Hawaii Ocean Time-series
Data Report 1
1988–1989

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Preface

The Hawaii Ocean Time-series (HOT) project has been making repeated observations of the hydrography, chemistry, and biology at a station north of Hawaii since October 1988, with the objective of describing the oceanography at a site representative of the central north Pacific Ocean.

Cruises are made approximately once a month to the HOT deep-water station (22°45'N, 158°W) about 100 km north of Oahu, Hawaii. Measurements of the hydrography, water column chemistry, primary production, and sedimentation rates are made over three days.

This document reports the data collected during the first 15 months of the HOT program. The data reported here are a screened subset of the complete data set. Only two CTD casts for each cruise are presented, although between 10 and 20 casts are typically made each cruise. Summary plots are given for CTD, meteorological, and ADCP observations.

A more complete data set resides on a Sun workstation at the University of Hawaii. These data are in ASCII form, and can easily be accessed using anonymous ftp via the Internet. Details on obtaining the data are given in Section VIII. The entire data set has also been submitted to the National Oceanographic Data Center (NODC) Office and is available through that service.

Acknowledgements

Many people have participated in cruises under the HOT program. They are listed in Table IV.B.3. We gratefully acknowledge their involvement and support.

Special thanks are due to Dale Hebel, Ricardo Letelier, Stewart Reid, Marc Rosen, and Jefrey Snyder for participating in most of the cruises, and for the tremendous amount of time and effort they have put into the program. In addition, we would like to acknowledge the contributions made by Sharon DeCarlo and Eric Loucks for programming; Lance Fujieki, Janice Sato, and Bo Yang helped with the data processing. Ursula Magaard performed many routine chemical analyses, including Winkler titrations. Ted Walsh and Gerald Akiyama performed the salinity and nutrient analyses. Without the assistance of these people, the data presented in this report could not have been collected, processed and analyzed. We would like to thank Anne Shure for her help in the production of this document.

We also would like to thank the Captains and crew members of the R/V MOANA WAVE and SSP KAIMALINO for their efforts.

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I. Introduction

In 1987, the National Science Foundation established a special-focus research initiative termed 'The Global Geosciences Program'. This program is intended to support studies of the earth as a system of interrelated physical, chemical, and biological processes that act together to regulate the habitability of our planet. The stated goals of this program are two-fold. The first goal is to understand the earth-ocean-atmosphere system and how it functions. The second goal is to describe, and eventually predict, major cause-and-effect relationships. Two of the components of the Global Geosciences Program are the World Ocean Circulation Experiment (WOCE) and the Joint Global Ocean Flux Study (JGOFS) programs. The former is focused on physical oceanographic processes and the latter on biogeochemical processes.

The Hawaii Ocean Time-series (HOT) project has been funded under the WOCE and JGOFS programs to make repeated observations of the hydrography, chemistry, and biology for five years at a station north of Hawaii. The objectives of HOT are to describe the physical oceanography, and to identify and quantify the processes controlling biogeochemical cycling in the ocean at a site representative of the central north Pacific Ocean.

The HOT deep-water station, also known as Station ALOHA (A Long-term Oligotrophic Habitat Assessment), is about 100 km north of Kahuku Point, Oahu, Hawaii (Figure I.1). Cruises are made to the site about once a month, and about three days are spent on station. The cruise length is dictated by the minimum time necessary to obtain reasonable estimates of particle flux using free-floating sediment traps. The WOCE requirements for HOT are met by making a 36-hour burst of CTD casts to obtain temperature, salinity, dissolved oxygen, and fluorescence profiles. Water samples are collected simultaneously with the CTD casts for the measurement of a variety of parameters, including inorganic and organic nutrient concentrations, microbial biomass, and primary production. Velocity measurements are made using a shipboard Acoustic Doppler Current Profiler (ADCP) and a Lowered ADCP.

The nominal deep-water station is at 22°45'N, 158°W. We have defined the station to be a 10-km radius circle centered on this position. Every effort is made to sample within this circle, especially during the 36-hour burst of CTD sampling.

A station is also occupied at 21°20.6'N, 158°16.4'W, near Kahe Point, Oahu, during the transit from Honolulu to Station ALOHA. The Kahe Point station is used primarily to test the CTD and other equipment, but it also provides additional time-series data at a near-shore site. The Kahe Point station is located in approximately 1500 m of water about 16 km from shore.

This report presents data collected during the first 12 cruises of HOT, from October 1988 to November 1989. Two ships were used during this time period: the University of Hawaii's

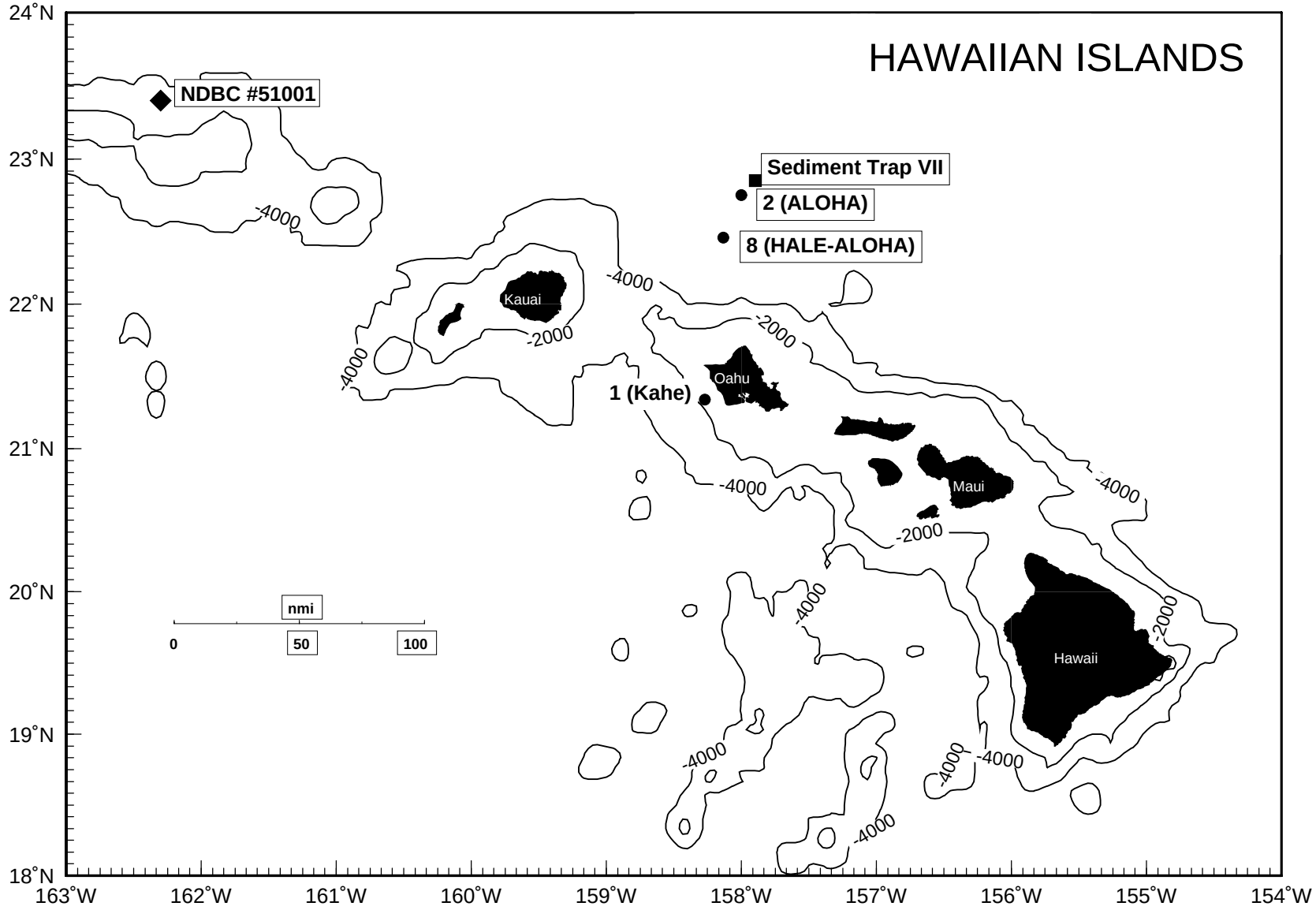


Figure 1.1: Map of Hawaiian Island, Showing Station ALOHA, the Kahe Point Station, and NDBC Buoy.

R/V MOANA WAVE, and the SSP KAIMALINO operated by Seaco for the Naval Ocean System Center (NOSC).

II. Sampling Procedures and Analytical Methods

II.A. CTD Profiling

CTD data are collected with a Sea-Bird SBE-09 CTD, which has an internal Digiquartz pressure sensor and external temperature, conductivity, and dissolved oxygen sensors. During 1989, Sea-Bird introduced a temperature-conductivity duct, so that water is pumped through both the temperature and conductivity sensors. This T-C duct has been used since HOT-11. The instrument also has provision for an external fluorometer and/or transmissometer. The CTD is mounted in a rosette, and the package is deployed on a three-conductor cable, allowing for real-time data acquisition and data display. Water samples are taken on the upcasts for chemical analyses, and for calibration of the conductivity and oxygen sensors.

A single CTD cast to approximately 1000 dbar is made at the Kahe Point station each month.

At Station ALOHA, a burst of consecutive CTD casts to 1000 dbar is made over 36 hours to span the local inertial period (~31.0 hours) and three semi-diurnal tidal cycles. This sampling is designed so that tidal and near-inertial variability during each cruise can be averaged to prevent these components from aliasing the longer time-scale signals. In order to satisfy WOCE requirements, one deep cast to near the bottom is made on each cruise. When cruises are made on a ship equipped with a 12-kHz echo sounder, a Benthos acoustic pinger attached to the rosette is used to make the cast to within 50 m of the sea floor (approximately 4750 m); otherwise the cast is made to 4500 dbar.

II.A.1. CTD Data Acquisition and Processing

CTD data are acquired at the instrument's highest sampling rate of 24 samples per second. Digital data are stored on a PC-compatible computer and, for redundancy, the analog CTD signal is recorded on VHS video tapes.

A flowchart of the CTD processing is shown in Figure II.A.1. The raw data (pressure, pressure-sensor temperature, temperature, conductivity, oxygen-sensor current, and oxygen-sensor temperature) are recorded as voltages or frequencies output from the various sensors. The first step is to convert these to scientific units (dbar, °C, °C, S m^{-1}, mA, °C, respectively). The data are then subjected to quality control procedures and preliminary processing. First they are screened for spikes or missing data using a 9-point median filter. After screening, the correct alignment of temperature and conductivity time-series is computed since the lag between temperature and conductivity can change from cruise to cruise, depending on the particular placement of the sensors, and whether the T-C duct is used.

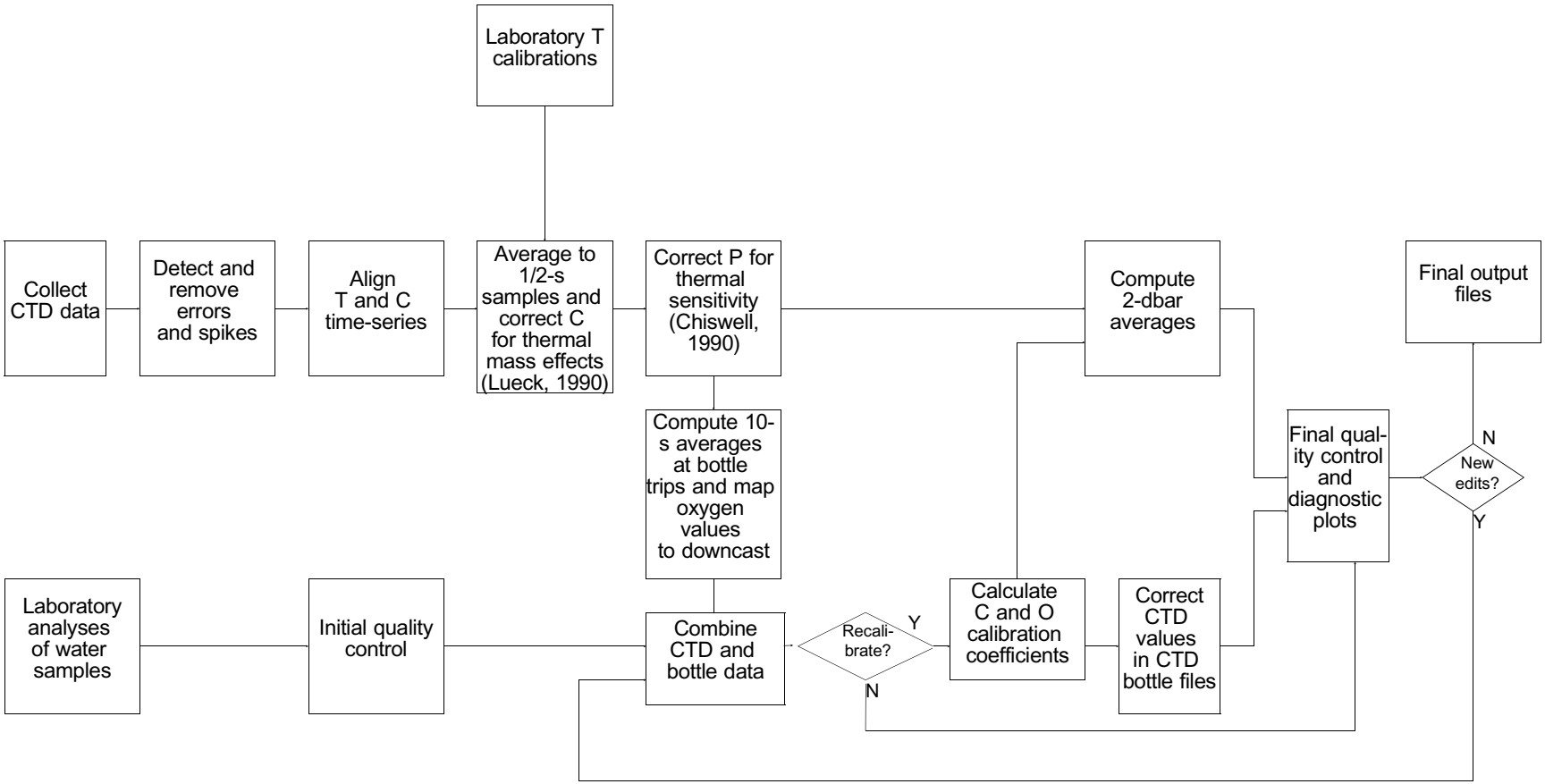


Figure 2.1: Flowchart of CTD data processing.

The data are then averaged to half-second values, and the pressure, temperature, conductivity, and oxygen calibration corrections are applied. Salinity and dissolved oxygen are then computed. Details of these corrections are described in the following sections.

Eddy shed wakes, caused by the rosette entraining water, introduce salinity spikes in the CTD profile data. These contaminated data are handled by using an algorithm which eliminates data collected when the CTD's speed is less than 0.25 m s^{-1} or its acceleration is greater than 0.25 m s^{-2}. Finally, the data are averaged into 2 dbar pressure bins.

Temperature is reported here in the IPTS-68 scale. Salinity and all derived units are calculated using the UNESCO (1981) routines.

II.A.2. CTD Sensor Corrections and Calibration

II.A.2.a. Pressure

The CTD pressure is measured with an internal 6000 dbar Paroscientific Digiquartz pressure transducer. Pressure is corrected for dynamic temperature effects using:

$$P_{cor} = a P_m - h * T + P_{offset}$$

where P_{cor} is the corrected pressure, P_m is the measured pressure, a and P_{offset} are calibration coefficients, and * signifies the convolution of an impulse response function, h, with the water temperature, T. The calibration coefficient, a, is determined from calibrations at constant temperature conducted twice yearly against a reference Paroscientific pressure standard, which has a calibration traceable to the National Bureau of Standards; P_{offset} is chosen to ensure that the pre-cast on-deck pressure is zero. The impulse response function, h, was computed by measuring pressure perturbations when the CTD was plunged into a cold water bath; details of this determination are given in Chiswell (1990).

II.A.2.b. Temperature

The Sea-Bird temperature sensors (SBE-3-02/F) can be removed and calibrated independently. Two sensors (#741 and #886) were used during 1988–1989. Sensors #886 and #741 were originally calibrated at the Northwest Regional Calibration Center in October 1988 August 1987, respectively; both sensors were recalibrated in November 1989. Between cruises, the sensors were intercalibrated against each other to check for sudden calibration changes. Based on the experience of Sea-Bird (Nordeen Larson, personal communication, 1990), and available lab intercalibrations, corrections were made to temperature assuming that the sensors drifted linearly between calibrations. Table II.A.1 lists the corrections made for each cruise.

II.A.2.c. Conductivity

The conductivity sensors (SBE-4-02/0) can be removed from the CTD for recalibration and/or cleaning. Three sensors were used in 1988-89 (Table II.A.1).

Conductivity is corrected for the thermal inertia of the glass conductivity cell using the recursive filter given by Lueck (1990) and Lueck and Picklo (1990):

$$C_t(n) = -b\, C_t\,(n-1) + \gamma\, a\, [T_c(n) - T_c(n-1)]$$

where $\gamma = \left.\frac{\partial C}{\partial T}\right|_{S\ P}$, T_c is filtered temperature, and a and b are coefficients calculated from sensor parameters α and β, which characterize the initial magnitude of the thermal effect and its relaxation time, respectively. As recommended by Lueck (personal communication, 1990), β was set to 0.1 s^{-1} for all cruises, but α was calculated separately for each cruise to close the spread between the down- and up-cast *T-S* curves. Table II.A.1 lists the values of α used for each cruise.

Table II.A.1: Temperature and Conductivity Sensor Corrections

HOT	Temp #	T Correction °C	Cond #	α	Drift** 10^{-8}(S m^{-1})s^{-1}	Station:Casts*
1	886	0.0006	528	0.028		2:1–13
1			375	0.045	- 10	2:14–17
2	886	0.0013	375	0.045	- 11	all
3	741	0.0065	375	0.045	- 14	all
4	886	0.0035	375	0.010	- 13	all
5	886	0.0041	375	0.045		all
6	886	0.0054	375	0.045	- 9	all
7	886	0.0063	375	0.045		all
8	886	0.0071	375	0.045		1:1–2; 2:1–12
8			527	0.045		2:13–15
9	886	0.0078	527	0.045		all
10	886	0.0085	527	0.045		all
11	741	0.0101	375	0.045	- 7	all
12	741	0.0106	375	0.045	- 10	all

*Station 1 is Kahe Point Station; Station 2 is Station ALOHA

**Drifts are calculated only where sensor #375 was used on 4500 dbar casts

The final conductivity cell calibration is computed from salinity check samples. *In situ* conductivity is back-calculated from the bottle salinity using the CTD pressure and temperature at

the time of the bottle trip. These *in situ* conductivity values are compared with those from the CTD and a correction is made on a cast-by-cast and cruise-by-cruise basis as needed.

Conductivity sensor #375 was found to drift for a few hours after power-up. Tests performed on the sensor after it was returned to Sea-Bird in early 1990 indicated that the drift was caused by unstable electronics. Empirical calculations of conductivity drifts required to minimize the spread in deep *T-S* between the down- and up-casts indicated that the drift was nearly linear in time, but that the rates varied somewhat from cruise to cruise. These rates were so small that they introduced significant salinity errors only in the deep casts, which typically take 3 to 4 hours to complete. Table II.1 includes the drift rates used to correct sensor #375 (no drifts are given for HOT-5, -7, -8 because no deep casts were made during these cruises). After applying these corrections, the spreads between down- and up-cast *T-S* curves were comparable to the spreads in casts made using other sensors (r.m.s spread was about 0.001 psu).

Calibrations for conductivity cell #375 for cruises from HOT-5 to HOT-12 showed a strong linear dependence on pressure in the upper 200 dbar. We suspect that these were caused by a small crack in the cell found when it was returned to Sea-Bird.

The quality of the CTD calibration is illustrated by Figures II.A.2, which shows the differences between the corrected CTD salinities and the bottle salinities as a function of pressure for each cruise. Typically, the calibrations are best below 500 dbar, because the weaker vertical salinity gradients at depth lead to less error if the bottle and CTD pressures are slightly mismatched. From HOT-5 on, the differences are significantly worse in the upper 200 dbar when cell #375 was used, because of the crack. Below 500 dbars, standard deviations between the calibrated salinities and the bottle salinities range from a minimum of 0.0013 psu (HOT-4) to a maximum of 0.0034 psu (HOT-7); these values are shown in Table II.A.2.

II.A.2.d. Dissolved Oxygen

A Beckman polarographic oxygen sensor, manufactured by Sensor-Medics, is used to measure dissolved oxygen. This sensor consists of a Teflon membrane covering a layer of potassium chloride gel. A constant voltage applied across two electrodes results in a current nearly proportional to the activity of oxygen diffusing across the membrane. This current and the temperature of the cell are measured, and dissolved oxygen is calculated using an algorithm based on that given by Owens and Millard (1985):

$$O_2 = (a_1 O_C + a_2)\, O_{sat}(P,T,S) \exp\left(a_3 T + a_4 O_T + a_5 P + a_6 \frac{dO_C}{dt}\right)$$

where O_C and O_T are the sensor current and temperature, respectively, and O_{sat} is the saturation concentration of oxygen at pressure, P, temperature, T, and salinity, S. The coefficients $a_1, \ldots a_6$ are determined from a nonlinear least-squares fit against check samples taken from bottles during

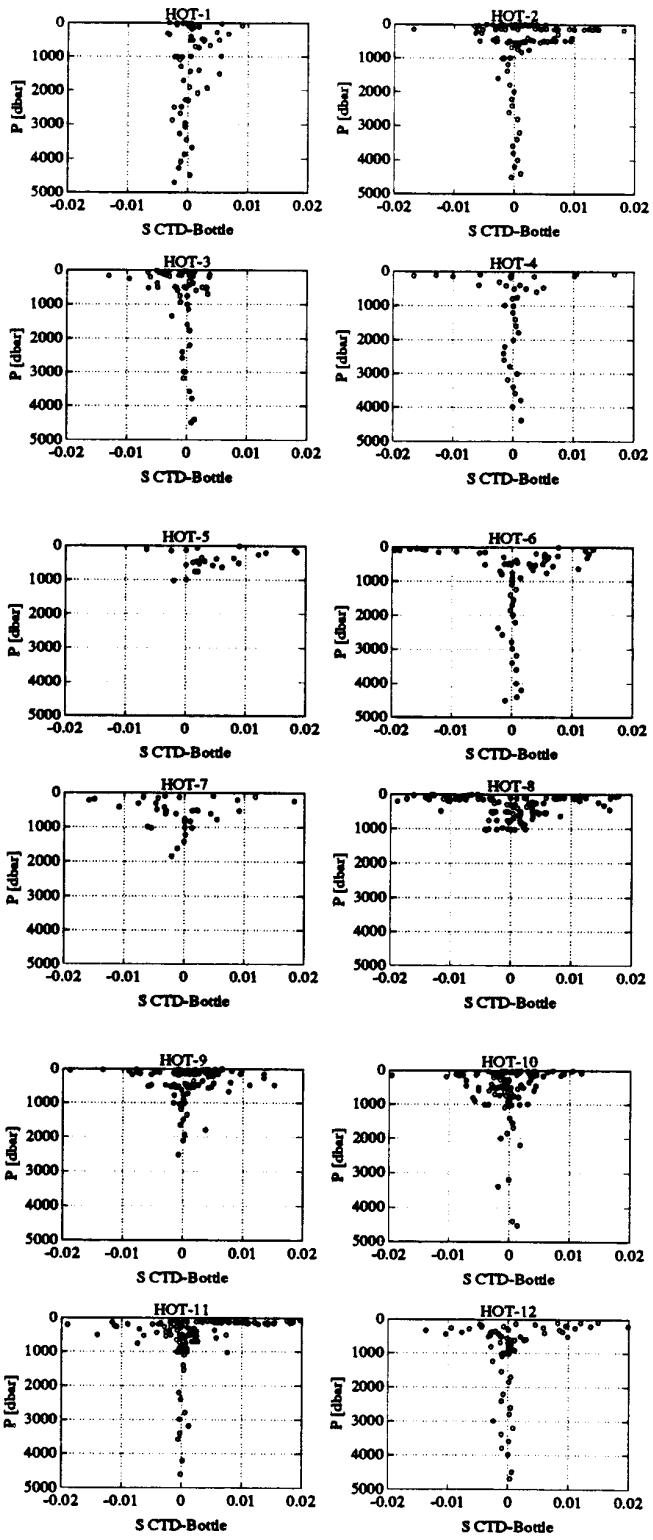


Figure II.A.2: Difference between calibrated CTD salinities and bottle salinities for HOT-1 to HOT-12.

the deep cast. Because the oxygen sensor shows considerable hysteresis (upcast oxygen values are very different from the downcast values) the calibration is made using the downcast CTD values of O_C, O_T, P, T, and S at the density levels where the bottles were closed on the upcast.

Table II.A.2. shows the standard deviations of differences between the calibrated CTD and bottle oxygen values.

Table II.A.2: Standard Deviations of Calibrated CTD Values - Bottle Values

	Salinity (psu)		Oxygen (μmol kg $^{-1}$)
HOT	0 < P < 4500	500 < P < 4500	0 < P < 4500
1	0.0050	0.0021	9.3
2	0.0050	0.0017	14.4
3	0.0032	0.0022	6.9
4	0.0107	0.0013	0.8
5	0.0310*	0.0026	3.4
6	0.0132*	0.0020	3.0
7	0.0175*	0.0034	5.2
8	0.0200*	0.0027	2.5
9	0.0063	0.0021	1.9
10	0.0039	0.0021	3.6
11	0.0262*	0.0031	2.7
12	0.0305*	0.0020	3.1

*conductivity sensor #375 used with hairline crack

In order to satisfy WOCE requirements for vertical resolution, between 36 and 48 water samples (depending on whether the 12- or 24-place rosette was used) were taken on each of two or three consecutive casts. These data are used to calibrate the conductivity and oxygen profiles of the 4500 dbar cast. During the first year of HOT, bottle samples from these casts were not interleaved (i.e., the deepest samples were taken on one cast, and the shallowest were taken on another).

This does not pose a significant problem for the conductivity calibration, but because the oxygen sensor drifts, in some cases significantly, between casts, the oxygen calibration is more problematic. The oxygen calibration is very nonlinear, and if one were to calibrate the deep cast using only the samples taken on that cast (usually below 2500 dbar), the shallow oxygen trace could be wildly in error because there would be no bottle data to constrain it near the surface.

We have calibrated the oxygen sensor using the ensemble bottle data—akin to assuming that the sensor does not drift. In fact, in some cruises, the drift was large between casts, and calibrated dissolved oxygen traces do not agree well with the bottle data for casts where no bottle samples

were taken. HOT-1 appears to be the worst cruise (Figure VII.A.10b), where the difference between the CTD oxygen trace and the bottle values is as much as 25 μmol kg^{-1} in places. On other cruises, e.g., HOT-9 and -11, the sensor was apparently much more stable, and could be calibrated satisfactorily.

II.A.2.e. Fluorescence

In situ fluorescence is measured using a fluorometer manufactured by Sea Tech Inc., having an excitation wavelength of 425 nm and an emission wavelength of 625 nm. Fluorometer voltage is recorded and averaged into 2 dbar pressure bins as described in Section II.A.1. As much as possible fluorescence traces are acquired at night when samples for the fluorometric determination of chlorophyll *a* are collected. Because of equipment problems, no fluorescence data were obtained on HOT-5 and -7.

II.B. Water Column Measurements

Samples for water column chemical analyses are collected at both Kahe Point and Station ALOHA. Most of the samples are collected in the upper 1000 m. As much as possible, depth profiles of specific chemical constituents are collected on consecutive casts in order to minimize the effects of time-dependent variation within the water column. In addition, samples are collected from the same depths each month in order to facilitate comparisons between monthly profiles. In the first year, approximately 20% of the discrete chemical samples were collected in triplicate.

A 12-place General Oceanics rosette was used for water sample collection on HOT-1 to HOT- 9. General Oceanics 5- or 30-l Niskin bottles were used with this rosette. The 30-l bottles were used for the collection of high-volume samples for particulate phosphorus and particulate organic carbon and nitrogen, and the 5-l bottles were used for all other water column sampling.

A 24-place aluminum rosette manufactured by Scripps Institution of Oceanography's Oceanographic Data Facility (ODF) was used beginning on HOT-10. PVC 12-l sampling bottles, also made by ODF, are used with this rosette; these bottles are equipped with Buna-N rubber O-rings, Teflon-coated steel springs and standard General Oceanics sampling valves.

Water sampling bottles are washed with dilute hydrochloric acid and rinsed with distilled water before each cruise.

A detailed description of our sampling procedures and analytical methods has been given in a separate report (Karl *et al.*, 1990). Abbreviated descriptions of these procedures are included in this report. During the first year of HOT, the sampling program and analytical protocols were altered somewhat as we became more familiar with the laboratory techniques and as our field sampling became more efficient.

The primary objective of the Hawaii Ocean Time-series program is to assess variability in the central Pacific Ocean on annual and interannual time scales. One of our most important concerns, therefore, is to ensure that highest possible precision and accuracy be consistently maintained for all water column chemical measurements. In order to achieve the highest possible data quality, we have instituted a quality-assurance/quality-control program with the HOT program (see Karl *et al.*, 1990), and have attempted to collect all ancillary information necessary to ensure that our data are not biased by sampling artifacts.

II.B.1. Salinity

Salinity samples are collected in 250 ml polyethylene bottles and stored at room temperature in the dark for subsequent analysis in our shore-based laboratories. The time between sample collection and analysis is generally about one week. Prior to analysis, each sample is allowed to equilibrate to laboratory temperature and then salinity is measured using an AGE model 2100 Minisal salinometer, calibrated against IAPSO standard (Wormley) water. Typical precision (one standard deviation of triplicate samples from the same Niskin bottle) is about 0.001 psu.

Table II.3. Salinity Changes in Bottles After Storage

	Date of Analysis			
Sample*	**27 Jan 89**	**16 Mar 89**	**5 Apr 89**	**Difference**
HOT-3 2-2-5	34.5536	34.5520		-0.0016
HOT-3 2-1-9	34.6708	34.6705		-0.0003
HOT-3 2-2-11	35.0019	35.0059		0.0040
HOT-3 2-2-4	34.5818	34.5841		0.0023
HOT-3 2-2-11	35.0019	35.0046		0.0027
HOT-4 2-10-4		34.1240	34.1234	-0.0006
HOT-4 2-10-4		34.1241	34.1237	-0.0004
HOT-4 2-10-4		34.1246	34.1237	-0.0009
HOT-4 2-10-8		35.3247	35.3245	-0.0002
HOT-4 2-10-8		35.3244	35.3245	0.0001
HOT-4 2-10-8		35.3246	35.3245	0.0001
HOT-4 2-10-12		34.8957	34.8993	0.0036
HOT-4 2-10-12		34.8972	34.8985	0.0013
HOT-4 2-10-12		34.8961	34.8982	0.0021

* Sample numbers have format Cruise Station-Cast-Bottle number

Table II.3 shows the results of tests made to determine if there are any changes in the salinities of samples stored in polyethylene bottles over time. During HOT-3 and HOT-4, duplicate samples were taken from several Niskin bottles. Half of these samples were analyzed immediately, and half were analyzed after storage for about a month. The table shows that, except for one Niskin bottle, changes after storage were negligible; in some cases, the salinities went up, in

others it went down. Overall, the mean increase in salinity after storage for one month was 0.001 psu, but because the standard deviation was 0.0028, this is statistically indistinguishable from zero. We thus expect that the typical 7–10 days storage of the salt samples before analysis leads to no significant salinity changes.

In the one case where large changes occurred (HOT-4 2-10-12), the standard deviations of the triplicates were large, indicating that there may have been some other sampling problems.

II.B.2. Dissolved Oxygen

Samples for dissolved oxygen are drawn as soon as possible after the rosette arrives on deck, and are collected before those for any other constituent. Samples are fixed immediately for subsequent analysis in the laboratory. Prior to HOT-11, the titration procedures described by Strickland and Parsons (1972) were used to determine dissolved oxygen. Samples were collected in 300-ml BOD bottles and a 50-ml aliquot was removed for titration. From HOT-11 on, dissolved oxygen was determined using a more accurate titration method (Carpenter, 1965). Samples are drawn into precalibrated 125-ml iodine flasks, which are flushed with at least 2 volumes of seawater. Whole-bottle titrations are conducted manually and the end-point is detected visually. The precision of both methods was typically less than 0.3% (coefficient of variation) in the first year of HOT.

Dissolved oxygen concentrations are reported in μmol kg^{-1}, and are calculated assuming the samples came to the surface adiabatically (i.e., were collected at their potential temperature). In fact, the deep samples usually warm a little en route to the surface. Because a precalibrated *volume* of sample is drawn and fixed, the weight of the sample depends on its density at time of collection. From HOT-1 until HOT-10, the sample temperatures were not measured immediately before they were fixed, and we have calculated the mass using the potential densities (which will be larger than the true densities). Thus, the oxygen concentrations reported here may be slightly lower than those in the deep ocean. However, on HOT-11 and HOT-12, the sample temperatures were measured, and Figure VII.B.1 shows that difference between these temperatures and *in situ* temperature was at most 6°C. The maximum error caused by neglecting the associated density change is thus about 0.06%, which is less than the average analytical precision of the oxygen tritration.

II.B.3. Dissolved Inorganic Carbon

Samples for dissolved inorganic carbon (DIC) are collected in 250-ml Pyrex bottles, and preserved immediately with 0.1 ml of a saturated mercuric chloride solution. DIC samples are kept in the dark in a cool location and returned to the laboratory for analysis. The coulometric procedures used in our analyses are a slight modification of those described by Johnson *et al.* (1985). Both wet and dry sodium carbonate standards are used for calibrating the instrument. The precision of our DIC measurements increased as we gained experience with the instrument during the

first year of the program. By the end of 1989, the coefficient of variation (i.e., standard deviation, expressed as a percentage of the mean) for field replicates (those drawn from the same Niskin bottle) was approximately 0.1 to 0.2%. The accuracy of our DIC determinations was monitored by comparison with replicate samples analyzed by a high precision manometer in Charles Keeling's laboratory. By the end of the first year, replicate analyses showed good agreement.

II.B.4. Inorganic and Organic Nutrients

Samples for the determination of nutrient concentrations are collected in acid-washed 125-ml polyethylene bottles. During the first year of the HOT program, nutrient samples collected from JGOFS 1000-m casts were prefiltered through combusted GF/F glass fiber filters. Nutrient samples collected from WOCE casts were not prefiltered. Except for silicate, which average 2–3 $\mu mol\ kg^{-1}$ higher after filtration, the two data sets are comparable.

These samples are then immediately frozen for transport to the laboratory. Before analysis, samples are allowed to thaw slowly at room temperature for 7 to 10 hours (Macdonald *et al.*, 1986). Analyses are conducted at room temperature on a four-channel Technicon Autoanalyzer II continuous flow system, using slight modification of the Technicon procedures for the analysis of seawater samples.

II.B.4.a. Nitrate plus Nitrite and Dissolved Organic Nitrogen

Inorganic nitrogen is measured as the sum of nitrate plus nitrite. Nitrate is quantitatively reduced to nitrite in a copperized cadmium reduction column. The nitrite produced, along with the nitrite present in the original sample, is coupled with an aromatic amine, which in turn is reacted with a second aromatic amine to produce an azo dye. The light extinction due to the dye is then read spectrophotometrically. Stock standards covering the full range of expected values are prepared using dried potassium nitrate in seawater. Working standards are prepared daily by diluting stock standard in low nutrient surface seawater. The detection limit for nitrate plus nitrite is approximately 0.03 μM. The coefficient of variation for field replicates is typically 0.3%.

Dissolved organic nitrogen is determined by using ultraviolet (UV) light oxidation (Armstrong *et al.*, 1966; Walsh, 1989). Samples are photo-oxidized for 24 hours, followed by autoanalyzer analysis of the oxidation products for nitrate plus nitrite (as above), and ammonium using the Berthelot (indophenol) method. Dissolved organic nitrogen is calculated as the difference between the total nitrogen (i.e. nitrate, nitrite, and ammonium) after UV oxidation and nitrate plus nitrite before oxidation. Ammonium is not routinely measured in pre-oxidized samples because the water column ammonium concentrations are below the detection limit of approximately 0.05 μM. The coefficient of variation for field replicates of DON averages 4%.

II.B.4.b. Orthophosphate and Dissolved Organic Phosphorus

Orthophosphate (soluble reactive phosphorus) is measured using acidified molybdate reagent and potassium antimonyl tartrate. The resulting compound is reduced to an intensely colored molybdenum blue by ascorbic acid and measured spectrophotometrically. Stock standards are prepared using dried potassium phosphate monobasic. Working standards are prepared daily by diluting stock standard in low nutrient surface seawater. The detection limit for phosphorus is approximately 0.02 μM. The coefficient of variation for field replicates averages 1%.

Dissolved organic phosphorus is measured by photo-oxidation (2–2.5 hours), followed by analysis of the oxidation products as described above. Dissolved organic phosphorus is calculated by the difference between the phosphorus content before and after UV treatment (as above). The coefficient of variation for field replicates averages 4%.

II.B.4.c. Silicate

Soluble reactive silicate is combined with ammonium molybdate at low pH to produce a yellow silicomolybdic acid. In order to increase the sensitivity of the reaction, silicomolybdic acid is reduced with ascorbic acid to produce molybdenum blue. Because phosphate also reacts with ammonium molybdate, oxalic acid is added to eliminate phosphate interference. Silicate stock standards are prepared using dried sodium fluorosilicate in seawater in polyethylene containers. Working standards are prepared daily by diluting stock standard in low nutrient surface seawater. The detection limit for dissolved silicate is approximately 0.3 μM. The coefficient of variation for field replicates averages 6%.

II.B.5. Particulate Carbon and Nitrogen

Samples for particulate carbon (PC) and particulate nitrogen (PN) are prefiltered through a 202-μm Nitex mesh, and 4–10 l (depending upon the depth) are then pressure filtered through combusted GF/F glass fiber filters. The filters are stored frozen for analysis in the laboratory.

Both PC and PN are analyzed using a commercial CHN analyzer (Perkin Elmer model 2400). The samples are combusted in a pure oxygen atmosphere and the resultant gaseous end products are separated chromatographically and measured with a thermal conductivity detector. Standards are prepared using acetanilide over the range of 20 to 500 μg sample^{-1}. The coefficient of variation for water column field replicates of both PC and PN averages approximately 12%.

II.B.6. Particulate Phosphorus

Samples for particulate phosphorus (PP) are prefiltered through a 202-μm Nitex mesh and concentrated by pressure filtration on combusted and acid rinsed GF/F glass fiber filters. The filters are stored frozen for analysis in the laboratory.

In the laboratory, organic compounds are oxidized by high temperature ashing (450°–500°C). The resultant orthophosphate is then extracted with 0.5 N hydrochloric acid at 90°C, neutralized with 6 N sodium hydroxide and reacted with a mixed reagent of molybdic acid, ascorbic acid, and trivalent antimony to form phosphomolybdic acid. The compound is then reduced to the molybdenum blue complex by ascorbic acid and the solution is measured spectrophotometrically.

II.B.7. Chlorophyll *a* and Phaeopigments

Chlorophyll *a* and phaeopigments are measured fluorometrically using standard techniques (Strickland and Parsons, 1972). Samples for the determination of chlorophyll *a* and phaeo-pigments are collected under subdued light and concentrated on GF/F glass fiber filters. The filters are extracted immediately in 100% acetone and stored in the dark at -20°C for analysis in the laboratory. Fluorescence is measured using a Turner fluorometer (Model #110) and 10% hydrochloric acid is used to separate fluorescence from chlorophyll *a* and phaeopigments. The fluorometer is calibrated at least every six months as described by Strickland and Parsons (1972). Analytical precision for both chlorophyll *a* and phaeopigments is approximately 1%. The coefficient of variation for field replicates drawn from the same Niskin bottle averages approximately 6%. For phaeopigments the coefficient of variation for replicates drawn from the same Niskin bottle averages 17%.

In addition to the fluorometric determination of pigments, we also measure chlorophylls and carotenes by high-performance liquid chromatography (HPLC). Seawater samples (4–10 l) are pressure filtered through GF/F filters and stored in liquid nitrogen until extracted in 100% acetone. The extracts were concentrated using Sep-Pak cartridges before injection into the HPLC. Chlorophyll *a* concentrations were determined using the JGOFS chlorophyll intercalibration standard (supplied by R. Bidigare and C. Kennicutt). Analytical precision for chlorophyll *a* determinations (coefficient of variation on replicate analysis of a single sample) averaged 1.7%.

II.B.8. Bacterioplankton

The procedure used to count bacteria is a slight modification of the standard protocols used in environmental research laboratories (Hobbie *et al.*, 1977; Porter and Feig, 1980). Samples are drawn into cleaned opaque polyethylene bottles. The samples are then preserved immediately with filtered 10% paraformaldehyde, stained with 4',6-diamidino-6-phenylindole (DAPI) and stored at 4°C for enumeration in the laboratory.

In the laboratory, 10–40 ml subsamples (depending upon depth) are filtered through Irgalan Black prestained 0.2-µm Nuclepore filters. Bacterial cells on three replicate filter preparations from each depth are counted using epifluorescence microscopy.

II.B.9. Adenosine 5'-Triphosphate

Samples for the determination of adenosine 5'-triphosphate (ATP) are collected on GF/F filters and extracted in boiling TRIS buffer. The filters are extracted immediately following filtration. Following extraction for 5 minutes in boiling buffer, the samples are frozen (-20°C) for analysis in the laboratory. ATP concentrations are measured by photometry using the firefly bioluminescence reaction. The coefficient of variation on replicate samples drawn from the same Niskin bottle averaged approximately 15%.

II.C. Primary Productivity

Photosynthetic production of organic matter is measured by the carbon-14 method. Samples are collected at eight depths, approximately three hours before sunrise, in acid-washed Go-Flo bottles. Care is taken to avoid trace metal contamination during sample collection. The Go-Flo bottles are therefore deployed using a dedicated hydrowinch, Kevlar line, a metal-free sheave, Teflon messengers, and a stainless steel bottom weight. Samples for incubation are collected in 500-ml polycarbonate bottles which are cleaned with high-purity hydrochloric acid and freshly-prepared glass-distilled deionized water. Samples are collected under low light and inoculated with a high-purity carbon-14 labelled sodium carbonate solution.

Incubations were conducted in specially constructed on-deck incubators on all cruises during 1988–1989. On some cruises during this period, incubations were also conducted *in situ* in order to compare these two different methods. On-deck incubations were conducted for both 12- and 24-hour periods using an incubation system which simulated both *in situ* temperature and *in situ* light quantity and quality. *In situ* incubations were conducted for 12 hours on a free-floating *in situ* array. Samples incubated either on deck or *in situ* were filtered onto GF/F glass fiber filters as soon as possible after recovery.

Carbon uptake for either 12 or 24 hour incubations is calculated as:

$$C = 1.06 \times 0.012 \times 1000 \, \frac{C_D}{C_A} \, \frac{C_P}{V_f}$$

where:
- C = carbon assimilation (mg C m^{-3})
- C_D = dissolved inorganic carbon (µM)
- C_A = $^{14}CO_2$ added (dpm l^{-1})
- C_P = radioactivity (^{14}C) collected on filter (dpm)
- V_f = volume filtered (l)
- 1.06 = isotope discrimination factor
- 0.012 = conversion factor (mg C (µmol C)$^{-1}$)
- 1000 = conversion factor (l m^{-3})

II.D. Particle Flux

Particle flux is measured using sediment traps deployed on a free-floating array which is deployed for approximately 72 hours each month.

II.D.1. Sediment Trap Design and Sample Collection

The trap design is patterned after the multitrap system of Knauer *et al.* (1979). Twelve individual baffled cylindrical polycarbonate collectors (mouth area = 0.0039 m^2) are attached to a PVC cross and are deployed at 150, 300, and 500 m. The array is outfitted with a VHF transmitter, an ARGOS satellite transmitter, strobelights, and a radar reflector.

Traps are precleaned with 1M hydrochloric acid and distilled deionized water, then filled with a filtered high-density solution containing 1% formalin as a preservative. The high-density solution is made up of surface seawater augmented with sodium chloride, which prevents advective-diffusive losses of the formalin, as well as flushing of traps during recovery. In order to avoid airborne contamination of the traps, they are capped immediately after filling and immediately after recovery.

II.D.2. Sediment Trap Analyses

Traps are processed from deepest to shallowest to minimize potential contamination. After recovery, the interface between the trap solution and the overlying seawater is marked, and the seawater is carefully aspirated to a depth of 5 cm above the interface. Beginning on HOT-8, all 12 traps from a given depth are aspirated, the entire contents of each are screened through a 335-μm Nitex mesh to remove swimmers (zooplankton and micronekton which entered the traps alive). All 12 traps from a given depth are then passed through a single Nitex mesh and the trap solutions are returned to the individual trap cylinders. The Nitex screen is subsequently preserved in a formalin-seawater solution. The screened contents of three traps from each depth are then filtered through individual acid-washed combusted GF/F filters for particulate phosphorus analysis. Six traps are filtered through combusted GF/F filters for particulate carbon and nitrogen analyses and the remaining three traps are used for determination of total particulate mass flux. Replicate aliquots of high density solution, either suspended on the trap line in capped sediment traps, or maintained in sealed containers, are processed simultaneously with trap samples in order to correct flux measurements for particulate material present in the high-density salt solution. On HOT-1 to -7, trap solutions were combined and replicate aliquots were removed from the combined solution for individual determinations. This practice was abandoned on HOT-8 in order to preserve information on variability of particle flux on the scale of the size of individual trap apertures.

II.D.2.a. Carbon, Nitrogen, and Phosphorus Fluxes

The quantity of carbon, nitrogen, and phosphorus collected from individual traps is determined using the methods described above for particulate carbon, nitrogen, and particulate phosphorus. Carbon flux is calculated as :

$$C = \frac{V_f}{A\,T}\,(C_s - C_b)$$

where: C = carbon flux (mg m^{-2} day^{-1})
C_s = carbon in sample (mg l^{-1})
C_b = carbon in blank (mg l^{-1})
V_f = volume high-density solution recovered (l)
A = cross-sectional trap area (0.0039 m^2)
T = deployment period (day)

Nitrogen and phosphorus fluxes are calculated similarly.

II.D.2.b. Mass Flux

Mass flux is determined on 250-ml aliquots from the three traps saved for mass flux analysis, using dried tared 25 mm 0.2-µm Nuclepore filters. Mass flux is calculated as:

$$M = \frac{V_f}{1000\,A\,T}\left[\left(\frac{S_a - S_b}{V_S}\right) + \left(\frac{B_a - B_b}{V_B}\right)\right]$$

where: M = mass flux (mg m^{-2} d^{-1})
S_a = filter weight after sample filtration (µg)
S_b = filter weight before sample filtration (µg)
B_a = filter weight after blank filtration (µg)
B_b = filter weight before blank filtration (µg)
V_B = volume of blank solution filtered (l)
V_S = volume of sample filtered (l)
1000 = conversion from µg to mg
A, V_f and *T* are as defined above

II.E. ADCP Profiling

II.E.1. Shipboard ADCP

All shipboard ADCP measurements were made with an RD Instruments VM-150 profiler installed on the MOANA WAVE. The profiler was set to transmit 25-ms pulses, corresponding to

8-m vertical resolution. The shallowest velocity estimate was centered at 20 m, and the maximum profiling range on station usually exceeded 300 m.

The ping rate was about once per second. Profiles were vector averaged in earth coordinates and recorded in 5-minute ensembles. Profiles were edited using automated screening and visual inspection to remove interference from the ocean bottom in shallow water and from the hydrographic wire and/or rosette during CTD casts. The latter was an intermittent problem causing errors of a few cm s^{-1} usually in only 2 or 3 bins near 50 m depth.

The ship's motion over the ground was determined from discrete 2-channel Transit satellite fixes and from GPS fixes at the end of each ADCP ensemble, when available. On HOT-11 the Transit receiver was malfunctioning to the point where fixes were deemed unusable, so only GPS fixes were used. All fixes were screened for suitable elevation and other quality parameters, after which a few remaining outliers were removed by hand. The absolute velocity of a reference layer (52–172 m) averaged between fixes was calculated by adding the ship velocity to the ADCP-measured velocity of the reference layer relative to the ship. This absolute reference layer velocity estimate was then smoothed by convolution with a Blackman window $w(t)$ (Blackman and Tukey, 1958) of width T,

$$w(t) = 0.42 - 0.5 \cos(2\pi t/T) + 0.08 \cos(4\pi t/T).$$

For HOT-1, -2, and -3 we used $T = 4$ hours; for HOT-5, -11, and -12 T was reduced to 2 hours. (Transit fix quality on HOT-5 and the GPS coverage on HOT-11 and -12 appeared to warrant the shorter filter and correspondingly higher resolution.) The smoothed reference layer velocity added to the velocity of the ship relative to the reference layer is then our best estimate of the ship's velocity over the ground during each ADCP ensemble.

The orientation of the transducer relative to the gyro compass and an amplitude correction factor for the ADCP were determined by standard calibration procedures (Joyce, 1989; Pollard and Read, 1989). Explicit calibration runs were not done during the HOT cruises, so the calibration comes from brief periods with simultaneous GPS coverage and either bottom tracking or major ship accelerations, such as arrival on station. Calibration information from adjacent cruises was used along with that from the HOT cruises. Calibration accuracy (one standard deviation) on the HOT cruises is estimated as 0.5° in orientation and 0.5% in amplitude. The amplitude calibration tends to be more stable from cruise to cruise than the orientation because the latter is relative to the gyrocompass, which drifts over a period of days within a range of up to ± 1°. (This has been observed by us on other cruises on the MOANA WAVE, and by Pollard and Read [1989] on the RRS DISCOVERY.)

II.E.2. Lowered ADCP

A self-contained ADCP mounted on a rosette sampler was first used for velocity profiling during a single lowering to 2000 m on HOT-12, November 1989. An RD Instruments SC-300 profiler was mounted on the 12-place rosette with the transducer looking downward. The instrument was set to transmit 16-m pulses about twice per second, process returns in 16-m bins, and record 10-s ensembles of velocities vector-averaged in earth coordinates. Heading was provided by a flux-gate compass and attitude by a 2-axis tilt sensor.

Because the motion of the LADCP over the ground is not known, the strategy for processing the profiles is to calculate the vertical shear from each 10-s ensemble, average the shears in depth bins covering the depth range of the cast, and integrate this averaged shear profile to get the velocity relative to an unknown constant of integration. The constant can be determined from accurate navigation at the start and end of the cast, if available, but this has not been done yet. Similarly, one can simply match the absolute shipboard ADCP profile to the overlapping part of the LADCP profile. This has been done.

So far, the depth of the LADCP has been determined only by integrating the vertical velocity of the LADCP relative to the water, as measured by the LADCP. Accumulated errors are a few tens of meters. It will be possible to do better by using the depth as measured by the CTD, but this has not been done yet. (The LADCP technique is new; only preliminary data processing and analysis have been done to date. See Firing and Gordon, 1990, for details.)

II.F. Meteorology

Meteorological data are collected at four-hour intervals while on station. Wind speed and direction, atmospheric pressure, wet- and dry- bulb air temperature, sea surface temperature, cloud cover, and sea state are recorded. In addition, meteorological data from an NDBC meteorological buoy (NDBC Buoy 51001) located about 280 km northwest of Kauai (Figure I.1) are available from NODC.

II.G. XBT

XBT casts are generally made spaced seven minutes of latitude apart during the transit from the deep-water site to Kaena Point. Sippican T-7 probes having a maximum depth of 750 m are used. The files have been screened for bad and missing data. No other corrections are applied.

II.H. Light Measurements

Incident irradiance at the sea surface was measured on each HOT cruise with a Licor LI-200 data logger and cosine collector. Irradiance levels are averaged over 10-minute intervals and integrated over the daylight period during the primary production experiment. Beginning on

HOT-10, vertical profiles of Photosynthetically Available Radiation (PAR) were obtained with a Biospherical Instruments model PNF-300 optical profiler.

III. Results

III.A. CTD Profiling

The hydrographic structures observed at the HOT station during the first year of the program are presented in Figures VII.A.10–24, and are described below. First, the surface layer properties are given, and then the vertical structures of temperature, salinity, dissolved oxygen, and nutrients are described. The deep ocean properties are generally consistent with those described by Reid (1965) and Talley and Joyce (1990) from previous measurements north of Oahu. The shallower features are consistent with those described by Tsuchiya (1968).

III.A.1. Surface Layer

Surface temperatures ranged from 23°C to 26°C, with coolest sea surface in late winter. Surface salinities ranged from 34.55 psu to 35.20 psu. The tendency was for freshest surface waters to occur in the spring; however, the lowest sea surface salinity was in August 1989.

Subjectively estimated mixed layer depths varied from less than 10 m to about 115 m. Most of the time, the mixed layer depth was in the range 40–75 m.

III.A.2. Temperature

Typically, the thermocline at the HOT station extended from about 100 m to 600 m (Figure VII.A.22a). Within each cruise, the repeated CTD profiling revealed vertical displacements of the thermocline with a range of up to 50 m. These displacements are due to internal waves, such as the internal semidiurnal tide, and they are the primary factor which motivated the burst-mode sampling that we adopted.

Potential temperature within 100 m of the bottom is about 1.11°C (Figure VII.A.22b). We are unable to detect any significant changes in the deep temperatures at this early point in the program.

III.A.3. Salinity

The prominent features in salinity are the shallow maximum, the salinity minimum, and the high salinity bottom waters. The salinity maximum is found at potential temperatures ranging from 20.5°C to 23°C (~150 m), and the maximum values range from 35.05 psu to 35.35 psu (Figure VII.A.23a). The 24.4 σ_θ surface falls in the middle of this range. This isopycnal is ventilated just north of the HOT site in the winter time, and near 30°N in the summer (Tsuchiya, 1968). The large variability of properties on this surface is certainly related to the proximity to

the ventilation region. There is no clear pattern of seasonal variability in this feature. During HOT-7, multiple intrusions of fresher waters into the salinity maximum were seen.

The salinity minimum is associated with North Pacific Intermediate Water (Reid, 1965). It is usually found at a potential temperature of 6.5°C (about 26.8 σ_θ), near 500 m. Variations within the salinity minimum were surprisingly large, ranging from 34.05 psu to 34.15 psu (Figure VII.A.23). High salinity (and low dissolved oxygen) intrusions into the salinity minimum were observed with values as high as 34.25 psu. Such intrusions were observed on HOT-2, -4, -9 and -10. This variability is likely to be associated with event-like ventilation of this isopycnal surface as it occasionally outcrops in the northwest Pacific in winter.

At potential temperatures above 3.5°C, there is a substantial increase of salinity variance compared to deeper levels, where the θ-S relationship becomes much tighter.

Figure VII.A.23 shows the CTD θ-S relationship at potential temperatures less than 5°C. In the deep water, salinities range from 34.685 psu to 34.691 psu at temperatures ranging between 1.11°–1.12°C. This spread of 0.006 psu is traceable to the salinity values determined from water samples. There seem to be no systematic offsets from cruise to cruise, so the variability may be real or due to noise from sampling techniques.

III.A.4. Dissolved Oxygen

A weak dissolved oxygen minimum at temperatures around 19°C is present in the upper ocean, with a weak maximum beneath at about 12°C. Occasionally, there is a maximum in dissolved oxygen just below the surface (above the shallow minimum).

The main dissolved oxygen minimum is found near 4.5°C (750 m), with a value of about 25 μmol kg^{-1}. This value varied little during the first year of measurements.

III.A.5. Inorganic Nutrients

The three sampled inorganic nutrients have low to undetectable concentrations in the surface layer, and all show an intermediate depth maximum. Nitrate plus nitrite has a maximum of about 42 μmol kg^{-1} near 1000 m where a phosphate maximum of about 3.1 μmol kg^{-1} is also found. The dissolved silica maximum is found at a depth of about 2600 m, with a value of about 165 μmol kg^{-1}.

III.A.6. Fluorescence

In situ fluorescence profiles show the deep pigment maximum, characteristic of the central north Pacific Ocean at about 100 m. Representative fluorescence profiles converted to pigment concentrations are shown in Figure VII.A.24. Fluorescence casts used for this figure were taken

at night and converted to pigment concentrations using a global linear regression fit of the fluorometer output to the sum of chlorophyll *a* and phaeopigment concentrations measured at discrete depths. The pigment maximum varied in intensity and depth over the first year of the program. To date, this variability displays little evidence of a seasonal cycle. The small and deep pigment maximum observed on HOT-3 coincided with a deep mixed layer (115 m).

III.B. Water Column Chemical Measurements

Water column chemical measurements are presented in Tables VI.B.1–27. The pressure and temperature reported with each sample are derived from CTD pressure and temperature readings at the time of bottle trips. Densities are calculated from temperature and salinity estimated from the CTD. Where appropriate, chemical concentrations are expressed per kilogram.

Although approximately 20% of our chemical analyses are analyzed in replicate (see Karl *et al*., 1990), only mean values are reported here. Whenever possible, we monitor the consistency of our analytical results between cruises by maintaining reference materials and by monitoring the concentration of the chemical of interest in the deep sea where month-to-month variability is believed to be small.

The precision of our oxygen analysis on HOT-1 through HOT-12 is shown in Table VI.B.25. Dissolved oxygen concentrations measured on HOT-1 through HOT-12 are plotted at constant pressure and density horizons in the deep ocean in Figure VII.B.2. Oxygen analyses in deep water indicate that analytical consistency was maintained throughout the first year of the program.

A summary of the precision of our dissolved nutrient analyses during HOT-1 through HOT-12 is shown in Table VI.B.26. In order to evaluate analytical consistency of our nutrient analyses we collected a set of replicate samples from three depth horizons early in the program. These samples were then kept frozen and one sample was run in replicate with the nutrient samples collected on each HOT cruise. The results of these analyses are presented in Figures VII.B.3–5. In Figures VII.B.6–8, nutrient concentrations are measured on HOT-1 through HOT-12 at constant deep water pressure and density horizons. These data indicate that analytical consistency was maintained for our analyses throughout the first year of our program.

The precision of our fluorometric pigment analyses during HOT-1 through HOT-12 are shown in Table VI.B.27. The precision of this analysis remained relatively constant over the first year of the program.

Analysis of algal pigments by HPLC has not been completed for the first year of the program. However, the comparison between available chlorophyll *a* data measured by HPLC (Table VI.B.28) and chlorophyll *a* measured by fluorescence indicates a good correspondence (Figure VII.B.9).

III.C. Primary Productivity

The results of the carbon-14 incubations and pigment determinations made on samples collected on Go-Flo casts are presented in Table VI.C.1. Also shown are integrated irradiances measured over the daylight period and estimated percent of surface PAR during incubation. Pigment concentrations and carbon-14 incorporation rates reported are the average of triplicate determinations. The average coefficient of variation for the carbon assimilation rates over the first twelve cruises was 19.7%. Table VI.C.2. presents rates of primary production and concentrations of chlorophyll *a* and phaeopigment per m^2 of ocean surface. Integrated values for pigment concentrations and carbon assimilation were calculated using the trapezoid rule. In all cases, shallowest values were extended to 0 m. Primary production rates were extrapolated to zero at 200 m on all cruises except HOT-1, where on-deck primary productions rates were extrapolated to zero at 150 m.

Percent irradiance for on-deck incubators was determined by direct measurements of PAR within seawater-filled incubation chambers. Estimates of *in situ* percent irradiance on HOT-8 to HOT-11 were estimated using extinction coefficient profiles generated with a Biospherical MER spectroradiometer on HOT-3. Percent irradiance for *in situ* incubation depths on HOT-12 were determined using a Biospherical PNF-300 on the day before primary production incubations were conducted.

Integrated primary production values for both 12- and 24-hour incubations conducted on deck are shown in Figure VII.C.1. Twelve- and 24-hour production rates are in good agreement, with the 12-hour results generally being slightly higher the 24-hour measurements. A peak in production of approximately 1100 mg C m^{-2} d^{-1} was observed in late August. On this same cruise, an extensive cyanobacteria (*Trichodesimum*) bloom was observed near Station ALOHA. The rate of primary production over the first twelve HOT cruises averaged between 450 and 550 mg C m^{-2} day^{-1}, depending on whether the results of 12- or 24-hour incubations are used to compute the average. This rate of production is equivalent to an annual rate of production of between 150 and 200 g C m^{-2} yr^{-1}, and is in good agreement with the estimates of annual production in the North Pacific Subtropical Gyre obtained by the VERTEX program (Martin *et al.*, 1987). Primary production rates were measured on-deck and *in situ* for 12 hours on HOT cruises 8 through 11. A comparison of the rates of production measured on-deck and *in situ* is shown in Figure VII.C.2. Good agreement between these estimates was achieved, indicating the on-deck incubation system adequately reproduces *in situ* conditions.

III.D. Particle Flux

The sediment trap flux data are presented in Table VI.D.1. We measured the flux of carbon, nitrogen, and phosphorus at all three depths during the period covered by this report. Occasionally, especially at deeper depths, elemental fluxes were below detection. Mass flux was measured beginning on HOT-8. As described in Section II.D.2., our practice of combining individual trap

contents at each depth for replicate determinations was altered on HOT-8, so that information of variability of sinking particulate material on the scale of the trap aperture was not lost in our sampling procedure. On HOT-8, samples were prepared both from individual traps and from a combined collection in order to compare the results using these two subsamples.

Carbon and nitrogen fluxes measured at 150 m are shown in Figures VII.D.1–2. Variability in elemental fluxes appear to be stochastic with no clear evidence of a seasonal cycle. Carbon flux ranged from approximately 20–70 mg C m^{-2} d^{-1} and nitrogen flux ranged from about 2–7 mg N m^{-2} d^{-1}. The C:N flux ratios at 150 m were variable with an average ratio (by atoms) of approximately 7 (Figure VII.D.3). These particle fluxes and elemental ratios are reasonably consistent with those measured by the VERTEX program (Martin *et al.*, 1987). Nitrogen flux at 150 m, as a percent of photosynthetic nitrogen assimilation, is shown in Figure VII.D.4. Nitrogen flux at this depth varies between approximately 3 and 10% of the contemporaneous autotrophic nitrogen production rate (calculated from carbon-14 primary production values assuming a C:N ratio [by atoms] of 6.6), and averages 6.4%. This value is consistent with the estimate of new production for the oligotrophic central gyres made by Eppley and Peterson (1979) and with field data from the VERTEX program (Knauer *et al.*, 1990). Although particle flux rates at 150, 300, and 500 m are quite variable within a single cruise, the carbon and nitrogen fluxes at these three depths averaged over the entire year show a consistent decrease with depth (Figures VII.D.5–6).

III.E. ADCP Profiling

III.E.1. Shipboard ADCP

The shipboard ACDP was used on all MOANA WAVE cruises (HOT-1, -2, -3, -5, -11, and -12) to measure the velocity profile in the upper 300 m.

A general picture of the shipboard ADCP data set can be obtained from the plots of reference-layer velocity and position (Figures VII.E.1 to VII.E.6). Gaps in the ADCP data were rare. The main difficulty was in the navigation data; the differences in resolution and accuracy between Transit and GPS data are evident. Neither was flawless, but the GPS, when available, resolves spatial/temporal gradients that would be missed with Transit. GPS was available 12 hours per day on HOT-1 and -2, 6.5 hours per day on HOT-3, 10.3 hours per day on HOT-5, and 15.6 hours per day on HOT-11 and -12. Transit was available on all but HOT-11.

The reference layer velocity shows the effects of both temporal and spatial variability. Predominantly spatial gradients are most obvious on the transits to and from the station. Note, for example, the oscillations in U and the gradient in V on both transits in HOT-11. However, spatial gradients can also be seen during the period on station. A good example is at day 291 on HOT-11. When the ship moved 25 km to the west, V changed by 40 cm s^{-1}. The presence of such gradients within the ship's range of motion on station complicates (or contaminates) the in-

terpretation of the velocity record on station as a time series at a fixed location, or a pseudo-mooring. Nevertheless, in most cases this is the most natural way to look at the on-station data.

The raw on-station time series of velocity as a function of depth show obvious variability near tidal and inertial periods. For example, one can see semidiurnal periodicity in the upper levels of the HOT-2 record. In HOT-3, at 160 and 180 m the velocity extrema recur at roughly the inertial period (31.0 hours). A good example of a dominant diurnal period is the time series at and below 240 m on HOT-1. To quantify these components of the record, we have performed a least-squares fit (multiple linear regression) of the velocity to a model containing a mean, a linear trend, and harmonics at periods of 12.42, 24, and 31 hours. The model components are not orthogonal over the typical 3-day time series—there are 2.3 inertial cycles and 3 diurnal cycles—so errors in the model coefficients are correlated.

Looking first at the mean and the trend, we see relatively simple vertical structure; these velocity components vary slowly with depth in the upper 300 m, and the flow is nearly unidirectional except when weak. Magnitude and direction of the mean current varied from cruise to cruise. The strongest mean current was during HOT-11, the weakest during HOT-3—surprising because it was a period of unusually strong trade winds. In five out of the six cruises, there was a westward component, and in the sixth, HOT-5, the trend shows a swing toward a westward component at the end of the cruise.

In contrast with the mean and the trend, the harmonic components are highly variable with depth. Like the mean and trend, the harmonics also vary greatly from cruise to cruise. There is a hint of a pattern in all this variability: the semidiurnal component tends to be strongest in the upper 150 m. The diurnal and inertial components often peak at middle depths. For example, we have already noted the concentration of near-inertial energy between 150 and 200 m on HOT-3; the total absence of inertial energy in the mixed layer on that cruise is even more striking. A peak in diurnal energy between 120 and 160 m is a dominant feature of HOT-12 (although the record is so short that we made no attempt to separate out an inertial component). Although the amplitudes and phases of the harmonics are highly variable, there is a clear dominance of clockwise (anticyclonic) rotation of the velocity vector for each component, as one expects for internal waves in the northern hemisphere. Counterclockwise rotation occurs only when amplitude is small or ellipticity is high. The direction of vertical phase propagation, however, is not consistent. In some cases (for example, the inertial component at 100 m in HOT-1) the phase reverses over a short vertical interval, consistent with a standing wave pattern.

Given the variability of the current field on station, the variability seen on the transits to and from the station is not surprising. For any given cruise, the currents on the transit to the station usually look quite different from the currents on the return. There is no clear evidence in these measurements of a consistent current along the windward side of the Hawaiian Island Chain

between the Station ALOHA and Kaena Point (northwest corner of Oahu) (Mysak and Magaard, 1983; DeSzoeke and Talley, 1986).

III.E.2. Lowered ADCP

The LADCP was tested on HOT-11 as a means of measuring the velocity profile below 300 m. The LADCP profile shows typical velocities of 5–10 cm s^{-1} throughout the upper 1500 m (Figure VII.E.7). Much of the energy appears to be at vertical wavelengths of 500–1000 m. No analysis of this profile has been done yet.

The difference between the downcast (solid lines) and the upcast (dashed) is some unknown combination of error in the profiles and real change in the shear field during the 1.5 hours of the cast. The difference in shear structure in the top 300 m is real; it is confirmed by the shipboard ADCP. At the bottom the profiles should coincide (assuming perfect referencing from the shipboard ADCP—a shaky assumption), since the up- and downcasts are nearly simultaneous there. Hence there seems to be roughly 5 cm s^{-1} of low vertical wavenumber error in these profiles.

III.F. Meteorology

The meteorological data are summarized in Figures VII.F.1–2. All parameters show slight evidence of annual cycles, although the daily and weekly ranges are nearly as high as the annual range. SST and air and wet-bulb temperatures appear to be loosely correlated, all having lowest values in February, but maximum SST leads maximum air temperatures by between one and two months. Meteorological data collected at NDBC Buoy 51001 (Figure I.1.) during the period covered by this report are presented in Figure VII.F.3.

III.G. Light measurements

Integrated irradiance measurements made with the on-deck cosine collector on days that primary production experiments were conducted are presented in Table VI.C.2. Vertical profiles of PAR obtained with the optical profiler on HOT-10 and -11 are presented in Figure VII.G.1. As is typical for this oceanic realm, the 1% light level is at about 100 m.

IV. Cruise Summaries

IV.A. Cruise Summaries

HOT-1. Chief Scientist: R. Lukas / D. Karl

HOT-1 was the shakedown cruise of the HOT program, much of the equipment had never been used, and there were some equipment failures. One conductivity cell and the General Oceanics rosette pylon failed. In addition, there were problems with the winch level-wind mechanism, and with the slip-rings. The Kahe Point station was abandoned because of these problems.

The sediment traps were tracked using ARGOS for two days after deployment, but we lost contact with them a few hours before they were due to be retrieved, and despite a 16-hour search, they were not found.

HOT-2. Chief Scientist: E. Firing

A problem with the on-deck incubation system prevented the measurement of primary production on this cruise. There were no other significant problems on this cruise. After the 36-hour time-series, a small scale spatial CTD survey was made.

HOT-3. Chief Scientist: C. Winn

Sampling at Kahe Point was not possible on this cruise because of a problem with the hydrowinch. Otherwise, this cruise was successful.

HOT-4. Chief Scientist: S. Chiswell

HOT-4 was the first cruise on the SSP KAIMALINO. The cruise was initially delayed for one day because the electric current required to start the hydrographic winch was more than the KAIMALINO's breaker-box could supply. The self-starter on the winch was eventually bypassed, and the rest of the cruise was nominal.

HOT-5. Chief Scientist: C. Winn

Shorting of the cable between the oxygen sensor and the CTD caused depth-dependent shutdown of the CTD. Diagnosing this problem took much of the cruise, and the sampling program was seriously impacted.

HOT-6. Chief Scientist: S. Chiswell

There were no major problems on this cruise.

HOT-7. Chief Scientist: C. Winn

The hydrowire was in questionable condition on this cruise and CTD casts were therefore limited to 2000 dbars. In addition, a faulty sheave caused the hydrowire to part. Although the CTD was saved, the number of hydrocasts obtained on this cruise was reduced, and no fluorescence data were obtained.

HOT-8. Chief Scientist: C. Winn

The hydrowire was in questionable condition on this cruise and hydrocasts were limited to 1000 m.

HOT-9. Chief Scientist: R. Lukas

CTD casts were limited to 2500 dbar because of the short hydrowire. Apart from this, there were no major problems affecting the data collection, except that the ship broke down during the transit home. Only three XBT casts were made on the return transit because of poor dead reckon-

ing navigation quality between fixes. On this cruise, a massive surface *Trichodesimum* bloom was observed near Station ALOHA.

HOT-10. Chief Scientist: S. Chiswell

A new wire had been installed on the winch, allowing us to make 4500 dbar CTD casts. This was the first cruise that the 24-place rosette was used. Some samples from the first two casts were lost because the Niskin bottle lanyards were not adjusted to the correct length for the new rosette. Otherwise, the cruise went without major incident.

HOT-11. Chief Scientist: S. Chiswell

The T-C duct was used on the CTD for the first time. There were no significant problems during this cruise.

HOT-12. Chief Scientist: C. Winn

Problems with the ship's gearbox, combined with tight ship schedules, limited this cruise to 36 hours on station. The sediment traps were therefore not deployed. In addition, the number of hydrocasts was limited and the Kahe Point station was not visited.

IV.B. Cruise Dates and Personnel

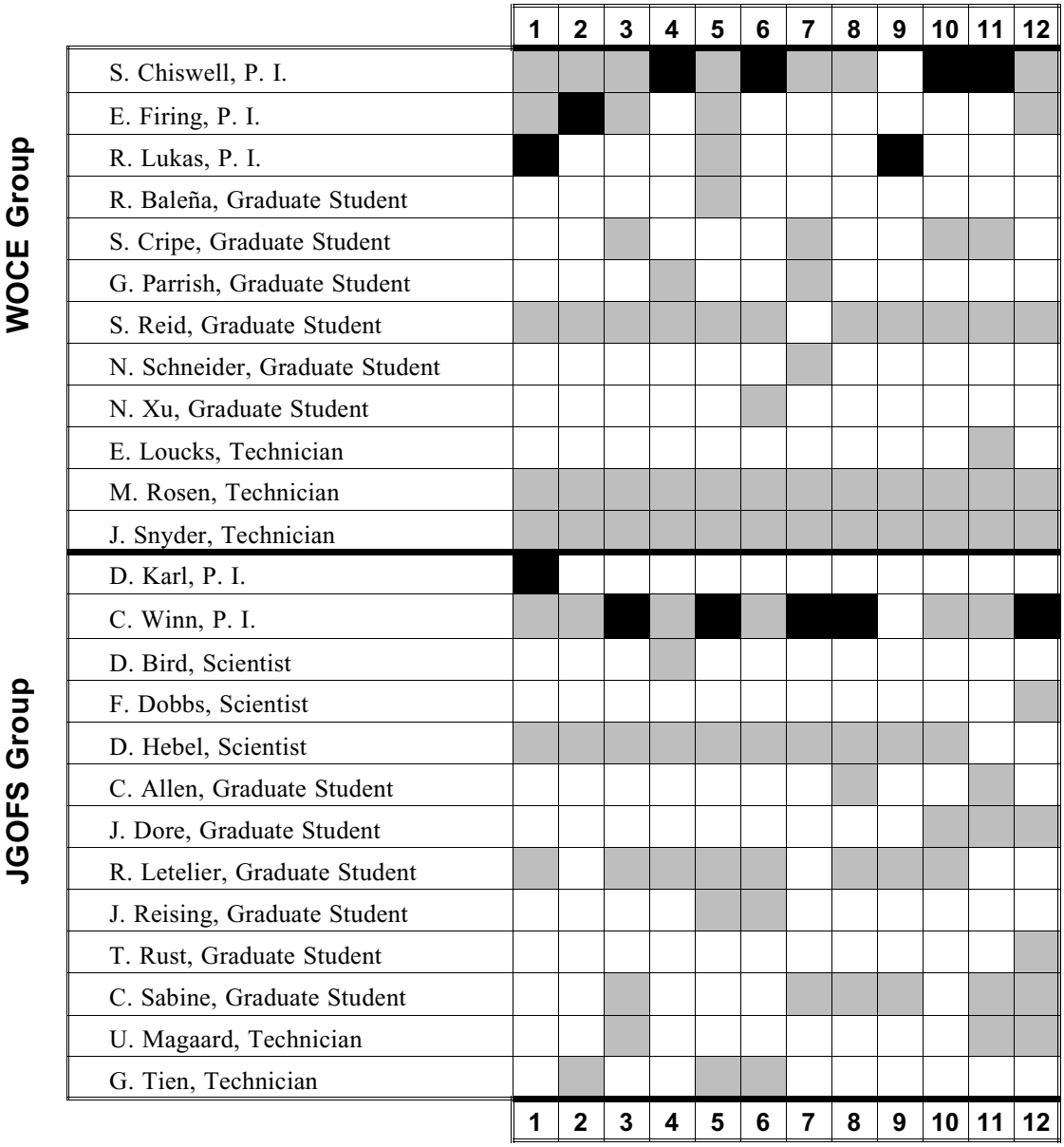
Table IV.B.1: Summary of HOT Cruises, 1988–1989

HOT	Ship	Depart	Return
1	R/V MOANA WAVE	30 October 1988	3 November 1988
2	R/V MOANA WAVE	1 December 1988	4 December 1988
3	R/V MOANA WAVE	7 January 1989	10 January 1989
4	SSP KAIMALINO	26 February 1989	1 March 1989
5	R/V MOANA WAVE	26 March 1989	30 March 1989
6	SSP KAIMALINO	16 May 1989	20 May 1989
7	SSP KAIMALINO	22 June 1989	26 June 1989
8	SSP KAIMALINO	27 July 1989	1 August 1989
9	SSP KAIMALINO	22 August 1989	27 August 1989
10	SSP KAIMALINO	19 September 1989	25 September 1989
11	R/V MOANA WAVE	17 October 1989	20 October 1989
12	R/V MOANA WAVE	27 November 1989	29 November 1989

Table IV.B.2: Ancillary Projects Supported by HOT

HOT	Principal Investigator	Institution / Program
2	A. Knap	Bermuda Biological Station
2	D. Collins	Jet Propulsion Laboratory
2	N. Pace	University of Indiana
12	S. Emerson	University of Washington
7–11	C. Winn	UH / Research Experiences for Undergraduates
1–12	F. MacKenzie	University of Hawaii
1–12	C. Keeling	Scripps Institution of Oceanography

Table IV.B.3: University of Hawaii Cruise Personnel



Shaded area = cruise participant Solid area = Chief Scientist

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VI. Data

VI.A. CTD Profiling

Tables VI.A.1–9: CTD data at NODC standard pressures for Kahe Point station.

Tables VI.A.10–21: CTD data at NODC standard pressures for Station ALOHA.

Station: 1 Cast: 1
Time: 0704 Z Date: 1 Dec 88
Latitude: 21°20.5'N Longitude: 158°16.3'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	26.490	26.490	35.007	206.7	22.887
10.0	9.9	26.474	26.471	35.007	206.7	22.893
20.0	19.9	26.380	26.376	35.004	206.3	22.921
30.0	29.8	26.323	26.317	34.989	206.6	22.928
50.0	49.7	26.112	26.101	34.953	204.2	22.969
75.0	74.5	26.051	26.035	35.003	202.6	23.026
100.0	99.4	24.207	24.186	35.072	205.3	23.642
125.0	124.2	22.538	22.513	35.149	195.9	24.187
150.0	149.0	20.859	20.830	35.049	186.4	24.579
200.0	198.7	16.953	16.920	34.736	177.3	25.331
250.0	248.3	14.368	14.331	34.481	173.7	25.717
300.0	297.9	11.625	11.587	34.263	163.0	26.095
400.0	397.1	8.446	8.404	34.153	121.8	26.548
500.0	496.3	6.658	6.612	34.182	72.4	26.827
600.0	595.4	5.719	5.667	34.258	44.1	27.008
700.0	694.5	5.392	5.333	34.331	37.9	27.106
800.0	793.5	4.943	4.878	34.398	37.6	27.212
900.0	892.5	4.659	4.587	34.435	40.3	27.274
1000.0	991.4	4.314	4.236	34.476	44.8	27.345

Station: 1 Cast: 1
Time: 0313 Z Date: 26 Feb 89
Latitude: 21°16.1'N Longitude: 158°9.1'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	24.754	24.754	34.309	235.5	22.895
10.0	9.9	24.765	24.763	34.312	236.7	22.895
20.0	19.9	24.767	24.762	34.313	232.8	22.895
30.0	29.8	24.762	24.756	34.313	232.9	22.898
50.0	49.7	24.762	24.751	34.312	224.4	22.898
75.0	74.5	24.972	24.956	34.721	223.6	23.146
100.0	99.4	23.925	23.904	34.919	220.2	23.610
125.0	124.2	23.474	23.448	35.084	210.0	23.869
150.0	149.0	21.562	21.533	35.124	196.3	24.444
200.0	198.7	17.852	17.817	34.873	195.8	25.221
250.0	248.3	14.982	14.944	34.561	196.2	25.647
300.0	297.9	12.049	12.010	34.293	180.2	26.039
400.0	397.1	8.793	8.750	34.165	123.7	26.504
500.0	496.3	6.994	6.947	34.180	78.2	26.780
600.0	595.4	5.772	5.721	34.237	46.0	26.985
700.0	694.5	5.210	5.153	34.347	33.8	27.140
800.0	793.5	4.788	4.724	34.413	36.9	27.241
900.0	892.5	4.511	4.440	34.458	39.8	27.309
1000.0	991.4	4.104	4.028	34.489	44.3	27.377

Station: 1 Cast: 1
Time: 0406 Z Date: 26 Mar 89
Latitude: 21°20.4'N Longitude: 158°16.1'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	25.235	25.235	34.285	217.2	22.731
10.0	9.9	24.732	24.730	34.283	215.5	22.882
20.0	19.9	24.660	24.656	34.294	211.9	22.914
30.0	29.8	24.606	24.600	34.286	216.2	22.924
50.0	49.7	24.668	24.657	34.468	213.7	23.045
75.0	74.5	23.811	23.795	34.838	214.3	23.581
100.0	99.4	23.550	23.529	34.940	218.3	23.736
125.0	124.2	23.119	23.094	35.019	214.8	23.922
150.0	149.0	22.136	22.106	35.065	196.1	24.239
200.0	198.7	19.244	19.208	34.941	185.6	24.924
250.0	248.3	16.033	15.994	34.684	204.7	25.507
300.0	297.9	13.405	13.362	34.399	200.2	25.855
400.0	397.1	10.099	10.052	34.171	159.1	26.296
500.0	496.3	7.452	7.403	34.153	103.3	26.696
600.0	595.4	5.987	5.935	34.263	41.1	26.979
700.0	694.5	5.263	5.205	34.344	34.7	27.131
800.0	793.5	4.893	4.828	34.408	36.6	27.226
900.0	892.5	4.609	4.538	34.448	41.4	27.290
1000.0	991.4	4.248	4.171	34.482	48.3	27.356

Station: 1 Cast: 2
Time: 0106 Z Date: 17 May 89
Latitude: 21°23.6'N Longitude: 158°15.0'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	25.633	25.633	34.387	213.0	22.686
10.0	9.9	25.372	25.369	34.382	213.5	22.764
20.0	19.9	25.305	25.301	34.379	210.7	22.782
30.0	29.8	25.276	25.270	34.376	211.0	22.789
50.0	49.7	24.630	24.619	34.684	215.0	23.220
75.0	74.5	23.588	23.572	34.906	213.5	23.698
100.0	99.4	22.475	22.455	35.069	206.0	24.143
125.0	124.2	21.407	21.383	35.117	197.4	24.479
150.0	149.0	19.697	19.670	35.008	200.2	24.856
200.0	198.7	16.569	16.537	34.702	194.9	25.395
250.0	248.3	14.609	14.572	34.512	207.3	25.690
300.0	297.9	12.320	12.280	34.286	198.2	25.982
400.0	397.1	8.697	8.654	34.139	142.2	26.498
500.0	496.3	7.080	7.033	34.158	91.4	26.751
600.0	595.4	6.025	5.972	34.220	59.3	26.940
700.0	694.5	5.295	5.236	34.317	38.8	27.106
800.0	793.5	4.865	4.800	34.386	35.9	27.211
900.0	892.5	4.401	4.331	34.463	34.9	27.324

Station: 1 Cast: 1
Time: 0226 Z Date: 23 Jun 89
Latitude: 21°19.9'N Longitude: 158°16.7'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	26.761	26.761	34.540	182.6	22.450
10.0	9.9	26.207	26.205	34.539	185.2	22.624
20.0	19.9	26.097	26.093	34.537	184.4	22.657
30.0	29.8	26.067	26.060	34.539	183.4	22.669
50.0	49.7	25.874	25.863	34.572	182.4	22.755
75.0	74.5	24.648	24.632	34.743	188.6	23.260
100.0	99.4	23.291	23.271	34.886	188.5	23.770
125.0	124.2	22.361	22.336	35.132	185.4	24.225
150.0	149.0	21.144	21.115	35.077	180.2	24.523
200.0	198.7	19.261	19.224	35.035	171.1	24.991
250.0	248.3	14.780	14.743	34.543	191.6	25.676
300.0	297.9	12.053	12.013	34.268	198.7	26.018
400.0	397.1	8.588	8.545	34.092	175.7	26.478
500.0	496.3	6.507	6.462	34.077	124.3	26.764
600.0	595.4	5.428	5.378	34.250	66.6	27.037
700.0	694.5	5.103	5.046	34.348	48.3	27.153
800.0	793.5	4.604	4.541	34.423	46.4	27.270
900.0	892.5	4.315	4.245	34.465	49.2	27.335
1000.0	991.4	4.061	3.985	34.489	51.8	27.381

Station: 1 Cast: 1
Time: 0035 Z Date: 28 Jul 89
Latitude: 21°21.0'N Longitude: 158°17.5'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	26.683	26.683	34.595	209.8	22.515
10.0	9.9	26.365	26.362	34.601	213.0	22.621
20.0	19.9	26.305	26.300	34.607	213.4	22.645
30.0	29.8	26.296	26.289	34.608	217.0	22.649
50.0	49.7	26.285	26.274	34.609	212.3	22.655
75.0	74.5	24.607	24.591	34.689	220.7	23.232
100.0	99.4	23.482	23.461	34.943	209.9	23.758
125.0	124.2	21.860	21.836	35.071	196.1	24.319
150.0	149.0	19.942	19.914	35.020	189.9	24.801
200.0	198.7	16.645	16.613	34.720	191.3	25.392
250.0	248.3	12.586	12.552	34.300	187.8	25.939
300.0	297.9	10.829	10.793	34.189	199.5	26.182
400.0	397.1	8.377	8.335	34.087	168.8	26.507
500.0	496.3	6.587	6.541	34.096	104.8	26.769
600.0	595.4	5.391	5.341	34.260	39.3	27.048
700.0	694.5	5.135	5.077	34.392	31.7	27.184
800.0	793.5	4.928	4.863	34.447	31.4	27.253
900.0	892.5	4.513	4.442	34.460	38.3	27.310
1000.0	991.4	4.188	4.111	34.491	44.8	27.370

Station: 1 Cast: 1
Time: 0118 Z Date: 23 Aug 89
Latitude: 21°13.7'N Longitude: 158°24.3'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	27.106	27.106	34.738	208.5	22.489
10.0	9.9	26.698	26.695	34.729	208.5	22.612
20.0	19.9	26.652	26.648	34.728	207.5	22.627
30.0	29.8	26.647	26.640	34.729	207.1	22.630
50.0	49.7	26.567	26.556	34.721	207.7	22.651
75.0	74.5	25.355	25.339	34.794	212.3	23.084
100.0	99.4	23.225	23.204	35.185	217.1	24.016
125.0	124.2	20.944	20.920	35.213	205.6	24.679
150.0	149.0	18.958	18.931	34.997	188.9	25.038
200.0	198.7	16.319	16.287	34.691	181.5	25.445
250.0	248.3	13.005	12.971	34.353	174.5	25.898
300.0	297.9	10.571	10.535	34.208	164.1	26.242
400.0	397.1	7.818	7.778	34.109	128.1	26.607
500.0	496.3	6.466	6.421	34.191	73.0	26.860
600.0	595.4	5.849	5.798	34.288	41.7	27.016
700.0	694.5	5.169	5.112	34.385	33.8	27.175
800.0	793.5	4.740	4.676	34.459	35.7	27.283
900.0	892.5	4.285	4.216	34.495	42.4	27.362
1000.0	991.4	4.119	4.042	34.506	46.9	27.389

Station: 1 Cast: 1
Time: 2332 Z Date: 20 Sep 89
Latitude: 21°19.8'N Longitude: 158°15.6'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	27.156	27.156	34.758	210.2	22.488
10.0	9.9	26.808	26.806	34.756	209.4	22.598
20.0	19.9	26.784	26.780	34.757	206.6	22.606
30.0	29.8	26.772	26.765	34.756	206.3	22.611
50.0	49.7	26.760	26.748	34.757	205.1	22.617
75.0	74.5	25.368	25.351	34.862	217.0	23.131
100.0	99.4	23.446	23.425	35.042	211.5	23.843
125.0	124.2	21.781	21.757	35.104	203.2	24.366
150.0	149.0	20.470	20.442	35.079	194.2	24.706
200.0	198.7	16.528	16.496	34.712	183.1	25.413
250.0	248.3	13.389	13.354	34.398	183.8	25.855
300.0	297.9	10.639	10.603	34.233	153.0	26.249
400.0	397.1	7.957	7.917	34.130	122.7	26.603
500.0	496.3	6.356	6.311	34.129	80.1	26.825
600.0	595.4	5.569	5.519	34.235	46.8	27.008
700.0	694.5	5.257	5.199	34.389	33.1	27.168
800.0	793.5	4.782	4.718	34.452	35.0	27.273
900.0	892.5	4.468	4.397	34.479	37.5	27.330
1000.0	991.4	4.130	4.053	34.502	40.7	27.385

Station: 1 Cast: 1
Time: 0830 Z Date: 17 Oct 89
Latitude: 21°19.2'N Longitude: 158°16.5'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	27.411	27.411	34.466	202.6	22.186
10.0	9.9	27.036	27.034	34.719	204.8	22.497
20.0	19.9	26.720	26.716	34.776	206.6	22.642
30.0	29.8	26.294	26.287	34.830	208.5	22.817
50.0	49.7	25.298	25.287	34.916	208.6	23.192
75.0	74.5	23.280	23.264	35.150	210.1	23.972
100.0	99.4	21.970	21.951	35.117	199.1	24.322
125.0	124.2	20.575	20.551	35.036	188.9	24.644
150.0	149.0	19.759	19.731	34.989	185.2	24.825
200.0	198.7	17.078	17.045	34.747	178.8	25.310
250.0	248.3	13.390	13.355	34.370	176.6	25.834
300.0	297.9	10.700	10.664	34.210	158.1	26.221
400.0	397.1	8.413	8.371	34.146	121.9	26.548
500.0	496.3	6.500	6.454	34.169	72.8	26.838
600.0	595.4	5.613	5.562	34.250	50.1	27.014
700.0	694.5	5.094	5.037	34.351	40.5	27.156
800.0	793.5	4.728	4.665	34.411	43.2	27.247
900.0	892.5	4.354	4.284	34.464	49.0	27.330
1000.0	991.4	4.019	3.943	34.502	56.5	27.396

Station: 2 Cast: 5
Time: 0639 Z Date: 31 Oct 88
Latitude: 22°45.2'N Longitude: 158°0.3'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	26.265	26.265	35.255	221.6	23.145
10.0	9.9	26.264	26.262	35.258	230.9	23.148
20.0	19.9	26.266	26.261	35.259	231.1	23.149
30.0	29.8	26.259	26.253	35.260	229.2	23.152
50.0	49.7	26.259	26.248	35.260	225.2	23.154
75.0	74.5	24.234	24.219	35.237	234.4	23.758
100.0	99.3	22.565	22.545	35.261	223.4	24.264
125.0	124.2	21.536	21.512	35.229	205.6	24.529
150.0	149.0	20.016	19.989	35.126	185.5	24.862
200.0	198.6	17.873	17.838	34.940	189.0	25.267
250.0	248.3	14.360	14.323	34.489	191.2	25.724
300.0	297.9	12.206	12.167	34.254	189.6	25.978
400.0	397.1	9.044	9.000	34.087	176.1	26.404
500.0	496.3	6.869	6.822	34.032	121.7	26.681
600.0	595.4	5.545	5.495	34.123	54.9	26.922
700.0	793.4	4.501	4.438	34.347	26.7	27.221
900.0	892.4	4.248	4.179	34.436	35.1	27.319
1000.0	991.3	3.884	3.809	34.482	44.0	27.394
1100.0	1090.2	3.648	3.567	34.514	51.1	27.443
1200.0	1189.0	3.419	3.331	34.535	56.2	27.483
1300.0	1287.8	3.139	3.046	34.551	61.9	27.522
1400.0	1386.5	2.991	2.891	34.560	67.1	27.544
1500.0	1485.2	2.819	2.713	34.572	73.8	27.569
1750.0	1731.8	2.371	2.250	34.601	87.5	27.632
2000.0	1978.0	2.103	1.965	34.620	99.7	27.670
2500.0	2469.6	1.732	1.556	34.649	117.3	27.724
3000.0	2960.1	1.544	1.326	34.666	135.7	27.755
4000.0	3937.8	1.464	1.146	34.682	158.1	27.780

Station: 2 Cast: 2
Time: 2219 Z Date: 1 Dec 88
Latitude: 22°46.7'N Longitude: 157°55.6'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	25.815	25.815	34.955	214.6	23.059
10.0	9.9	25.757	25.754	34.956	229.1	23.079
20.0	19.9	25.743	25.739	34.956	221.9	23.083
30.0	29.8	25.732	25.725	34.955	220.8	23.087
50.0	49.7	25.727	25.716	34.956	216.8	23.090
75.0	74.5	25.200	25.183	34.980	219.2	23.272
100.0	99.3	23.810	23.789	35.075	212.6	23.762
125.0	124.2	22.172	22.147	35.145	209.7	24.289
150.0	149.0	20.985	20.957	35.129	200.7	24.605
200.0	198.6	18.392	18.358	34.977	202.4	25.167
250.0	248.3	15.534	15.495	34.625	209.5	25.574
300.0	297.9	13.523	13.481	34.370	211.2	25.808
400.0	397.1	9.959	9.913	34.138	199.9	26.294
500.0	496.3	7.383	7.334	34.097	127.6	26.661
600.0	595.4	5.667	5.616	34.092	73.9	26.883
700.0	694.4	5.069	5.012	34.260	43.2	27.087
800.0	793.4	4.669	4.605	34.346	39.2	27.201
900.0	892.4	4.260	4.190	34.424	44.3	27.308
1000.0	991.3	3.984	3.908	34.471	49.2	27.375
1100.0	1090.2	3.716	3.635	34.496	52.2	27.422
1200.0	1189.0	3.489	3.401	34.523	55.8	27.467
1300.0	1287.8	3.271	3.177	34.536	59.8	27.498
1400.0	1386.5	3.030	2.930	34.545	62.8	27.529
1500.0	1485.2	2.826	2.720	34.561	66.9	27.560
1750.0	1731.8	2.420	2.298	34.590	76.5	27.619
2000.0	1978.0	2.073	1.936	34.615	86.9	27.669
2500.0	2469.6	1.737	1.562	34.645	102.2	27.721
3000.0	2960.1	1.538	1.320	34.667	124.3	27.756
4000.0	3937.8	1.452	1.134	34.685	153.2	27.783

Station: 2 Cast: 1
Time: 0056 Z Date: 8 Jan 89
Latitude: 22°46.3'N Longitude: 157°55.0'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	24.721	24.721	35.032	216.4	23.452
10.0	9.9	24.720	24.718	35.033	215.7	23.453
20.0	19.9	24.726	24.721	35.033	215.6	23.452
30.0	29.8	24.727	24.720	35.032	215.3	23.452
50.0	49.7	24.728	24.717	35.033	214.0	23.454
75.0	74.5	24.733	24.717	35.032	210.9	23.453
100.0	99.3	24.730	24.708	35.035	210.1	23.458
125.0	124.2	23.017	22.991	35.088	207.1	24.005
150.0	149.0	22.160	22.130	35.144	199.3	24.292
200.0	198.6	19.415	19.379	35.045	181.4	24.960
250.0	248.3	16.023	15.983	34.668	181.5	25.497
300.0	297.9	13.793	13.750	34.411	177.0	25.785
400.0	397.1	9.604	9.558	34.139	165.6	26.353
500.0	496.3	7.336	7.288	34.095	119.7	26.666
600.0	595.4	5.901	5.849	34.111	74.8	26.869
700.0	694.4	5.162	5.105	34.247	39.4	27.066
800.0	793.4	4.620	4.557	34.328	28.4	27.193
900.0	892.4	4.263	4.194	34.419	34.5	27.304
1000.0	991.3	3.962	3.887	34.470	42.3	27.376
1100.0	1090.2	3.753	3.671	34.501	46.0	27.423
1200.0	1189.0	3.499	3.411	34.523	50.2	27.466
1300.0	1287.8	3.232	3.139	34.543	56.0	27.508
1400.0	1386.5	3.056	2.955	34.557	59.5	27.536
1500.0	1485.2	2.856	2.749	34.572	64.1	27.566
1750.0	1731.8	2.425	2.303	34.594	75.4	27.622
2000.0	1978.0	2.102	1.964	34.615	83.6	27.666
2500.0	2469.6	1.716	1.541	34.648	103.6	27.725
3000.0	2960.1	1.531	1.313	34.670	126.5	27.759
4000.0	3937.8	1.454	1.137	34.688	152.8	27.785

Station: 2 Cast: 4
Time: 0634 Z Date: 28 Feb 89
Latitude: 22°41.5'N Longitude: 157°58.8'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	23.532	23.532	34.853	224.0	23.670
10.0	9.9	23.544	23.542	34.856	225.4	23.669
20.0	19.9	23.543	23.539	34.856	226.2	23.670
30.0	29.8	23.542	23.536	34.856	222.2	23.670
50.0	49.7	23.588	23.577	34.948	221.7	23.728
75.0	74.5	23.171	23.156	35.254	218.8	24.083
100.0	99.3	23.160	23.140	35.284	216.4	24.110
125.0	124.2	23.029	23.003	35.328	213.8	24.183
150.0	149.0	21.513	21.484	35.272	197.5	24.570
200.0	198.6	17.990	17.955	34.955	191.1	25.250
250.0	248.3	14.738	14.701	34.591	201.1	25.723
300.0	297.9	12.692	12.652	34.375	207.6	25.978
400.0	397.1	10.455	10.407	34.201	200.6	26.259
500.0	496.3	8.161	8.109	34.115	133.8	26.563
600.0	595.4	6.585	6.530	34.165	74.3	26.825
700.0	694.4	5.497	5.438	34.282	38.2	27.055
800.0	793.4	5.025	4.959	34.370	34.1	27.180
900.0	892.4	4.518	4.447	34.435	37.9	27.289
1000.0	991.3	4.224	4.147	34.480	44.2	27.357
1100.0	1090.2	3.953	3.870	34.501	48.0	27.403
1200.0	1189.0	3.602	3.513	34.519	53.2	27.453
1300.0	1287.8	3.363	3.268	34.536	58.5	27.490
1400.0	1386.6	3.160	3.058	34.551	62.3	27.522
1500.0	1485.2	2.913	2.806	34.563	67.9	27.554
1750.0	1731.8	2.481	2.359	34.587	77.5	27.612
2000.0	1978.0	2.171	2.032	34.609	87.2	27.656
2500.0	2469.6	1.731	1.555	34.645	105.0	27.722
3000.0	2960.1	1.552	1.334	34.665	124.8	27.753
4000.0	3937.8	1.455	1.138	34.683	150.1	27.781

