ORGANIZATION OF PERSISTENT UPWELLING STRUCTURES HYDROGRAPHIC OBSERVATIONS, 5 APRIL-10 MAY 1983

VOLUME 1: VERTICAL PROFILES

by

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TABLE OF CONTENTS

INTRODUCTION

The area near Point Arguello has long been recognized as a location of strong upwelling. A tongue of biologically active waters was observed in the earliest studies of this region (Sverdrup and Allen, 1939). More recently, satellite estimates of chlorophyll by the Coastal Zone Color Scanner (CZCS) on Nimbus-7 have shown the presence of this tongue emanating from Point Arguello in nearly all images off southern California (e.g., Smith and Baker, 1982; Atkinson et al., 1986). This feature is apparently not unique to the Point Arguello region. Similar structures are evident from CZCS and infra-red images near other major points and capes along the west coast of North America (e.g., Abbott and Zion, 1985). Along the central and southern California coast, the tongue off Point Arguello is the largest in spatial extent and the most persistent. The Organization of Persistent Upwelling Structures (OPUS) program was developed with the goal of understanding the relationship between the circulation and planktonic processes in this upwelling region extending southward from Point Arguello.

After a small OPUS pilot study in spring 1981 (see Brink et al., 1984, for a summary) a modest program, OPUS-83 (see Atkinson et al., 1986), was funded by the National Science Foundation with the specific objectives of 1) characterizing the physical and biological oceanographic setting in the region within roughly 40 km of Point Arguello; 2) examining the dynamical features of upwelling in this region; 3) obtaining design information for a possible major future OPUS field effort; and 4) achieving some preliminary understanding of the ecosystem dynamics in this region. The field work for OPUS-83 was completed in April and May 1983. This particular time period was selected in order to observe the physical and biological variability during the first few days after the seasonal transition from weak to strong upwelling, the so-called "spring transition" (e.g., Huyer et al., 1979; Brink et al., 1984; Strub et al., 1987; Lentz, 1987). Fortuitously, the OPUS-83 field study was also conducted during a very unusual warming event in the California Current (Simpson, 1983). The sea surface temperatures observed along the California coast during winter and spring of 1983 were the highest recorded since 1958-59. This 1983 warming was related to the major El Nino occurrence in the tropical Pacific Ocean.

OPUS-83 was an interdisciplinary program which included physical, chemical and biological measurements repeated at regular intervals on a fixed sampling grid. The hydrographic observations (CTD and XBT) are summarized in two data reports. This report is Volume 1 which contains a detailed background and summary of the OPUS program, summaries of the sampling, calibration and data processing procedures, and vertical profiles of temperature, salinity, and σ_t. Volume 2 contains vertical sections and horizontal maps at selected depths of temperature, salinity and σ_t.

Other components of OPUS-83 included drifters deployed at a number of different locations approximately once per week during the field study (Davis and Regier, 1984; Atkinson et al., 1986). A total of 72 drifters were drogued at 0.5 m and 19 drifters were drogued at 25 and 50 m depths. The tracks of deeper drifters show a strong similarity to those of the 0.5 m drifters.

Near-surface wind stress and sea surface temperature were sampled approximately every two days from aircraft. A summary of these measurements is given in Caldwell et al. (1986). These observations provide a characterization of the wind forcing in the OPUS region and a detailed description of the spatial structure of the sea surface temperature field.

During the first 24 days of the field program (Legs 1 and 2), current velocity was sampled continuously during the CTD and XBT surveys at 10 minute averaging intervals (nominally 2.5 km horizontal resolution) with an on-board Acoustic Doppler Current Profiler (ADCP). The range gates on the ADCP were set to sample every 6 m vertically from 20 m to a depth of 150-200 m (depending on particle concentrations in the deeper water). A description of the ADCP data is given in Barth and Brink (1986).

In addition to this extensive array of physical measurements, numerous measurements were made to support the biological components of the OPUS program. These consisted primarily of nutrient measurements (nitrate, ammonia, nitrite and silicate) and surface zooplankton (30 minute sample interval) sampled approximately every 3 days during XBT surveys of the full OPUS survey region. Zooplankton net tows to 200 m depth were regularly conducted at an inner and an outer station and occasionally a middle station along G line (see Figs. 2 and 5). Primary productivity measurements were made at the inner station along G line at daily intervals.

BACKGROUND

The California Current has been intensively studied by CalCOFI since 1949 in the region extending approximately 500 km offshore between San Francisco and the southern tip of Baja California. Since its conception, this sampling program has been primarily fisheries motivated with a goal of understanding the underlying principles governing behavior, availability and total abundance of the major pelagic fish stocks in the California Current. The most extensive CalCOFI data sets are the zooplankton, temperature and salinity measurements. Over the 35-year period from 1950 to 1984, CalCOFI collected approximately 30,000 zooplankton net tows and 21,000 hydrographic profiles.

The CalCOFI sampling grid is relatively coarse with a nominal grid spacing of 74 km (somewhat closer over the continental shelf and slope regions). Many of the CalCOFI grid points were occupied very infrequently over the 34-year sampling period. The 150 dots shown in Fig. 1 correspond to the grid points occupied 40 or more times between 1950 and 1984. It is apparent that only the very large-scale spatial structure of the variability can be addressed by this coarse grid. In addition to coarse spatial resolution, the grid points shown in Fig. 1 were generally occupied, at most, only once per month; frequently, successive observations at a given grid point were separated by several months. It is therefore apparent that the CalCOFI data are also appropriate only for studies of long time-scale variability.

The seasonal variability of the flow at the surface and at 200 m (relative to 500 m) has been determined by Reid et al. (1958), Wyllie (1966) and Chelton (1984). A comprehensive discussion of the Wyllie seasonal maps is given in Hickey (1979). Although these various studies are based on different quantities of data and different methods of defining the seasonal cycle, they all result in a consistent picture of the large-scale seasonal variability. The flow in the offshore region is equatorward throughout the year everywhere from San Francisco to southern Baja California and is strongest in the summertime. Within the nearshore 50-100 km there is a seasonal reversal in the surface flow; the flow is poleward from September through February but equatorward during the remainder of the year. When this poleward surface flow extends north of Point Arguello, it is generally referred to as the Davidson Current. The seasonal surface flow during the month of April is shown in Fig. 1.

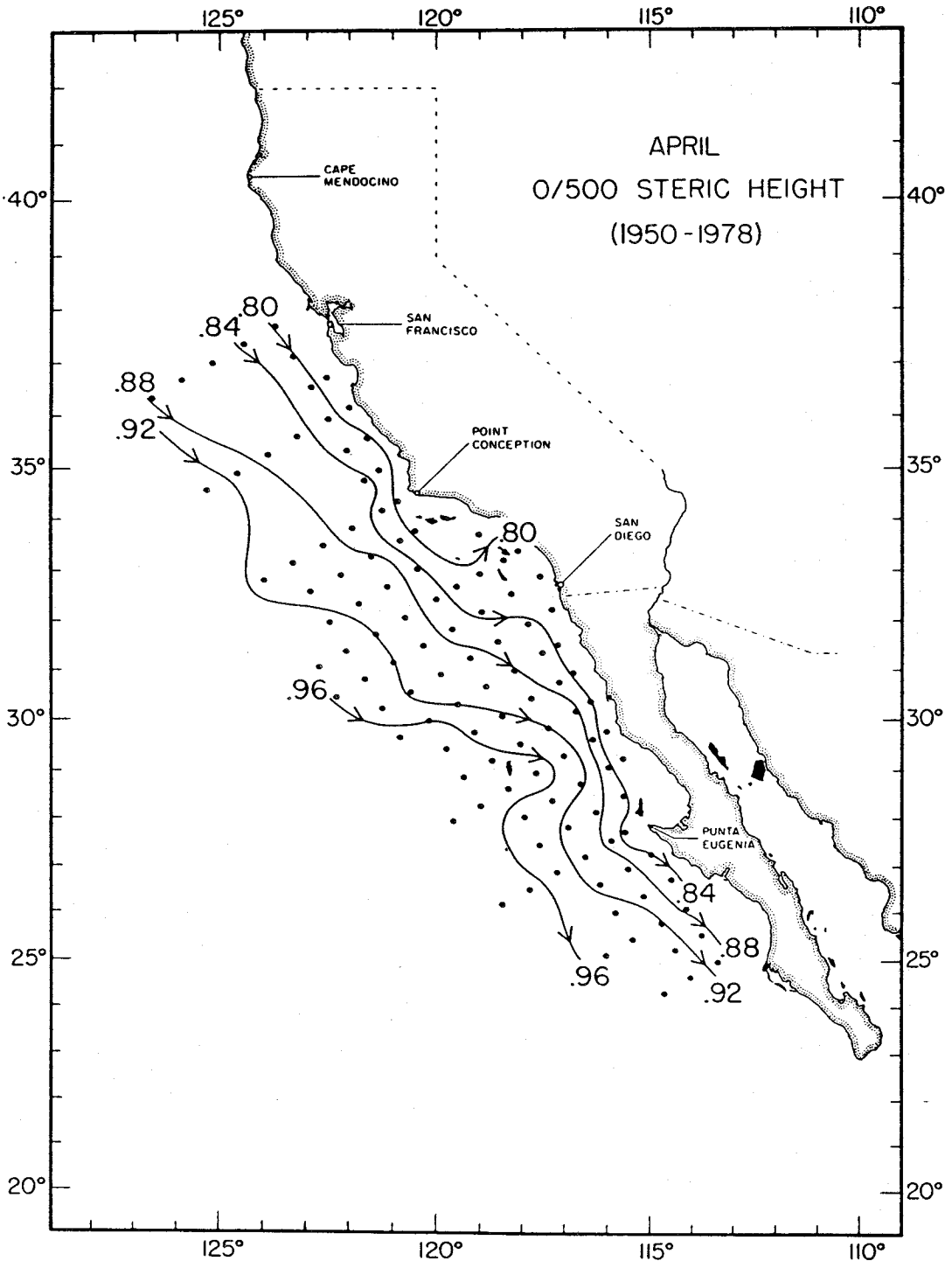

FIG. 1 Seasonal average geostrophic flow at the sea surface relative to 500 db for the month of April. Contours are dynamic height in meters and dots correspond to locations of CalCOFI grid points occupied 40 or more times between 1950 and 1984.

At depths below 150 m, the flow in the offshore region is weak and equatorward year round and the nearshore flow is generally poleward year round with weakest flow in late winter and early spring. During the spring and summertime this poleward flow at depth is in opposition to the nearshore equatorward surface flow (the California Undercurrent).

Within the Southern California Bight there is not sufficient historical data to resolve reliably the seasonal variability of the flow with any detail. Calculation of the surface geostrophic velocity relative to 400 m between the nearest inshore pair of stations along CalCOFI line 87 (running directly offshore from Los Angeles) indicates that the flow is poleward during all months except March (when it is zero). Elsewhere in the Southern California Bight there are few stations in water deeper than a few hundred meters. Consequently, the spatial structure of the flow in this region cannot be directly determined from the CalCOFI data. The flow in deeper water can be extrapolated to the shallow nearshore regions (e.g., Reid and Mantyla, 1976) but the validity of this extrapolation technique has not yet been conclusively demonstrated.

Nonseasonal physical and biological variability in the southern California Current has been examined by Chelton et al. (1982) and Roesler and Chelton (1987). The variability is dominated by very low frequency (interannual) fluctuations in the large-scale flow. During time periods when the generally equatorward flow is stronger than normal, the zooplankton biomass is anomalously high. Correspondingly, weaker than normal equatorward transport results in abnormally low zooplankton biomass. Evidence is presented in Roesler and Chelton (1987) indicating that the zooplankton variability north of Point Arguello is controlled by advection of zooplankton biomass. Farther south, variations in zooplankton biomass become progressively more controlled by nutrient advection and changes in environmental conditions associated with alongshore advection.

The low frequency variations in the flow of the California Current and the zooplankton biomass are uncorrelated with local and basin-wide wind forcing in the North Pacific. They are, however, significantly correlated with El Nino occurrences in the eastern tropical Pacific (Chelton et al., 1982; Roesler and Chelton, 1987). From analyses of low frequency sea level variations at coastal tide gauge stations from Mexico to Alaska (Chelton and Davis, 1982, Enfield and Allen, 1980), there is evidence for poleward propagation of the El Nino signal. It therefore appears that there is a northern hemisphere counterpart to the classical southern hemisphere El Nino signal along the west coast of South America. The biological response of this climatological signal off California is similar to that off Peru

and Ecuador, although not nearly as dramatic: several months after the occurrence of El Nino in the eastern tropical Pacific, there is a decrease in zooplankton biomass off California.

The resolution of the CalCOFI data is somewhat coarse spatially and temporally to examine ecosystem dynamics over time scales shorter than seasonal. Detailed studies of shorter-time variability require an alteration in the sampling strategy. The region around Point Arguello is particularly suitable for such studies because this is a dynamic region of recurring upwelling and high spatial and temporal variability, thus providing a large number of "realizations" of coupled physical and biological structures.

The region around Point Arguello is intriguing oceanographically because it represents the boundary between two very different circulation regimes. To the north the coastline is relatively straight and the bottom topography is simple (see Fig. 2). The winds in this region are strong and equatorward during the spring and summer, driving a generally equatorward surface flow. By comparison, the region to the south and east of Point Arguello (the Southern California Bight) has very complex bottom topography with numerous islands (the Channel Islands) and submerged banks, ridges and canyons. The springtime winds are weak and the surface flow is generally poleward in this region. Present understanding of the circulation in the area near Point Arguello where the equatorward flow from the north and poleward flow from the south converge is very limited and incomplete.

The only detailed studies of this region consist of a pair of cruises in 1964 (reported in Reid, 1965). Hydrographic surveys were conducted in January and June on an approximately 15 km grid over the region within roughly 150 km of Point Arguello. The January and June pictures of the flow differ in a number of major respects (see Fig. 3). The January 1964 flow is much simpler with nearshore poleward surface flow within approximately 100 km offshore of the Channel Islands. The flow in the region farther offshore is weak and equatorward. The subsurface flow pattern is remarkably similar with maximum nearshore poleward velocity at about 150 m depth.

By comparison, the June 1964 flow is much more complex, dominated by eddy variability and meandering. The surface flow is equatorward everywhere except within the Southern California Bight (inshore of the Channel Islands). The core of the southward flowing California Current separates from the coast and turns southwestward at Point

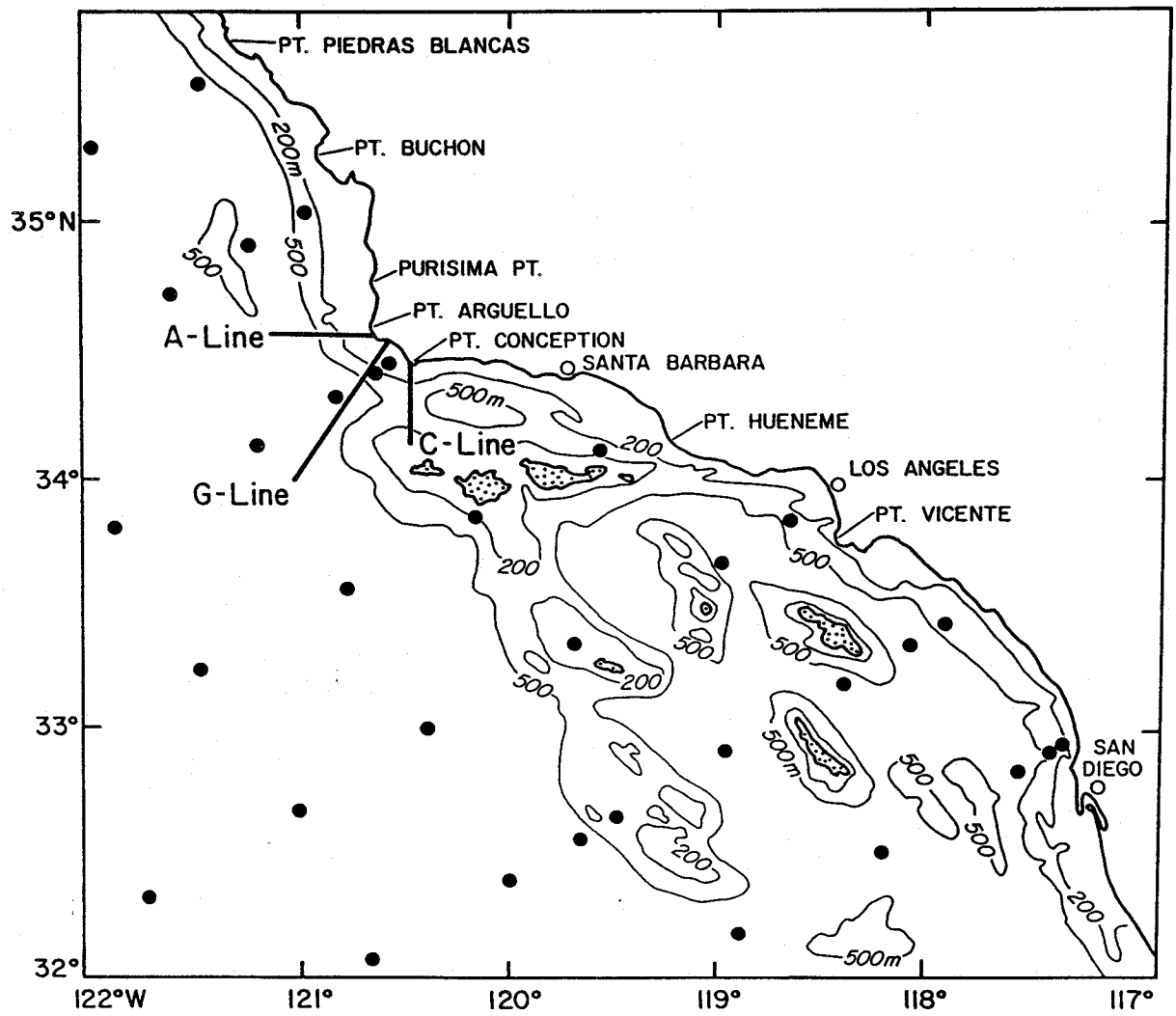

FIG. 2 Map of OPUS and surrounding region with 200 m and 500 m bottom contours. Dots indicate locations of CalCOFI grid points and the OPUS A-, G- and C-lines are labelled.

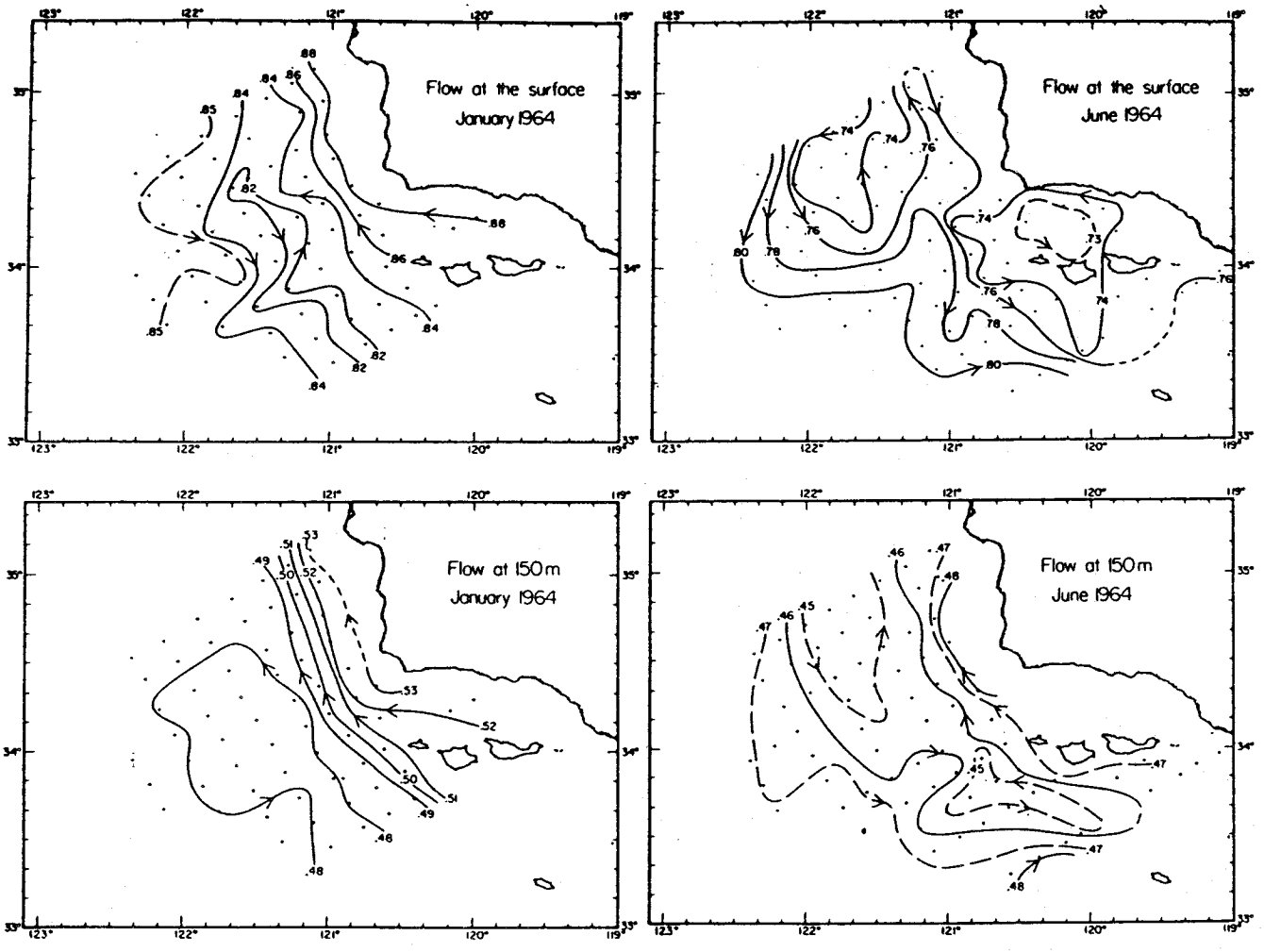

FIG. 3 Geostrophic flow at the surface and at 150 db relative to 500 db during January and June 1964. Contours are dynamic height in meters. From Reid (1965).

Arguello. At depths below 150 m, the flow within about 50-75 km of the coast and Channel Islands is poleward (the California Undercurrent), in opposition to the surface flow. Farther offshore the subsurface flow is equatorward everywhere as in the near surface region.

There are several questions left unanswered from the 1964 surveys of the Point Arguello region. Firstly, a description of the flow over the continental shelf and upper slope is lacking. Reliable calculation of geostrophic flow in this region is limited to areas in water deeper than 500 m. This excludes the inshore 30 km around Point Arguello which appear to be the most active biologically. Thus the source water for the upwelling "plume" at Point Arguello cannot be reliably determined from existing data. Furthermore, the dominant time and space scales of variability in the region near Point Arguello cannot be determined from historical data. The 1964 hydrographic surveys indicate the presence of variability over spatial scales not adequately sampled by the usual CalCOFI 74 km grid. The 15 km sample spacing in the 1964 surveys are rich in meanders and eddy-like features (especially the June data). Closer sample spacing is required to determine the spatial resolution required to resolve the complex hydrographic variability in this region.

Another important limitation of all past surveys of the Point Arguello region is the lack of a complete set of biological measurements in coordination with a detailed physical sampling program. Thus, physical and biological coupling cannot be resolved from existing data over the short space and time scales that are likely to be important.

Finally, no detailed hydrographic surveys have been conducted during the spring-time. A recent study of the historical CalCOFI data base by Chelton (1984) suggests that there may be important differences between the seasonal norm flow field in April and June. The seasonal average flow in April along a cross section running offshore from Point Arguello looks similar to that in June. The nearshore surface flow is weak and equator-ward with the core southward flow centered about 100-150 km offshore. During June the poleward undercurrent extends at least as far northward as San Francisco. However, during April and May this strong poleward undercurrent is not seasonally present along a section across the California Current only 200 km north of Point Conception (see Fig. 4). The CalCOFI sampling at grid points in the region between these two sections is too sparse to determine the poleward extent of the undercurrent. Furthermore, the relation between this strong undercurrent and the flow over the shelf and upper slope is unknown.

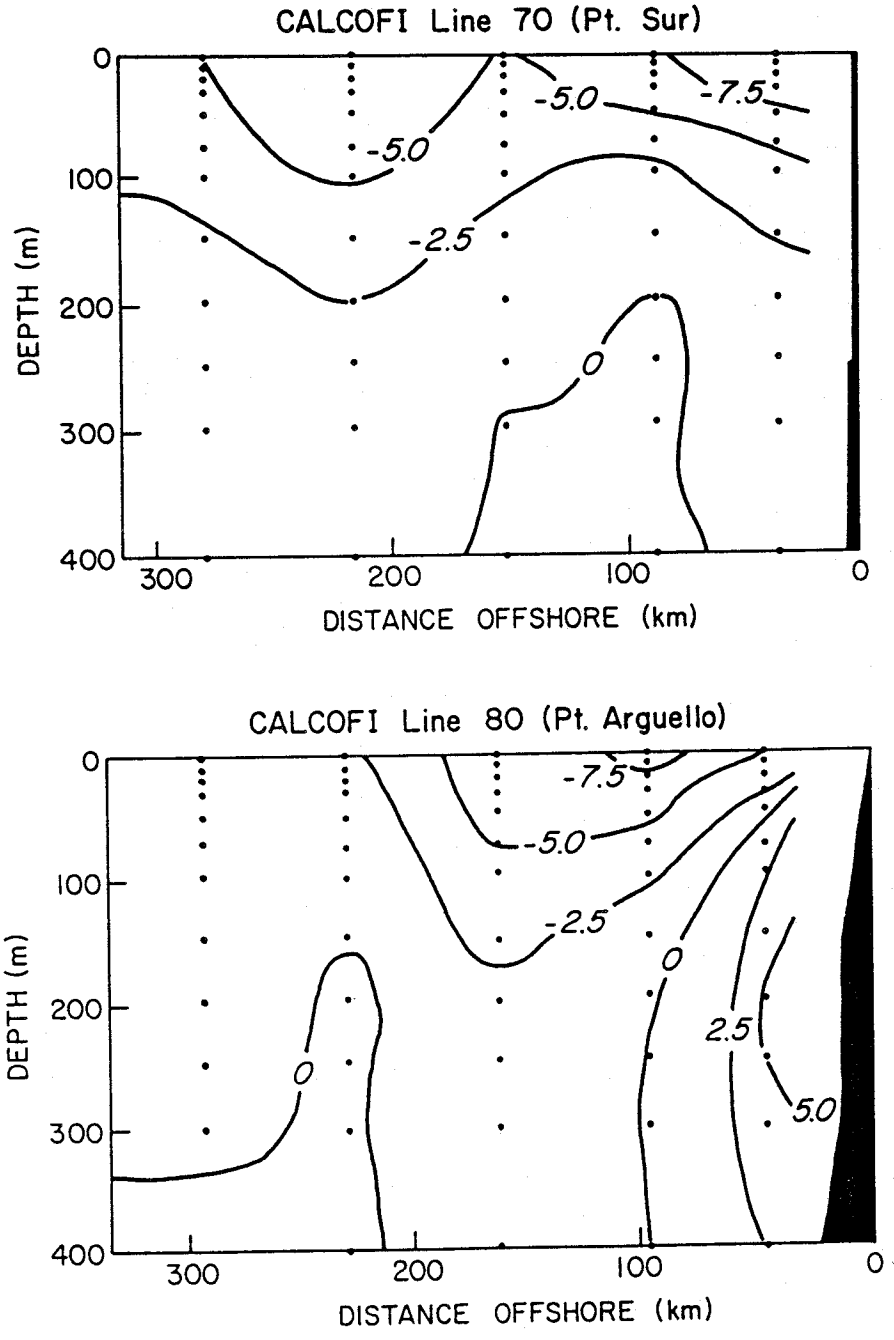

FIG. 4 Seasonal average alongshore component of geostrophic velocity in cm/sec (positive poleward) for the month of April along two sections across the California Current, one off Point Arguello and the other off Point Sur (200 km north of Point Arguello). Dots correspond to center points of geostrophic velocity calculations (midway between pairs of hydrographic stations).

SAMPLING STRATEGY

In order to answer the questions summarized in the previous sections, horizontal and vertical distributions of the physical and biological variables must be resolved synoptically on appropriate spatial and temporal scales. These scales were estimated from the 1981 OPUS pilot experiment (Brink et al., 1984) to be 4-6 km cross-shelf, 20 km alongshelf, with a temporal scale of 3-5 days. The OPUS-83 field program was designed and carried out with these objectives and spatial scales in mind.

Hydrographic section were occupied repeatedly to provide data to resolve the temporal evolution of distributions in several vertical planes. The locations of these sections were chosen to account for areas of input or export of waters by advection and to provide a map covering the area of intense upwelling. Along each section, stations were located 3.2 km apart. The offshore extent of the sections was chosen to strike a compromise between large spatial coverage and rapid (near-synoptic) sampling of the survey area. The OPUS-83 hydrographic sampling program was based primarily on the A, G and C lines shown in Figs. 2 and 5. The A line runs approximately 35 km offshore directly west of Point Arguello. The C line runs approximately 30 km across the western end of the Santa Barbara Channel directly south of Point Conception. These two lines mark the boundaries of the intensive OPUS study region. The G line bisects the OPUS region and runs approximately 50 km offshore in a southwestward direction from the source of the upwelling "plume" frequently observed between Points Arguello and Conception.

The OPUS region was surveyed in three legs over the 36-day period from 5 April to 10 May 1983. A log of the ship operations is given in Table 1. Sampling was based on a 6-day repeat cycle consisting of the following (times in parentheses correspond to approximate number of hours to complete):

1. CTD section along G line (approx. 18 hrs.)
2. XBT and sea surface temperature (SST) map of entire OPUS region (approx. 24 hrs.)
3. CTD section along A line (approx. 12 hrs.)
4. CTD section along G line (approx. 18 hrs.)
5. CTD section along C line (approx. 12 hrs.)
6. XBT and sea surface temperature map of entire OPUS region (approx. 24 hrs.)

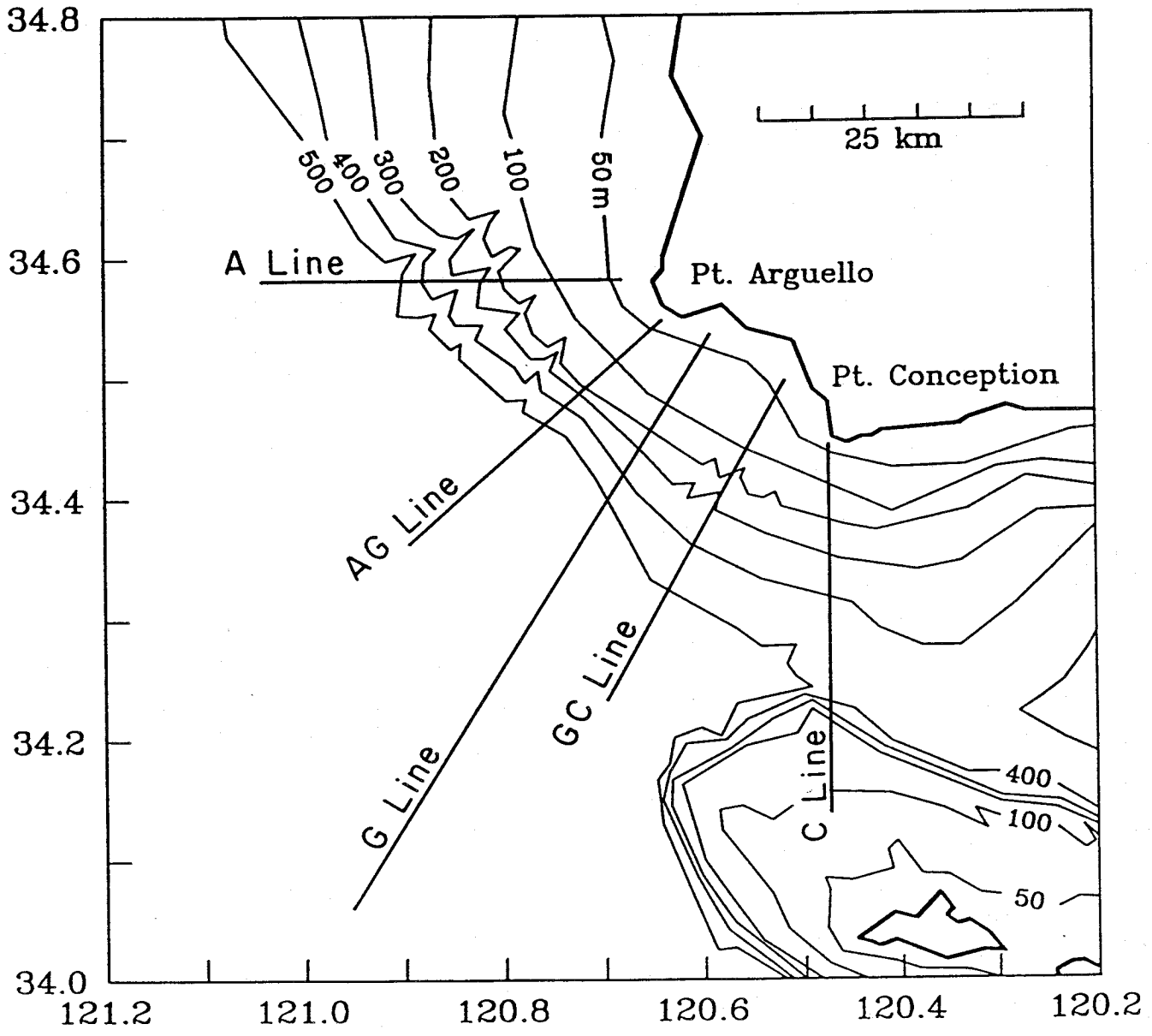

FIG. 5. Detail map of the OPUS survey region. Bathymetry contours are in meters. Locations of the A-, AG-, G-, GC- and C-lines are shown on the map. CTD profiler were collected at approximately 3.2 km spacing along the A-, G- and C-lines. XBT profiles were collected at approximately 3.2 km spacing along all five lines.

Table 1. Log of XBT and CTD profiles during the three legs of OPUS-83.

LEG 1

Dates (1983) & Times (GMT) Start	Stop	Transect Type, Name & Number	Station Names	Sequential Station Numbers	Map Type & Number	Comments
4/5 0625-	4/6 0235	CTD G-1	G1-G17	1-17		
4/6 0912			G1	18		
4/6 1138-	4/6 1246	XBT A-1	A1-A6	19-24	XBT Map 1	CTD @ A1
4/6 1330-	4/6 1517	XBT AG-1	AG1-AG7	25-31	XBT Map 1	CTD @ AG1
4/6 1555-	4/6 1800	XBT G-1	G1-G9	32-40	XBT Map 1	CTD @ G1
4/6 1845-	4/6 2102	XBT GC-1	GC1-GC8	41-48	XBT Map 1	CTD @ GC1
4/6 2206-	4/6 2405	XBT C-1	C1-C8	49-57	XBT Map 1	CTD @ C1 CTD & XBT @ C8
4/7 0205-	4/7 1135	CTD A-1	A1-A10	58-67	CTD Map 1	
4/7 1505-	4/8 1533	CTD G-2	G1-G18	68-85	CTD Map 1	
4/8 2055-	4/9 0510	CTD C-1	C1-C8	86-93	CTD Map 1	
4/9 1220-	4/9 1438	XBT C-2	C1-C8	94-101	XBT Map 2	CTD @ C1
4/9 1526-	4/9 1736	XBT GC-2	GC1-GC8	102-109	XBT Map 2	CTD @ GC1
4/9 1813-	4/9 2139	XBT G-2	G1-G11	110-125	XBT Map 2	CTD @ G1, 5 XBTs between G8, G9
4/9 2210-	4/10 0031	XBT AG-2	AG1-AG8	126-133	XBT Map 2	CTD @ AG1
4/10 0211-	4/10 0430	XBT A-2	A1-A8	134-141	XBT Map 2	CTD @ A1
4/11 0421-	4/11 2102	CTD G-3	G1-G12	142-153		
4/12 0127-	4/12 0312	XBT A-3	A1-A8	154-161	XBT Map 3	CTD @ A1
4/12 0349-	4/12 0616	XBT AG-3	AG1-AG8	162-169	XBT Map 3	CTD @ AG1 XBT @ AG4 failed
4/12 0710-	4/12 1004	XBT G-3	G1-G12	170-181	XBT Map 3	CTD @ G1
4/12 1042-	4/12 1251	XBT GC-3	GC1-GC10	182-191	XBT Map 3	CTD @ GC1
4/12 1432-	4/12 1653	XBT C-3	C1-C10	192-201	XBT Map 3	CTD @ C1
4/12 1852-	4/13 0224	CTD A-2	A1-A8	202-209	CTD Map 2	
4/13 0546-	4/13 1950	CTD G-4	G1-G12	210-221	CTD Map 2	
4/14 0010-	4/14 1024	CTD C-2	C1-C10	222-231	CTD Map 2	
4/14 2311-	4/15 0050	XBT A-4	A1-A8	232-239	XBT Map 4	CTD @ A1
4/15 0125-	4/15 0312	XBT AG-4	AG1-AG8	240-247	XBT Map 4	CTD @ AG1
4/15 0424-	4/15 0721	XBT G-4	G1-G12	248-259	XBT Map 4	CTD @ G1 XBT @ G2 failed 1 XBT between G9 & G10
4/15 0807-	4/15 1012	XBT GC-4	GC1-GC10	260-269	XBT Map 4	CTD @ GC1
4/15 1140-	4/15 1344	XBT C-4	C1-C10	270-279	XBT Map 4	CTD @ C1

Table 1. (continued)

LEG 2

Dates (1983) & Times (GMT) Start	Stop	Transect Type, Name & Number	Station Names	Sequential Station Numbers	Map Type & Number	Comments
4/18 1732	4/19 1006	CTD G-5	G1-G12	280-291		
4/19 1420	4/19 1925	XBT U-1	U1-U14	292-305	XBT Map 5	CTDs @ U1,U14 (same as C9,A8)
4/19 2003	4/20 0156	XBT V-1	V1-V13	306-318	XBT Map 5	CTDs @ V1,V13 (same as C7,A7)
4/20 0224			C6	319	XBT Map 5	
4/20 0247	4/20 0759	XBT W-1	W1-W11	320-330	XBT Map 5	CTDs @ W1,W11 (same as C5,A5)
4/20 0836			A4	331	XBT Map 5	
4/20 0856	4/20 1152	XBT X-1	X1-X10	332-341	XBT Map 5	CTDs @ X1,X10 (same as C3,A3)
4/20 1224	4/20 1600		C2,C1,GC1 G1,AG1,A1	342-347	XBT Map 5	all CTDs except C2
4/20 2344	4/20 0626	CTD A-3	A1-A8	348-355	CTD Map 3	
4/21 0948	4/22 0039	CTD G-6	G1-G12	356-367	CTD Map 3	
4/22 0659	4/22 1619	CTD C-3	C1-C10	368-377	CTD Map 3	
4/22 2101	4/22 2310	XBT C-5	C1-C10	378-387	XBT Map 6	CTD @ C1
4/23 0019	4/23 0217	XBT GC-5	GC1-GC10	388-397	XBT Map 6	CTD @ GC1 XBT @ GC2 failed
4/23 0300	4/23 0548	XBT G-5	G1-G12	398-409	XBT Map 6	CTD @ G1
4/23 0627	4/23 0846	XBT AG-5	AG1-AG8	410-417	XBT Map 6	CTD @ AG1
4/23 1013	4/23 1146	XBT A-5	A1-A8	418-425	XBT Map 6	CTD @ A1 XBT @ A5 failed
4/23 1513	4/23 1805	CTD P-1	P1-P8	426-433	XBT Map 6	All CTDs
4/24 0219	4/24 1828	CTD G-7	G1-G12	434-445		
4/25 0127	4/25 0334	XBT C-6	C1-C10	446-455	XBT Map 7	CTD @ C1
4/25 0411	4/25 0617	XBT GC-6	GC1-GC10	456-465	XBT Map 7	CTD @ GC1
4/25 0702	4/25 0929	XBT G-6	G1-G12	466-477	XBT Map 7	CTD @ G1
4/25 1007	4/25 1153	XBT AG-6	AG1-AG8	478-485	XBT Map 7	CTD @ AG1
4/25 1320	4/25 1519	XBT A-6	A1-A8	486-493	XBT Map 7	CTD @ A1
4/25 2108	4/26 0357	CTD A-4	A1-A8	494-501	CTD Map 4	
4/26 0823	4/26 2145	CTD G-8	G1-G12	502-513	CTD Map 4	
4/27 0150	4/27 1312	CTD C-4	C1-C10	514-523	CTD Map 4	
4/28 0721	4/28 0852	XBT A-7	A1-A8	524-531	XBT Map 8	CTD @ C1
4/28 1022	4/28 1157	XBT AG-7	AG1-AG8	532-539	XBT Map 8	CTD @ AG1
4/28 1227	4/28 1506	XBT G-7	G1-G12	540-551	XBT Map 8	CTD @ G1
4/28 1549	4/28 1742	XBT GC-7	GC1-GC10	552-561	XBT Map 8	CTD @ GC1 XBT @ GC3 failed
4/28 1817	4/28 2033	XBT C-7	C1-C10	562-571	XBT Map 8	CTD @ C1

Table 1. (continued)

LEG 3

Dates (1983) & Times (GMT) Start	Stop	Transect Type, Name & Number	Station Names	Sequential Station Numbers	Map Type & Number	Comments
5/2 1510-	5/3 0501	CTD G-9	G1-G12	572-583		
5/3 0935-	5/3 1123	XBT A-8	A1-A8	584-591	XBT Map 9	CTD @ A1
5/3 1246-	5/3 1421	XBT AG-8	AG1-AG8	592-599	XBT Map 9	All XBTs
5/3 1439-	5/3 1714	XBT G-8	G1-G12	600-611	XBT Map 9	All XBTs XBT @ G3 failed
5/3 1758-	5/3 2004	XBT GC-8	GC1-GC10	612-620	XBT Map 9	All XBTs
5/3 2037-	5/3 2230	XBT C-8	C1-C10	621-630	XBT Map 9	All XBTs
5/4 0054-	5/4 0952	CTD A-5	A1-A8	631-638	CTD Map 5	
5/4 1931-	5/5 0816	CTD G-10	G1-G12	639-650	CTD Map 5	
5/5 1422-	5/5 2343	CTD C-5	C1-C10	651-660	CTD Map 5	
5/6 0426-	5/6 1240	CTD P-2	P1-P10	661-670		XBT @ P10 XBT @ P9 failed
5/6 1646-	5/6 1833	XBT A-9	A1-A8	671-678	XBT Map 10	All XBTs
5/6 1952-	5/6 2132	XBT AG-9	AG1-AG8	679-686	XBT Map 10	All XBTs
5/6 2151-	5/7 0039	XBT G-9	G1-G12	687-698	XBT Map 10	All XBTs
5/7 0130-	5/7 0355	XBT GC-9	GC1-GC10	699-708	XBT Map 10	All XBTs
5/7 0429-	5/7 0620	XBT C-9	C1-C10	709-718	XBT Map 10	All XBTs
5/7 1934-	5/8 0235	CTD A-6	A1-A8	719-726		
5/8 0607-	5/8 1425	CTD G-11	G1-G7	727-734		Station 730 failed Line discontinued due to heavy seas
5/9 1533-	5/9 1709	CTD G-12	G1-G3	735-737		Line discontinued due to heavy seas
5/9 1845-	5/9 2034	XBT C-10	C1-C10	738-747		All XBTs
5/10 0212-	5/10 0417	XBT H-1	H1-H10	748-758		XBT @ H10 failed
5/10 1412-	5/10 1646	CTD G-13	G1-G4	759-762		XBT @ G4 Line discontinued due to heavy seas

7. Deployment of drifters and/or occasional XBT or CTD sampling of region to the north or east of the OPUS area (approx. 36 hrs.)

This 6-day repeat cycle was closely maintained throughout the 36-day field program with some modification during the final week due to poor weather.

The CTD profiles along A, G and C lines were made to the bottom or 500 m (whichever was shallower) in all cases. The casts included discrete samples of oxygen, nutrients and phytoplankton at standard depths. The XBT and SST mapping was conducted along five lines oriented in a "spoke pattern" with hub centered between Points Arguello and Conception (Fig. 5). Three of these lines coincided with the A, G and C base lines of the CTD surveys and the other two (the AG and GC lines) bisected the regions between the three base lines. XBT profiles during mapping were measured to a depth of 200 m. Generally, a CTD measurement was made at the nearest inshore station on each line during the XBT surveys (see Table 1).

In summary, totals of 446 XBT profiles and 308 CTD profiles were measured in OPUS-83. CTD sections were made approximately every three days along G line (12 transects) and approximately every six days along A and C lines (6 and 5 transects, respectively). XBT and ship-based SST maps of the OPUS area were made approximately every three days. The A, AG, G and GC lines were sampled by XBTs nine times each and C line was sampled ten times by XBTs. Thus, temperature along the three base lines (A, G and C) was sampled to at least 200 m depth approximately every 1.5 days by either CTD or XBT. There were totals of ten complete XBT maps and five complete CTD maps of the OPUS survey region.

SAMPLING METHODS

CTD Casts

CTD casts were taken at each hydrographic station on the A, G, and C lines during the CTD transects and at the inner stations of the A, AG, G, GC, and C lines during XBT mapping runs. The depth of the cast extended to 500 m or the bottom, whichever was shallower. Sample casts taken to 700 m indicated that deep casts would extend the station time much longer than that deemed acceptable for a quasi-synoptic section and not lead to a significantly improved understanding of the circulation in the region around Point Arguello.

Continuous vertical temperature, conductivity and pressure data were obtained with a Neil Brown Mark V CTD. Data acquisition was controlled by an interactive HP-9825T micro-computer interfaced with a printer, plotter, video display terminal, and dual floppy disk drives. All data from both down and up casts were stored on disk. Temperature versus depth was plotted real-time and salinity versus depth was plotted immediately after the cast. The printer and video display terminal enabled the controller to monitor temperature, salinity, and depth values at any point in the cast. The Neil Brown CTD sampled approximately 5 points per second. During a typical cast the unit was lowered at 30 m/min in the upper 200 m and at 50 m/min between 200-500 m and was raised at 50 m/min during the upcast. Downcast data were processed as described in the next section to obtain vertical profiles of temperature and salinity. Upcast data were recorded for backup purposes.

Discrete samples of dissolved oxygen, nutrients, chlorophyll, and phytoplankton were taken at standard depths using rosette-mounted 1.7 liter Niskin bottles. Samples were collected during the upcast of the CTD. Bottle salinities and temperature were obtained for calibration purposes whenever possible. Dissolved oxygen and nutrient samples were processed by Dr. B. Jones at the University of Southern California.

XBT Casts

During mapping, XBT probes (T-10 probes to 200 m) were launched at each CTD hydrographic station on the A, G and C lines and at 3.2 km increments on the AG and GC lines. These locations were reoccupied during all maps except Map 5. Map 5 was run with sections parallel to the coast but included as many of the standard stations as possible. The objective of this mapping run was to evaluate the effectiveness of a more uniform sampling grid. This sampling pattern required approximately a 50% increase in survey time over the A, AG, G, GC and C line pattern and was not used in any of the later surveys.

On Leg 1, 5 April-15 April, XBT data were read from the Sippican XBT chart recorder immediately after the cast and recorded on paper. Later they were merged with station header information on the same HP-9825T system used for the CTD. The operator recorded the depth at which each 0.5°C change occurred and enough data to duplicate any other features such as inversions or mixed layers. The data from the chart that were recorded

on paper and the values entered in computer files were compared to assure that data transfer was accurate. On Legs 2 and 3, the XBT recorder was linked directly to the HP-9825T. Voltages (proportional to temperature) and time (proportional to depth) were recorded real-time. The algorithm provided in the Sippican manual was used to compute temperature and depth values. Each XBT profile was plotted after the cast; the operator then had the option of deleting extraneous values to create a new "cleaned up" file. Typically, the depths of each 0.1°C change and inflection points were retained. The shortened data file was plotted overlaying the initial data plot and visually checked for errors.

DATA CALIBRATION AND PROCESSING

CTD Data

The Neil Brown Mark V CTD was calibrated by Neil Brown Instrument Systems, Inc. before the first leg and immediately following the third leg. The post-cruise tests showed that all deviations from the initial calibration prior to the cruise were well within specifications. Bottle salinities were taken within well-mixed layers, mostly at depth, but also at surface and intermediate layers. The suitability of the layer for a calibration sample was judged by the CTD operator using the printout of data during the four minute reversing thermometer soak and at stops for Niskin bottle sampling. Salinities and reversing thermometer temperatures were used to check for drift of temperature and salinity during the cruise. No drift or deviations were detected, consequently no corrections were applied to the Neil Brown CTD data.

The raw CTD downcast data were averaged over 1 m depth intervals. In most cases this averaging eliminated any "spikes" in the data which could occur when passing through strong vertical temperature gradients. These spikes are introduced in the salinity calculation because the response time of the CTD thermistor is slower than that of the conductivity probe. Any spikes which remained after the 1 m depth averaging were smoothed by manual editing of the data. In calculating the 1 m depth averages, the first step was a "depth-latch". This step sorted the downcast data to eliminate measurements made during upward excursions of the CTD related to ship motion. The data were then averaged, for example, between 0.5 and 1.5 m to produce the 1 m value.

XBT Data

The XBT temperature and depth profiles were obtained using the digitizing procedure described in the previous section. Because of chart and probe response times, the temperatures shallower than 3 m are unreliable. Thus, 3 m is generally the first value recorded in the XBT data sets. The data were plotted (temperature versus depth) and compared with the chart profile and data recorded on paper. Any discrepancies were resolved and the data corrected. XBT temperatures at 3 m were compared with bucket temperatures throughout the cruise as a first-order calibration check. No major differences were noted.

DATA PRESENTATION

The OPUS-83 hydrographic data are summarized in two volumes. Volume 1 contains a listing of all XBT and CTD station locations and times and plots of temperature, salinity and σ_t profiles. Volume 2 contains a listing of all XBT and CTD station locations (same as Volume 1), temperature, salinity and σ_t sections, and temperature, salinity and σ_t maps. All contouring in the vertical sections and maps was done objectively using an automatic contouring routine based on Laplacian interpolation. The contour plots included in these reports were not smoothed in any way. We give here a few brief comments on each of the data products.

Volume 1

1. Listing of XBT and CTD stations. For each OPUS-83 CTD and XBT station, relevant information about the station, time, and location is given in tabular form. This information includes sequential cast number, OPUS line and station number, data type (XBT or CTD), sequential XBT or CTD transect number for the particular OPUS line (if applicable), sequential XBT or CTD map number (if applicable), date and time (GMT), latitude, longitude, water depth and maximum sample depth of the profile.

2. XBT temperature profiles. Profiles are presented for all of the 446 XBT casts during the OPUS-83 field program. The XBT profiles are grouped six stations per page. A table of the profiles included is given at the beginning of this section of the report. Included in the table for cross reference is the OPUS-83 sequential cast number of each profile, the corresponding OPUS line and station number, XBT transect number for the particular line (if applicable), and XBT map number (if applicable). This information, along with the date

and time of the profile, is also included in the title for each plot. Because of the large number of XBT profiles, data listings are not included.

3. CTD temperature, salinity and σ_t profiles. Profiles are presented for all of the 308 CTD casts during the OPUS-83 field program. The CTD profiles are grouped two stations per page, with temperature, salinity and σ_t shown for each station. A table of the profiles included is given at the beginning of this section of the report. Included in the table for cross reference is the OPUS-83 sequential cast number of each profile, the corresponding line and station number, CTD transect number for the particular line (if applicable), and the CTD map number (if applicable). This information, along with the date and time of the profile, is also included in the title for each set of temperature, salinity and σ_t profiles. Because of the large number of CTD profiles, data listings are not included.

Volume 2

1. Listing of XBT and CTD stations. This is the same listing included in Volume 1 of the OPUS-83 hydrographic data reports.

2. XBT temperature sections. Vertical sections of temperature measured by XBTs along each transect of the A, AG, G, GC, C, and H lines are presented for depths from the sea surface to 500 m. A table of the plots included is given at the beginning of this section of the report. The date of the transect, consecutive XBT transect number (if applicable), and XBT map number (if applicable) are included in the title for each temperature plot. For easy reference, a map of the station locations in the transect is included in the lower left corner of each plot. In all sections, the contour interval is 0.5°C.

The plots are ordered by line number, with each transect of a given OPUS line shown sequentially. Note that the XBT profiles extended only to a depth of 200 m so the deeper half of each XBT section is blank. The full 500 m depth range was included to allow cross comparison with CTD sections which extended to the full 500 m depth.

3. CTD temperature, salinity and σ_t sections. Vertical sections of temperature, salinity, and σ_t measured by CTDs along each transect of the A, G, C, and P lines are presented for depths from the sea surface to 500 m. A table of the plots included is given at the beginning of this section of the report. The date of the transect, consecutive CTD transect number (if applicable), and CTD map number (if applicable) are included in the

title for each temperature, salinity and σ_t plot. For easy reference, a map of the station locations in the transect is included in the lower left corner of each plot. The contour intervals used are 0.5°C for temperature, 0.1°/$_{oo}$ for salinity and 0.2 for σ_t.

The plots are ordered by line number and then by consecutive transect number. Thus, temperature, salinity and σ_t for a particular transect of a particular OPUS line are shown sequentially. These are followed by temperature, salinity and σ_t sections for the next consecutive transect of the particular OPUS line.

4. XBT temperature maps. Maps of temperature are presented at depths of 10 m, 25 m, 50 m, 75 m, 100 m, 150 m, and 200 m for each of the ten OPUS-83 XBT maps. Plots at deeper depths are not possible since the XBTs sampled only to 200 m depth. A table of the plots included is given at the beginning of this section of the report. This is followed by a table of the XBT (and in some cases CTD) casts included in each map. The date of the map and consecutive XBT map number are included on each plot. For depths from 10 m to 100 m a contour interval of 0.2°C is used. In the 150 m and 200 m maps, where horizontal temperature gradients are weaker, intermediate contours are included as dashed lines.

The plots are ordered by map number with temperature maps at all depths for a given map number shown sequentially. Each set of temperature maps for a specific XBT map number is preceded by a map showing the station locations (with sequential cast number labelled) overlayed on a bathymetry map of the OPUS region. This map is plotted on the same scale as the temperature maps and can thus be copied and overlayed on the temperature maps to provide a measure of the reliability of features seen in the maps (i.e., the distance separating the features from observations). It should be noted that the OPUS-83 five line "spoke-like" sampling pattern used in the XBT maps introduces larger errors in the offshore region (where stations are separated by larger distances alongshore) than in the nearshore region.

5. CTD temperature, salinity and σ_t maps. Maps of temperature, salinity, and σ_t are presented at the same depths as the XBT maps (10 m, 25 m, 50 m, 75 m, 100 m, 150 m, and 200 m) and at 250 m and 300 m for each of the five OPUS-83 CTD maps. A table of the plots included is given at the beginning of this section of the report. This is followed by a table of the CTD casts included in each map. The date of the map and consecutive CTD map number are included on each plot. For maps from 10 m to 100 m, the contour

intervals used are 0.2°C for temperature, 0.06 °/₀₀ for salinity, and 0.06 for σ_t. For deeper maps, where horizontal gradients are weaker, intermediate contours are shown as dashed lines.

The plots are ordered by map number and then by depth. Thus, temperature, salinity and σ_t maps for a particular depth and particular CTD map number are shown sequentially. These are followed by maps of temperature, salinity and σ_t for the next deeper depth of the particular CTD map number. Each set of temperature, salinity and σ_t maps for a specific CTD map number is preceded by a map showing the station locations (with sequential cast number labelled) overlayed on a bathymetry map of the OPUS region. This map is plotted on the same scale as the temperature, salinity, and σ_t maps and can thus be copied and overlayed on the CTD maps to provide a measure of the reliability of features seen in the maps (i.e., the distance separating the features from observations). It is important to emphasize that the OPUS-83 three line "spoke-like" sampling pattern used in the CTD maps introduces potentially large errors in the offshore regions. This radial sampling pattern is too coarse to pinpoint accurately the axis of upwelling structures emanating from the Point Arguello/Point Conception region. In fact, if a narrow jet-like feature was present between the A and G or between the G and C lines, it might not be apparent at all in the CTD maps.

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LISTING OF XBT AND CTD STATIONS

Seq No	Sta	Data Type	XBT/CTD Transect	XBT/CTD Map	Yr	Mo	Dy	Time GMT	Lat N	Lon W	Bot z	Bot Obs
1	G1	ctd	CTD G-1		83	4	5	630	34.530	120.590	48	44
2	G2	ctd	CTD G-1		83	4	5	730	34.508	120.607	73	67
3	G3	xbt	CTD G-1		83	4	5	948	34.487	120.648	100	100
4	G4	ctd	CTD G-1		83	4	5	1048	34.447	120.650	238	232
5	G5	ctd	CTD G-1		83	4	5	1154	34.423	120.675	406	402
6	G6	ctd	CTD G-1		83	4	5	1318	34.395	120.697	497	492
7	G7	ctd	CTD G-1		83	4	5	1454	34.367	120.717	585	578
8	G8	ctd	CTD G-1		83	4	5	1712	34.333	120.733	632	618
9	G9	ctd	CTD G-1		83	4	5	1848	34.290	120.752	667	654
10	G10	ctd	CTD G-1		83	4	5	2012	34.292	120.788	709	497
11	G11	ctd	CTD G-1		83	4	5	2112	34.255	120.807	750	494
12	G12	ctd	CTD G-1		83	4	5	2206	34.228	120.827	786	504
13	G13	ctd	CTD G-1		83	4	5	2254	34.198	120.817	805	499
14	G14	ctd	CTD G-1		83	4	5	2354	34.173	120.868	864	502
15	G15	ctd	CTD G-1		83	4	6	48	34.145	120.893	975	503
16	G16	ctd	CTD G-1		83	4	6	148	34.117	120.915	850	503
17	G17	ctd	CTD G-1		83	4	6	230	34.088	120.937	1180	501
18	G1	ctd			83	4	6	912	34.532	120.593	37	35
19	A6	xbt	XBT A-1	XBT 1	83	4	6	1136	34.580	120.877	389	200
20	A5	xbt	XBT A-1	XBT 1	83	4	6	1142	34.580	120.842	231	200
21	A4	xbt	XBT A-1	XBT 1	83	4	6	1200	34.580	120.800	143	143
22	A3	xbt	XBT A-1	XBT 1	83	4	6	1212	34.580	120.760	95	95
23	A2	xbt	XBT A-1	XBT 1	83	4	6	1224	34.580	120.722	73	73
24	A1	ctd	XBT A-1	XBT 1	83	4	6	1242	34.580	120.682	39	38
25	AG1	ctd	XBT AG-1	XBT 1	83	4	6	1330	34.543	120.643	35	34
26	AG2	xbt	XBT AG-1	XBT 1	83	4	6	1354	34.522	120.675	78	78
27	AG3	xbt	XBT AG-1	XBT 1	83	4	6	1406	34.498	120.705	109	109
28	AG4	xbt	XBT AG-1	XBT 1	83	4	6	1418	34.477	120.735	307	200
29	AG5	xbt	XBT AG-1	XBT 1	83	4	6	1442	34.455	120.763	485	200
30	AG6	xbt	XBT AG-1	XBT 1	83	4	6	1454	34.433	120.797	593	200
31	AG7	xbt	XBT AG-1	XBT 1	83	4	6	1512	34.398	120.843	797	200
32	G9	xbt	XBT G-1	XBT 1	83	4	6	1554	34.312	120.763	683	200
33	G8	xbt	XBT G-1	XBT 1	83	4	6	1612	34.338	120.747	625	200
34	G7	xbt	XBT G-1	XBT 1	83	4	6	1624	34.367	120.718	543	200
35	G6	xbt	XBT G-1	XBT 1	83	4	6	1636	34.395	120.697	451	200
36	G5	xbt	XBT G-1	XBT 1	83	4	6	1654	34.423	120.675	338	200
37	G4	xbt	XBT G-1	XBT 1	83	4	6	1706	34.452	120.652	119	119
38	G3	xbt	XBT G-1	XBT 1	83	4	6	1718	34.467	120.612	93	93
39	G2	xbt	XBT G-1	XBT 1	83	4	6	1730	34.507	120.608	68	68
40	G1	ctd	XBT G-1	XBT 1	83	4	6	1800	34.530	120.590	36	33
41	GC1	ctd	XBT GC-1	XBT 1	83	4	6	1842	34.495	120.518	36	32
42	GC2	xbt	XBT GC-1	XBT 1	83	4	6	1930	34.468	120.538	58	58
43	GC3	xbt	XBT GC-1	XBT 1	83	4	6	1942	34.438	120.558	95	95
44	GC4	xbt	XBT GC-1	XBT 1	83	4	6	2000	34.410	120.577	246	200
45	GC5	xbt	XBT GC-1	XBT 1	83	4	6	2012	34.380	120.598	320	200
46	GC6	xbt	XBT GC-1	XBT 1	83	4	6	2036	34.350	120.617	421	200
47	GC7	xbt	XBT GC-1	XBT 1	83	4	6	2048	34.318	120.638	475	200
48	GC8	xbt	XBT GC-1	XBT 1	83	4	6	2100	34.290	120.657	549	200
49	C8	xbt	XBT C-1	XBT 1	83	4	6	2206	34.208	120.470	158	158
50	C8	ctd	XBT C-1	XBT 1	83	4	6	2212	34.207	120.468	155	148
51	C7	xbt	XBT C-1	XBT 1	83	4	6	2248	34.242	120.470	457	200
52	C6	xbt	XBT C-1	XBT 1	83	4	6	2306	34.275	120.470	421	200
53	C5	xbt	XBT C-1	XBT 1	83	4	6	2318	34.308	120.470	388	200
54	C4	xbt	XBT C-1	XBT 1	83	4	6	2330	34.342	120.470	320	111
55	C3	xbt	XBT C-1	XBT 1	83	4	6	2342	34.373	120.470	182	182
56	C2	xbt	XBT C-1	XBT 1	83	4	6	2354	34.410	120.470	82	82
57	C1	ctd	XBT C-1	XBT 1	83	4	6	2400	34.440	120.470	27	22
58	A1	ctd	CTD A-1	CTD 1	83	4	7	200	34.580	120.683	33	31
59	A2	ctd	CTD A-1	CTD 1	83	4	7	242	34.580	120.725	68	66
60	A3	ctd	CTD A-1	CTD 1	83	4	7	400	34.580	120.772	97	95
61	A4	ctd	CTD A-1	CTD 1	83	4	7	406	34.580	120.803	137	131
62	A5	ctd	CTD A-1	CTD 1	83	4	7	506	34.578	120.843	370	256
63	A6	ctd	CTD A-1	CTD 1	83	4	7	630	34.575	120.882	389	372

64	A7	ctd	CTD A-1	CTD 1	83	4	8	736	34.578	120.920	557	474
65	A8	ctd	CTD A-1	CTD 1	83	4	7	906	34.583	120.953	567	503
66	A9	ctd	CTD A-1	CTD 1	83	4	7	1018	34.577	121.005	650	506
67	A10	ctd	CTD A-1	CTD 1	83	4	7	1130	34.580	121.033	732	502
68	G1	ctd	CTD G-2	CTD 1	83	4	7	1500	34.530	120.588	37	35
69	G2	ctd	CTD G-2	CTD 1	83	4	7	1542	34.507	120.608	62	58
70	G3	ctd	CTD G-2	CTD 1	83	4	7	1706	34.485	120.648	91	87
71	G4	ctd	CTD G-2	CTD 1	83	4	7	1830	34.452	120.653	159	149
72	G5	ctd	CTD G-2	CTD 1	83	4	7	1936	34.423	120.677	341	334
73	G6	ctd	CTD G-2	CTD 1	83	4	7	2036	34.395	120.697	470	457
74	G7	ctd	CTD G-2	CTD 1	83	4	7	2142	34.367	120.718	552	503
75	G8	ctd	CTD G-2	CTD 1	83	4	7	2306	34.333	120.735	640	501
76	G9	ctd	CTD G-2	CTD 1	83	4	8	24	34.312	120.763	689	503
77	G10	ctd	CTD G-2	CTD 1	83	4	8	218	34.280	120.785	721	502
78	G11	ctd	CTD G-2	CTD 1	83	4	8	542	34.238	120.803	750	501
79	G12	ctd	CTD G-2	CTD 1	83	4	8	706	34.227	120.825	786	502
80	G13	ctd	CTD G-2	CTD 1	83	4	8	848	34.198	120.852	801	502
81	G14	ctd	CTD G-2	CTD 1	83	4	8	1000	34.173	120.850	869	499
82	G15	ctd	CTD G-2	CTD 1	83	4	8	1118	34.143	120.895	914	495
83	G16	ctd	CTD G-2	CTD 1	83	4	8	1230	34.113	120.902	896	500
84	G17	ctd	CTD G-2	CTD 1	83	4	8	1354	34.087	120.938	1198	499
85	G18	ctd	CTD G-2	CTD 1	83	4	8	1530	34.060	120.938	1815	502
86	C1	ctd	CTD C-1	CTD 1	83	4	8	2054	34.440	120.470	30	25
87	C2	ctd	CTD C-1	CTD 1	83	4	8	2124	34.407	120.470	97	89
88	C3	ctd	CTD C-1	CTD 1	83	4	8	2224	34.373	120.470	212	187
89	C4	ctd	CTD C-1	CTD 1	83	4	8	2312	34.342	120.470	311	307
90	C5	ctd	CTD C-1	CTD 1	83	4	9	48	34.308	120.470	400	387
91	C6	ctd	CTD C-1	CTD 1	83	4	9	206	34.275	120.470	451	358
92	C7	ctd	CTD C-1	CTD 1	83	4	9	330	34.242	120.470	466	448
93	C8	ctd	CTD C-1	CTD 1	83	4	9	506	34.208	120.467	201	172
94	C8	xbt	XBT C-2	XBT 2	83	4	9	1218	34.208	120.470	157	157
95	C7	xbt	XBT C-2	XBT 2	83	4	9	1248	34.258	120.470	462	200
96	C6	xbt	XBT C-2	XBT 2	83	4	9	1300	34.275	120.470	433	200
97	C5	xbt	XBT C-2	XBT 2	83	4	9	1318	34.308	120.470	399	200
98	C4	xbt	XBT C-2	XBT 2	83	4	9	1336	34.342	120.470	320	200
99	C3	xbt	XBT C-2	XBT 2	83	4	9	1400	34.373	120.470	229	200
100	C2	xbt	XBT C-2	XBT 2	83	4	9	1406	34.410	120.470	156	156
101	C1	ctd	XBT C-2	XBT 2	83	4	9	1436	34.440	120.470	58	52
102	GC1	ctd	XBT GC-2	XBT 2	83	4	9	1524	34.495	120.520	38	36
103	GC2	xbt	XBT GC-2	XBT 2	83	4	9	1548	34.468	120.538	68	68
104	GC3	xbt	XBT GC-2	XBT 2	83	4	9	1606	34.438	120.558	102	102
105	GC4	xbt	XBT GC-2	XBT 2	83	4	9	1618	34.410	120.577	200	200
106	GC5	xbt	XBT GC-2	XBT 2	83	4	9	1636	34.380	120.598	329	200
107	GC6	xbt	XBT GC-2	XBT 2	83	4	9	1648	34.350	120.617	407	200
108	GC7	xbt	XBT GC-2	XBT 2	83	4	9	1706	34.318	120.638	470	200
109	GC8	xbt	XBT GC-2	XBT 2	83	4	9	1736	34.290	120.697	548	200
110	G9	xbt	XBT G-2	XBT 2	83	4	9	1812	34.320	120.755	713	200
111	G10	xbt	XBT G-2	XBT 2	83	4	9	1842	34.283	120.780	694	200
112	G11	xbt	XBT G-2	XBT 2	83	4	9	1900	34.257	120.807	749	200
113	G8A	xbt		XBT 2	83	4	9	1918	34.270	120.787	713	200
114	G8B	xbt		XBT 2	83	4	9	1918	34.272	120.783	713	200
115	G8C	xbt		XBT 2	83	4	9	1924	34.273	120.775	713	200
116	G8D	xbt		XBT 2	83	4	9	1942	34.302	120.753	713	200
117	G8E	xbt		XBT 2	83	4	9	1948	34.318	120.742	713	200
118	G8	xbt	XBT G-2	XBT 2	83	4	9	2000	34.340	120.733	621	200
119	G7	xbt	XBT G-2	XBT 2	83	4	9	2018	34.370	120.742	548	200
120	G6	xbt	XBT G-2	XBT 2	83	4	9	2036	34.393	120.697	466	200
121	G5	xbt	XBT G-2	XBT 2	83	4	9	2048	34.422	120.675	329	200
122	G4	xbt	XBT G-2	XBT 2	83	4	9	2100	34.450	120.653	163	163
123	G3	xbt	XBT G-2	XBT 2	83	4	9	2112	34.487	120.647	97	97
124	G2	xbt	XBT G-2	XBT 2	83	4	9	2130	34.507	120.605	71	71
125	G1	ctd	XBT G-2	XBT 2	83	4	9	2136	34.530	120.590	36	31
126	AG1	ctd	XBT AG-2	XBT 2	83	4	9	2206	34.543	120.643	38	35
127	AG2	xbt	XBT AG-2	XBT 2	83	4	9	2248	34.522	120.675	88	88
128	AG3	xbt	XBT AG-2	XBT 2	83	4	9	2300	34.502	120.702	133	133
129	AG4	xbt	XBT AG-2	XBT 2	83	4	9	2318	34.478	120.733	366	200

130	AG5 xbt	XBT AG-2	XBT 2	83	4	9	2330	34.457	120.763	528	200
131	AG6 xbt	XBT AG-2	XBT 2	83	4	9	2336	34.432	120.793	593	200
132	AG7 xbt	XBT AG-2	XBT 2	83	4	9	2400	34.398	120.843	796	200
133	AG8 xbt	XBT AG-2	XBT 2	83	4	10	30	34.353	120.885	850	200
134	A8 xbt	XBT A-2	XBT 2	83	4	10	206	34.580	120.960	651	200
135	A7 xbt	XBT A-2	XBT 2	83	4	10	236	34.580	120.920	563	200
136	A6 xbt	XBT A-2	XBT 2	83	4	10	248	34.580	120.880	366	200
137	A5 xbt	XBT A-2	XBT 2	83	4	10	300	34.580	120.842	382	200
138	A4 xbt	XBT A-2	XBT 2	83	4	10	324	34.580	120.800	151	151
139	A3 xbt	XBT A-2	XBT 2	83	4	10	342	34.580	120.760	102	102
140	A2 xbt	XBT A-2	XBT 2	83	4	10	400	34.580	120.722	72	72
141	A1 ctd	XBT A-2	XBT 2	83	4	10	430	34.580	120.682	36	32
142	G1 ctd	CTD G-3		83	4	11	418	34.530	120.595	36	31
143	G2 ctd	CTD G-3		83	4	11	500	34.507	120.608	73	63
144	G3 ctd	CTD G-3		83	4	11	548	34.487	120.635	91	82
145	G4 ctd	CTD G-3		83	4	11	848	34.467	120.648	192	191
146	G5 ctd	CTD G-3		83	4	11	948	34.422	120.672	406	405
147	G6 ctd	CTD G-3		83	4	11	1112	34.383	120.697	494	479
148	G7 ctd	CTD G-3		83	4	11	1242	34.367	120.717	549	503
149	G8 ctd	CTD G-3		83	4	11	1412	34.338	120.740	664	501
150	G9 ctd	CTD G-3		83	4	11	1536	34.312	120.763	691	498
151	G10 ctd	CTD G-3		83	4	11	1812	34.285	120.788	722	474
152	G11 ctd	CTD G-3		83	4	11	1942	34.253	120.807	749	500
153	G12 ctd	CTD G-3		83	4	11	2100	34.228	120.827	777	497
154	A8 xbt	XBT A-3	XBT 3	83	4	12	124	34.580	120.960	609	200
155	A7 xbt	XBT A-3	XBT 3	83	4	12	148	34.580	120.920	548	200
156	A6 xbt	XBT A-3	XBT 3	83	4	12	200	34.580	120.880	362	200
157	A5 xbt	XBT A-3	XBT 3	83	4	12	212	34.580	120.842	377	200
158	A4 xbt	XBT A-3	XBT 3	83	4	12	230	34.580	120.800	142	142
159	A3 xbt	XBT A-3	XBT 3	83	4	12	242	34.580	120.760	93	25
160	A2 xbt	XBT A-3	XBT 3	83	4	12	254	34.580	120.722	81	81
161	A1 ctd	XBT A-3	XBT 3	83	4	12	312	34.580	120.682	38	37
162	AG1 ctd	XBT AG-3	XBT 3	83	4	12	348	34.543	120.643	46	41
163	AG2 xbt	XBT AG-3	XBT 3	83	4	12	430	34.517	120.675	92	92
164	AG3 xbt	XBT AG-3	XBT 3	83	4	12	442	34.498	120.697	135	135
166	AG5 xbt	XBT AG-3	XBT 3	83	4	12	506	34.455	120.762	475	200
167	AG6 xbt	XBT AG-3	XBT 3	83	4	12	524	34.432	120.795	585	200
168	AG7 xbt	XBT AG-3	XBT 3	83	4	12	542	34.395	120.845	771	200
169	AG8 xbt	XBT AG-3	XBT 3	83	4	12	612	34.362	120.890	897	200
170	G12 xbt	XBT G-3	XBT 3	83	4	12	706	34.225	120.827	795	200
171	G11 xbt	XBT G-3	XBT 3	83	4	12	730	34.253	120.807	769	200
172	G10 xbt	XBT G-3	XBT 3	83	4	12	742	34.282	120.785	694	200
173	G9 xbt	XBT G-3	XBT 3	83	4	12	800	34.312	120.753	658	200
174	G8 xbt	XBT G-3	XBT 3	83	4	12	812	34.338	120.738	603	200
175	G7 xbt	XBT G-3	XBT 3	83	4	12	824	34.367	120.722	548	200
176	G6 xbt	XBT G-3	XBT 3	83	4	12	836	34.395	120.698	475	200
177	G5 xbt	XBT G-3	XBT 3	83	4	12	854	34.423	120.675	366	200
178	G4 xbt	XBT G-3	XBT 3	83	4	12	906	34.452	120.652	225	200
179	G3 xbt	XBT G-3	XBT 3	83	4	12	924	34.493	120.647	93	93
180	G2 xbt	XBT G-3	XBT 3	83	4	12	942	34.507	120.608	72	72
181	G1 ctd	XBT G-3	XBT 3	83	4	12	1000	34.530	120.590	36	33
182	GC1 ctd	XBT GC-3	XBT 3	83	4	12	1042	34.495	120.520	36	31
183	GC2 xbt	XBT GC-3	XBT 3	83	4	12	1106	34.467	120.538	67	67
184	GC3 xbt	XBT GC-3	XBT 3	83	4	12	1118	34.438	120.558	113	113
185	GC4 xbt	XBT GC-3	XBT 3	83	4	12	1130	34.407	120.582	298	200
186	GC5 xbt	XBT GC-3	XBT 3	83	4	12	1142	34.383	120.600	375	200
187	GC6 xbt	XBT GC-3	XBT 3	83	4	12	1154	34.350	120.617	485	200
188	GC7 xbt	XBT GC-3	XBT 3	83	4	12	1206	34.318	120.638	472	200
189	GC8 xbt	XBT GC-3	XBT 3	83	4	12	1218	34.290	120.657	530	200
190	GC9 xbt	XBT GC-3	XBT 3	83	4	12	1236	34.262	120.675	593	200
191	GC0 xbt	XBT GC-3	XBT 3	83	4	12	1248	34.233	120.693	638	200
192	C10 xbt	XBT C-3	XBT 3	83	4	12	1430	34.142	120.470	85	85
193	C9 xbt	XBT C-3	XBT 3	83	4	12	1454	34.175	120.470	130	130
194	C8 xbt	XBT C-3	XBT 3	83	4	12	1506	34.208	120.470	208	200
195	C7 xbt	XBT C-3	XBT 3	83	4	12	1524	34.242	120.470	459	78
196	C6 xbt	XBT C-3	XBT 3	83	4	12	1542	34.275	120.470	424	200

197	C5	xbt	XBT C-3	XBT 3	83	4	12	1554	34.308	120.470	387	200
198	C4	xbt	XBT C-3	XBT 3	83	4	12	1612	34.342	120.470	296	200
199	C3	xbt	XBT C-3	XBT 3	83	4	12	1624	34.373	120.470	210	200
200	C2	xbt	XBT C-3	XBT 3	83	4	12	1636	34.410	120.470	95	95
201	C1	ctd	XBT C-3	XBT 3	83	4	12	1648	34.440	120.470	69	57
202	A1	ctd	CTD A-2	CTD 2	83	4	12	1848	34.580	120.682	47	42
203	A2	ctd	CTD A-2	CTD 2	83	4	12	1930	34.572	120.722	76	71
204	A3	ctd	CTD A-2	CTD 2	83	4	12	2018	34.580	120.760	105	99
205	A4	ctd	CTD A-2	CTD 2	83	4	12	2106	34.577	120.797	175	174
206	A5	ctd	CTD A-2	CTD 2	83	4	12	2218	34.580	120.850	370	303
207	A6	ctd	CTD A-2	CTD 2	83	4	12	2330	34.580	120.880	411	398
208	A7	ctd	CTD A-2	CTD 2	83	4	13	54	34.582	120.917	494	470
209	A8	ctd	CTD A-2	CTD 2	83	4	13	224	34.580	120.960	572	502
210	G1	ctd	CTD G-4	CTD 2	83	4	13	542	34.525	120.585	51	44
211	G2	ctd	CTD G-4	CTD 2	83	4	13	618	34.508	120.608	73	67
212	G3	ctd	CTD G-4	CTD 2	83	4	13	706	34.487	120.633	91	81
213	G4	ctd	CTD G-4	CTD 2	83	4	13	812	34.450	120.655	274	266
214	G5	ctd	CTD G-4	CTD 2	83	4	13	912	34.420	120.677	393	391
215	G6	ctd	CTD G-4	CTD 2	83	4	13	1036	34.395	120.697	516	501
216	G7	ctd	CTD G-4	CTD 2	83	4	13	1154	34.367	120.718	612	501
217	G8	ctd	CTD G-4	CTD 2	83	4	13	1330	34.338	120.740	657	485
218	G9	ctd	CTD G-4	CTD 2	83	4	13	1500	34.312	120.763	691	501
219	G10	ctd	CTD G-4	CTD 2	83	4	13	1630	34.282	120.788	727	491
220	G11	ctd	CTD G-4	CTD 2	83	4	13	1818	34.255	120.807	749	504
221	G12	ctd	CTD G-4	CTD 2	83	4	13	1948	34.225	120.827	786	501
222	C1	ctd	CTD C-2	CTD 2	83	4	14	6	34.440	120.470	59	51
223	C2	ctd	CTD C-2	CTD 2	83	4	14	42	34.410	120.470	87	82
224	C3	ctd	CTD C-2	CTD 2	83	4	14	136	34.373	120.470	245	230
225	C4	ctd	CTD C-2	CTD 2	83	4	14	230	34.342	120.470	305	287
226	C5	ctd	CTD C-2	CTD 2	83	4	14	342	34.308	120.470	408	371
227	C6	ctd	CTD C-2	CTD 2	83	4	14	506	34.275	120.473	457	403
228	C7	ctd	CTD C-2	CTD 2	83	4	14	730	34.242	120.470	466	403
229	C8	ctd	CTD C-2	CTD 2	83	4	14	806	34.208	120.470	150	133
230	C9	ctd	CTD C-2	CTD 2	83	4	14	912	34.175	120.470	115	107
231	C10	ctd	CTD C-2	CTD 2	83	4	14	1024	34.142	120.470	88	80
232	A8	xbt	XBT A-4	XBT 4	83	4	14	2306	34.580	120.960	540	200
233	A7	xbt	XBT A-4	XBT 4	83	4	14	2324	34.582	120.917	603	200
234	A6	xbt	XBT A-4	XBT 4	83	4	14	2330	34.580	120.880	402	200
235	A5	xbt	XBT A-4	XBT 4	83	4	14	2342	34.580	120.842	347	200
236	A4	xbt	XBT A-4	XBT 4	83	4	15	6	34.567	120.800	163	163
237	A3	xbt	XBT A-4	XBT 4	83	4	15	18	34.570	120.760	108	108
238	A2	xbt	XBT A-4	XBT 4	83	4	15	36	34.580	120.725	73	73
239	A1	ctd	XBT A-4	XBT 4	83	4	15	48	34.580	120.682	40	36
240	AG1	ctd	XBT AG-4	XBT 4	83	4	15	124	34.543	120.643	35	33
241	AG2	xbt	XBT AG-4	XBT 4	83	4	15	154	34.522	120.675	100	100
242	AG3	xbt	XBT AG-4	XBT 4	83	4	15	206	34.498	120.705	192	192
243	AG4	xbt	XBT AG-4	XBT 4	83	4	15	218	34.477	120.735	390	200
244	AG5	xbt	XBT AG-4	XBT 4	83	4	15	230	34.455	120.763	501	200
245	AG6	xbt	XBT AG-4	XBT 4	83	4	15	248	34.433	120.797	593	200
246	AG7	xbt	XBT AG-4	XBT 4	83	4	15	300	34.412	120.827	684	200
247	AG8	xbt	XBT AG-4	XBT 4	83	4	15	312	34.390	120.857	713	191
248	G12	xbt	XBT G-4	XBT 4	83	4	15	424	34.225	120.825	786	200
249	G11	xbt	XBT G-4	XBT 4	83	4	15	436	34.260	120.805	749	200
250	G10	xbt	XBT G-4	XBT 4	83	4	15	454	34.285	120.785	694	200
251	G0B	xbt		XBT 4	83	4	15	500	34.298	120.772	694	200
252	G9	xbt	XBT G-4	XBT 4	83	4	15	506	34.312	120.762	694	200
253	G8	xbt	XBT G-4	XBT 4	83	4	15	524	34.337	120.738	621	200
254	G7	xbt	XBT G-4	XBT 4	83	4	15	536	34.363	120.718	552	200
255	G6	xbt	XBT G-4	XBT 4	83	4	15	554	34.392	120.697	466	200
256	G5	xbt	XBT G-4	XBT 4	83	4	15	612	34.422	120.672	343	200
257	G4	xbt	XBT G-4	XBT 4	83	4	15	630	34.442	120.652	206	200
258	G3	xbt	XBT G-4	XBT 4	83	4	15	648	34.473	120.643	100	100
259	G1	ctd	XBT G-4	XBT 4	83	4	15	718	34.528	120.575	43	39
260	GC1	ctd	XBT GC-4	XBT 4	83	4	15	806	34.495	120.520	36	31
261	GC2	xbt	XBT GC-4	XBT 4	83	4	15	830	34.465	120.538	72	72
262	GC3	xbt	XBT GC-4	XBT 4	83	4	15	842	34.438	120.560	116	116

263	GC4 xbt	XBT GC-4	XBT 4	83	4	15	854	34.412	120.577	268	200
264	GC5 xbt	XBT GC-4	XBT 4	83	4	15	906	34.382	120.598	357	200
265	GC6 xbt	XBT GC-4	XBT 4	83	4	15	918	34.352	120.617	457	200
266	GC7 xbt	XBT GC-4	XBT 4	83	4	15	936	34.317	120.640	517	200
267	GC8 xbt	XBT GC-4	XBT 4	83	4	15	948	34.290	120.657	558	200
268	GC9 xbt	XBT GC-4	XBT 4	83	4	15	1000	34.260	120.677	609	200
269	GC0 xbt	XBT GC-4	XBT 4	83	4	15	1012	34.230	120.695	642	200
270	C10 xbt	XBT C-4	XBT 4	83	4	15	1136	34.142	120.468	92	92
271	C9 xbt	XBT C-4	XBT 4	83	4	15	1154	34.178	120.460	122	122
272	C8 xbt	XBT C-4	XBT 4	83	4	15	1206	34.210	120.475	168	168
273	C7 xbt	XBT C-4	XBT 4	83	4	15	1224	34.238	120.475	446	200
274	C6 xbt	XBT C-4	XBT 4	83	4	15	1236	34.272	120.475	428	200
275	C5 xbt	XBT C-4	XBT 4	83	4	15	1254	34.308	120.475	379	200
276	C4 xbt	XBT C-4	XBT 4	83	4	15	1300	34.342	120.475	290	200
277	C3 xbt	XBT C-4	XBT 4	83	4	15	1312	34.375	120.470	229	200
278	C2 xbt	XBT C-4	XBT 4	83	4	15	1330	34.410	120.470	95	95
279	C1 ctd	XBT C-4	XBT 4	83	4	15	1342	34.440	120.470	42	39
280	G1 ctd	CTD G-5		83	4	18	1730	34.530	120.590	40	37
281	G2 ctd	CTD G-5		83	4	18	1806	34.500	120.603	65	59
282	G3 ctd	CTD G-5		83	4	18	1948	34.482	120.653	93	89
283	G4 ctd	CTD G-5		83	4	18	2054	34.462	120.658	276	275
284	G5 ctd	CTD G-5		83	4	18	2206	34.420	120.677	388	387
285	G6 ctd	CTD G-5		83	4	18	2336	34.402	120.698	485	457
286	G7 ctd	CTD G-5		83	4	19	100	34.365	120.718	550	480
287	G8 ctd	CTD G-5		83	4	19	330	34.338	120.740	633	504
288	G9 ctd	CTD G-5		83	4	19	454	34.310	120.763	691	485
289	G10 ctd	CTD G-5		83	4	19	642	34.282	120.783	722	480
290	G11 ctd	CTD G-5		83	4	19	806	34.257	120.807	713	502
291	G12 ctd	CTD G-5		83	4	19	1006	34.228	120.827	786	503
292	U1 ctd	XBT U-1	XBT 5	83	4	19	1418	34.175	120.470	121	107
293	U2 xbt	XBT U-1	XBT 5	83	4	19	1518	34.200	120.540	178	178
294	U3 xbt	XBT U-1	XBT 5	83	4	19	1548	34.228	120.603	563	200
295	U4 xbt	XBT U-1	XBT 5	83	4	19	1612	34.258	120.678	612	200
296	U5 xbt	XBT U-1	XBT 5	83	4	19	1636	34.258	120.735	667	200
297	U6 xbt	XBT U-1	XBT 5	83	4	19	1654	34.285	120.787	716	200
298	U7 xbt	XBT U-1	XBT 5	83	4	19	1712	34.323	120.807	731	200
299	U8 xbt	XBT U-1	XBT 5	83	4	19	1724	34.365	120.833	731	200
300	U9 xbt	XBT U-1	XBT 5	83	4	19	1742	34.395	120.852	768	200
301	U10 xbt	XBT U-1	XBT 5	83	4	19	1754	34.423	120.868	709	200
302	U11 xbt	XBT U-1	XBT 5	83	4	19	1806	34.452	120.887	683	200
303	U12 xbt	XBT U-1	XBT 5	83	4	19	1830	34.485	120.912	676	200
304	U13 xbt	XBT U-1	XBT 5	83	4	19	1848	34.515	120.933	680	200
305	U14 ctd	XBT U-1	XBT 5	83	4	19	1924	34.578	120.957	585	203
306	V13 ctd	XBT V-1	XBT 5	83	4	19	2000	34.580	120.920	508	203
307	V12 xbt	XBT V-1	XBT 5	83	4	19	2048	34.548	120.892	549	200
308	V11 xbt	XBT V-1	XBT 5	83	4	19	2112	34.503	120.865	567	200
309	V10 xbt	XBT V-1	XBT 5	83	4	19	2136	34.463	120.842	582	200
310	V9 xbt	XBT V-1	XBT 5	83	4	19	2300	34.425	120.807	613	200
311	V8 xbt	XBT V-1	XBT 5	83	4	19	2318	34.395	120.783	631	200
312	V7 xbt	XBT V-1	XBT 5	83	4	19	2336	34.368	120.763	622	200
313	V6 xbt	XBT V-1	XBT 5	83	4	19	2354	34.335	120.728	626	200
314	V5 xbt	XBT V-1	XBT 5	83	4	20	18	34.327	120.688	543	200
315	V4 xbt	XBT V-1	XBT 5	83	4	20	42	34.307	120.647	492	200
316	V3 xbt	XBT V-1	XBT 5	83	4	20	106	34.287	120.592	471	200
317	V2 xbt	XBT V-1	XBT 5	83	4	20	130	34.262	120.522	512	200
318	V1 ctd	XBT V-1	XBT 5	83	4	20	154	34.242	120.468	459	196
319	C6 xbt		XBT 5	83	4	20	224	34.277	120.468	424	200
320	W1 ctd	XBT W-1	XBT 5	83	4	20	242	34.312	120.468	375	204
321	W2 xbt	XBT W-1	XBT 5	83	4	20	318	34.328	120.517	373	200
322	W3 xbt	XBT W-1	XBT 5	83	4	20	342	34.345	120.562	373	200
323	W4 xbt	XBT W-1	XBT 5	83	4	20	400	34.363	120.608	375	200
324	W5 xbt	XBT W-1	XBT 5	83	4	20	418	34.378	120.652	402	200
325	W6 xbt	XBT W-1	XBT 5	83	4	20	442	34.388	120.685	453	200
326	W7 xbt	XBT W-1	XBT 5	83	4	20	542	34.432	120.723	457	200
327	W8 xbt	XBT W-1	XBT 5	83	4	20	600	34.465	120.752	424	200
328	W9 xbt	XBT W-1	XBT 5	83	4	20	618	34.507	120.782	320	200

329	W10	xbt	XBT W-1	XBT	5	83	4	20	636	34.542	120.810	329	200
330	W11	ctd	XBT W-1	XBT	5	83	4	20	754	34.567	120.845	329	203
331	A4	xbt		XBT	5	83	4	20	836	34.582	120.797	139	139
332	X10	ctd	XBT X-1	XBT	5	83	4	20	854	34.580	120.762	95	89
333	X9	xbt	XBT X-1	XBT	5	83	4	20	936	34.527	120.722	103	103
334	X8	xbt	XBT X-1	XBT	5	83	4	20	948	34.495	120.703	119	119
335	X7	xbt	XBT X-1	XBT	5	83	4	20	1006	34.463	120.685	220	200
336	X6	xbt	XBT X-1	XBT	5	83	4	20	1024	34.428	120.658	283	200
337	X5	xbt	XBT X-1	XBT	5	83	4	20	1036	34.425	120.617	182	182
338	X4	xbt	XBT X-1	XBT	5	83	4	20	1054	34.410	120.575	274	200
339	X3	xbt	XBT X-1	XBT	5	83	4	20	1106	34.390	120.542	200	200
340	X2	xbt	XBT X-1	XBT	5	83	4	20	1124	34.373	120.510	232	200
341	X1	ctd	XBT X-1	XBT	5	83	4	20	1148	34.368	120.472	216	198
342	C2	xbt		XBT	5	83	4	20	1224	34.403	120.483	94	94
343	C1	ctd		XBT	5	83	4	20	1242	34.432	120.477	48	45
344	GC1	ctd		XBT	5	83	4	20	1318	34.488	120.528	38	36
345	G1	ctd		XBT	5	83	4	20	1412	34.527	120.602	31	30
346	AG1	ctd		XBT	5	83	4	20	1530	34.537	120.653	37	35
347	A1	ctd		XBT	5	83	4	20	1600	34.573	120.693	46	43
348	A1	ctd	CTD A-3	CTD	3	83	4	20	2342	34.583	120.688	38	34
349	A2	ctd	CTD A-3	CTD	3	83	4	21	18	34.580	120.725	68	63
350	A3	ctd	CTD A-3	CTD	3	83	4	21	106	34.585	120.765	95	90
351	A4	ctd	CTD A-3	CTD	3	83	4	21	148	34.580	120.805	163	151
352	A5	ctd	CTD A-3	CTD	3	83	4	21	242	34.580	120.842	371	345
353	A6	ctd	CTD A-3	CTD	3	83	4	21	400	34.580	120.887	386	373
354	A7	ctd	CTD A-3	CTD	3	83	4	21	512	34.578	120.923	512	473
355	A8	ctd	CTD A-3	CTD	3	83	4	21	624	34.577	120.962	594	499
356	G1	ctd	CTD G-6	CTD	3	83	4	21	948	34.525	120.595	31	27
357	G2	ctd	CTD G-6	CTD	3	83	4	21	1018	34.497	120.617	68	65
358	G3	ctd	CTD G-6	CTD	3	83	4	21	1212	34.482	120.663	95	86
359	G4	ctd	CTD G-6	CTD	3	83	4	21	1312	34.447	120.657	220	208
360	G5	ctd	CTD G-6	CTD	3	83	4	21	1406	34.422	120.675	355	341
361	G6	ctd	CTD G-6	CTD	3	83	4	21	1506	34.398	120.713	477	452
362	G7	ctd	CTD G-6	CTD	3	83	4	21	1636	34.365	120.722	554	490
363	G8	ctd	CTD G-6	CTD	3	83	4	21	1848	34.337	120.743	640	498
364	G9	ctd	CTD G-6	CTD	3	83	4	21	2018	34.313	120.768	695	502
365	G10	ctd	CTD G-6	CTD	3	83	4	21	2200	34.283	120.788	717	504
366	G11	ctd	CTD G-6	CTD	3	83	4	21	2324	34.257	120.808	750	502
367	G12	ctd	CTD G-6	CTD	3	83	4	22	36	34.227	120.830	785	755
368	C1	ctd	CTD C-3	CTD	3	83	4	22	654	34.425	120.477	64	52
369	C2	ctd	CTD C-3	CTD	3	83	4	22	730	34.400	120.482	97	89
370	C3	ctd	CTD C-3	CTD	3	83	4	22	824	34.362	120.473	232	222
371	C4	ctd	CTD C-3	CTD	3	83	4	22	942	34.327	120.465	333	315
372	C5	ctd	CTD C-3	CTD	3	83	4	22	1042	34.298	120.487	406	389
373	C6	ctd	CTD C-3	CTD	3	83	4	22	1154	34.263	120.487	448	442
374	C7	ctd	CTD C-3	CTD	3	83	4	22	1306	34.240	120.468	459	431
375	C8	ctd	CTD C-3	CTD	3	83	4	22	1418	34.208	120.470	196	190
376	C9	ctd	CTD C-3	CTD	3	83	4	22	1530	34.175	120.470	123	115
377	C10	ctd	CTD C-3	CTD	3	83	4	22	1618	34.140	120.472	91	75
378	C10	xbt	XBT C-5	XBT	6	83	4	22	2100	34.132	120.478	93	93
379	C9	xbt	XBT C-5	XBT	6	83	4	22	2112	34.167	120.475	121	121
380	C8	xbt	XBT C-5	XBT	6	83	4	22	2124	34.200	120.473	165	165
381	C7	xbt	XBT C-5	XBT	6	83	4	22	2142	34.243	120.473	457	200
382	C6	xbt	XBT C-5	XBT	6	83	4	22	2154	34.268	120.475	433	200
383	C5	xbt	XBT C-5	XBT	6	83	4	22	2206	34.302	120.477	397	200
384	C4	xbt	XBT C-5	XBT	6	83	4	22	2224	34.335	120.478	316	200
385	C3	xbt	XBT C-5	XBT	6	83	4	22	2236	34.365	120.480	229	200
386	C2	xbt	XBT C-5	XBT	6	83	4	22	2248	34.403	120.480	97	97
387	C1	ctd	XBT C-5	XBT	6	83	4	22	2306	34.433	120.477	33	31
388	GC1	ctd	XBT GC-5	XBT	6	83	4	23	18	34.487	120.532	37	35
390	GC3	xbt	XBT GC-5	XBT	6	83	4	23	48	34.440	120.563	101	101
391	GC4	xbt	XBT GC-5	XBT	6	83	4	23	100	34.408	120.588	209	164
392	GC5	xbt	XBT GC-5	XBT	6	83	4	23	112	34.380	120.608	342	200
393	GC6	xbt	XBT GC-5	XBT	6	83	4	23	124	34.345	120.633	435	200
394	GC7	xbt	XBT GC-5	XBT	6	83	4	23	136	34.317	120.645	481	200
395	GC8	xbt	XBT GC-5	XBT	6	83	4	23	148	34.287	120.658	538	200

396	GC9 xbt	XBT GC-5	XBT 6	83	4	23	200	34.260	120.677	598	200
397	GC0 xbt	XBT GC-5	XBT 6	83	4	23	212	34.232	120.693	642	200
398	G12 xbt	XBT G-5	XBT 6	83	4	23	300	34.228	120.830	785	200
399	G11 xbt	XBT G-5	XBT 6	83	4	23	312	34.265	120.798	748	200
400	G10 xbt	XBT G-5	XBT 6	83	4	23	324	34.290	120.782	731	200
401	G9 xbt	XBT G-5	XBT 6	83	4	23	348	34.317	120.768	694	200
402	G8 xbt	XBT G-5	XBT 6	83	4	23	406	34.342	120.742	625	200
403	G7 xbt	XBT G-5	XBT 6	83	4	23	412	34.365	120.717	548	200
404	G6 xbt	XBT G-5	XBT 6	83	4	23	430	34.393	120.692	457	200
405	G5 xbt	XBT G-5	XBT 6	83	4	23	442	34.423	120.672	329	200
406	G4 xbt	XBT G-5	XBT 6	83	4	23	454	34.452	120.655	162	162
407	G3 xbt	XBT G-5	XBT 6	83	4	23	512	34.483	120.643	95	95
408	G2 xbt	XBT G-5	XBT 6	83	4	23	524	34.497	120.620	75	75
409	G1 ctd	XBT G-5	XBT 6	83	4	23	548	34.522	120.588	37	33
410	AG1 ctd	XBT AG-5	XBT 6	83	4	23	624	34.530	120.638	37	32
411	AG2 xbt	XBT AG-5	XBT 6	83	4	23	724	34.517	120.692	88	88
412	AG3 xbt	XBT AG-5	XBT 6	83	4	23	742	34.492	120.737	196	196
413	AG4 xbt	XBT AG-5	XBT 6	83	4	23	754	34.462	120.753	350	200
414	AG5 xbt	XBT AG-5	XBT 6	83	4	23	806	34.443	120.770	549	200
415	AG6 xbt	XBT AG-5	XBT 6	83	4	23	818	34.425	120.800	594	200
416	AG7 xbt	XBT AG-5	XBT 6	83	4	23	830	34.405	120.832	686	200
417	AG8 xbt	XBT AG-5	XBT 6	83	4	23	842	34.380	120.865	759	200
418	A8 xbt	XBT A-5	XBT 6	83	4	23	1012	34.580	120.968	585	200
419	A7 xbt	XBT A-5	XBT 6	83	4	23	1024	34.583	120.928	589	200
420	A6 xbt	XBT A-5	XBT 6	83	4	23	1036	34.587	120.883	369	200
422	A4 xbt	XBT A-5	XBT 6	83	4	23	1100	34.585	120.807	157	157
423	A3 xbt	XBT A-5	XBT 6	83	4	23	1118	34.577	120.758	100	100
424	A2 xbt	XBT A-5	XBT 6	83	4	23	1130	34.577	120.725	74	74
425	A1 ctd	XBT A-5	XBT 6	83	4	23	1142	34.577	120.690	40	37
426	P8 ctd	CTD P-1		83	4	23	1512	34.745	120.950	331	199
427	P7 ctd	CTD P-1		83	4	23	1536	34.750	120.908	232	201
428	P6 ctd	CTD P-1		83	4	23	1612	34.752	120.865	166	150
429	P5 ctd	CTD P-1		83	4	23	1636	34.757	120.827	113	102
430	P4 ctd	CTD P-1		83	4	23	1706	34.760	120.787	91	85
431	P3 ctd	CTD P-1		83	4	23	1724	34.755	120.750	75	70
432	P2 ctd	CTD P-1		83	4	23	1742	34.742	120.712	57	50
433	P1 ctd	CTD P-1		83	4	23	1800	34.743	120.675	40	35
434	G1 ctd	CTD G-7		83	4	24	218	34.527	120.602	33	32
435	G2 ctd	CTD G-7		83	4	24	254	34.510	120.610	66	59
436	G3 ctd	CTD G-7		83	4	24	424	34.492	120.642	91	86
437	G4 ctd	CTD G-7		83	4	24	536	34.422	120.660	293	281
438	G5 ctd	CTD G-7		83	4	24	636	34.405	120.687	421	396
439	G6 ctd	CTD G-7		83	4	24	812	34.383	120.700	490	484
440	G7 ctd	CTD G-7		83	4	24	930	34.358	120.732	576	501
441	G8 ctd	CTD G-7		83	4	24	1200	34.330	120.747	664	503
442	G9 ctd	CTD G-7		83	4	24	1324	34.307	120.773	700	502
443	G10 ctd	CTD G-7		83	4	24	1554	34.288	120.787	711	500
444	G11 ctd	CTD G-7		83	4	24	1712	34.258	120.810	750	504
445	G12 ctd	CTD G-7		83	4	24	1824	34.225	120.830	786	499
446	C10 xbt	XBT C-6	XBT 7	83	4	25	124	34.142	120.472	94	94
447	C9 xbt	XBT C-6	XBT 7	83	4	25	136	34.175	120.468	127	127
448	C8 xbt	XBT C-6	XBT 7	83	4	25	154	34.212	120.468	234	200
449	C7 xbt	XBT C-6	XBT 7	83	4	25	206	34.242	120.468	457	200
450	C6 xbt	XBT C-6	XBT 7	83	4	25	218	34.278	120.467	419	200
451	C5 xbt	XBT C-6	XBT 7	83	4	25	230	34.313	120.467	382	200
452	C4 xbt	XBT C-6	XBT 7	83	4	25	248	34.345	120.470	282	200
453	C3 xbt	XBT C-6	XBT 7	83	4	25	300	34.375	120.472	178	178
454	C2 xbt	XBT C-6	XBT 7	83	4	25	312	34.403	120.475	91	91
455	C1 ctd	XBT C-6	XBT 7	83	4	25	330	34.435	120.487	40	37
456	GC1 ctd	XBT GC-6	XBT 7	83	4	25	406	34.487	120.530	42	37
457	GC2 xbt	XBT GC-6	XBT 7	83	4	25	424	34.465	120.540	68	68
458	GC3 xbt	XBT GC-6	XBT 7	83	4	25	436	34.438	120.557	98	98
459	GC4 xbt	XBT GC-6	XBT 7	83	4	25	454	34.408	120.583	219	200
460	GC5 xbt	XBT GC-6	XBT 7	83	4	25	506	34.382	120.603	352	200
461	GC6 xbt	XBT GC-6	XBT 7	83	4	25	524	34.347	120.630	424	200
462	GC7 xbt	XBT GC-6	XBT 7	83	4	25	536	34.307	120.642	486	200

463	GC8	xbt	XBT GC-6	XBT 7	83	4	25	554	34.282	120.658	544	201
464	GC9	xbt	XBT GC-6	XBT 7	83	4	25	600	34.258	120.678	588	200
465	GC0	xbt	XBT GC-6	XBT 7	83	4	25	612	34.232	120.697	643	200
466	G12	xbt	XBT G-6	XBT 7	83	4	25	700	34.230	120.832	786	200
467	G11	xbt	XBT G-6	XBT 7	83	4	25	712	34.257	120.807	758	200
468	G10	xbt	XBT G-6	XBT 7	83	4	25	724	34.285	120.783	694	200
469	G9	xbt	XBT G-6	XBT 7	83	4	25	736	34.315	120.760	694	200
470	G6	xbt	XBT G-6	XBT 7	83	4	25	754	34.343	120.733	612	200
471	G7	xbt	XBT G-6	XBT 7	83	4	25	800	34.365	120.713	548	75
472	G6	xbt	XBT G-6	XBT 7	83	4	25	818	34.392	120.697	475	200
473	G5	xbt	XBT G-6	XBT 7	83	4	25	824	34.417	120.680	384	200
474	G4	xbt	XBT G-6	XBT 7	83	4	25	836	34.443	120.663	237	200
475	G3	xbt	XBT G-6	XBT 7	83	4	25	854	34.480	120.655	100	100
476	G2	xbt	XBT G-6	XBT 7	83	4	25	912	34.498	120.610	68	68
477	G1	ctd	XBT G-6	XBT 7	83	4	25	924	34.523	120.593	35	32
478	AG1	ctd	XBT AG-6	XBT 7	83	4	25	1006	34.528	120.625	40	36
479	AG2	xbt	XBT AG-6	XBT 7	83	4	25	1036	34.508	120.678	89	89
480	AG3	xbt	XBT AG-6	XBT 7	83	4	25	1048	34.488	120.710	137	137
481	AG4	xbt	XBT AG-6	XBT 7	83	4	25	1100	34.470	120.742	373	200
482	AG5	xbt	XBT AG-6	XBT 7	83	4	25	1112	34.452	120.772	512	200
483	AG6	xbt	XBT AG-6	XBT 7	83	4	25	1124	34.430	120.807	603	200
484	AG7	xbt	XBT AG-6	XBT 7	83	4	25	1142	34.405	120.835	750	200
485	AG8	xbt	XBT AG-6	XBT 7	83	4	25	1148	34.387	120.862	850	200
486	A8	xbt	XBT A-6	XBT 7	83	4	25	1318	34.585	120.965	582	200
487	A7	xbt	XBT A-6	XBT 7	83	4	25	1336	34.588	120.913	485	200
488	A6	xbt	XBT A-6	XBT 7	83	4	25	1354	34.580	120.875	360	200
489	A5	xbt	XBT A-6	XBT 7	83	4	25	1406	34.580	120.835	369	200
490	A4	xbt	XBT A-6	XBT 7	83	4	25	1418	34.580	120.793	137	137
491	A3	xbt	XBT A-6	XBT 7	83	4	25	1448	34.588	120.760	91	91
492	A2	xbt	XBT A-6	XBT 7	83	4	25	1506	34.578	120.710	67	67
493	A1	ctd	XBT A-6	XBT 7	83	4	25	1518	34.582	120.687	38	37
494	A1	ctd	CTD A-4	CTD 4	83	4	25	2106	34.572	120.692	42	37
495	A2	ctd	CTD A-4	CTD 4	83	4	25	2136	34.572	120.732	77	73
496	A3	ctd	CTD A-4	CTD 4	83	4	25	2242	34.567	120.767	165	157
497	A4	ctd	CTD A-4	CTD 4	83	4	25	2336	34.572	120.808	177	170
498	A5	ctd	CTD A-4	CTD 4	83	4	26	24	34.582	120.845	320	273
499	A6	ctd	CTD A-4	CTD 4	83	4	26	148	34.585	120.880	366	351
500	A7	ctd	CTD A-4	CTD 4	83	4	26	242	34.580	120.925	499	459
501	A8	ctd	CTD A-4	CTD 4	83	4	26	354	34.573	120.970	622	478
502	G1	ctd	CTD G-8	CTD 4	83	4	26	818	34.525	120.593	33	30
503	G2	ctd	CTD G-8	CTD 4	83	4	26	848	34.495	120.615	73	64
504	G3	ctd	CTD G-8	CTD 4	83	4	26	1012	34.482	120.657	95	89
505	G4	ctd	CTD G-8	CTD 4	83	4	26	1106	34.442	120.667	252	231
506	G5	ctd	CTD G-8	CTD 4	83	4	26	1200	34.423	120.675	351	341
507	G6	ctd	CTD G-8	CTD 4	83	4	26	1312	34.385	120.705	499	480
508	G7	ctd	CTD G-8	CTD 4	83	4	26	1442	34.367	120.718	554	500
509	G8	ctd	CTD G-8	CTD 4	83	4	26	1642	34.333	120.743	658	500
510	G9	ctd	CTD G-8	CTD 4	83	4	26	1748	34.310	120.765	689	501
511	G10	ctd	CTD G-8	CTD 4	83	4	26	1900	34.273	120.790	732	497
512	G11	ctd	CTD G-8	CTD 4	83	4	26	2018	34.248	120.810	768	503
513	G12	ctd	CTD G-8	CTD 4	83	4	26	2142	34.215	120.835	801	504
514	C1	ctd	CTD C-4	CTD 4	83	4	27	148	34.433	120.482	40	38
515	C2	ctd	CTD C-4	CTD 4	83	4	27	218	34.402	120.483	95	93
516	C3	ctd	CTD C-4	CTD 4	83	4	27	342	34.365	120.483	234	223
517	C4	ctd	CTD C-4	CTD 4	83	4	27	442	34.338	120.475	307	302
518	C5	ctd	CTD C-4	CTD 4	83	4	27	542	34.307	120.468	388	383
519	C6	ctd	CTD C-4	CTD 4	83	4	27	700	34.272	120.470	430	403
520	C7	ctd	CTD C-4	CTD 4	83	4	27	918	34.233	120.473	463	458
521	C8	ctd	CTD C-4	CTD 4	83	4	27	1042	34.208	120.473	144	135
522	C9	ctd	CTD C-4	CTD 4	83	4	27	1136	34.163	120.478	113	108
523	C10	ctd	CTD C-4	CTD 4	83	4	27	1312	34.138	120.470	84	81
524	A1	ctd	XBT A-7	XBT 8	83	4	28	718	34.573	120.695	44	40
525	A2	xbt	XBT A-7	XBT 8	83	4	28	742	34.578	120.733	78	78
526	A3	xbt	XBT A-7	XBT 8	83	4	28	748	34.582	120.765	102	102
527	A4	xbt	XBT A-7	XBT 8	83	4	28	806	34.585	120.815	195	195
528	A5	xbt	XBT A-7	XBT 8	83	4	28	818	34.585	120.858	289	200

529	A6	xbt	XBT A-7	XBT 8	83	4	28	830	34.585	120.898	426	200
530	A7	xbt	XBT A-7	XBT 8	83	4	28	836	34.585	120.927	485	200
531	A8	xbt	XBT A-7	XBT 8	83	4	28	848	34.583	120.963	576	200
532	AG8	xbt	XBT AG-7	XBT 8	83	4	28	1018	34.383	120.858	741	200
533	AG7	xbt	XBT AG-7	XBT 8	83	4	28	1036	34.407	120.825	667	200
534	AG6	xbt	XBT AG-7	XBT 8	83	4	28	1042	34.425	120.797	640	200
535	AG5	xbt	XBT AG-7	XBT 8	83	4	28	1100	34.448	120.765	500	200
536	AG4	xbt	XBT AG-7	XBT 8	83	4	28	1112	34.472	120.735	370	200
537	AG3	xbt	XBT AG-7	XBT 8	83	4	28	1124	34.493	120.708	113	113
538	AG2	xbt	XBT AG-7	XBT 8	83	4	28	1136	34.518	120.677	81	81
539	AG1	ctd	XBT AG-7	XBT 8	83	4	28	1154	34.538	120.650	29	28
540	G1	ctd	XBT G-7	XBT 8	83	4	28	1224	34.523	120.598	35	34
541	G2	xbt	XBT G-7	XBT 8	83	4	28	1248	34.503	120.618	66	66
542	G3	xbt	XBT G-7	XBT 8	83	4	28	1306	34.475	120.660	98	98
543	G4	xbt	XBT G-7	XBT 8	83	4	28	1318	34.445	120.657	211	200
544	G5	xbt	XBT G-7	XBT 8	83	4	28	1330	34.418	120.683	349	200
545	G6	xbt	XBT G-7	XBT 8	83	4	28	1342	34.388	120.707	479	200
546	G7	xbt	XBT G-7	XBT 8	83	4	28	1354	34.363	120.723	558	200
547	G8	xbt	XBT G-7	XBT 8	83	4	28	1412	34.333	120.745	644	200
548	G9	xbt	XBT G-7	XBT 8	83	4	28	1424	34.307	120.768	691	200
549	G10	xbt	XBT G-7	XBT 8	83	4	28	1436	34.278	120.790	713	200
550	G11	xbt	XBT G-7	XBT 8	83	4	28	1448	34.250	120.812	757	200
551	G12	xbt	XBT G-7	XBT 8	83	4	28	1506	34.223	120.830	783	200
552	GC0	xbt	XBT GC-7	XBT 8	83	4	28	1548	34.230	120.685	633	201
553	GC9	xbt	XBT GC-7	XBT 8	83	4	28	1600	34.265	120.667	585	208
554	GC8	xbt	XBT GC-7	XBT 8	83	4	28	1612	34.297	120.653	515	200
555	GC7	xbt	XBT GC-7	XBT 8	83	4	28	1624	34.330	120.635	460	200
556	GC6	xbt	XBT GC-7	XBT 8	83	4	28	1636	34.358	120.615	424	200
557	GC5	xbt	XBT GC-7	XBT 8	83	4	28	1648	34.383	120.598	316	200
558	GC4	xbt	XBT GC-7	XBT 8	83	4	28	1700	34.408	120.583	219	200
560	GC2	xbt	XBT GC-7	XBT 8	83	4	28	1724	34.462	120.545	68	68
561	GC1	ctd	XBT GC-7	XBT 8	83	4	28	1742	34.488	120.525	37	36
562	C1	ctd	XBT C-7	XBT 8	83	4	28	1812	34.442	120.508	53	49
563	C2	xbt	XBT C-7	XBT 8	83	4	28	1836	34.412	120.513	101	101
564	C3	xbt	XBT C-7	XBT 8	83	4	28	1848	34.377	120.500	215	200
565	C4	xbt	XBT C-7	XBT 8	83	4	28	1900	34.347	120.485	292	200
566	C5	xbt	XBT C-7	XBT 8	83	4	28	1924	34.300	120.487	402	201
567	C6	xbt	XBT C-7	XBT 8	83	4	28	1936	34.270	120.483	448	200
568	C7	xbt	XBT C-7	XBT 8	83	4	28	1954	34.220	120.487	292	200
569	C8	xbt	XBT C-7	XBT 8	83	4	28	2006	34.195	120.488	143	143
570	C9	xbt	XBT C-7	XBT 8	83	4	28	2018	34.165	120.490	121	121
571	C10	xbt	XBT C-7	XBT 8	83	4	28	2030	34.128	120.478	89	89
572	G1	ctd	CTD G-9		83	5	2	1506	34.530	120.597	35	31
573	G2	ctd	CTD G-9		83	5	2	1554	34.500	120.630	73	67
574	G3	ctd	CTD G-9		83	5	2	1736	34.477	120.662	97	82
575	G4	ctd	CTD G-9		83	5	2	1930	34.437	120.665	262	253
576	G5	ctd	CTD G-9		83	5	2	2042	34.408	120.690	421	399
577	G6	ctd	CTD G-9		83	5	2	2136	34.387	120.693	475	453
578	G7	ctd	CTD G-9		83	5	2	2306	34.358	120.723	578	502
579	G8	ctd	CTD G-9		83	5	3	18	34.340	120.747	640	500
580	G9	ctd	CTD G-9		83	5	3	130	34.310	120.765	691	498
581	G10	ctd	CTD G-9		83	5	3	236	34.278	120.790	732	471
582	G11	ctd	CTD G-9		83	5	3	348	34.255	120.808	768	494
583	G12	ctd	CTD G-9		83	5	3	500	34.225	120.830	786	494
584	A1	ctd	XBT A-8	XBT 9	83	5	3	930	34.573	120.685	37	32
585	A2	xbt	XBT A-8	XBT 9	83	5	3	1000	34.570	120.735	80	80
586	A3	xbt	XBT A-8	XBT 9	83	5	3	1012	34.570	120.772	113	113
587	A4	xbt	XBT A-8	XBT 9	83	5	3	1024	34.572	120.810	183	183
588	A5	xbt	XBT A-8	XBT 9	83	5	3	1042	34.573	120.848	396	200
589	A6	xbt	XBT A-8	XBT 9	83	5	3	1054	34.577	120.888	393	196
590	A7	xbt	XBT A-8	XBT 9	83	5	3	1106	34.580	120.930	593	200
591	A8	xbt	XBT A-8	XBT 9	83	5	3	1118	34.580	120.968	596	200
592	AG8	xbt	XBT AG-8	XBT 9	83	5	3	1242	34.387	120.855	731	200
593	AG7	xbt	XBT AG-8	XBT 9	83	5	3	1300	34.408	120.827	658	200
594	AG6	xbt	XBT AG-8	XBT 9	83	5	3	1312	34.438	120.790	567	200
595	AG5	xbt	XBT AG-8	XBT 9	83	5	3	1324	34.455	120.763	446	200

596	AG4	xbt	XBT AG-8	XBT 9	83	5	3	1342	34.478	120.732	256	200
597	AG3	xbt	XBT AG-8	XBT 9	83	5	3	1354	34.498	120.703	107	107
598	AG2	xbt	XBT AG-8	XBT 9	83	5	3	1406	34.513	120.680	80	41
599	AG1	xbt	XBT AG-8	XBT 9	83	5	3	1418	34.533	120.647	43	43
600	G1	xbt	XBT G-8	XBT 9	83	5	3	1436	34.520	120.592	37	37
601	G2	xbt	XBT G-8	XBT 9	83	5	3	1448	34.503	120.617	67	62
603	G4	xbt	XBT G-8	XBT 9	83	5	3	1524	34.447	120.652	175	175
604	G5	xbt	XBT G-8	XBT 9	83	5	3	1536	34.422	120.677	351	200
605	G6	xbt	XBT G-8	XBT 9	83	5	3	1548	34.390	120.700	468	200
606	G7	xbt	XBT G-8	XBT 9	83	5	3	1606	34.358	120.727	548	200
607	G8	xbt	XBT G-8	XBT 9	83	5	3	1618	34.335	120.745	628	200
608	G9	xbt	XBT G-8	XBT 9	83	5	3	1630	34.308	120.768	694	201
609	G10	xbt	XBT G-8	XBT 9	83	5	3	1648	34.277	120.793	731	200
610	G11	xbt	XBT G-8	XBT 9	83	5	3	1700	34.253	120.810	764	200
611	G12	xbt	XBT G-8	XBT 9	83	5	3	1712	34.225	120.825	786	200
612	GC0	xbt	XBT GC-8	XBT 9	83	5	3	1754	34.223	120.695	649	200
613	GC9	xbt	XBT GC-8	XBT 9	83	5	3	1812	34.255	120.673	609	200
614	GC8	xbt	XBT GC-8	XBT 9	83	5	3	1824	34.283	120.657	530	200
615	GC7	xbt	XBT GC-8	XBT 9	83	5	3	1842	34.318	120.630	466	200
616	GC6	xbt	XBT GC-8	XBT 9	83	5	3	1854	34.347	120.605	420	200
617	GC4	xbt	XBT GC-8	XBT 9	83	5	3	1924	34.405	120.578	285	200
618	GC3	xbt	XBT GC-8	XBT 9	83	5	3	1936	34.428	120.562	101	101
619	GC2	xbt	XBT GC-8	XBT 9	83	5	3	1948	34.463	120.537	58	58
620	GC1	xbt	XBT GC-8	XBT 9	83	5	3	2000	34.485	120.522	37	37
621	C1	xbt	XBT C-8	XBT 9	83	5	3	2036	34.430	120.473	46	46
622	C2	xbt	XBT C-8	XBT 9	83	5	3	2042	34.403	120.475	91	91
623	C3	xbt	XBT C-8	XBT 9	83	5	3	2100	34.367	120.475	219	200
624	C4	xbt	XBT C-8	XBT 9	83	5	3	2112	34.332	120.477	329	203
625	C5	xbt	XBT C-8	XBT 9	83	5	3	2130	34.293	120.477	407	200
626	C6	xbt	XBT C-8	XBT 9	83	5	3	2136	34.265	120.475	444	200
627	C7	xbt	XBT C-8	XBT 9	83	5	3	2154	34.227	120.475	466	200
628	C8	xbt	XBT C-8	XBT 9	83	5	3	2206	34.195	120.477	135	135
629	C9	xbt	XBT C-8	XBT 9	83	5	3	2218	34.160	120.477	117	117
630	C10	xbt	XBT C-8	XBT 9	83	5	3	2230	34.133	120.478	91	91
631	A1	ctd	CTD A-5	CTD 5	83	5	4	54	34.575	120.682	40	37
632	A2	ctd	CTD A-5	CTD 5	83	5	4	418	34.577	120.722	69	60
633	A3	ctd	CTD A-5	CTD 5	83	5	4	454	34.578	120.763	97	93
634	A4	ctd	CTD A-5	CTD 5	83	5	4	530	34.580	120.803	165	153
635	A5	ctd	CTD A-5	CTD 5	83	5	4	624	34.580	120.845	338	278
636	A6	ctd	CTD A-5	CTD 5	83	5	4	724	34.578	120.887	384	371
637	A7	ctd	CTD A-5	CTD 5	83	5	4	836	34.580	120.925	507	470
638	A8	ctd	CTD A-5	CTD 5	83	5	4	948	34.580	120.963	594	500
639	G1	ctd	CTD G-10	CTD 5	83	5	4	1930	34.520	120.603	42	39
640	G2	ctd	CTD G-10	CTD 5	83	5	4	2024	34.493	120.623	79	72
641	G3	ctd	CTD G-10	CTD 5	83	5	4	2154	34.485	120.652	91	85
642	G4	ctd	CTD G-10	CTD 5	83	5	4	2318	34.438	120.660	238	200
643	G5	ctd	CTD G-10	CTD 5	83	5	5	12	34.420	120.682	371	353
644	G6	ctd	CTD G-10	CTD 5	83	5	5	112	34.393	120.700	475	453
645	G7	ctd	CTD G-10	CTD 5	83	5	5	218	34.365	120.720	549	497
646	G8	ctd	CTD G-10	CTD 5	83	5	5	336	34.337	120.742	567	503
647	G9	ctd	CTD G-10	CTD 5	83	5	5	442	34.307	120.768	695	500
648	G10	ctd	CTD G-10	CTD 5	83	5	5	600	34.273	120.793	731	497
649	G11	ctd	CTD G-10	CTD 5	83	5	5	718	34.258	120.808	750	485
650	G12	ctd	CTD G-10	CTD 5	83	5	5	812	34.222	120.832	792	500
651	C1	ctd	CTD C-5	CTD 5	83	5	5	1418	34.430	120.477	49	41
652	C2	ctd	CTD C-5	CTD 5	83	5	5	1454	34.403	120.480	91	81
653	C3	ctd	CTD C-5	CTD 5	83	5	5	1554	34.363	120.482	234	201
654	C4	ctd	CTD C-5	CTD 5	83	5	5	1636	34.337	120.483	320	293
655	C5	ctd	CTD C-5	CTD 5	83	5	5	1742	34.302	120.480	393	378
656	C6	ctd	CTD C-5	CTD 5	83	5	5	1848	34.267	120.478	439	402
657	C7	ctd	CTD C-5	CTD 5	83	5	5	1954	34.237	120.467	463	428
658	C8	ctd	CTD C-5	CTD 5	83	5	5	2148	34.195	120.472	134	121
659	C9	ctd	CTD C-5	CTD 5	83	5	5	2254	34.165	120.472	119	102
660	C10	ctd	CTD C-5	CTD 5	83	5	5	2342	34.137	120.472	86	72
661	P1	ctd	CTD P-2		83	5	6	424	34.745	120.675	38	32
662	P2	ctd	CTD P-2		83	5	6	506	34.740	120.712	55	46

663	P3	ctd	CTD P-2		83	5	6	554	34.743	120.753	73	66
664	P4	ctd	CTD P-2		83	5	6	648	34.745	120.792	91	82
665	P5	ctd	CTD P-2		83	5	6	730	34.747	120.835	119	100
666	P6	ctd	CTD P-2		83	5	6	830	34.738	120.875	177	150
667	P7	ctd	CTD P-2		83	5	6	924	34.743	120.918	249	237
668	P8	ctd	CTD P-2		83	5	6	1024	34.748	120.948	302	281
670	P10	xbt	CTD P-2		83	5	6	1236	34.750	121.035	460	200
671	A1	xbt	XBT A-9	XBT 10	83	5	6	1642	34.572	120.698	53	53
672	A2	xbt	XBT A-9	XBT 10	83	5	6	1654	34.570	120.728	79	79
673	A3	xbt	XBT A-9	XBT 10	83	5	6	1712	34.570	120.772	148	148
674	A4	xbt	XBT A-9	XBT 10	83	5	6	1730	34.572	120.813	200	200
675	A5	xbt	XBT A-9	XBT 10	83	5	6	1742	34.577	120.852	310	200
676	A6	xbt	XBT A-9	XBT 10	83	5	6	1754	34.578	120.888	426	200
677	A7	xbt	XBT A-9	XBT 10	83	5	6	1812	34.578	120.930	508	200
678	A8	xbt	XBT A-9	XBT 10	83	5	6	1830	34.572	120.967	628	200
679	AG8	xbt	XBT AG-9	XBT 10	83	5	6	1948	34.390	120.857	731	200
680	AG7	xbt	XBT AG-9	XBT 10	83	5	6	2006	34.410	120.823	649	200
681	AG6	xbt	XBT AG-9	XBT 10	83	5	6	2018	34.432	120.800	589	202
682	AG5	xbt	XBT AG-9	XBT 10	83	5	6	2030	34.448	120.768	570	200
683	AG4	xbt	XBT AG-9	XBT 10	83	5	6	2048	34.470	120.738	338	200
684	AG3	xbt	XBT AG-9	XBT 10	83	5	6	2100	34.492	120.708	118	113
685	AG2	xbt	XBT AG-9	XBT 10	83	5	6	2118	34.515	120.678	87	87
686	AG1	xbt	XBT AG-9	XBT 10	83	5	6	2130	34.533	120.655	28	28
687	G1	xbt	XBT G-9	XBT 10	83	5	6	2148	34.525	120.600	33	33
688	G2	xbt	XBT G-9	XBT 10	83	5	6	2206	34.498	120.610	68	68
689	G3	xbt	XBT G-9	XBT 10	83	5	6	2218	34.487	120.637	92	92
690	G4	xbt	XBT G-9	XBT 10	83	5	6	2242	34.435	120.658	299	200
691	G5	xbt	XBT G-9	XBT 10	83	5	6	2254	34.415	120.680	389	200
692	G6	xbt	XBT G-9	XBT 10	83	5	6	2312	34.387	120.705	497	200
693	G7	xbt	XBT G-9	XBT 10	83	5	6	2324	34.360	120.723	580	200
694	G8	xbt	XBT G-9	XBT 10	83	5	6	2336	34.335	120.740	640	200
695	G9	xbt	XBT G-9	XBT 10	83	5	6	2354	34.312	120.762	691	200
696	G10	xbt	XBT G-9	XBT 10	83	5	7	6	34.283	120.785	713	200
697	G11	xbt	XBT G-9	XBT 10	83	5	7	24	34.257	120.807	740	200
698	G12	xbt	XBT G-9	XBT 10	83	5	7	36	34.228	120.825	786	200
699	GC0	xbt	XBT GC-9	XBT 10	83	5	7	130	34.233	120.682	636	200
700	GC9	xbt	XBT GC-9	XBT 10	83	5	7	148	34.262	120.673	585	200
701	GC8	xbt	XBT GC-9	XBT 10	83	5	7	200	34.292	120.653	704	200
702	GC7	xbt	XBT GC-9	XBT 10	83	5	7	218	34.322	120.635	462	200
703	GC6	xbt	XBT GC-9	XBT 10	83	5	7	230	34.352	120.615	402	200
704	GC5	xbt	XBT GC-9	XBT 10	83	5	7	248	34.382	120.597	301	200
705	GC4	xbt	XBT GC-9	XBT 10	83	5	7	312	34.428	120.562	111	111
706	GC3	xbt	XBT GC-9	XBT 10	83	5	7	318	34.445	120.555	88	88
707	GC2	xbt	XBT GC-9	XBT 10	83	5	7	342	34.470	120.538	64	64
708	GC1	xbt	XBT GC-9	XBT 10	83	5	7	354	34.488	120.527	39	39
709	C1	xbt	XBT C-9	XBT 10	83	5	7	424	34.420	120.477	78	78
710	C2	xbt	XBT C-9	XBT 10	83	5	7	436	34.398	120.477	99	99
711	C3	xbt	XBT C-9	XBT 10	83	5	7	454	34.363	120.472	224	200
712	C4	xbt	XBT C-9	XBT 10	83	5	7	506	34.328	120.470	325	200
713	C5	xbt	XBT C-9	XBT 10	83	5	7	518	34.297	120.473	411	200
714	C6	xbt	XBT C-9	XBT 10	83	5	7	530	34.267	120.477	439	200
715	C7	xbt	XBT C-9	XBT 10	83	5	7	542	34.235	120.480	466	200
716	C8	xbt	XBT C-9	XBT 10	83	5	7	554	34.203	120.483	140	140
717	C9	xbt	XBT C-9	XBT 10	83	5	7	606	34.172	120.485	125	125
718	C10	xbt	XBT C-9	XBT 10	83	5	7	618	34.142	120.482	88	88
719	A1	ctd	CTD A-6		83	5	7	1930	34.575	120.697	46	44
720	A2	ctd	CTD A-6		83	5	7	2018	34.580	120.747	73	63
721	A3	ctd	CTD A-6		83	5	7	2118	34.583	120.770	119	99
722	A4	ctd	CTD A-6		83	5	7	2212	34.580	120.808	163	149
723	A5	ctd	CTD A-6		83	5	7	2318	34.583	120.853	274	253
724	A6	ctd	CTD A-6		83	5	8	18	34.582	120.880	366	341
725	A7	ctd	CTD A-6		83	5	8	118	34.582	120.923	512	447
726	A8	ctd	CTD A-6		83	5	8	230	34.580	120.962	585	485
727	G1	ctd	CTD G-11		83	5	8	606	34.513	120.597	42	37
728	G2	ctd	CTD G-11		83	5	8	636	34.495	120.607	71	63
729	G3	ctd	CTD G-11		83	5	8	906	34.488	120.665	91	84

731	G4	ctd	CTD G-11	83	5	8	1024	34.437	120.680	262	233
732	G5	ctd	CTD G-11	83	5	8	1242	34.413	120.683	397	368
733	G6	ctd	CTD G-11	83	5	8	1248	34.393	120.697	475	451
734	G7	ctd	CTD G-11	83	5	8	1424	34.372	120.730	567	501
735	G1	ctd	CTD G-12	83	5	9	1530	34.522	120.598	38	36
736	G2	ctd	CTD G-12	83	5	9	1618	34.497	120.618	73	66
737	G3	ctd	CTD G-12	83	5	9	1706	34.472	120.658	108	95
738	C1	xbt	XBT C-10	83	5	9	1842	34.425	120.478	74	74
739	C2	xbt	XBT C-10	83	5	9	1854	34.392	120.480	113	108
740	C3	xbt	XBT C-10	83	5	9	1906	34.370	120.483	223	200
741	C4	xbt	XBT C-10	83	5	9	1918	34.335	120.483	329	197
742	C5	xbt	XBT C-10	83	5	9	1930	34.300	120.482	402	200
743	C6	xbt	XBT C-10	83	5	9	1942	34.268	120.482	442	200
744	C7	xbt	XBT C-10	83	5	9	1954	34.223	120.473	466	200
745	C8	xbt	XBT C-10	83	5	9	2006	34.208	120.472	136	136
746	C9	xbt	XBT C-10	83	5	9	2018	34.162	120.472	117	117
747	C10	xbt	XBT C-10	83	5	9	2030	34.130	120.470	86	86
748	H11	xbt	XBT H-1	83	5	10	212	34.132	120.152	446	200
750	H9	xbt	XBT H-1	83	5	10	236	34.192	120.155	539	200
751	H8	xbt	XBT H-1	83	5	10	248	34.225	120.155	594	200
752	H7	xbt	XBT H-1	83	5	10	306	34.258	120.155	530	200
753	H6	xbt	XBT H-1	83	5	10	318	34.292	120.155	503	200
754	H5	xbt	XBT H-1	83	5	10	330	34.328	120.155	482	200
755	H4	xbt	XBT H-1	83	5	10	342	34.357	120.155	418	200
756	H3	xbt	XBT H-1	83	5	10	354	34.390	120.157	174	174
757	H2	xbt	XBT H-1	83	5	10	406	34.415	120.172	80	80
758	H1	xbt	XBT H-1	83	5	10	412	34.443	120.177	57	57
759	G1	ctd	CTD G-13	83	5	10	1412	34.523	120.603	38	32
760	G2	ctd	CTD G-13	83	5	10	1500	34.502	120.628	73	65
761	G3	ctd	CTD G-13	83	5	10	1530	34.503	120.638	95	86
762	G4	xbt	CTD G-13	83	5	10	1642	34.437	120.665	265	200

XBT TEMPERATURE PROFILES

Page 1-1				
Cast	3	OPUS Station G3	CTD Transect G-1	
Cast	19	OPUS Station A6	XBT Transect A-1	XBT Map 1
Cast	20	OPUS Station A5	XBT Transect A-1	XBT Map 1
Cast	21	OPUS Station A4	XBT Transect A-1	XBT Map 1
Cast	22	OPUS Station A3	XBT Transect A-1	XBT Map 1
Cast	23	OPUS Station A2	XBT Transect A-1	XBT Map 1
Page 1-2				
Cast	26	OPUS Station AG2	XBT Transect AG-1	XBT Map 1
Cast	27	OPUS Station AG3	XBT Transect AG-1	XBT Map 1
Cast	28	OPUS Station AG4	XBT Transect AG-1	XBT Map 1
Cast	29	OPUS Station AG5	XBT Transect AG-1	XBT Map 1
Cast	30	OPUS Station AG6	XBT Transect AG-1	XBT Map 1
Cast	31	OPUS Station AG7	XBT Transect AG-1	XBT Map 1
Page 1-3				
Cast	32	OPUS Station G9	XBT Transect G-1	XBT Map 1
Cast	33	OPUS Station G8	XBT Transect G-1	XBT Map 1
Cast	34	OPUS Station G7	XBT Transect G-1	XBT Map 1
Cast	35	OPUS Station G6	XBT Transect G-1	XBT Map 1
Cast	36	OPUS Station G5	XBT Transect G-1	XBT Map 1
Cast	37	OPUS Station G4	XBT Transect G-1	XBT Map 1
Page 1-4				
Cast	38	OPUS Station G3	XBT Transect G-1	XBT Map 1
Cast	39	OPUS Station G2	XBT Transect G-1	XBT Map 1
Cast	42	OPUS Station GC2	XBT Transect GC-1	XBT Map 1
Cast	43	OPUS Station GC3	XBT Transect GC-1	XBT Map 1
Cast	44	OPUS Station GC4	XBT Transect GC-1	XBT Map 1
Cast	45	OPUS Station GC5	XBT Transect GC-1	XBT Map 1
Page 1-5				
Cast	46	OPUS Station GC6	XBT Transect GC-1	XBT Map 1
Cast	47	OPUS Station GC7	XBT Transect GC-1	XBT Map 1
Cast	48	OPUS Station GC8	XBT Transect GC-1	XBT Map 1
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Cast	51	OPUS Station C7	XBT Transect C-1	XBT Map 1
Cast	52	OPUS Station C6	XBT Transect C-1	XBT Map 1
Page 1-6				
Cast	53	OPUS Station C5	XBT Transect C-1	XBT Map 1
Cast	54	OPUS Station C4	XBT Transect C-1	XBT Map 1
Cast	55	OPUS Station C3	XBT Transect C-1	XBT Map 1
Cast	56	OPUS Station C2	XBT Transect C-1	XBT Map 1
Cast	94	OPUS Station C8	XBT Transect C-2	XBT Map 2
Cast	95	OPUS Station C7	XBT Transect C-2	XBT Map 2
Page 1-7				
Cast	96	OPUS Station C6	XBT Transect C-2	XBT Map 2
Cast	97	OPUS Station C5	XBT Transect C-2	XBT Map 2
Cast	98	OPUS Station C4	XBT Transect C-2	XBT Map 2
Cast	99	OPUS Station C3	XBT Transect C-2	XBT Map 2
Cast	100	OPUS Station C2	XBT Transect C-2	XBT Map 2
Cast	103	OPUS Station GC2	XBT Transect GC-2	XBT Map 2

Page 1-8				
Cast	104	OPUS Station GC3	XBT Transect GC-2	XBT Map 2
Cast	105	OPUS Station GC4	XBT Transect GC-2	XBT Map 2
Cast	106	OPUS Station GC5	XBT Transect GC-2	XBT Map 2
Cast	107	OPUS Station GC6	XBT Transect GC-2	XBT Map 2
Cast	108	OPUS Station GC7	XBT Transect GC-2	XBT Map 2
Cast	109	OPUS Station GC8	XBT Transect GC-2	XBT Map 2
Page 1-9				
Cast	110	OPUS Station G9	XBT Transect G-2	XBT Map 2
Cast	111	OPUS Station G10	XBT Transect G-2	XBT Map 2
Cast	112	OPUS Station G11	XBT Transect G-2	XBT Map 2
Cast	113	OPUS Station G8A		XBT Map 2
Cast	114	OPUS Station G8B		XBT Map 2
Cast	115	OPUS Station G8C		XBT Map 2
Page 1-10				
Cast	116	OPUS Station G8D		XBT Map 2
Cast	117	OPUS Station G8E		XBT Map 2
Cast	118	OPUS Station G8	XBT Transect G-2	XBT Map 2
Cast	119	OPUS Station G7	XBT Transect G-2	XBT Map 2
Cast	120	OPUS Station G6	XBT Transect G-2	XBT Map 2
Cast	121	OPUS Station G5	XBT Transect G-2	XBT Map 2
Page 1-11				
Cast	122	OPUS Station G4	XBT Transect G-2	XBT Map 2
Cast	123	OPUS Station G3	XBT Transect G-2	XBT Map 2
Cast	124	OPUS Station G2	XBT Transect G-2	XBT Map 2
Cast	127	OPUS Station AG2	XBT Transect AG-2	XBT Map 2
Cast	128	OPUS Station AG3	XBT Transect AG-2	XBT Map 2
Cast	129	OPUS Station AG4	XBT Transect AG-2	XBT Map 2
Page 1-12				
Cast	130	OPUS Station AG5	XBT Transect AG-2	XBT Map 2
Cast	131	OPUS Station AG6	XBT Transect AG-2	XBT Map 2
Cast	132	OPUS Station AG7	XBT Transect AG-2	XBT Map 2
Cast	133	OPUS Station AG8	XBT Transect AG-2	XBT Map 2
Cast	134	OPUS Station A8	XBT Transect A-2	XBT Map 2
Cast	135	OPUS Station A7	XBT Transect A-2	XBT Map 2
Page 1-13				
Cast	136	OPUS Station A6	XBT Transect A-2	XBT Map 2
Cast	137	OPUS Station A5	XBT Transect A-2	XBT Map 2
Cast	138	OPUS Station A4	XBT Transect A-2	XBT Map 2
Cast	139	OPUS Station A3	XBT Transect A-2	XBT Map 2
Cast	140	OPUS Station A2	XBT Transect A-2	XBT Map 2
Cast	154	OPUS Station A8	XBT Transect A-3	XBT Map 3
Page 1-14				
Cast	155	OPUS Station A7	XBT Transect A-3	XBT Map 3
Cast	156	OPUS Station A6	XBT Transect A-3	XBT Map 3
Cast	157	OPUS Station A5	XBT Transect A-3	XBT Map 3
Cast	158	OPUS Station A4	XBT Transect A-3	XBT Map 3
Cast	159	OPUS Station A3	XBT Transect A-3	XBT Map 3
Cast	160	OPUS Station A2	XBT Transect A-3	XBT Map 3

Page 1-15				
Cast	163	OPUS Station AG2	XBT Transect AG-3	XBT Map 3
Cast	164	OPUS Station AG3	XBT Transect AG-3	XBT Map 3
Cast	166	OPUS Station AG5	XBT Transect AG-3	XBT Map 3
Cast	167	OPUS Station AG6	XBT Transect AG-3	XBT Map 3
Cast	168	OPUS Station AG7	XBT Transect AG-3	XBT Map 3
Cast	169	OPUS Station AG8	XBT Transect AG-3	XBT Map 3
Page 1-16				
Cast	170	OPUS Station G12	XBT Transect G-3	XBT Map 3
Cast	171	OPUS Station G11	XBT Transect G-3	XBT Map 3
Cast	172	OPUS Station G10	XBT Transect G-3	XBT Map 3
Cast	173	OPUS Station G9	XBT Transect G-3	XBT Map 3
Cast	174	OPUS Station G8	XBT Transect G-3	XBT Map 3
Cast	175	OPUS Station G7	XBT Transect G-3	XBT Map 3
Page 1-17				
Cast	176	OPUS Station G6	XBT Transect G-3	XBT Map 3
Cast	177	OPUS Station G5	XBT Transect G-3	XBT Map 3
Cast	178	OPUS Station G4	XBT Transect G-3	XBT Map 3
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Cast	180	OPUS Station G2	XBT Transect G-3	XBT Map 3
Cast	183	OPUS Station GC2	XBT Transect GC-3	XBT Map 3
Page 1-18				
Cast	184	OPUS Station GC3	XBT Transect GC-3	XBT Map 3
Cast	185	OPUS Station GC4	XBT Transect GC-3	XBT Map 3
Cast	186	OPUS Station GC5	XBT Transect GC-3	XBT Map 3
Cast	187	OPUS Station GC6	XBT Transect GC-3	XBT Map 3
Cast	188	OPUS Station GC7	XBT Transect GC-3	XBT Map 3
Cast	189	OPUS Station GC8	XBT Transect GC-3	XBT Map 3
Page 1-19				
Cast	190	OPUS Station GC9	XBT Transect GC-3	XBT Map 3
Cast	191	OPUS Station GC0	XBT Transect GC-3	XBT Map 3
Cast	192	OPUS Station C10	XBT Transect C-3	XBT Map 3
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Cast	194	OPUS Station C8	XBT Transect C-3	XBT Map 3
Cast	195	OPUS Station C7	XBT Transect C-3	XBT Map 3
Page 1-20				
Cast	196	OPUS Station C6	XBT Transect C-3	XBT Map 3
Cast	197	OPUS Station C5	XBT Transect C-3	XBT Map 3
Cast	198	OPUS Station C4	XBT Transect C-3	XBT Map 3
Cast	199	OPUS Station C3	XBT Transect C-3	XBT Map 3
Cast	200	OPUS Station C2	XBT Transect C-3	XBT Map 3
Cast	232	OPUS Station A8	XBT Transect A-4	XBT Map 4
Page 1-21				
Cast	233	OPUS Station A7	XBT Transect A-4	XBT Map 4
Cast	234	OPUS Station A6	XBT Transect A-4	XBT Map 4
Cast	235	OPUS Station A5	XBT Transect A-4	XBT Map 4
Cast	236	OPUS Station A4	XBT Transect A-4	XBT Map 4
Cast	237	OPUS Station A3	XBT Transect A-4	XBT Map 4
Cast	238	OPUS Station A2	XBT Transect A-4	XBT Map 4

Page 1-22

Cast	241	OPUS Station AG2	XBT Transect AG-4	XBT Map 4
Cast	242	OPUS Station AG3	XBT Transect AG-4	XBT Map 4
Cast	243	OPUS Station AG4	XBT Transect AG-4	XBT Map 4
Cast	244	OPUS Station AG5	XBT Transect AG-4	XBT Map 4
Cast	245	OPUS Station AG6	XBT Transect AG-4	XBT Map 4
Cast	246	OPUS Station AG7	XBT Transect AG-4	XBT Map 4

Page 1-23

Cast	247	OPUS Station AG8	XBT Transect AG-4	XBT Map 4
Cast	248	OPUS Station G12	XBT Transect G-4	XBT Map 4
Cast	249	OPUS Station G11	XBT Transect G-4	XBT Map 4
Cast	250	OPUS Station G10	XBT Transect G-4	XBT Map 4
Cast	251	OPUS Station G0B		XBT Map 4
Cast	252	OPUS Station G9	XBT Transect G-4	XBT Map 4

Page 1-24

Cast	253	OPUS Station G8	XBT Transect G-4	XBT Map 4
Cast	254	OPUS Station G7	XBT Transect G-4	XBT Map 4
Cast	255	OPUS Station G6	XBT Transect G-4	XBT Map 4
Cast	256	OPUS Station G5	XBT Transect G-4	XBT Map 4
Cast	257	OPUS Station G4	XBT Transect G-4	XBT Map 4
Cast	258	OPUS Station G3	XBT Transect G-4	XBT Map 4

Page 1-25

Cast	261	OPUS Station GC2	XBT Transect GC-4	XBT Map 4
Cast	262	OPUS Station GC3	XBT Transect GC-4	XBT Map 4
Cast	263	OPUS Station GC4	XBT Transect GC-4	XBT Map 4
Cast	264	OPUS Station GC5	XBT Transect GC-4	XBT Map 4
Cast	265	OPUS Station GC6	XBT Transect GC-4	XBT Map 4
Cast	266	OPUS Station GC7	XBT Transect GC-4	XBT Map 4

Page 1-26

Cast	267	OPUS Station GC8	XBT Transect GC-4	XBT Map 4
Cast	268	OPUS Station GC9	XBT Transect GC-4	XBT Map 4
Cast	269	OPUS Station GC0	XBT Transect GC-4	XBT Map 4
Cast	270	OPUS Station C10	XBT Transect C-4	XBT Map 4
Cast	271	OPUS Station C9	XBT Transect C-4	XBT Map 4
Cast	272	OPUS Station C8	XBT Transect C-4	XBT Map 4

Page 1-27

Cast	273	OPUS Station C7	XBT Transect C-4	XBT Map 4
Cast	274	OPUS Station C6	XBT Transect C-4	XBT Map 4
Cast	275	OPUS Station C5	XBT Transect C-4	XBT Map 4
Cast	276	OPUS Station C4	XBT Transect C-4	XBT Map 4
Cast	277	OPUS Station C3	XBT Transect C-4	XBT Map 4
Cast	278	OPUS Station C2	XBT Transect C-4	XBT Map 4

Page 1-28

Cast	293	OPUS Station U2	XBT Transect U-1	XBT Map 5
Cast	294	OPUS Station U3	XBT Transect U-1	XBT Map 5
Cast	295	OPUS Station U4	XBT Transect U-1	XBT Map 5
Cast	296	OPUS Station U5	XBT Transect U-1	XBT Map 5
Cast	297	OPUS Station U6	XBT Transect U-1	XBT Map 5
Cast	298	OPUS Station U7	XBT Transect U-1	XBT Map 5

Page 1-29				
Cast	299	OPUS Station U8	XBT Transect U-1	XBT Map 5
Cast	300	OPUS Station U9	XBT Transect U-1	XBT Map 5
Cast	301	OPUS Station U10	XBT Transect U-1	XBT Map 5
Cast	302	OPUS Station U11	XBT Transect U-1	XBT Map 5
Cast	303	OPUS Station U12	XBT Transect U-1	XBT Map 5
Cast	304	OPUS Station U13	XBT Transect U-1	XBT Map 5
Page 1-30				
Cast	307	OPUS Station V12	XBT Transect V-1	XBT Map 5
Cast	308	OPUS Station V11	XBT Transect V-1	XBT Map 5
Cast	309	OPUS Station V10	XBT Transect V-1	XBT Map 5
Cast	310	OPUS Station V9	XBT Transect V-1	XBT Map 5
Cast	311	OPUS Station V8	XBT Transect V-1	XBT Map 5
Cast	312	OPUS Station V7	XBT Transect V-1	XBT Map 5
Page 1-31				
Cast	313	OPUS Station V6	XBT Transect V-1	XBT Map 5
Cast	314	OPUS Station V5	XBT Transect V-1	XBT Map 5
Cast	315	OPUS Station V4	XBT Transect V-1	XBT Map 5
Cast	316	OPUS Station V3	XBT Transect V-1	XBT Map 5
Cast	317	OPUS Station V2	XBT Transect V-1	XBT Map 5
Cast	319	OPUS Station C6		XBT Map 5
Page 1-32				
Cast	321	OPUS Station W2	XBT Transect W-1	XBT Map 5
Cast	322	OPUS Station W3	XBT Transect W-1	XBT Map 5
Cast	323	OPUS Station W4	XBT Transect W-1	XBT Map 5
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Cast	325	OPUS Station W6	XBT Transect W-1	XBT Map 5
Cast	326	OPUS Station W7	XBT Transect W-1	XBT Map 5
Page 1-33				
Cast	327	OPUS Station W8	XBT Transect W-1	XBT Map 5
Cast	328	OPUS Station W9	XBT Transect W-1	XBT Map 5
Cast	329	OPUS Station W10	XBT Transect W-1	XBT Map 5
Cast	331	OPUS Station A4		XBT Map 5
Cast	333	OPUS Station X9	XBT Transect X-1	XBT Map 5
Cast	334	OPUS Station X8	XBT Transect X-1	XBT Map 5
Page 1-34				
Cast	335	OPUS Station X7	XBT Transect X-1	XBT Map 5
Cast	336	OPUS Station X6	XBT Transect X-1	XBT Map 5
Cast	337	OPUS Station X5	XBT Transect X-1	XBT Map 5
Cast	338	OPUS Station X4	XBT Transect X-1	XBT Map 5
Cast	339	OPUS Station X3	XBT Transect X-1	XBT Map 5
Cast	340	OPUS Station X2	XBT Transect X-1	XBT Map 5
Page 1-35				
Cast	342	OPUS Station C2		XBT Map 5
Cast	378	OPUS Station C10	XBT Transect C-5	XBT Map 6
Cast	379	OPUS Station C9	XBT Transect C-5	XBT Map 6
Cast	380	OPUS Station C8	XBT Transect C-5	XBT Map 6
Cast	381	OPUS Station C7	XBT Transect C-5	XBT Map 6
Cast	382	OPUS Station C6	XBT Transect C-5	XBT Map 6

Page 1-36

Cast	383	OPUS Station C5	XBT Transect C-5	XBT Map 6
Cast	384	OPUS Station C4	XBT Transect C-5	XBT Map 6
Cast	385	OPUS Station C3	XBT Transect C-5	XBT Map 6
Cast	386	OPUS Station C2	XBT Transect C-5	XBT Map 6
Cast	390	OPUS Station GC3	XBT Transect GC-5	XBT Map 6
Cast	391	OPUS Station GC4	XBT Transect GC-5	XBT Map 6

Page 1-37

Cast	392	OPUS Station GC5	XBT Transect GC-5	XBT Map 6
Cast	393	OPUS Station GC6	XBT Transect GC-5	XBT Map 6
Cast	394	OPUS Station GC7	XBT Transect GC-5	XBT Map 6
Cast	395	OPUS Station GC8	XBT Transect GC-5	XBT Map 6
Cast	396	OPUS Station GC9	XBT Transect GC-5	XBT Map 6
Cast	397	OPUS Station GC0	XBT Transect GC-5	XBT Map 6

Page 1-38

Cast	398	OPUS Station G12	XBT Transect G-5	XBT Map 6
Cast	399	OPUS Station G11	XBT Transect G-5	XBT Map 6
Cast	400	OPUS Station G10	XBT Transect G-5	XBT Map 6
Cast	401	OPUS Station G9	XBT Transect G-5	XBT Map 6
Cast	402	OPUS Station G8	XBT Transect G-5	XBT Map 6
Cast	403	OPUS Station G7	XBT Transect G-5	XBT Map 6

Page 1-39

Cast	404	OPUS Station G6	XBT Transect G-5	XBT Map 6
Cast	405	OPUS Station G5	XBT Transect G-5	XBT Map 6
Cast	406	OPUS Station G4	XBT Transect G-5	XBT Map 6
Cast	407	OPUS Station G3	XBT Transect G-5	XBT Map 6
Cast	408	OPUS Station G2	XBT Transect G-5	XBT Map 6
Cast	411	OPUS Station AG2	XBT Transect AG-5	XBT Map 6

Page 1-40

Cast	412	OPUS Station AG3	XBT Transect AG-5	XBT Map 6
Cast	413	OPUS Station AG4	XBT Transect AG-5	XBT Map 6
Cast	414	OPUS Station AG5	XBT Transect AG-5	XBT Map 6
Cast	415	OPUS Station AG6	XBT Transect AG-5	XBT Map 6
Cast	416	OPUS Station AG7	XBT Transect AG-5	XBT Map 6
Cast	417	OPUS Station AG8	XBT Transect AG-5	XBT Map 6

Page 1-41

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Cast	424	OPUS Station A2	XBT Transect A-5	XBT Map 6

Page 1-42

Cast	446	OPUS Station C10	XBT Transect C-6	XBT Map 7
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Page 1-43

Cast	452	OPUS Station C4	XBT Transect C-6	XBT Map 7
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Page 1-44

Cast	460	OPUS Station GC5	XBT Transect GC-6	XBT Map 7
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Page 1-45

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Page 1-46

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Page 1-47

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Page 1-48

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Page 1-49

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Page 1-50

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Page 1-51

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Page 1-52

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Page 1-53

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Page 1-54

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Page 1-55

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Page 1-56

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Page 1-57

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Page 1-58

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Page 1-59

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Page 1-60

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Page 1-61

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Page 1-62

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Page 1-63

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Page 1-64

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Page 1-65

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Page 1-66

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Page 1-67

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Page 1-68

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Page 1-69

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Page 1-70

Cast	708	OPUS Station GC1	XBT Transect GC-9	XBT Map 10
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Page 1-71

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Page 1-72

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Cast	744	OPUS Station C7	XBT Transect C-10

Page 1-73

Cast	745	OPUS Station C8	XBT Transect C-10
Cast	746	OPUS Station C9	XBT Transect C-10
Cast	747	OPUS Station C10	XBT Transect C-10
Cast	748	OPUS Station H11	XBT Transect H-1
Cast	750	OPUS Station H9	XBT Transect H-1
Cast	751	OPUS Station H8	XBT Transect H-1

Page 1-74

Cast	752	OPUS Station H7	XBT Transect H-1
Cast	753	OPUS Station H6	XBT Transect H-1
Cast	754	OPUS Station H5	XBT Transect H-1
Cast	755	OPUS Station H4	XBT Transect H-1
Cast	756	OPUS Station H3	XBT Transect H-1
Cast	757	OPUS Station H2	XBT Transect H-1

Page 1-75

Cast	758	OPUS Station H1	XBT Transect H-1
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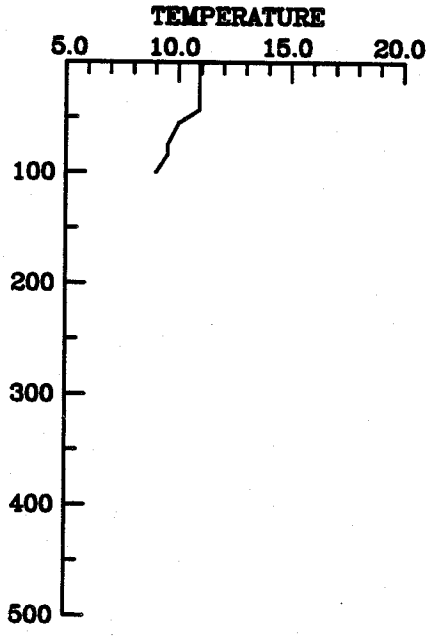
STATION G3 CAST 3
5 April 1983 948 GMT
CTD Transect G–1



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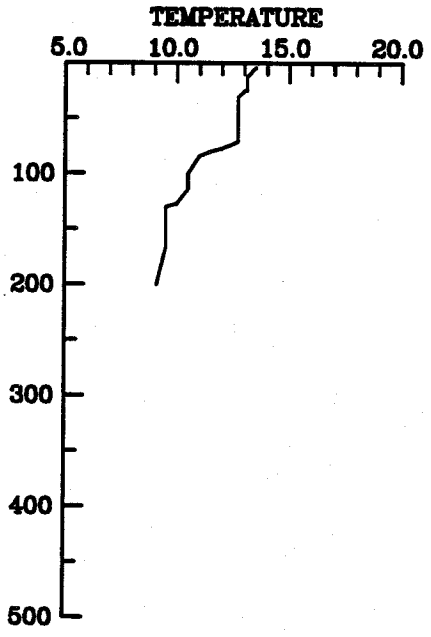
XBT Map 1



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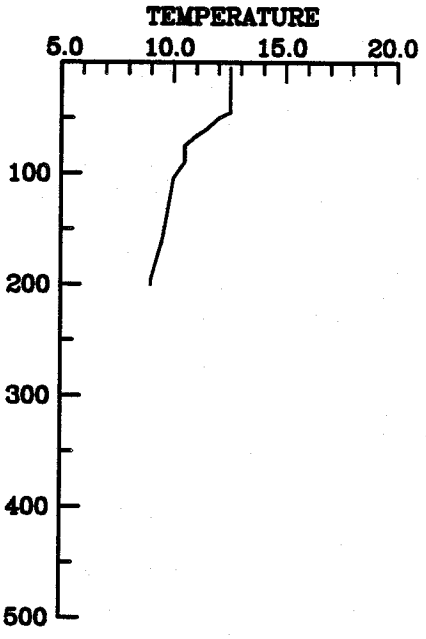

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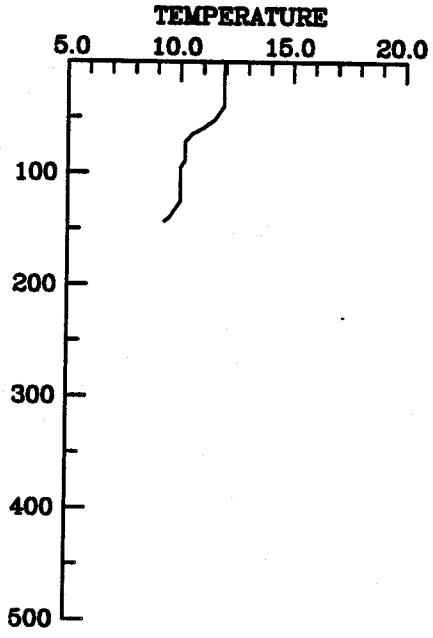

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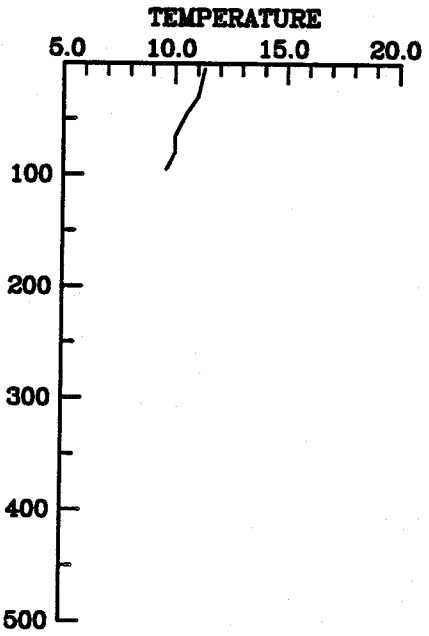

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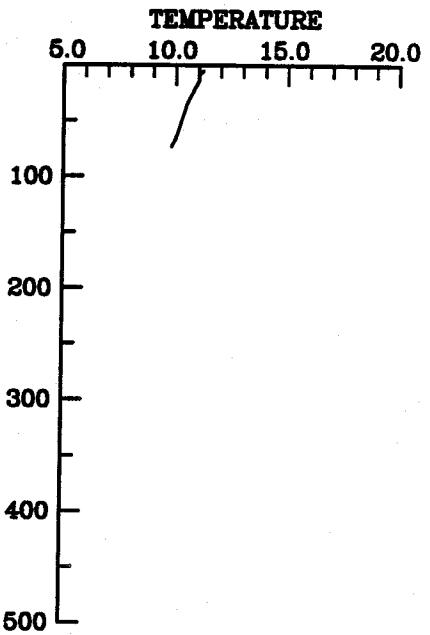

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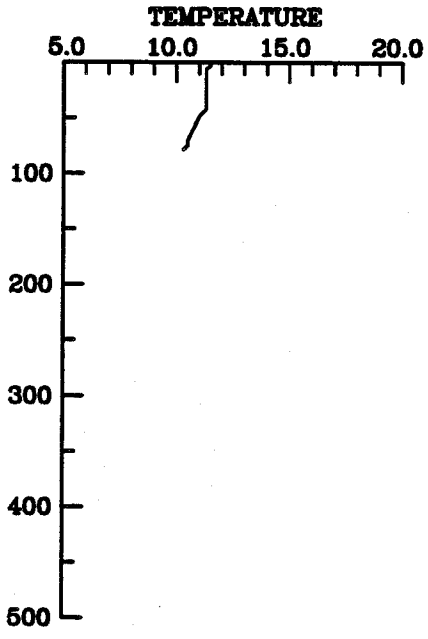

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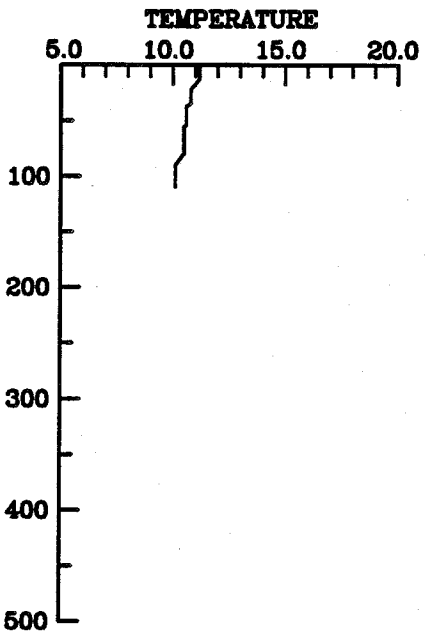

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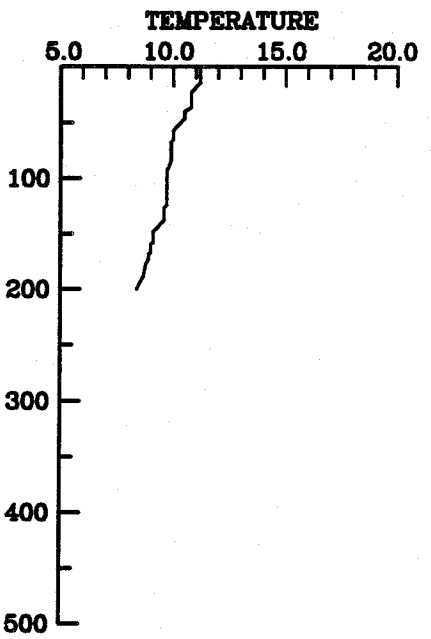

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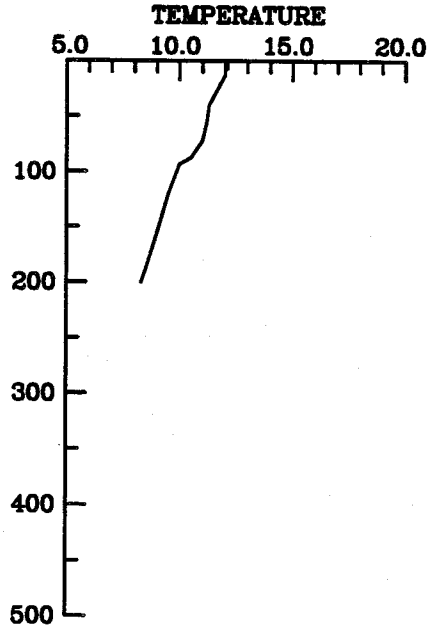

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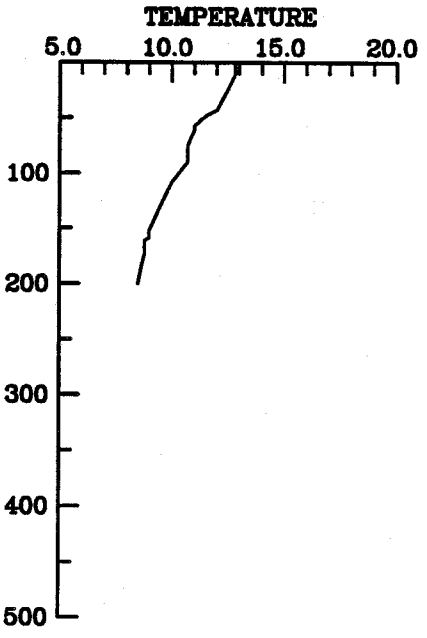

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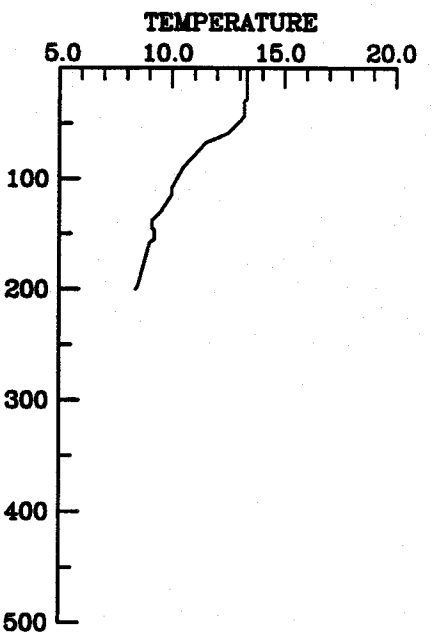

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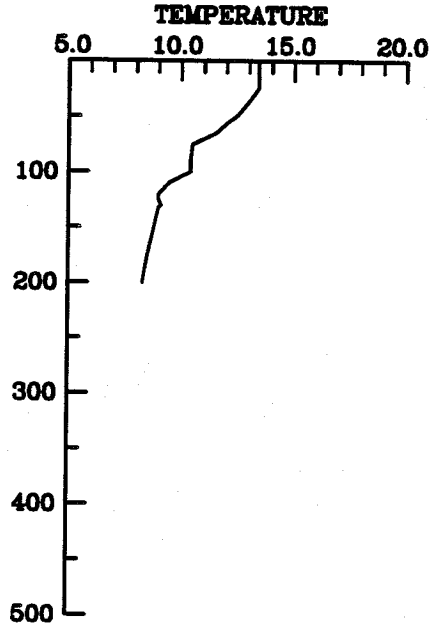

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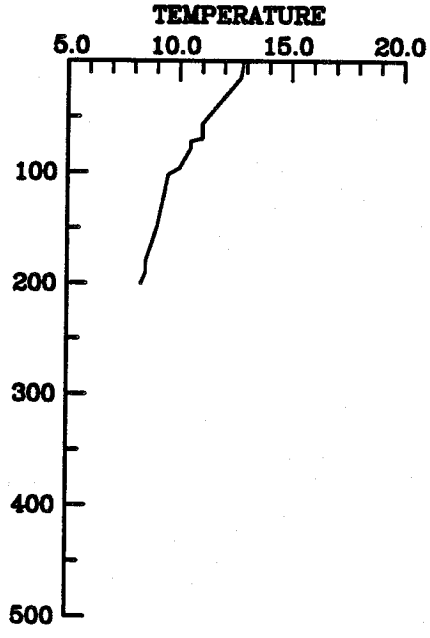

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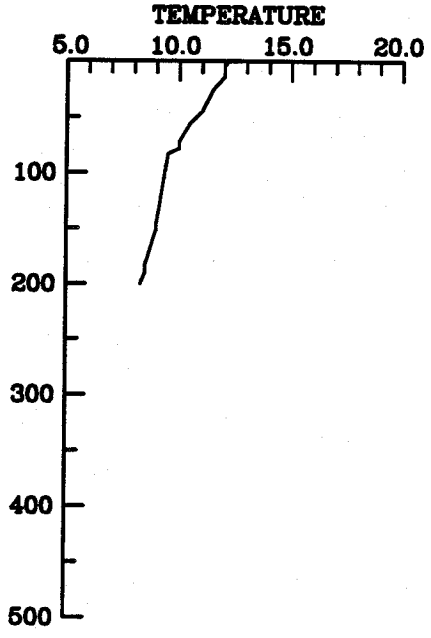

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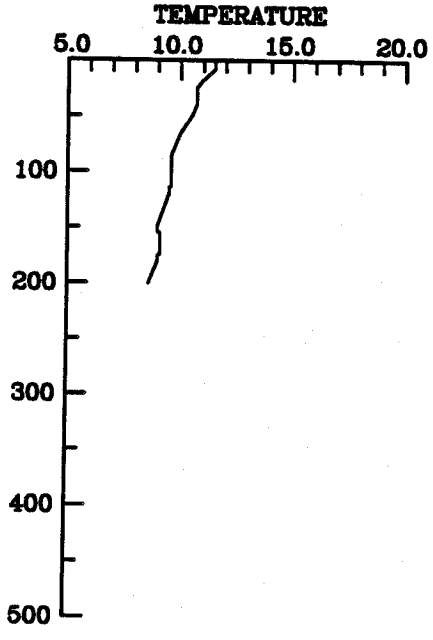

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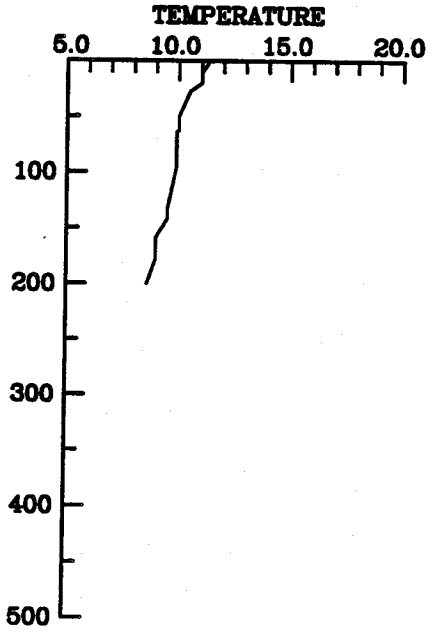

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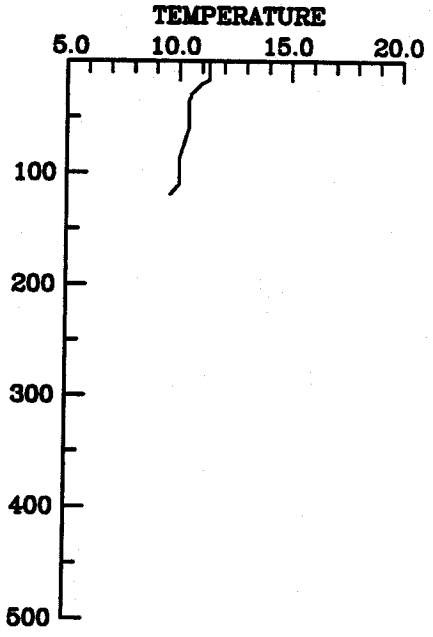
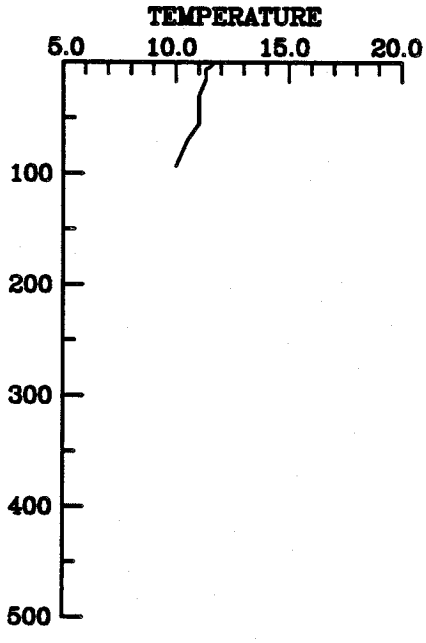
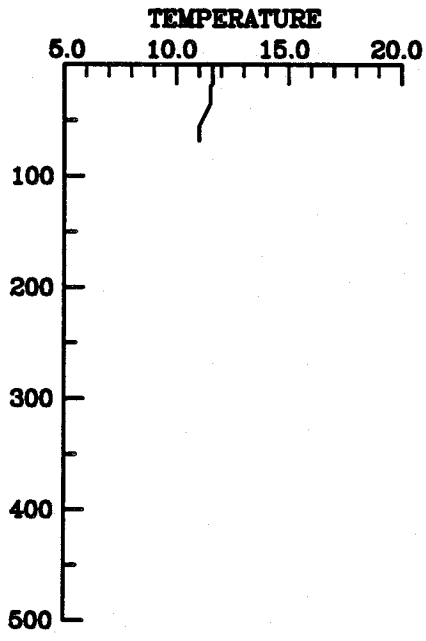


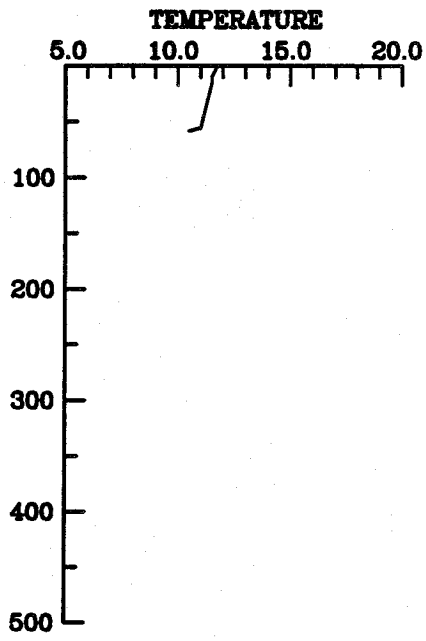
STATION G3 CAST 38
6 April 1983 1718 GMT
XBT Transect G-1
XBT Map 1



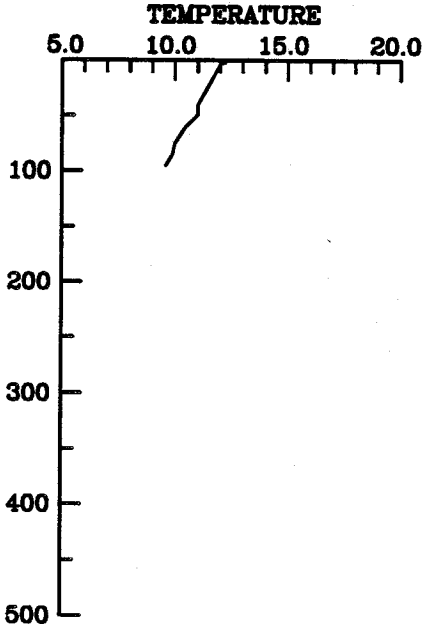
STATION G2 CAST 39
6 April 1983 1730 GMT
XBT Transect G-1
XBT Map 1



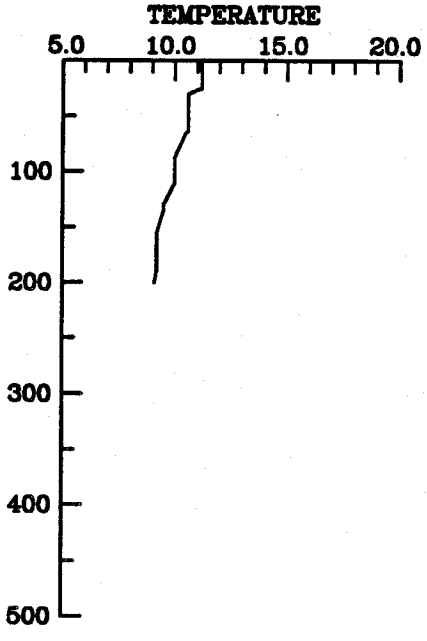
STATION GC2 CAST 42
6 April 1983 1930 GMT
XBT Transect GC-1
XBT Map 1



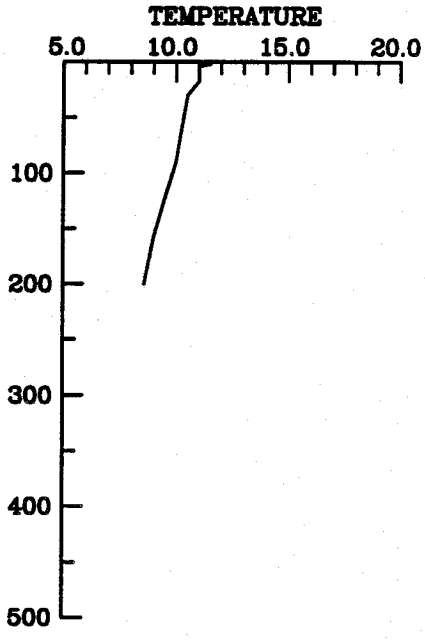
STATION GC3 CAST 43
6 April 1983 1942 GMT
XBT Transect GC-1
XBT Map 1



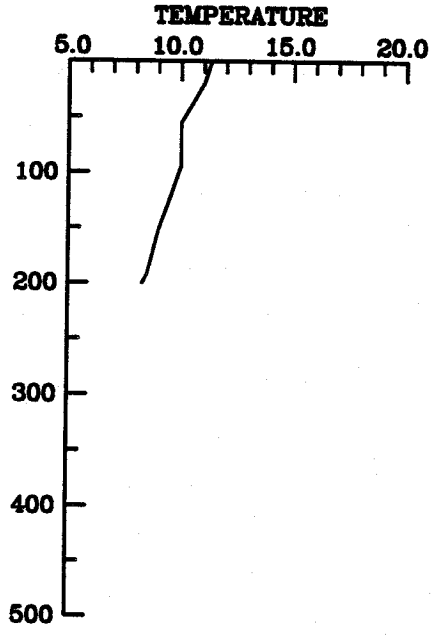
STATION GC4 CAST 44
6 April 1983 2000 GMT
XBT Transect GC-1
XBT Map 1



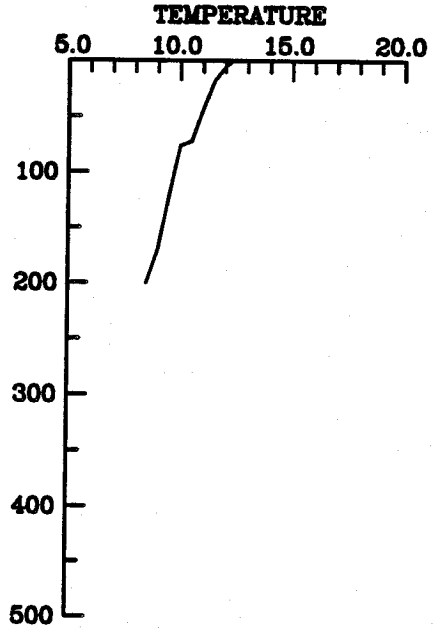
STATION GC5 CAST 45
6 April 1983 2012 GMT
XBT Transect GC-1
XBT Map 1



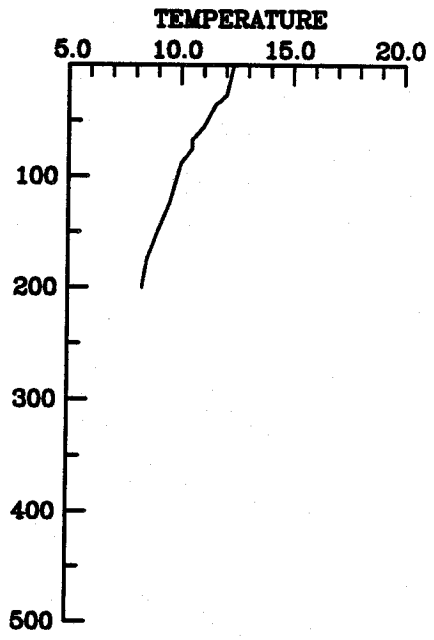
STATION GC6 CAST 46
6 April 1983 2036 GMT
XBT Transect GC-1
XBT Map 1



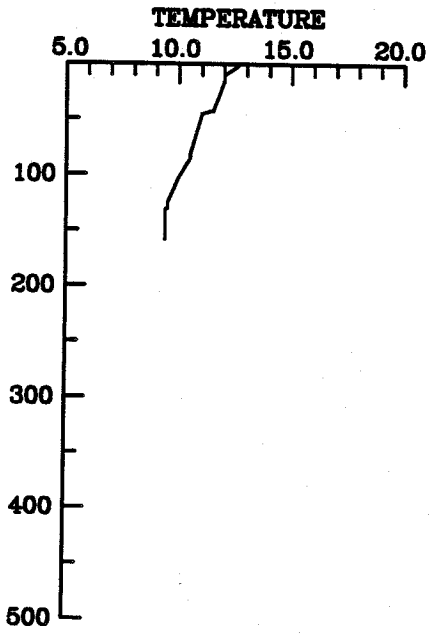
STATION GC7 CAST 47
6 April 1983 2048 GMT
XBT Transect GC-1
XBT Map 1



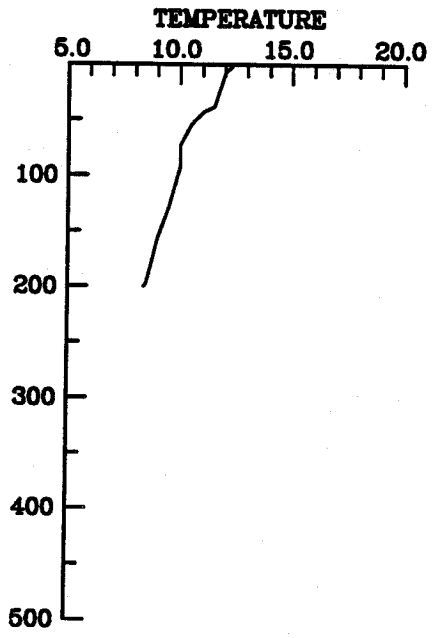
STATION GC8 CAST 48
6 April 1983 2100 GMT
XBT Transect GC-1
XBT Map 1



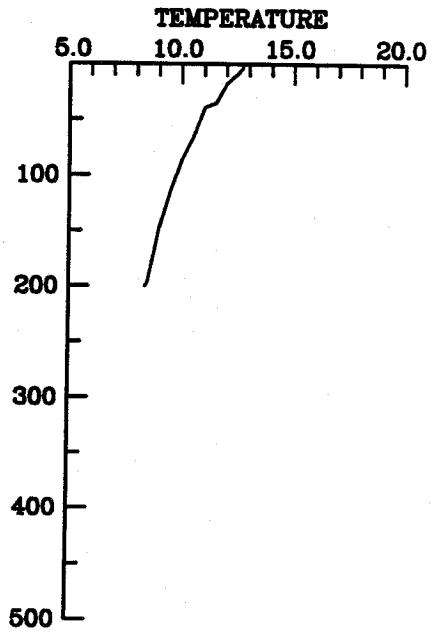
STATION C8 CAST 49
6 April 1983 2206 GMT
XBT Transect C-1
XBT Map 1



