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WARM CORE RING CRUISE #1

R/V ENDEAVOR CRUISE NO. 74

by

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TECHNICAL REPORT

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R/V ENDEAVOR Cruise No. 74

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WARM CORE RINGS CRUISE SUMMARY ENDEAVOR 74

1. CRUISE NARRATIVE

At 1300 hours on 12 September 1981 (year day 255) the research vessel ENDEAVOR departed Woods Hole on a 22 day cruise to study the physical, chemical and biological structure of warm core ring 81-D. The cruise was the first of 5 ENDEAVOR cruises planned as part of the NSF/NASA-sponsored Warm Core Ring study. The R/V ATLANTIS II and NOAA ship ALBATROSS IV also took part in the field study.

The mission of the R/V ENDEAVOR was to rapidly survey the warm ring twice by obtaining underway measurements of sea surface temperature, salinity and chlorophyll concentrations, vertical profiles of near-surface currents and hourly expendable bathythermographs (XBT's). In addition, three sections were to be made through the ring with two casts/ station: Cast 1, a deep (to the bottom) Conductivity, Temperature, Depth, Oxygen (CTD-02) cast with 24 water samples collected while retrieving the CTD and Cast 2, a shallow (120 m) cast using a Bio-Optical Profiling System (BOPS) with 11 water samples per lowering. At a number of stations in this survey vertical profiles of ocean turbulence were to be made with a device called CAMEL. Drogued drifters were also to be launched in the center and in the high velocity region of the ring. Two drifters were aboard: one contained an active radar transponder, and the other contained equipment to record its LORAN position and telemeter this information to the ENDEAVOR when within VHF radio range. Two multi-ship experiments were planned as well; one in the ring center and the other in the frontal

boundary region. Additionally, upstream and downstream CTD sections to the east and west of the ring were planned. Arrangements were also made to share data with the National Marine Fisheries Service to aid the scientific party aboard the ALBATROSS IV in their study of the interaction of the ring with colder shelf waters. An overflight of the ring by the NASA Wallops Island P3 aircraft was planned during the second multi-ship exercise.

Overall, most of the work planned for the R/V ENDEAVOR was accomplished. With the aid of satellite infra-red images the ring was located and the first XBT survey was made in the shape of a five-pointed star (see Figure II-1). Fifty-four XBT's were deployed in this star pattern. The doppler current profiling system (APOC) worked well and, except for occasional problems with the pump in the uncontaminated seawater system, the several surface measurement programs were successful.

Following the first XBT star survey, 26 CTD and BOPS stations and 18 Camel profiles (see Figure III-1) were taken in an asterisk pattern centered on the ring. The first multi-ship experiment had to be postponed at this time, and the second XBT star pattern was made to determine whether the ring was being temporarily engulfed by the Gulf Stream and was no longer a separate entity in the Slope Water (see Figure IV-1). During this second XBT star pattern, the weather began to deteriorate as one of several low pressure systems encountered during the cruise passed overhead. The strong winds reduced the ship's speed to 6 kts and at times made it necessary to alter course. Therefore the second star pattern lacks the symmetry of its predecessor. The high sea states made it neces-

sary to switch from the uncontaminated sea water pump to the ship's sanitary sea water supply for underway sampling of salinity and chlorophyll. It is unlikely that this change adversely affected these measurements.

On 26 September the R/V ENDEAVOR and R/V ATLANTIS II rendezvoused at the ring center. The LORAN and radar drifters were launched from ENDEAVOR, tethered together, and drogued at 100 m depth using a windowshade drogue. A pattern of vertical CTD/02 observations (Tow-yos) were begun during which the CTD was continuously raised and lowered between the surface and 325 m while the ship was underway at 2 kts. The ship steamed in an X pattern relative to the drogued drifters and thus the position of these measurements are relative to the motion of the water at the drogue. Each leg of this CTD tow-yo was 9 km long and crossed at nearly right angles near the drifters (see Figure V-1). BOPS stations were made at the center and ends of each X section. Two CAMEL profiles were also obtained at the ring center during this period.

The following morning the two ships began the second multi-ship study near the northern edge of the ring in a region of high surface currents and where interleaving of ring and Slope water masses occurs. The same procedures were repeated as on the previous day except tow-yos were also made between the ends of the pattern giving it a bowtie appearance (see Figure V-2). These two additional sections were oriented nearly north/south. The drift of the drogue was toward the ESE at about .5 m/sec. The CAMEL was successfully tow-yoed on one of the legs and four turbulence profiles were obtained. Of particular interest during this study was the structure of water mass intrusions at the ring boundary. A cold

intrusion of 16°C water between 65 and 150 m depth, overlay a warm one of 18°C. The BOPS casts sampled the cold layer but did not pass through the warm one. All CTD tow-yo's were to about 325 m. As before, the LORAN drifter recorded data during its southeastward drift though no data were telemetered to the ship.

Upon completion of the second MS experiment the drifters were recovered and the ENDEAVOR steamed southwest to begin a CTD/02 section west of the ring. This section was made along 66° West starting in the Sargasso Sea and ending at the continental shelf break and consisted of 10 stations to the bottom. Following this section ENDEAVOR steamed for Woods Hole arriving at 0630 local time on 2 October.

The deletion of a planned CTD section east of the ring was necessitated by the greater than planned distance to the ring site (63-64°W instead of 68-70°W), the large size of ring 81D which increased the area in our survey, and by bad weather which resulted in 12 hours lost while hove to and which reduced speed and interfered with work on deck at other times. The NASA P-3 overflight was scrubbed due to problems with the laser and power supplies. We hope to reschedule one or more flights to coincide with one of the early cruises in 1982.

Four different projects were aboard ENDEAVOR during the cruise: CTD/XBT/APOC doppler from WHOI, BOPS from Scripps, Camel from University of British Columbia, and LORAN drifter/communications from RSMAS, University of Miami. A summary of each of these and other activities follows.

Water samples were collected at 24 depths and analyzed for salinity and dissolved oxygen concentrations to obtain calibration data for the

sensors used in the NBIS - CTD/02 instrument. Intercomparisons between the water sample and sensor data showed that the salinities calculated from the CTD data drifted approximately linearly during the cruise. A correction, based on the station number, was applied to the conductivity data [conductivity = $0.0161 + \text{raw conductivity} * (1 - 0.10044 \text{ E-}2 (0.903022 \text{ E-}5 * \text{Station \#}))$] to correct for this drift. The derived salinity differences are shown in Figure VI-1 together with the mean and standard deviation values for each station.

The Beckman oxygen probe used in the CTD is considerably less stable than the salinity sensor and, in general, such oxygen measurements are less well understood. Comparison with the water sample oxygen measurements indicate that the best agreement with the probe data is attained when the slope, temperature and pressure terms in the calibration algorithm are adjusted on a station to station basis in order to provide a best fit of the sensor-derived curve to the water sample values. The sensor data is thus used to interpolate between the water sample oxygen measurements.

2. XBT DATA SUMMARY

All 146 XBT's expended during the cruise were the T7 type with a maximum depth in excess of 750 m. The first 55 were digitally logged on a Sea Data cassette tape using a Bathysystems recorder loaned to us by T. Rossby of URI. Due to an improperly mounted cassette tape no digital data were logged for the remaining XBT's. During the cruise selected isotherm depths were read from the analog chart recording and sent to all

warm ring participants via Telemail. These data proved to be useful in the timely description of the thermal structure of the warm core ring. Table 1 summarizes the times and positions of the XBT's and includes comments describing the activities at the time they were deployed.

3. CTD DATA SUMMARY

A total of 41 CTD-02 stations were occupied during the cruise. Stations 1 and 2 were test stations in the Slope Water to the west of the ring. Stations 3-28 were part of the asterisk pattern survey at the site of the ring. Station 29 was taken at the center of the ring prior to the first multi-ship experiment and stations 30 and 31 were tow-yo's at the ring center and in the northern high velocity region, respectively. The remaining 10 stations comprised a section to the west of the ring beginning in the Sargasso Sea and ending at the continental shelf. The stations are summarized in Table 2. These consecutive station numbers were also used to identify casts made by other instruments such as the BOPS and CAMEL.

4. UNDERWAY CURRENT PROFILING AND SURFACE SALINITY DATA

A continuous record of upper ocean currents was obtained throughout the cruise using a WHOI-built data logger and an Ametek-Straza acoustic doppler current meter mounted in the transducer well. The maximum depth of this 300 khz system is approximately 130 m. Data were digitally recorded on forty-five 1200' length nine track tapes, together with ship's speed and heading, LORAN and SATNAV positions, and transducer temperature.

The latter, when combined with surface salinities, are used for underway mapping of surface (or actually hull depth, 5 m) temperature and salinity changes along the cruise track. The salinities were measured with a Plessey thermo-salinograph which recorded on a strip chart. Sample water for this system was pumped through a separate intake at the seawater chest and was shared with the underway chlorophyll measurements described below. During rough weather the self-priming pump was unable to maintain water pressure due to excessive air drawn in at the intake. The ship's sanitary seawater supply was used after the first XBT star survey. Hourly water samples were drawn while underway and the salinometer record annotated for later calibration of the conductivity cell.

5. WATER SAMPLING AND THERMOMETRY

A General Oceanics Rosette equipped with twenty-four 1.2 liter Niskin bottles was used to collect water samples at selected depths at each CTD station. Salinities were measured with a Guildline 8400 Autosol and calibrated with IAPSO standard water. Salts are accurate to $\pm .003$ practical salinity units (psu). Oxygen samples were analyzed using a modified Winkler method and amperometric end point determination. Reproducibility using this method is $\pm .01$ ml/l and the results are believed accurate to better than 2 percent. Nutrient samples were collected in aged, acid rinsed, high density polyethylene bottles and frozen within 1 hour of collection for later analysis for nitrate, nitrite, phosphate, and silica concentrations on an autoanalyzer at URI. Temperature and pressure were measured using two protected and one unprotected reversing thermometers

at three depths/station. Temperatures were read to $.001^{\circ}\text{C}$ and are considered accurate to $\pm 0.01^{\circ}\text{C}$. Pressures were calculated from paired protected/unprotected thermometers and are accurate to within 0.5 percent. The distance between the CTD package and the ocean bottom was measured with a "bottom finding" pinger, and at most stations the deepest sample was collected within 10 meters of the bottom.

6. BIO-OPTICAL MEASUREMENTS

Measurements were made in an effort to define the biological and optical characteristics of warm core ring 81-D. The ship measurements are expected to augment remote sensing investigations using the Nimbus 7 Coastal Zone Color Scanner (CZCS) images and an aircraft LIDAR system which, due to instrument problems, did not fly. Several measurements with a hand held Contrast Reduction Meter were made on suitably clear days. These measurements allow calculation of the transmittance of the atmosphere, which is crucial for CZCS calibration.

Along-track ship measurements were logged by a minicomputer system and stored on floppy disk every minute for the duration of the cruise. For several legs during the multi-ship experiments the sampling rate was increased to once per second. The data recorded include: fluorescence from four Turner Design fluorometers, ship's position, surface (5 m) temperature, total irradiance, and ultraviolet irradiance (200-400 nm). Each of the four fluorometers was keyed to different aspects german to phytoplankton study:

	excite,nm	emit,nm	reference
TD1 chlorophyll	450 broad	685	366
TD2 chl	450 narrow	685	366
TD3 phycerythin	530	580	ND+Wratten8
TD4 fucoxanthin	530	580	366

It had been planned to log along track salinity and selected meteorological measurements, but these systems were not operative.

A water sample was taken every hour from the ship's seawater system in order to make discrete chlorophyll measurements. These (~ 800) samples will allow calibration of the along track data. In addition several non-standard chlorophyll analysis procedures were made for intercomparison, including grinding and no-grinding techniques.

The bio-optical profiling system (BOPS) measures pressure and spectral irradiance at 12 wavelengths in the visible region and one wavelength (380 nm) in the ultraviolet. Also on the BOPS are temperature and conductivity probes, a transmissometer (660 nm), a fluorometer, and an 11 bottle rosette. A total of 46 casts were made to either a depth of 120 or 200 m. The downcast profile was recorded once per second, displayed on a Hewlett-Packard 9845 minicomputer, and used for deciding depths for discrete samples which were collected on the way up. Discrete chl were done on all samples including frequently the 150, 200, and 250 m bottles from the CTD Rosette. Salt samples were periodically taken for calibration of the BOPS conductivity probe. Profiles to 200 meters were made at CTD stations 1,3, and 5. Bottle casts alone were made at stations 6-16 and

18-27 due to leaks in the pressure case of the spectroradiometer. This was repaired so the profiles were again logged from stations 28-36. After another leak developed, bottle casts were made for Stations 37-41. At thirty-one of the stations, water samples from 10 and 50 m depth were filtered for P. Blackwelder who will study coccolithophore populations. At nineteen stations water samples were frozen of both filtered and unfiltered surface seawater. These were done at the request of NASA for use with their LASER/LIDAR studies.

7. OCEAN TURBULENCE STUDIES

CAMEL II is a free-falling ocean microstructure profiler. It measures two components of vertical shear on scales from 0.01-2 meters, temperature, and vertical temperature gradient on scales larger than 0.01 meters. Twenty-one profiles were made during the CTD surveys. Measurements were made from the surface to depths of 1000 m. The profiles are listed in Table 3. Camel tow-yo's to 400 m depth were made during both multi-ship experiments. Two profiles were obtained at the ring center during the first MS experiment and four during the second MS experiment at the ring boundary.

8. DRIFTERS

Two drifters were tethered together and deployed during the two multi-ship experiments: a radar transponding drifter from WHOI which was drogued at 100 m depth with a window shade drogue, and a LORAN-C drifter from the University of Miami that internally recorded its LORAN-C posi-

tion. Although the latter buoy has the capability of telemetering its position back to the ship using VHF, this feature could not be used due to interference problems between the buoy electronics and the telemetry transmitter. It is anticipated that this problem will be solved for the later cruises. The LORAN drifter faithfully recorded its position during both deployments.

9. COMMUNICATION

Using an LSI computer and the ATS satellite link all sea surface temperatures and the depths of selected isotherms from the ENDEAVOR XBT's were transmitted to P. Eden and subsequently distributed to other investigators in the Warm Core Ring Program via Telemail. In addition, data were received via the University of Miami from satellite infrared and CZCS imagery. Imagery interpretations were also telecopied via URI from the NMFS group in Narraganset RI. These data aided in mapping the evolution of ring 81-D with a time scale of several days. The major limitations were the nearly constant cloud cover and rough weather. The former masked the ocean thermal signature while the latter stressed the satellite antenna aboard the ship so that it had to be overhauled several times during the cruise. When the ship's ATS system is rebuilt and properly tuned the satellite/telemail link should be more useful in guiding the seagoing sampling program. A twice daily schedule was kept with the AII and the ALBATROSS IV on the ship's single sideband. The VHF radio was used for scientific communication only during the two multi-ship experiments.

10. PARTICIPANTS IN SCIENTIFIC PARTY

The members of the scientific party aboard cruise number 74 of the R/V ENDEAVOR and their institutional affiliations are listed below.

Terrence Joyce	WHOI
Raymond Schmitt	WHOI
Marvel Stalcup	WHOI
Robert McDevitt	WHOI
Jane Dunworth	WHOI
William McMahon	WHOI
David Bitterman	AOML
Raymond Smith	Scripps
Karen Baker	Scripps
Jeffrey Star	Scripps
Kevin Leaman	RSMAS/U. Miami
Robert Evans	RSMAS/U. Miami
Owen Kennedy	RSMAS/U. Miami
Rolf Lueck	U. British Columbia
Richard Noel	U. British Columbia
David Nelson	URI

11. ACKNOWLEDGEMENTS

The scientific party aboard the ENDEAVOR gratefully thanks captain Jack Tate, master and all the officers and crew of the ENDEAVOR for their cheerful cooperation and competence. The research program was funded by the National Science Foundation as part of the WARM CORE RINGS PROGRAM. We also gratefully acknowledge support of the bio-optical and acoustic current profiling work by the National Aeronautics and Space Administration. The author thanks Ray Smith, Kevin Leaman and Rolf Lueck for their contributions and Jane Dunworth, Cindy Lanyon and Cindy Tynan for their help in processing the various data presented in this report.

WARM CORE RINGS CRUISE SUMMARY

ENDEAVOR 74 PART 2

TABLES CAPTIONS

- Table 1: XBT Observations Summary.
- Table 2: CTD Station Summary.
- Table 3: CAMEL II Station Summary.
- Table 4: Meteorological Data Summary.
- Table 5: Tabulated hydrographic data. The column headings are mostly self-explanatory. Sig 0-4 is the potential density ($-1, * 10^{-3}$) at 0, 1000....4000 m; anom is the specific volume anomaly ($10^5 \Delta$) and height is the dynamic height of the station in dynamic meters relative to the surface. Phosphate, silicate and nitrate plus nitrite (N+N) units are $\mu\text{M/KG}$.
- Table 6: Loran-C signals recorded on one of the buoys are used to determine the position of the free drifting drogue during the two multiple ship experiments. The average drift during the first experiment near the center of the eddy was 25 cm/sec toward the west. During the second experiment, near the high velocity region, the average drift was 53 cm/sec toward the east-southeast.

TABLE 1: XBT STATION SUMMARY

XBT No.	DAY	TIME	LATITUDE DEGREES/ MINUTES	LONGITUDE DEGREES/ MINUTES	COMMENTS
001	256	1729	39°44.3	-66°45.4	TEST STA 1
002	257	1000	39°00.03	-65°00.1	XBT STAR 1
003	257	1100	39°12.5	-64°55.3	
004	257	1200	39°23.2	-64°50.5	
005	257	1300	39°35.6	-64°45.6	
006	257	1400	39°48.7	-64°40.3	
007	257	1500	40°02.5	-64°33.6	
008	257	1600	40°16.6	-64°27.6	
009	257	1700	40°30.2	-64°21.3	
010	257	1800	40°43.6	-64°15.7	
011	257	1900	40°58.2	-64°09.9	
012	257	2000	41°11.9	-64°04.0	
013	257	2100	41°25.2	-63°57.7	END 1ST LINE
014	257	2200	41°18.9	-63°53.8	
015	257	2300	41°16.1	-63°55.8	
016	258	0000	41°07.9	-63°54.1	
017	258	0100	40°54.7	-63°46.9	
018	258	0200	40°42.7	-63°38.5	
019	258	0300	40°29.5	-63°33.0	
020	258	0400	40°17.5	-63°28.5	
021	258	0500	40°04.6	-63°23.7	
022	258	0600	39°49.9	-63°17.8	
023	258	0700	39°35.4	-63°14.3	
024	258	0800	39°22.1	-63°09.8	END 2ND LINE
025	258	0900	39°09.0	-63°03.9	
026	258	1000	39°13.5	-63°13.7	
027	258	1100	39°20.5	-63°28.2	
028	258	1200	39°27.4	-63°40.6	
029	258	1300	39°37.5	-63°53.5	DR
030	258	1400	39°47.3	-64°06.7	
031	258	1500	39°56.2	-64°20.2	
032	258	1600	40°04.3	-64°35.8	
033	258	1700	40°11.5	-64°49.5	
034	258	1800	40°19.3	-65°05.9	
035	258	1900	40°26.2	-65°19.3	END 3RD LINE
036	258	2000	40°26.7	-65°03.0	
037	258	2100	40°26.7	-64°45.7	
038	258	2200	40°27.1	-64°27.6	
039	258	2300	40°27.0	-64°08.6	
040	259	0000	40°26.8	-63°52.1	
041	259	0100	40°26.6	-63°32.5	
042	259	0200	40°27.4	-63°13.8	
043	259	0300	40°26.7	-62°56.9	END 4TH LINE
045	259	0406	40°25.	-62°40.	XBT 44 DUD

TABLE 1: XBT STATION SUMMARY

(Continued 2 of 4)

XBT No.	DAY	TIME	LATITUDE DEGREES/ MINUTES	LONGITUDE DEGREES/ MINUTES	COMMENTS
046	259	0500	40°19.1	-62°51.7	
047	259	0600	40°11.7	-63°06.1	
048	259	0700	40°04.5	-63°21.1	
049	259	0800	39°57.4	-63°36.1	
050	259	0900	39°51.1	-63°50.6	
051	259	1000	39°44.6	-64°05.1	
052	259	1100	39°38.7	-64°18.9	
053	259	1200	39°32.3	-64°31.0	
054	259	1300	39°22.9	-64°43.5	
055	259	1400	39°13.6	-64°54.9	END XBT STAR
056	261	2300	40°34.4	-62°23.4	BETWEEN CTD'S
057	262	0100	40°10.8	-62°16.3	
058	267	0200	40°13.2	-62°56.1	TO XBT STAR
059	267	0300	40°06.3	-62°42.7	
060	267	0400	40°01.1	-62°33.3	XBT STAR 2
061	267	0500	39°54.7	-62°22.5	
062	267	0600	39°54.9	-62°36.7	
063	267	0700	39°54.9	-62°51.6	
064	267	0800	39°55.0	-63°05.5	
065	267	0900	39°55.8	-63°19.0	
066	267	1000	39°56.1	-63°32.7	
067	267	1100	39°56.4	-63°46.5	
068	267	1200	39°56.2	-64°01.7	
069	267	1300	39°56.2	-64°16.6	
070	267	1400	39°56.3	-64°30.6	
071	267	1500	39°56.1	-64°43.6	
072	267	1600	39°56.0	-64°57.6	END 1ST LINE
073	267	1700	40°02.7	-64°48.7	
074	267	1800	40°09.6	-64°34.6	
075	267	1900	40°17.6	-64°20.8	
076	267	2000	40°24.0	-64°08.2	
077	267	2100	40°31.5	-63°54.0	
078	267	2200	40°37.7	-63°40.4	
079	267	2300	40°43.4	-63°25.4	
080	268	0000	40°49.3	-63°11.0	
081	268	0100	40°58.4	-62°58.6	END 2ND LINE
082	268	0200	40°55.1	-62°55.6	
083	268	0300	40°43.6	-62°59.0	
084	268	0400	40°32.9	-63°03.3	
085	268	0500	40°20.5	-63°08.8	

