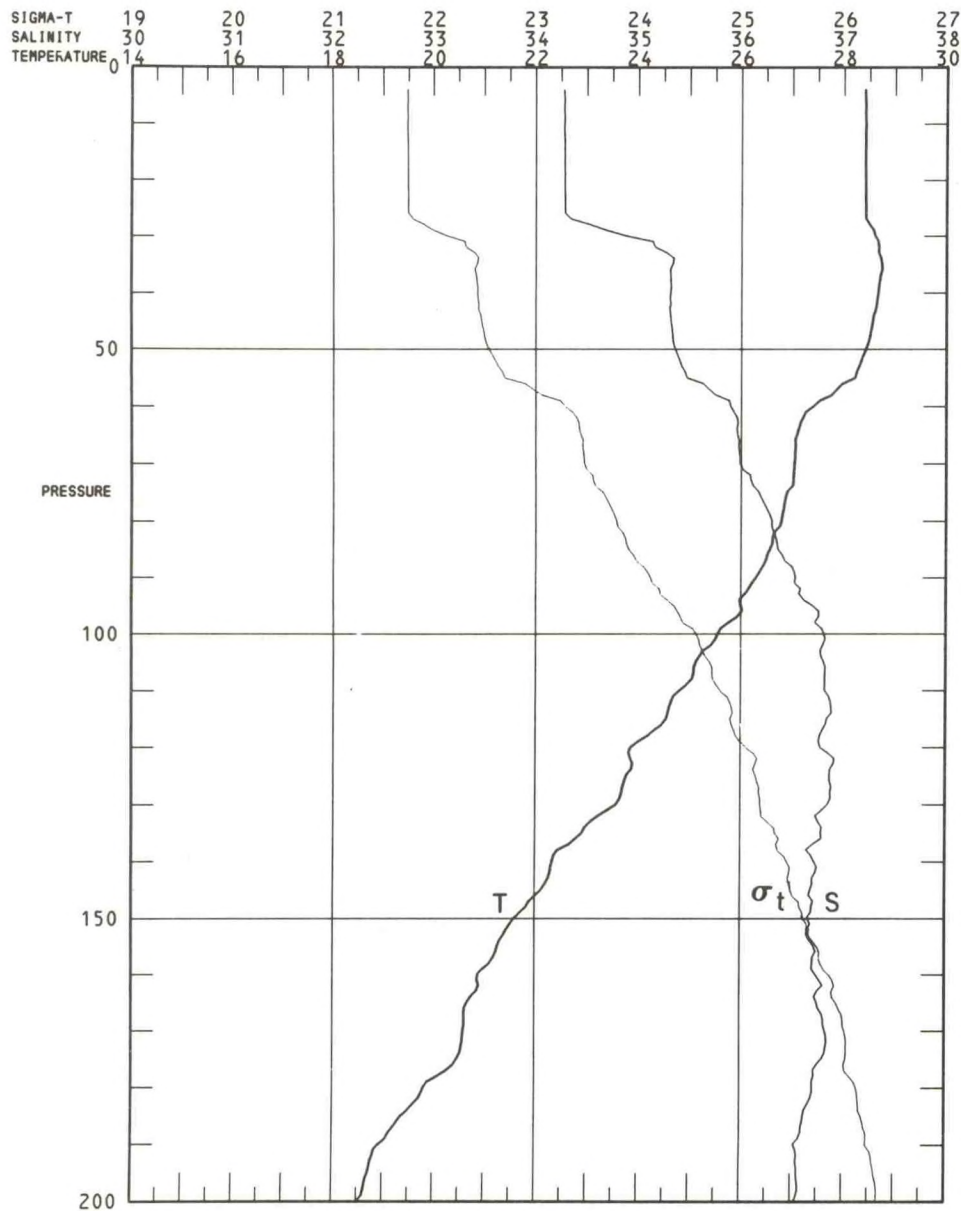
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 20, 1969, 0415 GMT, 13°01'N 059°47'W

MT. MITCHELL YEAR 1969 DAY 171 TIME 0900 GMT LAT 13°00'N LON 058°44'W  
THIS STD CAST TAKEN EN ROUTE FROM BARBADOS TO BOMEX STATION DELTA.

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

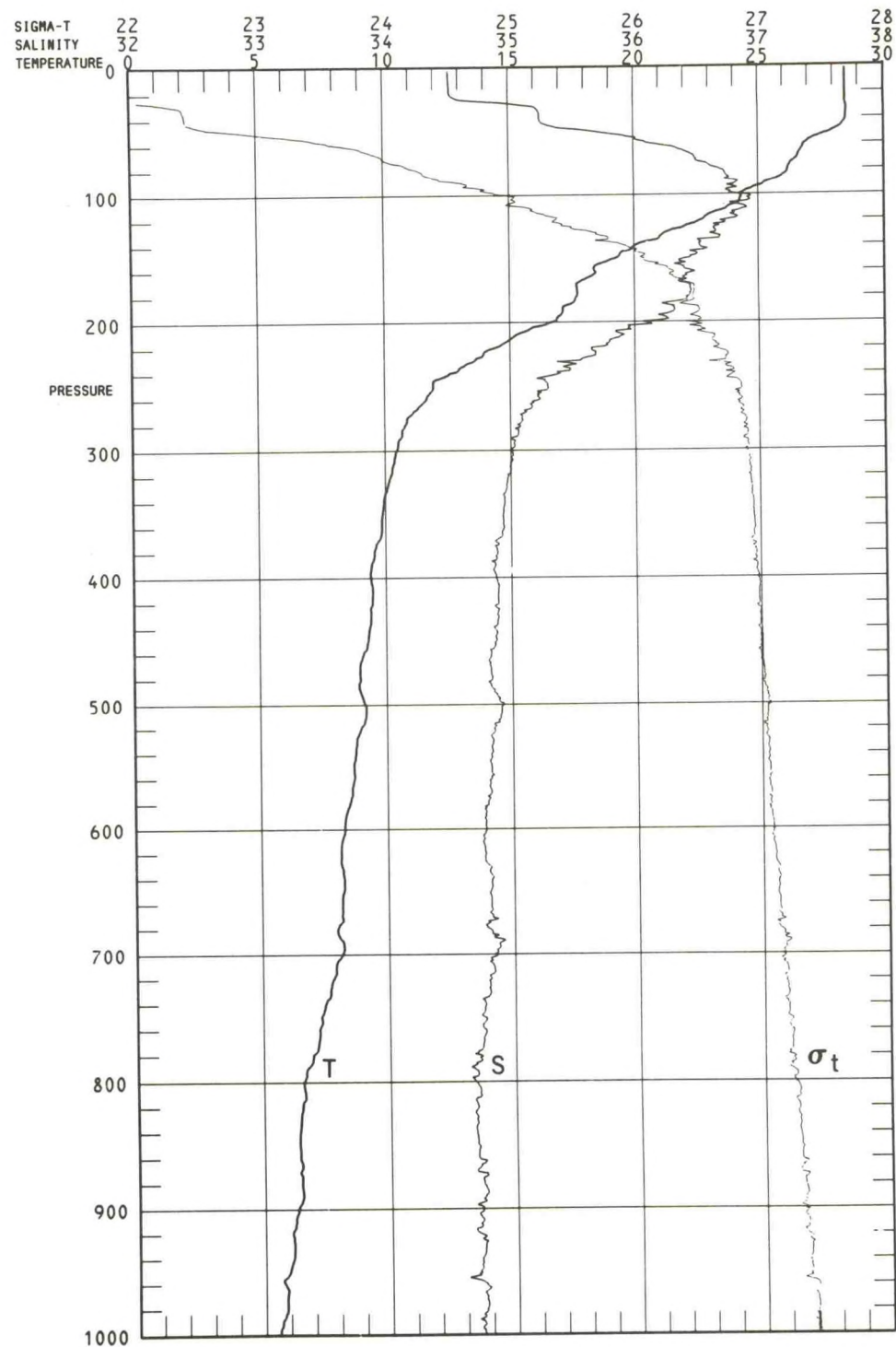
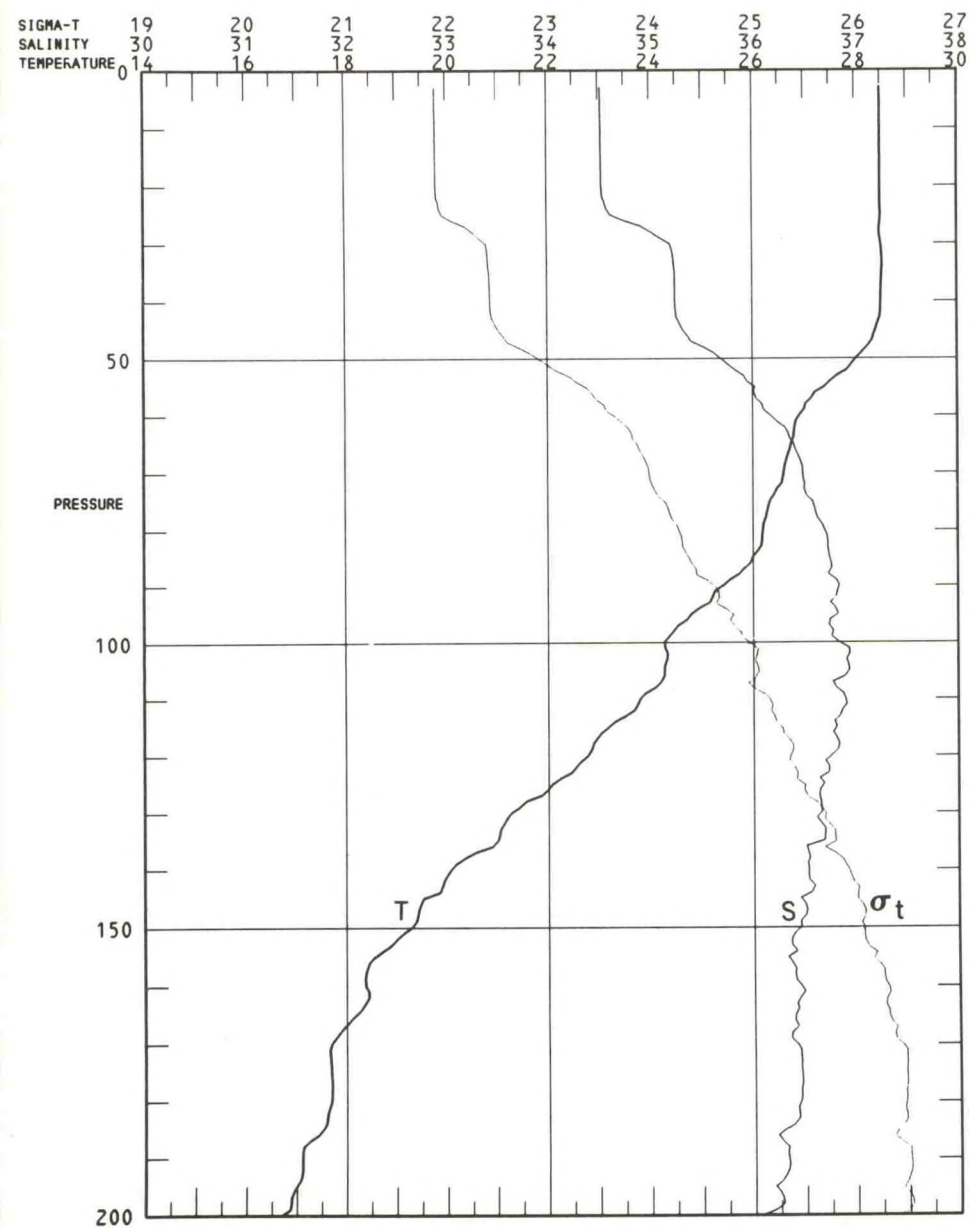


Mt. Mitchell, June 20, 1969, 0900 GMT, 13°00'N 058°44'W



MT. MITCHELL YEAR 1969 DAY 171 TIME 1200 GMT LAT 12°58'N LON 058°33'W  
THIS STD CAST TAKEN EN ROUTE FROM BARBADOS TO BOMEX STATION DELTA.

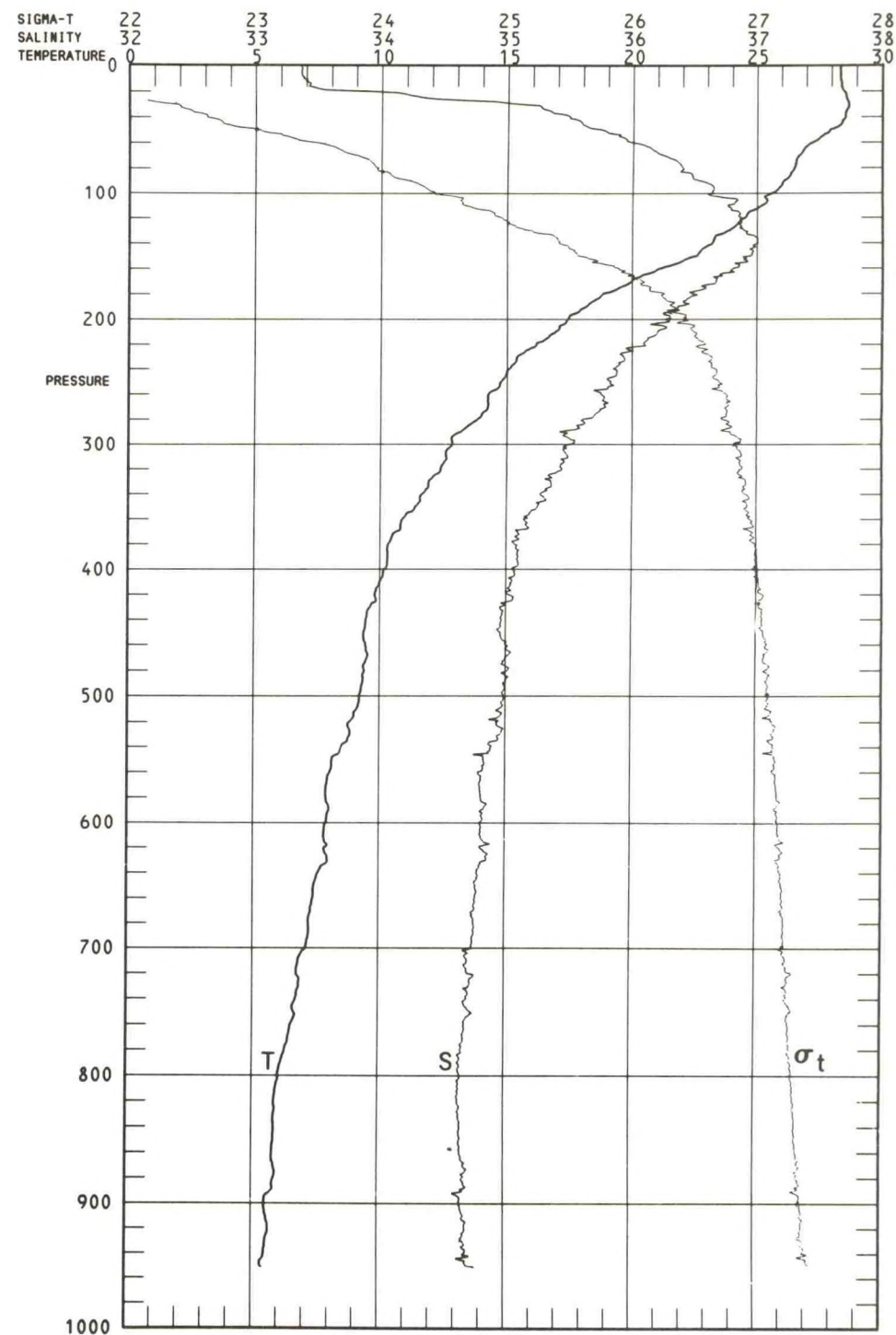
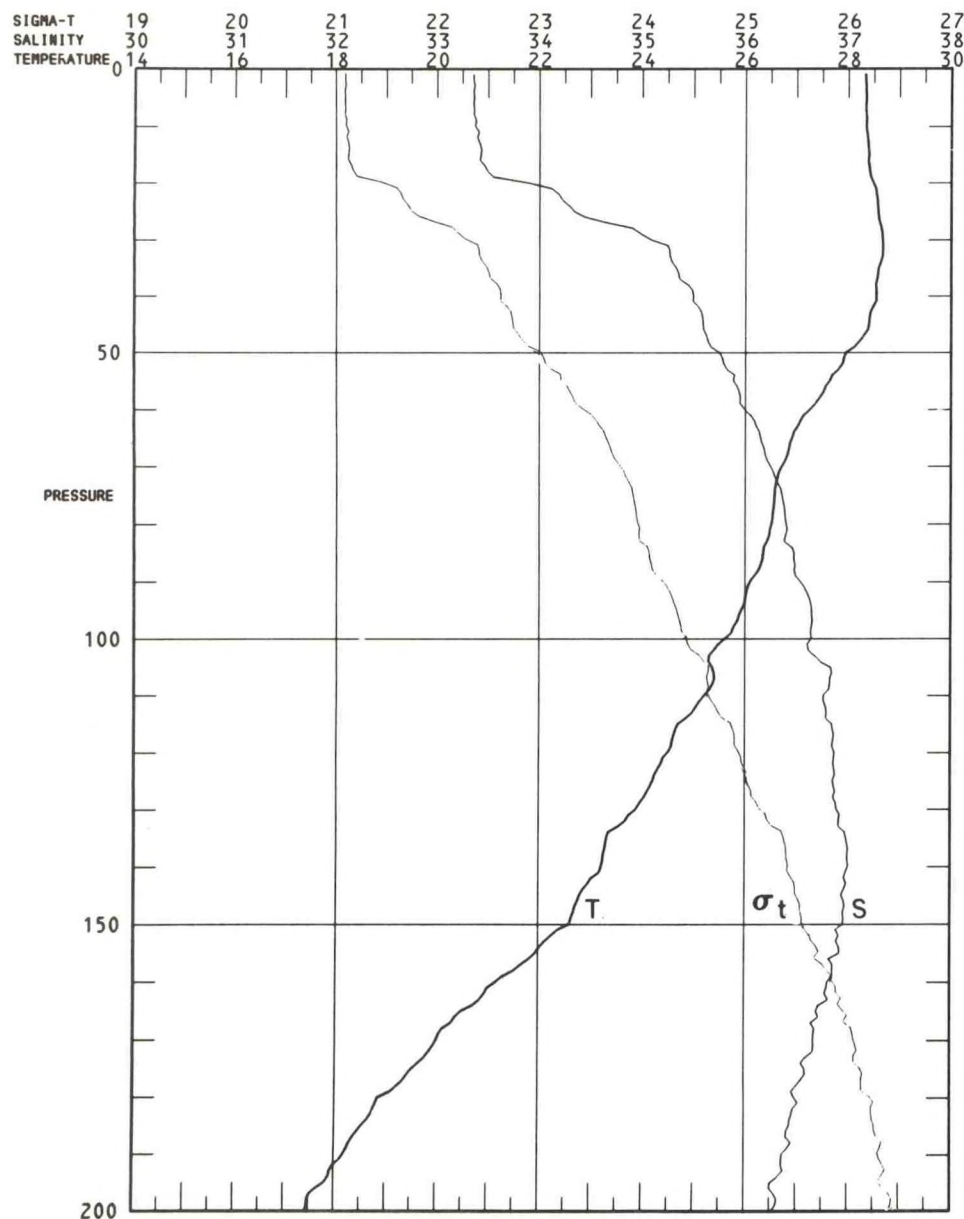
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 20, 1969, 1200 GMT, 12°58'N 058°33'W

# STD Depth-Sorted Plots

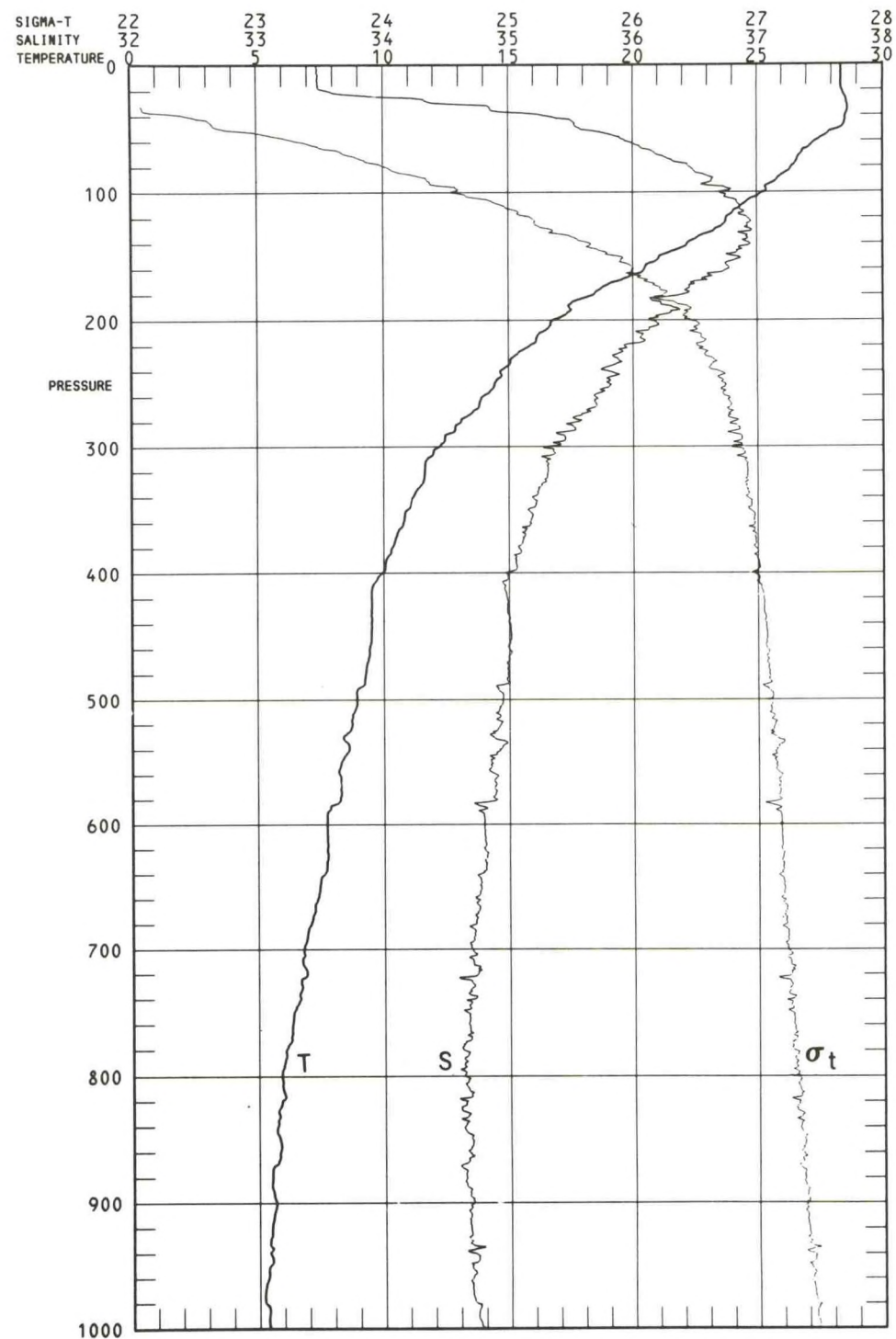
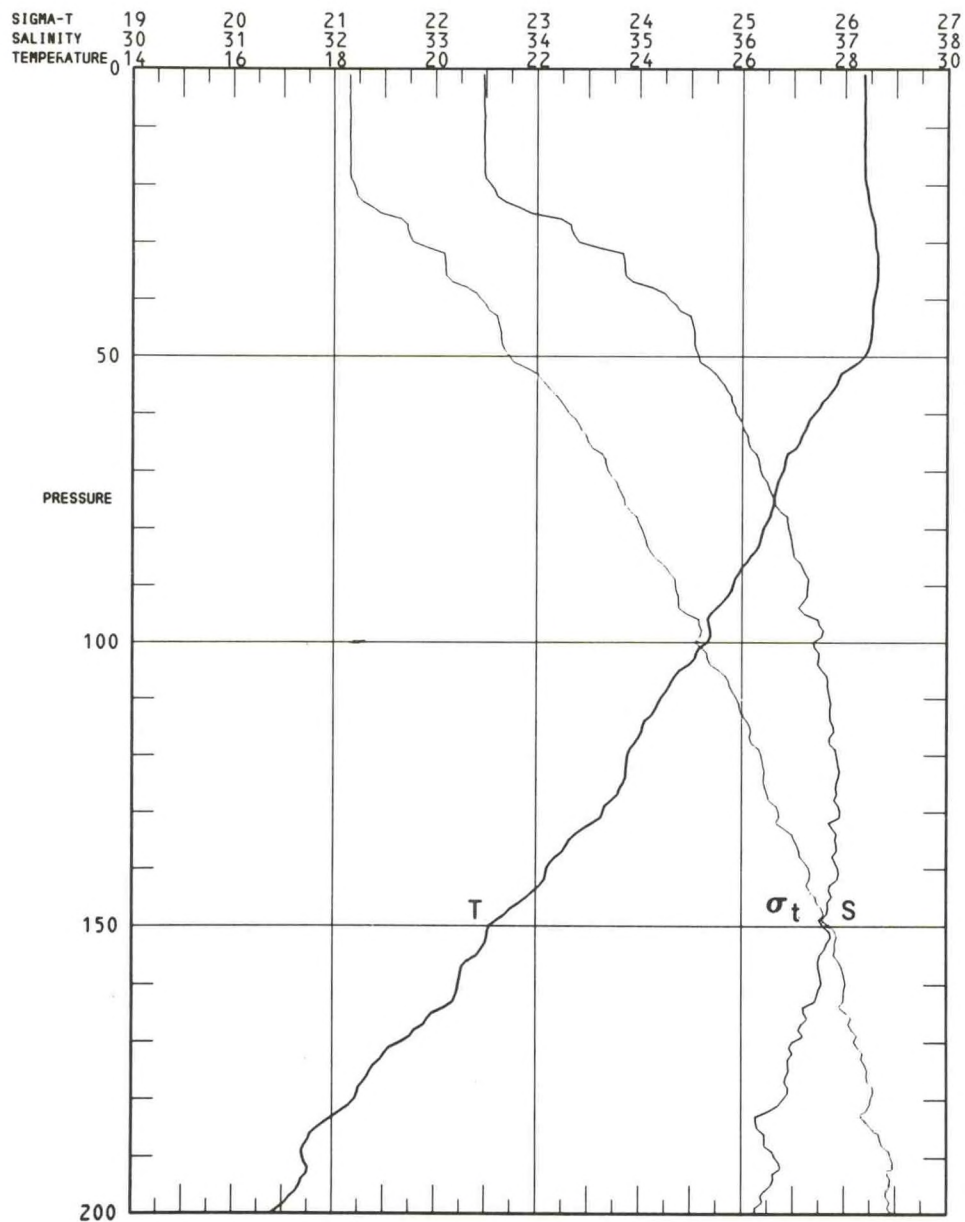
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 21, 1969, 0100 GMT, 12°20'N 058°22'W

MT.MITCHELL YEAR 1969 DAY 172 TIME 0600 GMT LAT 12°20' LON 058°21'

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

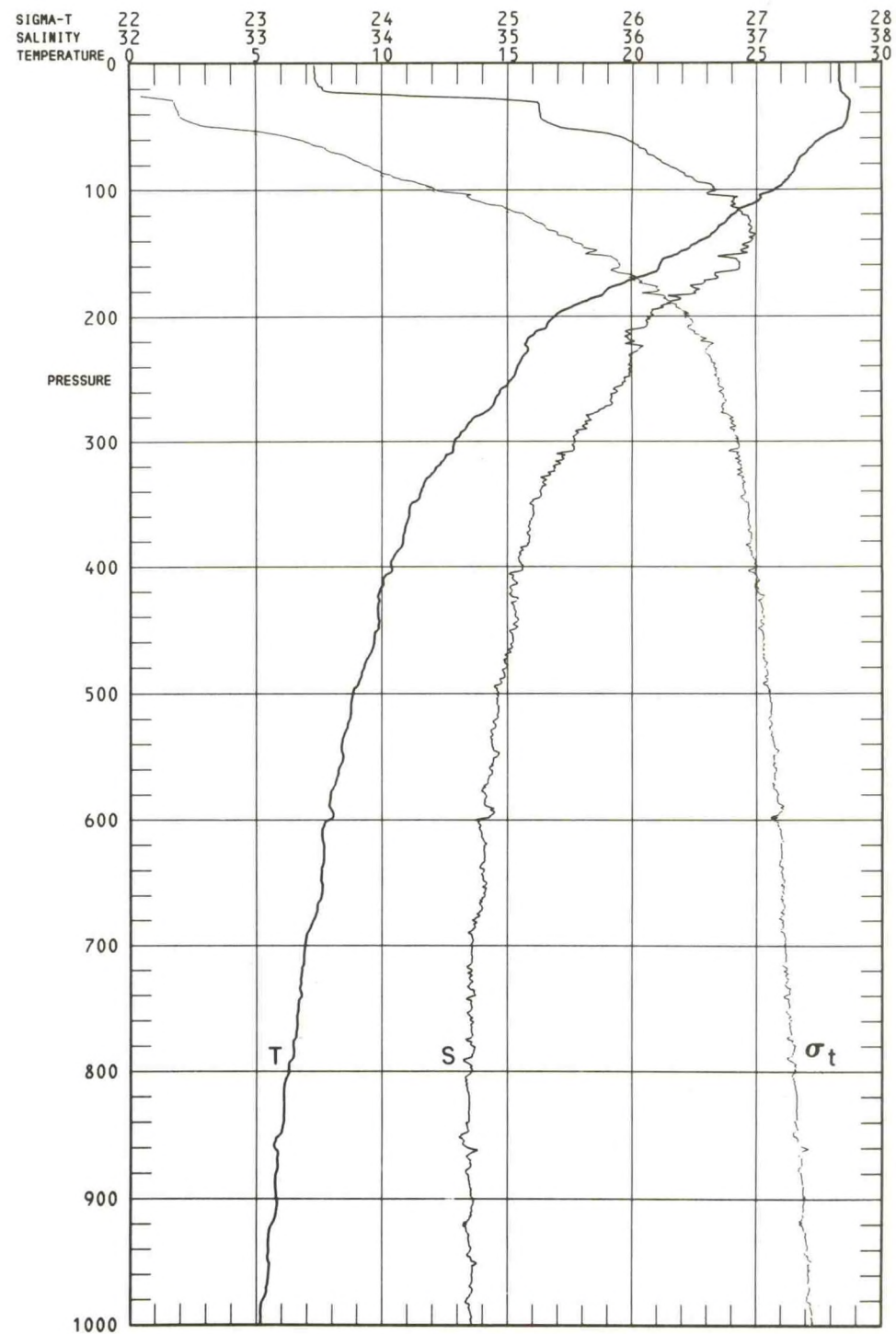
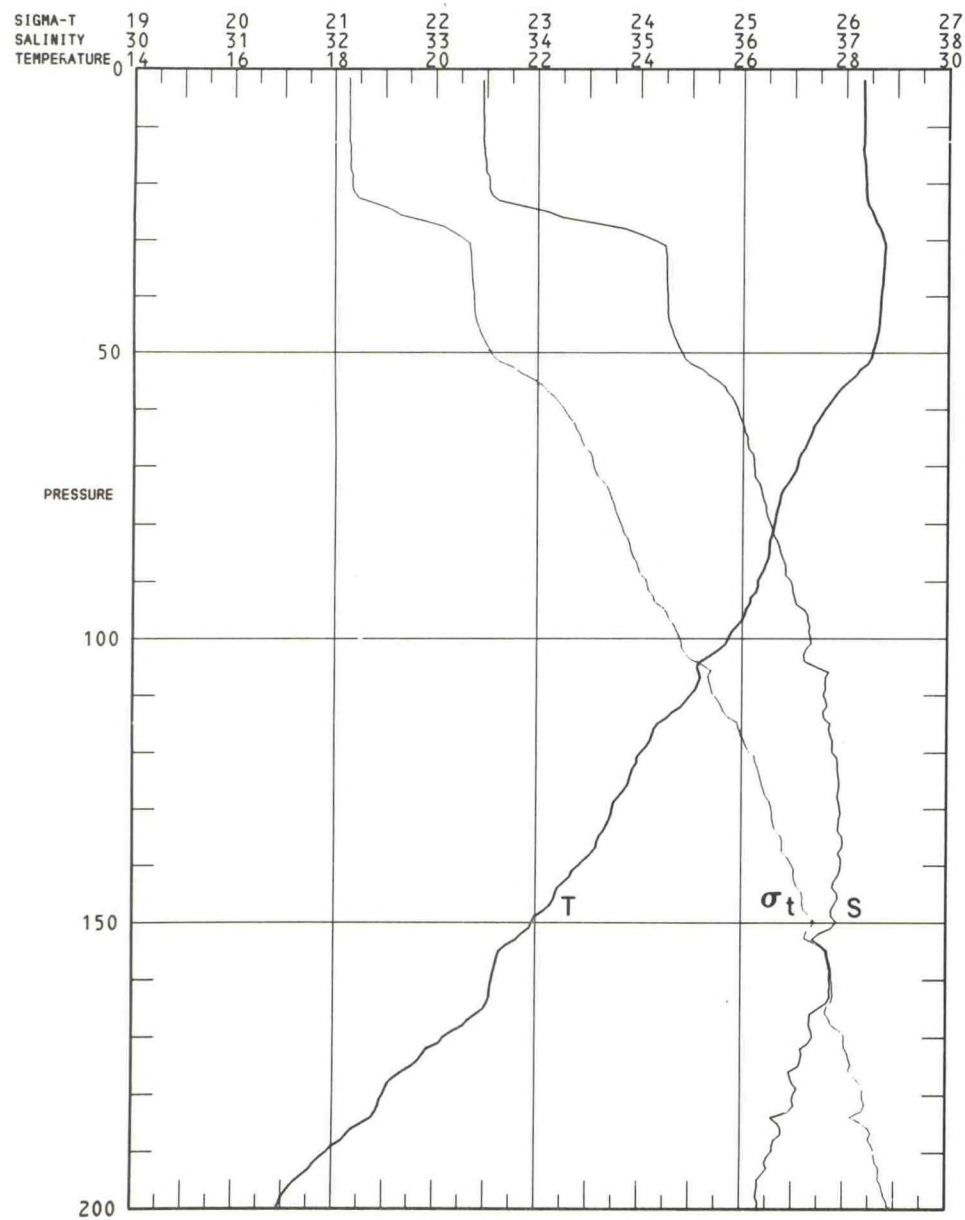


Mt. Mitchell, June 21, 1969, 0600 GMT, 12°20'N 058°21'W



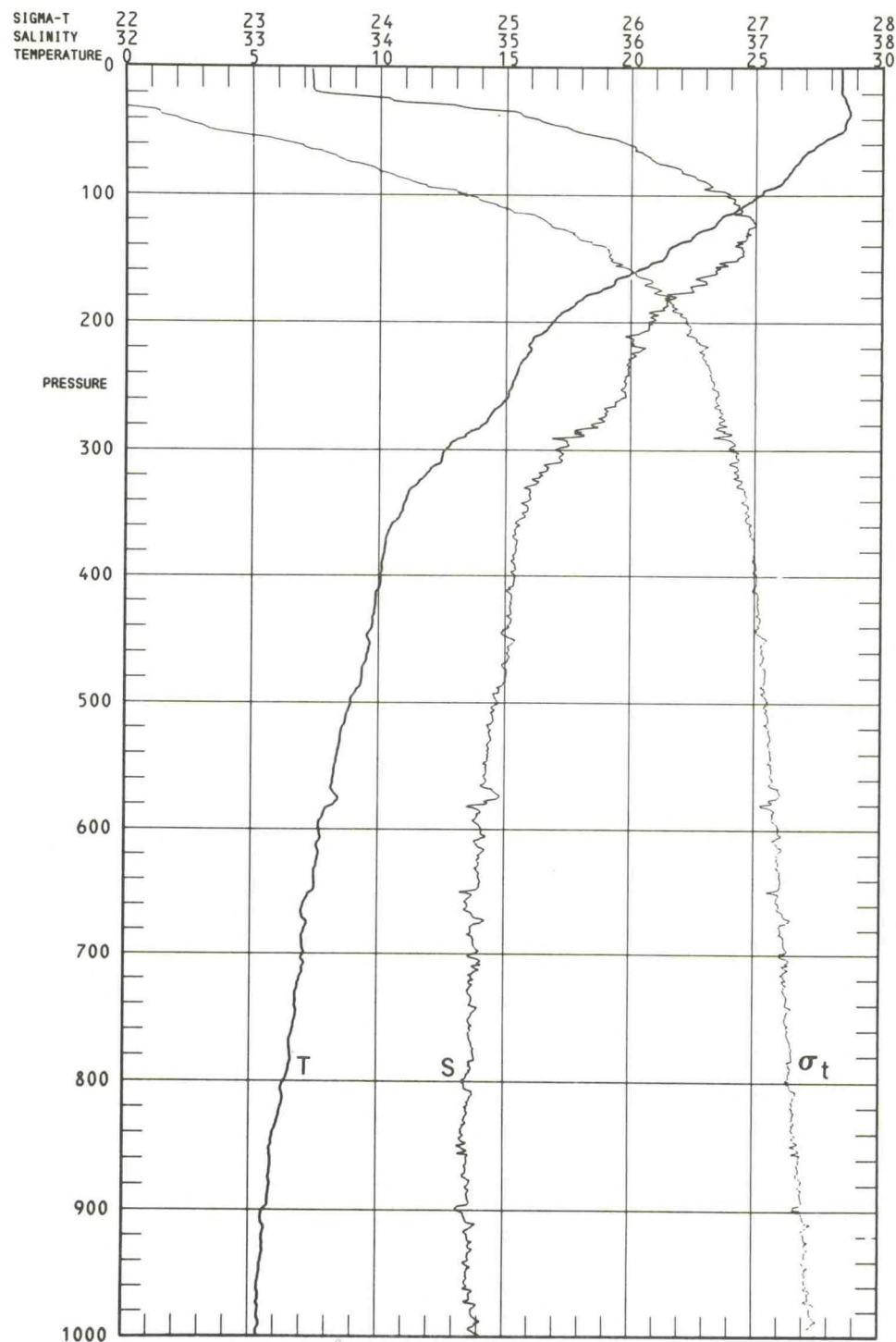
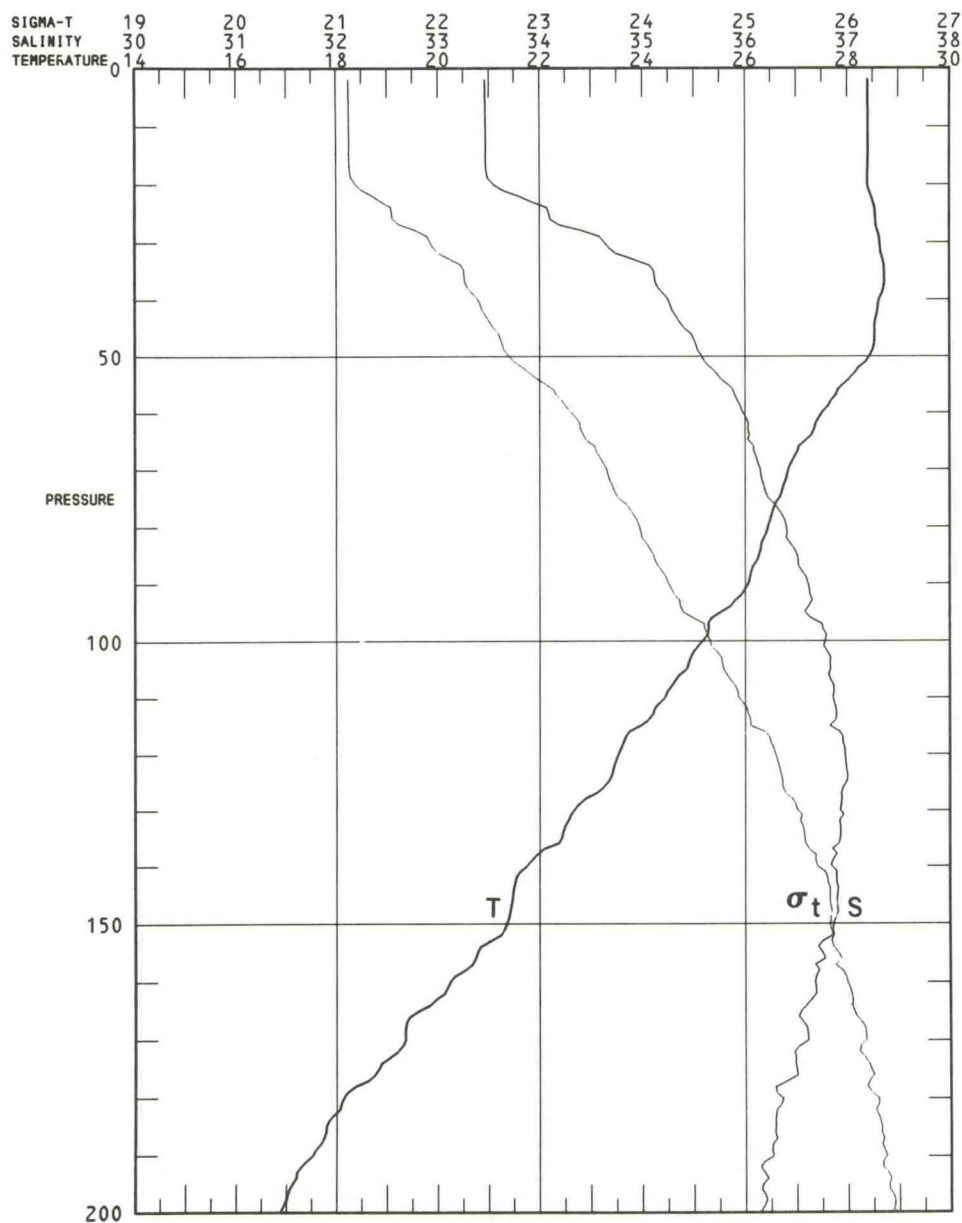
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



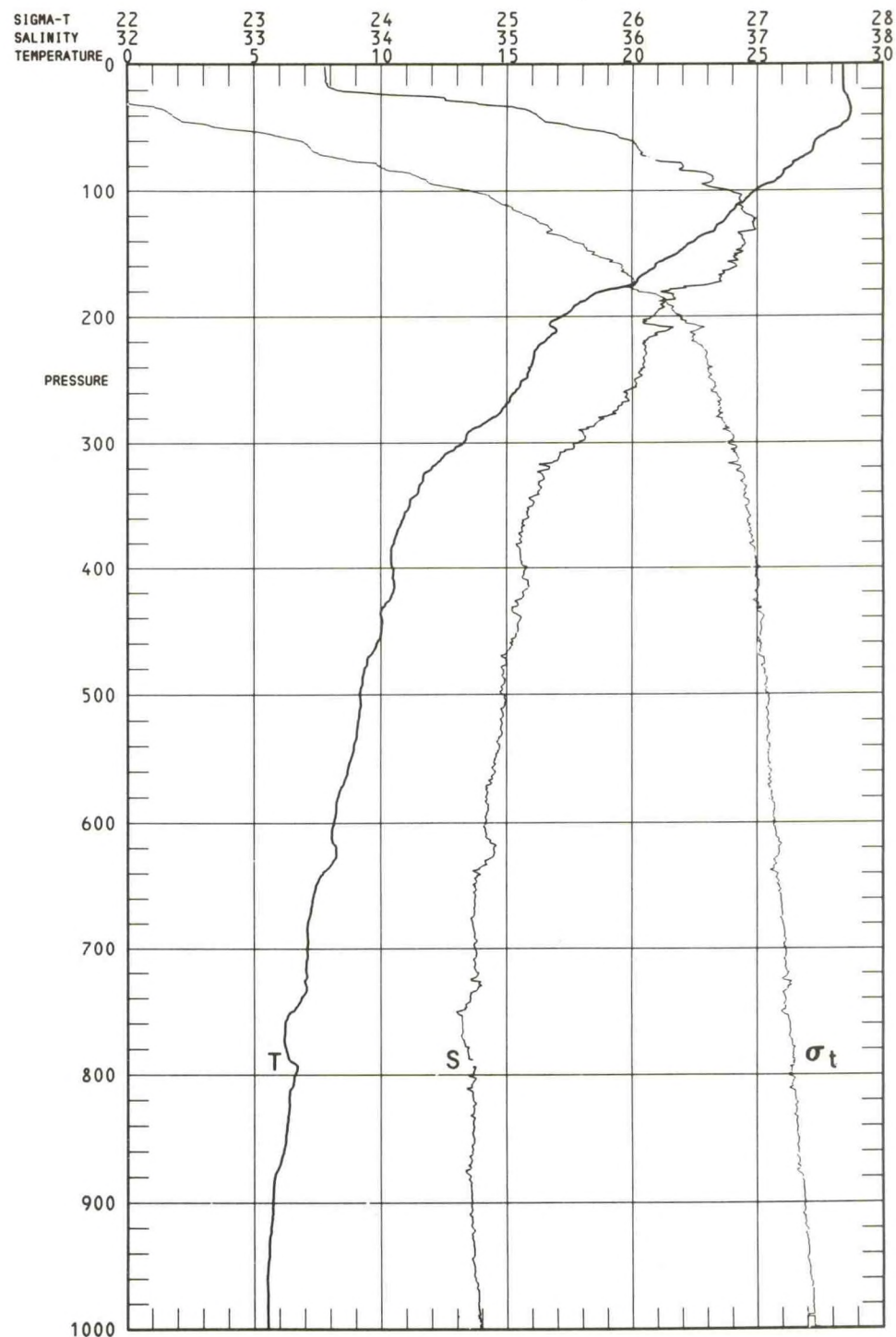
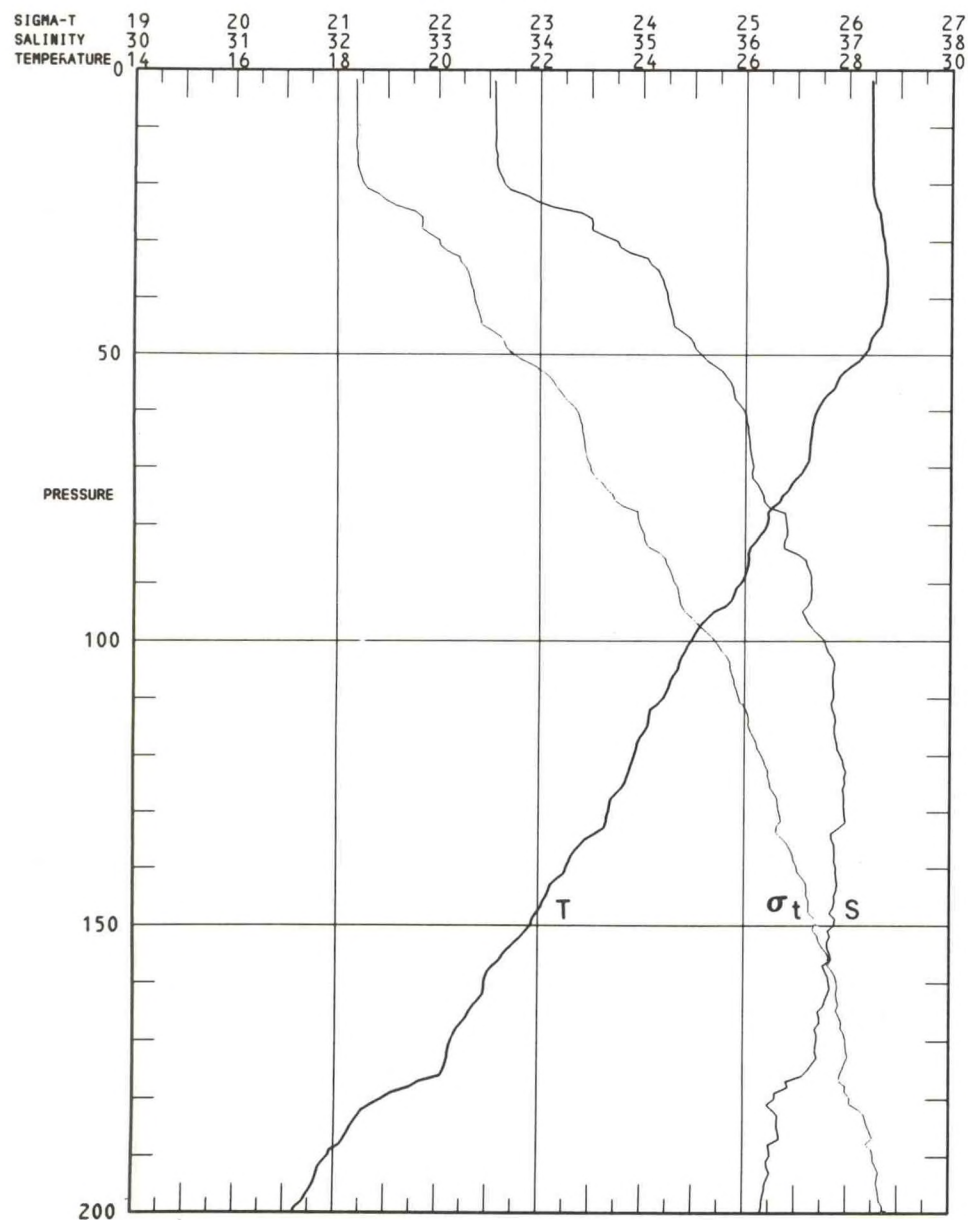
Mt. Mitchell, June 21, 1969, 1200 GMT, 12°21'N 058°23'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 21, 1969, 1800 GMT, 12°20'N 058°23'W

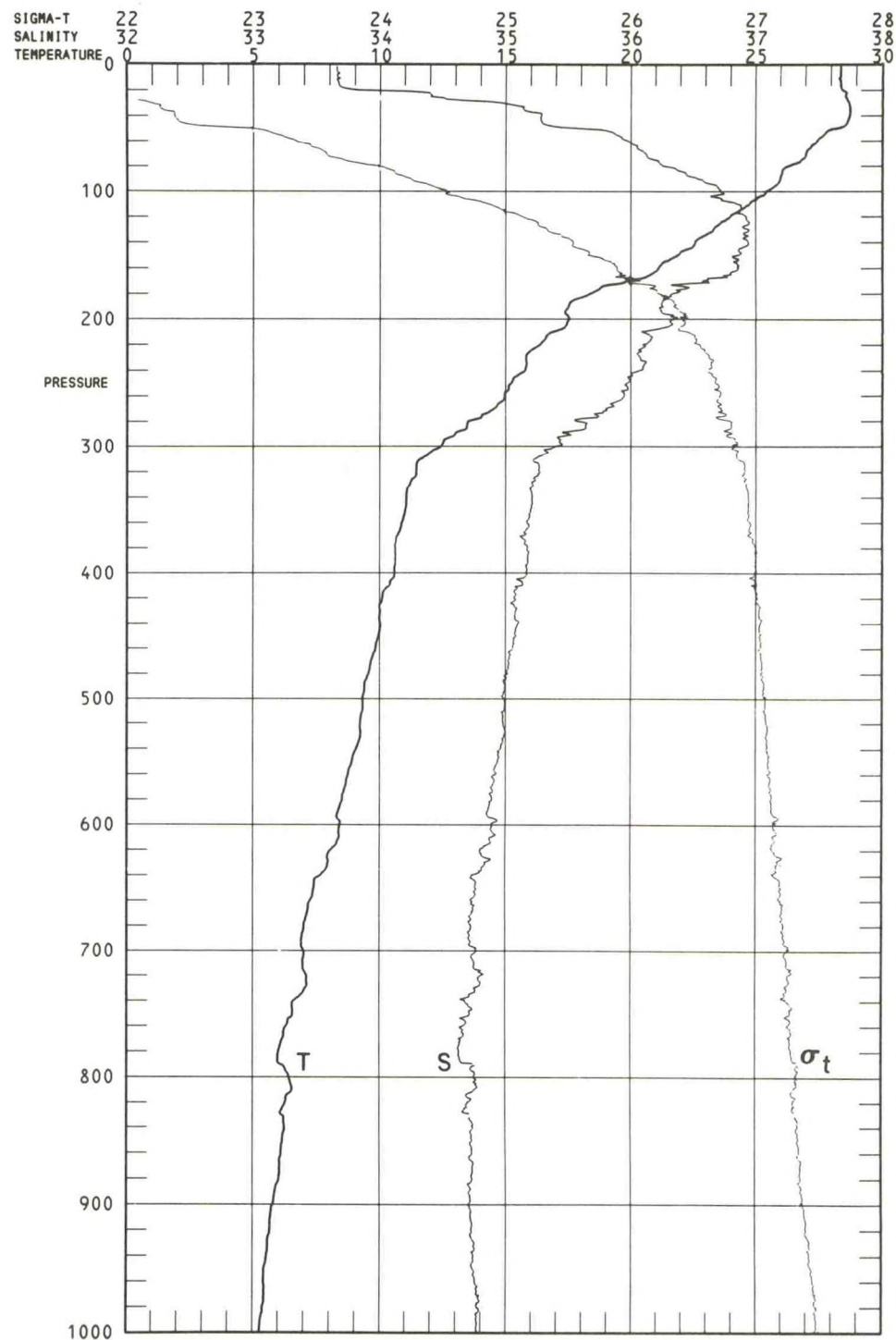
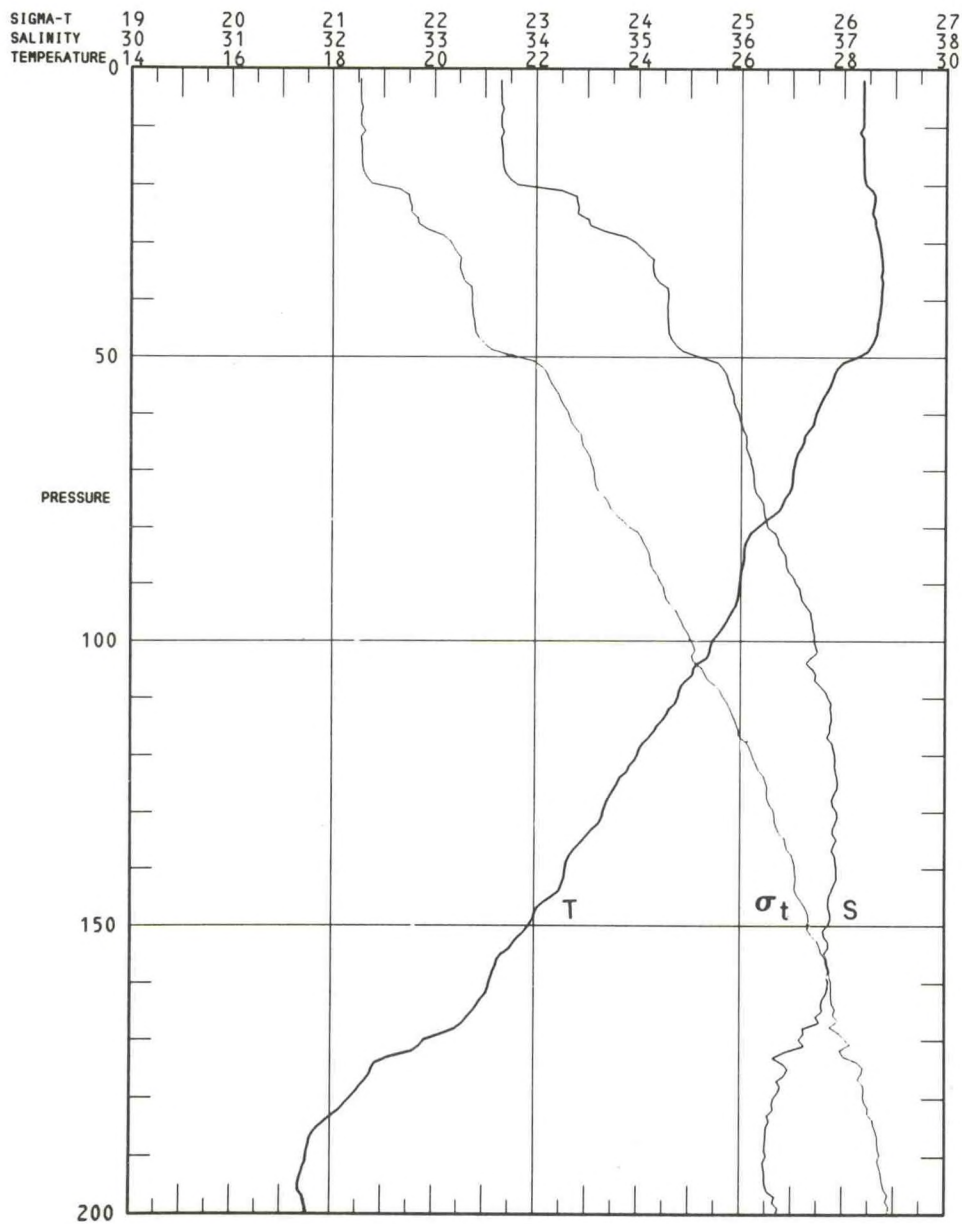
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 22, 1969, 0100 GMT, 12°20'N 058°22'W

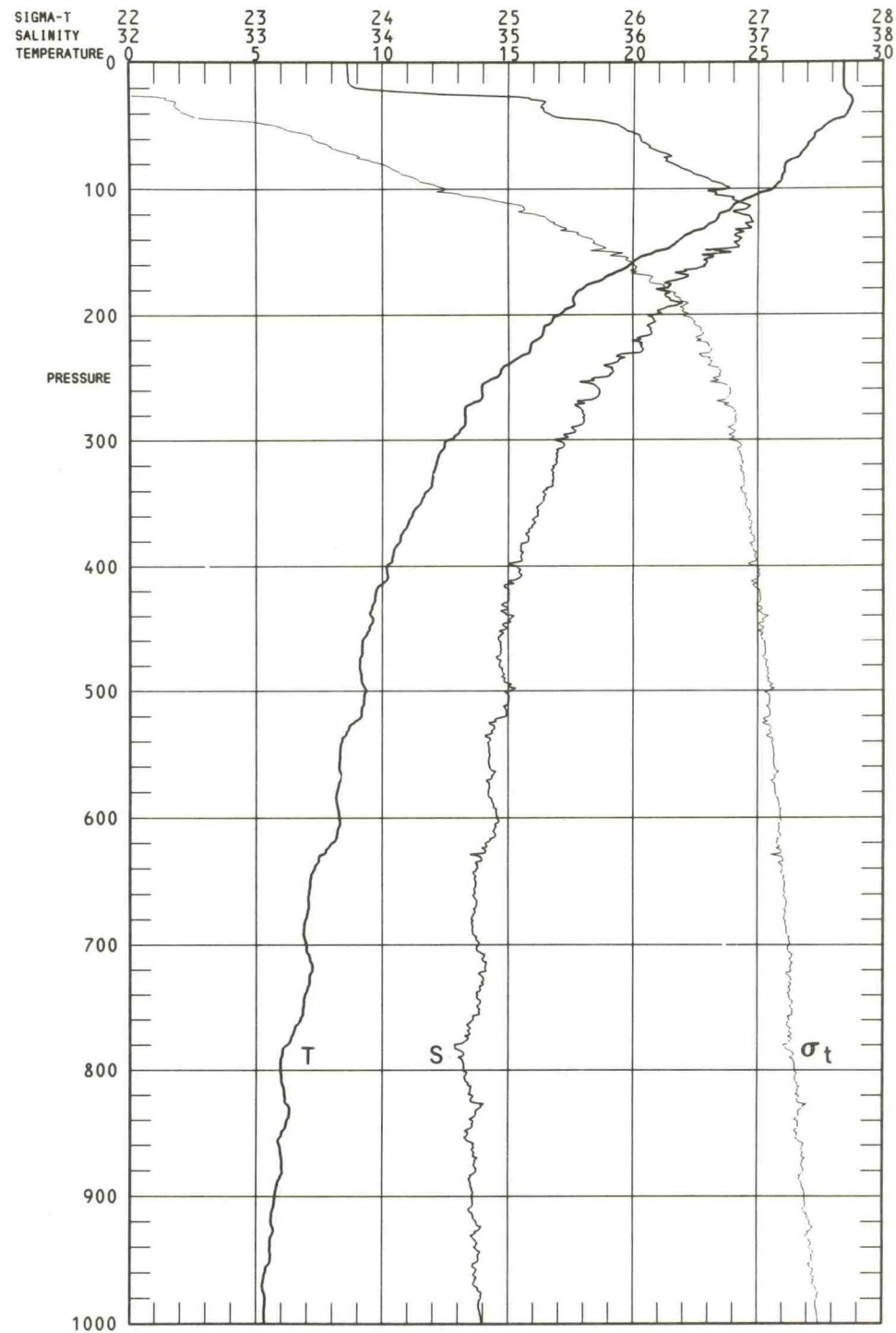
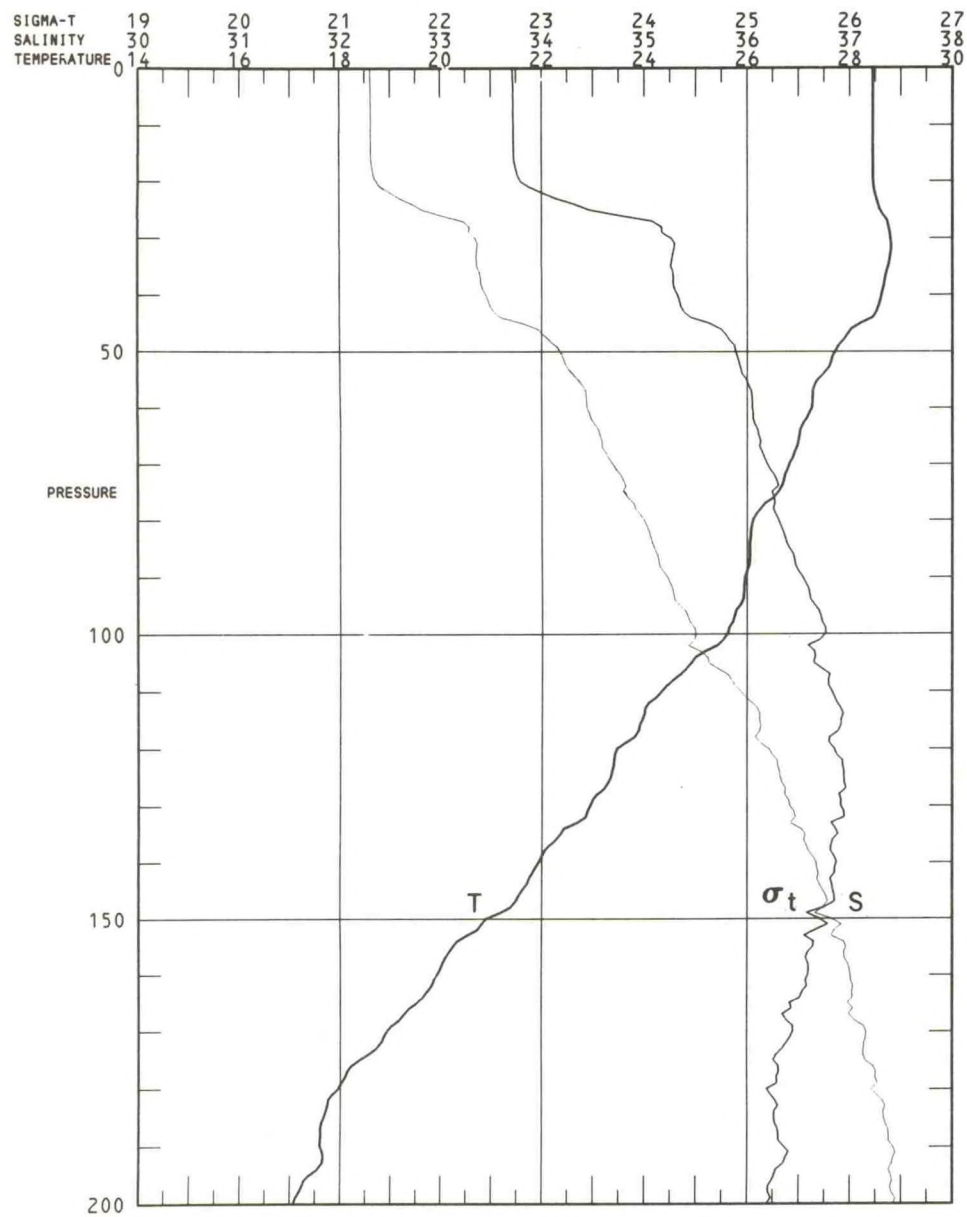


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 22, 1969, 1215 GMT, 12°20'N 058°23'W

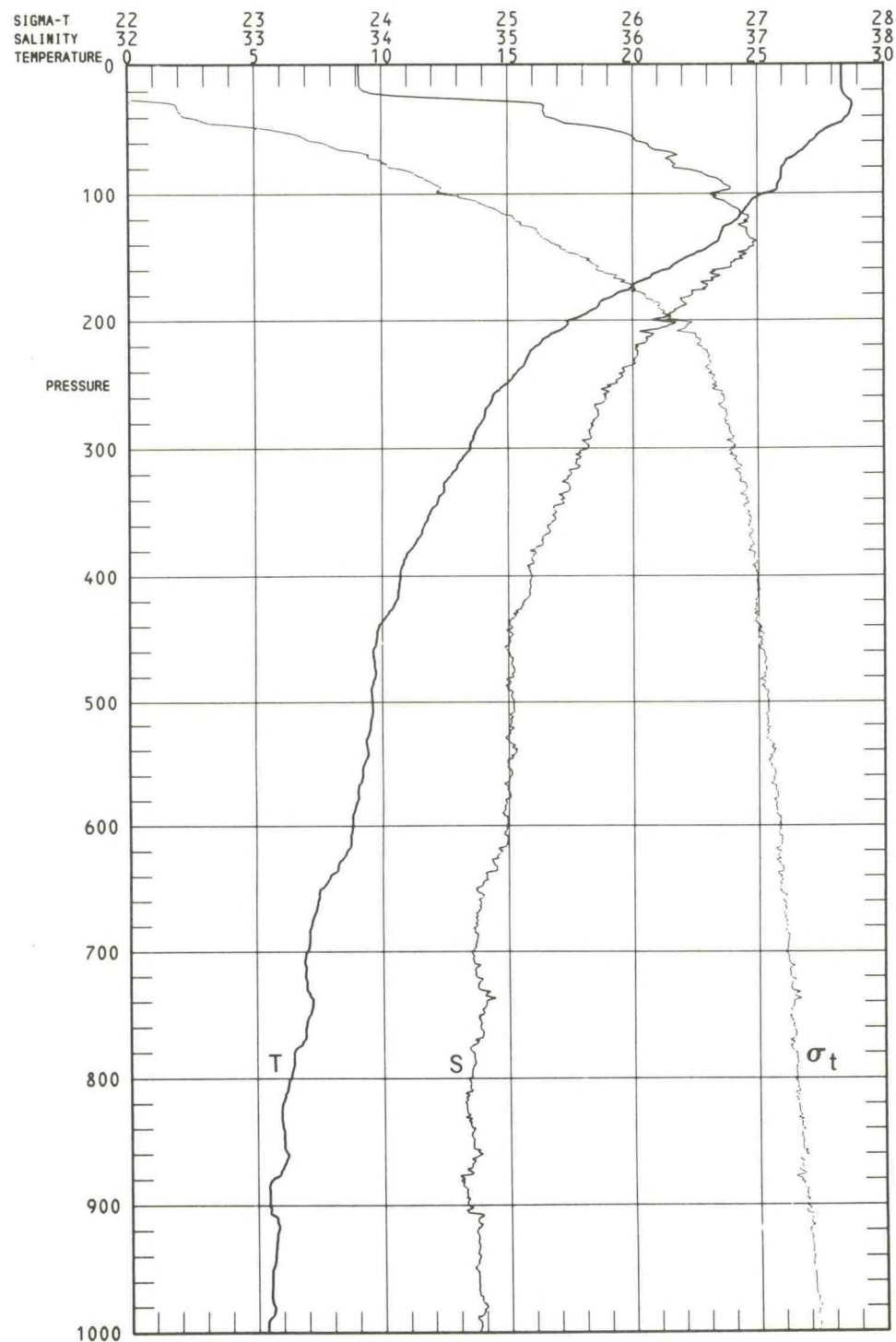
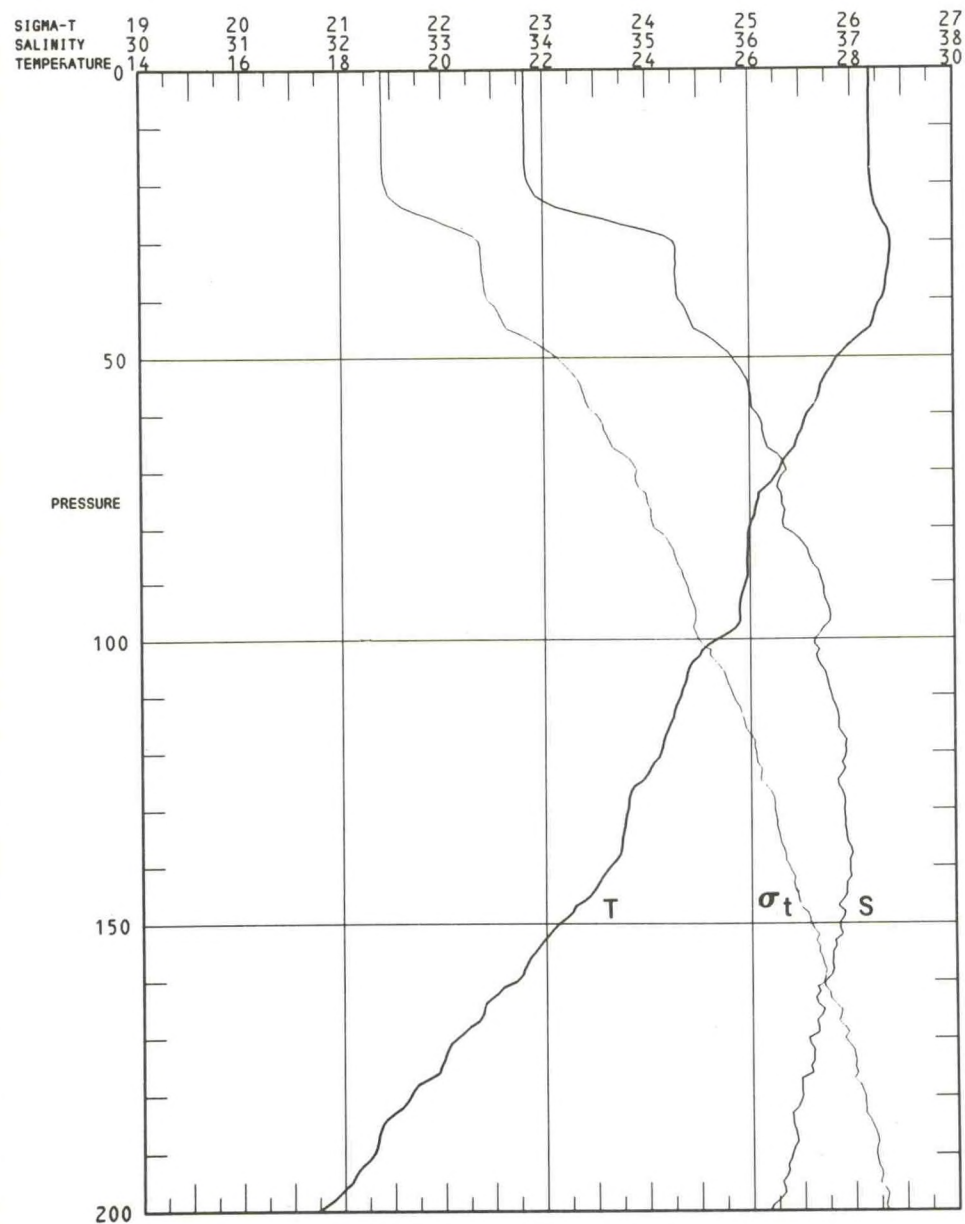
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 22, 1969, 1800 GMT, 12°21'N 058°23'W

MT. MITCHELL YEAR 1969 DAY 174 TIME 0115 GMT LAT 12°20' LON 058°22'

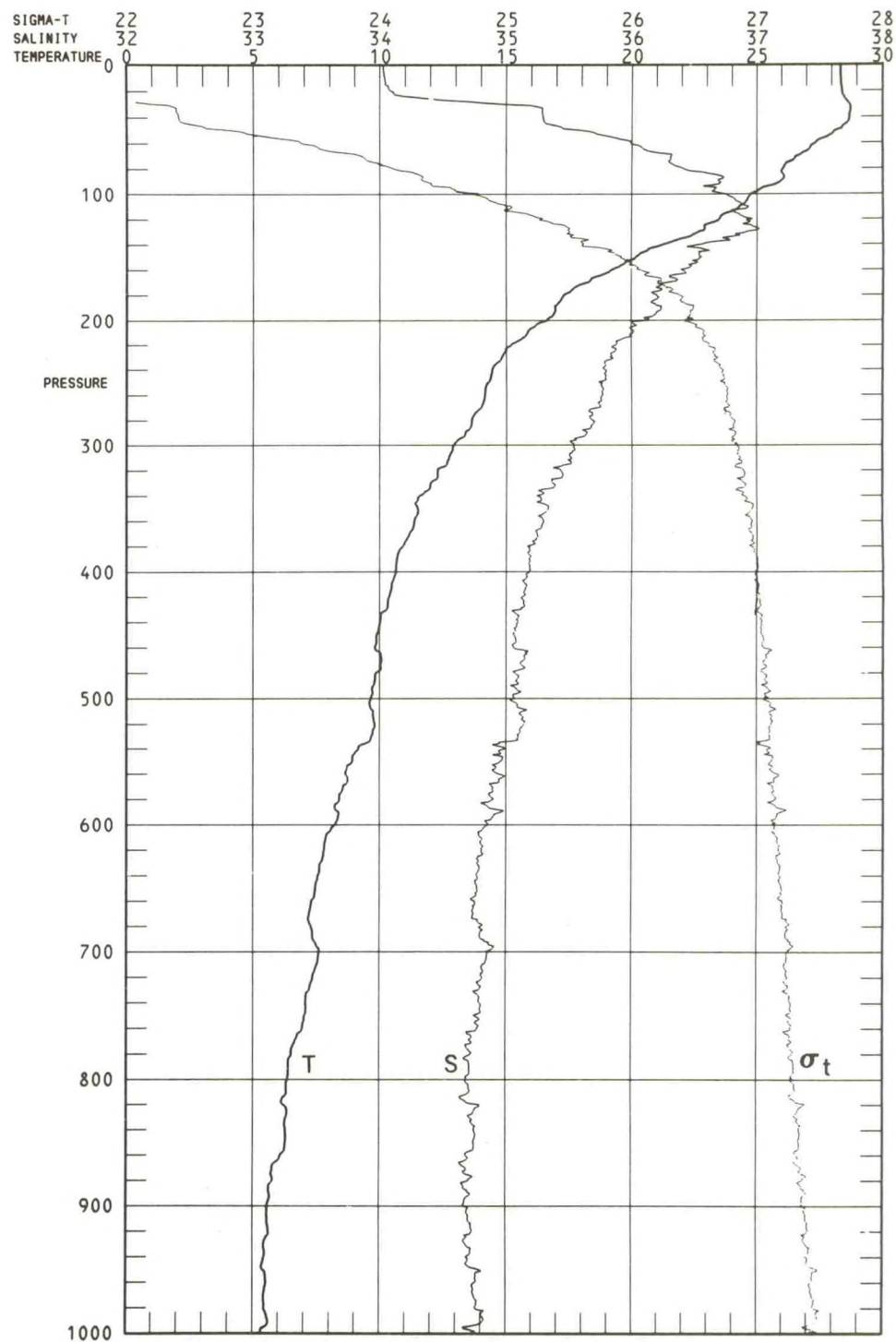
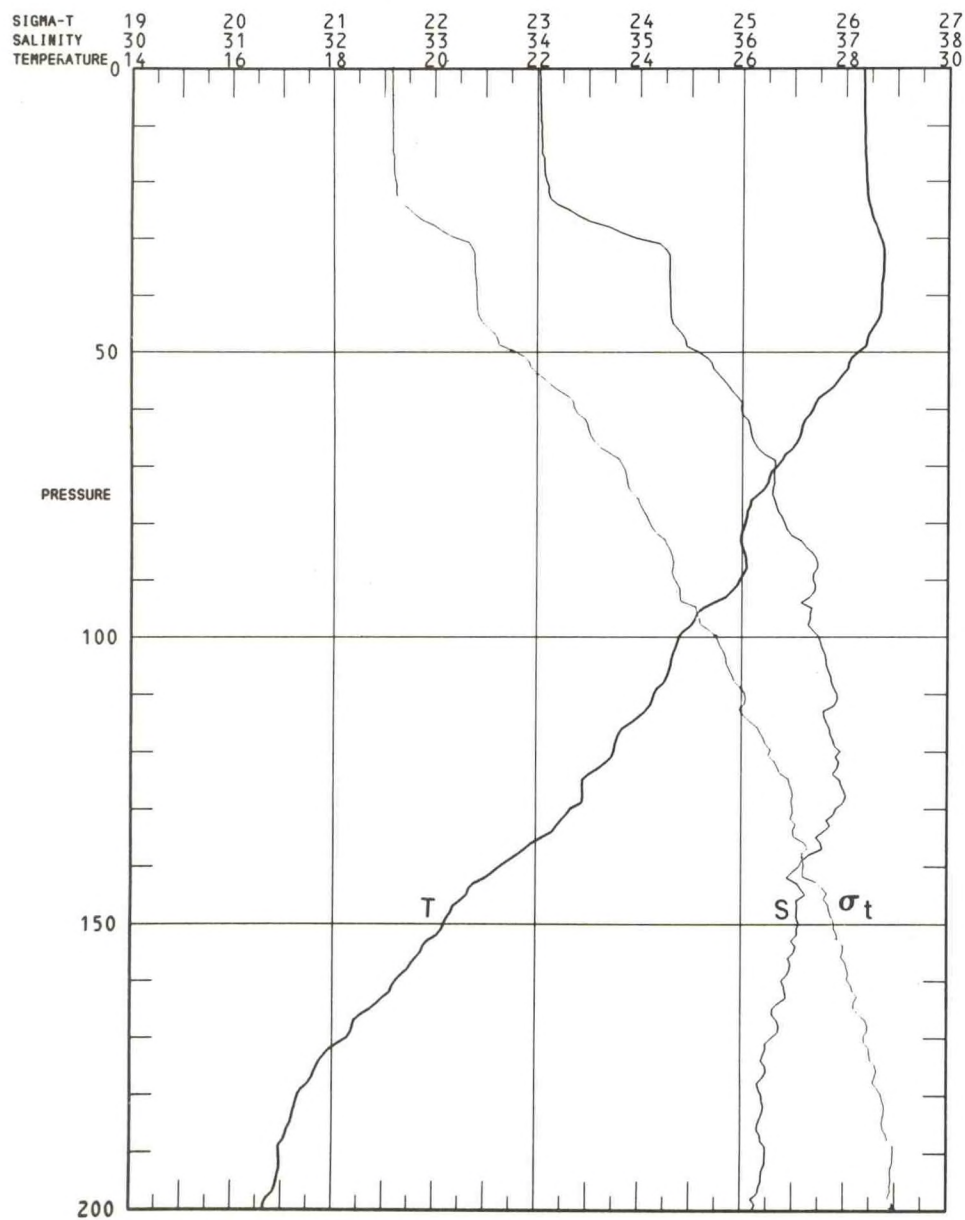
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Mt. Mitchell, June 23, 1969, 0115 GMT, 12°20'N 058°22'W



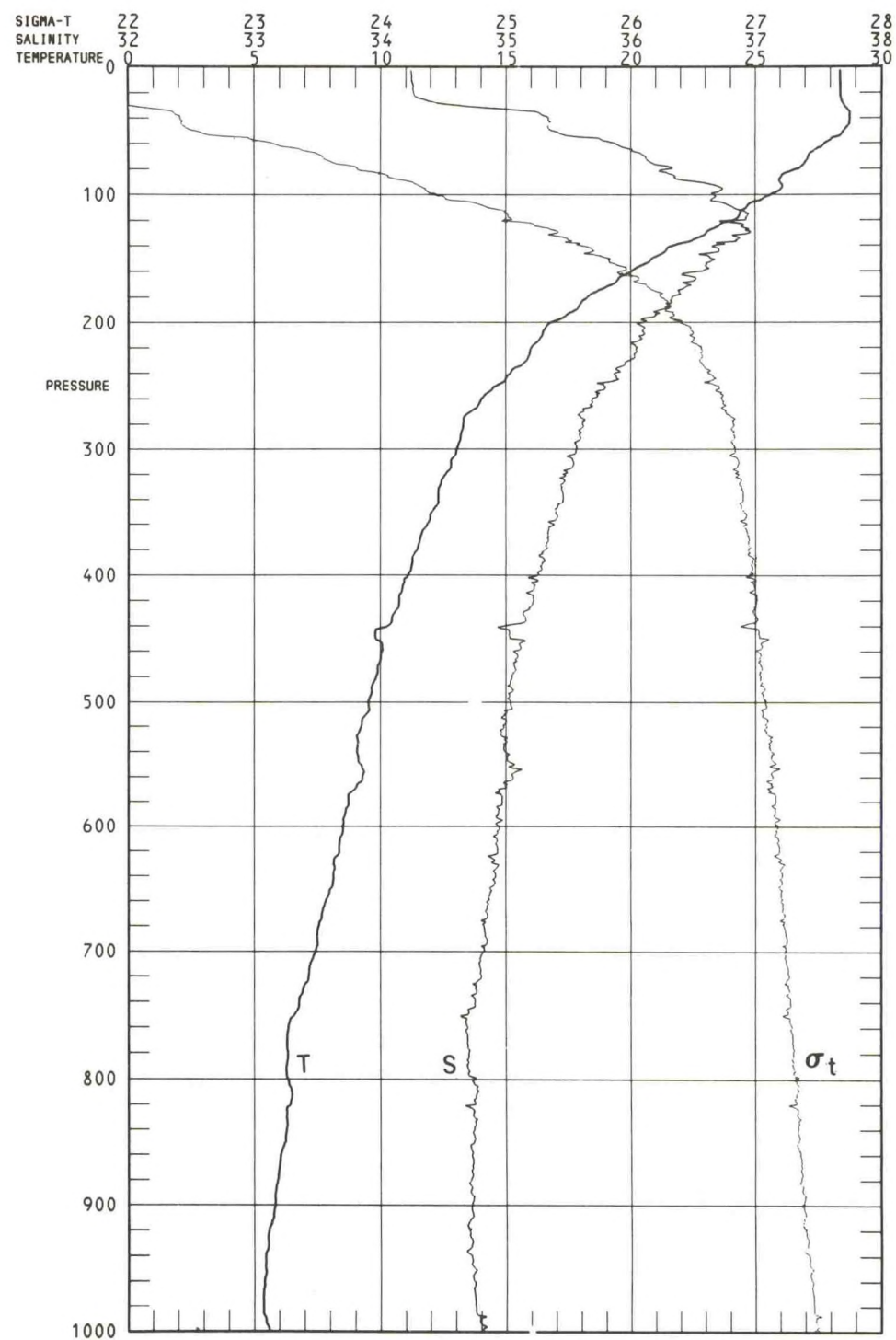
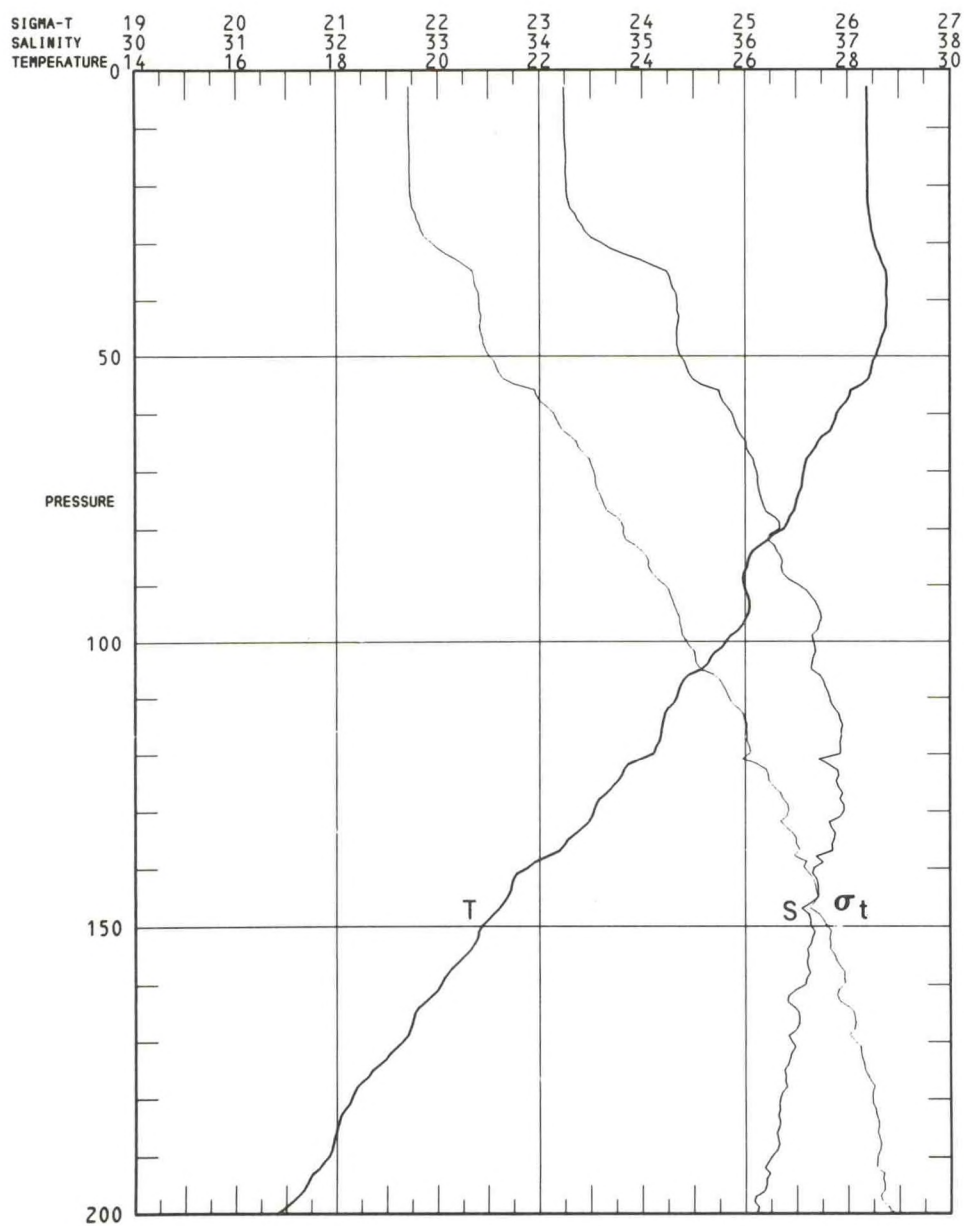
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 23, 1969, 0600 GMT, 12°20'N 058°23'W

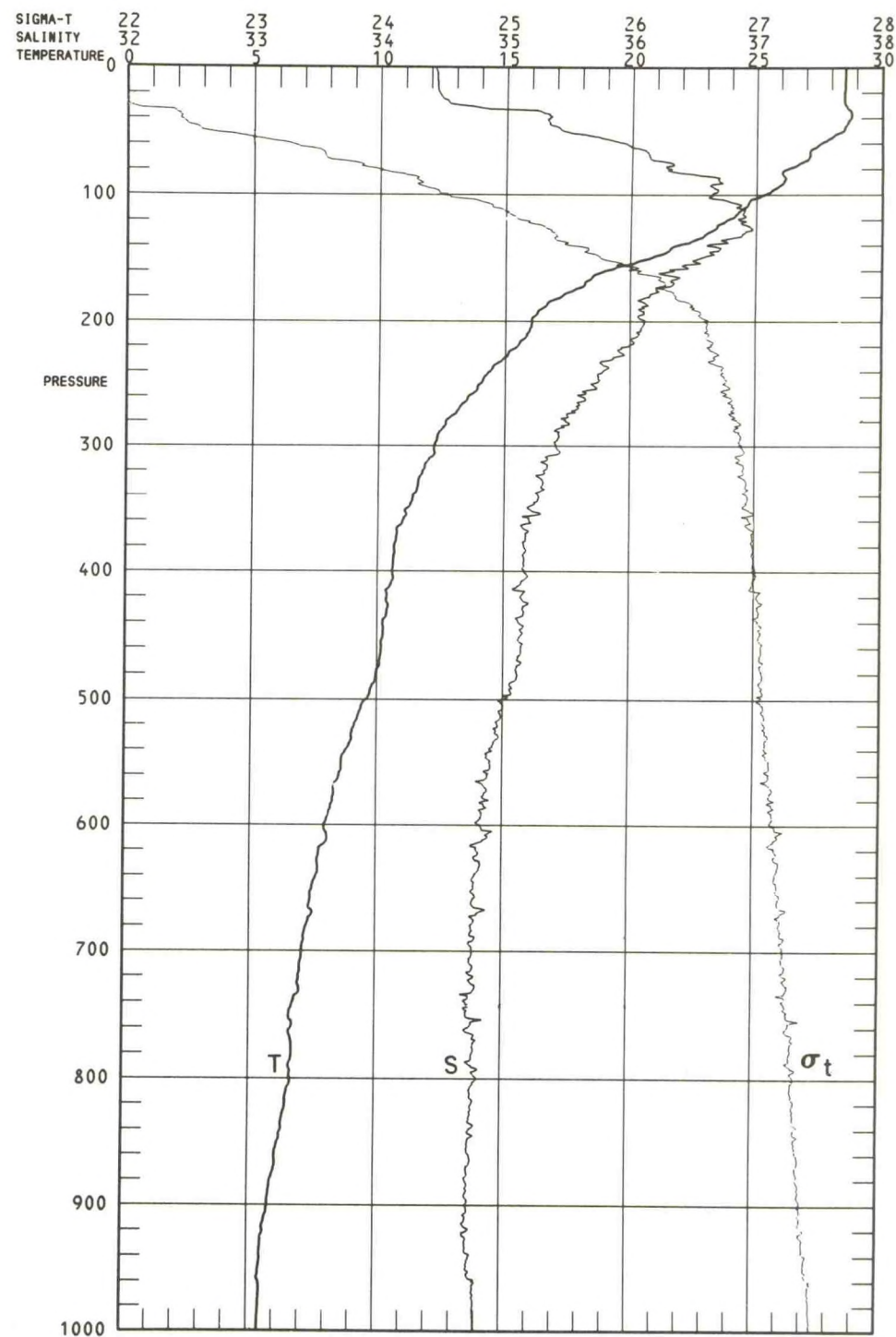
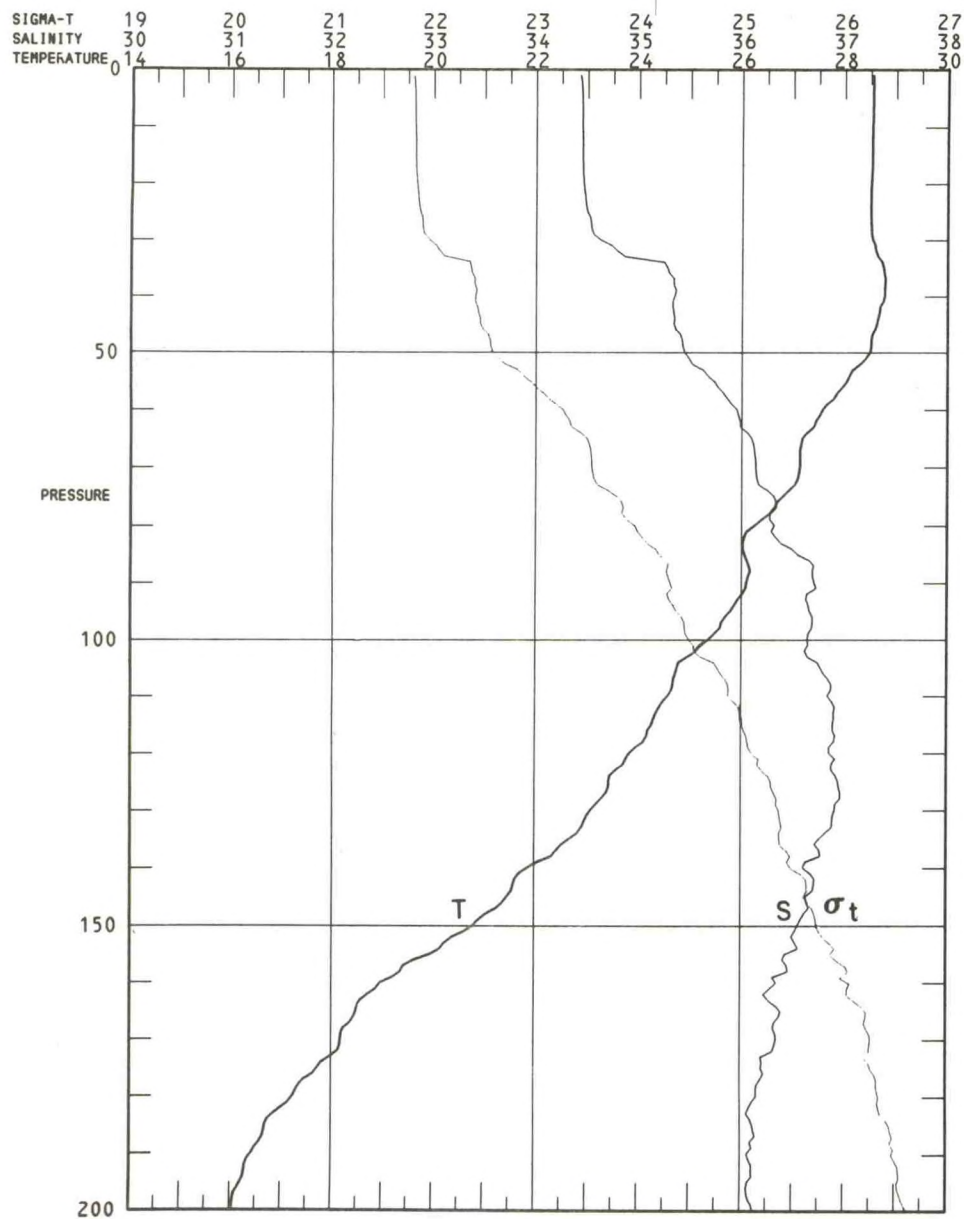
MT. MITCHELL YEAR 1969 DAY 174 TIME 1215 GMT LAT 12°30' LON 058°22'

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Mt. Mitchell, June 23, 1969, 1215 GMT, 12°30'N 058°22'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

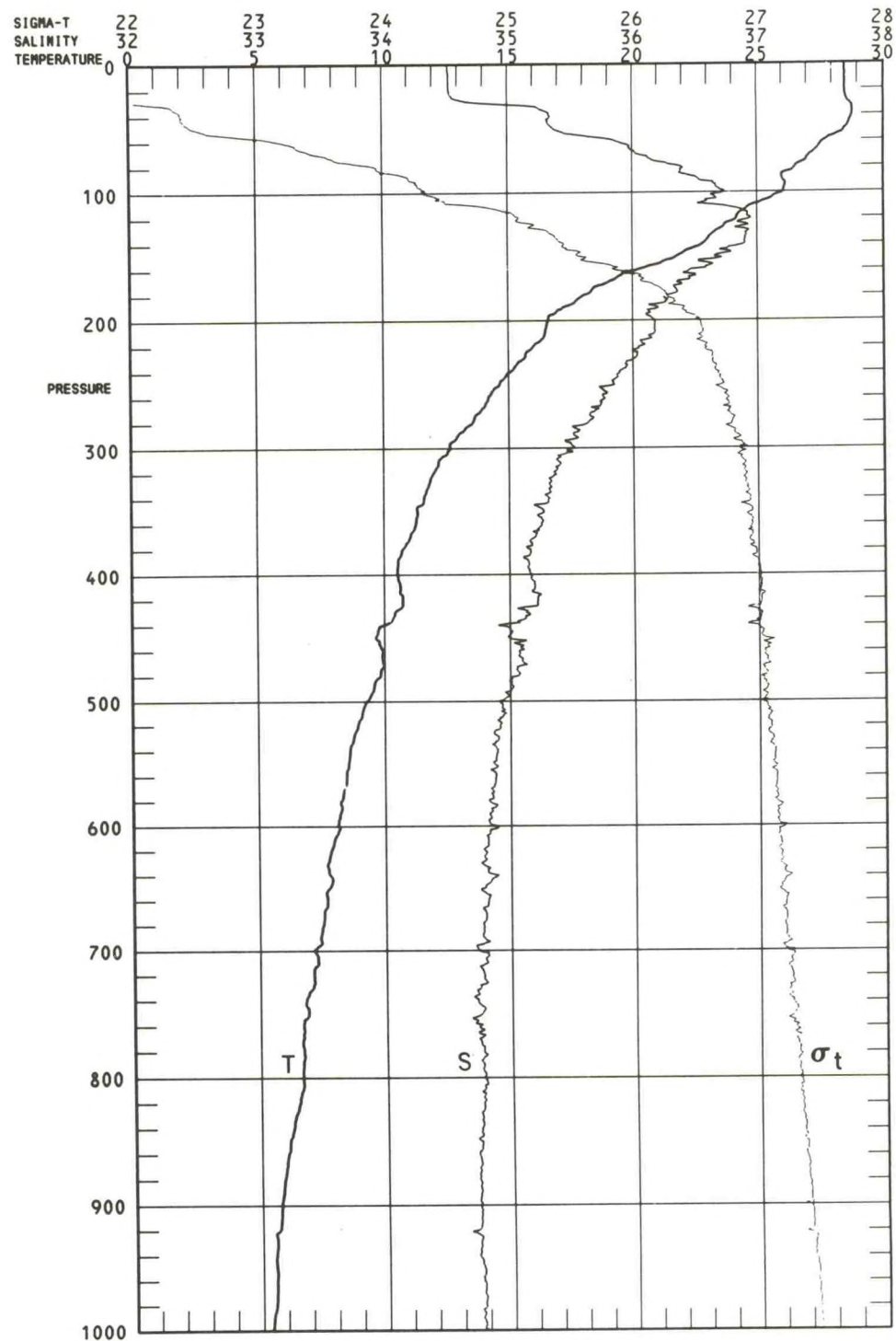
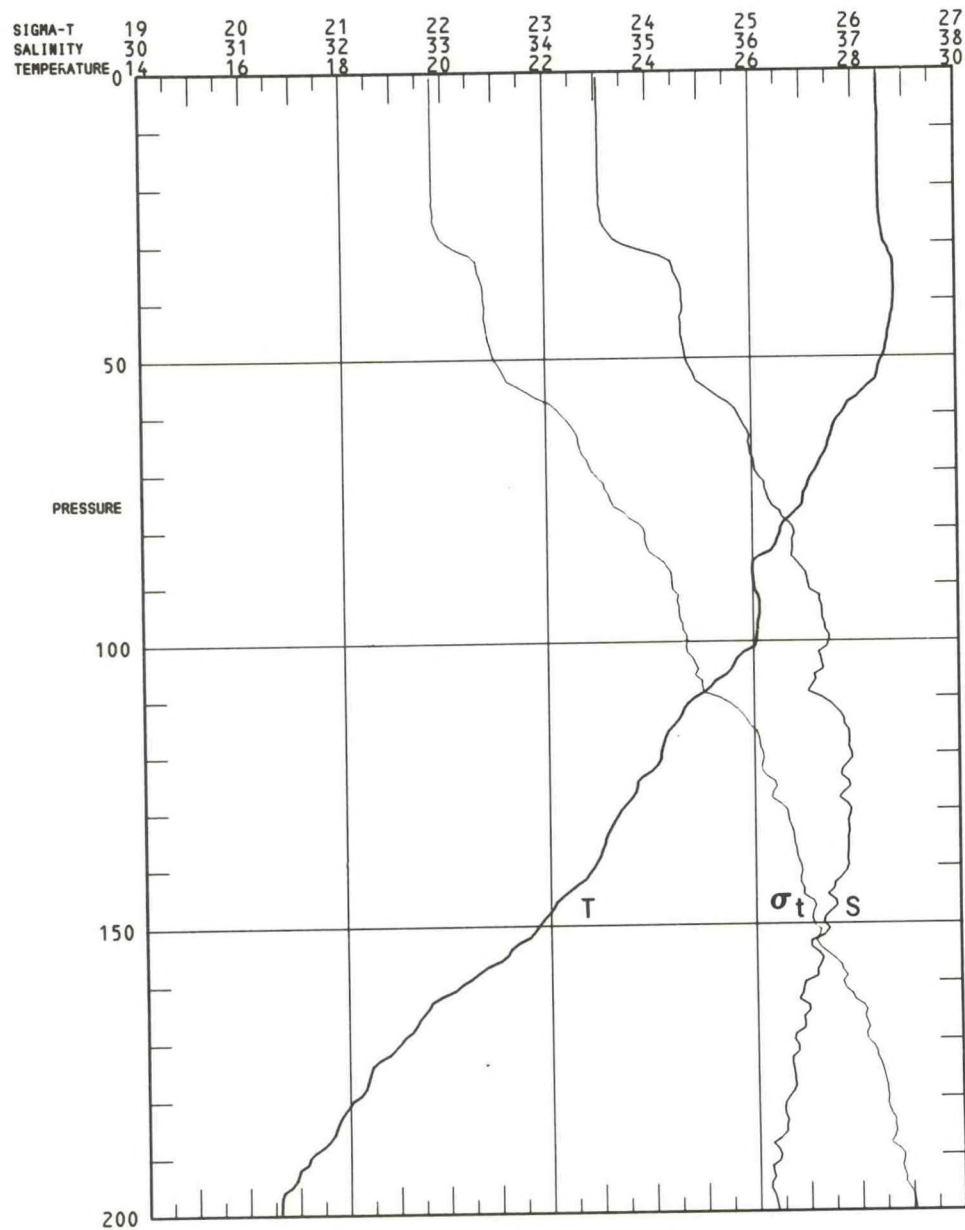


Mt. Mitchell, June 23, 1969, 1800 GMT, 12°20'N 058°21'W



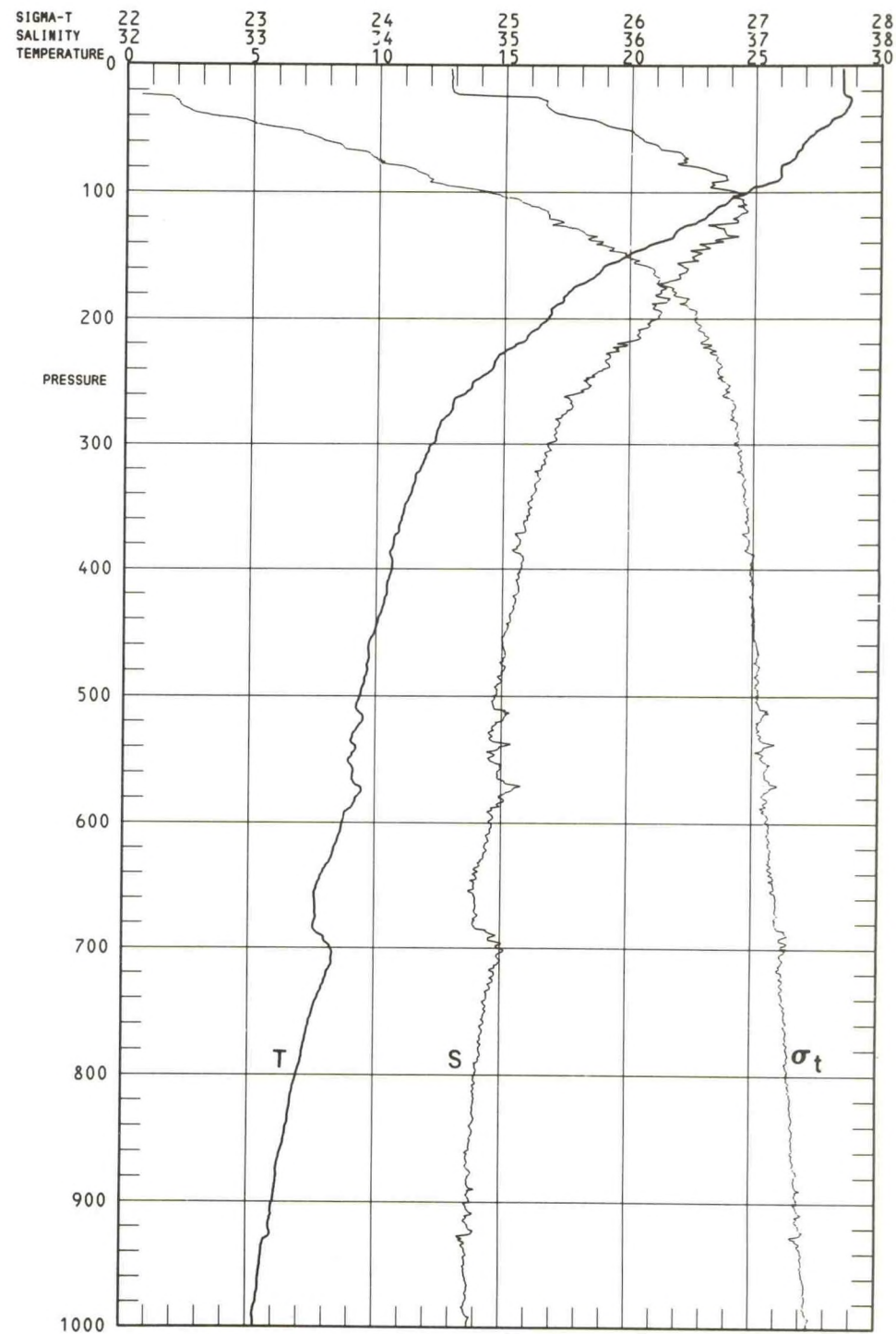
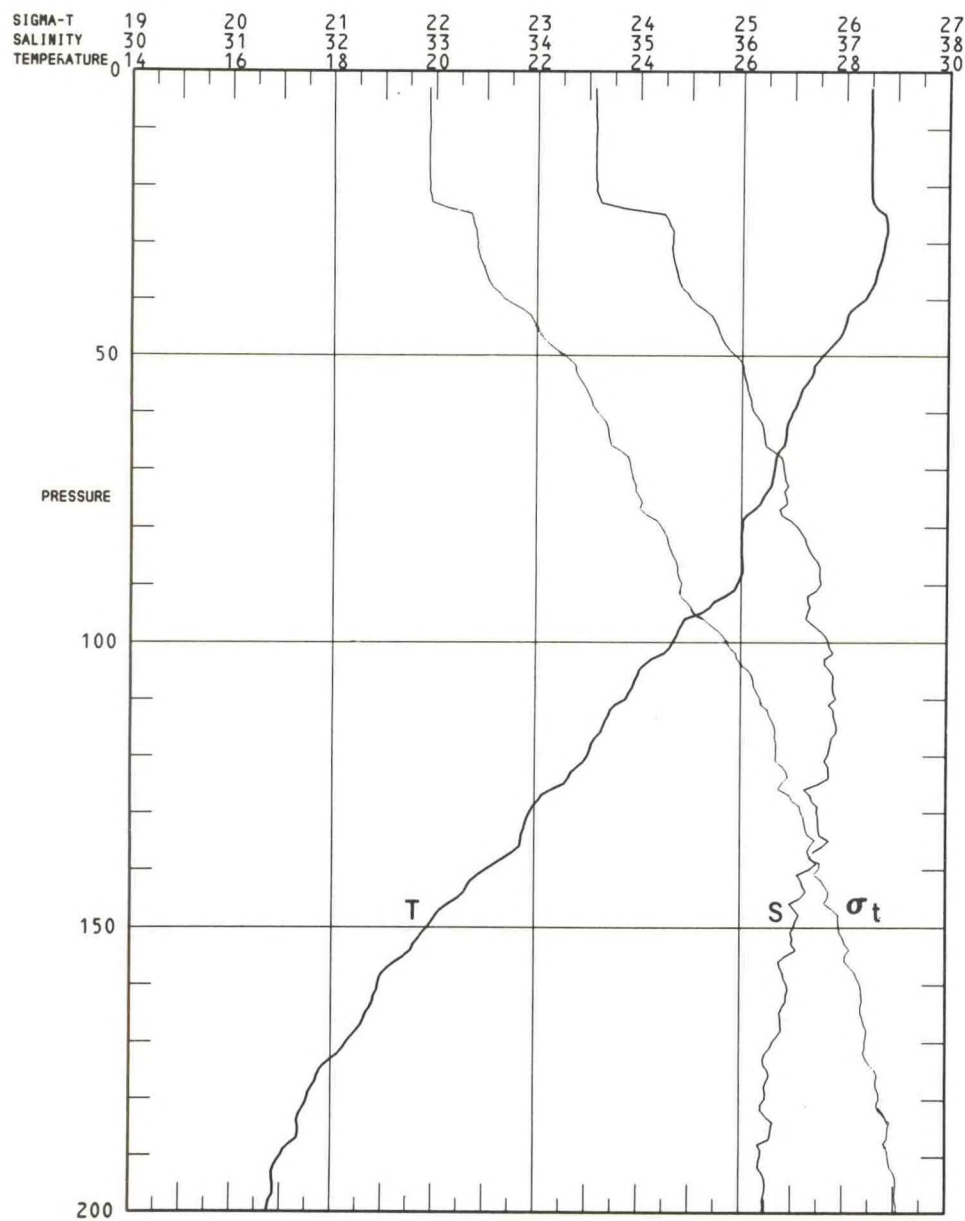
MT. MITCHELL YEAR 1969 DAY 175 TIME 100 GMT LAT.12°20' LON.058°22'

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 24, 1969, 0100 GMT, 12°20'N 058°22'W

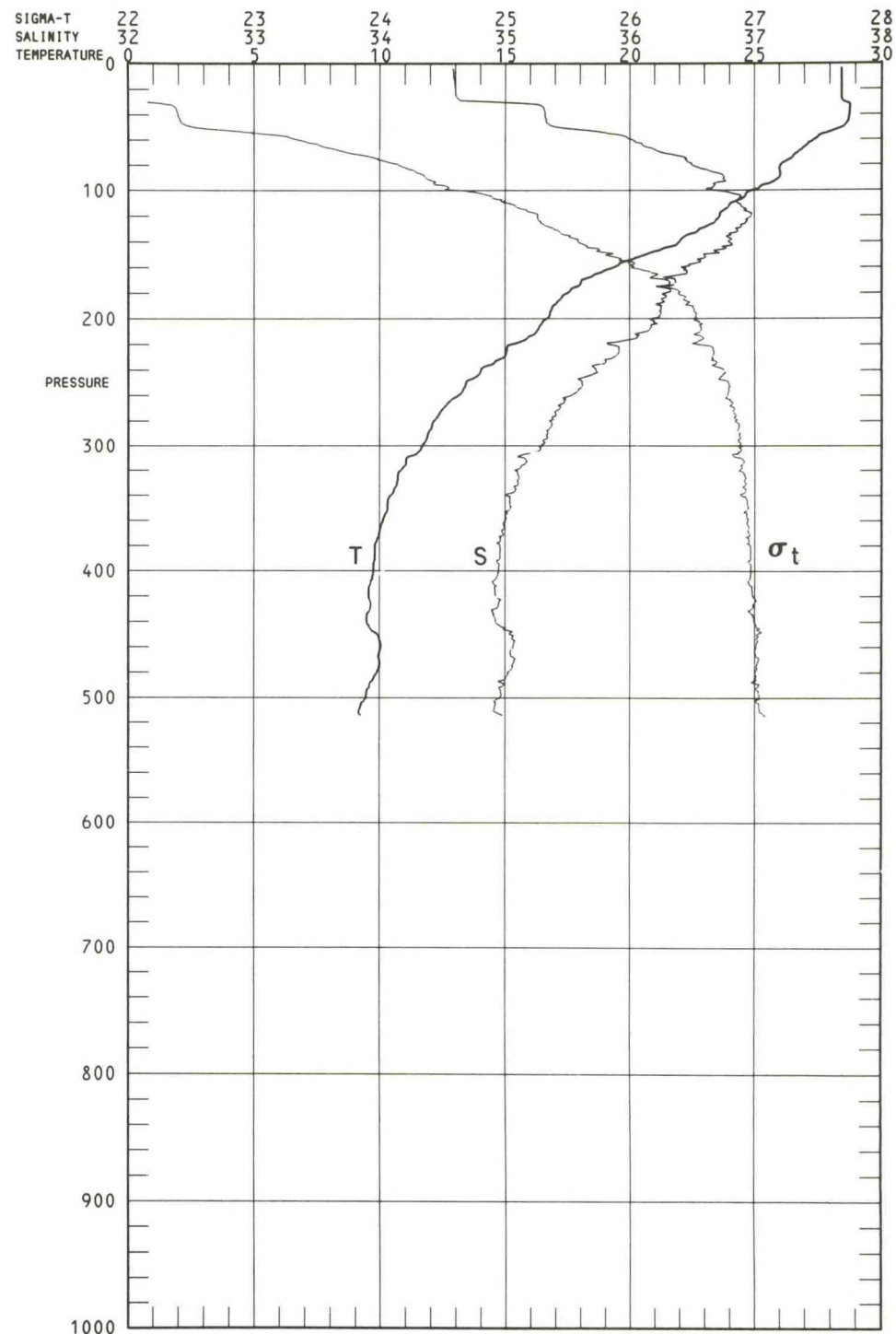
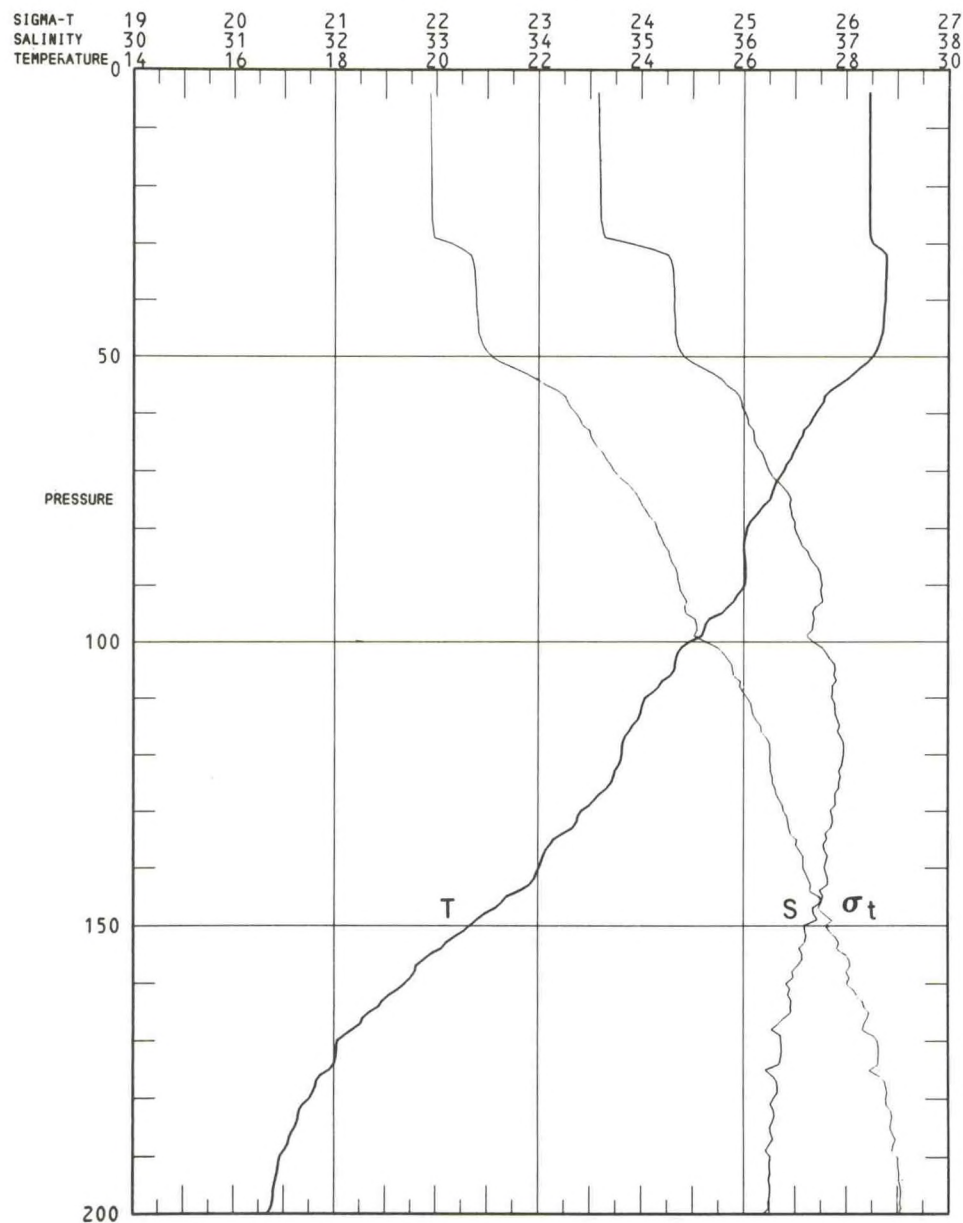
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 24, 1969, 0549 GMT, 12°21'N 058°20'W

MT. MITCHELL YEAR 1969 DAY 175 TIME 1216 GMT LAT.12°20'N LON.058°22'W  
THIS CAST ENDS AT 512 DBARS

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

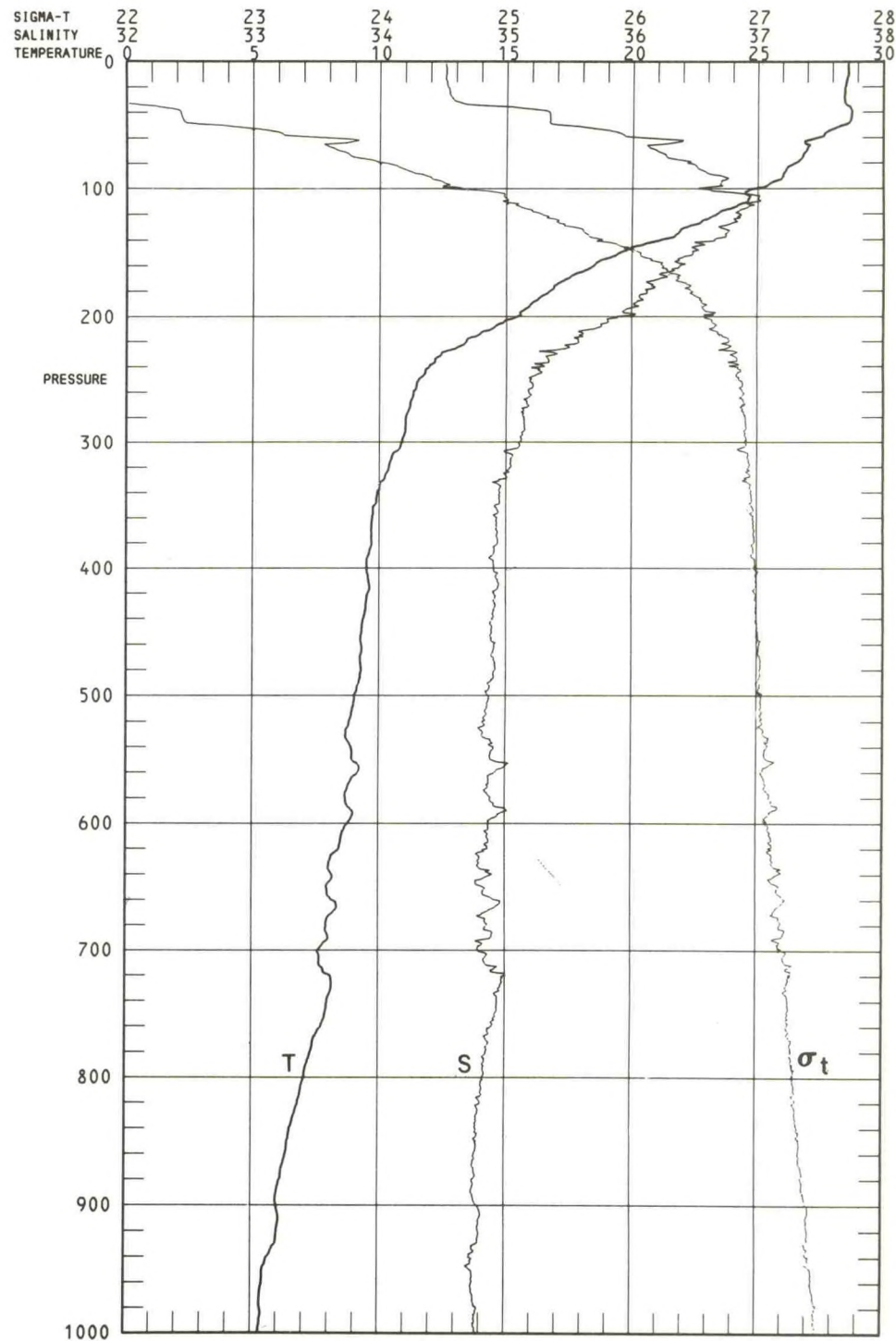
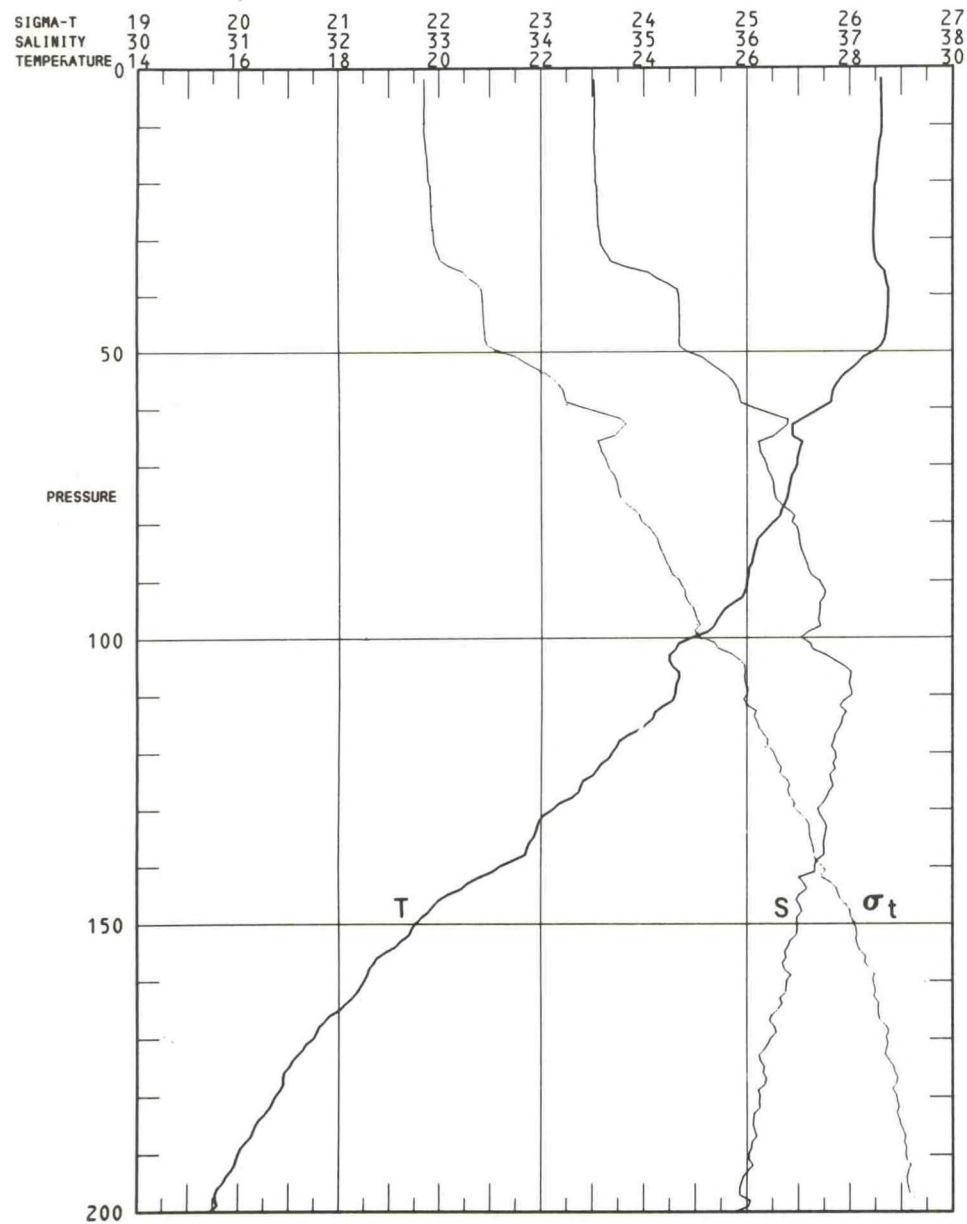


Mt. Mitchell, June 24, 1969, 1216 GMT, 12°20'N 058°22'W



# STD Depth-Sorted Plots

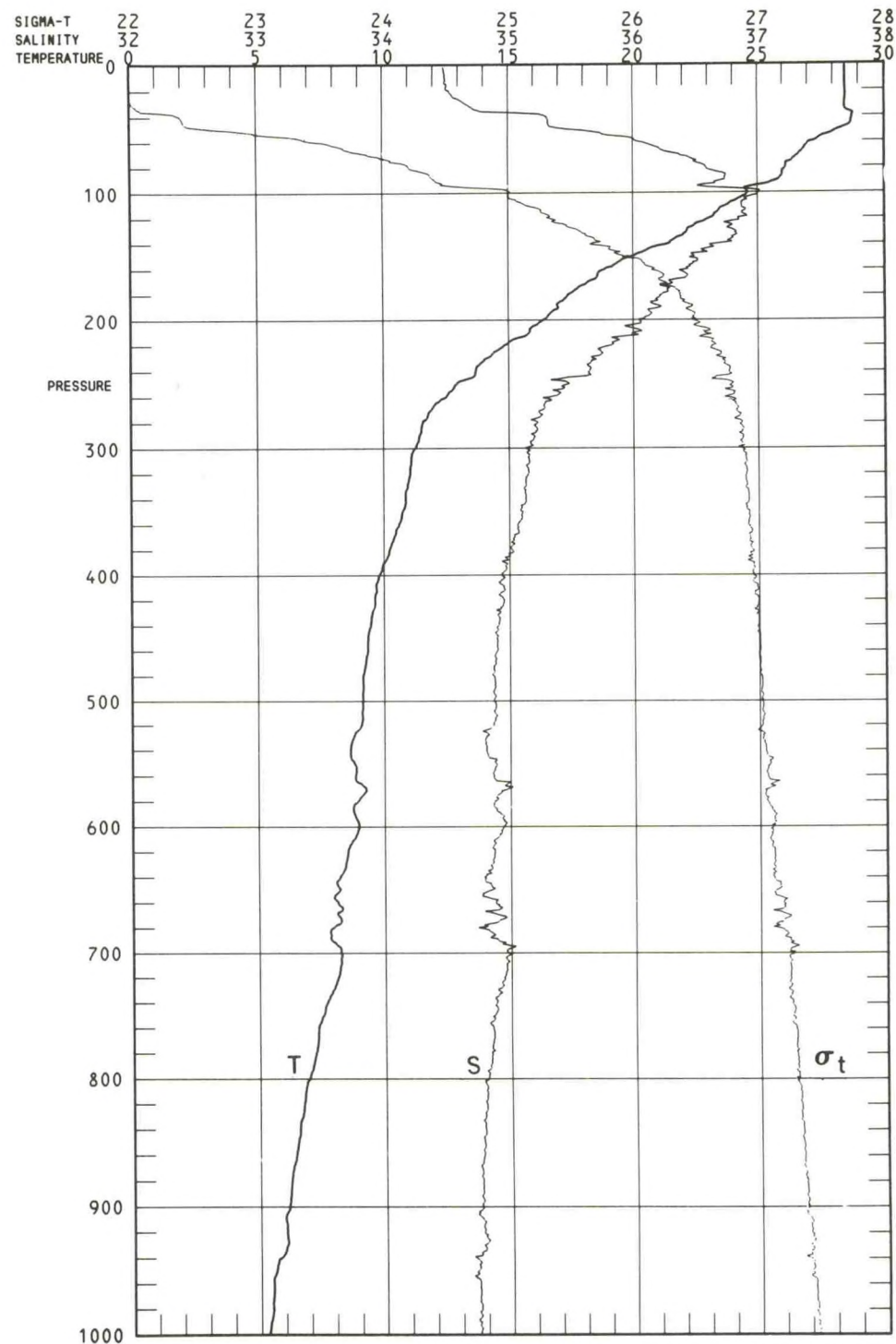
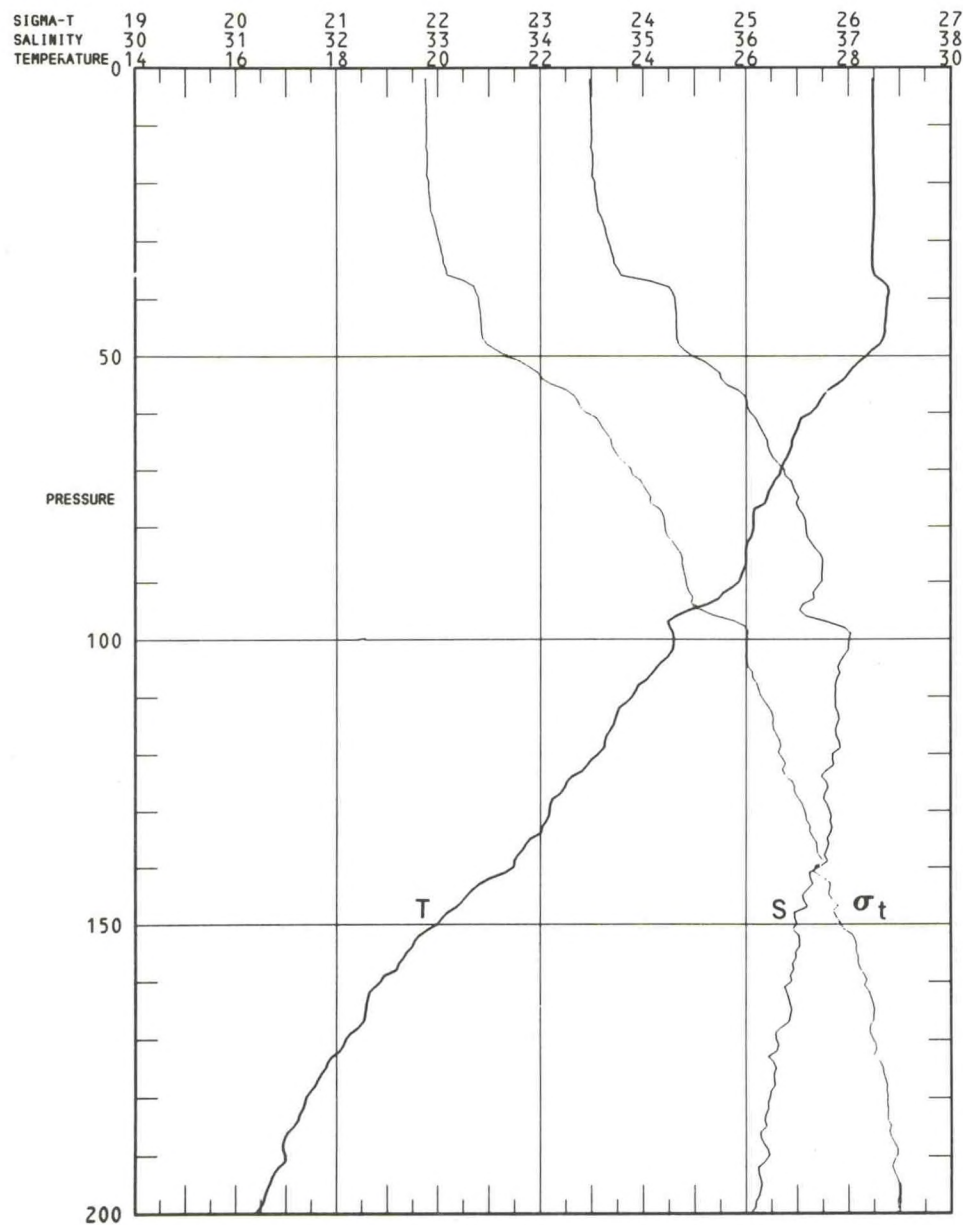
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 24, 1969, 1752 GMT, 12°22'N 058°20'W