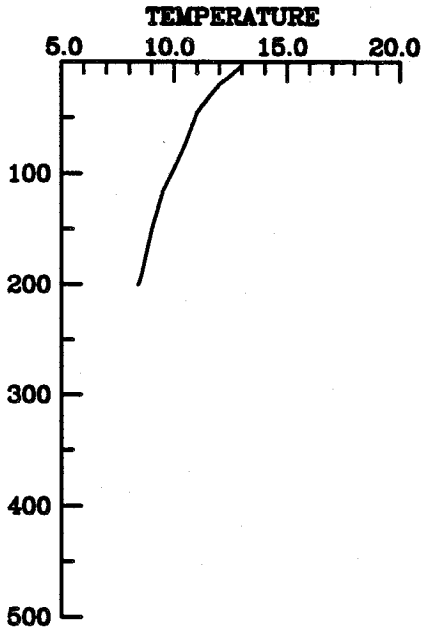
STATION C7 CAST 51
6 April 1983 2248 GMT
XBT Transect C-1
XBT Map 1



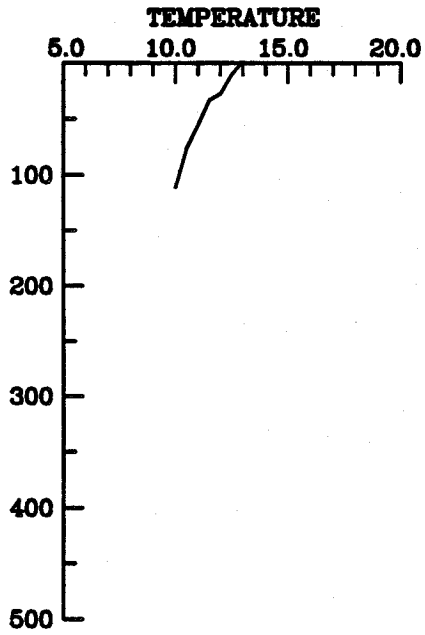
STATION C6 CAST 52
6 April 1983 2306 GMT
XBT Transect C-1
XBT Map 1



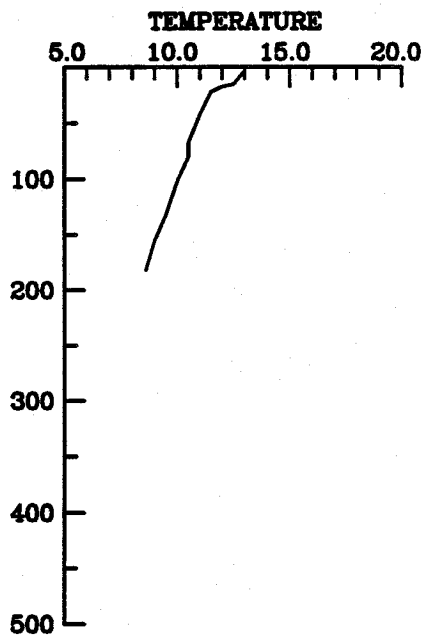
STATION C5 CAST 53
6 April 1983 2318 GMT
XBT Transect C-1
XBT Map 1



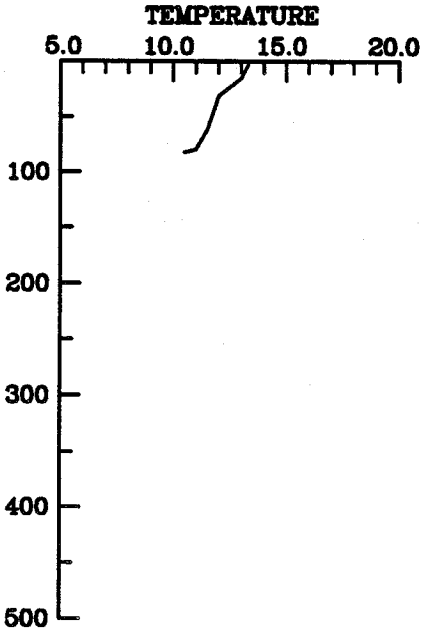
STATION C4 CAST 54
6 April 1983 2330 GMT
XBT Transect C-1
XBT Map 1



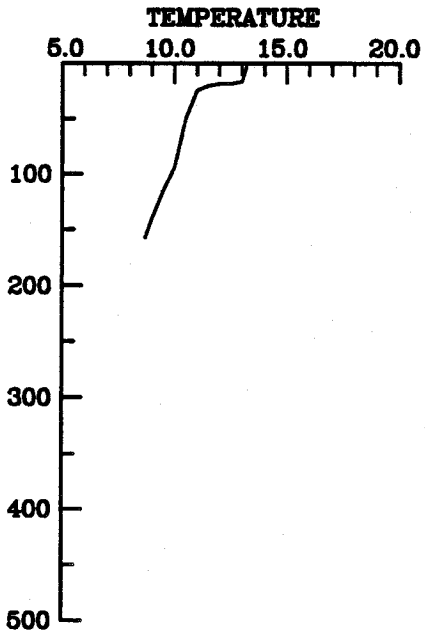
STATION C3 CAST 55
6 April 1983 2342 GMT
XBT Transect C-1
XBT Map 1



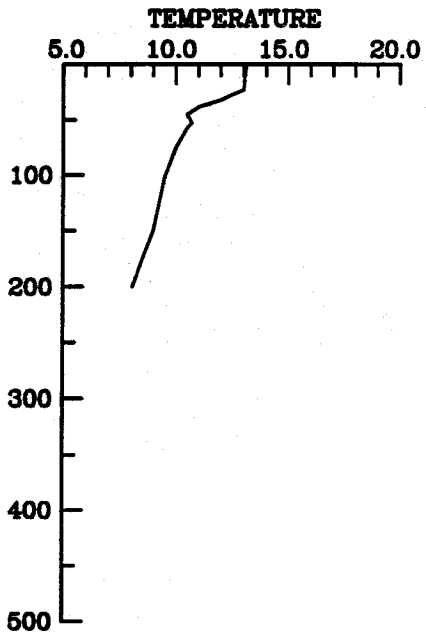
STATION C2 CAST 56
6 April 1983 2354 GMT
XBT Transect C-1
XBT Map 1



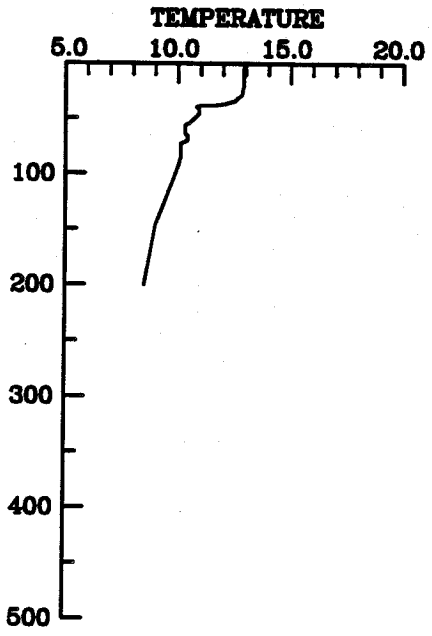
STATION C8 CAST 94
9 April 1983 1218 GMT
XBT Transect C-2
XBT Map 2



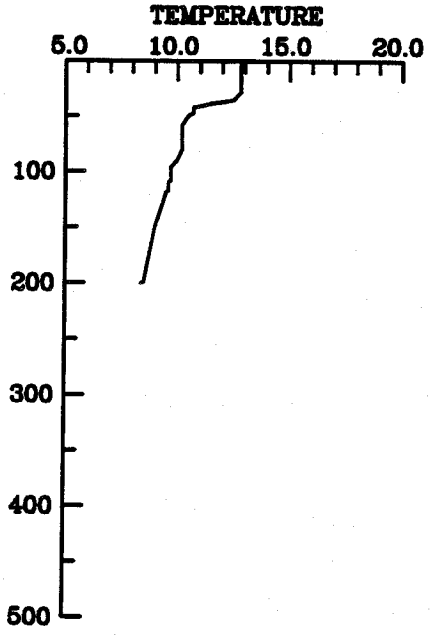
STATION C7 CAST 95
9 April 1983 1248 GMT
XBT Transect C-2
XBT Map 2



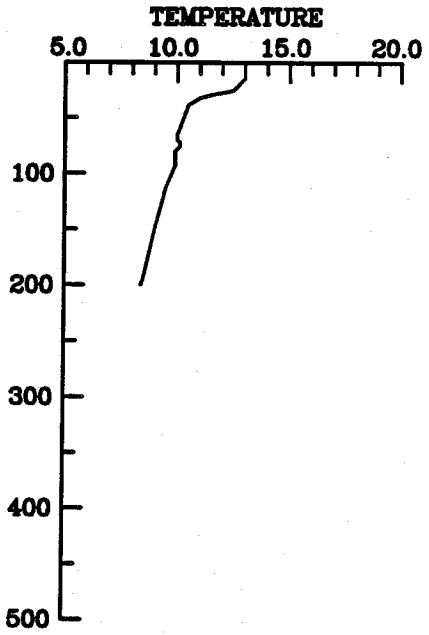
STATION C6 CAST 96
9 April 1983 1300 GMT
XBT Transect C-2
XBT Map 2



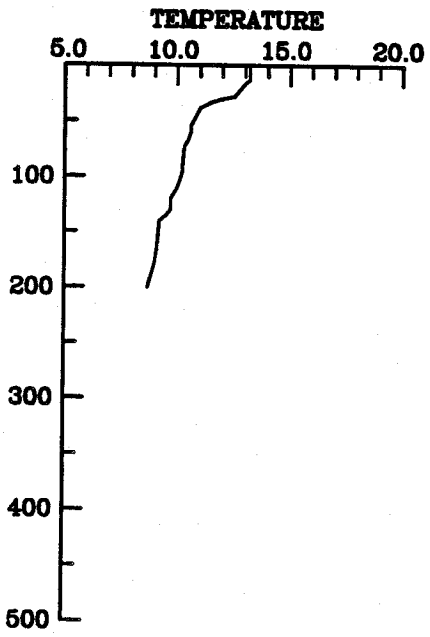
STATION C5 CAST 97
9 April 1983 1318 GMT
XBT Transect C-2
XBT Map 2



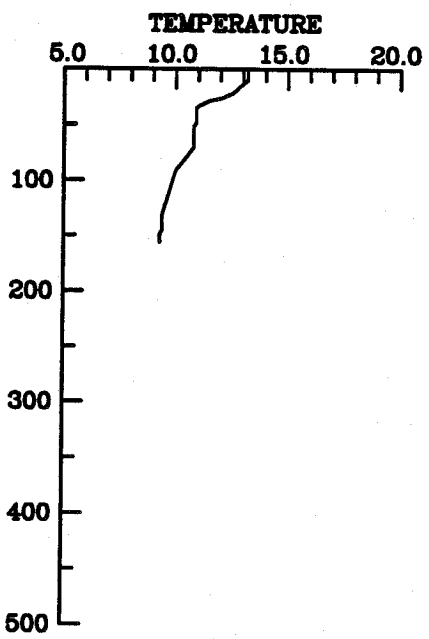
STATION C4 CAST 98
9 April 1983 1336 GMT
XBT Transect C-2
XBT Map 2



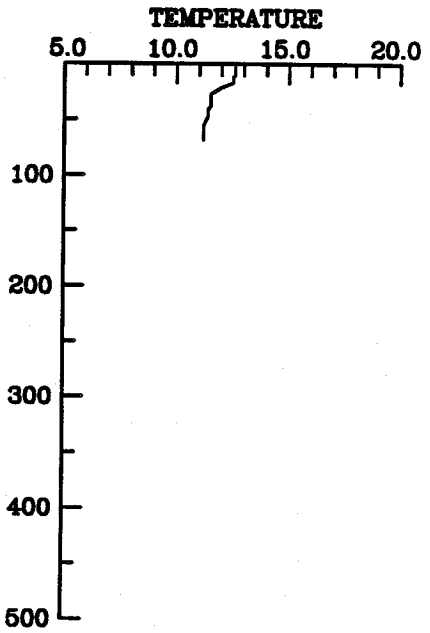
STATION C3 CAST 99
9 April 1983 1400 GMT
XBT Transect C-2
XBT Map 2



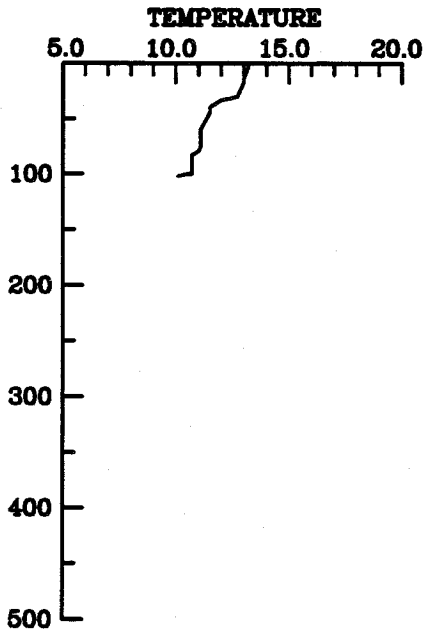
STATION C2 CAST 100
9 April 1983 1406 GMT
XBT Transect C-2
XBT Map 2



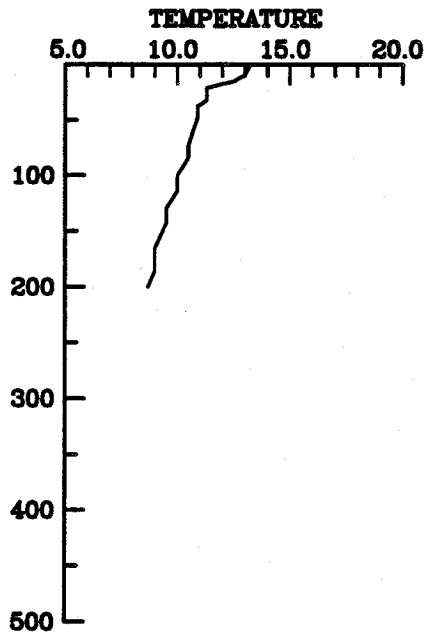
STATION GC2 CAST 103
9 April 1983 1548 GMT
XBT Transect GC-2
XBT Map 2



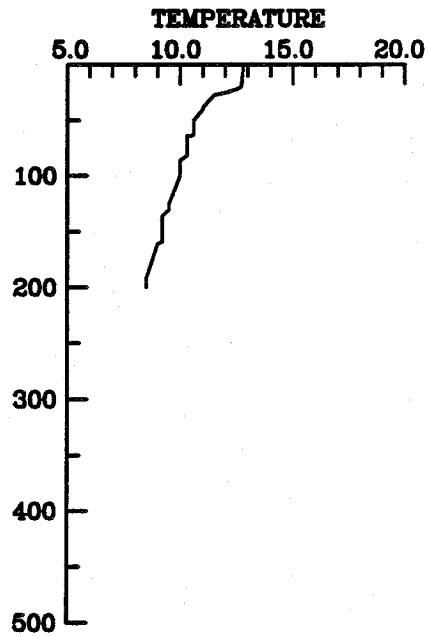
STATION GC3 CAST 104
9 April 1983 1606 GMT
XBT Transect GC-2
XBT Map 2



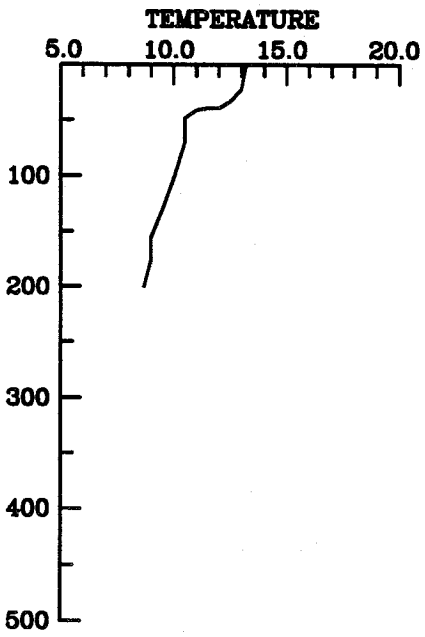
STATION GC4 CAST 105
9 April 1983 1618 GMT
XBT Transect GC-2
XBT Map 2



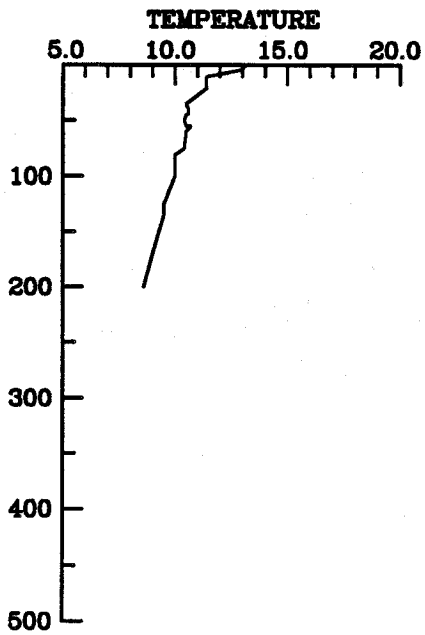
STATION GC5 CAST 106
9 April 1983 1636 GMT
XBT Transect GC-2
XBT Map 2



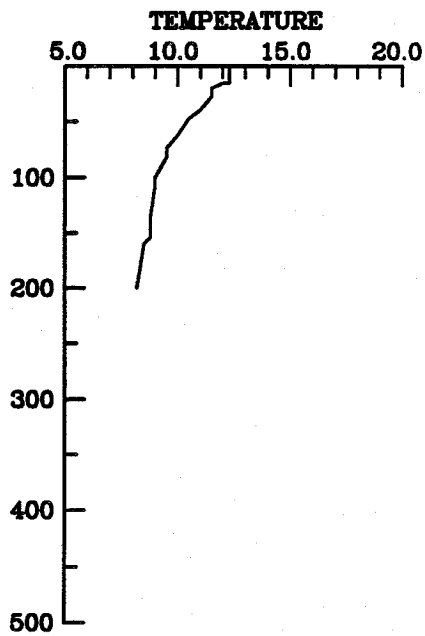
STATION GC6 CAST 107
9 April 1983 1648 GMT
XBT Transect GC-2
XBT Map 2



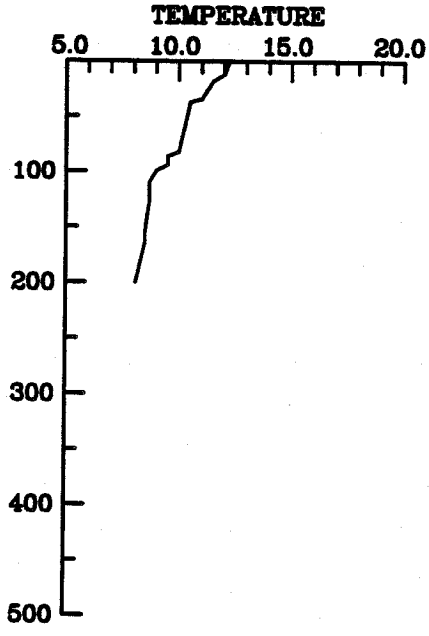
STATION GC7 CAST 108
9 April 1983 1706 GMT
XBT Transect GC-2
XBT Map 2



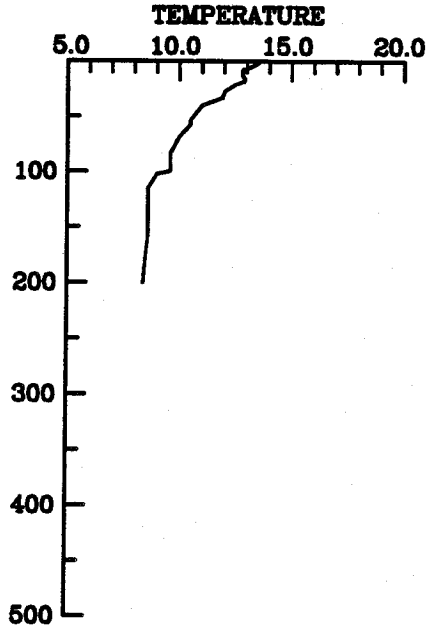
STATION GC8 CAST 109
9 April 1983 1736 GMT
XBT Transect GC-2
XBT Map 2



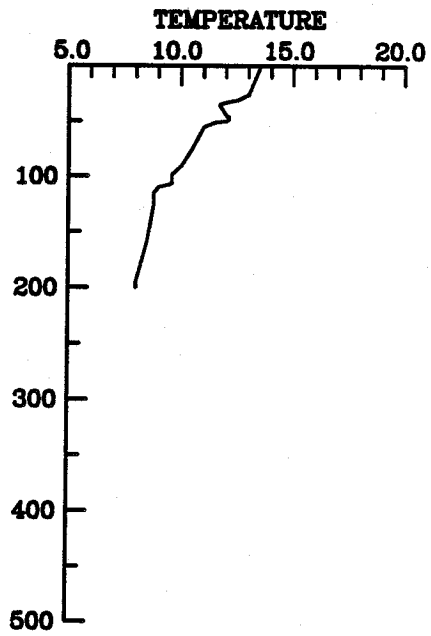
STATION G9 CAST 110
9 April 1983 1812 GMT
XBT Transect G-2
XBT Map 2



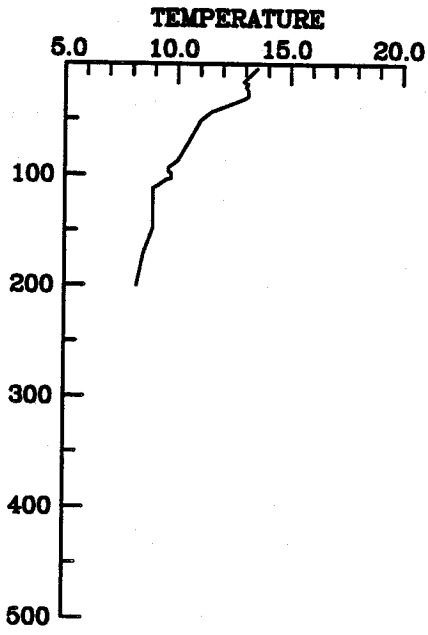
STATION G10 CAST 111
9 April 1983 1842 GMT
XBT Transect G-2
XBT Map 2



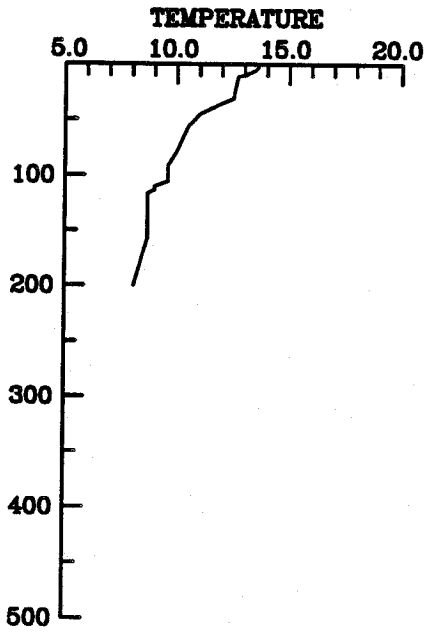
STATION G11 CAST 112
9 April 1983 1900 GMT
XBT Transect G-2
XBT Map 2



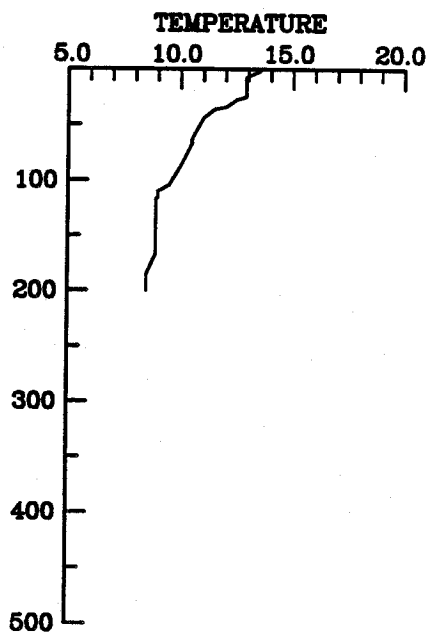
STATION G8A CAST 113
9 April 1983 1918 GMT
XBT Map 2



STATION G8B CAST 114
9 April 1983 1918 GMT
XBT Map 2

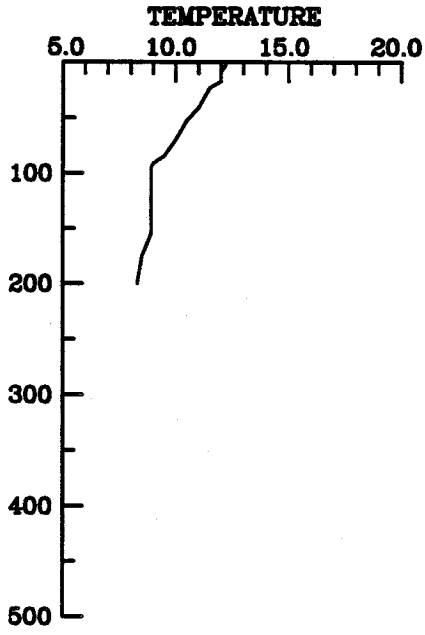


STATION G8C CAST 115
9 April 1983 1924 GMT
XBT Map 2



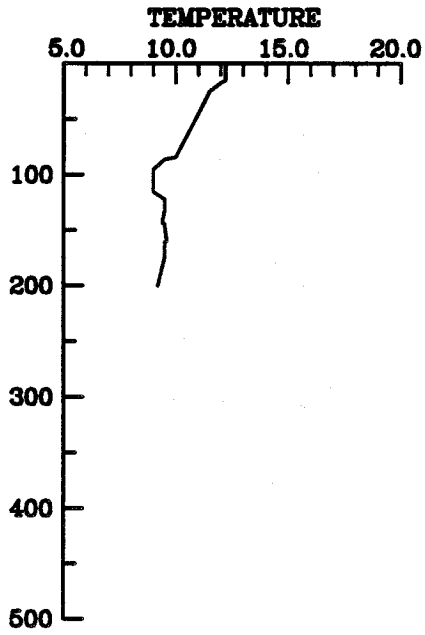
STATION G8D CAST 116
9 April 1983 1942 GMT

XBT Map 2

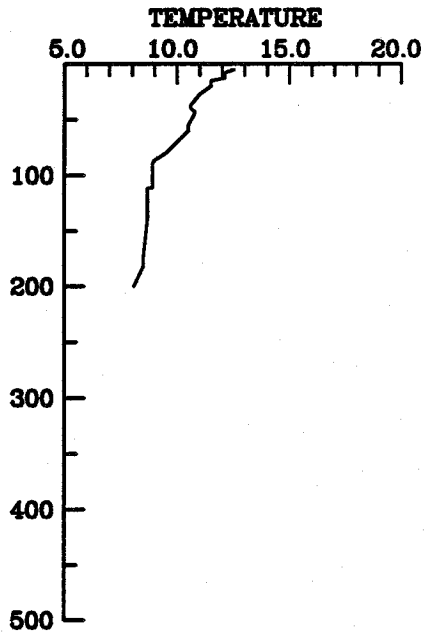


STATION G8E CAST 117
9 April 1983 1948 GMT

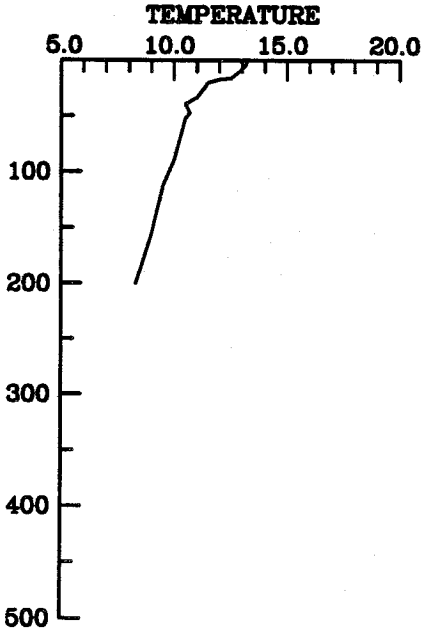
XBT Map 2



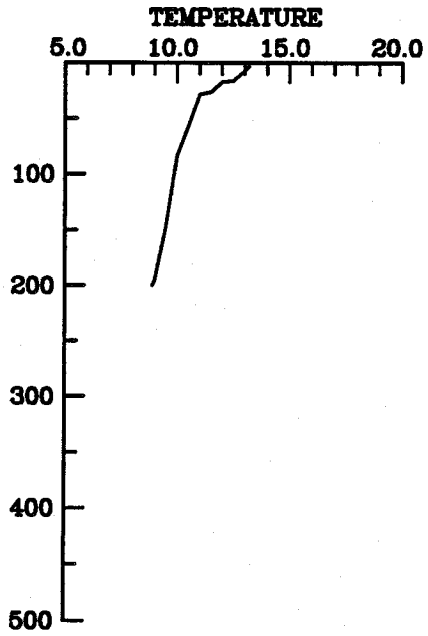
STATION G8 CAST 118
9 April 1983 2000 GMT
XBT Transect G-2
XBT Map 2



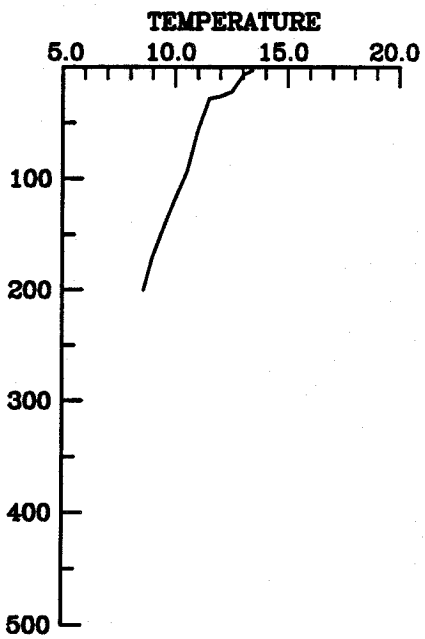
STATION G7 CAST 119
9 April 1983 2018 GMT
XBT Transect G-2
XBT Map 2



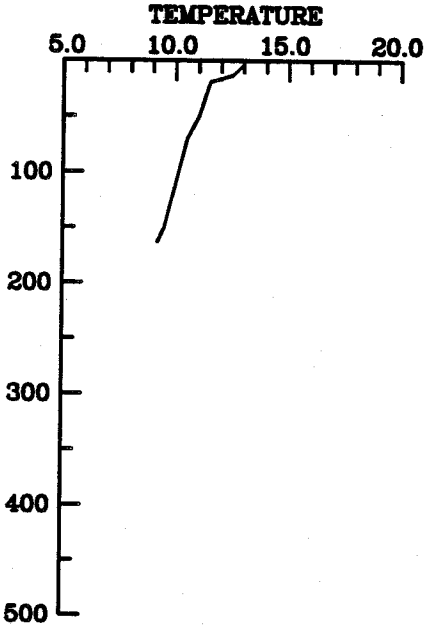
STATION G6 CAST 120
9 April 1983 2036 GMT
XBT Transect G-2
XBT Map 2



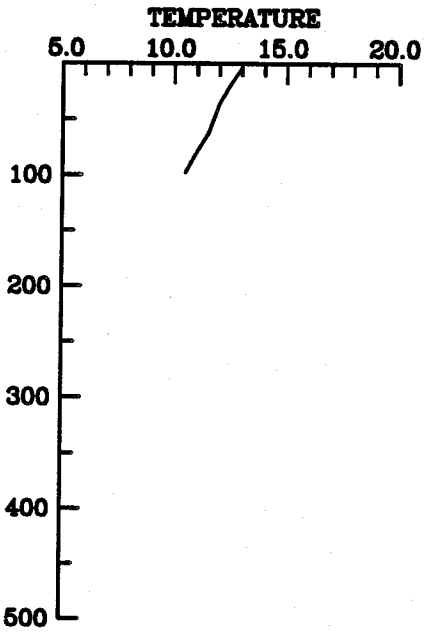
STATION G5 CAST 121
9 April 1983 2048 GMT
XBT Transect G-2
XBT Map 2



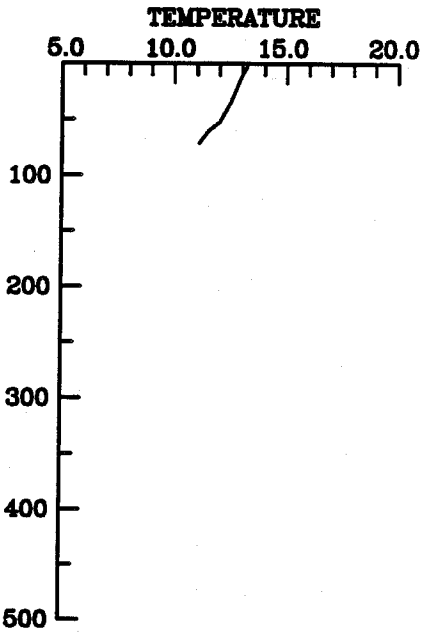
STATION G4 CAST 122
9 April 1983 2100 GMT
XBT Transect G-2
XBT Map 2



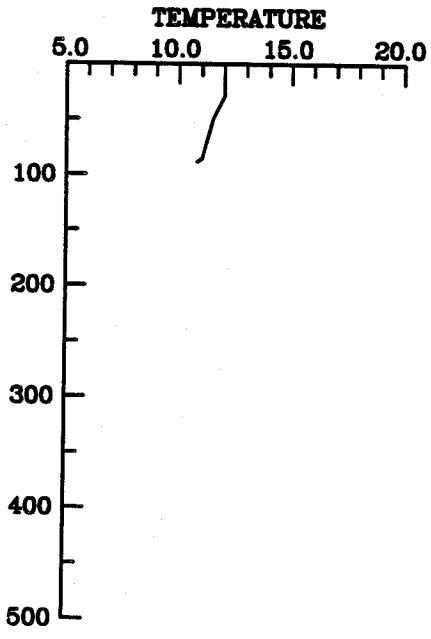
STATION G3 CAST 123
9 April 1983 2112 GMT
XBT Transect G-2
XBT Map 2



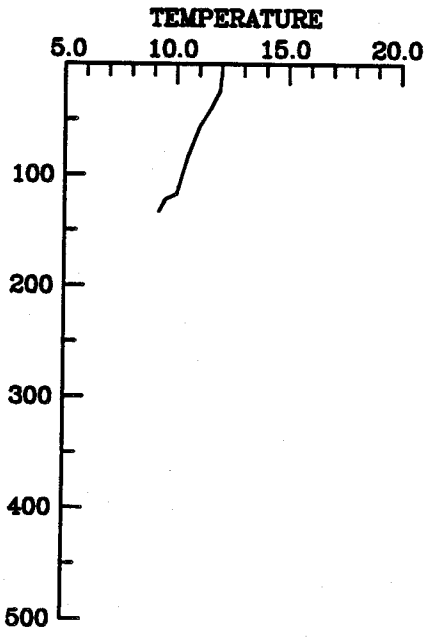
STATION G2 CAST 124
9 April 1983 2130 GMT
XBT Transect G-2
XBT Map 2



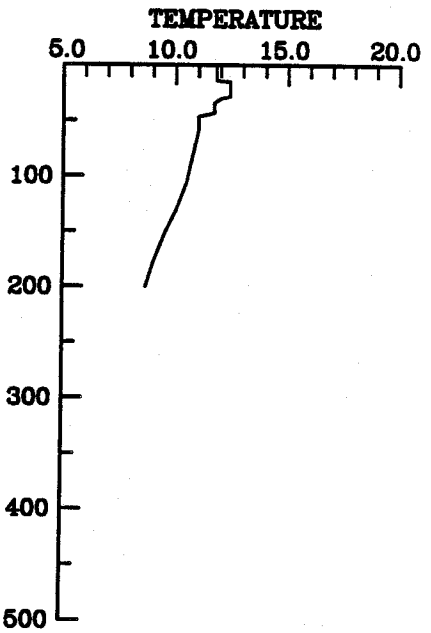
STATION AG2 CAST 127
9 April 1983 2248 GMT
XBT Transect AG-2
XBT Map 2



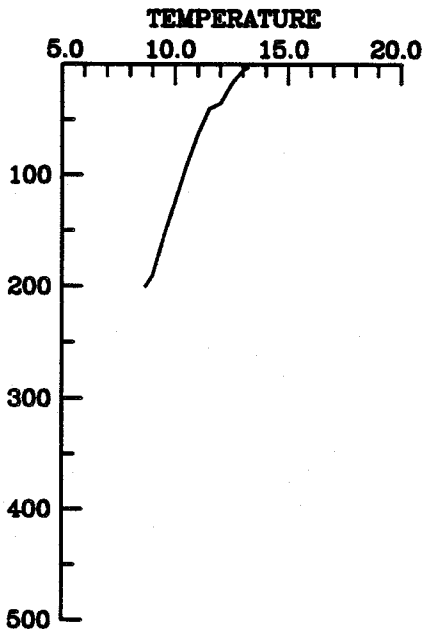
STATION AG3 CAST 128
9 April 1983 2300 GMT
XBT Transect AG-2
XBT Map 2



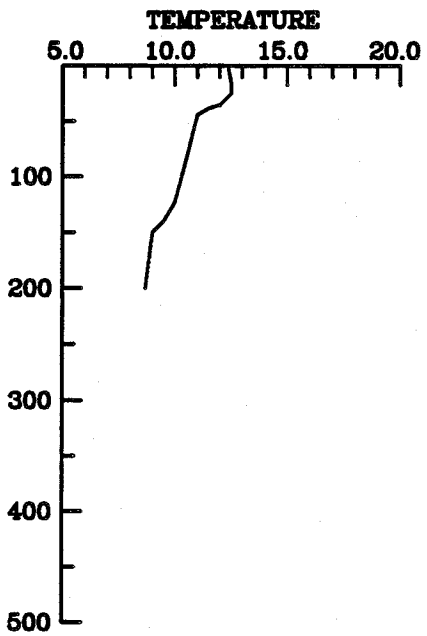
STATION AG4 CAST 129
9 April 1983 2318 GMT
XBT Transect AG-2
XBT Map 2



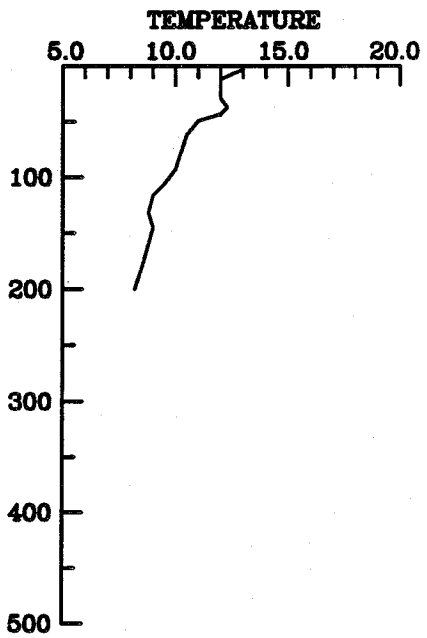
STATION AG5 CAST 130
9 April 1983 2330 GMT
XBT Transect AG-2
XBT Map 2



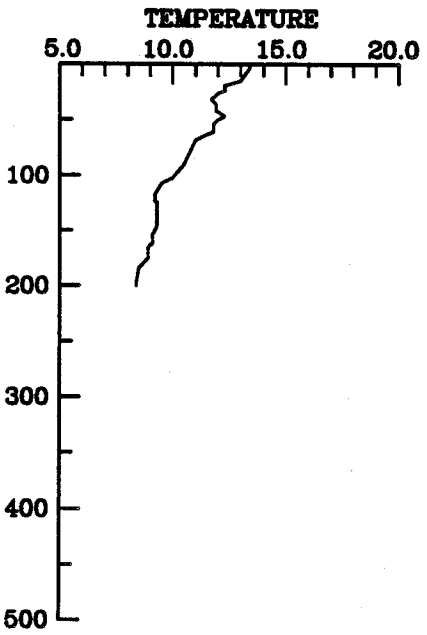
STATION AG6 CAST 131
9 April 1983 2336 GMT
XBT Transect AG-2
XBT Map 2



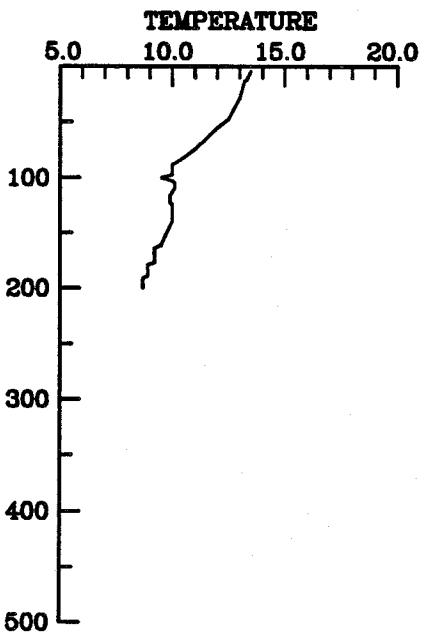
STATION AG7 CAST 132
9 April 1983 2400 GMT
XBT Transect AG-2
XBT Map 2



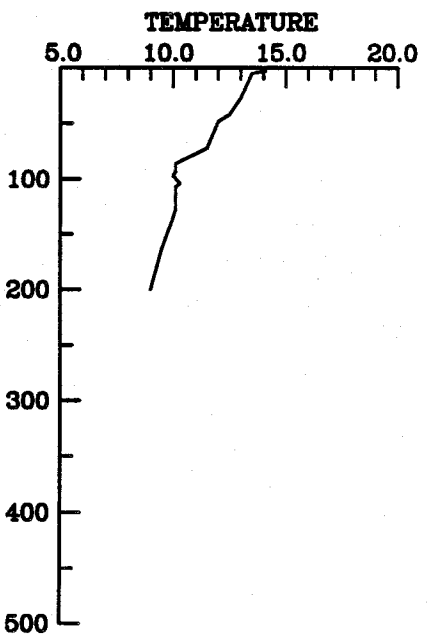
STATION AG8 CAST 133
10 April 1983 30 GMT
XBT Transect AG-2
XBT Map 2



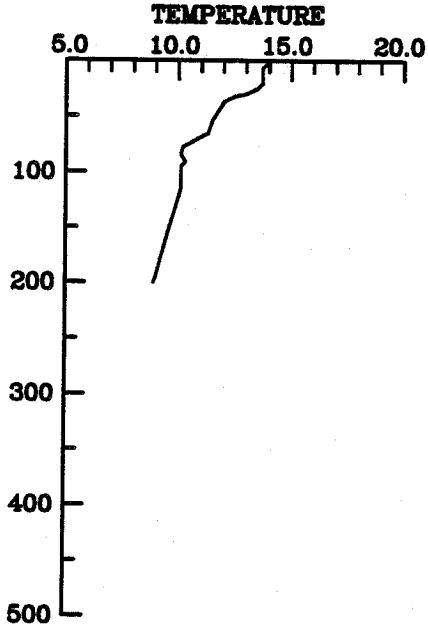
STATION A8 CAST 134
10 April 1983 206 GMT
XBT Transect A-2
XBT Map 2



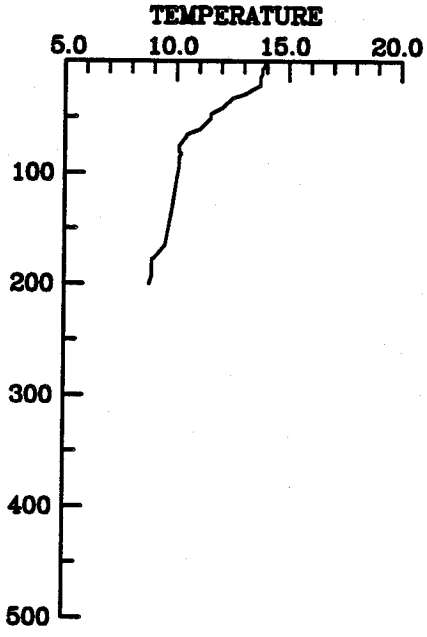
STATION A7 CAST 135
10 April 1983 236 GMT
XBT Transect A-2
XBT Map 2



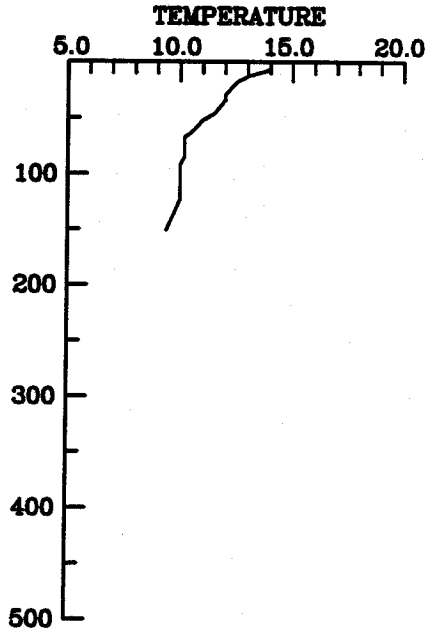
STATION A6 CAST 136
10 April 1983 248 GMT
XBT Transect A-2
XBT Map 2



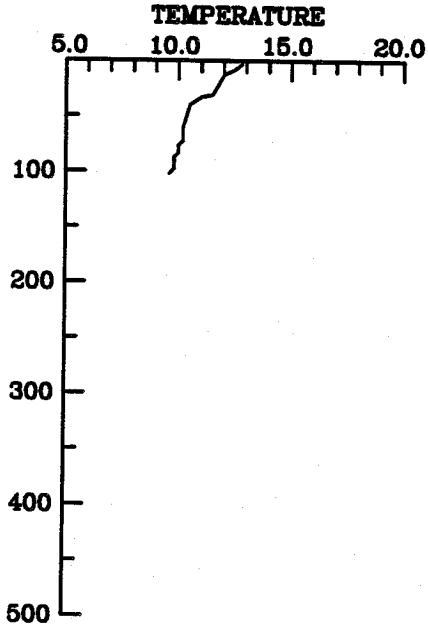
STATION A5 CAST 137
10 April 1983 300 GMT
XBT Transect A-2
XBT Map 2



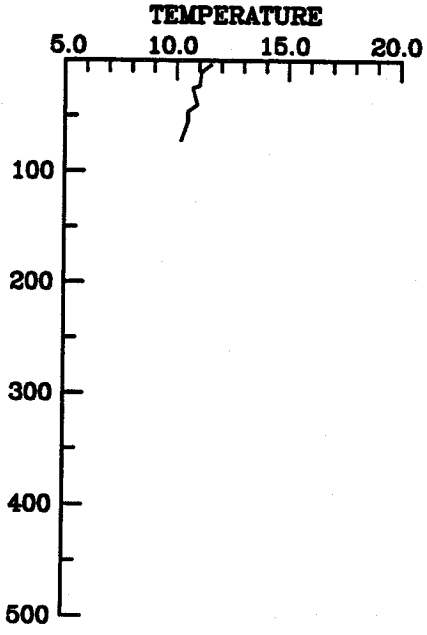
STATION A4 CAST 138
10 April 1983 324 GMT
XBT Transect A-2
XBT Map 2



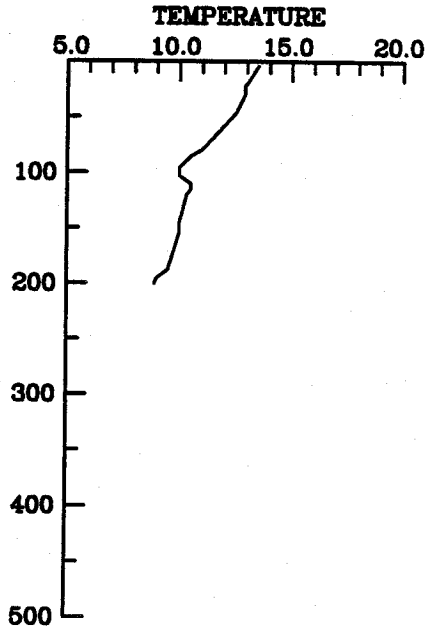
STATION A3 CAST 139
10 April 1983 342 GMT
XBT Transect A-2
XBT Map 2



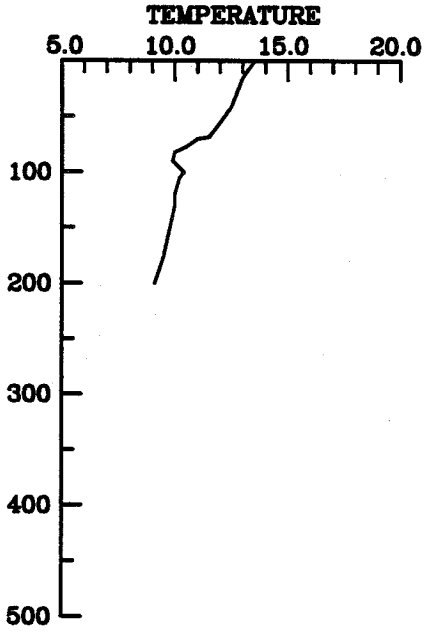
STATION A2 CAST 140
10 April 1983 400 GMT
XBT Transect A-2
XBT Map 2



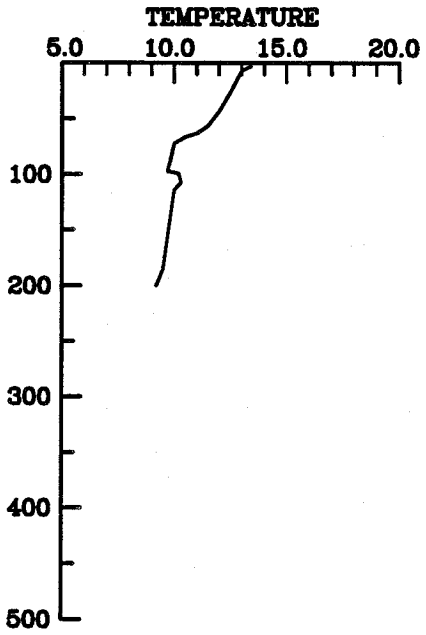
STATION A8 CAST 154
12 April 1983 124 GMT
XBT Transect A-3
XBT Map 3



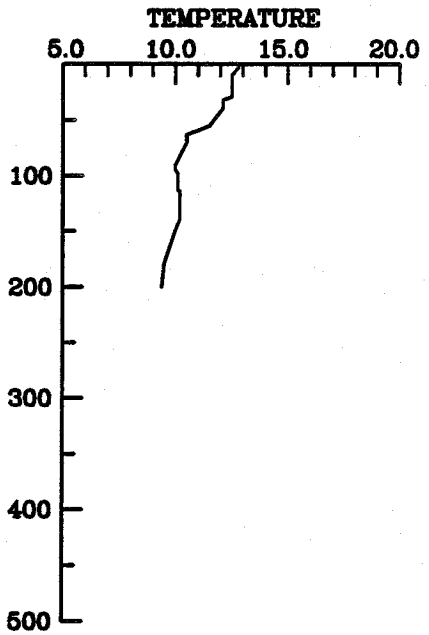
STATION A7 CAST 155
12 April 1983 148 GMT
XBT Transect A-3
XBT Map 3



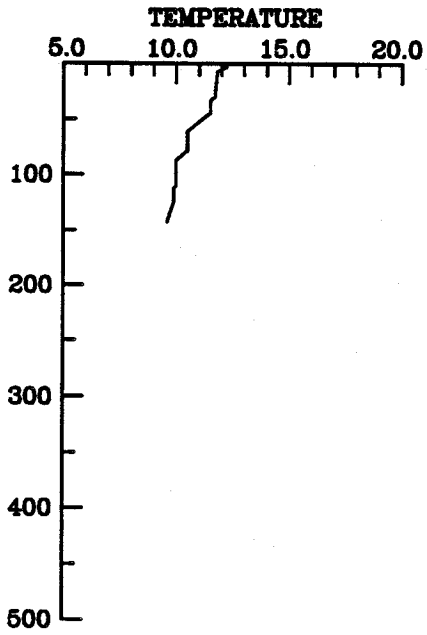
STATION A6 CAST 156
12 April 1983 200 GMT
XBT Transect A-3
XBT Map 3



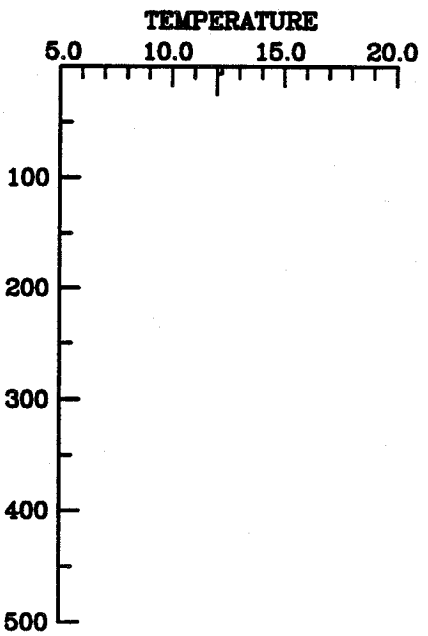
STATION A5 CAST 157
12 April 1983 212 GMT
XBT Transect A-3
XBT Map 3



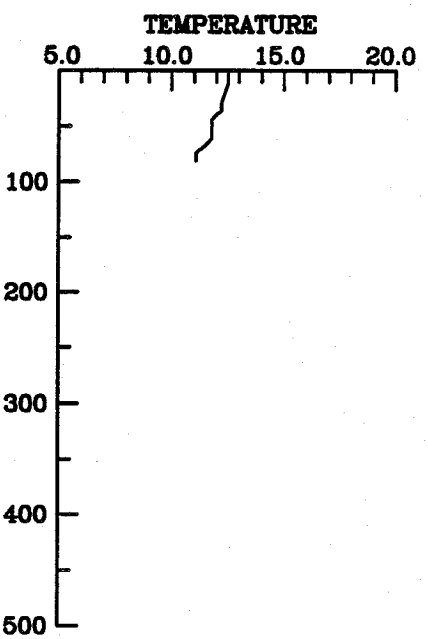
STATION A4 CAST 158
12 April 1983 230 GMT
XBT Transect A-3
XBT Map 3



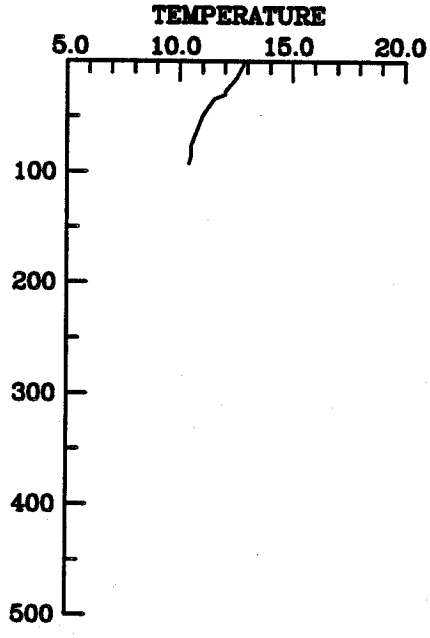
STATION A3 CAST 159
12 April 1983 242 GMT
XBT Transect A-3
XBT Map 3



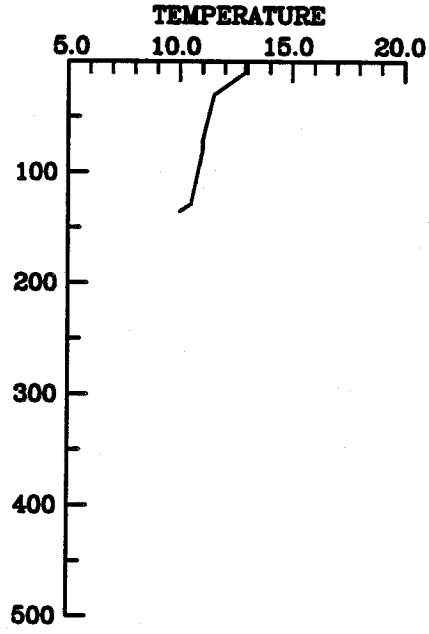
STATION A2 CAST 160
12 April 1983 254 GMT
XBT Transect A-3
XBT Map 3



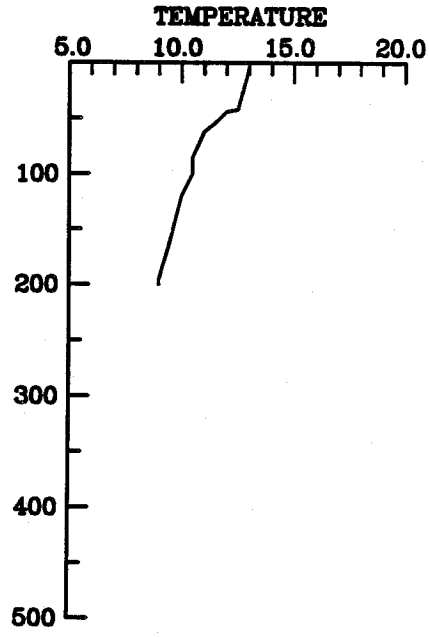
STATION AG2 CAST 163
12 April 1983 430 GMT
XBT Transect AG-3
XBT Map 3



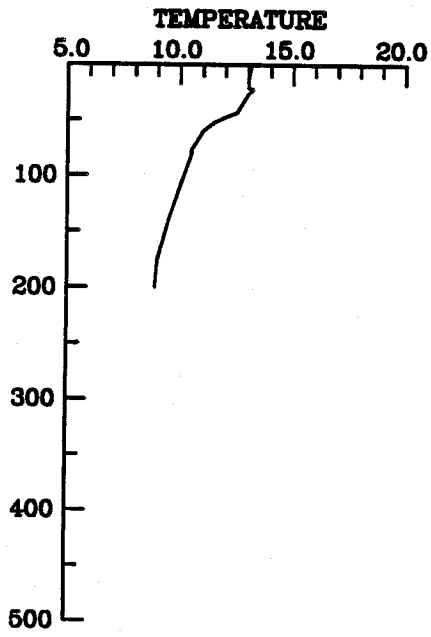
STATION AG3 CAST 164
12 April 1983 442 GMT
XBT Transect AG-3
XBT Map 3



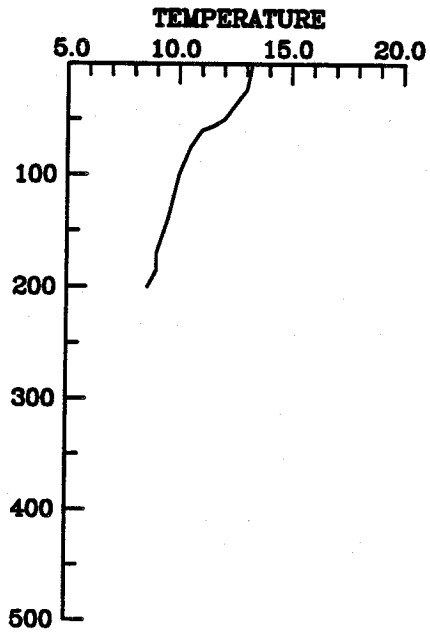
STATION AG5 CAST 166
12 April 1983 506 GMT
XBT Transect AG-3
XBT Map 3



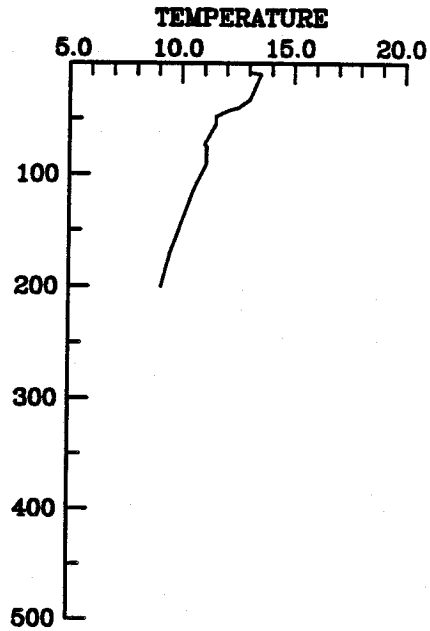
STATION AG6 CAST 167
12 April 1983 524 GMT
XBT Transect AG-3
XBT Map 3



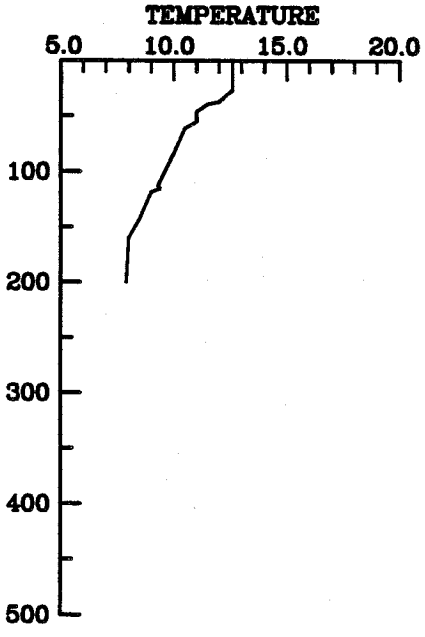
STATION AG7 CAST 168
12 April 1983 542 GMT
XBT Transect AG-3
XBT Map 3



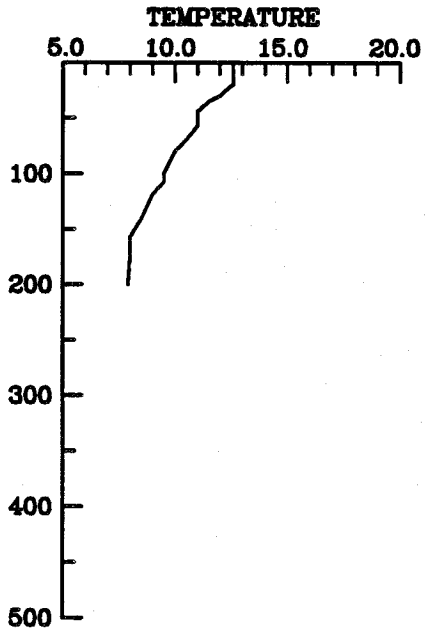
STATION AG8 CAST 169
12 April 1983 612 GMT
XBT Transect AG-3
XBT Map 3



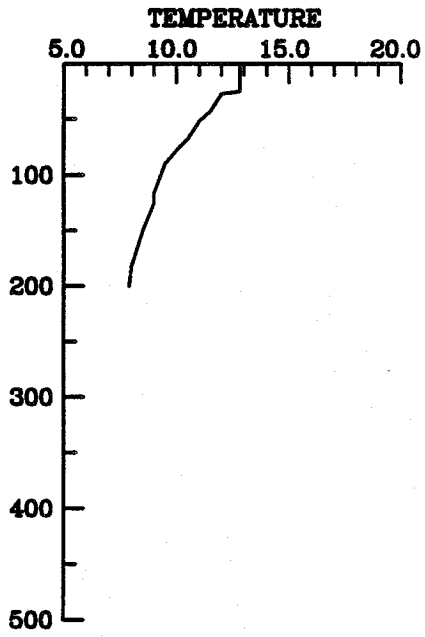
STATION G12 CAST 170
12 April 1983 706 GMT
XBT Transect G-3
XBT Map 3



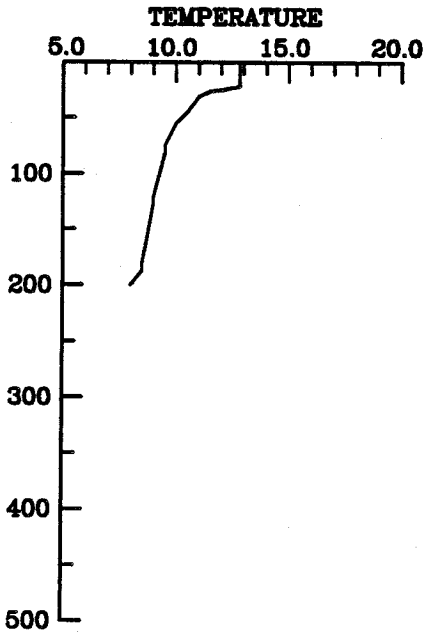
STATION G11 CAST 171
12 April 1983 730 GMT
XBT Transect G-3
XBT Map 3



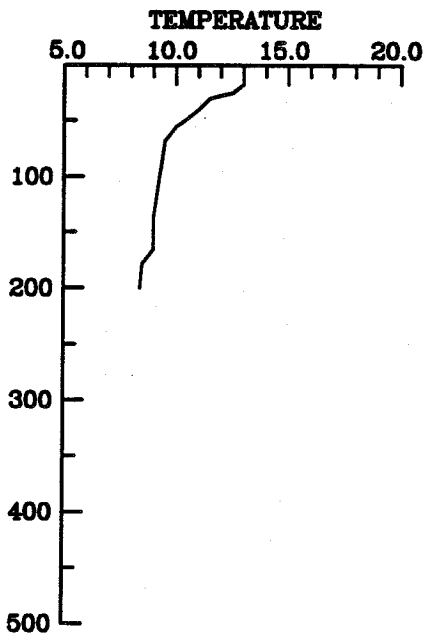
STATION G10 CAST 172
12 April 1983 742 GMT
XBT Transect G-3
XBT Map 3



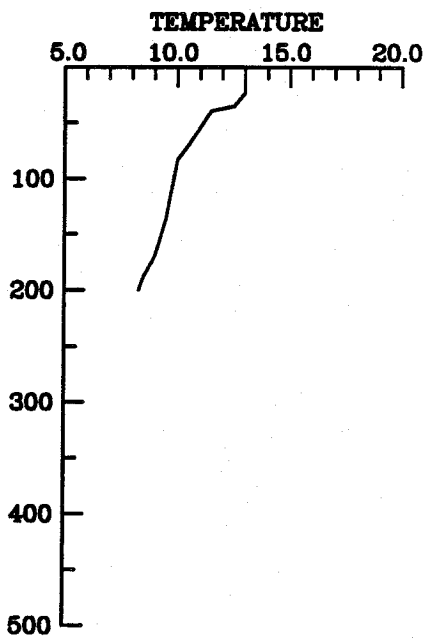
STATION G9 CAST 173
12 April 1983 800 GMT
XBT Transect G-3
XBT Map 3



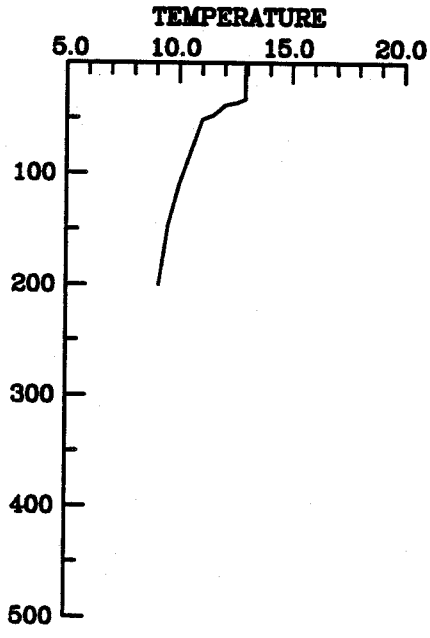
STATION G8 CAST 174
12 April 1983 812 GMT
XBT Transect G-3
XBT Map 3



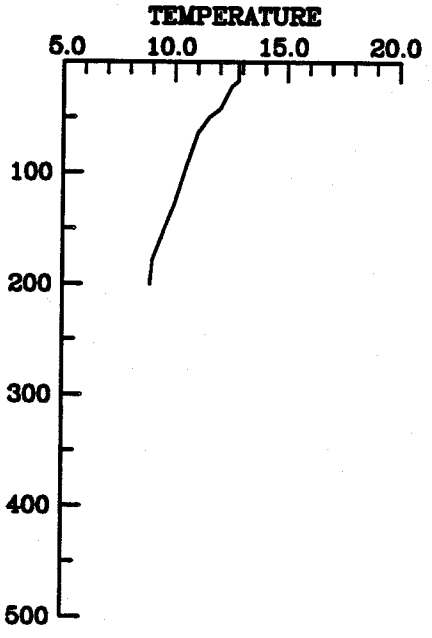
STATION G7 CAST 175
12 April 1983 824 GMT
XBT Transect G-3
XBT Map 3



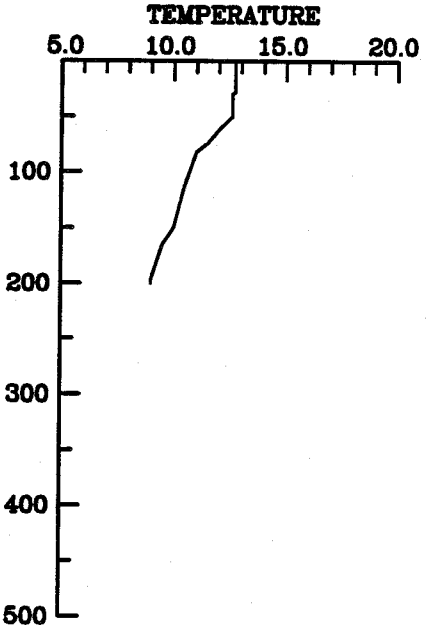
STATION G6 CAST 176
12 April 1983 836 GMT
XBT Transect G-3
XBT Map 3



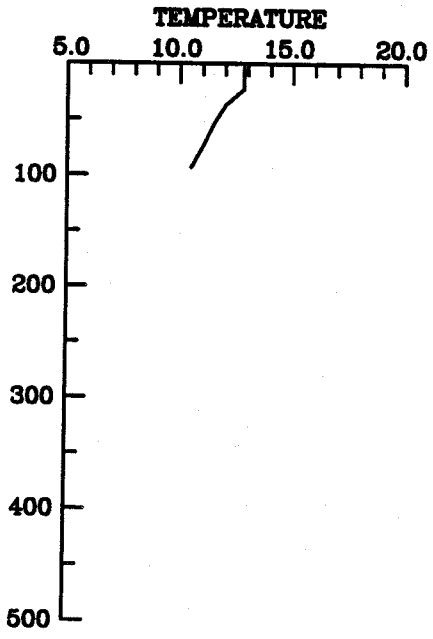
STATION G5 CAST 177
12 April 1983 854 GMT
XBT Transect G-3
XBT Map 3



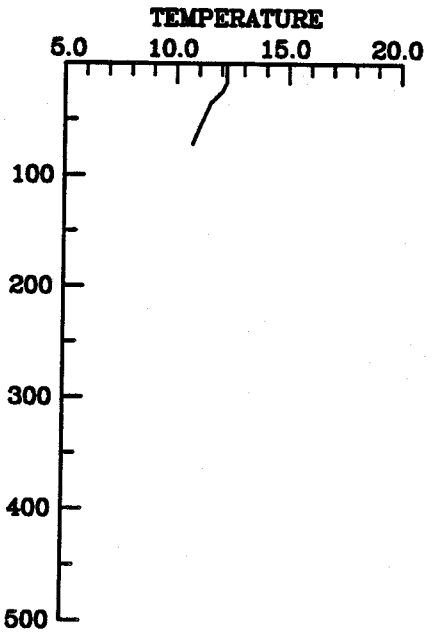
STATION G4 CAST 178
12 April 1983 906 GMT
XBT Transect G-3
XBT Map 3



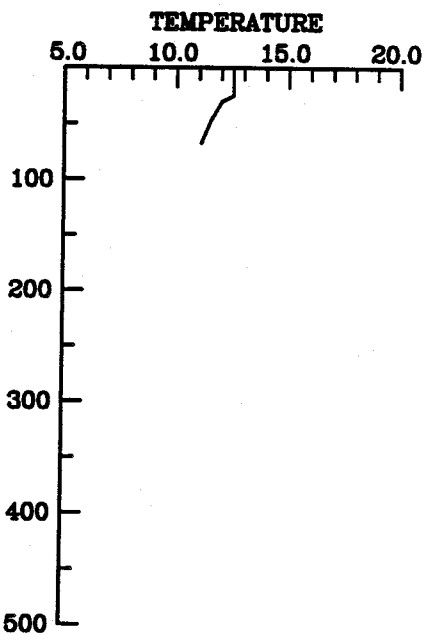
STATION G3 CAST 179
12 April 1983 924 GMT
XBT Transect G-3
XBT Map 3



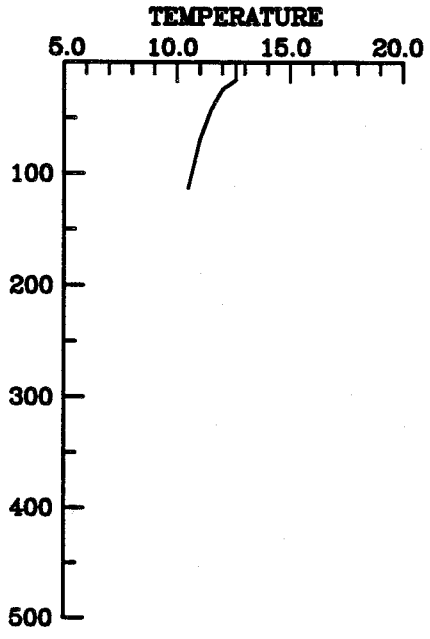
STATION G2 CAST 180
12 April 1983 942 GMT
XBT Transect G-3
XBT Map 3



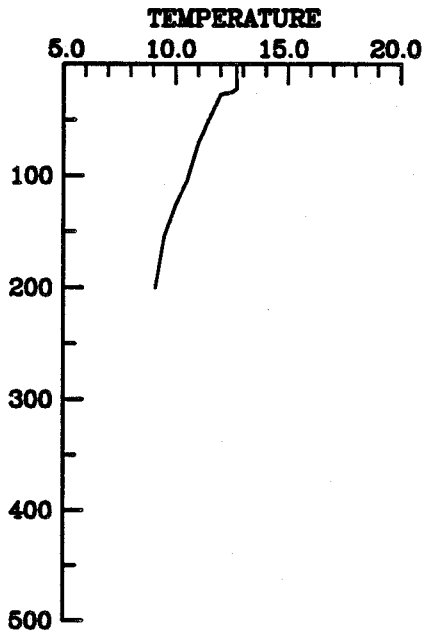
STATION GC2 CAST 183
12 April 1983 1106 GMT
XBT Transect GC-3
XBT Map 3



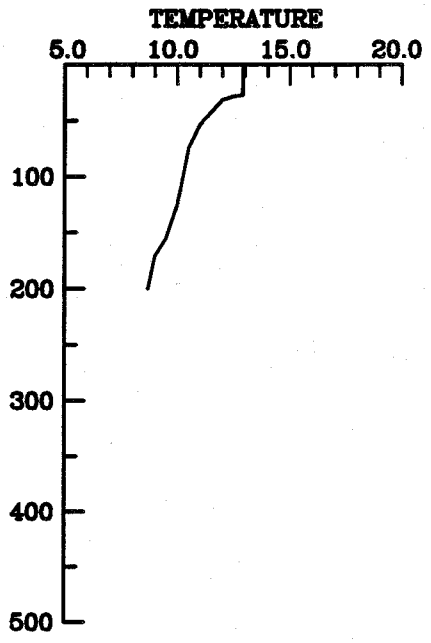
STATION GC3 CAST 184
12 April 1983 1118 GMT
XBT Transect GC-3
XBT Map 3



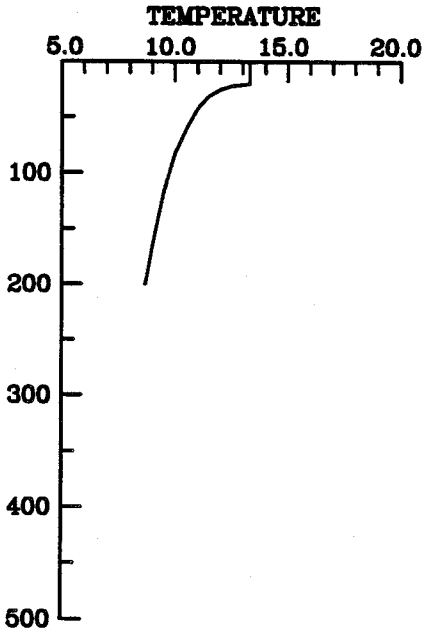
STATION GC4 CAST 185
12 April 1983 1130 GMT
XBT Transect GC-3
XBT Map 3



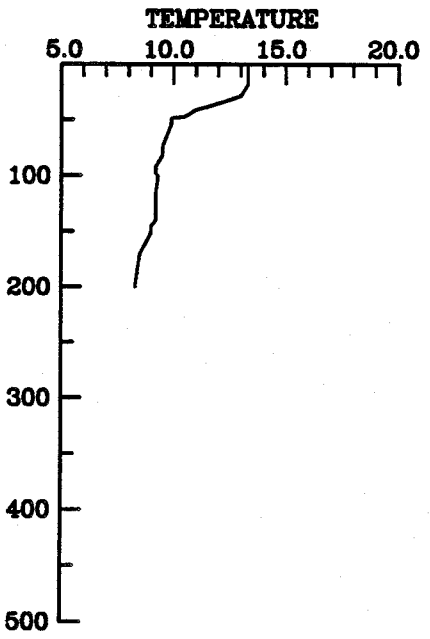
STATION GC5 CAST 186
12 April 1983 1142 GMT
XBT Transect GC-3
XBT Map 3



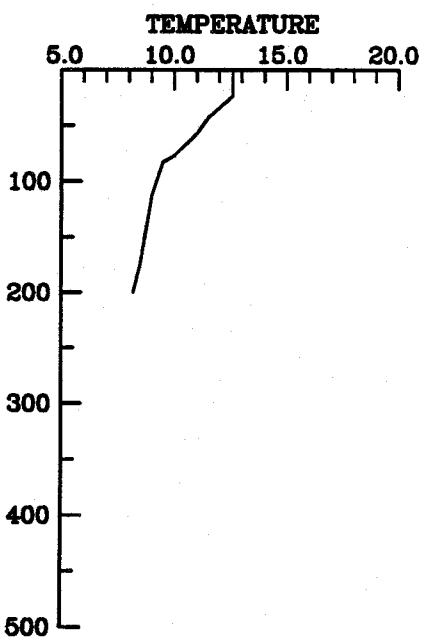
STATION GC6 CAST 187
12 April 1983 1154 GMT
XBT Transect GC-3
XBT Map 3



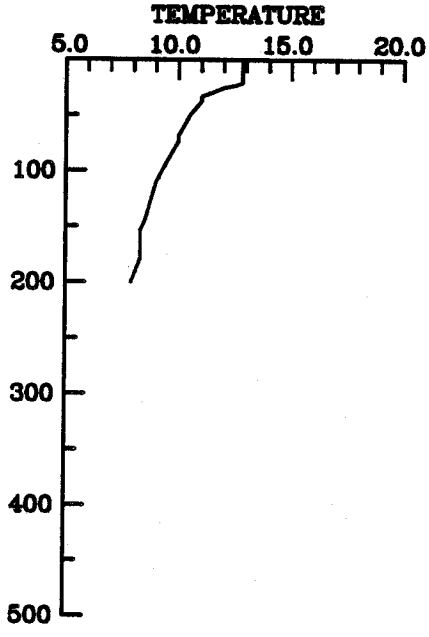
STATION GC7 CAST 188
12 April 1983 1206 GMT
XBT Transect GC-3
XBT Map 3



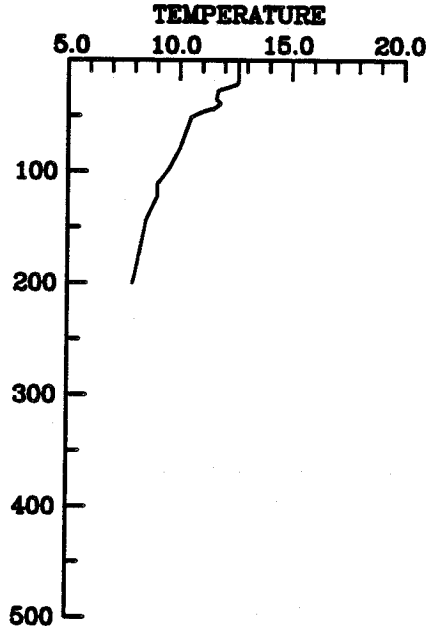
STATION GC8 CAST 189
12 April 1983 1218 GMT
XBT Transect GC-3
XBT Map 3



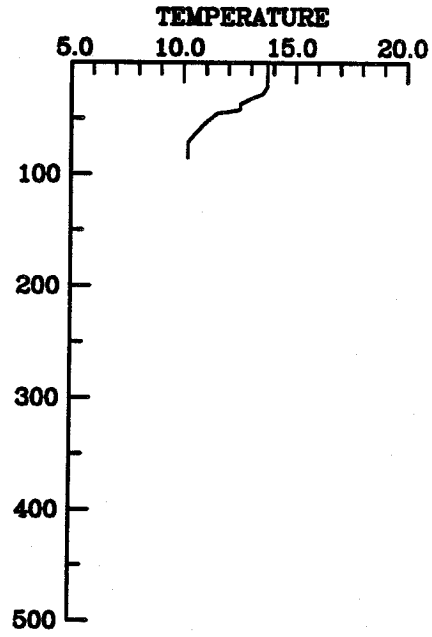
STATION GC9 CAST 190
12 April 1983 1236 GMT
XBT Transect GC-3
XBT Map 3



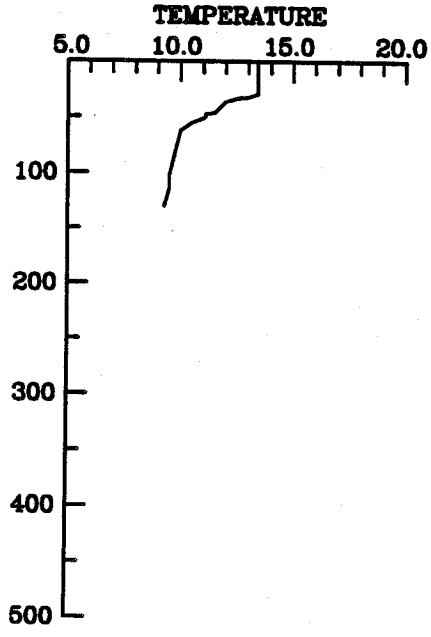
STATION GC0 CAST 191
12 April 1983 1248 GMT
XBT Transect GC-3
XBT Map 3



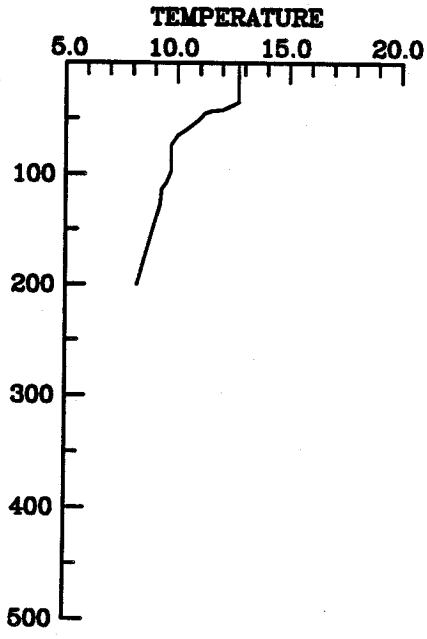
STATION C10 CAST 192
12 April 1983 1430 GMT
XBT Transect C-3
XBT Map 3



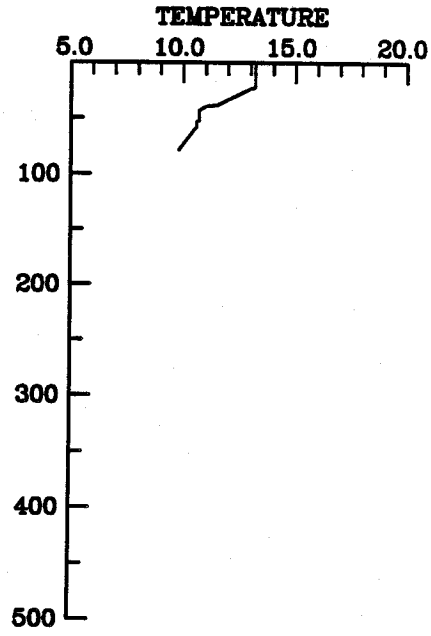
STATION C9 CAST 193
12 April 1983 1454 GMT
XBT Transect C-3
XBT Map 3



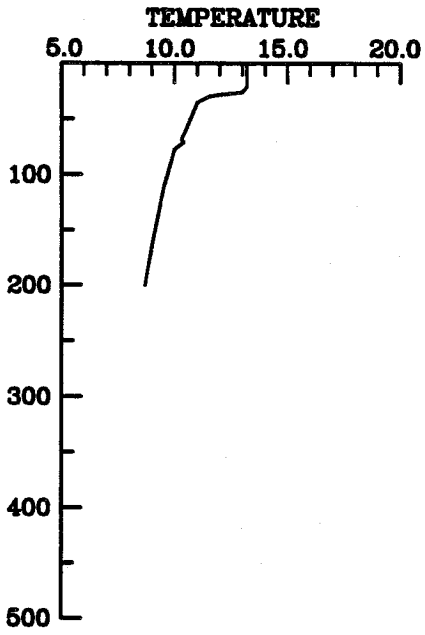
STATION C8 CAST 194
12 April 1983 1506 GMT
XBT Transect C-3
XBT Map 3



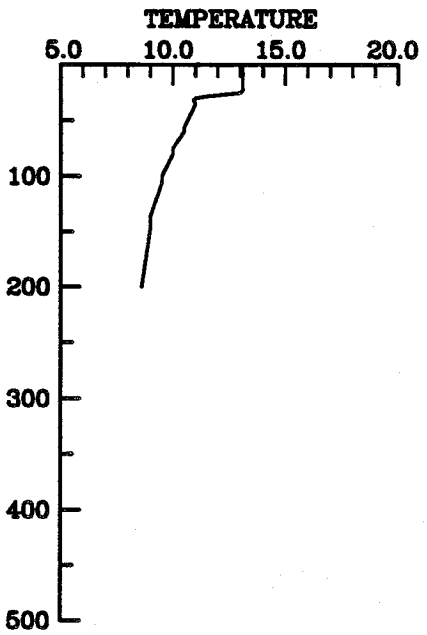
STATION C7 CAST 195
12 April 1983 1524 GMT
XBT Transect C-3
XBT Map 3



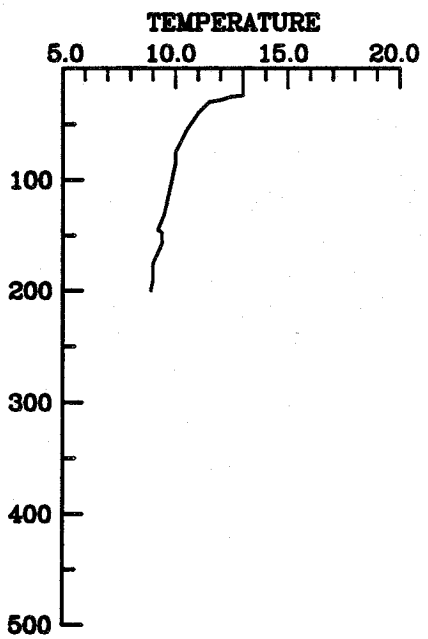
STATION C6 CAST 196
12 April 1983 1542 GMT
XBT Transect C-3
XBT Map 3



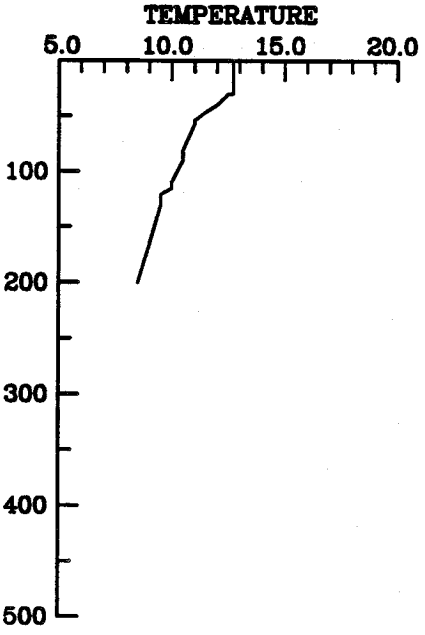
STATION C5 CAST 197
12 April 1983 1554 GMT
XBT Transect C-3
XBT Map 3



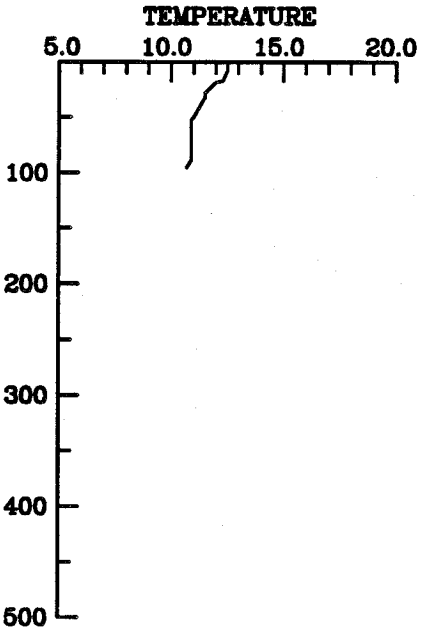
STATION C4 CAST 198
12 April 1983 1612 GMT
XBT Transect C-3
XBT Map 3



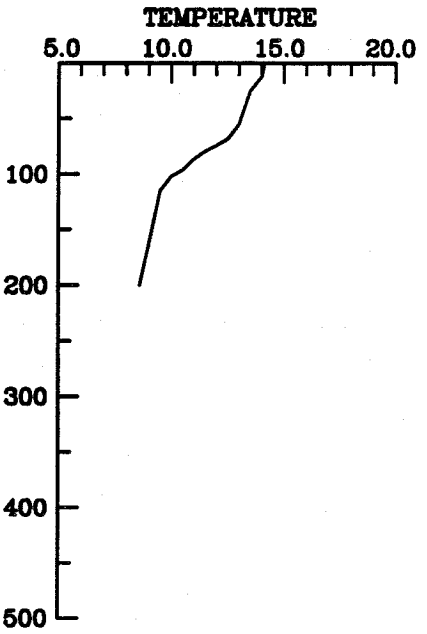
STATION C3 CAST 199
12 April 1983 1624 GMT
XBT Transect C-3
XBT Map 3



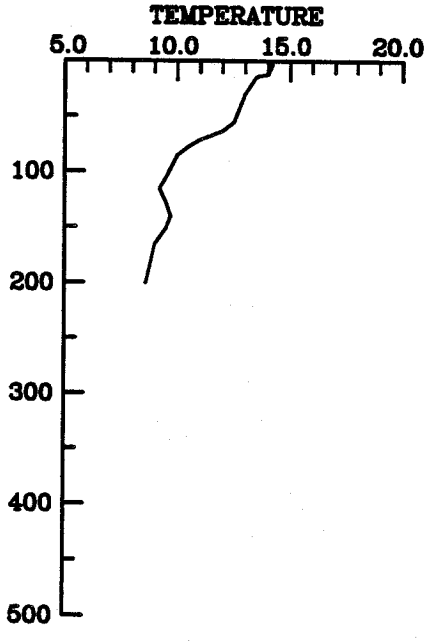
STATION C2 CAST 200
12 April 1983 1636 GMT
XBT Transect C-3
XBT Map 3



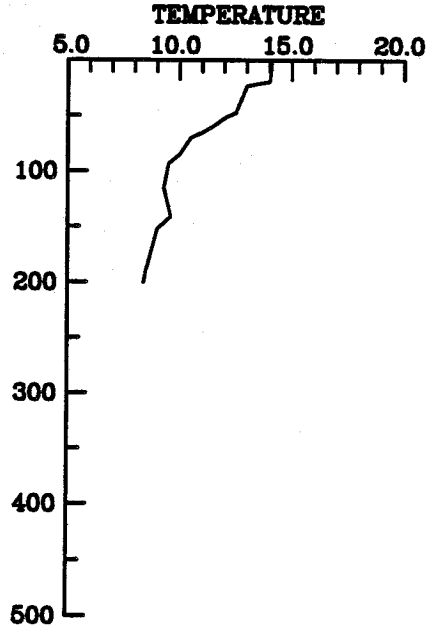
STATION A8 CAST 232
14 April 1983 2306 GMT
XBT Transect A-4
XBT Map 4



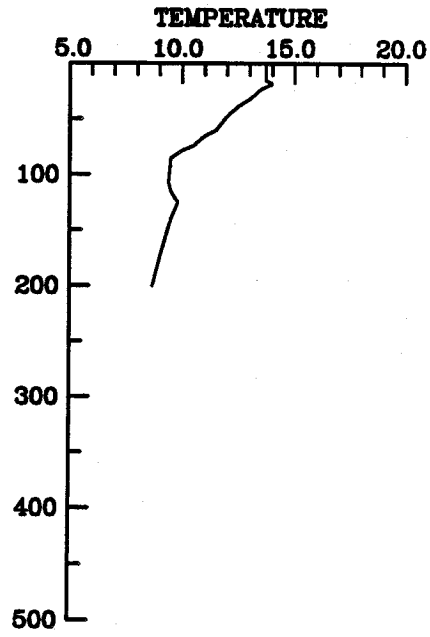
STATION A7 CAST 233
14 April 1983 2324 GMT
XBT Transect A-4
XBT Map 4



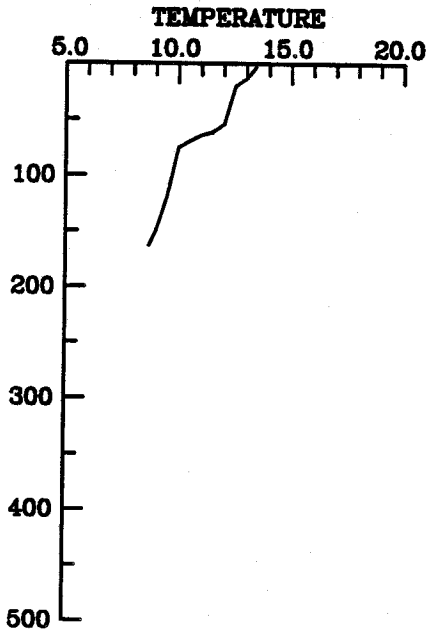
STATION A6 CAST 234
14 April 1983 2330 GMT
XBT Transect A-4
XBT Map 4



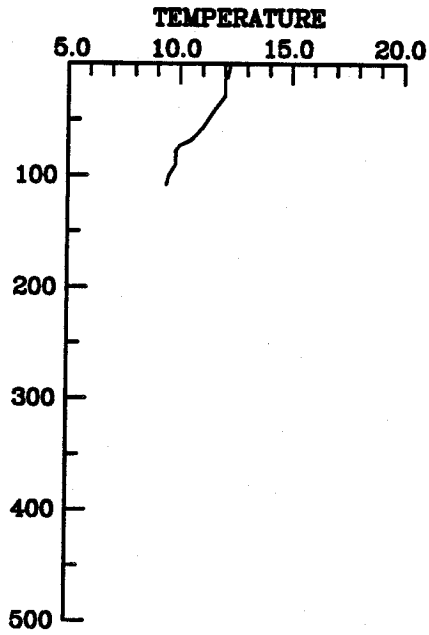
STATION A5 CAST 235
14 April 1983 2342 GMT
XBT Transect A-4
XBT Map 4



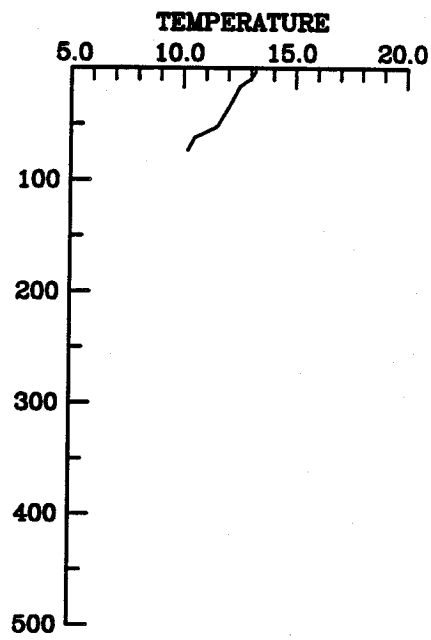
STATION A4 CAST 236
15 April 1983 6 GMT
XBT Transect A-4
XBT Map 4



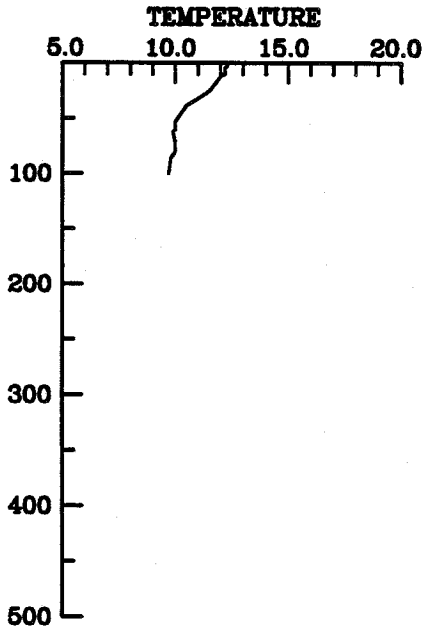
STATION A3 CAST 237
15 April 1983 18 GMT
XBT Transect A-4
XBT Map 4



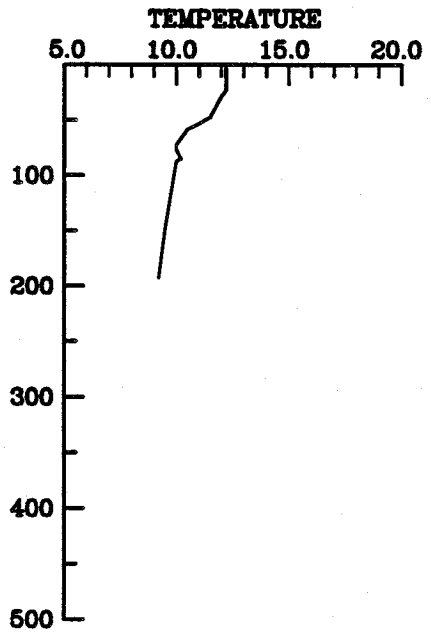
STATION A2 CAST 238
15 April 1983 36 GMT
XBT Transect A-4
XBT Map 4



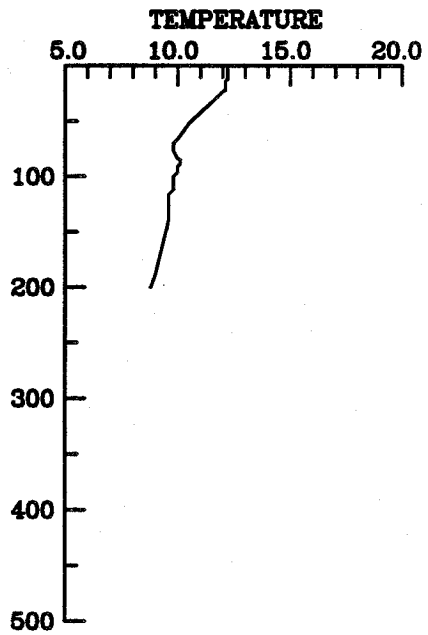
STATION AG2 CAST 241
15 April 1983 154 GMT
XBT Transect AG-4
XBT Map 4



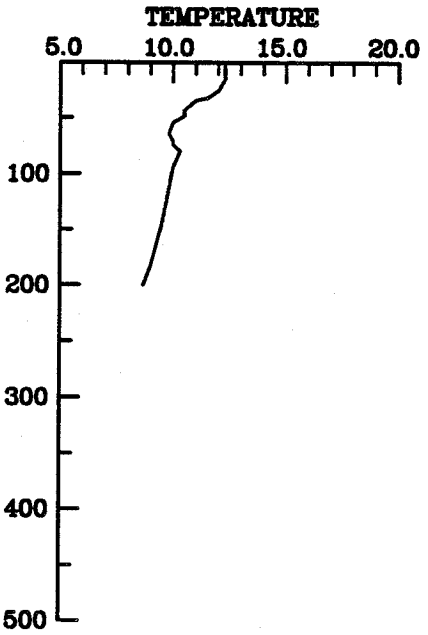
STATION AG3 CAST 242
15 April 1983 206 GMT
XBT Transect AG-4
XBT Map 4



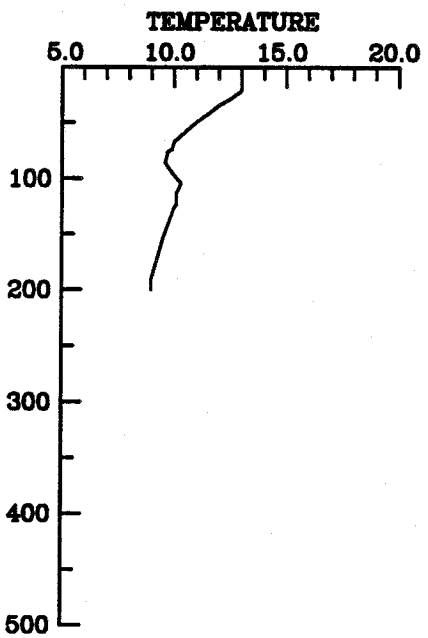
STATION AG4 CAST 243
15 April 1983 218 GMT
XBT Transect AG-4
XBT Map 4



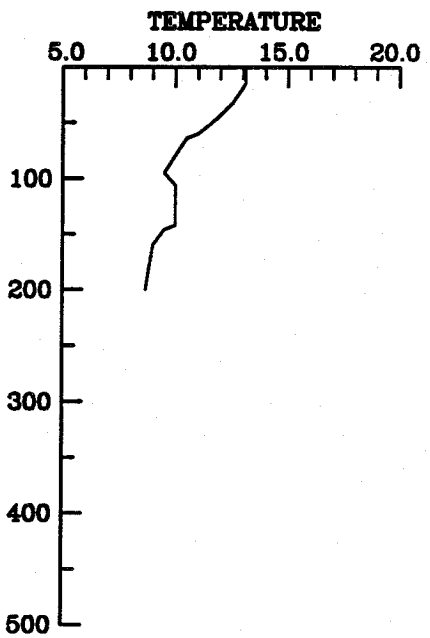
STATION AG5 CAST 244
15 April 1983 230 GMT
XBT Transect AG-4
XBT Map 4



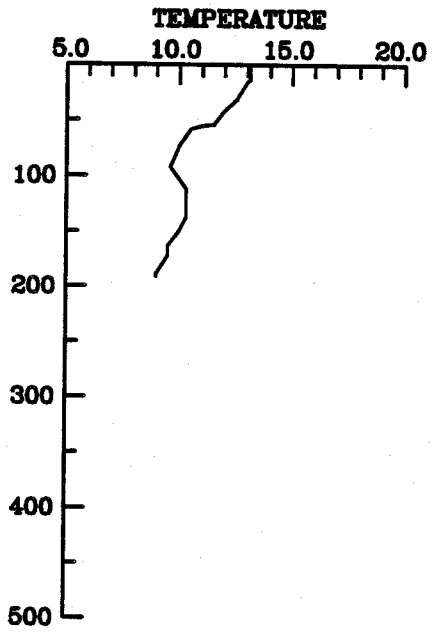
STATION AG6 CAST 245
15 April 1983 248 GMT
XBT Transect AG-4
XBT Map 4



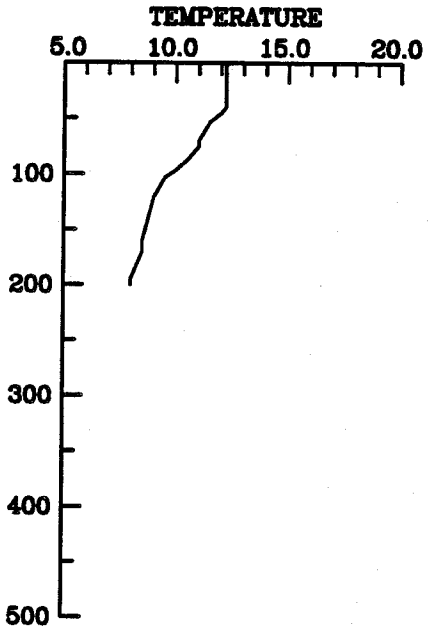
STATION AG7 CAST 246
15 April 1983 300 GMT
XBT Transect AG-4
XBT Map 4



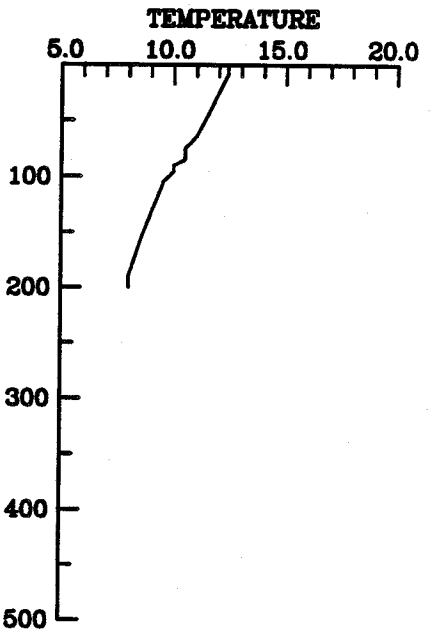
STATION AG8 CAST 247
15 April 1983 312 GMT
XBT Transect AG-4
XBT Map 4



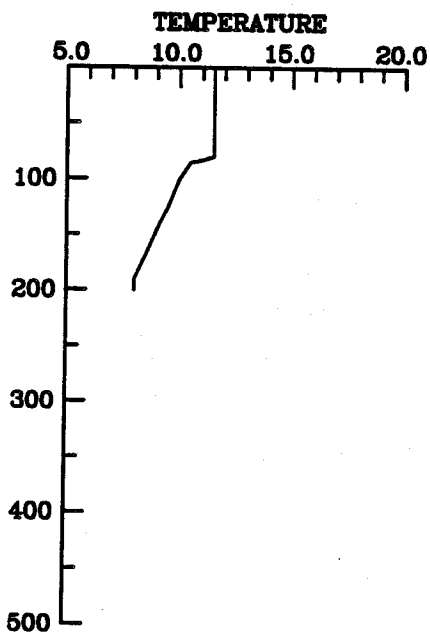
STATION G12 CAST 248
15 April 1983 424 GMT
XBT Transect G-4
XBT Map 4



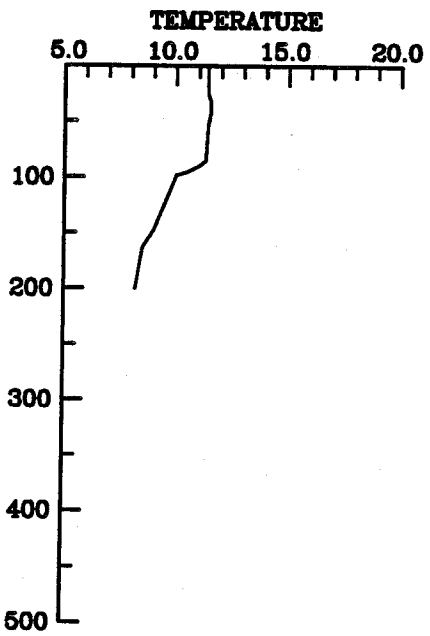
STATION G11 CAST 249
15 April 1983 436 GMT
XBT Transect G-4
XBT Map 4



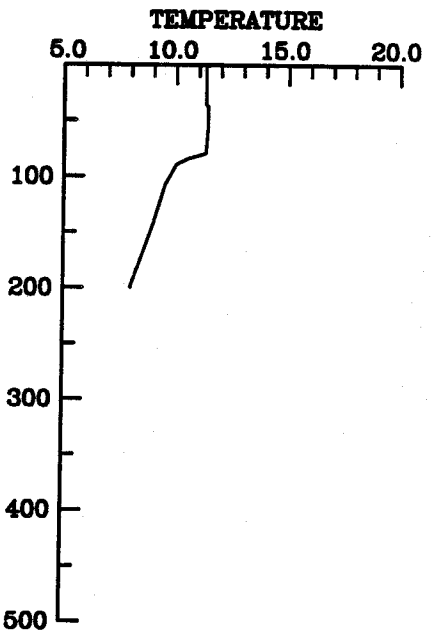
STATION G10 CAST 250
15 April 1983 454 GMT
XBT Transect G-4
XBT Map 4



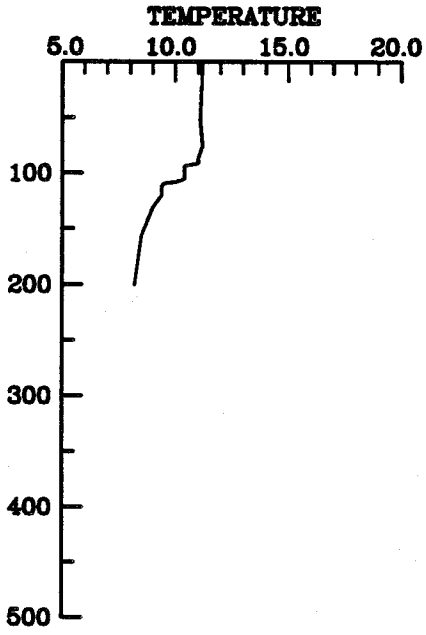
STATION G0B CAST 251
15 April 1983 500 GMT
XBT Map 4



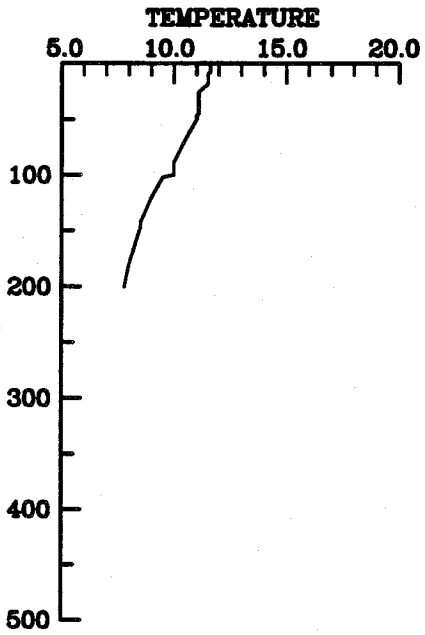
STATION G9 CAST 252
15 April 1983 506 GMT
XBT Transect G-4
XBT Map 4



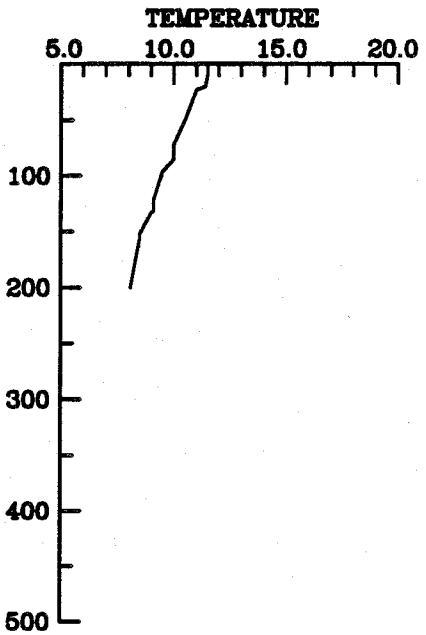
STATION G8 CAST 253
15 April 1983 524 GMT
XBT Transect G-4
XBT Map 4



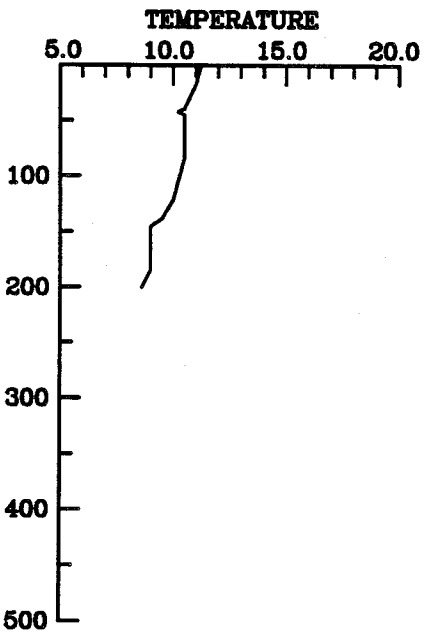
STATION G7 CAST 254
15 April 1983 536 GMT
XBT Transect G-4
XBT Map 4



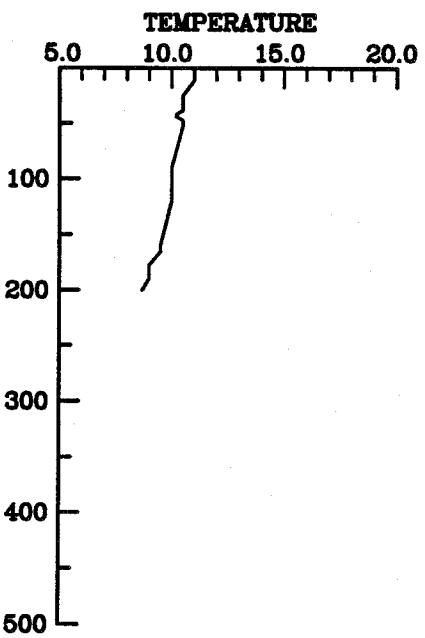
STATION G6 CAST 255
15 April 1983 554 GMT
XBT Transect G-4
XBT Map 4



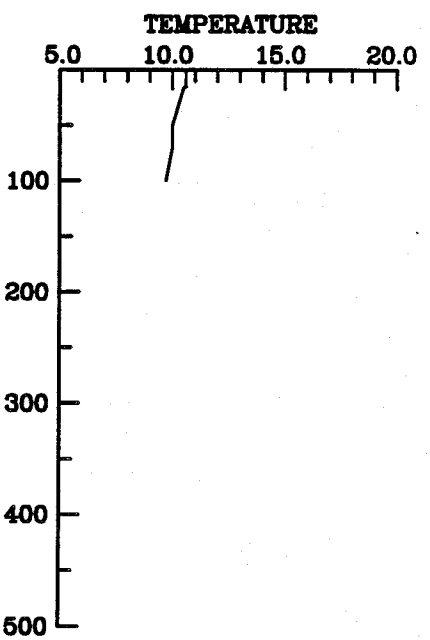
STATION G5 CAST 256
15 April 1983 612 GMT
XBT Transect G-4
XBT Map 4



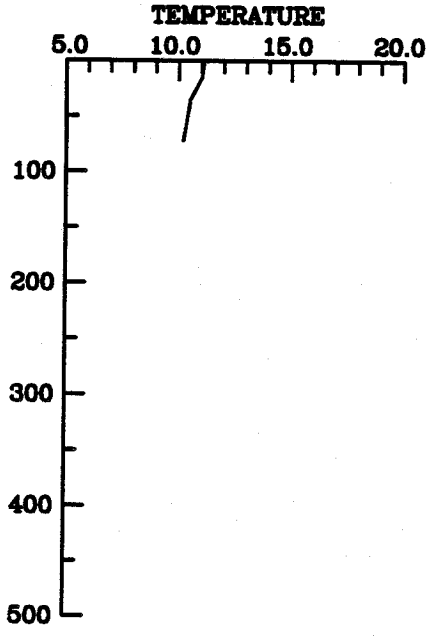
STATION G4 CAST 257
15 April 1983 630 GMT
XBT Transect G-4
XBT Map 4



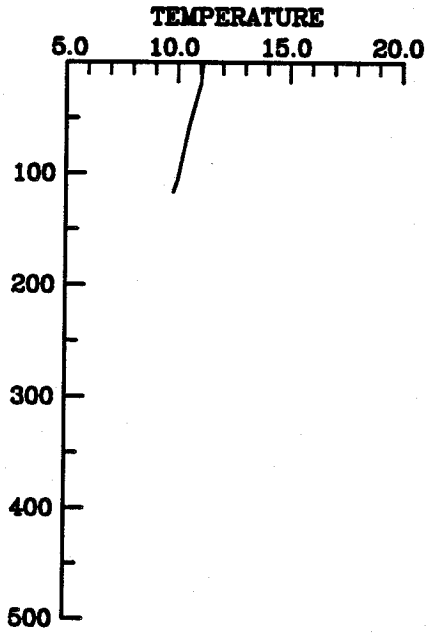
STATION G3 CAST 258
15 April 1983 648 GMT
XBT Transect G-4
XBT Map 4



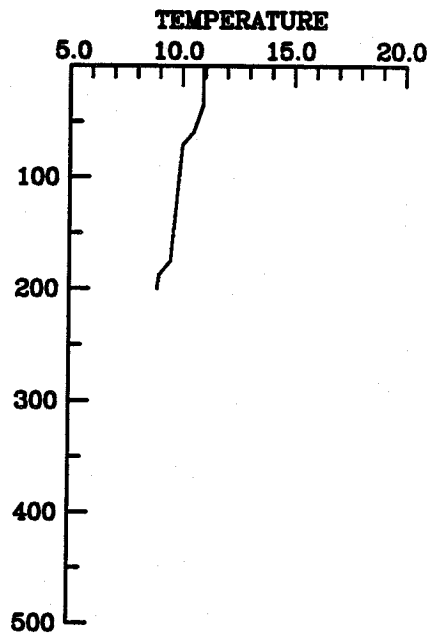
STATION GC2 CAST 261
15 April 1983 830 GMT
XBT Transect GC-4
XBT Map 4



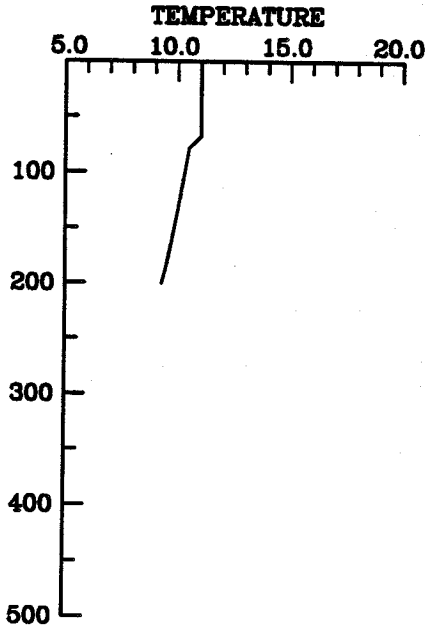
STATION GC3 CAST 262
15 April 1983 842 GMT
XBT Transect GC-4
XBT Map 4



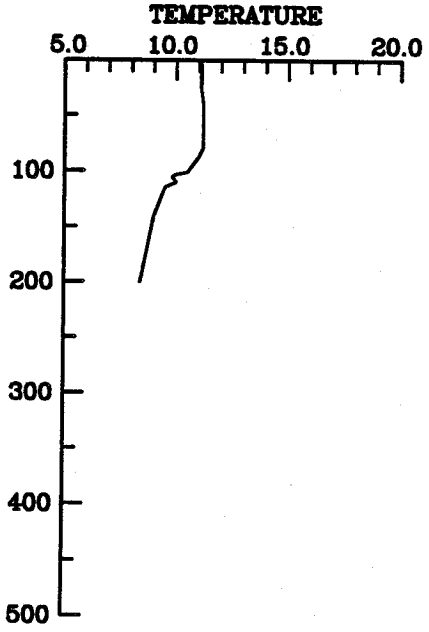
STATION GC4 CAST 263
15 April 1983 854 GMT
XBT Transect GC-4
XBT Map 4



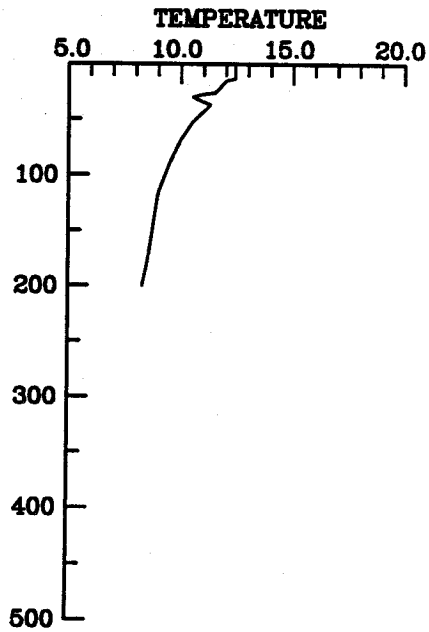
STATION GC5 CAST 264
15 April 1983 906 GMT
XBT Transect GC-4
XBT Map 4



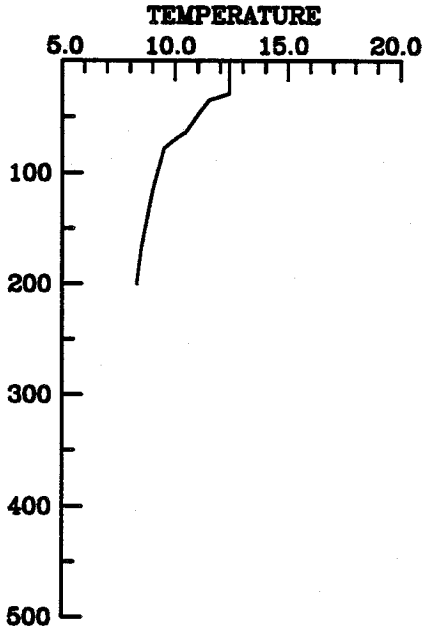
STATION GC6 CAST 265
15 April 1983 918 GMT
XBT Transect GC-4
XBT Map 4



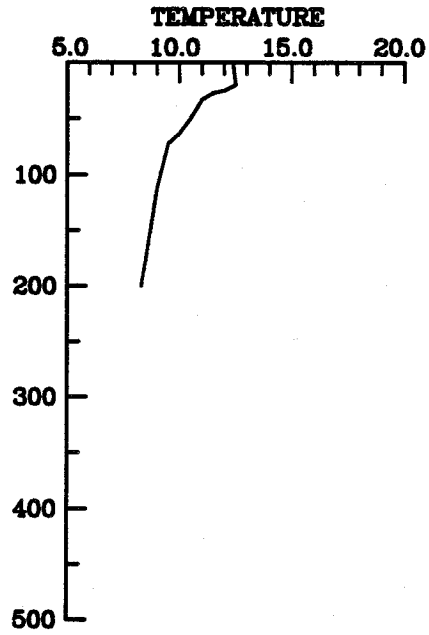
STATION GC7 CAST 266
15 April 1983 936 GMT
XBT Transect GC-4
XBT Map 4



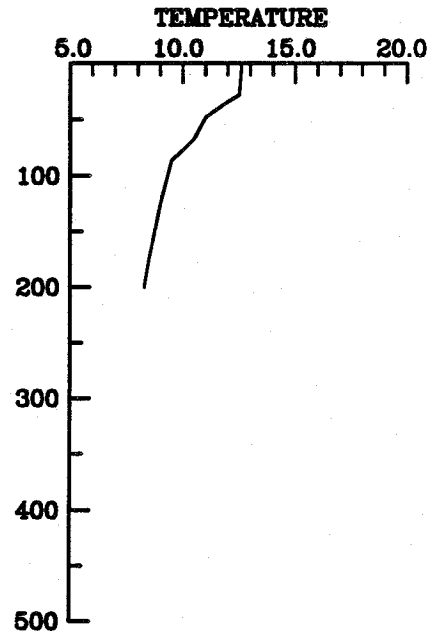
STATION GC8 CAST 267
15 April 1983 948 GMT
XBT Transect GC-4
XBT Map 4



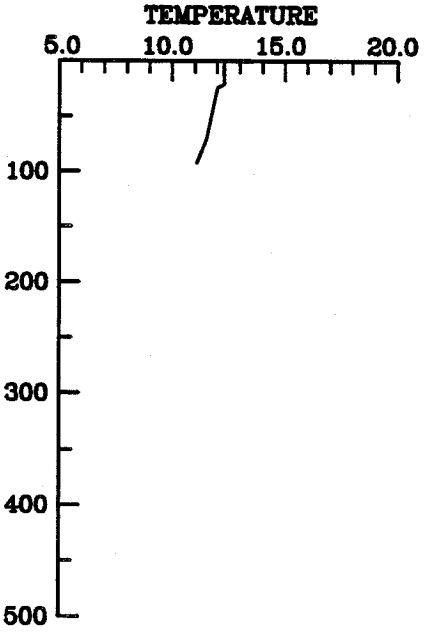
STATION GC9 CAST 268
15 April 1983 1000 GMT
XBT Transect GC-4
XBT Map 4



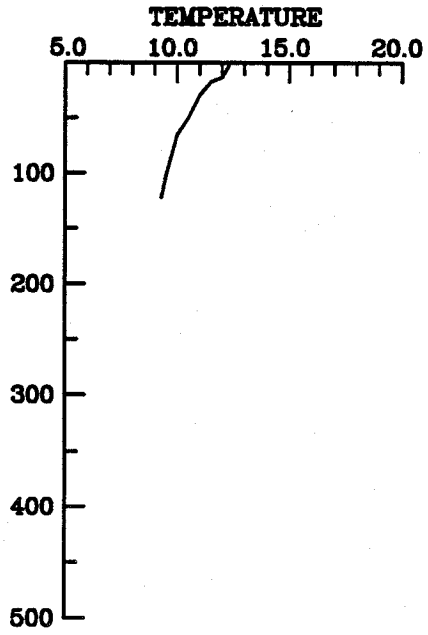
STATION GC0 CAST 269
15 April 1983 1012 GMT
XBT Transect GC-4
XBT Map 4



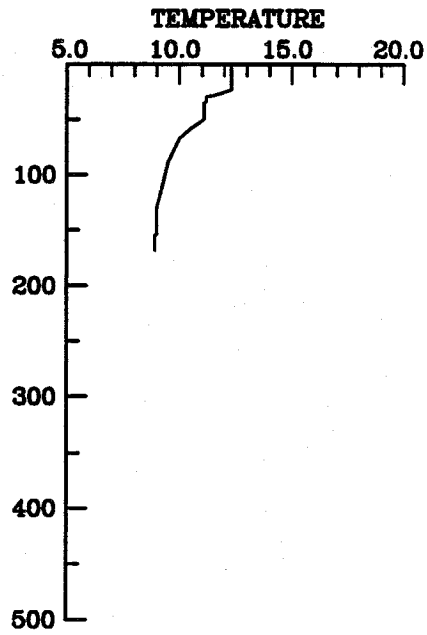
STATION C10 CAST 270
15 April 1983 1136 GMT
XBT Transect C-4
XBT Map 4



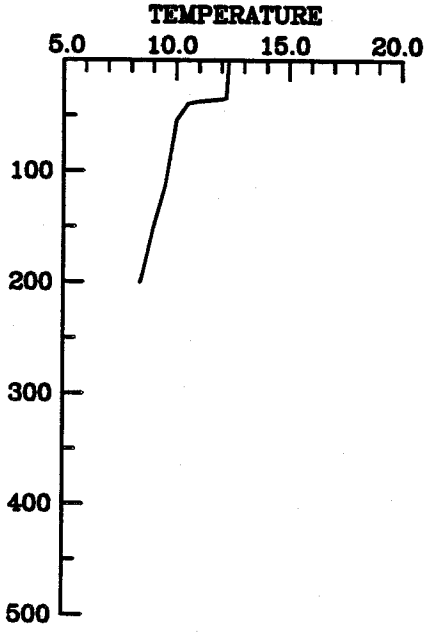
STATION C9 CAST 271
15 April 1983 1154 GMT
XBT Transect C-4
XBT Map 4



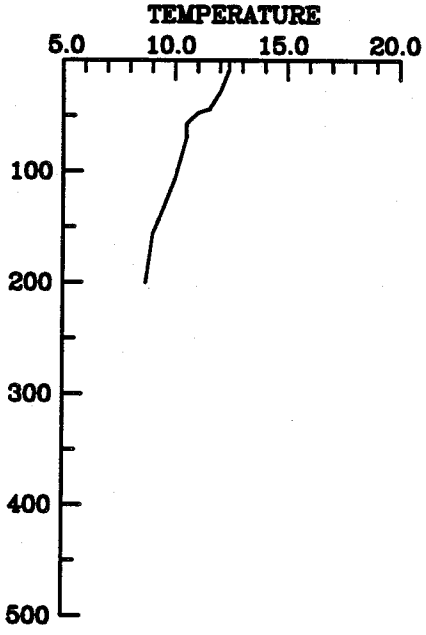
STATION C8 CAST 272
15 April 1983 1206 GMT
XBT Transect C-4
XBT Map 4



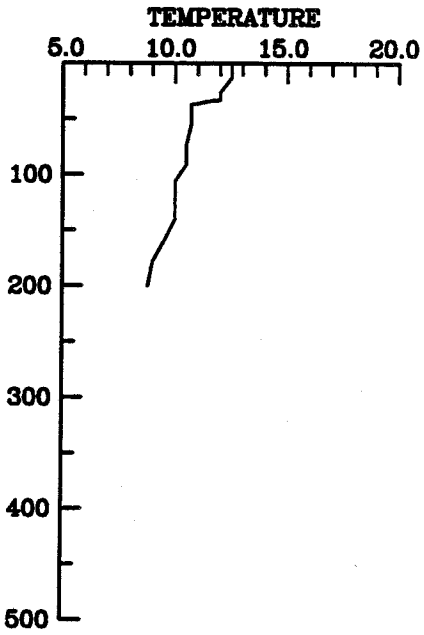
STATION C7 CAST 273
15 April 1983 1224 GMT
XBT Transect C-4
XBT Map 4



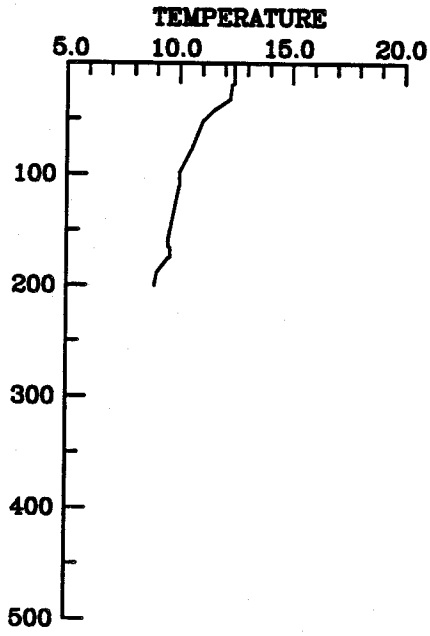
STATION C6 CAST 274
15 April 1983 1236 GMT
XBT Transect C-4
XBT Map 4



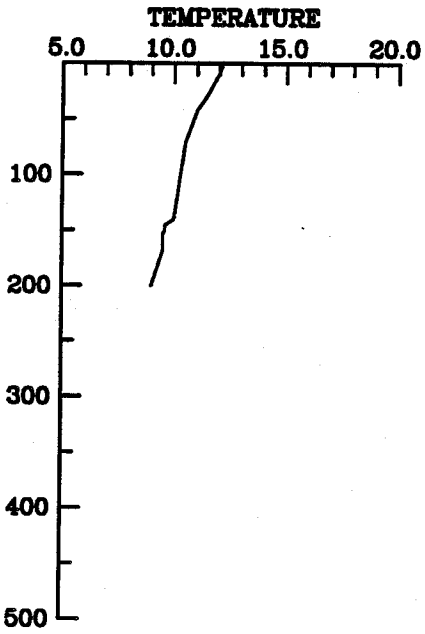
STATION C5 CAST 275
15 April 1983 1254 GMT
XBT Transect C-4
XBT Map 4



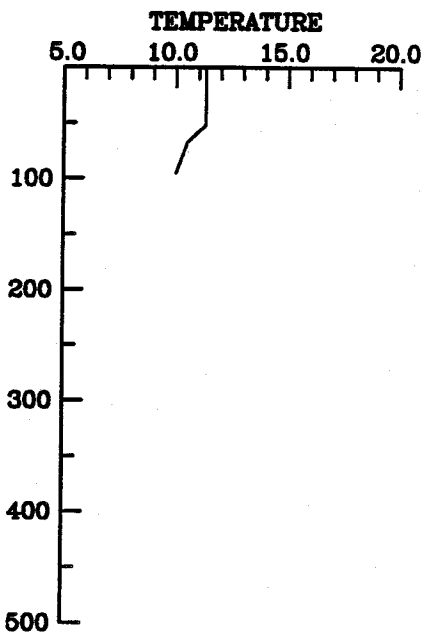
STATION C4 CAST 276
15 April 1983 1300 GMT
XBT Transect C-4
XBT Map 4



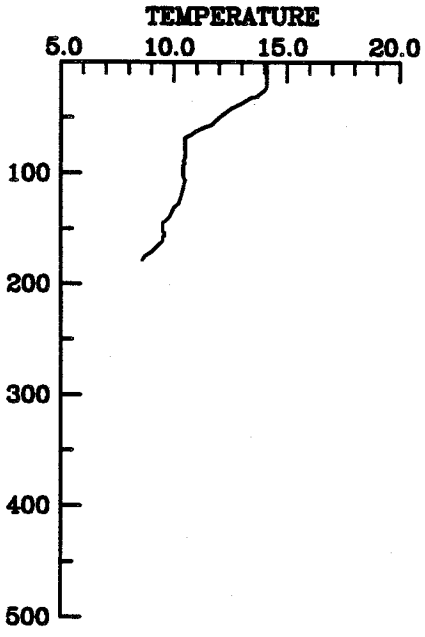
STATION C3 CAST 277
15 April 1983 1312 GMT
XBT Transect C-4
XBT Map 4



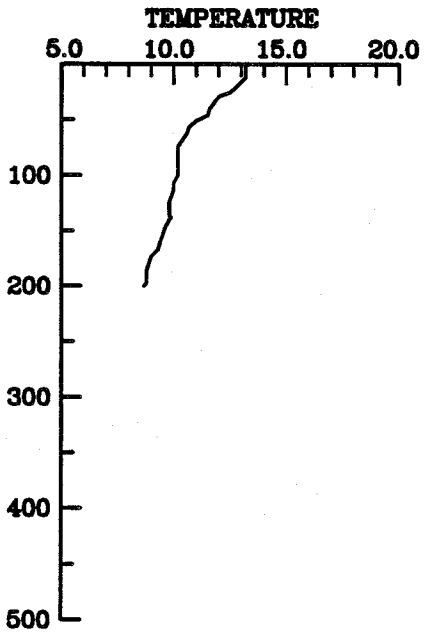
STATION C2 CAST 278
15 April 1983 1330 GMT
XBT Transect C-4
XBT Map 4



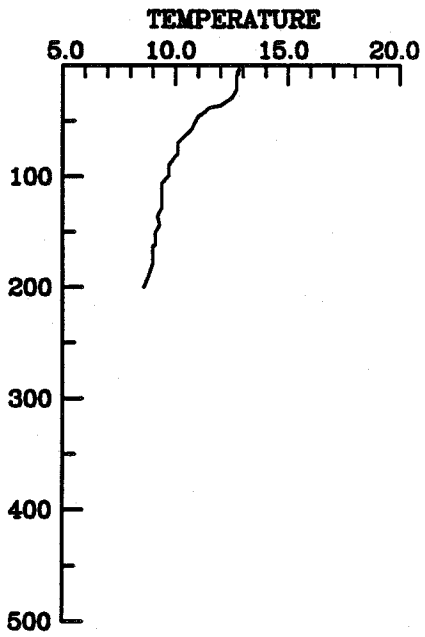
STATION U2 CAST 293
19 April 1983 1518 GMT
XBT Transect U-1
XBT Map 5



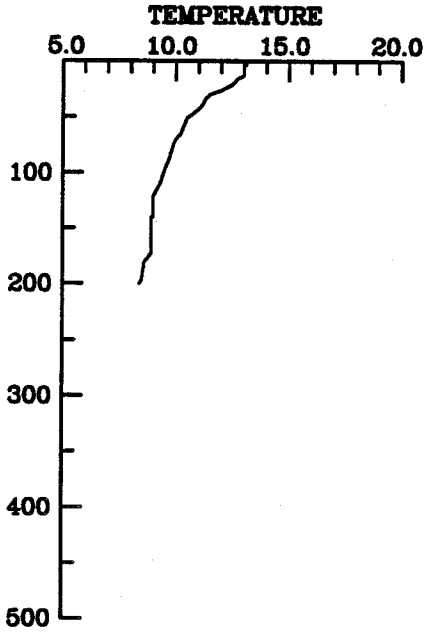
STATION U3 CAST 294
19 April 1983 1548 GMT
XBT Transect U-1
XBT Map 5



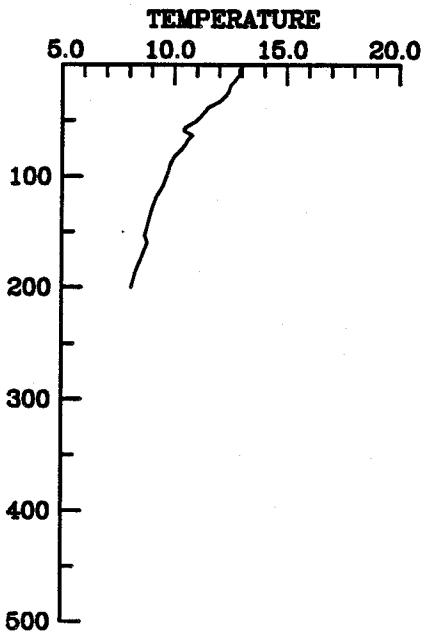
STATION U4 CAST 295
19 April 1983 1612 GMT
XBT Transect U-1
XBT Map 5



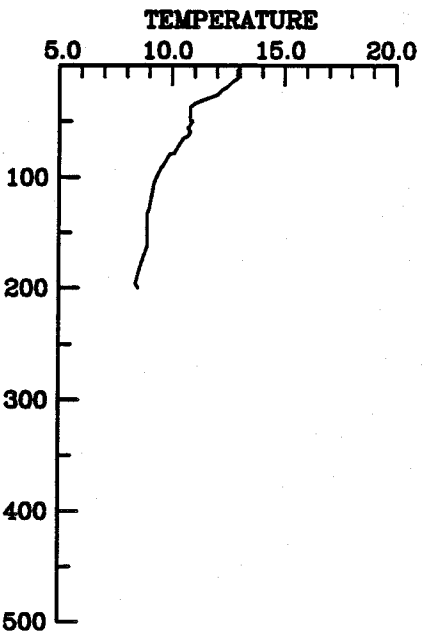
STATION U5 CAST 296
19 April 1983 1636 GMT
XBT Transect U-1
XBT Map 5



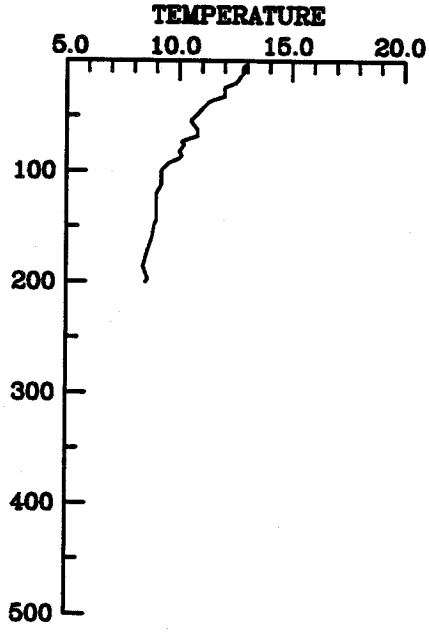
STATION U6 CAST 297
19 April 1983 1654 GMT
XBT Transect U-1
XBT Map 5



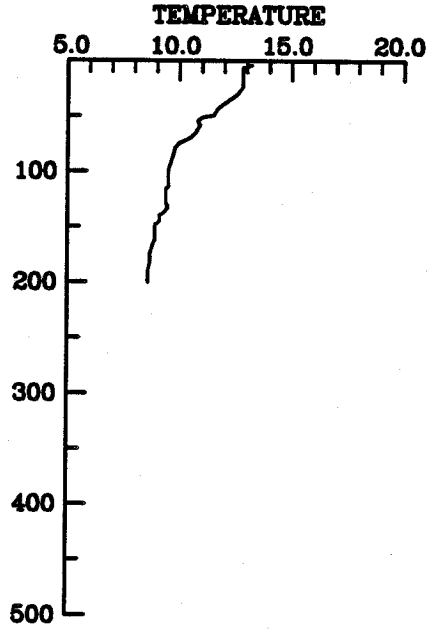
STATION U7 CAST 298
19 April 1983 1712 GMT
XBT Transect U-1
XBT Map 5



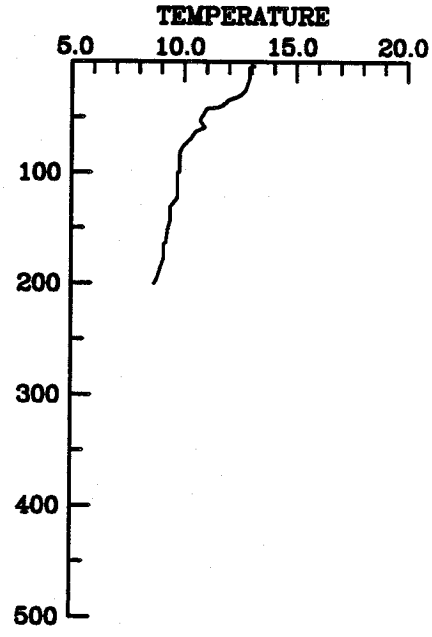
STATION U8 CAST 299
19 April 1983 1724 GMT
XBT Transect U-1
XBT Map 5



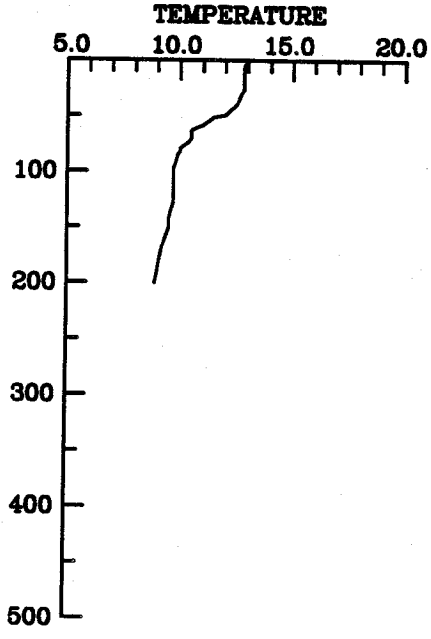
STATION U9 CAST 300
19 April 1983 1742 GMT
XBT Transect U-1
XBT Map 5



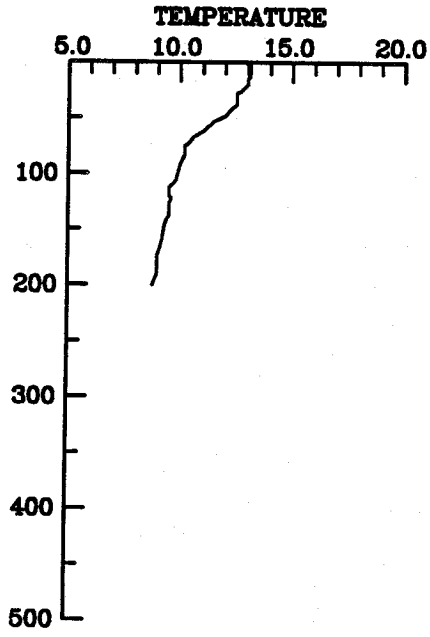
STATION U10 CAST 301
19 April 1983 1754 GMT
XBT Transect U-1
XBT Map 5



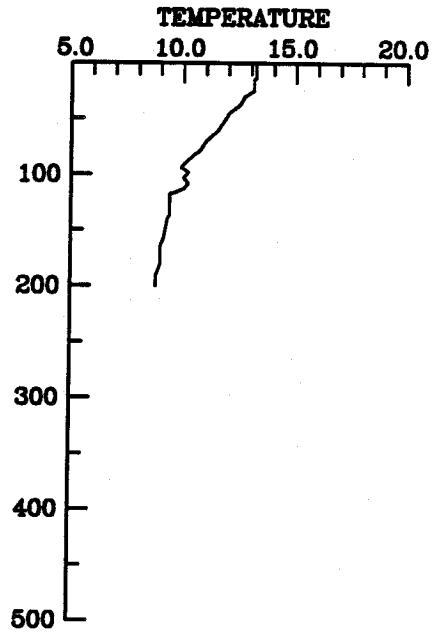
STATION U11 CAST 302
19 April 1983 1806 GMT
XBT Transect U-1
XBT Map 5



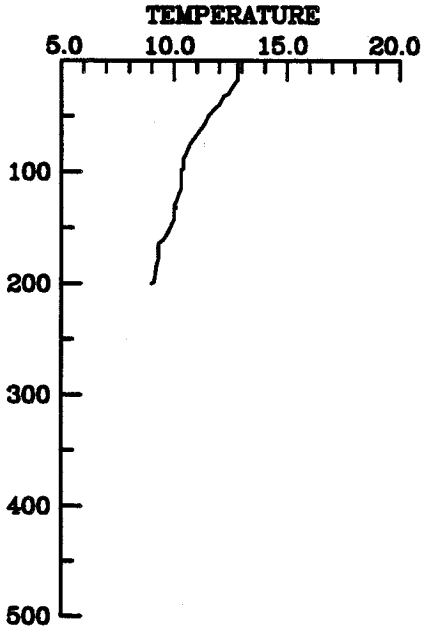
STATION U12 CAST 303
19 April 1983 1830 GMT
XBT Transect U-1
XBT Map 5



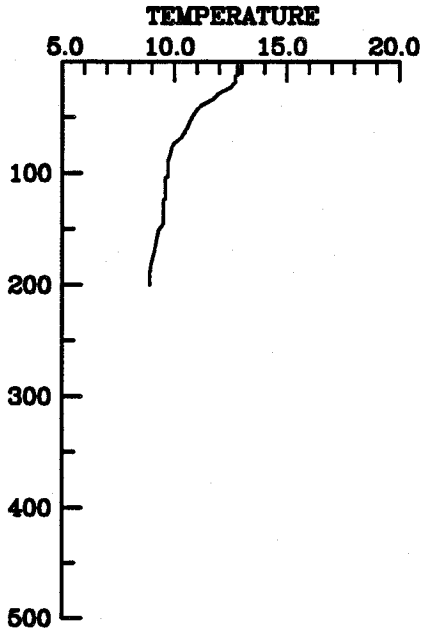
STATION U13 CAST 304
19 April 1983 1848 GMT
XBT Transect U-1
XBT Map 5



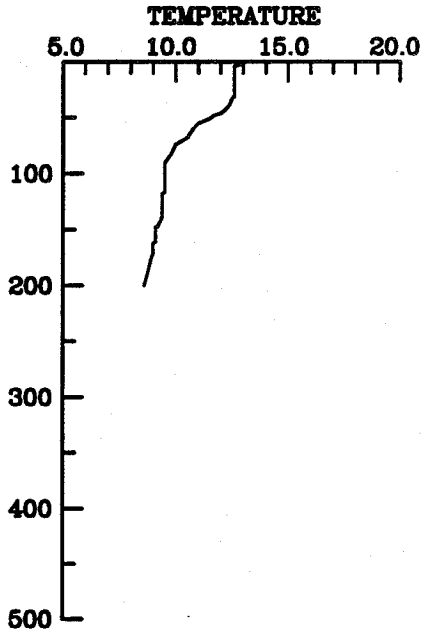
STATION V12 CAST 307
19 April 1983 2048 GMT
XBT Transect V-1
XBT Map 5



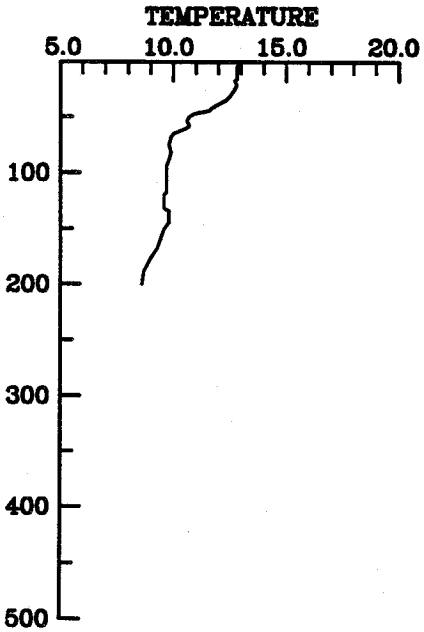
STATION V11 CAST 308
19 April 1983 2112 GMT
XBT Transect V-1
XBT Map 5



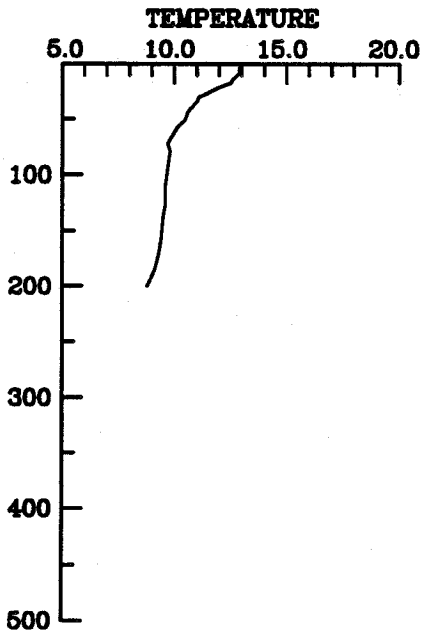
STATION V10 CAST 309
19 April 1983 2136 GMT
XBT Transect V-1
XBT Map 5



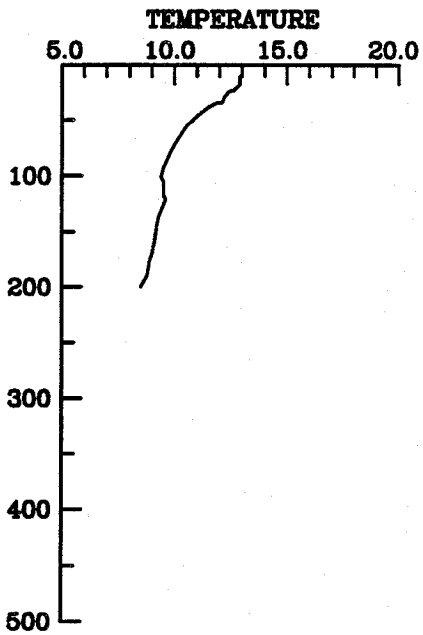
STATION V9 CAST 310
19 April 1983 2300 GMT
XBT Transect V-1
XBT Map 5



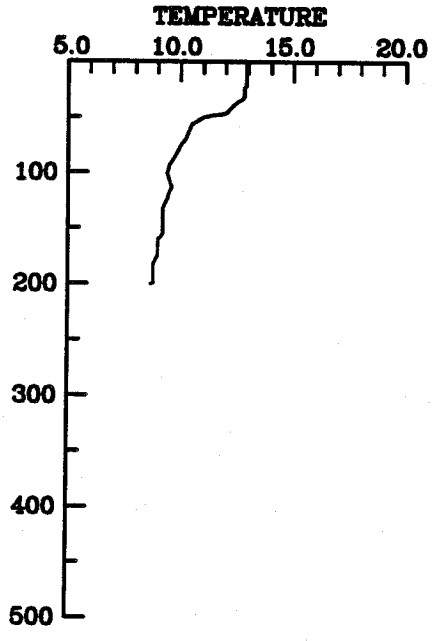
STATION V8 CAST 311
19 April 1983 2318 GMT
XBT Transect V-1
XBT Map 5



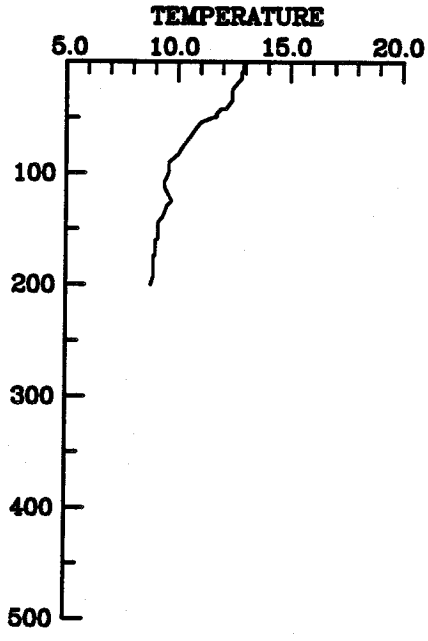
STATION V7 CAST 312
19 April 1983 2336 GMT
XBT Transect V-1
XBT Map 5



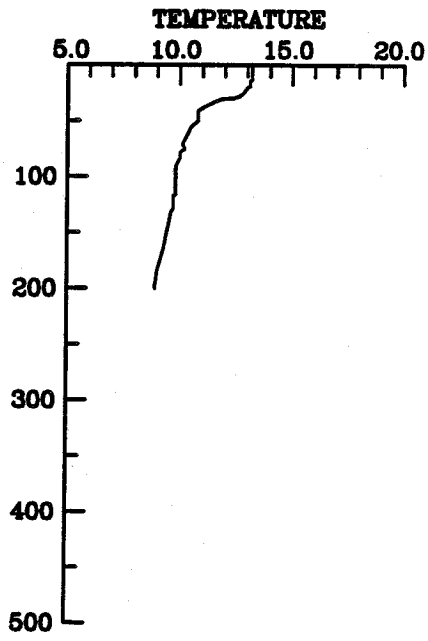
STATION V6 CAST 313
19 April 1983 2354 GMT
XBT Transect V-1
XBT Map 5



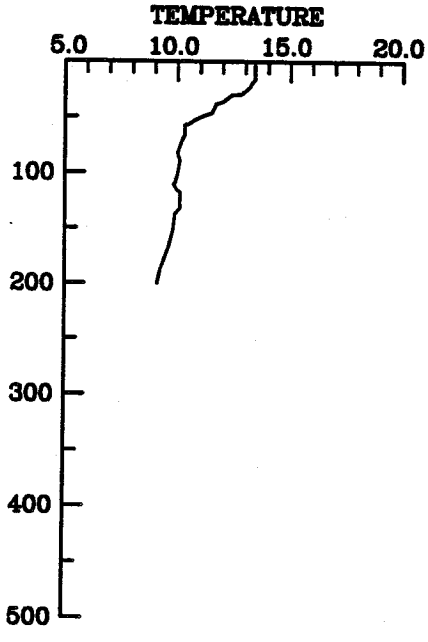
STATION V5 CAST 314
20 April 1983 18 GMT
XBT Transect V-1
XBT Map 5



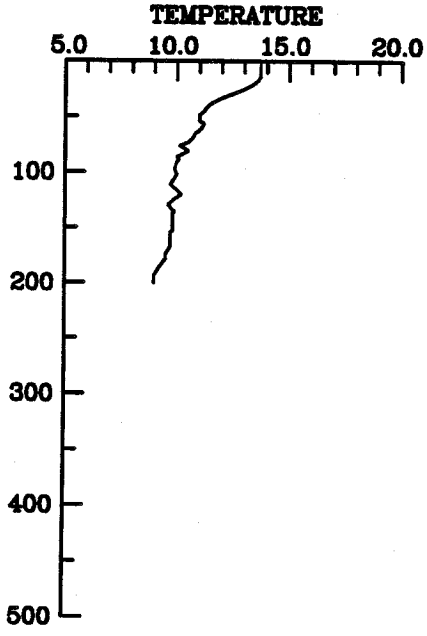
STATION V4 CAST 315
20 April 1983 42 GMT
XBT Transect V-1
XBT Map 5



STATION V3 CAST 316
20 April 1983 106 GMT
XBT Transect V-1
XBT Map 5

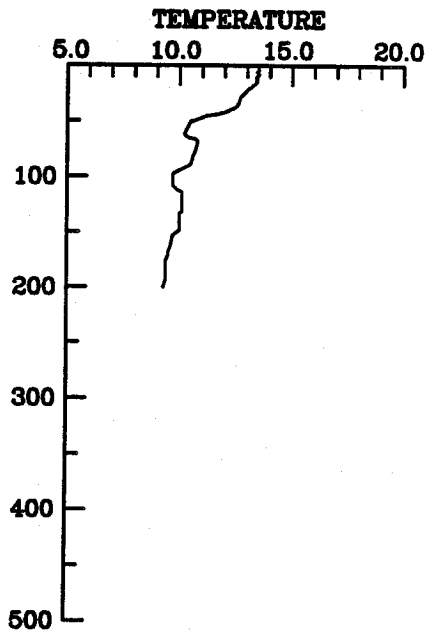


STATION V2 CAST 317
20 April 1983 130 GMT
XBT Transect V-1
XBT Map 5

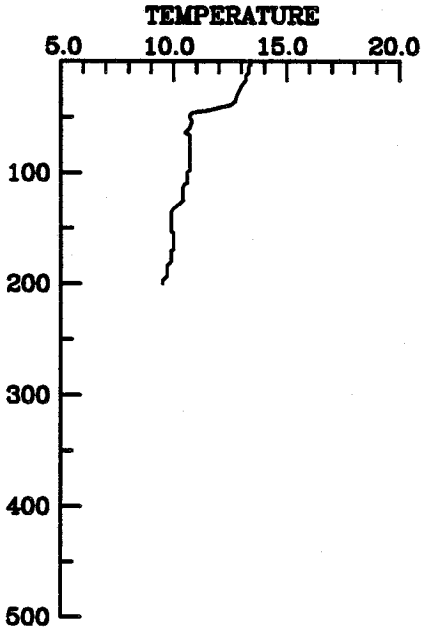


STATION C6 CAST 319
20 April 1983 224 GMT

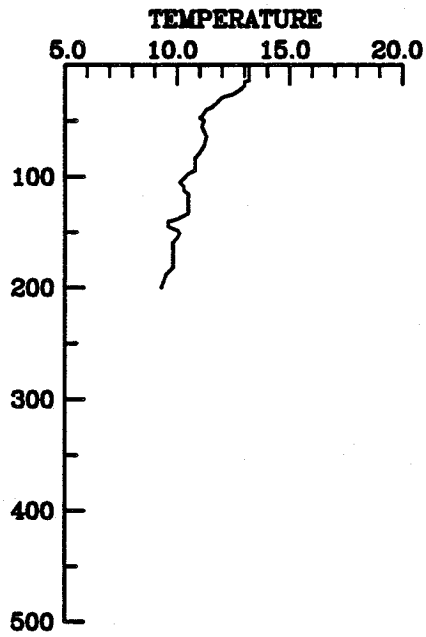
XBT Map 5



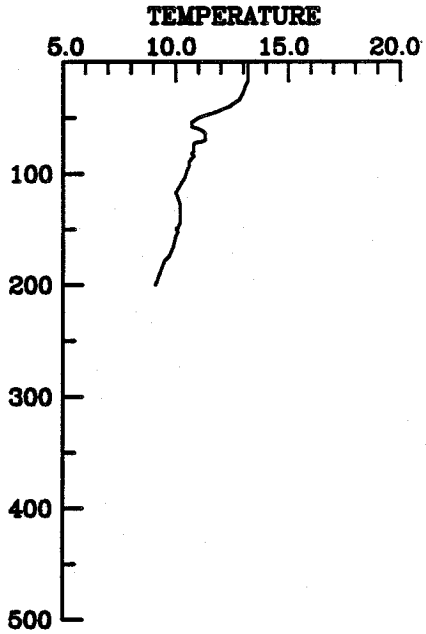
STATION W2 CAST 321
20 April 1983 318 GMT
XBT Transect W-1
XBT Map 5



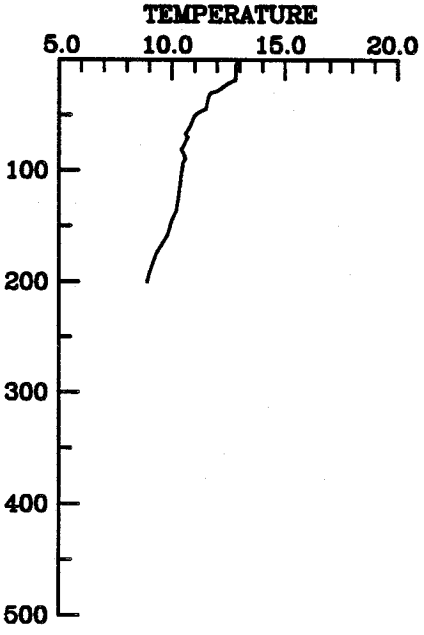
STATION W3 CAST 322
20 April 1983 342 GMT
XBT Transect W-1
XBT Map 5



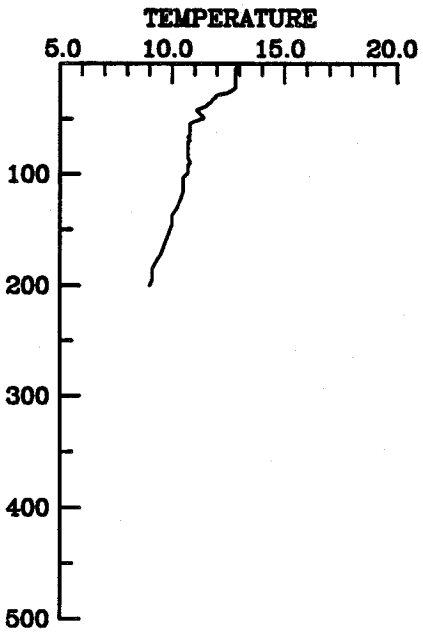
STATION W4 CAST 323
20 April 1983 400 GMT
XBT Transect W-1
XBT Map 5



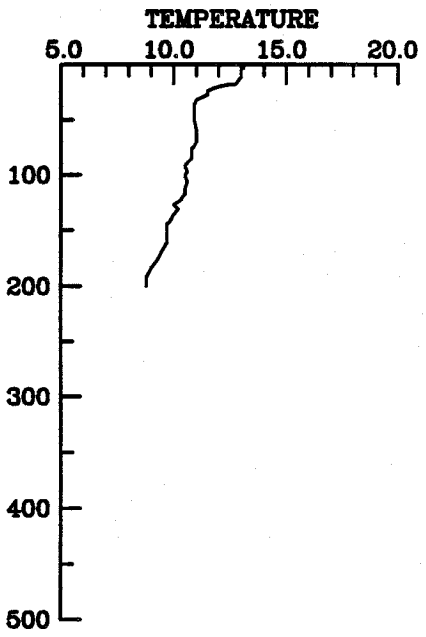
STATION W5 CAST 324
20 April 1983 418 GMT
XBT Transect W-1
XBT Map 5



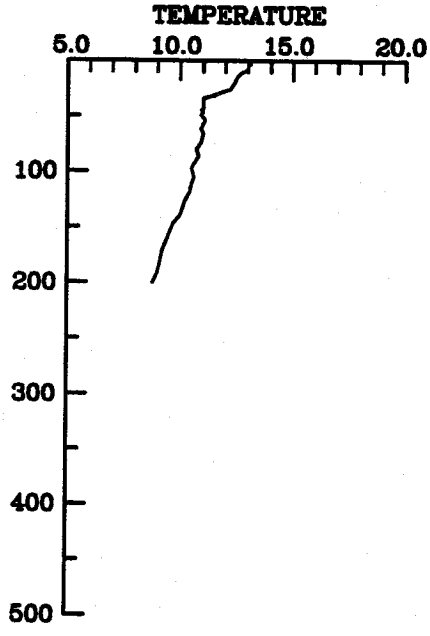
STATION W6 CAST 325
20 April 1983 442 GMT
XBT Transect W-1
XBT Map 5



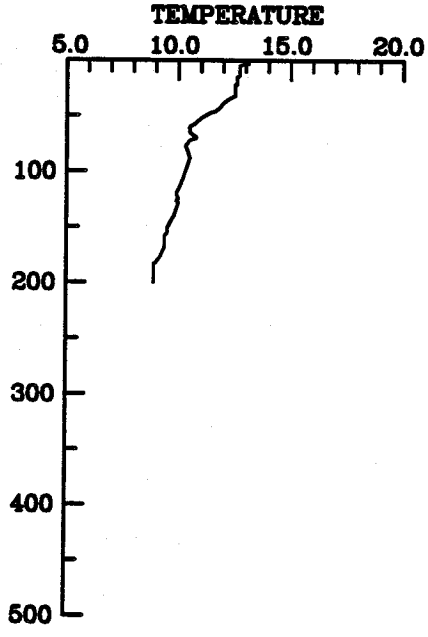
STATION W7 CAST 326
20 April 1983 542 GMT
XBT Transect W-1
XBT Map 5



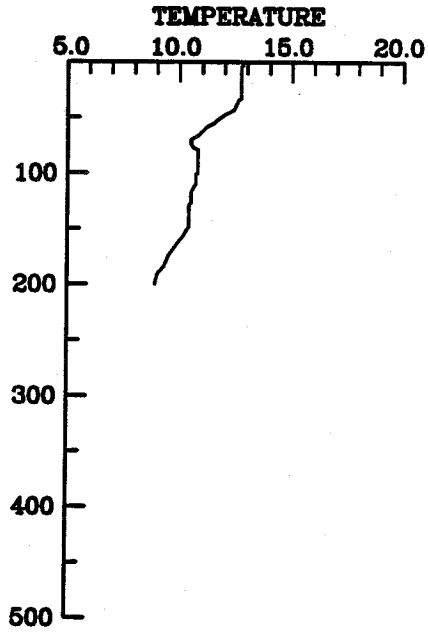
STATION W8 CAST 327
20 April 1983 600 GMT
XBT Transect W-1
XBT Map 5



STATION W9 CAST 328
20 April 1983 618 GMT
XBT Transect W-1
XBT Map 5

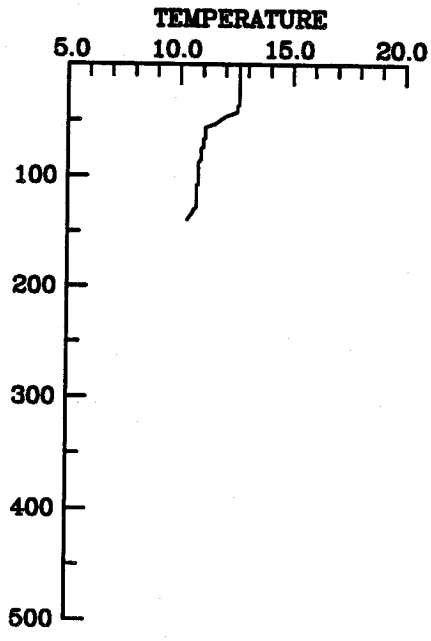


STATION W10 CAST 329
20 April 1983 636 GMT
XBT Transect W-1
XBT Map 5

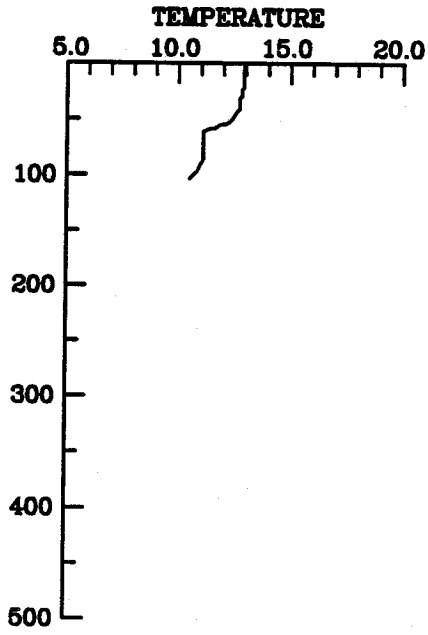


STATION A4 CAST 331
20 April 1983 836 GMT

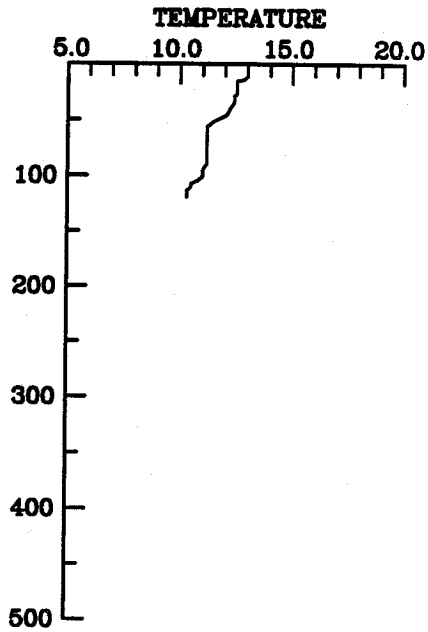
XBT Map 5



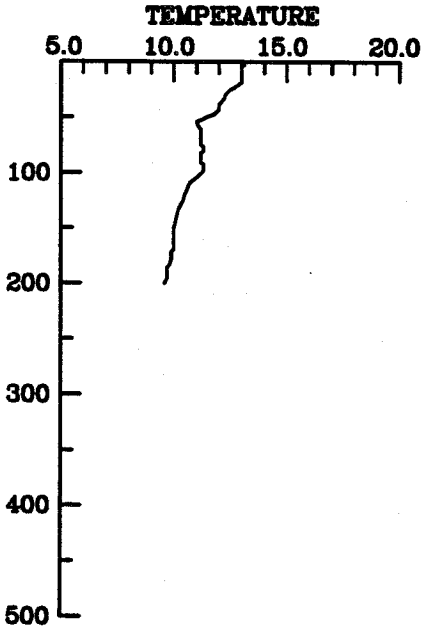
STATION X9 CAST 333
20 April 1983 936 GMT
XBT Transect X-1
XBT Map 5



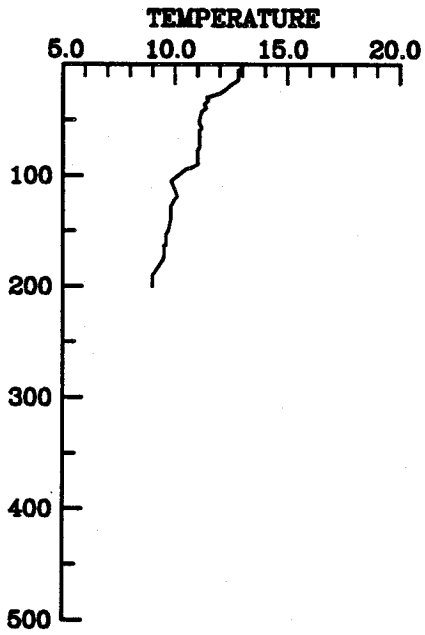
STATION X8 CAST 334
20 April 1983 948 GMT
XBT Transect X-1
XBT Map 5



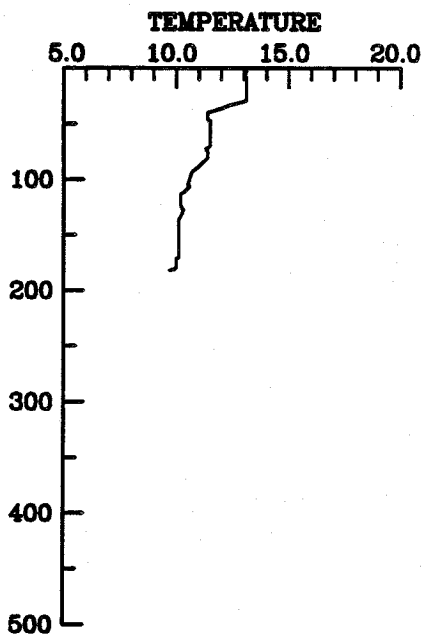
STATION X7 CAST 335
20 April 1983 1006 GMT
XBT Transect X-1
XBT Map 5



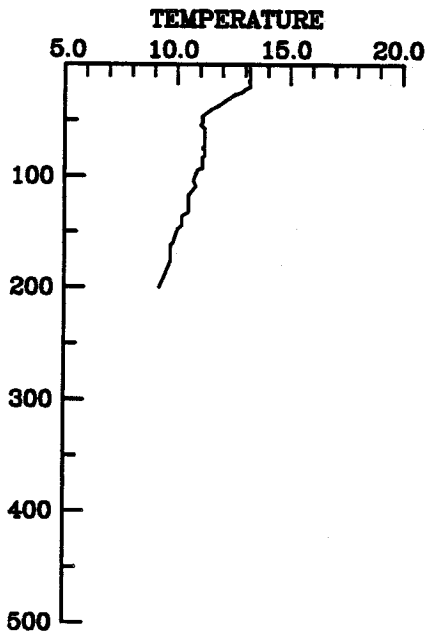
STATION X6 CAST 336
20 April 1983 1024 GMT
XBT Transect X-1
XBT Map 5



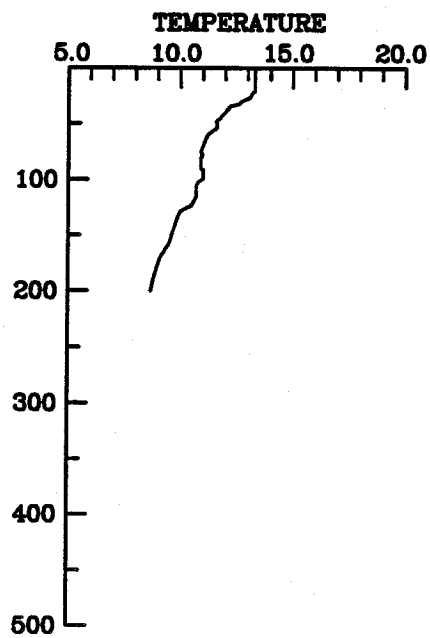
STATION X5 CAST 337
20 April 1983 1036 GMT
XBT Transect X-1
XBT Map 5



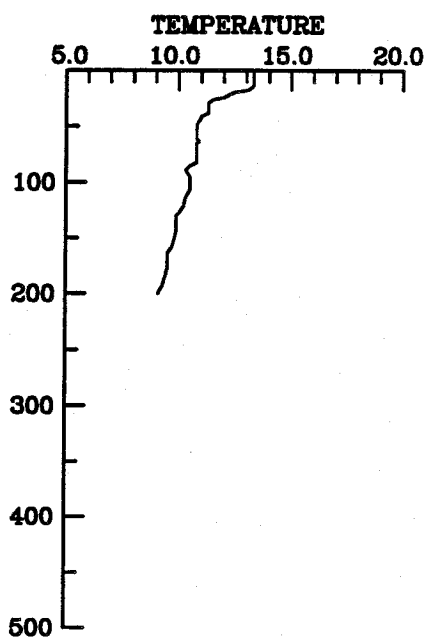
STATION X4 CAST 338
20 April 1983 1054 GMT
XBT Transect X-1
XBT Map 5



STATION X3 CAST 339
20 April 1983 1106 GMT
XBT Transect X-1
XBT Map 5

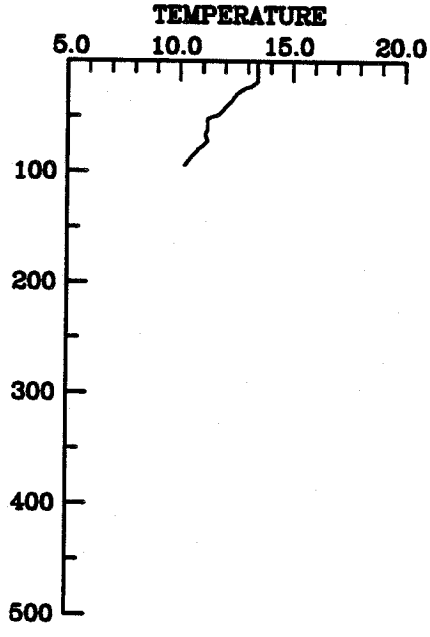


STATION X2 CAST 340
20 April 1983 1124 GMT
XBT Transect X-1
XBT Map 5

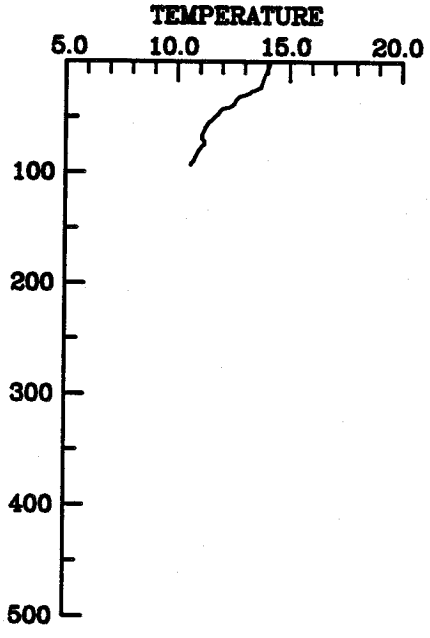


STATION C2 CAST 342
20 April 1983 1224 GMT

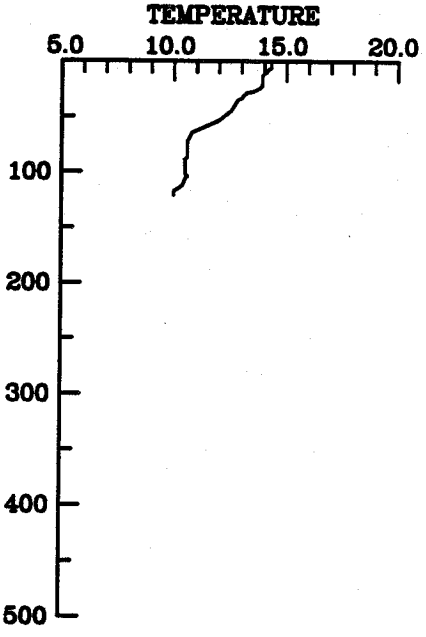
XBT Map 5



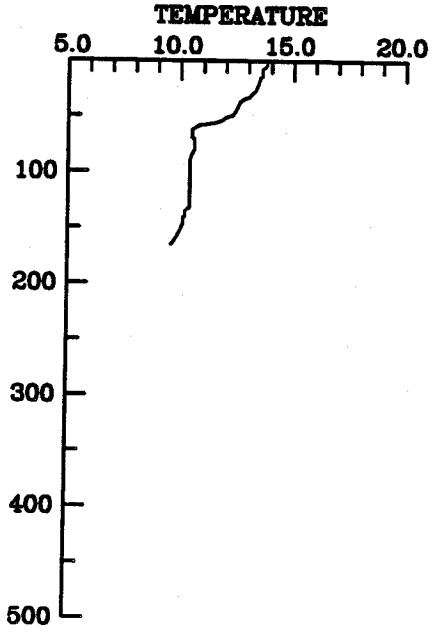
STATION C10 CAST 378
22 April 1983 2100 GMT
XBT Transect C-5
XBT Map 6



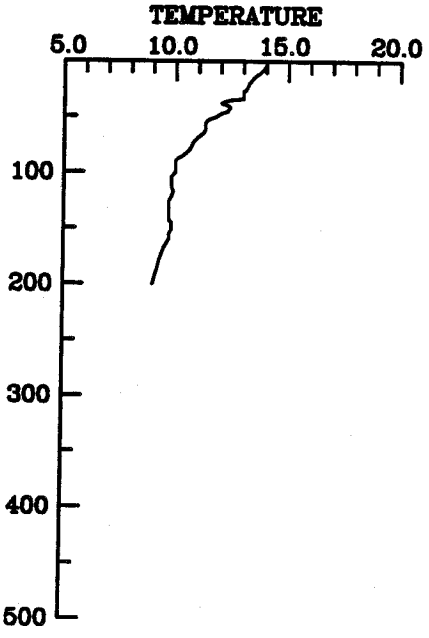
STATION C9 CAST 379
22 April 1983 2112 GMT
XBT Transect C-5
XBT Map 6



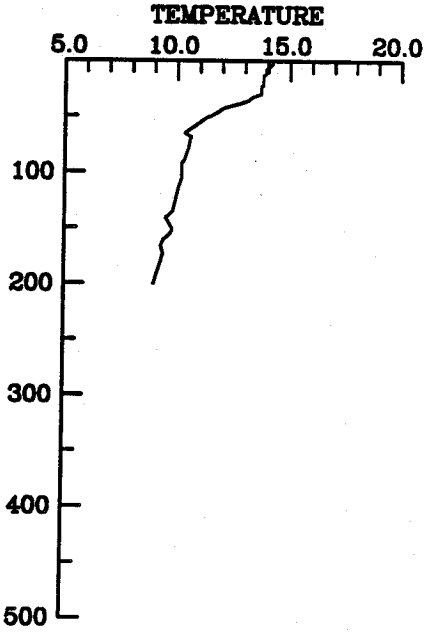
STATION C8 CAST 380
22 April 1983 2124 GMT
XBT Transect C-5
XBT Map 6



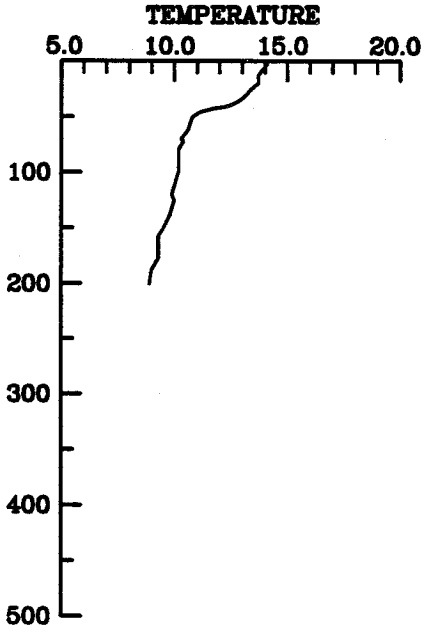
STATION C7 CAST 381
22 April 1983 2142 GMT
XBT Transect C-5
XBT Map 6



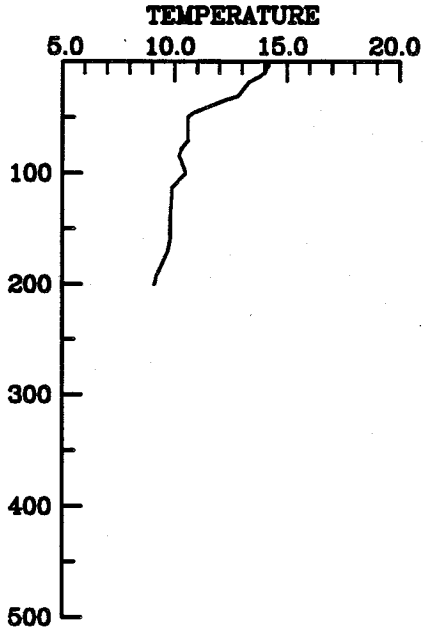
STATION C6 CAST 382
22 April 1983 2154 GMT
XBT Transect C-5
XBT Map 6