Station: 2 Cast: 3
Time: 0116 Z Date: 27 Mar 89
Latitude: 22°46.1'N Longitude: 157°53.6'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	24.637	24.637	34.692	237.2	23.220
10.0	9.9	24.534	24.532	34.692	237.2	23.252
20.0	19.9	24.428	24.423	34.700	236.4	23.290
30.0	29.8	24.325	24.318	34.700	234.6	23.321
50.0	49.7	23.786	23.776	34.865	234.2	23.607
75.0	74.5	23.648	23.632	34.955	221.8	23.717
100.0	99.3	23.290	23.269	35.082	214.7	23.920
125.0	124.2	21.815	21.790	35.065	202.4	24.327
150.0	149.0	20.834	20.806	35.092	193.7	24.618
200.0	198.6	18.685	18.650	34.990	189.7	25.104
250.0	248.3	15.968	15.928	34.691	195.9	25.527
300.0	297.9	13.526	13.483	34.411	202.6	25.839
400.0	397.1	9.942	9.896	34.158	201.5	26.313
500.0	496.3	7.885	7.834	34.064	157.3	26.564
600.0	595.4	6.065	6.012	34.048	92.4	26.799
700.0	694.4	5.073	5.016	34.183		27.026
800.0	793.4	4.894	4.830	34.342		27.173
900.0	892.4	4.532	4.461	34.407		27.265
1000.0	991.3	4.169	4.092	34.461		27.348
1100.0	1090.2	3.750	3.668	34.493		27.417
1200.0	1189.0	3.426	3.339	34.514		27.466
1300.0	1287.8	3.247	3.153	34.529		27.495
1400.0	1386.5	3.065	2.965	34.544		27.525
1500.0	1485.2	2.870	2.763	34.560		27.556
1750.0	1731.8	2.483	2.361	34.594		27.617
2000.0	1978.0	2.149	2.010	34.616		27.664
2500.0	2469.6	1.726	1.550	34.648		27.724
3000.0	2960.1	1.543	1.326	34.669		27.757

Station: 2 Cast: 1
Time: 1804 Z Date: 17 May 89
Latitude: 22°47.4'N Longitude: 157°57.2'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	23.884	23.884	34.952	207.6	23.641
10.0	9.9	23.883	23.881	34.947	210.9	23.638
20.0	19.9	23.883	23.879	34.949	210.9	23.640
30.0	29.8	23.852	23.845	34.951	209.9	23.652
50.0	49.7	22.951	22.941	35.131	209.3	24.051
75.0	74.5	22.521	22.506	35.229	211.4	24.250
100.0	99.3	21.591	21.571	35.231	200.7	24.514
125.0	124.2	20.160	20.137	35.121	187.6	24.819
150.0	149.0	18.283	18.257	34.956	189.4	25.176
200.0	198.6	15.834	15.803	34.651	192.2	25.525
250.0	248.3	13.264	13.229	34.374	203.9	25.862
300.0	297.9	11.500	11.462	34.200	192.6	26.069
400.0	397.1	9.053	9.009	34.108	188.3	26.419
500.0	496.3	6.797	6.751	34.020	140.1	26.681
600.0	595.4	5.438	5.388	34.128	58.9	26.939
700.0	694.4	5.029	4.972	34.253	35.8	27.086
800.0	793.4	4.580	4.517	34.334	30.1	27.201
900.0	892.4	4.313	4.244	34.432	40.4	27.309
1000.0	991.3	4.099	4.023	34.487	47.8	27.376
1100.0	1090.2	3.748	3.666	34.508	52.4	27.429
1200.0	1189.0	3.506	3.418	34.529	55.9	27.470
1300.0	1287.8	3.266	3.172	34.543	60.2	27.504
1400.0	1386.5	3.034	2.934	34.558	64.8	27.538
1500.0	1485.2	2.819	2.713	34.571	70.2	27.569
1750.0	1731.7	2.403	2.282	34.596	80.5	27.625
2000.0	1978.0	2.106	1.968	34.619	90.3	27.669
2500.0	2469.6	1.734	1.559	34.650	109.5	27.725
3000.0	2960.1	1.558	1.340	34.668	126.2	27.755
4000.0	3937.8	1.457	1.139	34.686	151.0	27.784

Station: 2 Cast: 3
Time: 0500 Z Date: 24 Jun 89
Latitude: 22°48.4'N Longitude: 157°57.6'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	25.820	25.820	34.565	211.3	22.763
10.0	9.9	25.810	25.808	34.565	211.3	22.767
20.0	19.9	25.696	25.691	34.608	212.1	22.835
30.0	29.8	25.676	25.670	34.610	211.8	22.844
50.0	49.7	25.634	25.622	34.609	209.0	22.857
75.0	74.5	25.038	25.021	34.588	213.7	23.025
100.0	99.3	23.979	23.958	34.844	216.3	23.538
125.0	124.2	23.183	23.158	35.096	210.2	23.963
150.0	149.0	22.509	22.479	35.148	204.9	24.197
200.0	198.6	19.141	19.105	34.901	173.0	24.920
250.0	248.3	16.009	15.970	34.595	154.7	25.444
300.0	297.9	12.934	12.893	34.333	204.3	25.898
400.0	397.1	9.137	9.093	34.108	188.7	26.405
500.0	496.3	6.907	6.861	34.065	113.1	26.701
600.0	595.4	5.663	5.612	34.134	55.3	26.917
700.0	694.4	5.090	5.033	34.272	32.2	27.095
800.0	793.4	4.547	4.484	34.356	26.1	27.223
900.0	892.4	4.207	4.138	34.437	39.2	27.324
1000.0	991.3	3.944	3.868	34.482	42.0	27.388
1100.0	1090.2	3.707	3.626	34.511	47.4	27.435
1200.0	1189.0	3.493	3.405	34.530	50.0	27.472
1300.0	1287.8	3.231	3.137	34.548	57.5	27.511
1400.0	1386.5	3.049	2.949	34.560	63.3	27.538
1500.0	1485.2	2.862	2.756	34.575	70.2	27.568
1750.0	1731.7	2.448	2.326	34.603	81.0	27.627

Station: 2 Cast: 3
Time: 0035 Z Date: 29 Jul 89
Latitude: 22°49.1'N Longitude: 157°56.1'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	25.464	25.464	34.921	217.8	23.142
10.0	9.9	25.396	25.394	34.921	217.8	23.163
20.0	19.9	25.354	25.349	34.921	217.4	23.177
30.0	29.8	25.328	25.321	34.920	217.2	23.185
50.0	49.7	24.127	24.116	35.059	228.7	23.653
75.0	74.5	23.224	23.208	35.187	224.4	24.017
100.0	99.3	22.295	22.275	35.266	217.0	24.344
125.0	124.2	21.357	21.333	35.303	213.8	24.635
150.0	149.0	20.016	19.989	35.168	197.7	24.894
200.0	198.6	17.016	16.983	34.816	198.1	25.378
250.0	248.3	13.880	13.844	34.458	208.7	25.801
300.0	297.9	12.027	11.988	34.258	206.9	26.015
400.0	397.1	8.982	8.939	34.082	175.5	26.410
500.0	496.3	6.841	6.794	34.058	106.9	26.705
600.0	595.4	5.197	5.148	34.117	55.2	26.958
700.0	694.4	4.650	4.596	34.236	26.6	27.115
800.0	793.4	4.560	4.497	34.350	25.5	27.217
900.0	892.4	4.160	4.091	34.395	27.0	27.295
1000.0	991.3	3.875	3.800	34.459	37.9	27.377
1100.0	1090.2	3.673	3.592	34.506	47.3	27.434

Station: 2 Cast: 2
Time: 1942 Z Date: 23 Aug 89
Latitude: 22°47.4'N Longitude: 157°57.4'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	26.127	26.127	34.663	216.5	22.742
10.0	9.9	26.115	26.113	34.664	218.4	22.746
20.0	19.9	26.112	26.108	34.664	217.1	22.748
30.0	29.8	26.115	26.108	34.664	214.9	22.748
50.0	49.7	26.026	26.015	34.670	214.2	22.782
75.0	74.5	24.713	24.697	34.822	217.2	23.301
100.0	99.3	23.351	23.330	35.130	218.8	23.938
125.0	124.2	22.254	22.229	35.273	214.3	24.362
150.0	149.0	21.354	21.325	35.312	206.5	24.644
200.0	198.6	18.807	18.772	35.006	188.4	25.085
250.0	248.3	15.043	15.005	34.532	196.4	25.611
300.0	297.9	11.437	11.400	34.174	194.6	26.060
400.0	397.1	8.218	8.177	34.063	168.3	26.512
500.0	496.3	7.250	7.202	34.153	86.4	26.724
600.0	595.4	5.833	5.782	34.184	51.7	26.936
700.0	694.4	5.223	5.165	34.273	35.3	27.080
800.0	793.4	4.696	4.632	34.377	34.6	27.223
900.0	892.4	4.351	4.282	34.447	39.7	27.317
1000.0	991.3	4.108	4.032	34.481	44.4	27.370
1100.0	1090.2	3.813	3.731	34.508	50.0	27.423
1200.0	1189.0	3.506	3.418	34.531	55.5	27.472
1300.0	1287.8	3.217	3.124	34.551	60.5	27.515
1400.0	1386.5	3.008	2.908	34.564	64.2	27.545
1500.0	1485.2	2.863	2.757	34.573	67.7	27.566
1750.0	1731.7	2.511	2.388	34.595	77.9	27.616
2000.0	1978.0	2.207	2.067	34.617	89.2	27.659
2500.0	2469.6	1.783	1.607	34.648	108.9	27.720

Station: 2 Cast: 3
Time: 2336 Z Date: 21 Sep 89
Latitude: 22°44.6'N Longitude: 157°57.9'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	26.485	26.485	34.787	203.7	22.723
10.0	9.9	26.428	26.426	34.785	205.4	22.740
20.0	19.9	26.394	26.389	34.783	204.8	22.749
30.0	29.8	26.385	26.378	34.783	204.2	22.753
50.0	49.7	26.382	26.371	34.783	204.4	22.755
75.0	74.5	26.221	26.204	34.785	205.3	22.810
100.0	99.3	24.328	24.307	34.949	212.7	23.513
125.0	124.2	22.565	22.539	35.048	200.0	24.104
150.0	149.0	20.370	20.342	34.995	173.4	24.668
200.0	198.6	17.448	17.415	34.810	177.3	25.270
250.0	248.3	14.870	14.833	34.516	184.1	25.636
300.0	297.9	11.828	11.789	34.218	208.7	26.022
400.0	397.1	8.660	8.617	34.105	156.1	26.478
500.0	496.3	6.826	6.779	34.090	95.5	26.732
600.0	595.4	5.561	5.510	34.145	49.8	26.937
700.0	694.4	4.925	4.869	34.283	28.7	27.122
800.0	793.4	4.663	4.600	34.372	29.0	27.223
900.0	892.4	4.414	4.344	34.465	37.6	27.324
1000.0	991.3	4.062	3.986	34.492	44.0	27.384
1100.0	1090.2	3.760	3.678	34.515	49.1	27.433
1200.0	1189.0	3.481	3.394	34.530	53.0	27.473
1300.0	1287.8	3.250	3.156	34.548	57.7	27.510
1400.0	1386.5	3.062	2.962	34.561	63.1	27.538
1500.0	1485.2	2.898	2.791	34.572	66.1	27.562
1750.0	1731.8	2.456	2.334	34.595	75.4	27.620
2000.0	1978.0	2.155	2.016	34.619	88.1	27.665
2500.0	2469.6	1.759	1.584	34.650	106.9	27.723
3000.0	2960.1	1.568	1.350	34.669	122.5	27.755
4000.0	3937.8	1.457	1.139	34.687	146.4	27.785

Station: 2 Cast: 2
Time: 2333 Z Date: 17 Oct 89
Latitude: 22°43.7'N Longitude: 157°57.6'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen μmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	26.591	26.591	34.769	208.9	22.676
10.0	9.9	26.210	26.207	34.761	212.8	22.791
20.0	19.9	26.195	26.191	34.754	211.3	22.790
30.0	29.8	26.205	26.199	34.783	210.5	22.810
50.0	49.7	25.923	25.912	35.042	212.4	23.094
75.0	74.5	23.095	23.080	35.246	228.1	24.099
100.0	99.3	22.105	22.085	35.294	215.6	24.419
125.0	124.2	21.643	21.619	35.326	207.8	24.573
150.0	149.0	21.189	21.160	35.320	200.8	24.695
200.0	198.6	18.114	18.080	34.964	198.1	25.226
250.0	248.3	14.439	14.402	34.534	210.2	25.743
300.0	297.9	12.528	12.488	34.345	215.7	25.987
400.0	397.1	9.345	9.301	34.121	199.2	26.382
500.0	496.3	7.181	7.133	34.050	123.4	26.652
600.0	595.4	5.638	5.587	34.104	60.9	26.896
700.0	694.4	4.997	4.941	34.245	31.3	27.083
800.0	793.4	4.683	4.619	34.394	35.2	27.238
900.0	892.4	4.373	4.303	34.462	38.9	27.327
1000.0	991.3	4.033	3.957	34.493	46.0	27.387
1100.0	1090.2	3.814	3.732	34.513	48.2	27.426
1200.0	1189.0	3.687	3.597	34.524	50.1	27.448
1300.0	1287.8	3.440	3.345	34.539	55.1	27.485
1400.0	1386.6	3.196	3.095	34.549	58.7	27.516
1500.0	1485.2	2.976	2.868	34.563	66.0	27.548
1750.0	1731.8	2.498	2.376	34.593	77.1	27.615
2000.0	1978.0	2.141	2.002	34.616	84.5	27.664
2500.0	2469.6	1.747	1.572	34.650	109.4	27.724
3000.0	2960.1	1.559	1.341	34.669	124.3	27.756
4000.0	3937.8	1.451	1.133	34.688	152.2	27.785

Station: 2 Cast: 2
Time: 0322 Z Date: 28 Nov 89
Latitude: 22°44.7'N Longitude: 158°1.7'W

Pressure dbar	Depth m	Temperature °C	Pot. Temp. °C	Salinity psu	Oxygen µmol kg^{-1}	Pot. Density kg m^{-3}
0.0	0.0	25.229	25.229	34.962	214.1	23.244
10.0	9.9	25.227	25.225	34.971	213.6	23.253
20.0	19.9	25.126	25.121	34.970	213.4	23.283
30.0	29.8	25.108	25.101	34.969	213.9	23.289
50.0	49.7	25.088	25.077	34.968	211.2	23.295
75.0	74.5	24.280	24.264	35.087	218.0	23.631
100.0	99.3	22.585	22.565	35.170	206.2	24.189
125.0	124.2	21.275	21.251	35.193	195.6	24.574
150.0	149.0	20.535	20.507	35.185	191.5	24.770
200.0	198.6	18.700	18.665	35.022	191.0	25.125
250.0	248.3	15.639	15.600	34.637	196.8	25.560
300.0	297.9	13.565	13.523	34.408	203.6	25.829
400.0	397.1	9.596	9.551	34.092	180.5	26.318
500.0	496.3	6.968	6.921	34.033	124.4	26.668
600.0	595.4	5.620	5.569	34.103	57.9	26.897
700.0	694.4	5.013	4.956	34.256	27.8	27.090
800.0	793.4	4.592	4.529	34.358	24.8	27.219
900.0	892.4	4.228	4.159	34.438	32.0	27.323
1000.0	991.3	3.920	3.845	34.486	40.2	27.393
1100.0	1090.2	3.658	3.577	34.511	46.3	27.440
1200.0	1189.0	3.402	3.315	34.531	52.0	27.481
1300.0	1287.8	3.191	3.098	34.548	54.6	27.515
1400.0	1386.5	2.983	2.883	34.561	59.1	27.545
1500.0	1485.2	2.765	2.660	34.576	67.3	27.577
1750.0	1731.8	2.407	2.286	34.597	75.9	27.626
2000.0	1978.0	2.140	2.002	34.617	87.0	27.665
2500.0	2469.6	1.750	1.575	34.650	104.1	27.724
3000.0	2960.1	1.562	1.344	34.670	122.8	27.757
4000.0	3937.8	1.459	1.141	34.688	148.4	27.785

VI.B. Water Column Measurements

Tables VI.B.1–12: Salinity and oxygen bottle data for HOT-1 to HOT-12. Also listed are CTD-derived values of pressure, temperature, salinity, potential temperature, and potential density (σ_θ) taken at the bottle trips. The CTD oxygen values are taken from the downcasts at the same potential density surfaces as the respective bottle trip. An entry is made to this table for every bottle trip where samples were collected for the WOCE or JGOFS groups. Surface values (Bottle 0, pressure 0.0 dbar) are taken from bucket samples.

Tables VI.B.13–24: Nutrient and other bottle data for HOT-1 to HOT-12. Also given, for cross-reference with Tables VI.B.1–12, are station, cast, bottle, and pressure.

Tables VI.B.25–27: Precision of oxygen, nutrient, and pigment analyses.

Table VI.B.28: HPLC analysis of chlorophyll *a*.

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	3	12	4.7	26.290	35.246	234.0	26.288	23.130	35.245	210.9
2	3	11	39.4	26.189	35.236	235.9	26.180	23.157	35.237	211.6
2	3	10	99.4	21.798	35.257	226.3	21.779	24.476	35.258	214.2
2	3	9	150.3	19.421	35.098	205.1	19.394	24.996	35.099	200.8
2	3	8	191.8	17.706	34.928	214.8	17.674	25.298	34.929	211.0
2	3	7	217.0	16.598	34.788		16.563	25.455		207.0
2	3	6	279.9	13.265	34.357	213.0	13.226	25.850	34.354	211.3
2	3	5	340.6	10.712	34.170	206.0	10.671	26.188	34.165	208.2
2	3	4	399.0	8.811	34.076	186.0	8.768	26.432	34.078	180.9
2	3	3	475.9	7.325	34.034	149.9	7.279	26.619	34.033	143.9
2	3	2	677.8	4.887	34.202	34.3	4.833	27.062	34.200	31.0
2	3	1	1013.7	3.861	34.486		3.785	27.399	34.488	
2	4	12	542.6	6.237	34.039	106.6	6.188	26.769	34.037	97.0
2	4	11	998.9	3.916	34.476	43.7	3.841	27.385	34.475	44.2
2	4	10	1100.4	3.652	34.507	50.8	3.571	27.438	34.509	51.5
2	4	9	1202.3	3.397	34.534		3.310	27.484		56.4
2	4	8	1306.1	3.150	34.550	62.9	3.057	27.521	34.552	63.0
2	4	7	1407.9	2.942	34.563	69.1	2.842	27.551	34.562	68.0
2	4	6	1514.6	2.747	34.578	75.7	2.641	27.580	34.573	76.0
2	4	5	1708.2	2.401	34.599	87.8	2.283	27.628	34.600	86.4
2	4	4	1902.5	2.177	34.615	97.7	2.046	27.659	34.615	94.4
2	4	3	2094.0	1.992	34.627	105.7	1.847	27.685	34.626	102.7
2	4	2	2283.6	1.844	34.638	111.6	1.686	27.706	34.639	106.8
2	4	1	2498.3	1.726	34.648	120.0	1.551	27.724	34.651	115.8
2	5	12	2488.7	1.744	34.646	116.0	1.570	27.721	34.647	117.9
2	5	11	2680.5	1.642	34.657	124.6	1.452	27.738	34.658	122.3
2	5	10	2880.0	1.568	34.663	131.9	1.361	27.750	34.666	127.6
2	5	9	3067.6	1.529	34.668	138.1	1.305	27.758	34.669	134.0
2	5	8	3259.0	1.497	34.673	143.5	1.255	27.765	34.674	139.4
2	5	7	3451.5	1.476	34.676	147.6	1.216	27.771	34.677	143.9
2	5	6	3675.3	1.465	34.679	153.0	1.181	27.775	34.679	154.7
2	5	5	3877.7	1.462	34.681	155.9	1.157	27.779	34.682	156.1
2	5	4	4087.4	1.463	34.683	159.4	1.136	27.782	34.684	155.5
2	5	3	4267.2	1.472	34.684	161.4	1.124	27.783	34.686	160.8
2	5	2	4483.3	1.486	34.685	163.0	1.113	27.785	34.685	167.2
2	5	1	4705.8	1.506	34.686	163.8	1.107	27.786	34.688	176.2
2	6	10	29.4	26.250	35.225		26.243	23.129		
2	6	9	43.2	26.254	35.226		26.244	23.129		
2	6	8	61.2	26.240	35.245		26.226	23.149		
2	6	7	87.0	23.152	35.224		23.134	24.066		
2	6	6	122.0	20.578	35.169		20.555	24.744		
2	6	5	315.8	11.377	34.184		11.337	26.079		
2	6	4	516.8	6.274	34.032		6.228	26.759	34.032	
2	6	3	715.9	4.678	34.285		4.622	27.151		
2	6	2	914.7	4.196	34.445		4.126	27.331		
2	6	1	1011.5	3.907	34.480		3.831	27.390	34.482	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	7	5	10.7	26.266	35.223		26.263	23.121		
2	7	4	25.5	26.270	35.222		26.264	23.120		
2	7	3	42.9	26.264	35.223		26.254	23.124		
2	7	2	68.3	23.642	35.222		23.628	23.921		
2	7	1	114.4	21.580	35.212		21.558	24.504		
2	8	3	2.3	26.273	35.241		26.273	23.132	35.243	
2	8	2	497.0	6.740	34.029		6.694	26.696		
2	8	1	1013.1	3.799	34.490		3.724	27.409		
2	10	10	4.1	26.264	35.246		26.263	23.138	35.198	
2	10	9	19.8	26.267	35.233		26.263	23.129		
2	10	8	38.8	26.243	35.231		26.235	23.136		
2	10	7	68.6	23.406	35.353		23.392	24.089		
2	10	6	117.6	21.036	35.290		21.013	24.712		
2	10	5	304.9	12.350	34.354		12.310	26.029		
2	10	4	506.1	6.600	34.133		6.553	26.796	34.031	
2	10	3	753.3	4.523	34.449		4.465	27.298		
2	10	2	1011.7	3.876	34.623		3.800	27.507	34.483	
2	10	1	1011.5	3.879	34.623		3.803	27.507		
2	11	11	16.6	26.272	35.415		26.269	23.264		
2	11	10	36.5	26.285	35.385		26.277	23.239		
2	11	9	56.4	25.833	35.424		25.821	23.411		
2	11	8	77.8	24.279	35.462		24.263	23.914		
2	11	7	97.8	23.115	35.452		23.095	24.251		
2	11	6	117.3	21.728	35.446		21.704	24.641		
2	11	5	137.8	20.455	35.425		20.429	24.973		
2	11	4	157.7	19.523	35.337		19.494	25.153		
2	11	3	181.8	18.092	35.222		18.061	25.428		
2	11	2	204.2	16.973	35.067		16.939	25.581		
2	11	1	228.8	15.385	34.883		15.350	25.805		
2	12	10	273.5	13.157	34.534		13.119	26.009		
2	12	9	303.8	12.069	34.414		12.029	26.129		
2	12	8	354.5	10.249	34.408		10.207	26.455		
2	12	7	405.3	8.752	34.397		8.708	26.693		
2	12	6	505.4	6.225	34.362		6.180	27.026	34.033	
2	12	5	602.9	5.290	34.426		5.241	27.192		
2	12	4	705.7	4.799	34.566		4.743	27.361		
2	12	3	805.2	4.542	34.661		4.478	27.466		
2	12	2	906.4	4.295	34.750		4.225	27.563		
2	12	1	1008.8	4.013	34.786		3.936	27.623	34.473	
2	13	10	7.7	26.279	35.801		26.277	23.553		
2	13	9	24.4	26.251	35.518		26.246	23.350		
2	13	8	44.2	26.257	35.360		26.247	23.230		
2	13	7	69.4	26.065	35.297		26.050	23.244		
2	13	6	117.4	22.241	35.346		22.217	24.421		
2	13	5	116.7	22.405	35.312		22.381	24.349		
2	13	4	310.8	11.849	34.266		11.809	26.055		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	13	3	508.6	6.433	34.186		6.388	26.860		
2	13	2	755.8	4.651	34.899		4.591	27.642		
2	13	1	1007.2	3.962	34.933		3.885	27.745		
2	14	10	11.8	26.339	35.174		26.336	23.061	35.175	
2	14	9	11.7	26.345	35.170		26.342	23.056	35.174	
2	14	8	52.9	26.249	35.169		26.237	23.089	35.180	
2	14	7	117.3	21.267	35.214		21.244	24.591	35.213	
2	14	6	115.8	21.362	35.211		21.340	24.563	35.215	
2	14	5	368.4	9.515	34.090		9.473	26.330	34.102	
2	14	4	493.7	7.054	34.022		7.007	26.648	34.031	
2	14	3	692.3	4.818	34.208		4.763	27.075	34.215	
2	14	2	836.7	4.400	34.378		4.335	27.256	34.378	
2	14	1	1011.2	3.978	34.468		3.901	27.373		
2	15	9	8.9	26.313	35.167	221.5	26.311	23.064	35.170	214.9
2	15	8	18.9	26.278	35.168	223.5	26.274	23.076	35.169	218.6
2	15	7	38.9	26.268	35.169	223.0	26.260	23.081	35.169	214.1
2	15	6	66.7	23.901	35.223	221.3	23.887	23.845	35.225	225.7
2	15	5	116.1	20.968	35.165	192.9	20.946	24.635	35.163	200.6
2	15	4	308.4	11.940	34.229	195.0	11.900	26.010	34.232	208.1
2	15	3	508.3	6.702	34.030	115.9	6.655	26.701	34.028	118.3
2	15	2	754.8	4.485	34.347	24.8	4.427	27.222	34.346	28.2
2	15	1	1008.5	3.886	34.484	43.1	3.811	27.395	34.486	47.2
2	16	11	9.9	26.291	35.178		26.289	23.079		
2	16	10	10.1	26.288	35.179		26.286	23.081		
2	16	9	10.1	26.287	35.179		26.285	23.081		
2	16	8	9.9	26.287	35.179		26.284	23.082		
2	16	7	10.0	26.285	35.178	167.0	26.283	23.081	35.179	209.0
2	16	6	82.5	23.669	35.236	225.6	23.652	23.925	35.227	224.2
2	16	5	132.5	20.134	35.128		20.110	24.832		
2	16	4	354.9	10.516	34.144	185.6	10.474	26.202	34.147	206.3
2	16	3	520.0	6.310	34.031	101.7	6.263	26.753	34.030	103.7
2	16	2	710.4	4.674	34.285	22.0	4.619	27.152	34.284	25.9
2	16	1	1014.9	3.858	34.483	44.3	3.782	27.397	34.485	46.8
2	17	7	28.3	26.283	35.187	194.6	26.277	23.090	35.184	210.2
2	17	6	519.2	6.298	34.033	103.9	6.252	26.757	34.032	100.8
2	17	5	991.2	4.016	34.470	39.9	3.941	27.371	34.467	43.7
2	17	4	1451.7	2.841	34.572	68.5	2.739	27.567	34.573	72.1
2	17	3	1920.7	2.153	34.619	93.3	2.021	27.665	34.616	95.1
2	17	2	2308.2	1.835	34.641	108.0	1.675	27.709	34.640	107.4
2	17	1	2971.9	1.560	34.668	130.2	1.345	27.755	34.667	129.1

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	1	0	0.0						35.251	
1	1	11	15.3	26.417	35.012	205.3	26.414	22.915	35.016	203.1
1	1	10	35.2	26.367	34.999	208.1	26.359	22.922	35.005	204.0
1	1	9	56.0	26.153	34.963	201.7	26.140	22.963	34.969	205.0
1	1	8	77.8	26.099	34.998	204.5	26.082	23.009	35.001	205.2
1	1	7	97.4	24.177	35.081	205.1	24.157	23.658	35.081	204.1
1	1	6	149.3	20.932	35.057	184.7	20.904	24.565	35.060	184.3
1	1	5	205.0	16.193	34.665	179.2	16.161	25.454	34.672	176.6
1	1	4	254.7	14.350	34.483	173.8	14.313	25.722	34.490	176.6
1	1	3	504.4	6.760	34.191	74.8	6.714	26.821	34.190	73.9
1	1	2	754.2	5.142	34.372	37.3	5.080	27.168	34.372	39.3
1	1	1	1014.7	4.242	34.483	44.7	4.163	27.358	34.485	43.7
2	2	0	0.0						34.973	
2	2	11	2603.2	1.677	34.651	107.2	1.493	27.731	34.652	111.2
2	2	10	2808.4	1.594	34.660	116.5	1.393	27.745	34.660	121.6
2	2	9	2990.6	1.541	34.667		1.324	27.755		125.8
2	2	8	3191.8	1.499	34.673	130.3	1.264	27.764	34.672	134.9
2	2	7	3390.4	1.471	34.677	137.9	1.217	27.771	34.676	141.0
2	2	6	3594.9	1.454	34.681	144.3	1.180	27.777	34.681	147.6
2	2	5	3797.6	1.448	34.684	149.4	1.152	27.781	34.684	150.3
2	2	4	3999.2	1.452	34.686	153.5	1.135	27.784	34.685	152.1
2	2	3	4200.3	1.461	34.687	157.6	1.121	27.786	34.687	154.3
2	2	2	4399.6	1.477	34.688		1.114	27.787		153.9
2	2	1	4505.0	1.487	34.688		1.112	27.787	34.688	
2	3	0	0.0						34.952	
2	3	11	695.3	5.188	34.225	43.1	5.131	27.046	34.225	36.2
2	3	10	755.2	4.824	34.308	37.9	4.763	27.153	34.305	32.0
2	3	9	839.6	4.435	34.401	40.6	4.370	27.271	34.400	37.2
2	3	8	990.0	4.025	34.472	47.7	3.950	27.371	34.473	46.5
2	3	7	1190.4	3.513	34.526	55.4	3.426	27.467	34.527	55.2
2	3	6	1391.9	2.971	34.554	63.3	2.872	27.540	34.555	63.3
2	3	5	1598.4	2.631	34.577	70.6	2.519	27.590	34.580	72.5
2	3	4	1807.8	2.301	34.602	78.8	2.176	27.639	34.603	81.9
2	3	3	1995.9	2.073	34.618	85.3	1.935	27.671	34.618	91.1
2	3	2	2207.1	1.886	34.633	93.0	1.734	27.698	34.633	97.3
2	3	1	2413.5	1.733	34.646	100.9	1.565	27.722	34.647	105.3
2	4	0	0.0						34.477	
2	4	11	15.6	25.709	34.970		25.706	23.104		207.3
2	4	10	99.5	23.283	35.092		23.263	23.929		209.3
2	4	9	136.4	21.446	35.185		21.420	24.521		199.6
2	4	8	173.3	19.954	35.114		19.922	24.870		192.8
2	4	7	238.0	16.458	34.762		16.419	25.469		212.4
2	4	6	322.5	11.861	34.229		11.819	26.025		207.7
2	4	5	433.3	8.944	34.074		8.897	26.409		179.9
2	4	4	494.5	7.537	34.034		7.489	26.590		142.9
2	4	3	526.2	7.192	34.033		7.141	26.637		127.2

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	4	2	575.0	6.122	34.035		6.072	26.781		91.9
2	4	1	637.8	5.456	34.148		5.403	26.953		48.6
2	5	0	0.0						34.978	
2	5	10	1.5	25.615	34.986	124.9	25.615	23.144	34.988	206.1
2	5	9	21.2	25.613	34.987		25.608	23.147		206.2
2	5	8	46.2	25.598	34.991		25.588	23.156		206.1
2	5	7	71.1	25.468	34.996		25.452	23.202		207.7
2	5	6	97.9	23.565	35.074		23.545	23.833		206.9
2	5	5	122.9	22.398	35.155		22.373	24.232		199.1
2	5	4	148.6	21.140	35.154		21.111	24.582		191.1
2	5	3	177.6	19.883	35.152	196.9	19.850	24.918	35.134	212.0
2	5	2	556.8	6.430	34.046		6.380	26.750	34.045	
2	5	1	1013.9	3.924	34.478		3.847	27.387		
2	6	0	0.0						34.992	
2	6	4	2.1	25.615	34.985		25.614	23.143	34.984	
2	6	3	24.1	25.585	34.994		25.579	23.161	34.993	
2	6	2	162.0	20.660	35.162		20.629	24.719	35.155	
2	6	1	550.8	6.164	34.077		6.115	26.809	34.072	
2	7	0	0.0						34.994	
2	7	11	0.9	25.618	34.983		25.618	23.141		
2	7	10	26.1	25.559	34.989		25.553	23.166		
2	7	9	46.2	25.528	34.990		25.518	23.177	34.993	
2	7	8	71.9	25.412	35.004		25.397	23.225		
2	7	7	97.8	24.152	35.047		24.131	23.640		
2	7	6	122.6	22.778	35.122		22.753	24.098		
2	7	5	150.6	21.413	35.158		21.383	24.511	35.154	
2	7	4	173.6	20.400	35.147		20.367	24.777		
2	7	3	259.6	15.527	34.625		15.487	25.576		
2	7	2	499.0	7.362	34.103		7.314	26.669	34.106	
2	7	1	747.9	4.857	34.297		4.797	27.141		
2	8	0	0.0						35.004	
2	8	11	1.6	25.661	34.983		25.661	23.128		
2	8	10	16.2	25.618	34.984		25.614	23.143	34.986	
2	8	9	37.8	25.605	34.986		25.597	23.150		
2	8	8	57.9	25.461	35.001		25.448	23.207		
2	8	7	79.2	24.635	35.012		24.618	23.468		
2	8	6	98.9	23.004	35.103		22.983	24.018		
2	8	5	119.7	22.044	35.167		22.020	24.341	35.154	
2	8	4	139.8	21.228	35.147		21.201	24.552		
2	8	3	161.5	20.367	35.157		20.337	24.794		
2	8	2	181.1	19.673	35.124		19.640	24.952		
2	8	1	258.5	15.404	34.606		15.364	25.588	34.611	
2	9	0	0.0						34.999	
2	9	11	277.2	14.288	34.471		14.248	25.727		
2	9	10	303.3	12.944	34.326		12.902	25.891		
2	9	9	354.9	11.147	34.193		11.103	26.129		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	9	8	404.1	9.812	34.144		9.765	26.324	34.135	
2	9	7	506.6	7.289	34.064		7.240	26.649	34.068	
2	9	6	605.6	6.013	34.136		5.960	26.875		
2	9	5	705.7	5.087	34.253		5.029	27.080		
2	9	4	805.9	4.574	34.342		4.511	27.208		
2	9	3	905.7	4.261	34.439		4.191	27.320		
2	9	2	1005.7	3.918	34.475		3.843	27.385		
2	9	1	1005.9	3.917	34.474		3.842	27.384	34.476	
2	10	0	0.0						34.907	
2	10	11	2.1	25.747	34.965		25.747	23.088		
2	10	10	5.9	25.753	34.965		25.752	23.086		
2	10	9	22.8	25.703	34.968	215.4	25.698	23.105	34.970	205.2
2	10	8	48.6	25.659	34.974		25.648	23.125		
2	10	7	73.0	24.986	34.998		24.970	23.351		
2	10	6	98.2	23.740	35.108		23.720	23.807		
2	10	5	126.0	21.943	35.160		21.918	24.364		
2	10	4	152.7	20.373	35.178		20.345	24.807		
2	10	3	177.4	19.175	35.077		19.143	25.045		
2	10	2	454.5	8.398	34.099	161.3	8.350	26.514	34.103	153.5
2	10	1	1005.4	3.985	34.477	47.6	3.909	27.380	34.479	44.9
2	11	0	0.0						34.919	
2	11	11	1.8	25.724	34.982		25.723	23.108	34.987	
2	11	10	20.6	25.653	34.983		25.648	23.131		
2	11	9	46.6	25.644	34.986		25.634	23.138		
2	11	8	73.5	25.490	34.987		25.474	23.188		
2	11	7	99.4	23.838	35.053		23.818	23.737		
2	11	6	125.0	22.094	35.159		22.069	24.321		
2	11	5	150.1	21.225	35.192		21.196	24.588		
2	11	4	176.3	19.593	35.107		19.561	24.960		
2	11	3	251.3	15.600	34.634		15.561	25.566		
2	11	2	304.0	13.220	34.357		13.178	25.859	34.349	
2	11	1	506.5	7.568	34.104		7.518	26.640	34.105	
2	12	0	0.0						34.686	
2	12	5	11.6	25.696	34.999		25.693	23.129		208.5
2	12	4	152.2	21.662	35.160	189.6	21.632	24.443	35.155	199.4
2	12	3	557.5	6.559	34.095	98.2	6.508	26.772	34.096	90.8
2	12	2	755.5	4.855	34.294		4.795	27.139		
2	12	1	1006.4	3.987	34.469		3.911	27.373		
2	13	0	0.0						34.978	
2	13	11	1.7	25.667	34.972		25.667	23.118		
2	13	10	21.4	25.663	34.975	201.0	25.658	23.122	34.975	205.7
2	13	9	46.1	25.652	34.991		25.642	23.140		
2	13	8	72.3	24.309	35.024		24.294	23.574		
2	13	7	96.9	23.403	35.107		23.383	23.906		
2	13	6	124.1	22.199	35.149		22.175	24.283		
2	13	5	148.8	21.406	35.165	189.9	21.377	24.517	35.181	191.4

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	13	4	175.6	19.955	35.168		19.923	24.912		
2	13	3	302.9	12.702	34.305		12.661	25.922		
2	13	2	499.1	7.883	34.102	135.1	7.832	26.594	34.108	130.5
2	13	1	1027.6	3.959	34.481		3.881	27.386		
2	14	0	0.0						35.003	
2	14	4	32.6	25.653	35.003	210.8	25.646	23.148	35.005	204.9
2	14	3	159.4	20.845	35.193	190.2	20.814	24.692	35.186	194.2
2	14	2	208.2	17.819	34.930		17.783	25.273		
2	14	1	495.2	7.309	34.079	121.3	7.261	26.657	34.079	120.9
2	15	0	0.0						35.011	
2	15	11	1.6	25.650	34.979		25.650	23.128		
2	15	10	21.6	25.645	34.980	210.0	25.640	23.132	34.982	203.9
2	15	9	46.4	25.542	34.993		25.532	23.175		
2	15	8	72.1	24.962	35.010		24.947	23.366		
2	15	7	97.9	23.410	35.104		23.390	23.901		
2	15	6	125.8	22.451	35.136		22.426	24.203		
2	15	5	151.1	21.355	35.159	189.7	21.325	24.527	35.145	190.1
2	15	4	176.9	19.885	35.141		19.852	24.910		
2	15	3	303.9	12.701	34.297		12.660	25.917		
2	15	2	543.1	6.347	34.056	101.9	6.298	26.769	34.056	95.4
2	15	1	1021.6	3.884	34.483		3.807	27.395		
2	16	0	0.0						34.990	
2	16	7	19.3	25.646	34.989		25.642	23.138		
2	16	6	302.8	13.087	34.337		13.046	25.871		
2	16	5	404.6	9.261	34.105		9.216	26.383	34.103	
2	16	4	504.2	7.368	34.102		7.319	26.667		
2	16	3	605.2	5.627	34.073		5.576	26.873	34.072	
2	16	2	754.1	4.876	34.297		4.815	27.139		
2	16	1	1005.3	3.973	34.480		3.898	27.383	34.482	
2	18	0	0.0						34.977	
2	18	3	23.1	25.662	34.986		25.657	23.131	34.983	
2	18	2	141.8	21.433	35.163		21.405	24.509	35.156	
2	18	1	538.6	6.865	34.043		6.815	26.690	34.041	
2	19	0	0.0						34.969	
2	19	3	17.4	25.672	34.979		25.668	23.123	34.978	
2	19	2	138.8	21.679	35.172		21.652	24.447	35.169	
2	19	1	605.5	6.058	34.097		6.005	26.839	34.097	
2	20	0	0.0						34.987	
2	20	3	17.6	25.659	34.985		25.655	23.131	34.980	
2	20	2	140.0	21.419	35.154		21.392	24.506	35.157	
2	20	1	507.4	7.525	34.106		7.475	26.648	34.107	
2	21	0	0.0						35.000	
2	21	3	25.3	25.665	34.995		25.659	23.138	34.992	
2	21	2	144.1	20.867	35.142		20.839	24.647	35.136	
2	21	1	507.3	7.438	34.112		7.388	26.666	34.107	
2	22	0	0.0						35.000	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	22	3	21.2	25.662	34.996		25.657	23.139	34.994	
2	22	2	140.9	20.892	35.149		20.865	24.645	35.142	
2	22	1	403.9	9.455	34.114		9.410	26.359	34.117	
2	23	0	0.0						34.995	
2	23	3	21.4	25.643	34.988		25.638	23.138	34.984	
2	23	2	150.4	20.097	35.147		20.069	24.857	35.152	
2	23	1	480.0	7.902	34.098		7.854	26.587	34.096	
2	24	0	0.0						34.985	
2	24	3	15.4	25.643	34.984		25.640	23.135	34.983	
2	24	2	140.7	21.889	35.174		21.861	24.390	35.161	
2	24	1	403.3	9.527	34.118		9.481	26.350	34.112	
2	25	0	0.0						34.974	
2	25	3	17.9	25.721	34.970		25.717	23.101	34.968	
2	25	2	140.5	21.772	35.171		21.744	24.421	35.162	
2	25	1	493.3	7.850	34.067		7.800	26.570	34.060	
2	26	0	0.0						35.036	
2	26	3	31.4	25.727	35.026		25.720	23.142	35.026	
2	26	2	160.6	21.110	35.178		21.080	24.609	35.171	
2	26	1	493.6	8.131	34.105		8.080	26.560	34.097	
2	27	0	0.0						35.032	
2	27	3	25.8	25.680	35.017		25.675	23.149	35.019	
2	27	2	158.3	21.169	35.192		21.139	24.604	35.182	
2	27	1	492.4	7.954	34.105		7.905	26.585	34.100	
2	28	0	0.0						35.030	
2	28	2	159.2	21.111	35.146		21.081	24.585	35.146	
2	28	1	494.9	7.897	34.109		7.847	26.597	34.104	
2	29	0	0.0						35.044	
2	29	3	31.9	25.674	35.036		25.667	23.166	35.034	
2	29	2	160.7	20.835	35.139		20.805	24.654	35.140	
2	29	1	496.6	7.945	34.078		7.894	26.565	34.068	
2	30	0	0.0						35.022	
2	30	3	32.6	25.653	35.014		25.646	23.156	35.013	
2	30	2	160.9	21.377	35.171		21.346	24.531	35.158	
2	30	1	495.4	7.834	34.058		7.785	26.566	34.055	
2	31	0	0.0						34.993	
2	31	3	31.9	25.622	34.990		25.615	23.147	34.988	
2	31	2	159.3	21.240	35.161		21.210	24.561	35.150	
2	31	1	495.7	7.277	34.075		7.229	26.659	34.069	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	1	0	0.0						35.086	
2	1	12	2396.7	1.791	34.643	98.0	1.624	27.714	34.643	101.4
2	1	11	2575.1	1.685	34.653	106.5	1.503	27.731	34.654	110.2
2	1	10	2786.4	1.590	34.663		1.392	27.748		119.9
2	1	9	2987.6	1.538	34.670	125.8	1.322	27.758	34.671	126.6
2	1	8	3197.6	1.493	34.676	134.0	1.257	27.767	34.676	134.3
2	1	7	3402.8	1.470	34.680		1.215	27.774		137.6
2	1	6	3590.0	1.454	34.683	145.2	1.180	27.779	34.683	143.6
2	1	5	3794.8	1.448	34.686	150.1	1.152	27.783	34.685	149.9
2	1	4	4003.6	1.452	34.688		1.134	27.786		150.0
2	1	3	4205.0	1.461	34.689		1.120	27.788		
2	1	2	4403.3	1.476	34.690	157.7	1.113	27.789	34.689	155.7
2	1	1	4504.9	1.485	34.690		1.110	27.789	34.690	
2	2	0	0.0						35.064	
2	2	12	35.9	24.710	35.039	216.5	24.702	23.463	35.042	212.4
2	2	11	204.9	18.796	34.996	181.9	18.760	25.080	35.002	187.5
2	2	10	378.3	10.553	34.170	169.6	10.508	26.217	34.175	181.3
2	2	9	598.6	6.168	34.102	88.4	6.114	26.829	34.104	77.0
2	2	8	757.5	4.808	34.287	32.0	4.748	27.139	34.288	31.8
2	2	7	928.8	4.193	34.445	36.9	4.122	27.332	34.446	41.1
2	2	6	1148.5	3.665	34.515	48.0	3.580	27.443	34.515	51.6
2	2	5	1351.3	3.182	34.551	57.2	3.085	27.519	34.554	60.7
2	2	4	1600.2	2.693	34.582	68.7	2.580	27.589	34.582	73.2
2	2	3	1775.8	2.412	34.598	75.9	2.288	27.627	34.598	78.5
2	2	2	1926.6	2.217	34.610		2.083	27.653		84.4
2	2	1	2201.1	1.909	34.632	91.3	1.757	27.696	34.632	93.7
2	3	0	0.0						35.046	
2	3	12	19.7	24.676	35.037	221.3	24.672	23.470	35.037	209.3
2	3	11	118.8	22.966	35.104	215.8	22.941	24.031	35.108	203.8
2	3	10	186.0	19.846	35.075	188.6	19.812	24.869	35.074	185.3
2	3	9	252.9	16.241	34.701	186.7	16.200	25.472	34.711	193.1
2	3	8	334.2	12.237	34.285	174.8	12.193	25.998	34.285	182.3
2	3	7	384.7	10.479	34.183	165.2	10.433	26.240	34.182	172.3
2	3	6	436.6	9.200	34.126	165.3	9.152	26.410	34.125	166.3
2	3	5	504.2	7.503	34.096	124.1	7.454	26.644	34.094	116.8
2	3	4	549.5	6.690	34.079	105.8	6.639	26.742	34.076	100.2
2	3	3	596.9	5.960	34.121	76.2	5.908	26.870	34.120	68.5
2	3	2	710.8	5.077	34.257	36.7	5.019	27.084	34.253	33.4
2	3	1	1016.4	3.970	34.476	43.0	3.893	27.380	34.475	45.1
2	4	0	0.0						35.041	
2	4	10	4.9	24.650	35.033		24.649	23.474		209.5
2	4	9	22.8	24.649	35.033		24.645	23.476		208.2
2	4	8	43.3	24.661	35.033	182.3	24.652	23.473	35.032	208.0
2	4	7	72.7	24.664	35.033		24.648	23.474		208.4
2	4	6	97.7	24.669	35.033		24.648	23.474		208.4
2	4	5	122.2	23.985	35.065		23.959	23.704		206.8

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	4	4	146.8	22.530	35.133		22.500	24.179		199.1
2	4	3	176.8	21.113	35.138	193.1	21.079	24.579	35.138	190.4
2	4	2	528.3	7.188	34.091		7.137	26.684	34.091	
2	4	1	1013.0	3.986	34.475		3.910	27.378	34.475	
2	5	0	0.0						35.044	
2	5	12	3.7	24.623	35.025		24.622	23.476		
2	5	11	17.7	24.625	35.026		24.621	23.477		
2	5	10	37.9	24.627	35.026		24.619	23.478		
2	5	9	57.4	24.631	35.026		24.618	23.478		
2	5	8	78.1	24.634	35.026		24.617	23.478		
2	5	7	97.1	24.618	35.027		24.597	23.485		
2	5	6	117.1	23.067	35.104		23.043	24.002		
2	5	5	139.0	21.849	35.152		21.822	24.385		
2	5	4	147.9	21.801	35.158		21.772	24.403		
2	5	3	161.7	21.047	35.127		21.016	24.587		
2	5	2	181.3	20.043	35.080		20.009	24.822		
2	5	1	227.3	17.661	34.874		17.623	25.269		
2	6	0	0.0						35.045	
2	6	12	2.8	24.629	35.027		24.628	23.476	35.032	
2	6	11	18.4	24.629	35.027		24.625	23.477		
2	6	10	38.2	24.632	35.028		24.624	23.478	35.029	
2	6	9	56.7	24.636	35.028		24.624	23.478		
2	6	8	79.4	24.640	35.028		24.623	23.478		
2	6	7	96.6	24.245	35.055		24.225	23.618		
2	6	6	117.5	22.481	35.132		22.457	24.190		
2	6	5	139.2	21.618	35.153		21.590	24.450		
2	6	4	151.6	20.955	35.124		20.927	24.609	35.123	
2	6	3	163.4	20.459	35.113		20.429	24.735		
2	6	2	186.7	19.132	35.028		19.099	25.018		
2	6	1	230.8	17.127	34.801		17.089	25.341		
2	7	0	0.0						35.040	
2	7	12	201.3	19.688	35.070		19.652	24.908	35.067	
2	7	11	251.0	16.693	34.754		16.652	25.408		
2	7	10	278.0	15.302	34.604		15.259	25.611		
2	7	9	304.3	14.014	34.446		13.970	25.766		
2	7	8	353.1	11.425	34.218		11.380	26.098		
2	7	7	403.8	9.571	34.137		9.526	26.358		
2	7	6	505.0	7.395	34.098		7.346	26.661	34.095	
2	7	5	605.8	5.875	34.130		5.823	26.887		
2	7	4	705.5	5.055	34.227		4.997	27.063		
2	7	3	808.3	4.732	34.354		4.668	27.200		
2	7	2	906.4	4.392	34.426		4.322	27.295		
2	7	1	1021.7	4.065	34.485		3.987	27.378		
2	8	0	0.0						35.046	
2	8	12	3.9	24.620	35.034		24.619	23.484		
2	8	11	19.4	24.638	35.035		24.633	23.480	35.035	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	8	10	41.6	24.643	35.035		24.634	23.480		
2	8	9	71.4	24.649	35.034		24.634	23.480		
2	8	8	102.9	24.647	35.034		24.625	23.483		
2	8	7	132.6	23.159	35.090		23.132	23.965		
2	8	6	151.8	22.178	35.147		22.147	24.290	35.148	
2	8	5	177.0	21.244	35.133		21.210	24.539		
2	8	4	257.2	16.936	34.775		16.894	25.368		
2	8	3	500.3	7.795	34.103		7.745	26.607		
2	8	2	753.9	4.955	34.274		4.894	27.112	34.274	
2	8	1	1014.1	4.027	34.481		3.950	27.378		
2	9	0	0.0						35.070	
2	9	12	8.7	24.609	35.038		24.607	23.490		
2	9	11	26.5	24.623	35.036		24.617	23.486		
2	9	10	48.8	24.630	35.036		24.620	23.485	35.039	
2	9	9	78.8	24.631	35.035		24.614	23.486		
2	9	8	102.7	24.632	35.035		24.610	23.488		
2	9	7	128.2	22.728	35.117		22.703	24.110		
2	9	6	153.2	21.597	35.150		21.567	24.454	35.151	
2	9	5	176.3	20.540	35.114		20.507	24.716		
2	9	4	253.1	16.306	34.703		16.266	25.459		
2	9	3	496.7	8.120	34.101		8.069	26.558	34.102	
2	9	2	756.7	4.914	34.259		4.854	27.104		
2	9	1	1013.1	4.073	34.478		3.996	27.372		
2	10	12	9.8	24.603	35.035		24.601	23.490		
2	10	11	28.3	24.612	35.035		24.606	23.489		
2	10	10	49.7	24.617	35.035		24.607	23.489	35.039	
2	10	9	79.9	24.620	35.035		24.603	23.489		
2	10	8	105.0	23.470	35.075		23.448	23.862		
2	10	7	129.2	22.292	35.150		22.266	24.258	35.146	
2	10	6	154.4	21.208	35.134		21.179	24.549		
2	10	5	178.8	20.154	35.080		20.121	24.792		
2	10	4	250.3	16.039	34.666		15.999	25.492		
2	10	3	505.3	7.639	34.103		7.589	26.630	34.108	
2	10	2	761.2	4.856	34.302		4.795	27.145		
2	10	1	1014.4	4.018	34.485		3.941	27.383		
2	11	3	53.3	24.593	35.036		24.582	23.497	35.039	
2	11	2	178.0	21.704	35.150		21.670	24.426	35.153	
2	11	1	539.2	7.205	34.101		7.153	26.690		
2	12	0	0.0						35.062	
2	12	12	3.6	24.550	35.027		24.549	23.500		
2	12	11	20.6	24.562	35.028		24.558	23.498		
2	12	10	40.9	24.564	35.028		24.555	23.499	35.033	
2	12	9	69.8	24.567	35.027		24.552	23.499		
2	12	8	98.6	24.380	35.037		24.359	23.565		208.1
2	12	7	123.2	22.796	35.107		22.771	24.082		
2	12	6	148.0	21.779	35.155		21.750	24.407		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	12	5	172.0	20.805	35.125		20.772	24.653	35.124	
2	12	4	251.6	17.089	34.803		17.047	25.353		189.8
2	12	3	503.5	7.527	34.098		7.477	26.641	34.099	
2	12	2	758.9	4.766	34.276		4.706	27.135		22.7
2	12	1	1005.6	4.112	34.472		4.036	27.363		
2	13	0	0.0						35.022	
2	13	12	4.1	24.527	35.018		24.526	23.500		
2	13	11	22.5	24.532	35.020		24.527	23.501		
2	13	10	42.7	24.537	35.021		24.528	23.501		
2	13	9	72.1	24.544	35.021		24.529	23.501		
2	13	8	97.3	24.550	35.022		24.529	23.502		208.7
2	13	7	122.0	23.072	35.089		23.047	23.990		
2	13	6	152.9	21.686	35.151		21.656	24.430		
2	13	5	175.0	20.231	35.090		20.199	24.779		
2	13	4	254.6	15.834	34.639		15.794	25.518		
2	13	3	504.6	7.520	34.093		7.470	26.639		
2	13	2	754.7	4.922	34.292		4.861	27.130		28.7
2	13	1	1016.2	3.954	34.484		3.878	27.389		
2	14	0	0.0						35.050	
2	14	3	84.9	24.595	35.036		24.577	23.498	35.041	
2	14	2	163.4	21.574	35.139		21.542	24.452	35.152	
2	14	1	485.3	8.295	34.118		8.244	26.545	34.120	
2	15	0	0.0						35.049	
2	15	6	54.4	24.556	35.035		24.545	23.507	35.041	
2	15	5	95.5	24.569	35.035		24.549	23.506		
2	15	4	120.3	22.874	35.102		22.849	24.056		
2	15	3	133.1	22.151	35.144		22.125	24.294		
2	15	2	152.9	21.099	35.130		21.070	24.575	35.134	
2	15	1	523.5	7.312	34.092		7.262	26.667	34.098	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	2	0	0.0						34.814	
1	2	12	6.9	24.624	34.439	215.2	24.623	23.033	34.388	215.8
1	2	11	46.6	24.614	34.436	215.6	24.604	23.037	34.398	215.2
1	2	10	73.4	24.802	34.921	215.5	24.787	23.348	34.904	214.1
1	2	9	99.4	23.471	35.089	205.9	23.450	23.872	35.095	204.4
1	2	8	125.1	21.444	35.112	191.3	21.419	24.466	35.112	191.7
1	2	7	150.8	20.138	35.056	184.5	20.110	24.777	35.066	184.9
1	2	6	201.7	18.640	34.956		18.605	25.089		190.0
1	2	5	305.4	12.676	34.335	180.2	12.634	25.951	34.337	180.3
1	2	4	404.5	8.921	34.162	130.5	8.877	26.482	34.161	131.1
1	2	3	504.8	7.102	34.177	78.9	7.054	26.763	34.175	77.2
1	2	2	754.5	5.045	34.384	32.9	4.983	27.189	34.384	33.1
1	2	1	1015.1	4.053	34.504	45.7	3.975	27.395	34.504	46.3
2	1	0	0.0						34.827	
2	1	12	8.7	23.548	34.839		23.546	23.655		
2	1	11	18.8	23.547	34.837		23.543	23.654		
2	1	10	38.5	23.557	34.830		23.549	23.647		
2	1	9	58.4	23.570	34.832		23.558	23.646	34.821	
2	1	8	78.4	23.254	35.268		23.238	24.070		
2	1	7	98.4	23.159	35.307		23.138	24.128		
2	1	6	108.2	23.088	35.328		23.066	24.165		
2	1	5	118.3	22.910	35.333		22.886	24.221		
2	1	4	131.3	22.273	35.326		22.246	24.398		
2	1	3	141.4	21.576	35.239		21.548	24.527		
2	1	2	151.3	20.670	35.176		20.641	24.726		
2	1	1	163.0	19.520	35.103		19.491	24.974		
2	2	0	0.0						34.820	
2	2	12	179.4	18.152	34.957		18.121	25.210		
2	2	11	226.3	15.444	34.653		15.409	25.615		
2	2	10	250.9	14.298	34.533		14.261	25.772		
2	2	9	270.4	13.178	34.382		13.141	25.887		
2	2	8	299.8	12.485	34.352		12.445	26.001		
2	2	7	402.2	9.711	34.146		9.665	26.342		
2	2	6	502.1	7.629	34.117		7.580	26.642		
2	2	5	602.8	6.087	34.126		6.034	26.858		
2	2	4	703.8	5.346	34.286		5.288	27.076		
2	2	3	806.7	4.938	34.378		4.873	27.197		
2	2	2	908.3	4.484	34.440		4.412	27.297		
2	2	1	1005.0	4.144	34.479		4.067	27.365		
2	3	12	3.2	23.529	34.851		23.528	23.669		213.4
2	3	11	21.5	23.544	34.851		23.539	23.666		212.7
2	3	10	47.5	23.442	35.099		23.432	23.885		214.0
2	3	9	99.0	23.113	35.326		23.093	24.156		214.5
2	3	8	151.9	20.189	35.158		20.161	24.841		195.3
2	3	7	201.0	16.284	34.750		16.252	25.498		207.4
2	3	6	226.3	15.337	34.651		15.302	25.637		209.6

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	3	5	251.1	13.986	34.482		13.950	25.798		214.2
2	3	4	302.7	12.399	34.344		12.359	26.011		217.5
2	3	3	504.8	7.626	34.124		7.576	26.648		106.8
2	3	2	753.5	5.206	34.338		5.143	27.134		33.8
2	3	1	1016.3	4.175	34.481		4.096	27.363		45.2
2	4	0	0.0						34.845	
2	4	12	2399.1	1.805	34.637	100.7	1.638	27.709	34.639	100.8
2	4	11	2601.8	1.683	34.650	109.1	1.500	27.729	34.651	110.1
2	4	10	2804.0	1.605	34.658	117.4	1.404	27.743	34.658	117.8
2	4	9	3005.6	1.550	34.666	125.5	1.332	27.754	34.665	126.0
2	4	8	3197.6	1.512	34.671	132.3	1.276	27.762	34.671	131.4
2	4	7	3400.3	1.482	34.676	139.0	1.226	27.770	34.676	138.6
2	4	6	3599.3	1.467	34.679	142.7	1.191	27.775	34.679	143.0
2	4	5	3800.9	1.452	34.682	147.3	1.156	27.780	34.681	147.2
2	4	4	4000.3	1.455	34.684	150.8	1.137	27.782	34.684	150.2
2	4	3	4202.8	1.466	34.685		1.125	27.784		
2	4	2	4396.5	1.479	34.686	153.1	1.116	27.785	34.685	153.6
2	4	1	4549.7	1.492	34.686		1.112	27.786		
2	5	11	201.7	16.418	34.776		16.385	25.488		207.2
2	5	10	404.4	9.900	34.156	201.7	9.854	26.318	34.161	201.1
2	5	9	601.2	6.244	34.195	57.4	6.190	26.893	34.191	56.3
2	5	8	787.3	5.037	34.369	33.7	4.973	27.178	34.369	34.7
2	5	7	998.7	4.185	34.475	43.1	4.108	27.357	34.476	43.8
2	5	6	1201.2	3.701	34.525	52.6	3.611	27.448	34.525	52.1
2	5	5	1395.3	3.105	34.552	63.5	3.004	27.527	34.551	62.1
2	5	4	1601.6	2.701	34.582	73.5	2.588	27.588	34.581	74.6
2	5	3	1802.9	2.384	34.599	82.8	2.259	27.630	34.599	81.8
2	5	2	2003.6	2.137	34.615	88.3	1.998	27.663	34.615	89.0
2	5	1	2201.3	1.942	34.626	94.0	1.789	27.689	34.628	93.9
2	6	0	0.0						34.786	
2	6	8	5.8	23.478	34.844		23.477	23.679		
2	6	7	22.1	23.530	34.875		23.525	23.688		
2	6	6	41.8	23.547	34.959		23.538	23.748		
2	6	5	71.8	23.207	35.304		23.193	24.110		
2	6	4	99.6	22.965	35.345		22.945	24.213		
2	6	3	123.2	22.505	35.346		22.480	24.347	35.336	
2	6	2	151.1	19.419	35.111		19.392	25.006		
2	6	1	177.4	17.143	34.862		17.114	25.382	34.863	
2	7	0	0.0						34.896	
2	7	12	47.0	23.349	35.175		23.340	23.969		214.0
2	7	11	131.0	22.215	35.320	207.5	22.189	24.410	35.337	208.0
2	7	10	162.1	19.852	35.119		19.822	24.900		195.6
2	7	9	203.7	16.500	34.785		16.467	25.475		207.4
2	7	8	299.8	12.496	34.354		12.455	26.001		216.0
2	7	7	355.4	10.805	34.229		10.762	26.218		212.3
2	7	6	423.7	8.816	34.130	144.0	8.770	26.473	34.131	144.8

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	7	5	571.5	6.496	34.167		6.443	26.838		66.2
2	7	4	678.0	5.564	34.292		5.507	27.055		38.5
2	7	3	745.5	5.102	34.361		5.041	27.164		36.0
2	7	2	810.5	4.625	34.437		4.561	27.278		38.7
2	7	1	980.2	4.164	34.486		4.089	27.368		44.7
2	8	0	0.0						34.895	
2	8	12	5.0	23.424	34.918		23.423	23.750		
2	8	11	22.2	23.438	34.927		23.433	23.754	34.890	
2	8	10	42.0	23.240	35.212		23.231	24.029		
2	8	9	71.8	23.131	35.313		23.116	24.139		
2	8	8	100.2	22.858	35.342		22.838	24.241		
2	8	7	126.4	22.010	35.320		21.985	24.466		
2	8	6	148.4	20.511	35.181		20.483	24.773	35.178	
2	8	5	177.6	18.641	35.022		18.610	25.138		
2	8	4	247.7	14.717	34.569		14.680	25.710		
2	8	3	303.2	12.567	34.363		12.526	25.994		
2	8	2	507.7	7.666	34.136		7.616	26.652	34.136	
2	8	1	756.4	5.195	34.350		5.132	27.145		
2	9	0	0.0						34.896	
2	9	2	5.5	23.359	34.935		23.358	23.783		
2	9	1	106.2	23.020	35.312		22.999	24.172		
2	10	0	0.0						34.911	
2	10	3	22.7	23.389	34.936		23.384	23.775	34.896	
2	10	2	121.9	22.057	35.312		22.033	24.447	35.325	
2	10	1	468.7	8.017	34.129		7.970	26.595	34.124	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
1	1	0	0.0						34.602	
1	1	12	10.1	24.771	34.315	218.3	24.769	22.896	34.307	216.5
1	1	11	71.0	24.708	34.771	216.8	24.692	23.263	34.678	216.7
1	1	10	127.6	22.979	35.064	218.6	22.953	23.998	35.008	220.7
1	1	9	145.3	22.147	35.069	202.6	22.118	24.238	35.069	203.2
1	1	8	196.3	19.561	34.956		19.526	24.853		187.6
1	1	7	242.0	16.616	34.740	197.2	16.577	25.415	34.763	196.3
1	1	6	367.7	11.616	34.247	198.1	11.569	26.086	34.239	199.6
1	1	5	452.5	8.629	34.134	145.0	8.581	26.506	34.131	146.1
1	1	4	520.7	7.199	34.178	99.4	7.149	26.751	34.170	95.0
1	1	3	585.3	6.204	34.240	52.3	6.151	26.933	34.236	54.0
1	1	2	759.1	5.108	34.384	36.2	5.045	27.182	34.382	38.0
1	1	1	998.0	4.253	34.485	48.9	4.176	27.358	34.484	48.2
2	1	0	0.0						34.668	
2	1	9	3.0	24.357	34.715		24.356	23.322	34.666	
2	1	8	22.9	24.331	34.712		24.326	23.328		
2	1	7	42.7	24.137	34.742		24.128	23.410		
2	1	6	74.6	23.799	34.927		23.783	23.652		
2	1	5	152.4	21.636	35.065		21.606	24.378		
2	1	4	178.7	20.663	35.096		20.629	24.669		
2	1	3	258.2	16.814	34.759		16.771	25.384		
2	1	2	305.8	13.766	34.414		13.723	25.793		
2	1	1	500.5	8.024	34.066		7.973	26.545	34.059	
2	2	0	0.0						34.645	
2	5	0	0.0						34.638	
2	5	12	26.7	24.130	34.786	239.3	24.124	23.444	34.649	244.9
2	5	11	111.1	23.072	35.176	212.2	23.049	24.055	35.137	211.8
2	5	10	144.1	21.417	35.094	197.2	21.389	24.460	35.071	199.8
2	5	9	212.0	19.001	34.987	188.9	18.963	25.022	34.969	191.1
2	5	8	266.8	16.453	34.726	191.7	16.410	25.443	34.709	195.3
2	5	7	351.8	12.238	34.301	210.6	12.192	26.010	34.293	210.1
2	5	6	386.6	10.720	34.190	192.0	10.673	26.204	34.179	193.5
2	5	5	423.0	9.820	34.149		9.771	26.327		199.9
2	5	4	453.2	9.110	34.114	190.8	9.060	26.415	34.107	191.1
2	5	3	535.0	7.178	34.047	145.3	7.127	26.651	34.039	144.0
2	5	2	570.5	6.455	34.041	117.2	6.403	26.743	34.035	114.8
2	5	1	633.5	5.533	34.092	65.0	5.480	26.900	34.080	66.7
2	8	0	0.0						34.649	
2	8	12	4.6	24.334	34.707		24.333	23.322		
2	8	11	23.7	24.294	34.727		24.289	23.351	34.676	
2	8	10	40.8	23.919	34.784		23.911	23.506		
2	8	9	72.4	23.732	34.900		23.717	23.651		
2	8	8	97.2	23.628	34.963		23.608	23.731		
2	8	7	122.5	23.371	35.196		23.346	23.983		
2	8	6	149.5	21.834	35.049		21.805	24.311	35.047	
2	8	5	177.2	20.516	35.040		20.482	24.665		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	8	4	255.2	16.661	34.755		16.620	25.417		
2	8	3	507.4	7.703	34.055		7.653	26.582		
2	8	2	755.7	4.828	34.295		4.768	27.143	34.286	
2	8	1	1025.0	4.116	34.477		4.037	27.367	34.473	
2	11	0	0.0						34.682	
2	11	12	225.0							
2	11	11	250.0						34.752	194.0
2	11	10	275.0							203.7
2	11	9	300.0							197.5
2	11	8	400.0							211.8
2	11	7	500.0						34.051	159.3
2	11	5	700.0							37.8
2	11	4	750.0							27.9
2	11	3	800.0							31.7
2	11	2	900.0							35.7
2	11	1	1000.0						34.462	41.0
2	12	0	0.0						34.687	
2	12	11	25.0						34.689	
2	12	3	500.0						34.045	
2	12	1	1000.0						34.469	
2	13	0	0.0						34.685	
2	13	4	125.0						34.675	
2	13	2	500.0						34.031	
2	13	1	1000.0						34.491	
2	16	0	0.0						34.704	
2	16	12	40.8	23.755	34.876		23.746	23.624		216.5
2	16	11	71.7	23.326	34.937	226.8	23.311	23.797	34.930	217.9
2	16	10	81.6	23.307	34.967		23.290	23.826		217.9
2	16	9	92.5	23.310	35.034		23.291	23.877		217.6
2	16	8	101.9	23.229	35.125		23.208	23.970		216.0
2	16	7	111.7	23.091	35.160		23.069	24.037		213.6
2	16	6	121.6	22.049	35.085	206.6	22.025	24.277	35.087	203.9
2	16	5	127.4	21.899	35.087		21.874	24.321		202.2
2	16	4	133.7	21.406	35.068		21.380	24.443		199.1
2	16	3	143.6	20.912	35.117		20.884	24.616		197.8
2	16	2	152.5	20.756	35.109		20.727	24.652		196.9
2	16	1	200.2	18.826	34.980	190.3	18.791	25.060	34.956	191.5

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	2	0	0.0						35.197	
1	2	12	41.8	25.184	34.433	211.3	25.175	22.861	34.449	213.0
1	2	11	61.8	23.944	34.859	219.9	23.931	23.556	34.845	218.7
1	2	10	110.8	21.494	35.123	196.9	21.472	24.459	35.148	202.4
1	2	9	162.5	18.552	34.893	191.6	18.524	25.061	34.906	185.2
1	2	8	211.2	15.917	34.655		15.884	25.509		183.5
1	2	7	281.0	12.803	34.340		12.764	25.929		192.0
1	2	6	336.8	10.606	34.198	172.8	10.566	26.228	34.192	175.3
1	2	5	411.0	8.684	34.143	138.2	8.640	26.504	34.138	137.9
1	2	4	530.0	6.801	34.161	85.4	6.752	26.792	34.157	78.8
1	2	3	630.2	5.794	34.242	50.6	5.740	26.986	34.231	48.1
1	2	2	756.5	5.080	34.360	35.7	5.018	27.166	34.355	37.4
1	2	1	899.0	4.414	34.462	38.2	4.344	27.322	34.462	42.3
2	1	12	2378.0	1.793	34.646	106.3	1.628	27.716	34.648	107.8
2	1	11	2578.9	1.692	34.655	112.9	1.510	27.733	34.657	114.9
2	1	10	2779.0	1.616	34.662	119.4	1.418	27.745	34.663	122.1
2	1	9	2980.5	1.567	34.668	125.0	1.350	27.755	34.668	125.9
2	1	8	3184.0	1.525	34.674	129.6	1.290	27.763	34.673	132.5
2	1	7	3389.0	1.492	34.678	135.7	1.237	27.771	34.678	137.6
2	1	6	3591.4	1.463	34.683	143.0	1.188	27.778	34.682	144.2
2	1	5	3794.5	1.451	34.686		1.156	27.783		
2	1	4	3996.5	1.455	34.688	150.9	1.138	27.785	34.687	151.6
2	1	3	4200.0	1.465	34.689	154.3	1.125	27.787	34.687	152.4
2	1	2	4403.3	1.478	34.690	156.1	1.115	27.788	34.689	154.5
2	1	1	4507.1	1.487	34.690	157.4	1.111	27.789	34.691	154.2
2	2	0	0.0						34.955	
2	2	11	13.8	24.051	34.981		24.048	23.614	34.948	
2	2	10	30.1	23.947	34.986		23.941	23.650		
2	2	9	49.9	22.973	35.249		22.962	24.135		
2	2	8	79.9	22.205	35.235		22.189	24.345		
2	2	7	154.7	17.688	34.890		17.661	25.271	34.894	
2	2	6	179.2	16.454	34.734		16.425	25.446		
2	2	5	254.4	12.696	34.321		12.661	25.934		
2	2	4	303.2	11.250	34.210		11.212	26.122		
2	2	3	503.0	6.568	34.034		6.522	26.722	34.029	
2	2	2	752.5	4.676	34.318		4.616	27.178		
2	2	1	1011.1	4.051	34.505		3.974	27.395		
2	3	0	0.0						34.962	
2	3	12	701.7	4.899	34.273	30.3	4.842	27.117	34.275	31.0
2	3	11	801.0	4.506	34.363	27.2	4.443	27.232	34.365	29.9
2	3	10	901.6	4.241	34.461	43.2	4.171	27.340	34.460	42.5
2	3	9	1002.3	3.980	34.493	48.9	3.904	27.393	34.493	48.3
2	3	8	1102.7	3.720	34.515	53.2	3.638	27.437	34.515	52.5
2	3	7	1251.5	3.302	34.545	61.1	3.212	27.503	34.545	60.1
2	3	6	1401.5	2.983	34.565	68.1	2.884	27.549	34.566	67.5
2	3	5	1552.2	2.722	34.583	74.2	2.613	27.586	34.582	74.4

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	3	4	1701.8	2.489	34.594	79.3	2.371	27.616	34.594	78.8
2	3	3	1852.4	2.268	34.609	86.5	2.140	27.647	34.609	85.6
2	3	2	2004.2	2.110	34.622	93.3	1.971	27.671	34.622	92.8
2	3	1	2210.4	1.932	34.635	100.8	1.778	27.696	34.634	100.2
2	4	0	0.0						34.981	
2	4	12	30.7	23.837	35.028	220.4	23.831	23.715	34.992	215.9
2	4	11	87.1	22.053	35.260	216.7	22.036	24.407	35.275	215.3
2	4	10	136.1	19.225	35.076	189.0	19.200	25.029	35.085	198.2
2	4	9	201.0	16.046	34.688	195.0	16.015	25.505	34.682	198.0
2	4	8	281.2	12.125	34.269	212.2	12.088	26.005	34.263	211.4
2	4	7	324.4	10.722	34.194	202.2	10.683	26.205	34.181	205.2
2	4	6	386.6	9.186	34.120	195.0	9.144	26.406	34.119	192.6
2	4	5	464.2	7.446	34.043	156.3	7.400	26.609	34.042	157.5
2	4	4	512.5	6.632	34.025	134.5	6.585	26.707	34.022	127.8
2	4	3	561.2	5.929	34.062	84.5	5.881	26.826	34.055	81.5
2	4	2	611.3	5.456	34.135	47.1	5.405	26.942	34.132	46.9
2	4	1	668.3	5.100	34.223	31.2	5.046	27.054	34.220	29.4
2	5	0	0.0						34.964	
2	5	12	4.5	23.983	34.983	224.1	23.982	23.635	34.953	215.6
2	5	11	19.5	23.977	34.985		23.973	23.640		215.6
2	5	10	39.4	22.959	35.204		22.951	24.104		215.4
2	5	9	59.4	22.443	35.295		22.431	24.322		213.6
2	5	8	79.0	21.615	35.285		21.600	24.548		216.8
2	5	7	99.0	20.573	35.185	202.6	20.554	24.756	35.172	202.5
2	5	6	108.7	20.150	35.154		20.129	24.847		199.2
2	5	5	119.1	19.596	35.091		19.575	24.944		196.3
2	5	4	129.0	18.991	35.022		18.968	25.047		195.2
2	5	3	139.8	18.534	34.992		18.510	25.140		195.3
2	5	2	159.7	17.808	34.907		17.781	25.255		197.4
2	5	1	179.6	16.467	34.738	198.8	16.438	25.446	34.743	197.1
2	6	0	0.0						35.019	
2	6	12	199.7	16.111	34.688		16.079	25.490	34.684	
2	6	11	250.6	13.676	34.421		13.640	25.815		
2	6	10	273.5	12.643	34.313		12.606	25.939		
2	6	9	300.4	11.445	34.208		11.407	26.085		
2	6	8	349.7	10.191	34.152		10.150	26.265		
2	6	7	400.4	9.094	34.108		9.051	26.412		
2	6	6	502.7	6.751	34.021		6.705	26.688	34.022	
2	6	5	603.0	5.578	34.099		5.527	26.899		
2	6	4	702.3	4.955	34.278		4.898	27.114		
2	6	3	801.9	4.562	34.390		4.499	27.248		
2	6	2	904.1	4.263	34.460		4.194	27.336		
2	6	1	1007.2	3.919	34.493		3.844	27.399	34.493	
2	7	0	0.0						34.997	
2	7	12	29.5	23.065	35.167		23.059	24.045		
2	7	11	49.6	22.860	35.248		22.850	24.167		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	7	10	79.6	21.893	35.286		21.877	24.471		
2	7	9	104.4	20.280	35.145		20.261	24.805		
2	7	8	129.1	18.573	34.997		18.550	25.134	35.021	
2	7	7	153.7	17.331	34.846		17.306	25.324		
2	7	6	178.9	16.120	34.687		16.092	25.486		
2	7	5	252.9	12.755	34.328		12.721	25.928		
2	7	4	302.6	10.935	34.183		10.898	26.158		
2	7	3	502.6	6.585	34.019		6.539	26.708	34.017	
2	7	2	902.3	4.282	34.434		4.213	27.314		
2	7	1	1012.1	3.908	34.481		3.832	27.391	34.481	
2	8	0	0.0						34.981	
2	8	12	1.3	24.025	34.990		24.025	23.628		
2	8	11	20.8	23.899	35.002		23.895	23.676		
2	8	10	40.9	23.033	35.171		23.024	24.058		
2	8	9	73.5	22.510	35.245		22.495	24.265	35.260	
2	8	8	98.2	21.344	35.199		21.325	24.558		
2	8	7	125.2	19.678	35.088		19.655	24.921		
2	8	6	149.8	18.128	34.938		18.103	25.201		
2	8	5	174.6	16.769	34.777		16.741	25.406		
2	8	4	252.3	12.452	34.310		12.419	25.973		
2	8	3	467.5	6.767	34.013		6.724	26.679	34.050	
2	8	2	767.5	4.695	34.351		4.635	27.202		
2	8	1	1011.0	3.891	34.490		3.816	27.400	34.490	
2	9	0	0.0						34.983	
2	9	12	2.9	24.055	34.992		24.054	23.621		
2	9	11	21.7	23.888	35.010		23.884	23.685		
2	9	10	42.6	23.075	35.203		23.066	24.070		
2	9	9	73.3	22.601	35.240		22.587	24.236		
2	9	8	97.4	22.068	35.268		22.048	24.409	35.287	
2	9	7	122.6	20.717	35.154		20.694	24.695		
2	9	6	149.7	19.506	35.069		19.479	24.952		
2	9	5	173.9	18.486	34.999		18.456	25.159		
2	9	4	251.1	13.683	34.417		13.648	25.810		
2	9	3	302.3	11.698	34.242		11.659	26.065	34.243	
2	9	2	756.1	4.681	34.316		4.621	27.176		
2	9	1	755.9	4.684	34.317		4.625	27.176	34.317	
2	10	0	0.0						34.987	
2	10	3	93.3	21.991	35.245		21.973	24.413	35.264	
2	10	2	501.8	6.996	34.023		6.949	26.656	34.024	
2	10	1	1017.0	3.985	34.483		3.908	27.384	34.483	
2	11	0	0.0						35.003	
2	11	4	105.8	20.111	35.117		20.091	24.828	35.138	
2	11	3	500.5	6.874	34.023		6.828	26.672	34.023	
2	11	2	500.5	6.862	34.022		6.815	26.674	34.023	
2	11	1	1010.2	3.929	34.487		3.853	27.393	34.487	
2	13	0	0.0						35.033	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	13	10	3.9	23.866	35.032		23.865	23.707	35.024	
2	13	9	21.8	23.819	35.052		23.815	23.737		
2	13	8	42.8	22.895	35.206		22.887	24.124		
2	13	7	73.5	22.409	35.243		22.394	24.293	35.273	
2	13	6	99.6	20.463	35.148		20.444	24.758		
2	13	5	124.1	18.863	35.009		18.841	25.070		
2	13	4	149.8	18.053	34.936		18.027	25.217		
2	13	3	176.3	16.784	34.772		16.755	25.398		
2	13	2	252.6	13.328	34.389		13.293	25.861		
2	13	1	304.0	11.450	34.206		11.412	26.083	34.200	
2	14	0	0.0						35.054	
2	14	11	4.7	23.893	35.008		23.892	23.681	34.980	
2	14	10	24.4	23.852	35.026		23.847	23.708		
2	14	9	44.7	22.959	35.194		22.950	24.097		
2	14	8	74.0	22.322	35.253		22.307	24.325	35.270	
2	14	7	98.9	21.270	35.201		21.251	24.580		
2	14	6	98.8	21.275	35.205		21.256	24.581		
2	14	5	123.8	19.918	35.095		19.895	24.863		
2	14	4	153.7	18.608	35.010		18.581	25.136		
2	14	3	153.1	18.616	35.013		18.589	25.136		
2	14	2	203.7	15.948	34.678		15.916	25.520		
2	14	1	257.4	13.729	34.423		13.692	25.806	34.415	
2	15	0	0.0						35.013	
2	15	12	2.9	23.886	35.016		23.885	23.689	34.988	
2	15	11	23.0	23.846	35.025		23.841	23.709		
2	15	10	45.8	22.857	35.208		22.848	24.137		
2	15	9	74.4	22.437	35.250		22.422	24.290	35.269	
2	15	8	106.9	20.475	35.141		20.455	24.750		
2	15	7	126.9	19.365	35.039		19.342	24.965		
2	15	6	151.8	18.135	34.956		18.109	25.213		
2	15	5	176.8	16.529	34.656		16.500	25.369		
2	15	4	256.8	12.440	34.293		12.406	25.962		
2	15	3	305.8	10.733	34.156		10.696	26.173		
2	15	2	504.6	6.573	34.013		6.527	26.705	34.017	
2	15	1	1012.3	3.924	34.475		3.848	27.385		
2	16	0	0.0						34.990	
2	16	3	13.8	23.942	35.019		23.939	23.675		
2	16	2	2076.9	2.001	34.629		1.858	27.685		
2	16	1	2025.1	2.052	34.624		1.913	27.677		
2	17	0	0.0						34.995	
2	17	7	107.9						35.285	
2	18	0	0.0						35.046	
2	18	12	37.7	23.067	35.225		23.059	24.089	35.198	
2	18	11	67.7	22.420	35.245		22.407	24.291		
2	18	10	77.3	22.178	35.264		22.163	24.374	35.291	
2	18	9	87.5	21.509	35.246		21.492	24.547		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	18	8	97.4	20.674	35.150		20.656	24.702		
2	18	7	107.4	20.456	35.128		20.436	24.745		
2	18	6	112.4	20.089	35.085		20.068	24.810		
2	18	5	118.2	19.777	35.062		19.755	24.875		
2	18	4	128.3	18.996	34.967		18.974	25.004		
2	18	3	149.0	18.213	34.941		18.187	25.181		
2	18	2	175.1	16.812	34.752		16.783	25.376		
2	18	1	200.9	15.513	34.613		15.482	25.568	34.600	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	1	0	0.0						35.054	
1	1	4	7.4	26.481	34.664		26.480	22.631		
1	1	3	746.3	4.813	34.404		4.753	27.231		
1	1	2	826.6	4.537	34.442		4.472	27.292	34.442	
1	1	1	1074.3	3.753	34.512		3.673	27.432		
2	1	0	0.0						34.615	
2	1	12	5.8	25.884	34.591		25.883	22.764		
2	1	11	26.2	25.628	34.616		25.622	22.862		
2	1	10	51.4	25.414	34.617		25.403	22.931		
2	1	9	78.4	24.259	34.672		24.242	23.323		
2	1	8	103.4	23.535	34.981		23.514	23.771		
2	1	7	129.1	22.990	35.125		22.964	24.040		
2	1	6	152.3	21.419	35.102		21.389	24.466	35.106	
2	1	5	179.9	19.688	34.925		19.655	24.796		
2	1	4	257.6	14.294	34.434		14.256	25.696		
2	1	3	514.2	6.661	34.065		6.614	26.734	34.063	
2	1	2	758.0	4.741	34.327		4.681	27.178		
2	1	1	1021.2	3.849	34.494		3.773	27.407	34.494	
2	2	12	15.3	25.753	34.593	219.4	25.750	22.806	34.538	215.5
2	2	11	79.6	24.269	34.673	223.7	24.252	23.320	34.643	219.6
2	2	10	99.5	23.781	34.890	217.0	23.760	23.630	34.885	218.6
2	2	9	139.5	22.172	35.082	206.8	22.144	24.241	35.082	205.1
2	2	8	199.2	18.490	34.875	174.9	18.455	25.065	34.867	176.6
2	2	7	242.8	15.144	34.506		15.107	25.568	34.487	
2	2	6	304.8	11.737	34.251	189.8	11.698	26.065	34.259	207.4
2	2	5	403.5	8.756	34.104	176.1	8.713	26.462	34.070	171.5
2	2	4	530.9	6.443	34.070	98.1	6.395	26.767	34.060	98.0
2	2	3	612.5	5.560	34.165	51.6	5.508	26.954	34.167	48.1
2	2	2	770.1	4.688	34.342	27.8	4.627	27.196	34.337	26.1
2	2	1	1018.3	3.893	34.490	43.3	3.817	27.399	34.496	45.3
2	3	0	0.0						34.570	
2	3	11	49.1	25.601	34.632	208.8	25.590	22.884	34.566	213.4
2	3	10	127.6	23.143	35.102	208.6	23.117	23.979	35.069	213.5
2	3	9	225.5	17.556	34.787	184.6	17.518	25.228	34.803	175.7
2	3	8	424.3	9.054	34.108	183.8	9.007	26.419	34.111	177.2
2	3	7	620.5	5.490	34.164	44.1	5.438	26.961	34.159	45.8
2	3	6	821.3	4.376	34.369	25.5	4.313	27.251	34.368	26.1
2	3	5	1017.3	3.896	34.496	44.7	3.820	27.403	34.494	43.0
2	3	4	1218.7	3.435	34.537	50.4	3.346	27.483	34.536	51.8
2	3	3	1420.6	2.967	34.566	64.8	2.866	27.551	34.566	66.3
2	3	2	1623.2	2.664	34.590	75.0	2.550	27.598	34.591	74.6
2	3	1	1843.0	2.309	34.611	86.2	2.181	27.645	34.613	86.4
2	4	0	0.0						34.548	
2	4	12	105.2	23.340	35.042		23.319	23.875	35.030	
2	4	11	206.8	18.207	34.893		18.171	25.149		
2	4	10	257.6	14.934	34.536		14.895	25.638		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	4	9	279.8	13.853	34.417		13.813	25.776		
2	4	8	309.8	12.684	34.323		12.642	25.940		
2	4	7	363.8	10.585	34.174		10.542	26.214		
2	4	6	424.1	9.188	34.115		9.141	26.403		
2	4	5	521.8	6.846	34.069		6.797	26.713	34.067	
2	4	4	604.5	5.737	34.119		5.685	26.896		
2	4	3	822.7	4.490	34.366		4.426	27.237		
2	4	2	906.4	4.205	34.437		4.136	27.324		
2	4	1	1004.5	3.961	34.478		3.885	27.383	34.478	
2	5	0	0.0						34.532	
2	5	12	102.0	23.301	35.048		23.280	23.891		
2	5	11	130.0	22.119	35.073		22.093	24.249	35.080	
2	5	10	154.8	21.203	35.127		21.173	24.545		
2	5	9	180.2	19.243	34.902		19.211	24.894		
2	5	8	205.6	17.795	34.817		17.760	25.192		
2	5	7	230.3	15.946	34.562		15.910	25.432		
2	5	6	255.3	14.854	34.532		14.816	25.652		
2	5	5	280.1	13.788	34.417		13.748	25.790		
2	5	4	309.8	12.048	34.281		12.008	26.030		
2	5	3	529.6	6.812	34.070		6.763	26.719	34.069	
2	5	2	1030.7	3.884	34.496		3.807	27.405	34.495	
2	5	1	1030.6	3.885	34.495		3.808	27.405		
2	6	0	0.0						34.518	
2	6	12	81.8	24.004	34.854		23.987	23.536	34.882	
2	6	11	103.0	23.223	35.066		23.202	23.927	35.069	
2	6	10	193.5	19.059	35.003		19.024	25.019	35.018	
2	6	9	236.2	15.673	34.568		15.636	25.498	34.593	
2	6	8	307.8	11.907	34.268		11.867	26.046	34.273	
2	6	7	413.2	8.882	34.097		8.838	26.437	34.108	
2	6	6	482.6	7.272	34.058		7.226	26.645	34.062	
2	6	5	518.1	6.574	34.063		6.527	26.744	34.066	
2	6	4	614.3	5.490	34.155		5.438	26.955	34.159	
2	6	3	754.2	4.805	34.320		4.745	27.165	34.319	
2	6	2	851.1	4.322	34.383		4.257	27.269	34.383	
2	6	1	988.7	3.964	34.474		3.889	27.379	34.480	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	1	0	0.0						35.277	
1	1	12	18.2	26.303	34.694	208.3	26.299	22.711	34.667	208.3
1	1	11	67.1	24.802	34.759	218.7	24.788	23.225	34.742	216.4
1	1	10	126.4	20.866	35.073	192.4	20.842	24.594	35.101	194.8
1	1	9	166.2	17.978	34.847	182.0	17.949	25.168	34.886	185.9
1	1	8	240.5	12.755	34.313	172.8	12.722	25.917	34.299	167.7
1	1	7	320.1	9.888	34.156	175.6	9.852	26.319	34.141	177.9
1	1	6	449.6	6.952	34.096	106.4	6.910	26.719	34.080	106.7
1	1	5	539.7	5.811	34.221	54.2	5.765	26.966	34.215	49.6
1	1	4	629.4	5.070	34.302	32.8	5.019	27.119	34.293	34.6
1	1	3	729.5	5.097	34.427	32.7	5.037	27.217	34.424	34.1
1	1	2	879.5	4.534	34.466	38.9	4.464	27.312	34.464	40.8
1	1	1	1033.5	4.102	34.503	47.2	4.022	27.388	34.505	46.2
2	1	0	0.0						35.016	
2	1	12	6.3	25.331	34.942		25.329	23.199	34.905	
2	1	11	26.0	25.332	34.941		25.326	23.199	34.907	
2	1	10	47.8	25.245	34.956		25.235	23.238	34.978	
2	1	9	77.1	23.008	35.217		22.992	24.102		
2	1	8	103.3	22.067	35.271		22.047	24.412		
2	1	7	129.0	20.776	35.220		20.751	24.730	35.237	
2	1	6	155.4	19.237	35.056		19.209	25.012		
2	1	5	180.9	17.944	34.957		17.913	25.261	34.934	
2	1	4	257.8	13.661	34.417		13.624	25.815	34.414	
2	1	3	509.6	6.470	34.037		6.424	26.737	34.040	
2	1	2	761.7	4.591	34.322		4.531	27.190	34.325	
2	1	1	1019.6	3.727	34.496		3.652	27.420	34.500	
2	2	0	0.0						34.939	
2	2	12	54.3	23.718	35.144	228.6	23.706	23.839	35.113	226.8
2	2	11	98.5	22.623	35.259	222.9	22.604	24.245	35.253	220.6
2	2	10	148.5	20.217	35.179	195.9	20.189	24.849	35.187	199.7
2	2	9	206.8	16.689	34.754	198.5	16.655	25.408	34.773	198.3
2	2	8	288.0	11.961	34.257	209.7	11.923	26.027	34.257	211.3
2	2	7	403.5	8.606	34.073	170.8	8.564	26.461	34.069	170.1
2	2	6	483.8	6.962	34.057	115.3	6.916	26.688	34.069	110.0
2	2	5	564.3	5.635	34.062	78.6	5.587	26.863	34.058	74.4
2	2	4	635.0	5.194	34.127	44.2	5.142	26.967	34.123	47.5
2	2	3	765.2	4.696	34.307	30.0	4.635	27.167	34.307	25.1
2	2	2	855.6	4.391	34.388	29.2	4.325	27.265	34.386	29.1
2	2	1	1012.3	3.800	34.477	40.9	3.725	27.398	34.481	42.1
2	3	0	0.0						34.927	
2	3	12	203.2	17.071	34.807		17.037	25.359		
2	3	11	227.7	16.174	34.720		16.138	25.501		
2	3	10	255.7	14.239	34.479		14.202	25.743		
2	3	9	304.7	11.905	34.239		11.865	26.024		
2	3	8	355.2	10.001	34.131		9.960	26.281		
2	3	7	406.6	8.701	34.075		8.658	26.447		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	3	6	505.4	6.541	34.045		6.496	26.735		
2	3	5	605.0	5.152	34.132		5.103	26.975		
2	3	4	705.1	4.637	34.243		4.582	27.122		
2	3	3	804.4	4.442	34.374		4.380	27.248		
2	3	2	905.7	4.057	34.422		3.989	27.327		
2	3	1	1006.9	3.847	34.473		3.772	27.390		
2	4	0	0.0						34.976	
2	4	12	204.9	15.792	34.657	203.3	15.760	25.539	34.667	201.6
2	4	11	228.0	15.248	34.581	204.3	15.213	25.603	34.583	198.1
2	4	10	253.5	13.644	34.411	206.1	13.608	25.814	34.408	207.3
2	4	9	304.8	11.501	34.205	197.8	11.462	26.073	34.205	199.3
2	4	8	356.0	9.934	34.120	190.4	9.893	26.283	34.120	191.2
2	4	7	405.7	8.719	34.073	170.3	8.676	26.443	34.072	172.6
2	4	6	507.6	6.560	34.048	100.7	6.514	26.734	34.044	100.7
2	4	5	605.7	5.224	34.106	53.9	5.175	26.946	34.104	53.6
2	4	4	708.3	4.628	34.259	24.0	4.573	27.136	34.258	23.6
2	4	3	808.1	4.388	34.385	26.6	4.326	27.263	34.385	28.2
2	4	2	909.9	4.036	34.429	31.6	3.968	27.335	34.427	33.2
2	4	1	1012.5	3.800	34.482	41.8	3.725	27.402	34.482	44.3
2	5	0	0.0						34.937	
2	5	12	5.6	25.401	34.976	213.8	25.400	23.203	34.922	212.0
2	5	11	27.4	25.402	34.977	213.5	25.396	23.205	34.920	212.3
2	5	10	46.8	25.359	34.974	214.0	25.349	23.217	34.917	212.0
2	5	9	61.8	23.950	35.123	224.5	23.937	23.755	35.066	226.6
2	5	8	77.3	23.120	35.229	225.4	23.104	24.079	35.192	225.2
2	5	7	87.8	22.579	35.275	219.7	22.561	24.270	35.254	220.4
2	5	6	98.5	22.167	35.296	213.9	22.147	24.403	35.283	218.5
2	5	5	109.3	21.756	35.306	215.3	21.735	24.526	35.298	215.3
2	5	4	119.2	21.490	35.308	212.5	21.467	24.601	35.300	214.8
2	5	3	130.5	21.101	35.288	213.9	21.076	24.694	35.301	213.8
2	5	2	156.0	19.358	35.108	195.8	19.330	25.020	35.111	196.6
2	5	1	181.1	17.636	34.785	196.2	17.606	25.205	34.888	193.9
2	6	0	0.0						34.952	
2	6	3	14.4	25.344	34.970		25.341	23.216	34.915	
2	6	2	108.2	21.385	35.296		21.364	24.621	35.304	
2	6	1	544.3	5.779	34.046		5.733	26.832	34.040	
2	7	0	0.0						34.928	
2	7	12	52.2	23.569	35.162		23.558	23.896	35.126	
2	7	11	95.9	21.758	35.305		21.739	24.524	35.303	
2	7	10	216.9	16.181	34.718		16.146	25.498	34.715	
2	7	9	300.9	11.604	34.210		11.566	26.058	34.211	
2	7	8	361.2	9.826	34.119		9.785	26.301	34.117	
2	7	7	472.6	7.298	34.052		7.253	26.637	34.049	
2	7	6	513.5	6.594	34.058		6.547	26.738	34.056	
2	7	5	612.8	5.191	34.108		5.141	26.952	34.107	
2	7	4	749.9	4.564	34.316		4.506	27.188	34.314	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	7	3	828.0	4.320	34.395		4.257	27.278	34.393	
2	7	2	973.2	3.858	34.465		3.786	27.383	34.467	
2	7	1	1019.5	3.783	34.485		3.707	27.407	34.489	
2	8	0	0.0						34.935	
2	8	3	106.0	21.757	35.311		21.736	24.530	35.311	
2	8	2	529.4	6.026	34.055		5.980	26.809	34.051	
2	8	1	1021.1	3.829	34.502		3.753	27.415	34.502	
2	9	0	0.0						34.940	
2	9	12	6.0	25.388	34.976		25.387	23.206	34.920	
2	9	11	25.3	25.341	34.973		25.336	23.220	34.922	
2	9	10	47.7	24.654	35.056		24.644	23.493	35.013	
2	9	9	77.6	22.722	35.284		22.707	24.235	35.260	
2	9	8	106.1	21.582	35.307		21.562	24.575	35.300	
2	9	7	125.0	20.845	35.217		20.821	24.709	35.226	
2	9	6	153.2	19.561	35.098		19.533	24.960	35.103	
2	9	5	181.9	16.880	34.796		16.851	25.394	34.784	
2	9	4	257.7	13.079	34.337		13.044	25.871	34.334	
2	9	3	510.9	6.735	34.064		6.688	26.724	34.066	
2	9	2	761.1	4.554	34.316		4.495	27.190	34.319	
2	9	1	1022.7	3.851	34.496		3.774	27.409	34.494	
2	10	0	0.0						35.002	
2	10	12	5.7	25.429	34.975		25.428	23.193	34.922	
2	10	11	5.6	25.428	34.976		25.426	23.194	34.920	
2	10	10	25.9	25.371	34.973		25.366	23.211	34.920	
2	10	9	45.9	25.170	34.979		25.160	23.279	34.962	
2	10	8	76.9	22.785	35.281		22.770	24.215	35.251	
2	10	7	102.9	22.010	35.297		21.990	24.448	35.288	
2	10	6	128.7	21.383	35.298		21.358	24.624	35.288	
2	10	5	128.6	21.383	35.294		21.358	24.621	35.287	
2	10	4	155.4	20.148	35.161		20.119	24.854	35.174	
2	10	3	180.6	18.226	34.937		18.195	25.176	34.973	
2	10	2	257.7	13.642	34.393		13.606	25.800	34.387	
2	10	1	257.3	13.678	34.391		13.641	25.792	34.387	
2	11	0	0.0						34.980	
2	11	3	6.4	25.393	34.974		25.391	23.204	34.925	
2	11	2	114.9	21.482	35.276		21.460	24.579	35.259	
2	11	1	509.0	6.684	34.060		6.638	26.727	34.060	
2	12	0	0.0						34.952	
2	12	3	11.5	25.356	34.970		25.353	23.212	34.919	
2	12	2	107.1	21.450	35.290		21.429	24.598	35.288	
2	12	1	543.5	5.927	34.042		5.880	26.811	34.045	
2	13	12	4.6	25.286	34.913		25.285	23.190	34.921	
2	13	11	15.6	25.293	34.912		25.290	23.188	34.920	
2	13	10	30.3	25.291	34.912		25.284	23.190	34.921	
2	13	9	45.9	25.233	34.925		25.223	23.219	34.935	
2	13	8	60.1	23.644	35.151		23.631	23.866	35.151	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	13	7	76.8	22.761	35.250		22.746	24.198	35.253	
2	13	6	92.4	22.196	35.277		22.177	24.380	35.283	
2	13	5	102.6	21.717	35.258		21.697	24.500	35.274	
2	13	4	112.1	21.438	35.274		21.416	24.590	35.275	
2	13	3	122.0	20.755	35.208		20.732	24.726		
2	13	2	128.9	20.573	35.200		20.549	24.769	35.208	
2	13	1	149.2	19.543	35.111		19.516	24.974	35.121	
2	14	0	0.0						34.947	
2	14	12	7.6	25.344	34.901		25.342	23.164	34.915	
2	14	11	27.8	25.298	34.903		25.292	23.180	34.916	
2	14	10	47.4	24.969	34.969		24.958	23.332	34.958	
2	14	9	76.2	22.764	35.242		22.748	24.191	35.214	
2	14	8	105.0	21.555	35.275		21.535	24.558	35.285	
2	14	7	129.8	20.459	35.196		20.434	24.797	35.206	
2	14	6	154.2	18.347	34.962		18.321	25.165	34.965	
2	14	5	180.7	17.082	34.775		17.052	25.330	34.786	
2	14	4	255.7	13.006	34.320		12.971	25.873	34.323	
2	14	3	507.4	6.709	34.057		6.662	26.722	34.058	
2	14	2	762.2	4.533	34.336		4.474	27.208	34.337	
2	14	1	1017.9	3.860	34.494		3.784	27.406	34.494	
2	15	0	0.0						35.007	
2	15	3	29.1	25.332	34.900		25.326	23.168	34.916	
2	15	2	123.2	21.433	35.243		21.409	24.569	35.255	
2	15	1	553.9	5.891	34.046		5.843	26.819	34.046	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	1	0	0.0						34.729	
1	1	12	5.4	26.755	34.718	209.1	26.754	22.585	34.713	208.3
1	1	11	70.3	25.728	34.660	213.4	25.712	22.868	34.669	214.2
1	1	10	117.4	22.059	35.226	210.1	22.036	24.381	35.222	212.7
1	1	9	149.9	20.209	35.142	193.5	20.181	24.823	35.142	196.4
1	1	8	208.0	16.199	34.671	180.7	16.166	25.458	34.666	179.8
1	1	7	266.3	11.727	34.269		11.693	26.079		170.9
1	1	6	352.1	8.691	34.127	147.1	8.653	26.489	34.125	150.8
1	1	5	430.9	7.173	34.120	109.6	7.132	26.708	34.115	107.1
1	1	4	539.4	6.227	34.246	52.9	6.179	26.934	34.245	51.1
1	1	3	633.0	5.663	34.321	36.3	5.609	27.065	34.322	35.9
1	1	2	727.4	5.034	34.416	33.3	4.975	27.215	34.415	35.2
1	1	1	1026.1	3.981	34.517	46.5	3.903	27.412	34.517	47.7
2	1	0	0.0						34.672	
2	1	12	10.1	26.121	34.663		26.118	22.744	34.661	
2	1	11	26.0	26.122	34.661		26.116	22.744		
2	1	10	46.7	26.121	34.662		26.110	22.746		
2	1	9	77.6	24.925	34.784		24.908	23.208		
2	1	8	104.6	23.658	35.082		23.637	23.812		
2	1	7	129.2	22.430	35.281		22.404	24.319		
2	1	6	154.3	21.391	35.311		21.361	24.633	35.309	
2	1	5	181.3	20.593	35.211		20.558	24.775		
2	1	4	258.5	14.941	34.522		14.902	25.626		
2	1	3	509.9	7.251	34.184		7.202	26.748		
2	1	2	761.7	4.816	34.344		4.755	27.183		
2	1	1	1026.9	4.002	34.496		3.924	27.393	34.496	
2	2	0	0.0						34.668	
2	2	12	779.3	4.734	34.377	31.7	4.672	27.218	34.378	32.4
2	2	11	911.2	4.251	34.454	41.2	4.181	27.333	34.454	42.0
2	2	10	1053.8	3.885	34.504	49.1	3.806	27.411	34.504	48.5
2	2	9	1198.1	3.472	34.534	55.7	3.384	27.477	34.534	55.8
2	2	8	1352.3	3.084	34.561	63.2	2.988	27.535	34.560	62.7
2	2	7	1499.7	2.868	34.573	67.7	2.762	27.566	34.573	68.6
2	2	6	1649.7	2.649	34.587	73.8	2.533	27.597	34.587	74.9
2	2	5	1802.7	2.442	34.600	79.5	2.316	27.626	34.596	80.5
2	2	4	1952.6	2.227	34.615	88.5	2.091	27.656	34.615	88.7
2	2	3	2100.3	2.055	34.627	94.8	1.909	27.680	34.627	95.8
2	2	2	2303.7	1.895	34.640		1.734	27.704		
2	2	1	2508.2	1.776	34.648	109.6	1.599	27.721	34.649	107.7
2	3	0	0.0						34.691	
2	3	12	4.5	26.309	34.669		26.308	22.689		
2	3	11	59.9	25.448	34.724	214.5	25.435	23.002	34.716	214.2
2	3	10	91.6	23.391	35.115	215.9	23.372	23.915	35.113	216.5
2	3	9	139.3	21.204	35.287	204.5	21.177	24.665	35.287	205.2
2	3	8	191.7	18.464	34.967	186.1	18.431	25.141	34.962	188.2
2	3	7	227.3	16.624	34.743	193.5	16.587	25.415	34.739	196.1