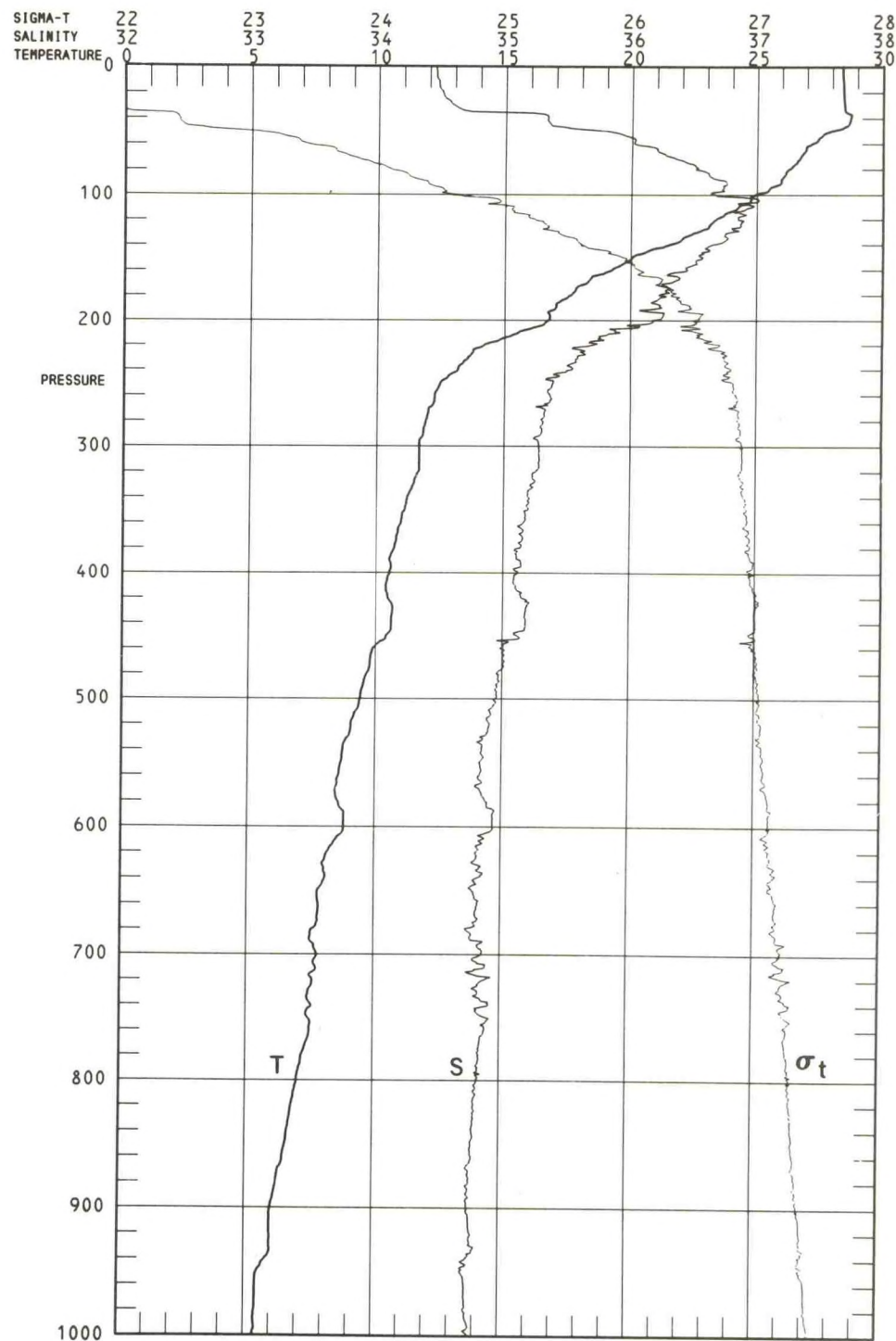
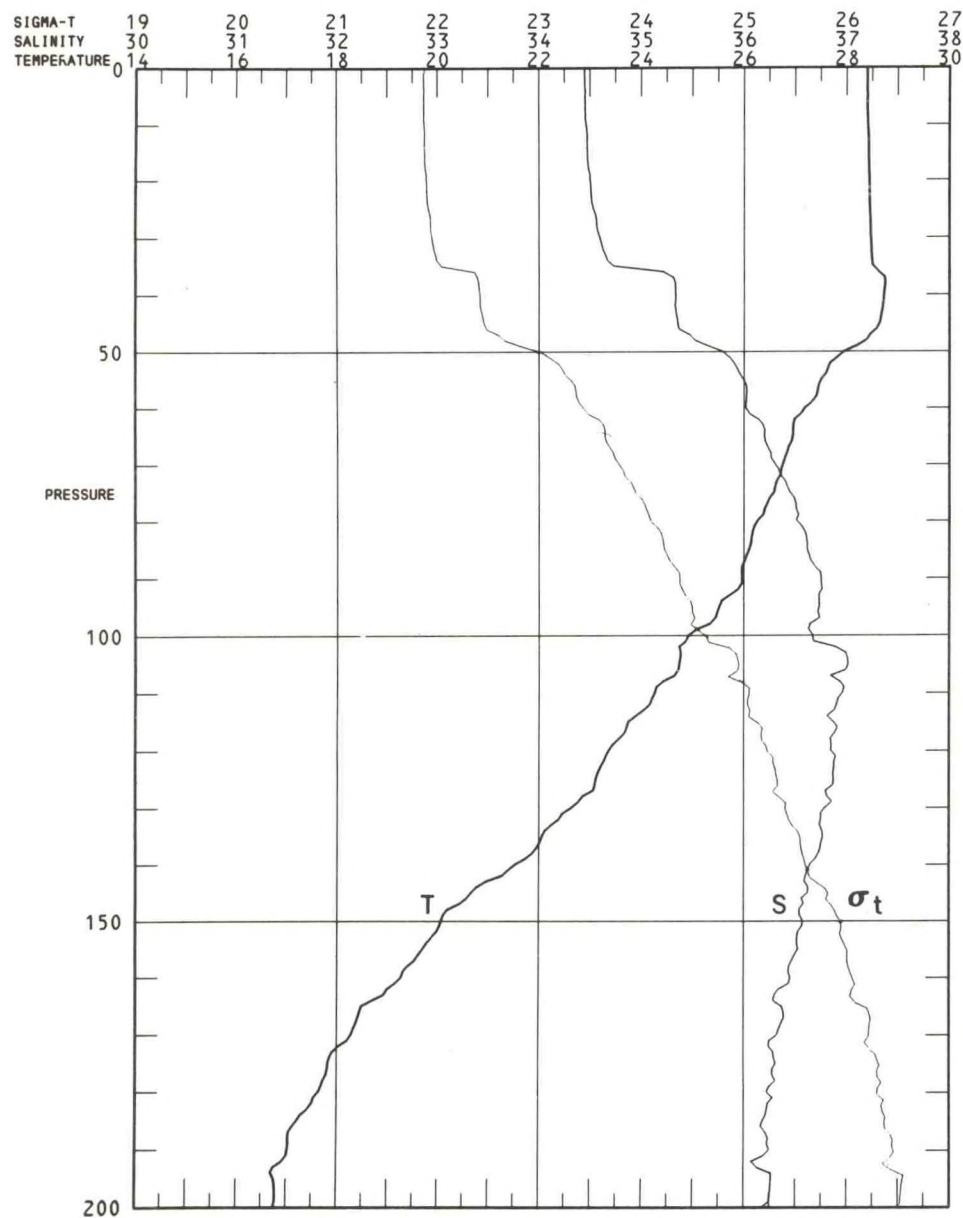
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



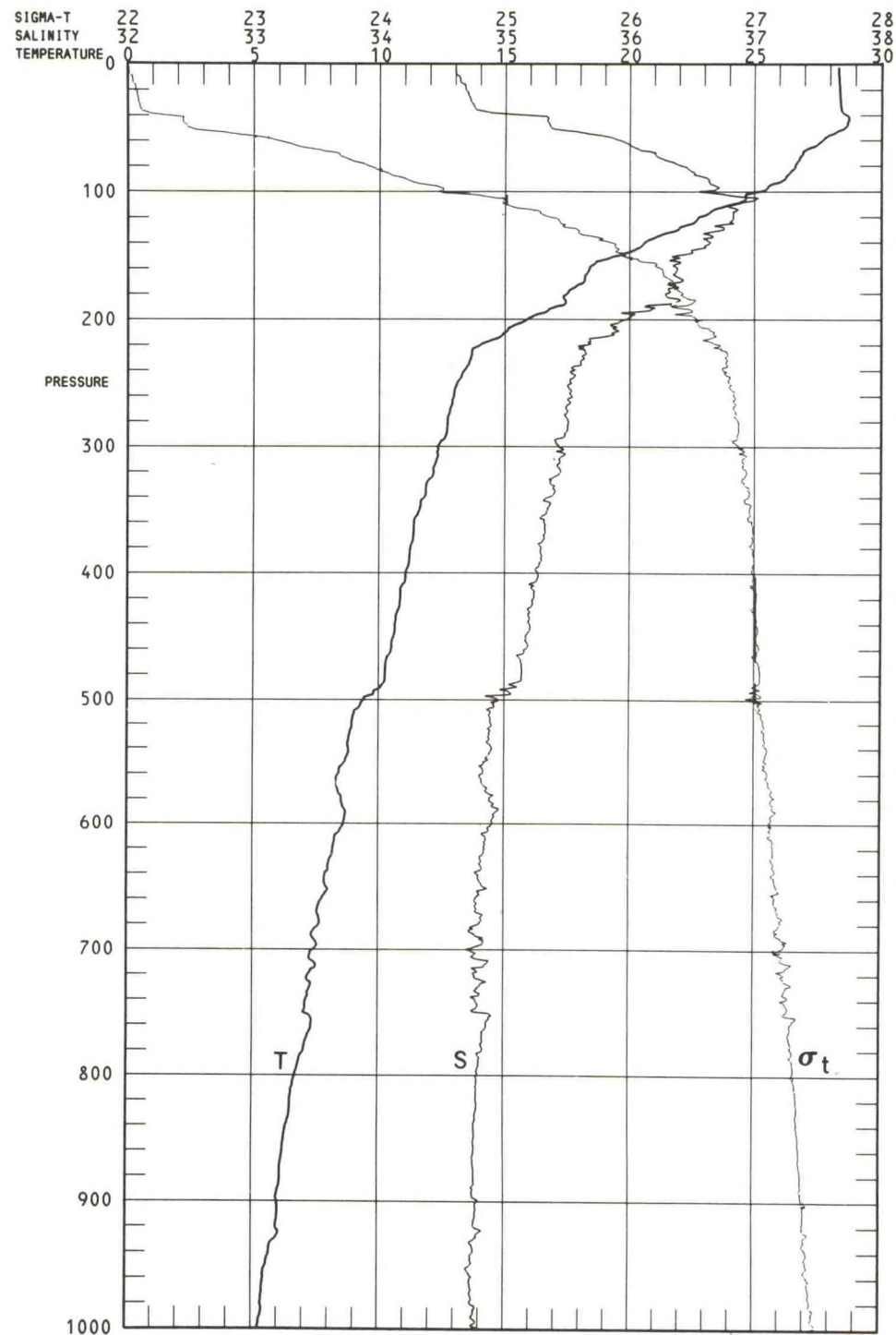
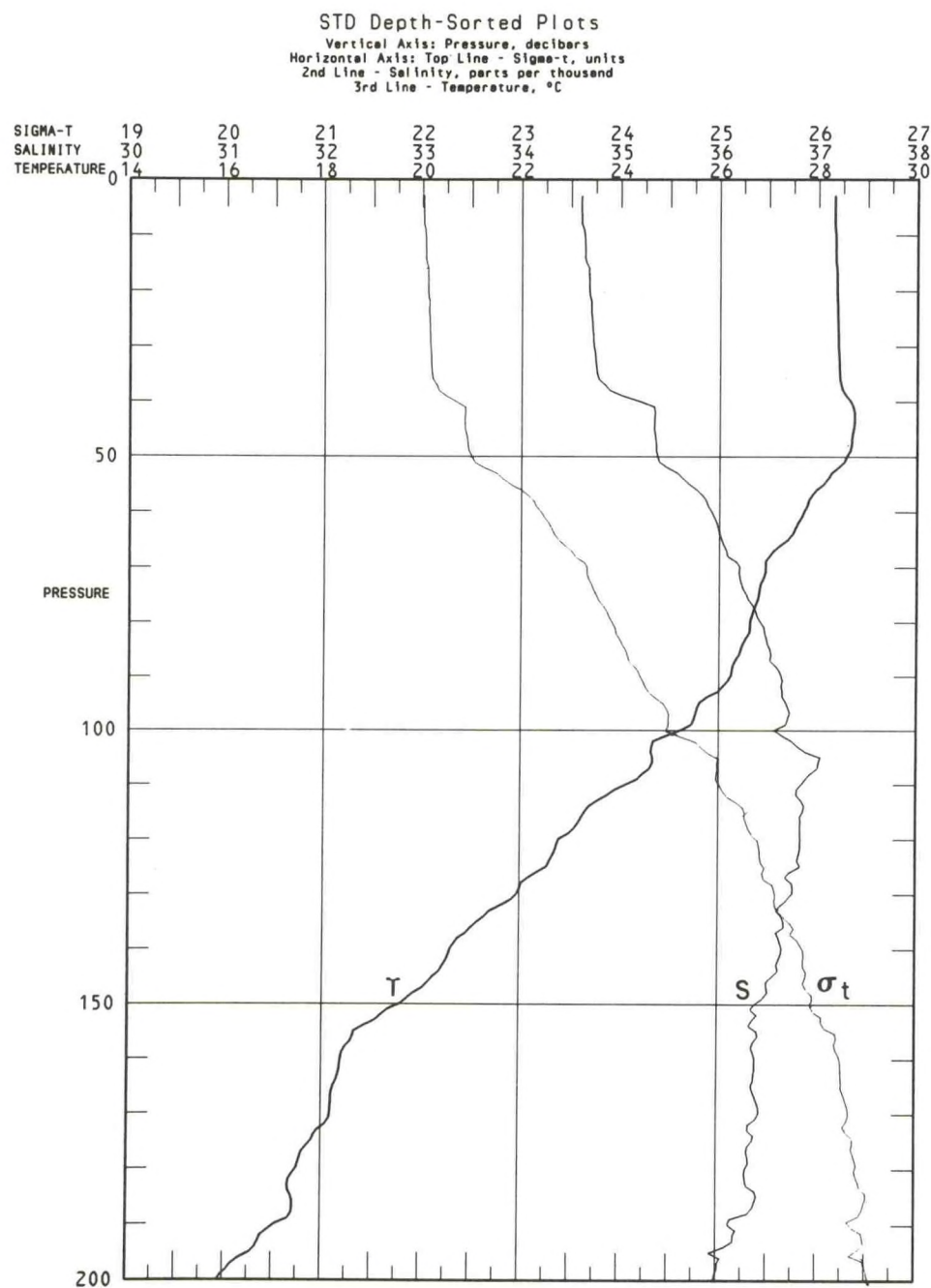
Mt. Mitchell, June 25, 1969, 0106 GMT, 12°20'N 058°21'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



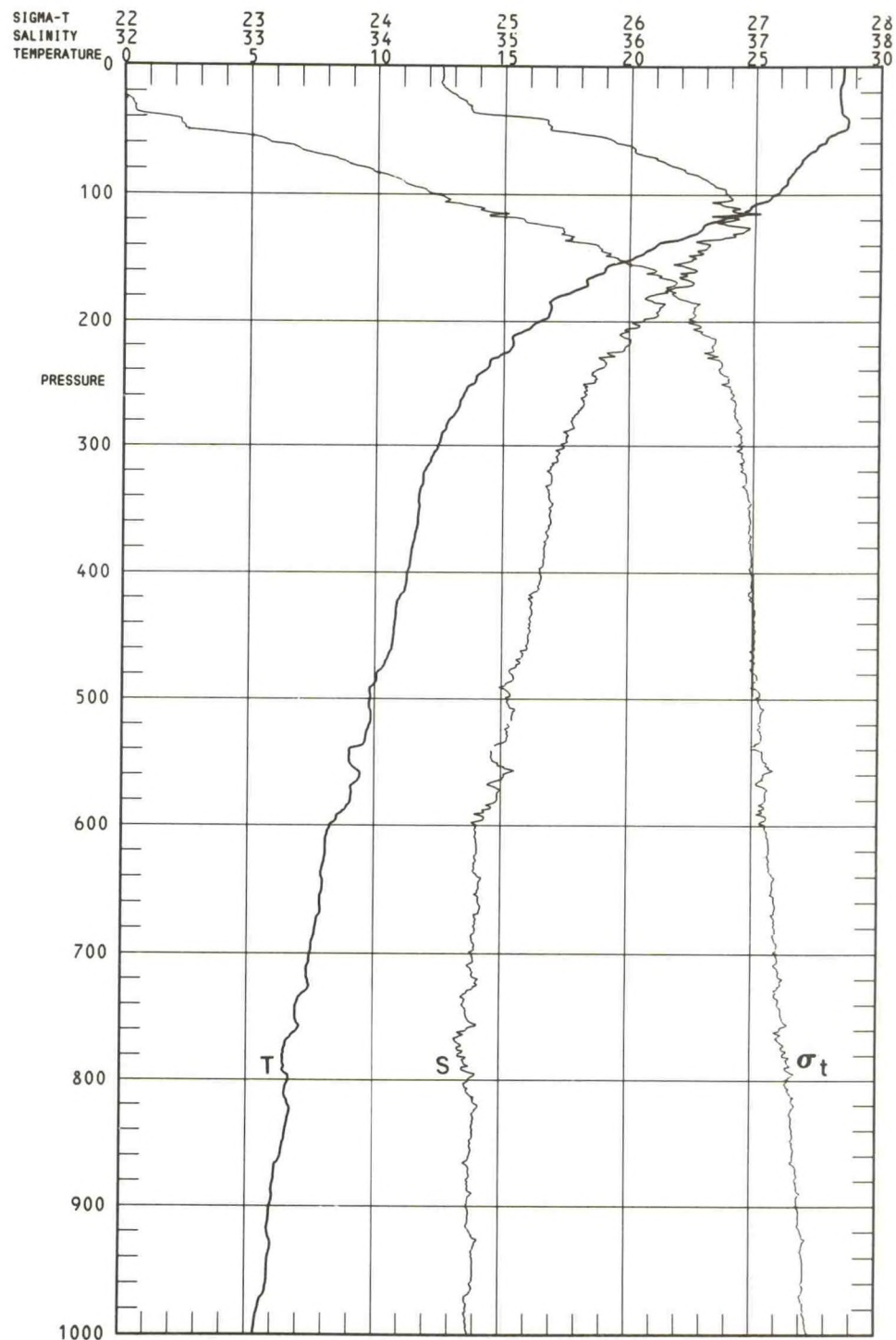
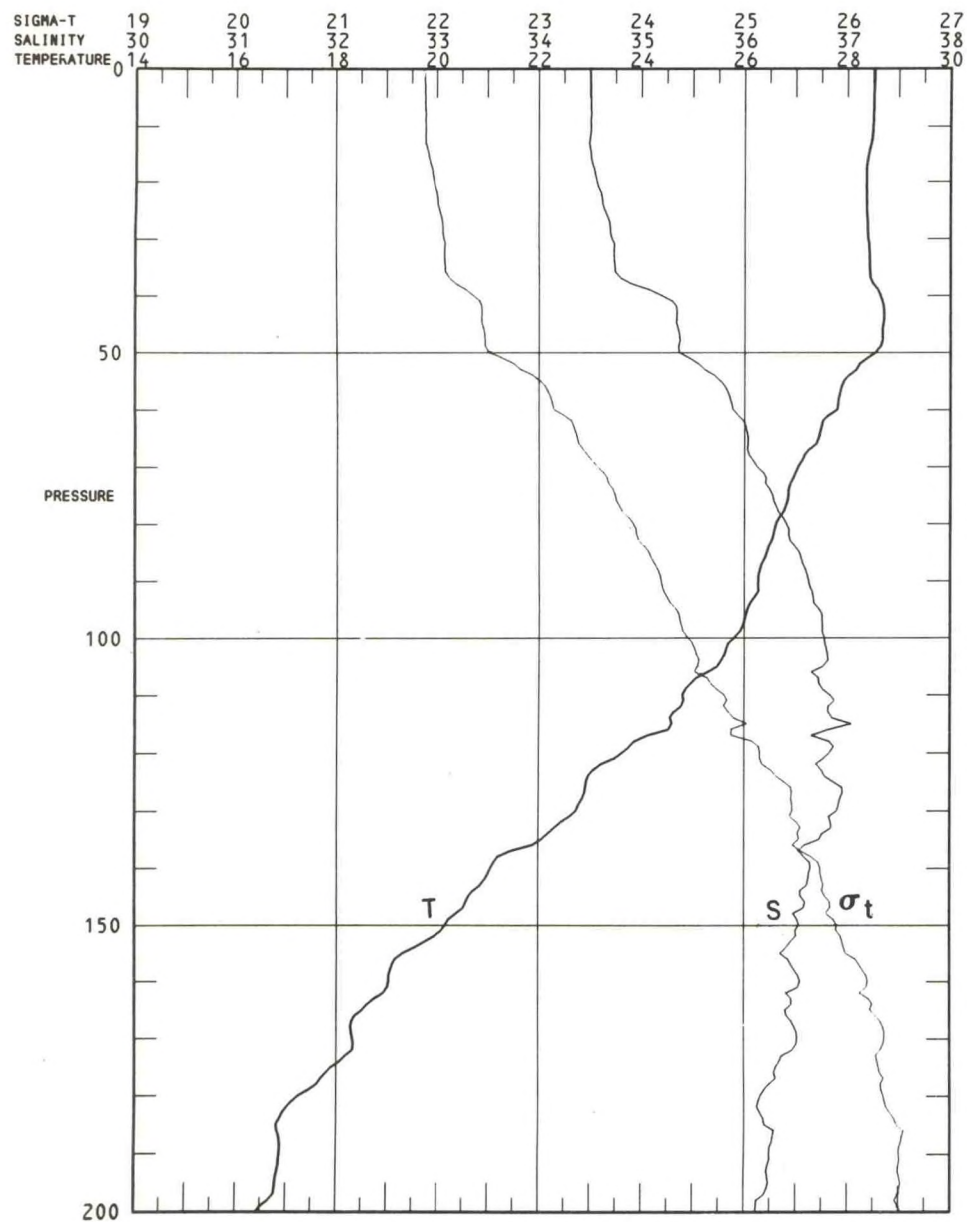
Mt. Mitchell, June 25, 1969, 0548 GMT, 12°21'N 058°23'W





Mt. Mitchell, June 25, 1969, 1206 GMT, 12°23'N 058°23'W

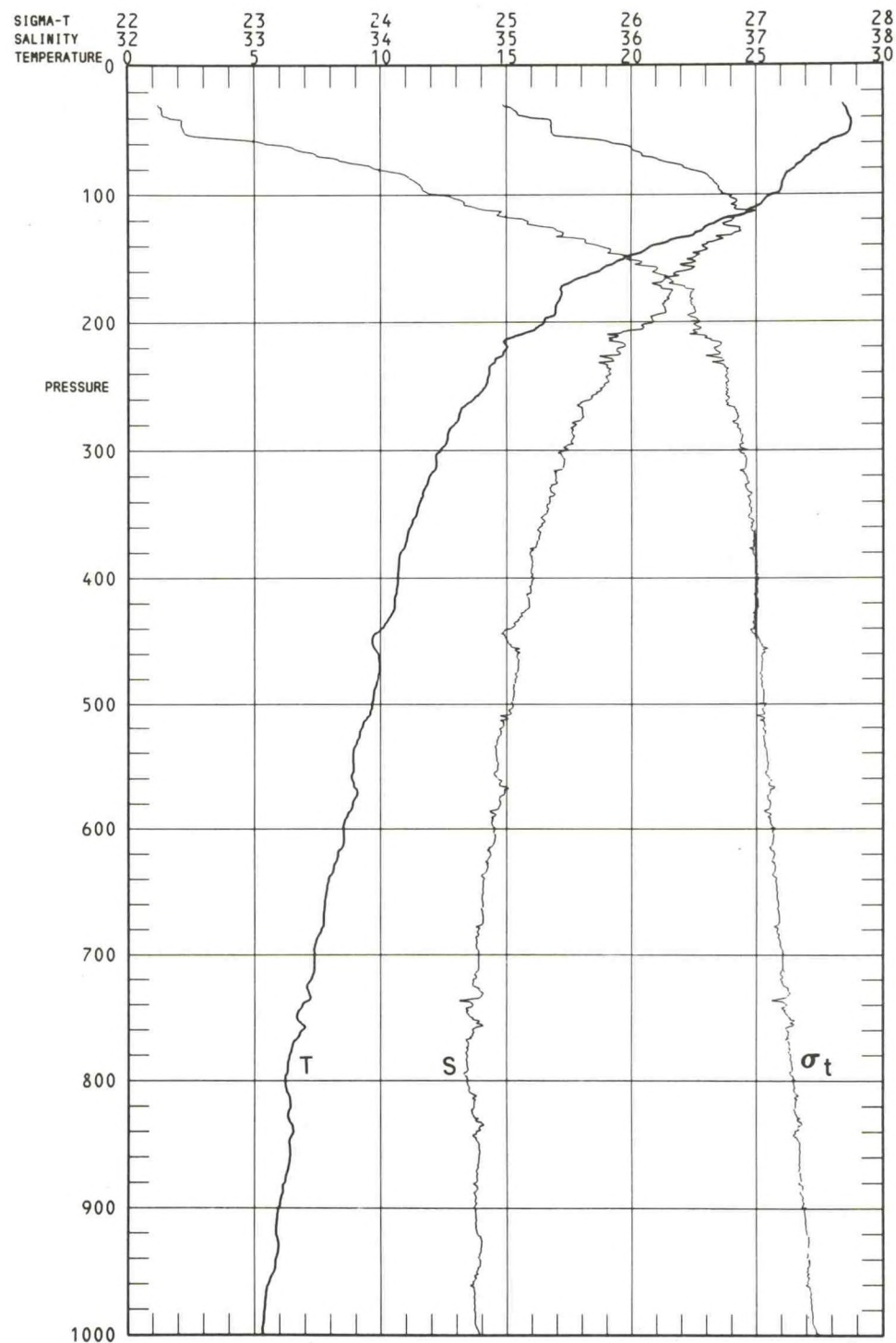
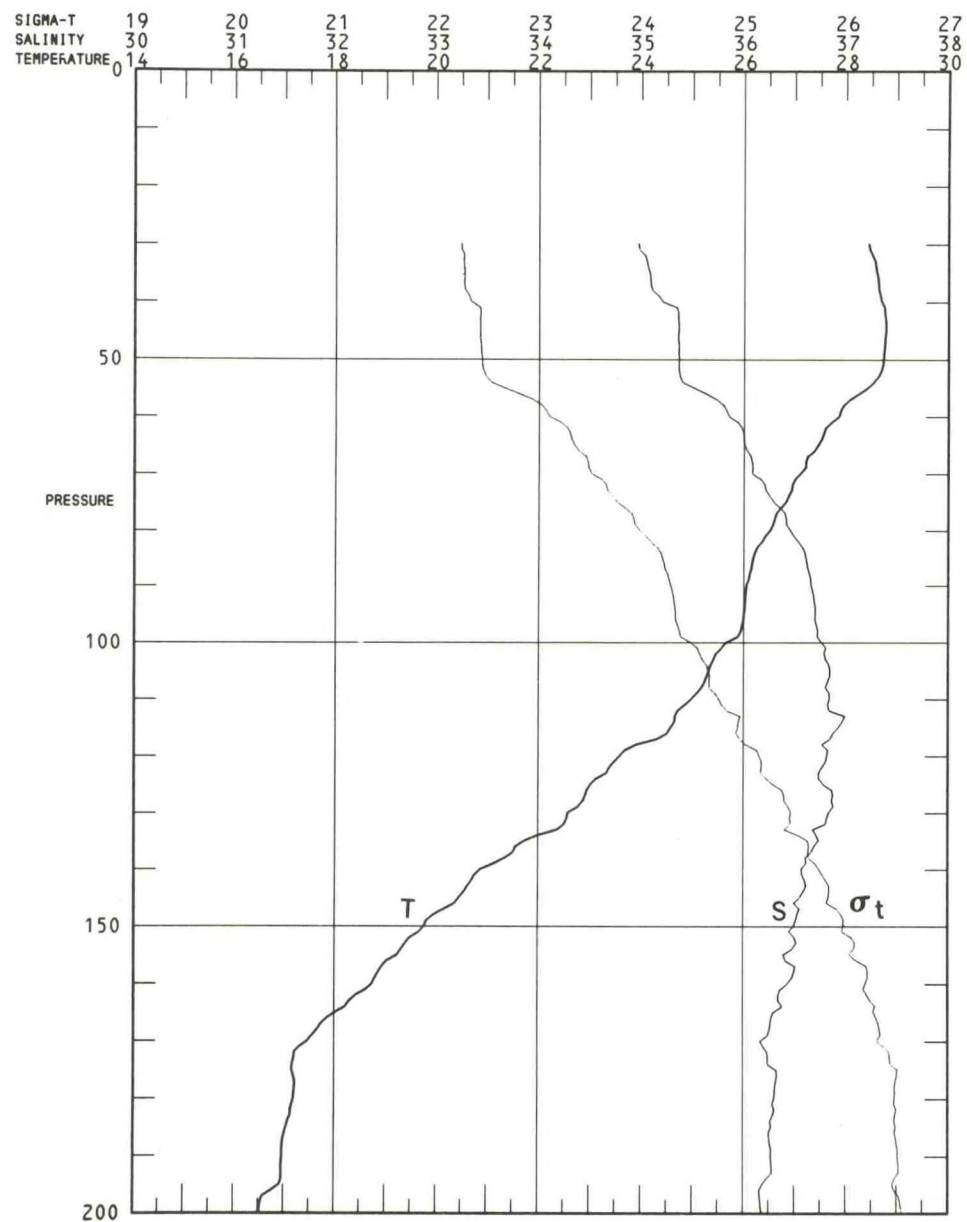
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 25, 1969, 1749 GMT, 12°21'N 058°21'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



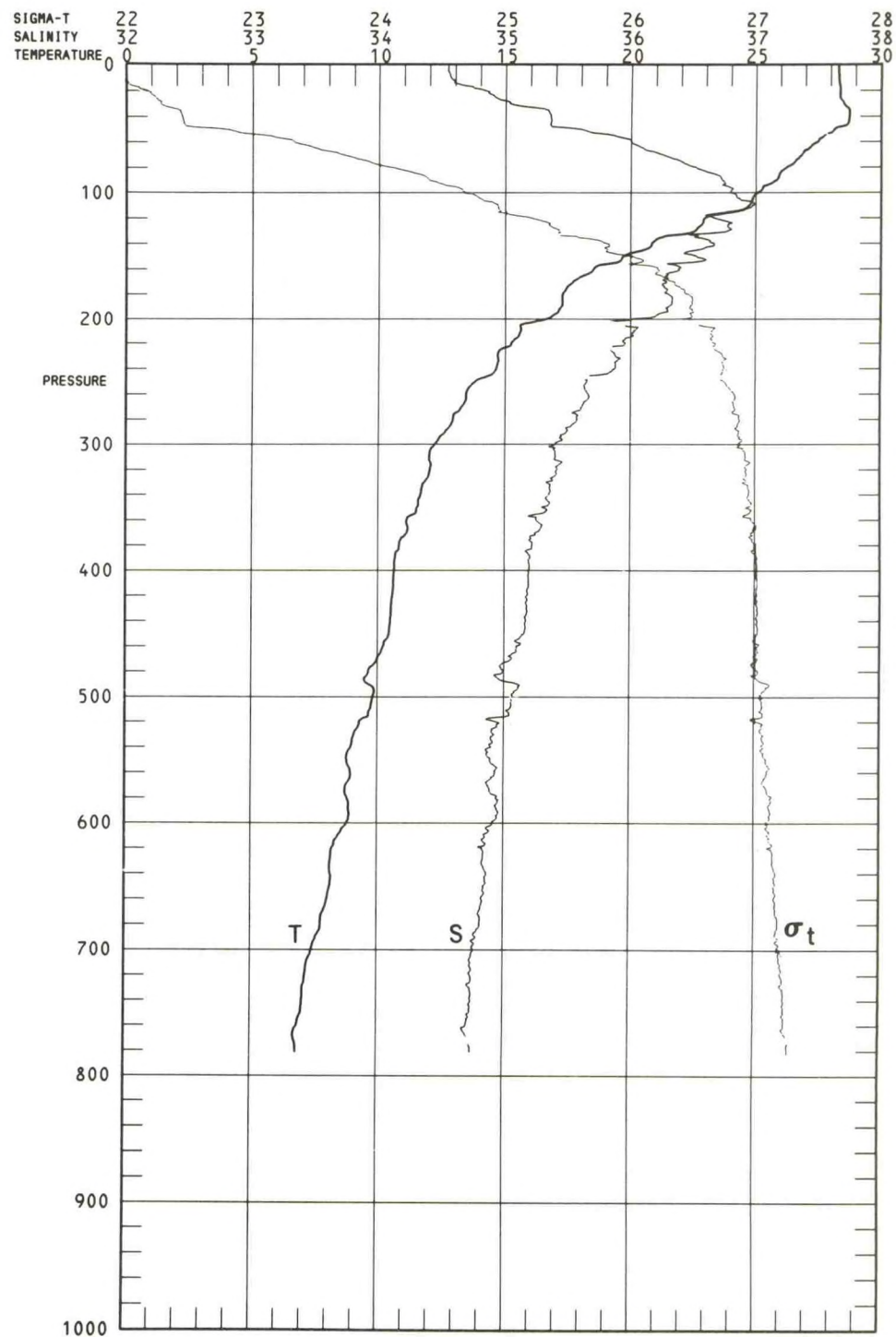
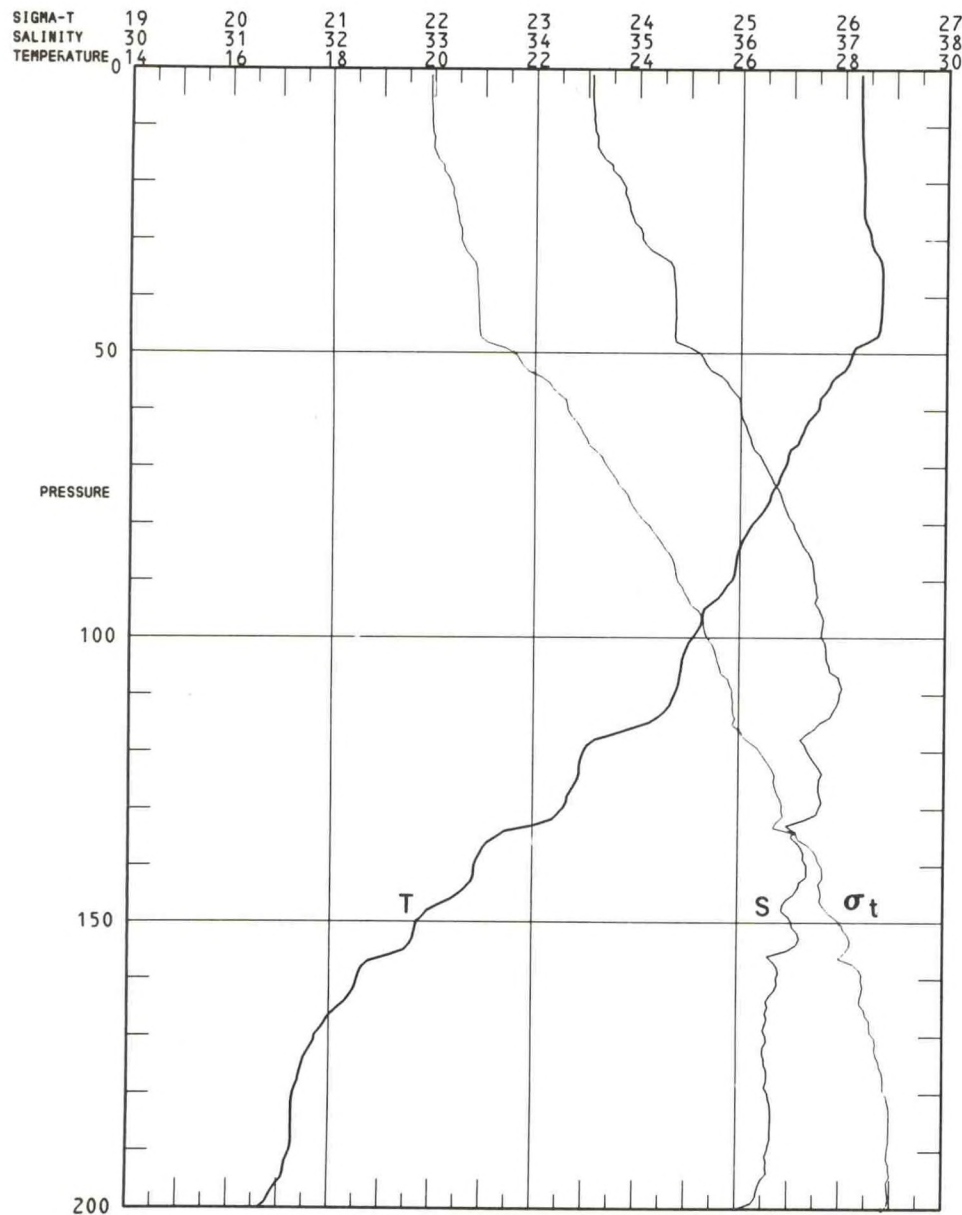
Mt. Mitchell, June 26, 1969, 0106 GMT, 12°20'N 058°23'W



MT. MITCHELL YEAR 1969 DAY 177 TIME 548 GMT LAT.12°20' LOW.058°22'  
 CAST STOPPED AT 750 DBARS DUE TO DIFFICULTY IN EDITING

# STD Depth-Sorted Plots

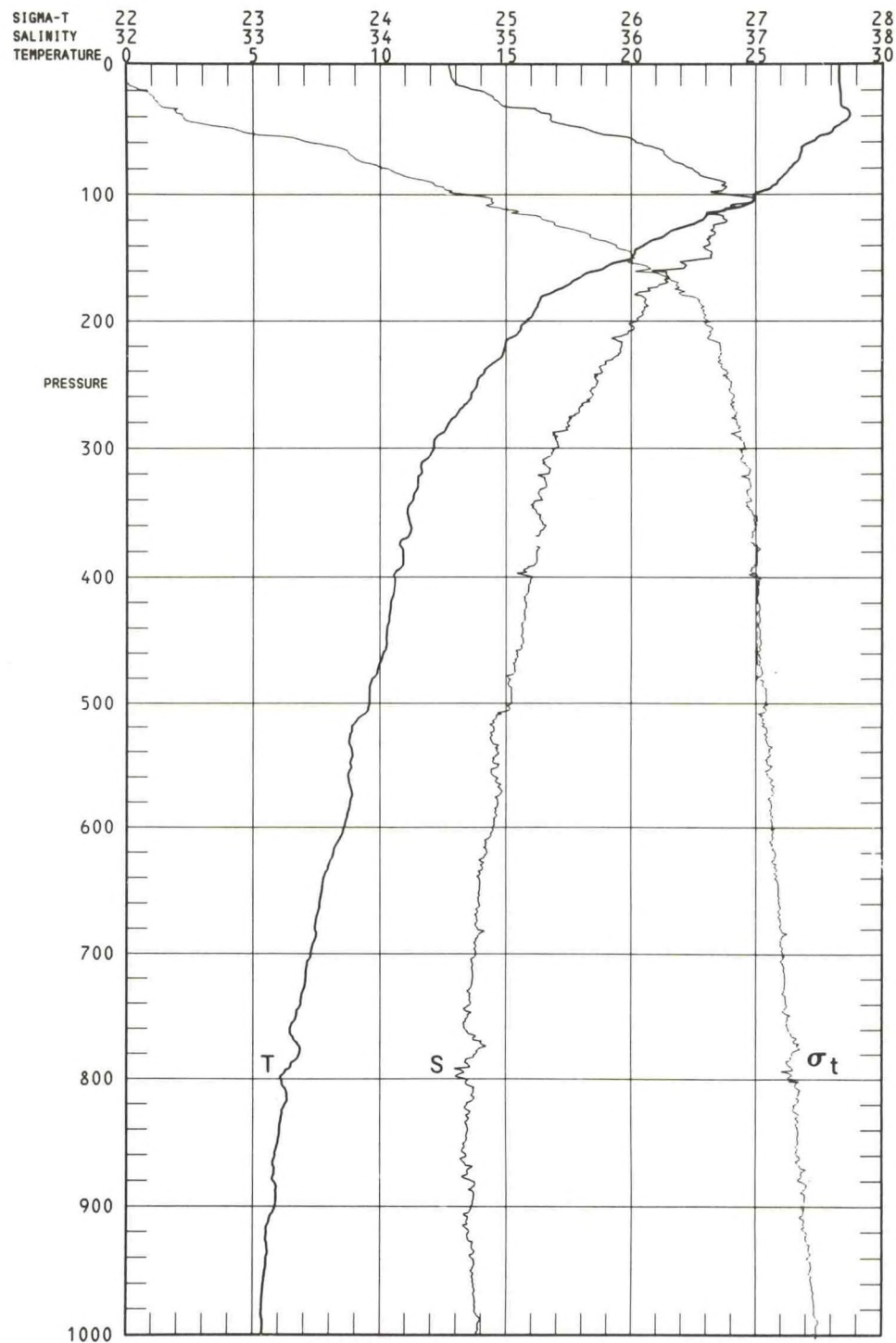
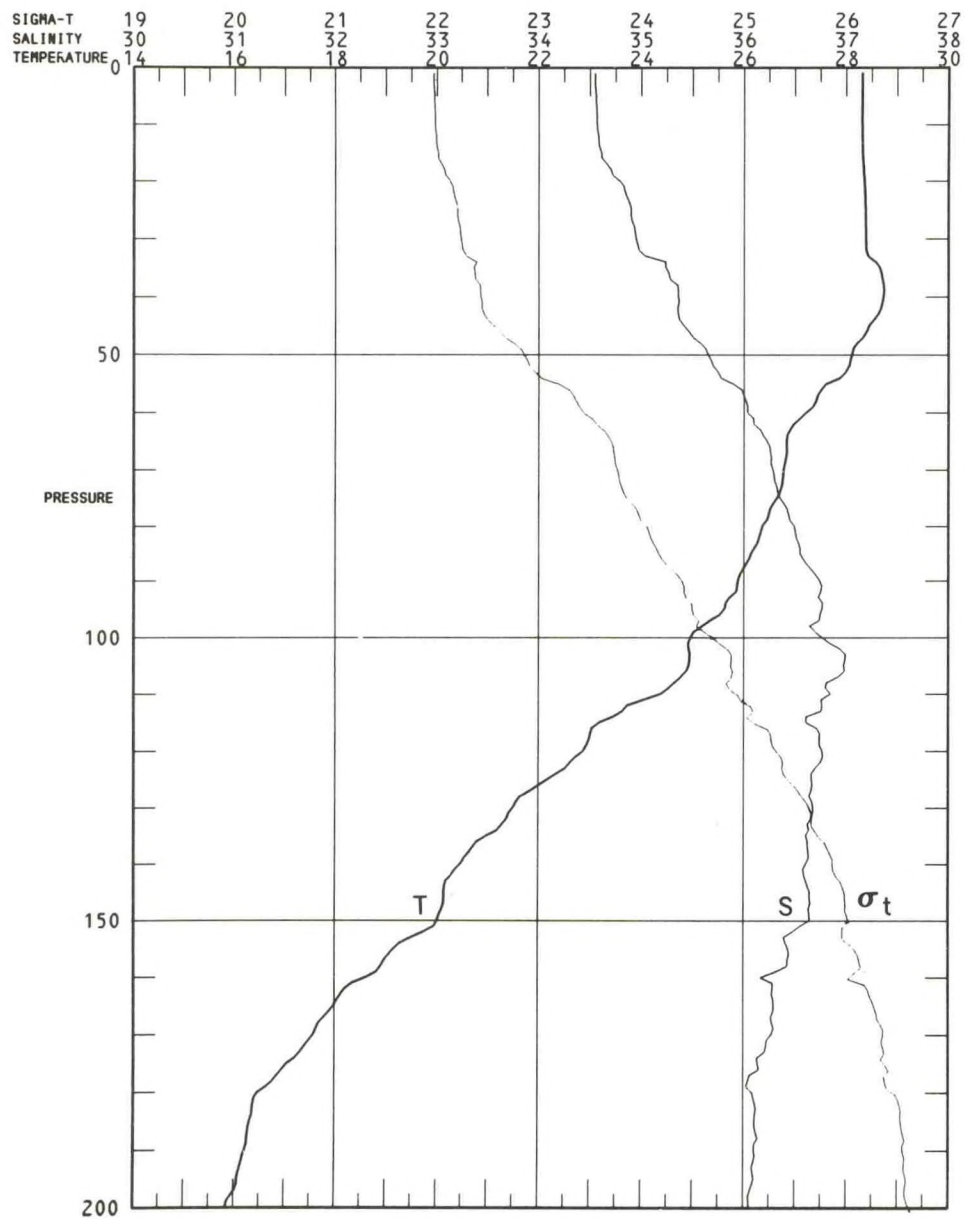
Vertical Axis: Pressure, decibars  
 Horizontal Axis: Top Line - Sigma-t, units  
 2nd Line - Salinity, parts per thousand  
 3rd Line - Temperature, °C



Mt. Mitchell, June 26, 1969, 0548 GMT, 12°20'N 058°22'W

MT. MITCHELL YEAR 1969 DAY 177 TIME 1206 GMT LAT.12°20' LON.058°22'

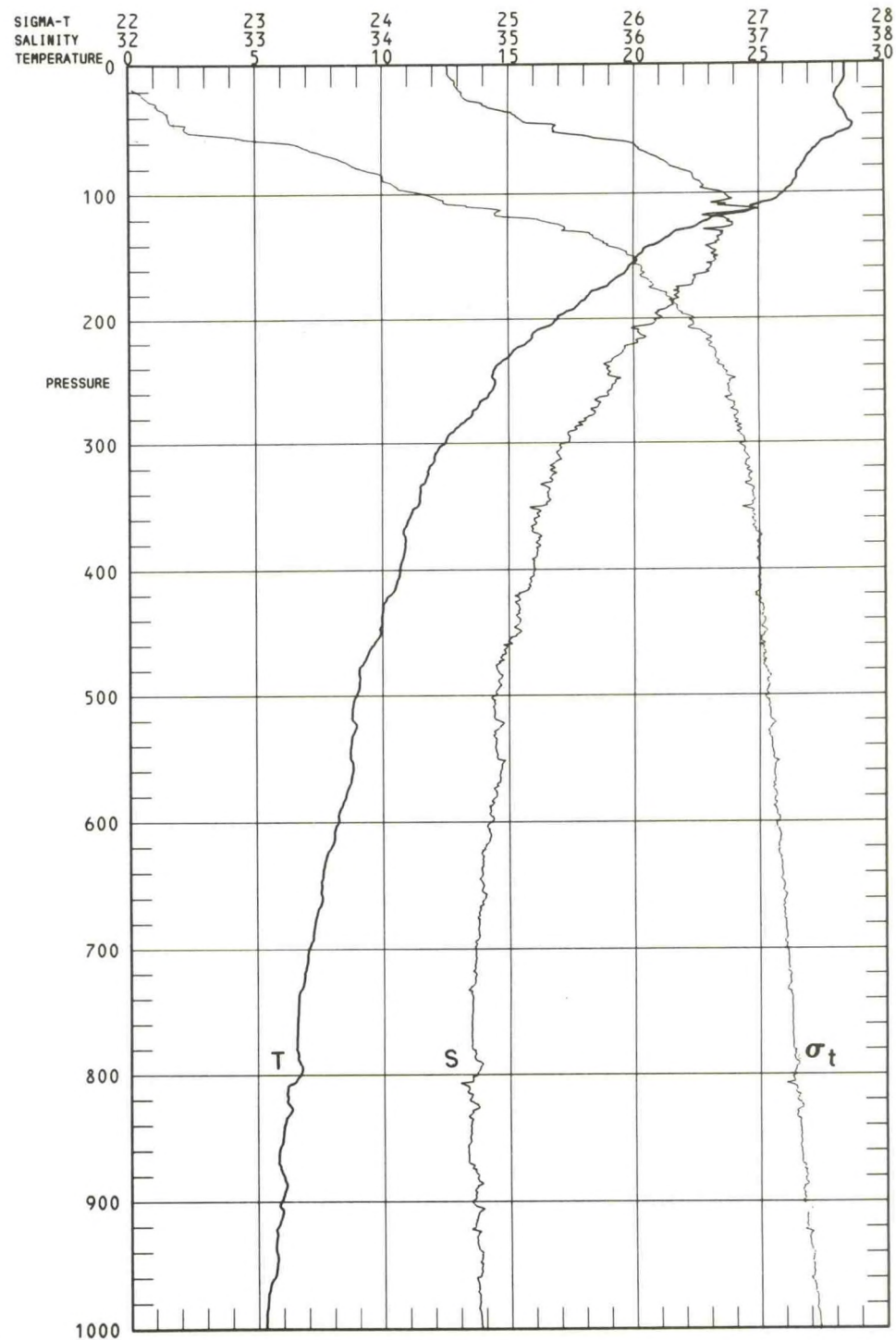
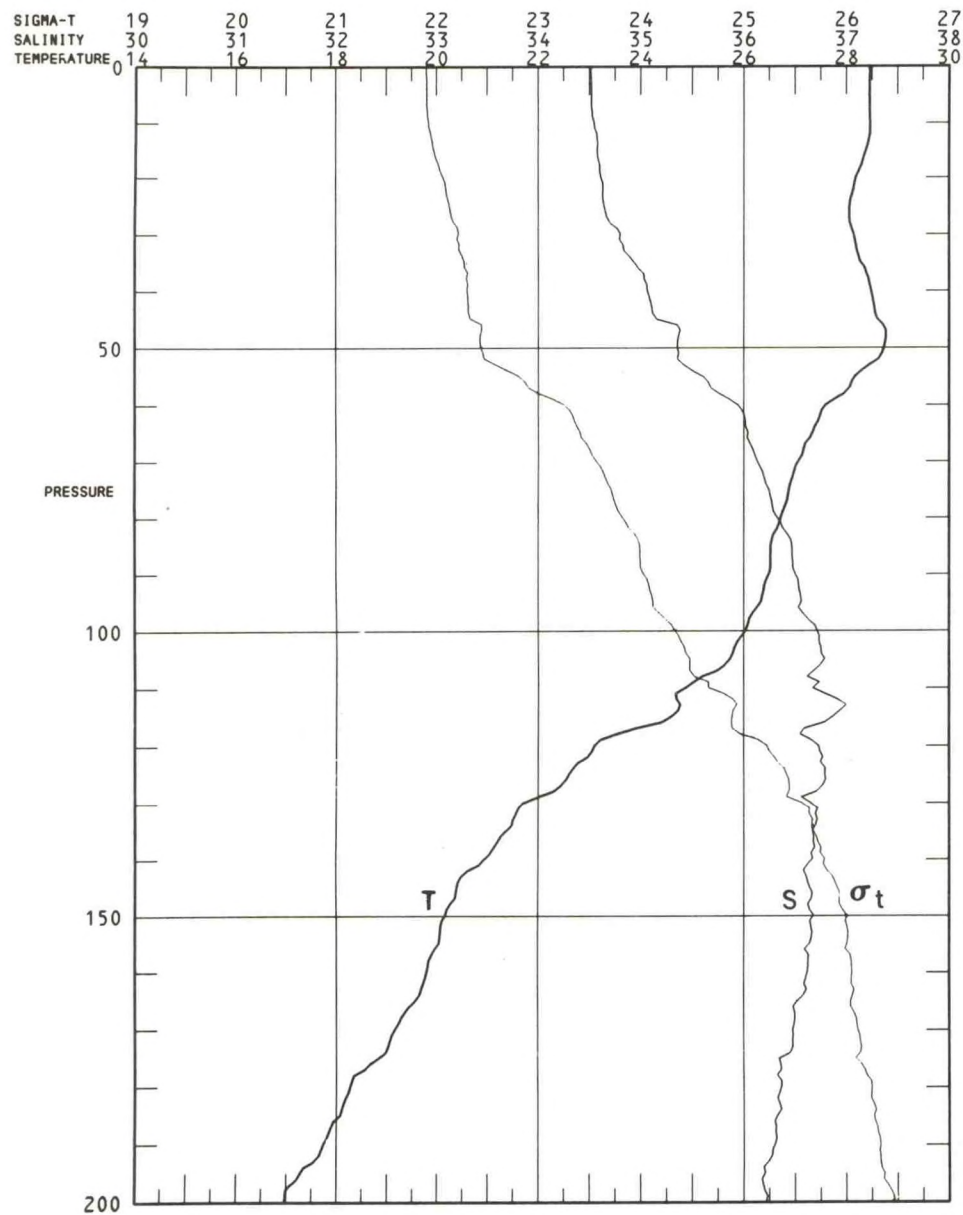
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 26, 1969, 1206 GMT, 12°20'N 058°22'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

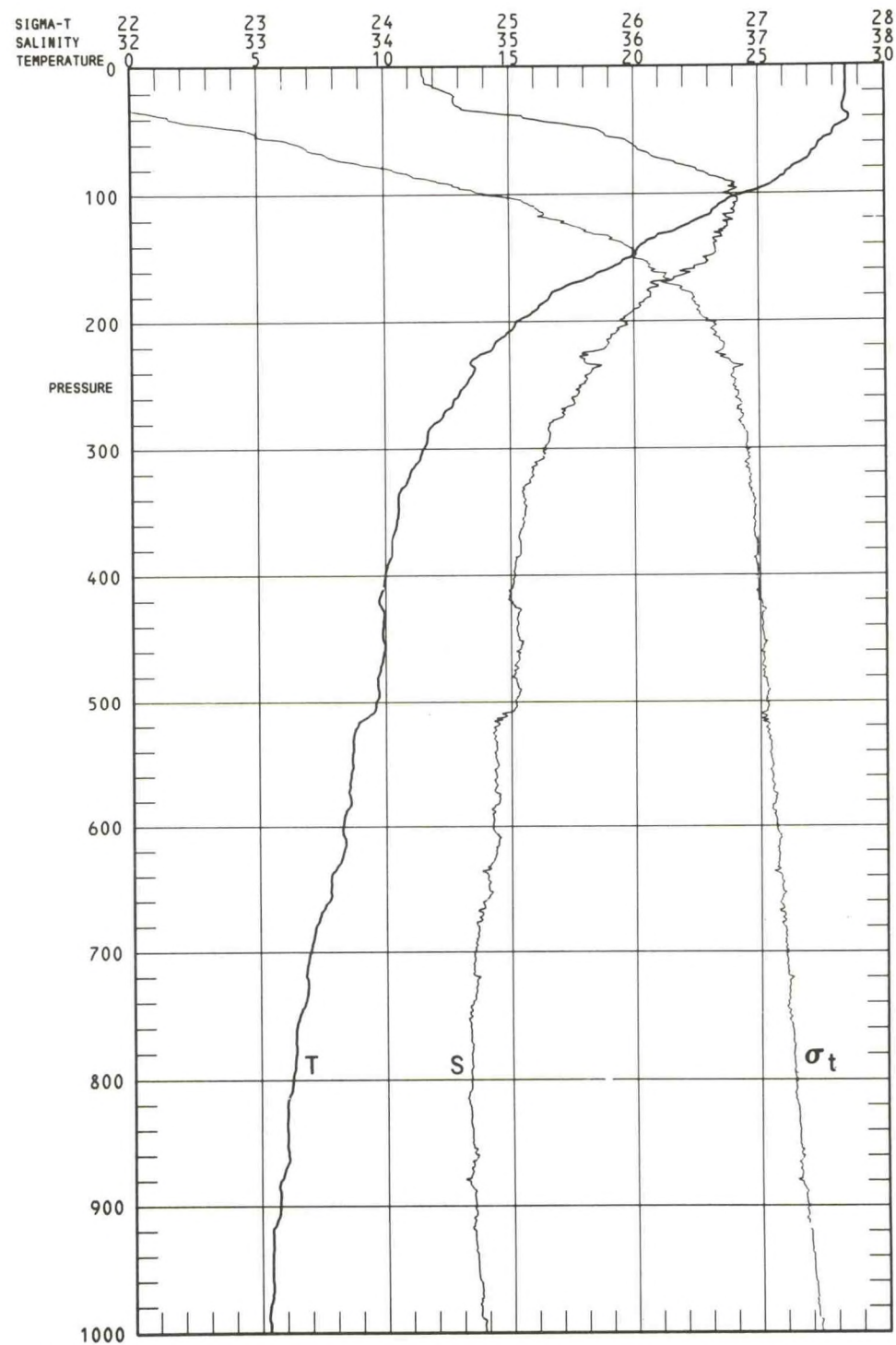
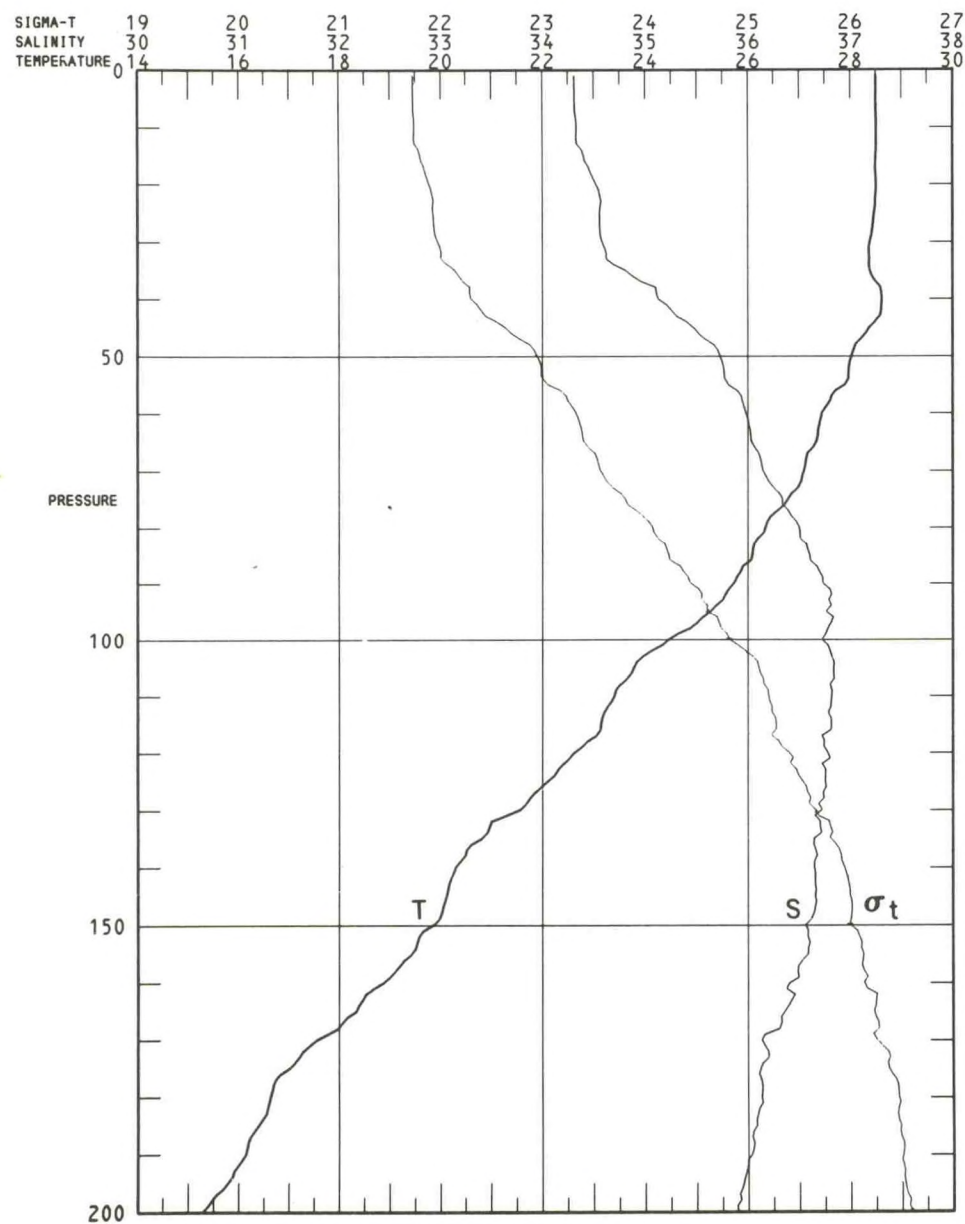


Mt. Mitchell, June 26, 1969, 1758 GMT, 12°18'N 058°23'W



MT.MITCHELL YEAR 1969 DAY 179 TIME 0100 GMT LAT 12°20' LON 058°23'

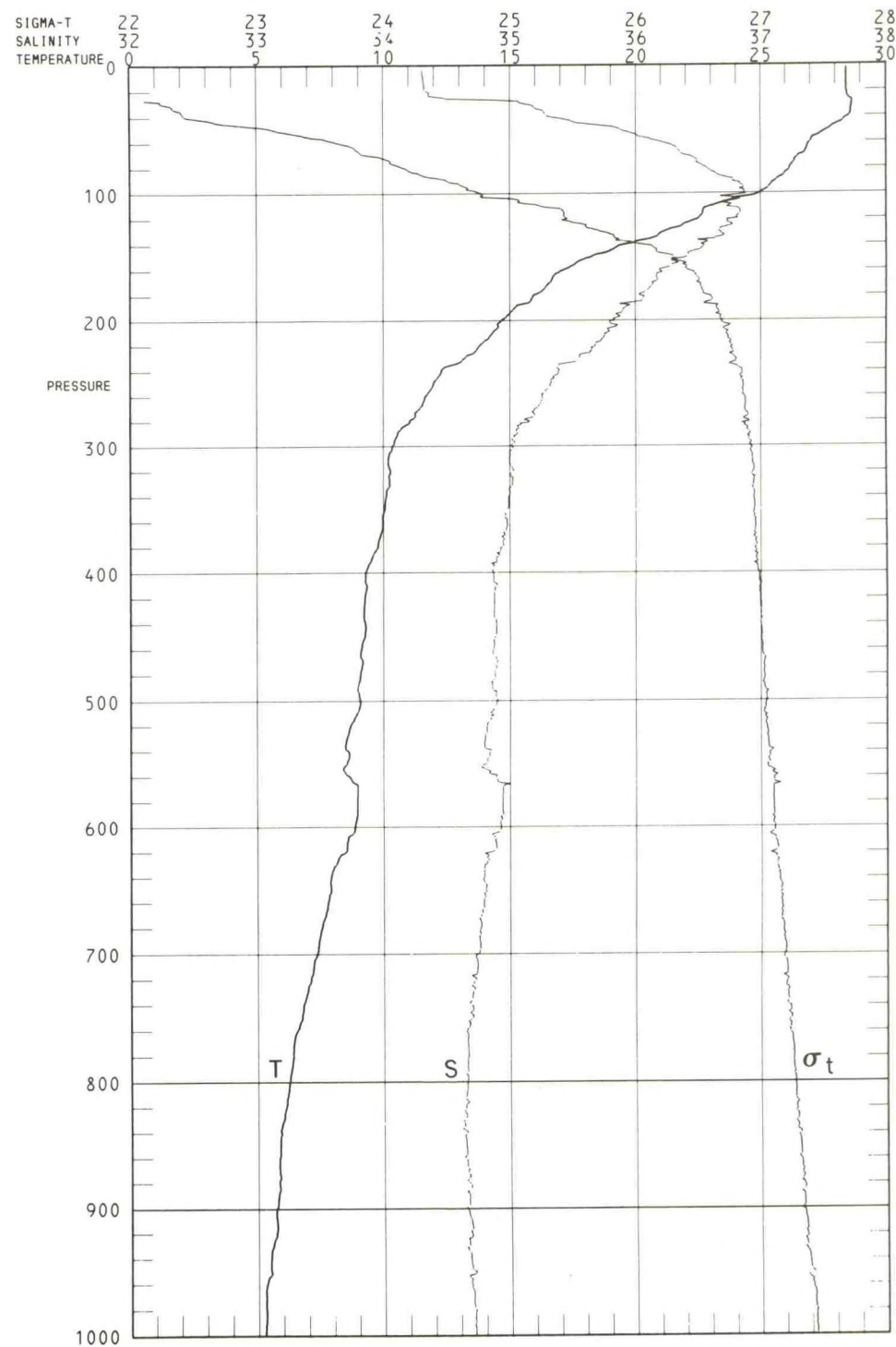
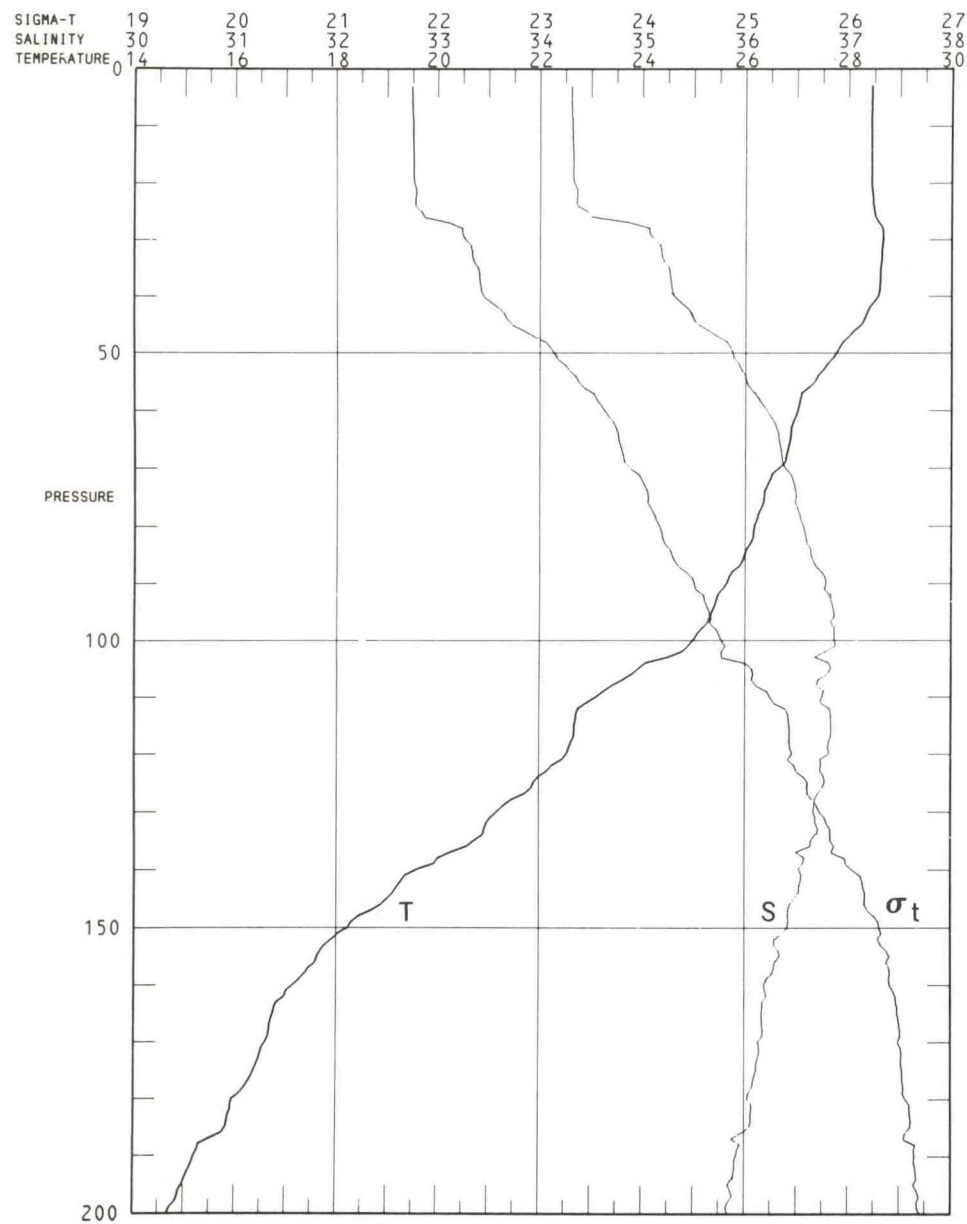
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 28, 1969, 0100 GMT, 12°20'N 058°23'W

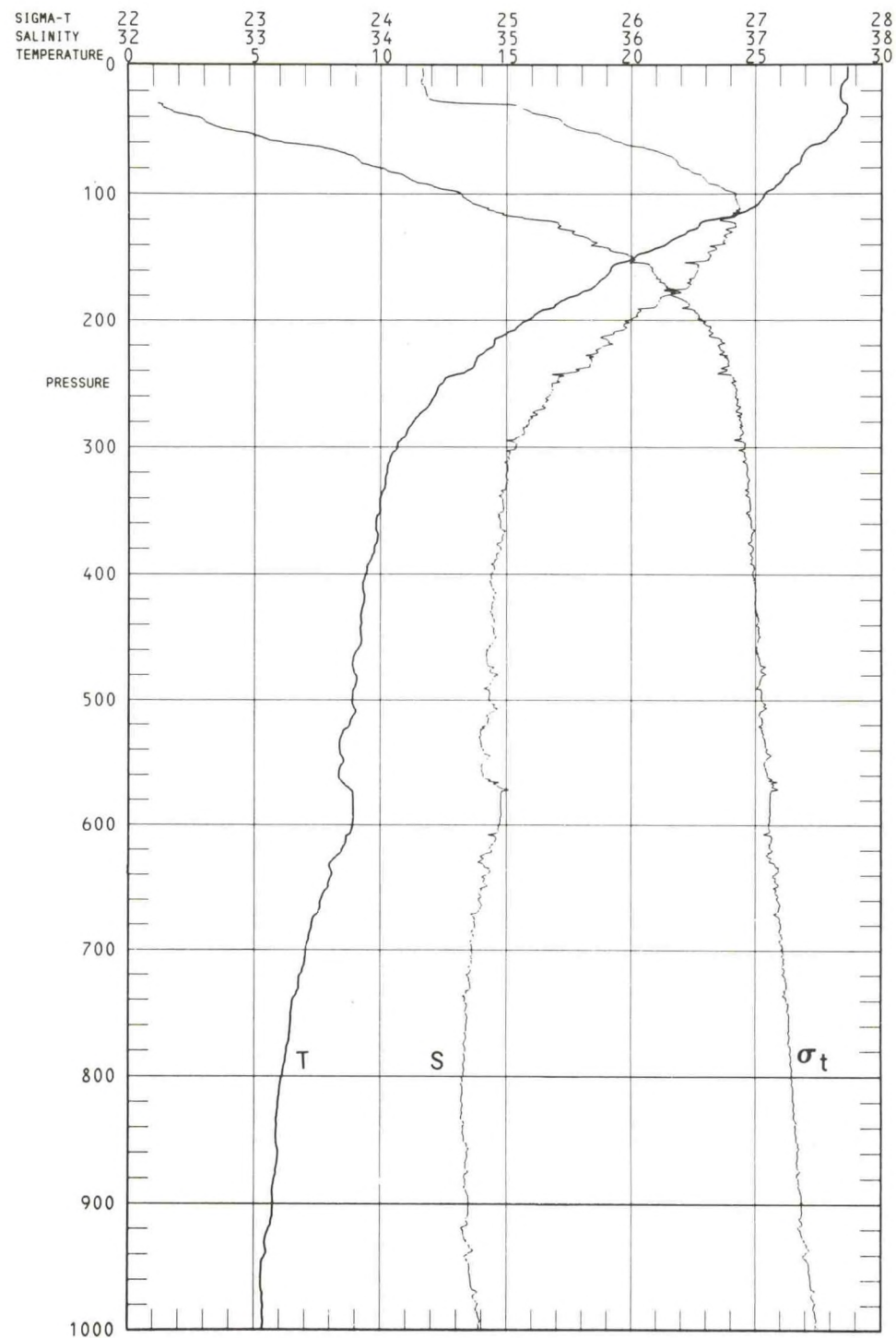
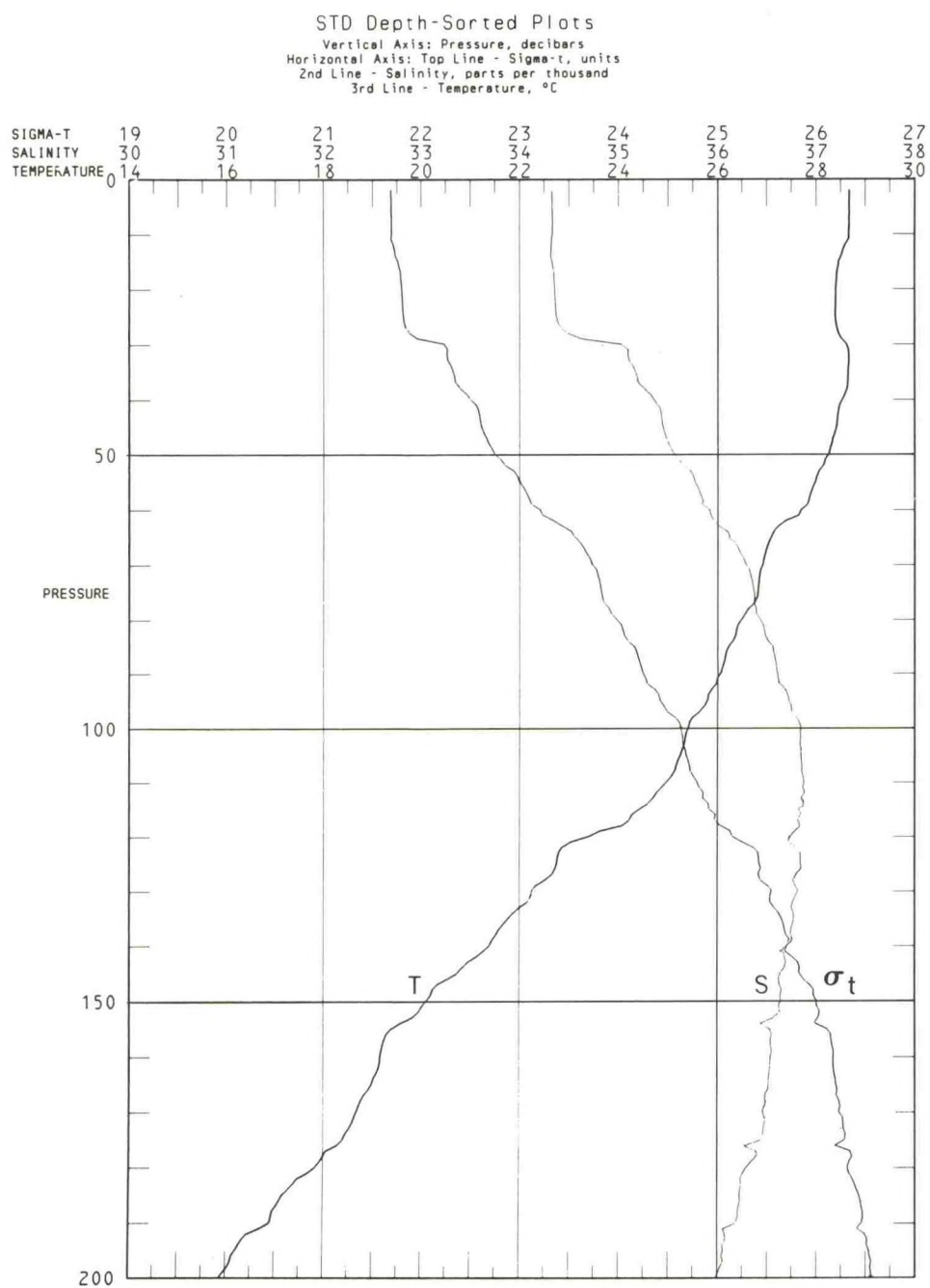
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 28, 1969, 1200 GMT, 12°20'N 058°22'W

MT. MITCHELL YEAR 1969 DAY 179 TIME 1751 GMT LAT.12°19'N LON.058°22'W

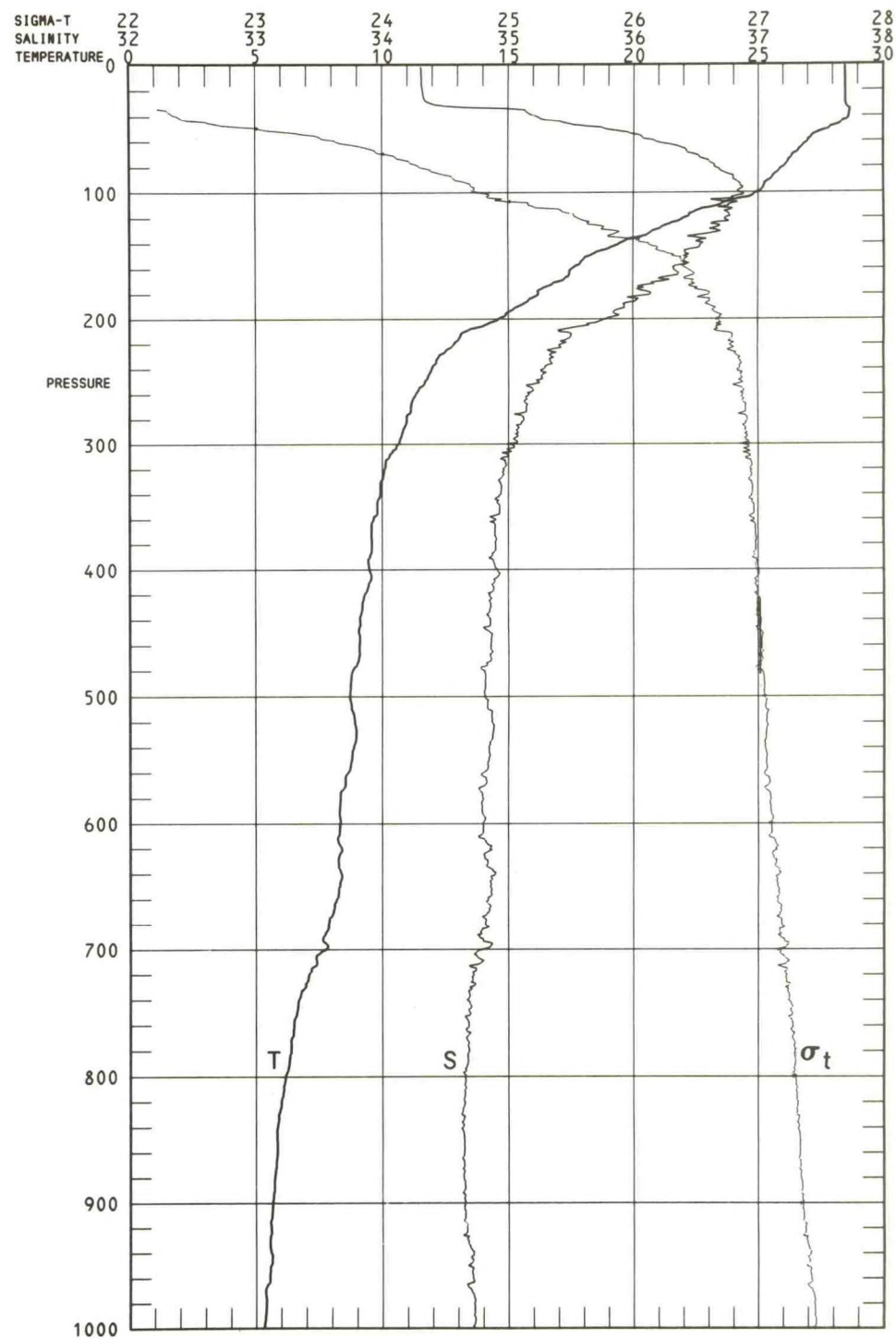
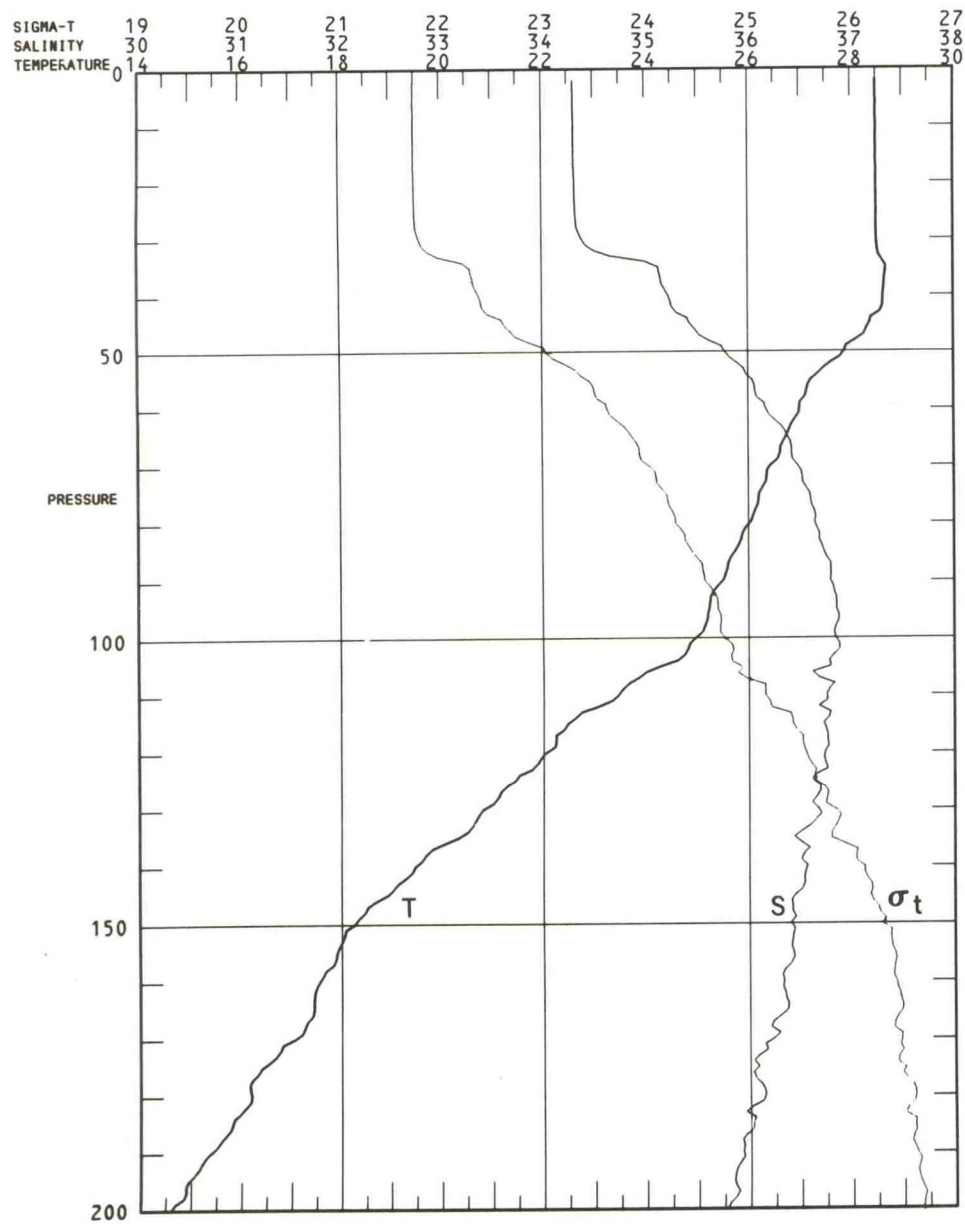


Mt. Mitchell, June 28, 1969, 1751 GMT, 12°19'N 058°22'W



MT. MITCHELL YEAR 1969 DAY 180 TIME 059 GMT LAT.12°20'N LONG.058°21'W

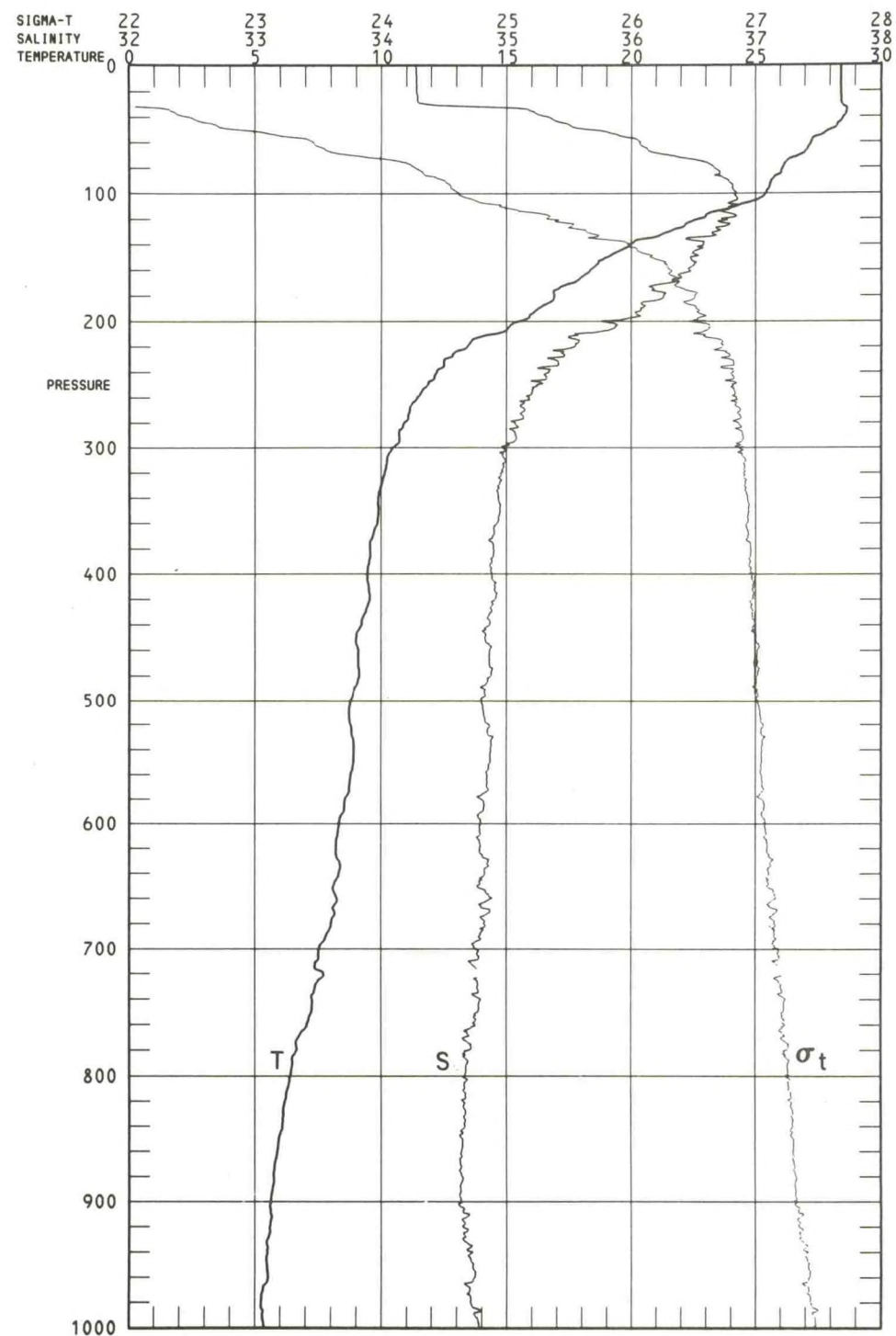
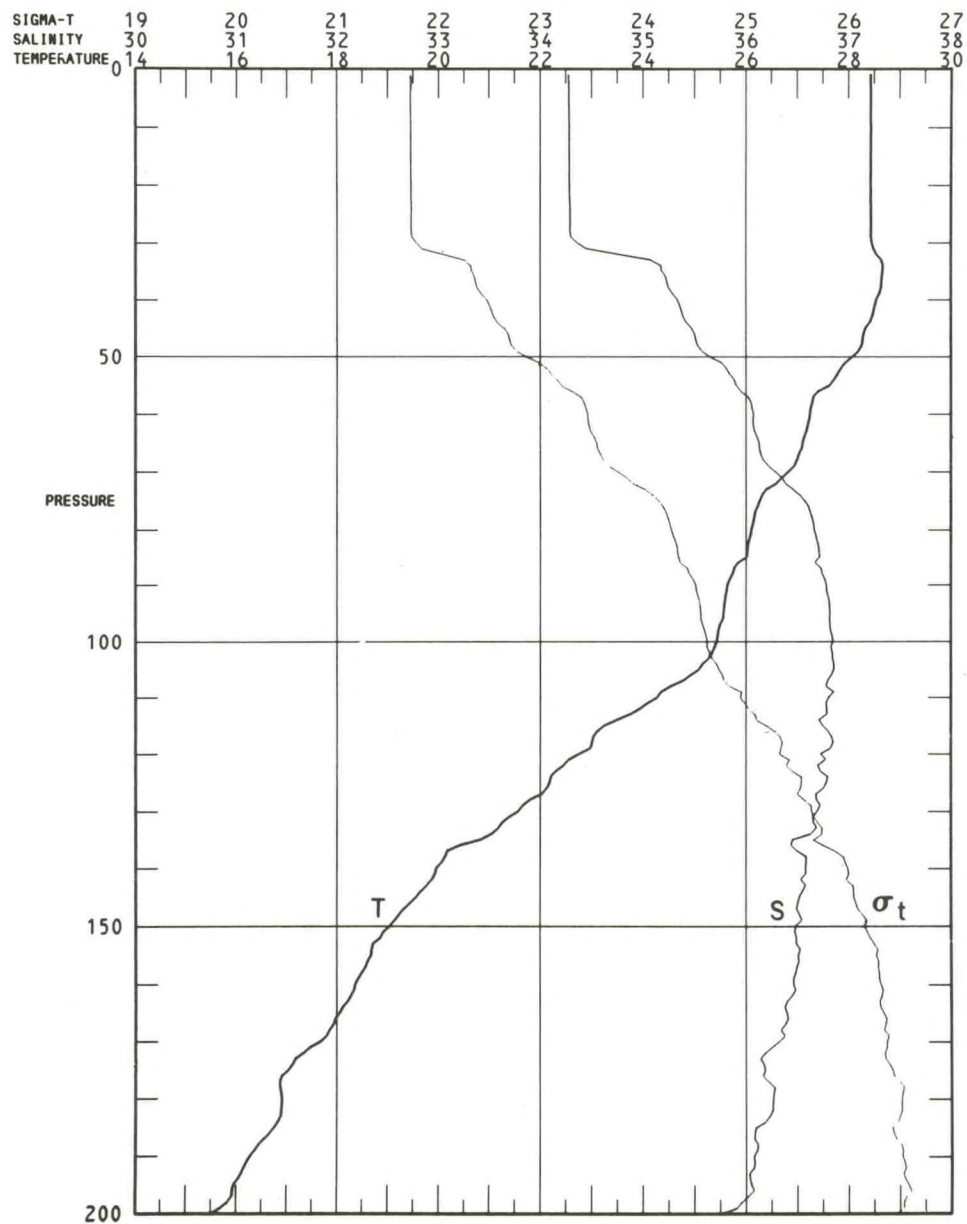
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



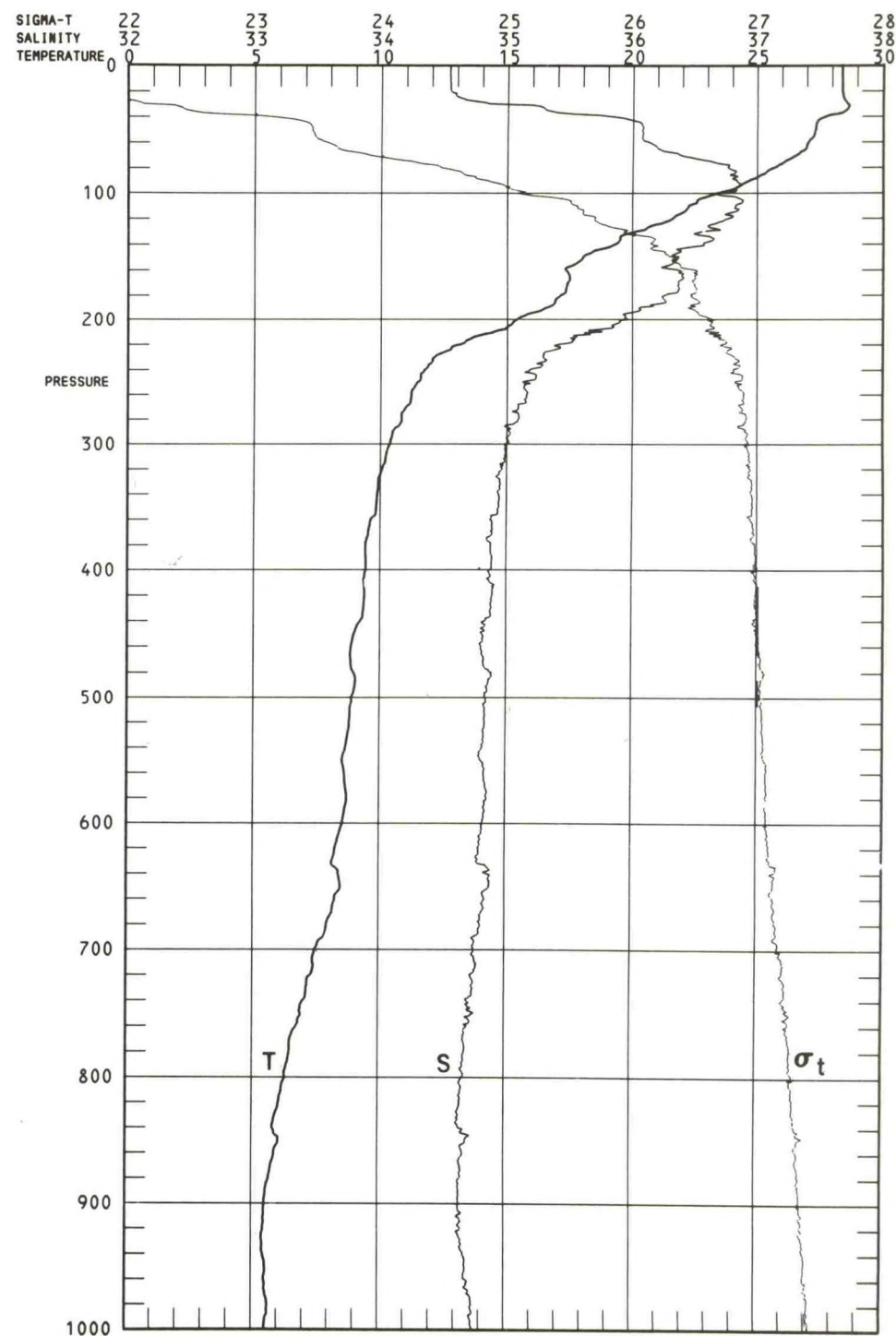
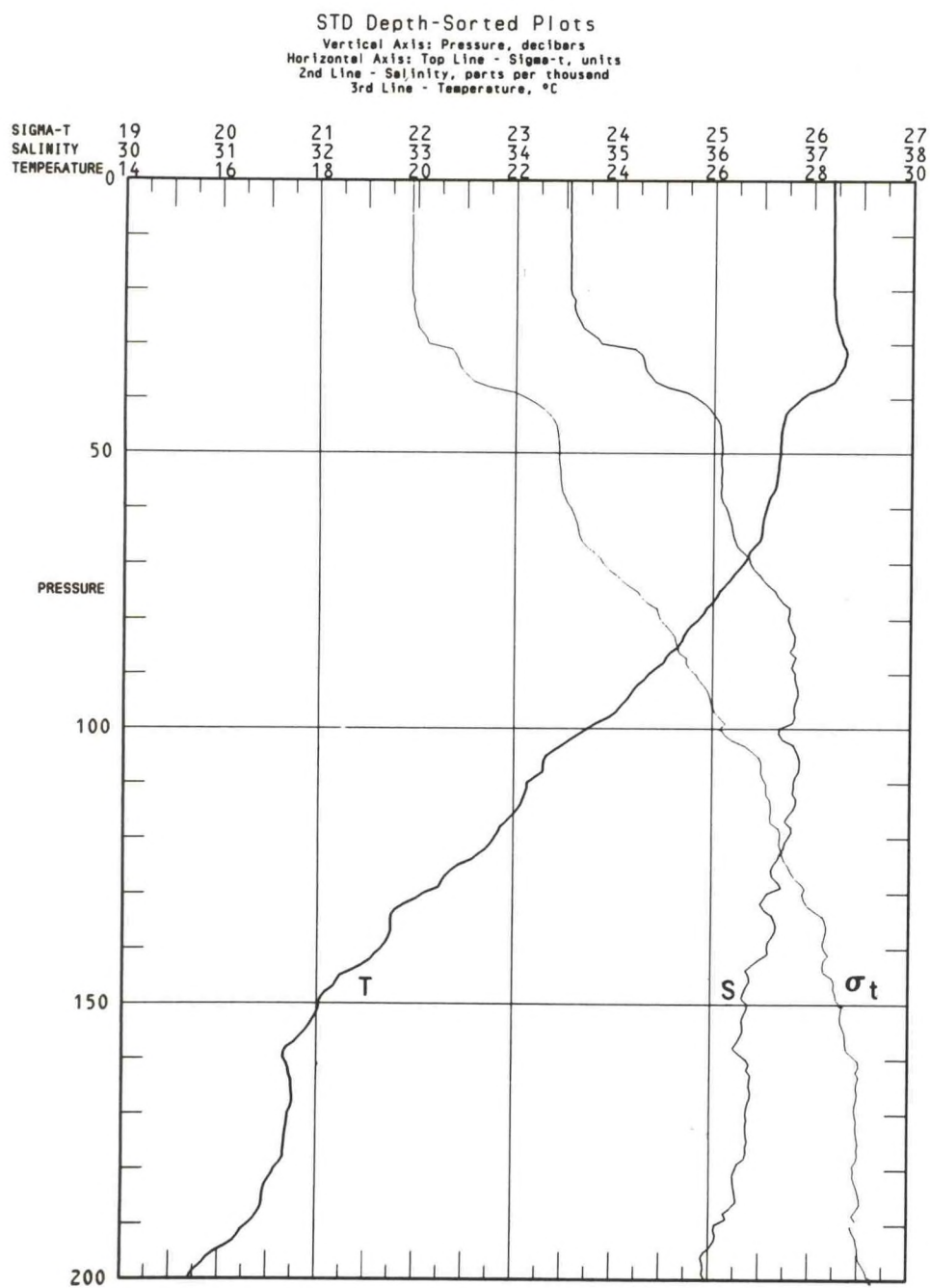
Mt. Mitchell, June 29, 1969, 0059 GMT, 12°20'N 058°21'W

MT. MITCHELL YEAR 1969 DAY 180 TIME 546 GMT LAT.12°20'N LON.058°21'W  
PRESSURE CORRECTION OF 2.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Mt. Mitchell, June 29, 1969, 0546 GMT, 12°20'N 058°21'W

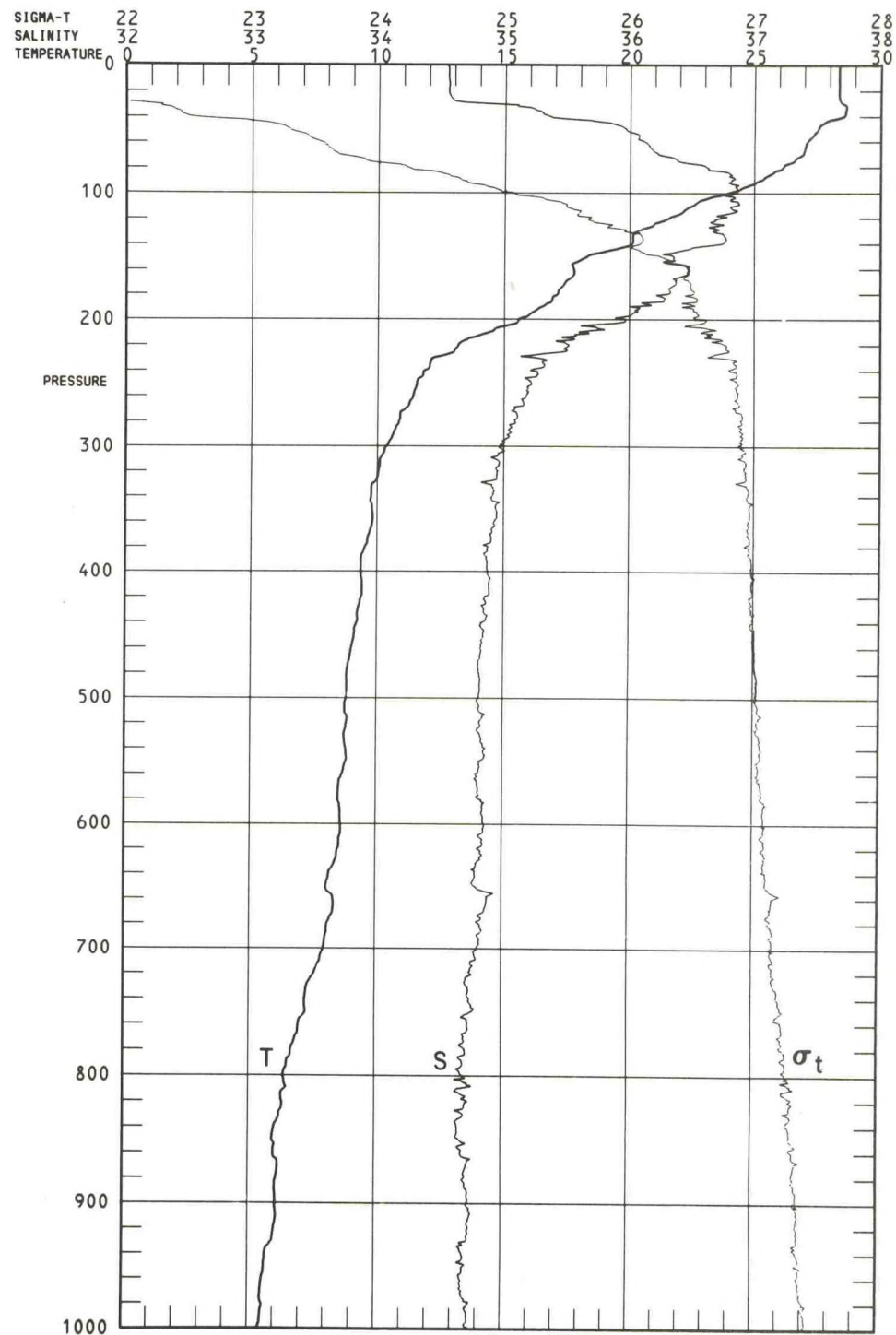
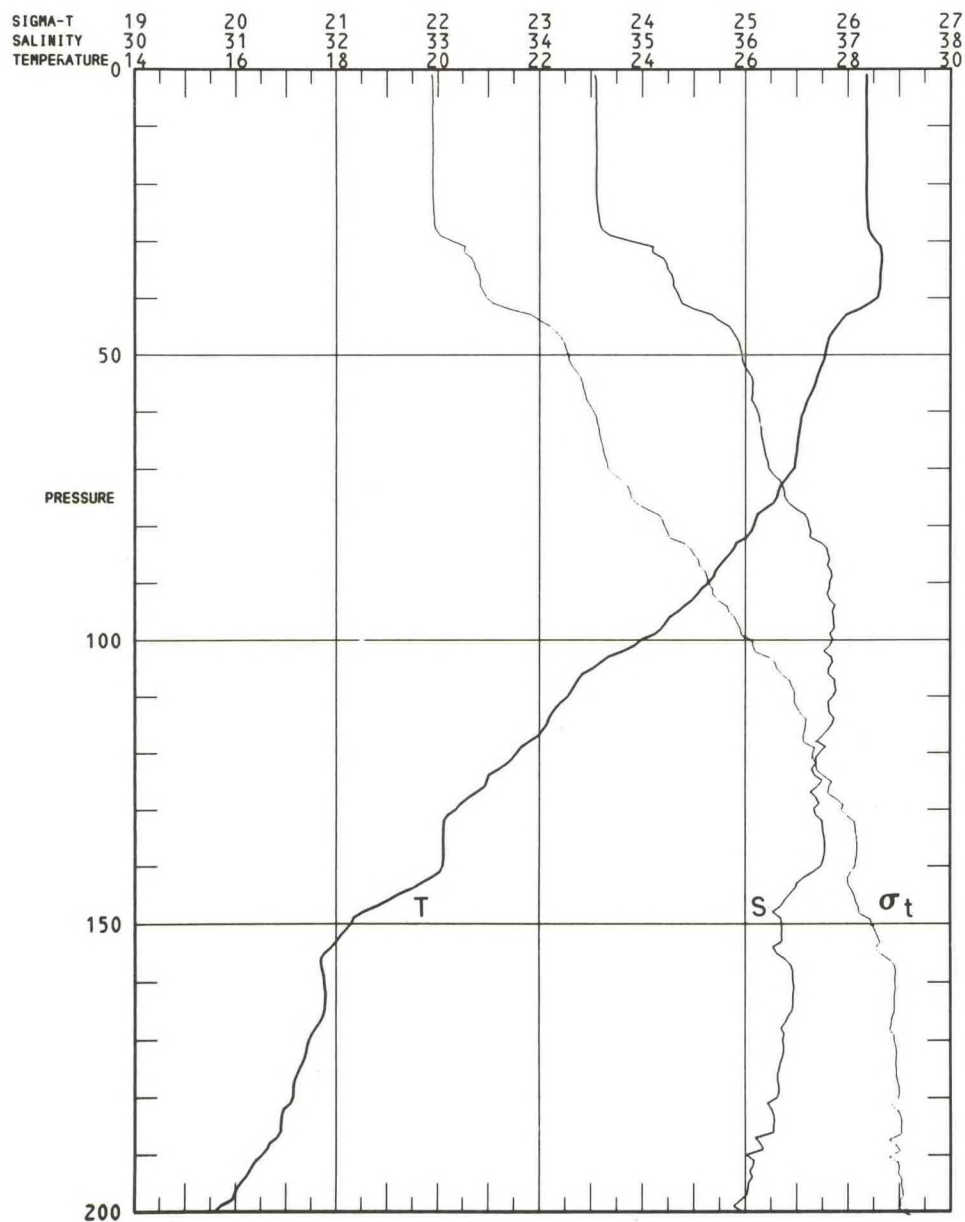


Mt. Mitchell, June 30, 1969, 0101 GMT, 12°20'N 058°21'W



MT. MITCHELL YEAR 1969 DAY 181 TIME 551 GMT LAT.12°21'N LGN.058°21'W  
PRESSURE CORRECTION OF 2.0 DECIBARS APPLIED TO THE ENTIRE CAST.

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

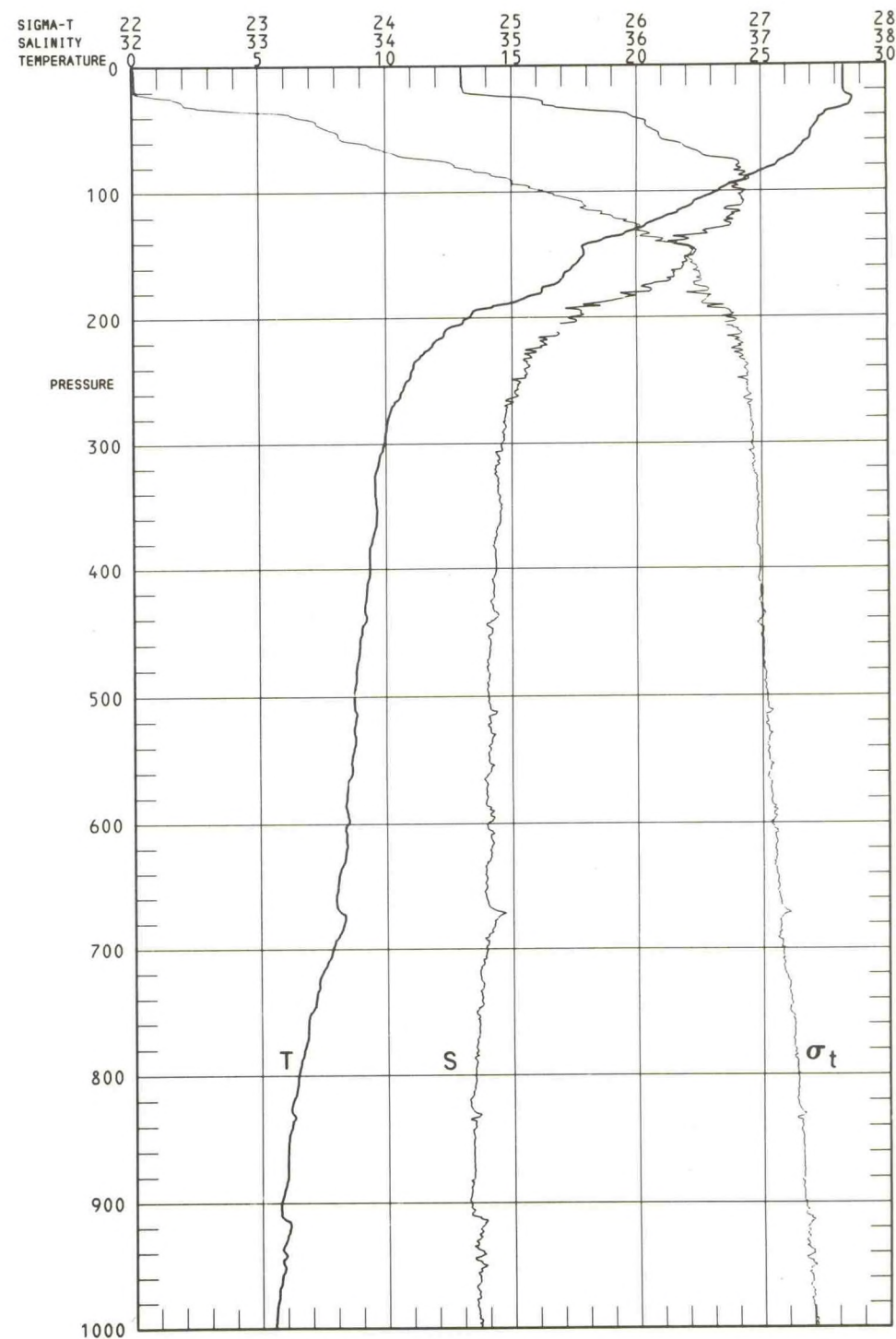
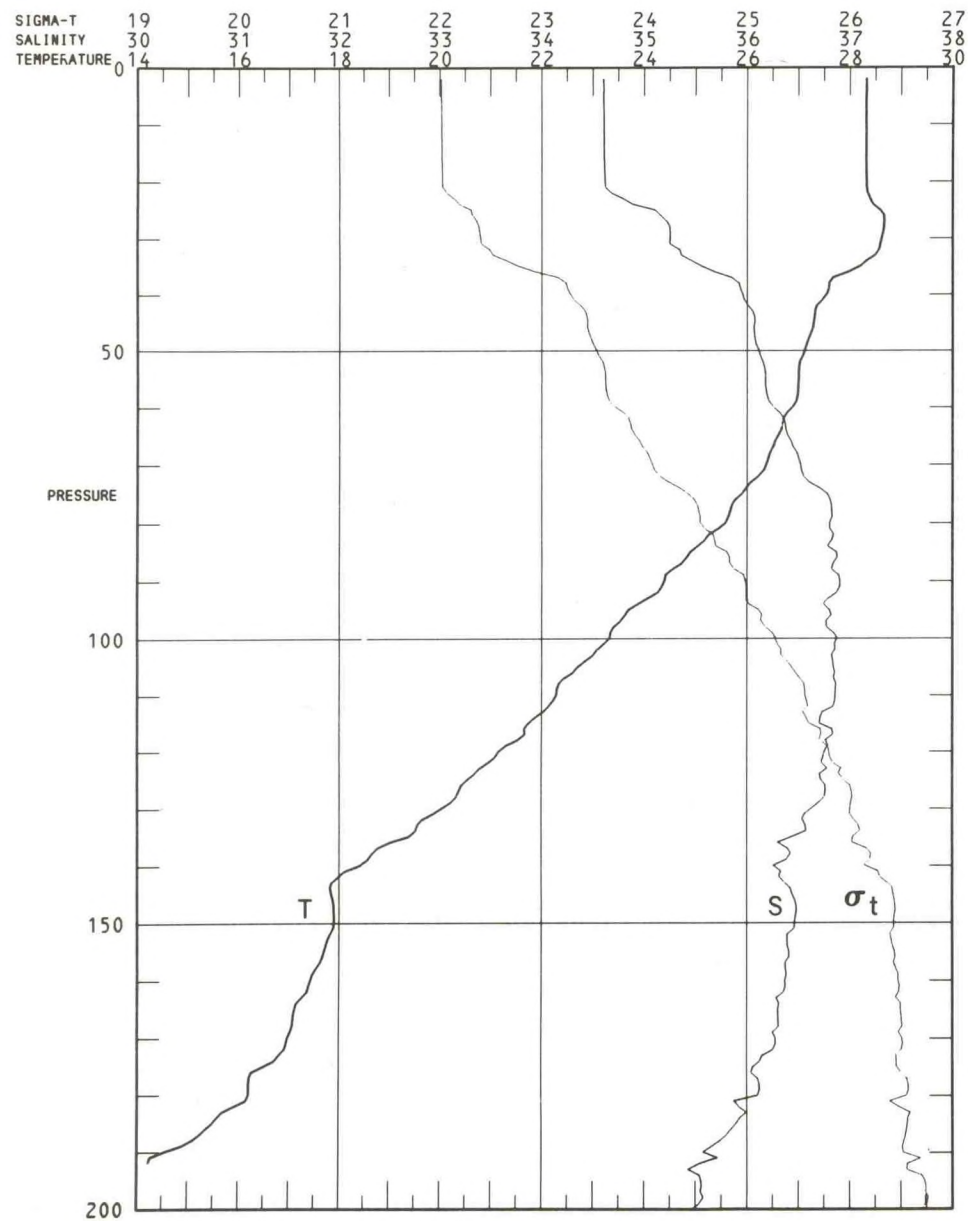


Mt. Mitchell, June 30, 1969, 0551 GMT, 12°21'N 058°21'W

MT. MITCHELL YEAR 1969 DAY 181 TIME 1219 GMT LAT.12°20'N LON.058°22'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

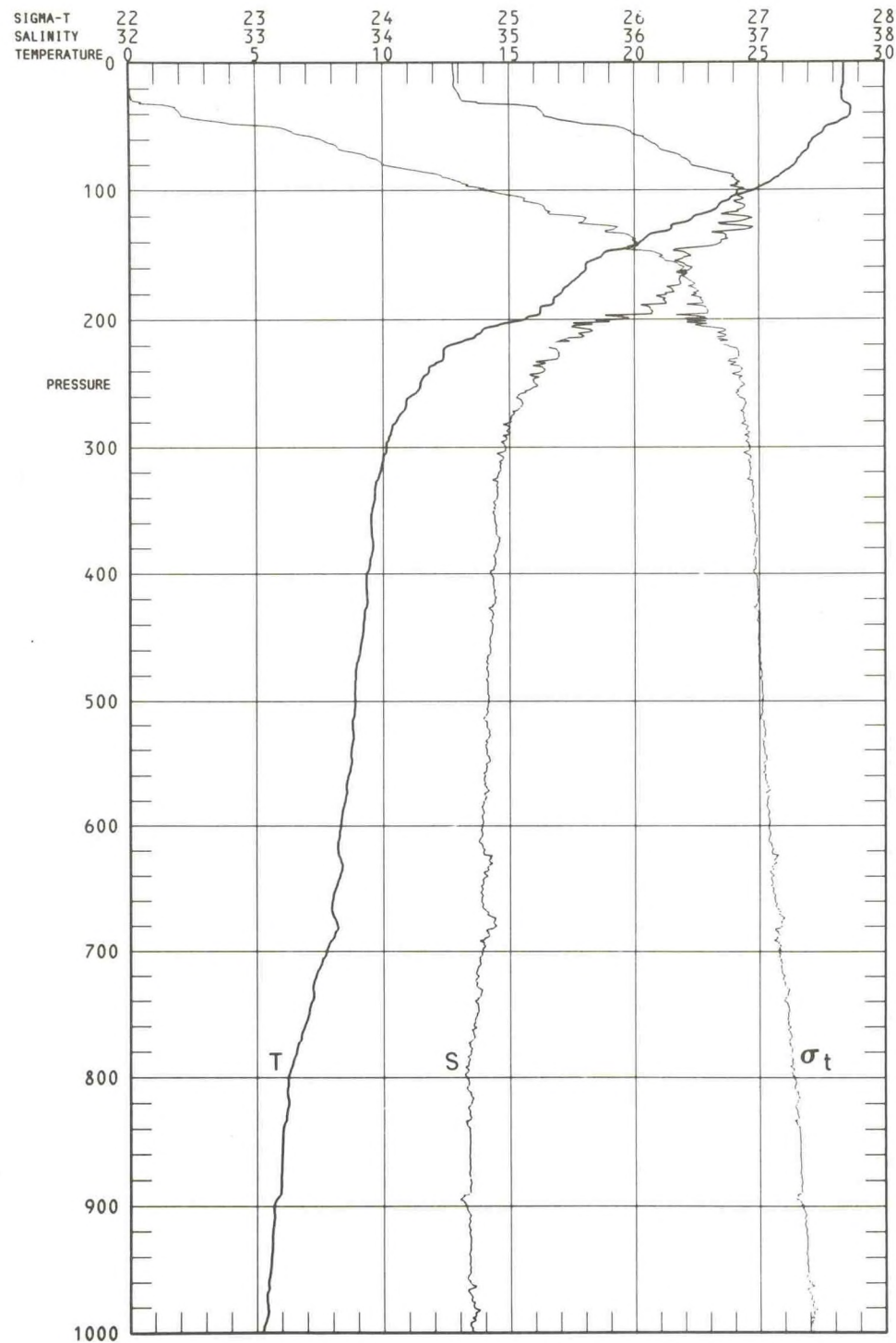
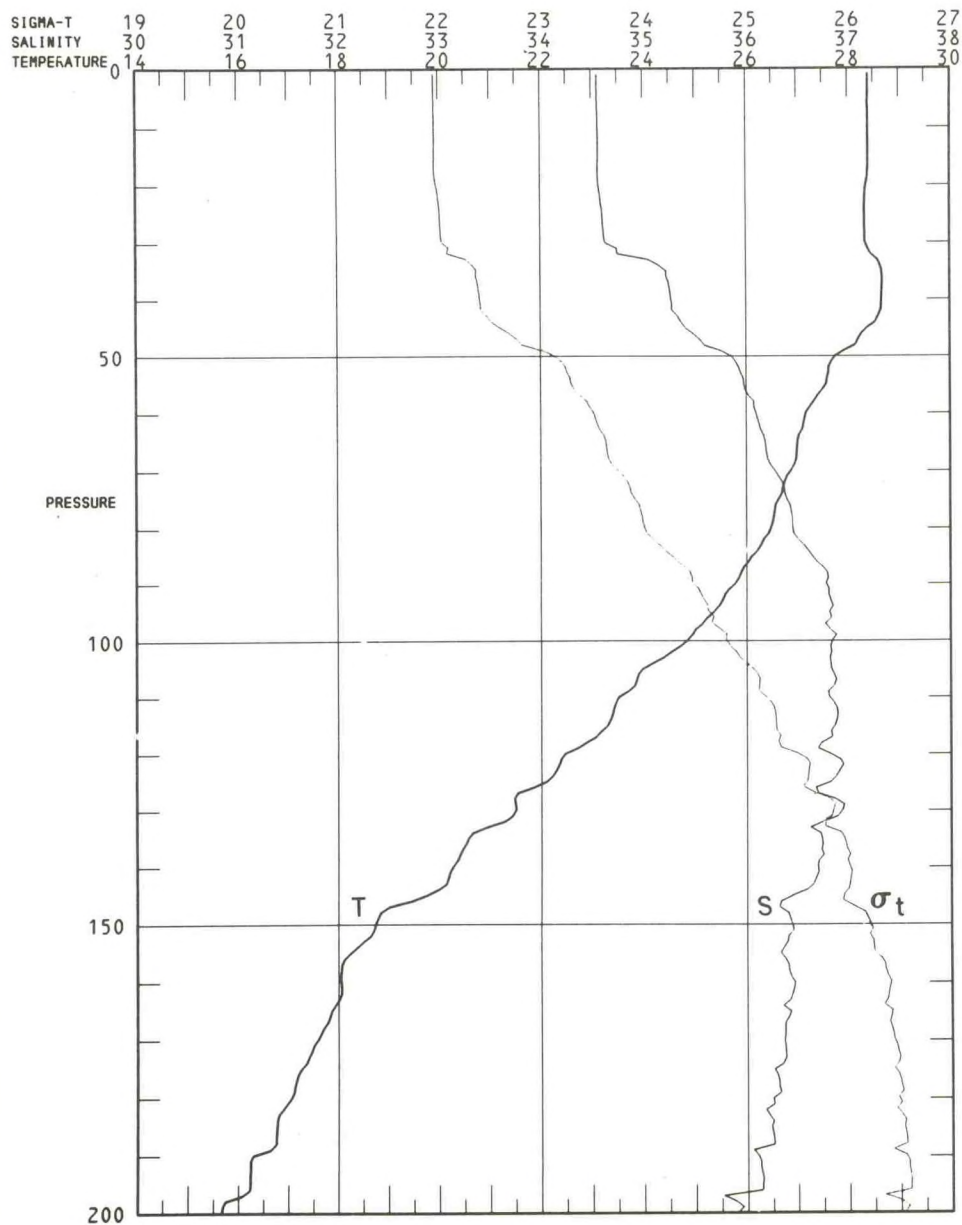


Mt. Mitchell, June 30, 1969, 1219 GMT, 12°20'N 058°22'W

MT. MITCHELL YEAR 1969 DAY 181 TIME 1751 GMT LAT.12°22'N LON.058°24'W  
PRESSURE CORRECTION OF 2.0 DECIBARS APPLIED TO THE ENTIRE CAST.