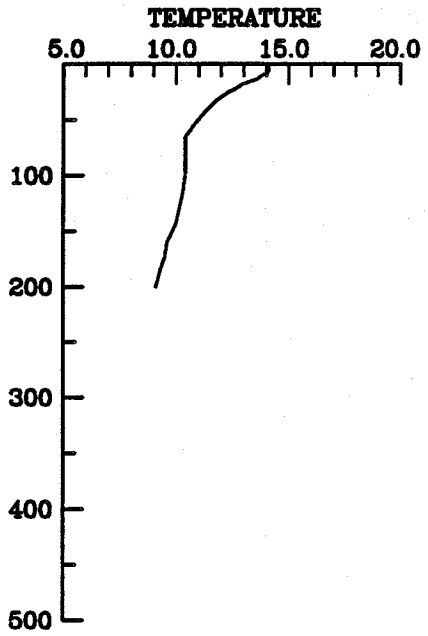
STATION C5 CAST 383
22 April 1983 2206 GMT
XBT Transect C-5
XBT Map 6



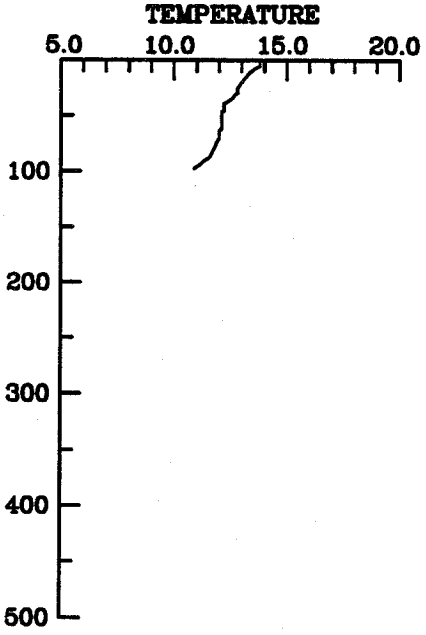
STATION C4 CAST 384
22 April 1983 2224 GMT
XBT Transect C-5
XBT Map 6



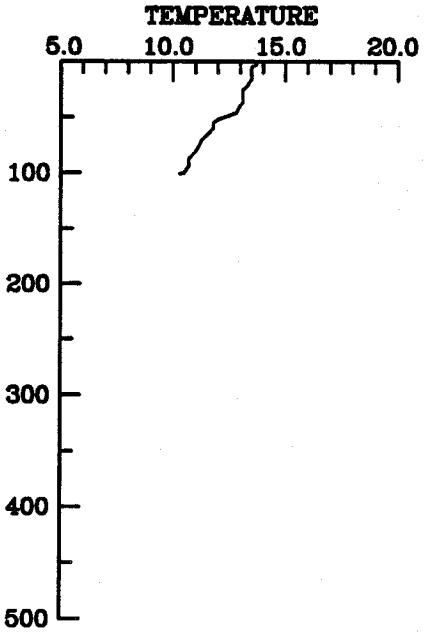
STATION C3 CAST 385
22 April 1983 2236 GMT
XBT Transect C-5
XBT Map 6



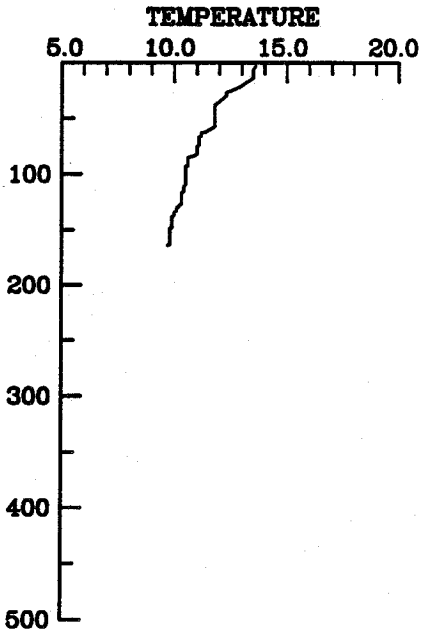
STATION C2 CAST 386
22 April 1983 2248 GMT
XBT Transect C-5
XBT Map 6



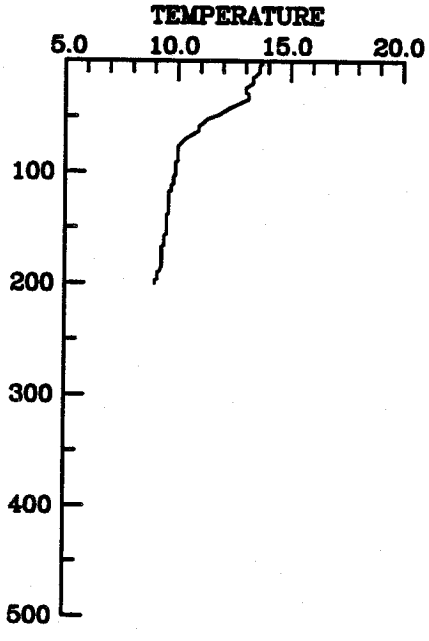
STATION GC3 CAST 390
23 April 1983 48 GMT
XBT Transect GC-5
XBT Map 6



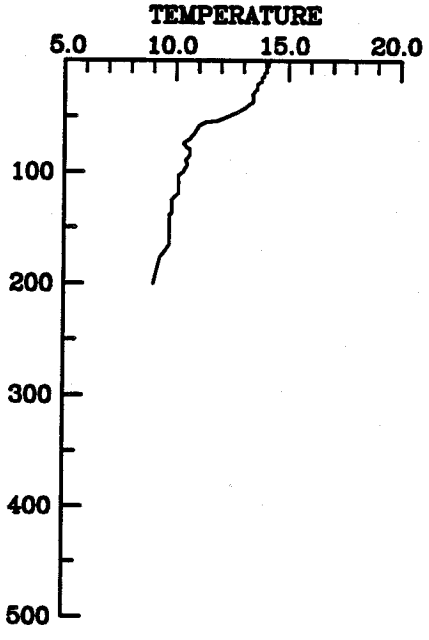
STATION GC4 CAST 391
23 April 1983 100 GMT
XBT Transect GC-5
XBT Map 6



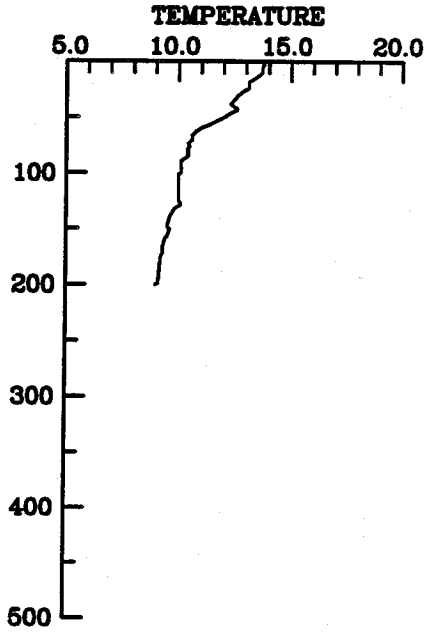
STATION GC5 CAST 392
23 April 1983 112 GMT
XBT Transect GC-5
XBT Map 6



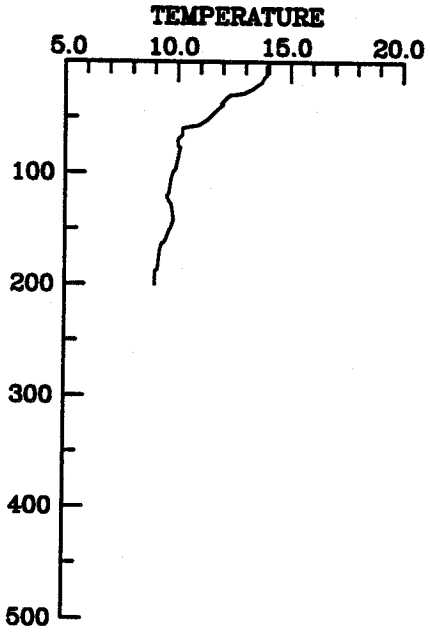
STATION GC6 CAST 393
23 April 1983 124 GMT
XBT Transect GC-5
XBT Map 6



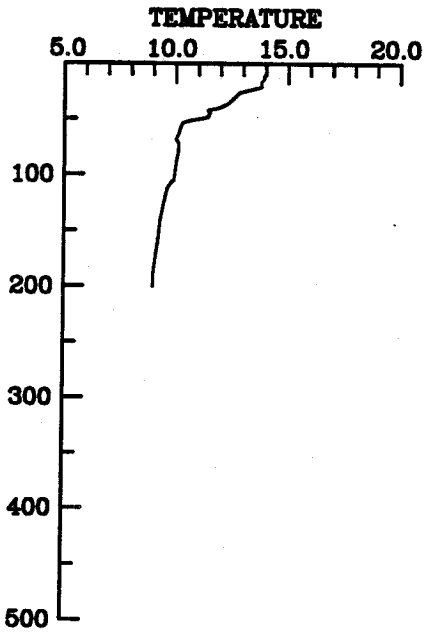
STATION GC7 CAST 394
23 April 1983 136 GMT
XBT Transect GC-5
XBT Map 6



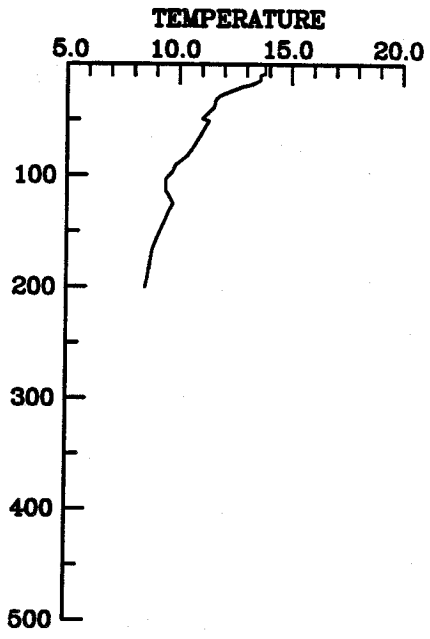
STATION GC8 CAST 395
23 April 1983 148 GMT
XBT Transect GC-5
XBT Map 6



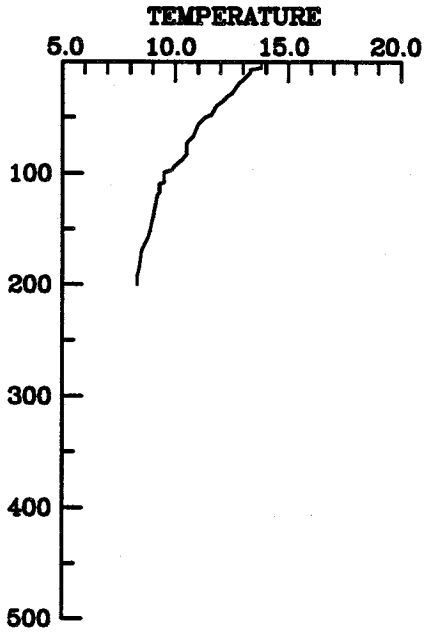
STATION GC9 CAST 396
23 April 1983 200 GMT
XBT Transect GC-5
XBT Map 6



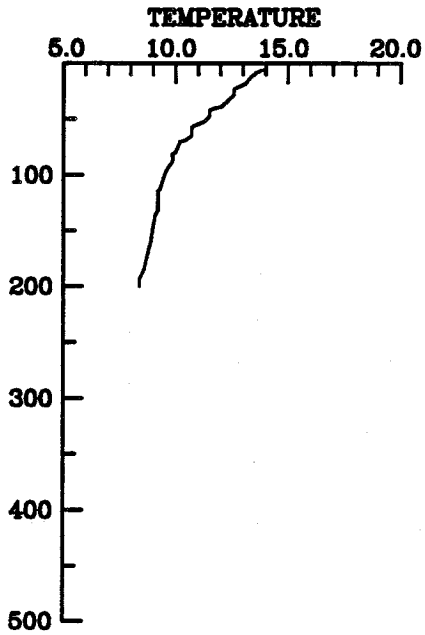
STATION GC0 CAST 397
23 April 1983 212 GMT
XBT Transect GC-5
XBT Map 6



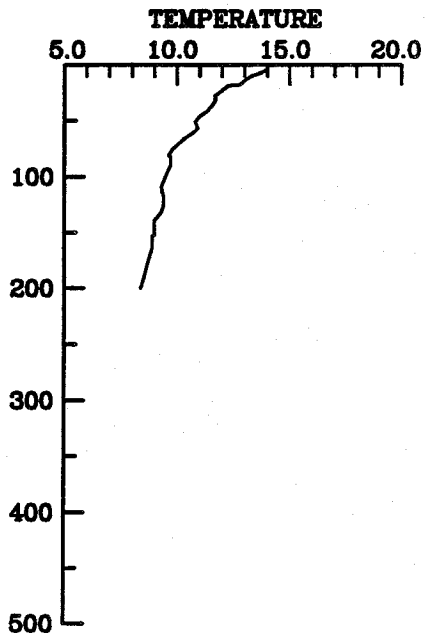
STATION G12 CAST 398
23 April 1983 300 GMT
XBT Transect G-5
XBT Map 6



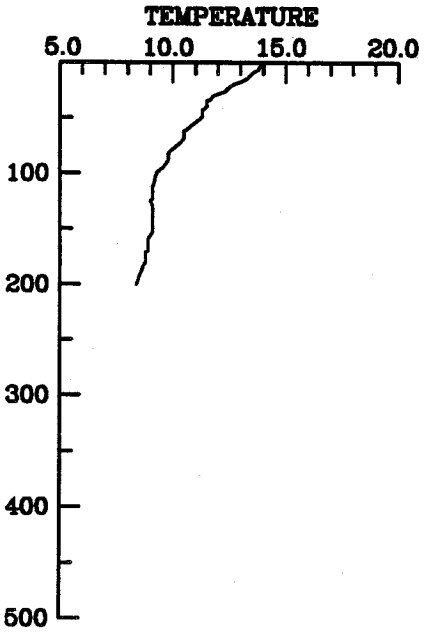
STATION G11 CAST 399
23 April 1983 312 GMT
XBT Transect G-5
XBT Map 6



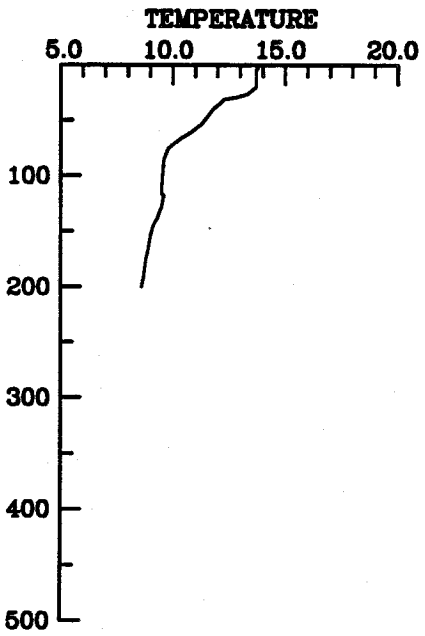
STATION G10 CAST 400
23 April 1983 324 GMT
XBT Transect G-5
XBT Map 6



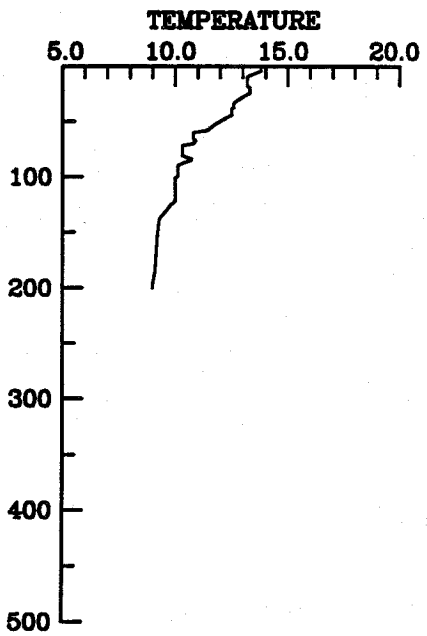
STATION G9 CAST 401
23 April 1983 348 GMT
XBT Transect G-5
XBT Map 6



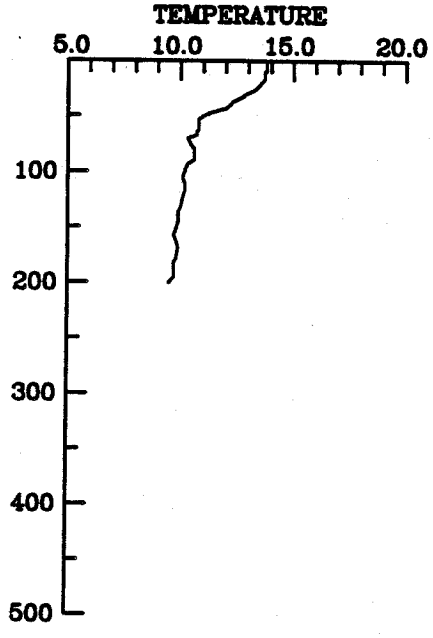
STATION G8 CAST 402
23 April 1983 406 GMT
XBT Transect G-5
XBT Map 6



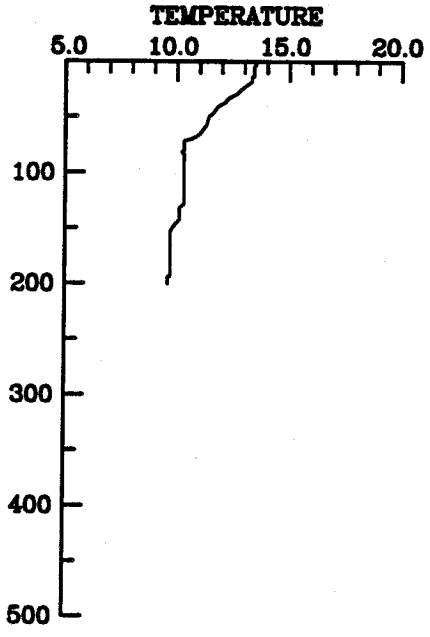
STATION G7 CAST 403
23 April 1983 412 GMT
XBT Transect G-5
XBT Map 6



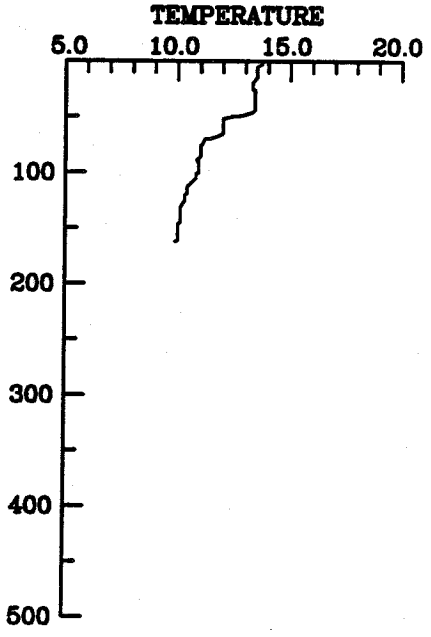
STATION G6 CAST 404
23 April 1983 430 GMT
XBT Transect G-5
XBT Map 6



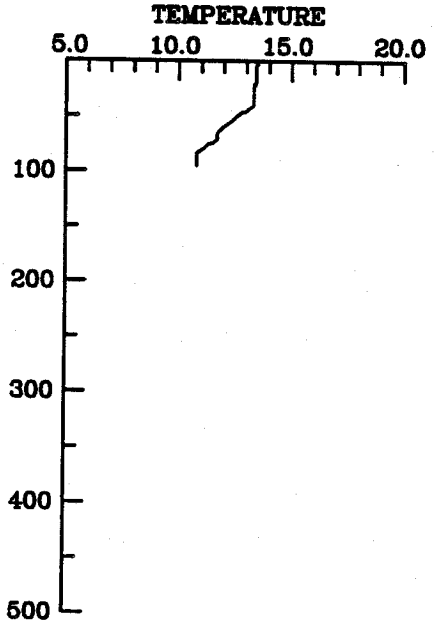
STATION G5 CAST 405
23 April 1983 442 GMT
XBT Transect G-5
XBT Map 6



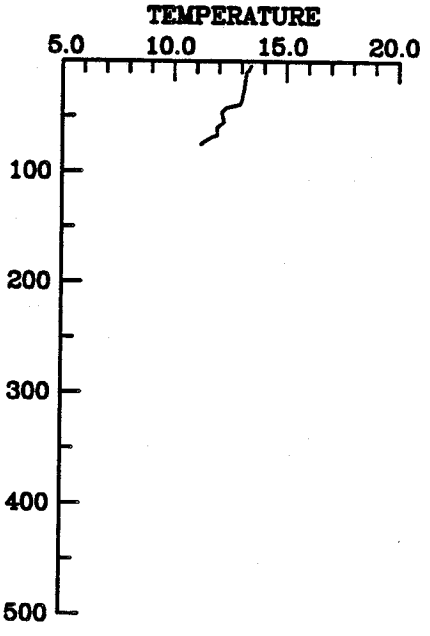
STATION G4 CAST 406
23 April 1983 454 GMT
XBT Transect G-5
XBT Map 6



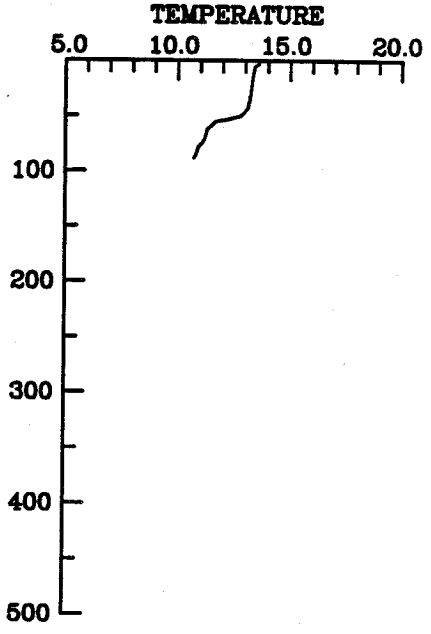
STATION G3 CAST 407
23 April 1983 512 GMT
XBT Transect G-5
XBT Map 6



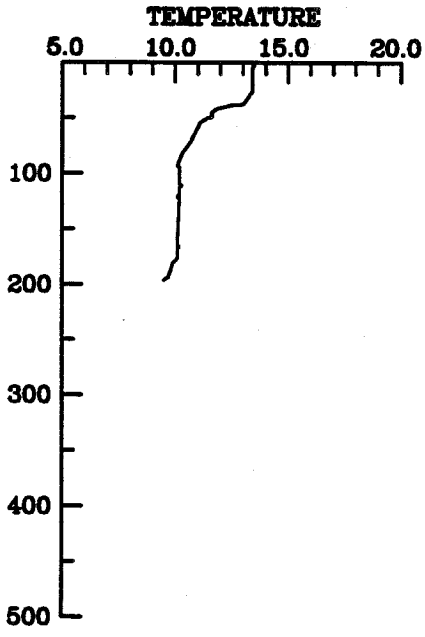
STATION G2 CAST 408
23 April 1983 524 GMT
XBT Transect G-5
XBT Map 6



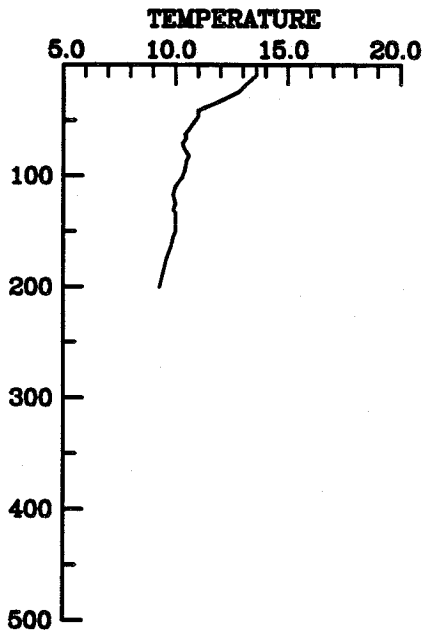
STATION AG2 CAST 411
23 April 1983 724 GMT
XBT Transect AG-5
XBT Map 6



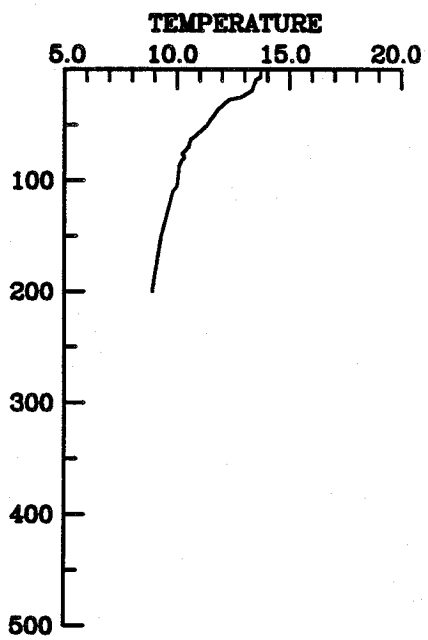
STATION AG3 CAST 412
23 April 1983 742 GMT
XBT Transect AG-5
XBT Map 6



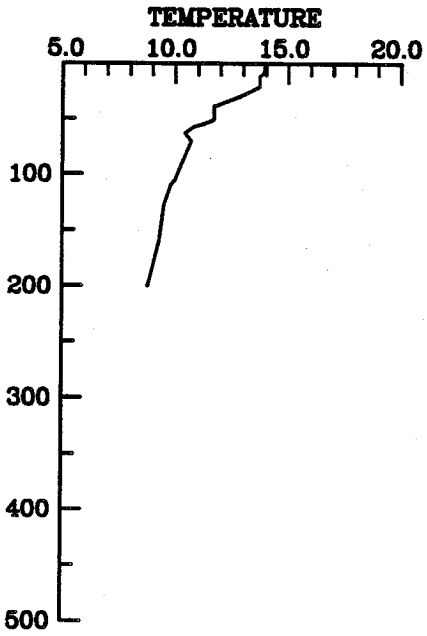
STATION AG4 CAST 413
23 April 1983 754 GMT
XBT Transect AG-5
XBT Map 6



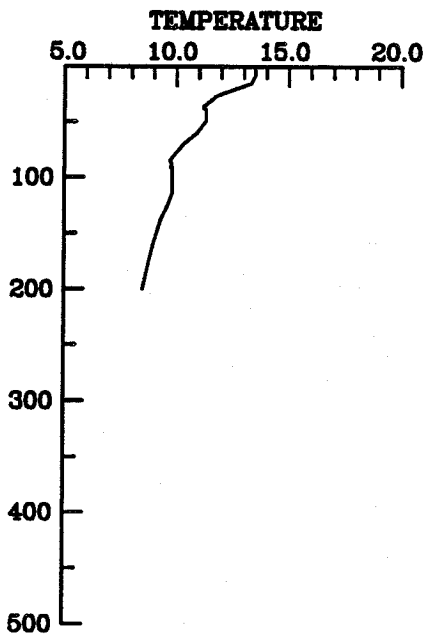
STATION AG5 CAST 414
23 April 1983 806 GMT
XBT Transect AG-5
XBT Map 6



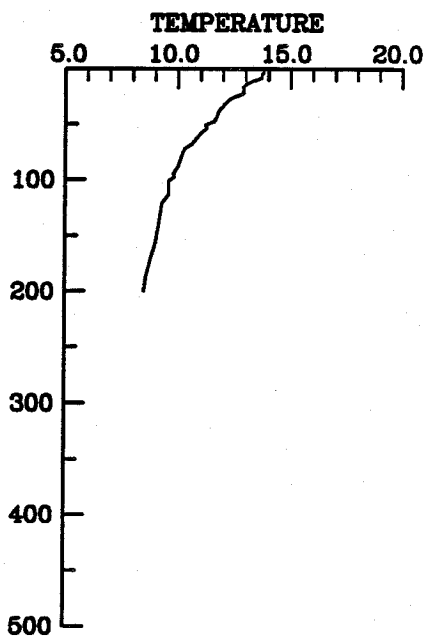
STATION AG6 CAST 415
23 April 1983 818 GMT
XBT Transect AG-5
XBT Map 6



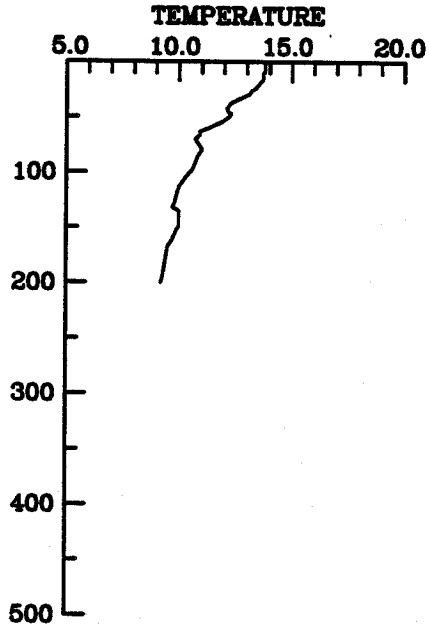
STATION AG7 CAST 416
23 April 1983 830 GMT
XBT Transect AG-5
XBT Map 6



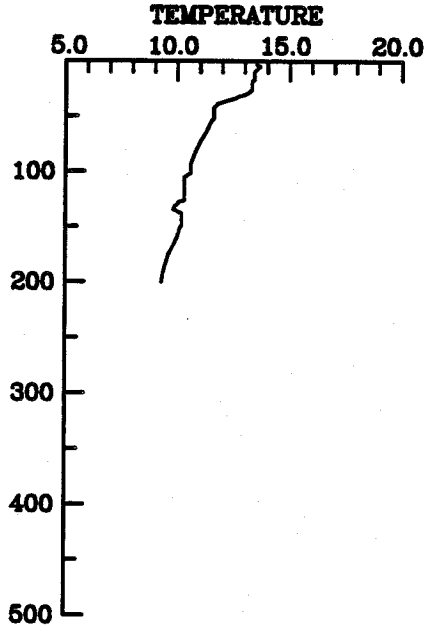
STATION AG8 CAST 417
23 April 1983 842 GMT
XBT Transect AG-5
XBT Map 6



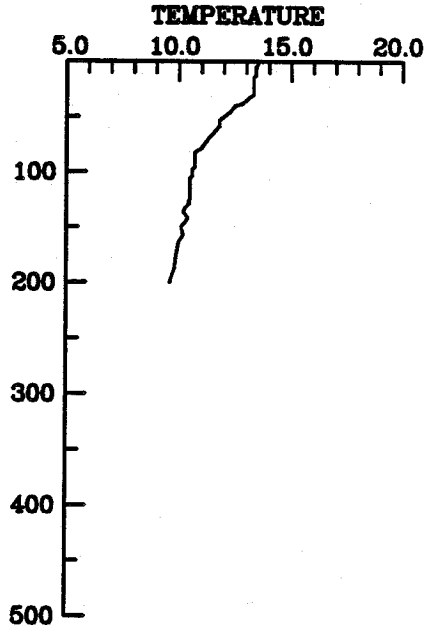
STATION A8 CAST 418
23 April 1983 1012 GMT
XBT Transect A-5
XBT Map 6



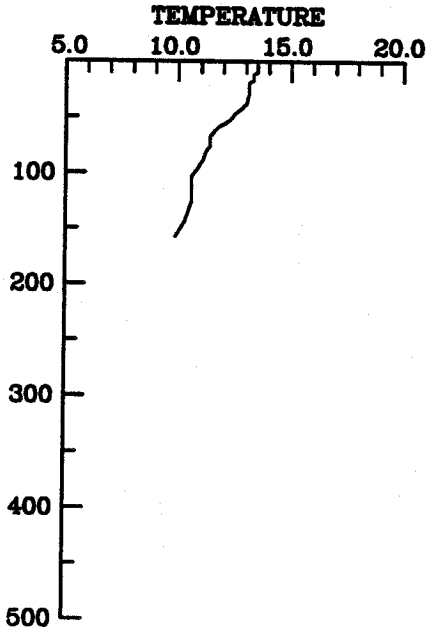
STATION A7 CAST 419
23 April 1983 1024 GMT
XBT Transect A-5
XBT Map 6



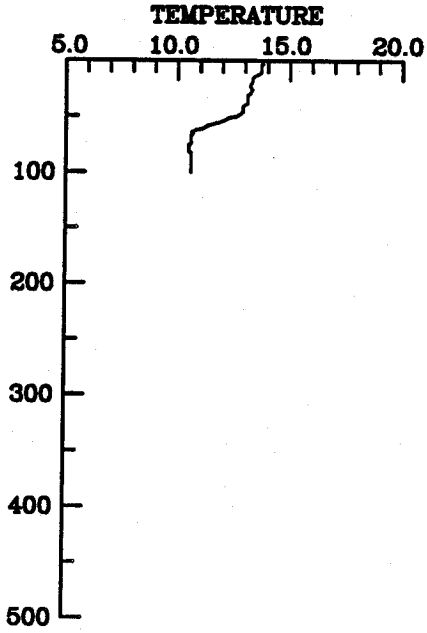
STATION A6 CAST 420
23 April 1983 1036 GMT
XBT Transect A-5
XBT Map 6



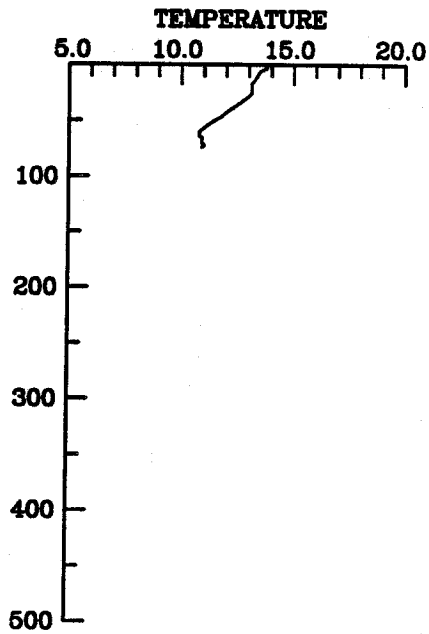
STATION A4 CAST 422
23 April 1983 1100 GMT
XBT Transect A-5
XBT Map 6



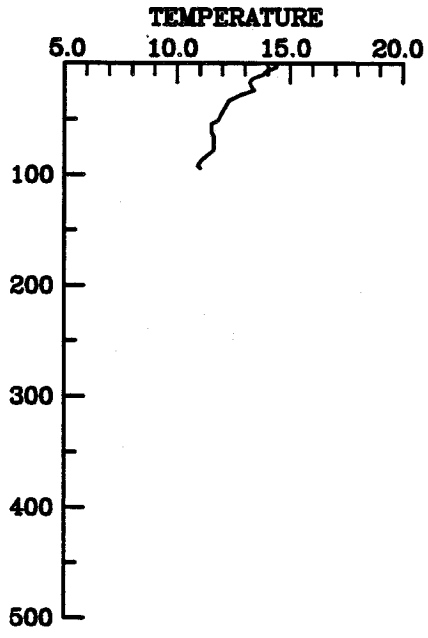
STATION A3 CAST 423
23 April 1983 1118 GMT
XBT Transect A-5
XBT Map 6



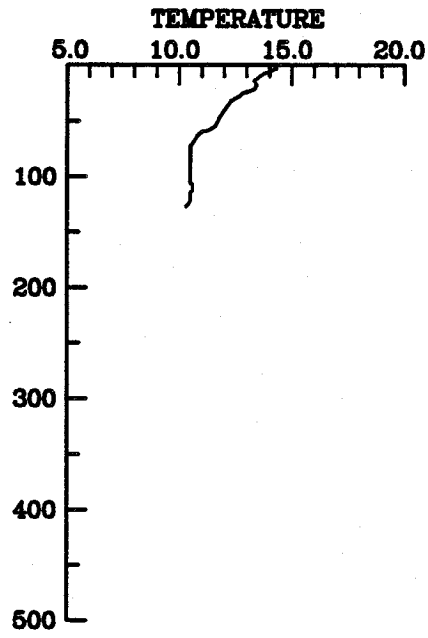
STATION A2 CAST 424
23 April 1983 1130 GMT
XBT Transect A-5
XBT Map 6



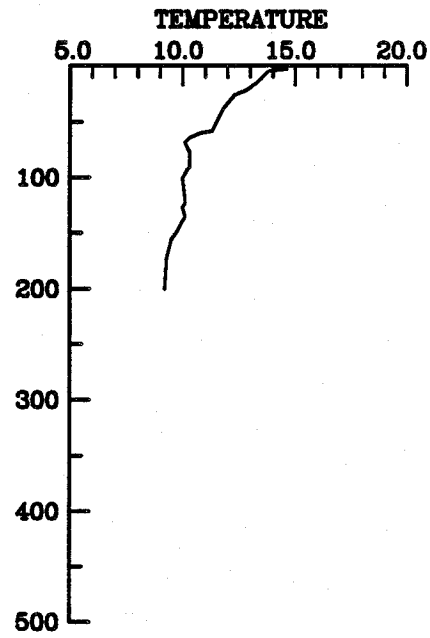
STATION C10 CAST 446
25 April 1983 124 GMT
XBT Transect C-6
XBT Map 7



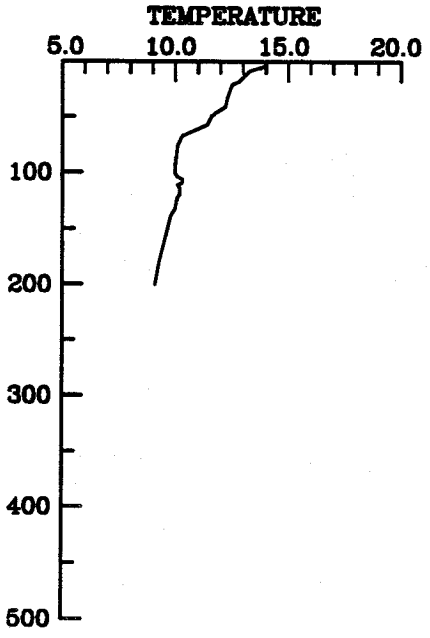
STATION C9 CAST 447
25 April 1983 136 GMT
XBT Transect C-6
XBT Map 7



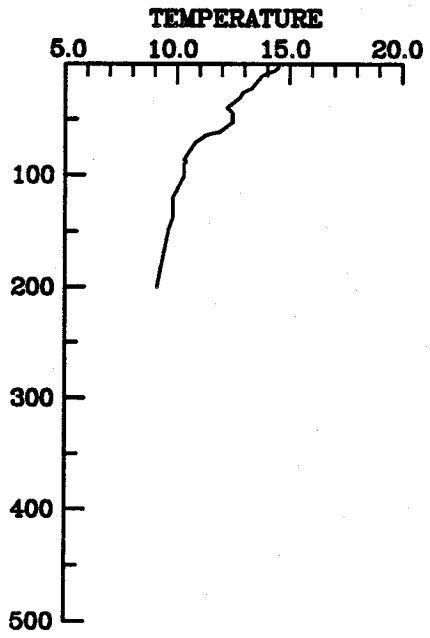
STATION C8 CAST 448
25 April 1983 154 GMT
XBT Transect C-6
XBT Map 7



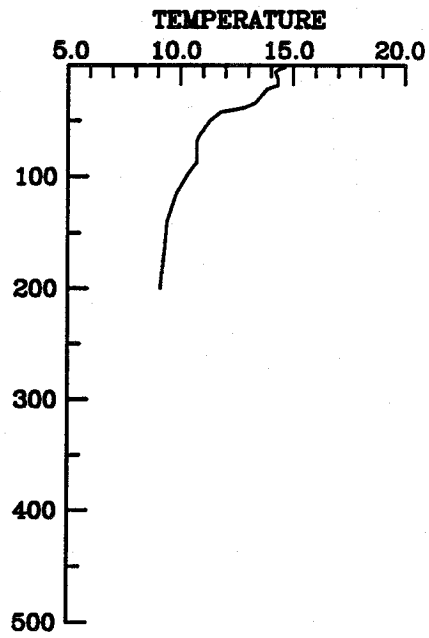
STATION C7 CAST 449
25 April 1983 206 GMT
XBT Transect C-6
XBT Map 7



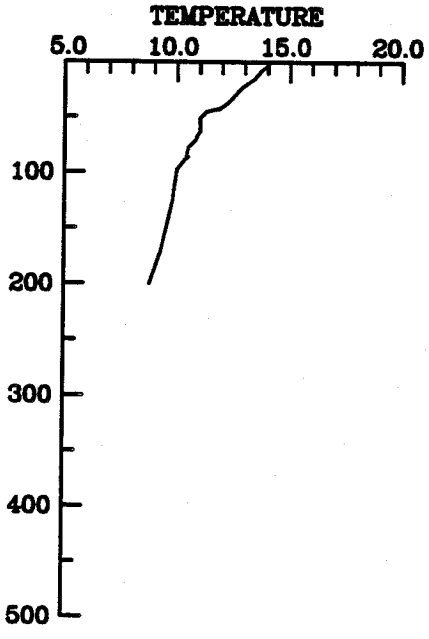
STATION C6 CAST 450
25 April 1983 218 GMT
XBT Transect C-6
XBT Map 7



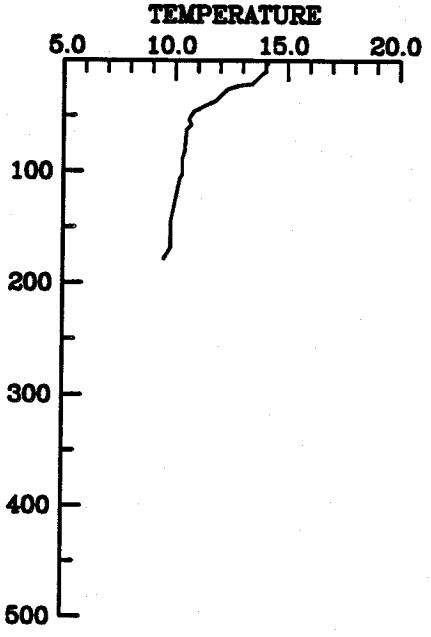
STATION C5 CAST 451
25 April 1983 230 GMT
XBT Transect C-6
XBT Map 7



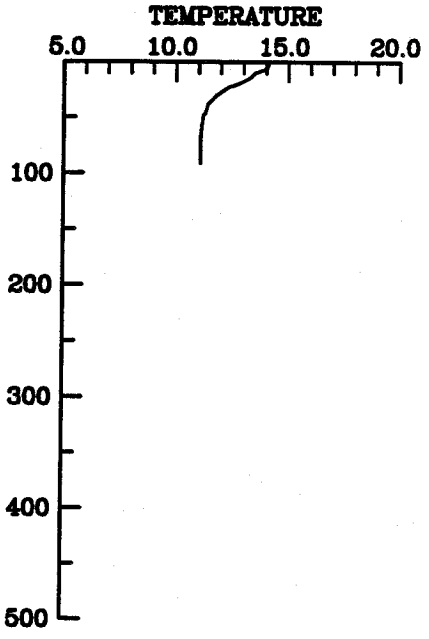
STATION C4 CAST 452
25 April 1983 248 GMT
XBT Transect C-6
XBT Map 7



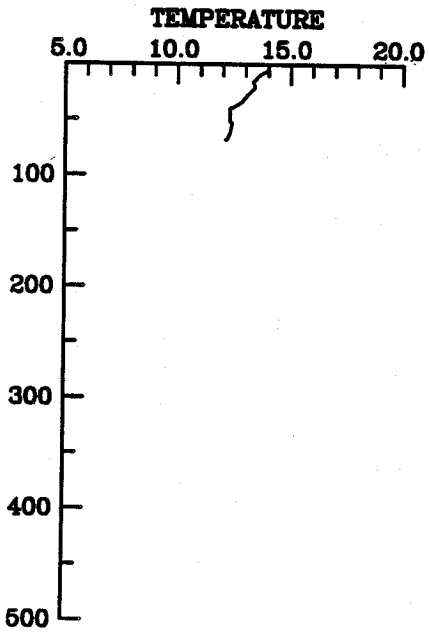
STATION C3 CAST 453
25 April 1983 300 GMT
XBT Transect C-6
XBT Map 7



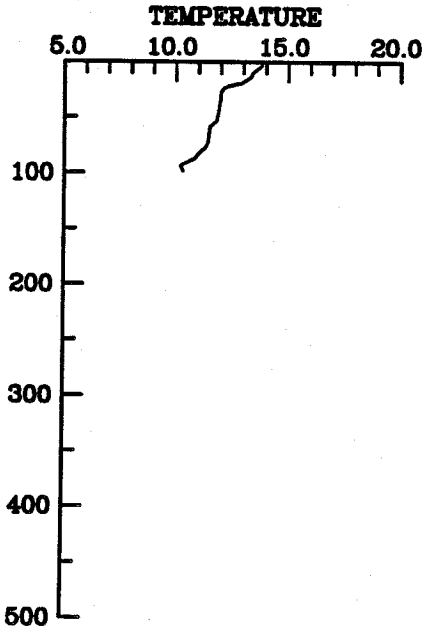
STATION C2 CAST 454
25 April 1983 312 GMT
XBT Transect C-6
XBT Map 7



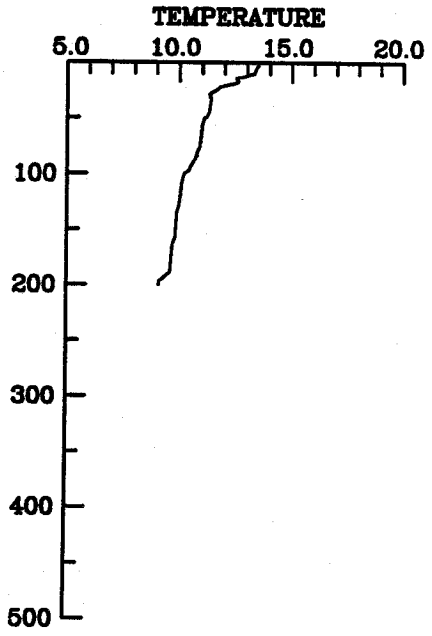
STATION GC2 CAST 457
25 April 1983 424 GMT
XBT Transect GC-6
XBT Map 7



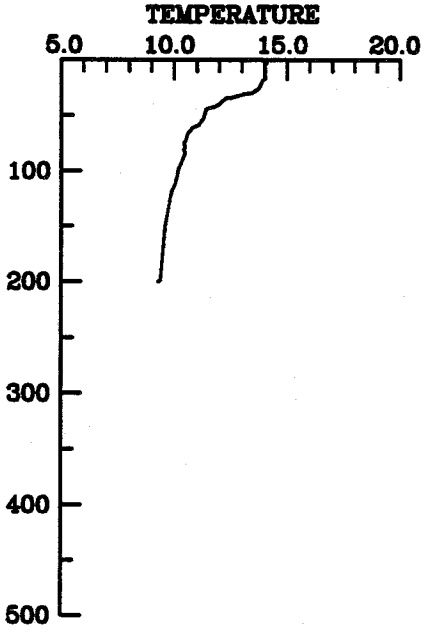
STATION GC3 CAST 458
25 April 1983 436 GMT
XBT Transect GC-6
XBT Map 7



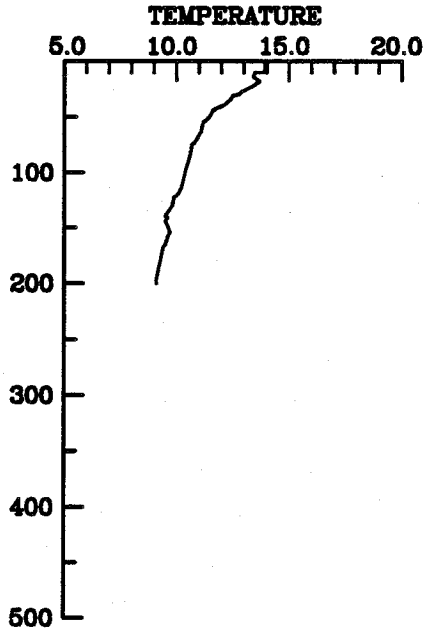
STATION GC4 CAST 459
25 April 1983 454 GMT
XBT Transect GC-6
XBT Map 7



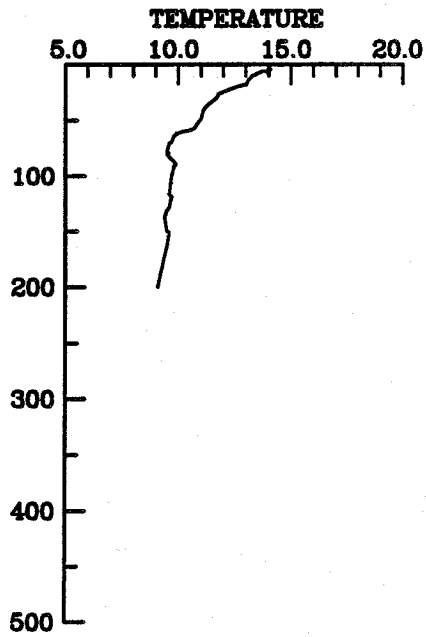
STATION GC5 CAST 460
25 April 1983 506 GMT
XBT Transect GC-6
XBT Map 7



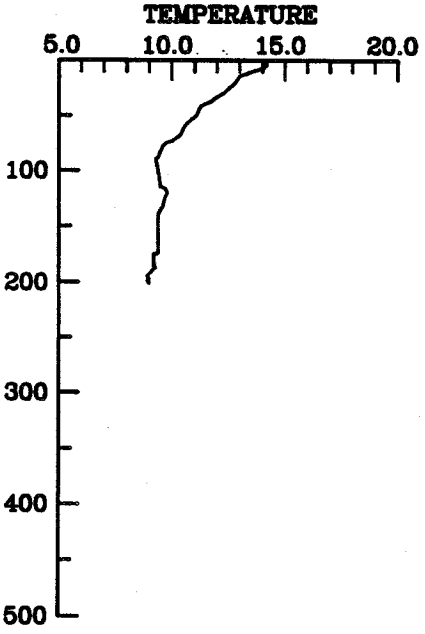
STATION GC6 CAST 461
25 April 1983 524 GMT
XBT Transect GC-6
XBT Map 7



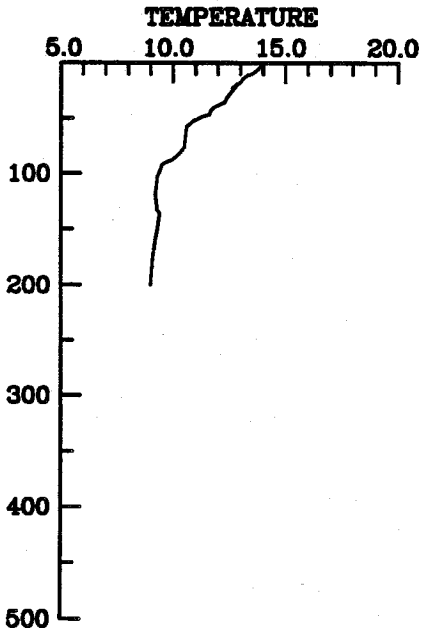
STATION GC7 CAST 462
25 April 1983 536 GMT
XBT Transect GC-6
XBT Map 7



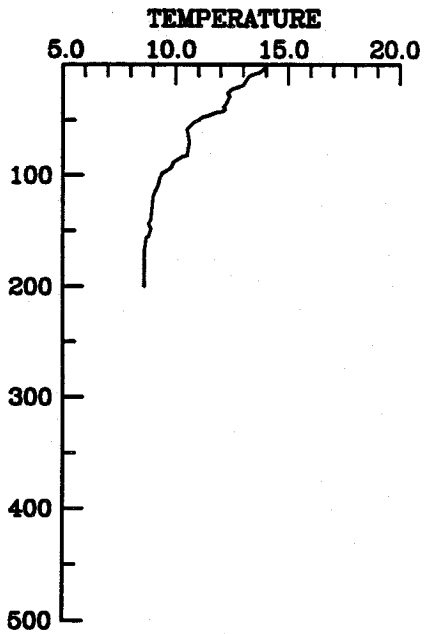
STATION GC8 CAST 463
25 April 1983 554 GMT
XBT Transect GC-6
XBT Map 7



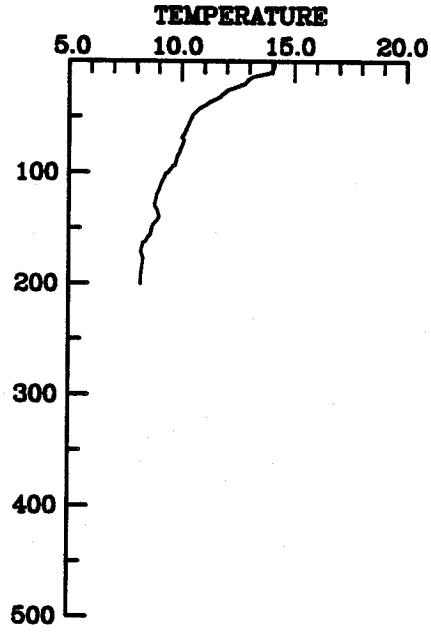
STATION GC9 CAST 464
25 April 1983 600 GMT
XBT Transect GC-6
XBT Map 7



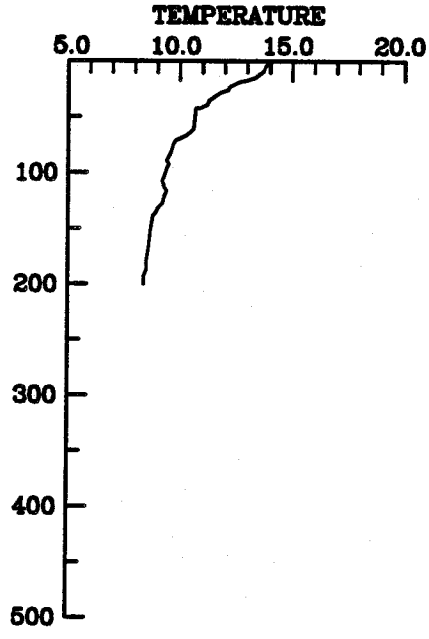
STATION GC0 CAST 465
25 April 1983 612 GMT
XBT Transect GC-6
XBT Map 7



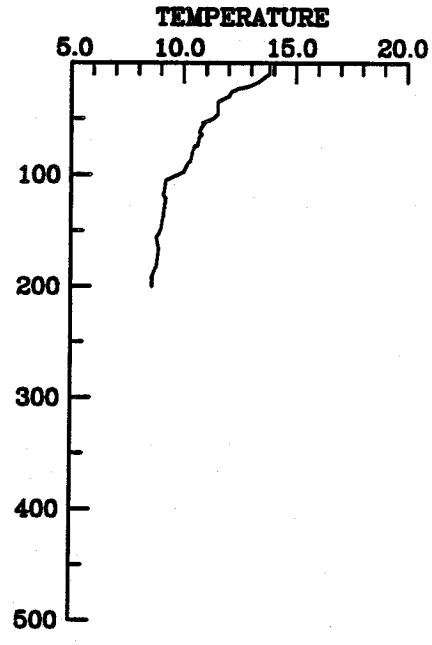
STATION G12 CAST 466
25 April 1983 700 GMT
XBT Transect G-6
XBT Map 7



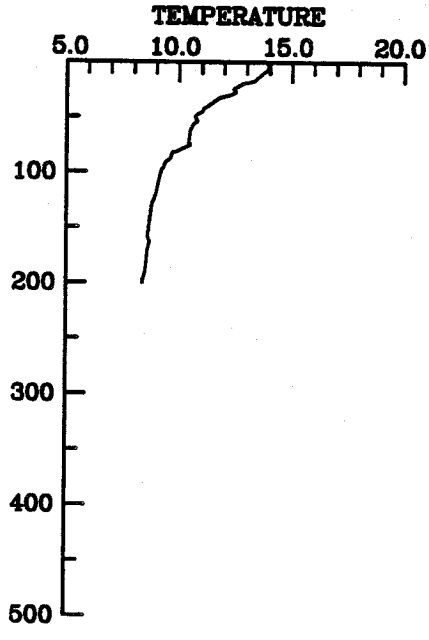
STATION G11 CAST 467
25 April 1983 712 GMT
XBT Transect G-6
XBT Map 7



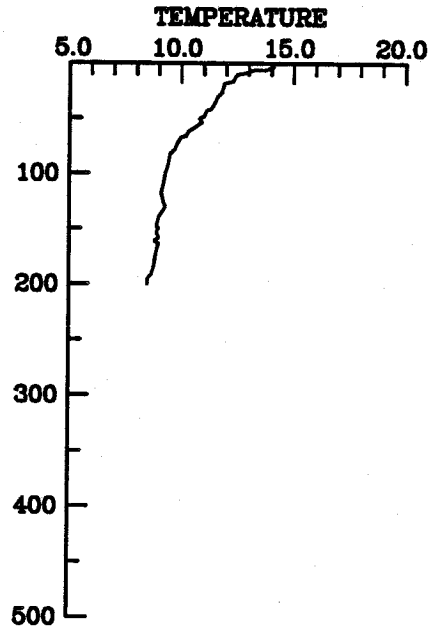
STATION G10 CAST 468
25 April 1983 724 GMT
XBT Transect G-6
XBT Map 7



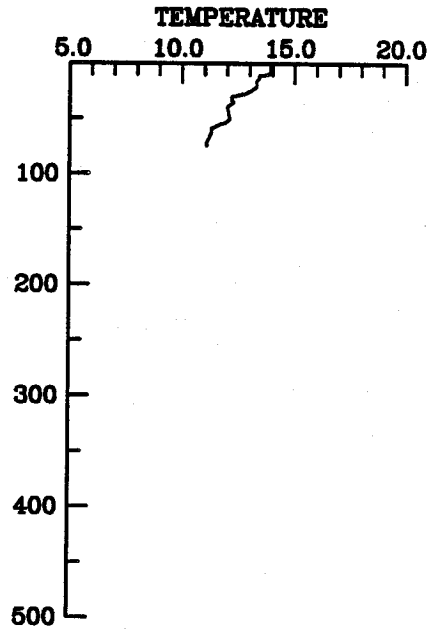
STATION G9 CAST 469
25 April 1983 736 GMT
XBT Transect G-6
XBT Map 7



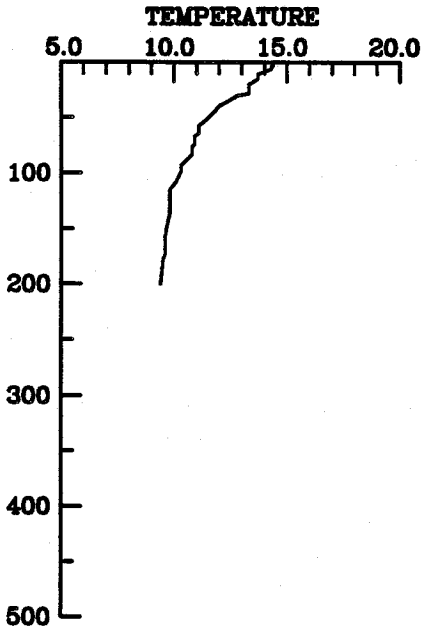
STATION G6 CAST 470
25 April 1983 754 GMT
XBT Transect G-6
XBT Map 7



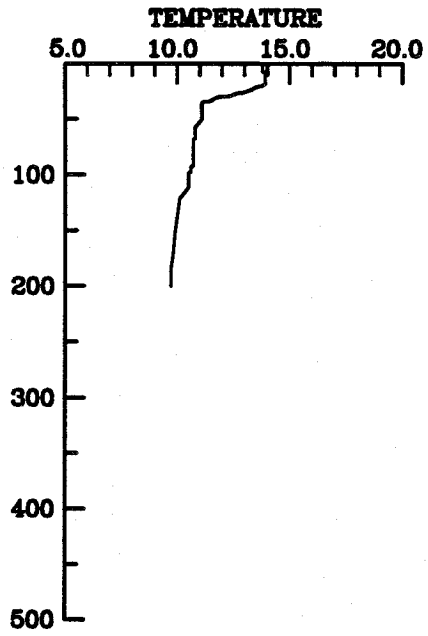
STATION G7 CAST 471
25 April 1983 800 GMT
XBT Transect G-6
XBT Map 7



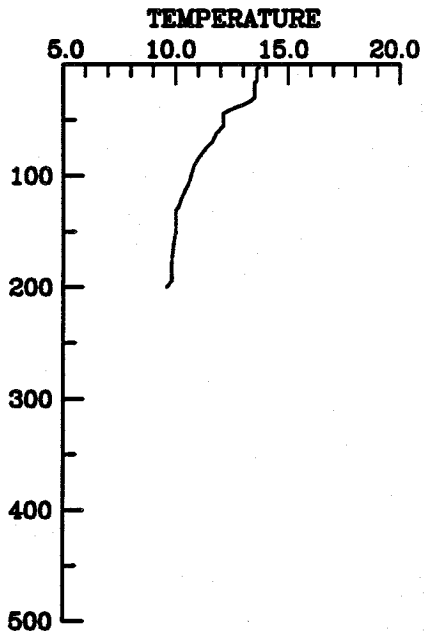
STATION G6 CAST 472
25 April 1983 818 GMT
XBT Transect G-6
XBT Map 7



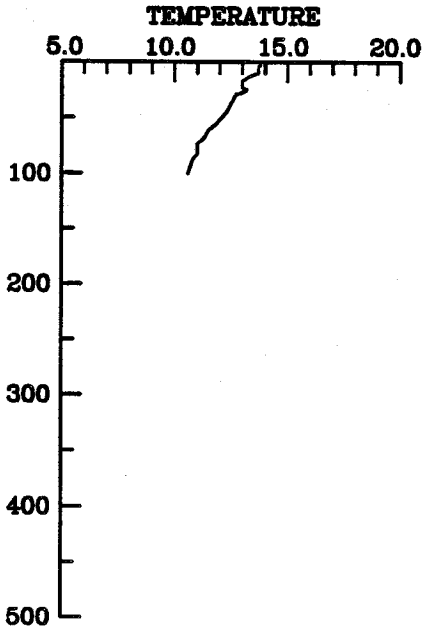
STATION G5 CAST 473
25 April 1983 824 GMT
XBT Transect G-6
XBT Map 7



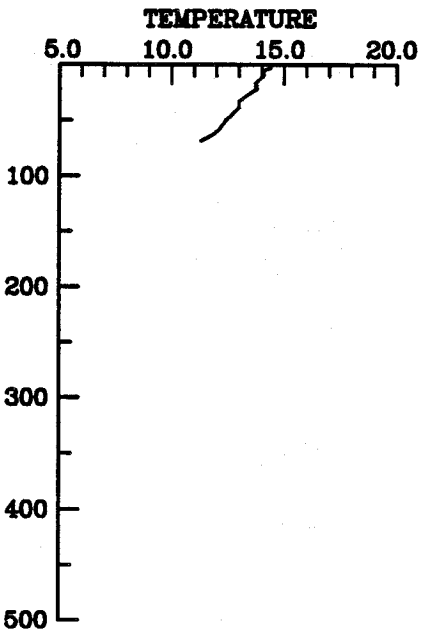
STATION G4 CAST 474
25 April 1983 836 GMT
XBT Transect G-6
XBT Map 7



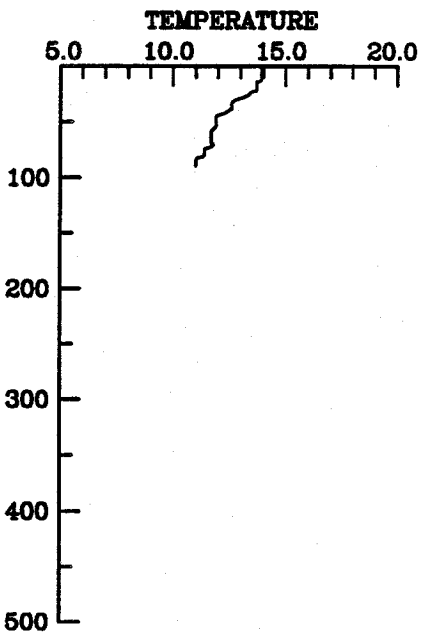
STATION G3 CAST 475
25 April 1983 854 GMT
XBT Transect G-6
XBT Map 7



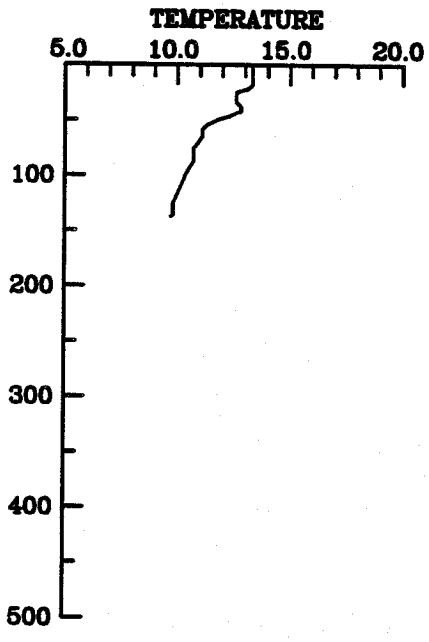
STATION G2 CAST 476
25 April 1983 912 GMT
XBT Transect G-6
XBT Map 7



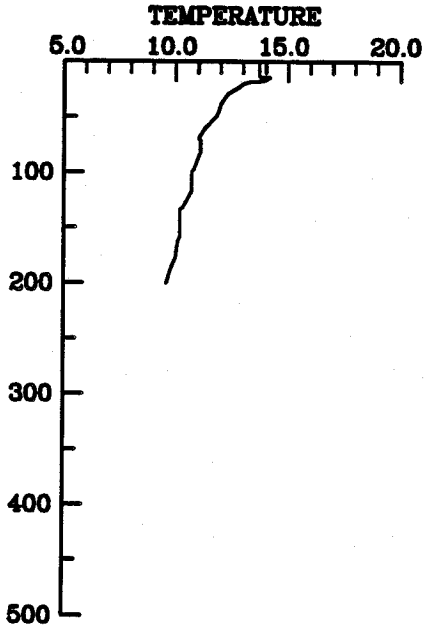
STATION AG2 CAST 479
25 April 1983 1036 GMT
XBT Transect AG-6
XBT Map 7



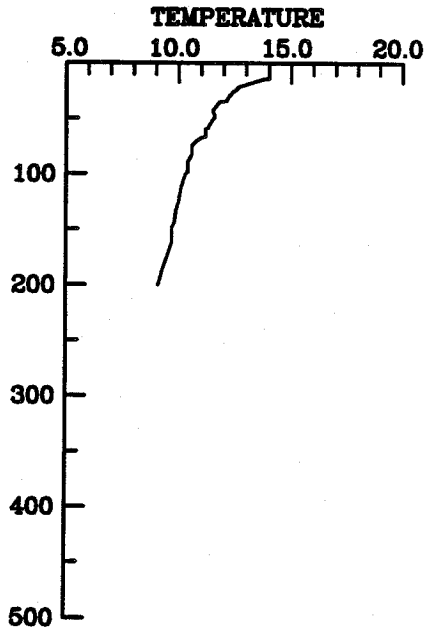
STATION AG3 CAST 480
25 April 1983 1048 GMT
XBT Transect AG-6
XBT Map 7



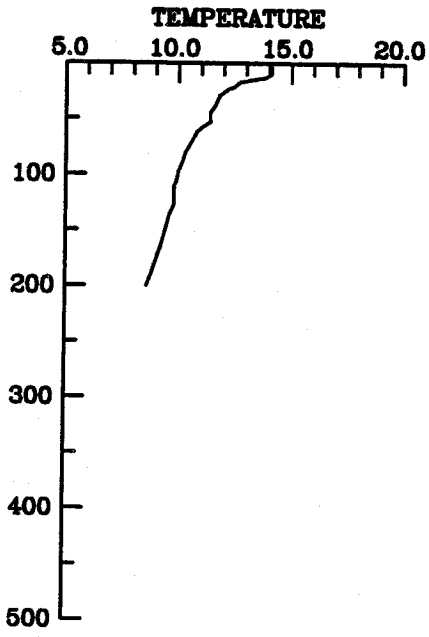
STATION AG4 CAST 481
25 April 1983 1100 GMT
XBT Transect AG-6
XBT Map 7



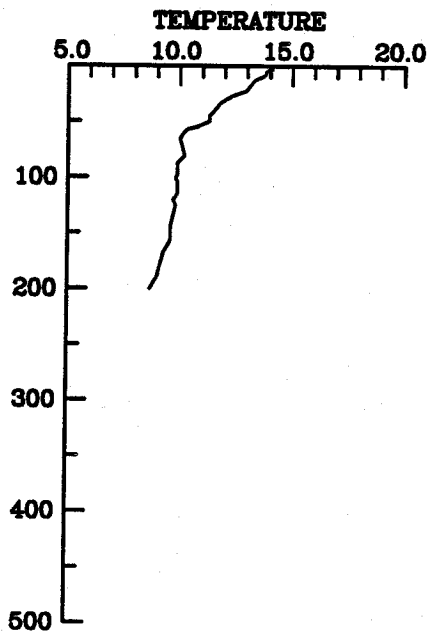
STATION AG5 CAST 482
25 April 1983 1112 GMT
XBT Transect AG-6
XBT Map 7



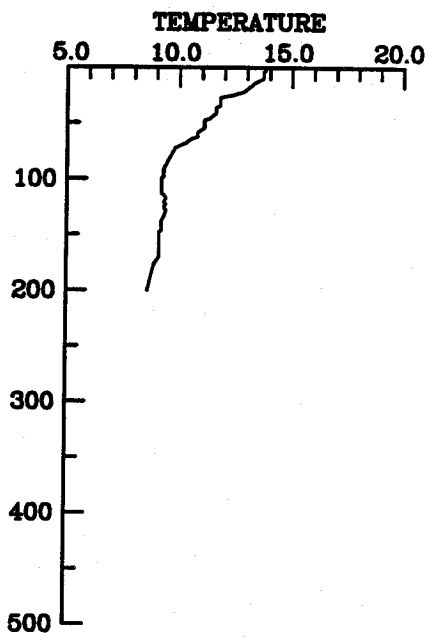
STATION AG6 CAST 483
25 April 1983 1124 GMT
XBT Transect AG-6
XBT Map 7



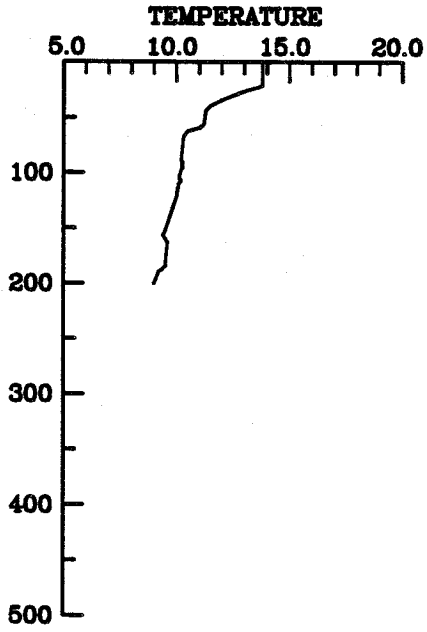
STATION AG7 CAST 484
25 April 1983 1142 GMT
XBT Transect AG-6
XBT Map 7



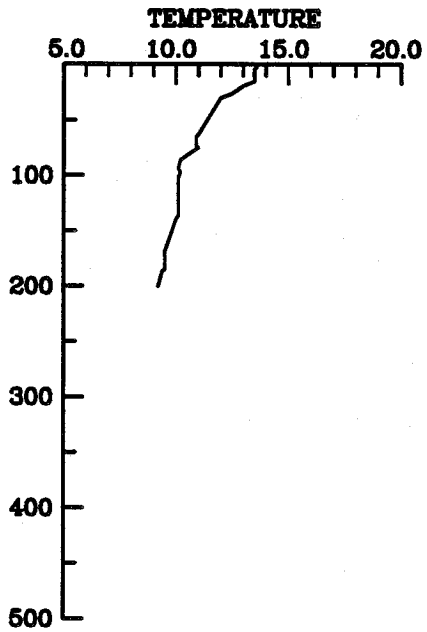
STATION AG8 CAST 485
25 April 1983 1148 GMT
XBT Transect AG-6
XBT Map 7



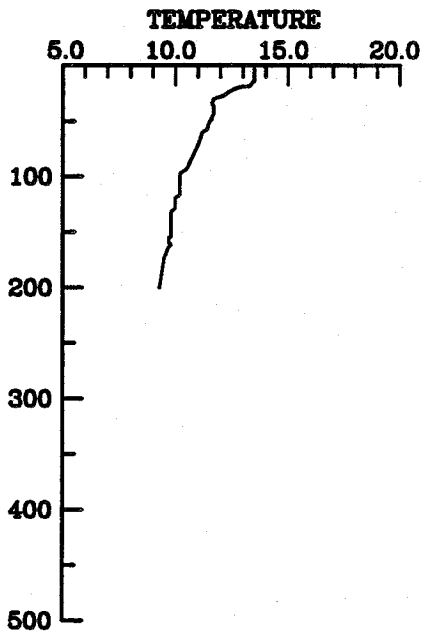
STATION A8 CAST 486
25 April 1983 1318 GMT
XBT Transect A-6
XBT Map 7



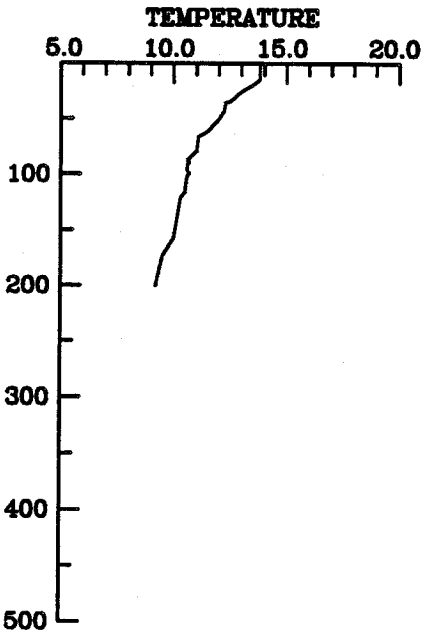
STATION A7 CAST 487
25 April 1983 1336 GMT
XBT Transect A-6
XBT Map 7



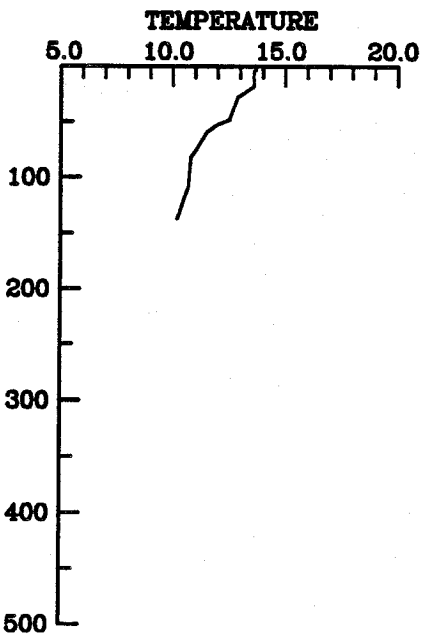
STATION A6 CAST 488
25 April 1983 1354 GMT
XBT Transect A-6
XBT Map 7



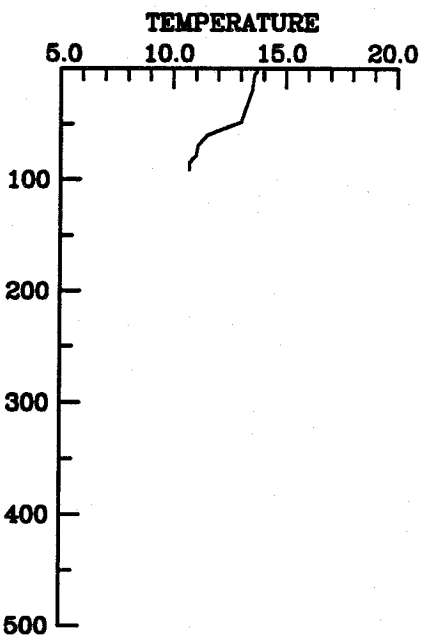
STATION A5 CAST 489
25 April 1983 1406 GMT
XBT Transect A-6
XBT Map 7



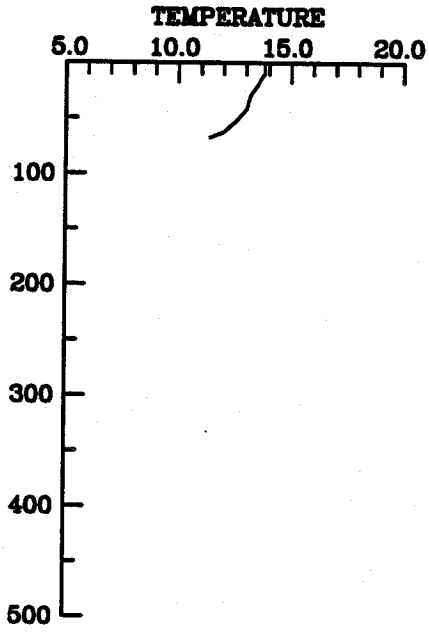
STATION A4 CAST 490
25 April 1983 1418 GMT
XBT Transect A-6
XBT Map 7



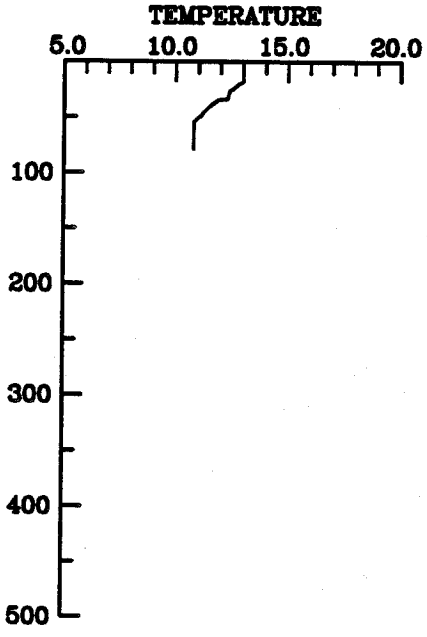
STATION A3 CAST 491
25 April 1983 1448 GMT
XBT Transect A-6
XBT Map 7



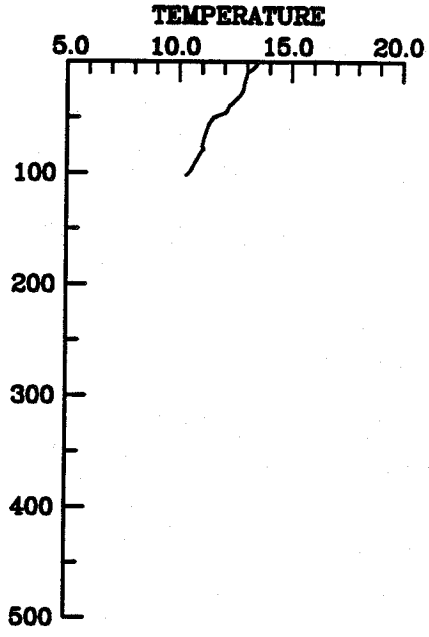
STATION A2 CAST 492
25 April 1983 1506 GMT
XBT Transect A-6
XBT Map 7



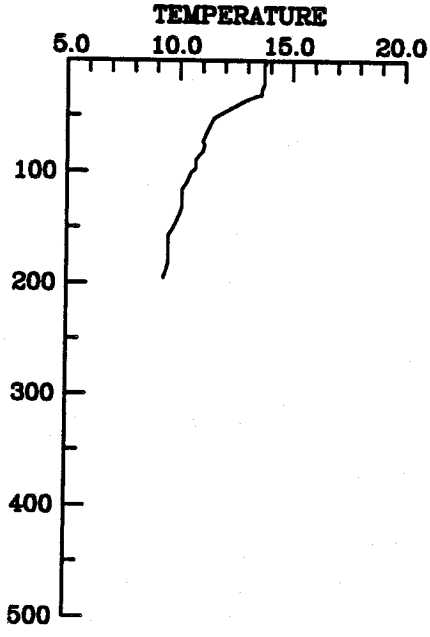
STATION A2 CAST 525
28 April 1983 742 GMT
XBT Transect A-7
XBT Map 8



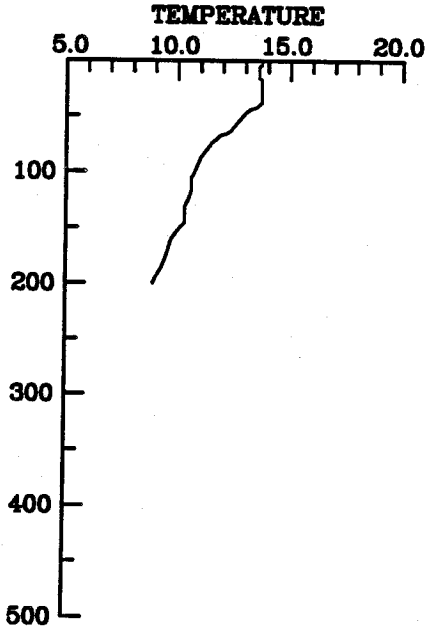
STATION A3 CAST 526
28 April 1983 748 GMT
XBT Transect A-7
XBT Map 8



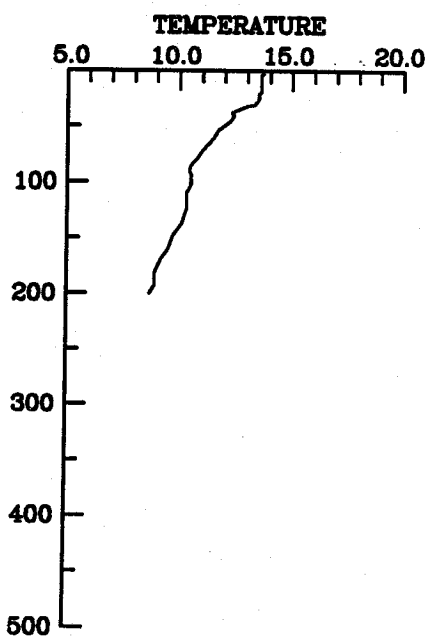
STATION A4 CAST 527
28 April 1983 806 GMT
XBT Transect A-7
XBT Map 8



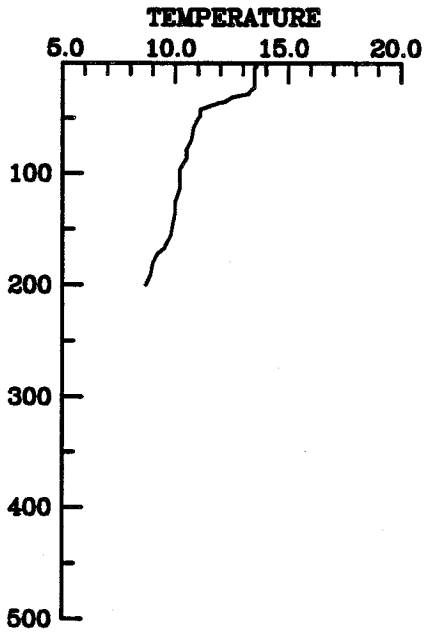
STATION A5 CAST 528
28 April 1983 818 GMT
XBT Transect A-7
XBT Map 8



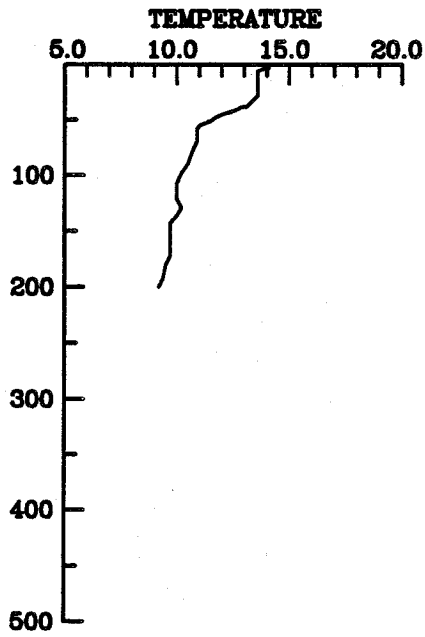
STATION A6 CAST 529
28 April 1983 830 GMT
XBT Transect A-7
XBT Map 8



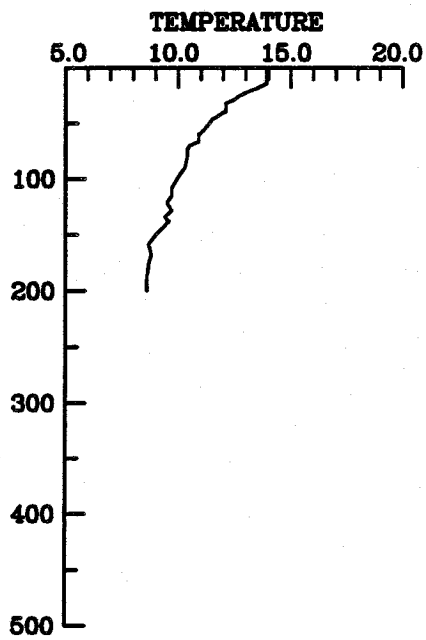
STATION A7 CAST 530
28 April 1983 836 GMT
XBT Transect A-7
XBT Map 8



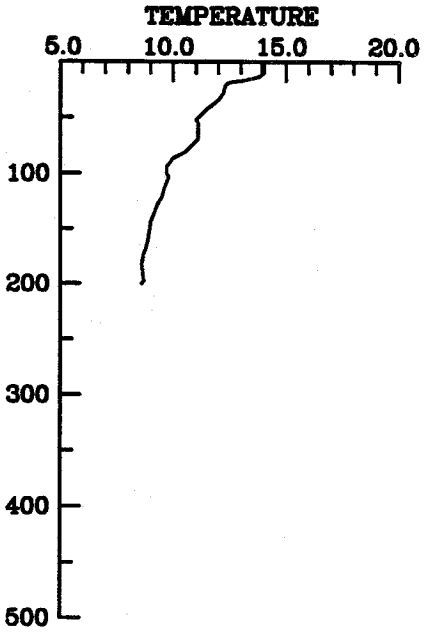
STATION A8 CAST 531
28 April 1983 848 GMT
XBT Transect A-7
XBT Map 8



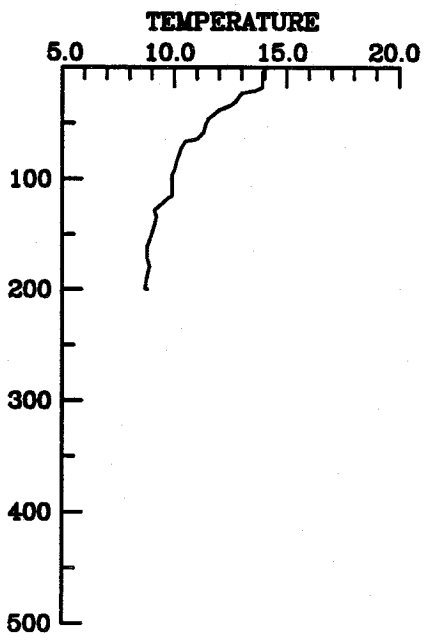
STATION AG8 CAST 532
28 April 1983 1018 GMT
XBT Transect AG-7
XBT Map 8



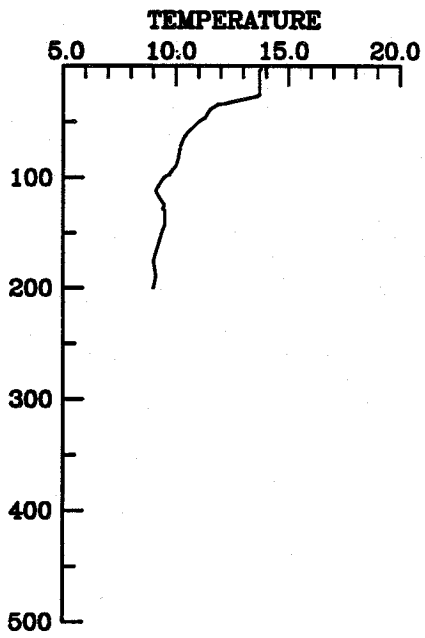
STATION AG7 CAST 533
28 April 1983 1036 GMT
XBT Transect AG-7
XBT Map 8



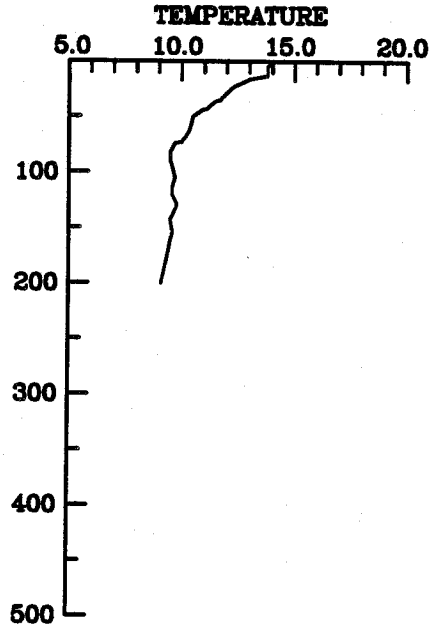
STATION AG6 CAST 534
28 April 1983 1042 GMT
XBT Transect AG-7
XBT Map 8



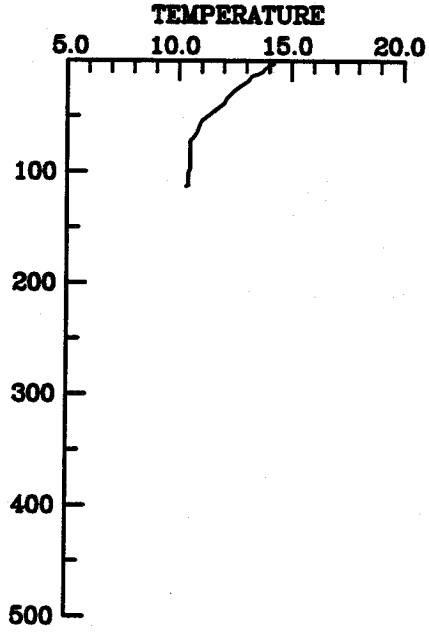
STATION AG5 CAST 535
28 April 1983 1100 GMT
XBT Transect AG-7
XBT Map 8



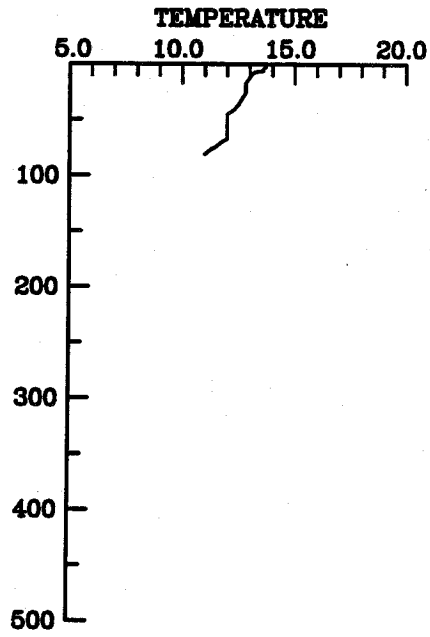
STATION AG4 CAST 536
28 April 1983 1112 GMT
XBT Transect AG-7
XBT Map 8



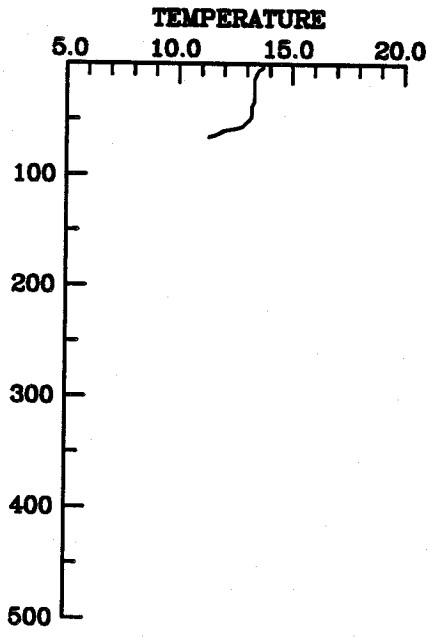
STATION AG3 CAST 537
28 April 1983 1124 GMT
XBT Transect AG-7
XBT Map 8



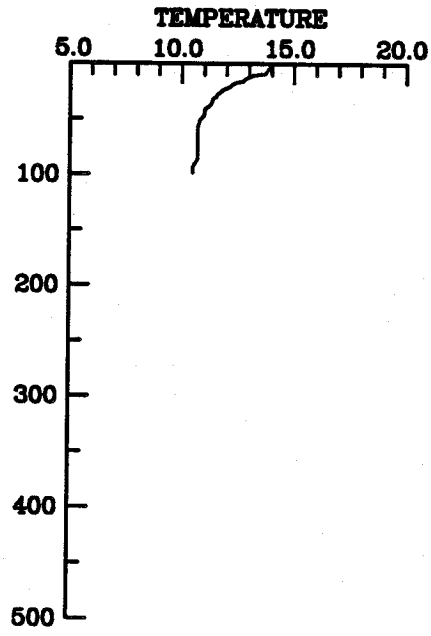
STATION AG2 CAST 538
28 April 1983 1136 GMT
XBT Transect AG-7
XBT Map 8



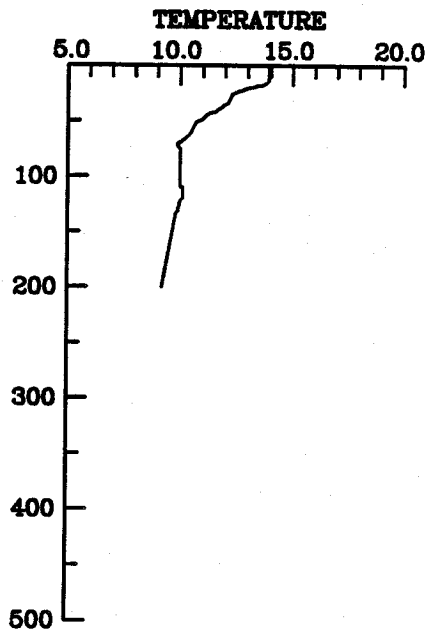
STATION G2 CAST 541
28 April 1983 1248 GMT
XBT Transect G-7
XBT Map 8



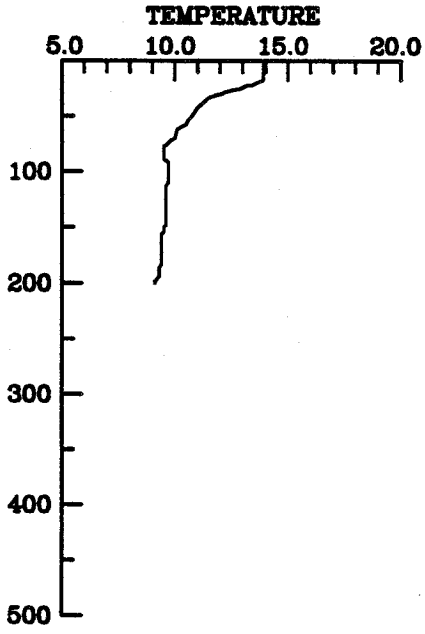
STATION G3 CAST 542
28 April 1983 1306 GMT
XBT Transect G-7
XBT Map 8



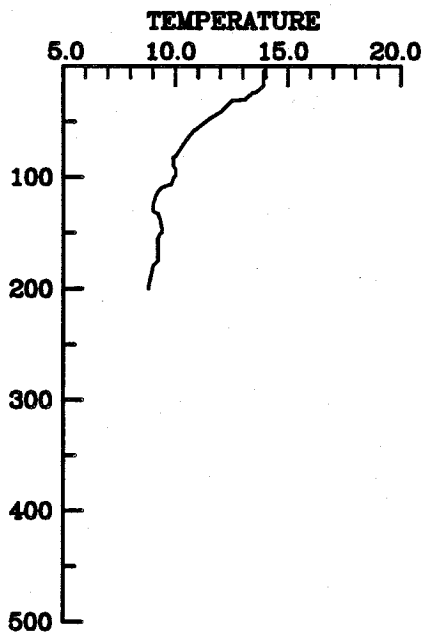
STATION G4 CAST 543
28 April 1983 1318 GMT
XBT Transect G-7
XBT Map 8



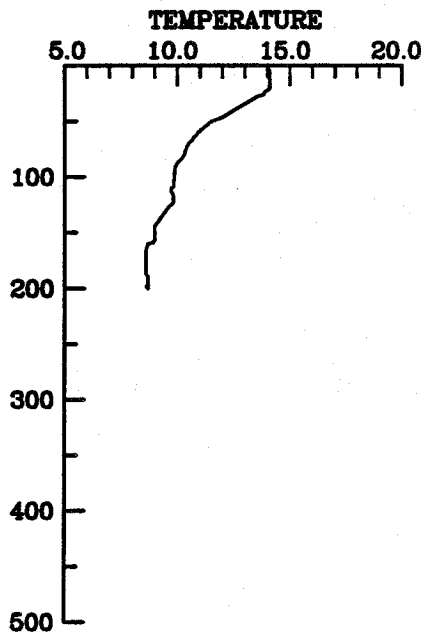
STATION G5 CAST 544
28 April 1983 1330 GMT
XBT Transect G-7
XBT Map 8



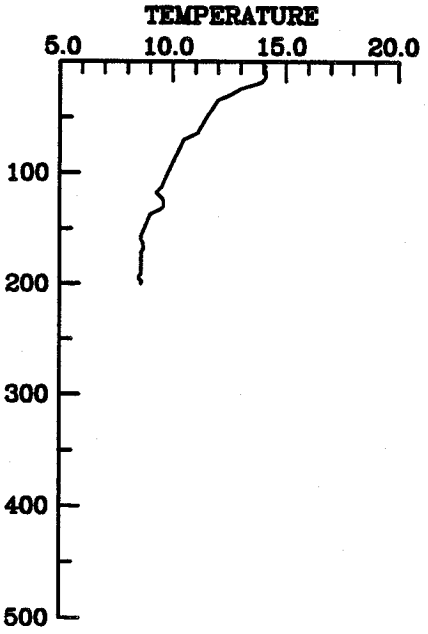
STATION G6 CAST 545
28 April 1983 1342 GMT
XBT Transect G-7
XBT Map 8



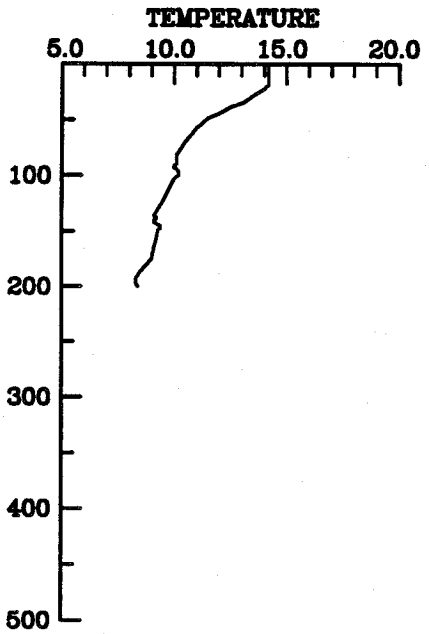
STATION G7 CAST 546
28 April 1983 1354 GMT
XBT Transect G-7
XBT Map 8



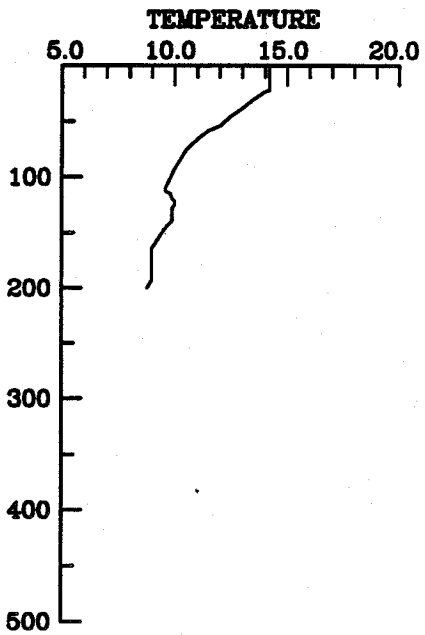
STATION G8 CAST 547
28 April 1983 1412 GMT
XBT Transect G-7
XBT Map 8



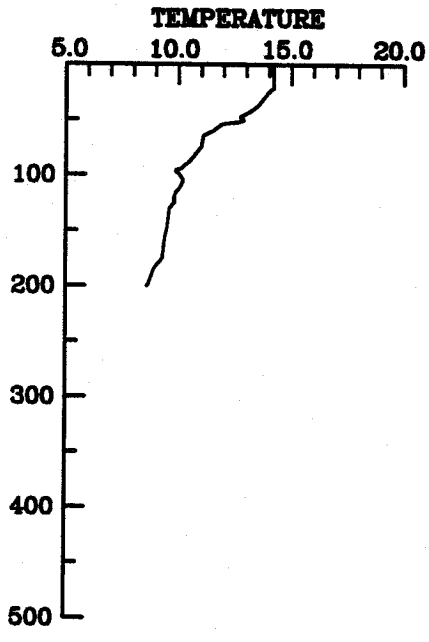
STATION G9 CAST 548
28 April 1983 1424 GMT
XBT Transect G-7
XBT Map 8



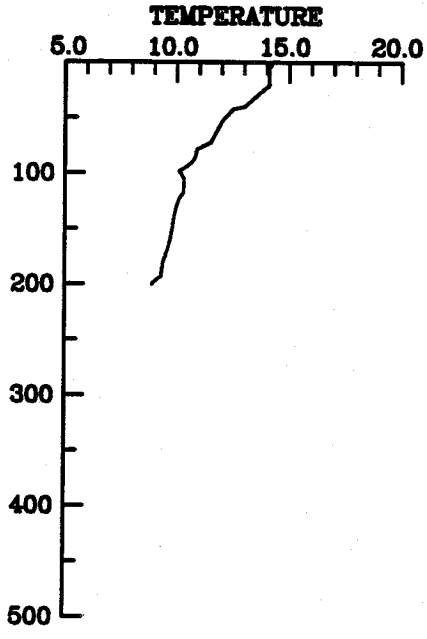
STATION G10 CAST 549
28 April 1983 1436 GMT
XBT Transect G-7
XBT Map 8



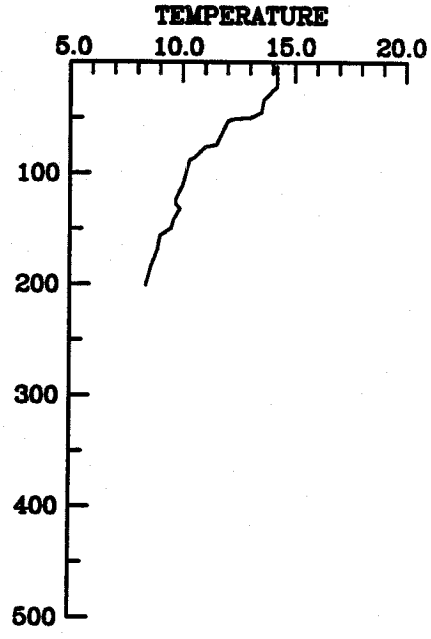
STATION G11 CAST 550
28 April 1983 1448 GMT
XBT Transect G-7
XBT Map 8



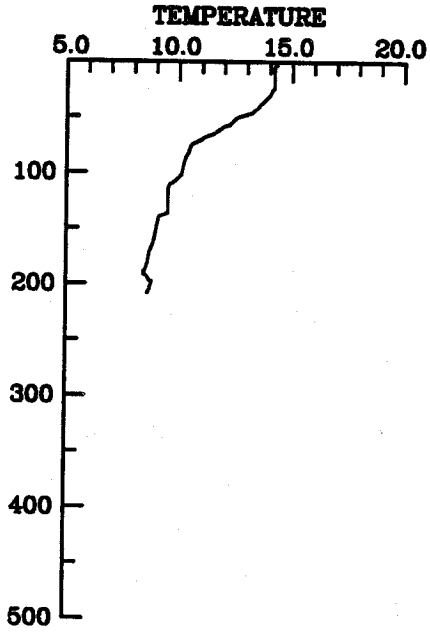
STATION G12 CAST 551
28 April 1983 1506 GMT
XBT Transect G-7
XBT Map 8



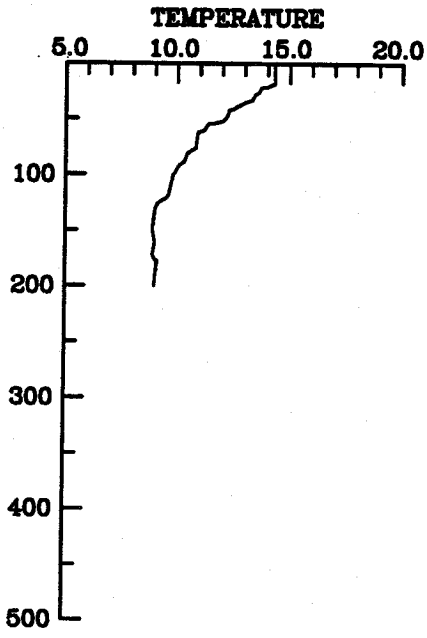
STATION GC0 CAST 552
28 April 1983 1548 GMT
XBT Transect GC-7
XBT Map 8



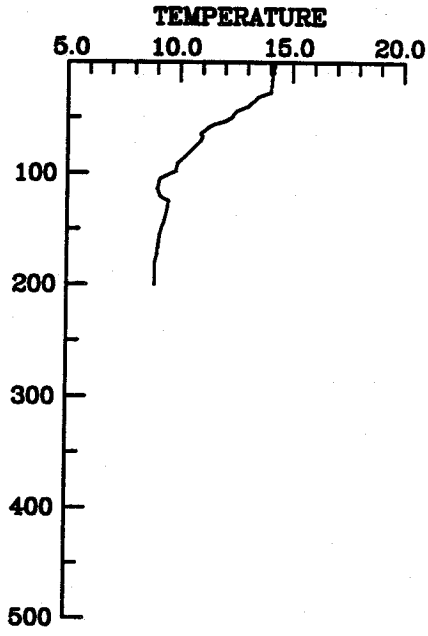
STATION GC9 CAST 553
28 April 1983 1600 GMT
XBT Transect GC-7
XBT Map 8



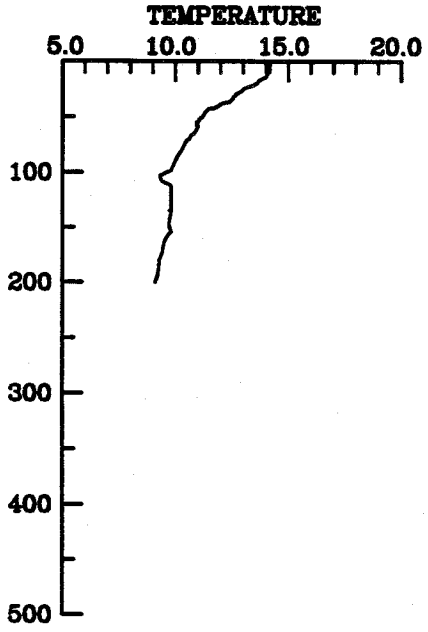
STATION GC8 CAST 554
28 April 1983 1612 GMT
XBT Transect GC-7
XBT Map 8



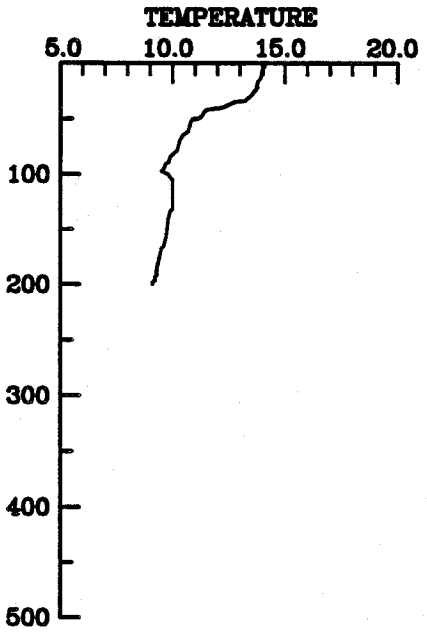
STATION GC7 CAST 555
28 April 1983 1624 GMT
XBT Transect GC-7
XBT Map 8



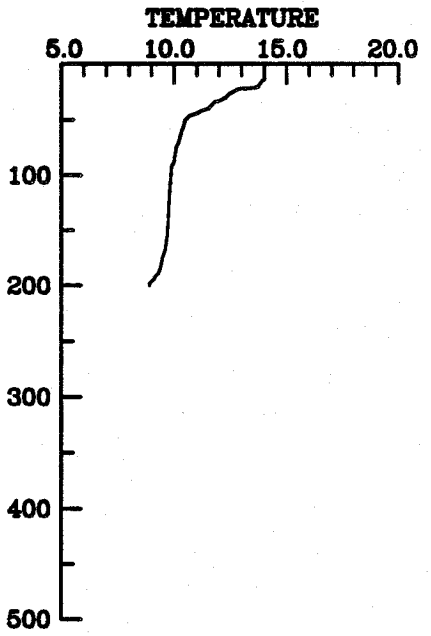
STATION GC6 CAST 556
28 April 1983 1636 GMT
XBT Transect GC-7
XBT Map 8



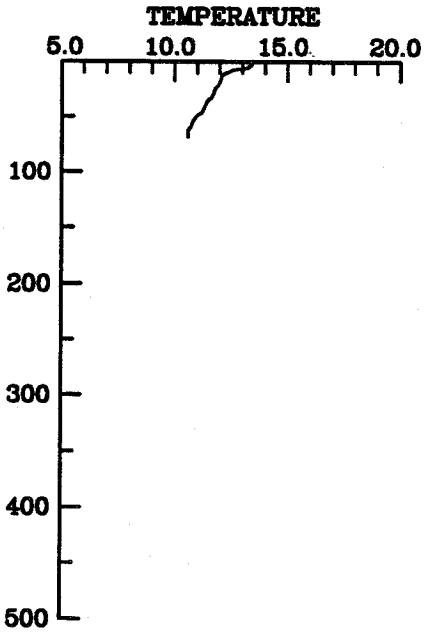
STATION GC5 CAST 557
28 April 1983 1648 GMT
XBT Transect GC-7
XBT Map 8



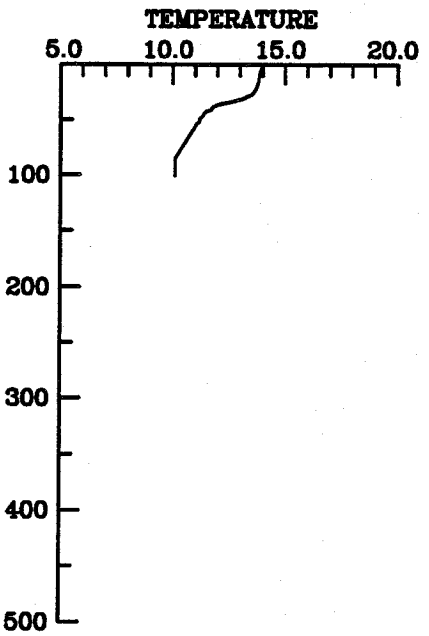
STATION GC4 CAST 558
28 April 1983 1700 GMT
XBT Transect GC-7
XBT Map 8



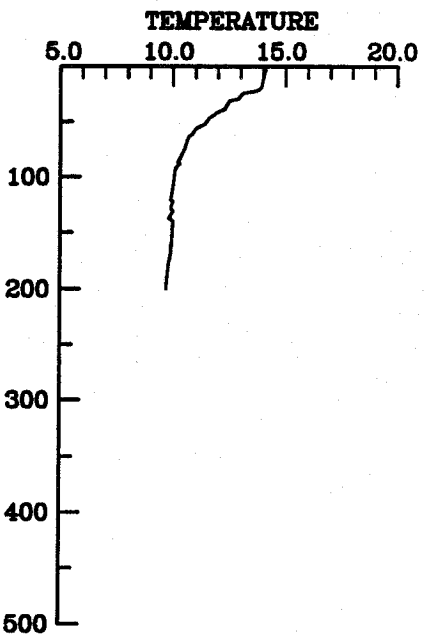
STATION GC2 CAST 560
28 April 1983 1724 GMT
XBT Transect GC-7
XBT Map 8



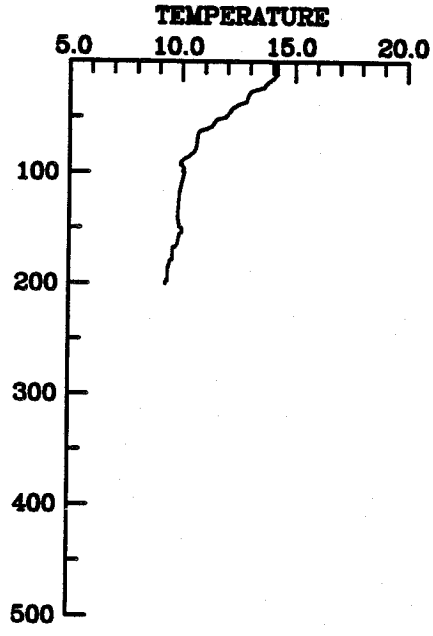
STATION C2 CAST 563
28 April 1983 1836 GMT
XBT Transect C-7
XBT Map 8



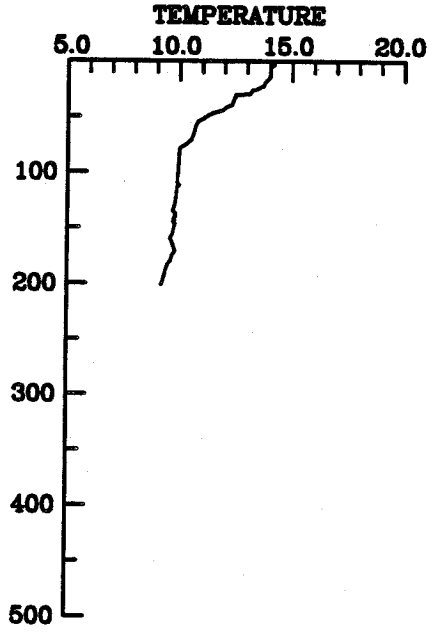
STATION C3 CAST 564
28 April 1983 1848 GMT
XBT Transect C-7
XBT Map 8



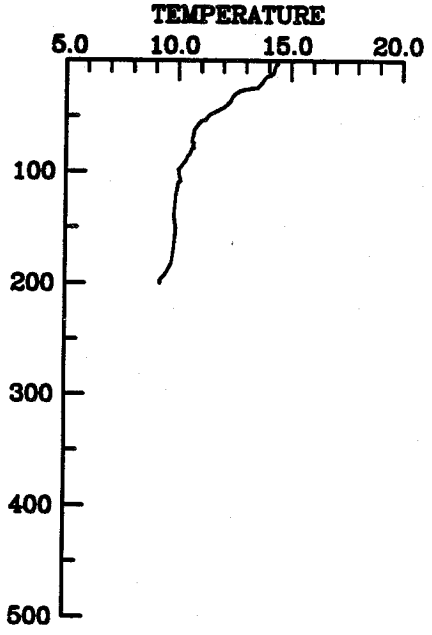
STATION C4 CAST 565
28 April 1983 1900 GMT
XBT Transect C-7
XBT Map 8



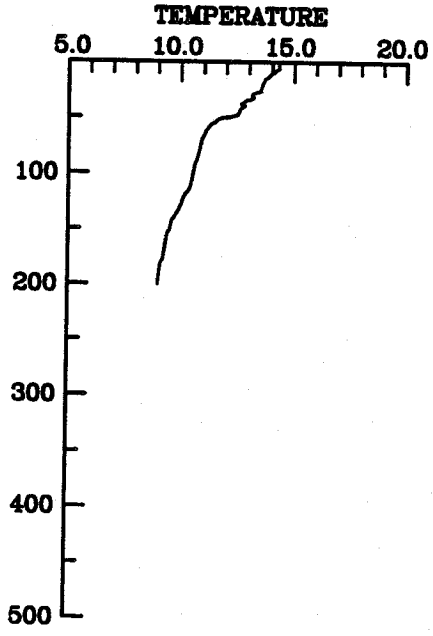
STATION C5 CAST 566
28 April 1983 1924 GMT
XBT Transect C-7
XBT Map 8



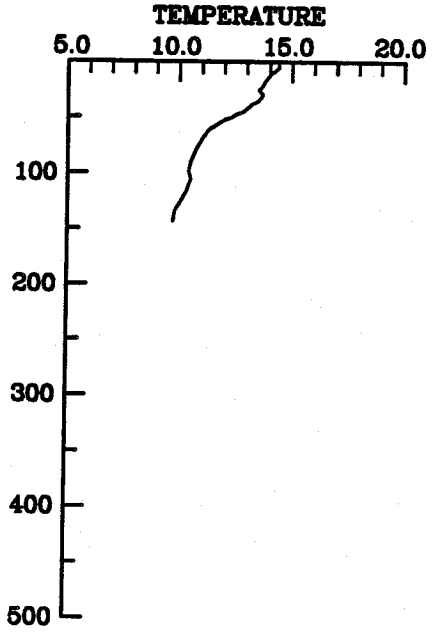
STATION C6 CAST 567
28 April 1983 1936 GMT
XBT Transect C-7
XBT Map 8



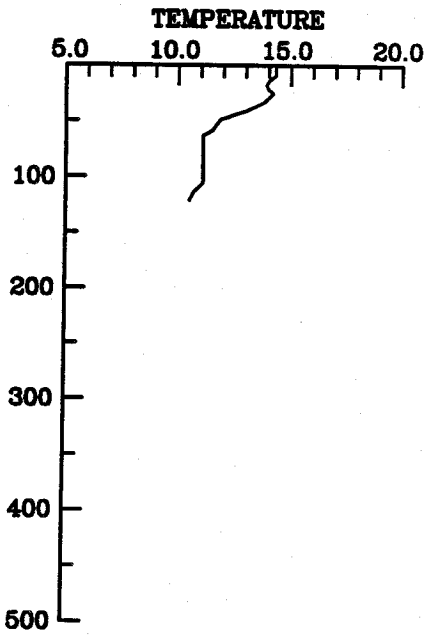
STATION C7 CAST 568
28 April 1983 1954 GMT
XBT Transect C-7
XBT Map 8



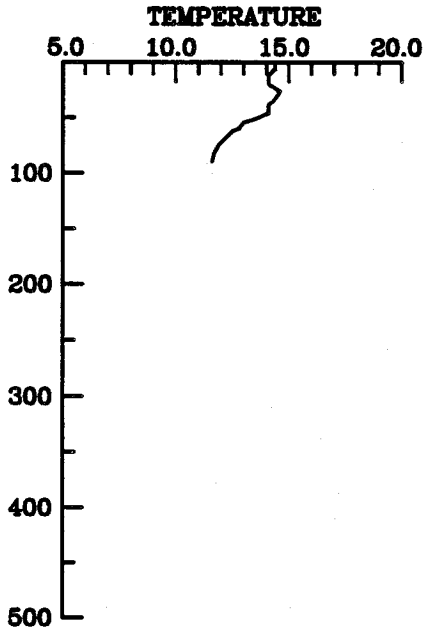
STATION C8 CAST 569
28 April 1983 2006 GMT
XBT Transect C-7
XBT Map 8



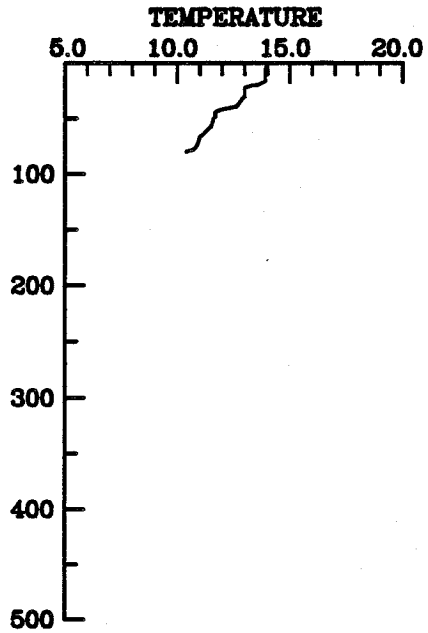
STATION C9 CAST 570
28 April 1983 2018 GMT
XBT Transect C-7
XBT Map 8



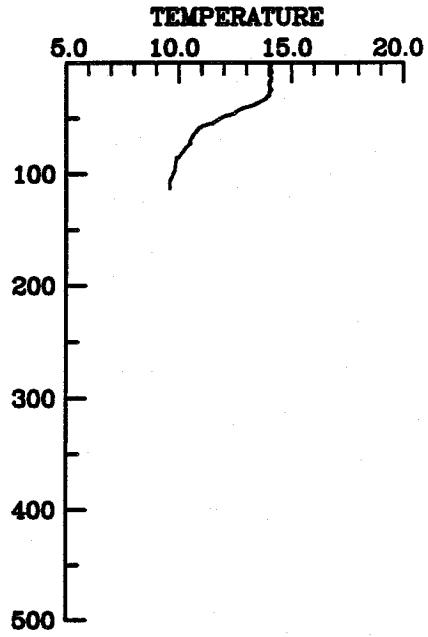
STATION C10 CAST 571
28 April 1983 2030 GMT
XBT Transect C-7
XBT Map 8



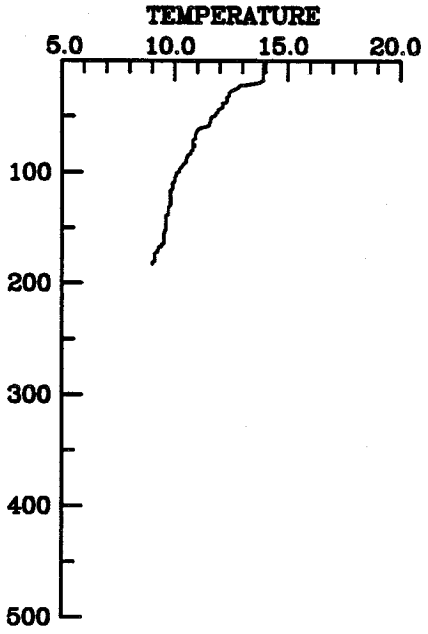
STATION A2 CAST 585
3 May 1983 1000 GMT
XBT Transect A-8
XBT Map 9



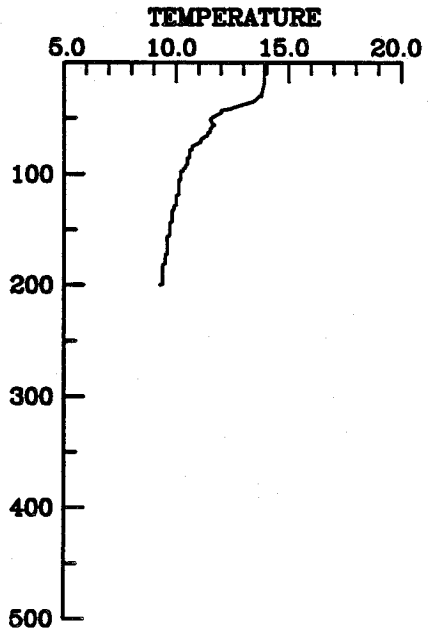
STATION A3 CAST 586
3 May 1983 1012 GMT
XBT Transect A-8
XBT Map 9



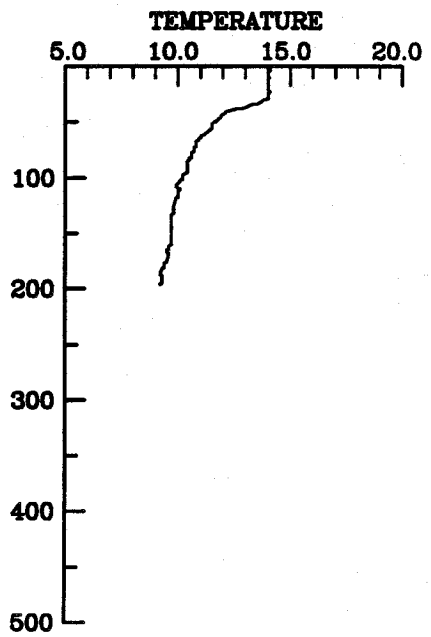
STATION A4 CAST 587
3 May 1983 1024 GMT
XBT Transect A-8
XBT Map 9



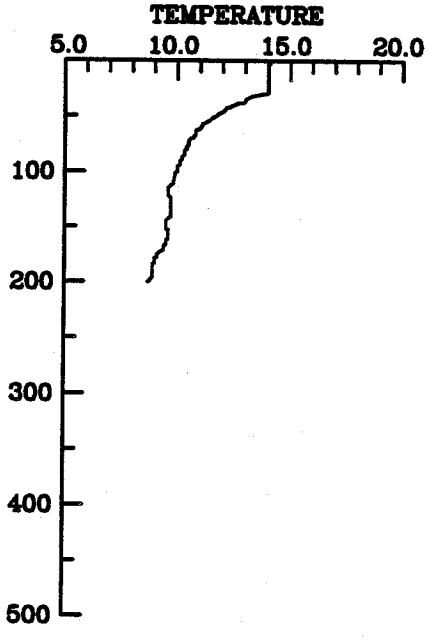
STATION A5 CAST 588
3 May 1983 1042 GMT
XBT Transect A-8
XBT Map 9



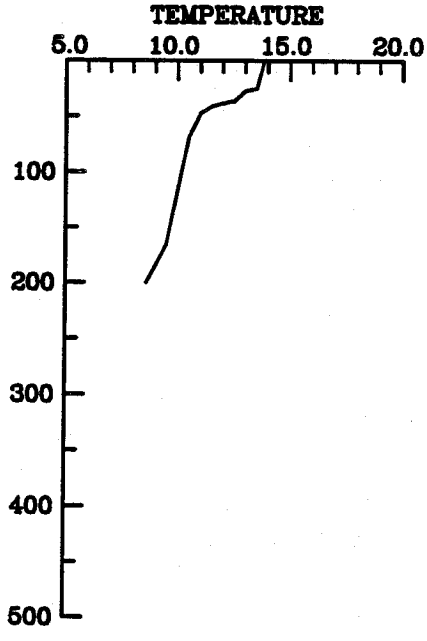
STATION A6 CAST 589
3 May 1983 1054 GMT
XBT Transect A-8
XBT Map 9



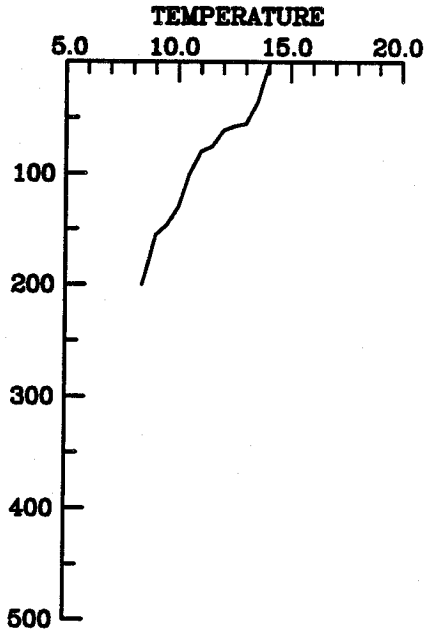
STATION A7 CAST 590
3 May 1983 1106 GMT
XBT Transect A-8
XBT Map 9



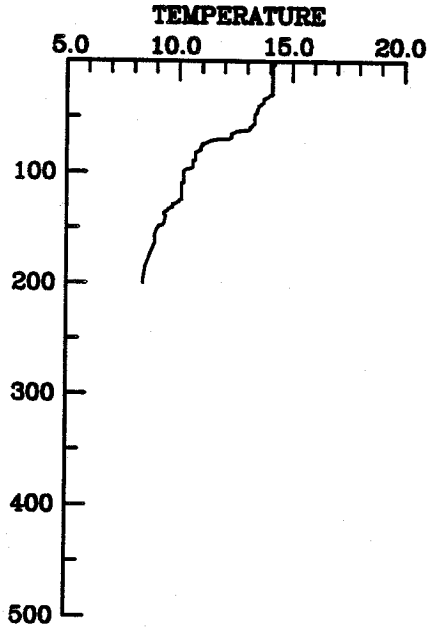
STATION A8 CAST 591
3 May 1983 1118 GMT
XBT Transect A-8
XBT Map 9



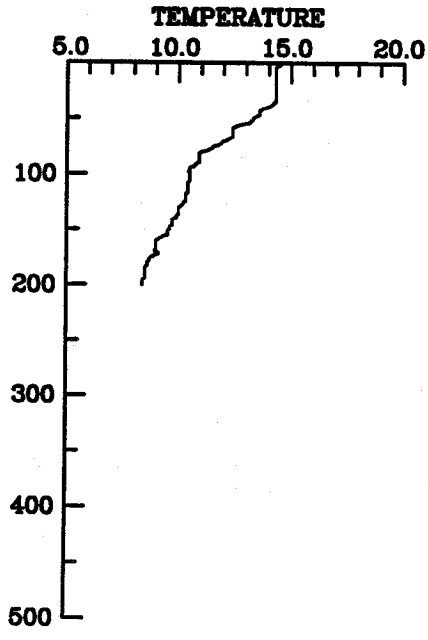
STATION AG8 CAST 592
3 May 1983 1242 GMT
XBT Transect AG-8
XBT Map 9



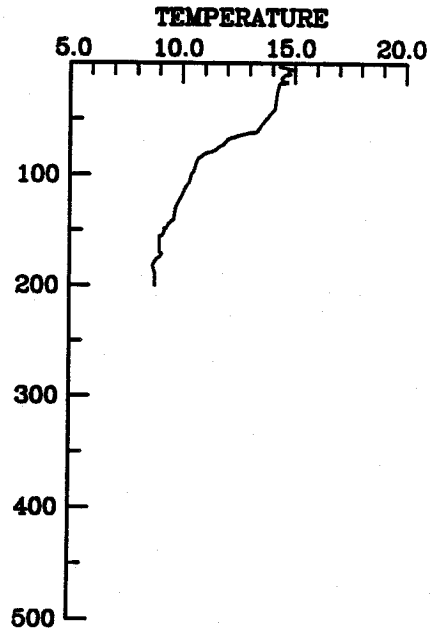
STATION AG7 CAST 593
3 May 1983 1300 GMT
XBT Transect AG-8
XBT Map 9



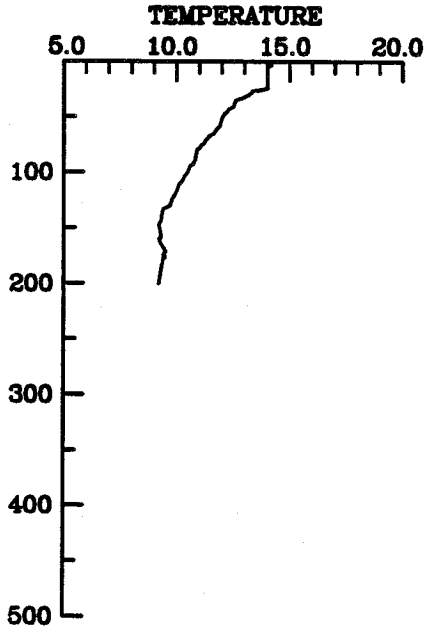
STATION AG6 CAST 594
3 May 1983 1312 GMT
XBT Transect AG-8
XBT Map 9



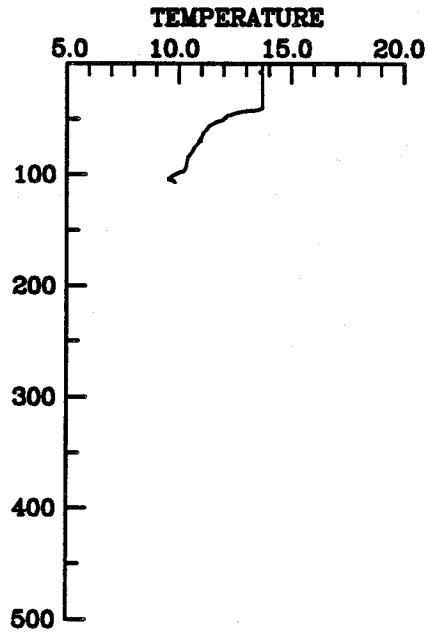
STATION AG5 CAST 595
3 May 1983 1324 GMT
XBT Transect AG-8
XBT Map 9



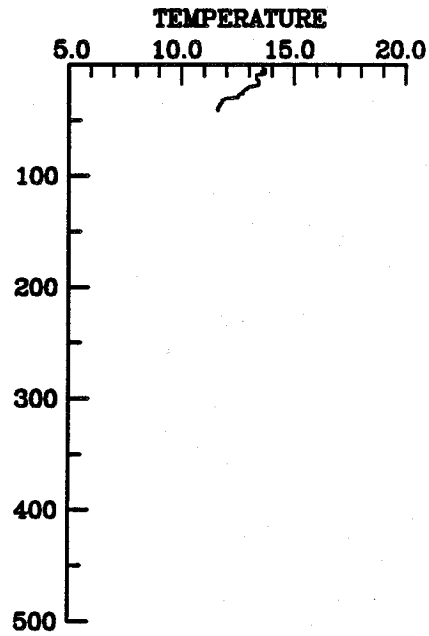
STATION AG4 CAST 596
3 May 1983 1342 GMT
XBT Transect AG-8
XBT Map 9



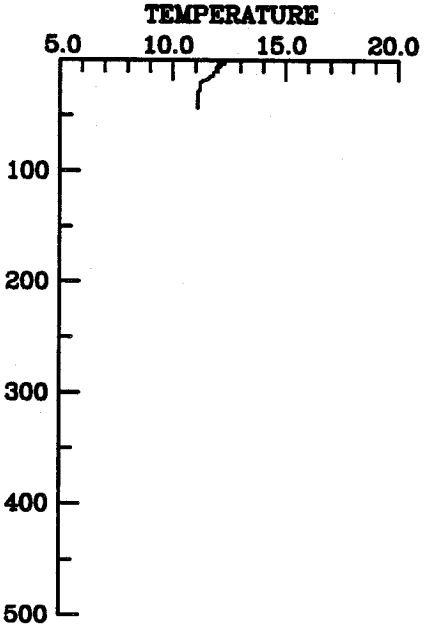
STATION AG3 CAST 597
3 May 1983 1354 GMT
XBT Transect AG-8
XBT Map 9



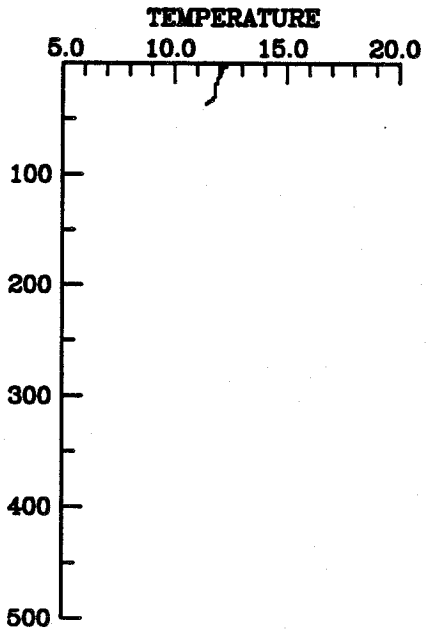
STATION AG2 CAST 598
3 May 1983 1406 GMT
XBT Transect AG-8
XBT Map 9



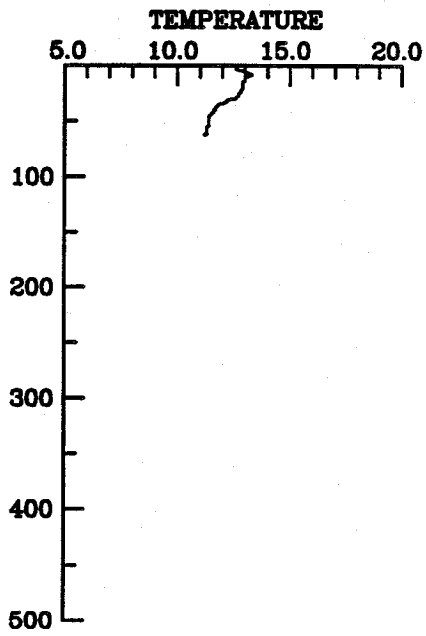
STATION AG1 CAST 599
3 May 1983 1418 GMT
XBT Transect AG-8
XBT Map 9



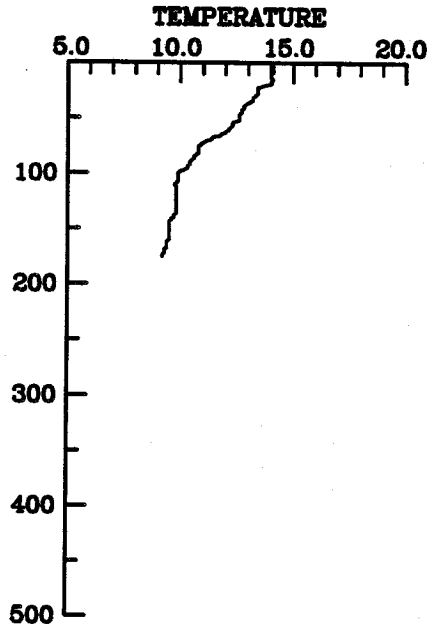
STATION G1 CAST 600
3 May 1983 1436 GMT
XBT Transect G-8
XBT Map 9



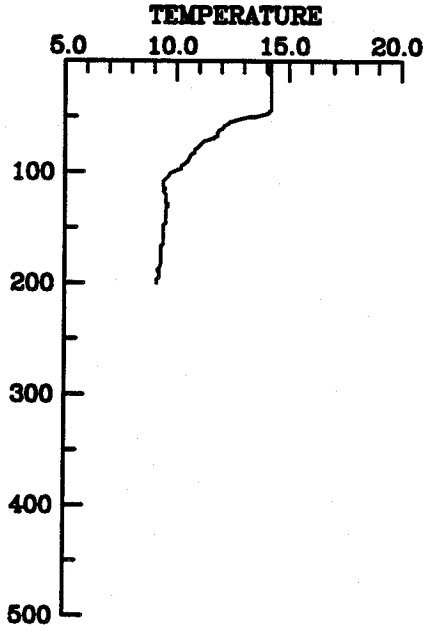
STATION G2 CAST 601
3 May 1983 1448 GMT
XBT Transect G-8
XBT Map 9



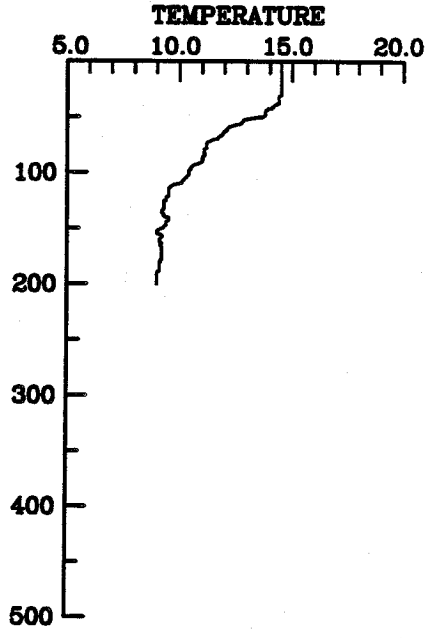
STATION G4 CAST 603
3 May 1983 1524 GMT
XBT Transect G-8
XBT Map 9



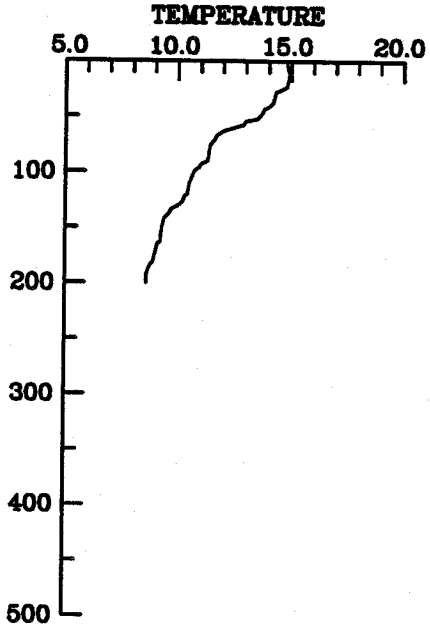
STATION G5 CAST 604
3 May 1983 1536 GMT
XBT Transect G-8
XBT Map 9



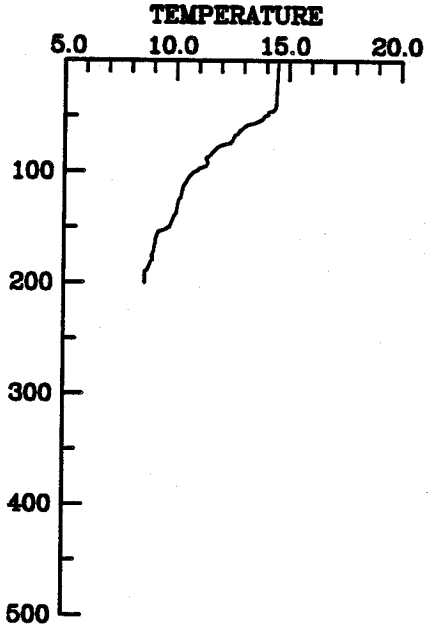
STATION G6 CAST 605
3 May 1983 1548 GMT
XBT Transect G-8
XBT Map 9



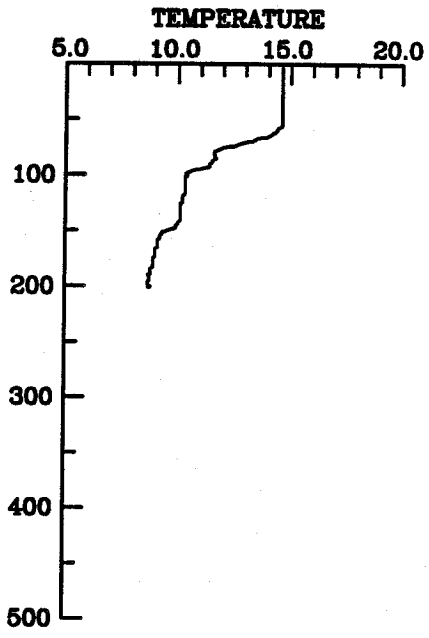
STATION G7 CAST 606
3 May 1983 1606 GMT
XBT Transect G-8
XBT Map 9



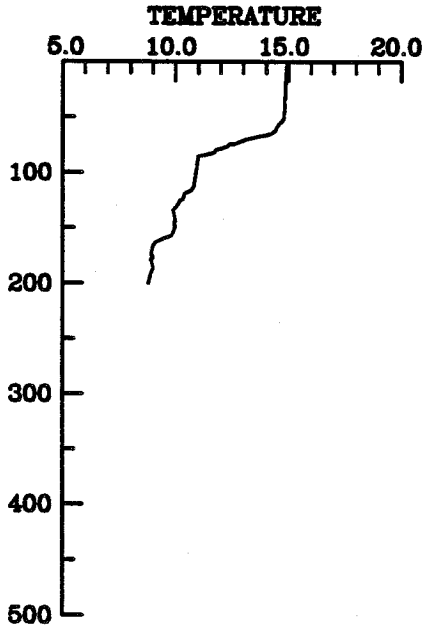
STATION G8 CAST 607
3 May 1983 1618 GMT
XBT Transect G-8
XBT Map 9



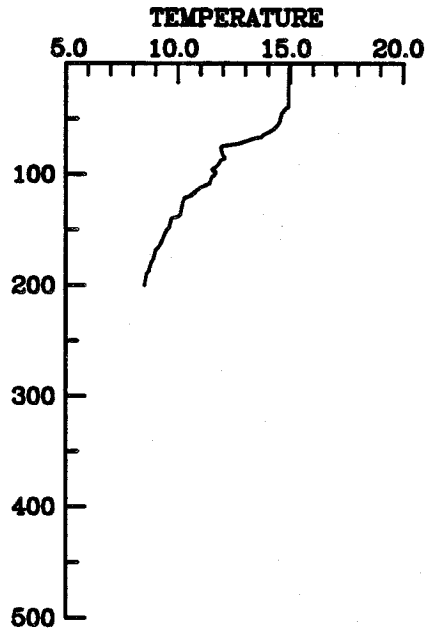
STATION G9 CAST 608
3 May 1983 1630 GMT
XBT Transect G-8
XBT Map 9



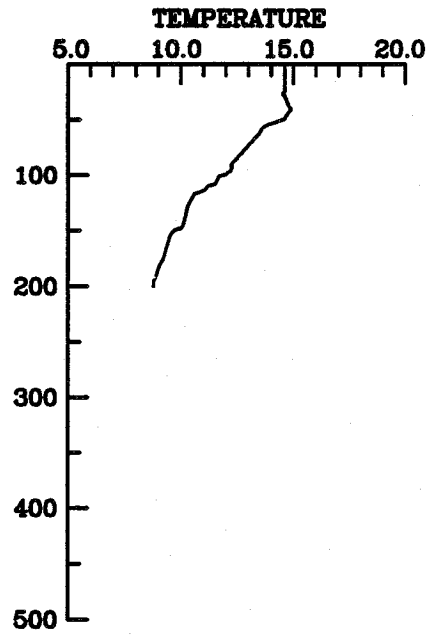
STATION G10 CAST 609
3 May 1983 1648 GMT
XBT Transect G-8
XBT Map 9



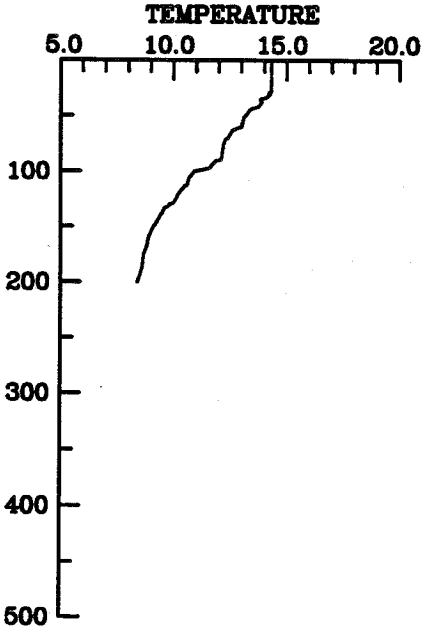
STATION G11 CAST 610
3 May 1983 1700 GMT
XBT Transect G-8
XBT Map 9



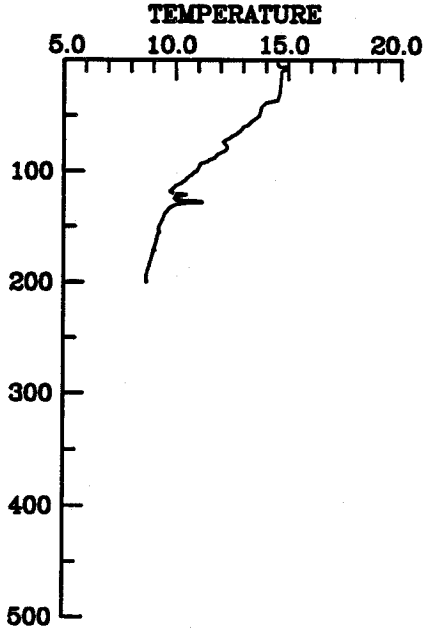
STATION G12 CAST 611
3 May 1983 1712 GMT
XBT Transect G-8
XBT Map 9



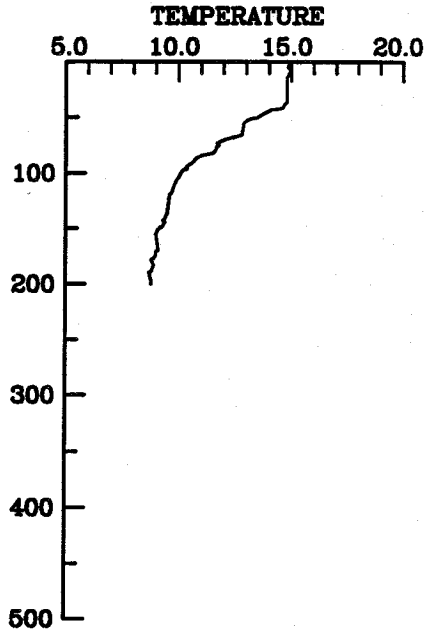
STATION GC0 CAST 612
3 May 1983 1754 GMT
XBT Transect GC-8
XBT Map 9



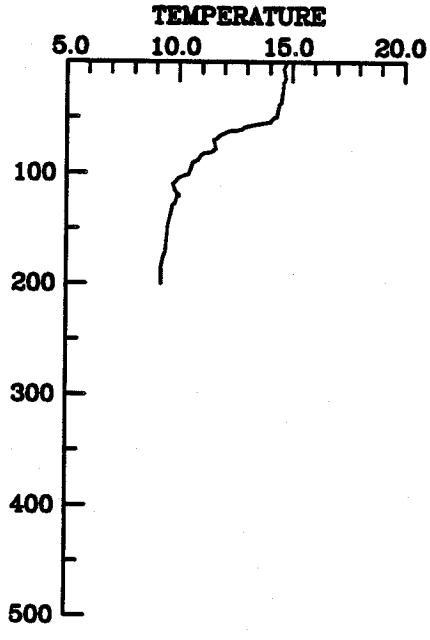
STATION GC9 CAST 613
3 May 1983 1812 GMT
XBT Transect GC-8
XBT Map 9



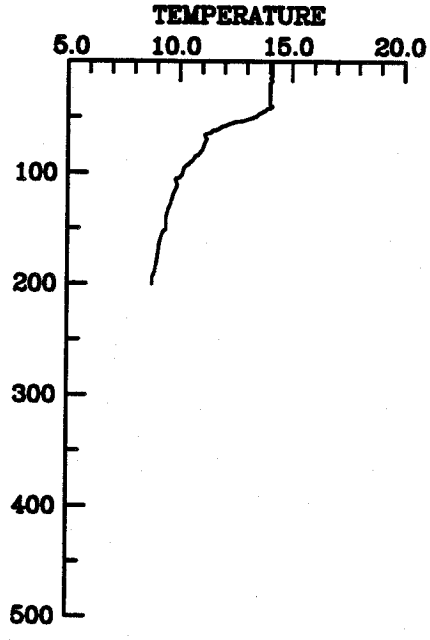
STATION GC8 CAST 614
3 May 1983 1824 GMT
XBT Transect GC-8
XBT Map 9



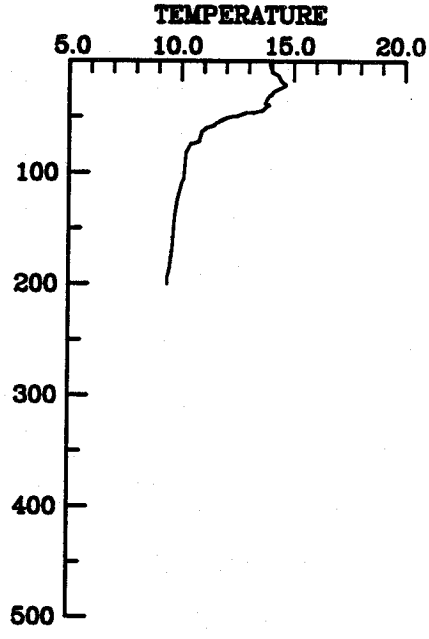
STATION GC7 CAST 615
3 May 1983 1842 GMT
XBT Transect GC-8
XBT Map 9



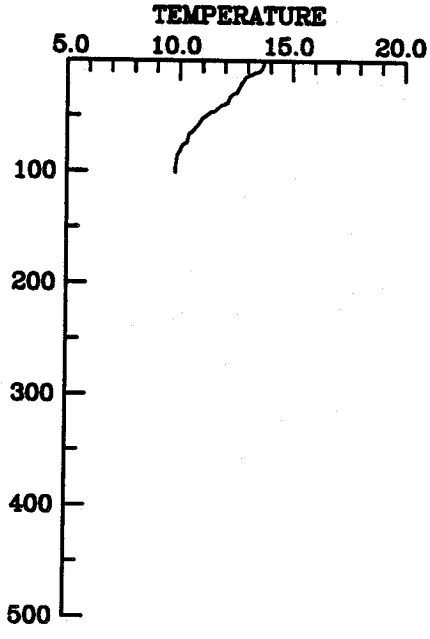
STATION GC6 CAST 616
3 May 1983 1854 GMT
XBT Transect GC-8
XBT Map 9



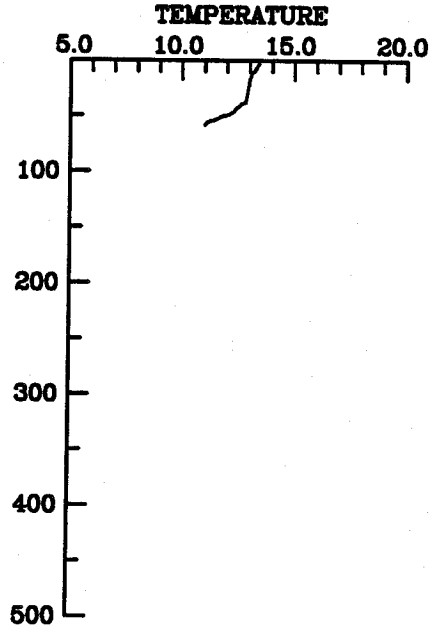
STATION GC4 CAST 617
3 May 1983 1924 GMT
XBT Transect GC-8
XBT Map 9



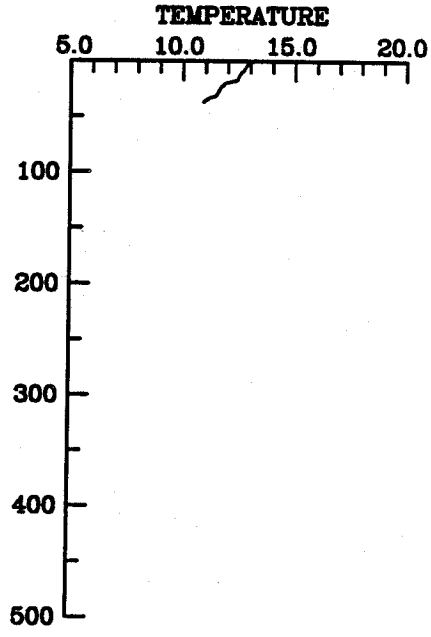
STATION GC3 CAST 618
3 May 1983 1936 GMT
XBT Transect GC-8
XBT Map 9



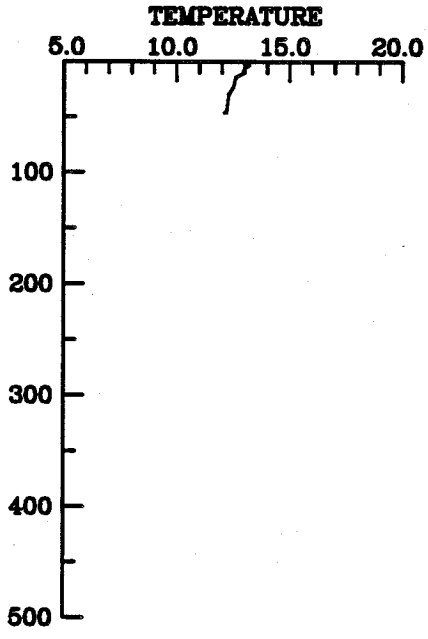
STATION GC2 CAST 619
3 May 1983 1948 GMT
XBT Transect GC-8
XBT Map 9



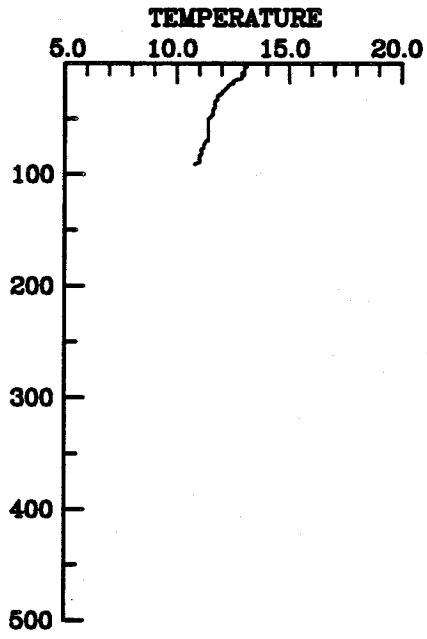
STATION GC1 CAST 620
3 May 1983 2000 GMT
XBT Transect GC-8
XBT Map 9



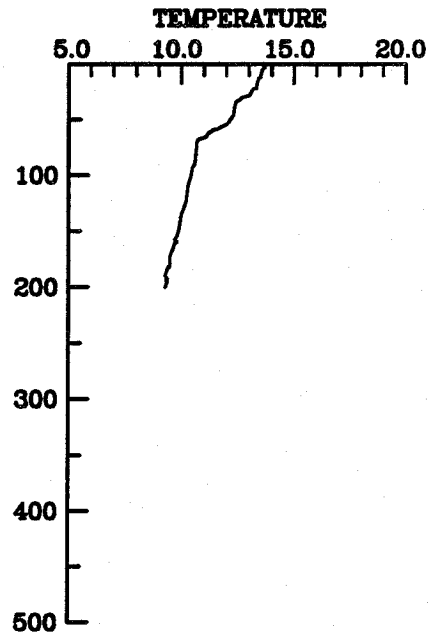
STATION C1 CAST 621
3 May 1983 2036 GMT
XBT Transect C-8
XBT Map 9



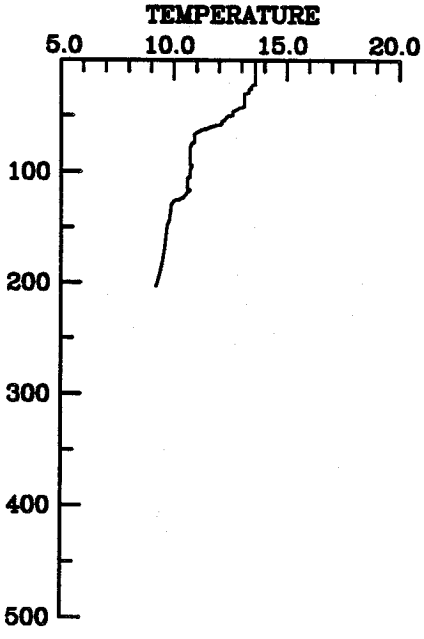
STATION C2 CAST 622
3 May 1983 2042 GMT
XBT Transect C-8
XBT Map 9



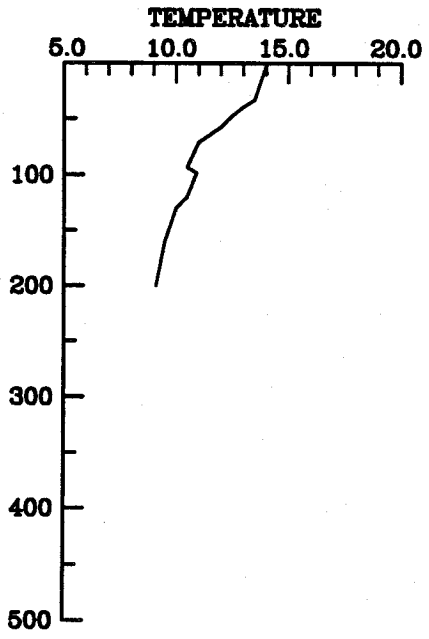
STATION C3 CAST 623
3 May 1983 2100 GMT
XBT Transect C-8
XBT Map 9



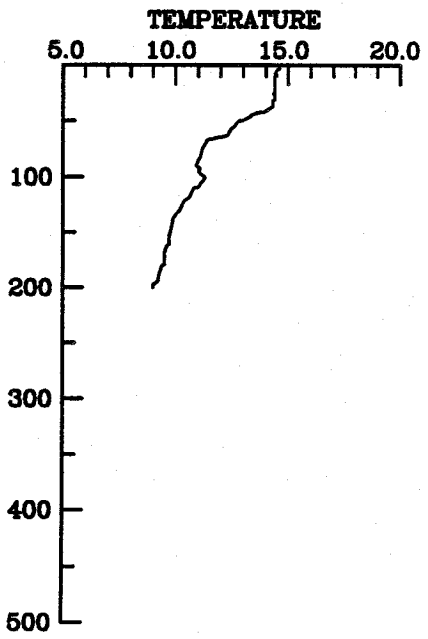
STATION C4 CAST 624
3 May 1983 2112 GMT
XBT Transect C-8
XBT Map 9



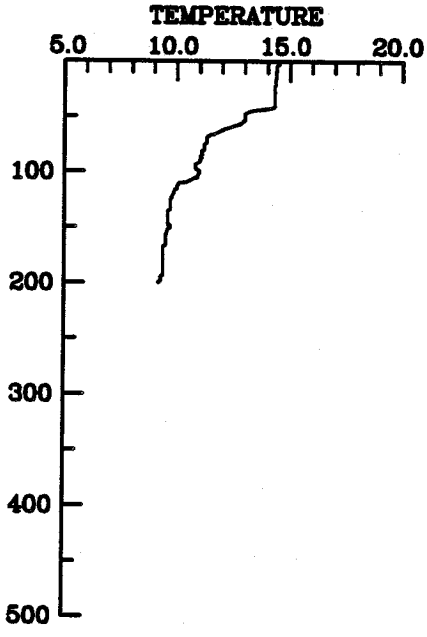
STATION C5 CAST 625
3 May 1983 2130 GMT
XBT Transect C-8
XBT Map 9



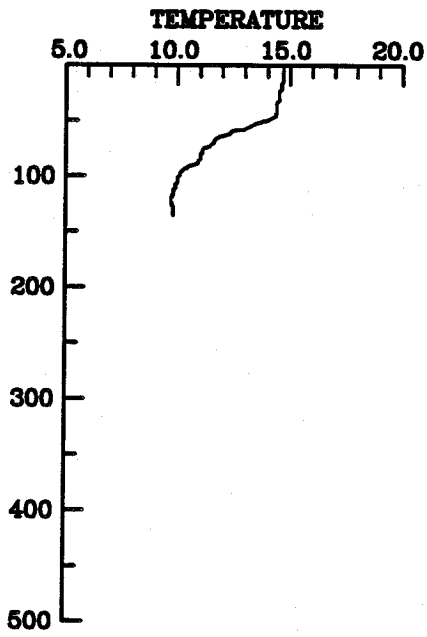
STATION C6 CAST 626
3 May 1983 2136 GMT
XBT Transect C-8
XBT Map 9



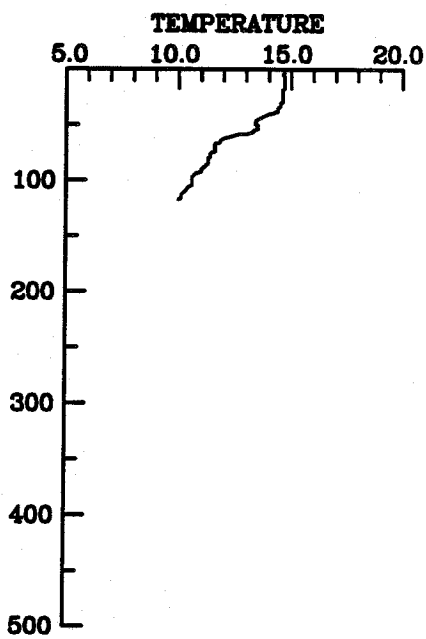
STATION C7 CAST 627
3 May 1983 2154 GMT
XBT Transect C-8
XBT Map 9



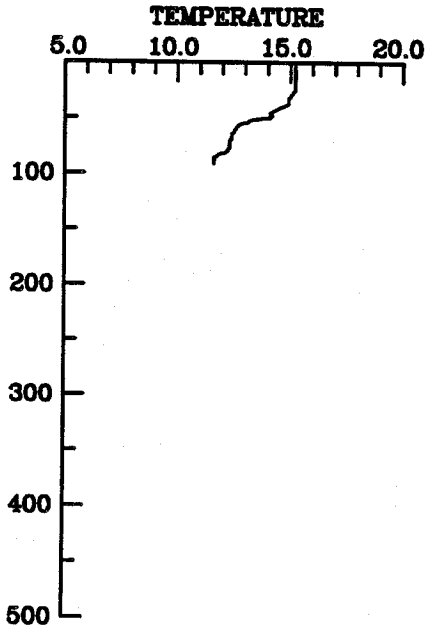
STATION C8 CAST 628
3 May 1983 2206 GMT
XBT Transect C-8
XBT Map 9



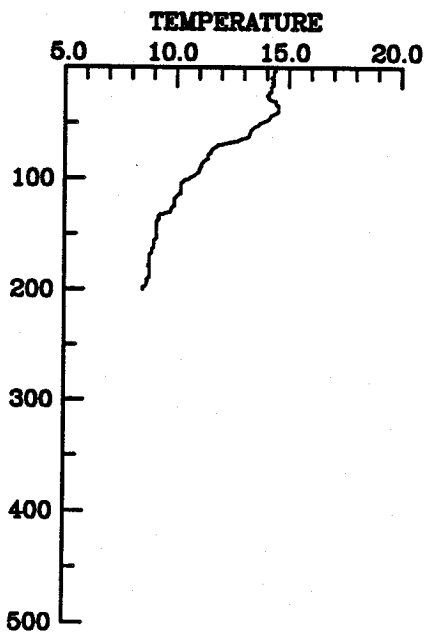
STATION C9 CAST 629
3 May 1983 2218 GMT
XBT Transect C-8
XBT Map 9



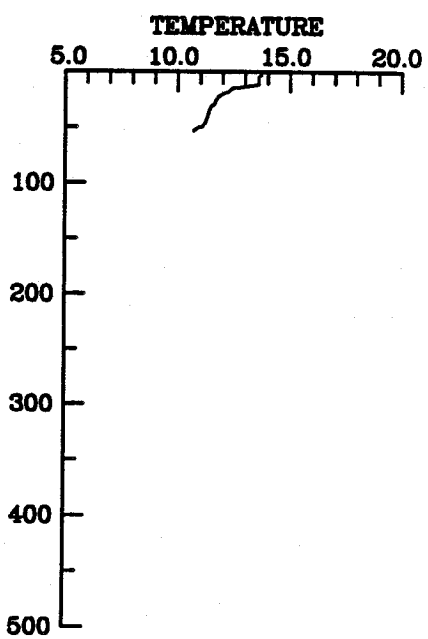
STATION C10 CAST 630
3 May 1983 2230 GMT
XBT Transect C-8
XBT Map 9



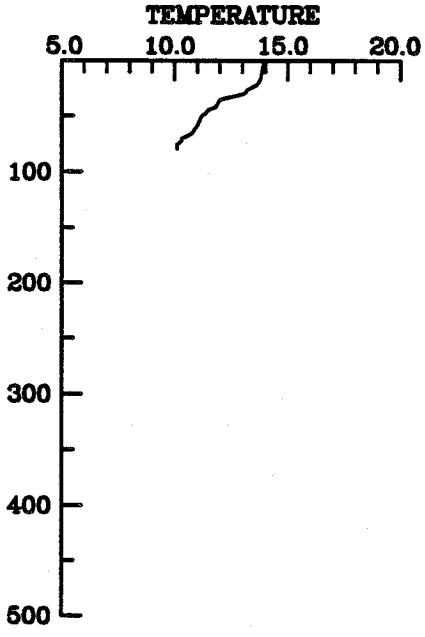
STATION P10 CAST 670
6 May 1983 1236 GMT
CTD Transect P-2



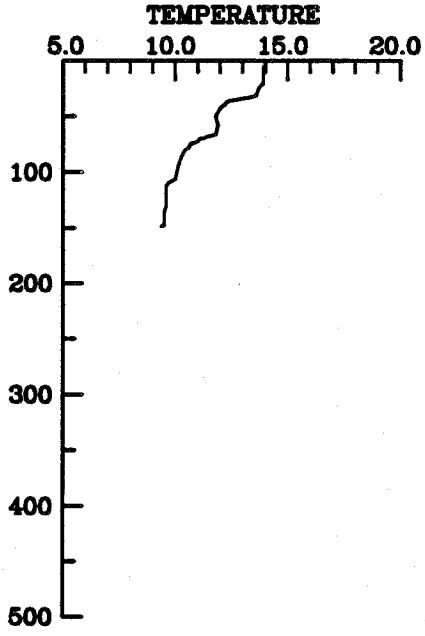
STATION A1 CAST 671
6 May 1983 1642 GMT
XBT Transect A-9
XBT Map 10



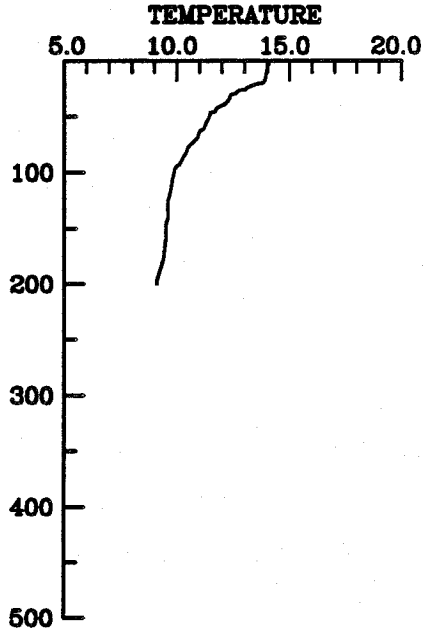
STATION A2 CAST 672
6 May 1983 1654 GMT
XBT Transect A-9
XBT Map 10



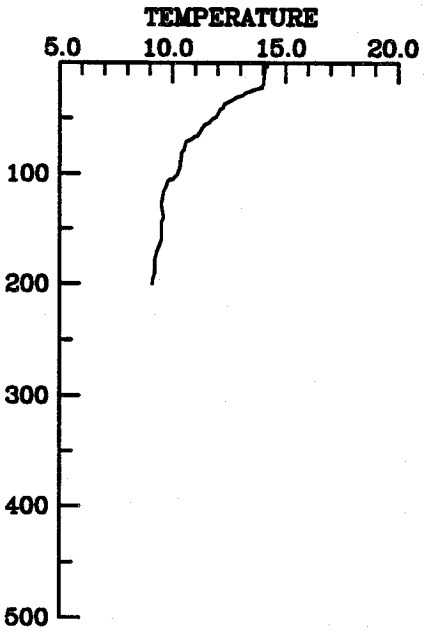
STATION A3 CAST 673
6 May 1983 1712 GMT
XBT Transect A-9
XBT Map 10



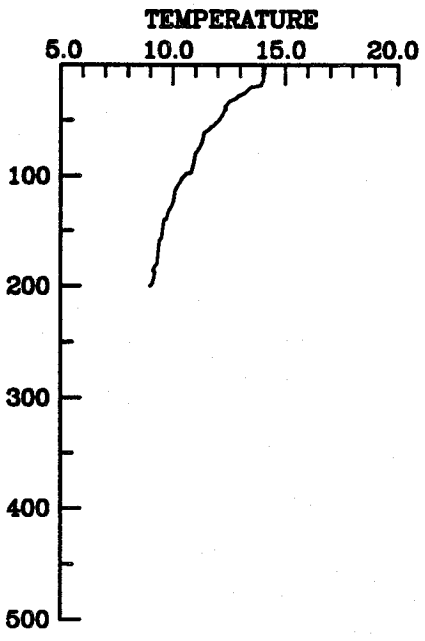
STATION A4 CAST 674
6 May 1983 1730 GMT
XBT Transect A-9
XBT Map 10



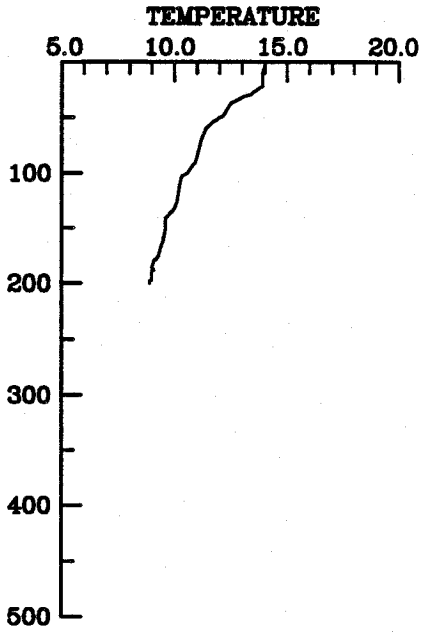
STATION A5 CAST 675
6 May 1983 1742 GMT
XBT Transect A-9
XBT Map 10



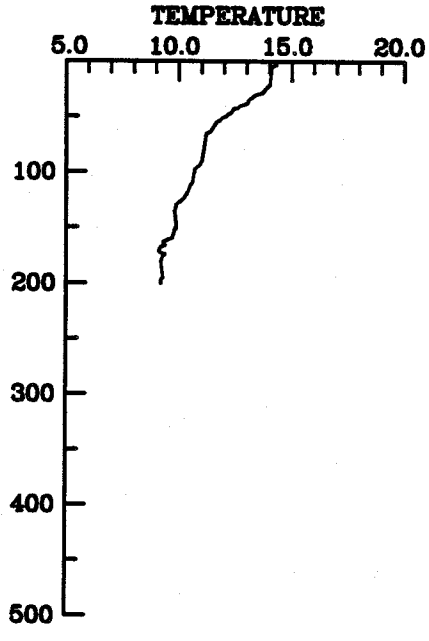
STATION A6 CAST 676
6 May 1983 1754 GMT
XBT Transect A-9
XBT Map 10



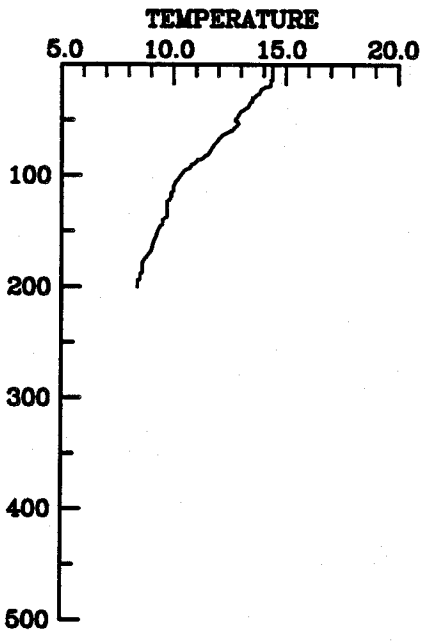
STATION A7 CAST 677
6 May 1983 1812 GMT
XBT Transect A-9
XBT Map 10



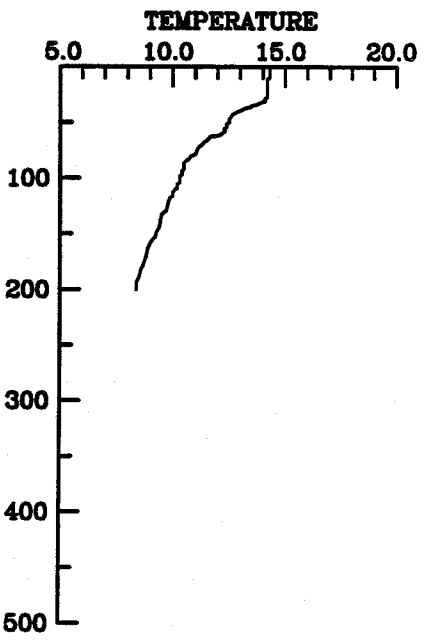
STATION A8 CAST 678
6 May 1983 1830 GMT
XBT Transect A-9
XBT Map 10



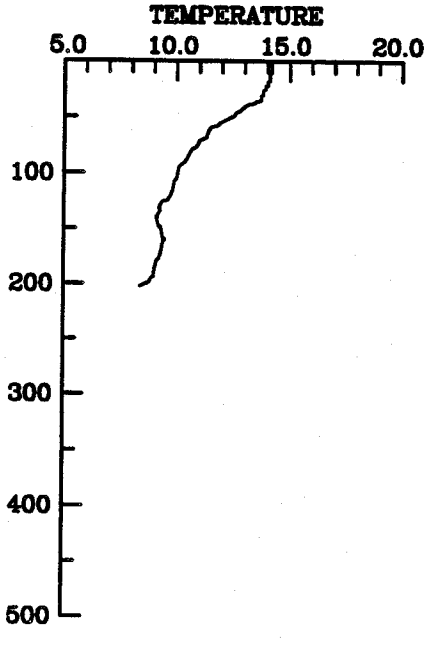
STATION AG8 CAST 679
6 May 1983 1948 GMT
XBT Transect AG-9
XBT Map 10



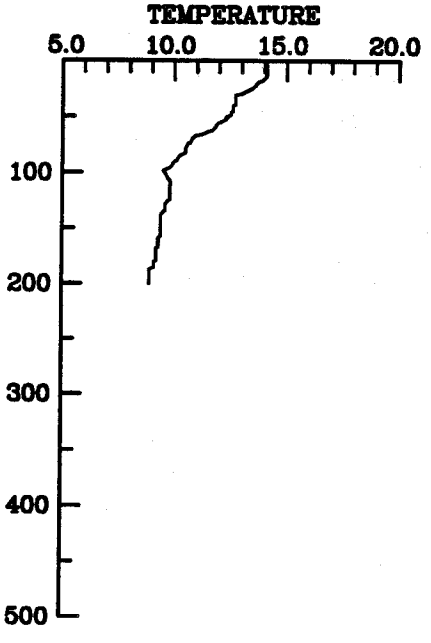
STATION AG7 CAST 680
6 May 1983 2006 GMT
XBT Transect AG-9
XBT Map 10



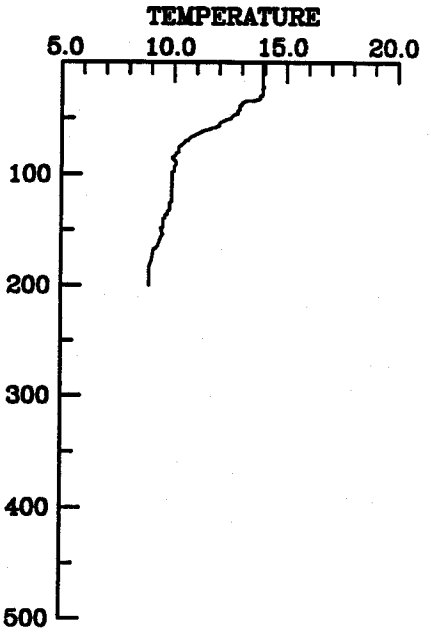
STATION AG6 CAST 681
6 May 1983 2018 GMT
XBT Transect AG-9
XBT Map 10



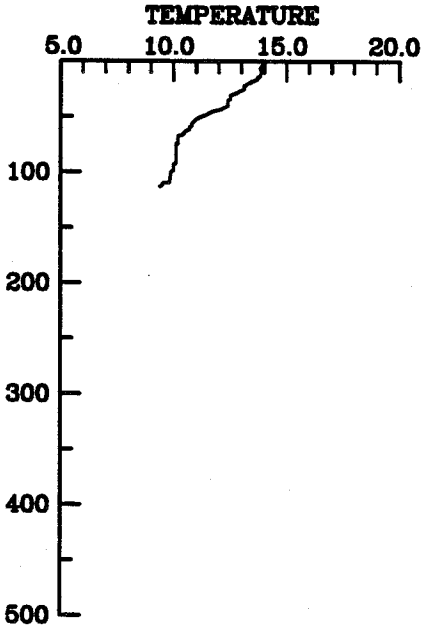
STATION AG5 CAST 682
6 May 1983 2030 GMT
XBT Transect AG-9
XBT Map 10



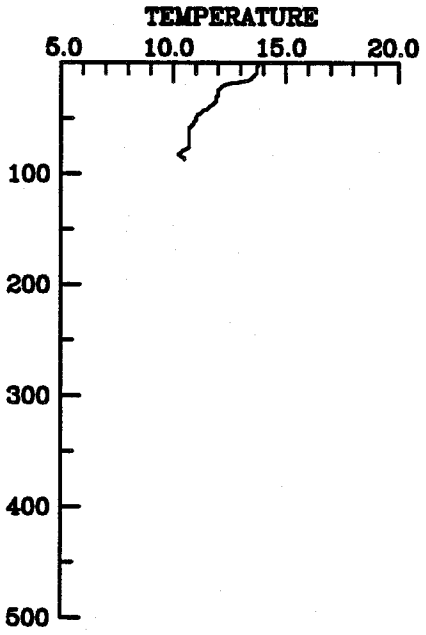
STATION AG4 CAST 683
6 May 1983 2048 GMT
XBT Transect AG-9
XBT Map 10



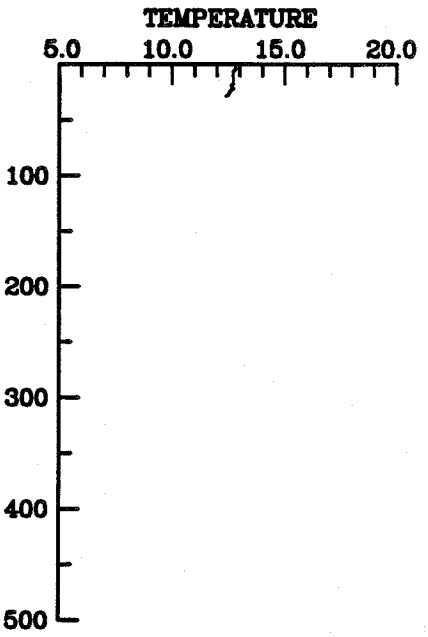
STATION AG3 CAST 684
6 May 1983 2100 GMT
XBT Transect AG-9
XBT Map 10