TABLE 1: XBT STATION SUMMARY

(Continued 3 of 4)

XBT No.	DAY	TIME	LATITUDE DEGREES/ MINUTES	LONGITUDE DEGREES/ MINUTES	COMMENTS
086	268	0600	40°08.8	-63°14.3	
087	268	0700	40°00.1	-63°18.9	
088	268	0800	39°52.1	-63°16.6	
089	268	0900	39°43.9	-63°12.6	
090	268	1000	39°35.3	-63°07.3	
091	268	1100	39°26.4	-63°02.4	END 3RD LINE
092	268	1200	39°20.1	-63°04.0	INTO G. STRM.
093	268	1300	39°18.0	-63°10.1	
094	268	1400	39°15.7	-63°18.0	
095	268	1500	39°12.8	-63°25.0	
096	268	1600	39°17.2	-63°29.8	ON 4TH LINE
097	268	1700	39°23.1	-63°34.6	
098	268	1800	39°28.9	-63°40.3	
099	268	1900	39°34.9	-63°46.3	
100	268	2000	39°42.0	-63°53.0	
101	268	2100	39°48.6	-64°00.0	
102	268	2200	39°56.4	-64°04.6	
103	268	2300	40°04.8	-64°08.1	
105	269	0000	40°13.8	-64°12.2	#104 A DUD
106	269	0100	40°22.6	-64°15.7	
107	269	0200	40°31.3	-64°19.4	
108	269	0300	40°39.6	-64°23.0	
109	269	0400	40°48.0	-64°26.5	END 4TH LINE
110	269	0500	40°49.7	-64°15.5	
111	269	0600	40°49.4	-64°04.4	
112	269	0700	40°43.3	-63°56.7	
113	269	0800	40°35.1	-63°52.4	END STAR 2
114	270	0200	40°36.5	-64°03.6	TO 2ND MS EXP
115	270	0300	40°48.0	-64°01.4	
116	270	0400	41°00.4	-64°00.2	
117	270	0500	41°11.0	-64°00.0	
118	270	0530	41°16.8	-64°00.3	
119	270	0600	41°22.3	-64°00.2	
120	270	0700	41°16.9	-64°10.8	
121	270	0730	41°11.1	-64°11.4	
122	270	0800	41°05.9	-64°11.0	
123	270	0830	41°05.2	-64°01.7	END SURVEY
124	271	0400	40°56.1	-63°37.0	TO SARGASSO S
125	271	0500	40°45.0	-63°44.0	
126	271	0600	40°32.9	-63°52.4	
127	271	0700	40°21.3	-64°01.4	

TABLE 1: XBT STATION SUMMARY

(Continued 4 of 4)

XBT No.	DAY	TIME	LATITUDE DEGREES/ MINUTES	LONGITUDE DEGREES/ MINUTES	COMMENTS
128	271	0800	40°09.9	-64°09.3	
129	271	0900	39°59.0	-64°16.8	
130	271	1000	39°47.9	-64°23.8	
131	271	1100	39°36.5	-64°29.8	
132	271	1200	39°26.5	-64°35.0	
133	271	1300	39°15.6	-64°42.9	
134	271	1400	39°04.4	-64°49.3	
135	271	1500	38°54.0	-64°55.7	
136	271	1600	38°43.8	-65°01.2	DUD
137	271	1700	38°33.1	-65°06.7	
139	271	1800	38°24.0	-65°12.0	138 A DUD
140	271	1900	38°15.9	-65°17.2	
141	271	2000	38°06.7	-65°22.6	
142	271	2100	37°56.7	-65°29.0	
143	271	2200	37°47.2	-65°34.9	
144	271	2300	37°36.9	-65°41.3	
145	272	0000	37°27.5	-65°47.6	
146	272	0100	37°18.1	-65°53.8	
147	272	0200	37°08.9	-66°00.2	END SECTION

TABLE 2: CTD STATION SUMMARY

CTD No.	DAY	TIME	LATITUDE DEGREES/ MINUTES	LONGITUDE DEGREES/ MINUTES	COMMENTS
01	256	1330	39°44.3	-66°45.4	INST 3 TEST
02	257	0233	39°20.4	-65°50.7	INST 7 TEST
03	259	1425	39°13.6	-64°54.9	MAX PR=4920.3
04	259	2131	39°26.0	-64°41.0	4922.
05	260	0334	39°40.9	-64°20.9	4923.5
06	260	1002	39°53.9	-64°00.0	4924.2
07	260	1532	40°06.1	-63°45.4	4861.
08	261	2138	40°20.2	-63°26.4	4738.5
09	261	0355	40°34.2	-63°07.1	4663.1
10	261	1044	40°48.5	-62°50.0	4528.3
11	261	1637	41°02.0	-62°32.0	4431.5
12	262	0327	39°46.9	-62°05.5	5087.8
13	262	0836	39°51.5	-62°30.5	3805.3
14	262	1357	39°55.6	-62°54.5	3002.3
15	263	1300	38°50.0	-63°19.1	3504.5
16	263	1751	39°09.0	-63°26.6	5078.8
17	264	0005	39°28.7	-63°28.0	4990.3
18	264	0635	39°47.8	-63°42.4	5006.8
19	264	1339	40°24.9	-63°51.3	4637.6
20	264	1815	40°43.4	-63°55.5	4391.7
21	265	0016	41°02.5	-64°02.1	4002.4
22	265	0533	41°21.7	-64°11.2	3534.5
23	265	1441	40°27.2	-65°25.0	3957.7
24	265	1917	40°21.8	-65°00.4	4354.5
25	265	2352	40°16.8	-64°35.4	4675.8
26	266	0500	40°12.0	-64°10.1	4748.6
27	266	1102	40°07.1	-63°45.2	4853.3
28	266	2017	40°01.4	-63°19.5	4945.6
29	269	0938	40°24.1	-63°56.8	4668.8
30	269	1530	40°21.4	-63°56.5	TOW-YO 325.
31	270	1237	41°12.6	-63°54.2	TOW-YO 325.
32	272	0230	37°08.4	-66°01.1	4761.0
33	272	0830	37°38.2	-66°00.0	4508.1
34	272	1440	38°07.7	-66°00.2	4882.5
35	272	2220	38°37.4	-65°58.2	4696.2
36	273	0500	39°08.0	-66°00.2	4671.2
37	273	1125	39°38.0	-66°00.3	2969.2
38	273	1705	40°08.2	-66°00.0	3740.5
39	273	2249	40°23.5	-66°17.0	2741.0
40	274	0446	40°38.0	-66°36.3	2105.1
41	274	0900	40°52.2	-66°51.1	92.0

TABLE 3: STATION SUMMARY FOR CAMEL II

CAMEL STATION	CTD STATION	MAXIMUM PRESSURE
		DBARS
01	01	600
02	03	1000
03	04	1100
04	05	600
05	07	1100
06	08	350
07	09	530
08	10	1100
09	11	500
10	14	1000
11	16	500
12	17	550
13	18	950
14	19	800
15	20	500
16	21	1100
17	25	1100
18	26	600
19	28	800
20	34	800
21	35	

WARM CORE RINGS METEOROLOGICAL LOG

WARM CORE RINGS METEOROLOGICAL LOG

WARM CORE RINGS METEOROLOGICAL LOG													
SHIP: ENDEAVOR				CRUISE: 74		CHIEF SCIENTIST: T. JOYCE		DATES: 12 SEPT.'81-2 OCT.'81					
DAY	TIME	WIND REL. KTS	WIND SPD KTS	SHIP SPD KTS	SHIP HDG	BAROMETRIC PRES. (MMHG)	DPY BUL (C)	WET BUL (C)	BUCKET TEMP (C)	SWELL AMP (M)	SWELL DIREC	WXTAS CLAMS	COMMENTS
10													
20													
30													
40													
50													
60													
70	14 1000	12	310	12.8	018	1016	22	19	23.3	1	340	0	
80	14 1100	12	310	13.0	018	1016	22.5	19	22.2	-1	290	0	
90	14 1200	10	305	13.0	019	1016	22.8	19.2	22.3	-1	220	0	
100	14 1300	10	300	12.8	021	1016	22.9	19.2	22.7	1	240	0	
110	14 1400	8	290	12.8	024	1016	23.9	20.5	27.0	1	250	0	
120	14 1500	11	290	12.7	026	1015	23.2	19.8	23.8	1	265	0	
130	14 1600	8	290	12.7	019	1015	22.0	20.2	23.7	1.5	280	1	1.5
140	14 1700	8	265	12.7	015	1015	23.7	20.3	24.2	1.5	260	1	1.5
150	14 1800	8	275	13.0	011	1014	23.9	20.5	23.4	1.5	265	1	1.5
160	14 1900	8	242	13.4	013	1014	24.5	21.2	25.0	1.5	245	0	
170	14 2000	8	240	12.2	014	1013	25.9	21.9	25.3	1.5	250	0	
180	14 2100	12	263	13.1	015	1013	23.1	20.5	21.0	1.5	250	0	
190	14 2200	23	330	4.9	265	1013	24.0	21.5	25.1	1.5	230	5	
200	14 2300	34	050	12.9	172	1013	24.0	21.5	25.1	2.6	220	7	
210	15 0000	30	045	12.9	167	1013	24.0	21.5	24.7	2.0	230	8	
220	15 0100	25	045	13.1	163	1013	23.7	21.3	24.1	2.0	230	8	
230	15 0200	25	040	13.0	163	1014	23.5	21.2	23.1	1.5	210	2	
240	15 0300	25	030	12.9	170	1014	23.5	21.5	23.7	1.5	200	5	
250	15 0400	22	030	12.8	164	1015	23.5	21.7	22.7	2.0	220	-	
260	15 0500	20	030	13.0	163	1015	23.5	21.7	22.8	2.0	250	-	
270	15 0600	20	035	13.0	162	1015	24.0	21.7	23.2	2.0	240	-	
280	15 0700	25	028	12.9	163	1016	24.3	21.7	24.2	1.5	240	3	
290	15 0800	21	025	12.9	156	1016	23.9	21.6	24.2	1.5	200	3	
300	15 0900	19	010	12.9	151	1017	23.8	21.7	22.9	1.2	180	2	
310	15 1000	10	310	13.2	313	1017	24.0	22.0	23.4	1.2	250	2	
320	15 1100	12	310	13.2	312	1017	24.1	22.2	23.3	1.0	250	0	
330	15 1200	15	260	12.9	316	1017	24.3	22.5	23.1	1.0	270	0	
340	15 1300	12	260	12.9	316	1017	24.6	22.8	22.9	1.0	250	0	
350	15 1400	15	270	13.0	311	1017	24.4	22.8	22.9	1.0	280	0	
360	15 1500	20	275	12.9	300	1016	24.9	23.0	23.2	1.0	270	0	
370	15 1600	20	310	12.6	296	1016	25.5	23.5	26.5	1.5	260	1	
380	15 1700	21	310	13.0	297	1015	25.4	23.4	26.2	1.5	240	1	
390	15 1800	17	310	13.0	297	1015	23.7	23.2	24.0	1.5	240	0	
400	15 1900	17	305	12.8	302	1015	23.5	22.2	22.2	1.5	240	0	
410	15 2000	14	060	13.1	094	1015	24.4	22.2	22.3	1.0	160	0	
420	15 2100	14	065	13.3	095	1015	25.4	23.5	26.2	1.0	165	0	
430	15 2200	11	060	13.4	094	1015	25.1	22.5	24.1	1.0	220	3	
440	15 2300	14	054	13.2	094	1015	22.9	22.9	23.1	1.0	220	3	
450	16 0000	12	060	12.0	092	1016	24.3	23.0	23.5	1.0	230	4	
460	16 0100	10	060	13.2	090	1016	24.5	22.9	23.4	1.0	210	2	
470	16 0200	12	060	13.0	080	1017	23.9	22.9	23.4	1.0	200	1	
480	16 0300	12	065	13.2	080	1017	24.4	22.7	24.9	1.0	200	1	
490	16 0400	14	063	13.4	084	1017	24.7	23.3	24.9	1.0	210	0	
500	16 0500	22	315	12.6	256	1016	24.3	22.9	23.4	1.0	210	1	
510	16 0600	24	330	12.8	245	1016	24.2	22.4	23.7	1.0	210	1	
520	16 0700	23	315	12.6	243	1016	23.9	22.5	23.2	1.0	210	1	
530	16 0800	22	315	12.6	237	1016	24.4	22.5	22.9	1.0	270	2	
540	16 0900	23	340	12.8	234	1016	24.9	22.4	22.4	1.0	250	1	
550	16 1000	26	355	12.7	233	1017	24.4	22.4	23.3	1.0	230	1	
560	16 1100	30	360	12.7	230	1017	25.0	22.4	23.3	1.0	230	0	
570	16 1200	28	050	12.8	226	1017	25.3	22.4	24.4	1.5	250	0	
580	16 1300	28	070	12.9	220	1017	25.4	22.4	25.4	1.5	240	0	
590	16 1400	25	350	12.7	220	1017	24.7	22.8	24.7	1.5	230	0	
600	16 1500	5	070	12.0	046	1017	25.0	22.7	23.2	1.0	270	0	
610	17 0000	10	045	0.0		1017	24.4	22.9	24.7	1.0	230	0	

620	17	0407	20	005	1-3	212	1017	24.8	23.1	24.2	1.0	210	0
630	17	0800	16	355	0.5	215	1016	24.5	22.9	23.7	1.0	210	-
640	17	1200	18	020	0	-	1016	24.3	23.3	23.0	<1.0	220	R
650	17	1600	10	330	0	248	1016	24.5	22.5	23.1	2-3	220	R
660	17	2000	12	325	12.2	039	1016	24.1	22.5	23.5	2-3	190	R
670	18	0000	12	010	0	-	1017	-	-	25.3	1.0	200	R
680	18	0400	16	025	0	002	1018	21.5	19.0	25.7	1.0	200	R
690	18	0800	16	255	2.2	009	1019	21.0	18.7	25.6	1.0	330	R
700	18	1200	15	010	0	345	1021	21.1	18.0	21.0	<1.0	010	-
710	18	1600	25	005	11.9	048	1022	22.0	18.0	23.9	1.5	045	7
720	18	2000	13	004	0.0	035	1022	21.2	17.1	24.5	1.0	070	R
730	19	0000	25	020	11.9	165	1019	21.8	19.3	23.0	1.0	080	R
740	19	0400	14	020	14.0	134	1017	23.4	21.0	22.0	1.0	140	R
750	19	0800	12	023	13.1	285	1015	24.1	22.7	20.2	-	-	-
760	19	1200	15	200	12.1	295	1013	24.2	22.8	18.6	2.0	200	-
770	19	1600	25	040	12.2	315	1005	26.0	23.2	26.7	2.0	220	R
780	20	0000	30	220	1.3	205	1004	23.3	21.9	17.5	2.0	220	R
790	20	0400	22	045	9.4	153	1013	22.3	17.3	20.1	2.0	230	-
800	20	0800	20	080	11.1	155	1014	22.6	17.5	25.6	1.5	235	1
810	20	1200	20	230	-	-	1016	24.0	19.5	25.1	2.0	230	3
820	20	1600	20	230	-	-	1015	24.0	19.4	24.9	1.5	250	4
830	20	2000	18	245	-	-	1015	24.0	20.4	25.3	1.5	270	5
840	21	0000	20	250	11.9	330	1016	22.1	19.5	25.2	2.0	250	R
850	21	0400	25	250	11.6	350	1016	23.0	18.7	22.5	-	-	-
860	21	0800	18	250	-	-	1017	22.3	17.0	22.8	2.0	230	0
870	21	1200	8	300	11.5	355	1019	21.6	17.0	22.8	2.0	180	7
880	21	1600	10	300	-	-	1019	23.9	13.6	25.4	2.0	270	R
890	21	2000	20	232	-	-	1019	23.0	19.5	23.5	1.5	240	-
900	22	0000	22	000	12.1	310	1021	19.3	15.6	23.5	1.0	270	0
910	22	0400	22	000	12.3	310	1022	18.0	13.0	22.3	1.0	270	0
920	22	0800	8	030	12.8	225	1022	17.5	12.8	18.6	-	-	0
930	22	1200	10	315	12.5	223	1023	20.5	16.1	23.4	1.0	045	0
940	22	1600	20	113	-	-	1029	24.5	20.0	21.4	1.0	080	0
950	22	2000	10	130	-	-	1021	24.5	22.2	23.6	1.0	120	0
960	23	0000	15	010	9.3	090	1021	23.3	21.8	22.3	<1	110	2
1060	23	0400	19	000	12.3	116	1021	23.1	21.7	23.7	<1	115	R
1160	23	0800	18	210	-	-	-	-	-	-	1	200	R
1260	23	1200	20	200	1.6	160	1015	22.6	21.7	23.4	1.5	200	R
1360	23	1600	19	190	-	-	1015	22.4	20.4	22.8	2.0	180	R
1460	23	2000	8	200	-	-	1013	22.3	21.3	23.5	1.0	185	R
1560	24	0000	20	030	12.0	045	1012	22.1	21.3	23.4	<1	170	R
1660	24	0400	16	010	-	-	1007	22.3	21.7	22.6	1.0	160	R
1760	24	0800	19	270	12.2	275	1009	21.3	19.2	23.0	1.7	-	-
1860	24	1200	25	240	9.0	265	1013	19.2	15.0	23.2	2.0	300	3
1960	24	1600	10	020	12.6	060	1011	20.3	15.4	23.3	2.0	350	6
2060	25	0000	5	100	12.5	045	1010	20.3	16.1	21.1	2.0	300	5
2160	25	0400	25	270	-	-	1009	19.5	15.4	21.5	2.0	250	-
2260	25	0800	25	270	7.2	175	1009	19.7	15.7	25.5	2.0	220	4
2360	25	1200	35	280	7.9	250	1012	20.1	16.8	26.7	2.0	280	2
2460	25	1600	30	310	-	-	1012	17.8	16.7	26.5	2.5	300	4
2560	25	2000	33	315	7.7	314	1015	19.0	16.3	26.8	2.5	320	7
2660	26	0000	30	320	5.6	345	1017	18.3	15.2	22.2	2+	300	7
2760	26	0400	25	315	7.5	340	1019	18.5	14.0	22.8	2.0	310	0
2860	26	0800	25	320	8.3	163	1019	19.4	14.1	27.6	2.0	340	0
2960	26	1200	14	340	1.0	350	1020	19.5	13.5	22.3	1.5	340	2
3060	26	1600	18	300	2.4	344	1022	21.1	15.0	22.1	2.0	300	2
3160	27	0000	20	310	-	-	1021	21.2	14.3	22.1	1.0	300	2
3260	27	0400	7	355	8.9	245	1022	18.4	13.4	22.4	1.0	300	1
3360	27	0800	9	330	12.2	090	1023	17.3	13.0	22.3	1.0	-	-
3460	27	1200	7	035	8.1	035	1023	17.0	13.1	22.5	<5	075	0

TRUE WIND FROM HERE
ON: WIND DIRECTION
INDICATOR FELL OFF!!

