

U.S. Coast Guard Oceanographic Report

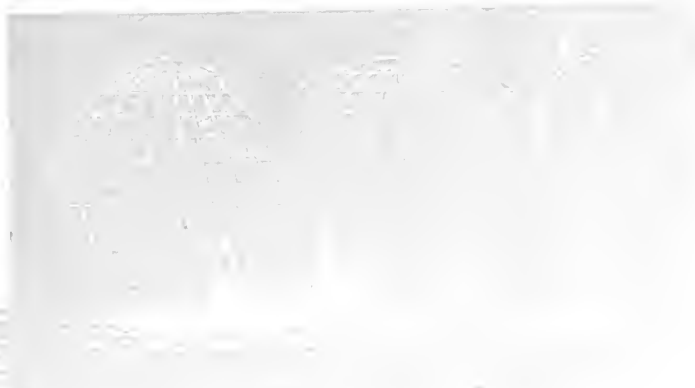
UNITED STATES COAST GUARD  
**OCEANOGRAPHIC**  
**REPORT No.21**

CG 373-21

Woods Hole Oceanographic Institution  
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OCEANOGRAPHIC OBSERVATIONS  
NORTH ATLANTIC OCEAN STATION 1000

September 1966 - October 1967

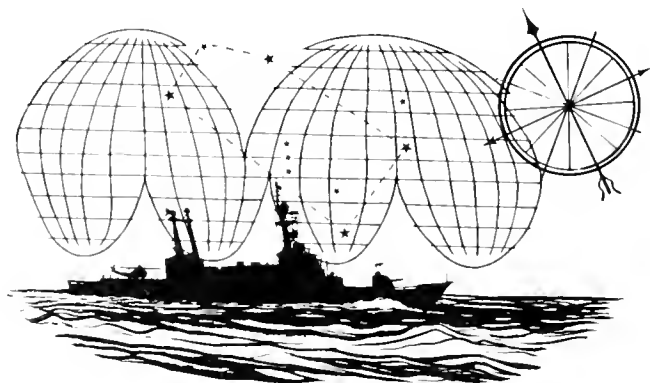


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# OCEANOGRAPHIC



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# REPORT No. 21<sup>CG 373-21</sup>

OCEANOGRAPHIC OBSERVATIONS  
NORTH ATLANTIC OCEAN STATION ECHO  
35°00' N., 48°00' W.