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	3	6	299.8	12.297	34.238		12.257	25.948		195.0
2	3	5	357.1	10.135	34.129	191.1	10.094	26.257	34.126	188.8
2	3	4	483.7	7.065	34.049	122.2	7.020	26.667	34.047	125.3
2	3	3	523.7	7.024	34.179	69.8	6.974	26.776	34.174	69.2
2	3	2	563.4	6.243	34.158	67.0	6.193	26.863	34.154	60.7
2	3	1	678.3	5.279	34.267	36.0	5.223	27.069	34.260	34.0
2	4	0	0.0						34.682	
2	4	12	203.8	16.995	34.804		16.961	25.374		195.7
2	4	11	230.9	15.797	34.637		15.760	25.524		195.9
2	4	10	255.6	14.070	34.432		14.033	25.742		197.1
2	4	9	305.4	11.808	34.207		11.768	26.018		195.1
2	4	8	355.5	9.885	34.131		9.844	26.300		195.2
2	4	7	408.1	8.507	34.081	172.8	8.464	26.482	34.073	172.6
2	4	6	508.4	7.545	34.229		7.495	26.742		
2	4	5	612.9	5.776	34.206		5.723	26.960		46.3
2	4	4	709.8	5.036	34.308		4.979	27.129		31.7
2	4	3	814.6	4.587	34.422		4.523	27.271		34.7
2	4	2	919.3	4.194	34.479		4.124	27.359		41.9
2	4	1	1022.2	3.911	34.508	46.2	3.835	27.412	34.508	47.1
2	5	0	0.0						34.684	
2	5	12	4.8	26.260	34.680		26.259	22.713		208.8
2	5	11	25.8	26.140	34.674		26.134	22.748		208.5
2	5	10	45.8	26.019	34.680		26.009	22.791		209.9
2	5	9	61.6	25.075	34.798		25.061	23.172		215.2
2	5	8	76.1	23.885	35.000		23.869	23.681		216.2
2	5	7	87.3	23.377	35.129		23.359	23.929		216.7
2	5	6	97.4	23.079	35.183		23.059	24.057		216.4
2	5	5	109.0	22.841	35.230		22.819	24.162		216.8
2	5	4	118.0	22.486	35.268		22.463	24.293		215.6
2	5	3	130.5	21.998	35.287	213.9	21.972	24.446	35.282	211.7
2	5	2	157.0	20.976	35.266		20.946	24.712		201.5
2	5	1	181.8	19.145	35.058		19.112	25.038		190.1
2	6	0	0.0						34.685	
2	6	12	4.8	26.215	34.681		26.214	22.728	34.689	
2	6	11	4.8	26.214	34.681		26.213	22.728	34.674	
2	6	10	25.7	26.196	34.677		26.190	22.733		
2	6	9	25.7	26.205	34.674		26.200	22.727	34.671	
2	6	8	46.7	26.132	34.672		26.122	22.750		
2	6	7	77.4	25.041	34.800		25.024	23.185		
2	6	6	103.1	23.041	35.191		23.020	24.075		
2	6	5	128.1	22.342	35.272		22.317	24.337		
2	6	4	155.8	21.566	35.295		21.536	24.573		
2	6	3	179.7	19.859	35.130		19.826	24.908		
2	6	2	207.7	18.031	34.931		17.995	25.221		
2	6	1	269.1	14.132	34.432		14.093	25.729		
2	7	0	0.0						34.689	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	7	4	13.8	26.184	34.673		26.181	22.732	34.673	
2	7	3	136.6	21.996	35.272		21.969	24.435	35.273	
2	7	2	531.9	6.454	34.144		6.406	26.824	34.146	
2	7	1	1023.0	3.997	34.493		3.920	27.391	34.492	
2	9	0	0.0						34.737	
2	9	3	146.9	21.529	35.311		21.500	24.595	35.297	
2	9	2	459.5	7.361	34.040		7.316	26.619	34.040	
2	9	1	1025.0	3.986	34.489		3.908	27.389	34.489	
2	11	0	0.0						34.772	
2	11	3	157.0	20.883	35.264		20.853	24.736	35.263	
2	11	2	470.6	7.511	34.080		7.465	26.629	34.065	
2	11	1	1021.1	3.969	34.488		3.891	27.390	34.488	
2	12	0	0.0						34.706	
2	12	12	128.4	22.006	35.271		21.981	24.431	35.273	
2	12	11	181.1	19.789	35.125		19.756	24.922	35.133	
2	12	10	181.1	19.794	35.124		19.761	24.920		
2	12	9	181.0	19.812	35.128		19.779	24.919	35.134	
2	12	8	257.9	14.924	34.522		14.885	25.629		
2	12	7	511.1	7.508	34.209		7.457	26.732	34.210	
2	12	6	510.2	7.516	34.210		7.466	26.731		
2	12	5	760.1	4.862	34.343		4.801	27.177	34.343	
2	12	4	760.0	4.862	34.343		4.801	27.177		
2	12	3	1020.0	3.911	34.495		3.834	27.401	34.496	
2	12	2	1020.1	3.910	34.495		3.834	27.401		
2	12	1	1020.3	3.910	34.495		3.833	27.401	34.494	
2	13	0	0.0						34.711	
2	13	9	3.6	26.353	34.687		26.352	22.689	34.681	
2	13	8	27.0	26.170	34.680		26.164	22.742	34.679	
2	13	7	46.7	26.080	34.671		26.070	22.765	34.669	
2	13	6	78.2	24.011	34.965		23.995	23.618	34.970	
2	13	5	105.8	22.997	35.202		22.976	24.096	35.206	
2	13	4	130.7	21.765	35.296		21.740	24.517	35.292	
2	13	3	157.8	20.582	35.222		20.552	24.785	35.218	
2	13	2	486.3	7.682	34.169		7.634	26.675	34.158	
2	13	1	1020.3	3.937	34.496		3.860	27.399	34.496	
2	14	0	0.0						34.700	
2	14	4	37.7	26.167	34.665		26.159	22.733	34.679	
2	14	3	140.9	21.653	35.284		21.625	24.540	35.291	
2	14	2	554.5	6.171	34.149		6.122	26.865	34.147	
2	14	1	1032.0	3.894	34.497		3.817	27.404	34.496	
2	15	0	0.0						34.696	
2	15	4	28.3	26.164	34.673		26.158	22.740	34.696	
2	15	3	137.5	21.814	35.277		21.787	24.489	35.276	
2	15	2	549.1	6.434	34.144		6.385	26.827	34.145	
2	15	1	1022.9	4.000	34.492		3.922	27.390	34.492	
2	16	0	0.0						34.696	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	16	4	31.0	26.153	34.669		26.146	22.740	34.670	
2	16	3	130.5	21.709	35.280		21.684	24.520	35.277	
2	16	2	533.9	6.517	34.145		6.468	26.817	34.143	
2	16	1	1027.4	4.012	34.490		3.934	27.388	34.490	
2	17	0	0.0						34.688	
2	17	12	4.7	26.220	34.688		26.219	22.731		
2	17	11	26.3	26.199	34.683		26.193	22.736		
2	17	10	46.2	25.961	34.688		25.951	22.815		
2	17	9	77.2	23.975	34.979		23.959	23.639		
2	17	8	92.0	23.412	35.150		23.393	23.935		
2	17	7	103.0	23.008	35.189		22.987	24.082		
2	17	6	112.9	22.160	35.272		22.137	24.387		
2	17	5	128.8	21.636	35.308		21.611	24.562		
2	17	4	139.9	21.335	35.294		21.308	24.635		
2	17	3	154.7	20.736	35.243		20.707	24.760		
2	17	2	181.6	18.961	35.035		18.928	25.068		
2	17	1	208.6	17.488	34.894		17.453	25.326		
2	18	0	0.0						34.681	
2	18	12	6.1	26.153	34.665		26.152	22.735	34.660	
2	18	11	26.3	26.135	34.664		26.129	22.742	34.661	
2	18	10	46.9	26.044	34.672		26.033	22.778	34.691	
2	18	9	77.2	23.855	34.995		23.839	23.687	35.026	
2	18	8	103.2	23.070	35.203		23.049	24.075	35.211	
2	18	7	130.1	22.112	35.282		22.086	24.409	35.281	
2	18	6	156.9	21.358	35.295		21.327	24.630	35.285	
2	18	5	183.6	19.741	35.112		19.707	24.925	35.112	
2	18	4	259.9	14.093	34.418		14.056	25.726	34.404	
2	18	3	510.9	6.678	34.064		6.631	26.731	34.069	
2	18	2	762.0	4.715	34.323		4.654	27.178	34.323	
2	18	1	1021.5	3.940	34.498		3.863	27.401		
2	19	0	0.0						34.774	
2	19	4	29.9	26.152	34.660		26.145	22.733		
2	19	3	153.8	20.731	35.225		20.702	24.748	35.227	
2	19	2	459.3	7.641	34.085		7.596	26.615	34.087	
2	19	1	1020.5	3.907	34.498		3.830	27.404	34.498	
2	20	0	0.0						34.705	
2	20	8	28.4	26.186	34.667		26.180	22.728	34.668	
2	20	7	149.6	20.972	35.249		20.944	24.700	35.247	
2	20	6	258.1	15.573	34.606		15.533	25.551		
2	20	5	258.0	15.557	34.604		15.517	25.553		
2	20	4	258.0	15.507	34.595		15.467	25.557		
2	20	3	478.2	7.199	34.068		7.154	26.664	34.071	
2	20	2	507.1	6.486	34.045		6.440	26.742	34.047	
2	20	1	1021.5	3.965	34.487		3.887	27.389	34.486	
2	21	0	0.0						34.698	
2	21	5	31.5	26.154	34.665		26.147	22.737	34.662	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	21	4	104.3	22.732	35.254		22.711	24.211		
2	21	3	131.3	21.675	35.305		21.650	24.549	35.304	
2	21	2	438.4	7.822	34.052		7.778	26.562	34.052	
2	21	1	1023.7	3.981	34.487		3.904	27.388	34.487	
2	22	0	0.0						34.691	
2	22	6	7.4	26.285	34.681		26.284	22.706		
2	22	5	49.2	26.042	34.678		26.031	22.783		
2	22	4	106.8	22.326	35.274		22.304	24.342		
2	22	3	258.6	13.437	34.356		13.400	25.814		
2	22	2	512.0	6.569	34.041		6.522	26.728		
2	22	1	1010.6	4.004	34.489		3.927	27.387		
2	23	0	0.0						34.687	
2	23	3	36.9	26.121	34.657		26.112	22.742	34.657	
2	23	2	469.3	7.469	34.046		7.423	26.609	34.051	
2	23	1	1029.1	3.909	34.491		3.832	27.398	34.491	
2	24	0	0.0						34.695	
2	24	12	6.6	26.201	34.687		26.199	22.737		
2	24	11	26.6	26.191	34.677		26.185	22.734		
2	24	10	47.6	25.806	34.772		25.795	22.926		
2	24	9	78.0	24.310	34.918		24.294	23.494		
2	24	8	102.9	23.051	35.077		23.030	23.985		
2	24	7	125.9	22.267	35.269		22.242	24.355		
2	24	6	157.0	21.440	35.296		21.410	24.608	35.290	
2	24	5	183.1	20.167	35.169		20.133	24.857		
2	24	4	258.9	14.211	34.448		14.173	25.725		
2	24	3	508.5	7.060	34.132		7.012	26.733	34.130	
2	24	2	760.6	4.691	34.331		4.631	27.187		
2	24	1	1021.2	3.977	34.495		3.899	27.395	34.495	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	1	0	0.0						34.771	
1	1	24	6.5	26.853	34.752		26.851	22.580	34.741	
1	1	23	21.4	26.787	34.747	206.8	26.782	22.598	34.740	205.4
1	1	22	41.4	26.769	34.746		26.759	22.605	34.740	
1	1	21	70.1	26.531	34.742	204.9	26.515	22.679	34.739	208.9
1	1	20	84.0	24.935	34.922		24.917	23.310	34.910	
1	1	19	106.6	22.795	35.057		22.773	24.044		207.7
1	1	18	129.7	21.290	35.097		21.265	24.496	35.092	
1	1	17	137.7	20.776	35.079		20.750	24.623		194.3
1	1	16	171.8	18.545	34.914	183.9	18.515	25.079	34.908	185.1
1	1	15	208.8	15.549	34.608		15.517	25.556		
1	1	14	270.9	11.895	34.282	170.2	11.860	26.058	34.279	172.0
1	1	13	303.4	10.466	34.227	150.7	10.430	26.275	34.227	151.3
1	1	12	359.6	9.000	34.175		8.961	26.479	34.172	
1	1	11	418.8	7.519	34.115	118.4	7.478	26.655	34.114	118.6
1	1	10	458.5	6.648	34.103		6.606	26.765	34.098	
1	1	9	517.9	6.202	34.144	75.2	6.156	26.857	34.142	72.6
1	1	8	557.5	5.828	34.192		5.780	26.942	34.191	
1	1	7	602.5	5.521	34.245	45.8	5.470	27.021	34.240	44.7
1	1	6	646.9	5.379	34.324		5.325	27.102	34.325	
1	1	5	706.9	5.256	34.392		5.197	27.171		
1	1	4	751.9	4.935	34.425	34.1	4.874	27.234	34.425	36.2
1	1	3	808.3	4.769	34.454		4.704	27.276	34.453	
1	1	2	897.9	4.473	34.480		4.403	27.330	34.480	
1	1	1	1016.2	4.068	34.509		3.990	27.396		42.1
2	1	0	0.0						34.783	
2	1	11	7.7	26.379	34.771		26.377	22.744		
2	1	10	48.7	26.381	34.769		26.370	22.746		
2	1	9	76.5	26.299	34.770		26.282	22.774		
2	1	8	102.4	24.262	34.957		24.240	23.539		
2	1	7	128.6	22.756	35.043		22.730	24.045		
2	1	6	154.3	20.395	34.999		20.366	24.666		
2	1	5	182.4	18.359	34.901		18.327	25.116		
2	1	4	255.7	14.804	34.508		14.765	25.645		
2	1	3	505.3	7.184	34.089		7.136	26.682		
2	1	2	761.2	4.781	34.321		4.720	27.169		
2	1	1	1008.7	4.175	34.488		4.097	27.368		
2	2	0	0.0						34.794	
2	2	10	5.2	26.399	34.772		26.398	22.739		
2	2	9	45.7	26.373	34.771		26.363	22.749	34.771	
2	2	8	76.4	25.456	34.836		25.439	23.085	34.834	
2	2	7	129.2	22.082	35.041		22.056	24.234	35.048	
2	2	6	156.6	20.141	34.985		20.112	24.722	34.981	
2	2	5	182.9	18.611	34.925		18.579	25.071	34.935	
2	2	4	256.3	14.986	34.532		14.947	25.623		
2	2	3	508.1	6.307	34.075		6.262	26.789	34.080	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	2	2	759.9	4.791	34.339		4.731	27.182	34.338	
2	2	1	1019.1	4.083	34.491		4.005	27.381	34.495	
2	3	24	704.6	4.973	34.275		4.916	27.110		
2	3	23	803.6	4.700	34.409	29.7	4.636	27.248	34.409	31.6
2	3	22	903.7	4.406	34.466	37.7	4.336	27.326	34.466	37.5
2	3	21	1004.2	4.056	34.491		3.979	27.384		
2	3	20	1103.9	3.787	34.514	49.2	3.704	27.430	34.515	48.0
2	3	19	1252.4	3.411	34.536		3.319	27.485		
2	3	18	1404.6	3.104	34.559	61.6	3.003	27.533	34.559	61.6
2	3	17	1552.7	2.819	34.575	68.1	2.709	27.572	34.575	67.1
2	3	16	1699.4	2.543	34.589	72.9	2.424	27.608	34.589	72.9
2	3	15	1851.8	2.314	34.608	80.4	2.185	27.643	34.609	83.3
2	3	14	2002.5	2.124	34.620	88.7	1.985	27.669	34.622	89.8
2	3	13	2199.8	1.935	34.635	97.1	1.782	27.696	34.633	98.8
2	3	12	2396.9	1.794	34.646		1.626	27.717		
2	3	11	2600.0	1.678	34.656		1.495	27.734		
2	3	10	2801.3	1.585	34.665		1.385	27.750		
2	3	9	2996.1	1.542	34.671		1.324	27.759		
2	3	8	3189.4	1.505	34.675	130.8	1.270	27.766	34.675	134.6
2	3	7	3392.2	1.480	34.680	136.3	1.225	27.773	34.681	134.6
2	3	6	3597.7	1.465	34.683		1.189	27.777		
2	3	5	3801.6	1.457	34.685		1.161	27.781		
2	3	4	4003.1	1.456	34.687		1.138	27.785		
2	3	3	4197.5	1.465	34.688		1.125	27.787		
2	3	2	4397.2	1.476	34.689	150.0	1.114	27.788	34.689	152.4
2	3	1	4525.9	1.485	34.690		1.108	27.789	34.689	
2	4	0	0.0						34.783	
2	4	24	7.2	26.373	34.779	208.8	26.372	22.752	34.775	205.5
2	4	23	86.7	25.317	34.845	213.3	25.298	23.135	34.850	213.8
2	4	22	96.6	24.290	34.934	218.3	24.270	23.513	34.929	215.4
2	4	21	108.3	23.759	34.987	213.2	23.736	23.711	34.988	213.8
2	4	20	123.4	22.673	35.011	205.8	22.648	24.045	35.014	206.2
2	4	19	132.9	22.195	35.048	194.6	22.169	24.209	35.047	201.3
2	4	18	143.8	20.215	34.976	188.4	20.188	24.695	34.982	182.3
2	4	17	182.8	18.597	34.912	170.1	18.565	25.065	34.908	178.1
2	4	16	217.7	16.290	34.677	187.7	16.255	25.441	34.679	182.2
2	4	15	274.2	12.894	34.309	179.0	12.857	25.887	34.309	176.5
2	4	14	285.2	12.614	34.282	170.0	12.576	25.921	34.283	180.0
2	4	13	303.2	11.465	34.188	203.4	11.427	26.066	34.195	203.3
2	4	12	345.0	9.980	34.112	195.0	9.940	26.269	34.113	194.3
2	4	11	404.4	8.894	34.122	149.9	8.851	26.454	34.125	152.0
2	4	10	465.2	7.401	34.103	114.4	7.356	26.663	34.104	107.6
2	4	9	489.7	6.709	34.079	90.6	6.664	26.739	34.081	92.6
2	4	8	509.3	6.339	34.070	88.1	6.294	26.781	34.073	82.8
2	4	7	538.1	5.883	34.105	63.3	5.837	26.866	34.107	60.8
2	4	6	601.6	5.427	34.173	40.8	5.377	26.976	34.176	40.5

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	4	5	674.8	5.279	34.277	37.1	5.223	27.076	34.277	31.7
2	4	4	745.3	4.823	34.328		4.763	27.169		
2	4	3	814.9	4.654	34.420	34.5	4.590	27.262	34.420	33.7
2	4	2	994.8	4.142	34.487	42.0	4.066	27.371	34.484	42.0
2	4	1	1023.5	4.011	34.492	44.3	3.934	27.389	34.492	41.9
2	5	0	0.0						34.796	
2	5	4	13.3	26.347	34.773		26.344	22.756		
2	5	3	151.8	19.927	34.962		19.899	24.761	34.970	
2	5	2	507.7	6.593	34.064		6.546	26.742	34.064	
2	5	1	1018.4	4.054	34.493		3.977	27.386	34.493	
2	6	0	0.0						34.804	
2	6	5	51.8	26.320	34.774		26.308	22.769	34.775	
2	6	4	137.0	21.611	35.010		21.584	24.343	35.013	
2	6	3	510.9	6.613	34.063		6.566	26.740	34.063	
2	6	2	1035.4	4.009	34.496		3.930	27.393	34.496	
2	6	1	1035.8	4.010	34.496		3.931	27.392	34.496	
2	7	4	24.6	26.314	34.771		26.309	22.766	34.775	
2	7	3	128.5	20.869	35.004		20.845	24.541	35.013	
2	7	2	502.8	6.517	34.062		6.471	26.751	34.064	
2	7	1	501.9	6.520	34.062		6.475	26.751	34.064	
2	8	12	5.8	26.346	34.781		26.344	22.763	34.778	
2	8	11	25.8	26.279	34.778		26.273	22.783	34.776	
2	8	10	48.3	26.275	34.777		26.264	22.785	34.776	
2	8	9	78.1	25.815	34.768		25.798	22.923	34.771	
2	8	8	105.0	23.655	34.984		23.633	23.739	34.975	
2	8	7	130.0	21.465	35.039		21.440	24.405	35.036	
2	8	6	156.8	19.921	34.983		19.892	24.778	34.985	
2	8	5	182.4	18.385	34.916		18.353	25.122	34.918	
2	8	4	258.1	14.224	34.441		14.186	25.716	34.441	
2	8	3	511.3	6.969	34.186		6.921	26.789		
2	8	2	750.4	4.936	34.352		4.875	27.176	34.354	
2	8	1	1020.6	4.060	34.492		3.982	27.384	34.490	
2	9	4	26.9	26.249	34.775		26.243	22.790	34.776	
2	9	3	126.1	21.545	35.045		21.520	24.387	35.042	
2	9	2	505.2	7.045	34.097		6.997	26.708	34.098	
2	9	1	1024.4	4.076	34.492		3.998	27.382	34.492	
2	10	0	0.0						34.793	
2	10	3	138.9	21.700	35.032		21.673	24.335		
2	10	2	453.6	7.308	34.049		7.264	26.633	34.050	
2	10	1	1024.6	4.059	34.488		3.981	27.381	34.488	
2	11	0	0.0						34.789	
2	11	5	11.7	26.269	34.775		26.266	22.782	34.776	
2	11	4	155.5	21.029	35.011		20.999	24.504	35.031	
2	11	3	156.3	20.987	35.013		20.958	24.517	35.005	
2	11	2	460.2	7.124	34.049		7.081	26.659	34.050	
2	11	1	1022.1	4.093	34.488		4.015	27.377	34.487	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	12	0	0.0						34.789	
2	12	23	6.3	26.252	34.779		26.250	22.791		212.8
2	12	22	26.5	26.254	34.776		26.248	22.789		215.9
2	12	21	47.5	26.237	34.774		26.226	22.795		212.8
2	12	20	63.2	26.196	34.765		26.182	22.801		210.8
2	12	19	79.0	26.170	34.761		26.152	22.807		210.9
2	12	18	89.1	25.459	34.777		25.439	23.040		215.5
2	12	17	98.6	24.153	34.963		24.132	23.576		215.3
2	12	16	111.2	23.246	34.971		23.223	23.849		211.4
2	12	15	119.9	22.442	34.980		22.418	24.086		202.9
2	12	14	131.7	21.694	35.077		21.668	24.371		198.5
2	12	13	157.5	18.667	34.877		18.639	25.020		173.0
2	12	12	182.1	17.572	34.804		17.541	25.235		177.1
2	12	11	206.7	16.670	34.725		16.637	25.390		182.5
2	12	10	231.7	15.990	34.647		15.954	25.488		178.1
2	12	9	257.6	14.150	34.420		14.113	25.716		192.0
2	12	8	282.5	12.544	34.266		12.506	25.922		190.2
2	12	7	307.4	11.406	34.199		11.367	26.086		191.7
2	12	6	330.9	10.924	34.180		10.884	26.158		182.6
2	12	5	356.0	10.237	34.144		10.195	26.250		183.8
2	12	4	384.0	9.576	34.126		9.533	26.348		161.8
2	12	3	409.0	8.957	34.117		8.913	26.441		156.0
2	12	2	461.3	7.248	34.056		7.204	26.647		123.9
2	12	1	511.9	6.633	34.105		6.586	26.770		81.3
2	13	0	0.0						34.806	
2	13	7	125.8	21.491	35.005		21.467	24.371	35.013	
2	13	6	467.5	7.155	34.049		7.111	26.655	34.056	
2	13	5	610.8	5.785	34.246		5.733	26.990	34.251	
2	13	4	709.5	5.183	34.313	30.0	5.125	27.116	34.316	31.7
2	13	3	810.7	4.868	34.393	30.3	4.803	27.217	34.399	31.8
2	13	2	910.8	4.492	34.455	36.1	4.421	27.308	34.460	37.2
2	13	1	1018.7	4.120	34.486	42.8	4.042	27.373	34.490	44.6
2	14	0	0.0						34.794	
2	14	10	8.3	26.339	34.776		26.337	22.761	34.775	
2	14	9	8.2	26.339	34.776		26.337	22.761	34.774	
2	14	8	26.5	26.330	34.774		26.324	22.764	34.775	
2	14	7	27.0	26.329	34.774		26.323	22.764	34.774	
2	14	6	47.9	26.258	34.770		26.247	22.785	34.771	
2	14	5	78.4	26.179	34.775		26.162	22.815	34.771	
2	14	4	104.5	24.484	34.930		24.462	23.452	34.898	
2	14	3	129.2	22.184	34.980		22.159	24.160	34.976	
2	14	2	155.9	20.033	34.967		20.004	24.737	34.969	
2	14	1	181.0	18.162	34.867		18.131	25.139	34.887	
2	15	0	0.0						34.798	
2	15	10	6.4	26.475	34.778		26.474	22.719		
2	15	9	27.7	26.344	34.774		26.337	22.759		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	15	8	47.4	26.336	34.773		26.325	22.762		
2	15	7	78.0	25.813	34.773		25.795	22.928		
2	15	6	104.1	24.172	34.958		24.150	23.567		
2	15	5	155.7	20.615	35.004		20.585	24.611		
2	15	4	181.0	18.558	34.923		18.526	25.083		
2	15	3	257.8	14.170	34.427		14.133	25.717		
2	15	2	510.3	7.266	34.187		7.216	26.748		
2	15	1	752.0	4.861	34.334		4.801	27.170		
2	16	0	0.0						34.806	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
1	1	0	0.0						34.479	
1	1	23	7.4	27.030	34.804	204.6	27.029	22.563	34.718	204.8
1	1	22	27.2	26.362	34.899	208.1	26.355	22.848	34.821	208.7
1	1	21	47.3	25.244	34.993	208.2	25.233	23.266	34.920	208.8
1	1	20	63.0	23.887	35.186	216.6	23.874	23.821	35.091	215.4
1	1	19	77.3	23.079	35.207	209.5	23.063	24.074	35.158	209.8
1	1	18	98.0	21.812	35.136	196.2	21.793	24.380	35.107	197.5
1	1	17	108.5	20.726	35.065	187.7	20.706	24.625	35.047	188.9
1	1	16	118.5	20.338	35.034	187.2	20.316	24.705	35.026	186.8
1	1	15	129.4	19.868	34.999	186.2	19.844	24.803	34.996	185.6
1	1	14	154.5	19.073	34.947	182.8	19.046	24.970	34.947	184.9
1	1	13	180.8	17.877	34.845		17.846	25.192		
1	1	12	205.9	15.337	34.574	178.9	15.305	25.577	34.599	180.4
1	1	11	231.4	14.177	34.455	178.2	14.143	25.736	34.455	178.3
1	1	10	260.0	13.070	34.352	174.6	13.034	25.884	34.353	176.2
1	1	9	308.9	10.601	34.215	154.6	10.564	26.242	34.213	156.4
1	1	8	357.3	9.642	34.188	143.3	9.601	26.385	34.183	143.4
1	1	7	405.8	8.385	34.153	121.0	8.343	26.558	34.151	120.2
1	1	6	507.4	6.414	34.188	66.5	6.368	26.864	34.186	63.0
1	1	5	598.0	5.578	34.264	48.5	5.527	27.030	34.259	50.8
1	1	4	704.5	5.068	34.363		5.010	27.169	34.361	
1	1	3	808.6	4.639	34.425		4.575	27.267		
1	1	2	920.2	4.311	34.478	50.0	4.240	27.345	34.477	49.5
1	1	1	1011.9	3.979	34.504	56.9	3.903	27.402	34.505	58.1
2	1	0	0.0						34.790	
2	1	13	0.3	26.187	34.822		26.187	22.843	34.776	
2	1	12	25.2	26.168	34.835		26.162	22.860	34.791	
2	1	11	45.1	26.020	35.062		26.010	23.079	35.018	
2	1	10	74.2	23.241	35.245		23.226	24.056	35.244	
2	1	9	102.4	22.115	35.312		22.095	24.430	35.313	
2	1	8	129.2	21.674	35.338		21.648	24.575	35.340	
2	1	7	155.4	21.312	35.328		21.282	24.668	35.331	
2	1	6	179.6	20.306	35.191		20.272	24.837	35.235	
2	1	5	252.8	15.719	34.670		15.680	25.567	34.673	
2	1	4	504.6	7.715	34.056		7.665	26.582	34.048	
2	1	3	531.2	7.108	34.067		7.057	26.676		
2	1	2	760.8	4.816	34.333		4.755	27.175	34.341	
2	1	1	1019.8	4.003	34.507		3.925	27.402	34.499	
2	2	23	801.0	4.759	34.335		4.695	27.183		26.9
2	2	22	900.6	4.444	34.434		4.373	27.297		35.2
2	2	21	1000.7	4.148	34.485		4.071	27.369		34.5
2	2	20	1099.7	3.897	34.510	48.2	3.814	27.415	34.509	48.1
2	2	19	1249.7	3.539	34.536		3.447	27.473		
2	2	18	1397.8	3.171	34.556	59.6	3.070	27.525	34.556	60.3
2	2	17	1548.1	2.902	34.571	65.0	2.791	27.562	34.571	65.0
2	2	16	1697.9	2.624	34.587	73.4	2.505	27.600	34.588	96.0

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	2	15	1849.0	2.375	34.601	79.5	2.246	27.632	34.601	80.4
2	2	14	1999.8	2.173	34.615		2.034	27.660		
2	2	13	2200.2	1.954	34.632	93.6	1.801	27.693	34.633	96.7
2	2	12	2401.2	1.815	34.644	101.8	1.647	27.713	34.644	105.9
2	2	11	2602.1	1.707	34.654		1.523	27.730		
2	2	10	2796.7	1.626	34.662	117.7	1.425	27.744	34.661	117.8
2	2	9	2995.2	1.561	34.669	124.7	1.343	27.755	34.669	124.3
2	2	8	3198.3	1.509	34.675	130.9	1.273	27.765	34.674	133.0
2	2	7	3396.1	1.479	34.679	136.5	1.223	27.772	34.679	138.7
2	2	6	3590.9	1.457	34.683	142.1	1.182	27.778	34.683	144.4
2	2	5	3792.2	1.449	34.685		1.153	27.782		
2	2	4	3996.7	1.452	34.687		1.135	27.785		
2	2	3	4204.5	1.463	34.688	153.7	1.123	27.787	34.688	151.6
2	2	2	4406.4	1.479	34.689		1.115	27.788		
2	2	1	4603.9	1.498	34.690	158.1	1.111	27.789	34.690	153.6
2	3	23	9.5	26.181	34.880	211.9	26.178	22.889	34.785	207.3
2	3	22	26.3	26.155	34.891	212.0	26.149	22.906	34.801	207.6
2	3	21	59.7	25.147	35.072		25.134	23.357		
2	3	20	78.9	23.570	35.218	222.7	23.553	23.940	35.171	221.9
2	3	19	118.1	22.144	35.344	215.6	22.121	24.446	35.314	217.1
2	3	18	133.3	21.836	35.364	209.1	21.809	24.549	35.337	211.6
2	3	17	198.5	18.599	35.004	198.3	18.564	25.136	35.023	198.5
2	3	16	246.1	16.216	34.723	202.4	16.177	25.495	34.734	203.4
2	3	15	296.3	13.651	34.449	211.9	13.609	25.843	34.449	212.7
2	3	14	330.3	12.312	34.321	215.1	12.268	26.011	34.328	215.9
2	3	13	380.8	10.500	34.187	210.0	10.454	26.240	34.190	209.4
2	3	12	441.5	9.092	34.101	196.6	9.044	26.408	34.105	193.0
2	3	11	487.8	7.855	34.049	159.7	7.806	26.556	34.049	159.8
2	3	10	522.1	7.309	34.054		7.259	26.638		
2	3	9	552.8	6.525	34.047	101.9	6.475	26.739	34.047	100.1
2	3	8	591.9	5.835	34.095	69.5	5.784	26.865	34.095	62.6
2	3	7	642.9	5.259	34.148	44.3	5.206	26.976	34.149	44.7
2	3	6	687.0	5.062	34.227	31.8	5.006	27.062	34.225	28.4
2	3	5	747.3	4.810	34.309	29.0	4.751	27.156	34.310	27.4
2	3	4	802.6	4.775	34.372	28.7	4.711	27.210	34.372	32.2
2	3	3	867.0	4.603	34.418	35.3	4.534	27.266	34.418	33.5
2	3	2	914.3	4.517	34.444		4.445	27.297		
2	3	1	1012.4	4.234	34.486	42.3	4.155	27.361	34.486	45.4
2	4	0	0.0						34.811	
2	4	4	17.0	26.172	34.890		26.168	22.900	34.831	
2	4	3	130.2	21.616	35.355		21.590	24.603		
2	4	2	533.5	6.680	34.042		6.631	26.714	34.048	
2	4	1	1023.7	4.146	34.490		4.068	27.374		
2	5	0	0.0						34.828	
2	5	3	21.4	26.146	34.875		26.141	22.897	34.831	
2	5	2	130.4	21.577	35.360		21.551	24.618	35.355	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	5	1	500.3	6.965	34.039		6.918	26.673	34.053	
2	6	0	0.0						34.829	
2	6	10	4.6	26.159	34.864		26.158	22.883	34.818	
2	6	9	24.6	26.127	34.878		26.122	22.905	34.834	
2	6	8	46.4	25.929	34.977		25.919	23.043	34.934	
2	6	7	76.6	23.628	35.188		23.612	23.900	35.148	
2	6	6	99.5	22.558	35.303		22.538	24.298	35.297	
2	6	5	124.8	21.955	35.341		21.930	24.498		
2	6	4	155.2	21.596	35.366		21.565	24.619	35.346	
2	6	3	185.6	20.987	35.324		20.952	24.755	35.309	
2	6	2	511.4	7.442	34.057		7.392	26.622	34.057	
2	6	1	1023.5	4.104	34.499		4.026	27.385	34.498	
2	7	0	0.0						34.820	
2	7	4	9.3	26.143	34.853		26.141	22.881	34.811	
2	7	3	151.2	21.626	35.361		21.597	24.606	35.343	
2	7	2	510.6	7.637	34.046		7.587	26.585	34.046	
2	7	1	1033.6	4.053	34.498		3.974	27.390	34.498	
2	8	0	0.0						34.821	
2	8	12	5.7	26.154	34.856		26.153	22.879		
2	8	11	25.6	26.023	34.949		26.017	22.992	34.903	
2	8	10	45.3	25.802	35.012		25.792	23.109	34.963	
2	8	9	77.1	23.223	35.271		23.207	24.081	35.272	
2	8	8	101.8	22.039	35.329		22.019	24.464	35.331	
2	8	7	130.2	21.657	35.357		21.632	24.593	35.350	
2	8	6	155.2	21.317	35.356		21.287	24.688	35.345	
2	8	5	180.0	20.576	35.263		20.542	24.820	35.272	
2	8	4	258.6	15.106	34.597		15.066	25.648	34.608	
2	8	3	507.2	7.015	34.039		6.967	26.666	34.041	
2	8	2	756.2	4.862	34.299		4.801	27.142	34.298	
2	8	1	1027.6	4.104	34.493		4.025	27.380	34.494	
2	9	0	0.0						34.824	
2	9	4	5.8	26.259	34.863		26.257	22.852	34.819	
2	9	3	134.9	21.571	35.362		21.545	24.621	35.354	
2	9	2	503.9	7.602	34.052		7.552	26.595	34.050	
2	9	1	1017.9	4.146	34.489		4.068	27.373	34.489	
2	10	0	0.0						34.830	
2	10	3	22.1	26.123	34.874		26.118	22.903	34.831	
2	10	2	131.5	21.583	35.369		21.558	24.623	35.356	
2	10	1	542.2	6.473	34.052		6.423	26.750	34.050	
2	11	0	0.0						34.865	
2	11	3	21.4	26.236	34.871		26.232	22.866	34.833	
2	11	2	129.9	21.787	35.355		21.761	24.555	35.366	
2	11	1	540.1	6.668	34.042		6.618	26.716	34.045	
2	12	0	0.0						34.838	
2	12	23	4.9	26.219	34.885		26.218	22.881	34.844	
2	12	22	25.2	26.223	34.884		26.218	22.880	34.844	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	12	21	25.2	26.225	34.884		26.220	22.879		
2	12	20	46.7	25.828	35.015		25.818	23.103		
2	12	19	46.6	25.831	35.013		25.821	23.101	34.971	
2	12	18	75.4	23.436	35.262		23.420	24.012		
2	12	17	75.3	23.435	35.261		23.420	24.012	35.244	
2	12	16	90.6	22.466	35.302		22.448	24.322	35.295	
2	12	15	90.3	22.511	35.300		22.492	24.308		
2	12	14	101.3	22.133	35.324		22.113	24.434		
2	12	13	101.3	22.136	35.323		22.116	24.432	35.324	
2	12	12	112.3	21.917	35.341		21.895	24.508	35.340	
2	12	11	112.1	21.921	35.340		21.898	24.506	35.338	
2	12	10	126.5	21.681	35.356		21.656	24.586	35.350	
2	12	9	126.4	21.685	35.355		21.660	24.584	35.349	
2	12	8	136.8	21.607	35.368		21.581	24.616	35.358	
2	12	7	136.5	21.608	35.367		21.581	24.615	35.357	
2	12	6	153.9	21.495	35.373		21.465	24.652	35.359	
2	12	5	154.0	21.498	35.373		21.468	24.651	35.357	
2	12	4	178.8	20.620	35.281		20.586	24.822	35.285	
2	12	3	178.9	20.622	35.282		20.588	24.821	35.269	
2	12	2	208.9	18.206	34.968		18.170	25.207	35.033	
2	12	1	208.6	18.242	34.969		18.206	25.199	34.994	
2	13	0	0.0						34.851	
2	13	3	16.4	26.194	34.882		26.191	22.887	34.840	
2	13	2	128.2	21.619	35.368		21.594	24.612	35.362	
2	13	1	568.7	6.215	34.066		6.164	26.794	34.066	
2	14	4	8.6	26.179	34.875		26.177	22.886	34.833	
2	14	3	131.5	21.745	35.354		21.719	24.567		
2	14	2	555.3	6.526	34.045		6.475	26.737	34.044	
2	14	1	1024.5	4.082	34.493		4.004	27.383	34.493	
2	15	0	0.0						34.883	
2	15	10	5.4	26.102	34.911		26.101	22.937	34.864	
2	15	9	20.3	26.107	34.910		26.102	22.936		
2	15	8	45.3	26.088	34.933		26.077	22.961		
2	15	7	80.1	23.752	35.173		23.736	23.852		
2	15	6	103.4	22.538	35.307		22.517	24.307		
2	15	5	123.4	21.916	35.340		21.892	24.508	35.324	
2	15	4	164.8	21.394	35.361		21.362	24.671		
2	15	3	182.6	20.855	35.305		20.820	24.776		
2	15	2	556.4	6.397	34.077		6.346	26.779		
2	15	1	1018.4	4.163	34.498		4.084	27.378	34.498	
2	16	0	0.0						34.866	
2	16	17	4.8	26.136	34.888	206.8	26.135	22.909	34.843	207.3
2	16	16	25.5	26.098	34.896	209.4	26.093	22.928	34.854	208.0
2	16	15	45.4	25.771	35.016	210.3	25.761	23.122	34.971	210.3
2	16	14	61.7	24.089	35.139	221.7	24.076	23.726	35.120	219.9
2	16	13	76.4	23.235	35.273	224.6	23.219	24.079	35.239	225.0

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	16	12	86.7	22.606	35.297	223.5	22.588	24.279	35.288	223.1
2	16	11	96.5	22.279	35.310	215.5	22.260	24.382	35.306	216.7
2	16	10	106.4	22.000	35.323	212.4	21.979	24.471	35.319	214.1
2	16	9	116.8	21.814	35.334	208.3	21.791	24.532	35.329	215.9
2	16	8	129.7	21.648	35.348	206.5	21.623	24.589	35.339	207.7
2	16	7	153.9	21.263	35.342	200.3	21.233	24.692	35.331	202.6
2	16	6	181.7	20.075	35.205	198.7	20.042	24.908	35.210	199.8
2	16	5	207.3	18.564	35.013	196.4	18.528	25.152	35.043	199.0
2	16	4	234.3	16.285	34.721		16.248	25.477		196.8
2	16	3	258.0	15.248	34.614	207.5	15.208	25.629	34.615	204.9
2	16	2	555.7	6.339	34.069		6.289	26.780	34.069	
2	16	1	1021.1	4.134	34.491		4.055	27.376	34.491	
2	17	0	0.0						34.843	
2	17	17	6.8	26.177	34.885		26.175	22.894		
2	17	16	28.8	26.001	34.950		25.995	22.999	34.908	
2	17	15	28.7	25.996	34.953		25.990	23.003	34.915	
2	17	14	28.8	25.983	34.962		25.977	23.014		
2	17	13	279.2	13.344	34.413		13.305	25.877		
2	17	12	301.2	13.005	34.379	216.6	12.963	25.920	34.378	213.5
2	17	11	330.9	12.348	34.324	217.3	12.304	26.006	34.322	215.2
2	17	10	358.2	11.726	34.274	217.6	11.680	26.086	34.275	222.0
2	17	9	383.2	10.895	34.225	215.7	10.848	26.200	34.227	213.1
2	17	8	412.9	9.948	34.162	209.7	9.900	26.315	34.165	206.5
2	17	7	460.2	8.329	34.068	161.7	8.281	26.500	34.066	164.2
2	17	6	508.3	7.349	34.040	139.1	7.300	26.621	34.039	140.8
2	17	5	612.1	5.845	34.130	56.5	5.792	26.891	34.129	55.1
2	17	4	705.8	5.334	34.299	33.6	5.275	27.088	34.297	38.0
2	17	3	814.0	4.873	34.394	33.3	4.807	27.217	34.394	30.7
2	17	2	903.6	4.603	34.439	38.2	4.531	27.283	34.440	35.7
2	17	1	1016.8	4.116	34.493	45.5	4.038	27.379	34.492	42.6
2	18	23	6.0	26.178	34.879		26.176	22.889		
2	18	22	25.1	26.036	34.947		26.031	22.986	34.911	
2	18	21	25.0	26.042	34.946		26.036	22.983		
2	18	20	45.3	25.099	35.072		25.089	23.371	34.898	
2	18	19	45.2	25.075	35.077		25.065	23.382		
2	18	18	75.7	23.576	35.194		23.560	23.919		
2	18	17	75.6	23.576	35.194		23.560	23.919		
2	18	16	101.3	22.431	35.305		22.411	24.335	35.307	
2	18	15	128.2	21.888	35.336		21.863	24.513	35.328	
2	18	14	127.8	21.892	35.336		21.867	24.512		
2	18	12	155.6	21.217	35.338		21.187	24.701	35.326	
2	18	11	155.6	21.219	35.338		21.189	24.701		
2	18	10	183.2	18.825	35.039		18.793	25.105	35.064	
2	18	9	183.0	18.852	35.040		18.820	25.098		
2	18	8	260.8	14.329	34.514		14.291	25.751		
2	18	7	260.4	14.341	34.515		14.303	25.749		

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	18	6	509.3	6.951	34.037		6.904	26.674		
2	18	5	509.8	6.943	34.036		6.895	26.674		
2	18	4	751.1	5.038	34.321		4.977	27.139	34.279	
2	18	3	752.1	5.030	34.321		4.969	27.141		
2	18	2	1011.8	4.225	34.482		4.147	27.359		
2	18	1	1012.7	4.222	34.483		4.144	27.360	34.487	

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	1	0	0.0						34.968	
2	1	19	0.3	25.270	35.011		25.270	23.269	34.947	
2	1	18	4.4	25.270	35.017		25.269	23.274	34.953	
2	1	17	8.6	25.234	35.017		25.232	23.285	34.936	
2	1	16	18.4	25.142	35.013		25.138	23.311	34.943	
2	1	15	23.4	25.138	35.012		25.133	23.311	34.946	
2	1	14	28.3	25.127	35.009		25.121	23.313	34.943	
2	1	13	39.1	25.122	35.004		25.113	23.311	34.942	
2	1	12	44.4	25.121	35.001		25.111	23.310	34.947	
2	1	11	49.2	25.121	34.997		25.110	23.307	34.932	
2	1	10	59.1	25.119	34.989		25.106	23.302	34.942	
2	1	9	70.1	24.519	35.066		24.504	23.543	35.029	
2	1	8	75.6	24.157	35.121		24.141	23.692	35.106	
2	1	7	81.1	23.970	35.176		23.953	23.790	35.153	
2	1	6	90.7	23.598	35.198		23.579	23.917	35.176	
2	1	5	104.9	22.838	35.249		22.816	24.177	35.241	
2	1	4	103.1	22.909	35.244		22.888	24.152	35.231	
2	1	3	129.1	21.798	35.288		21.772	24.502	35.286	
2	1	2	154.9	20.913	35.256		20.883	24.722	35.261	
2	1	1	184.2	20.039	35.166		20.005	24.888	35.170	
2	2	23	898.9	4.307	34.427	29.4	4.237	27.305	34.426	34.2
2	2	22	998.3	3.989	34.482	38.4	3.914	27.383	34.482	38.7
2	2	21	1098.2	3.714	34.509	45.8	3.633	27.433	34.510	44.7
2	2	20	1244.8	3.334	34.539	53.8	3.243	27.494	34.541	53.0
2	2	19	1398.0	2.995	34.563		2.896	27.546		
2	2	18	1550.8	2.709	34.582	69.5	2.600	27.587	34.583	69.7
2	2	17	1698.2	2.468	34.597	76.0	2.350	27.620	34.596	76.7
2	2	16	1850.9	2.282	34.610	80.7	2.154	27.647	34.610	84.9
2	2	15	1997.3	2.109	34.621		1.971	27.670		
2	2	14	2200.2	1.939	34.634	95.8	1.786	27.695	34.635	96.3
2	2	13	2401.9	1.810	34.645	100.3	1.642	27.715	34.646	104.2
2	2	12	2597.7	1.702	34.655	109.2	1.519	27.732	34.655	111.7
2	2	11	2796.5	1.627	34.662	115.2	1.426	27.745	34.662	118.7
2	2	10	2998.6	1.561	34.670	123.9	1.343	27.757	34.673	124.7
2	2	9	3200.2	1.517	34.675	129.7	1.281	27.765	34.674	130.3
2	2	8	3392.1	1.492	34.679	136.0	1.237	27.771	34.680	135.7
2	2	7	3595.0	1.469	34.683	140.7	1.194	27.778	34.683	145.1
2	2	6	3799.5	1.459	34.686	146.5	1.162	27.782	34.687	147.2
2	2	5	3993.2	1.458	34.688	149.6	1.141	27.785	34.688	149.1
2	2	4	4197.3	1.467	34.689		1.127	27.787		151.7
2	2	3	4390.6	1.481	34.690		1.119	27.788		153.1
2	2	2	4491.9	1.489	34.690	155.6	1.115	27.789	34.690	152.9
2	2	1	4694.5	1.509	34.691	158.4	1.111	27.789	34.690	153.4
2	3	22	30.6	25.096	35.036	212.4	25.089	23.343	34.947	209.7
2	3	21	56.4	25.090	35.024	211.8	25.077	23.338	34.955	210.3
2	3	20	80.0	25.065	35.016	210.3	25.048	23.341	34.957	210.7

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	μmol kg^{-1}	°C	kg m^{-3}	psu	μmol kg^{-1}
2	3	19	99.3	23.269	35.108	214.0	23.248	23.946	35.078	210.3
2	3	18	121.6	22.019	35.261	204.8	21.995	24.419	35.247	207.7
2	3	17	147.2	20.587	35.191	194.8	20.559	24.760	35.201	205.5
2	3	16	166.3	19.388	35.064		19.358	24.979		
2	3	15	226.9	16.073	34.689	200.1	16.037	25.501	34.696	204.2
2	3	14	299.8	11.769	34.217	200.3	11.731	26.032	34.217	202.0
2	3	13	342.7	10.207	34.130	196.8	10.167	26.245	34.133	196.6
2	3	12	407.0	8.591	34.064	170.5	8.548	26.456	34.067	169.7
2	3	11	437.0	8.287	34.062	162.3	8.242	26.501	34.072	157.0
2	3	10	467.1	7.522	34.042	141.7	7.476	26.598	34.045	145.3
2	3	9	505.2	6.812	34.043	117.7	6.765	26.697	34.047	112.3
2	3	8	569.9	5.832	34.108	57.9	5.783	26.875	34.109	59.6
2	3	7	598.9	5.569	34.129	54.7	5.518	26.924	34.126	47.7
2	3	6	621.4	5.427	34.151	44.3	5.376	26.958	34.148	41.4
2	3	5	689.9	5.082	34.242	30.0	5.026	27.072	34.243	28.7
2	3	4	763.1	4.684	34.327	25.1	4.623	27.185	34.327	23.1
2	3	3	825.6	4.462	34.387	27.5	4.398	27.257	34.387	27.5
2	3	2	905.9	4.228	34.440	32.5	4.159	27.324	34.440	32.3
2	3	1	1023.0	3.901	34.490	40.9	3.825	27.399	34.492	42.5
2	4	0	0.0						34.973	
2	4	13	80.1	25.060	35.016		25.042	23.342	34.950	
2	4	12	101.3	23.487	35.087		23.466	23.866	35.040	
2	4	11	122.5	22.749	35.186		22.724	24.156	35.150	
2	4	10	142.4	21.535	35.251		21.507	24.548	35.232	
2	4	9	163.1	20.566	35.201		20.536	24.774		
2	4	8	184.5	19.012	35.041		18.979	25.059	35.040	
2	4	7	205.6	18.181	34.943		18.146	25.193	34.935	
2	4	6	256.4	15.606	34.647		15.566	25.575	34.636	
2	4	5	308.5	12.960	34.343		12.918	25.901	34.334	
2	4	4	358.0	10.775	34.164		10.732	26.173	34.155	
2	4	3	407.6	9.264	34.085		9.219	26.367	34.079	
2	4	2	508.3	6.971	34.042		6.923	26.675	34.032	
2	4	1	809.7	4.471	34.396		4.408	27.263	34.396	
2	5	12	4.6	25.066	35.000		25.065	23.323		
2	5	11	26.6	25.070	35.010		25.065	23.331		
2	5	10	47.4	25.064	35.005		25.054	23.330	34.933	
2	5	9	78.0	24.377	35.017		24.360	23.549		
2	5	8	104.0	22.992	35.145		22.971	24.054	35.122	
2	5	7	129.0	22.066	35.259		22.041	24.405		
2	5	6	155.2	20.448	35.184		20.419	24.792		
2	5	5	179.9	19.144	35.076		19.112	25.051	35.076	
2	5	4	254.3	15.297	34.595		15.259	25.604	34.605	
2	5	3	508.5	6.627	34.042		6.581	26.721	34.040	
2	5	2	760.8	4.713	34.323		4.653	27.178	34.323	
2	5	1	1012.1	3.990	34.482		3.914	27.383	34.482	
2	6	13	5.8	25.073	35.019		25.072	23.336		210.9

Station	Cast	Bottle	CTD						Bottle	
			Pressure	Temperature	Salinity	Oxygen	Pot. Temp.	Pot. Density	Salinity	Oxygen
			dbar	°C	psu	µmol kg^{-1}	°C	kg m^{-3}	psu	µmol kg^{-1}
2	6	12	25.3	25.071	35.020	213.4	25.066	23.338	34.935	210.7
2	6	11	45.6	25.072	35.019	212.2	25.062	23.339	34.936	211.9
2	6	10	61.6	25.059	35.017	209.6	25.046	23.342	34.936	209.7
2	6	9	76.5	24.905	35.024		24.889	23.395		210.3
2	6	8	86.6	23.689	35.089	213.4	23.671	23.808	35.010	212.6
2	6	7	96.3	23.150	35.165	212.5	23.130	24.022	35.107	210.0
2	6	6	106.7	22.819	35.205		22.797	24.149		209.2
2	6	5	119.6	22.043	35.272	207.4	22.019	24.421	35.233	204.0
2	6	4	130.6	21.628	35.275	201.8	21.602	24.539	35.233	201.2
2	6	3	155.4	20.340	35.203	192.0	20.311	24.835	35.172	201.2
2	6	2	181.5	18.876	35.048	194.3	18.844	25.099	35.018	194.5
2	6	1	201.3	17.886	34.912	194.3	17.851	25.242	34.912	195.4
2	7	0	0.0						34.946	
2	7	14	231.2	16.367	34.741	202.0	16.329	25.473	34.735	201.7
2	7	13	256.3	14.873	34.549	202.1	14.835	25.661	34.526	202.0
2	7	12	281.2	13.410	34.383	204.8	13.371	25.841	34.389	204.0
2	7	11	306.4	12.160	34.255	203.6	12.120	25.989	34.255	202.1
2	7	10	331.5	10.904	34.163	198.5	10.863	26.149	34.177	200.2
2	7	9	356.6	10.228	34.125	196.6	10.186	26.237	34.127	194.1
2	7	8	381.6	9.648	34.108	189.8	9.605	26.322	34.116	190.2
2	7	7	409.8	8.667	34.065	169.8	8.624	26.445	34.067	171.0
2	7	6	509.4	6.700	34.035	122.4	6.653	26.705	34.036	115.0
2	7	5	610.8	5.512	34.143	46.8	5.460	26.942	34.143	47.3
2	7	4	709.0	4.883	34.287	26.4	4.827	27.130	34.287	26.4
2	7	3	812.1	4.522	34.376	25.5	4.459	27.242	34.379	24.2
2	7	2	911.6	4.207	34.446	35.0	4.138	27.331	34.445	32.7
2	7	1	1019.4	3.940	34.488	41.8	3.864	27.393	34.488	40.2
2	8	0	0.0						34.950	
2	8	11	11.2	25.102	35.011		25.099	23.322		
2	8	10	112.5	22.288	35.242		22.266	24.328	35.196	
2	8	9	134.7	21.287	35.264		21.261	24.625	35.230	
2	8	8	154.5	20.465	35.217		20.436	24.813	35.193	
2	8	7	164.5	20.241	35.200		20.210	24.860	35.174	
2	8	6	177.3	19.842	35.161		19.809	24.936	35.136	
2	8	5	196.8	19.386	35.119		19.351	25.023	35.099	
2	8	4	507.9	6.674	34.036		6.627	26.710	34.038	
2	8	3	610.4	5.516	34.141		5.465	26.940	34.140	
2	8	2	710.5	4.892	34.286		4.836	27.128	34.285	
2	8	1	810.4	4.555	34.370		4.491	27.233	34.286	

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	3	12	4.7		0.09	0.02	0.91										
2	3	11	39.4		0.08	0.04	1.11										
2	3	10	99.4		0.14	0.21	1.50										
2	3	9	150.3		0.27	2.07	2.10										
2	3	8	191.8		0.31	2.26	2.89										
2	3	7	217.0		0.39	3.79	3.49										
2	3	6	279.9		0.67	8.01	7.66										
2	3	5	340.6		1.07	13.95	16.19										
2	3	4	399.0		1.55	20.73	28.41										
2	3	3	475.9		2.05	26.87	43.20										
2	3	2	677.8		2.97	40.18	92.63										
2	4	12	542.6		2.40	32.42	60.67										
2	4	11	998.9					0.01	1.33	24.33							
2	4	3	2094.0					0.01	1.66	22.66							
2	5	10	2880.0			37.05	161.06										
2	5	9	3067.6					0.03	1.86	22.47							
2	5	4	4087.4					0.03	2.51	22.37							
2	5	1	4705.8					0.00	2.42	25.11							
2	7	5	10.7		0.07	0.00	0.52	0.20	5.01	41.99				0.24	0.31		
2	7	4	25.5		0.08	0.04	0.71							0.13	0.08		
2	7	3	42.9		0.09	0.02	0.31							0.19	0.05		
2	7	2	68.3		0.08	0.00	0.91							0.29	0.30		
2	7	1	114.4		0.16	0.40	1.70							0.32	0.04		
2	10	10	4.1													3.66	
2	10	9	19.8													3.55	
2	10	8	38.8													4.65	
2	10	7	68.6													2.85	
2	10	6	117.6													1.25	
2	10	5	304.9													0.82	
2	10	4	506.1													0.50	

Table VI.B.13

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	10	3	753.3													0.23	
2	10	2	1011.7													0.19	
2	11	11	16.6		0.08	0.02	0.71	0.20	5.53	40.03							
2	11	10	36.5		0.09	0.00	0.71	0.19	5.44	39.15							
2	11	9	56.4		0.07	0.02	0.71	0.20	5.83	38.66							
2	11	8	77.8		0.08	0.00	1.11	0.18	5.85	34.56							
2	11	7	97.8		0.09	0.00	1.70	0.17	5.23	35.73							
2	11	6	117.3		0.14	0.36	1.50	0.14	4.61	32.12							
2	11	5	137.8		0.22	1.30	2.10										
2	11	4	157.7		0.29	2.37	2.50										
2	11	3	181.8		0.34	3.07	3.10										
2	11	2	204.2		0.42	4.21	4.08	0.10	3.80	27.83							
2	11	1	228.8		0.47	4.92	5.08										
2	12	9	303.8		0.86	10.89	11.24										
2	12	8	354.5		1.16	15.32	17.98										
2	12	7	405.3		1.54	20.90	28.70										
2	12	6	505.4		2.38	32.55	59.87	0.04	2.10	26.87							
2	12	5	602.9		2.82	38.40	80.70										
2	12	4	705.7		3.05	41.23	96.37	0.03	1.70	26.67							
2	12	3	805.2		3.08	41.17	103.51										
2	12	2	906.4		3.07	41.49	109.06	0.03	2.32	23.64							
2	13	10	7.7														25.24
2	13	9	24.4														24.54
2	13	8	44.2														26.73
2	13	7	69.4														32.47
2	13	4	310.8														2.65
2	13	3	508.6														2.65
2	13	2	755.8														0.95
2	13	1	1007.2														0.64
2	14	7	117.3														15.97

Table VI.B.13

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	15	9	8.9										15.8				
2	15	8	18.9										19.9				
2	15	7	38.9										15.1				
2	15	6	66.7										20.8				
2	15	5	116.1										7.9				
2	15	4	308.4										4.1				
2	15	3	508.3										4.4				
2	15	2	754.8										5.0				
2	15	1	1008.5										5.0				

Table VI.B.14

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
1	1	11	15.3		0.08	0.07	1.03										
1	1	10	35.2		0.09	0.07	1.03										
1	1	9	56.0		0.09	0.07	1.03	0.17	5.16	38.28							
1	1	8	77.8		0.09	0.02	1.22										
1	1	7	97.4		0.12	0.05	1.03										
1	1	6	149.3		0.31	2.55	2.79										
1	1	5	205.0		0.64	7.55	6.72	0.08	4.74	31.18							
1	1	4	254.7		0.86	10.31	9.86										
1	1	3	504.4		2.54	33.66	60.29										
1	1	2	754.2		3.03	40.54	87.85	0.06	2.87	23.61							
1	1	1	1014.7		3.06	41.41	104.42										
2	2	11	2603.2		2.71	38.67	161.29	0.09	2.47	17.11							
2	2	10	2808.4		2.65	38.02	161.29										
2	2	9	2990.6		2.64	37.58	158.65										
2	2	8	3191.8		2.60	37.14	158.94	0.06	2.35	18.37							
2	2	7	3390.4		2.57	36.71	156.39										
2	2	6	3594.9		2.54	36.49	154.43	0.07	2.49	18.70							
2	2	5	3797.6		2.53	36.16	153.44	0.08	2.68	21.18							
2	2	4	3999.2		2.52	35.89	150.31										
2	2	3	4200.3		2.53	35.83	149.53	0.04	2.40	16.85							
2	2	2	4399.6		2.52	35.83	150.50										
2	2	1	4505.0		2.52	35.72	148.54	0.06	2.30	18.32							
2	3	11	695.3		2.97	39.89	85.41										
2	3	10	755.2		3.05	41.08	93.64										
2	3	9	839.6		3.06	41.52	102.46										
2	3	8	990.0		3.06	41.51	110.30	0.05	2.50	22.33							
2	3	7	1190.4		3.05	41.47	121.10	0.06	2.31	20.43							
2	3	6	1391.9		3.01	41.07	132.86	0.04	1.59	22.41							
2	3	5	1598.4		2.97	40.64	142.67	0.02	2.01	20.42							
2	3	4	1807.8		2.91	40.09	149.54	0.04	2.33	19.45							

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	3	3	1995.9		2.82	39.94	153.95										
2	3	2	2207.1		2.78	39.44	158.35	0.08	2.86	17.05							
2	3	1	2413.5		2.72	38.78	162.28										
2	4	11	15.6		0.09	0.07	0.05	0.15	5.04	39.79							
2	4	10	99.5		0.11	0.18	1.22										
2	4	9	136.4		0.19	0.12	1.82										
2	4	8	173.3		0.25	2.23	2.01										
2	4	7	238.0		0.34	3.43	3.58										
2	4	6	322.5		0.87	11.29	11.43										
2	4	5	433.3		1.49	20.20	26.54										
2	4	4	494.5		1.94	26.47	41.26										
2	4	3	526.2		2.09	28.43	45.78										
2	4	2	575.0		2.46	33.67	61.28										
2	4	1	637.8		2.84	38.36	78.93										
2	5	10	1.5	1938	0.09	0.05	1.03	0.18	5.01	43.65				0.20			
2	5	9	21.2	1941	0.09	0.05	1.03							0.19	0.01		
2	5	8	46.2	1935	0.08	0.07	0.05							0.18	0.01		
2	5	7	71.1	1940	0.08	0.05	1.03							0.38	0.08		
2	5	6	97.9		0.12	0.21	1.03	0.12	5.26	37.50				0.27	0.48		
2	5	5	122.9	1986	0.18	0.72	2.01							0.17	0.15		
2	5	4	148.6	2007	0.22	1.61	2.21	0.09	6.41	32.66				0.04	0.05		
2	5	3	177.6	2014	0.23	2.03	2.40							0.03	0.04		
2	7	11	0.9	1936							1.30	0.058					
2	7	10	26.1	1938							1.13	0.083					
2	7	9	46.2									0.019					
2	7	8	71.9								2.06	0.071					
2	7	7	97.8								3.26	0.027					
2	7	6	122.6								3.06	0.018					
2	7	5	150.6								1.27	0.040					
2	7	4	173.6									0.011					

Table VI.B.14

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	7	3	259.6									0.013					
2	7	2	499.0									0.013					
2	7	1	747.9								0.74	0.012					
2	8	11	1.6	1941	0.09	0.05	1.42										
2	8	10	16.2		0.08	0.05	1.42										
2	8	9	37.8		0.09	0.07	1.42										
2	8	8	57.9		0.08	0.07	1.22										
2	8	7	79.2		0.11	0.07	1.42										
2	8	6	98.9		0.15	0.55	1.56										
2	8	5	119.7		0.16	0.76	2.01										
2	8	4	139.8		0.22	1.59	2.99										
2	8	3	161.5		0.22	1.77	2.21										
2	8	2	181.1		0.23	2.05	2.01										
2	8	1	258.5	2029	0.48	5.35	5.29										
2	9	11	277.2		0.57	6.72	6.72	0.08	4.25	29.12							
2	9	10	303.3		0.74	9.21	8.87										
2	9	9	354.9		0.99	13.14	13.98	0.07	3.22	27.43							
2	9	8	404.1		1.25	16.96	20.84	0.06	3.43	27.57							
2	9	7	506.6		2.07	28.10	45.58	0.08	2.89	26.23							
2	9	6	605.6		2.71	36.29	69.12	0.06	2.27	26.93							
2	9	5	705.7		3.01	40.32	88.74	0.04	2.51	23.40							
2	9	4	805.9		3.11	41.85	93.20	0.06	2.47	22.62							
2	9	3	905.7		3.07	41.62	107.37	0.06	2.56	24.32							
2	9	2	1005.7		3.07	41.72	114.52	0.04	2.84	24.45							
2	11	11	1.8														24.39
2	11	10	20.6														62.60
2	11	9	46.6														43.69
2	11	8	73.5														40.84
2	11	7	99.4														43.25
2	11	6	125.0														16.19

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	11	5	150.1														10.26
2	11	4	176.3														7.23
2	11	3	251.3														5.62
2	11	2	304.0														4.36
2	11	1	506.5														2.14
2	12	4	152.2													0.35	
2	12	3	557.5													0.78	
2	12	2	755.5													0.47	0.96
2	12	1	1006.4														0.78
2	13	11	1.7													0.76	
2	13	10	21.4													6.37	
2	13	9	46.1													8.12	
2	13	8	72.3													6.95	
2	13	7	96.9													4.08	
2	13	6	124.1													1.96	
2	13	5	148.8													1.63	
2	13	4	175.6													1.40	
2	13	3	302.9													1.18	
2	15	11	1.6										16.1				
2	15	10	21.6										16.4				
2	15	9	46.4										16.4				
2	15	8	72.1										19.9				
2	15	7	97.9										20.2				
2	15	6	125.8										9.5				
2	15	5	151.1										6.0				
2	15	4	176.9										13.9				
2	16	6	302.8										3.5				
2	16	4	504.2										5.0				
2	16	2	754.1										3.2				
2	16	1	1005.3										2.5				

Table VI.B.14

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	1	12	2396.7	2363	2.79	39.42	160.74										
2	1	11	2575.1	2357	2.75	38.72	160.33										
2	1	10	2786.4	2344	2.71	38.15	159.94										
2	1	9	2987.6	2349	2.68	37.73	158.77										
2	1	7	3402.8	2340	2.59	36.99	156.80										
2	1	6	3590.0	2334	2.56	36.57	155.43										
2	1	5	3794.8	2318	2.56	36.36	152.49										
2	1	4	4003.6	2300	2.52	36.25	153.46	0.03	2.74	23.80							
2	1	2	4403.3	2288	2.52	36.20	149.54										
2	1	1	4504.9	2267	2.53	35.94	148.95										
2	2	12	35.9		0.09	0.02	1.33										
2	2	11	204.9		0.32	3.41	2.30										
2	2	10	378.3		1.26	16.68	18.41										
2	2	9	598.6		2.56	34.80	63.58										
2	2	8	757.5	2321	3.04	41.11	93.62										
2	2	7	928.8	2345	3.06	41.63	107.75										
2	2	6	1148.5	2353	3.02	41.52	117.55										
2	2	5	1351.3	2360	3.00	41.41	126.97										
2	2	4	1600.2	2358	2.96	40.89	138.17										
2	2	3	1775.8	2361	2.90	40.46	143.07										
2	2	2	1926.6	2356	2.87	40.26	148.96	0.01	2.77	22.80							
2	2	1	2201.1	2371	2.82	39.73	156.81										
2	3	12	19.7	1967	0.09	0.02	0.93										
2	3	11	118.8	1996	0.13	0.38	1.91										
2	3	10	186.0	2045	0.30	2.75	1.91										
2	3	9	252.9	2055	0.46	5.20	4.27										
2	3	8	334.2	2096	1.02	13.00	13.10										
2	3	7	384.7	2117	1.34	17.59	19.59										
2	3	6	436.6	2141	1.55	20.96	26.86										
2	3	5	504.2	2204	2.14	28.69	45.51										

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	3	4	549.5	2233	2.35	31.85	54.94										
2	3	3	596.9	2266	2.68	36.01	68.29										
2	3	2	710.8	2312	3.00	40.38	88.12										
2	3	1	1016.4	2347	3.04	41.61	111.67										
2	4	10	4.9	1961	0.07	0.02	0.93							0.19	0.12		
2	4	9	22.8	1960	0.07	0.04	0.93							0.26	0.09		
2	4	8	43.3	1964	0.07	0.02	1.33							0.23	0.07		
2	4	7	72.7	1956	0.07	0.04	1.13							0.24	0.07		
2	4	6	97.7	1968	0.09	0.04	1.23							0.27	0.05		
2	4	5	122.2	1976	0.12	0.11	0.73							0.24	0.27		
2	4	4	146.8	2008	0.16	0.61	0.93							0.14	0.25		
2	4	3	176.8	2022	0.21	1.49	1.52							0.06	0.06		
2	6	12	2.8		0.07	0.02	0.93	0.18	5.88	38.43							
2	6	11	18.4		0.07	0.00	0.93										
2	6	10	38.2		0.07	0.02	1.13	0.18	5.26	36.29							
2	6	9	56.7		0.07	0.04	1.33										
2	6	8	79.4		0.09	0.04	1.13	0.17	5.23	38.05							
2	6	7	96.6		0.10	0.10	1.13										
2	6	6	117.5		0.14	0.49	0.93	0.14	5.02	30.58							
2	6	5	139.2		0.18	1.02	1.13										
2	6	4	151.6		0.24	1.81	1.91										
2	6	3	163.4		0.27	2.09	1.72										
2	6	2	186.7		0.34	3.20	3.09	0.06	4.24	30.77							
2	6	1	230.8		0.43	4.60	3.78										
2	7	12	201.3		0.32	2.82	2.30										
2	7	11	251.0	2056	0.47	5.16	4.27	0.07	3.65	26.73							
2	7	10	278.0	2052	0.51	5.72	5.26										
2	7	9	304.3	2062	0.64	7.71	7.21										
2	7	8	353.1	2100	1.11	14.22	15.07	0.09	5.14	26.74							
2	7	7	403.8	2128	1.49	19.55	24.30										

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	7	6	505.0	2206	2.14	28.90	46.89	0.01	3.86	24.80							
2	7	5	605.8	2270	2.69	36.17	70.06										
2	7	4	705.5	2320	3.04	40.58	88.71	0.01	3.95	23.93							
2	7	2	906.4	2337	3.08	41.63	100.87										
2	7	1	1021.7	2349	3.06	41.56	106.56	0.00	2.93	24.80							
2	8	12	3.9														27.12
2	8	11	19.4														28.52
2	8	10	41.6														27.52
2	8	9	71.4														28.79
2	8	8	102.9														23.38
2	8	7	132.6														19.19
2	8	6	151.8														10.55
2	8	5	177.0														7.16
2	8	4	257.2														4.65
2	8	3	500.3														1.19
2	8	2	753.9														0.60
2	8	1	1014.1														0.16
2	9	12	8.7									0.070					
2	9	11	26.5								3.07	0.155					
2	9	10	48.8								1.76	0.204					
2	9	9	78.8								8.77	0.144					
2	9	8	102.7									0.024					
2	9	7	128.2									0.227					
2	9	6	153.2									0.073					
2	9	5	176.3									0.019					
2	9	4	253.1									0.048					
2	9	3	496.7									0.042					
2	9	2	756.7									0.049					
2	9	1	1013.1								0.62	0.041					
2	12	11	20.6										16.7				

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	12	9	69.8										8.2				
2	12	8	98.6										12.6				
2	12	7	123.2										10.1				
2	12	6	148.0										8.5				
2	12	5	172.0										8.2				
2	12	4	251.6										5.0				
2	12	1	1005.6										4.4				
2	13	12	4.1													6.09	
2	13	8	97.3													4.10	
2	13	7	122.0													1.55	
2	13	6	152.9													0.95	
2	13	5	175.0													0.78	
2	13	3	504.6													0.51	
2	13	2	754.7													0.42	
2	13	1	1016.2													0.21	

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
1	2	12	6.9		0.20	0.05	1.71										
1	2	11	46.6		0.18	0.05	1.61										
1	2	10	73.4		0.17	0.05	1.51										
1	2	9	99.4		0.15	0.11	1.71										
1	2	8	125.1		0.24	1.72	2.49										
1	2	7	150.8		0.32	2.76	3.08										
1	2	6	201.7		0.38	3.56	3.47										
1	2	5	305.4		1.00	12.37	13.84										
1	2	4	404.5		1.86	24.21	34.27										
1	2	3	504.8		2.46	32.37	54.70										
1	2	2	754.5		3.02	40.50	91.05										
1	2	1	1015.1		3.01	41.38	109.42										
2	1	12	8.7		0.09	0.07	1.32										
2	1	11	18.8		0.09	0.05	0.93										
2	1	10	38.5		0.09	0.07	0.73										
2	1	9	58.4		0.09	0.05	0.73										
2	1	8	78.4		0.04	0.05	1.12										
2	1	7	98.4		0.04	0.07	0.83										
2	1	6	108.2		0.04	0.05	1.12										
2	1	5	118.3		0.08	0.07	0.73										
2	1	4	131.3		0.07	0.29	1.12										
2	1	3	141.4		0.13	0.98	1.51										
2	1	2	151.3		0.17	1.53	1.71										
2	1	1	163.0		0.22	2.16	2.10										
2	2	12	179.4		0.31	3.23	3.27										
2	2	11	226.3		0.43	4.91	5.03										
2	2	10	250.9		0.53	6.57	6.59	0.08	4.29	25.60							
2	2	9	270.4		0.63	7.80	8.94										
2	2	8	299.8		0.71	9.29	11.09										
2	2	7	402.2		1.19	16.50	21.66	0.04	3.67	25.01							

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	2	6	502.1		2.18	28.69	45.90										
2	2	5	602.8		2.66	35.71	68.19										
2	2	4	703.8		2.95	39.83	84.22	0.02	1.96	24.29							
2	2	3	806.7		3.03	40.83	91.61										
2	2	2	908.3		3.03	41.16	100.83										
2	2	1	1005.0		3.03	41.28	107.67	0.00	2.10	27.20							
2	3	7	201.0	2024	0.36	3.97	4.44										
2	4	12	2399.1		2.77	39.15	160.43										
2	4	11	2601.8		2.72	38.70	161.02										
2	4	10	2804.0		2.67	38.15	161.02										
2	4	9	3005.6		2.65	37.59	159.45										
2	4	8	3197.6		2.61	37.20	158.77										
2	4	7	3400.3		2.58	36.70	156.52										
2	4	6	3599.3		2.57	36.48	153.59										
2	4	5	3800.9		2.54	36.25	153.59										
2	4	4	4000.3		2.53	35.92	151.63										
2	4	2	4396.5		2.51	35.69	149.28										
2	5	11	201.7		0.36	3.83	3.86										
2	5	10	404.4		1.18	16.32	19.90										
2	5	9	601.2		2.67	36.05	65.65										
2	5	8	787.3		2.98	40.72	91.05										
2	5	7	998.7		3.02	41.61	107.67										
2	5	6	1201.2		3.03	41.55	117.44										
2	5	4	1601.6		2.90	40.83	137.96										
2	5	3	1802.9		2.85	40.27	145.78										
2	5	2	2003.6		2.83	39.94	152.22										
2	5	1	2201.3		2.79	39.60	157.50										
2	6	8	5.8		0.09	0.02	0.73							0.13	0.05		
2	6	7	22.1		0.09	0.02	0.54							0.13	0.05		
2	6	6	41.8		0.09	0.02	1.71	0.19	5.92	32.90				0.17	0.06		

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	6	5	71.8		0.07	0.05	1.32							0.19	0.13		
2	6	4	99.6		0.05	0.07	0.73	0.18	5.41	35.81				0.22	0.20		
2	6	3	123.2		0.07	0.21	2.10							0.17	0.23		
2	6	2	151.1		0.23	2.31	2.49	0.13	4.76	27.87				0.06	0.10		
2	6	1	177.4		0.29	3.11	4.25							0.02	0.03		
2	7	12	47.0		0.08	0.05	0.93										
2	7	11	131.0		0.11	0.24	1.71										
2	7	10	162.1		0.24	1.91	2.88										
2	7	9	203.7		0.39	3.95	3.86										
2	7	8	299.8		0.75	9.72	9.82										
2	7	7	355.4		0.99	13.38	15.99										
2	7	6	423.7		1.79	23.74	33.38										
2	7	5	571.5		2.59	34.94	61.74										
2	7	4	678.0		2.90	39.39	80.31										
2	7	3	745.5		2.98	40.72	89.10										
2	7	2	810.5		3.03	41.49	98.48										
2	7	1	980.2		3.03	41.61	107.27										
2	8	12	5.0									0.255				4.42	30.68
2	8	11	22.2													5.38	43.76
2	8	10	42.0									0.180				3.93	42.35
2	8	9	71.8								1.73	0.242				4.50	30.69
2	8	8	100.2									0.227				3.51	25.08
2	8	7	126.4								2.21	0.120				2.74	19.82
2	8	6	148.4								1.45	0.113				1.65	12.73
2	8	5	177.6								0.73	0.061				0.97	8.68
2	8	4	247.7								0.50	0.032				0.63	4.89
2	8	3	303.2								0.45	0.047				0.62	3.92
2	8	2	507.7													0.84	1.98
2	8	1	756.4													0.27	0.98

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
1	1	12	10.1		0.18	0.05	1.82										
1	1	11	71.0		0.11	0.02	1.43										
1	1	10	127.6		0.08	0.05	1.23										
1	1	9	145.3		0.20	0.80	1.43										
1	1	8	196.3		0.37	3.25	2.99										
1	1	7	242.0		0.47	5.30	4.96										
1	1	6	367.7		1.04	13.29	14.98										
1	1	5	452.5		1.79	24.10	34.83										
1	1	4	520.7		2.32	31.18	53.49										
1	1	3	585.3		2.75	36.42	69.20										
1	1	2	759.1		3.01	40.70	88.84										
1	1	1	998.0		3.03	41.48	105.83										
2	1	9	3.0										13.2				
2	1	8	22.9										13.6				
2	1	7	42.7										12.6				
2	1	6	74.6										12.3				
2	1	5	152.4										8.5				
2	1	4	178.7										6.6				
2	1	3	258.2										2.5				
2	1	2	305.8										3.5				
2	1	1	500.5										1.9				
2	5	12	26.7		0.12	0.14	2.01										
2	5	11	111.1		0.09	0.05	1.43										
2	5	10	144.1		0.20	0.92	1.62										
2	5	9	212.0		0.33	3.08	2.79										
2	5	8	266.8		0.46	5.15	4.37										
2	5	7	351.8		0.80	10.50	10.26										
2	5	6	386.6		1.14	15.34	16.94										
2	5	5	423.0		1.22	17.00	20.48										
2	5	4	453.2		1.39	19.13	25.10										

Table VI.B.17

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	5	3	535.0		1.96	27.28	45.24										
2	5	2	570.5		2.27	31.07	55.46										
2	5	1	633.5		2.69	36.76	73.14										
2	8	11	23.7													4.73	
2	8	10	40.8													7.31	
2	8	9	72.4													8.27	
2	8	8	97.2													5.88	
2	8	7	122.5													3.75	
2	8	6	149.5													1.96	
2	8	5	177.2													2.32	
2	8	4	255.2													1.64	
2	8	3	507.4													0.71	
2	8	2	755.7													0.31	
2	8	1	1025.0													0.22	
2	11	12	225.0		0.35	3.58	3.19										
2	11	11	250.0		0.43	4.81	4.17										4.07
2	11	10	275.0		0.50	5.86	5.55										
2	11	9	300.0		0.67	8.09	7.90										4.29
2	11	8	400.0		1.03	14.18	16.15										
2	11	7	500.0		1.82	25.26	38.34										1.93
2	11	5	700.0		2.94	39.86	84.49										
2	11	4	750.0														1.07
2	11	3	800.0		3.05	41.86	92.34										
2	11	2	900.0		3.04	41.59	100.58										
2	11	1	1000.0		3.03	41.63	107.46										0.63
2	12	12	5.0								1.56	0.149					
2	12	11	25.0								1.68	0.181					
2	12	10	45.0								1.67	0.184					
2	12	9	75.0								1.94	0.107					
2	12	8	100.0								1.67	0.121					

Table VI.B.17

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	12	7	125.0								1.12	0.090					
2	12	6	150.0								0.68	0.070					
2	12	5	175.0								1.01	0.028					
2	12	4	250.0								0.38	0.033					
2	12	3	500.0								0.24	0.020					
2	12	2	750.0								0.29	0.017					
2	12	1	1000.0								0.28	0.020					
2	16	12	40.8	1941	0.08	0.02	2.01							0.11	0.07	8.77	45.14
2	16	11	71.7	1943	0.08	0.02	1.82							0.19	0.06	4.96	47.71
2	16	10	81.6	1944	0.08	0.02	1.03							0.19	0.10	4.87	39.68
2	16	9	92.5	1947	0.08	0.05	3.58							0.22	0.13	2.36	37.29
2	16	8	101.9	1956	0.08	0.05	1.23							0.34	0.21	3.62	38.88
2	16	7	111.7	1963	0.08	0.05	2.21							0.43	0.28	3.63	28.04
2	16	6	121.6	1991	0.16	0.47	1.82							0.30	0.39	2.20	25.49
2	16	5	127.4	1994	0.18	0.69	1.62							0.23	0.40	1.38	21.35
2	16	4	133.7	2001	0.20	0.98	1.62							0.17	0.26	1.68	18.22
2	16	3	143.6	2035	0.21	1.25	2.99							0.13	0.19	1.78	18.42
2	16	2	152.5	2038	0.23	1.39	2.21							0.11	0.13	1.39	10.90
2	16	1	200.2	2056	0.36	3.22	3.10							0.01	0.03	1.16	6.11

Table VI.B.18

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
1	2	12	41.8	1961	0.14	0.03	1.32										
1	2	11	61.8	1987	0.12	0.01	1.12										
1	2	10	110.8	2036	0.18	0.92	1.71										
1	2	9	162.5	2074	0.40	4.12	3.27										
1	2	6	336.8	2142	1.27	17.01	20.06										
1	2	5	411.0	2199	1.82	24.57	33.93										
1	2	4	530.0	2316	2.46	33.24	57.36										
1	2	3	630.2	2319	2.79	38.00	74.94										
1	2	2	756.5	2409	2.98	40.89	89.58										
1	2	1	899.0	2360	3.03	41.58	103.83										
2	1	12	2378.0		2.76	38.67	158.18										
2	1	11	2578.9		2.75	38.34	159.84										
2	1	10	2779.0	2377	2.71												
2	1	9	2980.5		2.68	37.68	160.42										
2	1	8	3184.0		2.64	37.12	158.86										
2	1	7	3389.0		2.61	36.78	156.90										
2	1	6	3591.4		2.59	36.45	155.53										
2	1	4	3996.5	2357	2.54	35.89	152.03										
2	1	3	4200.0		2.54	35.89	151.05										
2	1	2	4403.3		2.52	35.66	150.07										
2	1	1	4507.1	2353	2.53	35.66	149.68										
2	2	11	13.8										17.0				
2	2	10	30.1										18.6				
2	2	9	49.9										14.5				
2	2	8	79.9										19.5				
2	2	4	303.2										2.8				
2	3	12	701.7	2347	2.96	41.14	92.51										
2	3	11	801.0		3.04	41.81	102.27										
2	3	10	901.6	2366	3.00	41.69	106.16										
2	3	9	1002.3	2366	3.01	41.58	111.34										

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	3	8	1102.7		2.99	41.58	116.90										
2	3	7	1251.5		2.96	41.25	125.69										
2	3	6	1401.5		2.96	41.02	132.51										
2	3	5	1552.2	2384	2.94	40.69	138.96										
2	3	4	1701.8		2.91	40.13	144.22										
2	3	3	1852.4		2.87	40.01	149.11										
2	3	2	2004.2	2388	2.86	39.57	152.03										
2	3	1	2210.4		2.80												
2	4	12	30.7	2024	0.09		2.10										
2	4	11	87.1	2055	0.07		2.10										
2	4	10	136.1	2074	0.21	1.92	3.27										
2	4	9	201.0	2089	0.42	4.91	5.42										
2	4	8	281.2		0.74	10.17	11.28										
2	4	7	324.4	2135	1.00	13.97	16.36										
2	4	6	386.6	2167	1.30	18.59	25.14										
2	4	5	464.2	2187	1.77	25.54	41.36										
2	4	4	512.5	2226	2.08	29.78	52.49										
2	4	3	561.2	2282	2.47	34.79	65.77										
2	4	2	611.3	2311	2.77	38.58	78.46										
2	4	1	668.3	2336	2.96	40.58	87.63										
2	5	12	4.5		0.09	0.01	1.51	0.28	4.89	30.21							
2	5	11	19.5		0.09		1.32										
2	5	10	39.4		0.08		2.49	0.25	5.04	29.22							
2	5	9	59.4		0.09		1.51										
2	5	8	79.0		0.12		1.71	0.19	4.57	27.76							
2	5	7	99.0		0.17	0.41	2.49	0.17	4.36	25.16							
2	5	6	108.7		0.20	0.96	3.37										
2	5	5	119.1		0.24	1.86	3.08										
2	5	4	129.0		0.29	2.68	3.27	0.16	3.82	24.44							
2	5	3	139.8		0.31	2.85	3.47										

Table VI.B.18

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	5	2	159.7		0.34	3.23	3.86	0.11	4.21	25.59							
2	5	1	179.6		0.42	4.45	4.64										
2	6	12	199.7		0.42	4.81	4.64	0.16	4.18	31.51							
2	6	11	250.6		0.58	7.30	7.17										
2	6	10	273.5		0.68	8.90	8.74										
2	6	9	300.4		0.91	12.23	12.25	0.14	3.46	22.39							
2	6	8	349.7		1.13	15.57	17.73										
2	6	7	400.4		1.37	19.23	25.34										
2	6	6	502.7		2.05	28.79	50.15	0.08	3.55	24.67							
2	6	5	603.0		2.74	37.57	76.90										
2	6	4	702.3		3.00	40.89	91.54	0.07	3.55	22.07							
2	6	3	801.9		3.04	41.78	100.32										
2	6	2	904.1		3.03	41.55	106.16										
2	6	1	1007.2		3.03	41.78	113.00	0.09	2.91	20.62							
2	7	12	29.5													1.49	
2	7	11	49.6													5.37	
2	7	10	79.6													5.18	
2	7	9	104.4													2.43	
2	7	8	129.1													1.78	
2	7	7	153.7													1.89	
2	7	6	178.9													1.51	
2	7	5	252.9													1.44	
2	7	4	302.6													0.96	
2	7	3	502.6													0.46	
2	7	2	902.3													0.30	
2	7	1	1012.1													0.25	
2	8	12	1.3								1.64	0.272					
2	8	11	20.8								2.19	0.300					
2	8	10	40.9								1.96	0.293					
2	8	9	73.5								1.63	0.223					

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	8	8	98.2								1.85	0.272					
2	8	7	125.2								1.15	0.209					
2	8	6	149.8								0.54	0.098					
2	8	5	174.6								0.50	0.077					
2	8	4	252.3								0.35	0.056					
2	8	3	467.5								0.27	0.035					
2	8	2	767.5								0.35	0.070					
2	8	1	1011.0								0.15	0.021					
2	15	12	2.9														19.81
2	15	11	23.0														29.98
2	15	10	45.8														39.86
2	15	9	74.4														32.87
2	15	8	106.9														42.99
2	15	7	126.9														16.18
2	15	6	151.8														15.03
2	15	5	176.8														8.05
2	15	4	256.8														4.54
2	15	3	305.8														2.33
2	15	2	504.6														1.97
2	15	1	1012.3														0.00
2	17	12	40.6								2.00	0.530					
2	17	11	71.3								2.08	0.321					
2	17	10	81.0								1.89	0.237					
2	17	9	92.5								1.91	0.293					
2	17	8	102.0								1.63	0.202					
2	17	7	107.9								1.61	0.209					
2	17	6	112.0								1.60	0.244					
2	17	5	123.7								2.91	0.328					
2	17	4	132.0								1.86	0.265					
2	17	3	151.9								1.26	0.223					

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	17	2	176.7								0.72	0.105					
2	17	1	204.4								0.50	0.084					

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	1	12	5.8										12.3				
2	1	11	26.2										15.8				
2	1	10	51.4										15.5				
2	1	9	78.4										17.7				
2	1	8	103.4										10.4				
2	1	7	129.1										9.5				
2	1	6	152.3										7.3				
2	1	5	179.9										4.4				
2	1	4	257.6										3.8				
2	1	3	514.2										3.2				
2	1	2	758.0										1.9				
2	1	1	1021.2										1.9				
2	2	12	15.3		0.14	0.05	0.92										
2	2	11	79.6		0.12	0.02	0.92										
2	2	10	99.5		0.16	0.02	1.30										
2	2	9	139.5		0.17	0.36	1.30										
2	2	8	199.2		0.47	5.05	3.80										
2	2	6	304.8		0.87	11.61	12.07										
2	2	5	403.5		1.56	21.51	29.19										
2	2	4	530.9		2.35	32.41	58.44										
2	2	3	612.5		2.79	38.08	76.52										
2	2	2	770.1		3.05	41.63	96.90										
2	2	1	1018.3			41.85	113.04										
2	3	11	49.1		0.16	0.02	1.30										
2	3	10	127.6		0.08	0.05	1.30										
2	3	9	225.5		0.50	5.73	4.38										
2	3	8	424.3		1.45	20.06	26.31										
2	3	7	620.5		2.76	38.31	76.52										
2	3	6	821.3		3.05	42.07	103.43										
2	3	5	1017.3		3.02	41.96	112.46										