VISUAL ON WIND DIRECT

3660	28	0000	10	170	2.0	035	1021	19.2	15.5	22.4	<.5	-	0
3760	28	0400	26	200	11.9	208	1019	21.1	16.4	22.5	<.1	200	0
3860	28	0800	27	-	11.9	200	1018	22.7	19.8	22.0	<.1	-	3
3960	28	1200	25	020	12.0	200	1018	22.7	20.3	21.8	<.1	020	4
4060	28	1600	28	020	11.9	210	1013	23.0	19.4	21.4	1.0	340	1
4160	28	2000	32	020	11.6	215	1013	23.5	21.0	26.8	1.0	250	7
4260	29	0000	27	020	11.7	207	1012	22.8	20.4	24.8	1.0	-	7
4360	29	0800	25	300	-	-	1012	20.0	15.5	24.7	-	-	-
4460	29	1200	25	340	0.8	310	1015	19.3	15.0	24.7	1.5	330	7
4560	29	1600	25	045	0.4	280	1008	18.0	14.5	25.2	2.0	045	7
4660	29	2000	29	315	10.6	345	1014	18.6	15.0	26.2	2.0	310	6
4760	30	0000	25	020	2.2	280	1015	17.9	13.1	26.4	2.0	020	4
4860	30	0800	33	300	11.4	000	1013	16.5	13.8	20.6	-	-	-
4960	30	1200	25	010	1.5	270	1014	15.9	10.7	20.5	2.0	040	2
5060	30	1700	22	330	1.3	305	1008	14.9	10.8	20.6	4.0	330	4
5160	30	2000	38	350	7.2	323	1011	13.6	11.5	19.9	3.0	310	4
5260	1	0000	30	000	0.3	280	1013	13.4	8.9	15.9	3.0	-	4
5360	1	0800	30	-	10.4	320	1012	16.5	12.0	13.1	2.0	-	2

ENDEAVOR-74		2	LAT = 39 22.8 N		LONG = 65 57.0 W		14/ 9/81	12 ORS.	SONIC DEPTH= 4492m				STATION 2			
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-θ	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dhar	m	deg C	deg C	o/oo	ml/l											
54	54	16.004	15.995	35.349	3.65					26.035	30.384	34.631	38.780	42.835	200.2	0.055
250	248	10.424	10.394	35.351	3.64					27.176	31.635	35.986	40.736	44.389	96.3	0.345
502	497	5.762	5.719	35.049	4.89					27.648	32.217	36.676	41.028	45.280	52.7	0.532
749	742	4.646	4.586	35.010	5.73					27.752	32.350	36.837	41.217	45.494	44.5	0.652
998	988	4.320	4.241	34.992	5.91					27.776	32.383	36.879	41.267	45.553	44.4	0.763
1497	1481	3.911	3.792	34.983	6.17					27.816	32.435	36.942	41.342	45.638	44.5	0.985
1995	1970	3.532	3.372	34.986	6.14					27.860	32.491	37.009	41.419	45.725	43.3	1.204
2495	2461	3.171	2.969	34.961	6.19					27.878	32.520	37.049	41.469	45.786	43.7	1.421
2993	2949	2.750	2.505	34.933	6.51					27.897	32.553	37.094	41.526	45.854	42.6	1.636
3493	3437	2.383	2.094	34.912	6.41					27.915	32.582	37.134	41.578	45.916	41.0	1.845
3992	3924	2.257	1.916	34.899	6.24					27.919	32.591	37.148	41.596	45.939	42.2	2.053
4536	4454	2.260	1.856	34.895	6.27					27.920	32.594	37.153	41.603	45.948	44.8	2.290

3

PR	NO	T	deg C	deg C	S	oxy	PHYS	SIL	MM2	N-M	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
104	105	12.454	12.940	12.940	34.888	6.21	0.00	0.0	0.00	0.0	26.357	30.748	35.075	39.781	43.393	170.8	0.001
155	155	12.137	12.117	12.117	35.563	4.11	0.85	7.9	0.00	17.1	27.022	31.443	35.759	39.974	44.094	109.1	0.141
204	202	11.294	11.271	11.271	35.476	4.02	0.97	9.5	0.00	19.3	27.115	31.554	35.897	40.119	44.255	101.3	0.211
249	247	9.407	9.779	9.779	35.255	3.75	1.19	12.4	0.00	22.4	27.208	31.680	36.046	40.309	44.474	92.9	0.255
302	300	8.472	9.447	9.447	35.126	3.69	1.34	14.9	0.00	25.1	27.324	31.827	36.222	40.514	44.707	82.3	0.302
356	353	7.784	7.350	7.350	35.044	3.99	1.34	14.9	0.00	24.4	27.424	31.954	36.374	40.690	44.905	73.0	0.343
403	400	6.664	6.626	6.626	35.042	4.37	1.28	14.9	0.00	23.5	27.524	32.071	36.508	40.840	45.071	63.8	0.374
451	447	5.861	5.821	5.821	35.006	4.36	1.22	14.1	0.00	22.3	27.601	32.168	36.625	40.975	45.225	54.5	0.405
498	493	5.420	5.577	5.577	35.031	4.98	1.02	13.7	0.00	21.9	27.651	32.224	36.687	41.043	45.297	52.1	0.430
546	508	5.077	5.078	5.078	35.017	5.41	1.08	13.0	0.00	20.5	27.707	32.294	36.749	41.138	45.406	47.7	0.482
594	592	4.842	4.786	4.786	35.014	5.59	1.08	12.8	0.00	19.9	27.732	32.326	36.807	41.182	45.455	44.1	0.528
642	641	4.504	4.570	4.570	35.002	5.73	1.04	12.7	0.00	19.3	27.752	32.352	36.865	41.221	45.500	45.0	0.574
690	688	4.431	4.340	4.340	34.999	5.82	1.06	12.7	0.00	18.9	27.768	32.373	36.883	41.250	45.533	44.2	0.617
738	730	4.296	4.208	4.208	34.990	6.05	1.09	12.7	0.00	18.7	27.778	32.396	36.883	41.272	45.558	44.0	0.658
786	780	4.031	3.934	3.934	34.921	6.14	1.06	13.1	0.00	18.4	27.799	32.415	36.919	41.315	45.608	43.9	0.749
834	830	3.977	3.715	3.715	34.977	6.14	1.06	13.9	0.00	18.4	27.819	32.441	36.950	41.351	45.649	43.9	0.878
882	871	3.454	3.297	3.297	34.970	6.30	1.04	16.6	0.00	18.9	27.855	32.488	37.008	41.420	45.728	43.5	1.008
930	925	3.049	2.848	2.848	34.953	6.21	1.09	20.8	0.00	19.7	27.883	32.529	37.061	41.484	45.803	42.5	1.313
978	973	2.651	2.417	2.417	34.929	6.32	1.14	24.1	0.00	19.1	27.902	32.559	37.103	41.538	45.868	41.6	1.524
1026	1022	2.374	2.090	2.090	34.910	6.23	1.15	28.1	0.00	19.1	27.914	32.581	37.134	41.577	45.916	41.0	1.724
1074	1070	2.271	2.091	2.091	34.899	6.54	1.18	31.7	0.00	19.5	27.918	32.589	37.146	41.594	45.937	42.4	1.934
1122	1118	2.262	1.863	1.863	34.895	6.24	1.00	0.0	0.00	0.0	27.920	32.593	37.152	41.602	45.946	44.7	2.156
1170	1166	2.254	1.804	1.804	34.889	6.51	1.22	38.2	0.00	20.7	27.919	32.594	37.155	41.606	45.952	46.8	2.352

STATION 3

STATION		4		LAT = 37 25.3 S		LONG = 64 40.8 W		16/ 9/81		24 DRS.		SONIC DEPTH= 4861M		STATION		4	
PP	REF	T	A	S	QXY	PHYS	SIL	NO2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANG	HEIGHT	
102	101	14.423	14.408	35.618	4.18	0.51	2.8	0.00	8.0	26.595	30.971	35.244	39.418	43.498	148.4	0.076	
152	151	13.272	13.250	35.655	3.85	0.72	5.7	0.00	14.4	26.867	31.265	35.558	39.753	43.852	124.0	0.144	
200	199	12.435	12.409	35.594	4.35	0.77	6.3	0.00	14.5	26.989	31.404	35.714	39.924	44.038	113.6	0.201	
250	249	11.514	11.482	35.493	4.07	0.88	8.4	0.00	17.4	27.088	31.523	35.852	40.080	44.212	105.1	0.255	
300	297	10.404	10.368	35.352	3.76	0.91	9.0	0.00	18.0	27.182	31.641	35.993	40.243	44.397	97.0	0.306	
348	345	9.756	9.719	35.141	3.71	1.19	13.9	0.00	23.1	27.293	31.790	36.179	40.465	44.652	86.4	0.350	
402	398	7.700	7.659	35.075	3.83	1.28	15.5	0.00	25.1	27.402	31.924	36.337	40.645	44.854	76.3	0.394	
450	446	7.104	7.051	35.069	4.16	1.04	12.7	0.00	20.8	27.485	32.021	36.448	40.770	44.992	68.7	0.429	
497	493	6.146	6.101	35.017	4.57	1.07	13.4	0.00	21.2	27.574	32.134	36.583	40.928	45.171	60.1	0.459	
546	541	5.271	5.221	35.002	5.19	1.07	13.5	0.00	19.9	27.672	32.254	36.725	41.090	45.353	51.2	0.520	
701	694	4.595	4.528	35.015	5.47	0.98	12.2	0.00	18.4	27.717	32.306	36.785	41.156	45.426	47.8	0.567	
801	793	4.749	4.683	35.013	5.64	1.01	12.6	0.00	18.8	27.743	32.339	36.824	41.201	45.476	46.1	0.614	
902	893	4.517	4.445	35.006	5.79	1.02	12.6	0.00	18.5	27.764	32.367	36.857	41.240	45.521	44.8	0.660	
997	987	4.377	4.249	34.994	6.07	0.99	12.6	0.00	18.8	27.776	32.384	36.879	41.267	45.553	44.3	0.702	
1246	1233	4.062	3.963	34.983	6.09	0.91	11.9	0.00	17.2	27.798	32.413	36.916	41.311	45.603	44.2	0.812	
1405	1379	3.877	3.758	34.978	6.10	0.93	13.4	0.00	18.1	27.815	32.436	36.944	41.344	45.641	44.4	0.923	
1745	1724	3.717	3.578	34.981	6.27	1.02	15.0	0.00	18.4	27.836	32.461	36.974	41.379	45.680	44.2	1.033	
1994	1969	3.518	3.358	34.974	6.14	0.95	16.6	0.00	17.7	27.852	32.483	37.002	41.412	45.719	44.0	1.143	
2500	2466	3.140	2.937	34.960	6.23	1.10	19.8	0.00	18.6	27.881	32.523	37.053	41.474	45.791	43.3	1.364	
2902	2848	2.731	2.486	34.935	6.23	1.09	23.2	0.00	19.4	27.901	32.556	37.098	41.531	45.859	42.1	1.575	
3492	3437	2.417	2.128	34.915	6.19	1.12	27.8	0.00	18.7	27.915	32.580	37.132	41.574	45.912	41.4	1.784	
3993	3925	2.296	1.944	34.901	6.32	1.14	31.6	0.00	19.2	27.918	32.589	37.146	41.593	45.936	42.5	1.993	
4469	4399	2.265	1.868	34.898	6.25	1.30	34.4	0.00	19.0	27.922	32.595	37.154	41.603	45.948	44.4	2.201	
4926	4832	2.254	1.802	34.888	6.20	1.22	36.2	0.00	17.2	27.919	32.594	37.155	41.606	45.952	46.8	2.409	

STATION 4

ENDEAVOR 74		5	LAT = 39 40.8 S		LONG = 64 21.0 W		17/ 9/81	23 OBS.	SONIC DEPTH= 4851m				STATION			
PO dbr	DE m	T deg C	Q deg C	S o/oo	OXY ml/l	PHOS	SIL	NO2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
103	102	18.614	13.595	36.563	4.59	0.05	1.1	0.00	3.2	26.336	30.634	34.830	38.931	42.940	173.8	0.090
154	153	18.004	17.977	36.531	4.81	0.05	1.1	0.00	3.4	26.467	30.775	34.981	39.091	43.110	163.3	0.176
207	205	17.811	17.775	36.520	4.70	0.05	1.1	0.00	3.3	26.509	30.820	35.030	39.143	43.164	161.3	0.261
257	254	17.597	17.553	36.485	4.98	0.05	1.2	0.00	4.0	26.537	30.852	35.065	39.182	43.207	160.5	0.347
308	305	16.764	16.713	36.326	4.40	0.21	2.2	0.00	7.4	26.617	30.947	35.176	39.307	43.346	154.3	0.422
356	353	15.994	15.937	36.187	4.20	0.36	3.2	0.00	10.3	26.692	31.037	35.279	39.424	43.475	148.5	0.495
404	401	14.730	14.669	35.974	4.04	0.69	4.6	0.00	13.5	26.813	31.182	35.447	39.615	43.688	137.9	0.564
449	445	13.586	13.521	35.790	3.98	0.78	6.9	0.00	17.1	26.915	31.307	35.595	39.783	43.877	128.7	0.623
494	494	12.080	12.022	35.573	3.70	0.95	9.3	0.00	19.6	27.048	31.471	35.788	40.006	44.127	116.2	0.685
702	695	6.704	6.637	35.018	4.29	1.34	14.7	0.00	24.0	27.503	32.050	36.487	40.819	45.051	70.7	0.874
794	787	5.589	5.519	35.022	4.94	1.22	13.8	0.00	21.7	27.651	32.226	36.690	41.047	45.303	56.3	0.933
901	892	4.958	4.883	35.014	5.45	1.20	13.3	0.00	20.6	27.721	32.312	36.791	41.164	45.435	49.8	0.990
996	986	4.766	4.694	35.008	5.63	1.14	12.9	0.00	20.2	27.739	32.335	36.819	41.197	45.472	49.9	1.037
1261	1247	4.262	4.161	34.980	6.00	1.09	12.5	0.00	19.4	27.775	32.385	36.882	41.273	45.560	47.1	1.164
1428	1402	3.986	3.866	34.970	6.06	1.06	12.8	0.00	19.0	27.798	32.416	36.921	41.319	45.613	46.5	1.275
1741	1721	3.855	3.714	34.978	6.08	1.07	13.7	0.00	19.2	27.820	32.442	36.951	41.352	45.650	46.3	1.388
1998	1973	3.662	3.500	34.978	6.15	1.04	15.1	0.00	19.2	27.841	32.469	36.983	41.390	45.694	45.7	1.506
2486	2452	3.216	3.014	34.961	6.09	1.16	19.0	0.00	19.8	27.874	32.515	37.043	41.462	45.777	44.3	1.725
2982	2946	2.785	2.541	34.937	6.25	1.13	22.1	0.00	19.2	27.898	32.552	37.092	41.523	45.851	42.8	1.945
3492	3426	2.448	2.158	34.916	6.17	1.13	25.7	0.00	19.0	27.913	32.578	37.129	41.570	45.907	41.8	2.157
3889	3821	2.205	1.954	34.903	6.10	1.17	30.6	0.00	19.9	27.919	32.590	37.146	41.593	45.936	42.5	2.366
4479	4398	2.274	1.876	34.895	6.19	1.40	34.0	0.00	21.0	27.919	32.592	37.151	41.600	45.944	44.8	2.580
4923	4830	2.262	1.810	34.894	5.95	1.40	36.8	0.00	21.4	27.923	32.598	37.158	41.609	45.955	46.5	2.784

STATION 5

STATION		6		LAT = 39 54.0 S		LONG = 64 0.0 W		17/ 9/91		24 HRS.		SONIC DEPTH= 4941m		STATION		6	
PR	DE	T	θ	S	PHY	SIL	NDZ	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANN	HEIGHT		
4447	m	deg C	deg C	o/oo	mi/l												
97	94	18.475	18.458	36.548	4.64	0.05	0.00	3.0	26.359	30.659	34.858	38.961	42.972	171.3	0.084		
149	148	18.075	18.049	36.532	4.87	0.05	0.00	3.2	26.450	30.756	34.962	39.071	43.088	164.7	0.171		
200	199	17.918	17.883	36.522	4.89	0.05	0.00	2.8	26.483	30.793	35.001	39.113	43.132	163.5	0.255		
248	246	17.805	17.762	36.513	4.94	0.05	0.00	2.6	26.506	30.818	35.028	39.142	43.163	163.1	0.333		
297	294	17.743	17.692	36.506	4.98	0.05	0.00	2.8	26.518	30.831	35.042	39.157	43.180	163.8	0.413		
347	344	17.595	17.536	36.490	4.95	0.05	0.00	3.3	26.545	30.860	35.074	39.191	43.216	163.1	0.494		
401	398	17.242	17.181	36.417	4.66	0.05	0.00	4.9	26.575	30.897	35.117	39.240	43.271	162.1	0.583		
448	444	16.742	16.668	36.316	4.48	0.12	0.00	8.9	26.620	30.951	35.181	39.313	43.352	159.2	0.659		
494	492	16.019	15.937	36.192	4.24	0.22	0.00	9.5	26.695	31.040	35.282	39.427	43.479	153.1	0.733		
595	593	13.522	13.537	35.789	3.88	0.58	0.00	15.2	26.911	31.303	35.590	39.778	43.872	133.6	0.875		
694	692	11.075	10.936	35.431	3.71	0.93	0.00	23.2	27.132	31.577	35.916	40.154	44.296	112.3	0.999		
798	790	8.381	8.295	35.176	3.63	1.16	0.00	25.2	27.387	31.893	36.291	40.586	44.781	86.3	1.100		
897	888	6.764	6.677	35.088	3.63	1.04	0.00	22.8	27.553	32.099	36.534	40.864	45.095	69.4	1.177		
993	983	5.774	5.685	35.038	4.37	0.99	0.00	21.6	27.644	32.214	36.673	41.027	45.279	60.2	1.240		
1239	1225	4.747	4.643	35.005	5.66	0.89	0.00	19.4	27.741	32.339	36.824	41.202	45.479	51.5	1.376		
1490	1474	4.319	4.196	34.995	5.93	0.80	0.00	19.2	27.783	32.392	36.888	41.278	45.564	49.0	1.503		
1741	1720	4.060	3.917	34.981	6.10	0.82	0.00	18.6	27.801	32.418	36.922	41.318	45.611	48.8	1.626		
1993	1968	3.874	3.709	34.980	6.14	0.92	0.00	17.8	27.822	32.444	36.953	41.354	45.653	48.5	1.749		
2545	2510	3.461	3.248	34.970	6.11	0.90	0.00	17.8	27.859	32.494	37.015	41.428	45.738	47.6	2.014		
2995	2950	3.062	2.810	34.950	6.16	0.96	0.00	18.2	27.884	32.531	37.064	41.488	45.809	46.1	2.225		
3492	3437	2.674	2.378	34.928	6.18	0.96	0.00	17.8	27.904	32.563	37.108	41.544	45.875	44.5	2.450		
3990	3923	2.400	2.055	34.911	6.26	0.96	0.00	18.2	27.917	32.585	37.139	41.583	45.923	43.7	2.670		
4450	4370	2.319	1.923	34.900	6.28	1.02	0.00	19.6	27.919	32.591	37.148	41.596	45.939	45.2	2.874		
4927	4833	2.269	1.817	34.888	6.14	1.09	0.00	20.0	27.918	32.593	37.153	41.604	45.949	47.1	3.094		

STATION 6

STATION 7									
SONIC DEPTH= 471M									
24 DRS.									
17/ 9/81									
LAT = 40 45.0 S LONG = 63 45.0 W									
7									
PR	DF	T	B	S	OXY	PHOS	SIL	NO2	N+N
dbar	m	deg C	deg C	o/oo	ml/l				
104	103	18.444	18.426	36.545	4.64	0.05	0.2	0.00	2.9
153	152	18.187	18.160	36.541	4.74	0.05	0.2	0.00	2.9
202	201	17.990	17.955	36.531	4.87	0.05	0.2	0.00	3.0
242	240	17.909	17.867	36.525	4.87	0.05	0.2	0.00	3.0
304	301	17.799	17.747	36.513	4.95	0.05	0.2	0.00	2.9
352	349	17.689	17.627	36.449	4.90	0.05	0.2	0.00	3.2
404	400	17.427	17.353	36.448	4.76	0.36	0.2	0.00	4.4
453	449	16.856	16.780	36.337	4.49	0.39	2.5	0.00	7.0
499	495	16.343	16.263	36.251	4.24	0.45	2.1	0.00	8.8
601	595	12.795	13.707	35.822	3.80	0.78	5.6	0.00	16.3
659	652	10.984	10.896	35.426	3.72	1.50	9.2	0.00	21.8
797	789	9.816	8.727	35.190	3.49	1.70	12.6	0.00	24.6
896	887	6.981	6.892	35.086	4.18	1.68	12.8	0.00	23.6
994	984	5.915	5.825	35.043	4.74	1.55	12.0	0.00	21.8
1243	1230	4.695	4.591	35.008	5.63	1.40	10.4	0.00	19.2
1493	1477	4.278	4.154	34.992	5.80	1.32	10.4	0.00	18.4
1747	1727	4.011	3.868	34.978	6.04	1.32	10.8	0.00	18.4
1994	1969	3.831	3.667	34.977	6.00	1.44	12.0	0.00	18.6
2497	2463	3.471	3.263	34.971	6.07	1.44	16.0	0.00	18.2
2991	2947	3.037	2.787	34.947	6.11	1.44	17.4	0.00	18.0
3492	3435	2.629	2.334	34.926	6.24	1.50	18.4	0.00	17.4
3995	3918	2.390	2.046	34.910	6.15	1.44	26.6	0.00	19.6
4201	4128	2.340	1.973	34.907	6.31	1.44	21.8	0.00	17.4
4863	4771	2.259	1.915	34.889	6.00	1.86	37.0	0.00	20.2
STATION 7									
SIG-0									
SIG-1									
SIG-2									
SIG-3									
SIG-4									
ANOM									
HEIGHT									
171.0	0.089								
166.9	0.173								
164.6	0.254								
164.5	0.319								
164.9	0.421								
168.5	0.502								
164.1	0.588								
160.4	0.668								
156.3	0.741								
134.9	0.889								
111.1	1.010								
92.4	1.109								
72.8	1.191								
61.8	1.257								
50.5	1.397								
48.7	1.521								
48.5	1.645								
48.1	1.764								
47.4	2.004								
45.9	2.234								
43.9	2.459								
43.6	2.675								
43.9	2.770								
46.6	3.070								

ENDEAVOUR 74										LAT = 40 19.8 S LONG = 63 25.8 W										17/ 9/81										24 HRS.										SONIC DEPTH= 4457m										STATION 8									
OP	NE	T	Q	S	NY	PHOS	SIL	NO2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANJM	HEIGHT																																											
4548	"	deg C	deg C	o/oo	ml/l																																																						
100	99	19.075	19.057	36.580	4.49	0.05	0.2	0.00	3.2	26.231	30.521	34.711	38.804	42.806	183.7	0.092																																											
154	152	18.248	18.241	36.548	4.72	0.05	0.2	0.00	3.2	26.414	30.717	34.920	39.026	43.040	168.3	0.187																																											
201	199	18.027	17.992	36.541	4.79	0.05	0.2	0.00	3.2	26.471	30.778	34.985	39.095	43.113	164.7	0.266																																											
253	250	17.857	17.819	36.517	4.87	0.05	0.2	0.00	3.4	26.495	30.806	35.015	39.128	43.148	164.3	0.350																																											
301	299	17.785	17.733	36.516	4.92	0.05	0.2	0.00	3.2	26.516	30.828	35.038	39.152	43.174	164.2	0.431																																											
350	347	17.645	17.585	36.496	4.90	0.05	0.2	0.00	3.8	26.537	30.852	35.065	39.191	43.205	164.0	0.510																																											
403	400	16.954	16.897	36.362	4.50	0.33	1.7	0.00	6.7	26.601	30.928	35.153	39.281	43.317	159.5	0.596																																											
444	440	15.816	15.745	36.153	4.07	0.47	3.2	0.00	10.7	26.710	31.058	35.304	39.452	43.507	149.8	0.660																																											
502	497	14.409	14.333	35.912	3.82	0.68	5.3	0.00	14.1	26.838	31.213	35.485	39.659	43.738	138.4	0.743																																											
603	597	11.851	11.771	35.535	3.68	0.96	9.2	0.00	19.5	27.066	31.495	35.818	40.040	44.166	117.1	0.872																																											
701	695	9.201	9.121	35.213	3.42	1.48	13.0	0.00	25.4	27.285	31.772	36.152	40.428	44.607	95.3	0.977																																											
801	793	7.185	7.105	35.088	4.12	1.46	13.8	0.00	24.6	27.494	32.029	36.454	40.775	44.996	74.2	1.061																																											
893	885	5.882	5.802	35.042	4.82	1.34	13.0	0.00	22.4	27.632	32.199	36.656	41.007	45.256	60.1	1.123																																											
1000	990	5.201	5.115	35.028	5.27	1.40	13.6	0.00	21.2	27.705	32.290	36.763	41.130	45.395	53.2	1.183																																											
1247	1234	4.422	4.389	35.002	5.81	1.10	10.8	0.00	18.6	27.767	32.371	36.863	41.247	45.530	48.4	1.309																																											
1495	1478	4.175	4.053	34.985	5.98	1.10	11.2	0.00	18.8	27.790	32.403	36.903	41.296	45.596	47.9	1.428																																											
1742	1721	3.938	3.797	34.978	6.08	1.12	13.2	0.00	18.4	27.811	32.431	36.938	41.337	45.633	47.4	1.545																																											
1993	1968	3.777	3.613	34.978	6.08	0.00	0.0	0.00	0.0	27.830	32.454	36.966	41.370	45.671	47.3	1.664																																											
2497	2463	3.377	3.171	34.964	6.10	1.12	16.4	0.00	18.6	27.862	32.498	37.022	41.437	45.748	46.5	1.901																																											
2993	2949	2.908	2.659	34.945	6.16	1.30	20.2	0.00	18.6	27.894	32.544	37.081	41.510	45.834	44.1	2.125																																											
3402	3436	2.487	2.176	34.919	6.26	1.24	21.6	0.00	18.4	27.912	32.576	37.126	41.566	45.902	42.2	2.341																																											
3992	3924	2.315	1.973	34.911	6.14	1.24	19.8	0.00	19.2	27.924	32.594	37.150	41.596	45.938	42.3	2.552																																											
4482	4401	2.252	1.854	34.900	6.18	1.30	35.0	0.00	20.2	27.925	32.598	37.157	41.607	45.952	44.1	2.764																																											
4740	4651	2.234	1.806	34.889	6.03	1.32	39.2	0.00	21.0	27.919	32.595	37.155	41.606	45.952	45.6	2.879																																											