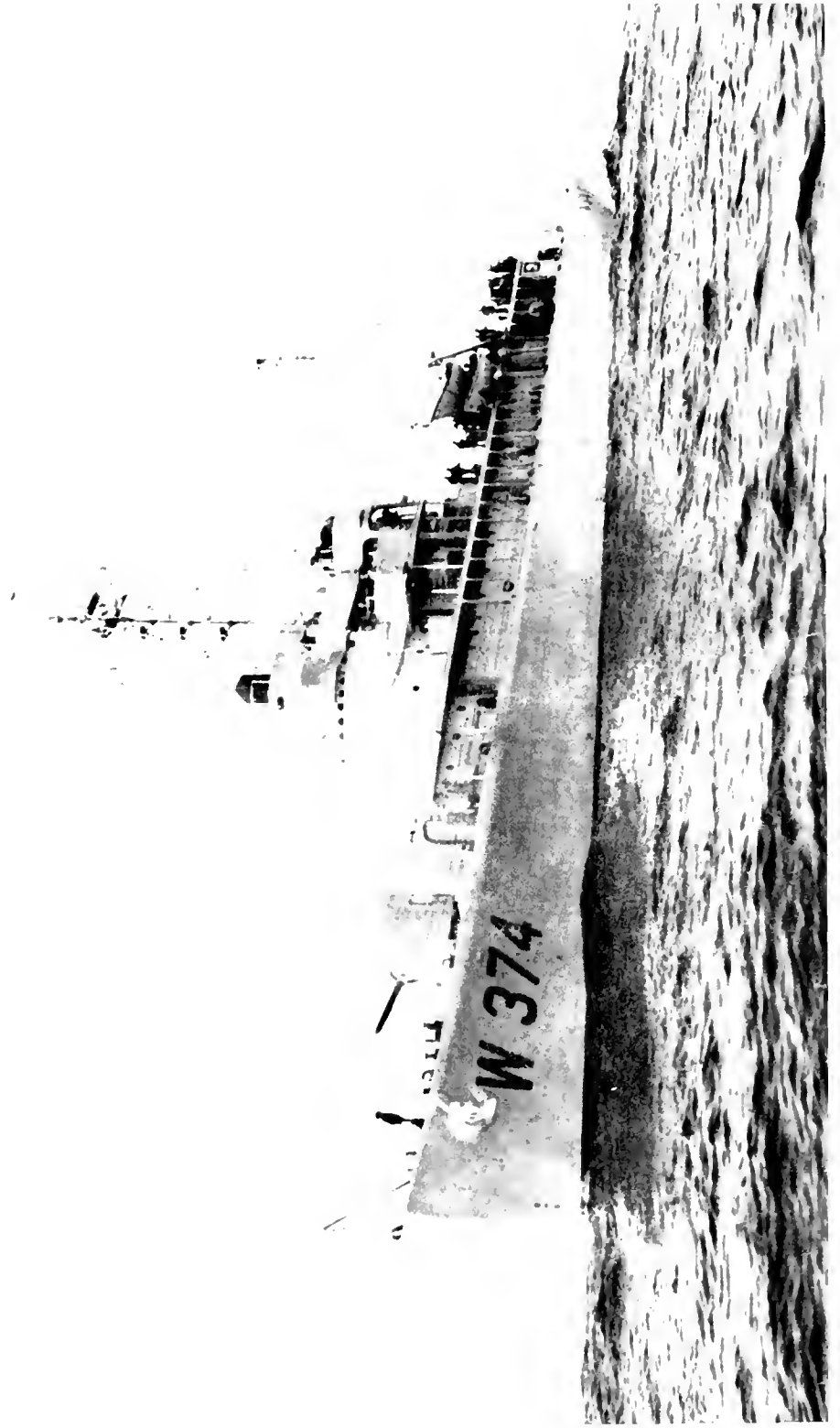
September 1966–October 1967

*By Joseph L. Shuhly*



WASHINGTON, D.C.





**Frontispiece: USCGC ABSECON (WHEC 374), a 311 ft. High Endurance Cutter, Homeport: Norfolk, Virginia**

## Abstract

This report contains the observed and interpolated temperature and salinity data plus the computed sigma-t, geopotential anomalies, and sound velocities for 89 oceanographic stations occupied by four U.S. Coast Guard cutters at ocean station ECHO (centered at 35° N., 48° W.) during September 1966–October 1967. They were the USCGC YAKUTAT (WHEC 380), 21 September–13 October 1966; USCGC MCCULLOCH (WHEC 386), 4–25 February 1967; USCGC ANDROSCOGGIN (WHEC 68), 1–20 June 1967; USCGC ABSECON (WHEC 374), 17 July–6 August 1967; USCGC MCCULLOCH, 27 September–13 October 1967. Casts of 14 Nansen bottles were made daily to 1500 meters where weather and operating conditions permitted. In addition, sampling was successfully extended to near the bottom at one station during each patrol.



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## Introduction

Ocean station ECHO is located in the North Atlantic Ocean at latitude 35°00' N. and longitude 48°00' W. Previous to September 1966, this station was monitored by the USCGC CASCO (WHEC 370) during the period 29 January–16 February 1963 in a joint effort with the U.S. Naval Oceanographic Office. The results of that study are presented in the U.S. Coast Guard Oceanographic report no. CG-373-2.

### Procedures

During the period September 1966–October 1967, U.S. Coast Guard cutters conducted hydrographic casts on five patrols at ocean station ECHO. Nansen casts were made daily at 14 prescribed levels to 1500 meters, weather and operating conditions permitting, during the three-week patrols. The cutters were also instructed to make a deep cast to near bottom at least once during the patrol. On shallow casts the prescribed sample depths were as follows: 0, 25, 50, 75, 100, 150, 200, 400, 500, 600, 800, 1000, 1250, and 1500 meters. The prescribed depths for the deep casts were 2000, 2500, 3000, and 150 and 50 meters off the bottom.

Two deep-sea reversing thermometers were attached to each Nansen bottle. Between the depths of 200 and 1500 meters one unprotected thermometer was used on 5 Nansen bottles to determine thermometric depths. Depths which were determined thermometrically are preceded by a "T" in the station data, Tables I–V. Field observations were returned to the U.S. Coast Guard Oceanographic Unit (CG Oceanographic Unit) for reduction to "in situ" temperature and determination of sample depths. The procedures used in recording and processing of thermometer data are similar to those in U.S.N. HO Pub. No. 607 (1955) and LaFond (1951). The CG Oceanographic Unit used a Digital Equipment Corporation PDP-5 computer to determine corrected temperatures for the protected thermometers, and thermometric depths of the unprotected thermometers.

Water samples were drawn from each Nansen bottle and stored in sample bottles for salinity determinations. The salinity was determined aboard ship using induction salinometers. Duplicate samples were drawn from the top and bottom bottle of each cast and delivered to CG Oceanographic Unit for quality control purposes when the vessel returned to port.

All oceanographic data collected by the ocean station vessels were transmitted via radioteletype to CG Oceanographic Unit for real-time processing and quality control. The temperature data were then passed on to the Fleet Numerical Weather Facility, Monterey, California.

Processed temperature and salinity data were recorded on form NHO/NODC-3167/1 (1-61), "Physical and Chemical Data Form for Oceanographic Stations" and delivered to the National Oceanographic Data Center (NODC). The interpolated temperatures and salinities for standard depths, sigma-t, specific volume anomalies, and sound velocities were computed by NODC and are presented in Tables I–V.

The ocean station vessels are normally required to maintain stations within a ten-mile square grid. The actual positions of the stations taken on each patrol are shown in figures 3–7. Thirteen of the 89 stations were taken outside of the ten-mile grid.

The USCGC YAKUTAT (WHEC 380) occupied 23 oceanographic stations during the period 21 September–13 October 1966. During this highly successful monitoring of ocean station ECHO, 22 stations were occupied. Samples ranged in depth from 1399 to 1536 meters. One deep cast was made to 4106 meters in a water depth of 4224 meters. The distribution of these stations about ECHO is shown in Figure 3. The data are listed by NODC as Ref. No. 31-767 YA and as Table I of this report.