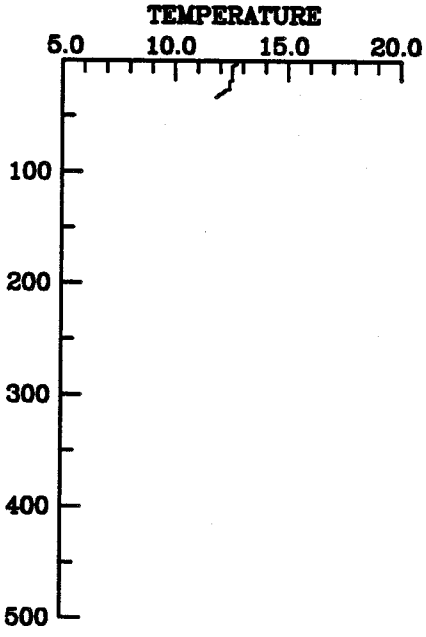
STATION AG2 CAST 685
6 May 1983 2118 GMT
XBT Transect AG-9
XBT Map 10



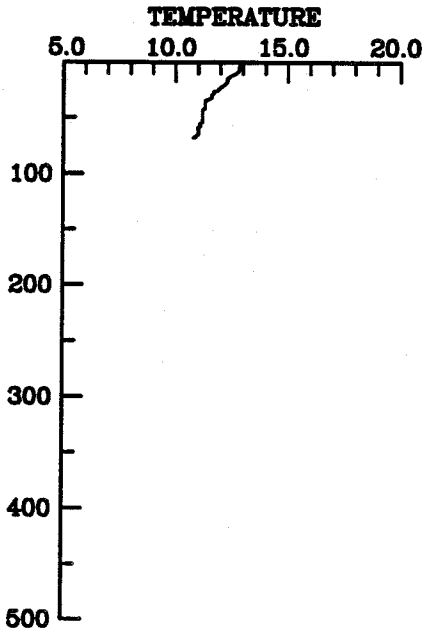
STATION AG1 CAST 686
6 May 1983 2130 GMT
XBT Transect AG-9
XBT Map 10



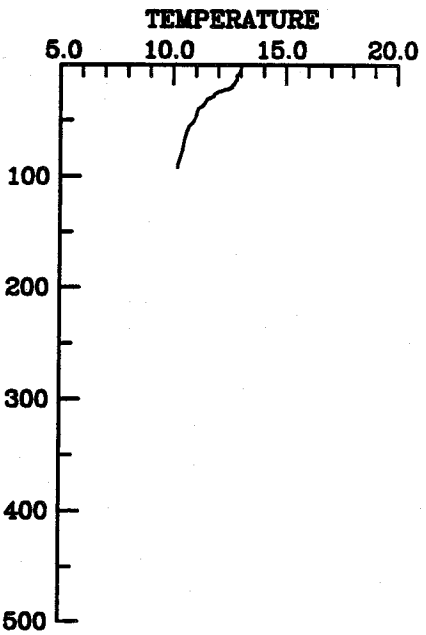
STATION G1 CAST 687
6 May 1983 2148 GMT
XBT Transect G-9
XBT Map 10



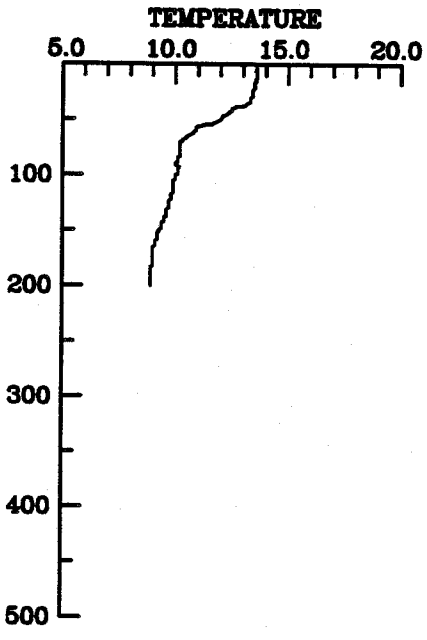
STATION G2 CAST 688
6 May 1983 2206 GMT
XBT Transect G-9
XBT Map 10



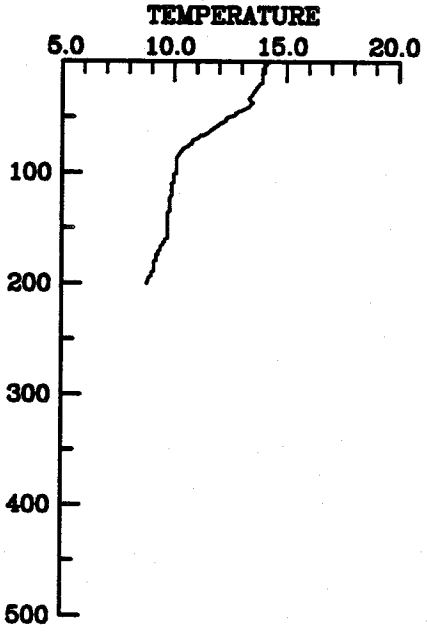
STATION G3 CAST 689
6 May 1983 2218 GMT
XBT Transect G-9
XBT Map 10



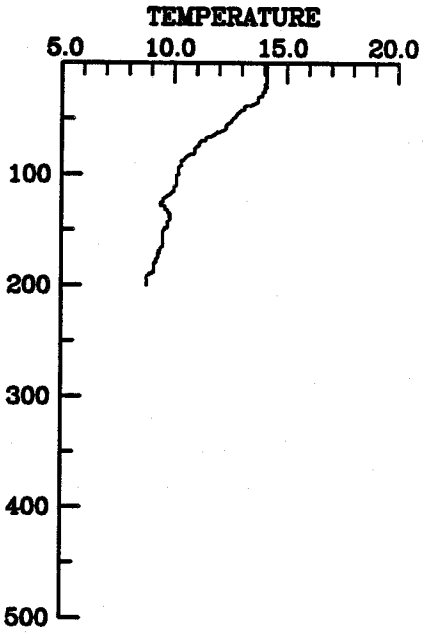
STATION G4 CAST 690
6 May 1983 2242 GMT
XBT Transect G-9
XBT Map 10



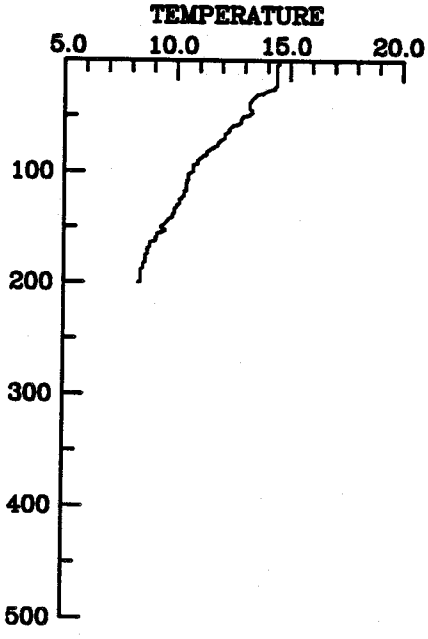
STATION G5 CAST 691
6 May 1983 2254 GMT
XBT Transect G-9
XBT Map 10



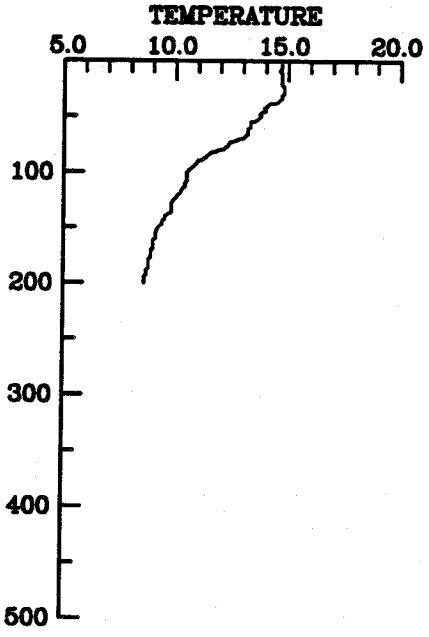
STATION G6 CAST 692
6 May 1983 2312 GMT
XBT Transect G-9
XBT Map 10



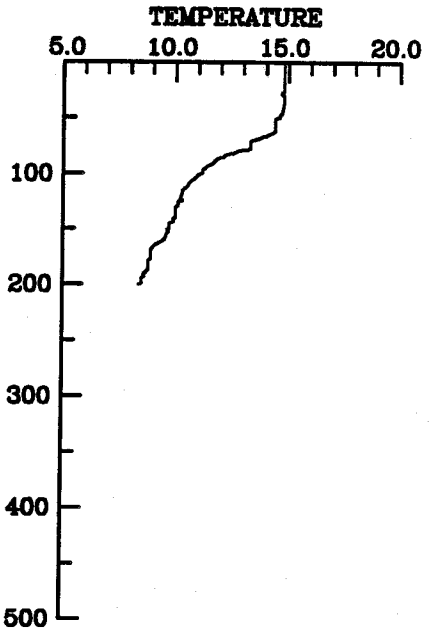
STATION G7 CAST 693
6 May 1983 2324 GMT
XBT Transect G-9
XBT Map 10



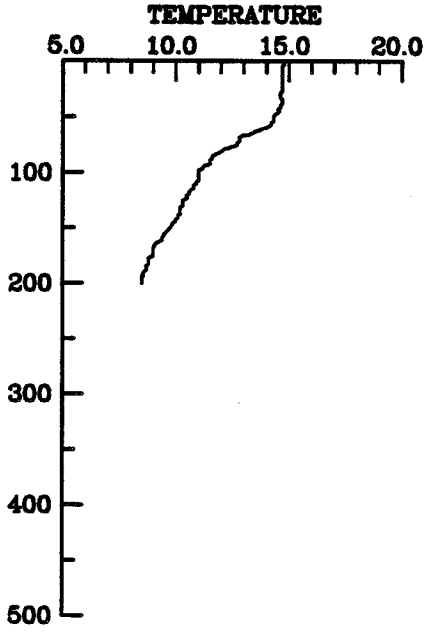
STATION G8 CAST 694
6 May 1983 2336 GMT
XBT Transect G-9
XBT Map 10



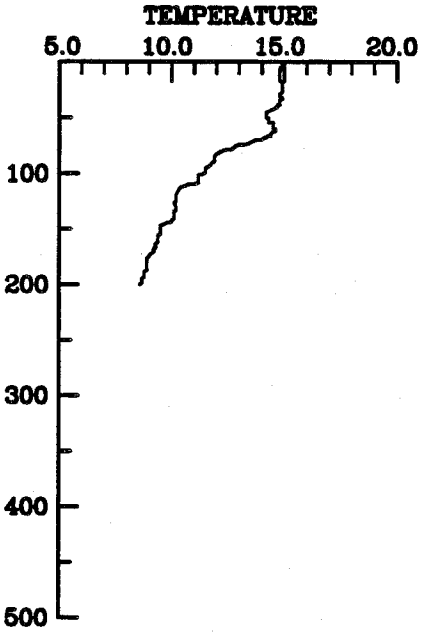
STATION G9 CAST 695
6 May 1983 2354 GMT
XBT Transect G-9
XBT Map 10



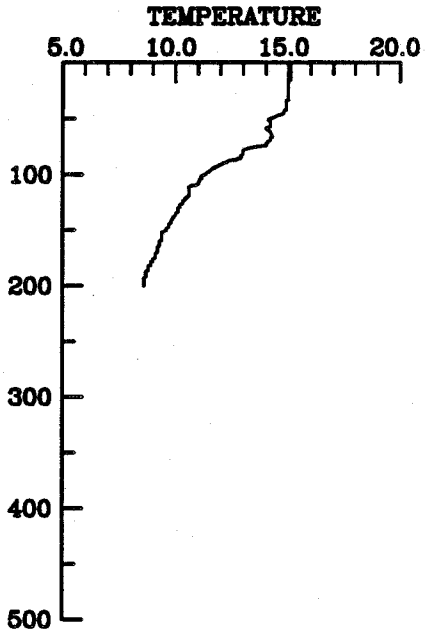
STATION G10 CAST 696
7 May 1983 6 GMT
XBT Transect G-9
XBT Map 10



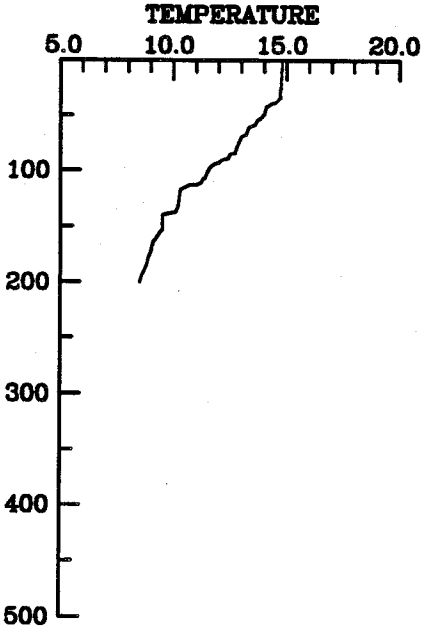
STATION G11 CAST 697
7 May 1983 24 GMT
XBT Transect G-9
XBT Map 10



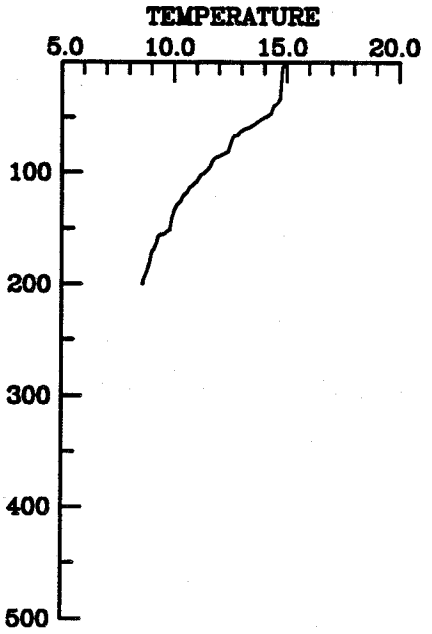
STATION G12 CAST 698
7 May 1983 36 GMT
XBT Transect G-9
XBT Map 10



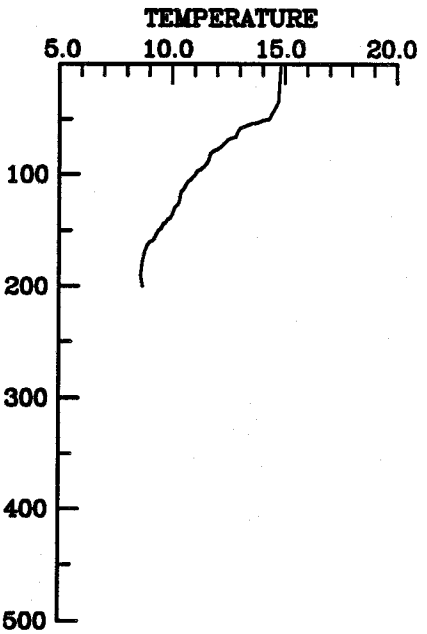
STATION GC0 CAST 699
7 May 1983 130 GMT
XBT Transect GC-9
XBT Map 10



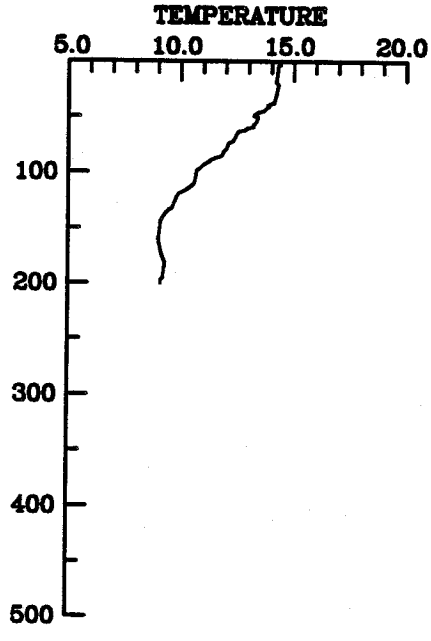
STATION GC9 CAST 700
7 May 1983 148 GMT
XBT Transect GC-9
XBT Map 10



STATION GC8 CAST 701
7 May 1983 200 GMT
XBT Transect GC-9
XBT Map 10



STATION GC7 CAST 702
7 May 1983 218 GMT
XBT Transect GC-9
XBT Map 10



STATION GC6 CAST 703
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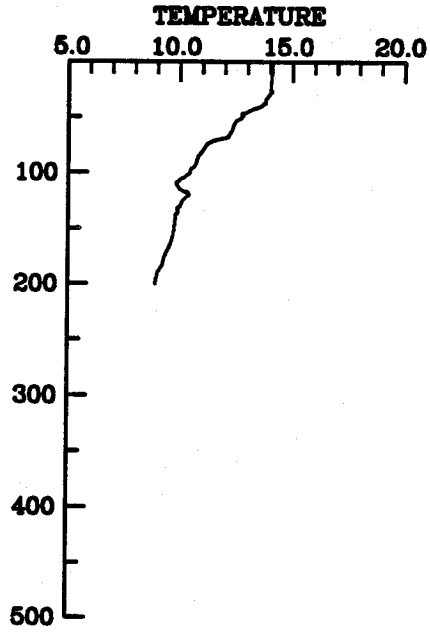
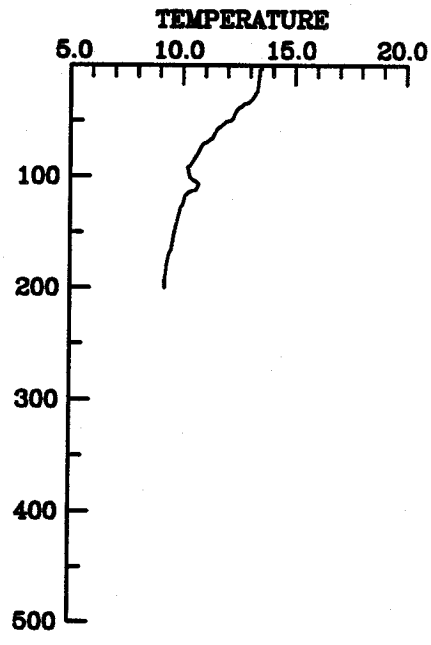
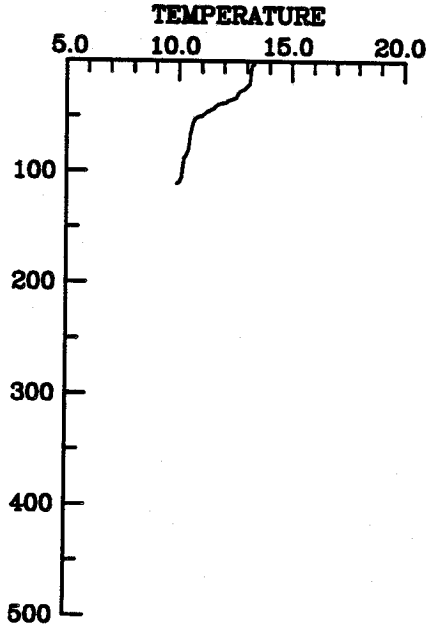
XBT Transect GC-9
XBT Map 10



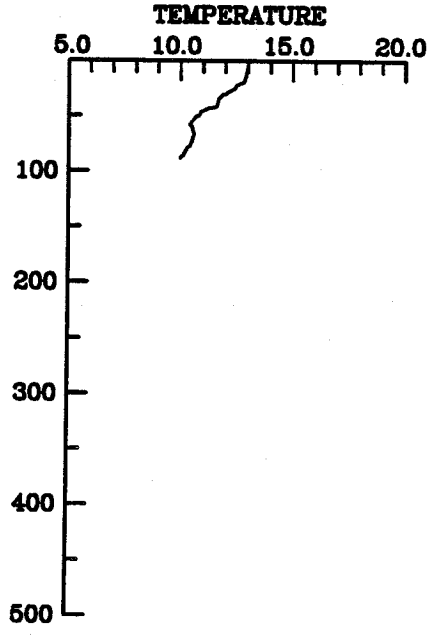
STATION GC5 CAST 704
7 May 1983 248 GMT
XBT Transect GC-9
XBT Map 10



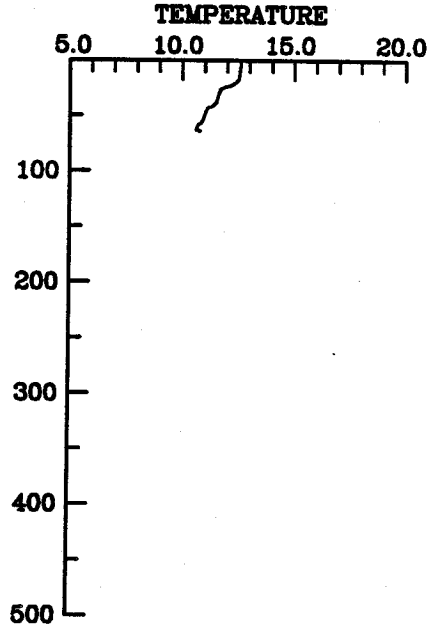
STATION GC4 CAST 705
7 May 1983 312 GMT
XBT Transect GC-9
XBT Map 10



STATION GC3 CAST 706
7 May 1983 318 GMT
XBT Transect GC-9
XBT Map 10



STATION GC2 CAST 707
7 May 1983 342 GMT
XBT Transect GC-9
XBT Map 10



STATION GC1 CAST 708
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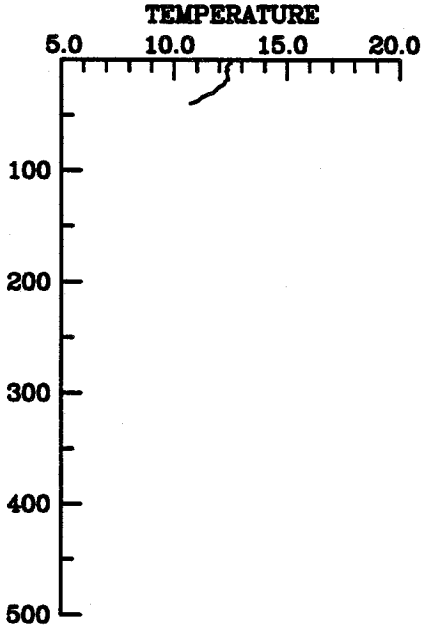
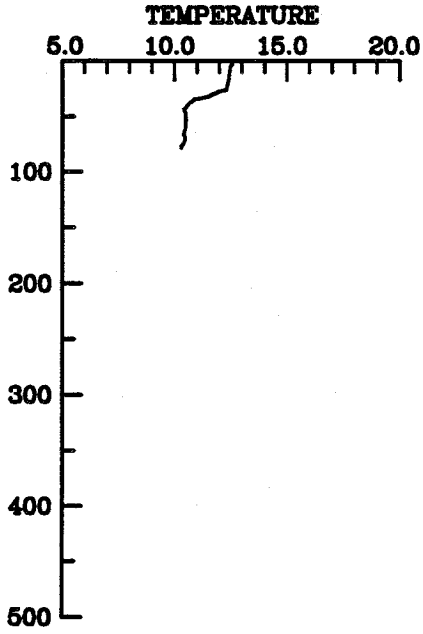
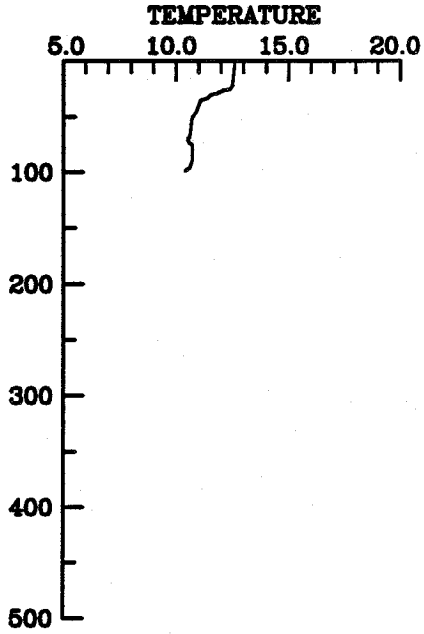
XBT Transect GC-9
XBT Map 10



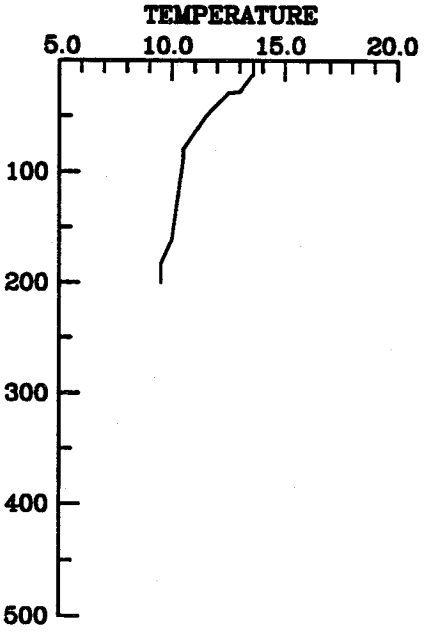
STATION C1 CAST 709
7 May 1983 424 GMT
XBT Transect C-9
XBT Map 10



STATION C2 CAST 710
7 May 1983 436 GMT
XBT Transect C-9
XBT Map 10



STATION C3 CAST 711
7 May 1983 454 GMT
XBT Transect C-9
XBT Map 10



STATION C4 CAST 712
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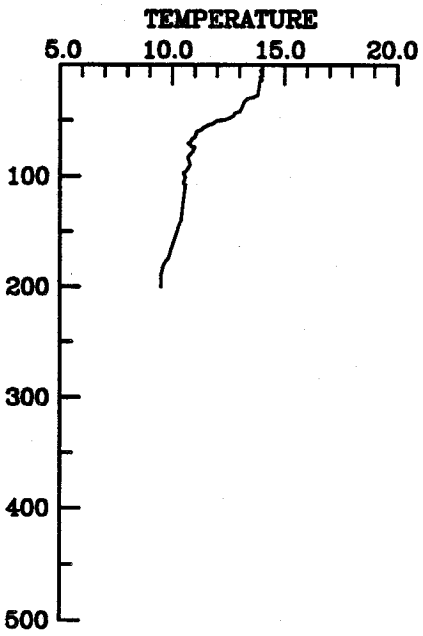
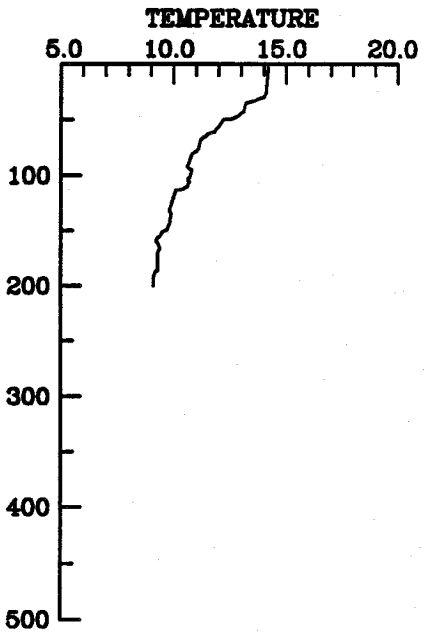
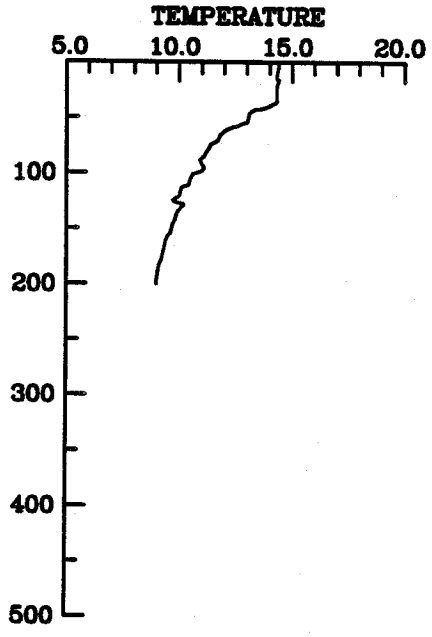
XBT Transect C-9
XBT Map 10



STATION C5 CAST 713
7 May 1983 518 GMT
XBT Transect C-9
XBT Map 10



STATION C6 CAST 714
7 May 1983 530 GMT
XBT Transect C-9
XBT Map 10



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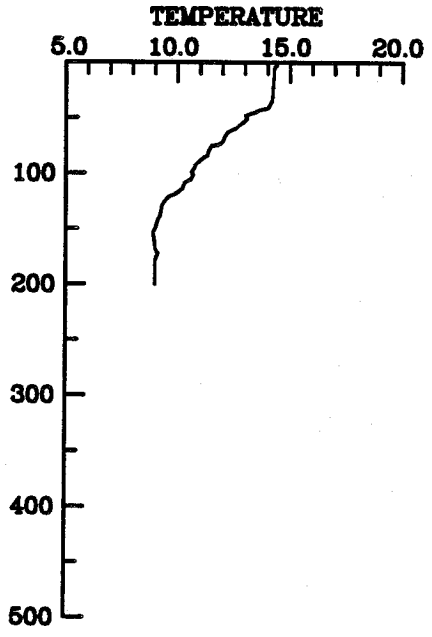
7 May 1983 542 GMT
XBT Transect C-9
XBT Map 10



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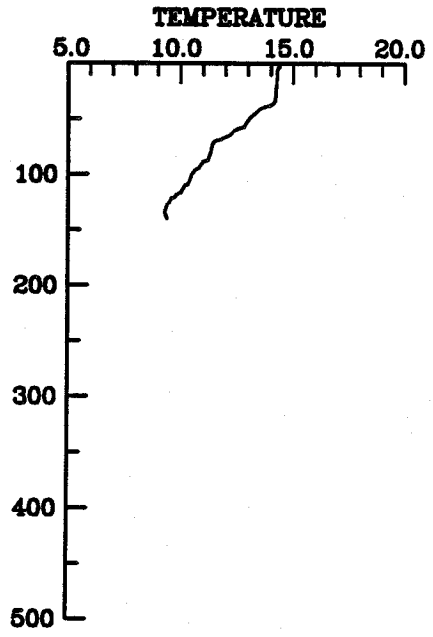
7 May 1983 554 GMT
XBT Transect C-9
XBT Map 10



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7 May 1983 606 GMT
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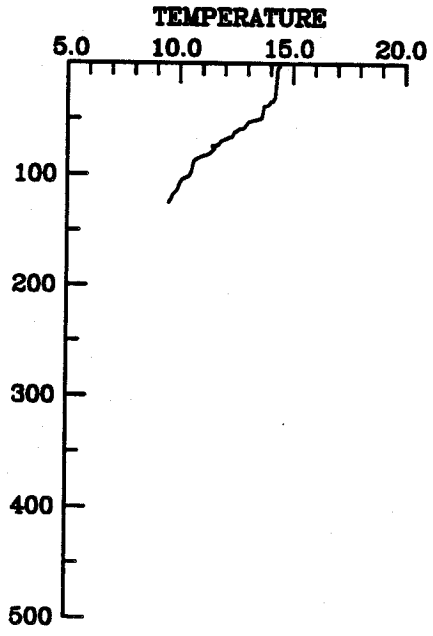
XBT Map 10



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7 May 1983 618 GMT
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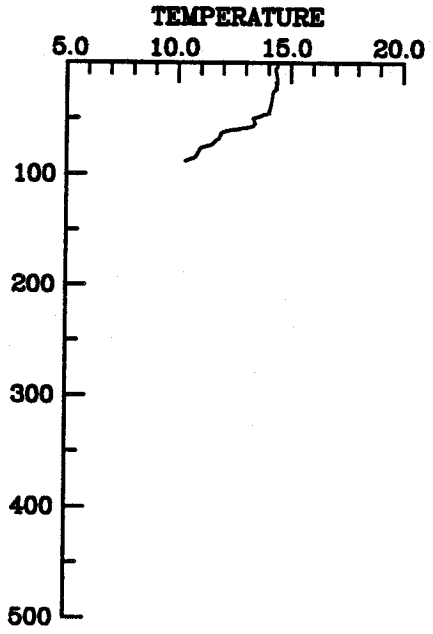
XBT Map 10



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9 May 1983 1842 GMT
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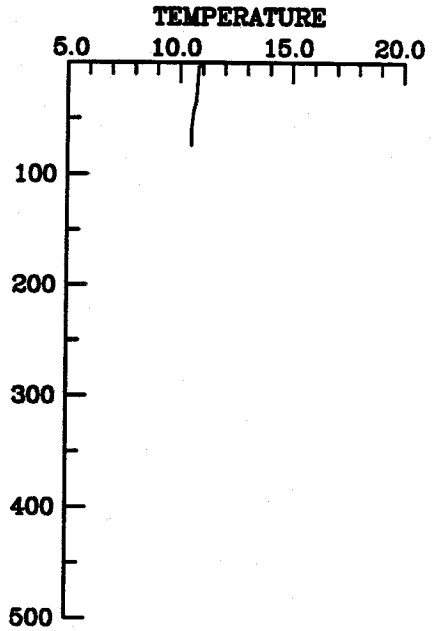

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9 May 1983 1854 GMT
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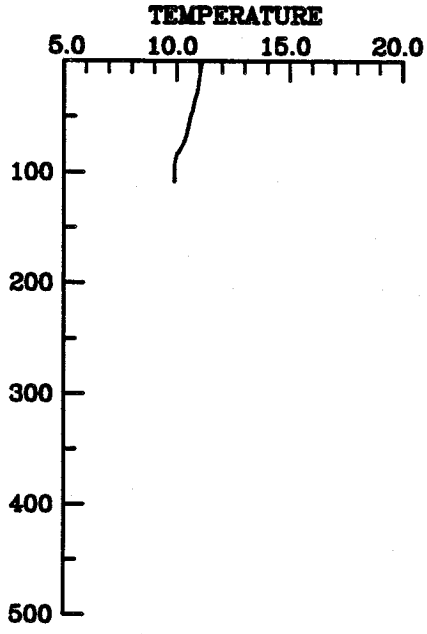

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9 May 1983 1906 GMT
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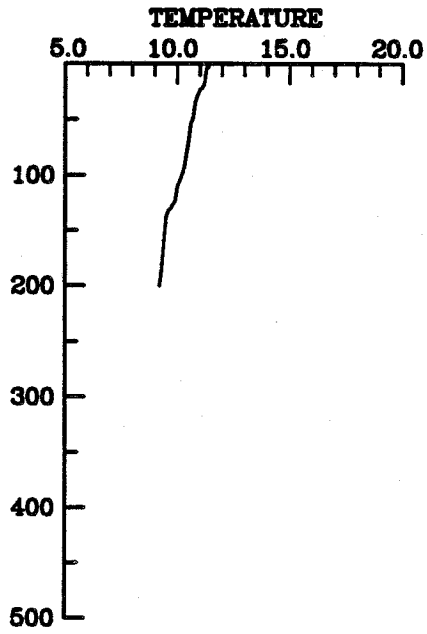

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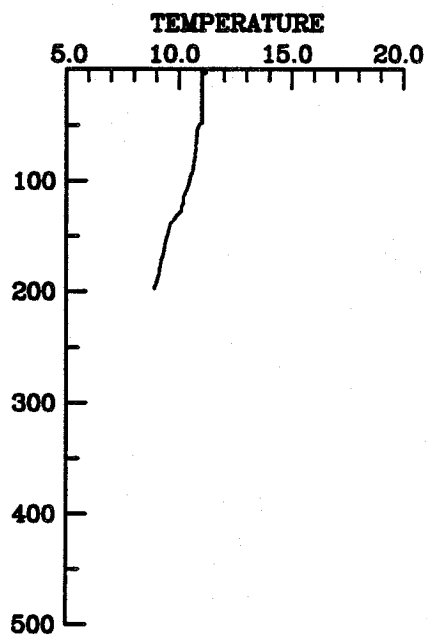

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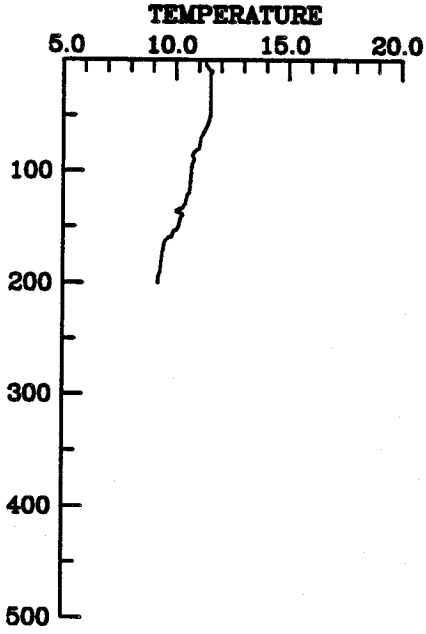

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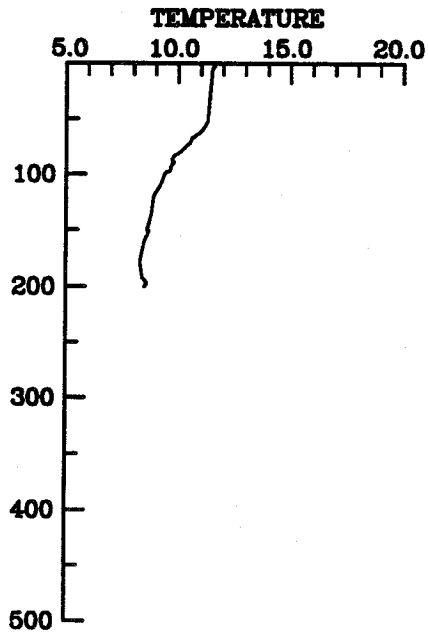

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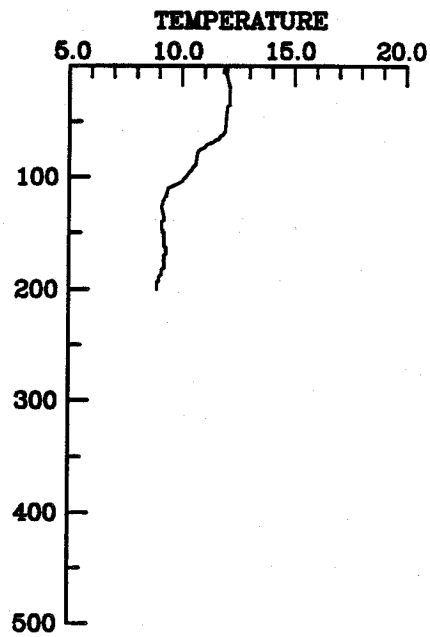

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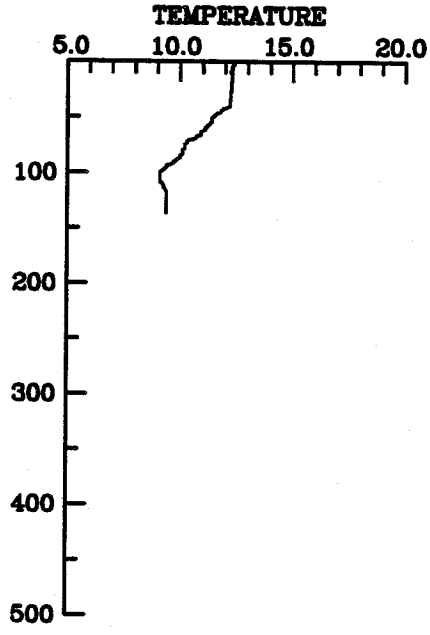

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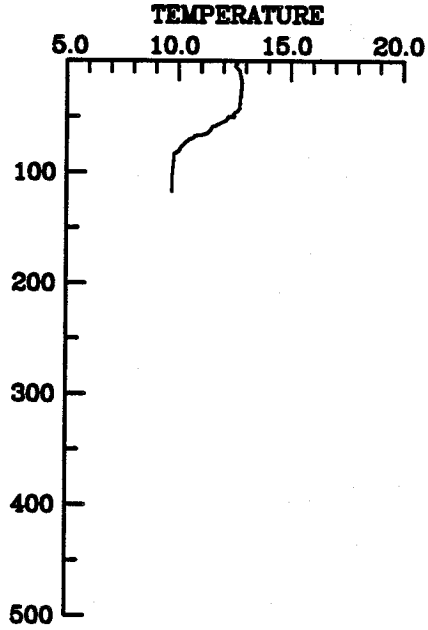

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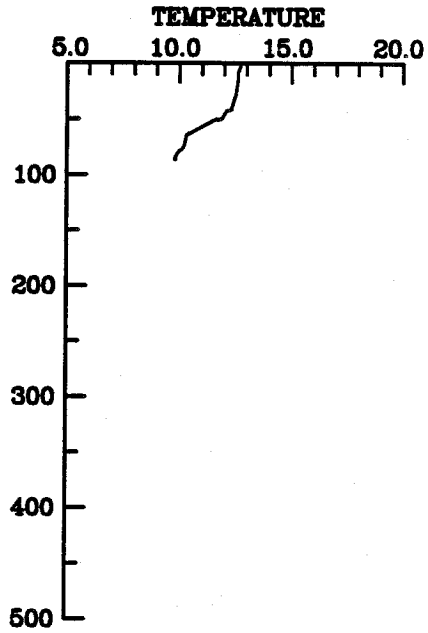

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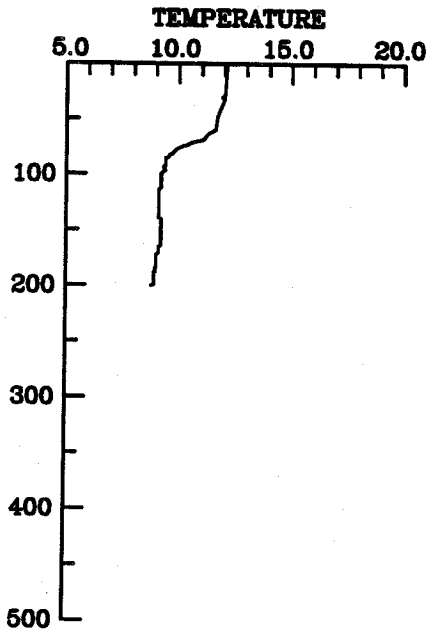

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10 May 1983 236 GMT
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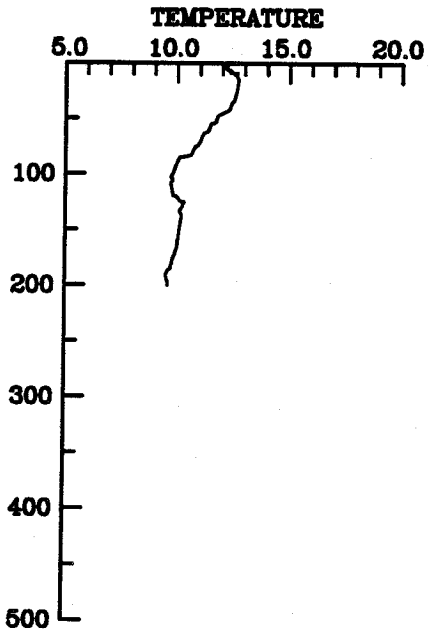

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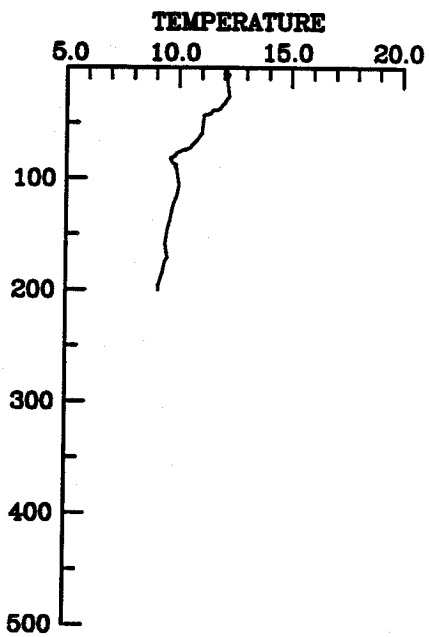

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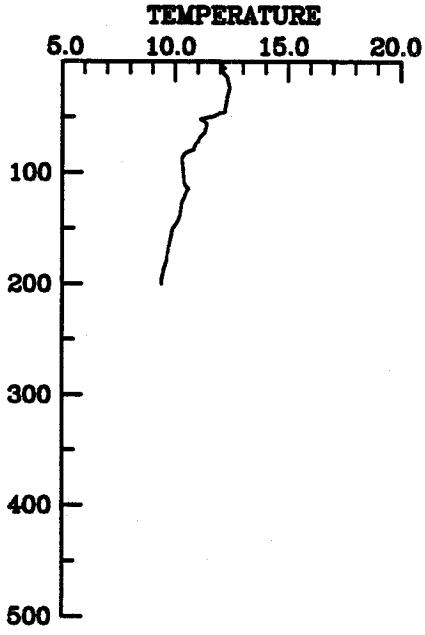

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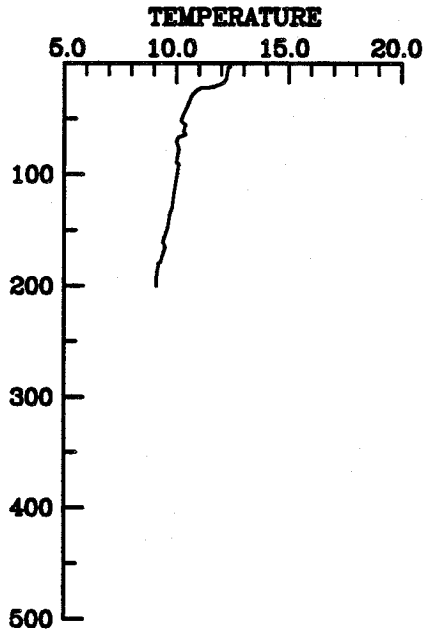

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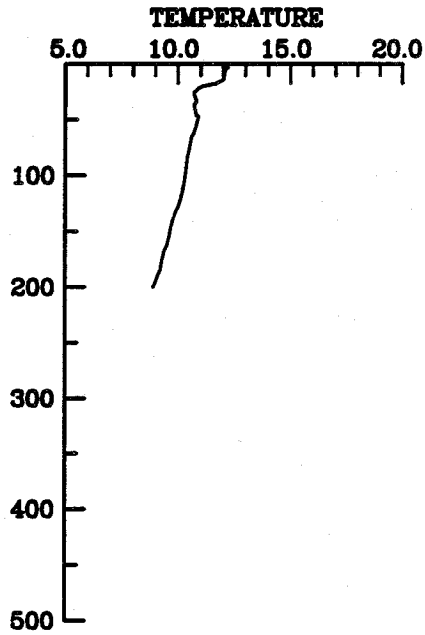

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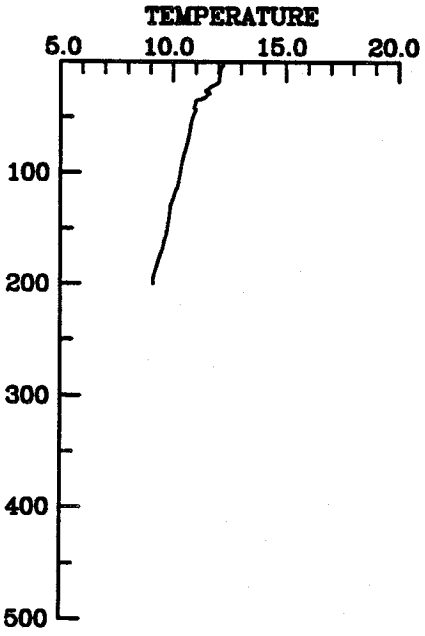

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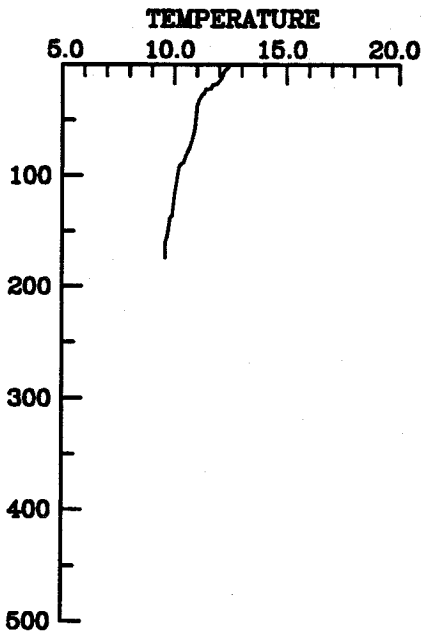

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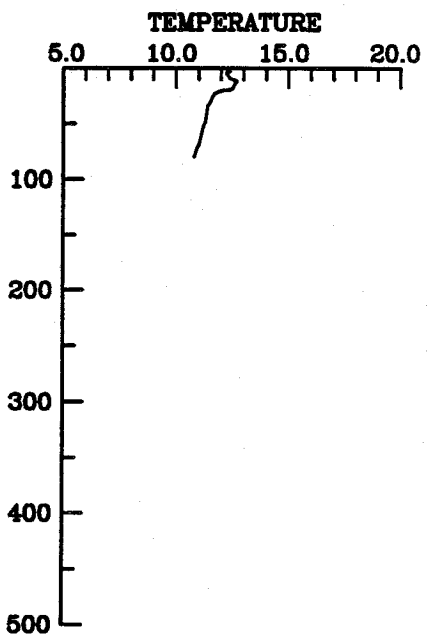

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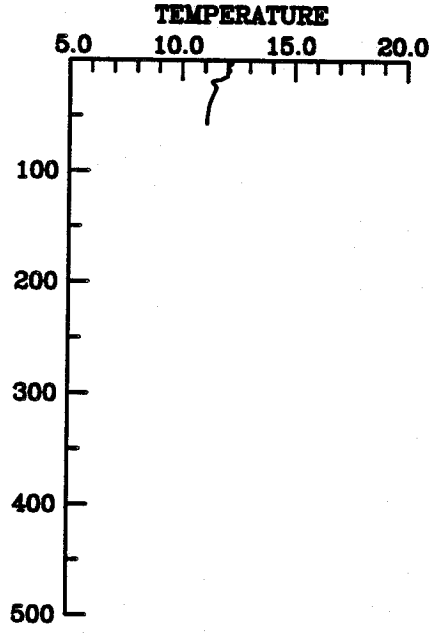

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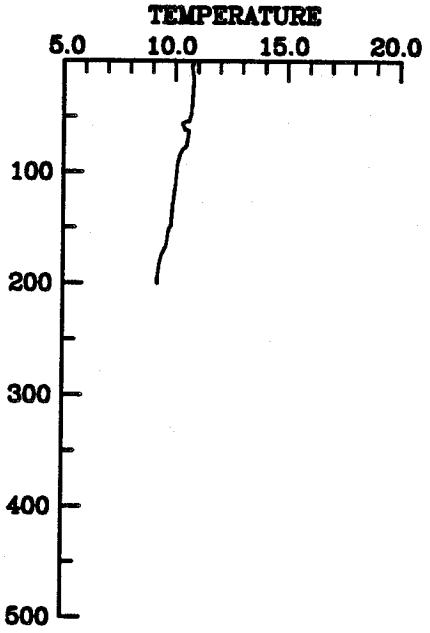
10 May 1983 1642 GMT
CTD Transect G–13



CTD TEMPERATURE, SALINITY AND SIGMA-T PROFILES

Page 2-1				
Cast	1	OPUS Station G1	CTD Transect G-1	
Cast	2	OPUS Station G2	CTD Transect G-1	
Page 2-2				
Cast	4	OPUS Station G4	CTD Transect G-1	
Cast	5	OPUS Station G5	CTD Transect G-1	
Page 2-3				
Cast	6	OPUS Station G6	CTD Transect G-1	
Cast	7	OPUS Station G7	CTD Transect G-1	
Page 2-4				
Cast	8	OPUS Station G8	CTD Transect G-1	
Cast	9	OPUS Station G9	CTD Transect G-1	
Page 2-5				
Cast	10	OPUS Station G10	CTD Transect G-1	
Cast	11	OPUS Station G11	CTD Transect G-1	
Page 2-6				
Cast	12	OPUS Station G12	CTD Transect G-1	
Cast	13	OPUS Station G13	CTD Transect G-1	
Page 2-7				
Cast	14	OPUS Station G14	CTD Transect G-1	
Cast	15	OPUS Station G15	CTD Transect G-1	
Page 2-8				
Cast	16	OPUS Station G16	CTD Transect G-1	
Cast	17	OPUS Station G17	CTD Transect G-1	
Page 2-9				
Cast	18	OPUS Station G1		
Cast	24	OPUS Station A1	XBT Transect A-1	XBT Map 1
Page 2-10				
Cast	25	OPUS Station AG1	XBT Transect AG-1	XBT Map 1
Cast	40	OPUS Station G1	XBT Transect G-1	XBT Map 1
Page 2-11				
Cast	41	OPUS Station GC1	XBT Transect GC-1	XBT Map 1
Cast	50	OPUS Station C8	XBT Transect C-1	XBT Map 1
Page 2-12				
Cast	57	OPUS Station C1	XBT Transect C-1	XBT Map 1
Cast	58	OPUS Station A1	CTD Transect A-1	CTD Map 1
Page 2-13				
Cast	59	OPUS Station A2	CTD Transect A-1	CTD Map 1
Cast	60	OPUS Station A3	CTD Transect A-1	CTD Map 1
Page 2-14				
Cast	61	OPUS Station A4	CTD Transect A-1	CTD Map 1
Cast	62	OPUS Station A5	CTD Transect A-1	CTD Map 1

Page 2-15				
Cast	63	OPUS Station A6	CTD Transect A-1	CTD Map 1
Cast	64	OPUS Station A7	CTD Transect A-1	CTD Map 1
Page 2-16				
Cast	65	OPUS Station A8	CTD Transect A-1	CTD Map 1
Cast	66	OPUS Station A9	CTD Transect A-1	CTD Map 1
Page 2-17				
Cast	67	OPUS Station A10	CTD Transect A-1	CTD Map 1
Cast	68	OPUS Station G1	CTD Transect G-2	CTD Map 1
Page 2-18				
Cast	69	OPUS Station G2	CTD Transect G-2	CTD Map 1
Cast	70	OPUS Station G3	CTD Transect G-2	CTD Map 1
Page 2-19				
Cast	71	OPUS Station G4	CTD Transect G-2	CTD Map 1
Cast	72	OPUS Station G5	CTD Transect G-2	CTD Map 1
Page 2-20				
Cast	73	OPUS Station G6	CTD Transect G-2	CTD Map 1
Cast	74	OPUS Station G7	CTD Transect G-2	CTD Map 1
Page 2-21				
Cast	75	OPUS Station G8	CTD Transect G-2	CTD Map 1
Cast	76	OPUS Station G9	CTD Transect G-2	CTD Map 1
Page 2-22				
Cast	77	OPUS Station G10	CTD Transect G-2	CTD Map 1
Cast	78	OPUS Station G11	CTD Transect G-2	CTD Map 1
Page 2-23				
Cast	79	OPUS Station G12	CTD Transect G-2	CTD Map 1
Cast	80	OPUS Station G13	CTD Transect G-2	CTD Map 1
Page 2-24				
Cast	81	OPUS Station G14	CTD Transect G-2	CTD Map 1
Cast	82	OPUS Station G15	CTD Transect G-2	CTD Map 1
Page 2-25				
Cast	83	OPUS Station G16	CTD Transect G-2	CTD Map 1
Cast	84	OPUS Station G17	CTD Transect G-2	CTD Map 1
Page 2-26				
Cast	85	OPUS Station G18	CTD Transect G-2	CTD Map 1
Cast	86	OPUS Station C1	CTD Transect C-1	CTD Map 1
Page 2-27				
Cast	87	OPUS Station C2	CTD Transect C-1	CTD Map 1
Cast	88	OPUS Station C3	CTD Transect C-1	CTD Map 1
Page 2-28				
Cast	89	OPUS Station C4	CTD Transect C-1	CTD Map 1
Cast	90	OPUS Station C5	CTD Transect C-1	CTD Map 1

Page 2-29				
Cast	91	OPUS Station C6	CTD Transect C-1	CTD Map 1
Cast	92	OPUS Station C7	CTD Transect C-1	CTD Map 1
Page 2-30				
Cast	93	OPUS Station C8	CTD Transect C-1	CTD Map 1
Cast	101	OPUS Station C1	XBT Transect C-2	XBT Map 2
Page 2-31				
Cast	102	OPUS Station GC1	XBT Transect GC-2	XBT Map 2
Cast	125	OPUS Station G1	XBT Transect G-2	XBT Map 2
Page 2-32				
Cast	126	OPUS Station AG1	XBT Transect AG-2	XBT Map 2
Cast	141	OPUS Station A1	XBT Transect A-2	XBT Map 2
Page 2-33				
Cast	142	OPUS Station G1	CTD Transect G-3	
Cast	143	OPUS Station G2	CTD Transect G-3	
Page 2-34				
Cast	144	OPUS Station G3	CTD Transect G-3	
Cast	145	OPUS Station G4	CTD Transect G-3	
Page 2-35				
Cast	146	OPUS Station G5	CTD Transect G-3	
Cast	147	OPUS Station G6	CTD Transect G-3	
Page 2-36				
Cast	148	OPUS Station G7	CTD Transect G-3	
Cast	149	OPUS Station G8	CTD Transect G-3	
Page 2-37				
Cast	150	OPUS Station G9	CTD Transect G-3	
Cast	151	OPUS Station G10	CTD Transect G-3	
Page 2-38				
Cast	152	OPUS Station G11	CTD Transect G-3	
Cast	153	OPUS Station G12	CTD Transect G-3	
Page 2-39				
Cast	161	OPUS Station A1	XBT Transect A-3	XBT Map 3
Cast	162	OPUS Station AG1	XBT Transect AG-3	XBT Map 3
Page 2-40				
Cast	181	OPUS Station G1	XBT Transect G-3	XBT Map 3
Cast	182	OPUS Station GC1	XBT Transect GC-3	XBT Map 3
Page 2-41				
Cast	201	OPUS Station C1	XBT Transect C-3	XBT Map 3
Cast	202	OPUS Station A1	CTD Transect A-2	CTD Map 2
Page 2-42				
Cast	203	OPUS Station A2	CTD Transect A-2	CTD Map 2
Cast	204	OPUS Station A3	CTD Transect A-2	CTD Map 2

Page 2-43				
Cast	205	OPUS Station A4	CTD Transect A-2	CTD Map 2
Cast	206	OPUS Station A5	CTD Transect A-2	CTD Map 2
Page 2-44				
Cast	207	OPUS Station A6	CTD Transect A-2	CTD Map 2
Cast	208	OPUS Station A7	CTD Transect A-2	CTD Map 2
Page 2-45				
Cast	209	OPUS Station A8	CTD Transect A-2	CTD Map 2
Cast	210	OPUS Station G1	CTD Transect G-4	CTD Map 2
Page 2-46				
Cast	211	OPUS Station G2	CTD Transect G-4	CTD Map 2
Cast	212	OPUS Station G3	CTD Transect G-4	CTD Map 2
Page 2-47				
Cast	213	OPUS Station G4	CTD Transect G-4	CTD Map 2
Cast	214	OPUS Station G5	CTD Transect G-4	CTD Map 2
Page 2-48				
Cast	215	OPUS Station G6	CTD Transect G-4	CTD Map 2
Cast	216	OPUS Station G7	CTD Transect G-4	CTD Map 2
Page 2-49				
Cast	217	OPUS Station G8	CTD Transect G-4	CTD Map 2
Cast	218	OPUS Station G9	CTD Transect G-4	CTD Map 2
Page 2-50				
Cast	219	OPUS Station G10	CTD Transect G-4	CTD Map 2
Cast	220	OPUS Station G11	CTD Transect G-4	CTD Map 2
Page 2-51				
Cast	221	OPUS Station G12	CTD Transect G-4	CTD Map 2
Cast	222	OPUS Station C1	CTD Transect C-2	CTD Map 2
Page 2-52				
Cast	223	OPUS Station C2	CTD Transect C-2	CTD Map 2
Cast	224	OPUS Station C3	CTD Transect C-2	CTD Map 2
Page 2-53				
Cast	225	OPUS Station C4	CTD Transect C-2	CTD Map 2
Cast	226	OPUS Station C5	CTD Transect C-2	CTD Map 2
Page 2-54				
Cast	227	OPUS Station C6	CTD Transect C-2	CTD Map 2
Cast	228	OPUS Station C7	CTD Transect C-2	CTD Map 2
Page 2-55				
Cast	229	OPUS Station C8	CTD Transect C-2	CTD Map 2
Cast	230	OPUS Station C9	CTD Transect C-2	CTD Map 2
Page 2-56				
Cast	231	OPUS Station C10	CTD Transect C-2	CTD Map 2
Cast	239	OPUS Station A1	XBT Transect A-4	XBT Map 4

Page 2-57				
	Cast 240	OPUS Station AG1	XBT Transect AG-4	XBT Map 4
	Cast 259	OPUS Station G1	XBT Transect G-4	XBT Map 4
Page 2-58				
	Cast 260	OPUS Station GC1	XBT Transect GC-4	XBT Map 4
	Cast 279	OPUS Station C1	XBT Transect C-4	XBT Map 4
Page 2-59				
	Cast 280	OPUS Station G1	CTD Transect G-5	
	Cast 281	OPUS Station G2	CTD Transect G-5	
Page 2-60				
	Cast 282	OPUS Station G3	CTD Transect G-5	
	Cast 283	OPUS Station G4	CTD Transect G-5	
Page 2-61				
	Cast 284	OPUS Station G5	CTD Transect G-5	
	Cast 285	OPUS Station G6	CTD Transect G-5	
Page 2-62				
	Cast 286	OPUS Station G7	CTD Transect G-5	
	Cast 287	OPUS Station G8	CTD Transect G-5	
Page 2-63				
	Cast 288	OPUS Station G9	CTD Transect G-5	
	Cast 289	OPUS Station G10	CTD Transect G-5	
Page 2-64				
	Cast 290	OPUS Station G11	CTD Transect G-5	
	Cast 291	OPUS Station G12	CTD Transect G-5	
Page 2-65				
	Cast 292	OPUS Station U1	XBT Transect U-1	XBT Map 5
	Cast 305	OPUS Station U14	XBT Transect U-1	XBT Map 5
Page 2-66				
	Cast 306	OPUS Station V13	XBT Transect V-1	XBT Map 5
	Cast 318	OPUS Station V1	XBT Transect V-1	XBT Map 5
Page 2-67				
	Cast 320	OPUS Station W1	XBT Transect W-1	XBT Map 5
	Cast 330	OPUS Station W11	XBT Transect W-1	XBT Map 5
Page 2-68				
	Cast 332	OPUS Station X10	XBT Transect X-1	XBT Map 5
	Cast 341	OPUS Station X1	XBT Transect X-1	XBT Map 5
Page 2-69				
	Cast 343	OPUS Station C1		XBT Map 5
	Cast 344	OPUS Station GC1		XBT Map 5
Page 2-70				
	Cast 345	OPUS Station G1		XBT Map 5
	Cast 346	OPUS Station AG1		XBT Map 5

Page 2-71				
Cast	347	OPUS Station A1		XBT Map 5
Cast	348	OPUS Station A1	CTD Transect A-3	CTD Map 3
Page 2-72				
Cast	349	OPUS Station A2	CTD Transect A-3	CTD Map 3
Cast	350	OPUS Station A3	CTD Transect A-3	CTD Map 3
Page 2-73				
Cast	351	OPUS Station A4	CTD Transect A-3	CTD Map 3
Cast	352	OPUS Station A5	CTD Transect A-3	CTD Map 3
Page 2-74				
Cast	353	OPUS Station A6	CTD Transect A-3	CTD Map 3
Cast	354	OPUS Station A7	CTD Transect A-3	CTD Map 3
Page 2-75				
Cast	355	OPUS Station A8	CTD Transect A-3	CTD Map 3
Cast	356	OPUS Station G1	CTD Transect G-6	CTD Map 3
Page 2-76				
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Cast	358	OPUS Station G3	CTD Transect G-6	CTD Map 3
Page 2-77				
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Cast	360	OPUS Station G5	CTD Transect G-6	CTD Map 3
Page 2-78				
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Cast	362	OPUS Station G7	CTD Transect G-6	CTD Map 3
Page 2-79				
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Cast	364	OPUS Station G9	CTD Transect G-6	CTD Map 3
Page 2-80				
Cast	365	OPUS Station G10	CTD Transect G-6	CTD Map 3
Cast	366	OPUS Station G11	CTD Transect G-6	CTD Map 3
Page 2-81				
Cast	367	OPUS Station G12	CTD Transect G-6	CTD Map 3
Cast	368	OPUS Station C1	CTD Transect C-3	CTD Map 3
Page 2-82				
Cast	369	OPUS Station C2	CTD Transect C-3	CTD Map 3
Cast	370	OPUS Station C3	CTD Transect C-3	CTD Map 3
Page 2-83				
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Cast	372	OPUS Station C5	CTD Transect C-3	CTD Map 3
Page 2-84				
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Cast	374	OPUS Station C7	CTD Transect C-3	CTD Map 3

Page 2-85				
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	Cast 376	OPUS Station C9	CTD Transect C-3	CTD Map 3
Page 2-86				
	Cast 377	OPUS Station C10	CTD Transect C-3	CTD Map 3
	Cast 387	OPUS Station C1	XBT Transect C-5	XBT Map 6
Page 2-87				
	Cast 388	OPUS Station GC1	XBT Transect GC-5	XBT Map 6
	Cast 409	OPUS Station G1	XBT Transect G-5	XBT Map 6
Page 2-88				
	Cast 410	OPUS Station AG1	XBT Transect AG-5	XBT Map 6
	Cast 425	OPUS Station A1	XBT Transect A-5	XBT Map 6
Page 2-89				
	Cast 426	OPUS Station P8	CTD Transect P-1	
	Cast 427	OPUS Station P7	CTD Transect P-1	
Page 2-90				
	Cast 428	OPUS Station P6	CTD Transect P-1	
	Cast 429	OPUS Station P5	CTD Transect P-1	
Page 2-91				
	Cast 430	OPUS Station P4	CTD Transect P-1	
	Cast 431	OPUS Station P3	CTD Transect P-1	
Page 2-92				
	Cast 432	OPUS Station P2	CTD Transect P-1	
	Cast 433	OPUS Station P1	CTD Transect P-1	
Page 2-93				
	Cast 434	OPUS Station G1	CTD Transect G-7	
	Cast 435	OPUS Station G2	CTD Transect G-7	
Page 2-94				
	Cast 436	OPUS Station G3	CTD Transect G-7	
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Page 2-95				
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Page 2-96				
	Cast 440	OPUS Station G7	CTD Transect G-7	
	Cast 441	OPUS Station G8	CTD Transect G-7	
Page 2-97				
	Cast 442	OPUS Station G9	CTD Transect G-7	
	Cast 443	OPUS Station G10	CTD Transect G-7	
Page 2-98				
	Cast 444	OPUS Station G11	CTD Transect G-7	
	Cast 445	OPUS Station G12	CTD Transect G-7	

Page 2-99				
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Page 2-100				
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Page 2-101				
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Page 2-102				
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Page 2-103				
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Page 2-104				
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Page 2-105				
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Page 2-106				
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Page 2-107				
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Cast	506	OPUS Station G5	CTD Transect G-8	CTD Map 4
Page 2-108				
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Cast	508	OPUS Station G7	CTD Transect G-8	CTD Map 4
Page 2-109				
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Cast	510	OPUS Station G9	CTD Transect G-8	CTD Map 4
Page 2-110				
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Cast	512	OPUS Station G11	CTD Transect G-8	CTD Map 4
Page 2-111				
Cast	513	OPUS Station G12	CTD Transect G-8	CTD Map 4
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Page 2-112				
Cast	515	OPUS Station C2	CTD Transect C-4	CTD Map 4
Cast	516	OPUS Station C3	CTD Transect C-4	CTD Map 4

Page 2-113				
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	Cast 518	OPUS Station C5	CTD Transect C-4	CTD Map 4
Page 2-114				
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	Cast 520	OPUS Station C7	CTD Transect C-4	CTD Map 4
Page 2-115				
	Cast 521	OPUS Station C8	CTD Transect C-4	CTD Map 4
	Cast 522	OPUS Station C9	CTD Transect C-4	CTD Map 4
Page 2-116				
	Cast 523	OPUS Station C10	CTD Transect C-4	CTD Map 4
	Cast 524	OPUS Station A1	XBT Transect A-7	XBT Map 8
Page 2-117				
	Cast 539	OPUS Station AG1	XBT Transect AG-7	XBT Map 8
	Cast 540	OPUS Station G1	XBT Transect G-7	XBT Map 8
Page 2-118				
	Cast 561	OPUS Station GC1	XBT Transect GC-7	XBT Map 8
	Cast 562	OPUS Station C1	XBT Transect C-7	XBT Map 8
Page 2-119				
	Cast 572	OPUS Station G1	CTD Transect G-9	
	Cast 573	OPUS Station G2	CTD Transect G-9	
Page 2-120				
	Cast 574	OPUS Station G3	CTD Transect G-9	
	Cast 575	OPUS Station G4	CTD Transect G-9	
Page 2-121				
	Cast 576	OPUS Station G5	CTD Transect G-9	
	Cast 577	OPUS Station G6	CTD Transect G-9	
Page 2-122				
	Cast 578	OPUS Station G7	CTD Transect G-9	
	Cast 579	OPUS Station G8	CTD Transect G-9	
Page 2-123				
	Cast 580	OPUS Station G9	CTD Transect G-9	
	Cast 581	OPUS Station G10	CTD Transect G-9	
Page 2-124				
	Cast 582	OPUS Station G11	CTD Transect G-9	
	Cast 583	OPUS Station G12	CTD Transect G-9	
Page 2-125				
	Cast 584	OPUS Station A1	XBT Transect A-8	XBT Map 9
	Cast 631	OPUS Station A1	CTD Transect A-5	CTD Map 5
Page 2-126				
	Cast 632	OPUS Station A2	CTD Transect A-5	CTD Map 5
	Cast 633	OPUS Station A3	CTD Transect A-5	CTD Map 5

Page 2-127				
	Cast 634	OPUS Station A4	CTD Transect A-5	CTD Map 5
	Cast 635	OPUS Station A5	CTD Transect A-5	CTD Map 5
Page 2-128				
	Cast 636	OPUS Station A6	CTD Transect A-5	CTD Map 5
	Cast 637	OPUS Station A7	CTD Transect A-5	CTD Map 5
Page 2-129				
	Cast 638	OPUS Station A8	CTD Transect A-5	CTD Map 5
	Cast 639	OPUS Station G1	CTD Transect G-10	CTD Map 5
Page 2-130				
	Cast 640	OPUS Station G2	CTD Transect G-10	CTD Map 5
	Cast 641	OPUS Station G3	CTD Transect G-10	CTD Map 5
Page 2-131				
	Cast 642	OPUS Station G4	CTD Transect G-10	CTD Map 5
	Cast 643	OPUS Station G5	CTD Transect G-10	CTD Map 5
Page 2-132				
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	Cast 645	OPUS Station G7	CTD Transect G-10	CTD Map 5
Page 2-133				
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	Cast 647	OPUS Station G9	CTD Transect G-10	CTD Map 5
Page 2-134				
	Cast 648	OPUS Station G10	CTD Transect G-10	CTD Map 5
	Cast 649	OPUS Station G11	CTD Transect G-10	CTD Map 5
Page 2-135				
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Page 2-136				
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	Cast 653	OPUS Station C3	CTD Transect C-5	CTD Map 5
Page 2-137				
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	Cast 655	OPUS Station C5	CTD Transect C-5	CTD Map 5
Page 2-138				
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Page 2-139				
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Page 2-140				
	Cast 660	OPUS Station C10	CTD Transect C-5	CTD Map 5
	Cast 661	OPUS Station P1	CTD Transect P-2	

Page 2-141
Cast 662 OPUS Station P2 CTD Transect P-2
Cast 663 OPUS Station P3 CTD Transect P-2

Page 2-142
Cast 664 OPUS Station P4 CTD Transect P-2
Cast 665 OPUS Station P5 CTD Transect P-2

Page 2-143
Cast 666 OPUS Station P6 CTD Transect P-2
Cast 667 OPUS Station P7 CTD Transect P-2

Page 2-144
Cast 668 OPUS Station P8 CTD Transect P-2
Cast 719 OPUS Station A1 CTD Transect A-6

Page 2-145
Cast 720 OPUS Station A2 CTD Transect A-6
Cast 721 OPUS Station A3 CTD Transect A-6

Page 2-146
Cast 722 OPUS Station A4 CTD Transect A-6
Cast 723 OPUS Station A5 CTD Transect A-6

Page 2-147
Cast 724 OPUS Station A6 CTD Transect A-6
Cast 725 OPUS Station A7 CTD Transect A-6

Page 2-148
Cast 726 OPUS Station A8 CTD Transect A-6
Cast 727 OPUS Station G1 CTD Transect G-11

Page 2-149
Cast 728 OPUS Station G2 CTD Transect G-11
Cast 729 OPUS Station G3 CTD Transect G-11

Page 2-150
Cast 731 OPUS Station G4 CTD Transect G-11
Cast 732 OPUS Station G5 CTD Transect G-11

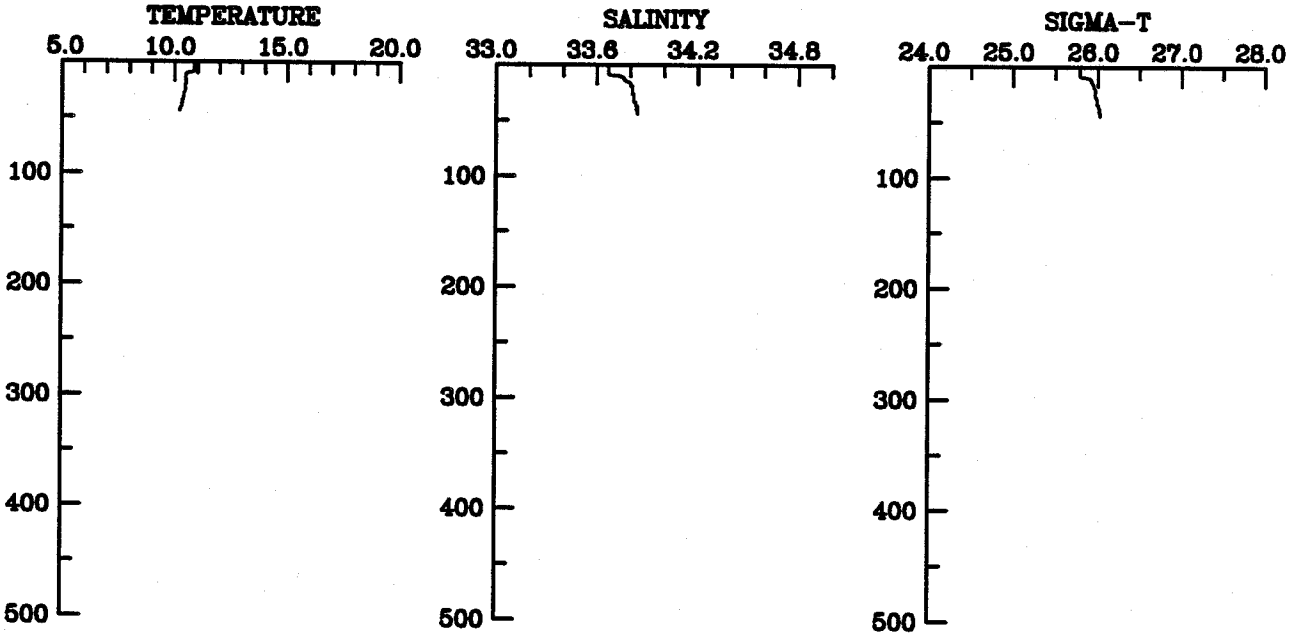
Page 2-151
Cast 733 OPUS Station G6 CTD Transect G-11
Cast 734 OPUS Station G7 CTD Transect G-11

Page 2-152
Cast 735 OPUS Station G1 CTD Transect G-12
Cast 736 OPUS Station G2 CTD Transect G-12

Page 2-153
Cast 737 OPUS Station G3 CTD Transect G-12
Cast 759 OPUS Station G1 CTD Transect G-13

Page 2-154
Cast 760 OPUS Station G2 CTD Transect G-13
Cast 761 OPUS Station G3 CTD Transect G-13

STATION G1 CAST 1
5 April 1983 630 GMT
CTD Transect G-1



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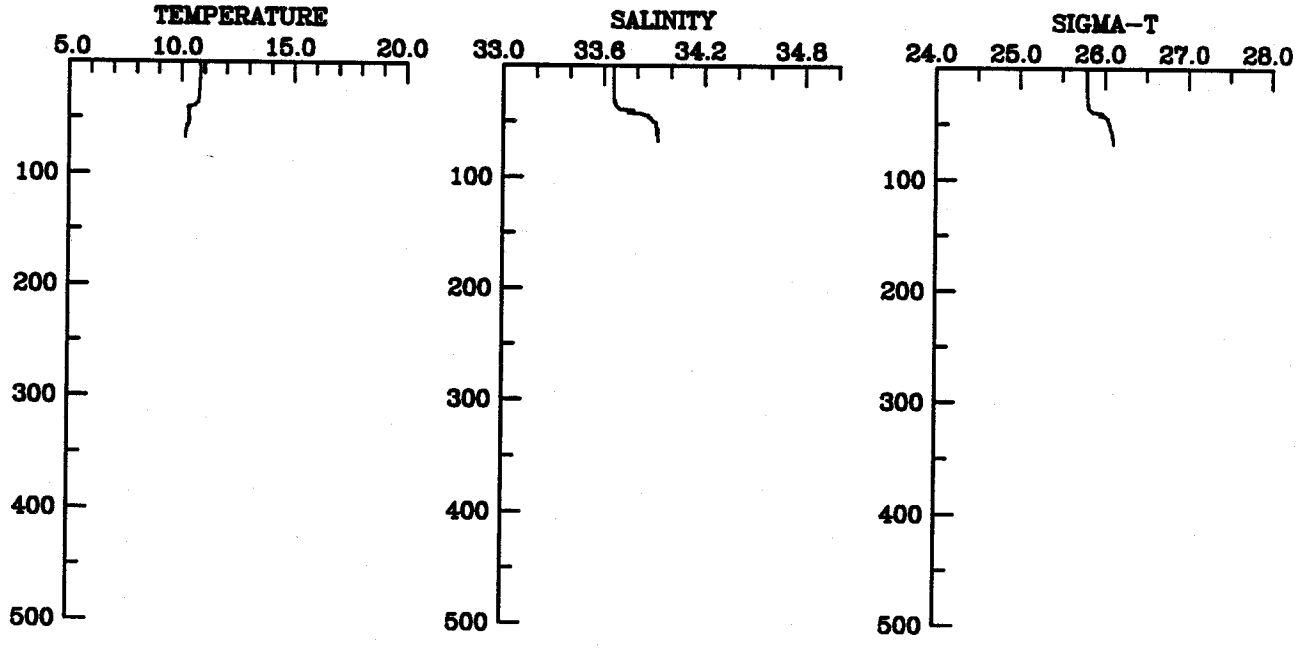

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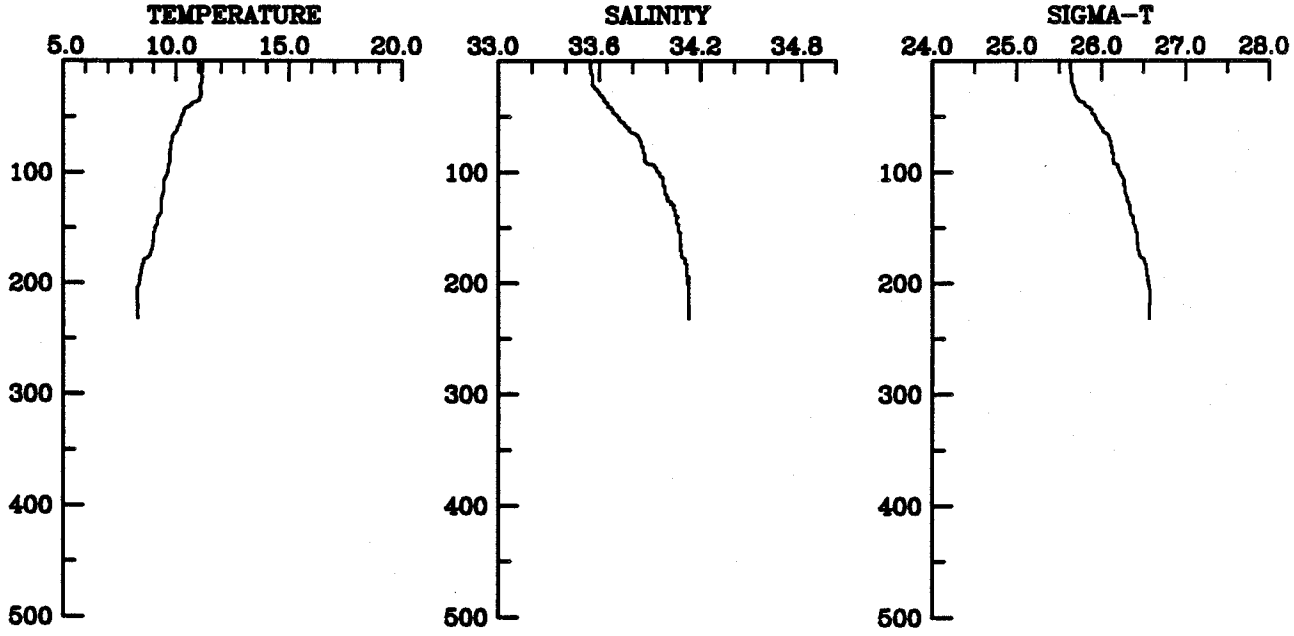

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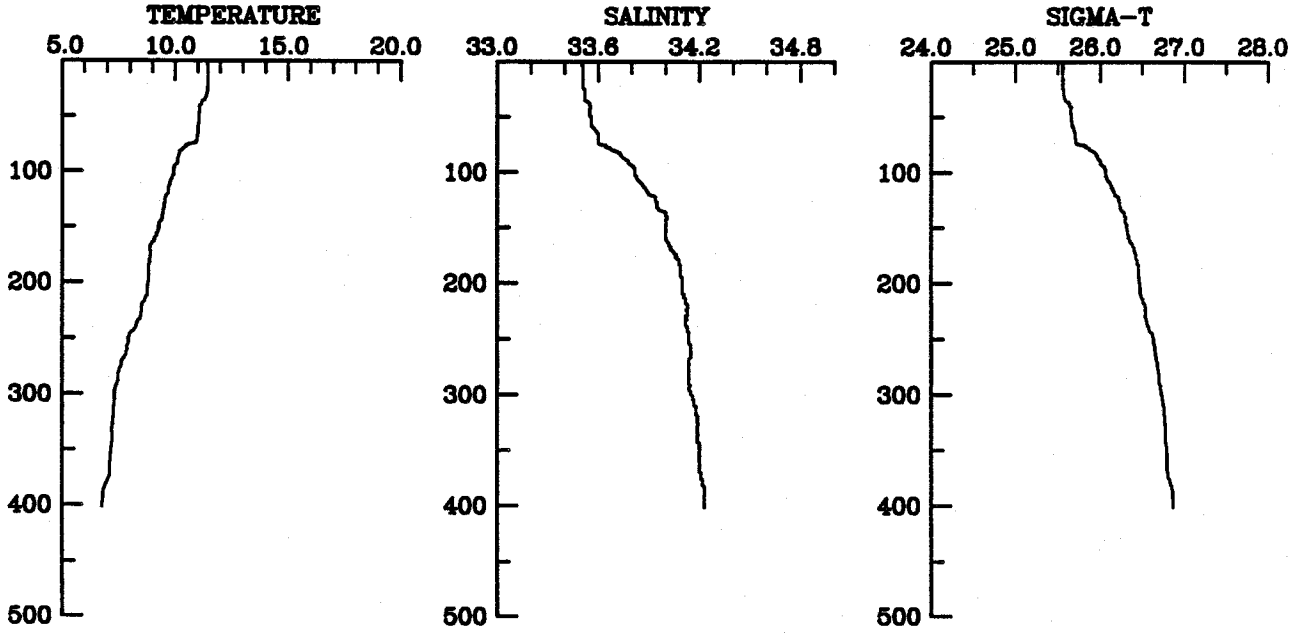

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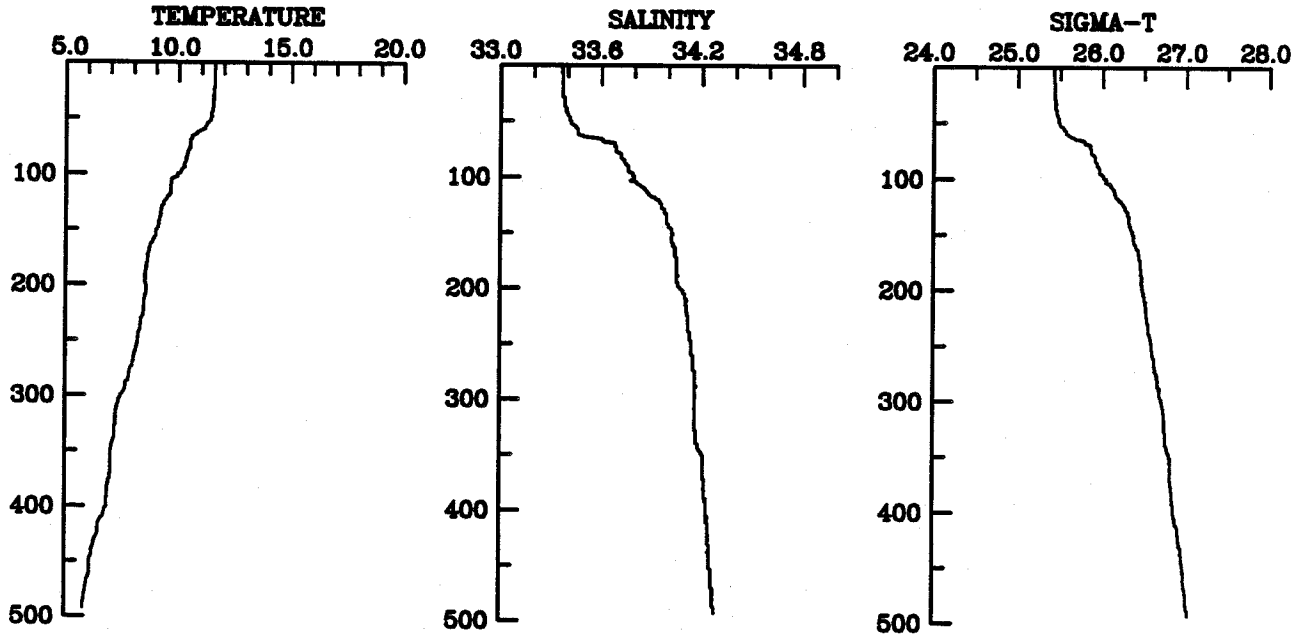

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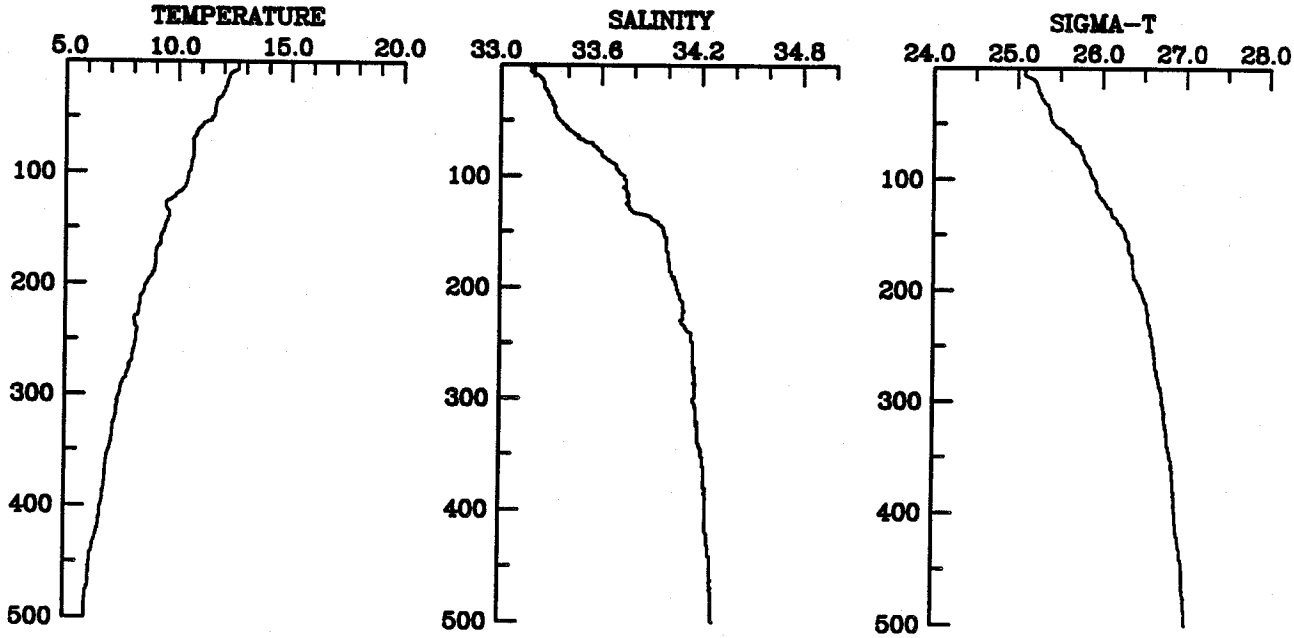

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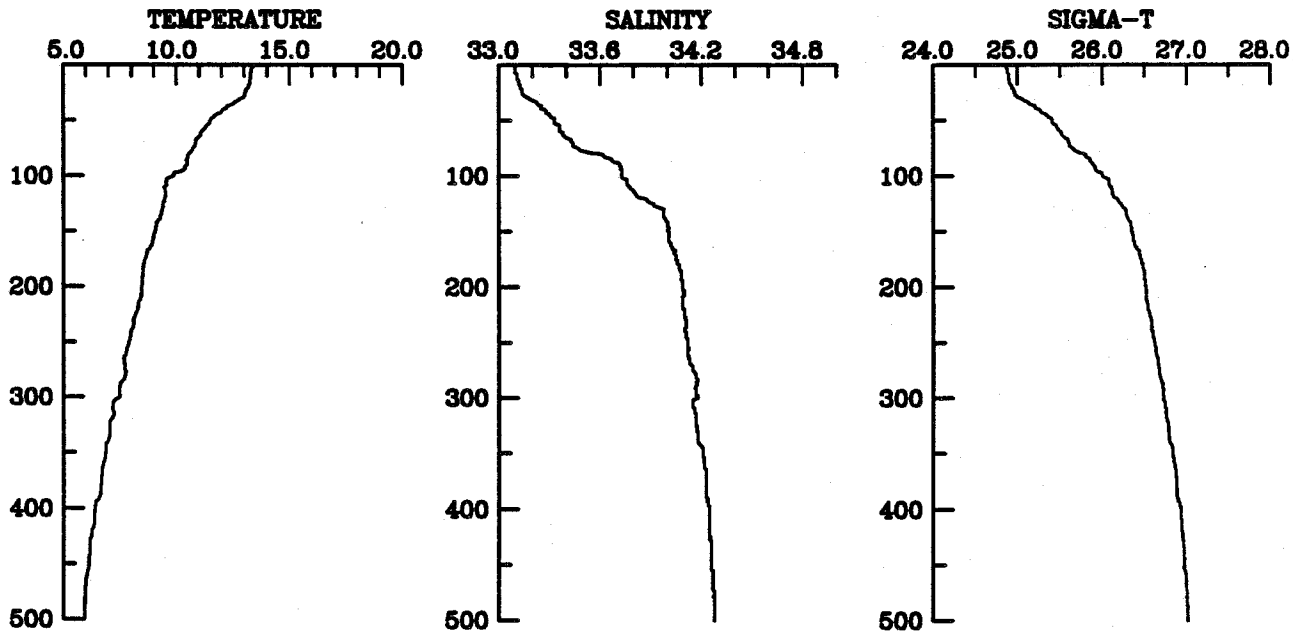

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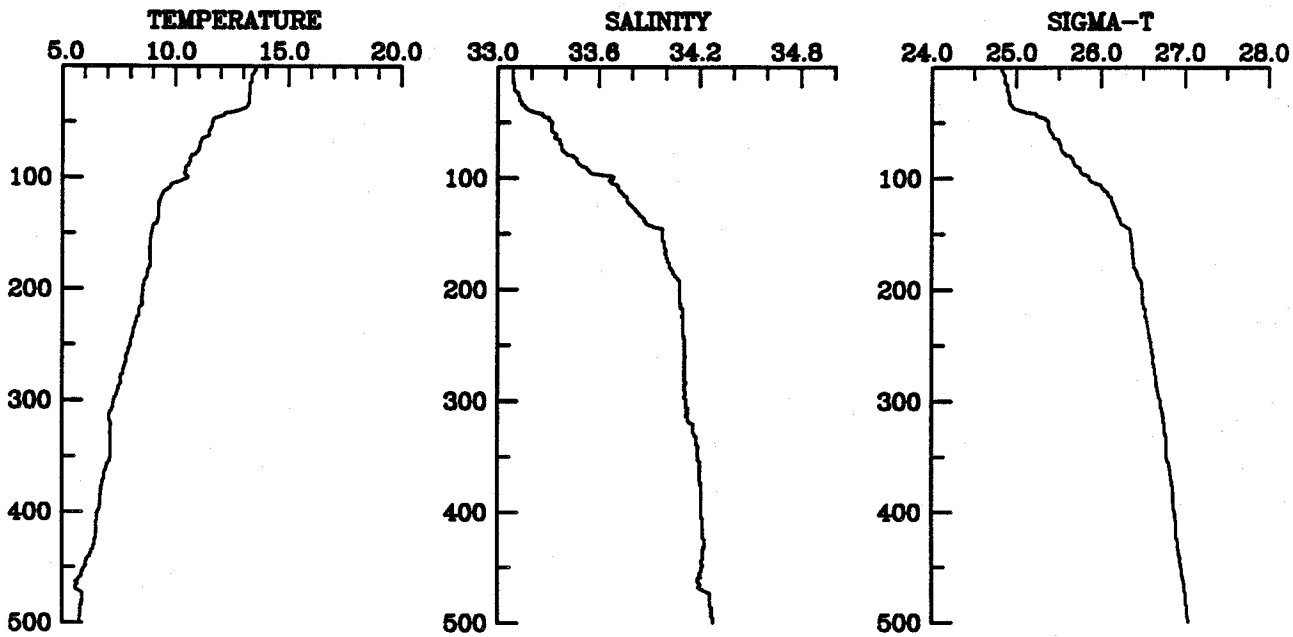

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5 April 1983 2012 GMT
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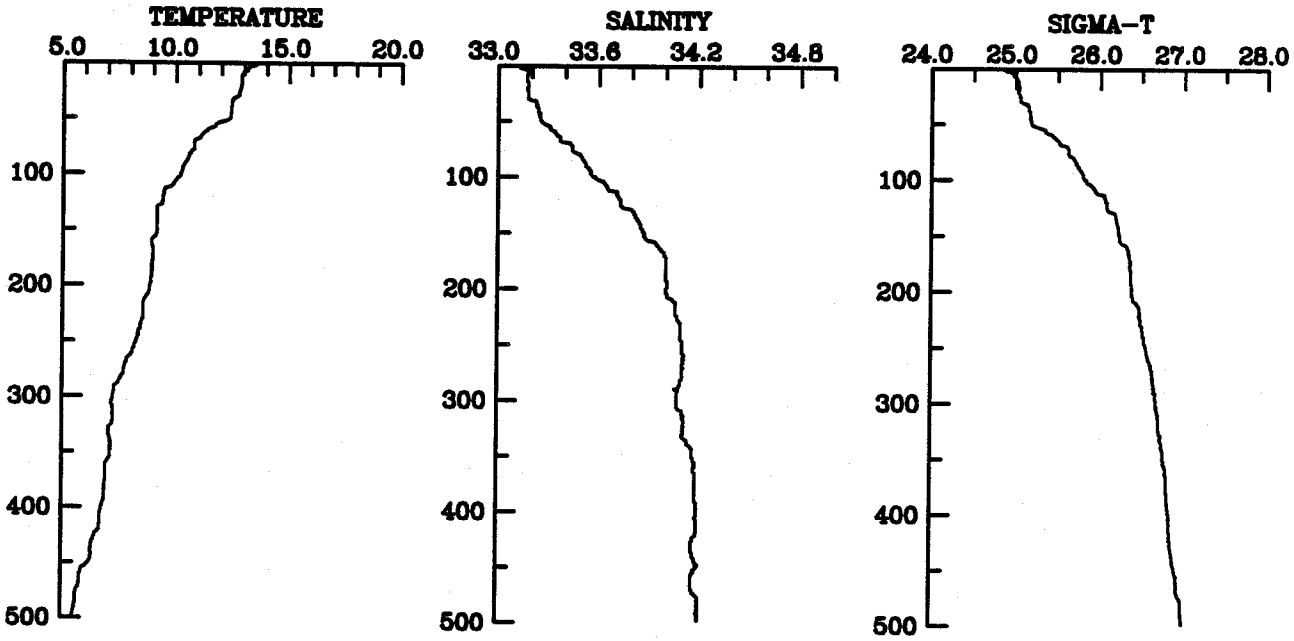

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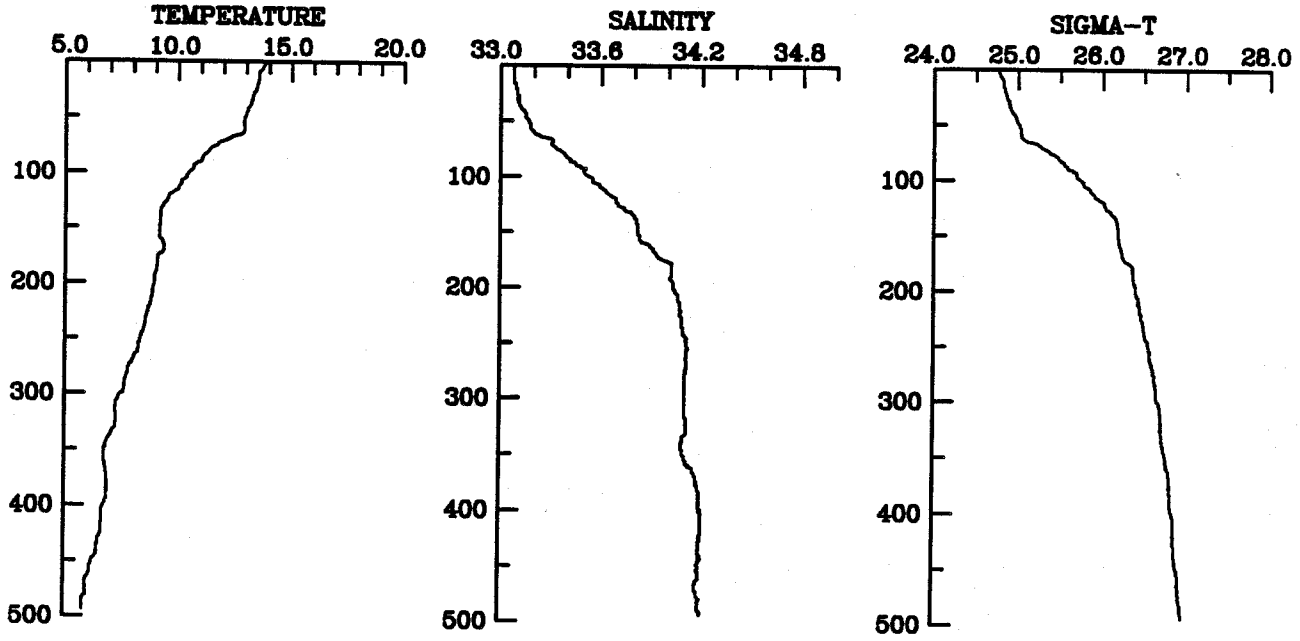

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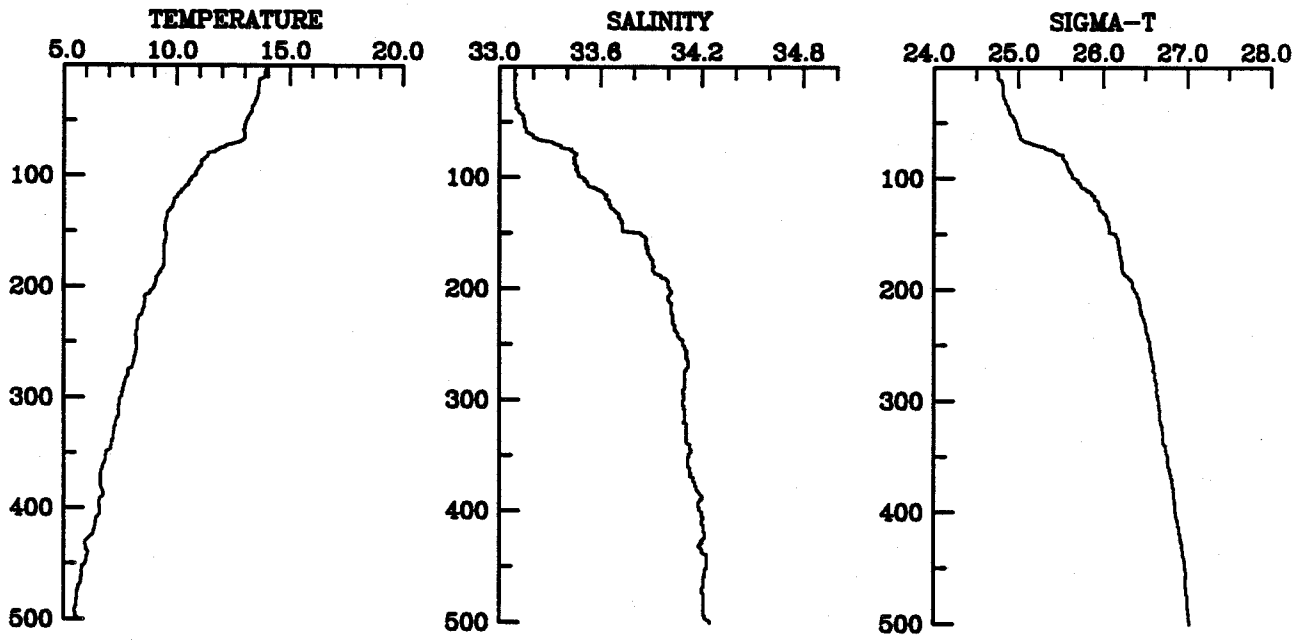

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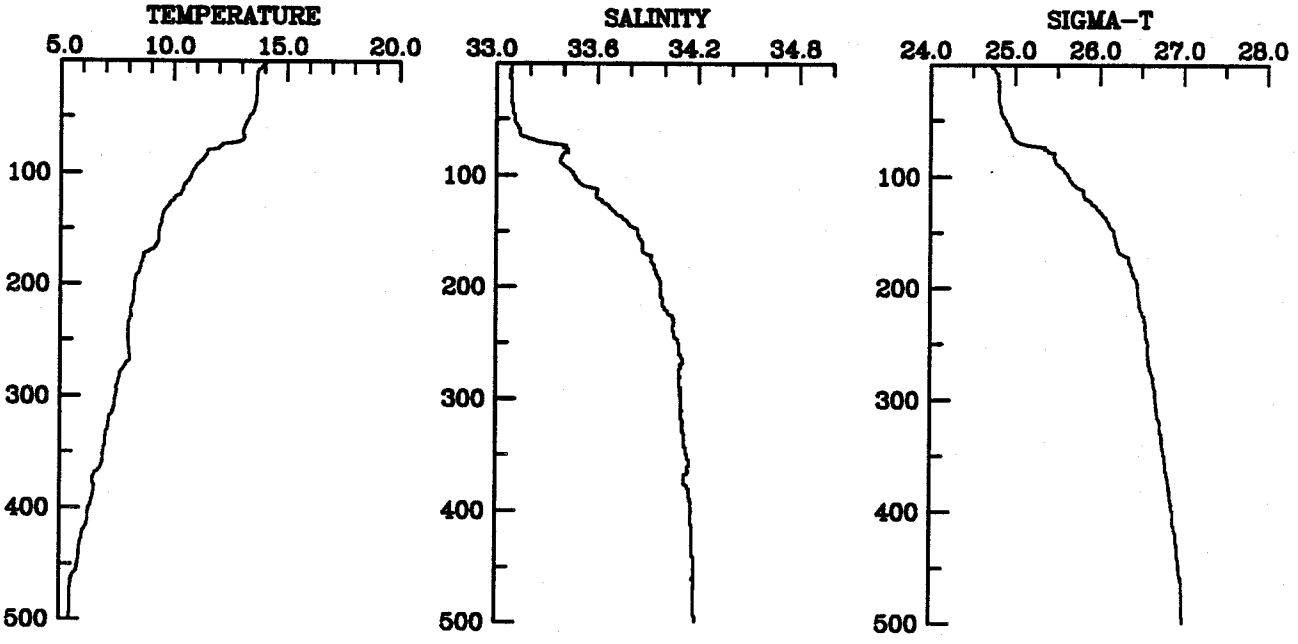

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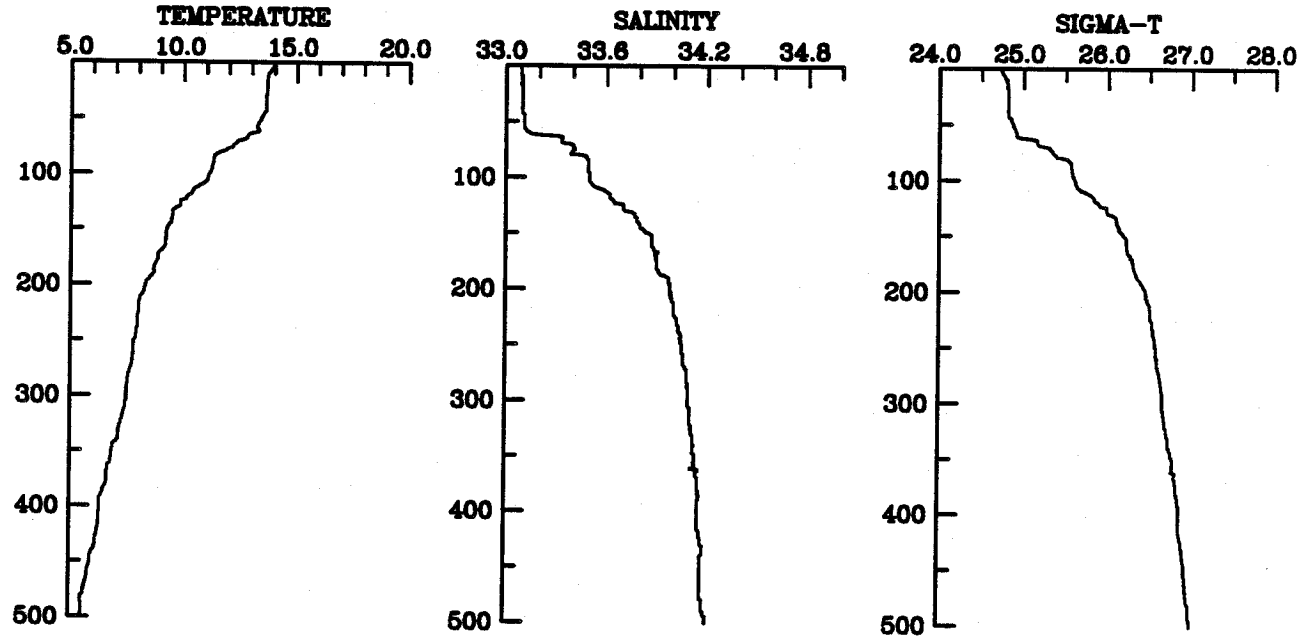

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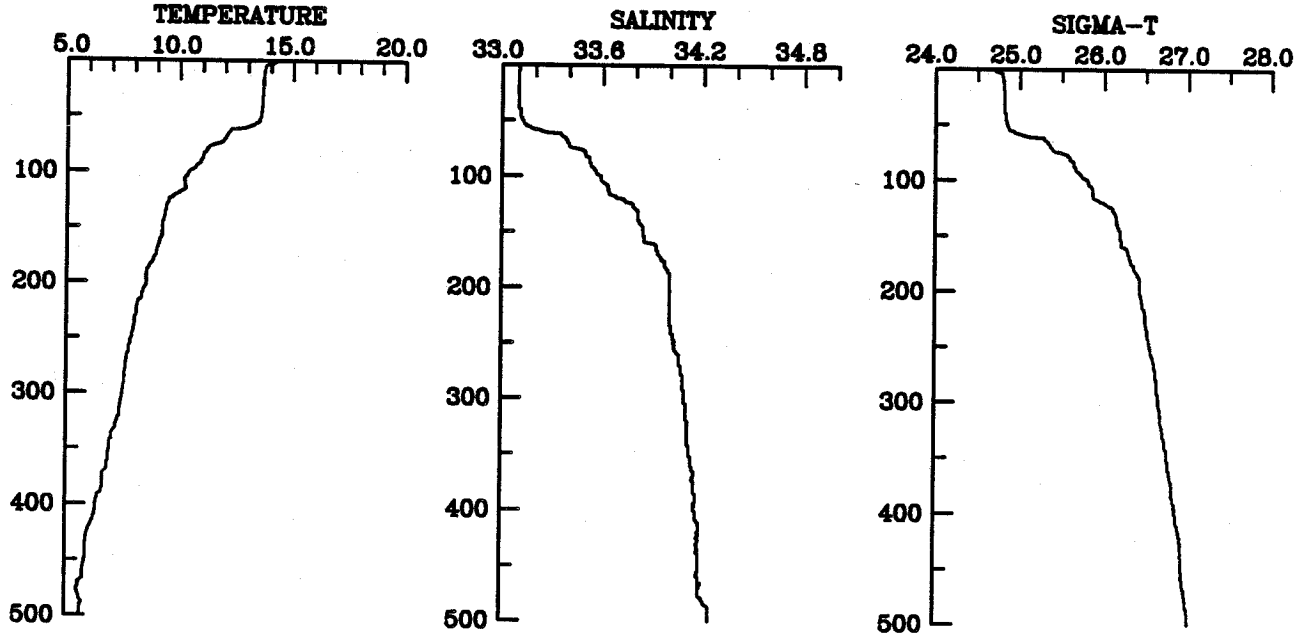

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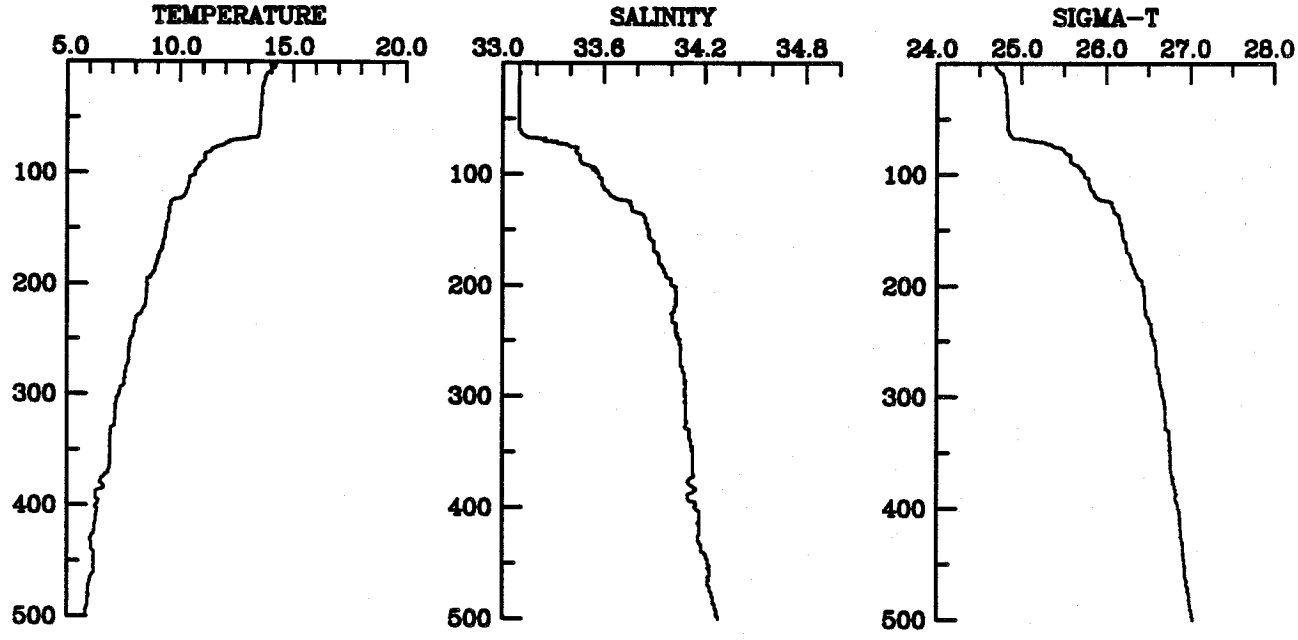

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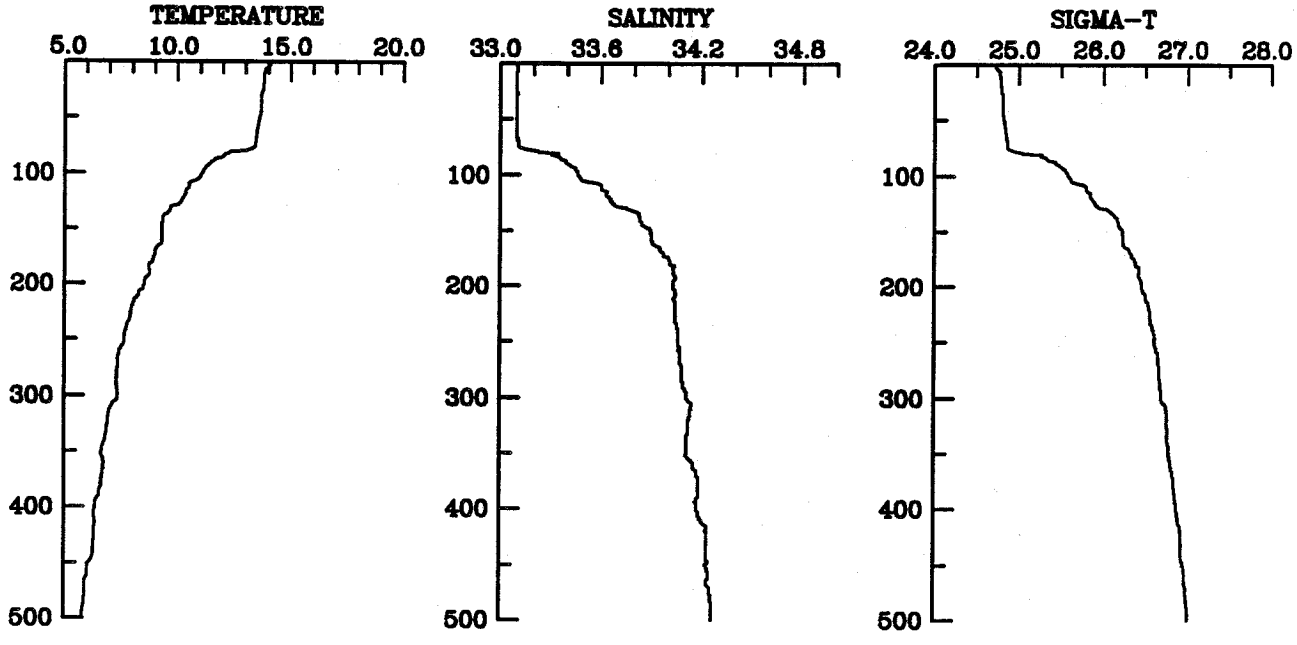

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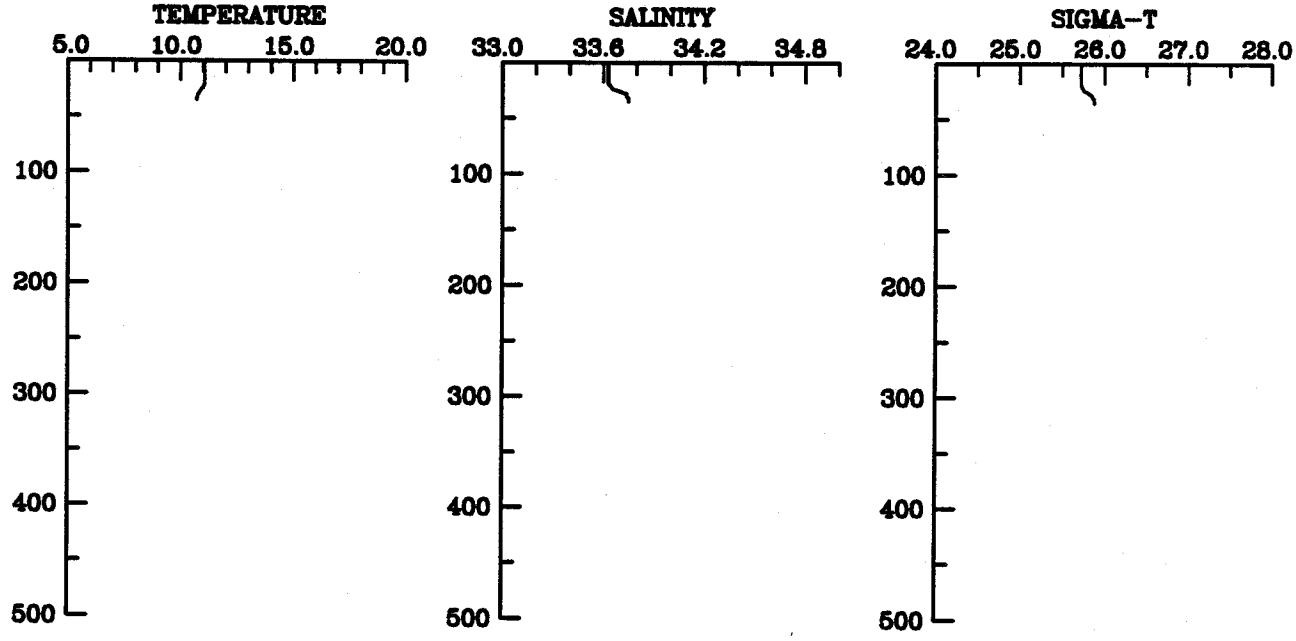

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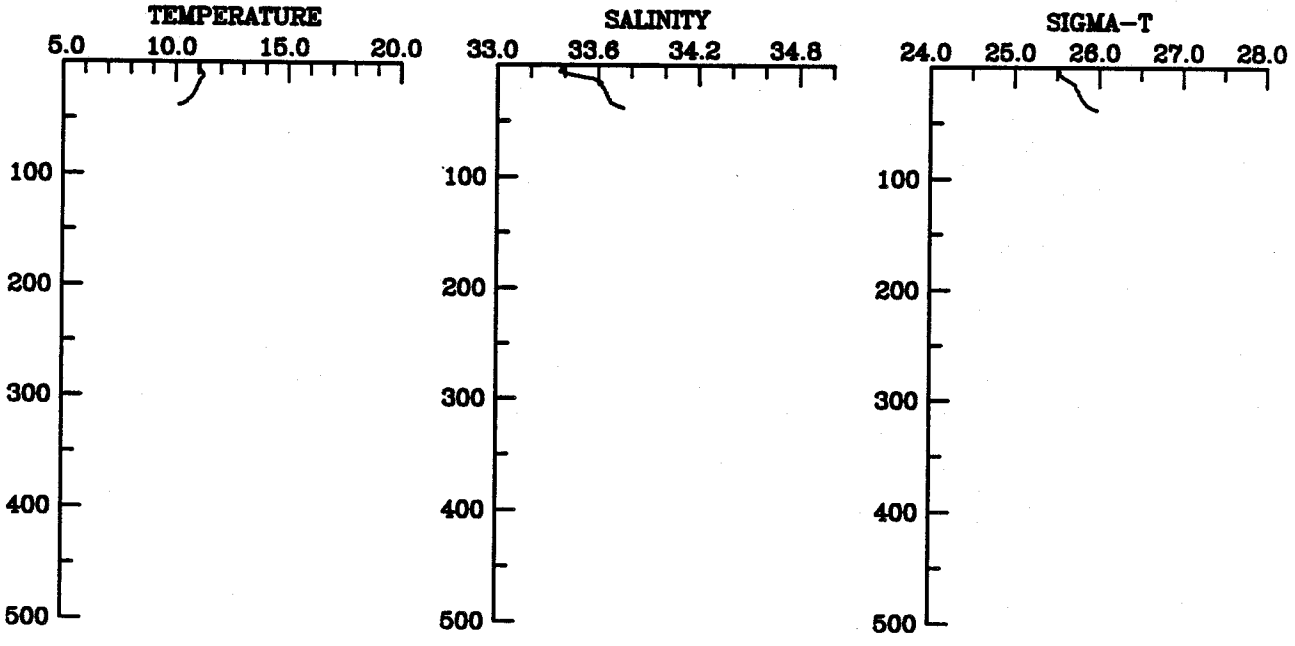
XBT Transect A-1
XBT Map 1



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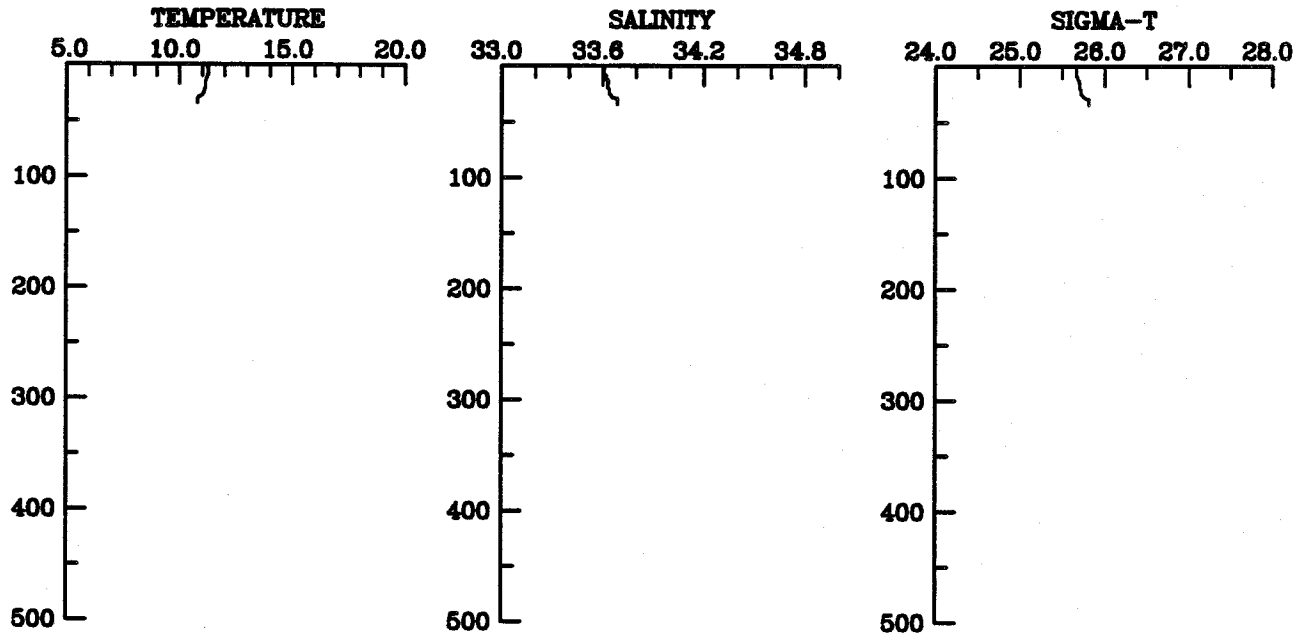
XBT Map 1



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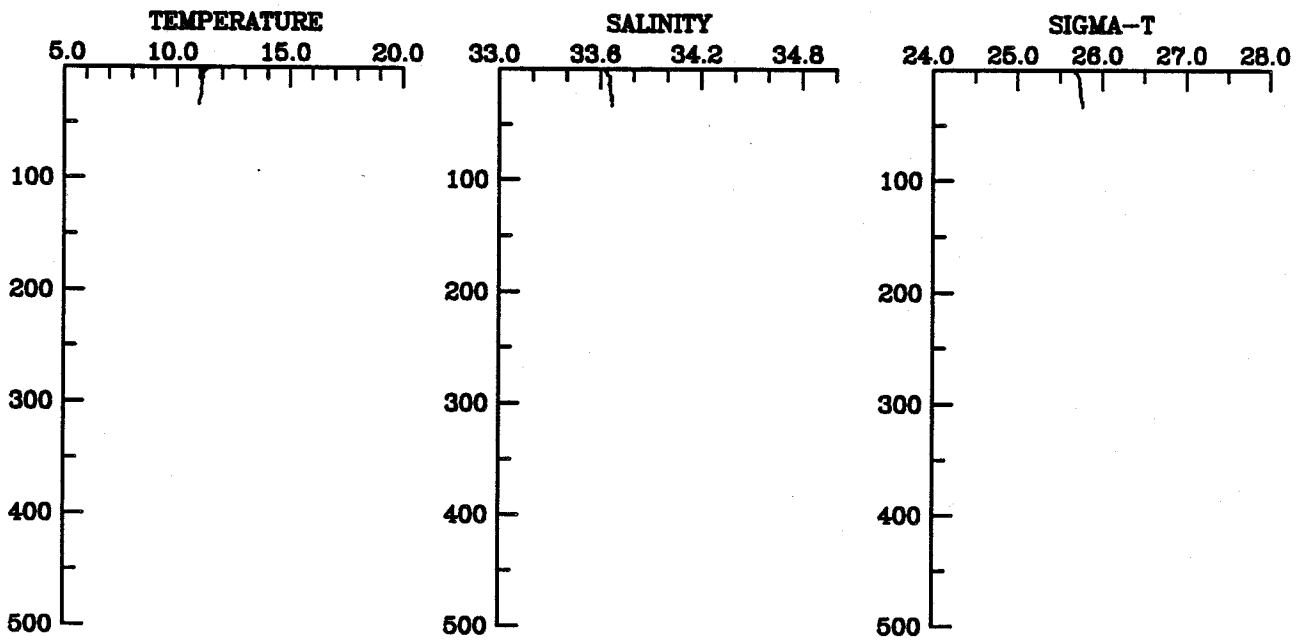
XBT Transect G–1
XBT Map 1



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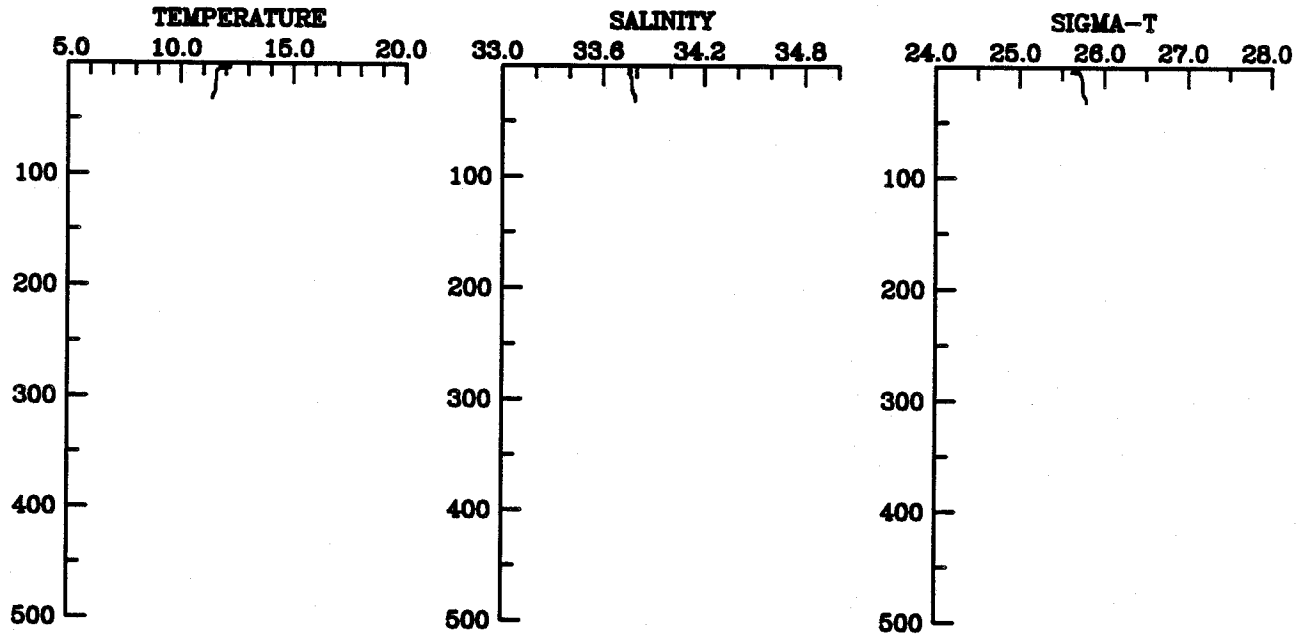
XBT Map 1



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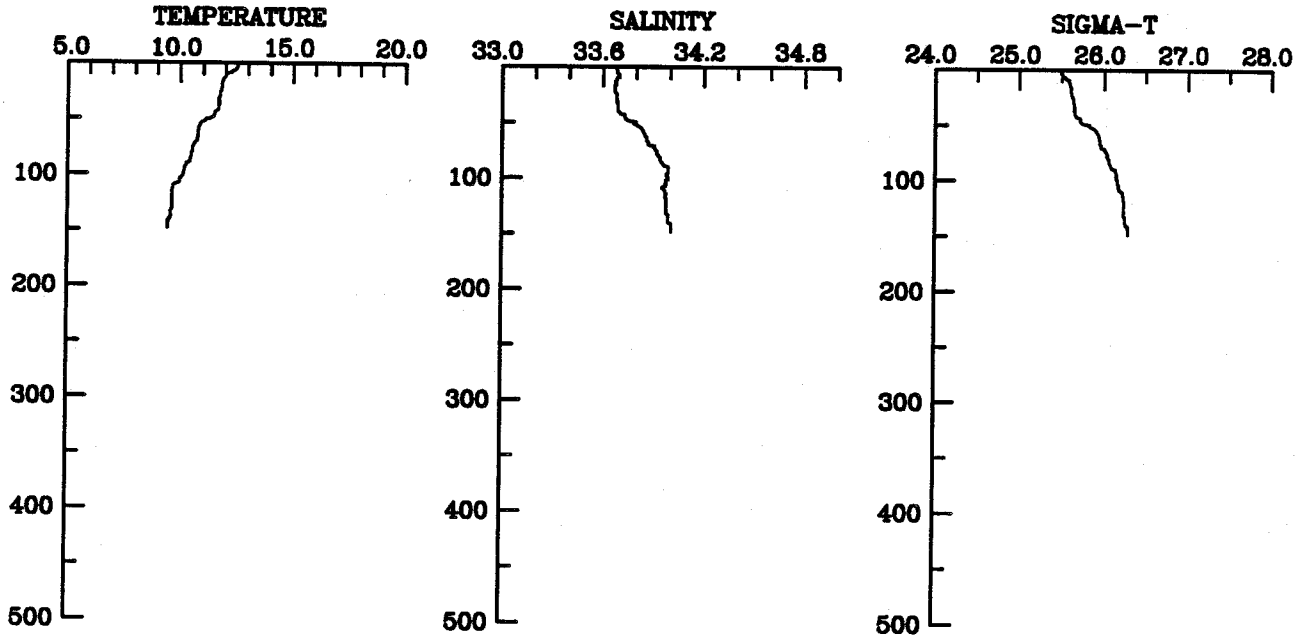
XBT Transect C-1
XBT Map 1



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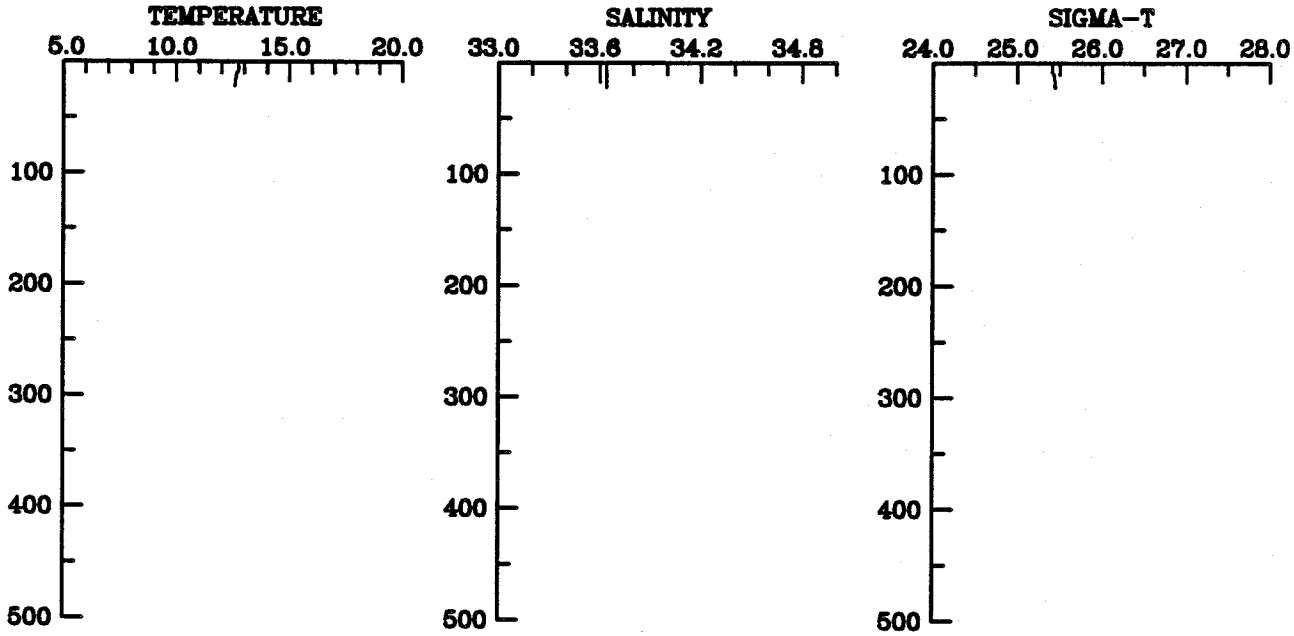
XBT Transect C–1
XBT Map 1



STATION A1 CAST 58
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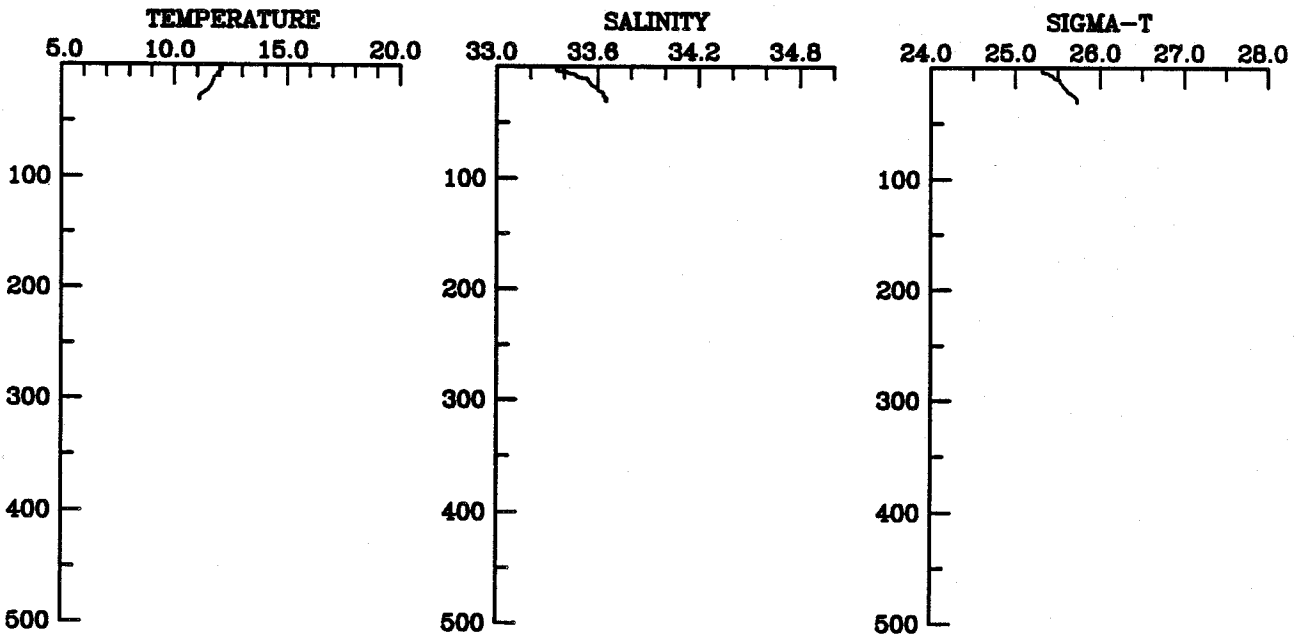
CTD Transect A–1
CTD Map 1



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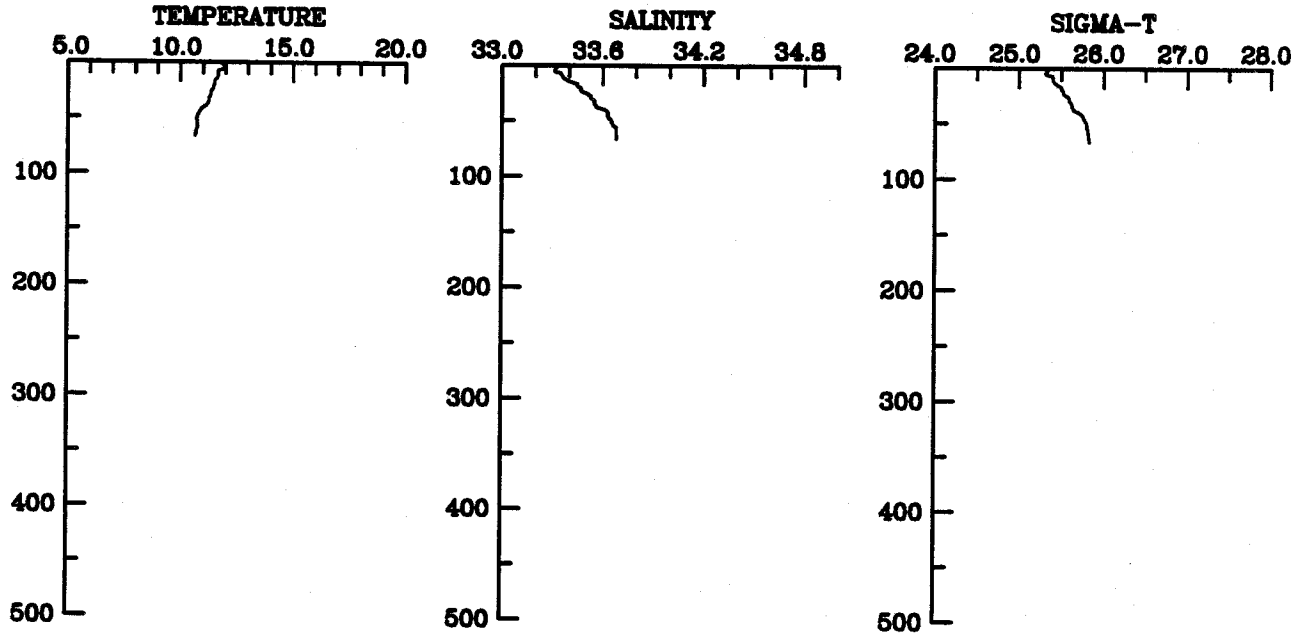
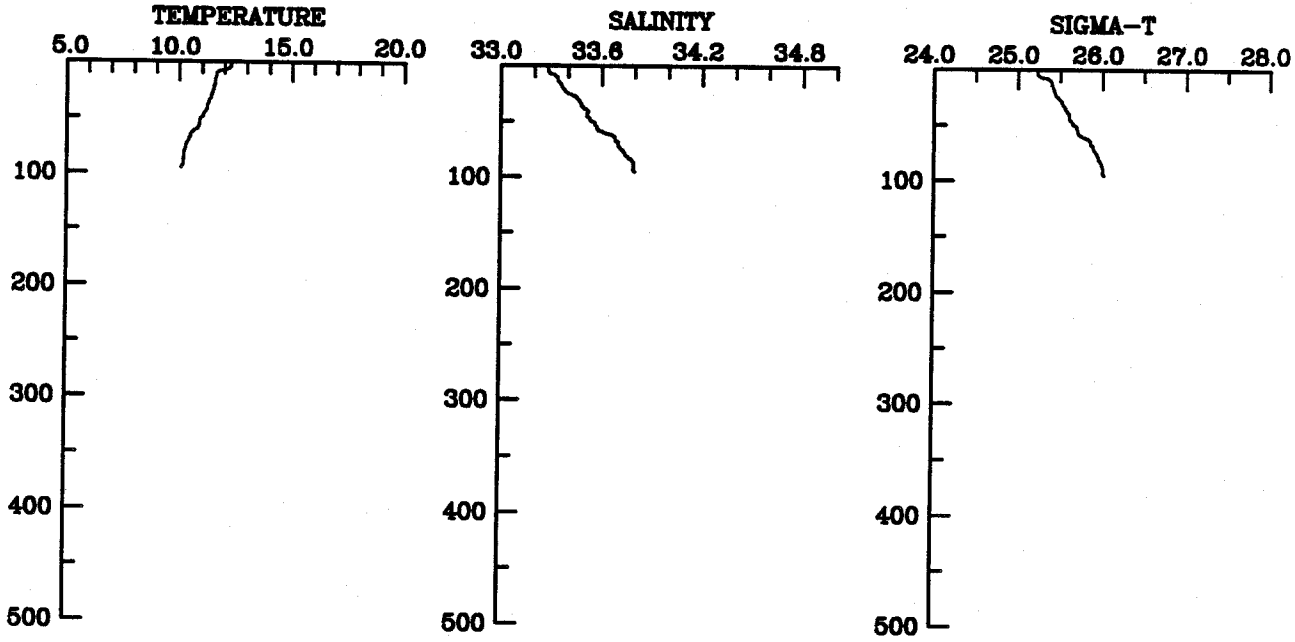
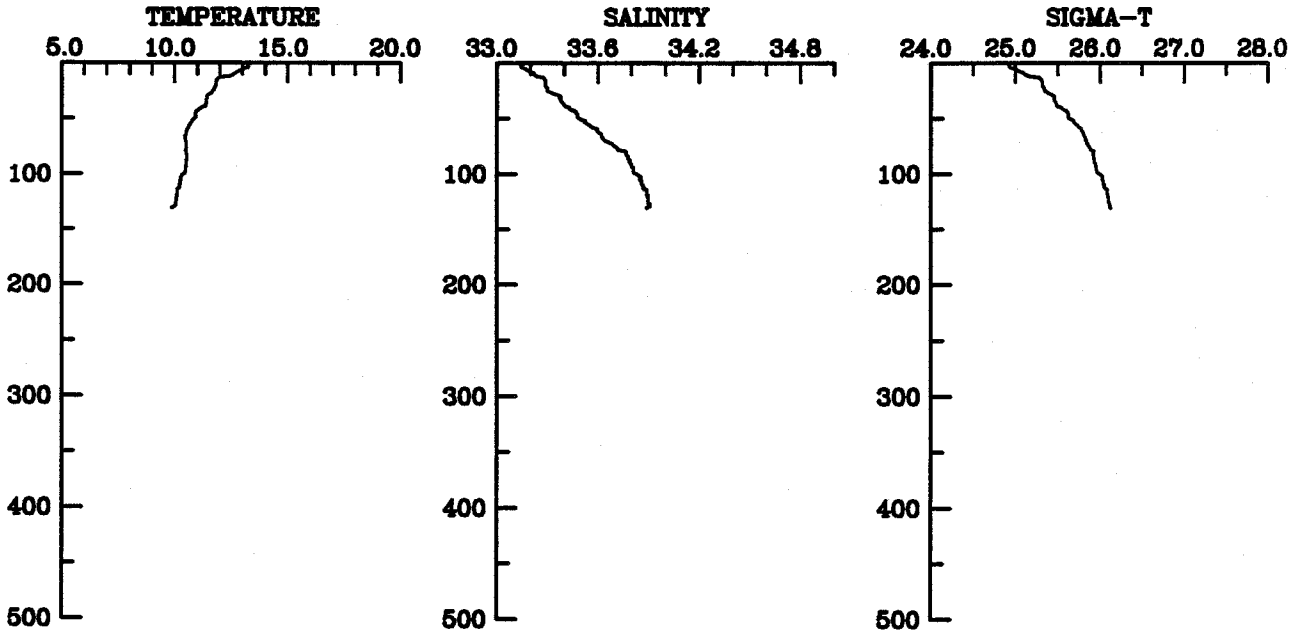
CTD Transect A-1
CTD Map 1



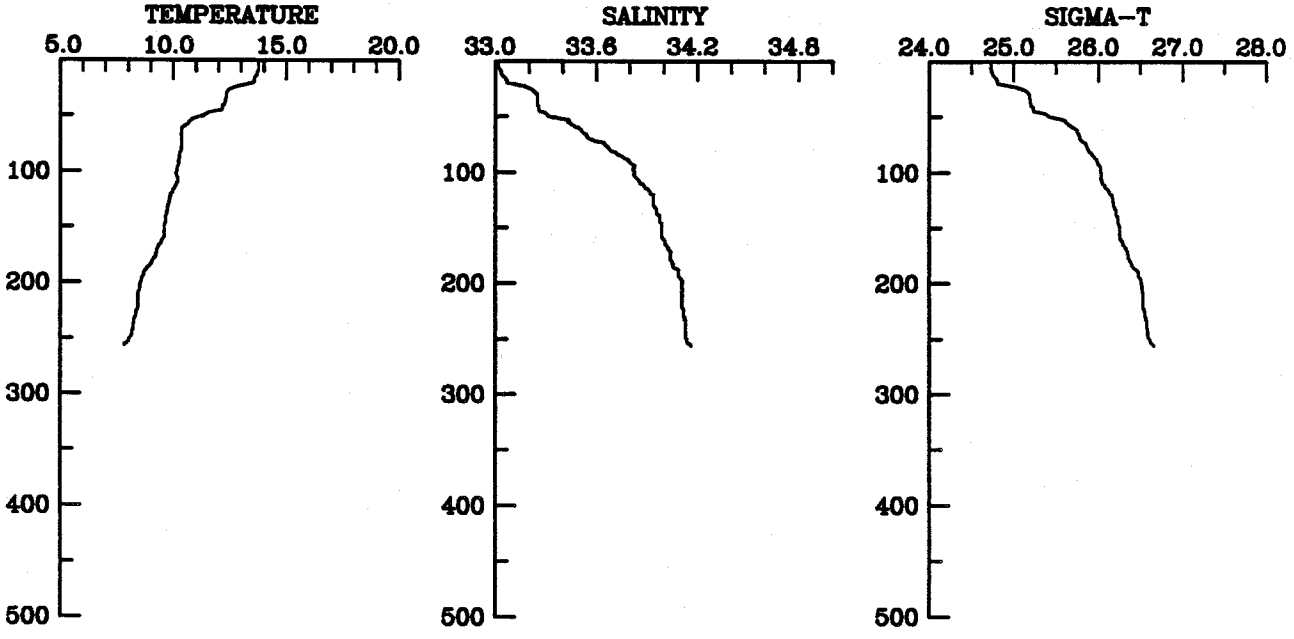
STATION A3 CAST 60
7 April 1983 400 GMT
CTD Transect A-1
CTD Map 1



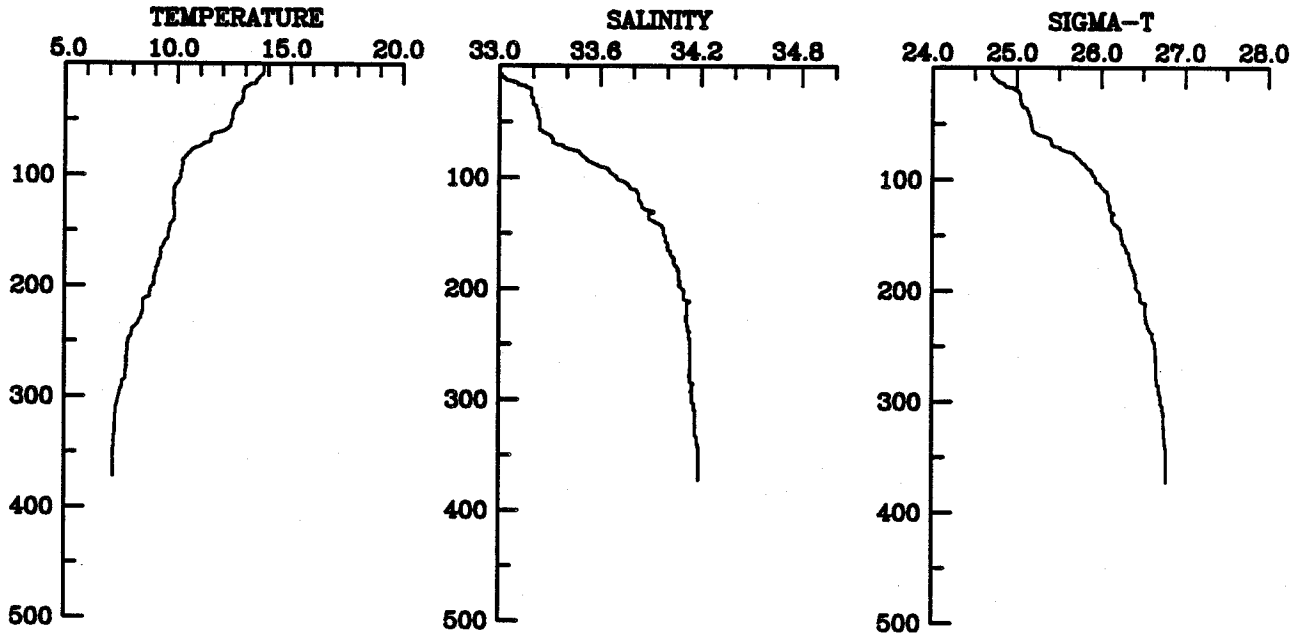
STATION A4 CAST 61
7 April 1983 406 GMT
CTD Transect A-1
CTD Map 1



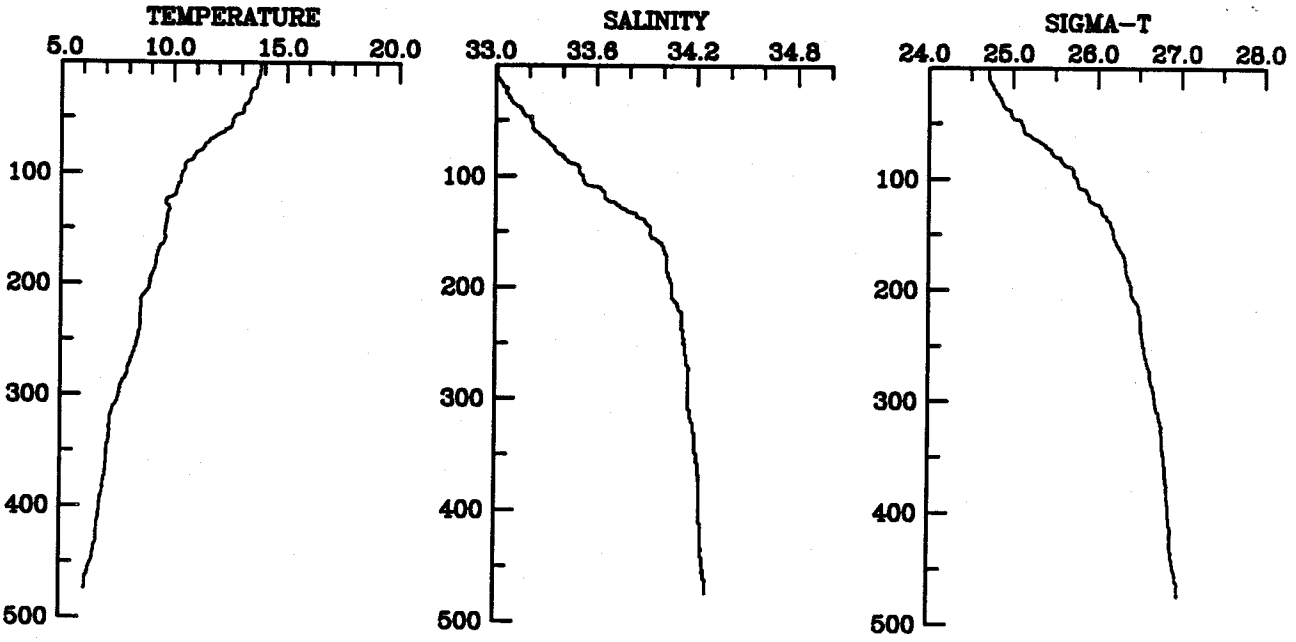
STATION A5 CAST 62
7 April 1983 506 GMT
CTD Transect A-1
CTD Map 1



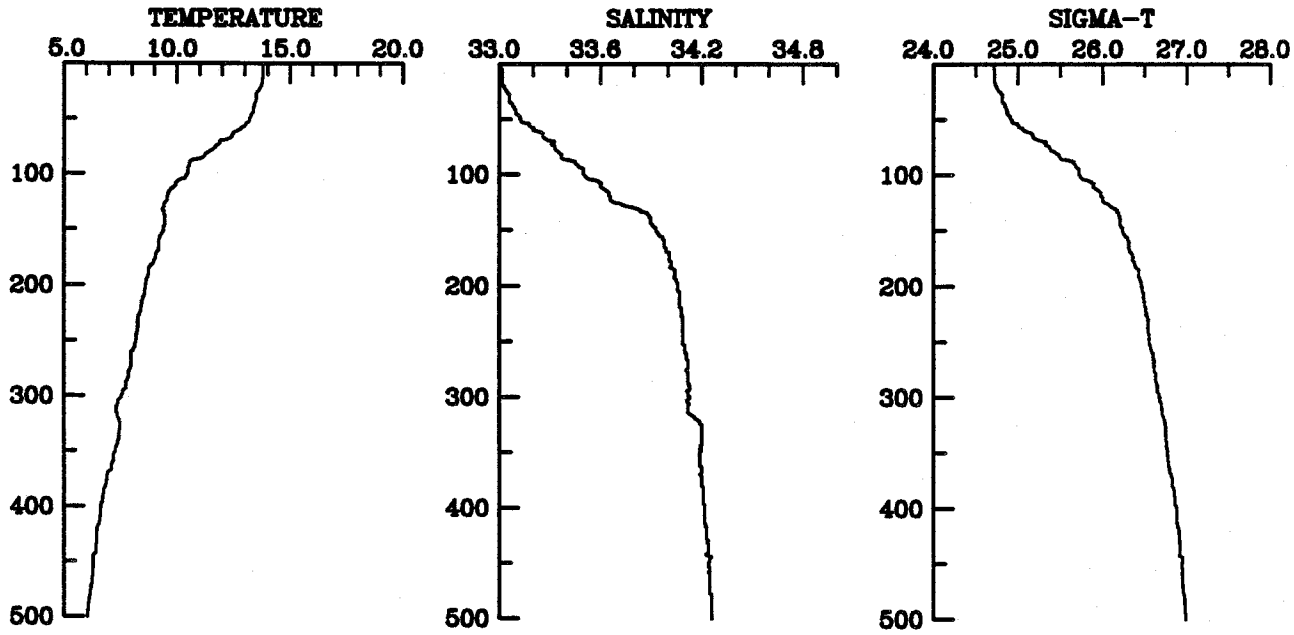
STATION A6 CAST 63
7 April 1983 630 GMT
CTD Transect A-1
CTD Map 1



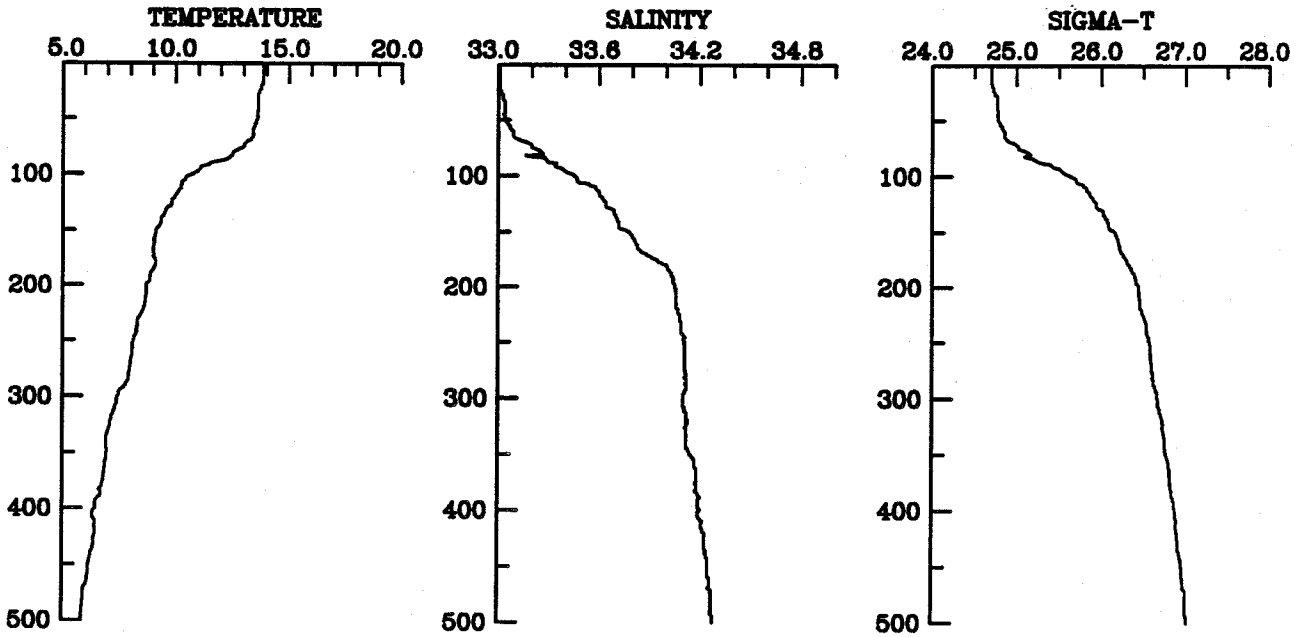
STATION A7 CAST 64
8 April 1983 736 GMT
CTD Transect A-1
CTD Map 1



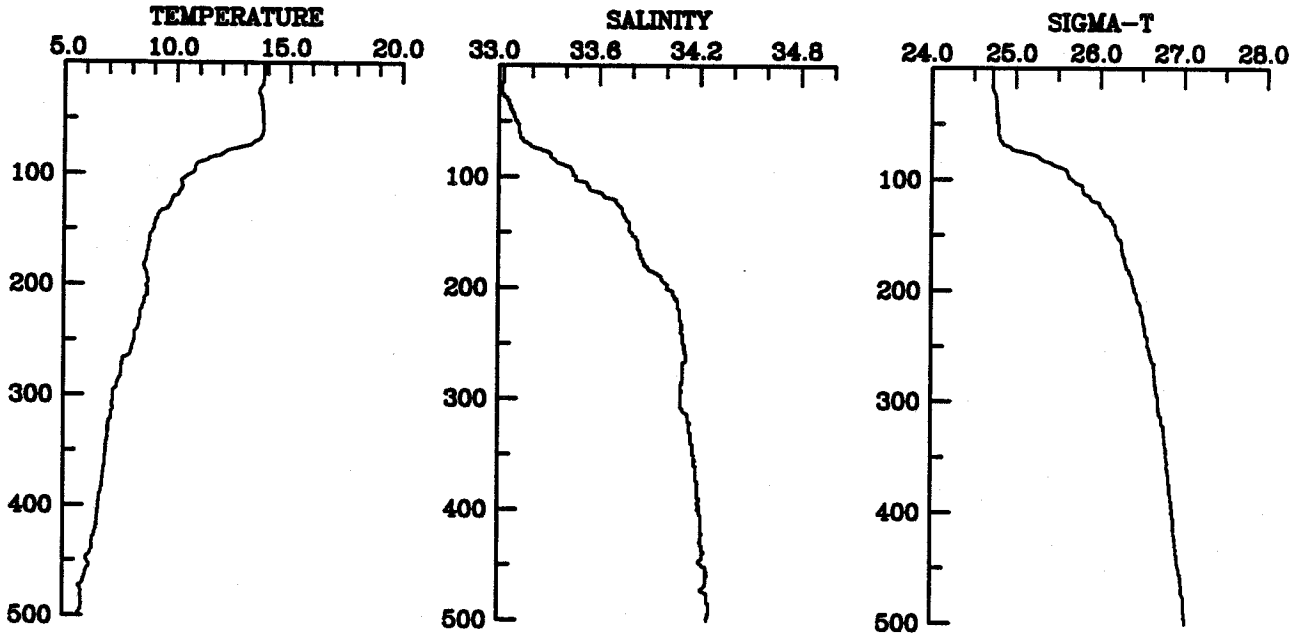
STATION A8 CAST 65
7 April 1983 906 GMT
CTD Transect A-1
CTD Map 1



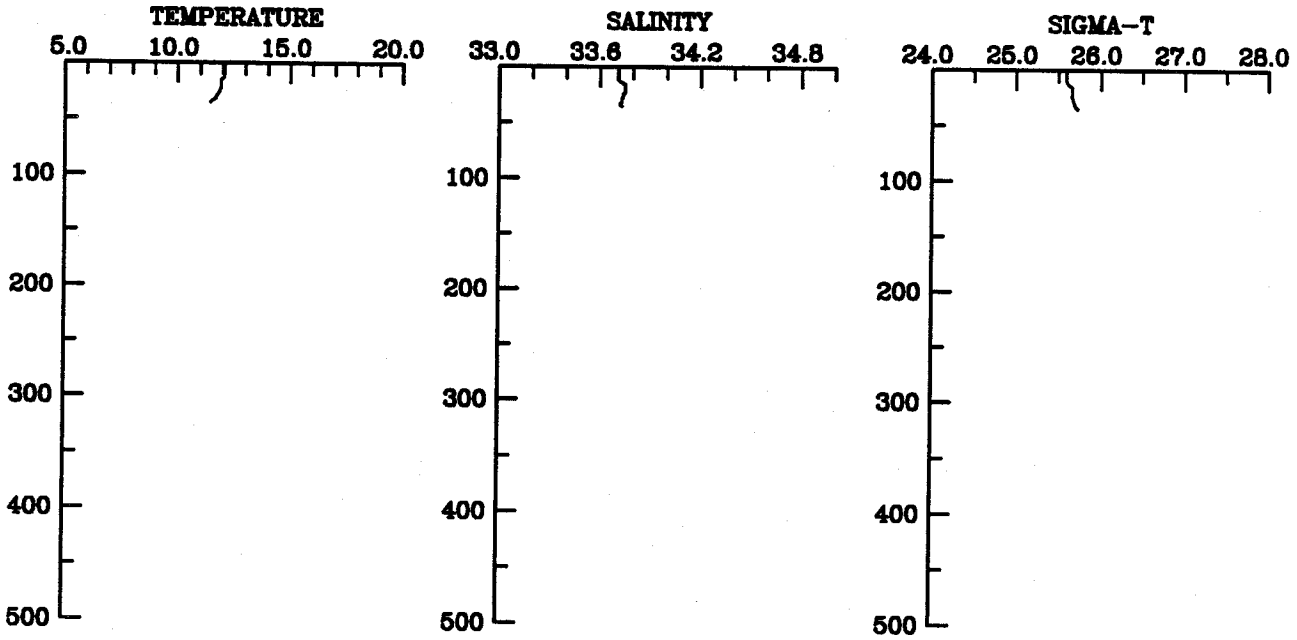
STATION A9 CAST 66
7 April 1983 1018 GMT
CTD Transect A-1
CTD Map 1



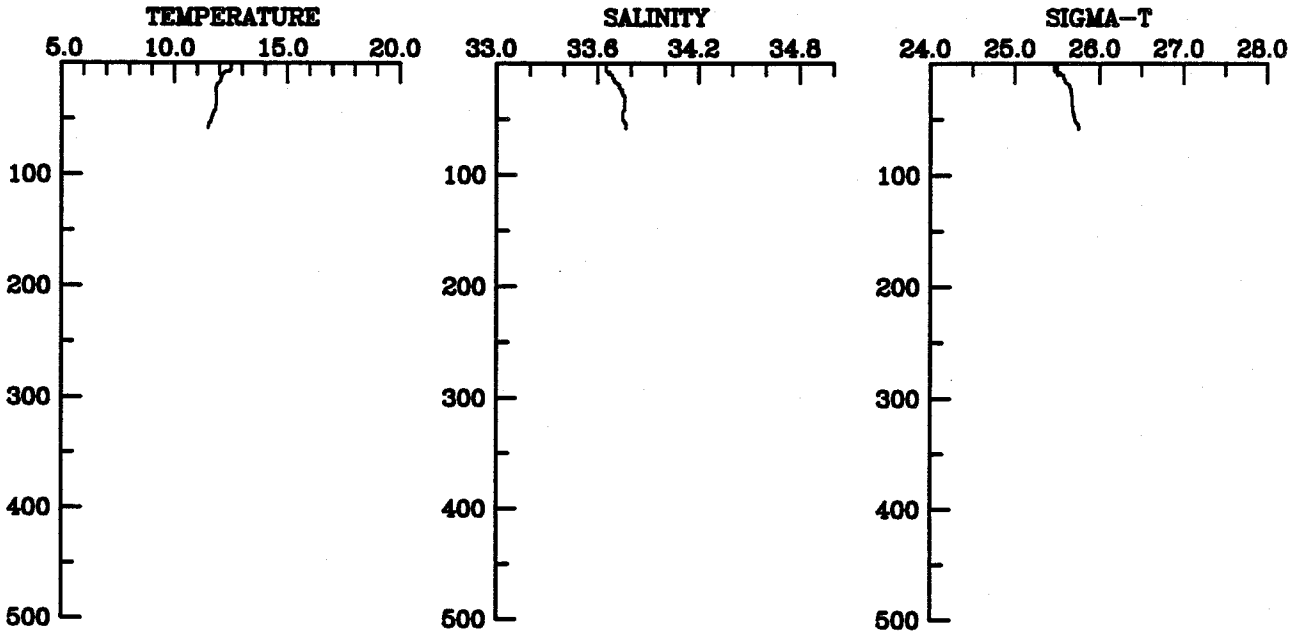
STATION A10 CAST 67
7 April 1983 1130 GMT
CTD Transect A-1
CTD Map 1



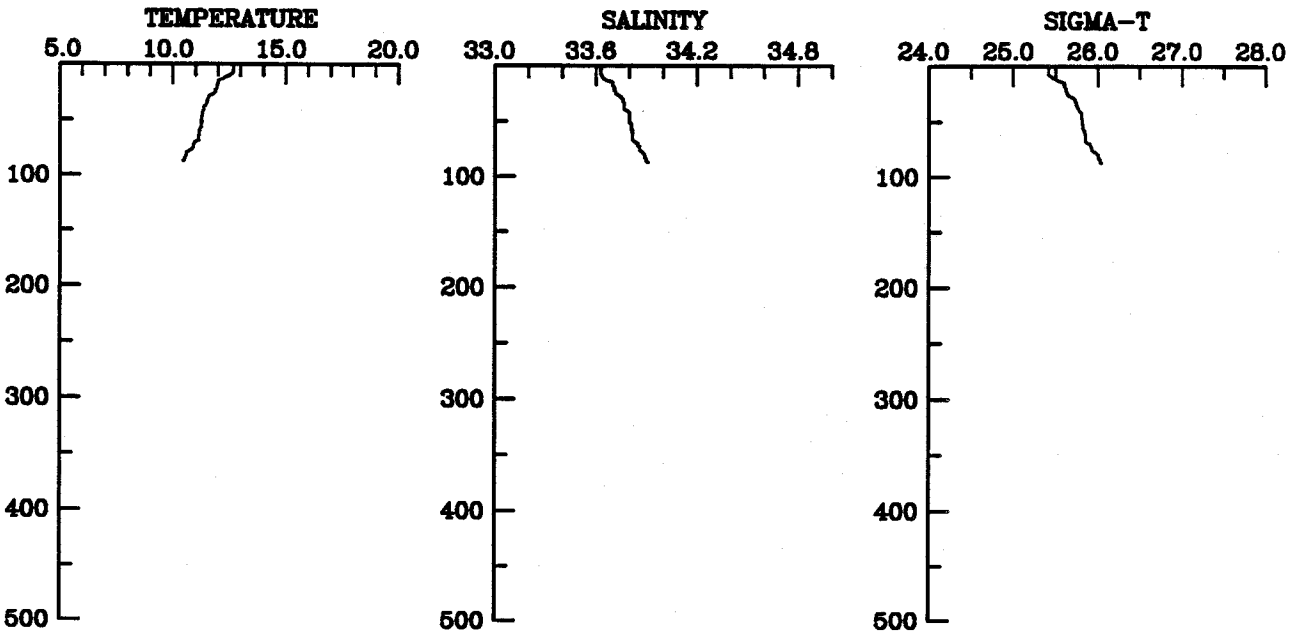
STATION G1 CAST 68
7 April 1983 1500 GMT
CTD Transect G-2
CTD Map 1



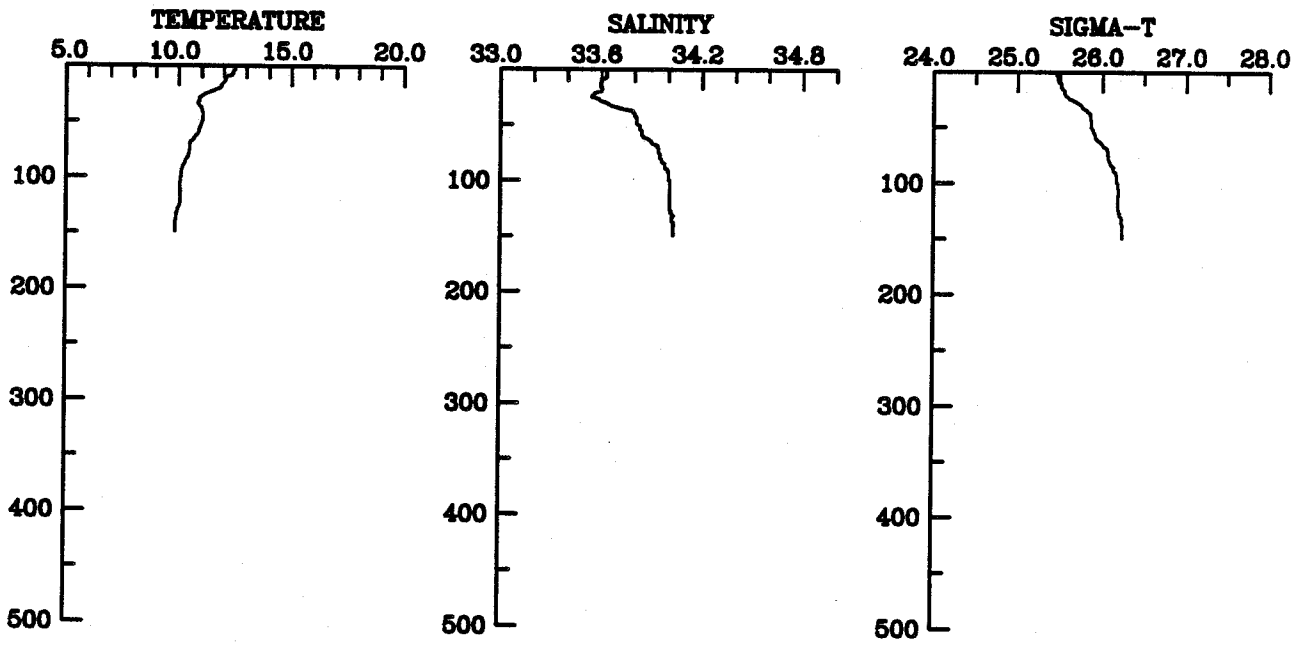
STATION G2 CAST 69
7 April 1983 1542 GMT
CTD Transect G-2
CTD Map 1



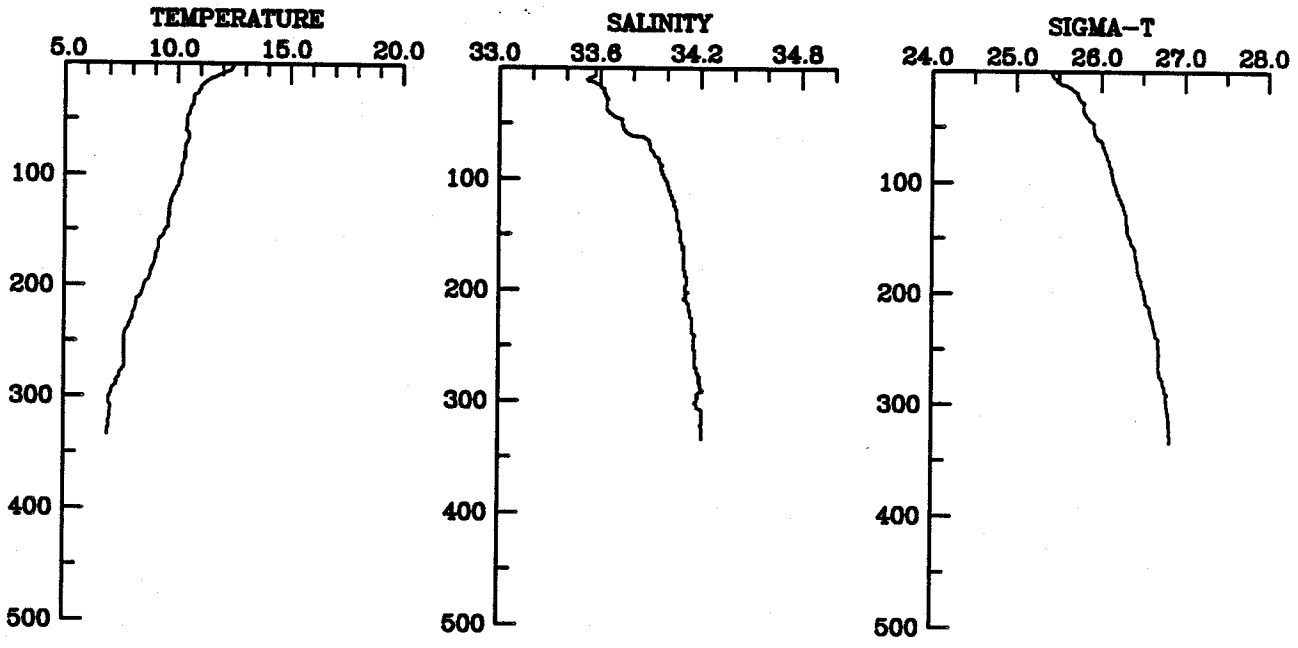
STATION G3 CAST 70
7 April 1983 1706 GMT
CTD Transect G-2
CTD Map 1



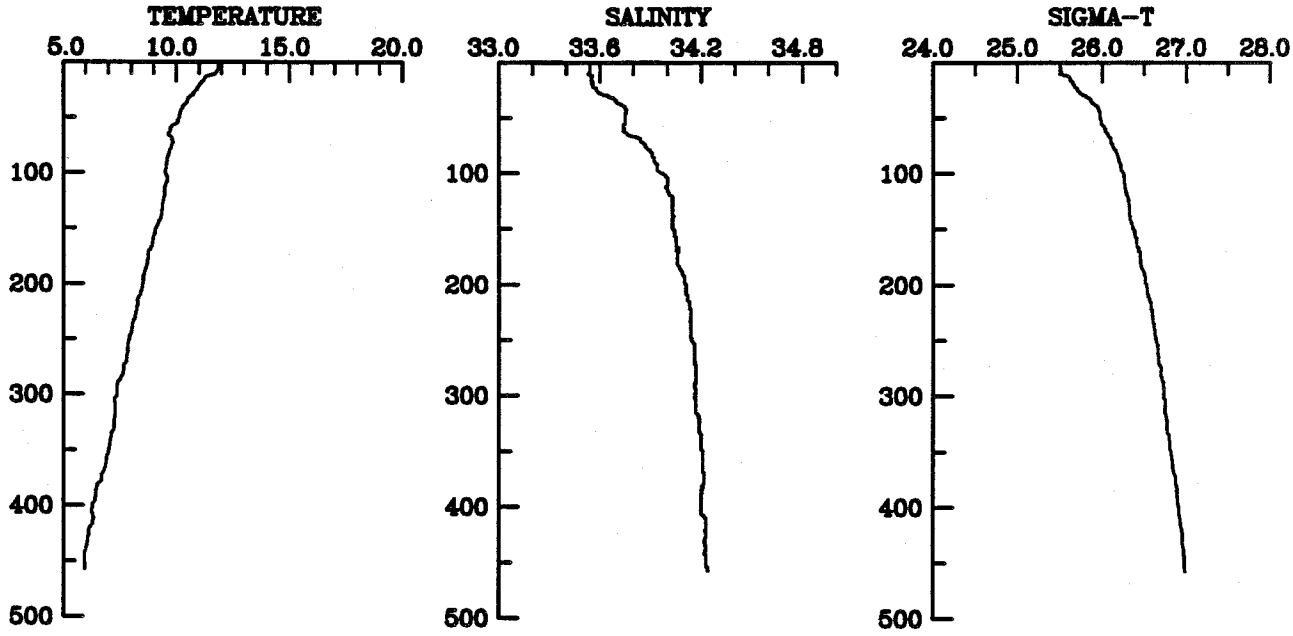
STATION G4 CAST 71
7 April 1983 1830 GMT
CTD Transect G-2
CTD Map 1



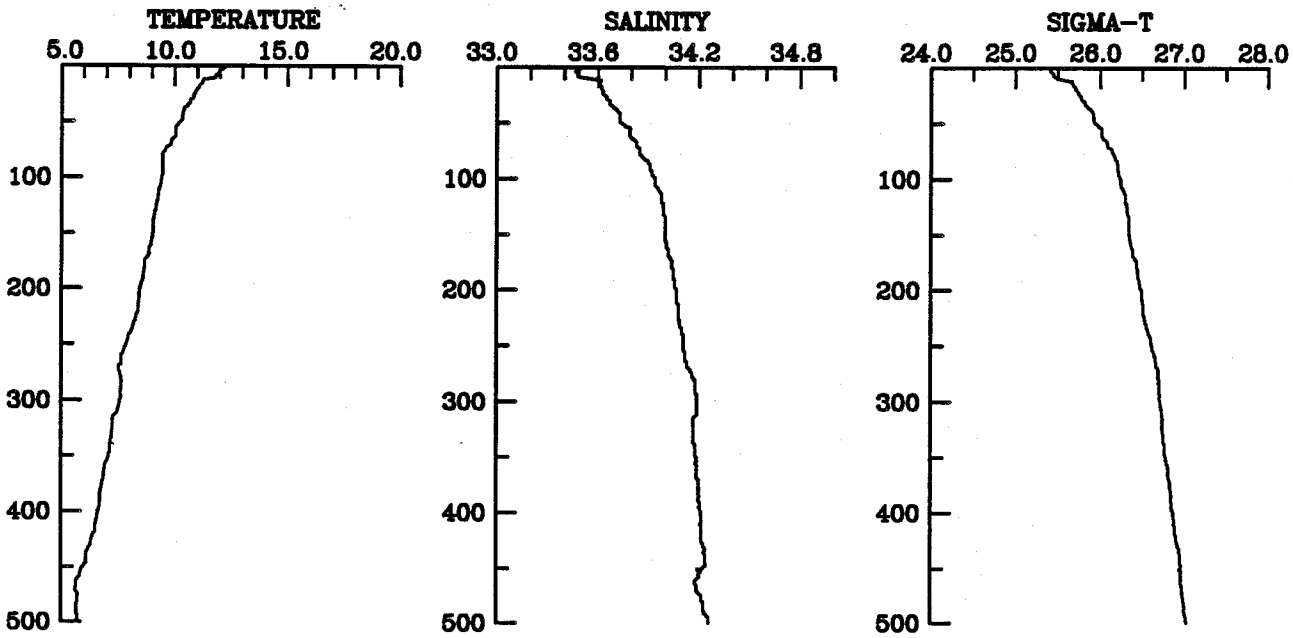
STATION G5 CAST 72
7 April 1983 1936 GMT
CTD Transect G-2
CTD Map 1



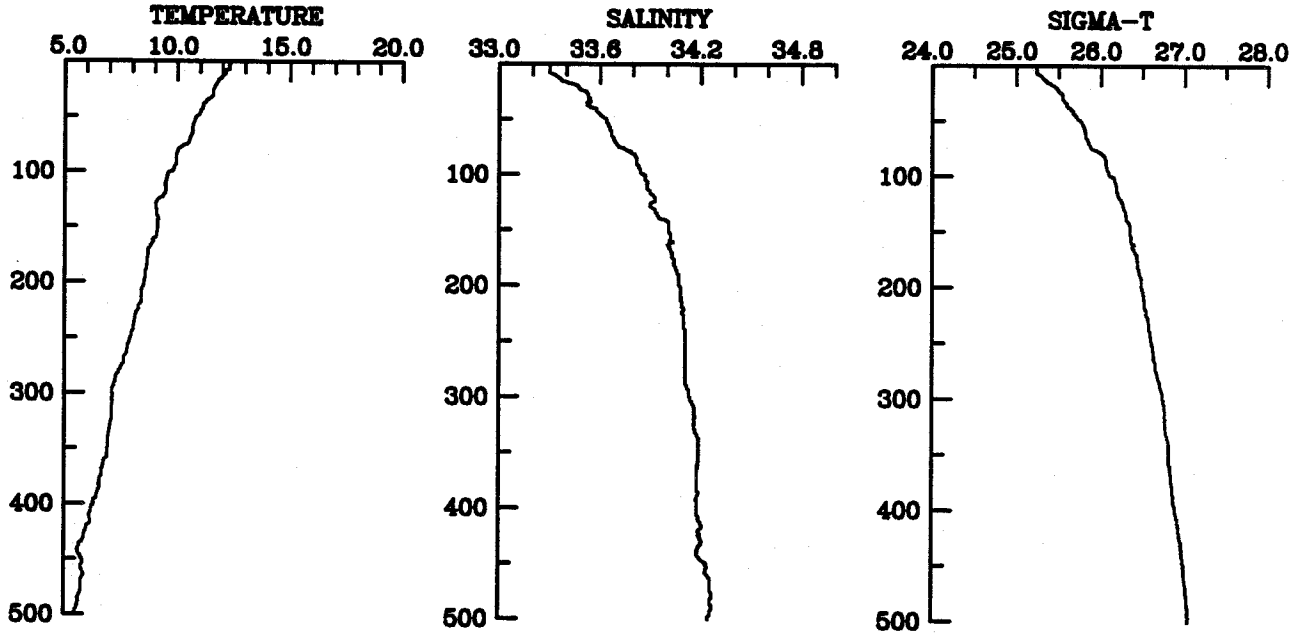
STATION G6 CAST 73
7 April 1983 2036 GMT
CTD Transect G-2
CTD Map 1