ENFEEAVER 74	9	LAT = 40 34.2 S				LONG = 62	7.2 W	18/ 9/81	23 MAR.	SONIC DEPTH= 4666m				STATION	9	
Pg	DF	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
char	m	deg C	deg C	c/oo	ml/l											
101	100	19.255	12.237	36.596	4.24	0.10	1.2	0.00	3.4	26.197	30.484	34.670	38.761	42.761	187.0	0.095
152	151	18.075	14.048	36.505	4.43	0.10	1.3	0.00	4.7	26.429	30.735	34.942	39.051	43.068	166.8	0.185
203	201	17.191	17.156	36.347	4.34	0.16	2.2	0.00	6.6	26.542	30.865	35.086	39.210	43.241	157.7	0.268
251	249	14.736	14.638	35.899	3.83	0.49	5.0	0.00	13.4	26.748	31.117	35.383	39.550	43.624	139.9	0.339
305	302	12.758	12.716	35.625	3.76	0.81	7.6	0.00	16.9	26.952	31.361	35.664	39.868	43.977	120.3	0.409
351	348	11.862	11.816	35.547	3.92	0.90	9.4	0.00	18.6	27.067	31.494	35.816	40.037	44.163	110.1	0.462
401	398	10.675	10.646	35.405	3.65	1.16	11.6	0.00	21.2	27.173	31.626	35.972	40.217	44.365	100.5	0.515
450	446	9.538	9.487	35.240	3.29	1.37	15.1	0.00	25.2	27.245	31.724	36.096	40.365	44.536	93.8	0.562
501	495	8.137	8.085	35.126	3.62	1.39	16.0	0.00	24.2	27.380	31.892	36.294	40.594	44.794	80.7	0.606
505	505	6.680	6.624	35.065	4.35	1.25	14.4	0.00	22.2	27.542	32.089	36.576	40.858	45.089	65.4	0.679
593	593	5.823	5.761	35.043	4.85	1.37	13.8	0.00	23.2	27.638	32.206	36.654	41.015	45.266	56.6	0.740
797	789	5.315	5.247	35.032	5.09	1.22	13.2	0.00	20.6	27.693	32.274	36.744	41.108	45.370	51.9	0.793
901	892	4.845	4.771	35.014	5.45	1.20	12.4	0.00	19.2	27.734	32.328	36.810	41.185	45.458	48.4	0.845
999	990	4.622	4.548	35.008	5.70	1.22	12.0	0.00	19.8	27.755	32.354	36.842	41.222	45.501	47.1	0.892
1255	1241	4.146	4.046	34.967	6.07	1.10	12.0	0.00	19.2	27.777	32.390	36.890	41.283	45.574	46.5	1.011
1499	1482	3.989	3.969	34.971	6.01	1.12	12.0	0.00	17.6	27.798	32.416	36.921	41.319	45.613	46.4	1.125
1997	1972	3.673	3.610	34.976	6.07	1.04	15.0	0.00	17.8	27.839	32.466	36.980	41.387	45.690	46.0	1.355
2504	2469	3.283	3.078	34.962	6.10	1.22	16.8	0.00	18.2	27.869	32.508	37.034	41.451	45.765	45.3	1.584
2995	2951	2.849	2.641	34.942	-9.00	1.22	19.8	0.00	18.0	27.893	32.544	37.092	41.511	45.835	44.0	1.806
3495	3439	2.535	2.242	34.923	6.20	1.22	22.8	0.00	18.0	27.912	32.574	37.123	41.562	45.897	42.7	2.023
3990	3922	2.372	1.980	34.908	6.17	1.06	24.8	0.00	17.8	27.921	32.591	37.147	41.593	45.934	42.6	2.234
4487	4406	2.248	1.850	34.895	6.07	1.22	33.0	0.00	18.8	27.921	32.595	37.154	41.604	45.949	44.4	2.450
4655	4568	2.238	1.820	34.891	6.06	-1.24	37.0	0.00	19.8	27.920	32.595	37.155	41.605	45.951	45.2	2.525

STATION 9

ENDFACCP 74		10	LAT = 40 49.2 S			LONG = 62 40.8 W			18/ 9/81	22 OPS.	SONIC DEPTH= 4477m			STATION	10	
PO	DF	T	θ	S	RAY	PHOS	SIL	NO2	N+M	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
char	m	deg C	deg C	o/oo	ml/l											
100	99	14.601	14.586	35.733	4.02	0.57	4.3	0.00	12.1	26.645	31.017	35.286	39.456	43.532	143.6	0.072
152	150	12.635	12.614	35.568	4.16	0.68	5.4	0.00	14.1	26.928	31.339	35.645	39.851	43.963	118.0	0.140
202	200	11.860	11.833	35.546	4.21	0.81	7.0	0.00	16.6	27.079	31.505	35.827	40.048	44.173	104.9	0.196
253	251	10.731	10.701	35.420	3.90	1.02	9.8	0.00	20.0	27.175	31.627	35.972	40.215	44.362	96.6	0.247
303	300	9.507	9.472	35.262	3.45	1.19	12.5	0.00	22.3	27.265	31.744	36.116	40.385	44.557	88.6	0.294
352	349	8.454	8.417	35.137	3.47	1.52	16.1	0.00	25.5	27.337	31.841	36.237	40.529	44.722	82.0	0.335
402	398	7.600	7.560	35.111	3.85	1.40	15.4	0.00	25.0	27.446	31.970	36.385	40.696	44.907	72.0	0.374
448	444	6.916	6.874	35.091	4.18	1.34	15.3	0.00	23.9	27.529	32.069	36.500	40.826	45.052	64.4	0.406
501	496	6.123	6.078	35.024	4.62	1.09	12.7	0.00	20.1	27.582	32.143	36.593	40.937	45.181	59.3	0.438
600	595	5.292	5.242	35.003	5.20	1.03	12.0	0.00	19.1	27.670	32.252	36.722	41.087	45.349	51.4	0.493
698	692	4.844	4.787	34.994	5.52	1.03	12.4	0.00	19.7	27.716	32.310	36.792	41.167	45.440	47.6	0.541
799	791	4.751	4.686	35.008	5.62	1.32	11.2	0.00	18.8	27.739	32.335	36.819	41.196	45.472	46.5	0.589
898	889	4.455	4.384	34.981	5.83	1.14	10.6	0.00	18.8	27.751	32.355	36.847	41.232	45.515	45.9	0.634
1001	991	4.310	4.231	34.977	5.90	1.08	10.8	0.00	18.2	27.765	32.373	36.869	41.257	45.543	45.4	0.681
1247	1234	4.120	4.021	34.981	6.07	0.96	10.4	0.00	17.8	27.790	32.404	36.905	41.299	45.590	45.1	0.793
1744	1723	3.796	3.655	34.975	6.11	1.02	12.4	0.00	18.2	27.823	32.447	36.957	41.360	45.660	45.7	1.018
1999	1974	3.597	3.436	34.978	6.10	1.02	13.8	0.00	18.2	27.848	32.477	36.993	41.401	45.706	44.9	1.134
2490	2456	3.200	2.998	34.959	6.20	1.06	16.8	0.00	18.2	27.874	32.515	37.043	41.463	45.779	44.2	1.352
2990	2945	2.771	2.526	34.938	6.20	1.06	20.2	0.00	18.2	27.900	32.554	37.095	41.527	45.854	42.5	1.569
3493	3438	2.416	2.127	34.914	6.25	1.04	23.2	0.00	18.2	27.914	32.580	37.132	41.574	45.912	41.4	1.781
3992	3924	2.279	1.928	34.904	6.24	1.06	26.6	0.00	18.2	27.921	32.592	37.149	41.597	45.939	42.2	1.989
4530	4448	2.214	1.812	34.894	6.07	1.16	37.4	0.00	19.8	27.923	32.598	37.158	41.609	45.955	44.1	2.221

STATION 10

ENDFAVOR	74	11	LAT = 41	1.8 S	LONG = 62	31.8 W	18/ 9/81	23 OBS.	SONIC DEPTH= 4370m	STATION	11				
dbar	DE	T	θ	S	PHY	SIL	NO2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
53	52	17.477	17.468	36.043	4.14	0.41	0.00	6.1	26.234	30.553	34.771	38.892	42.920	181.4	0.048
101	109	15.065	15.050	35.979	3.50	0.71	0.00	14.4	26.733	31.095	35.354	39.514	43.581	135.5	0.125
151	150	12.891	12.870	35.658	3.56	0.91	0.00	17.4	26.946	31.352	35.652	39.853	43.959	116.3	0.188
201	193	11.674	11.648	35.512	3.48	1.13	0.00	20.9	27.073	31.504	35.829	40.054	44.182	105.4	0.243
251	240	10.080	10.050	35.319	3.42	1.29	0.00	23.6	27.211	31.677	36.036	40.294	44.453	92.8	0.293
301	299	8.872	8.840	35.178	3.40	1.44	0.00	25.6	27.303	31.797	36.183	40.466	44.650	84.5	0.337
402	398	7.047	7.009	35.051	4.08	1.38	0.00	24.2	27.478	32.016	36.444	40.767	44.990	68.5	0.414
449	445	6.255	6.215	35.004	4.46	1.30	0.00	23.0	27.549	32.106	36.553	40.895	45.136	61.8	0.445
500	495	5.694	5.653	34.928	4.81	1.23	0.00	21.6	27.608	32.180	36.640	40.995	45.248	56.3	0.475
600	594	5.338	5.288	35.011	5.23	1.16	0.00	20.9	27.671	32.251	36.721	41.084	45.345	51.3	0.529
699	692	4.949	4.892	35.006	5.45	1.13	0.00	20.0	27.714	32.304	36.784	41.156	45.427	49.0	0.578
797	789	4.752	4.687	35.009	5.65	1.05	0.00	19.6	27.740	32.336	36.820	41.197	45.472	46.4	0.624
896	887	4.564	4.492	35.006	5.81	1.06	0.00	19.3	27.759	32.360	36.849	41.231	45.511	45.4	0.670
997	987	4.339	4.260	34.987	5.91	1.05	0.00	19.0	27.770	32.377	36.872	41.260	45.545	45.0	0.715
1245	1233	4.137	4.038	34.983	6.01	1.02	0.00	18.8	27.790	32.403	36.904	41.297	45.588	45.2	0.828
1401	1474	3.912	3.794	34.970	6.46	1.05	0.00	18.4	27.805	32.425	36.932	41.331	45.628	45.4	0.938
1742	1721	3.804	3.663	34.975	6.10	0.99	0.00	18.8	27.822	32.446	36.956	41.359	45.658	45.8	1.053
2022	1996	3.587	3.424	34.974	5.11	1.08	0.00	18.6	27.845	32.475	36.992	41.400	45.706	45.2	1.180
2493	2459	3.069	2.869	34.953	6.16	1.07	0.00	18.7	27.881	32.526	37.058	41.480	45.799	42.8	1.388
2992	2947	2.675	2.432	34.933	6.26	1.05	0.00	18.5	27.904	32.561	37.104	41.538	45.868	41.5	1.597
3494	3439	2.384	2.097	34.914	6.27	1.02	0.00	18.2	27.918	32.585	37.137	41.580	45.919	40.8	1.804
3954	3891	2.271	1.934	34.907	6.27	1.13	0.00	18.6	27.924	32.595	37.152	41.600	45.942	41.7	1.996
4433	4353	2.205	1.815	34.890	6.07	1.21	0.00	20.6	27.920	32.594	37.155	41.605	45.951	43.8	2.198

STATION 11

ENDEAVOR-74		12	LAT = 39 46.8 N			LONG = 62	6.0 W	19/ 9/81	22 DRS.	SONIC DEPTH= 5059m				ANOM	HEIGHT	STATION	12
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-θ	SIG-1	SIG-2	SIG-3	SIG-4			
dbar	m	deg C	deg C	o/oo	ml/l												
107	106	13.858	13.842	35.733	3.84					26.804	31.190	35.472	39.656	43.744	128.6	0.069	
157	155	12.360	12.339	35.612	3.62					27.016	31.433	35.744	39.955	44.070	109.7	0.128	
209	206	11.371	11.345	35.481	3.65					27.105	31.542	35.874	40.104	44.239	102.4	0.183	
259	257	9.889	9.859	35.296	3.34					27.226	31.697	36.060	40.321	44.485	91.4	0.233	
359	356	8.019	7.982	35.119	3.64					27.390	31.904	36.309	40.611	44.813	76.8	0.316	
409	406	7.228	7.189	35.091	4.10					27.484	32.017	36.441	40.760	44.979	68.2	0.353	
461	457	6.297	6.256	35.055	4.54					27.584	32.140	36.585	40.925	45.165	58.8	0.385	
510	506	5.719	5.675	35.031	4.77					27.639	32.210	36.670	41.023	45.276	53.6	0.413	
611	606	5.067	5.016	35.005	5.64					27.699	32.286	36.762	41.131	45.399	48.5	0.465	
713	706	4.868	4.810	35.021	5.48					27.735	32.328	36.809	41.183	45.455	46.0	0.513	
813	805	4.470	4.406	34.996	5.79					27.761	32.364	36.855	41.240	45.522	44.0	0.558	
1017	1007	4.281	4.201	34.991	5.92					27.779	32.388	36.884	41.274	45.560	44.2	0.648	
1271	1257	4.010	3.910	34.976	5.94					27.798	32.415	36.919	41.315	45.609	44.3	0.760	
1521	1504	3.849	3.729	34.977	5.95					27.817	32.439	36.948	41.349	45.647	44.4	0.871	
1744	1723	3.742	3.602	34.979	6.01					27.832	32.457	36.969	41.373	45.674	44.7	0.970	
2026	2001	3.534	3.371	34.973	5.94					27.850	32.481	36.999	41.409	45.716	44.5	1.096	
2534	2500	3.157	2.951	34.957						27.877	32.520	37.049	41.469	45.786	44.0	1.321	
3039	2994	2.790	2.539	34.937	6.09					27.898	32.552	37.092	41.524	45.851	43.2	1.541	
3550	3404	2.432	2.136	34.914	5.98					27.913	32.579	37.130	41.572	45.910	42.0	1.759	
4062	3993	2.299	1.949	34.900	6.11					27.917	32.588	37.145	41.592	45.934	43.1	1.977	
4576	4492	2.286	1.876	34.897	5.89					27.920	32.593	37.152	41.601	45.945	45.3	2.204	
5091	4993	2.289	1.815	34.892	6.14					27.921	32.596	37.156	41.607	45.953	47.8	2.444	

ENDEAVOR-74		14	LAT = 39 55.8 N			LONG = 62 55.2 W			197 9/81	24 DRS.	SONIC DEPTH= 4900m			STATION 14		
PR	DBAR	DE	T	θ	S	OX	PHOS	SIL	N02	N+N	SIG-A	SIG-2	SIG-3	SIG-4	AVOM	HEIGHT
		m	deg C	deg C	o/oo	ml/l										
99		98	18.978	18.960	36.578	4.35					30.546	34.737	38.832	42.835	181.4	0.090
144		143	18.217	18.192	36.536	4.55					30.771	34.925	39.032	43.047	167.6	0.169
198		105	17.949	17.915	36.527	4.82					30.788	34.906	39.107	43.126	163.8	0.258
234		232	17.400	17.360	36.411	4.41					30.846	35.063	39.183	43.212	160.5	0.317
297		295	15.001	14.956	35.840	3.85					31.011	35.273	39.436	43.505	150.2	0.415
345		342	13.826	13.776	35.767	3.76					31.231	35.515	39.699	43.788	132.3	0.483
387		384	12.470	12.418	35.601	4.21					31.407	35.717	39.926	44.041	118.6	0.535
498		494	9.140	9.084	35.153	3.60					31.732	36.113	40.391	44.571	94.6	0.654
600		595	6.882	6.824	35.012	4.18					32.016	36.448	40.776	45.003	72.2	0.739
696		689	6.153	6.089	35.182	4.64					32.265	36.713	41.056	45.299	50.8	0.797
799		791	5.448	5.379	35.038	5.10					32.259	36.726	41.097	45.346	53.3	0.851
899		890	4.995	4.920	35.025	5.43					32.315	36.794	41.165	45.435	49.5	0.902
996		986	4.673	4.592	35.007	5.87					32.347	36.834	41.213	45.491	47.7	0.950
1101		1089	4.475	4.385	35.003	5.79					32.372	36.864	41.249	45.531	46.6	0.999
1201		1188	4.322	4.225	34.993	5.92					32.386	36.882	41.271	45.557	46.4	1.044
1300		1296	4.187	4.083	34.986	5.94					32.400	36.899	41.291	45.581	46.1	1.092
1399		1383	4.119	4.006	34.985	6.10					32.409	36.911	41.305	45.596	46.2	1.137
1494		1477	4.059	3.948	34.982	6.05					32.414	36.917	41.313	45.606	46.7	1.181
1744		1723	3.858	3.717	34.979	6.09					32.442	36.951	41.352	45.650	46.3	1.297
1994		1969	3.682	3.520	34.977	6.14					32.465	36.980	41.386	45.689	46.1	1.413
2244		2215	3.450	3.267	34.967	6.14					32.489	37.010	41.422	45.732	45.5	1.527
2494		2460	3.230	3.027	34.960	6.14					32.513	37.040	41.459	45.774	44.6	1.640
2727		2689	3.043	2.819	34.953	6.17					32.532	37.065	41.489	45.809	43.9	1.743
2982		2938	2.845	2.599	34.943	6.25					32.550	37.088	41.518	45.844	43.2	1.854

ENDEAVOR-74		15	LAT = 38 49.8 N			LONG = 63 19.2 W			20/ 9/81	22 OBS.	SONIC DEPTH= 4941m			STATION	15	
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-θ	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
103	102	21.272	21.252	36.704	4.21					25.740	29.995	34.151	38.213	42.183	230.8	0.119
152	151	19.738	19.709	36.649	4.31					26.114	30.393	34.572	38.656	42.648	197.1	0.224
202	200	18.791	18.755	36.567	4.31					26.298	30.593	34.788	38.886	42.892	191.3	0.318
253	251	18.363	18.318	36.545	4.58					26.392	30.694	34.896	39.000	43.014	174.3	0.409
299	296	18.060	18.008	36.498	4.56					26.434	30.741	34.948	39.058	43.076	172.0	0.489
352	349	17.703	17.642	36.460	4.61					26.495	30.809	35.021	39.137	43.141	168.0	0.578
401	398	17.299	17.231	36.375	4.39					26.531	30.852	35.071	39.194	43.224	166.3	0.662
448	444	16.564	16.490	36.269	4.21					26.626	30.961	35.193	39.328	43.371	159.4	0.737
595	589	13.652	13.566	35.809	3.65					26.921	31.312	35.598	39.786	43.879	132.7	0.951
696	690	10.878	10.791	35.428	3.59					27.165	31.615	35.958	40.199	44.345	108.9	1.074
796	789	8.770	8.681	35.120	3.19					27.283	31.781	36.170	40.457	44.645	96.8	1.177
896	887	7.264	7.174	35.093	4.16					27.488	32.021	36.445	40.764	44.984	76.6	1.263
995	985	5.916	5.825	35.041	4.91					27.628	32.195	36.651	41.001	45.250	52.0	1.331
1252	1239	4.671	4.567	35.004	5.78					27.749	32.348	36.836	41.216	45.494	50.7	1.476
1491	1474	4.276	4.153	34.995	6.12					27.787	32.397	36.895	41.285	45.573	48.4	1.595
1743	1722	4.023	3.880	34.978	6.17					27.803	32.420	36.925	41.322	45.617	48.6	1.717
1902	1868	3.829	3.665	34.978	6.22					27.825	32.448	36.958	41.361	45.660	48.0	1.837
2255	2226	3.577	3.391	34.976	6.14					27.850	32.481	36.998	41.408	45.714	46.7	1.962
2491	2458	3.364	3.158	34.967	6.13					27.866	32.502	37.026	41.441	45.753	46.0	2.071
2741	2702	3.143	2.916	34.961	6.14					27.883	32.527	37.057	41.478	45.796	44.9	2.185
3241	3192	2.688	2.418	34.931	6.26					27.903	32.561	37.104	41.539	45.869	43.2	2.405
3502	3447	2.577	2.282	34.925	6.22					27.910	32.571	37.119	41.557	45.891	43.2	2.518