During the period 4–25 February 1967, 18 oceanographic stations were occupied by the USCGC MCCULLOCH (WHEC 386). Of the 18 stations taken, 17 were shallow casts ranging

in depth between 1411 and 1847 meters. The one deep cast of 4527 meters was taken in water that was 4755 meters deep. The distribution of these stations about ECHO is shown in Figure 4. The data are listed by NODC as Ref. No. 31-855 ML and as Table II of this report.

Eleven oceanographic stations were taken by the USCGC ANDROSCOGGIN (WHEC 68) during the period 1-20 June 1967. Two stations had useful data to depths of 532 and 581 meters. One deep cast was made to a depth of 2846 meters, and the remaining eight stations ranged between 1182 and 1601 meters. The distribution of these stations about ECHO is shown in Figure 5. The data are listed by NODC as Ref. No. 31-1087 AI and as Table III of this report.

The USCGC ABSECON (WHEC 374) took

20 oceanographic stations during the period 17 July-6 August 1967. Samples from nineteen of these stations ranged in depth between 1305 and 1590 meters. The deep cast taken on this patrol was to a depth of 4445 meters. The distribution of these stations about ECHO is shown in Figure 6. The data are listed by NODC as Ref. No. 31-1140 AZ and as Table IV of this report.

Seventeen oceanographic stations were taken by the USCGC MCCULLOCH when she again occupied ocean station ECHO from 27 September to 13 October 1967. Sixteen casts ranged in depth between 1310 and 1785 meters while one deep cast to 4030 meters was taken in water 4206 meters deep. The distribution of these stations about ECHO is shown in Figure 7. The data are listed by NODC as Ref. No. 31-1164 ML and as Table V of this report.

## Discussion

The five patrols at ocean station ECHO from 21 September 1966 to 13 October 1967 cover over a one-year period. Although there are many gaps in the data, it is felt that there are enough data for a preliminary study of oceanographic conditions at ocean station ECHO which can be used as a basis for future reports.

Figures 8–12 show the vertical envelopes of temperature vs. depth for each of the five patrols. Figure 8 shows the vertical temperature envelope for ocean station ECHO between 21 September and 13 October 1966. During this time, the surface temperature ranged between 23.74 and 25.39° C. The water column was isothermal in the upper 25 meters, after which the seasonal thermocline was evident down to 125 meters with a gradient of about 6.57° C./100 meters. Below this there was a gradual gradient down to a depth of about 1200 meters.

By February the surface temperature had dropped to a range of 18.14–19.16° C., as shown in Figure 9. The water column was nearly isothermal at the majority of the stations to a depth of 100–150 meters. The thermocline then extended down to about 1100 meters.

Seasonal warming was evident at the surface during the patrol of the USCGC ANDROSCOGGIN in June 1967 (See Figure 10). The surface temperature had increased to 19.92–21.53° C. Between 100 and 300 meters the temperature structure was essentially the same as the previous patrol (February). Below 300 meters there were some erratic changes. Stations No. 1 and No. 2, located in the SE. portion of the ten-mile grid, revealed exceptionally cold water between the depths of 500 and 1300 meters. Below 1300 meters the temperature returned to normal. Station No. 11, taken 20 days later in the NW. portion of the grid had water temperatures higher than the apparent normal between the same depths. The greatest temperature difference between station No. 2 and No. 11 was 6.1° C. which occurred at the 800 meter level. There was a 5.7° C. difference at the 700 meter level.

The maximum surface temperature appears to occur in August (24.38–27.08° C.). Figure 11 shows a large temperature gradient in the upper 100 meters of the water column. Although the surface temperature had increased, below the 75 meter level the water temperature was substantially colder than during the previous patrol.

Seasonal cooling began in September. The surface temperatures ranged from 24.47 to 25.50° C. As seen in Figure 12, below 50 meters the water temperature was higher than any other time it was observed during the year, though it gradually decreased with time.

The vertical salinity envelopes are shown in Figures 13–17. During the patrol of the USCGC YAKUTAT the surface salinities ranged between 35.91 and 36.43‰. There was a slight increase in salinity with depth with the maximum salinity occurring between 50 and 100 meters. As shown in Figure 13, below this there was a negative gradient extending down to 1000 meters.

By February 1967, the surface salinities had increased to 36.43–36.59‰ and the water column was isohaline to a depth of about 200–240 meters. A marked salinity gradient existed between about 200 and 900 meters as shown in Figure 14.

The surface salinities during June (Figure 15) were slightly lower than the previous patrol in February and ranged between 36.28 and 36.48‰. Again, as with the temperature data, the salinity values for the USCGC ANDROSCOGGIN stations No. 1 and No. 2 were considerably lower between the depths of 500 and 1000 meters, and were higher at station No. 11. The greatest salinity difference between stations No. 2 and No. 11 was 0.79‰ which occurred at the 800 meter level. Another significant difference was 0.74‰ at the 700 meter level.

During the patrol of the USCGC ABSECON from 17 July to 6 August 1967 the surface salinities had increased to 36.53–36.68‰. From

the surface to 50 meters there was a slight decrease in salinity, and between 50 and 100 meters there was a slight inversion. The lower limit of the halocline was at about 800 meters. The surface salinity had reached a maximum during this patrol (Figure 16). However, it is felt that the maximum salinity might occur later in August.

During the September–October 1967 patrol of the USCGC MCCULLOCH at ocean station ECHO the surface salinities had decreased. However, there was a noticeable increase in salinity between the depths of 100 and 900 meters.