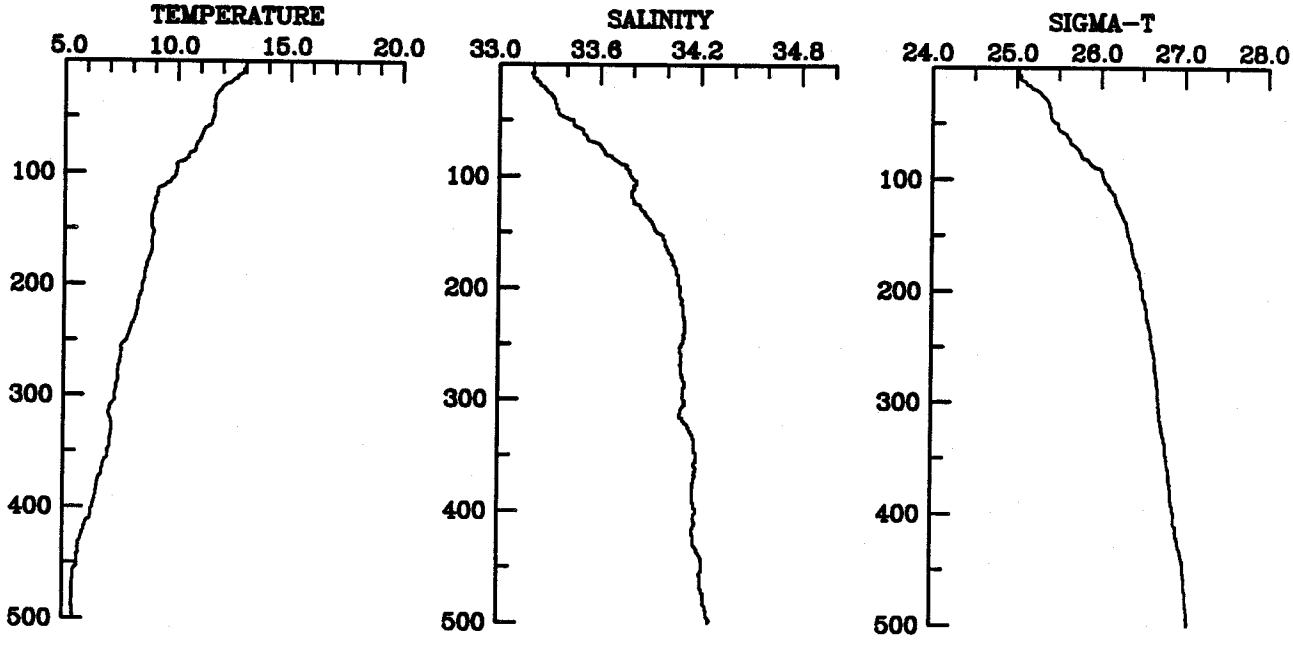
STATION G7 CAST 74
7 April 1983 2142 GMT
CTD Transect G-2
CTD Map 1



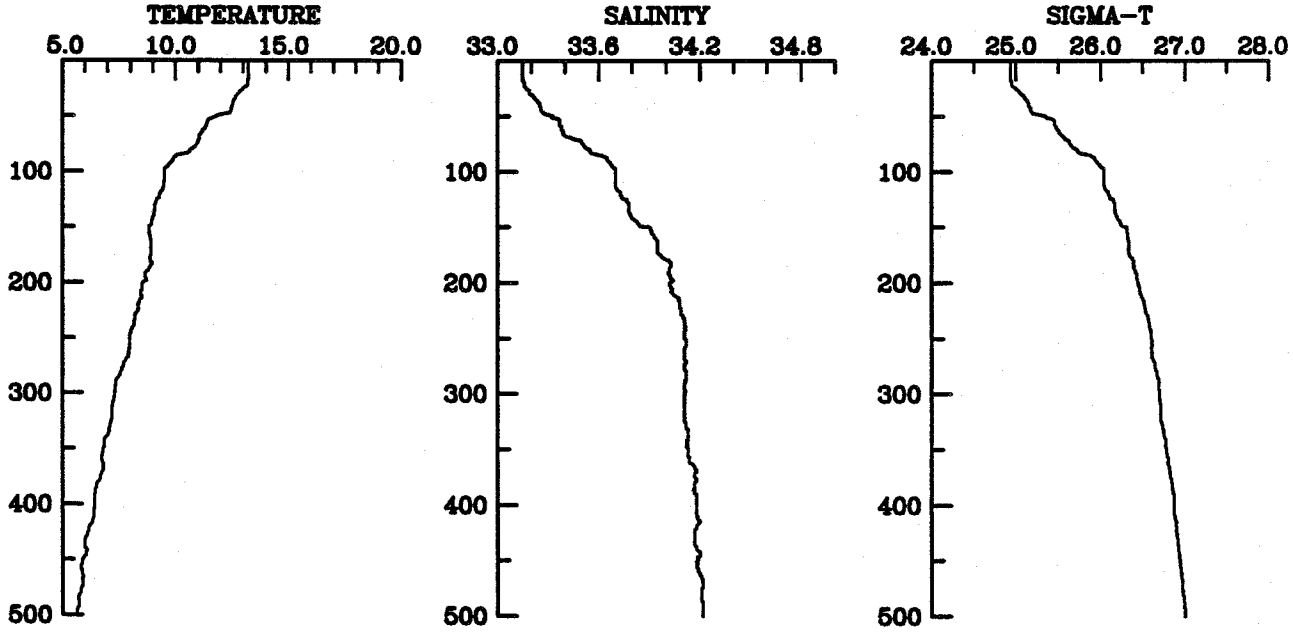
STATION G8 CAST 75
7 April 1983 2306 GMT
CTD Transect G-2
CTD Map 1



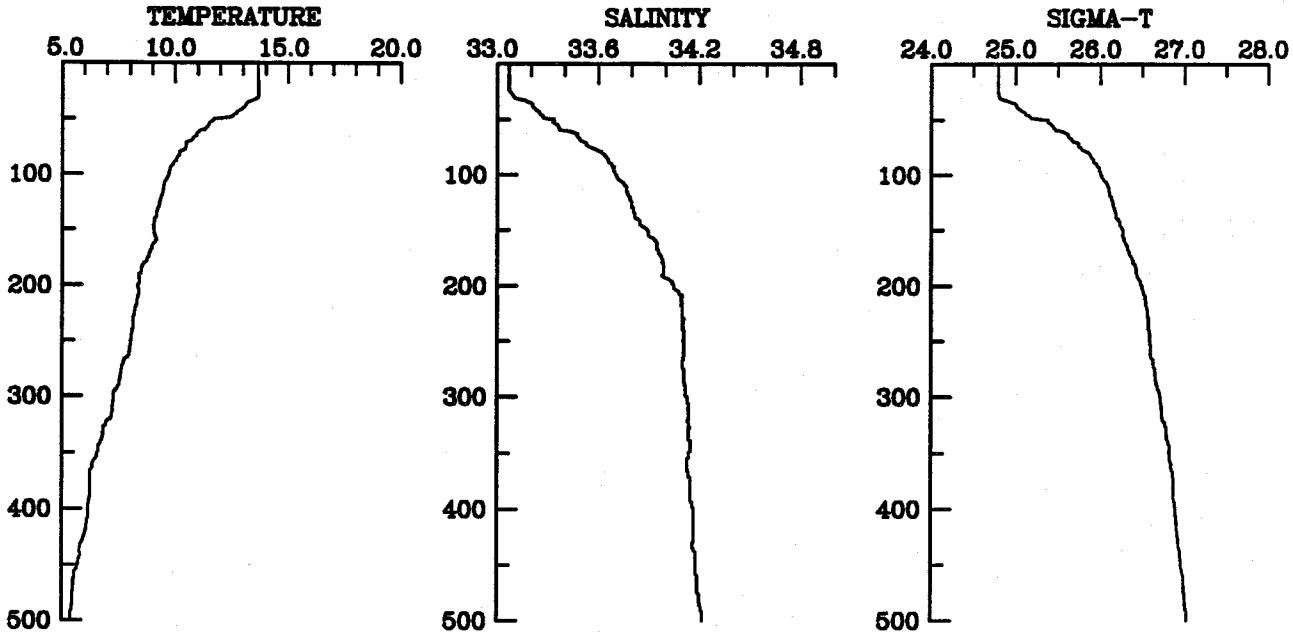
STATION G9 CAST 76
8 April 1983 24 GMT
CTD Transect G-2
CTD Map 1



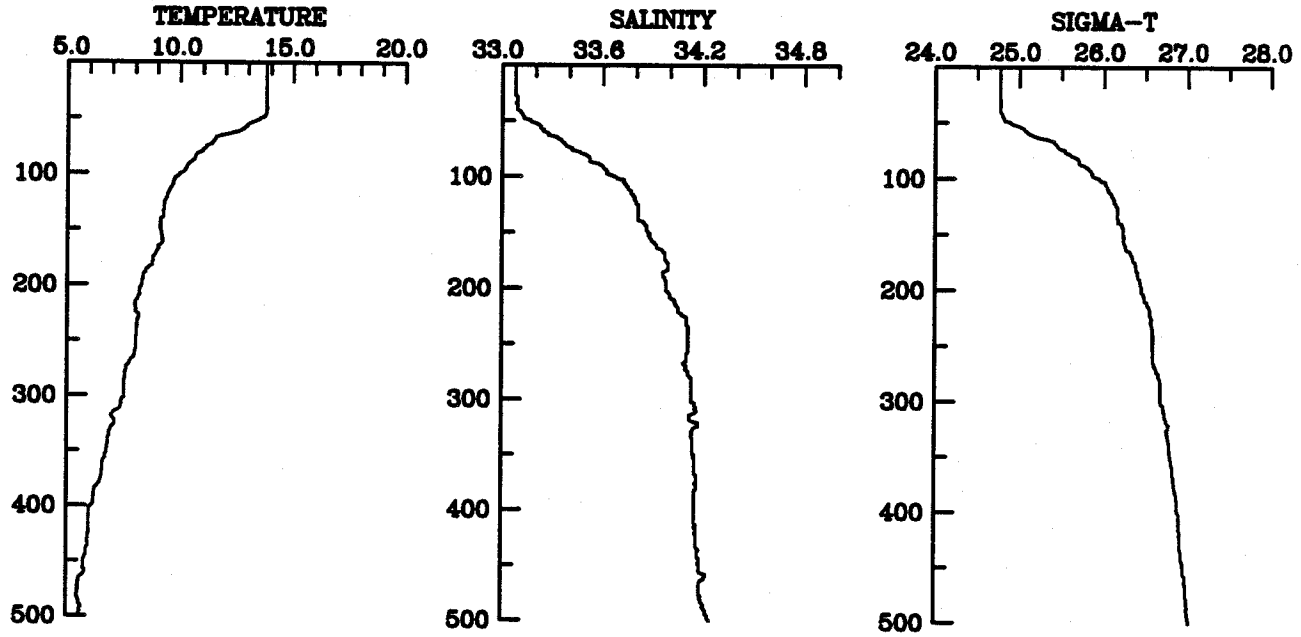
STATION G10 CAST 77
8 April 1983 218 GMT
CTD Transect G-2
CTD Map 1



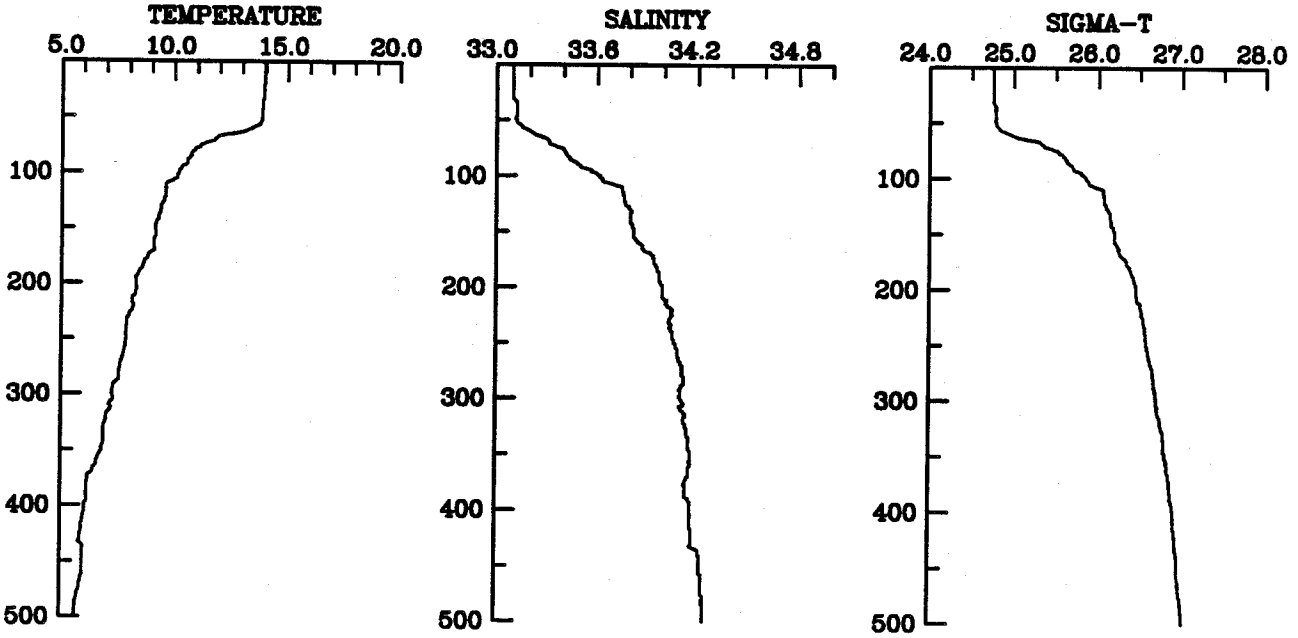
STATION G11 CAST 78
8 April 1983 542 GMT
CTD Transect G-2
CTD Map 1



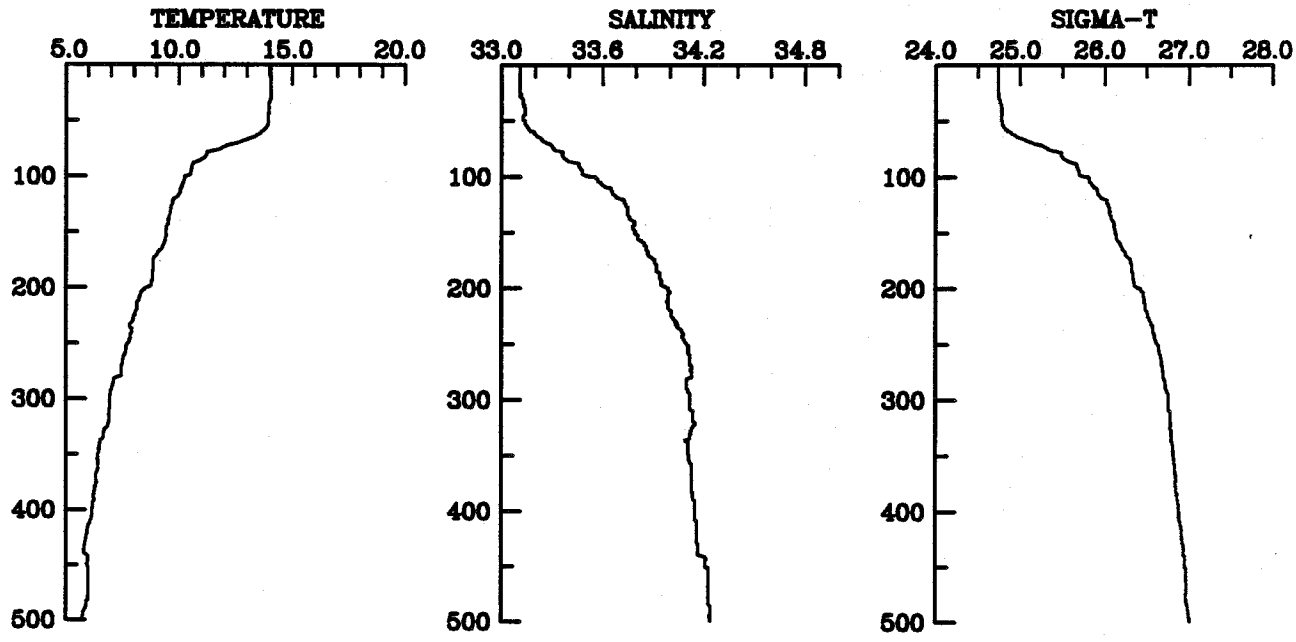
STATION G12 CAST 79
8 April 1983 706 GMT
CTD Transect G-2
CTD Map 1



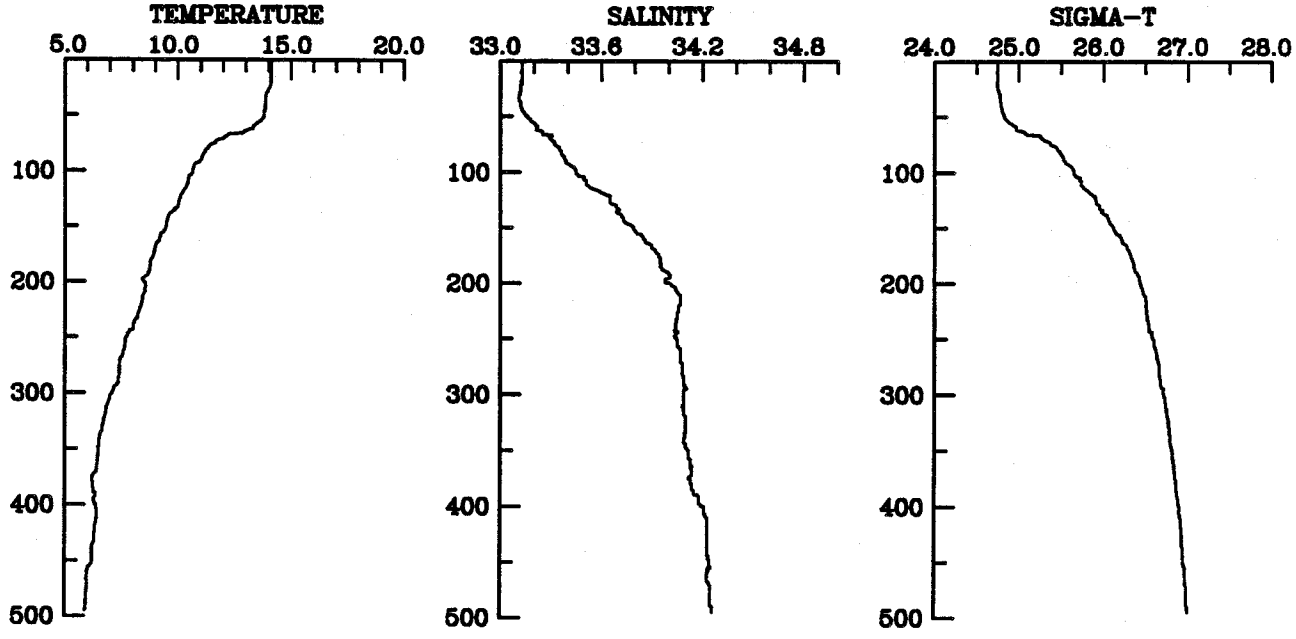
STATION G13 CAST 80
8 April 1983 848 GMT
CTD Transect G-2
CTD Map 1



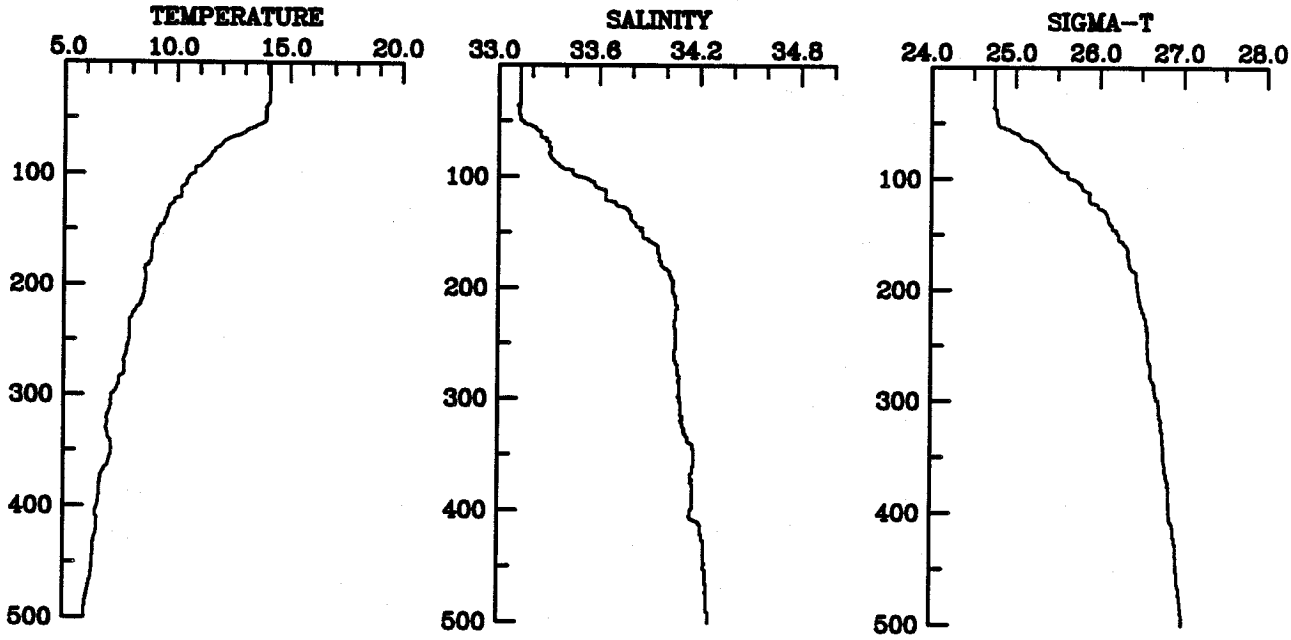
STATION G14 CAST 81
8 April 1983 1000 GMT
CTD Transect G-2
CTD Map 1



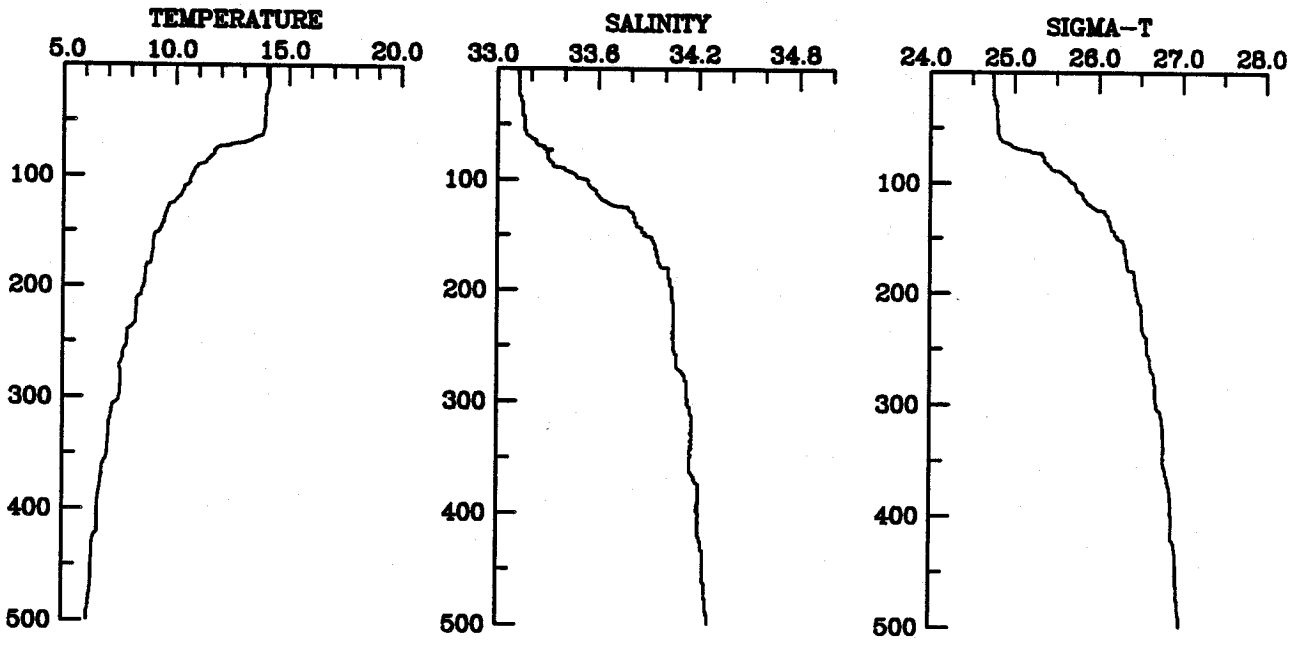
STATION G15 CAST 82
8 April 1983 1118 GMT
CTD Transect G-2
CTD Map 1



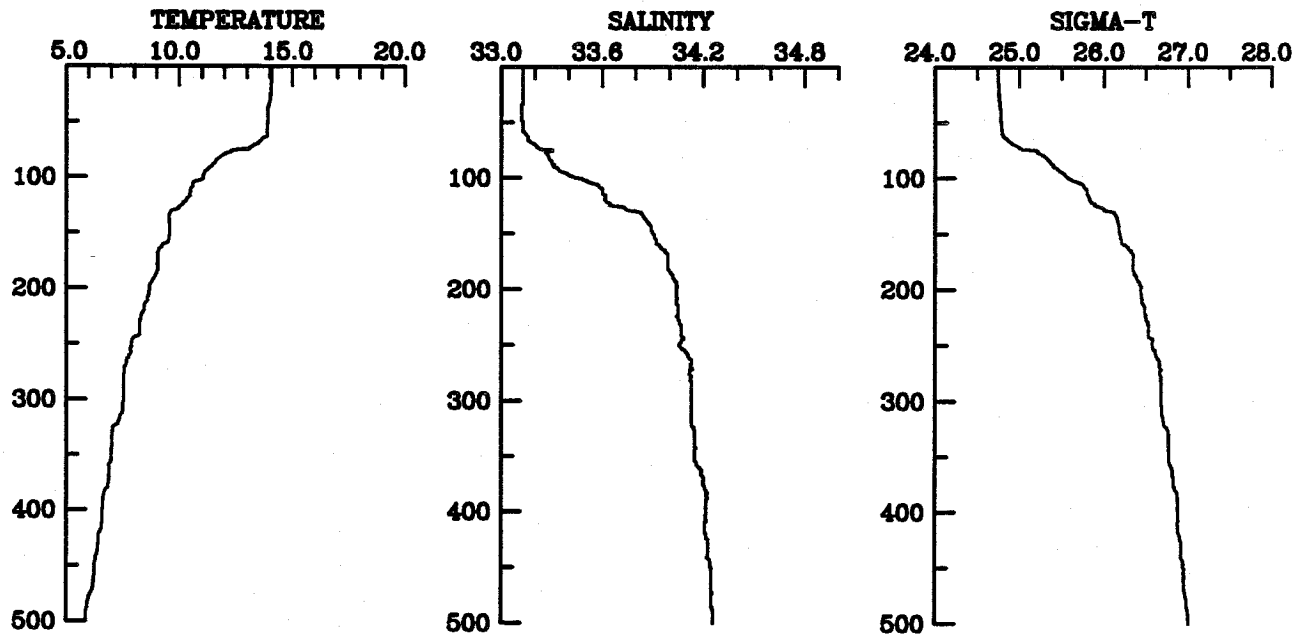
STATION G16 CAST 83
8 April 1983 1230 GMT
CTD Transect G-2
CTD Map 1



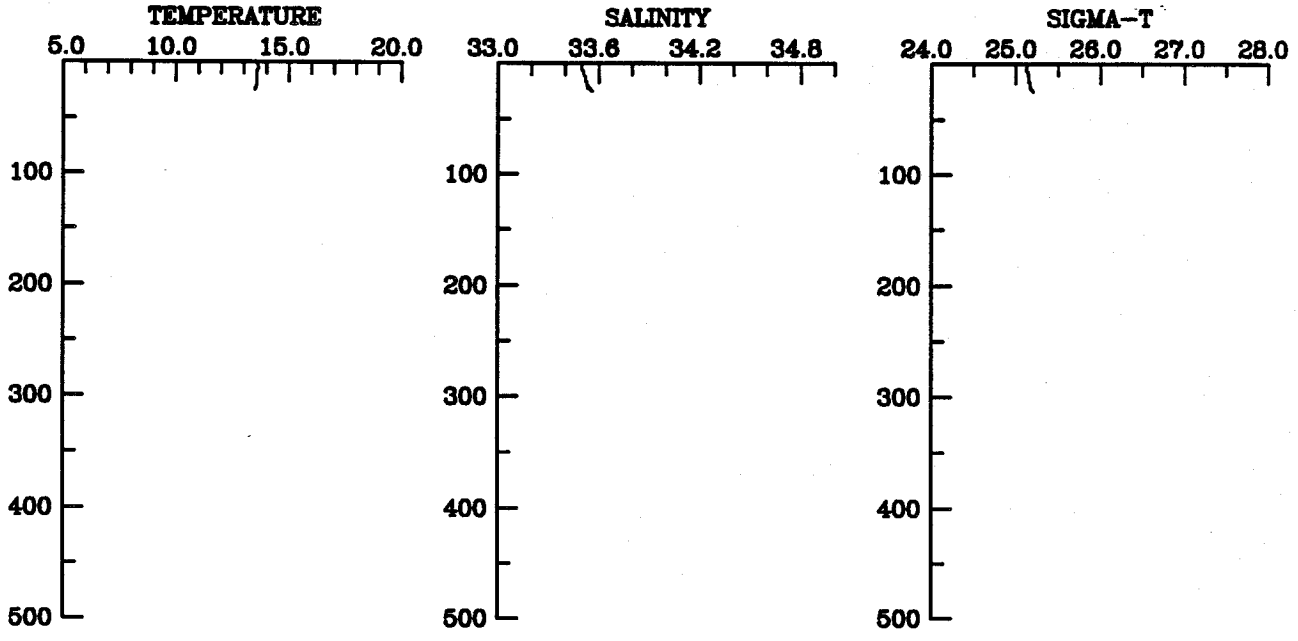
STATION G17 CAST 84
8 April 1983 1354 GMT
CTD Transect G-2
CTD Map 1



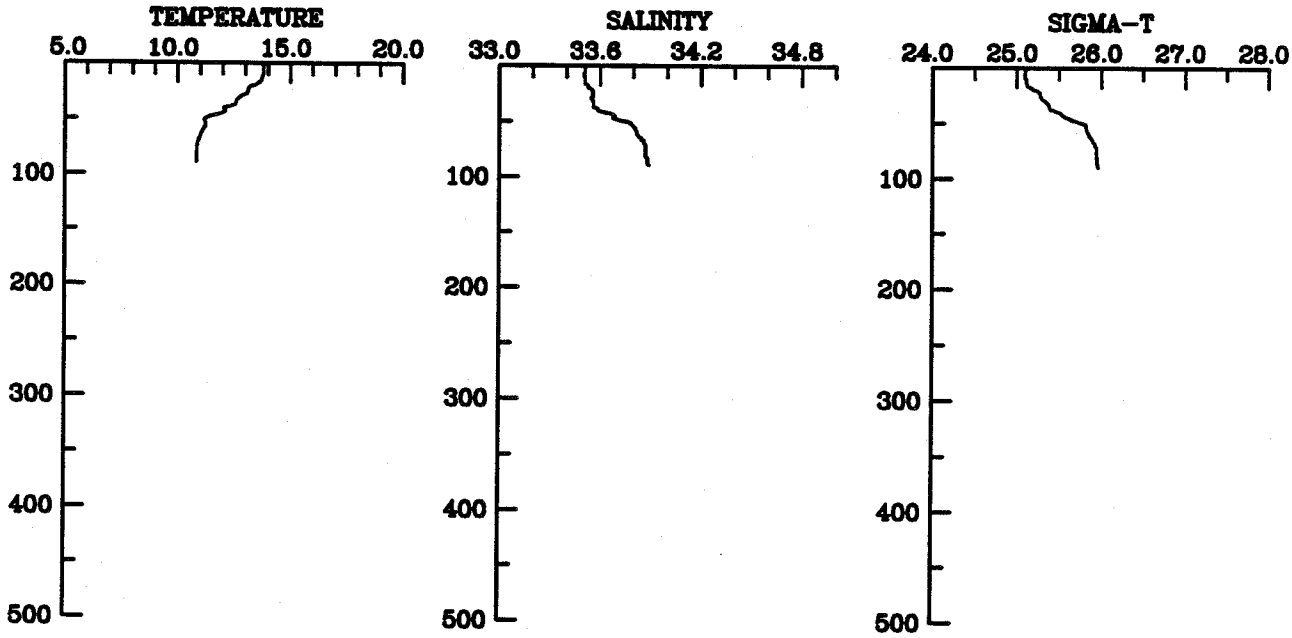
STATION G18 CAST 85
8 April 1983 1530 GMT
CTD Transect G–2
CTD Map 1



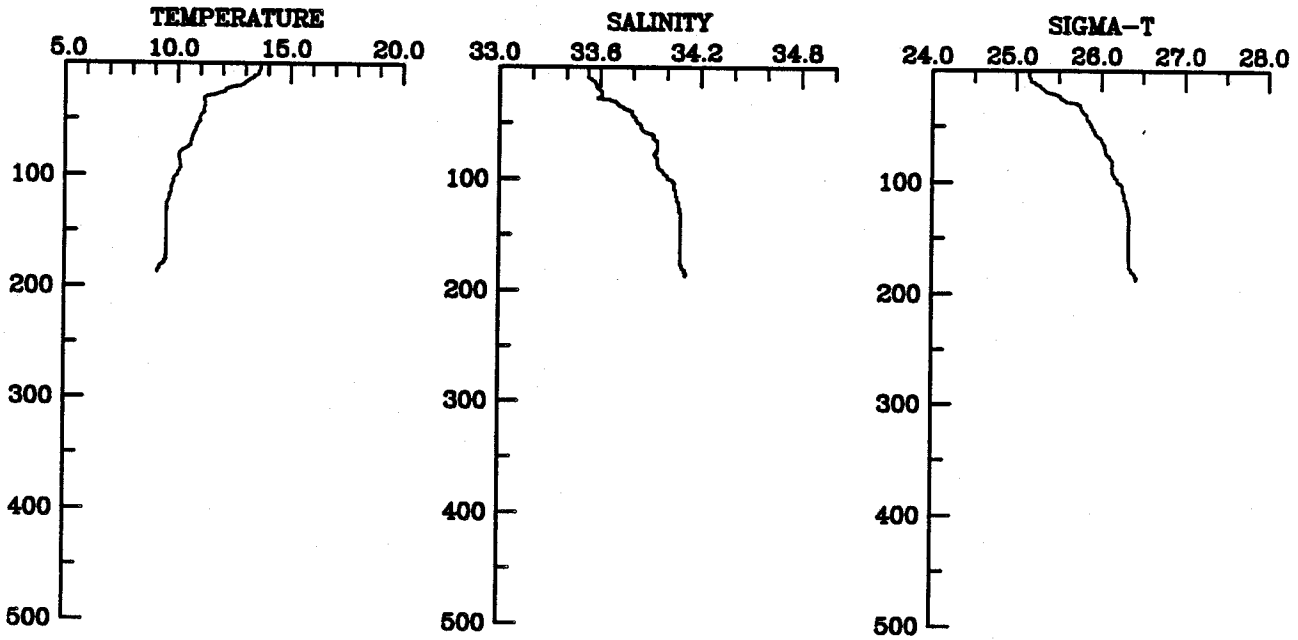
STATION C1 CAST 86
8 April 1983 2054 GMT
CTD Transect C–1
CTD Map 1



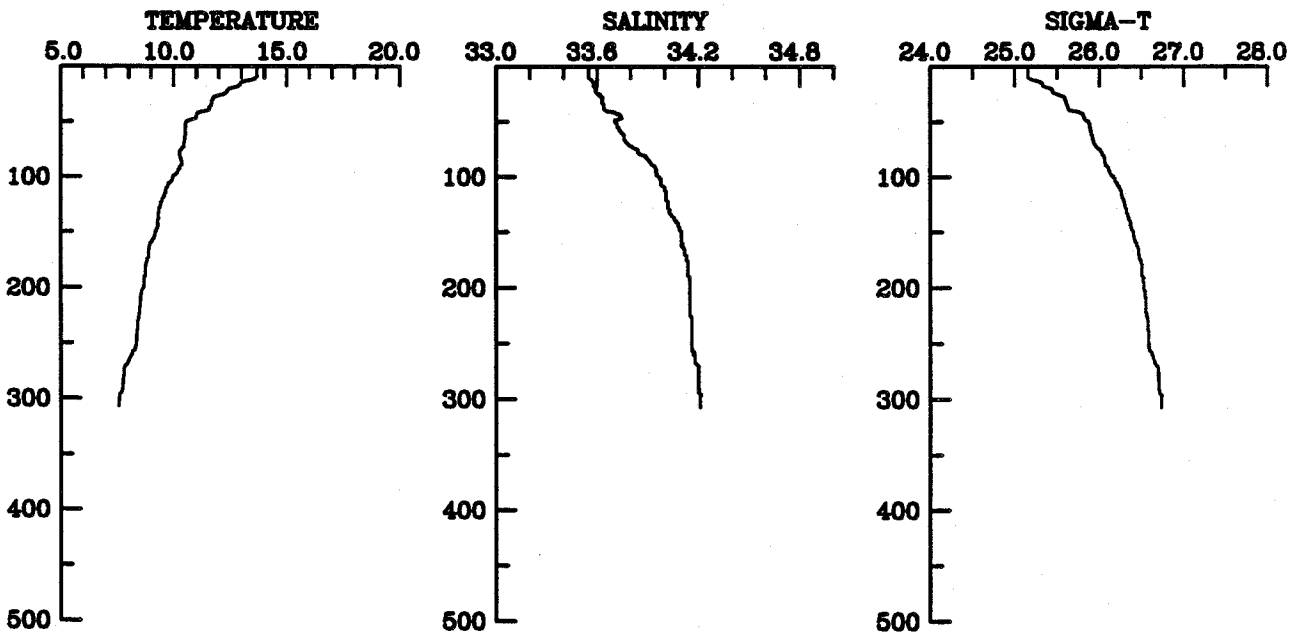
STATION C2 CAST 87
8 April 1983 2124 GMT
CTD Transect C–1
CTD Map 1



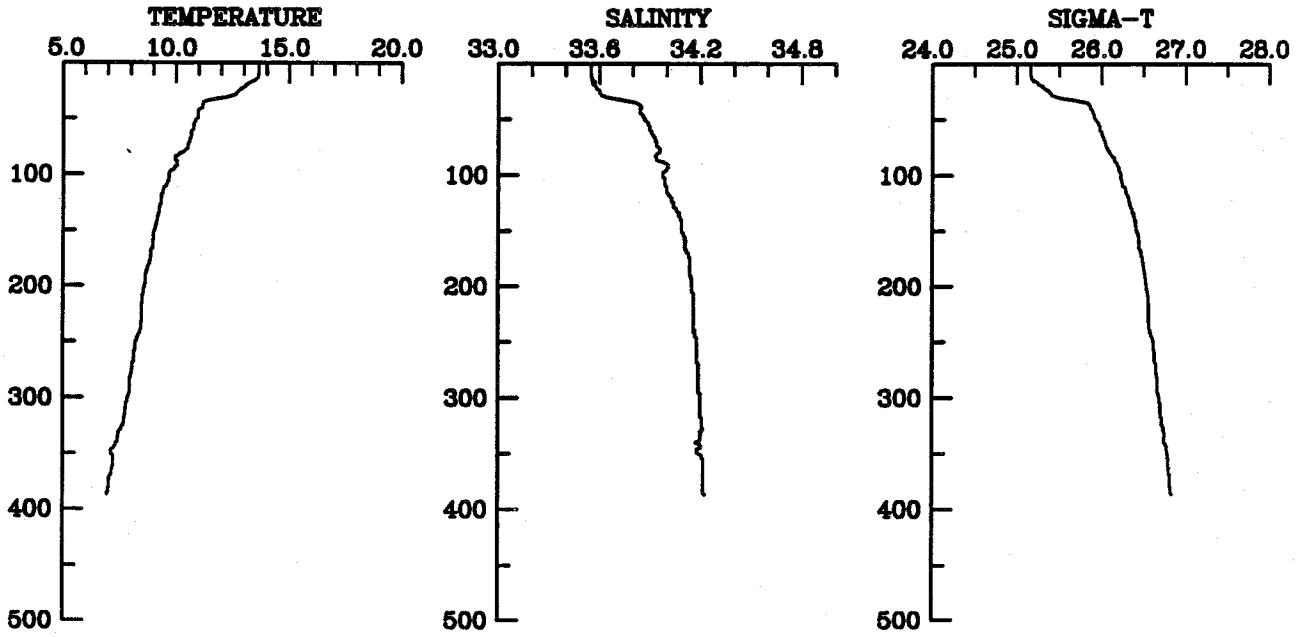
STATION C3 CAST 88
8 April 1983 2224 GMT
CTD Transect C–1
CTD Map 1



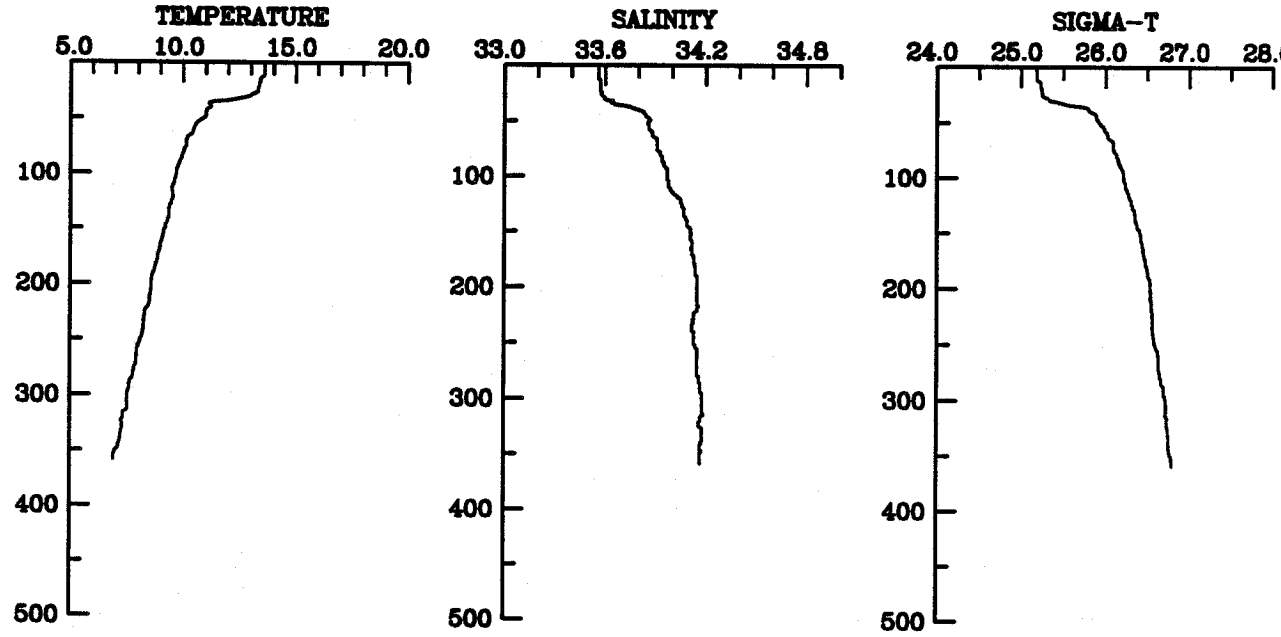
STATION C4 CAST 89
8 April 1983 2312 GMT
CTD Transect C–1
CTD Map 1



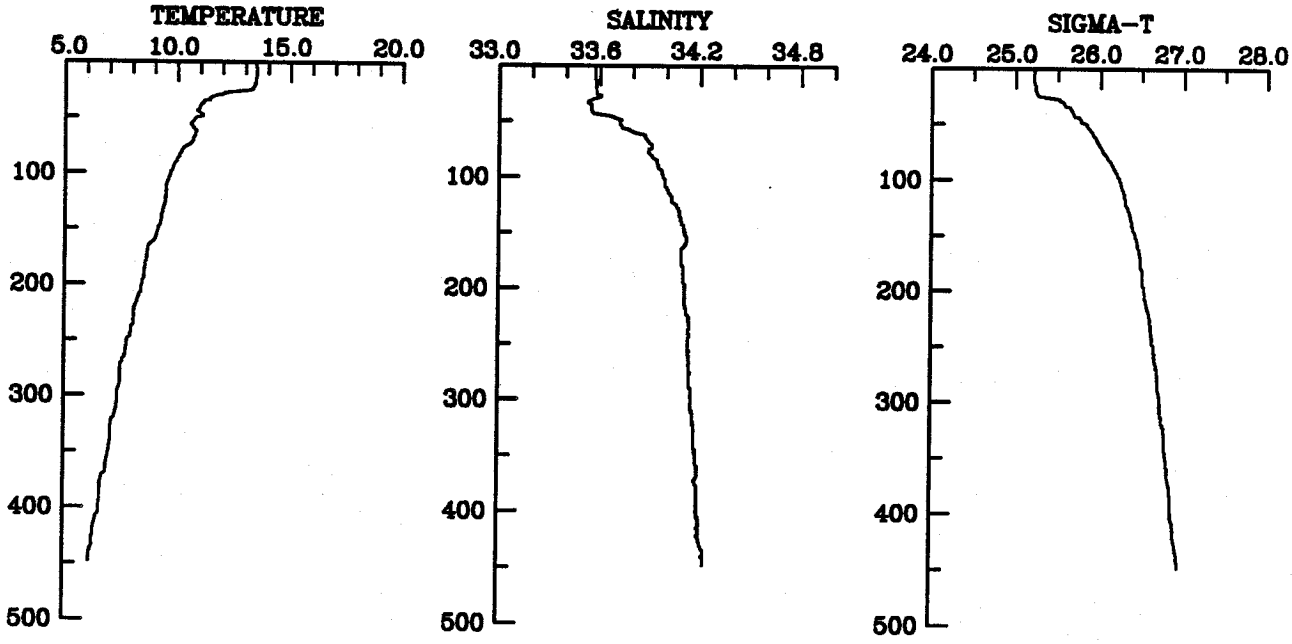
STATION C5 CAST 90
9 April 1983 48 GMT
CTD Transect C–1
CTD Map 1



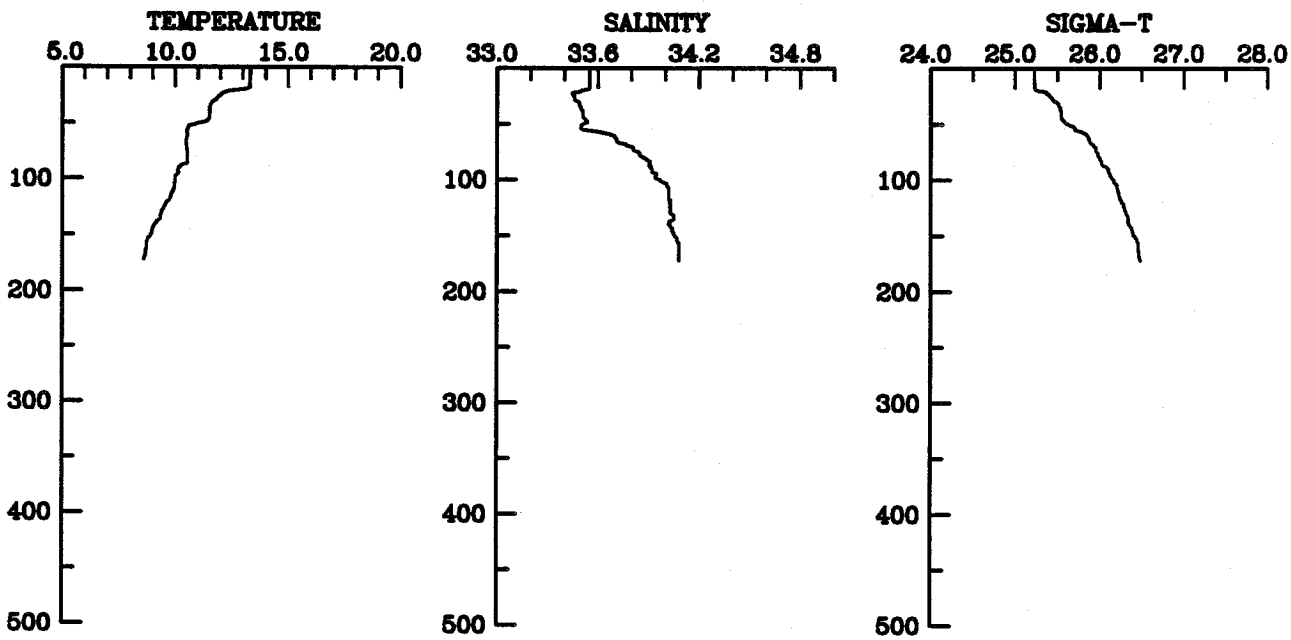
STATION C6 CAST 91
9 April 1983 206 GMT
CTD Transect C-1
CTD Map 1



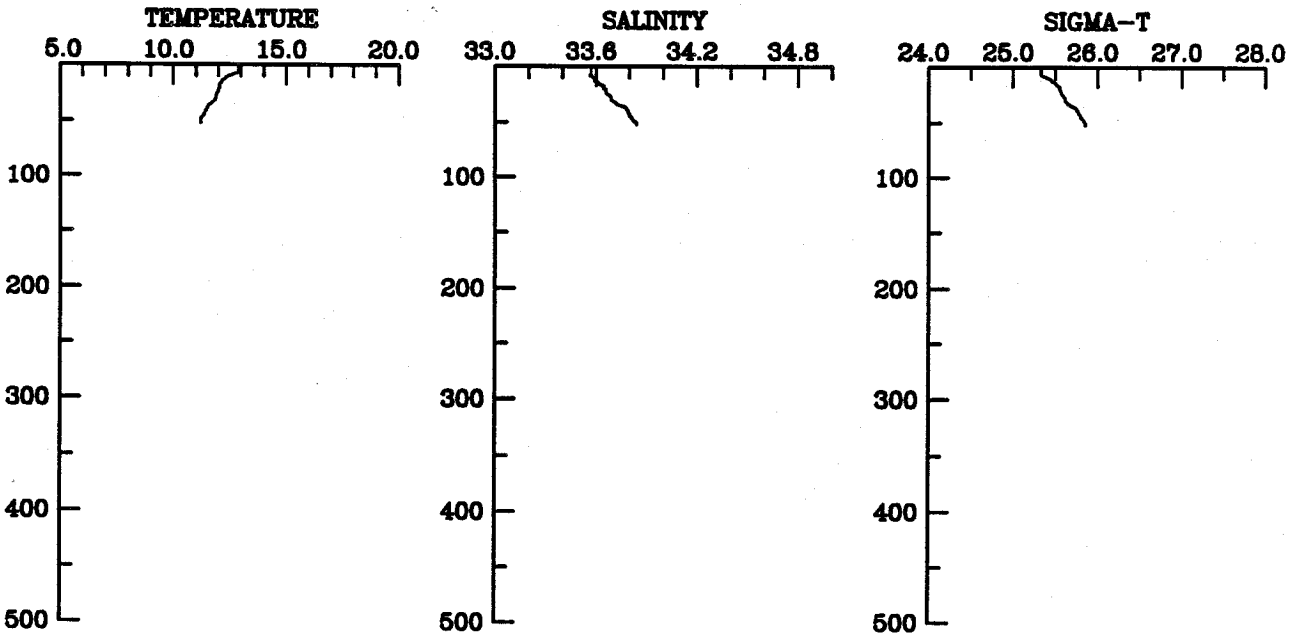
STATION C7 CAST 92
9 April 1983 330 GMT
CTD Transect C-1
CTD Map 1



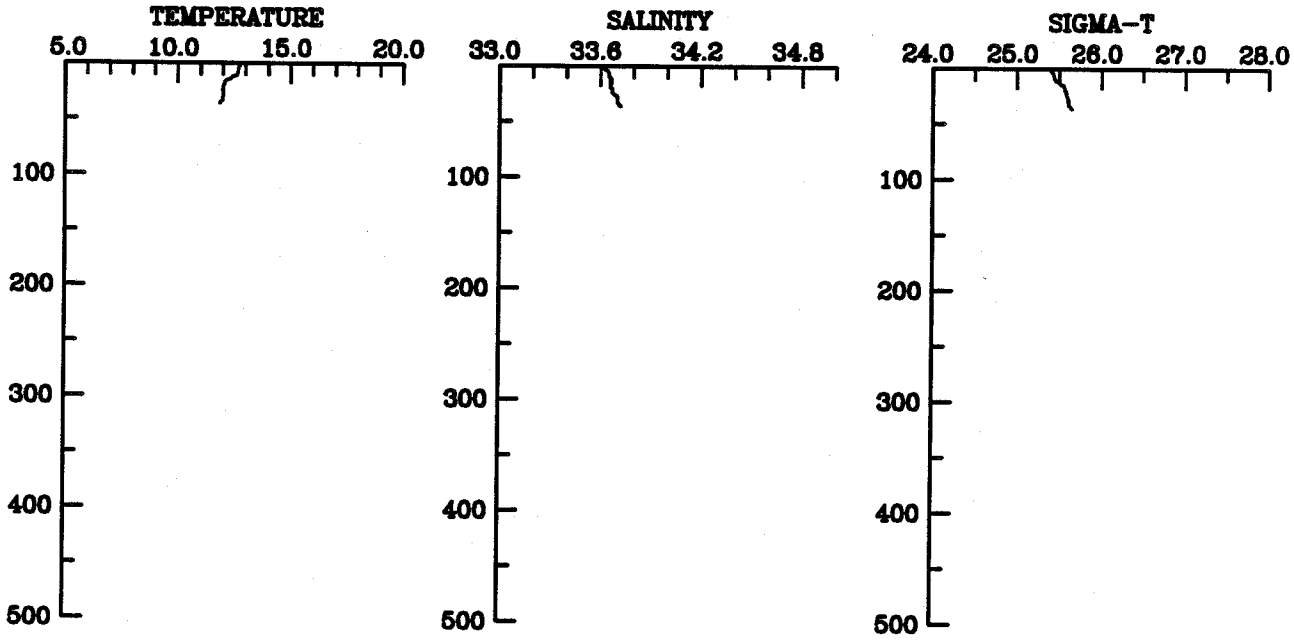
STATION C8 CAST 93
9 April 1983 506 GMT
CTD Transect C–1
CTD Map 1



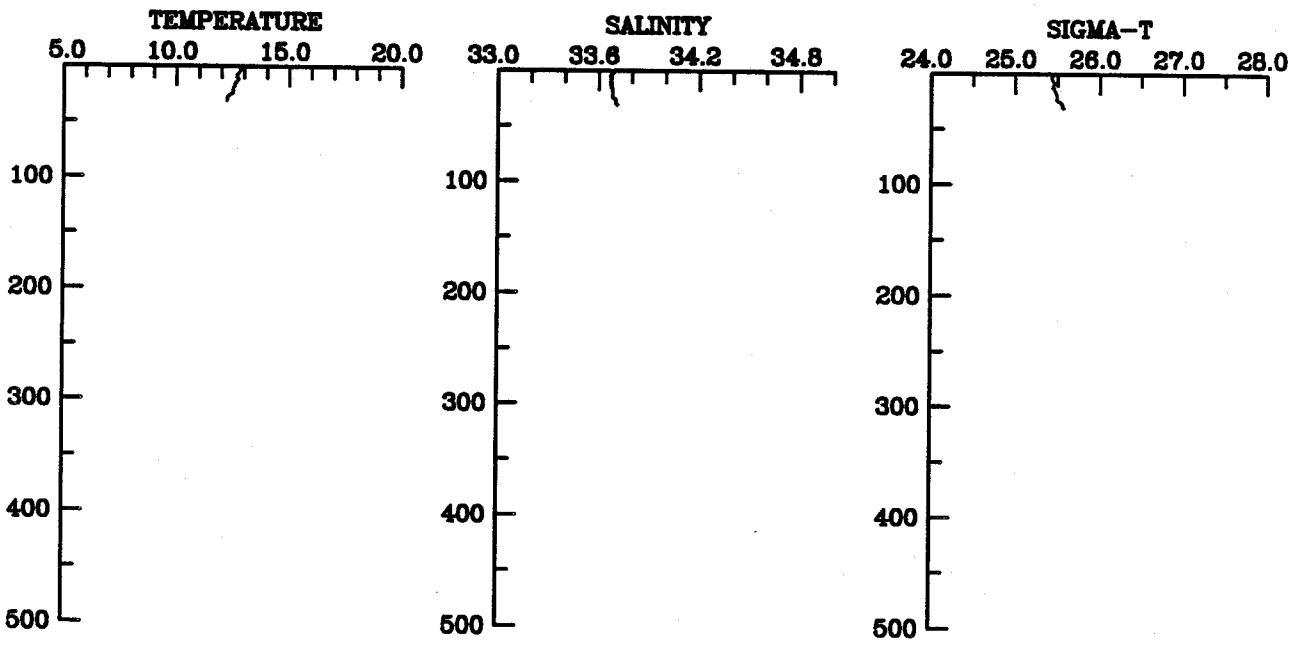
STATION C1 CAST 101
9 April 1983 1436 GMT
XBT Transect C–2
XBT Map 2



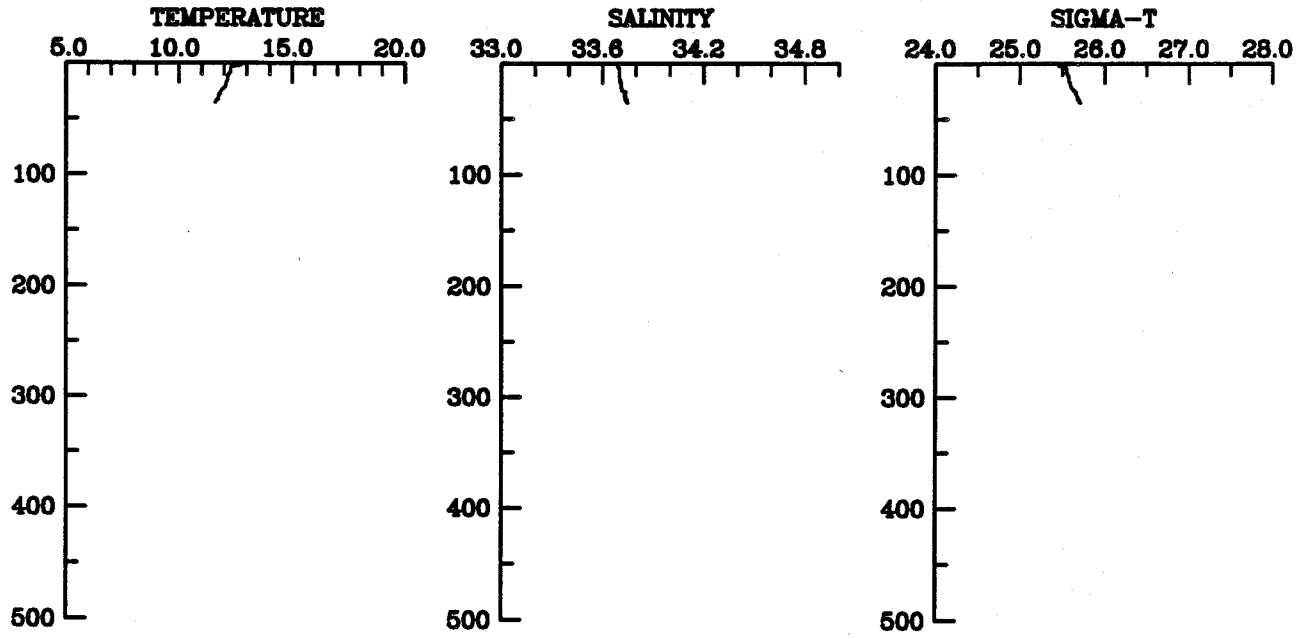
STATION GC1 CAST 102
9 April 1983 1524 GMT
XBT Transect GC-2
XBT Map 2



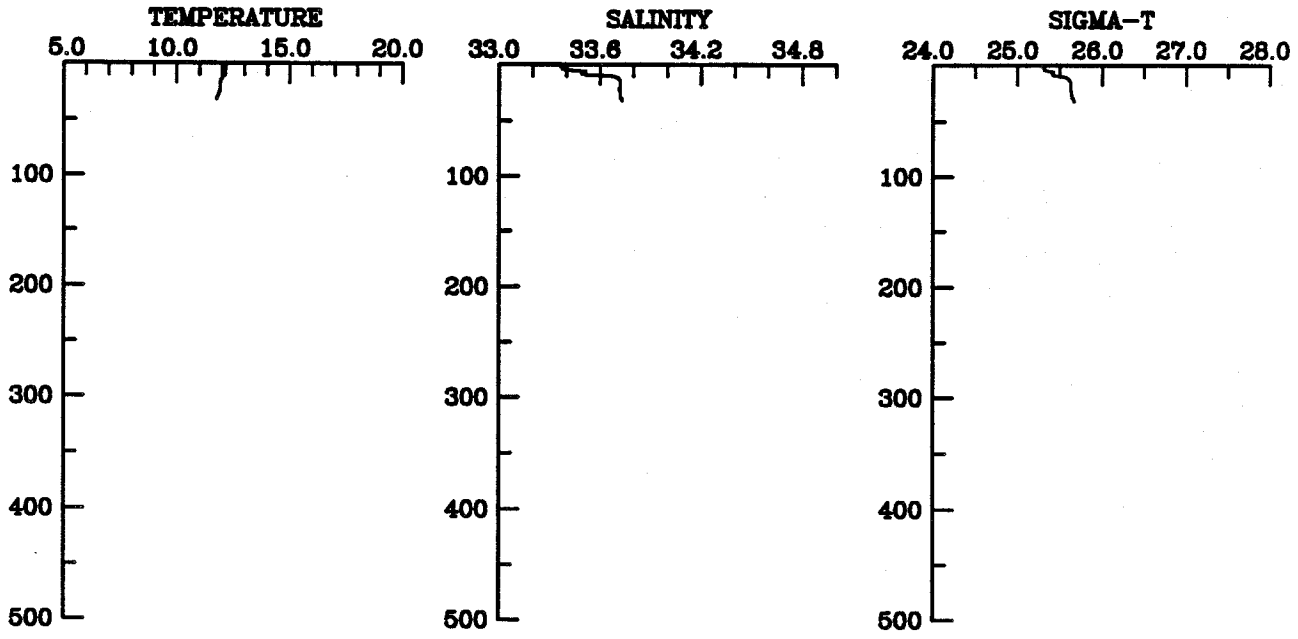
STATION G1 CAST 125
9 April 1983 2136 GMT
XBT Transect G-2
XBT Map 2



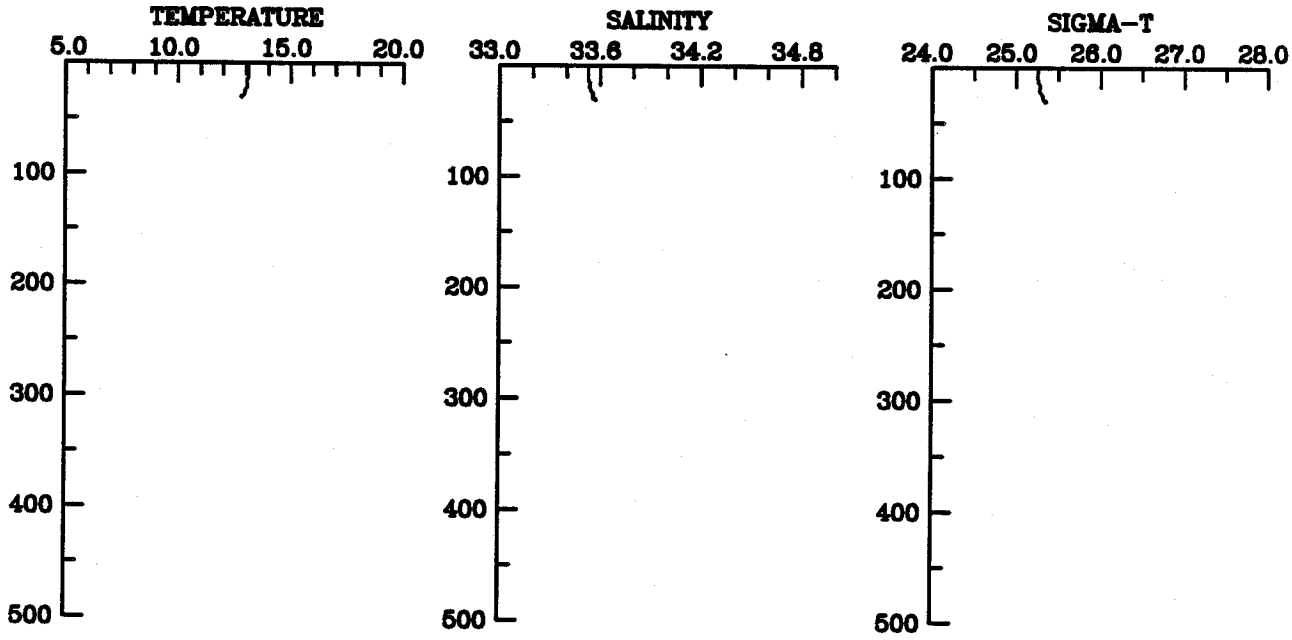
STATION AG1 CAST 126
9 April 1983 2206 GMT
XBT Transect AG–2
XBT Map 2



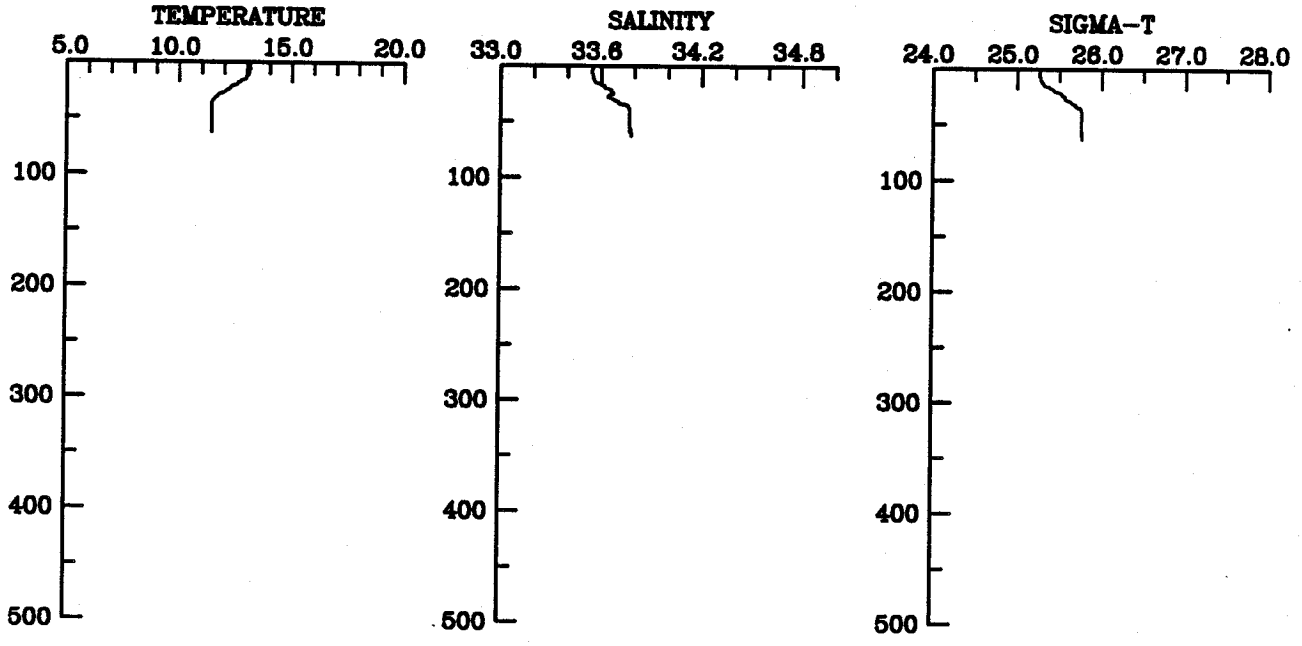
STATION A1 CAST 141
10 April 1983 430 GMT
XBT Transect A–2
XBT Map 2



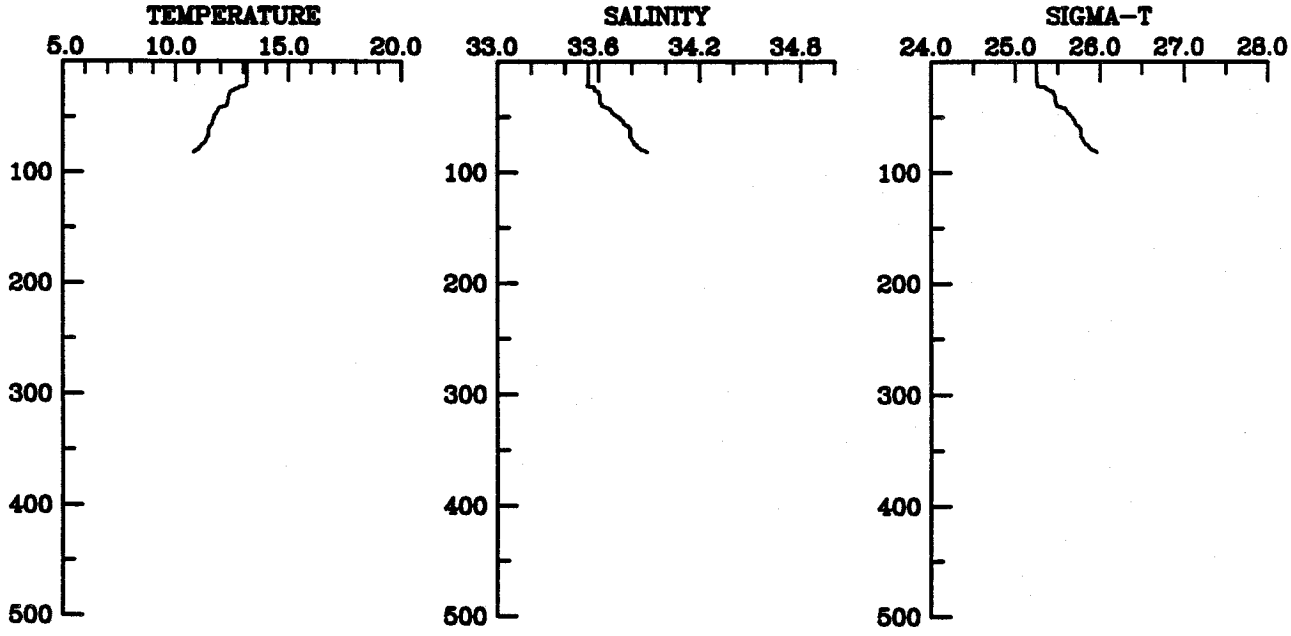
STATION G1 CAST 142
11 April 1983 418 GMT
CTD Transect G-3



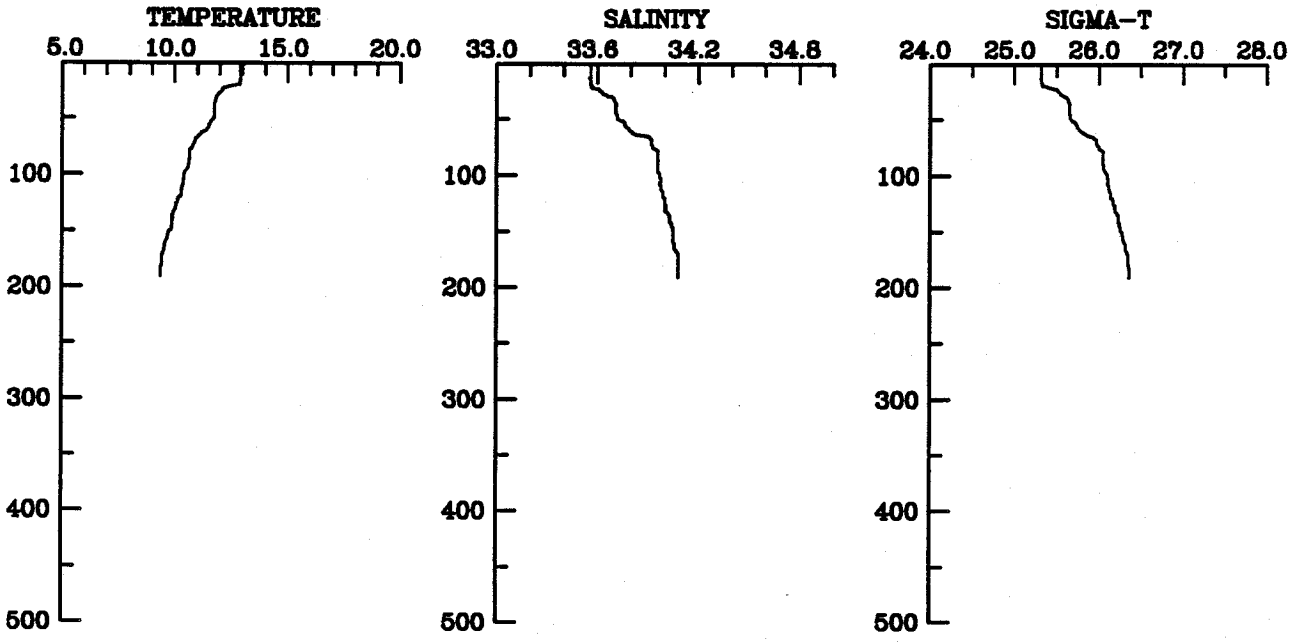
STATION G2 CAST 143
11 April 1983 500 GMT
CTD Transect G-3



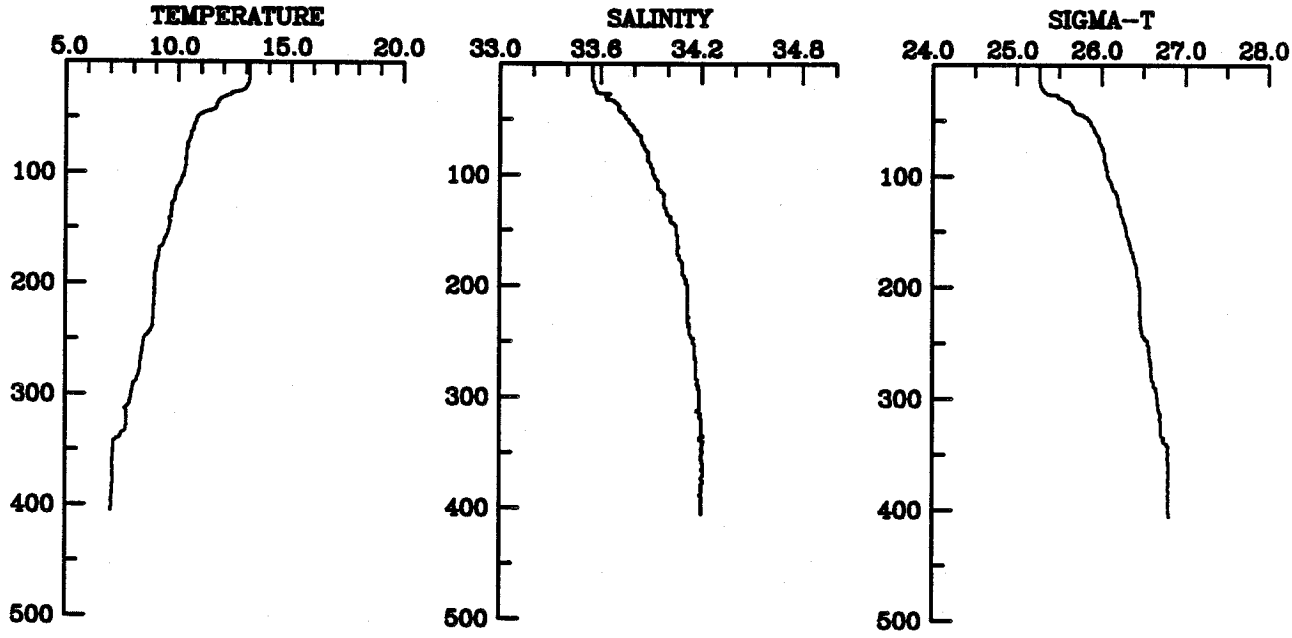
STATION G3 CAST 144
11 April 1983 548 GMT
CTD Transect G-3



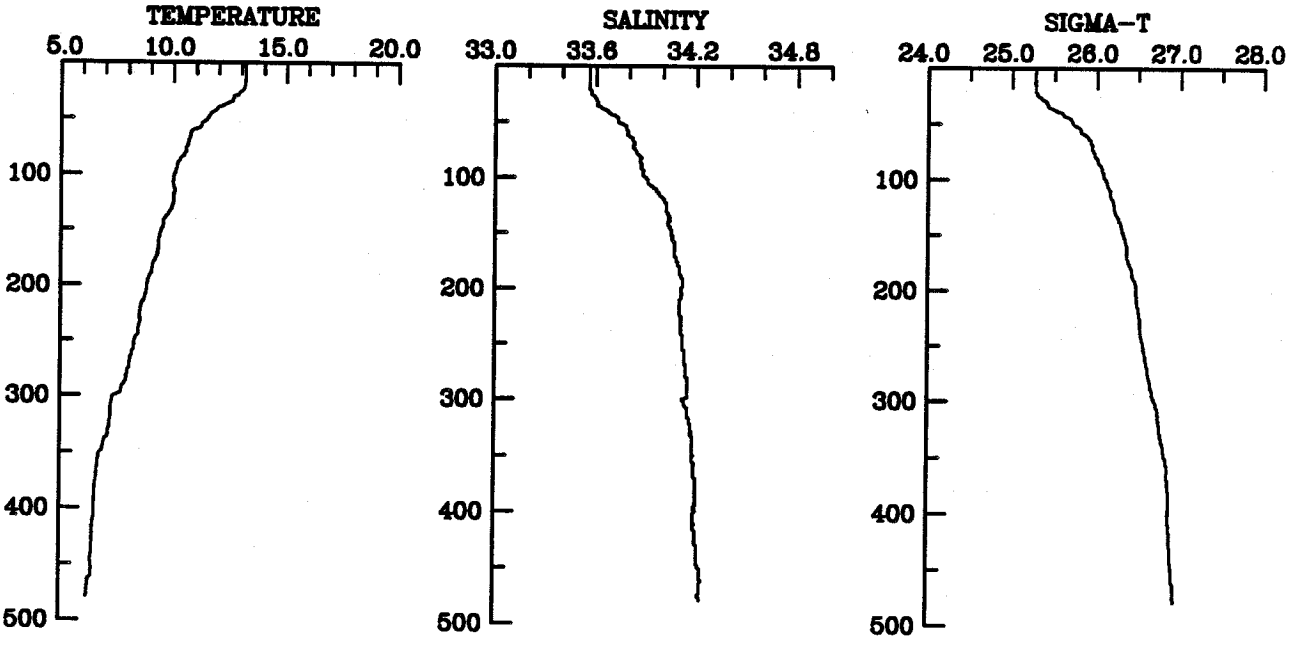
STATION G4 CAST 145
11 April 1983 848 GMT
CTD Transect G-3



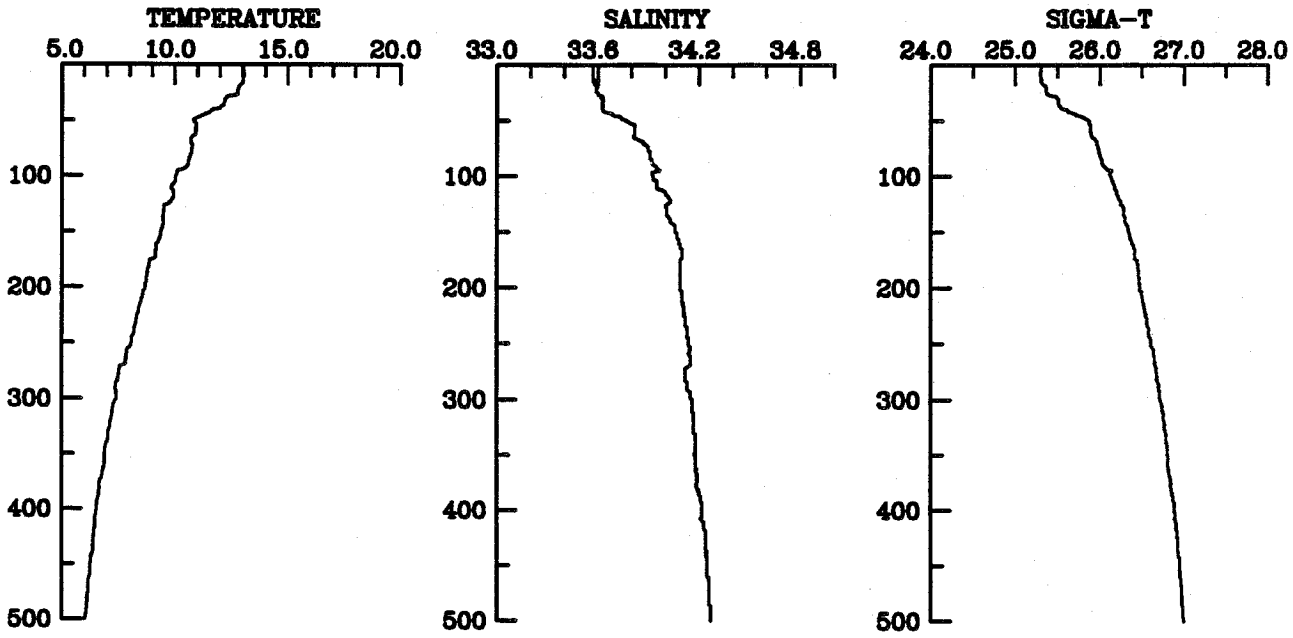
STATION G5 CAST 146
11 April 1983 948 GMT
CTD Transect G-3



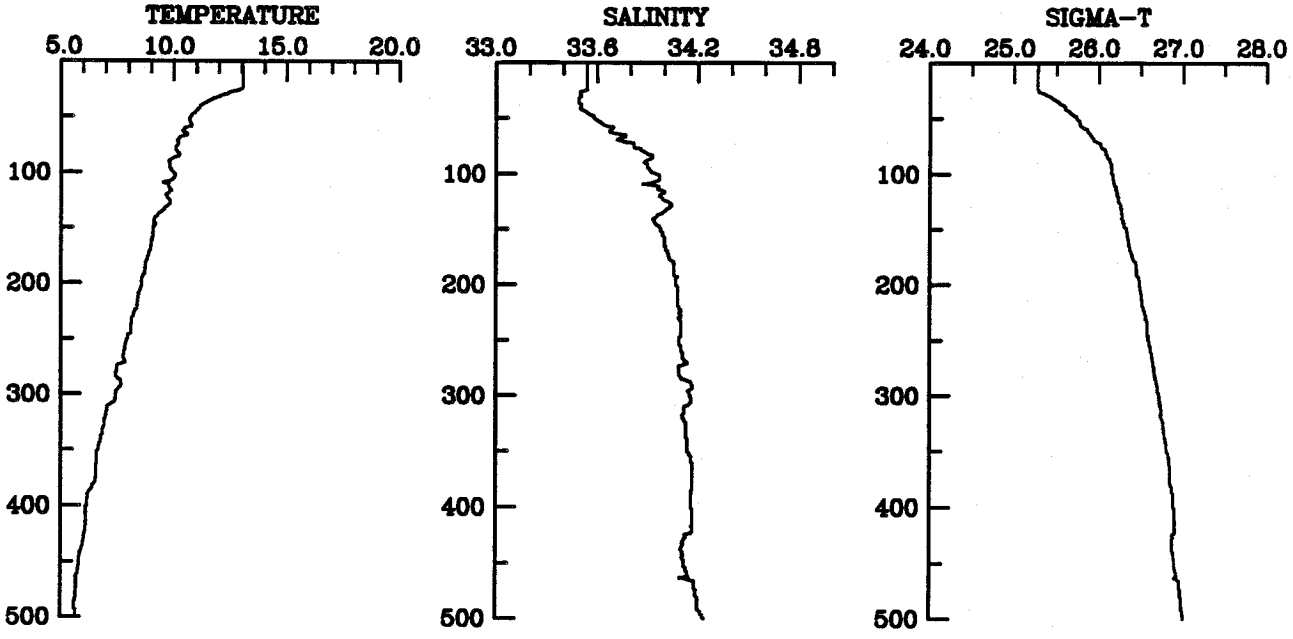
STATION G6 CAST 147
11 April 1983 1112 GMT
CTD Transect G-3



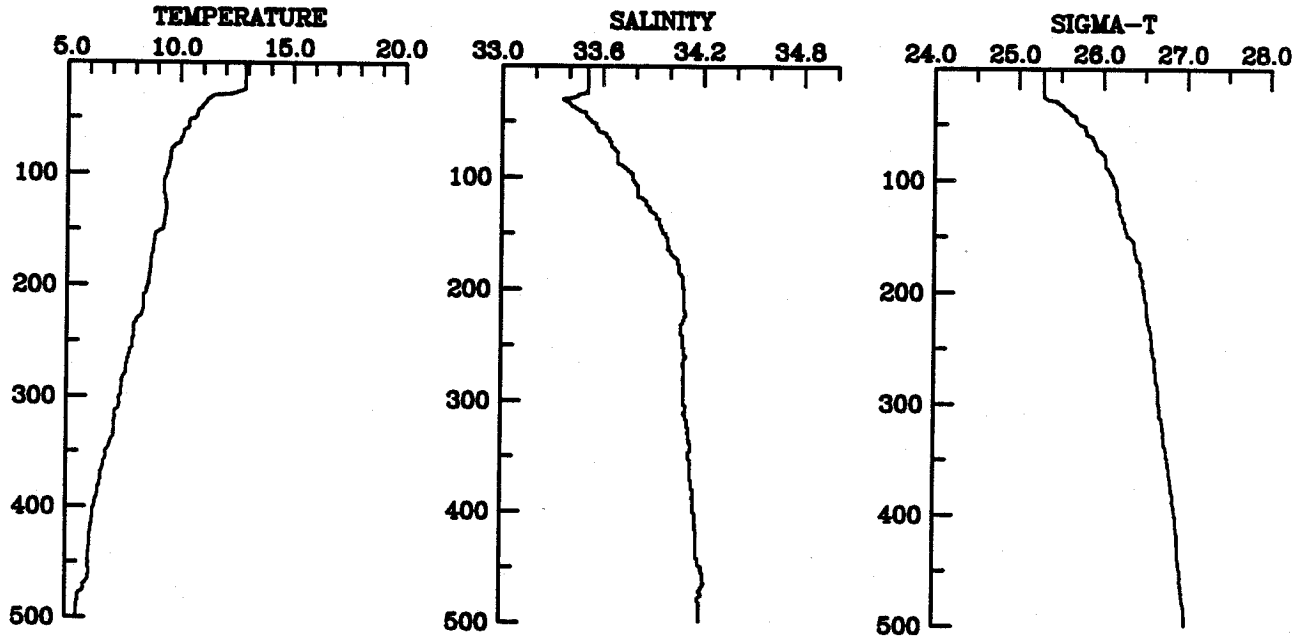
STATION G7 CAST 148
11 April 1983 1242 GMT
CTD Transect G-3



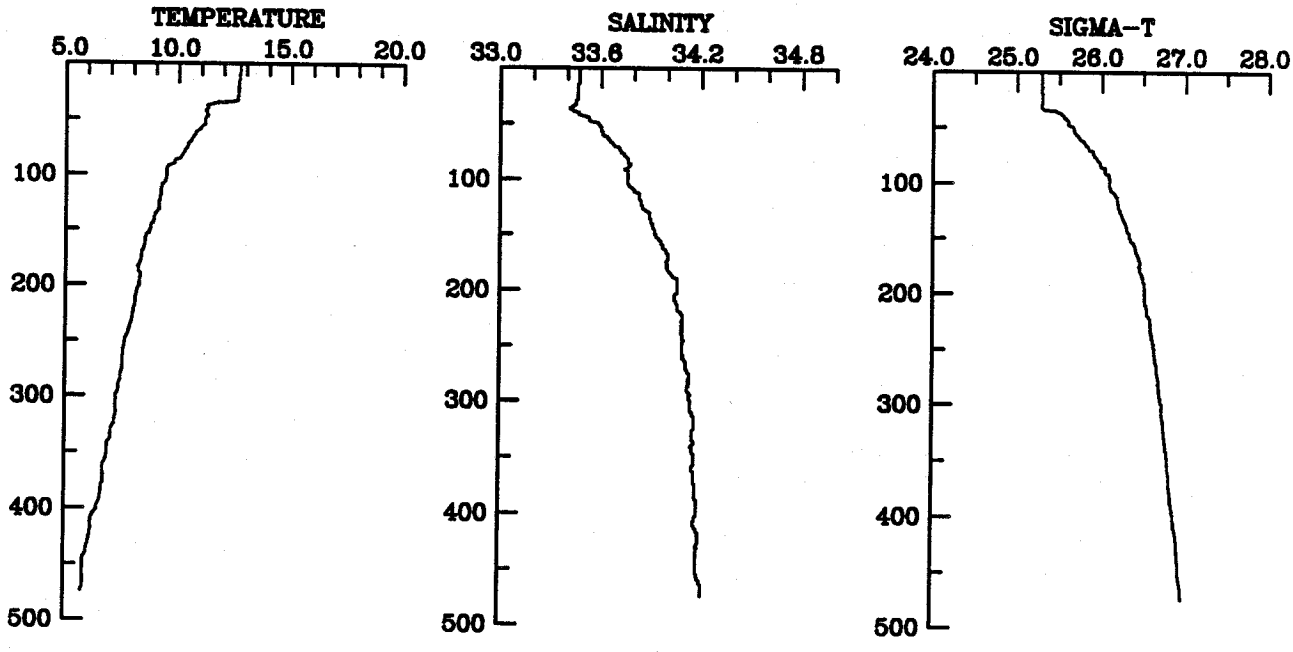
STATION G8 CAST 149
11 April 1983 1412 GMT
CTD Transect G-3



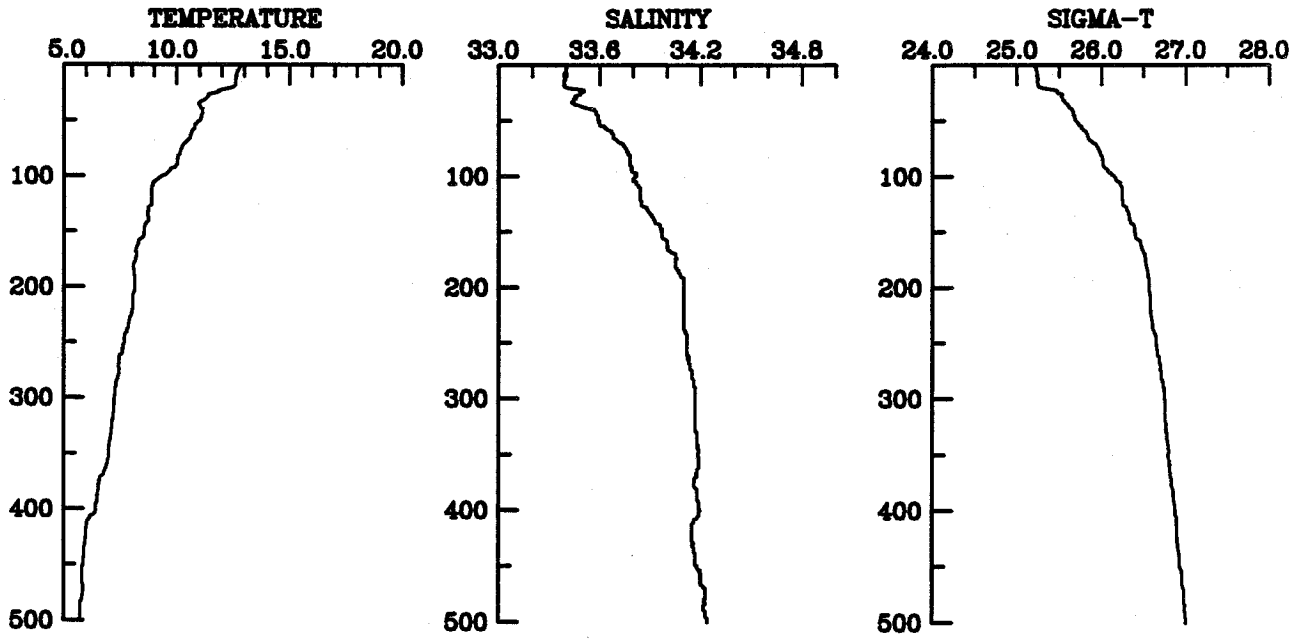
STATION G9 CAST 150
11 April 1983 1536 GMT
CTD Transect G-3



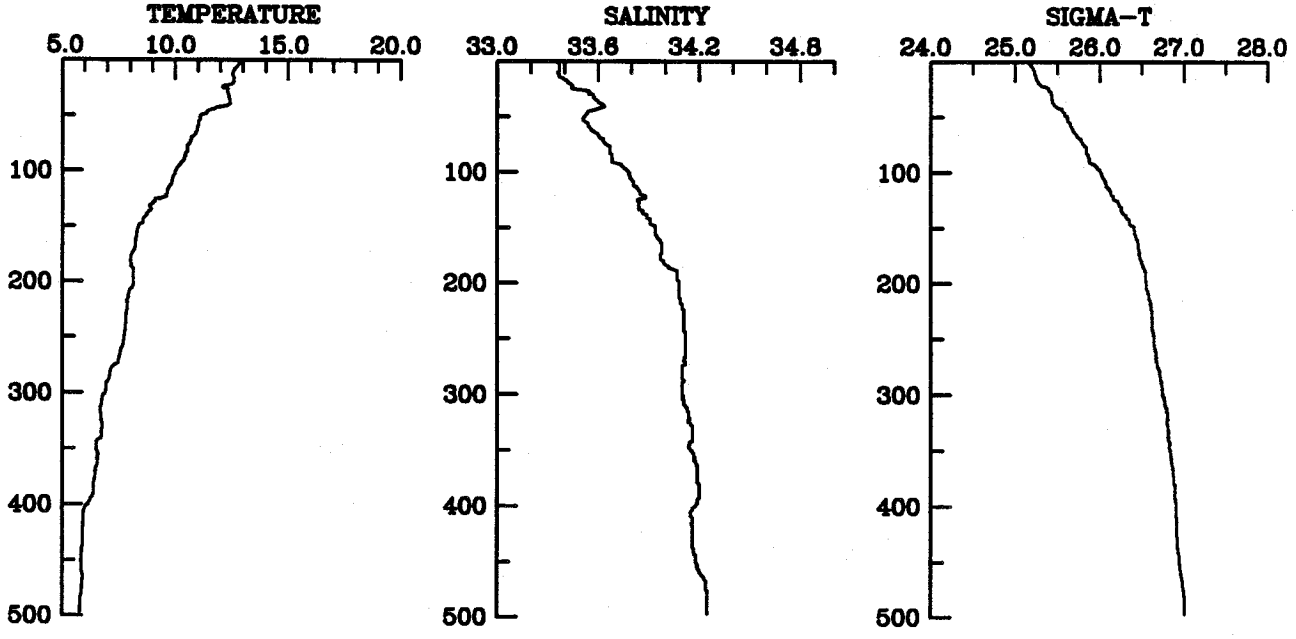
STATION G10 CAST 151
11 April 1983 1812 GMT
CTD Transect G-3



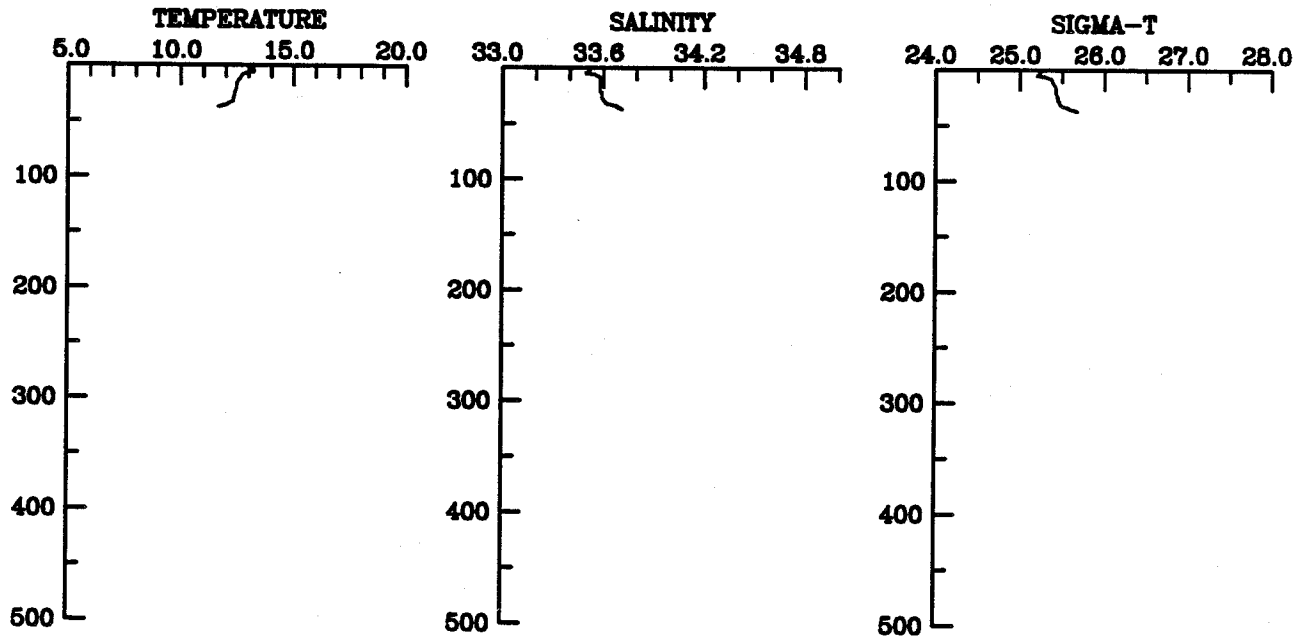
STATION G11 CAST 152
11 April 1983 1942 GMT
CTD Transect G-3



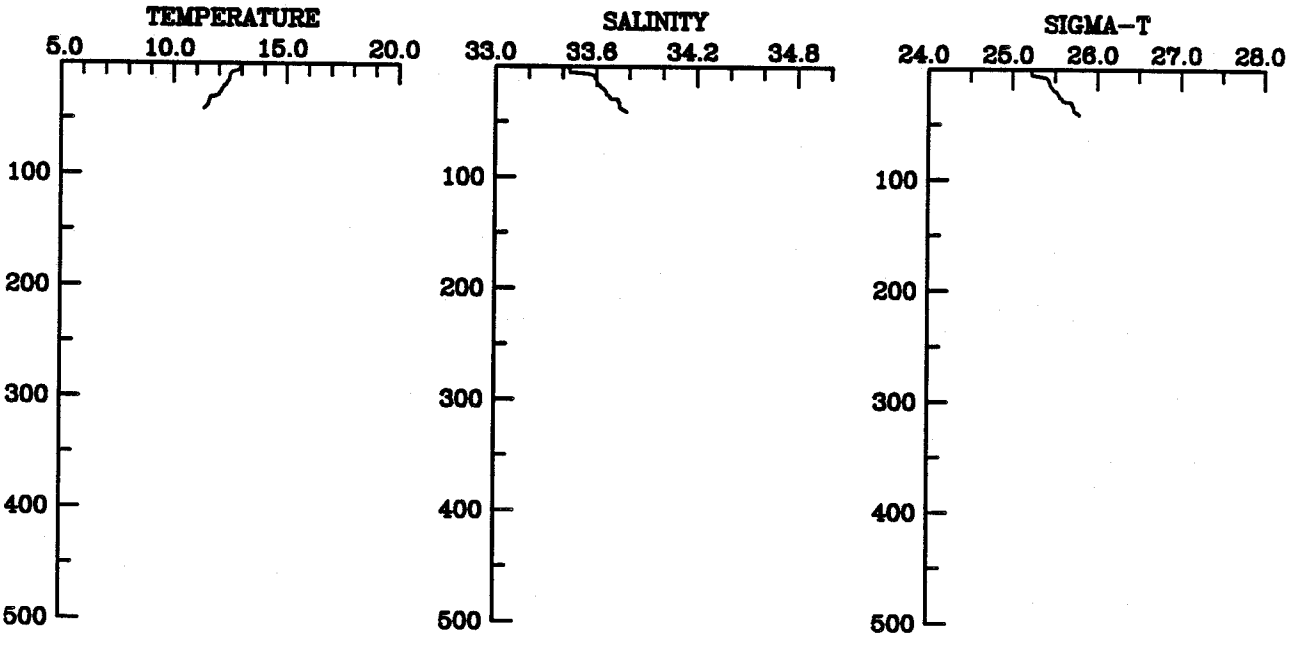
STATION G12 CAST 153
11 April 1983 2100 GMT
CTD Transect G-3



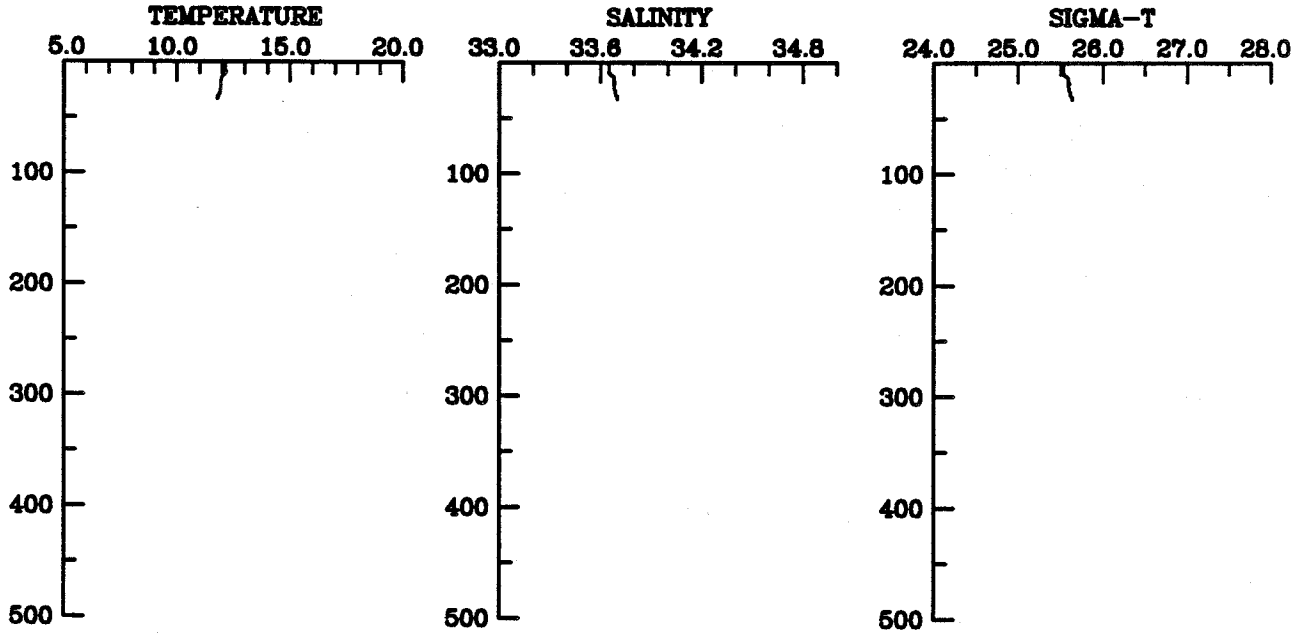
STATION A1 CAST 161
12 April 1983 312 GMT
XBT Transect A-3
XBT Map 3



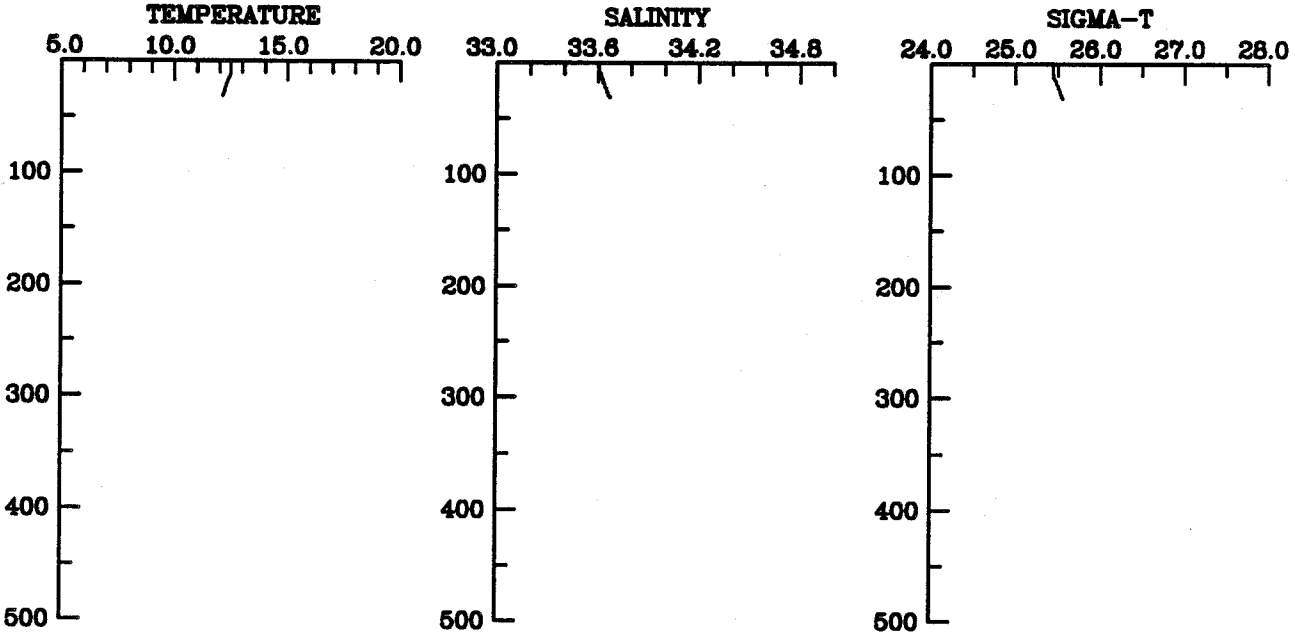
STATION AG1 CAST 162
12 April 1983 348 GMT
XBT Transect AG-3
XBT Map 3



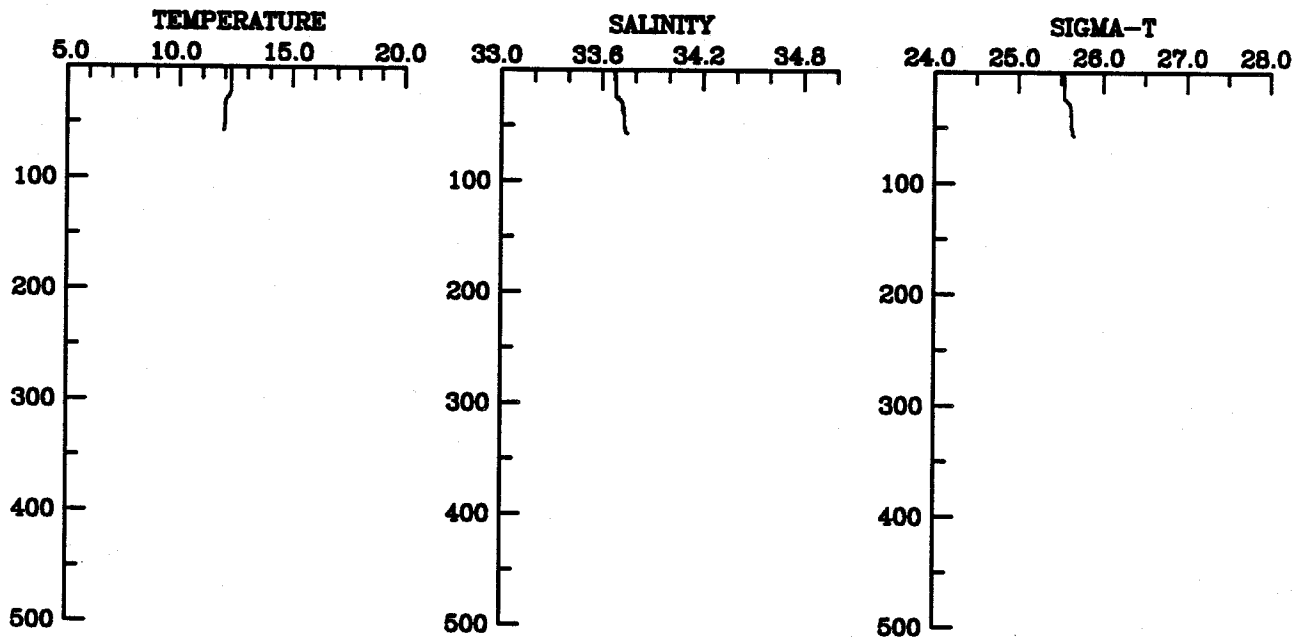
STATION G1 CAST 181
12 April 1983 1000 GMT
XBT Transect G-3
XBT Map 3



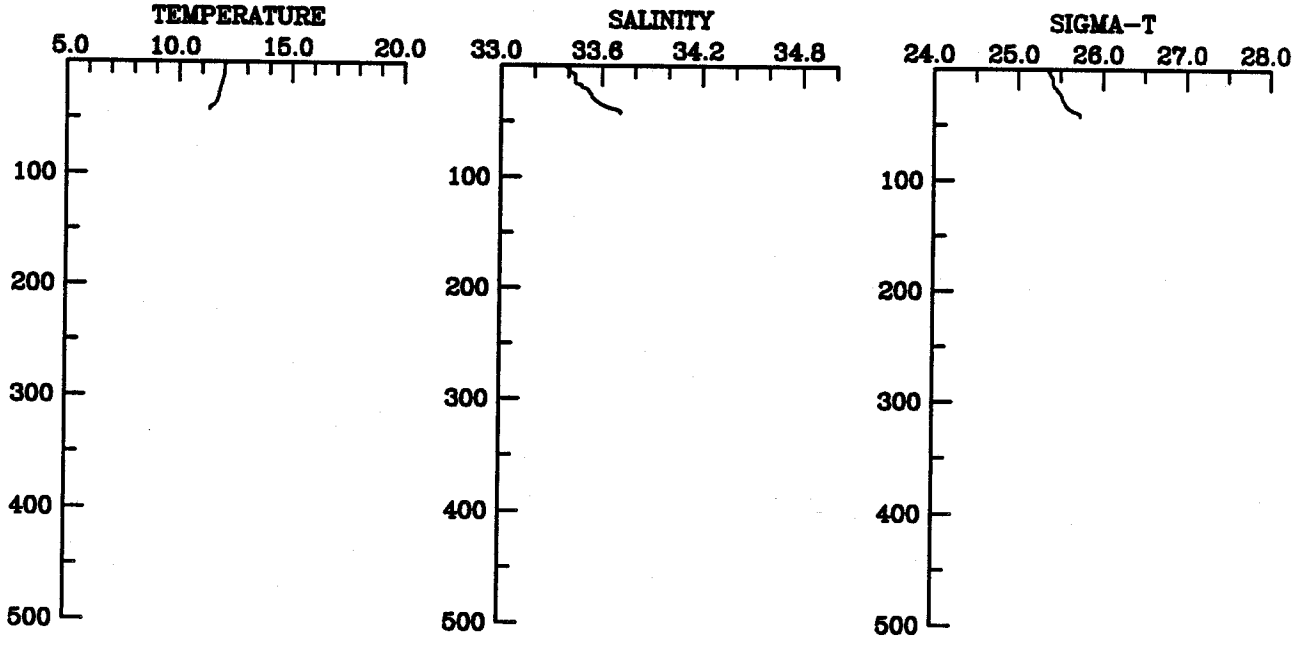
STATION GC1 CAST 182
12 April 1983 1042 GMT
XBT Transect GC-3
XBT Map 3



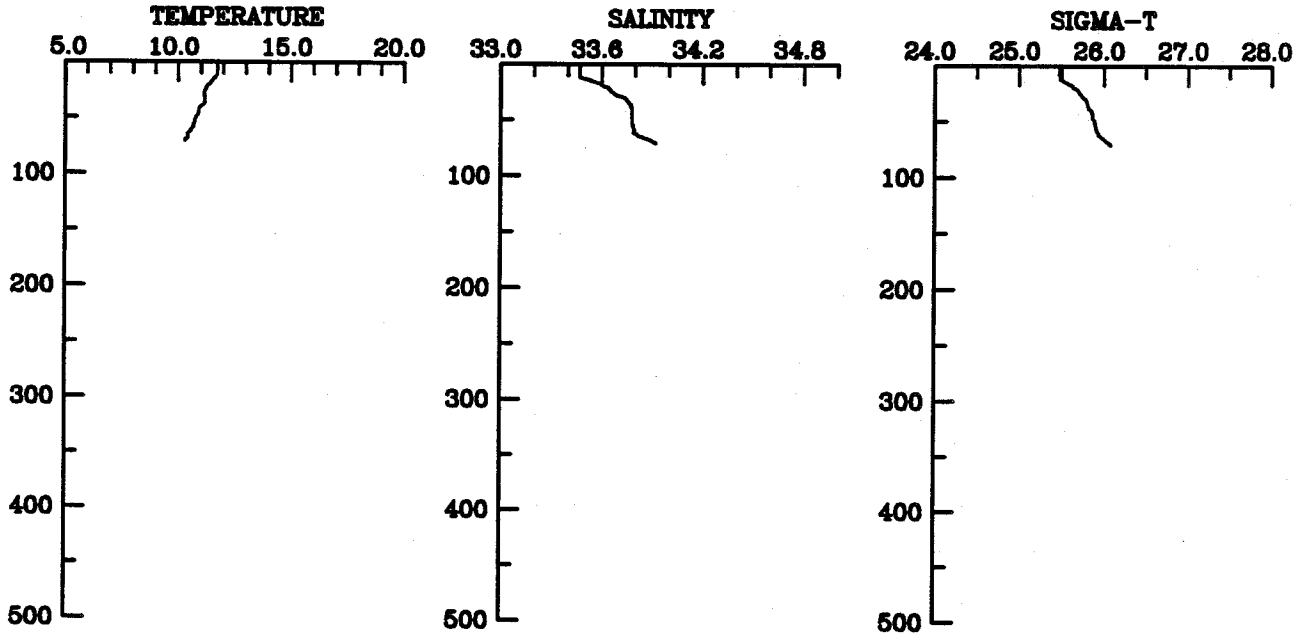
STATION C1 CAST 201
12 April 1983 1648 GMT
XBT Transect C-3
XBT Map 3



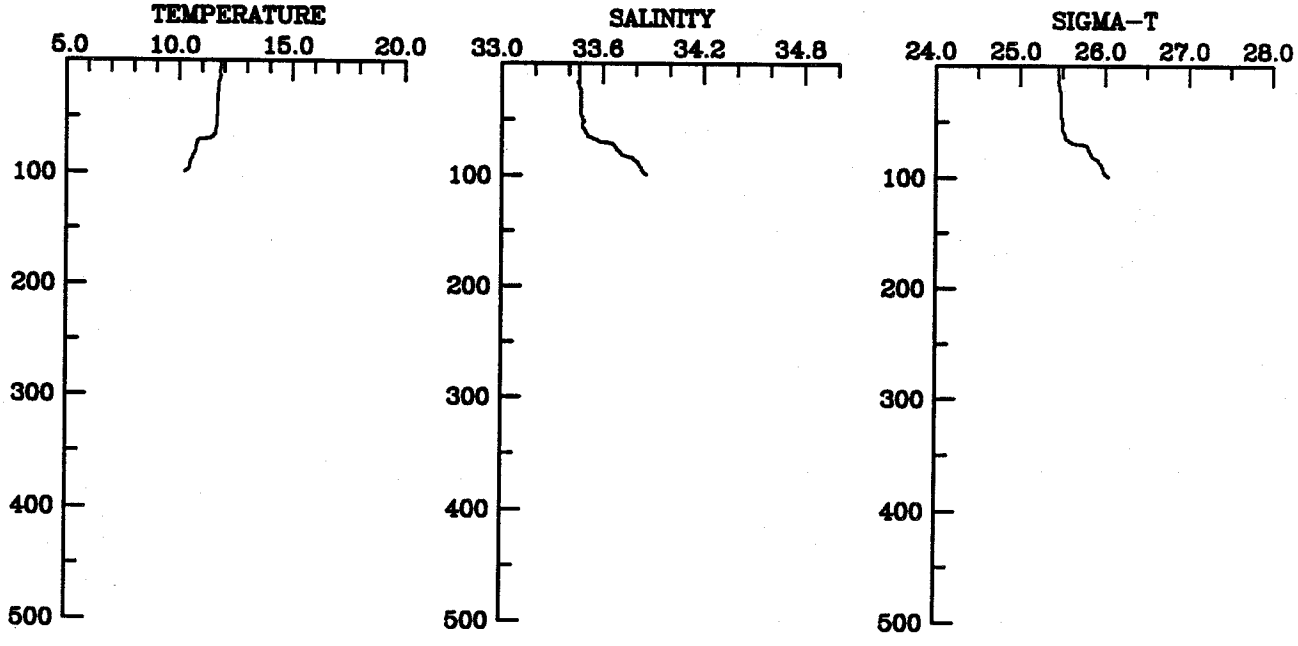
STATION A1 CAST 202
12 April 1983 1848 GMT
CTD Transect A-2
CTD Map 2



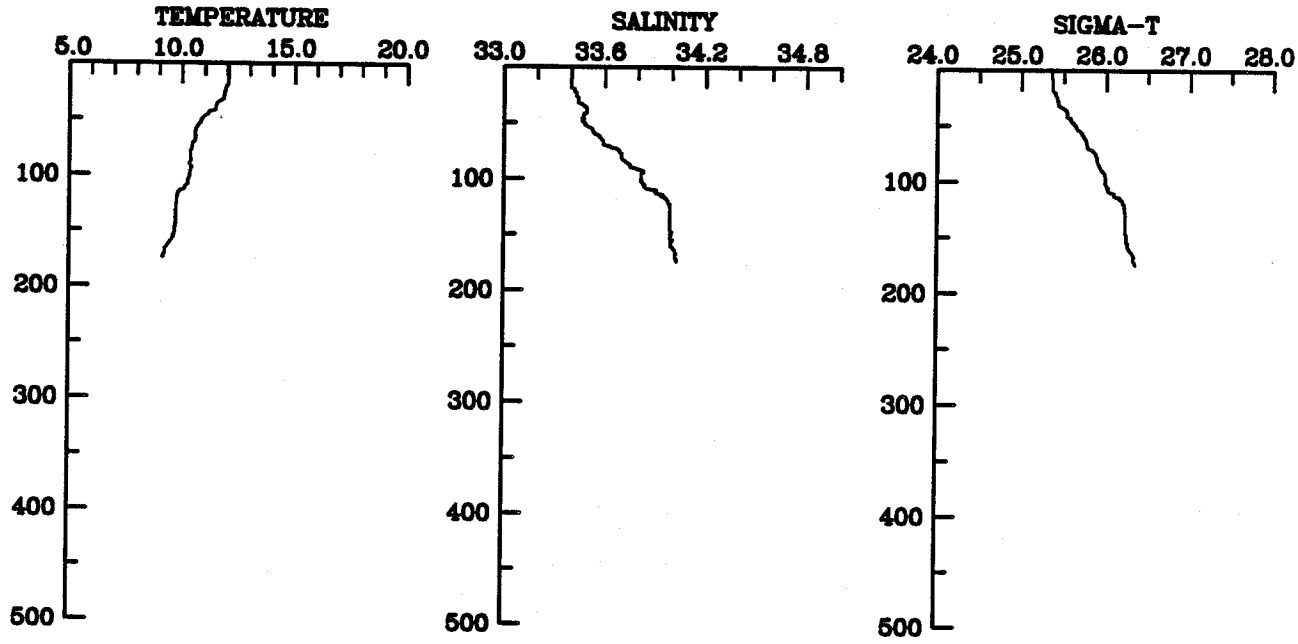
STATION A2 CAST 203
12 April 1983 1930 GMT
CTD Transect A-2
CTD Map 2



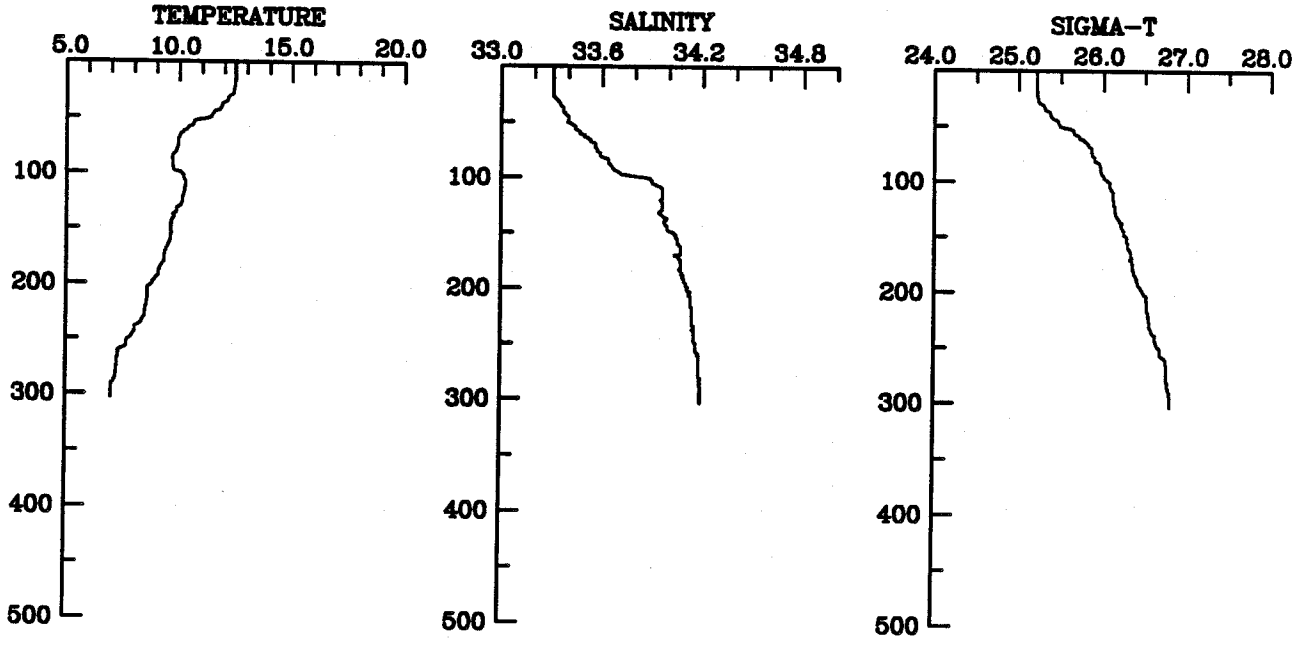
STATION A3 CAST 204
12 April 1983 2018 GMT
CTD Transect A-2
CTD Map 2



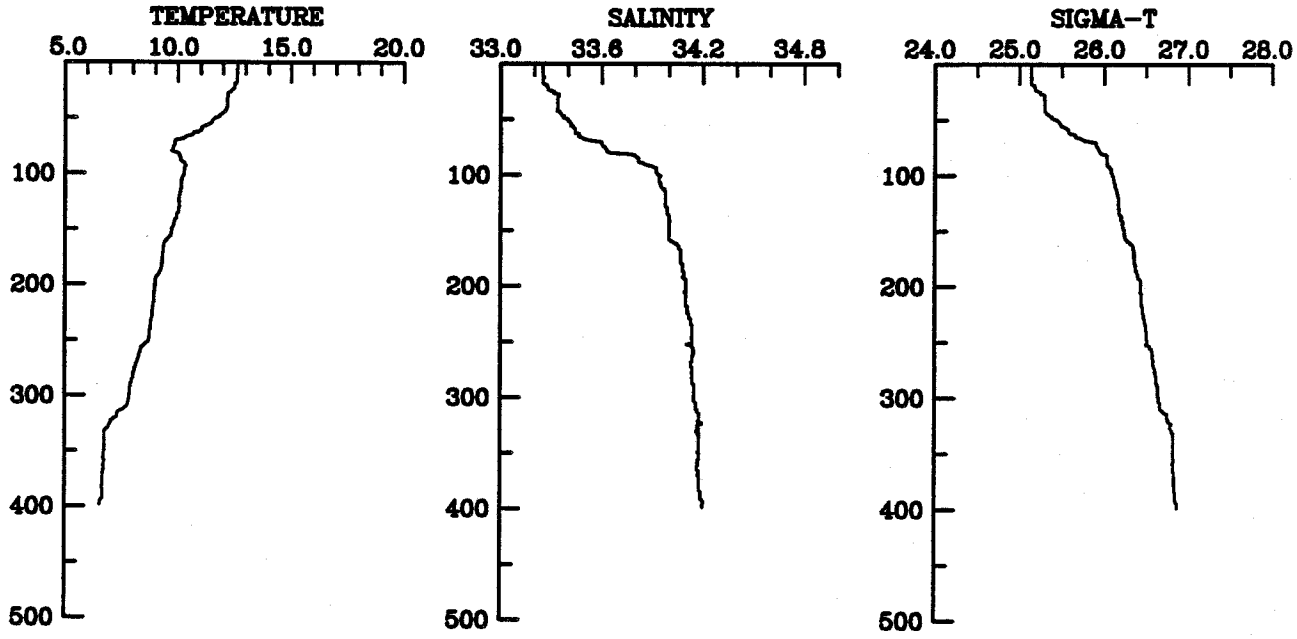
STATION A4 CAST 205
12 April 1983 2106 GMT
CTD Transect A-2
CTD Map 2



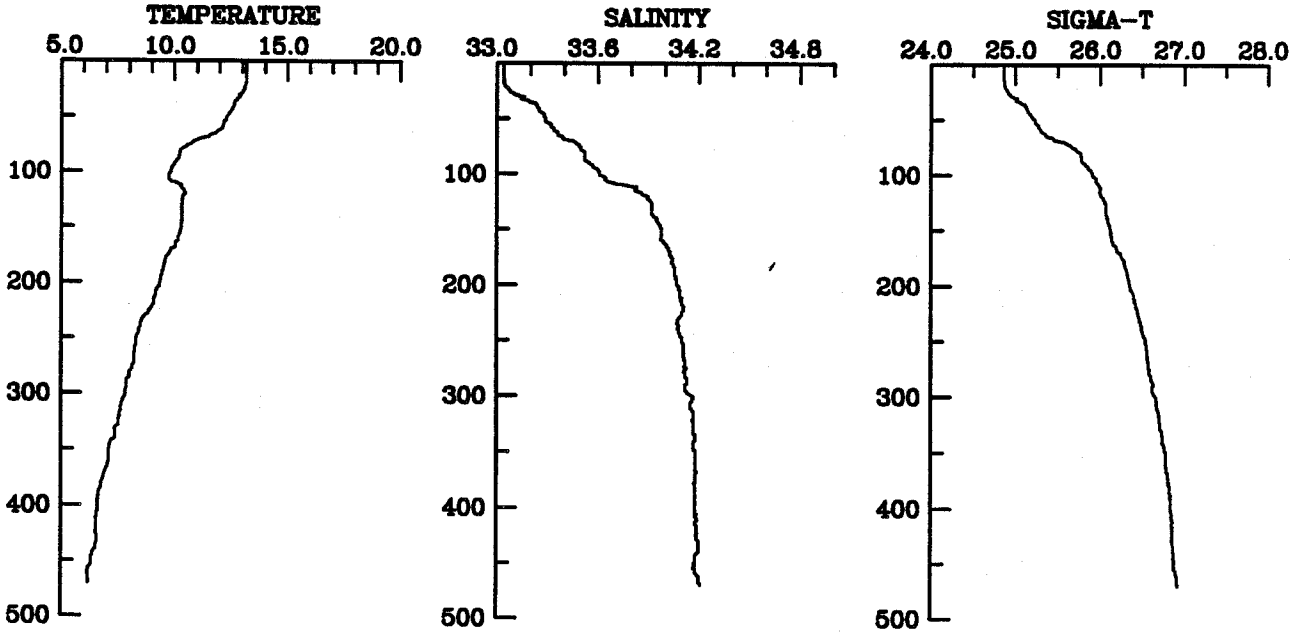
STATION A5 CAST 206
12 April 1983 2218 GMT
CTD Transect A-2
CTD Map 2



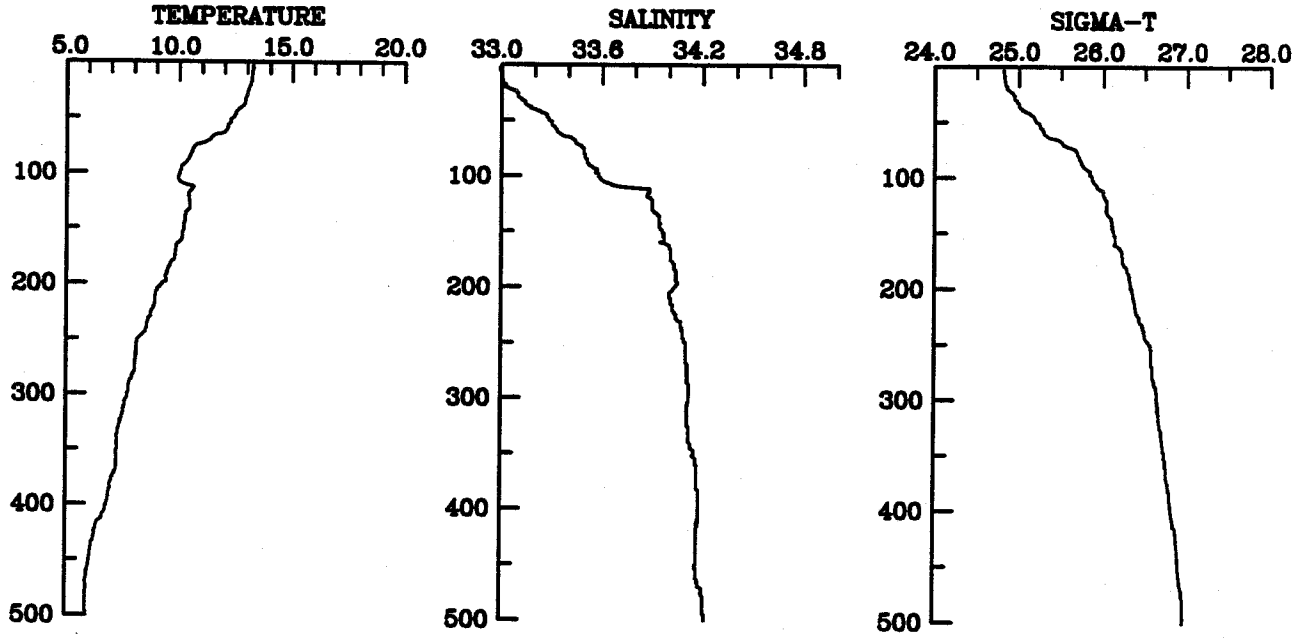
STATION A6 CAST 207
12 April 1983 2330 GMT
CTD Transect A-2
CTD Map 2



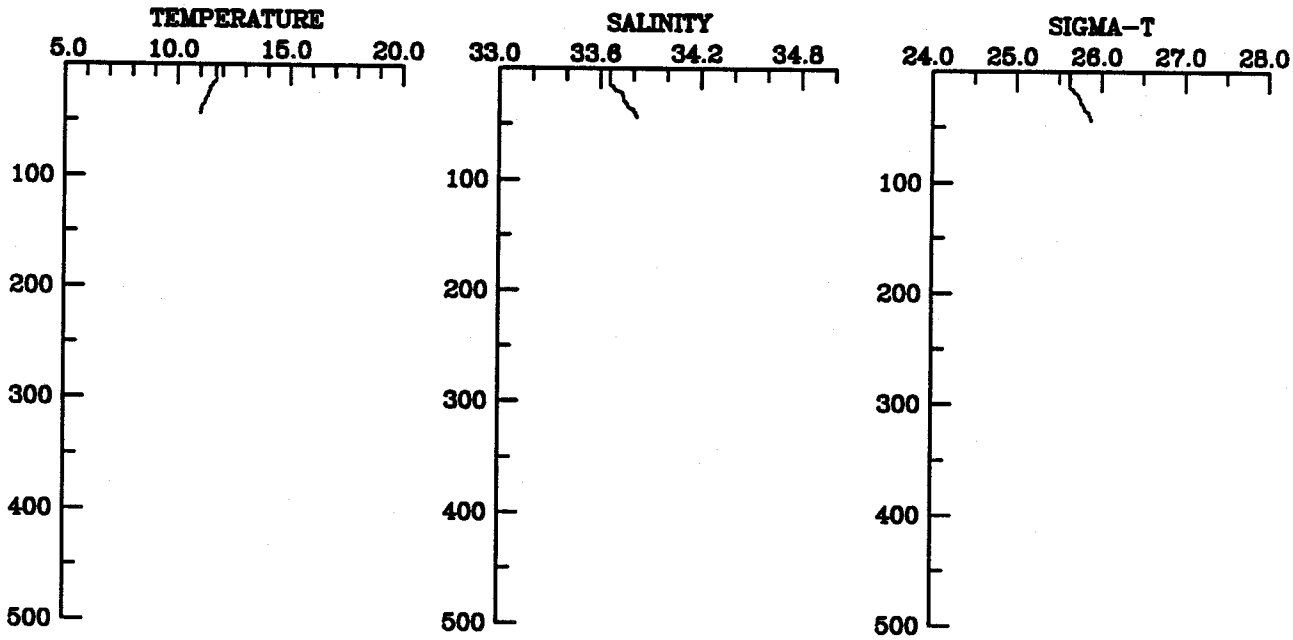
STATION A7 CAST 208
13 April 1983 54 GMT
CTD Transect A-2
CTD Map 2



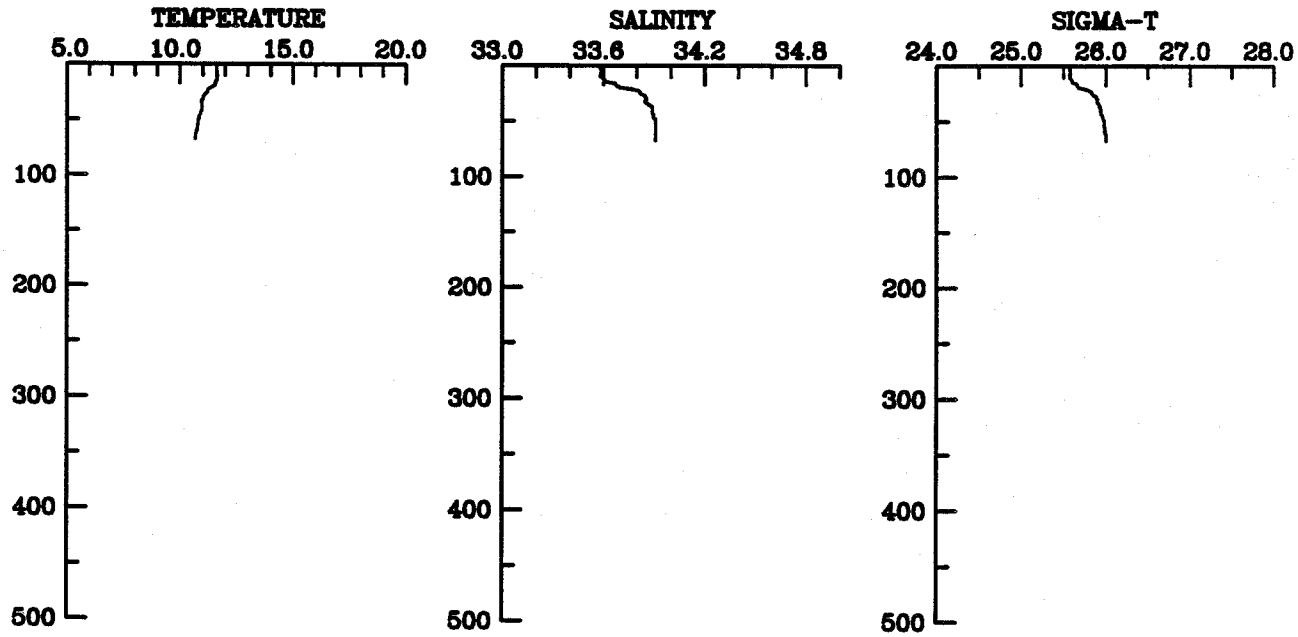
STATION A8 CAST 209
13 April 1983 224 GMT
CTD Transect A-2
CTD Map 2



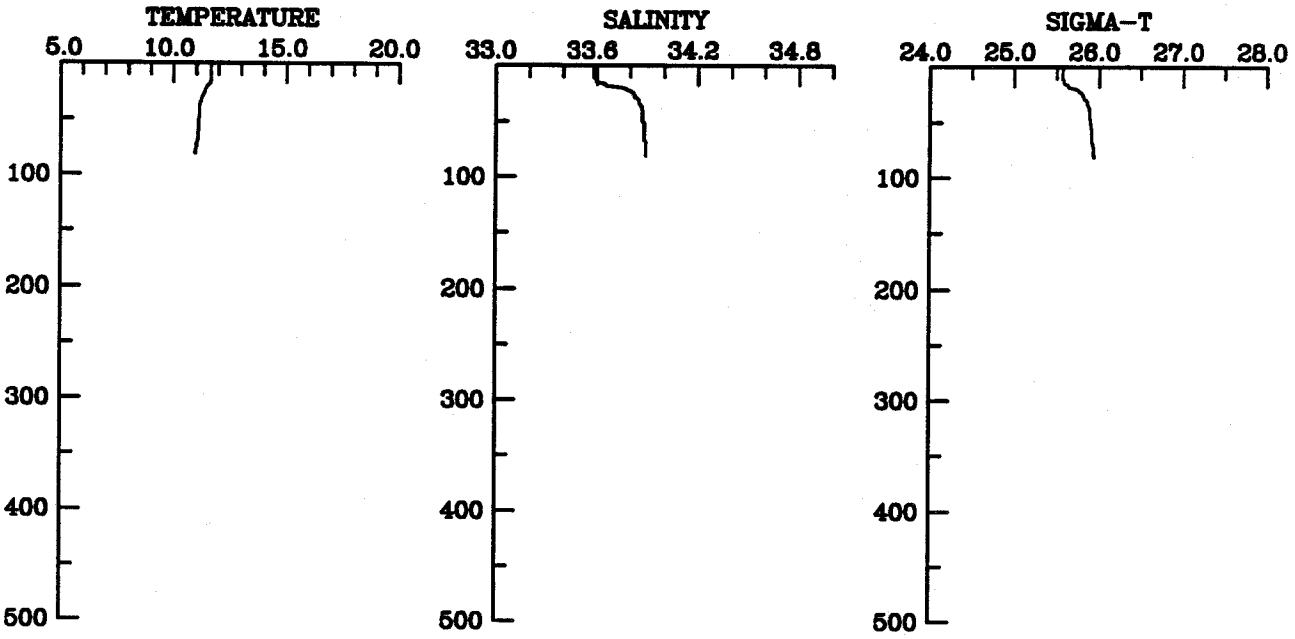
STATION G1 CAST 210
13 April 1983 542 GMT
CTD Transect G-4
CTD Map 2



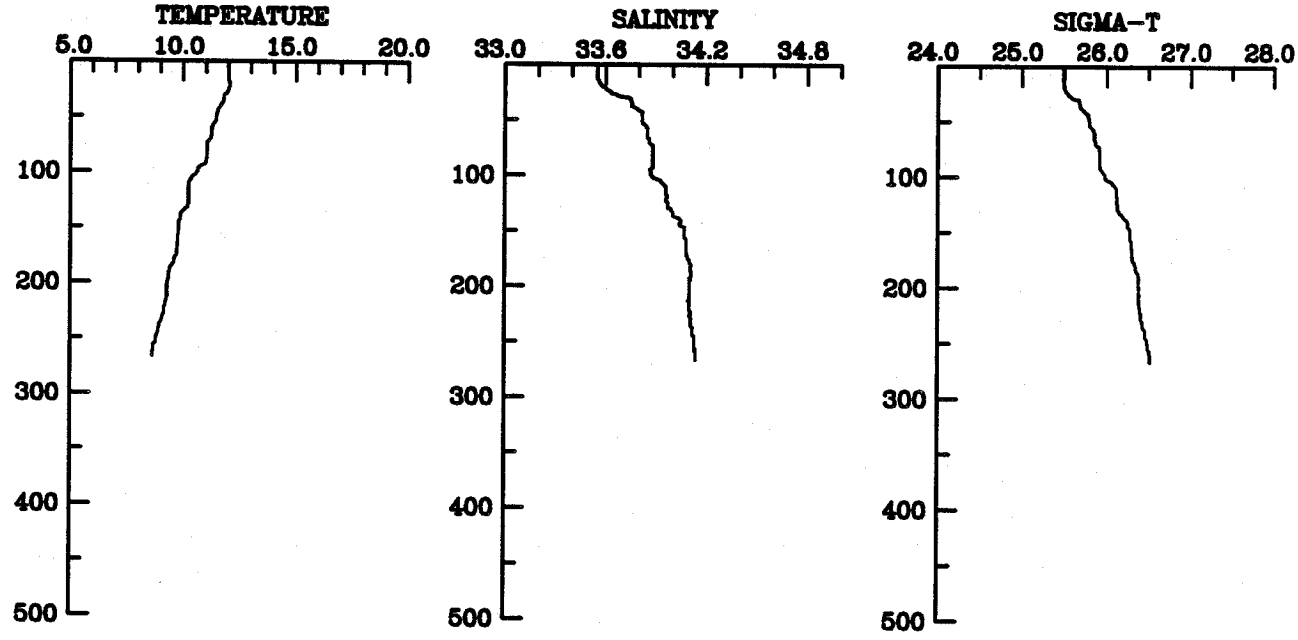
STATION G2 CAST 211
13 April 1983 618 GMT
CTD Transect G-4
CTD Map 2



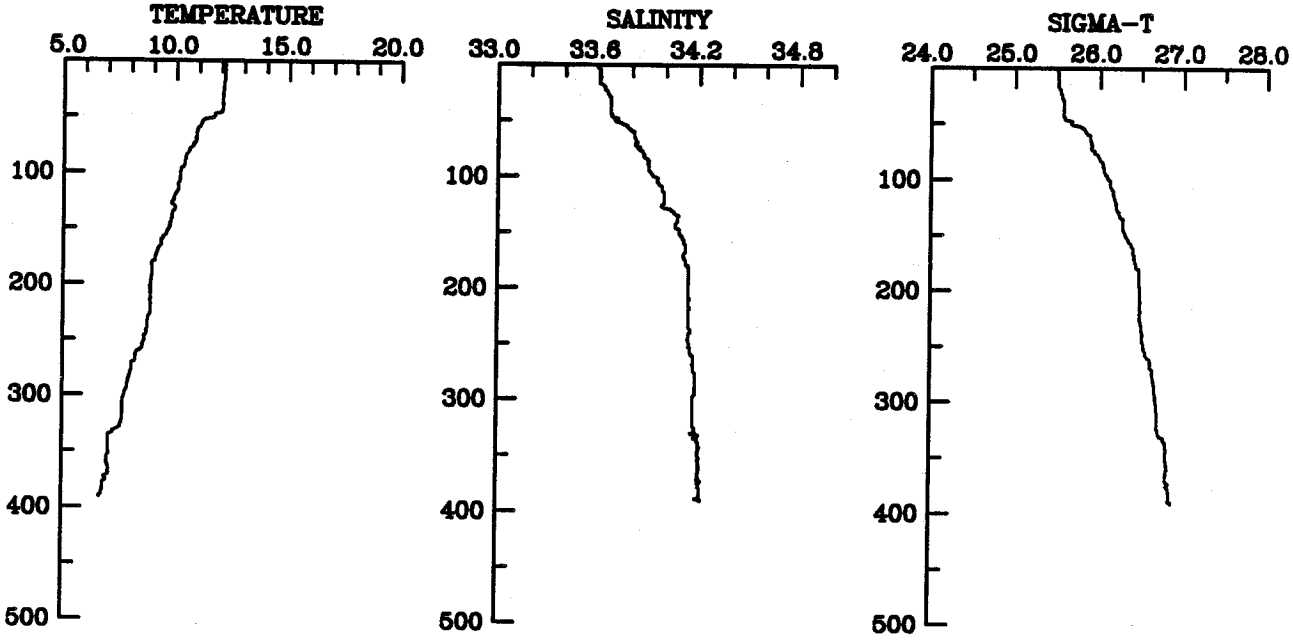
STATION G3 CAST 212
13 April 1983 706 GMT
CTD Transect G-4
CTD Map 2



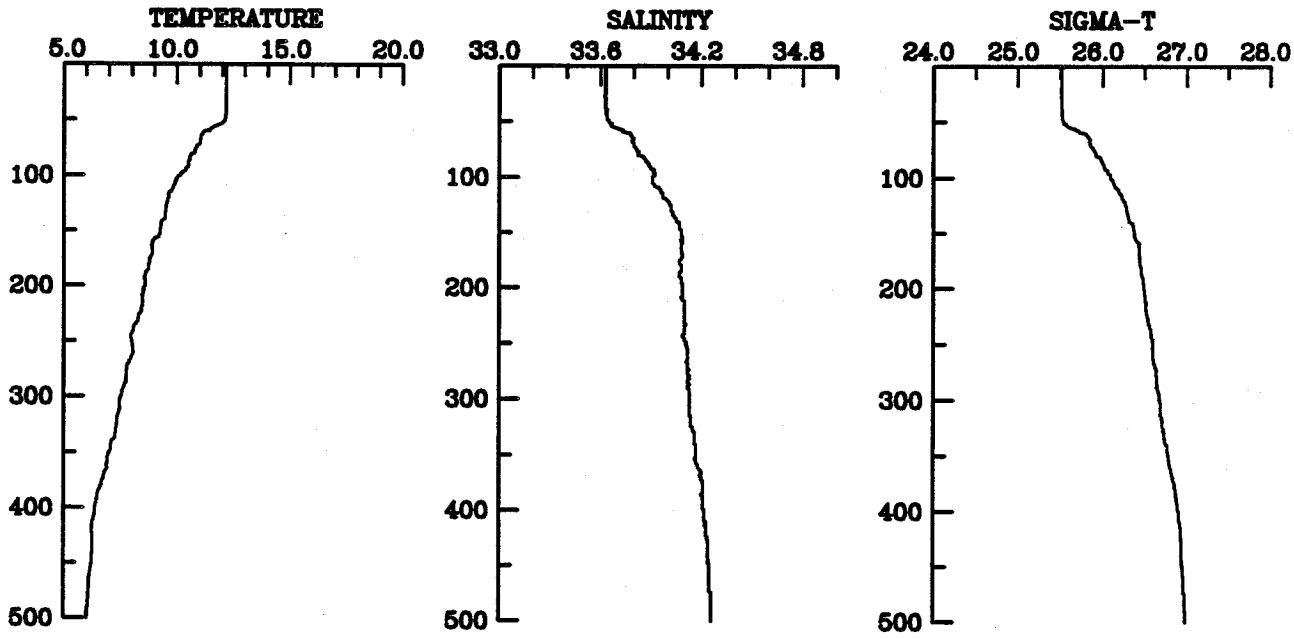
STATION G4 CAST 213
13 April 1983 812 GMT
CTD Transect G-4
CTD Map 2



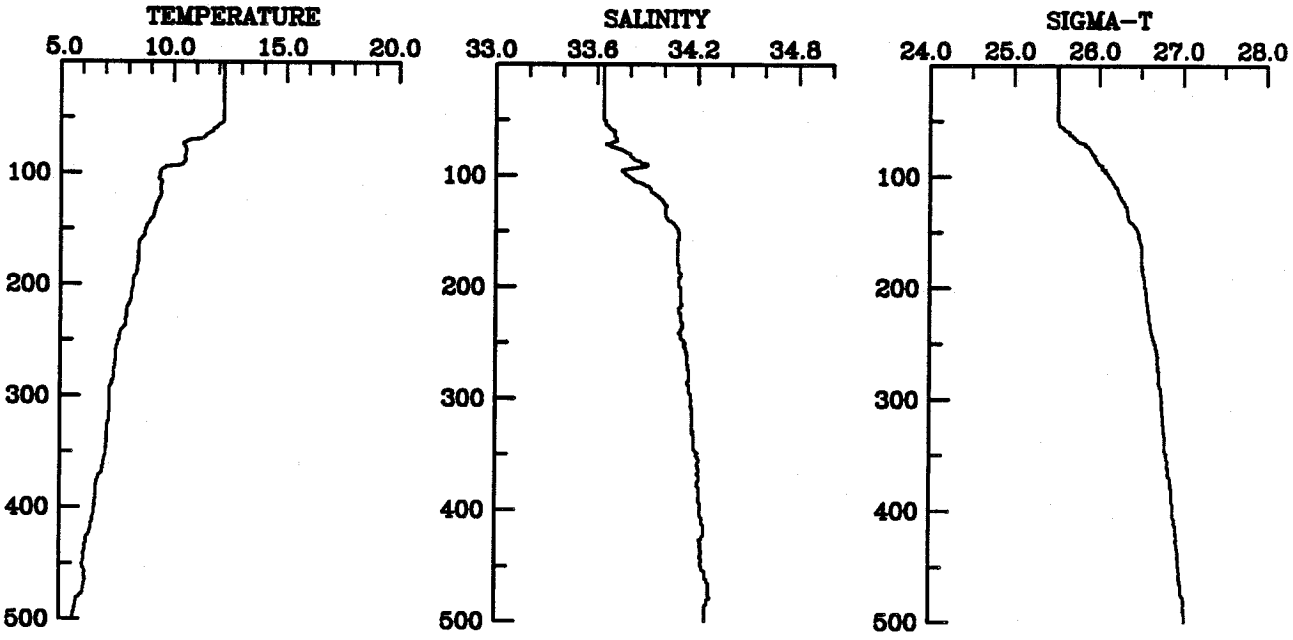
STATION G5 CAST 214
13 April 1983 912 GMT
CTD Transect G-4
CTD Map 2



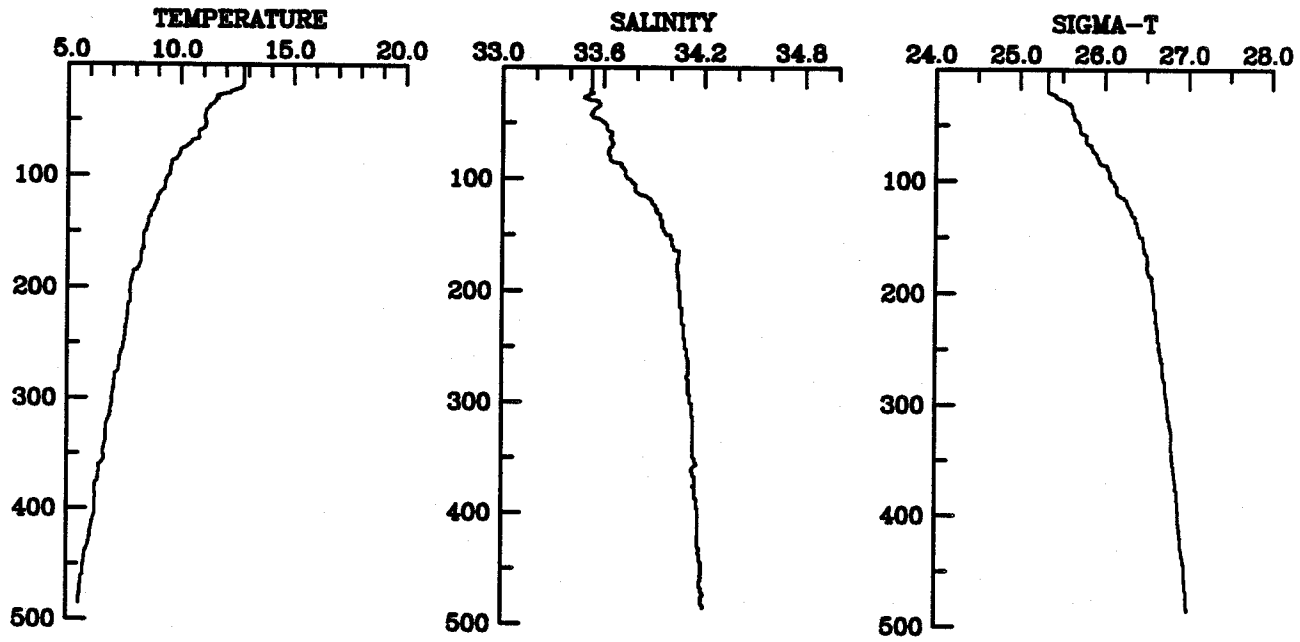
STATION G6 CAST 215
13 April 1983 1036 GMT
CTD Transect G-4
CTD Map 2



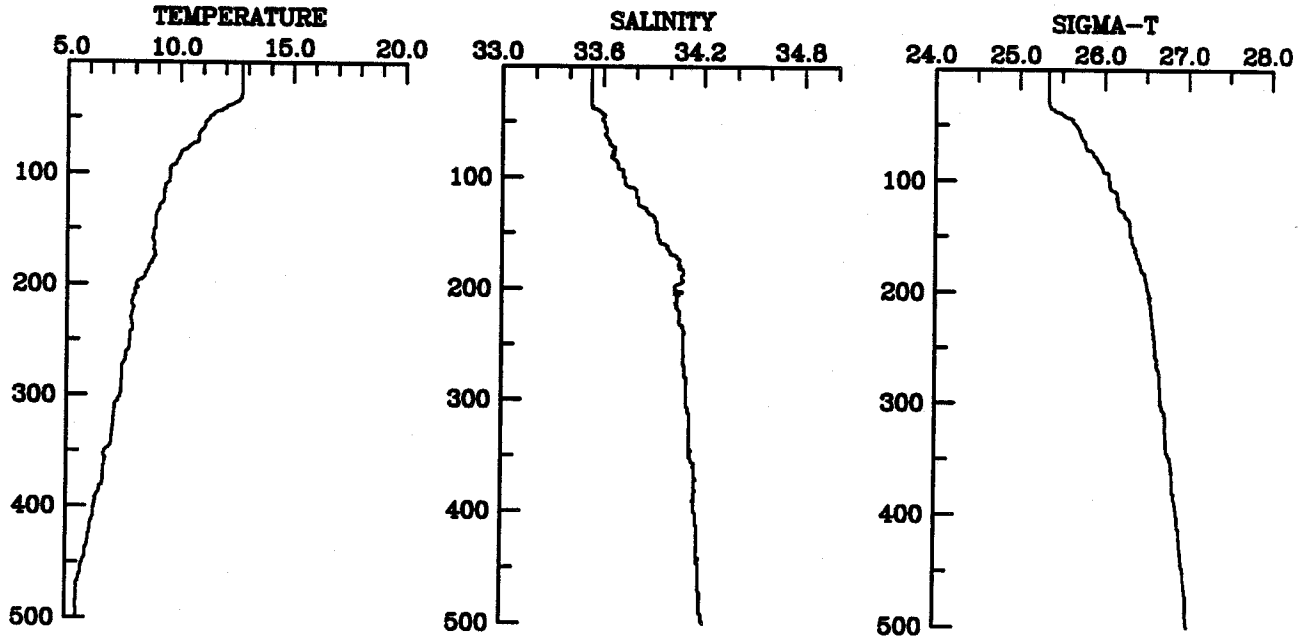
STATION G7 CAST 216
13 April 1983 1154 GMT
CTD Transect G-4
CTD Map 2



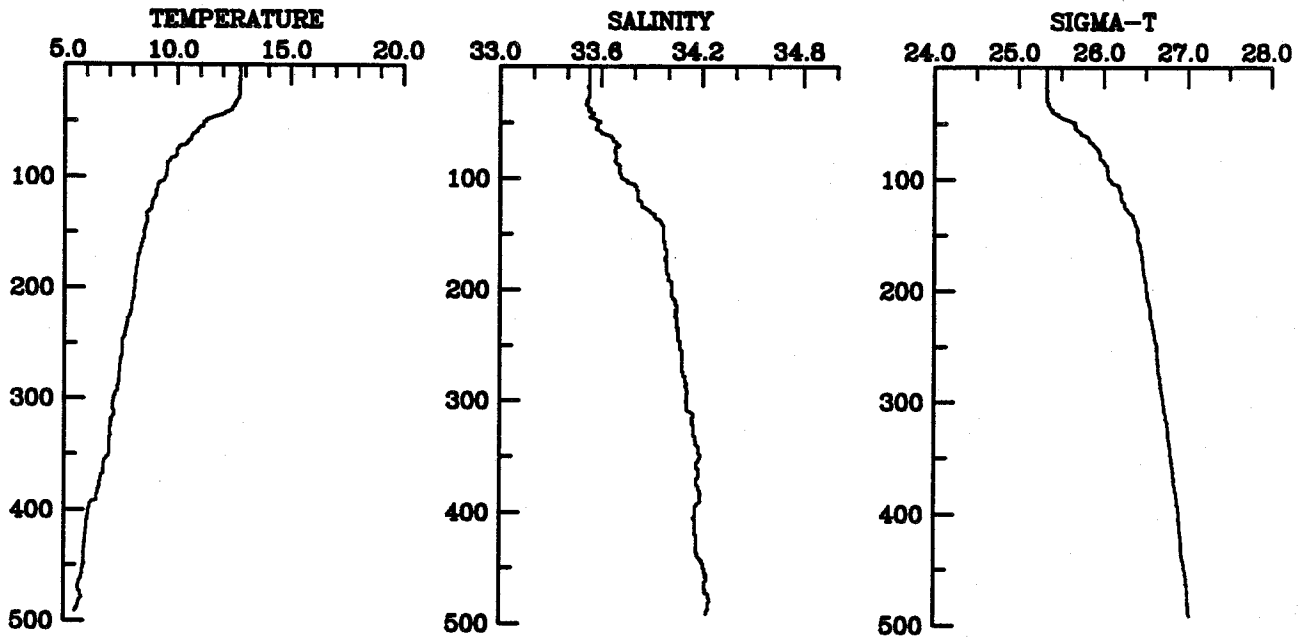
STATION G8 CAST 217
13 April 1983 1330 GMT
CTD Transect G-4
CTD Map 2



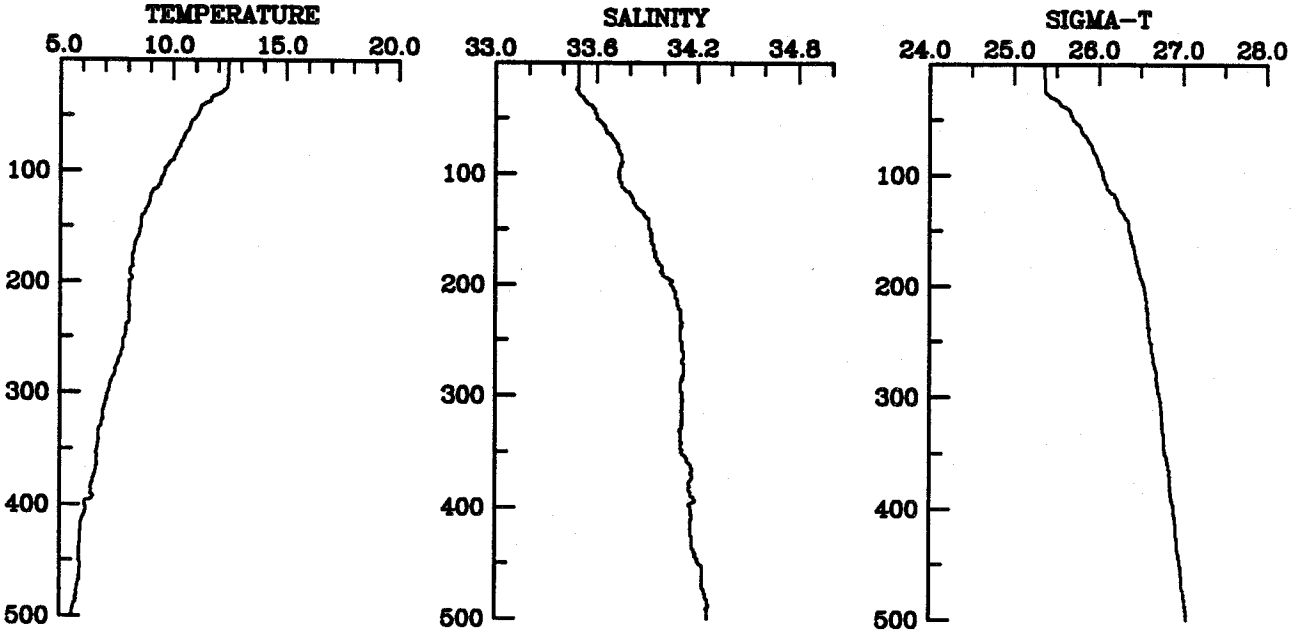
STATION G9 CAST 218
13 April 1983 1500 GMT
CTD Transect G-4
CTD Map 2



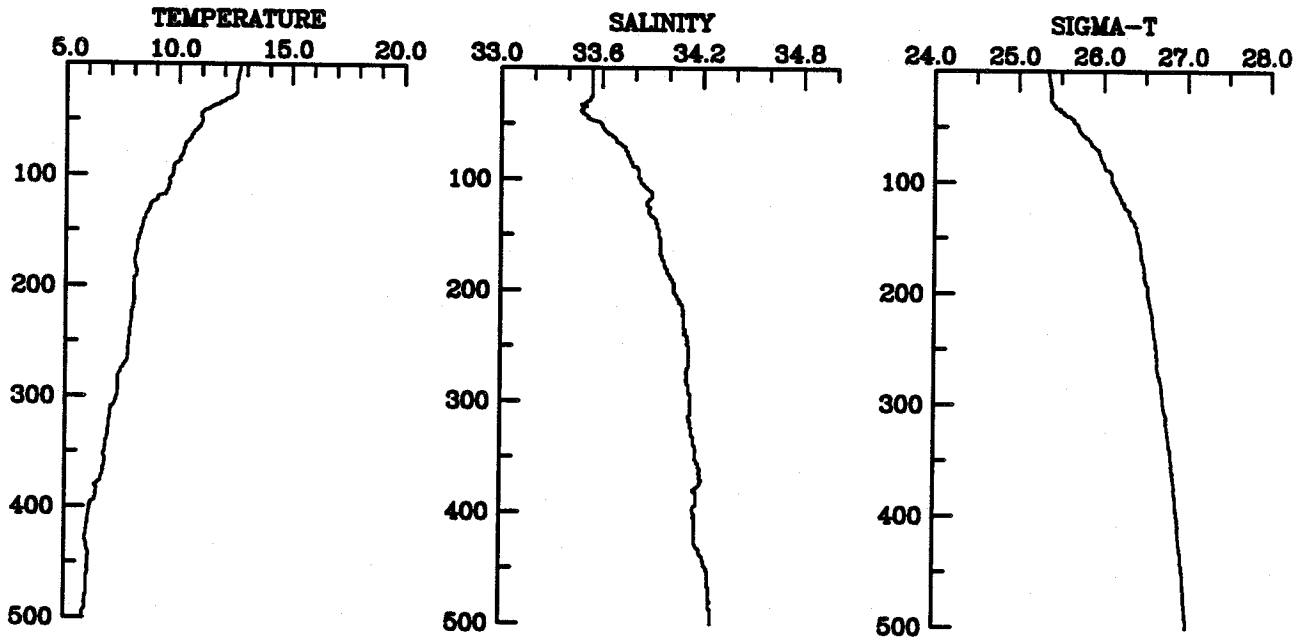
STATION G10 CAST 219
13 April 1983 1630 GMT
CTD Transect G-4
CTD Map 2



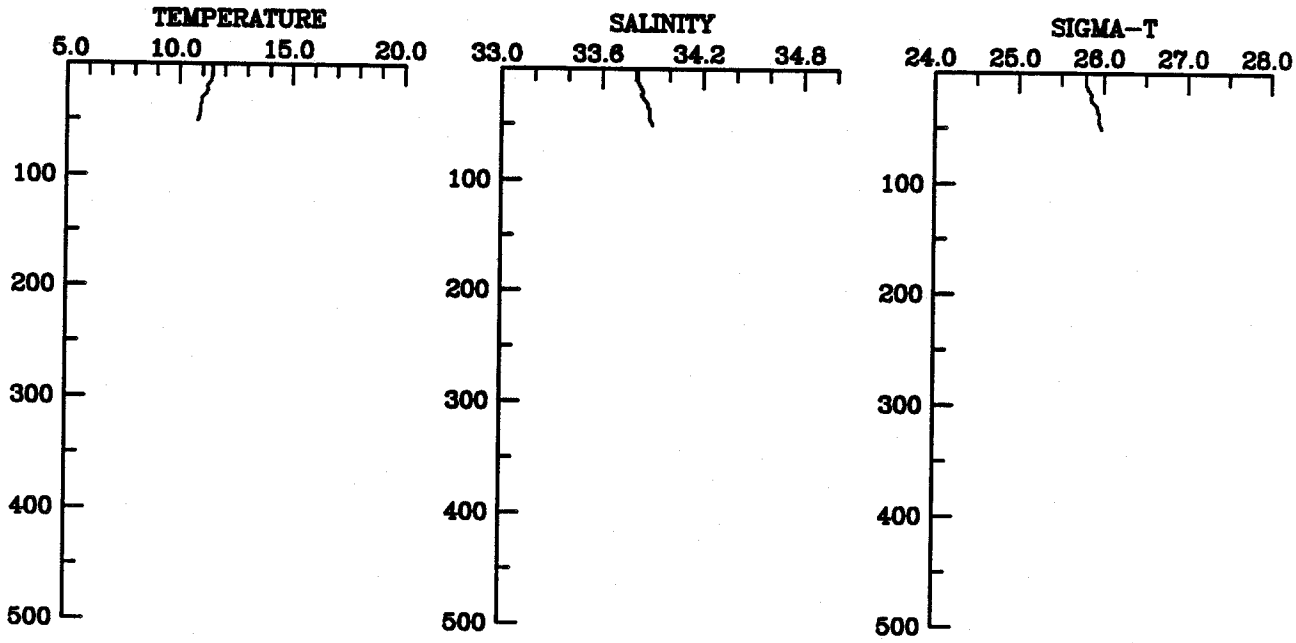
STATION G11 CAST 220
13 April 1983 1818 GMT
CTD Transect G-4
CTD Map 2



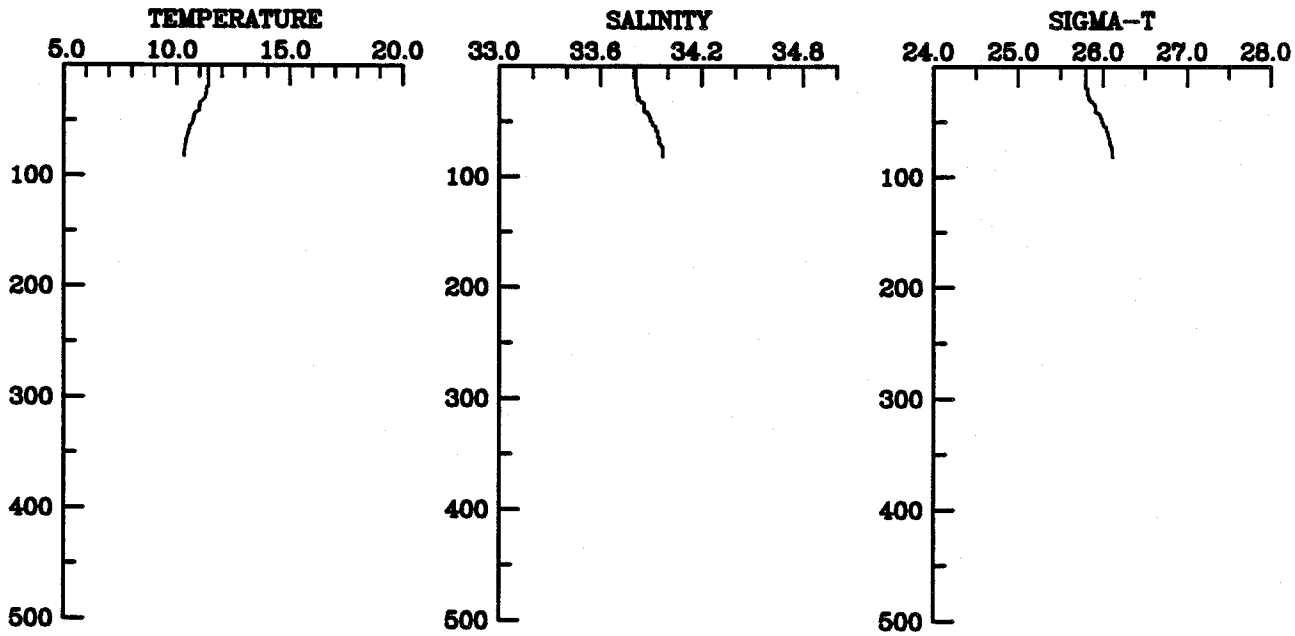
STATION G12 CAST 221
13 April 1983 1948 GMT
CTD Transect G-4
CTD Map 2



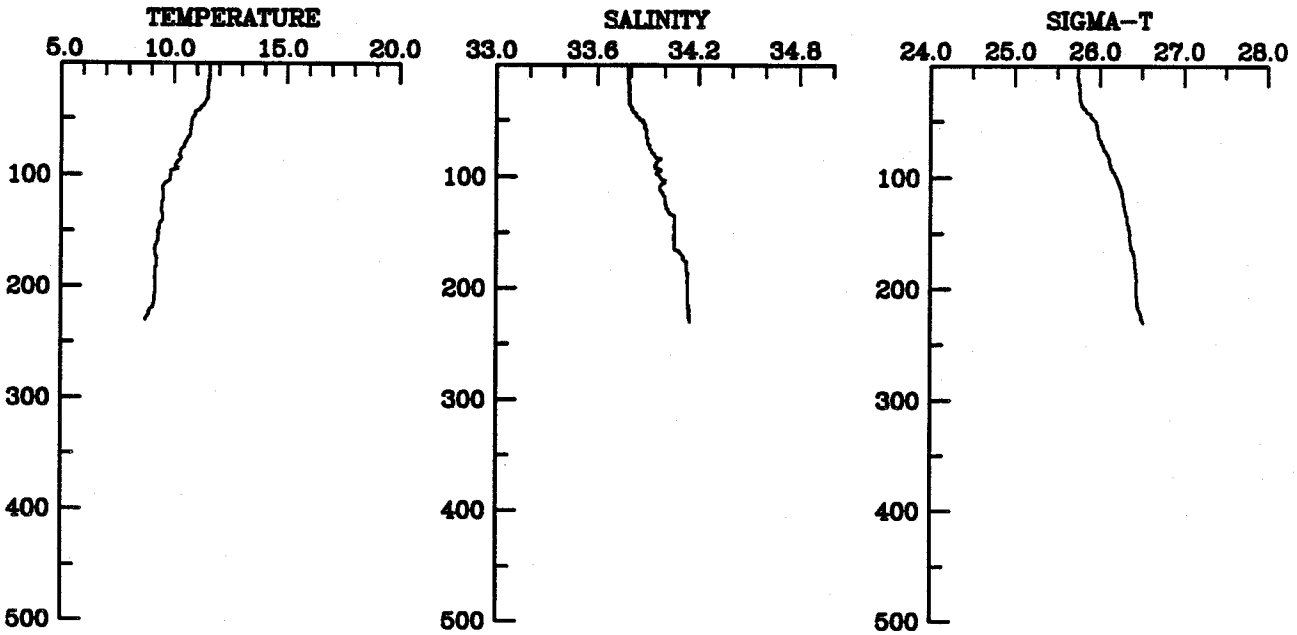
STATION C1 CAST 222
14 April 1983 6 GMT
CTD Transect C-2
CTD Map 2



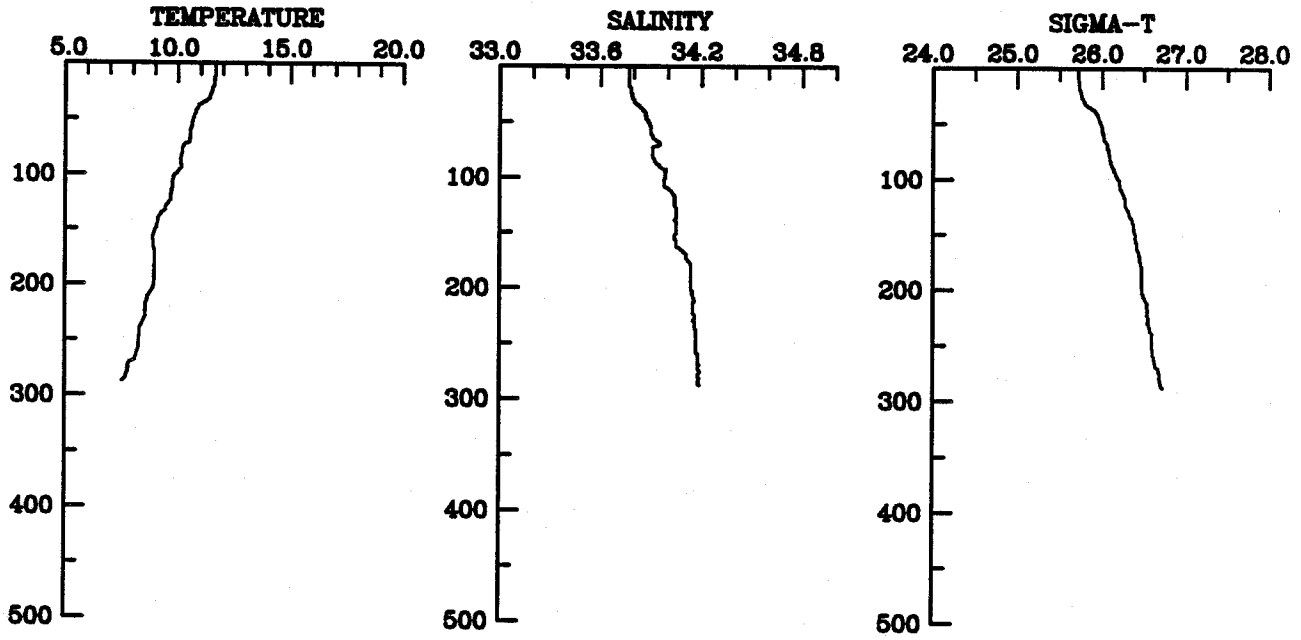
STATION C2 CAST 223
14 April 1983 42 GMT
CTD Transect C-2
CTD Map 2



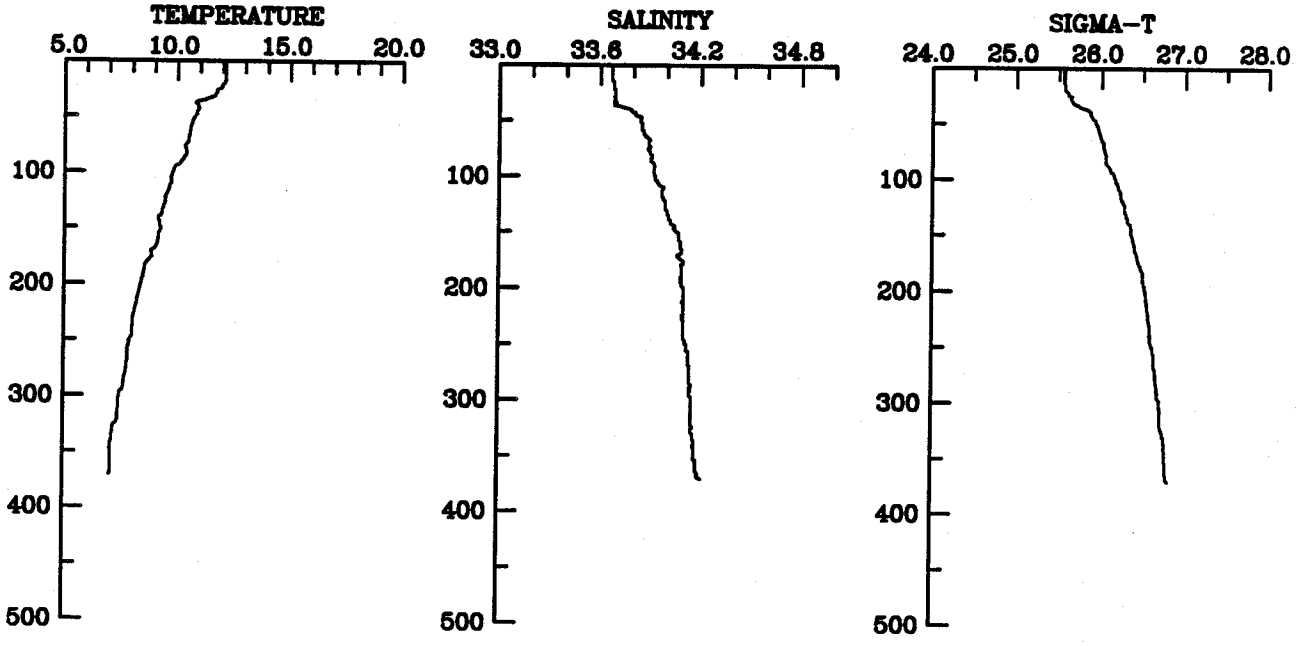
STATION C3 CAST 224
14 April 1983 136 GMT
CTD Transect C-2
CTD Map 2



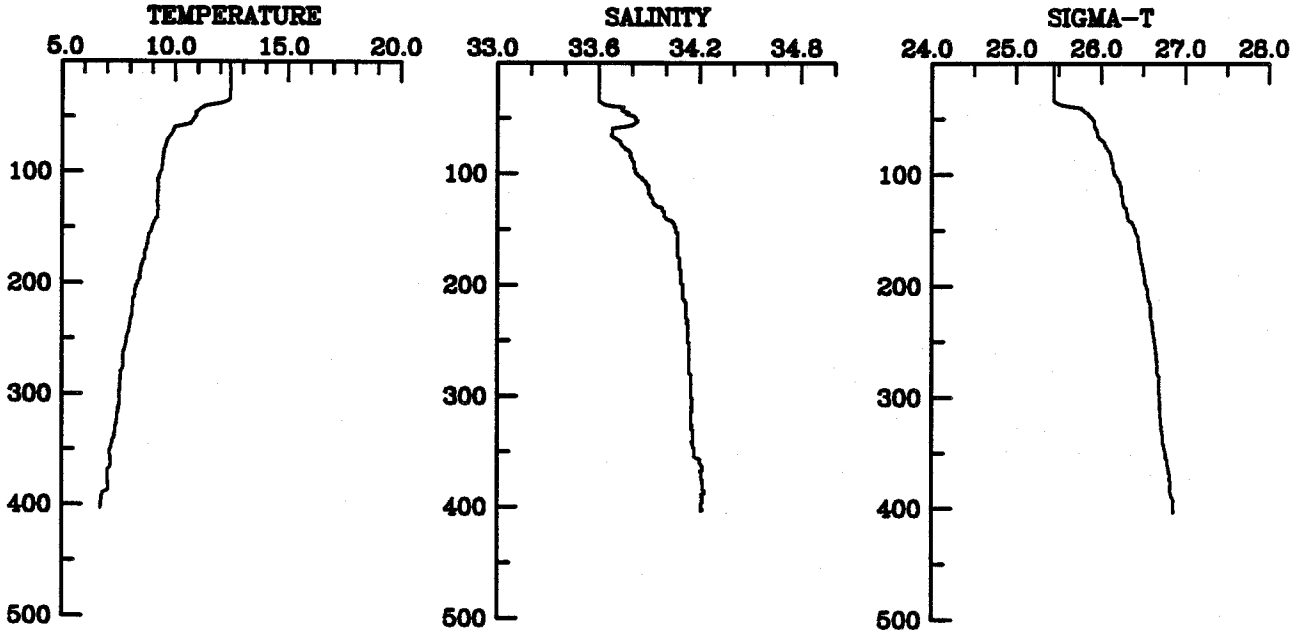
STATION C4 CAST 225
14 April 1983 230 GMT
CTD Transect C-2
CTD Map 2