ENDEAVOR-74		16	LAT = 39 9.0 N		LONG = 63 27.0 W		20/ 9/81	23 OBS.	SONIC DEPTH= 4940m				STATION 16			
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
154	152	19.946	19.917	36.651	4.49					26.060	30.336	34.513	38.593	42.582	202.3	0.156
201	199	18.932	18.896	36.521	4.71					26.227	30.520	34.713	38.809	42.814	188.1	0.248
250	248	17.341	17.298	36.348	4.78					26.494	30.814	35.032	39.154	43.184	154.2	0.334
301	298	16.662	16.613	36.268	4.57					26.596	30.929	35.159	39.292	43.333	156.0	0.416
350	347	16.084	16.028	36.185	4.11					26.669	31.013	35.253	39.396	43.447	150.5	0.491
400	396	15.470	15.408	36.089	3.46					26.737	31.092	35.344	39.498	43.559	145.4	0.565
457	453	14.545	14.476	36.088	3.35					26.943	31.314	35.583	39.753	43.828	127.2	0.643
504	499	13.863	13.749	35.934	3.58					26.971	31.356	35.638	39.821	43.909	125.5	0.702
597	592	11.660	11.592	35.520						27.091	31.573	35.850	40.075	44.205	114.4	0.814
704	697	9.032	8.953	35.188	4.00					27.509	32.045	36.472	40.795	44.630	94.3	0.925
802	794	7.113	7.033	35.094	4.85					27.621	32.190	36.648	41.001	45.252	72.7	1.007
899	890	5.819	5.738	35.013	5.04					27.694	32.278	36.750	41.116	45.381	54.3	1.128
995	985	5.241	5.156	35.020	5.35					27.762	32.369	36.864	41.251	45.536	48.5	1.256
1246	1233	4.377	4.276	34.980	5.80					27.790	32.404	36.906	41.300	45.592	47.7	1.377
1496	1480	4.118	3.997	34.977	6.02					27.807	32.425	36.931	41.330	45.625	48.0	1.496
1746	1725	3.977	3.834	34.978	6.09					27.828	32.453	36.964	41.367	45.668	47.5	1.615
1995	1970	3.791	3.627	34.978	5.92					27.864	32.500	37.023	41.438	45.749	46.3	1.848
2492	2458	3.389	3.193	34.968	6.06					27.889	32.538	37.074	41.500	45.823	45.0	2.080
2998	2954	2.962	2.719	34.946						27.907	32.568	37.114	41.551	45.884	43.5	2.282
3455	3401	2.607	2.316	34.925	5.97					27.916	32.586	37.141	41.587	45.928	43.3	2.515
3993	3926	2.344	2.001	34.904	6.03					27.919	32.592	37.150	41.599	45.943	45.0	2.738
4499	4418	2.279	1.879	34.895	6.09					27.916	32.591	37.153	41.605	45.951	47.8	3.010
5084	4986	2.254	1.782	34.882	6.02											

ENDEAVOR-74		17	LAT = 39 28.2 N		LONG = 63 28.2 W		21/ 9/81	24 DRS.	SONIC DEPTH= 4941m					STATION 17		
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-B	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
102	101	18.915	18.896	36.550						26.249	30.542	34.734	38.830	42.835	192.0	0.094
153	152	18.292	18.265	36.538						26.400	30.703	34.905	39.011	43.025	169.6	0.183
204	202	17.949	17.914	36.520						26.474	30.783	34.991	39.102	43.121	164.5	0.268
250	248	17.690	17.647	36.498						26.523	30.837	35.049	39.164	43.188	161.5	0.343
300	297	17.470	17.418	36.452						26.544	30.862	35.078	39.197	43.224	161.3	0.423
347	344	16.295	16.238	36.239						26.662	31.001	35.238	39.377	43.424	151.3	0.498
400	396	13.765	13.707	35.835	3.95					26.911	31.299	35.583	39.768	43.859	127.7	0.571
450	446	12.396	12.335	35.616	3.69					27.020	31.437	35.748	39.959	44.075	117.9	0.632
496	492	11.733	11.668	35.508	3.58					27.065	31.496	35.821	40.045	44.173	114.2	0.686
593	593	9.387	9.319	35.221						27.258	31.741	36.117	40.389	44.564	95.7	0.793
700	693	7.198	7.118	35.068	3.44					27.476	32.011	36.436	40.757	44.978	74.1	0.946
797	790	5.670	5.609	34.960	4.02					27.591	32.164	36.626	40.982	45.237	62.1	0.946
897	888	5.510	5.432	35.039	4.85					27.676	32.252	36.718	41.077	45.335	55.3	1.004
993	983	5.061	4.976	35.027	5.19					27.721	32.309	36.786	41.156	45.424	51.3	1.055
1250	1237	4.449	4.347	35.006	5.71					27.775	32.390	36.873	41.258	45.541	47.6	1.182
1493	1476	4.138	4.017	34.986	6.08					27.795	32.408	36.910	41.303	45.595	47.3	1.297
1742	1721	3.924	3.782	34.983						27.817	32.437	36.944	41.344	45.640	46.9	1.414
1990	1965	3.770	3.607	34.976	6.13					27.829	32.454	36.965	41.370	45.670	47.3	1.531
2488	2454	3.351	3.146	34.964	6.09					27.864	32.501	37.026	41.441	45.753	46.0	1.764
2992	2948	2.948	2.699	34.943	6.14					27.889	32.538	37.074	41.501	45.825	44.8	1.993
3493	3438	2.527	2.234	34.920	6.09					27.910	32.573	37.121	41.561	45.896	42.7	2.212
3991	3924	2.330	1.987	34.903	6.18					27.916	32.586	37.142	41.588	45.929	43.1	2.426
4487	4406	2.289	1.890	34.896	6.16					27.919	32.591	37.149	41.598	45.942	45.1	2.644
4992	4897	2.273	1.812	34.888	5.95					27.918	32.593	37.154	41.604	45.950	47.4	2.878

ENDEXVOR-74		18	LAT = 39 48.0 N		LONG = 63 42.0 W		21/ 9/81	24 OBS.	SONIC DEPTH= 4916m					STATION 18		
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-B	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
101	100	18.352	18.335	36.542	4.75					26.386	30.688	34.889	38.993	43.006	158.9	0.086
150	149	18.076	18.050	36.531	4.80					26.449	30.755	34.961	39.070	43.087	154.8	0.167
200	198	17.934	17.899	36.527	4.85					26.483	30.792	35.000	39.112	43.131	153.5	0.250
249	247	17.921	17.778	36.515	4.95					26.504	30.815	35.025	39.138	43.160	163.4	0.330
299	296	17.729	17.677	36.509	4.96					26.524	30.837	35.049	39.164	43.186	153.3	0.411
349	346	17.591	17.532	36.481	4.94					26.539	30.854	35.068	39.185	43.211	163.8	0.492
400	396	17.147	17.080	36.385	4.77					26.576	30.899	35.121	39.246	43.279	161.9	0.575
449	445	15.930	15.858	36.199	4.25					26.719	31.065	35.309	39.455	43.508	149.2	0.652
498	493	14.583	14.509	35.942	3.88					26.823	31.195	35.464	39.634	43.711	139.8	0.723
598	592	11.296	11.220	35.460	3.62					27.112	31.552	35.886	40.119	44.256	112.0	0.848
697	691	8.847	8.770	35.178	3.51					27.314	31.809	36.197	40.481	44.667	91.9	0.950
797	789	7.317	7.237	35.093	4.04					27.479	32.011	36.433	40.751	44.969	75.8	1.034
896	887	5.520	5.501	34.989	5.00					27.628	32.203	36.667	41.025	45.282	59.9	1.101
999	989	5.262	5.176	35.031	5.28					27.700	32.283	36.755	41.121	45.385	53.8	1.159
1239	1226	4.502	4.400	34.998	5.81					27.763	32.367	36.858	41.242	45.524	48.7	1.282
1491	1474	4.192	4.070	34.986	6.01					27.789	32.401	36.901	41.294	45.584	48.0	1.404
1743	1723	3.978	3.835	34.979	6.17					27.808	32.427	36.933	41.331	45.626	47.9	1.525
1991	1966	3.806	3.642	34.977	6.07					27.826	32.450	36.961	41.364	45.664	47.8	1.643
2485	2452	3.419	3.213	34.963	6.03					27.857	32.493	37.015	41.429	45.739	47.1	1.878
2991	2947	3.003	2.753	34.945	6.12					27.885	32.533	37.068	41.494	45.816	45.5	2.112
3490	3435	2.630	2.335	34.926	6.20					27.906	32.566	37.112	41.549	45.881	43.9	2.335
3990	3922	2.387	2.043	34.908	6.23					27.916	32.584	37.138	41.583	45.923	43.7	2.554
4492	4411	2.314	1.913	34.903	6.19					27.922	32.594	37.152	41.600	45.943	45.0	2.777
5009	4913	2.284	1.821	34.890	6.08					27.919	32.594	37.154	41.605	45.950	47.5	3.016

ENDREAVOR 74		19	LAT = 40 25.2 S		LONG = 63 51.0 W		21/ 9/81	24 HRS.	SONIC DEPTH= 4560m					STATION 19		
DR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
char	m	deg C	deg C	o/oo	ml/l											
102	101	18.363	13.345	36.544	4.50	0.05	1.5	0.00	3.2	26.385	30.686	34.887	38.992	43.004	169.1	0.086
141	140	18.089	13.065	36.535	4.88	0.05	1.4	0.00	3.0	26.448	30.755	34.960	39.068	43.085	164.5	0.151
204	202	17.481	17.446	36.522	4.88	0.05	1.4	0.00	3.0	26.493	30.803	35.011	39.124	43.144	162.7	0.254
249	247	17.908	17.765	36.517	4.92	0.05	1.2	0.00	3.0	26.509	30.820	35.030	39.144	43.165	162.9	0.329
298	295	17.736	17.695	36.505	4.92	0.05	1.4	0.00	3.0	26.519	30.832	35.043	39.158	43.181	163.7	0.407
349	346	17.539	17.479	36.475	5.02	0.18	1.5	0.00	3.9	26.547	30.863	35.078	39.196	43.222	163.0	0.491
392	389	16.962	16.897	36.379	4.71	0.28	2.1	0.00	6.6	26.614	30.941	35.166	39.294	43.329	157.8	0.561
454	450	15.785	15.713	36.147	4.20	0.47	3.6	0.00	10.6	26.713	31.062	35.308	39.457	43.512	149.8	0.656
499	495	14.934	14.757	35.993	4.07	0.58	5.1	0.00	12.7	26.808	31.175	35.439	39.605	43.677	141.5	0.722
593	594	11.976	11.896	35.543	3.81	0.97	9.3	0.00	19.3	27.049	31.474	35.795	40.014	44.138	118.8	0.852
701	694	9.662	9.580	35.245	3.52	1.26	14.4	0.00	23.8	27.249	31.726	36.095	40.362	44.532	99.3	0.963
801	793	7.210	7.130	35.092	4.24	1.34	14.9	0.00	23.5	27.493	32.028	36.452	40.773	44.993	74.3	1.049
898	890	6.095	6.012	35.049	4.80	1.31	14.0	0.00	21.8	27.610	32.172	36.623	40.969	45.214	62.7	1.116
997	987	5.104	5.020	34.925	5.42	1.20	13.1	0.00	20.2	27.682	32.270	36.746	41.115	45.383	55.0	1.174
1245	1232	4.427	4.325	34.969	5.88	1.11	12.2	0.00	19.3	27.748	32.354	36.847	41.234	45.518	49.9	1.304
1493	1476	4.187	4.066	34.980	5.95	1.12	12.7	0.00	19.1	27.785	32.397	36.897	41.290	45.580	48.4	1.426
1740	1719	3.976	3.833	34.980	6.05	1.09	13.2	0.00	18.4	27.809	32.428	36.934	41.332	45.628	47.7	1.545
1987	1962	3.785	3.621	34.975	6.19	1.09	14.4	0.00	18.6	27.827	32.451	36.962	41.366	45.667	47.6	1.662
2481	2448	2.363	2.158	34.959	6.10	1.15	17.3	0.00	18.0	27.859	32.496	37.020	41.435	45.747	46.5	1.895
2984	2940	2.903	2.656	34.936	6.27	1.12	19.7	0.00	19.1	27.887	32.538	37.075	41.503	45.828	44.6	2.174
3489	3434	2.517	2.225	34.913	6.22	1.12	21.4	0.00	17.3	27.905	32.568	37.117	41.557	45.892	43.1	2.346
3996	3928	2.312	1.970	34.904	6.31	1.09	24.4	0.00	18.0	27.919	32.589	37.145	41.592	45.933	42.8	2.563
4479	4398	2.230	1.834	34.888	6.09	1.34	36.6	0.00	21.4	27.916	32.591	37.151	41.601	45.946	44.6	2.774
4640	4555	2.230	1.814	34.888	5.99	1.20	38.0	0.00	20.6	27.918	32.593	37.153	41.604	45.950	45.2	2.847

STATION 19

ENDEAVOR-74		20	LAT = 40 43.2 N			LONG = 63 55.8 W			21/ 9/81	20 OBS.	SONIC DEPTH= 4325m			STATION 20		
PR	OE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-θ	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
51	50	20.972	20.863	36.622	4.29					25.784	30.046	34.208	38.275	42.252	224.3	0.058
101	100	18.518	18.500	36.554	5.00					26.353	30.653	34.851	38.953	42.963	172.0	0.156
149	147	18.049	18.024	36.531	5.04					26.455	30.762	34.968	39.078	42.095	154.2	0.237
199	198	17.827	17.793	36.513	5.14					26.499	30.810	35.019	39.132	42.154	162.0	0.320
249	247	17.743	17.701	36.507	4.92					26.517	30.830	35.041	39.155	42.178	162.1	0.400
297	294	17.475	17.424	36.460	4.84					26.549	30.866	35.082	39.201	42.228	160.8	0.477
438	433	11.945	11.879	35.562	3.70					27.057	31.493	35.813	40.033	44.157	114.3	0.753
597	592	8.809	8.743	35.170	3.51					27.312	31.808	36.196	40.481	44.668	89.9	0.855
696	690	6.870	6.803	35.046	4.05					27.503	32.046	36.478	40.806	45.034	71.0	0.935
795	789	5.684	5.614	35.025	4.96					27.642	32.214	36.675	41.031	45.285	57.3	0.998
896	897	5.272	5.196	35.026	5.31					27.694	32.277	36.748	41.113	45.377	53.0	1.054
1083	1072	4.656	4.567	35.008	5.81					27.752	32.352	36.839	41.219	45.497	48.4	1.149
1491	1474	4.008	3.889	34.964	6.14					27.791	32.408	36.913	41.310	45.604	47.1	1.343
1739	1718	3.877	3.736	34.974	6.14					27.814	32.435	36.944	41.345	45.643	46.8	1.460
1882	1859	3.700	3.548	34.963	6.39					27.824	32.451	36.964	41.370	45.672	46.4	1.527
2400	2454	3.235	3.032	34.956	6.14					27.869	32.509	37.036	41.455	45.770	44.9	1.804
2986	2942	2.793	2.548	34.935	6.16					27.895	32.549	37.089	41.521	45.848	43.0	2.023
3488	3432	2.429	2.139	34.915	6.36					27.914	32.579	37.131	41.573	45.910	41.5	2.235
3982	3915	2.263	1.923	34.901	6.30					27.920	32.592	37.149	41.597	45.940	42.1	2.442
4393	4314	2.207	1.822	34.892	6.21					27.921	32.595	37.155	41.606	45.952	43.5	2.617

ENDEAVOR-74															21	LAT = 41		3.0 N	LONG = 64	1.8 W	22/ 9/81	23 ORS.	SONIC DEPTH= 3993m				STATION	21
PP	DF	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-B	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT												
dbar	m	deg C	deg C	o/oo	ml/l																							
53	53	20.010	20.000	34.314	4.03					25.781	30.058	34.235	38.316	42.306	224.6	0.060												
104	103	15.023	15.007	35.256	4.26					26.186	30.553	34.818	38.984	43.056	187.4	0.164												
152	151	13.304	13.282	35.642	4.04					26.850	31.248	35.541	39.735	43.833	125.6	0.240												
201	200	12.732	12.705	35.632	3.74					26.959	31.368	35.672	39.876	43.986	116.5	0.299												
250	248	11.774	11.743	35.540	4.01					27.076	31.505	35.828	40.050	44.177	106.5	0.354												
301	298	10.529	10.592	35.390	3.63					27.171	31.625	35.973	40.218	44.368	98.1	0.406												
350	347	9.590	9.560	35.257	3.50					27.250	31.728	36.098	40.366	44.536	91.1	0.452												
399	396	8.121	8.090	35.119	3.63					27.375	31.887	36.290	40.589	44.790	79.1	0.494												
449	445	7.168	7.125	35.039	4.12					27.452	31.987	36.413	40.733	44.954	71.8	0.532												
497	493	6.307	6.262	34.987	4.45					27.529	32.085	36.531	40.872	45.112	64.5	0.565												
598	592	5.612	5.561	35.011	4.98					27.638	32.211	36.674	41.030	45.286	54.8	0.625												
692	692	4.952	4.895	35.005	5.42					27.713	32.303	36.782	41.155	45.425	48.1	0.677												
797	790	4.848	4.783	35.026	5.54					27.742	32.336	36.817	41.192	45.465	46.4	0.723												
899	890	4.570	4.498	35.006	5.73					27.759	32.359	36.848	41.230	45.510	45.5	0.770												
999	989	4.167	4.089	34.949	6.05					27.758	32.370	36.869	41.262	45.551	45.7	0.816												
1246	1232	4.129	4.030	34.981	6.01					27.789	32.403	36.904	41.297	45.588	45.2	0.927												
1494	1477	3.821	3.703	34.959	6.17					27.806	32.428	36.938	41.339	45.638	45.1	1.040												
1741	1720	3.697	3.559	34.969	6.10					27.828	32.454	36.967	41.373	45.675	44.8	1.150												
1995	1970	3.536	3.375	34.966	6.23					27.844	32.475	36.993	41.403	45.709	44.8	1.264												
2492	2458	3.089	2.888	34.953	6.17					27.879	32.524	37.055	41.477	45.796	43.1	1.483												
2988	2944	2.621	2.380	34.926	6.23					27.903	32.561	37.106	41.542	45.873	41.1	1.691												
3489	3433	2.300	2.014	34.909	6.28					27.919	32.588	37.143	41.588	45.929	39.9	1.895												
4003	3935	2.178	1.839	34.891	6.14					27.919	32.593	37.152	41.602	45.948	41.5	2.104												

ENDEAVOR-74		22	LAT = 41 22.2 N			LONG = 64 10.8 W			22/ 9/81	24 OBS.	SONIC DEPTH= 1487m			STATION	22	
PR dbar	DE m	T deg C	θ deg C	S o/oo	OXY ml/l	PHOS	SIL	NO2	N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
55	55	8.213	9.207	33.993	5.24					26.473	30.991	35.399	39.704	43.910	157.7	0.044
102	101	12.093	12.080	35.372	4.86					26.881	31.304	35.622	39.839	43.961	120.9	0.109
150	149	17.257	17.237	35.532	4.61					26.974	31.393	35.707	39.920	44.038	113.4	0.165
202	200	10.077	10.054	35.257	3.94					27.162	31.629	35.988	40.246	44.406	96.2	0.220
251	249	9.317	9.289	35.181	3.53					27.232	31.716	36.092	40.366	44.541	90.4	0.265
304	302	8.012	7.930	35.088	3.68					27.366	31.880	36.286	40.587	44.790	78.0	0.310
351	348	7.231	7.197	35.035	3.93					27.439	31.972	36.396	40.715	44.935	71.4	0.345
401	397	6.634	6.597	35.033	4.25					27.521	32.068	36.506	40.839	45.071	64.1	0.379
444	440	6.413	6.373	35.057	4.37					27.570	32.123	36.566	40.903	45.140	59.9	0.406
495	492	5.811	5.768	35.041	4.78					27.636	32.204	36.661	41.013	45.263	53.9	0.436
599	593	5.045	4.997	34.978	5.24					27.679	32.268	36.744	41.114	45.383	50.1	0.489
697	691	4.573	4.518	34.944	5.56					27.707	32.308	36.797	41.179	45.458	47.9	0.537
797	789	4.595	4.531	34.982	5.83					27.736	32.336	36.824	41.206	45.485	46.5	0.584
889	879	4.433	4.363	34.973	5.76					27.747	32.352	36.845	41.230	45.513	46.1	0.626
999	989	4.233	4.155	34.959	6.00					27.759	32.369	36.867	41.257	45.545	45.8	0.677
1244	1231	4.136	4.037	34.982	5.92					27.789	32.403	36.903	41.297	45.587	45.2	0.789
1484	1467	3.969	3.831	34.973	6.01					27.804	32.422	36.929	41.327	45.623	45.6	0.897
1742	1721	3.704	3.565	34.962	6.09					27.822	32.448	36.961	41.366	45.668	45.4	1.015
1994	1969	3.583	3.422	34.966	6.14					27.839	32.469	36.986	41.394	45.700	45.5	1.130
2237	2208	3.404	3.223	34.963	6.16					27.856	32.491	37.013	41.427	45.737	45.1	1.240
2486	2452	3.174	2.972	34.956	6.26					27.874	32.516	37.045	41.465	45.781	44.0	1.350
2737	2698	2.986	2.763	34.943	6.23					27.883	32.531	37.065	41.491	45.812	43.9	1.461
2996	2941	2.785	2.540	34.940	6.35					27.900	32.554	37.094	41.526	45.853	42.6	1.568
3531	3475	2.394	2.101	34.914	6.10					27.916	32.583	37.135	41.578	45.916	41.3	1.797