Table VI.B.19

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	3	4	1218.7		2.97	41.63	122.07										
2	3	3	1420.6		2.91	40.85	137.46										
2	3	2	1623.2		2.89	40.51	137.45										
2	3	1	1843.0			39.91	145.44										
2	4	12	105.2		0.07	0.04	3.22	0.21	5.34	31.09							
2	4	10	257.6		0.58	7.21	7.26	0.11	4.28	23.01							
2	4	9	279.8		0.67	8.33	8.23	0.08	3.77	22.37							
2	4	8	309.8		0.73	9.35	9.58	0.20	3.26	20.60							
2	4	7	363.8		1.19	15.84	17.84	0.11	4.02	20.44							
2	4	6	424.1		1.45	19.88	25.93	0.14	4.55	21.23							
2	4	5	521.8		2.24	30.71	51.51	0.07	3.10	20.91							
2	4	4	604.5		2.69	36.82	71.71	0.03	2.88	19.56							
2	4	3	822.7		3.09			0.00	2.38	19.65							
2	4	2	906.4		3.06	41.93	107.28	0.13	3.45	19.65							
2	4	1	1004.5		3.05	41.93	112.46	0.01	2.38	21.54							
2	5	12	102.0													4.22	
2	5	11	130.0													3.78	
2	5	10	154.8													2.09	
2	5	9	180.2													1.59	
2	5	8	205.6													1.37	
2	5	7	230.3													1.13	
2	5	6	255.3													0.74	
2	5	5	280.1													0.61	
2	5	4	309.8													0.73	
2	5	3	529.6													0.51	
2	5	2	1030.7													0.23	

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
1	1	12	18.2		0.14	0.02	2.40										
1	1	11	67.1		0.15	0.04	2.03										
1	1	10	126.4		0.27	1.79	2.97										
1	1	9	166.2		0.45	4.38	3.82										
1	1	8	240.5		1.09	13.21	12.68										
1	1	7	320.1		1.41	18.21	22.21										
1	1	6	449.6		2.28	30.47	51.64										
1	1	5	539.7		2.82	37.74	73.70										
1	1	4	629.4		3.02	40.35	87.84										
1	1	3	729.5		3.06	40.86	88.77										
1	1	2	879.5		3.06	41.17	99.15										
1	1	1	1033.5		3.08	41.38	107.91										
2	1	12	6.3										18.9				
2	1	10	47.8										13.6				
2	1	9	77.1										11.3				
2	1	8	103.3										12.3				
2	1	7	129.0										8.5				
2	1	6	155.4										5.4				
2	1	5	180.9										5.7				
2	1	4	257.8										3.8				
2	1	3	509.6										4.1				
2	1	1	1019.6										2.2				
2	2	12	54.3		0.07	0.02	0.90										
2	2	11	98.5		0.09	0.02	0.90										
2	2	10	148.5		0.21	1.34	1.65										
2	2	9	206.8		0.42	4.30	3.72										
2	2	8	288.0		0.83	10.63	10.33										
2	2	7	403.5		1.59	21.77	29.38										
2	2	6	483.8		2.25	30.41	49.19										
2	2	5	564.3		2.65	36.16	68.99										

Table VI.B.20

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	2	4	635.0		2.88	39.19	80.30										
2	2	3	765.2		3.10	41.68	96.33										
2	2	2	855.6			41.99	103.20										
2	2	1	1012.3			41.88	114.80										
2	4	12	204.9		0.48	4.92	7.49	0.22	4.53	19.05				0.02	0.01		
2	4	11	228.0	2062	0.54	5.91	5.61	0.24	4.78	20.07							
2	4	10	253.5		0.64	7.45	7.49	0.39	4.27	20.51							
2	4	9	304.8		1.01	12.41	13.35	0.15	4.07	19.42							
2	4	8	356.0		1.29	16.75	20.95	0.15	3.83	19.84							
2	4	7	405.7	2150	1.59	21.09	28.82	0.07	3.68	19.66							
2	4	6	507.6		2.38	31.76	55.79	0.05	3.03	20.68							
2	4	5	605.7	2302	2.84	38.32	79.36	0.07	2.75	19.58							
2	4	4	708.3		3.12	41.59	98.21	0.07	2.36	22.46							
2	4	2	909.9	2354	3.13	41.99	112.35	0.06	2.06	20.76							
2	4	1	1012.5		3.10	41.79	115.74	0.06	2.21	20.76							
2	5	12	5.6	1965	0.10	0.02	1.46	0.21	4.88	33.66				0.13	0.03		
2	5	11	27.4	1964	0.10	0.02	1.52	0.21	5.32	30.29				0.13	0.01		
2	5	10	46.8	1965	0.11	0.02	2.22	0.24	6.36	36.10				0.16	0.06		
2	5	9	61.8		0.09	0.02	1.28	0.22	5.89	27.77				0.14	0.05		
2	5	8	77.3	1987	0.07	0.02	1.28	0.21	5.23	35.07				0.19	0.09		
2	5	7	87.8		0.10	0.02	1.28	0.14	5.01	23.25				0.22	0.11		
2	5	6	98.5		0.14	0.04	1.84	0.14	5.47	24.81				0.37	0.16		
2	5	5	109.3		0.12	0.04	1.84	0.17	5.10	23.95				0.36	0.29		
2	5	4	119.2	2013	0.13	0.06	1.28	0.12	5.06	25.83				0.28	0.42		
2	5	3	130.5		0.13	0.12	1.28	0.18	5.51	23.25				0.26	0.27		
2	5	2	156.0		0.27	1.99	2.60	0.24	4.42	19.67				0.10	0.15		
2	5	1	181.1	2061	0.39	3.66	2.97	0.12	4.03	18.42				0.01	0.10		
2	9	12	6.0														39.92
2	9	11	25.3													8.08	38.02
2	9	10	47.7													5.66	31.80

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	9	9	77.6													6.50	64.35
2	9	8	106.1													5.04	24.96
2	9	7	125.0													3.18	18.66
2	9	6	153.2														8.46
2	9	5	181.9													1.56	6.82
2	9	4	257.7													1.27	3.62
2	9	3	510.9													0.70	1.50
2	9	2	761.1													0.33	0.76
2	9	1	1022.7													0.29	0.57
2	14	12	7.6								2.15	0.293					
2	14	11	27.8								2.27	0.301					
2	14	10	47.4								2.59	0.326					
2	14	9	76.2								2.10	0.218					
2	14	8	105.0								1.59	0.236					
2	14	7	129.8								1.08	0.205					
2	14	6	154.2								0.56	0.073					
2	14	5	180.7								0.71	0.084					
2	14	4	255.7								0.37	0.060					
2	14	2	762.2								0.22	0.047					
2	14	1	1017.9								0.20	0.044					

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
1	1	12	5.4		0.10	0.04	1.81										
1	1	11	70.3		0.11	0.04	1.44										
1	1	10	117.4		0.13	0.49	1.62										
1	1	9	149.9		0.23	1.96	2.18										
1	1	8	208.0		0.63	7.08	6.43										
1	1	7	266.3		1.18	14.84	16.42										
1	1	6	352.1		1.72	23.00	32.70										
1	1	5	430.9		2.25	29.90	50.28										
1	1	4	539.4		2.76	36.47	68.96										
1	1	3	633.0		2.95	39.12	79.31										
1	1	2	727.4		3.03	40.81	91.32										
1	1	1	1026.1		3.06	41.55	111.30										
2	1	12	10.1										8.2				
2	1	11	26.0										24.3				
2	1	10	46.7										11.7				
2	1	9	77.6										10.1				
2	1	8	104.6										6.0				
2	1	7	129.2										10.7				
2	1	4	258.5										11.7				
2	1	3	509.9										7.9				
2	1	2	761.7										0.0				
2	1	1	1026.9										9.1				
2	2	12	779.3		3.05	41.13	95.96										
2	2	11	911.2		3.05	41.34	106.12										
2	2	10	1053.8		3.05	41.34	113.14										
2	2	9	1198.1		3.02	41.24	120.91										
2	2	8	1352.3		2.99	41.02	130.16										
2	2	7	1499.7		2.98	40.70	134.78										
2	2	6	1649.7		2.94	40.49	139.40										
2	2	5	1802.7		2.91	40.28	143.10										

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	2	4	1952.6		2.87	39.75	147.72										
2	2	3	2100.3		2.82	39.43	150.49										
2	2	1	2508.2		2.77	38.79	158.44										
2	3	11	59.9		0.11	0.02	0.14										
2	3	10	91.6		0.07	0.04											
2	3	9	139.3		0.13	0.63	0.32										
2	3	8	191.7		0.34	3.62	1.81										
2	3	7	227.3		0.41	4.43	2.73										
2	3	6	299.8		0.87	10.82	9.39										
2	3	5	357.1		1.25	16.39	17.90										
2	3	4	483.7		2.08	28.42	46.02										
2	3	3	523.7		2.52	33.02	53.69										
2	3	2	563.4		2.66	35.52	64.15										
2	3	1	678.3		2.95	39.76	84.49										
2	4	12	203.8		0.38	3.91	3.90	0.07	4.08	24.14				0.02	0.01		
2	4	11	230.9	2053	0.46	5.05	4.58	0.08	3.32	24.56				0.00	0.00		
2	4	10	255.6		0.64	7.38	6.80	0.09	4.61	23.71							
2	4	9	305.4		0.94	11.83	11.79	0.09	4.24	22.57							
2	4	8	355.5		1.24	16.52	20.68	0.07	4.12	25.14							
2	4	7	408.1		1.59	21.37	30.30	0.05	4.06	24.29							
2	4	6	508.4					0.07	3.07	21.63							
2	4	5	612.9	2293	2.81	37.64	74.70	0.10	2.81								
2	4	4	709.8		2.99	40.39	90.41	0.06	2.64								
2	4	3	814.6		3.05	41.27	100.95	0.07	2.71								
2	4	2	919.3	2345	3.05	41.44	107.97	0.05	2.52	21.00							
2	4	1	1022.2		3.05	41.44	113.52	0.04	2.29	20.78							
2	5	12	4.8		0.11	0.01	2.24	0.21	4.64	34.83				0.17	0.03		
2	5	11	25.8		0.11	0.02	1.25	0.21	5.50	35.84				0.13	0.04		
2	5	10	45.8	1946	0.11	0.02	1.62	0.22	5.14	36.41				0.12	0.03		
2	5	9	61.6		0.10	0.02	1.25	0.19	5.59	31.59				0.17	0.07		

Table VI.B.21

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	5	8	76.1	1974	0.08	0.02	1.25	0.21	6.63	29.93				0.25	0.17		
2	5	7	87.3		0.07	0.00	0.88	0.18	5.14	29.85				0.34	0.28		
2	5	6	97.4		0.06	0.01	1.06	0.18	4.94	31.00				0.31	0.32		
2	5	5	109.0		0.06	0.02	1.25	0.18	5.51	29.22				0.32	0.33		
2	5	4	118.0	1990	0.06	0.04	1.25	0.19	5.21	28.13				0.25	0.32		
2	5	3	130.5		0.07	0.13	1.06	0.15	4.81	26.56				0.19	0.03		
2	5	2	157.0		0.14	0.91	1.71	0.13	4.35	27.55				0.01	0.02		
2	5	1	181.8	2044	0.27	2.75	2.35	0.11	3.97	27.41				0.00	0.01		
2	12	12	128.4													1.86	15.98
2	12	11	181.1														7.43
2	12	10	181.1													1.10	
2	12	9	181.0														5.57
2	12	8	257.9													0.41	
2	12	7	511.1														3.73
2	12	6	510.2													0.33	
2	12	5	760.1														1.18
2	12	4	760.0													0.18	
2	12	2	1020.1													0.20	0.64
2	12	1	1020.3														0.72
2	13	9	3.6														23.78
2	13	8	27.0														38.91
2	13	7	46.7														41.58
2	13	6	78.2														33.82
2	13	5	105.8														22.37
2	13	4	130.7														14.84
2	13	3	157.8														9.33
2	18	12	6.1								1.96	0.317					
2	18	11	26.3								2.10	0.348					
2	18	10	46.9								1.78	0.310					
2	18	9	77.2								1.62	0.284					

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	18	8	103.2								1.50	0.264					
2	18	7	130.1								1.01	0.219					
2	18	6	156.9								0.76	0.122					
2	18	5	183.6								0.54	0.097					
2	18	2	762.0								0.15	0.009					
2	20	4	258.0		0.51	5.64	5.50	0.10	3.98	26.30							
2	22	6	7.4								2.02	0.357					
2	22	5	49.2								2.01	0.345					
2	22	4	106.8								1.37	0.279					
2	22	3	258.6								0.49	0.081					
2	22	2	512.0								0.76	0.092					
2	22	1	1010.6								0.40	0.030					

Table VI.B.22

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
1	1	23	21.4		0.08	0.03	2.40										
1	1	21	70.1		0.09	0.03	1.17										
1	1	17	137.7		0.23	2.18	2.20										
1	1	16	171.8		0.40	4.48	3.43										
1	1	14	270.9		1.12	14.72	15.54										
1	1	13	303.4		1.47	19.51	24.36										
1	1	11	418.8		2.07	28.58	45.90										
1	1	9	517.9		2.56	35.14	65.39										
1	1	7	602.5		2.85	38.78	79.75										
1	1	4	751.9		3.01	41.17	92.65										
1	1	1	1016.2		3.04	41.98	101.06										
2	2	9	45.7										23.7				
2	2	8	76.4										23.3				
2	2	7	129.2										11.0				
2	2	6	156.6										7.9				
2	2	5	182.9										7.9				
2	2	4	256.3										6.3				
2	2	3	508.1										2.5				
2	2	2	759.9										3.5				
2	2	1	1019.1										2.5				
2	3	23	803.6		3.01	41.80	97.17										
2	3	22	903.7		3.04	42.00	103.32										
2	3	20	1103.9		3.02	41.90	105.16										
2	3	18	1404.6		2.93	41.59	129.97										
2	3	17	1552.7		2.92	41.48	136.13										
2	3	16	1699.4		2.89	41.06	141.87										
2	3	15	1851.8		2.83	40.65	146.38										
2	3	14	2002.5	2356	2.79	40.23	149.04										
2	3	13	2199.8		2.79	39.71	154.57										
2	3	8	3189.4		2.54	37.32	156.62										

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	3	7	3392.2		2.52	36.90	154.57										
2	3	2	4397.2	2313	2.43	36.22	148.57										
2	3	1	4525.9		2.48	36.16	149.03										
2	4	24	7.2		0.09	0.05	0.76										
2	4	23	86.7		0.11	0.07	0.76										
2	4	22	96.6		0.08	0.05	0.56										
2	4	21	108.3		0.08	0.07	0.56										
2	4	20	123.4		0.13	0.14	0.76										
2	4	19	132.9		0.16	0.69	0.76										
2	4	18	143.8		0.33	3.19	1.79										
2	4	17	182.8		0.42	4.78	2.61										
2	4	16	217.7		0.54	6.45	4.66										
2	4	15	274.2		0.93	12.01	9.59										
2	4	14	285.2		0.95	12.18	10.00										
2	4	13	303.2		0.92	12.84	11.02										
2	4	12	345.0		1.21	16.53	17.80										
2	4	11	404.4		1.67	22.63	28.46										
2	4	10	465.2		2.17	29.51	45.49										
2	4	9	489.7		2.37	32.53	53.70										
2	4	8	509.3		2.48	33.99	59.23										
2	4	7	538.1		2.70	36.80	67.44										
2	4	6	601.6		2.87	39.41	78.73										
2	4	5	674.8		2.97	40.44	83.85										
2	4	3	814.9		3.04	41.69	97.17										
2	4	2	994.8		3.05	41.95	107.42										
2	4	1	1023.5		3.04	41.90	110.50										
2	8	12	5.8														27.93
2	8	11	25.8														44.60
2	8	10	48.3														57.78
2	8	9	78.1														41.08

Table VI.B.22

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	8	8	105.0														23.09
2	8	7	130.0														16.74
2	8	6	156.8														9.31
2	8	5	182.4														6.44
2	8	4	258.1														5.13
2	8	3	511.3														4.10
2	8	2	750.4														1.47
2	8	1	1020.6														1.12
2	12	23	6.3	1944	0.06	0.07	1.17	0.22	5.15	37.66				0.10	0.02		
2	12	22	26.5		0.06	0.05	0.76	0.21	5.72	36.40				0.02			
2	12	21	47.5	1949	0.06	0.03	0.97	0.21	5.28	52.78				0.15	0.01		
2	12	20	63.2		0.06	0.03	0.56	0.21	6.04	44.22				0.09	0.03		
2	12	19	79.0		0.06	0.03	0.56	0.20	5.85	34.31				0.07	0.00		
2	12	18	89.1											0.25	0.08		
2	12	17	98.6		0.06	0.04	1.10	0.19	5.16	35.28				0.44	0.05		
2	12	16	111.2		0.09	0.07	0.56	0.17	4.66	34.86				0.31	0.30		
2	12	15	119.9	1998	0.17	0.38	0.97	0.13	4.95	31.22				0.26	0.29		
2	12	14	131.7		0.19	0.93	1.17	0.15	4.50	32.20				0.20	0.28		
2	12	13	157.5		0.47	5.29	3.02	0.98	4.36	23.30				0.05	0.07		
2	12	12	182.1		0.48	5.53	3.84	0.11	4.26	25.66				0.02	0.02		
2	12	11	206.7		0.51	5.95	5.07	0.09	4.01	28.82				0.01	0.02		
2	12	10	231.7	2059	0.50	5.86	4.25	0.08	3.74	27.33							
2	12	9	257.6		0.66	8.16	7.33	0.09	4.17	23.77							
2	12	8	282.5		0.88	11.34	10.61	0.10	4.13	25.69							
2	12	7	307.4		1.03	13.57	13.69	0.11	5.12	32.46							
2	12	6	330.9		1.17	15.55	16.15	0.09	4.30	26.58							
2	12	5	356.0		1.27	17.01	22.17	0.07	4.11	23.01							
2	12	4	384.0		1.54	20.33	24.98	0.07	3.81	23.27							
2	12	2	461.3		2.05	28.58	45.49	0.08	3.11	24.29							
2	12	1	511.9		2.44	33.37	57.18	0.07	2.97	22.50							

Table VI.B.22

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	13	5	610.8		2.85	38.68	75.64	0.08	2.72	25.69							
2	13	4	709.5		3.00	40.66	86.91	0.04	2.10	22.00							
2	13	3	810.7		3.03	41.38	94.09	0.05	2.28	24.33							
2	13	2	910.8		3.05	41.80	100.86	0.02	2.33	23.29							
2	13	1	1018.7	2387	3.04	41.80	108.45	0.04	1.99	21.94							
2	15	9	27.7								2.32						
2	15	8	47.4								2.35						
2	15	7	78.0								2.36	0.398					
2	15	6	104.1								1.81	0.237					
2	15	5	155.7								1.11	0.174					
2	15	4	181.0								0.82	0.091					
2	15	3	257.8								0.74	0.091					
2	15	2	510.3								0.46	0.049					
2	15	1	752.0								0.37	0.035					

Table VI.B.23

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
1	1	23	7.4		0.08		0.75							0.09	0.02		
1	1	22	27.2		0.08		0.95							0.13	0.04		
1	1	21	47.3		0.08		0.95							0.25	0.08		
1	1	20	63.0		0.06		0.95							0.24	0.13		
1	1	19	77.3											0.29	0.26		
1	1	18	98.0		0.17	1.01	1.36							0.23	0.26		
1	1	17	108.5		0.27	2.44	1.95							0.10	0.13		
1	1	16	118.5		0.30	2.86	2.35							0.06	0.10		
1	1	15	129.4		0.34	3.37	2.75							0.04	0.07		
1	1	14	154.5		0.39	4.14	3.36							0.02	0.07		
1	1	12	205.9		0.67	8.10	6.97							0.00	0.03		
1	1	11	231.4		0.82	10.12	9.17										
1	1	10	260.0		0.97	12.15	11.38										
1	1	9	308.9		1.44	18.76	22.22										
1	1	8	357.3		1.65	21.98	27.23										
1	1	7	405.8		1.95	26.42	37.27										
1	1	6	507.4		2.61	35.35	63.36										
1	1	5	598.0		2.84	38.80	78.41										
1	1	4	704.5		2.98	40.58	89.43										
1	1	2	920.2		3.01	41.41	103.47										
1	1	1	1011.9		3.01	41.40	110.09										
2	1	13	0.3										23.0				
2	1	12	25.2										20.2				
2	1	11	45.1										23.0				
2	1	10	74.2										16.7				
2	1	9	102.4										6.9				
2	1	8	129.2										14.5				
2	1	7	155.4										6.0				
2	1	6	179.6										5.7				
2	1	5	252.8										4.4				

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	1	4	504.6										5.4				
2	1	2	760.8										0.0				
2	1	1	1019.8										1.9				
2	2	23	801.0		3.07	41.77	96.46										
2	2	22	900.6		3.04	41.89	101.46										
2	2	21	1000.7		3.04	41.88	101.46										
2	2	20	1099.7		3.03	41.88	111.49										
2	2	19	1249.7			41.88	111.49										
2	2	18	1397.8		2.99	41.53	127.14										
2	2	17	1548.1		2.96	41.29	133.56										
2	2	16	1697.9		2.92	40.82	139.17										
2	2	15	1849.0		2.89	40.57	146.20										
2	2	14	1999.8			40.57	146.19										
2	2	13	2200.2		2.80	39.62	154.61										
2	2	12	2401.2		2.77	39.03	157.22										
2	2	11	2602.1		2.75	39.03	158.62										
2	2	10	2796.7		2.68	38.31	159.62										
2	2	9	2995.2			37.72	157.79										
2	2	8	3198.3		2.60	37.24	155.21										
2	2	7	3396.1		2.56	36.77	155.21										
2	2	6	3590.9		2.53	36.52	153.20										
2	2	5	3792.2		2.52	36.29	150.59										
2	2	3	4204.5		2.50	35.93	149.59										
2	2	2	4406.4			35.81	141.16										
2	2	1	4603.9			35.81	148.59										
2	3	23	9.5		0.06		8.58										
2	3	22	26.3		0.05		0.15										
2	3	20	78.9		0.03		4.96										
2	3	19	118.1		0.03	0.01	0.35										
2	3	18	133.3		0.06	0.18	0.35										

Table VI.B.23

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	3	17	198.5		0.24	2.63	1.76										
2	3	16	246.1		0.37	4.43	3.36										
2	3	15	296.3		0.60	7.70	7.38										
2	3	14	330.3		0.74	9.89	9.18										
2	3	13	380.8		1.05	14.48	15.60										
2	3	12	441.5		1.36	19.03	23.93										
2	3	11	487.8		1.75	24.65	36.28										
2	3	9	552.8		2.35	32.38	55.34										
2	3	8	591.9		2.70	36.78	68.99										
2	3	7	642.9		2.92	39.52	81.02										
2	3	6	687.0		3.03	40.94	99.08										
2	3	5	747.3		3.07	41.65	95.05										
2	3	4	802.6		3.07	41.54	95.45										
2	3	3	867.0		3.08	41.77	99.06										
2	3	1	1012.4		3.08	41.88	105.48										
2	8	12	5.7														23.34
2	8	11	25.6														34.74
2	8	10	45.3														27.47
2	8	9	77.1														24.35
2	8	8	101.8														16.12
2	8	7	130.2														9.29
2	8	6	155.2														5.10
2	8	5	180.0														5.58
2	8	4	258.6														4.08
2	8	3	507.2														1.01
2	8	2	756.2														0.52
2	8	1	1027.6														0.48
2	16	17	4.8	1951	0.08	0.01	1.76	0.19	5.81	35.00				0.08	0.06		
2	16	16	25.5	1952	0.06	0.04	1.55	0.18	5.66	36.63				0.10	0.05		
2	16	15	45.4		0.06	0.01	2.75	0.19	5.66	39.06				0.13	0.06		

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	16	14	61.7		0.03	0.01	2.35	0.18	5.79	36.62				0.15	0.09		
2	16	13	76.4		0.02	0.01	1.36	0.19	5.81	36.62				0.20	0.15		
2	16	12	86.7		0.02	0.01	2.16	0.17	4.91	34.98				0.36	0.25		
2	16	11	96.5	1994	0.03	0.04	1.62	0.18	4.90	34.98				0.29	0.29		
2	16	10	106.4		0.05	0.16	1.55	0.16	4.87	31.73				0.16	0.15		
2	16	9	116.8		0.06	0.27	1.15	0.15	5.12	31.73				0.14	0.20		
2	16	8	129.7		0.08	0.42	2.75	0.13	5.04	32.54				0.08	0.13		
2	16	7	153.9		0.10	0.84	1.76	0.14	4.66	31.73				0.03	0.05		
2	16	6	181.7	2030	0.17	1.60	1.95	0.11	4.18	28.48				0.01	0.02		
2	16	5	207.3		0.25	2.57	2.69	0.13	4.49	27.67				0.01	0.01		
2	16	4	234.3					0.18	4.34	26.86							
2	16	3	258.0	2050	0.48	5.48	5.57	0.11	4.28	25.23							
2	17	13	279.2							25.24							
2	17	12	301.2		0.66	8.70	8.18	0.11	3.22	25.24							
2	17	11	330.9		0.74	9.89	9.78	0.20	4.88	24.43							
2	17	10	358.2		0.84	11.15	11.38	0.33	4.54	24.43							
2	17	9	383.2		0.97	13.24	14.67	0.23	3.65	23.62							
2	17	8	412.9		1.15	15.91	18.81	0.14	3.53	22.80							
2	17	7	460.2		1.66	22.93	31.86	0.10	3.55	21.99							
2	17	6	508.3	2284	1.96	27.50	42.30	0.07	2.88	25.24							
2	17	5	612.1		2.75	37.14	70.38	0.07	2.60	21.18							
2	17	4	705.8		3.00	40.35	84.42	0.03	1.88	21.17							
2	17	3	814.0		3.06	41.41	93.45	0.04	2.23	21.17							
2	17	2	903.6	2347	3.07	41.77	99.19	0.01	2.03	21.17							
2	17	1	1016.8		3.06	41.82	107.32	0.01	2.13	21.17							
2	18	22	25.1								3.55	0.363					
2	18	20	45.3								2.82	0.314					
2	18	18	75.7								2.17	0.251					
2	18	16	101.3								2.85	0.314					
2	18	15	128.2								2.23	0.209					

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	18	12	155.6								1.11	0.105					
2	18	10	183.2								1.05	0.119					
2	18	8	260.8								0.68	0.077					
2	18	6	509.3								0.72	0.056					
2	18	4	751.1								0.59	0.063					
2	18	1	1012.7								0.78	0.063					

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	2	23	898.9		3.06	42.12	105.45										
2	2	22	998.3		3.04	42.00	112.16										
2	2	21	1098.2		3.03	41.88	117.61										
2	2	20	1244.8		3.02	41.53	124.87										
2	2	18	1550.8		2.92	40.93	138.48										
2	2	17	1698.2		2.87	40.58	143.02										
2	2	16	1850.9		2.85	40.23	145.73										
2	2	14	2200.2		2.78	39.47	154.18										
2	2	13	2401.9		2.75	39.06	156.62										
2	2	12	2597.7		2.73	38.59	161.16										
2	2	11	2796.5		2.66	38.23	159.35										
2	2	10	2998.6	2348	2.61	37.65	157.17										
2	2	9	3200.2		2.58	37.29	156.62										
2	2	8	3392.1		2.55	36.93	155.72										
2	2	7	3595.0		2.53	36.58	152.99										
2	2	6	3799.5		2.51	36.29	152.36										
2	2	5	3993.2	2336	2.50	36.11	150.82										
2	2	4	4197.3		2.50	36.00	148.09										
2	2	3	4390.6		2.49	36.00	148.45										
2	2	2	4491.9		2.46	35.88	147.54										
2	2	1	4694.5		2.49	35.76	147.54										
2	3	22	30.6		0.08	0.04	0.68										
2	3	21	56.4		0.07	0.01	0.14										
2	3	20	80.0		0.07	0.04	0.50										
2	3	19	99.3		0.10	0.06	0.32										
2	3	18	121.6		0.11	0.41	0.50										
2	3	17	147.2		0.19	1.35	0.86										
2	3	15	226.9		0.40	4.70	3.77										
2	3	14	299.8		0.88	11.72	11.39										
2	3	13	342.7		1.16	15.91	17.76										

Table VI.B.24

STATION	CAST	BOTTLE	Pressure dbar	DIC µmol kg^{-1}	PO_4 µmol kg^{-1}	NO_2 + NO_3 µmol kg^{-1}	SiO_4 µmol kg-1	DOP µmol kg^{-1}	DON µmol kg^{-1}	DOC µmol kg^{-1}	PC µmol kg^{-1}	PN µmol kg^{-1}	PP nmol kg^{-1}	Chl. *a* mg m^{-3}	Phaeo. mg m^{-3}	Bacteria 10^5 ml^{-1}	ATP mg m^{-3}
2	3	12	407.0		1.59	21.90	29.56										
2	3	11	437.0		1.69	23.55	33.19										
2	3	10	467.1		1.87	26.38	40.46										
2	3	9	505.2		2.20	30.61	51.36										
2	3	8	569.9		2.70	36.83	70.06										
2	3	7	598.9		2.79	38.02	74.60										
2	3	6	621.4		2.87	38.84	78.59										
2	3	5	689.9		3.00	40.59	88.21										
2	3	4	763.1		3.08	41.83	97.65										
2	3	3	825.6		3.10	42.24	98.19										
2	3	2	905.9		3.08	42.24	102.99										
2	3	1	1023.0		3.07	42.12	107.63										
2	5	12	4.6														27.79
2	5	11	26.6														26.63
2	5	10	47.4														34.89
2	5	9	78.0														23.18
2	5	8	104.0														17.07
2	5	7	129.0														10.94
2	5	6	155.2														9.11
2	5	5	179.9														6.68
2	5	4	254.3														2.61
2	5	3	508.5														0.93
2	5	2	760.8														0.67
2	5	1	1012.1														0.51
2	6	13	5.8	1951	0.08	0.01	1.04	0.19	5.40	29.49				0.10	0.03		
2	6	12	25.3	1959	0.07	0.04	1.23	0.19	5.50	30.85				0.12	0.03		
2	6	11	45.6		0.07	0.01	2.14	0.19	5.20	28.31				0.13	0.03		
2	6	10	61.6		0.11	0.01	0.68	0.57	6.69	26.64				0.18	0.05		
2	6	9	76.5	1962	0.07	0.01	1.23	0.20	5.65	24.32				0.25	0.13		
2	6	8	86.6		0.08	0.01	1.23	0.18	5.11	25.34				0.30	0.26		

STATION	CAST	BOTTLE	Pressure	DIC	PO_4	NO_2 + NO_3	SiO_4	DOP	DON	DOC	PC	PN	PP	Chl. *a*	Phaeo.	Bacteria	ATP
			dbar	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg-1	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	µmol kg^{-1}	nmol kg^{-1}	mg m^{-3}	mg m^{-3}	10^5 ml^{-1}	mg m^{-3}
2	6	7	96.3	1989	0.08	0.06	1.32	0.18	4.90	24.74				0.30	0.40		
2	6	6	106.7		0.10	0.24	1.04	0.18	4.90	24.70				0.23	0.34		
2	6	5	119.6		0.11	0.53	1.95	0.17	4.76	23.80				0.11	0.17		
2	6	4	130.6		0.14	0.67	1.23	0.14	4.01	23.65				0.07	0.14		
2	6	3	155.4		0.20	1.58	1.95	0.15	3.57	23.49				0.03	0.03		
2	6	2	181.5	2044	0.26	2.66	2.77	0.12	4.47	22.95				0.01	0.01		
2	6	1	201.3		0.29	3.20	3.22	0.05	4.05	23.55				0.00	0.00		
2	7	14	231.2		0.38	4.34	4.32	0.05	3.90	22.46							
2	7	13	256.3	2045	0.53	6.48	6.13	0.04	3.43	20.77							
2	7	12	281.2		0.64	8.16	7.77	0.04	3.20	20.87							
2	7	11	306.4		0.83	10.92	10.86	0.04	4.00	19.50							
2	7	10	331.5		1.00	13.67	14.67	0.06	4.46	20.53							
2	7	9	356.6		1.17	15.91	18.29	0.04	4.48	21.53							
2	7	8	381.6		1.28	17.67	21.02	0.02	4.25	24.86							
2	7	7	409.8		1.58	21.67	28.29	0.02	3.20	25.77							
2	7	6	509.4	2208	2.17	30.49	51.36	0.04	3.43	22.93							
2	7	5	610.8		2.84	38.54	75.87	0.03	2.79	21.17							
2	7	4	709.0		3.07	41.42	92.75	0.00	2.62	21.08							
2	7	3	812.1		3.10	42.12	101.64	0.00	2.50	20.40							
2	7	2	911.6		3.08	42.24	107.27	0.02	2.51	20.58							
2	7	1	1019.4	2342	3.06	42.12	112.16	0.01	2.38	21.03							

Table VI.B.25

Precision of Winkler Titration

HOT CRUISE	CV(%)[a]	N[b]
1	ND[d]	-
2	0.28	4
3	0.14	3
4	0.30	10
5	0.07	12
6	ND[d]	-
7	ND[d]	-
8	0.19	4
9	0.05	6
10[c]	0.58	3
11[c]	0.16	3
12[c]	0.21	5

a - Coefficient of variation expressed as the difference between replicates as a percentage of the mean when duplicate samples were collected, and as the standard deviation as a percentage of the mean for samples collected in triplicate.

b - Number of depths from which replicates were collected. Only replicates from depth where 0_2 concentrations exceed 100 umol kg^{-1} were included in this analysis.

c - Triplicates were collected at each depth. On all other cruises duplicates were analyzed.

d - No replicate samples were collected on HOT-1. Equipment problems prevented replicate sample collection on HOT-6 and HOT-7.

Table VI.B.26

Precision of Dissolved Nutrient Analysis

HOT CRUISE	Phosphorus		Nitrate + Nitrite		Silica	
	Analytical[a]	Field[b]	Analytical	Field	Analytical	Field
1	0.4	-	0.4	-	0.3	-
2	0.1	-	0.2	-	0.6	-
3	0.2	1.6	0.8	-	0.4	0.0
4	0.4	1.0	0.3	1.1	0.4	3.3
5	0.1	-	0.2	-	0.1	-
6	0.4	-	0.3	-	1.3	-
7	0.3	2.0	0.6	0.1	0.5	3.5
8	0.2	0.8	0.2	0.2	1.2	8.9
9	0.1	1.1	0.2	0.0	0.3	7.5
10	0.7	0.4	0.2	0.2	0.8	3.9
11	0.4	0.2	0.2	0.1	0.1	10.0
12	0.4	0.2	0.3	0.0	0.9	-

a - Average coefficient of variation (standard deviation as a percentage of the mean) for analytical replicates (i.e., replicate analysis of a single sample).

b - Average coefficient of variation (standard deviation as a percentage of the mean) for field replicates (i.e., analysis of replicate samples from the same Niskin bottle).

Table VI.B.27

Precision of Pigment Analysis

HOT Cruise	Chlorophyll *a* CV(%)[a]	Pheopigment CV(%)
1	5.5	30.5
2	6.0	39.0
3	8.4	21.2
4	8.6	18.5
5	4.2	10.7
6	4.8	11.5
7	6.2	16.7
8	8.1	11.3
9	6.4	12.4
10	8.0	11.3
11	3.4	7.9
12	1.7	13.3

a - Average coefficient of variation (standard deviation as a percentage of the mean) for all replicates.

Table VI.B.28

HPLC Analysis of Chlorophyll *a*

Cruise	Cast	Pressure (decibar)	n	mean Chl *a* (mg/m^3)	C.V. (%)
HOT-1	7	114.4	3	0.364	0.992
	7	68.3	3	0.272	1.81
	7	42.9	3	0.237	0.882
	7	25.5	3	0.229	0.83
	7	10.7	3	0.224	1.43
HOT-2	10	177.4	3	0.0304	2.24
	10	152.7	1	0.0337	
	10	126.0	1	0.14	
	10	98.2	3	0.361	0.532
	10	73.0	1	0.331	
	10	48.6	1	0.201	
	10	22.8	1	0.203	
	10	2.1	3	0.204	0.34
HOT-3	4	176.8	3	0.0706	8.78
	4	146.8	1	0.142	
	4	122.2	1	0.245	
	4	97.7	3	0.284	0.408
	4	72.7	1	0.231	
	4	43.3	1	0.215	
	4	22.8	1	0.199	
	4	4.9	3	0.199	0.779

VI.C. Primary Productivity

Tables VI.C.1–2: Summaries of primary production and pigment data.

Table VI.C.1

Primary Production and Pigment Data Summary

Cruise[a]	Depth (m)	Irradiance (% of incident)	Pigments (ug/m^3)		Carbon Assimilation (mg $C/m^3/d$)		
			Chl *a*	Pheo	24 Hrs	12 Hrs Light	12 Hrs Dark
1 OD	10	54	241	310	12.10	22.30	6.20
1 OD	24	25	129	77	2.99	12.50	8.50
1 OD	42	11	192	51	1.57	2.48	0.02
1 OD	68	3	285	303	2.32	2.58	0.01
1 OD	114	0.20	326	44	0.45	0.68	0.11
3 OD	9	49	190	122	2.23	1.97	0.04
3 OD	28	27	260	86	2.66	2.94	0.03
3 OD	50	9.60	240	72	3.98	4.57	0.07
3 OD	77	2.80	213	86	1.82	2.07	0.03
3 OD	126	0.24	269	55	0.39	0.29	0.03
3 OD	178	0.03	57	34	0.01	0.00	0.00
4 OD	10	52	120	50	3.84	4.71	0.06
4 OD	26	27	130	48	4.03	5.44	0.10
4 OD	45	9.60	170	63	2.52	2.57	0.04
4 OD	75	2.80	190	133	1.40	1.64	0.04
4 OD	125	0.24	170	227	1.50	2.34	0.03
4 OD	178	0.03	25	29	0.03	0.06	0.01
5 OD	5	46.50	86	39	3.40	1.82	0.18
5 OD	25	23	65	34	5.32	4.77	0.33
5 OD	45	8.60	90	27	2.83	3.99	0.56
5 OD	75	2	163	61	1.34	0.94	0.61
5 OD	125	0.26	370	428	1.95	0.72	0.81
5 OD	175	0.02	40	48	0.22	0.17	0.10
6 OD	5	46.50	67	28	2.94	3.98	0.21
6 OD	25	23	77	42	4.52	7.31	0.28
6 OD	45	8.60	83	41	2.31	3.30	0.31
6 OD	75	2	91	47	5.31	6.35	0.15
6 OD	125	0.26	210	373	0.07	0.26	0.17
6 OD	175	0.02	83	38	0.00	0.22	0.11
7 OD	5	46.50	89	11	2.80	4.67	0.17
7 OD	25	23.20	90	12	2.19	2.93	0.15
7 OD	45	8.60	100	26	1.47	3.04	0.19
7 OD	75	2	164	58	1.49	1.04	0.13
7 OD	100	0.85	328	271	1.62	3.28	0.08
7 OD	125	0.24	144	274	0.70	0.29	0.07
7 OD	150	0.082	65	147	0.13	0.14	0.08
7 OD	175	0.026	39	63	0.04	0.06	0.07

Table VI.C.1

Cruise[a]	Depth (m)	Irradiance (% of incident)	Pigments (ug/m^3)		Carbon Assimilation (mg C/m^3/d)		
						12 Hrs	12 Hrs
			Chl *a*	Pheo	24 Hrs	Light	Dark
8 IS	5	46.50	147	18	ND[b]	0.30	
8 IS	25	23.20	143	22		4.98	0.19
8 IS	45	8.60	153	51		6.25	0.69
8 IS	75	2	190	58		3.75	0.12
8 IS	100	0.85	347	241		3.10	0.13
8 IS	125	0.24	233	293		0.81	0.05
8 IS	150	0.082	94	157		0.18	0.06
8 IS	175	0.026	95	36		0.11	0.11
8 OD	5	46.50	147	18	4.35	3.84	0.16
8 OD	25	23.20	143	22	6.12	7.26	0.26
8 OD	45	8.60	153	51	4.56	6.11	0.20
8 OD	75	2	190	58	1.43	1.46	0.14
8 OD	100	0.85	347	241	1.91	3.21	0.10
8 OD	125	0.24	233	293	0.64	0.68	0.07
8 OD	150	0.082	94	157	0.14	0.15	0.15
8 OD	175	0.026	95	36	0.06	0.13	0.24
9 OD	5	46.50	97	32	12.20	12.40	0.47
9 OD	25	23.20	109	32	13.80	15.30	0.66
9 OD	45	8.60	103	38	7.13	9.78	0.60
9 OD	75	2	211	157	5.44	4.26	0.45
9 OD	100	0.85	344	388	4.41	5.86	0.19
9 OD	125	0.24	201	323	1.30	1.56	0.14
9 OD	150	0.082	70	171	0.26	0.22	0.11
9 OD	175	0.026	39	94	0.10	0.11	0.08
10 IS	2	46.50	118	59	ND[b]	3.92	0.42
10 IS	10	23.20	130	58		5.45	0.31
10 IS	45	8.60	127	73		5.32	0.36
10 IS	75	2	109	43		0.77	0.19
10 IS	100	0.85	224	334		3.11	0.10
10 IS	125	0.24	140	312		0.69	0.09
10 IS	150	0.082	45	115		0.09	0.12
10 IS	175	0.026	23	51		0.09	0.10
10 OD	2	46.50	118	59	4.08	5.28	0.27
10 OD	10	23.20	130	58	10.10	8.29	0.30
10 OD	45	8.60	127	73	7.28	6.59	0.06
10 OD	75	2	109	43	0.59	0.51	0.18
10 OD	100	0.85	224	334	4.21	3.20	0.28
10 OD	125	0.24	140	312	0.46	0.88	0.14
10 OD	150	0.082	45	115	0.12	0.12	0.13
10 OD	175	0.026	21	51	0.01	0.18	0.13

Table VI.C.1

Cruise[a]	Depth (m)	Irradiance (% of incident)	Pigments (ug/m^3)		Carbon Assimilation (mg C/m^3/d)		
						12 Hrs	12 Hrs
			Chl *a*	Pheo	24 Hrs	Light	Dark
11 IS	5	46.50	120	44	ND[b]	5.20	0.23
11 IS	20	23.20	111	39		3.58	0.28
11 IS	45	8.60	207	95		6.55	0.22
11 IS	80	2	259	280		3.72	0.11
11 IS	100	0.85	154	218		1.16	0.08
11 IS	120	0.24	70	122		0.30	0.07
11 IS	160	0.082	20	28		0.06	0.09
11 IS	175	0.026	23	24		0.06	0.06
11 OD	5	46.50	120	44	3.86	4.60	0.35
11 OD	20	23.20	111	39	3.80	3.46	0.39
11 OD	45	8.60	207	95	3.55	5.32	0.35
11 OD	80	2	259	280	1.17	2.84	0.17
11 OD	100	0.85	154	218	1.14	1.13	0.14
11 OD	120	0.24	70	122	0.11	0.19	0.11
11 OD	160	0.082	20	28	0.06	0.10	0.11
11 OD	175	0.026	23	24	0.06	0.09	0.08
12 IS	2	46.50	110	14	ND[b]	2.39	0.18
12 IS	10	23.20	107	22		2.85	0.18
12 IS	20	8.60	109	32		7.03	0.21
12 IS	45	2	115	37		3.18	0.18
12 IS	65	0.85	218	80		4.49	0.16
12 IS	95	0.24	275	323		2.39	0.06
12 IS	110	0.082	214	325		0.69	0.07
12 IS	140	0.026	52	108		0.10	0.05
12 OD	2	46.50	110	14	2.65	2.79	0.14
12 OD	10	23.20	107	22	4.12	4.95	0.14
12 OD	20	8.60	109	32	2.13	3.04	0.17
12 OD	45	2	115	37	0.37	0.80	0.15
12 OD	65	0.85	218	80	0.53	1.46	0.12
12 OD	95	0.24	275	323	0.37	0.41	0.06
12 OD	110	0.082	214	325	0.03	0.15	0.06
12 OD	140	0.026	52	108	0.01	0.07	0.05

a – OD=On-deck incubation; IS=in-situ incubation.

b – ND=Not determined

Table VI.C.2

Primary Production and Pigment Summary
Integrated Values 0-200 m

Cruise[a]	Incident Irradiance ($E/m^2/d$)	Pigments (mg/m^2)		Carbon Assimilation ($mg\ C/m^3/d$)		
		Chl *a*	Pheo	24 hours	12 Hrs light	12 Hrs dark
1 OD	34.2	34.0	17.0	390	754	247
3 OD	41.7	38.2	22.0	282	302	5.96
4 OD	44.5	25.7	20.9	336	431	7.14
5 OD	41.9	30.9	29.5	388	302	91.8
6 OD	47.6	20.5	18.1	408	564	35.0
7 0D	52.6	25.4	21.6	252	338	23.3
8 IS		33.4	21.8		557	38.3
8 OD		33.4	21.8	462	569	27.6
9 OD	53.4	28.3	30.6	1053	1193	66.9
10 IS	54.7	21.4	25.4		504	38.2
10 OD	54.7	21.4	25.4	688	625	37.7
11 IS	27.7	23.1	21.0		495	27.5
11 OD	27.7	23.1	21.0	307	416	42.1
12 IS		24.9	23.1		575	20.9
12 OD		24.9	23.1	144	218	17.6

a - OD = on-deck incubations; IS=in-situ incubations

VI.D. Particle Flux

Table VI.D.1: Sediment trap fluxes for HOT-2 to HOT-11.

Table VI.D.1

Station ALOHA Sediment Trap Flux Data

			Carbon			Nitrogen			Phosphorus			Mass		
Cruise	Depth	C, I[a]	mg m^{-2} d^{-1}	sd/diff.[b]	n[c]	mg m^{-2} d^{-1}	sd/diff.	n	mg m^{-2} d^{-1}	sd/diff.	n	mg m^{-2} d^{-1}	sd/diff.	n
2	150	C	27	5.5	3	4.3	0.4	3	1.36		1	—		
2	300	C	17	2.2	3	2.8	0.2	3	—			—		
2	500	C	—			—						—		
3	150	C	28	2.2	2	5.1	0.5	2	0.74	0.10	3	—		
3	300	C	6.9	1.4	2	1.6	0.3	2	0.17	0.03	3	—		
3	500	C	—			—			—			—		
4	150	C	38	6.0	2	2.8	1.4	2	0.30	0.08	2	—		
4	300	C	19	8.0	2	1.5	0.4	2	0.12		1	—		
4	500	C	—			—			—			—		
5	150	C	36	15	2	5.9	2.9	2	0.42		1	—		
5	300	C	6.6		1	1.1		1	0.53		1	—		
5	500	C	18	5.0	2	3.3	0.7	2	0.12		1	—		
6	150	C	26	4.0	2	7.6	6.7	2	0.27	0.17	2	—		
6	300	C	29	6.0	3	3.9	1.1	3	0.50	0.15	2	—		
6	500	C	12	10	3	1.0	1.5	2	0.22	0.04	2	—		
7	150	C	20	3.0	3	2.8	0.2	3	0.39	0.07	3	—		
7	300	C	7.6	2.6	3	1.1	0.3	3	0.15	0.08	3	—		
7	500	C	7.3	0.8	3	1.1	0.05	3	0.27	0.09	3	—		
8	150	I	67	24	6	6.3	1.2	6	0.31	0.07	3	70	6.1	3
8	150	C	57	4.8	6	5.6	0.4	6	0.29	0.00	3	70	6.1	3
8	300	I	27	4.1	6	2.7	0.4	6	0.12	0.05	3	23	4.5	3
8	300	C	24	1.9	3	2.4	0.3	3	0.08	0.00	3	23	4.5	3
8	500	I	23	8.0	4	1.5	0.2	4	0.13	0.02	3	—		
9	150	I	50	5.3	6	6.7	0.9	6	0.68	0.08	3	79.1	9.5	3
9	300	I	25	2.6	6	2.3	0.2	6	0.62	0.33	3	45.2	11.3	3
9	500	I	15	2.5	6	1.2	0.4	6	0.21	0.15	3	28.3	18.4	3
10	150	I	36	3.8	6	5.1	0.5	6	0.42	0.08	3	105.2	13.3	3
10	300	I	34	11	6	3.5	1.2	6	0.20	0.01	3	67.8	4.9	3
10	500	I	26	6.9	6	2.0	0.3	6	0.15	0.02	3	72.9	19.2	3
11	150	I	33	4.2	6	5.2	0.9	6	0.38	0.33	3	59.4	3.5	3
11	300	I	20	4.9	6	2.5	1.0	5	0.12	0.06	3	42.4	2.6	3
11	500	I	9.9	3.3	3	1.5	0.8	3	0.08	0.06	3	36.9	7.2	3

a. C - Solutions from individual traps combined and replicate subsamples drawn from this solution.
   I - Individual traps sampled as replicates
b. Standard deviation presented where n = 3. Difference between replicate presented where n = 2.
c. Number of replicate samples collected for replicate analysis.

VII. Figures

VII.A. CTD Profiling

Figures VII.A.1–9: CTD and nutrient data taken at Kahe Point. Upper left panel: Temperature, salinity, dissolved oxygen and density (σ_θ) as a function of pressure. Also plotted are the bottle salinities (*) and oxygens (o). Lower left panel: Temperature and salinity as a function of pressure to 1000 dbar from all CTD casts. Upper right: Potential temperature-property plots for nutrients (NO_2+NO_3, PO_4, SiO_4) and oxygen for all water samples. Lower right: Potential temperature-Property plots for salinity and oxygen. Also plotted are all the oxygen bottle data.

Figures VII.A.10a–21a: Staggered temperature and salinity profiles to 1000 dbar for Station ALOHA.

Figures VII.A.10b–21b: CTD and nutrient data taken at Station ALOHA, as in Figures VII.A.1–9, except that upper left panel shows data from the deepest casts, and lower right panel shows θ-S profiles from all casts, but θ-O profile from only the deepest cast.

Figure VII.A.22: Pressure–potential temperature for the deep casts of HOT-1 to HOT-12: a) 0–5000 dbar, b) 2500–5000 dbar

Figure VII.A.23: Potential temperature-salinity for the deep casts of HOT-1 to HOT-12: a) full water column, b) $\theta < 5°C$.

Figure VII.A.24: Vertical profiles of pigments. Fluorescence traces were converted to pigment concentrations using a global linear regression fit of pigment concentrations measured at discrete depths to fluorescence traces collected during 1988–1989.

Figure VII.A.1

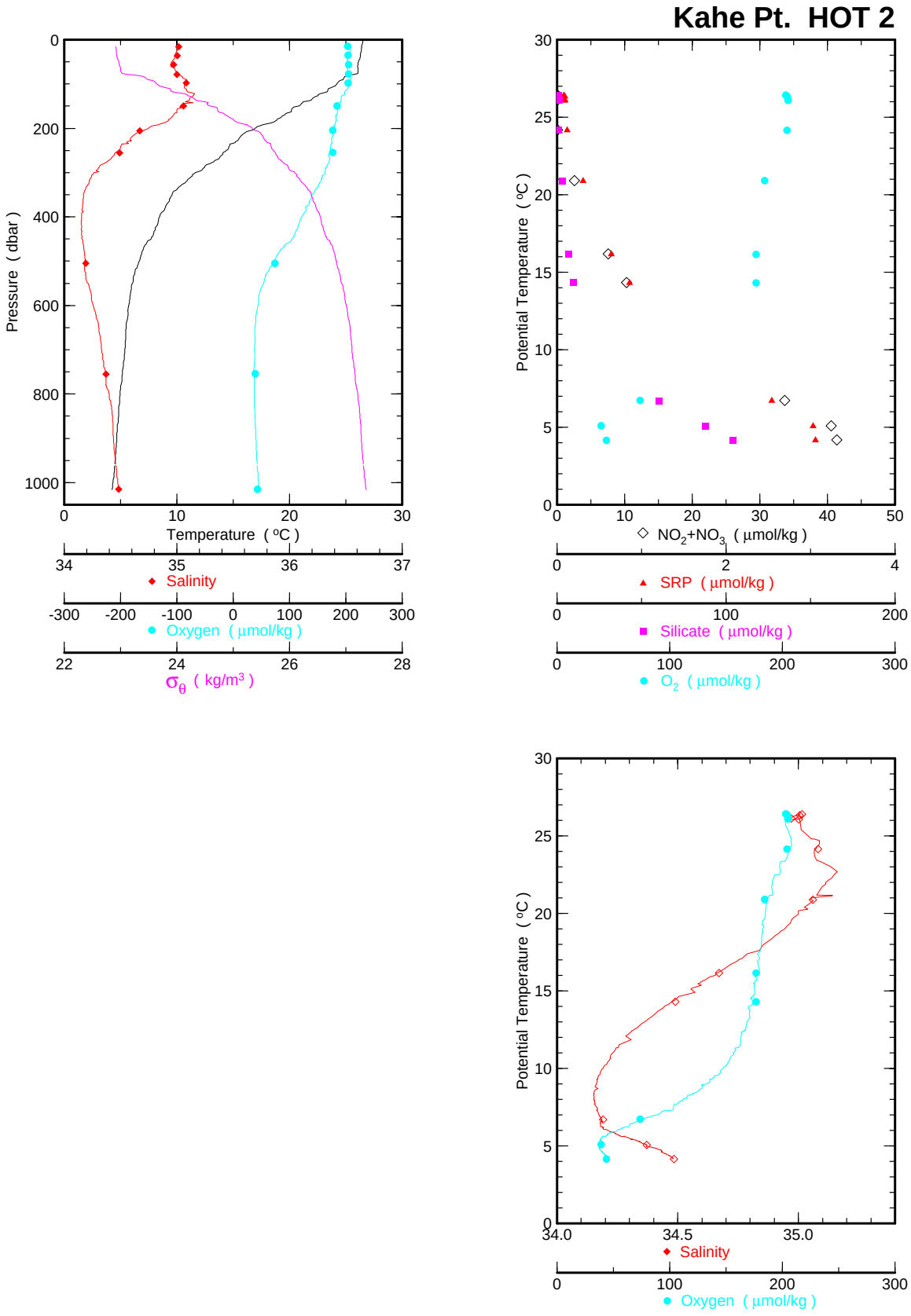


Figure VII.A.2

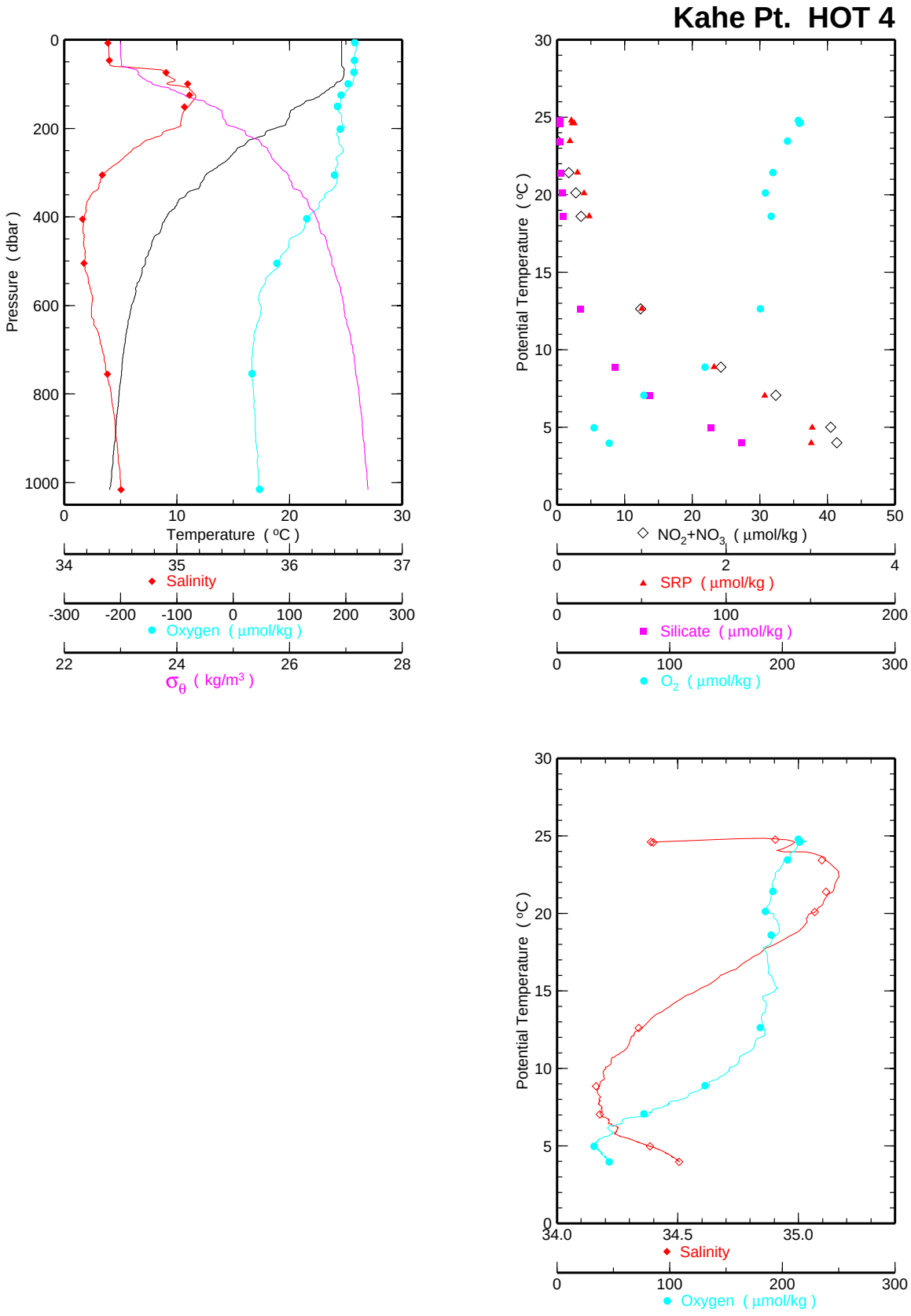


Figure VII.A.3

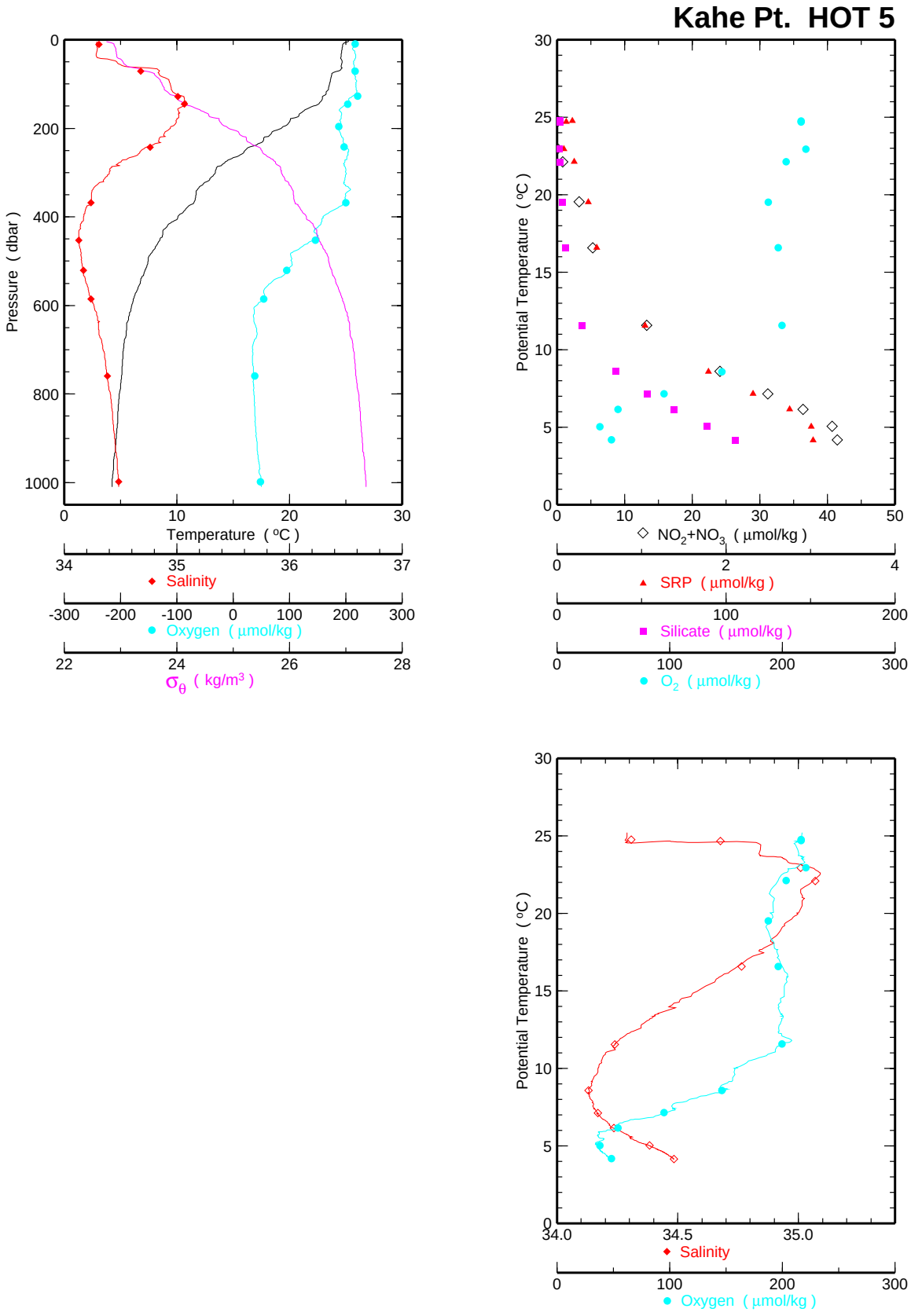


Figure VII.A.4

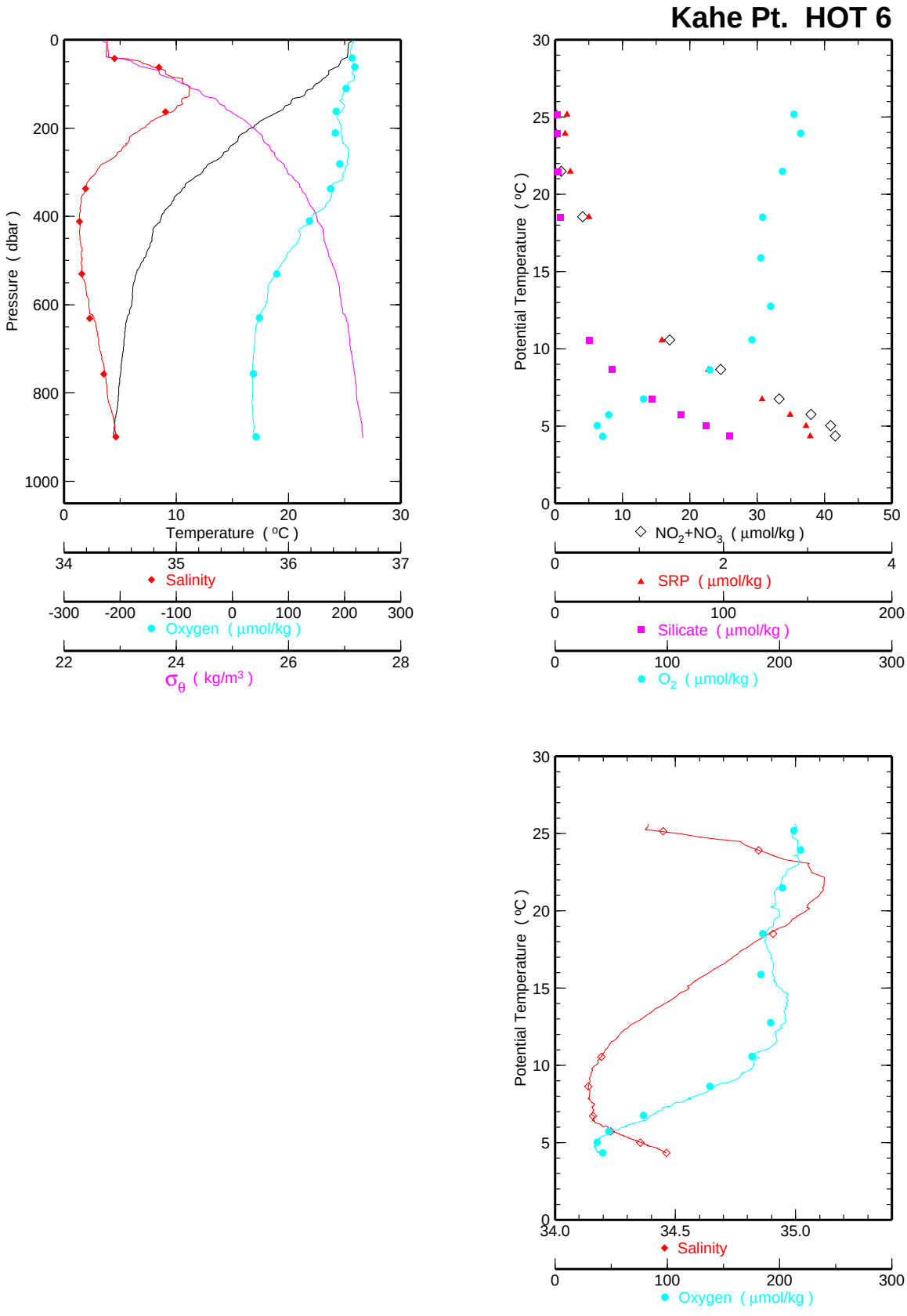


Figure VII.A.5

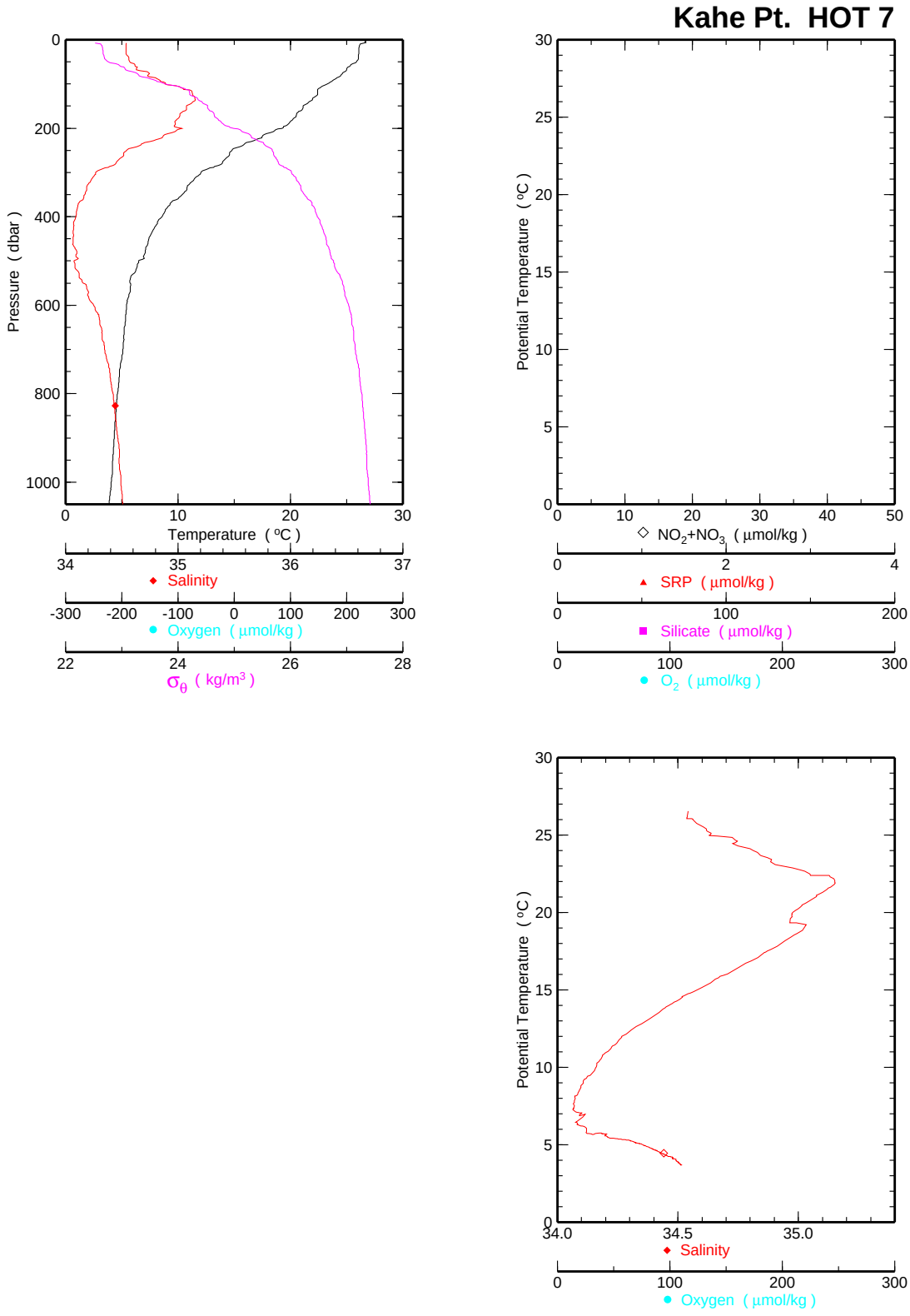


Figure VII.A.6

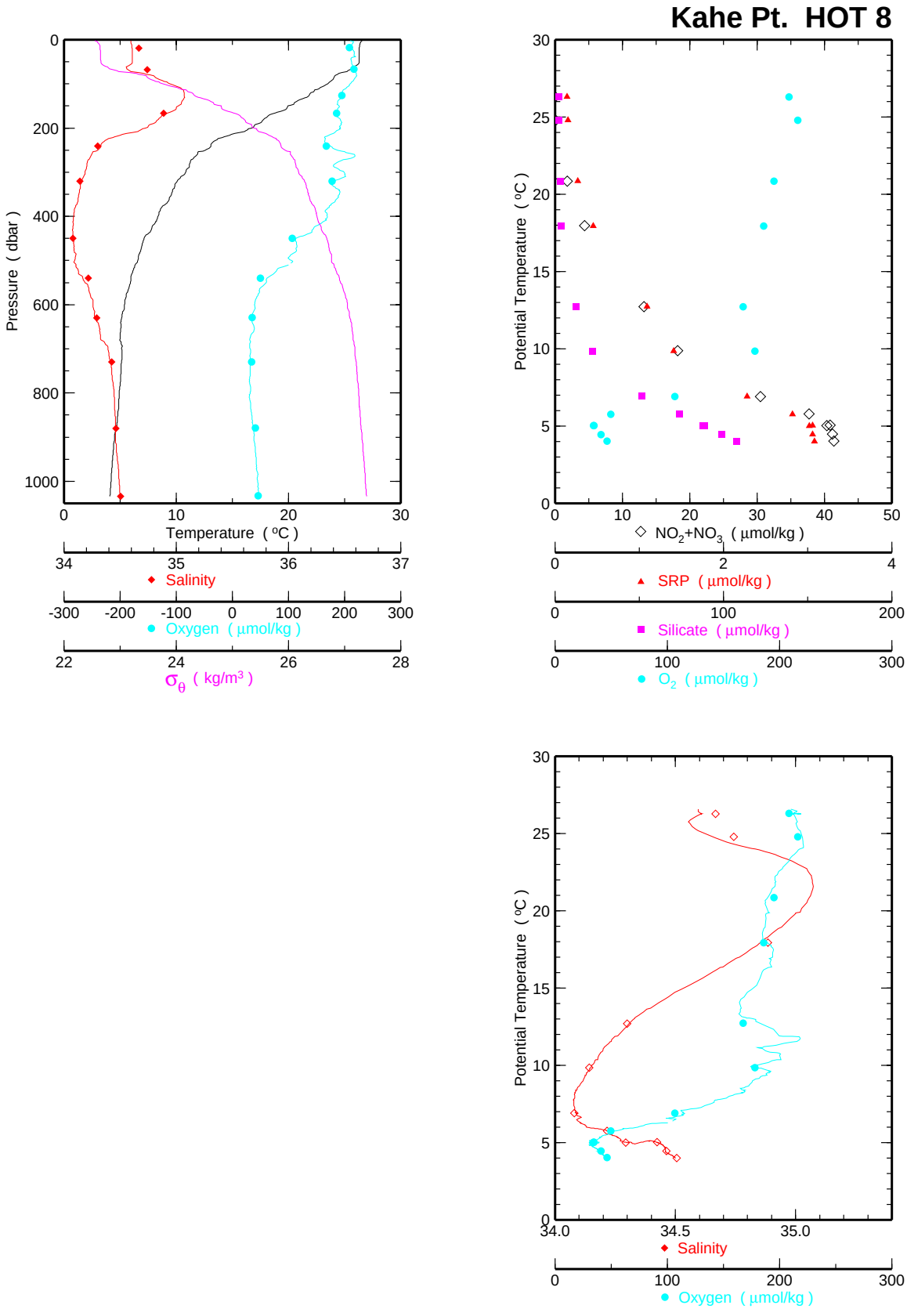


Figure VII.A.7

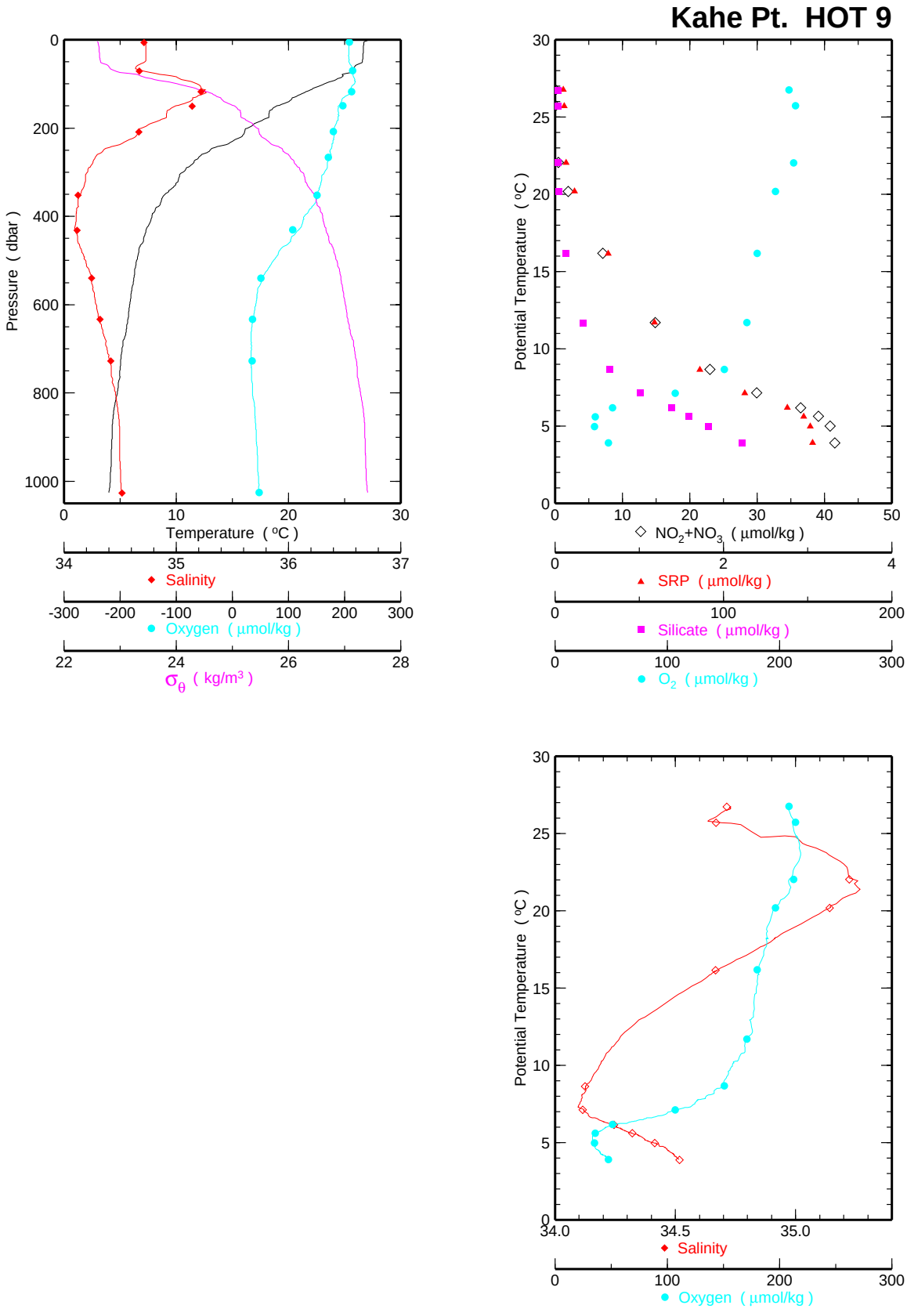


Figure VII.A.8

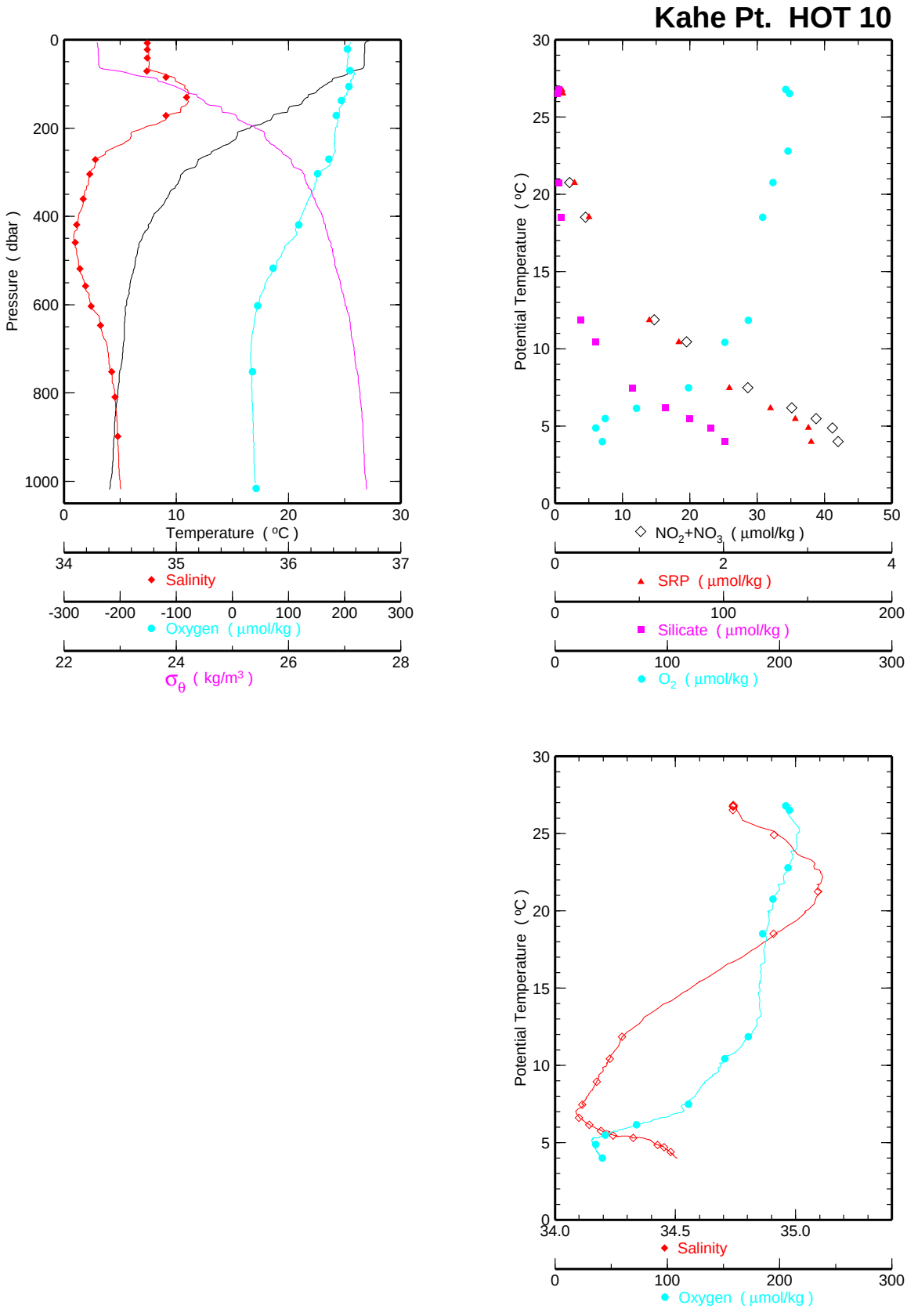


Figure VII.A.9

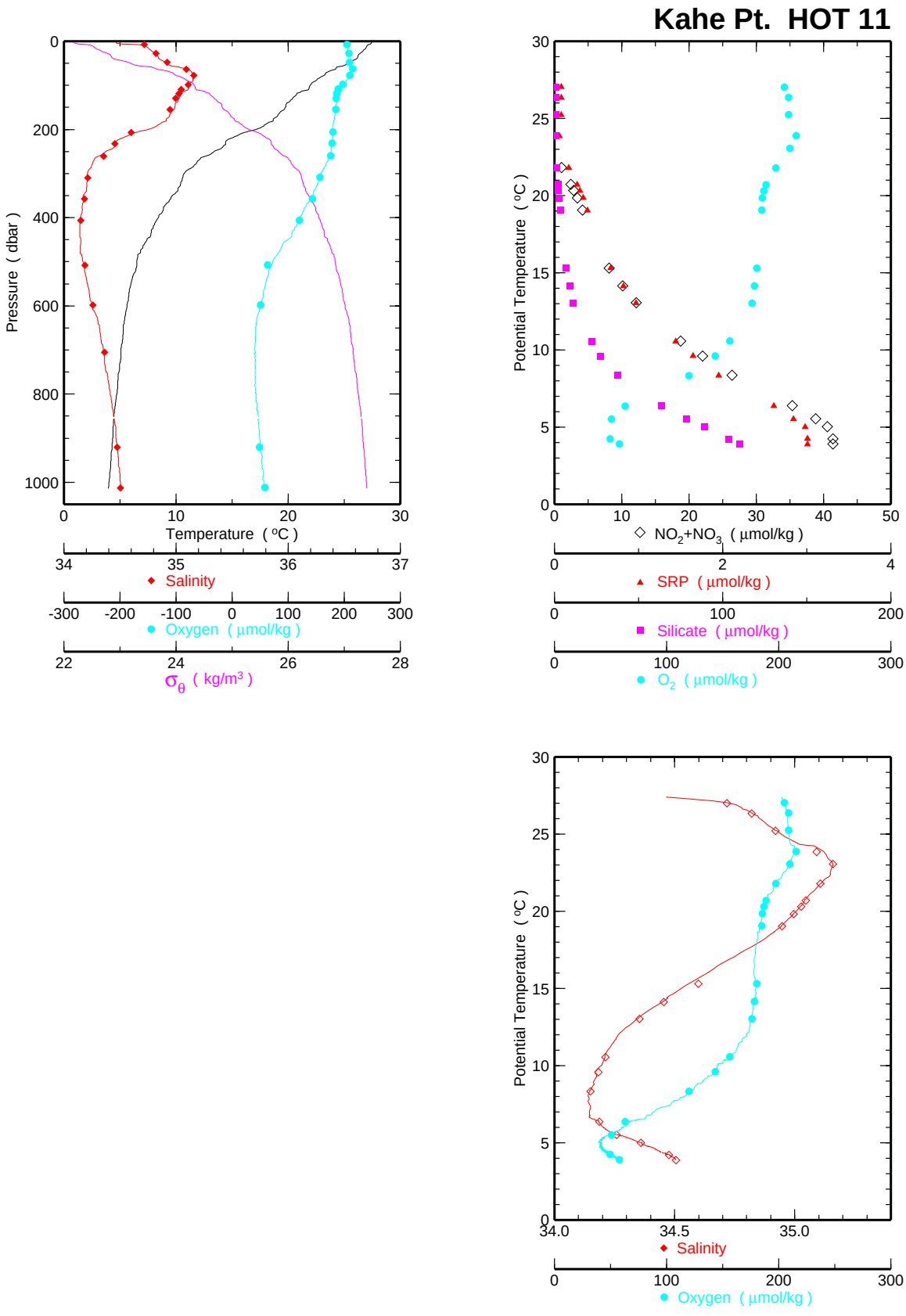


Figure VII.A.10.a

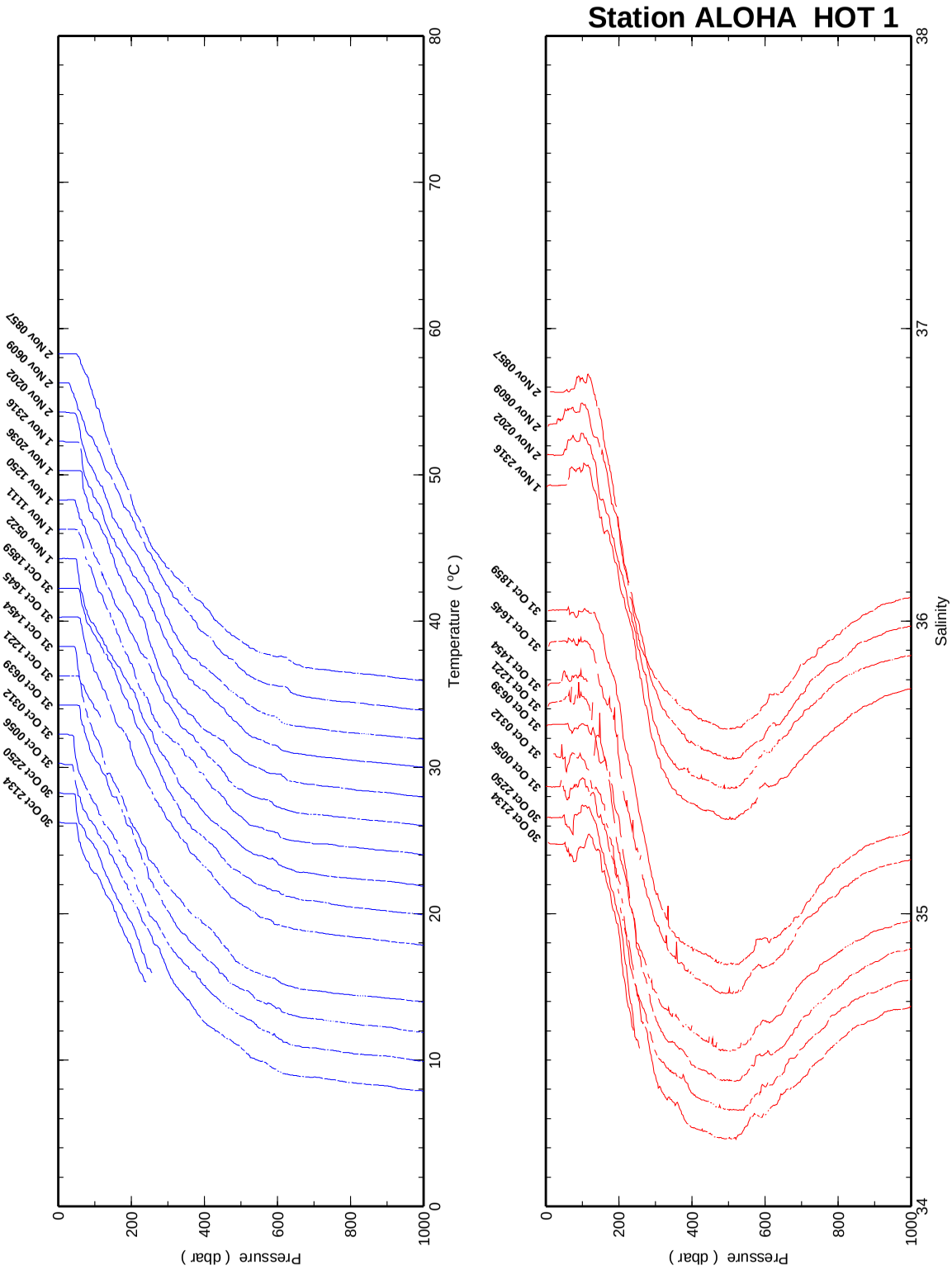


Figure VII.A.10.b

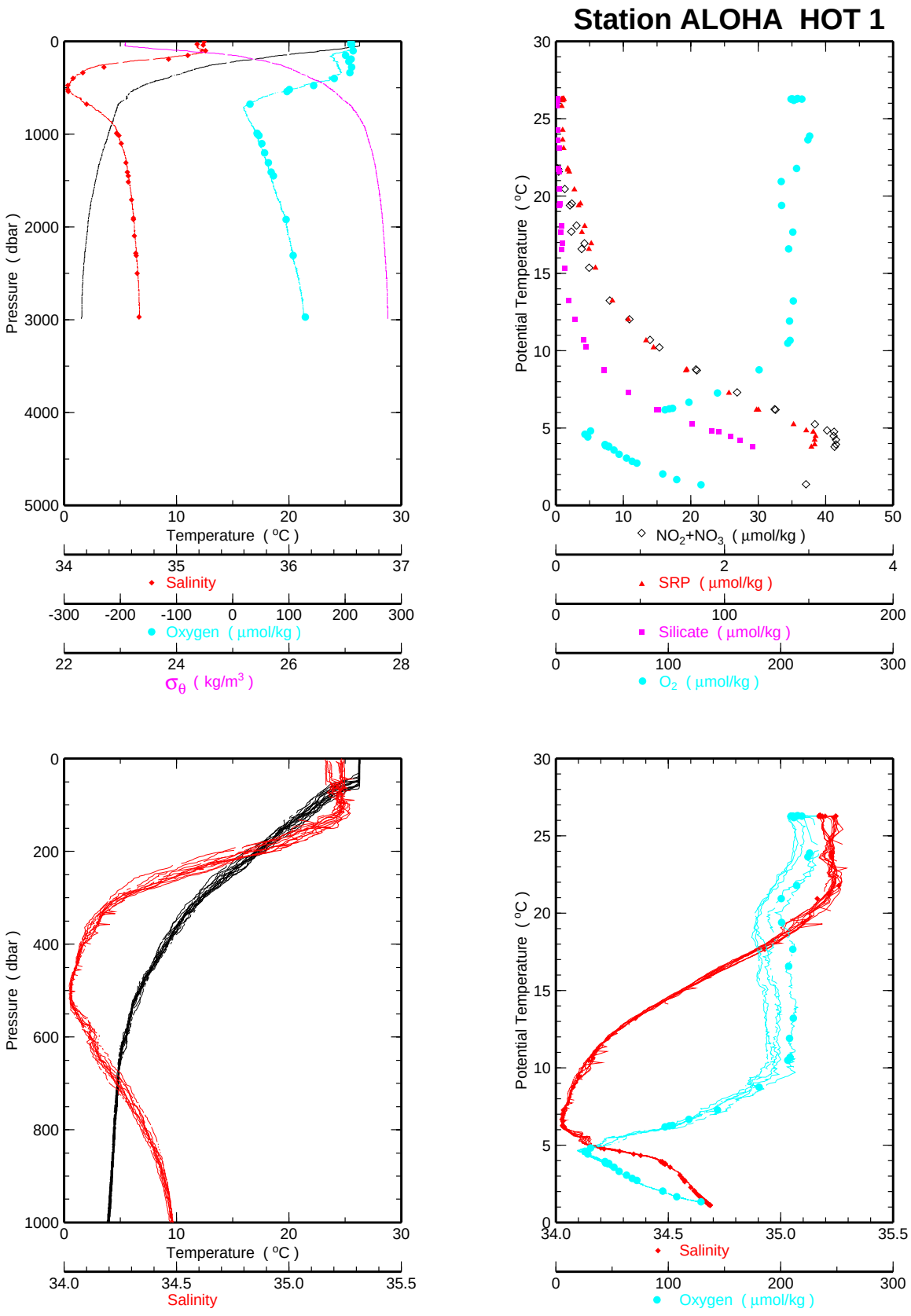


Figure VII.A.11.a

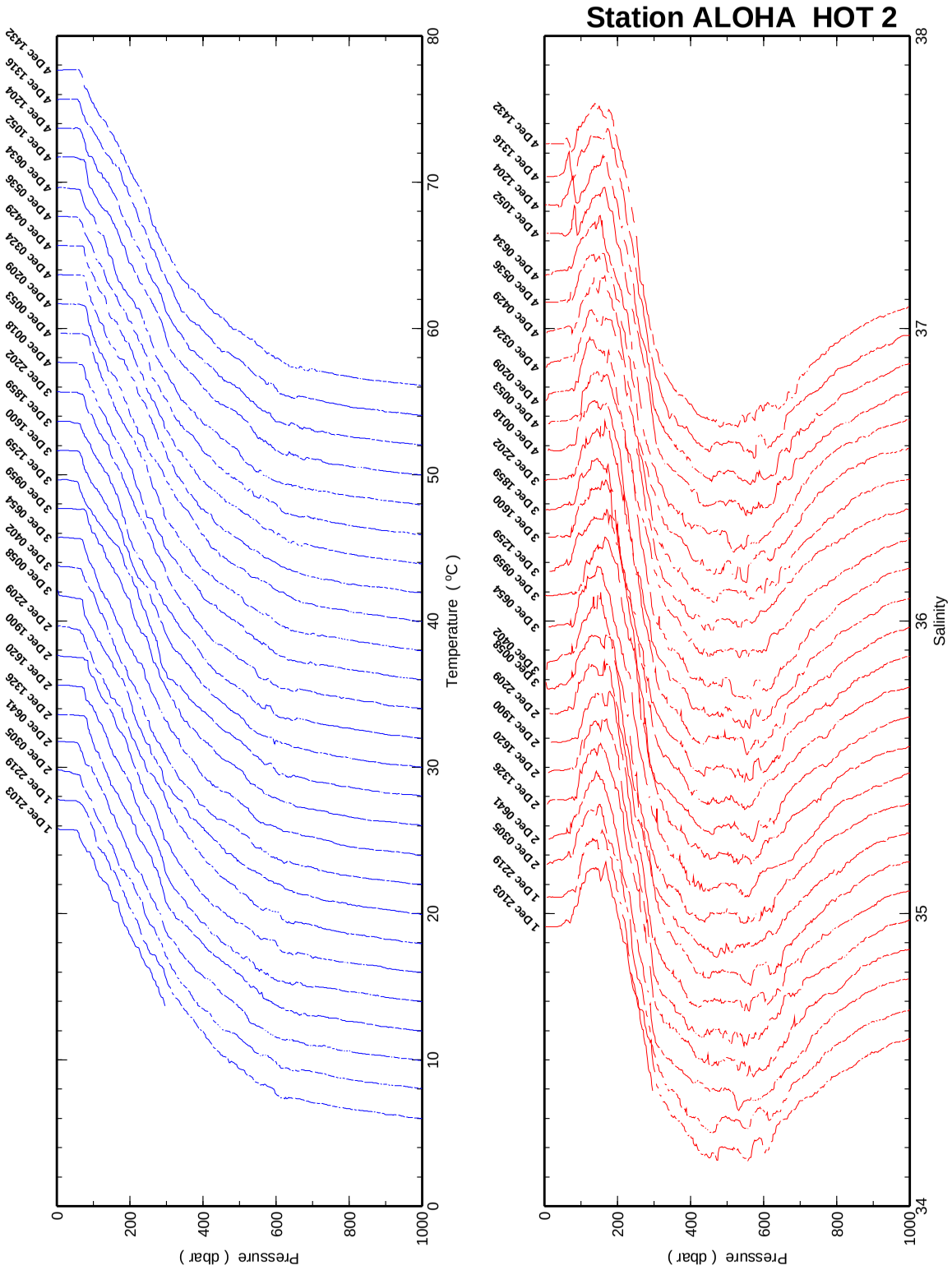
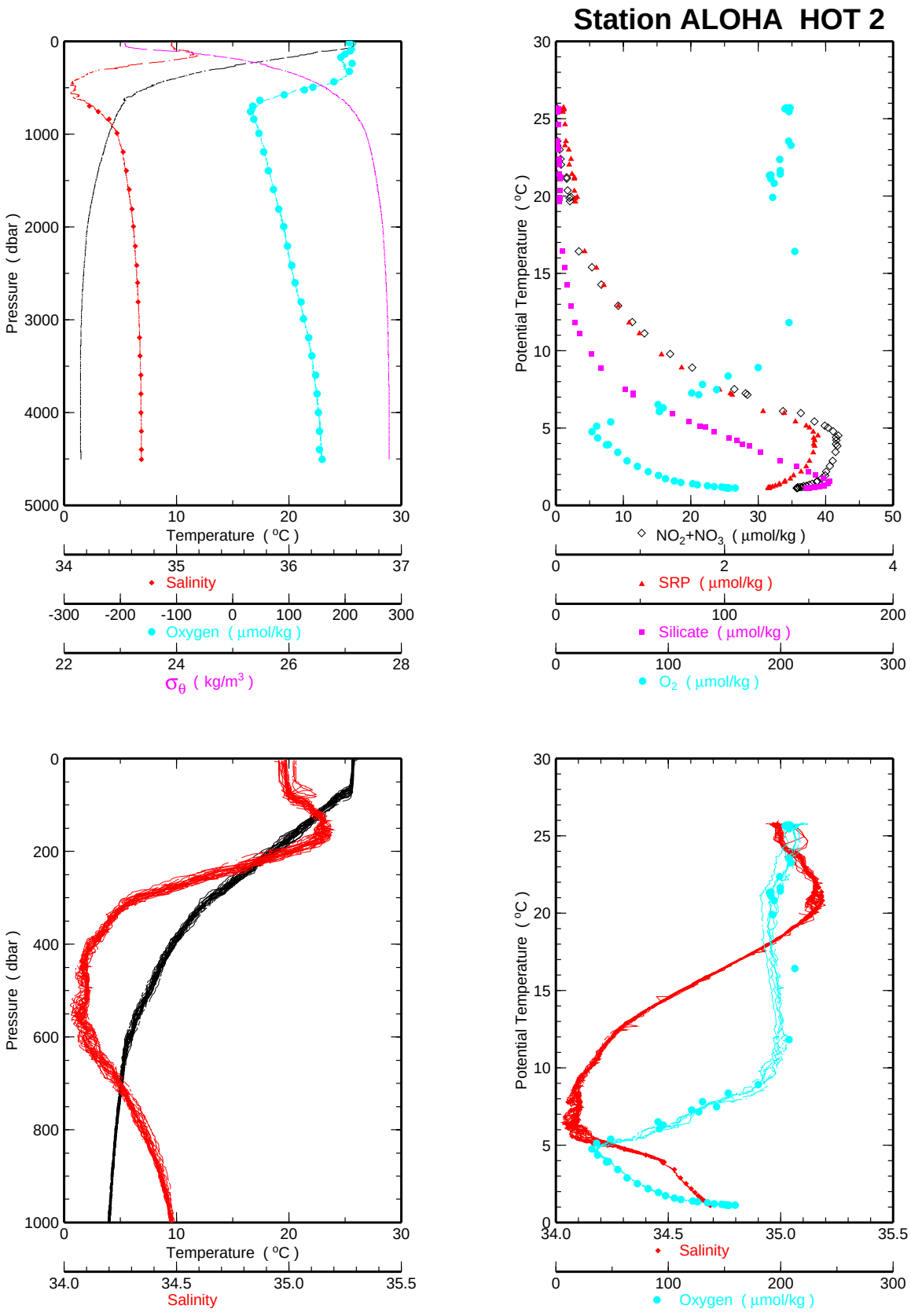