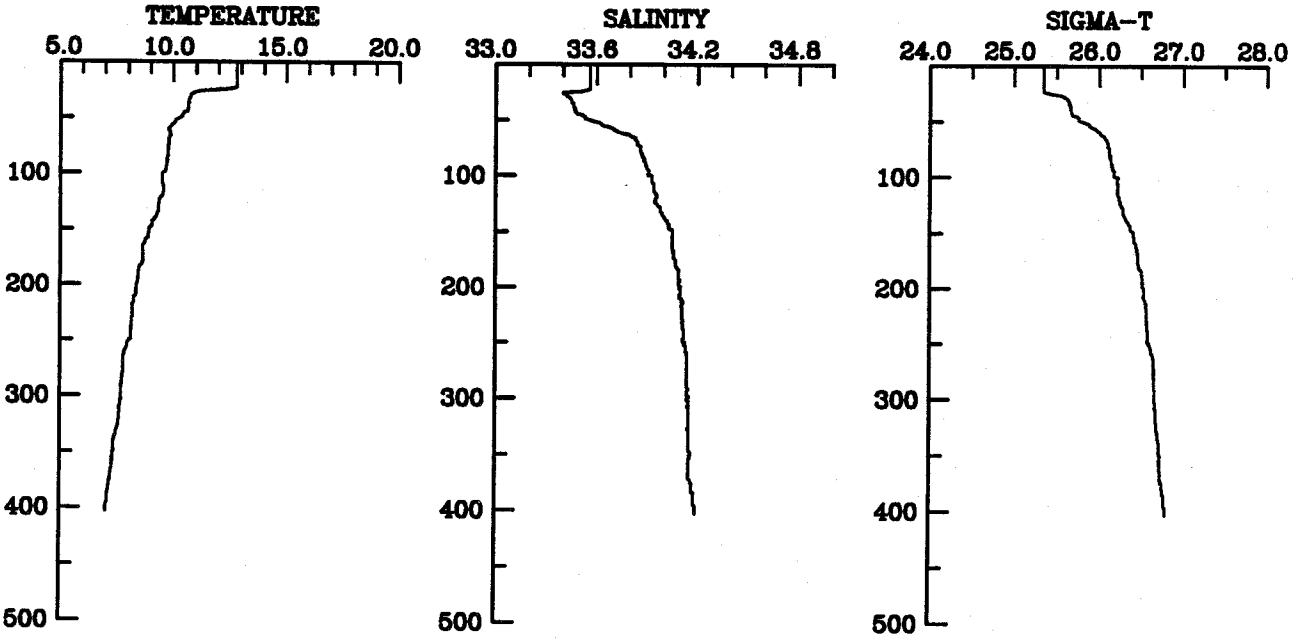
STATION C5 CAST 226
14 April 1983 342 GMT
CTD Transect C-2
CTD Map 2



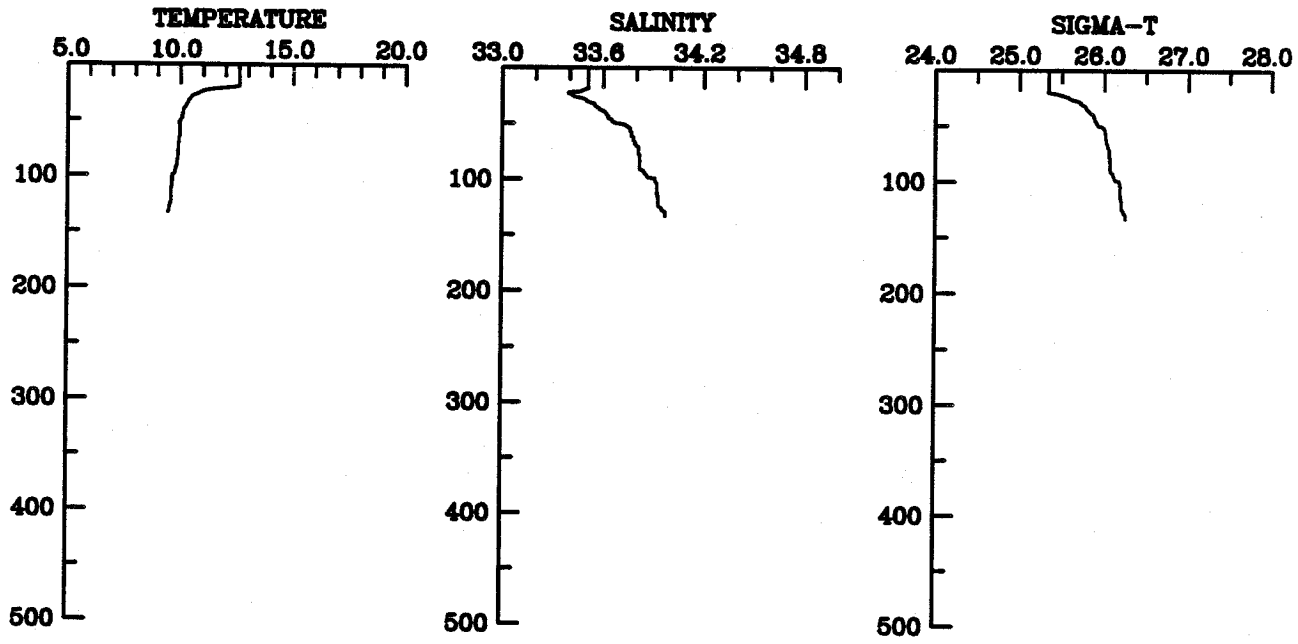
STATION C6 CAST 227
14 April 1983 506 GMT
CTD Transect C-2
CTD Map 2



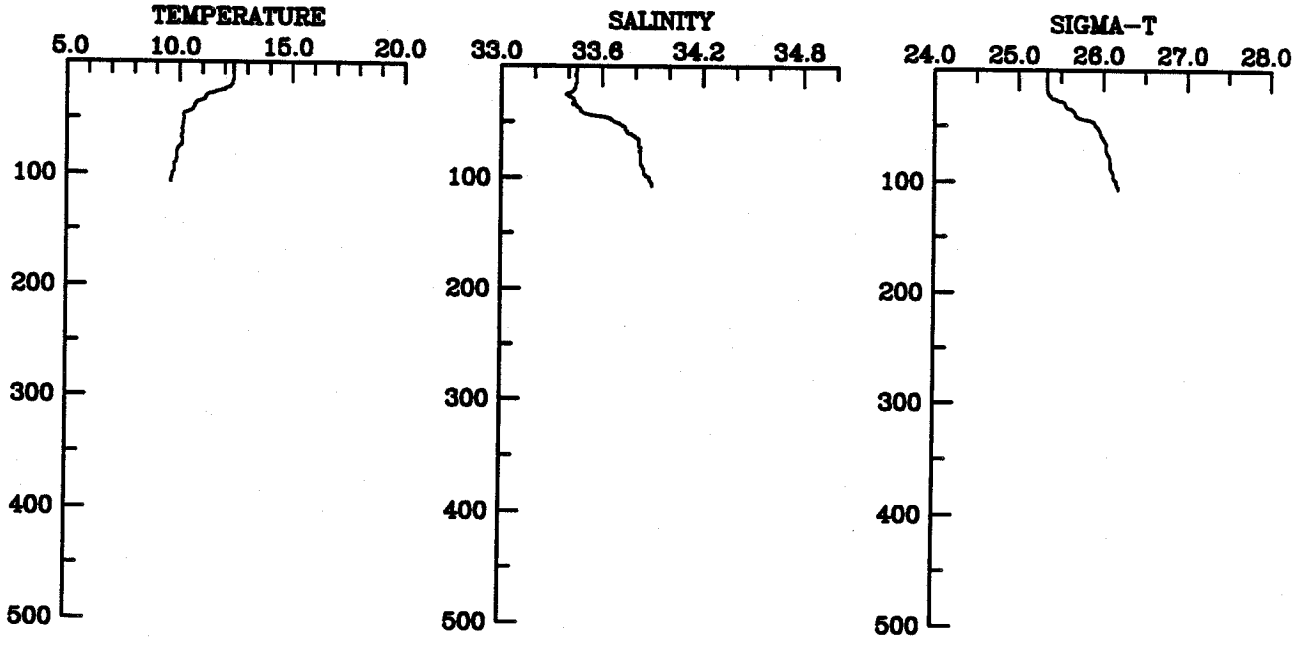
STATION C7 CAST 228
14 April 1983 730 GMT
CTD Transect C-2
CTD Map 2



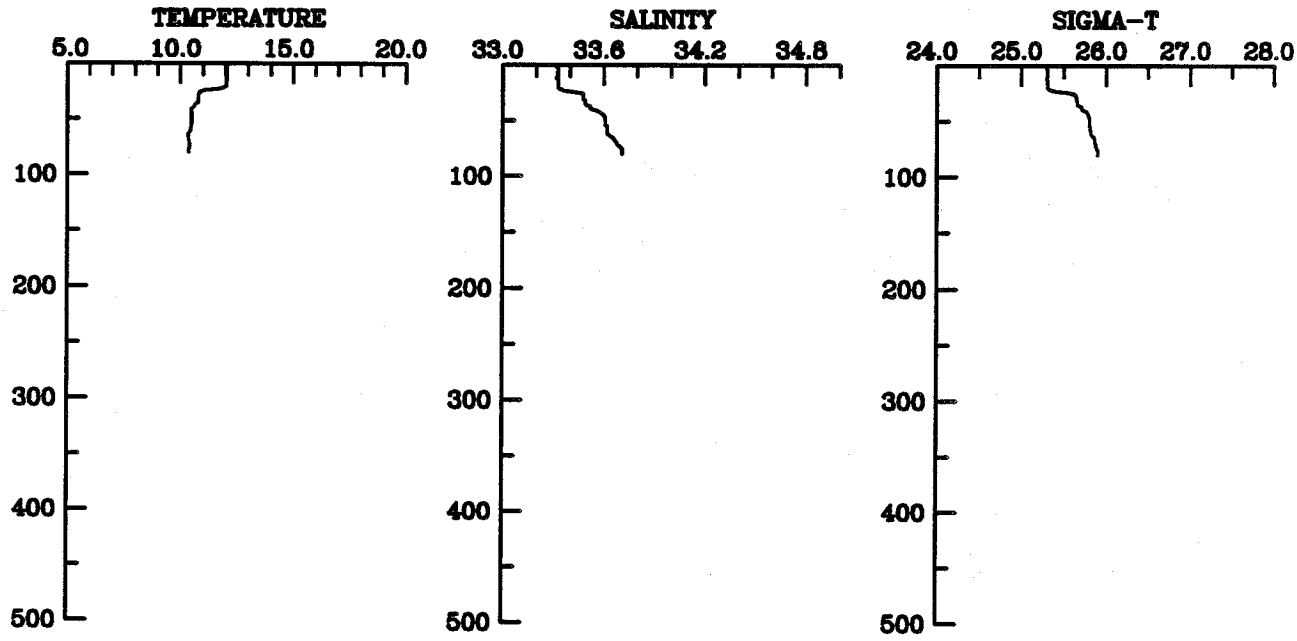
STATION C8 CAST 229
14 April 1983 806 GMT
CTD Transect C-2
CTD Map 2



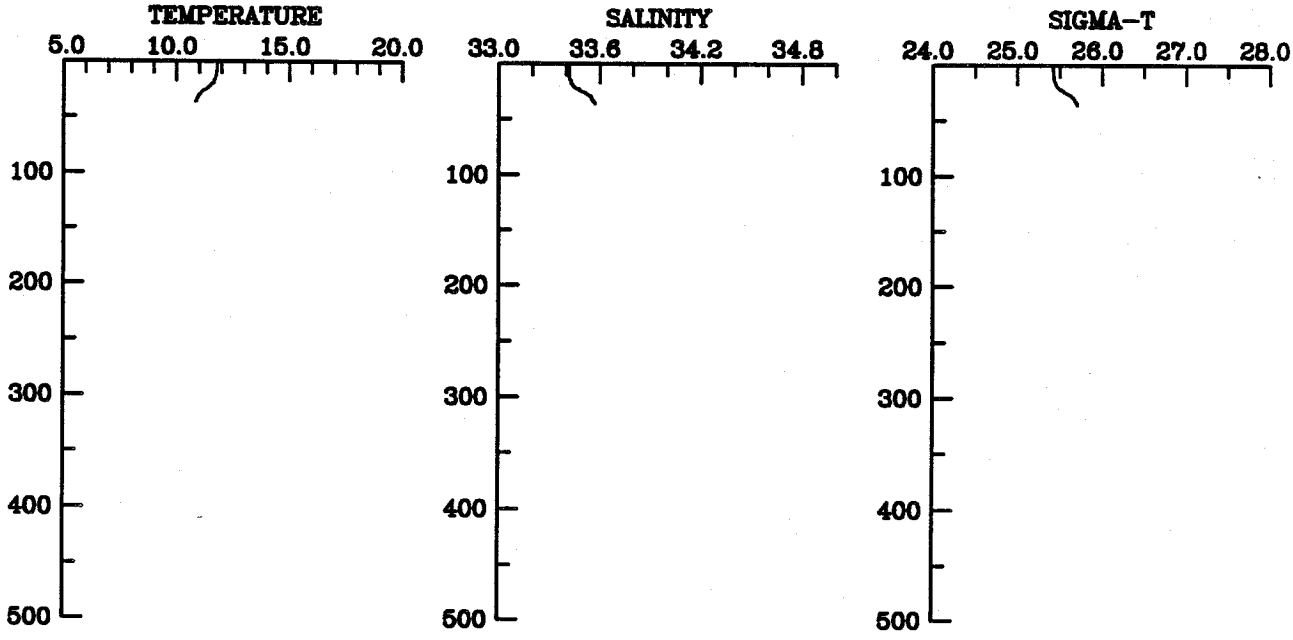
STATION C9 CAST 230
14 April 1983 912 GMT
CTD Transect C-2
CTD Map 2



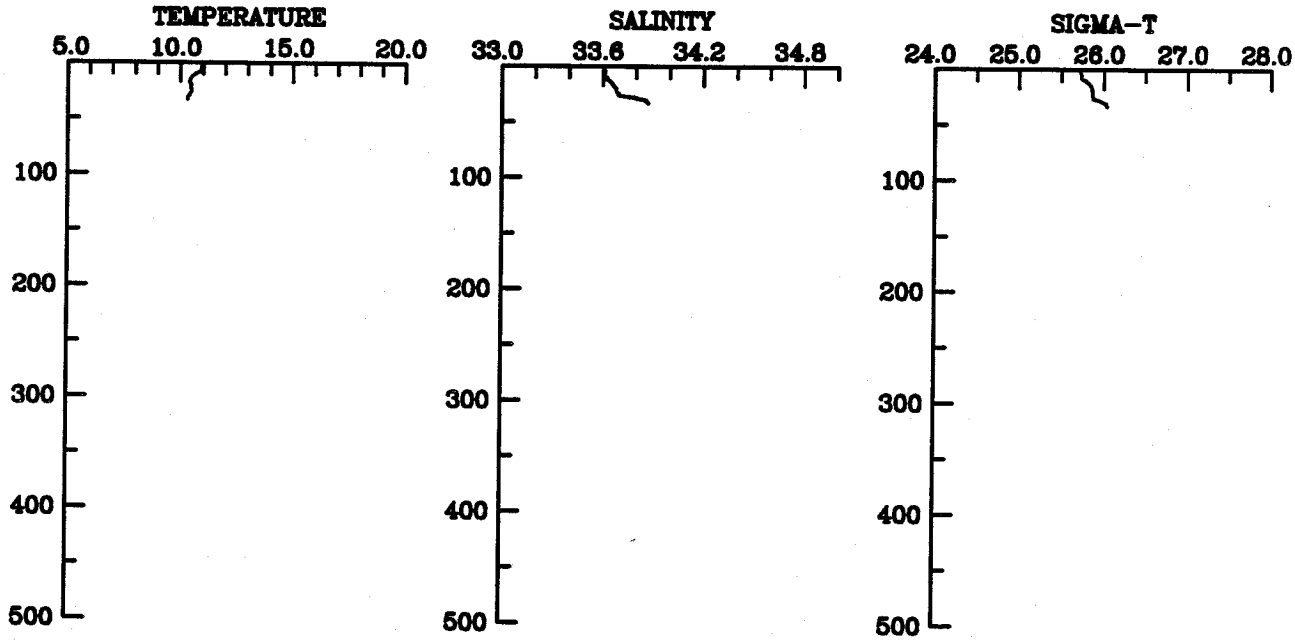
STATION C10 CAST 231
14 April 1983 1024 GMT
CTD Transect C-2
CTD Map 2



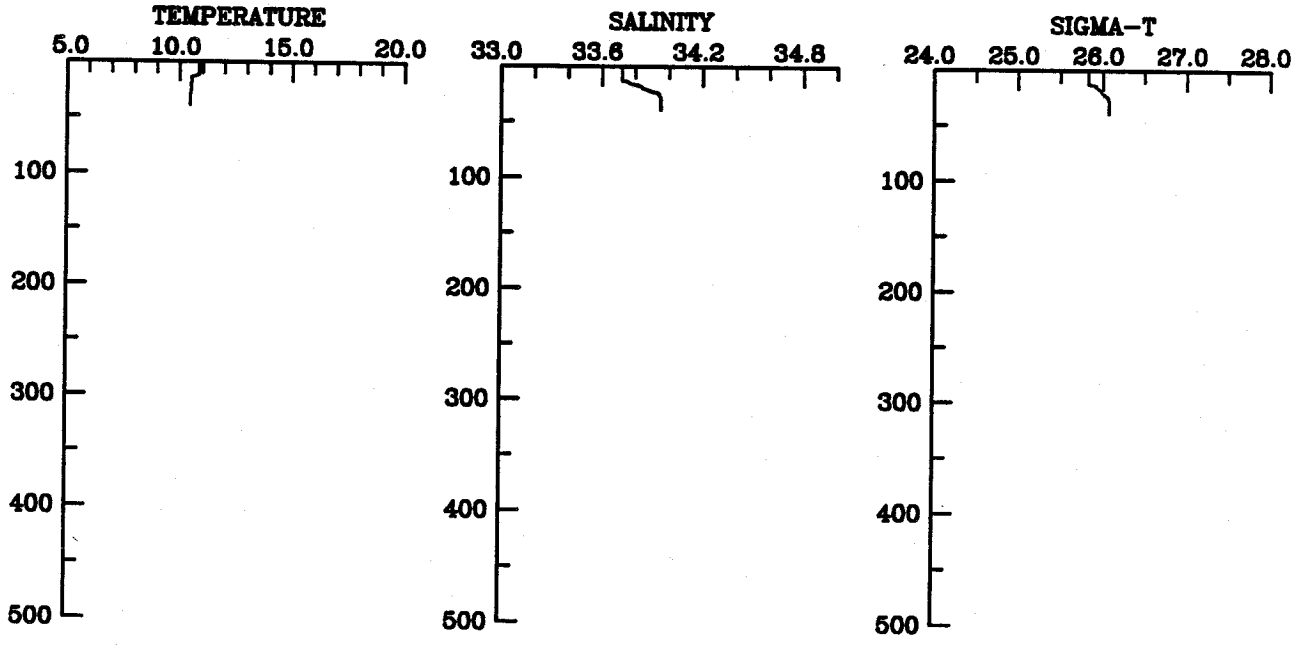
STATION A1 CAST 239
15 April 1983 48 GMT
XBT Transect A-4
XBT Map 4



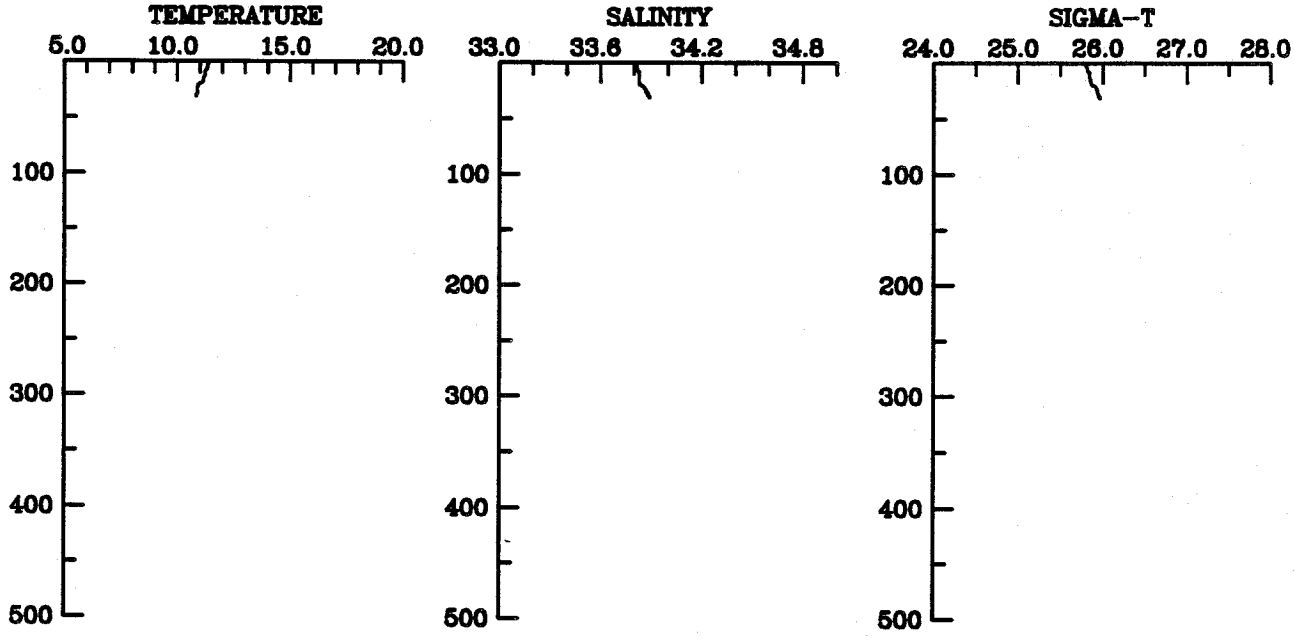
STATION AG1 CAST 240
15 April 1983 124 GMT
XBT Transect AG-4
XBT Map 4



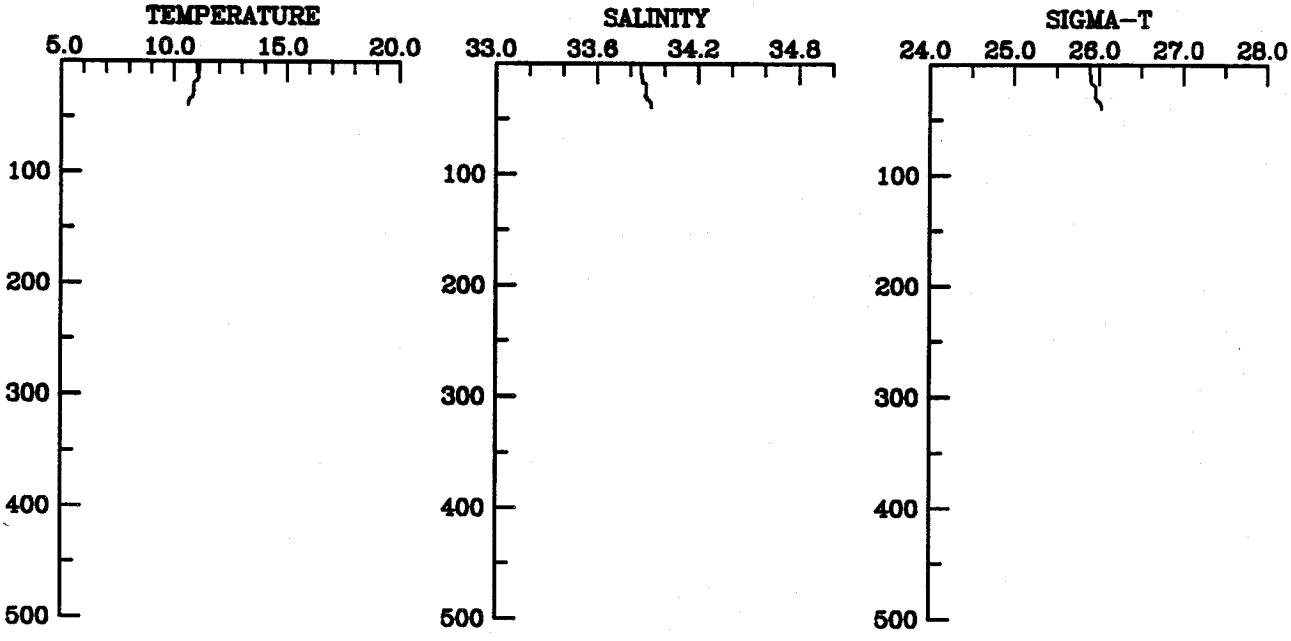
STATION G1 CAST 259
15 April 1983 718 GMT
XBT Transect G-4
XBT Map 4



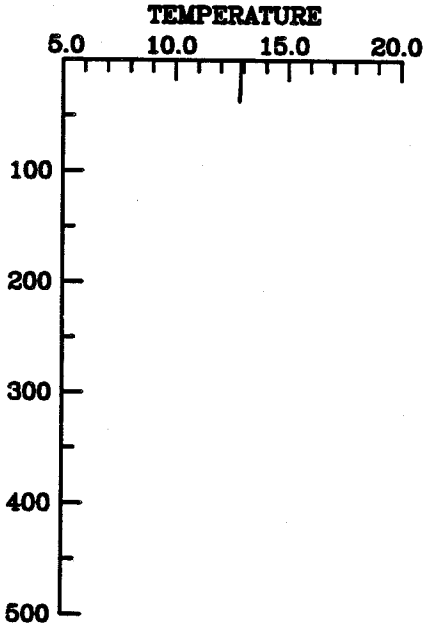
STATION GC1 CAST 260
15 April 1983 806 GMT
XBT Transect GC-4
XBT Map 4

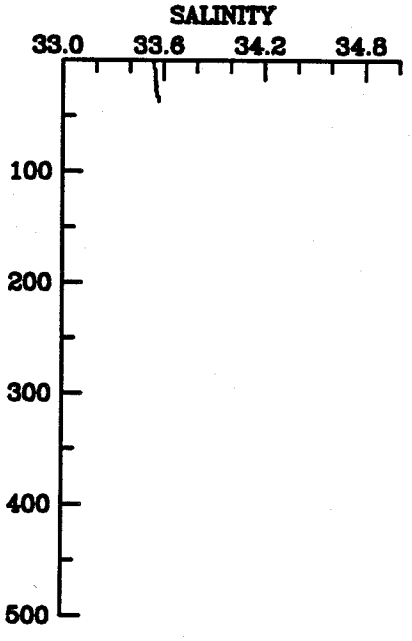


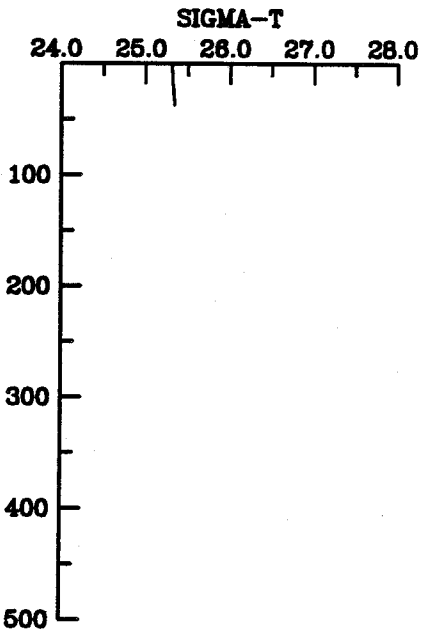
STATION C1 CAST 279
15 April 1983 1342 GMT
XBT Transect C-4
XBT Map 4



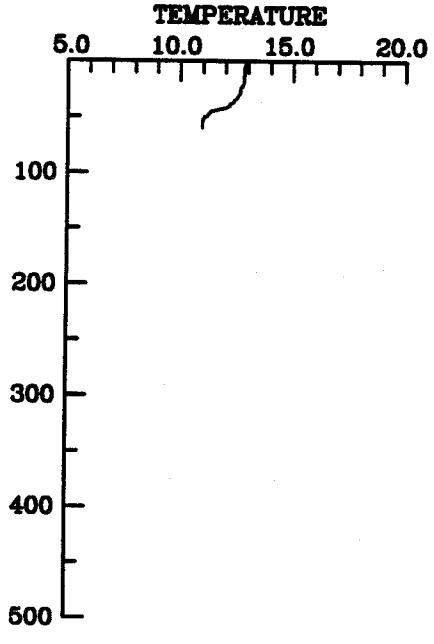
STATION G1 CAST 280
18 April 1983 1730 GMT
CTD Transect G-5

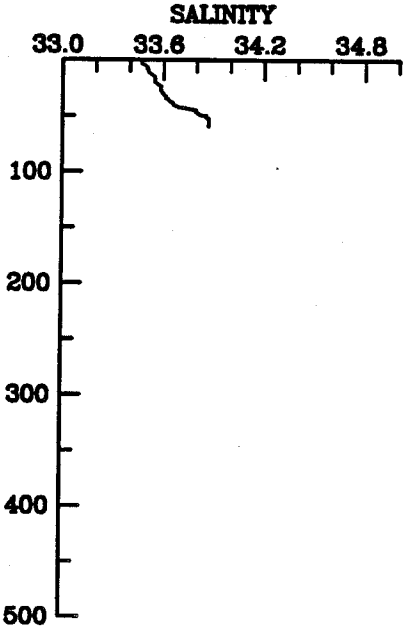


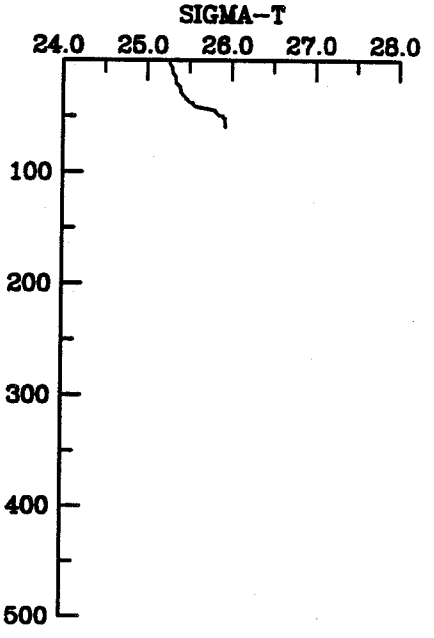




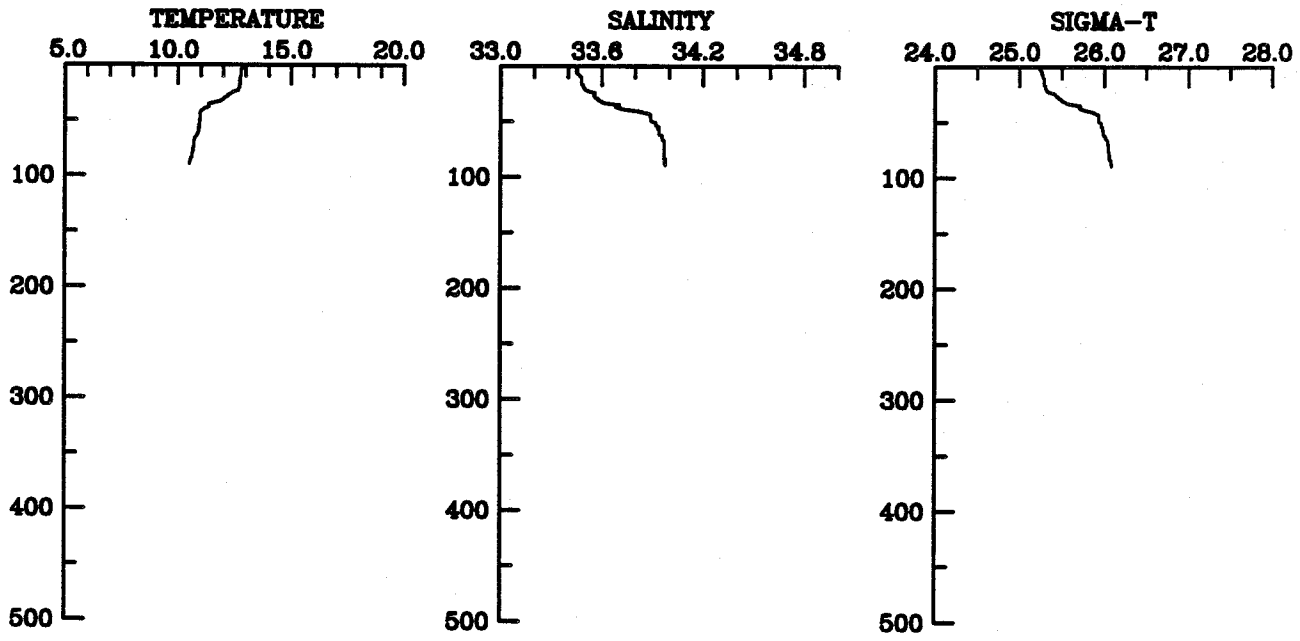
STATION G2 CAST 281
18 April 1983 1806 GMT
CTD Transect G-5



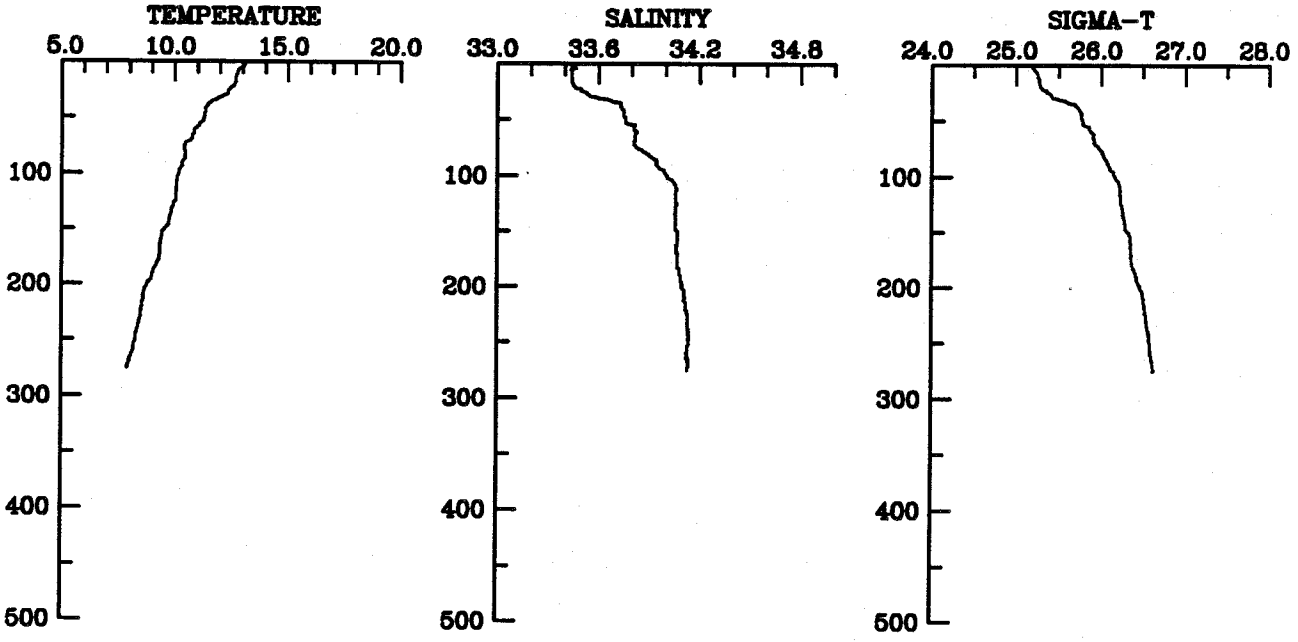




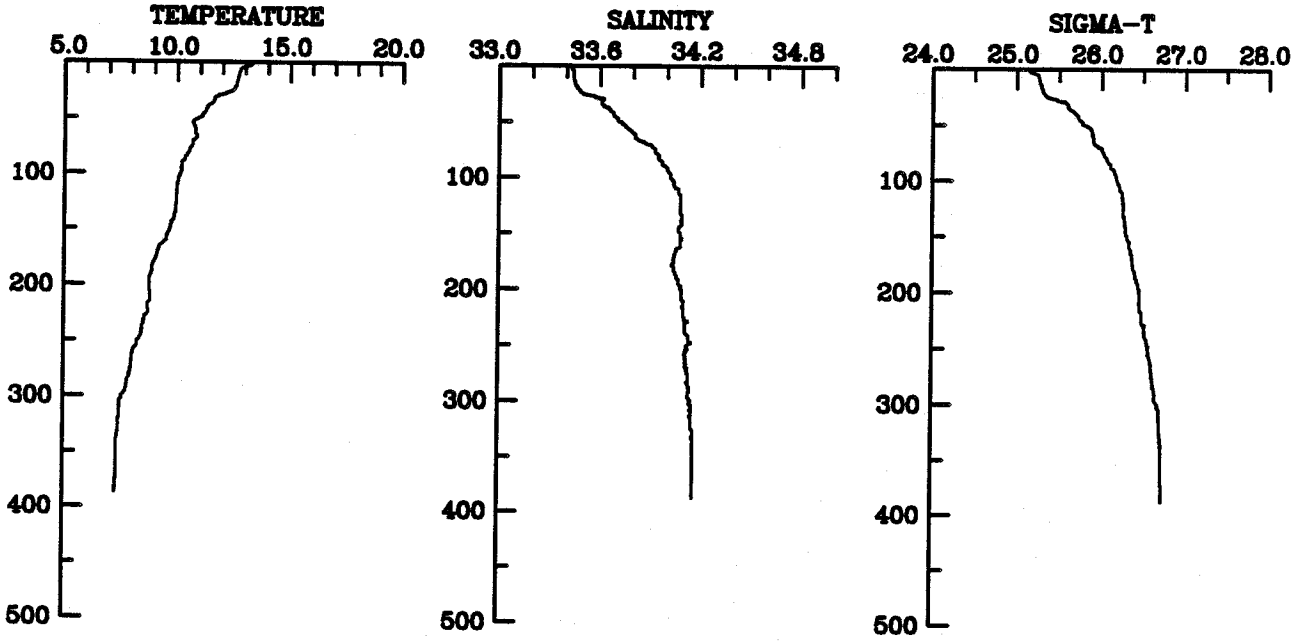
STATION G3 CAST 282
18 April 1983 1948 GMT
CTD Transect G-5



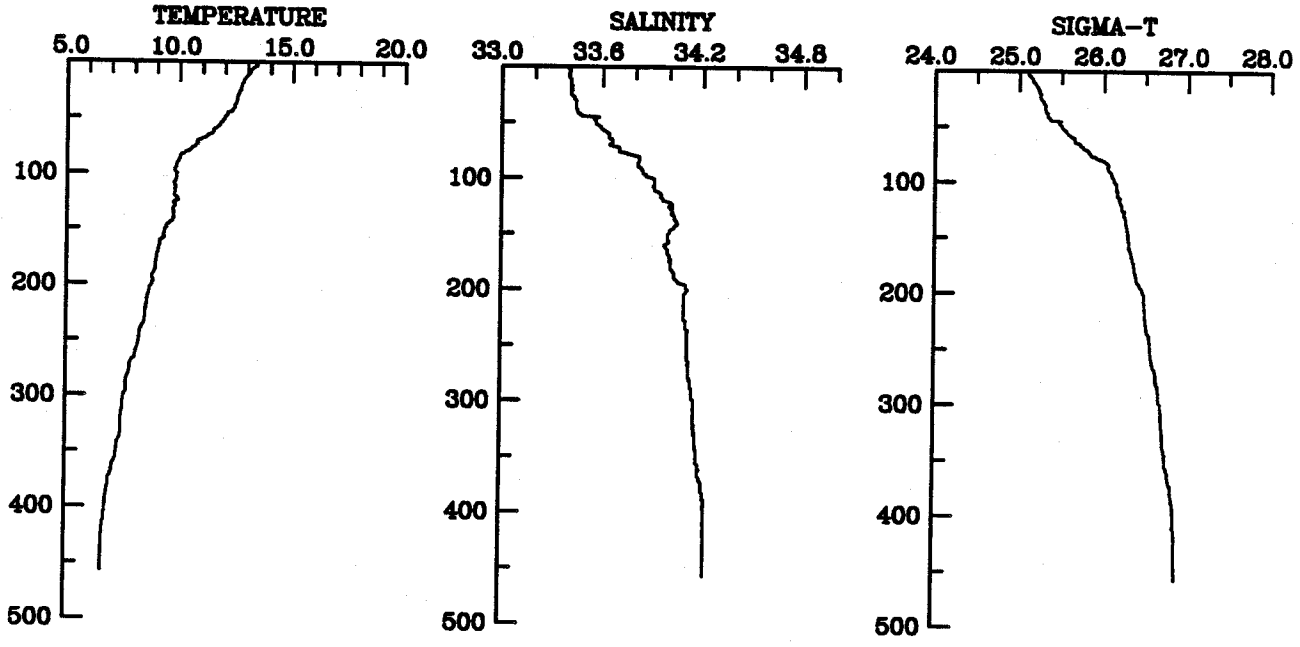
STATION G4 CAST 283
18 April 1983 2054 GMT
CTD Transect G-5



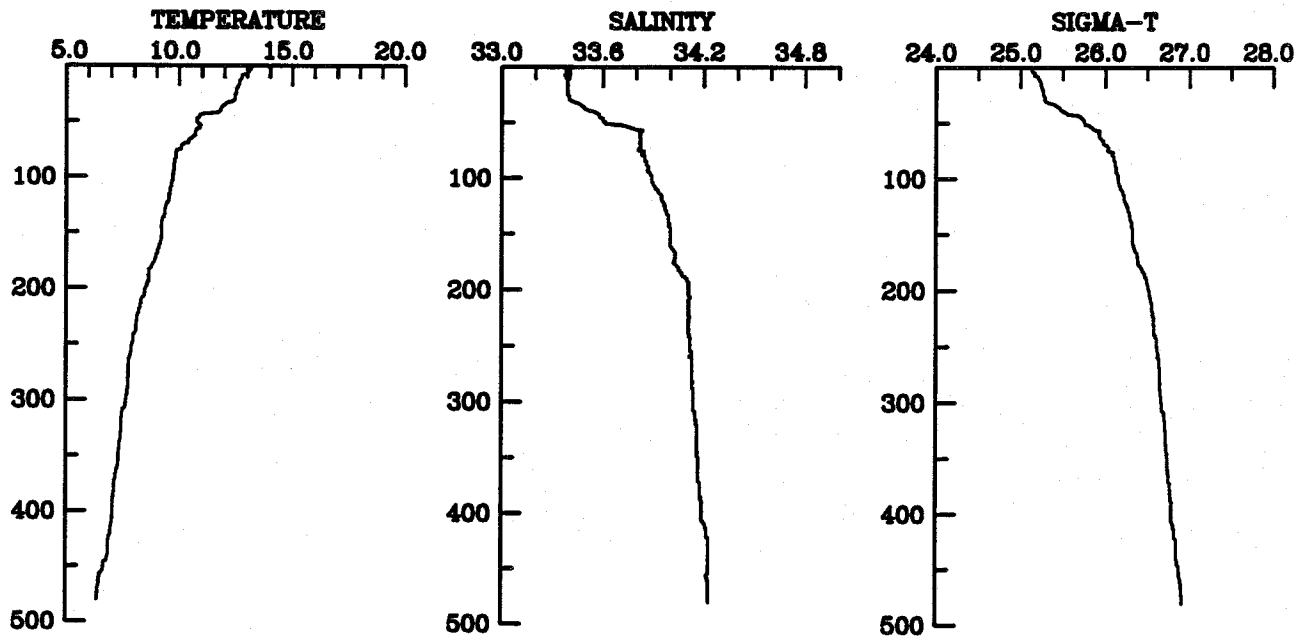
STATION G5 CAST 284
18 April 1983 2206 GMT
CTD Transect G-5



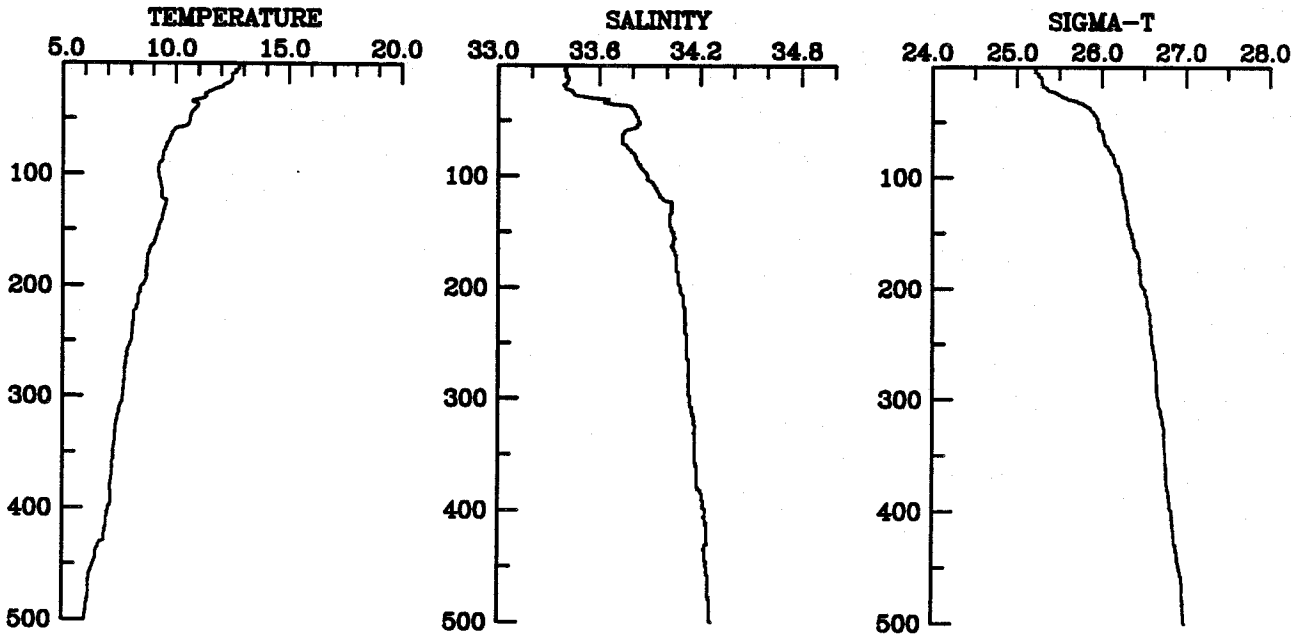
STATION G6 CAST 285
18 April 1983 2336 GMT
CTD Transect G-5



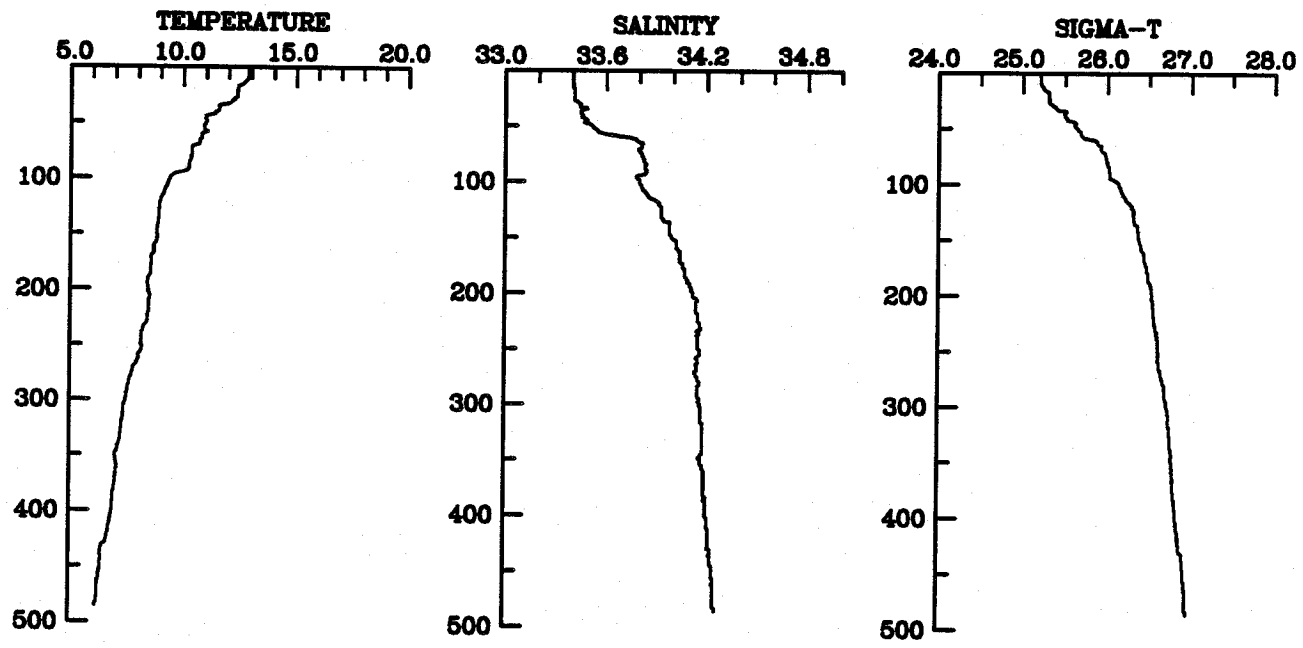
STATION G7 CAST 286
19 April 1983 100 GMT
CTD Transect G-5



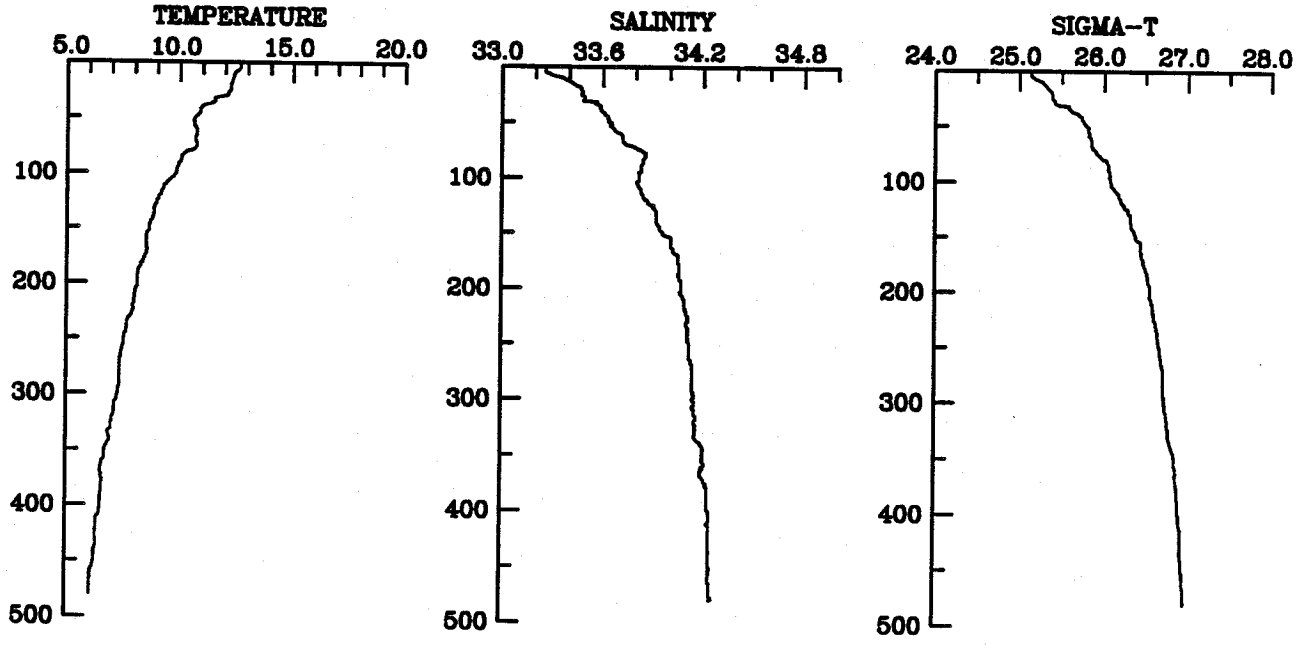
STATION G8 CAST 287
19 April 1983 330 GMT
CTD Transect G-5



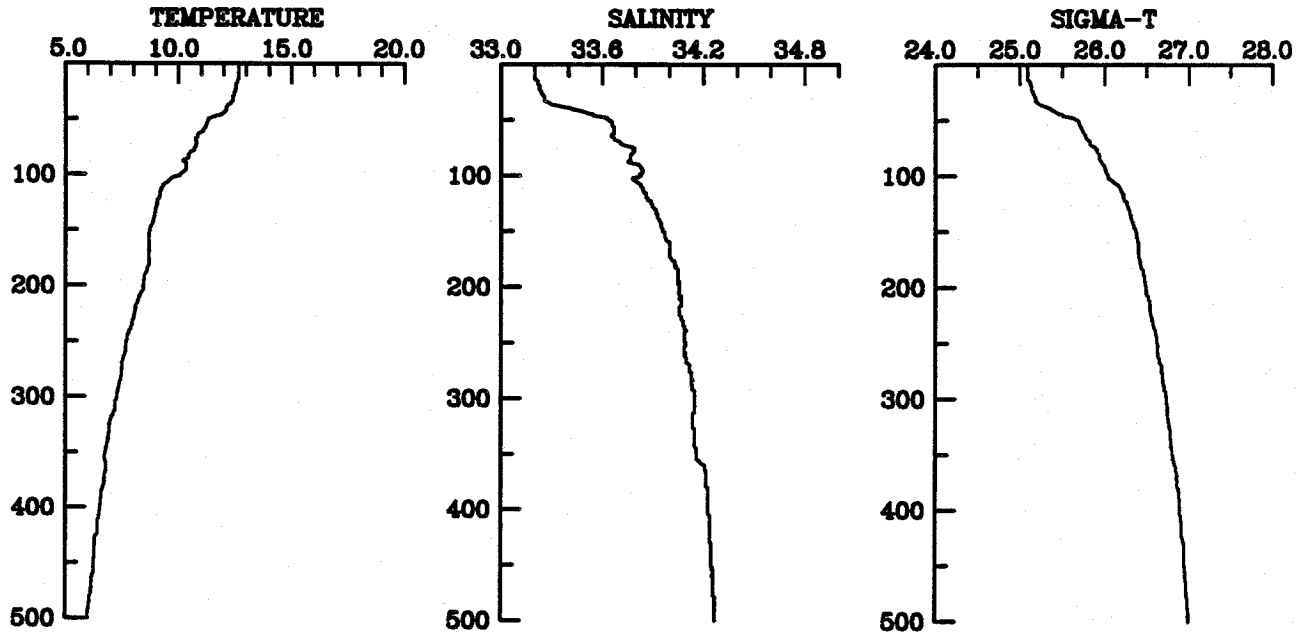
STATION G9 CAST 288
19 April 1983 454 GMT
CTD Transect G-5



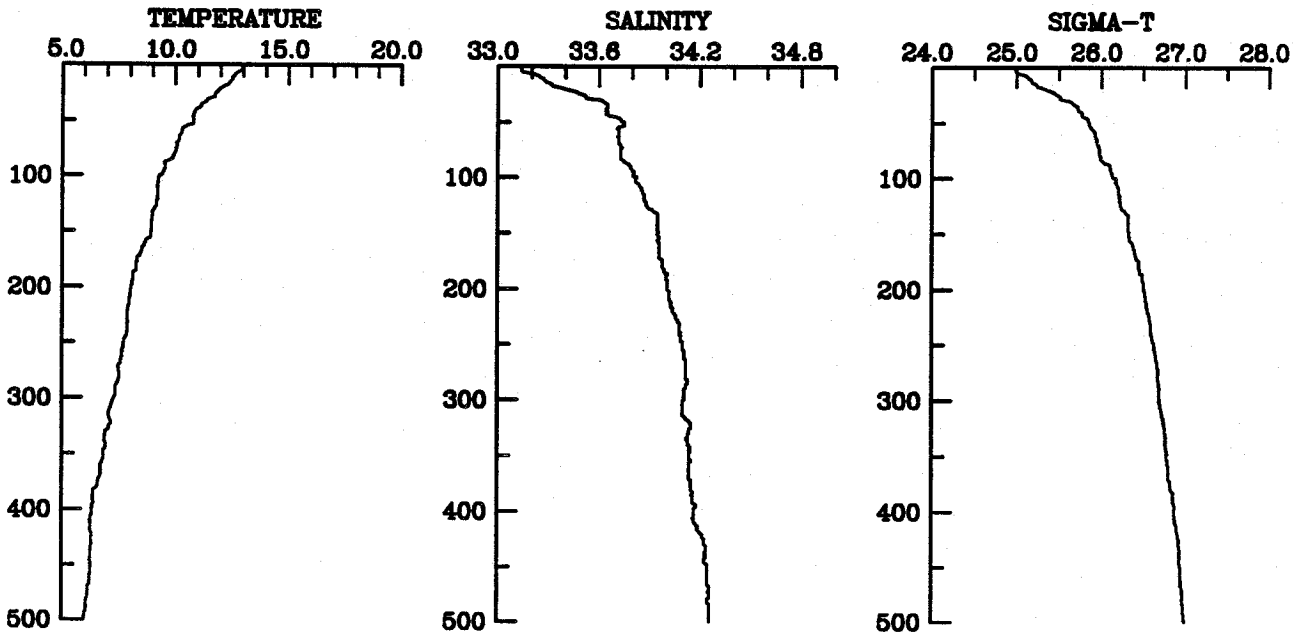
STATION G10 CAST 289
19 April 1983 642 GMT
CTD Transect G-5



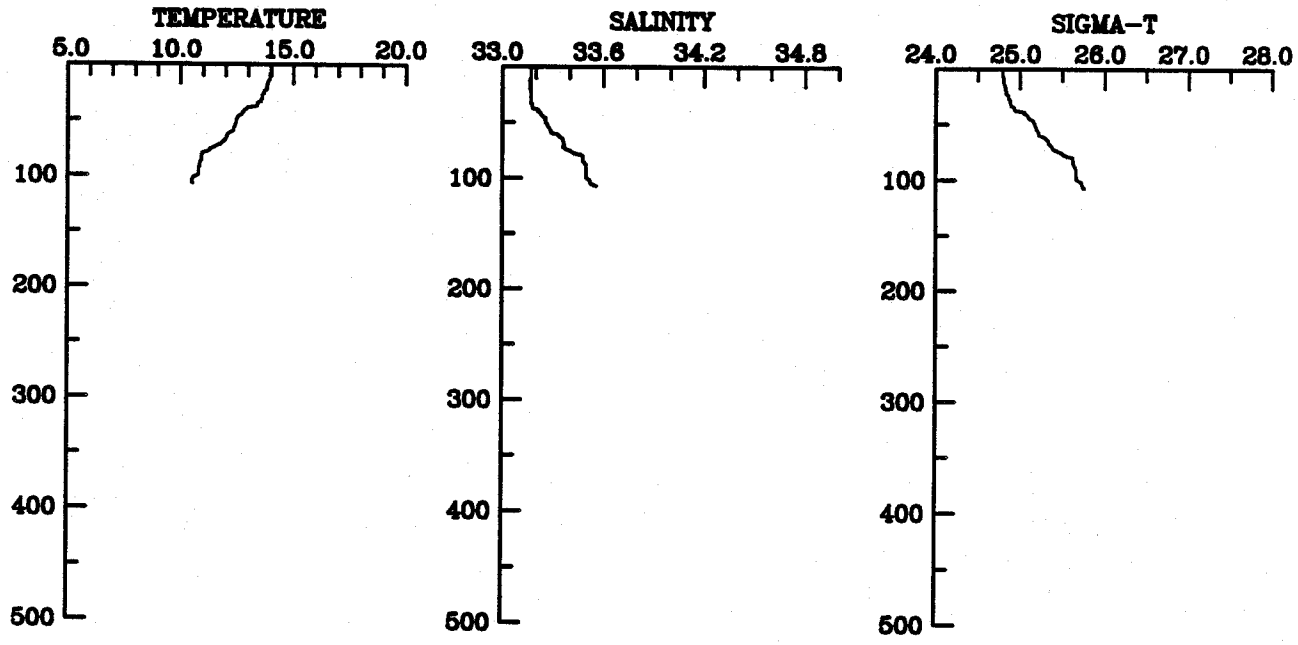
STATION G11 CAST 290
19 April 1983 806 GMT
CTD Transect G-5



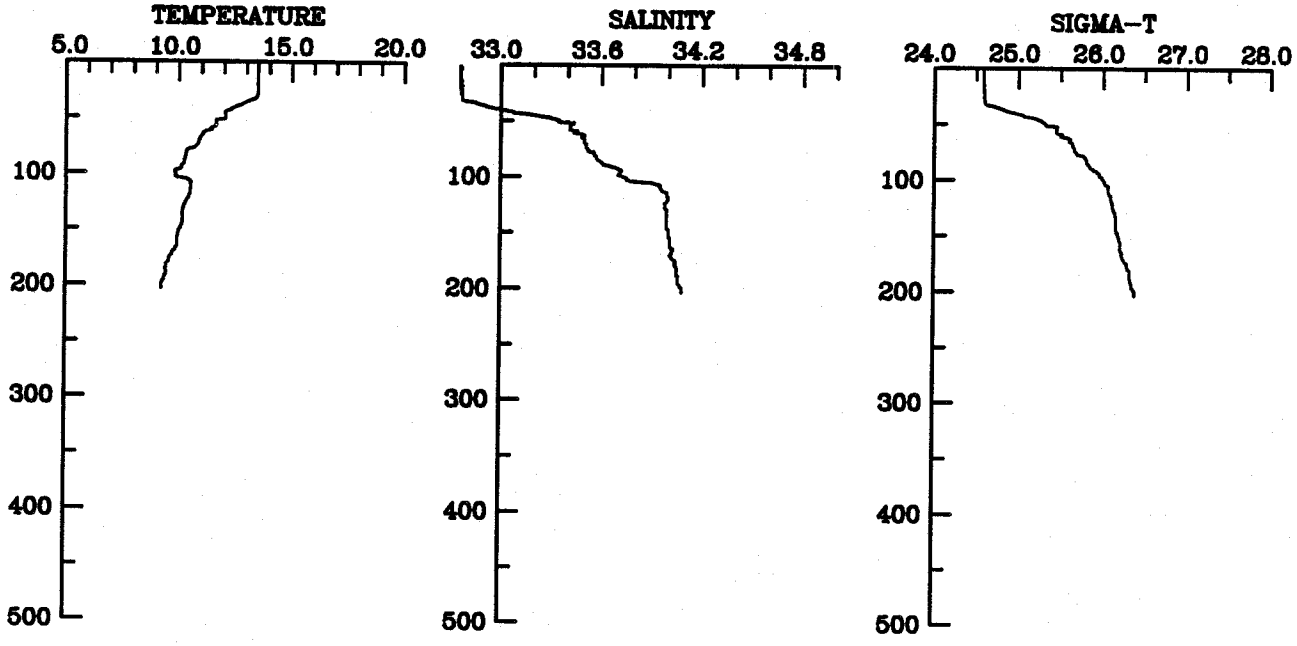
STATION G12 CAST 291
19 April 1983 1006 GMT
CTD Transect G-5



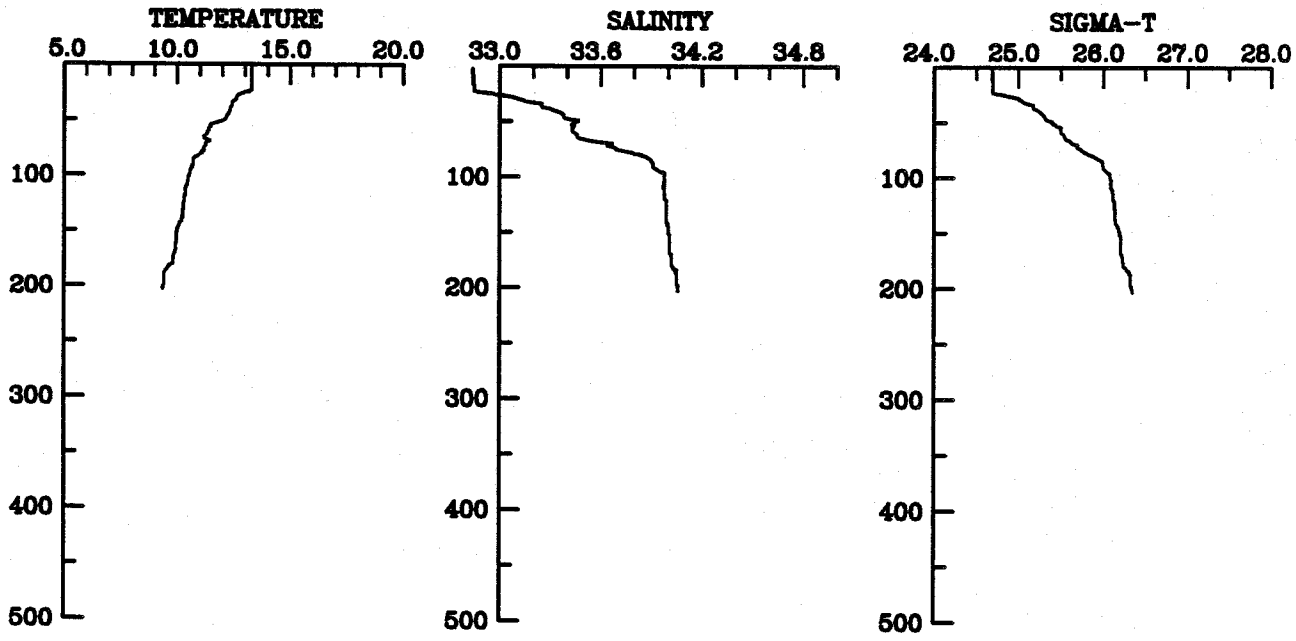
STATION U1 CAST 292
19 April 1983 1418 GMT
XBT Transect U-1
XBT Map 5



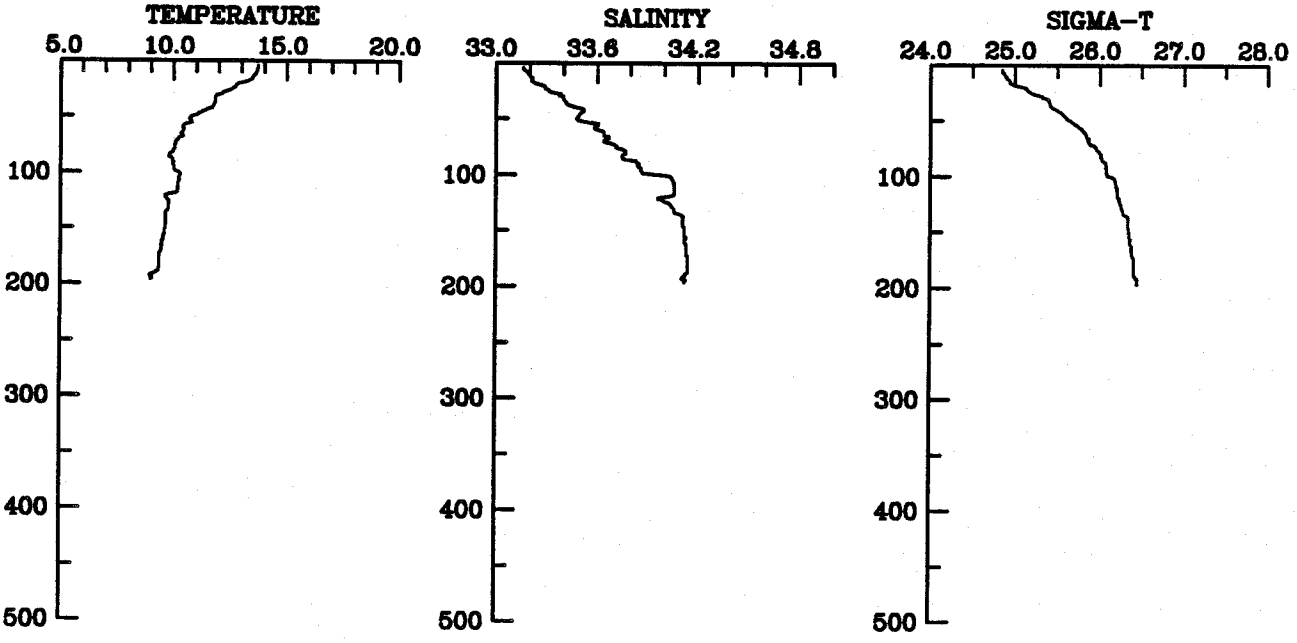
STATION U14 CAST 305
19 April 1983 1924 GMT
XBT Transect U-1
XBT Map 5



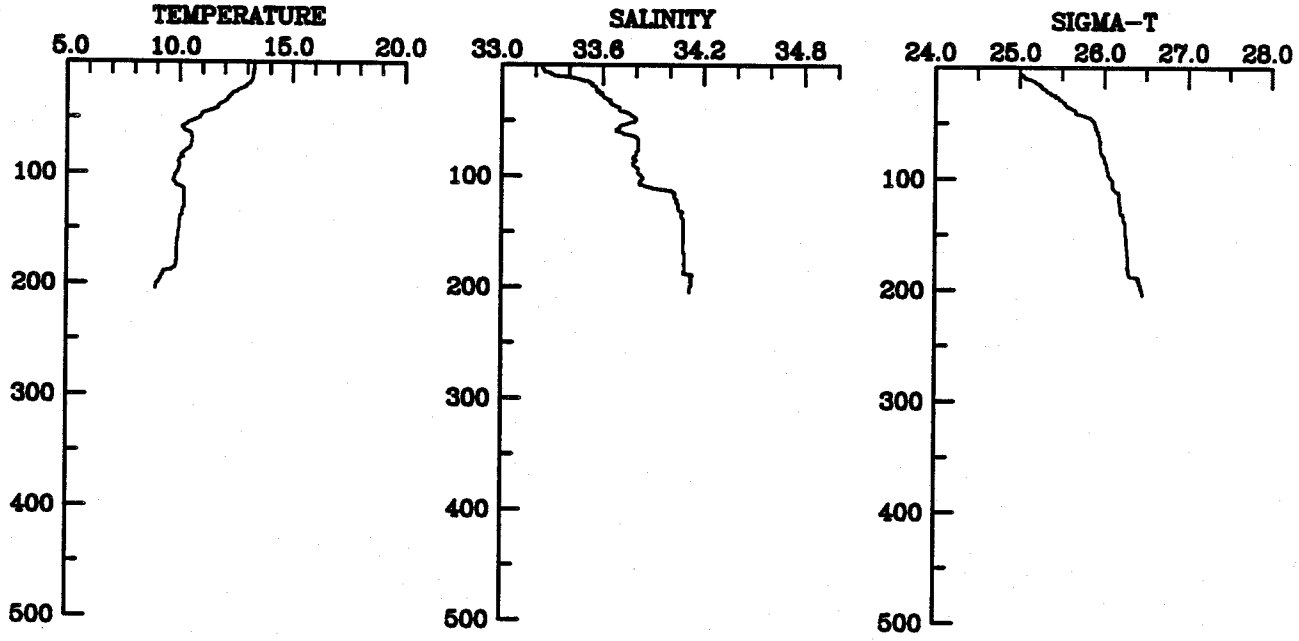
STATION V13 CAST 306
19 April 1983 2000 GMT
XBT Transect V-1
XBT Map 5



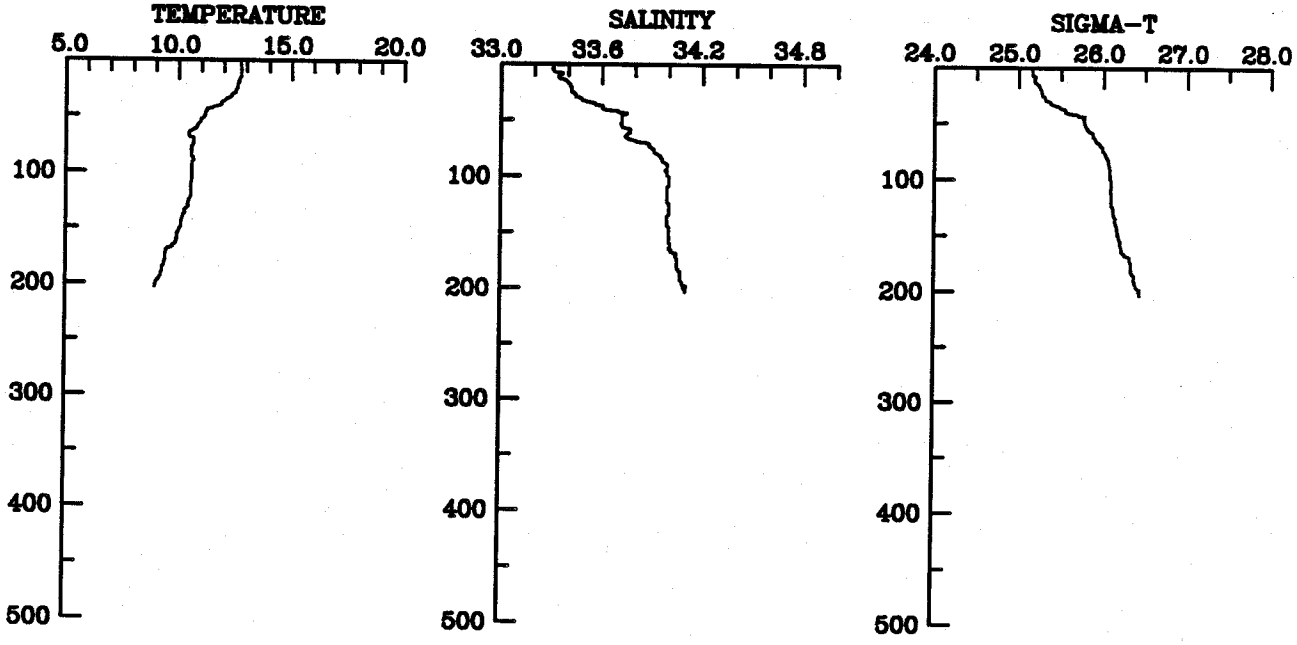
STATION V1 CAST 318
20 April 1983 154 GMT
XBT Transect V-1
XBT Map 5



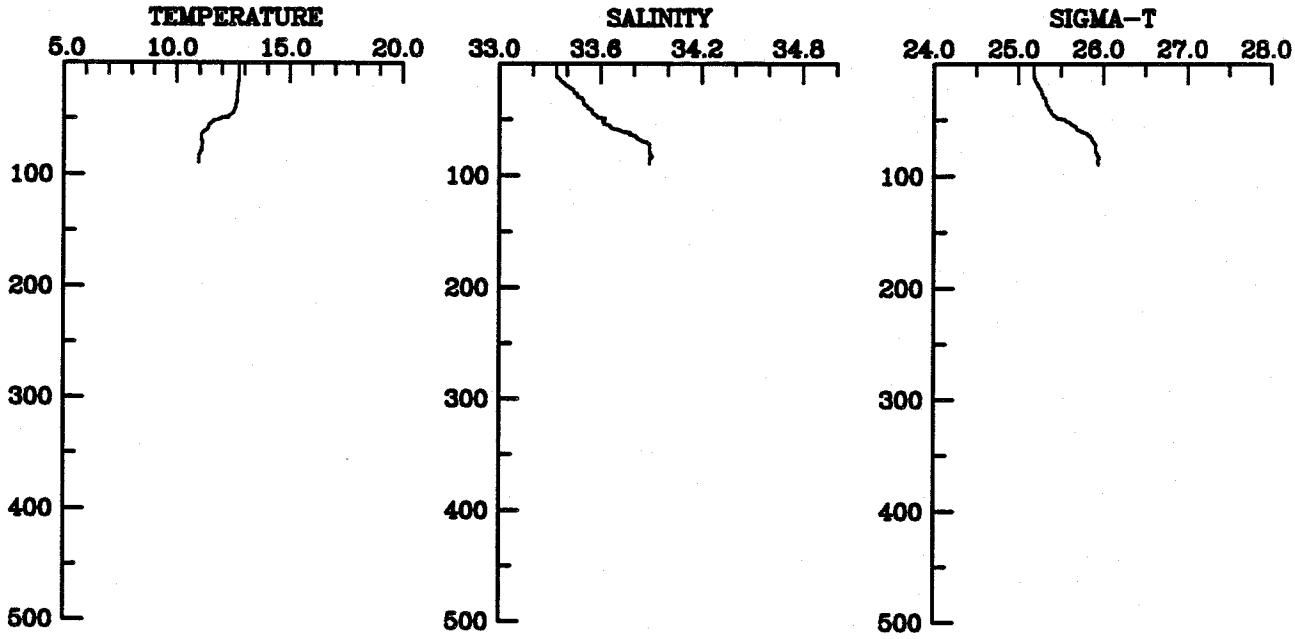
STATION W1 CAST 320
20 April 1983 242 GMT
XBT Transect W-1
XBT Map 5



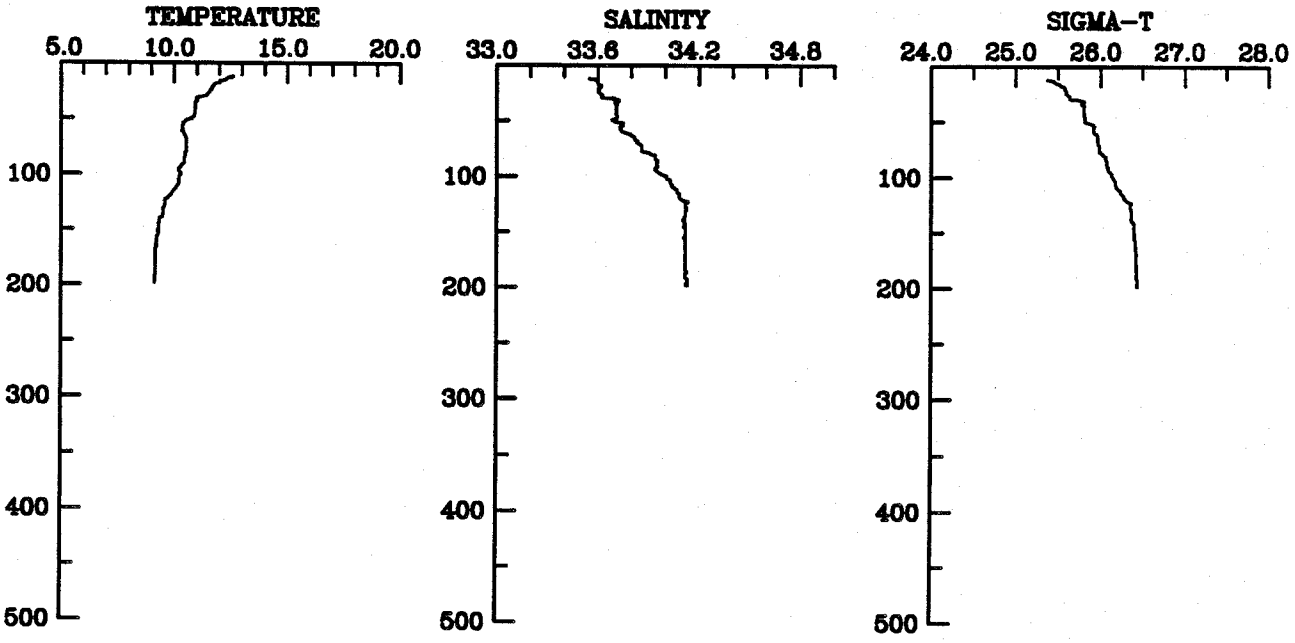
STATION W11 CAST 330
20 April 1983 754 GMT
XBT Transect W-1
XBT Map 5



STATION X10 CAST 332
20 April 1983 854 GMT
XBT Transect X-1
XBT Map 5

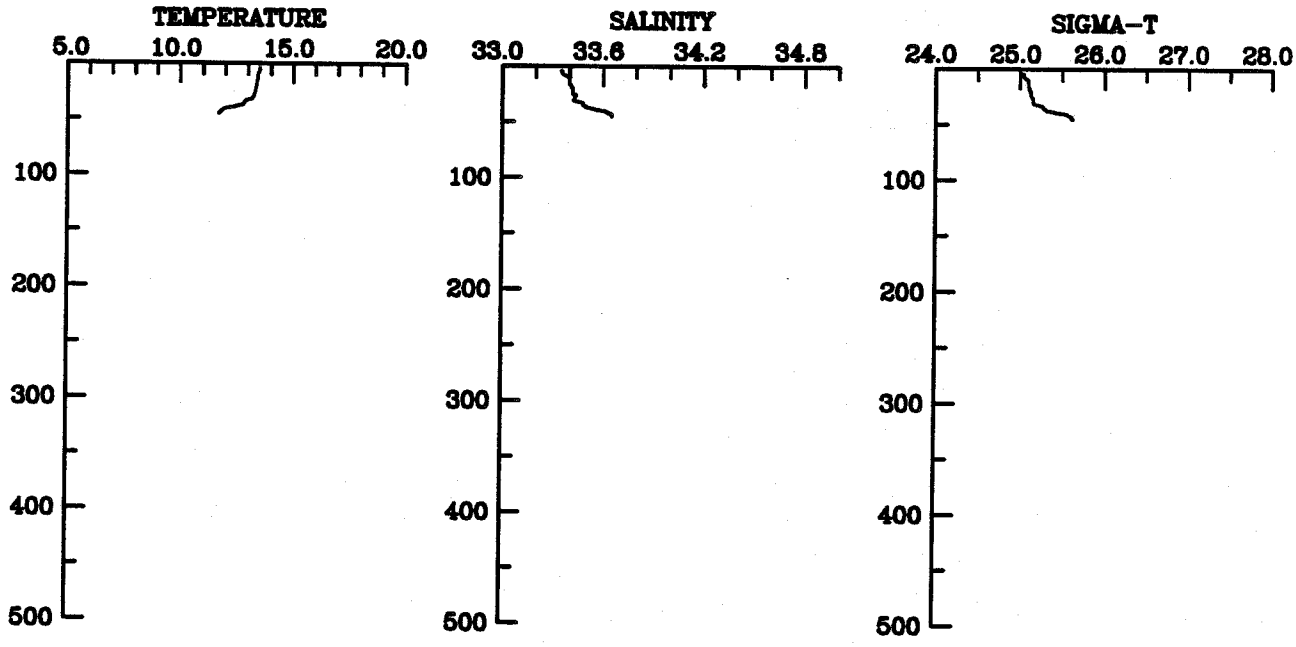


STATION X1 CAST 341
20 April 1983 1148 GMT
XBT Transect X-1
XBT Map 5



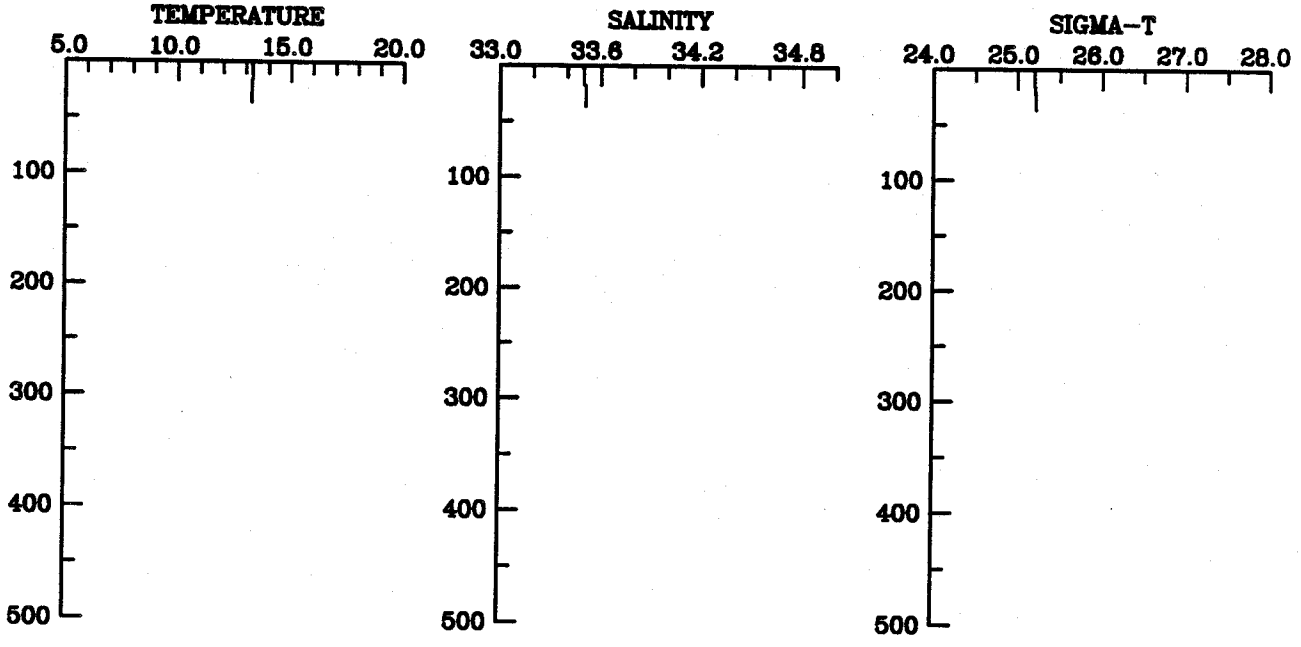
STATION C1 CAST 343
20 April 1983 1242 GMT

XBT Map 5



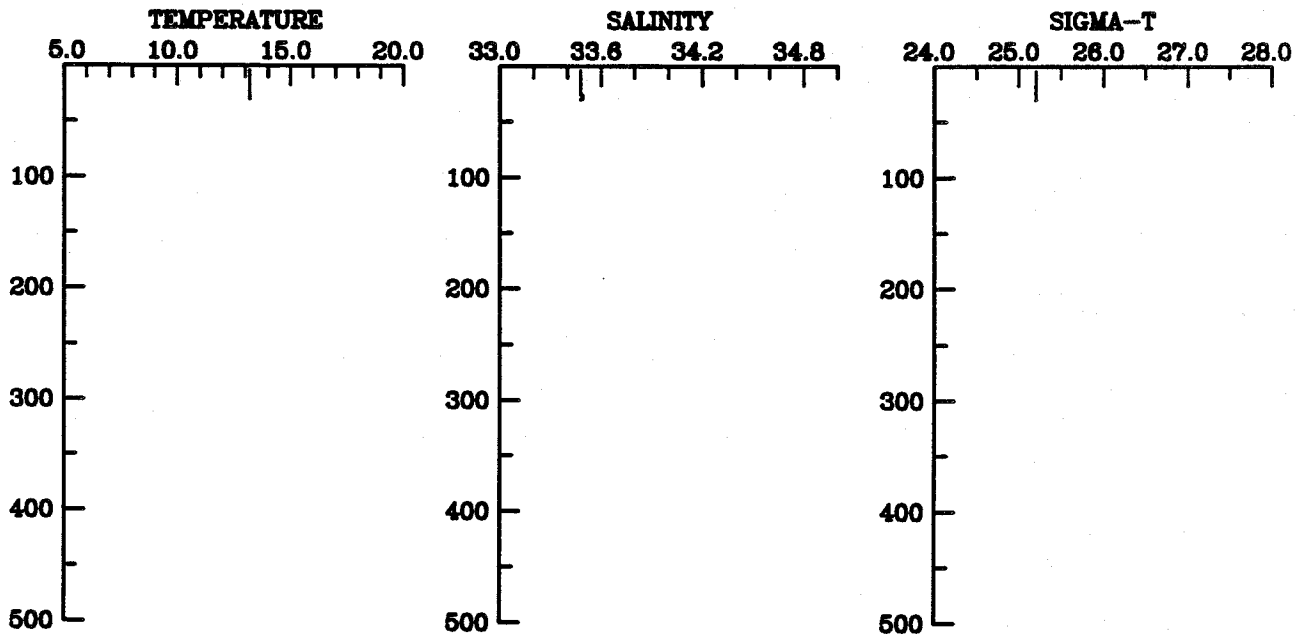
STATION GC1 CAST 344
20 April 1983 1318 GMT

XBT Map 5



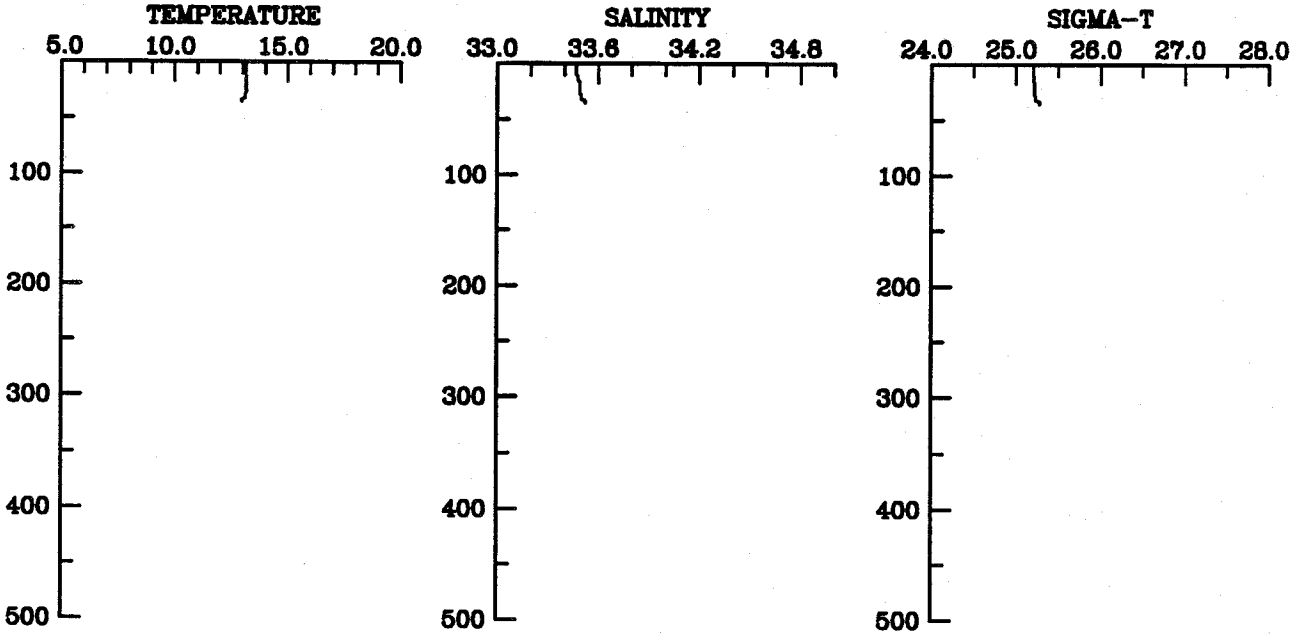
STATION G1 CAST 345
20 April 1983 1412 GMT

XBT Map 5



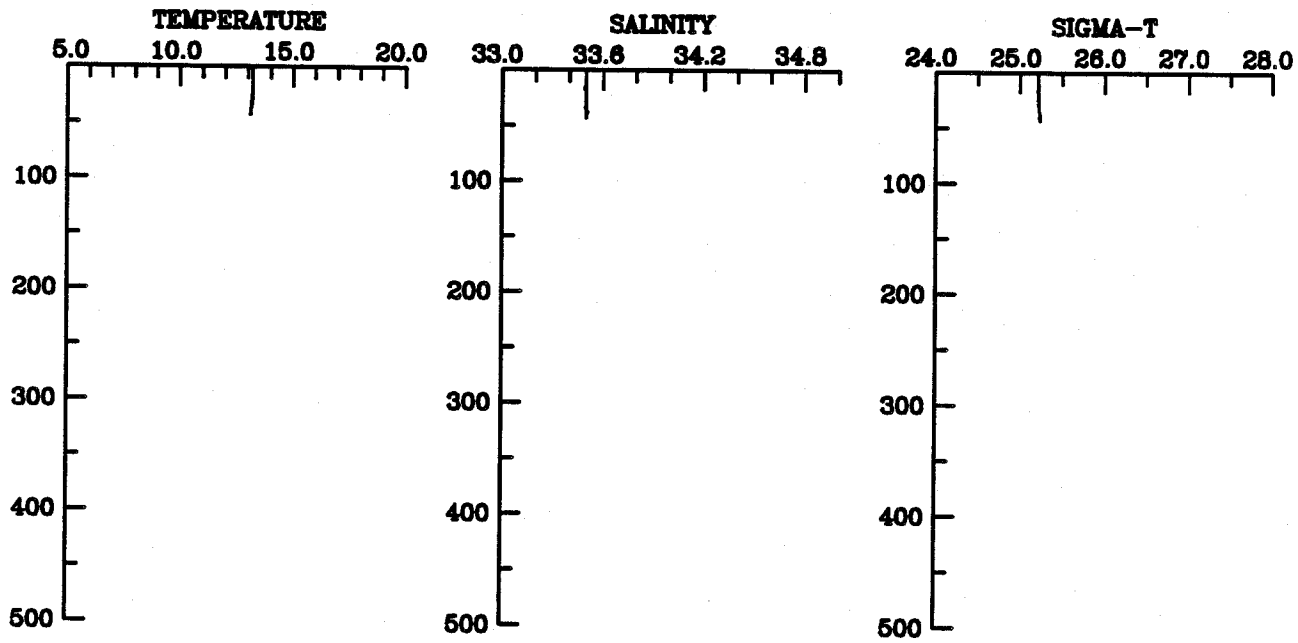
STATION AG1 CAST 346
20 April 1983 1530 GMT

XBT Map 5

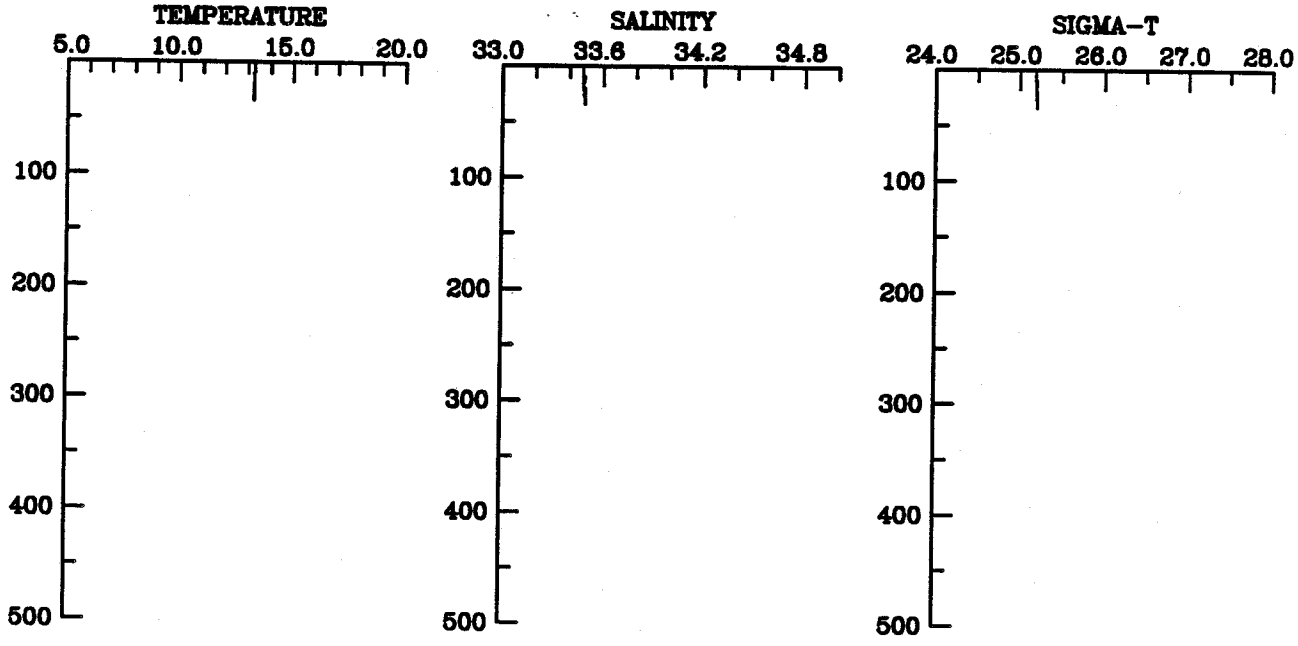


STATION A1 CAST 347
20 April 1983 1600 GMT

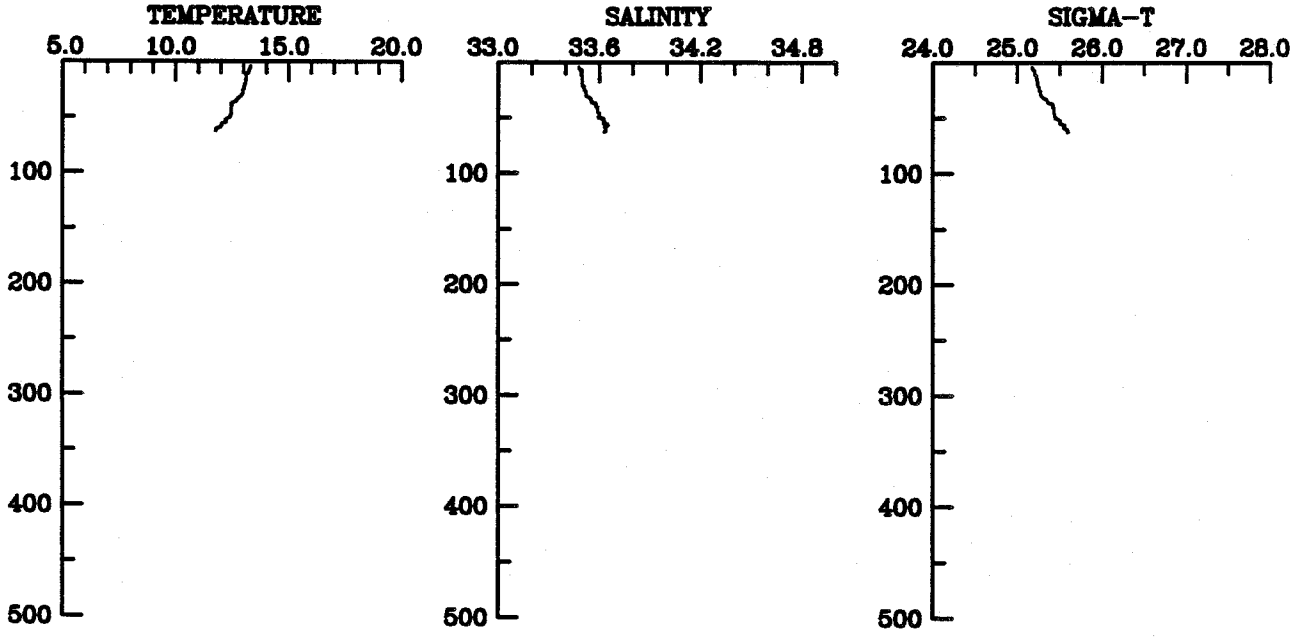
XBT Map 5



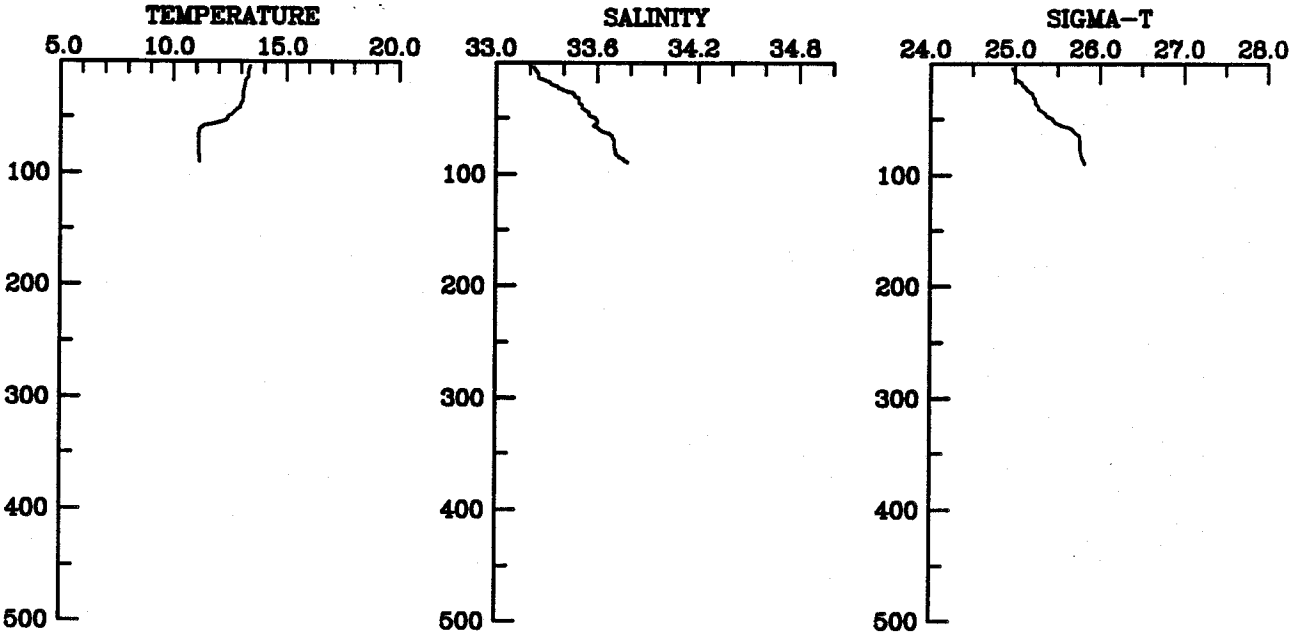
STATION A1 CAST 348
20 April 1983 2342 GMT
CTD Transect A-3
CTD Map 3



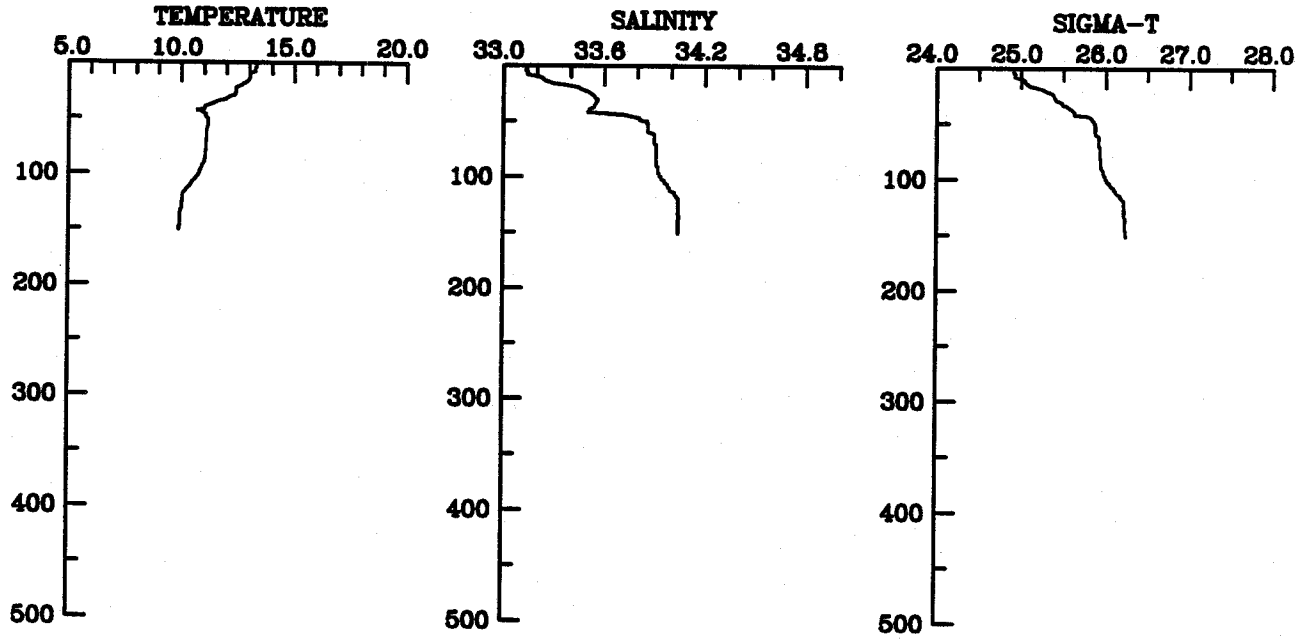
STATION A2 CAST 349
21 April 1983 18 GMT
CTD Transect A-3
CTD Map 3



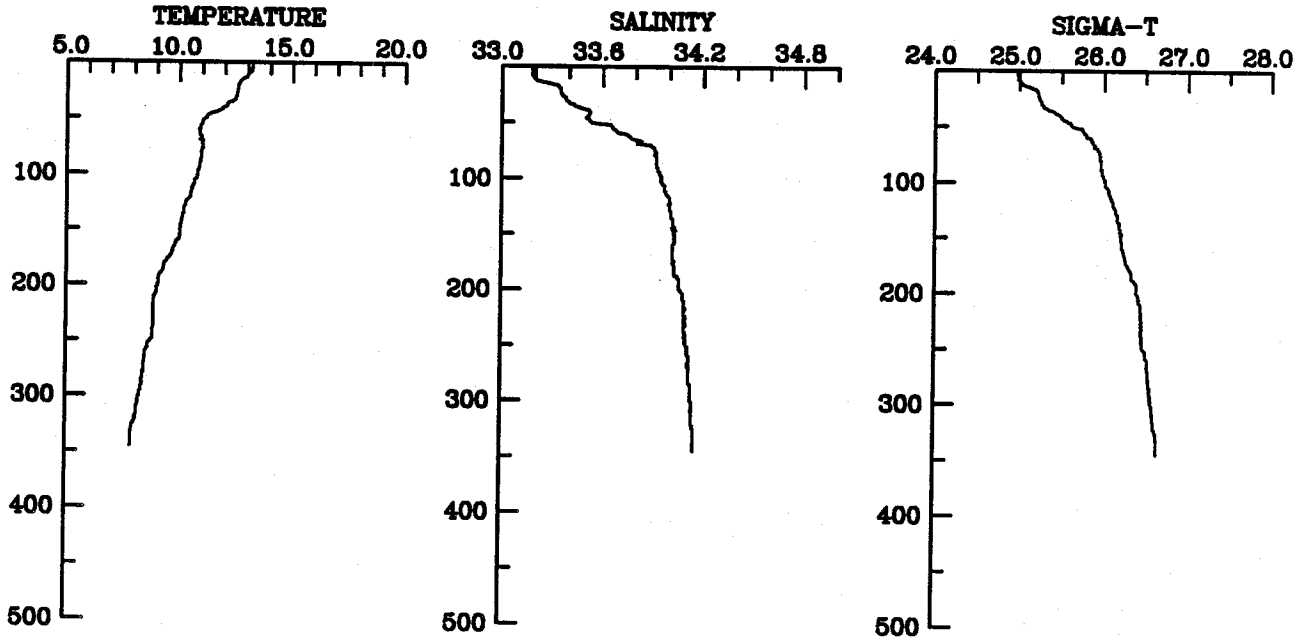
STATION A3 CAST 350
21 April 1983 106 GMT
CTD Transect A-3
CTD Map 3



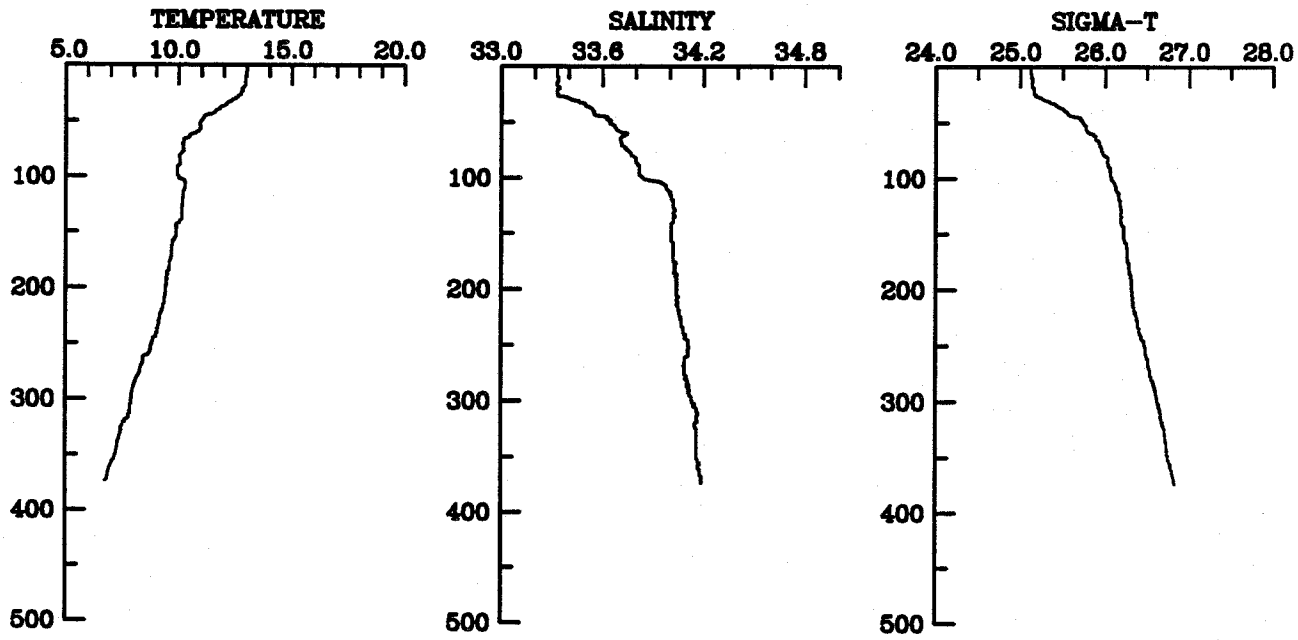
STATION A4 CAST 351
21 April 1983 148 GMT
CTD Transect A-3
CTD Map 3



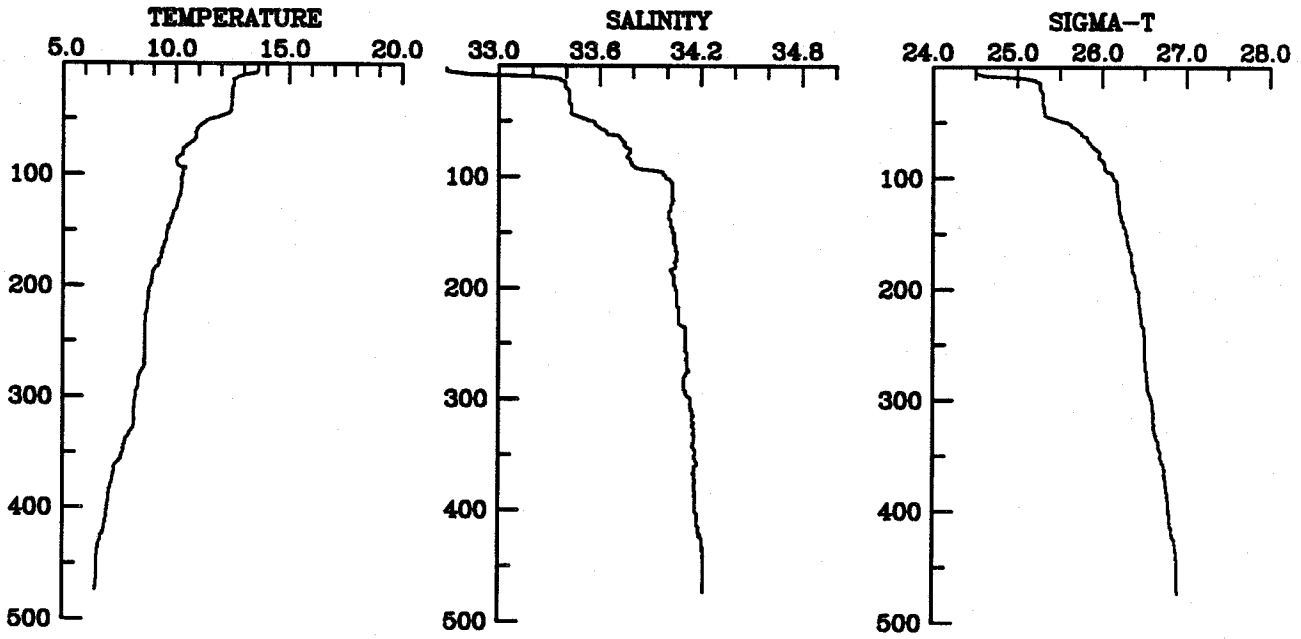
STATION A5 CAST 352
21 April 1983 242 GMT
CTD Transect A-3
CTD Map 3



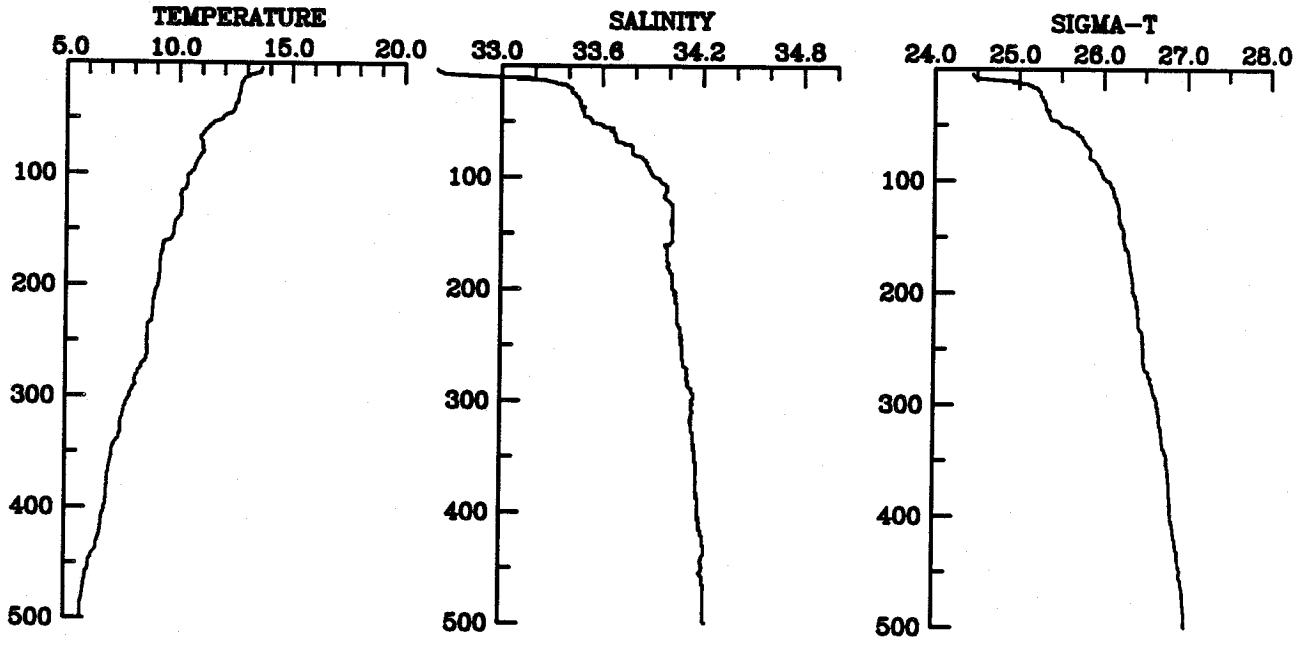
STATION A6 CAST 353
21 April 1983 400 GMT
CTD Transect A-3
CTD Map 3



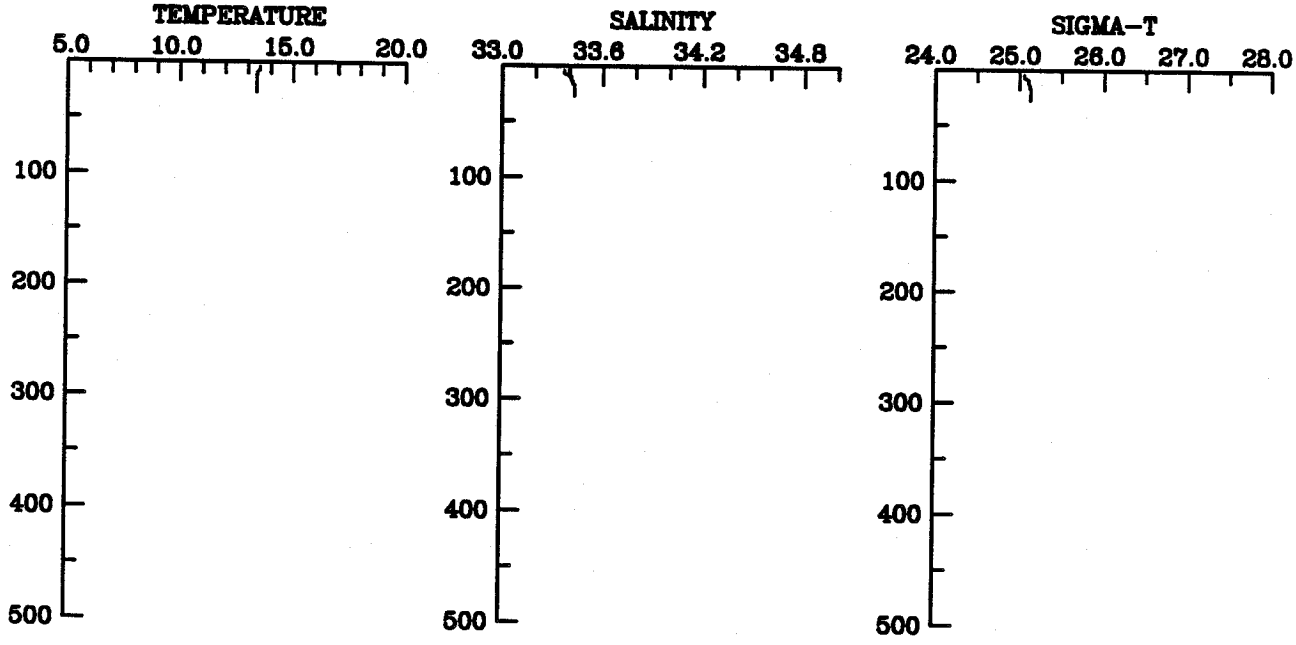
STATION A7 CAST 354
21 April 1983 512 GMT
CTD Transect A-3
CTD Map 3



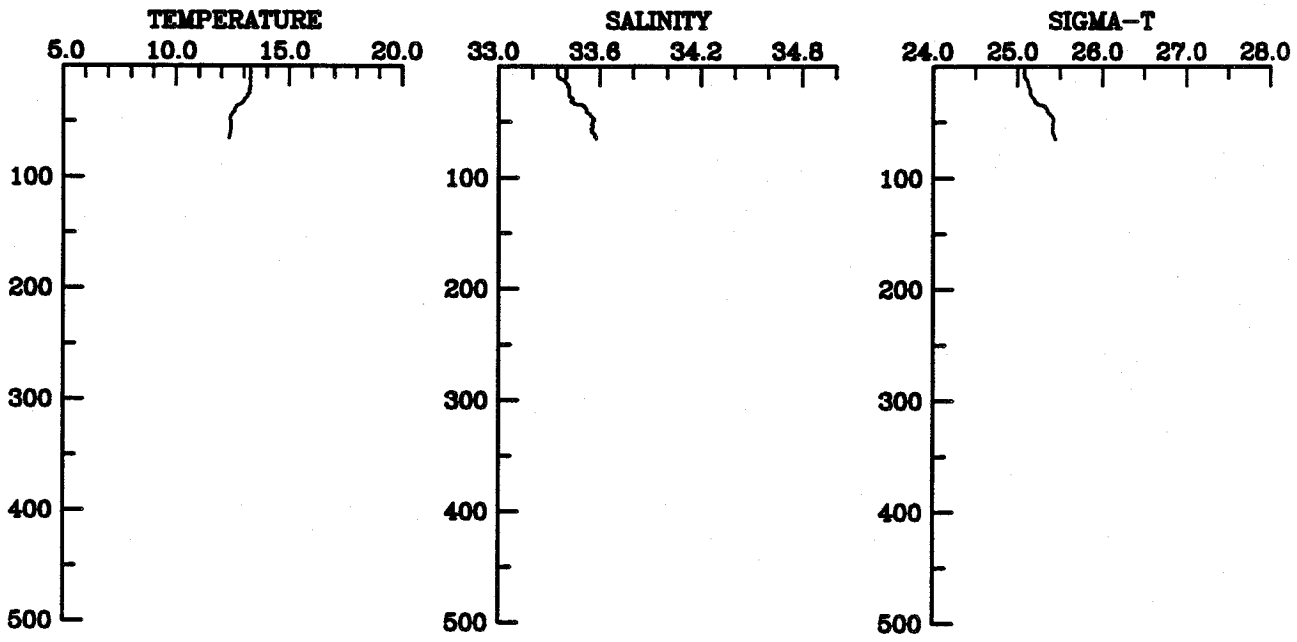
STATION A8 CAST 355
21 April 1983 624 GMT
CTD Transect A-3
CTD Map 3



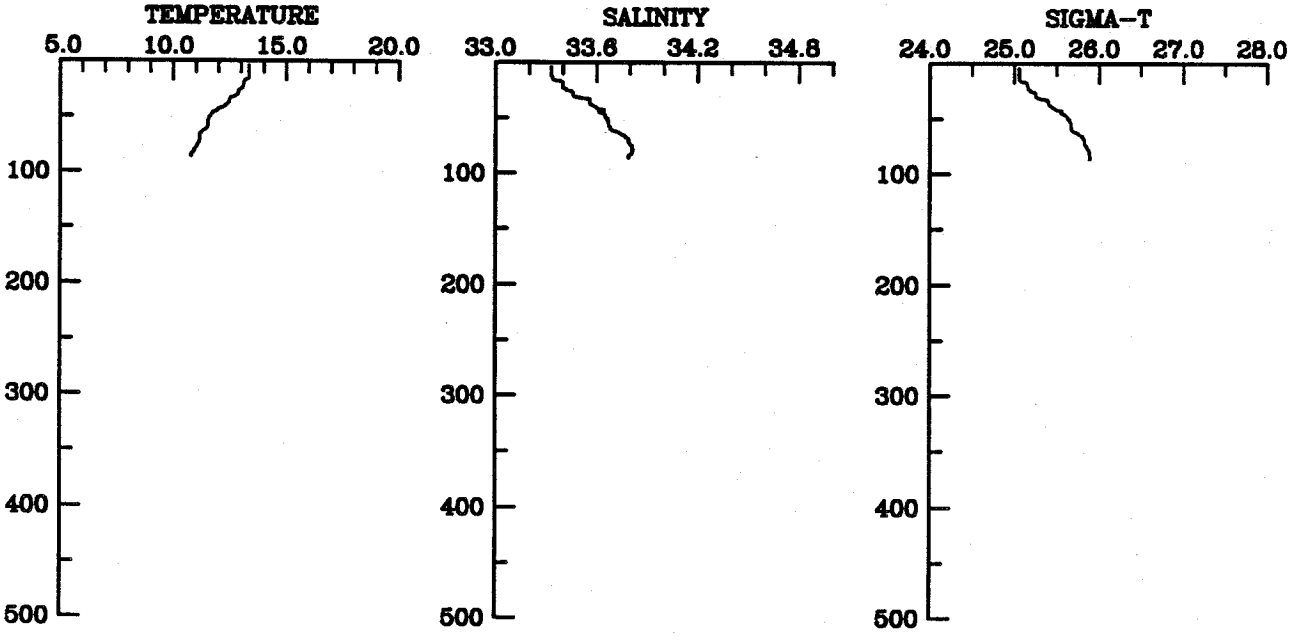
STATION G1 CAST 356
21 April 1983 948 GMT
CTD Transect G-6
CTD Map 3



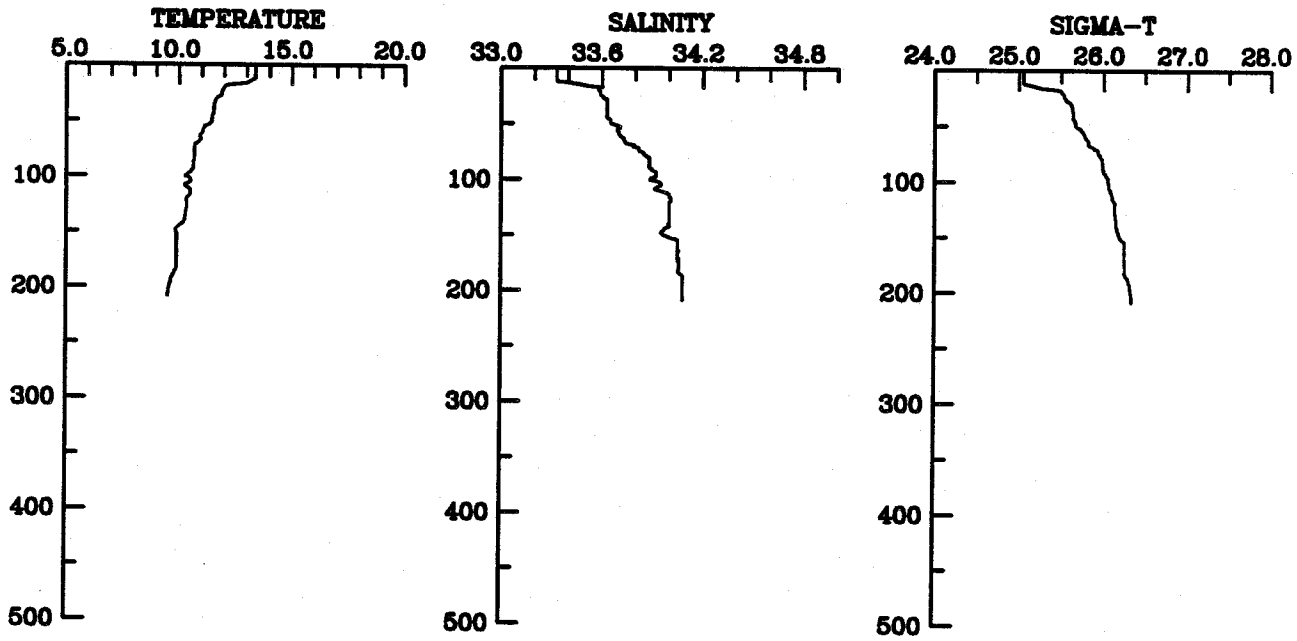
STATION G2 CAST 357
21 April 1983 1018 GMT
CTD Transect G-6
CTD Map 3



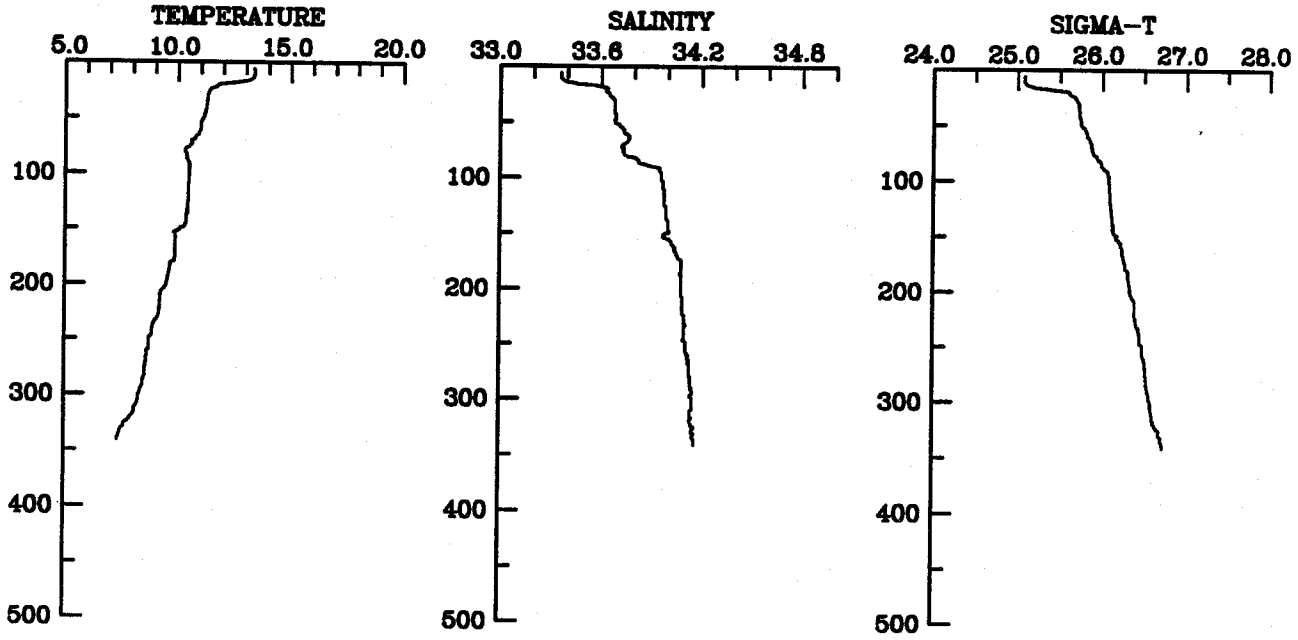
STATION G3 CAST 358
21 April 1983 1212 GMT
CTD Transect G-6
CTD Map 3



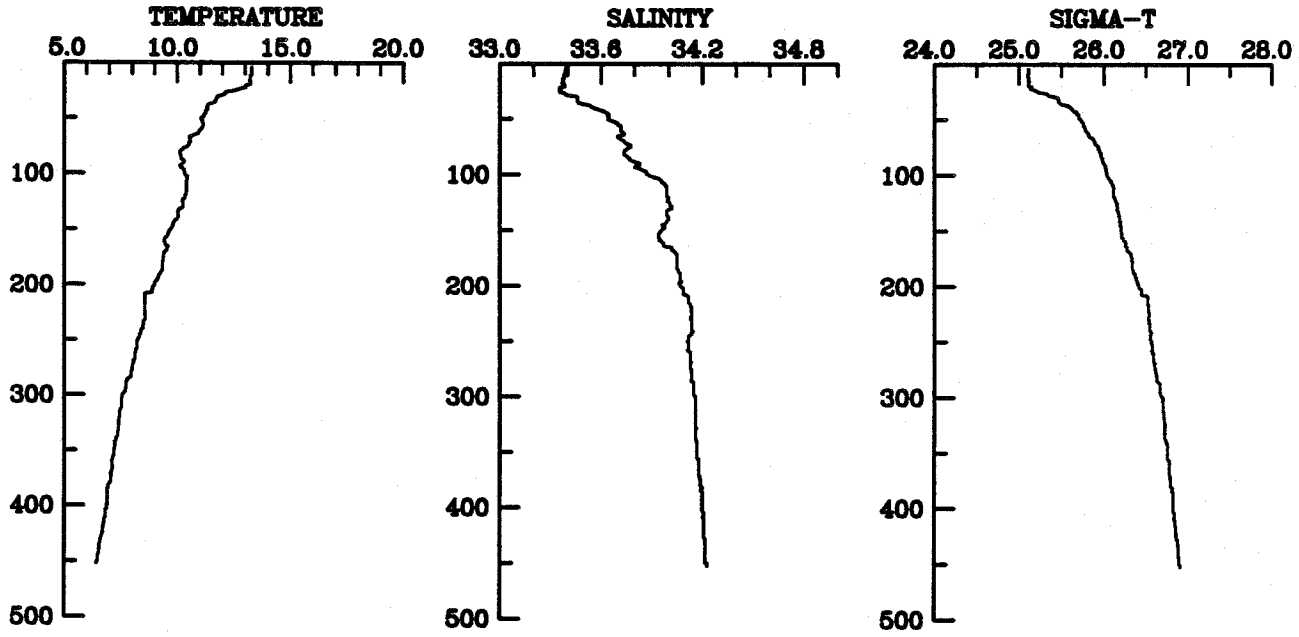
STATION G4 CAST 359
21 April 1983 1312 GMT
CTD Transect G-6
CTD Map 3



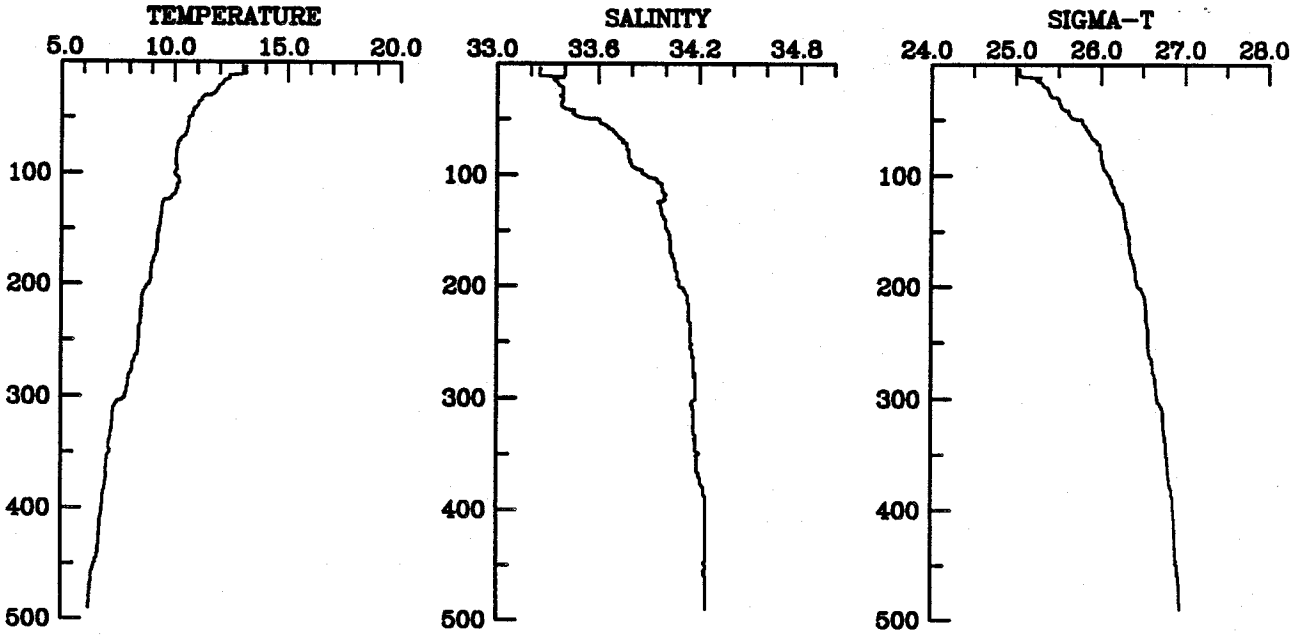
STATION G5 CAST 360
21 April 1983 1406 GMT
CTD Transect G-6
CTD Map 3



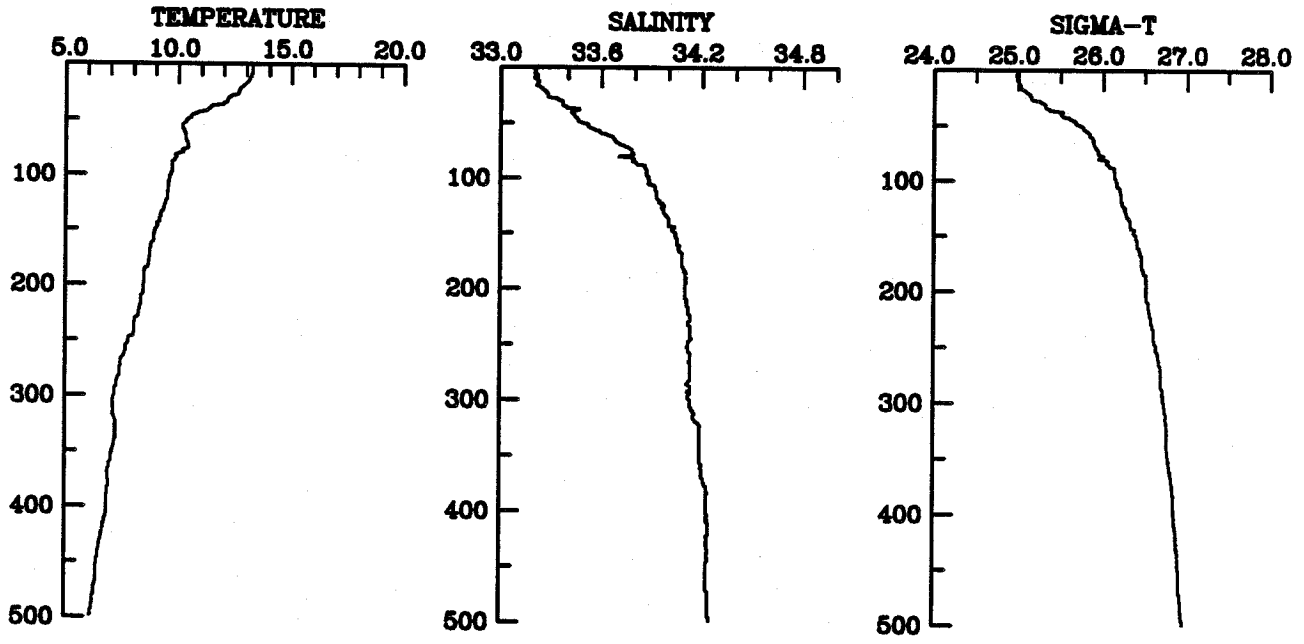
STATION G6 CAST 361
21 April 1983 1506 GMT
CTD Transect G-6
CTD Map 3



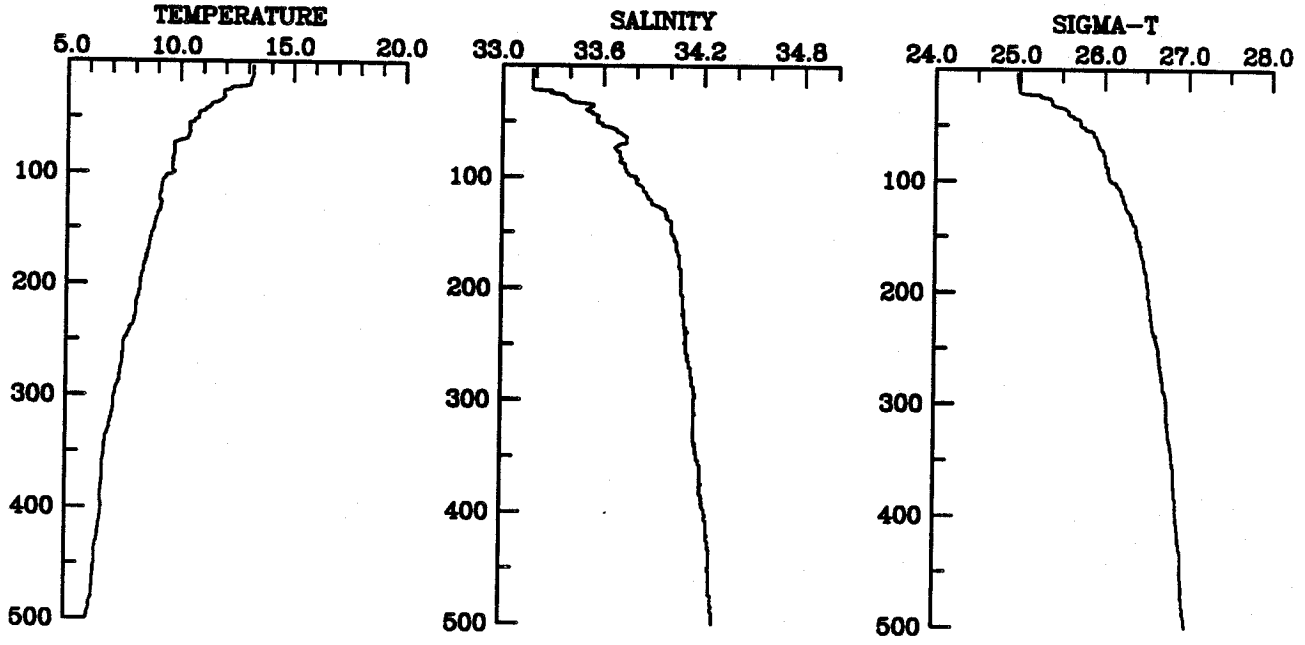
STATION G7 CAST 362
21 April 1983 1636 GMT
CTD Transect G-6
CTD Map 3



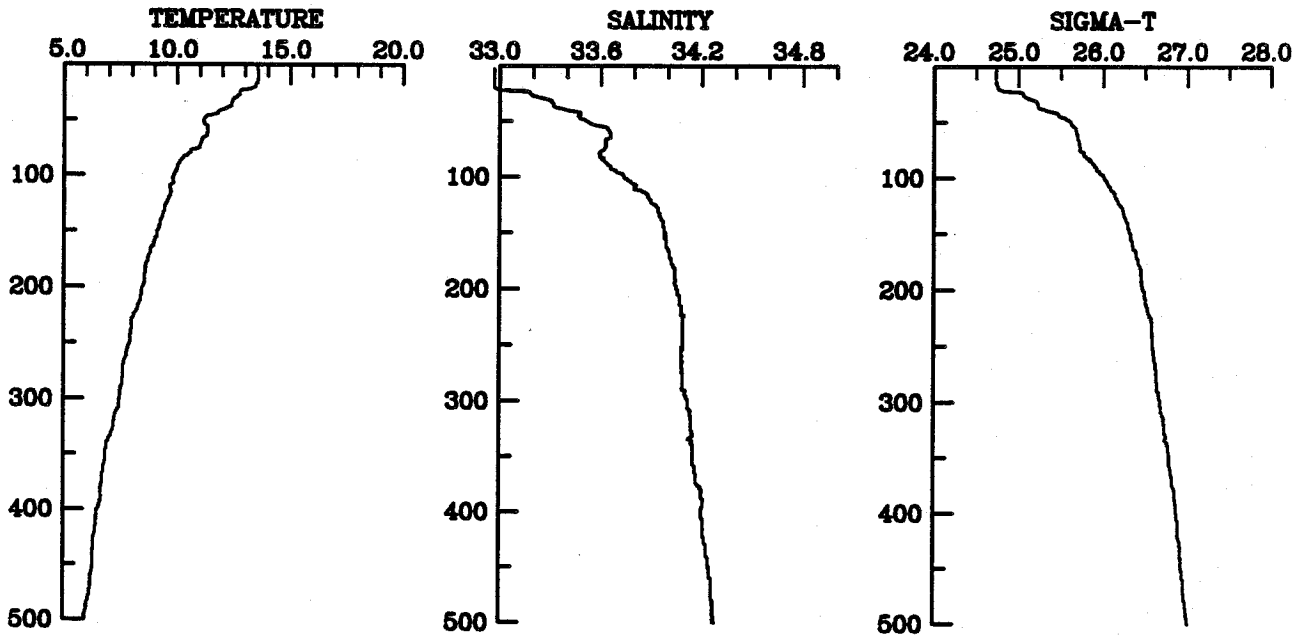
STATION G8 CAST 363
21 April 1983 1848 GMT
CTD Transect G-6
CTD Map 3



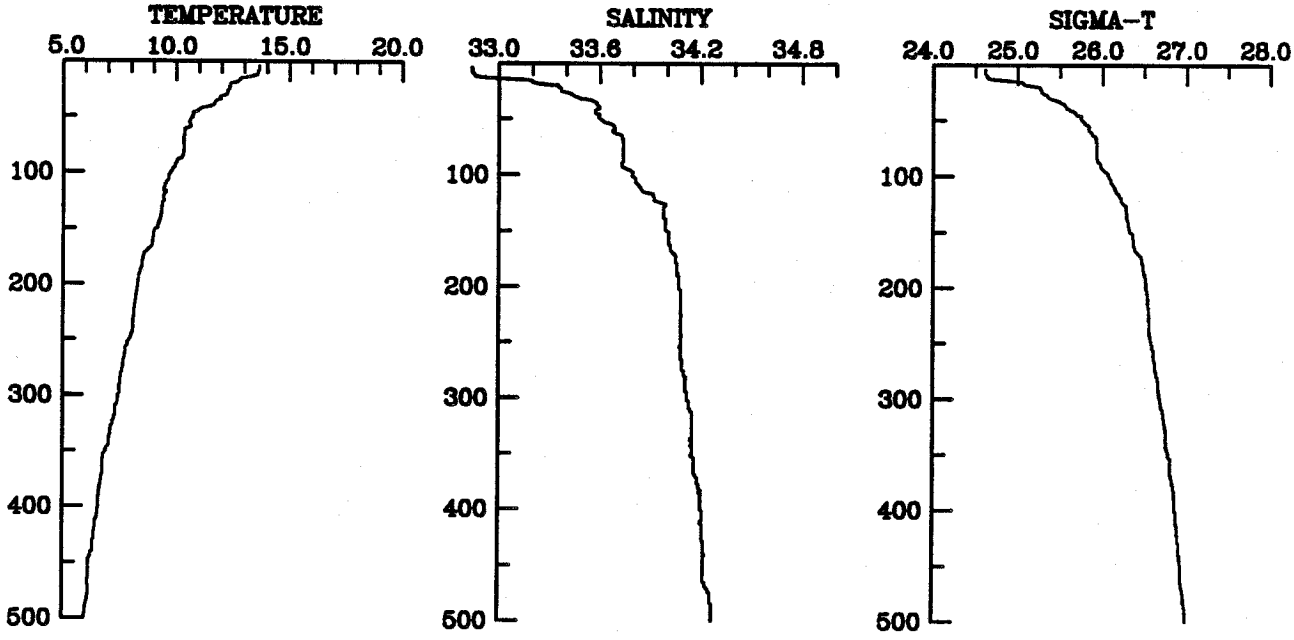
STATION G9 CAST 364
21 April 1983 2018 GMT
CTD Transect G-6
CTD Map 3



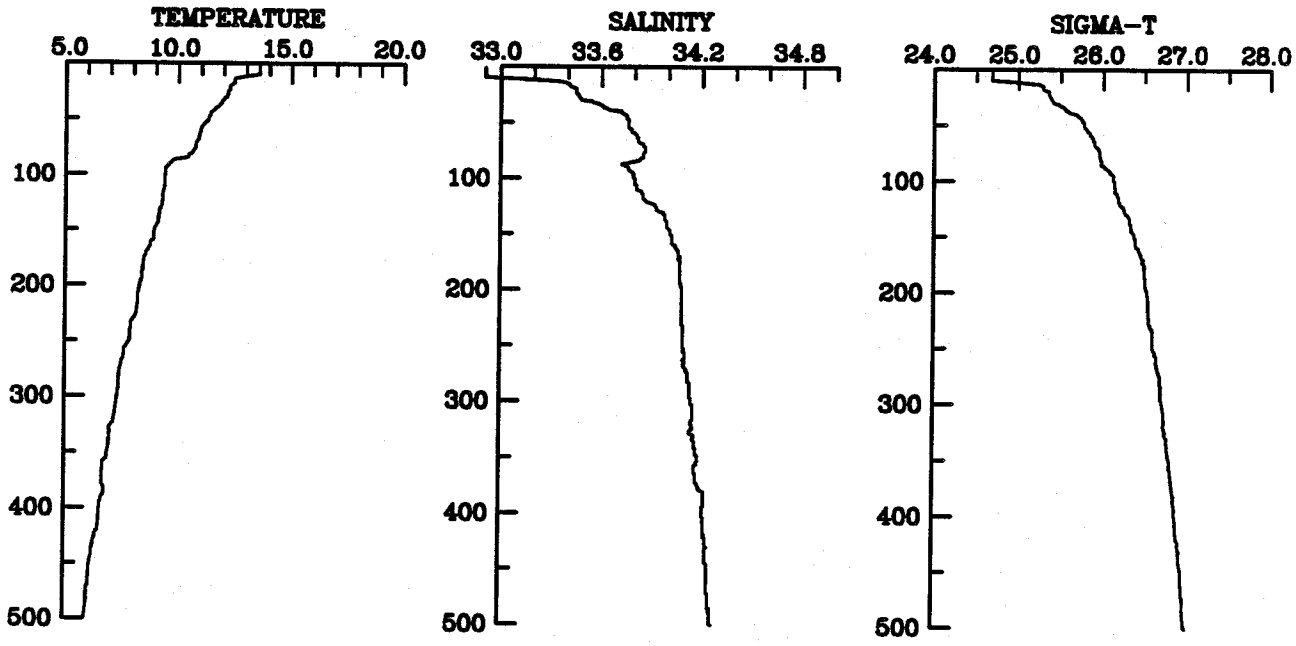
STATION G10 CAST 365
21 April 1983 2200 GMT
CTD Transect G-6
CTD Map 3



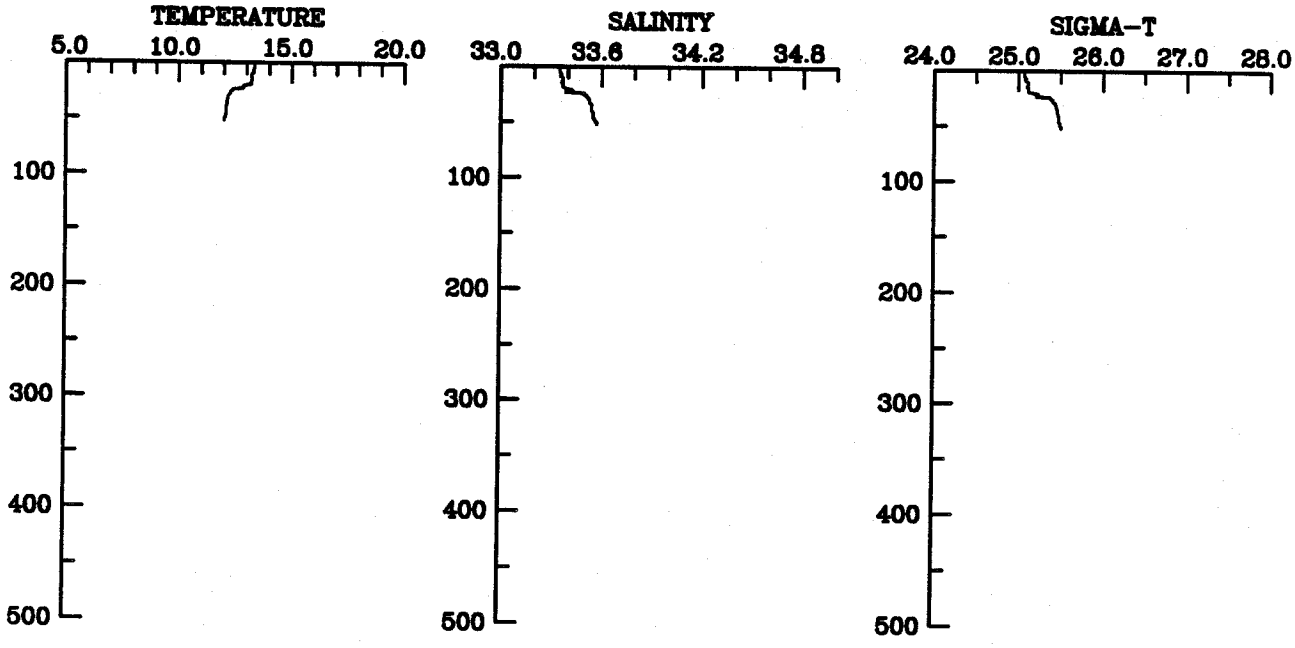
STATION G11 CAST 366
21 April 1983 2324 GMT
CTD Transect G-6
CTD Map 3



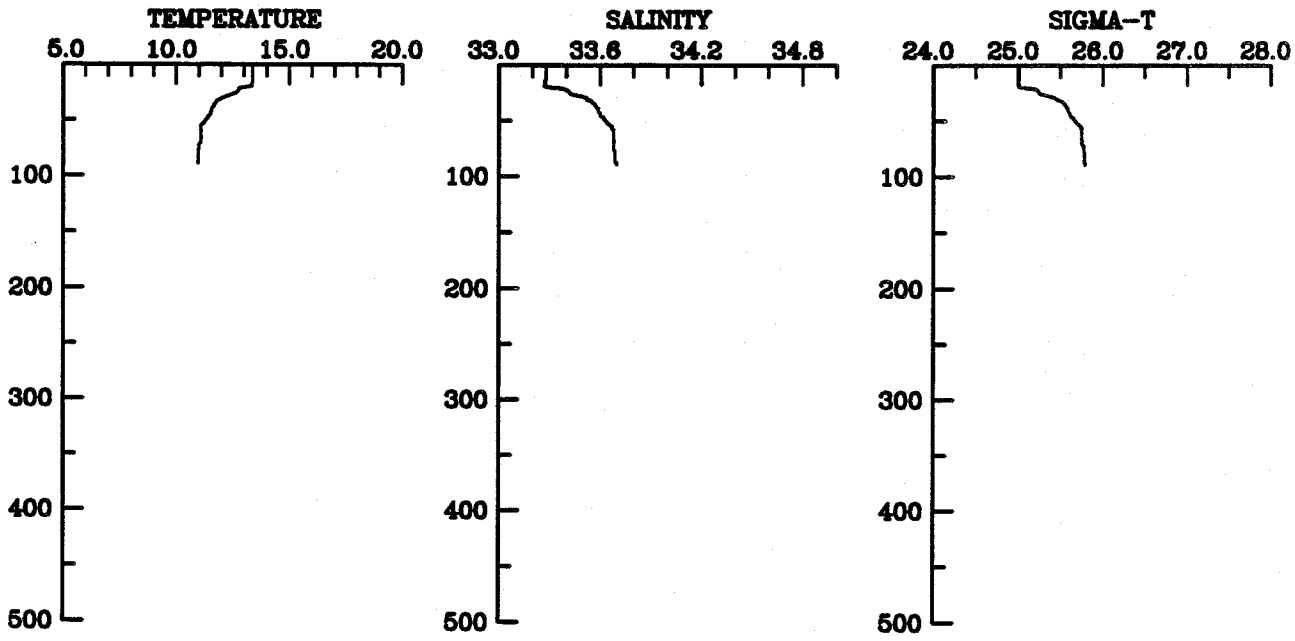
STATION G12 CAST 367
22 April 1983 36 GMT
CTD Transect G-6
CTD Map 3



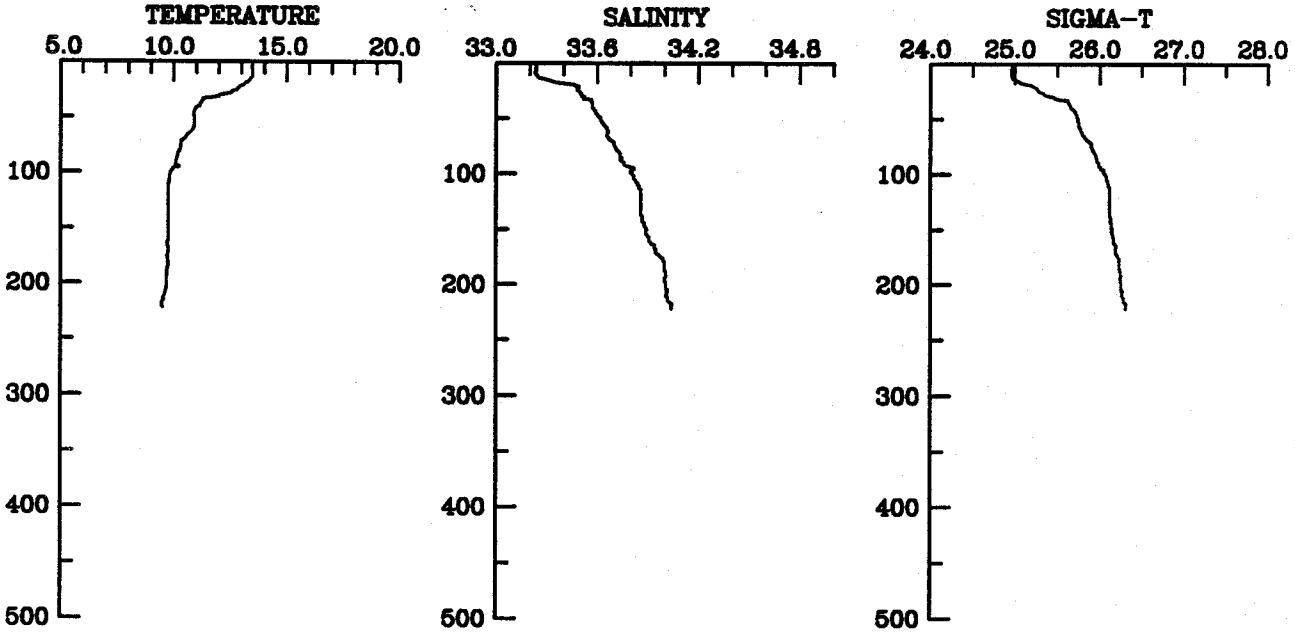
STATION C1 CAST 368
22 April 1983 654 GMT
CTD Transect C-3
CTD Map 3



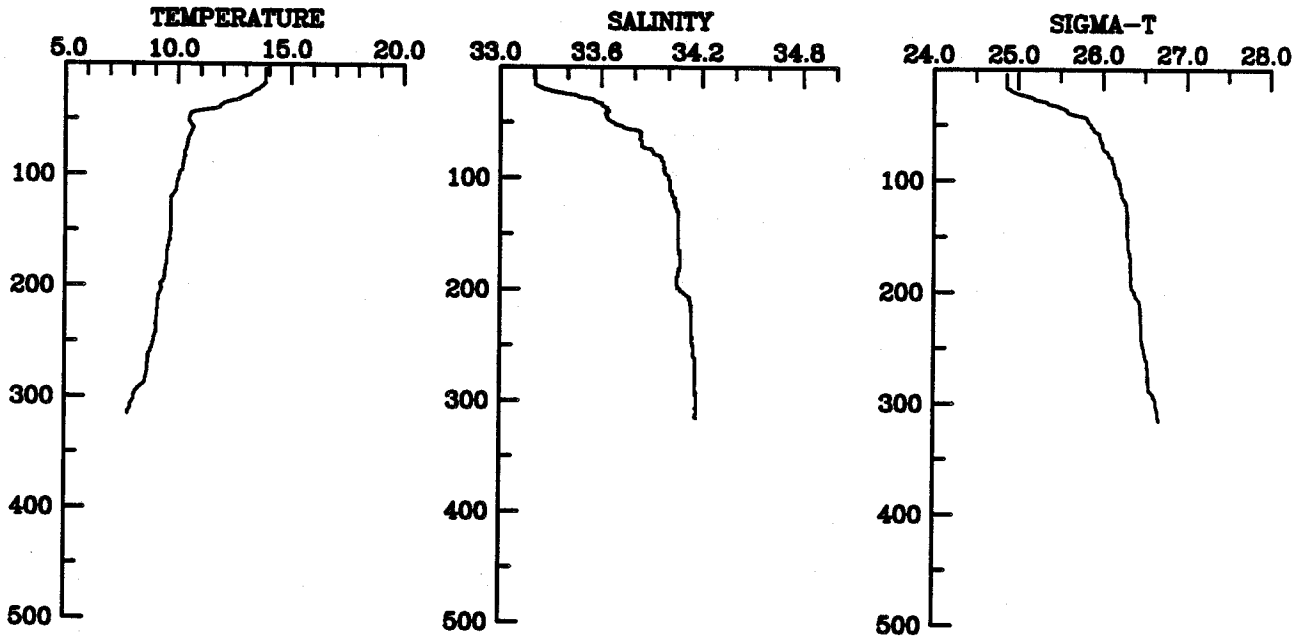
STATION C2 CAST 369
22 April 1983 730 GMT
CTD Transect C-3
CTD Map 3



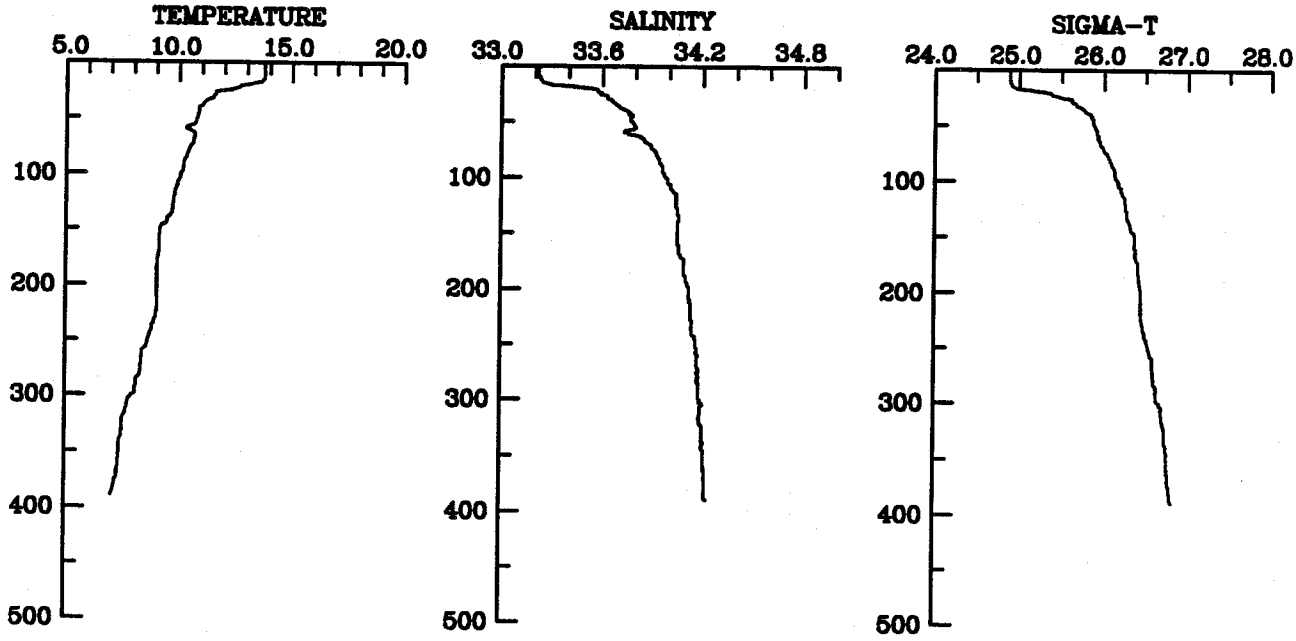
STATION C3 CAST 370
22 April 1983 824 GMT
CTD Transect C-3
CTD Map 3



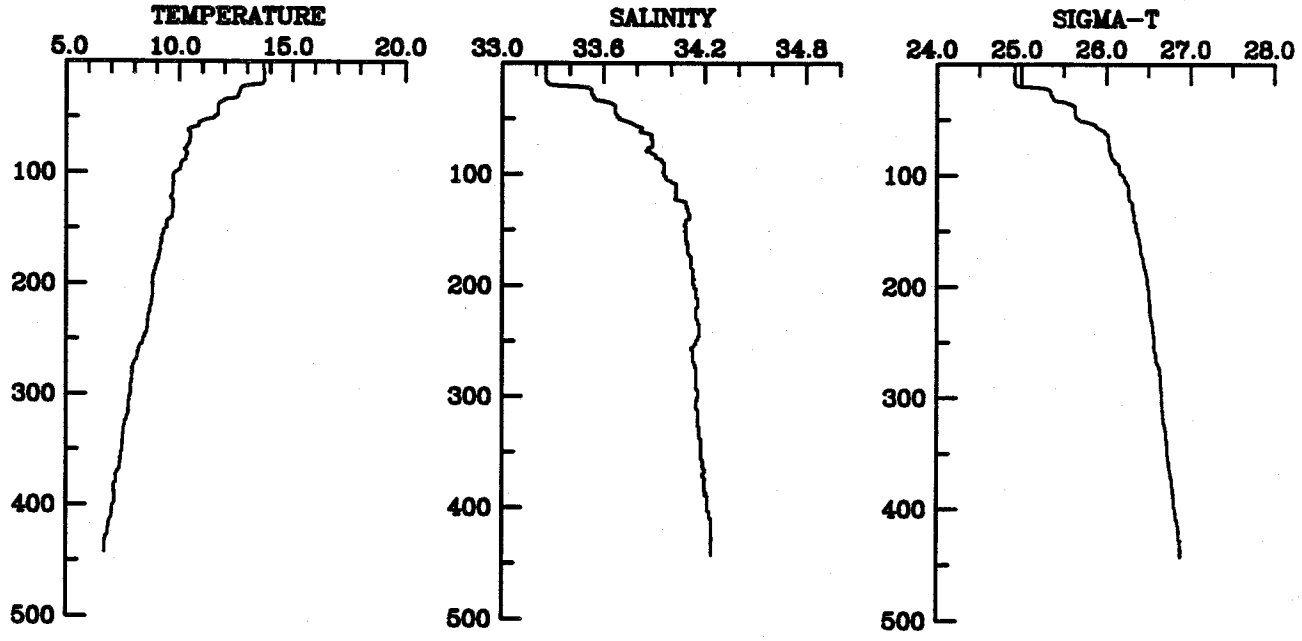
STATION C4 CAST 371
22 April 1983 942 GMT
CTD Transect C-3
CTD Map 3



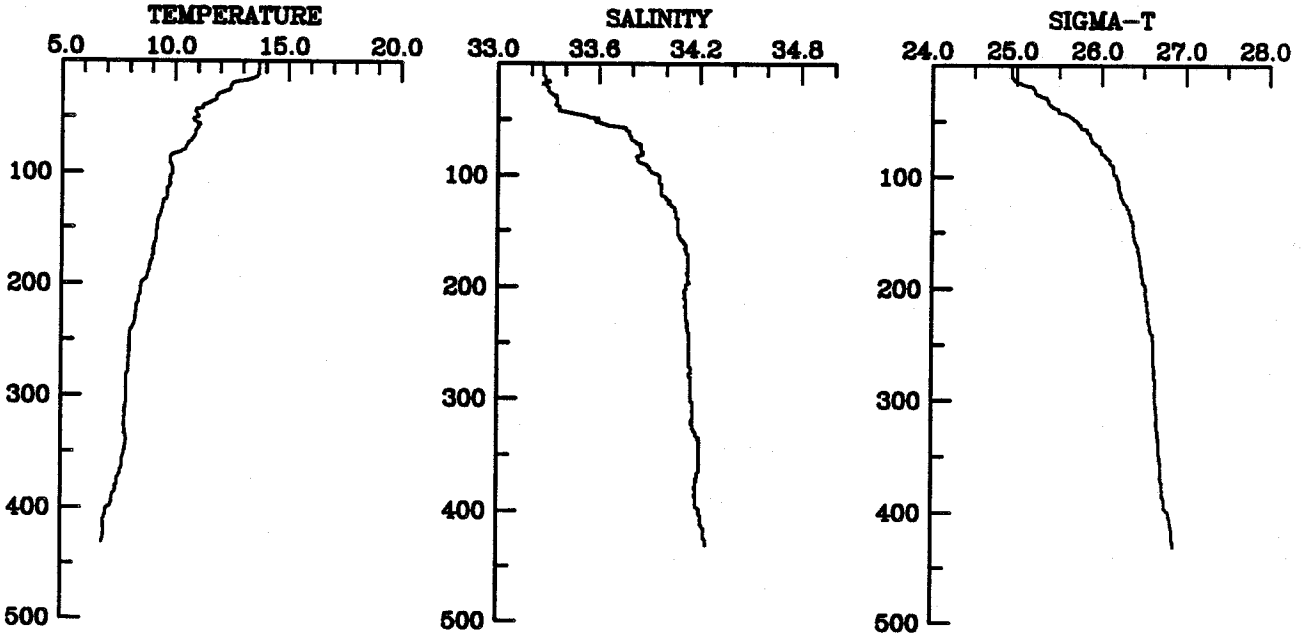
STATION C5 CAST 372
22 April 1983 1042 GMT
CTD Transect C-3
CTD Map 3



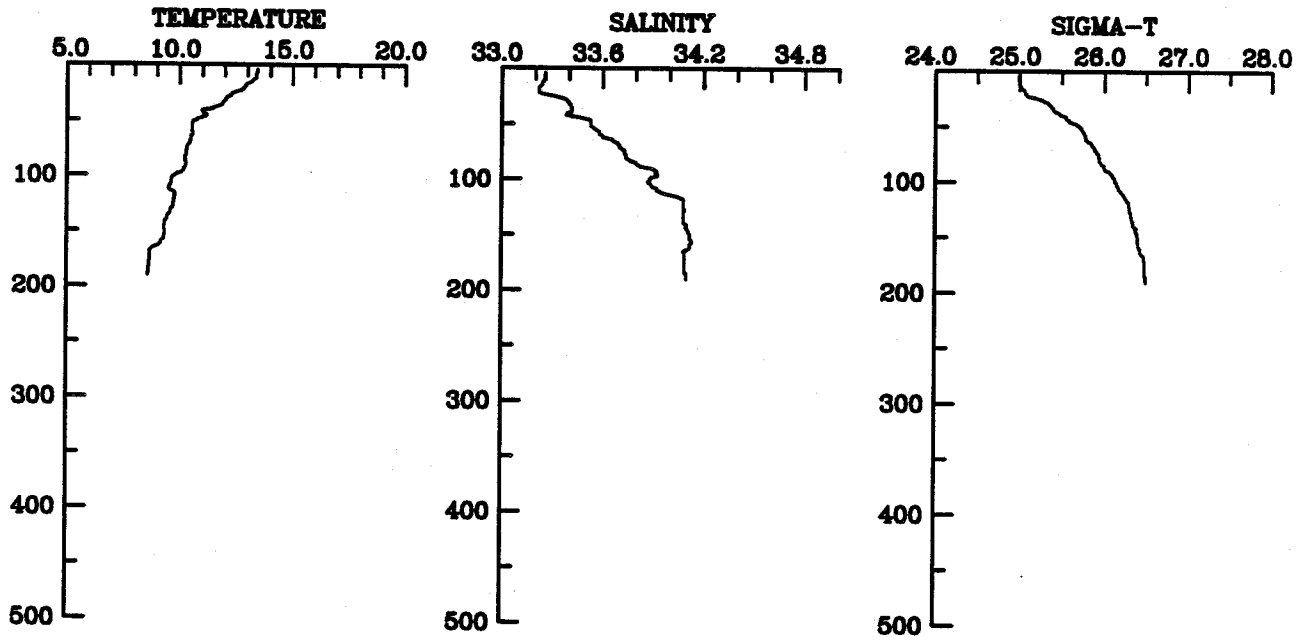
STATION C6 CAST 373
22 April 1983 1154 GMT
CTD Transect C-3
CTD Map 3



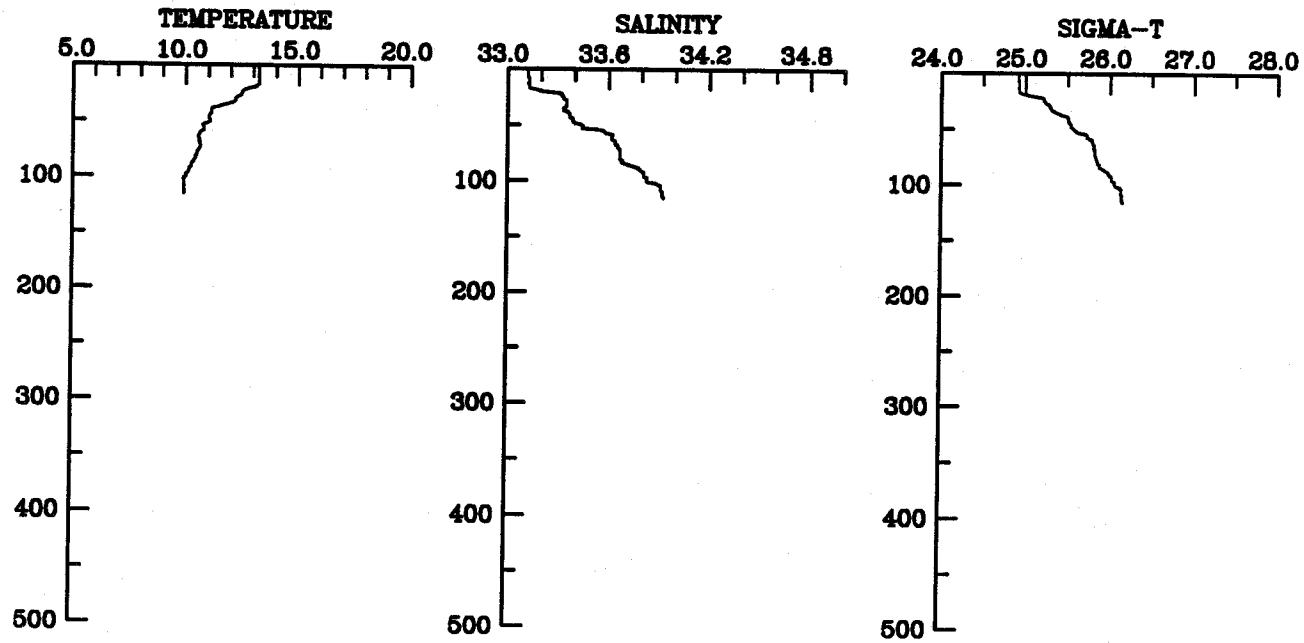
STATION C7 CAST 374
22 April 1983 1306 GMT
CTD Transect C-3
CTD Map 3



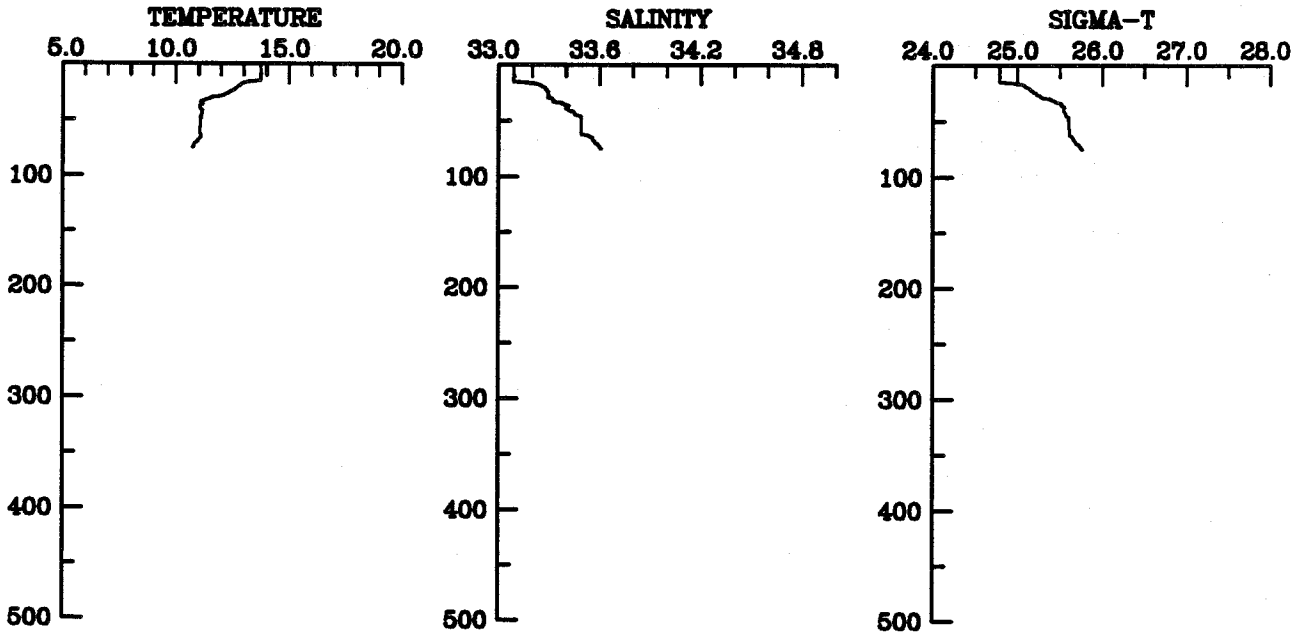
STATION C8 CAST 375
22 April 1983 1418 GMT
CTD Transect C-3
CTD Map 3



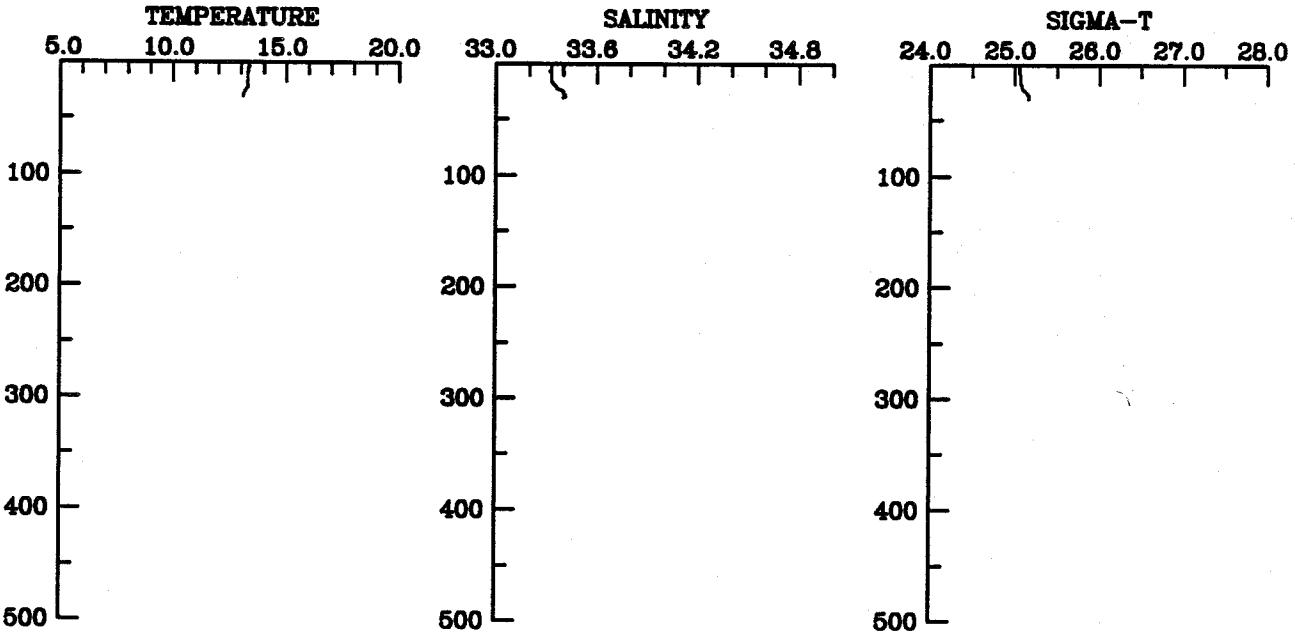
STATION C9 CAST 376
22 April 1983 1530 GMT
CTD Transect C-3
CTD Map 3



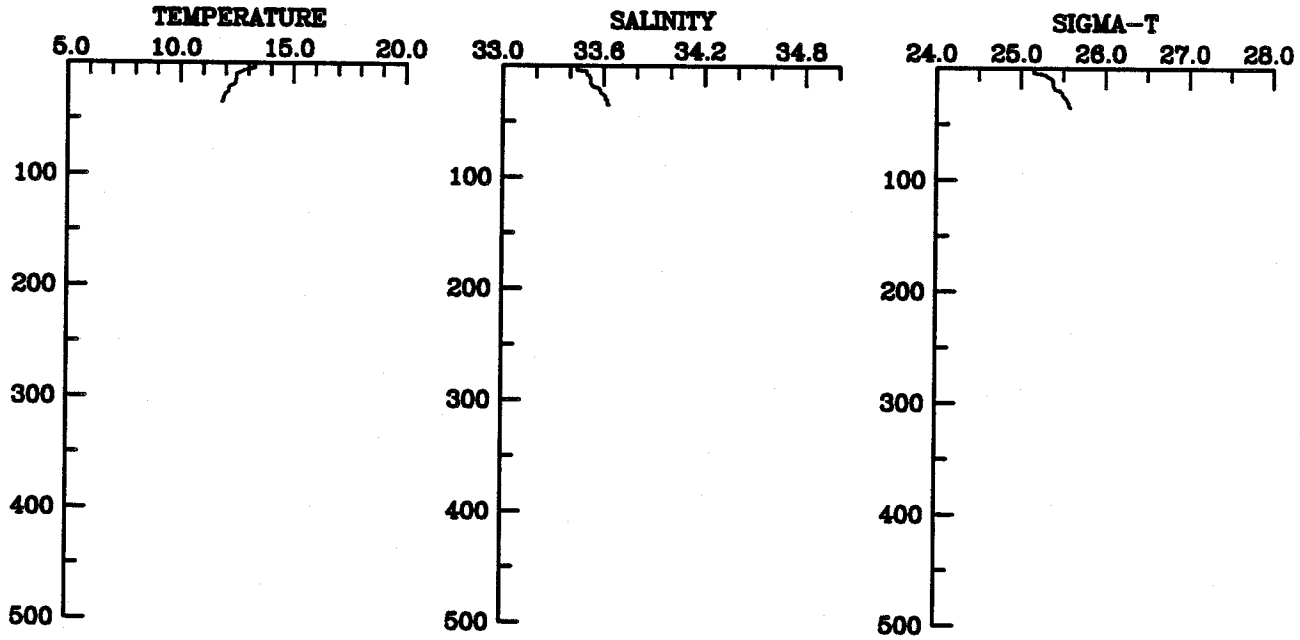
STATION C10 CAST 377
22 April 1983 1618 GMT
CTD Transect C-3
CTD Map 3



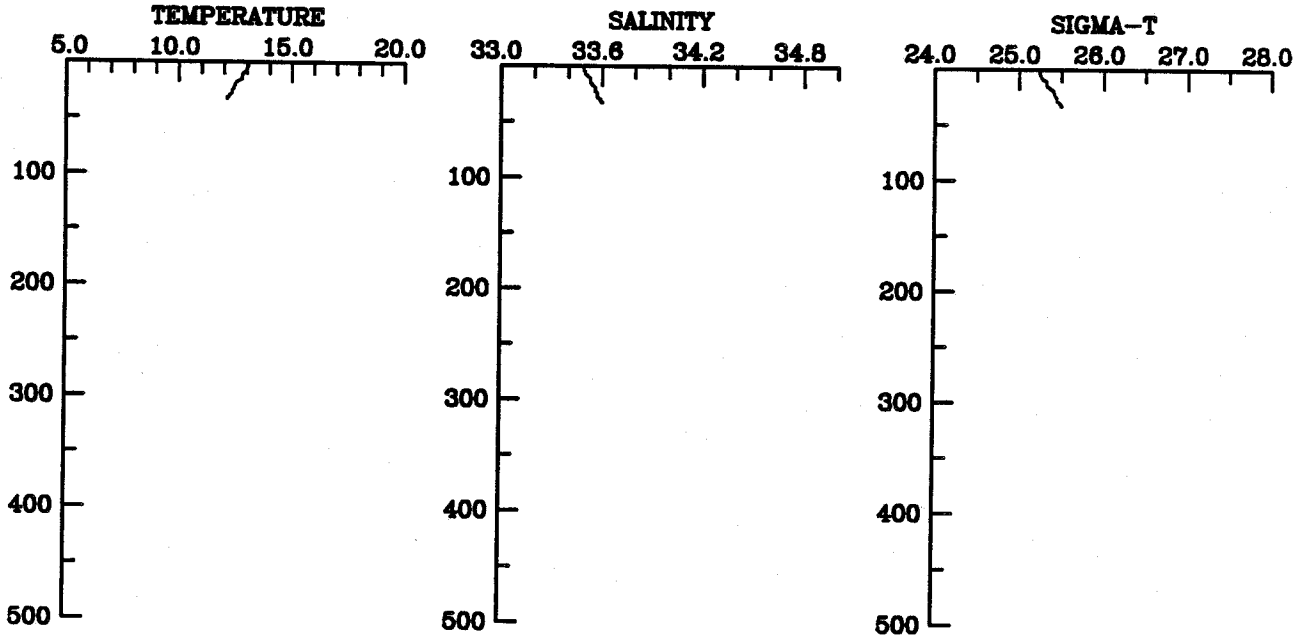
STATION C1 CAST 387
22 April 1983 2306 GMT
XBT Transect C-5
XBT Map 6