ENDEAVOR-74		23	LAT = 40 27.0 N			LONG = 65 25.2 W			22/ 9/81	24 OBS.	SONIC DEPTH= 3488m			STATION 23		
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-9	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
char	m	deg C	deg C	o/oo	ml/l											
103	102	13.518	13.503	35.676	3.76					26.831	31.224	35.513	39.702	43.797	125.9	0.065
144	143	12.679	12.660	35.635	3.91					26.971	31.381	35.685	39.890	44.000	113.7	0.114
193	191	10.852	10.828	35.411	4.00					27.145	31.594	35.936	40.178	44.322	97.9	0.166
244	242	9.528	9.501	35.225	3.64					27.231	31.710	36.081	40.350	44.522	90.4	0.214
303	300	8.486	8.454	35.145	3.53					27.338	31.841	36.235	40.527	44.719	81.0	0.264
343	340	7.790	7.756	35.106	3.76					27.414	31.933	36.344	40.650	44.857	74.1	0.296
400	397	6.547	6.510	34.985	4.40					27.495	32.045	36.485	40.820	45.054	66.4	0.336
444	440	6.204	6.164	35.036	4.56					27.581	32.139	36.587	40.929	45.171	58.7	0.363
497	492	5.815	5.772	35.036	4.87					27.631	32.199	36.656	41.008	45.258	54.3	0.393
584	579	5.123	5.075	35.005	5.35					27.692	32.278	36.753	41.121	45.387	48.8	0.438
697	690	4.944	4.887	35.018	5.47					27.724	32.315	36.794	41.166	45.437	47.0	0.492
773	766	4.728	4.666	35.015	5.58					27.747	32.343	36.828	41.206	45.481	45.4	0.527
896	887	4.438	4.367	34.995	5.81					27.764	32.369	36.861	41.246	45.529	44.6	0.583
993	983	4.320	4.241	34.992	5.88					27.776	32.383	36.879	41.267	45.553	44.3	0.626
1209	1197	4.109	4.013	34.980	6.20					27.790	32.404	36.906	41.300	45.591	44.7	0.722
1489	1472	3.891	3.773	34.979	6.09					27.815	32.435	36.942	41.342	45.639	44.5	0.847
1741	1720	3.694	3.555	34.977	6.09					27.835	32.461	36.974	41.380	45.682	44.2	0.958
1991	1965	3.510	3.350	34.969	6.10					27.849	32.480	36.999	41.409	45.717	44.2	1.069
2255	2235	3.243	3.062	34.957	6.17					27.867	32.506	37.032	41.450	45.765	43.4	1.189
2487	2453	3.027	2.828	34.947	6.26					27.880	32.526	37.059	41.483	45.803	42.6	1.284
2733	2694	2.822	2.602	34.935	6.20					27.891	32.543	37.082	41.512	45.837	42.0	1.388
2983	2939	2.668	2.426	34.929	6.25					27.901	32.558	37.102	41.536	45.866	41.6	1.493
3486	3431	2.317	2.030	34.909	6.30					27.918	32.586	37.141	41.586	45.926	40.2	1.699
3957	3890	2.212	1.877	34.895	6.23					27.919	32.592	37.150	41.600	45.944	41.6	1.891

ENDEAVOR-74		24	LAT = 40 22.2 N			LONG = 65 0.0 W	22/ 9/81	24 OBS.	SONIC DEPTH= 4300m				STATION	24	
PR	DE	T	θ	S	OXY	PHOS	SIL	N+H	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANDM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l										
50	50	14.721	14.714	34.980	5.30				26.037	30.412	34.683	38.856	42.935	139.7	0.050
101	100	13.233	13.219	35.525	4.17				26.773	31.172	35.467	39.663	43.764	131.3	0.134
149	148	12.618	12.598	35.581	4.02				26.941	31.353	35.659	39.866	43.977	116.6	0.194
200	198	11.709	11.683	35.524	3.94				27.075	31.505	35.829	40.053	44.181	105.2	0.251
248	246	10.714	10.683	35.405	3.89				27.167	31.619	35.964	40.208	44.355	97.2	0.299
297	294	9.115	9.082	35.211	3.55				27.289	31.778	36.158	40.436	44.615	85.9	0.344
348	345	7.990	7.954	35.097	3.82				27.377	31.892	36.298	40.600	44.803	77.8	0.384
397	394	7.202	7.171	35.041	4.11				27.447	31.981	36.406	40.725	44.945	71.4	0.423
447	443	6.522	6.481	35.025	4.52				27.530	32.081	36.521	40.856	45.091	63.8	0.456
497	492	5.984	5.940	35.052	4.78				27.622	32.186	36.639	40.987	45.233	55.3	0.485
596	590	5.313	5.263	35.018	5.50				27.680	32.261	36.730	41.094	45.356	50.4	0.538
697	690	4.983	4.925	35.021	5.50				27.722	32.311	36.790	41.161	45.431	47.3	0.587
795	788	4.747	4.683	35.014	5.79				27.744	32.340	36.824	41.202	45.477	46.0	0.633
896	887	4.534	4.463	35.005	5.90				27.762	32.363	36.853	41.236	45.517	45.1	0.679
995	985	4.355	4.275	34.990	5.95				27.770	32.377	36.872	41.259	45.544	44.9	0.724
1244	1231	4.120	4.021	34.982	6.15				27.791	32.405	36.906	41.300	45.591	45.0	0.835
1404	1477	3.927	3.808	34.976	6.22				27.809	32.428	36.935	41.334	45.630	45.2	0.949
1744	1723	3.769	3.629	34.974	6.18				27.825	32.449	36.961	41.364	45.664	45.4	1.062
1992	1967	3.577	3.416	34.972	6.12				27.845	32.474	36.991	41.400	45.706	44.9	1.174
2490	2456	3.191	2.989	34.957	6.18				27.873	32.515	37.043	41.463	45.779	44.2	1.396
2991	2947	2.736	2.492	34.930	6.36				27.896	32.552	37.093	41.526	45.855	42.6	1.613
3491	3436	2.404	2.115	34.912	6.36				27.913	32.580	37.132	41.574	45.912	41.4	1.823
3990	3922	2.261	1.920	34.900	6.37				27.919	32.591	37.149	41.596	45.939	42.2	2.032
4356	4279	2.213	1.831	34.895	6.37				27.922	32.597	37.157	41.607	45.952	43.3	2.188

ENDEAVOR-74			25	LAT = 40 16.8 N			LONG = 64 34.8 W			22/ 9/81	24 OBS.	SONIC DEPTH= 4612m			STATION		25
PR	DE	T	θ	S	PHY	SIL	N02	N+N	SIG-θ	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT		
dbar	m	deg C	deg C	o/oo	ml/l												
102	102	15.869	15.853	35.970	3.62				26.545	30.892	35.137	39.285	43.339	153.5	0.079		
150	149	14.232	14.210	35.803	3.84				26.780	31.159	35.434	39.610	43.692	132.4	0.147		
202	201	12.408	12.380	35.527	4.15				26.942	31.358	35.669	39.880	43.996	118.0	0.212		
252	249	12.156	12.123	35.577	4.29				27.031	31.452	35.768	39.983	44.103	110.9	0.269		
301	298	10.993	10.955	35.421	4.08				27.130	31.576	35.916	40.154	44.296	102.3	0.322		
350	347	9.826	9.786	35.280	3.42				27.226	31.698	36.063	40.326	44.491	93.6	0.370		
404	400	8.615	8.572	35.157	3.52				27.329	31.829	36.221	40.510	44.700	84.1	0.417		
450	446	7.390	7.343	35.110	3.67				27.389	31.904	36.310	40.612	44.816	78.7	0.455		
498	494	6.902	6.855	35.044	4.19				27.494	32.036	36.467	40.794	45.021	68.5	0.490		
598	593	5.995	5.942	35.027	4.69				27.602	32.166	36.620	40.967	45.214	58.7	0.554		
698	692	5.189	5.131	35.006	5.20				27.686	32.270	36.744	41.110	45.375	51.0	0.609		
801	793	4.803	4.738	35.001	5.59				27.728	32.322	36.805	41.181	45.456	47.7	0.659		
898	889	4.664	4.592	35.006	5.73				27.748	32.347	36.833	41.213	45.490	46.6	0.705		
995	985	4.497	4.417	34.992	5.82				27.756	32.359	36.850	41.234	45.516	46.6	0.751		
1259	1245	4.134	4.034	34.979	6.13				27.787	32.401	36.902	41.295	45.586	45.5	0.872		
1497	1490	3.933	3.814	34.972	6.12				27.805	32.424	36.931	41.329	45.675	45.6	0.980		
1743	1723	3.793	3.652	34.974	6.13				27.823	32.446	36.957	41.360	45.660	45.7	1.093		
1993	1968	3.657	3.495	34.974	6.22				27.838	32.466	36.981	41.388	45.691	45.9	1.207		
2491	2458	3.253	3.049	34.959	6.10				27.869	32.509	37.036	41.454	45.769	45.0	1.434		
2991	2947	2.860	2.613	34.937	6.24				27.891	32.543	37.082	41.511	45.837	43.9	1.656		
3486	3431	2.494	2.203	34.917	6.17				27.910	32.574	37.123	41.564	45.899	42.4	1.870		
3989	3921	2.311	1.970	34.902	6.25				27.917	32.587	37.143	41.590	45.932	42.9	2.084		
4485	4404	2.271	1.872	34.894	6.10				27.918	32.591	37.150	41.599	45.944	44.9	2.302		
4678	4591	2.255	1.834	34.889	6.08				27.917	32.592	37.151	41.602	45.947	45.7	2.389		

ENDEAVOR-74		26	LAT = 40 12.0 N			LONG = 64 10.2 W			23/ 9/81	24 OBS.	SONIC DEPTH= 4687m			STATION 26		
pg	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-B	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
char	m	deg C	deg C	o/oo	ml/l											
101	100	18.288	18.271	36.544	4.24					26.404	30.706	34.908	39.014	43.028	167.2	0.085
147	146	17.928	17.902	36.530	4.68					26.485	30.794	35.002	39.113	43.132	161.3	0.151
203	201	17.729	17.694	36.507	4.68					26.519	30.831	35.042	39.157	43.180	160.2	0.250
252	250	17.392	17.349	36.455	4.30					26.563	30.882	35.099	39.219	43.248	157.7	0.329
302	300	16.361	16.312	36.279	4.11					26.676	31.013	35.248	39.386	43.432	148.4	0.406
350	347	14.927	14.874	35.994	3.80					26.783	31.148	35.410	39.574	43.644	139.0	0.474
402	399	13.296	13.239	35.744	3.61					26.938	31.336	35.629	39.823	43.922	124.9	0.543
449	445	11.747	11.688	35.523	3.54					27.073	31.503	35.827	40.051	44.179	112.2	0.599
500	495	10.191	10.131	35.333	3.44					27.208	31.672	36.030	40.285	44.443	99.2	0.652
600	595	7.783	7.722	35.114	3.68					27.425	31.945	36.356	40.663	44.871	78.0	0.741
699	692	5.919	5.857	34.987	4.30					27.582	32.148	36.604	40.953	45.202	52.0	0.810
798	791	5.317	5.249	35.027	4.82					27.688	32.270	36.740	41.103	45.366	52.4	0.867
878	869	4.973	4.900	35.011						27.717	32.307	36.786	41.158	45.429	50.0	0.908
996	986	4.662	4.580	34.991						27.737	32.336	36.823	41.203	45.481	48.8	0.966
1249	1236	4.292	4.191	34.988						27.778	32.387	36.884	41.273	45.560	46.8	1.087
1495	1478	4.056	3.936	34.981						27.799	32.415	36.919	41.314	45.607	45.6	1.202
1743	1723	3.870	3.729	34.992						27.829	32.451	36.959	41.360	45.658	45.5	1.316
1990	1965	3.707	3.544	34.976						27.835	32.462	36.975	41.381	45.683	46.4	1.430
2503	2469	3.312	3.106	34.961						27.866	32.504	37.029	41.446	45.759	45.8	1.666
2992	2949	2.935	2.686	34.941						27.888	32.538	37.074	41.502	45.826	44.8	1.888
3493	3438	2.534	2.241	34.918						27.908	32.570	37.119	41.558	45.893	43.0	2.108
3987	3919	2.343	2.000	34.907						27.919	32.588	37.143	41.589	45.930	43.0	2.320
4487	4406	2.214	1.817	34.887						27.917	32.592	37.152	41.603	45.949	44.4	2.539
4751	4662	2.246	1.816	34.890						27.919	32.594	37.155	41.605	45.951	45.8	2.657

PR	DE	T	Q	S	OXY	PHOS	SIL	NH2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
char	m	deg C	deg C	o/oo	ml/l											
101	101	18.257	19.239	36.545	4.71	0.05	0.9	0.00	3.1	26.412	30.716	34.918	39.024	43.038	166.4	0.085
151	150	19.015	17.989	36.528	4.76	0.05	0.9	0.00	3.1	26.462	30.769	34.976	39.086	43.104	163.6	0.167
202	201	17.828	17.793	36.511	4.87	0.05	0.8	0.00	3.7	26.497	30.808	35.018	39.131	43.152	162.2	0.250
251	249	17.713	17.670	36.499	4.97	0.05	0.7	0.00	3.4	26.518	30.832	35.043	39.158	43.181	162.0	0.329
301	298	17.340	17.289	36.427	4.75	0.05	1.6	0.00	4.9	26.556	30.876	35.094	39.216	43.245	160.2	0.410
351	348	16.376	16.319	36.261	4.25	0.20	2.5	0.00	8.1	26.660	30.998	35.233	39.371	43.416	151.6	0.488
400	397	15.174	15.112	36.069	4.05	0.47	4.1	0.00	11.1	26.781	31.141	35.399	39.558	43.624	141.1	0.559
450	446	13.537	13.472	35.759	3.79	0.70	6.7	0.00	15.8	26.902	31.295	35.583	39.773	43.868	130.0	0.627
499	494	12.321	12.254	35.602	3.72	0.90	12.4	0.00	18.4	27.025	31.443	35.756	39.969	44.086	118.6	0.688
597	592	9.887	7.917	35.296	3.46	1.23	13.6	0.00	23.8	27.233	31.705	36.069	40.331	44.495	98.7	0.795
698	691	7.524	7.465	35.104	3.89	1.34	15.6	0.00	24.7	27.455	31.981	36.398	40.711	44.924	76.6	0.883
798	790	6.010	5.938	35.042	4.23	1.23	14.3	0.00	22.5	27.615	32.179	36.632	40.979	45.226	60.6	0.952
893	895	5.388	5.311	35.024	5.14	1.22	13.8	0.00	20.6	27.678	32.258	36.727	41.089	45.350	54.7	1.007
997	986	4.978	4.894	35.019	5.39	1.13	13.3	0.00	20.4	27.724	32.314	36.793	41.166	45.436	50.8	1.061
1240	1227	4.439	4.337	34.994	5.46	1.08	12.7	0.00	18.6	27.767	32.372	36.865	41.251	45.534	48.2	1.181
1494	1477	4.129	4.008	34.980	6.01	1.02	12.6	0.00	17.8	27.791	32.405	36.906	41.300	45.592	47.6	1.303
1742	1721	3.921	3.777	34.974	6.05	1.06	13.6	0.00	18.5	27.810	32.430	36.937	41.337	45.634	47.5	1.421
1994	1969	3.742	3.578	34.974	6.02	1.06	15.1	0.00	17.9	27.830	32.456	36.968	41.373	45.675	47.1	1.540
2495	2461	3.363	3.157	34.963	6.06	1.14	17.5	0.00	16.6	27.862	32.499	37.023	41.439	45.750	46.3	1.774
2993	2949	2.894	2.646	34.936	6.00	1.14	18.4	0.00	18.5	27.888	32.539	37.076	41.505	45.829	44.5	2.000
3492	3437	2.500	2.208	34.913	6.08	1.15	27.0	0.00	18.6	27.907	32.570	37.120	41.560	45.896	42.8	2.218
3990	3922	2.324	1.982	34.897	6.18	1.11	28.8	0.00	17.3	27.912	32.582	37.138	41.584	45.926	43.4	2.433
4856	4745	2.240	1.797	34.882	6.12	1.42	38.8	0.00	19.8	27.915	32.590	37.151	41.602	45.948	46.7	2.824

STATION 27

ENDEAVOR-74		23	LAT = 40		1.2 N	LONG = 63 19.8 W		23/ 9/81	24 OBS.	SONIC DEPTH= 4825m		STATION 28		
ps dbar	DE m	T deg C	θ deg C	S o/oo	OXY ml/l	PHOS SIL	NO2 N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
100	99	18.836	18.819	36.574	4.41			26.288	30.582	34.775	38.872	42.878	178.3	0.090
149	148	18.130	18.104	36.541	4.78			26.443	30.749	34.953	39.041	43.078	155.4	0.174
199	198	17.941	17.906	36.524	4.89			26.479	30.788	34.996	39.107	43.127	153.8	0.257
247	245	17.840	17.797	36.514	4.94			26.499	30.810	35.019	39.132	43.153	153.8	0.335
300	297	17.715	17.664	36.496	4.93			26.518	30.831	35.043	39.158	43.181	164.0	0.421
350	347	17.485	17.425	36.454	4.80			26.544	30.861	35.077	39.196	43.223	163.3	0.504
401	397	16.458	16.393	36.255	4.28			26.638	30.975	35.209	39.346	43.390	155.5	0.584
451	447	15.053	14.984	36.011	3.95			26.772	31.135	35.395	39.556	43.624	143.5	0.659
499	495	13.335	13.265	35.749	3.90			26.936	31.333	35.626	39.819	43.917	128.0	0.725
598	593	11.114	11.038	35.438	3.72			27.128	31.572	35.910	40.147	44.287	110.2	0.843
697	690	8.027	7.954	35.121	4.02			27.396	31.910	36.316	40.618	44.821	82.9	0.938
796	789	6.067	5.994	34.977	4.59			27.556	32.119	36.572	40.918	45.164	56.1	1.012
894	885	5.332	5.255	34.991	5.16			27.659	32.241	36.711	41.075	45.337	56.4	1.072
995	985	5.082	4.998	35.023	5.37			27.715	32.303	36.779	41.149	45.417	51.9	1.127
1234	1221	4.467	4.366	34.994	5.81			27.764	32.368	36.860	41.246	45.528	48.5	1.247
1492	1476	4.129	4.008	34.981	5.99			27.792	32.406	36.907	41.301	45.593	47.5	1.371
1742	1722	3.940	3.798	34.972	6.02			27.806	32.426	36.933	41.332	45.629	47.9	1.490
1992	1967	3.774	3.610	34.973	6.08			27.826	32.451	36.963	41.367	45.667	47.5	1.609
2449	2416	3.389	3.187	34.960	6.08			27.857	32.493	37.016	41.431	45.742	46.6	1.825
2991	2947	2.924	2.675	34.938	6.20			27.887	32.537	37.074	41.502	45.825	44.8	2.072
3491	3436	2.568	2.275	34.920	6.30			27.907	32.568	37.116	41.554	45.888	43.4	2.293
3990	3923	2.367	2.024	34.905	6.33			27.915	32.584	37.138	41.584	45.924	43.6	2.510
4485	4404	2.297	1.898	34.896	6.20			27.918	32.590	37.148	41.597	45.941	45.2	2.729
4949	4854	2.271	1.816	34.886	6.04			27.916	32.591	37.151	41.602	45.948	47.3	2.944

STATION	29	26/ 9/81	24 OPS.	SUNIC DEPTH= 4620m	ANQM	HEIGHT									
DEPTH	DE	T	deg C	S	OXY	PHOS	SIL	NO2	N+M	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	
102	18.345	14.347	36.541	4.67	0.05	1.2	0.00	3.3	26.382	30.684	34.884	38.989	43.002	169.3	0.086
151	18.051	19.025	36.536	4.83	0.05	1.0	0.00	2.8	26.459	30.766	34.972	39.081	43.099	163.9	0.169
202	17.861	17.826	36.509	5.14	0.05	1.1	0.00	2.8	26.488	30.798	35.007	39.120	43.141	163.1	0.251
249	17.724	17.681	36.503	5.18	0.05	1.1	0.00	3.1	26.519	30.832	35.043	39.158	43.181	161.9	0.328
302	17.438	17.386	36.456	4.98	0.05	1.3	0.00	4.1	26.555	30.873	35.090	39.209	43.237	160.4	0.413
350	16.770	16.712	36.327	4.58	0.12	2.3	0.00	7.3	26.618	30.949	35.177	39.308	43.347	155.8	0.491
401	15.788	15.724	36.151	4.38	0.43	3.5	0.00	10.3	26.713	31.062	35.308	39.456	43.512	149.0	0.548
451	13.863	13.797	35.836	4.00	0.64	6.1	0.00	15.2	26.893	31.280	35.562	39.745	43.834	131.1	0.637
501	12.689	12.620	35.653	3.88	0.91	7.9	0.00	18.1	26.993	31.403	35.708	39.914	44.024	122.1	0.701
597	9.342	9.771	35.279	3.68	0.00	0.0	0.00	0.0	27.228	31.700	36.066	40.329	44.494	99.3	0.812
699	7.882	7.810	35.113	3.81	1.31	15.6	0.00	25.1	27.411	31.929	36.338	40.644	44.850	81.3	0.900
799	5.776	5.705	34.958	4.77	1.20	14.1	0.00	22.0	27.578	32.148	36.608	40.961	45.214	63.6	0.973
899	5.221	5.144	35.005	5.22	1.14	13.2	0.00	20.7	27.683	32.268	36.740	41.107	45.372	53.9	1.031
1000	4.914	4.834	35.017	5.43	1.11	13.4	0.00	19.8	27.729	32.321	36.802	41.175	45.447	50.2	1.084
1265	4.373	4.270	35.000	5.87	1.03	12.5	0.00	19.0	27.779	32.386	36.880	41.268	45.553	47.2	1.213
1497	4.117	3.996	34.979	5.80	1.05	12.6	0.00	18.6	27.791	32.406	36.908	41.302	45.594	47.5	1.323
1741	3.870	3.729	34.972	6.16	1.08	13.2	0.00	18.8	27.813	32.435	36.944	41.345	45.643	46.9	1.438
1996	3.668	3.505	34.964	6.12	0.94	13.7	0.00	17.9	27.829	32.457	36.972	41.378	45.682	46.8	1.557
2493	3.298	3.094	34.966	6.10	1.08	17.6	0.00	19.4	27.871	32.509	37.035	41.452	45.765	45.2	1.788
2992	2.915	2.657	34.939	6.14	1.09	21.0	0.00	18.8	27.888	32.539	37.076	41.504	45.828	44.6	2.010
3491	2.512	2.220	34.917	6.42	1.04	22.2	0.00	17.5	27.909	32.572	37.121	41.561	45.896	42.7	2.228
3992	2.294	1.953	34.905	6.25	1.10	29.9	0.00	19.2	27.921	32.592	37.148	41.595	45.937	42.4	2.441
4481	2.232	1.835	34.894	6.06	1.30	36.8	0.00	20.4	27.921	32.595	37.155	41.605	45.951	44.2	2.653
4667	2.237	1.817	34.891	6.17	1.24	37.4	0.00	20.8	27.920	32.595	37.155	41.606	45.952	45.2	2.733