Figure VII.A.11.b



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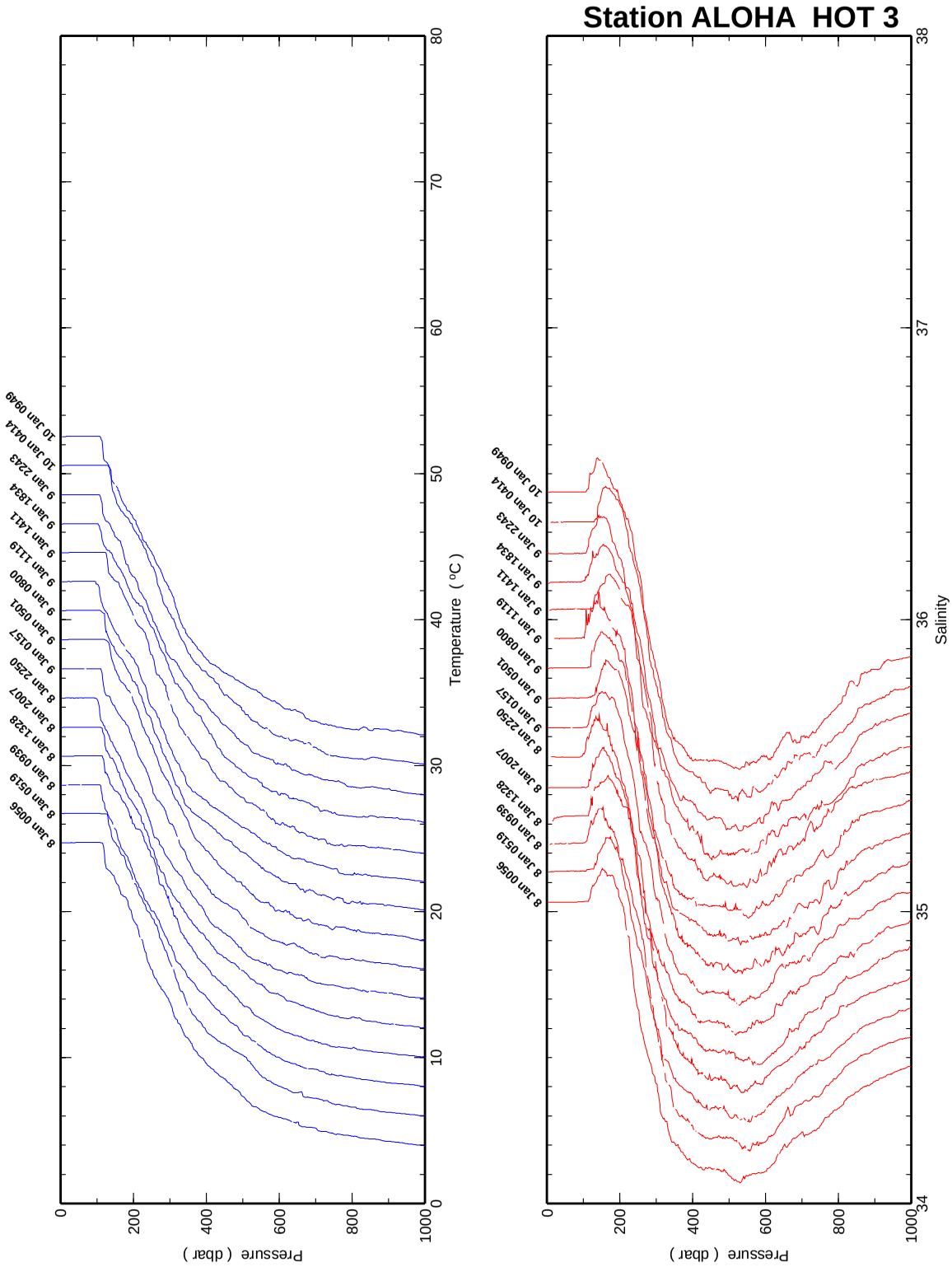


Figure VII.A.12.b

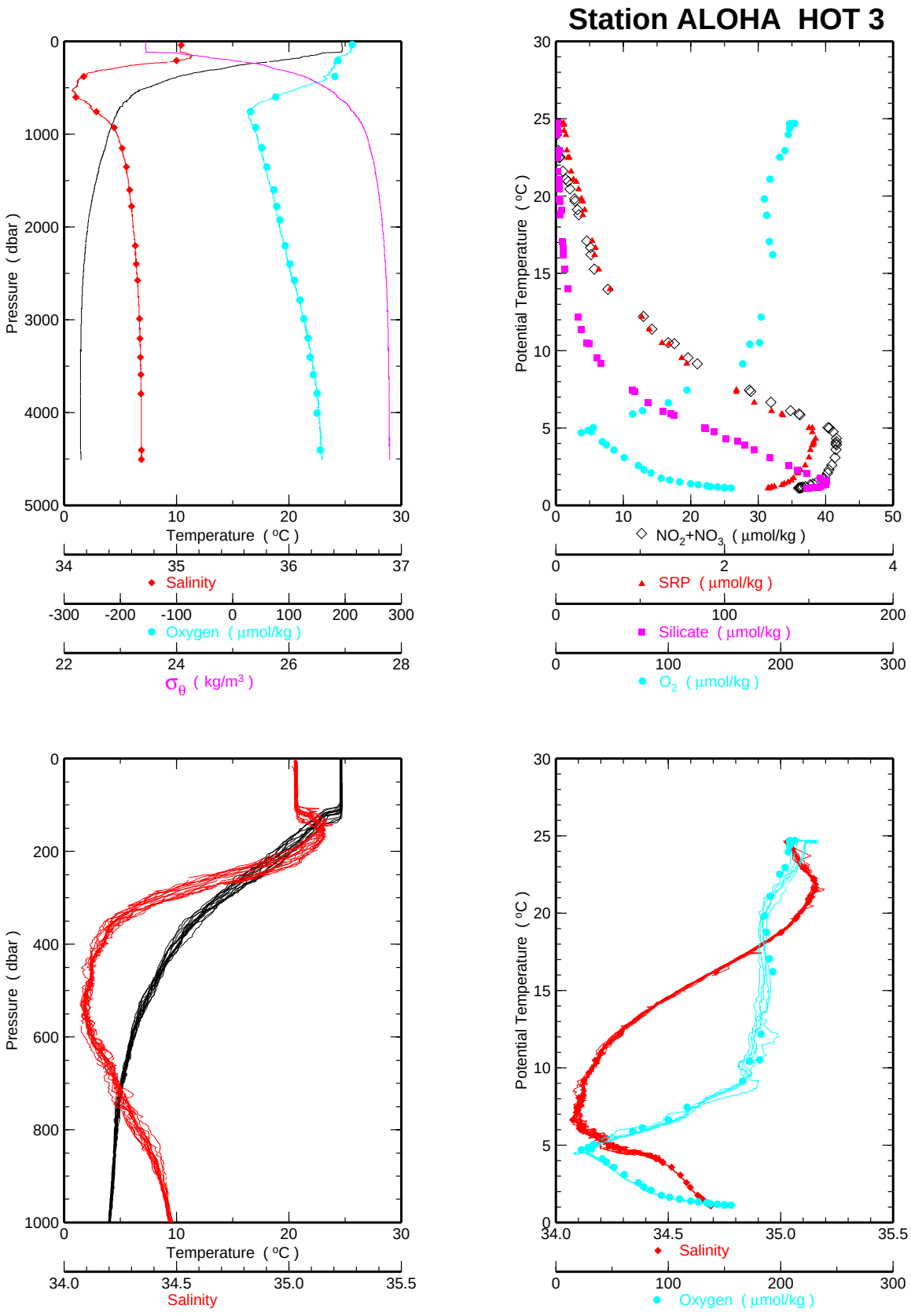


Figure VII.A.13.a

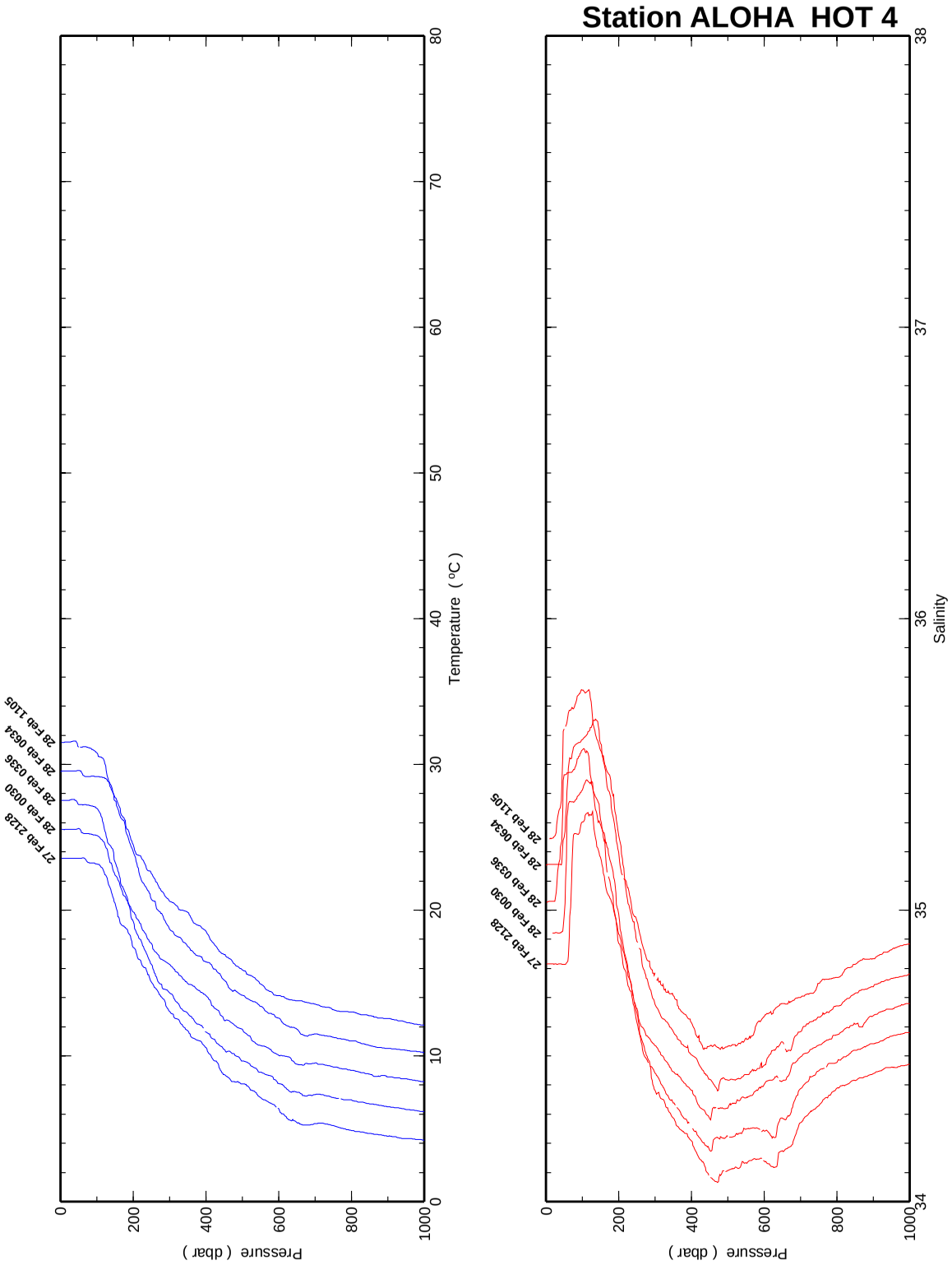
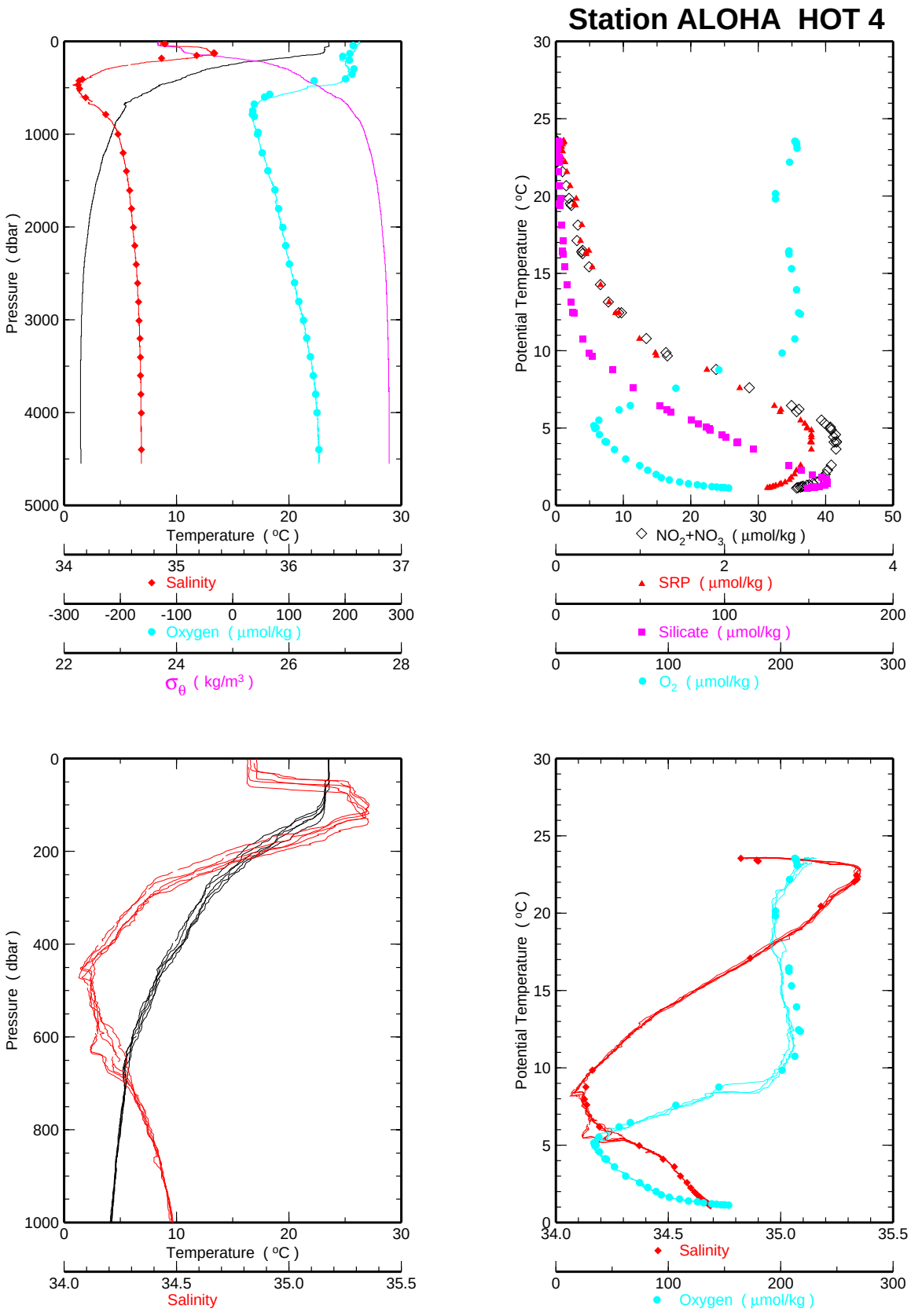


Figure VII.A.13.b



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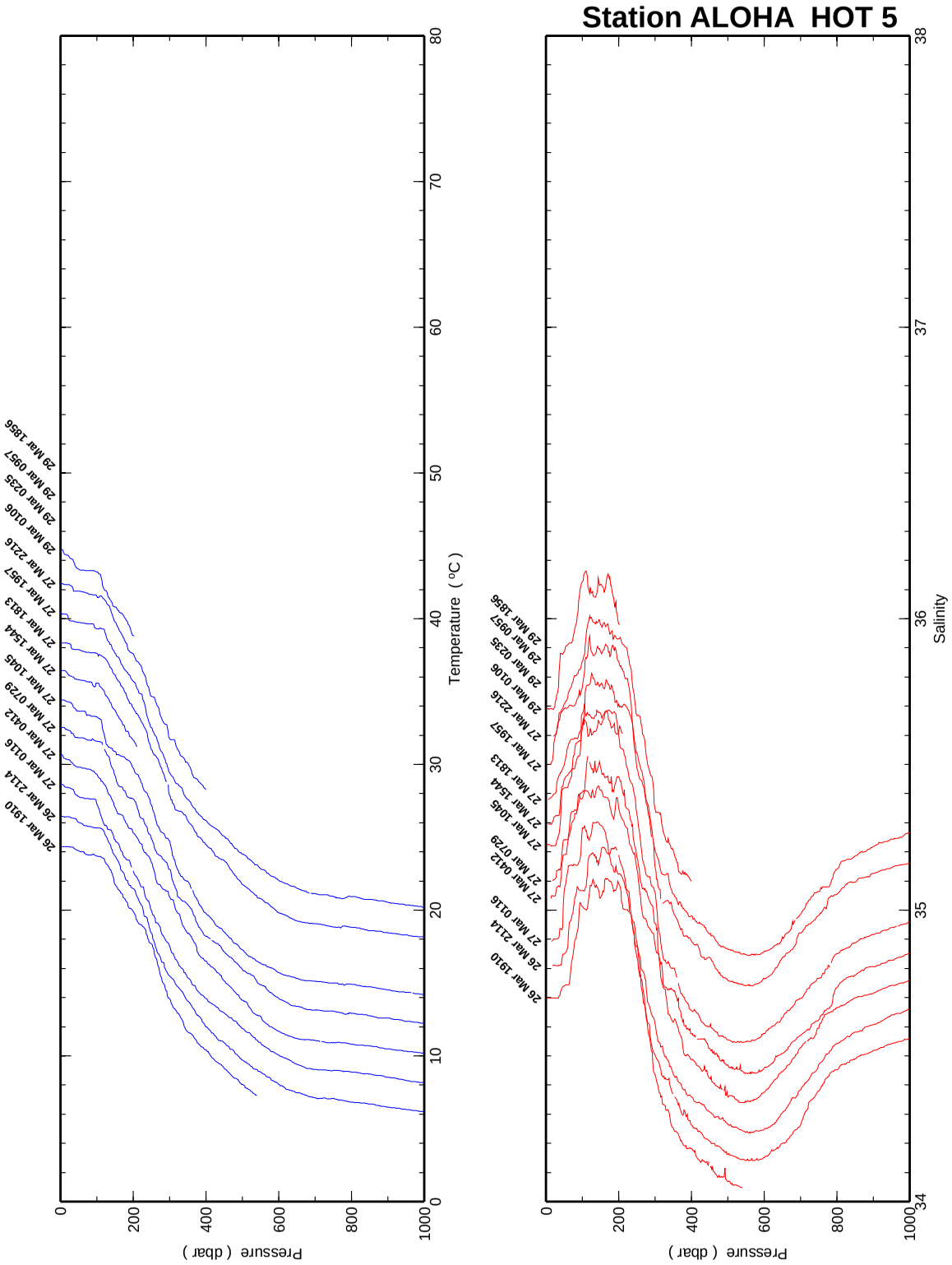
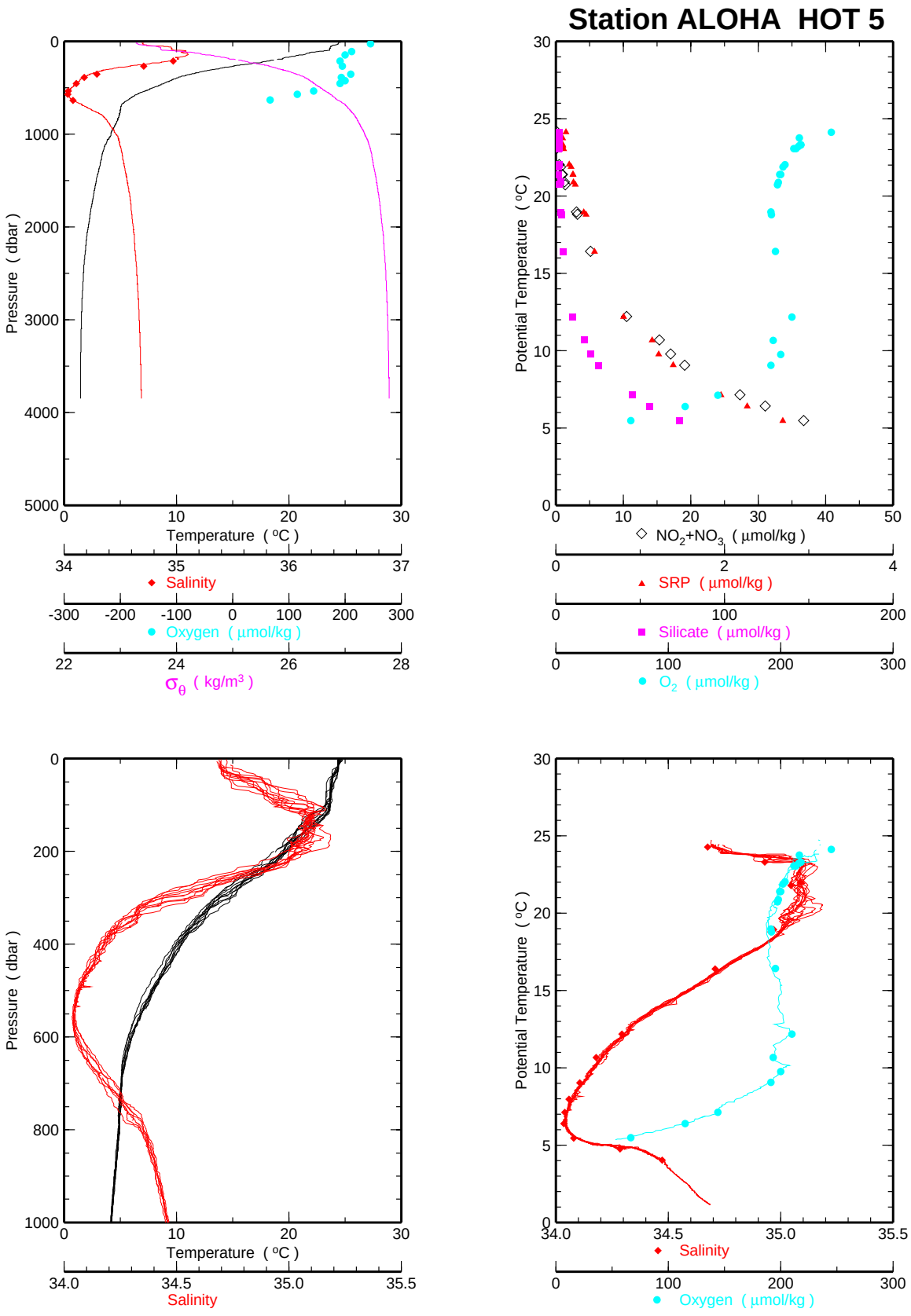


Figure VII.A.14b



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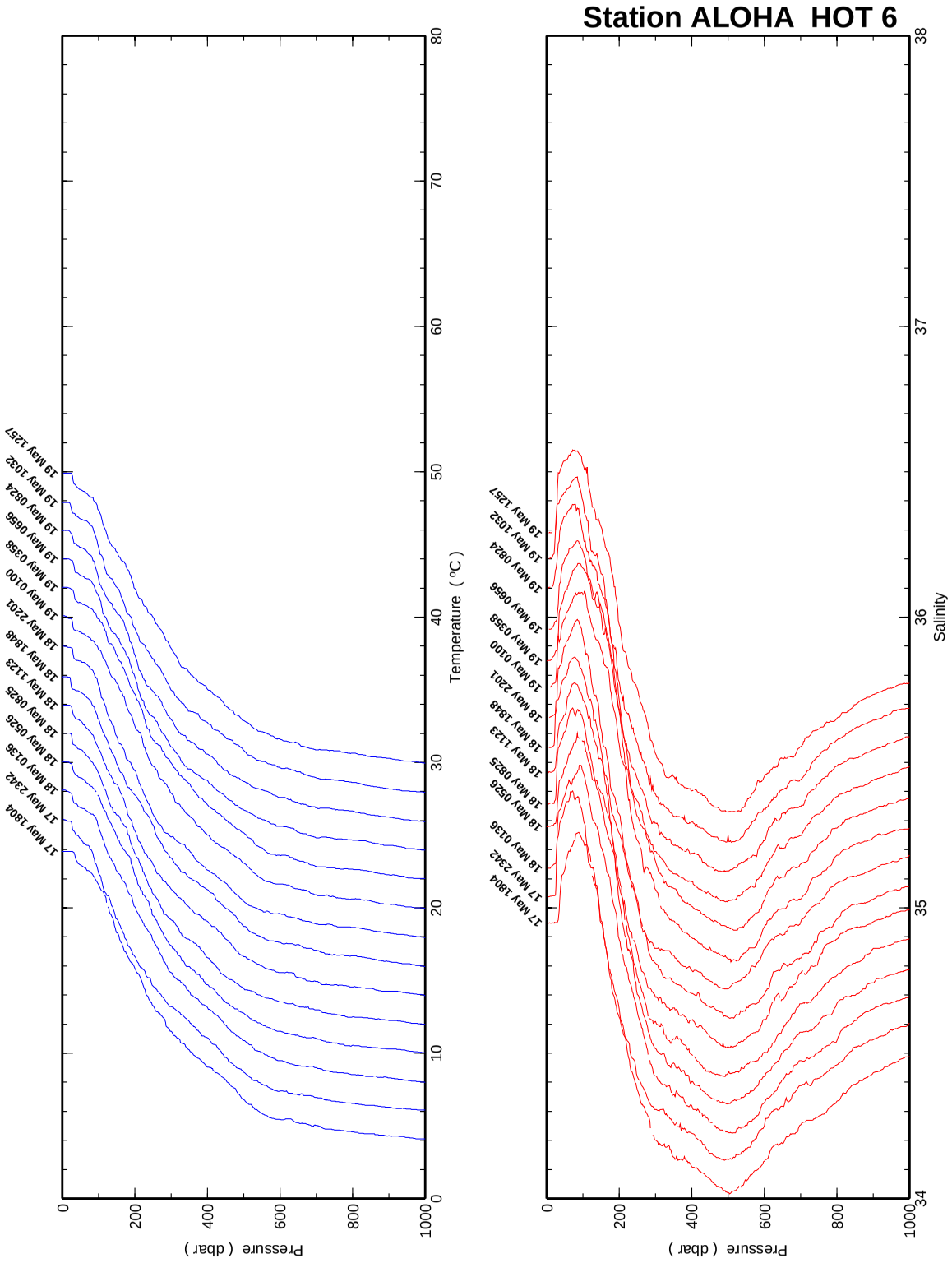

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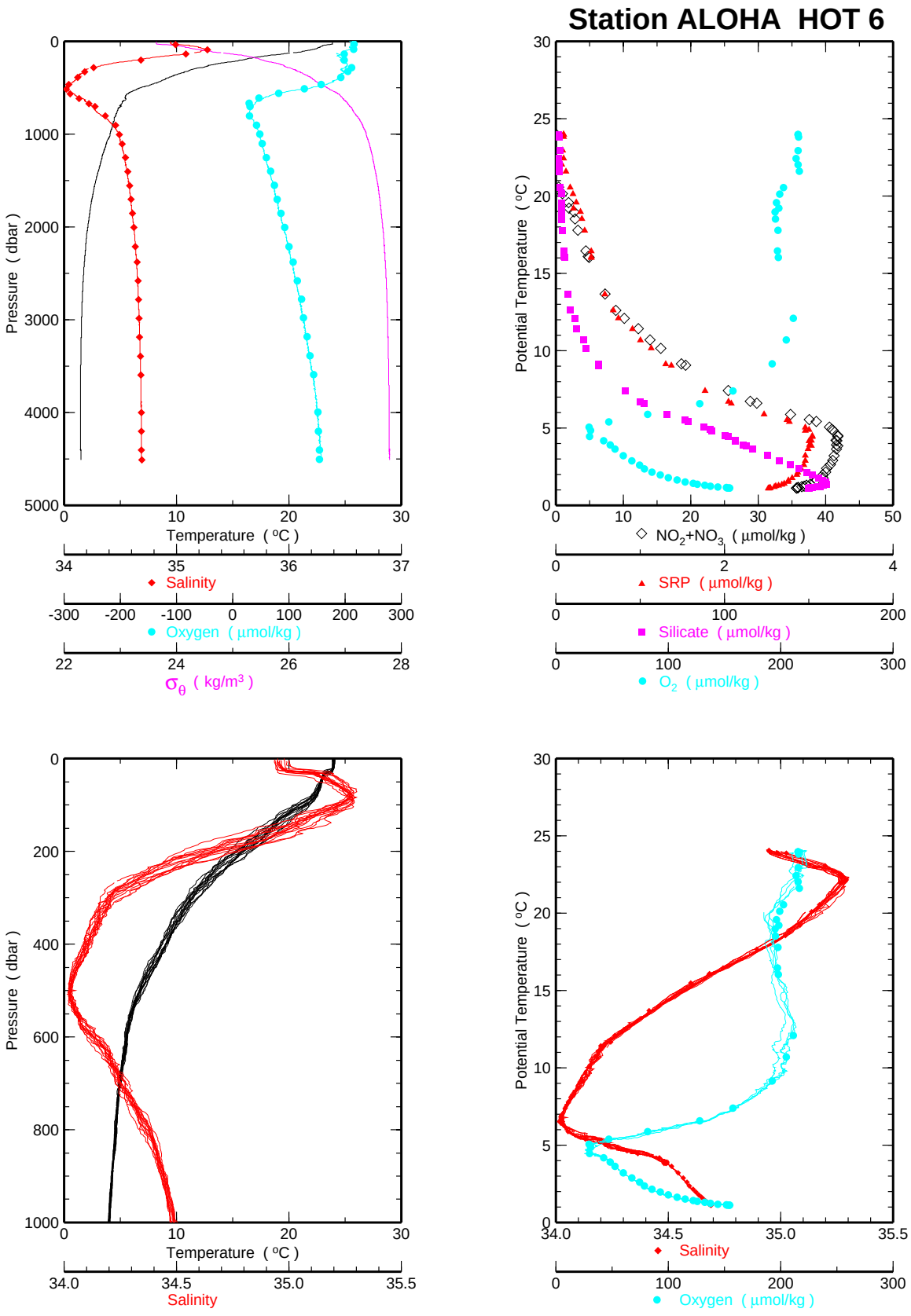

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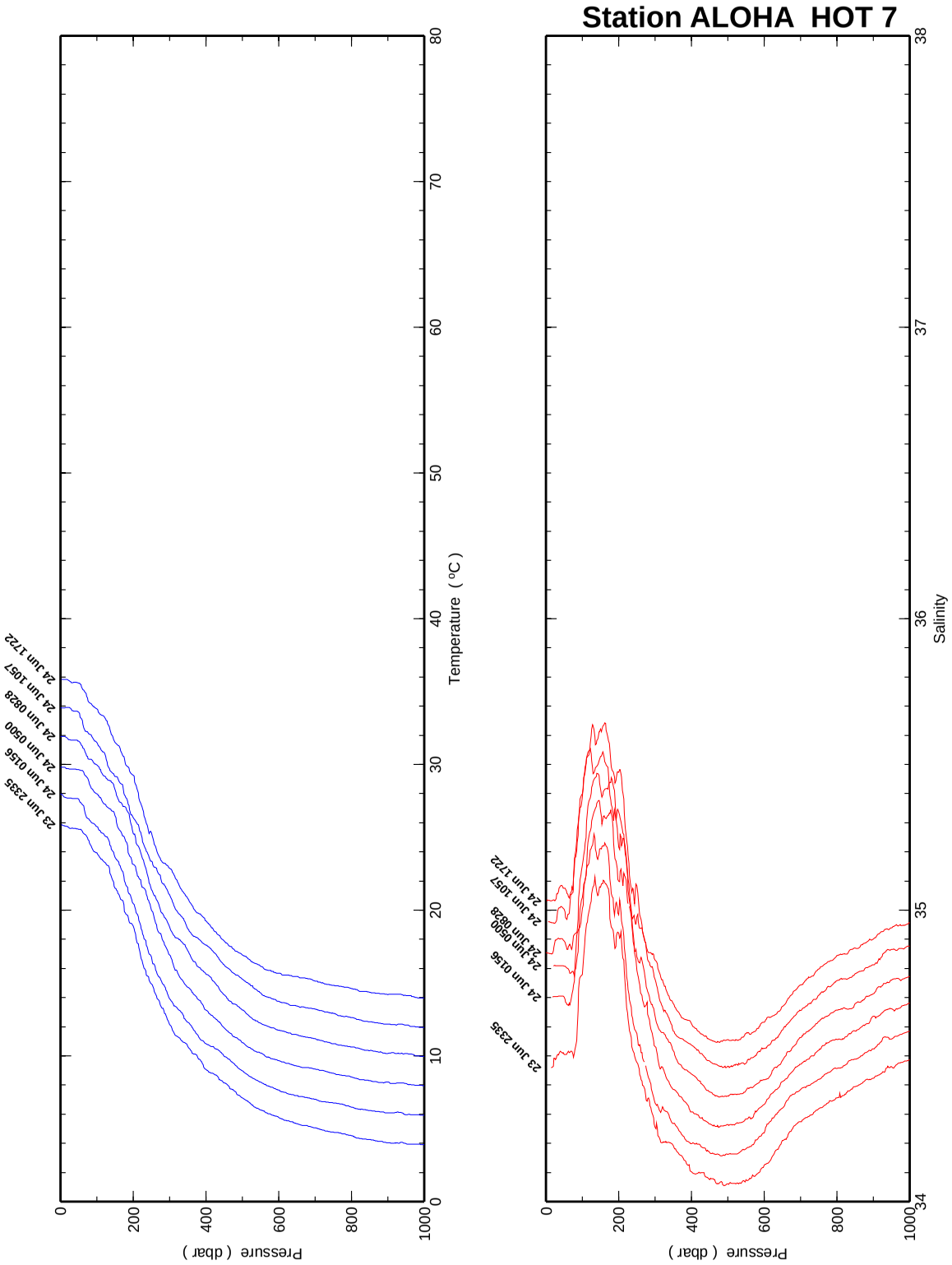
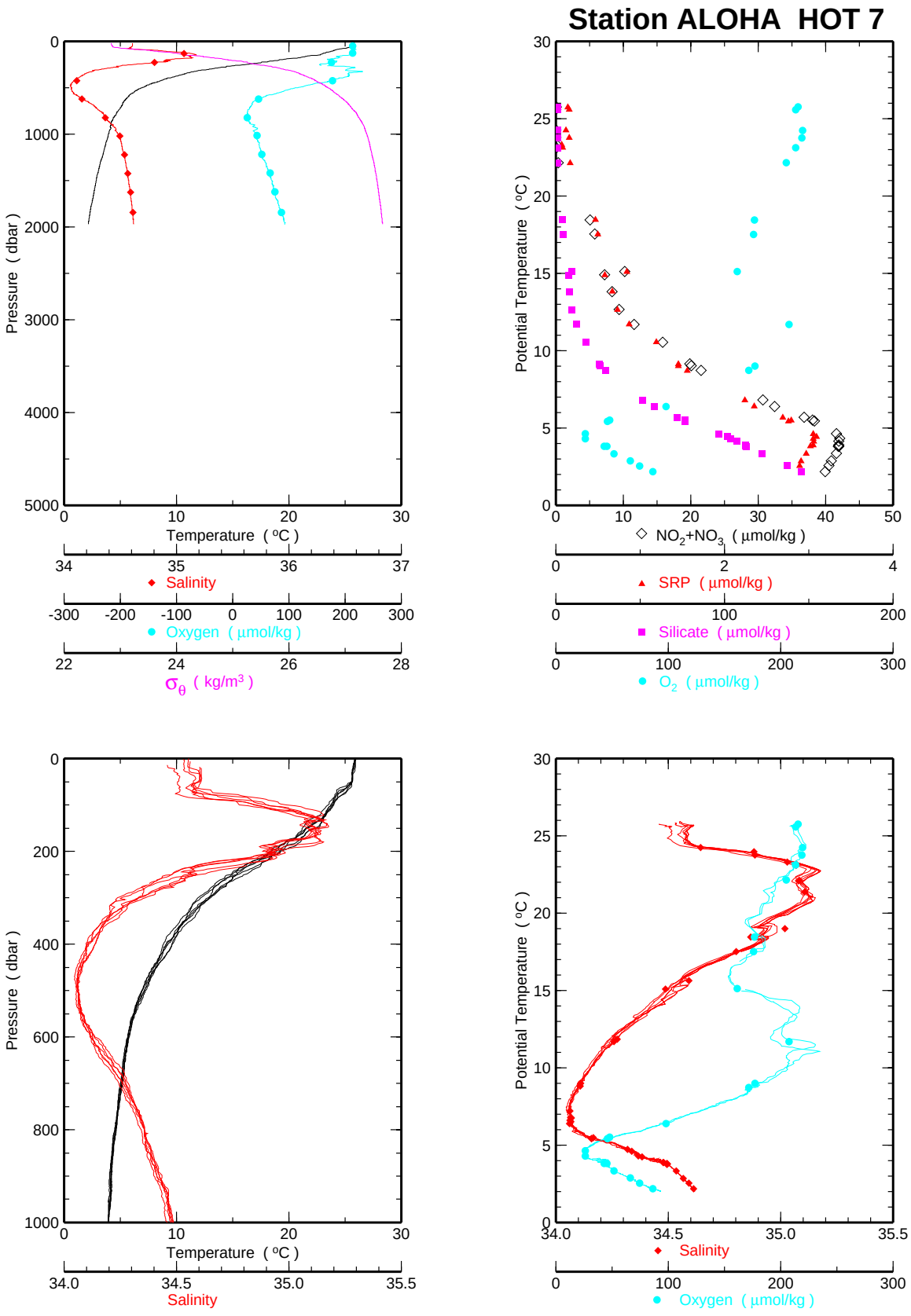


Figure VII.A.16b



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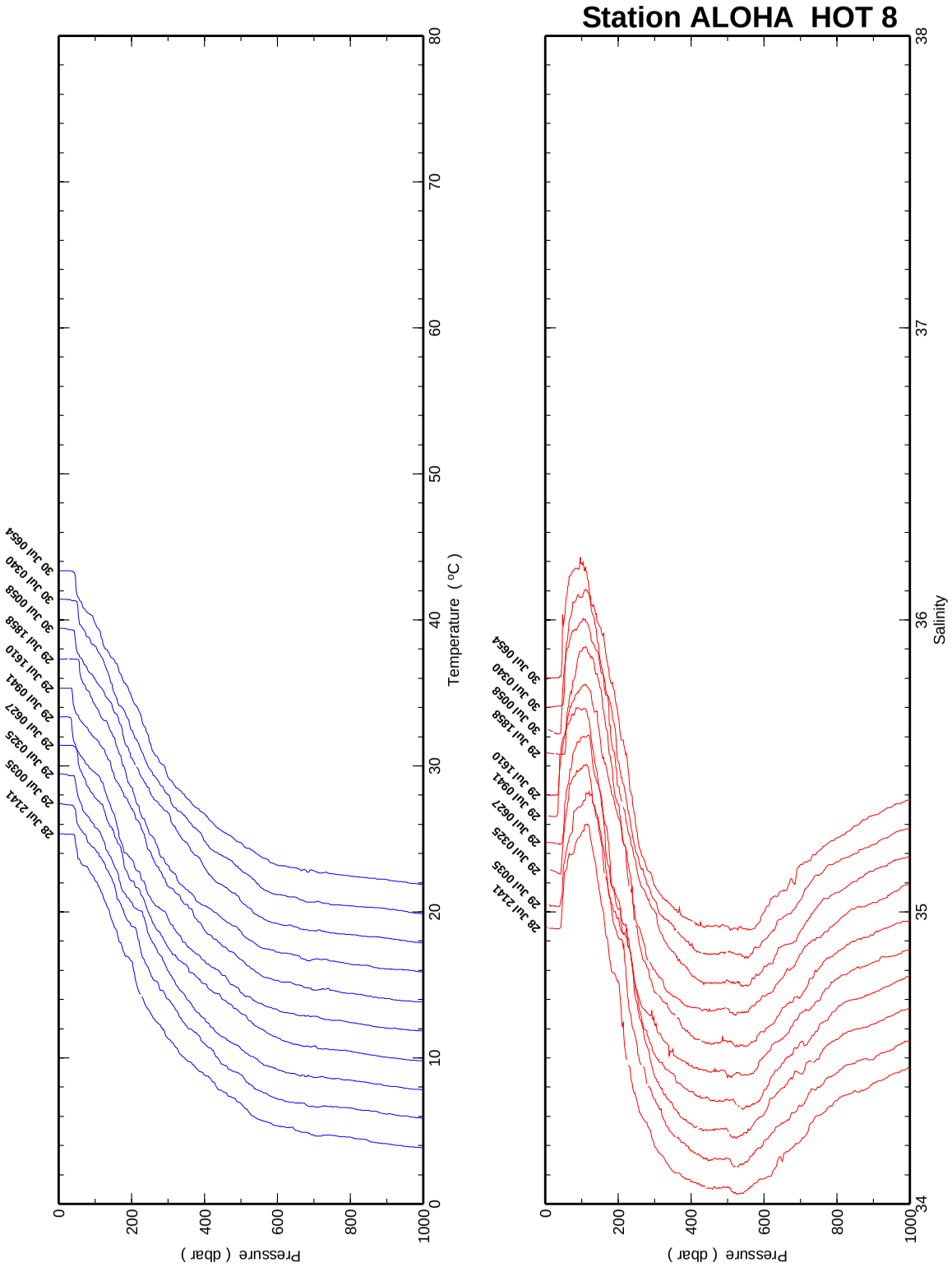


Figure VII.A.17b

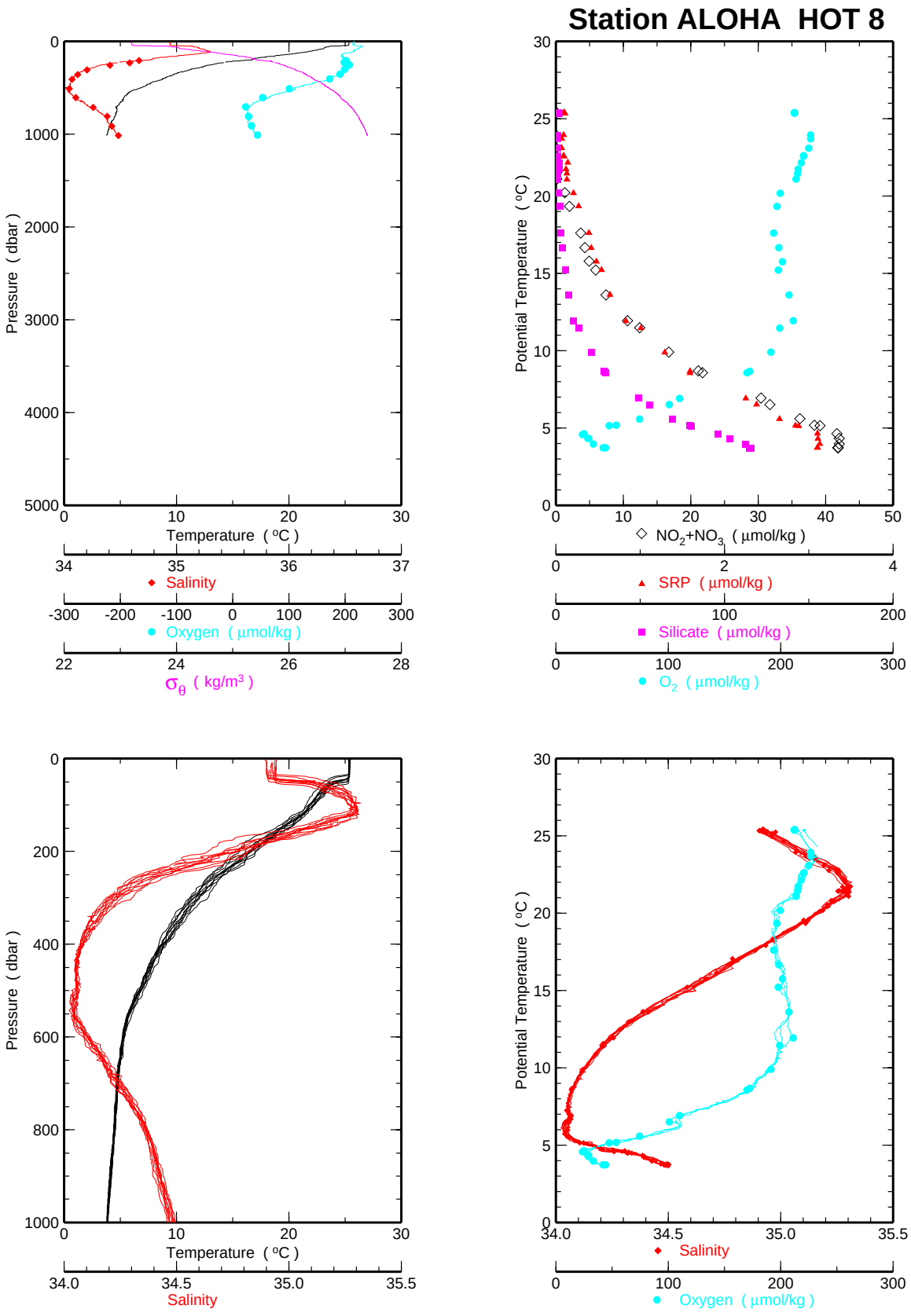


Figure VII.A.18a

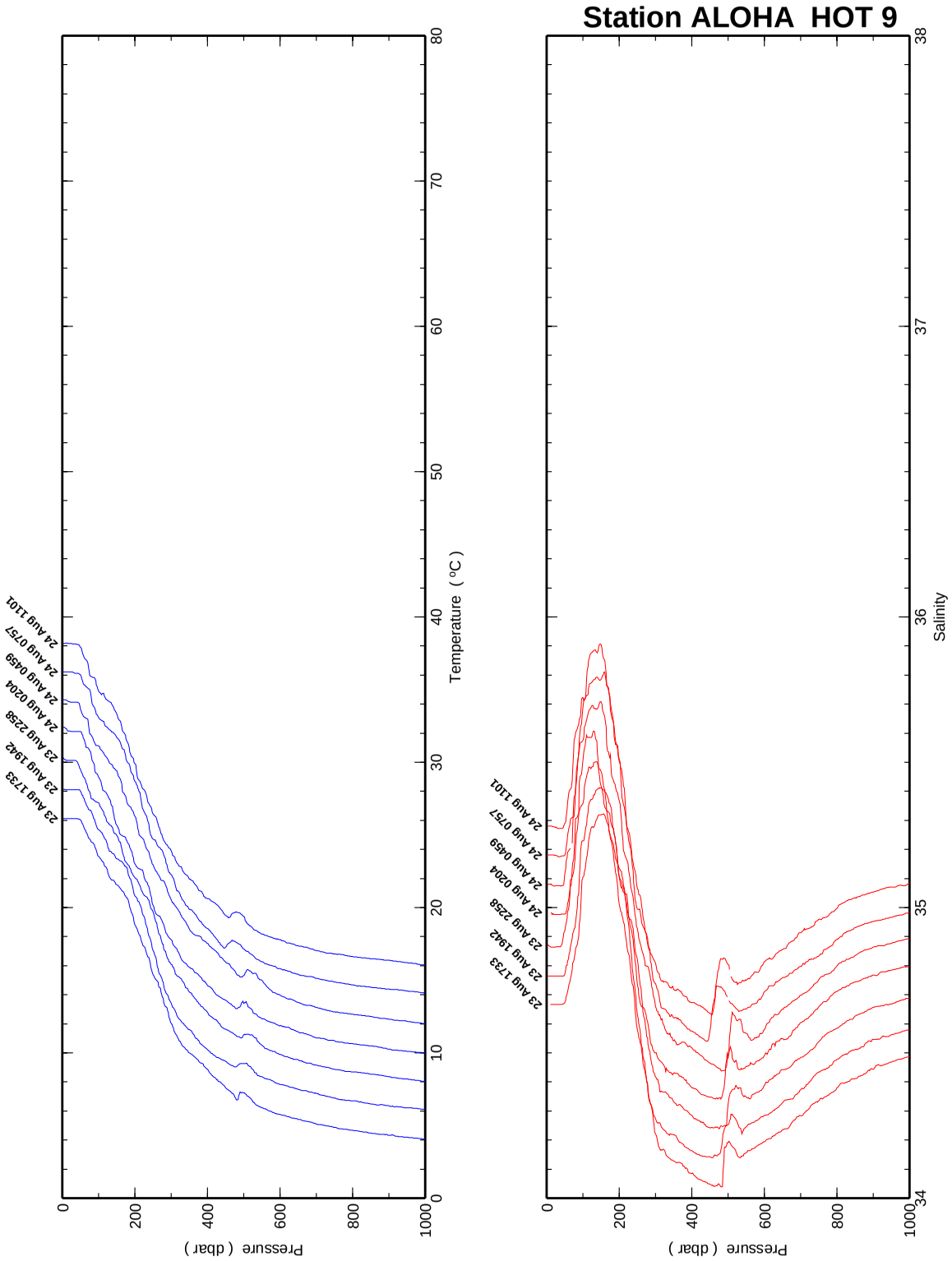


Figure VII.A.18b

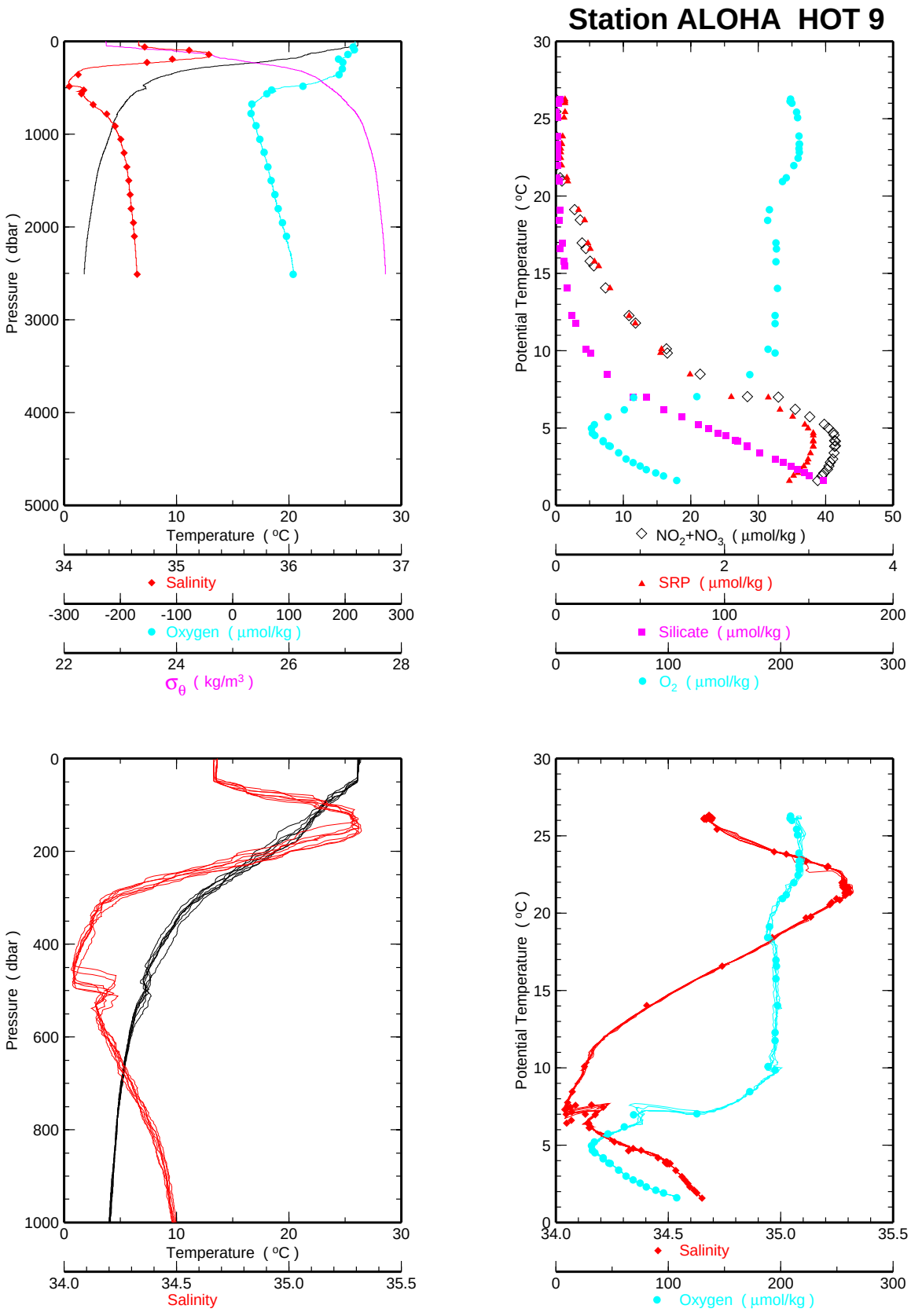


Figure VII.A.19a

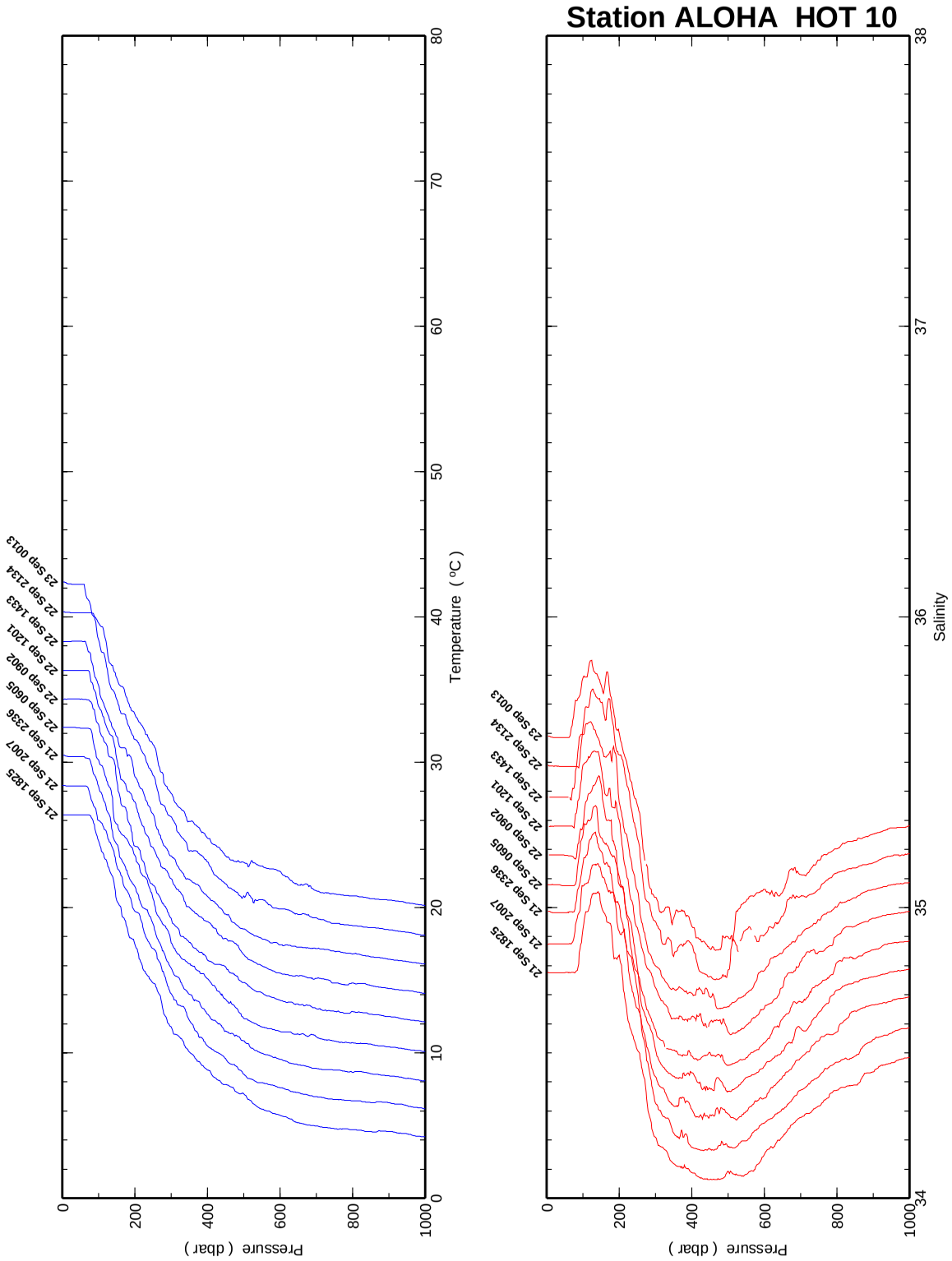


Figure VII.A.19b

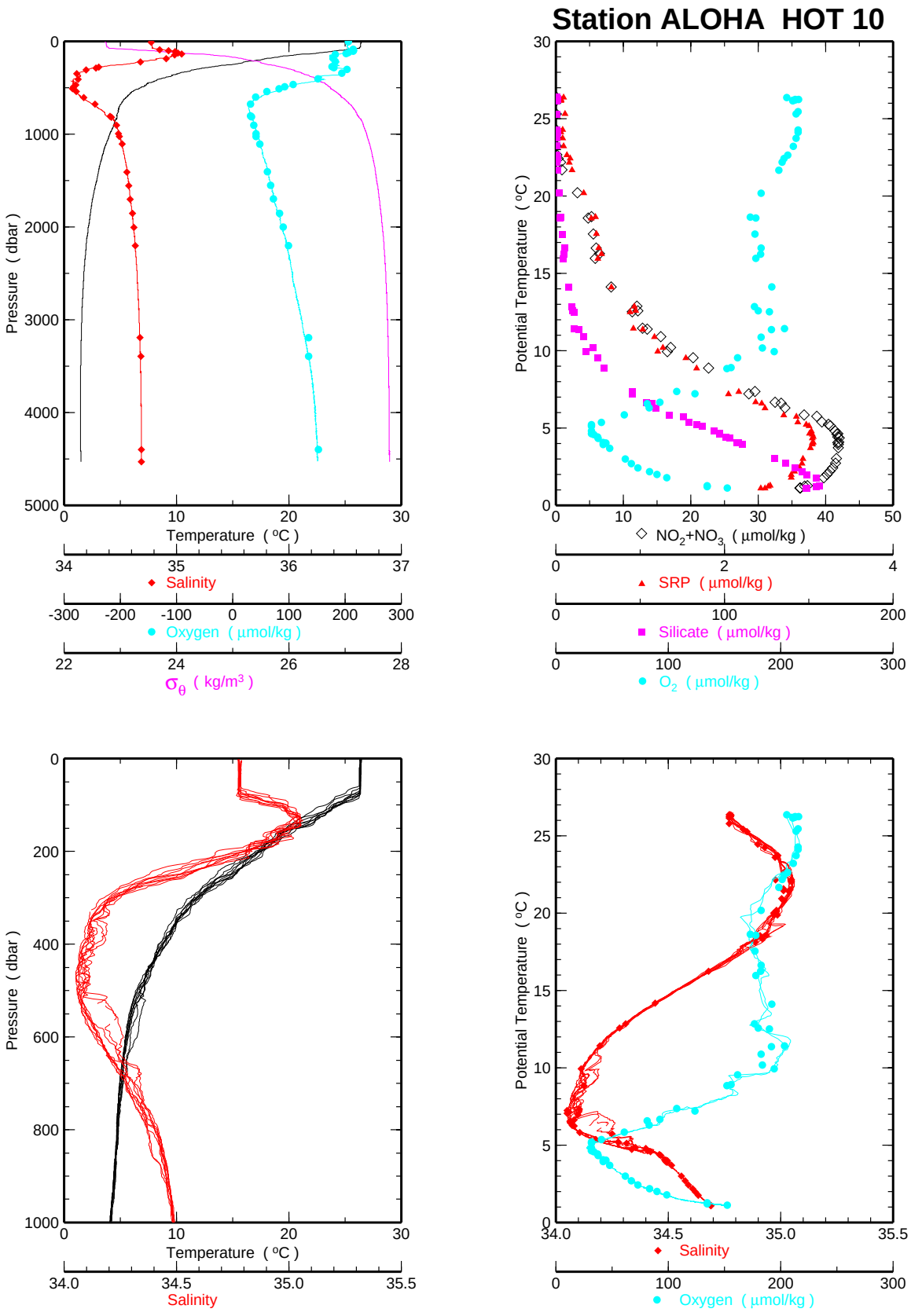


Figure VII.A.20a

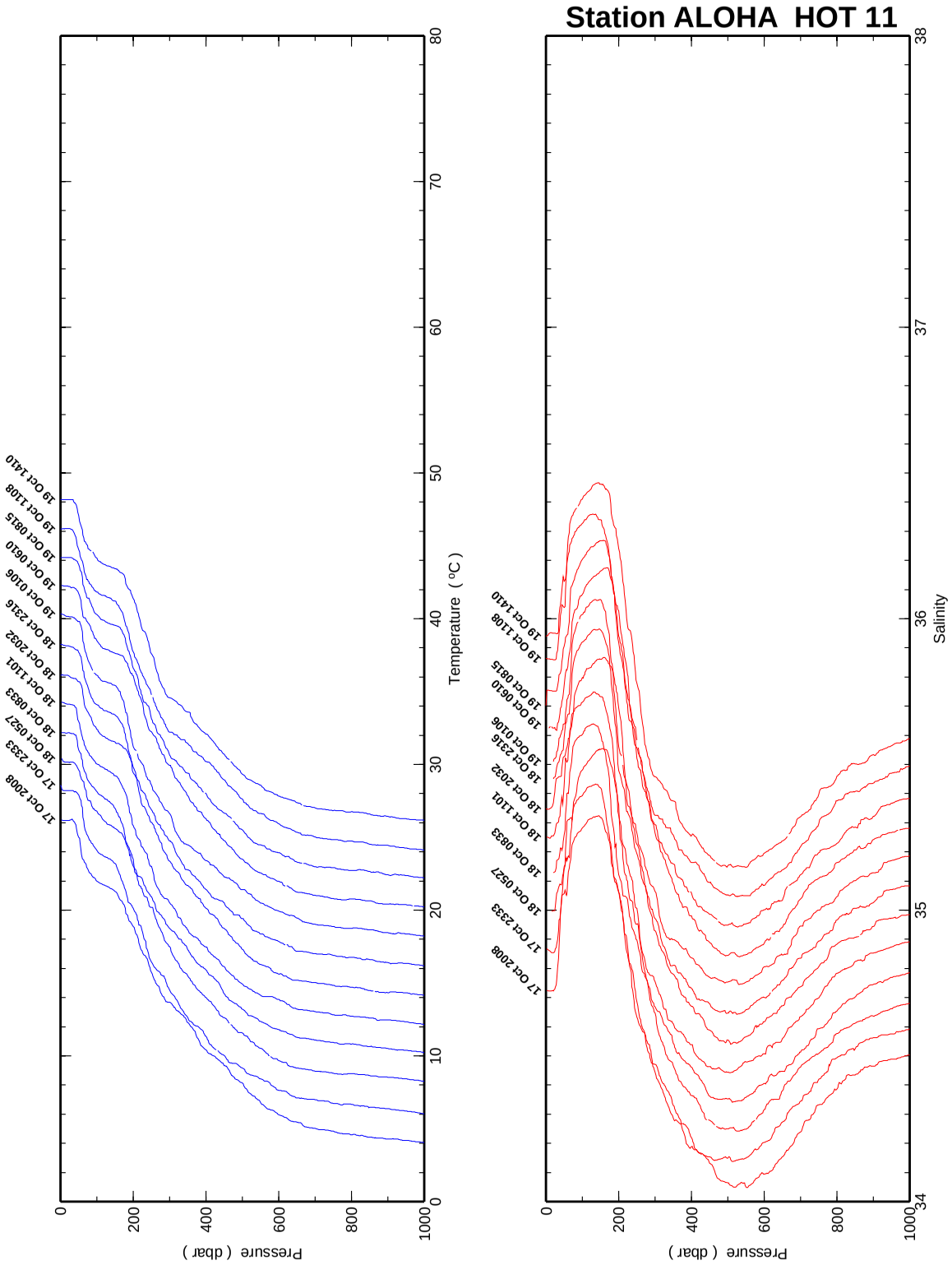


Figure VII.A.20b

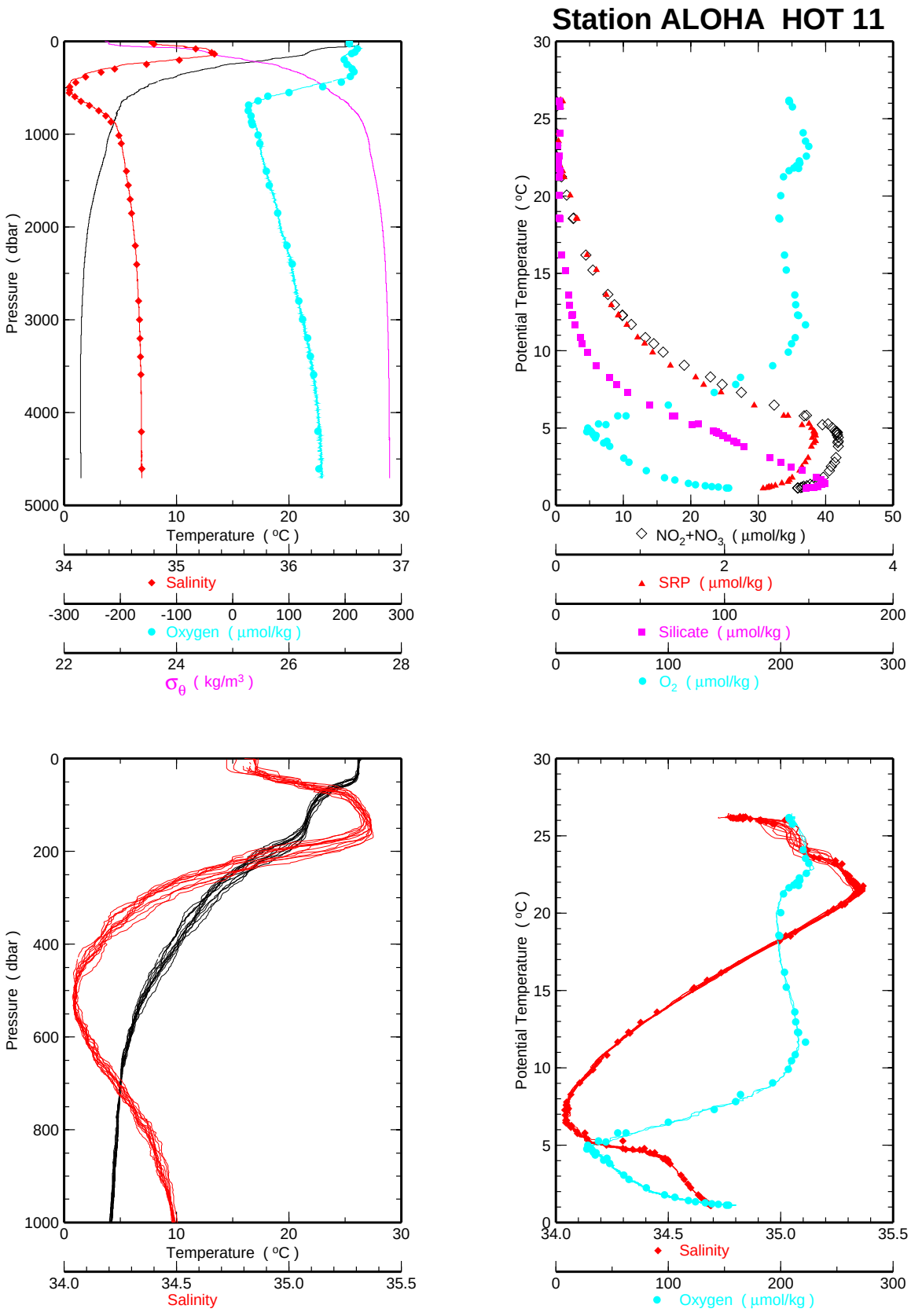


Figure VII.A.21a

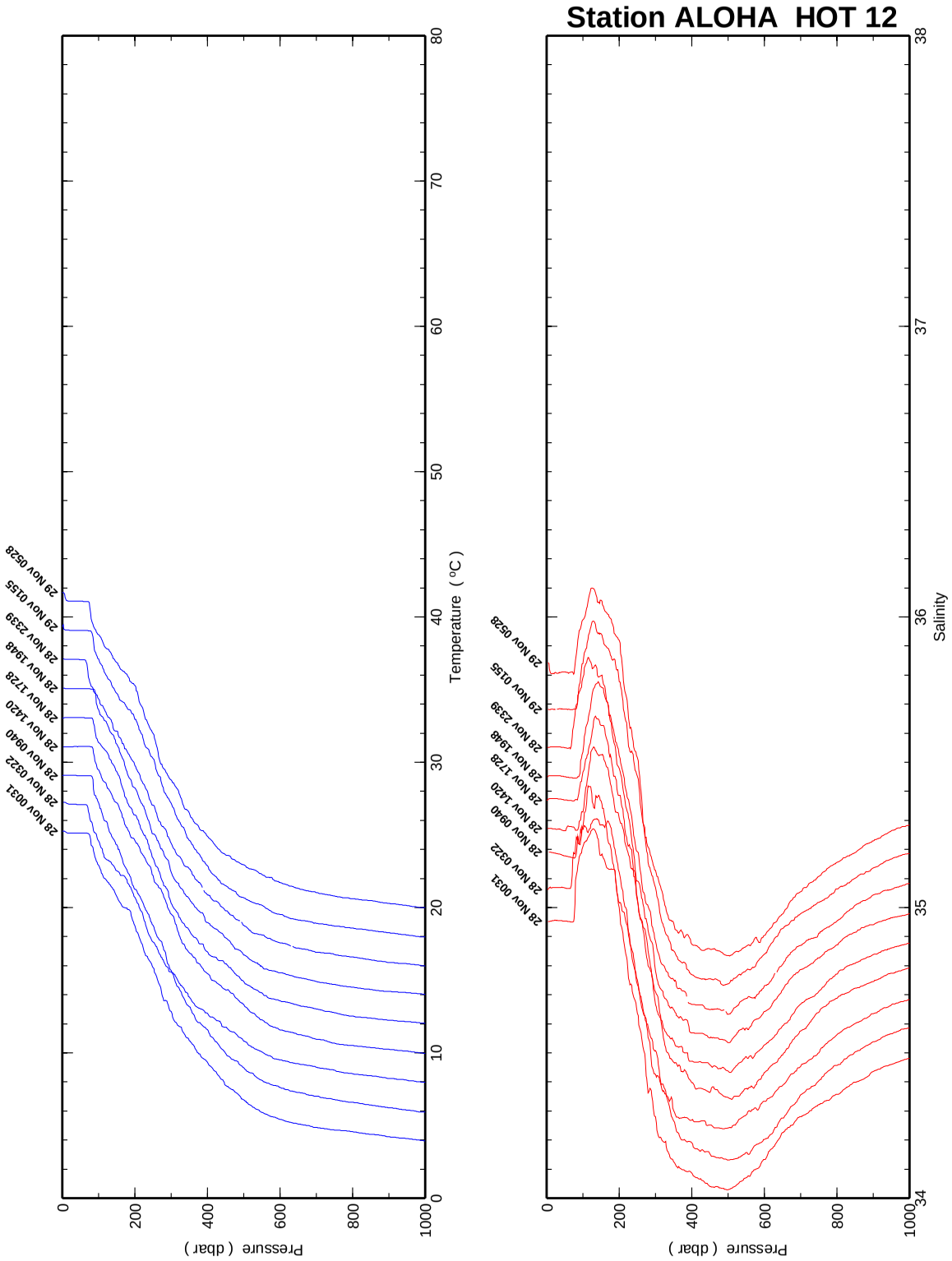


Figure VII.A.21b

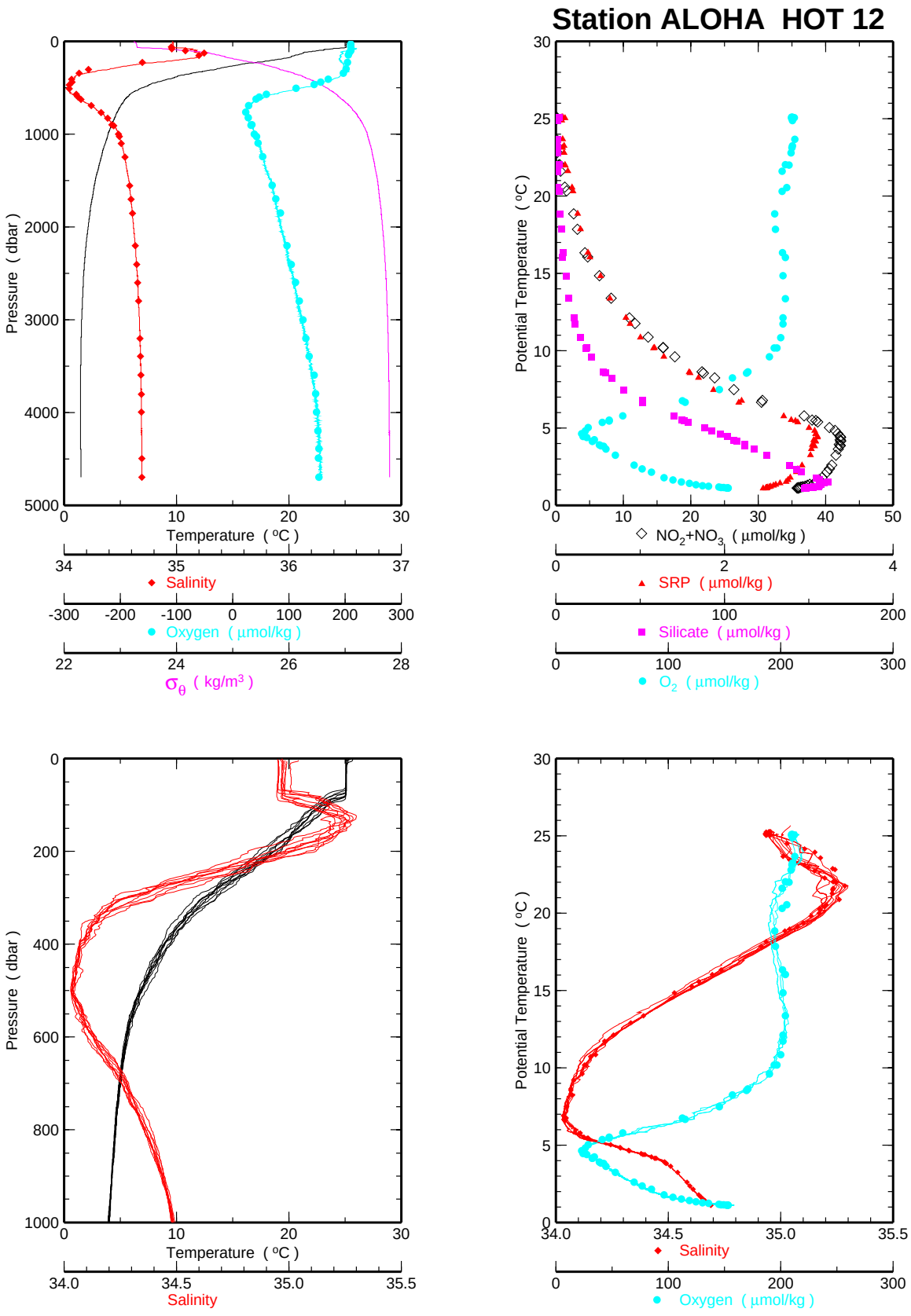
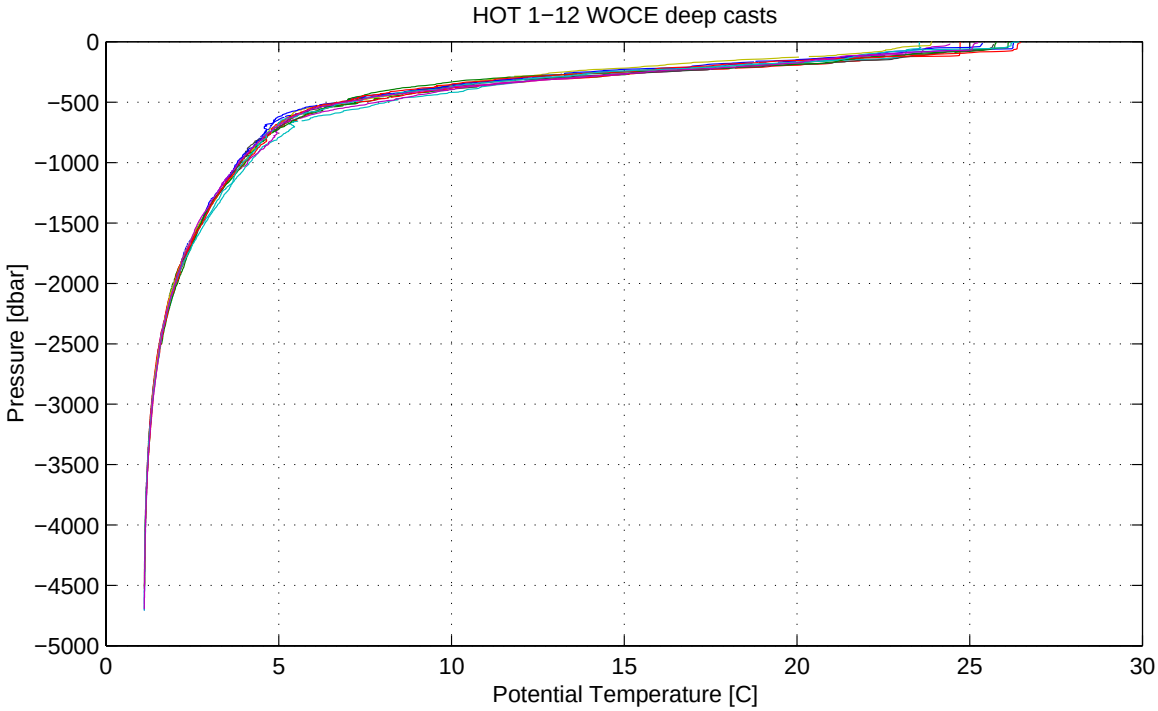


Figure VII.A.22



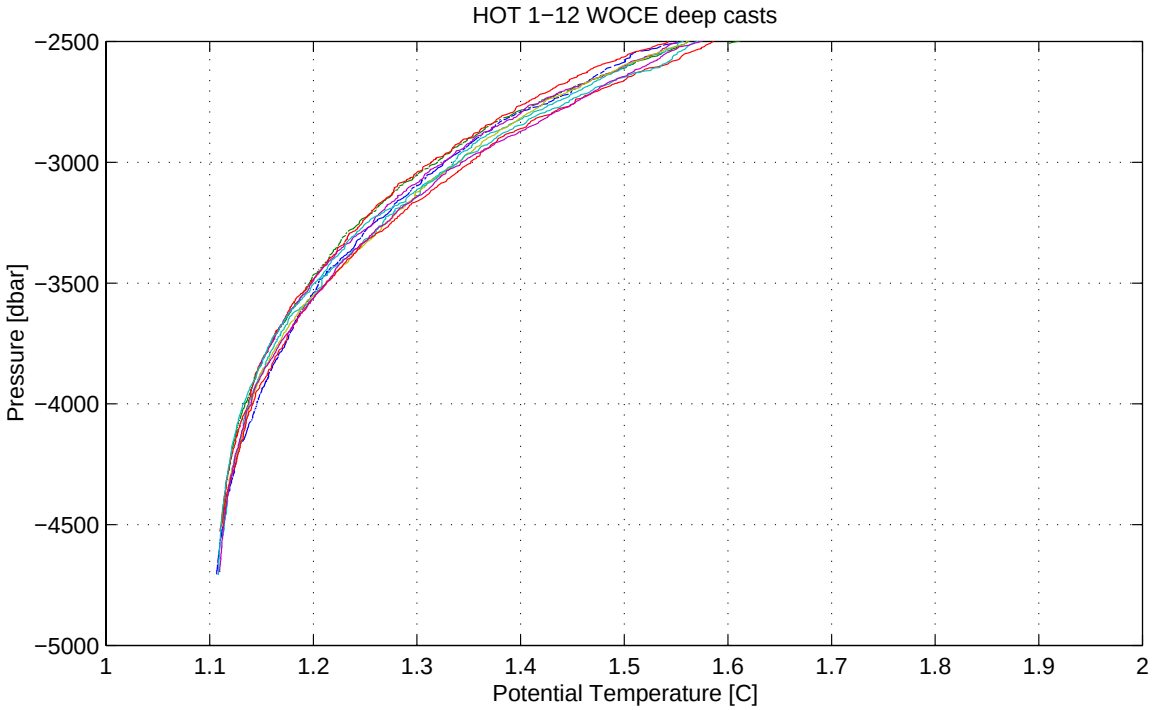
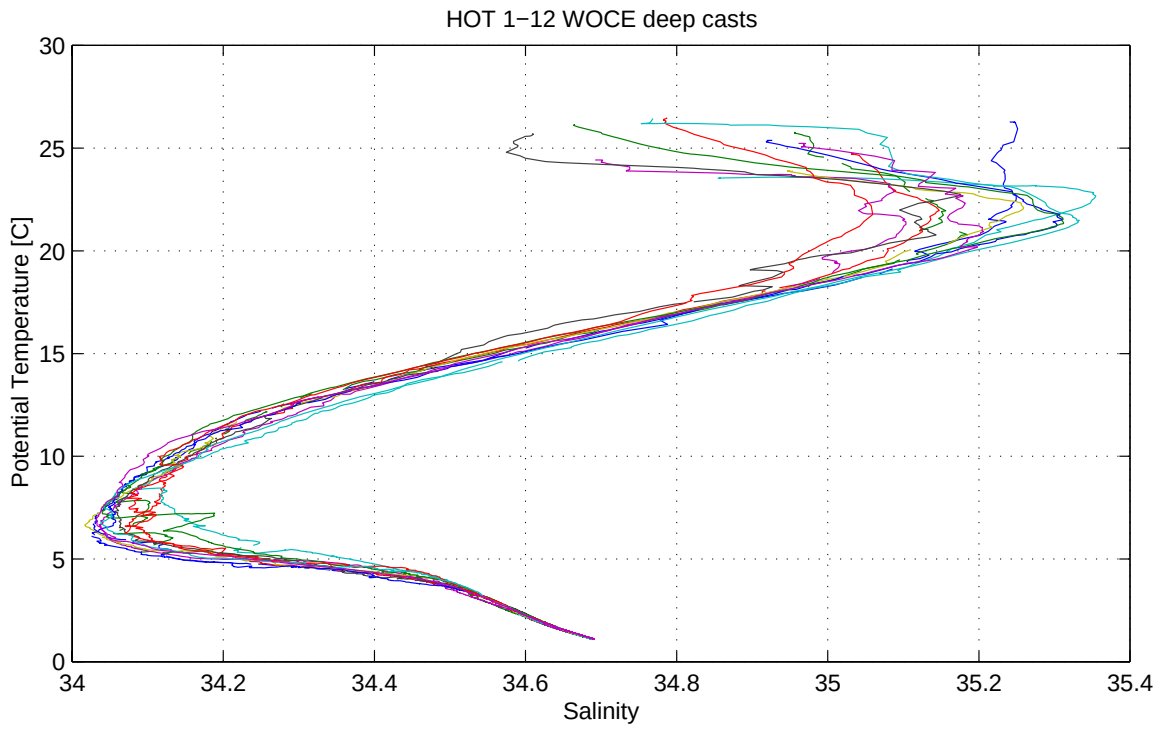


Figure VII.A.23



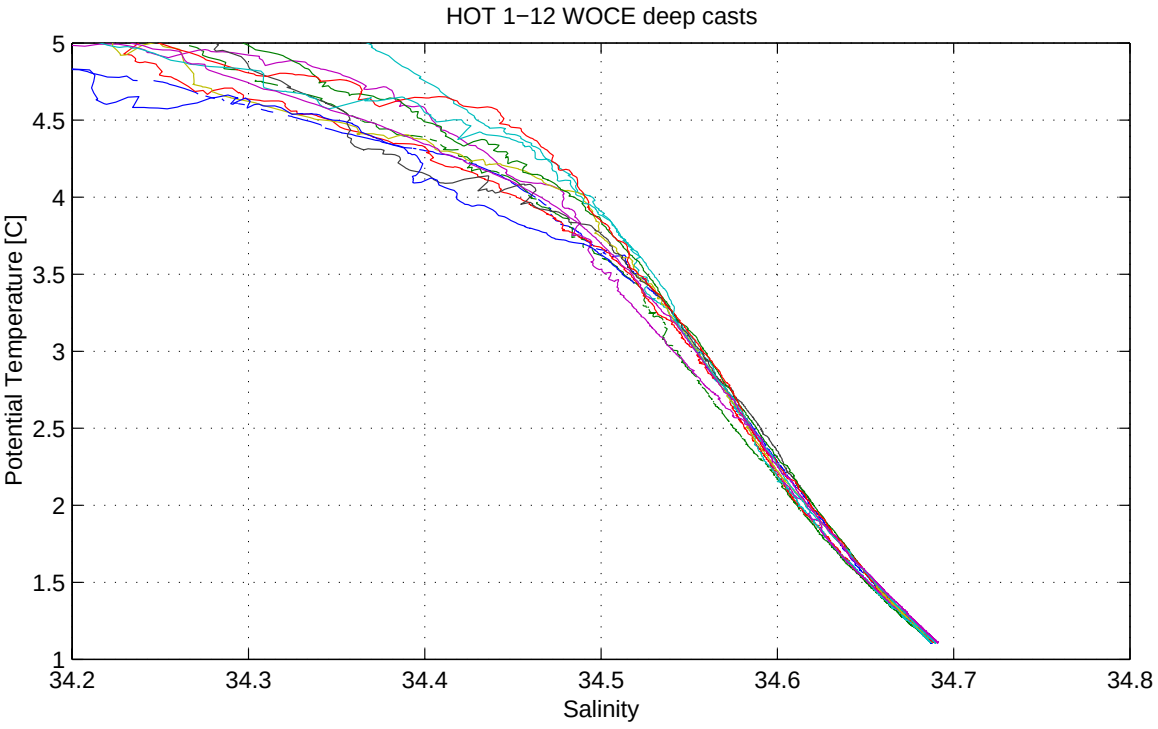
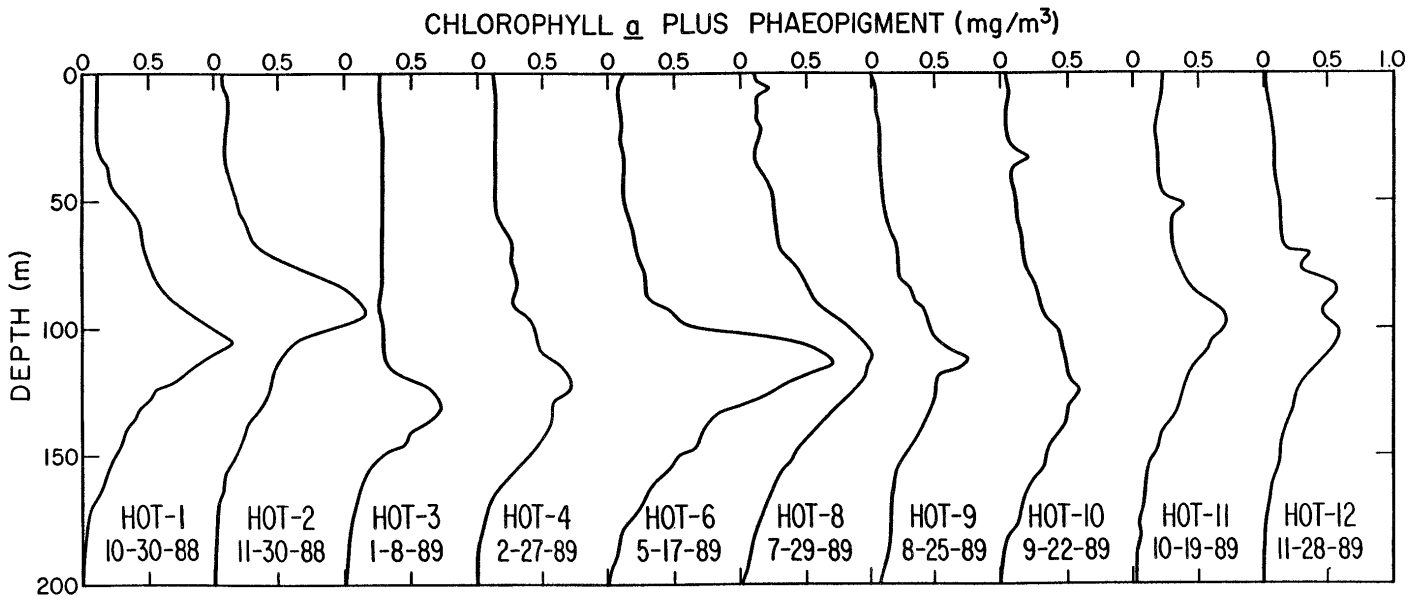


Figure VII.A.24



VII.B. Water Column Measurements

Figure VII.B.1: Difference between *in situ* temperature and sample temperature at the time the oxygen was fixed (δ temperature) for HOT-11 and -12.

Figure VII.B.2: Dissolved oxygen in deep water versus time during 1988–1989. Upper panel shows oxygen concentrations at 3 isopycnals. Lower panel shows oxygen concentrations at 3 depths. Concentration at these locations were interpolated from determinations at the two closest depth horizons.

Figure VII.B.3: Nitrate plus nitrite determined for replicate samples versus time during 1989 and 1990. Replicate samples were collected from the same Niskin bottles at three depths early in the first year of the program and then one sample from each depth was analyzed with nutrient samples from each subsequent HOT cruise. The first point in each panel is the mean of 17 replicate samples collected from a single Niskin bottle. The error bars represent the standard deviation of these analyses. Subsequent points in each panel are the mean of three analyses of one of the replicates analyzed previously and maintained at -20°C. Error bars for these points are the standard deviation of these 3 analyses.

Figure VII.B.4: As in Figure VII.B.3, except for phosphate.

Figure VII.B.5: As in Figure VII.B.3, expect for silicate.

Figure VII.B.6: Nitrate plus nitrite in deep water versus time during 1988–1989. Upper panel shows nitrate plus nitrite at 3 isopycnals. Lower panel shows nitrate plus nitrite at 3 depth horizons. Nitrate plus nitrite concentrations at each depth were interpolated from the two nearest depths.

Figure VII.B.7: As in Figure VII.B.6, except for phosphate.

Figure VII.B.8: As in Figure VII.B.6, except for silicate.

Figure VII.B.9: Chlorophyll *a* measured by fluorometry versus chlorophyll *a* measured by HPLC. Individual samples were collected from separate casts on each HOT cruise. The slope of the regression is not different than 1 at $p = 0.001$. Error bars represent standard deviations from each analysis when available.