Figure 18 shows the temporal variation of temperature at 100 meter intervals during the five patrols at ocean station ECHO between 21 September 1966 and 13 October 1967. During the September–October 1966 cruise of the USCGC YAKUTAT the largest daily variation in surface temperature was  $1.27^{\circ}$  C. between September 23 and 24 which may have resulted from the time of day the casts were taken. A  $1.26^{\circ}$  C. temperature difference occurred between September 21 and 22. This could be due to spatial variation since similarly high temperature values were noted from a station taken in the same general area in February 1967. However the possibility that this is due to advection can not be overlooked. It is apparent that there was a tendency for the temperature throughout the water column to increase through September and into October.

Daily variations of surface temperature of about  $0.60^{\circ}$  C. was the largest encountered during the February 1967 patrol of the USCGC MCCULLOCH. Larger daily variations (as high as  $1.68^{\circ}$  C.) were observed between 200 and 1000 meters. These variations would have to be due to spatial effects since they extend well below the limits of the surface effects.

The exceptionally cold water on 2 June 1967 is the predominant feature of the USCGC ANDROSCOGGIN's occupation of ocean station ECHO.

When the USCGC ABSECON began its occupation of ocean station ECHO in July 1967, the temperatures below the 100 meter level were lower than those temperatures observed at the end of the previous patrol. The temperature then increased with time throughout the water column with the largest temperature increase

for the patrol occurring between 400 and 700 meters. The maximum variation was  $3.72^{\circ}$  C. at the 600 meter level as compared to  $1.28^{\circ}$  C. variation at the surface.

Late September and early October 1967 revealed higher temperatures at all levels below 25 meters over the previous patrol and temperatures decreasing with time. The largest daily variation of temperature occurred between 600 meters and 1100 meters.

Figure 19 shows the temporal variation of salinity at 100 meter intervals during the five patrols at ocean ECHO between September 1966 and October 1967. During the patrol of the USCGC YAKUTAT, the surface had low salinity values. Between 200 and 800 meters there was a high degree of correlation between temperature and salinity. Below 800 meters the temperature-salinity correlation still existed, but not to the same degree. This was the case during all of the patrols. The largest daily variation of salinity was 0.30% at the 400 meter level between September 21 and 22. These large variations occurred down to 700 meters, and could be due to the spatial variation of the stations. This was also a predominant feature in the corresponding plot for temperature. Other abnormal variations occurred at the 900, 1000, and 1100 meter levels between October 11 and October 13. Upon close inspection of the data it appears as though this is due to bad data and is not a true representation of the salinity. There was no corresponding variation in temperature between these dates.

During February 1967, the surface salinity had increased and displayed isohaline conditions to a depth of 200–250 meters. Between 250 and 900 meters large daily variations in salinity were the rule rather than the exception. These variations appear to be due to both spatial variations and lateral motion of water masses.

In June spatial variation of salinity was again evident as it was with temperature. The salinity values at stations No. 1 and No. 2 were considerably lower and those at station No. 11 were higher than those of other stations.

The surface salinity during July–August 1967 was higher than during the previous patrol, but lower values were recorded between

100 and 1200 meters, gradually increasing with time.

During September and October 1967 the salinities below 50 meters were higher than during the previous month and gradually decreased with time.

Figures 20 through 24 are the T-S diagrams for the five patrols at ocean station ECHO from 21 September 1966 to 13 October 1967. With a few noted exceptions, the T-S plots fell within or, in a few cases, just outside the limits for North Atlantic Central Water (Sverdrup et al. 1942, p. 669).

During the patrol of the USCGC YAKUTAT one point at the 1000 meter level was well outside the limits of the envelope (Figure 20). These values of temperature and salinity were gathered on 12 October 1966, and the validity of this point is doubtful as has been mentioned before.

Figure 21 shows the T-S plot for the February 1967 cruise of the USCGC MCCULLOCH. Particularly noteworthy is the mixed layer extending down to about 200 meters.

The T-S diagram for the patrol of the USCGC ANDROSCOGGIN in June 1967 (Figure 22) shows the exceptionally cold and low saline water encountered between 800 and 1200 meters on the 1st and 2nd of June 1967. These points fall well outside of the envelope for the North Atlantic Central Water.

The T-S diagrams for the patrols of the USCGC ABSECON during July and August 1967 and that of the USCGC MCCULLOCH during September and October 1967 are shown in Figures 23 and 24, respectively. The data points of both patrols fall within the envelope for North Atlantic Central Water and both show the rise in temperature of the surface layer.

## Summary

The results of the five patrols at ocean station ECHO from 21 September 1966 to 13 October 1967 indicates that the maximum surface temperature occurred in late August and the minimum occurred in February. The tem-

perature gradient below the 200 meter level remained basically the same throughout the period observed with slightly lower temperatures between the depths of 600 and 1100 meters during June due to colder water masses apparently moving through the area. The water column was very nearly isothermal in the upper 200 meters during February. After February a temperature gradient developed reaching a maximum about August. This gradient then slowly started to decrease.

The surface salinity also reached a maximum in late August. The time of minimum surface salinity is harder to determine with the available data, but indications are that it occurred in January. Between the depths of 200 and 800 meters there was a high degree of correlation between temperature and salinity throughout the year.

During September and October 1966 the mixed layer extended down to about 30 meters. By February 1967 it had increased in depth to about 200 meters and all but disappeared during the June 1967 patrol of the USCGC ANDROSCOGGIN.