STATION 29

ENDREAVNS 74		32	LAT = 37 7.8 S		LONG = 66 1.2 W		29/ 9/81	24 MRS.	SONIC DEPTH= 5020M		STATION 32					
PR dbar	DE m	T deg C	A deg C	S o/oo	DOY ml/l	PHOS	SIL	NUT	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
102	102	21.355	21.335	36.452	4.92	0.05	0.3	0.00	0.2	25.525	29.781	33.938	37.999	41.970	251.2	0.129
154	153	18.664	18.536	36.485	4.24	0.12	1.1	0.00	5.0	26.266	30.563	34.760	38.860	42.869	182.5	0.241
201	199	17.864	17.829	36.442	4.46	0.14	1.3	0.00	5.3	26.436	30.746	34.956	39.069	43.090	168.0	0.323
252	250	17.520	17.547	36.448	4.67	0.05	0.5	0.00	3.4	26.510	30.825	35.039	39.156	43.181	162.9	0.408
302	300	17.303	17.252	36.414	4.73	0.12	0.8	0.00	5.0	26.555	30.876	35.095	39.217	43.247	160.3	0.489
350	347	16.679	16.621	36.293	4.35	0.21	2.1	0.00	7.5	26.614	30.946	35.176	39.309	43.349	156.2	0.564
401	397	15.840	15.776	36.167	4.25	0.41	2.8	0.00	9.6	26.713	31.061	35.306	39.454	43.508	148.0	0.642
450	446	14.821	14.752	35.973	4.10	0.50	4.1	0.00	12.2	26.794	31.161	35.425	39.591	43.663	141.2	0.713
502	497	14.055	13.981	35.849	4.23	0.58	5.0	0.00	13.4	26.864	31.247	35.526	39.706	43.792	135.5	0.784
559	554	12.455	12.373	35.631	4.17	0.81	7.1	0.00	16.6	27.024	31.440	35.750	39.961	44.075	121.7	0.910
608	601	10.393	10.307	35.349	3.61	1.15	11.6	0.00	22.2	27.190	31.650	36.004	40.255	44.410	105.9	1.022
705	700	8.351	8.265	35.160	3.82	0.00	0.0	0.00	0.0	27.379	31.886	36.285	40.580	44.776	87.0	1.117
807	808	6.734	6.647	35.054	4.38	1.73	14.2	0.00	23.1	27.530	32.077	36.513	40.844	45.076	71.5	1.197
907	907	5.748	5.659	35.049	4.95	1.19	13.2	0.00	20.9	27.656	32.226	36.686	41.040	45.293	59.1	1.262
1218	1218	4.775	4.672	35.010	5.87	1.11	12.2	0.00	19.2	27.742	32.339	36.823	41.201	45.476	51.4	1.391
1407	1401	4.293	4.170	34.990	5.98	1.05	11.8	0.00	18.5	27.782	32.391	36.889	41.279	45.566	49.1	1.525
1742	1722	4.034	3.891	34.976	6.22	1.05	12.2	0.00	18.4	27.800	32.417	36.922	41.319	45.613	48.9	1.645
1905	1970	3.845	3.680	34.971	6.11	1.02	13.1	0.00	18.2	27.818	32.440	36.950	41.353	45.652	48.8	1.748
2479	2446	3.412	3.207	34.967	6.25	1.03	16.5	0.00	18.5	27.861	32.496	37.019	41.433	45.744	46.6	1.909
3002	2959	2.922	2.672	34.941	6.59	1.08	19.7	0.00	18.2	27.889	32.540	37.076	41.504	45.828	44.7	2.238
3450	3436	2.577	2.283	34.920	6.16	1.11	23.2	0.00	18.4	27.906	32.567	37.115	41.553	45.887	43.5	2.453
3902	3926	2.345	2.003	34.901	6.29	1.13	28.9	0.00	18.9	27.914	32.583	37.138	41.584	45.925	43.5	2.672
4431	4411	2.282	1.982	34.893	6.11	1.30	36.2	0.00	18.0	27.917	32.590	37.148	41.597	45.941	45.2	2.893
4762	4575	2.285	1.853	34.900	6.42	1.18	37.4	0.00	18.8	27.925	32.598	37.158	41.607	45.952	45.9	3.017

STATION 32

P2		DE	T	θ	S	XY	PHOS	SIL	NR2	N+N	SIG-0	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar		m	deg C	deg C	o/oo	m/l											
74	98	20.272	20.273	20.273	36.620	4.46	0.05	1.1	0.00	2.2	25.942	30.213	34.384	38.459	42.444	211.3	0.105
149	148	18.828	18.801	18.801	36.570	4.57	0.05	0.8	0.00	1.9	26.289	30.583	34.777	38.874	42.880	180.1	0.202
205	203	18.176	18.140	18.140	36.540	4.81	0.05	0.8	0.00	2.6	26.433	30.738	34.942	39.050	43.065	158.5	0.300
251	249	17.982	17.938	17.938	36.523	4.82	0.05	0.3	0.00	2.5	26.470	30.779	34.986	39.097	43.116	164.7	0.377
299	297	17.729	17.747	17.747	36.500	4.83	0.05	0.6	0.00	3.2	26.500	30.812	35.022	39.136	43.158	155.6	0.457
350	347	17.638	17.578	17.578	36.473	4.76	0.05	0.3	0.00	2.6	26.521	30.836	35.049	39.166	43.190	165.5	0.541
399	396	17.468	17.400	17.400	36.450	4.73	0.13	0.4	0.00	3.2	26.547	30.865	35.081	39.201	43.228	164.8	0.622
448	444	17.027	16.951	16.951	36.366	4.60	0.13	1.4	0.00	5.3	26.591	30.917	35.141	39.268	43.303	162.1	0.702
500	496	16.358	16.277	16.277	36.240	4.32	0.28	2.4	0.00	8.5	26.654	30.942	35.228	39.367	43.413	157.5	0.785
600	595	14.764	14.672	14.672	35.956	4.17	0.00	0.0	0.00	0.0	26.798	31.167	35.433	39.500	43.674	145.7	0.937
697	691	12.567	12.471	12.471	35.624	3.85	0.82	7.8	0.00	17.6	27.000	31.413	35.722	39.930	44.043	126.9	1.040
797	780	9.941	9.846	9.846	35.283	3.46	1.02	10.4	0.00	19.3	27.218	31.689	36.053	40.314	44.478	104.8	1.185
896	887	8.097	8.001	8.001	35.131	4.01	1.02	10.9	0.00	17.5	27.396	31.910	36.315	40.616	44.818	86.8	1.280
998	988	6.397	6.302	6.302	35.059	4.50	1.25	13.1	0.00	20.6	27.581	32.135	36.580	40.919	45.158	67.6	1.359
1272	1259	4.949	4.839	4.839	35.035	5.50	0.91	9.9	0.00	16.2	27.743	32.335	36.815	41.188	45.460	52.4	1.523
1496	1480	4.357	4.233	4.233	35.001	5.90	0.96	10.8	0.00	17.0	27.784	32.391	36.887	41.275	45.561	49.1	1.637
1722	1702	4.107	3.964	3.964	34.991	6.04	0.62	6.2	0.00	11.5	27.804	32.419	36.922	41.317	45.609	48.6	1.747
1992	1968	3.872	3.707	3.707	34.982	6.11	0.81	7.5	0.00	15.0	27.824	32.446	36.955	41.356	45.655	48.3	1.878
2444	2411	3.493	3.289	3.289	34.973	6.02	1.02	13.2	0.00	18.6	27.858	32.491	37.011	41.423	45.732	47.1	2.004
2989	2945	2.991	2.742	2.742	34.947	6.04	0.81	13.2	0.00	11.8	27.888	32.536	37.071	41.497	45.819	45.2	2.346
3488	3433	2.574	2.291	2.291	34.923	6.10	0.65	12.1	0.00	9.1	27.908	32.570	37.117	41.556	45.889	43.3	2.566
3991	3924	2.344	2.001	2.001	34.905	6.12	0.68	18.0	0.00	11.6	27.917	32.586	37.142	41.587	45.928	43.2	2.784
4450	4371	2.293	1.898	1.898	34.899	6.34	0.96	21.8	0.00	13.6	27.920	32.593	37.151	41.599	45.943	44.8	2.986
4510	4420	2.289	1.897	1.897	34.899	6.19	1.12	32.4	0.00	18.6	27.921	32.594	37.152	41.601	45.945	45.0	3.013

STATION 33

ENDEAVOR-74		34	LAT = 38		7.8 N	LONG = 66		0.0 W	29/ 9/81	22 ORS.	SONIC DEPTH= 4790m			STATION	34	
PR	DE	T	θ	S	OYV	PHOS	SIL	NO2	N+N	SIG-B	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
105	104	20.277	20.257	36.607	4.71					25.936	30.207	34.379	38.454	42.439	212.1	0.112
152	150	18.517	18.490	36.551	4.64					26.354	30.653	34.851	38.953	42.964	174.1	0.202
202	201	18.062	18.027	36.522	4.76					26.448	30.755	34.961	39.070	43.088	157.0	0.288
251	249	17.903	17.859	36.517	4.83					26.486	30.795	35.004	39.116	43.126	155.2	0.369
301	299	17.723	17.671	36.487	4.93					26.509	30.822	35.034	39.149	43.172	154.8	0.452
350	347	17.554	17.494	36.465	4.88					26.536	30.852	35.066	39.185	43.210	164.1	0.533
400	397	17.264	17.196	36.410	4.64					26.566	30.887	35.107	39.230	43.261	152.9	0.614
449	445	16.700	16.525	36.319	4.43					26.633	30.964	35.194	39.327	43.367	158.0	0.692
498	493	15.583	15.504	36.108	3.85					26.730	31.083	35.333	39.485	43.544	149.5	0.767
635	628	11.202	11.113	35.450	3.50					27.124	31.566	35.903	40.138	44.277	113.3	1.026
705	702	8.717	8.629	35.137	3.29					27.304	31.803	36.194	40.481	44.671	94.6	1.131
888	888	6.832	6.744	35.080	4.25					27.538	32.081	36.515	40.844	45.073	71.0	1.215
996	996	5.525	5.437	35.037	5.12					27.673	32.250	36.715	41.075	45.333	56.9	1.278
1240	1227	4.652	4.549	35.002	5.71					27.750	32.349	36.837	41.218	45.496	50.4	1.409
1494	1478	4.101	3.980	34.963	6.03					27.780	32.395	36.898	41.292	45.585	48.5	1.535
1738	1718	3.966	3.824	34.972	6.10					27.804	32.423	36.929	41.328	45.673	48.2	1.653
1989	1964	3.791	3.627	34.977	6.02					27.828	32.452	36.963	41.367	45.667	47.5	1.773
2482	2448	3.345	3.140	34.963	6.02					27.864	32.501	37.026	41.441	45.754	46.0	2.003
2993	2950	2.858	2.611	34.938	6.13					27.892	32.544	37.083	41.512	45.838	43.8	2.233
3495	3440	2.475	2.183	34.914	6.16					27.909	32.574	37.124	41.565	45.901	42.4	2.449
3996	3928	2.257	1.916	34.894	6.16					27.915	32.587	37.144	41.592	45.936	42.5	2.662
4328	4252	2.272	1.892	34.891	6.13					27.914	32.587	37.145	41.594	45.938	44.4	2.806

ENDEAVOR-74			35	LAT = 38 37.2 N			LONG = 65 58.2 W			29/ 9/81	24 OBS.	SONIC DEPTH= 4436m			STATION 35		
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT	
dbar	m	deg C	deg C	o/oo	ml/l												
100	99	22.312	22.292	36.734	3.92					25.471	29.711	33.853	37.899	41.856	256.3	0.128	
149	148	19.748	19.721	26.388	4.02					26.170	30.467	34.663	38.763	42.771	191.4	0.239	
204	202	14.242	14.212	35.328	4.33					26.413	30.735	35.073	39.253	43.338	158.8	0.338	
246	244	13.889	13.854	35.765	3.59					26.826	31.212	35.494	39.677	43.765	131.0	0.402	
301	299	12.542	12.501	35.670	3.37					26.991	31.404	35.712	39.920	44.032	116.4	0.469	
347	344	11.400	11.355	35.477	3.29					27.100	31.537	35.868	40.099	44.233	106.6	0.520	
403	400	9.734	9.688	35.264	3.18					27.230	31.705	36.072	40.337	44.504	94.3	0.577	
448	444	9.138	9.088	35.179	3.24					27.264	31.752	36.132	40.410	44.590	91.6	0.618	
499	495	8.264	8.211	35.122	3.51					27.357	31.866	36.266	40.563	44.761	82.9	0.663	
597	592	6.404	6.349	35.059	4.53					27.574	32.128	36.571	40.909	45.147	61.9	0.734	
697	691	5.239	5.181	34.981	5.21					27.660	32.244	36.716	41.081	45.346	53.5	0.792	
794	786	5.062	4.995	35.010	5.55					27.705	32.293	36.769	41.139	45.407	50.2	0.842	
898	889	4.773	4.700	35.018	5.67					27.745	32.341	36.825	41.202	45.476	47.1	0.893	
997	987	4.530	4.450	35.000	5.80					27.759	32.361	36.851	41.235	45.515	46.4	0.939	
1268	1254	4.228	4.127	34.990	6.09					27.786	32.397	36.895	41.287	45.575	46.0	1.064	
1495	1479	3.991	3.872	34.984	6.11					27.808	32.426	36.931	41.328	45.623	45.5	1.168	
1735	1715	3.839	3.699	34.979	6.09					27.822	32.444	36.954	41.355	45.654	45.9	1.278	
1991	1967	3.626	3.465	34.977	6.09					27.844	32.472	36.988	41.395	45.700	45.3	1.395	
2497	2463	3.225	3.021	34.959	6.09					27.872	32.513	37.040	41.459	45.774	44.6	1.622	
2995	2953	2.807	2.560	34.939	6.61					27.897	32.551	37.091	41.522	45.848	43.0	1.841	
3488	3434	2.414	2.125	34.915	6.25					27.915	32.581	37.133	41.575	45.913	41.3	2.048	
3994	3926	2.296	1.954	34.902	6.30					27.918	32.589	37.145	41.592	45.935	42.6	2.260	
4465	4385	2.257	1.861	34.896	6.25					27.921	32.594	37.153	41.603	45.947	44.4	2.466	
4698	4610	2.266	1.842	34.894	6.13					27.921	32.595	37.154	41.604	45.949	45.7	2.570	

ENDEAVOR-74		36	LAT = 39		7.8 N	LONG = 66	0.0 W	30/ 9/81	24 DRS.	SONIC DEPTH= 4612m				STATION	36	
dbar	DE	T	θ	S	OXY	PHOS	SIL	N02	N+N	SIG-θ	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
	m	deg C	deg C	o/oo	ml/l											
53	52	15.133	15.124	35.269	4.79					26.170	30.535	34.797	38.961	42.031	187.2	0.050
103	102	14.126	14.111	35.748	3.94					26.759	31.140	35.417	39.595	43.679	132.9	0.129
151	149	12.771	12.751	35.613	4.14					26.936	31.344	35.647	39.850	43.959	117.3	0.190
202	200	11.599	11.573	35.492	3.91					27.071	31.503	35.830	40.056	44.187	105.5	0.247
251	249	10.633	10.602	35.373	3.69					27.156	31.610	35.957	40.203	44.352	98.3	0.297
305	302	8.599	8.567	35.145	3.52					27.320	31.821	36.213	40.502	44.692	82.8	0.345
354	351	7.721	7.685	35.101	3.86					27.420	31.941	36.353	40.661	44.870	73.7	0.384
400	397	7.205	7.166	35.076	4.09					27.476	32.009	36.433	40.753	44.973	58.8	0.417
498	494	6.094	6.049	35.055	4.74					27.611	32.172	36.622	40.967	45.211	56.6	0.478
597	592	5.253	5.214	35.028	5.30					27.693	32.276	36.747	41.111	45.374	49.1	0.531
699	693	4.904	4.847	35.018	5.73					27.729	32.320	36.800	41.174	45.445	46.5	0.579
797	789	4.643	4.579	35.010	5.79					27.753	32.351	36.838	41.218	45.496	45.0	0.624
899	890	4.400	4.329	34.993						27.767	32.372	36.866	41.252	45.535	44.3	0.670
995	985	4.299	4.221	34.990	6.18					27.776	32.384	36.881	41.269	45.556	44.2	0.712
1186	1174	4.076	3.983	34.980	6.12					27.793	32.408	36.910	41.305	45.597	44.0	0.797
1395	1380	3.880	3.771	34.970	6.12					27.808	32.428	36.936	41.336	45.633	44.2	0.889
1592	1574	3.790	3.663	34.977						27.824	32.447	36.958	41.360	45.660	44.2	0.976
1736	1716	3.695	3.557	34.976	6.02					27.834	32.460	36.973	41.378	45.680	44.2	1.039
1932	1909	3.561	3.407	34.972	6.06					27.846	32.476	36.993	41.402	45.708	44.3	1.126
2489	2455	3.085	2.885	34.952						27.879	32.523	37.054	41.477	45.795	43.1	1.369
2988	2944	2.680	2.438	34.929	6.18					27.900	32.557	37.100	41.534	45.864	41.8	1.581
3499	3444	2.341	2.053	34.908	6.13					27.915	32.583	37.137	41.581	45.921	40.7	1.792
3998	3921	2.248	1.908	34.898	6.18					27.919	32.591	37.149	41.597	45.940	42.1	1.894
4670	4585	2.234	1.814	34.895	6.10					27.924	32.598	37.159	41.610	45.955	44.9	2.291

ENDEAVOR-74		37	LAT = 39 37.8 N			LONG = 66 0.0 W	30/ 9/81	24 DRS.	SONIC DEPTH= 3000			STATION	37			
DR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
23	22	20.583	20.579	34.898	5.12					24.549	28.826	33.003	37.084	41.074	340.5	0.039
55	55	14.475	14.467	35.205	4.88					26.264	30.642	34.916	39.092	43.173	178.3	0.124
107	106	13.288	13.273	35.557	4.18					26.786	31.185	35.479	39.673	43.772	130.2	0.204
151	150	12.547	12.526	35.608	4.34					26.976	31.389	35.696	39.904	44.016	113.4	0.258
200	199	11.359	11.334	35.488	3.86					27.112	31.550	35.882	40.112	44.247	101.5	0.310
248	246	10.203	10.173	35.328	3.73					27.197	31.660	36.017	40.271	44.429	94.1	0.357
301	299	8.254	8.223	35.128	3.56					27.360	31.869	36.269	40.565	44.762	78.7	0.403
347	344	7.281	7.247	35.049	4.17					27.443	31.975	36.397	40.715	44.934	71.0	0.437
400	397	5.603	5.566	35.044	4.32					27.535	32.084	36.522	40.855	45.088	62.7	0.473
447	443	6.068	6.028	35.032	4.74					27.595	32.157	36.608	40.954	45.198	57.2	0.501
501	496	5.535	5.492	35.030	5.05					27.661	32.236	36.700	41.058	45.315	51.2	0.530
599	593	5.073	5.024	35.027	5.44					27.715	32.302	36.778	41.147	45.414	46.8	0.578
700	693	4.727	4.671	34.990	5.70					27.725	32.323	36.808	41.186	45.461	46.4	0.625
776	769	4.605	4.543	35.008	5.58					27.755	32.355	36.843	41.223	45.502	44.4	0.660
893	884	4.372	4.302	34.991	5.94					27.768	32.374	36.868	41.255	45.539	44.0	0.711
995	985	4.275	4.197	34.990	5.94					27.779	32.388	36.884	41.274	45.560	44.0	0.756
1246	1233	4.031	3.934	34.997	6.04					27.812	32.428	36.931	41.327	45.620	42.8	0.865
1492	1475	3.817	3.719	34.973	5.97					27.815	32.437	36.946	41.347	45.645	44.2	0.972
1750	1729	3.672	3.533	34.975	6.11					27.836	32.462	36.976	41.382	45.685	44.1	1.086
1992	1967	3.405	3.247	34.968	6.11					27.858	32.492	37.014	41.427	45.736	42.9	1.191
2240	2211	3.105	2.928	34.954	6.10					27.877	32.520	37.050	41.471	45.789	41.5	1.296
2491	2457	2.878	2.681	34.942	6.12					27.889	32.539	37.076	41.504	45.827	40.8	1.399
2730	2691	2.707	2.490	34.936	6.22					27.901	32.557	37.098	41.531	45.860	40.2	1.496
2968	2925	2.545	2.308	34.930	6.23					27.912	32.572	37.119	41.557	45.890	39.6	1.591