# STD Depth-Sorted Plots

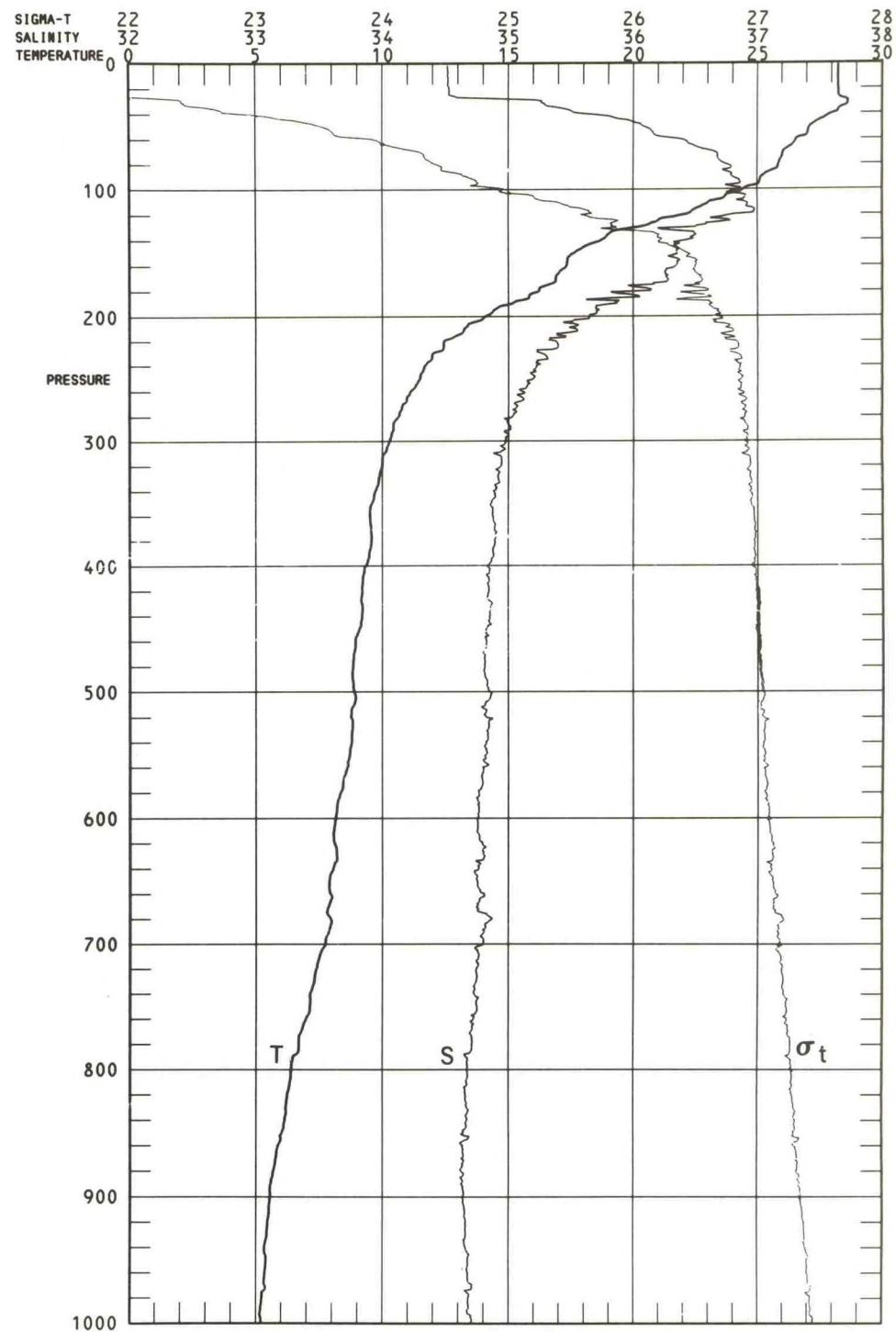
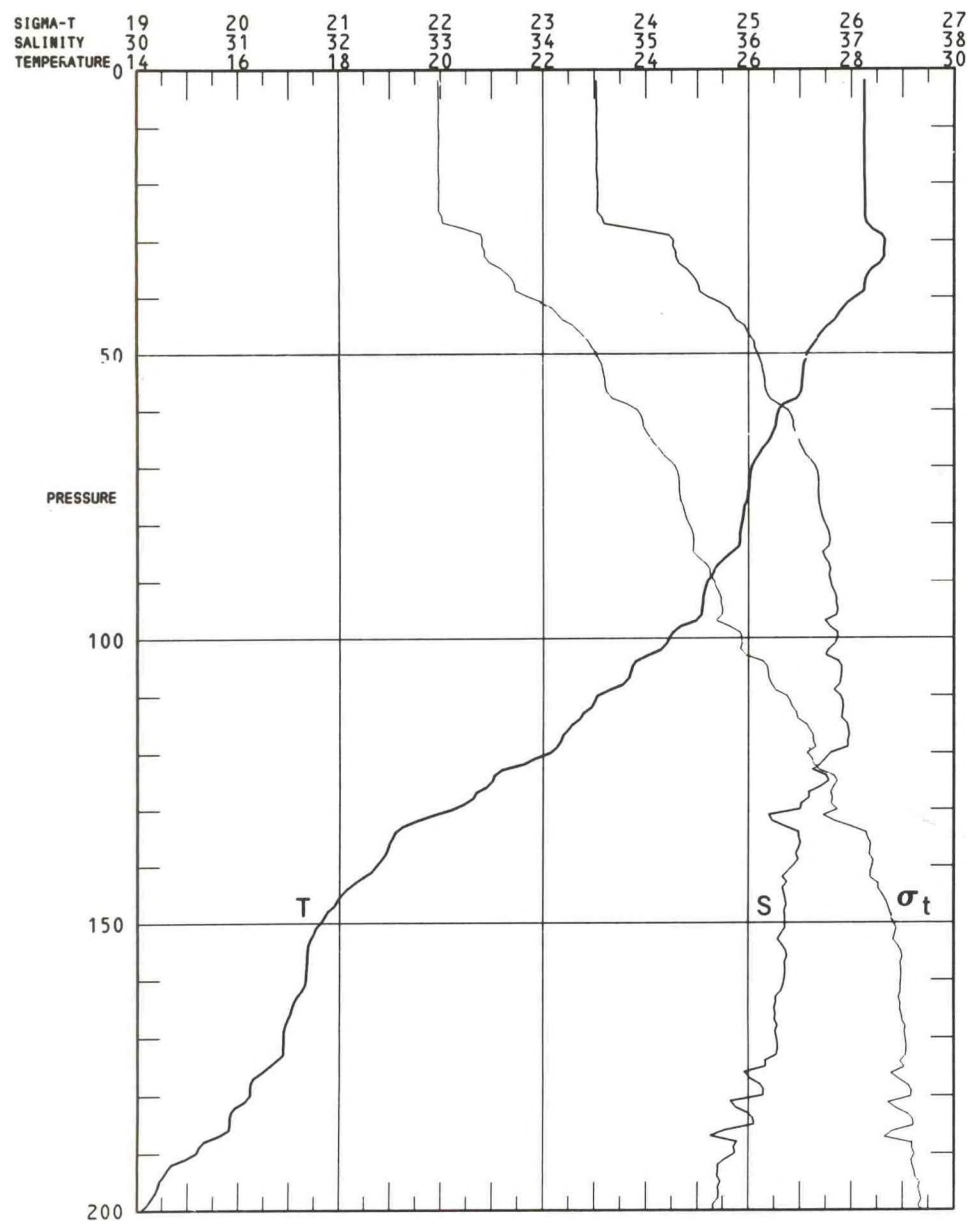
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, June 30, 1969, 1751 GMT, 12°22'N 058°24'W



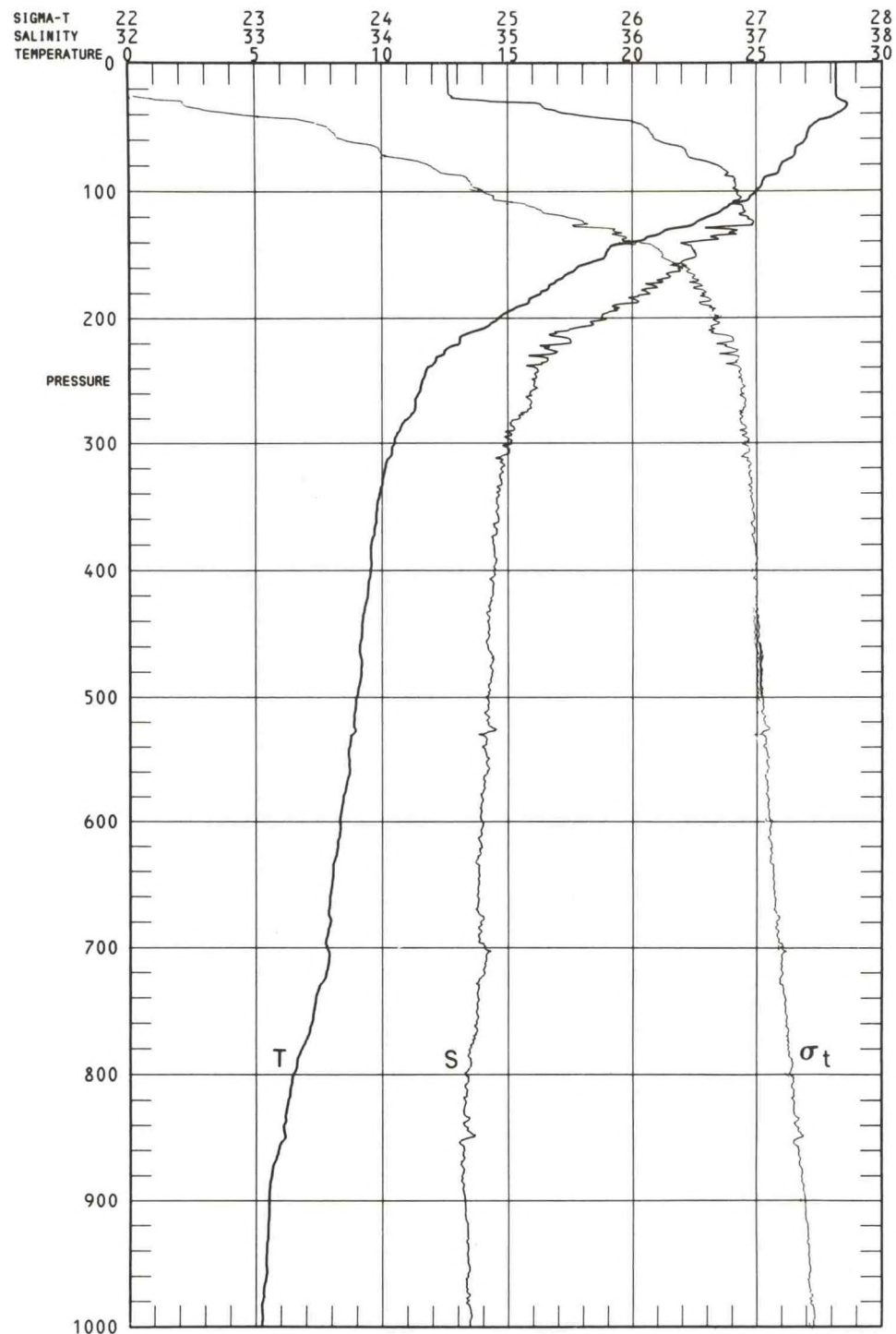
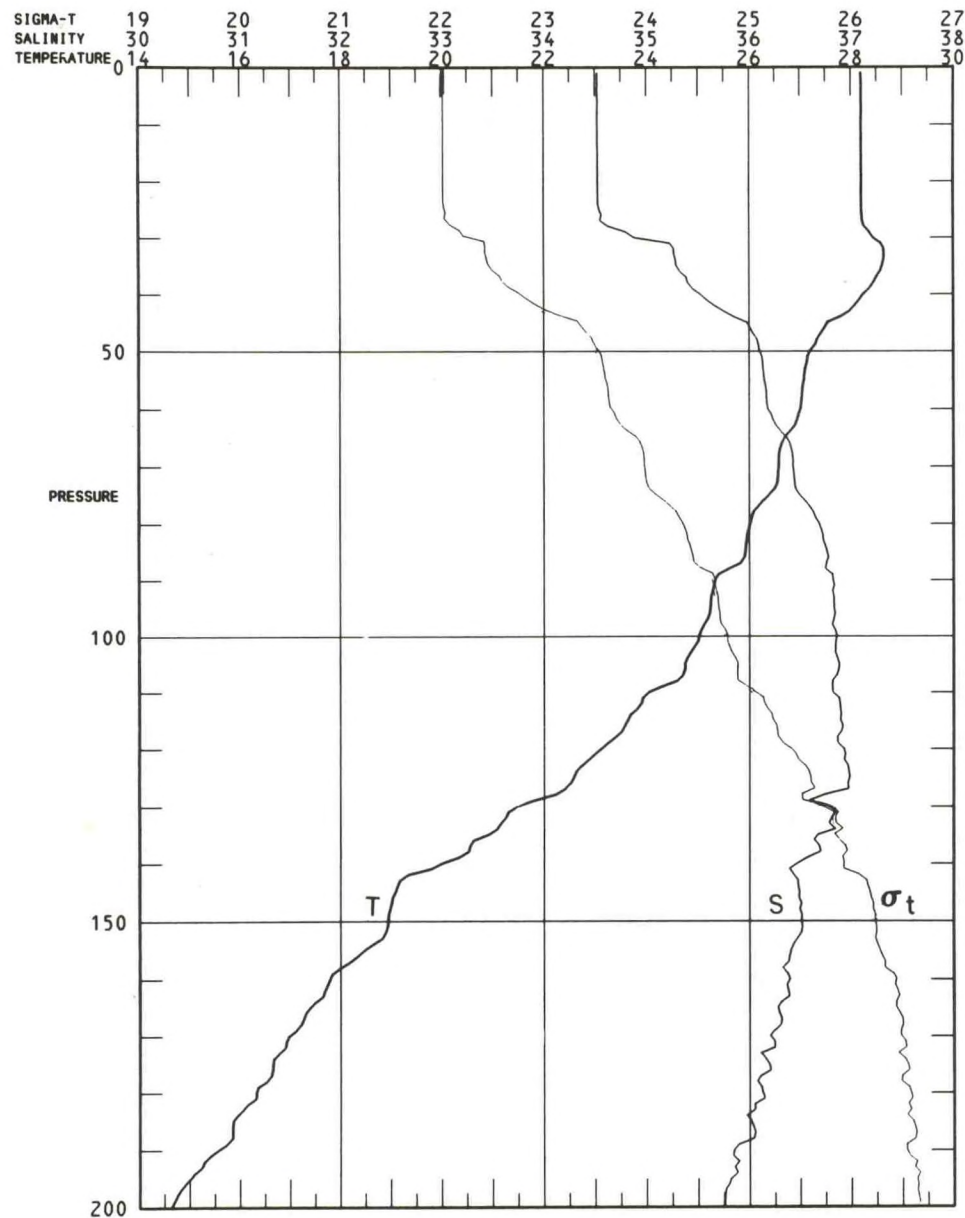
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, July 1, 1969, 0105 GMT, 12°20'N 058°21'W

MT. MITCHELL YEAR 1969 DAY 182 TIME 550 GMT LAT.12°20'N LONG.058°21'W  
PRESSURE CORRECTION OF 2.0 DECIBARS APPLIED TO THE ENTIRE CAST.

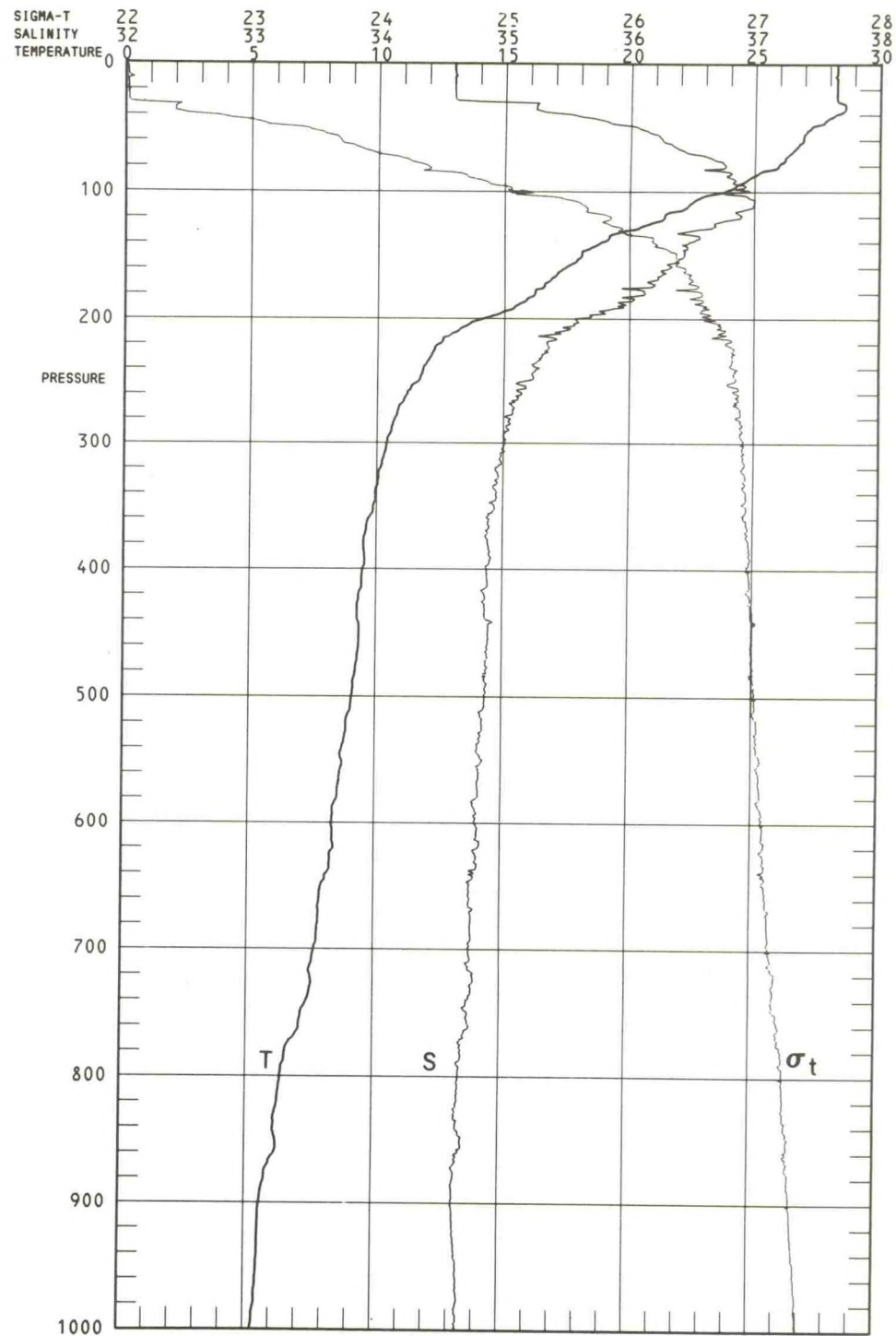
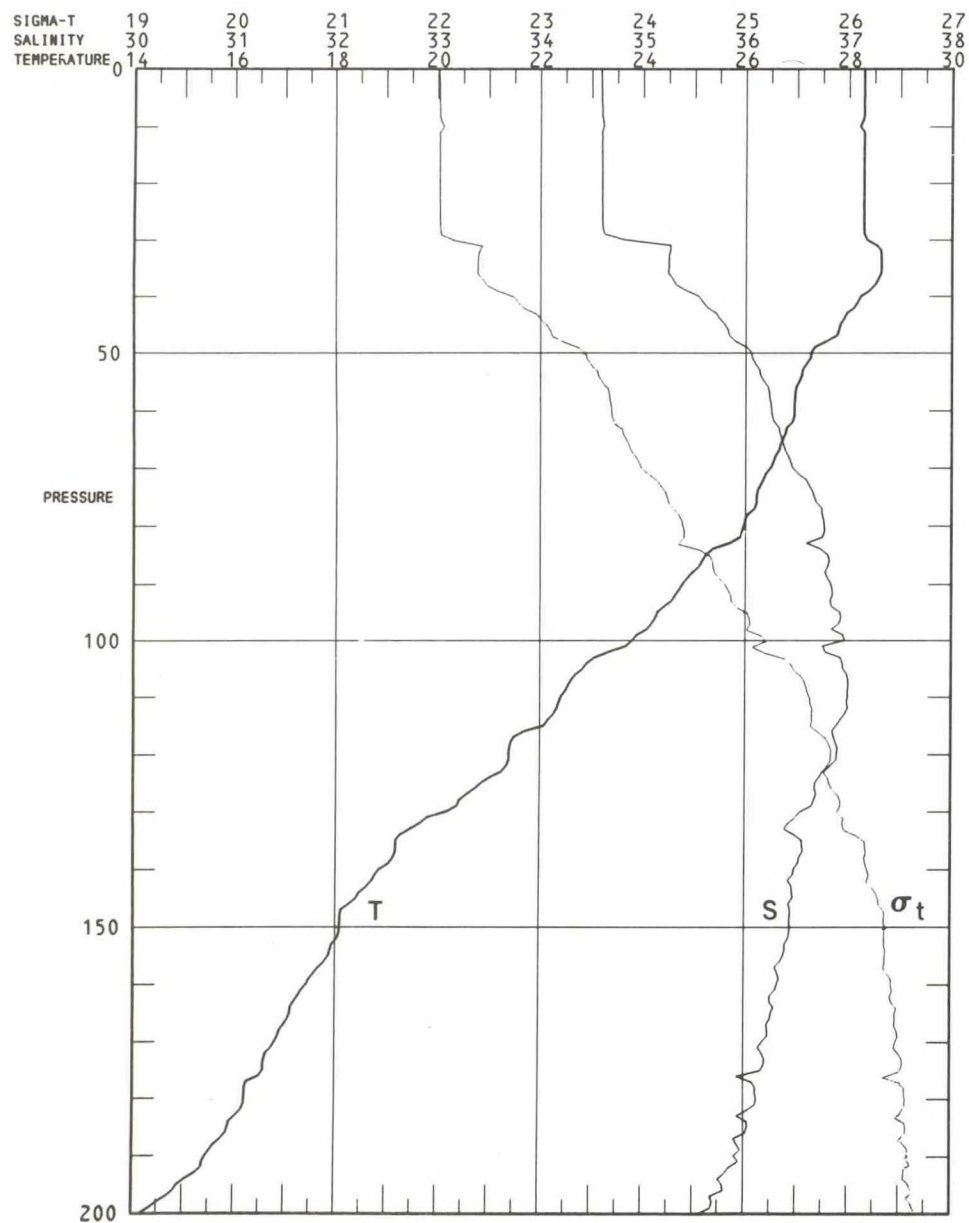
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Mt. Mitchell, July 1, 1969, 0550 GMT, 12°20'N 058°21'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



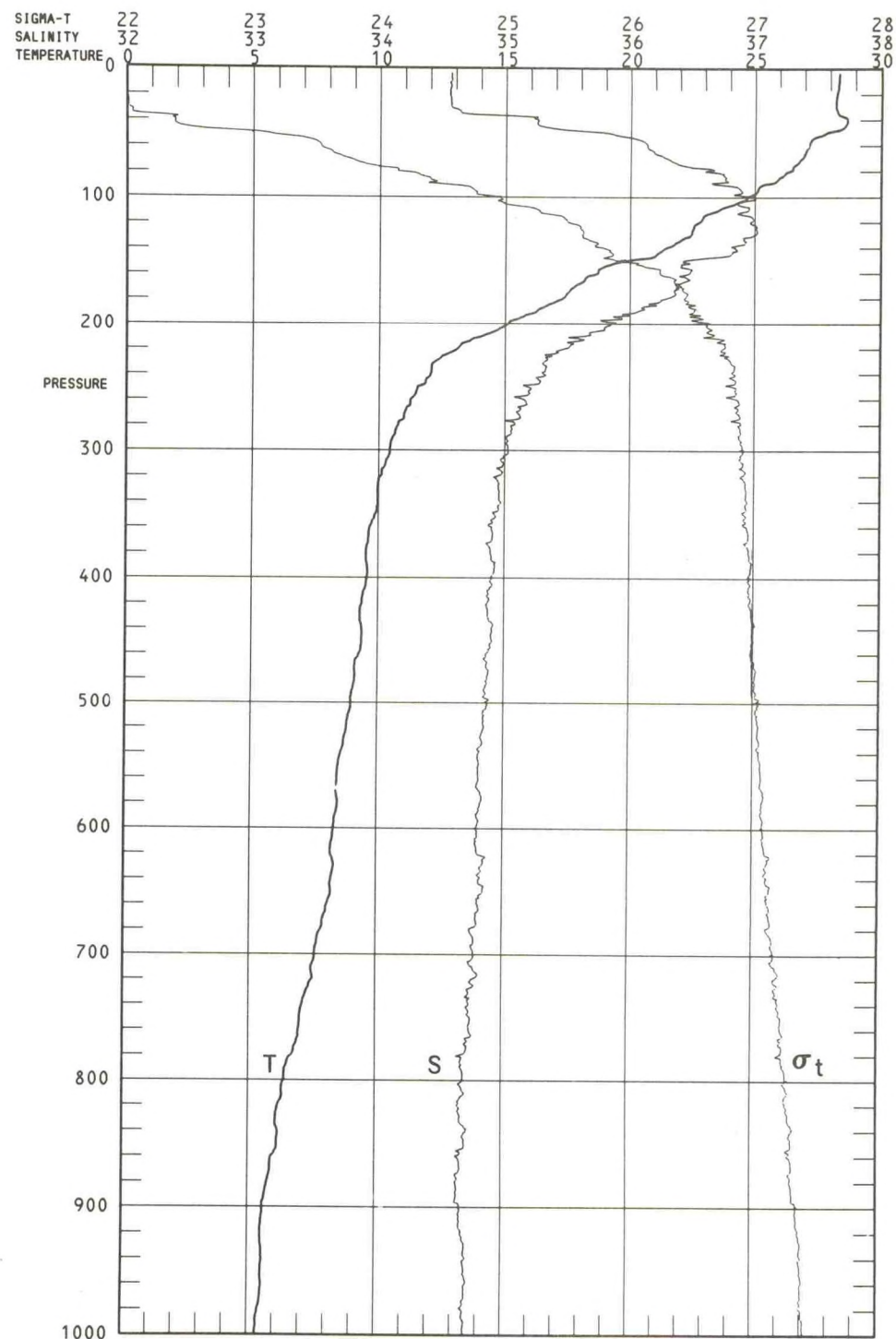
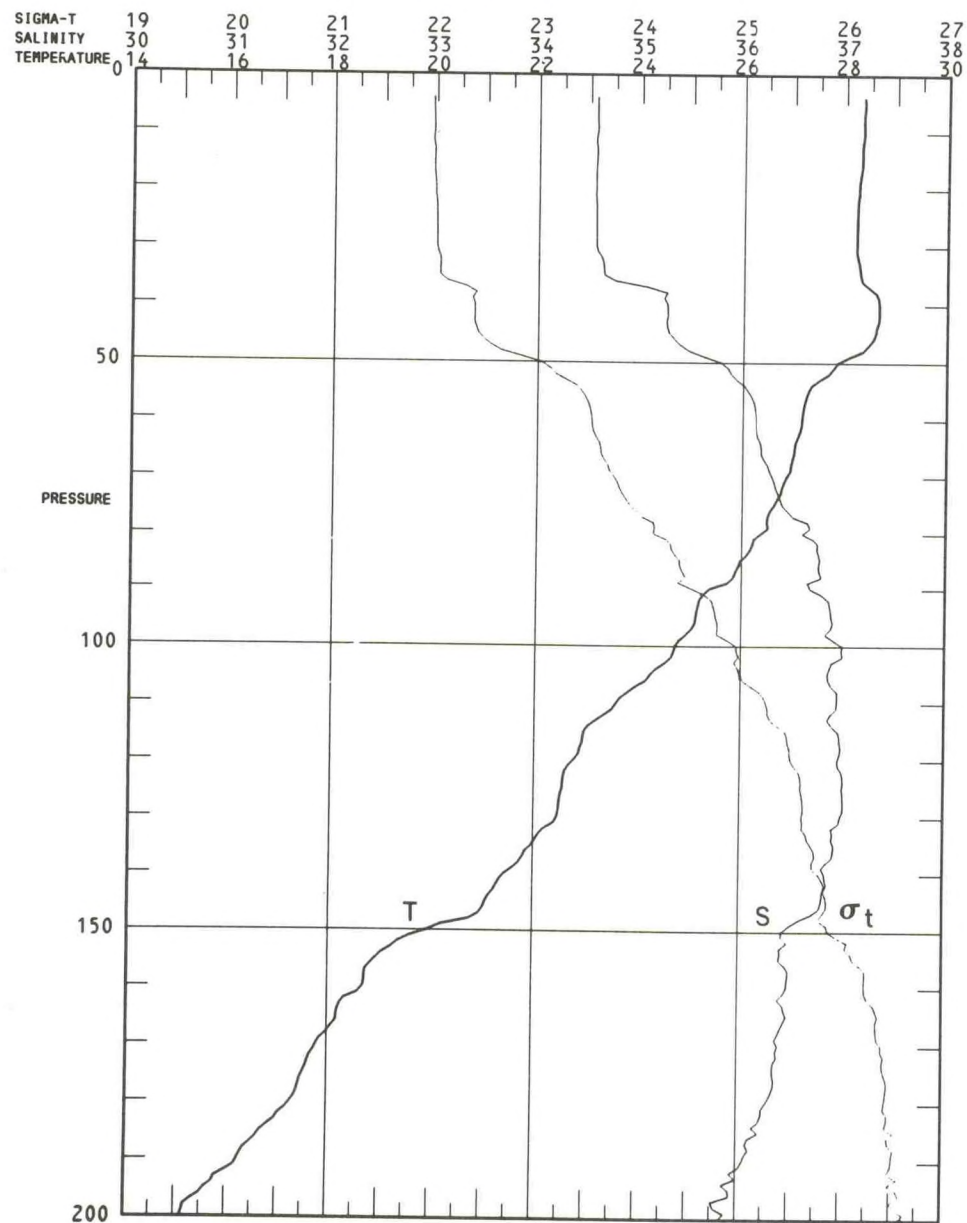
Mt. Mitchell, July 1, 1969, 1207 GMT, 12°21'N 058°23'W



MT. MITCHELL YEAR 1969 DAY 182 TIME 1755 GMT LAT.12°20'N LON.058°22'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

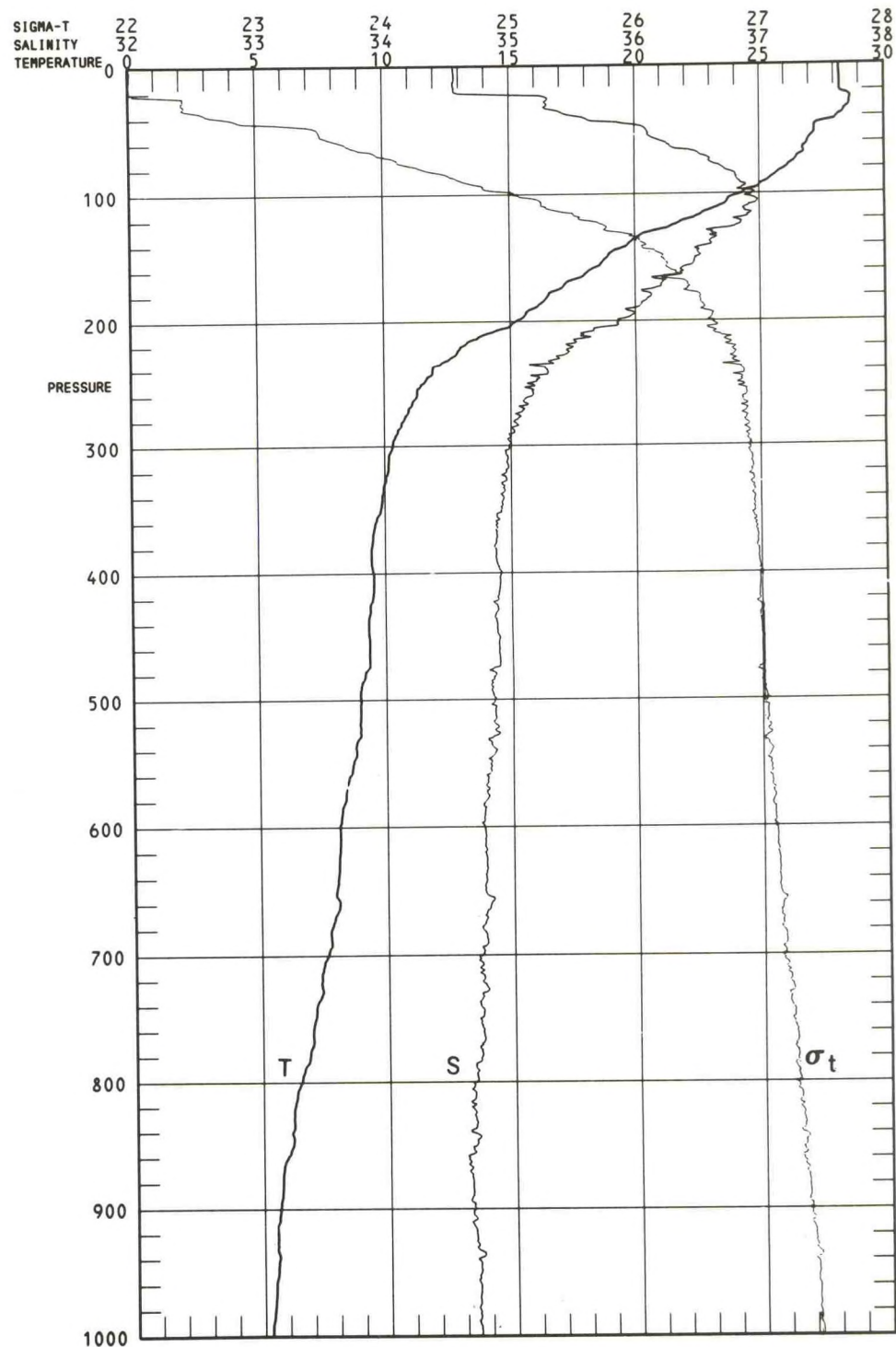
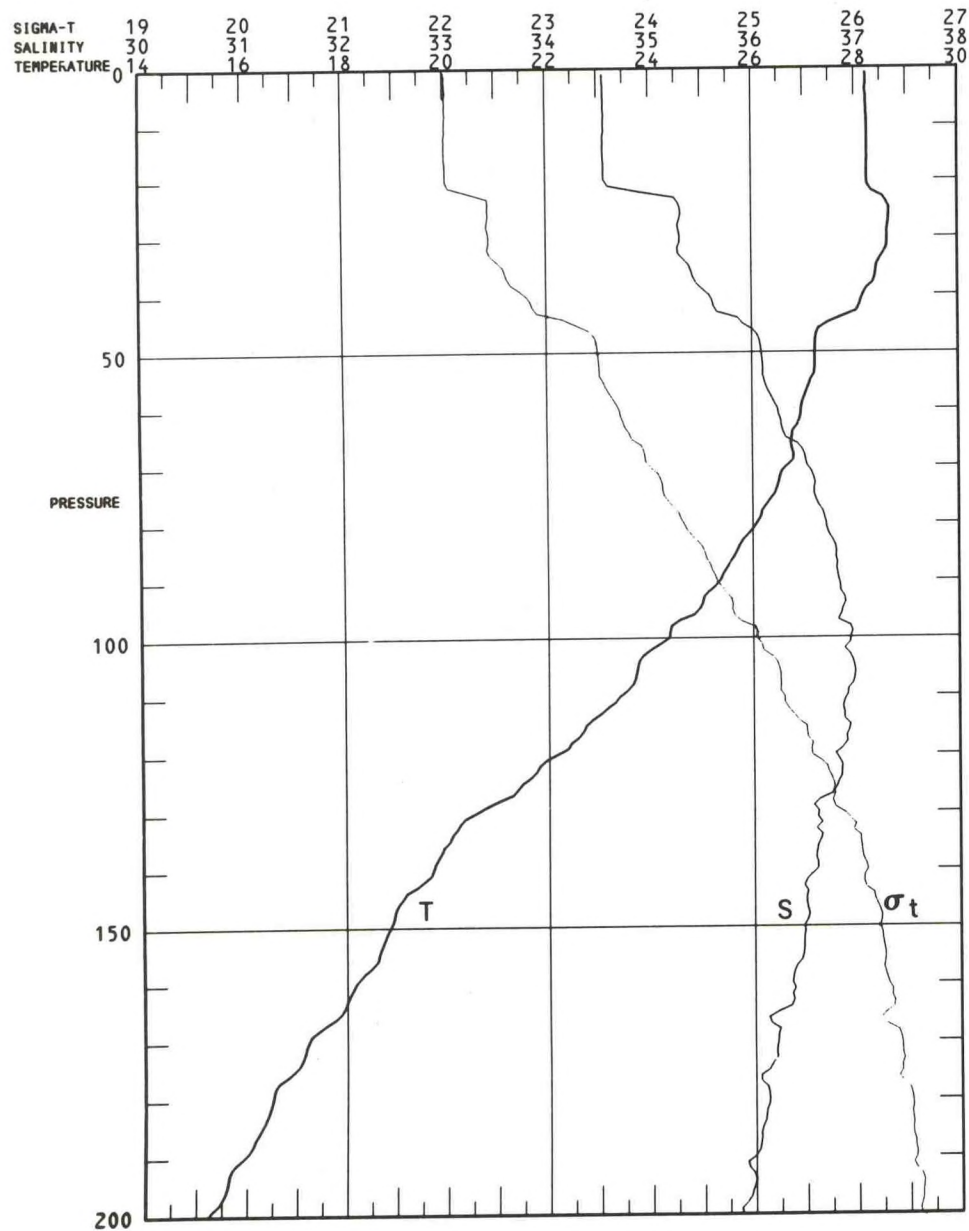


Mt. Mitchell, July 1, 1969, 1755 GMT, 12°20'N 058°22'W

MT. MITCHELL YEAR 1969 DAY 183 TIME 556 GMT LAT.12°20'N LONG.058°21'W  
PRESSURE CORRECTION OF 1.0 DECIBARS APPLIED TO THE ENTIRE CAST.

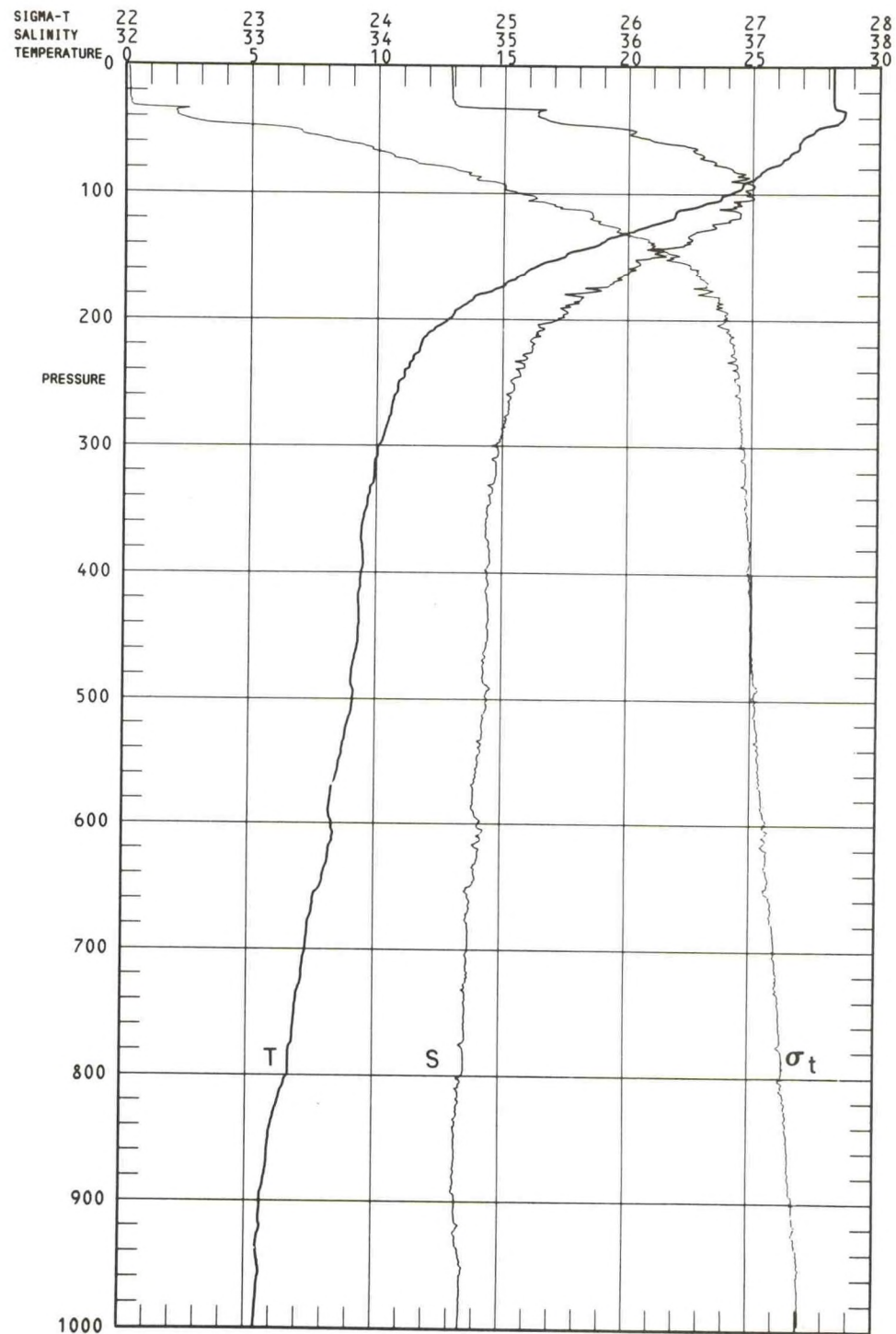
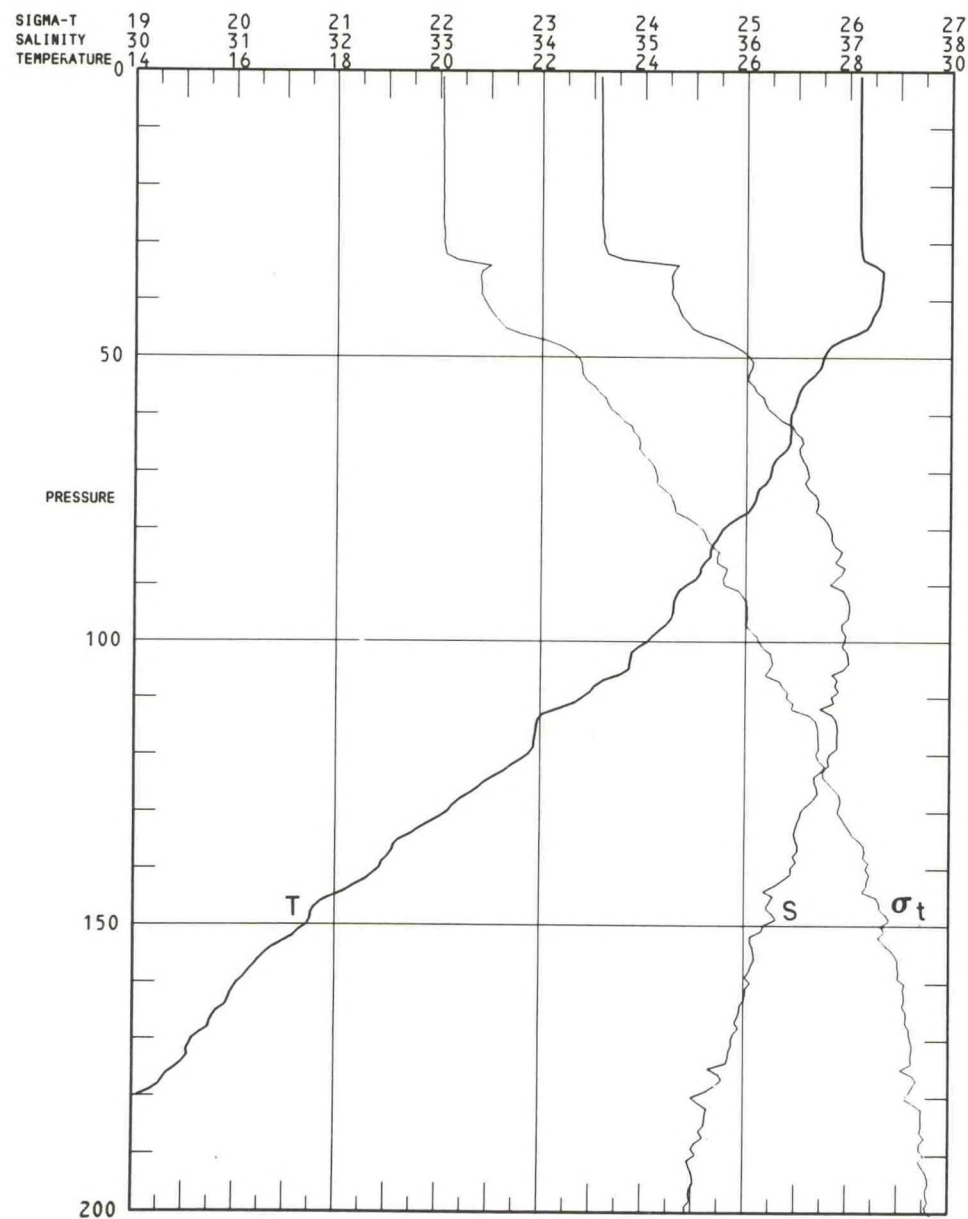
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Mt. Mitchell, July 2, 1969, 0556 GMT, 12°20'N 058°21'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

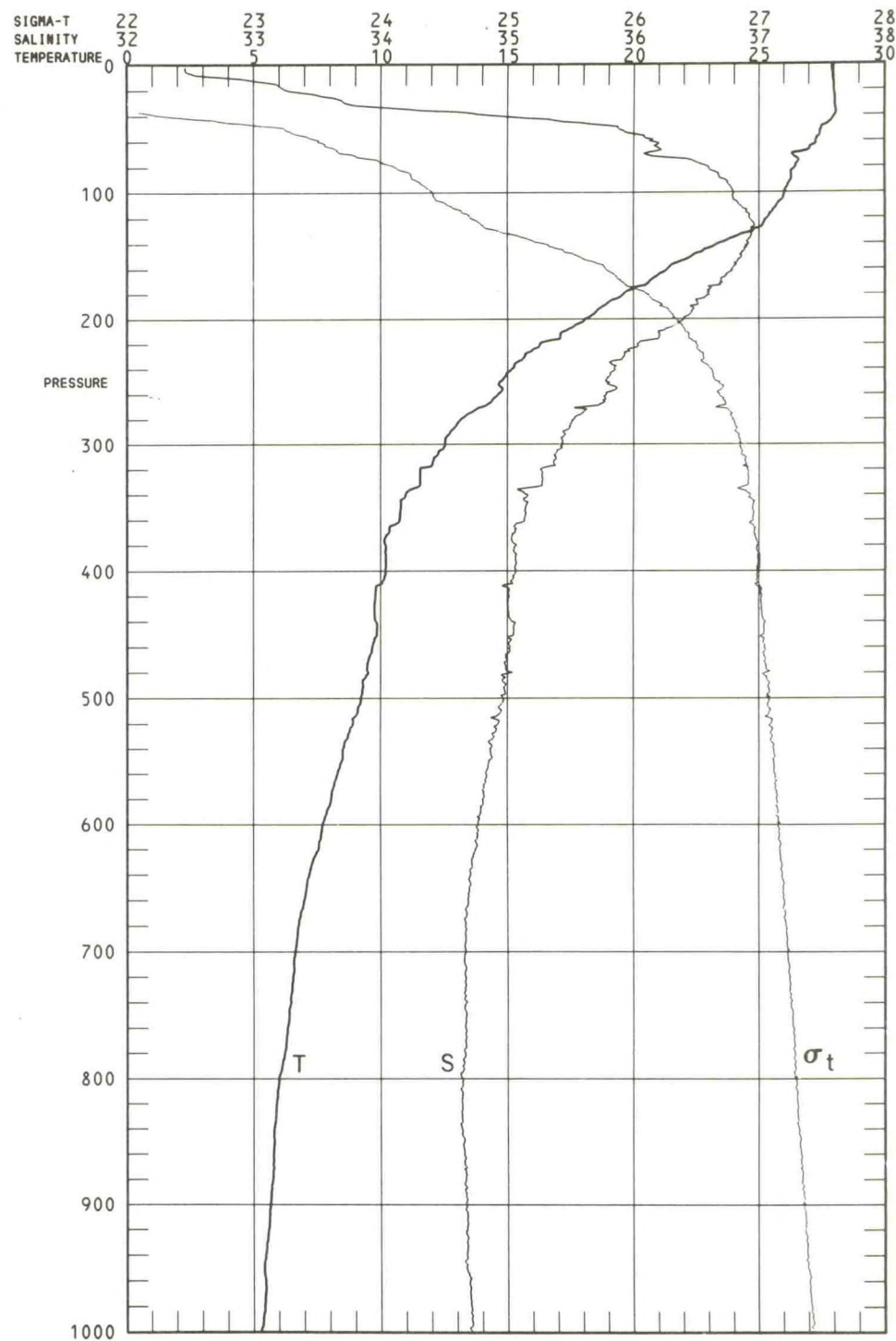
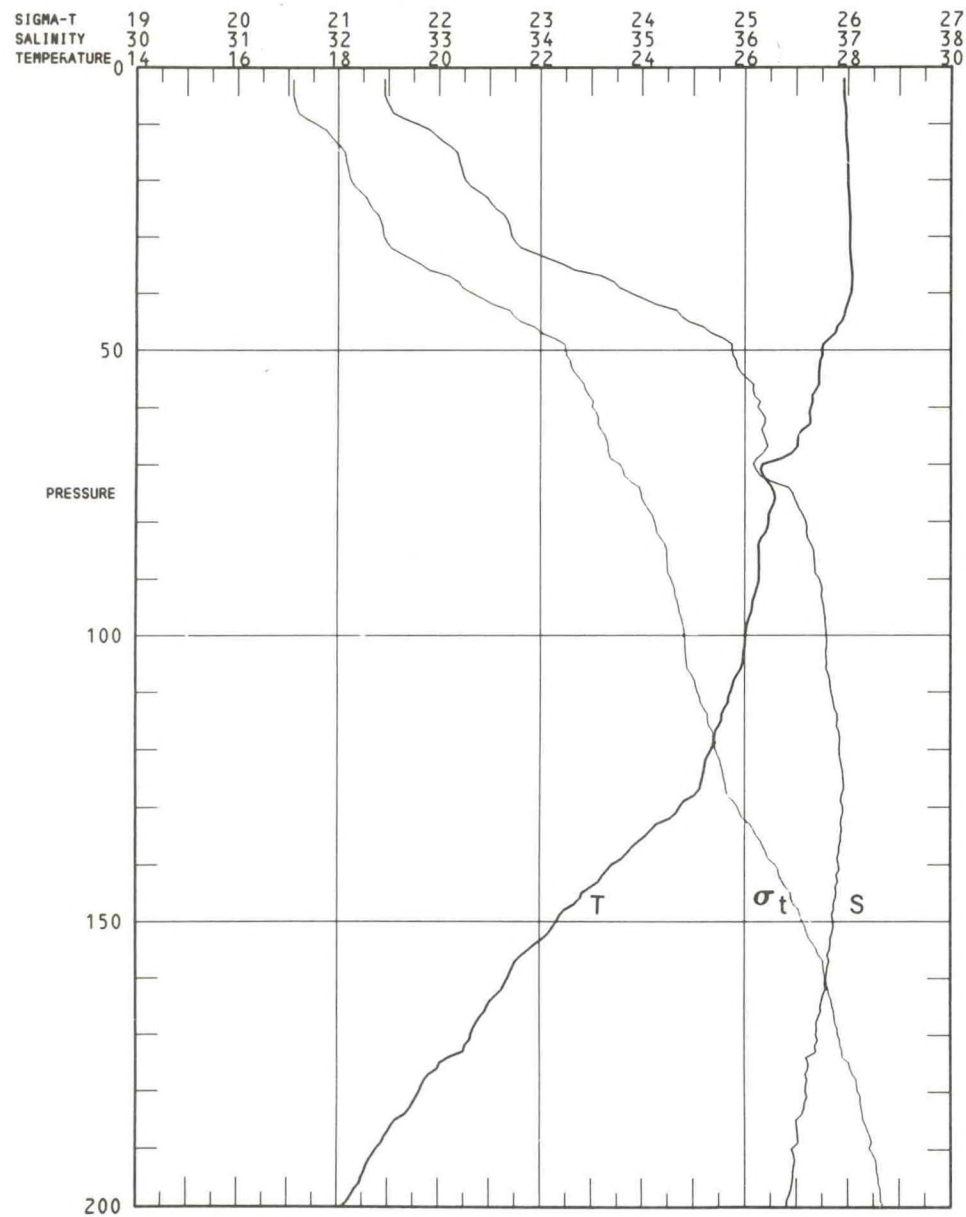


Mt. Mitchell, July 2, 1969, 1203 GMT, 12°20'N 058°21'W



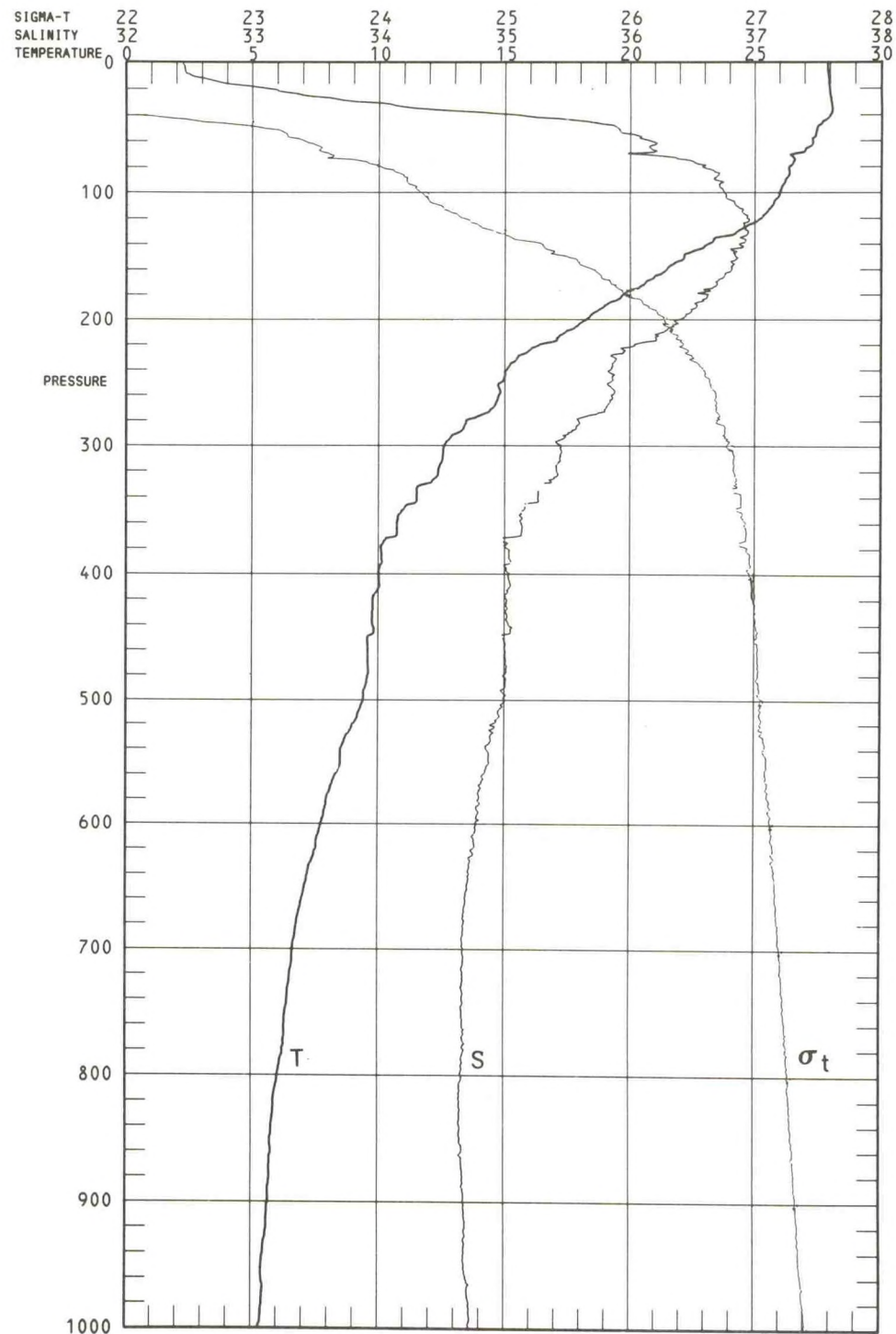
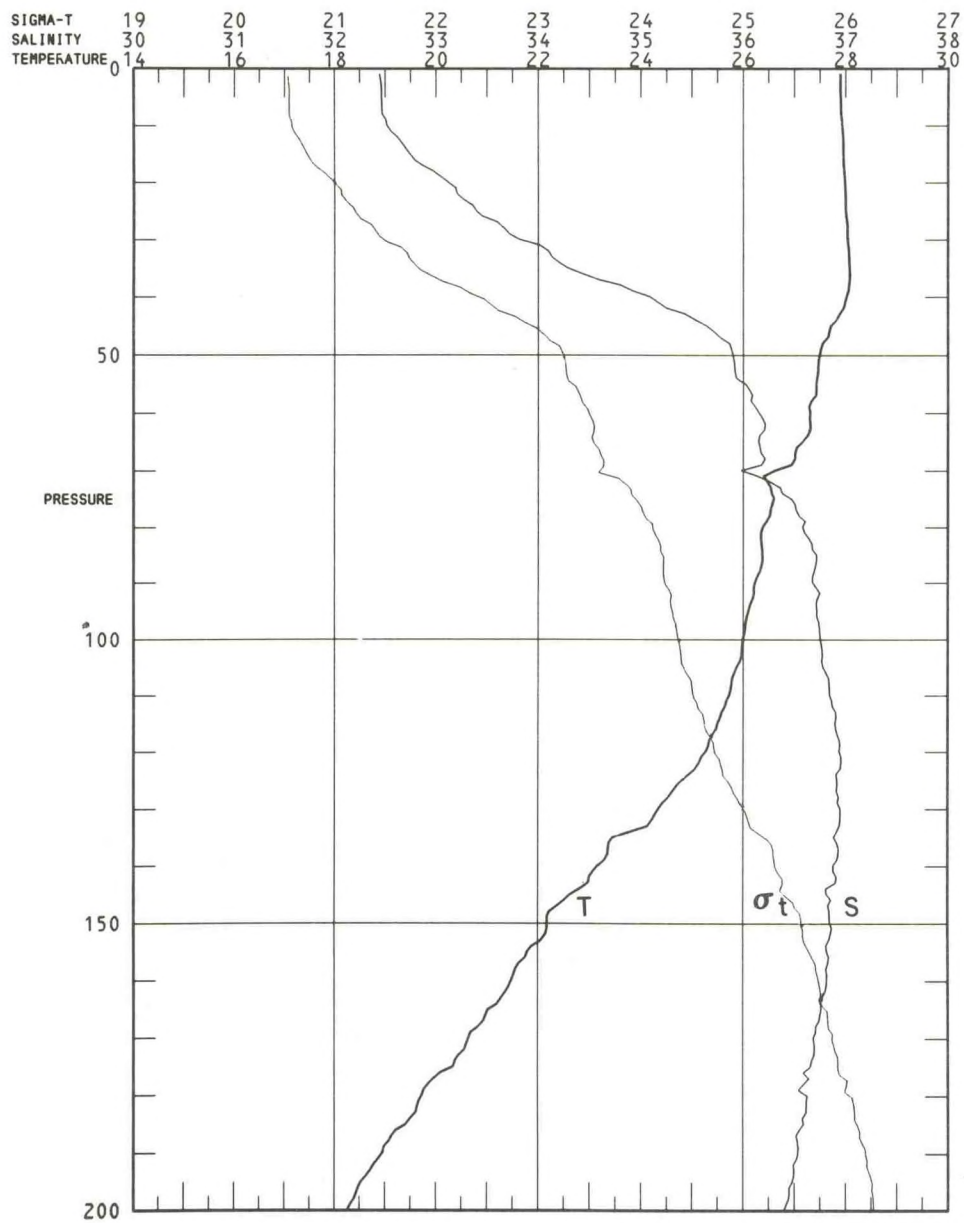
DISCOVERER YEAR 1969 DAY 172 TIME 100 GHT LAT.13°11'N LON.053°56'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



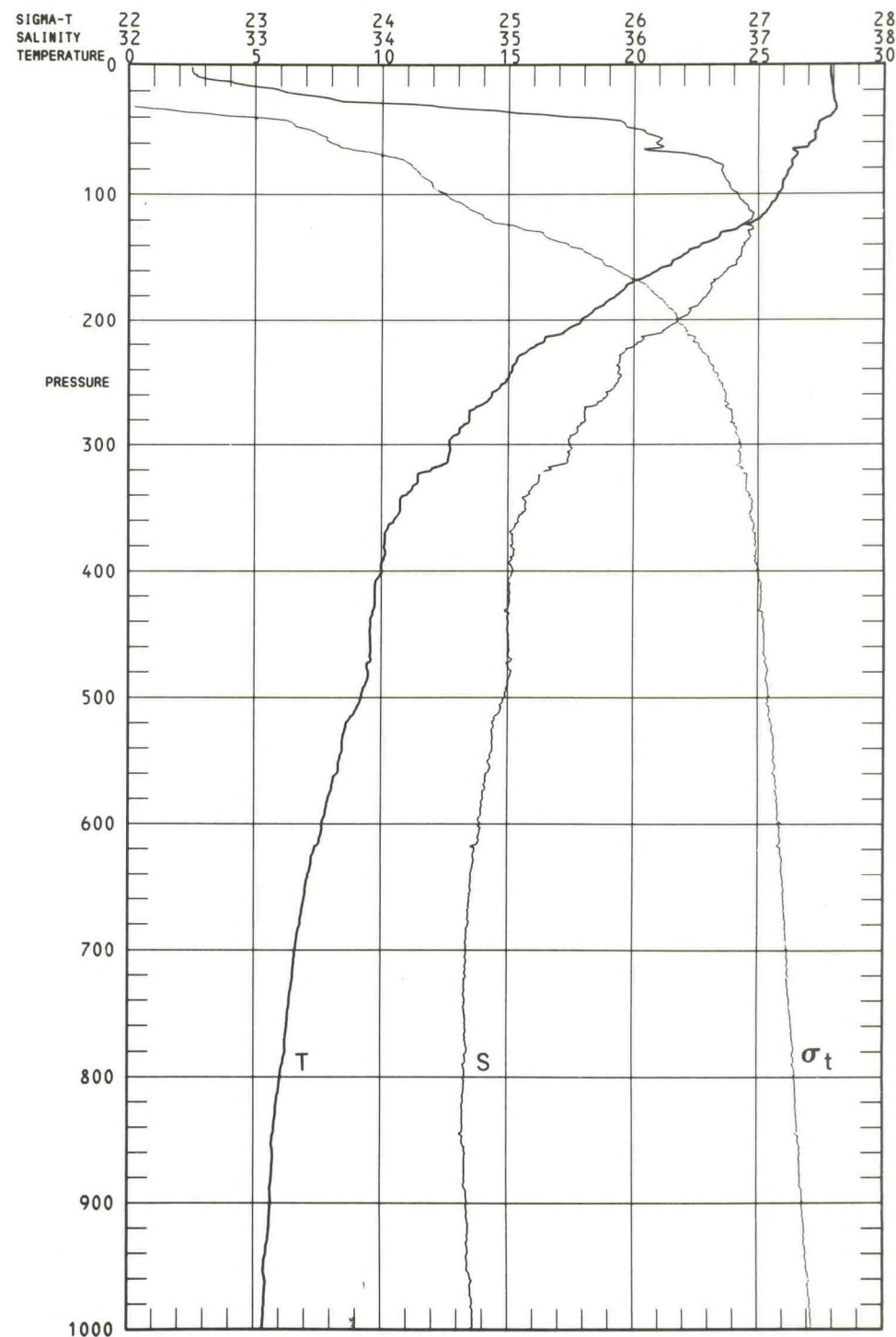
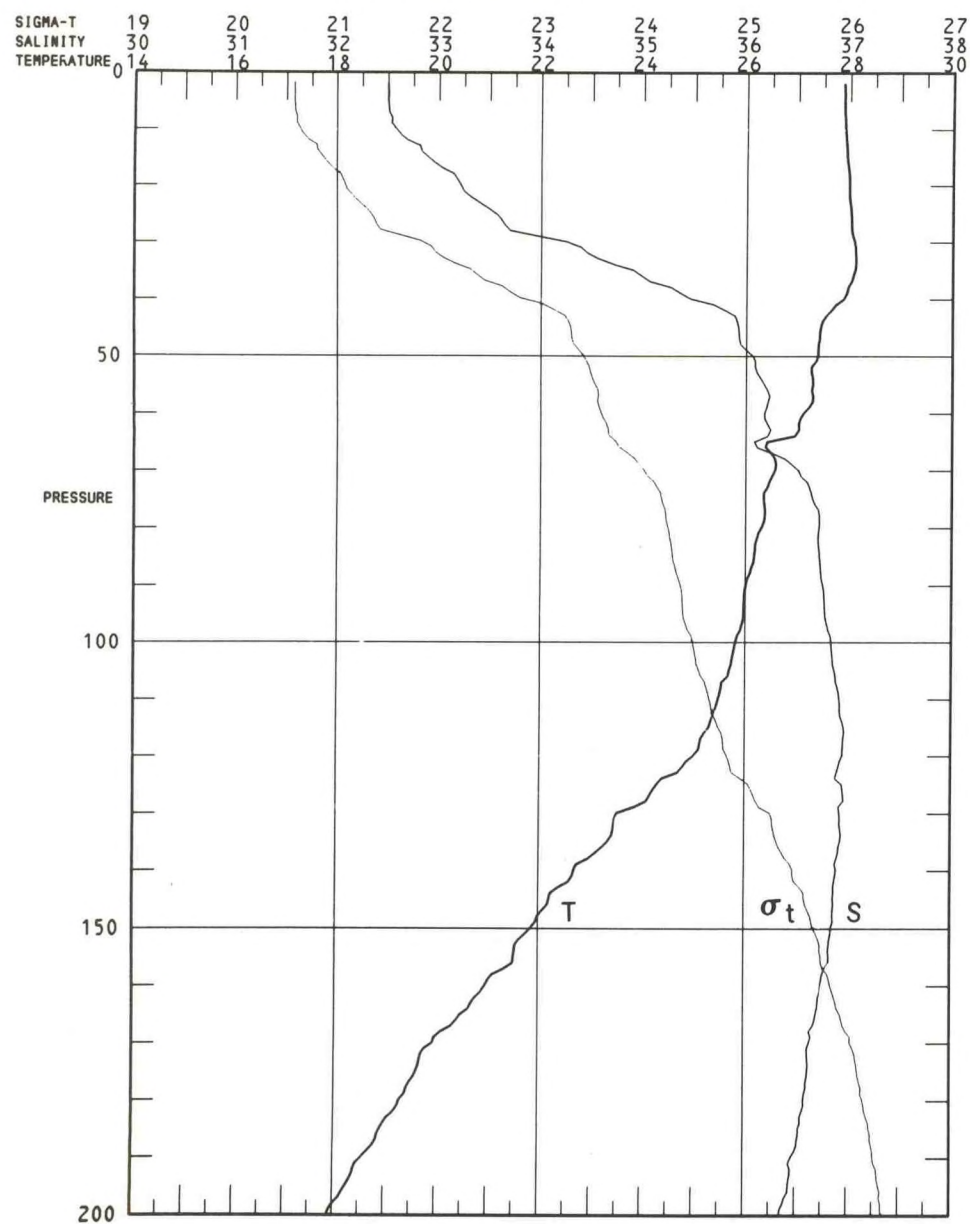
Discoverer, June 21, 1969, 0100 GMT, 13°11'N 053°56'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 21, 1969, 0255 GMT, 13°11'N 053°56'W

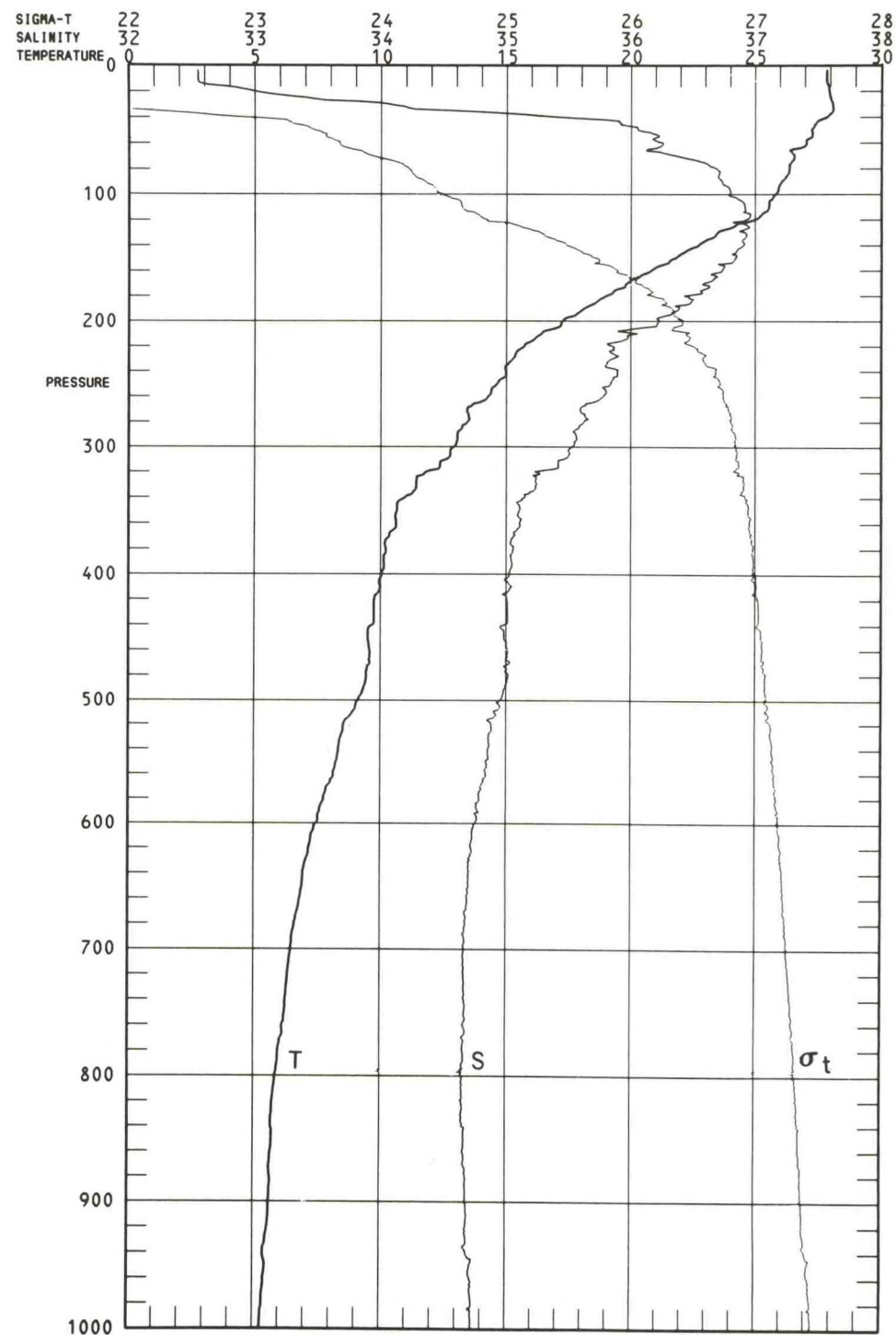
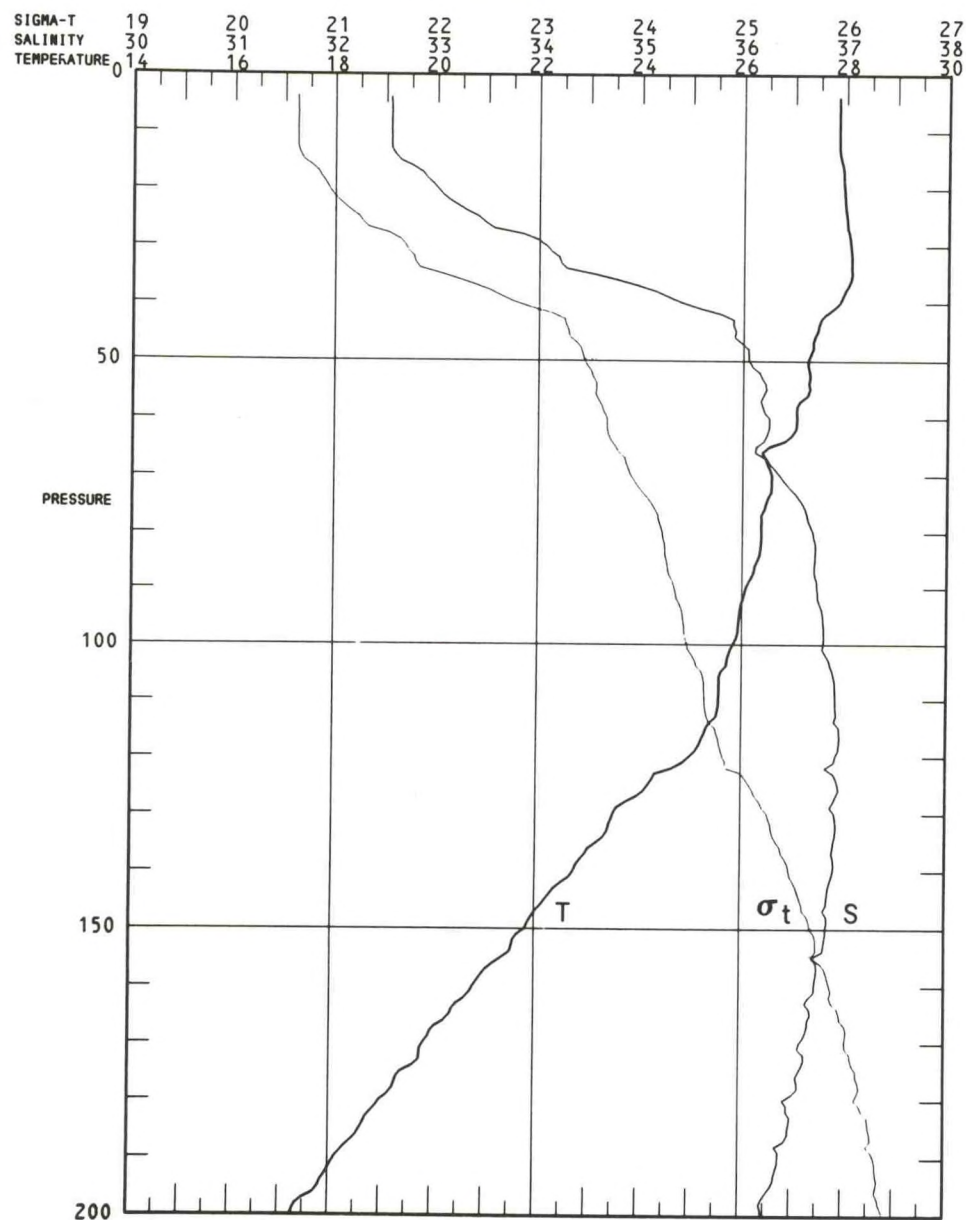
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 21, 1969, 0601 GMT, 13°11'N 053°56'W



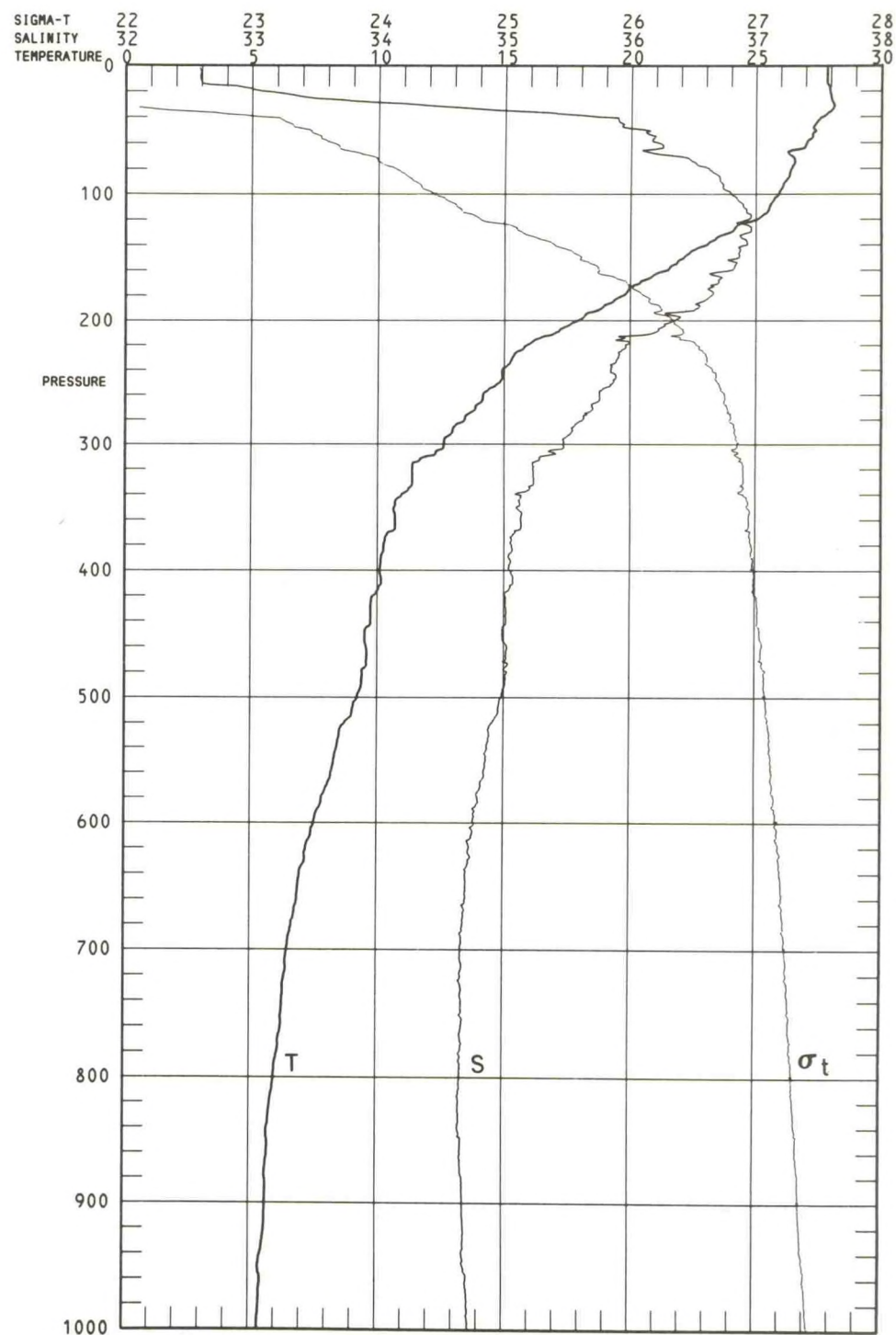
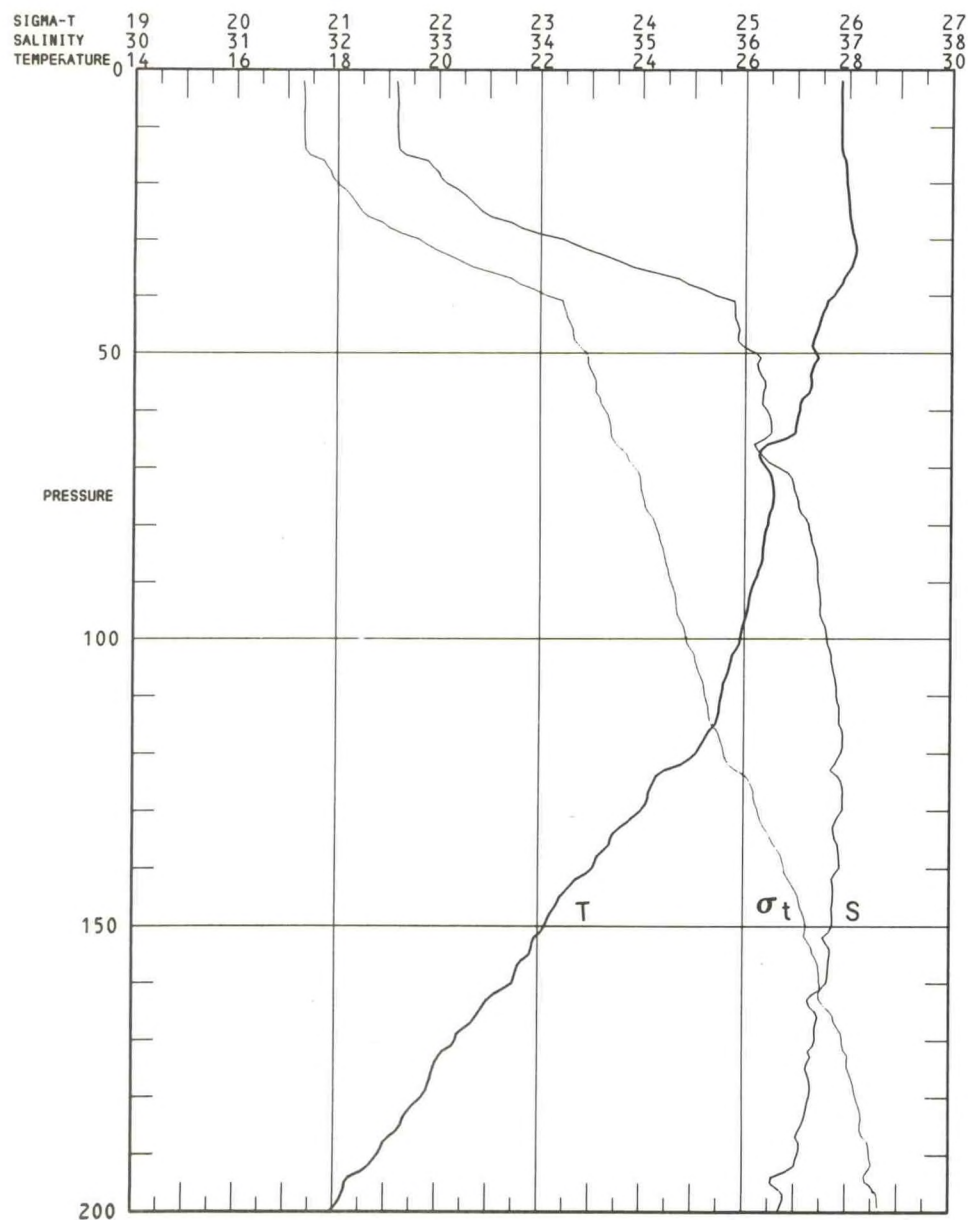
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 21, 1969, 0912 GMT, 13°11'N 053°56'W

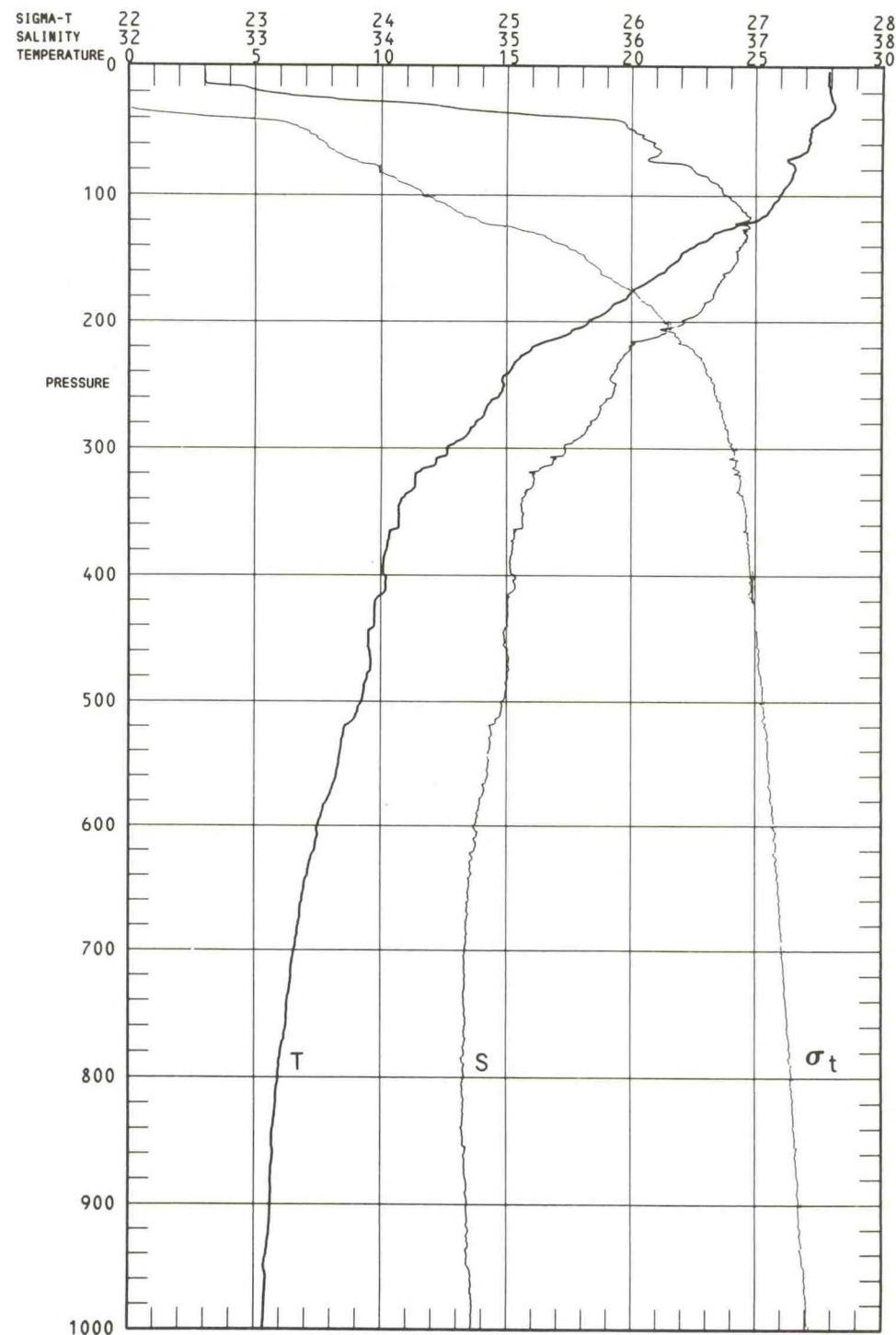
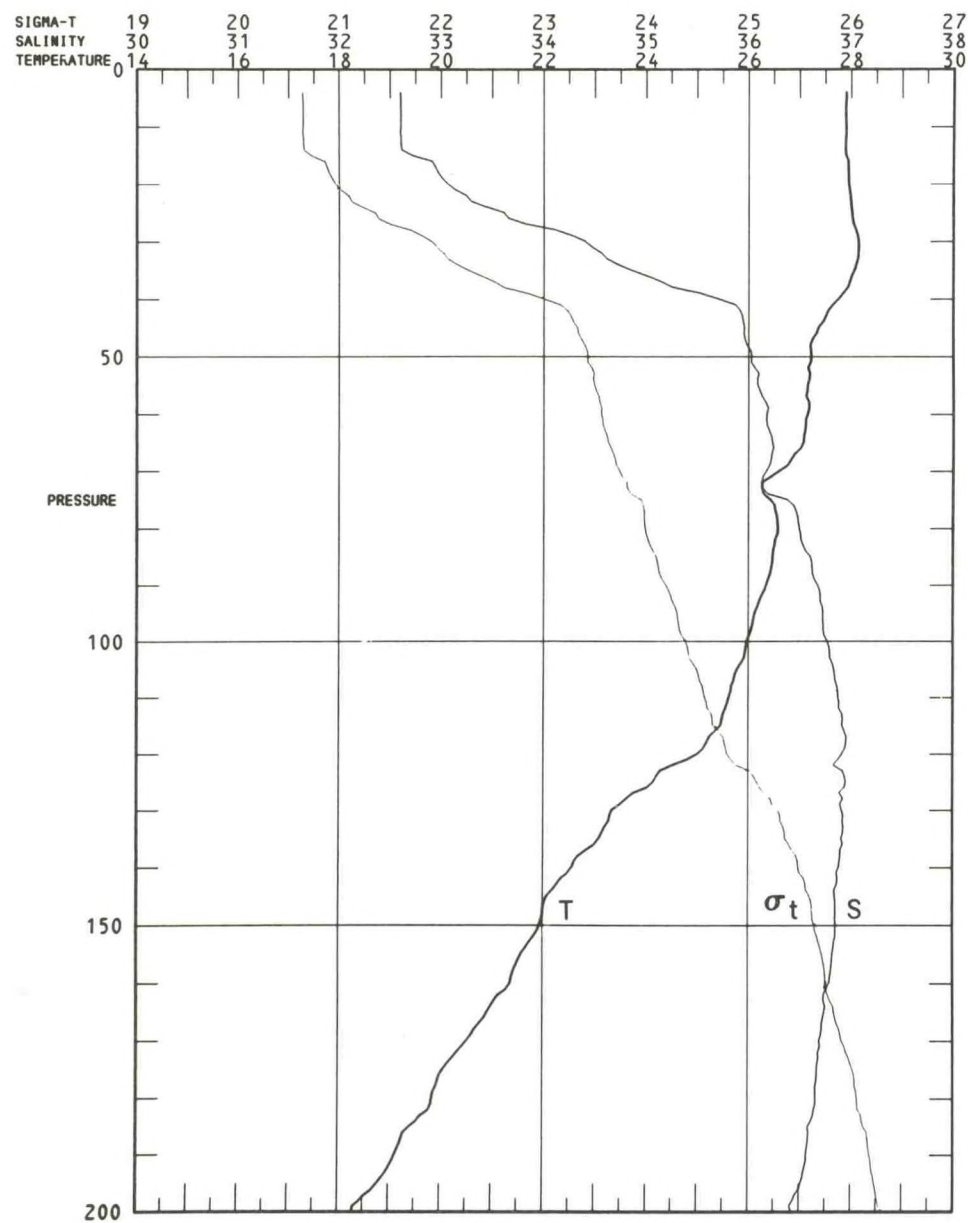
DISCOVERER YEAR 1969 DAY 172 TIME 1158 GMT LAT.13°11'N LON.053°56'W  
TIME CODE GENERATOR SUSPECTED AS BEING INCORRECT.

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 21, 1969, 1158 GMT, 13°11'N 053°56'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

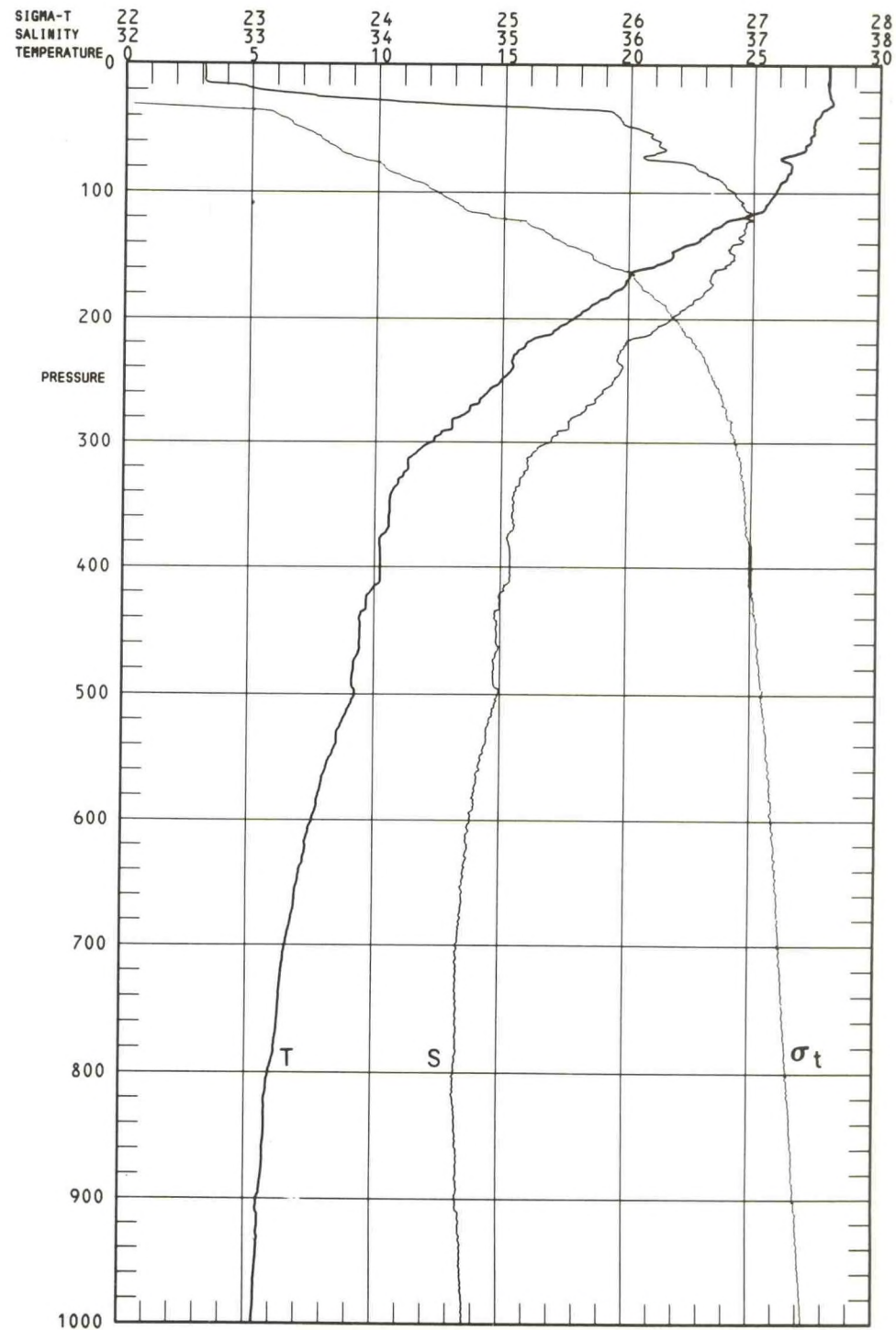
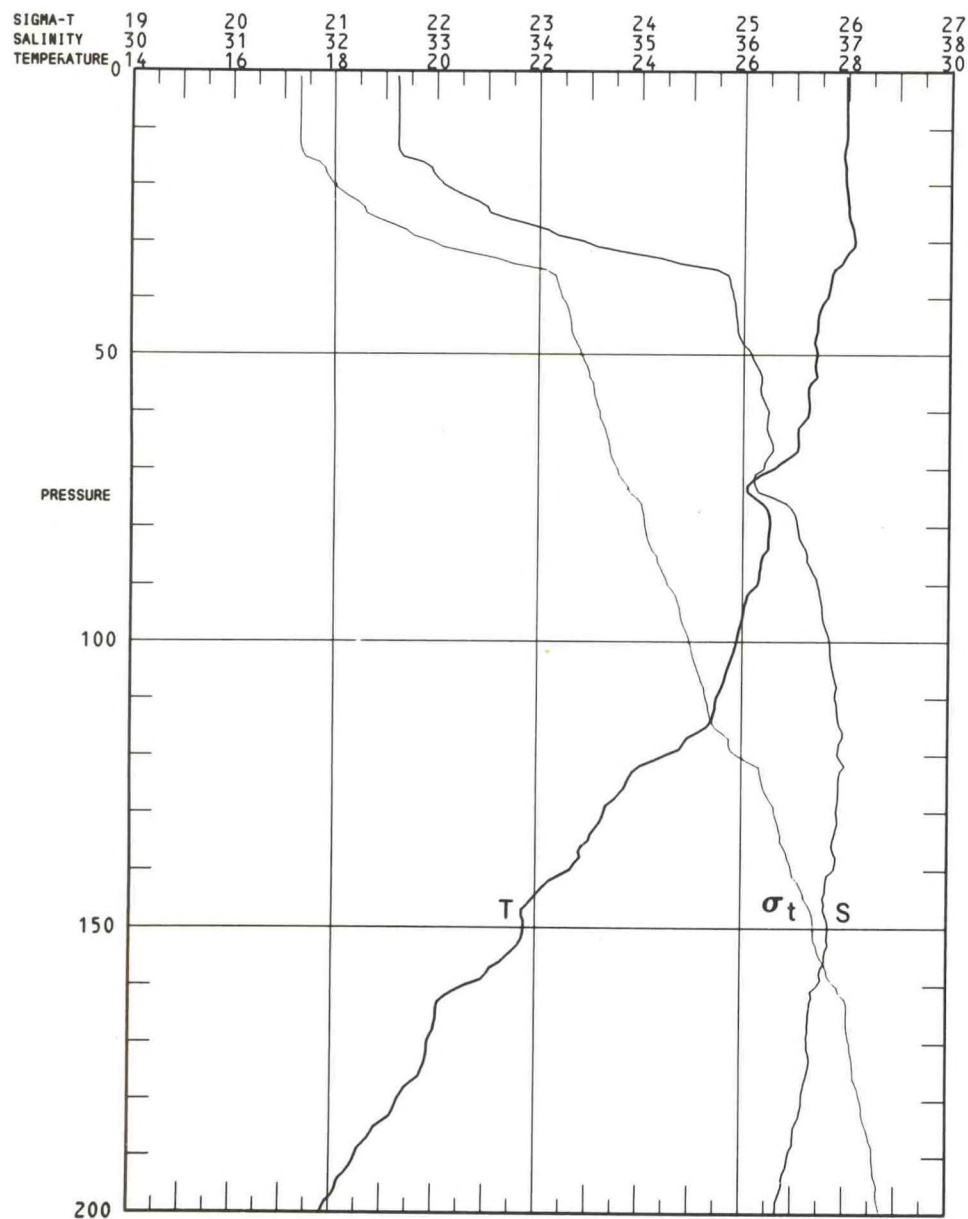


Discoverer, June 21, 1969, 1458 GMT, 13°11'N 053°56'W

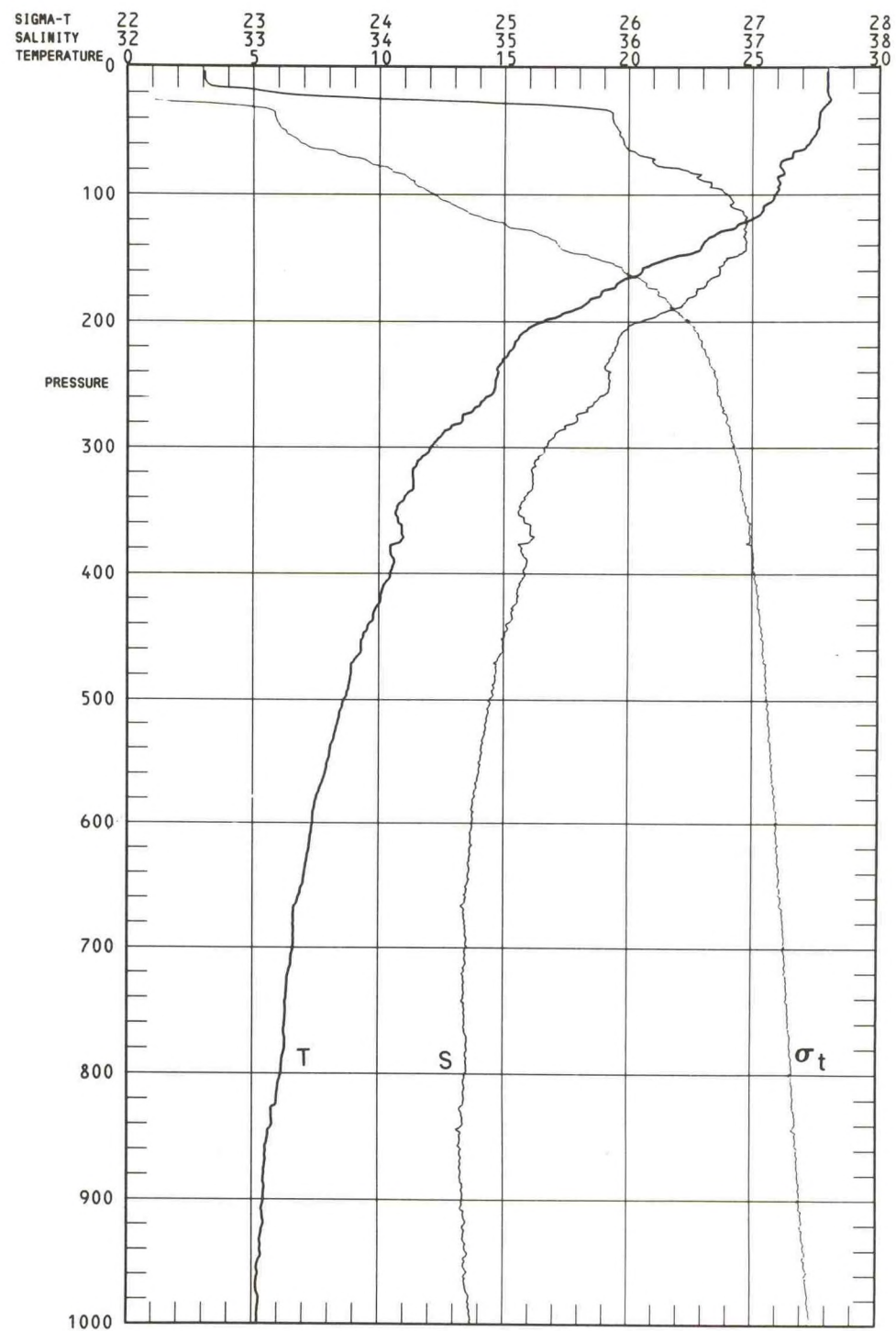
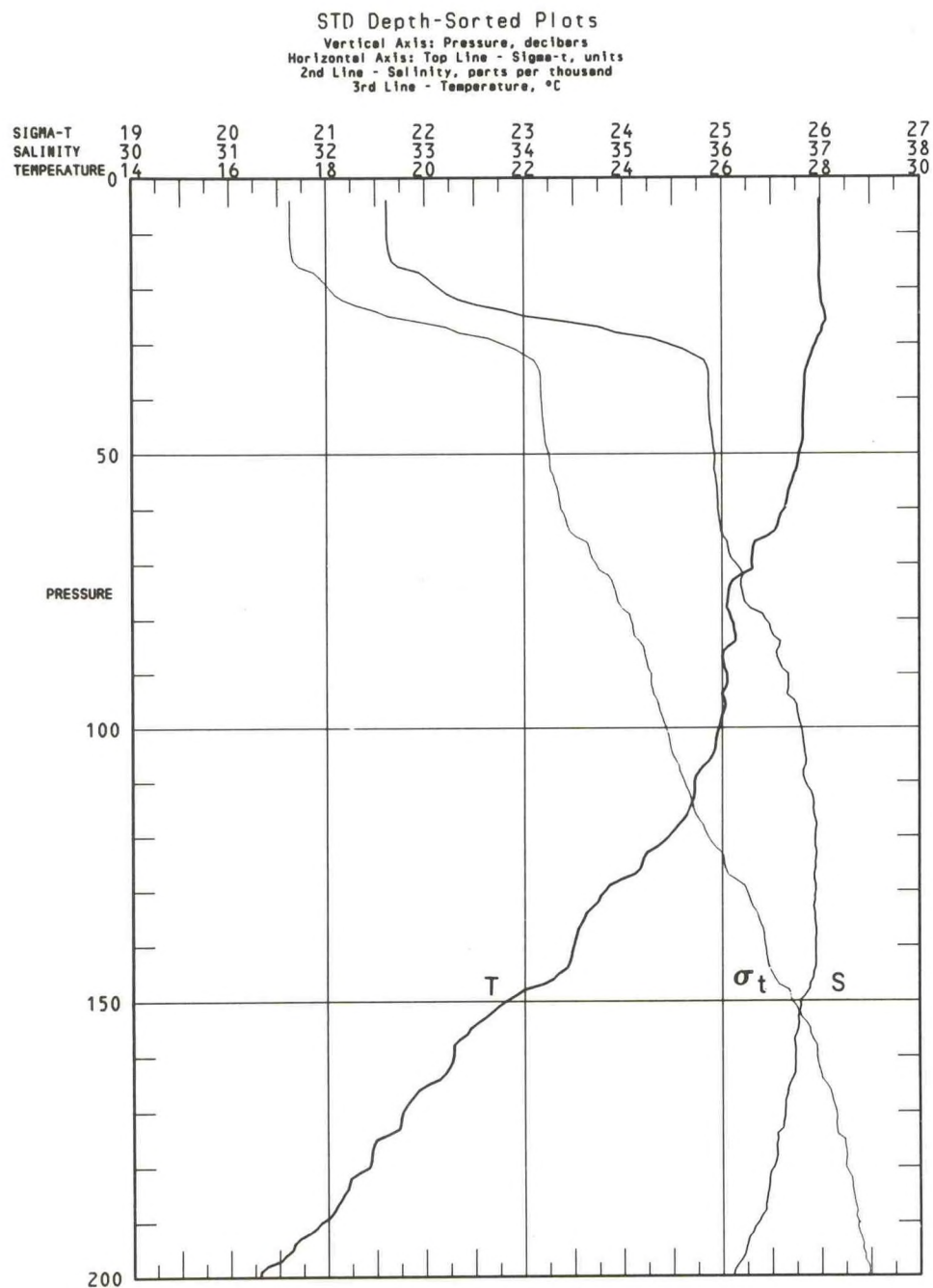


# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



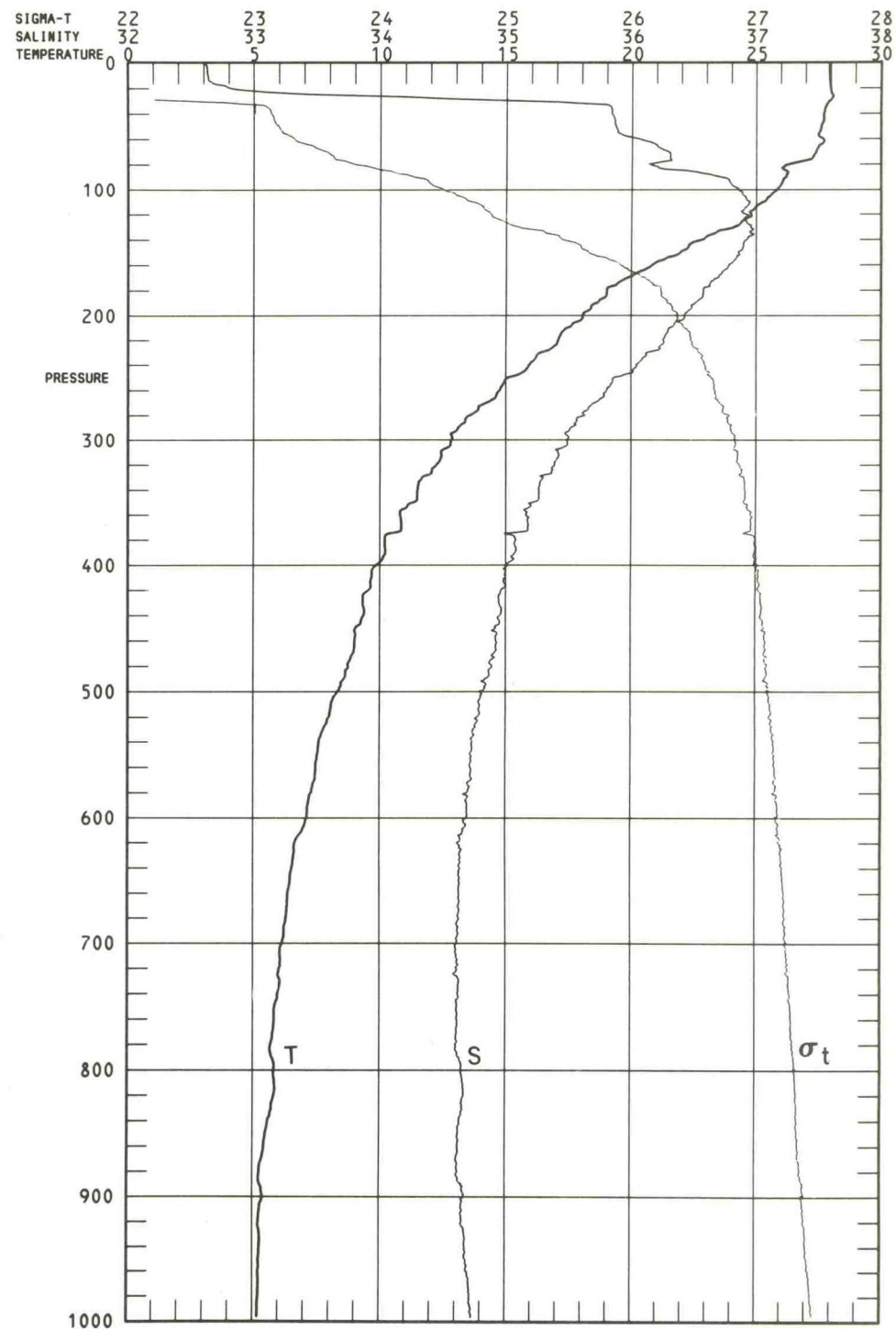
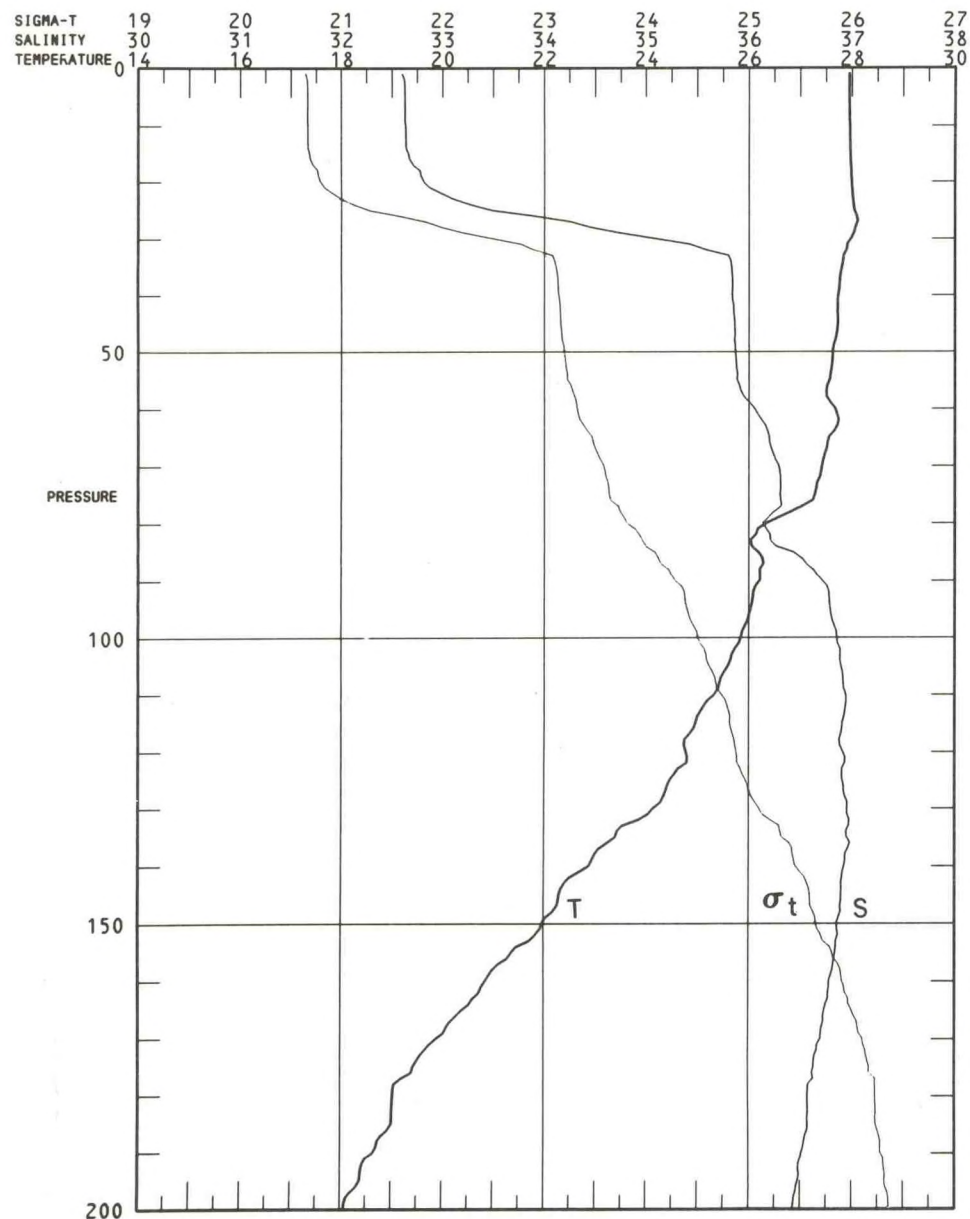
Discoverer, June 21, 1969, 1756 GMT, 13°11'N 053°56'W



Discoverer, June 21, 1969, 2130 GMT, 13°11'N 053°56'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

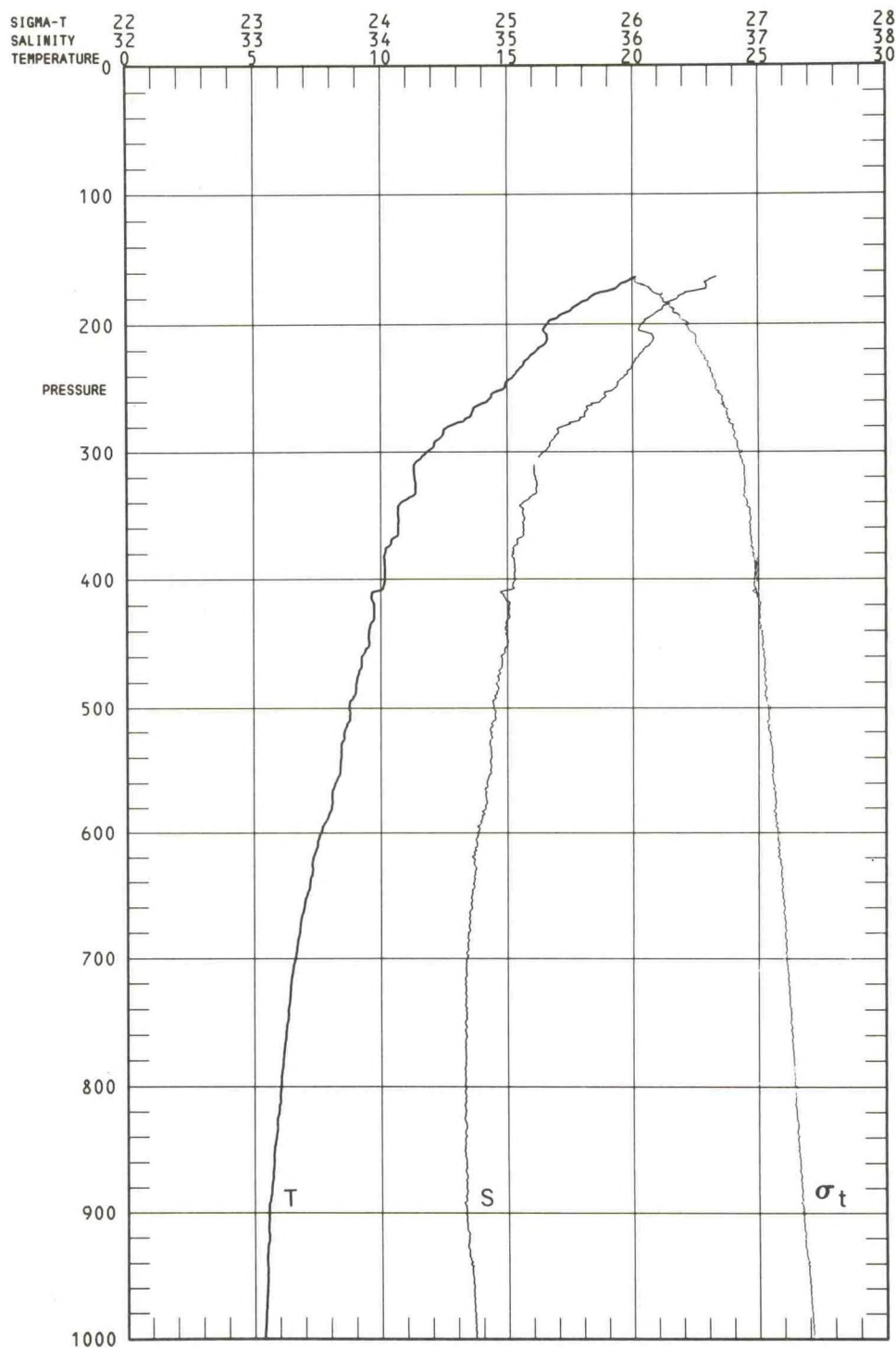
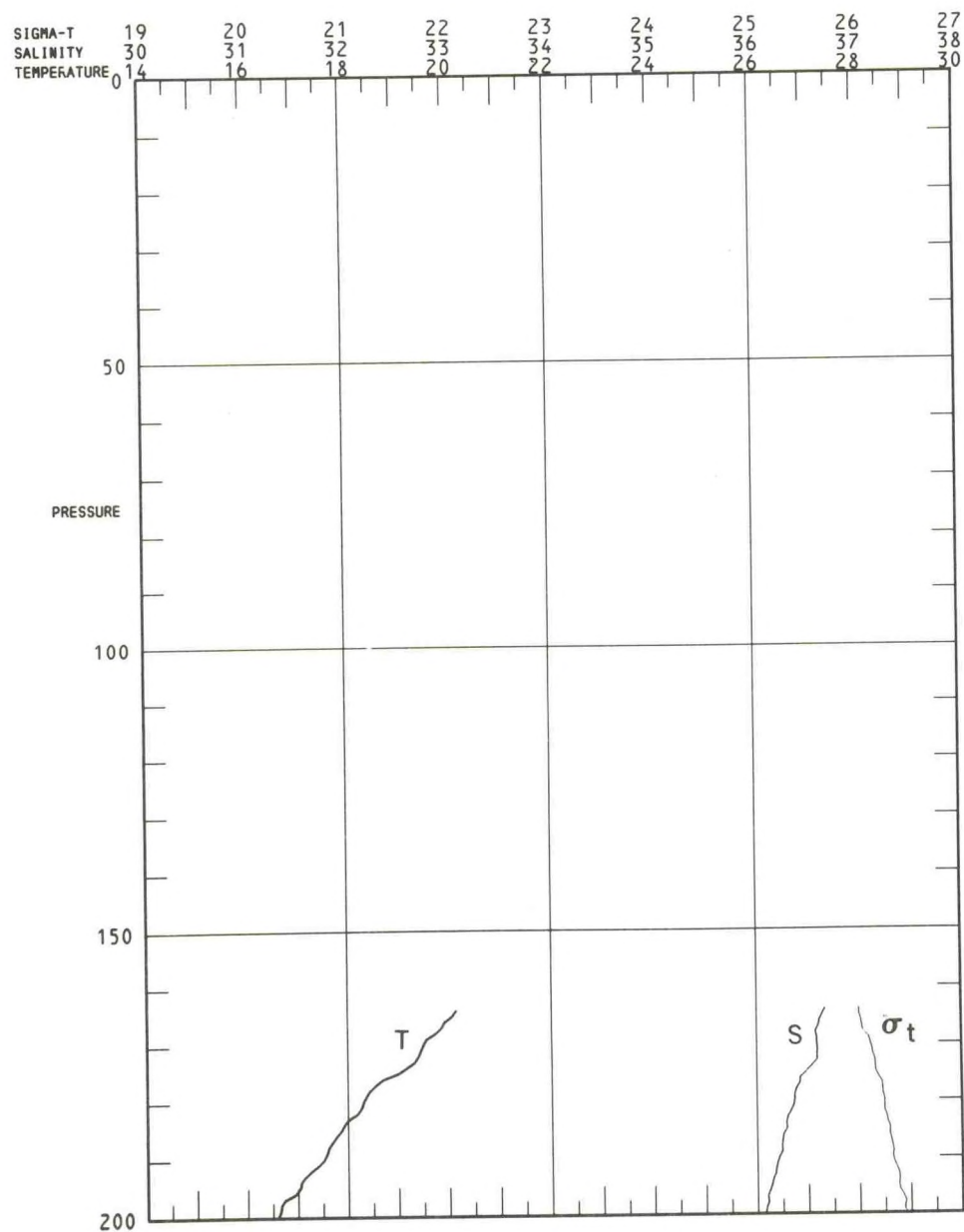


Discoverer, June 22, 1969, 0059 GMT, 13°09'N 054°09'W



DISCOVERER YEAR 1969 DAY 173 TIME 1820 GMT LAT.13°09'N LON.053°51'W  
THIS CAST DID NOT START UNTIL THE PROBE REACHED 163 DECIBARS

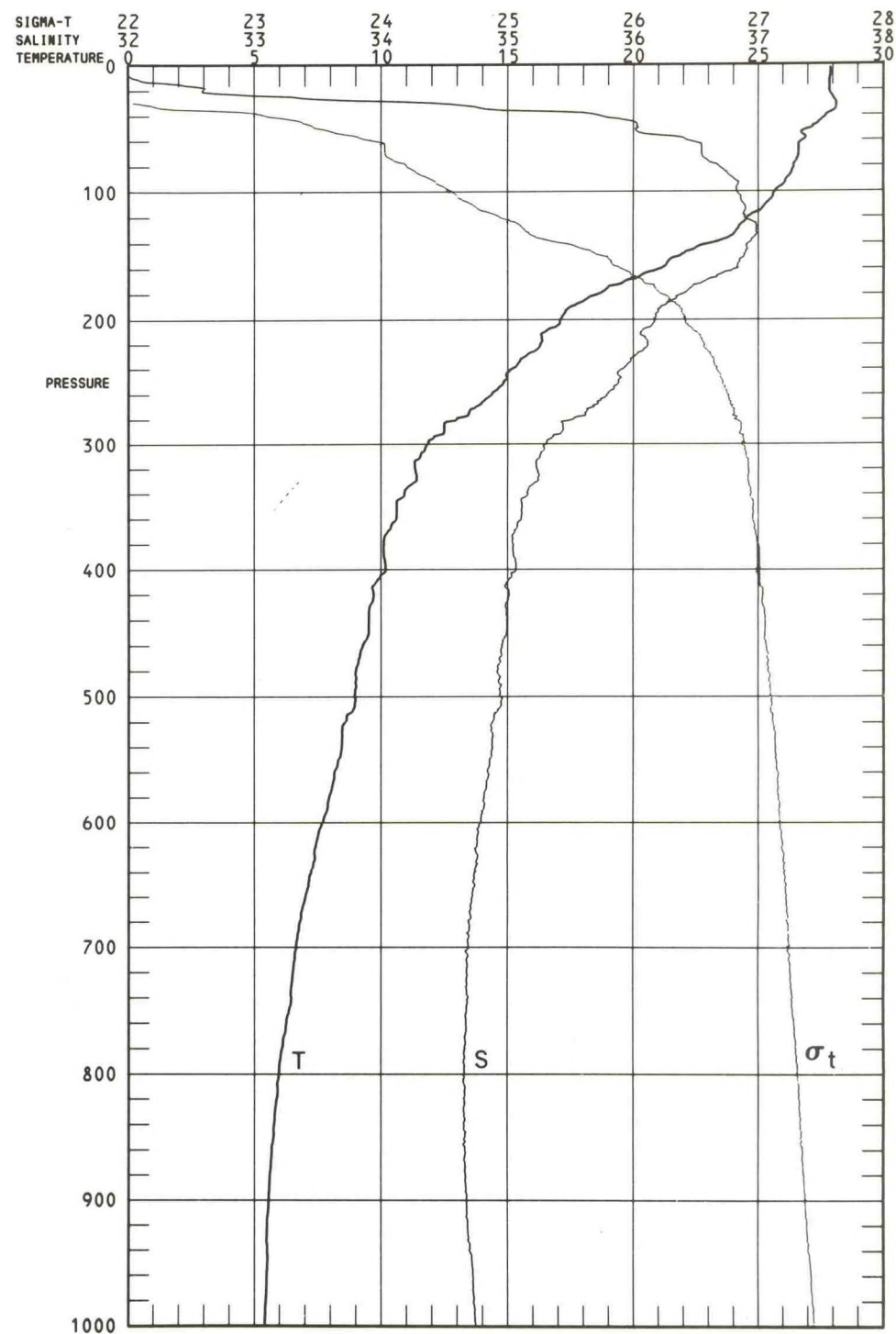
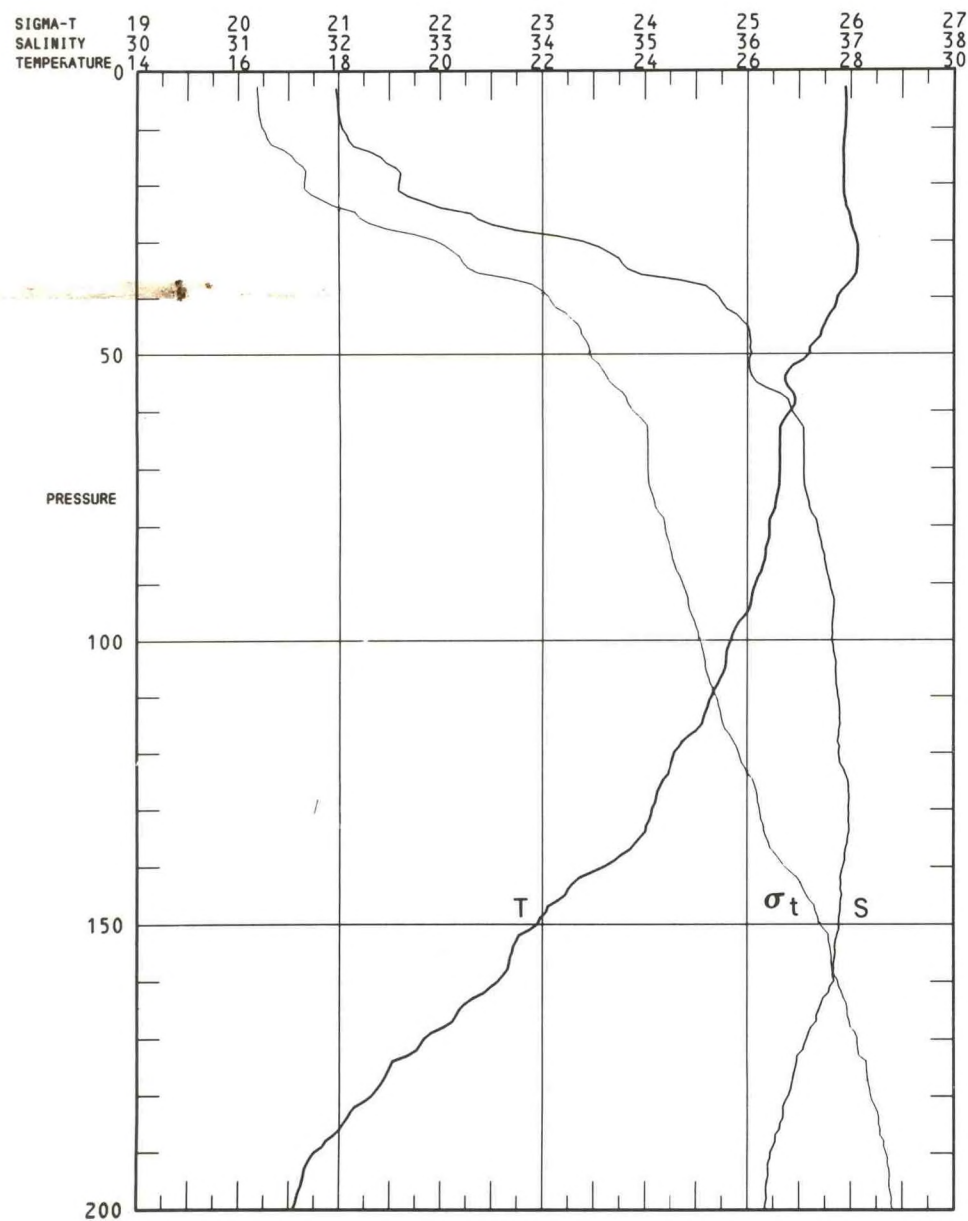
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 22, 1969, 1820 GMT, 13°09'N 053°51'W