Figure VII.B.1

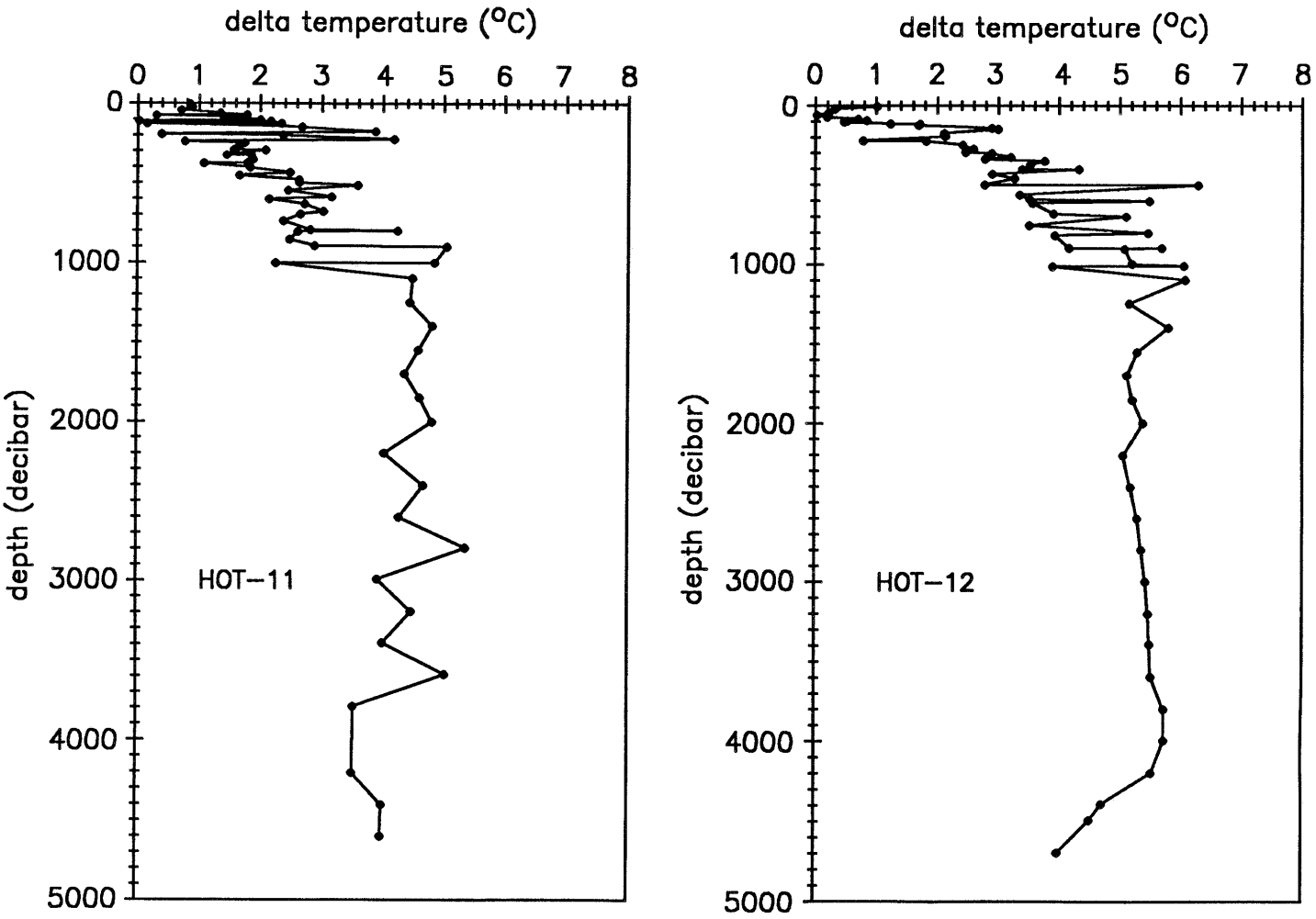
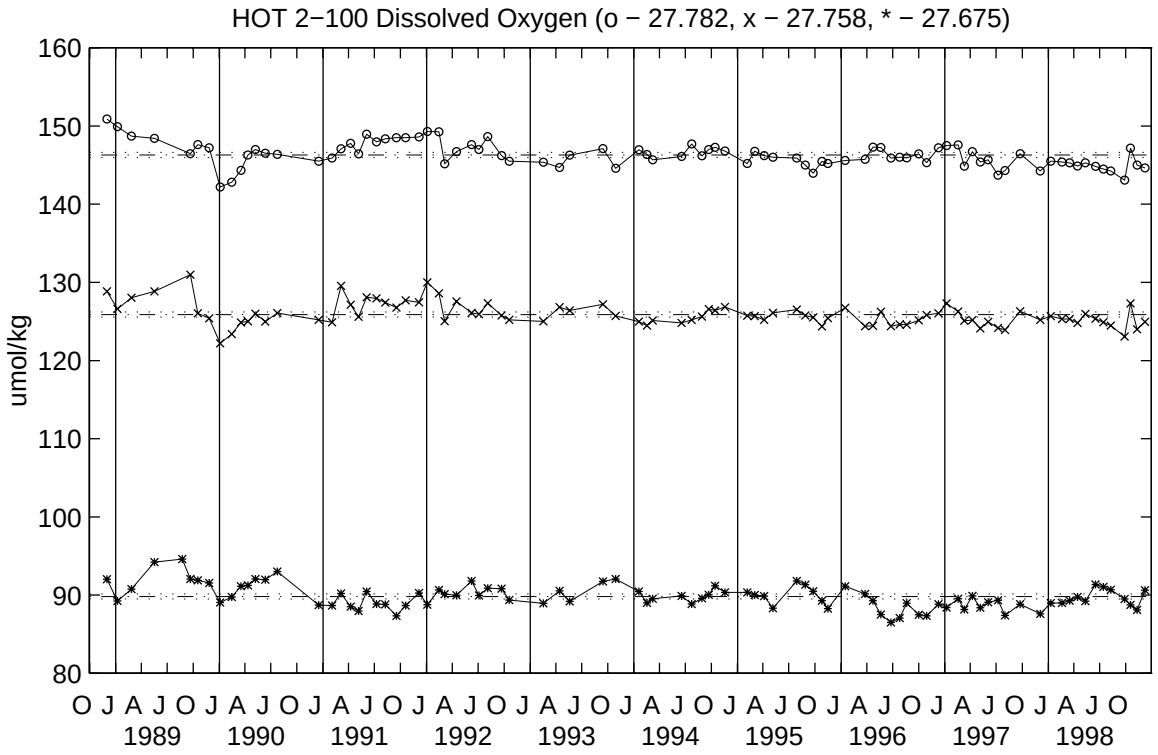


Figure VII.B.2(Top), Figure VII.B.6(Bottom)



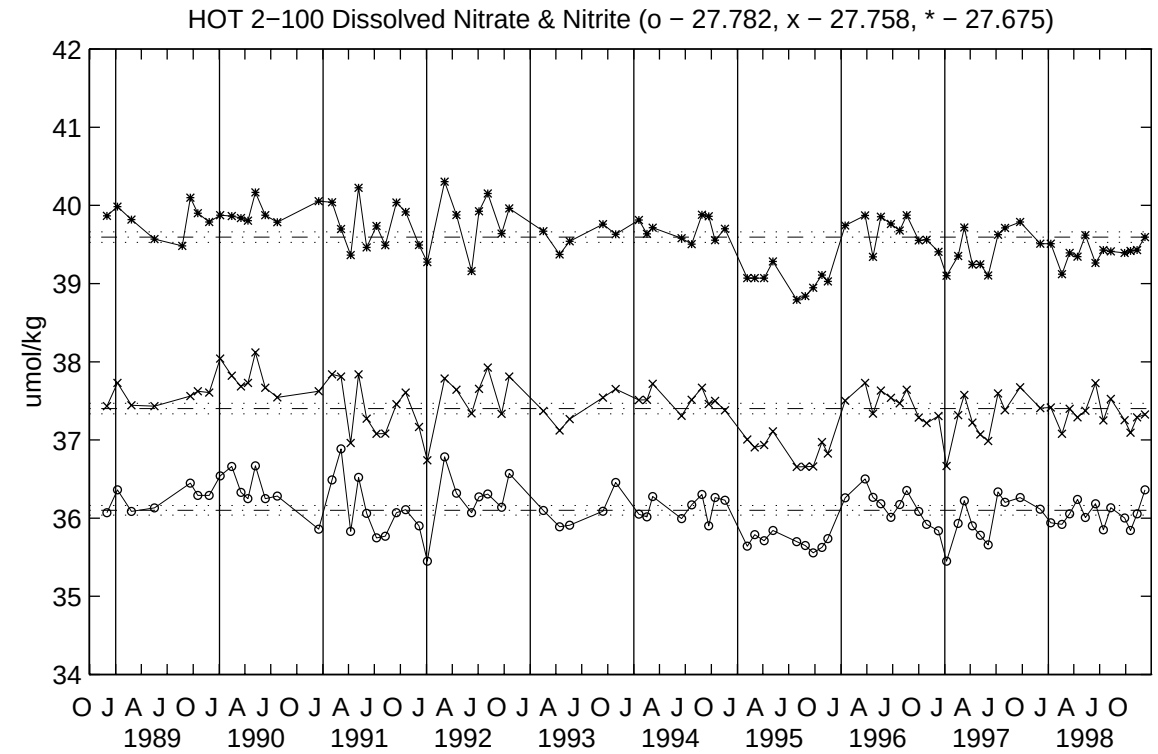


Figure VII.B.3

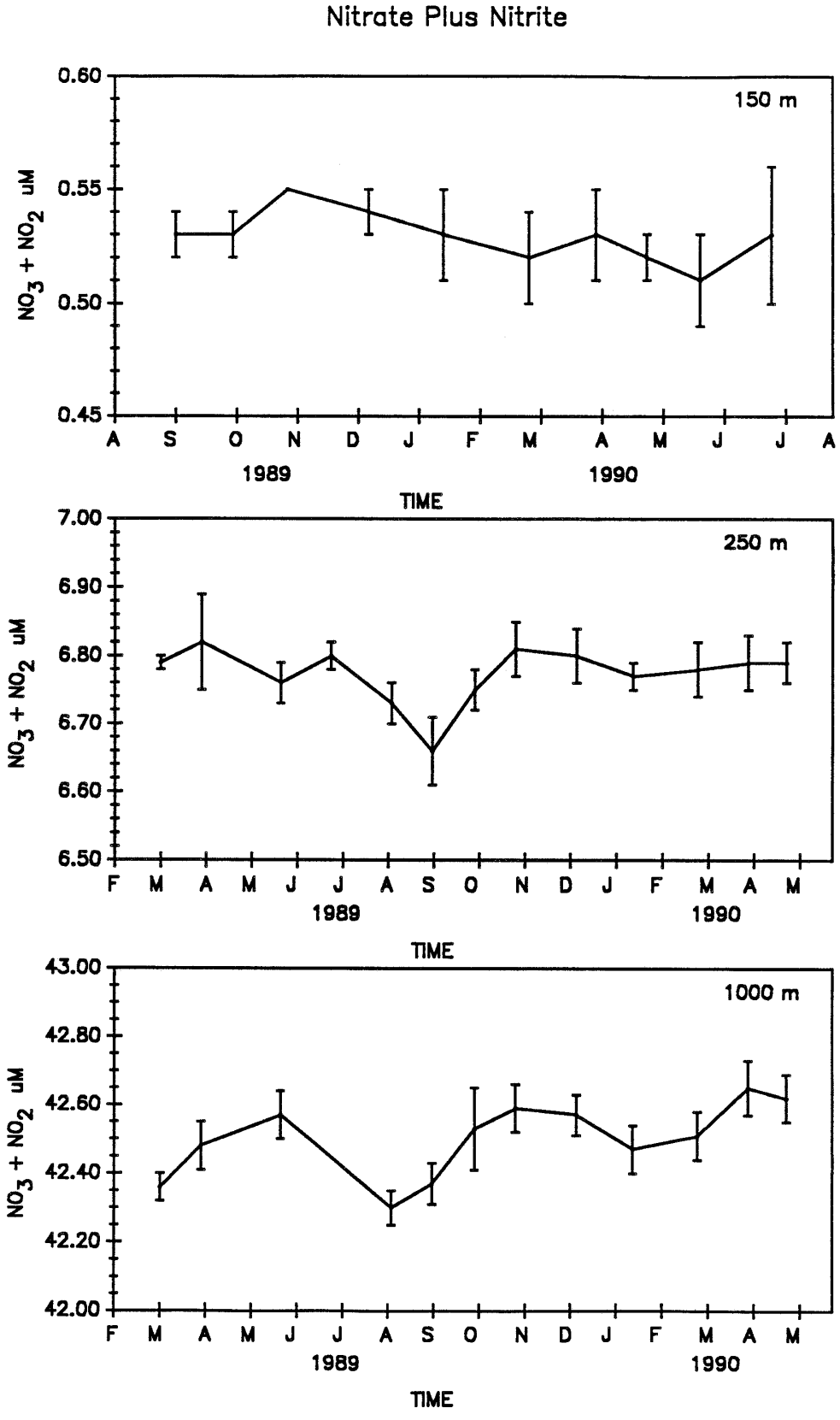


Figure VII.B.4

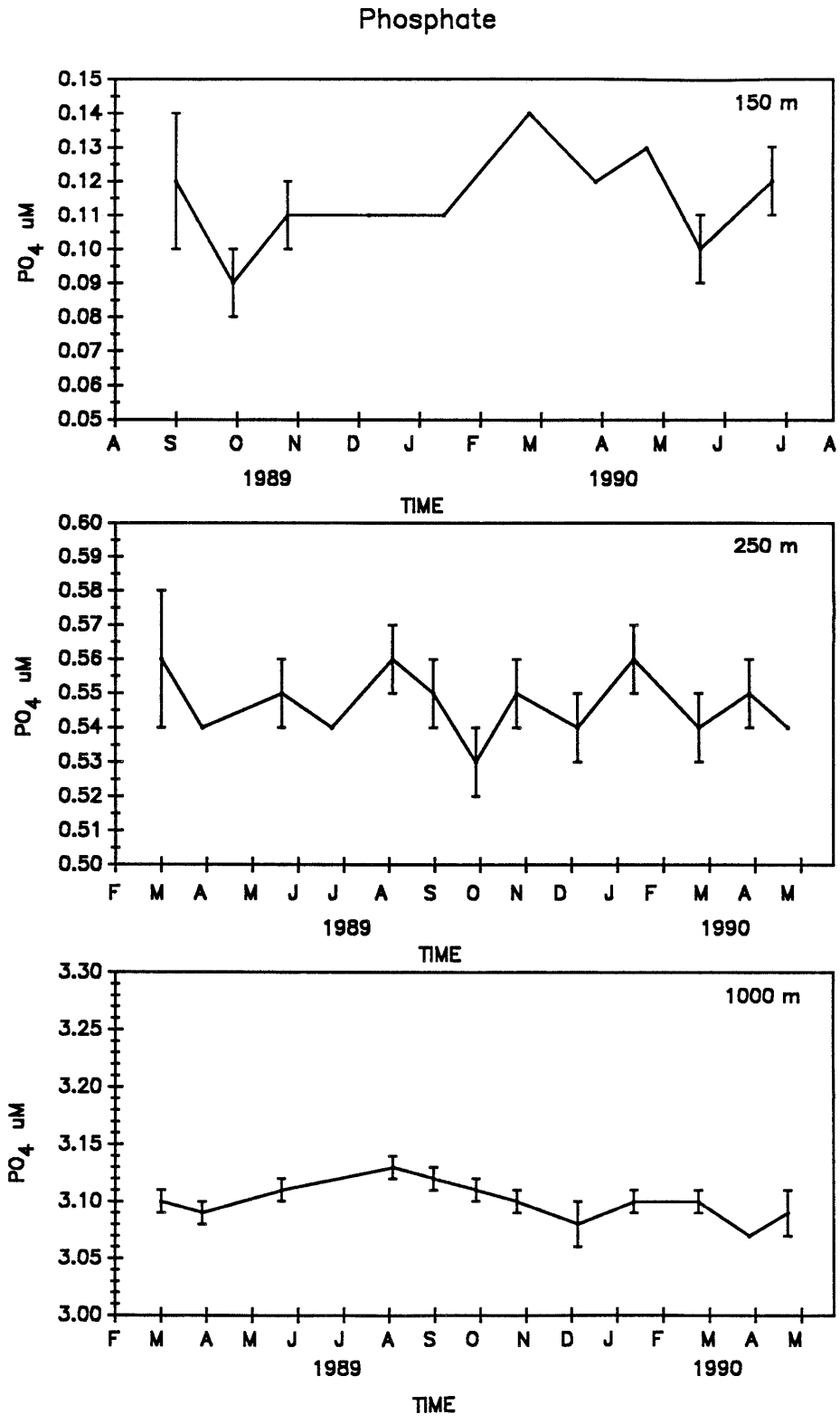


Figure VII.B.5

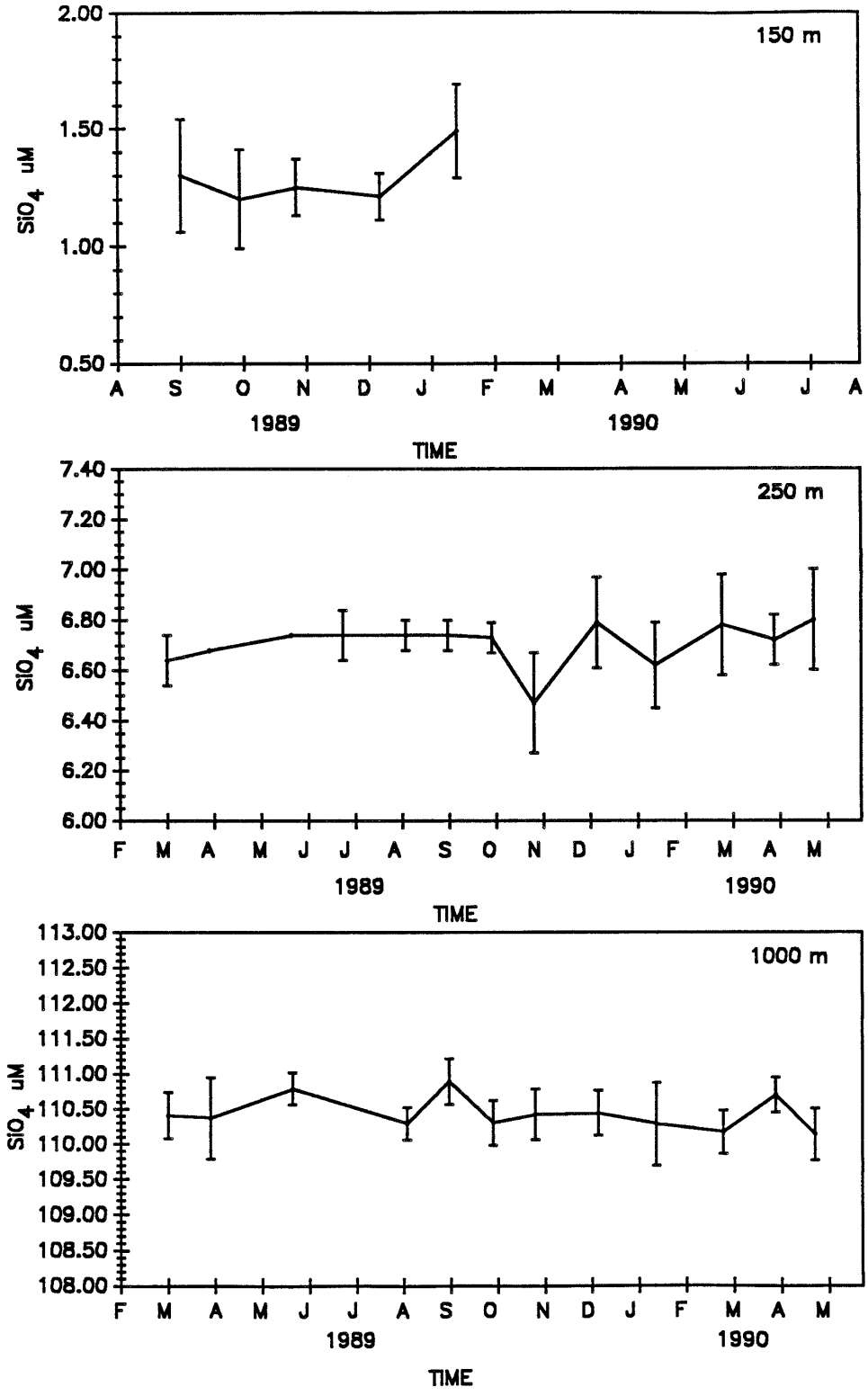
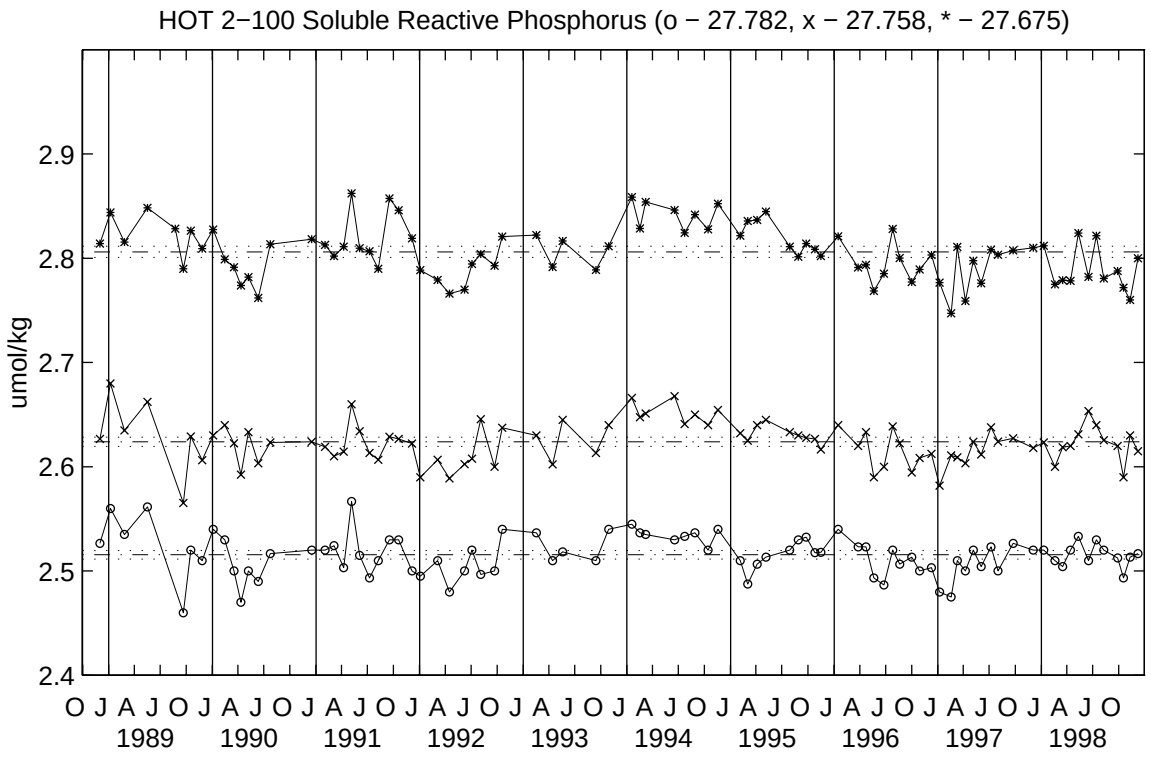


Figure VII.B.7(Top), VII.B.8(Bottom)



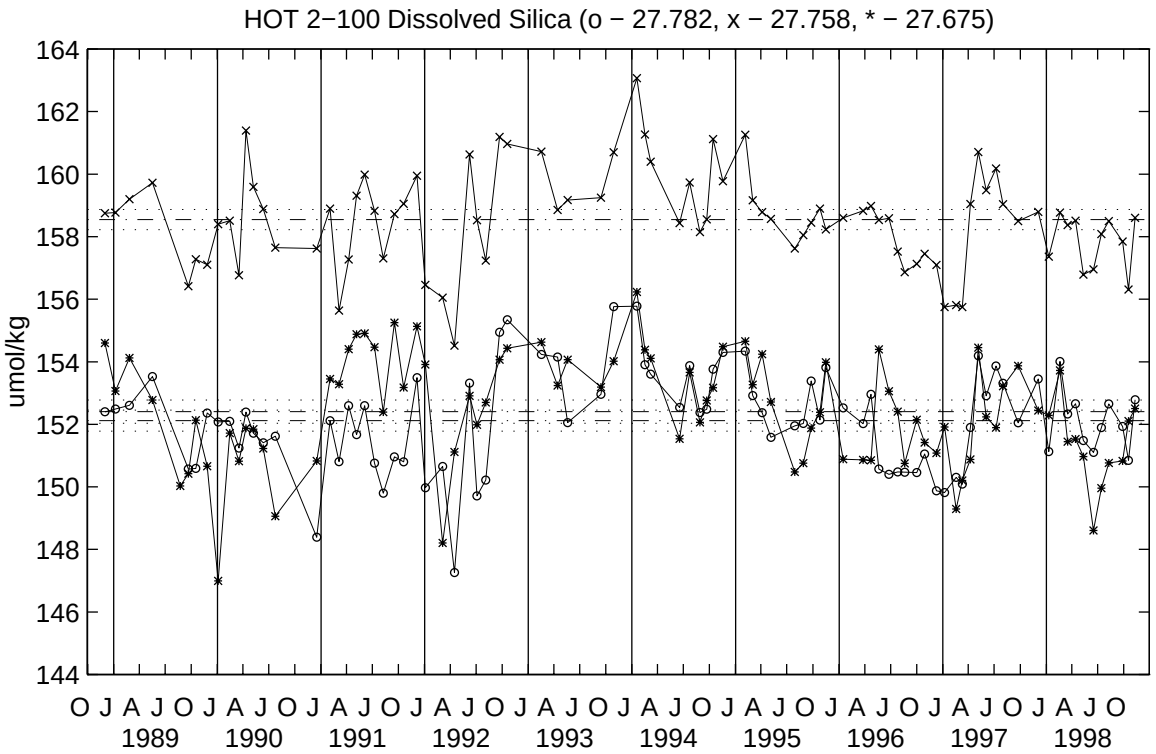
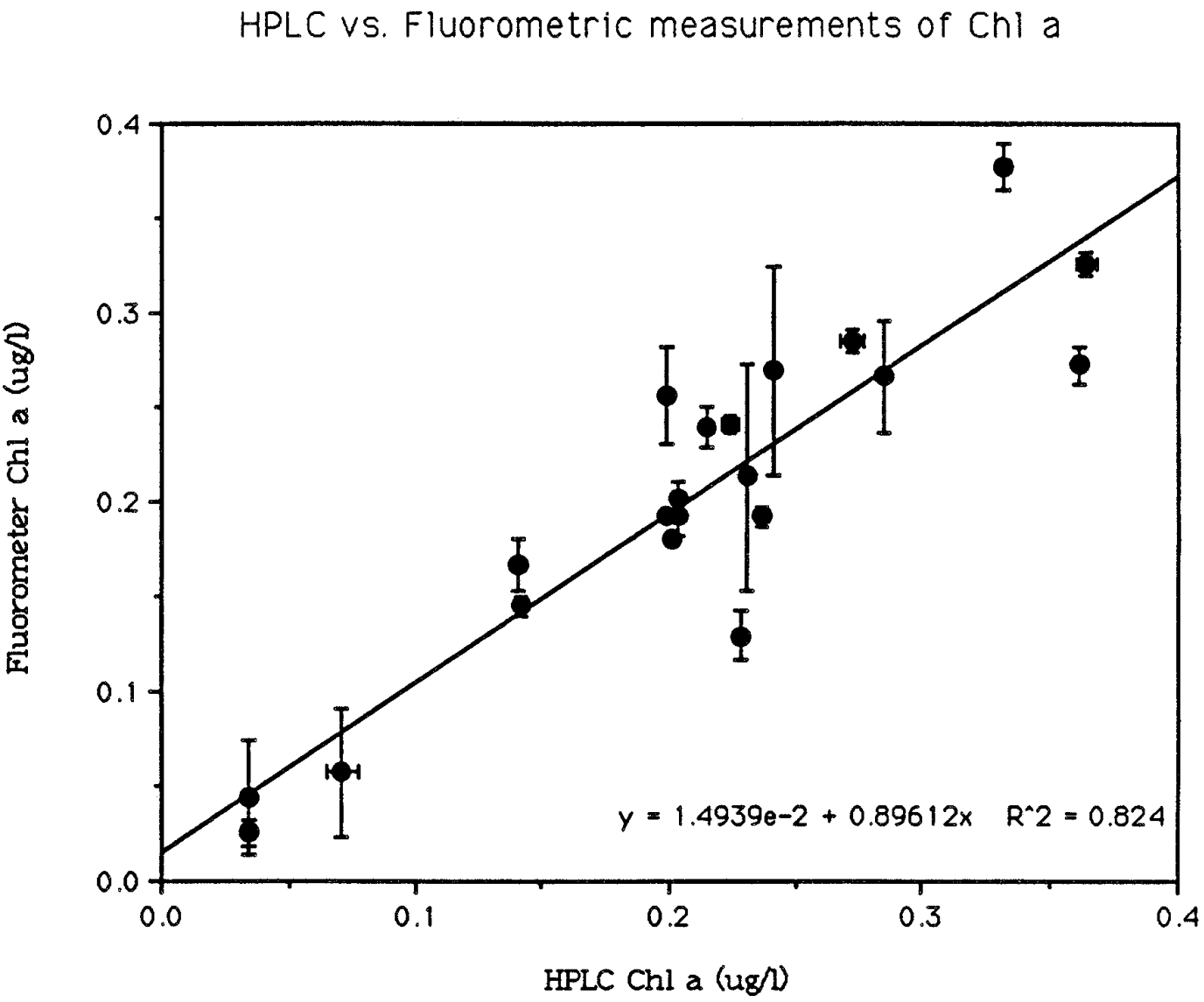


Figure VII.B.9



VII.C. Primary Productivity

Figure VII.C.1: Integrated primary production rates for HOT-1 through HOT-12. Results of both 12- and 24-hour on-deck incubations are shown.

Figure VII.C.2: Simultaneous rates of primary production measured on deck and *in situ*. Incubations were conducted for 12 hours and subsamples from the same Niskin bottle were incubated both on deck and *in situ* at each depth.

Figure VII.C.1

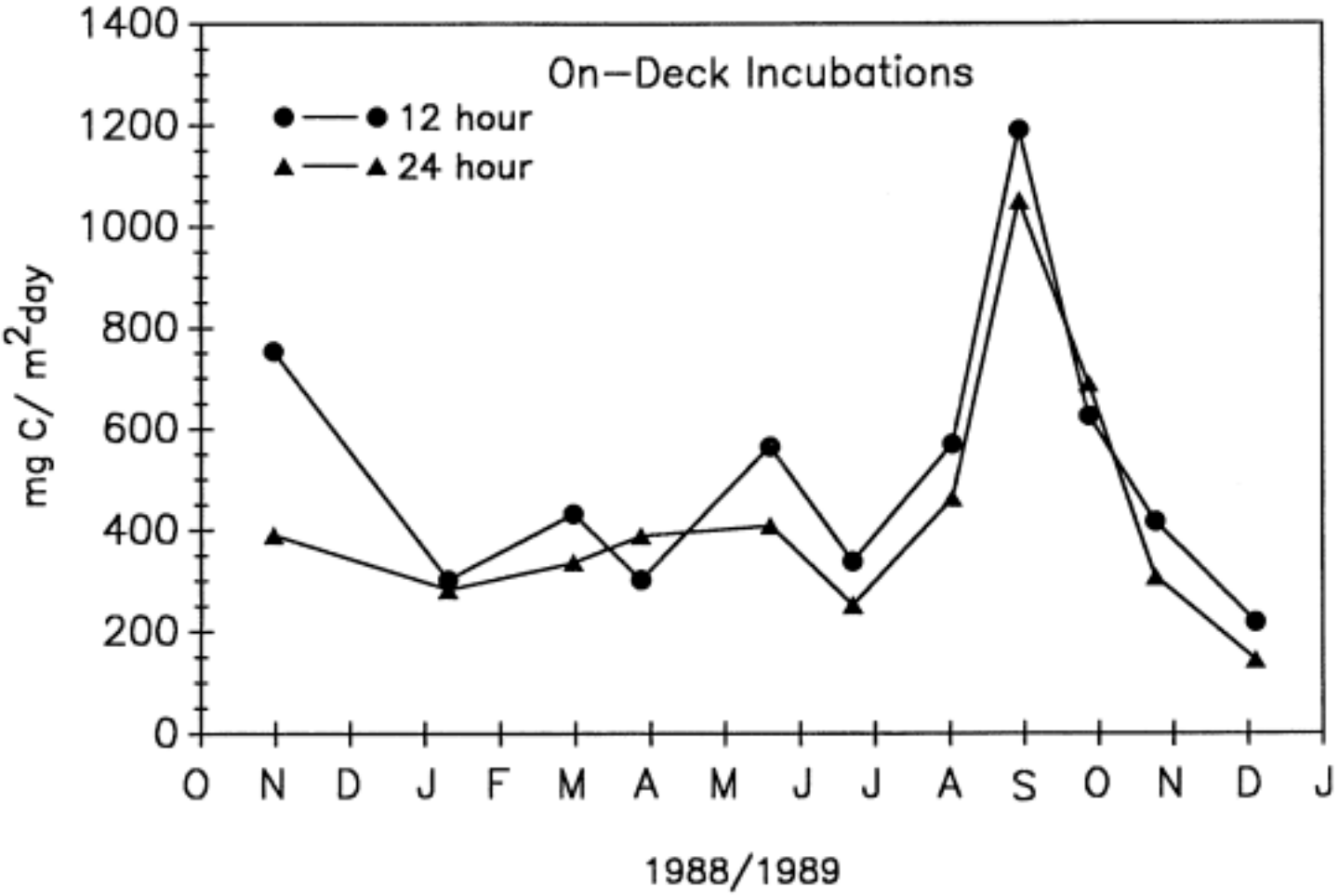
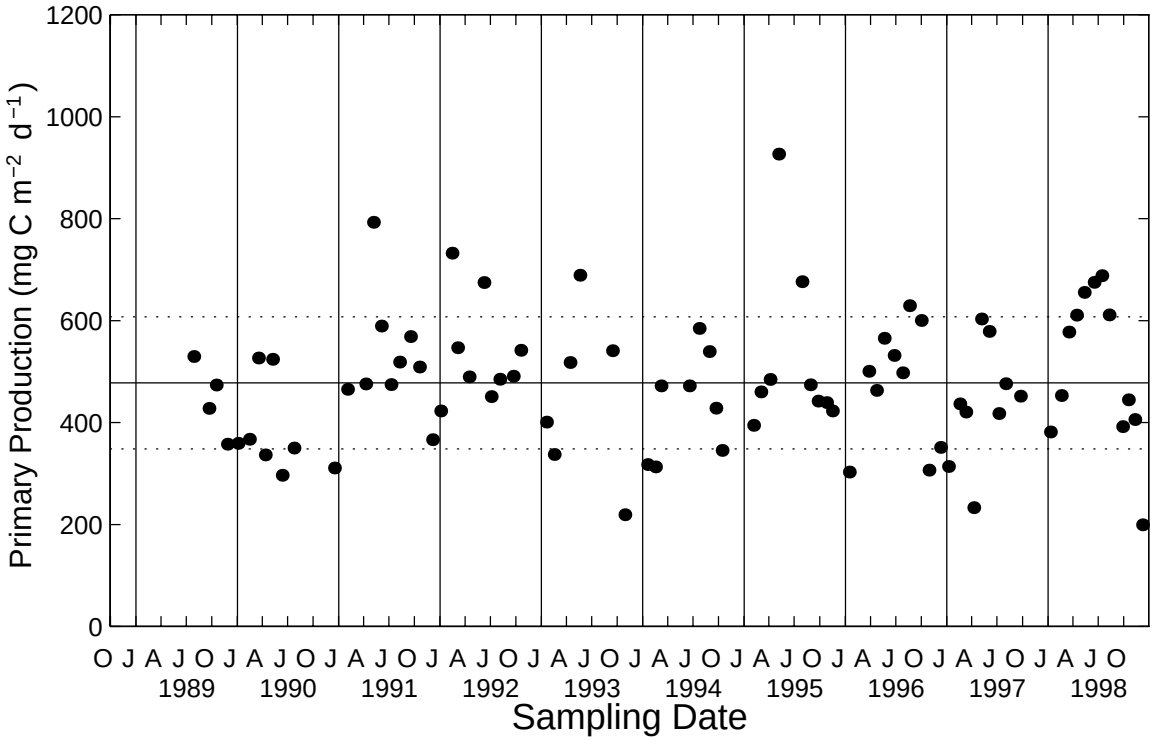
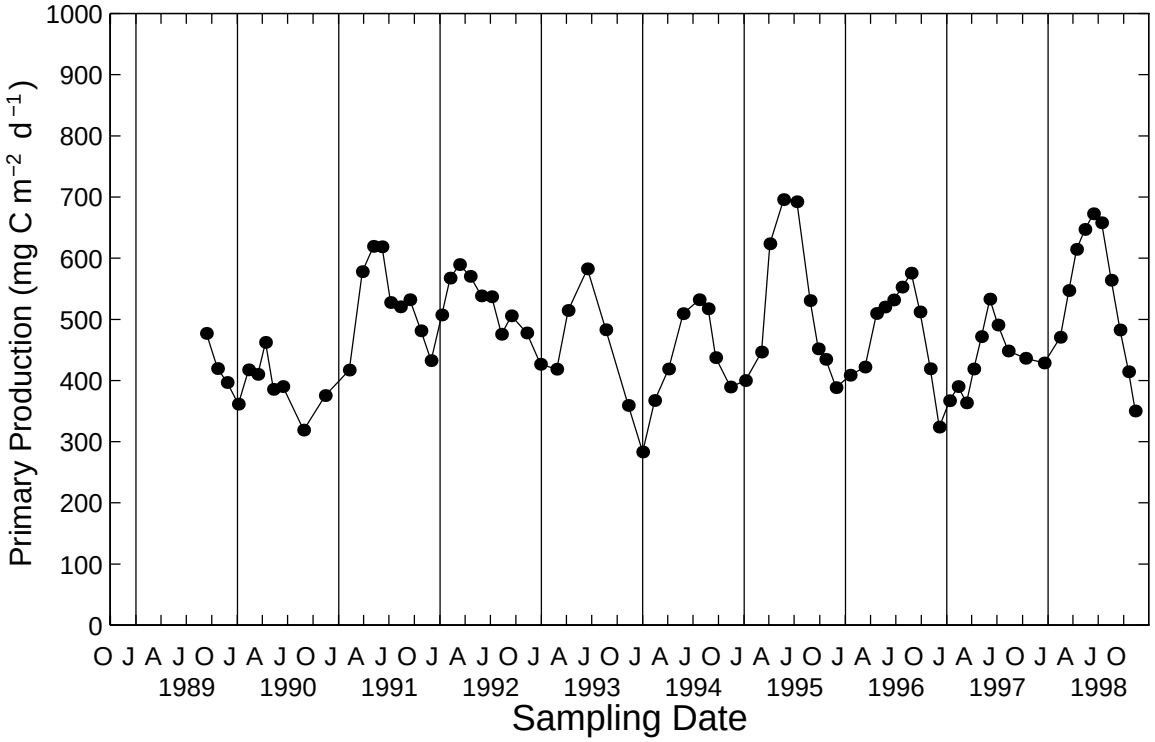


Figure VII.C.2





VII.D. Particle Flux

Figure VII.D.1: Carbon flux measured at 150 m during 1988– 1989. Error bars represent the standard deviation of replicate analyses.

Figure VII.D.2: Nitrogen flux measured at 150 m during 1988–1989. Error bars represent the standard deviations of replicate analyses.

Figure VII.D.3: Carbon:Nitrogen ratio measured at 150 m during 1988–1989. Error bars represent the standard deviations estimated by propagating errors associated with individual measurements of carbon and nitrogen.

Figure VII.D.4: Nitrogen flux as a percent of photosynthetic nitrogen production. Photosynthetic nitrogen production was calculated using the contemporaneous rate of primary production using the carbon-14 method and assuming that nitrogen was incorporated at a C:N rate (by atoms) of 106:16.

Figure VII.D.5: Carbon flux versus depth during 1988–1989. Data points represent the average flux at each depth using all data collected on HOT-1 through HOT-12. Error bars are 95% confidence intervals on the mean.

Figure VII.D.6: Nitrogen flux versus depth during 1988–1989. Data points represent the average flux at each depth using all data collected on HOT-1 through HOT-12. Error bars are 95% confidence intervals on the mean.

Figure VII.D.1(Top), VII.D.2(Middle)

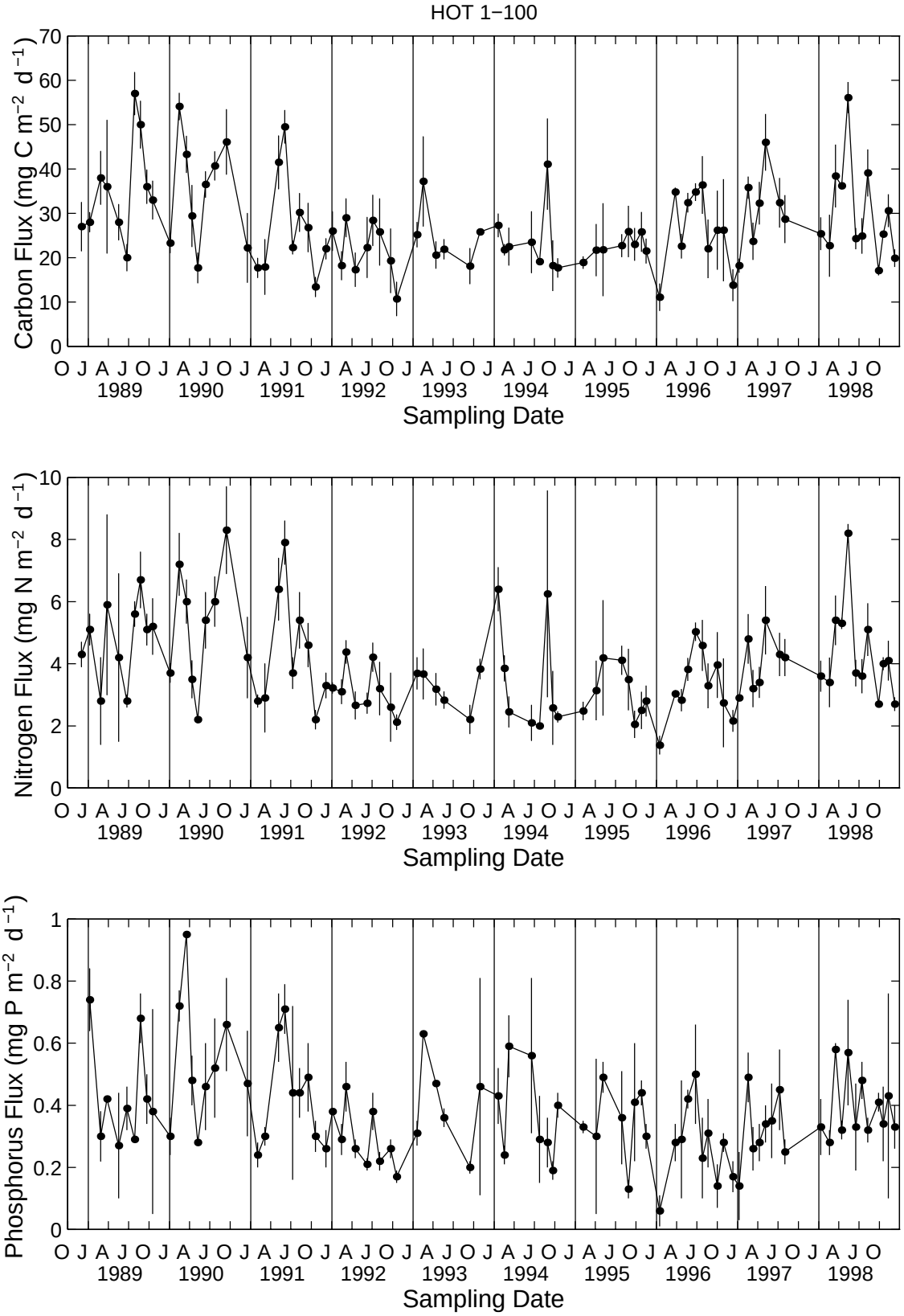


Figure VII.D.3

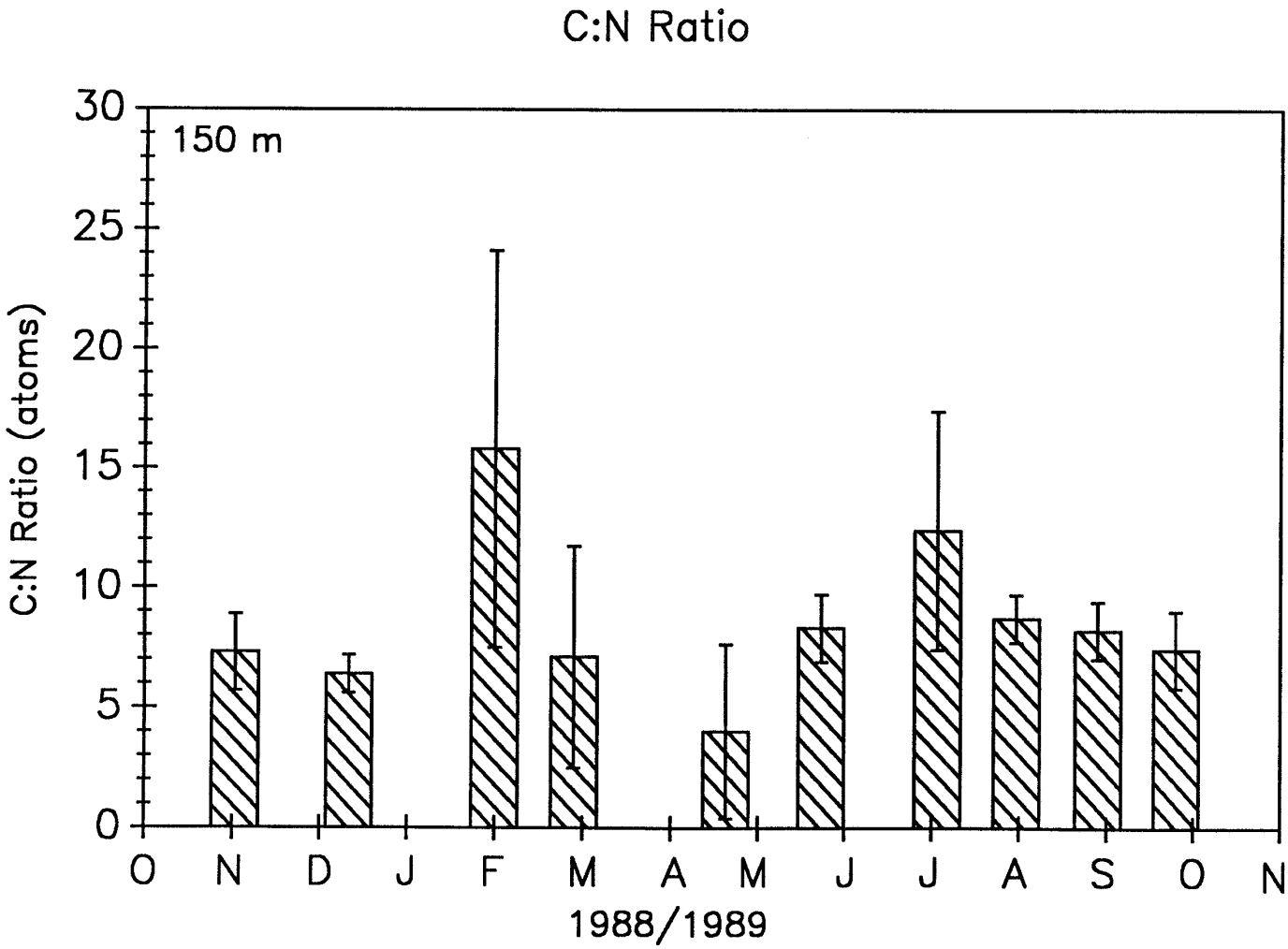
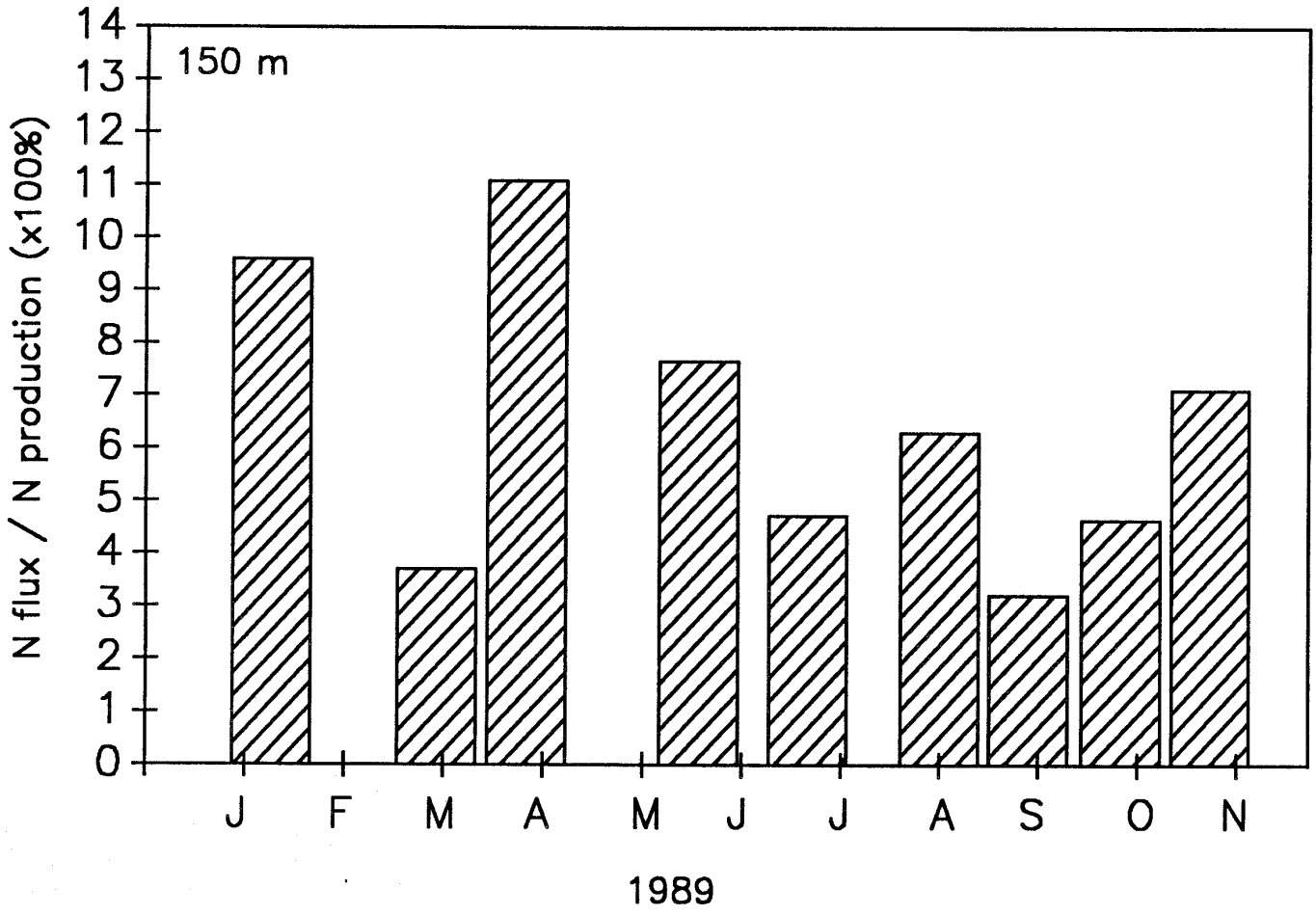


Figure VII.D.4



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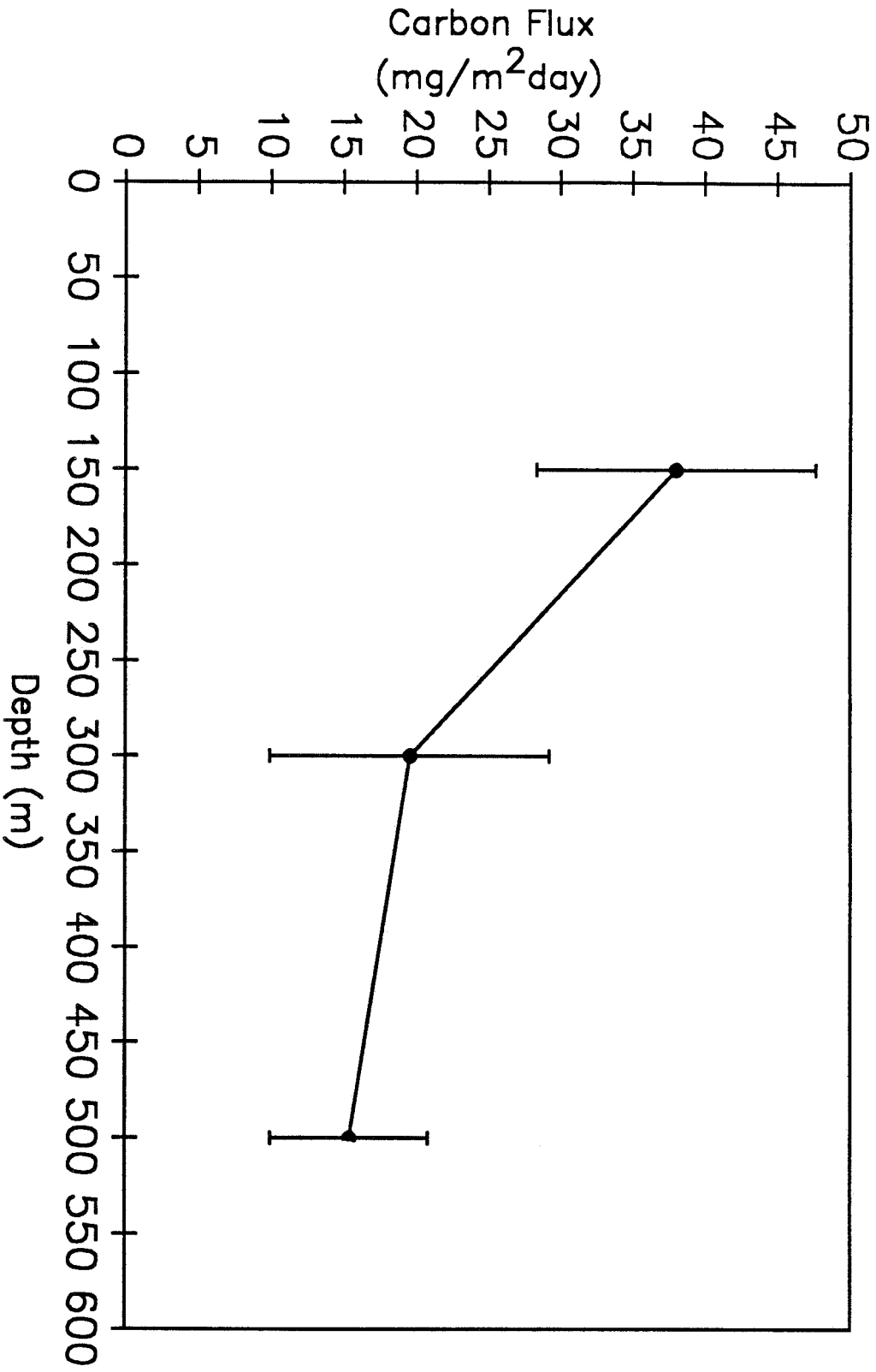
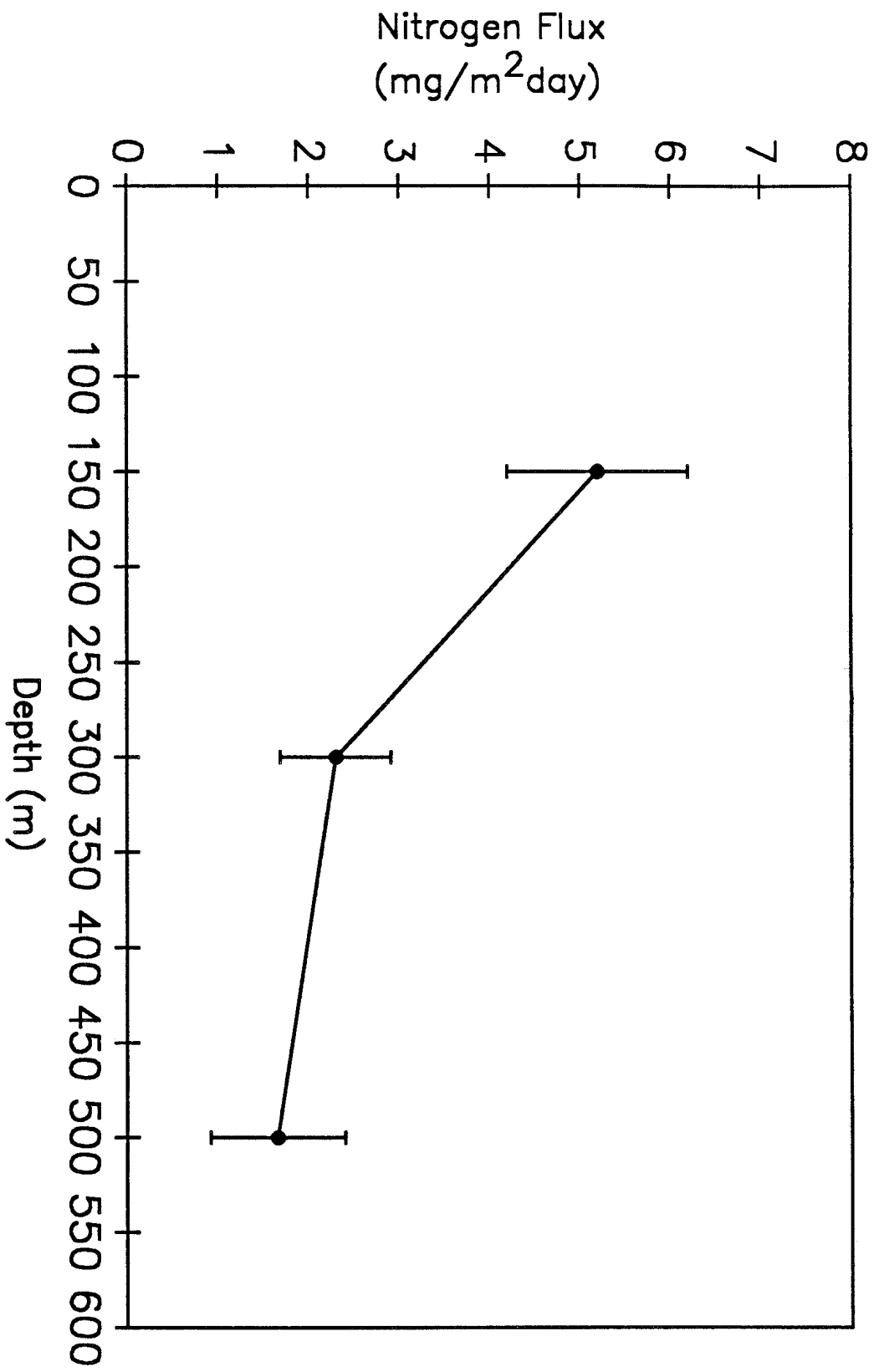


Figure VII.D.6



VII.E. ADCP Profiling

For each cruise with shipboard ADCP, the following figures (VII.E.1–6) are provided:

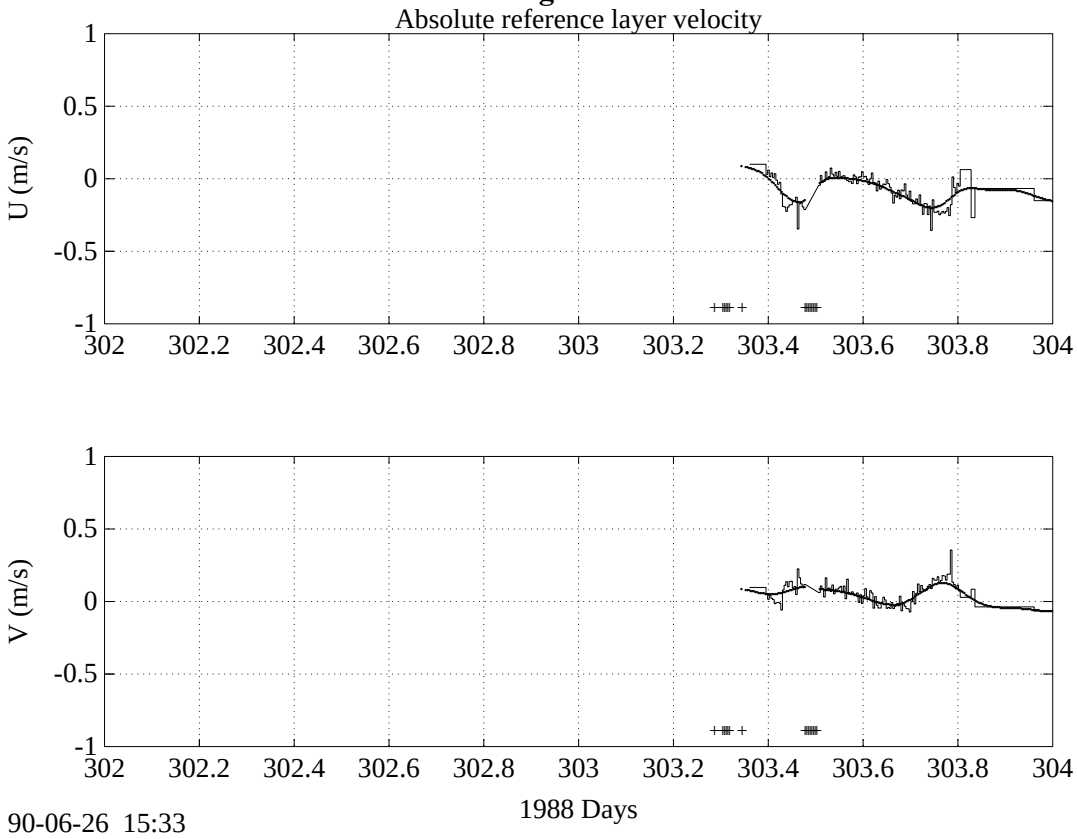
Navigation: Reference layer velocity and ship's longitude and latitude as functions of time. Time is given in days from the beginning of the year; for example, noon on January 1 is 0.5 decimal days. The reference layer velocity is shown averaged between fixes (steppy curves), and smoothed, as used in the final velocity estimates (smooth curves). Plus signs near the bottom of the reference layer velocity plots indicate ADCP data gaps. The ship's position is shown by asterisks at fixes and by a continuous curve (actually closely spaced dots) as determined by fixes together with the ADCP data.

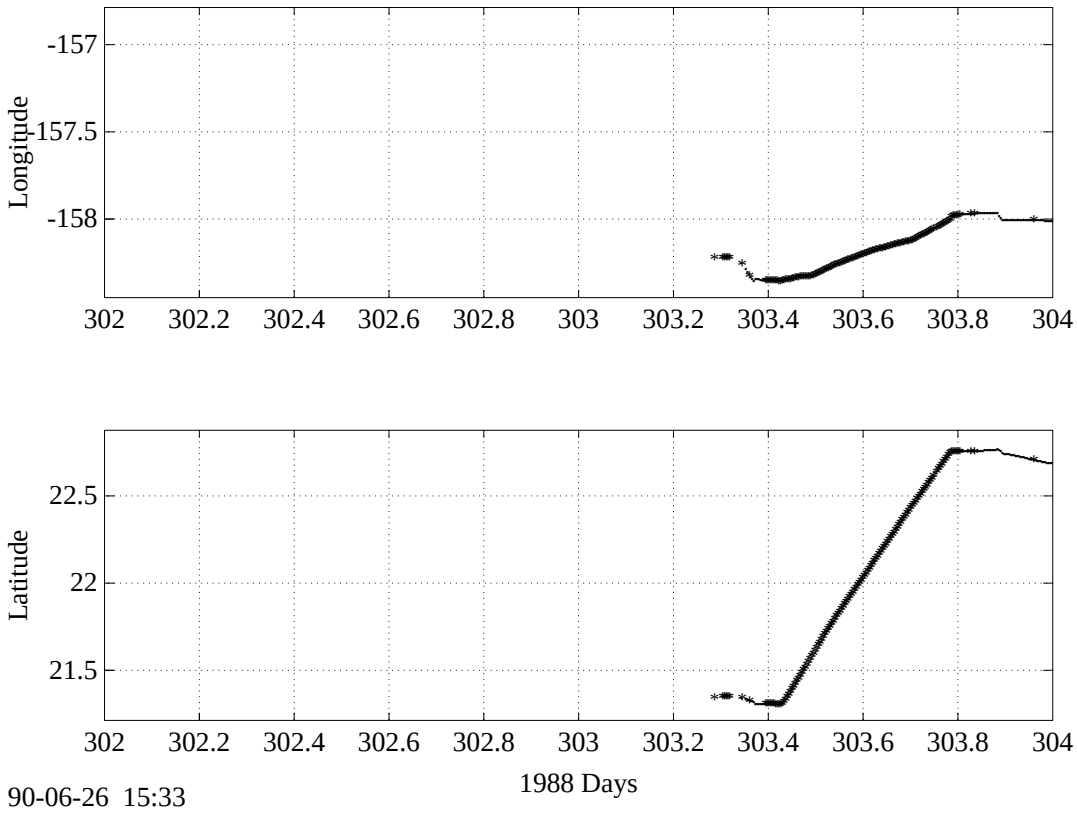
Velocity field on station: The top panel shows hourly averages at 20-m depth intervals while the ship was at Station ALOHA. The orientation of each stick gives the direction of the current: up is northward, to the right is eastward. The bottom panel shows the results of a least-squares fit of the hourly averages to a mean, trend, semidiurnal, and diurnal tides, and an inertial cycle. In the first column, the arrow shows the mean current, and the headless stick shows the sum of the mean plus the trend at the end of the station. For each harmonic, the current ellipse is shown in the first column. The orientation of the stick in the second column shows the direction of that harmonic component of the current at the beginning of the station, and the arrowhead at the end of the stick shows the direction of rotation of the current vector around the ellipse. Only the mean and trend were fitted for HOT-11, because the record length was less than 3 days, there was no Transit navigation, and there were large signals due to spatial rather than temporal gradients. For HOT-12 the tides were included in the fit in spite of the short record length, because the variability in the raw data looks largely tidal.

Velocity field on the transits to and from the station: Velocity is shown as a function of latitude, averaged in 10-minute time intervals.

Figure VII.E.7: Velocity profile during HOT-12, made with the self-contained ADCP: zonal component (top), and meridional component (bottom). Solid curves are the downcast, dashed are the upcast. Each curve is referenced by fitting the overlapping part of the simultaneous shipboard ADCP profile.

Figure VII.E.1





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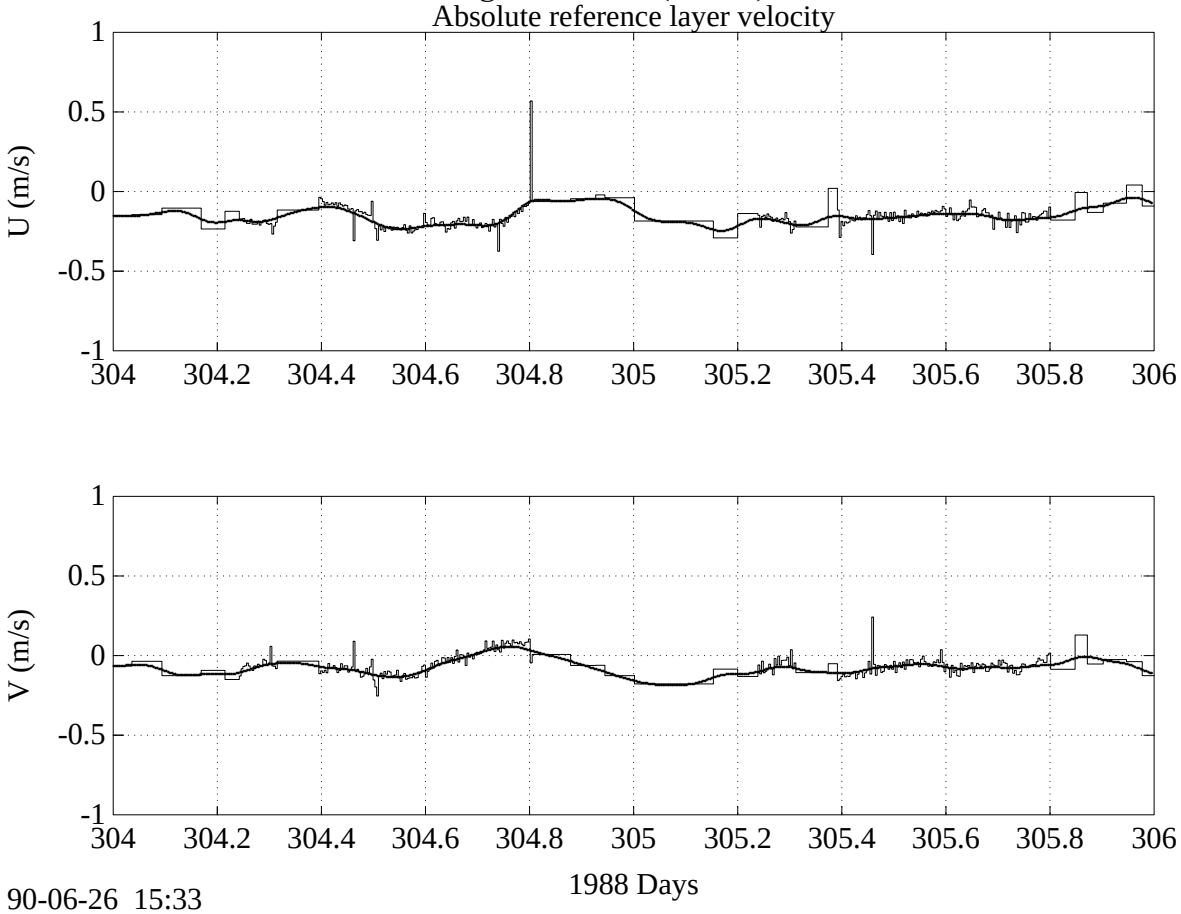


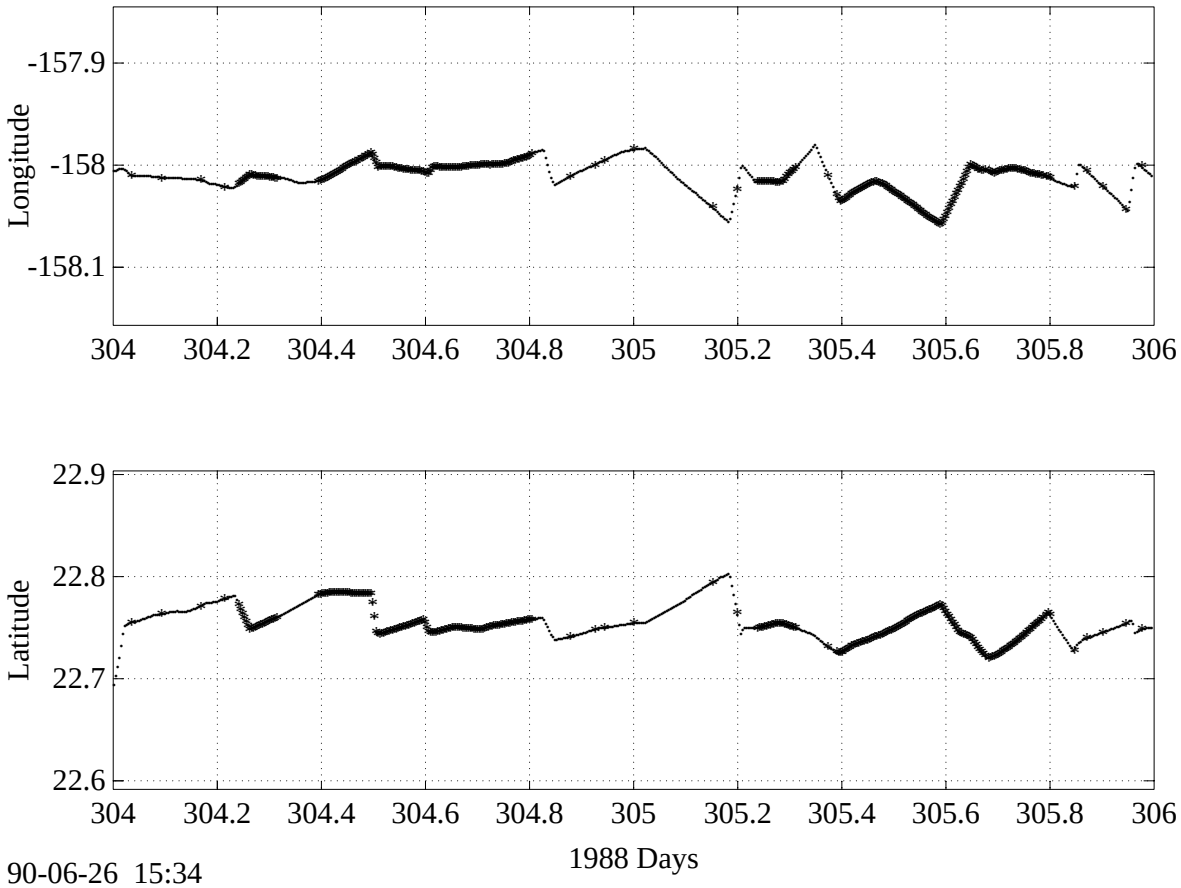
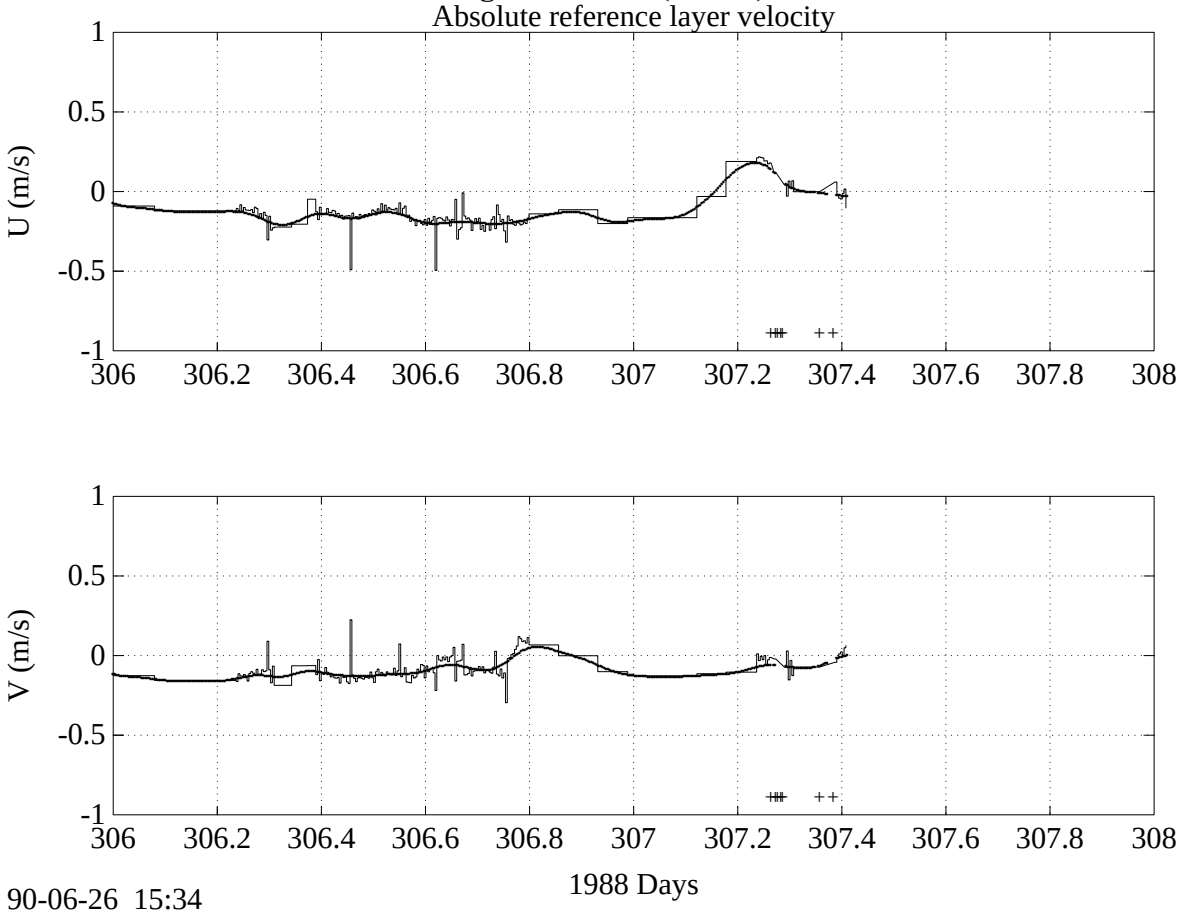
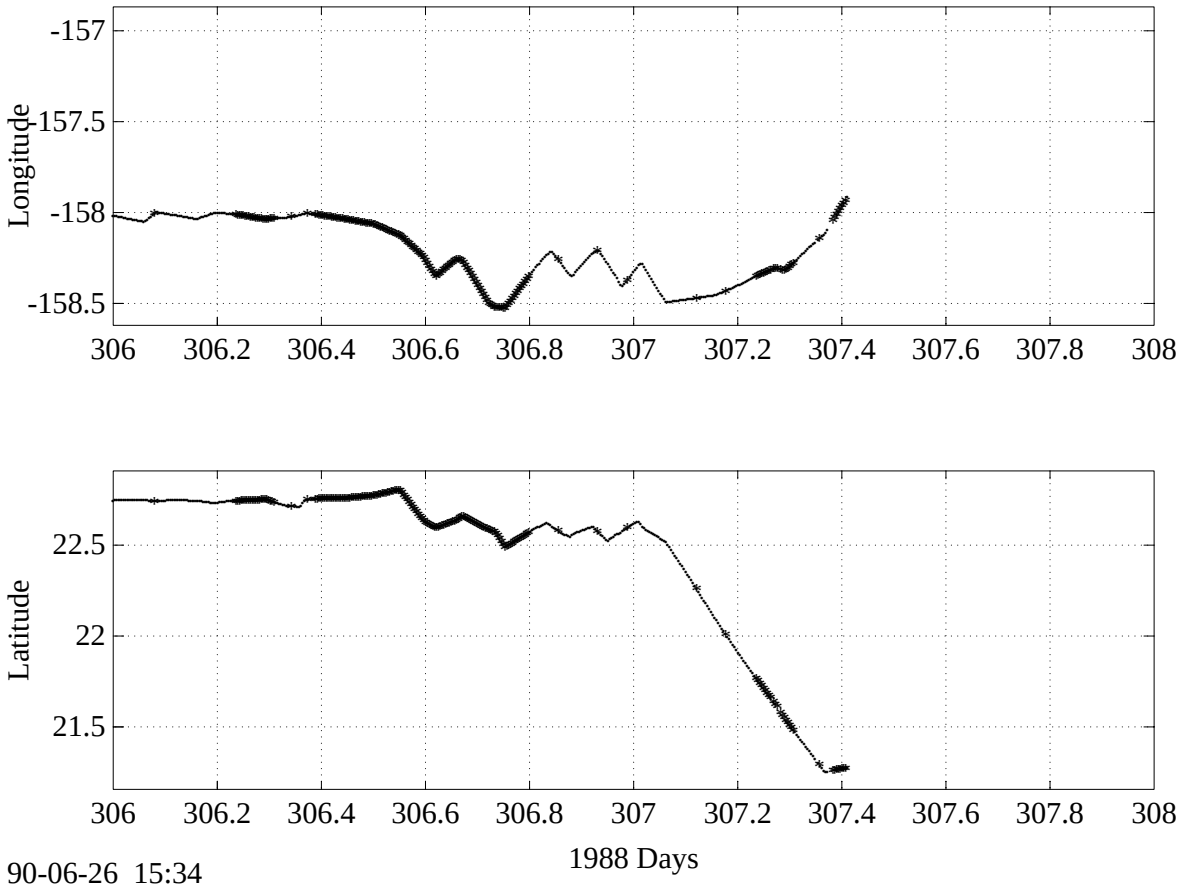


Figure VII.E.1 (cont'd)





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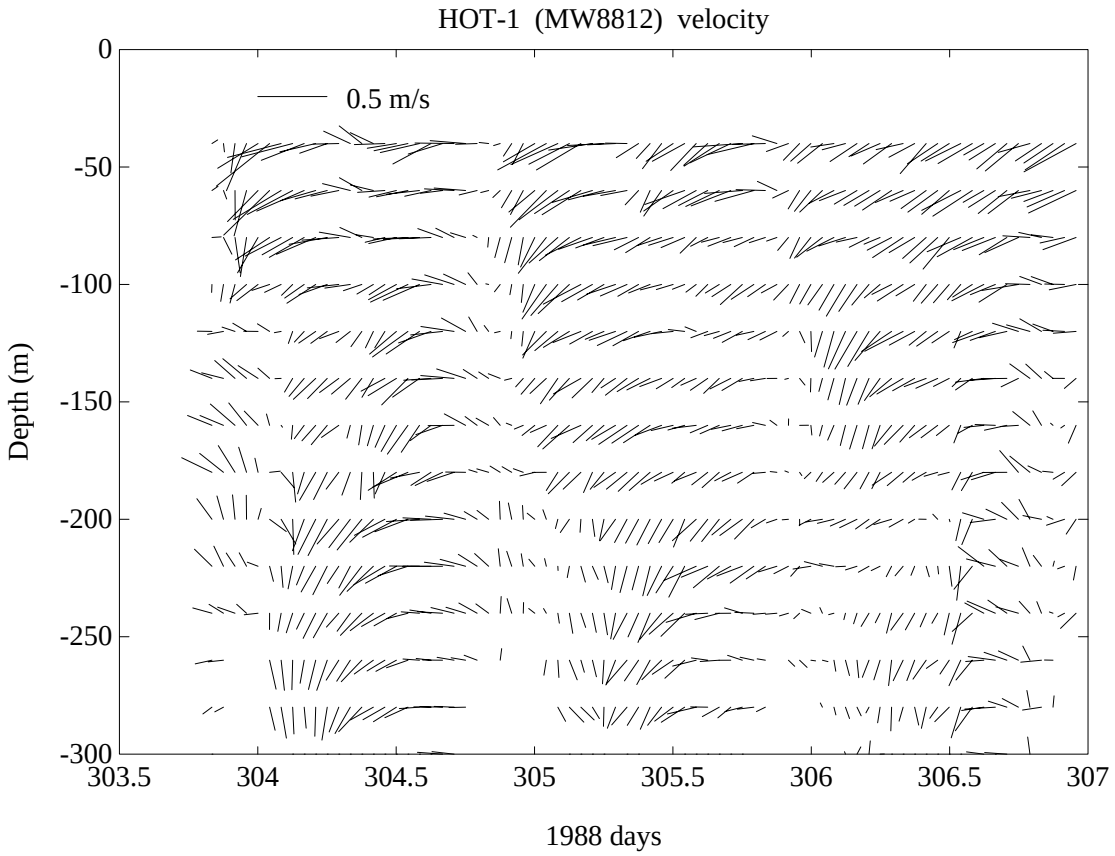

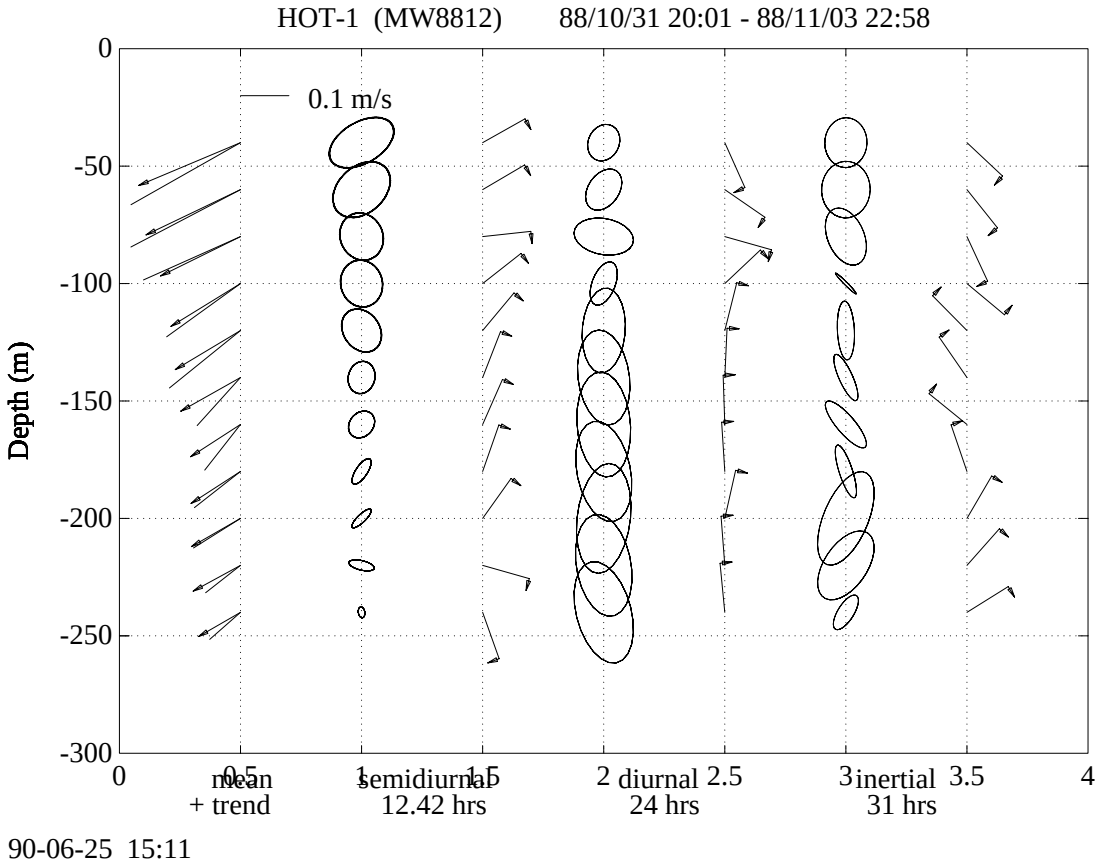

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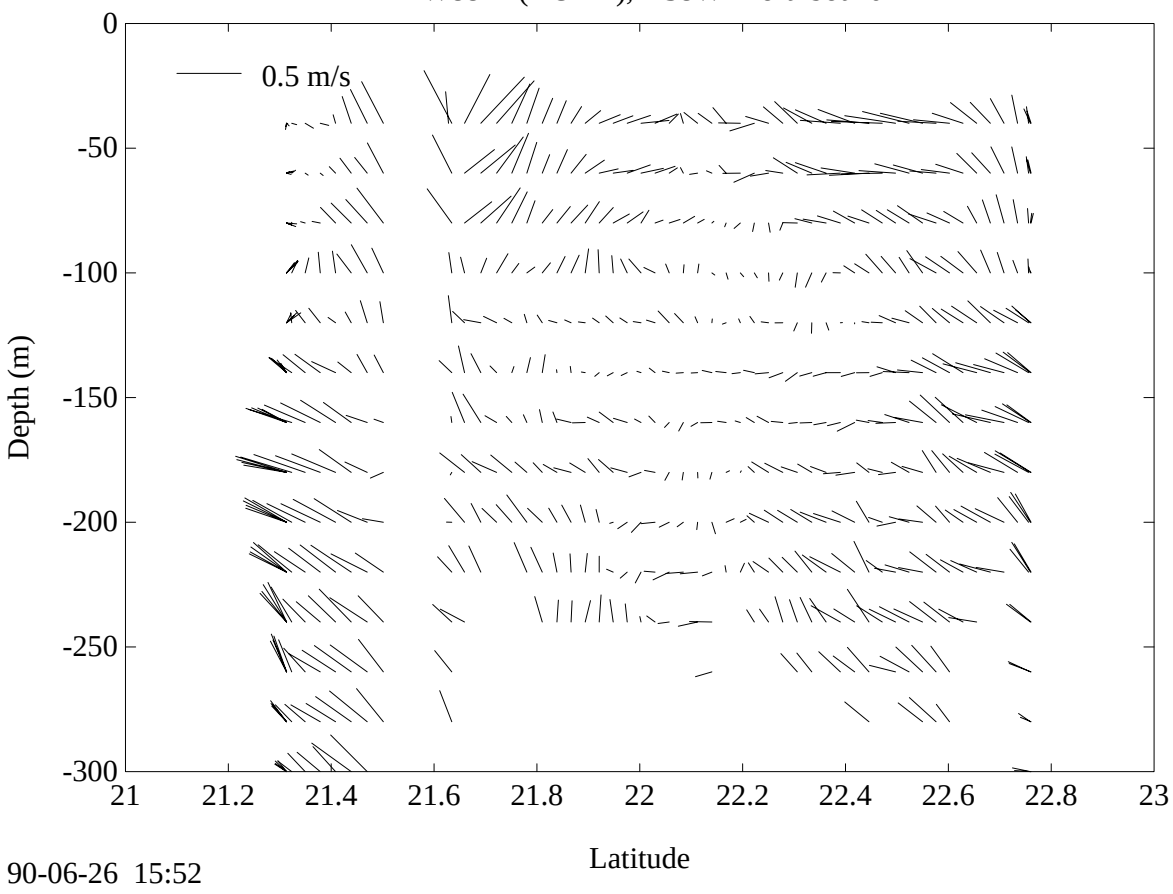


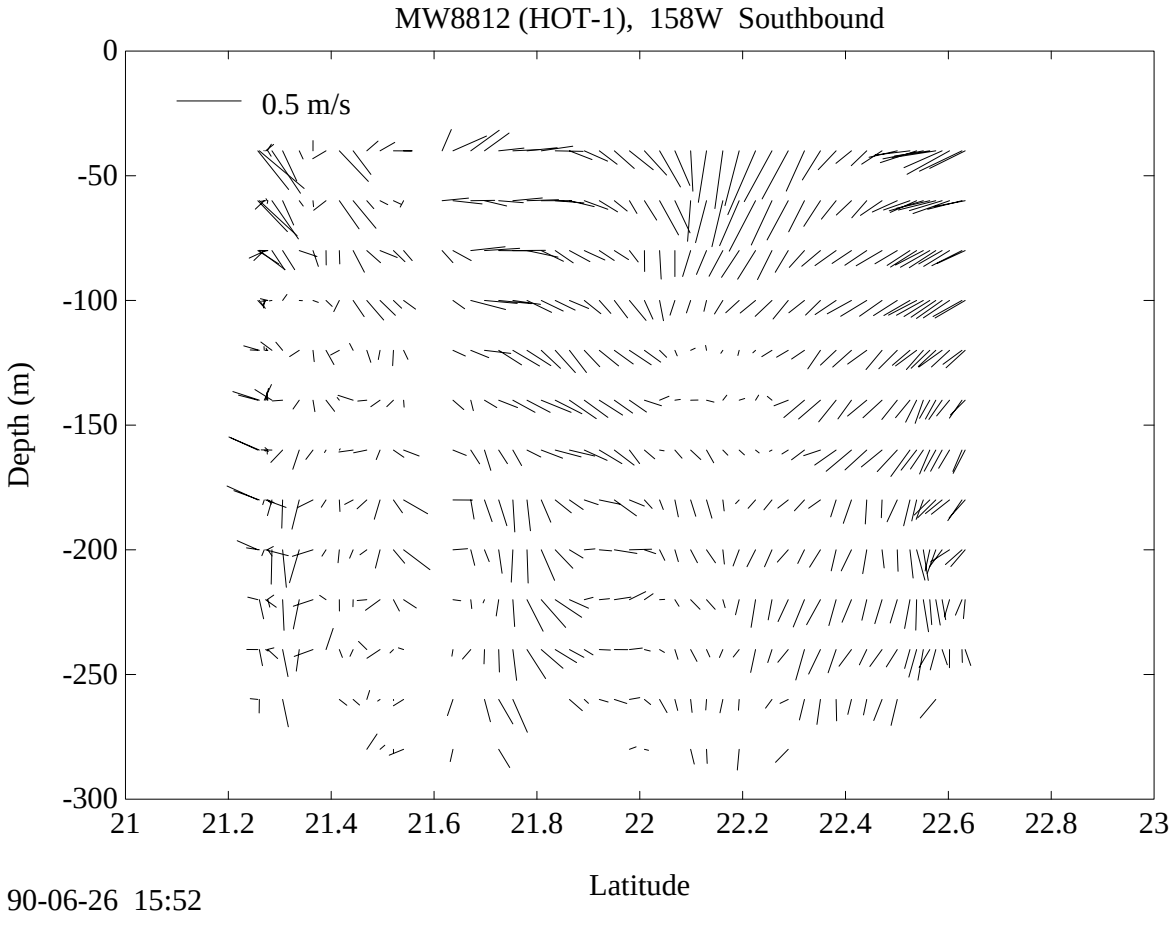
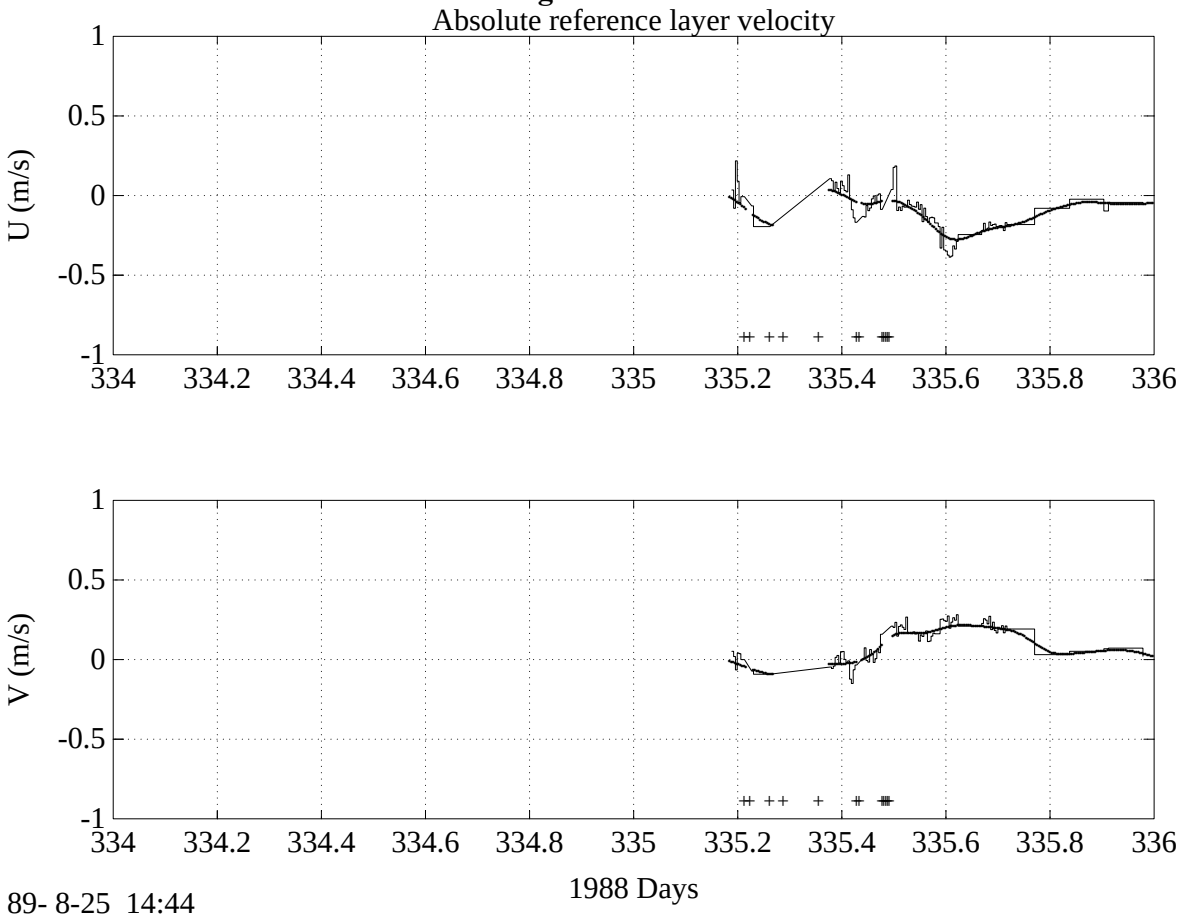
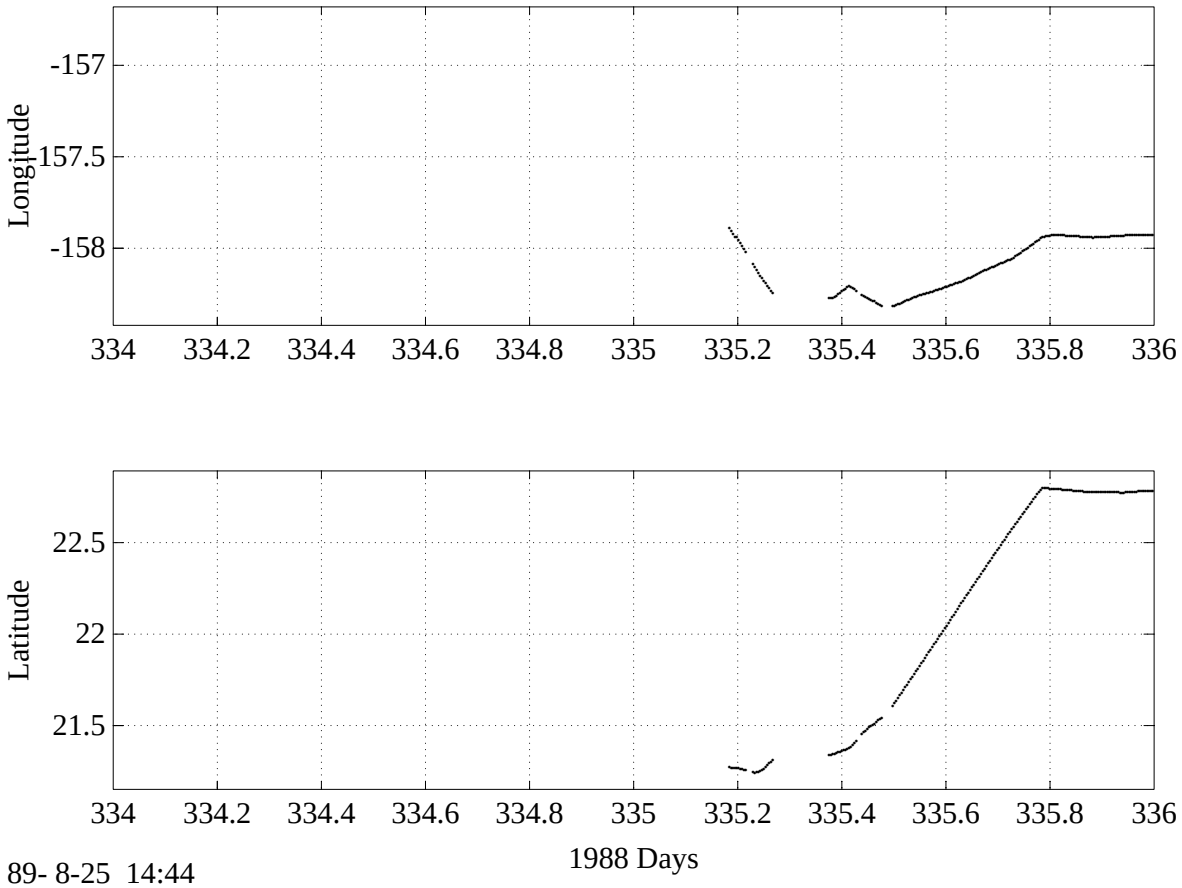