ENDEAVOR-74																38							
LAT = 40 7.8 N LONG = 66 0.0 W																30/ 9/81	23 OBS.	SONIC DEPTH= 3711m				STATION	38
PR	DF	T	θ	S	OXY	PHOS	SIL	N02	N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT							
char	m	deg C	deg C	o/oo	ml/l																		
77	77	13.877	13.866	35.428	4.35					26.564	30.951	35.235	39.420	43.510	150.5	0.058							
124	123	12.598	12.582	35.530	4.25					26.905	31.317	35.624	39.831	43.943	119.4	0.122							
152	150	12.229	12.208	35.531	4.18					26.979	31.399	35.713	39.977	44.045	113.0	0.154							
203	201	11.378	11.353	35.469	4.00					27.094	31.531	35.863	40.093	44.228	103.3	0.209							
253	250	9.714	9.685	35.280	3.28					27.243	31.718	36.085	40.349	44.517	89.6	0.257							
300	297	8.510	8.478	35.172	3.43					27.355	31.858	36.251	40.542	44.734	79.3	0.297							
345	342	7.649	7.615	35.071	4.01					27.407	31.930	36.344	40.654	44.864	74.7	0.332							
404	401	6.940	6.901	35.051	4.14					27.493	32.033	36.464	40.789	45.015	57.0	0.374							
450	446	6.247	6.206	35.023	4.63					27.565	32.122	36.569	40.911	45.152	60.3	0.403							
504	500	5.711	5.667	35.026	4.96					27.636	32.207	36.667	41.021	45.274	53.8	0.434							
602	596	5.018	4.970	34.982	5.39					27.686	32.275	36.752	41.123	45.392	49.5	0.484							
702	695	4.937	4.780	35.010	5.49					27.730	32.323	36.805	41.180	45.453	46.3	0.532							
800	792	4.596	4.532	34.995	5.76					27.746	32.346	36.834	41.215	45.494	45.5	0.577							
901	892	4.457	4.385	34.993	5.87					27.761	32.365	36.856	41.241	45.524	45.0	0.623							
998	988	4.281	4.202	34.986	6.12					27.775	32.384	36.880	41.270	45.556	44.3	0.666							
1300	1286	3.940	3.838	34.966	6.32					27.797	32.416	36.922	41.320	45.616	44.4	0.800							
1595	1577	3.774	3.648	34.973	6.01					27.822	32.446	36.957	41.360	45.660	44.3	0.931							
1896	1873	3.546	3.395	34.968	6.04					27.844	32.474	36.991	41.401	45.707	44.1	1.064							
2194	2165	3.273	3.098	34.960	6.10					27.866	32.504	37.029	41.446	45.760	43.1	1.194							
2490	2456	2.957	2.758	34.941	6.48					27.882	32.530	37.064	41.490	45.812	42.0	1.320							
2792	2752	2.677	2.454	34.925	6.43					27.895	32.552	37.095	41.528	45.858	40.9	1.445							
3090	3044	2.454	2.206	34.912	6.32					27.906	32.569	37.119	41.559	45.895	40.2	1.566							
3739	3677	2.149	1.840	34.891	6.10					27.918	32.592	37.152	41.602	45.947	39.9	1.826							

ENDEAVOR-74			39	LAT = 40 24.0 N			LONG = 65 16.8 W			30/ 9/81	24 OBS.	SONIC DEPTH= 2751m			STATION 39		
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-θ	SIG-1	SIG-2	SIG-3	SIG-4	AYOM	HEIGHT	
dbar.	m	deg C	deg C	o/oo	ml/l												
21	21	15.972	15.969	32.737	5.85					24.037	28.404	32.668	36.834	40.906	389.1	0.042	
46	46	13.498	13.491	34.959	4.98					26.280	30.678	34.972	39.166	43.265	176.4	0.113	
99	99	11.160	11.148	35.113	4.52					26.855	31.299	35.637	39.874	44.015	123.0	0.193	
148	147	10.408	10.390	35.138	4.00					27.011	31.471	35.824	40.076	44.231	109.3	0.249	
202	200	10.049	10.026	35.249	3.77					27.161	31.628	35.988	40.246	44.407	96.3	0.305	
248	246	9.003	8.976	35.158	3.57					27.265	31.756	36.139	40.420	44.602	87.0	0.347	
301	299	7.606	7.576	35.008	4.05					27.363	31.888	36.303	40.614	44.826	79.0	0.391	
352	349	7.010	6.976	34.994	4.25					27.438	31.977	36.406	40.730	44.955	71.4	0.429	
399	395	6.139	6.103	34.938	4.63					27.511	32.072	36.522	40.867	45.110	64.4	0.460	
452	448	5.726	5.687	34.941	4.87					27.567	32.138	36.598	40.952	45.205	59.6	0.493	
503	498	5.379	5.337	34.955	5.25					27.621	32.200	36.669	41.031	45.292	54.8	0.522	
601	596	4.838	4.799	34.952	5.78					27.683	32.277	36.759	41.134	45.407	49.5	0.574	
702	695	4.564	4.508	35.018	5.71					27.767	32.367	36.856	41.237	45.517	42.4	0.620	
796	798	4.424	4.352	34.949	6.21					27.728	32.333	36.826	41.212	45.495	46.8	0.662	
941	932	4.270	4.197	34.959	5.96					27.754	32.363	36.860	41.250	45.537	45.6	0.729	
998	988	4.164	4.087	34.956	6.28					27.764	32.376	36.875	41.268	45.557	45.1	0.755	
1247	1234	4.013	3.915	34.960	6.15					27.785	32.401	36.905	41.302	45.596	45.3	0.867	
1495	1478	3.868	3.750	34.958	6.20					27.800	32.421	36.929	41.330	45.628	45.8	0.980	
1758	1737	3.732	3.591	34.963	6.12					27.820	32.445	36.958	41.362	45.664	45.8	1.101	
1963	1939	3.613	3.455	34.964	6.19					27.834	32.463	36.979	41.387	45.692	45.8	1.195	
2241	2212	3.309	3.129	34.962	6.21					27.864	32.502	37.026	41.443	45.755	43.8	1.319	
2491	2457	3.003	2.804	34.943	5.91					27.879	32.526	37.059	41.484	45.804	42.5	1.427	
2646	2609	2.792	2.582	34.938	6.22					27.895	32.548	37.087	41.517	45.843	40.8	1.492	
2737	2698	2.690	2.473	34.933	6.29					27.900	32.556	37.098	41.532	45.861	40.3	1.529	

ENDEAVOR-74		40	LAT = 40 37.8 N		LONG = 66 36.0 W		63/ 9/81	22 ORS.	SONIC DEPTH= 2100m				STATION 40			
PR	DE	T	B	S	OXY	PHOS	SIL	NO2	N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT
dbar	m	deg C	deg C	o/oo	ml/l											
122	121	12.224	12.208	35.577	3.64					27.015	31.434	35.748	39.962	44.080	108.8	0.066
129	128	12.050	12.033	35.555	3.53					27.032	31.455	35.772	39.989	44.111	107.4	0.074
144	143	11.722	11.704	35.517	3.46					27.065	31.495	35.819	40.043	44.171	104.5	0.090
153	161	11.171	11.151	35.439	3.37					27.108	31.550	35.886	40.120	44.259	100.8	0.109
203	201	10.202	10.178	35.322	3.41					27.191	31.655	36.011	40.266	44.423	93.5	0.148
251	249	8.981	8.954	35.191	3.79					27.295	31.786	36.149	40.450	44.632	84.3	0.191
302	299	7.696	7.666	35.038	4.52					27.373	31.896	36.309	40.617	44.827	77.1	0.232
399	395	6.198	6.162	34.958	5.19					27.519	32.078	36.527	40.870	45.112	63.7	0.301
500	495	5.221	5.180	34.943	5.44					27.630	32.214	36.686	41.052	45.317	53.7	0.360
598	593	4.797	4.749	34.950	5.82					27.686	32.281	36.764	41.140	45.414	49.1	0.410
698	691	4.428	4.433	34.947	5.96					27.719	32.322	36.813	41.197	45.478	46.7	0.458
800	792	4.384	4.322	34.957						27.739	32.345	36.839	41.225	45.509	45.8	0.505
898	889	4.269	4.199	34.958	6.02					27.753	32.362	36.859	41.249	45.536	45.3	0.550
997	987	4.197	4.119	34.960	6.02					27.763	32.374	36.873	41.265	45.554	45.2	0.595
1097	1086	4.117	4.032	34.950	6.15					27.765	32.378	36.879	41.273	45.564	45.9	0.640
1193	1180	4.023	3.929	34.953	5.99					27.778	32.394	36.898	41.294	45.587	45.4	0.684
1293	1279	3.990	3.889	34.952	6.12					27.781	32.398	36.903	41.300	45.595	46.0	0.730
1380	1364	3.944	3.835	34.955	6.15					27.789	32.408	36.914	41.312	45.608	46.0	0.770
1494	1477	3.877	3.759	34.956	6.13					27.798	32.418	36.927	41.327	45.624	46.0	0.822
1581	1563	3.812	3.686	34.959	6.18					27.807	32.430	36.940	41.342	45.641	45.7	0.862
1691	1671	3.748	3.613	34.960	6.19					27.816	32.440	36.952	41.356	45.657	45.7	0.913
2100	2074	3.441	3.272	34.964	6.23					27.852	32.486	37.007	41.419	45.728	44.5	1.097

ENDEAVOR-74		41	LAT = 40 52.2 N			LONG = 66 51.0 W			1/10/81	3 ORS.	SONIC DEPTH=			92	STATION		41
PR	DE	T	θ	S	OXY	PHOS	SIL	NO2	N+N	SIG-A	SIG-1	SIG-2	SIG-3	SIG-4	ANOM	HEIGHT	
dbar	m	deg C	deg C	o/oo	ml/l												
15	15	12.610	12.608	32.555	5.96					24.598	29.031	33.357	37.584	41.714	333.3	0.026	
53	53	9.615	9.609	32.876	5.98					25.382	29.876	34.262	38.545	42.730	261.4	0.140	
91	90	8.278	8.269	33.837	5.59					26.342	30.859	35.267	39.572	43.777	170.8	0.222	

TABLE 6: Loran-C Drifter Buoy Multiple Ship Experiment No. 1

September 26, 1981

<u>GMT</u>	<u>Latitude</u>	<u>Longitude</u>
1531	40° 25.93'	64° 4.22'
1731	40° 23.17'	63° 58.34'
1831	40° 22.84'	63° 59.07'
1843	40° 22.80'	63° 59.63'
1943	40° 22.53'	64° 0.30'
2043	40° 22.44'	64° 1.12'
2143	40° 22.33'	64° 1.93'
2243	40° 22.42'	64° 3.19'
0019	40° 23.27'	64° 5.57'

Average Speed $\approx$ 25 cm/sec W

Loran-C Drifter Buoy Multiple Ship Experiment No. 2

September 27, 1981

<u>GMT</u>	<u>Latitude</u>	<u>Longitude</u>
1212	41° 9.12'	63° 55.88'
1324	41° 8.25'	63° 53.04'
1436	41° 9.46'	63° 54.92'
1548	41° 8.52'	63° 52.80'
1724	41° 8.21'	63° 51.13'
1812	41° 8.04'	63° 49.97'
1900	41° 7.84'	63° 48.63'
2012	41° 7.74'	63° 46.75'
2112	41° 7.37'	63° 44.81'
2148	41° 7.08'	63° 43.72'
2300	41° 6.31'	63° 41.77'
0000	41° 5.27'	63° 39.26'
0200	41° 3.24'	63° 36.23'

Average Speed $\approx$ 53 cm/sec ESE

WCR CRUISES

1982

	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>Jul</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>
ALBATROSS	19—	4—		17—	2—	9—	20—
ENDEAVOR	17—	8—	10—	1—	5—	26—	22—
KNORR	19—	6—	12—	29—	7—	24—	24—
OCEANUS	15—	2—	14—	1—	6—	23—	17—

Aircraft 20 & 28 Additional flights are possible.

Figure Captions

- Figure I-1: Positions of XBT observations, CTD/O2 stations and CTD/O2 two-yo stations made during R/V ENDEAVOR Cruise No. 74; 12 September to 2 October 1981.
- Figure I-2: Underway measurements of winds, clouds, barometric pressure, wet and dry bulb thermometers and sea surface temperatures and salinity during the cruise.
- Figure II-1: Chart showing the location of hourly XBT observations made during the first star survey 14-16 September 1981. The star-shaped track of the ship was designed to quickly map the thermal structure of the clockwise rotating feature.
- Figure II-2: Contours of surface temperature during the first star survey.
- Figure II-3: Velocity vectors averaged over the depth interval 5-28 m and over 10-minute periods along the ship's track during the first star survey.
- Figure II-4: The depth to the base of the near-surface mixed layer during the first star survey.
- Figure II-5: The thickness of the 17-19°C layer (18° water) during the first star survey.
- Figure II-6: The depth of the 15°C isotherm during the first star survey.
- Figure II-7: The depth of the 10°C isotherm during the first star survey.
- Figure II-8: Continuous surface salinity measurements recorded along the ship's track during Legs 1-5 of the first star survey. The dashes are calibration samples.
- Figure II-9: Contours of surface salinity during the first star survey.
- Figure II-10: Sections of temperature (°C) versus depth (m) from XBT data obtained along Legs 1-5 of the first star survey. The stippled area between 17-19°C defines the extent of 18° water.
- Figure III-1: Chart showing the location of CTD/O2 stations occupied during R/V Endeavor Cruise 74. Stations 1 and 2 were made to test the instruments. The sites of the two Multiple-Ship Experiments (MS-1 and MS-2), during which CTD "tow-yo" stations were made, are also shown. Section 4 was made west of the ring from the Sargasso Sea to the continental shelf. Combination CTD-CAMEL stations are shown by the * symbol.

- Figure III-2: Temperature, salinity and oxygen sections constructed from the water sample data collected at each CTD/02 station. Sections 1-3 are through the ring, Section 4 is west of the ring.
- Figure III-3: The depth of the 10°C isotherm during the CTD/02 survey.
- Figure IV-1: Chart showing the location of hourly XBT observations made during the second XBT star survey; 24-26 September 1981. Section 10 was made through the ring and the Gulf Stream to the Sargasso Sea and the beginning of CTD/02, Section 4.
- Figure IV-2: Contours of surface temperature during the second star survey.
- Figure IV-3: Velocity vectors averaged over the depth interval 5-28 m over 10-minute periods during the second star survey.
- Figure IV-4: The depth to the base of the near-surface mixed layer during the second star survey.
- Figure IV-5: The thickness of the 17-19°C layer during the second star survey.
- Figure IV-6: The depth of the 15°C isotherm during the second star survey.
- Figure IV-7: The depth of the 10°C isotherm during the second star survey.
- Figure IV-8: Continuous surface salinity measurements recorded during the second star survey on Legs 1-3. Problems with the salt water intake pump resulted in lost data during the remainder of the survey.
- Figure IV-9: Sections of temperature (°C) vs. depth (m) constructed from data obtained during the second star survey. The stippled area between 17-19°C delineates the extent of 18° water. Section 10, from the ring to the Sargasso Sea is included for completeness.
- Figure IV-10: Contours of surface salinity during the second star survey.
- Figure V-1: The track of the R/V ENDEAVOR relative to a drogue at 100 m during the first multiple-ship experiment. This is CTD/02 station No. 30 occupied near the center of the ring on 26 September 1981 (year day 269). The dots are positions at which a radar range and bearing to the surface float was obtained; times are in GMT.

- Figure V-2: The track of the ship relative to a drogue at 100 m during the second multiple-ship experiment. This is CTD/02 Station No. 31 taken in the high velocity region of the ring on 27 September 1981 (year day 270). The data are as described in Figure V-1. Operations were suspended between 2002 and 2102 while recovering the CAMEL.
- Figure V-3: Temperature and salinity sections constructed from data collected while lowering the CTD along Legs 1 and 2 of the first tow-yo station near the ring center.
- Figure V-4: Temperature and salinity sections as in Figure V-3 from Legs 1-4 during the second "tow-yo" station in the high velocity region of the ring.
- Figure V-5: Temperature and salinity profiles collected while lowering the CTD along Legs 1 and 2 of the first "tow-yo" station. Each temperature profile is offset 2°C and each salinity profile is offset $0.8^{\circ}/\text{‰}$.
- Figure V-6: Temperature and salinity profiles as in Figure V-5 for the "tow-yo" station at the second multiple ship experiment. Each temperature profile is offset 4°C and each salinity profile is offset $0.8^{\circ}/\text{‰}$.
- Figure VI-1: The difference in conductivity (mmho/cm) between water samples (ROS) and CTD measurements after calibration procedures have been applied to the CTD data. The solid triangles are the mean and the solid diamonds are the standard deviation for each station.
- Figure VI-2: Scatter plot of potential temperature vs. salinity for all the water sample data collected during the cruise.
- Figure VI-3: Scatter plot of potential temperature vs. oxygen as in Figure VI-2.

Figure I-1: Positions of XBT observations, CTD/02 stations and CTD/02 two-yr stations made during R/V ENDEAVOR Cruise No. 74; 12 September to 2 October 1981.

WIND SPEED KTS

WIND DIR. DEG.

CLOUDS OKTAS

Figure I-2: Underway measurements of winds, clouds, barometric pressure, wet and dry bulb thermometers and sea surface temperatures and salinity during the cruise.

BARO PRS (MBARS)

WET BULB T (DEG. C)

DRY BULB T (DEG. C)

SEA SURF T (DEG. C)

SEA SURF T (DEG. C)

Figure II-1: Chart showing the location of hourly XBT observations made during the first star survey 14-16 September 1981. The star-shaped track of the ship was designed to quickly map the thermal structure of the clockwise rotating feature.

Figure II-2: Contours of surface temperature during the first star survey.

Figure II-3: Velocity vectors averaged over the depth interval 5-28 m and over 10-minute periods along the ship's track during the first star survey.

Figure II-4: The depth to the base of the near-surface mixed layer during the first star survey.

Figure II-5: The thickness of the 17-19°C layer (18° water) during the first star survey.

Figure II-6: The depth of the 15°C isotherm during the first star survey.

Figure II-7: The depth of the 10°C isotherm during the first star survey.

Figure II-8: Continuous surface salinity measurements recorded along the ship's track during Legs 1-5 of the first star survey. The dashes are calibration samples.

Figure II-9: Contours of surface salinity during the first star survey.

Figure II-10: Sections of temperature ($^{\circ}\text{C}$) versus depth (m) from XBT data obtained along Legs 1-5 of the first star survey. The stippled area between $17\text{--}19^{\circ}\text{C}$ defines the extent of 18° water.

Figure III-1: Chart showing the location of CTD/02 stations occupied during R/V Endeavor Cruise 74. Stations 1 and 2 were made to test the instruments. The sites of the two Multiple-Ship Experiments (MS-1 and MS-2), during which CTD "tow-yo" stations were made, are also shown. Section 4 was made west of the ring from the Sargasso Sea to the continental shelf. Combination CTD-CAMEL stations are shown by the * symbol.

Figure III-2: Temperature, salinity and oxygen sections constructed from the water sample data collected at each CTD/02 station. Sections 1-3 are through the ring, Section 4 is west of the ring.

Figure III-3: The depth of the 10°C isotherm during the CTD/02 survey.

Figure IV-1: Chart showing the location of hourly XBT observations made during the second XBT star survey; 24-26 September 1981. Section 10 was made through the ring and the Gulf Stream to the Sargasso Sea and the beginning of CTD/02, Section 4.

Figure IV-3: Velocity vectors averaged over the depth interval 5-28 m over 10-minute periods during the second star survey.

Figure IV-4: The depth to the base of the near-surface mixed layer during the second star survey.

Figure IV-5: The thickness of the 17-19°C layer during the second star survey.

Figure IV-6: The depth of the 15°C isotherm during the second star survey.

Figure IV-7: The depth of the 10°C isotherm during the second star

Figure IV-8: Continuous surface salinity measurements recorded during the second star survey on Legs 1-3. Problems with the salt water intake pump resulted in lost data during the remainder of the survey.

SECOND STAR, LEG 2

Figure IV-9: Sections of temperature ($^{\circ}\text{C}$) vs. depth (m) constructed from data obtained during the second star survey. The stippled area between 17° - 19°C delineates the extent of 18° water. Section 10, from the ring to the Sargasso Sea is included for completeness.

Figure IV-10: Contours of surface salinity during the second star survey.

Figure V-1: The track of the R/V ENDEAVOR relative to a drogue at 100 m during the first multiple-ship experiment. This is CTD/02 station No. 30 occupied near the center of the ring on 26 September 1981 (year day 269). The dots are positions at which a radar range and bearing to the surface float was obtained; times are in GMT.

Figure V-2: The track of the ship relative to a drogue at 100 m during the second multiple-ship experiment. This is CTD/02 Station No. 31 taken in the high velocity region of the ring on 27 September 1981 (year day 270). The data are as described in Figure V-1. Operations were suspended between 2002 and 2102 while recovering the CAMEL.

Figure V-3: Temperature and salinity sections constructed from data collected while lowering the CTD along Legs 1 and 2 of the first tow-yo station near the ring center.

G M T

Figure V-4: Temperature and salinity sections as in Figure V-3 from Legs 1-4 during the second "tow-yo" station in the high velocity region of the ring.

G M T

SECTION 3

SECTION 4

Figure V-5: Temperature and salinity profiles collected while lowering the CTD along Legs 1 and 2 of the first "tow-yo" station. Each temperature profile is offset 2°C and each salinity profile is offset 0.8‰ .

Figure V-6: Temperature and salinity profiles as in Figure V-5 for the "tow-yo" station at the second multiple ship experiment. Each temperature profile is offset 4°C and each salinity profile is offset 0.8‰.

Figure VI-1: The difference in conductivity (mmho/cm) between water samples (ROS) and CTD measurements after calibration procedures have been applied to the CTD data. The solid triangles are the mean and the solid diamonds are the standard deviation for each station.

Figure VI-2: Scatter plot of potential temperature vs. salinity for all the water sample data collected during the cruise.

Figure VI-3: Scatter plot of potential temperature vs. oxygen as in Figure VI-2.

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WARM CORE RING CRUISE #1 R/V ENDEAVOR CRUISE NO. 74 by M. C. Stalcup, T. M. Joyce, R. M. Schmitt and J. A. Dunworth, 133 pages. July 1982. Prepared for the National Science Foundation IDEO under Grant OCE 80-16983.	I. Stalcup, M. C. II. Joyce, T. M. III. Schmitt, R. M. IV. Dunworth, J. A. V. OCE 80-16983	WARM CORE RING CRUISE #1 R/V ENDEAVOR CRUISE NO. 74 by M. C. Stalcup, T. M. Joyce, R. M. Schmitt and J. A. Dunworth, 133 pages. July 1982. Prepared for the National Science Foundation IDEO under Grant OCE 80-16983.	I. Stalcup, M. C. II. Joyce, T. M. III. Schmitt, R. M. IV. Dunworth, J. A. V. OCE 80-16983
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