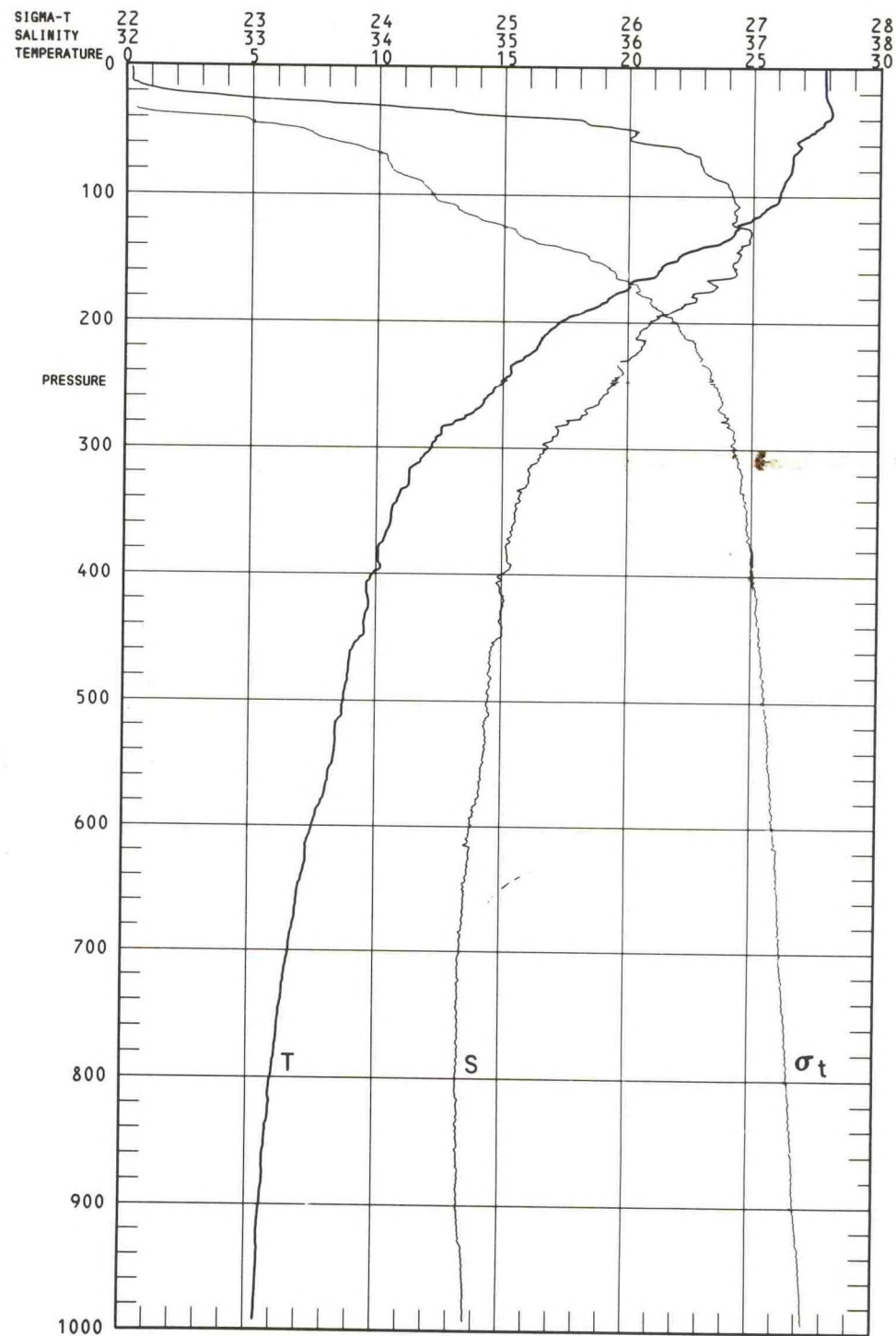
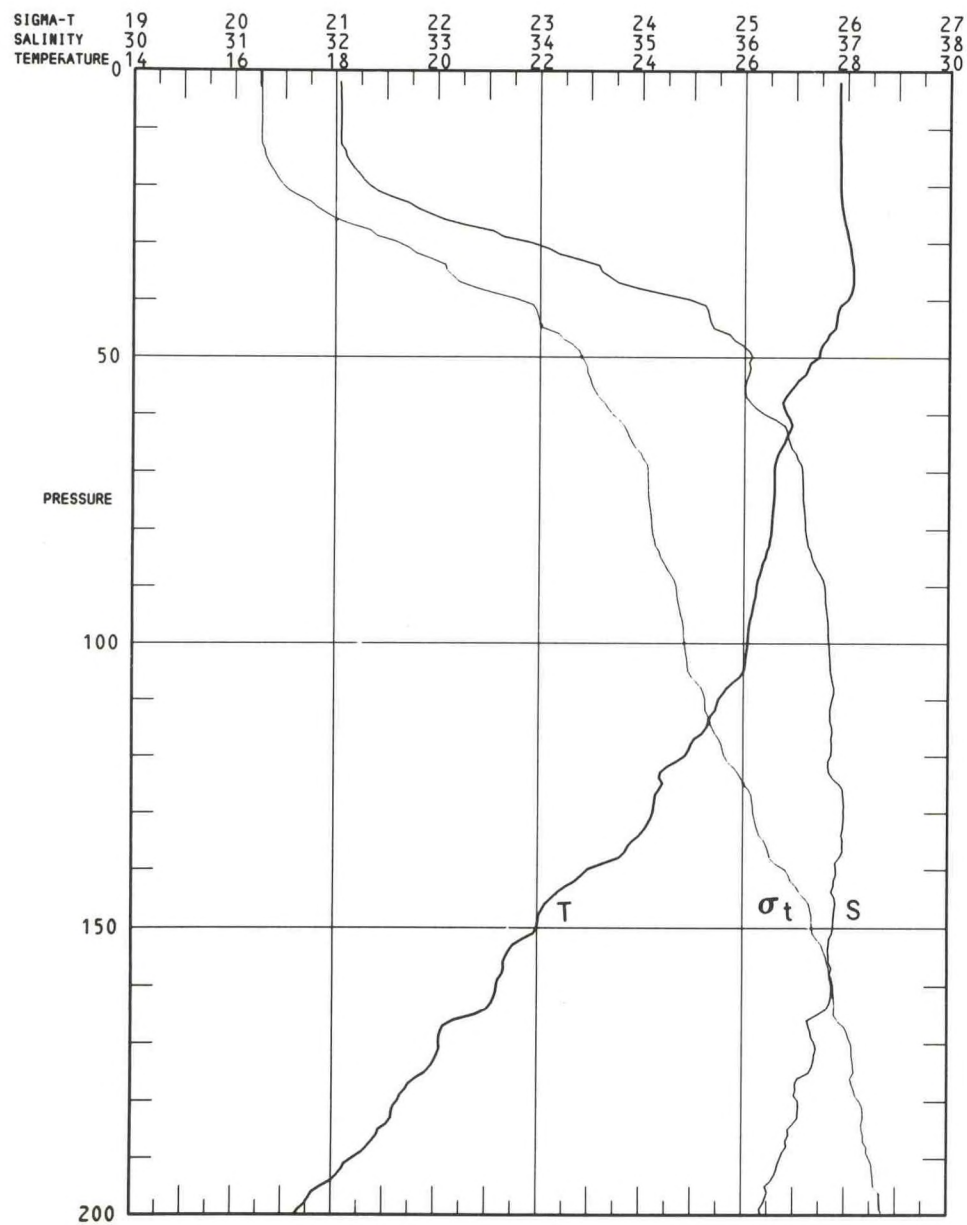
DISCOVERER YEAR 1969 DAY 173 TIME 2119 GMT LAT.13°08'N LON.053°52'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 22, 1969, 2119 GMT, 13°08'N 053°52'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



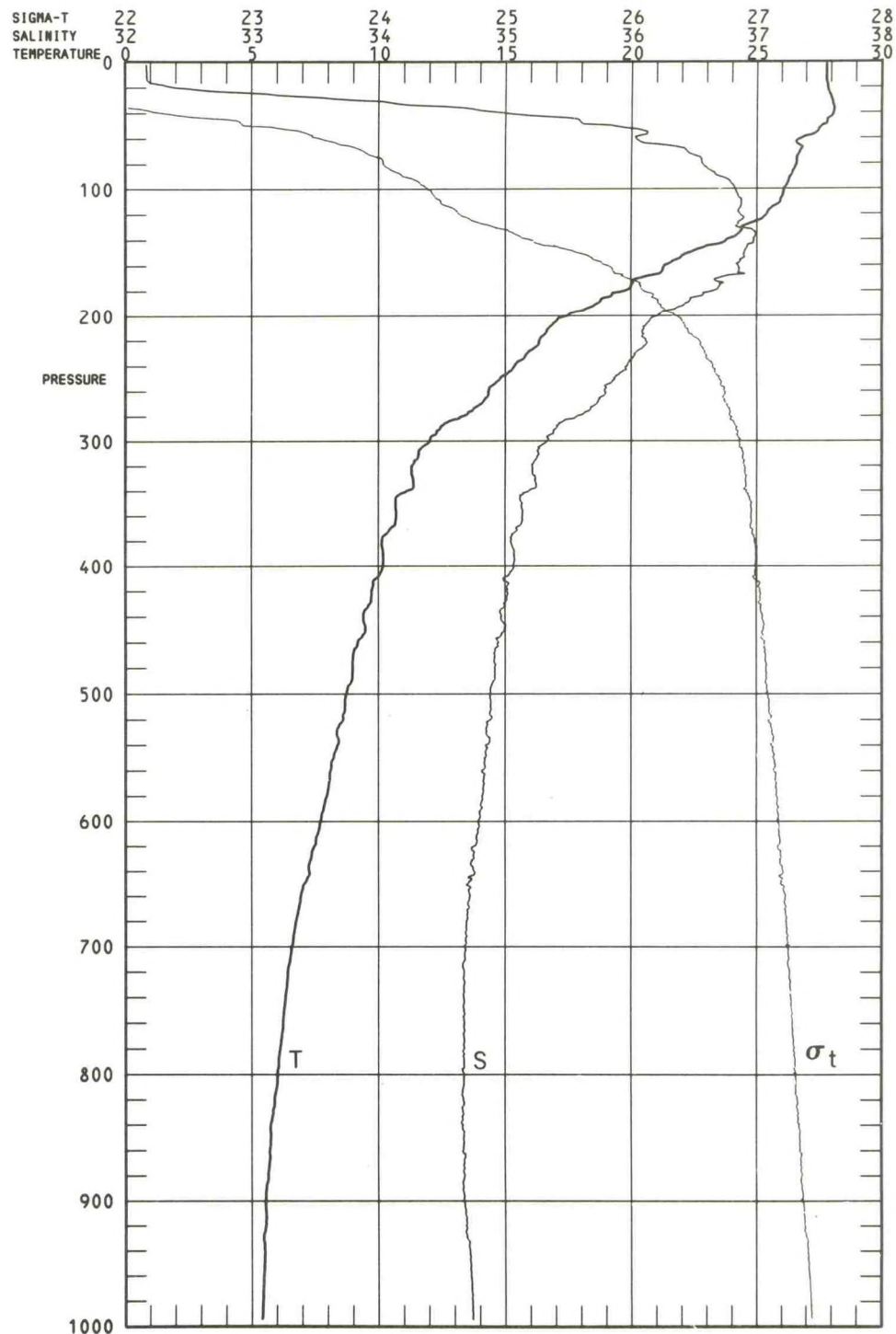
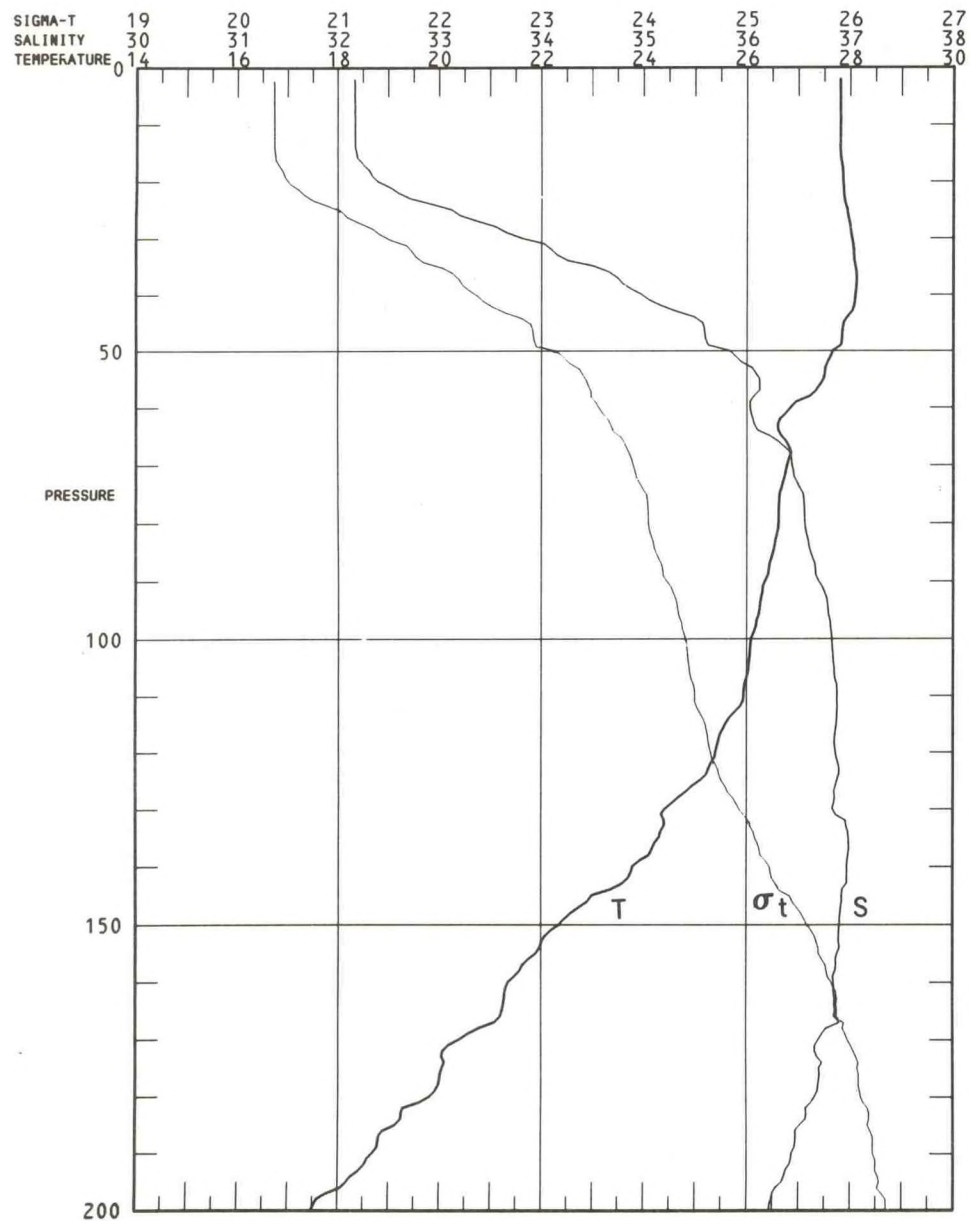
Discoverer, June 23, 1969, 0104 GMT, 13°10'N 053°51'W



DISCOVERER YEAR 1969 DAY 174 TIME 258 GMT LAT.13°09'N LONG.053°52'W

# STD Depth-Sorted Plots

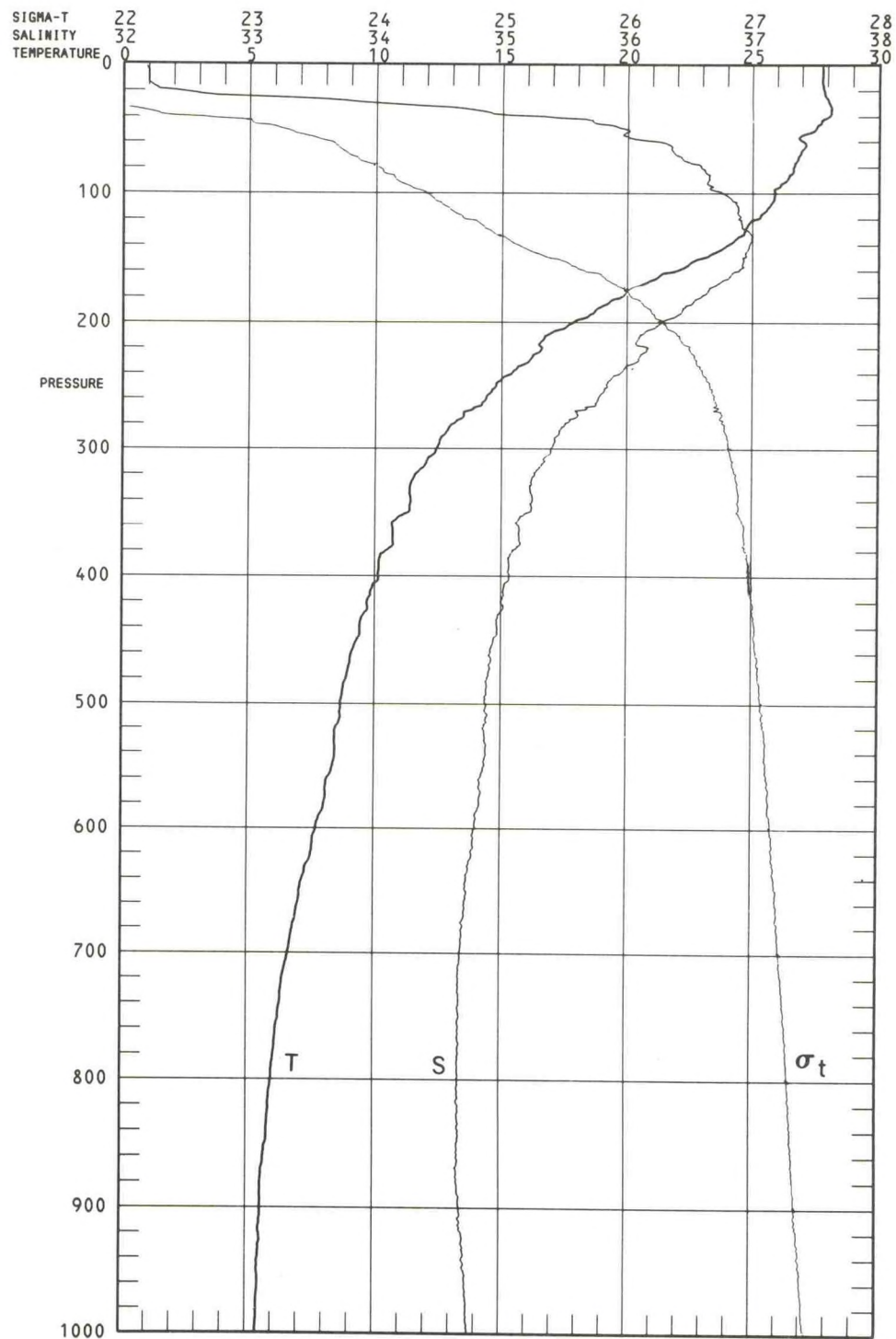
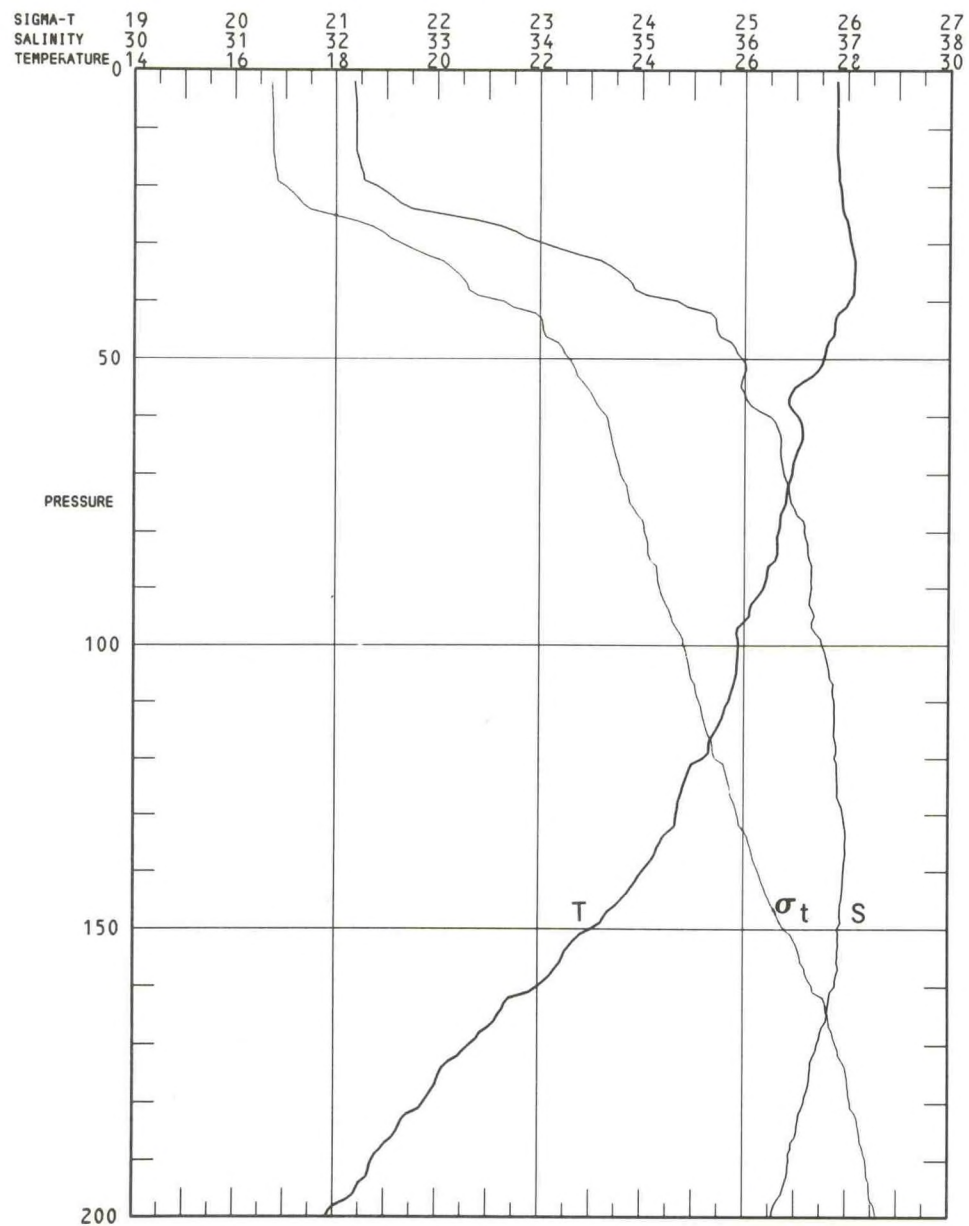
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



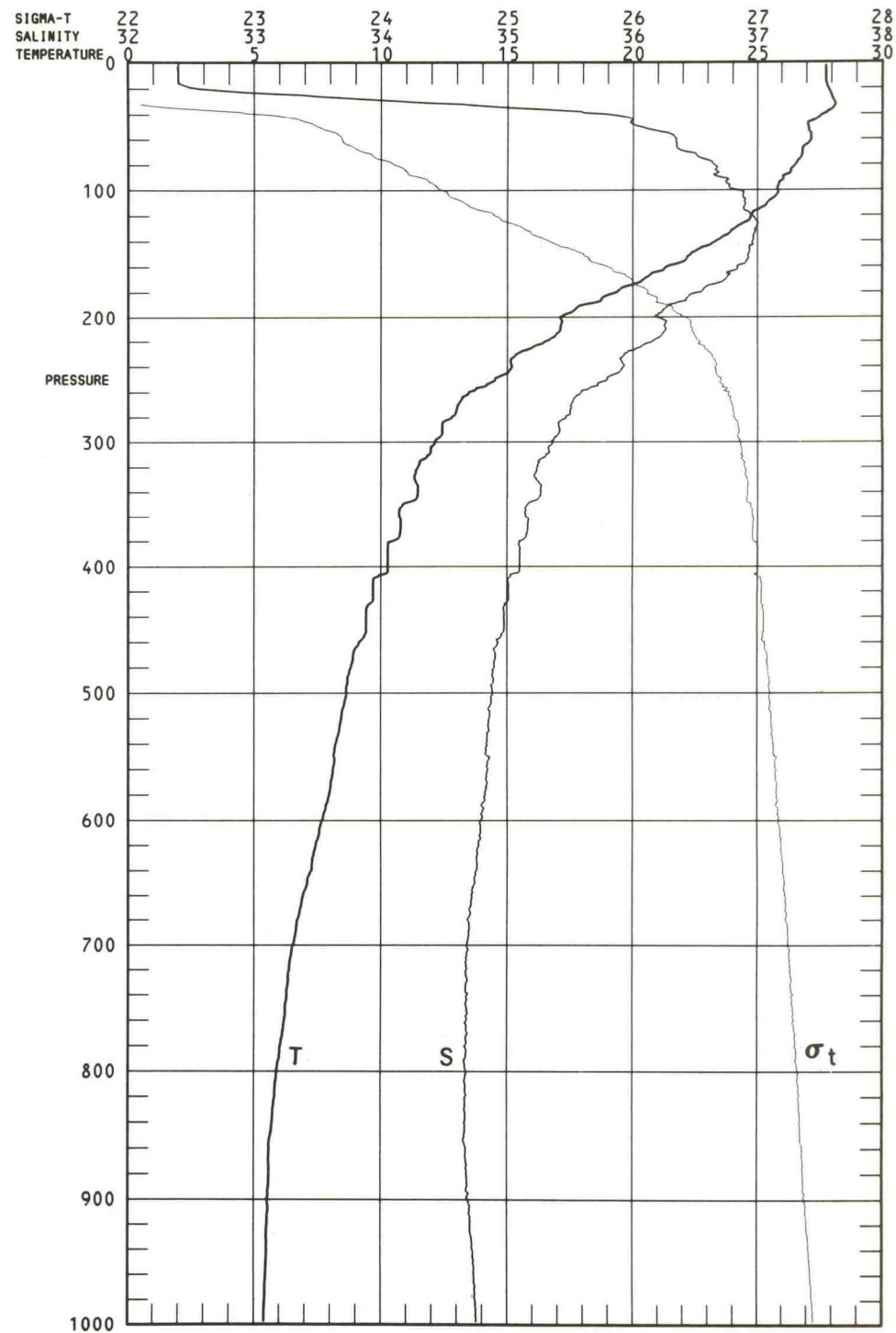
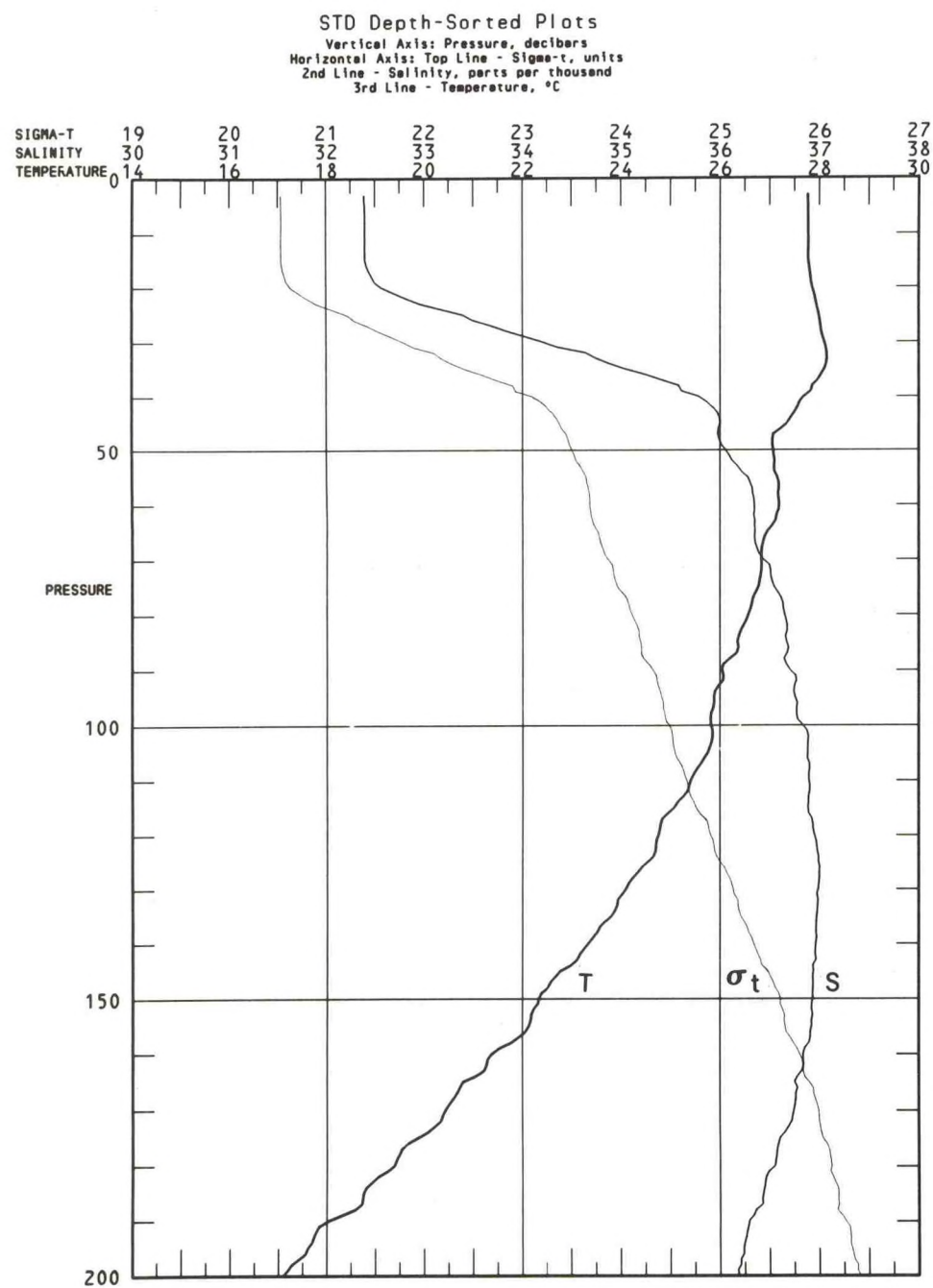
Discoverer, June 23, 1969, 0258 GMT, 13°09'N 053°52'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



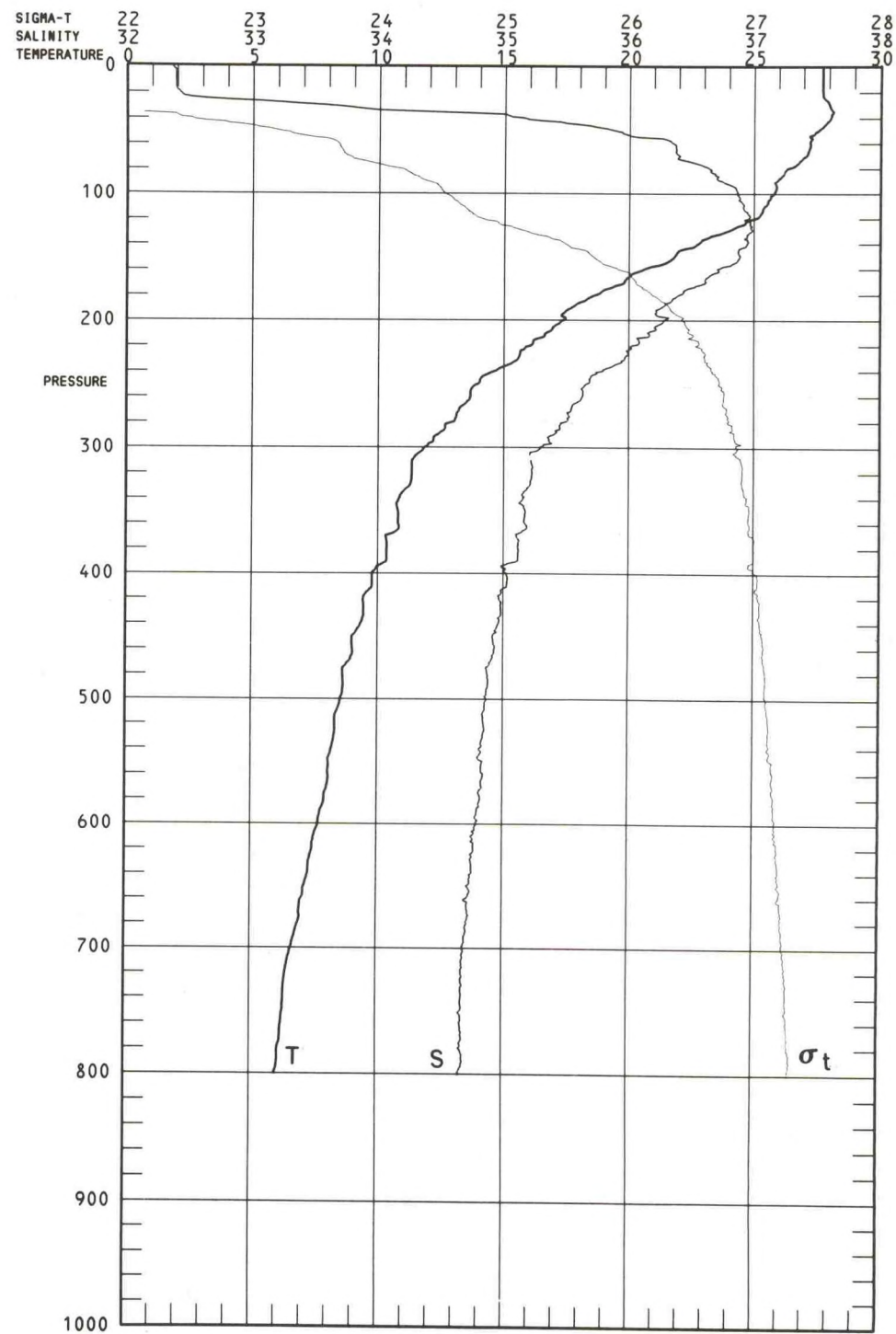
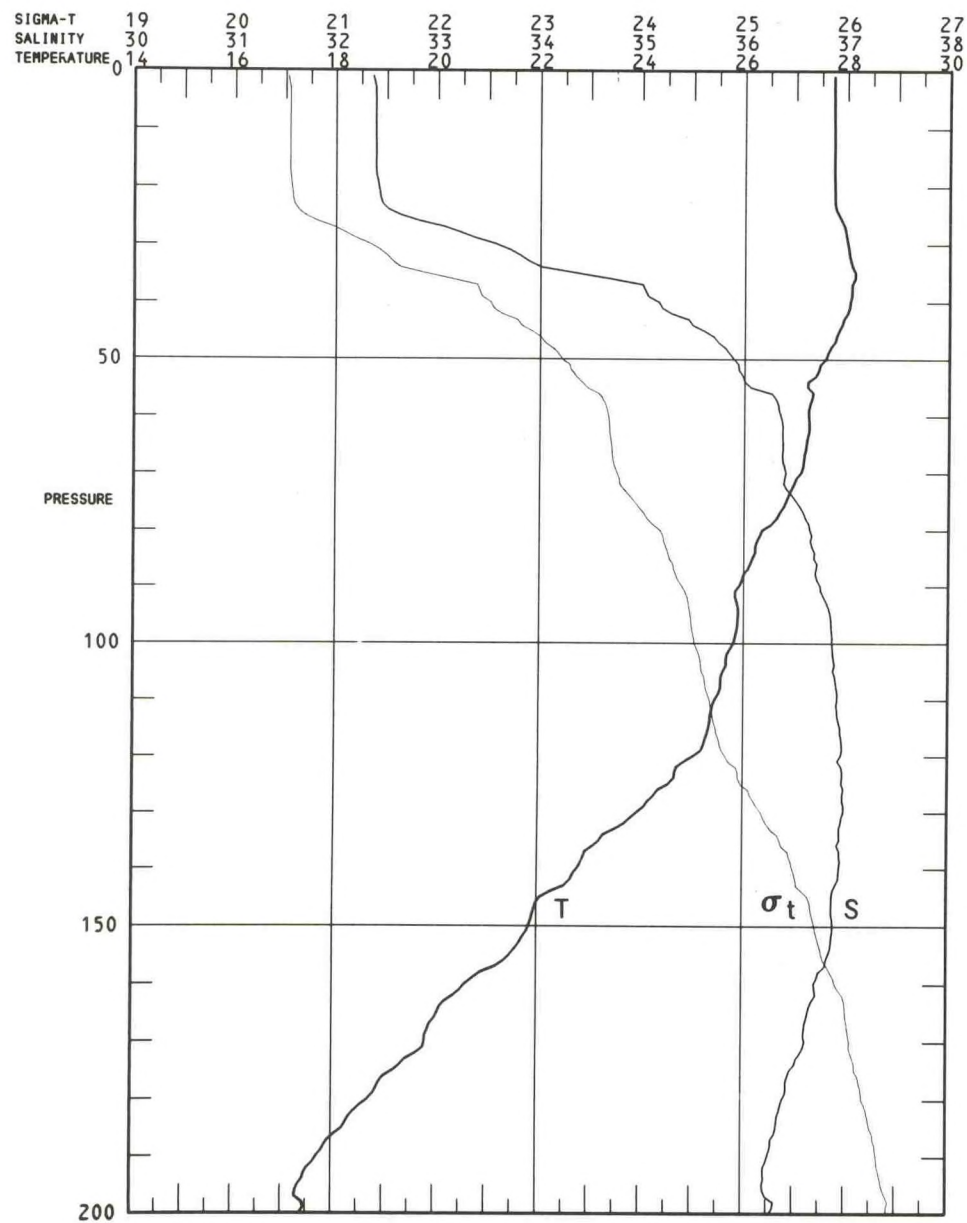
Discoverer, June 23, 1969, 0554 GMT, 13°00'N 054°00'W



Discoverer, June 23, 1969, 0855 GMT, 13°00'N 054°00'W

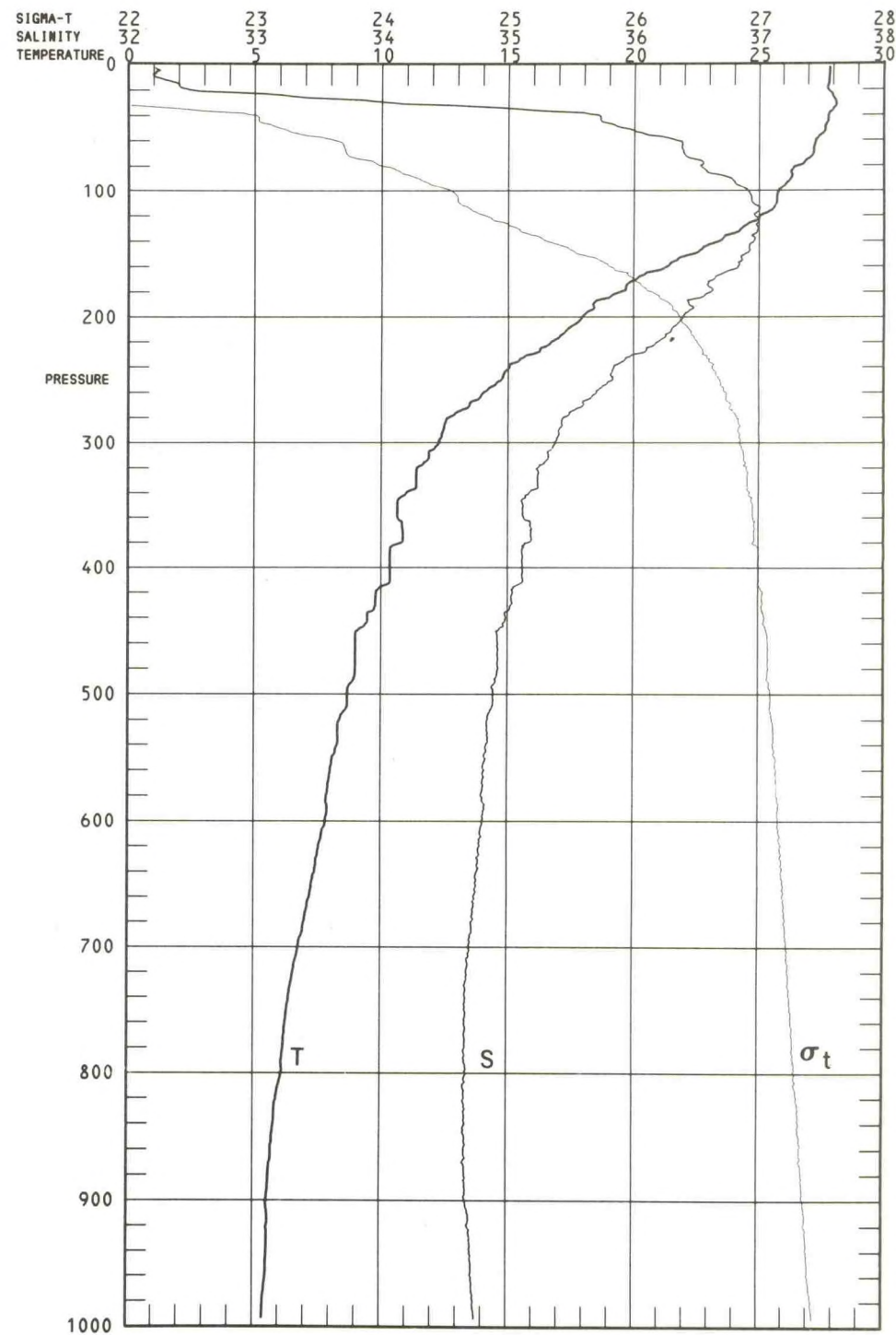
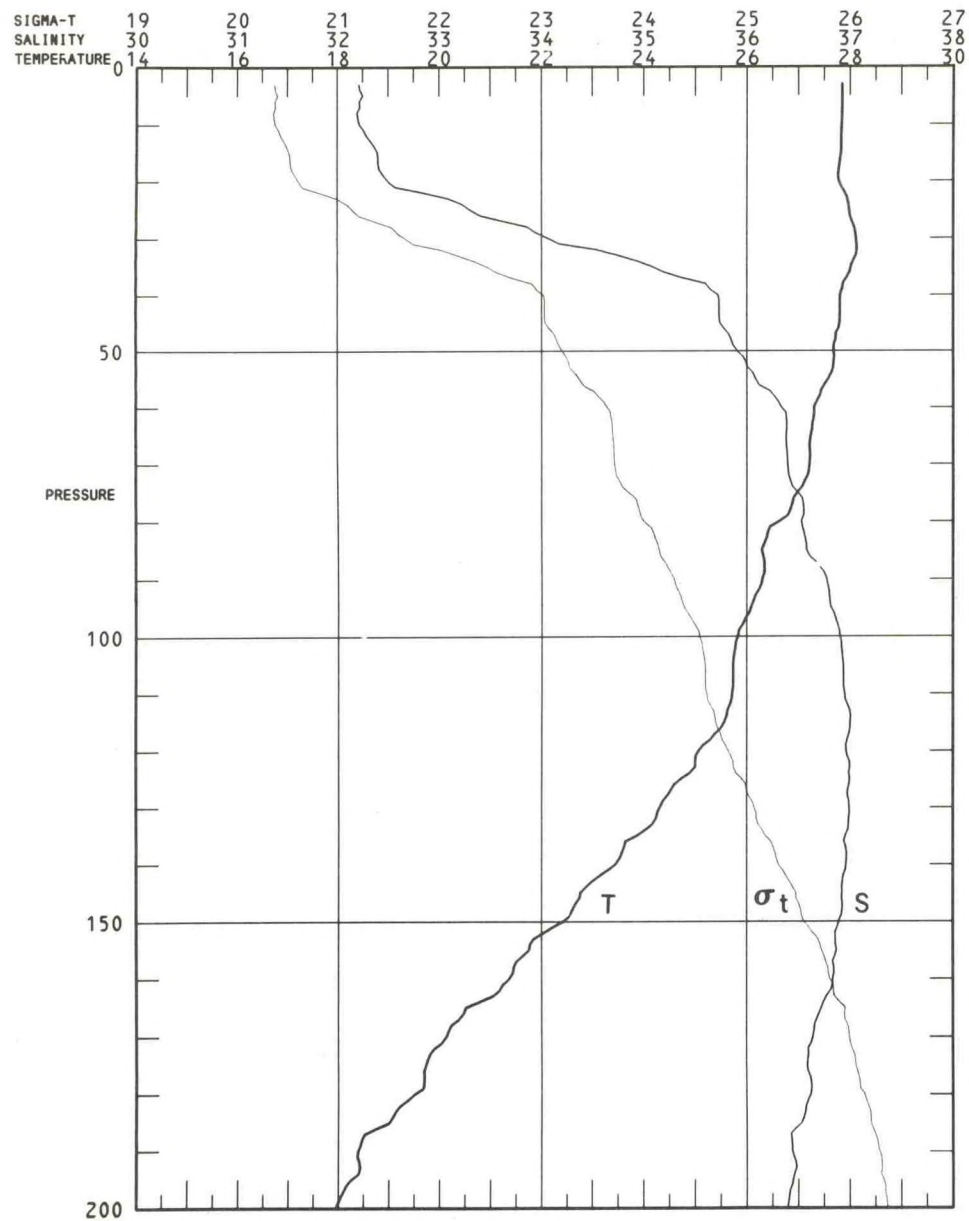


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 23, 1969, 1156 GMT, 13°00'N 054°00'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

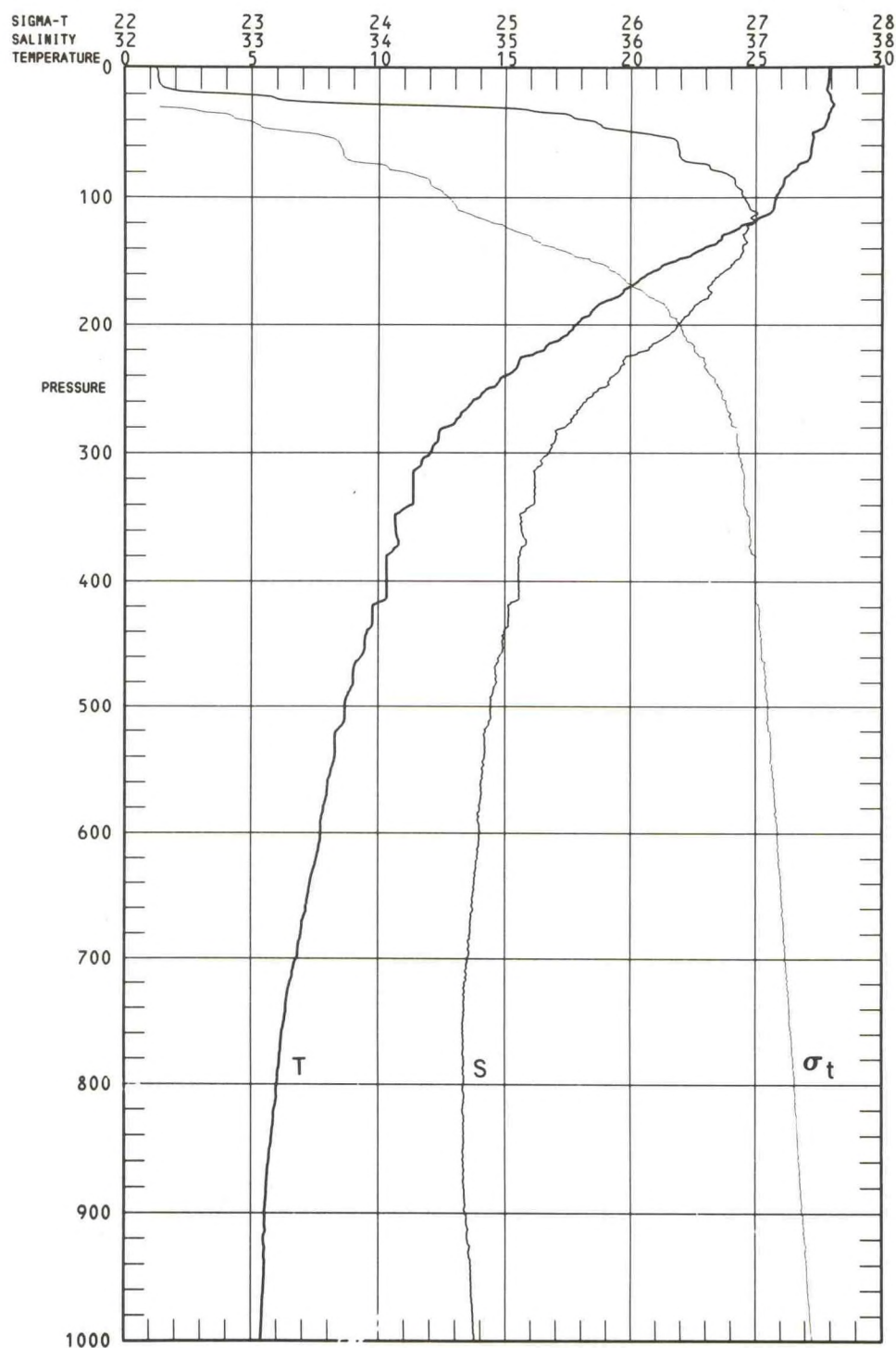
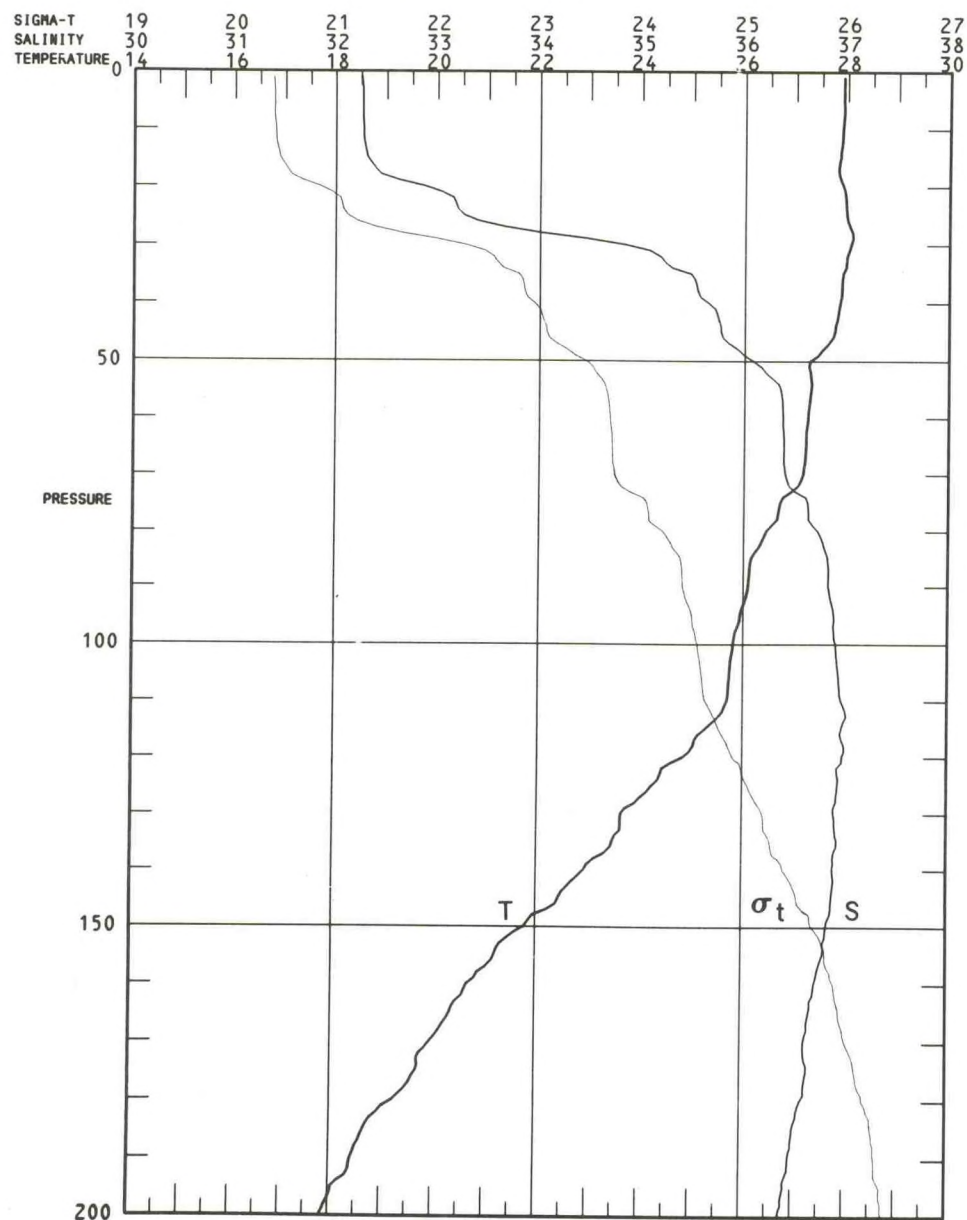


Discoverer, June 23, 1969, 1517 GMT, 13°00'N 054°00'W

DISCOVERER YEAR 1969 DAY 174 TIME 1758 GMT LAT.13°00N LON.054°00W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

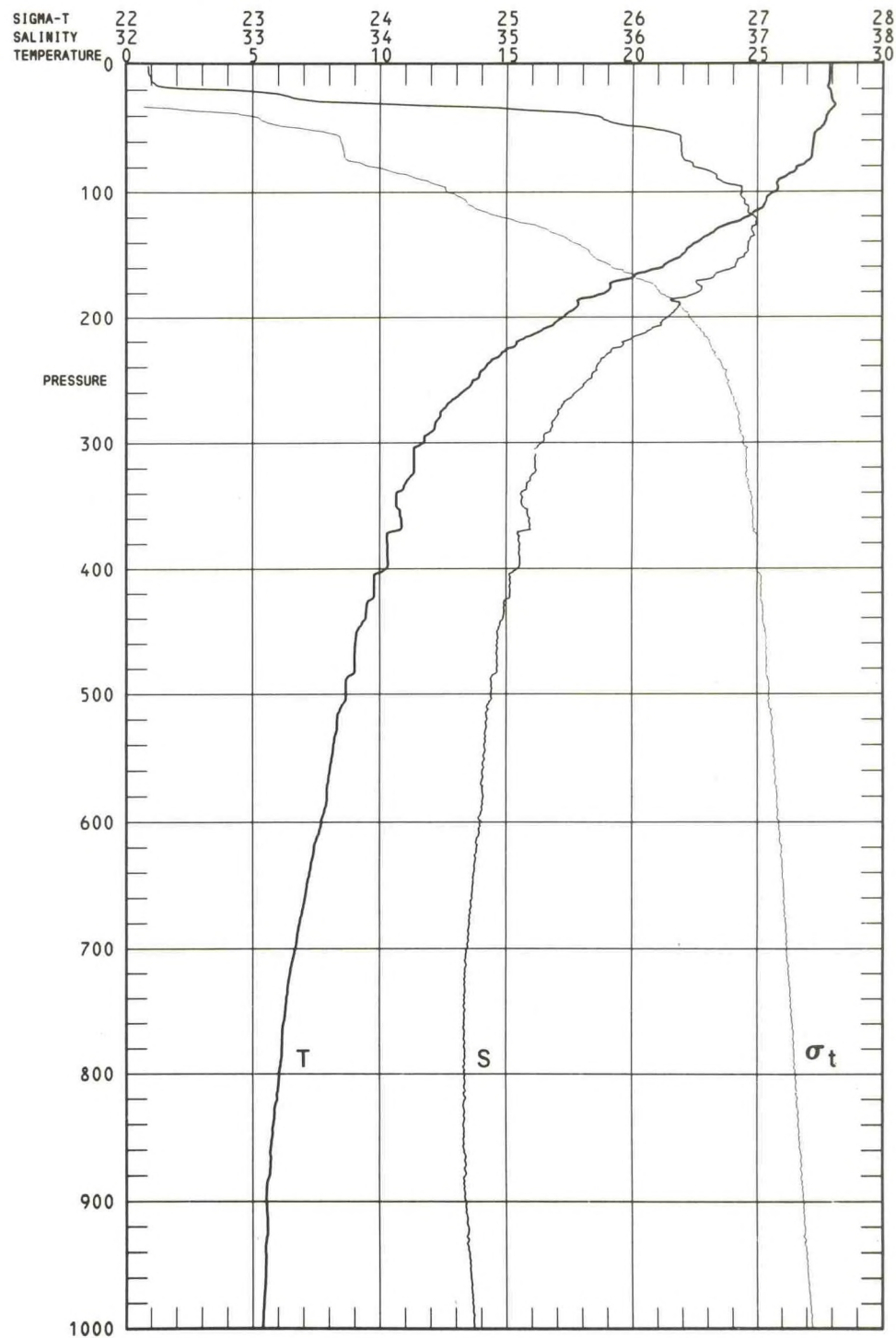
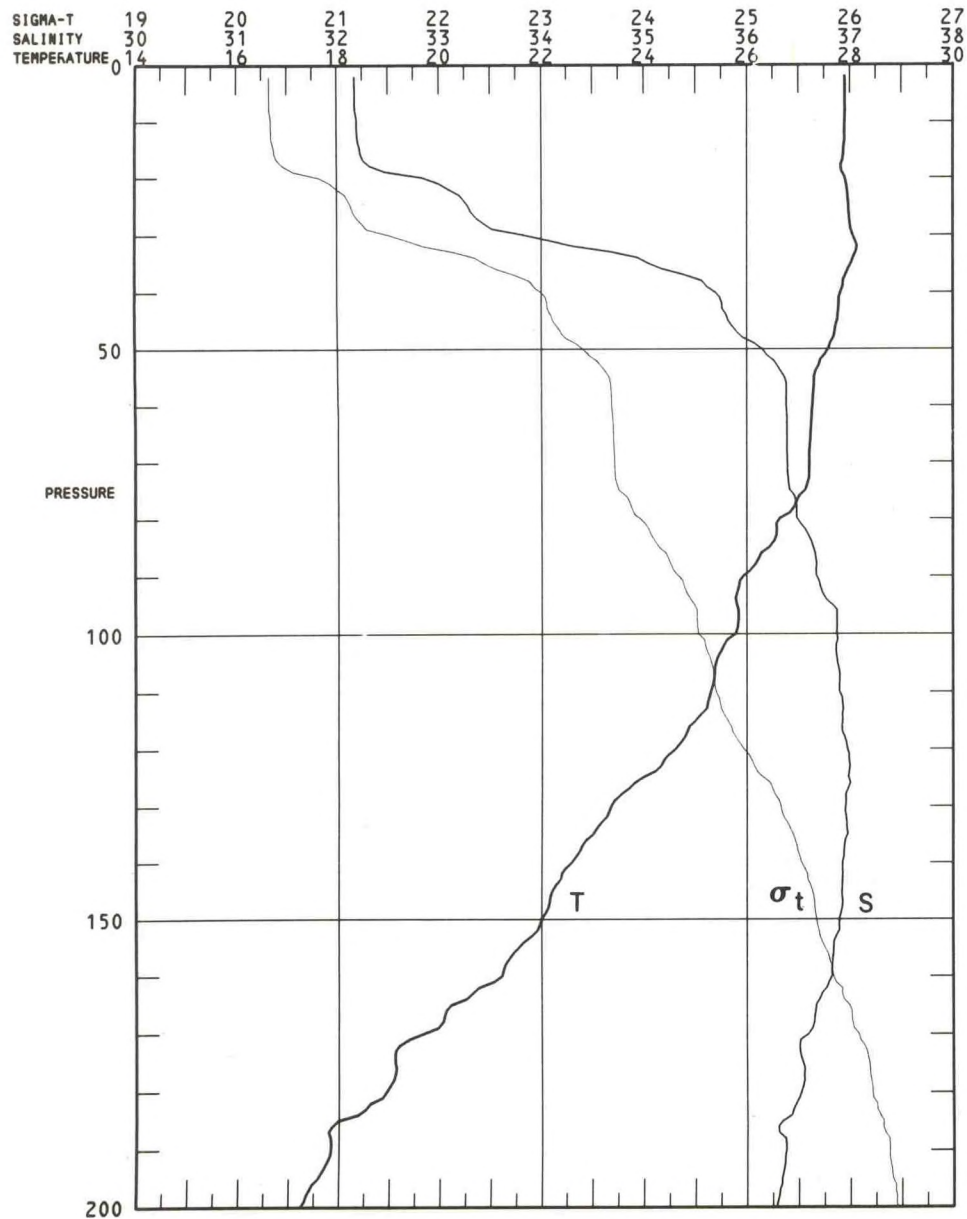


Discoverer, June 23, 1969, 1758 GMT, 13°00'N 054°00'W



DISCOVERER YEAR 1969 DAY 174 TIME 2107 GMT LAT.13°00'N LON.054°00'W

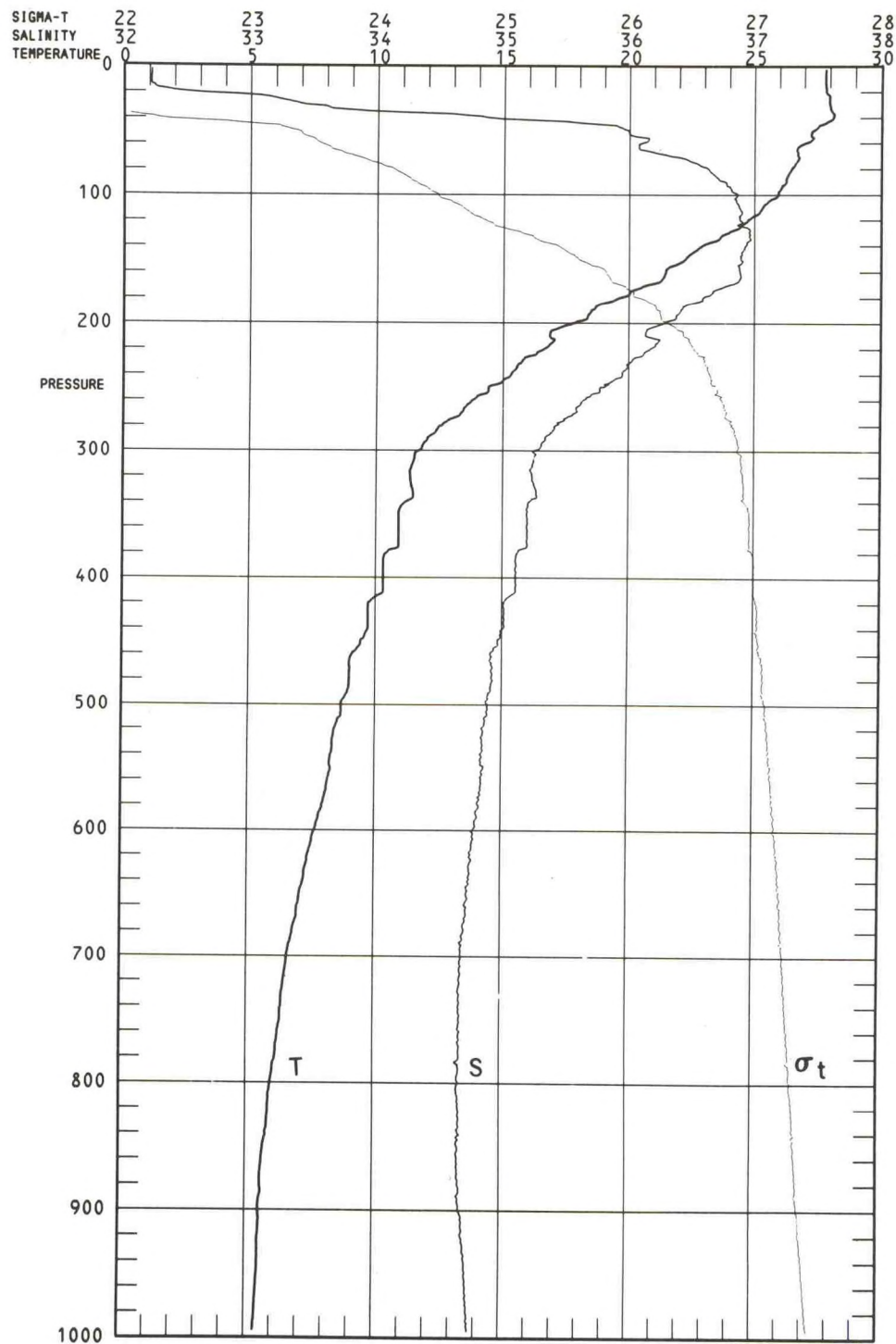
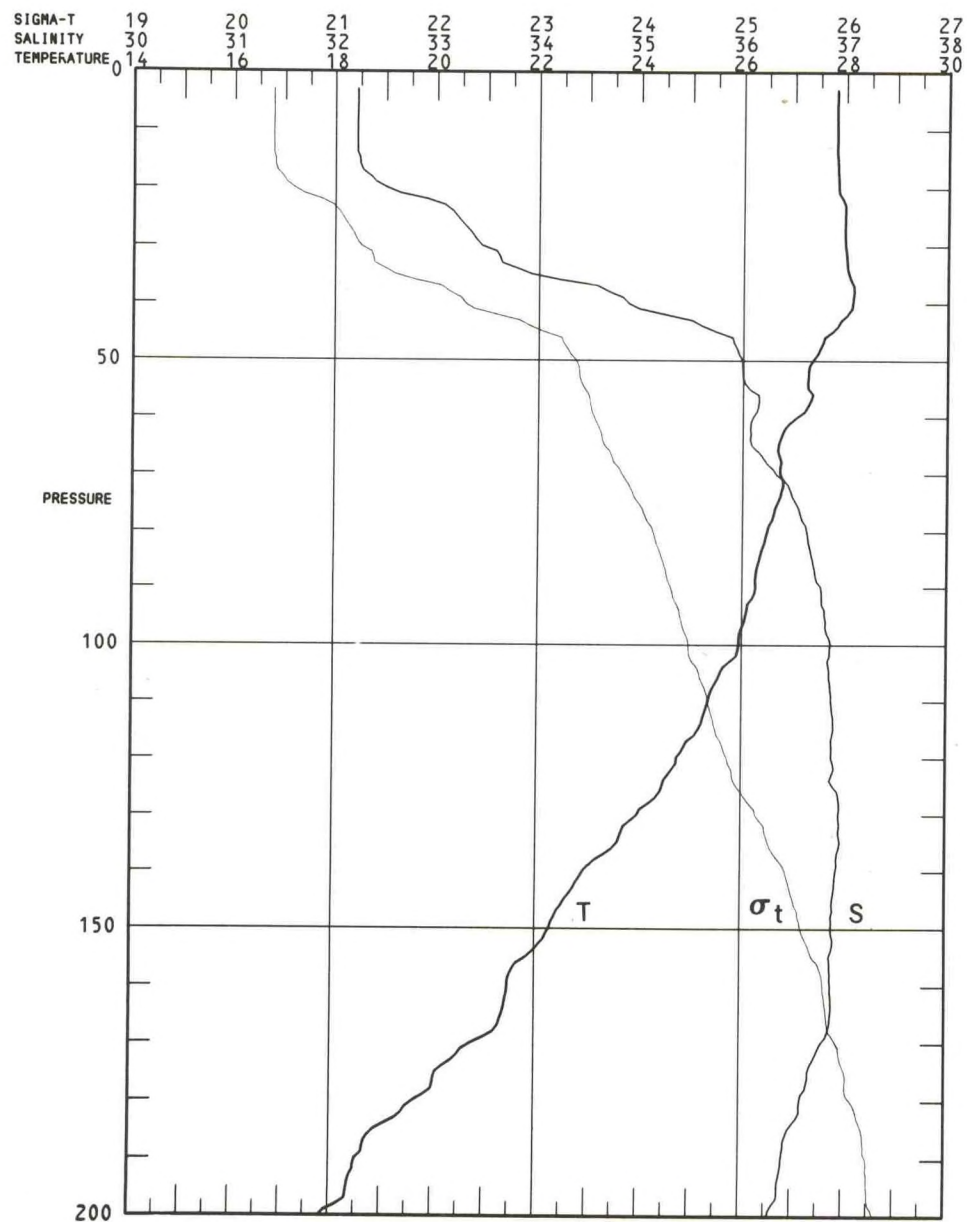
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 23, 1969, 2107 GMT, 13°00'N 054°00'W

# STD Depth-Sorted Plots

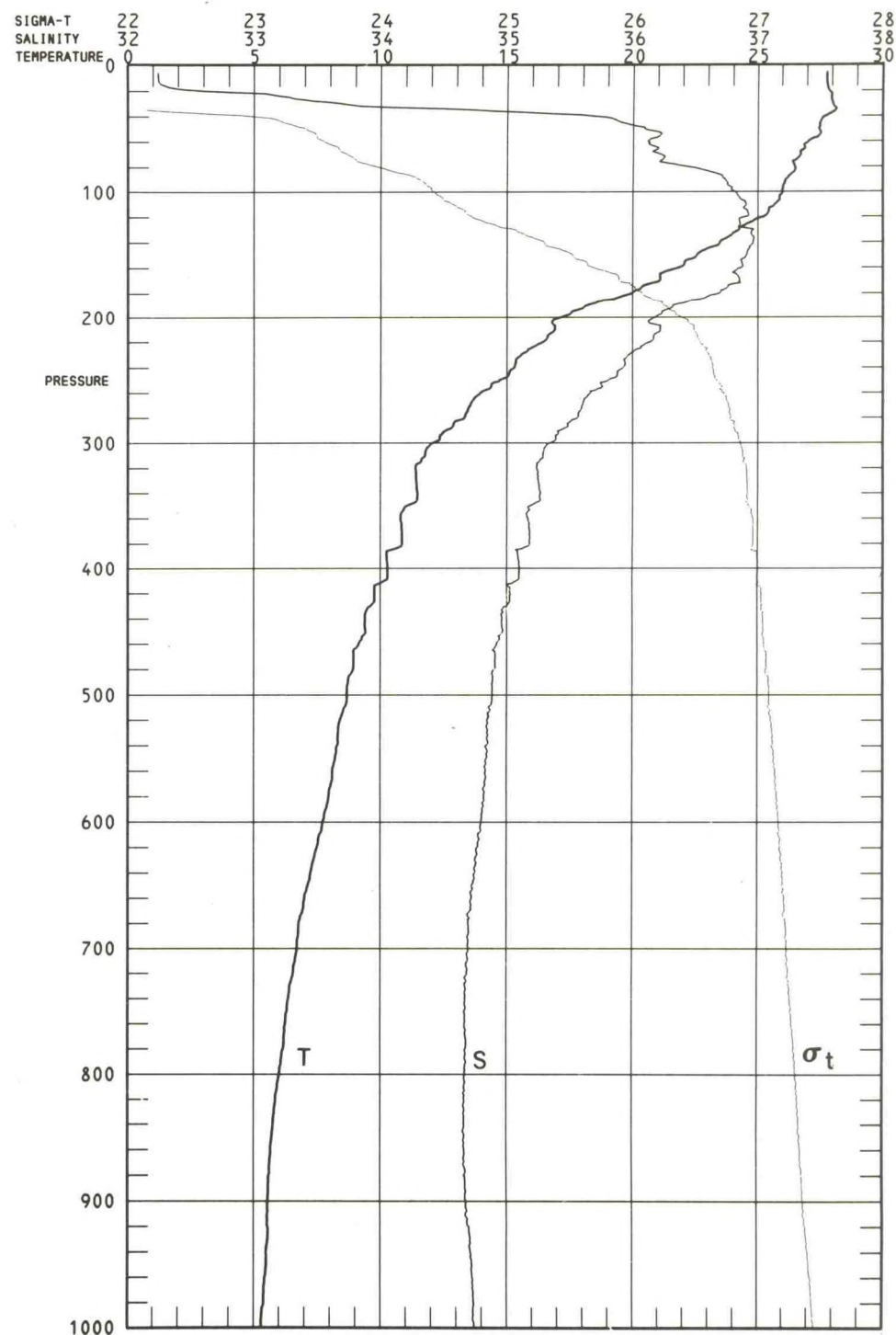
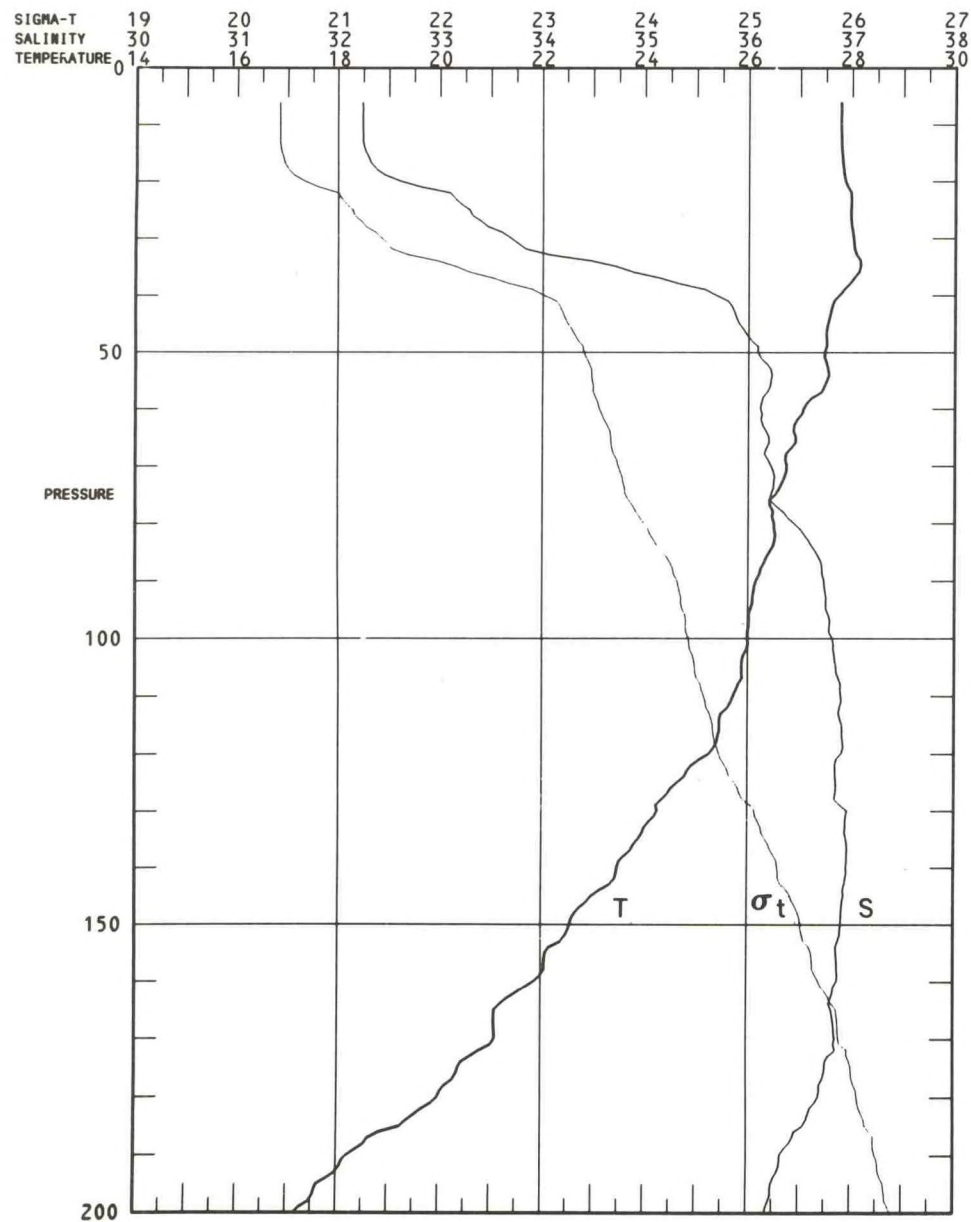
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 24, 1969, 0059 GMT, 13°00'N 054°00'W

DISCOVERER YEAR 1969 DAY 175 TIME 301 GMT LAT.13°00N LON.054°00W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

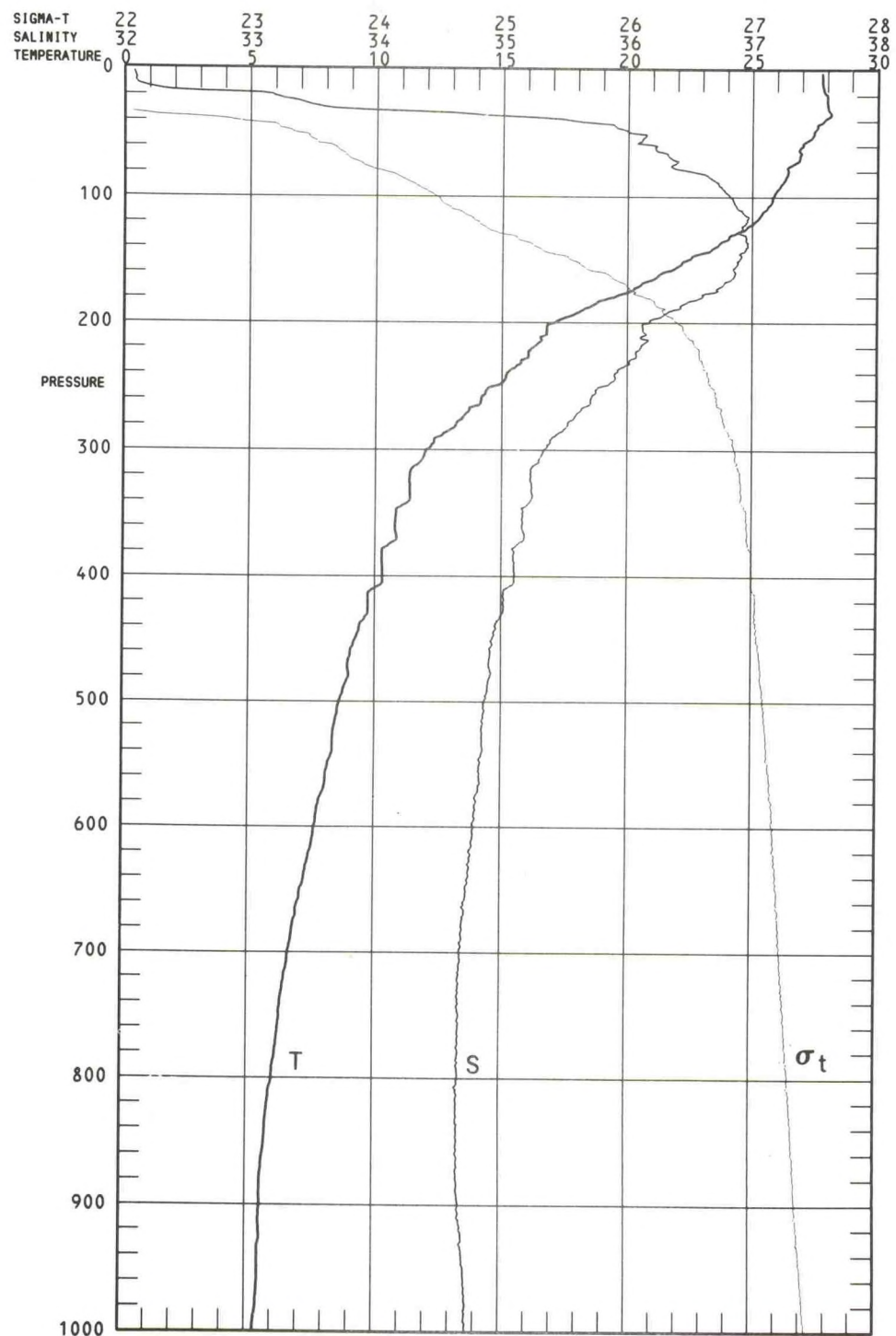
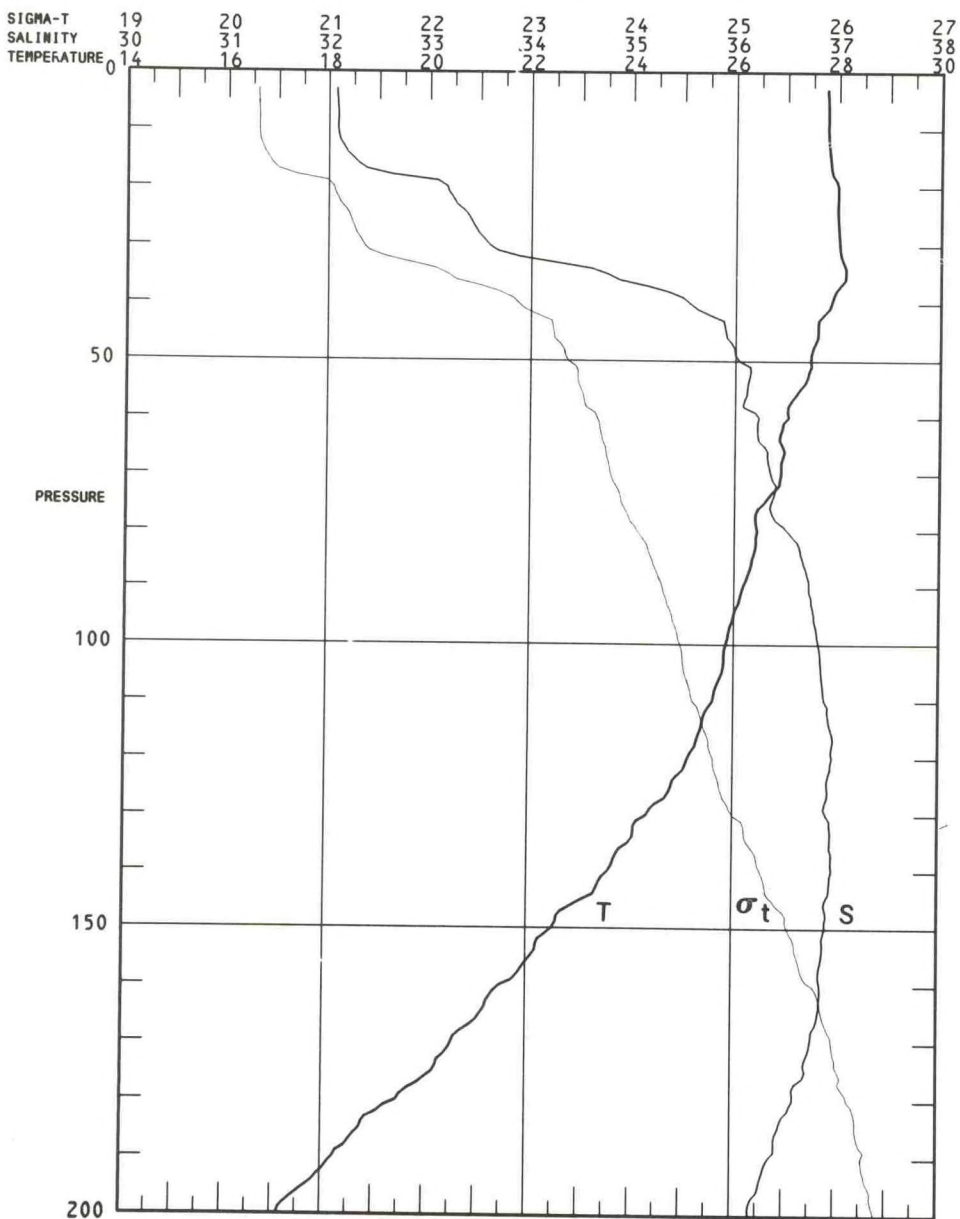


Discoverer, June 24, 1969, 0301 GMT, 13°00'N 054°00'W



DISCOVERER YEAR 1969 DAY 175 TIME 600 GMT LAT.13°00N LON.054°00W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

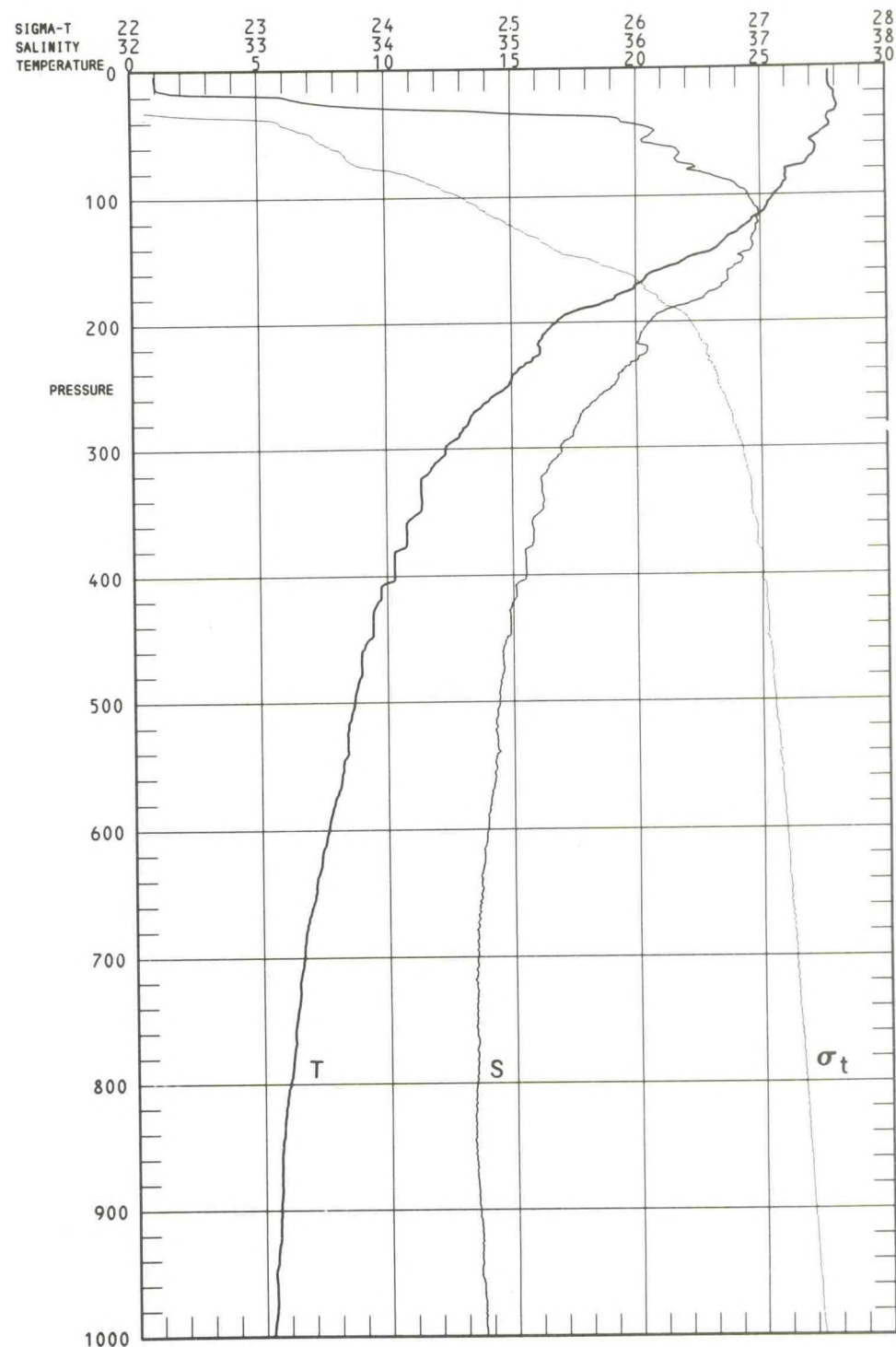
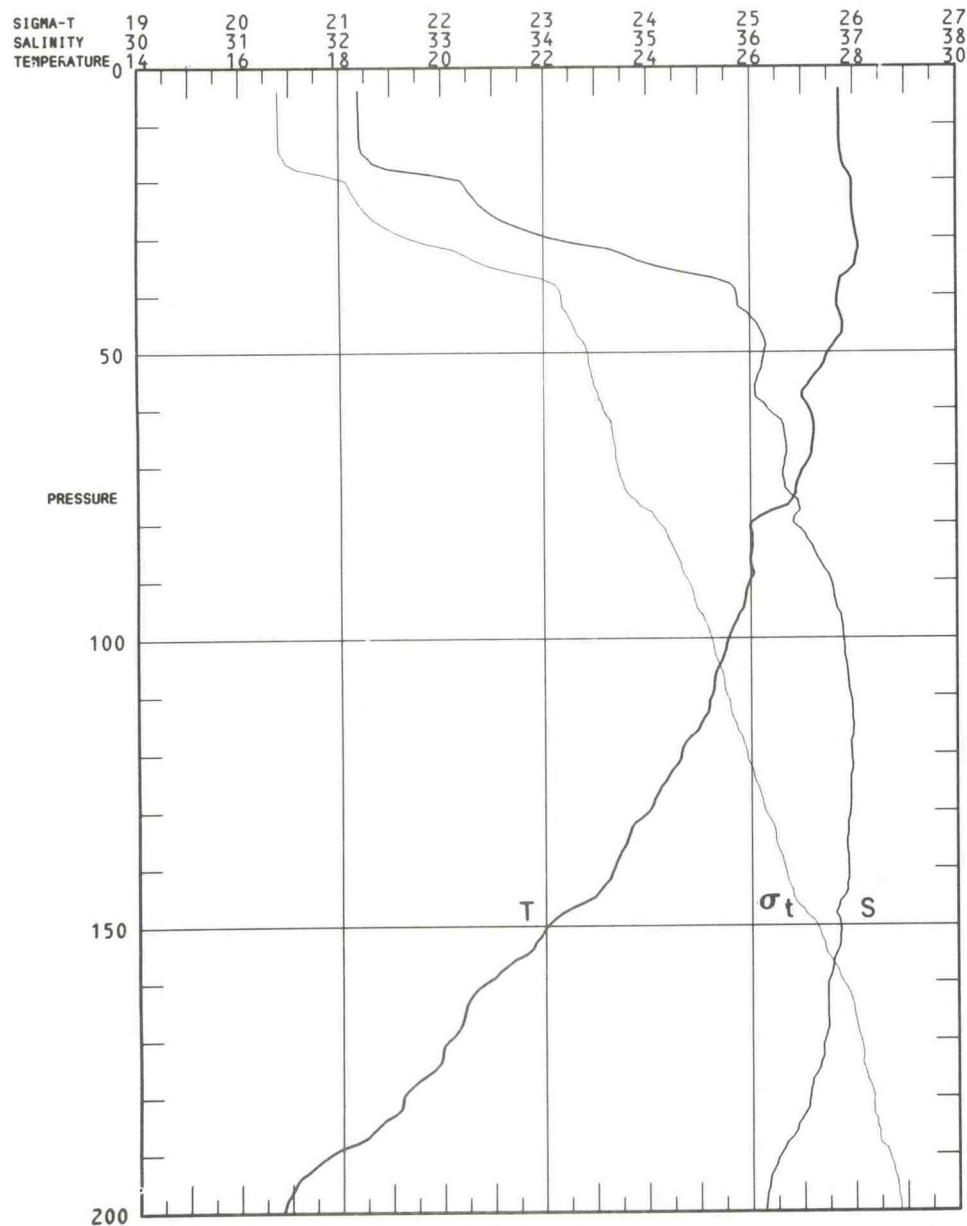


Discoverer, June 24, 1969, 0600 GMT, 13°00'N 054°00'W

DISCOVERER YEAR 1969 DAY 175 TIME 901 GMT LAT.13°00'N LON.054°00'W

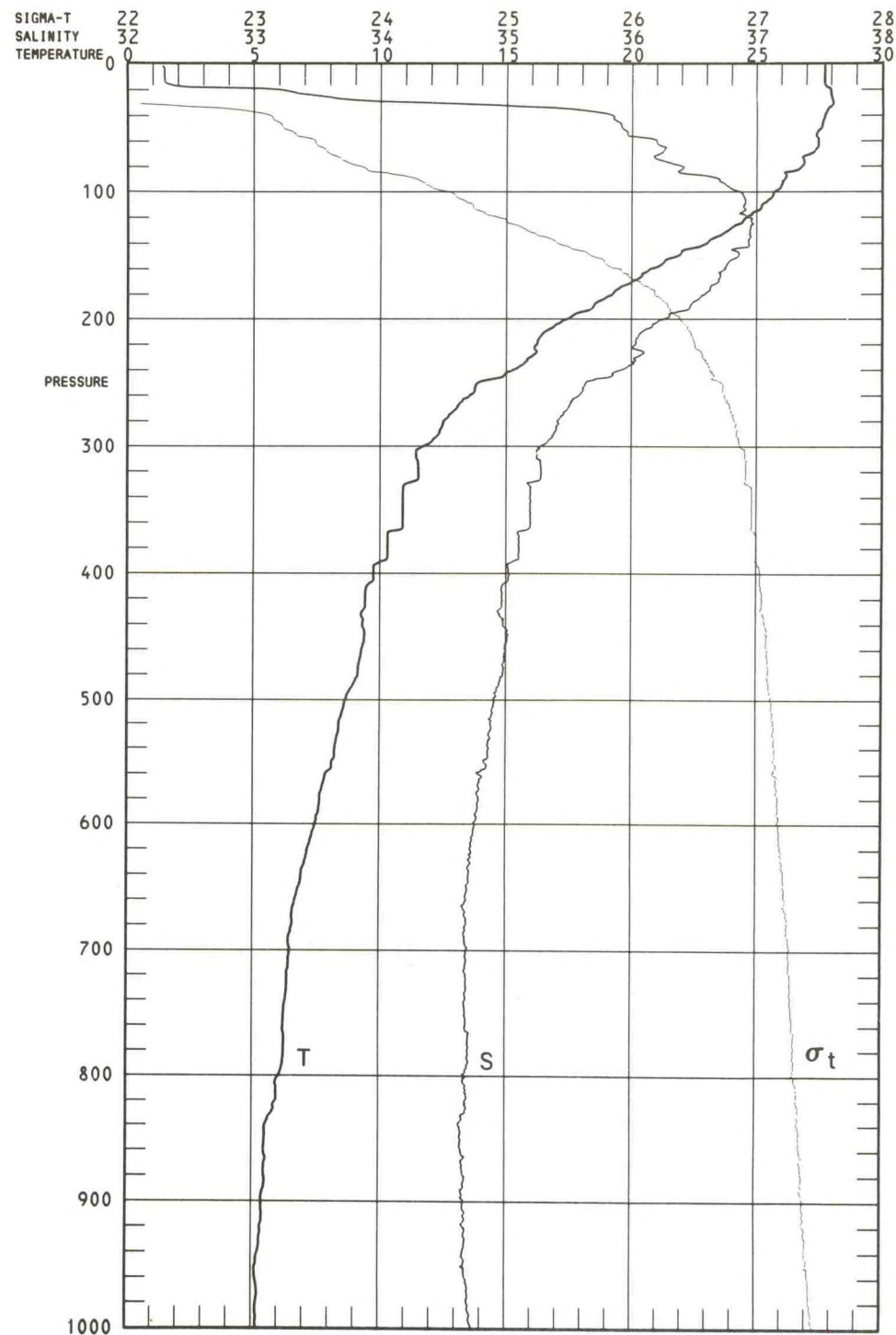
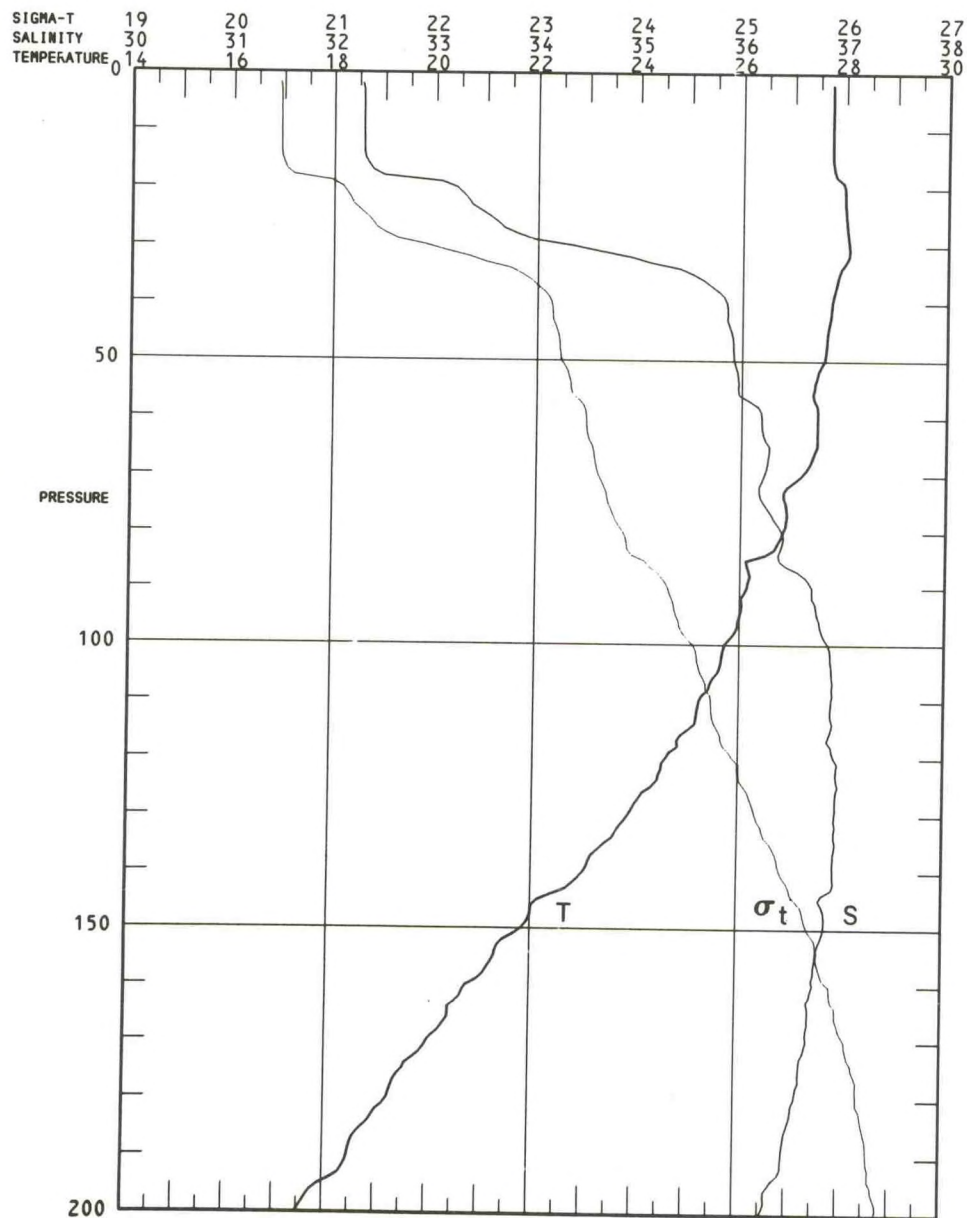
# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 24, 1969, 0901 GMT, 13°00'N 054°00'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

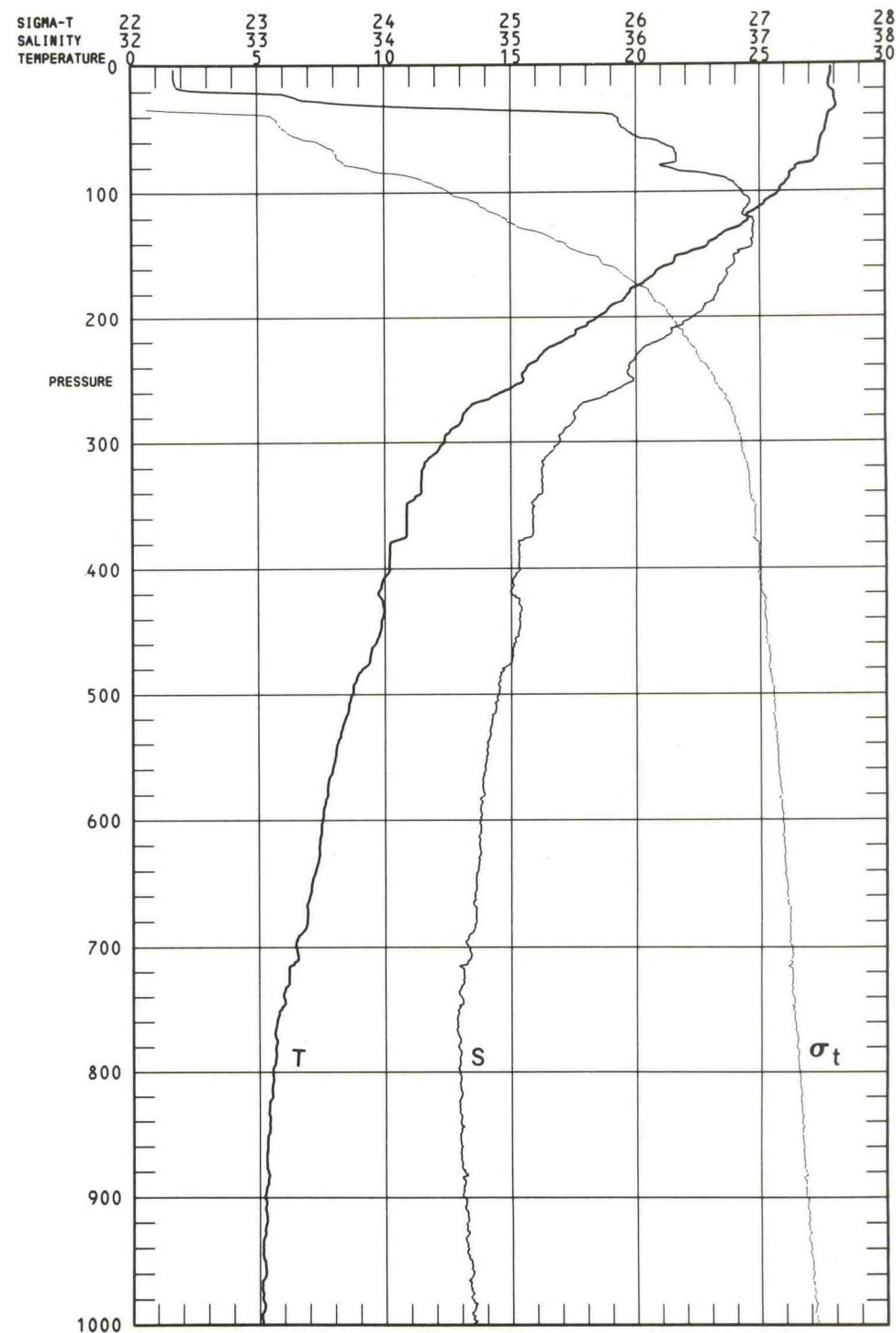
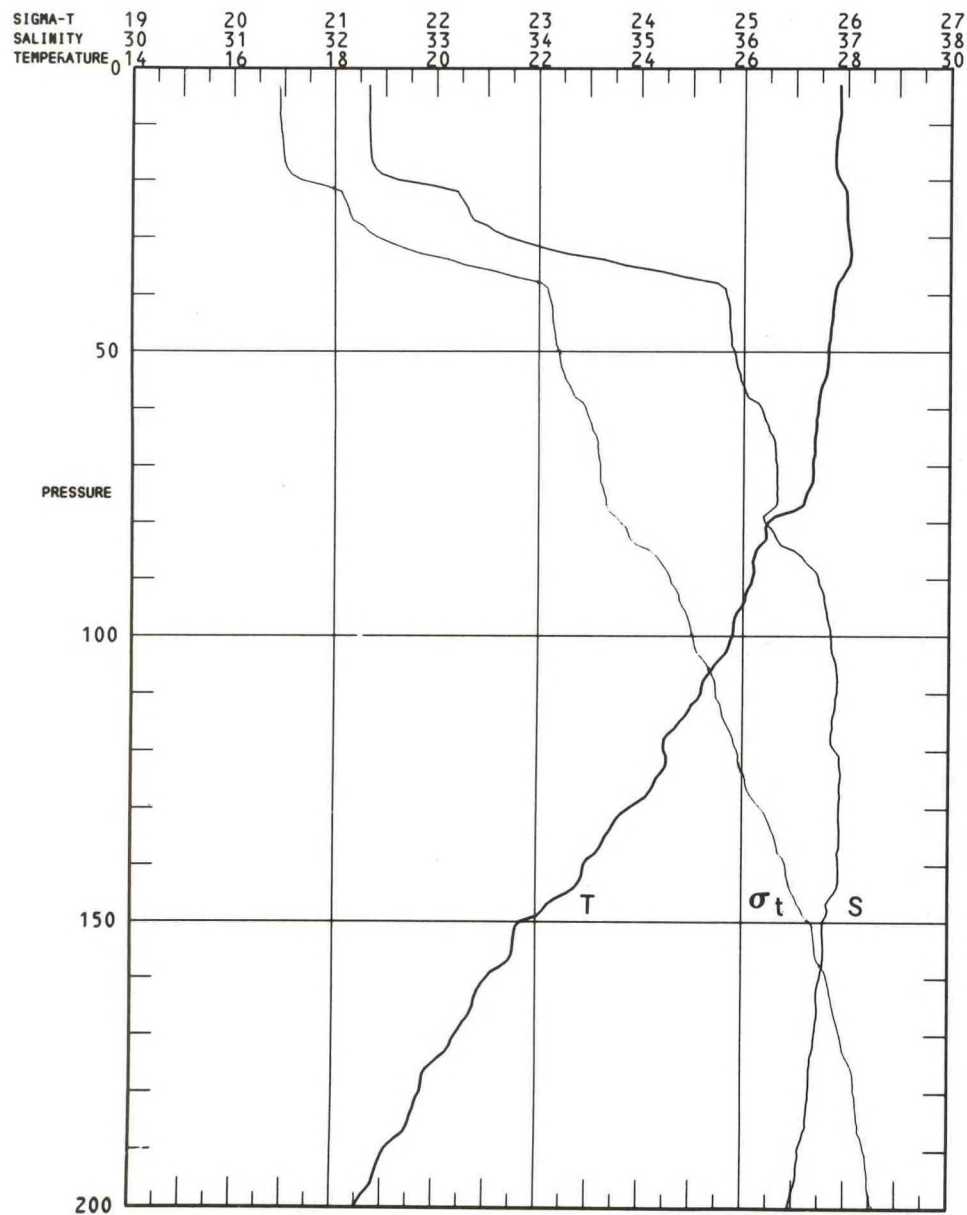


Discoverer, June 24, 1969, 1158 GMT, 13°00'N 054°00'W



DISCOVERER YEAR 1969 DAY 175 TIME 1502 GMT LAT.13°00N LON.054°00W

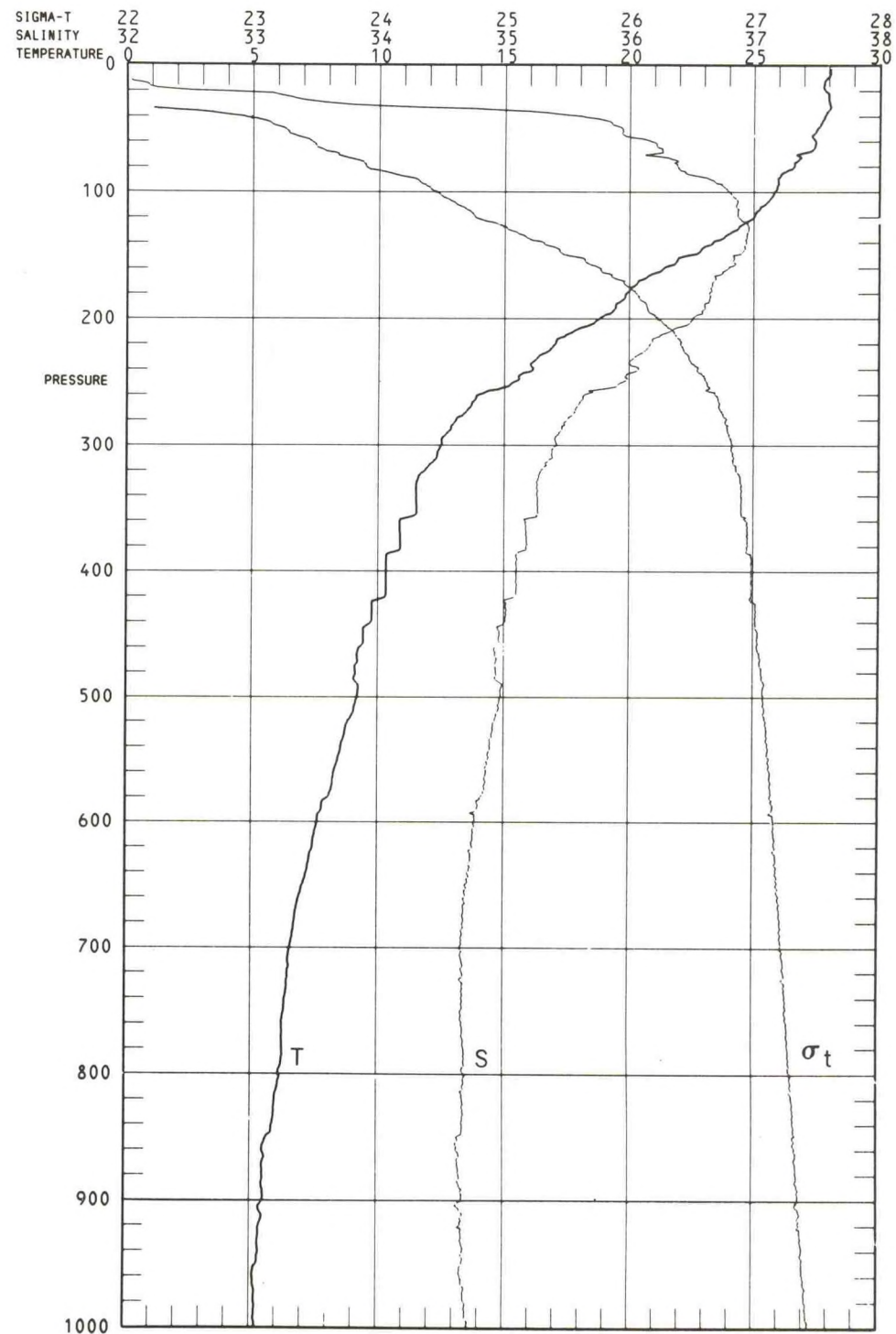
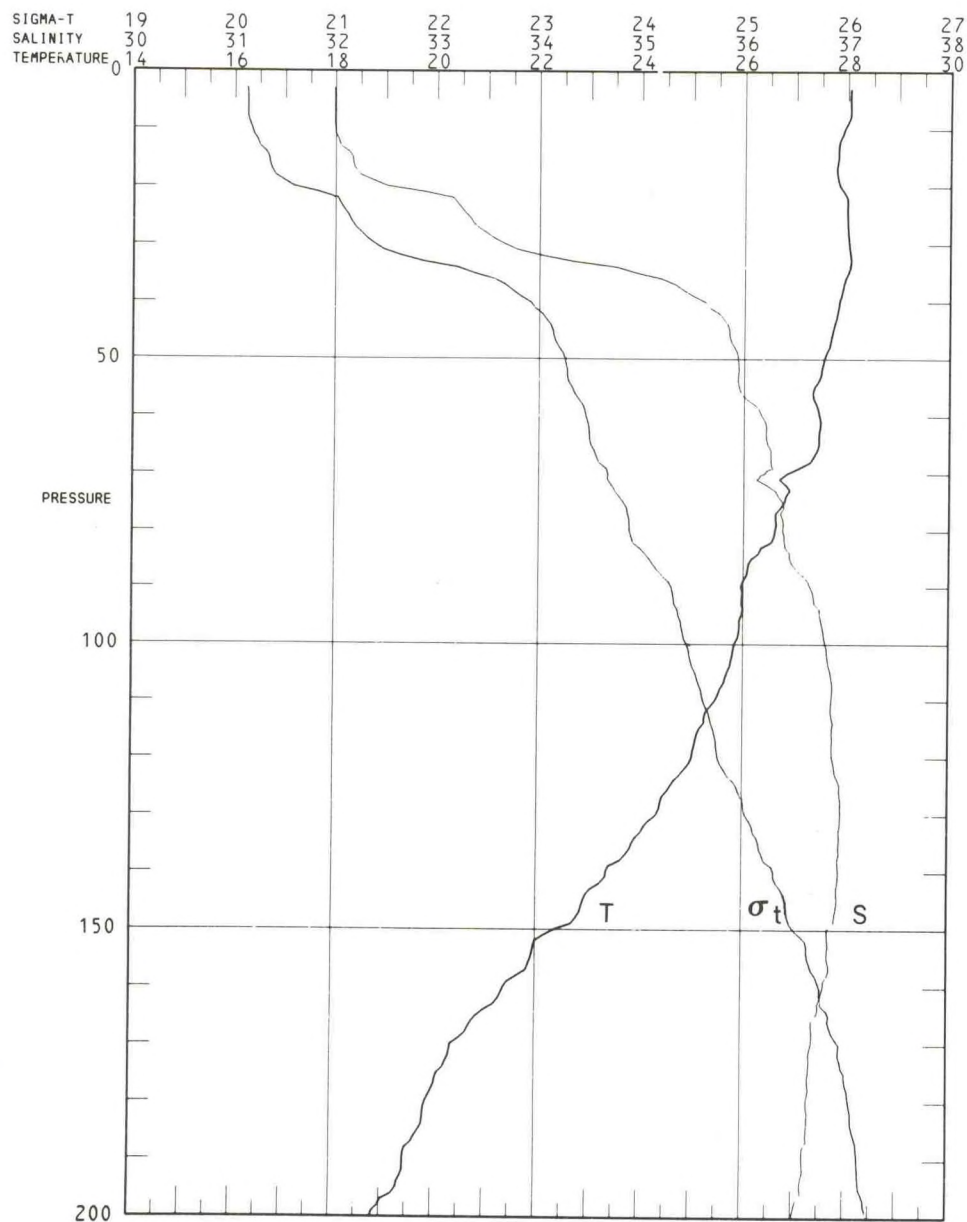
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 24, 1969, 1502 GMT, 13°00'N 054°00'W

DISCOVERER YEAR 1969 DAY 175 TIME 1803 GMT LAT.13°00N LON.054°00W

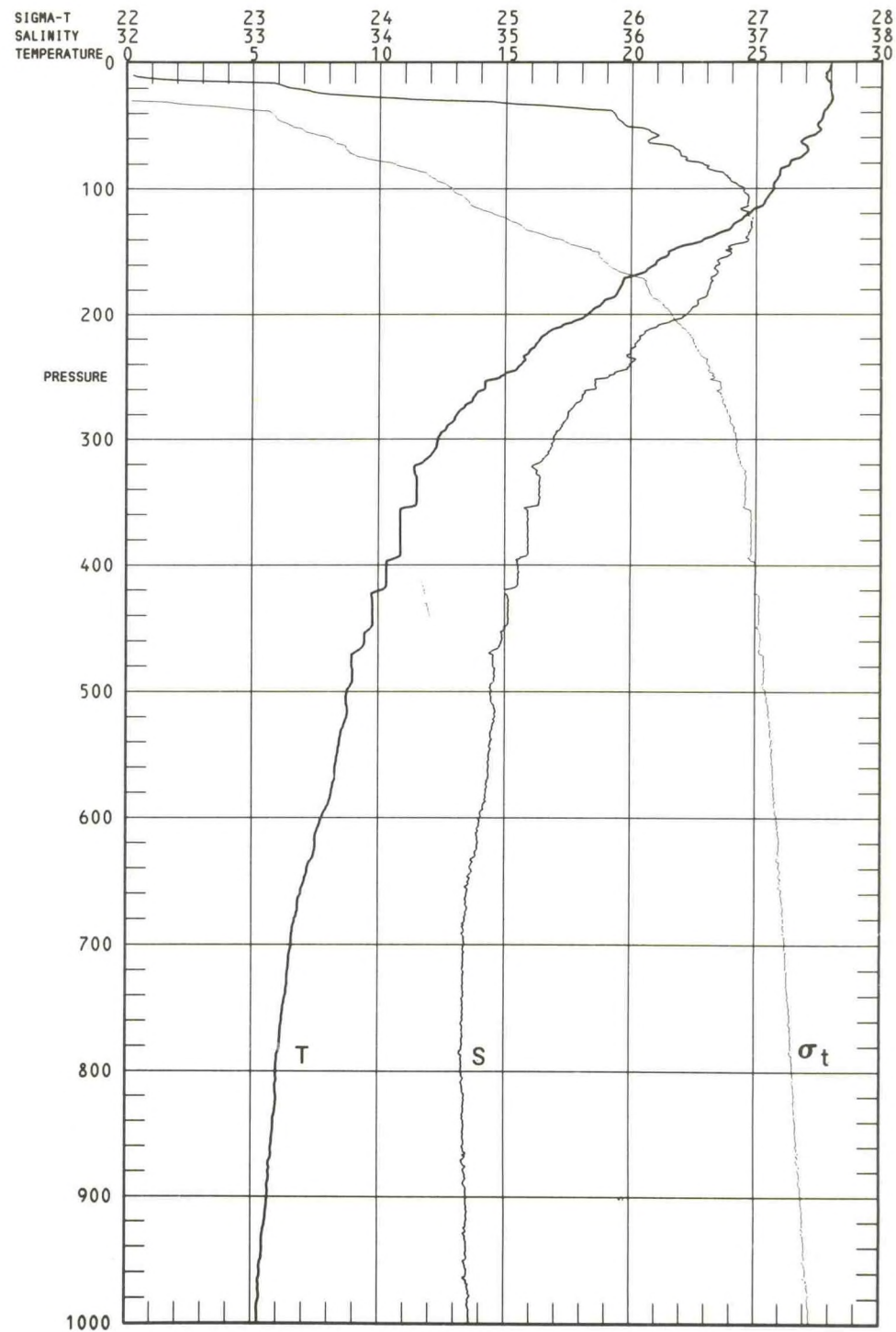
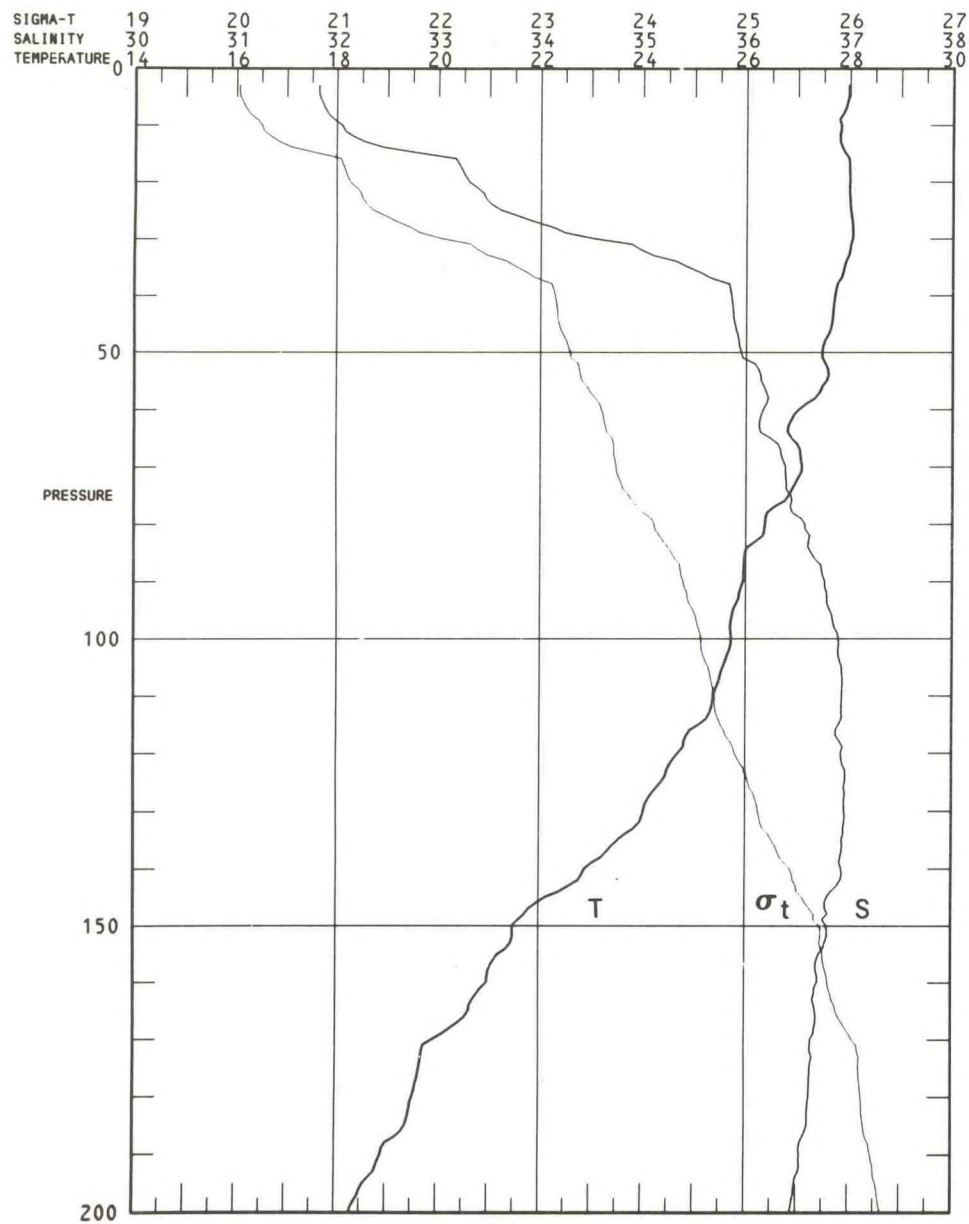
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 24, 1969, 1803 GMT, 13°00'N 054°00'W

DISCOVERER YEAR 1969 DAY 175 TIME 2059 GMT LAT.13°00N LON.054°00W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

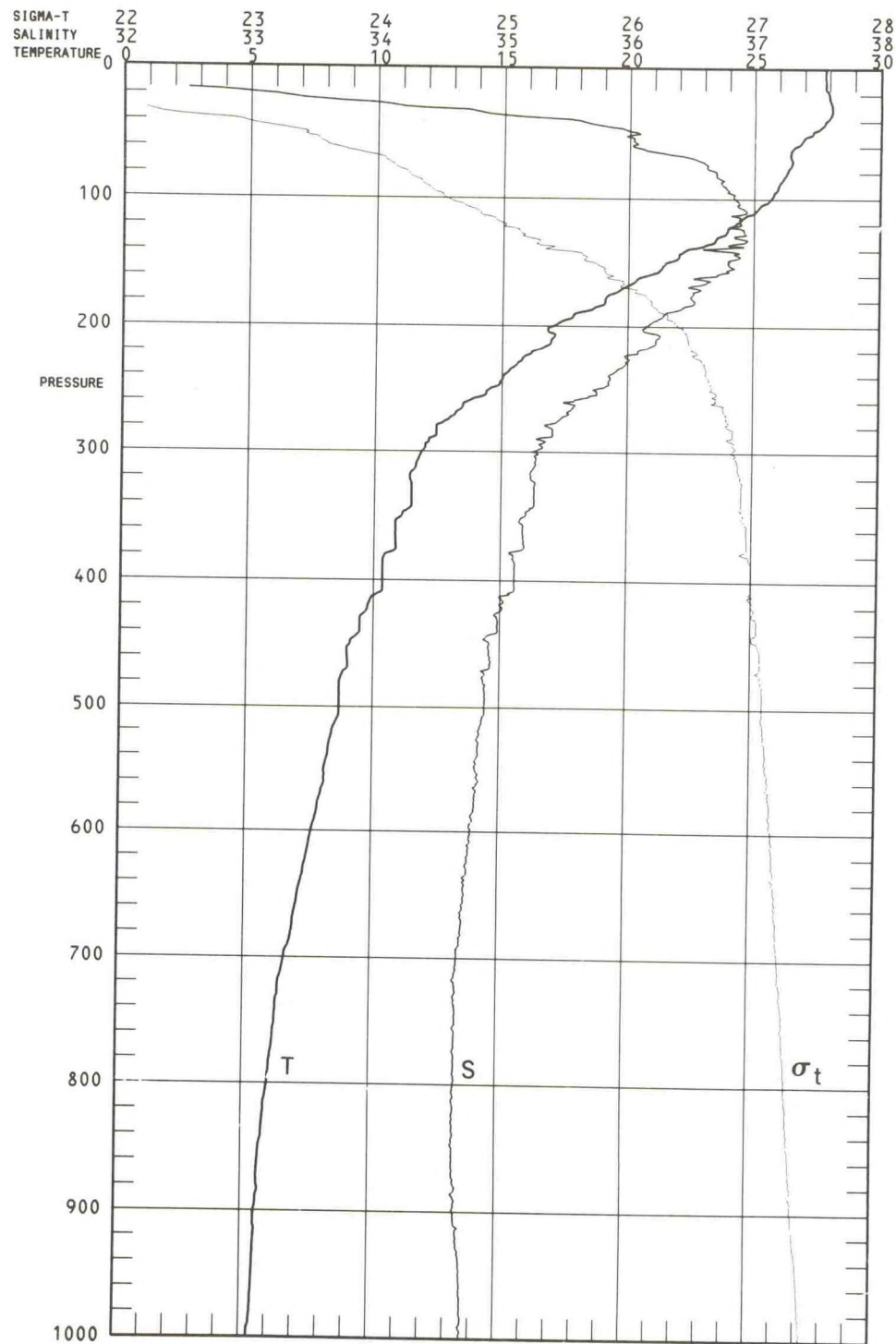
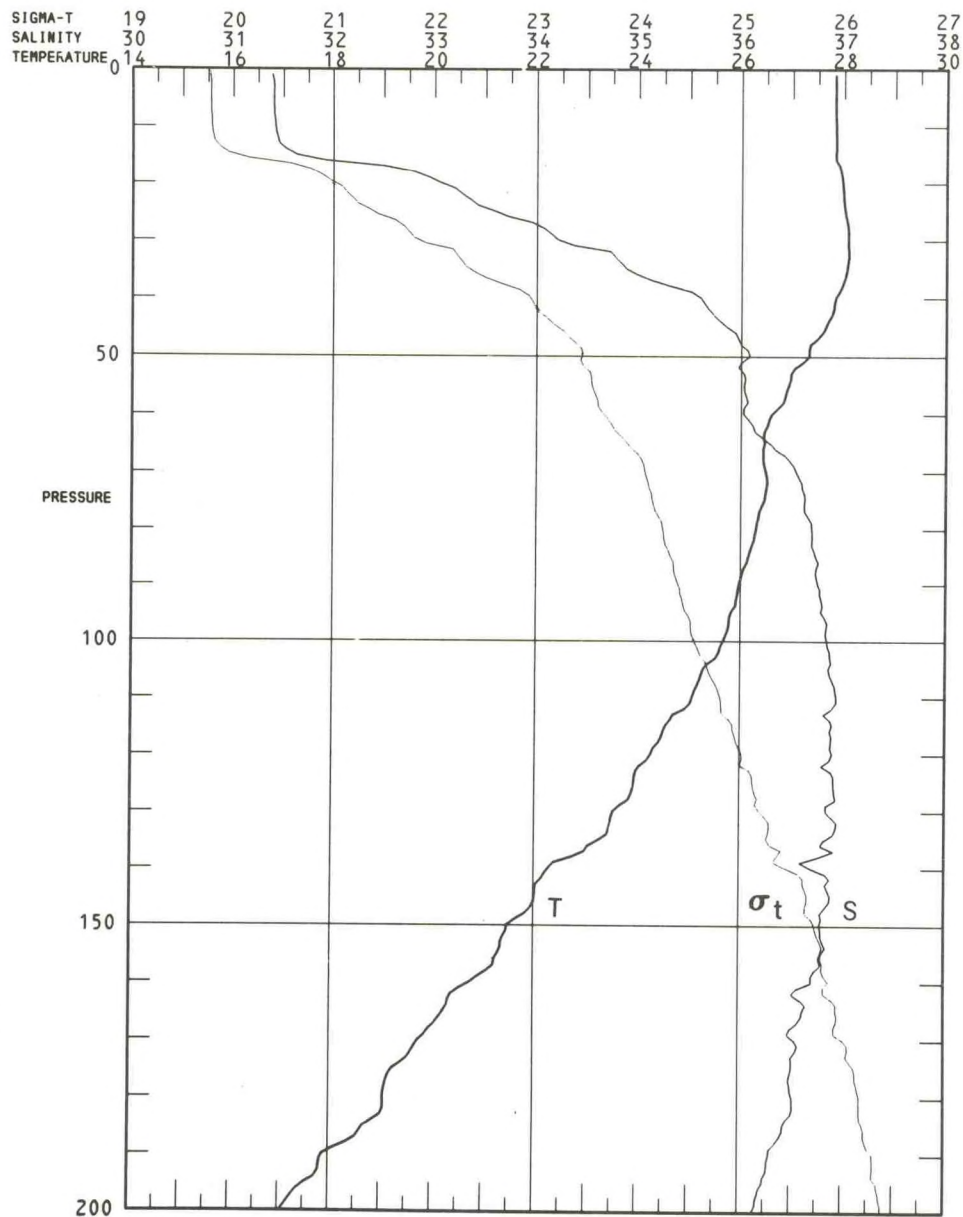