Figure VII.E.2





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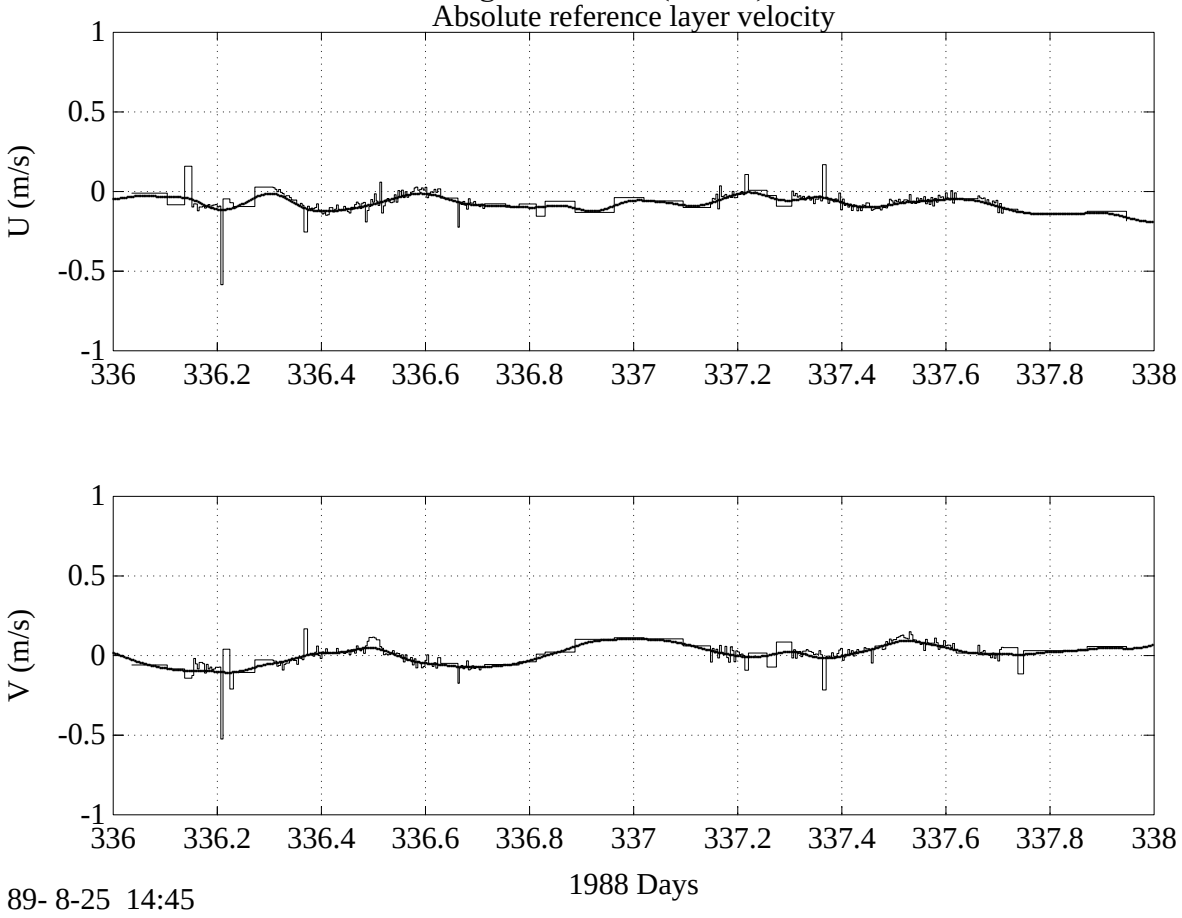

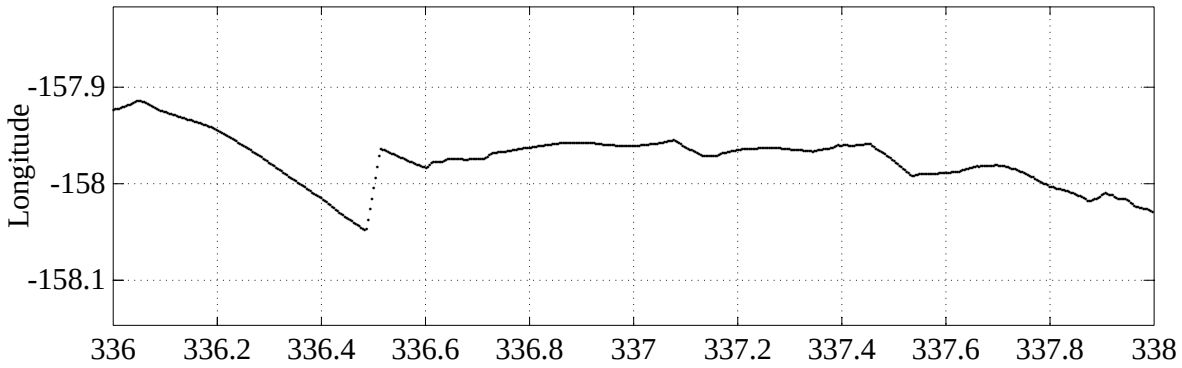

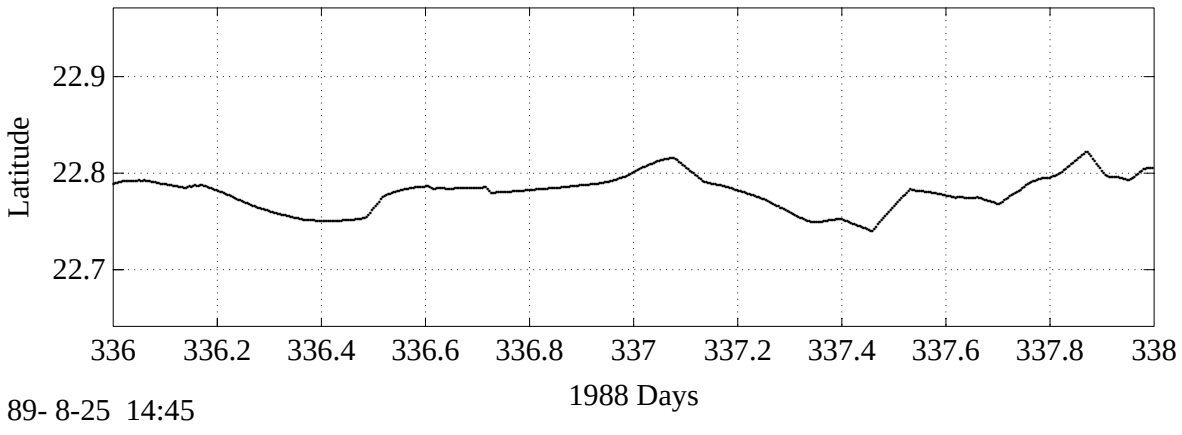

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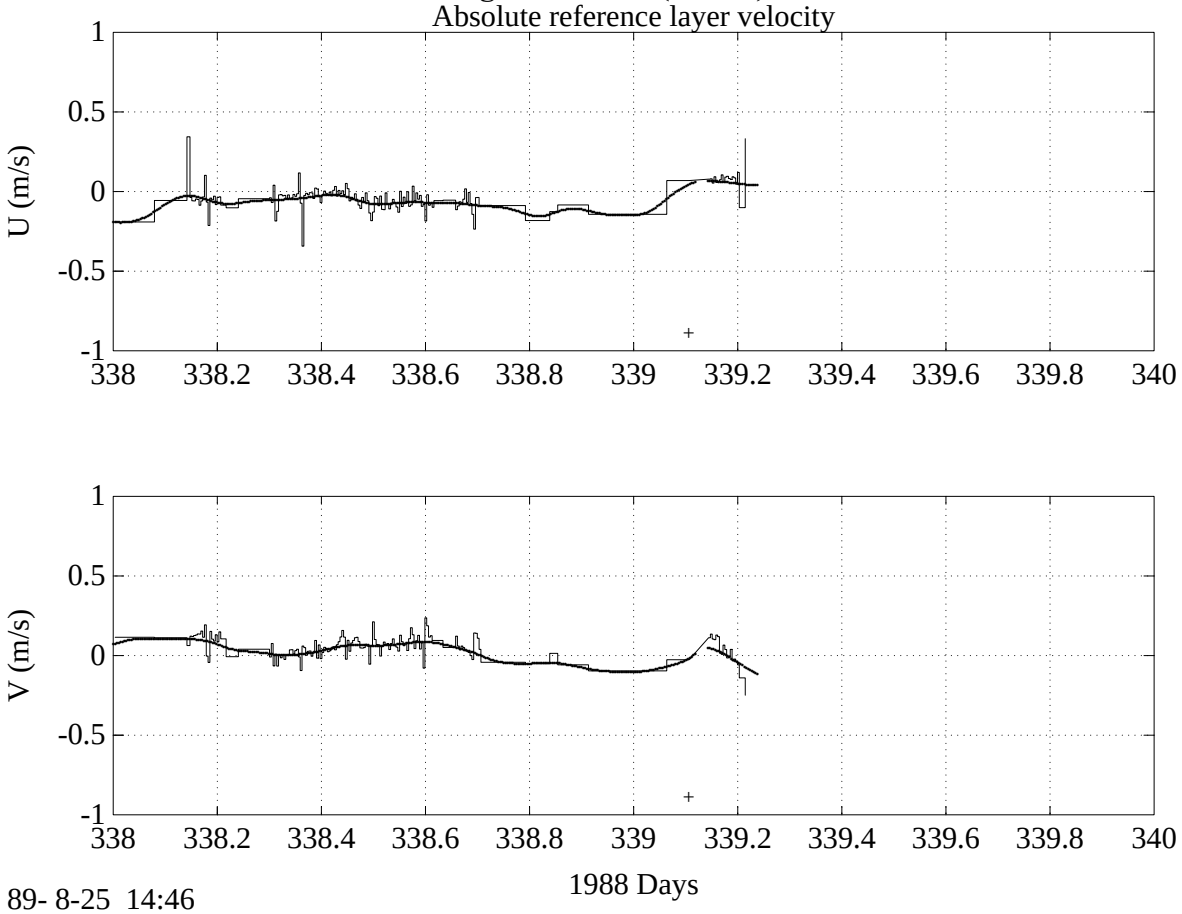

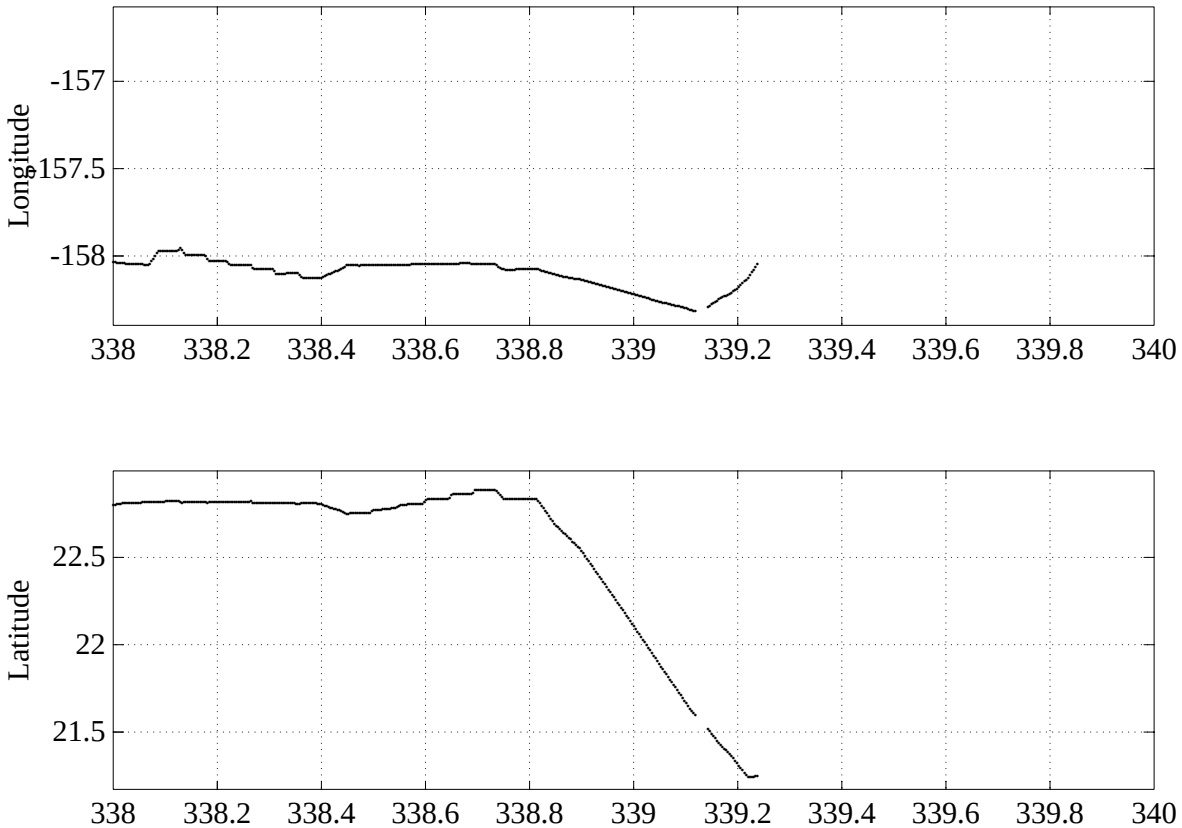

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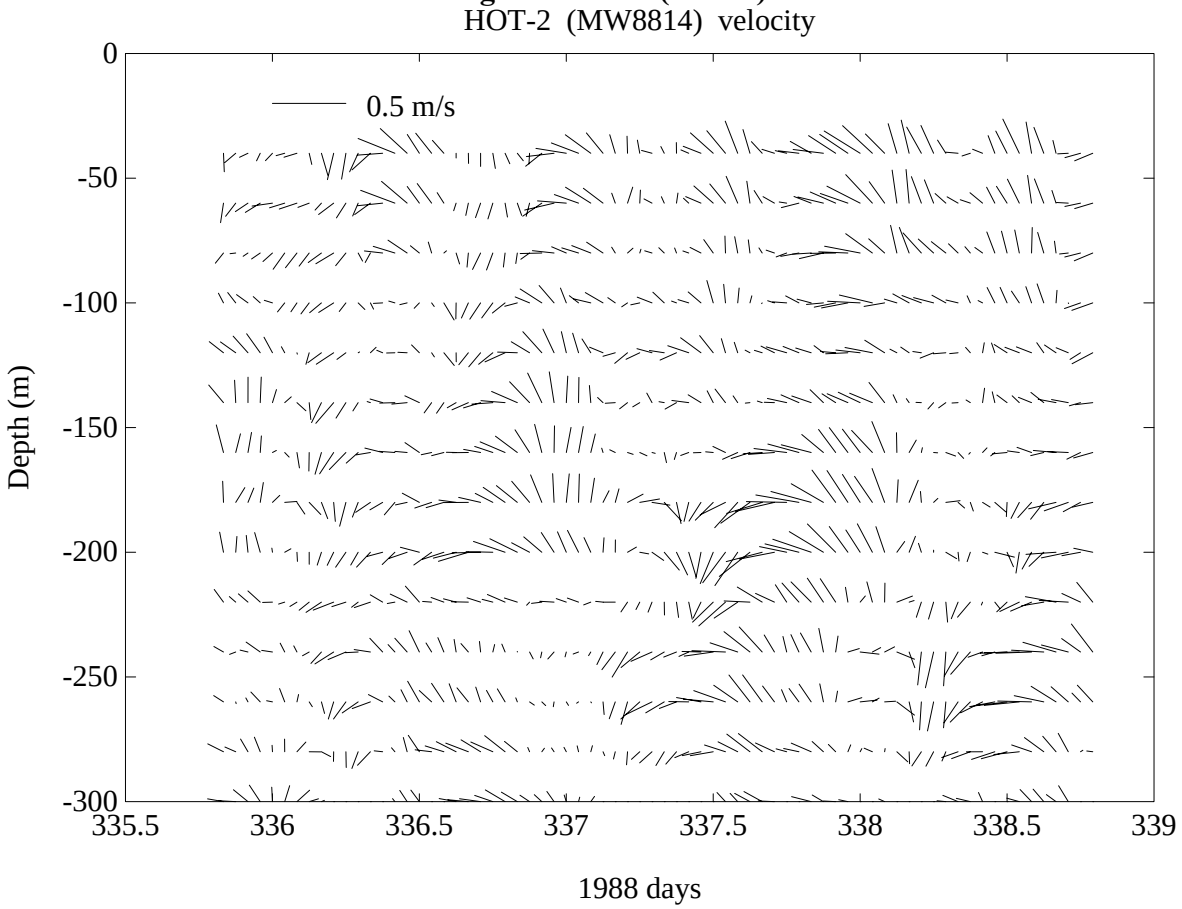

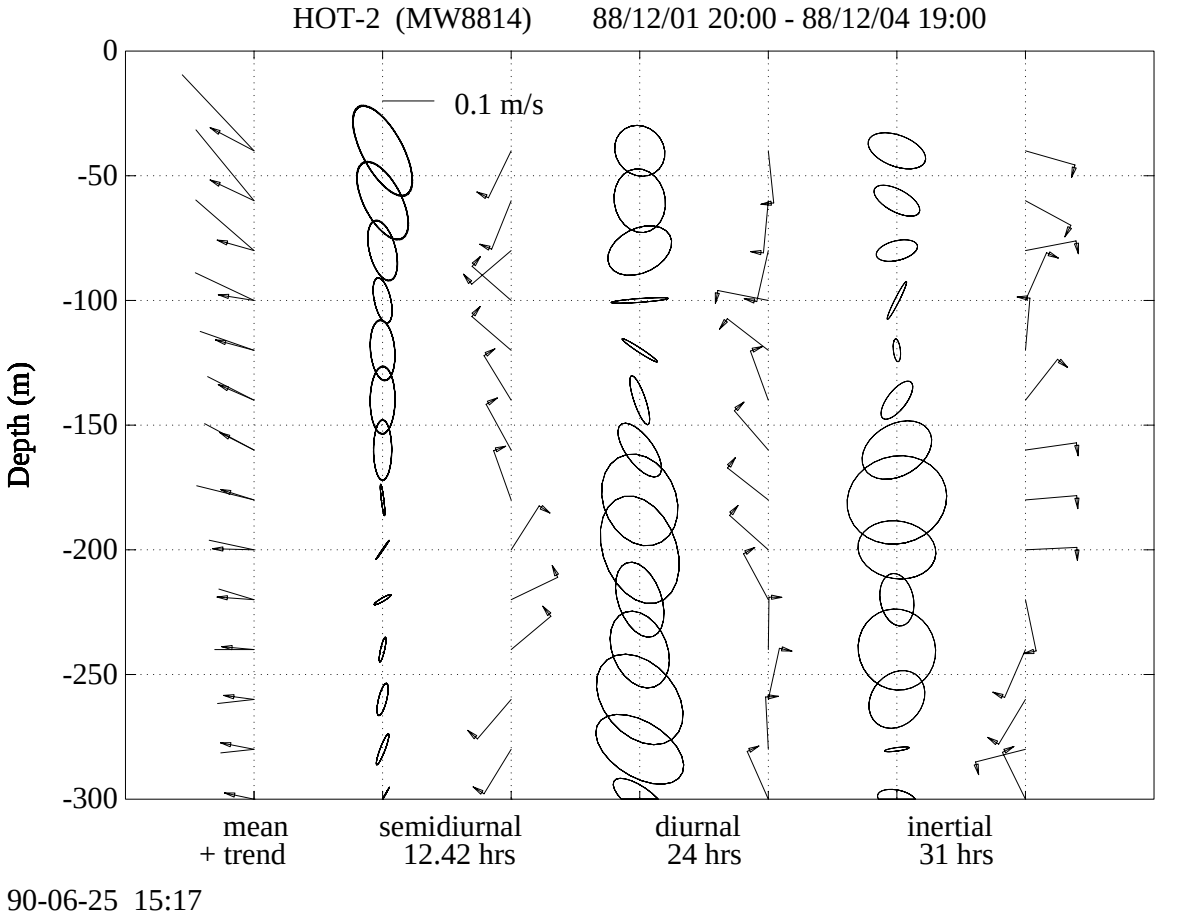

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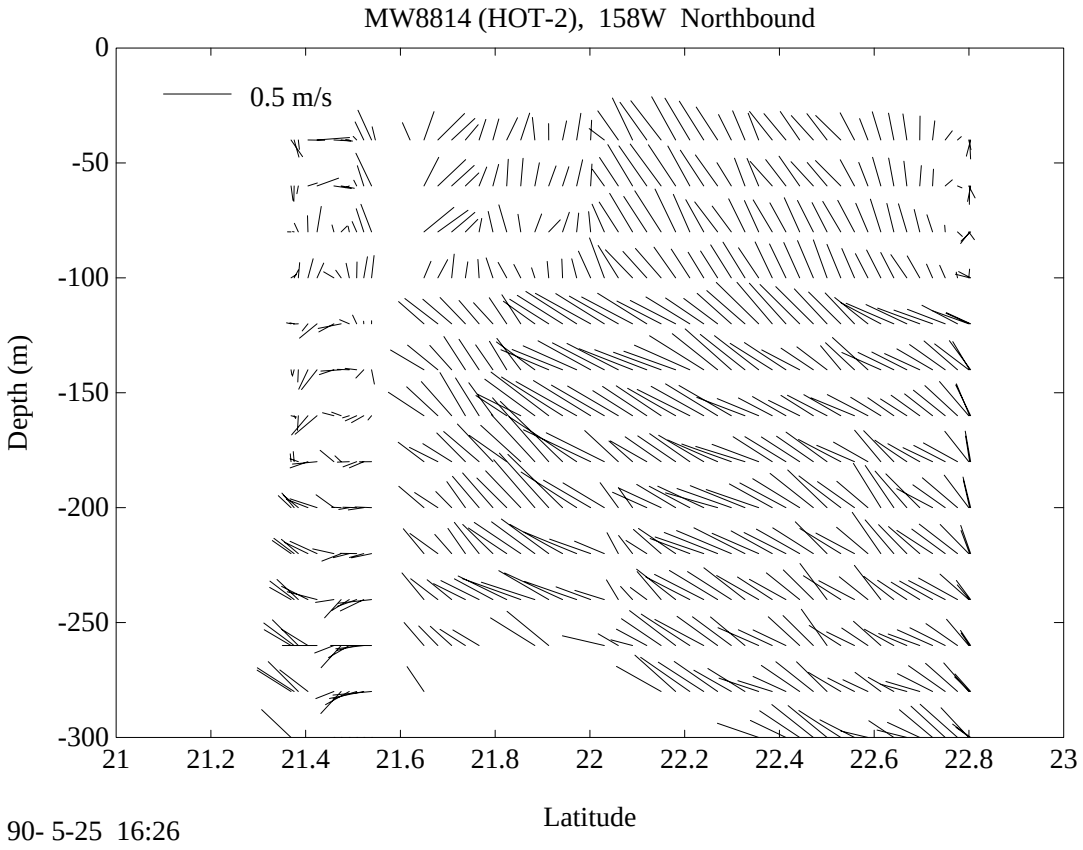

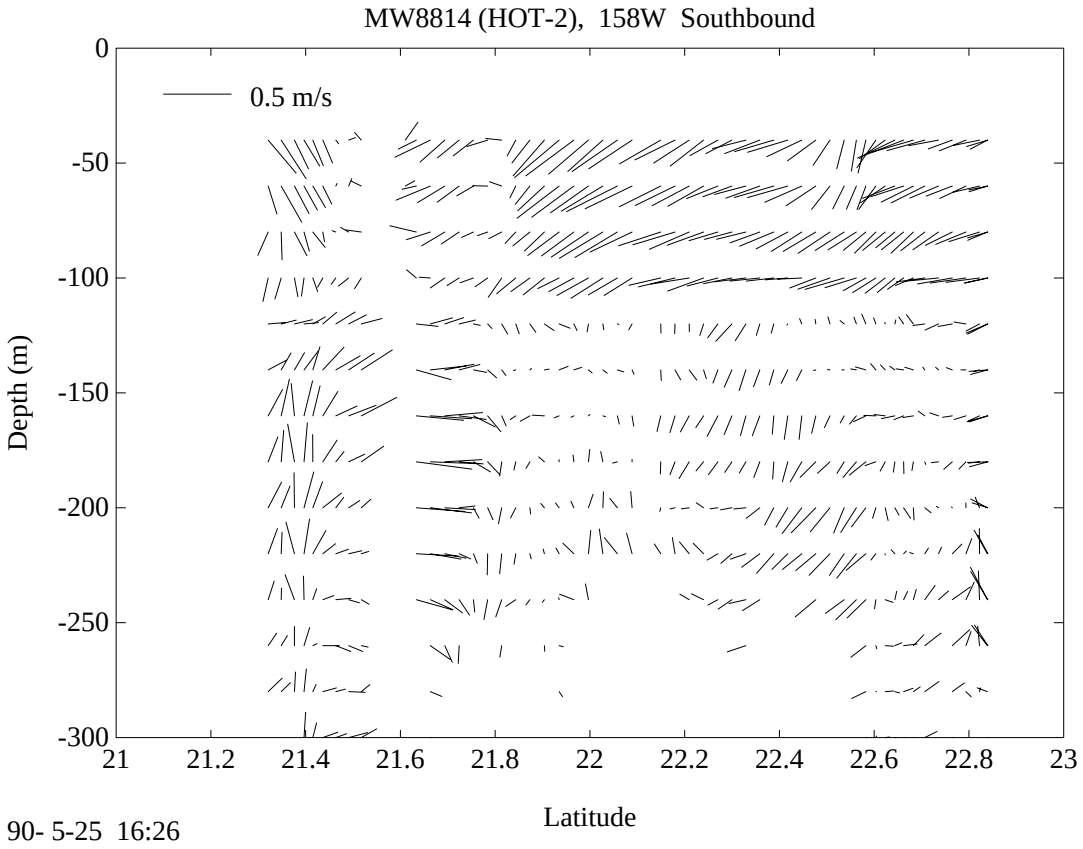

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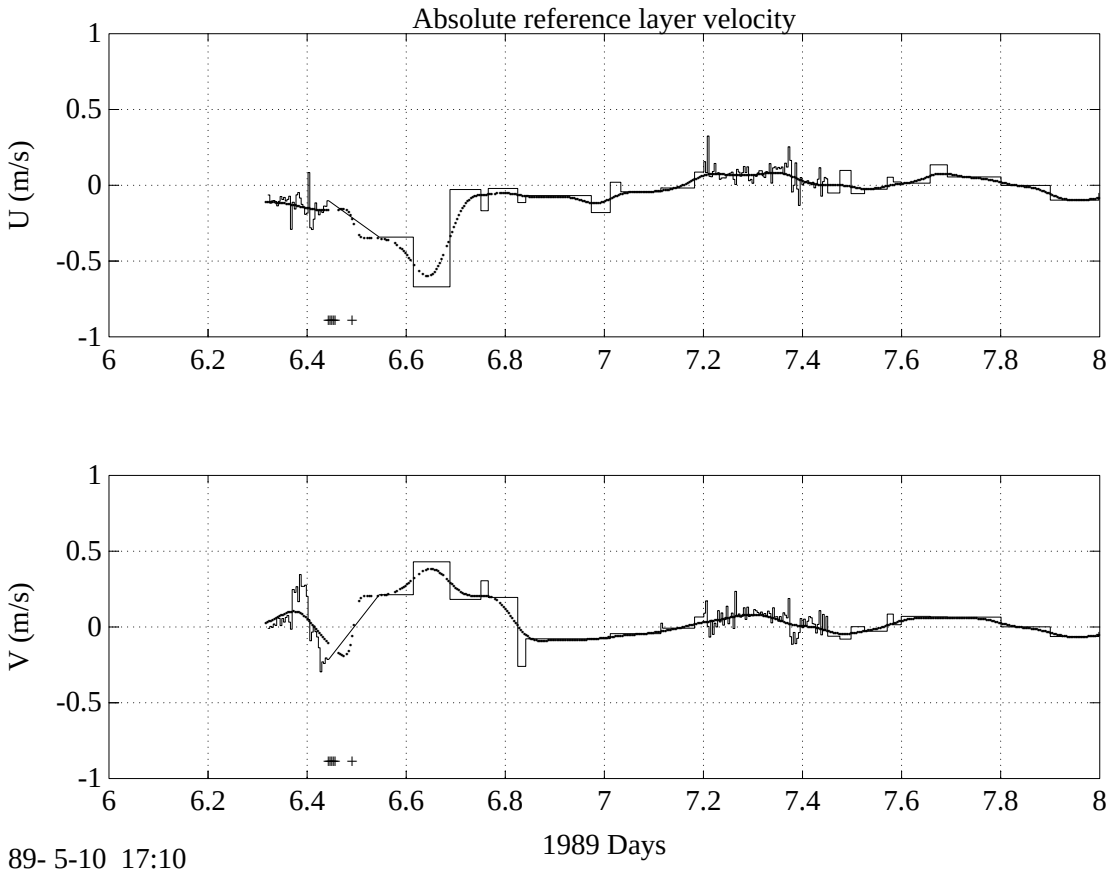

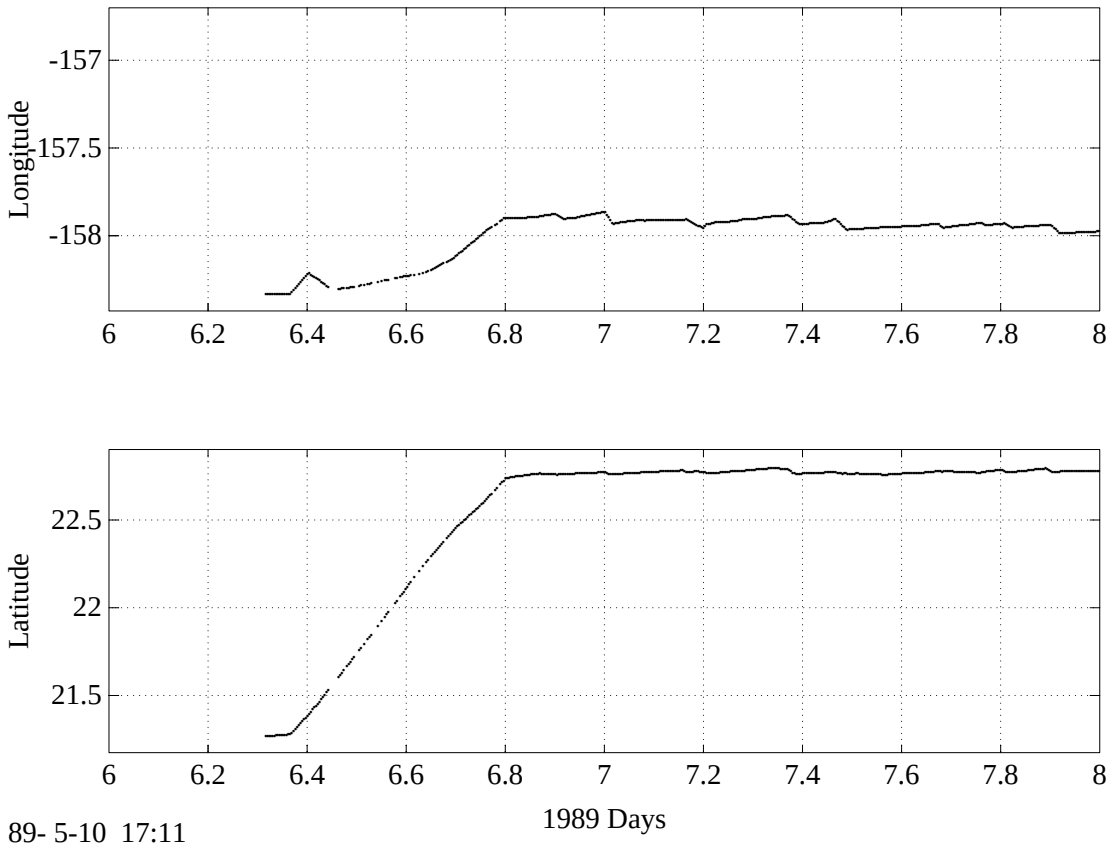

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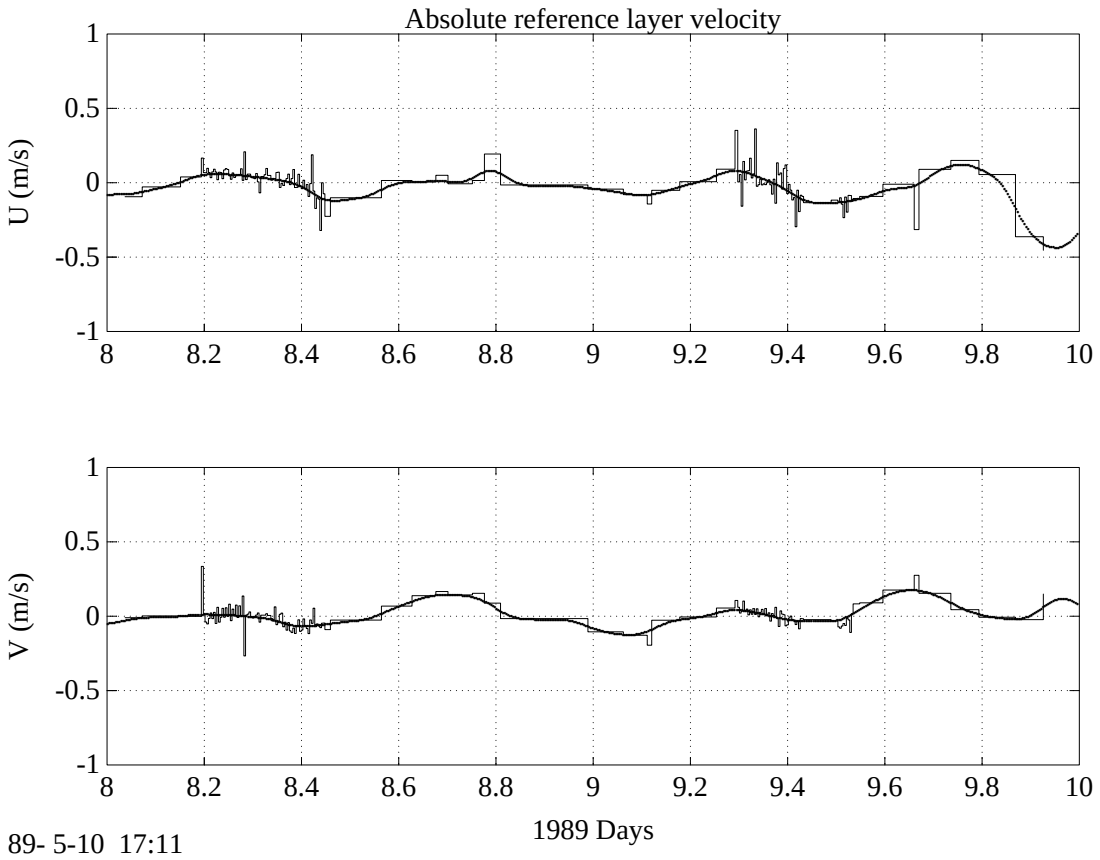

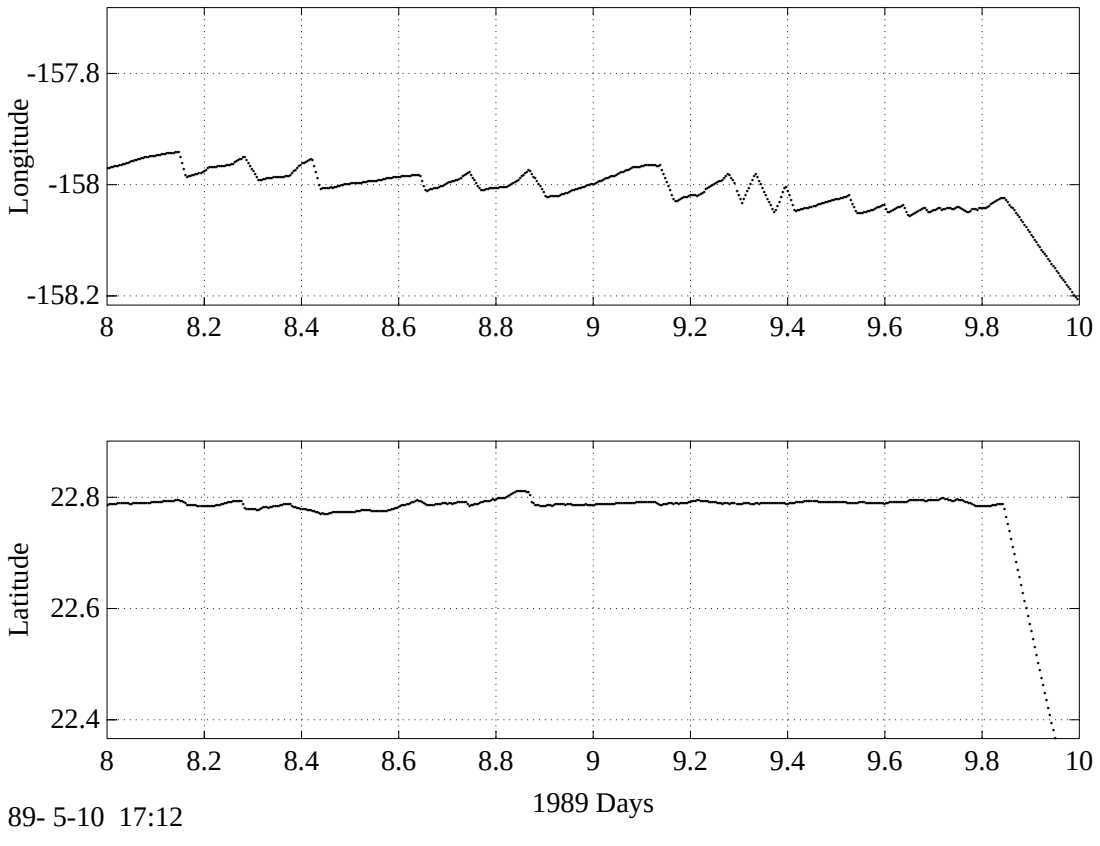

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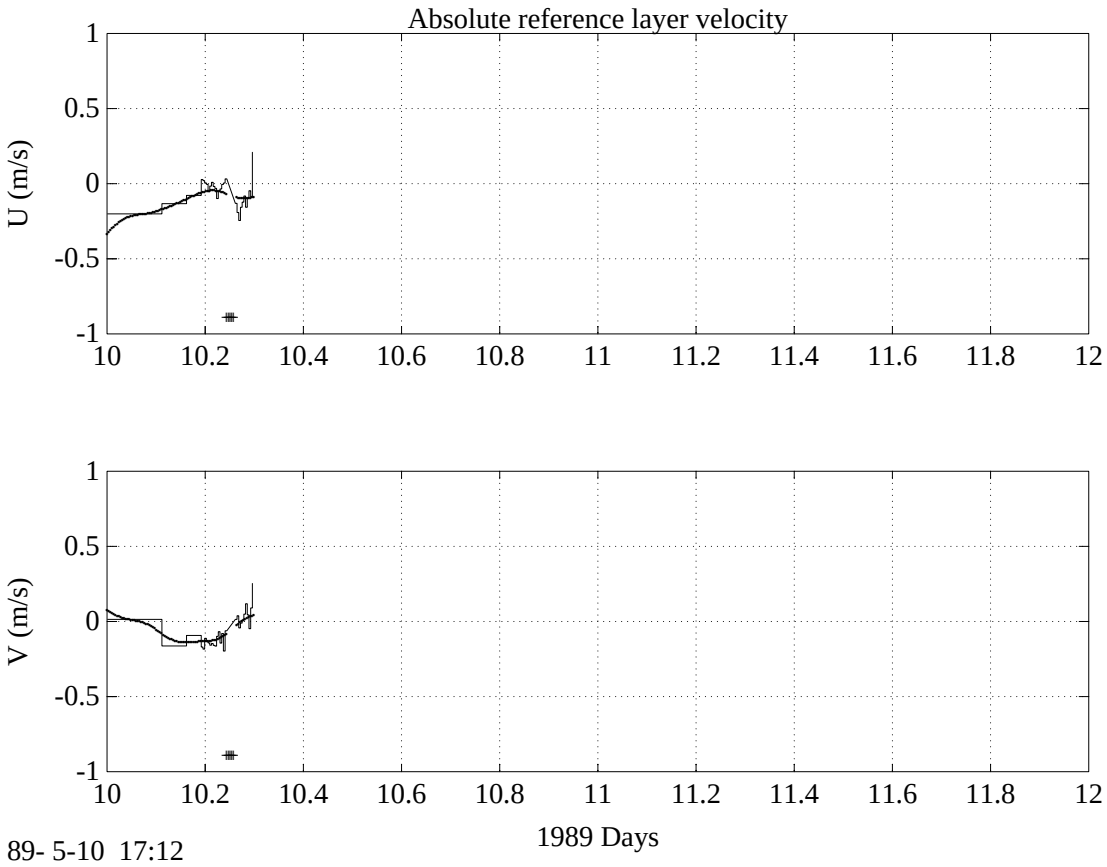

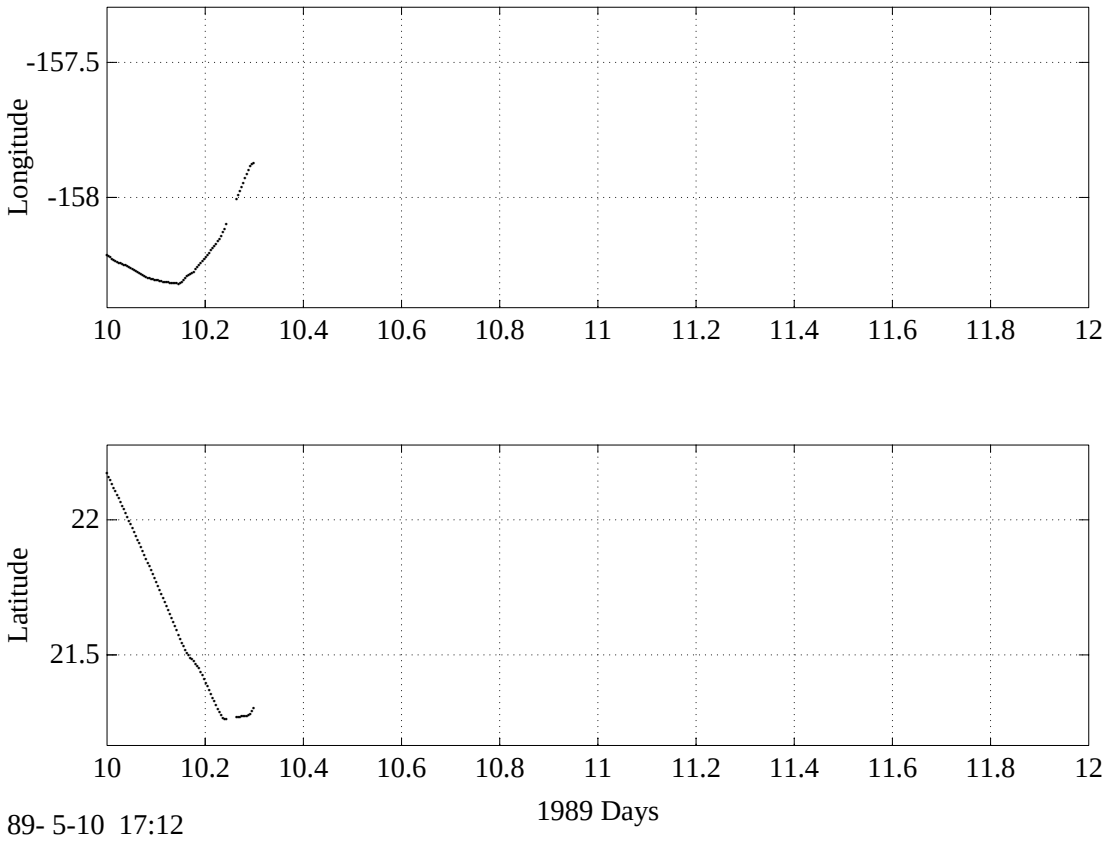

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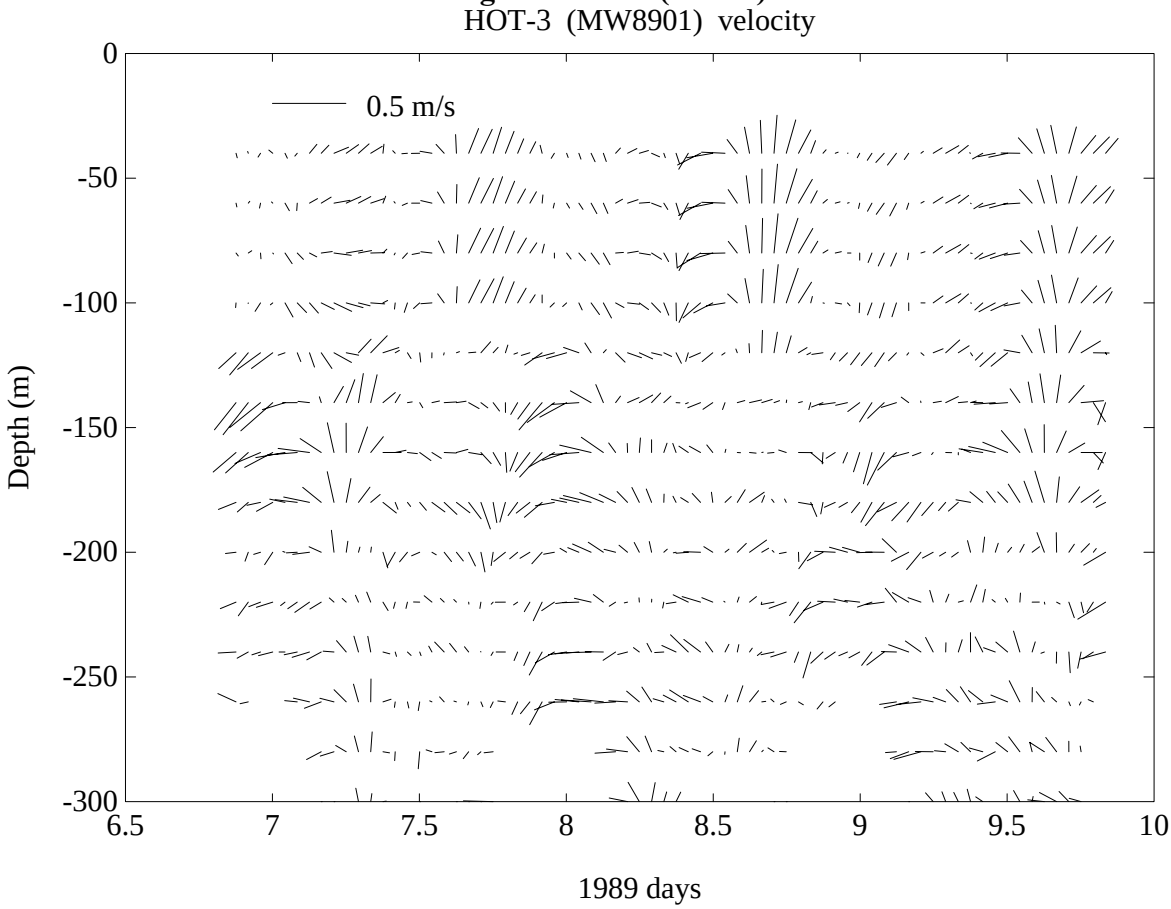

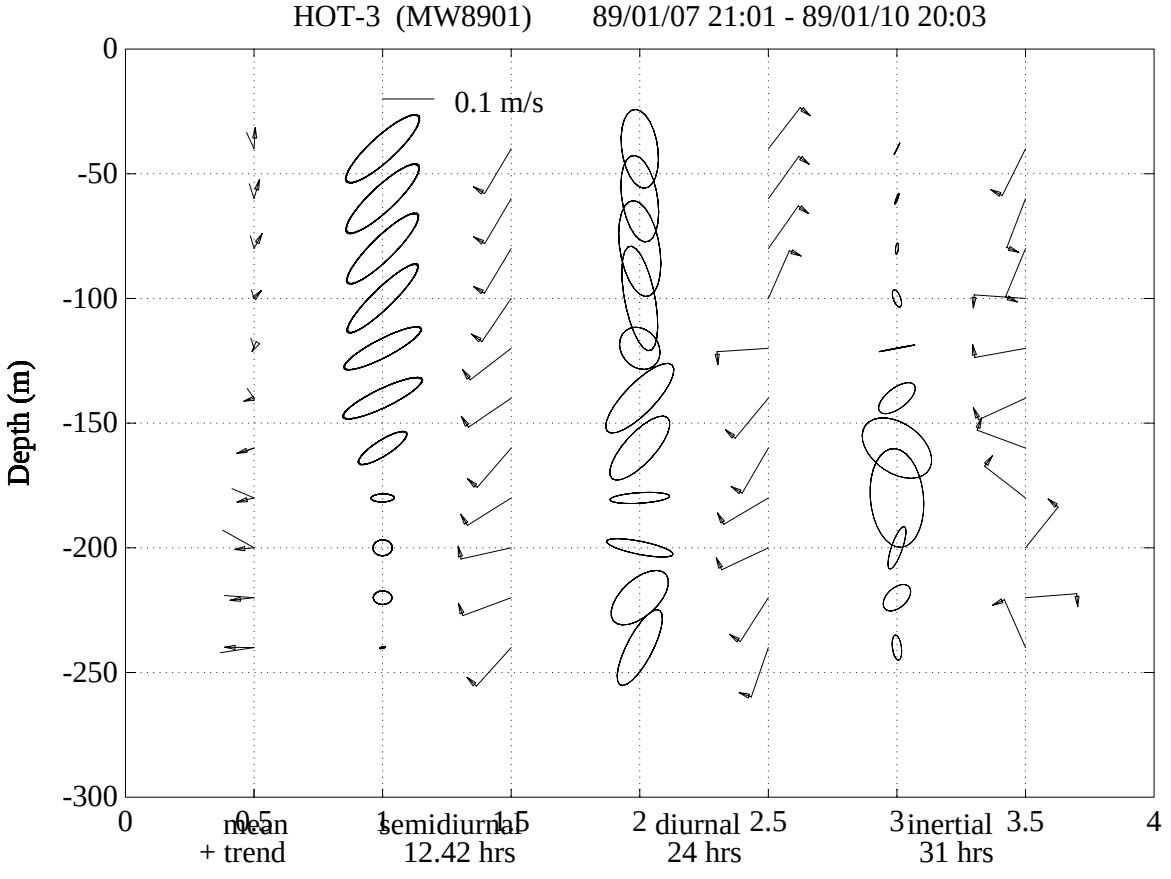

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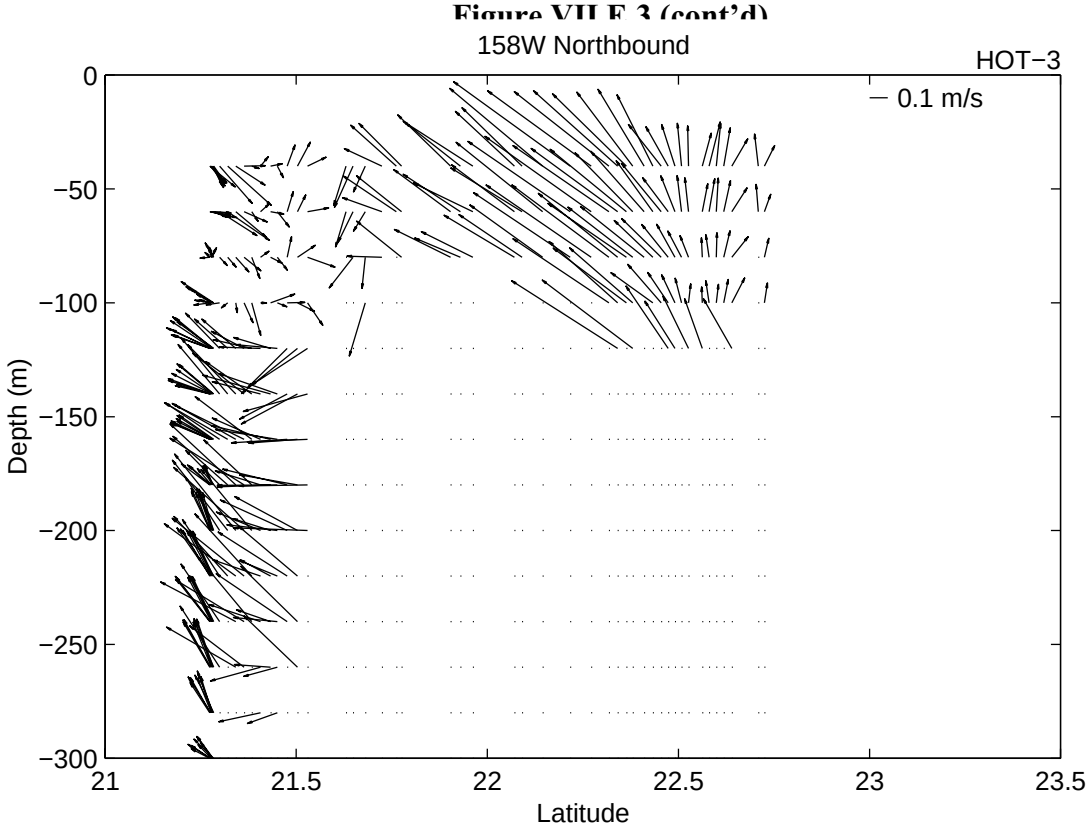

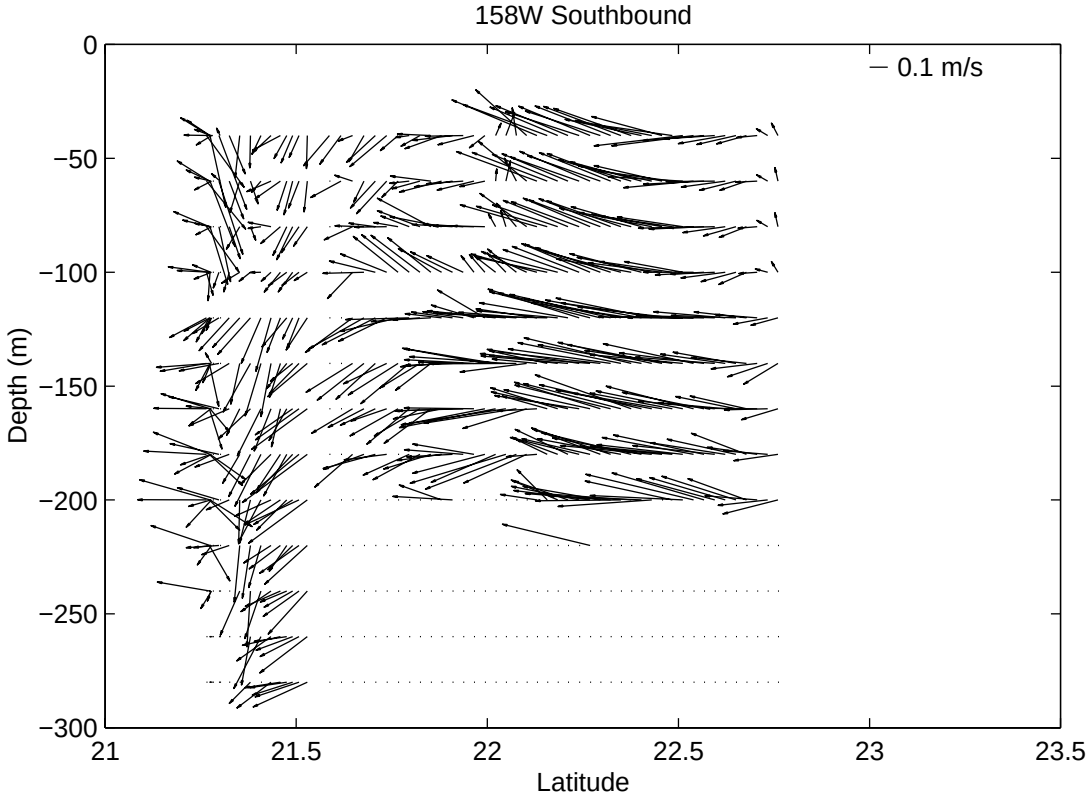

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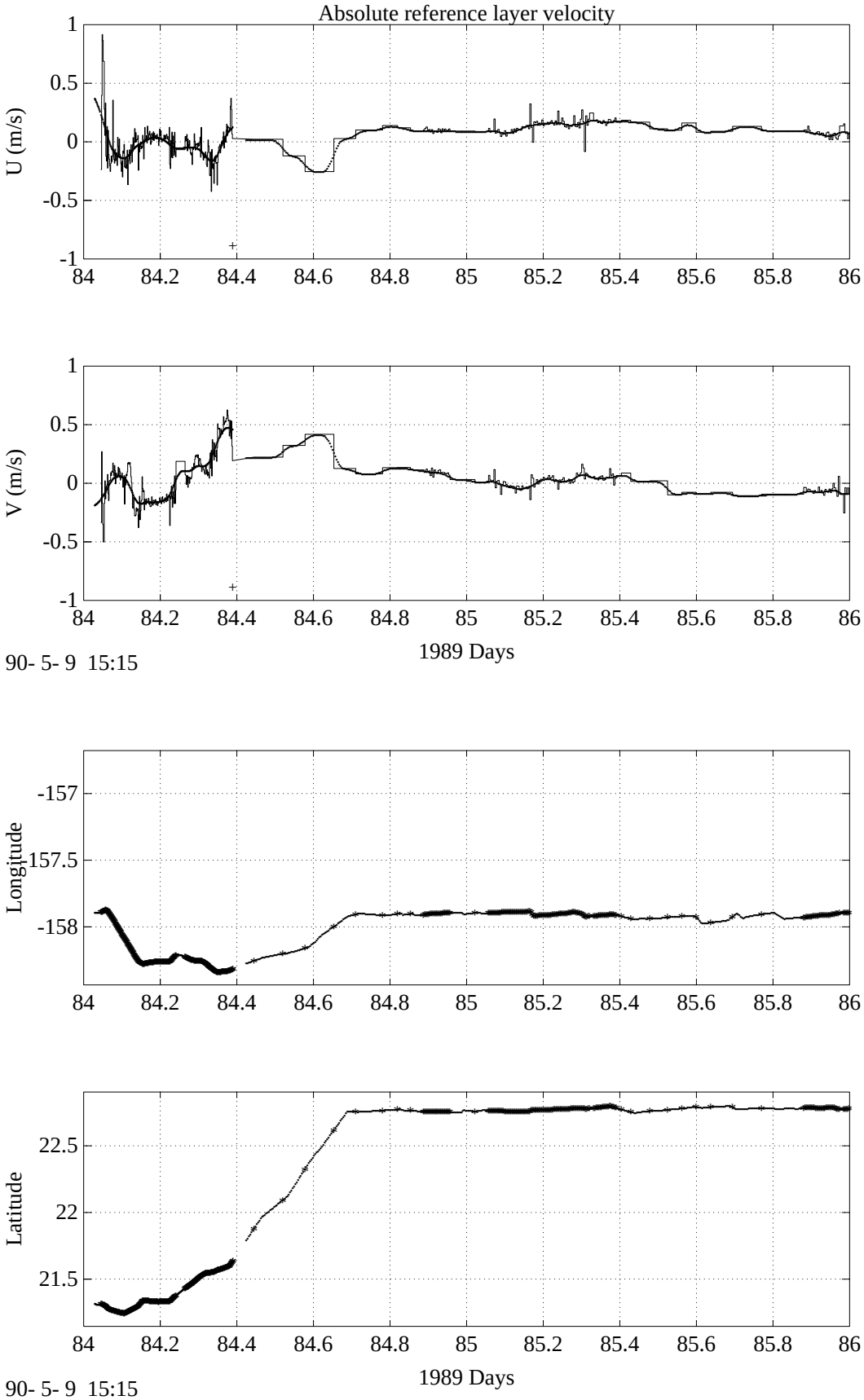

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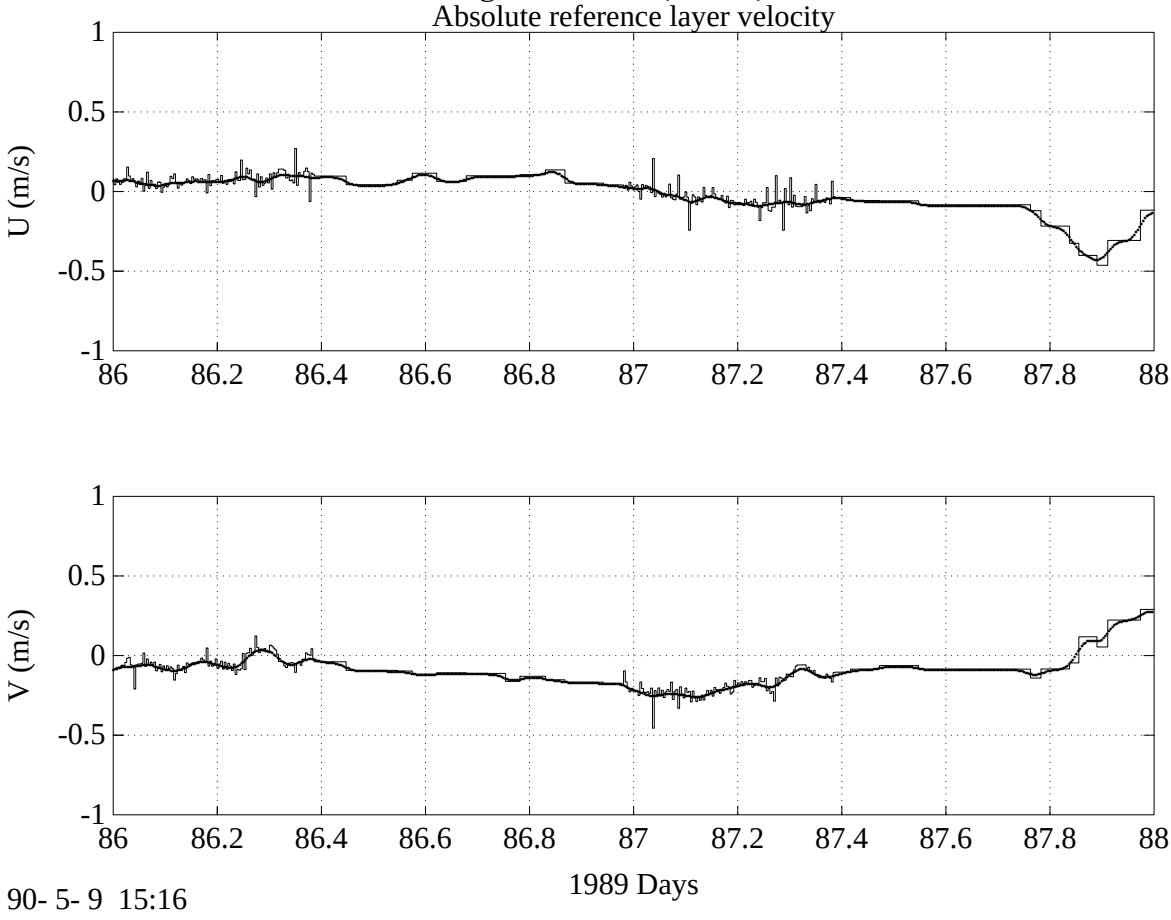

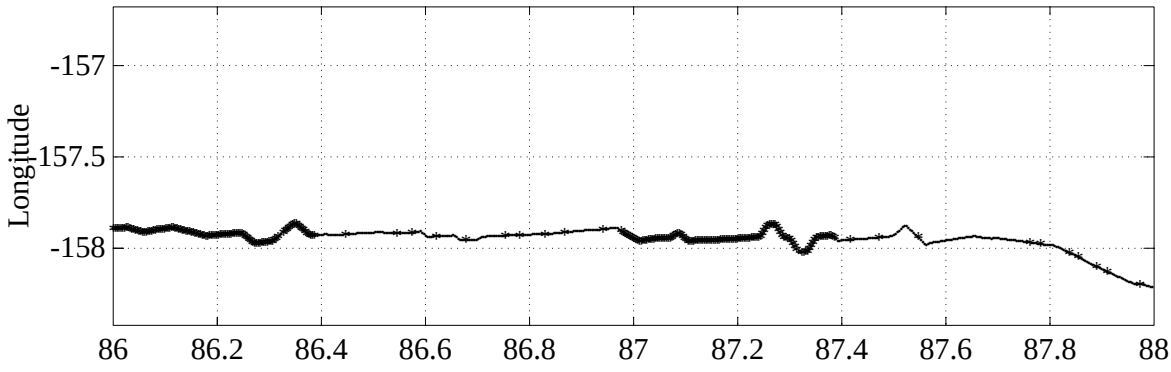

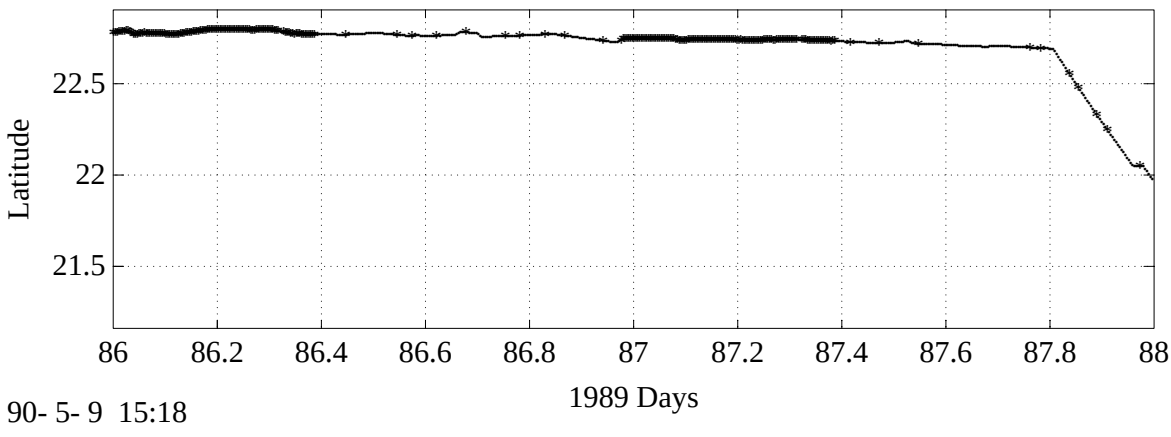

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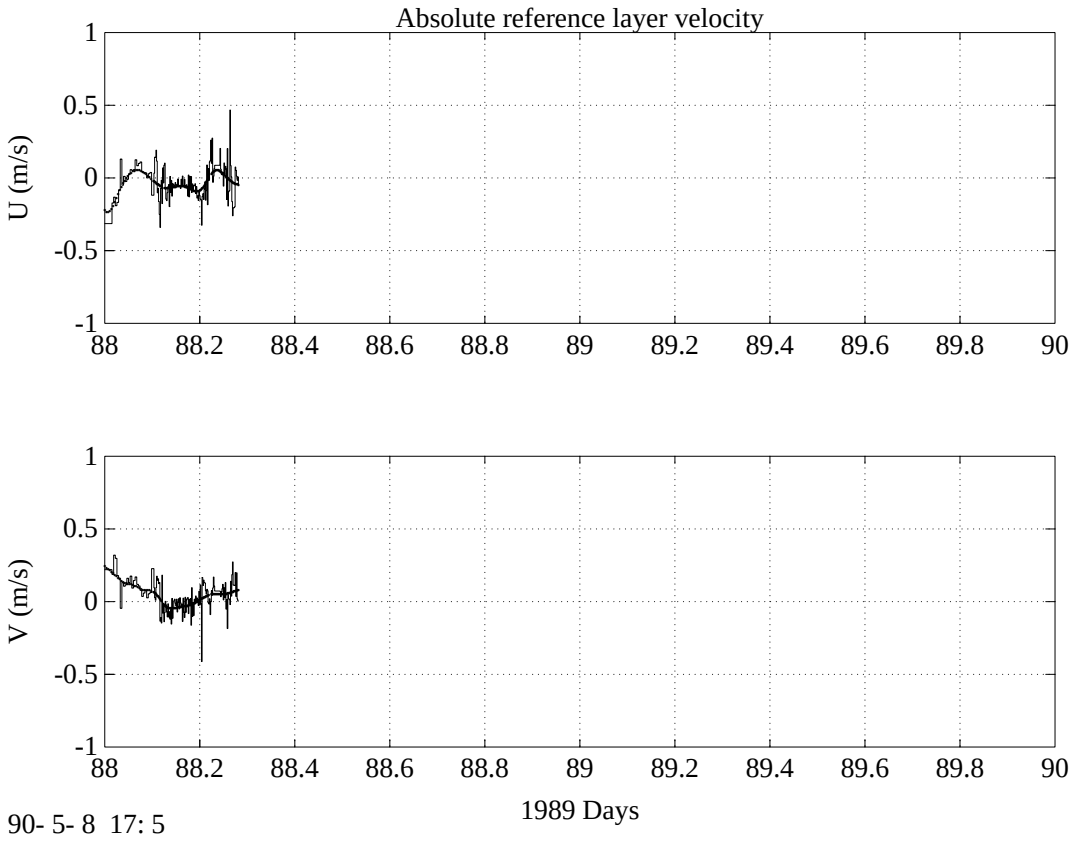

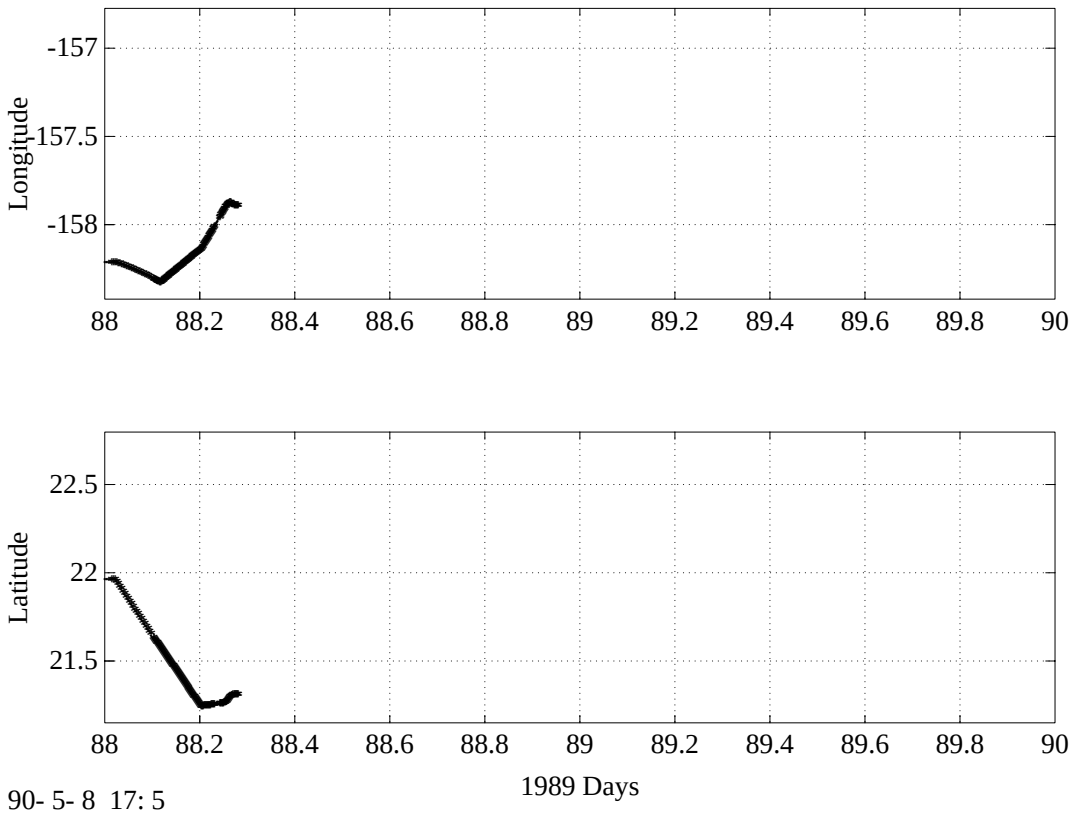

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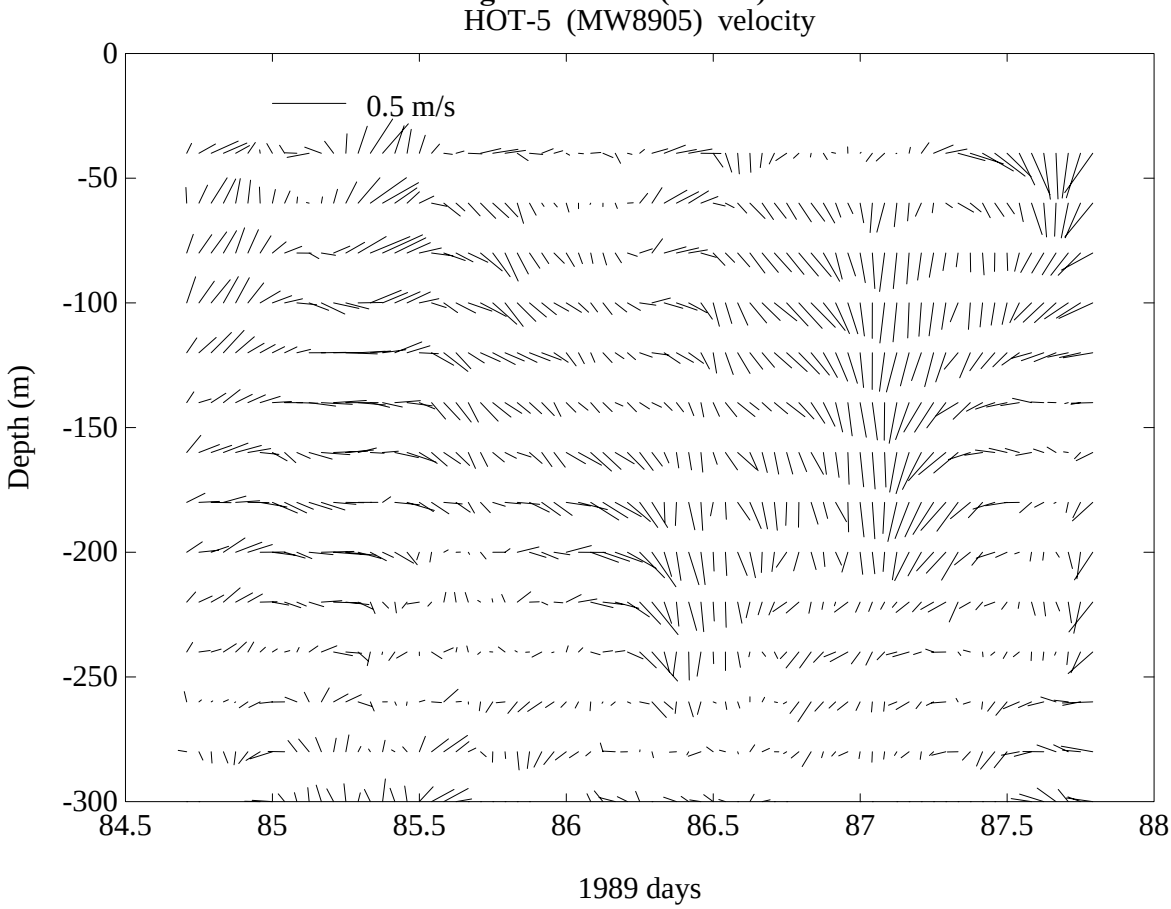

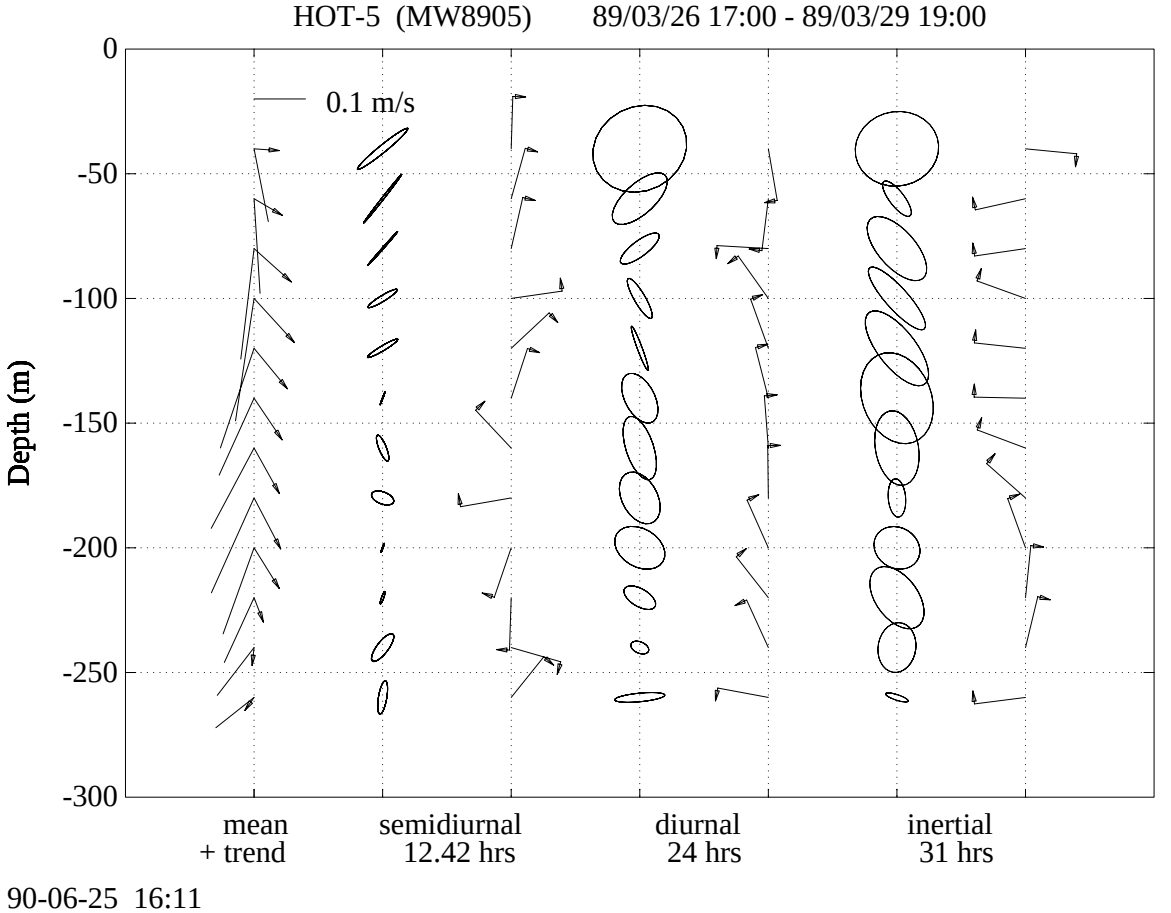

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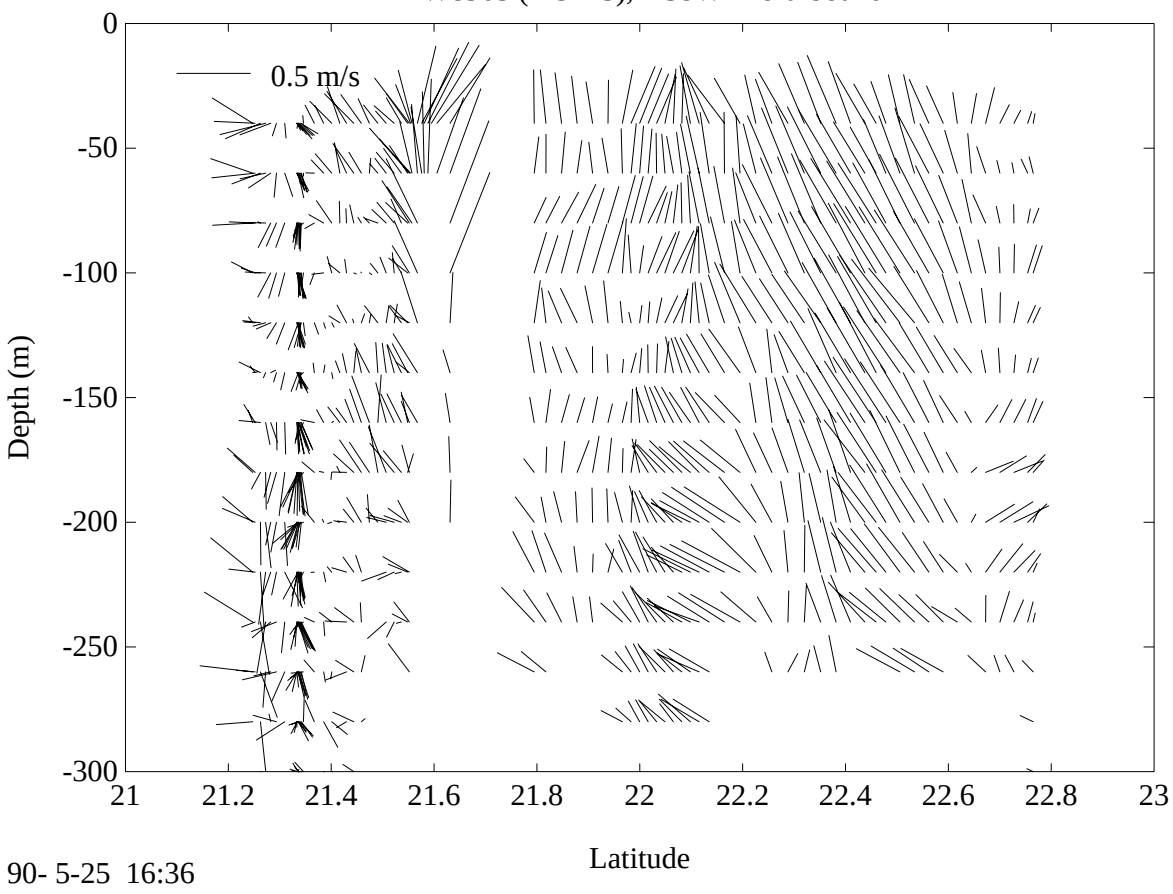
Figure VII.E.4 (cont'd)



90- 5-25 16:36

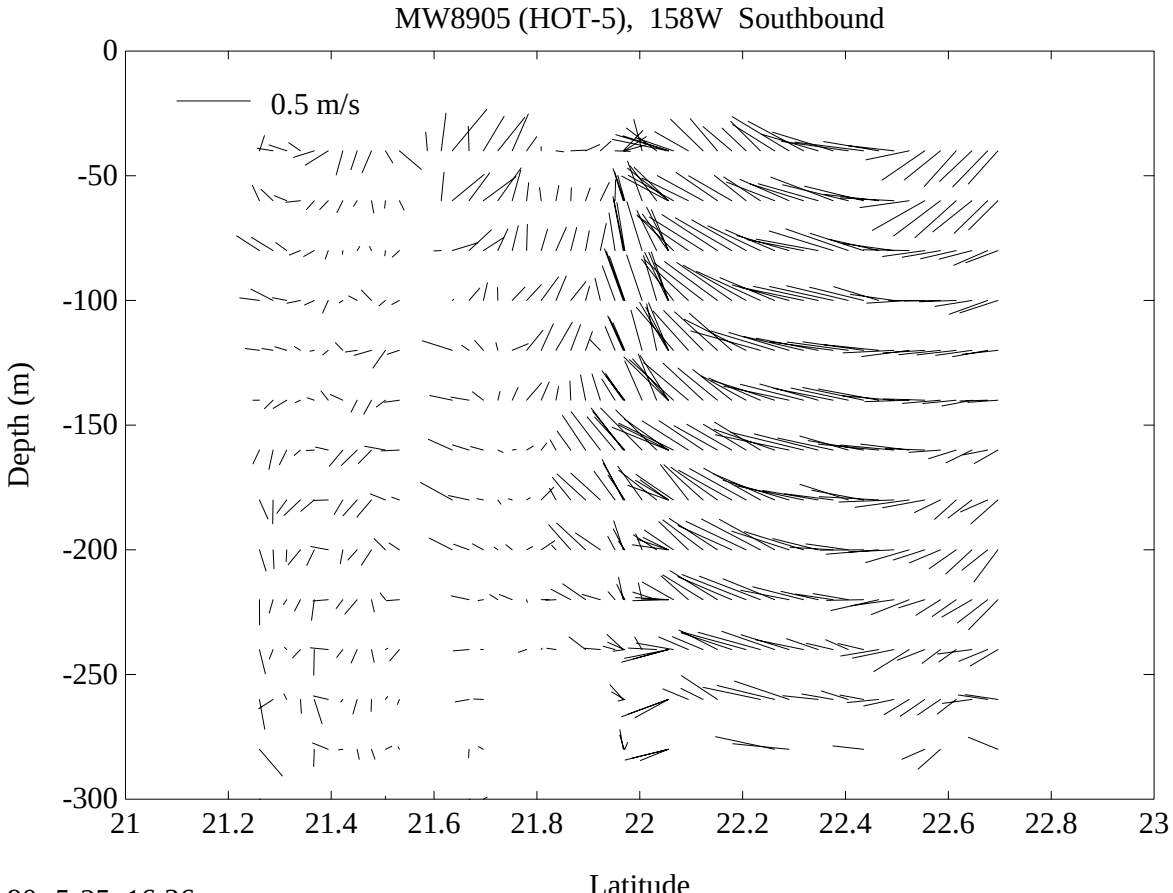


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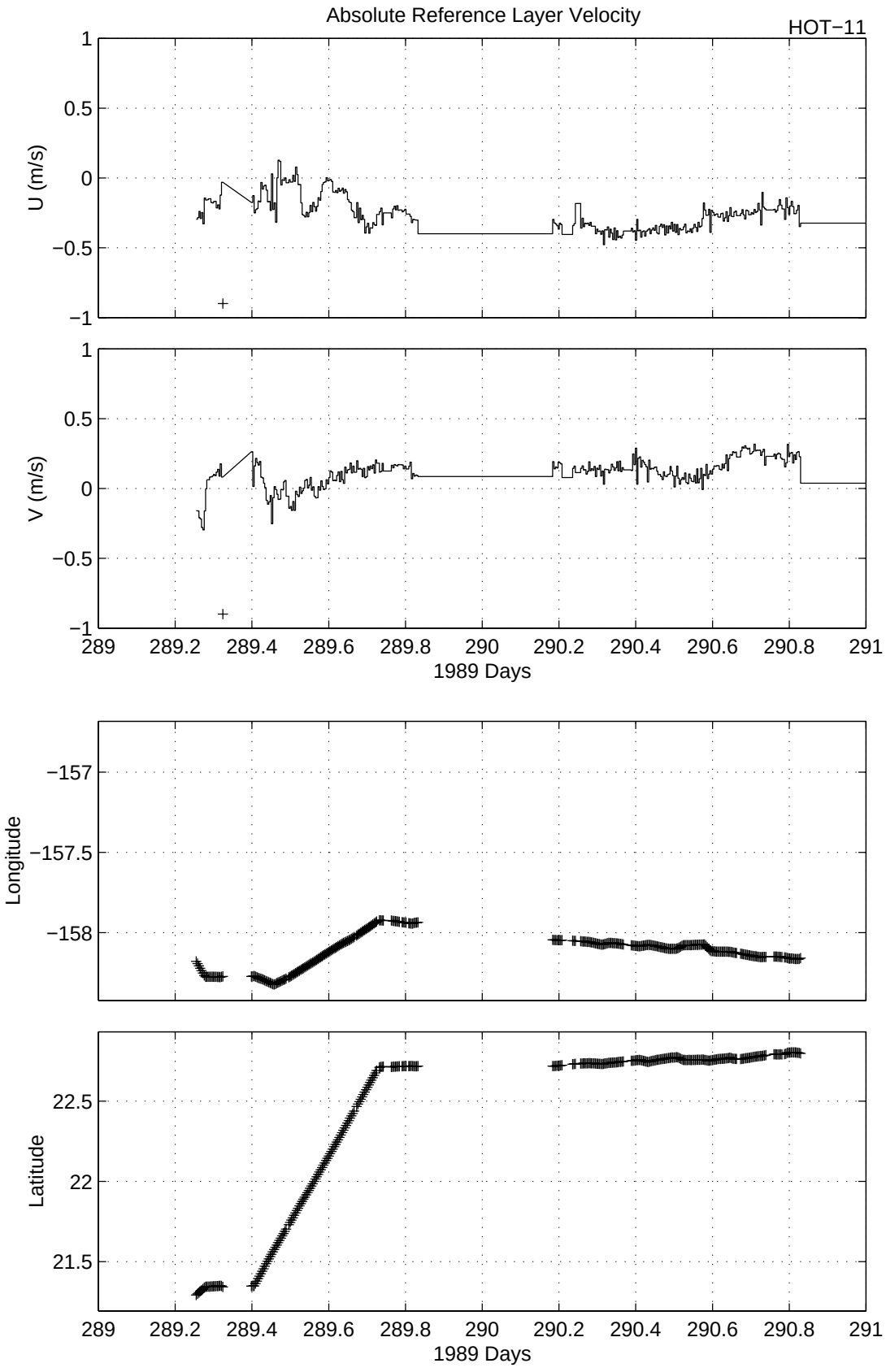
Figure VII.E.5



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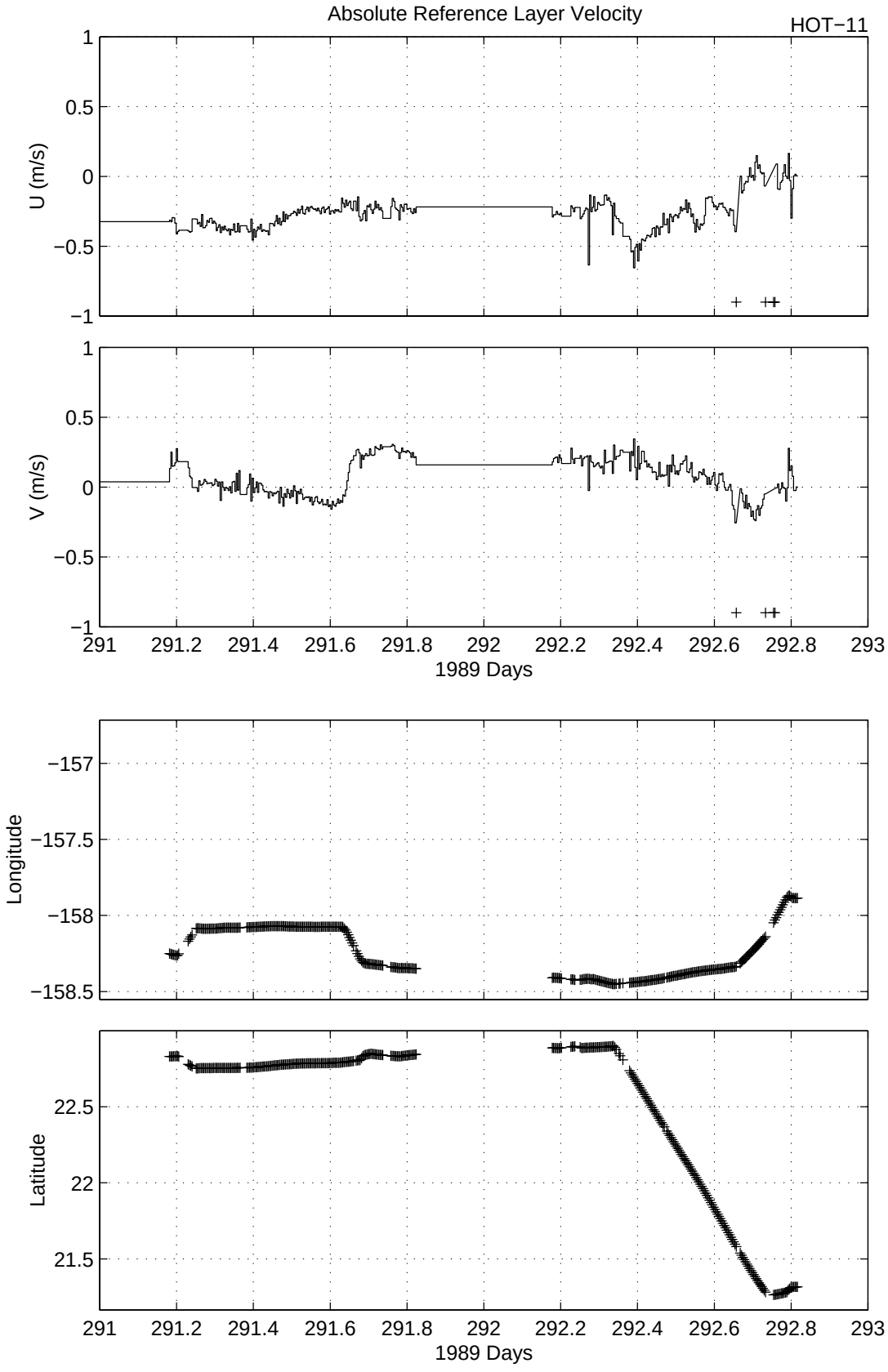

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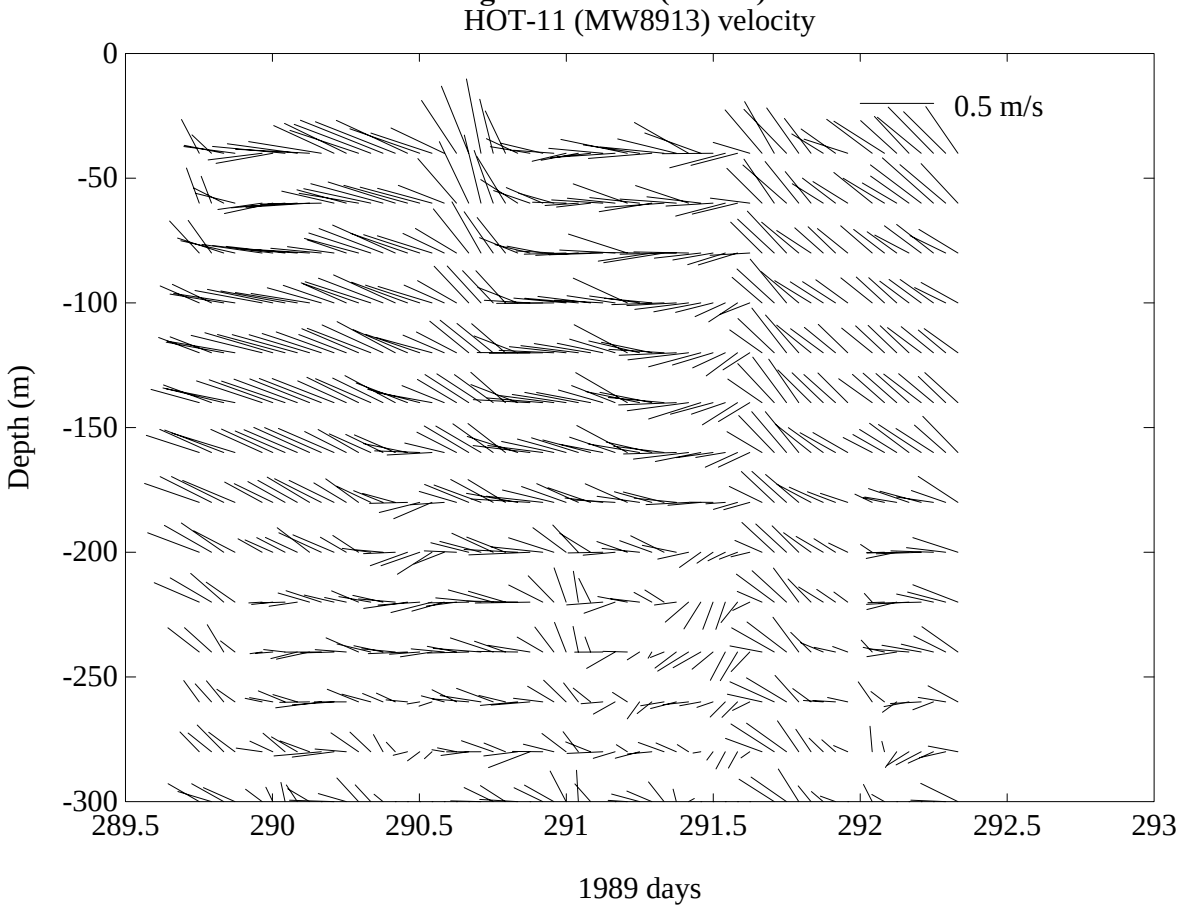