The data for stations No. 1 and No. 2 during the June 1967 patrol of the USCGC ANDROSCOGGIN appear to be valid. At the 834 meter level the temperature and salinity were a low 3.72° C. and 34.54‰, respectively. In general, there appeared to be lower temperature and salinity values in the SE portion of the ten-mile grid and higher values in the NW portion during the June 1967 patrol. It is possible that these low values were the result of meanders passing through the area.

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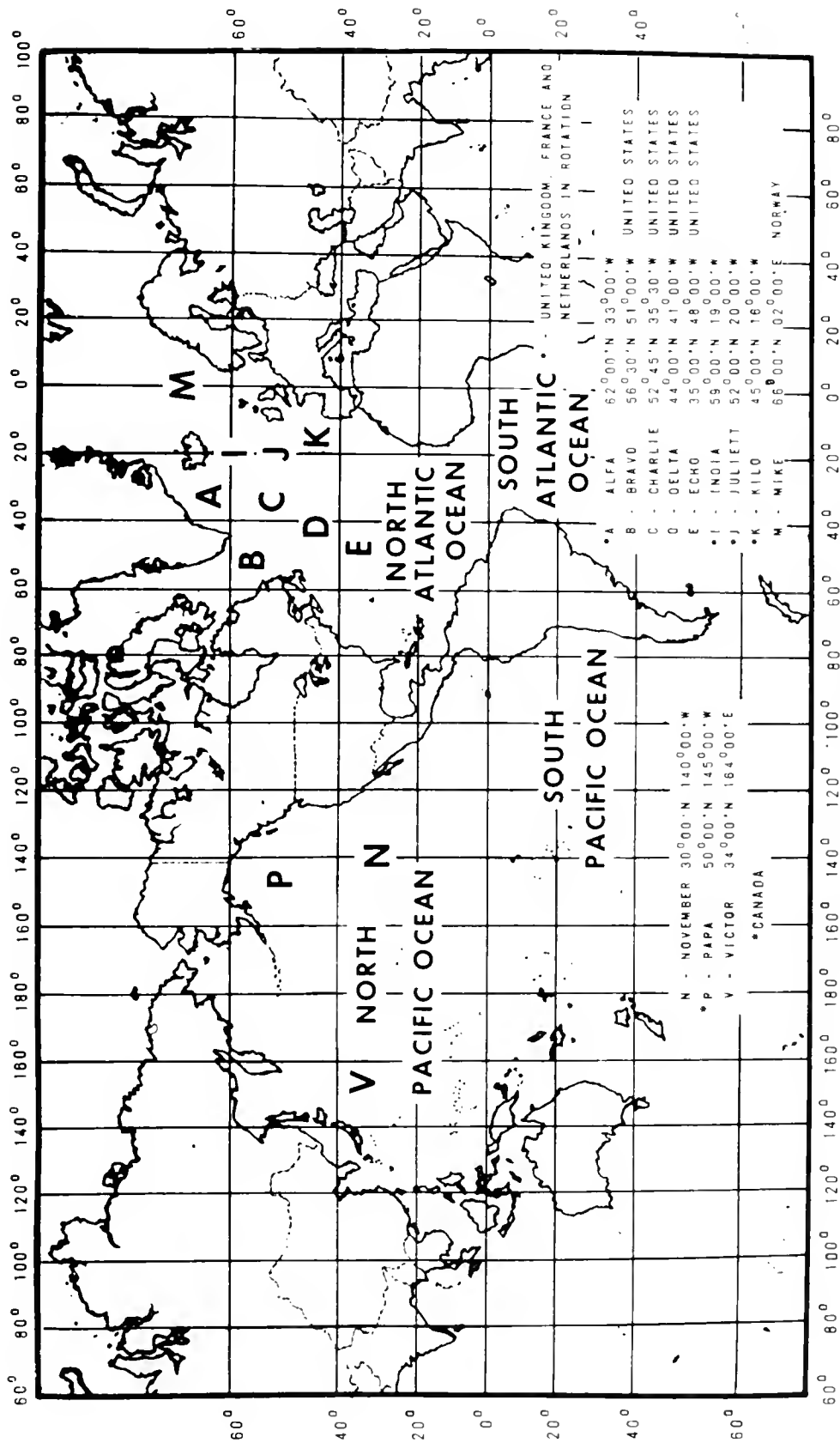


Figure 1. Chart of all ocean stations in the world.