Discoverer, June 24, 1969, 2059 GMT, 13°00'N 054°00'W



# STD Depth-Sorted Plots

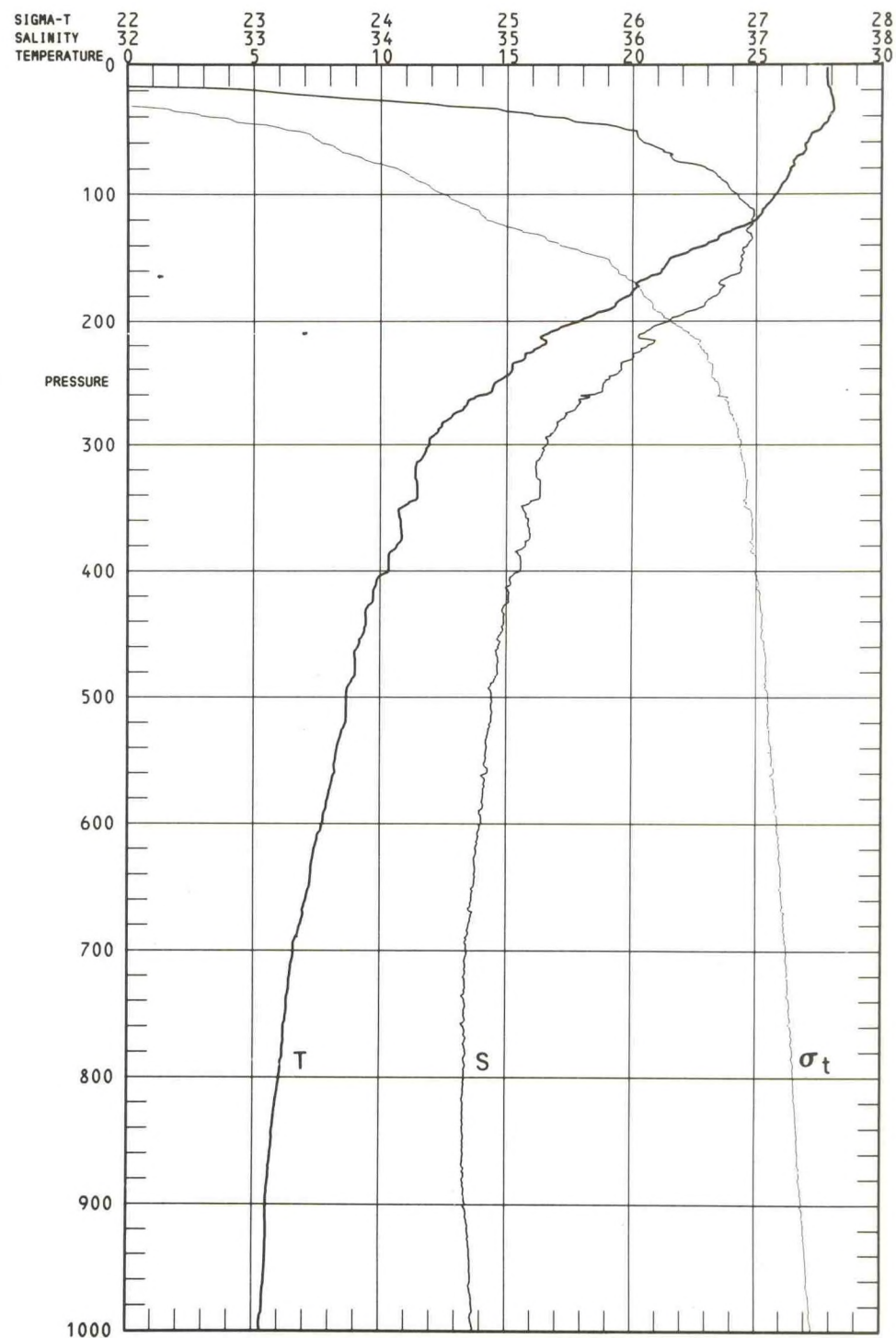
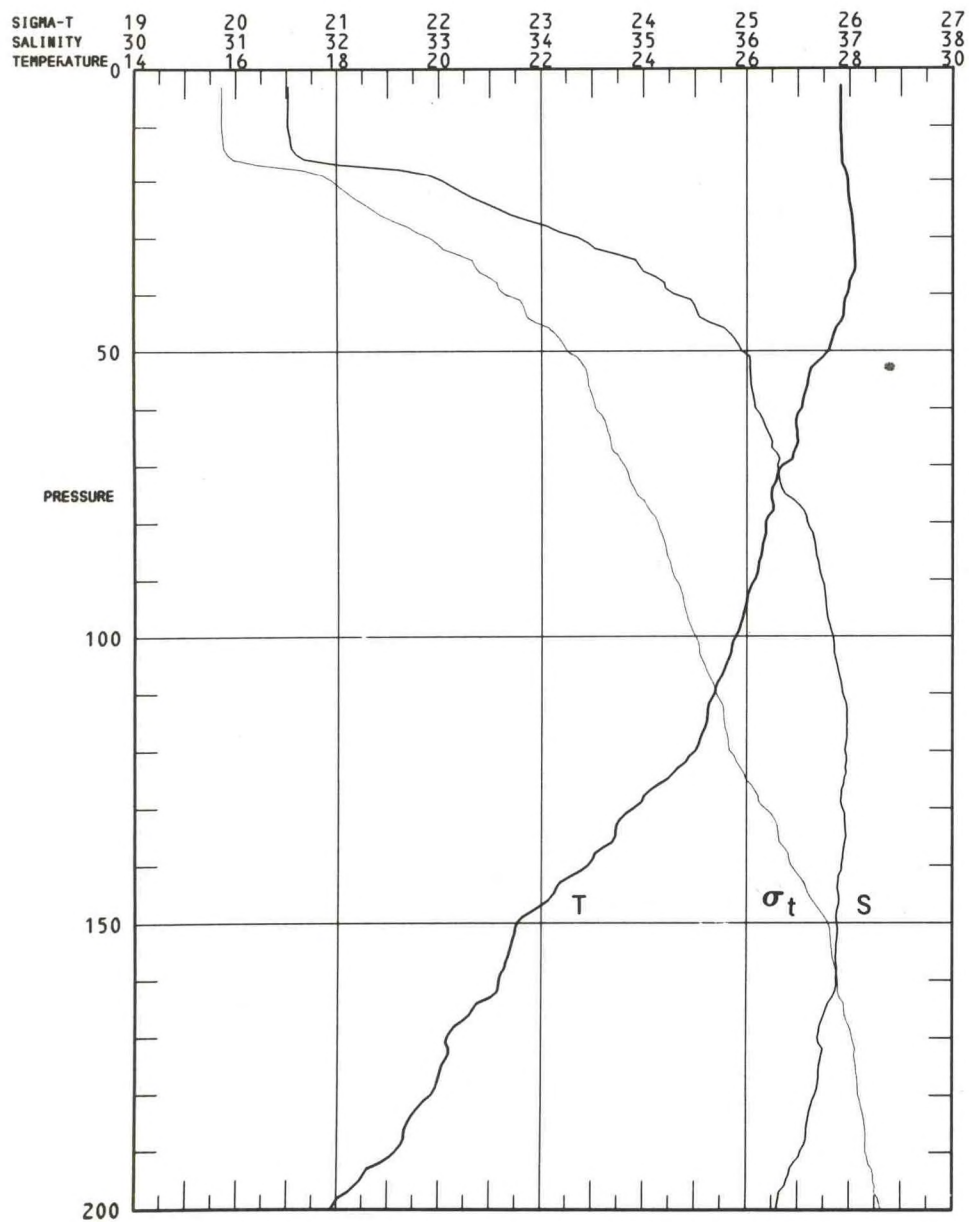
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 25, 1969, 0057 GMT, 13°00'N 054°00'W

# STD Depth-Sorted Plots

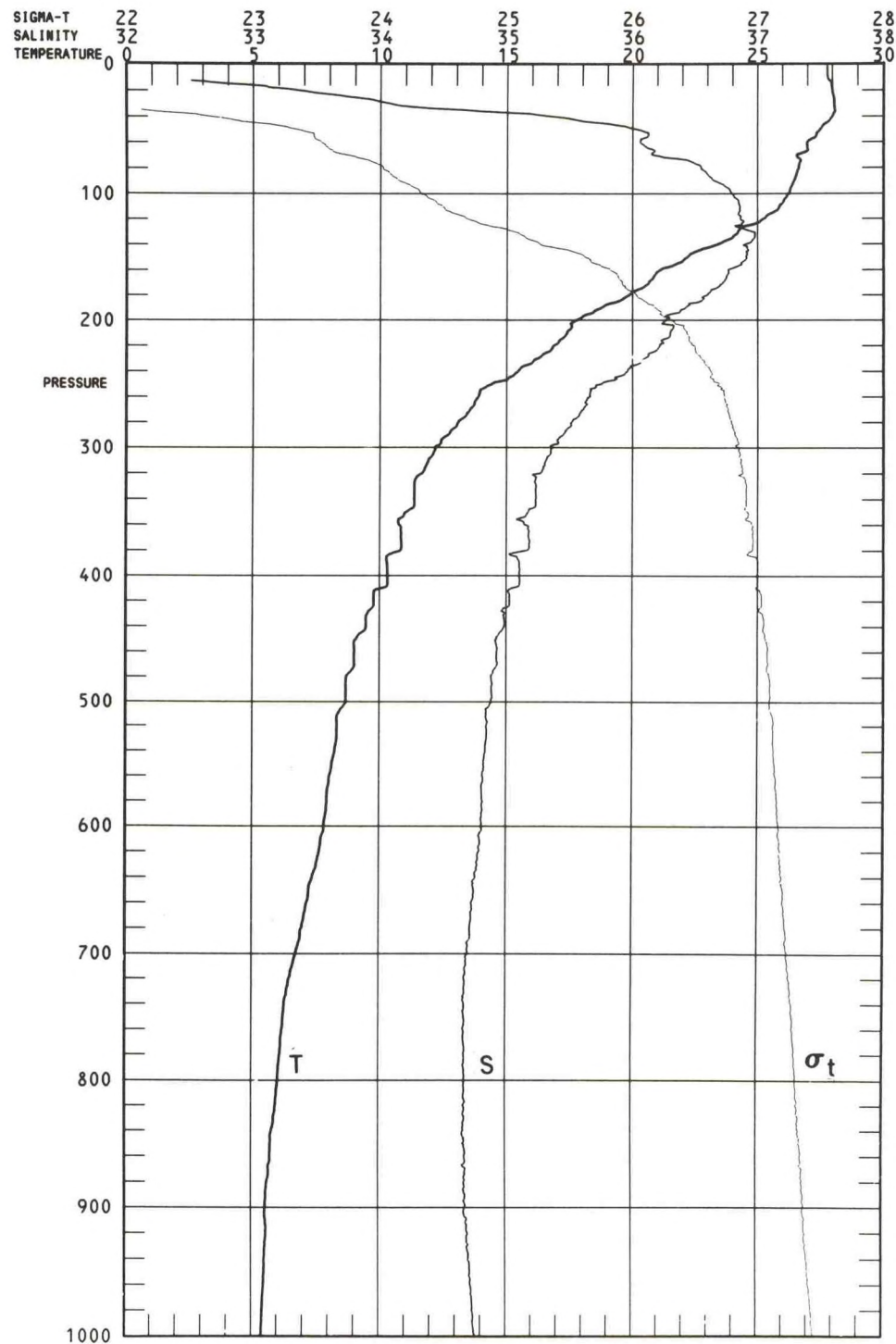
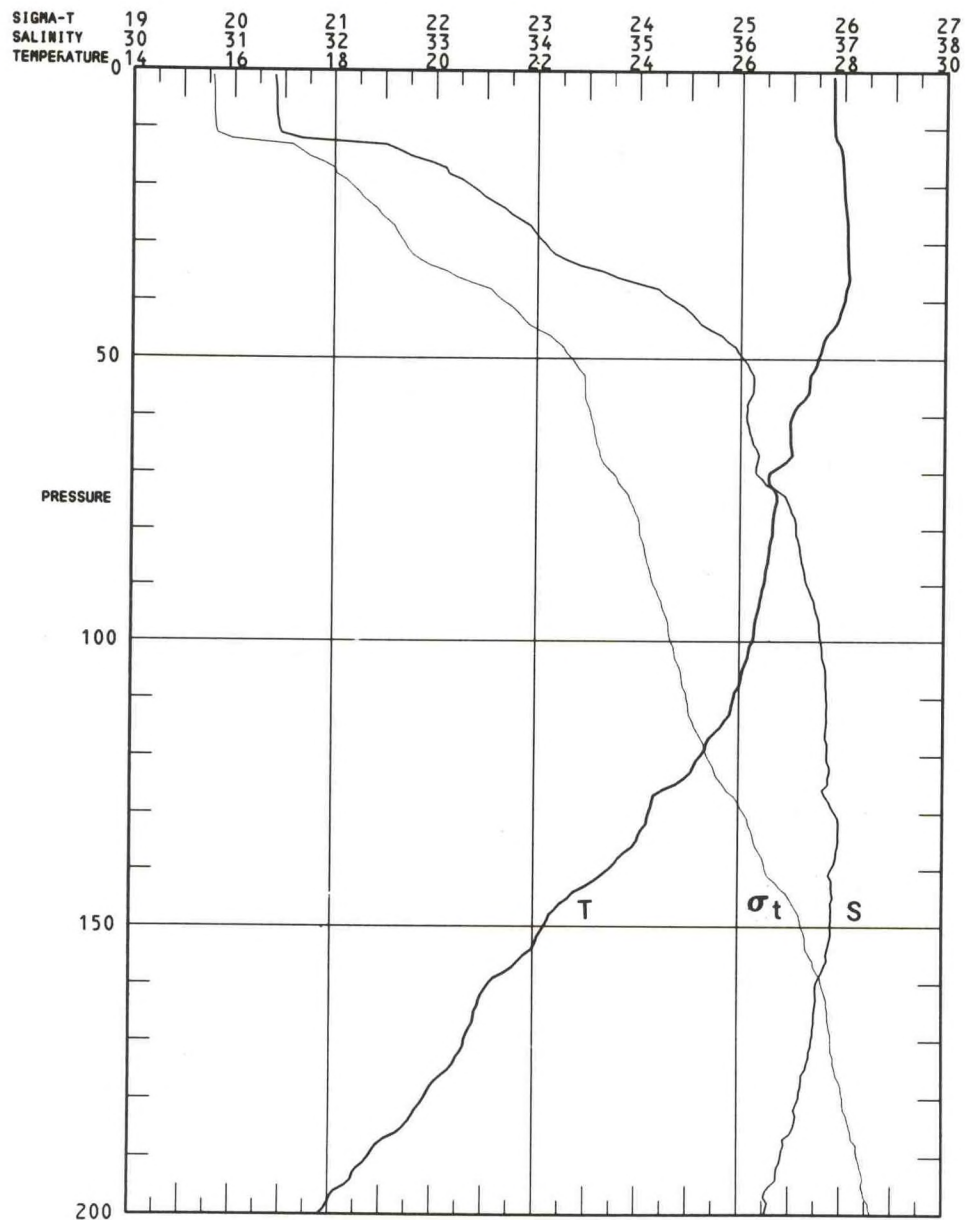
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 25, 1969, 0256 GMT, 13°00'N 054°00'W

DISCOVERER YEAR 1969 DAY 176 TIME 557 GMT LAT.13°08N LON.053°51W

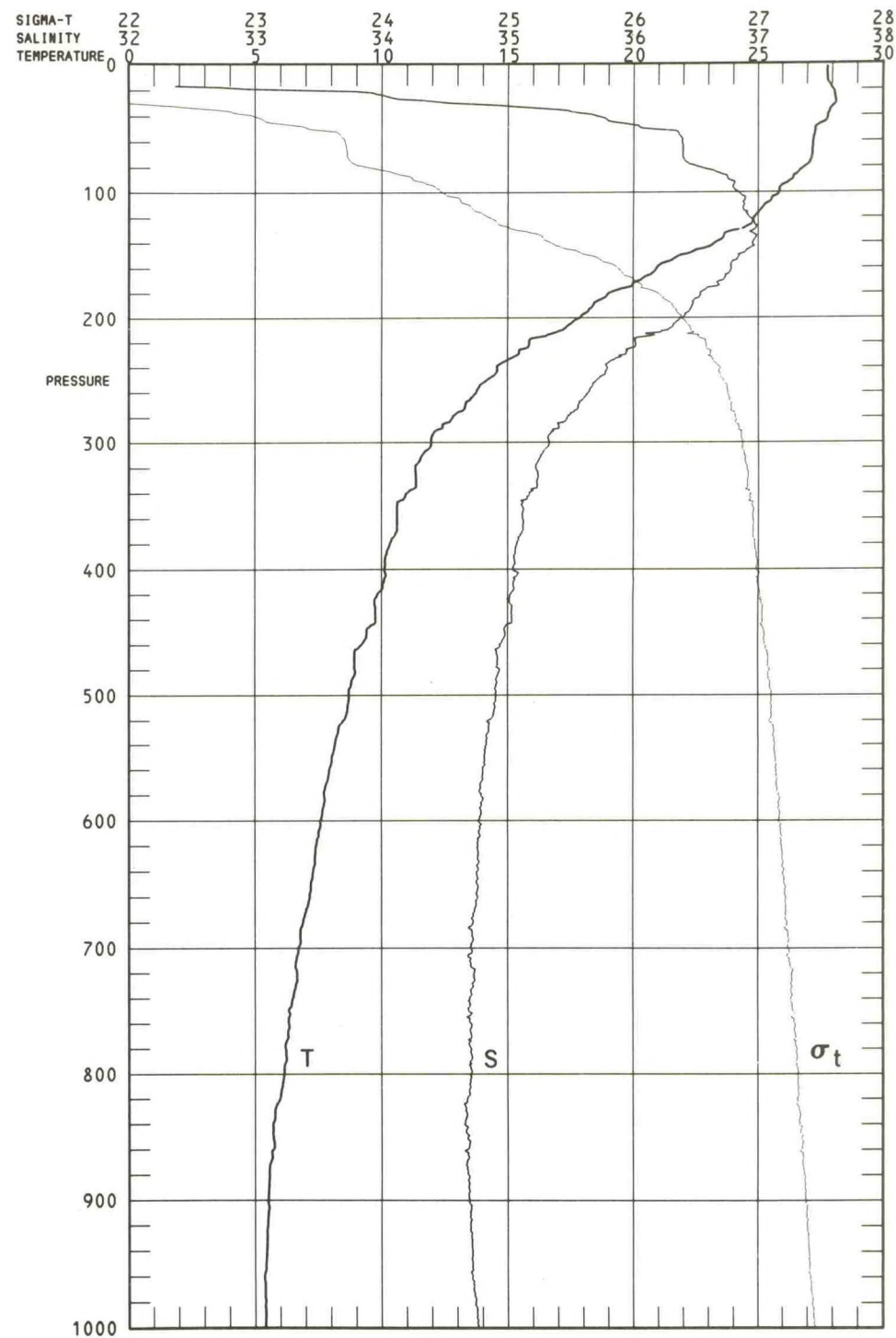
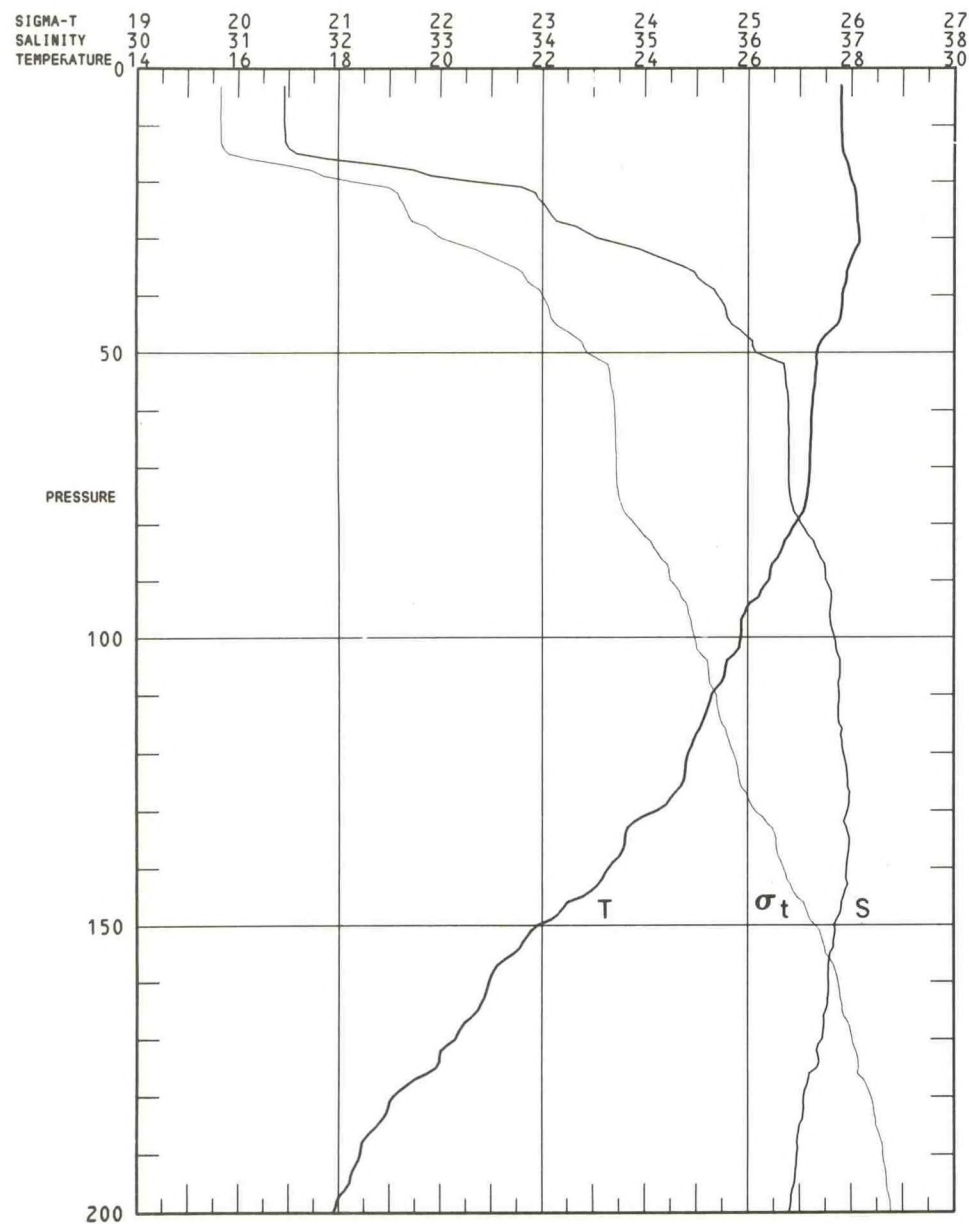
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 25, 1969, 0557 GMT, 13°08'N 053°51'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

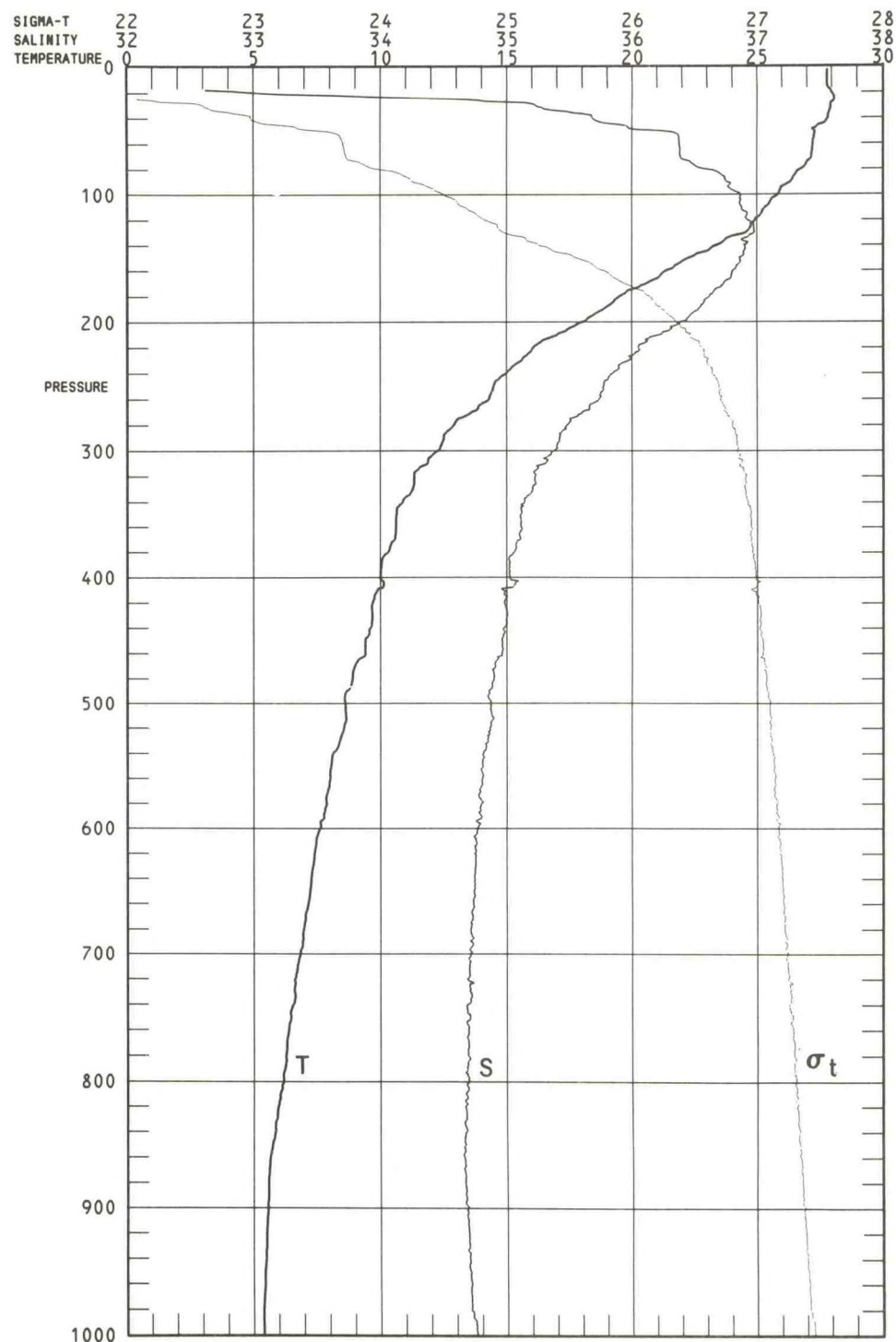
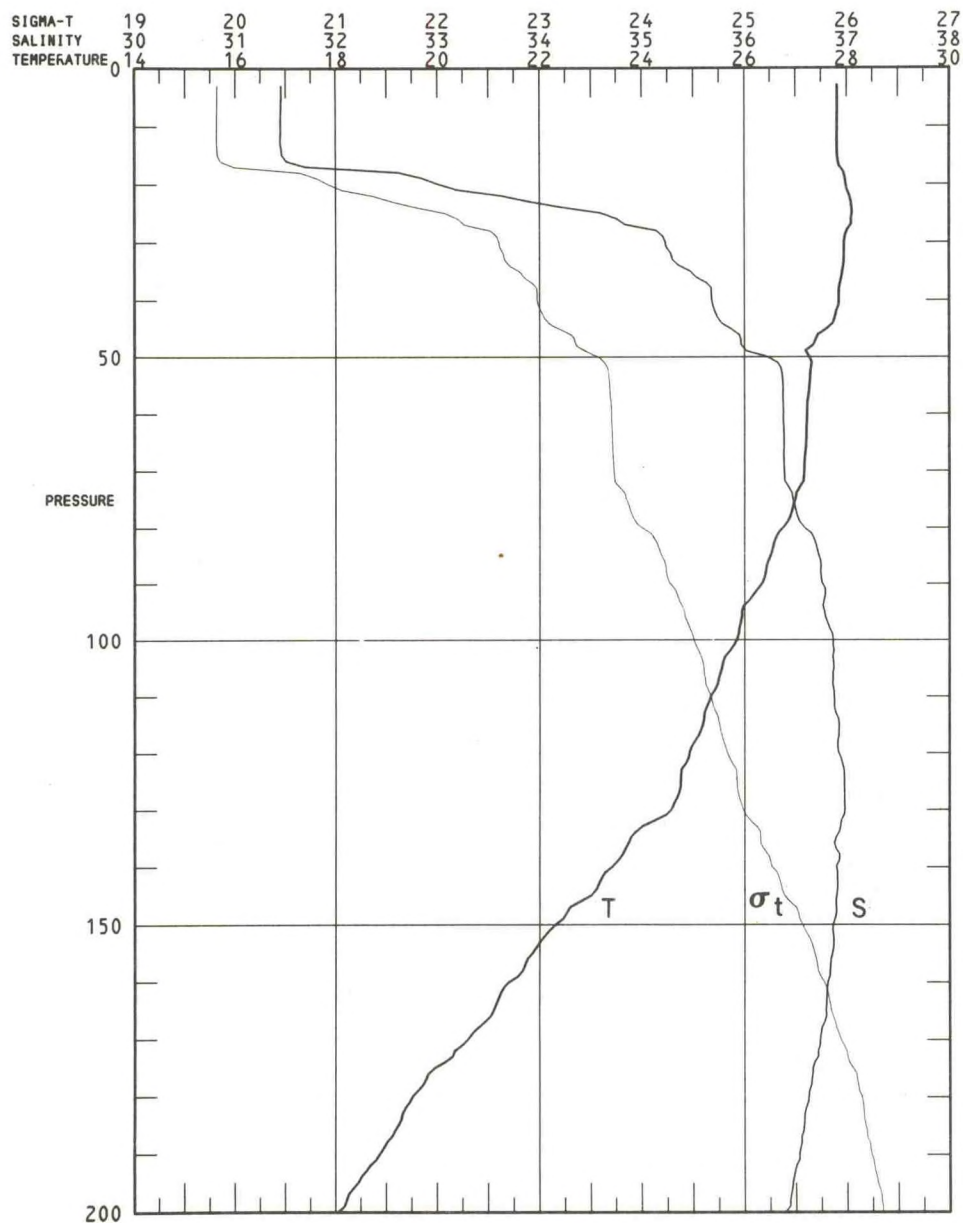


Discoverer, June 25, 1969, 0900 GMT, 13°08'N 053°51'W

DISCOVERER YEAR 1969 DAY 176 TIME 1158 GMT LAT.13°08N LON.053°51W

# STD Depth-Sorted Plots

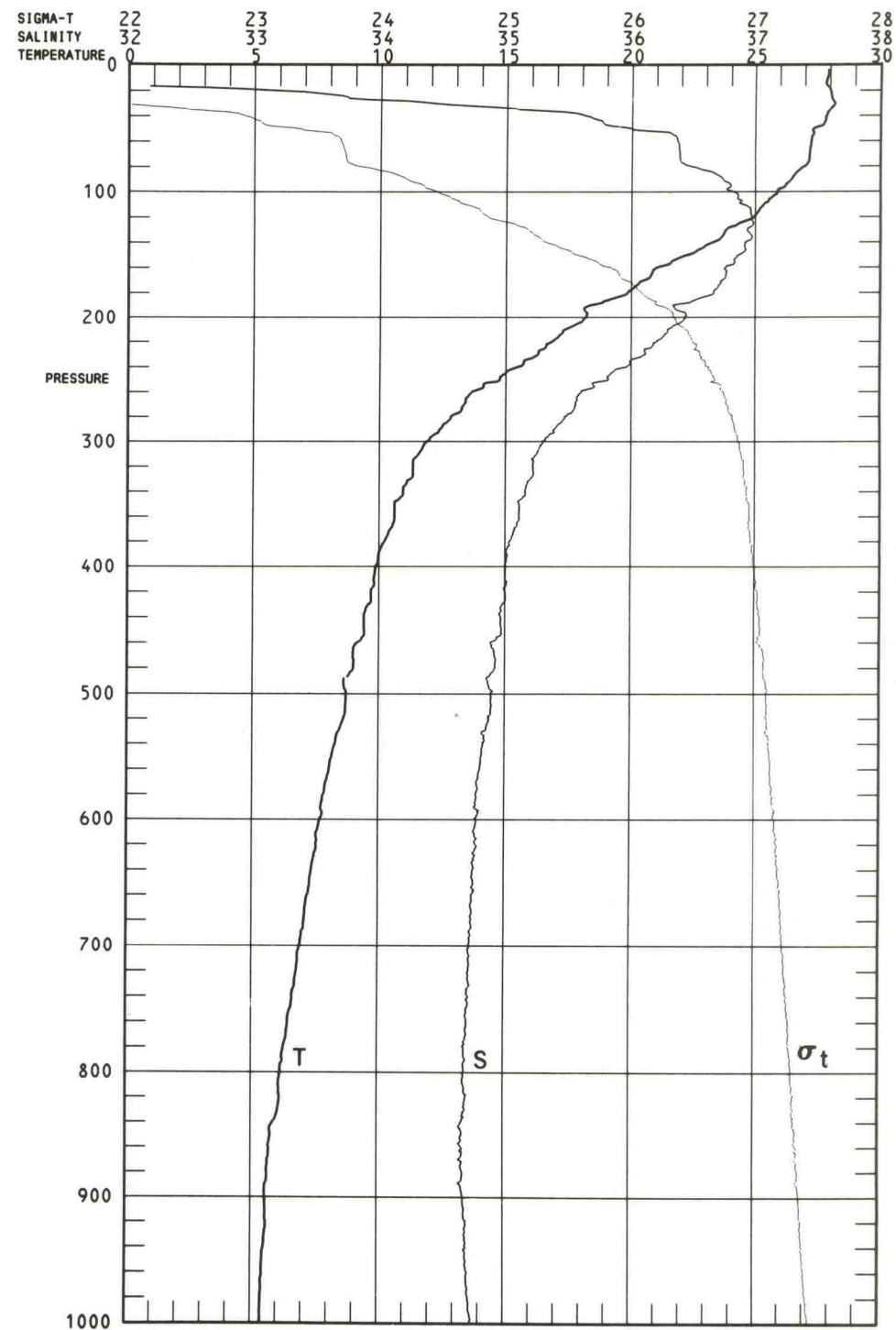
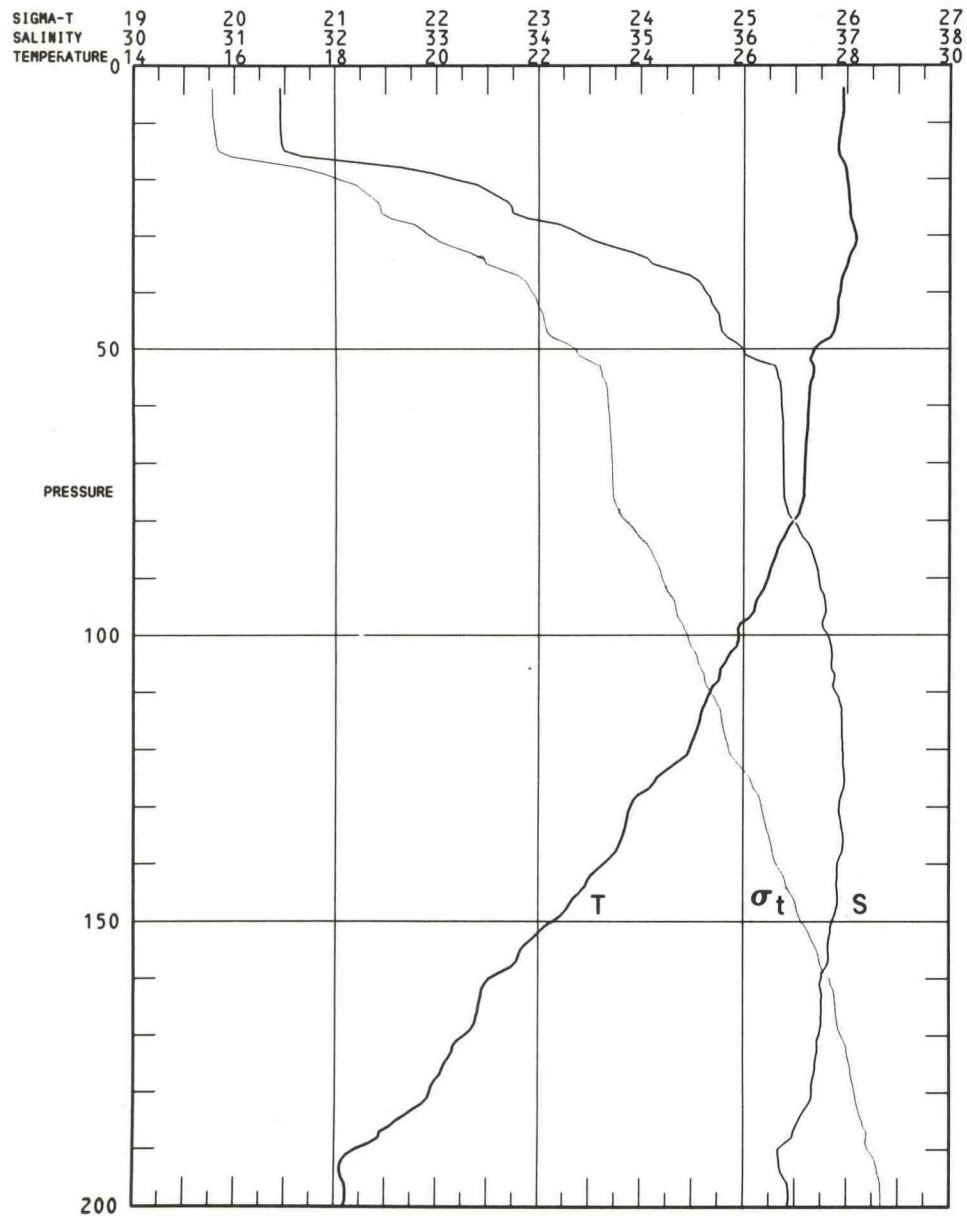
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 25, 1969, 1158 GMT, 13°08'N 053°51'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

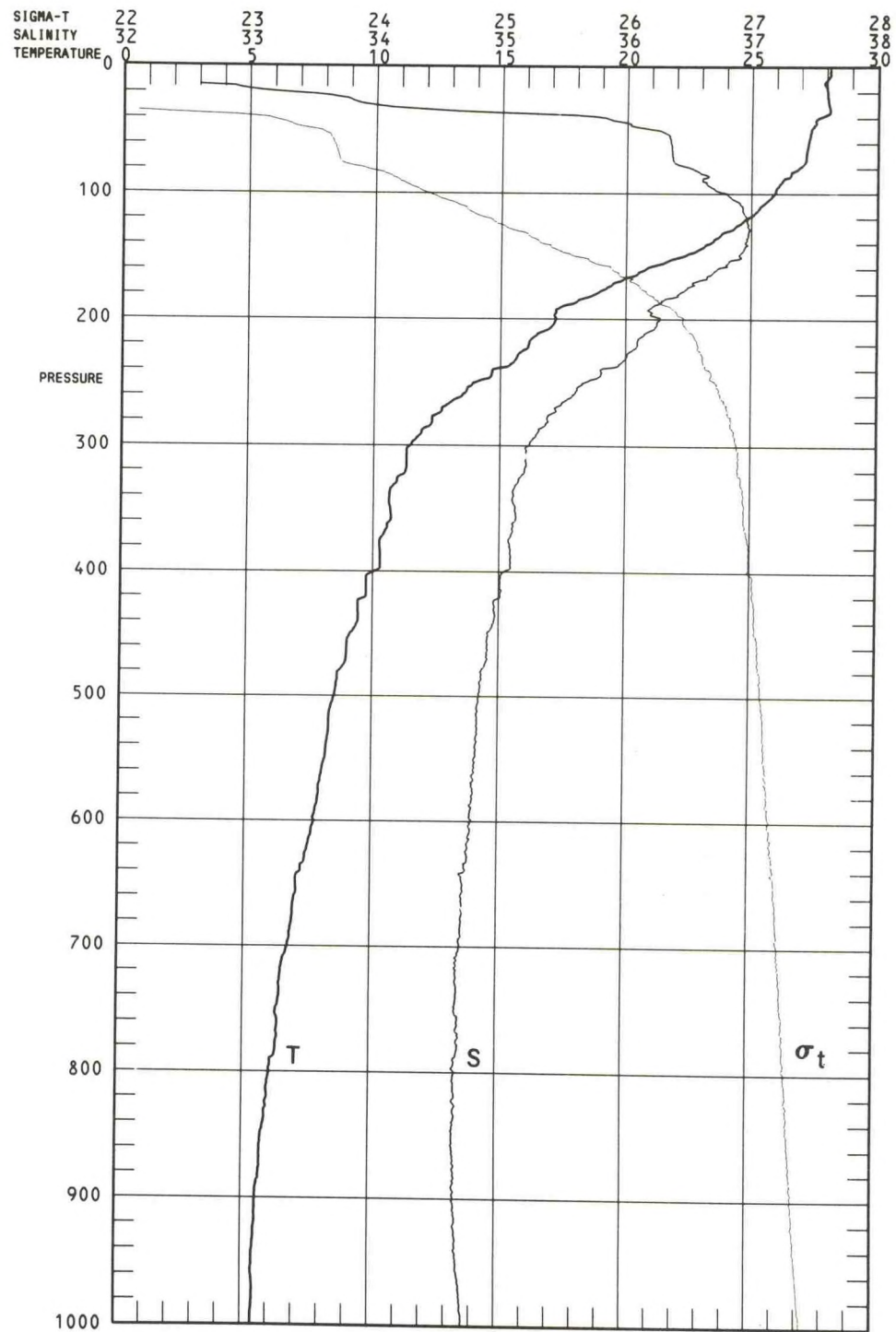
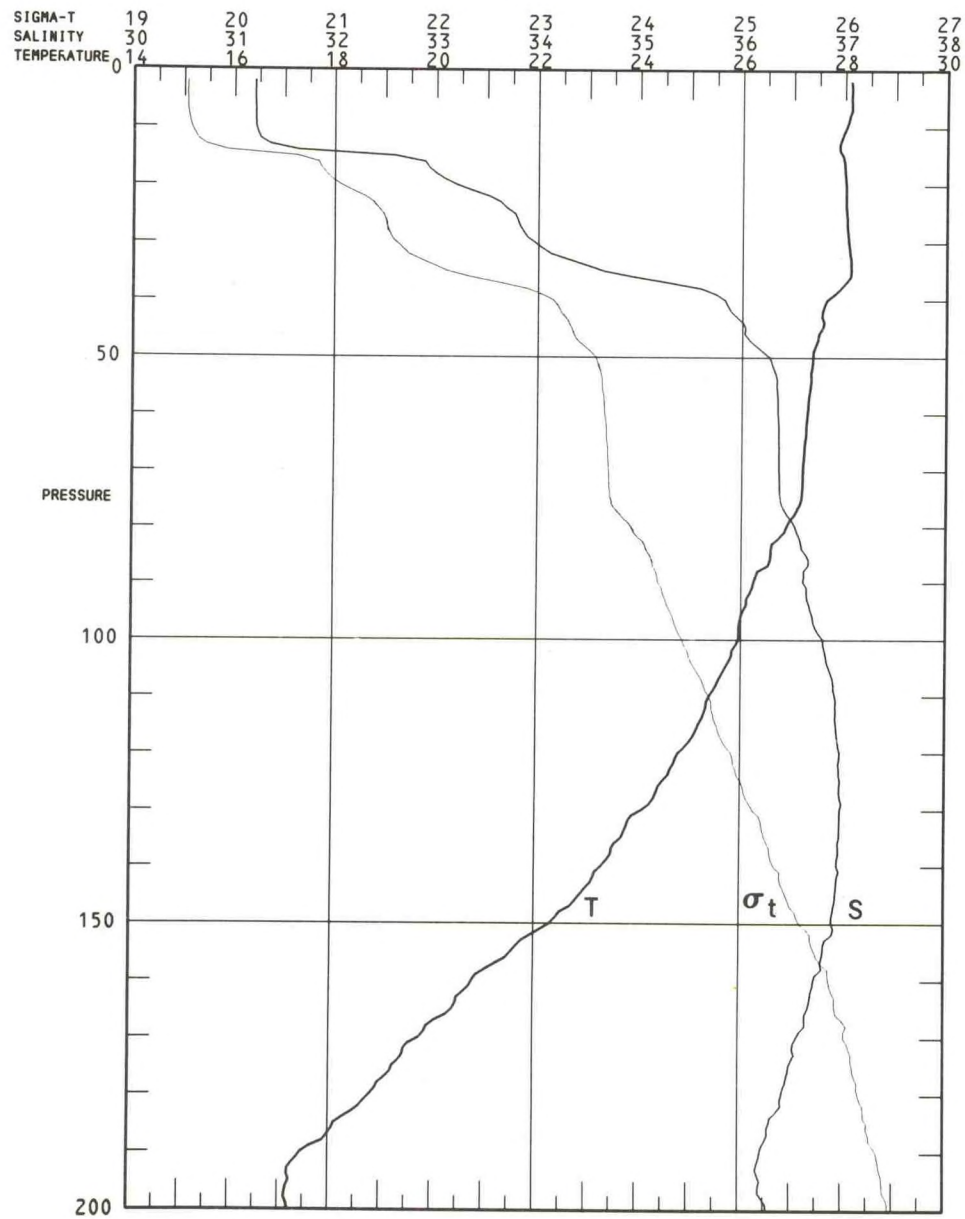


Discoverer, June 25, 1969, 1459 GMT, 13°08'N 053°51'W



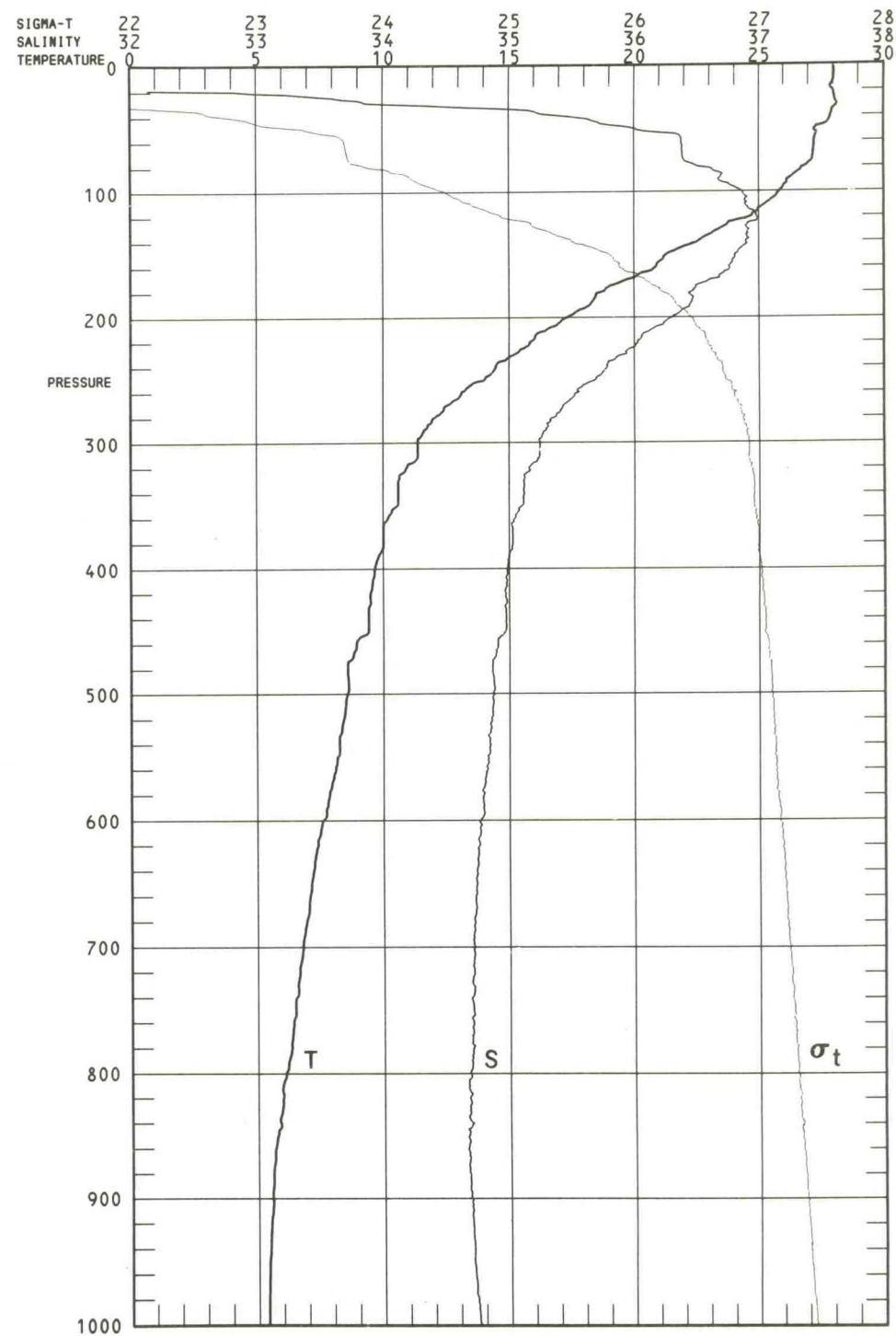
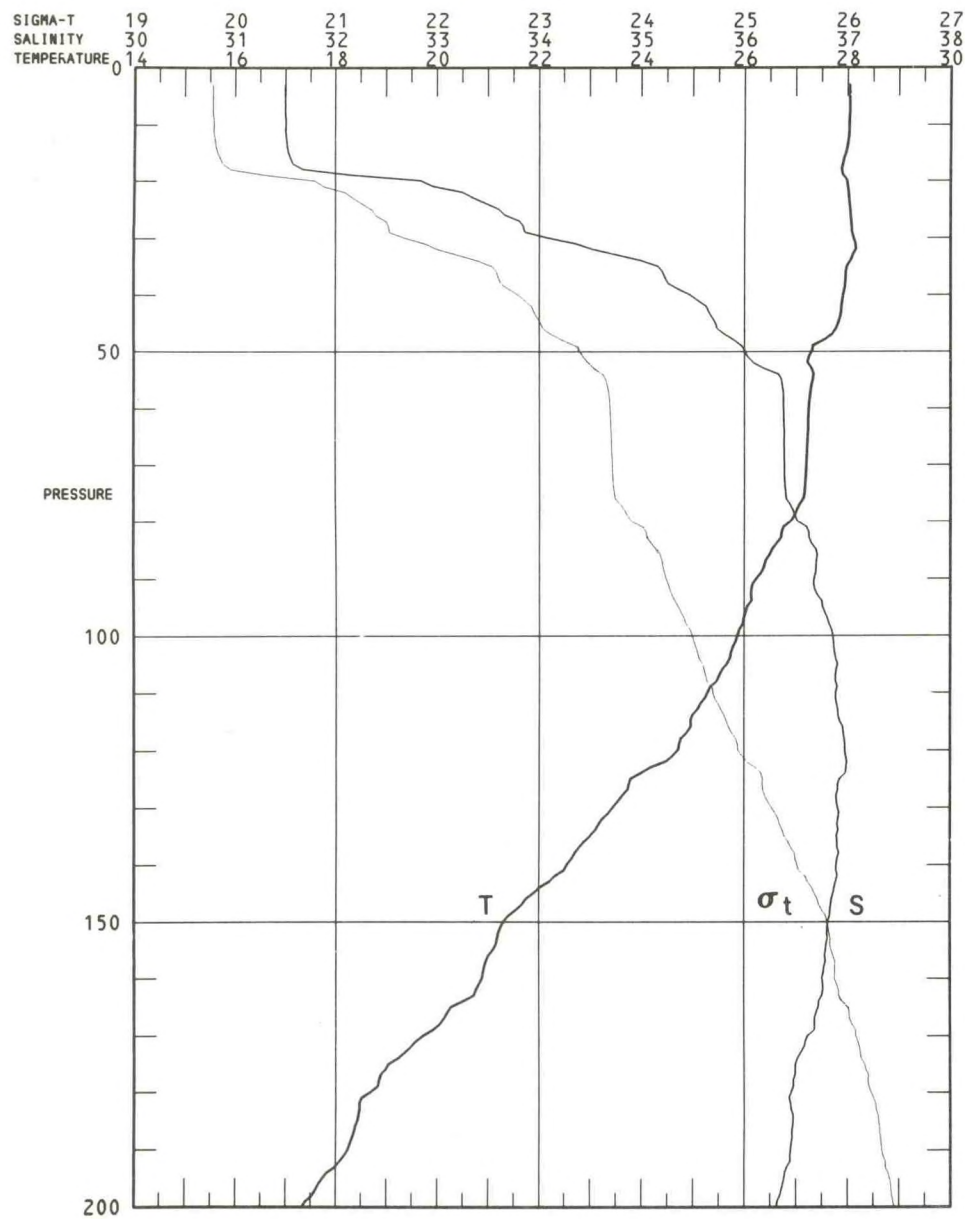
DISCOVERER YEAR 1969 DAY 176 TIME 1802 GMT LAT.13°08N LON.053°51W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 25, 1969, 1802 GMT, 13°08'N 053°51'W

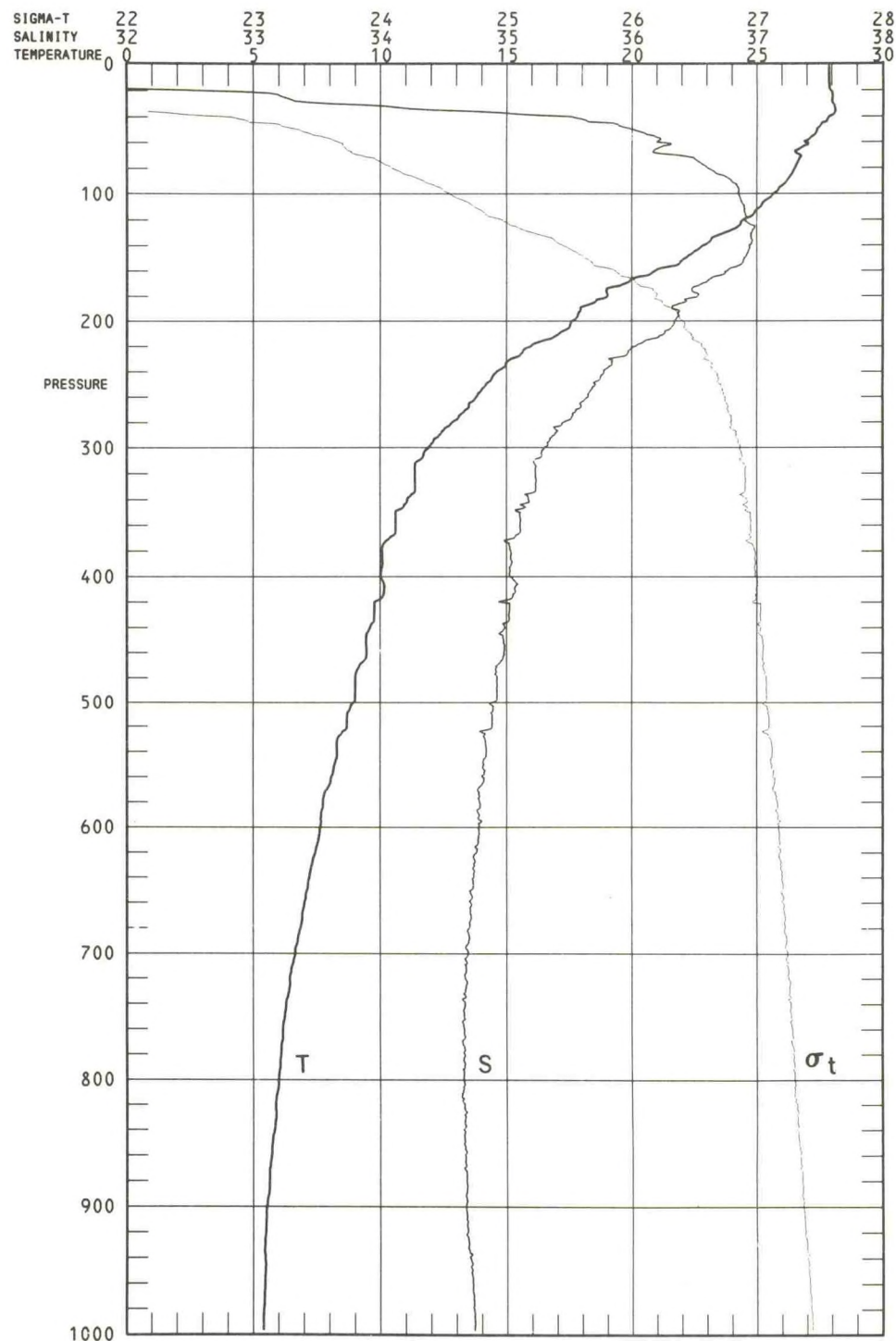
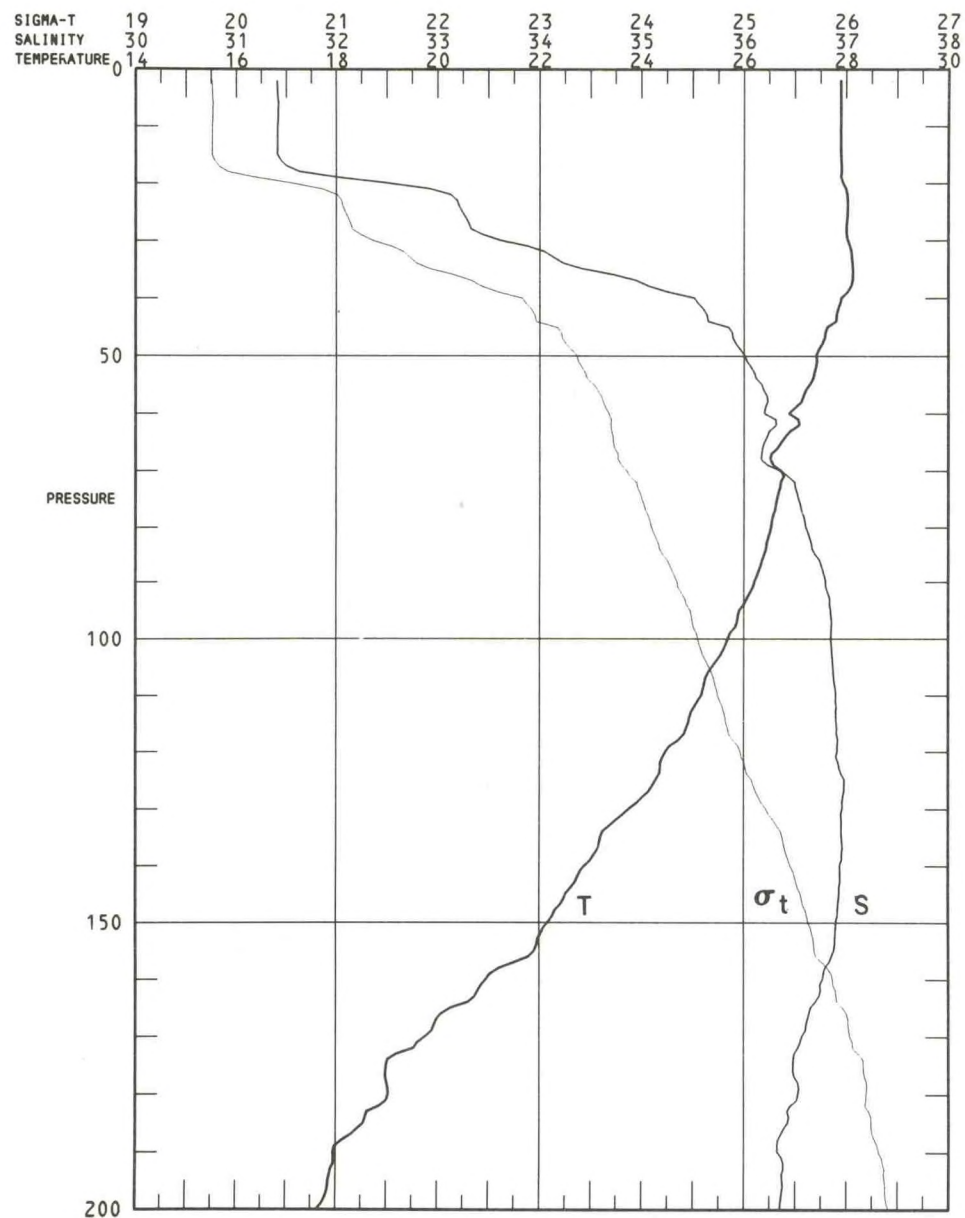
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 25, 1969, 2102 GMT, 13°08'N 053°51'W

DISCOVERER YEAR 1969 DAY 177 TIME 104 GMT LAT.13°08N LON.053°51W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

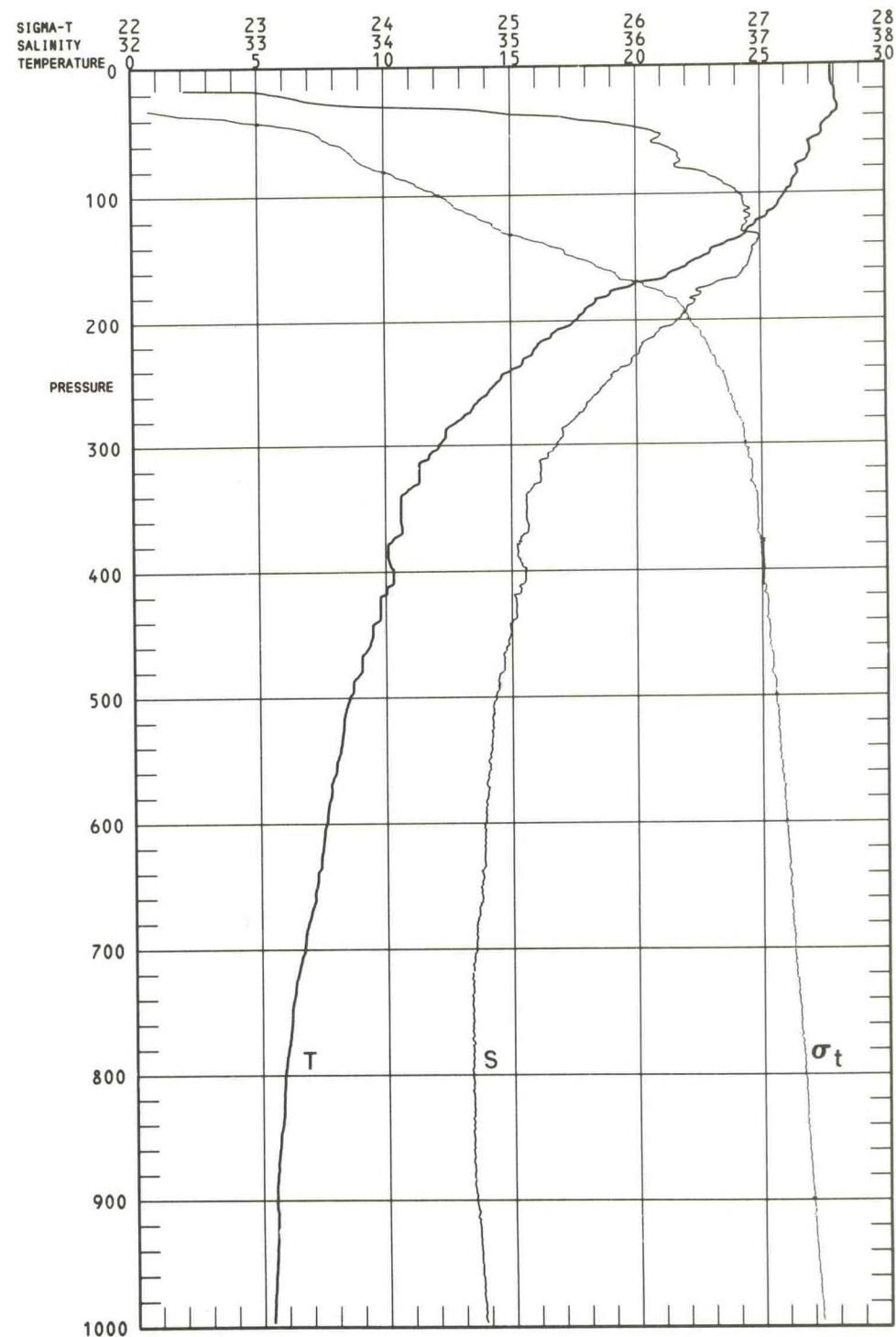
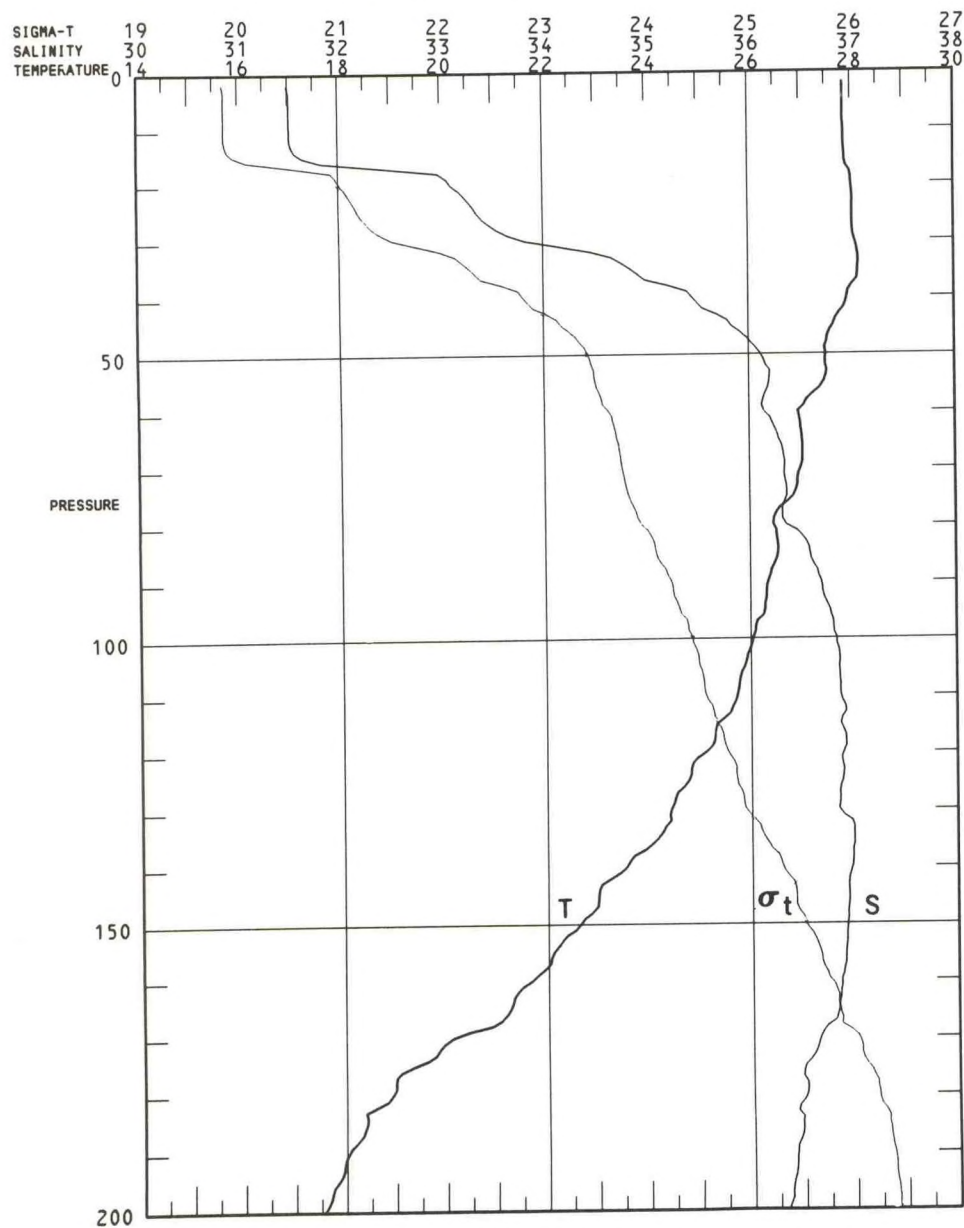


Discoverer, June 26, 1969, 0104 GMT, 13°08'N 053°51'W



DISCOVERER YEAR 1969 DAY 177 TIME 256 GMT LAT.13°08N LON.053°51W

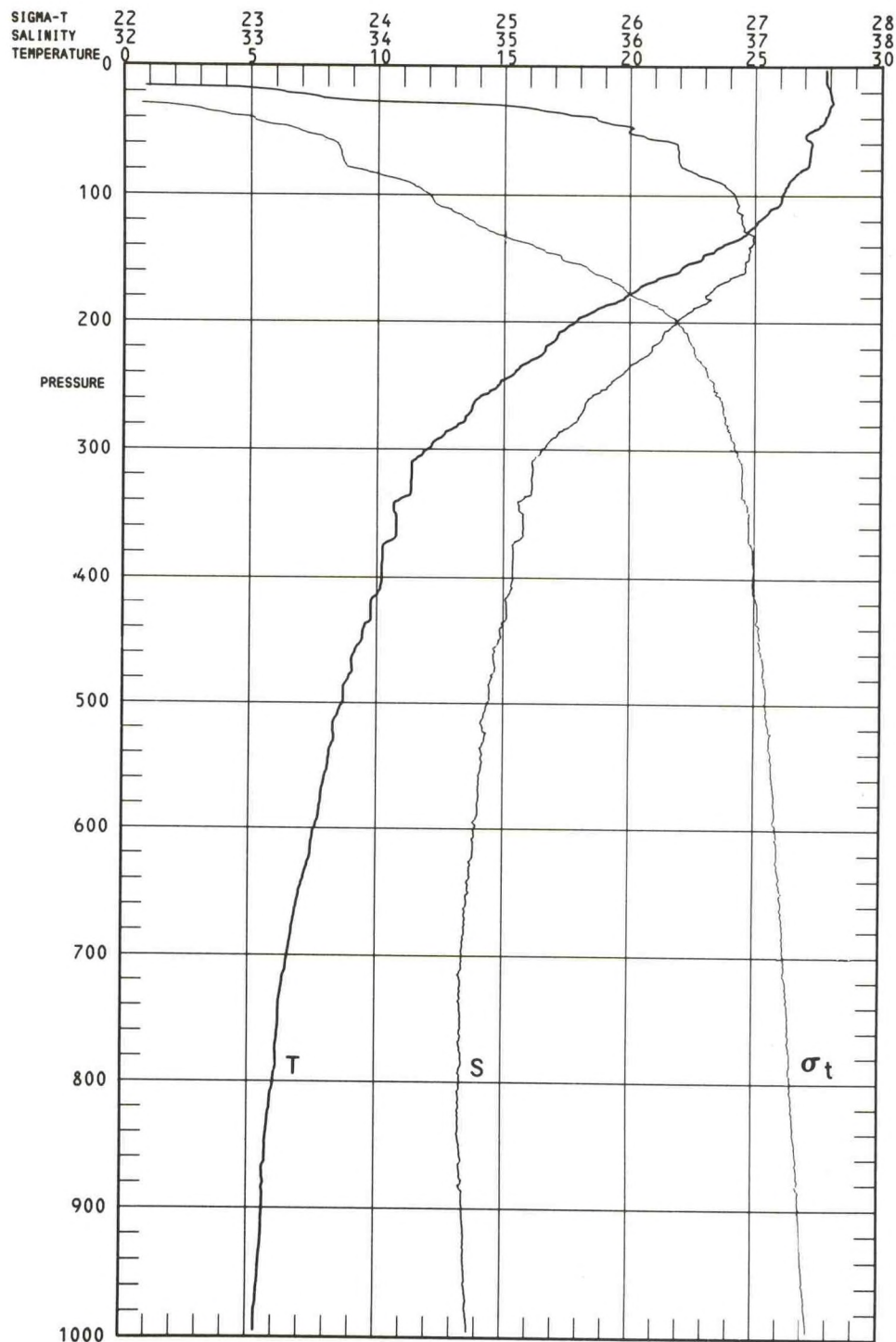
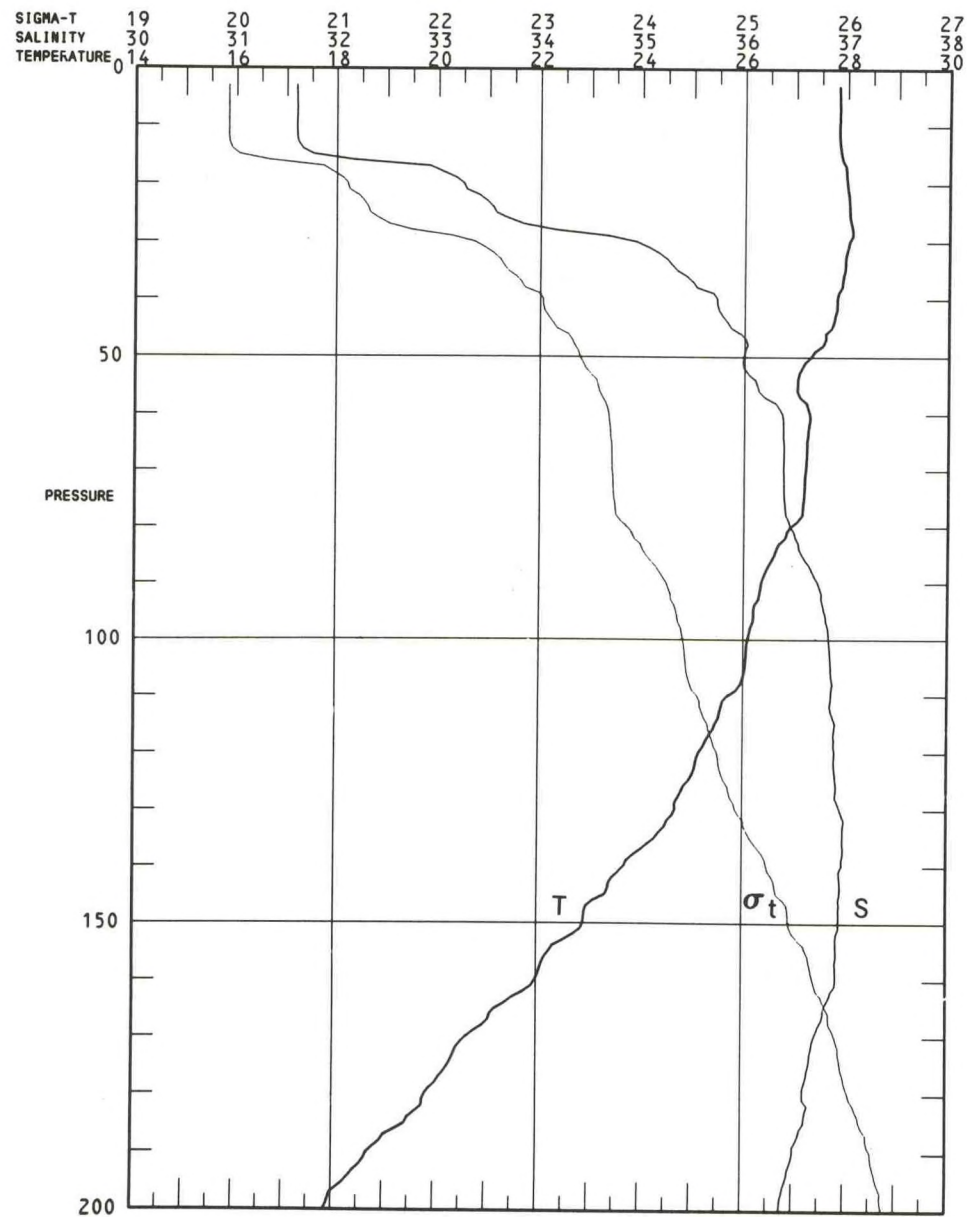
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 26, 1969, 0256 GMT, 13°08'N 053°51'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

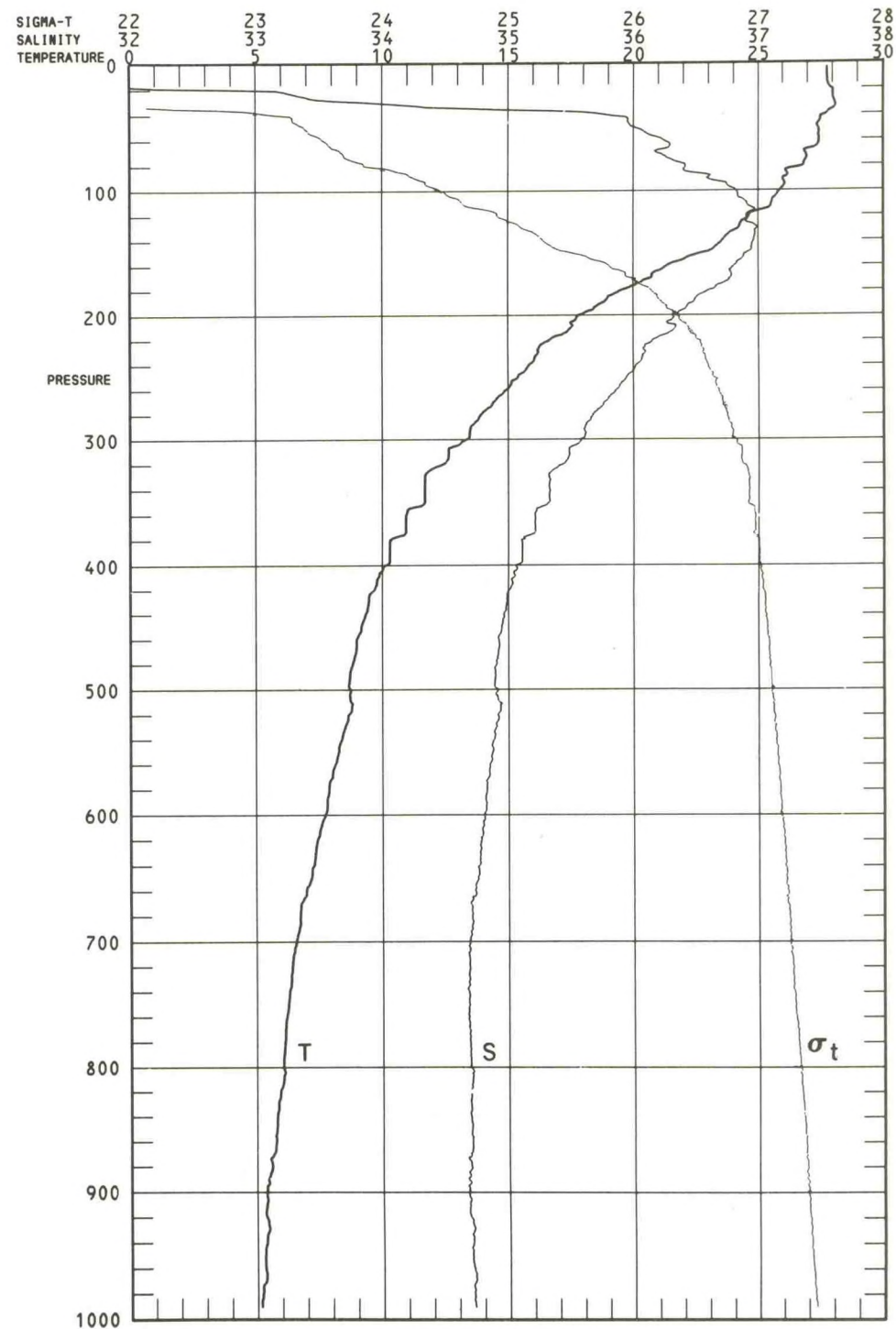
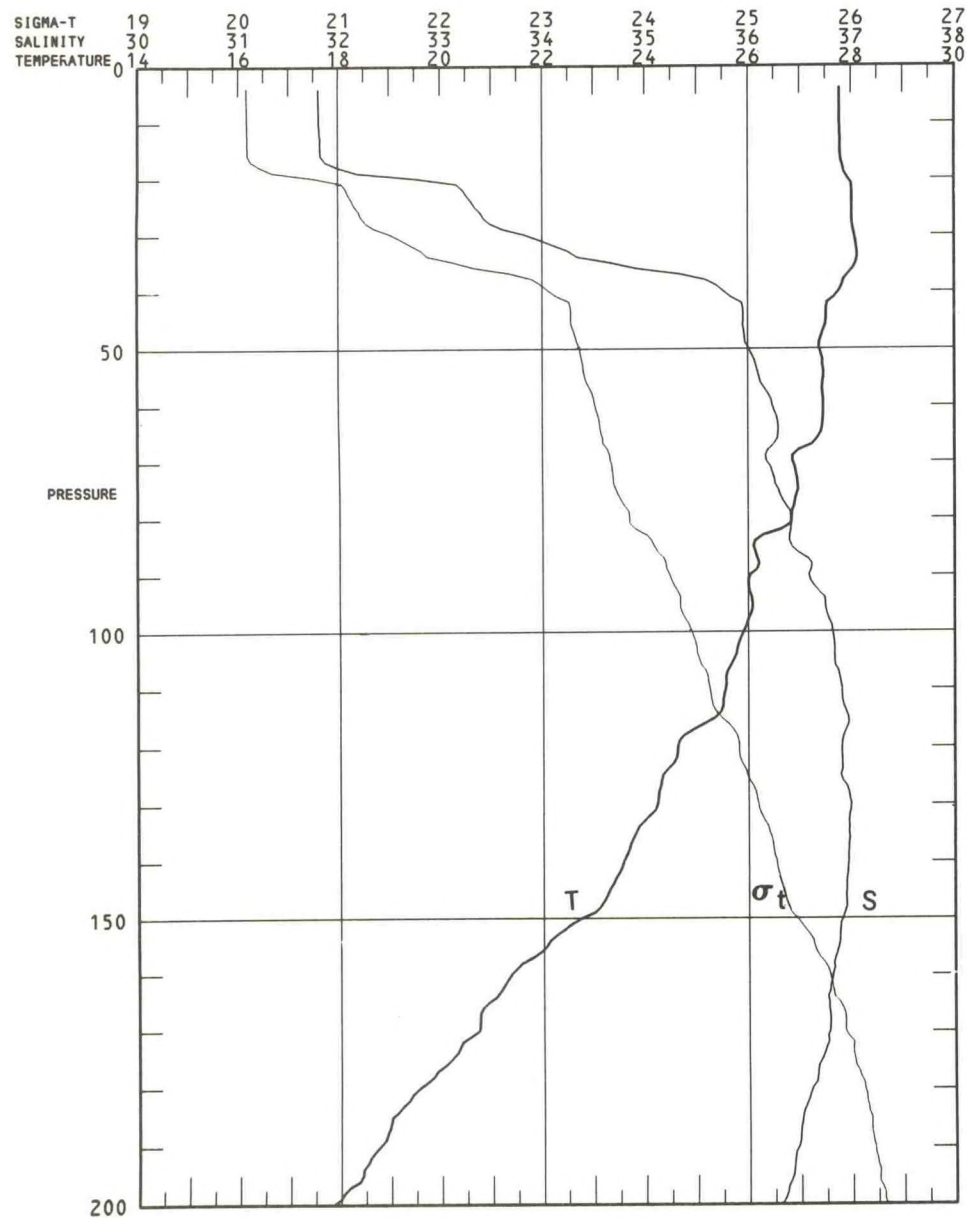


Discoverer, June 26, 1969, 0602 GMT, 13°08'N 053°51'W

DISCOVERER YEAR 1969 DAY 177 TIME 859 GMT LAT.13°08'N LON.053°51'W

# STD Depth-Sorted Plots

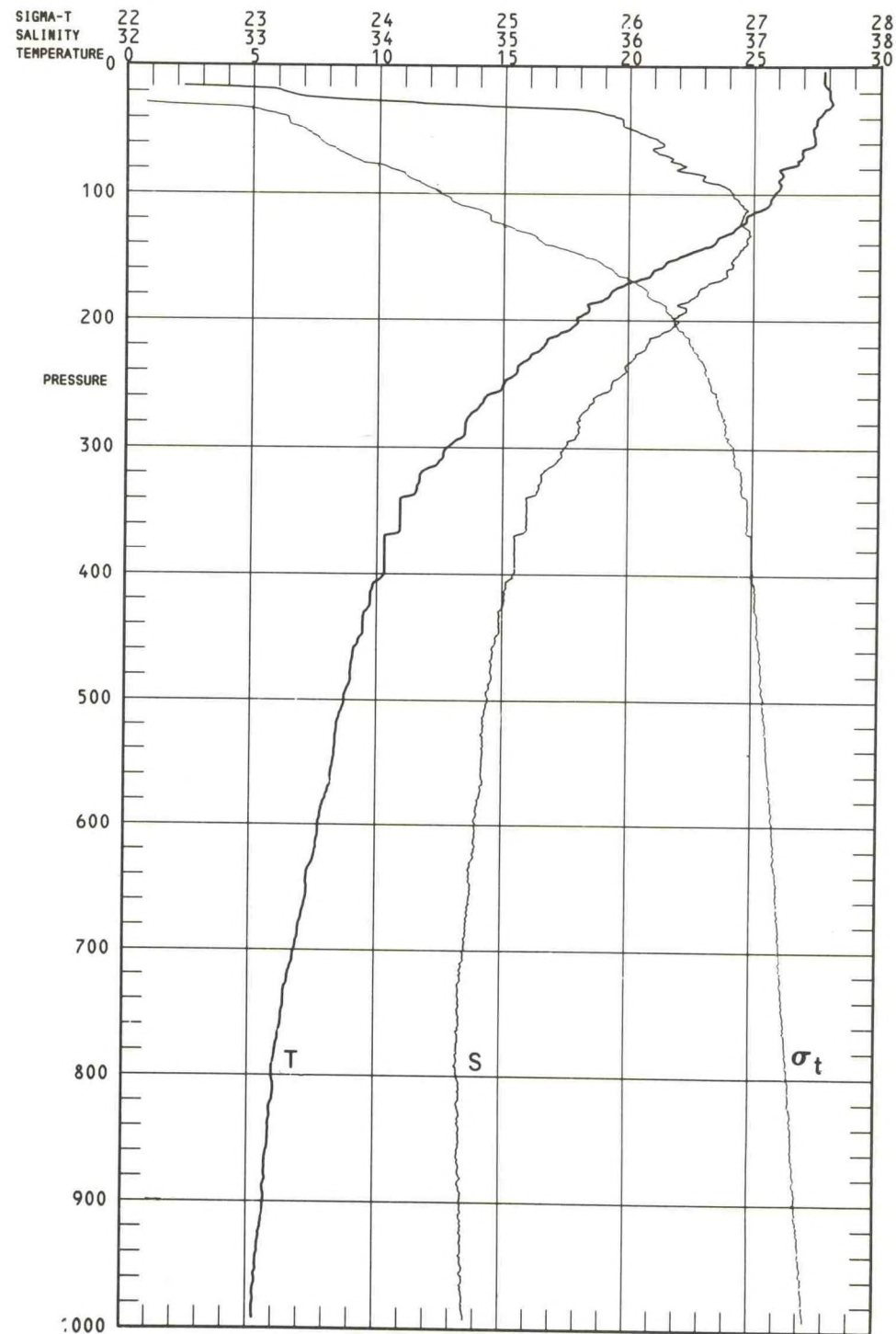
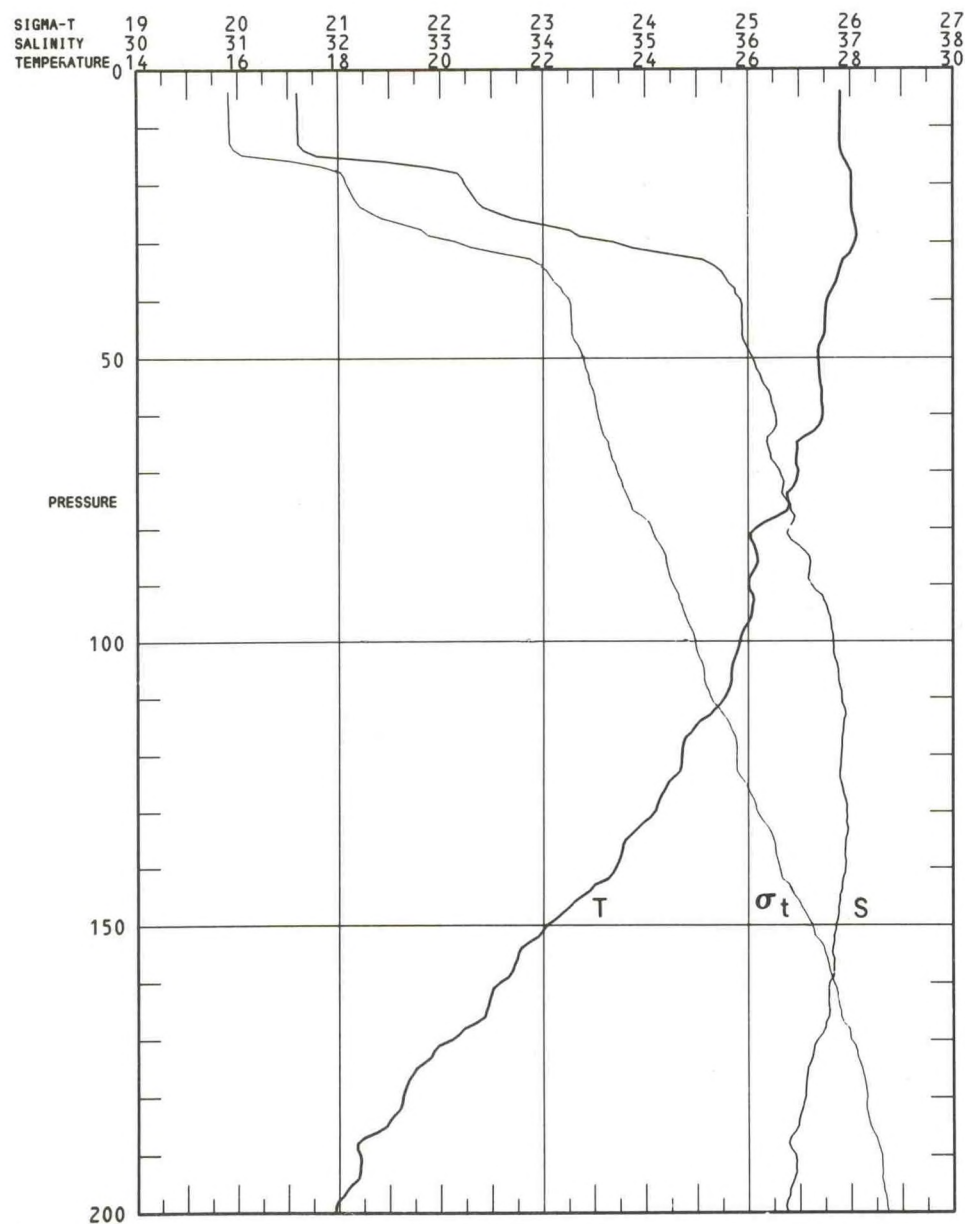
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 26, 1969, 0859 GMT, 13°08'N 053°51'W



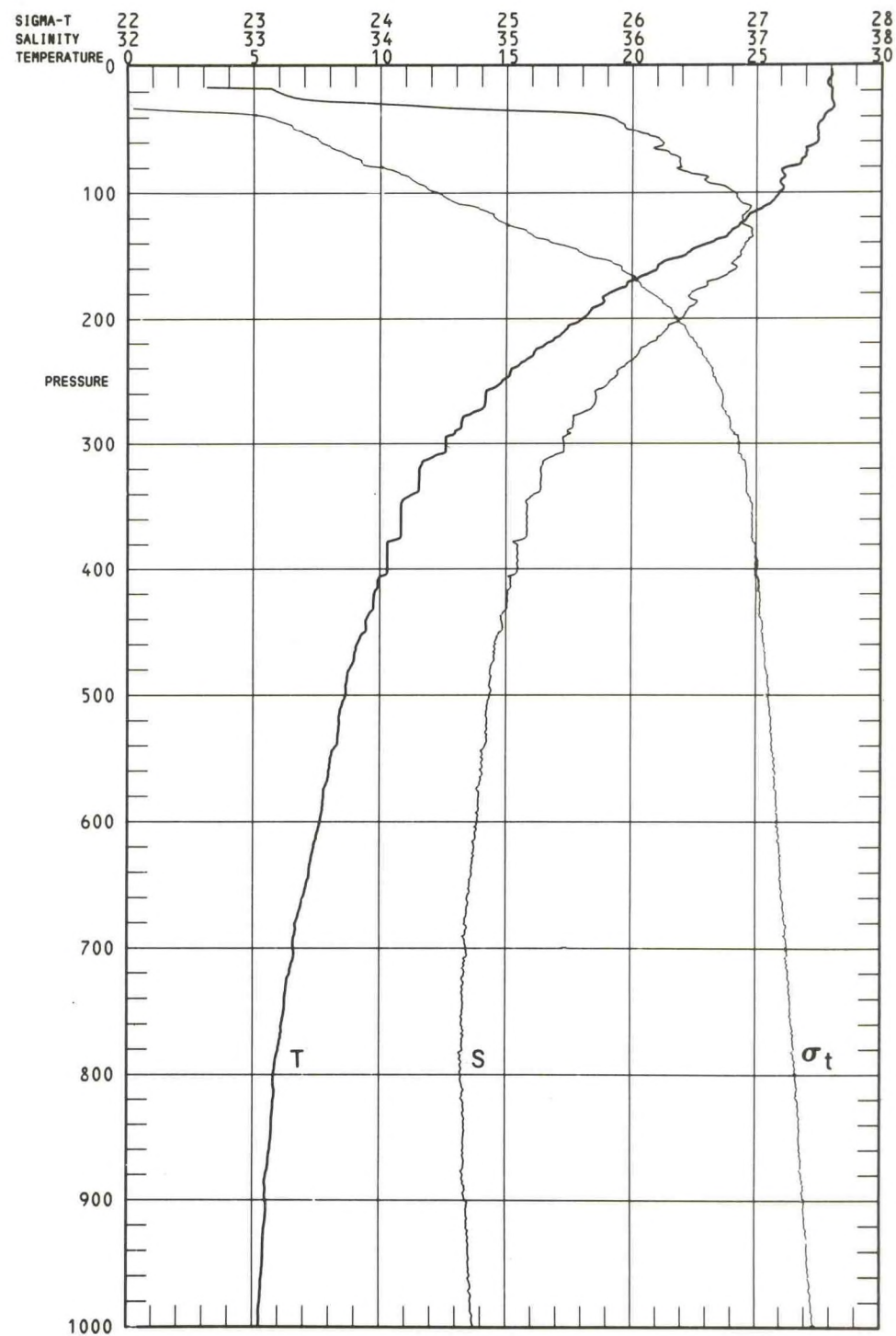
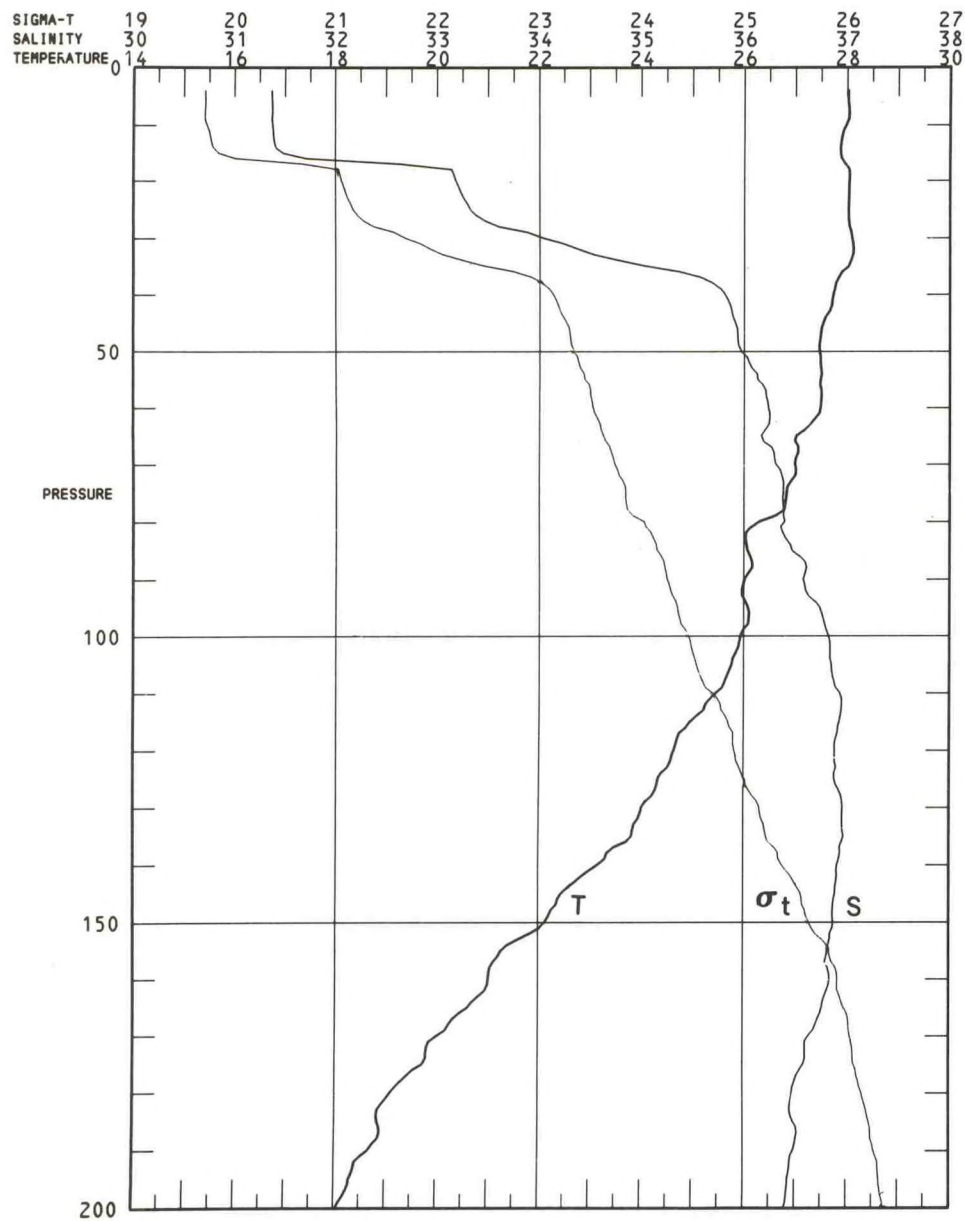
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 26, 1969, 1201 GMT, 13°08'N 053°51'W

DISCOVERER YEAR 1969 DAY 177 TIME 1516 GMT LAT.13°08'N LON.053°51'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

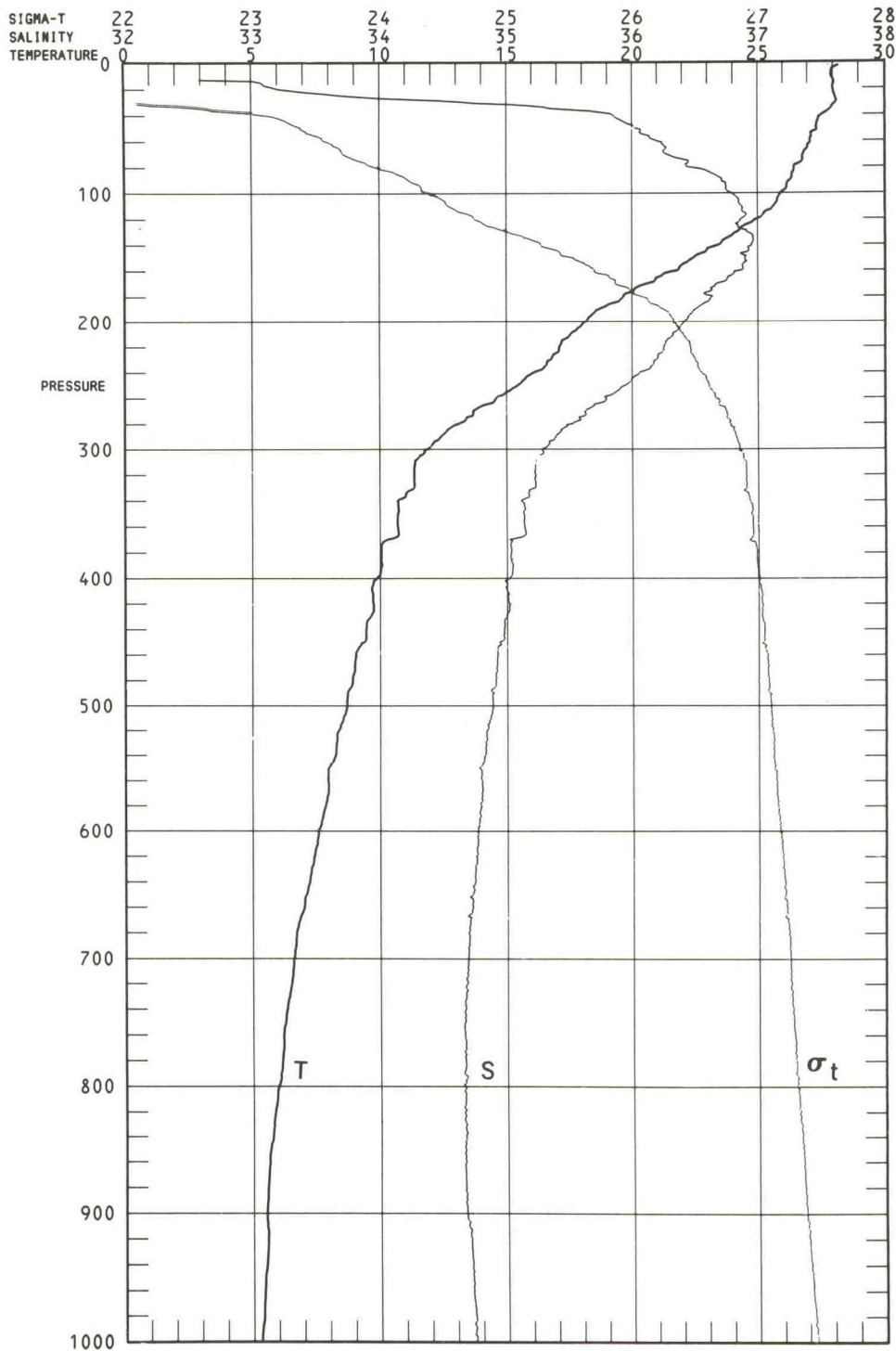
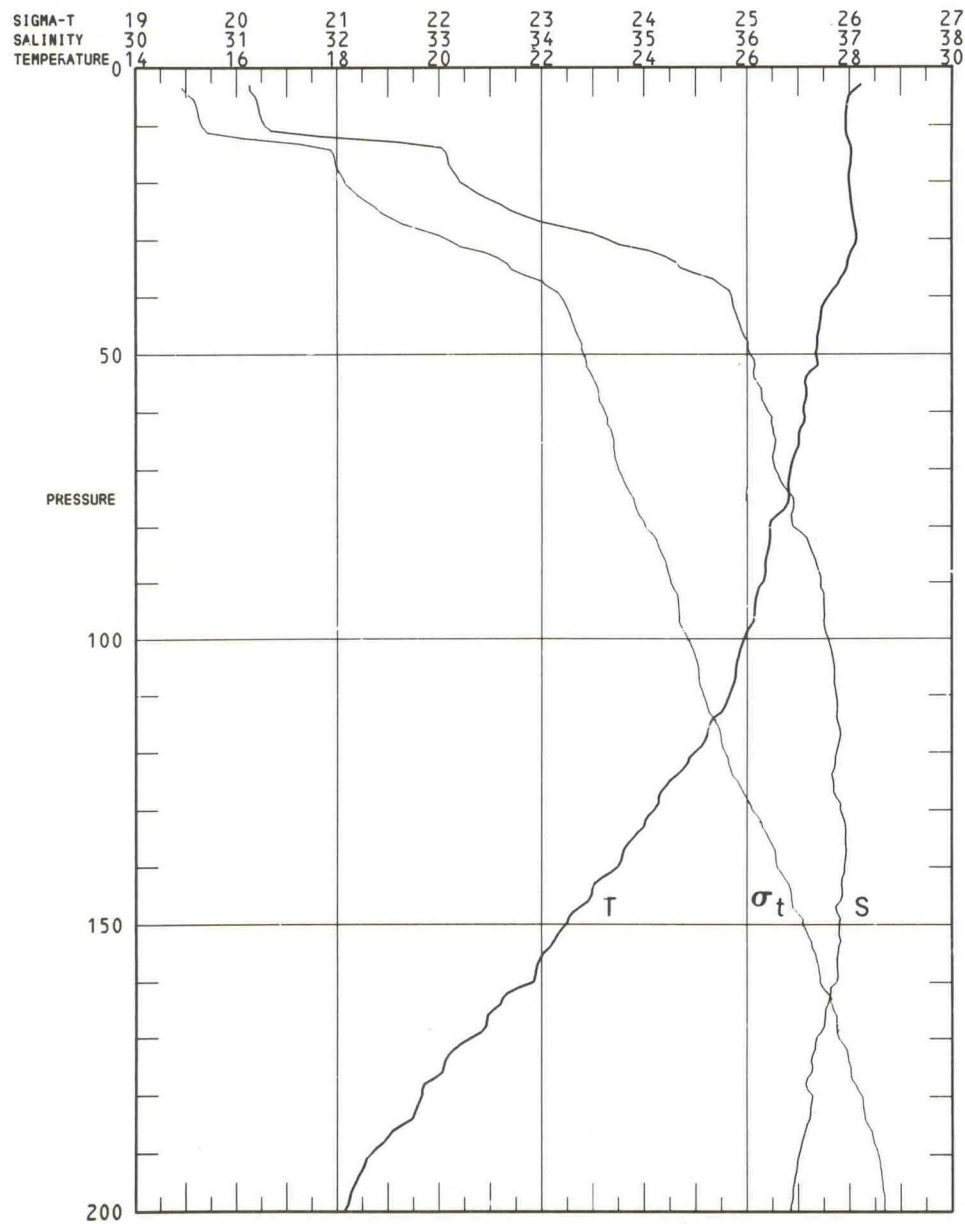


Discoverer, June 26, 1969, 1516 GMT, 13°08'N 053°51'W

DISCOVERER YEAR 1969 DAY 177 TIME 1759 GMT LAT.13°08'N LON.053°51'W

# STD Depth-Sorted Plots

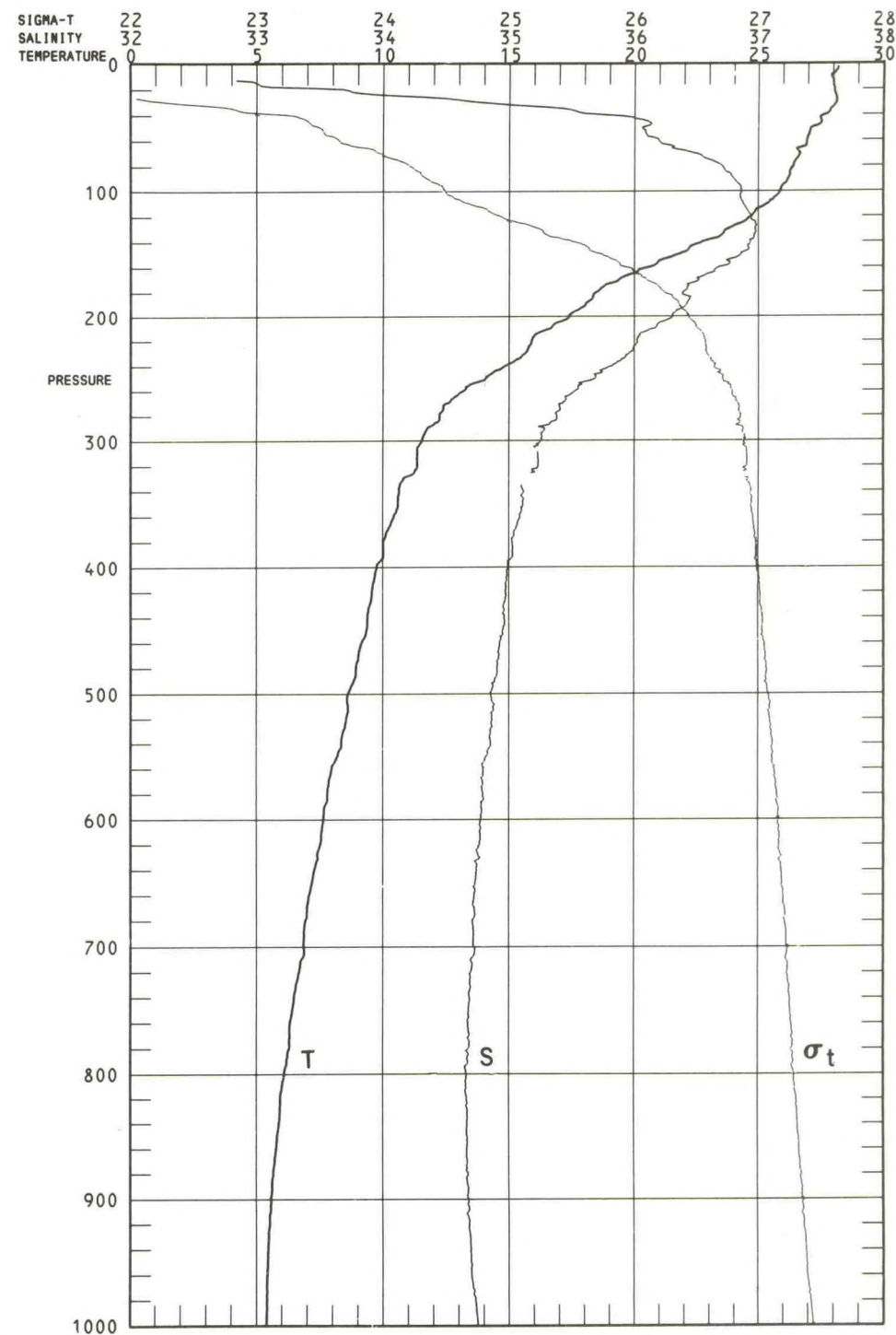
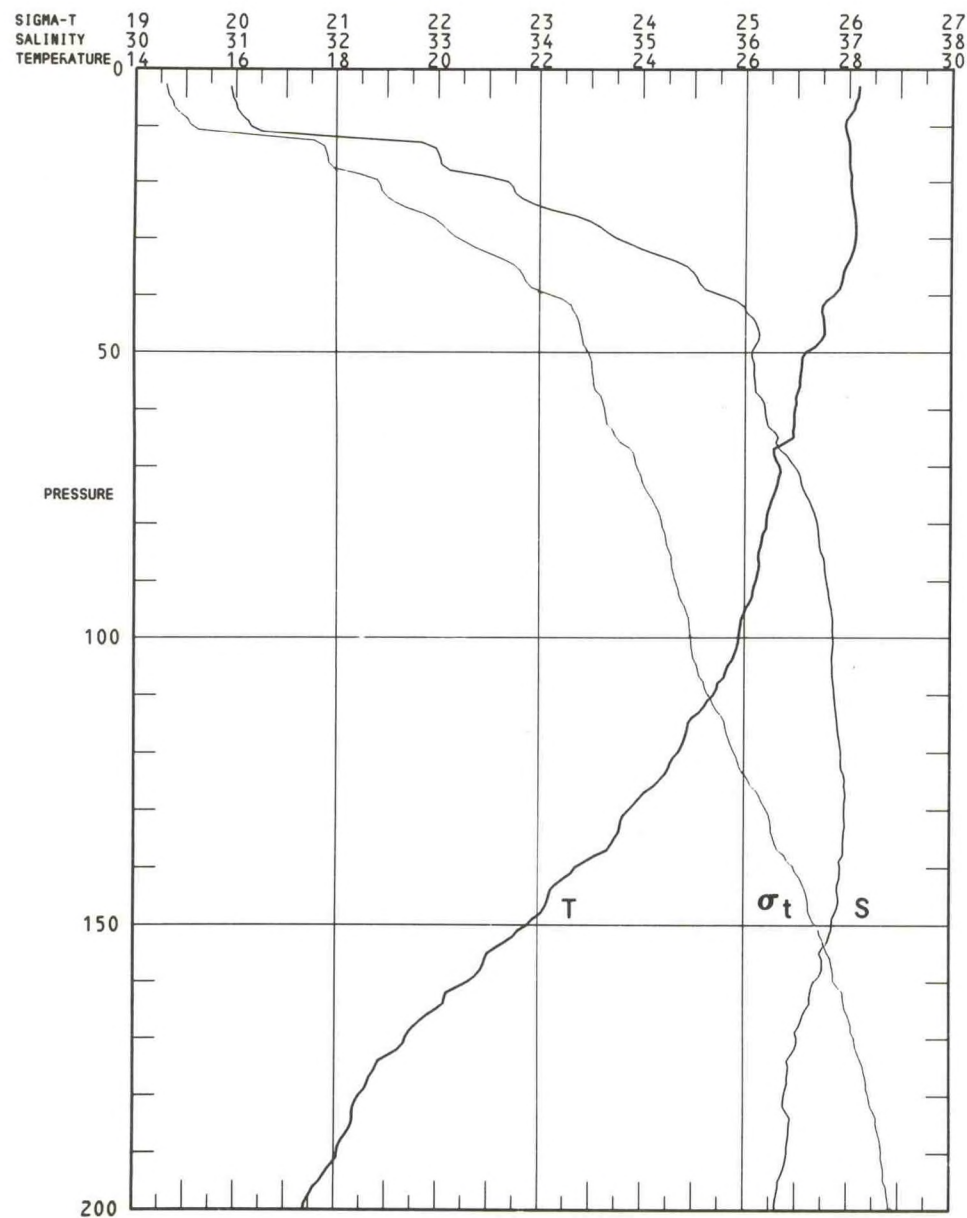
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 26, 1969, 1759 GMT, 13°08'N 053°51'W

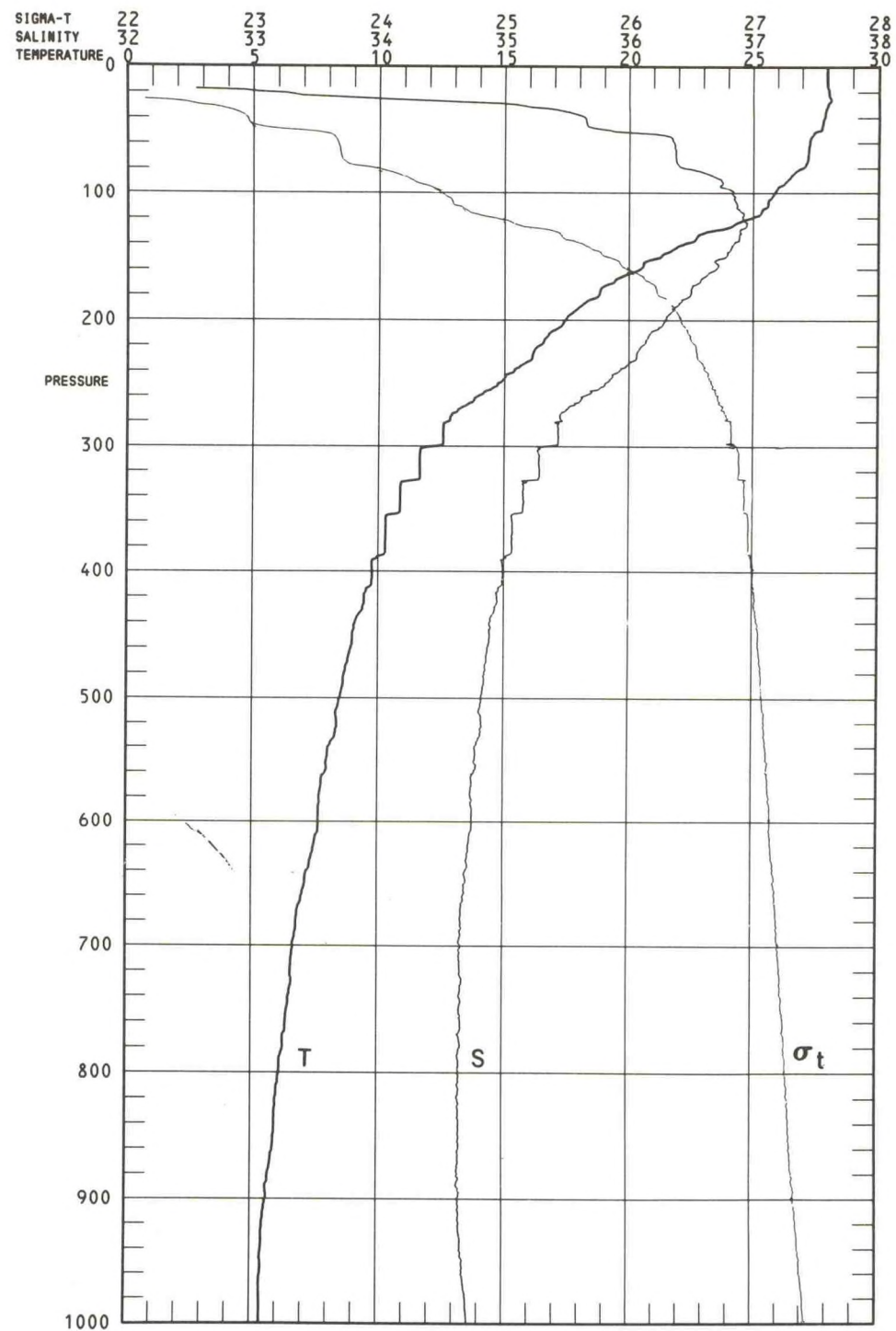
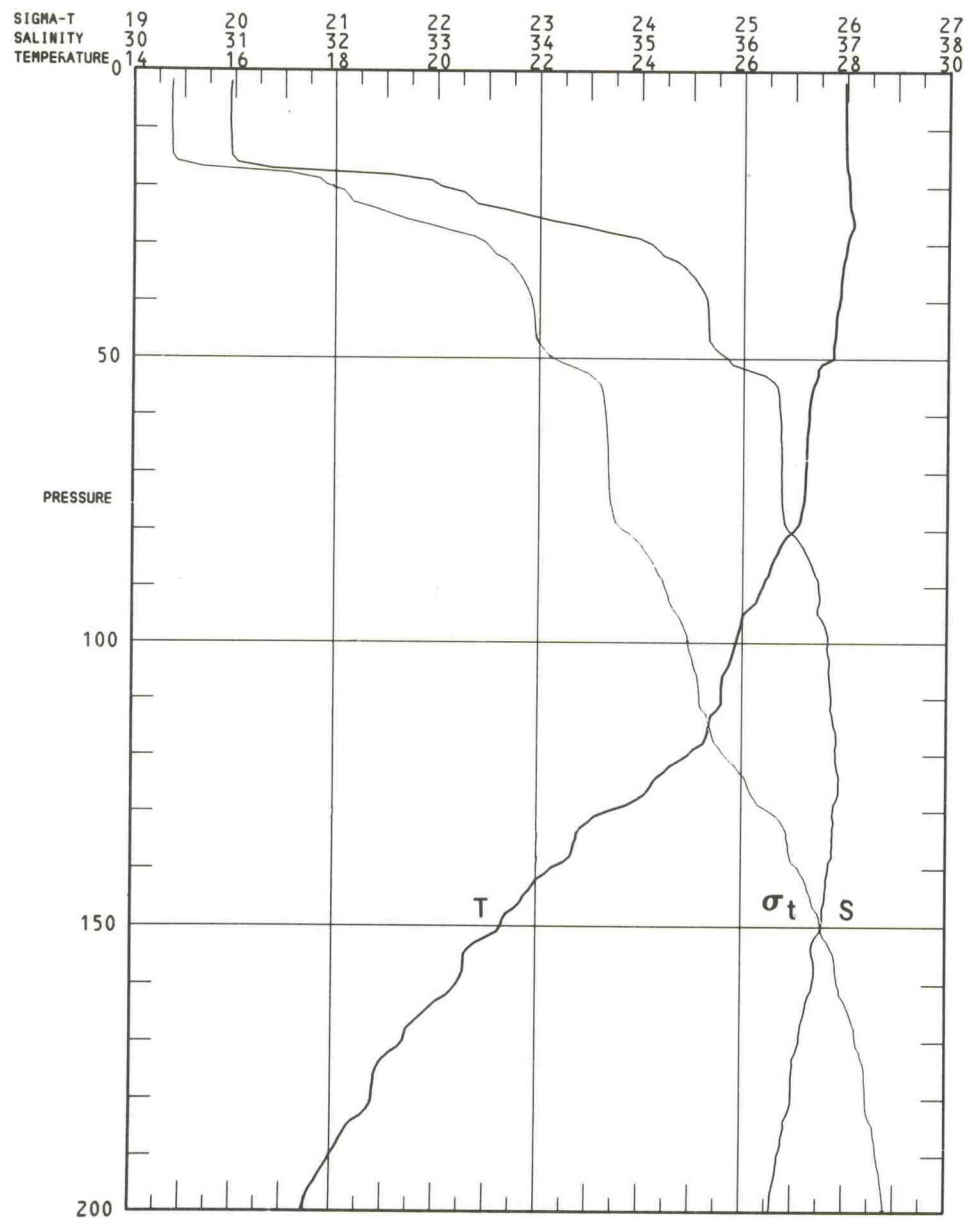


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 26, 1969, 2102 GMT, 13°08'N 053°51'W

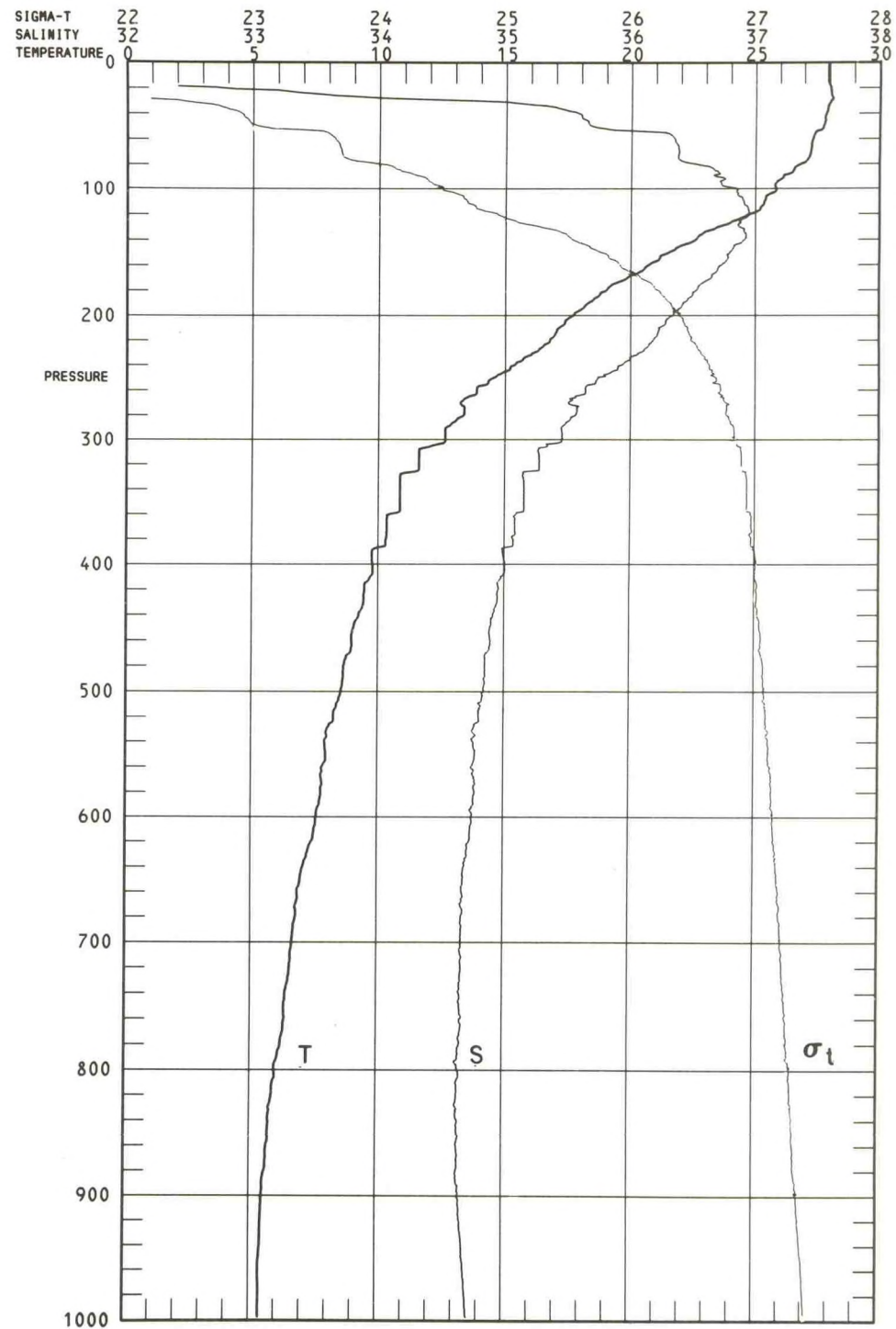
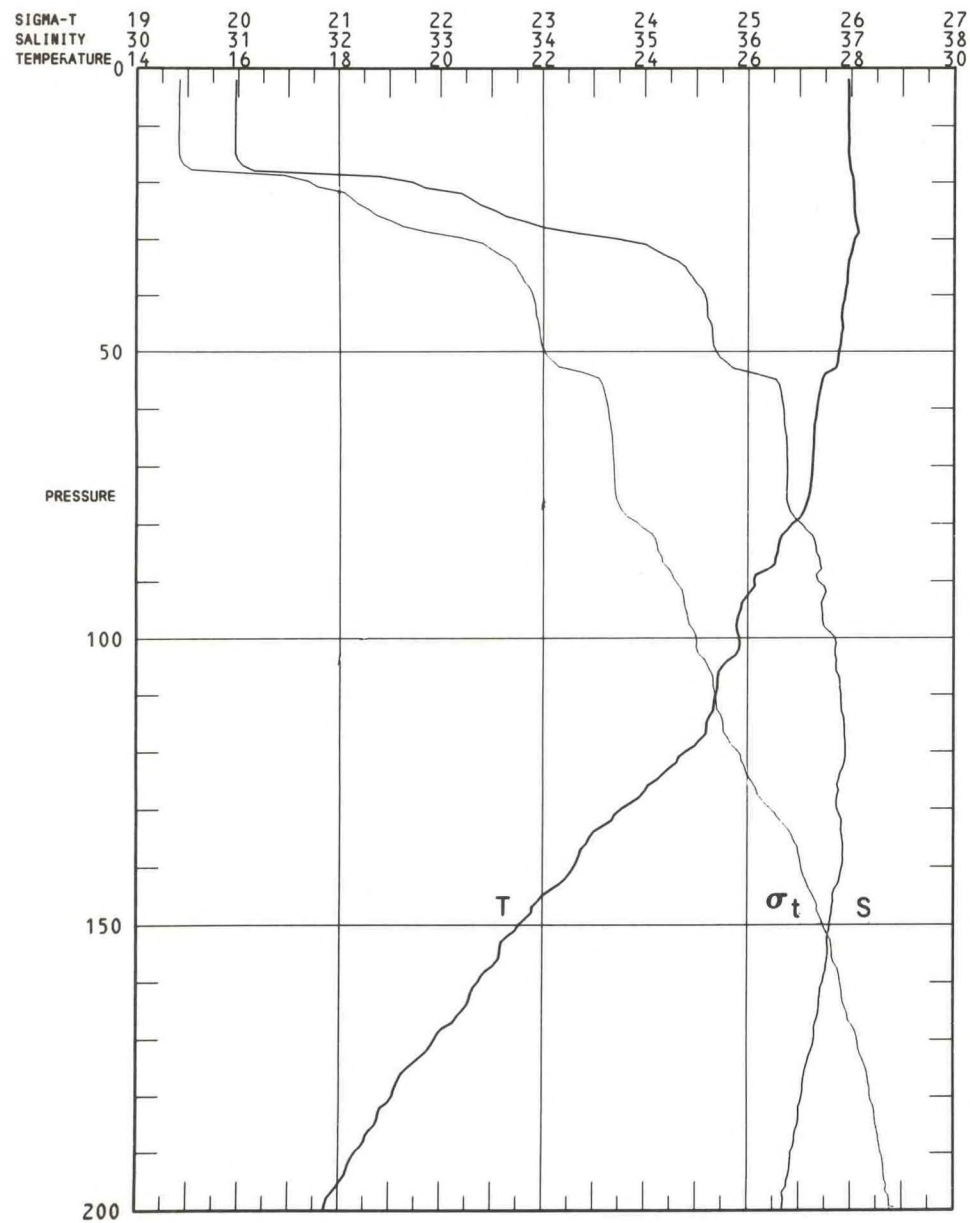
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 27, 1969, 0059 GMT, 13°08'N 053°51'W

# STD Depth-Sorted Plots

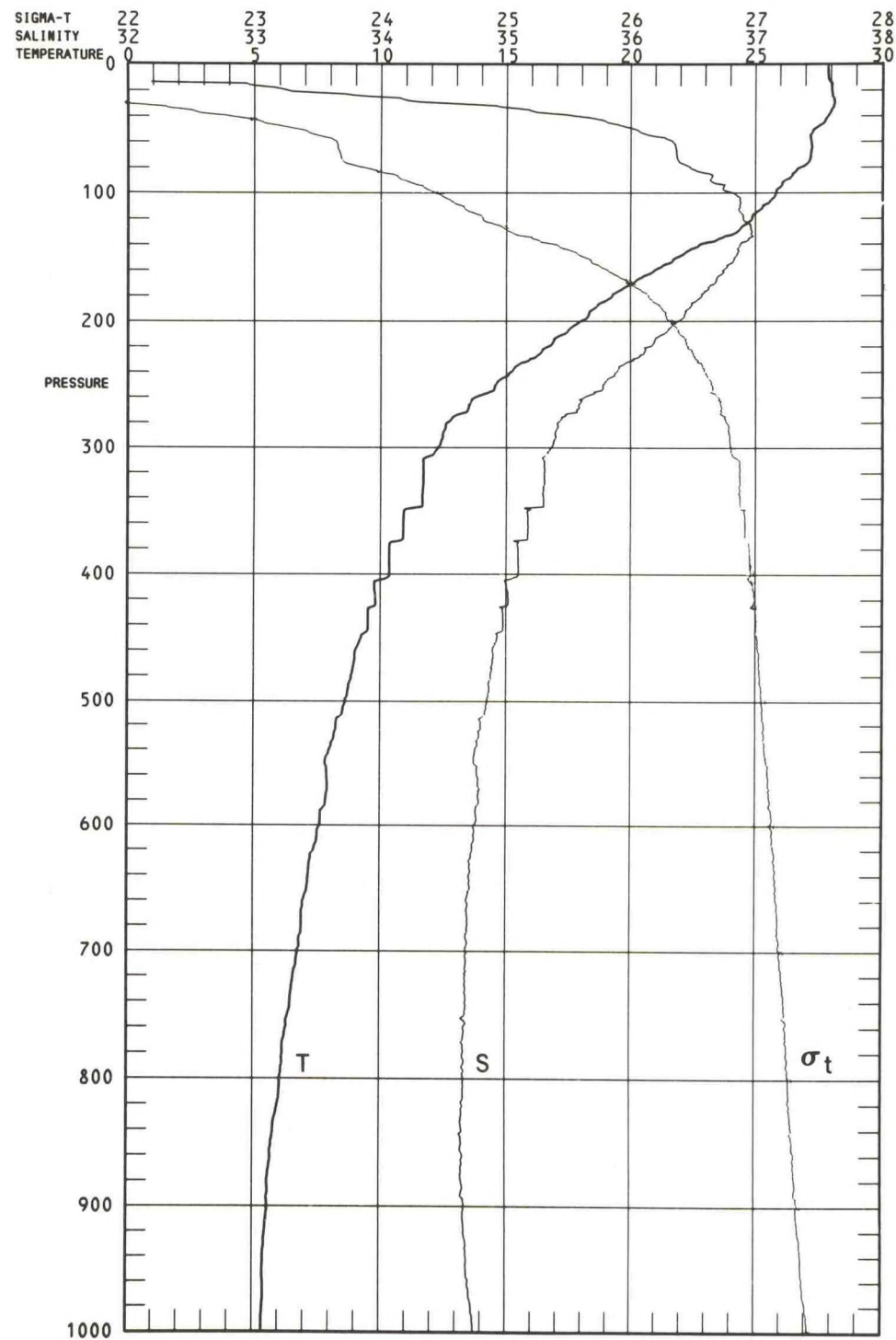
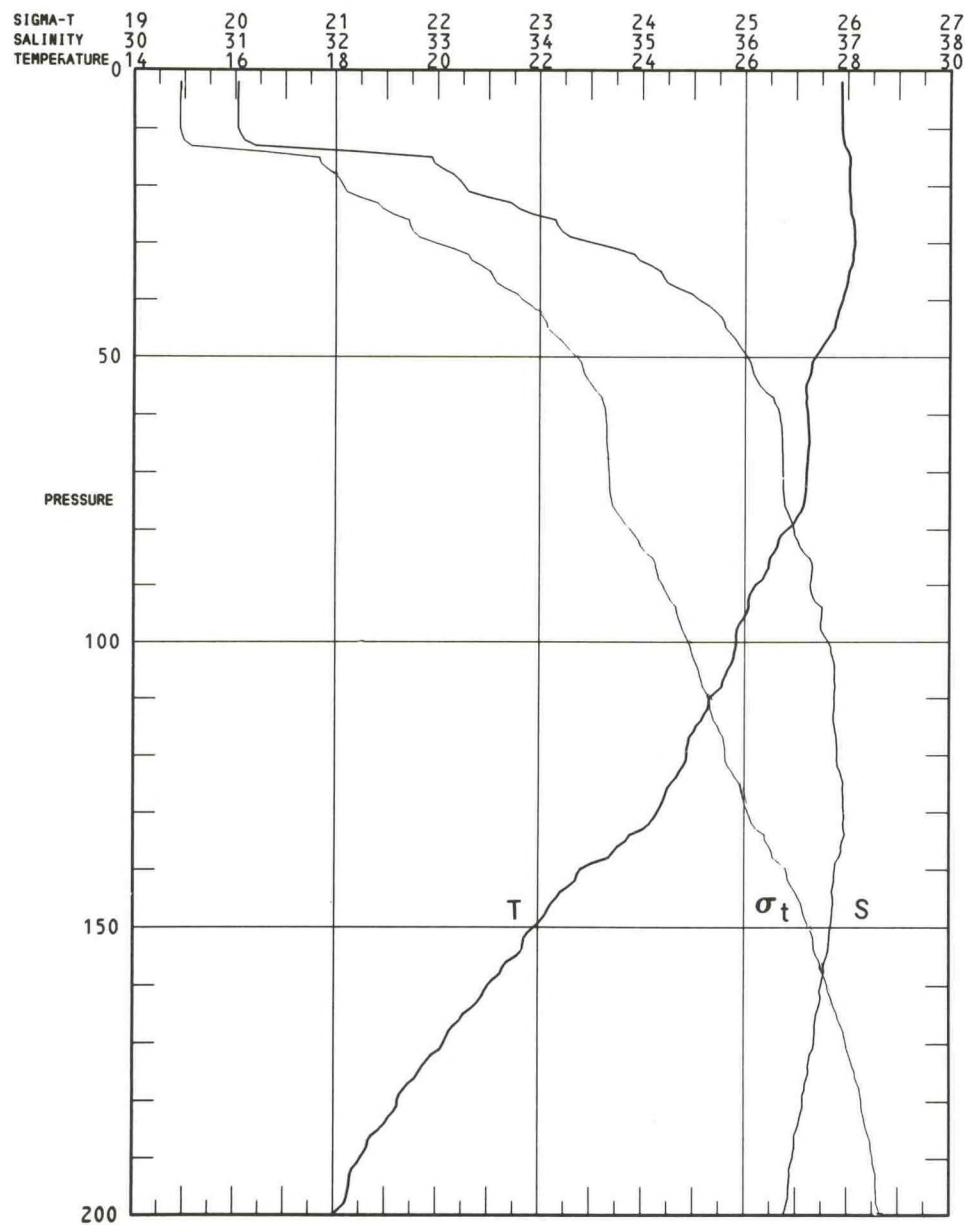
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 27, 1969, 0259 GMT, 13°08'N 053°51'W



STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

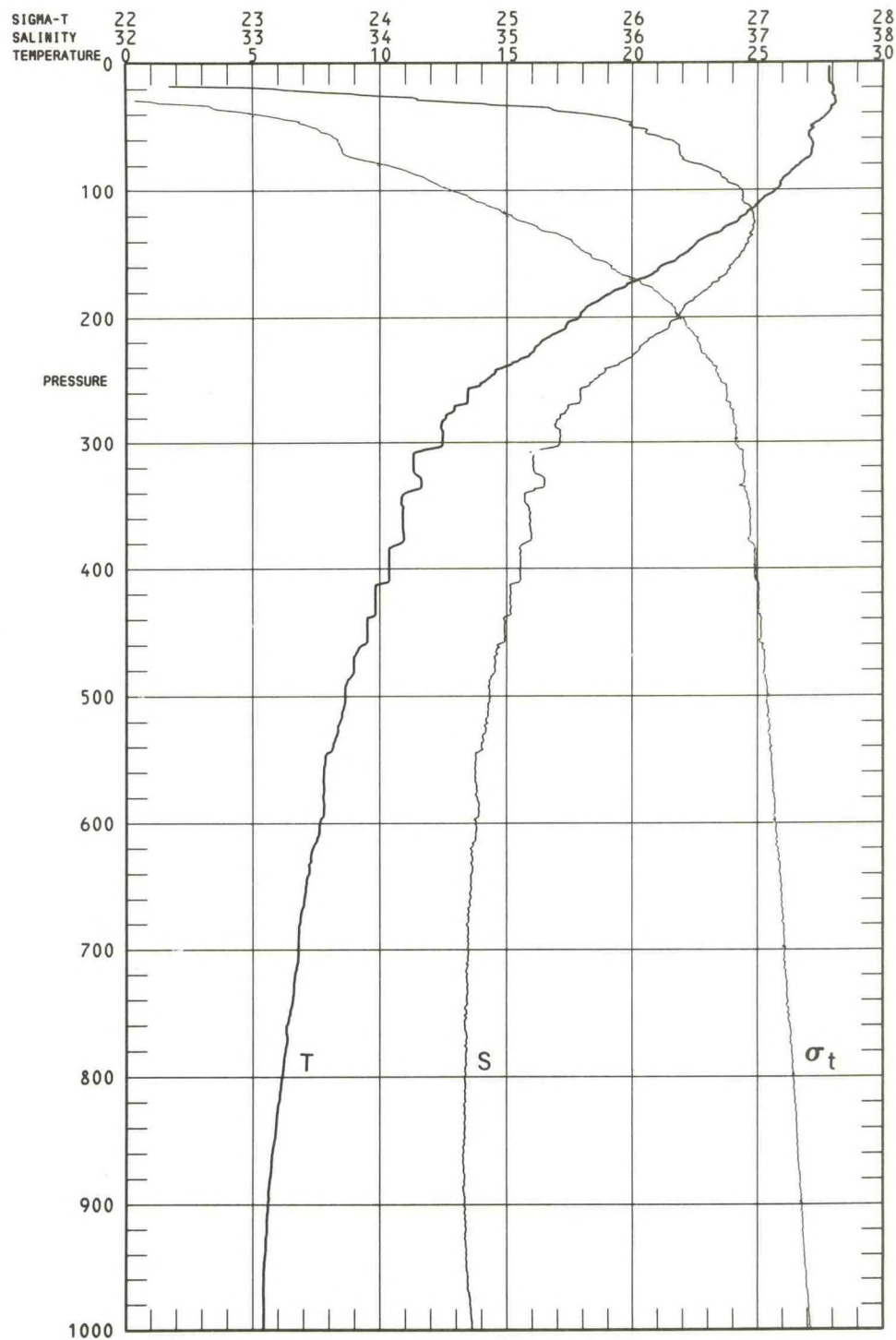
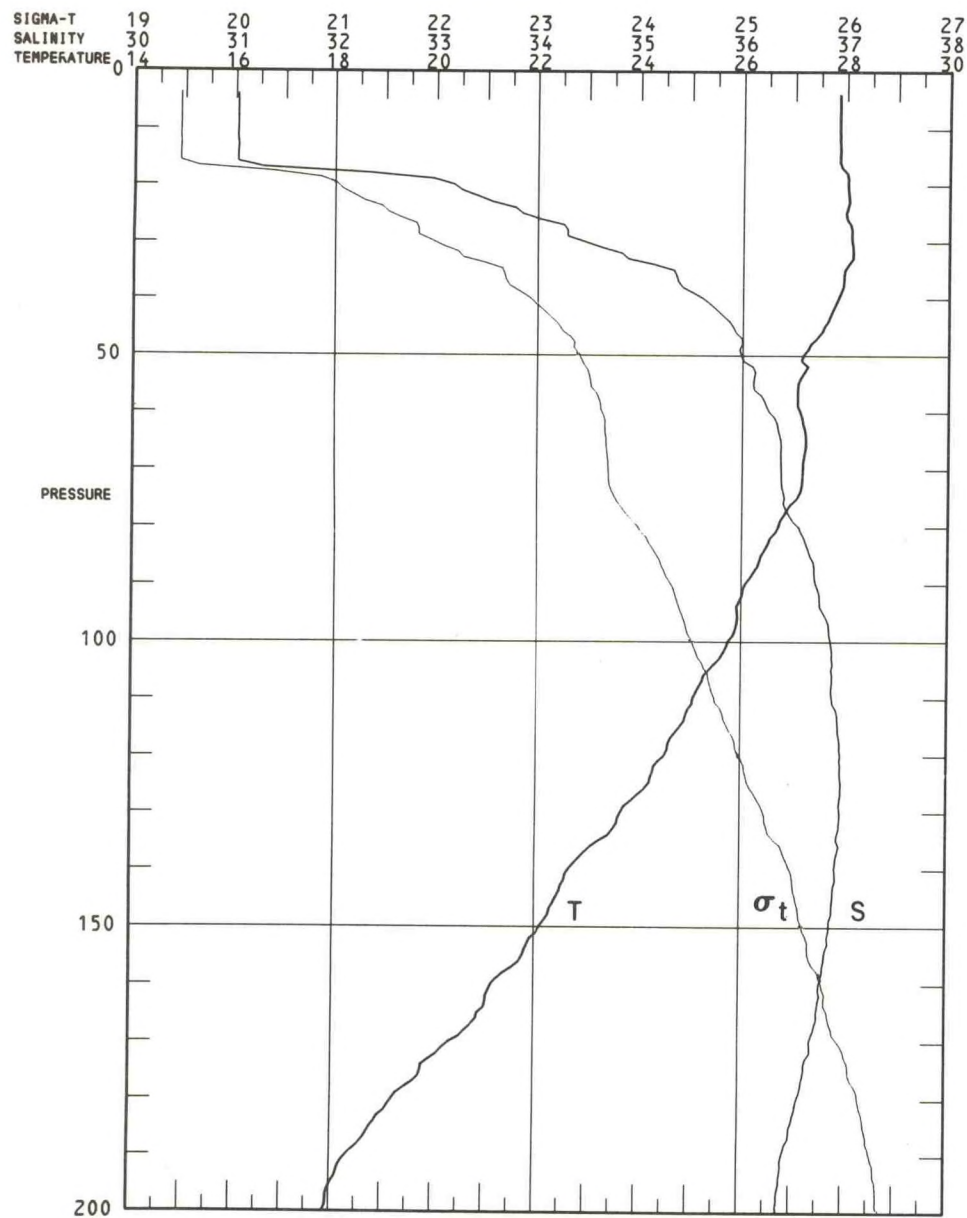


Discoverer, June 28, 1969. 0559 GMT, 13°06'N 053°55'W

DISCOVERER YEAR 1969 DAY 179 TIME 858 GMT LAT.13°07'N LON.053°58'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

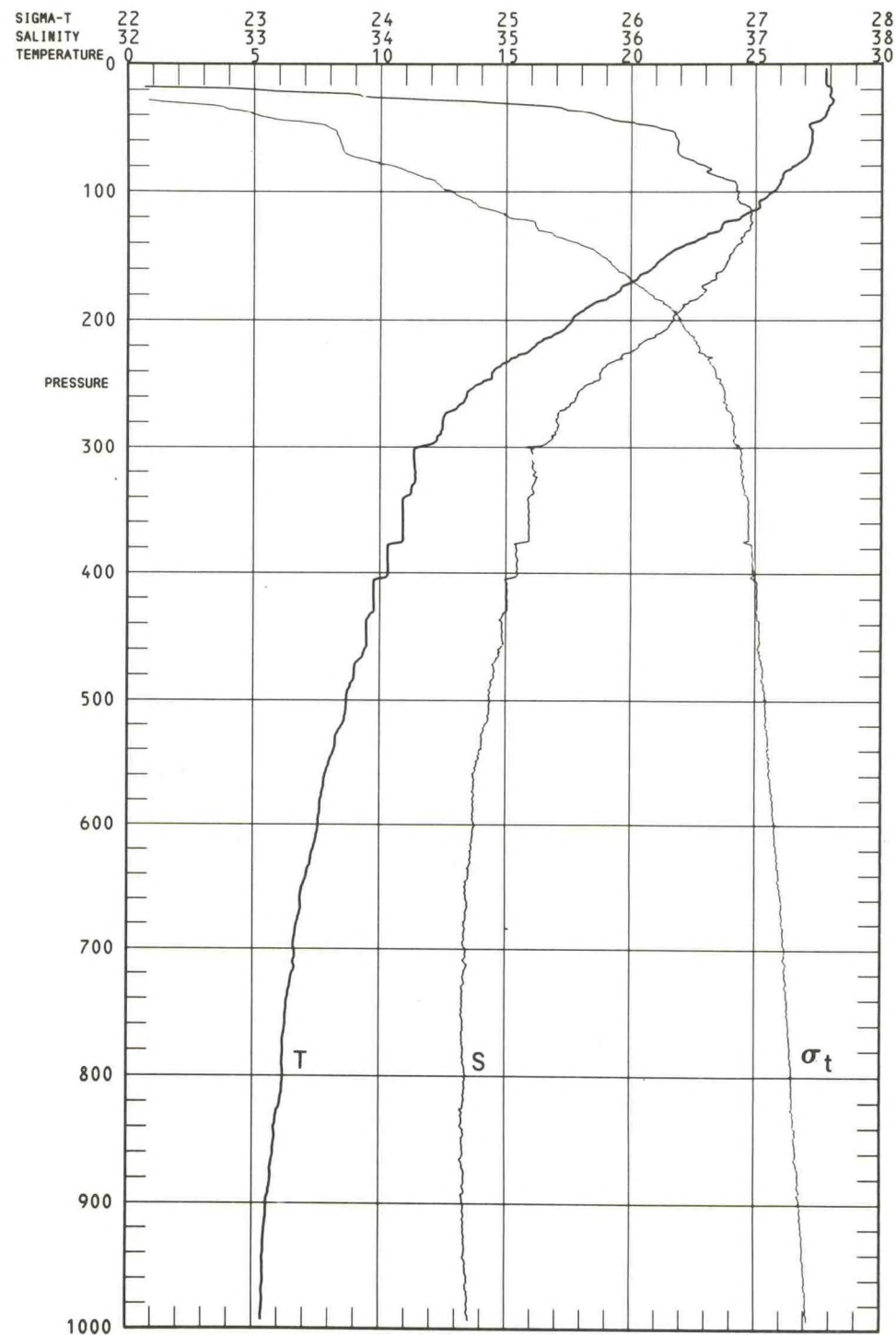
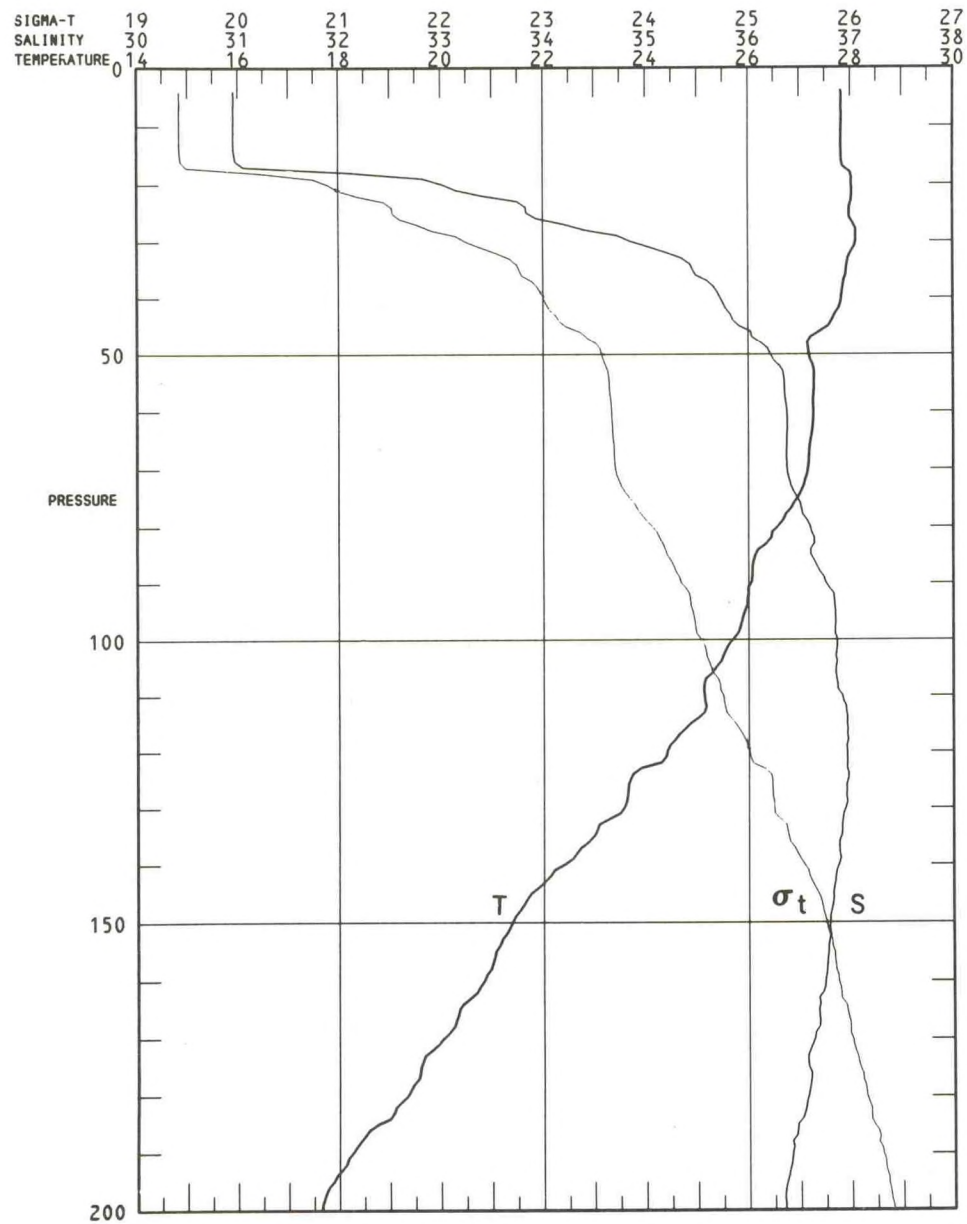


Discoverer, June 28, 1969, 0858 GMT, 13°07'N 053°58'W

DISCOVERER YEAR 1969 DAY 179 TIME 1206 GMT LAT.13°00N LON.053°46W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

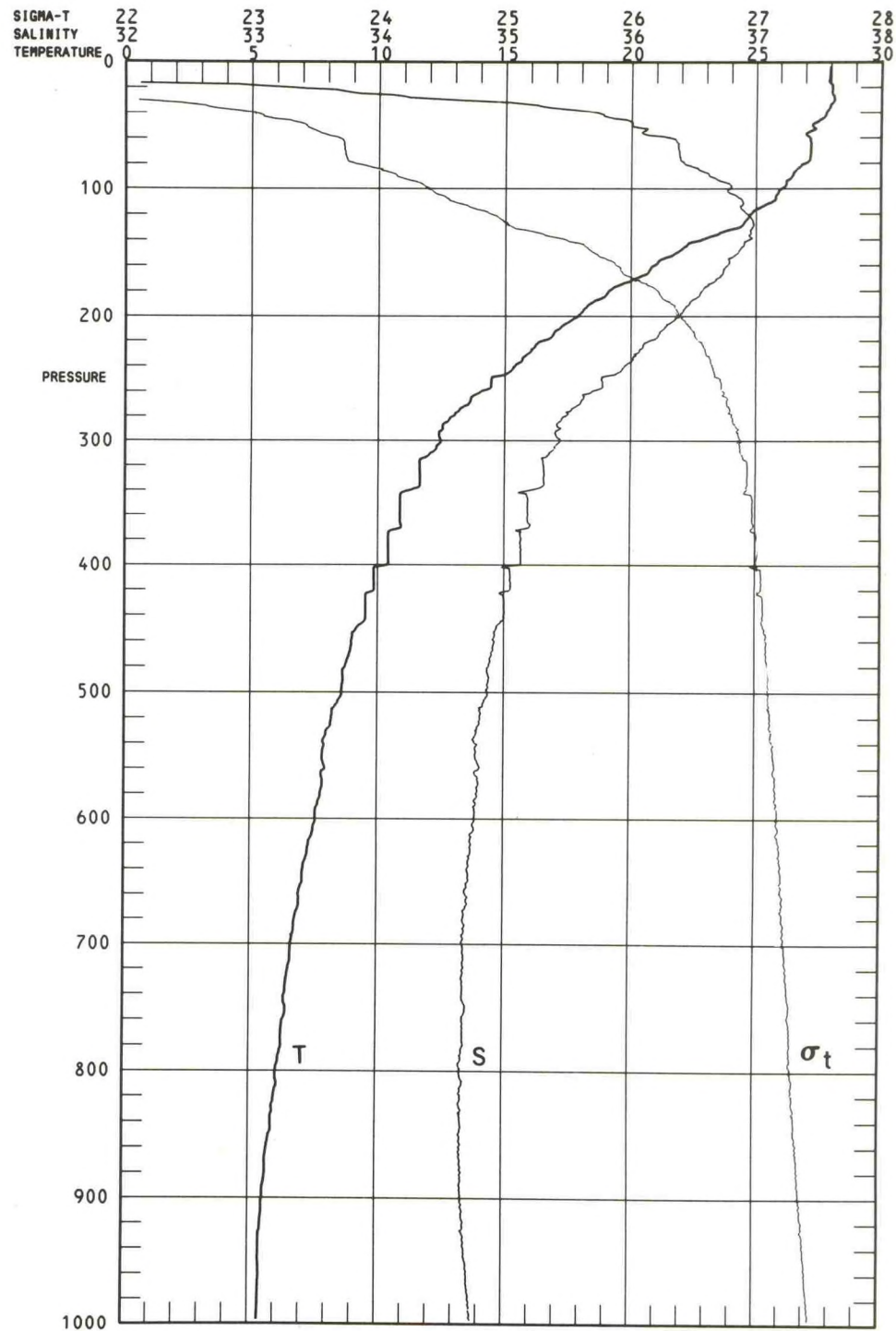
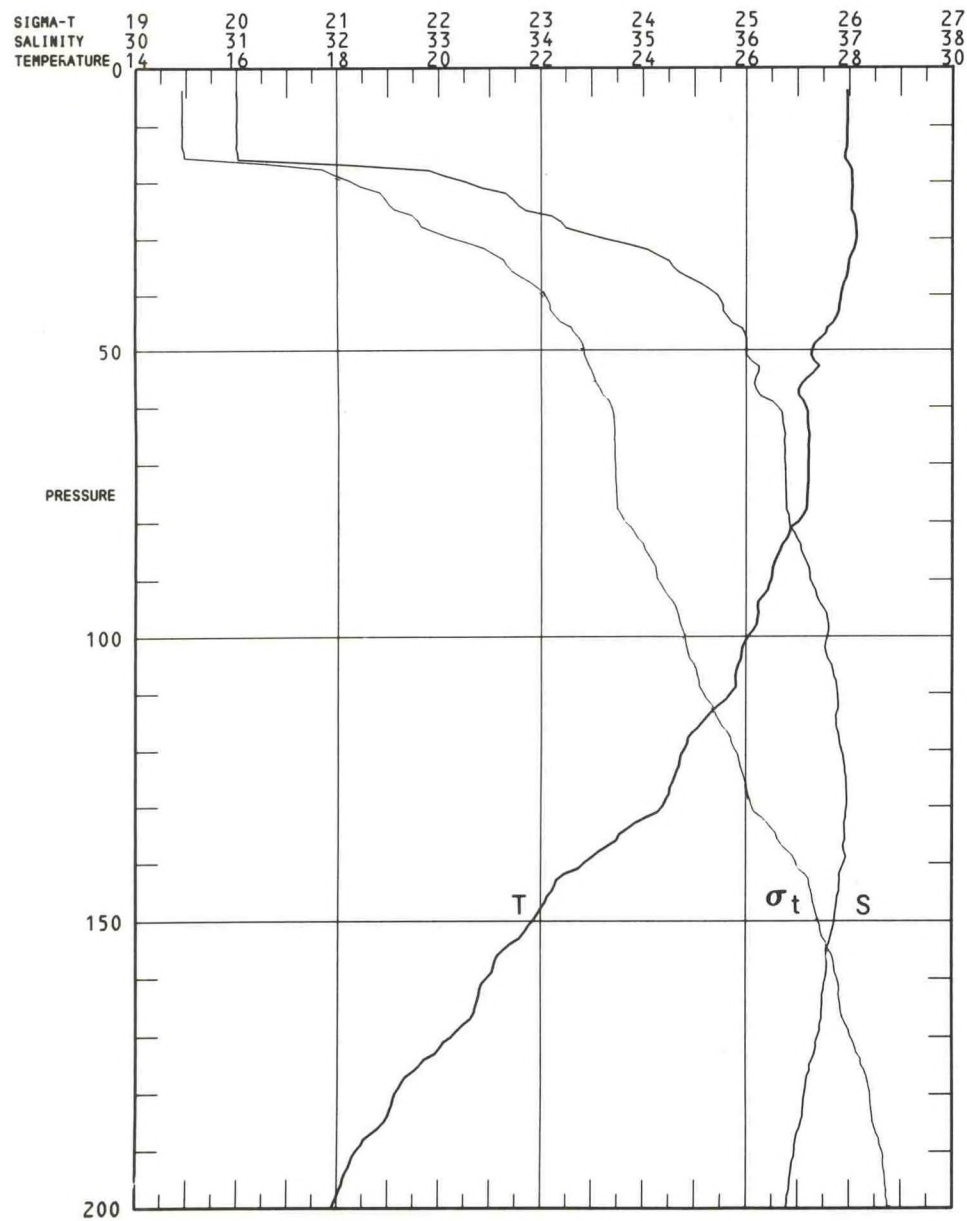


Discoverer, June 28, 1969, 1206 GMT, 13°00'N 053°46'W



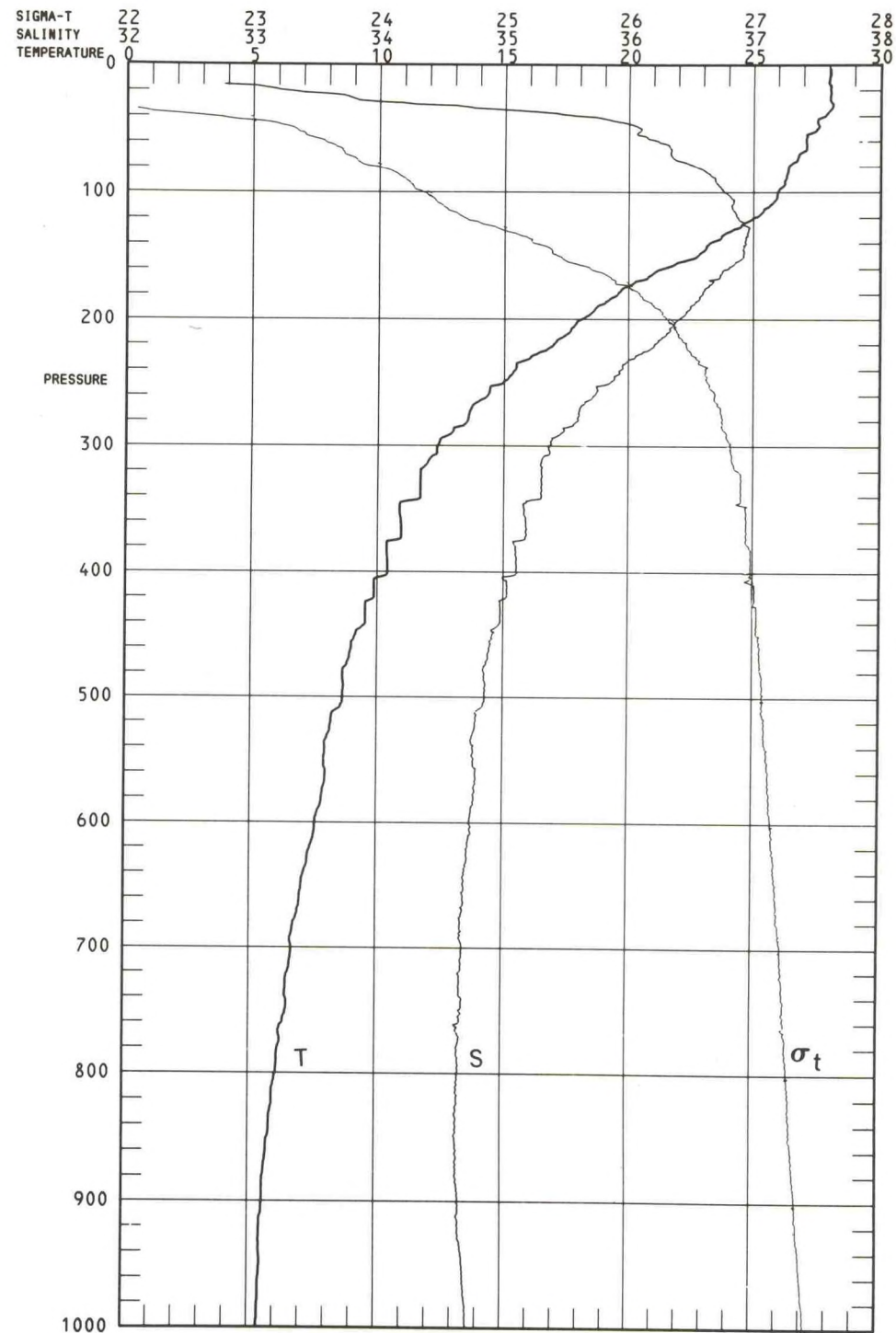
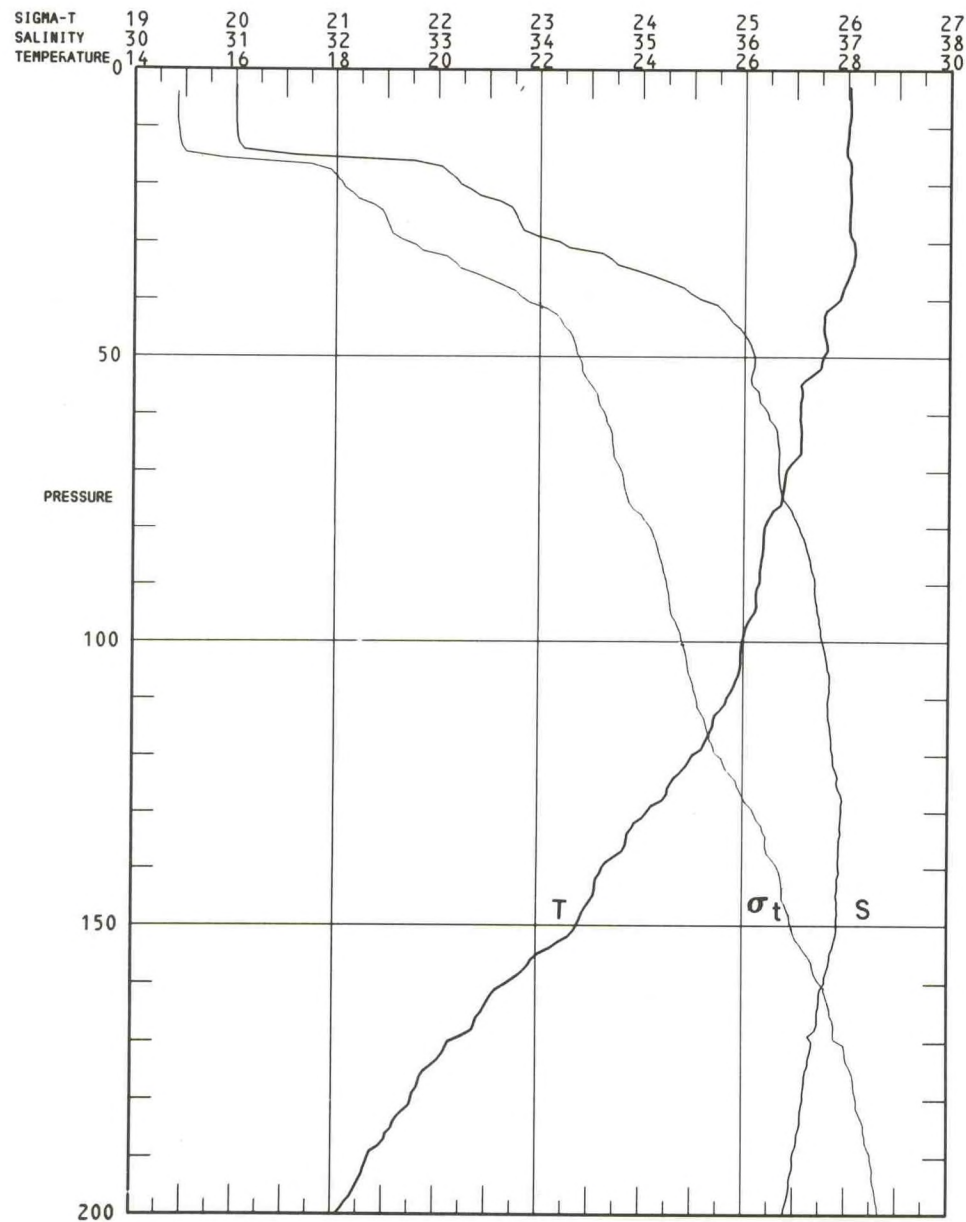
DISCOVERER YEAR 1969 DAY 179 TIME 1459 GMT LAT.13°04'N LON.053°51'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 28, 1969, 1459 GMT, 13°04'N 053°51'W

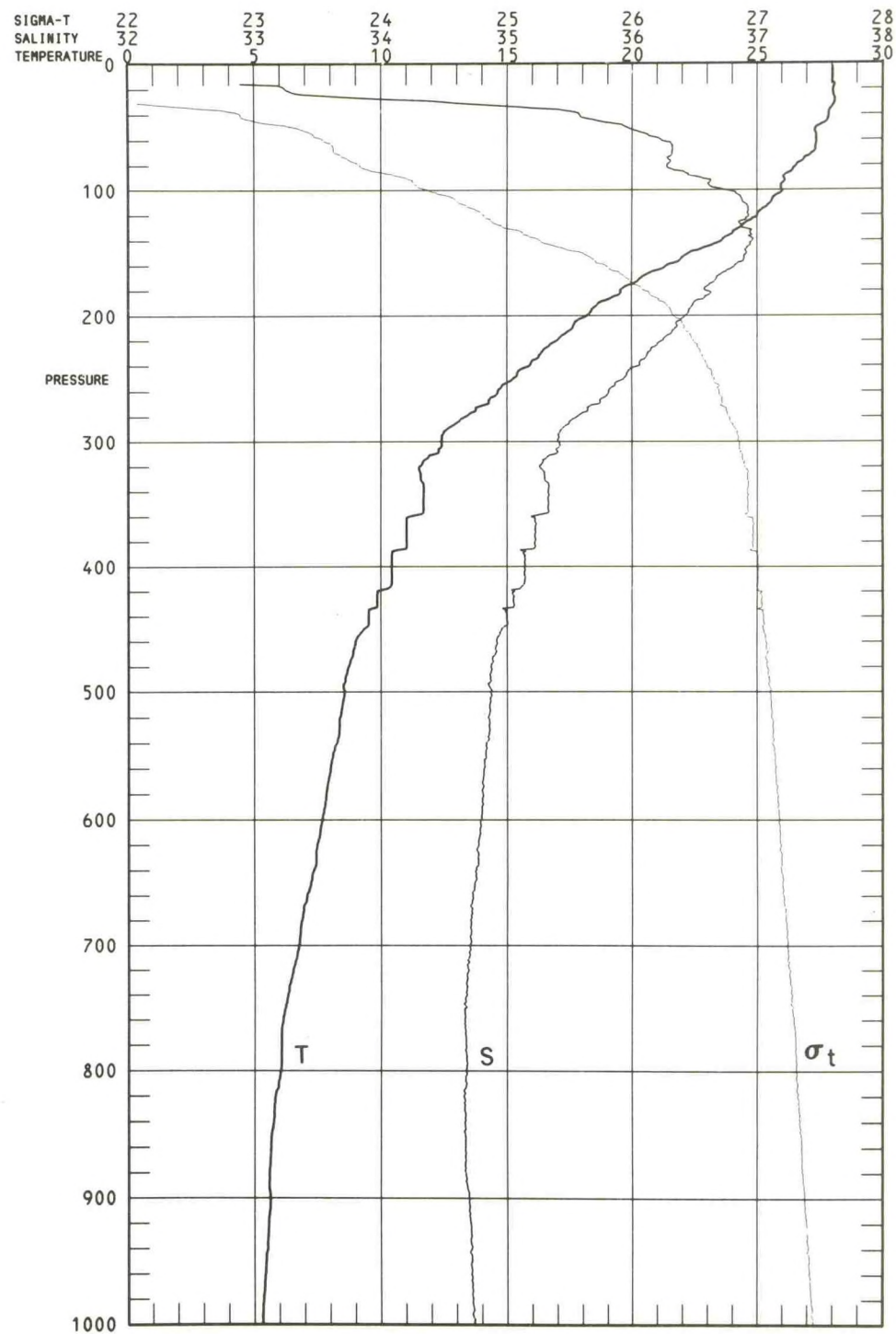
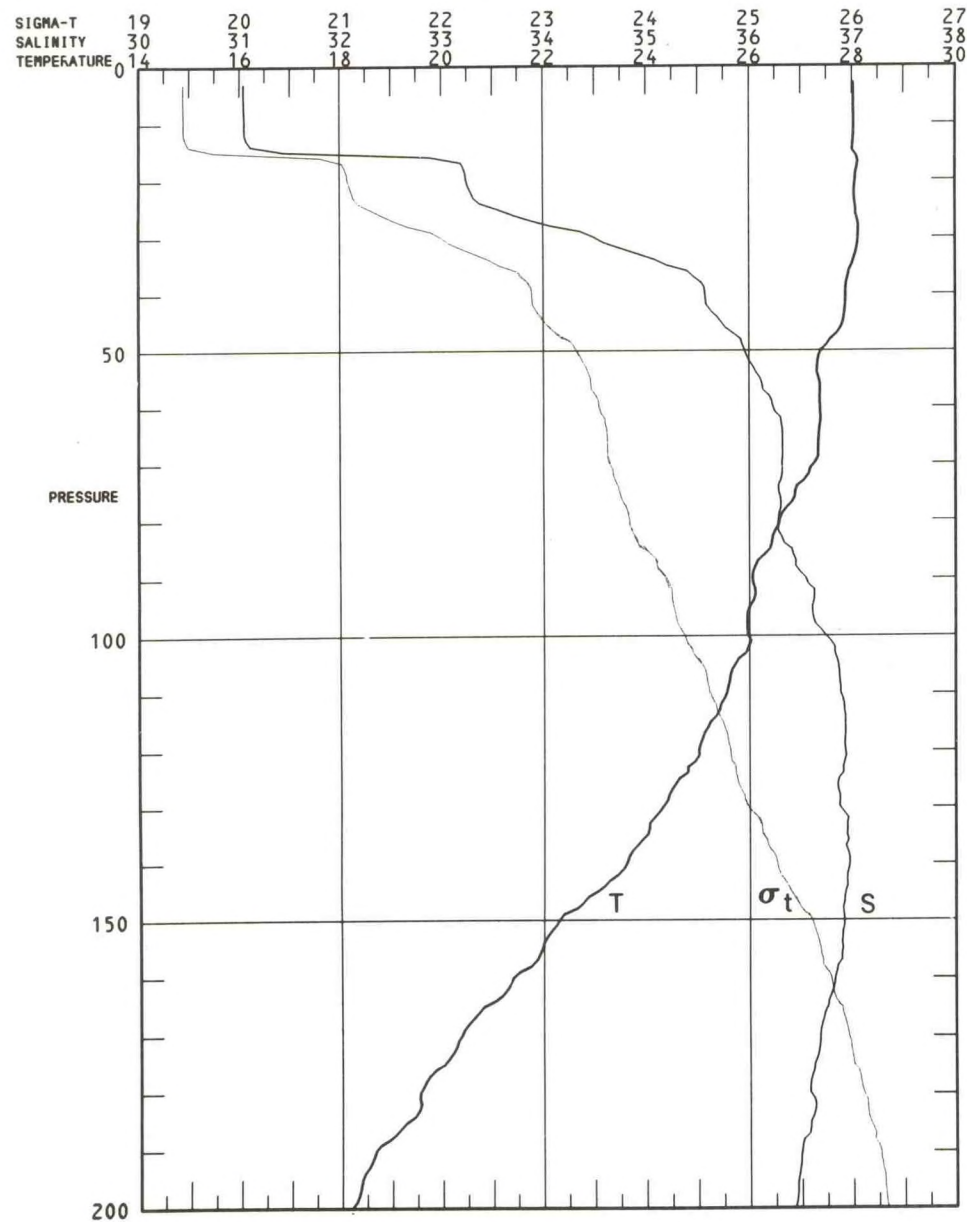
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 28, 1969, 1759 GMT, 13°09'N 053°50'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

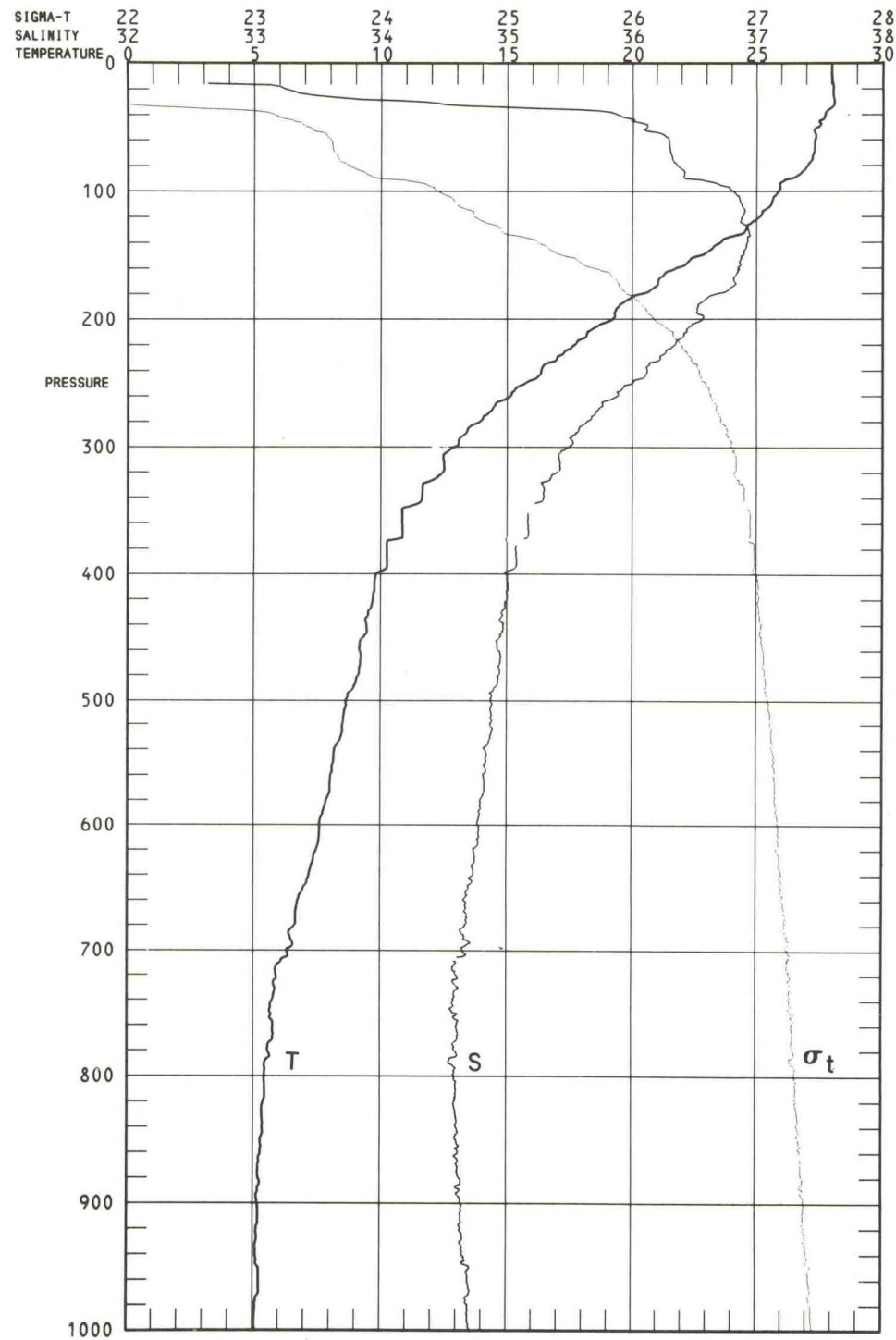
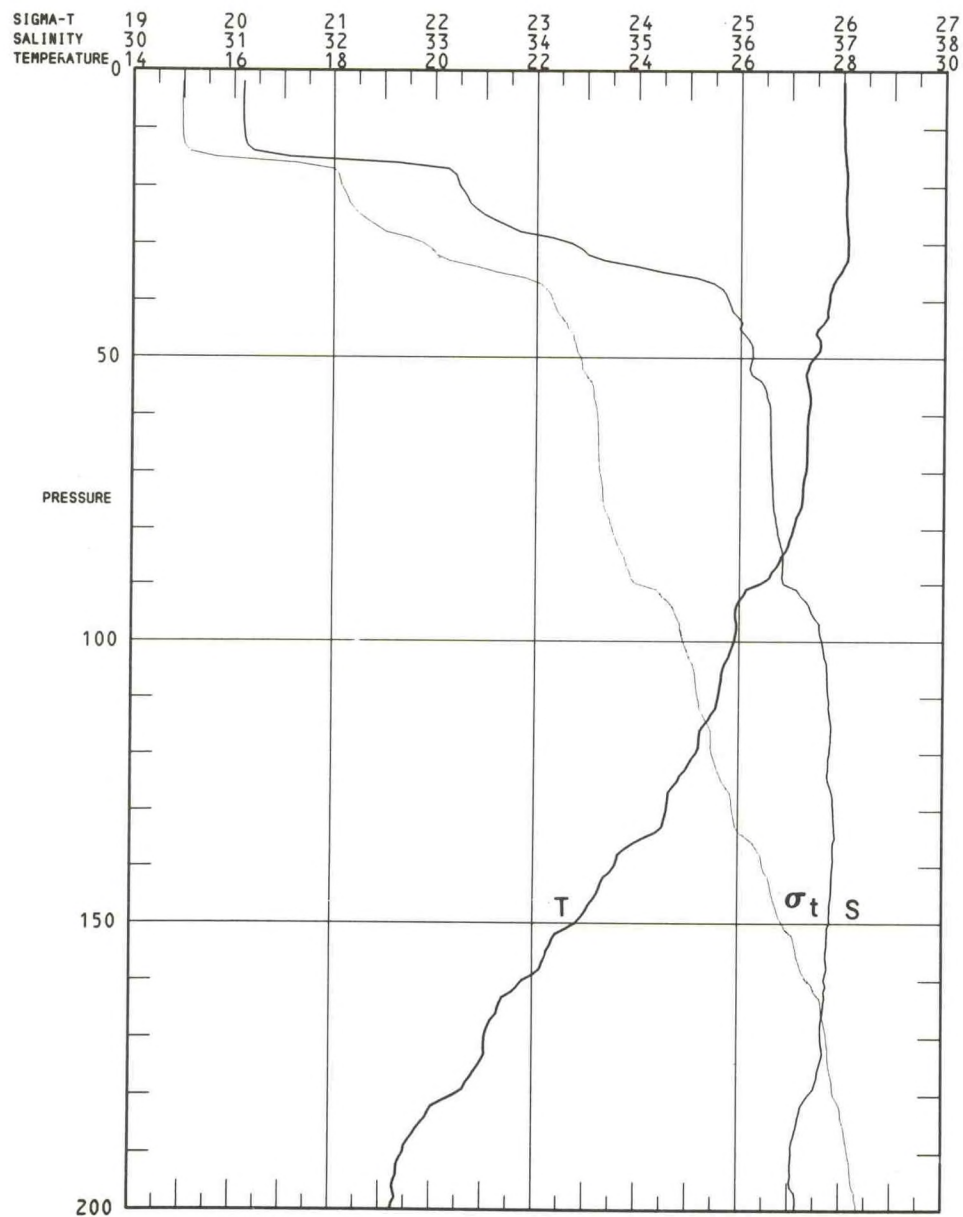


Discoverer, June 28, 1969, 2100 GMT, 13°04'N 053°48'W



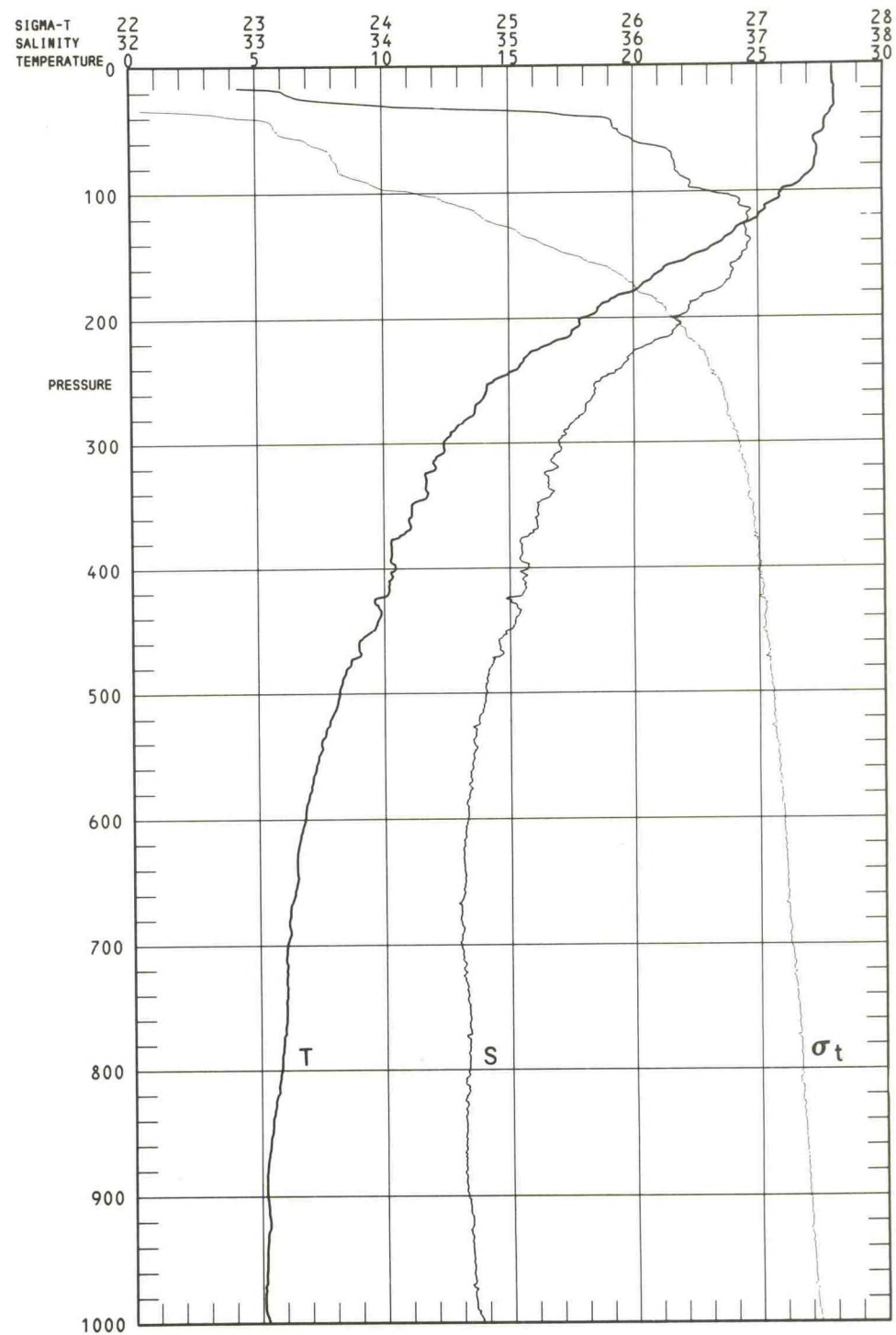
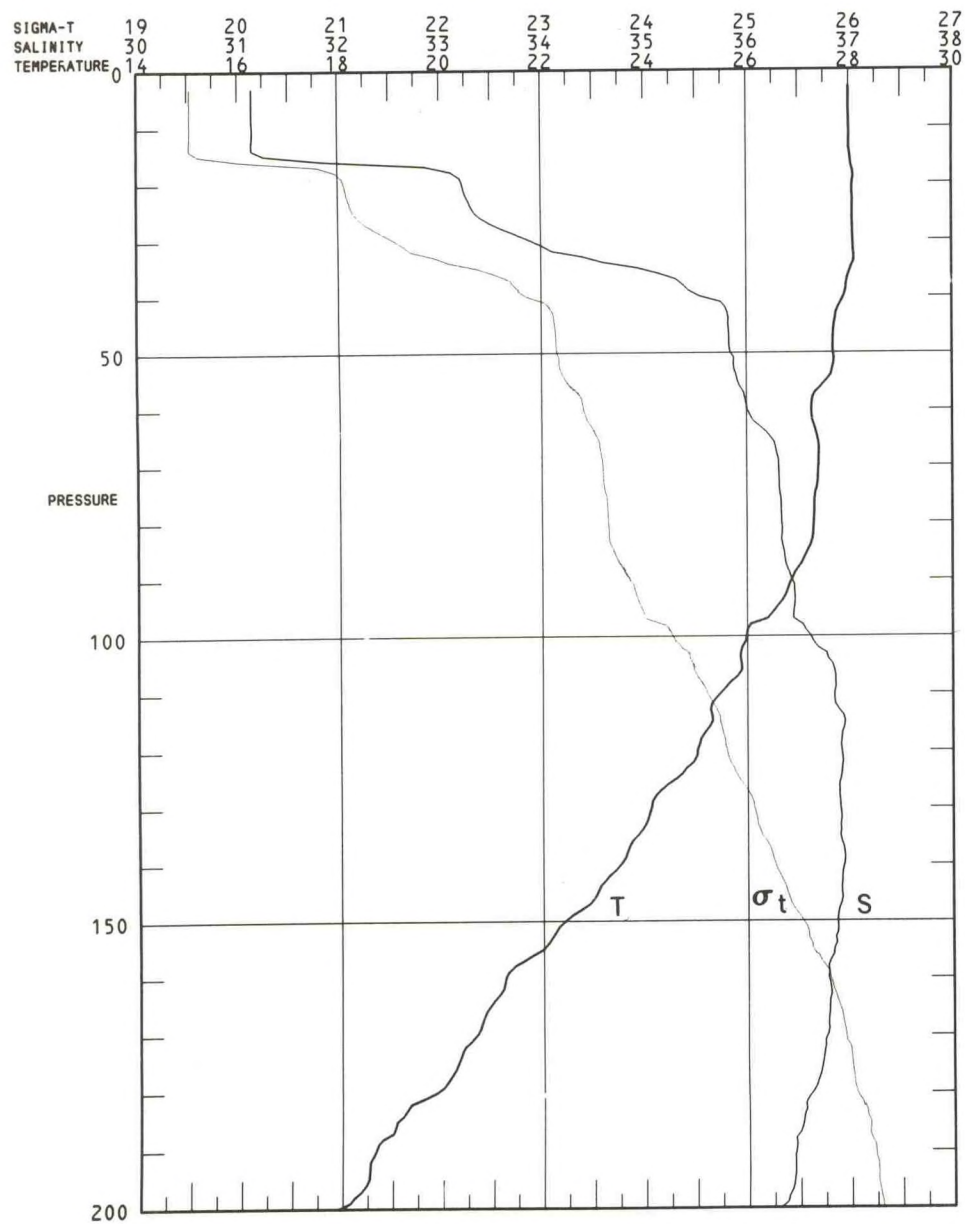
DISCOVERER YEAR 1969 DAY 180 TIME 057 GMT LAT.13°12N LON.054°07W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 29, 1969, 0057 GMT, 13°12'N 054°07'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

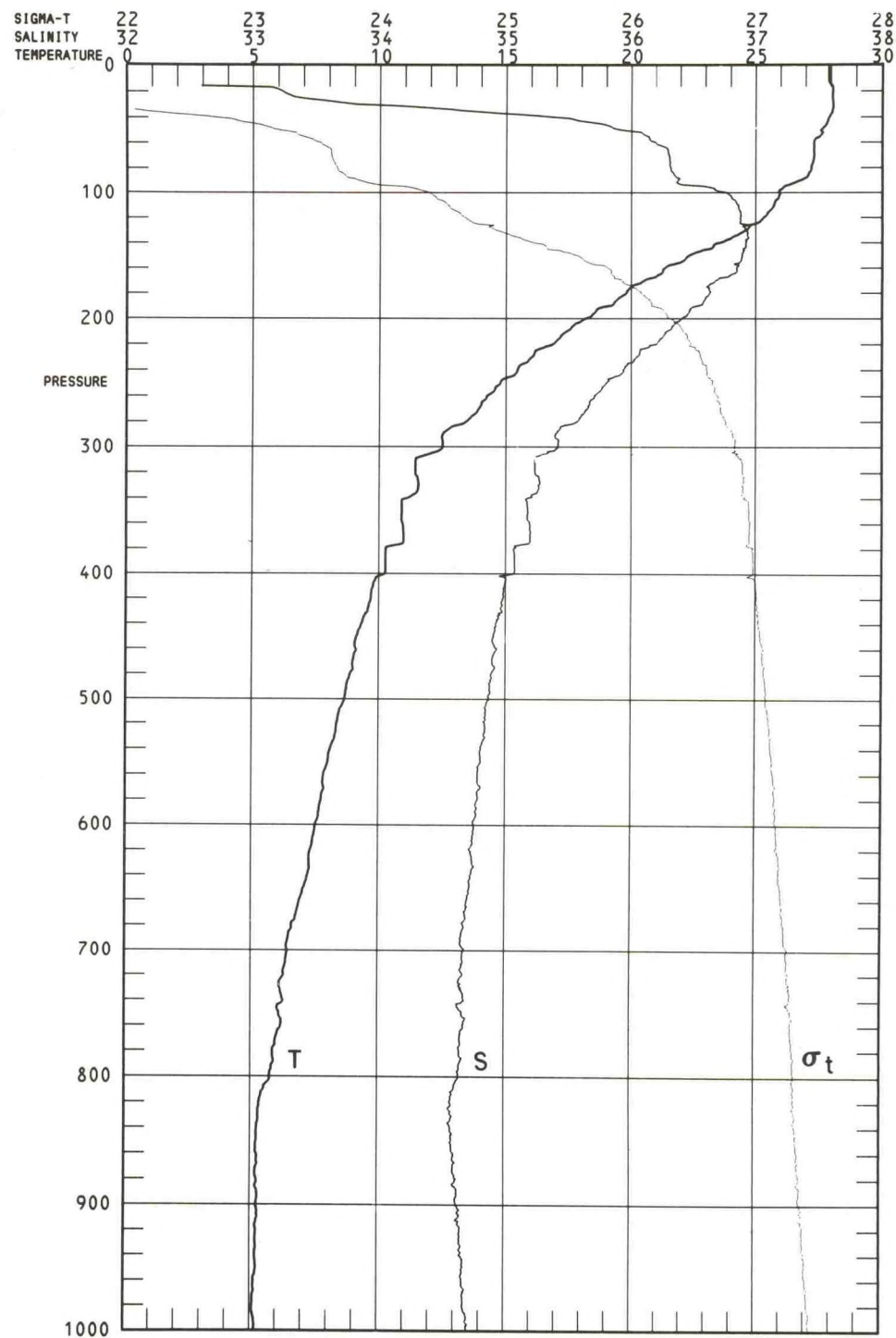
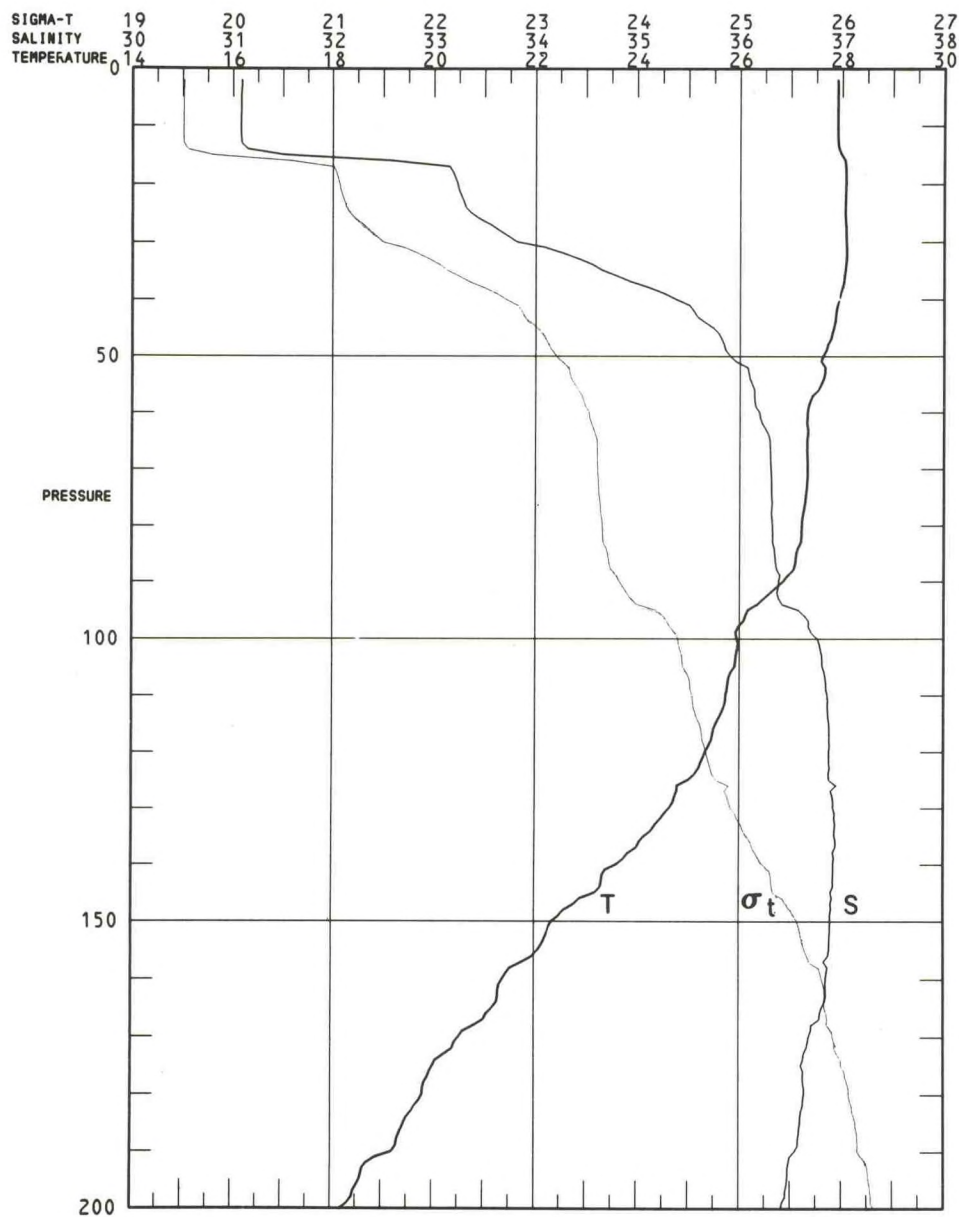


Discoverer, June 29, 1969, 0254 GMT, 13°13'N 054°08'W

DISCOVERER YEAR 1969 DAY 180 TIME 556 GMT LAT.13°13'N LON.054°07'W

# STD Depth-Sorted Plots

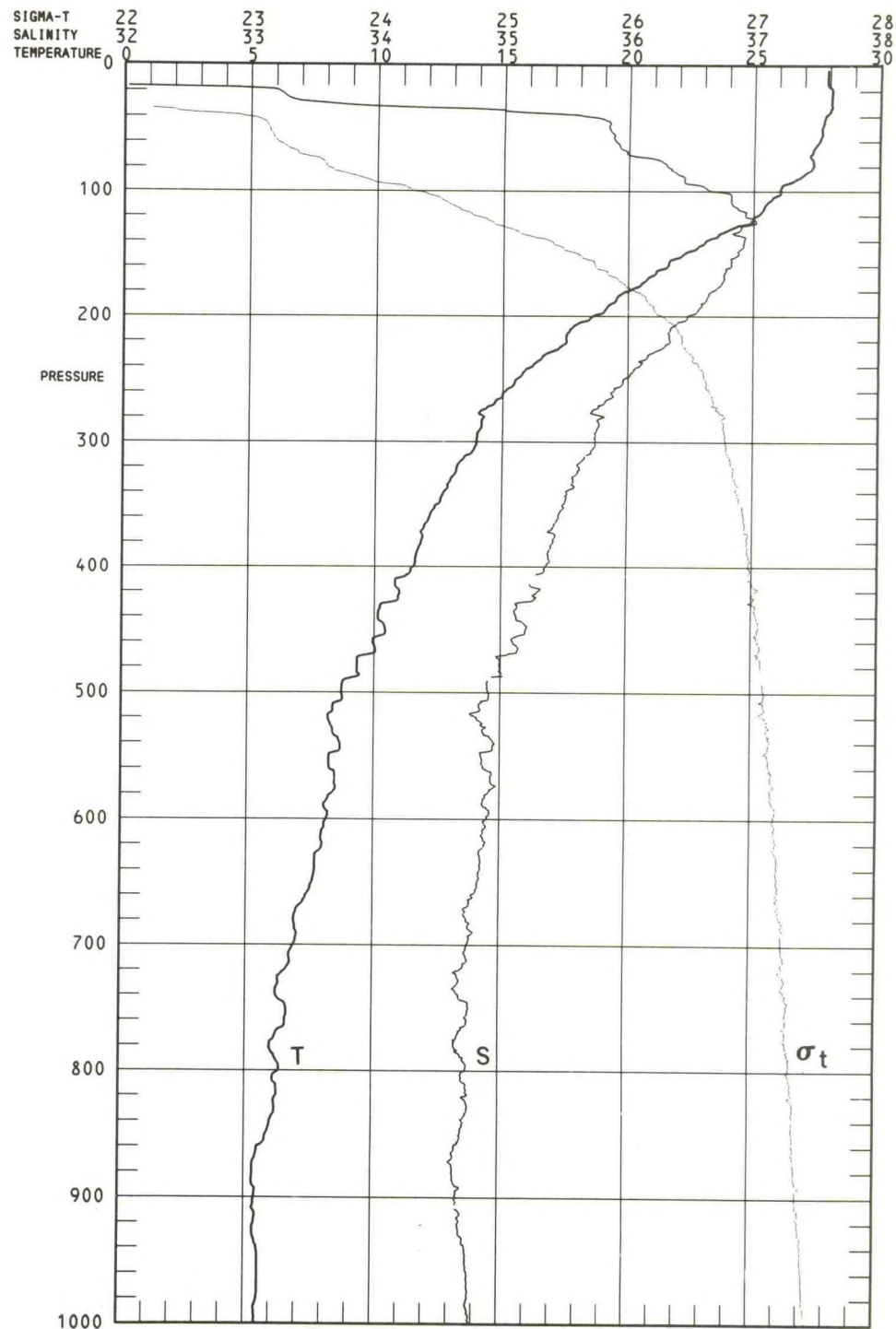
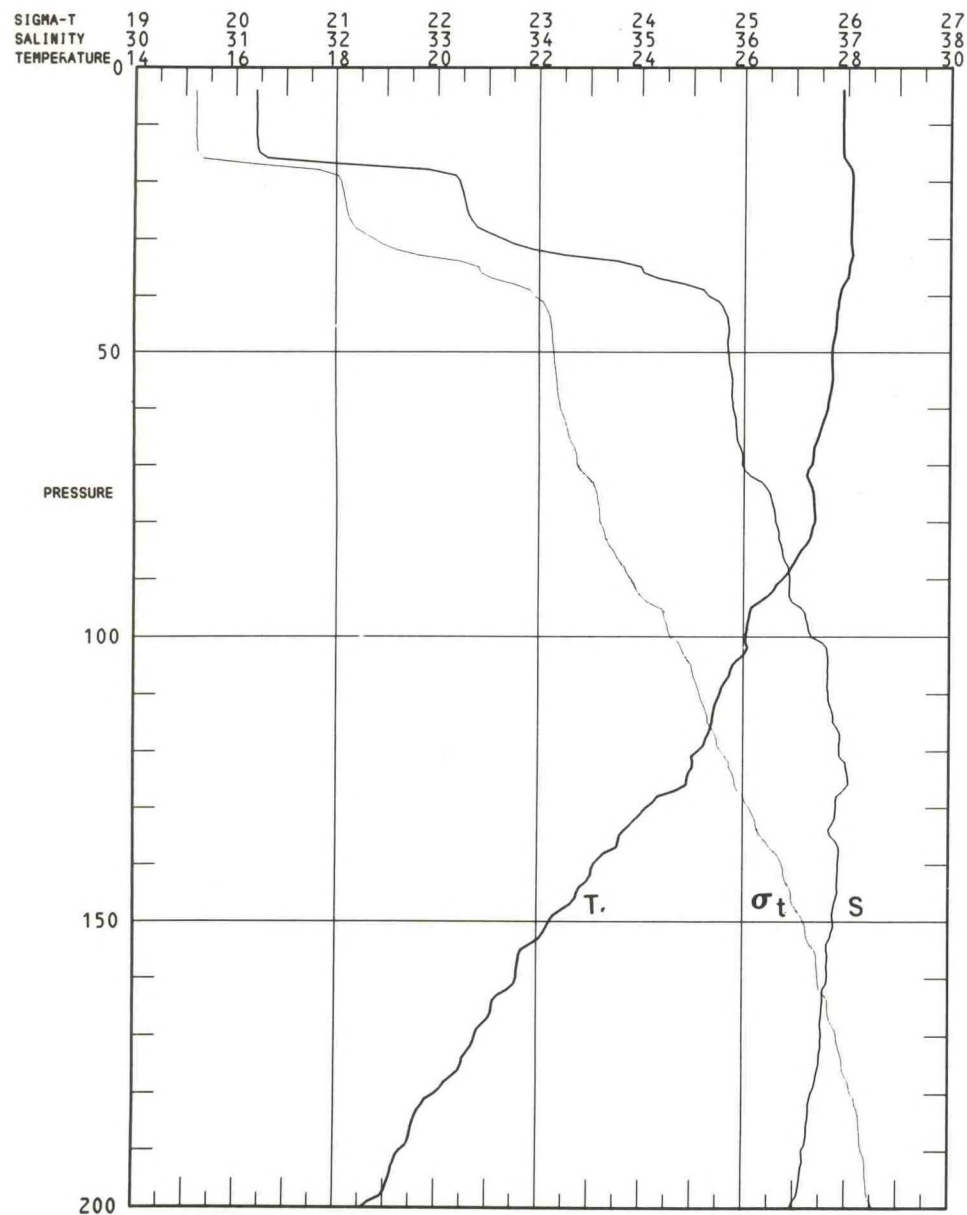
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 29, 1969, 0556 GMT, 13°13'N 054°07'W

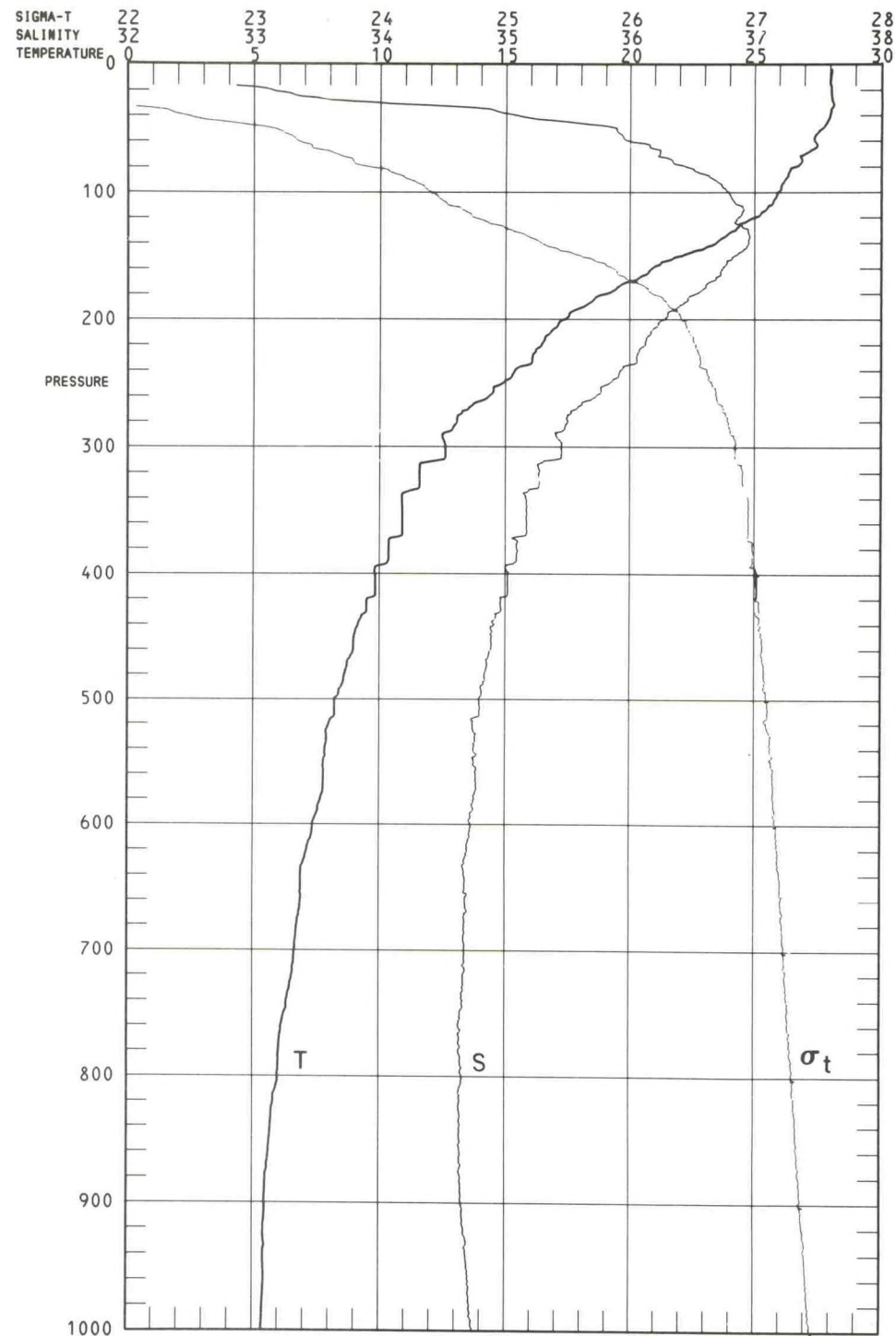
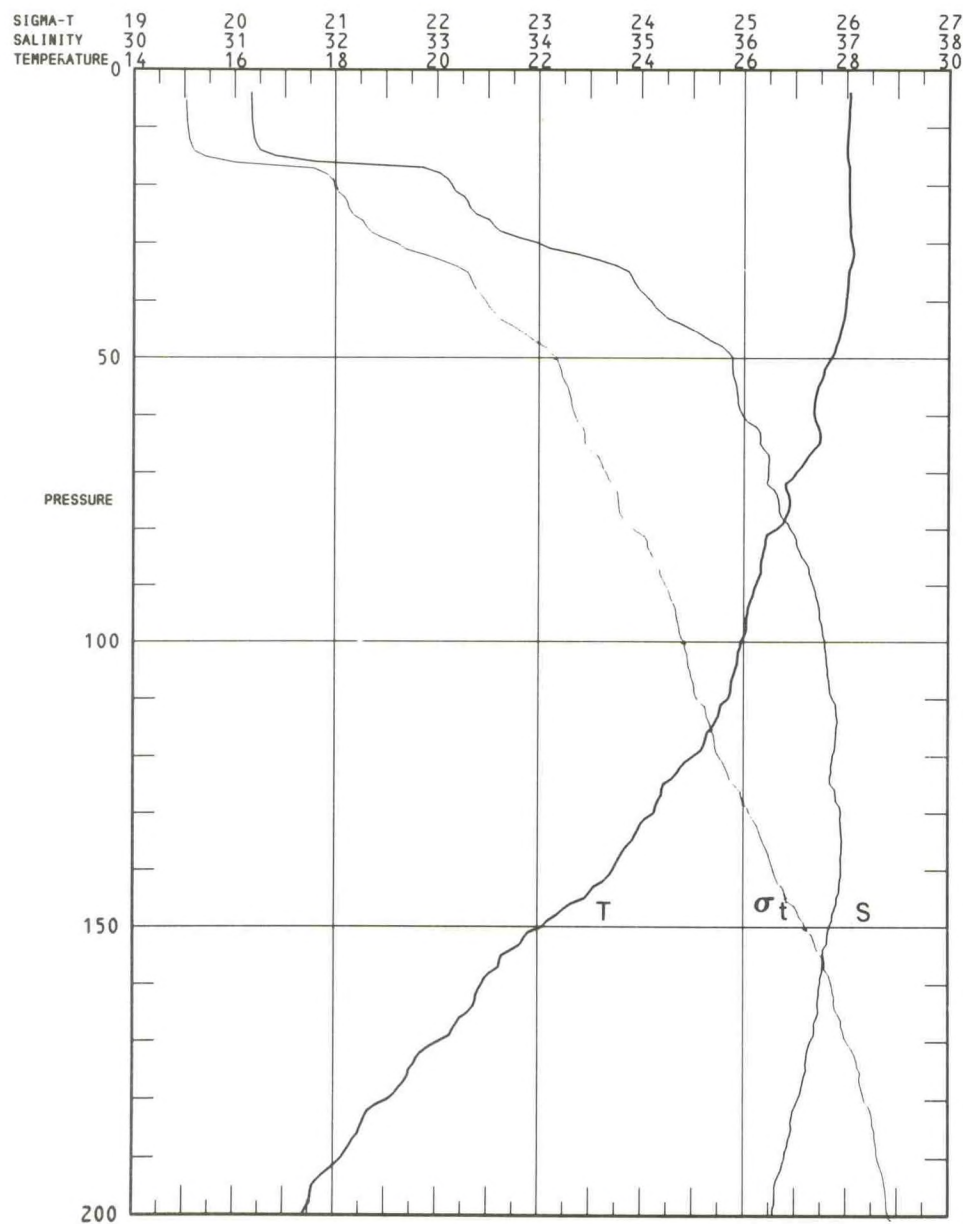


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 29, 1969, 1159 GMT, 13°17'N 054°15'W

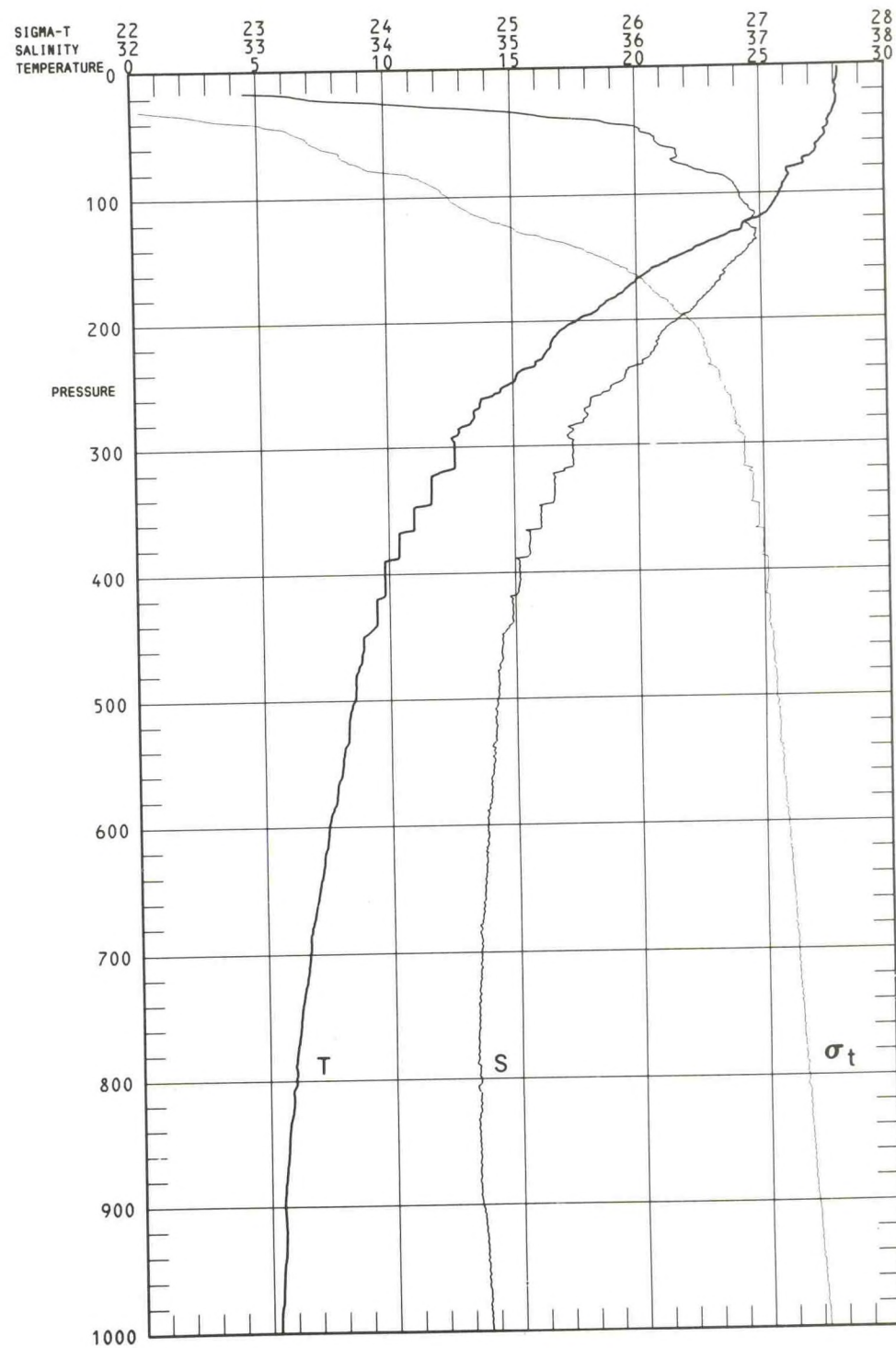
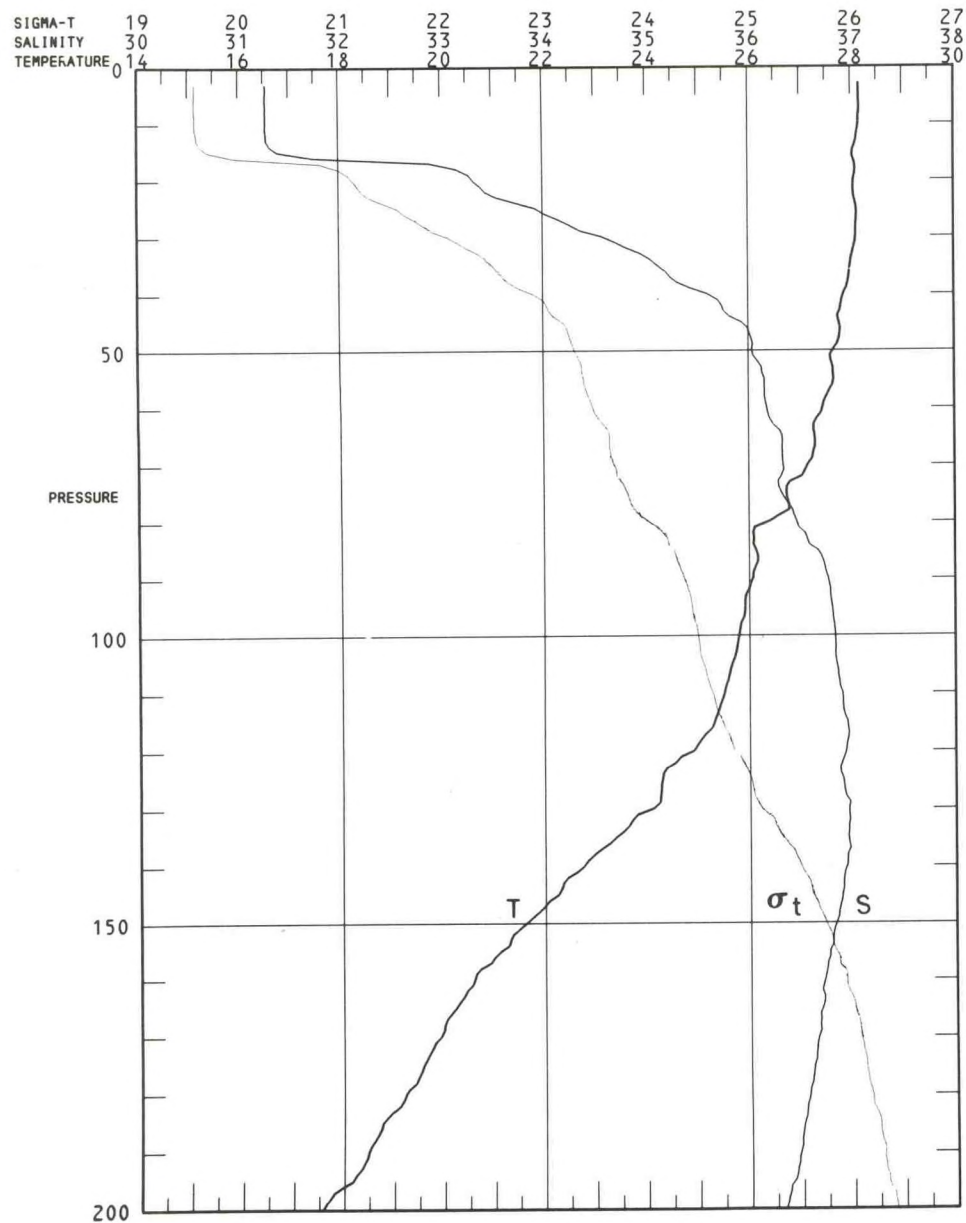
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 29, 1969, 1505 GMT, 13°14'N 054°05'W

DISCOVERER YEAR 1969 DAY 180 TIME 1800 GMT LAT.13°10'N LON.054°01'W

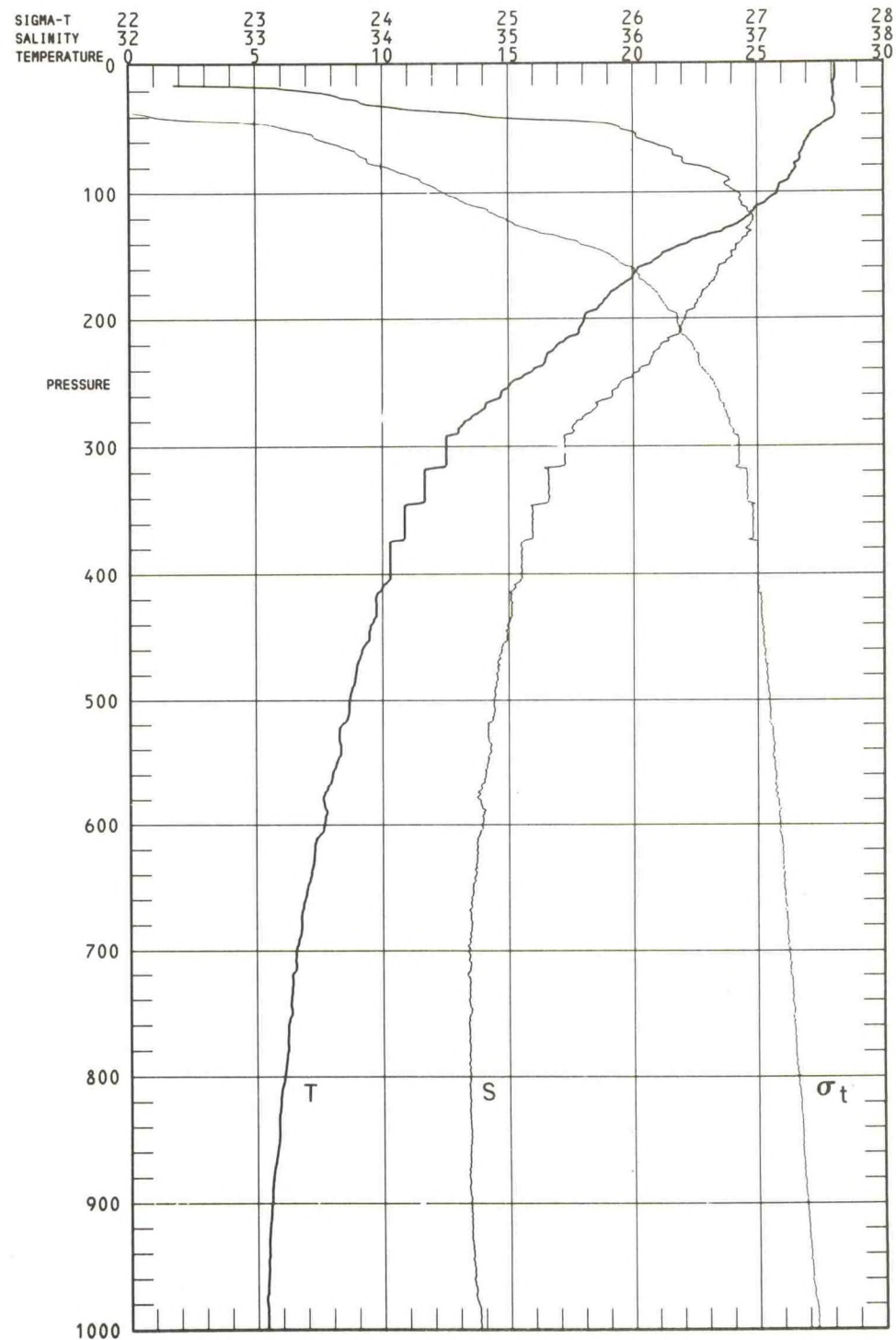
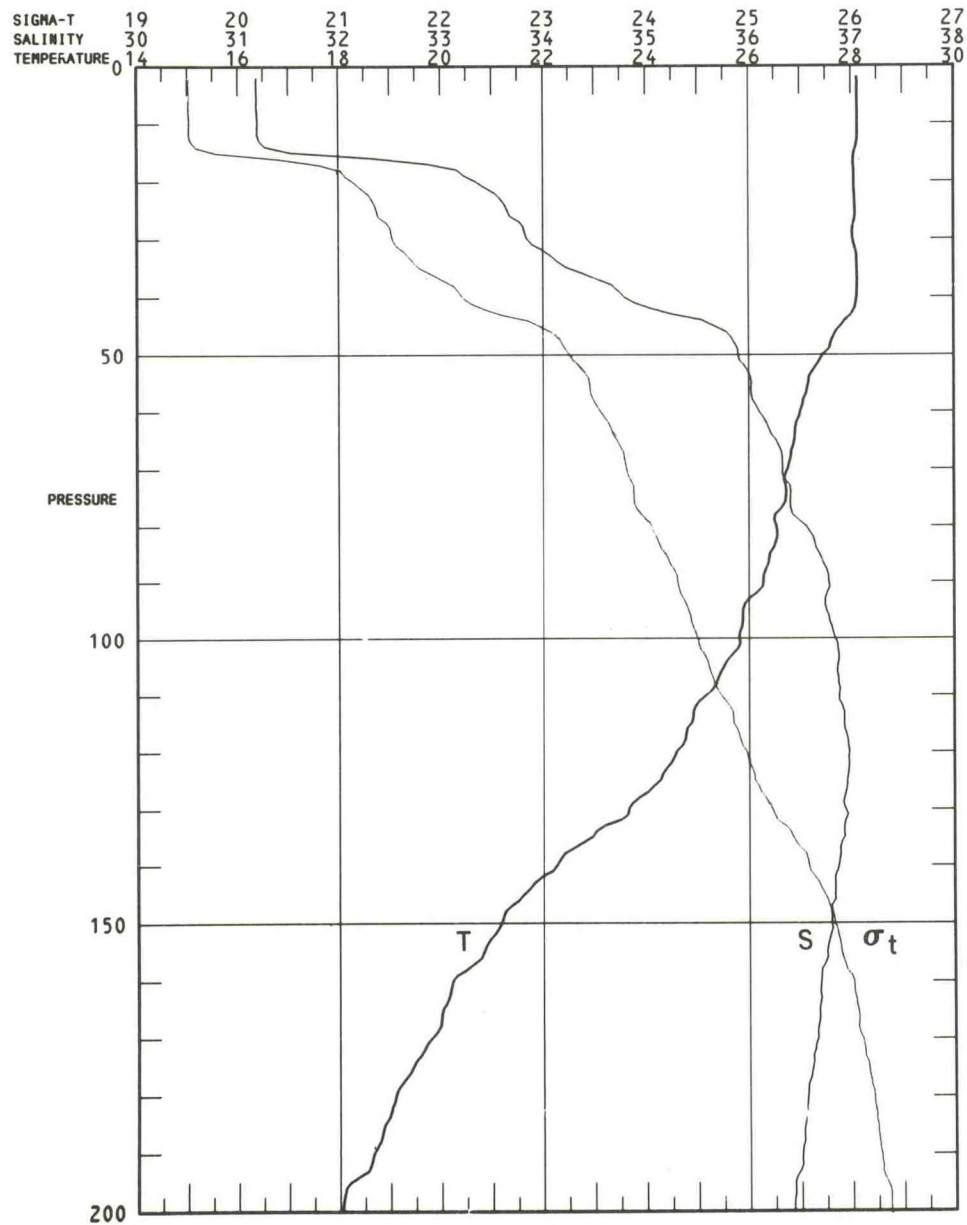
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 29, 1969, 1800 GMT, 13°10'N 054°01'W

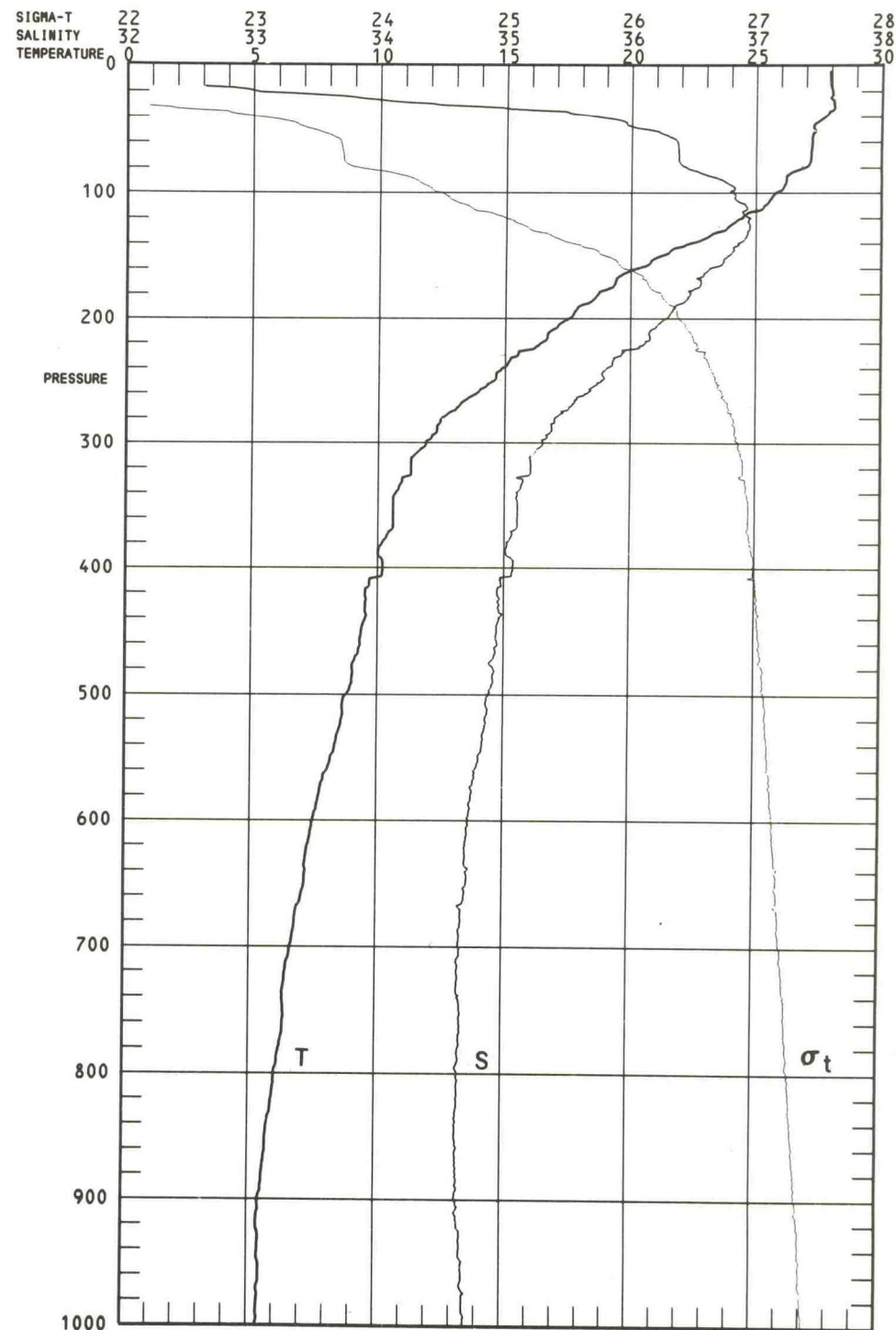
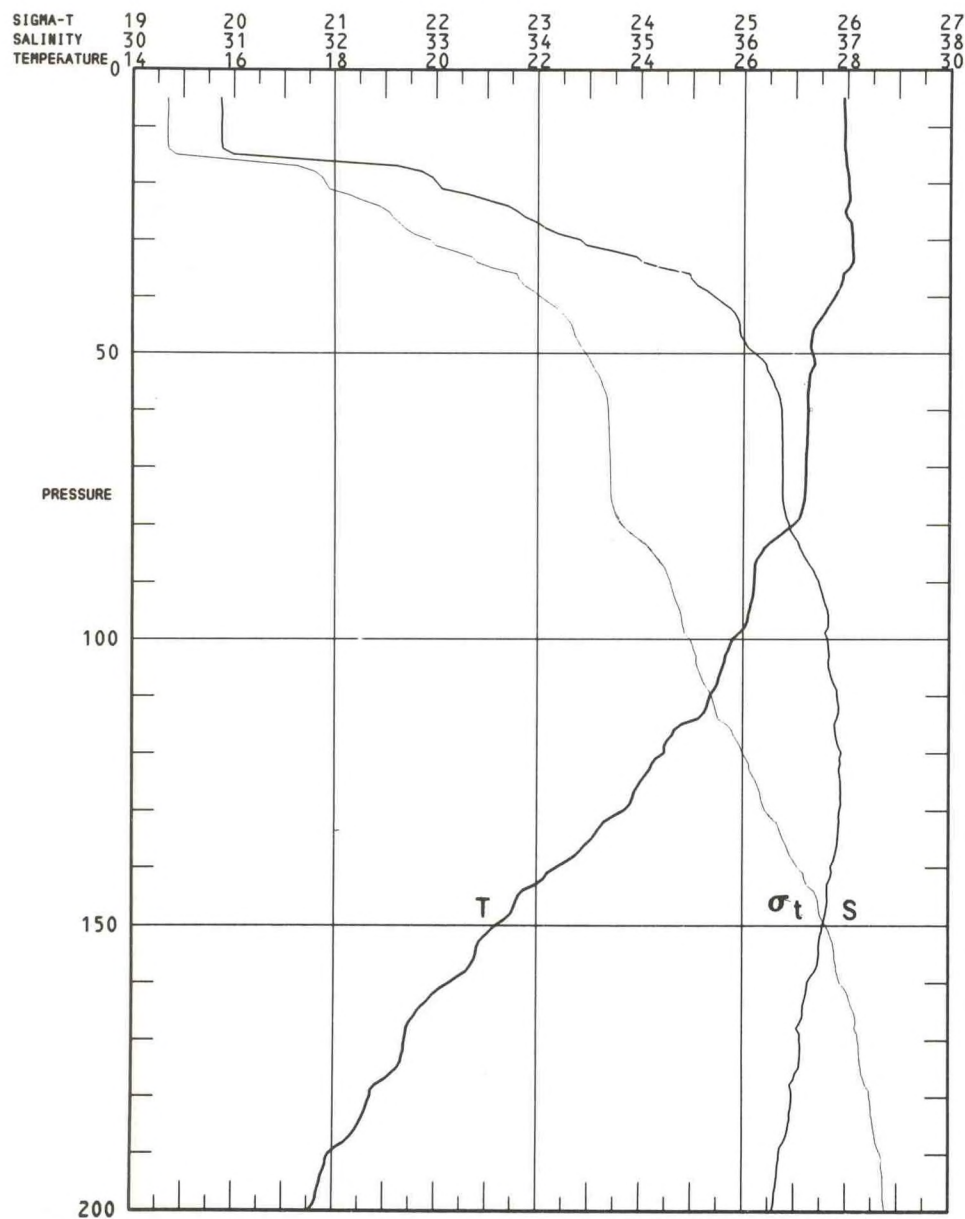


STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



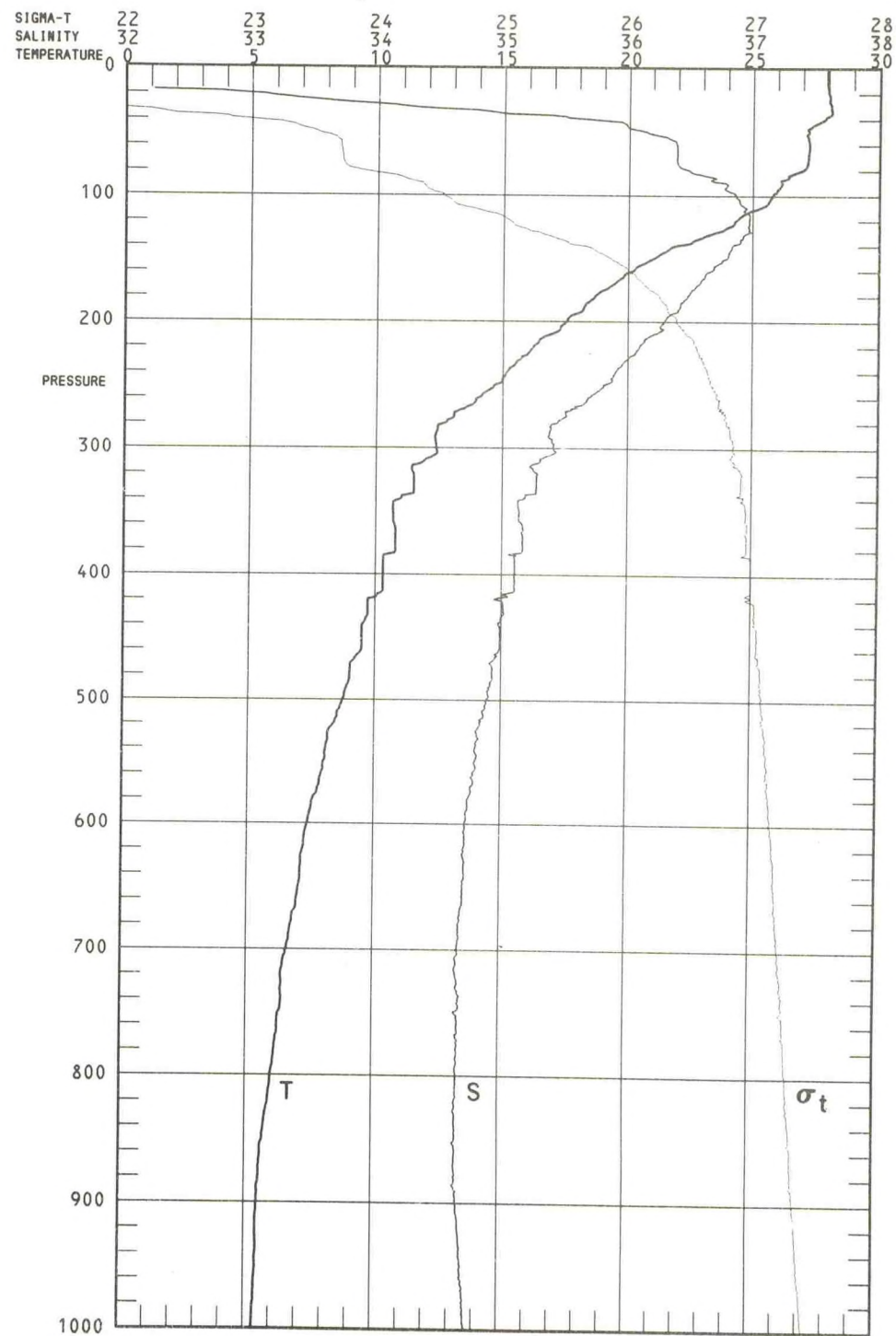
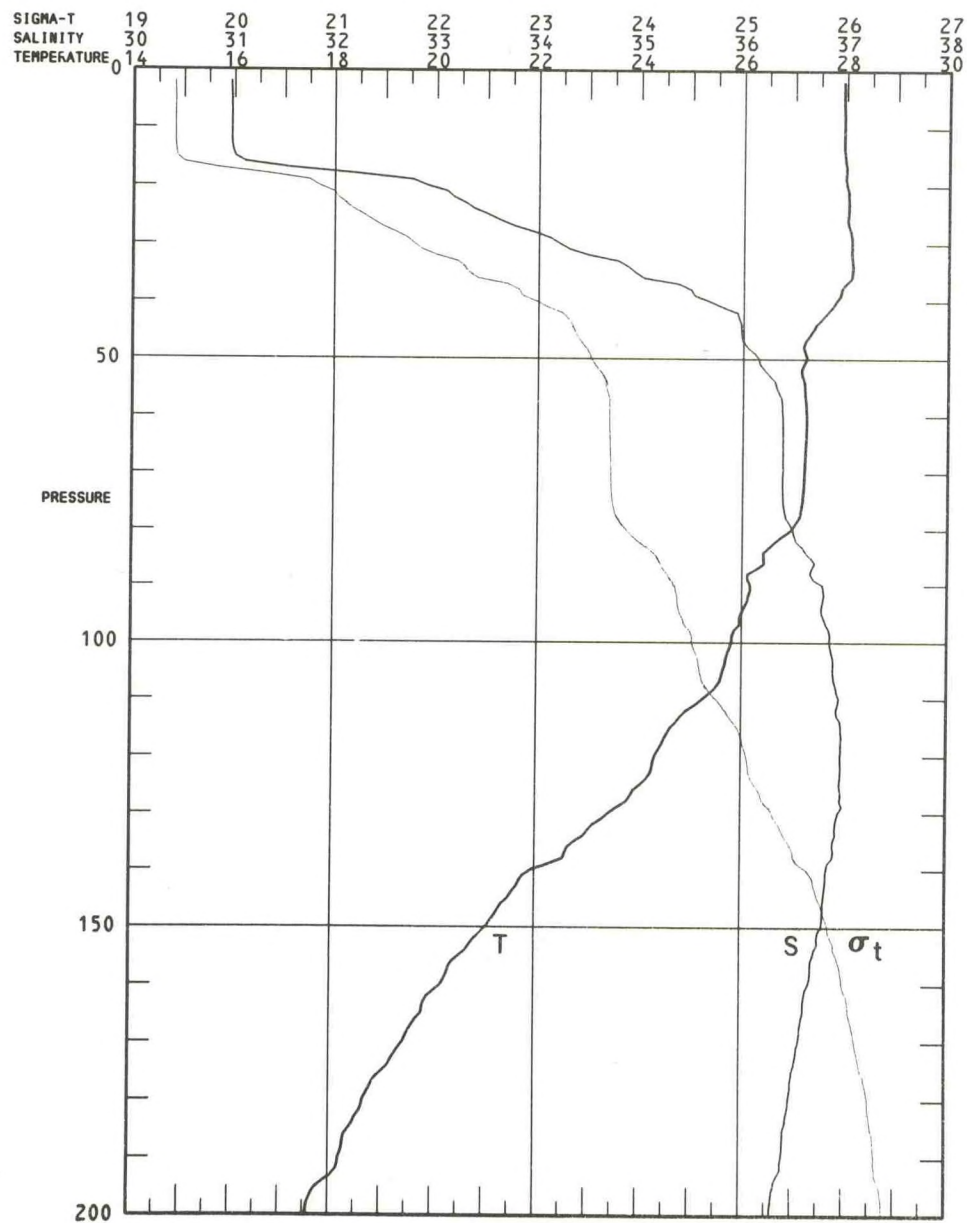
Discoverer, June 29, 1969, 2108 GMT, 13°12'N 054°05'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 30, 1969, 0100 GMT, 13°05'N 053°46'W

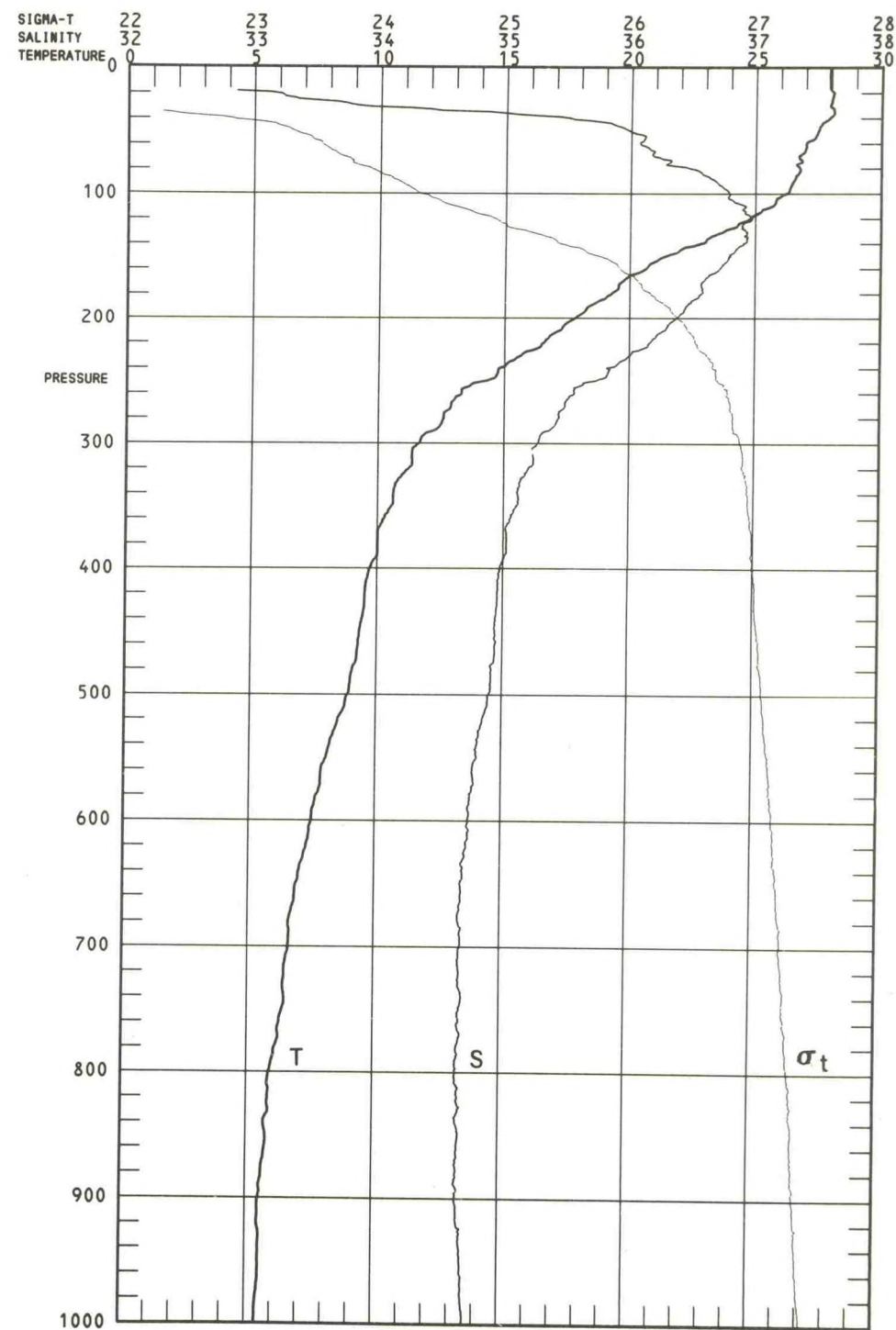
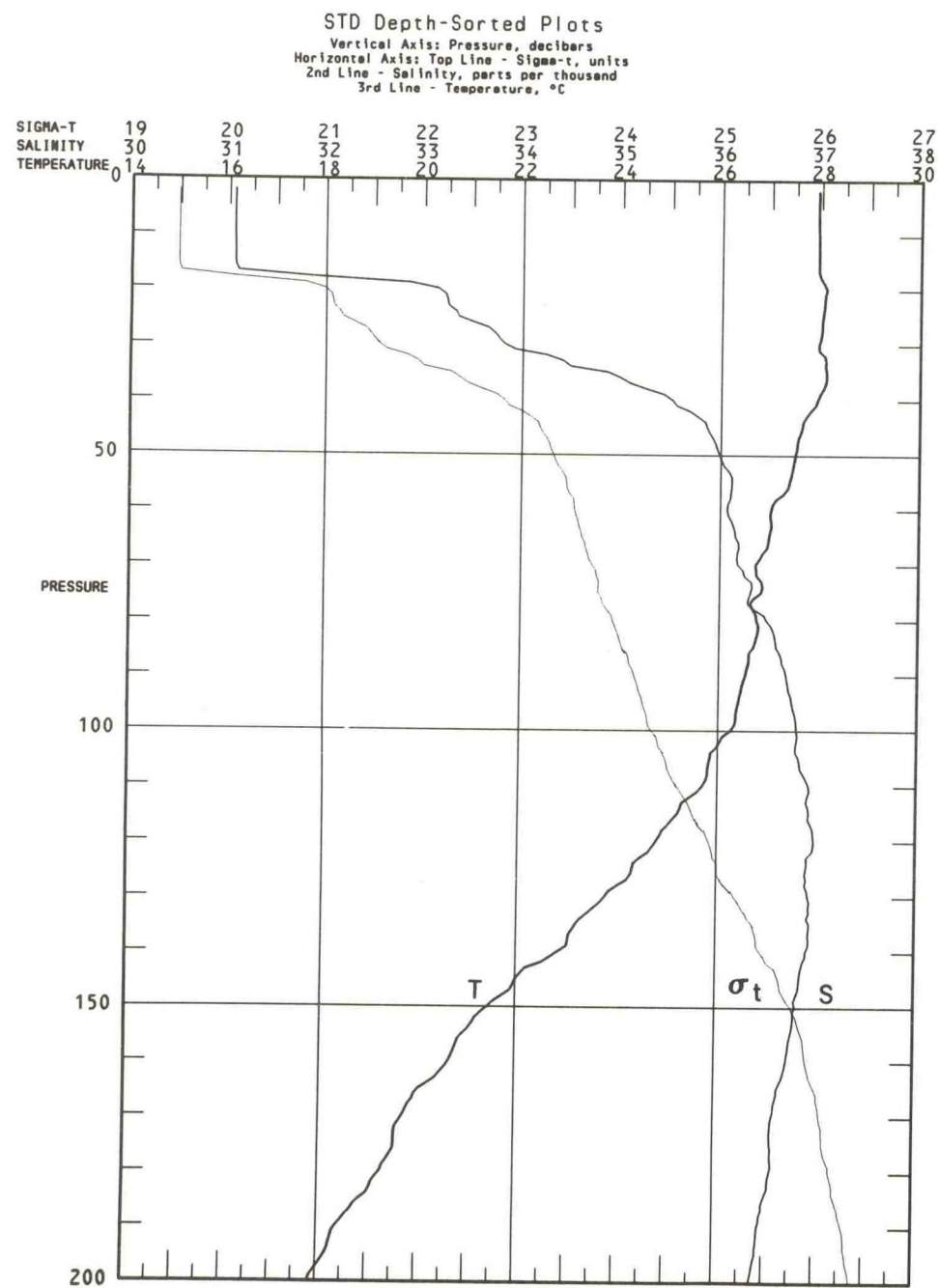
# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 30, 1969, 0254 GMT, 13°07'N 053°53'W

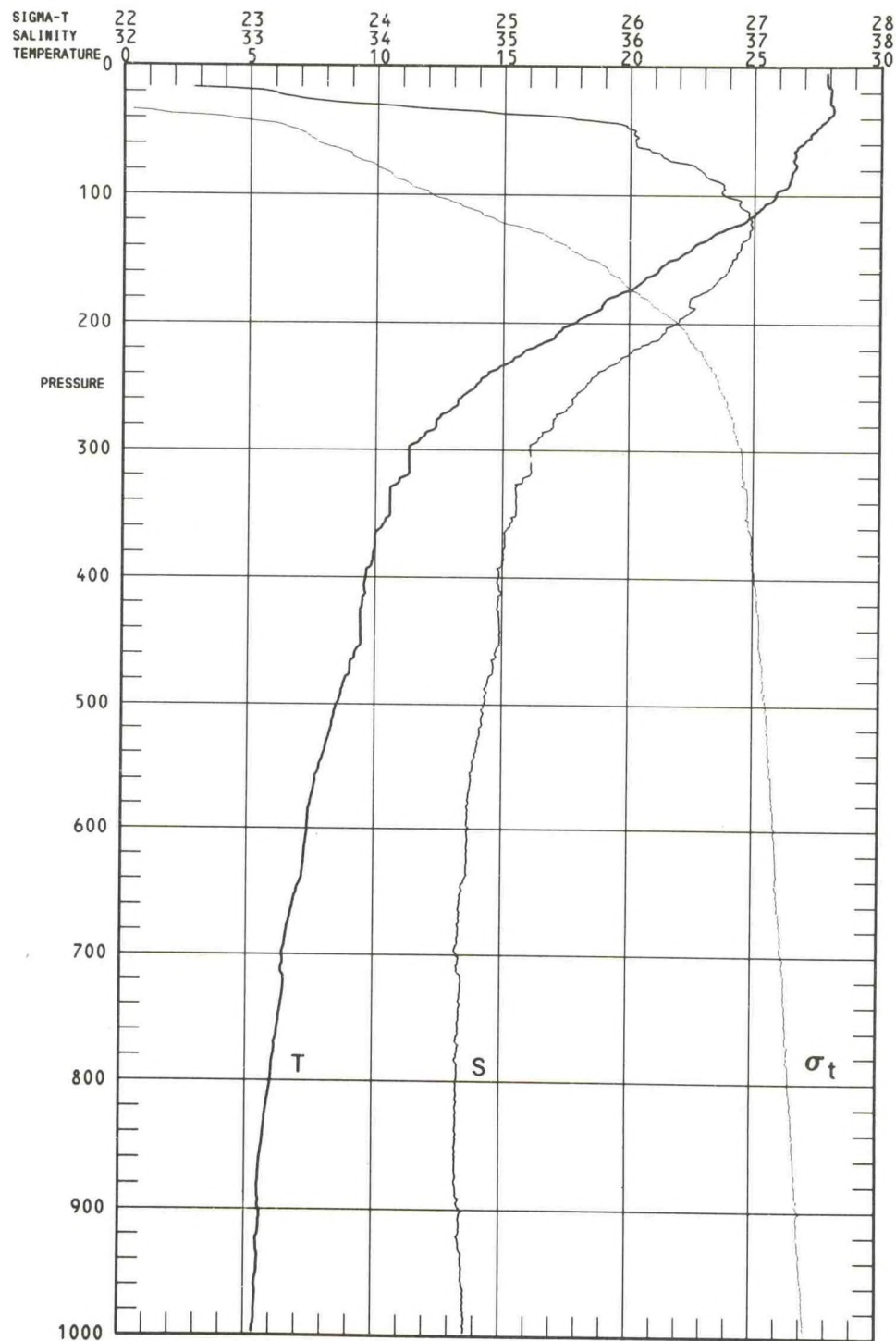
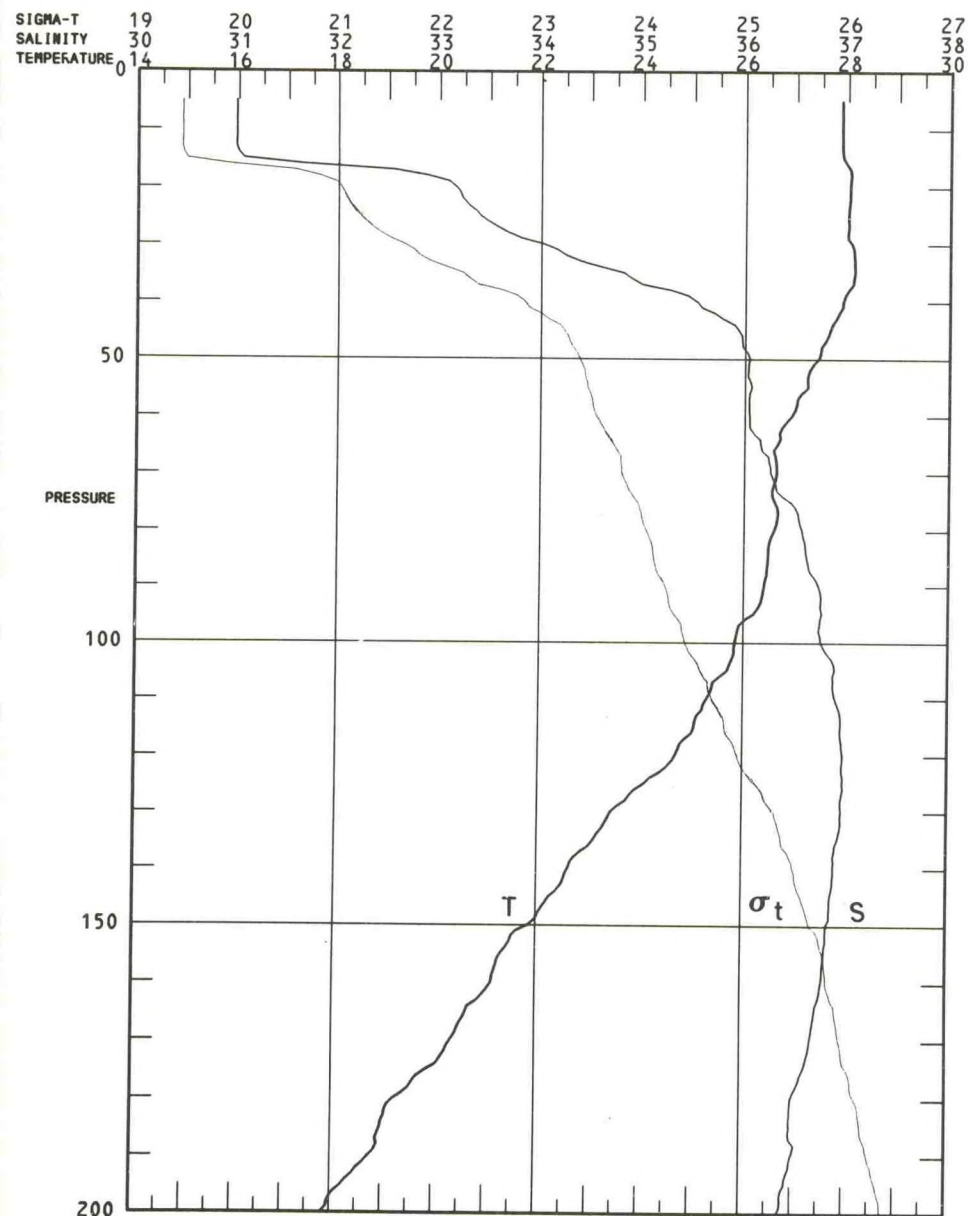


DISCOVERER YEAR 1969 DAY 181 TIME 601 GMT LAT. 12° 05' LON. 49° 53' W



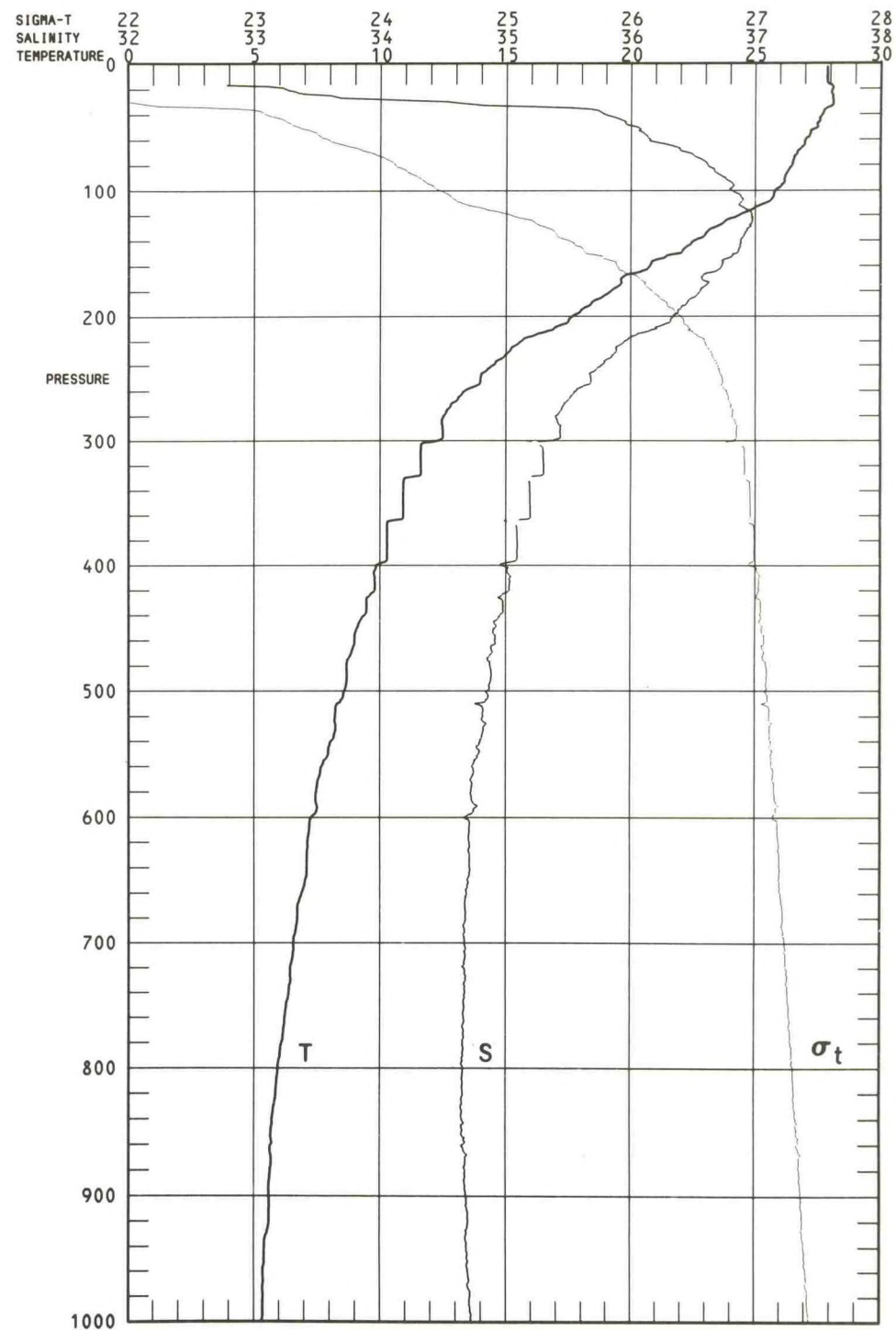
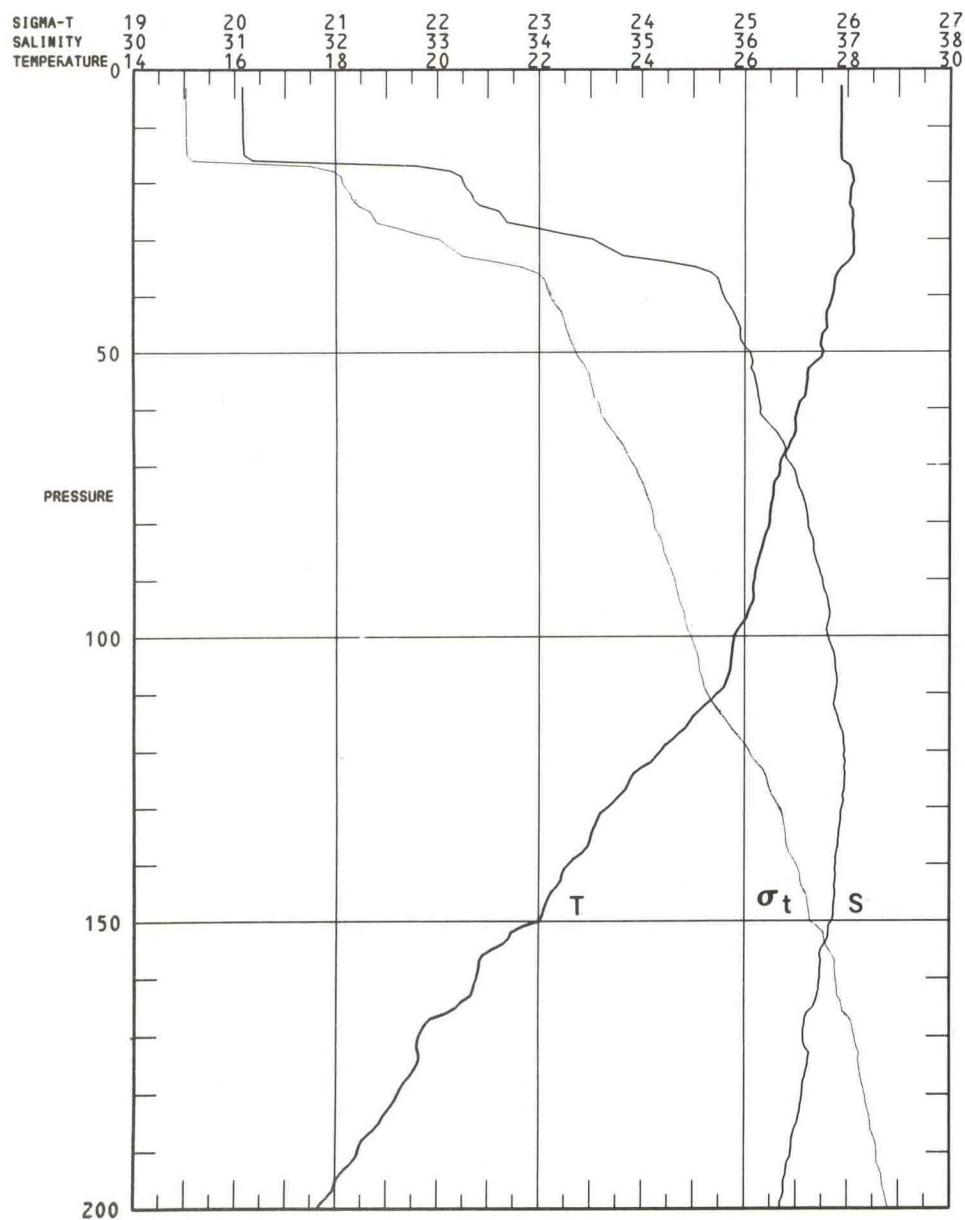
Discoverer, June 30, 1969, 0601 GMT, 13° 10' N 053° 53' W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 30, 1969, 0900 GMT, 13°19'N 053°54'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