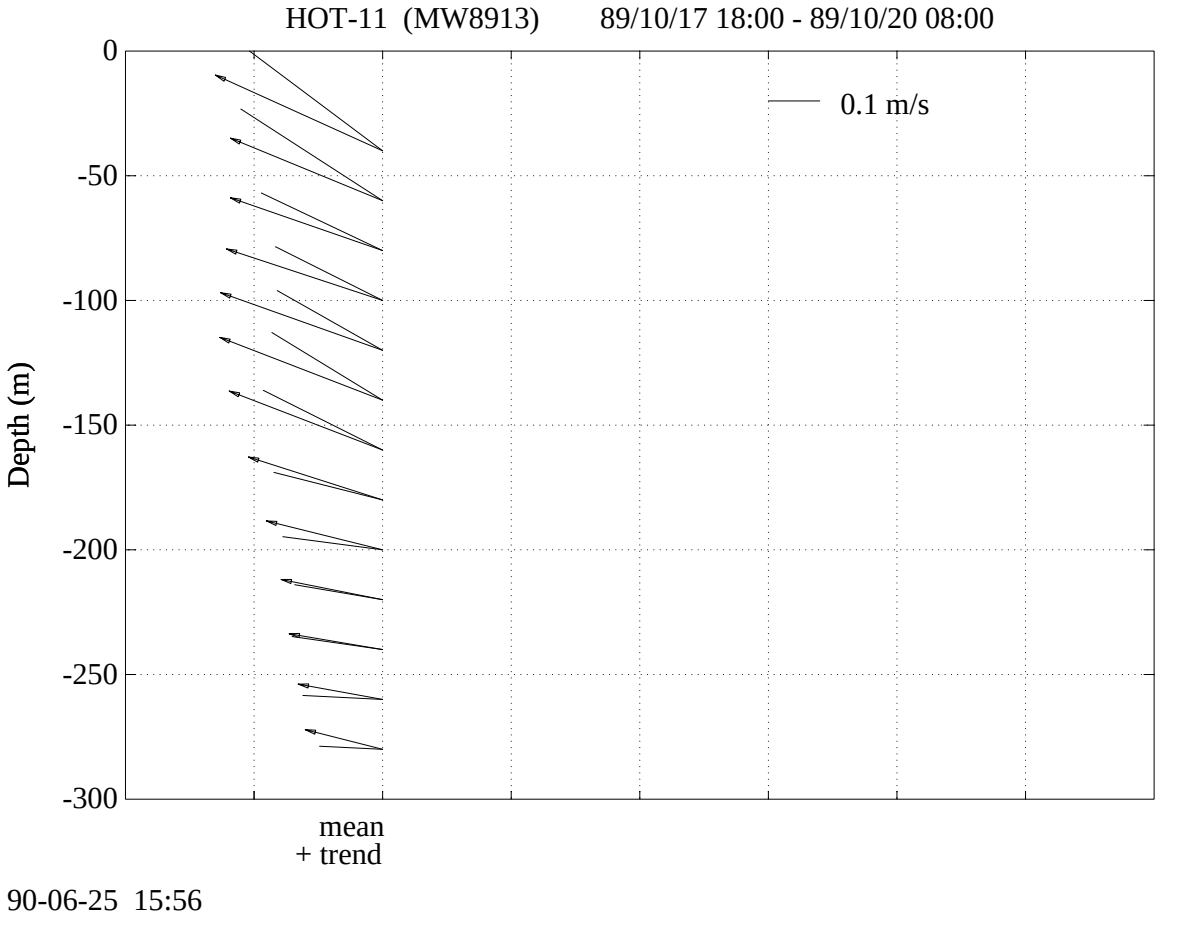

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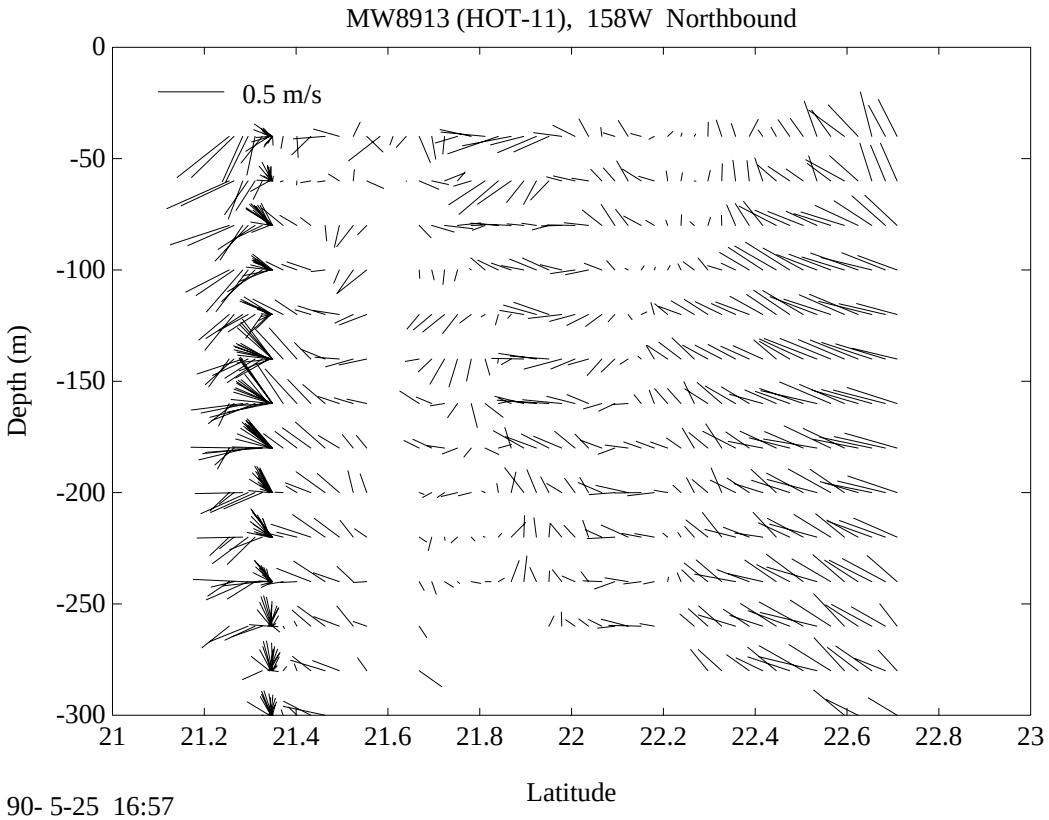


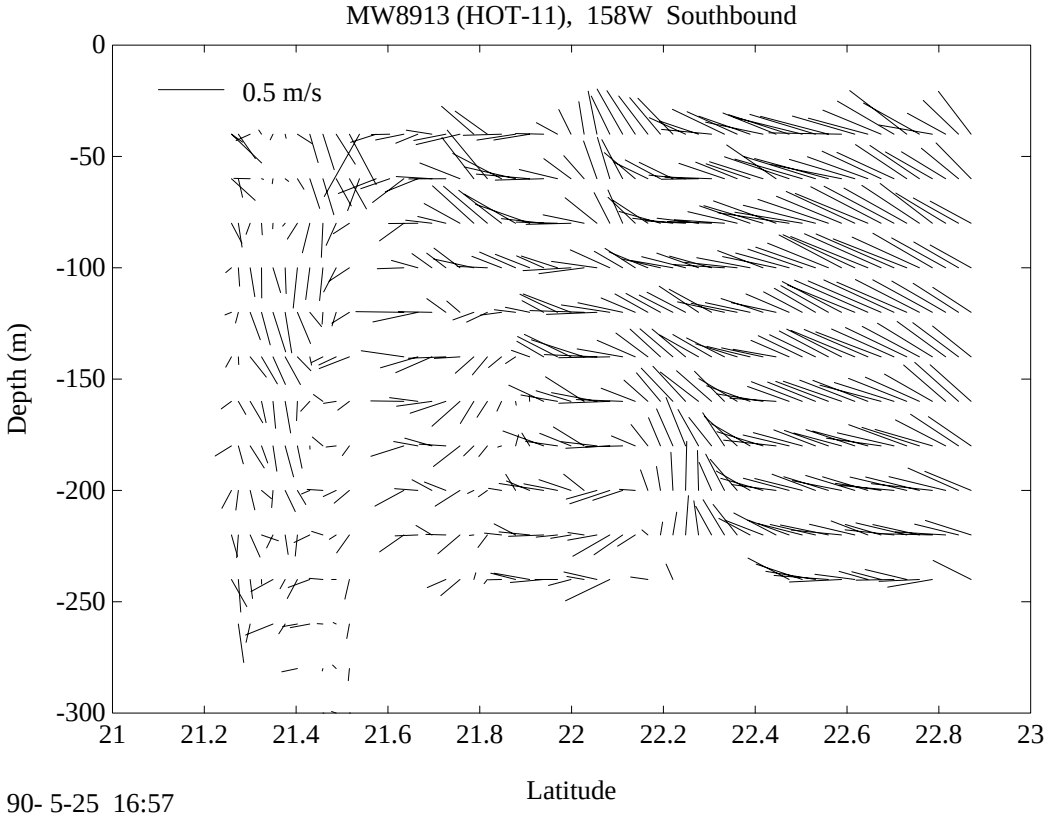
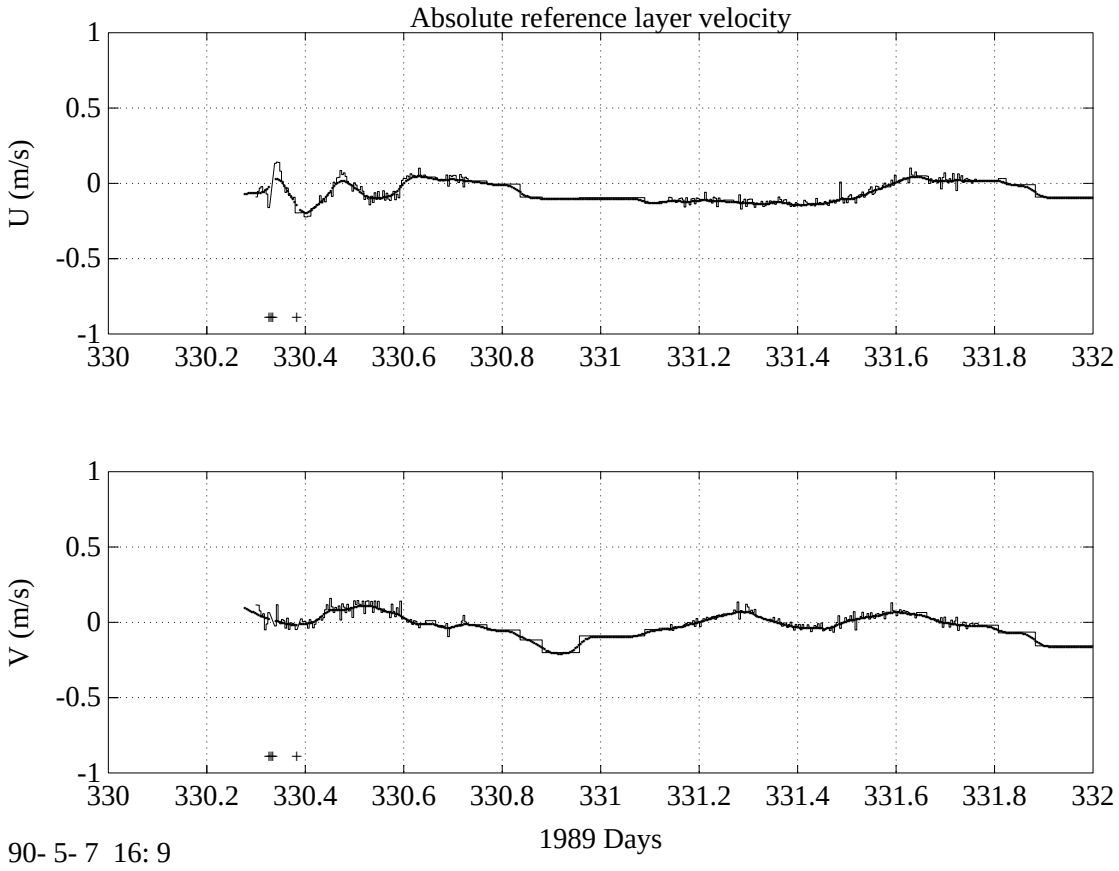
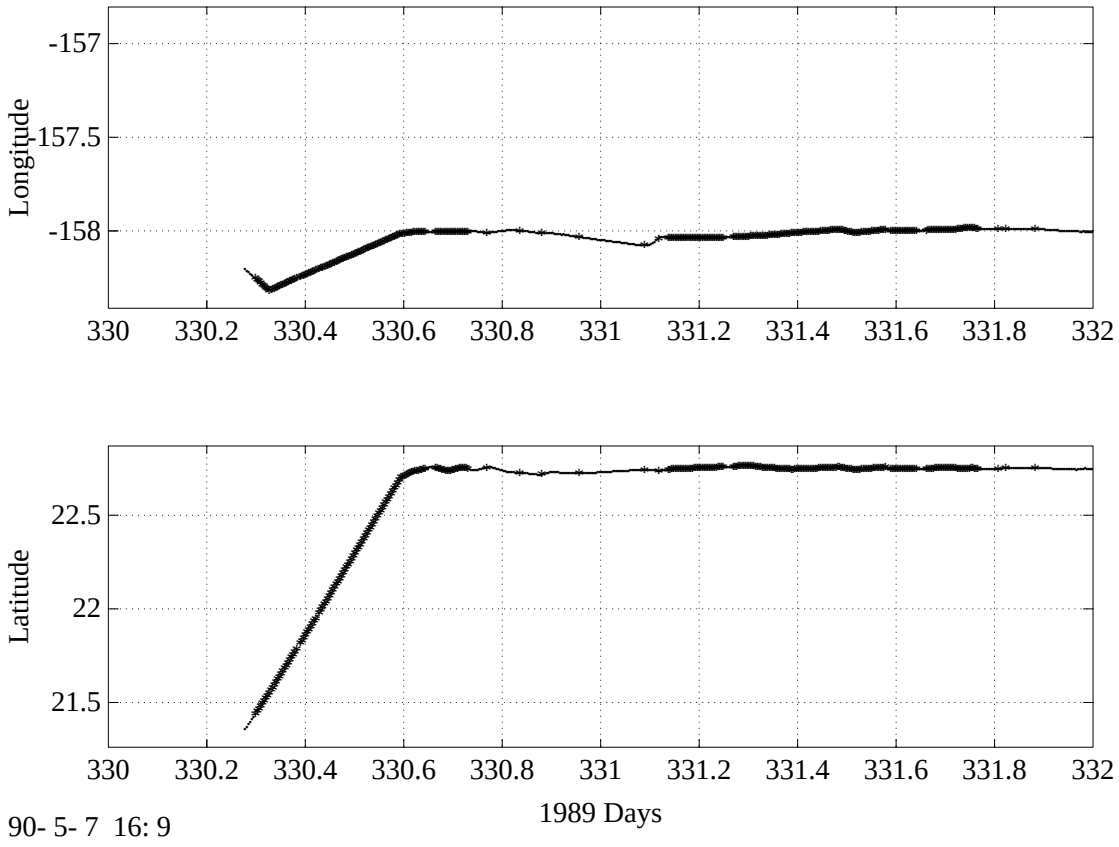


Figure VII.E.6





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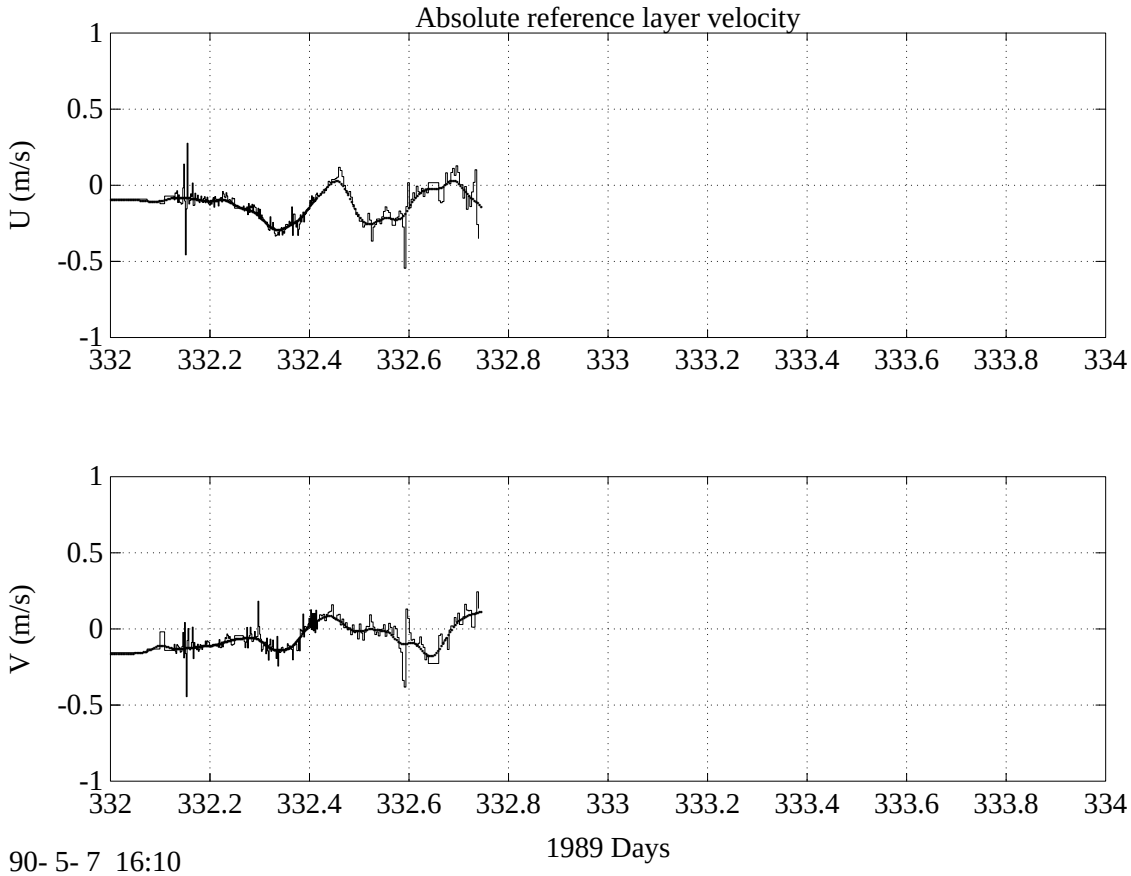

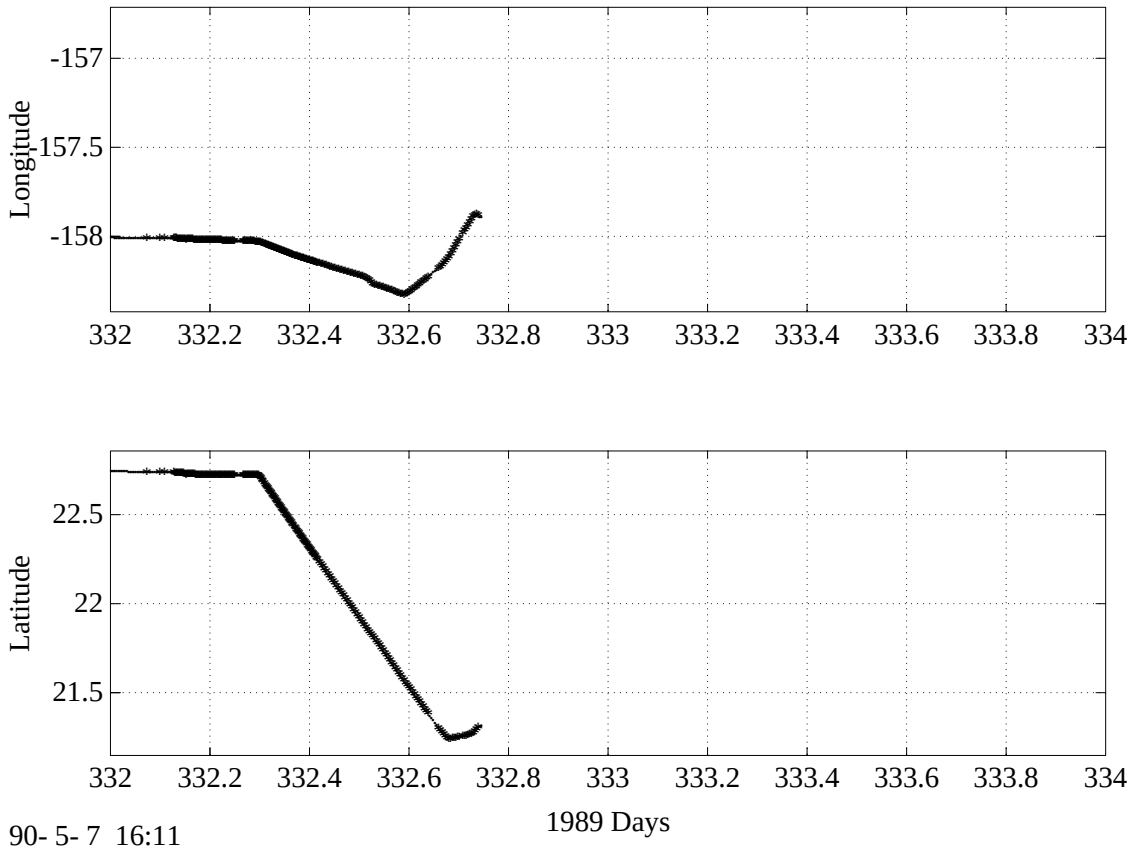

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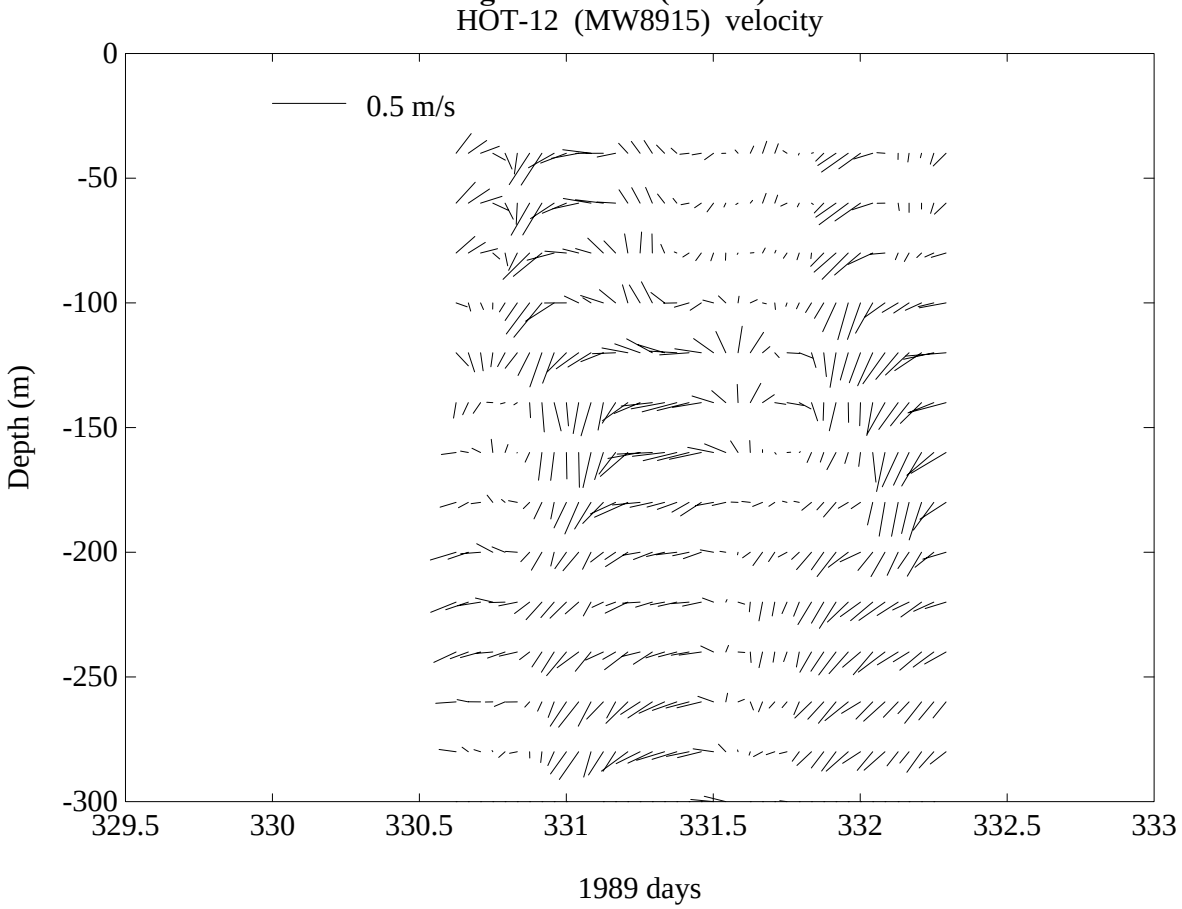

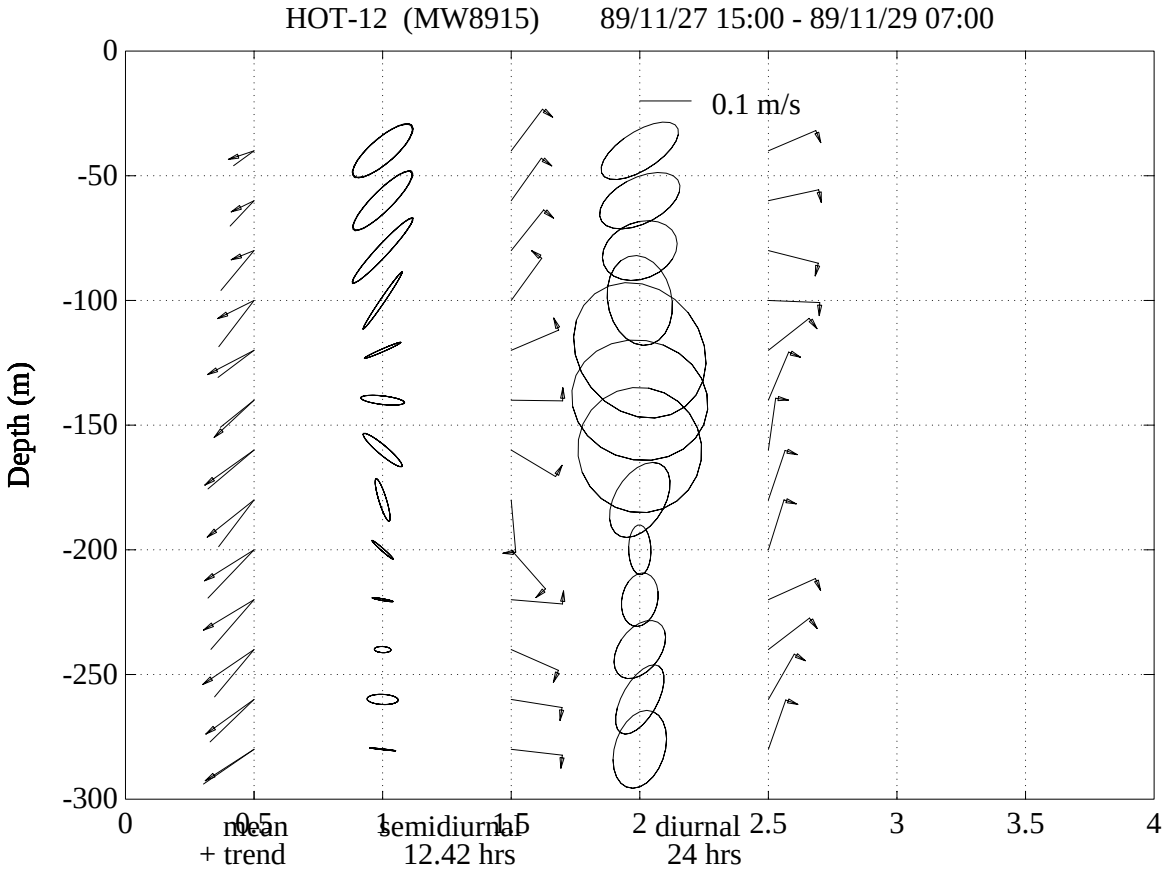

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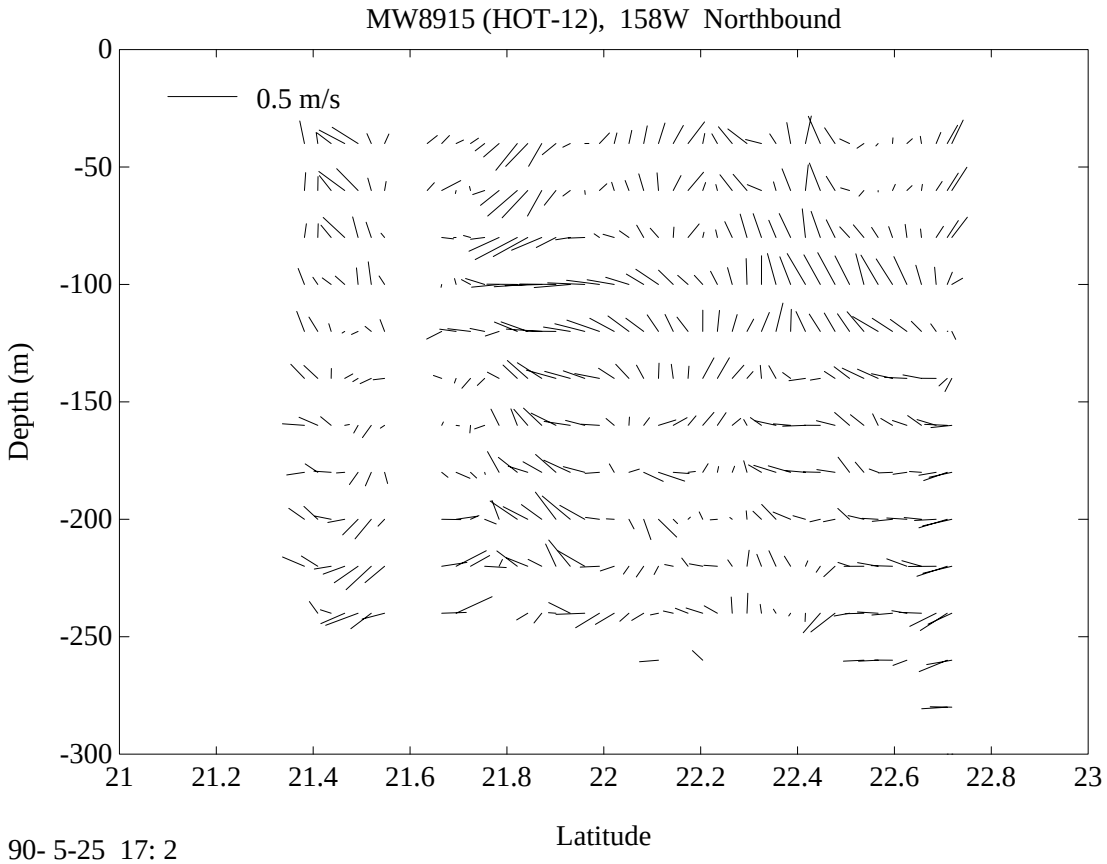

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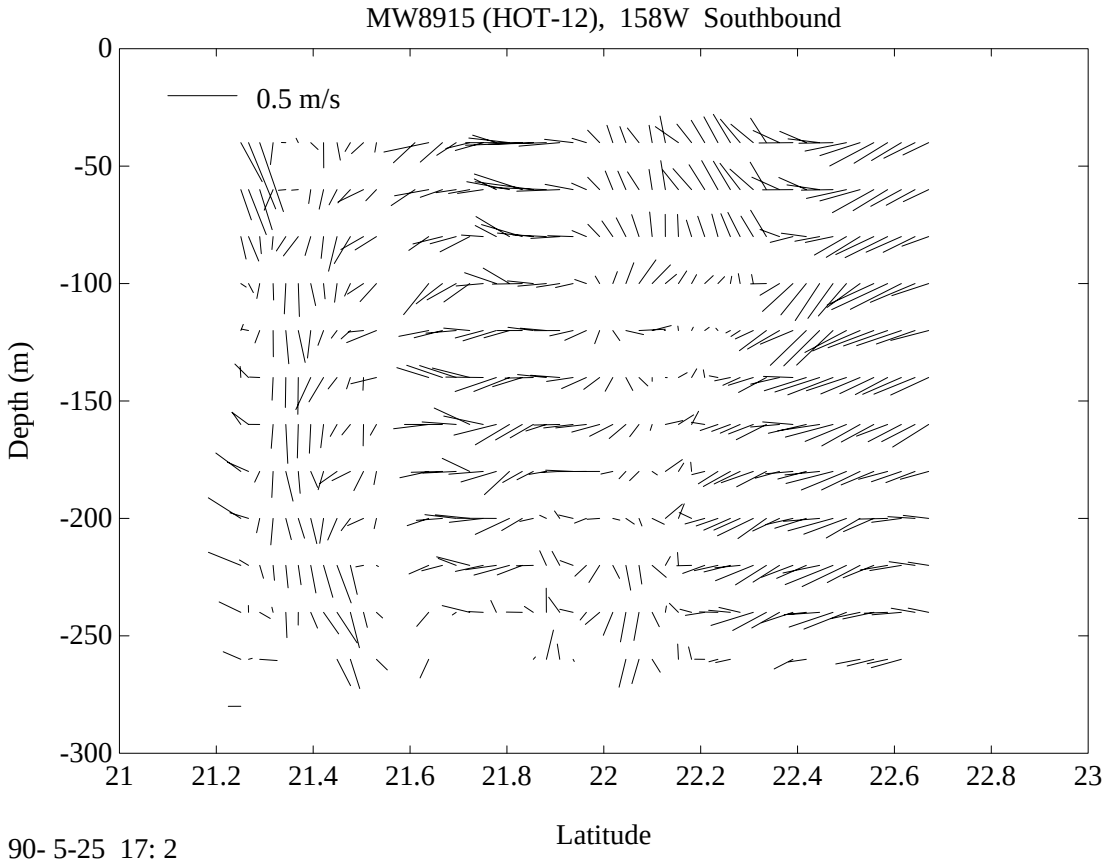
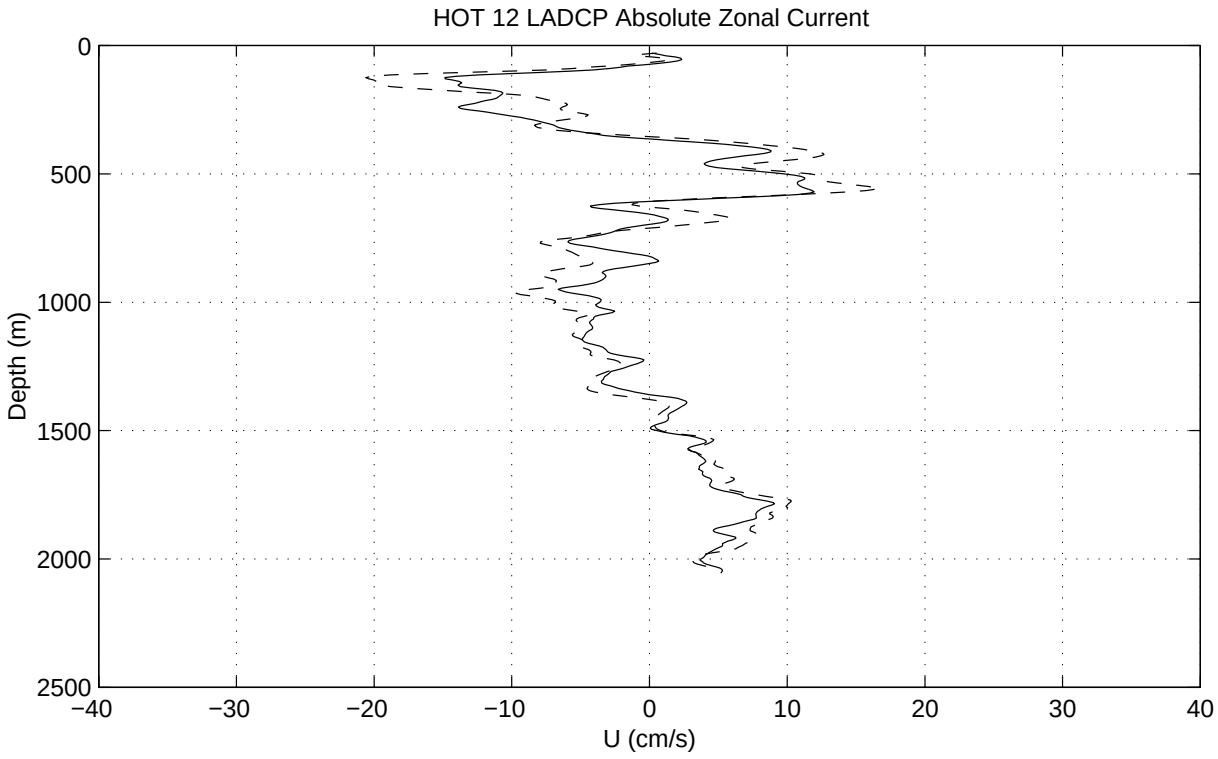
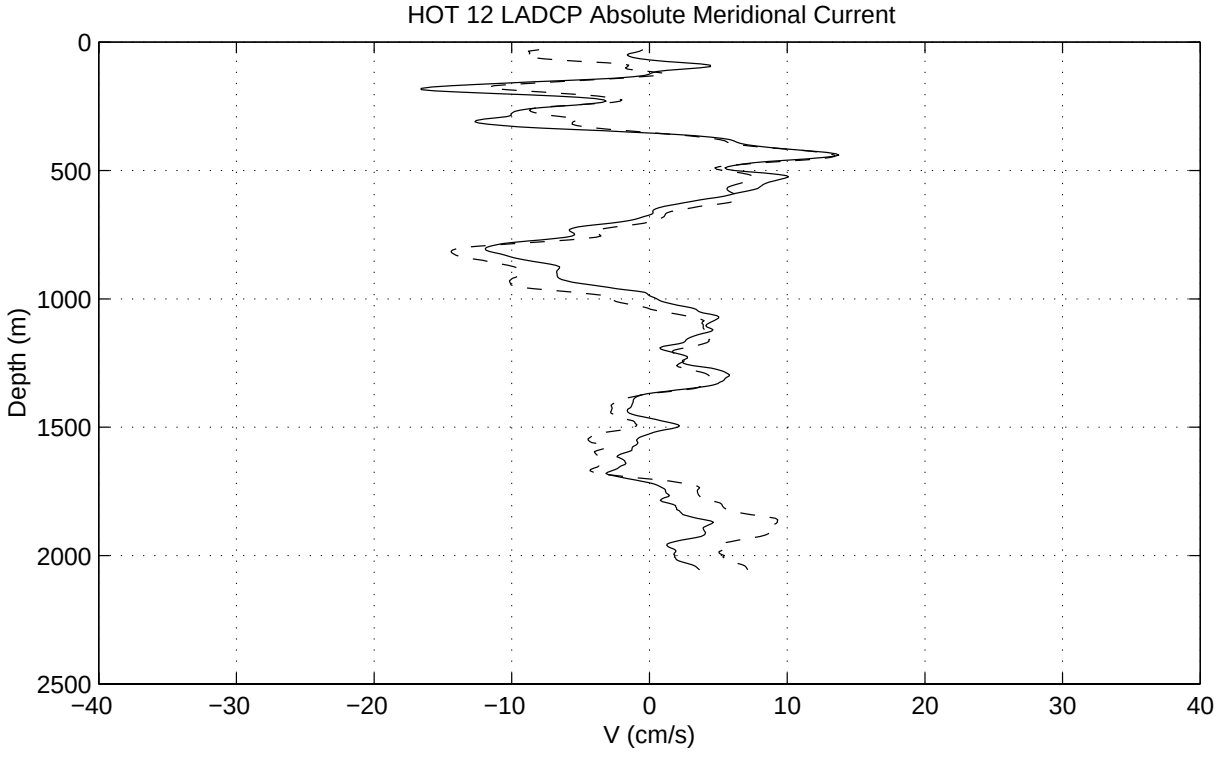


90- 5-25 17: 2

Figure VII.E.7





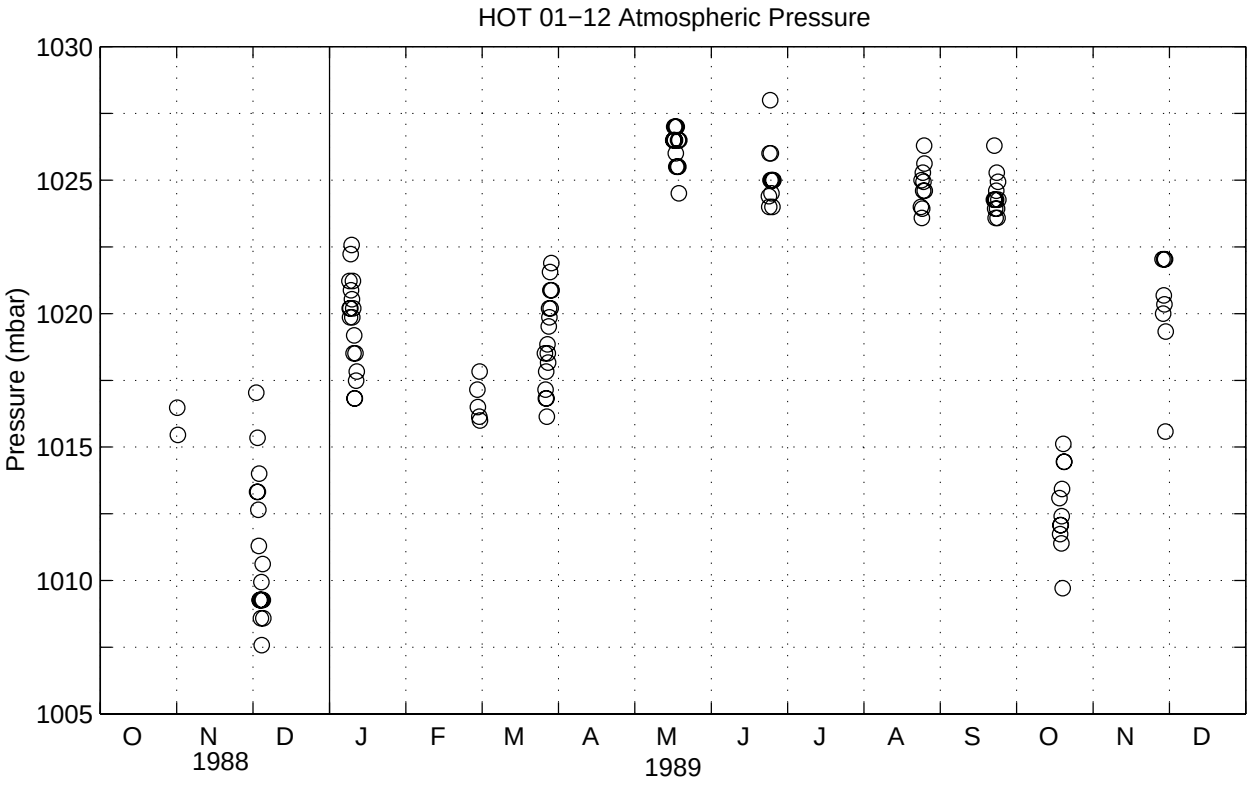
VII.F. Meteorology

Figure VII.F.1: Atmospheric pressure and sea surface temperature (SST) from 4-hourly observations made at station ALOHA.

Figure VII.F.2: As in VII.F.1, except for air temperature and wet-bulb temperature.

Figure VII.F.3: Meteorological data from NDBC Buoy 51001: a) SST, b) wave height, c) wind speed.

Figure VII.F.1



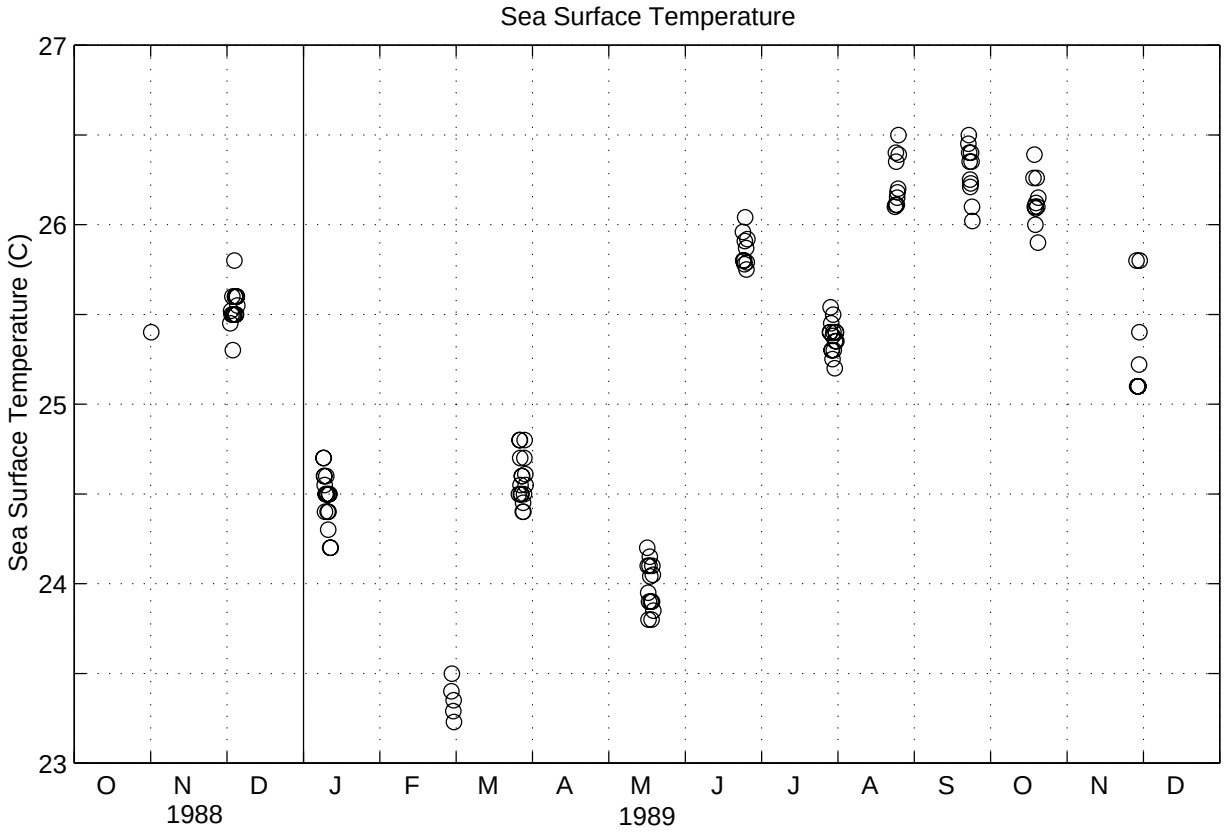
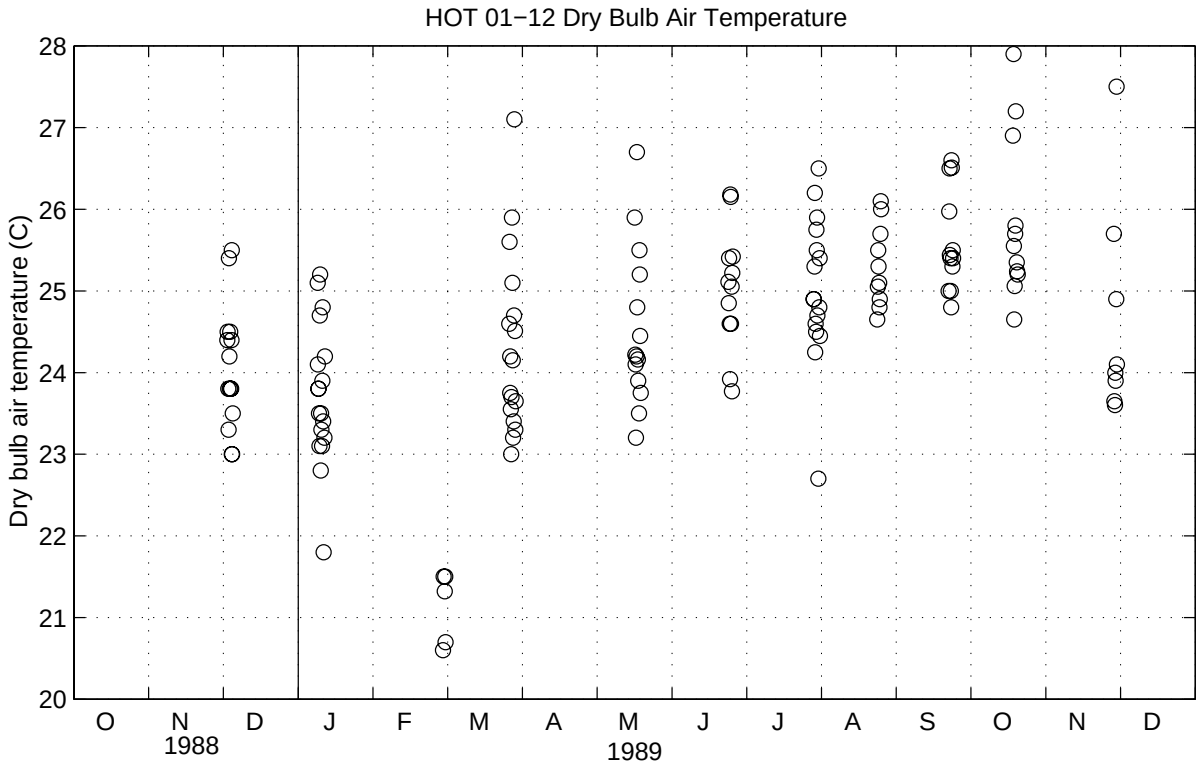


Figure VII.F.2



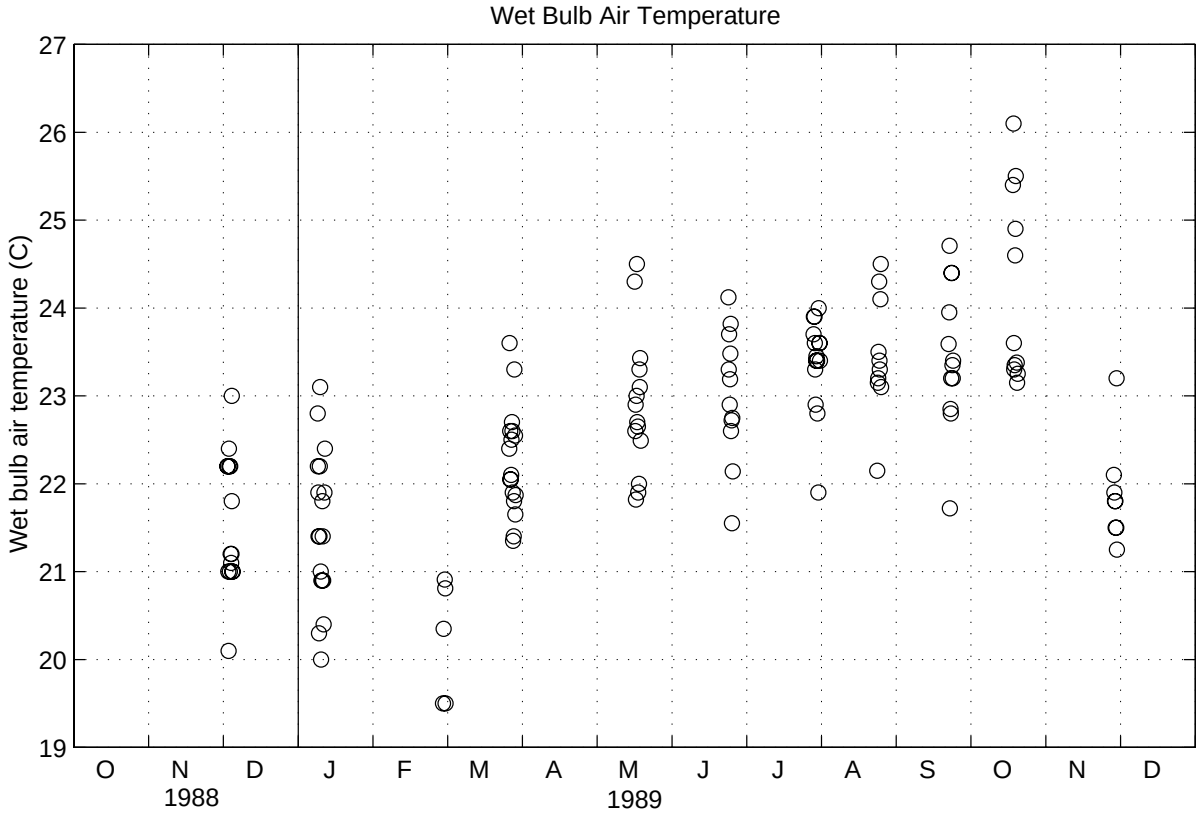
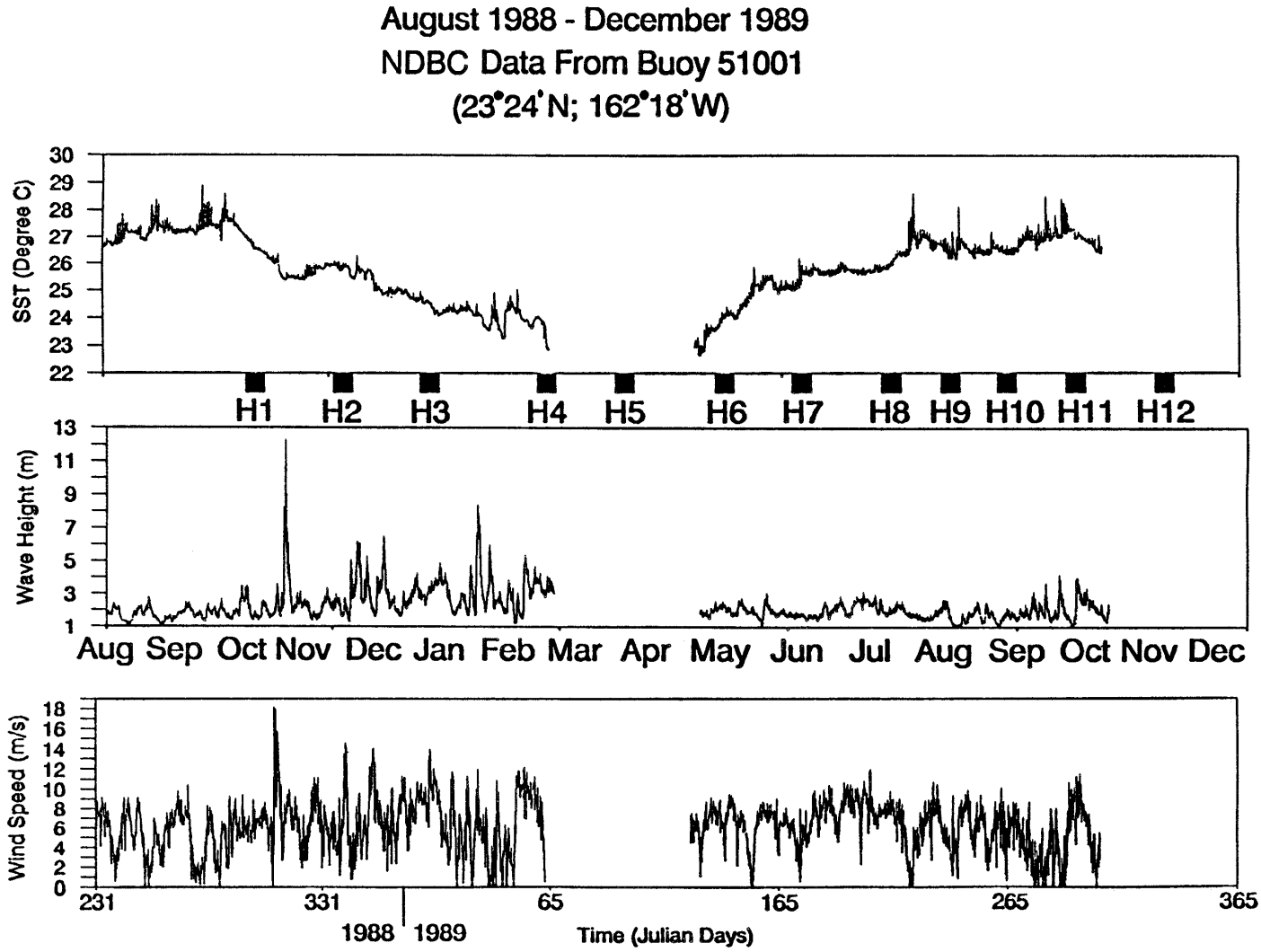


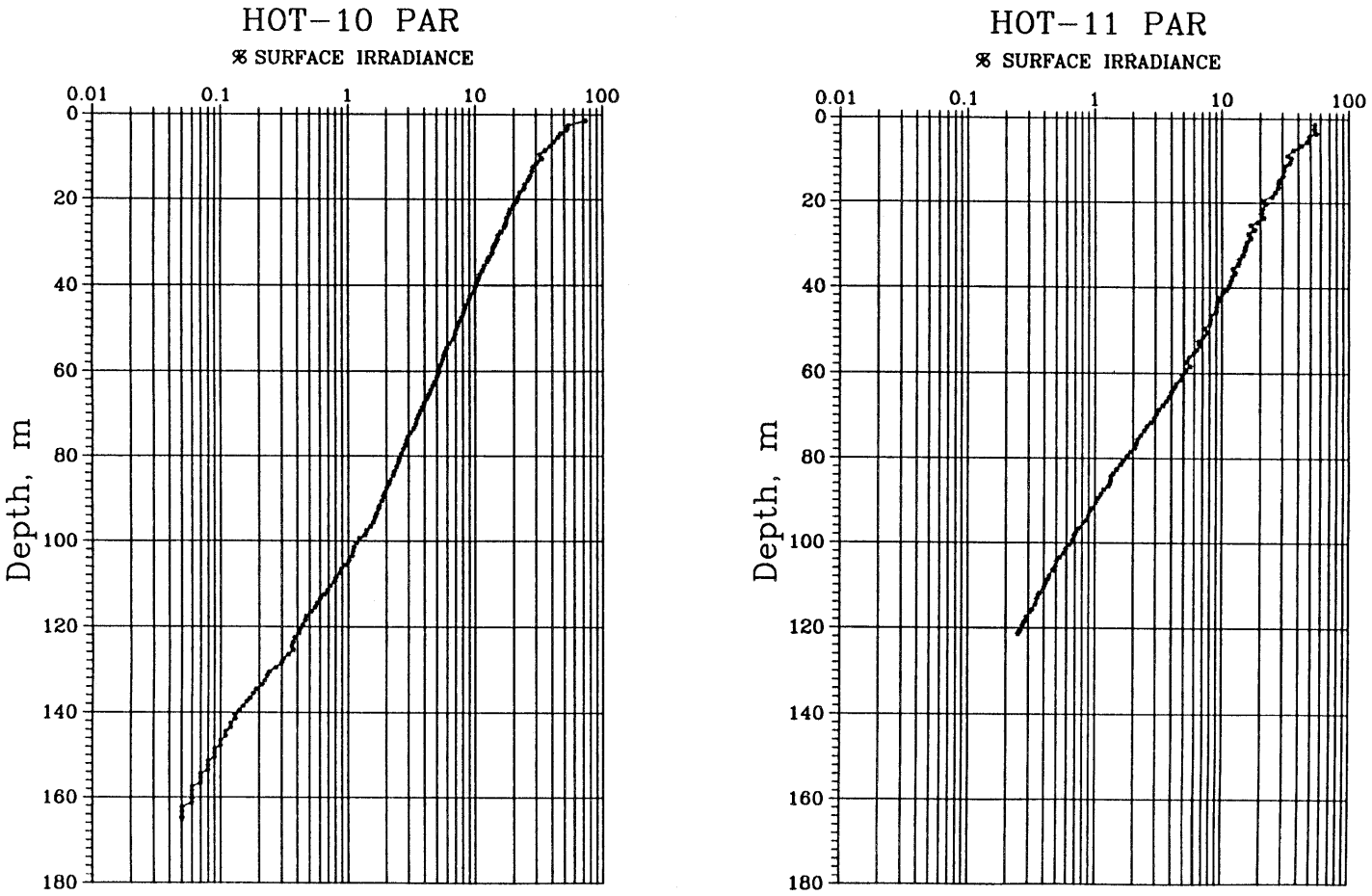
Figure VII.F.3



VII.G. Light

Figure VII.G.1: Percent of surface irradiance versus depth. Data were obtained using optical profiler at mid-day on both HOT-11 and HOT-12.

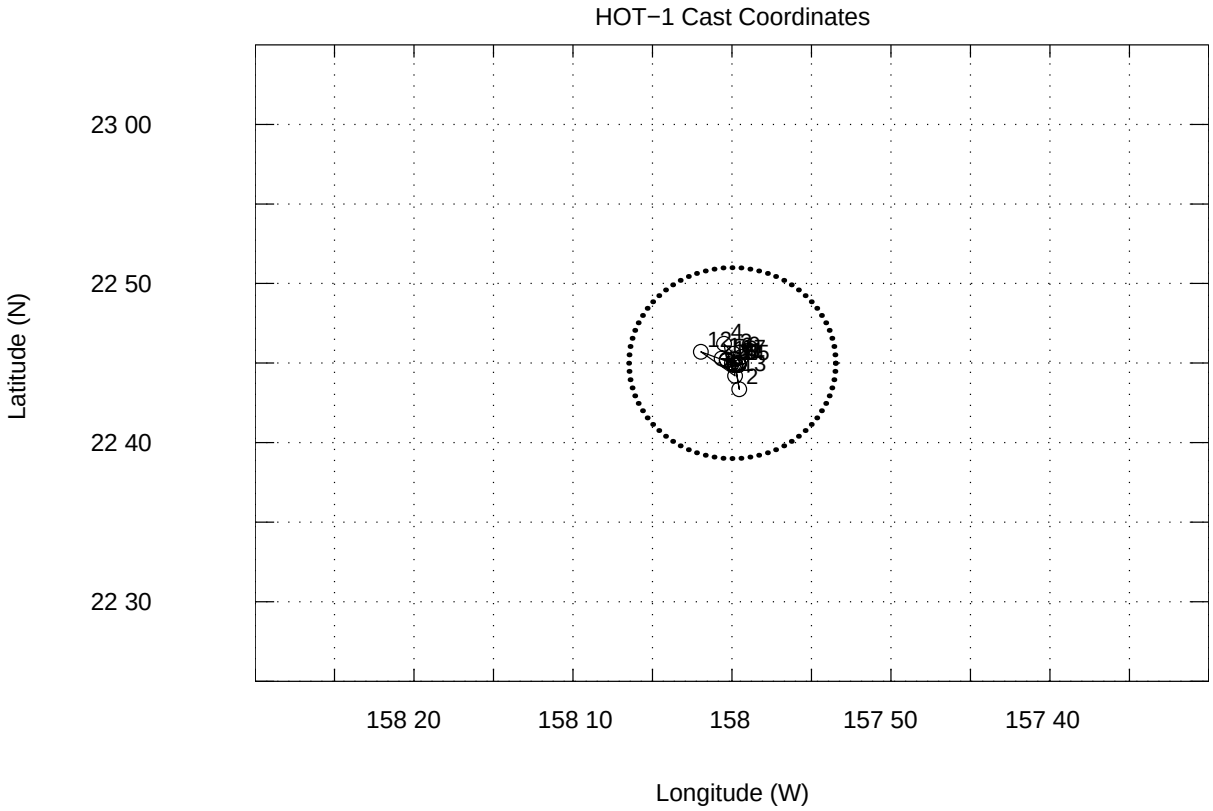
Figure VII.G.1



VII.H. Station locations and sediment-trap tracks

Figures VII.H.1–12: Station positions for each cruise. The dotted circle denotes the nominal 10-km radius HOT Station.

Figure VII.H.1(Top), VII.H.2(Bottom)



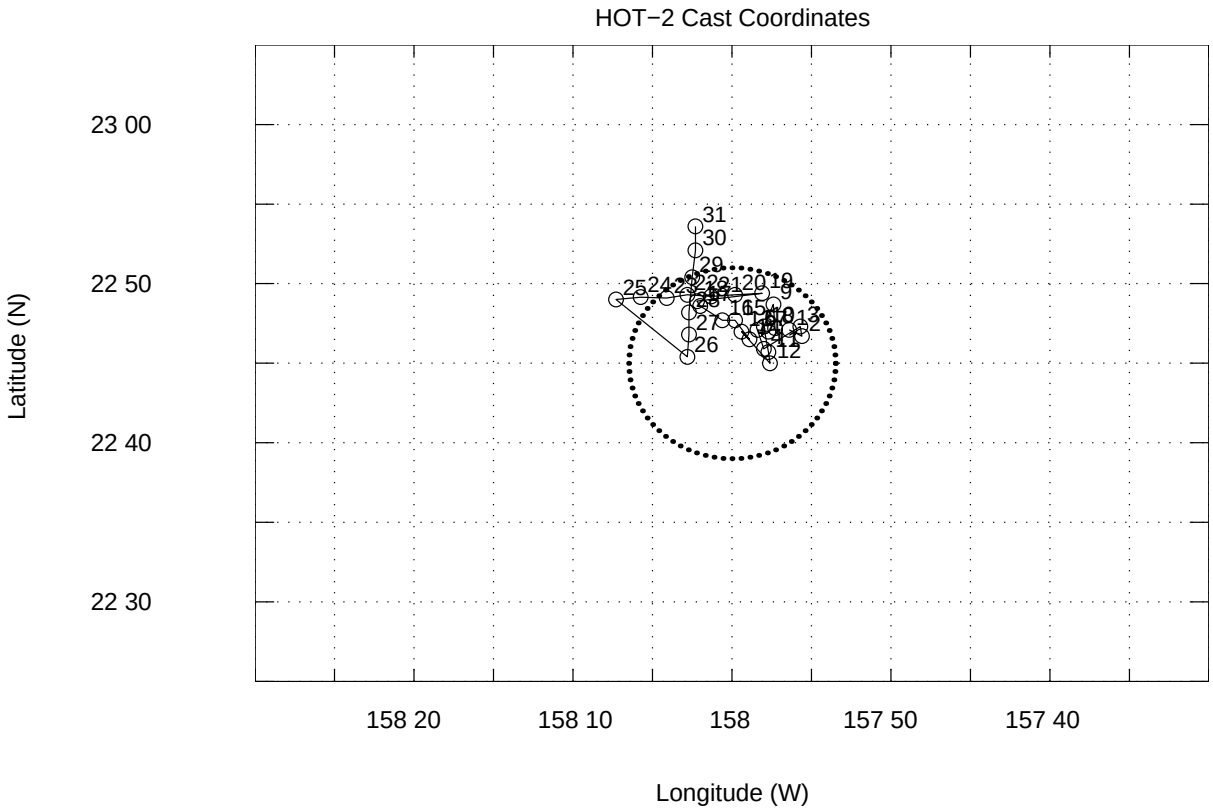
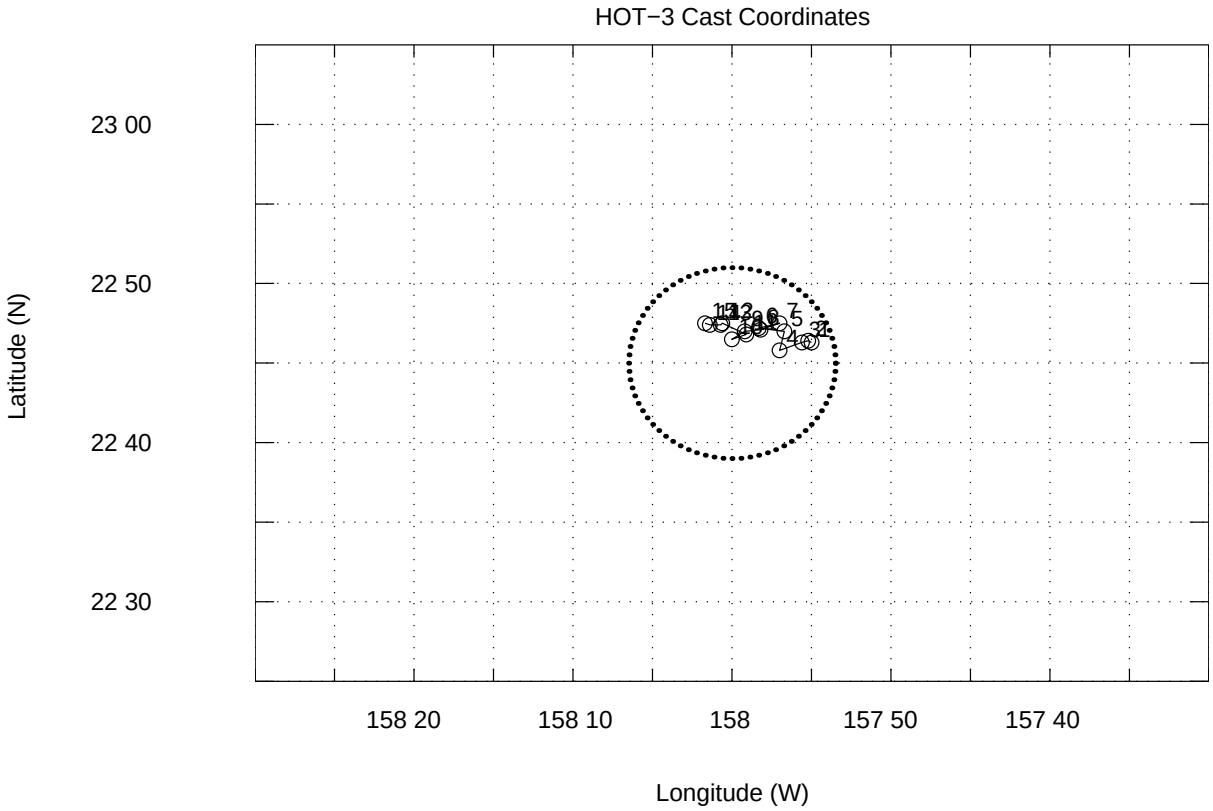


Figure VII.H.3(Top), VII.H.4(Bottom)



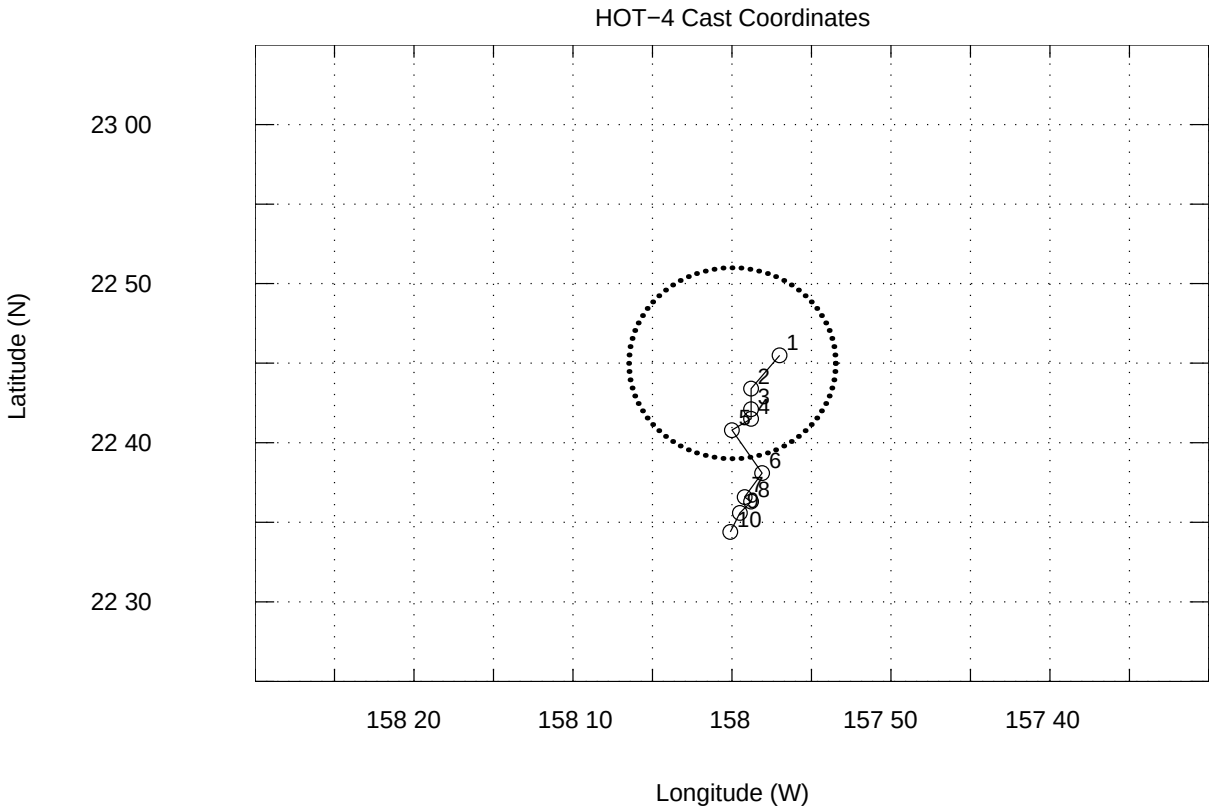
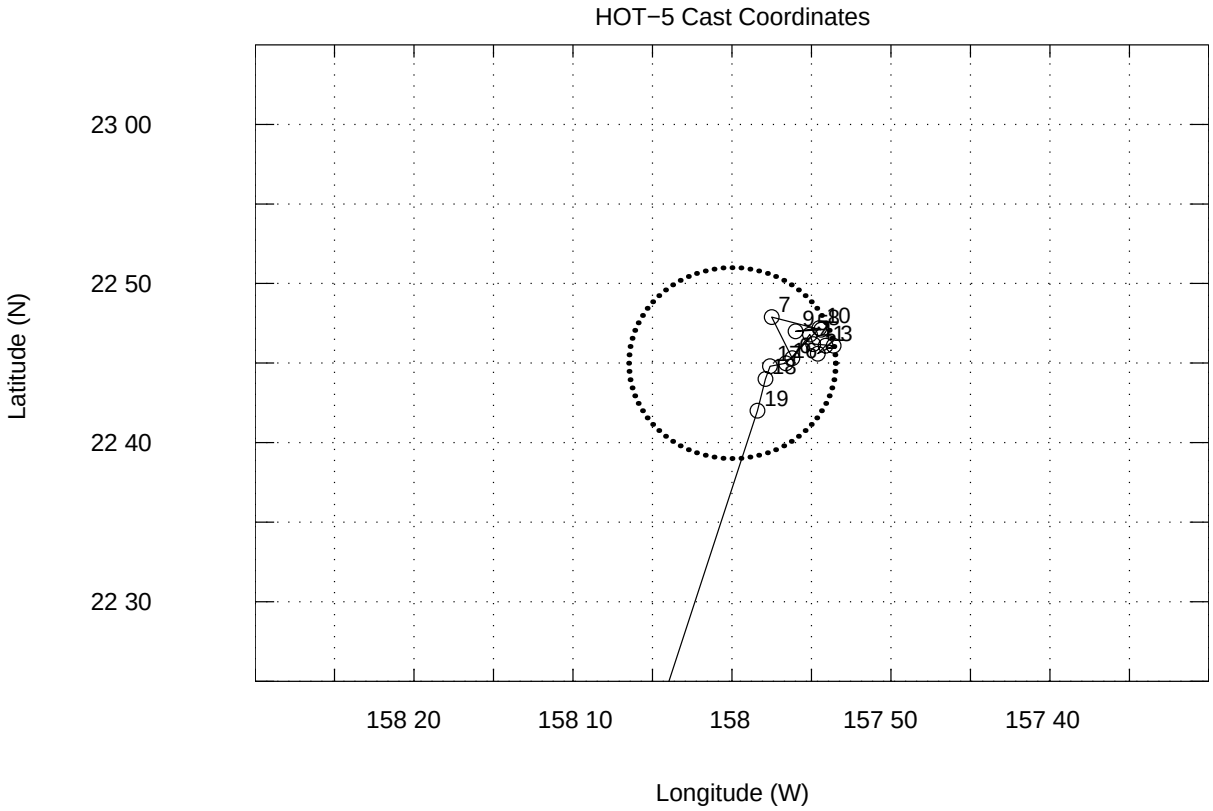


Figure VII.H.5(Top), VII.H.6(Bottom)



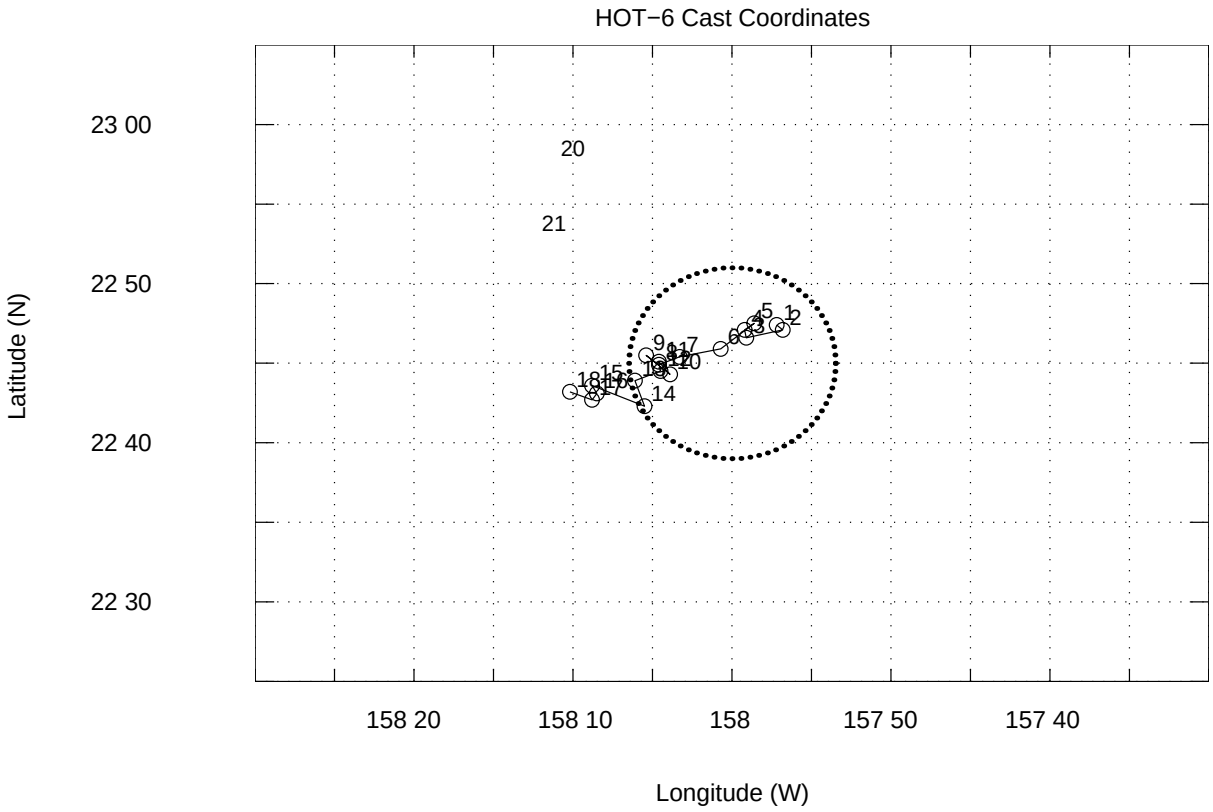
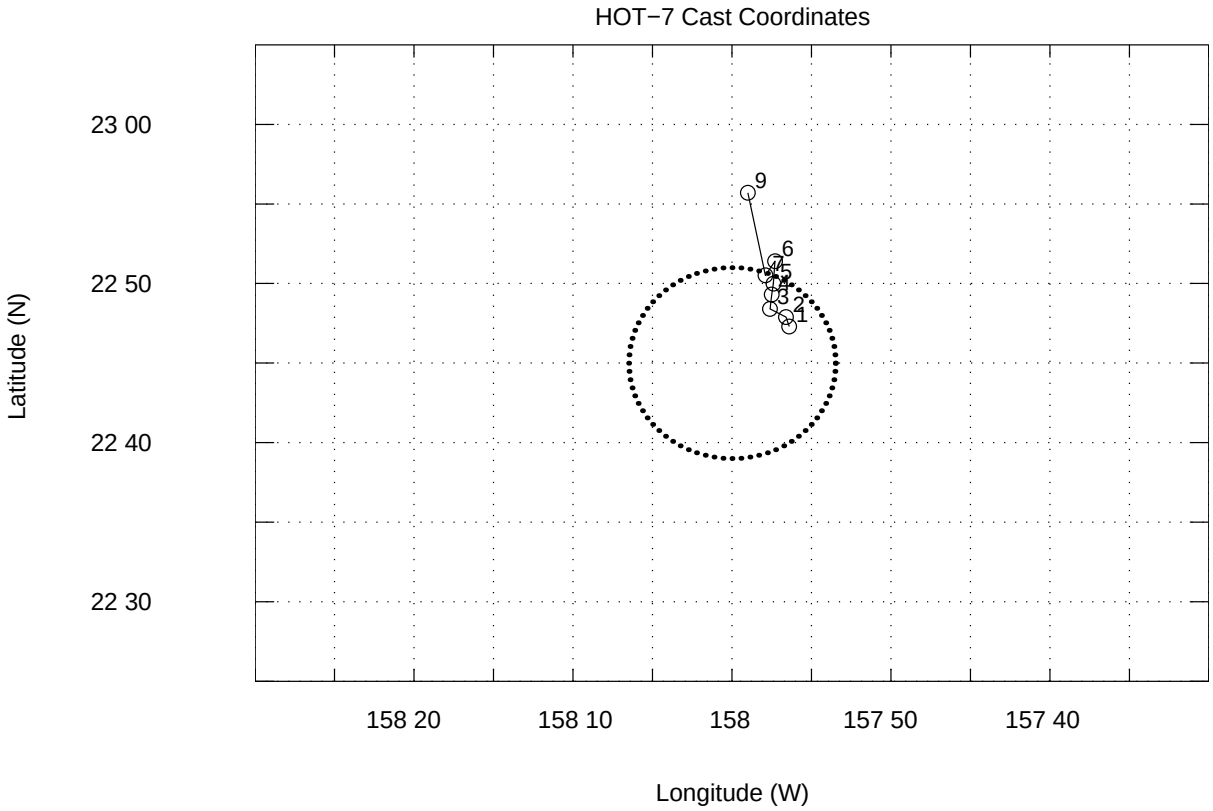


Figure VII.H.7(Top), VII.H.8(Bottom)



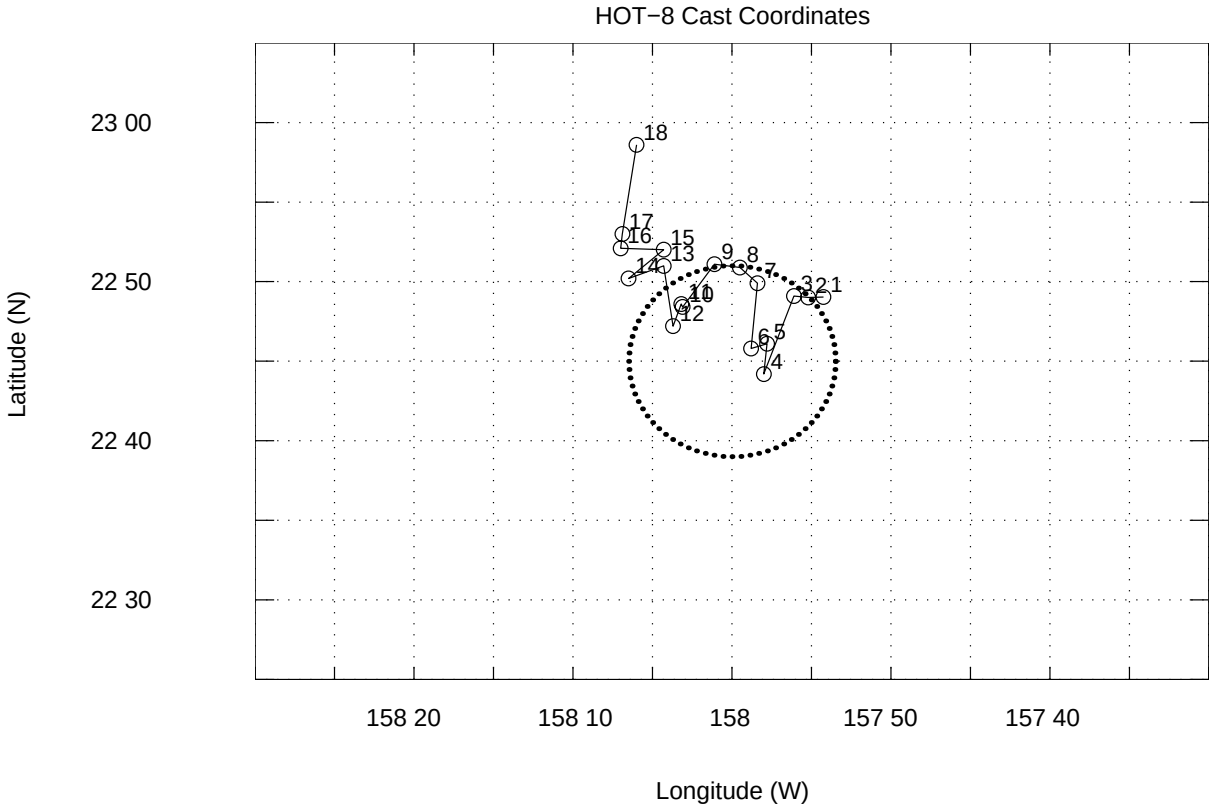
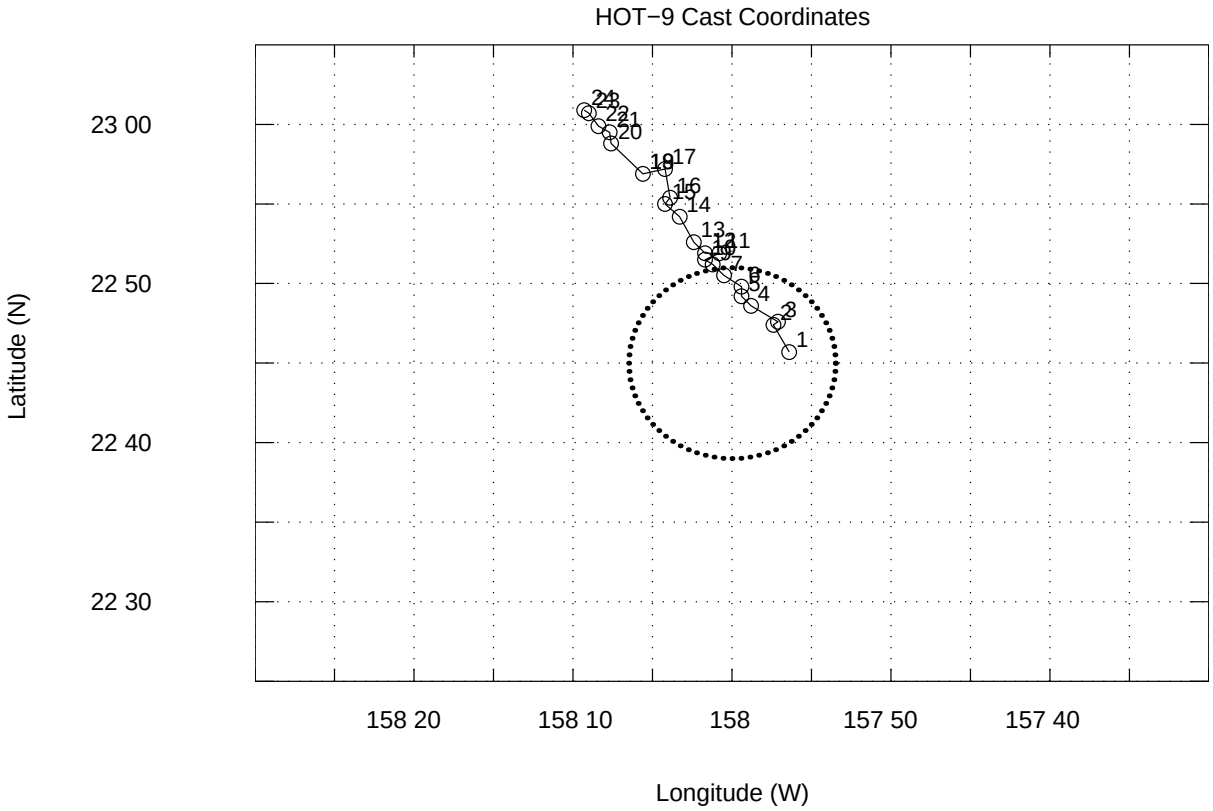


Figure VII.H.9(Top), VII.H.10(Bottom)



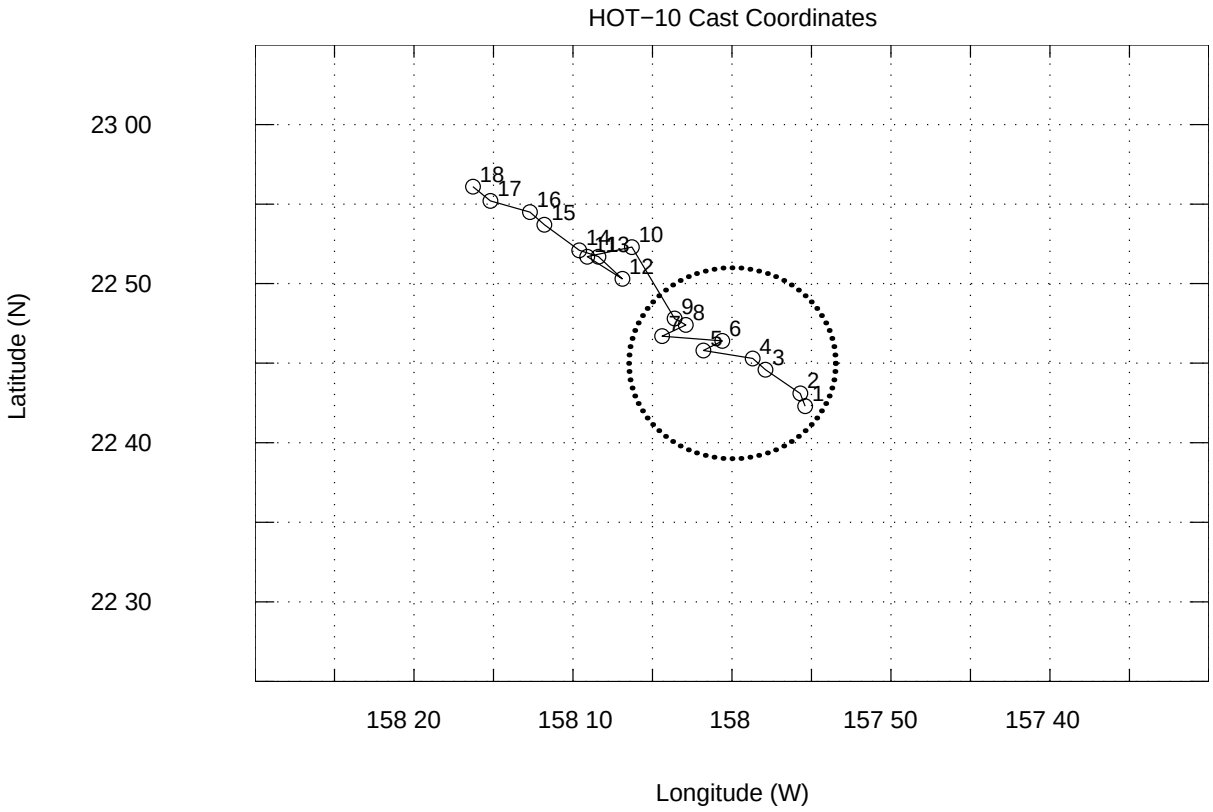
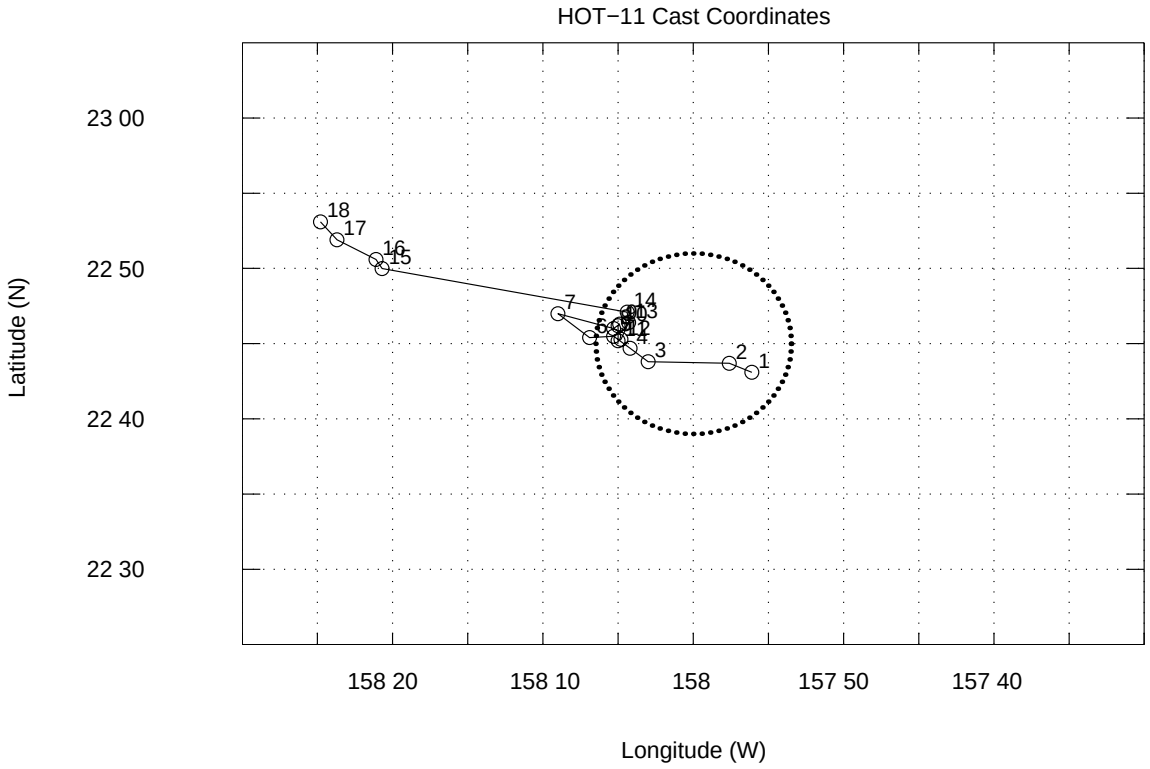
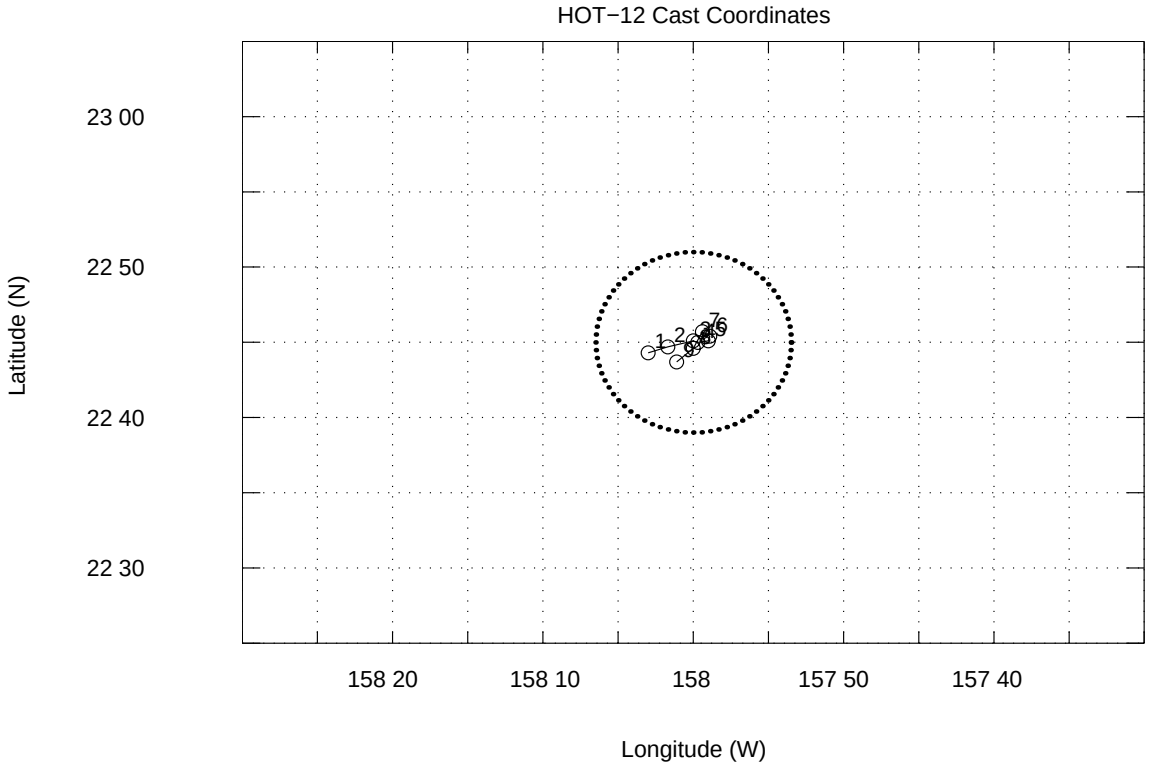


Figure VII.H.11(Top), VII.H.12(Bottom)





VIII. Data Availability and Distribution

Data collected in the HOT program under NSF funding are made available to the oceanographic community as soon as they have been processed. There are two ways to obtain these data. The first is through NODC in the normal manner. The second way is self-service: the data reside in a data base on a workstation at the University of Hawaii, and may be accessed using the world-wide Internet system using anonymous ftp.

In order to maximize ease of access, the data are in ASCII files. File names are chosen so that they may be copied to DOS machines without ambiguity. (DOS users should be aware that Unix is case-sensitive, and Unix extensions may be longer than 3 characters.)

The data are in a subdirectory called /pub/hot. More information about the data base is given in several files called `Readme.*` at this level. The file `Readme.first` gives general information on the data base; we encourage users to read it first.

The following is an example of how to use ftp to obtain HOT data. The user's command are denoted by `underlined` text, while the computer's responses are denoted by `regular` text. The workstation's Internet address is manaloa.soest.hawaii.edu, or `128.171.151.9` `(either address should work).`

```
prompt> ftp 128.171.151.9

Name (.....) : anonymous

Password: OK

ftp> cd /pub/hot

ftp> ls
```

A directory of files and subdirectories will appear here.

```
ftp> get Readme.first

ftp> quit
```