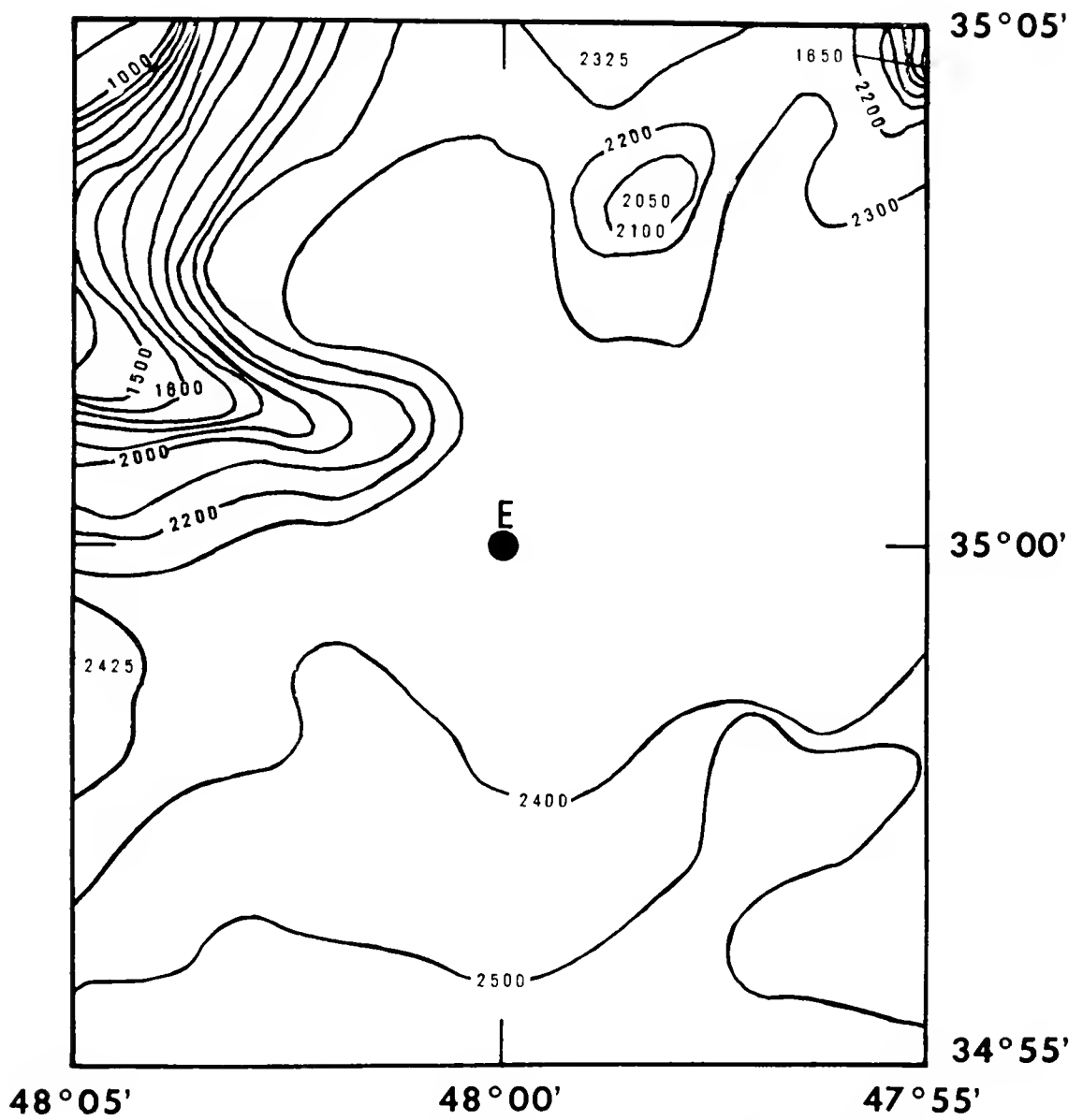
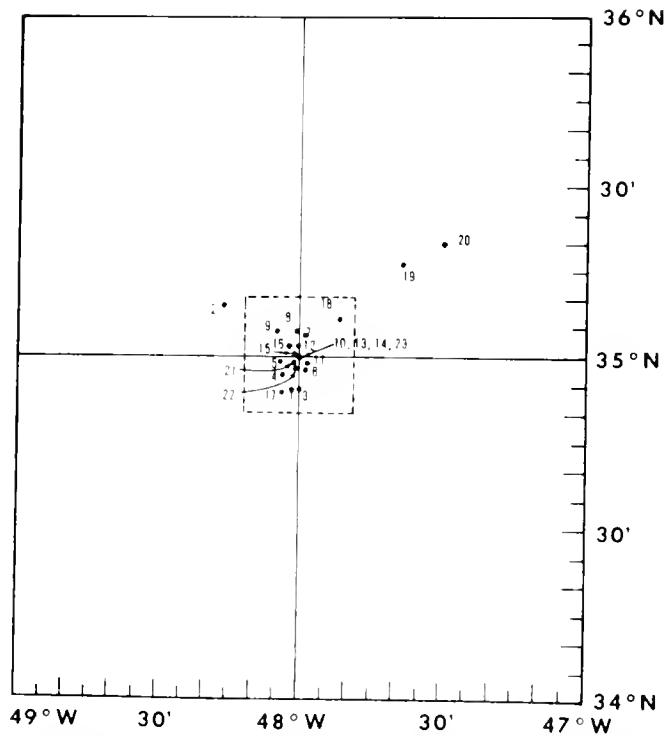
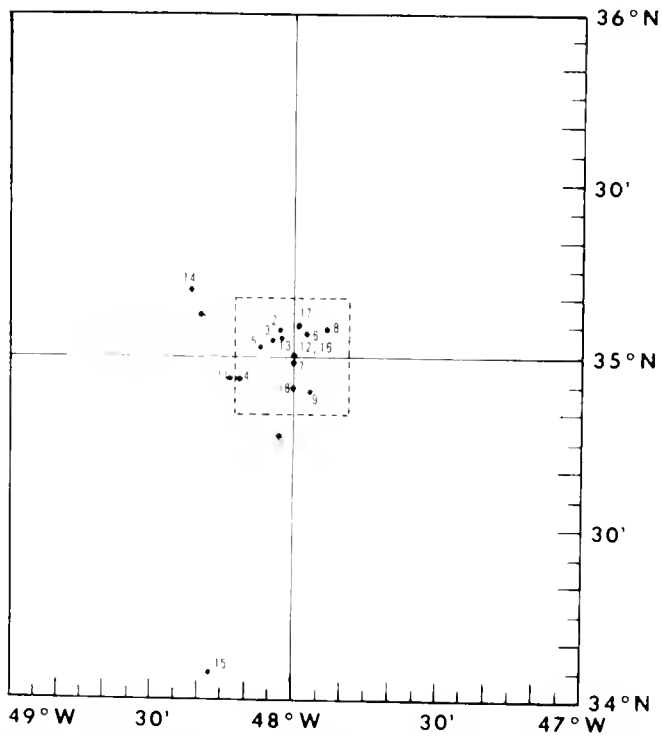