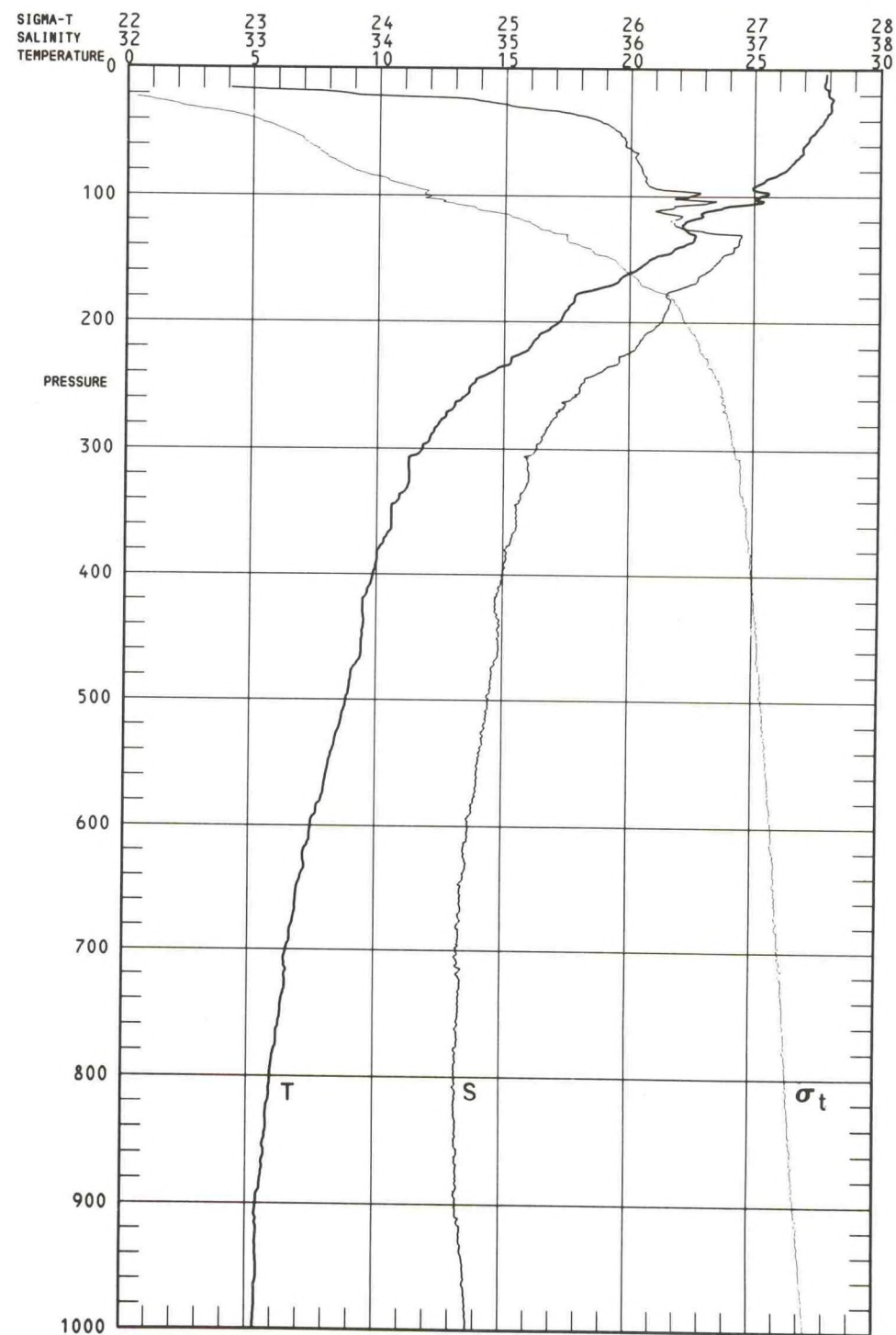
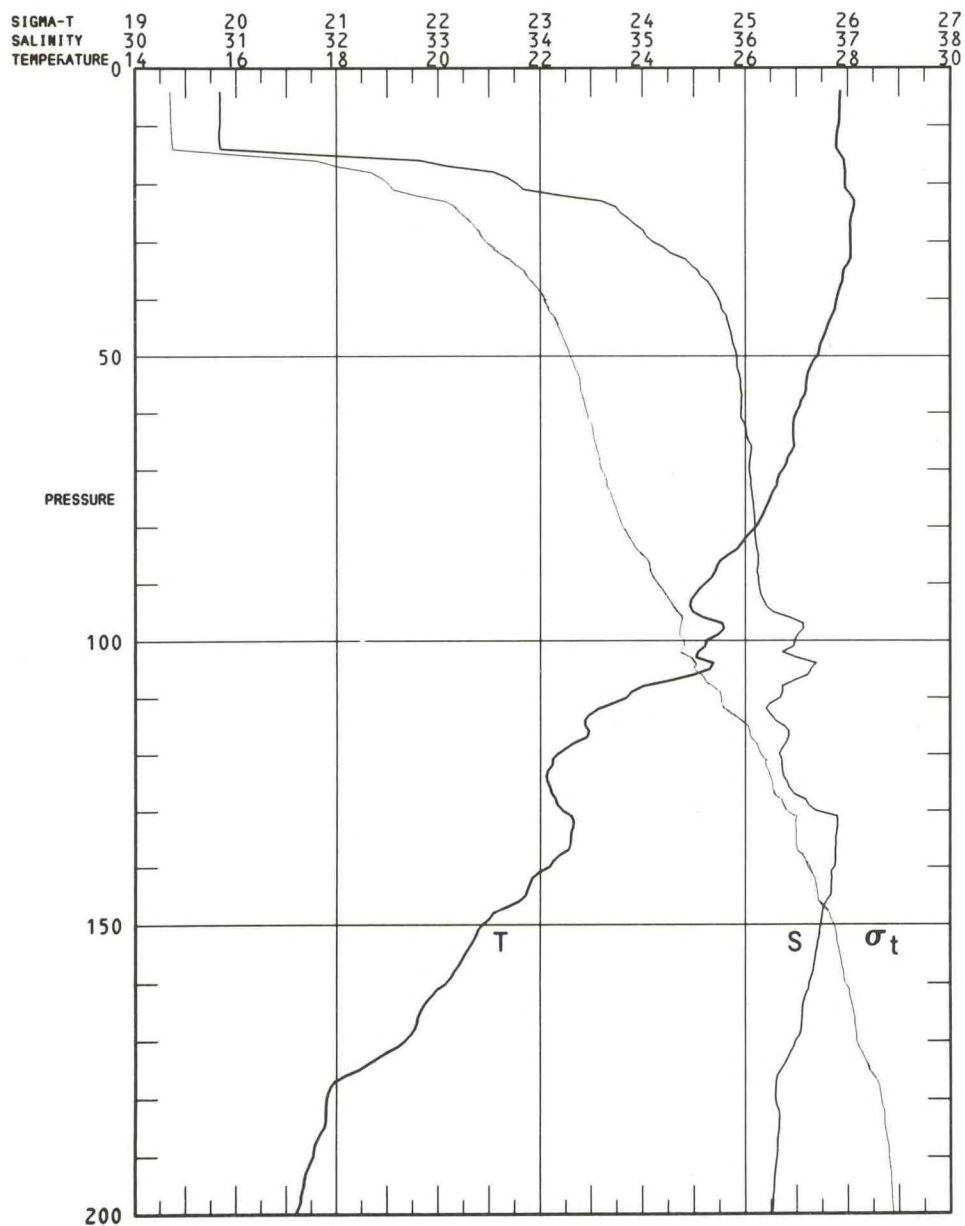


Discoverer, June 30, 1969, 1201 GMT, 13°25'N 054°08'W



# STD Depth-Sorted Plots

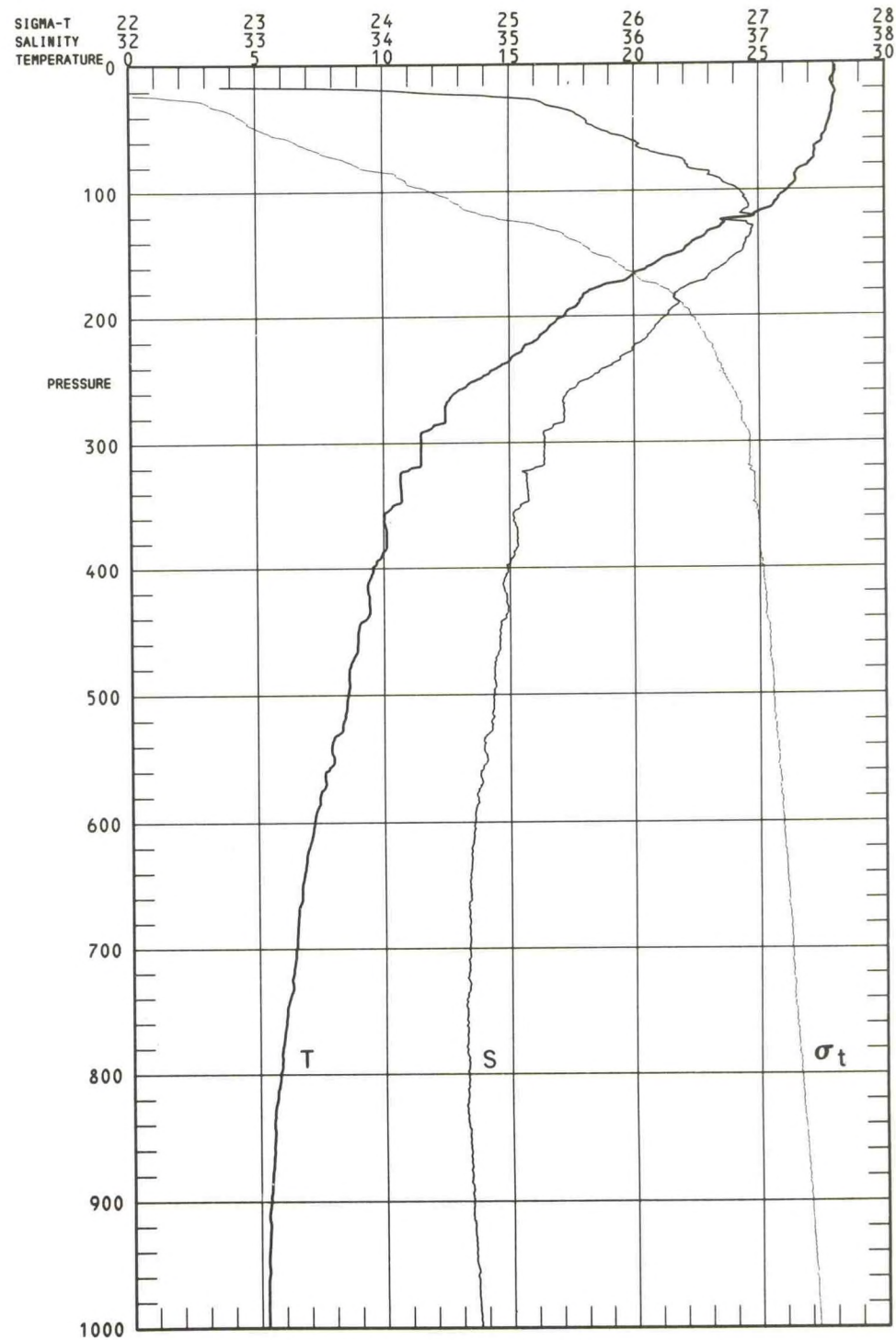
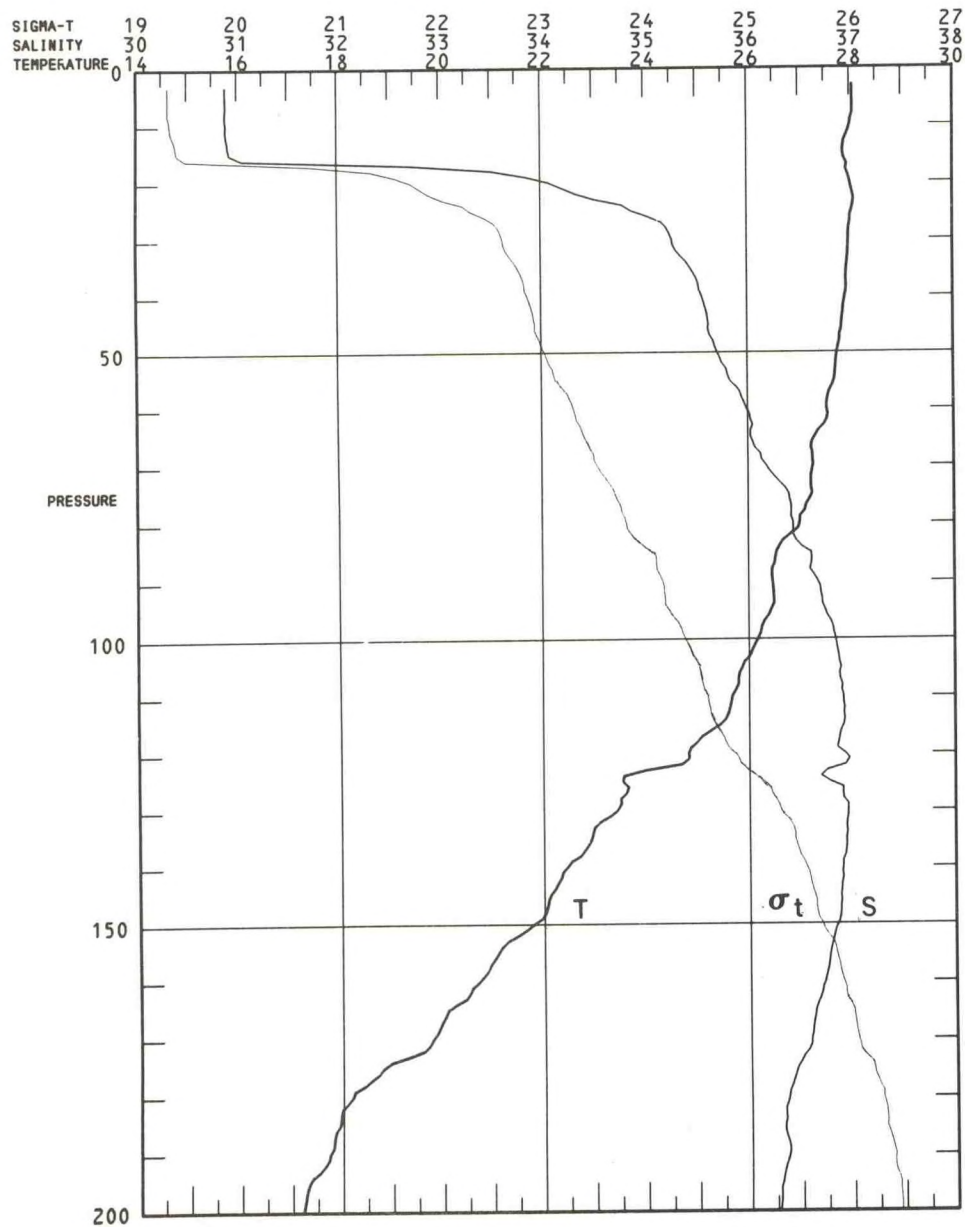
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, June 30, 1969, 1503 GMT, 13°10'N 053°52'W

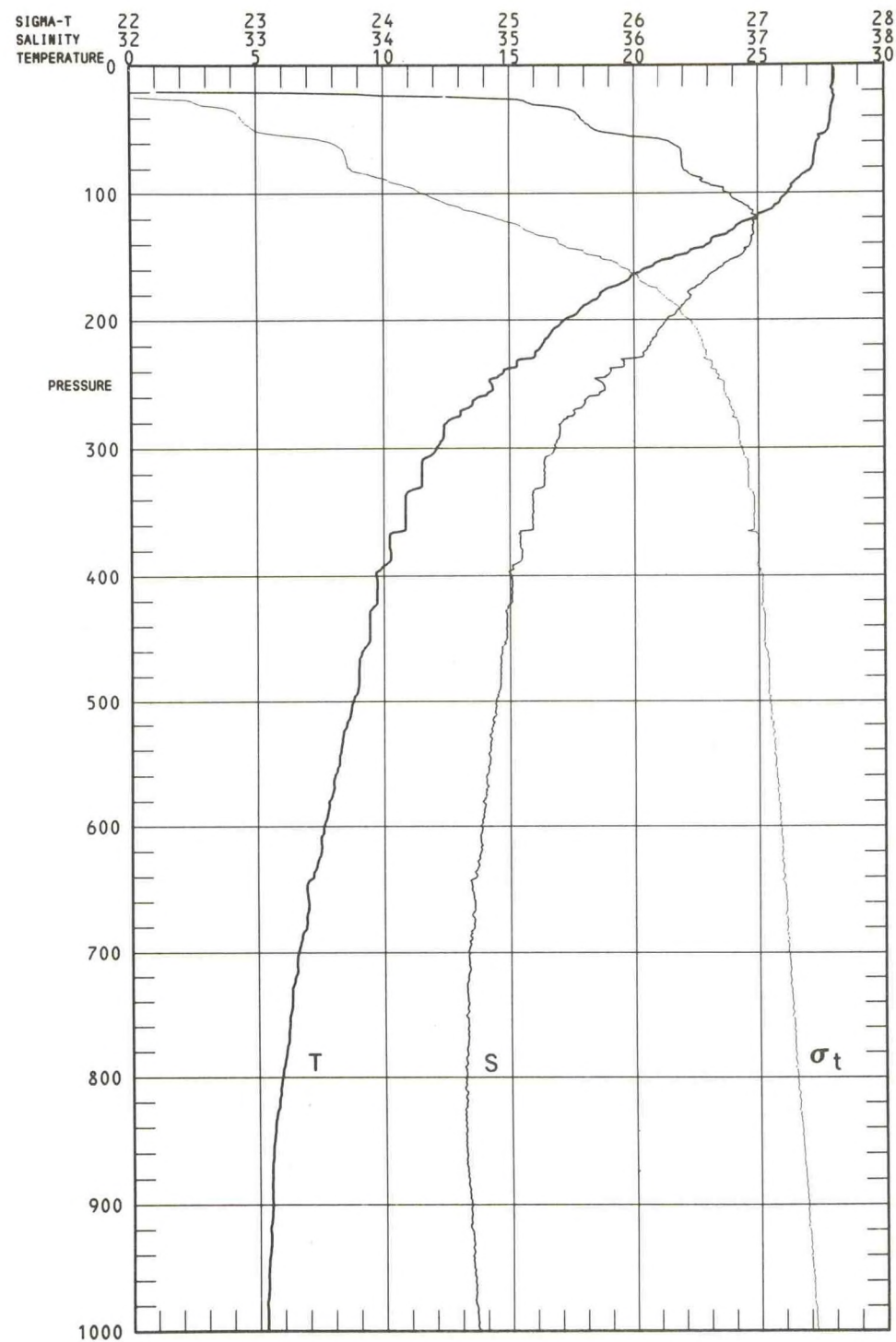
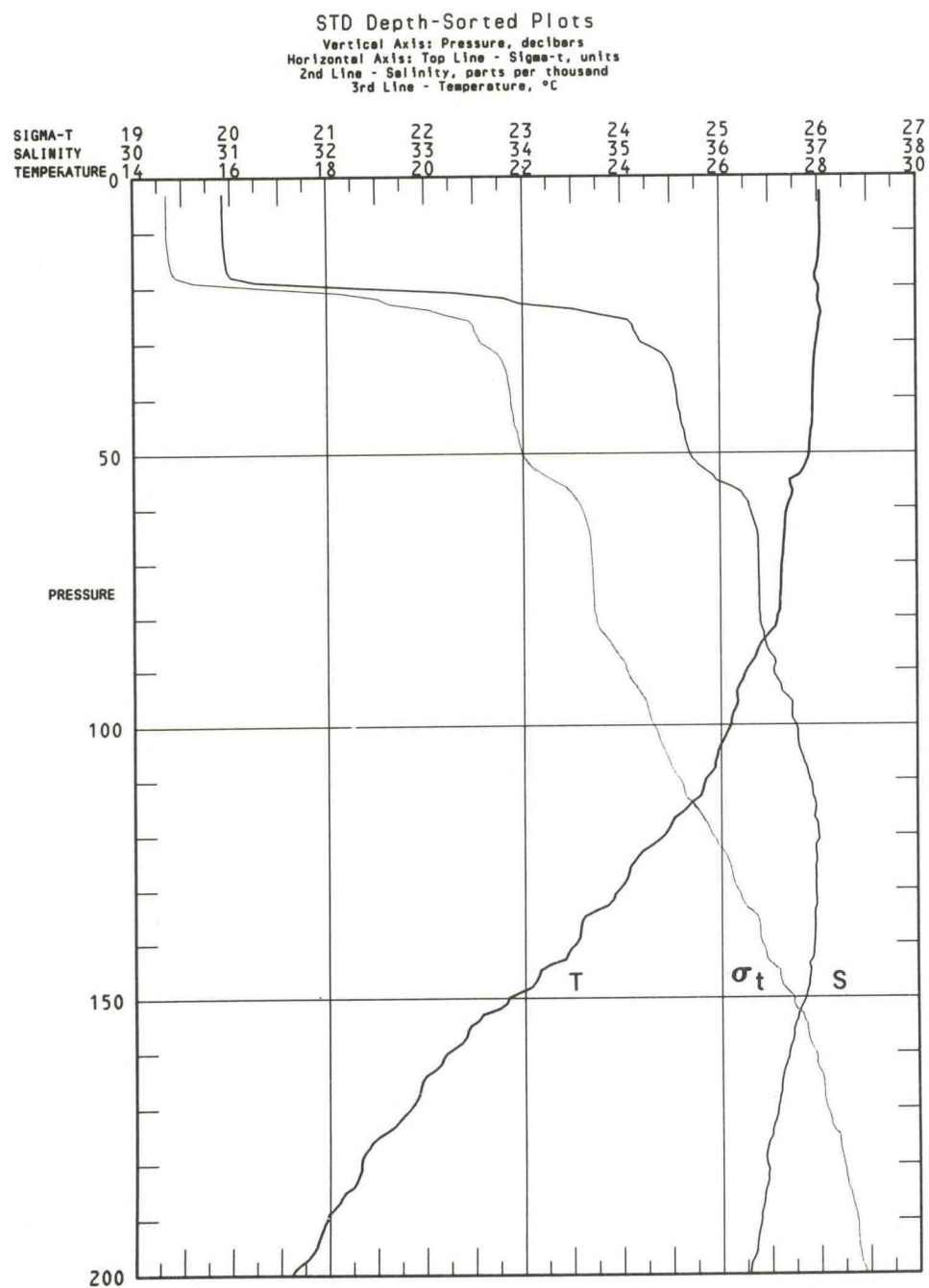
DISCOVERER YEAR 1969 DAY 181 TIME 1758 GMT LAT.12°53'N LON.053°55'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, June 30, 1969, 1758 GMT, 12°53'N 053°55'W

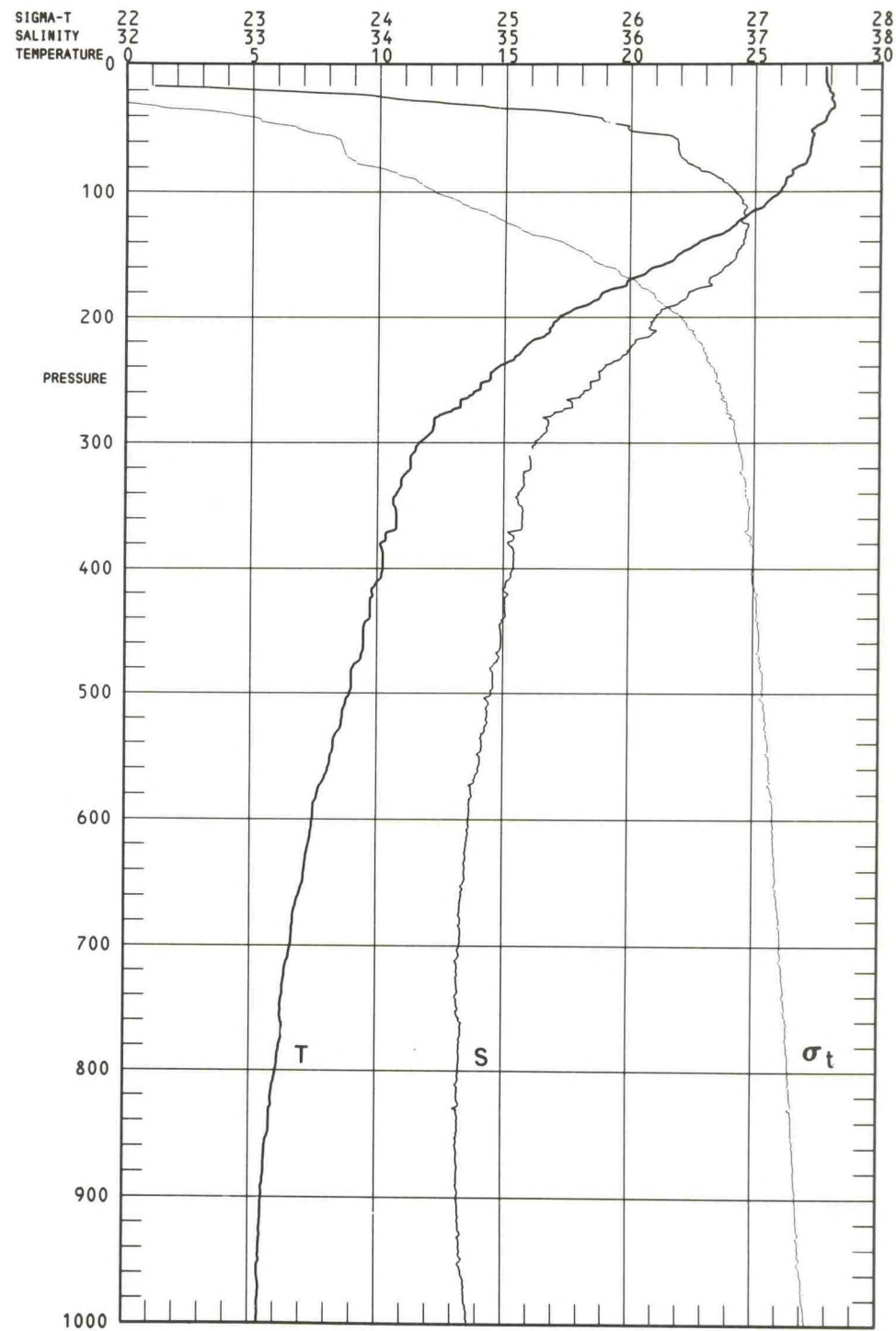
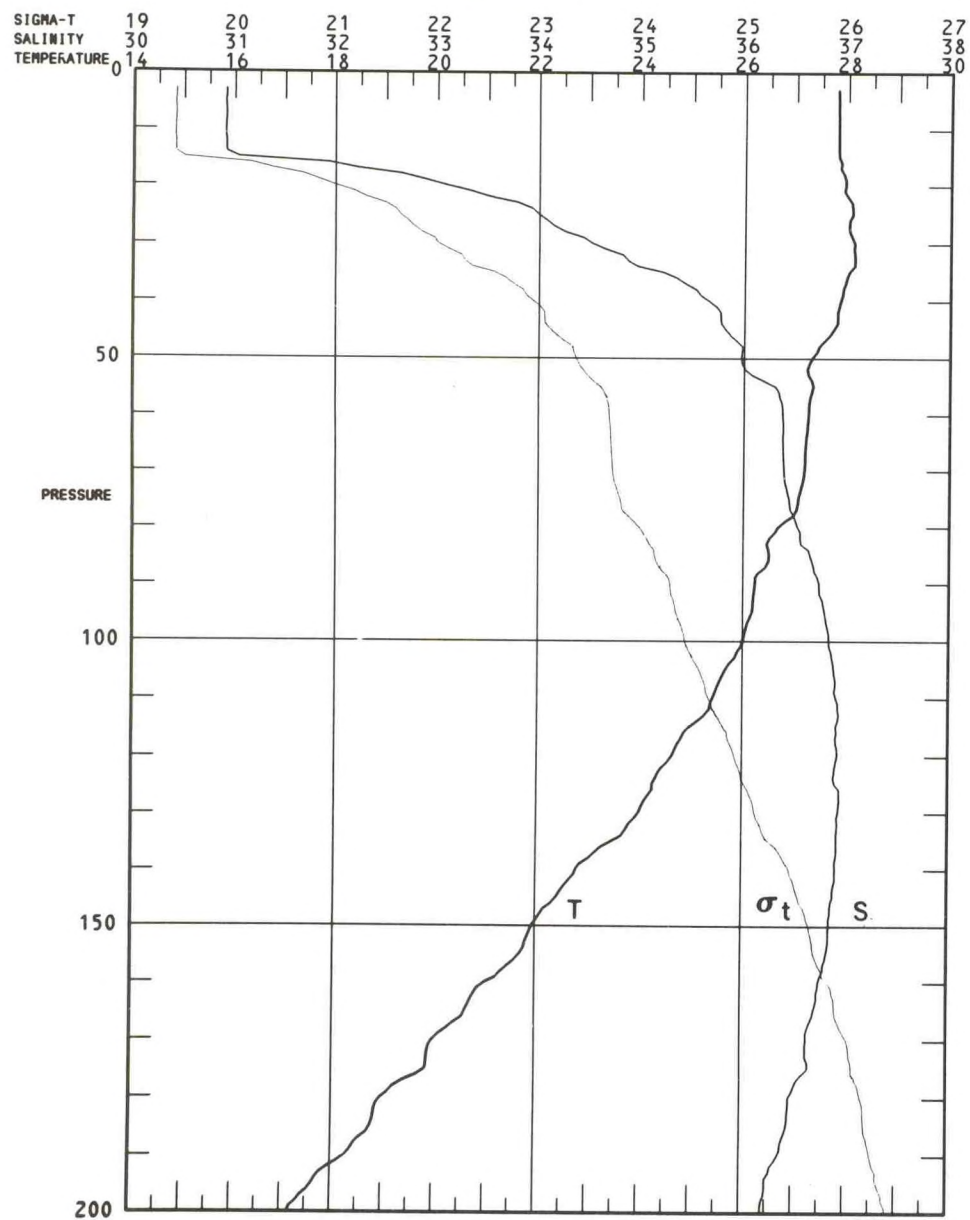
DISCOVERER YEAR 1969 DAY 181 TIME 2059 GMT LAT.12°51'N LONG.053°53'W



Discoverer, June 30, 1969, 2059 GMT, 12°51'N 053°53'W



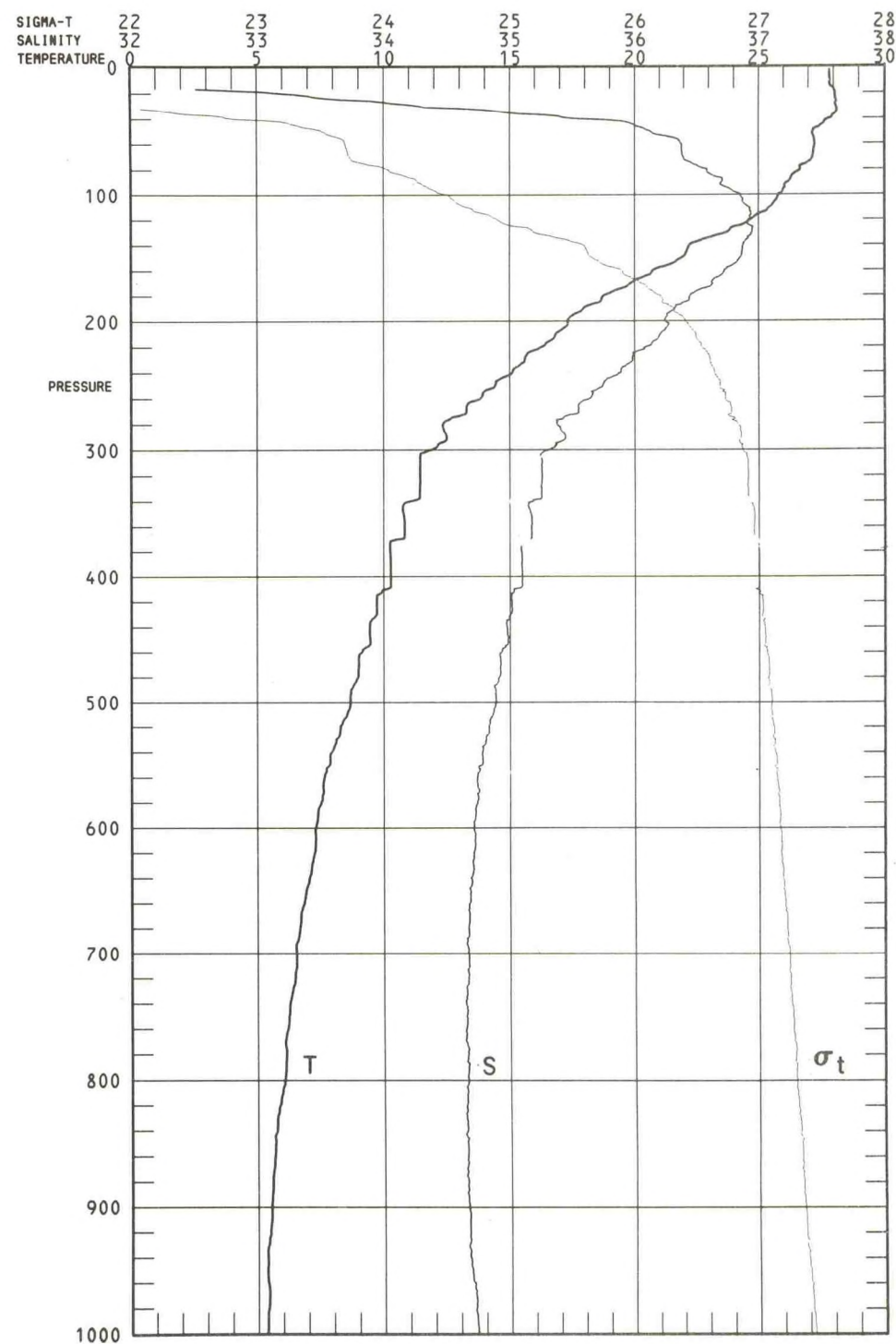
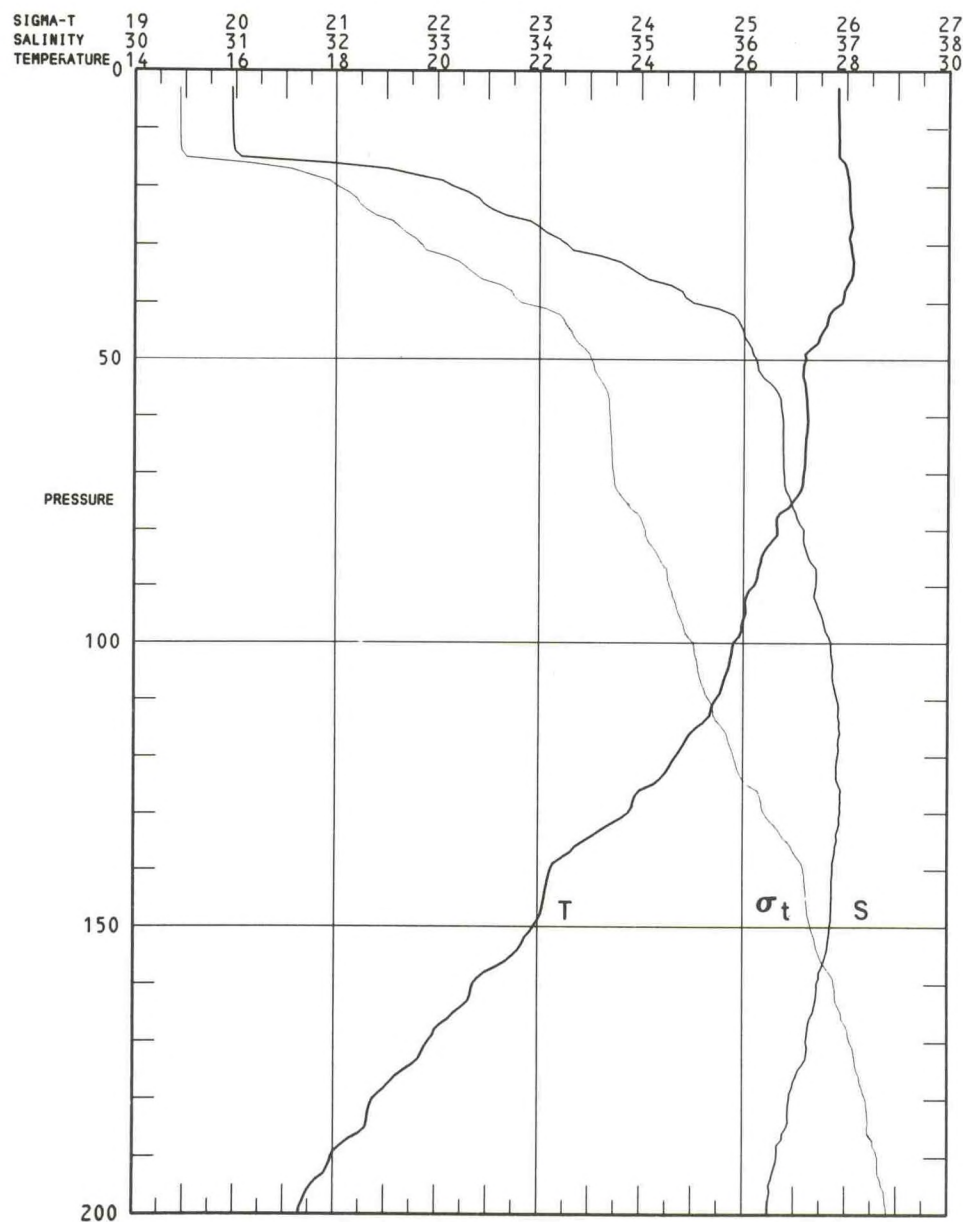
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, July 1, 1969, 0058 GMT, 13°05'N 053°11'W

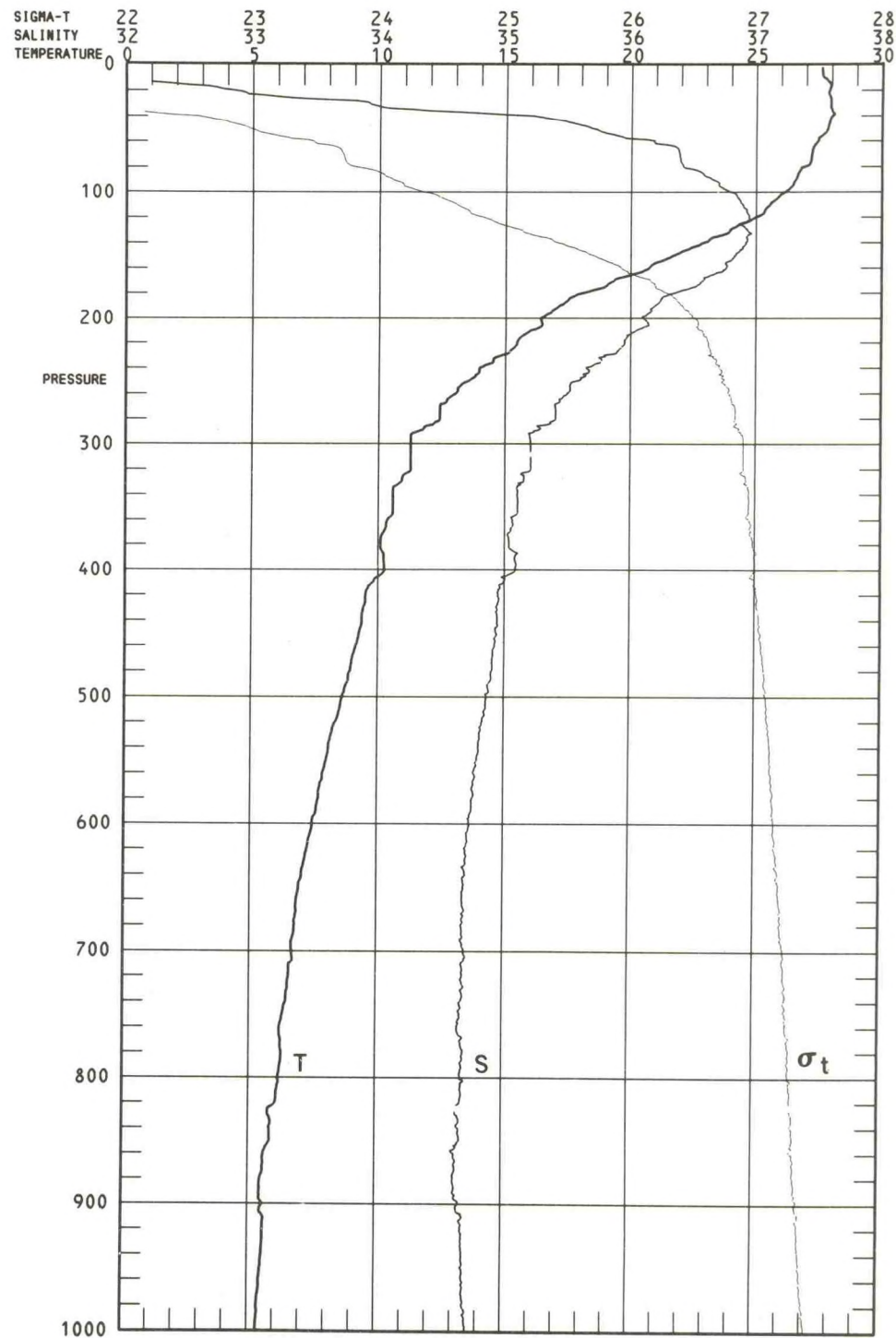
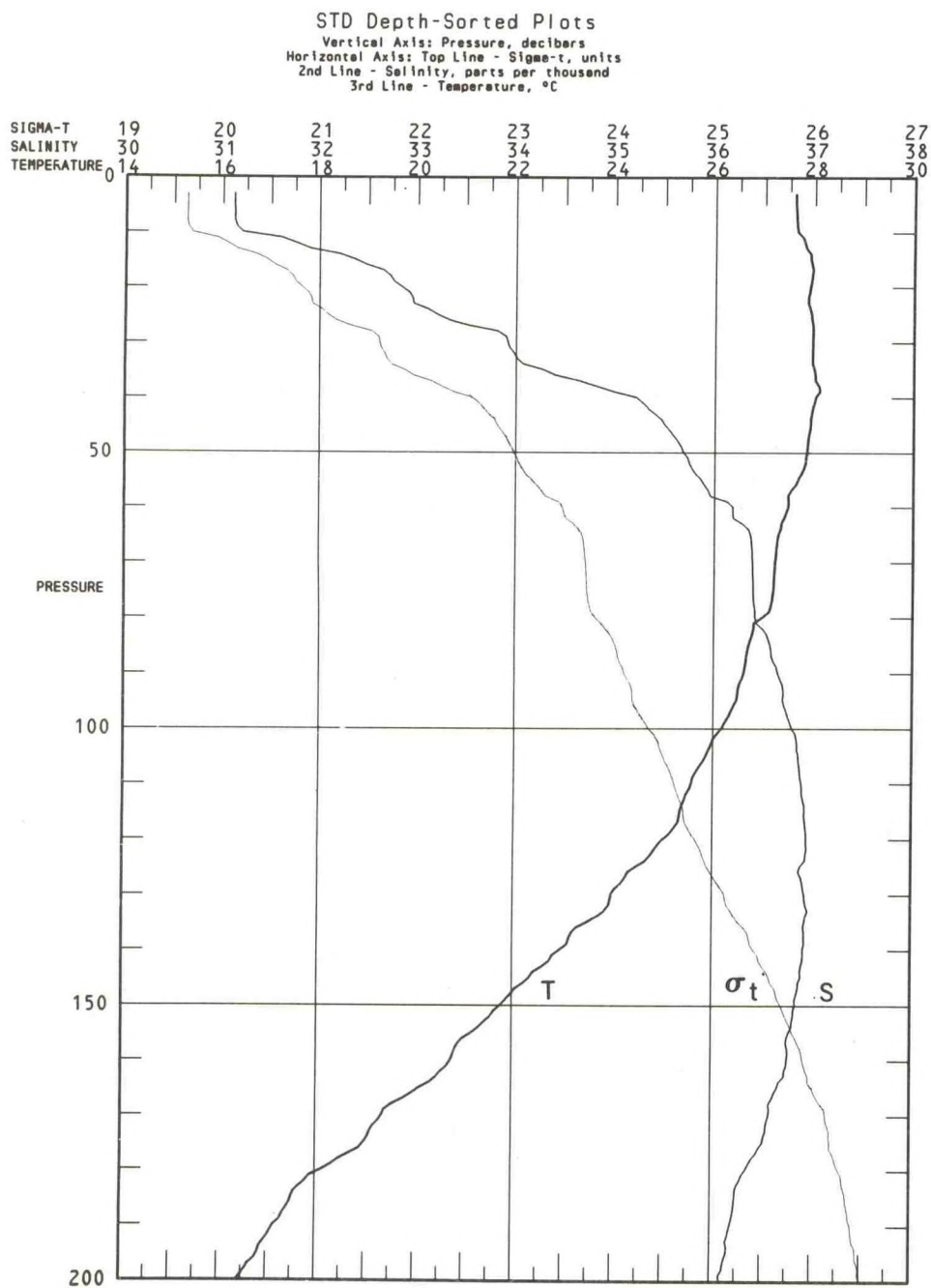
DISCOVERER YEAR 1969 DAY 182 TIME 259 GMT LAT.13°03'N LON.053°55'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, July 1, 1969, 0259 GMT, 13°03'N 053°55'W

DISCOVERER YEAR 1969 DAY 182 TIME 559 GMT LAT.13°11'N LONG.053°54'W

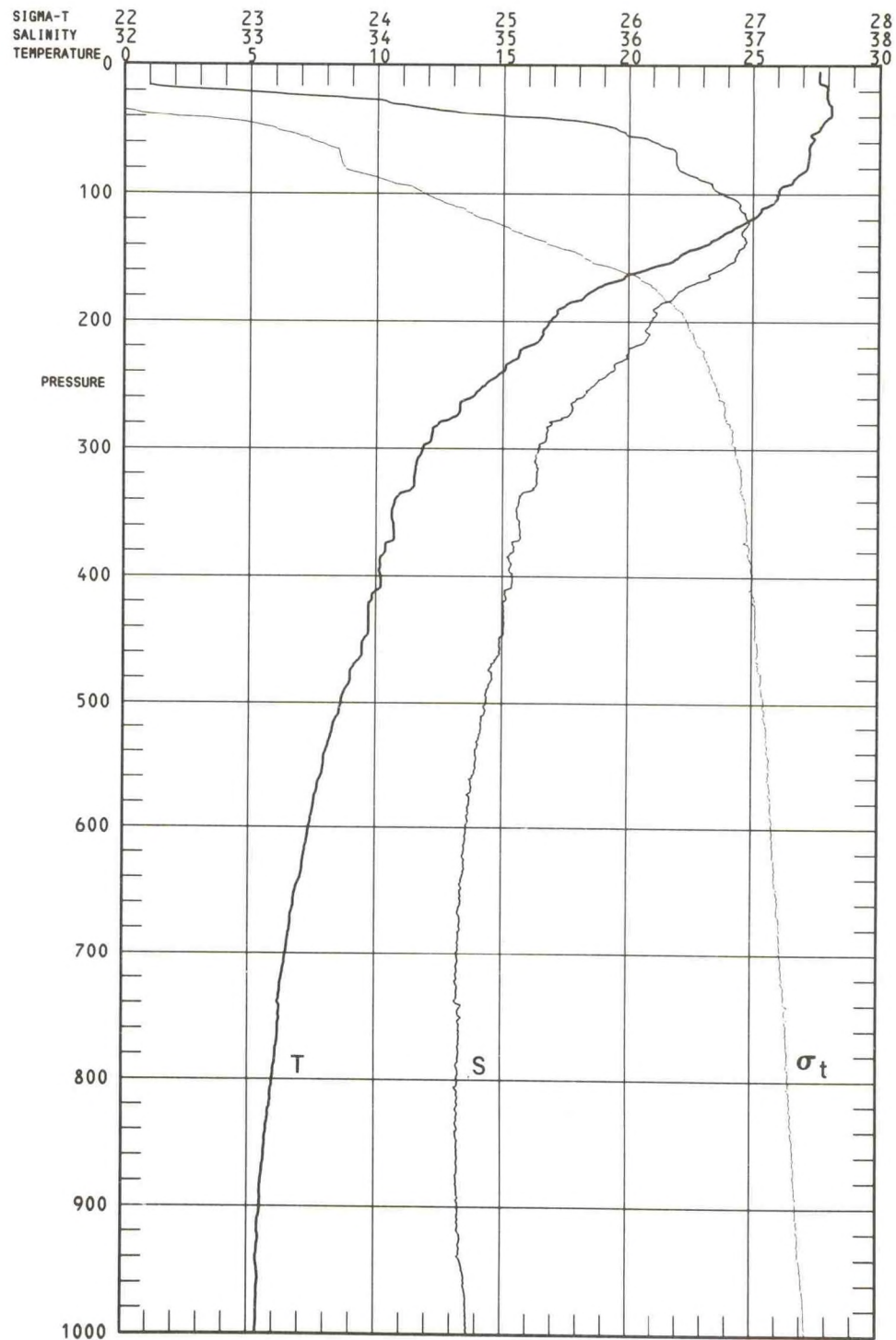
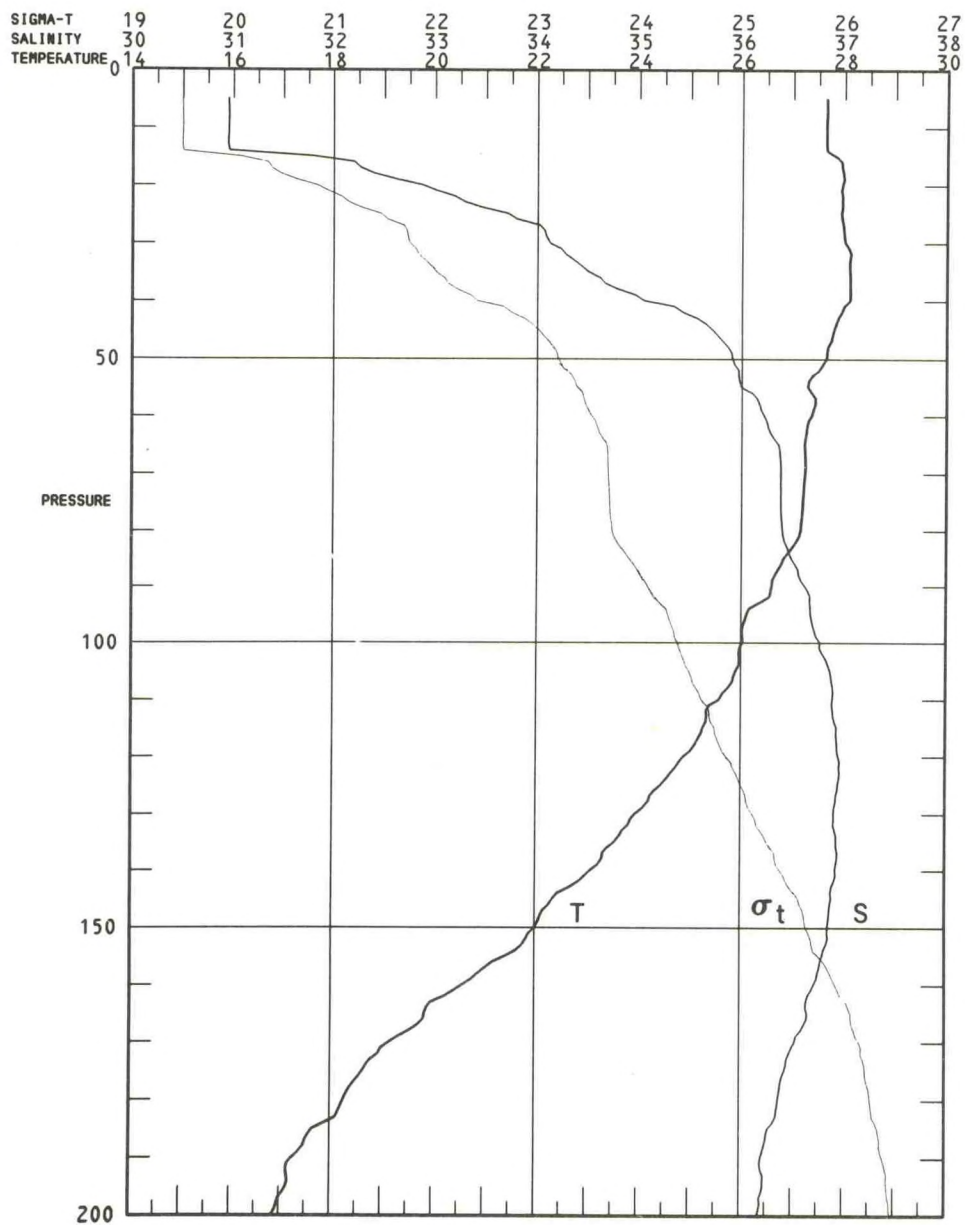


Discoverer, July 1, 1969, 0559 GMT, 13°11'N 053°53'W



# STD Depth-Sorted Plots

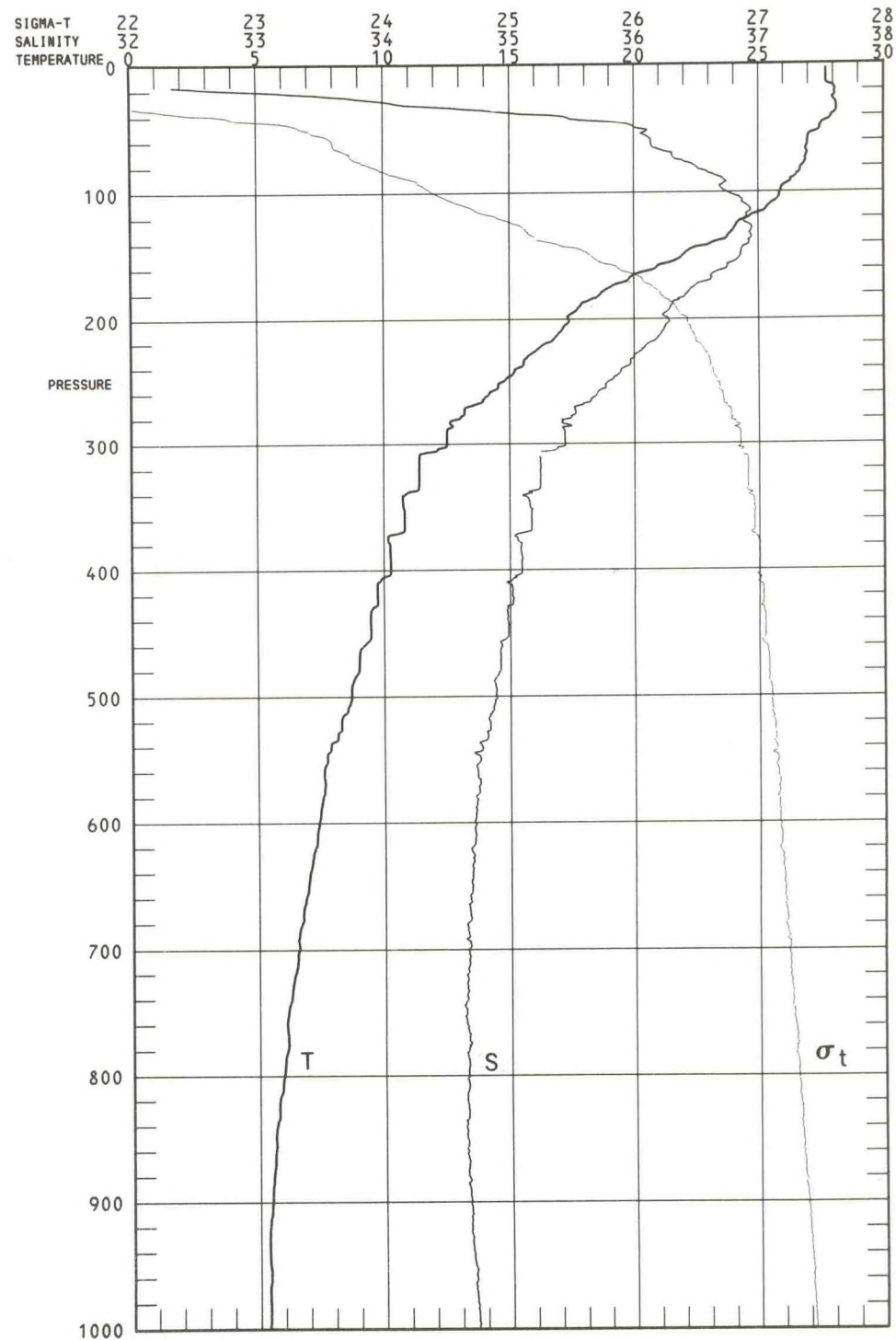
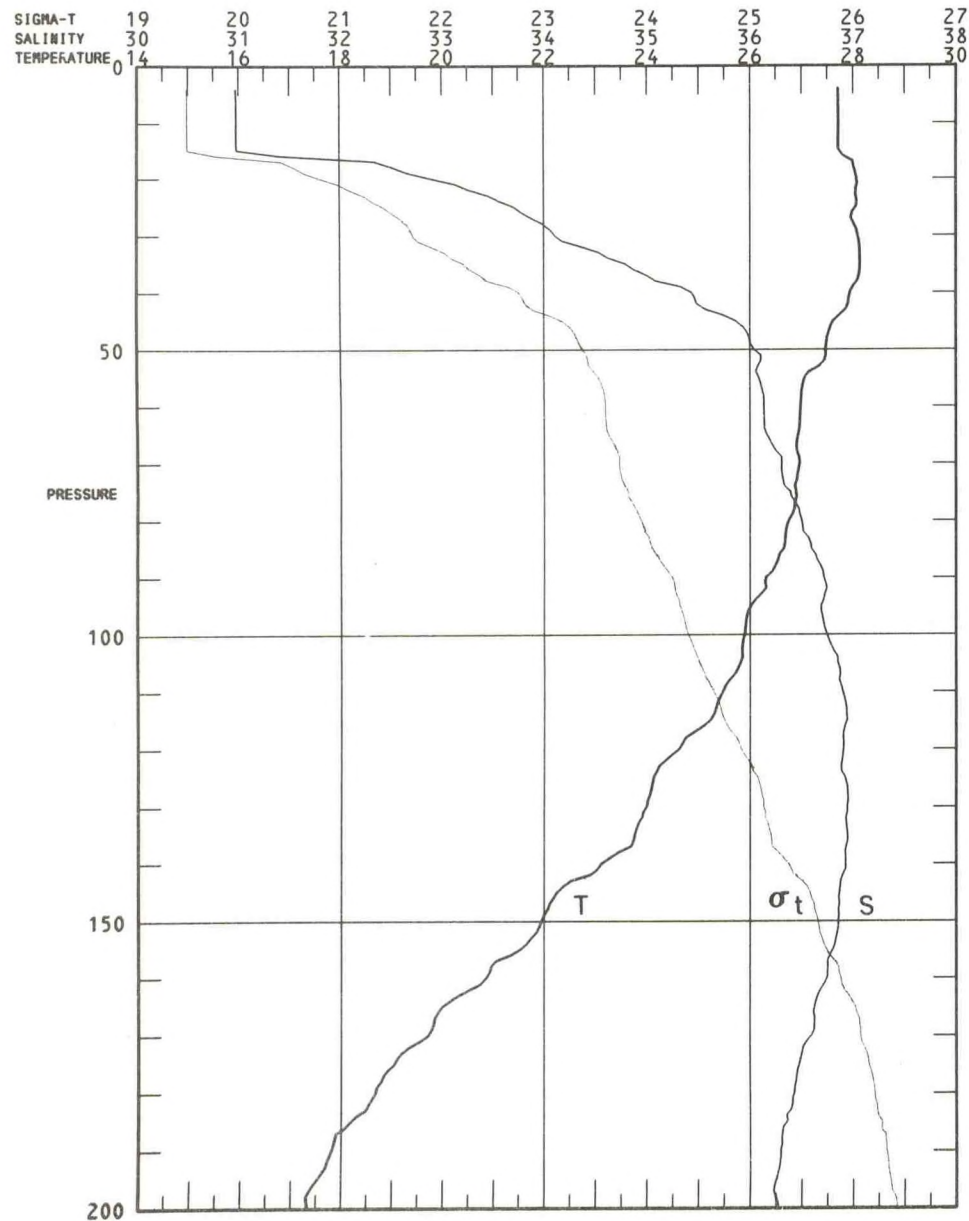
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, July 1, 1969, 0902 GMT, 13°10'N 053°53'W

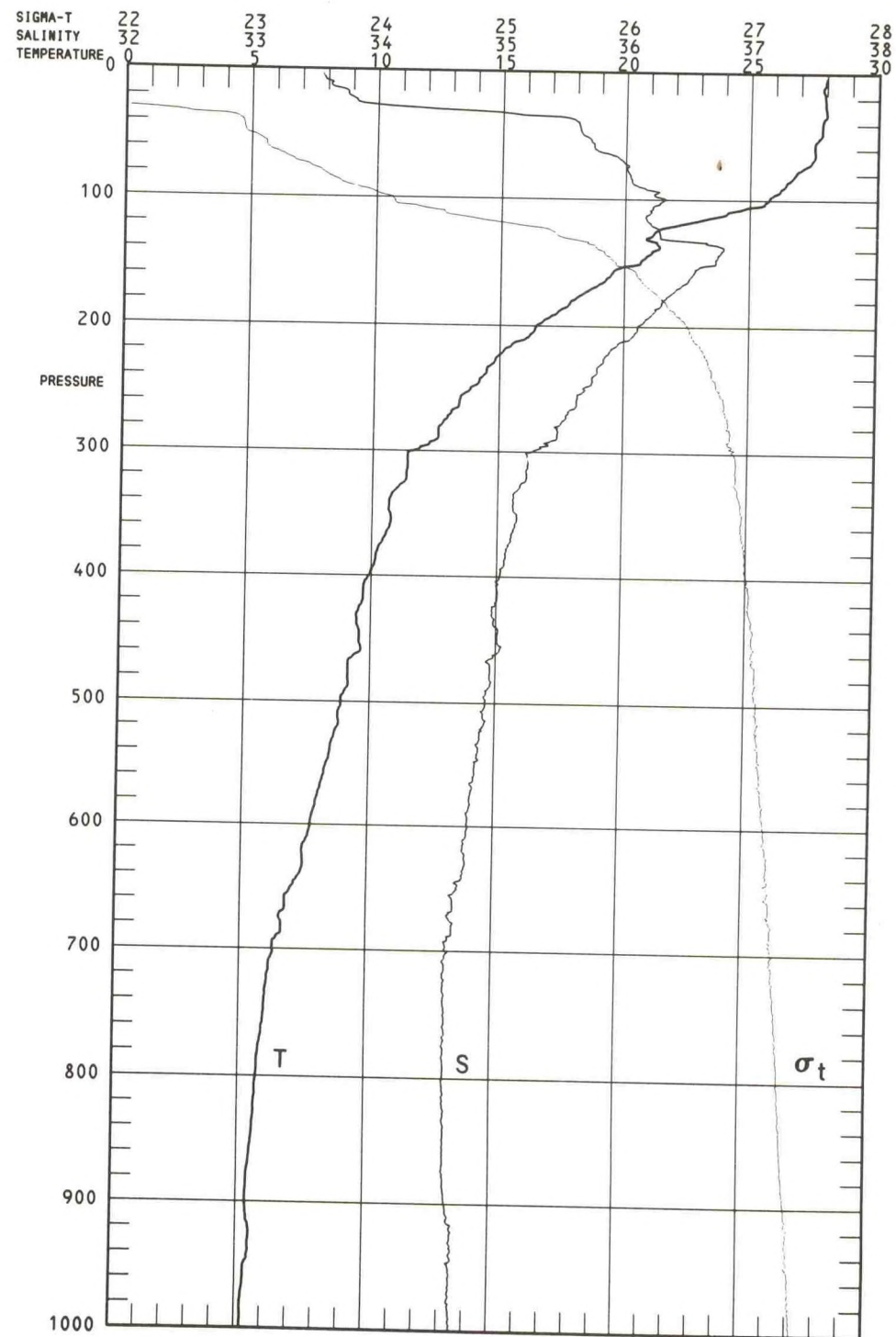
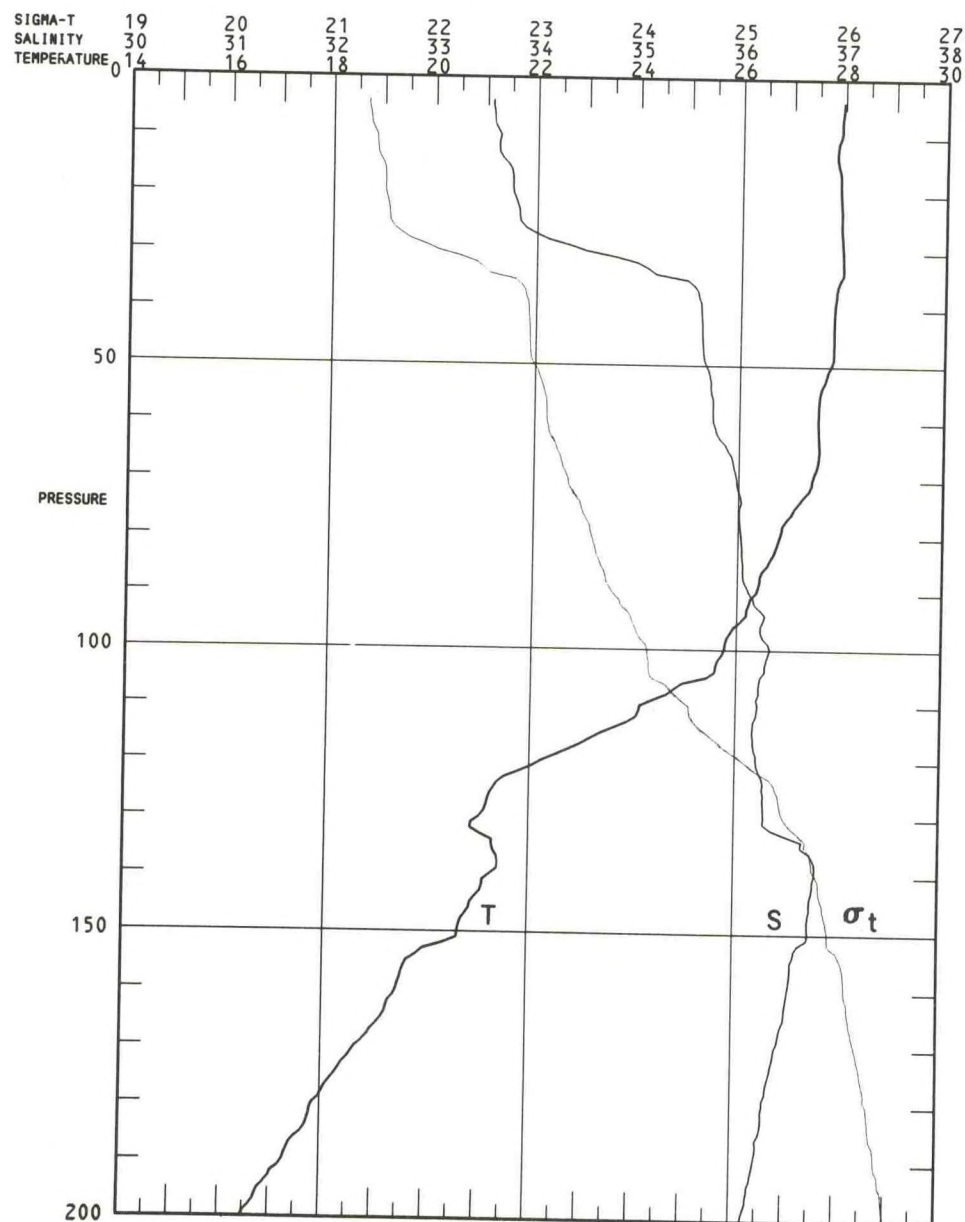
DISCOVERER YEAR 1969 DAY 182 TIME 1159 GMT LAT.13°07'N LON.053°53'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C



Discoverer, July 1, 1969, 1159 GMT, 13°07'N 053°53'W

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C

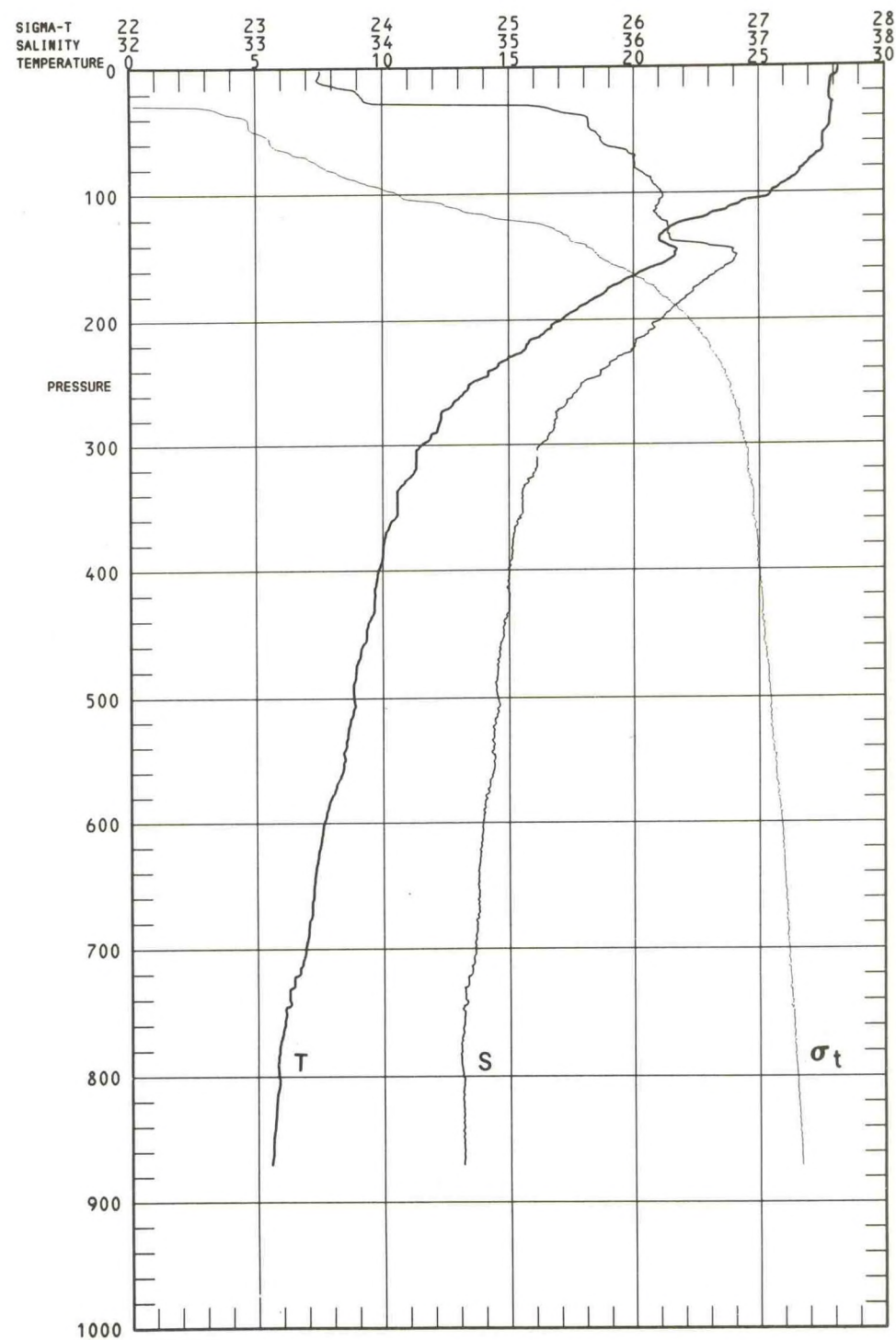
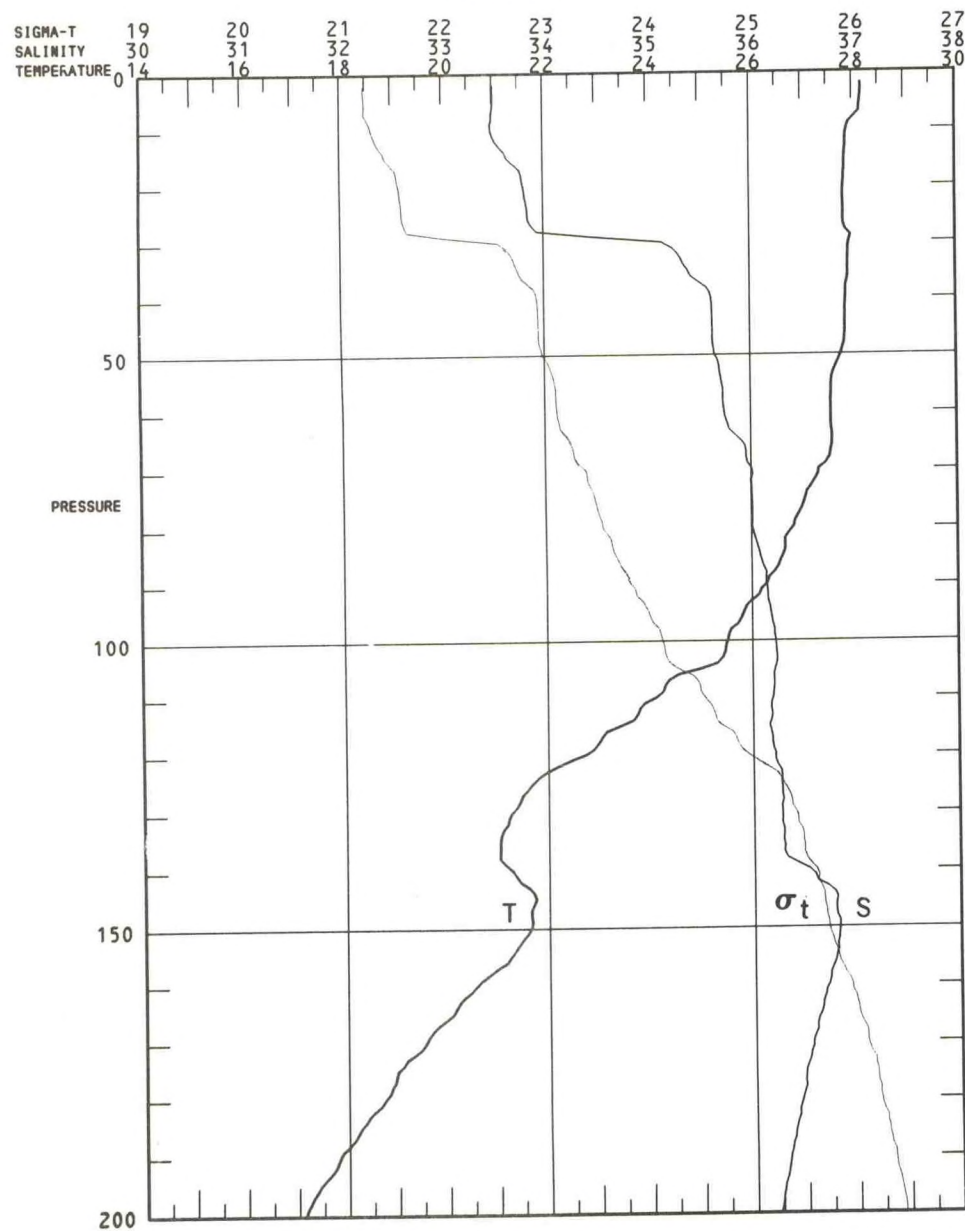


Discoverer, July 1, 1969, 1509 GMT, 13°07'N 053°38'W



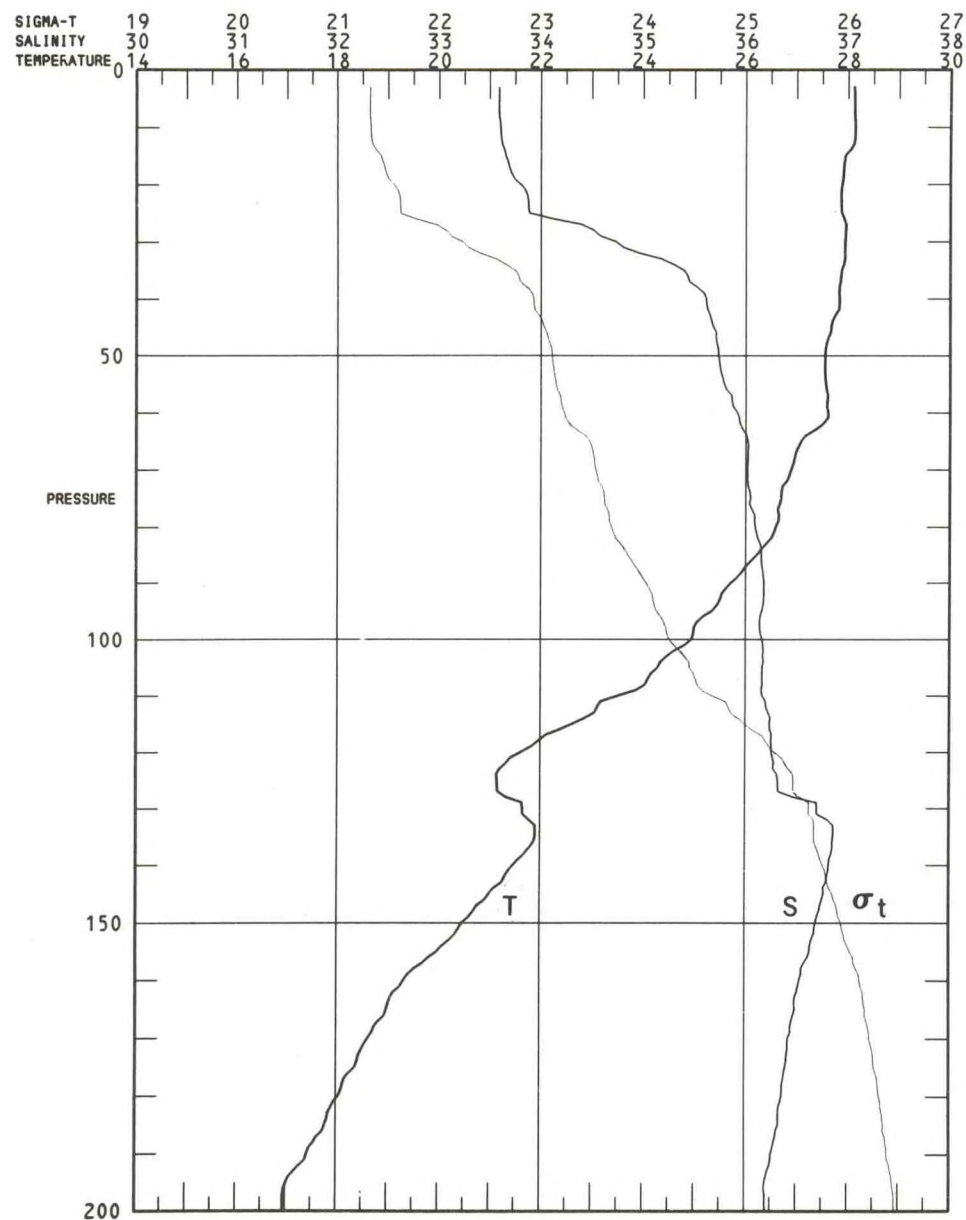
DISCOVERER YEAR 1969 DAY 182 TIME 1759 GMT LAT.13°07'N LON.053°44'W

# STD Depth-Sorted Plots Vertical Axis: Pressure, decibars Horizontal Axis: Top Line - Sigma-t, units 2nd Line - Salinity, parts per thousand 3rd Line - Temperature, °C

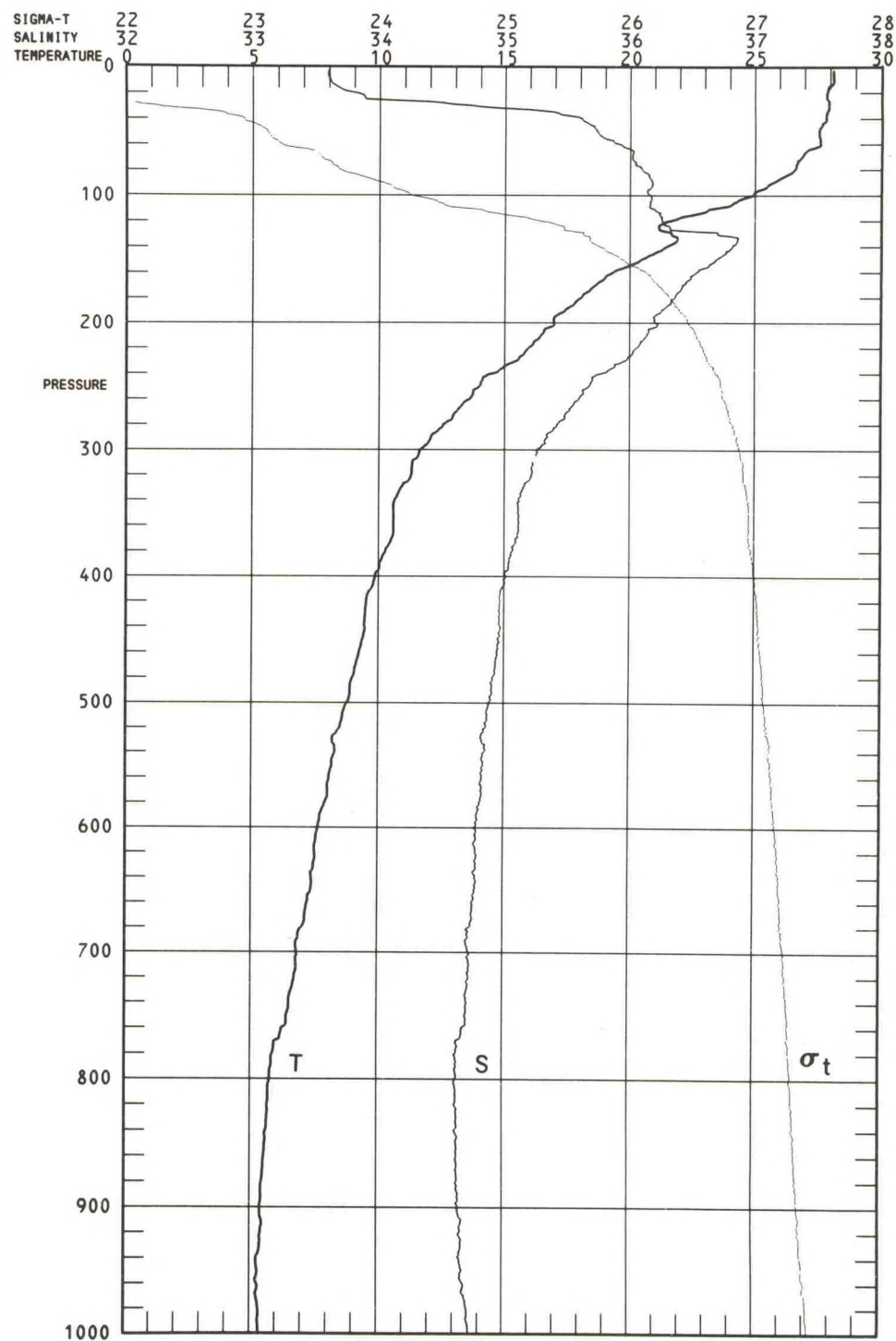


Discoverer, July 1, 1969, 1759 GMT, 13°07'N 053°44'W

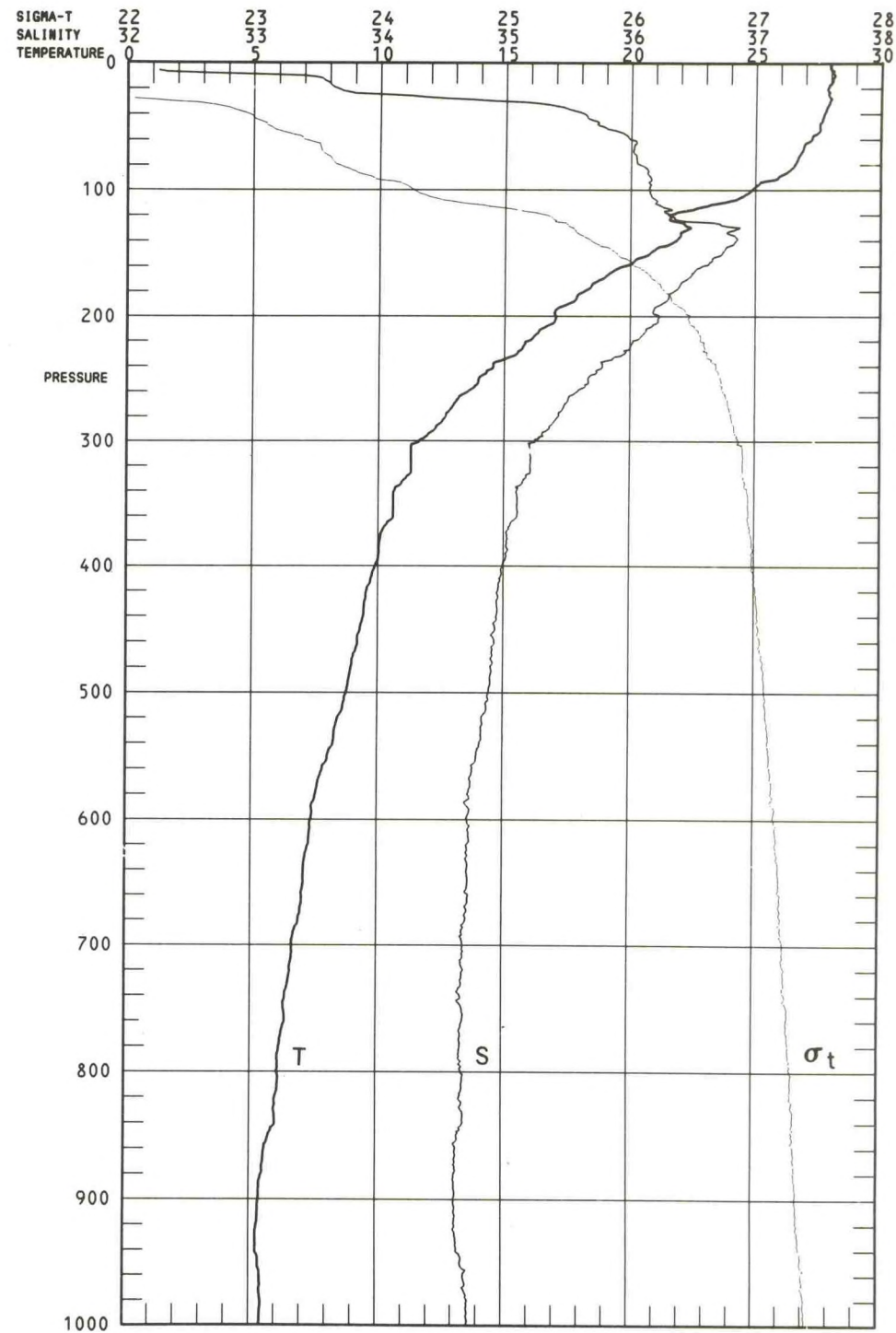
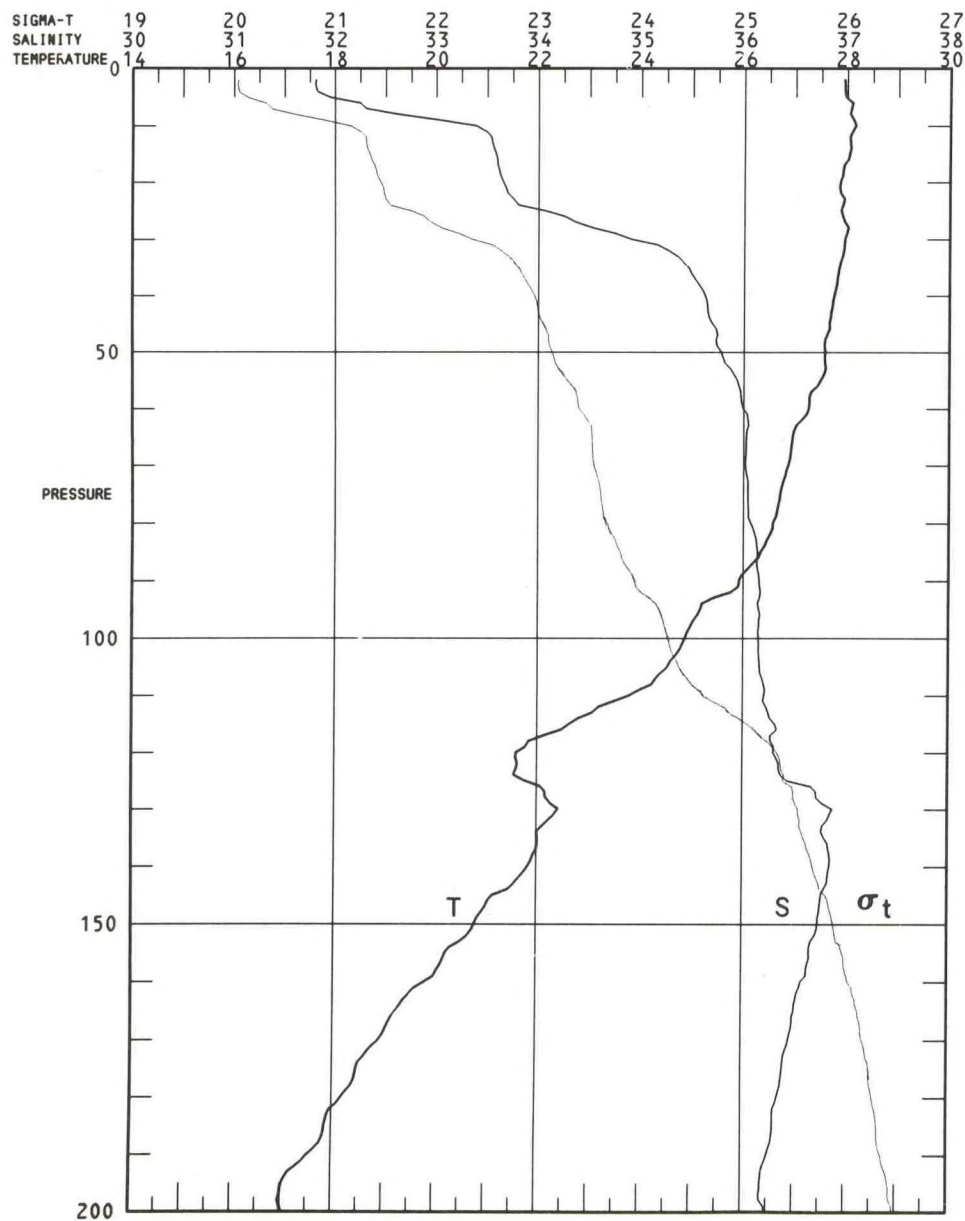
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, July 1, 1969, 2059 GMT, 13°09'N 053°49'W



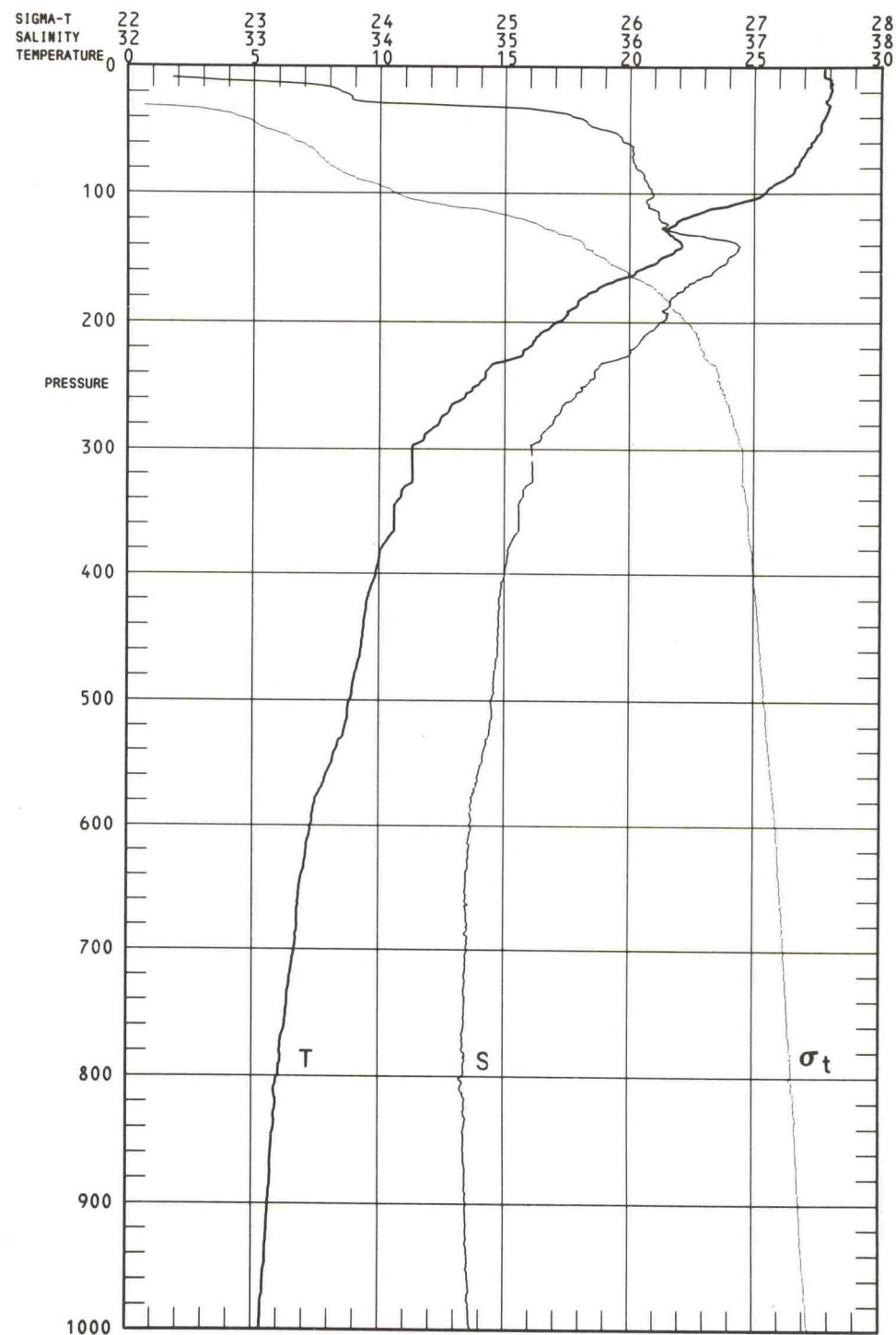
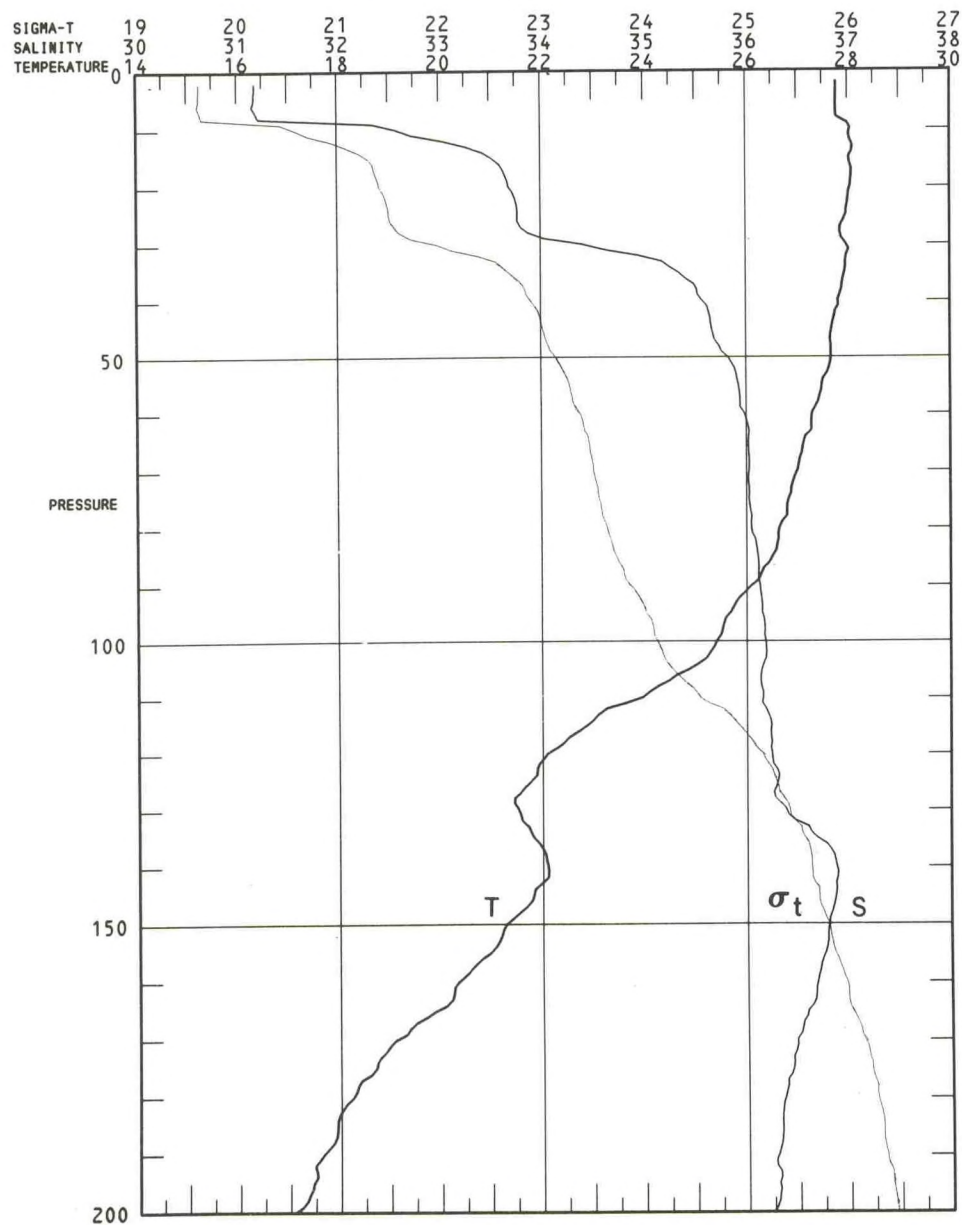
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, July 2, 1969, 0054 GMT, 13°02'N 053°54'W



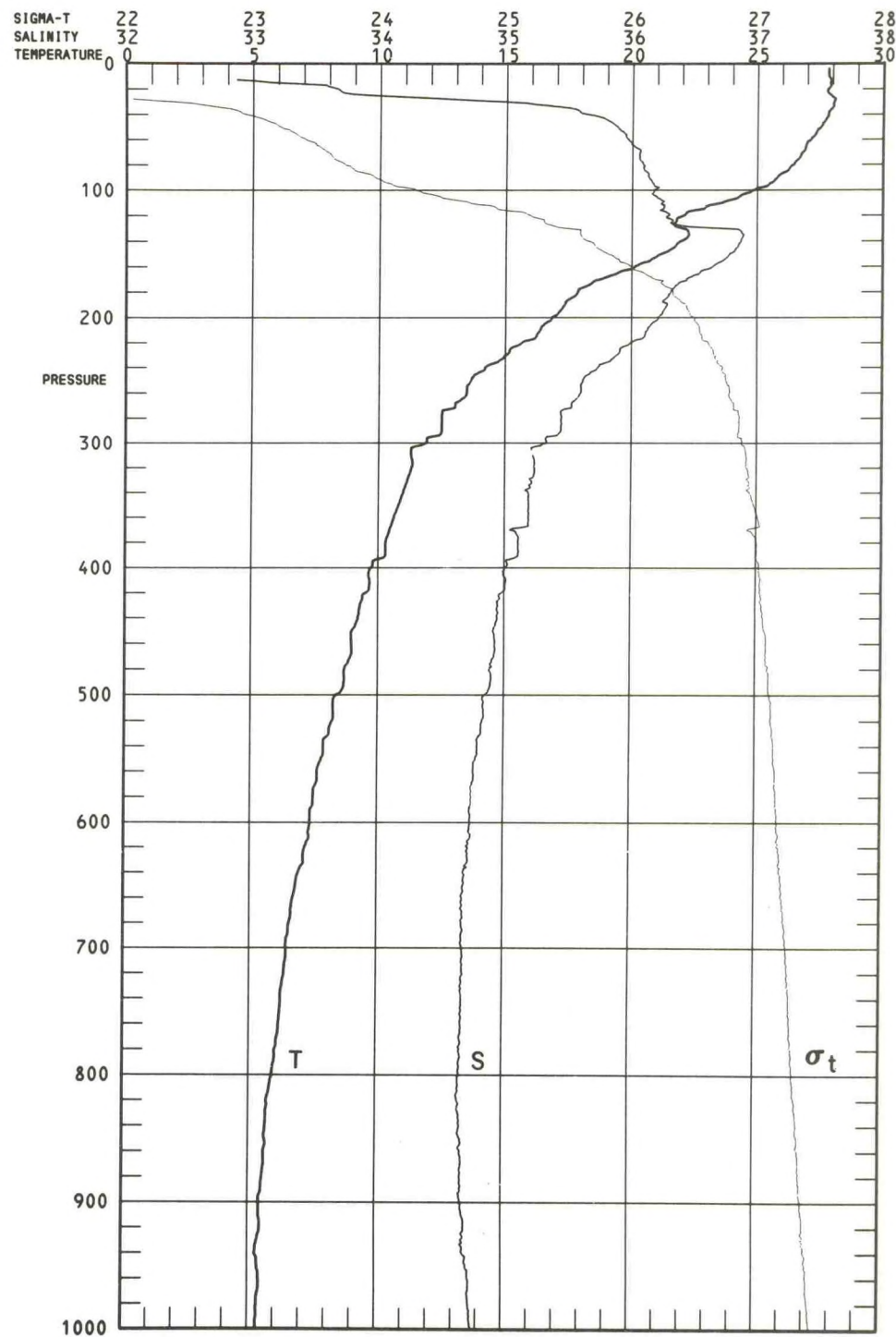
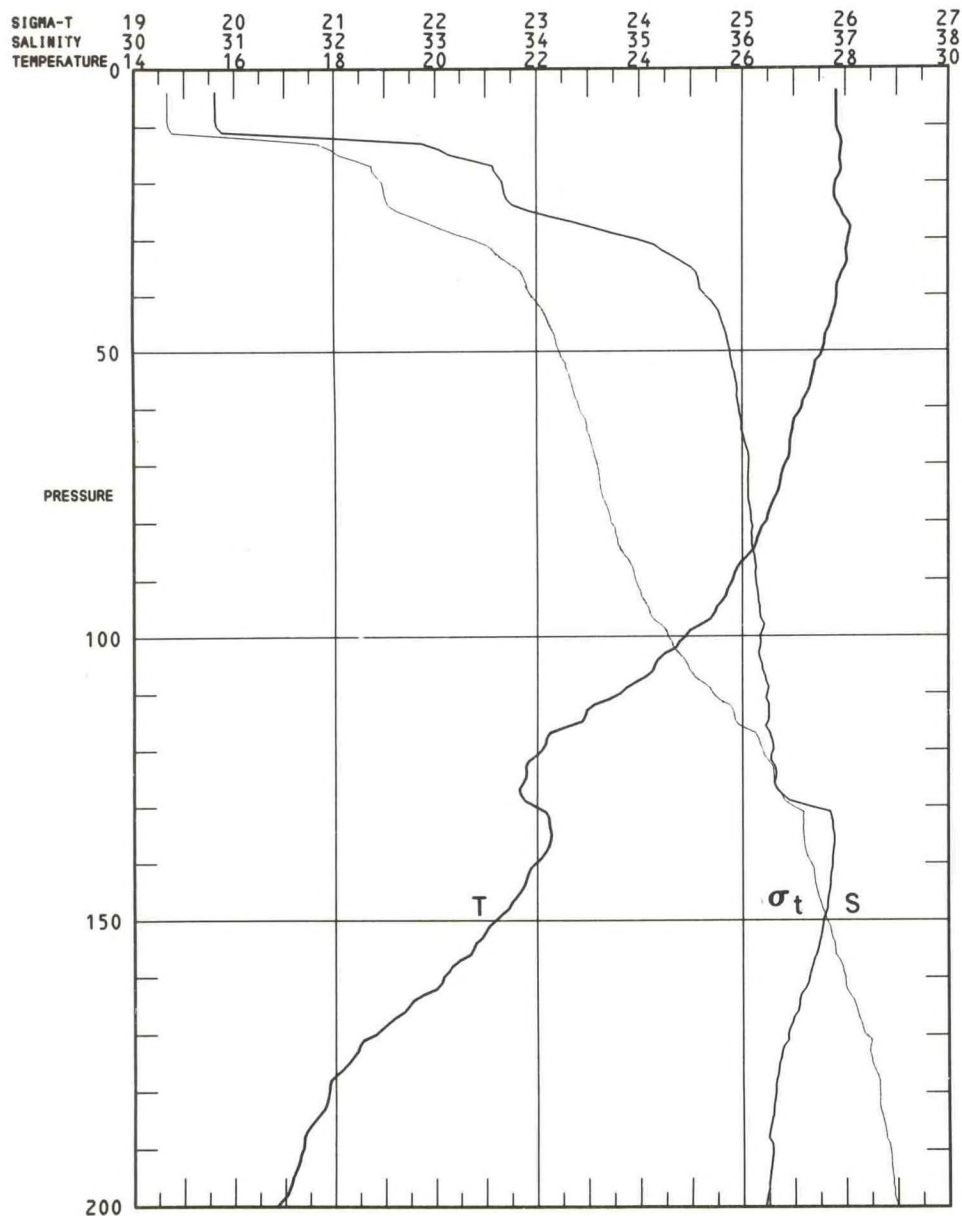
STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, July 2, 1969, 0256 GMT, 13°01'N 053°56'W

# STD Depth-Sorted Plots

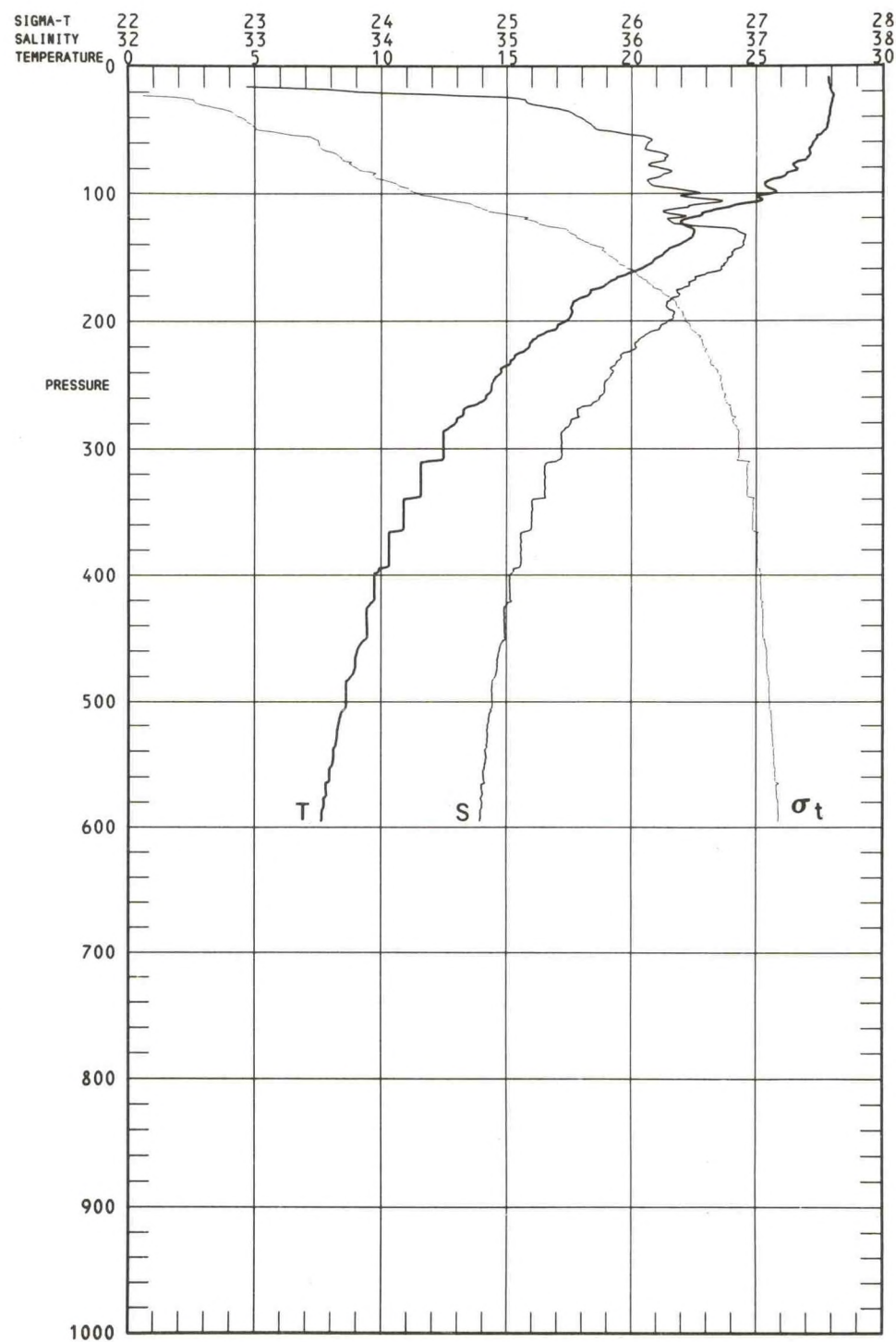
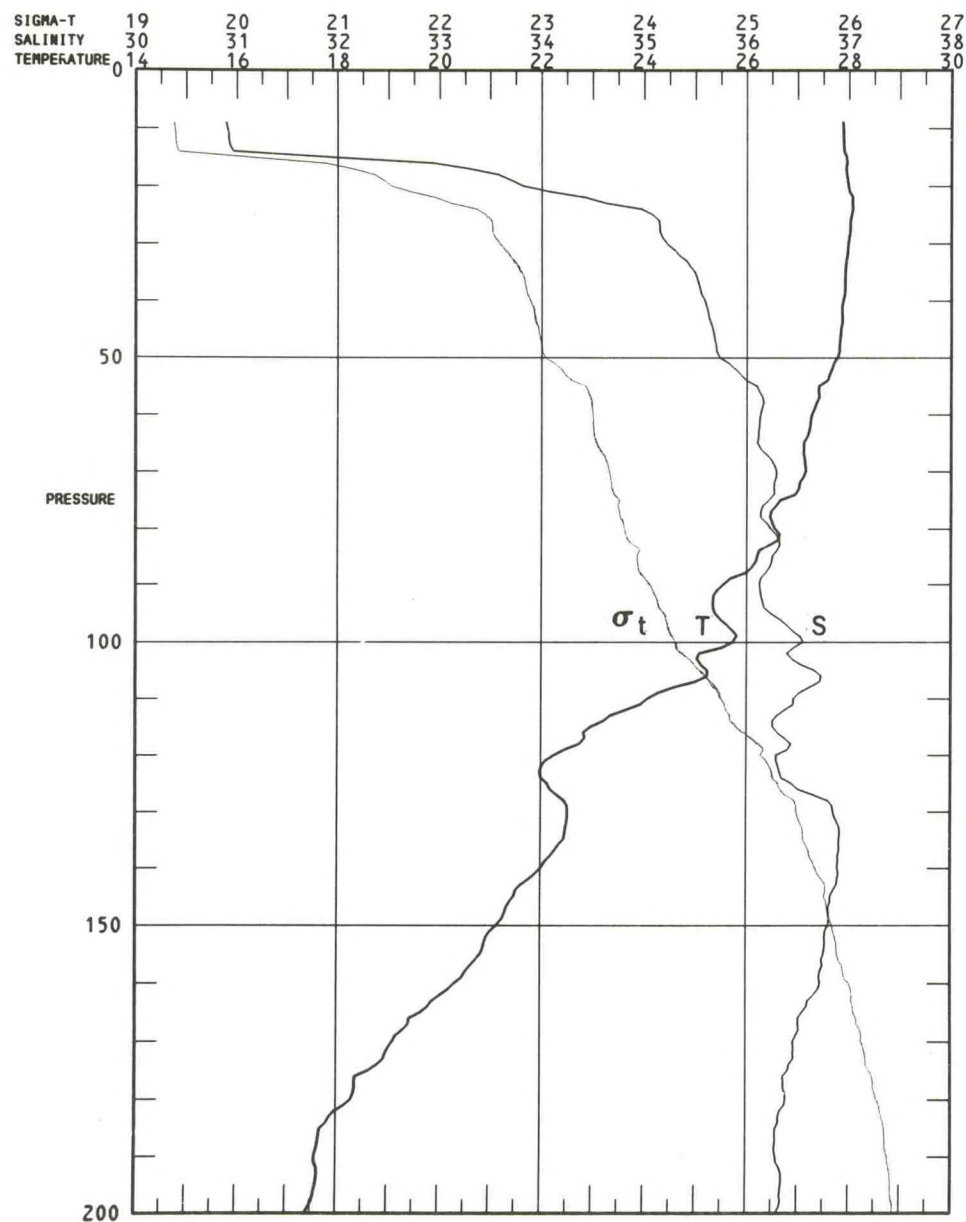
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, July 2, 1969, 0607 GMT, 13°07'N 053°38'W

DISCOVERER YEAR 1969 DAY 183 TIME 901 GMT  
CAST TERMINATED DUE TO SEVERE WIRE ANGLE

STD Depth-Sorted Plots  
Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



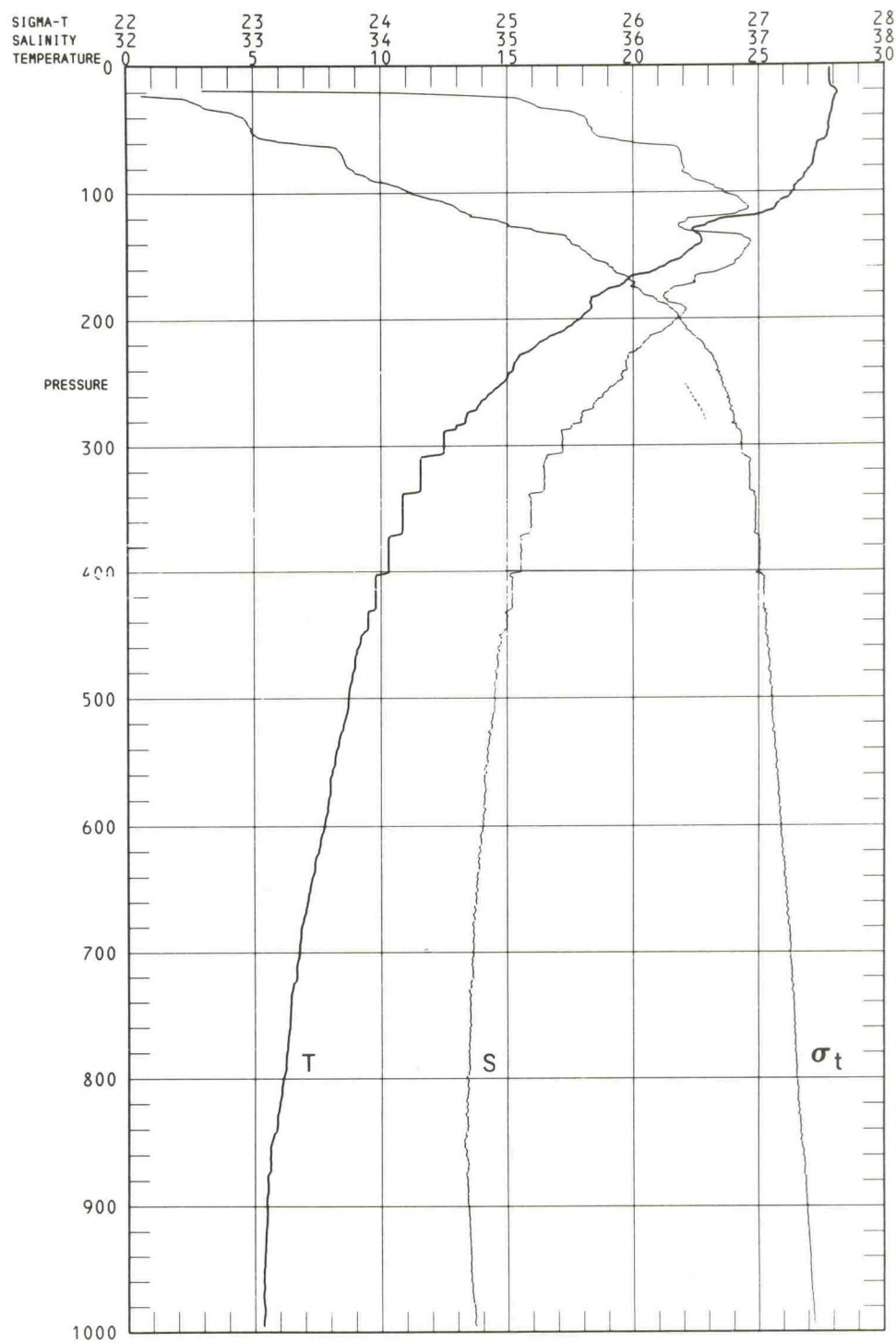
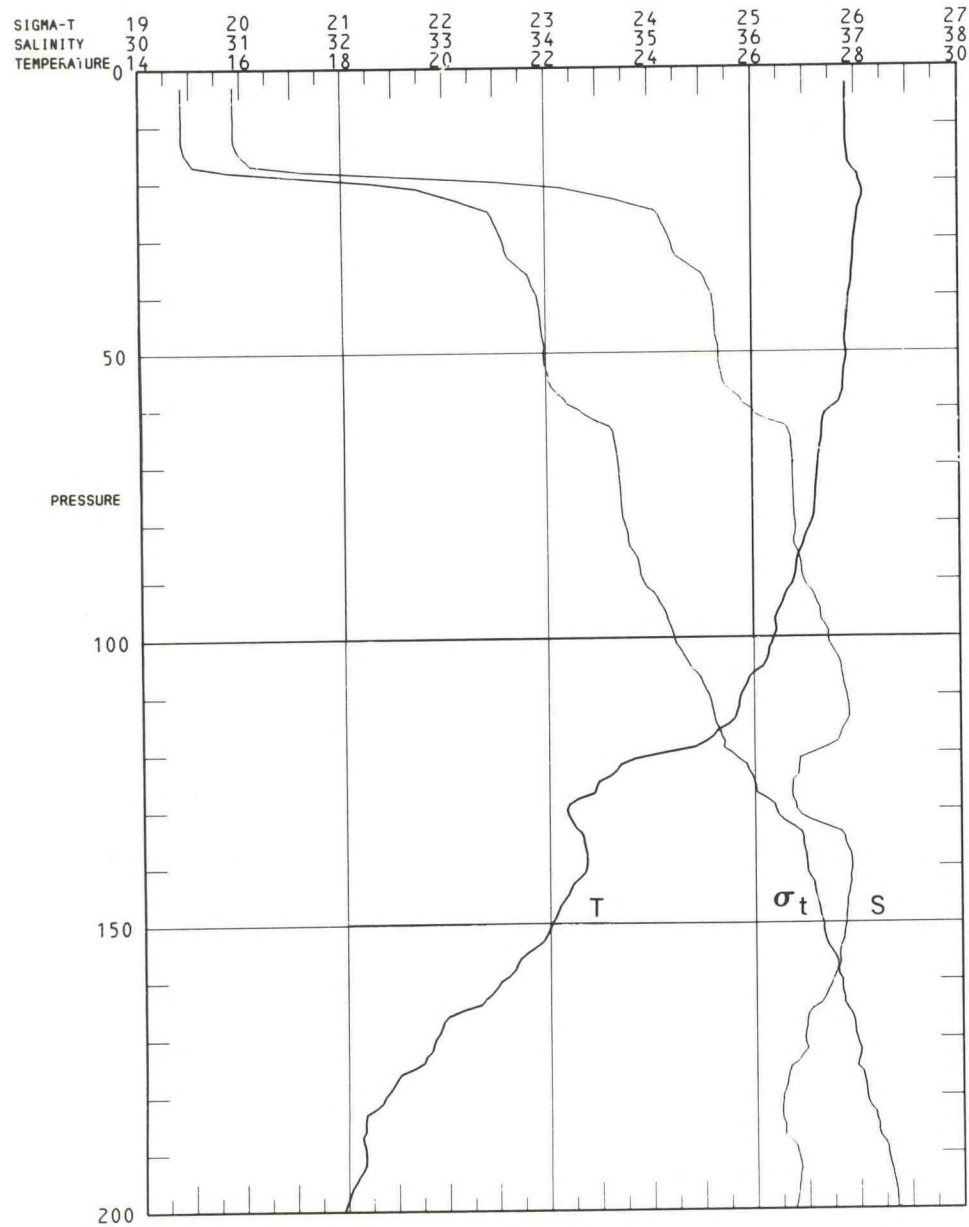
Discoverer, July 2, 1969, 0901 GMT, 13°10'N 053°40'W



DISCOVERER YEAR 1969 DAY 183 TIME 1156 GMT LAT.13°10'N LON.054°08'W

# STD Depth-Sorted Plots

Vertical Axis: Pressure, decibars  
Horizontal Axis: Top Line - Sigma-t, units  
2nd Line - Salinity, parts per thousand  
3rd Line - Temperature, °C



Discoverer, July 2, 1969, 1156 GMT, 13°10'N 054°08'W

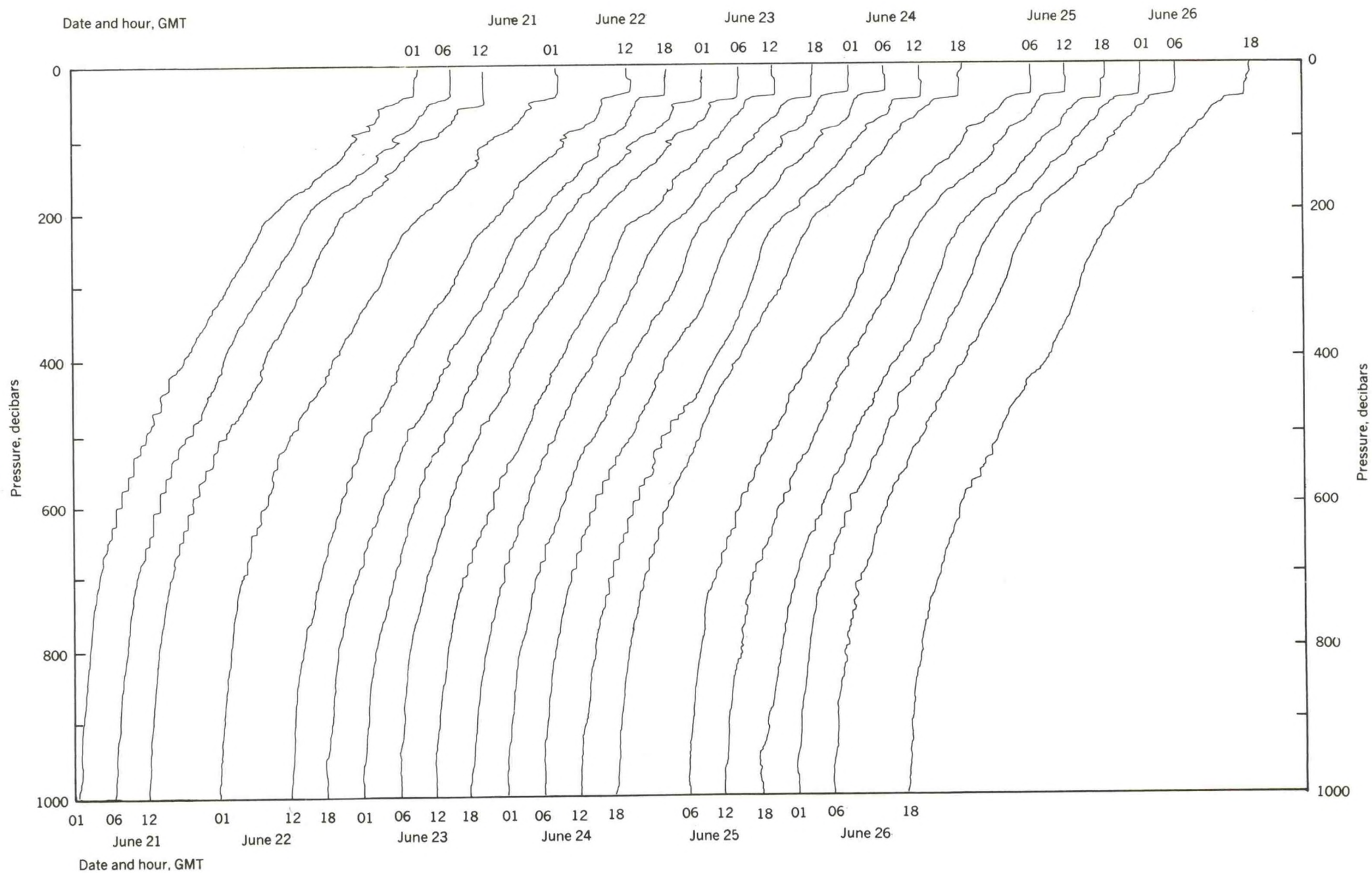


# 5. TEMPORAL VARIATIONS IN TEMPERATURE, SALINITY, AND SIGMA-t

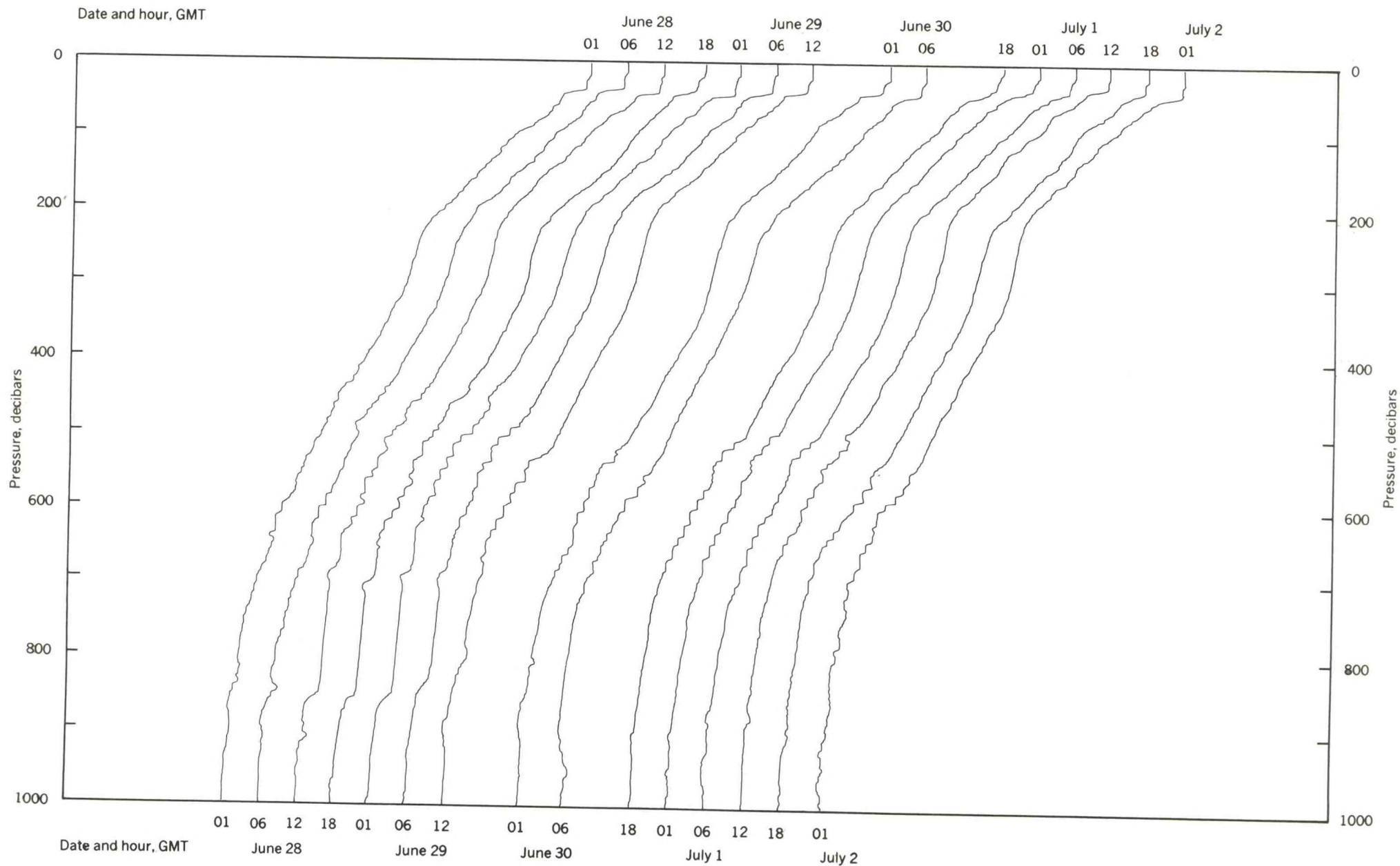
Given in this section are plots of temperature, salinity, and sigma-t versus pressure for each station and sounding, arranged along a staggered time axis for display of sounding-to-sounding variations. The plots were constructed by shifting the horizontal scale to the right for successive observation times. The amount of shift for each 6 hours is 2.4°C for temperature, 1.2 ‰ for salinity, and 1.2 for sigma-t. Soundings taken at 0100 GMT are here shown as having been obtained at 0000 GMT to allow greater regularity in the graphic presentation.