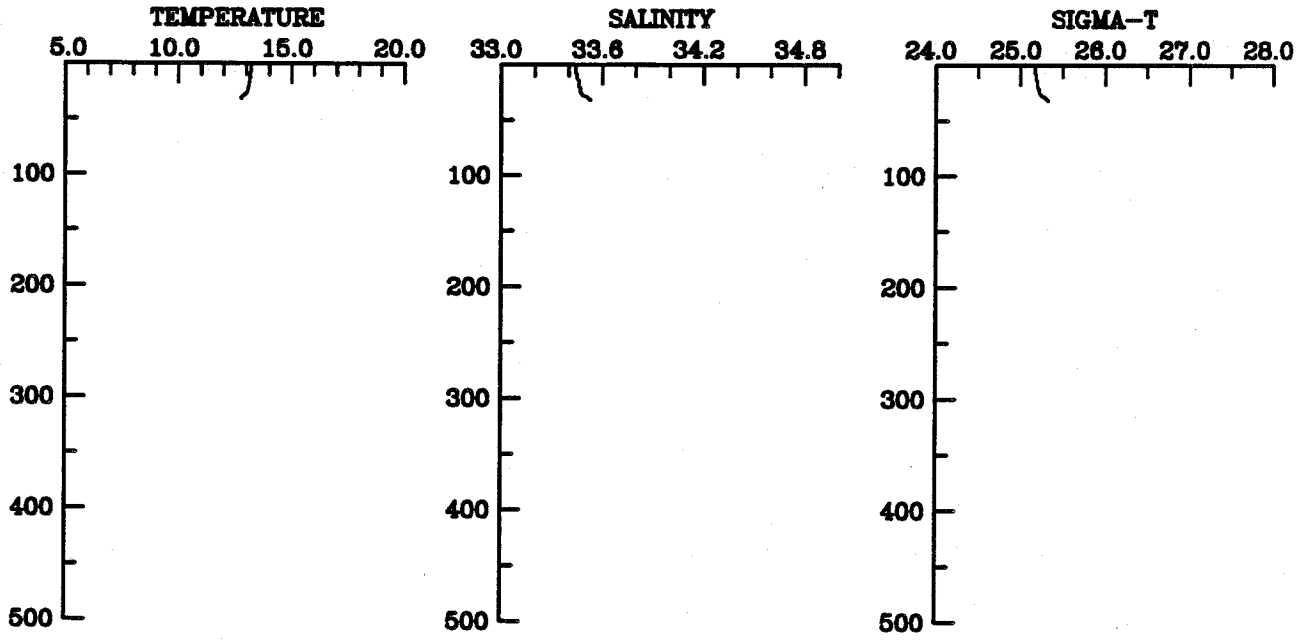
STATION GC1 CAST 388
23 April 1983 18 GMT
XBT Transect GC-5
XBT Map 6



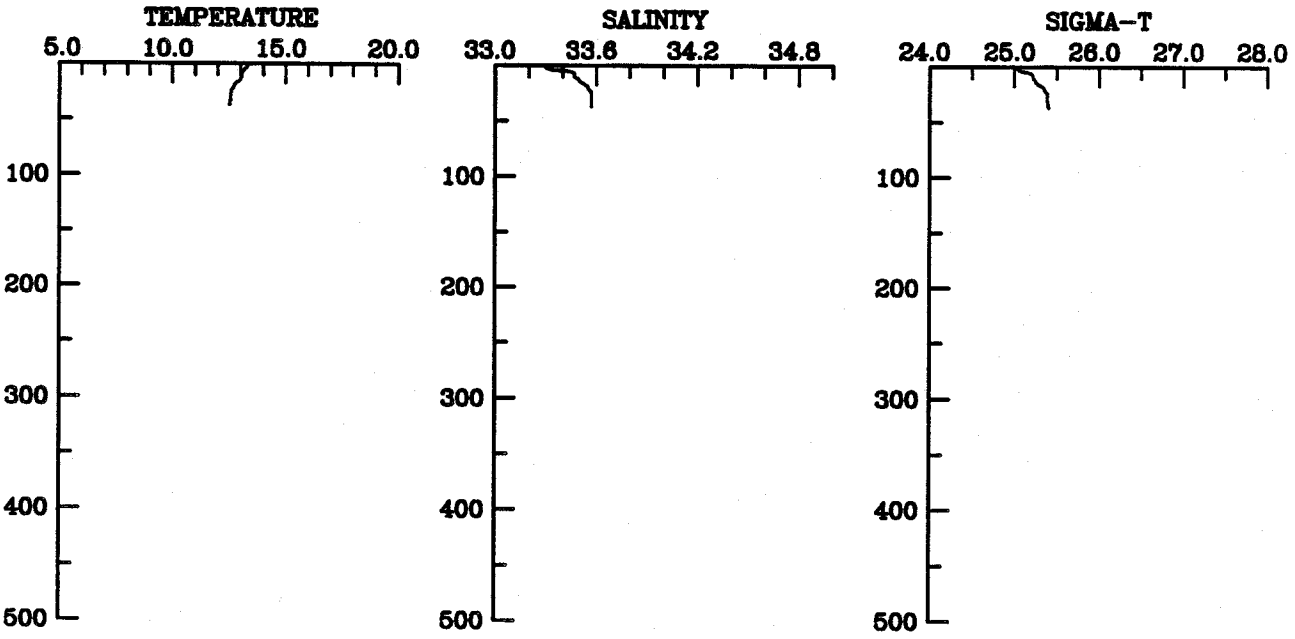
STATION G1 CAST 409
23 April 1983 548 GMT
XBT Transect G-5
XBT Map 6



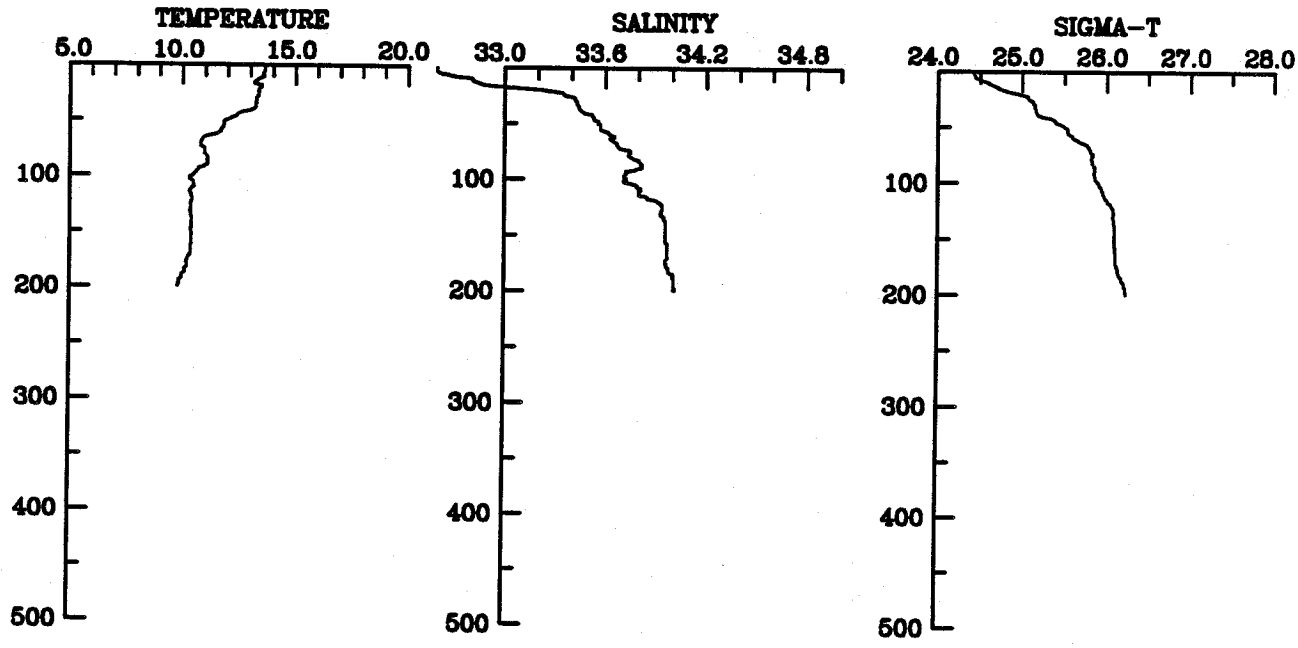
STATION AG1 CAST 410
23 April 1983 624 GMT
XBT Transect AG-5
XBT Map 6



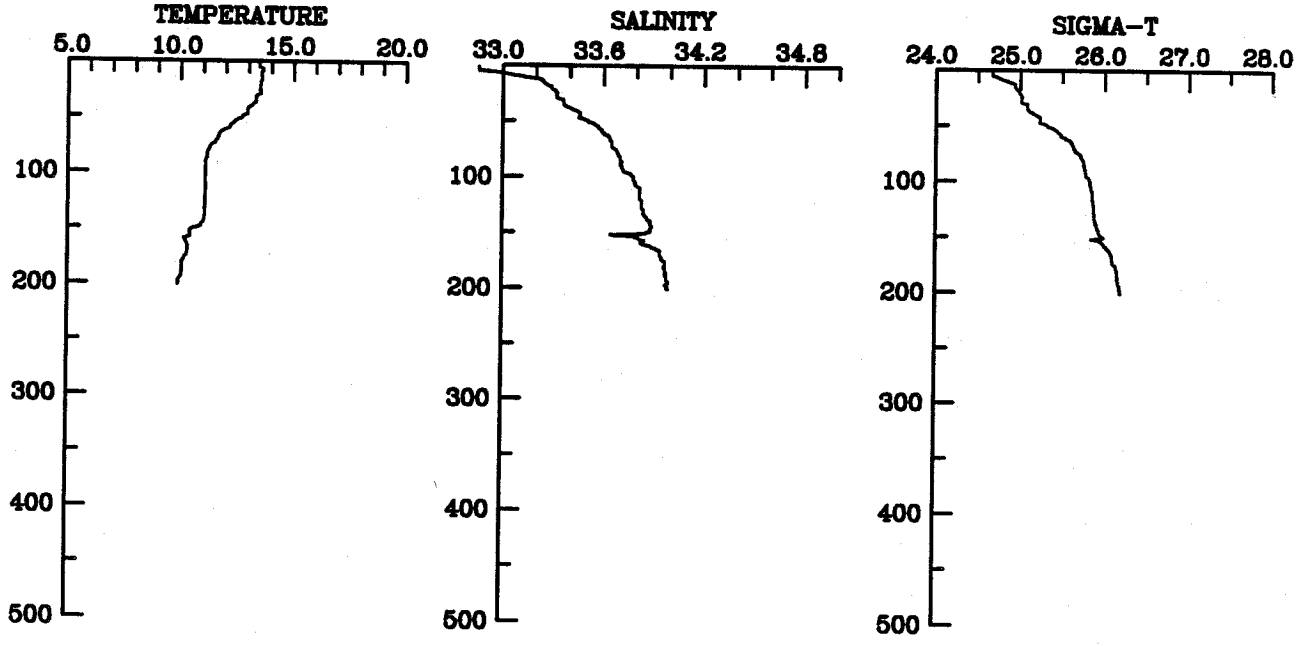
STATION A1 CAST 425
23 April 1983 1142 GMT
XBT Transect A-5
XBT Map 6



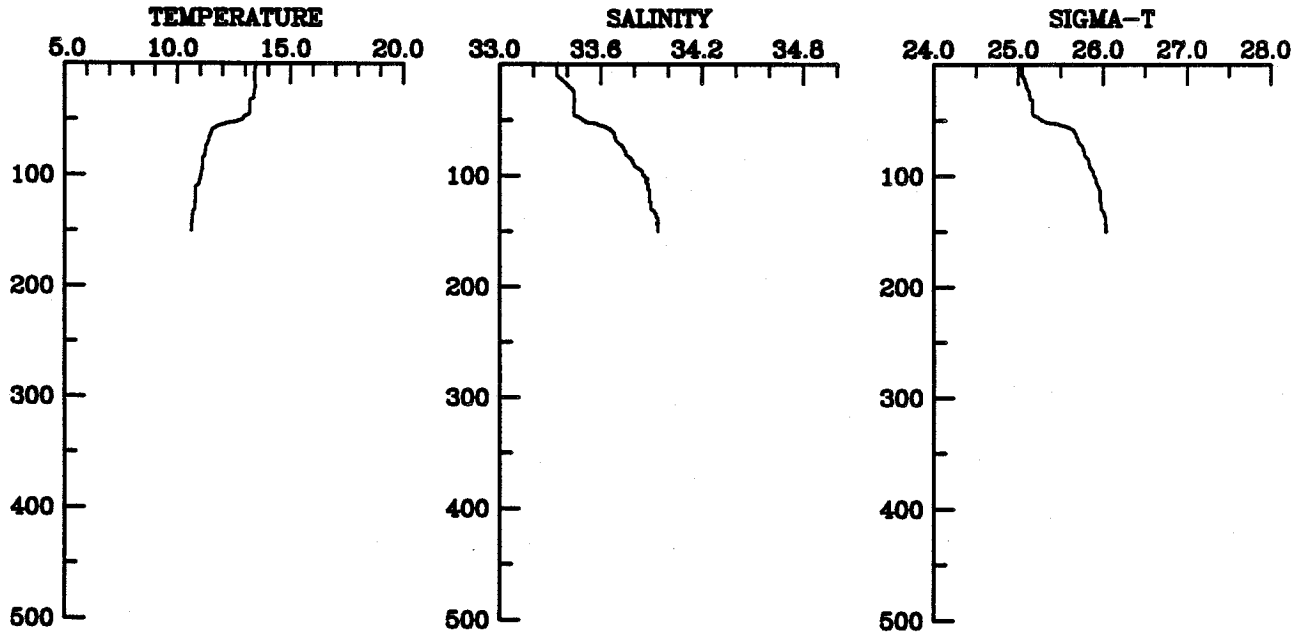
STATION P8 CAST 426
23 April 1983 1512 GMT
CTD Transect P-1



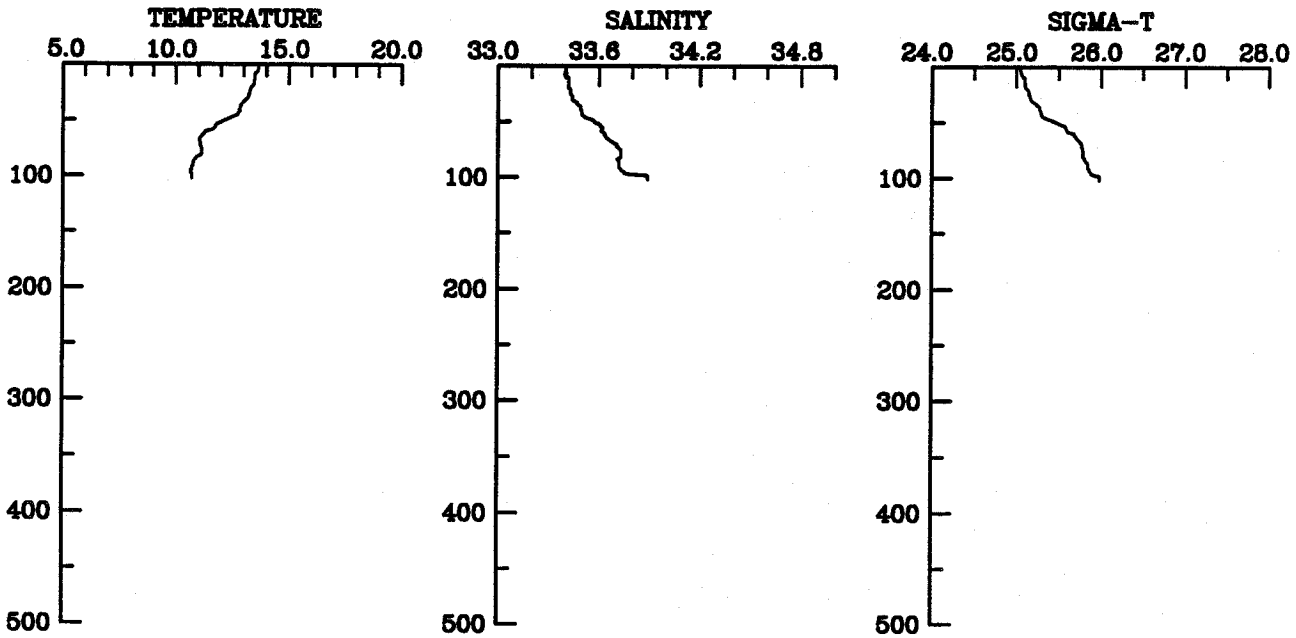
STATION P7 CAST 427
23 April 1983 1536 GMT
CTD Transect P-1



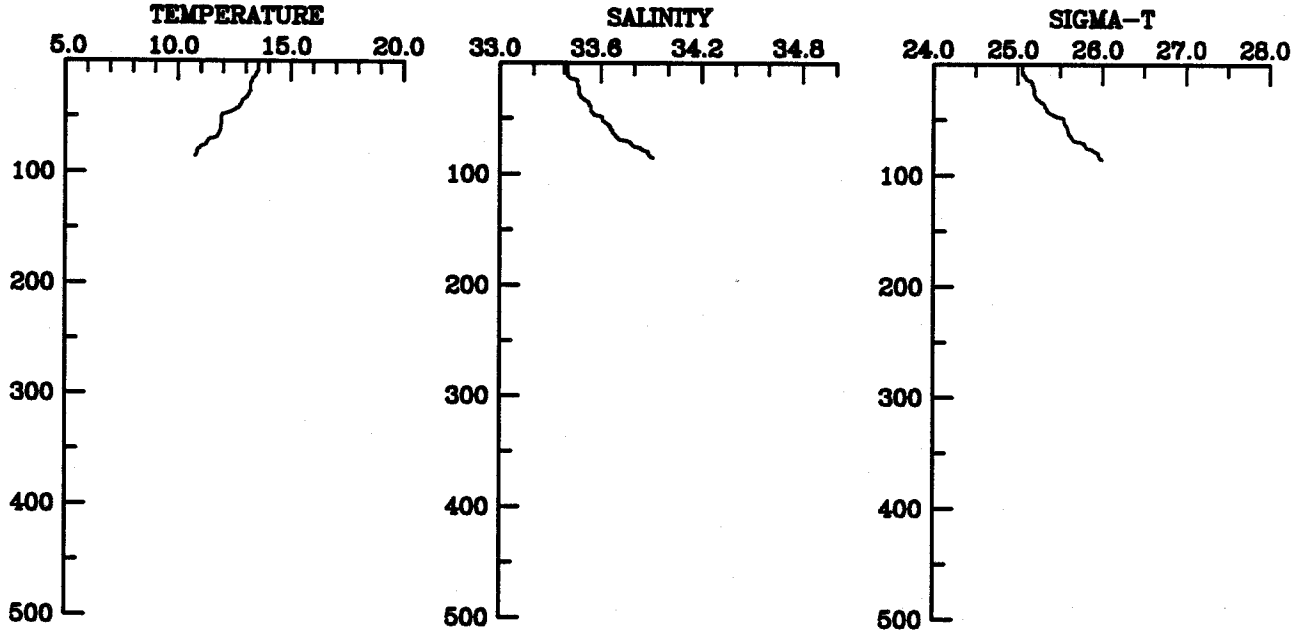
STATION P6 CAST 428
23 April 1983 1612 GMT
CTD Transect P-1



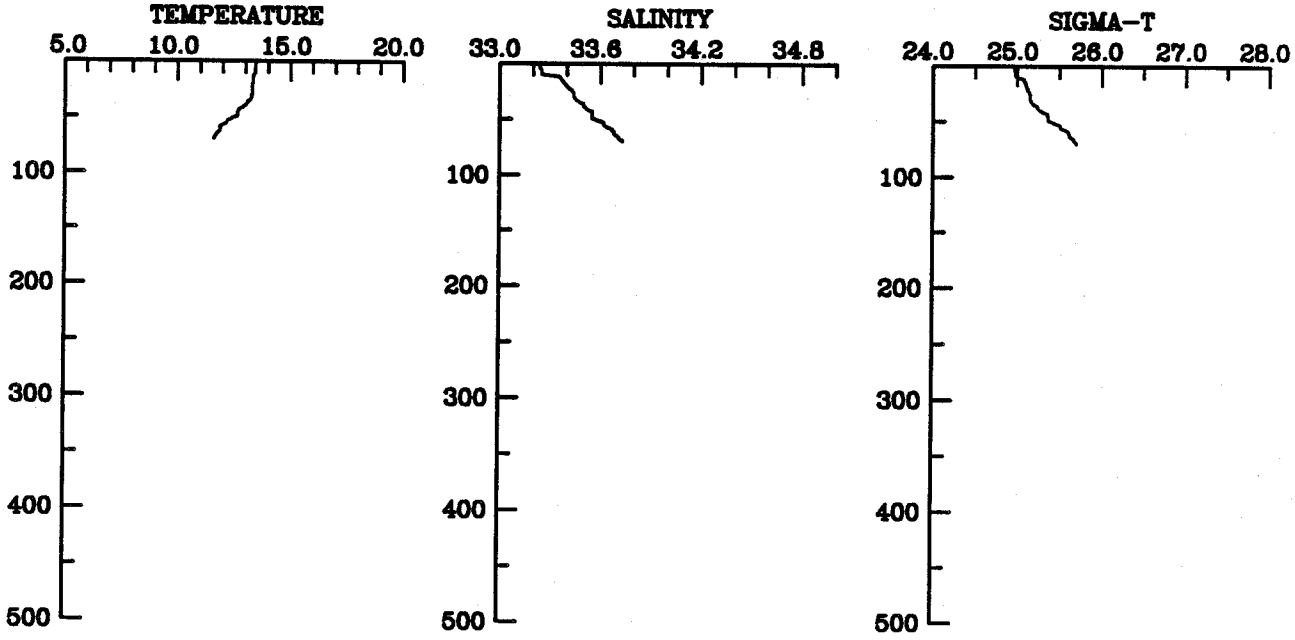
STATION P5 CAST 429
23 April 1983 1636 GMT
CTD Transect P-1



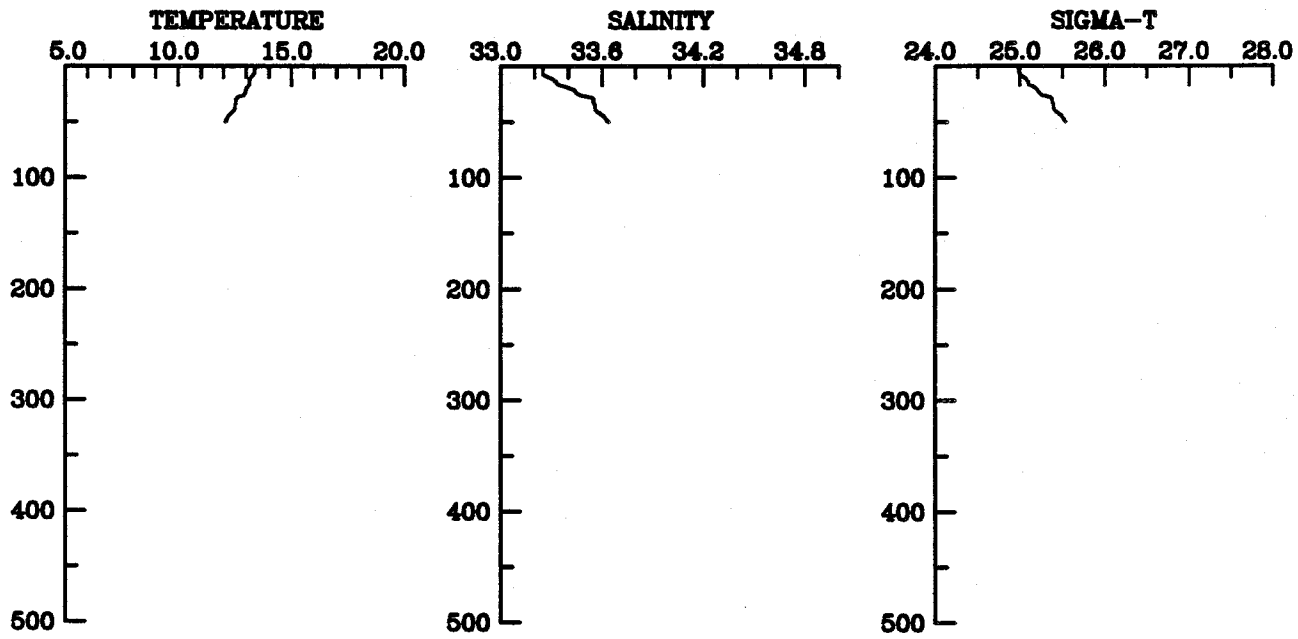
STATION P4 CAST 430
23 April 1983 1706 GMT
CTD Transect P-1



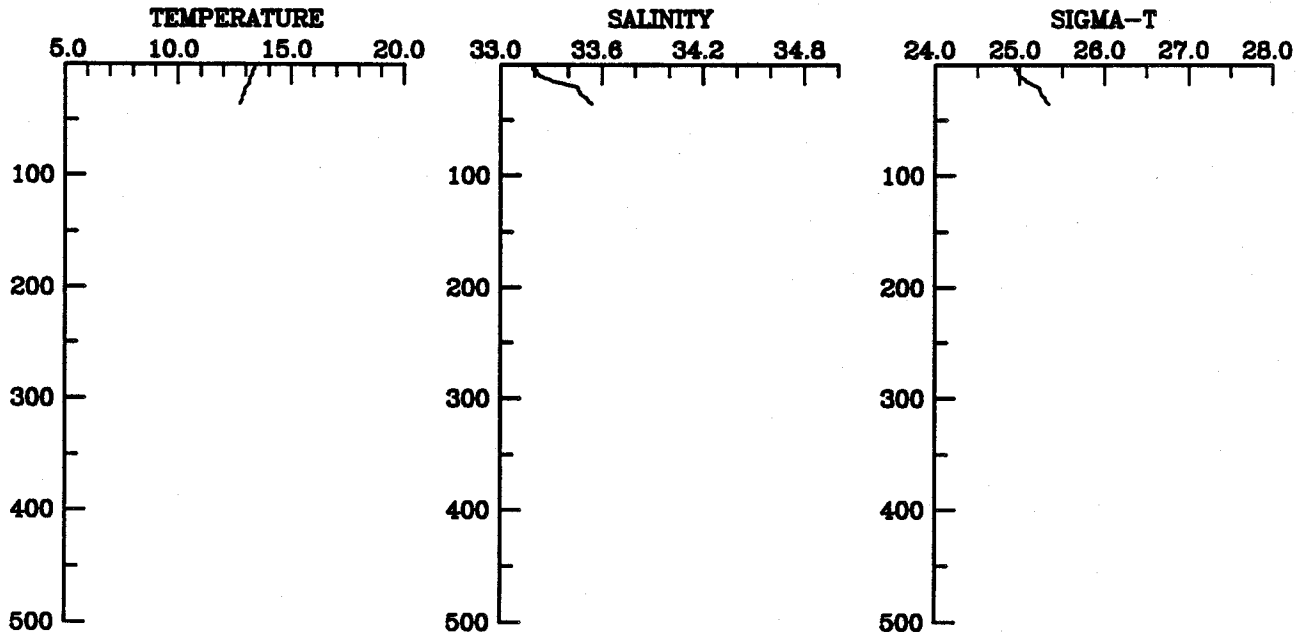
STATION P3 CAST 431
23 April 1983 1724 GMT
CTD Transect P-1



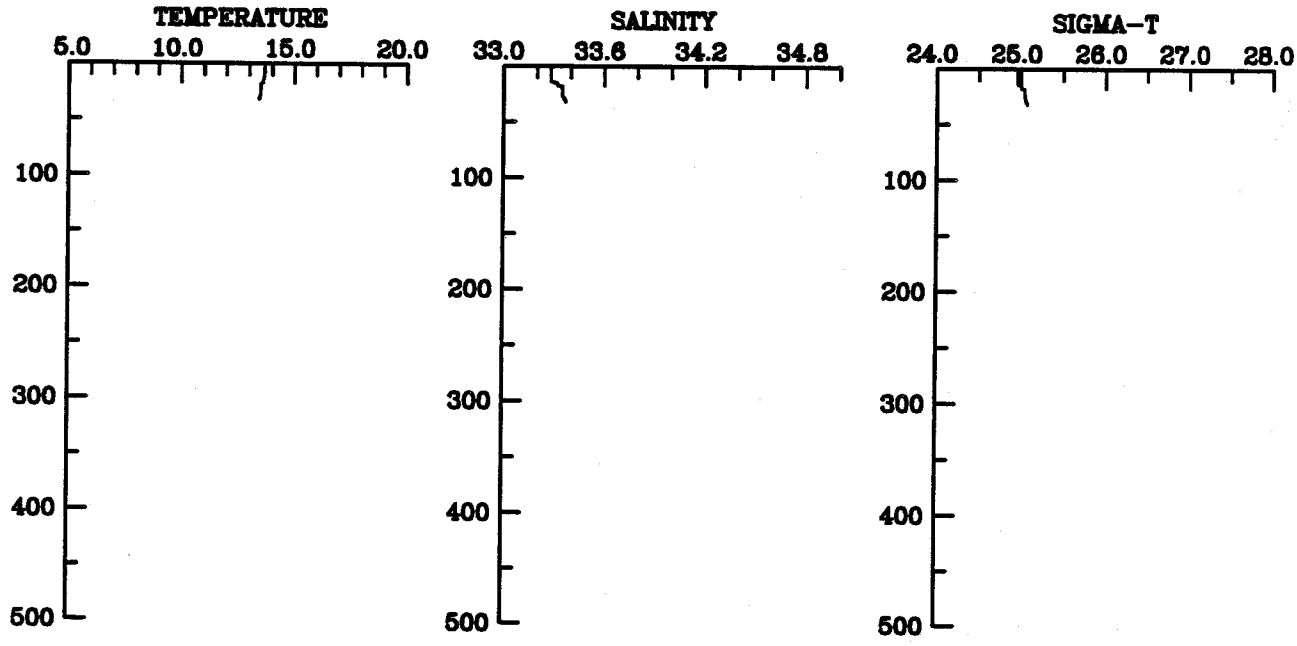
STATION P2 CAST 432
23 April 1983 1742 GMT
CTD Transect P-1



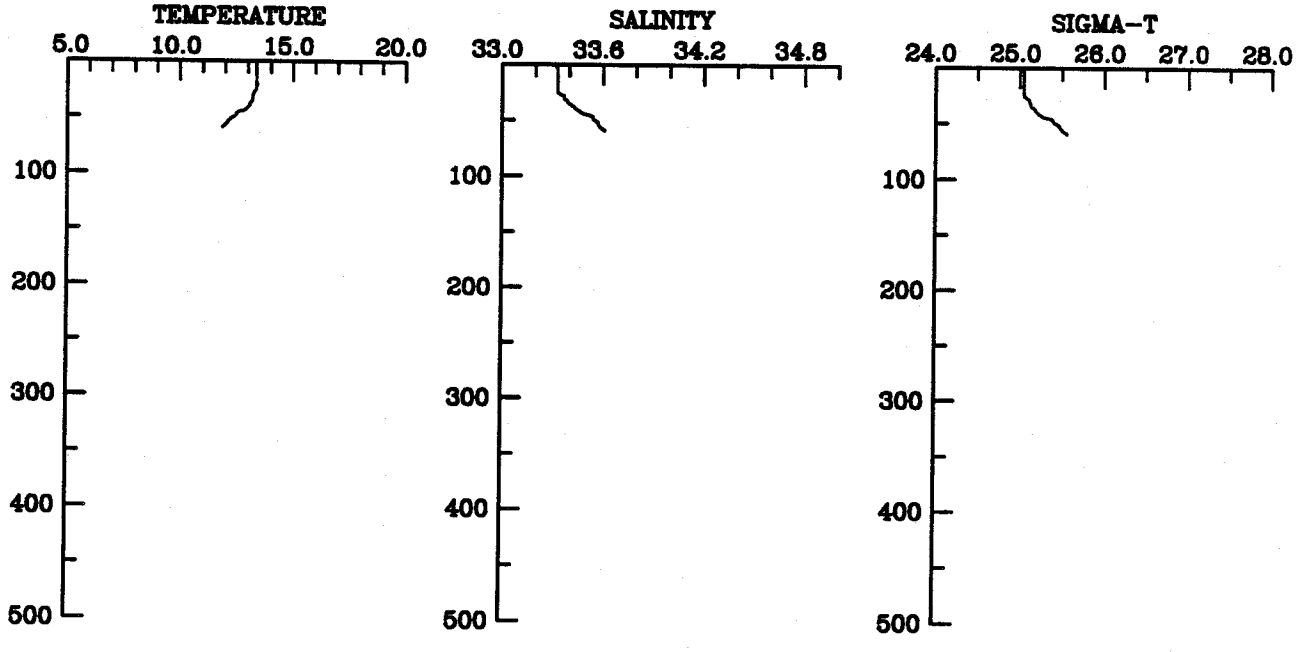
STATION P1 CAST 433
23 April 1983 1800 GMT
CTD Transect P-1



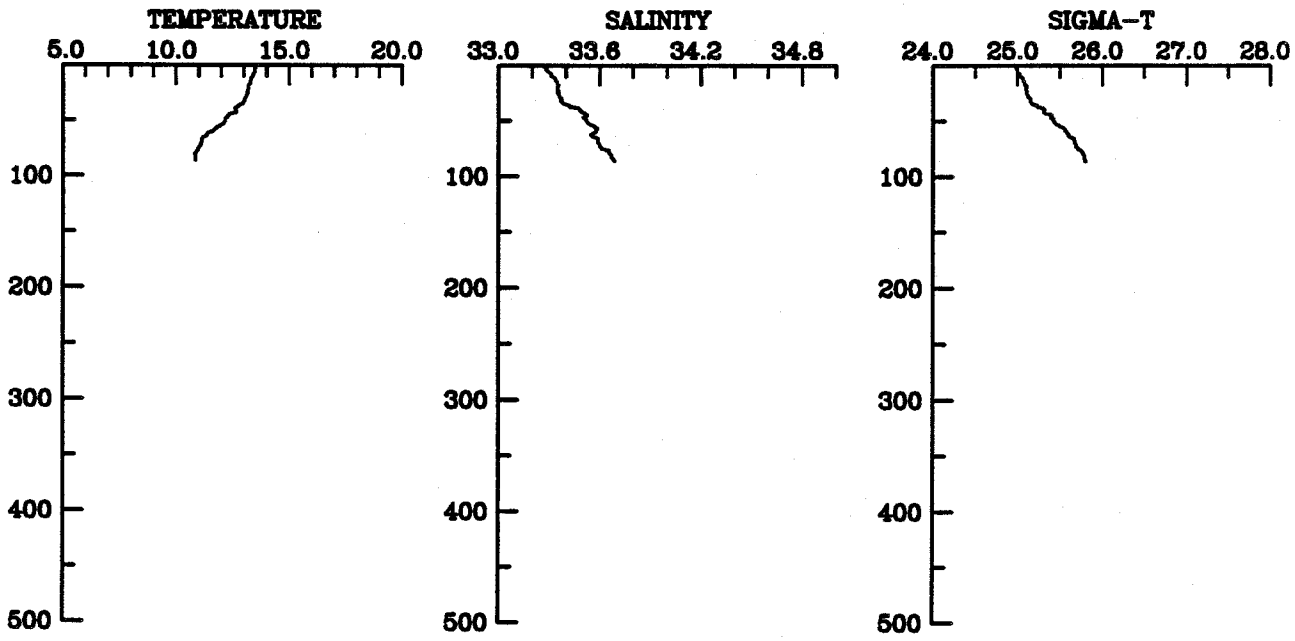
STATION G1 CAST 434
24 April 1983 218 GMT
CTD Transect G-7



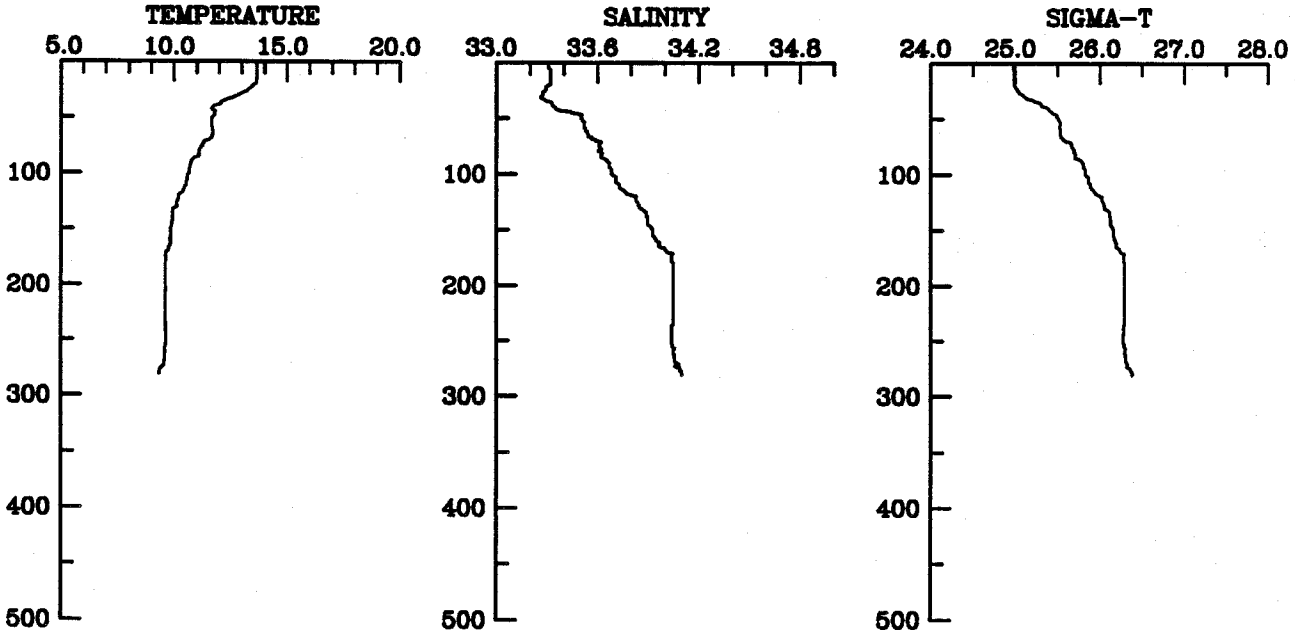
STATION G2 CAST 435
24 April 1983 254 GMT
CTD Transect G-7



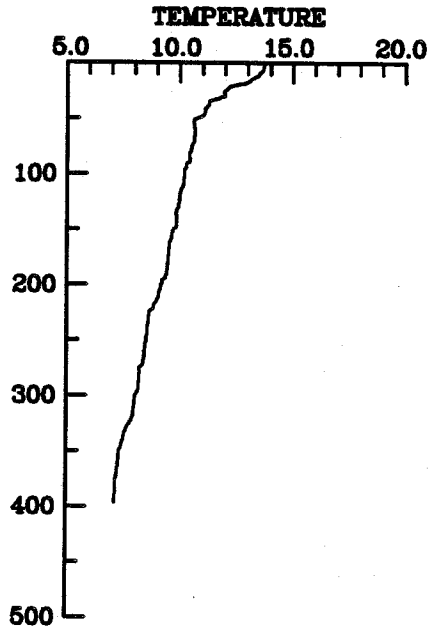
STATION G3 CAST 436
24 April 1983 424 GMT
CTD Transect G-7

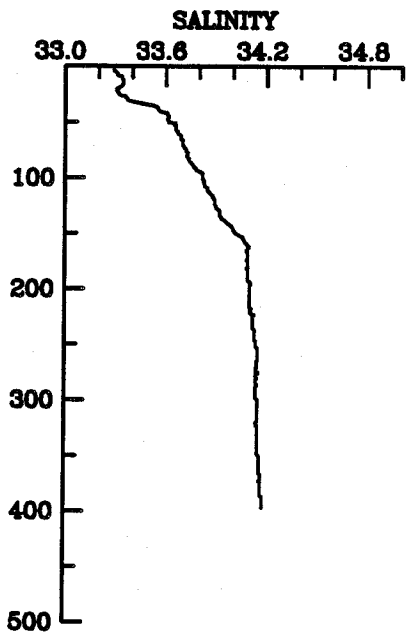


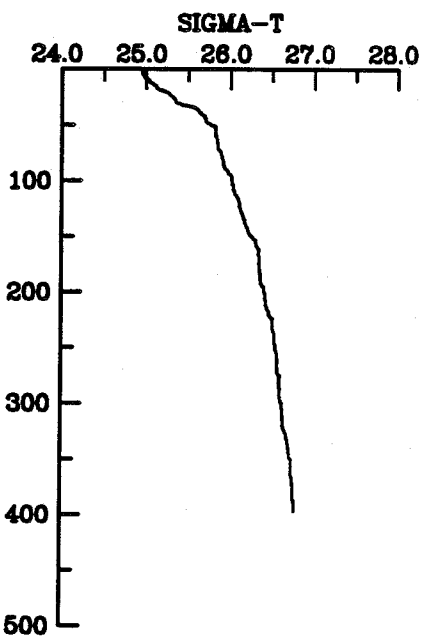
STATION G4 CAST 437
24 April 1983 536 GMT
CTD Transect G-7



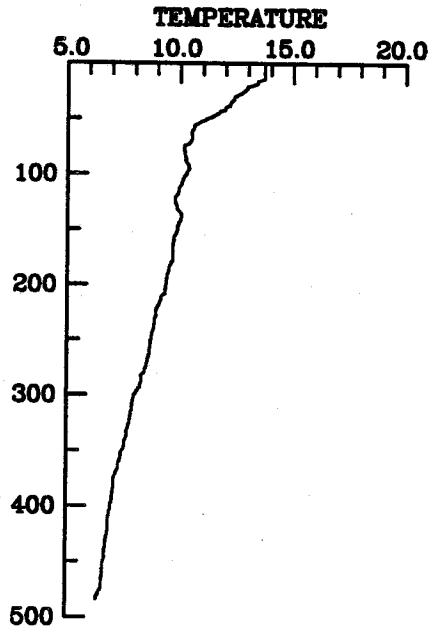
STATION G5 CAST 438
24 April 1983 636 GMT
CTD Transect G-7

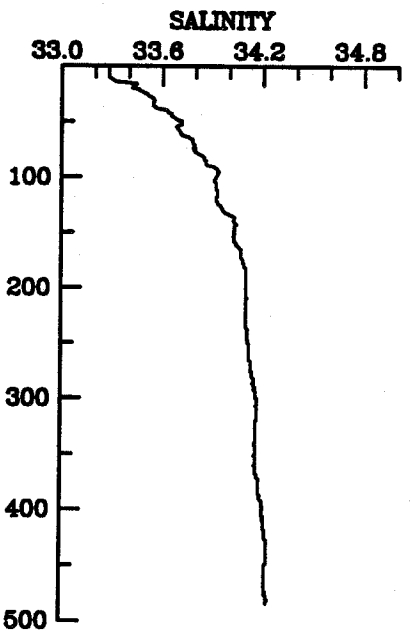


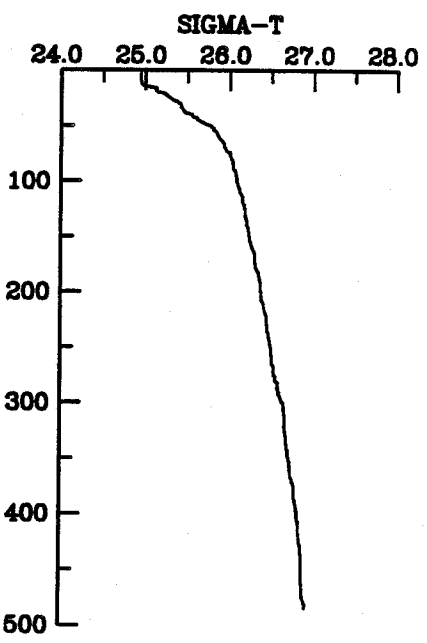




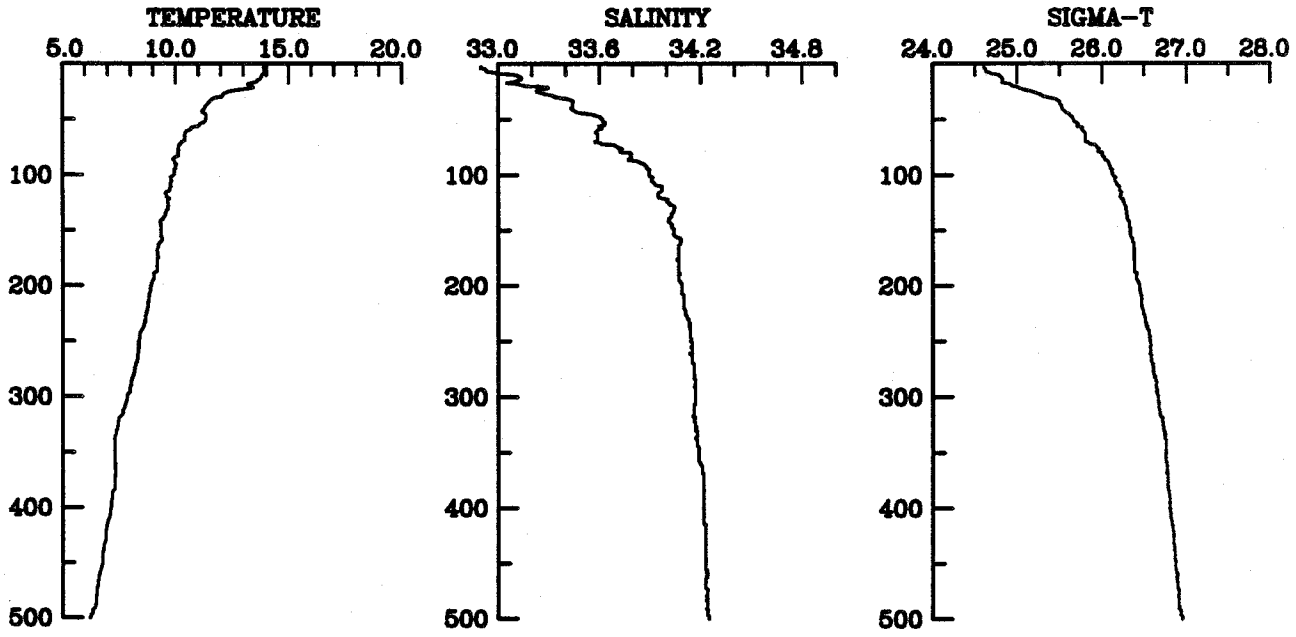
STATION G6 CAST 439
24 April 1983 812 GMT
CTD Transect G-7



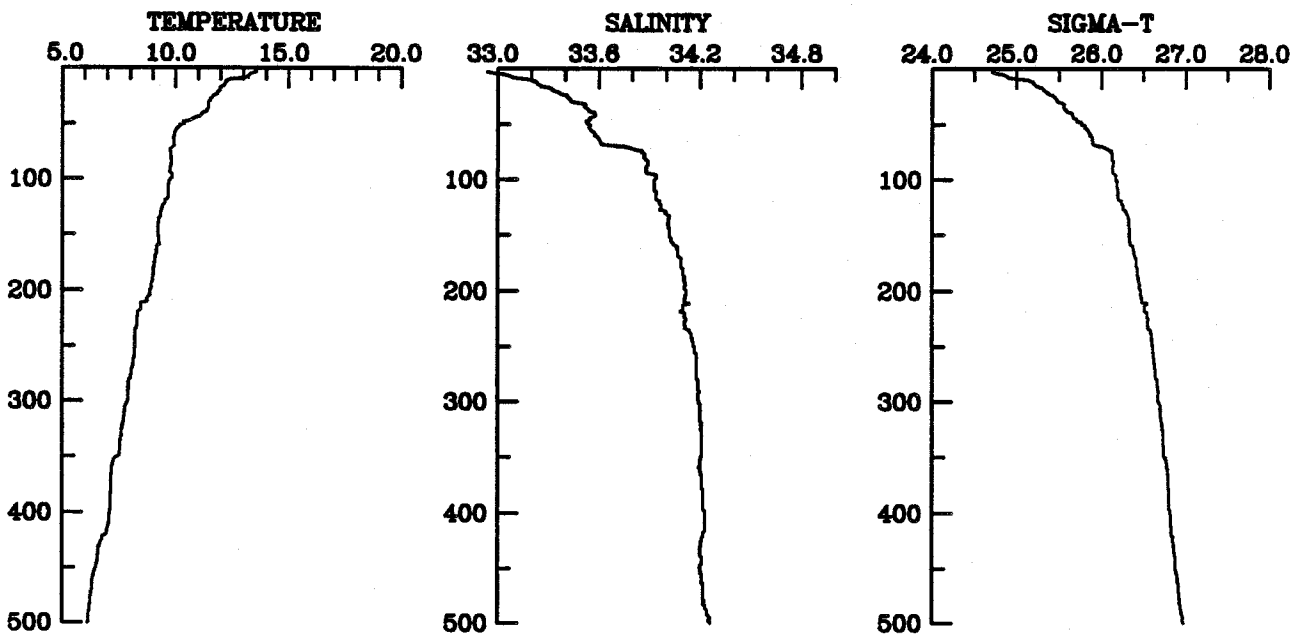




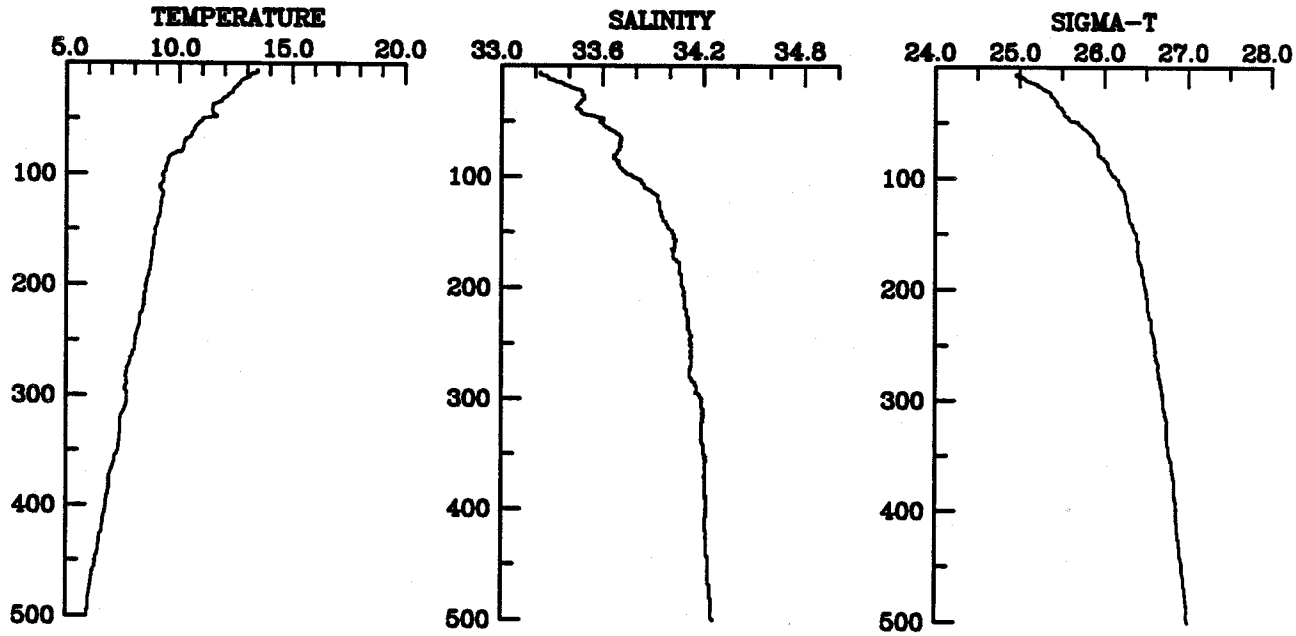
STATION G7 CAST 440
24 April 1983 930 GMT
CTD Transect G-7



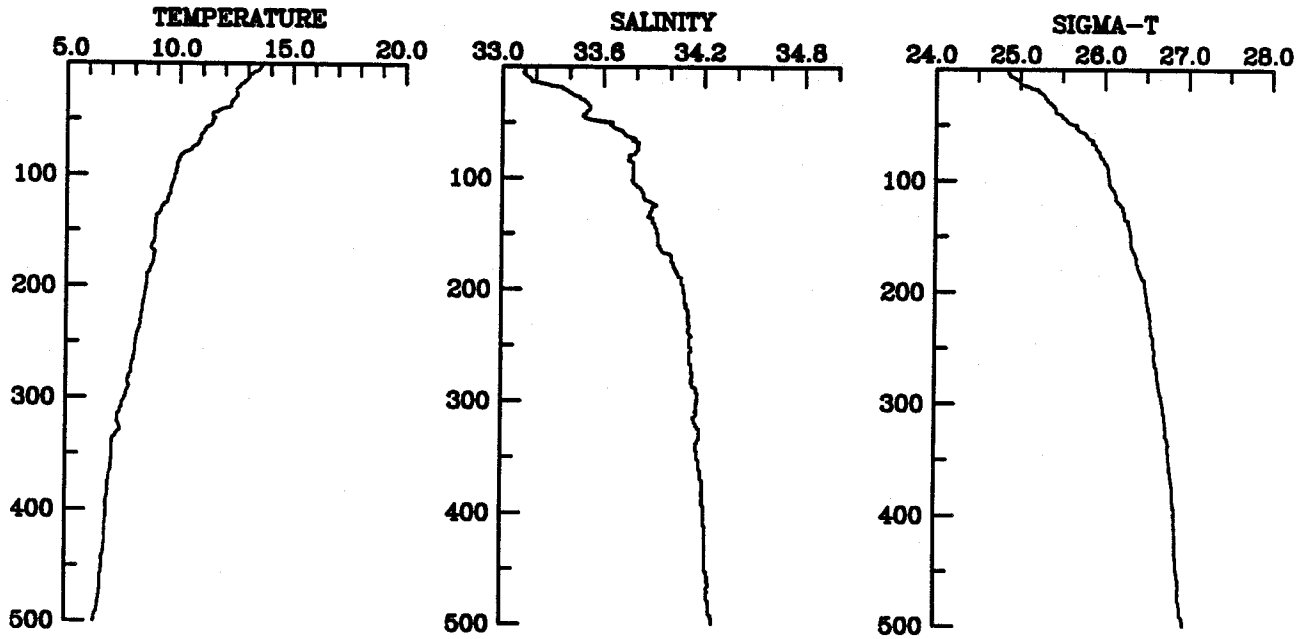
STATION G8 CAST 441
24 April 1983 1200 GMT
CTD Transect G-7



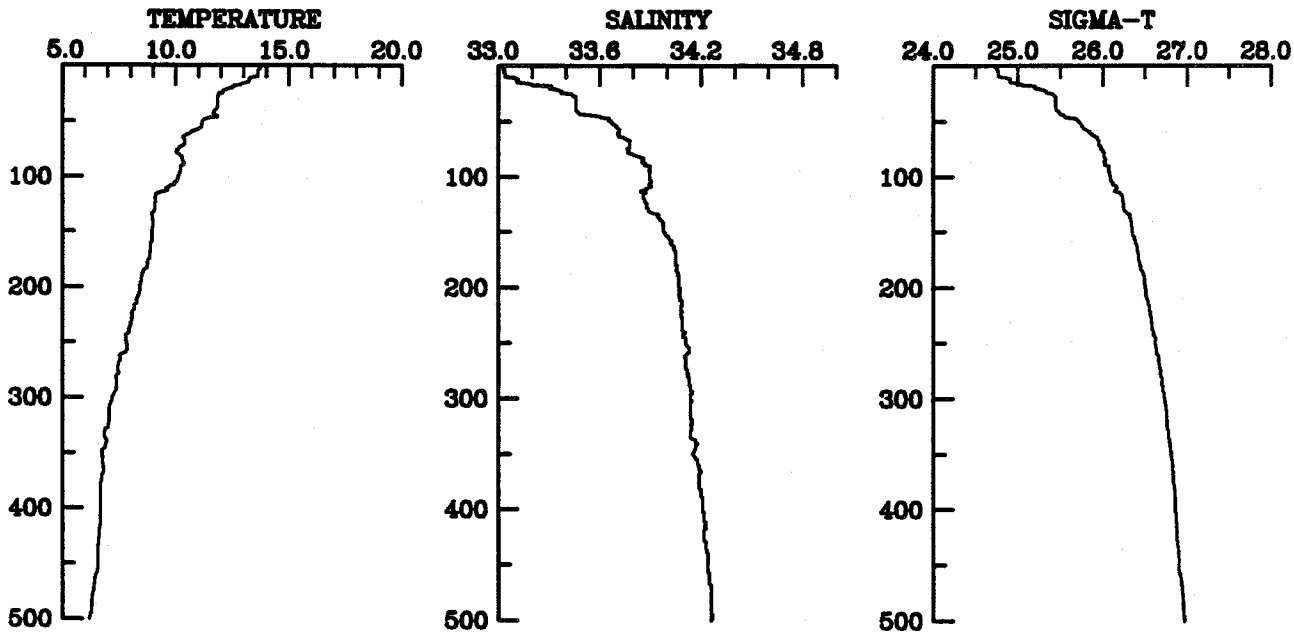
STATION G9 CAST 442
24 April 1983 1324 GMT
CTD Transect G-7



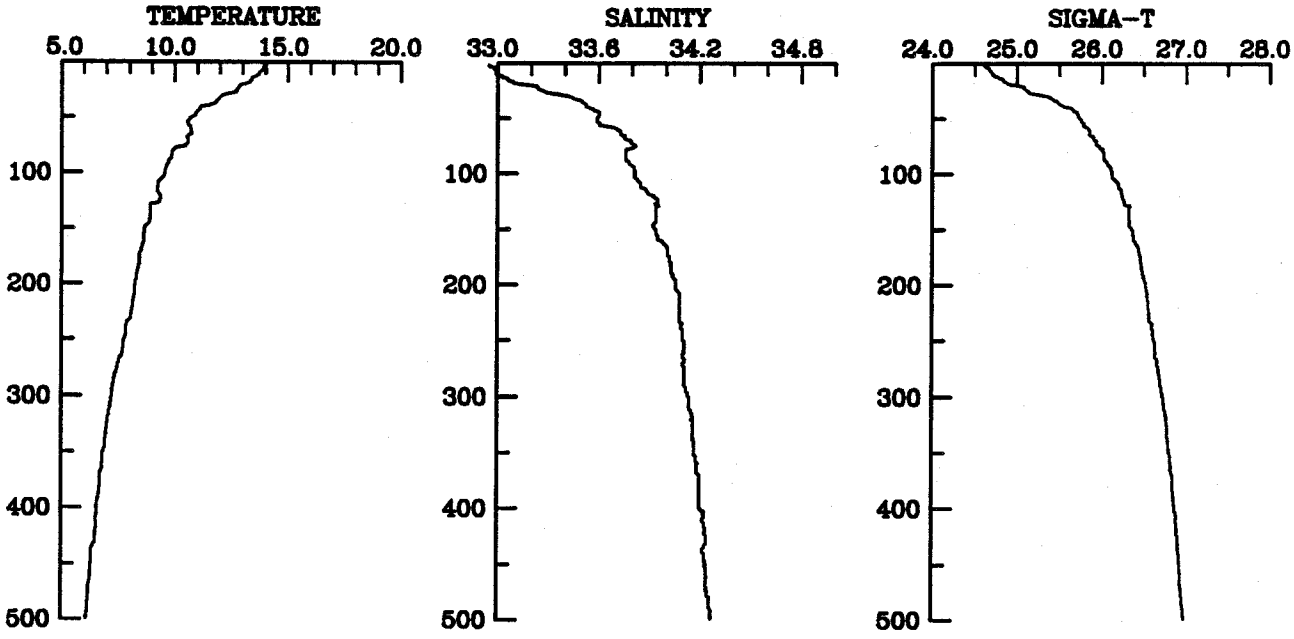
STATION G10 CAST 443
24 April 1983 1554 GMT
CTD Transect G-7



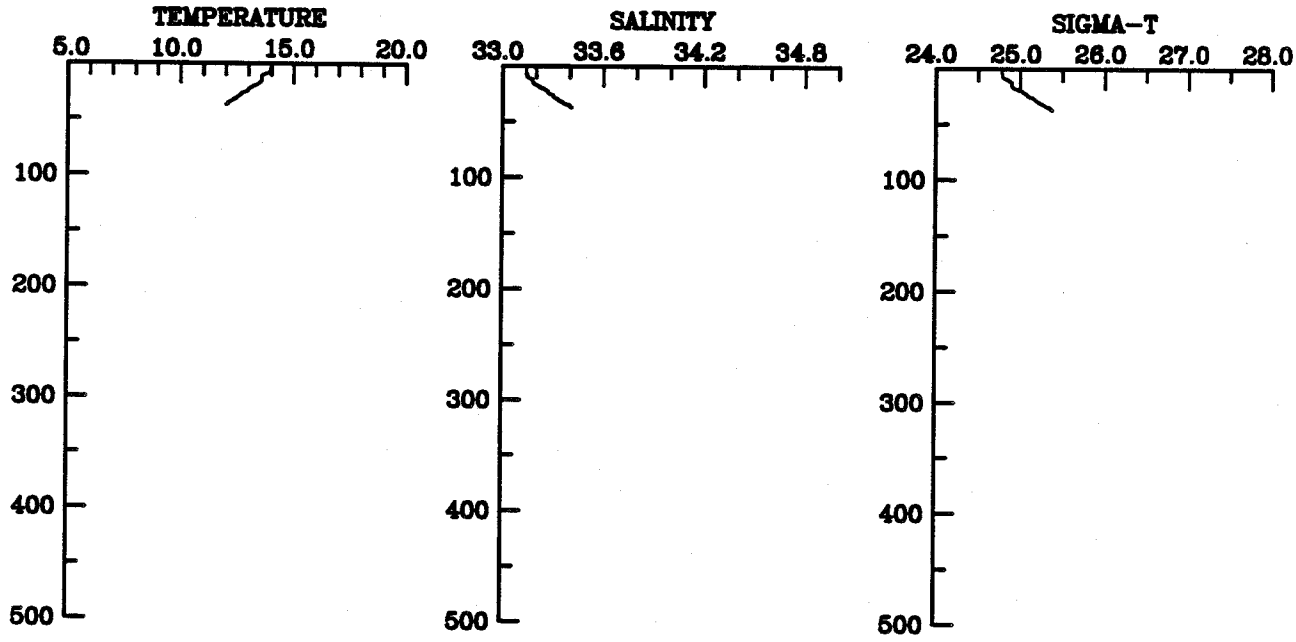
STATION G11 CAST 444
24 April 1983 1712 GMT
CTD Transect G-7



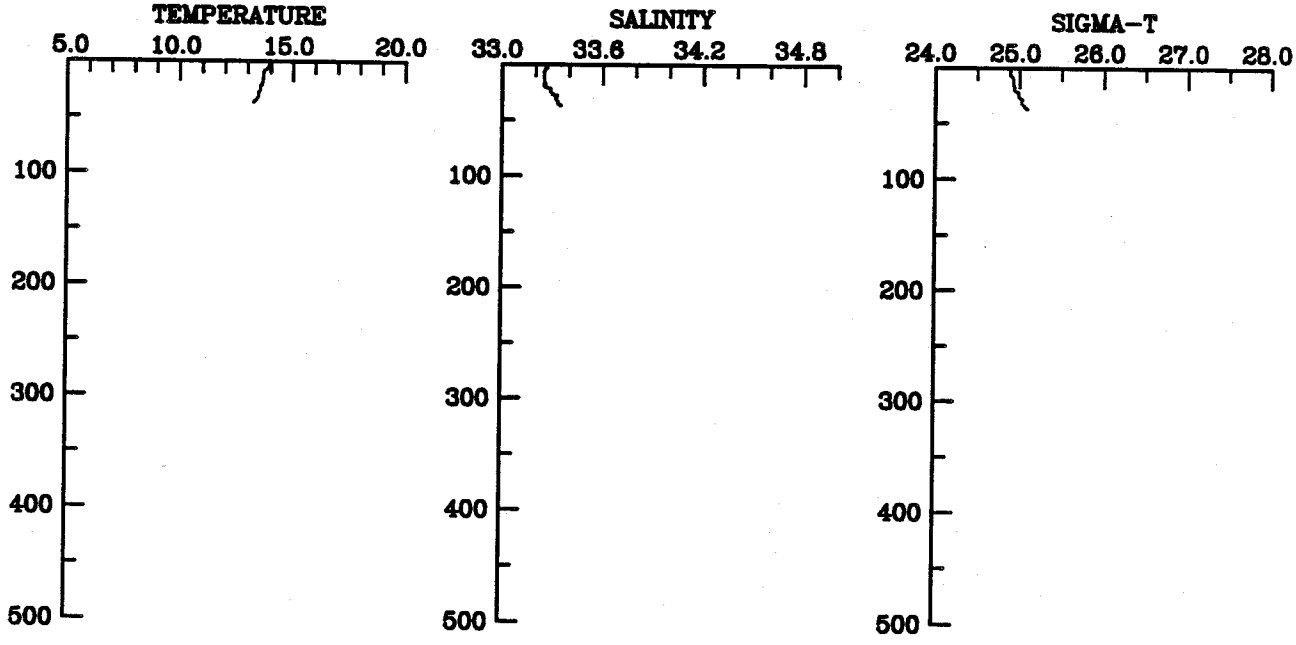
STATION G12 CAST 445
24 April 1983 1824 GMT
CTD Transect G-7



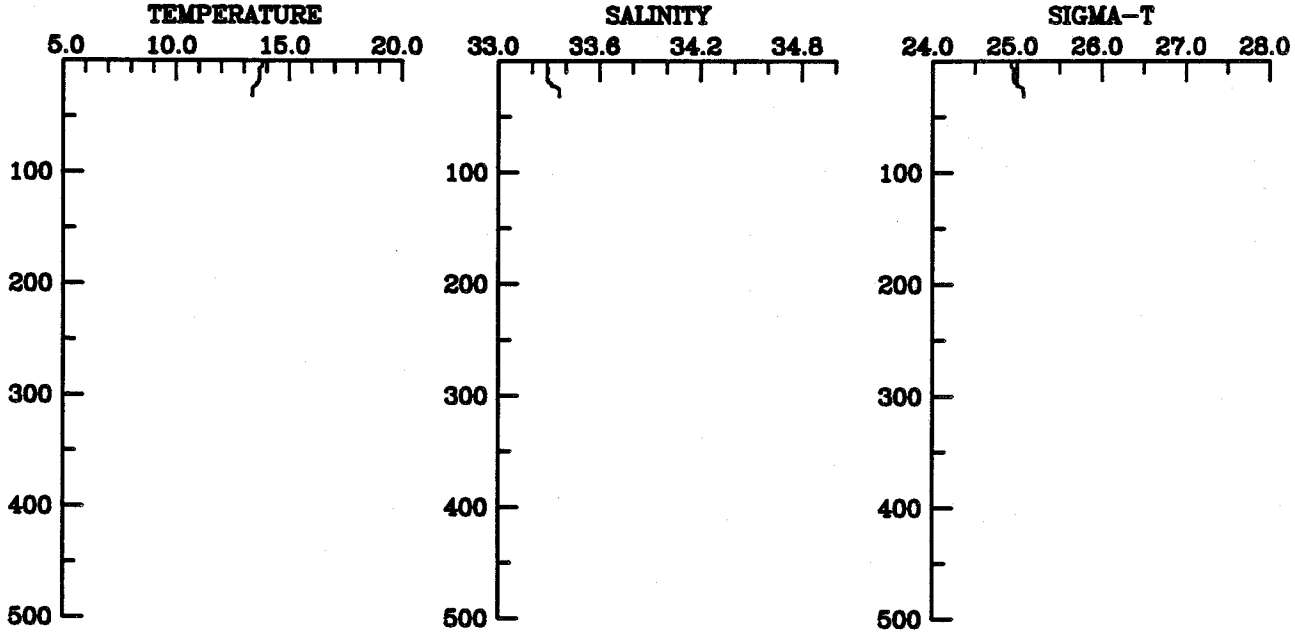
STATION C1 CAST 455
25 April 1983 330 GMT
XBT Transect C-6
XBT Map 7



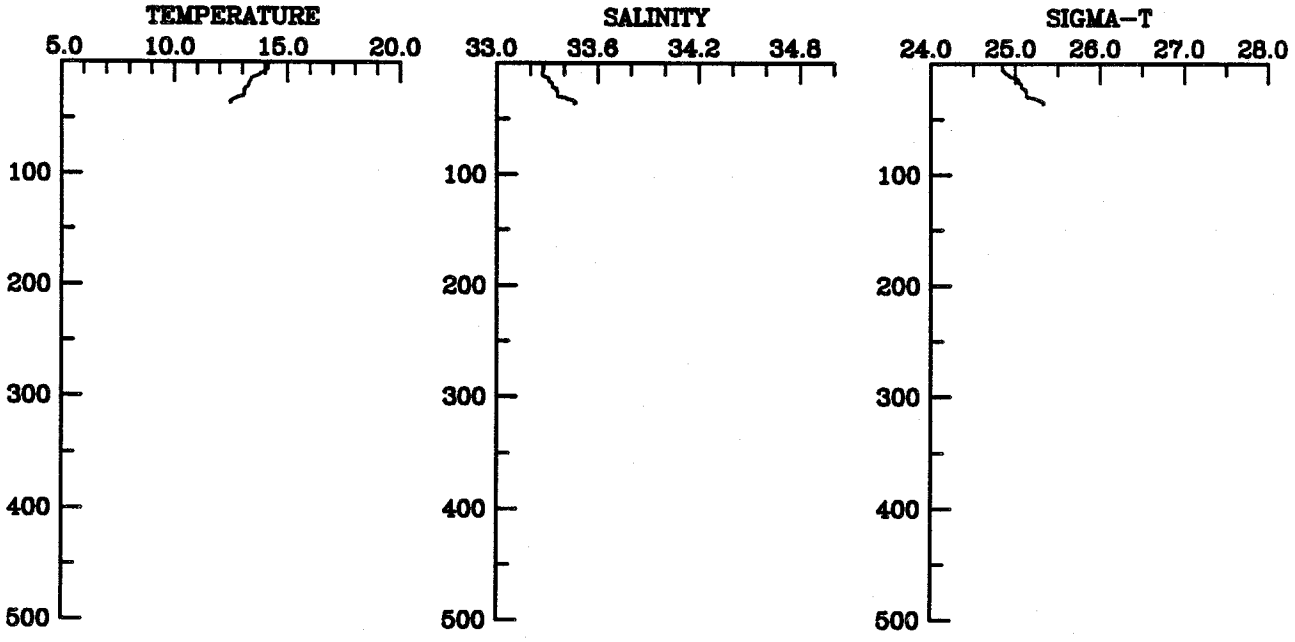
STATION GC1 CAST 456
25 April 1983 406 GMT
XBT Transect GC-6
XBT Map 7



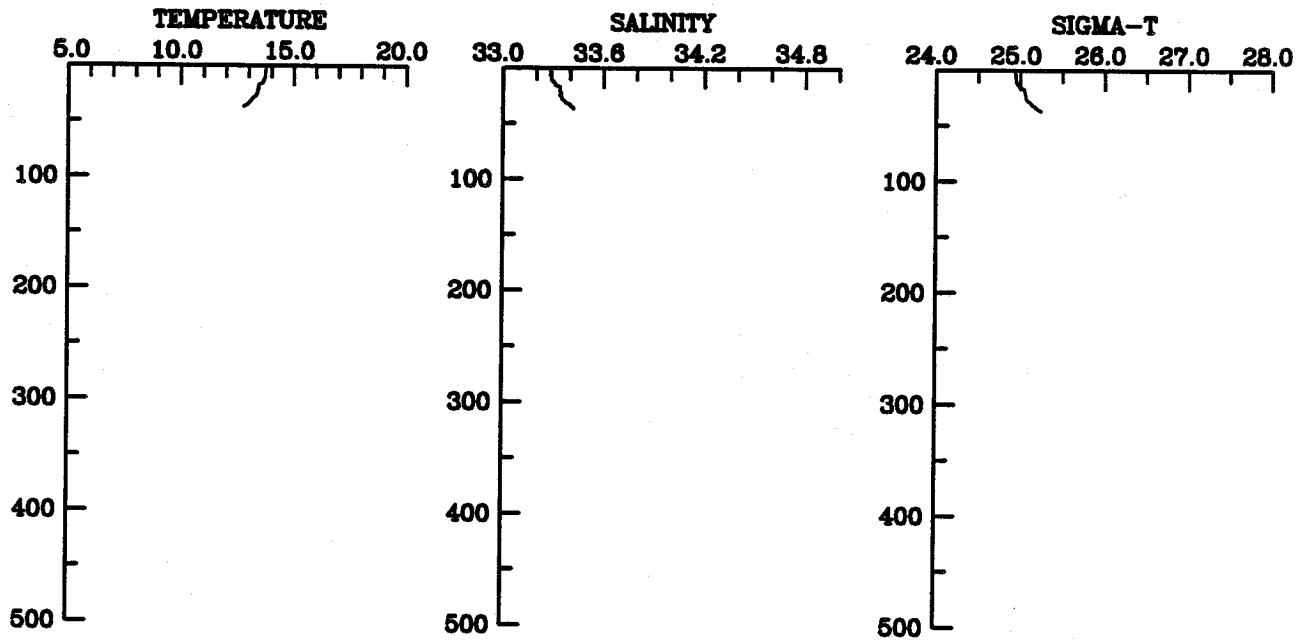
STATION G1 CAST 477
25 April 1983 924 GMT
XBT Transect G-6
XBT Map 7



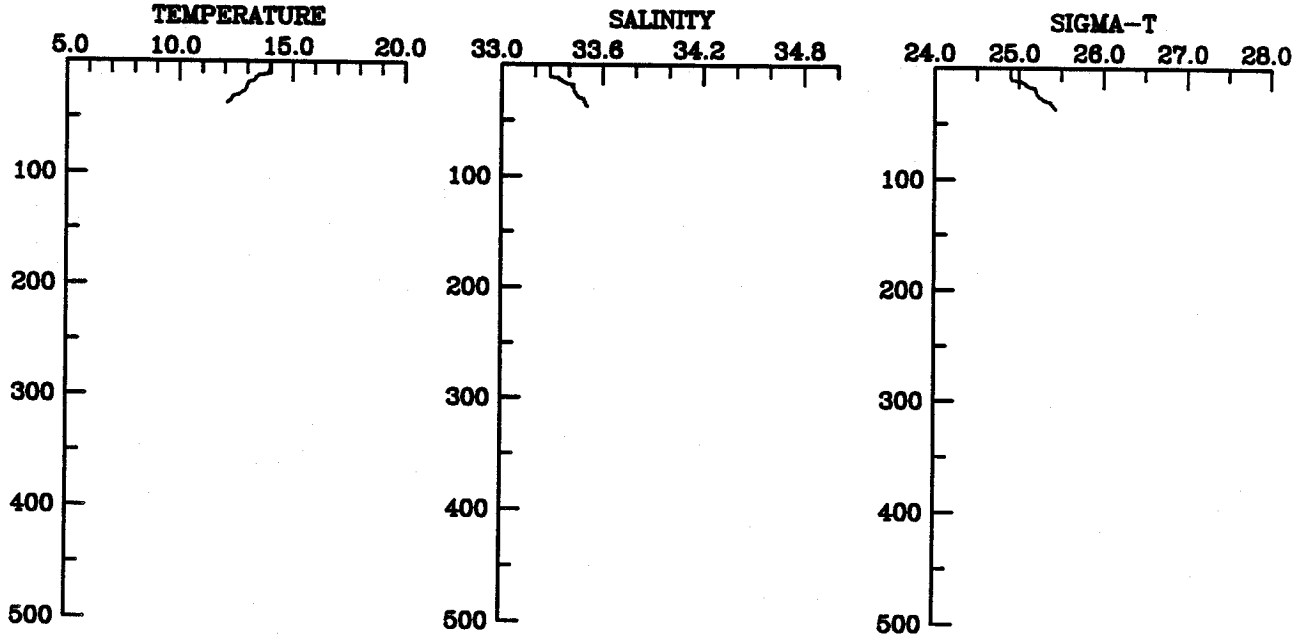
STATION AG1 CAST 478
25 April 1983 1006 GMT
XBT Transect AG-6
XBT Map 7



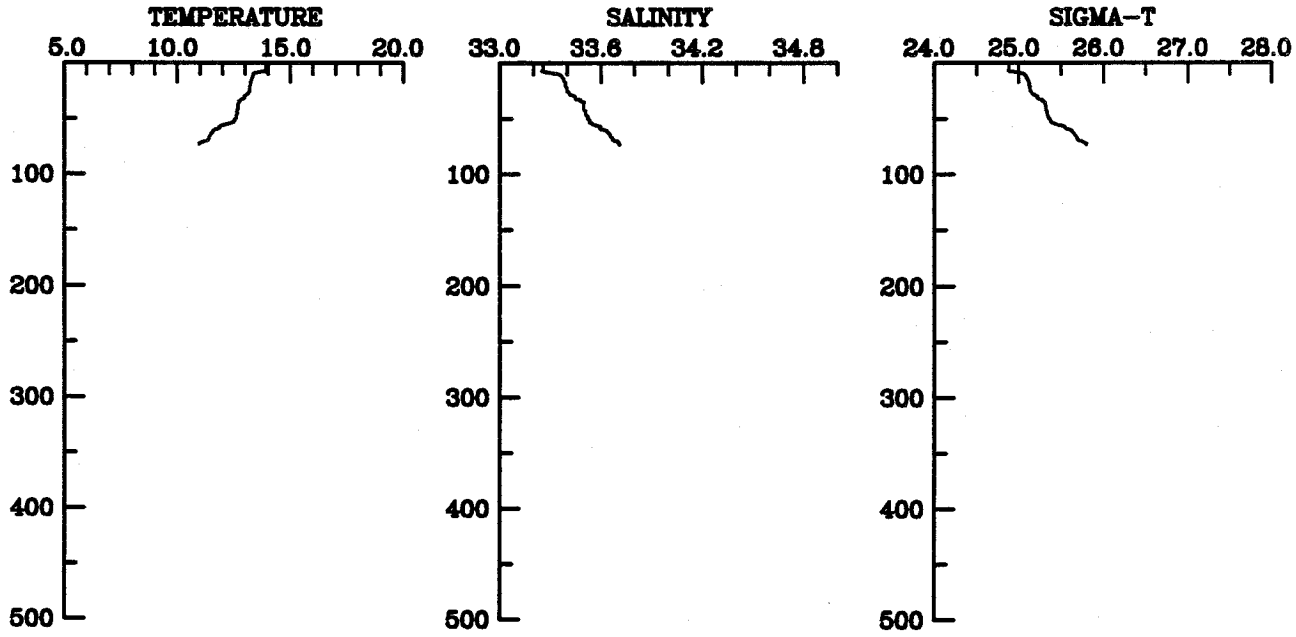
STATION A1 CAST 493
25 April 1983 1518 GMT
XBT Transect A-6
XBT Map 7



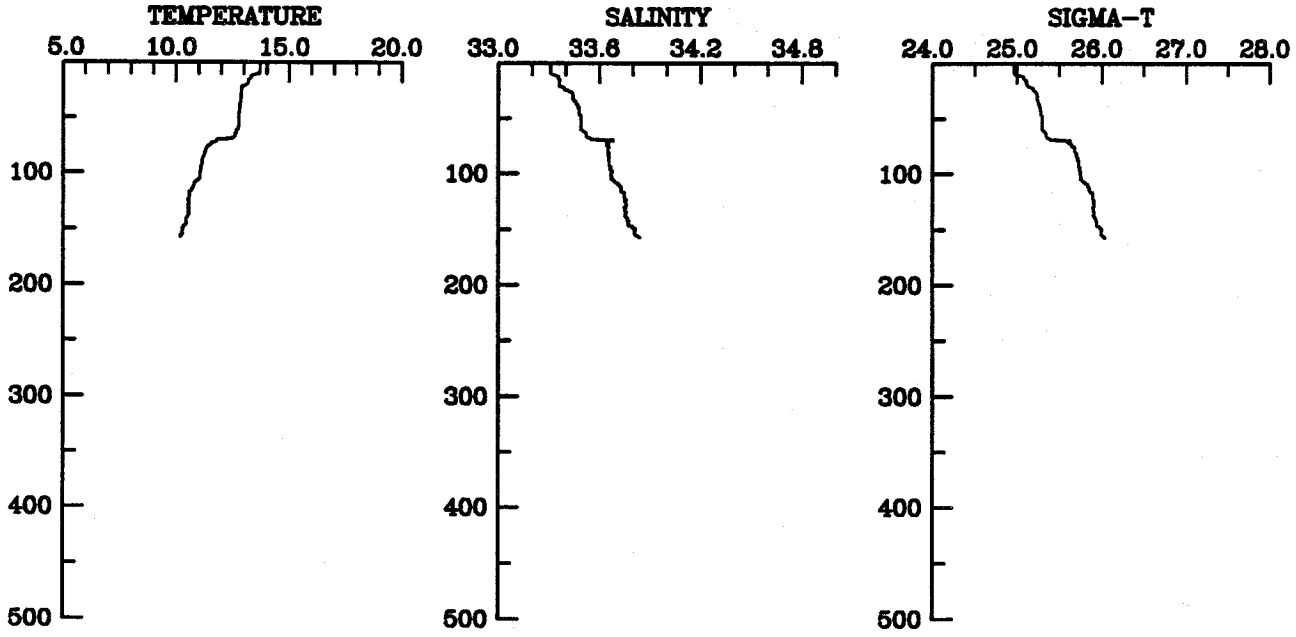
STATION A1 CAST 494
25 April 1983 2106 GMT
CTD Transect A-4
CTD Map 4



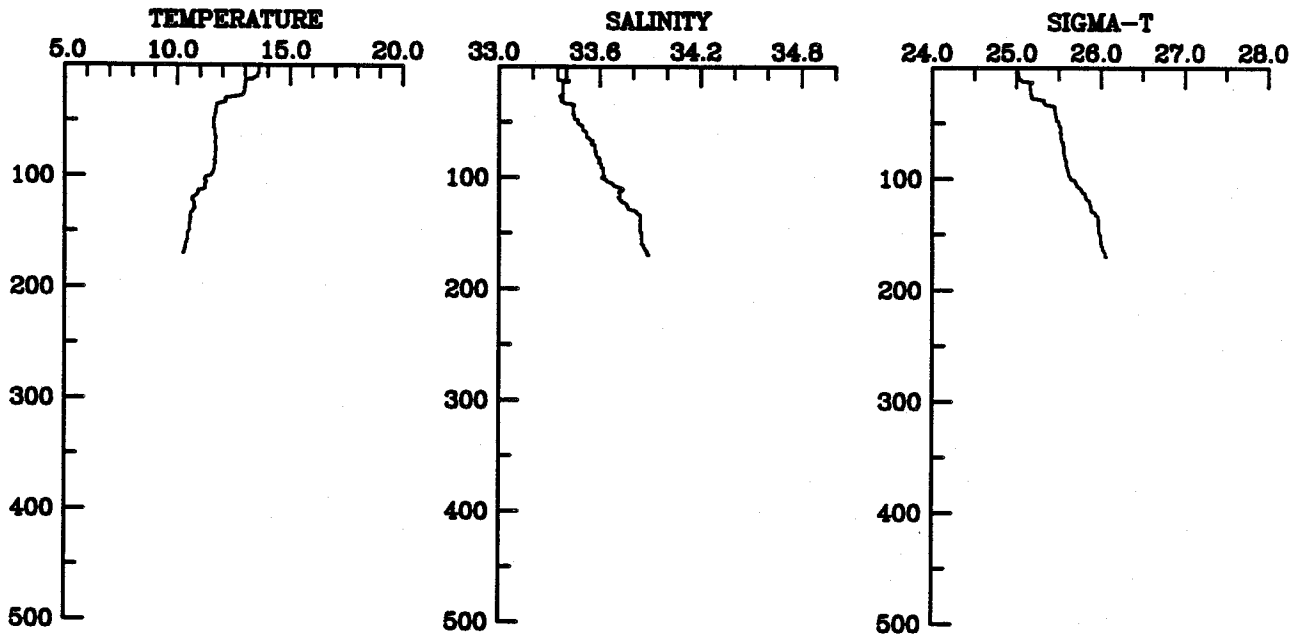
STATION A2 CAST 495
25 April 1983 2136 GMT
CTD Transect A-4
CTD Map 4



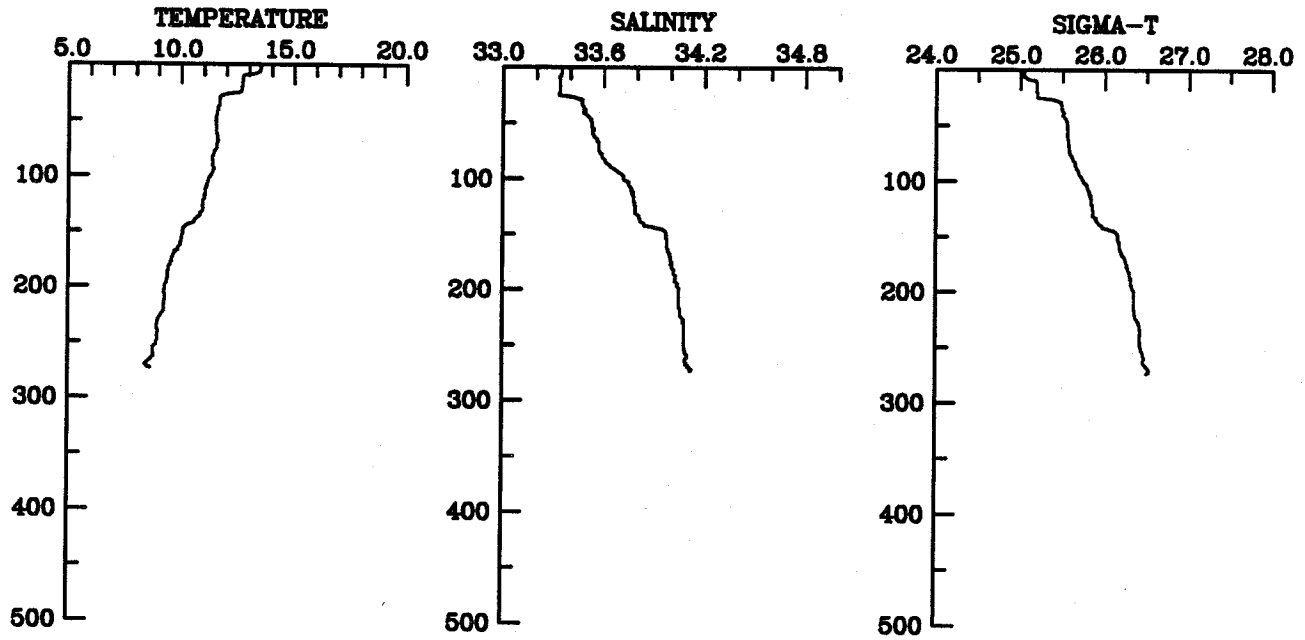
STATION A3 CAST 496
25 April 1983 2242 GMT
CTD Transect A-4
CTD Map 4



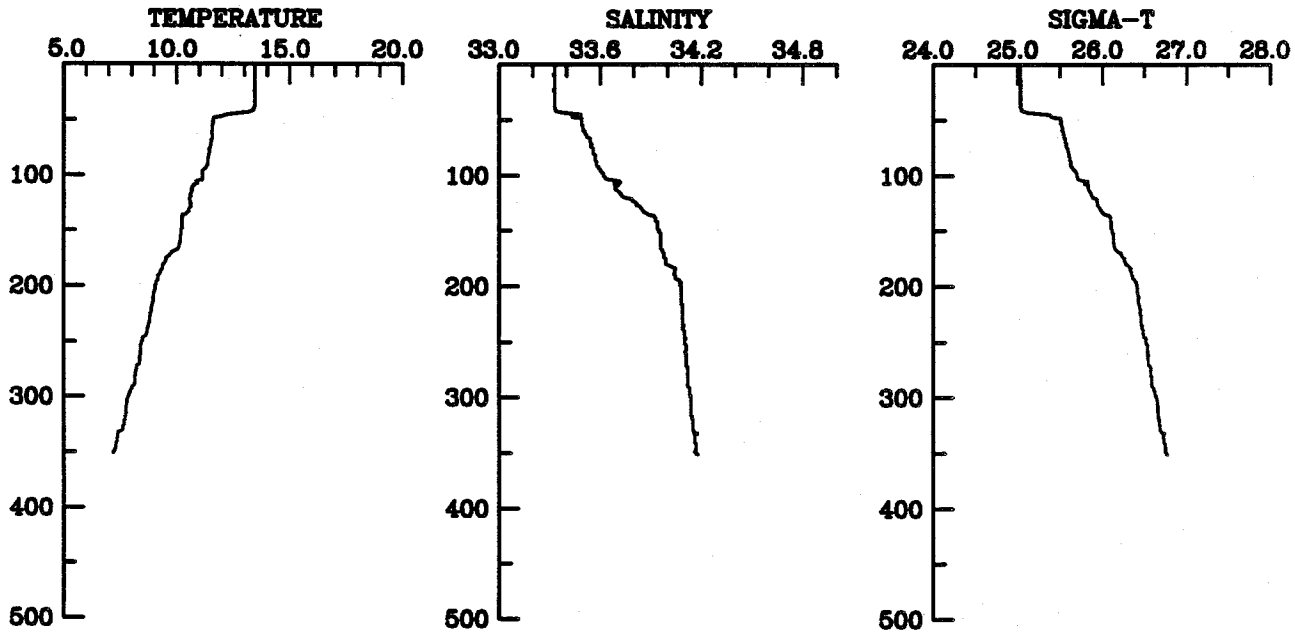
STATION A4 CAST 497
25 April 1983 2336 GMT
CTD Transect A-4
CTD Map 4



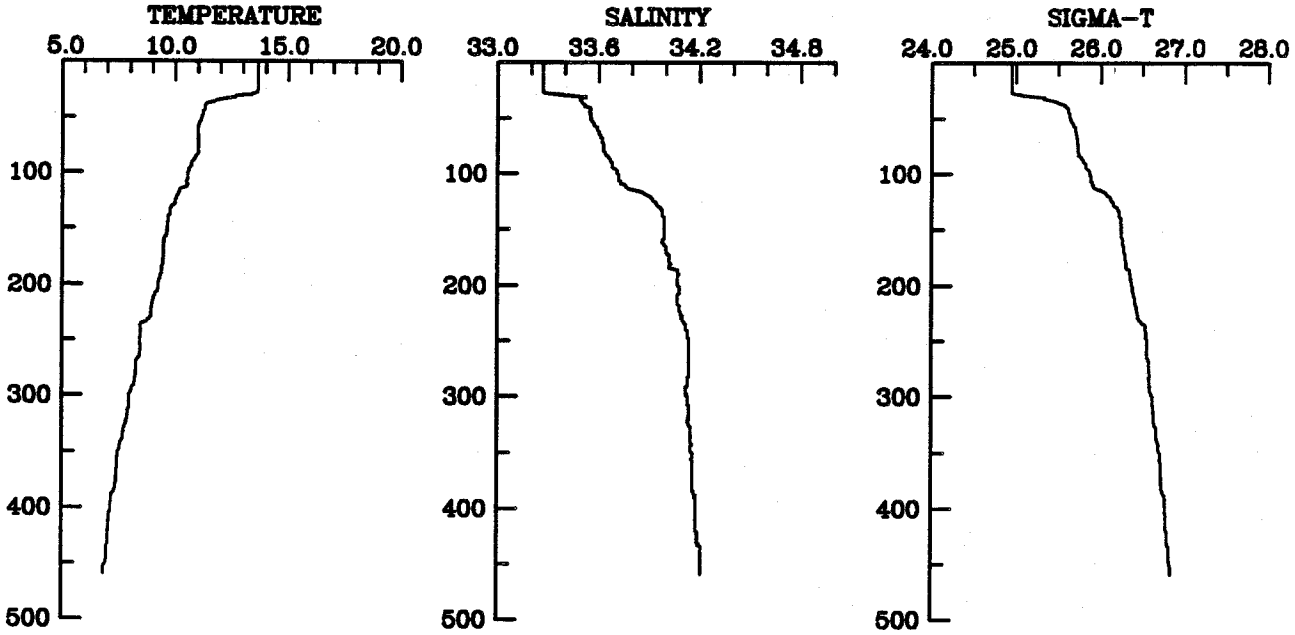
STATION A5 CAST 498
26 April 1983 24 GMT
CTD Transect A-4
CTD Map 4



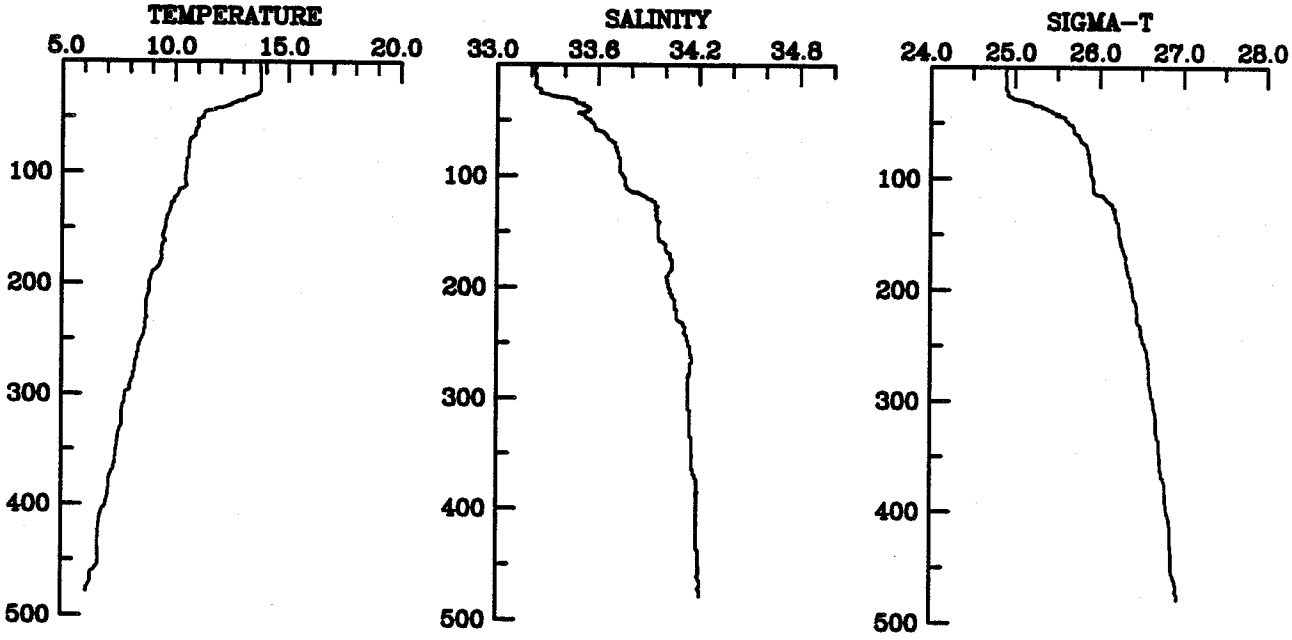
STATION A6 CAST 499
26 April 1983 148 GMT
CTD Transect A-4
CTD Map 4



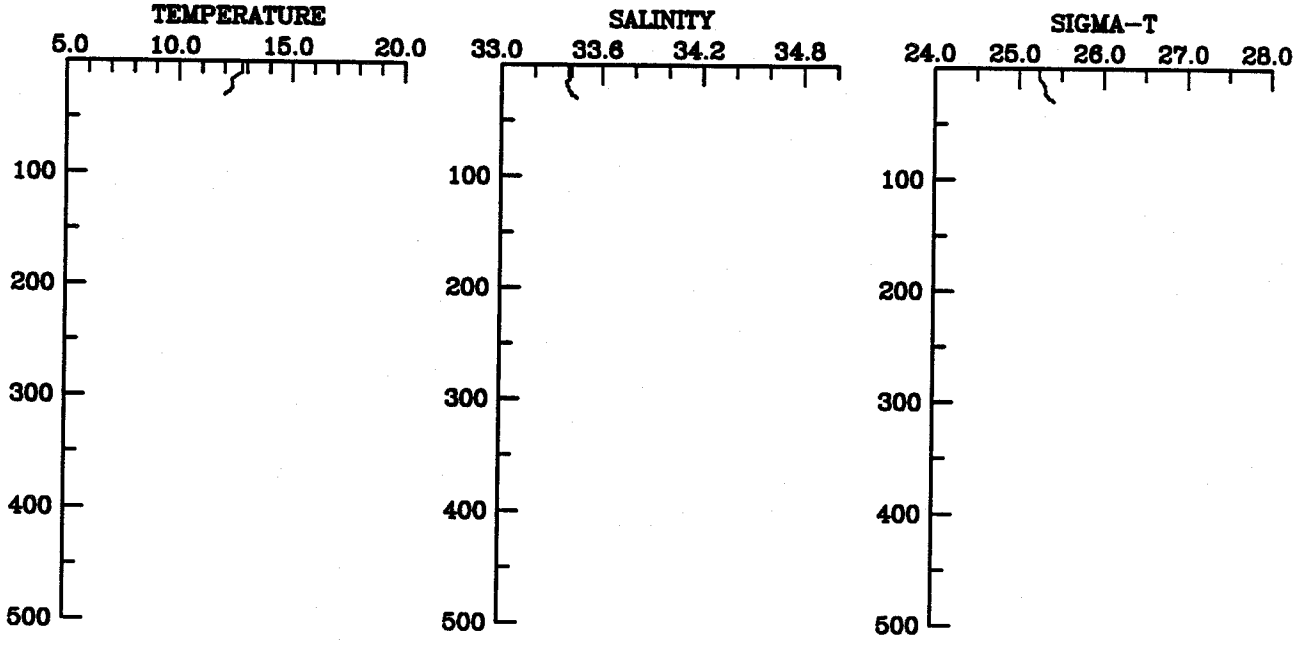
STATION A7 CAST 500
26 April 1983 242 GMT
CTD Transect A-4
CTD Map 4



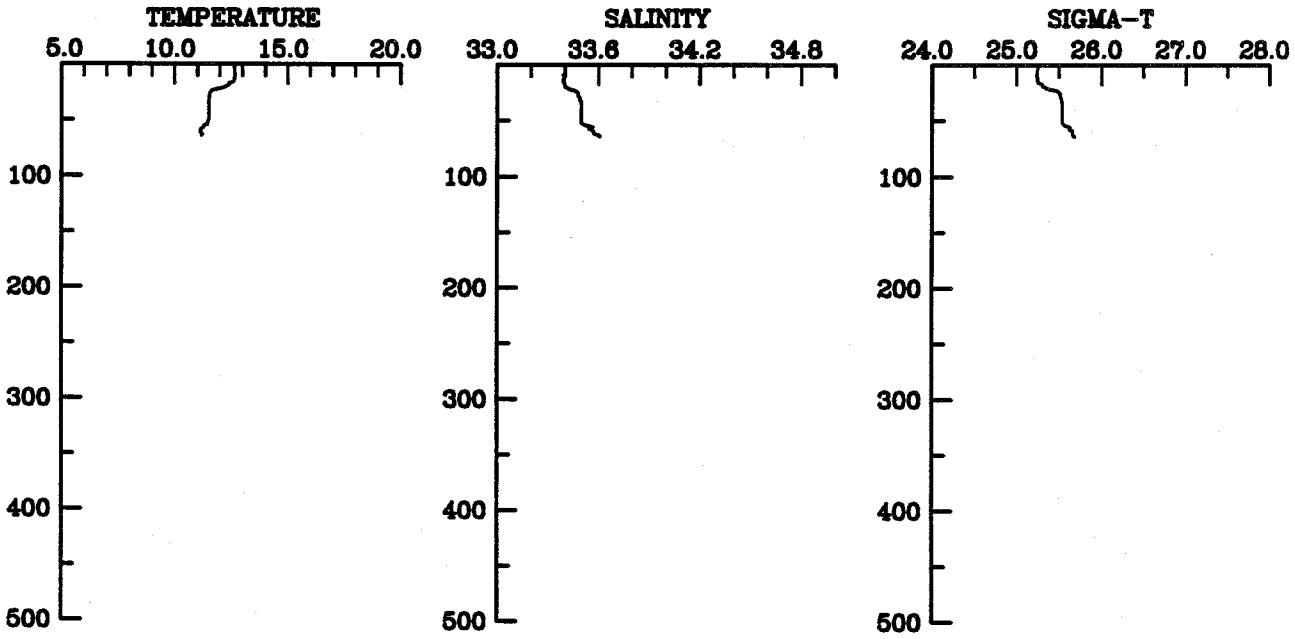
STATION A8 CAST 501
26 April 1983 354 GMT
CTD Transect A-4
CTD Map 4



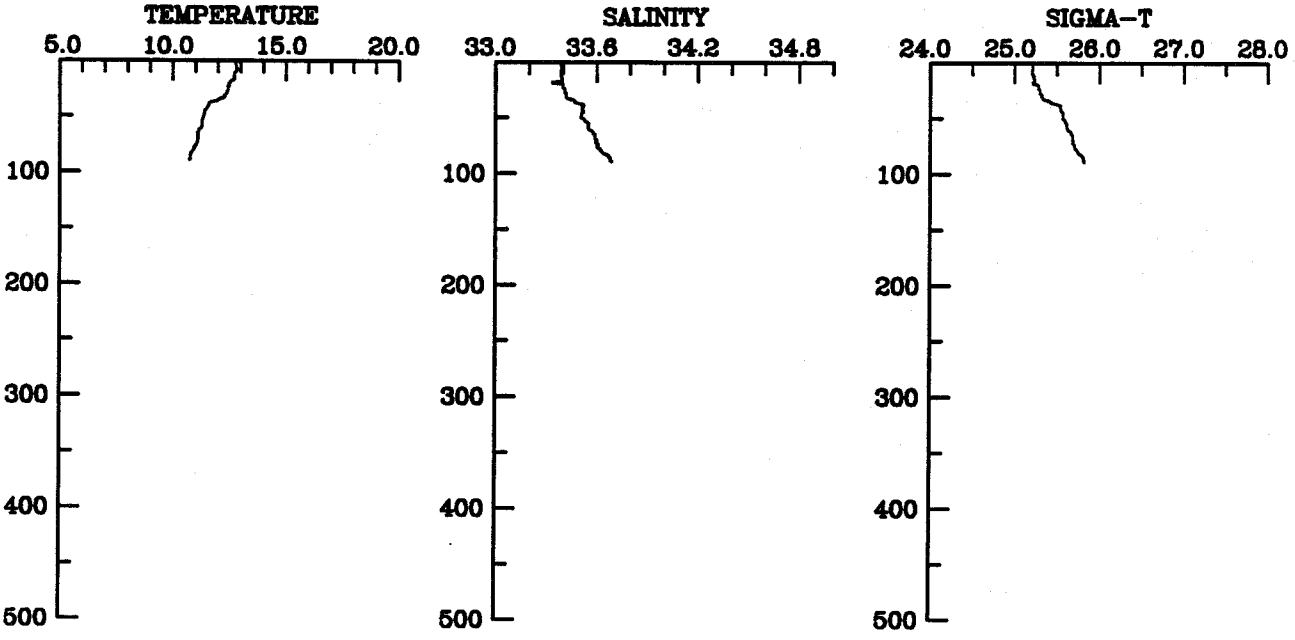
STATION G1 CAST 502
26 April 1983 818 GMT
CTD Transect G-8
CTD Map 4



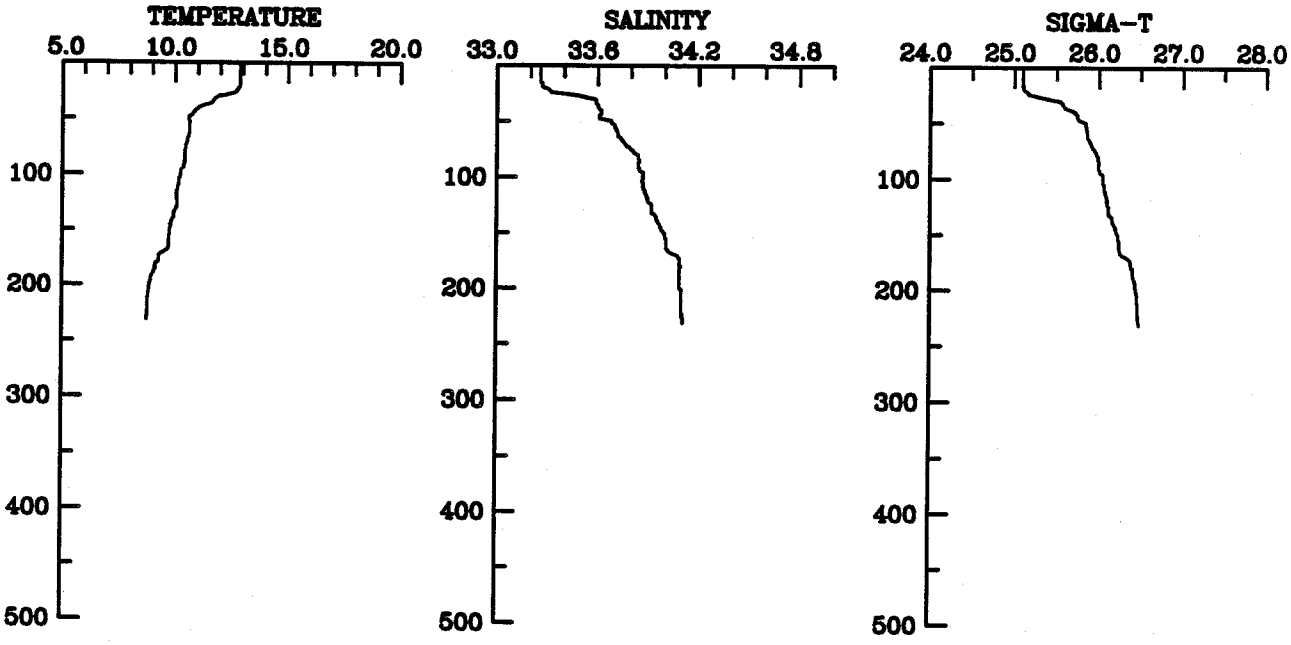
STATION G2 CAST 503
26 April 1983 848 GMT
CTD Transect G-8
CTD Map 4



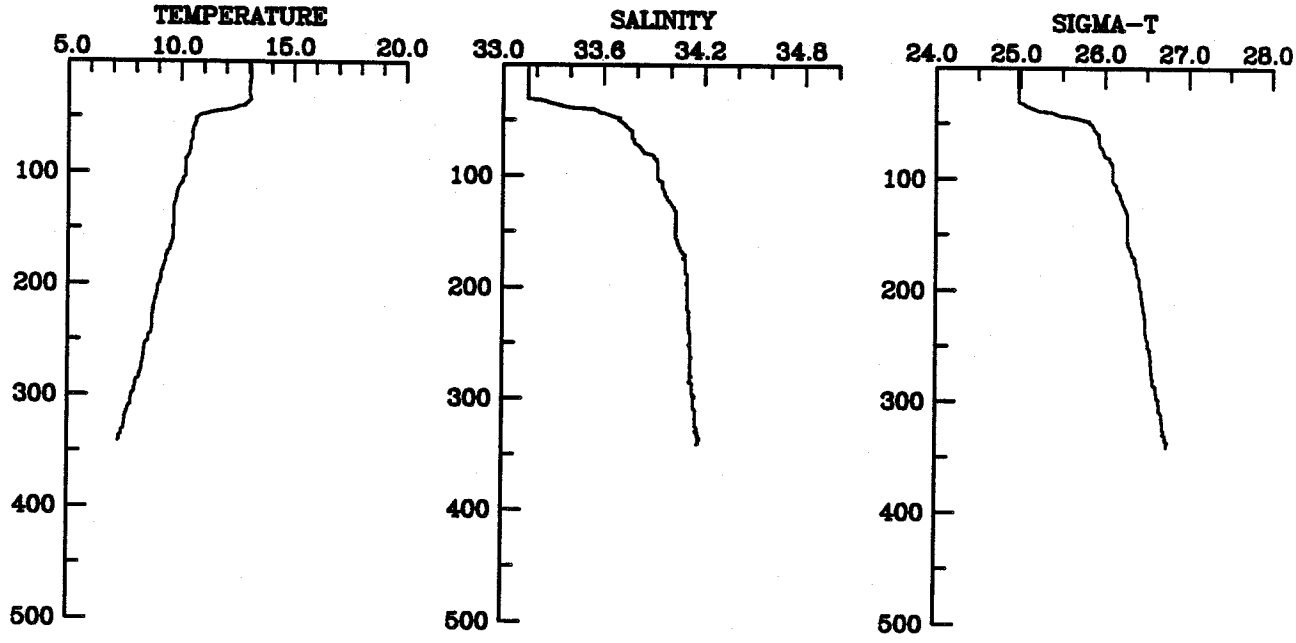
STATION G3 CAST 504
26 April 1983 1012 GMT
CTD Transect G-8
CTD Map 4



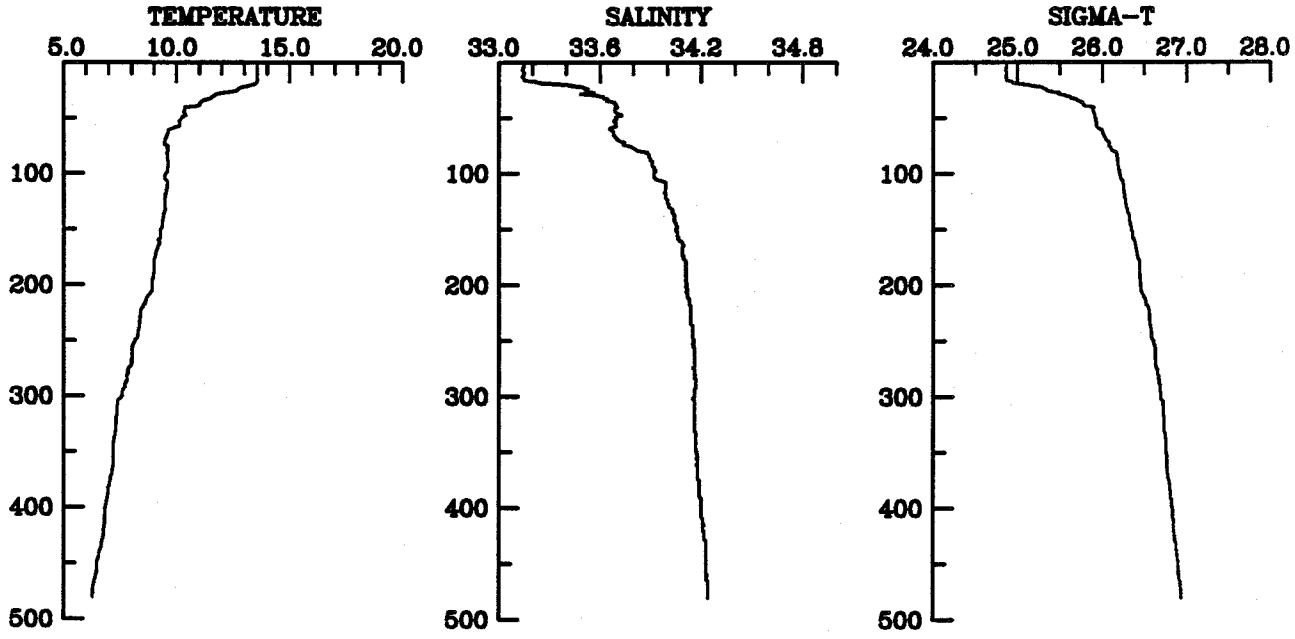
STATION G4 CAST 505
26 April 1983 1106 GMT
CTD Transect G-8
CTD Map 4



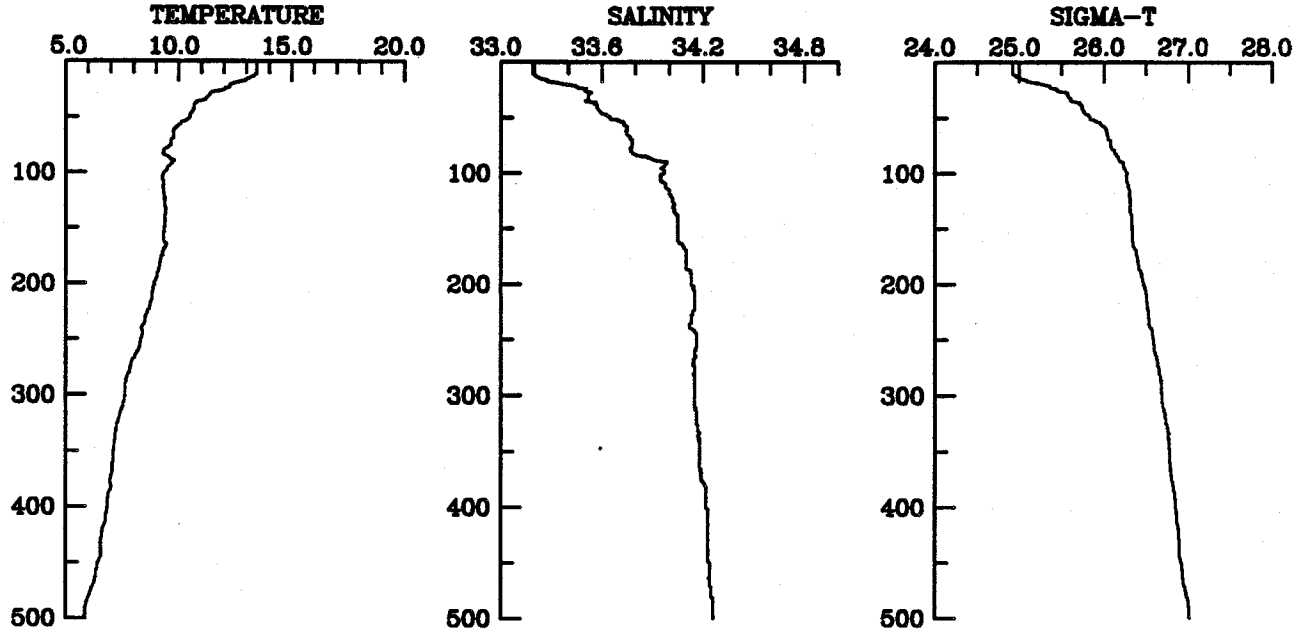
STATION G5 CAST 506
26 April 1983 1200 GMT
CTD Transect G-8
CTD Map 4



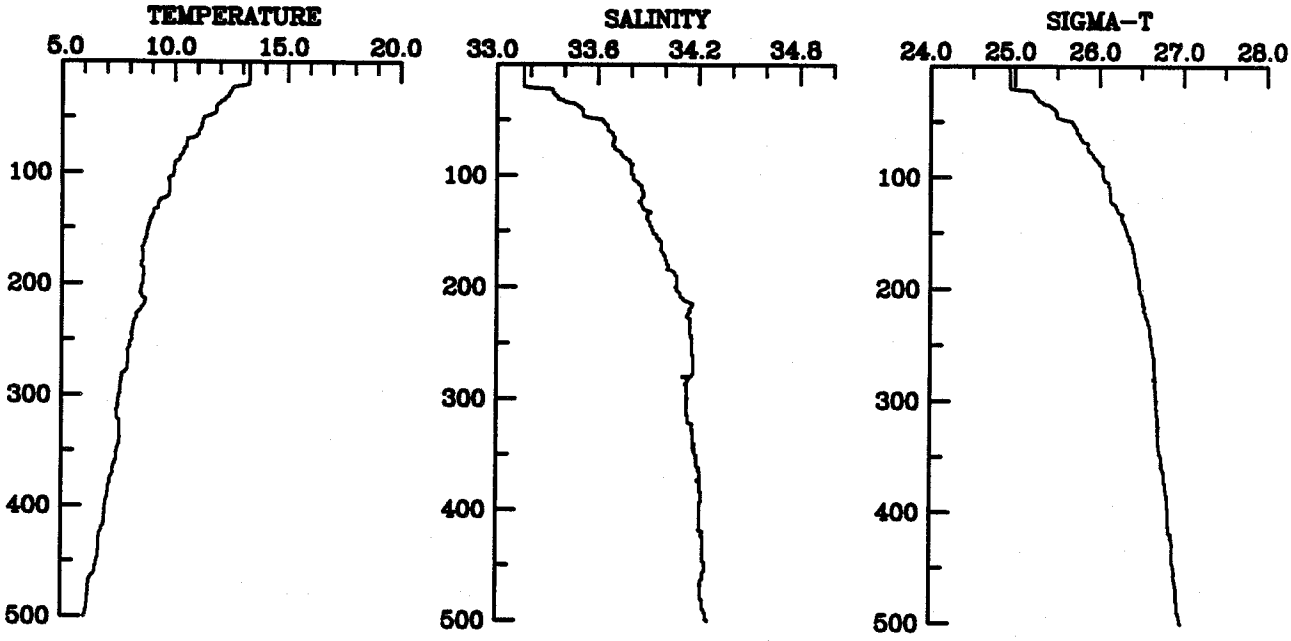
STATION G6 CAST 507
26 April 1983 1312 GMT
CTD Transect G-8
CTD Map 4



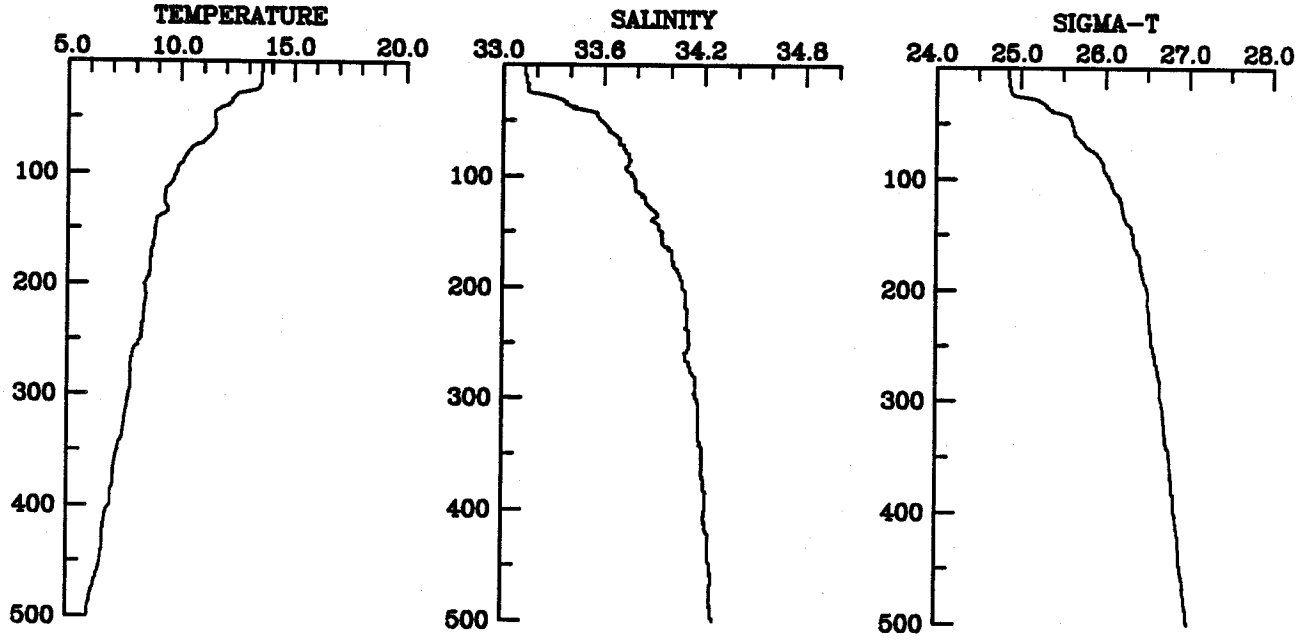
STATION G7 CAST 508
26 April 1983 1442 GMT
CTD Transect G-8
CTD Map 4



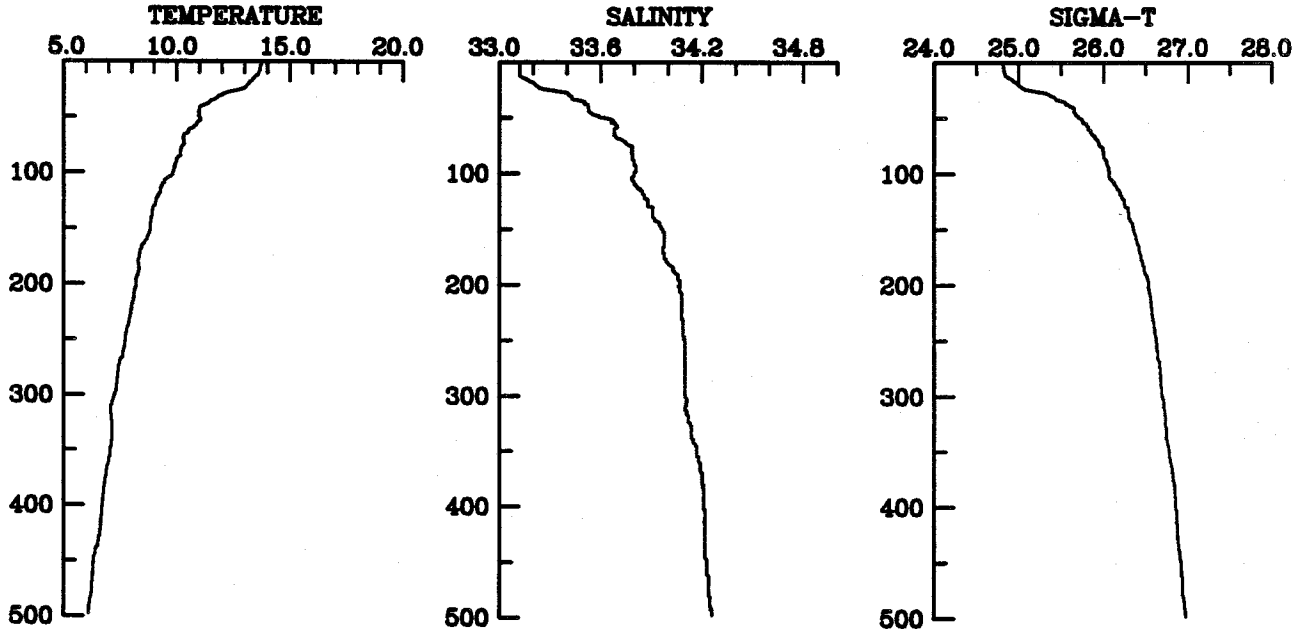
STATION G8 CAST 509
26 April 1983 1642 GMT
CTD Transect G-8
CTD Map 4



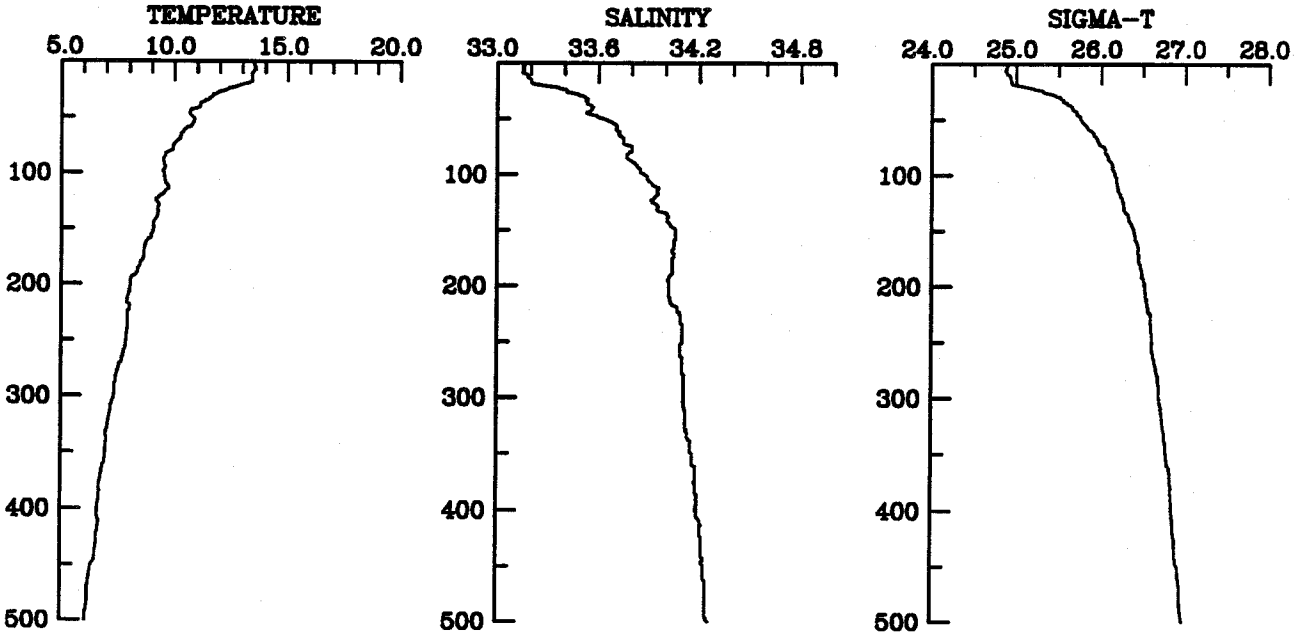
STATION G9 CAST 510
26 April 1983 1748 GMT
CTD Transect G-8
CTD Map 4



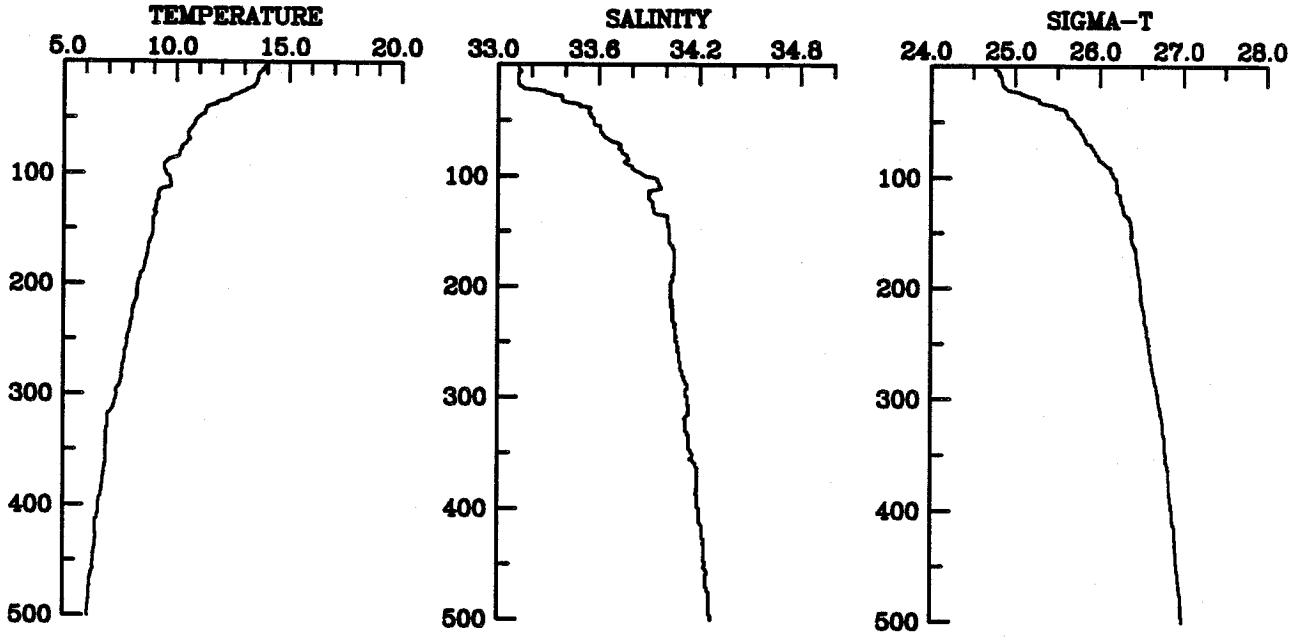
STATION G10 CAST 511
26 April 1983 1900 GMT
CTD Transect G-8
CTD Map 4



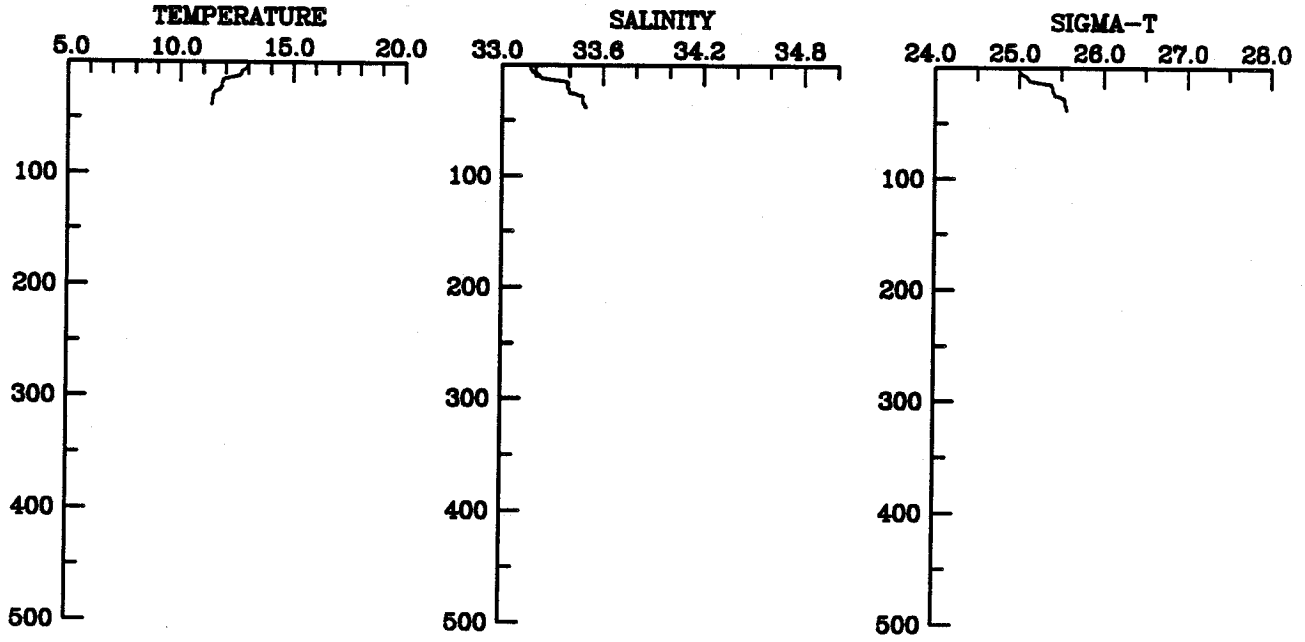
STATION G11 CAST 512
26 April 1983 2018 GMT
CTD Transect G-8
CTD Map 4



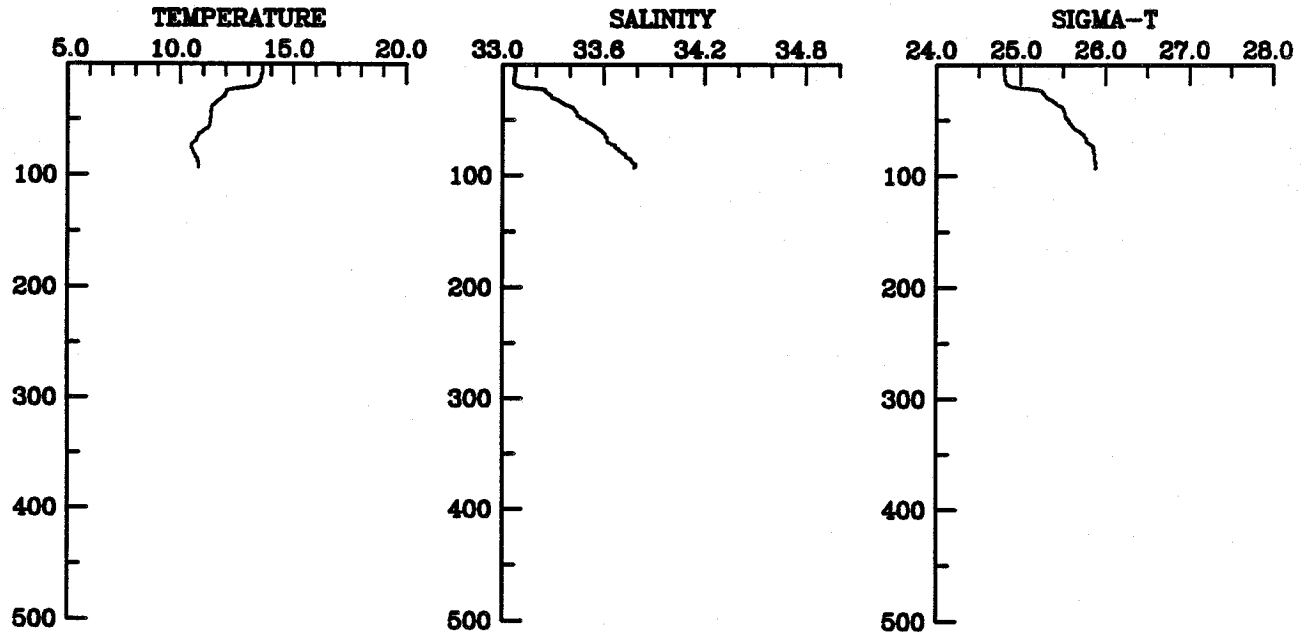
STATION G12 CAST 513
26 April 1983 2142 GMT
CTD Transect G-8
CTD Map 4



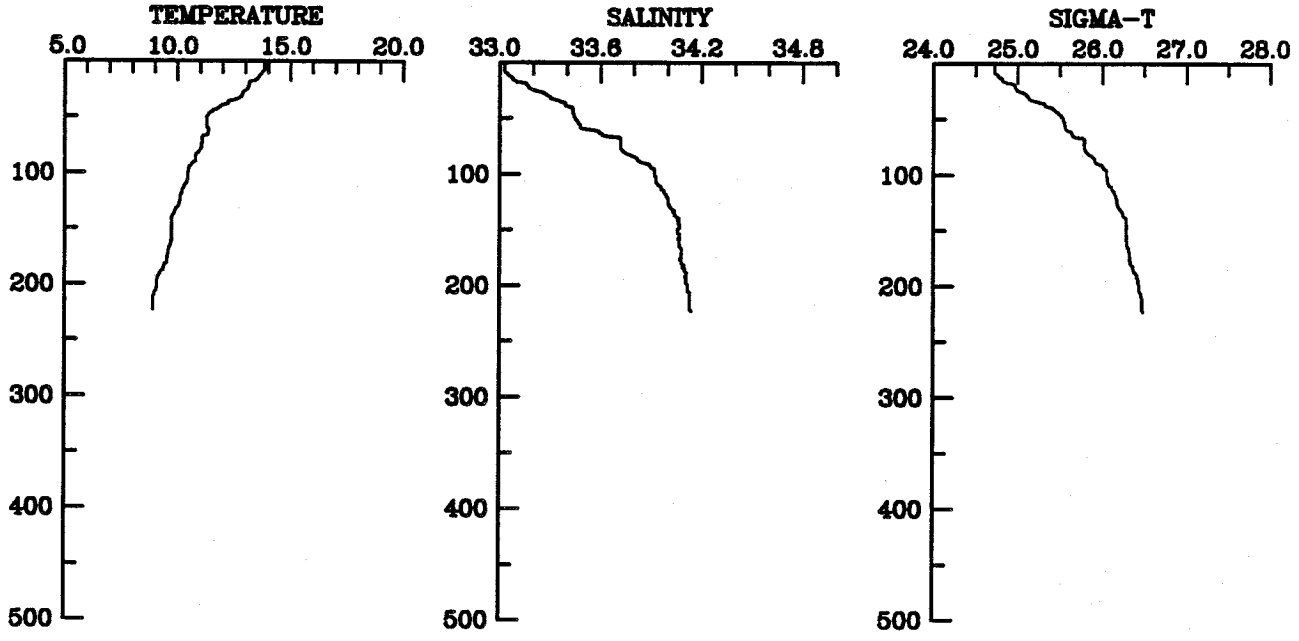
STATION C1 CAST 514
27 April 1983 148 GMT
CTD Transect C-4
CTD Map 4



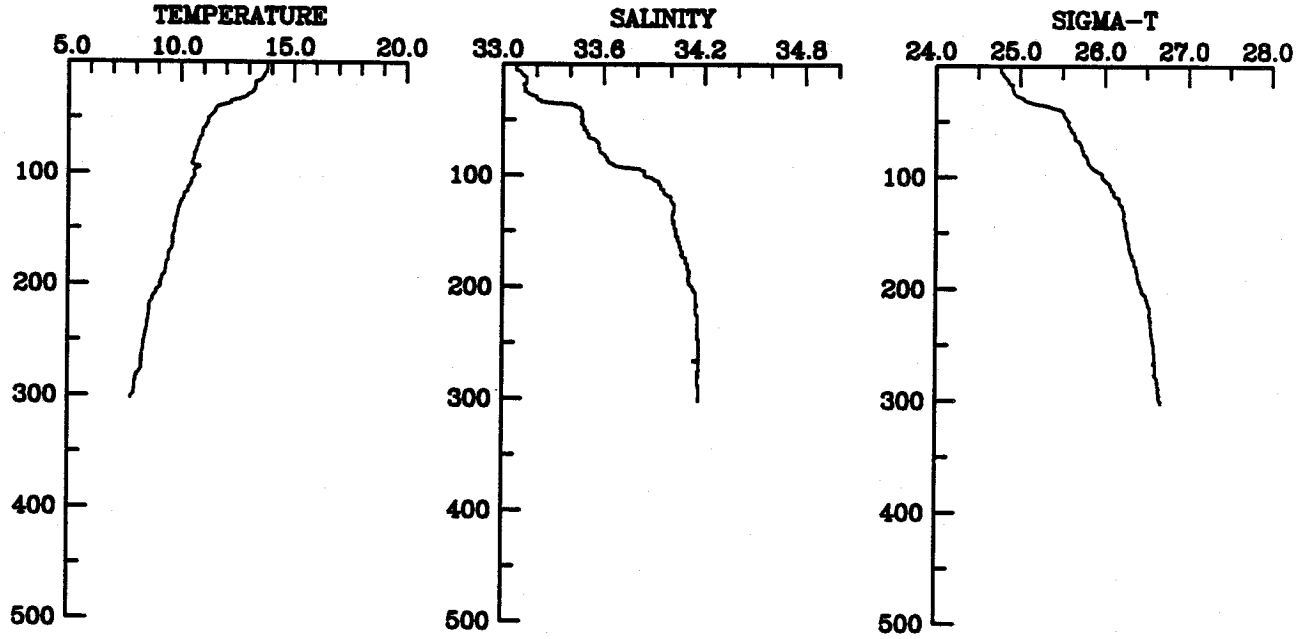
STATION C2 CAST 515
27 April 1983 218 GMT
CTD Transect C-4
CTD Map 4



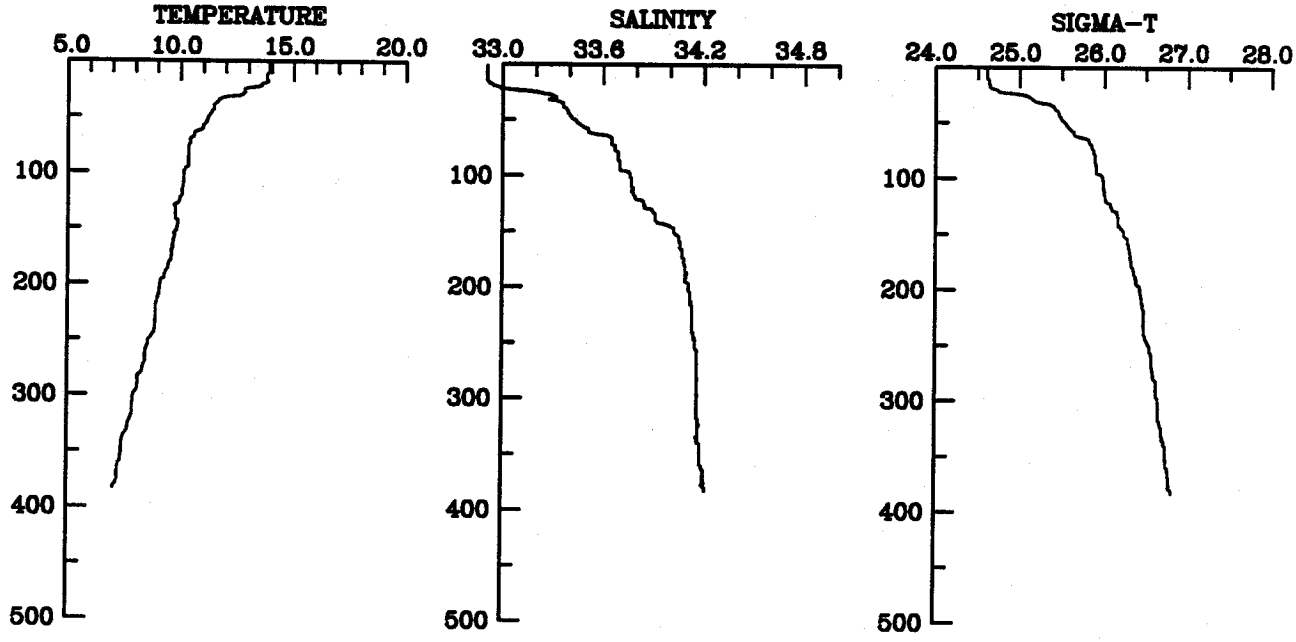
STATION C3 CAST 516
27 April 1983 342 GMT
CTD Transect C-4
CTD Map 4



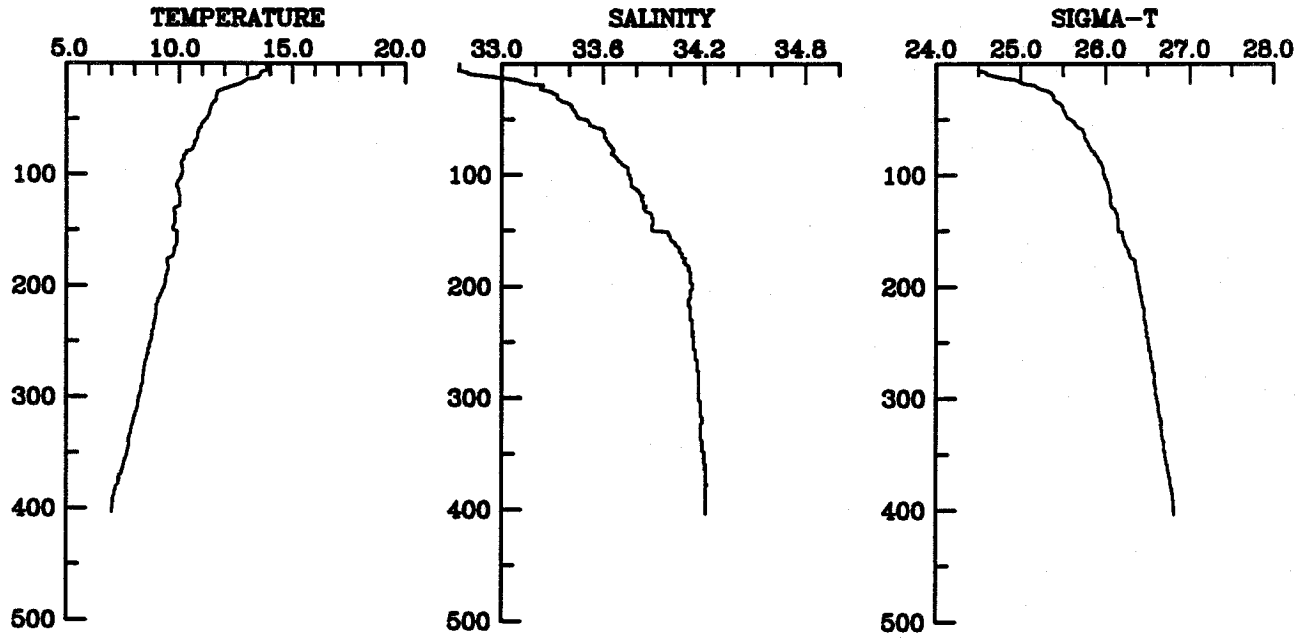
STATION C4 CAST 517
27 April 1983 442 GMT
CTD Transect C-4
CTD Map 4



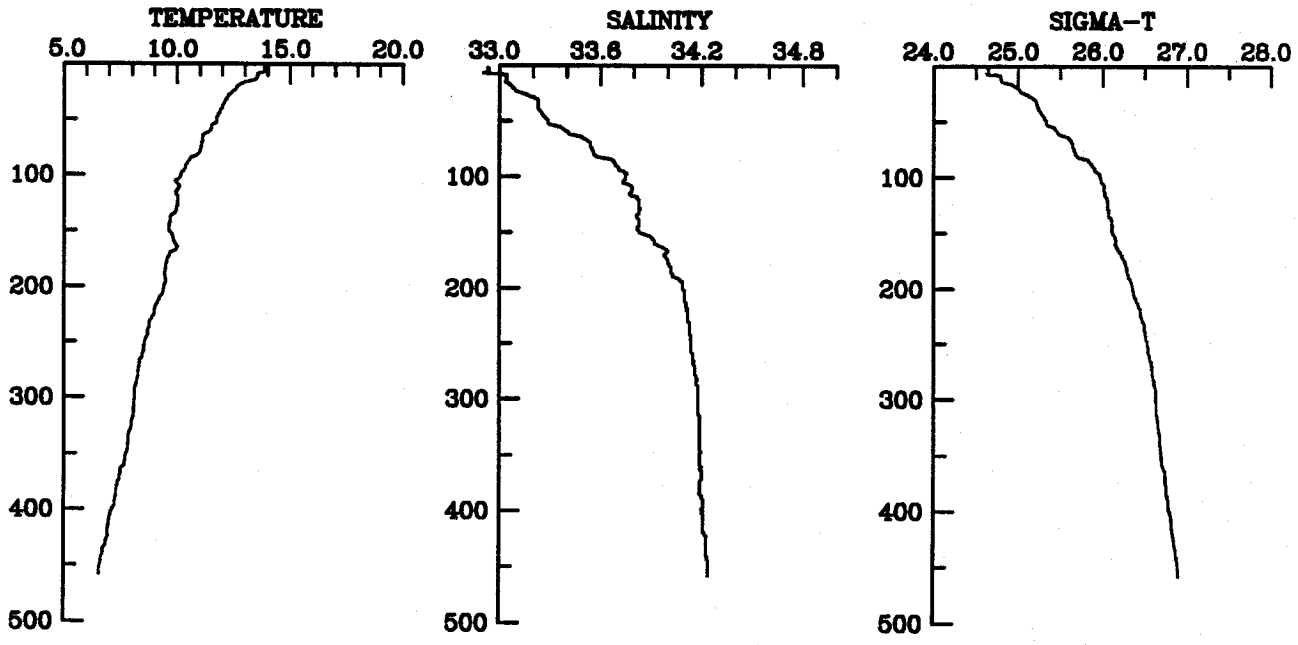
STATION C5 CAST 518
27 April 1983 542 GMT
CTD Transect C-4
CTD Map 4



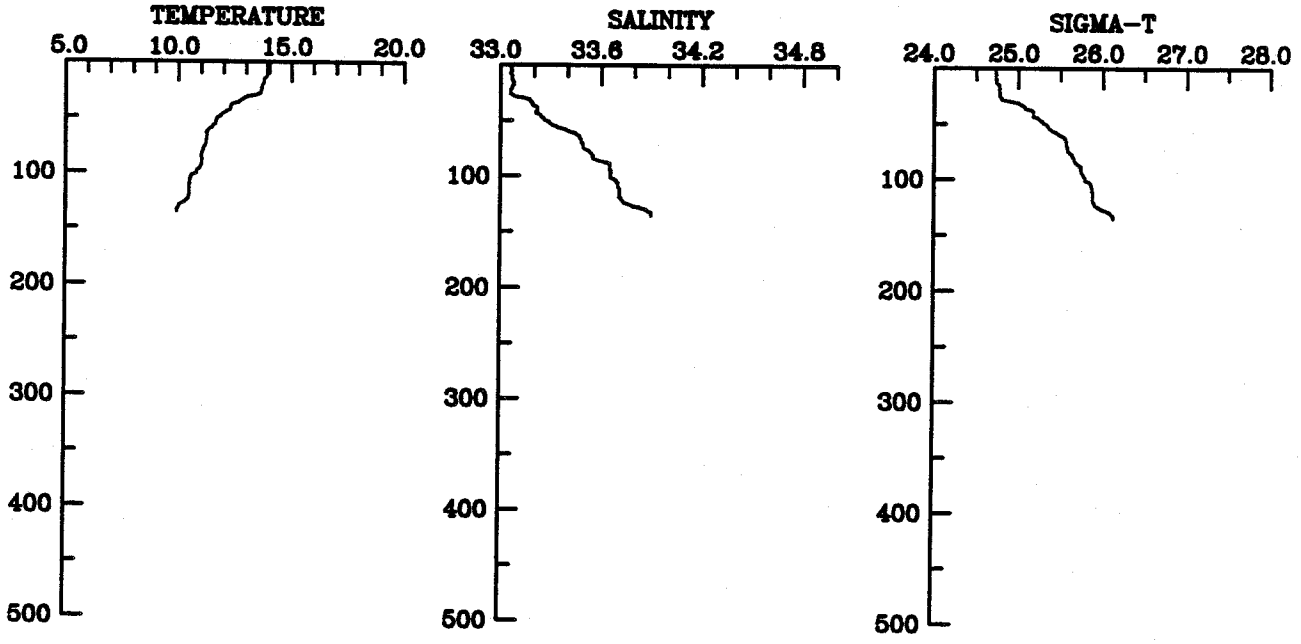
STATION C6 CAST 519
27 April 1983 700 GMT
CTD Transect C-4
CTD Map 4



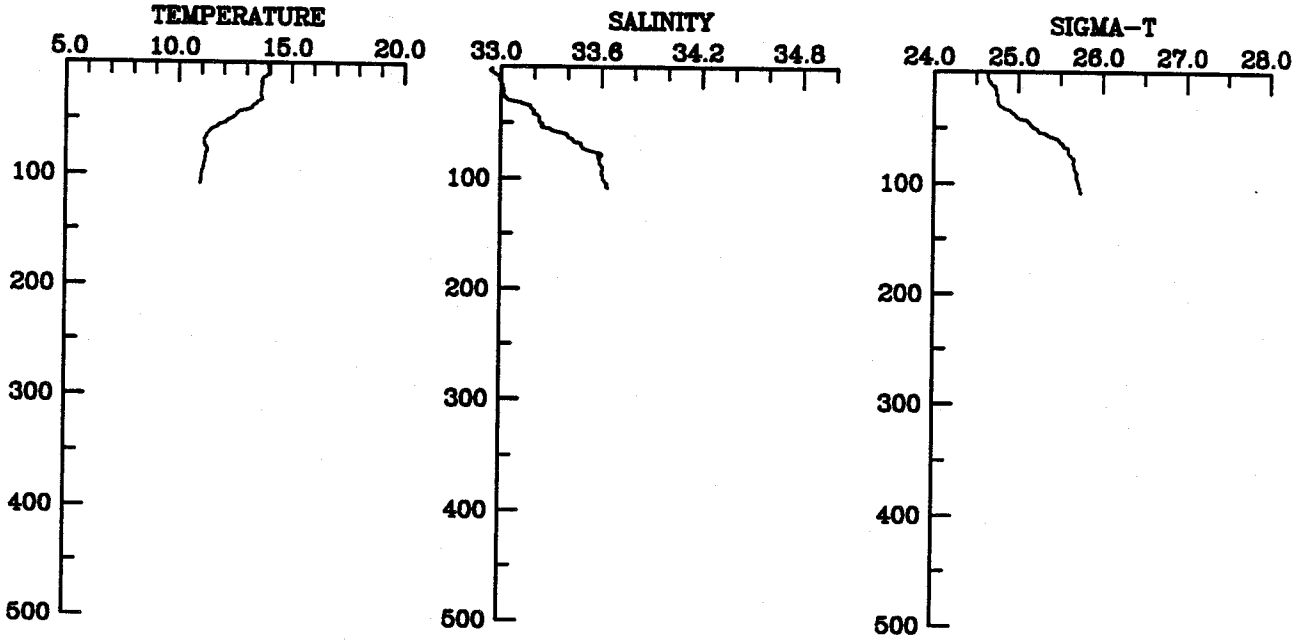
STATION C7 CAST 520
27 April 1983 918 GMT
CTD Transect C-4
CTD Map 4



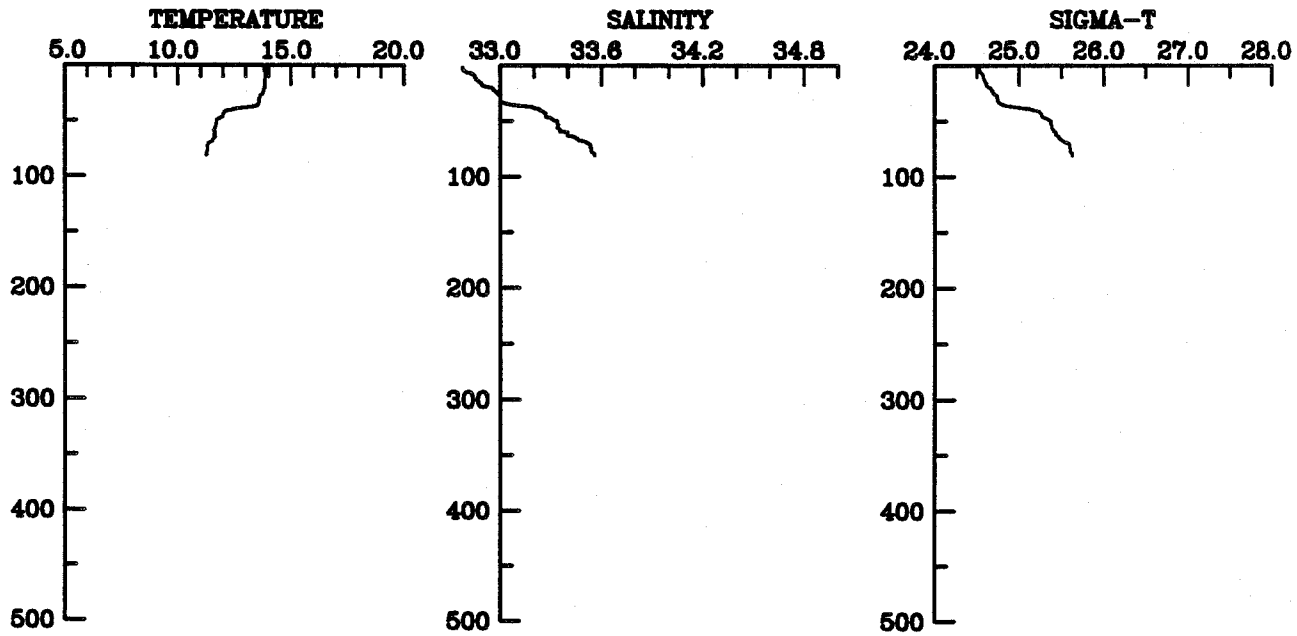
STATION C8 CAST 521
27 April 1983 1042 GMT
CTD Transect C-4
CTD Map 4



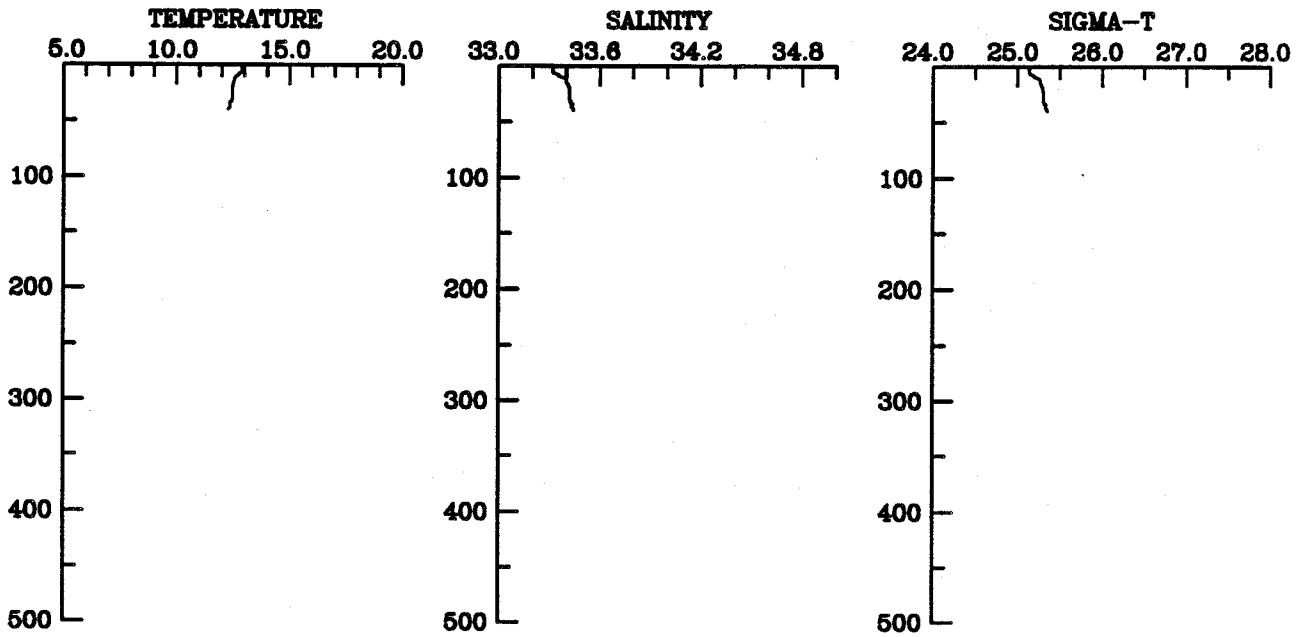
STATION C9 CAST 522
27 April 1983 1136 GMT
CTD Transect C-4
CTD Map 4



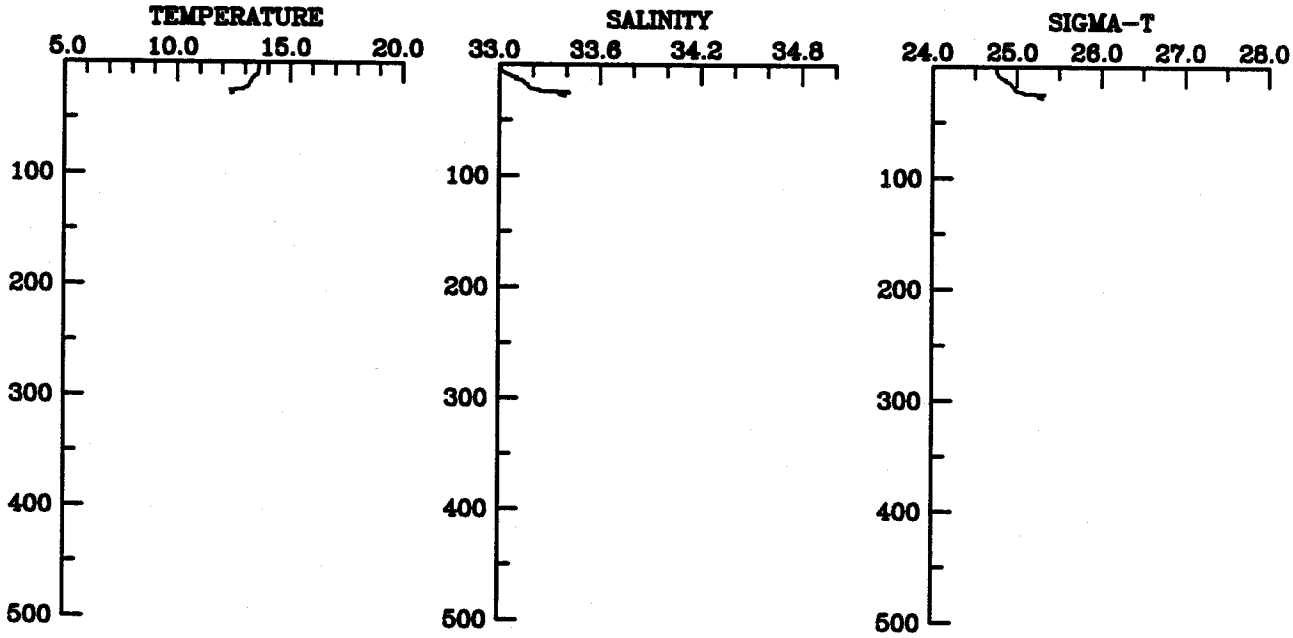
STATION C10 CAST 523
27 April 1983 1312 GMT
CTD Transect C-4
CTD Map 4



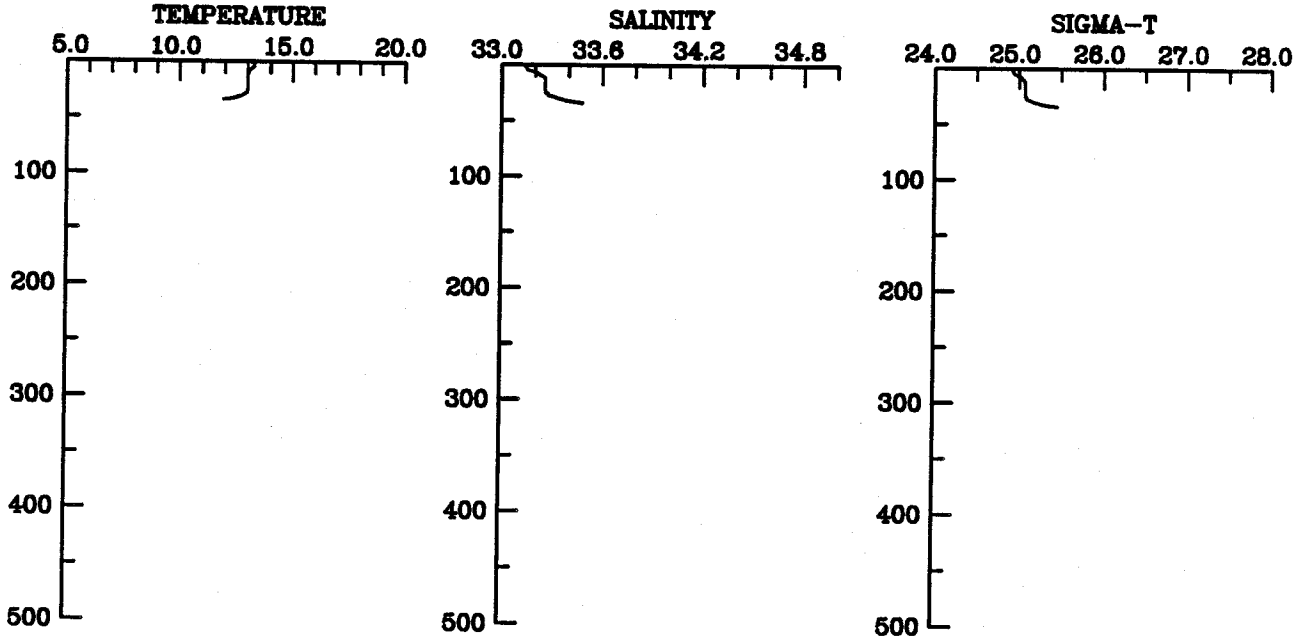
STATION A1 CAST 524
28 April 1983 718 GMT
XBT Transect A-7
XBT Map 8



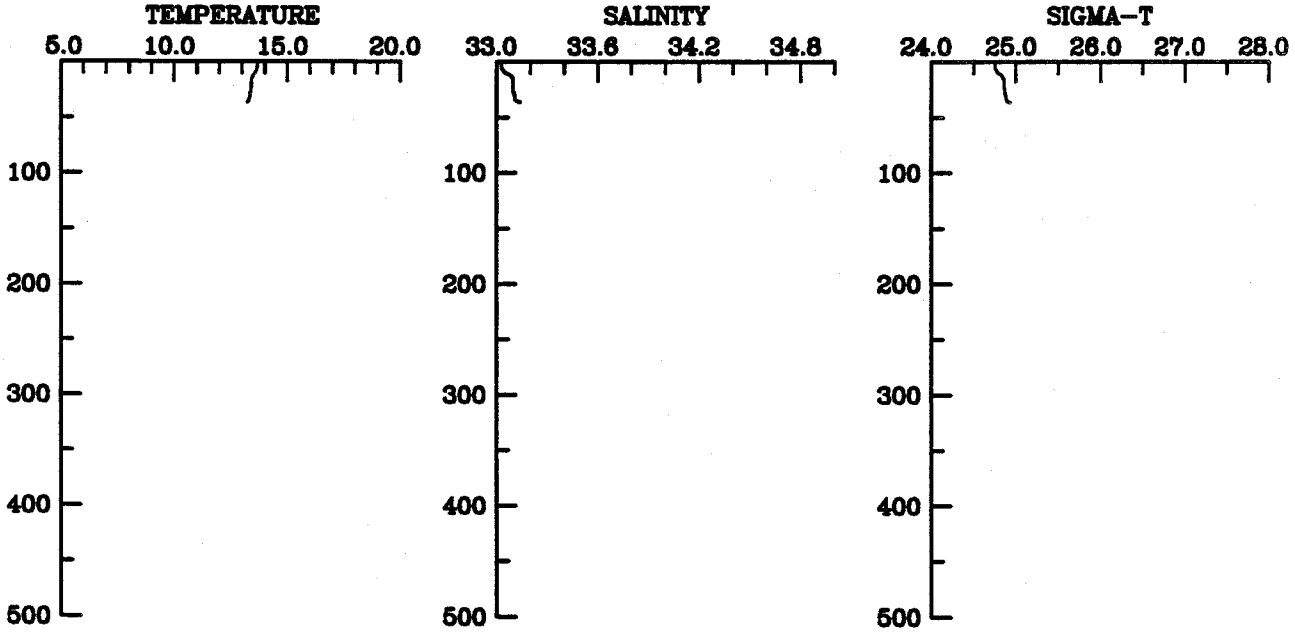
STATION AG1 CAST 539
28 April 1983 1154 GMT
XBT Transect AG-7
XBT Map 8



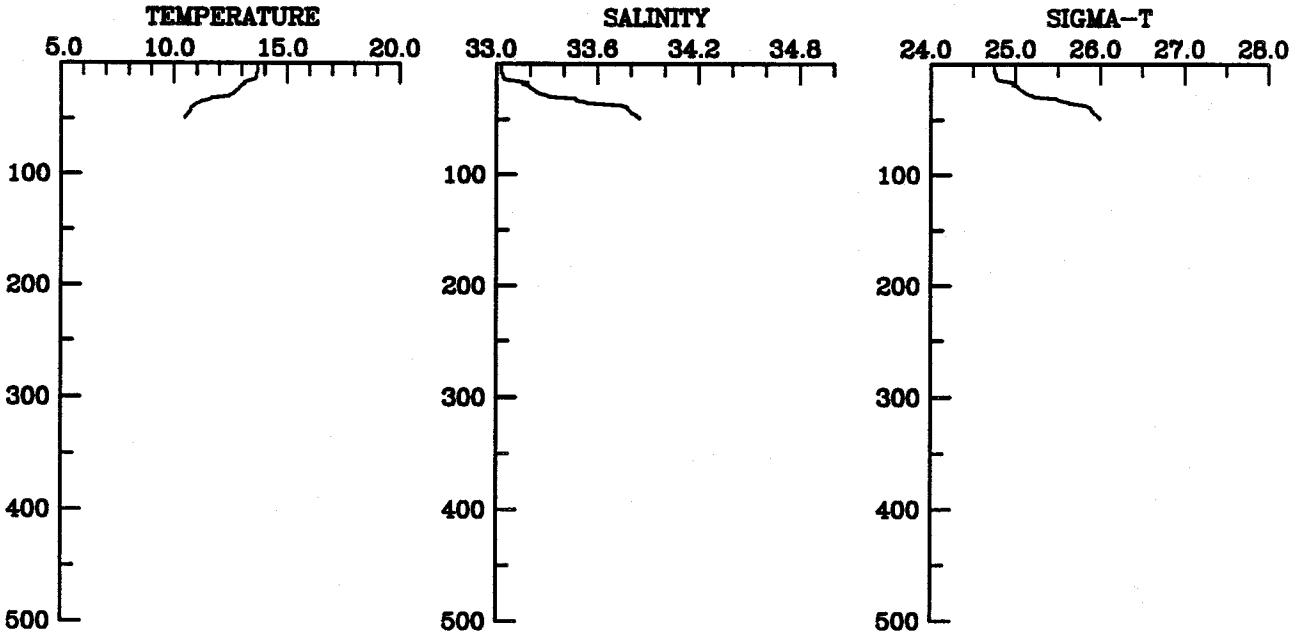
STATION G1 CAST 540
28 April 1983 1224 GMT
XBT Transect G-7
XBT Map 8



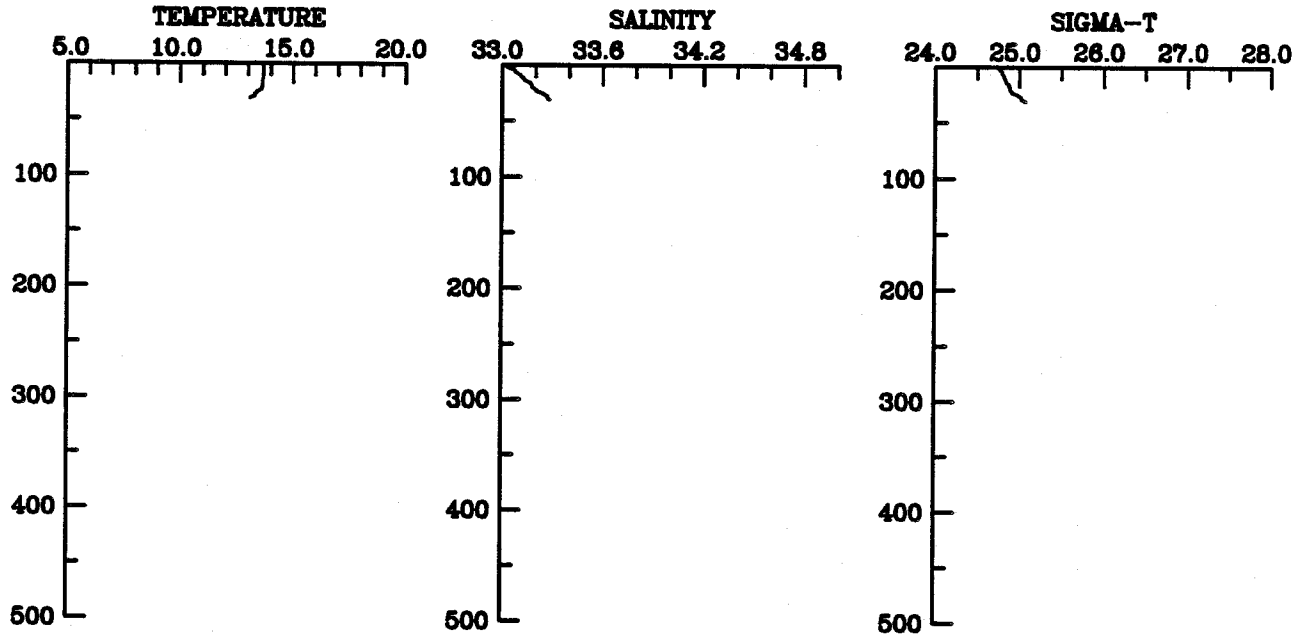
STATION GC1 CAST 561
28 April 1983 1742 GMT
XBT Transect GC-7
XBT Map 8



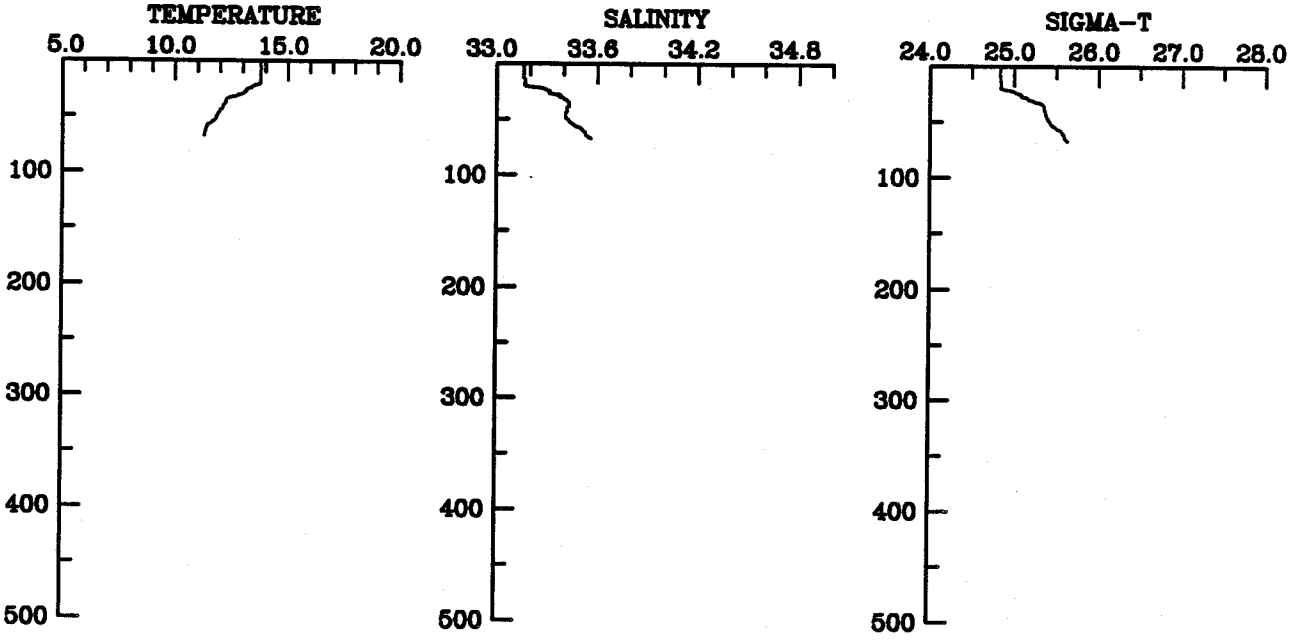
STATION C1 CAST 562
28 April 1983 1812 GMT
XBT Transect C-7
XBT Map 8



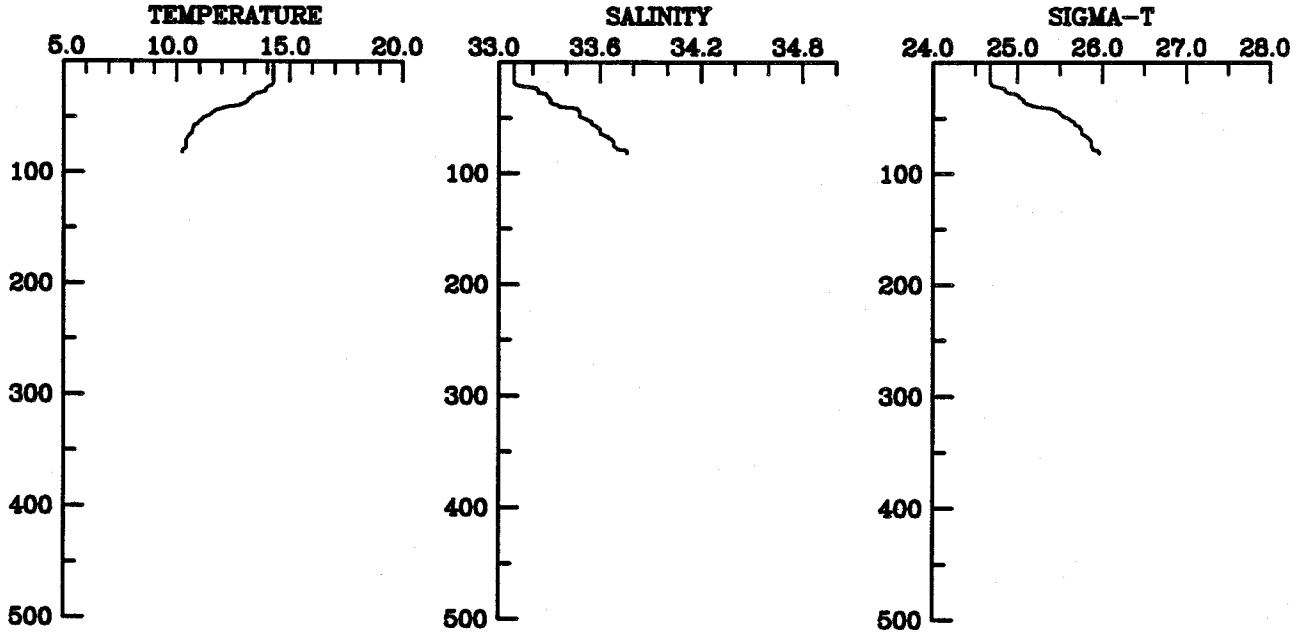
STATION G1 CAST 572
2 May 1983 1506 GMT
CTD Transect G-9



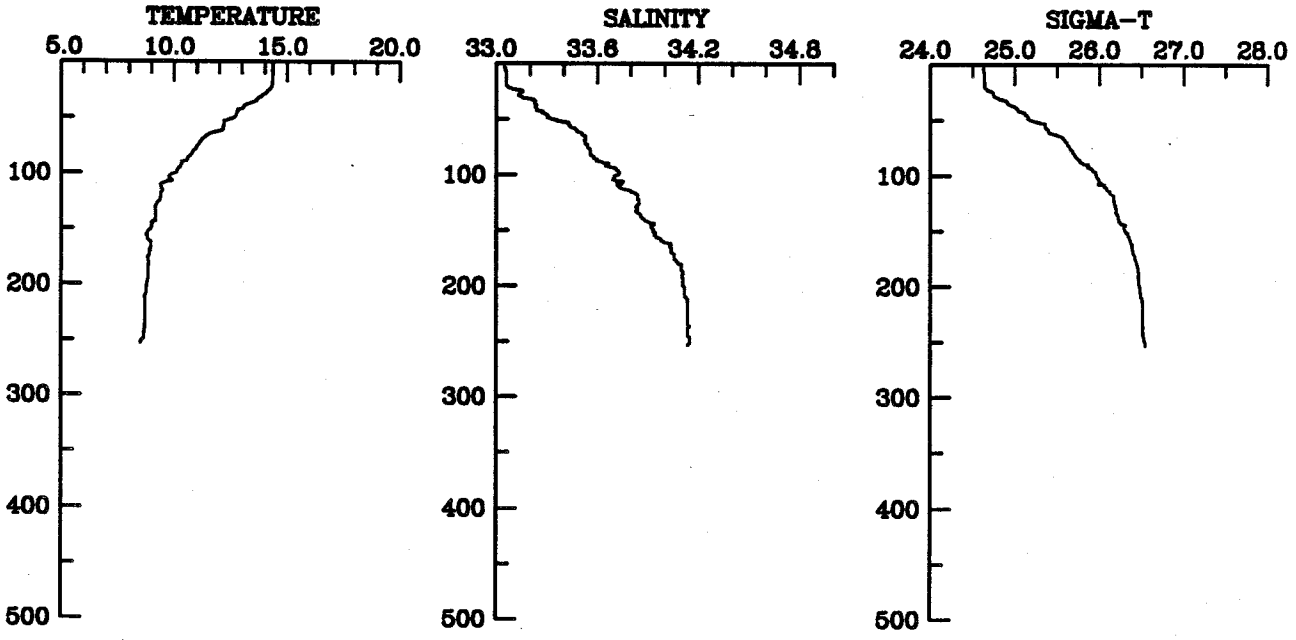
STATION G2 CAST 573
2 May 1983 1554 GMT
CTD Transect G-9