Figure 2. Bathymetry in the vicinity of Ocean Station ECHO (in fathoms).

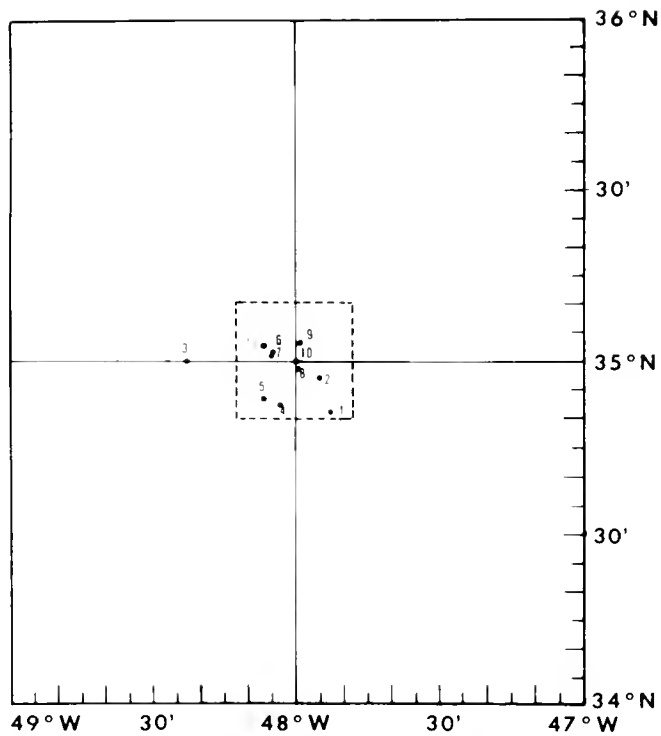




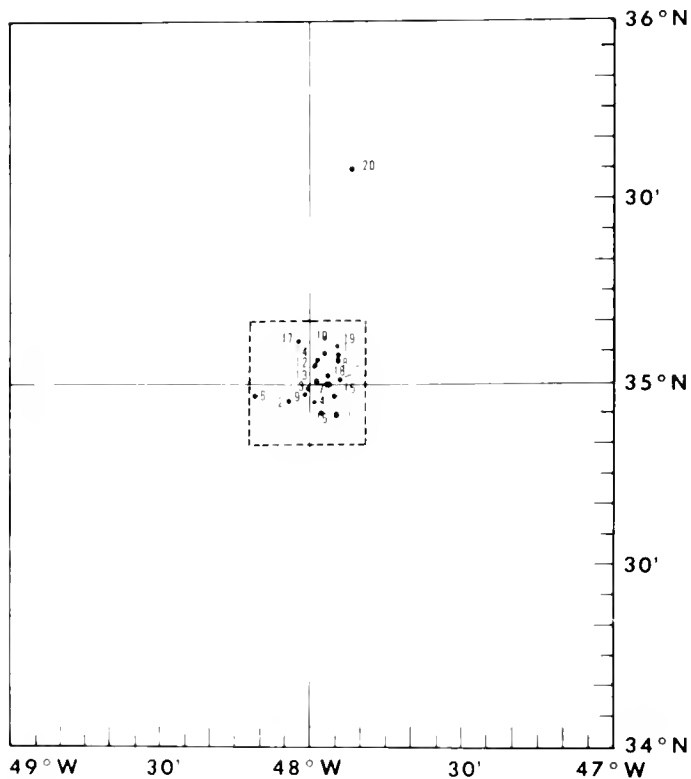
**Figure 3.** Positions of oceanographic stations taken by USCGC YAKUTAT (WHEC 380) during 21 September-13 October 1966 at ocean station ECHO.



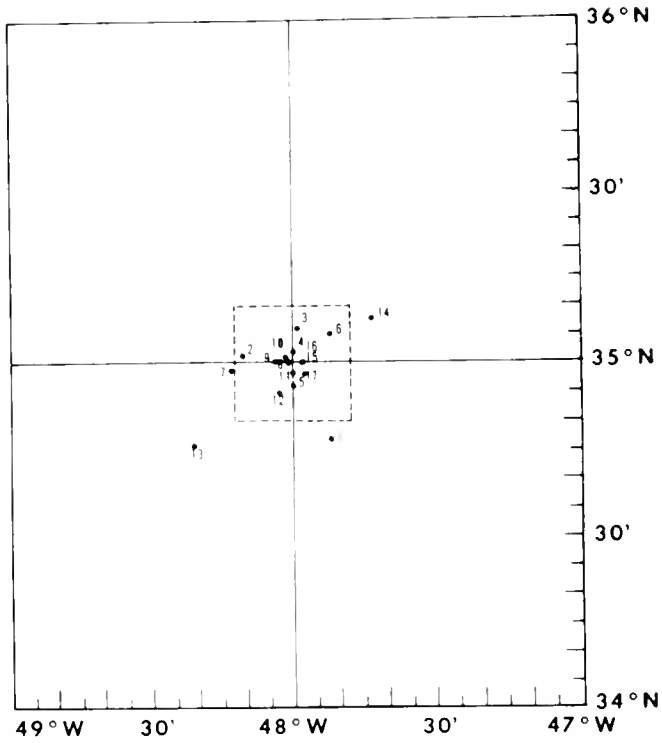
**Figure 4.** Positions of oceanographic stations taken by USCGC MCCULLOCH (WHEC 386) during 4-25 February 1967 at ocean station ECHO.