The plots in this section, arranged by station location rather than by ship, are intended only as an aid in estimating the growth, persistence, and decay with time of features in the profiles. For absolute values the reader is referred to the profiles in section 4.

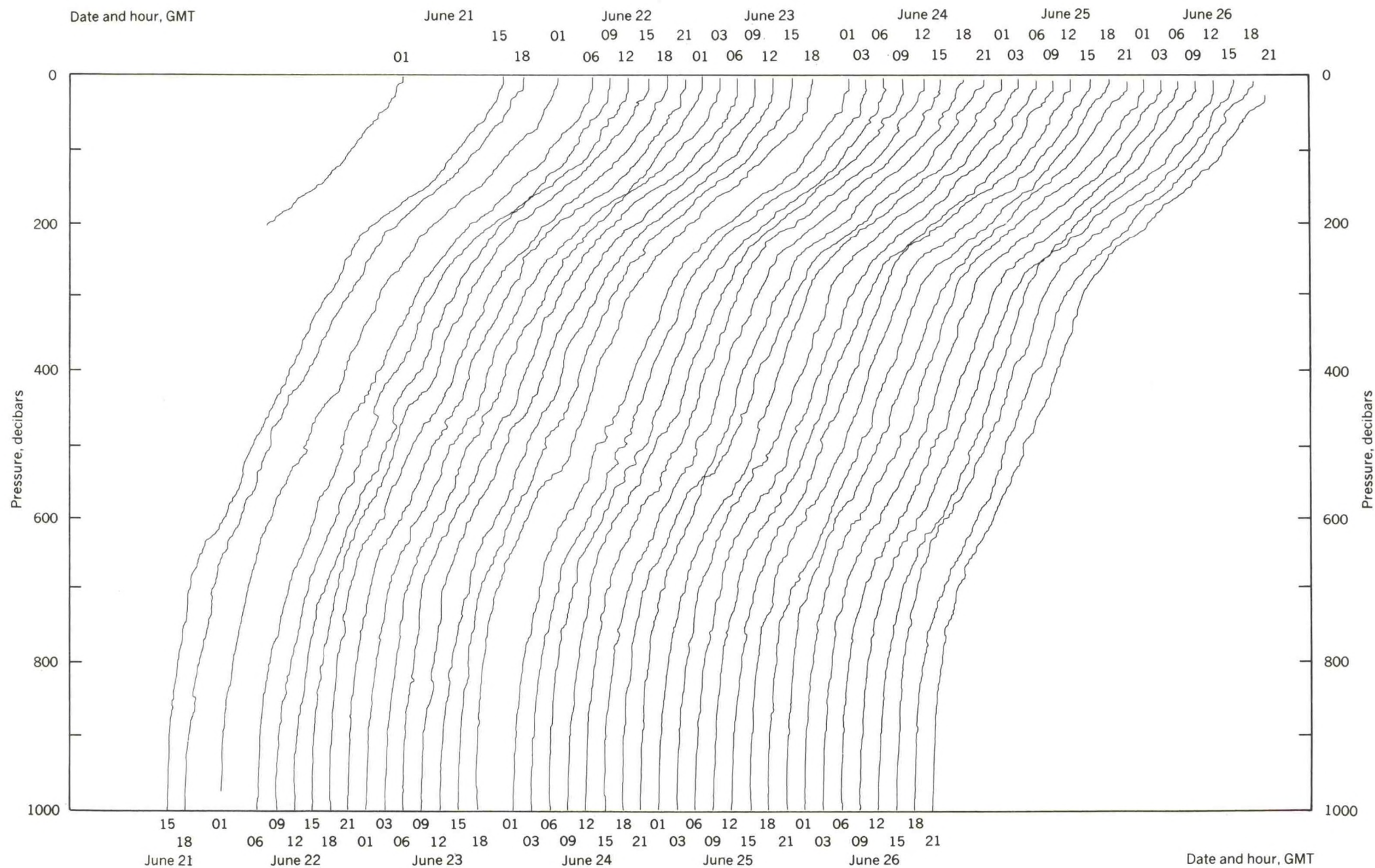




Temperature profiles, Station A,  $16^{\circ}50'N$   $59^{\circ}12'W$ , June 21—June 26, 1969.  
 Horizontal temperature scale:  $2.4^{\circ}C$  per 6 hrs. Nominal 1,000-decibar temperature:  $5.5^{\circ}C$ .

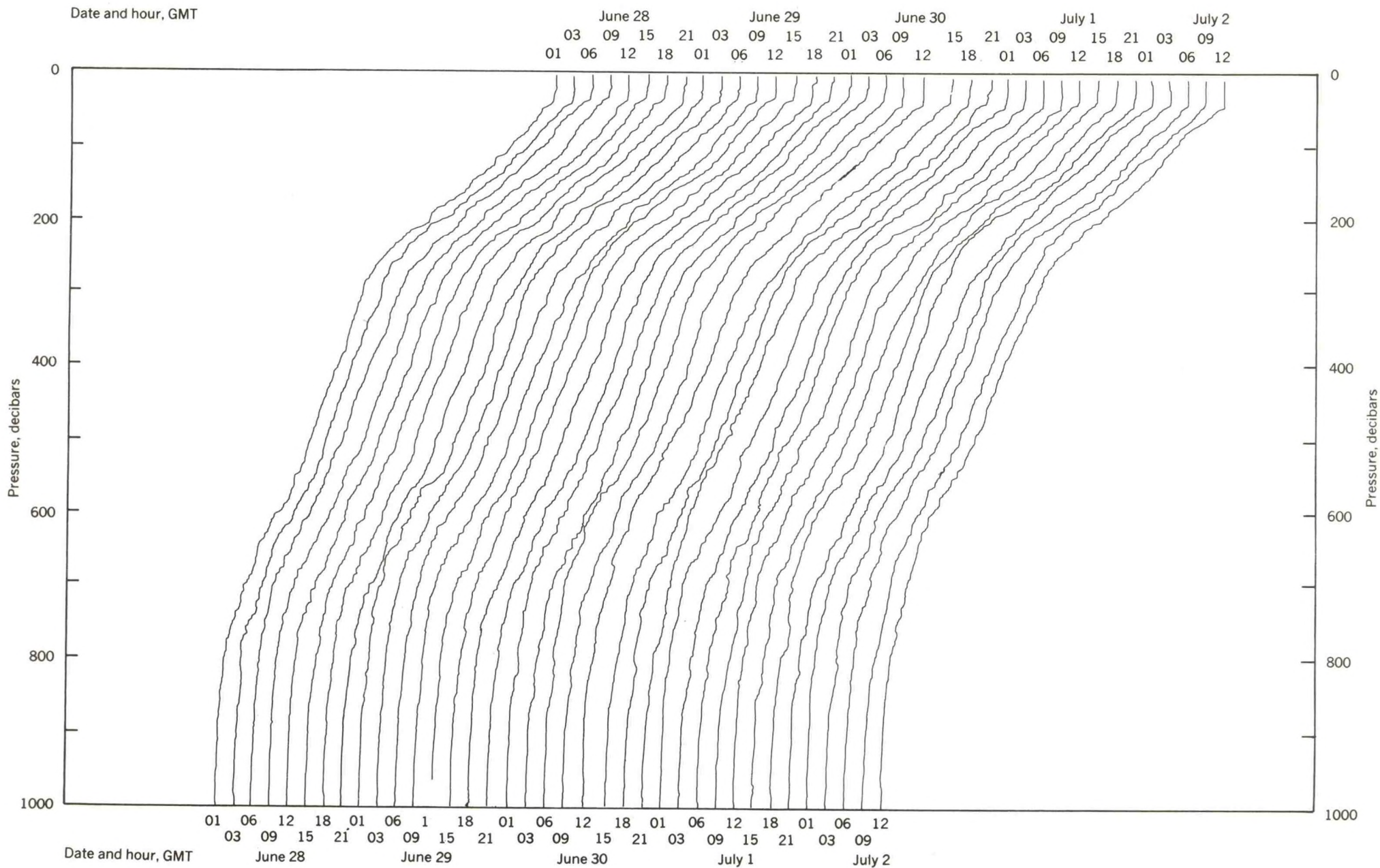


Temperature profiles, Station A, 16°50'N 59°12'W, June 28—July 2, 1969.  
 Horizontal temperature scale: 2.4°C per 6 hrs. Nominal 1,000-decibar temperature: 5.5°C.



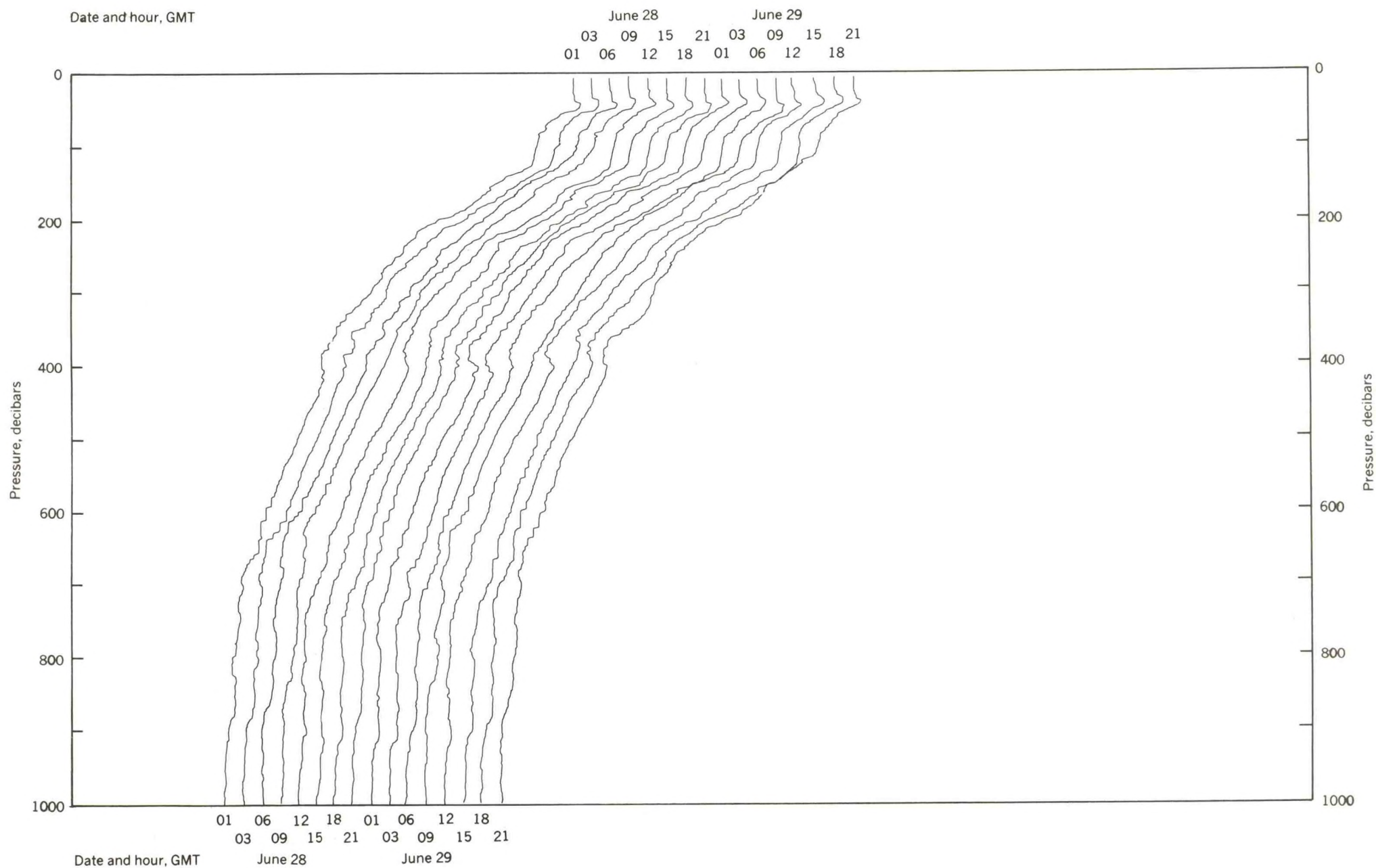
Temperature profiles, Station B, 17°36'N 54°34'W, June 21—June 26, 1969.  
Horizontal temperature scale: 2.4°C per 6 hrs. Nominal 1,000-decibar temperature: 5.4°C.





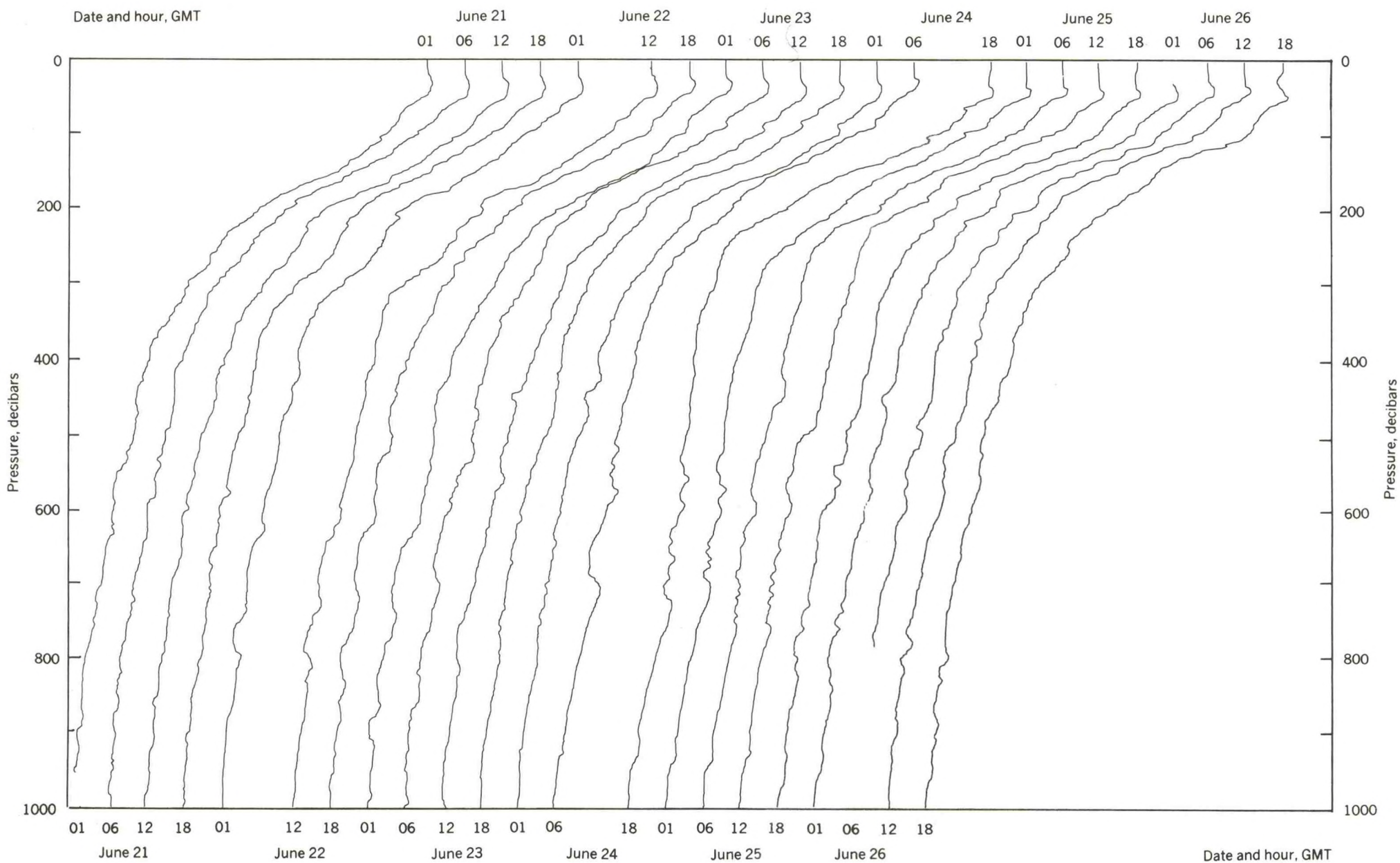
Temperature profiles, Station B, 17°36'N 54°34'W, June 28—July 2, 1969.  
Horizontal temperature scale: 2.4°C per 6 hrs. Nominal 1,000-decibar temperature: 5.4°C.



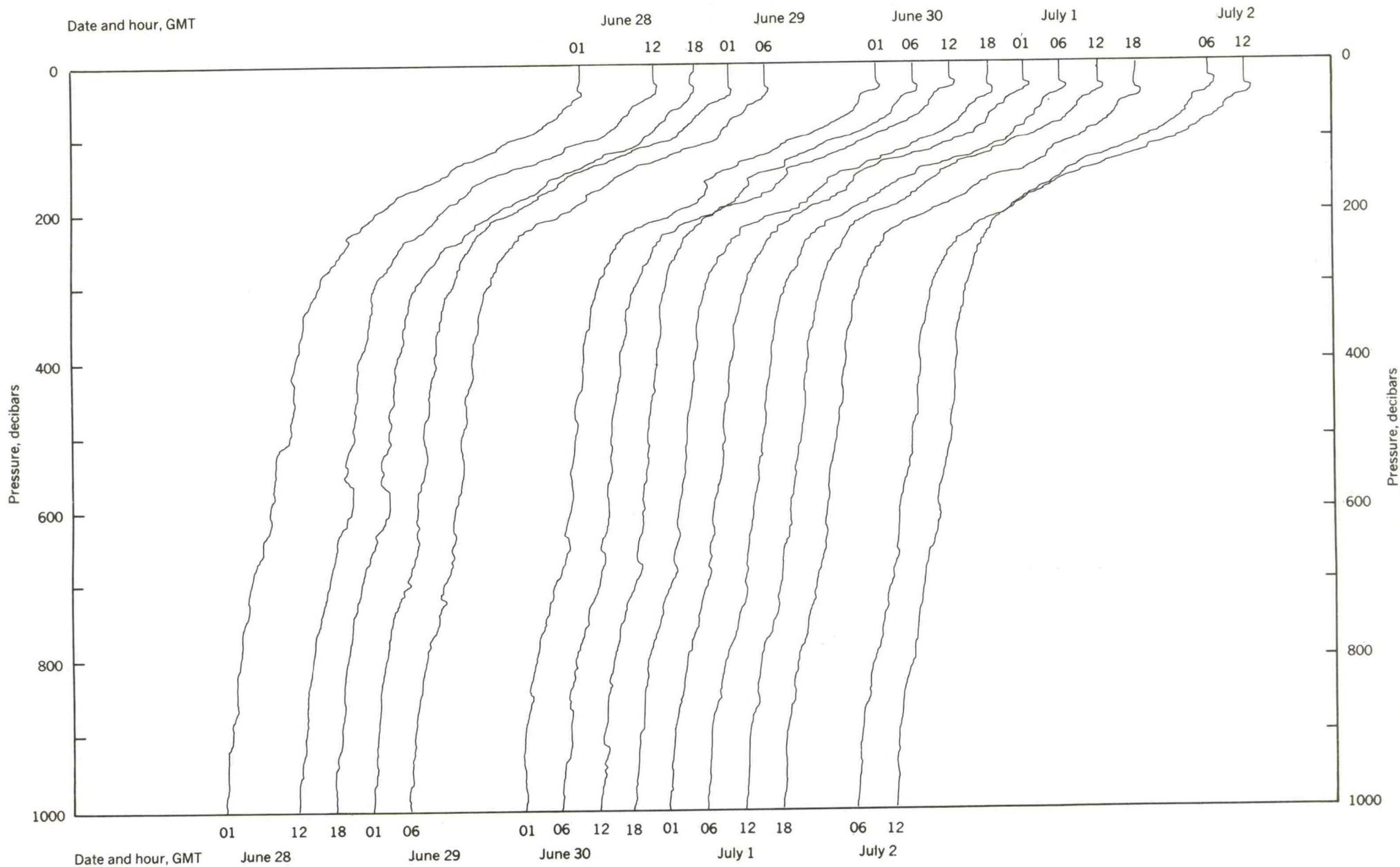


Temperature profiles, Station C, 15°00'N 56°30'W, June 28—June 29, 1969.  
Horizontal temperature scale: 2.4°C per 6 hrs. Nominal 1,000-decibar temperature: 5.1°C.





Temperature profiles, Station D,  $12^{\circ}23'N$   $58^{\circ}23'W$ , June 21—June 26, 1969.  
 Horizontal temperature scale:  $2.4^{\circ}C$  per 6 hrs. Nominal 1,000-decibar temperature:  $5.3^{\circ}C$ .



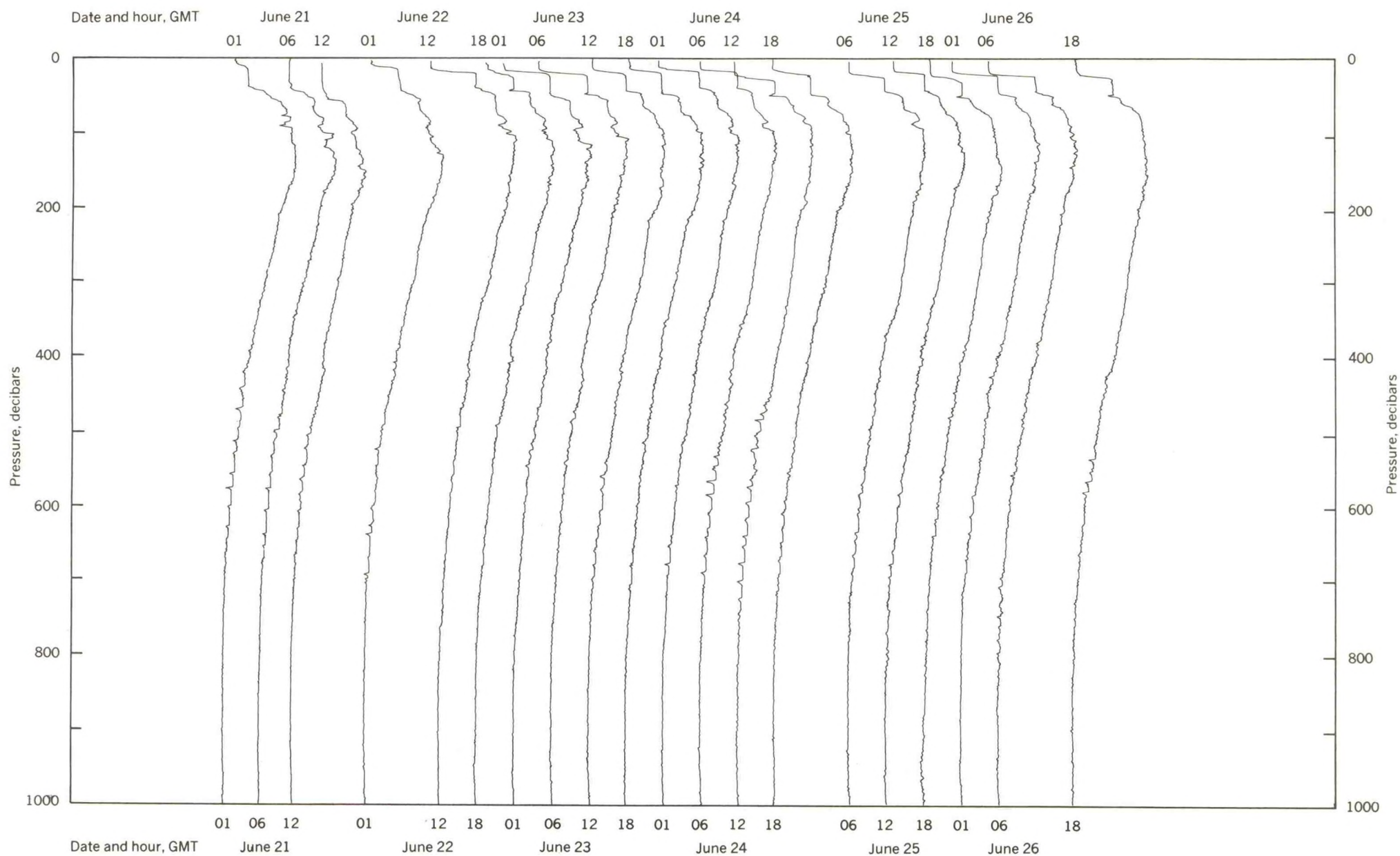
Temperature profiles, Station D, 12°23'N 58°23'W, June 28—July 2, 1969.  
Horizontal temperature scale: 2.4°C per 6 hrs. Nominal 1,000-decibar temperature: 5.3°C.



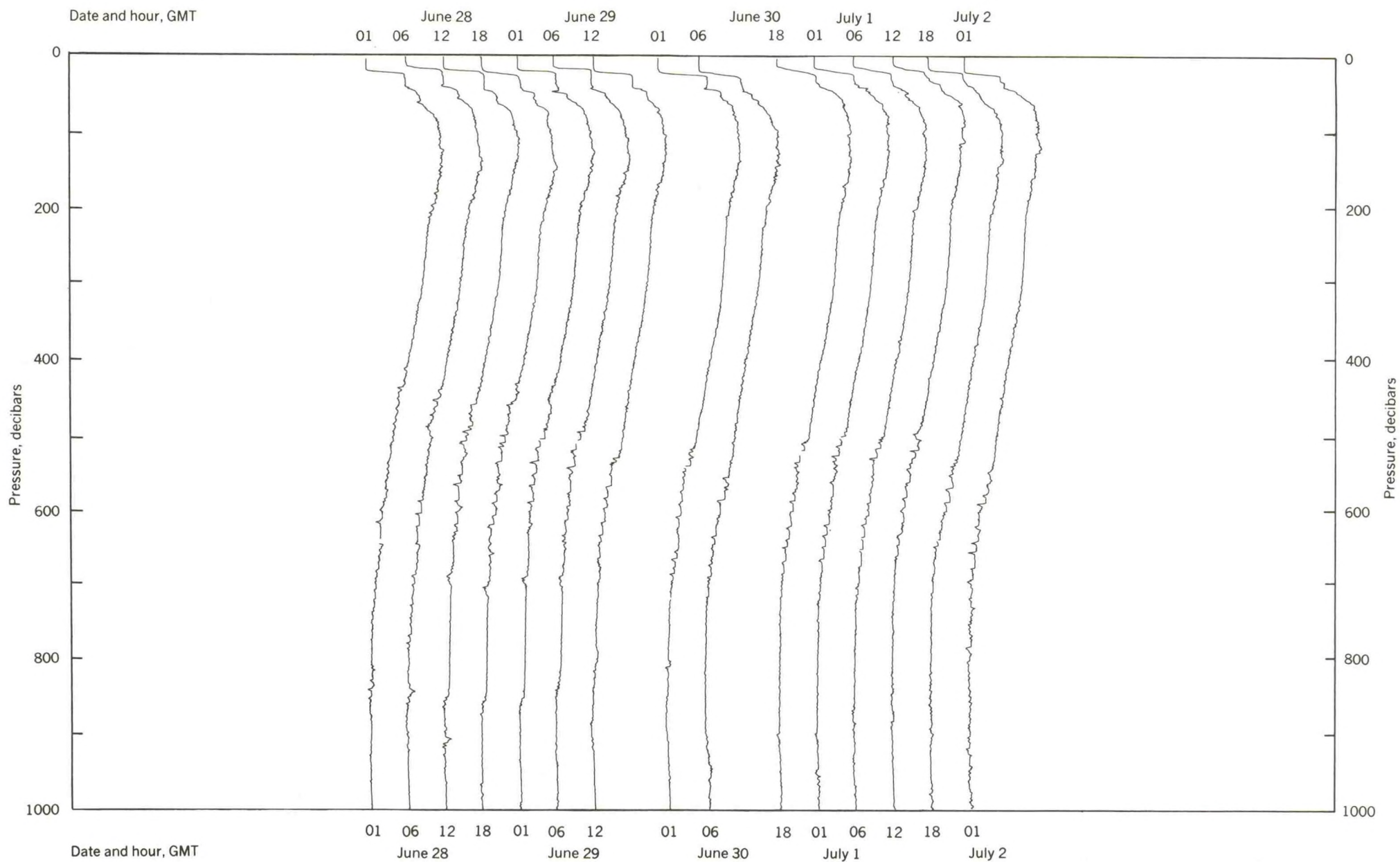




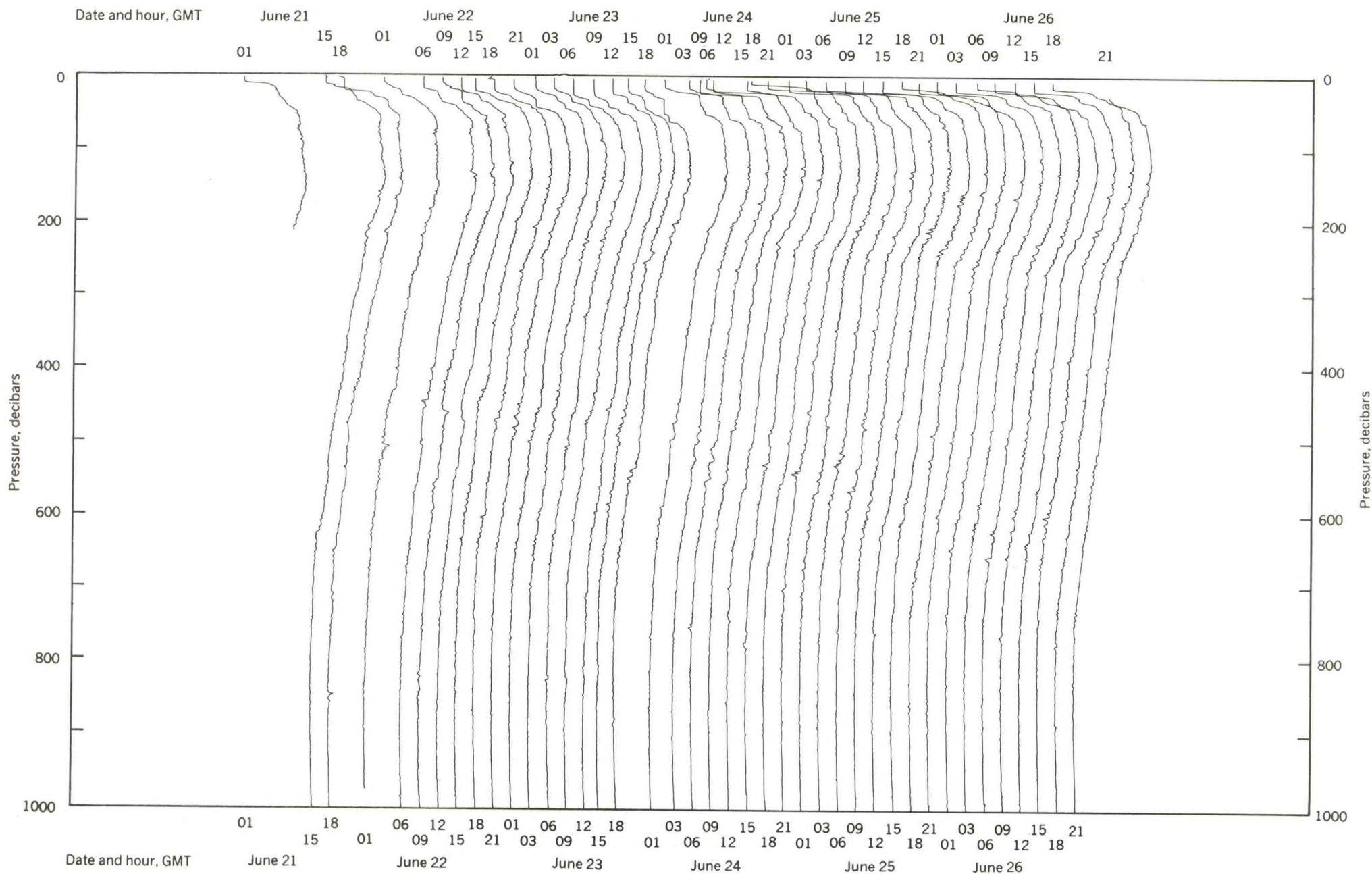




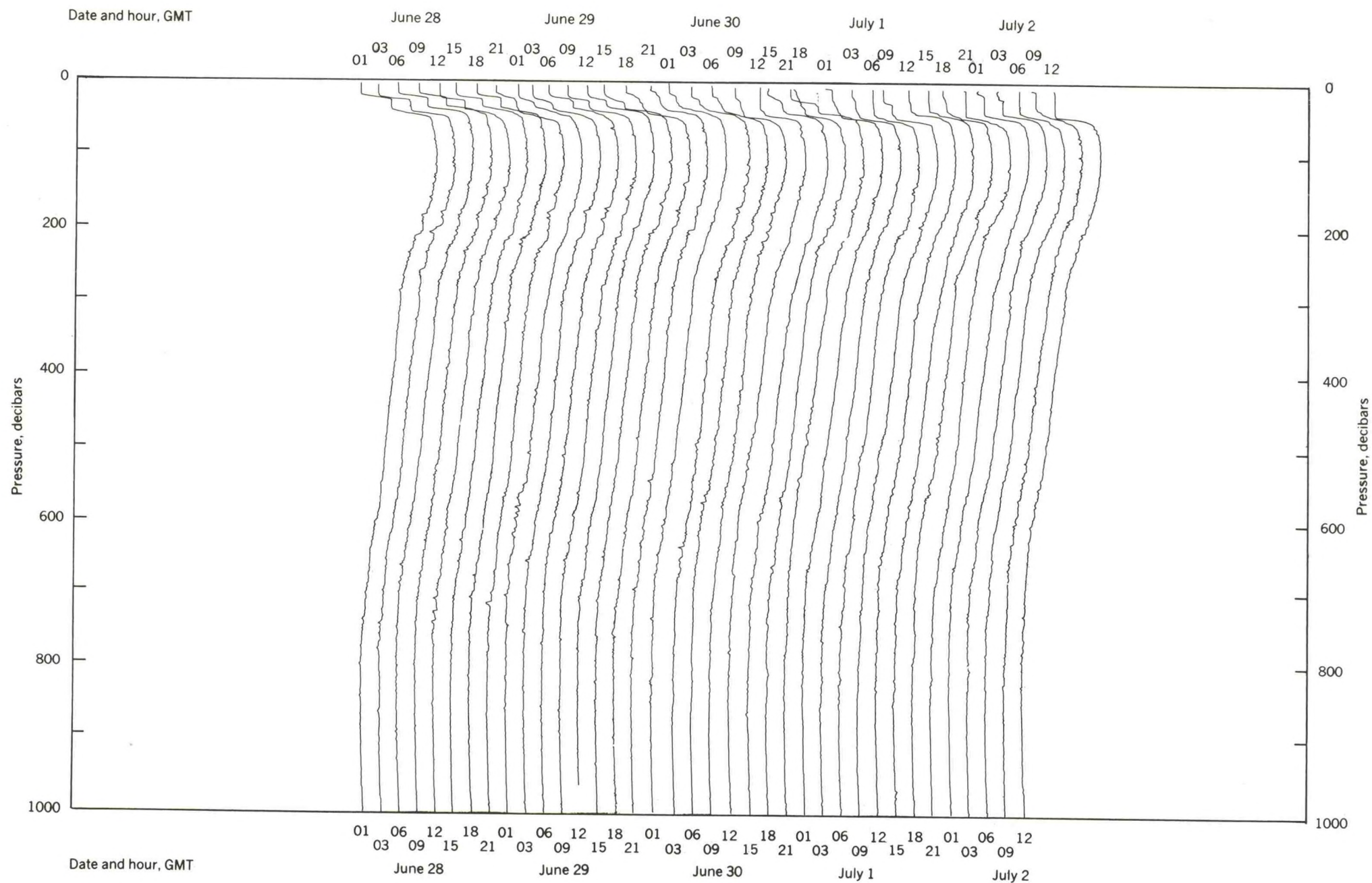




Salinity profiles, Station A,  $16^{\circ}50'N$   $59^{\circ}12'W$ , June 28—July 2, 1969.  
 Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.7 ‰.



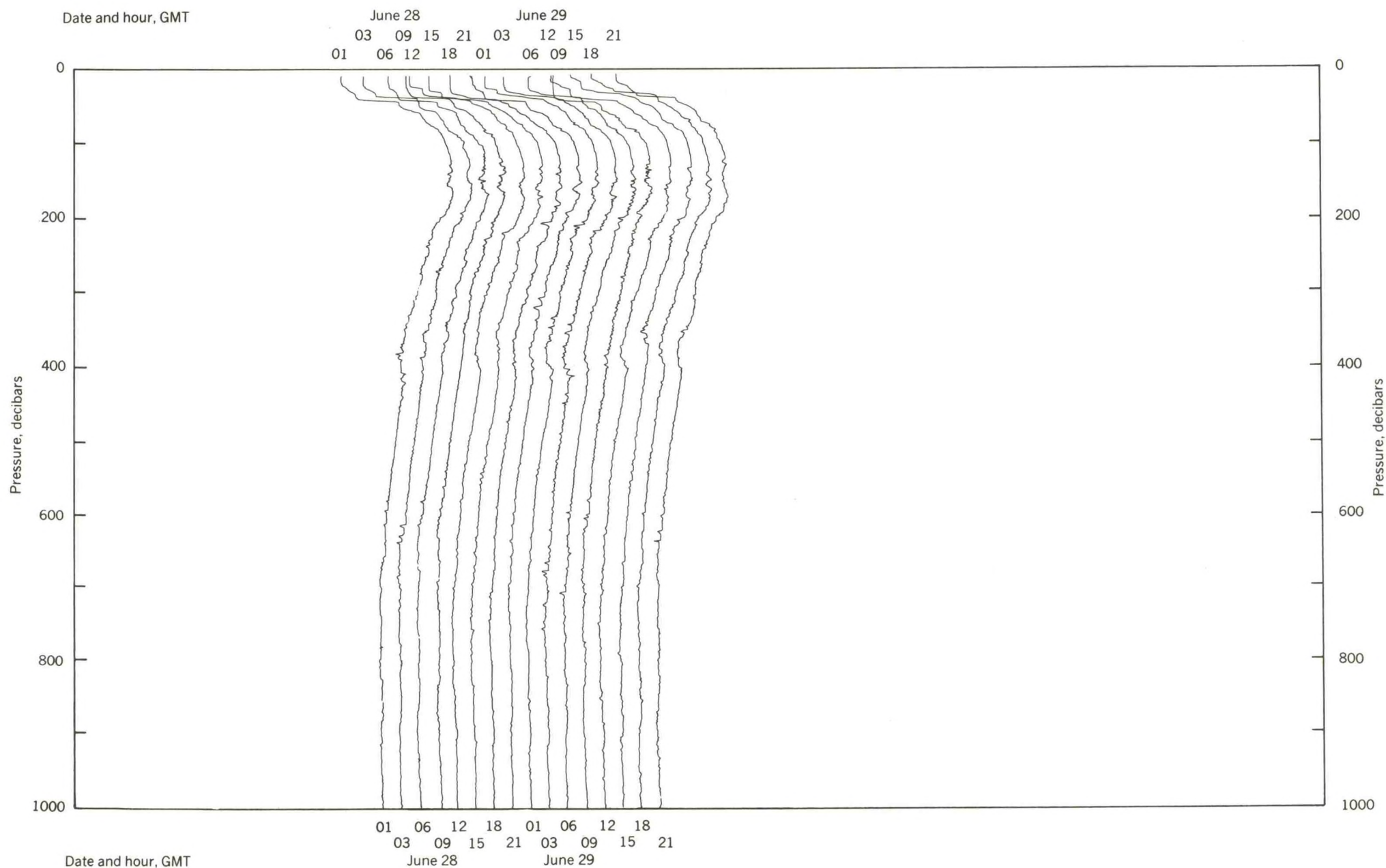
Salinity profiles, Station B, 17°36'N 54°34'W, June 21—June 26, 1969.  
 Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.8 ‰.



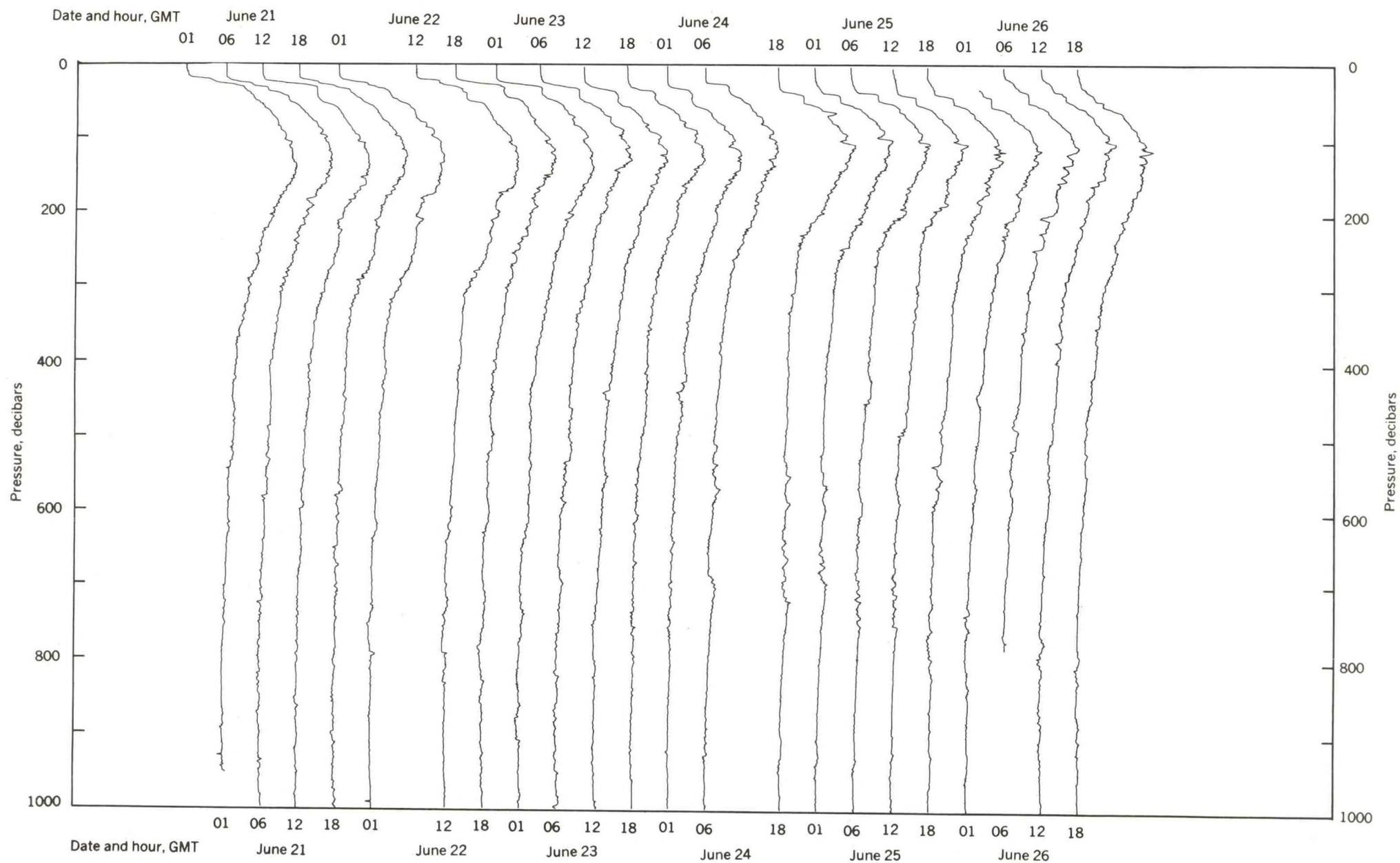
Salinity profiles, Station B, 17°36'N 54°34'W, June 28—July 2, 1969.  
Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.8 ‰.





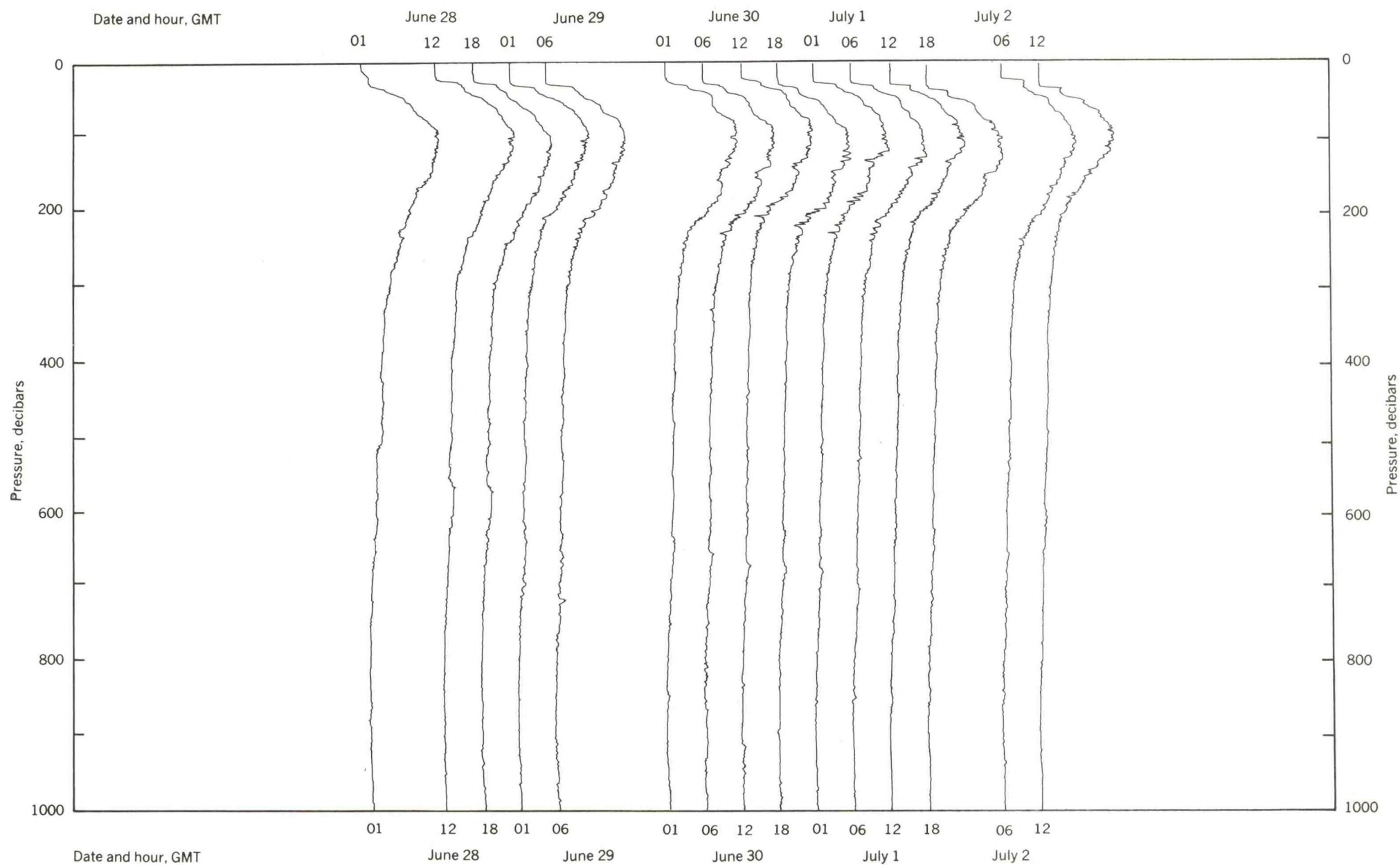


Salinity profiles, Station C, 15°00'N 56°30'W, June 28—June 29, 1969.  
Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.8 ‰.

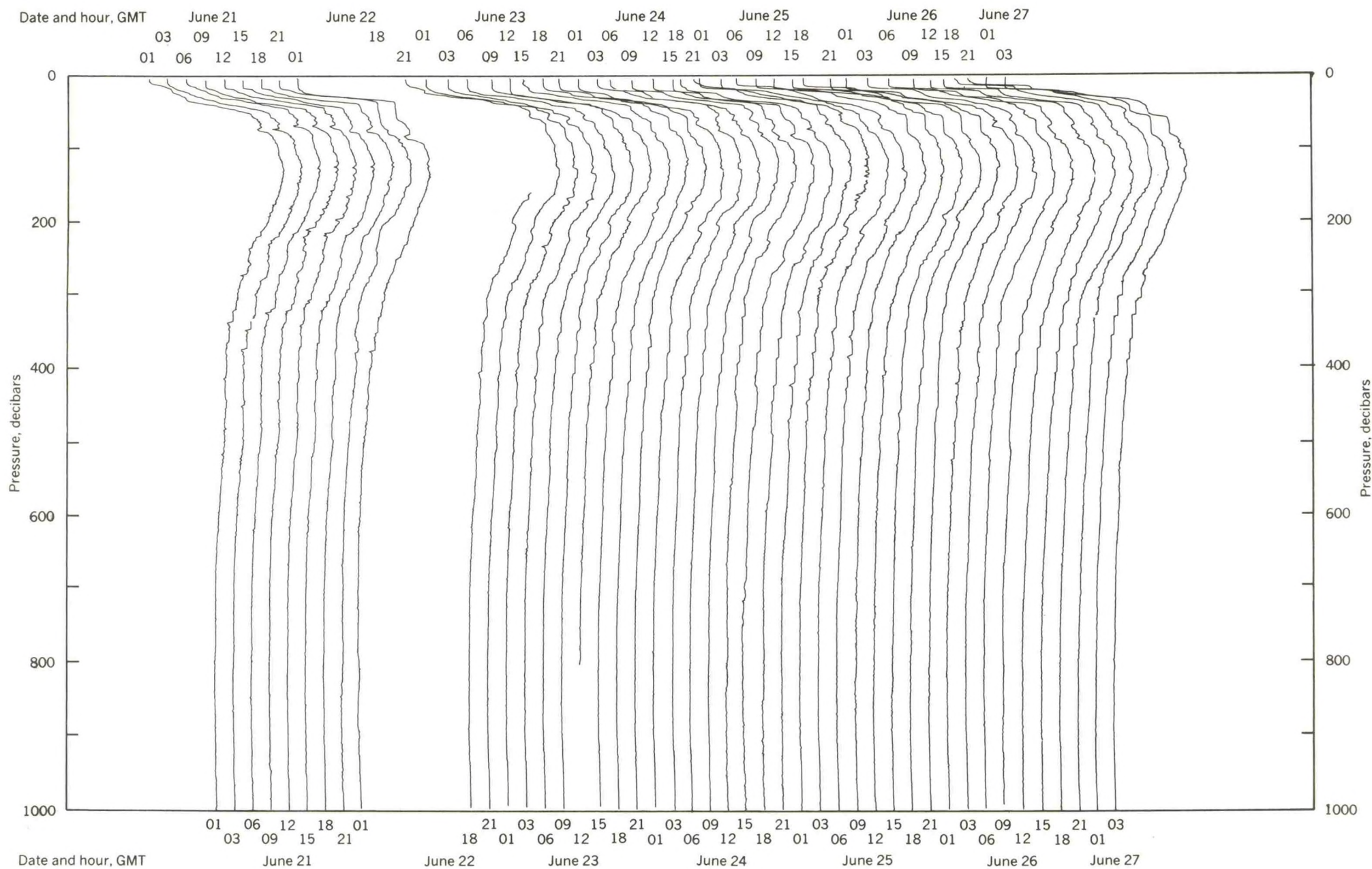


Salinity profiles, Station D,  $12^{\circ}23'N$   $58^{\circ}23'W$ , June 21—June 26, 1969.  
 Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.8 ‰.

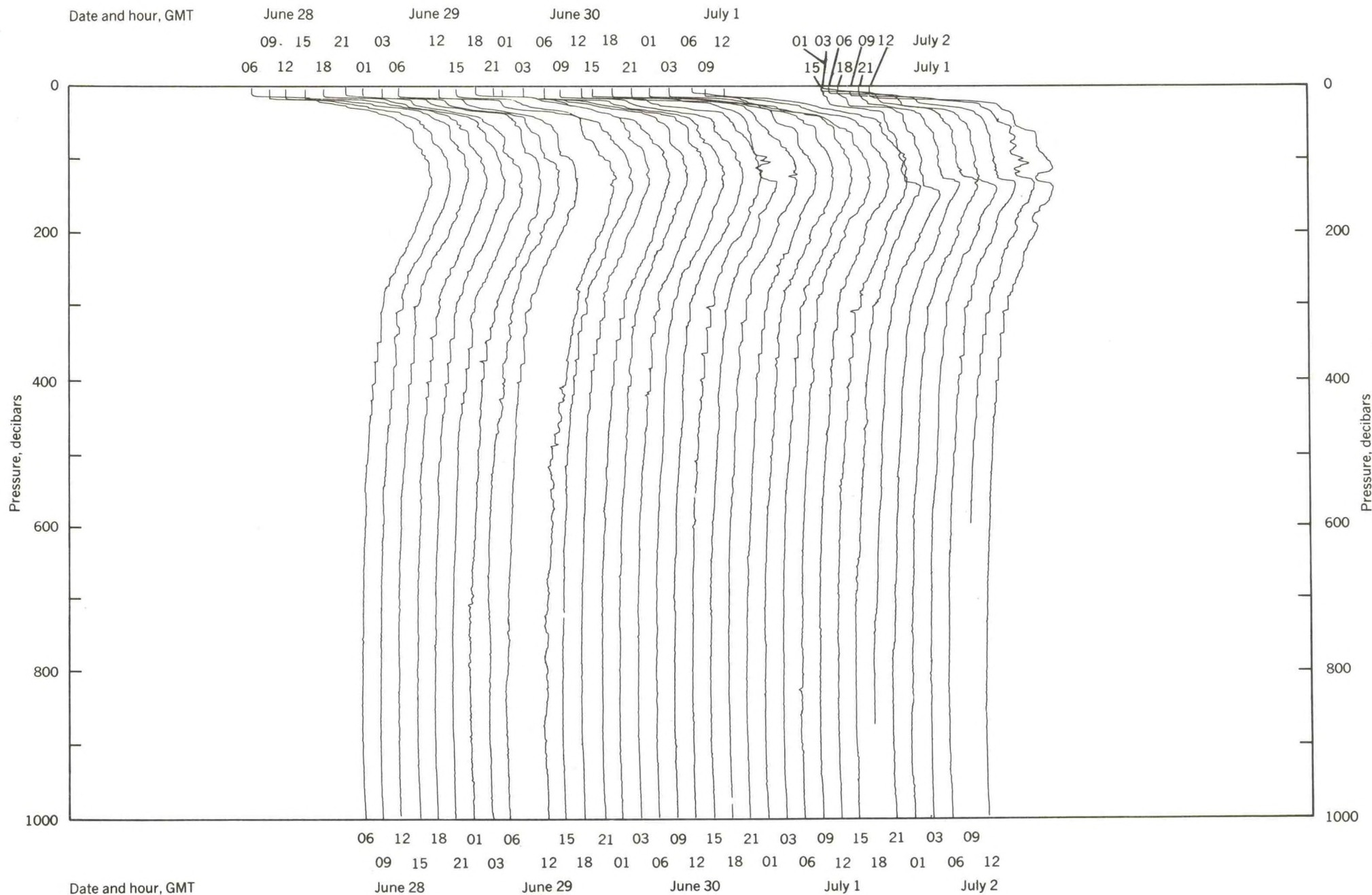




Salinity profiles, Station D, 12°23'N 58°23'W, June 28—July 2, 1969.  
Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.8 ‰.

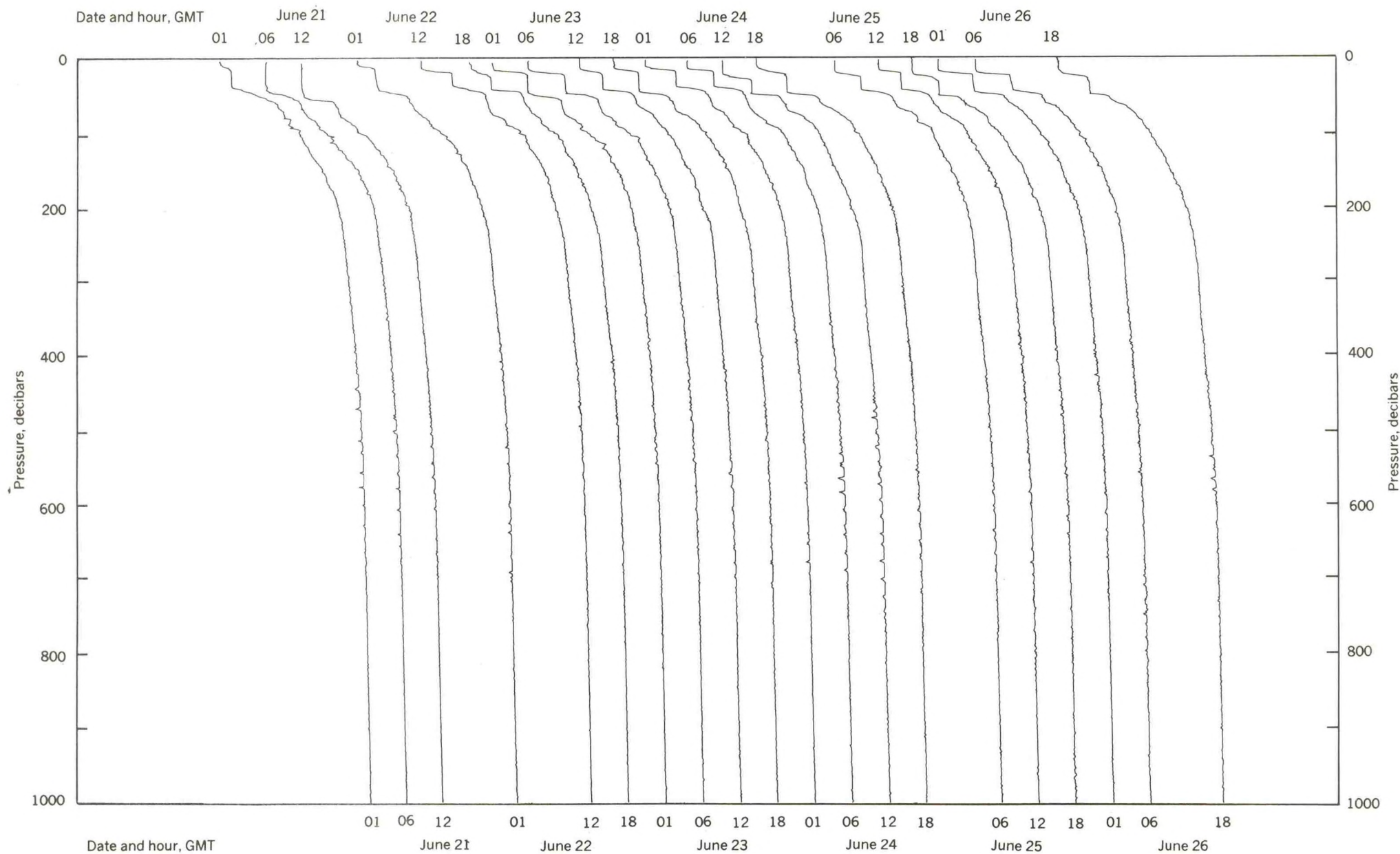


Salinity profiles, Station E, 13°08'N 53°51'W, June 21–June 27, 1969.  
Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.7 ‰.

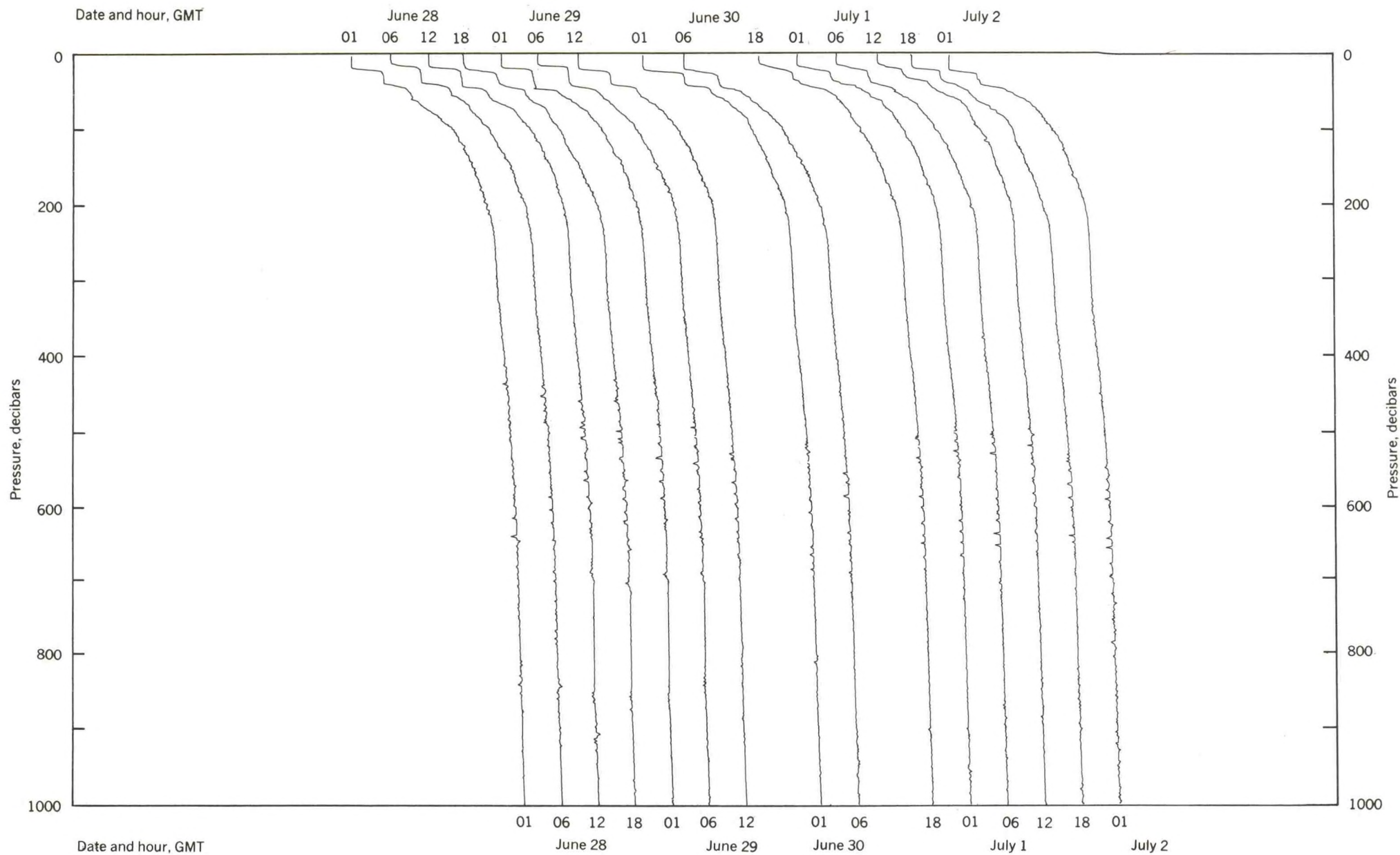


Salinity profiles, Station E,  $13^{\circ}08'N$   $53^{\circ}51'W$ , June 28—July 2, 1969.  
Horizontal salinity scale: 1.2 ‰ per 6 hrs. Nominal 1,000-decibar salinity: 34.7 ‰.

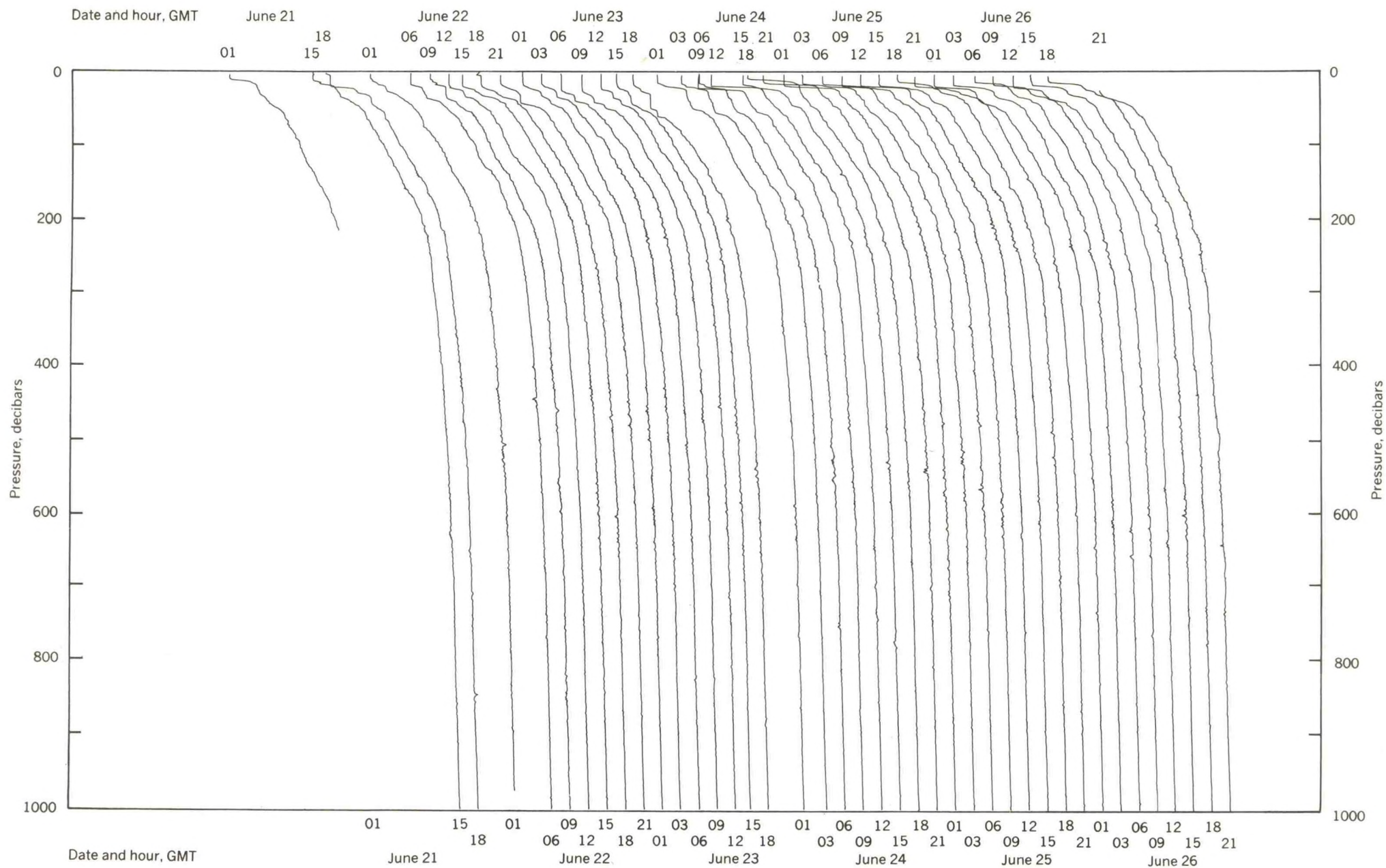




Sigma-t profiles, Station A, 16°50'N 59°12'W, June 21—June 26, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.4.

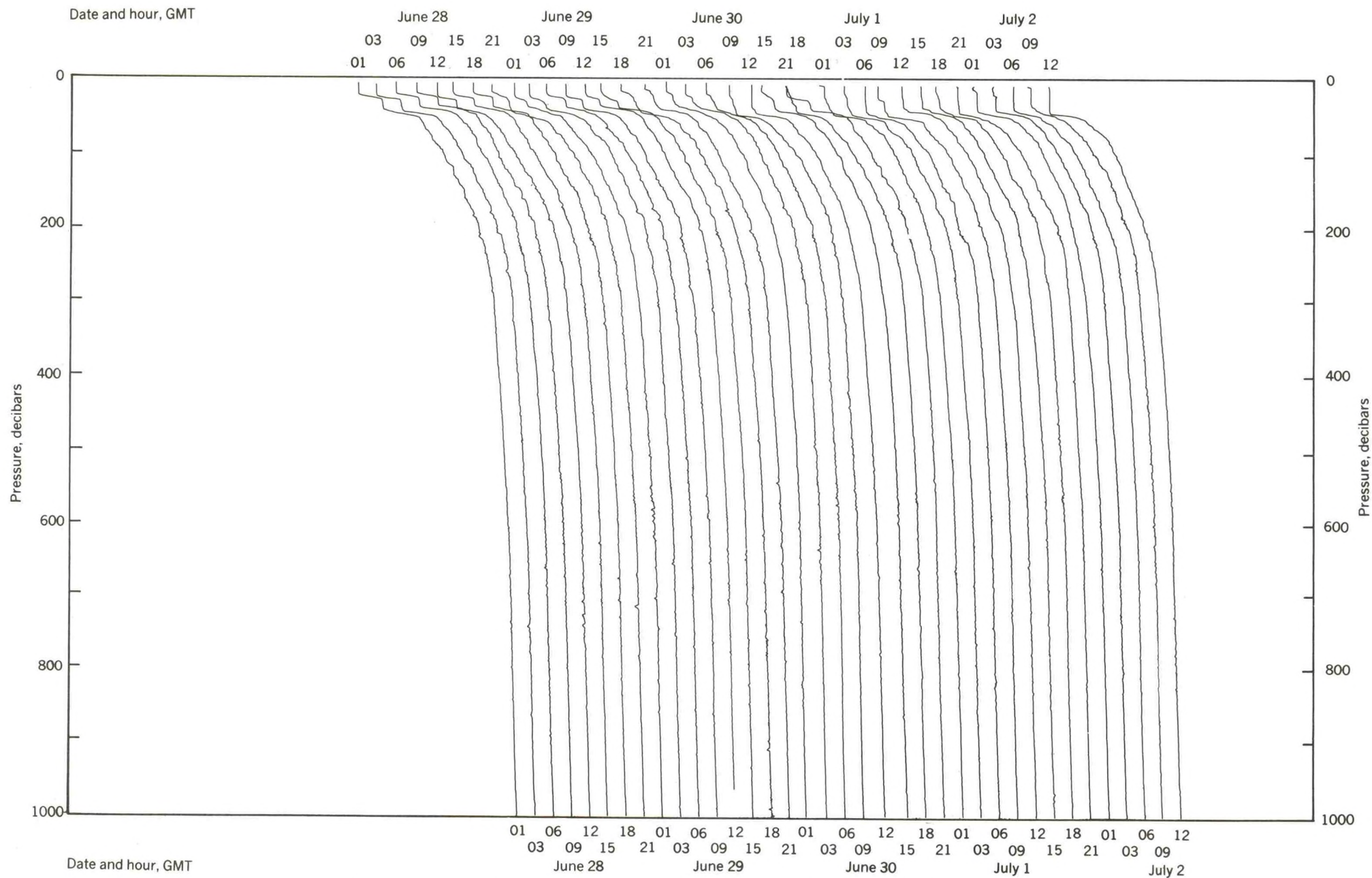


Sigma-t profiles, Station A, 16°50'N 59°12'W, June 28—July 2, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.4.

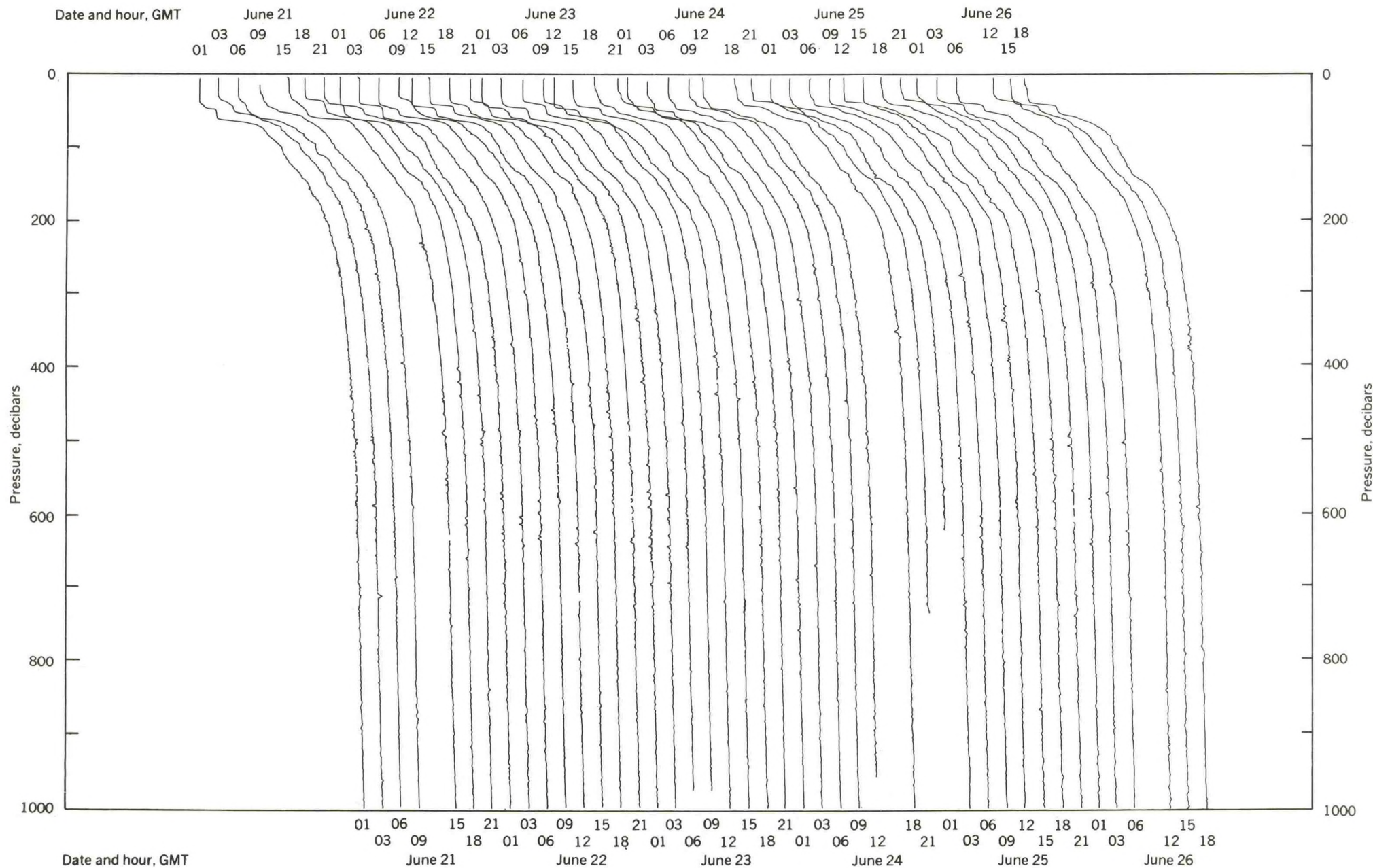


Sigma-t profiles, Station B, 17°36'N 54°34'W, June 21—June 26, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.

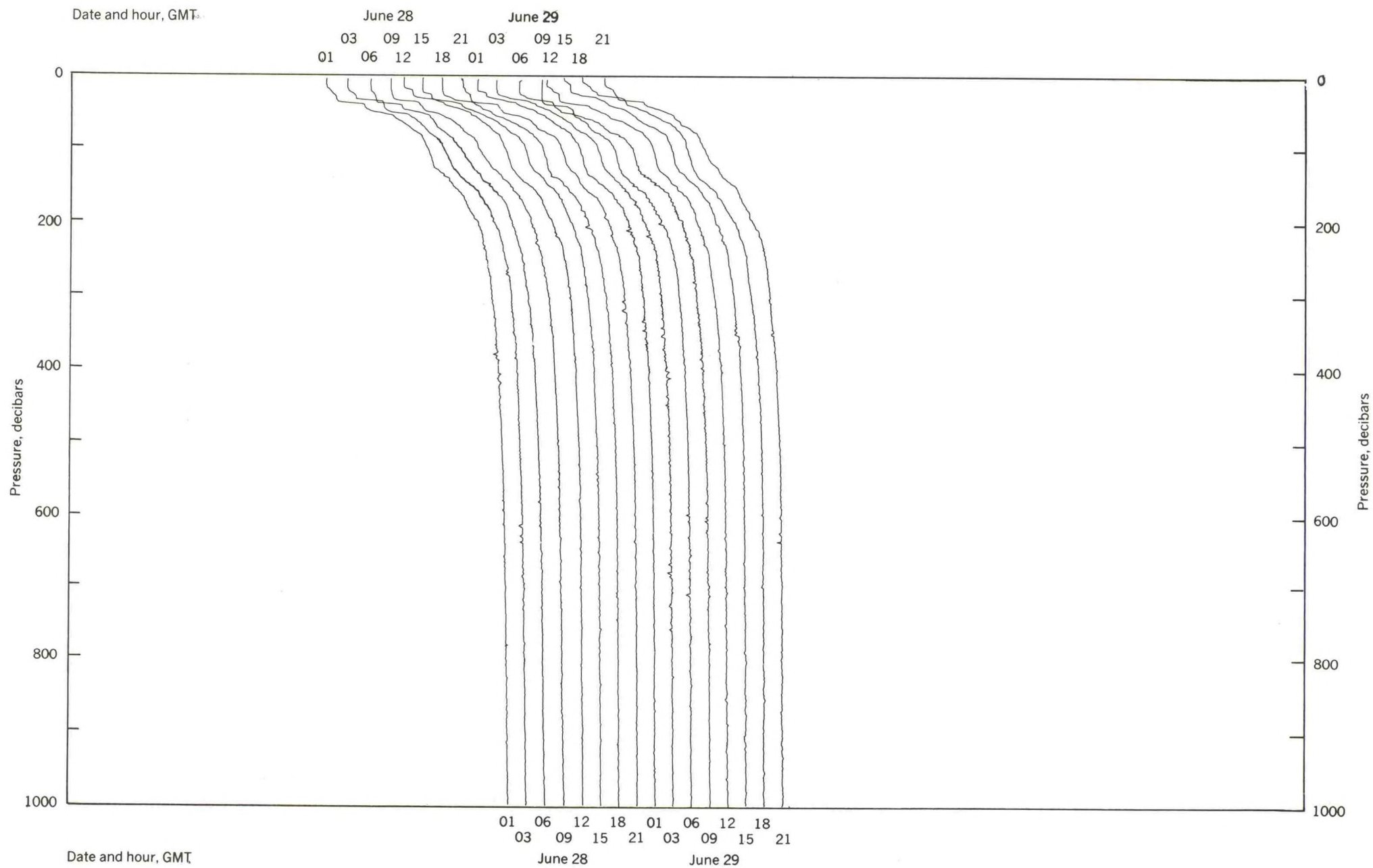




Sigma-t profiles, Station B,  $17^{\circ}36'N$   $54^{\circ}34'W$ , June 28—July 2, 1969.  
 Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.

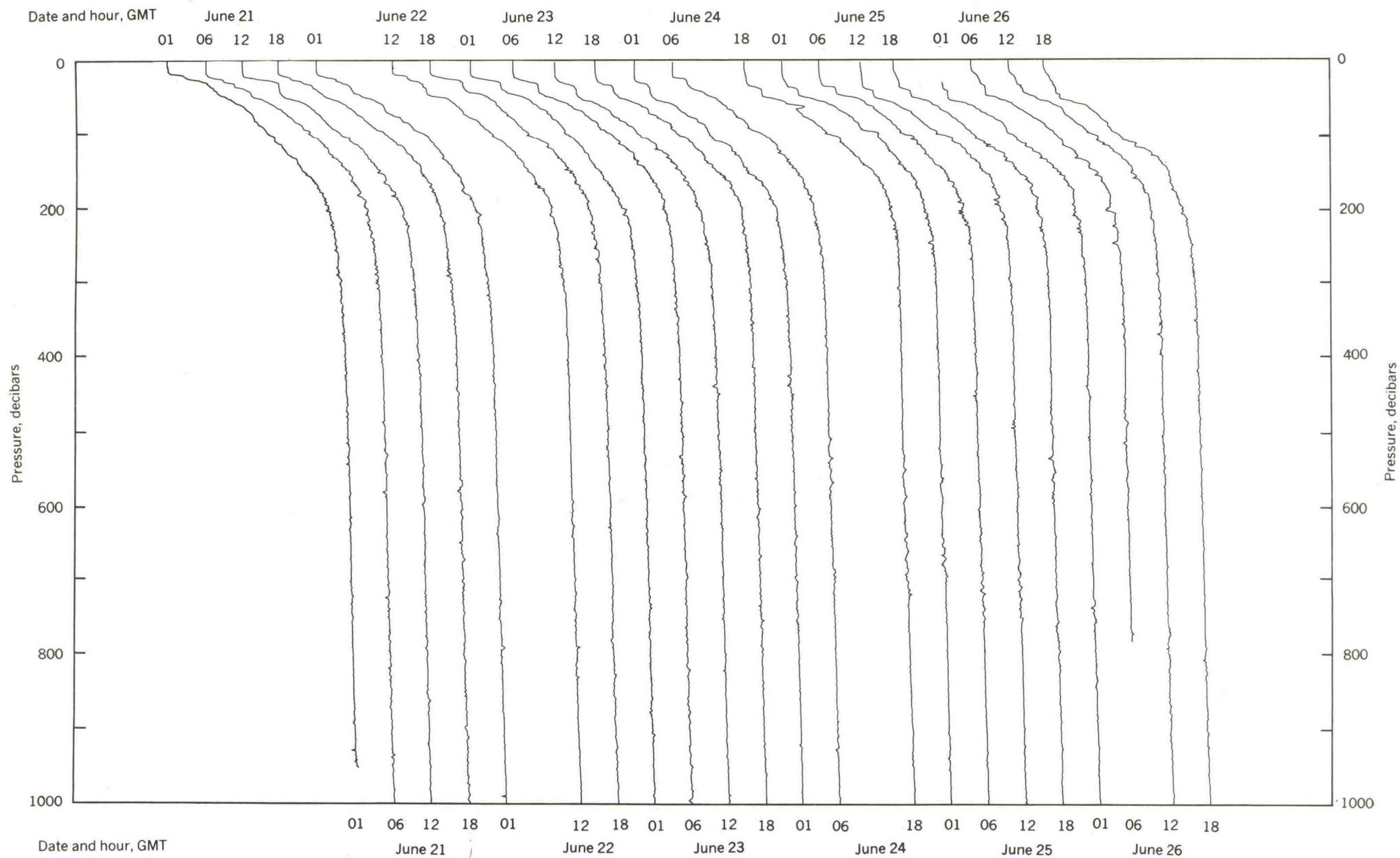


Sigma-t profiles, Station C, 15°00'N 56°30'W, June 21—June 26, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.

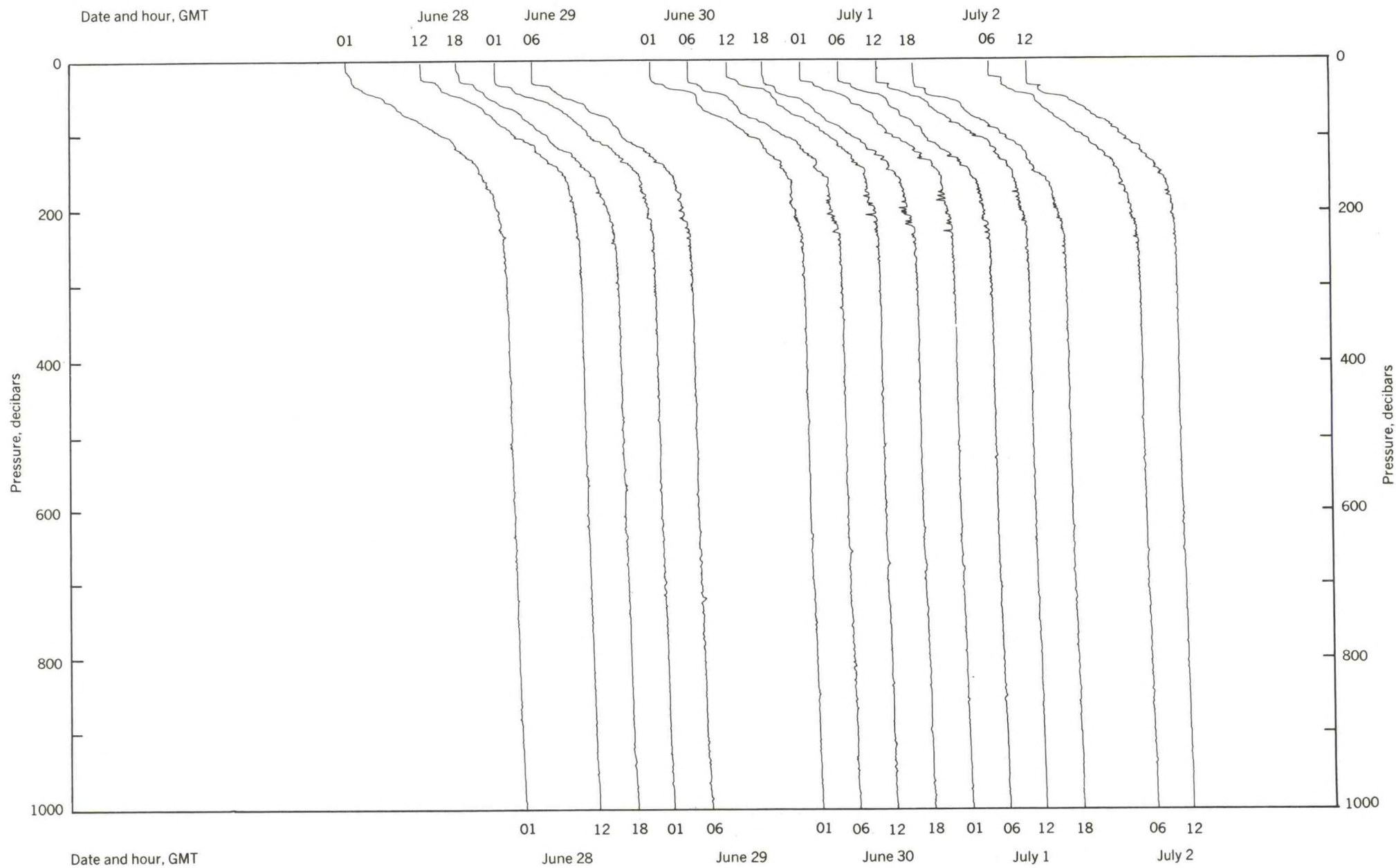


Sigma-t profiles, Station C, 15°00'N 56°30'W, June 28—June 29, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.

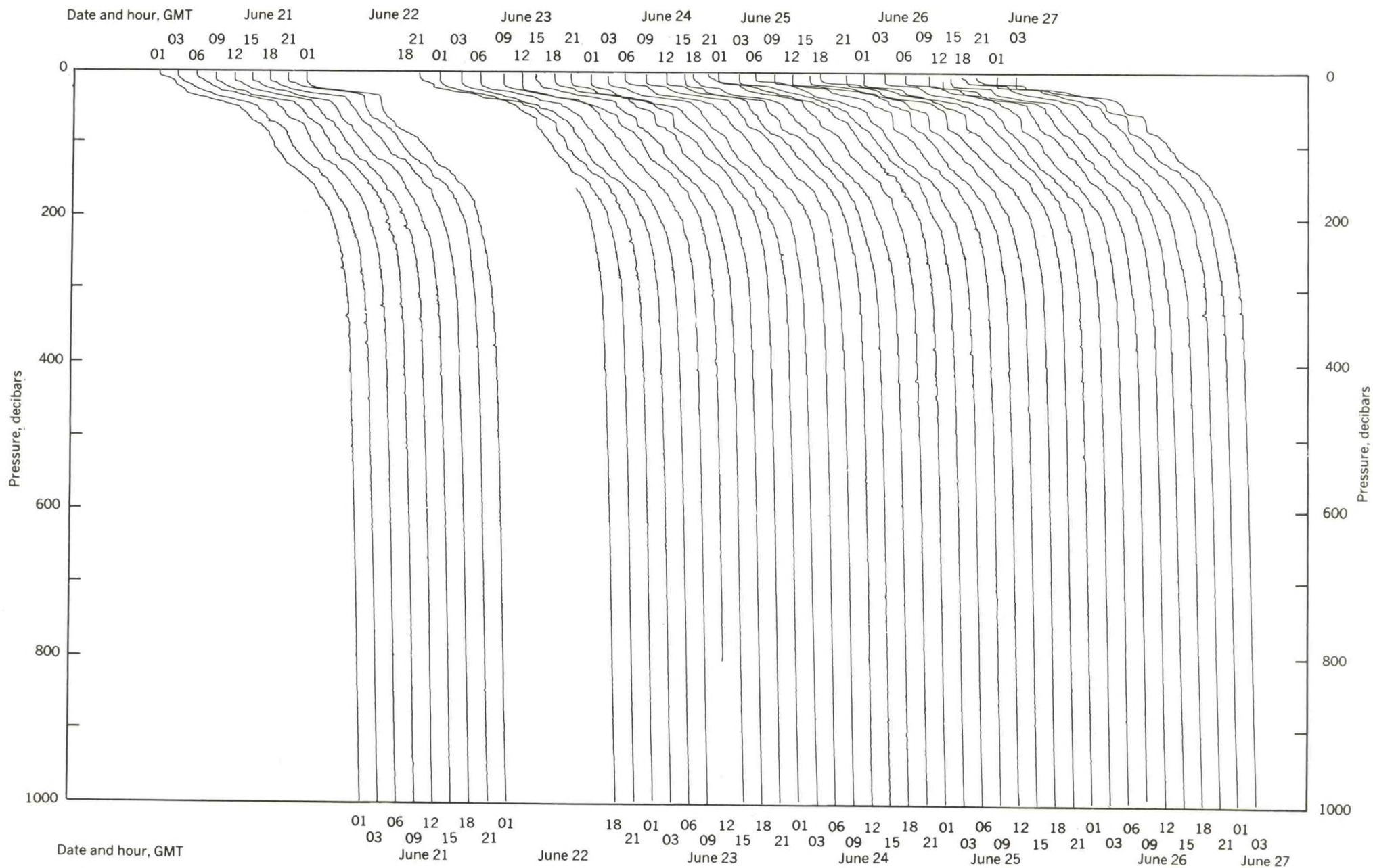




Sigma-t profiles, Station D, 12°23'N 58°23'W, June 21—June 26, 1969.  
 Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.

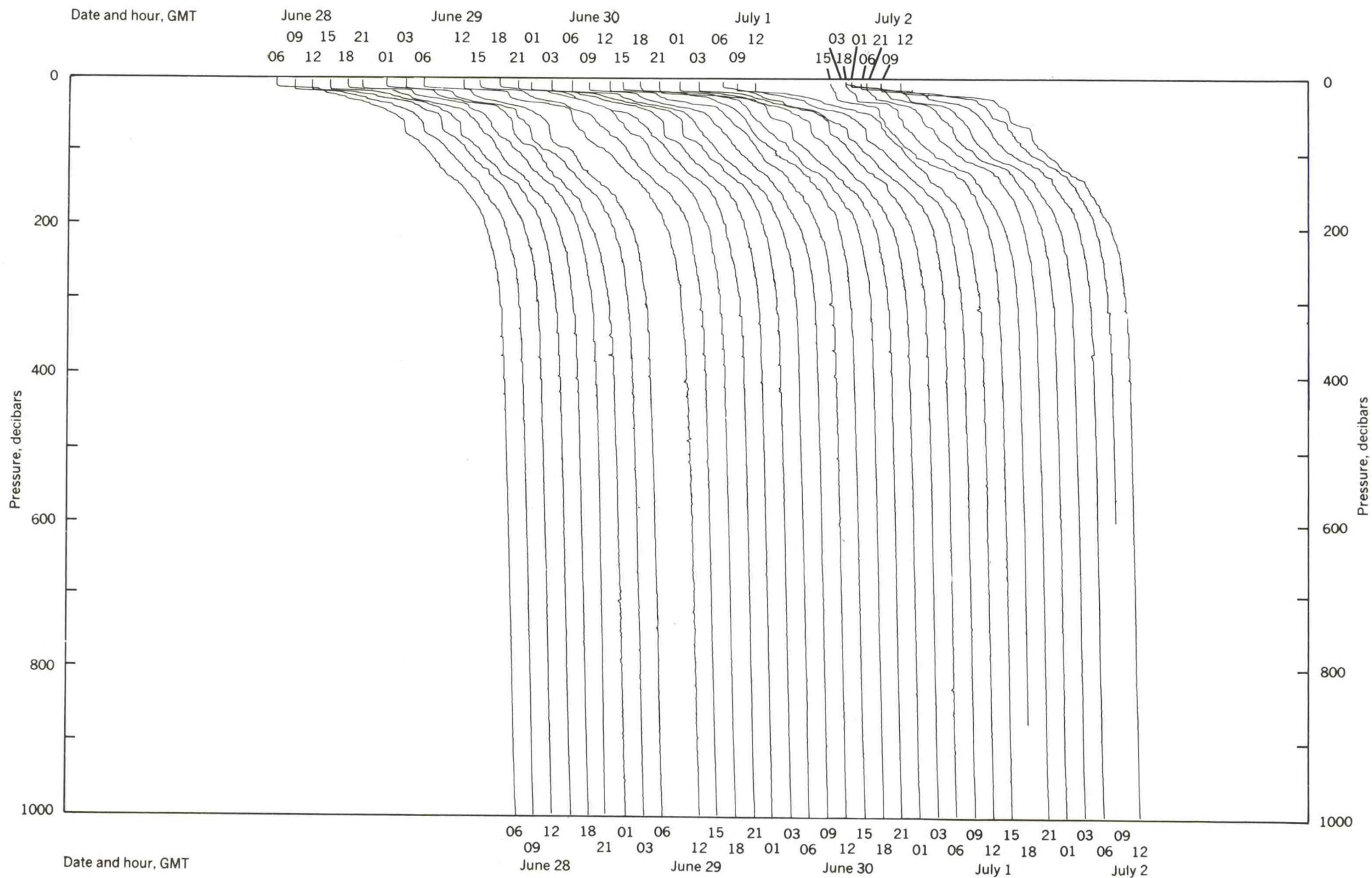


Sigma-t profiles, Station D, 12°23'N 58°23'W, June 28—July 2, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.



Sigma-t profiles, Station E, 13°08'N 53°51'W, June 21—June 27, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.

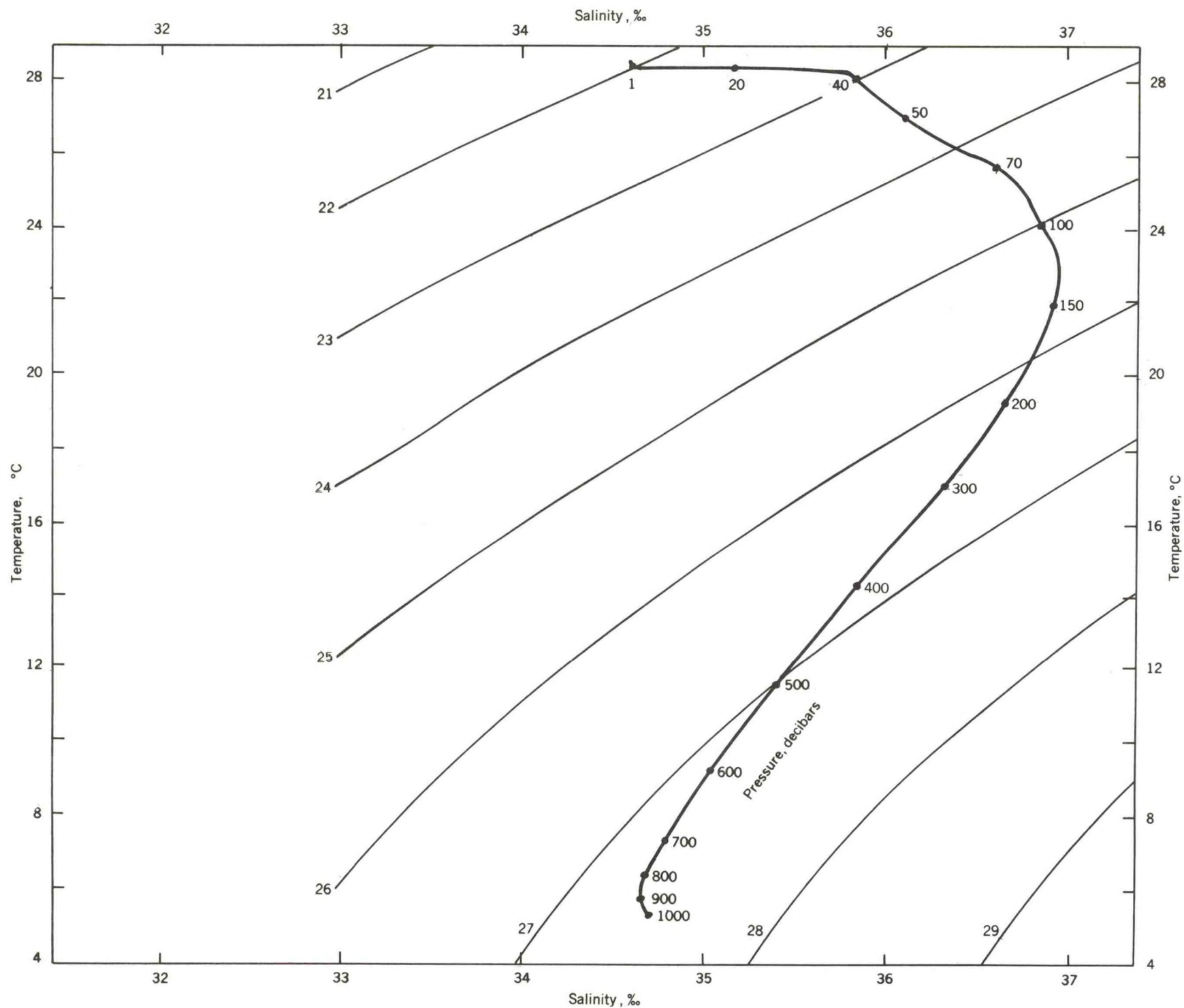




Sigma-t profiles, Station E, 13°08'N 53°51'W, June 28—July 2, 1969.  
Horizontal sigma-t scale: 1.2 units per 6 hrs. Nominal 1,000-decibar sigma-t: 27.5.

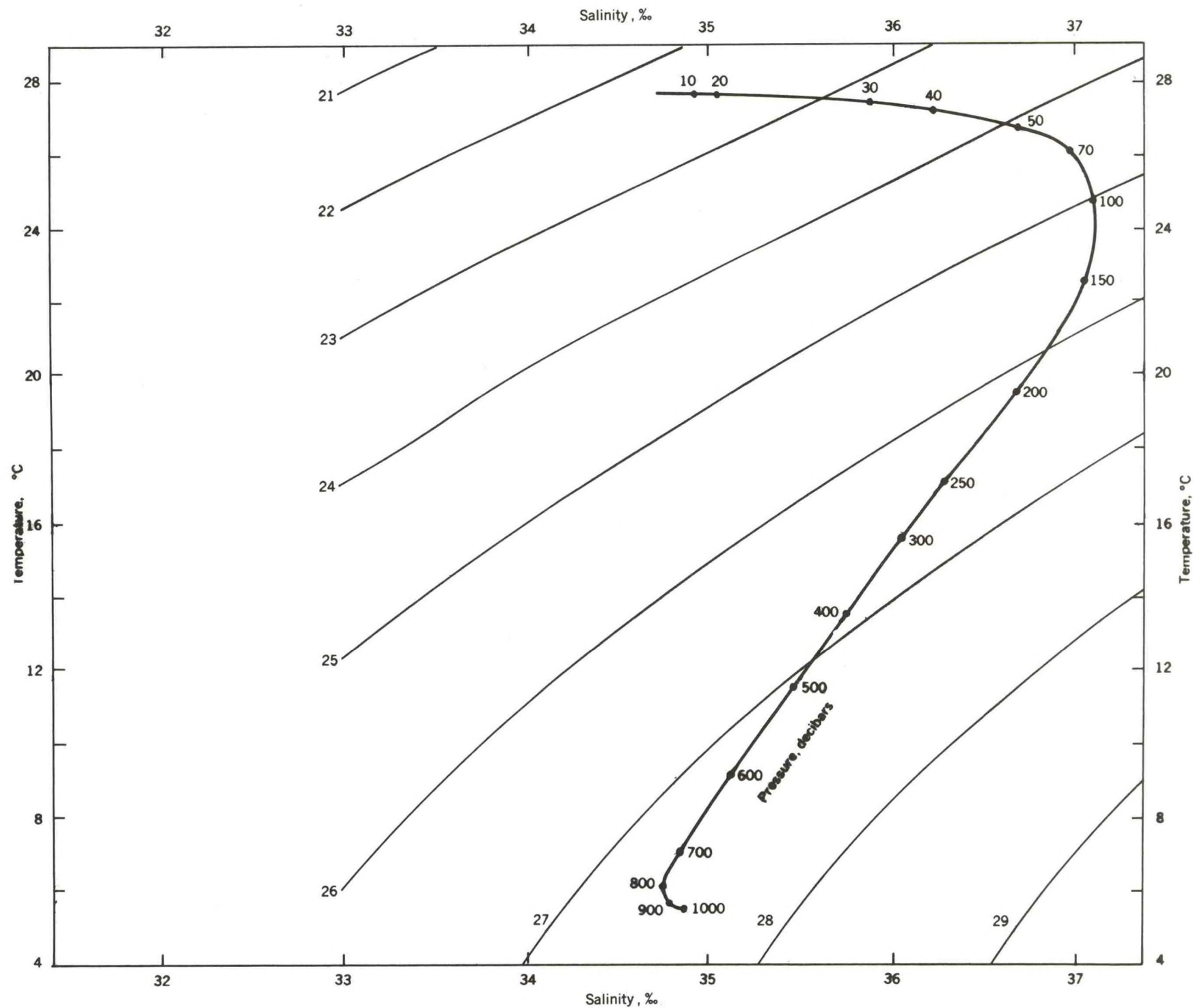
## 6. AVERAGE TEMPERATURE- SALINITY DIAGRAMS

The diagrams presented in this section were prepared by averaging together for each station all data for each 1-decibar depth. Temporal variations, evident in the plots given in section 5, are, of course, eliminated through such an averaging process, but these diagrams serve to give insight into the types of water present in upper layers of the "BOMEX Basin." Discernible on each diagram from near-surface to the greatest depths are Amazon water, water from the Atlantic Equatorial Current System, South Atlantic Central Water, and Antarctic Intermediate Water.

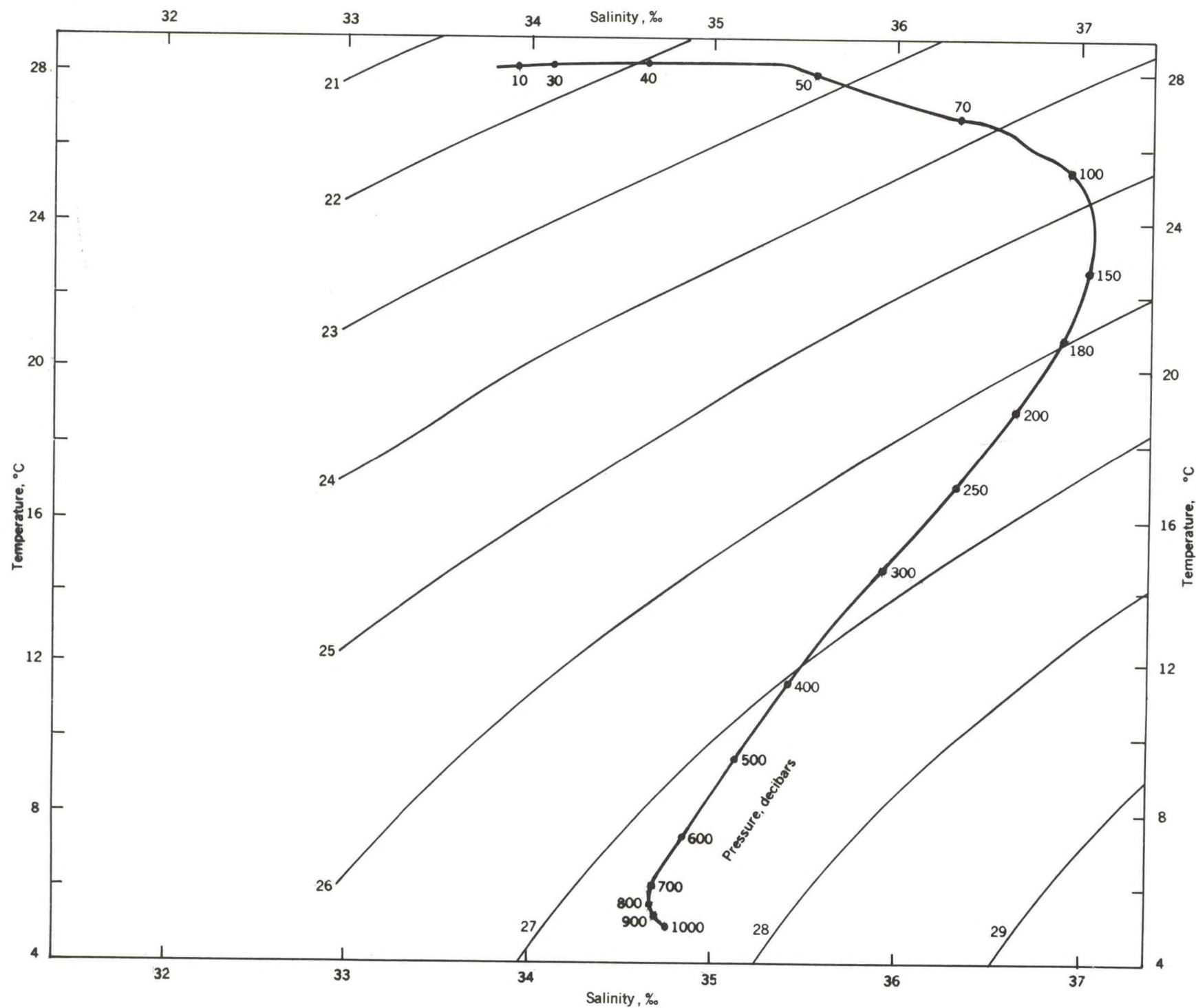


Temperature-salinity diagram for Station A, 16°50'N 59°12'W. Labeled contours are lines of equal sigma-t.

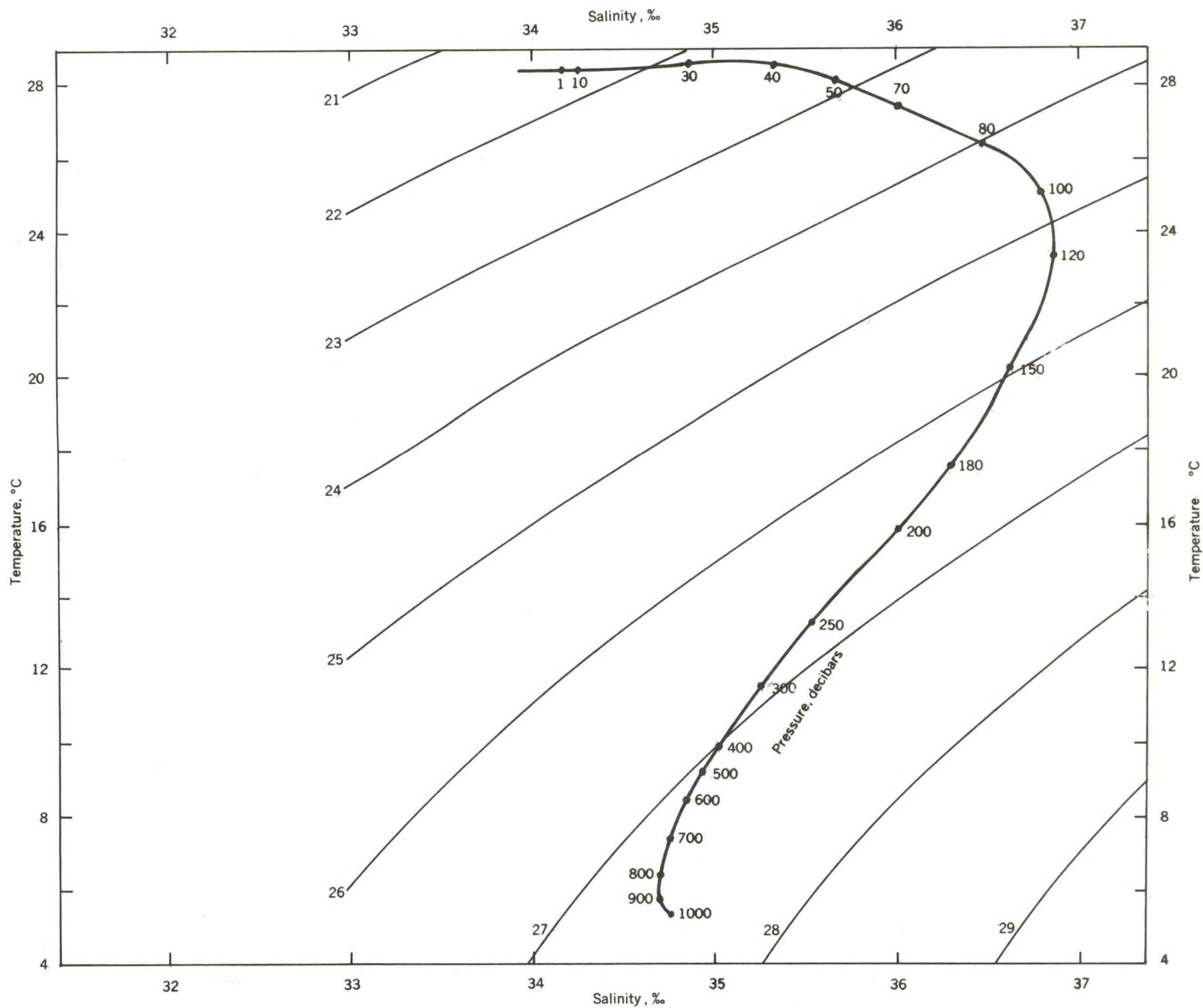




Temperature-salinity diagram for Station B, 17°36'N 54°34'W. Labeled contours are lines of equal sigma-t.

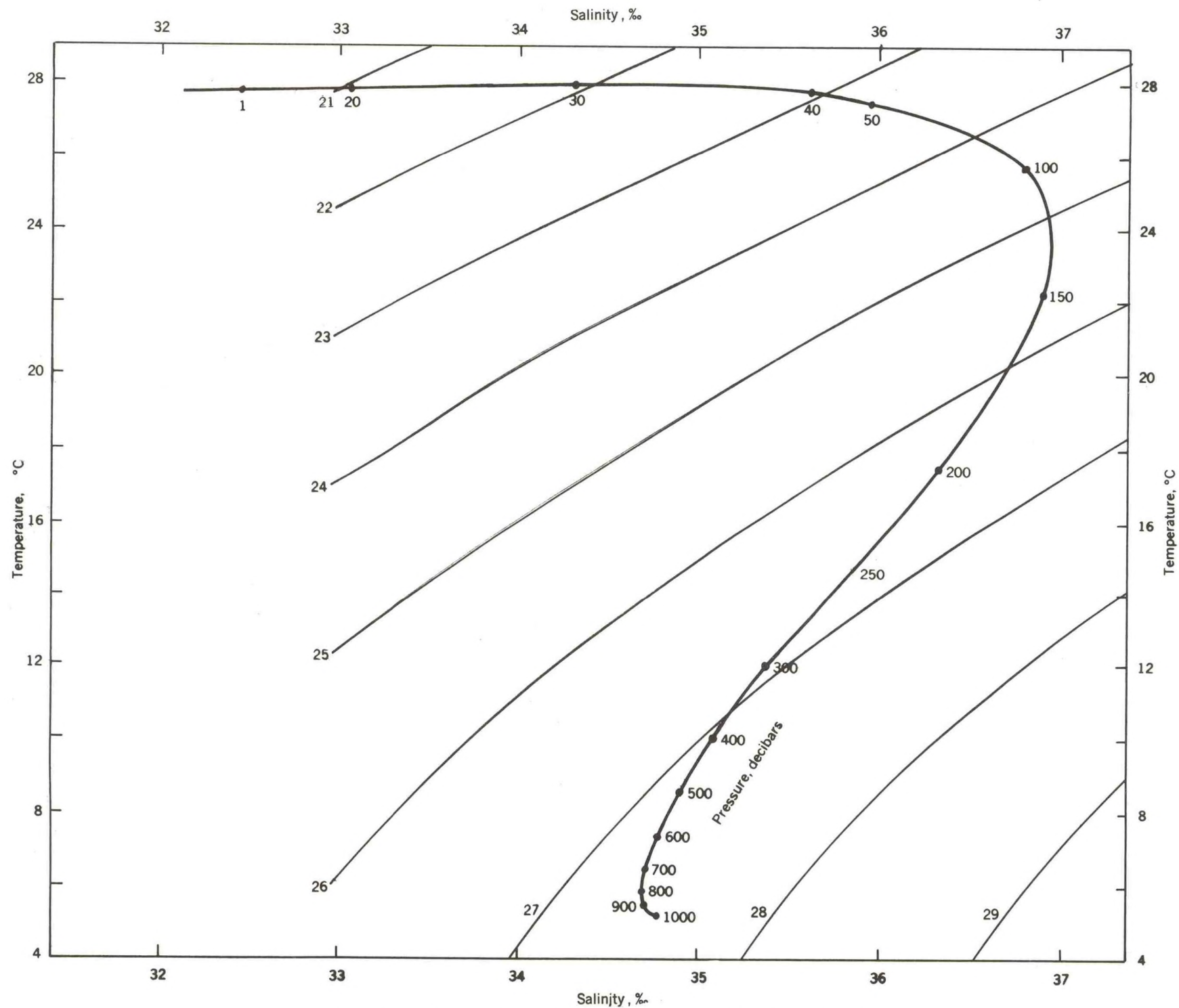


Temperature-salinity diagram for Station C, 15°00'N 56°30'W. Labeled contours are lines of equal sigma-t.



Temperature-salinity diagram for Station D, 12°23'N 58°23'W. Labeled contours are lines of equal sigma-t.

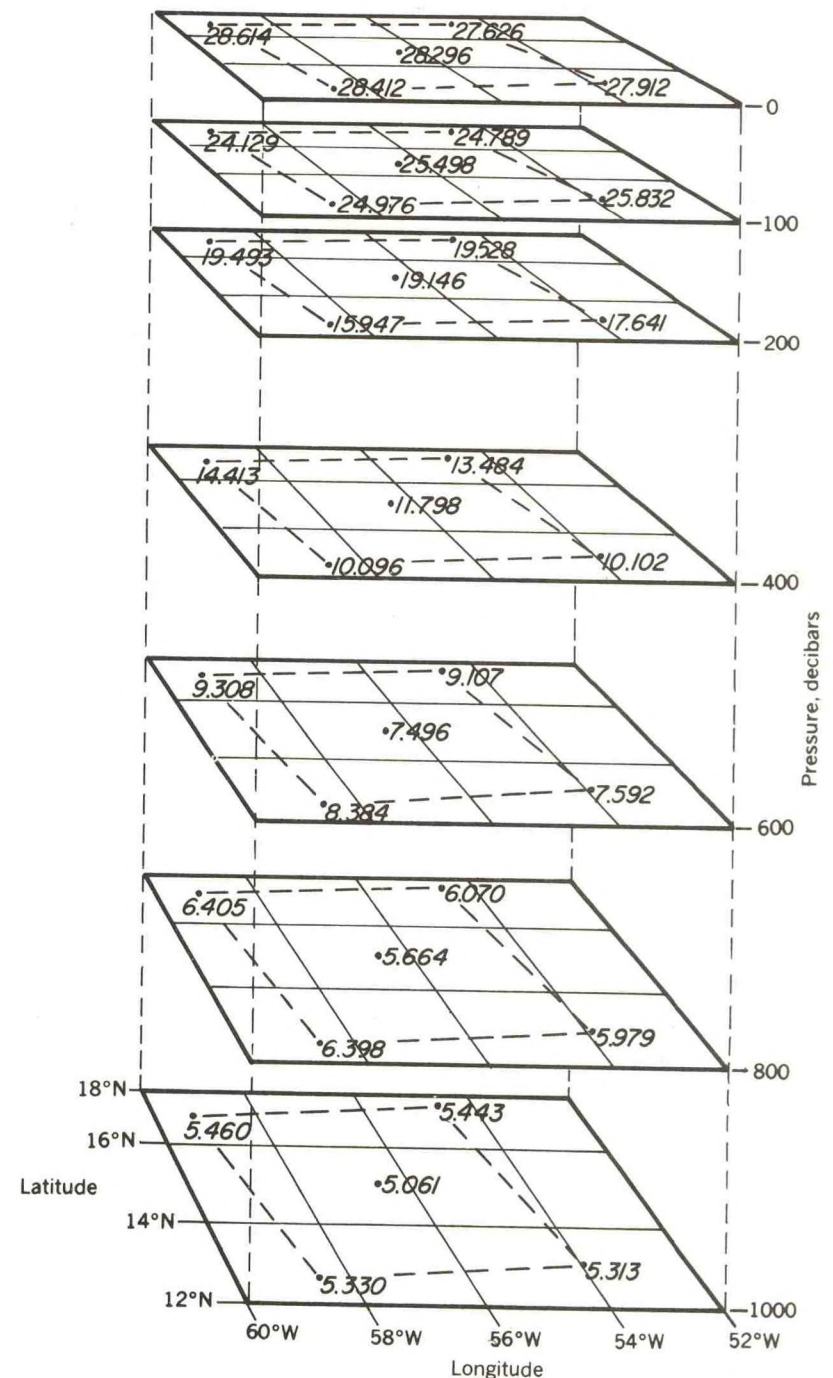




Temperature-salinity diagram for Station E, 13°08'N 53°51'W. Labeled contours are lines of equal sigma-t.

# 7. SPATIAL DISTRIBUTION OF TEMPERATURE, SALINITY, AND SIGMA-t

The three maps presented here show the horizontal distribution of salinity, temperature, and sigma-t in the "BOMEX Basin." The horizontal contours are stacked vertically at seven depth levels to also reveal the gross vertical structure. The data points used in constructing these maps were obtained by averaging together all data for each depth and station in the BOMEX array.



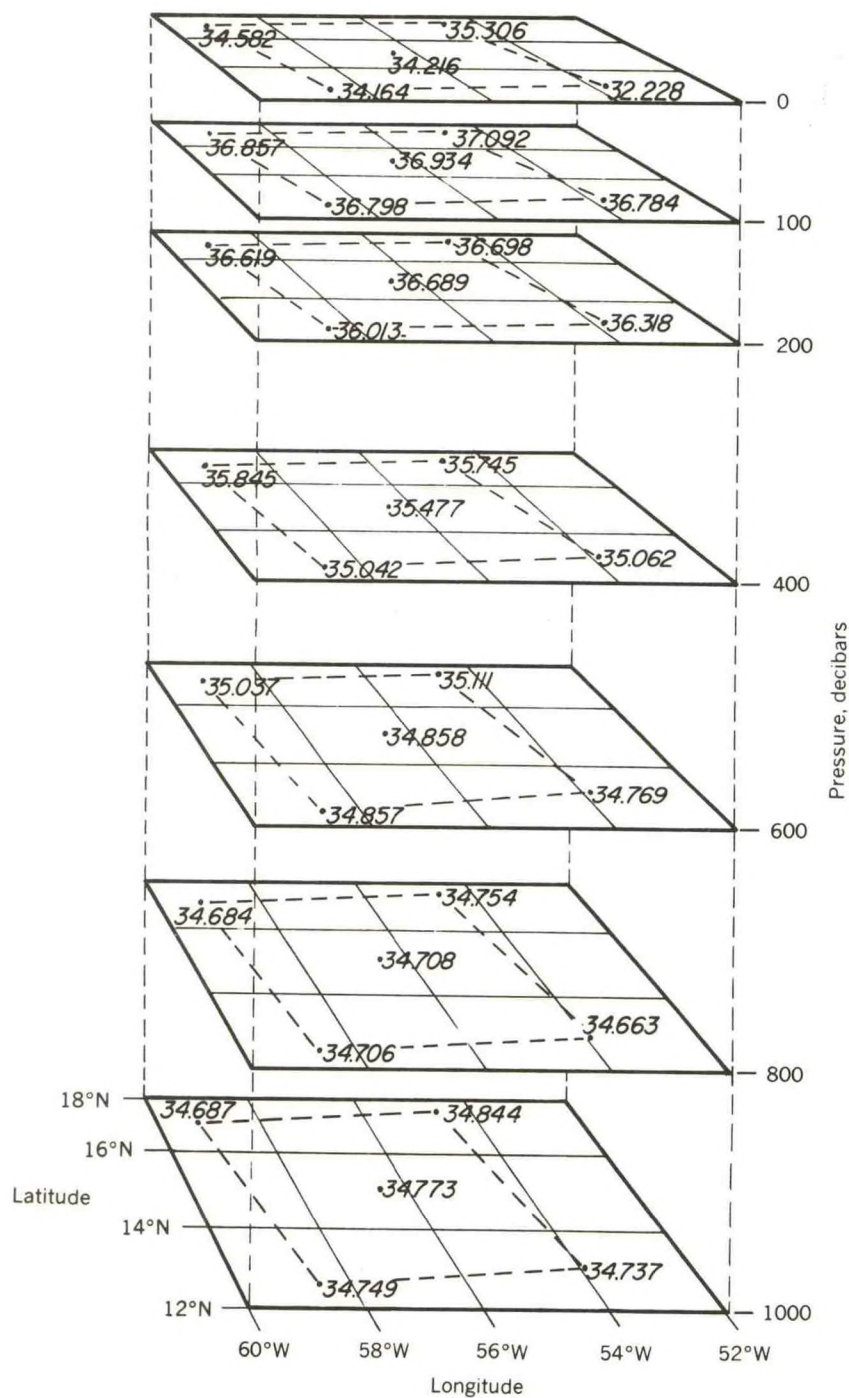
Spatial distribution of time-averaged temperature (°C).



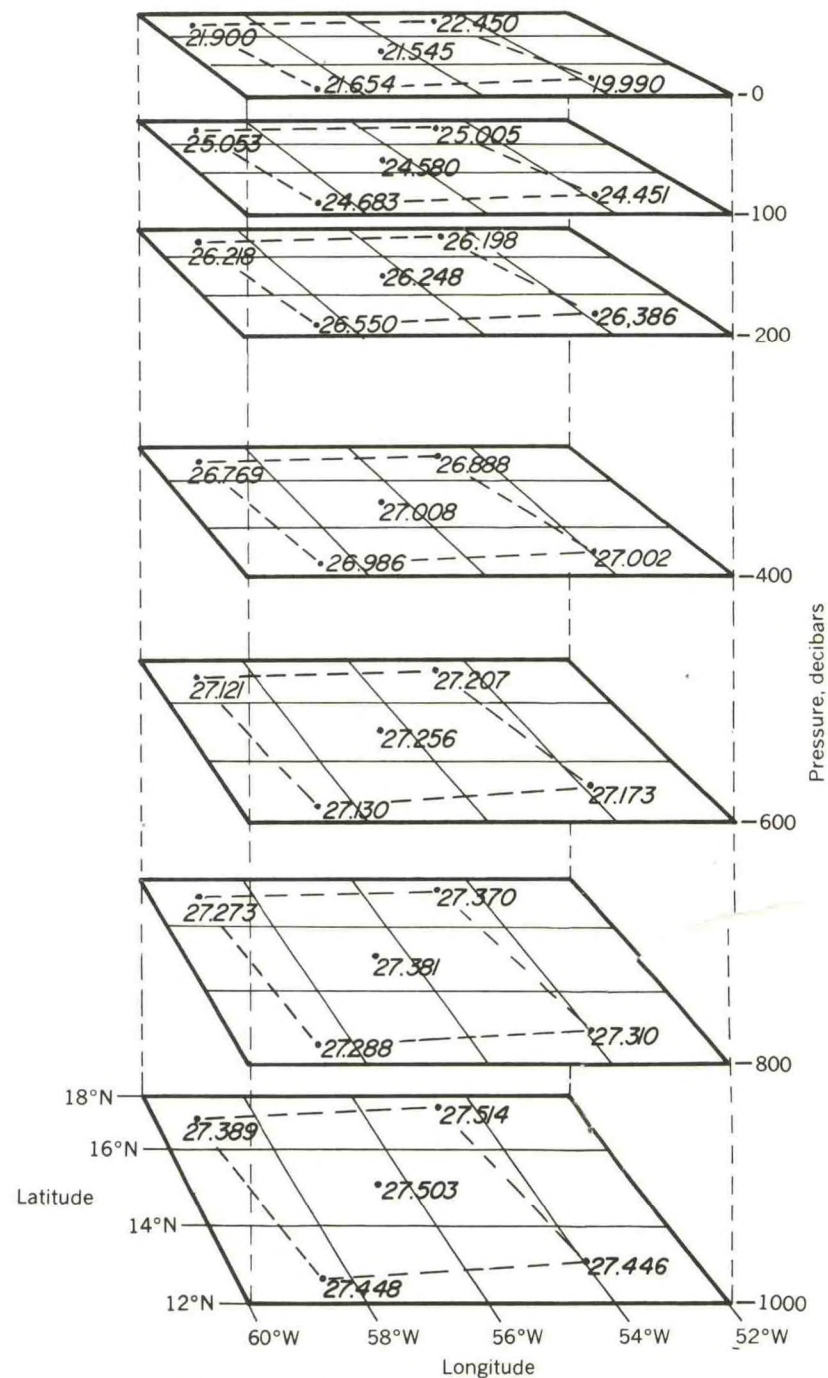
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Spatial distribution of time-averaged salinity (%).



Spatial distribution of time-averaged sigma-t.