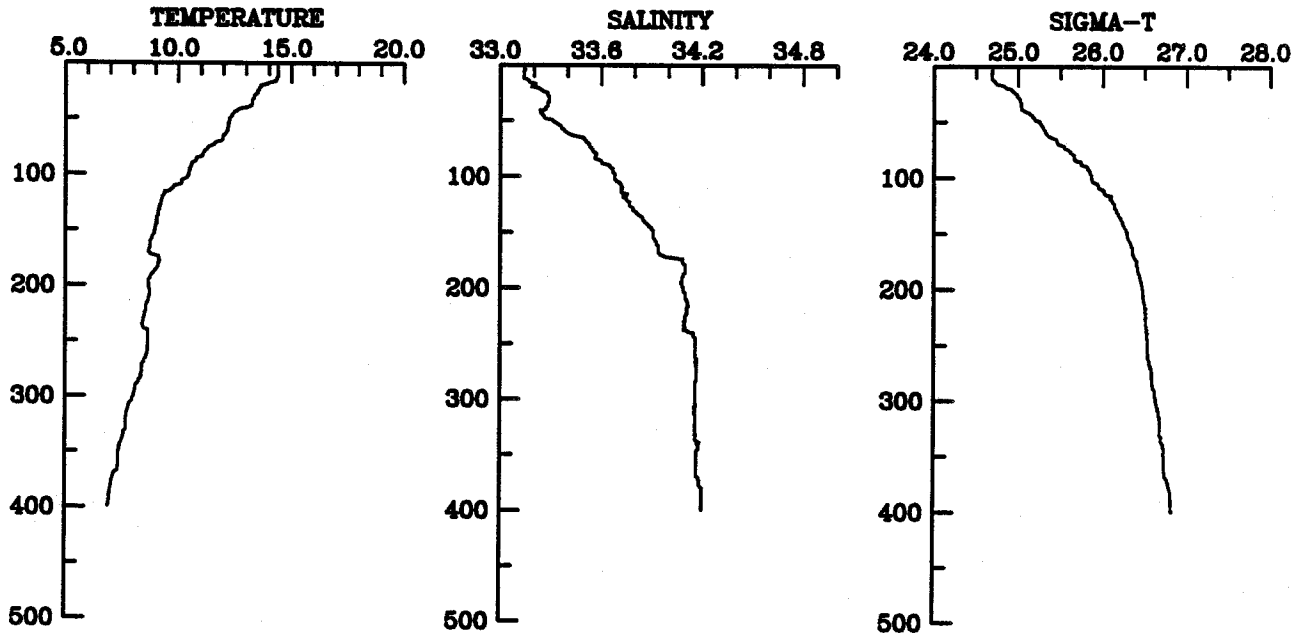
STATION G3 CAST 574
2 May 1983 1736 GMT
CTD Transect G-9



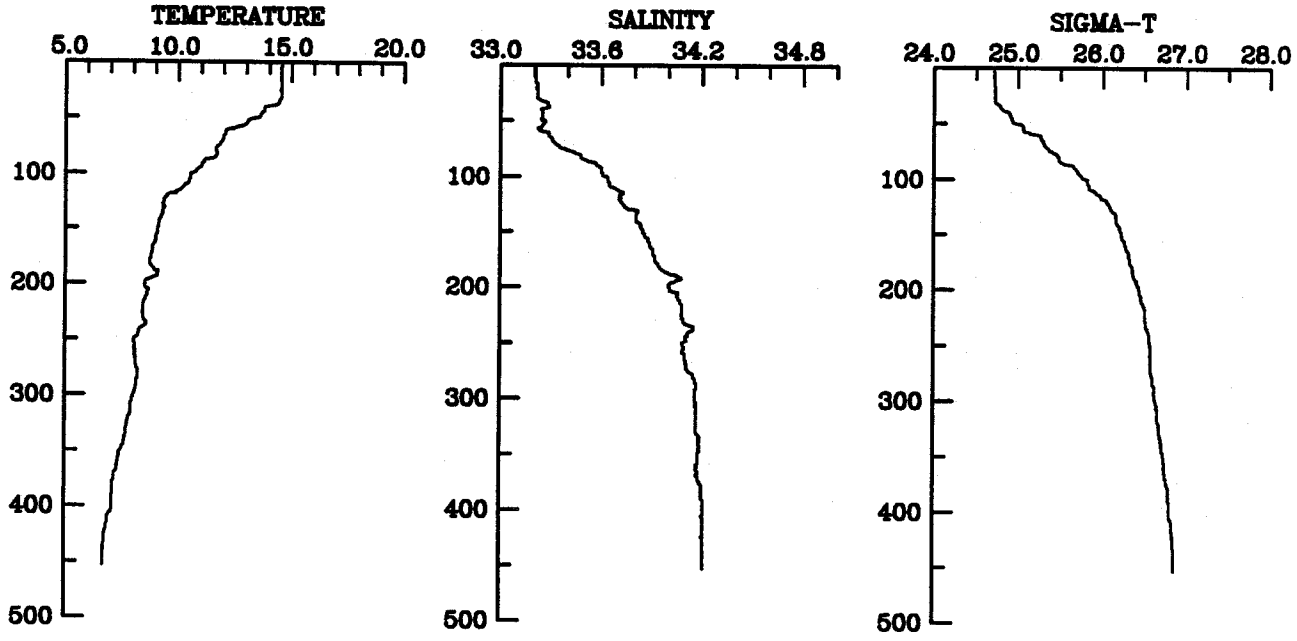
STATION G4 CAST 575
2 May 1983 1930 GMT
CTD Transect G-9



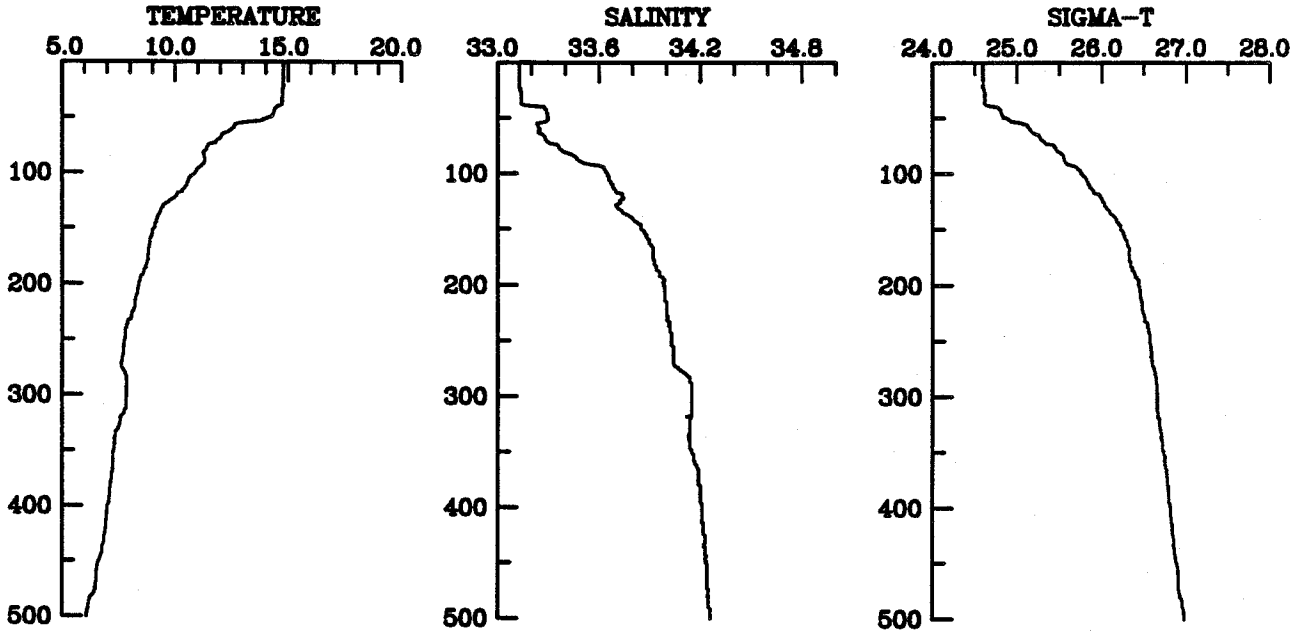
STATION G5 CAST 576
2 May 1983 2042 GMT
CTD Transect G-9



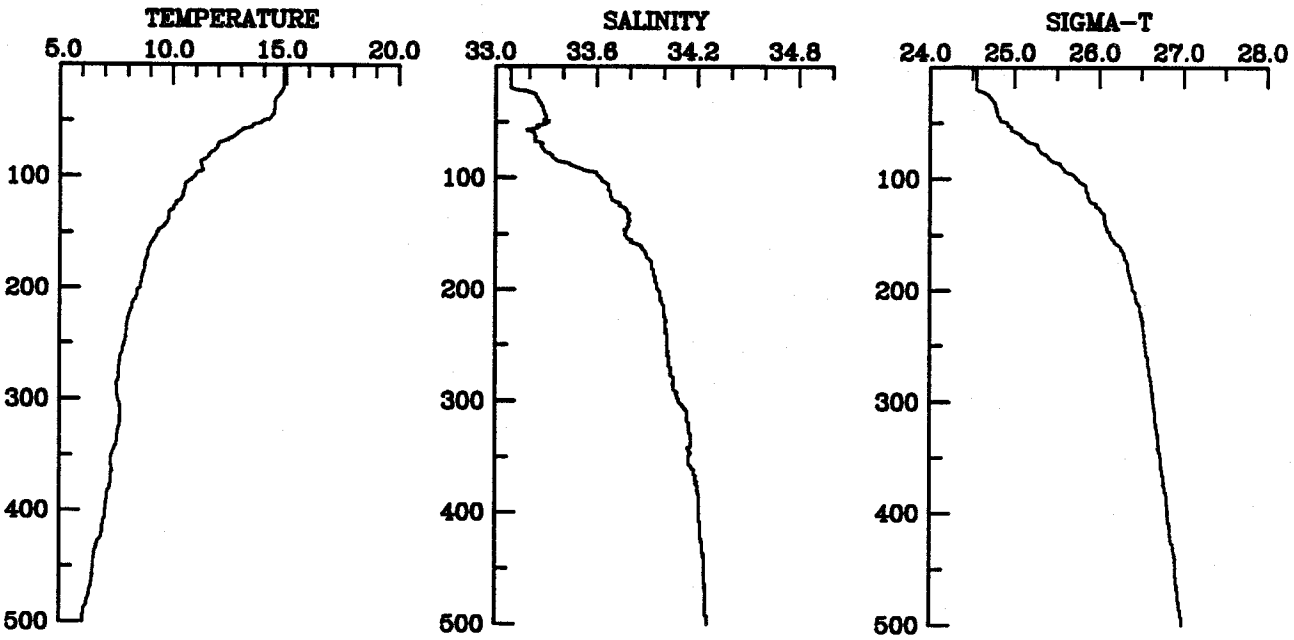
STATION G6 CAST 577
2 May 1983 2136 GMT
CTD Transect G-9



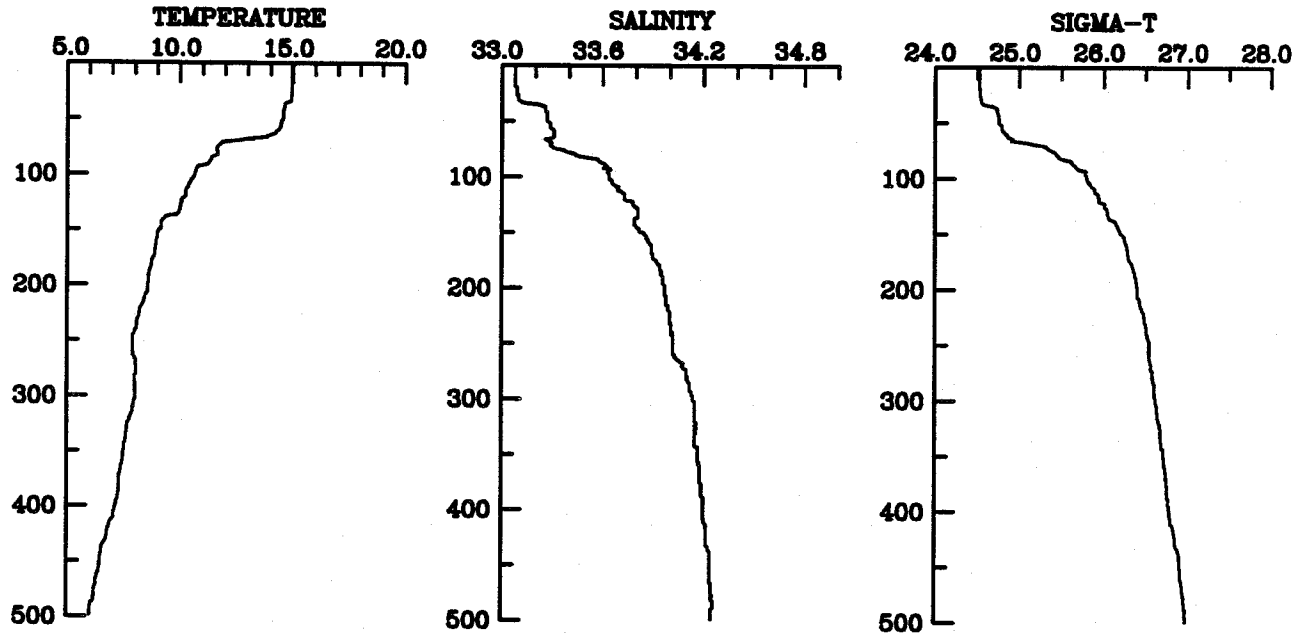
STATION G7 CAST 578
2 May 1983 2306 GMT
CTD Transect G-9



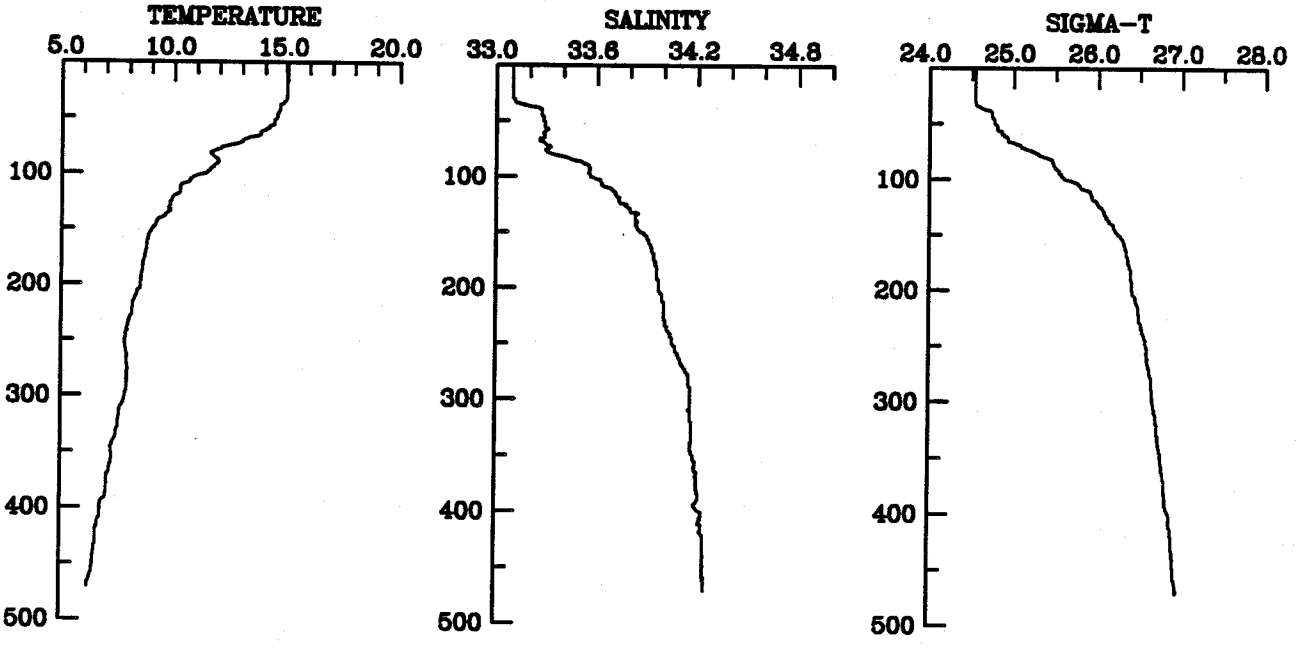
STATION G8 CAST 579
3 May 1983 18 GMT
CTD Transect G-9



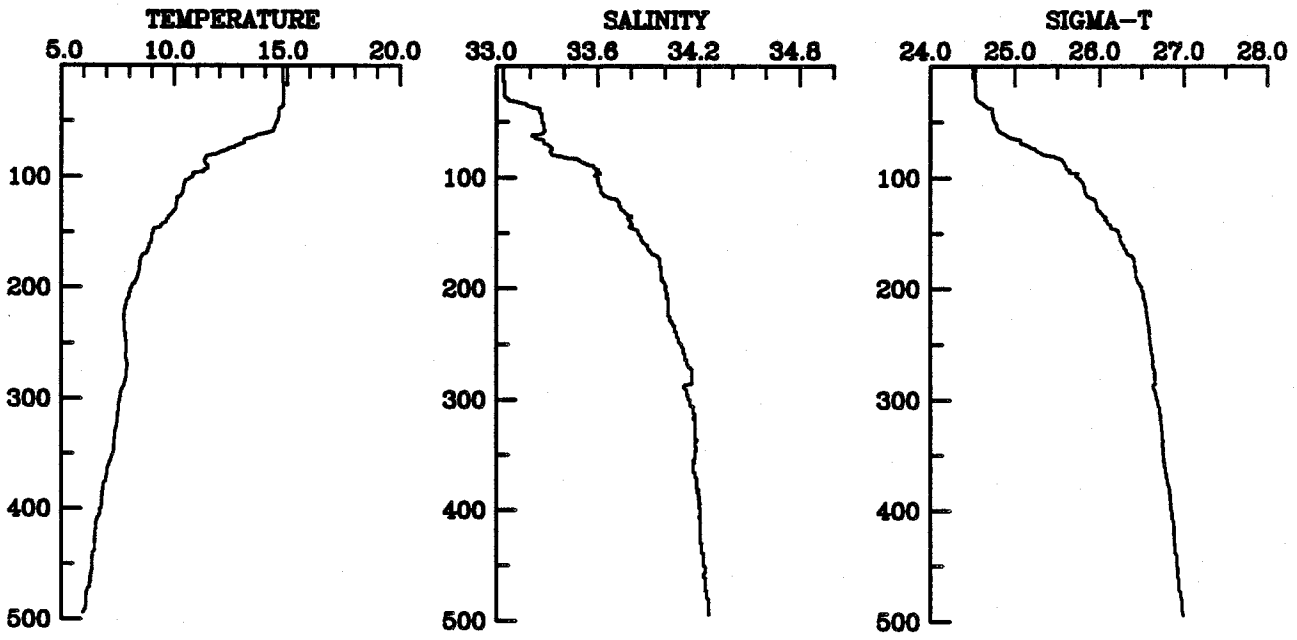
STATION G9 CAST 580
3 May 1983 130 GMT
CTD Transect G-9



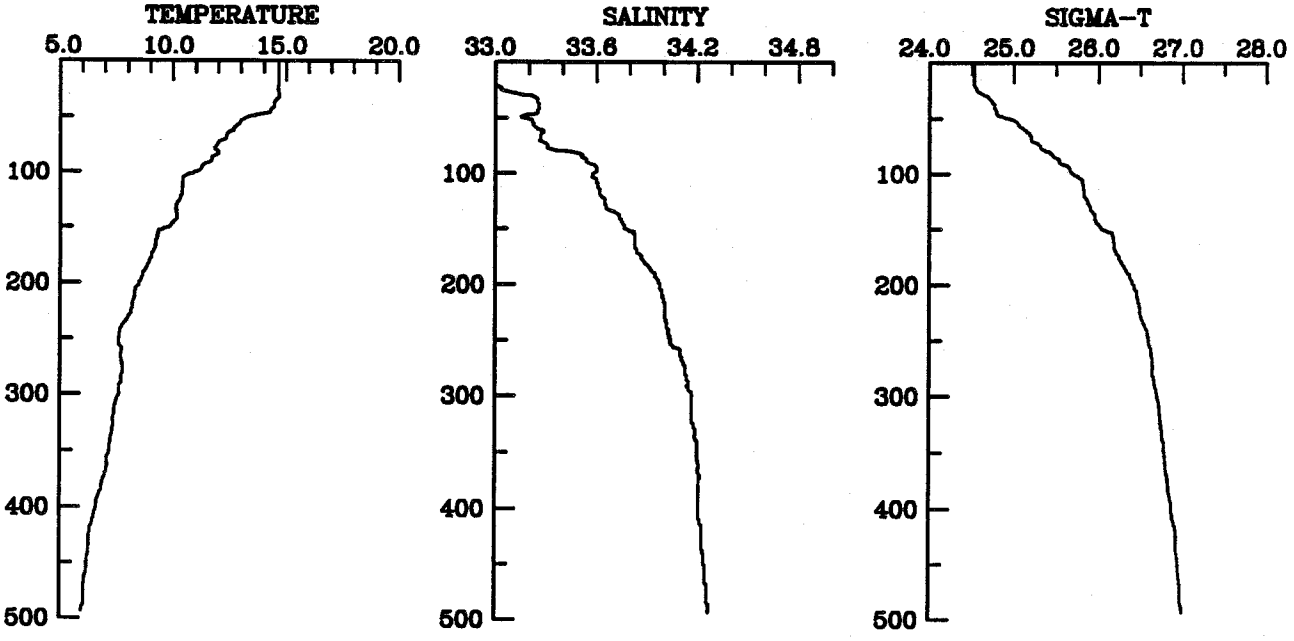
STATION G10 CAST 581
3 May 1983 236 GMT
CTD Transect G-9



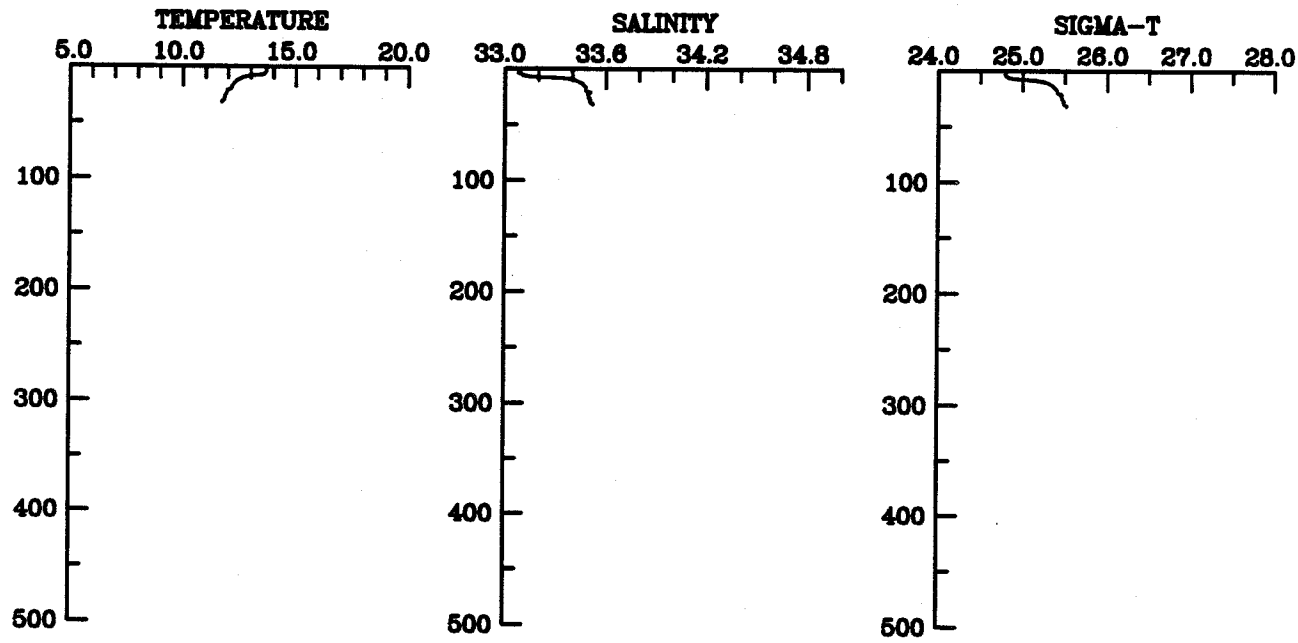
STATION G11 CAST 582
3 May 1983 348 GMT
CTD Transect G-9



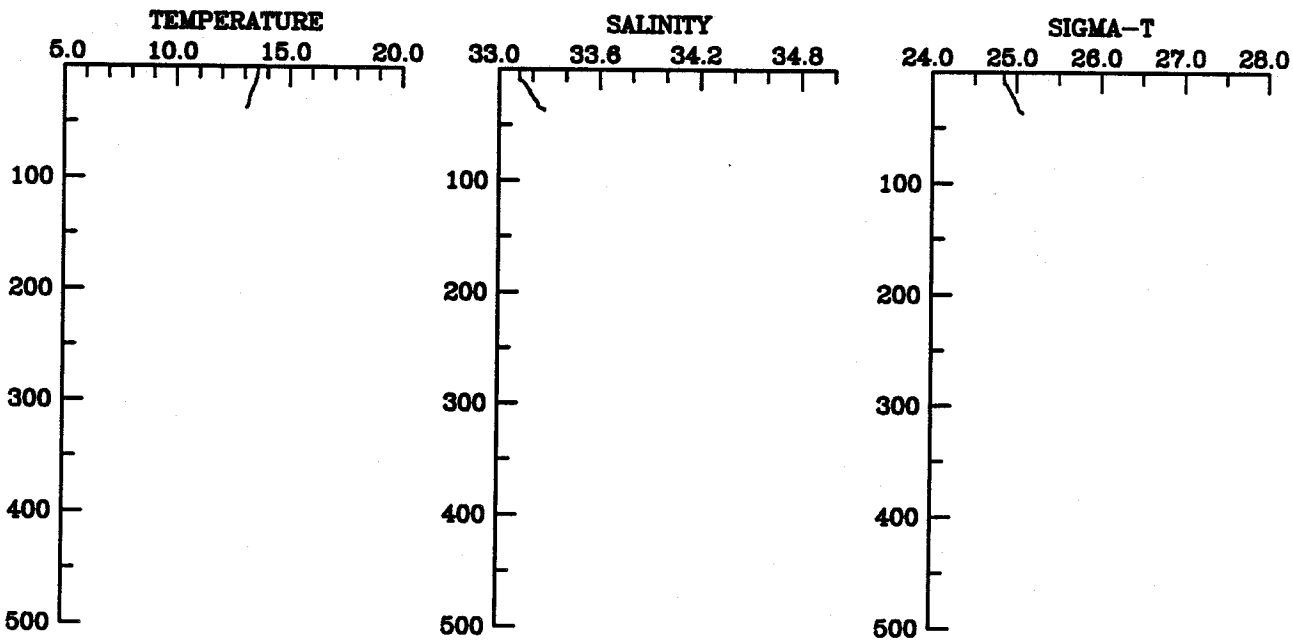
STATION G12 CAST 583
3 May 1983 500 GMT
CTD Transect G-9



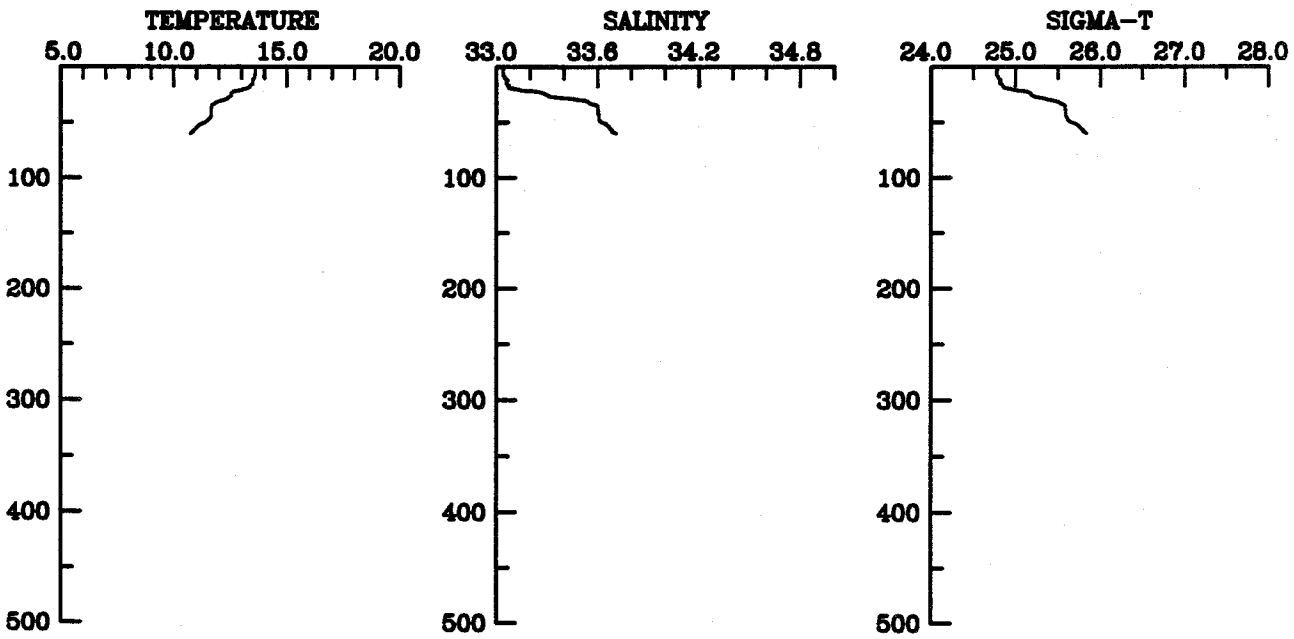
STATION A1 CAST 584
3 May 1983 930 GMT
XBT Transect A-8
XBT Map 9



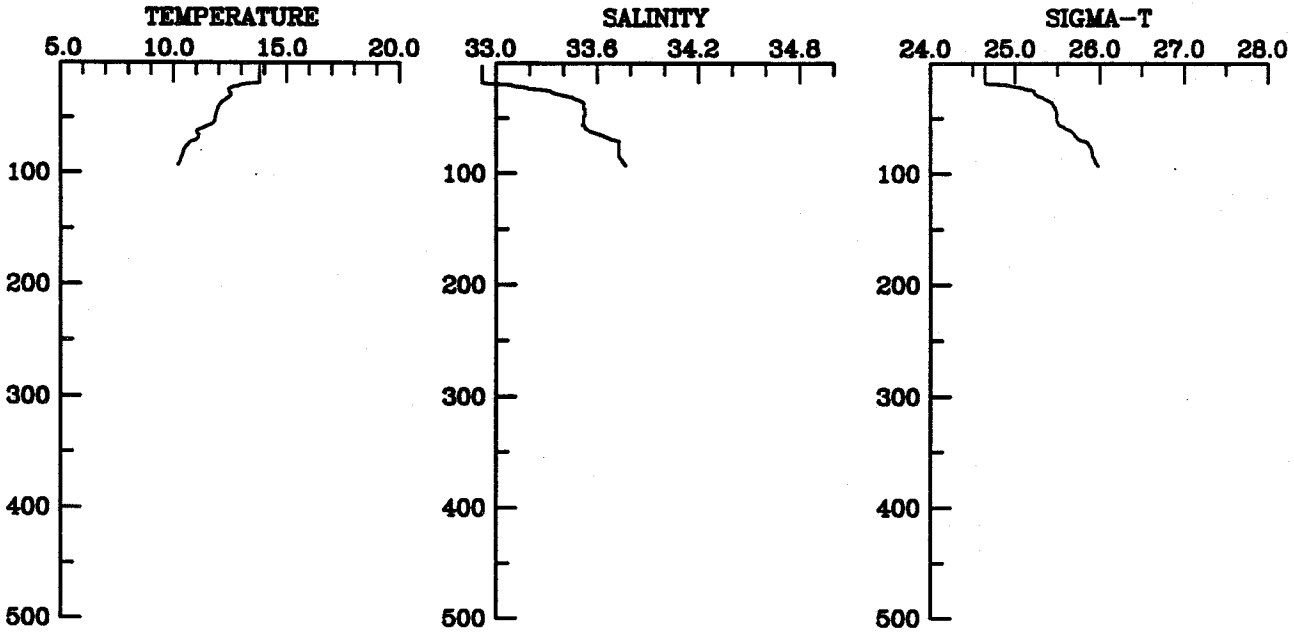
STATION A1 CAST 631
4 May 1983 54 GMT
CTD Transect A-5
CTD Map 5



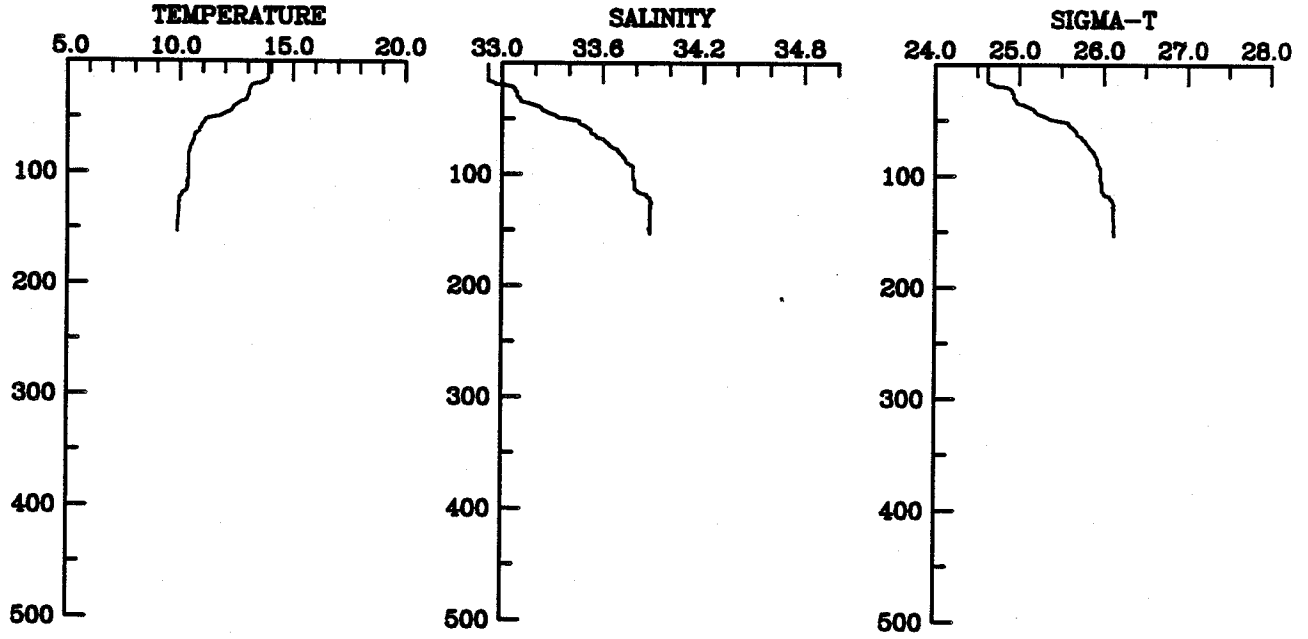
STATION A2 CAST 632
4 May 1983 418 GMT
CTD Transect A-5
CTD Map 5



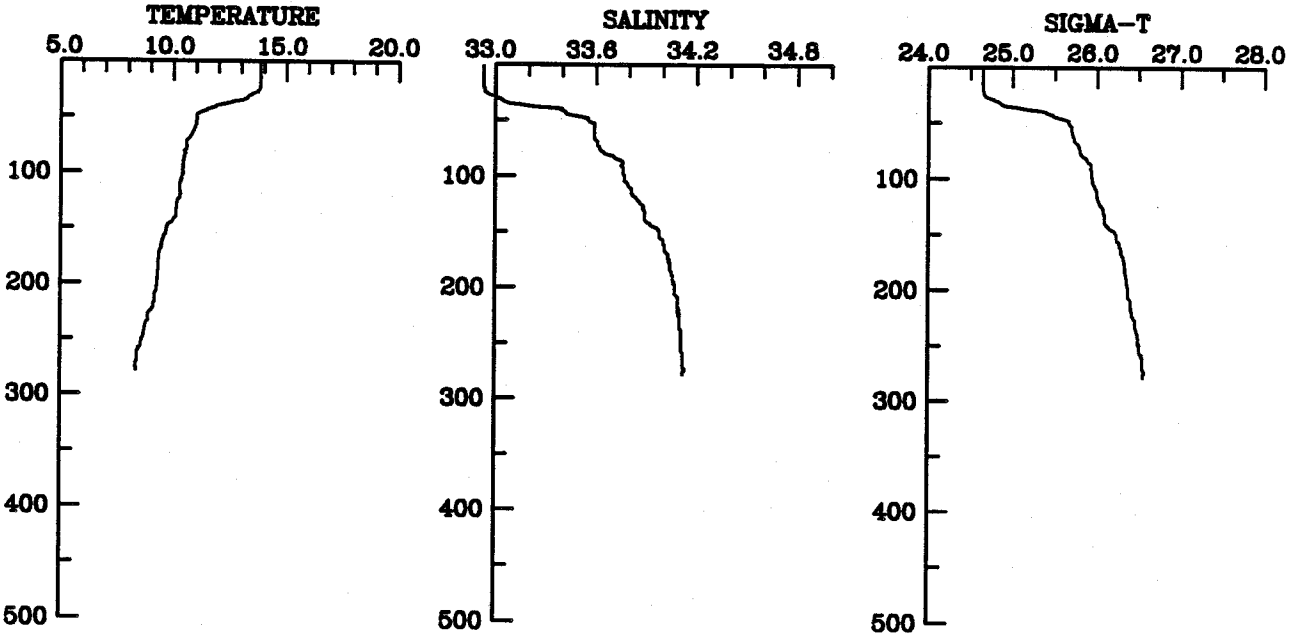
STATION A3 CAST 633
4 May 1983 454 GMT
CTD Transect A-5
CTD Map 5



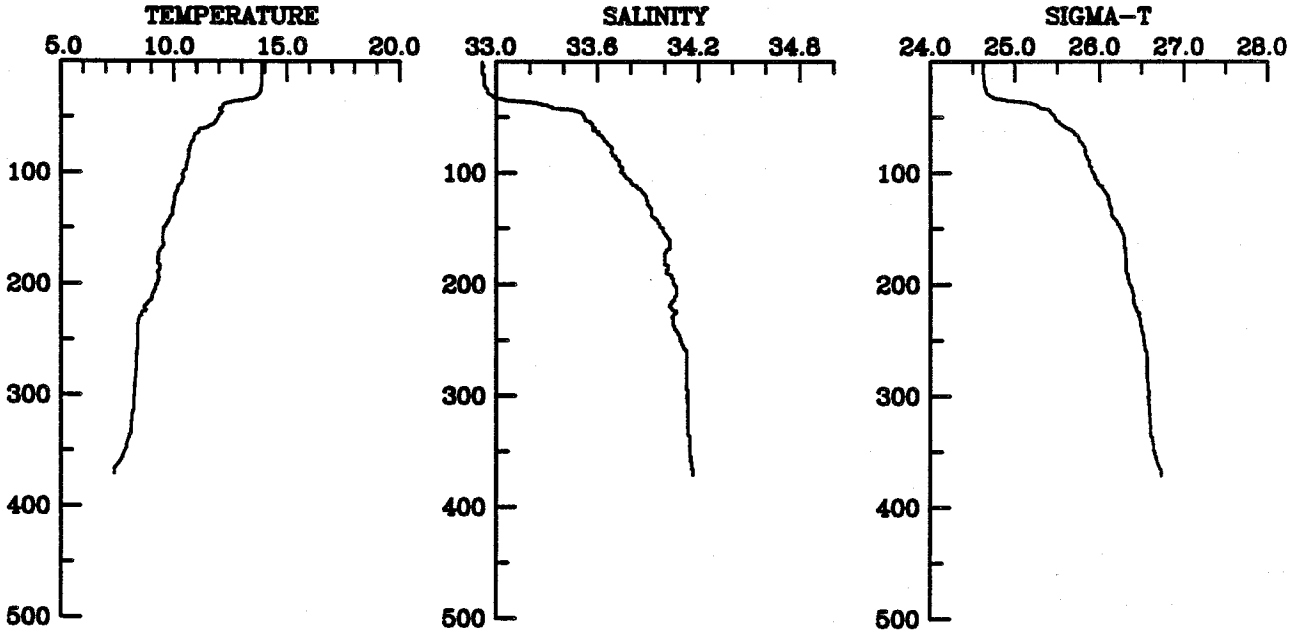
STATION A4 CAST 634
4 May 1983 530 GMT
CTD Transect A-5
CTD Map 5



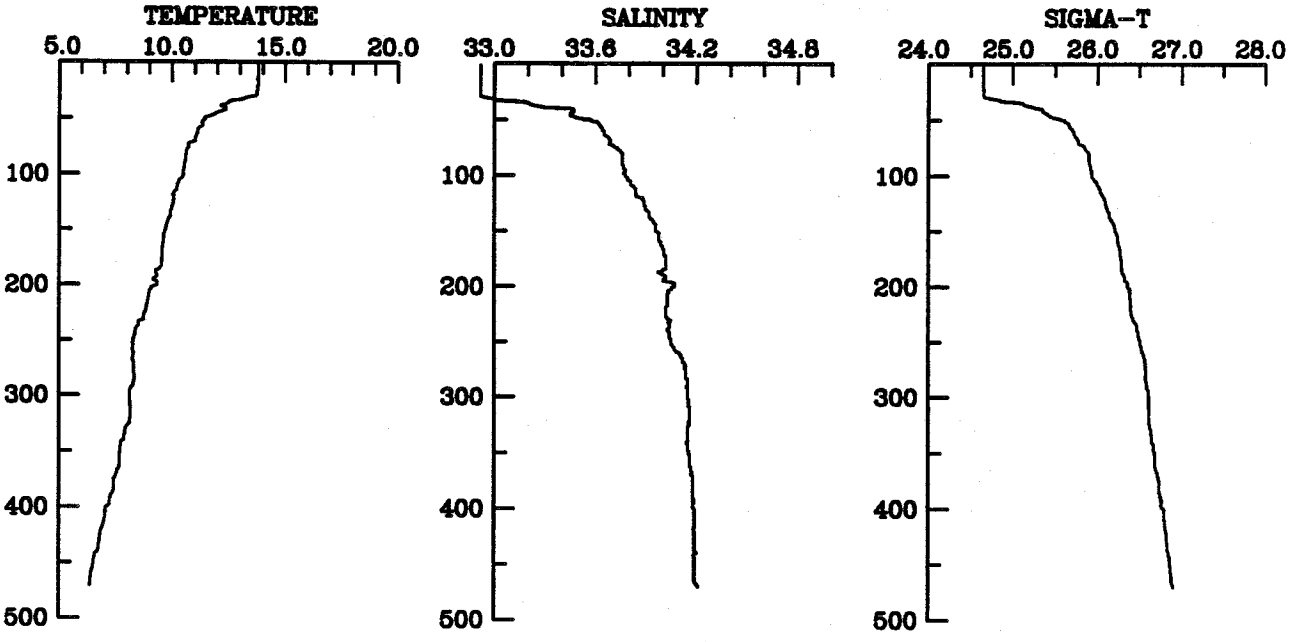
STATION A5 CAST 635
4 May 1983 624 GMT
CTD Transect A-5
CTD Map 5



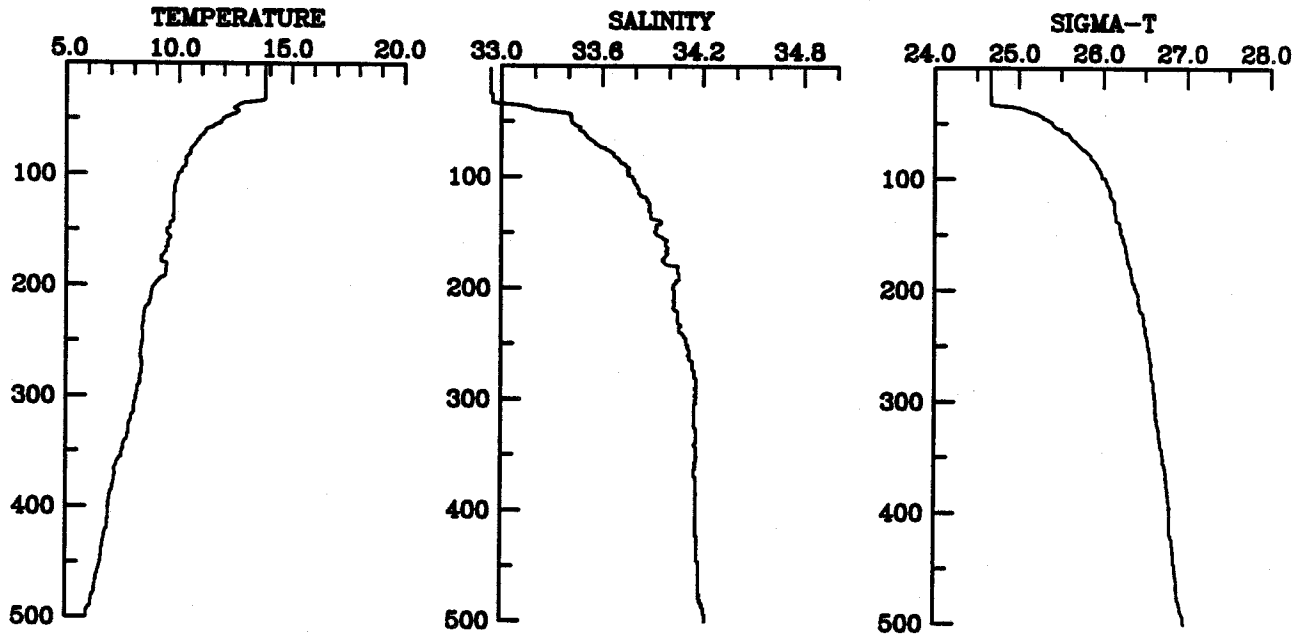
STATION A6 CAST 636
4 May 1983 724 GMT
CTD Transect A-5
CTD Map 5



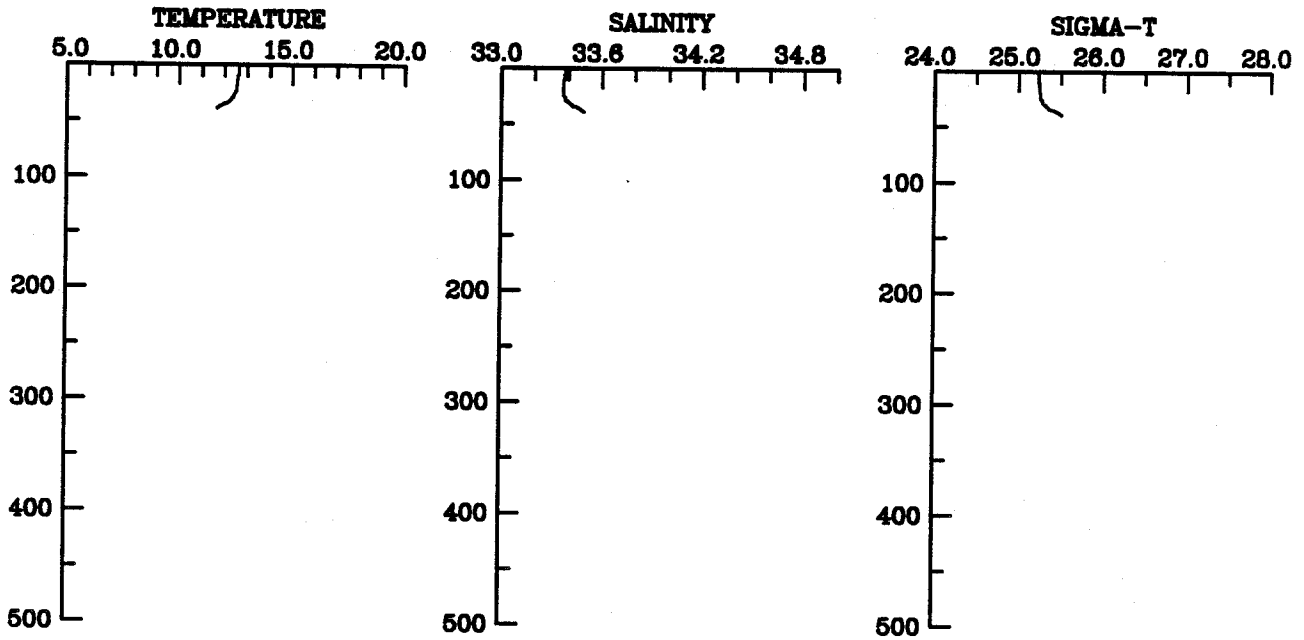
STATION A7 CAST 637
4 May 1983 836 GMT
CTD Transect A-5
CTD Map 5



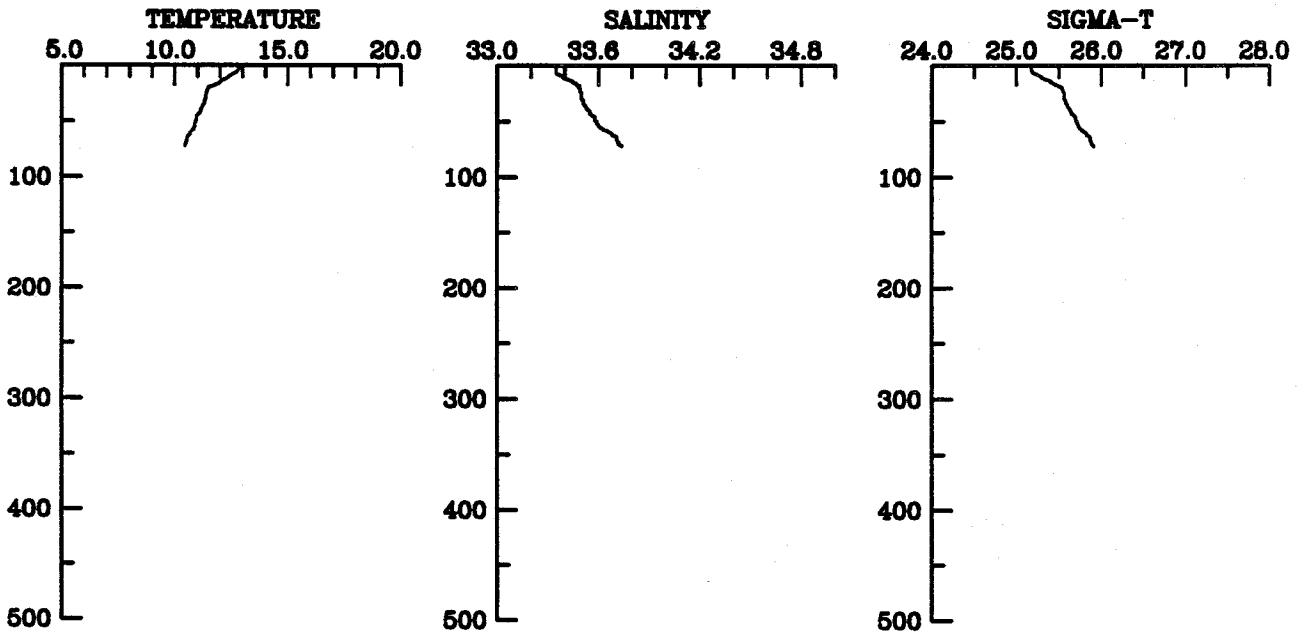
STATION A8 CAST 638
4 May 1983 948 GMT
CTD Transect A-5
CTD Map 5



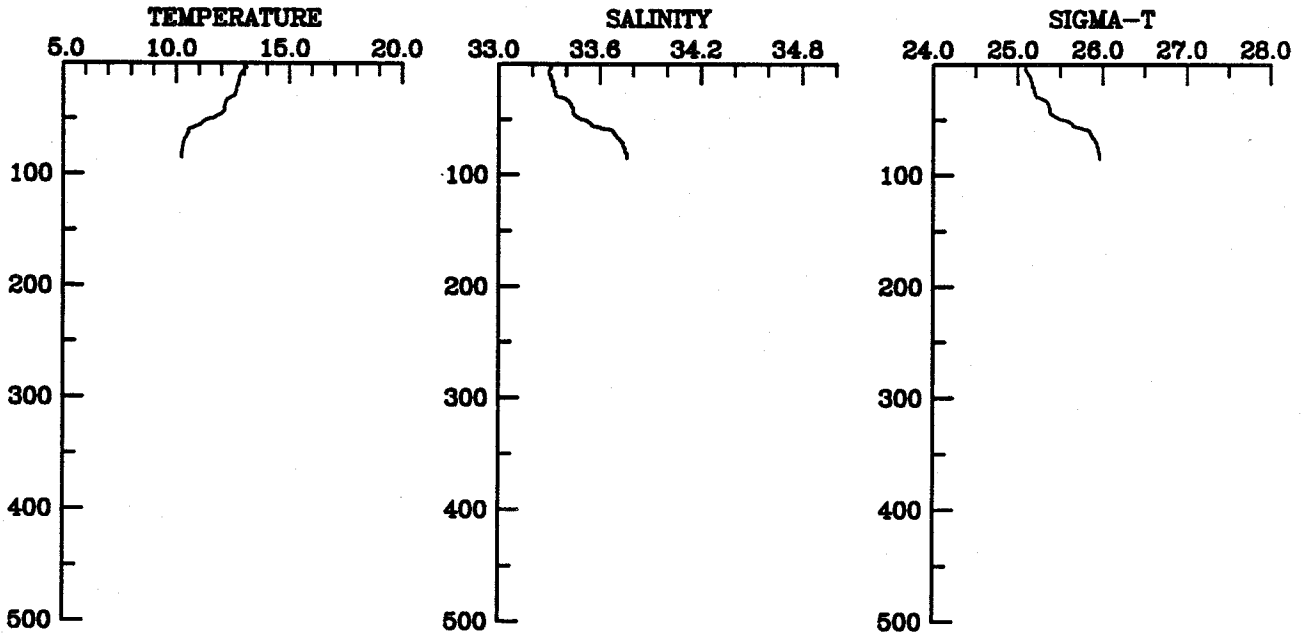
STATION G1 CAST 639
4 May 1983 1930 GMT
CTD Transect G-10
CTD Map 5



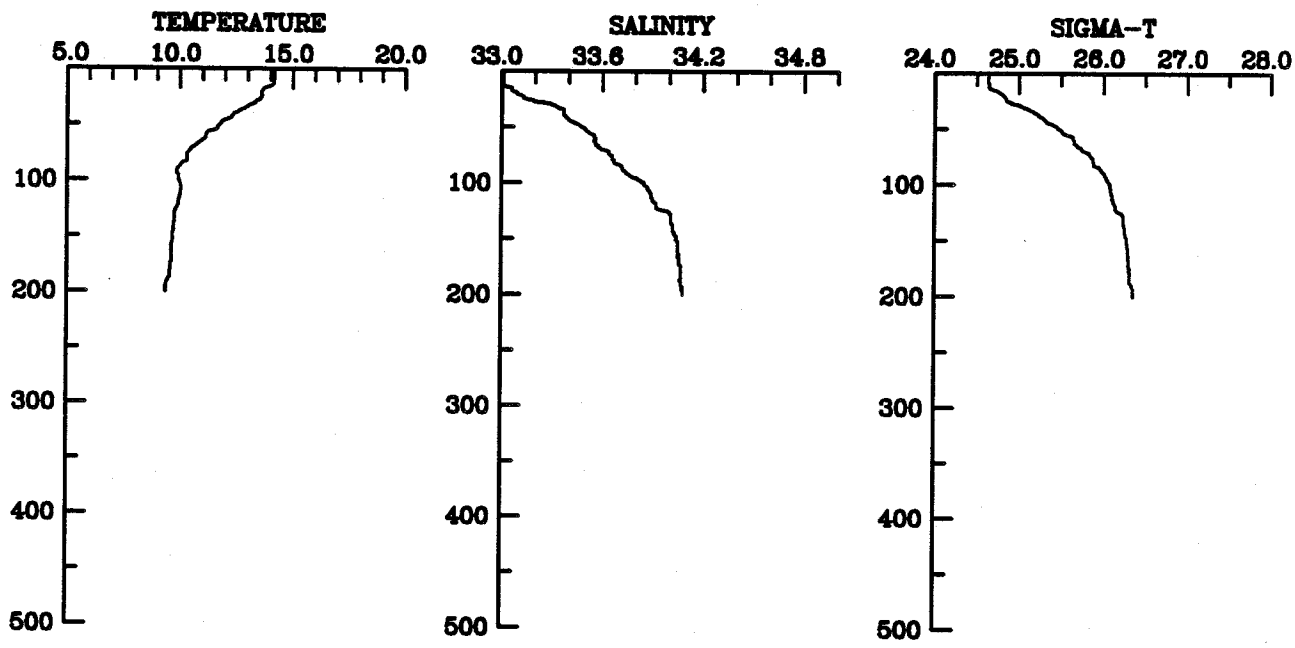
STATION G2 CAST 640
4 May 1983 2024 GMT
CTD Transect G-10
CTD Map 5



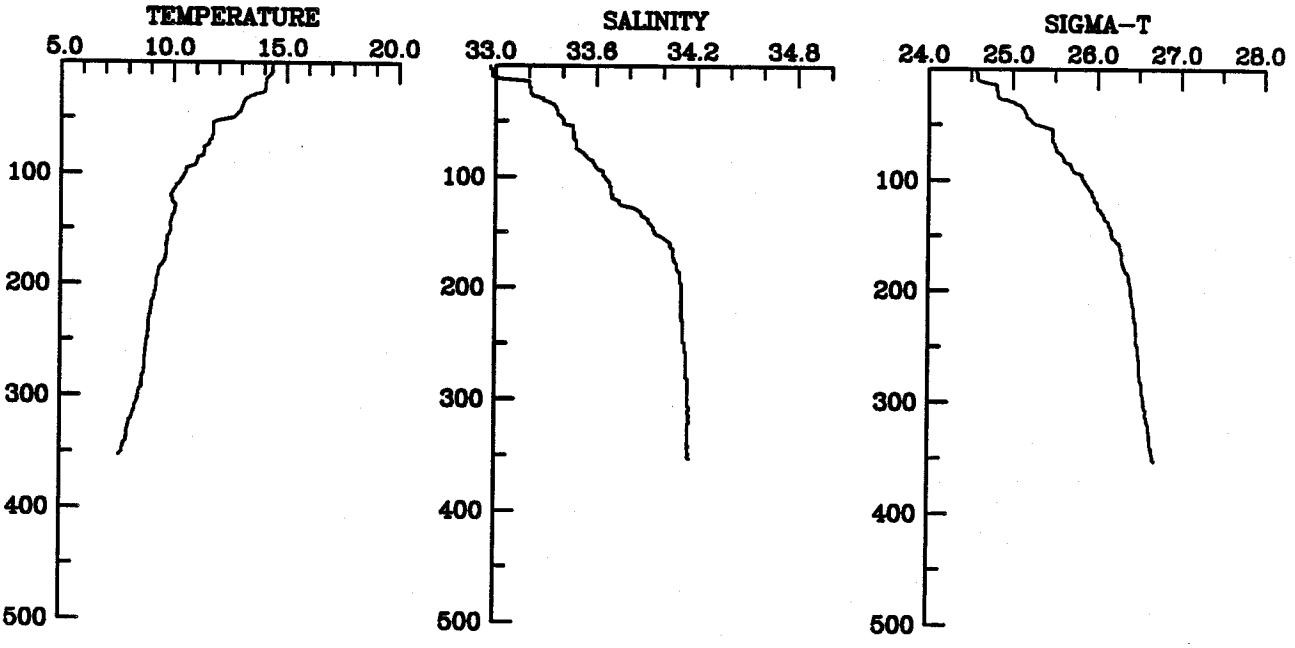
STATION G3 CAST 641
4 May 1983 2154 GMT
CTD Transect G-10
CTD Map 5



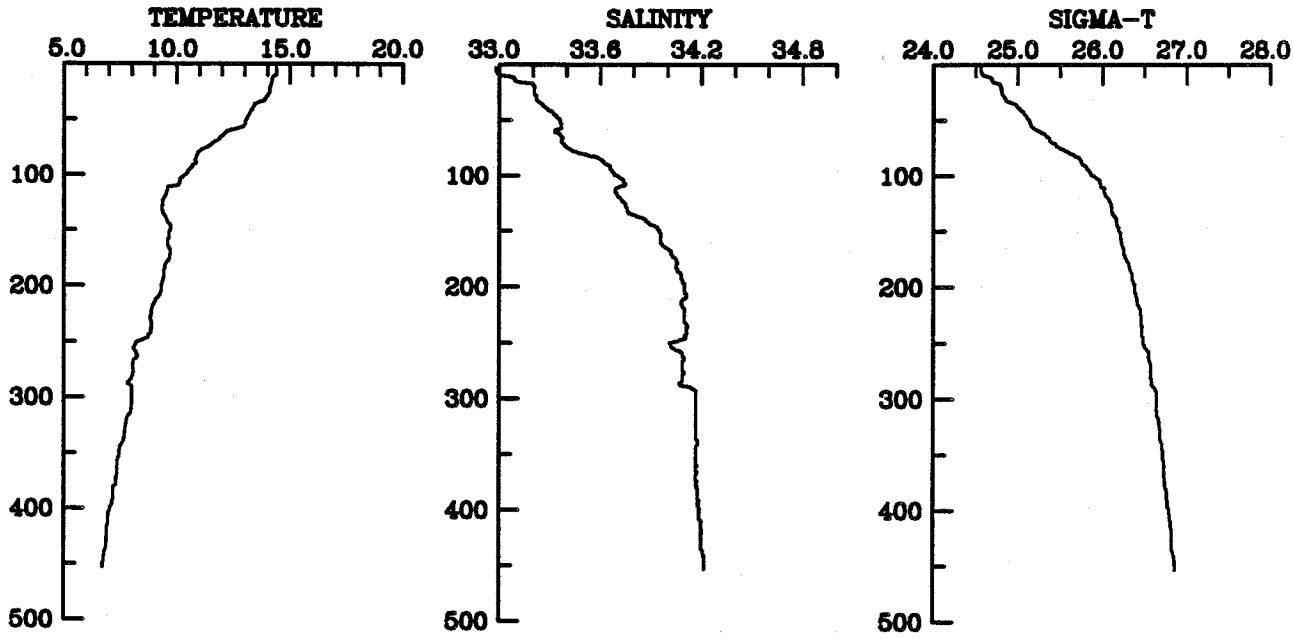
STATION G4 CAST 642
4 May 1983 2318 GMT
CTD Transect G-10
CTD Map 5



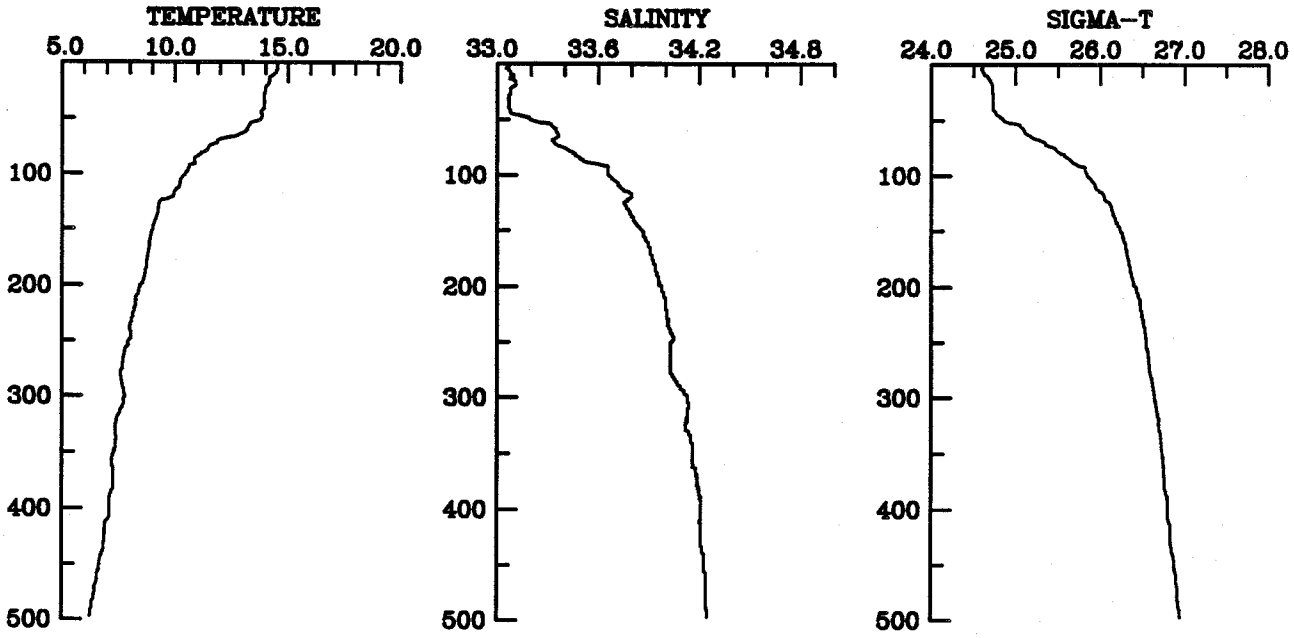
STATION G5 CAST 643
5 May 1983 12 GMT
CTD Transect G-10
CTD Map 5



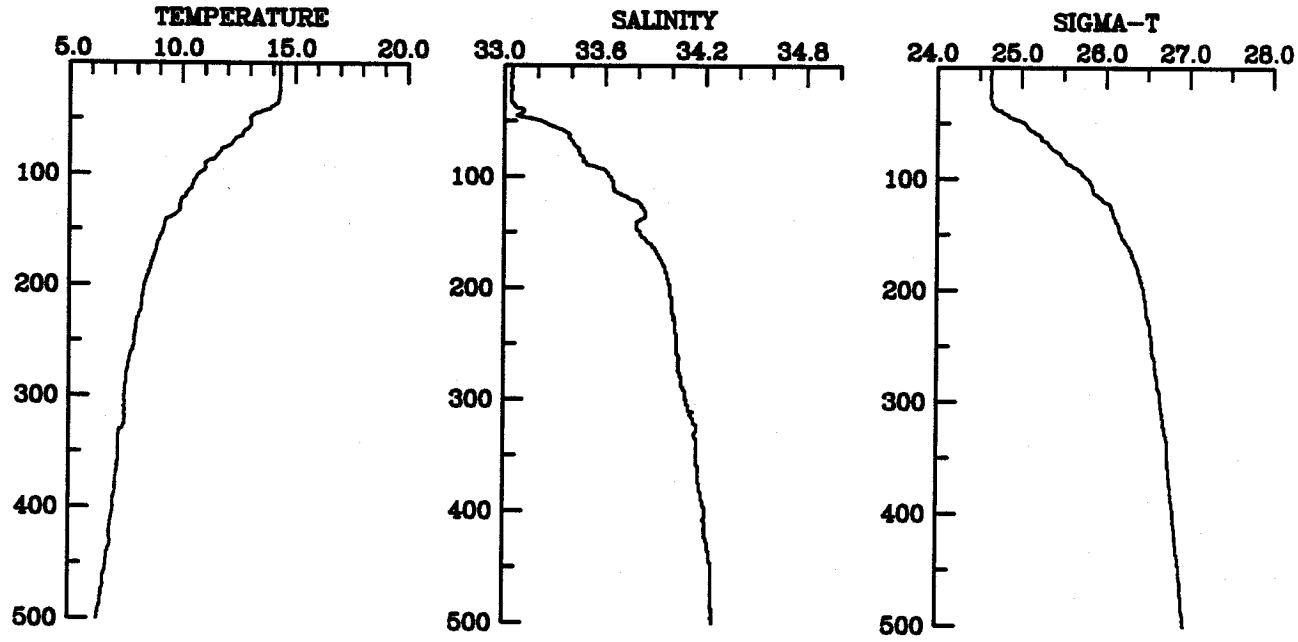
STATION G6 CAST 644
5 May 1983 112 GMT
CTD Transect G-10
CTD Map 5



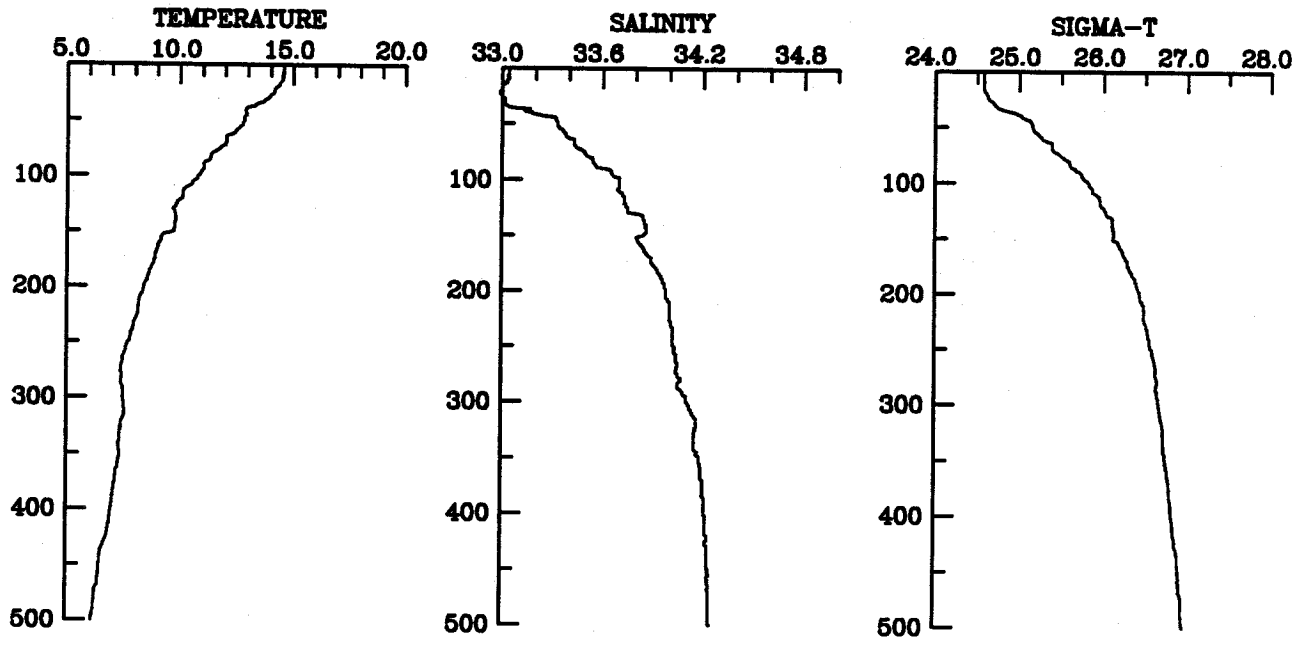
STATION G7 CAST 645
5 May 1983 218 GMT
CTD Transect G-10
CTD Map 5



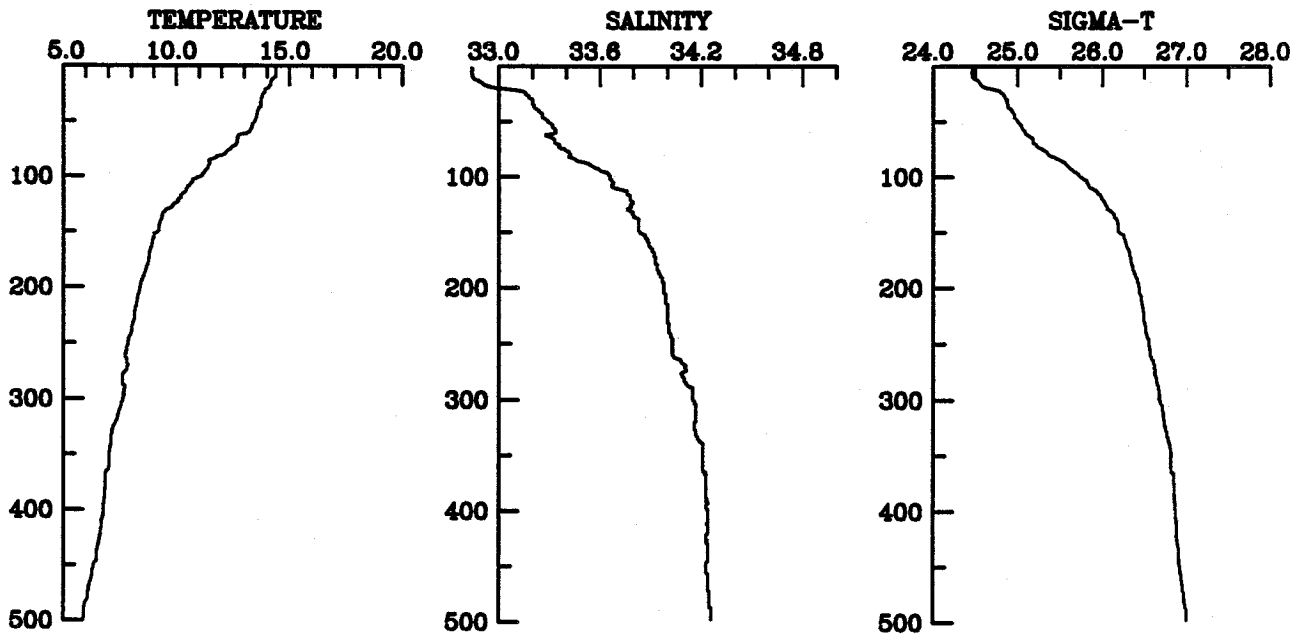
STATION G8 CAST 646
5 May 1983 336 GMT
CTD Transect G-10
CTD Map 5



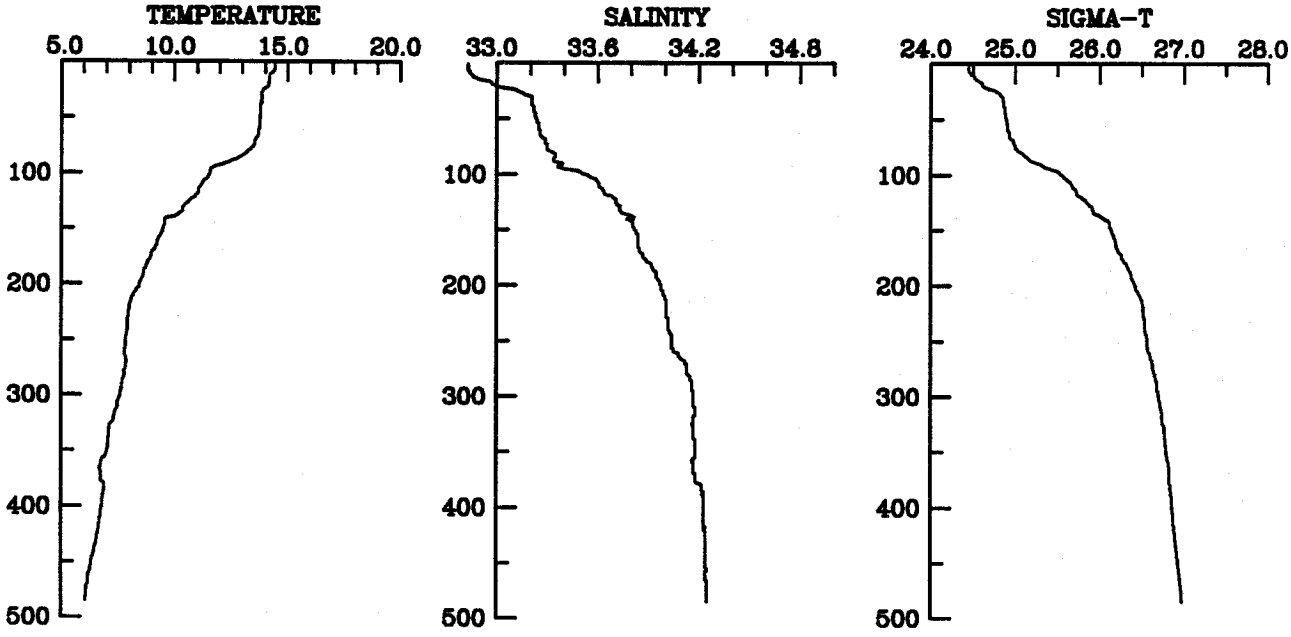
STATION G9 CAST 647
5 May 1983 442 GMT
CTD Transect G-10
CTD Map 5



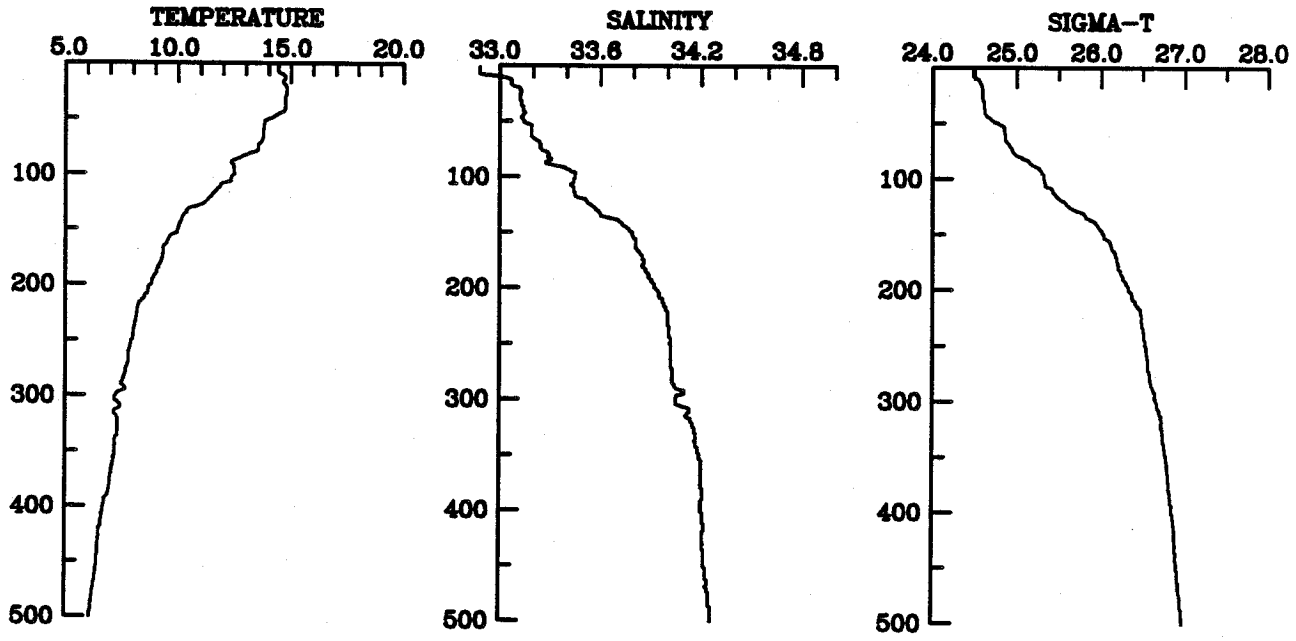
STATION G10 CAST 648
5 May 1983 600 GMT
CTD Transect G-10
CTD Map 5



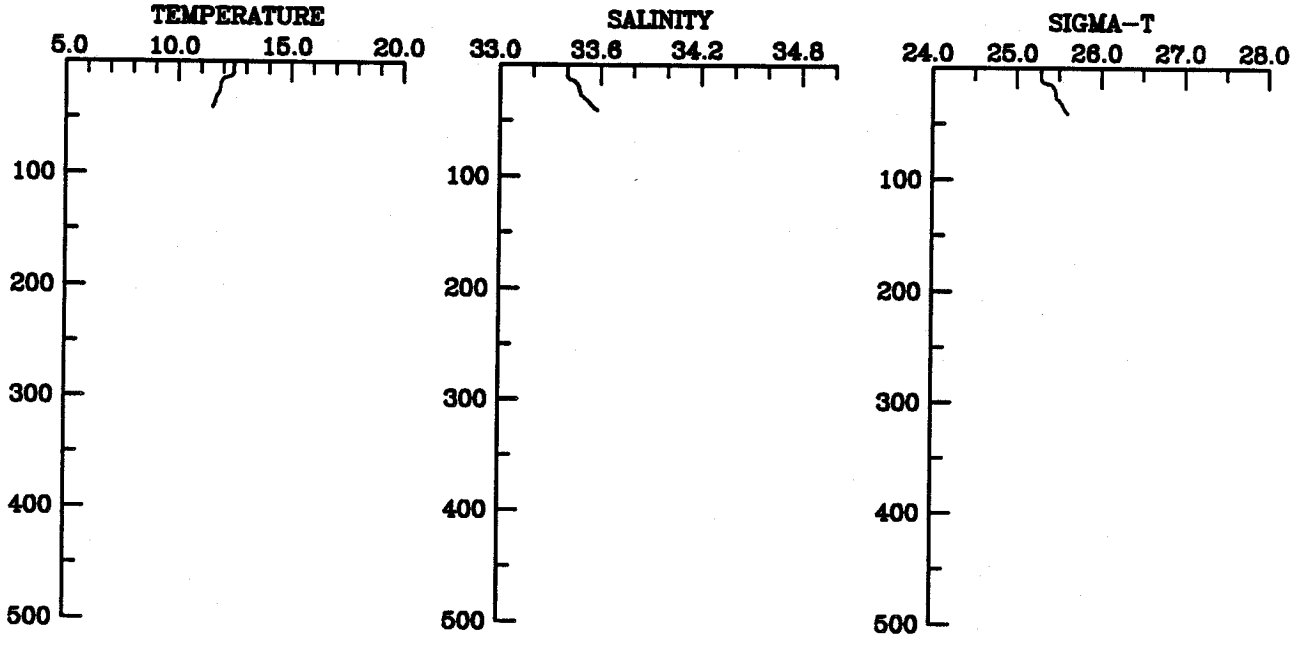
STATION G11 CAST 649
5 May 1983 718 GMT
CTD Transect G-10
CTD Map 5



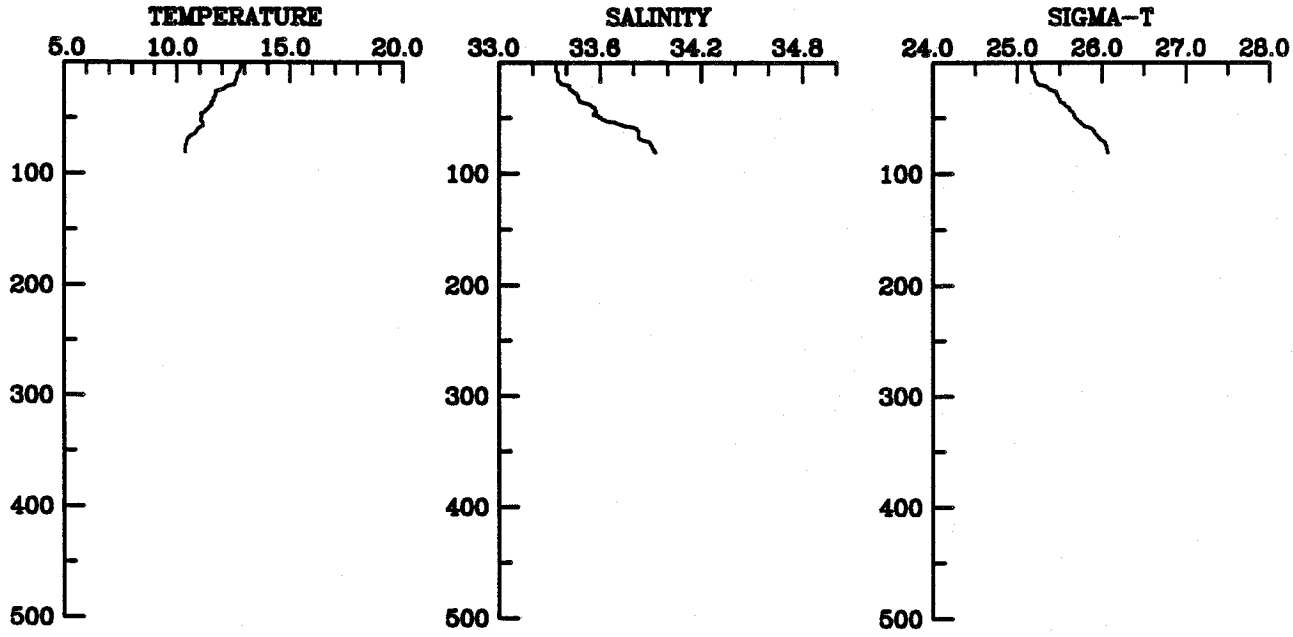
STATION G12 CAST 650
5 May 1983 812 GMT
CTD Transect G–10
CTD Map 5



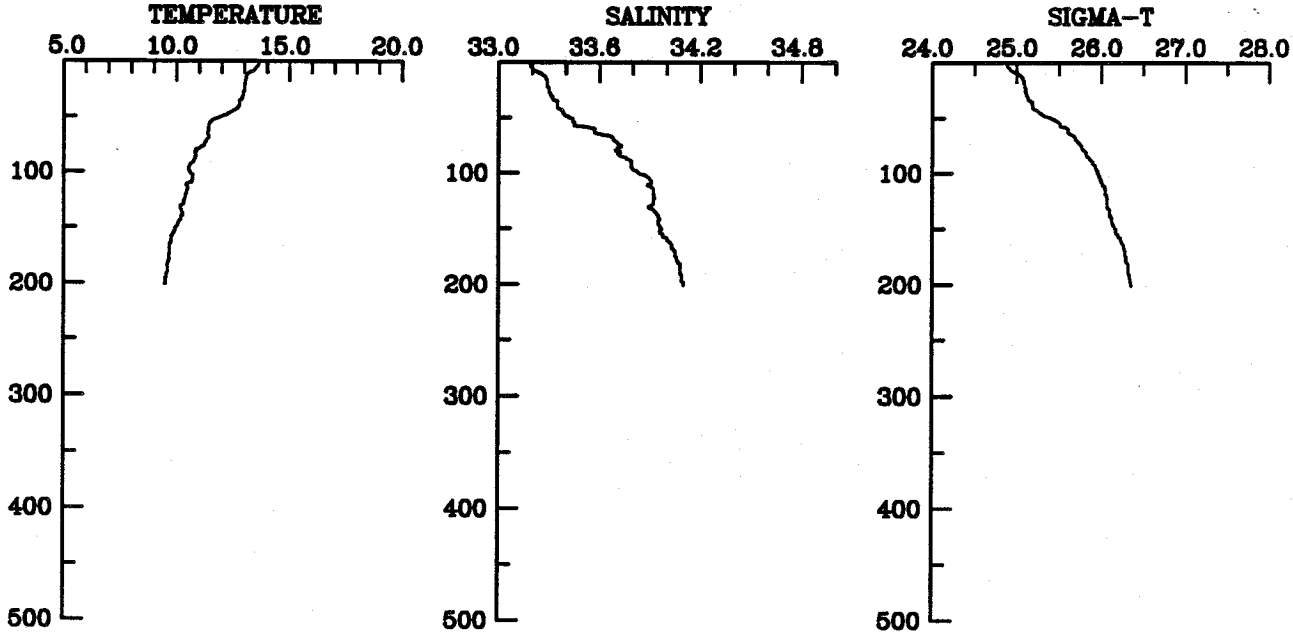
STATION C1 CAST 651
5 May 1983 1418 GMT
CTD Transect C–5
CTD Map 5



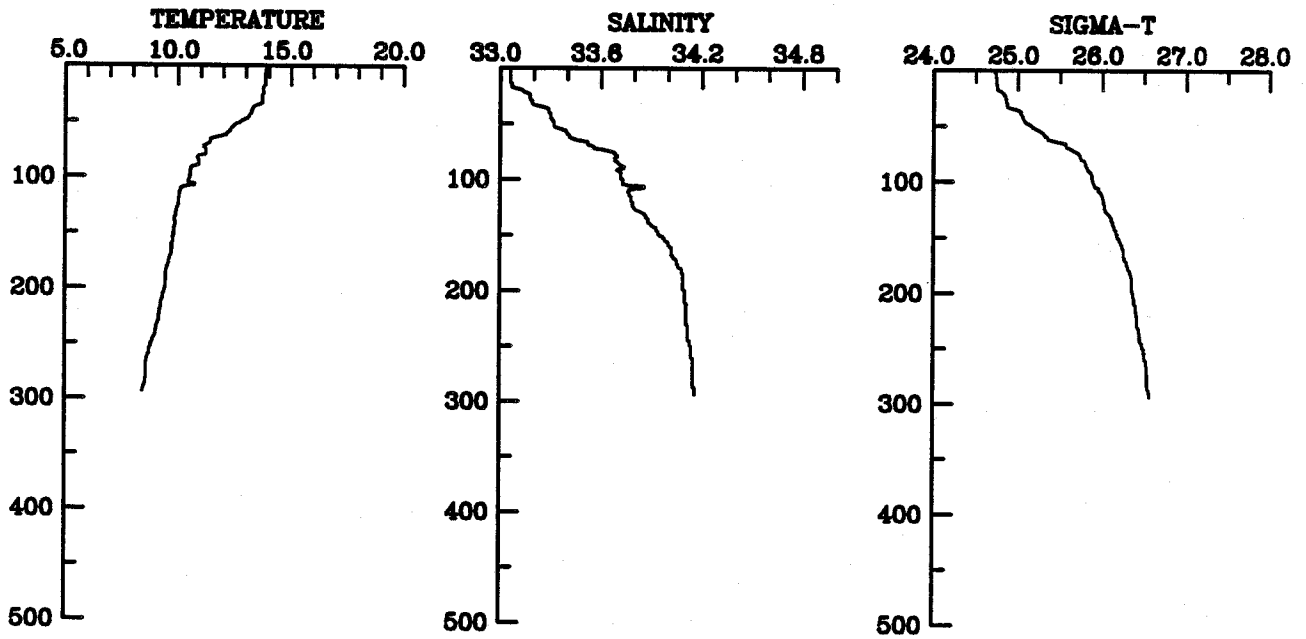
STATION C2 CAST 652
5 May 1983 1454 GMT
CTD Transect C-5
CTD Map 5



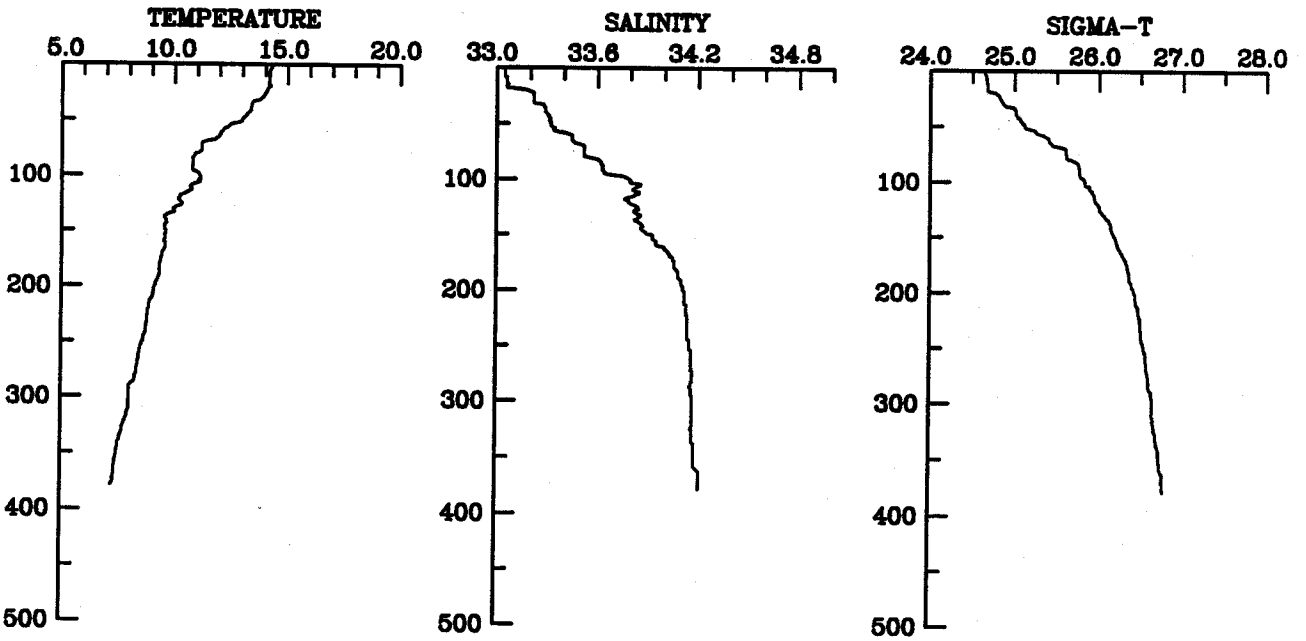
STATION C3 CAST 653
5 May 1983 1554 GMT
CTD Transect C-5
CTD Map 5



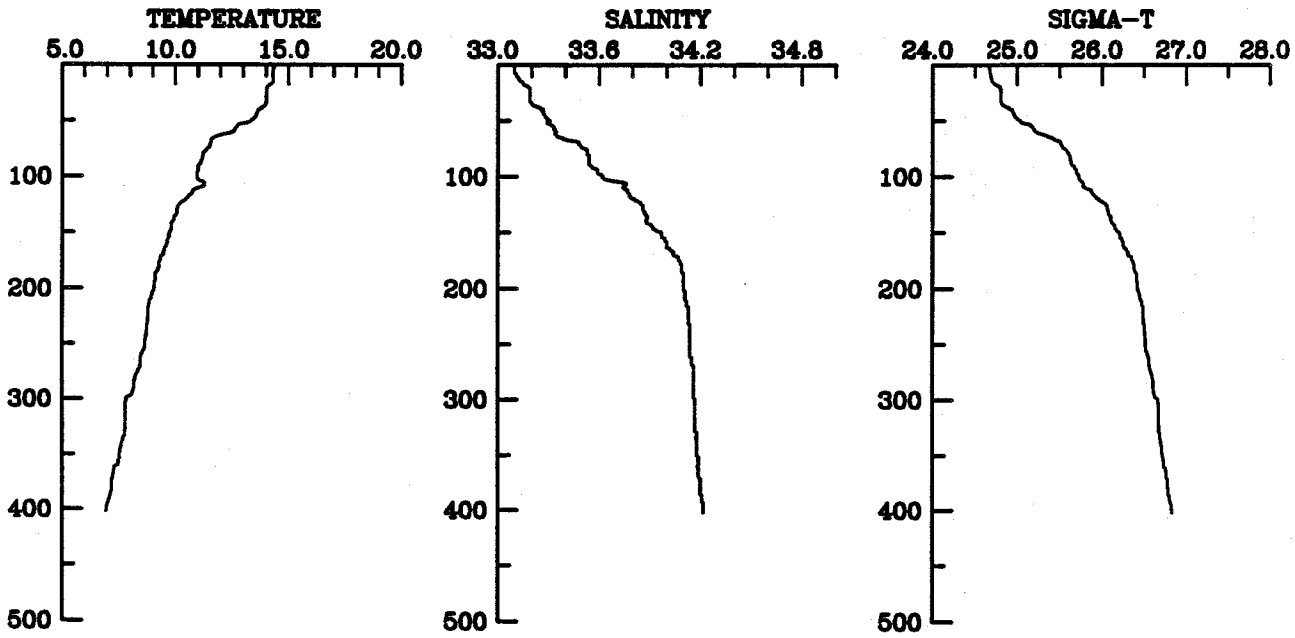
STATION C4 CAST 654
5 May 1983 1636 GMT
CTD Transect C-5
CTD Map 5



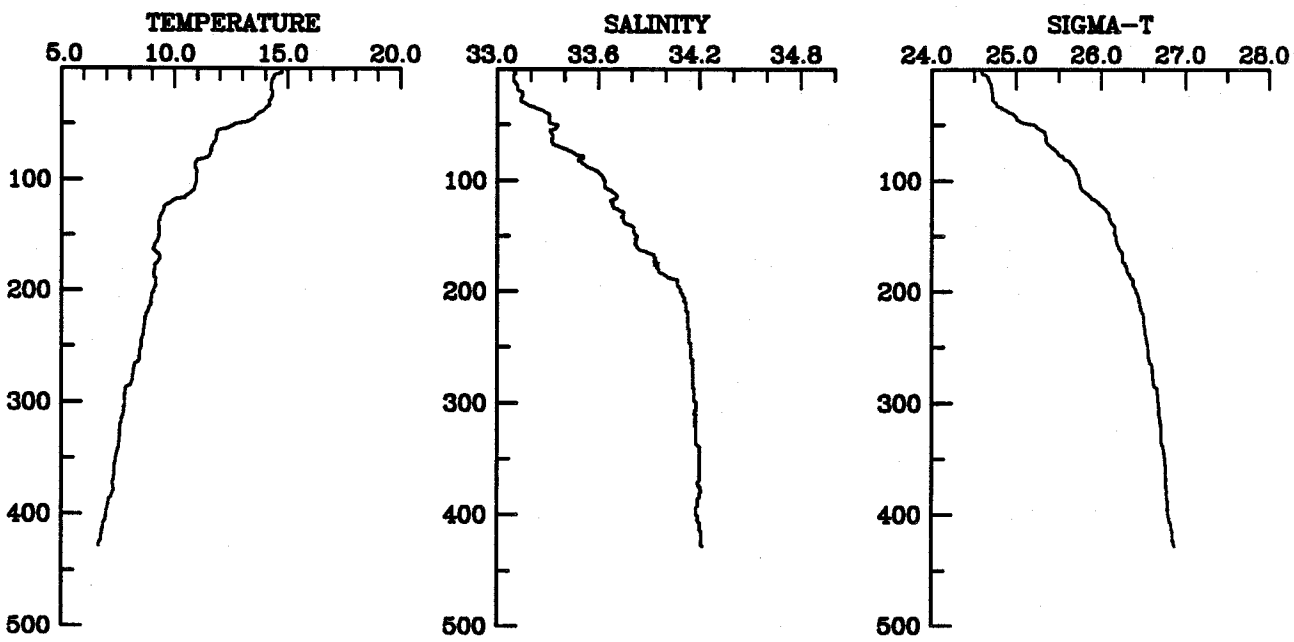
STATION C5 CAST 655
5 May 1983 1742 GMT
CTD Transect C-5
CTD Map 5



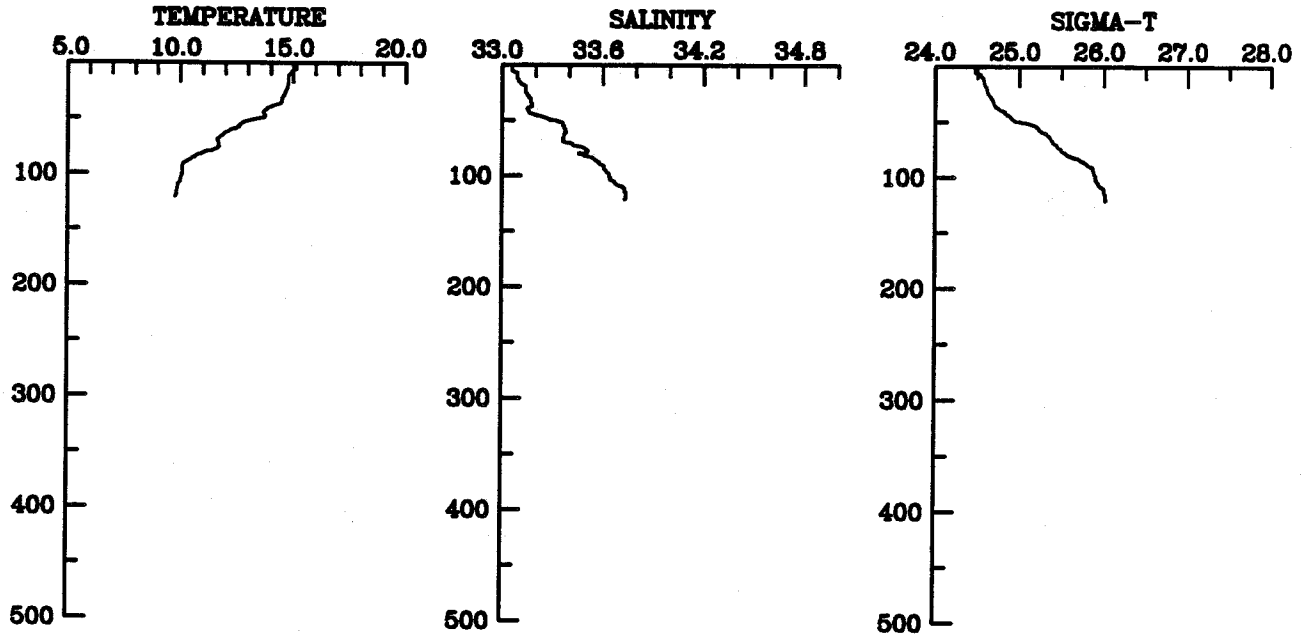
STATION C6 CAST 656
5 May 1983 1848 GMT
CTD Transect C-5
CTD Map 5



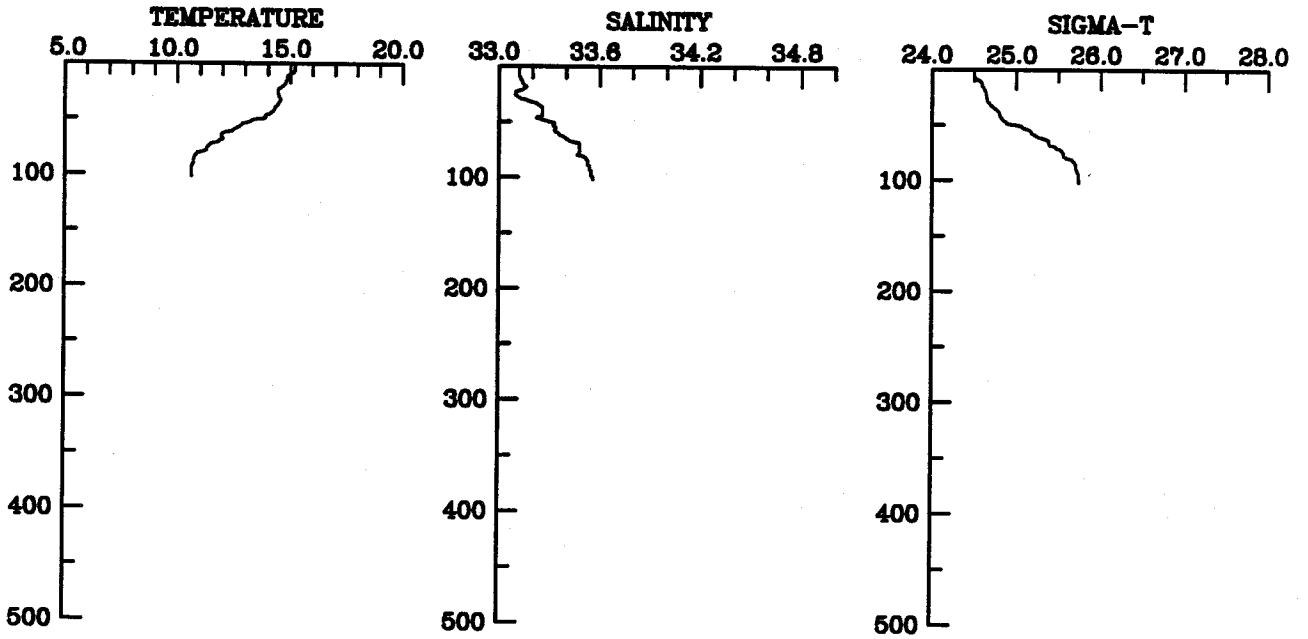
STATION C7 CAST 657
5 May 1983 1954 GMT
CTD Transect C-5
CTD Map 5



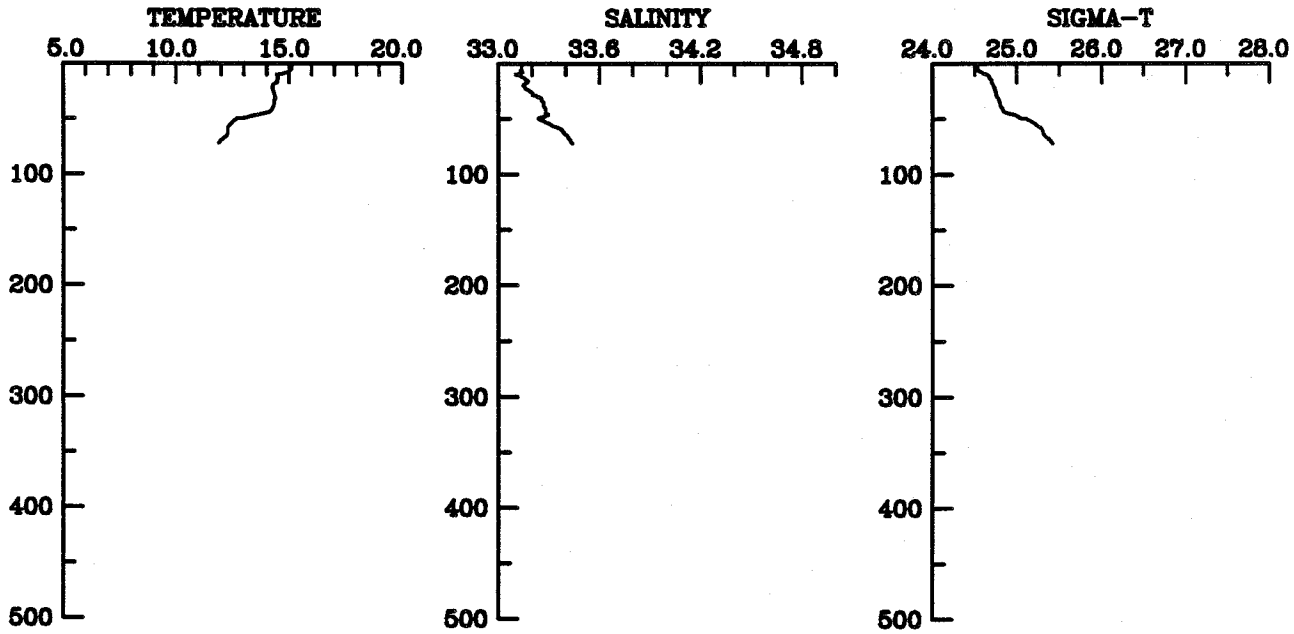
STATION C8 CAST 658
5 May 1983 2148 GMT
CTD Transect C-5
CTD Map 5



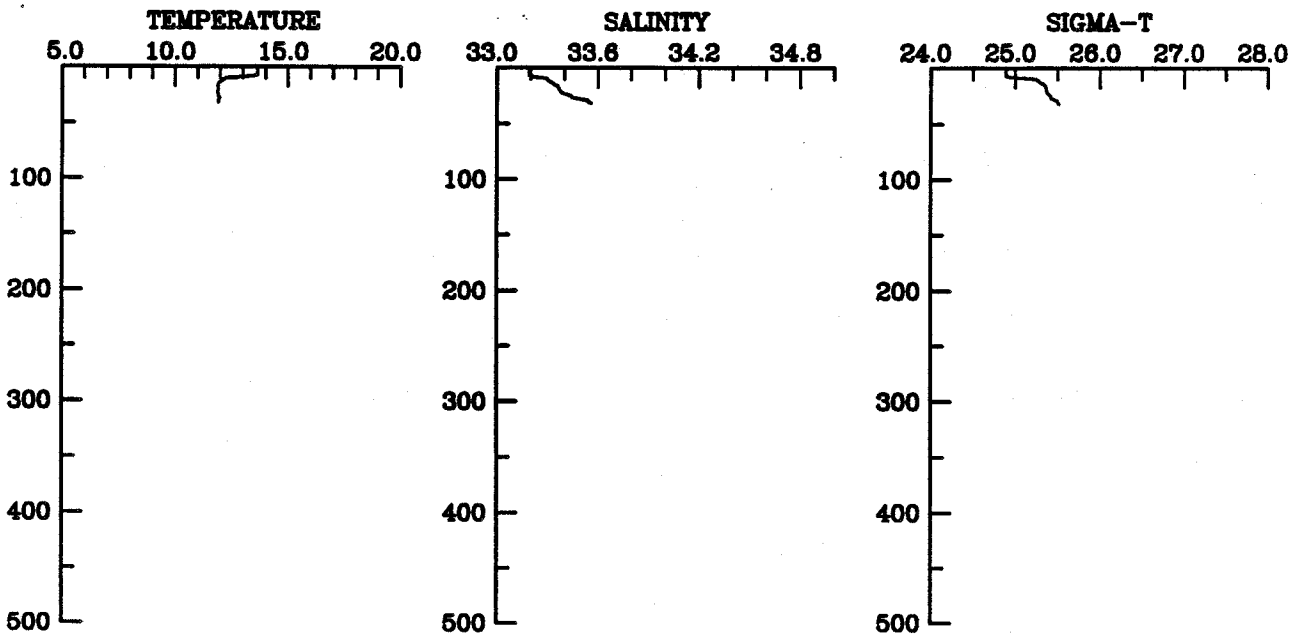
STATION C9 CAST 659
5 May 1983 2254 GMT
CTD Transect C-5
CTD Map 5



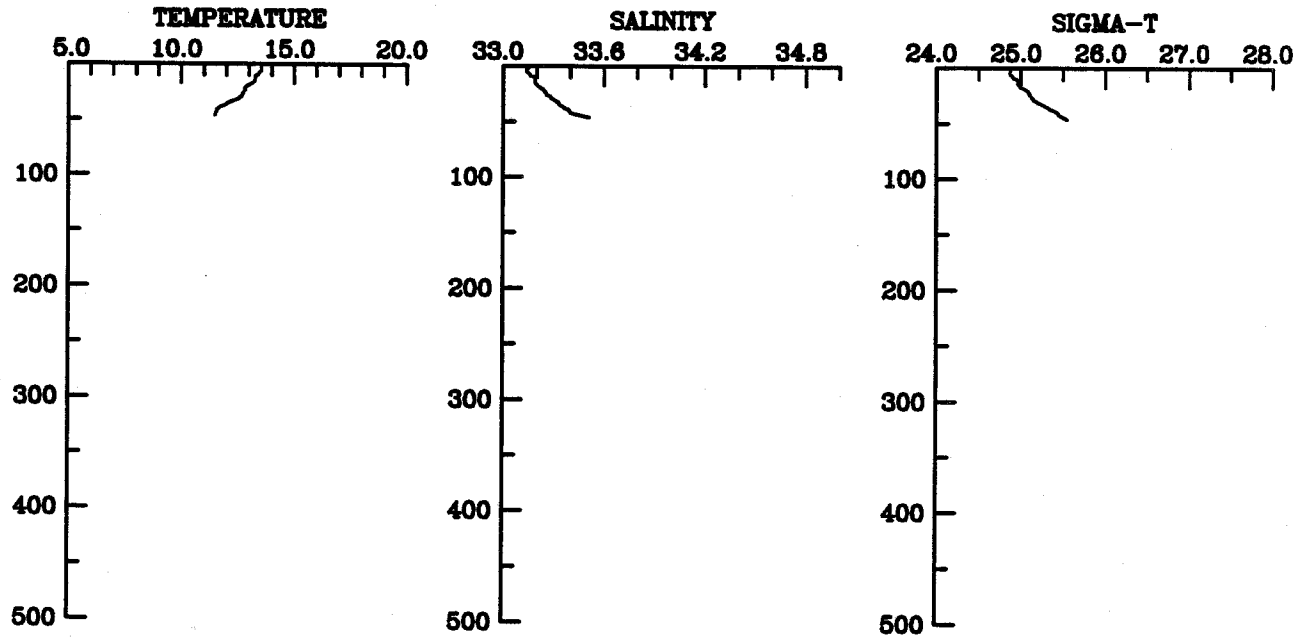
STATION C10 CAST 660
5 May 1983 2342 GMT
CTD Transect C-5
CTD Map 5



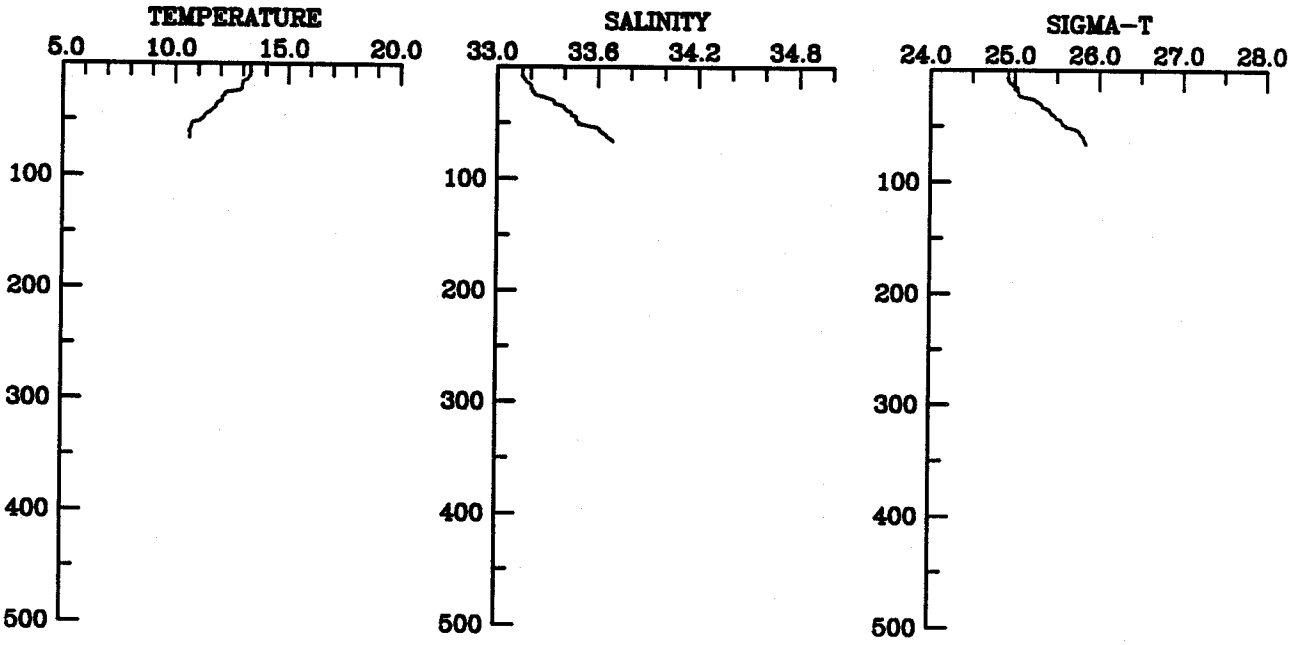
STATION P1 CAST 661
6 May 1983 424 GMT
CTD Transect P-2



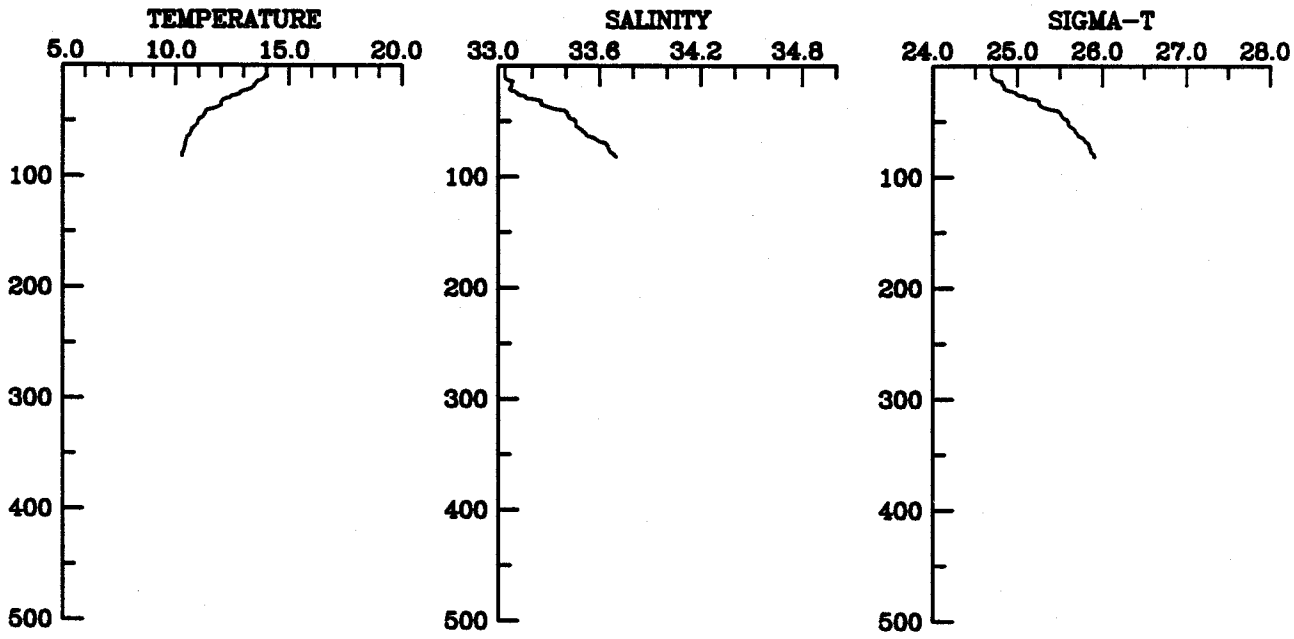
STATION P2 CAST 662
6 May 1983 506 GMT
CTD Transect P-2



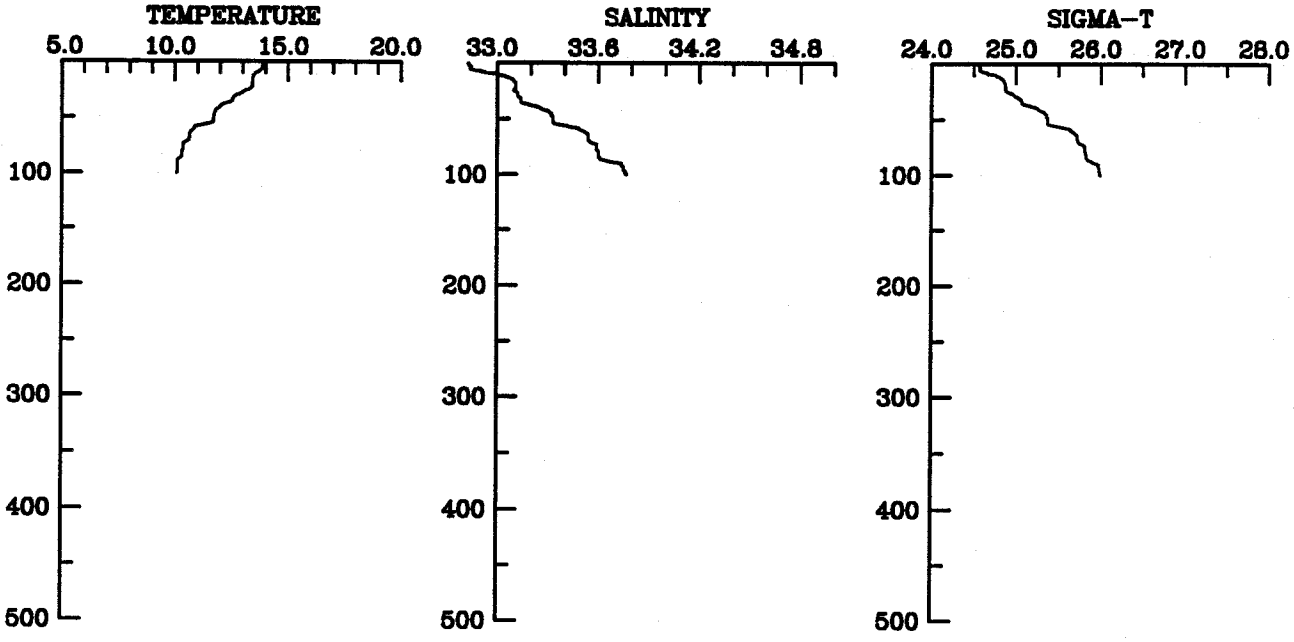
STATION P3 CAST 663
6 May 1983 554 GMT
CTD Transect P-2



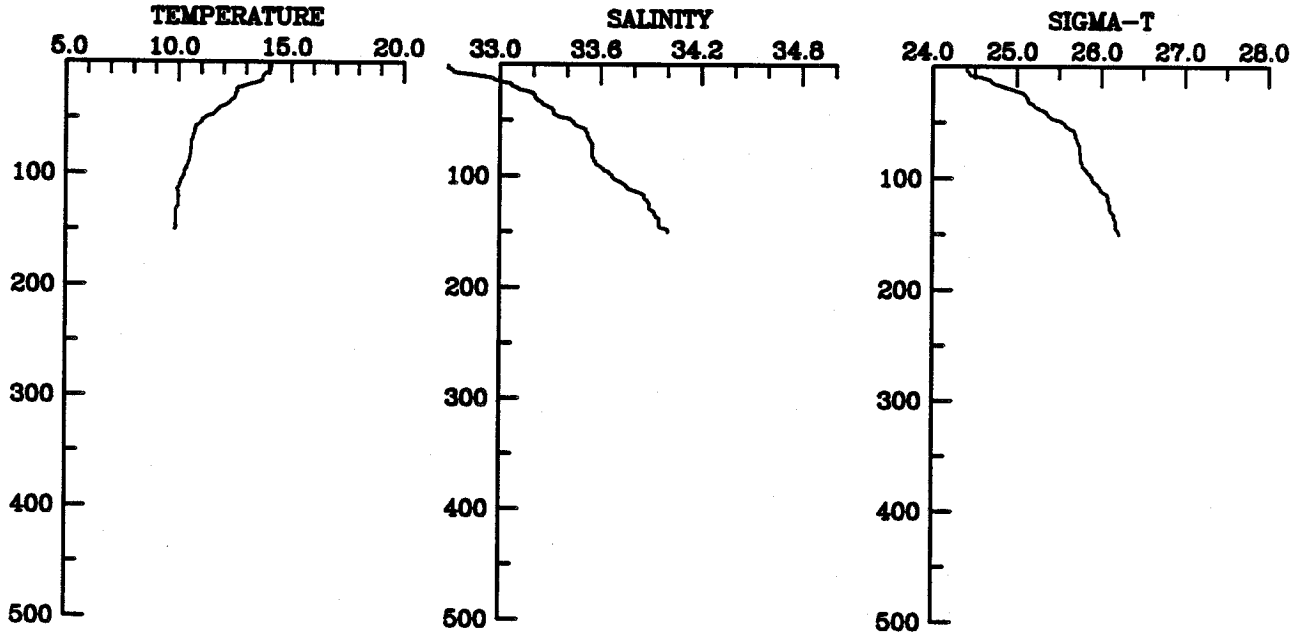
STATION P4 CAST 664
6 May 1983 648 GMT
CTD Transect P-2



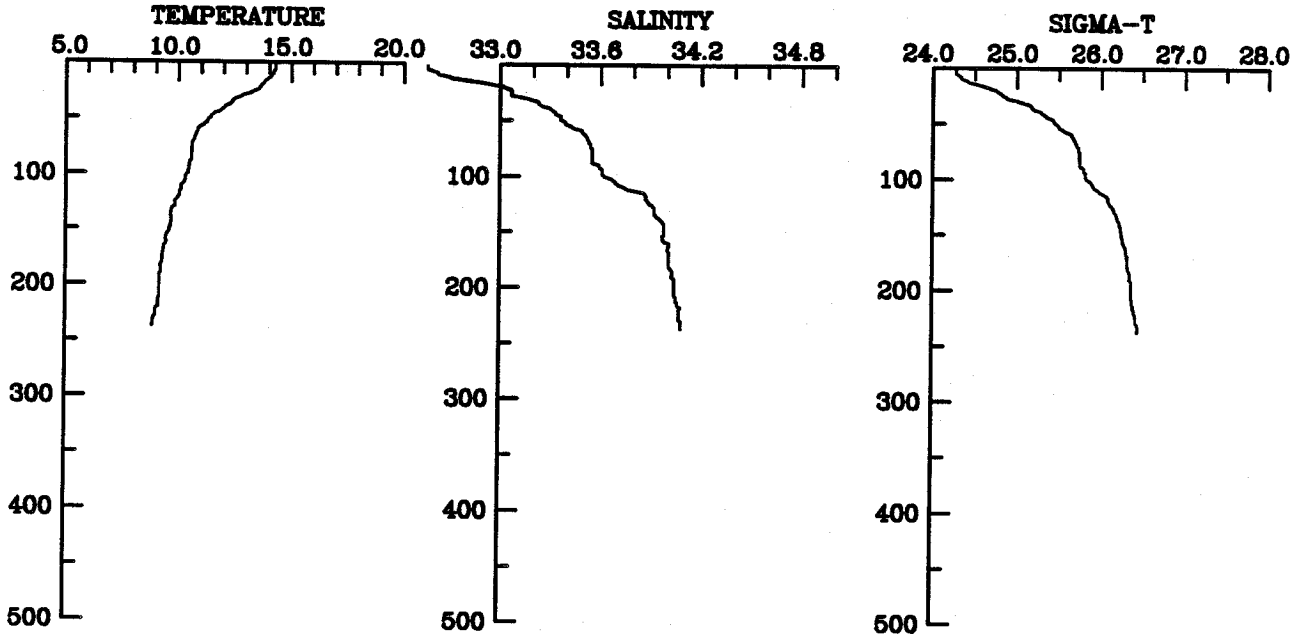
STATION P5 CAST 665
6 May 1983 730 GMT
CTD Transect P-2



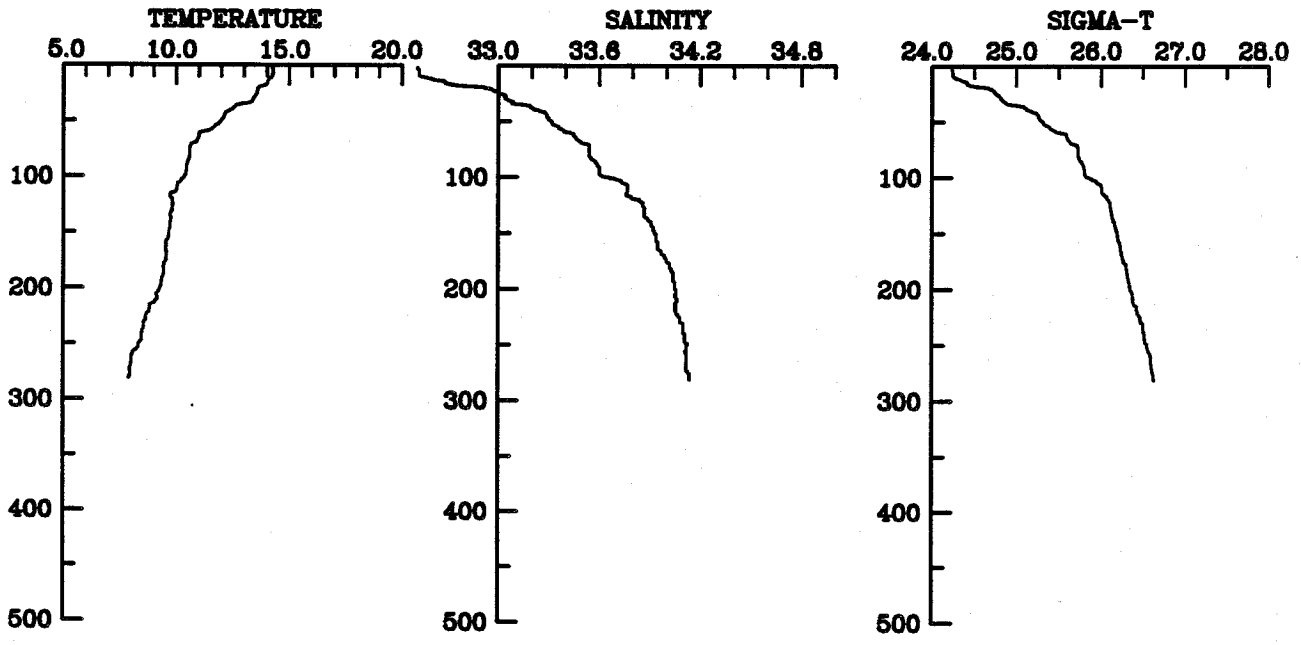
STATION P6 CAST 666
6 May 1983 830 GMT
CTD Transect P-2



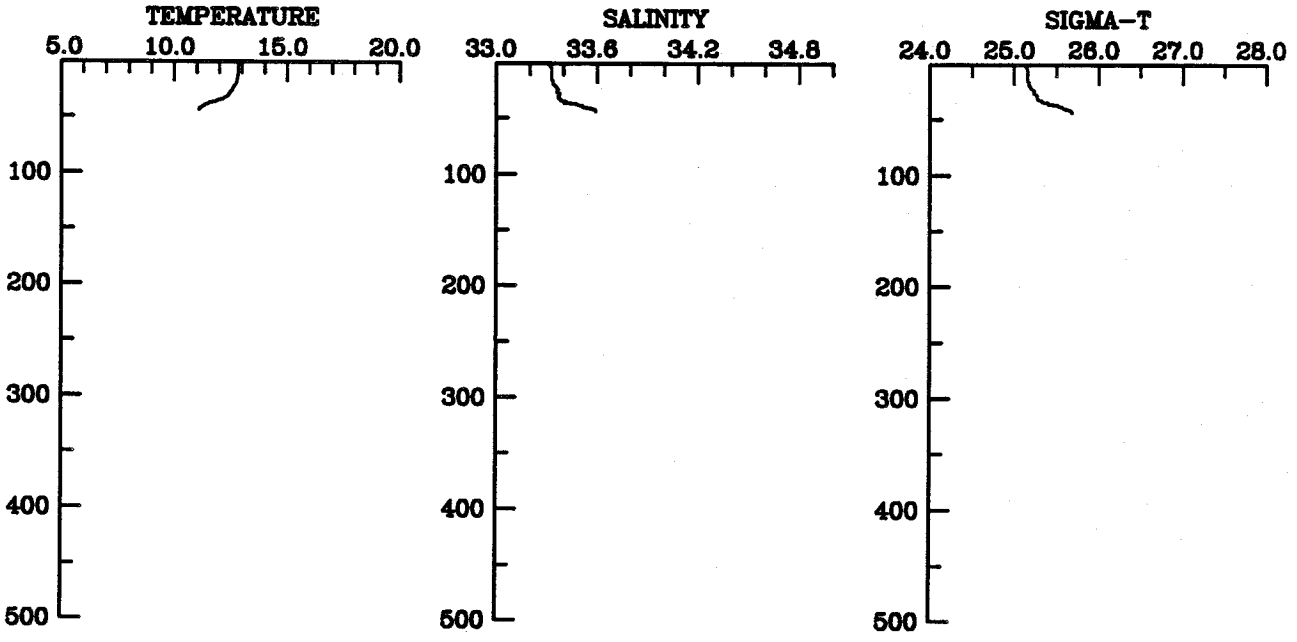
STATION P7 CAST 667
6 May 1983 924 GMT
CTD Transect P-2



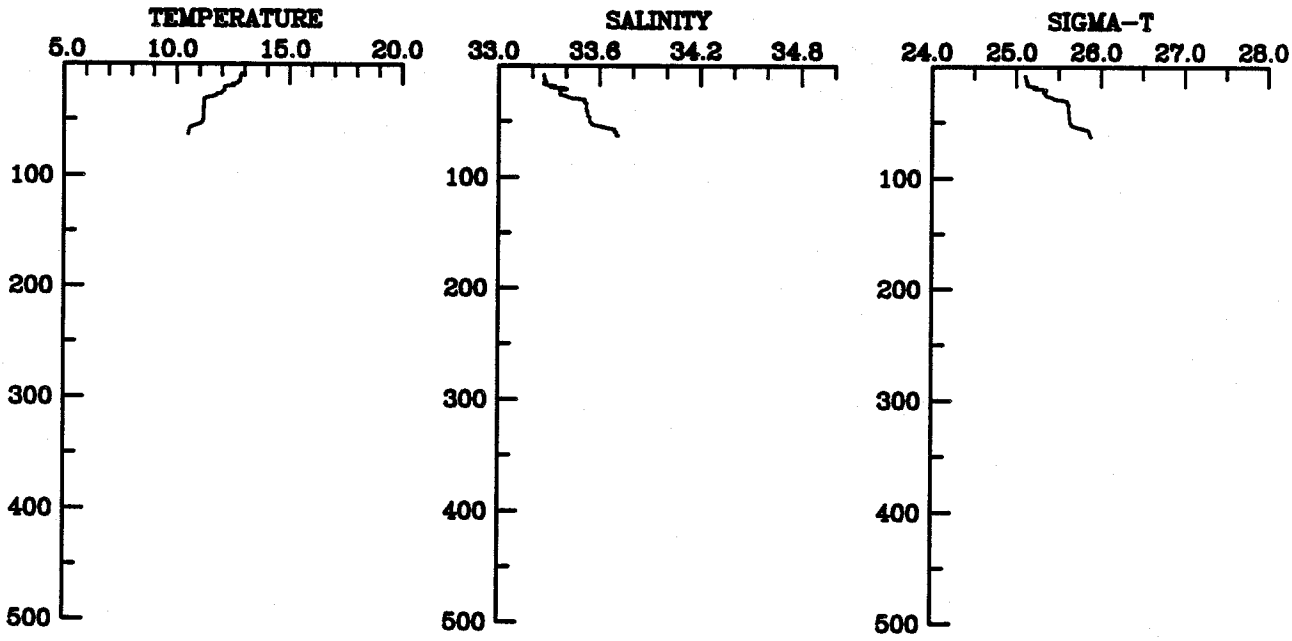
STATION P8 CAST 668
6 May 1983 1024 GMT
CTD Transect P-2



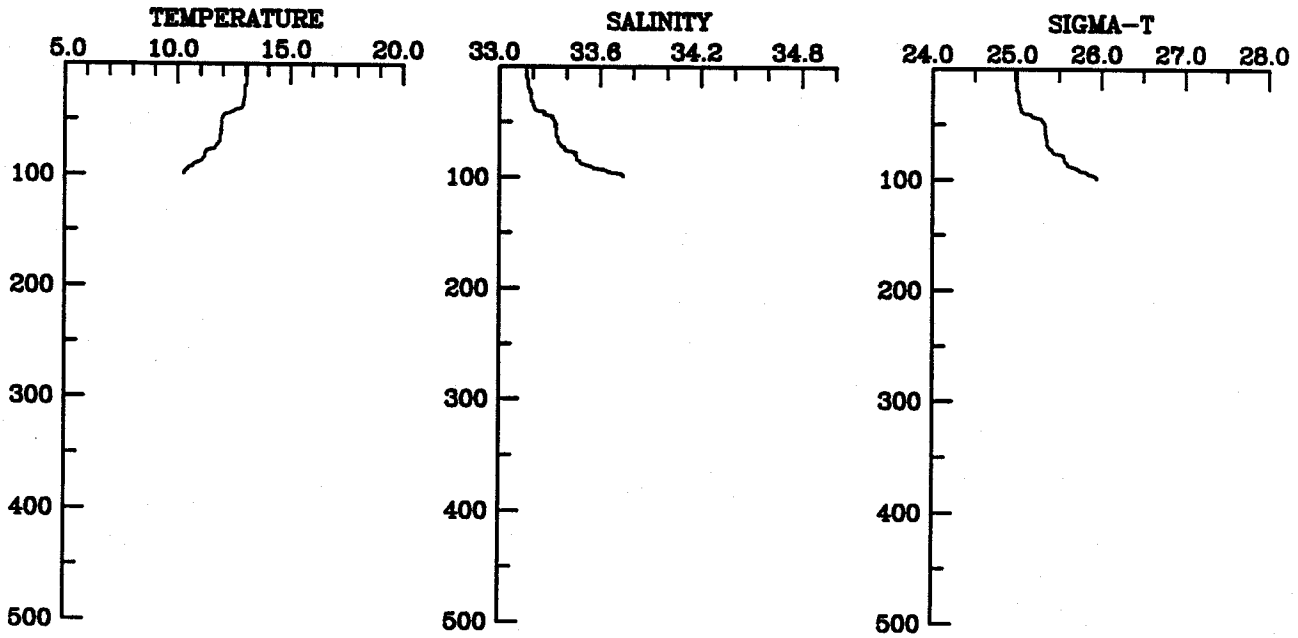
STATION A1 CAST 719
7 May 1983 1930 GMT
CTD Transect A-6



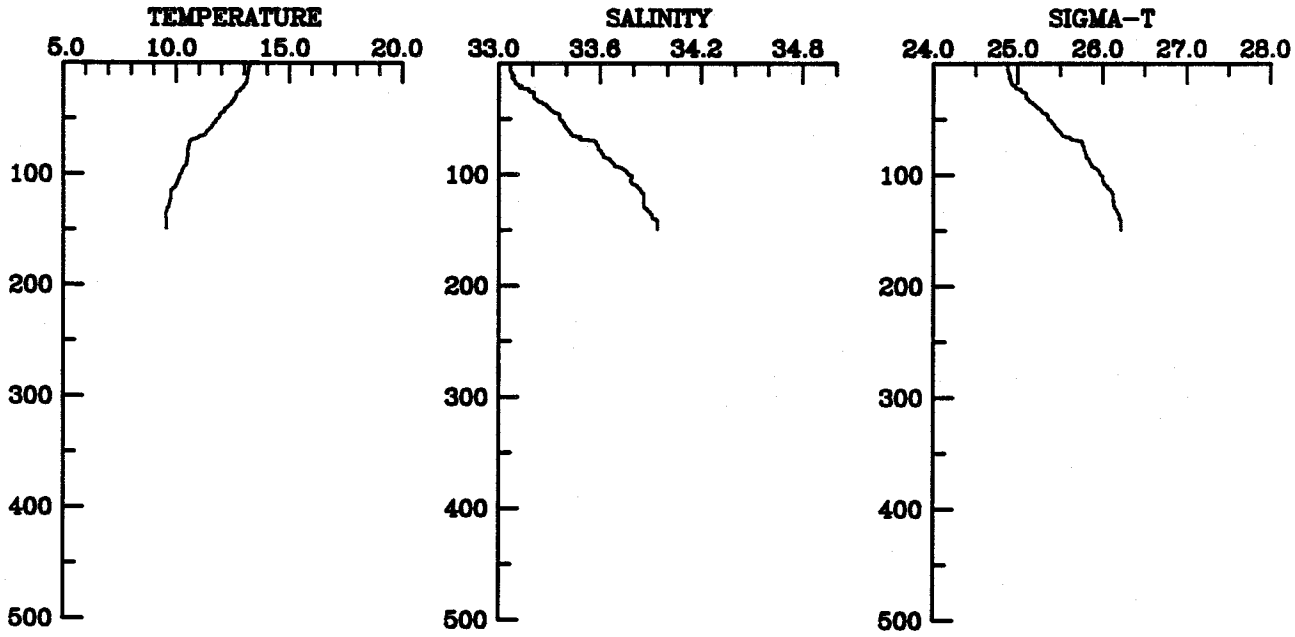
STATION A2 CAST 720
7 May 1983 2018 GMT
CTD Transect A-6



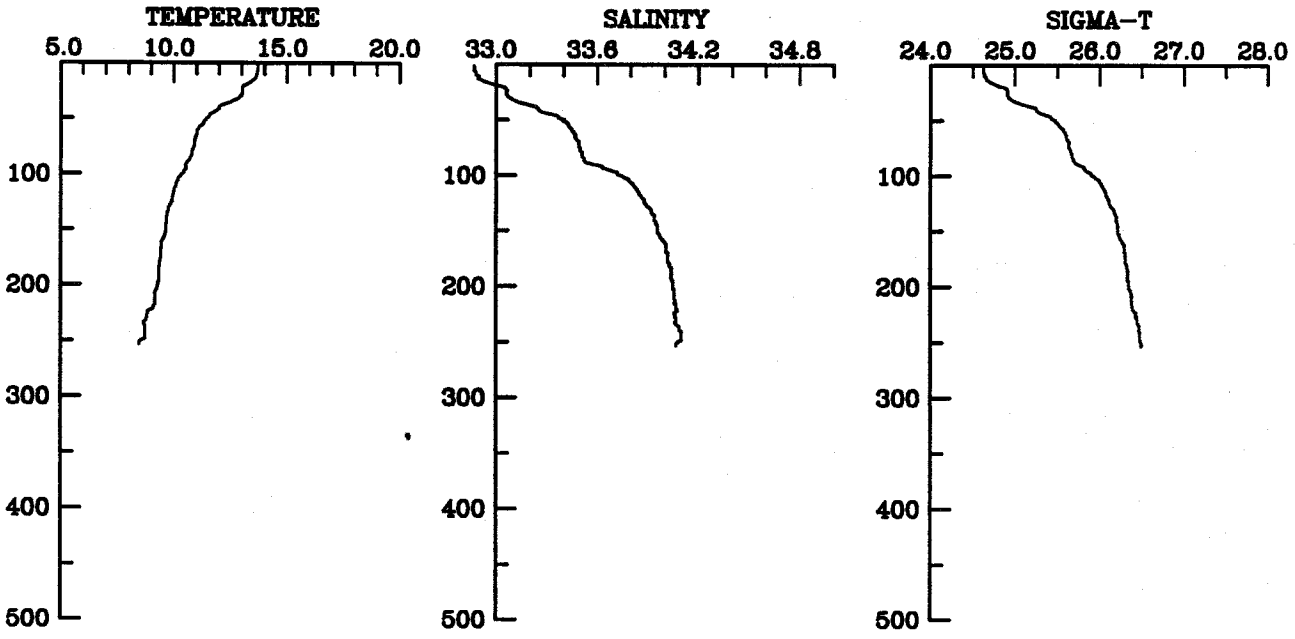
STATION A3 CAST 721
7 May 1983 2118 GMT
CTD Transect A-6



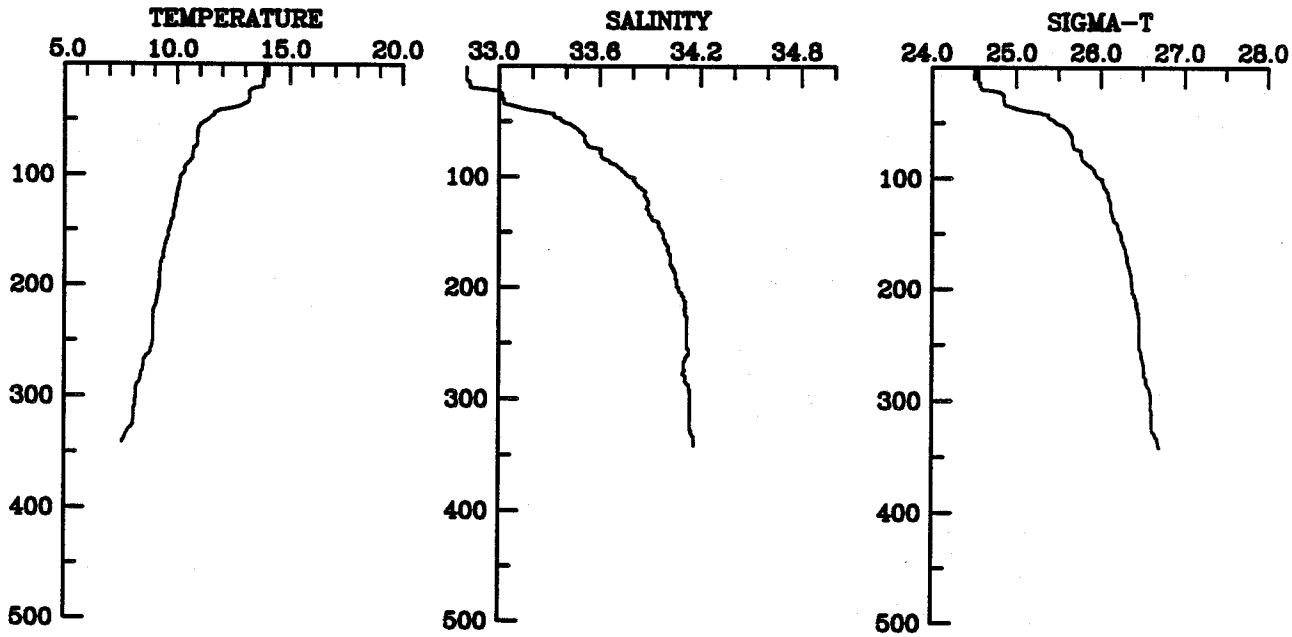
STATION A4 CAST 722
7 May 1983 2212 GMT
CTD Transect A-6



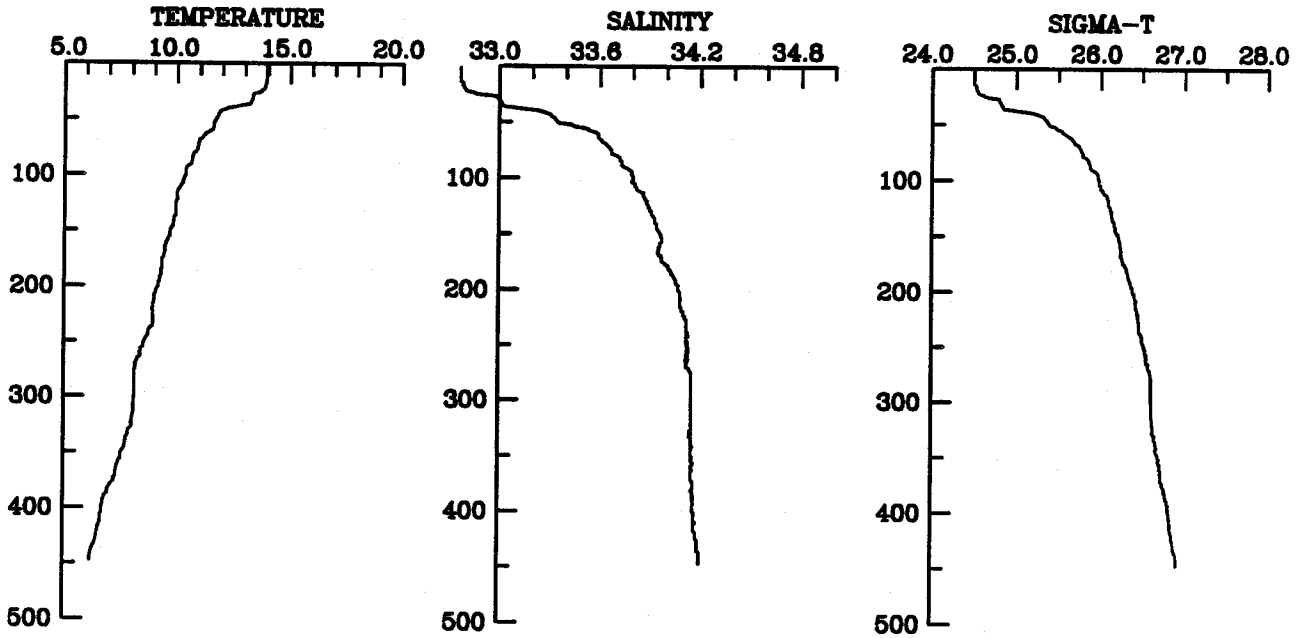
STATION A5 CAST 723
7 May 1983 2318 GMT
CTD Transect A-6



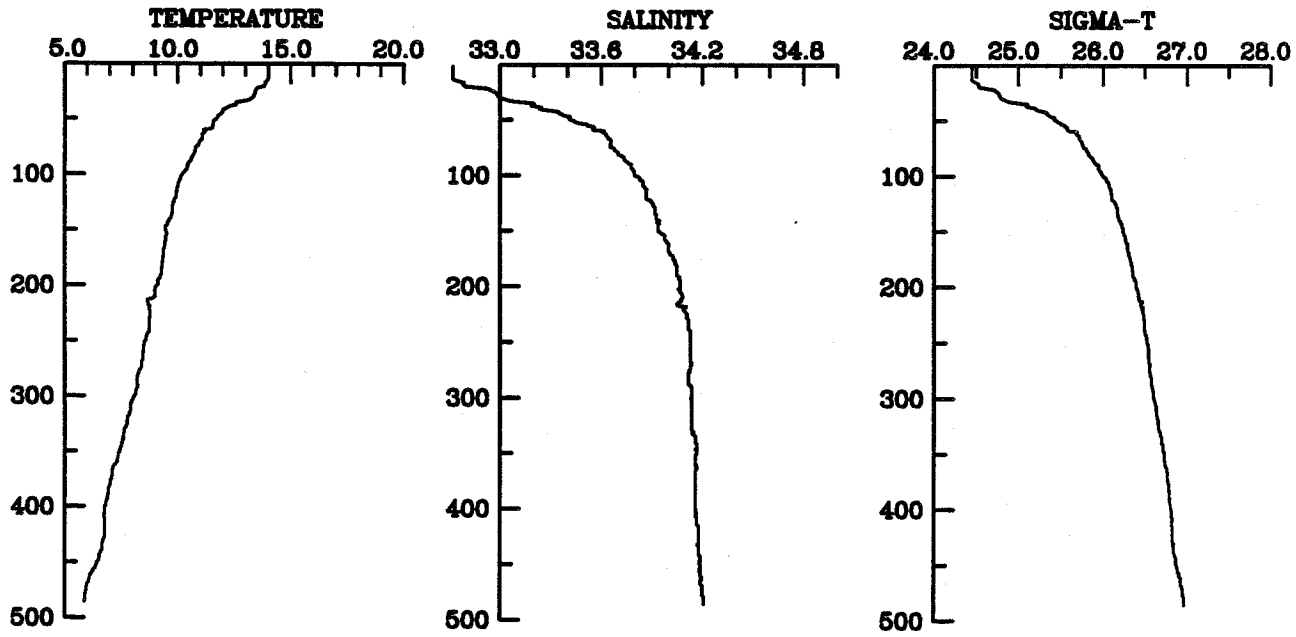
STATION A6 CAST 724
8 May 1983 18 GMT
CTD Transect A-6



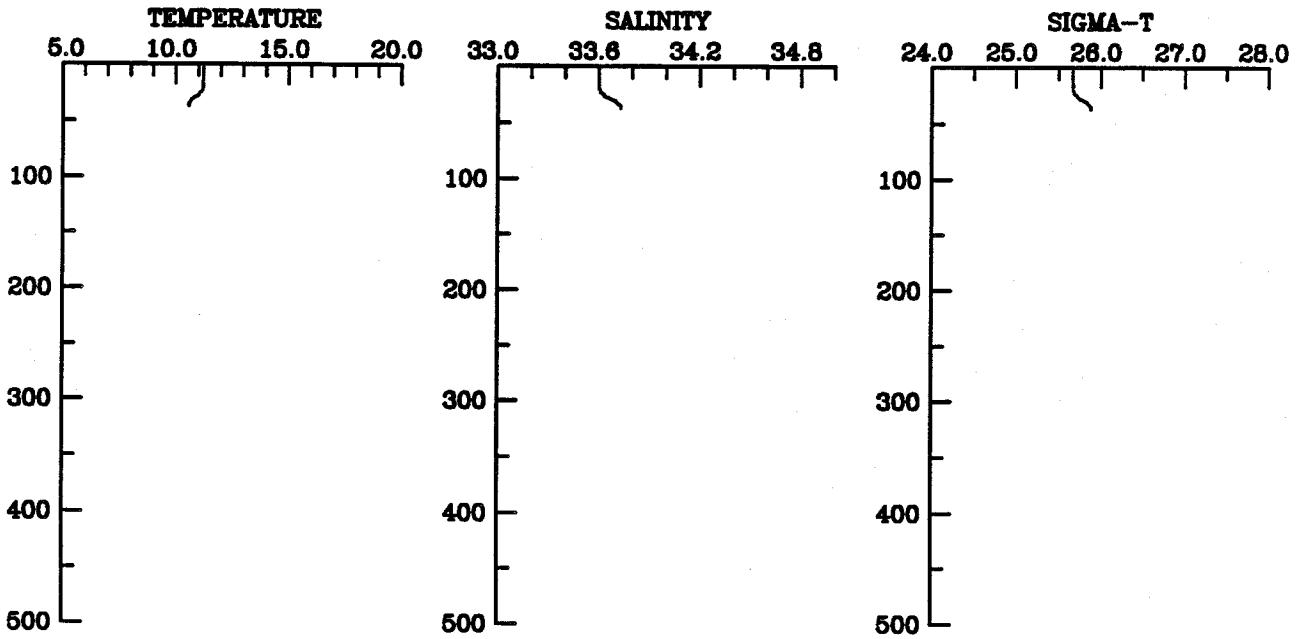
STATION A7 CAST 725
8 May 1983 118 GMT
CTD Transect A-6



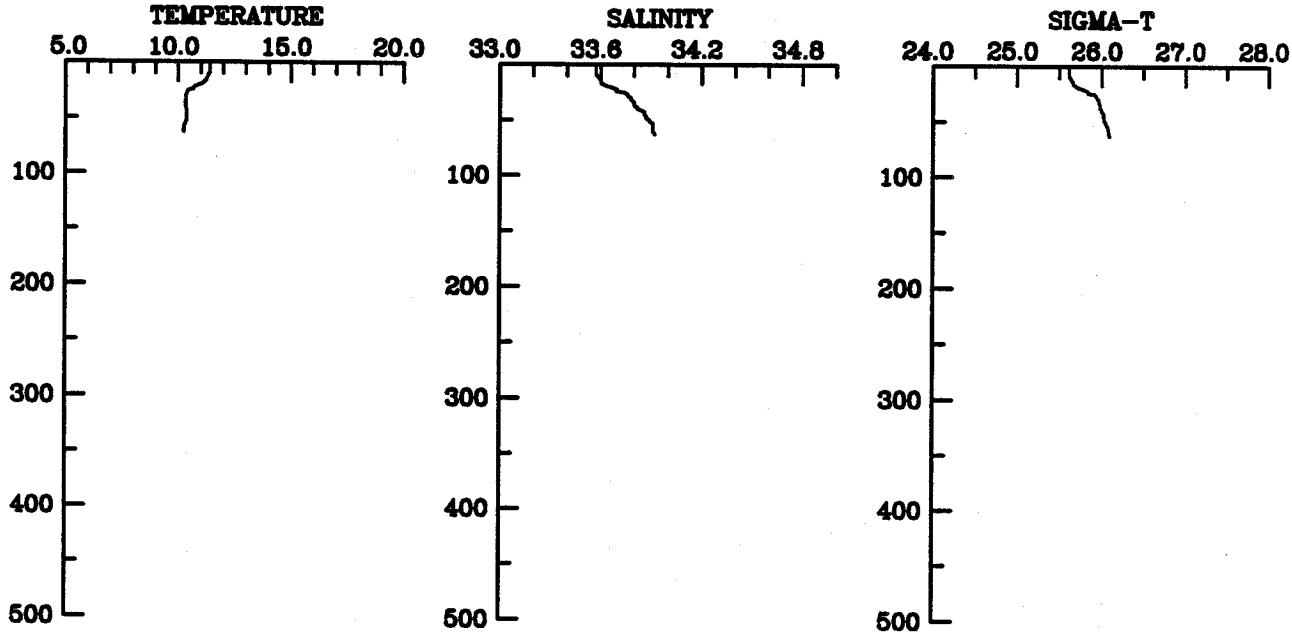
STATION A8 CAST 726
8 May 1983 230 GMT
CTD Transect A-6



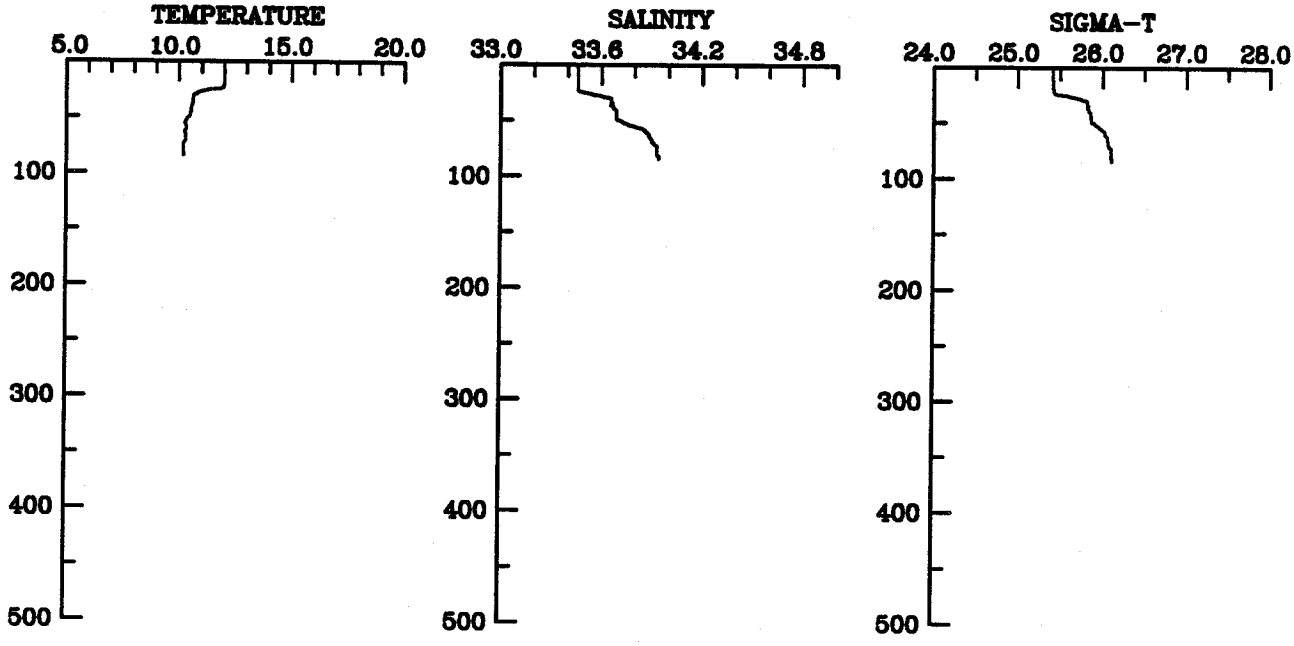
STATION G1 CAST 727
8 May 1983 606 GMT
CTD Transect G-11



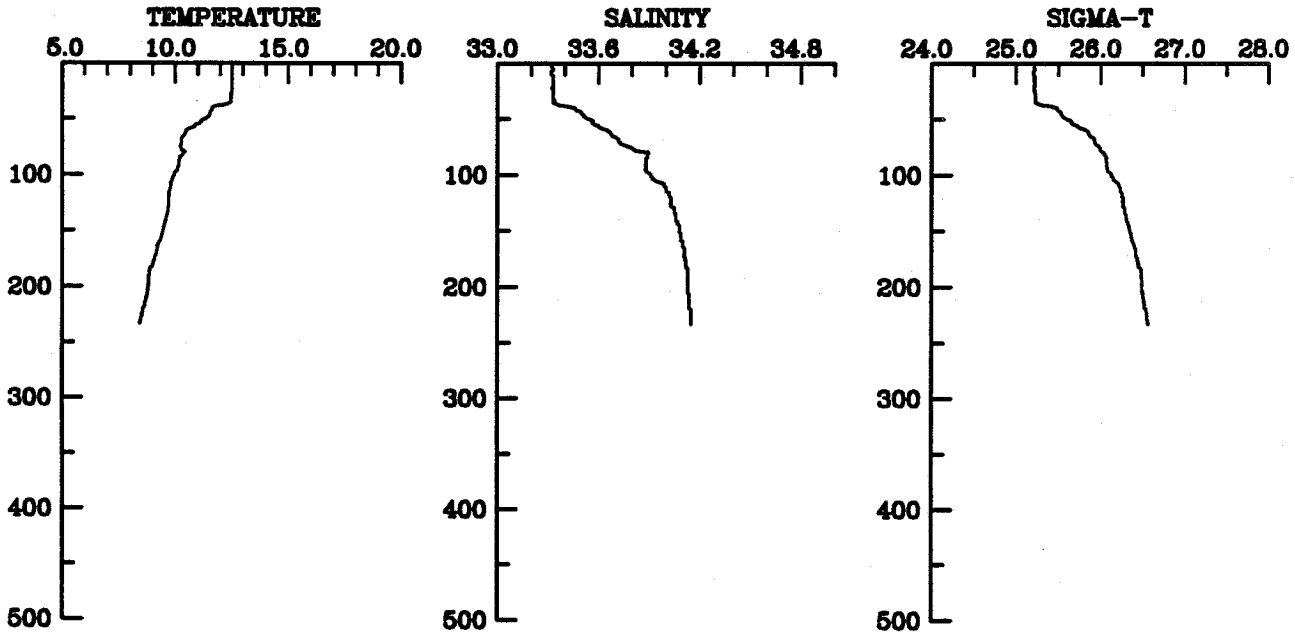
STATION G2 CAST 728
8 May 1983 636 GMT
CTD Transect G-11



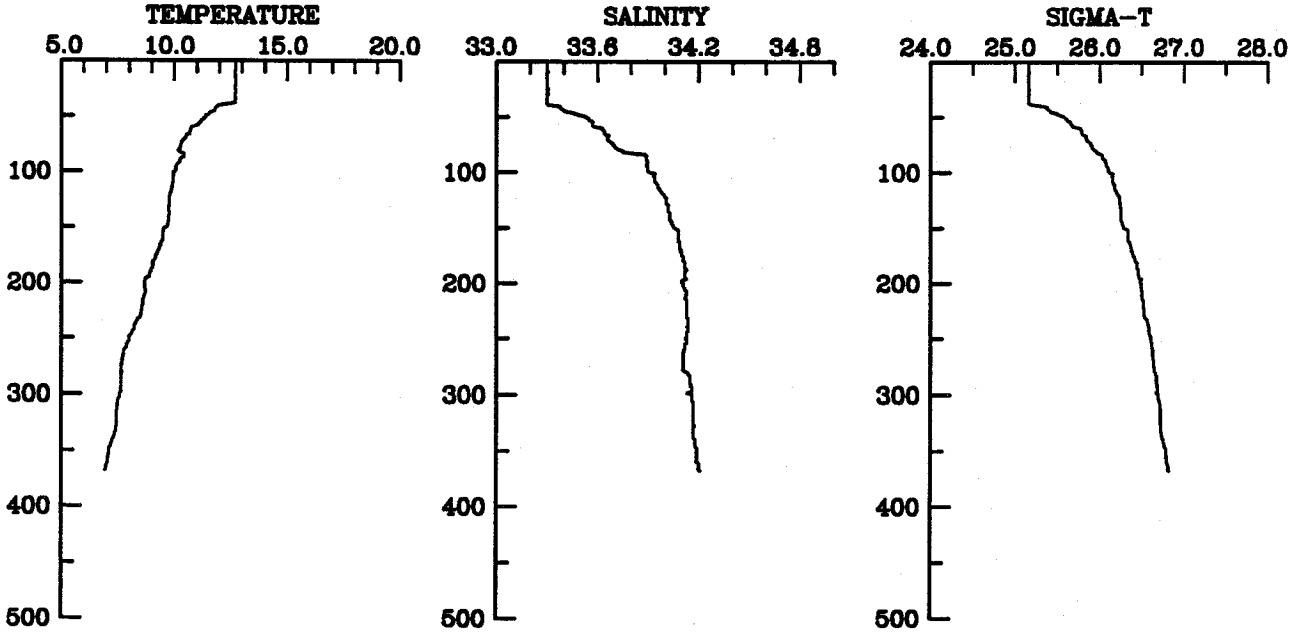
STATION G3 CAST 729
8 May 1983 906 GMT
CTD Transect G-11



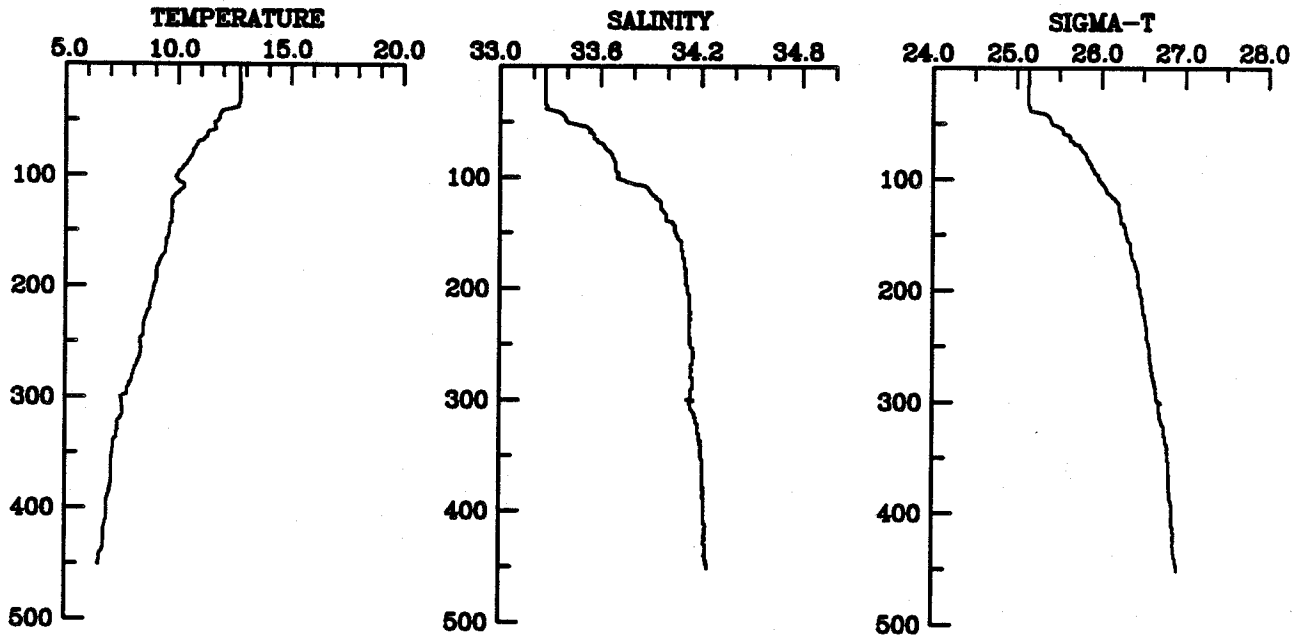
STATION G4 CAST 731
8 May 1983 1024 GMT
CTD Transect G-11



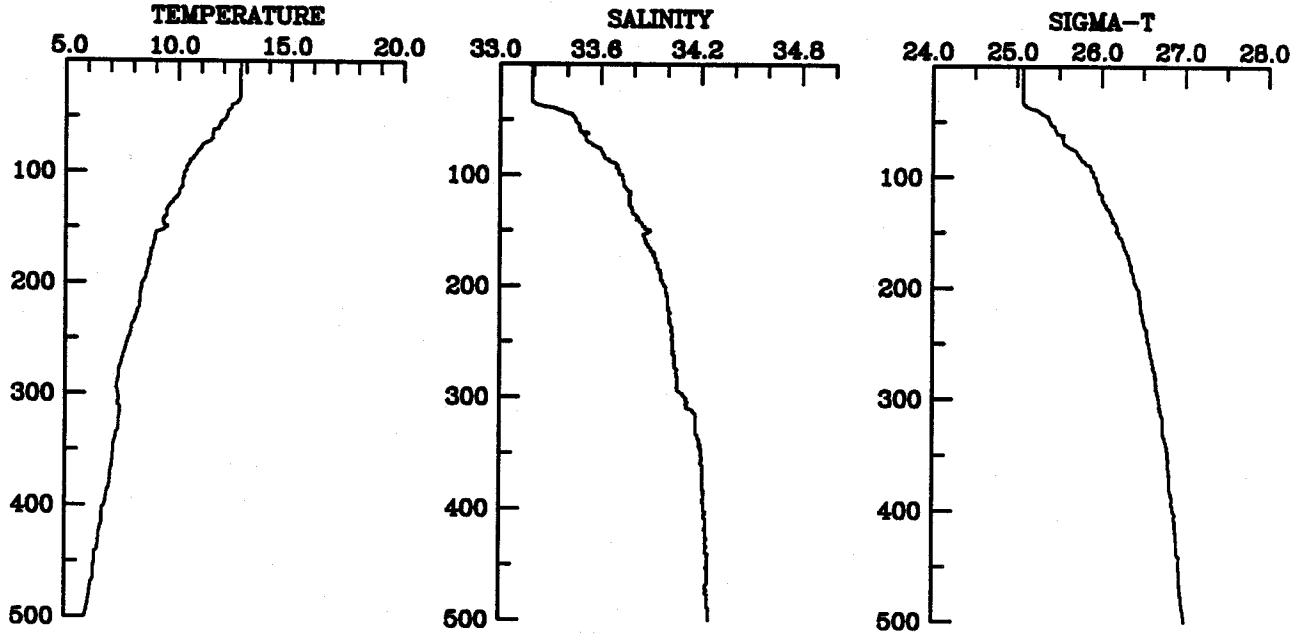
STATION G5 CAST 732
8 May 1983 1242 GMT
CTD Transect G-11



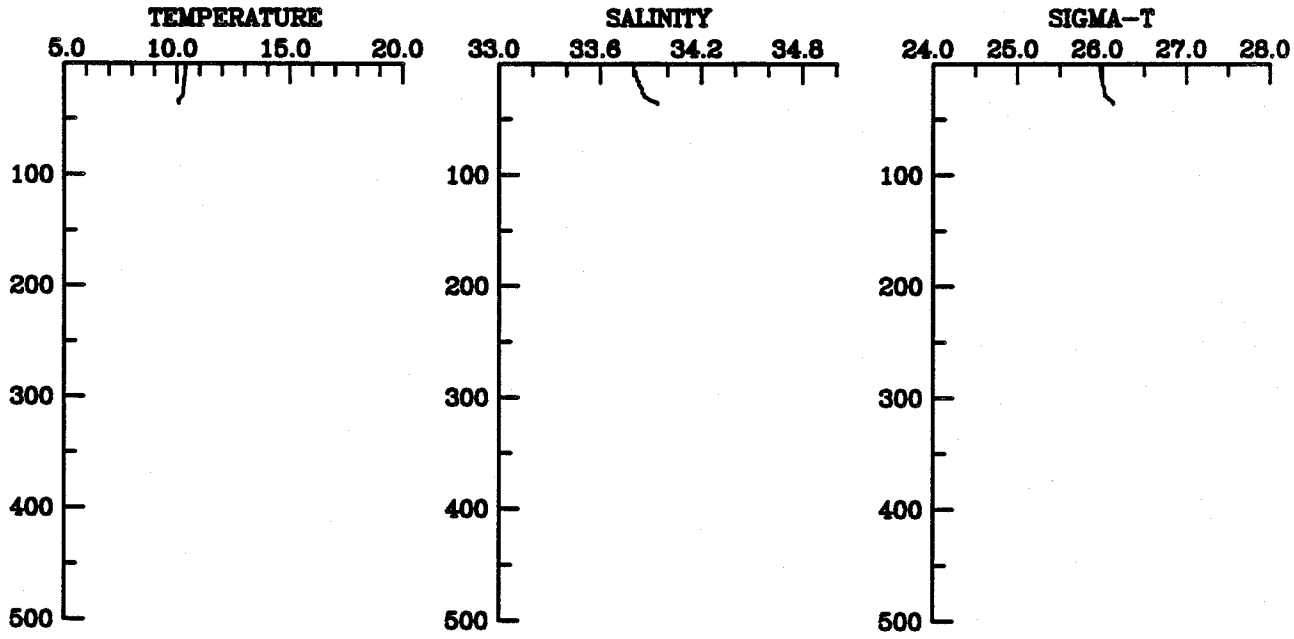
STATION G6 CAST 733
8 May 1983 1248 GMT
CTD Transect G-11



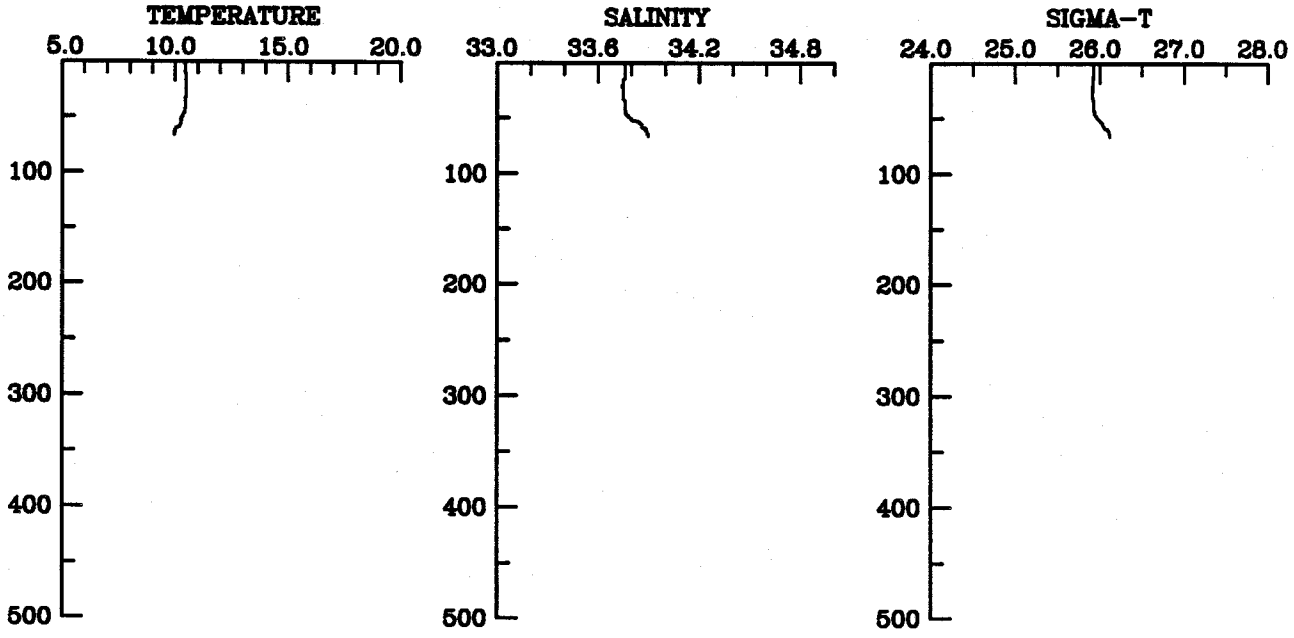
STATION G7 CAST 734
8 May 1983 1424 GMT
CTD Transect G-11



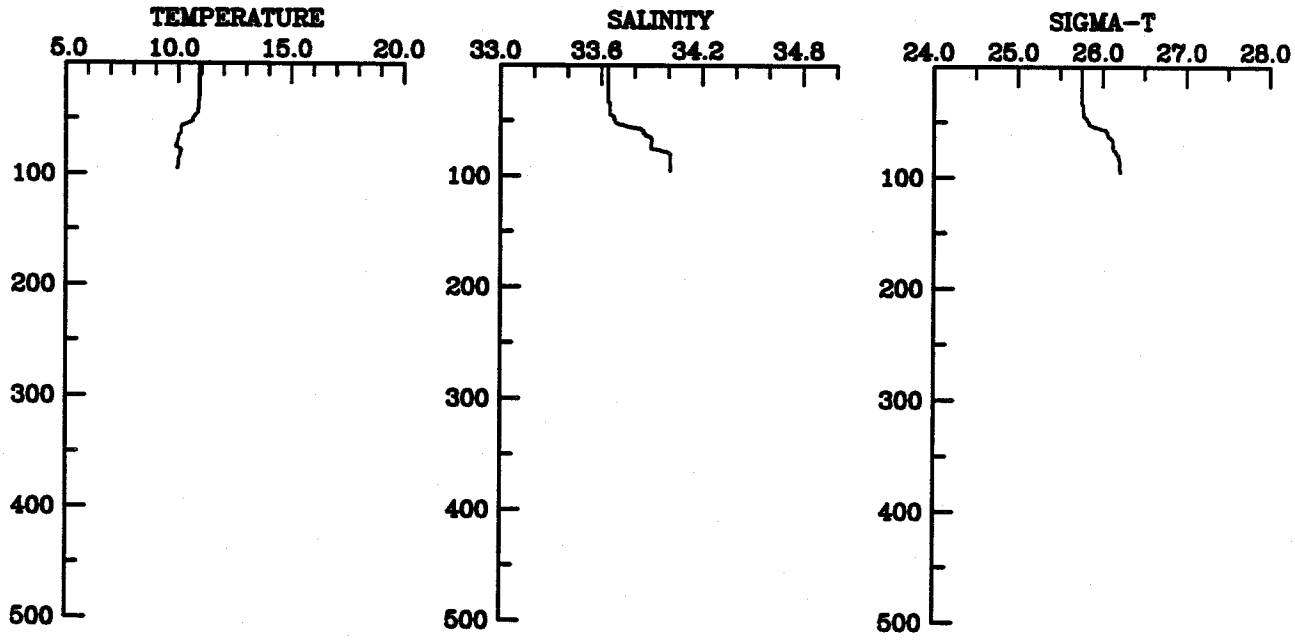
STATION G1 CAST 735
9 May 1983 1530 GMT
CTD Transect G-12



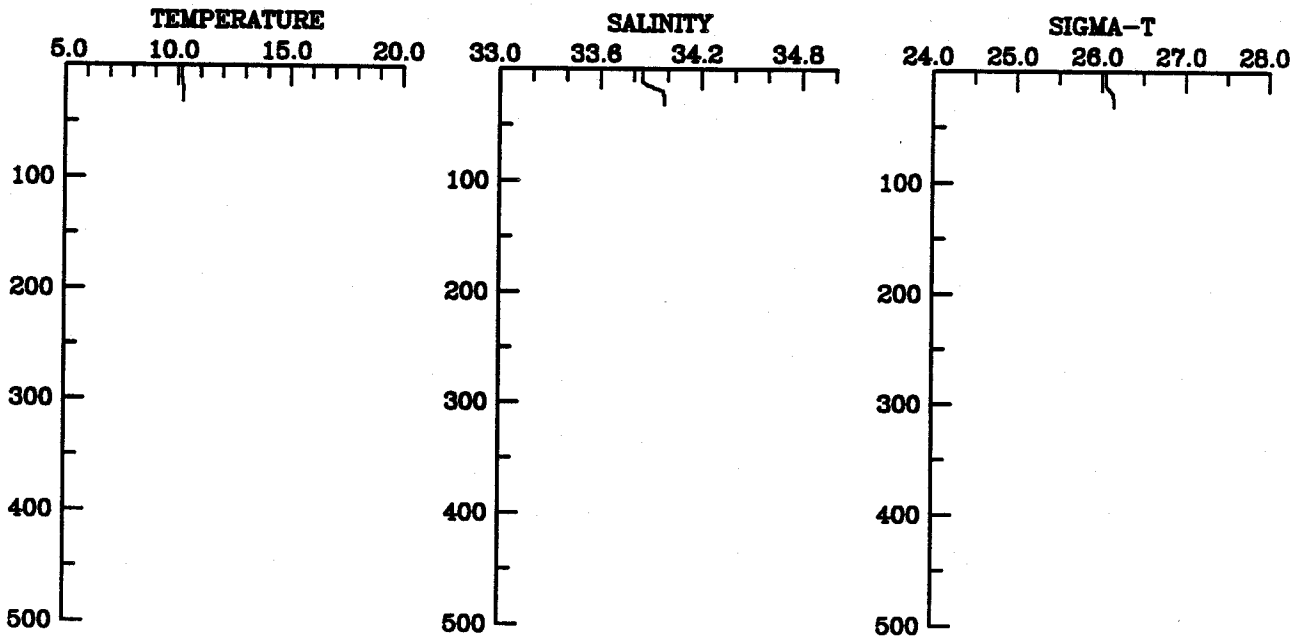
STATION G2 CAST 736
9 May 1983 1618 GMT
CTD Transect G-12



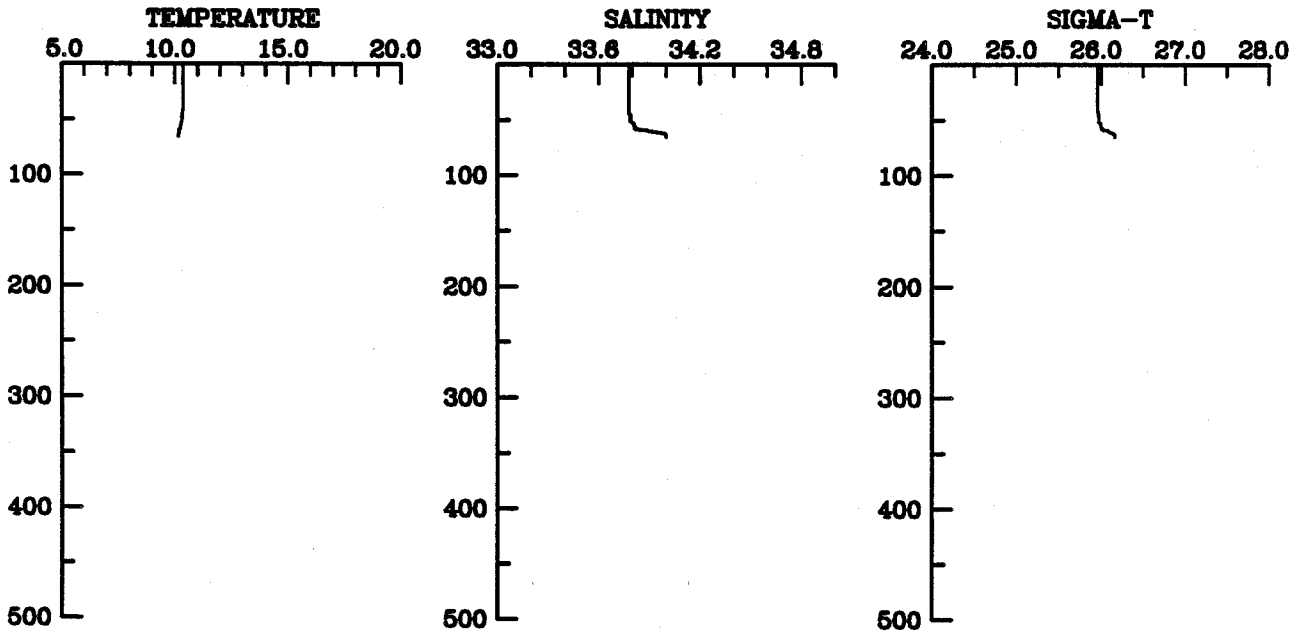
STATION G3 CAST 737
9 May 1983 1706 GMT
CTD Transect G-12



STATION G1 CAST 759
10 May 1983 1412 GMT
CTD Transect G-13



STATION G2 CAST 760
10 May 1983 1500 GMT
CTD Transect G-13



STATION G3 CAST 761
10 May 1983 1530 GMT
CTD Transect G-13