**Figure 5.** Positions of oceanographic stations taken by USCGC ANDROSCOGGIN (WHEC 68) during 1-20 June 1967 at ocean station ECHO.



**Figure 6.** Positions of oceanographic stations taken by USCGC ABSECON (WHEC 374) during 17 July-6 August 1967 at ocean station ECHO.



**Figure 7.** Positions of oceanographic stations taken by USCGC MCCULLOCH (WHEC 386) during 27 September–13 October 1967 at ocean station ECHO.

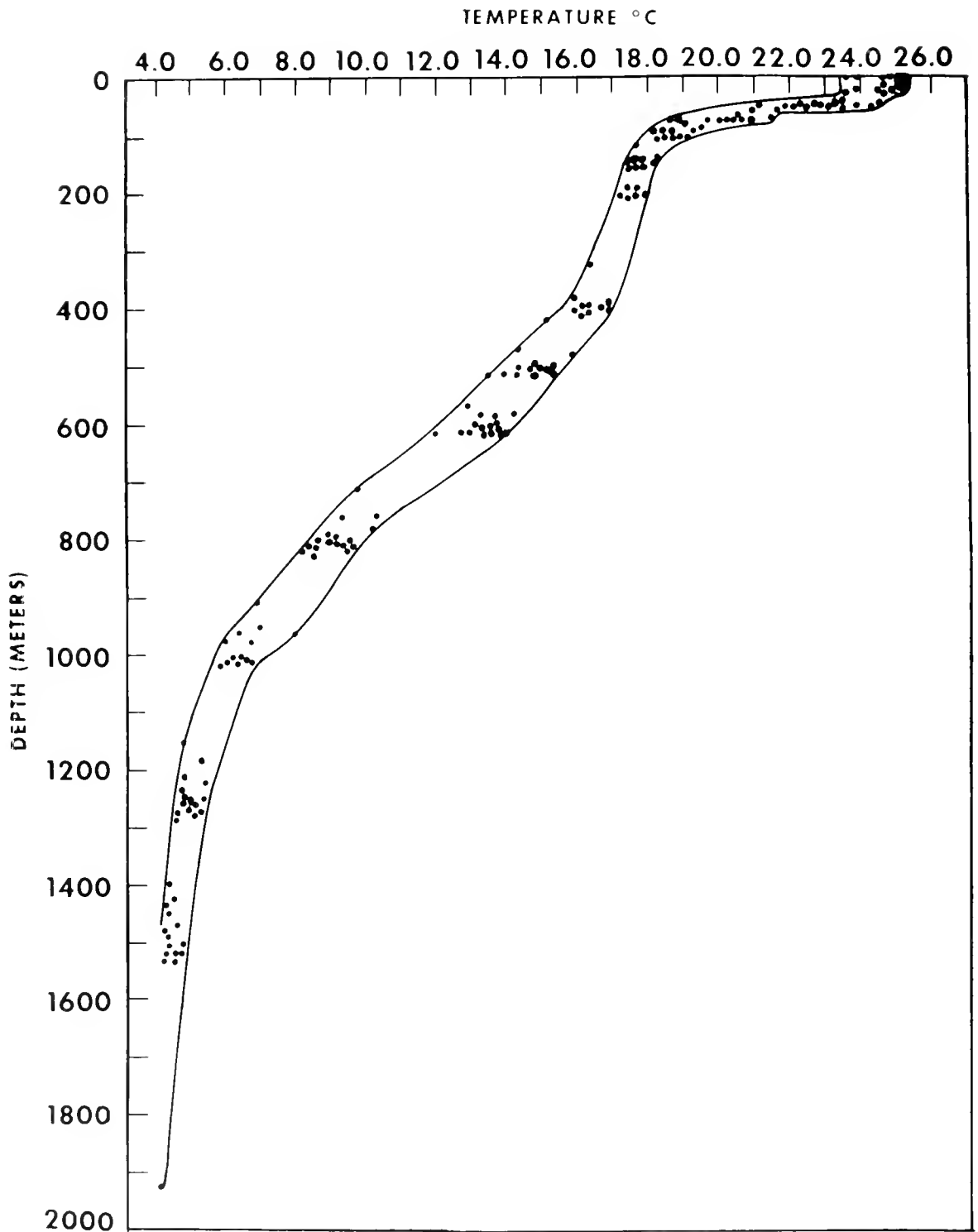


Figure 8. Envelope of temperature versus depth at oceanographic stations taken by USCGC YAKUTAT (WHEC 380) at ocean station ECHO, 21 September-13 October 1966.

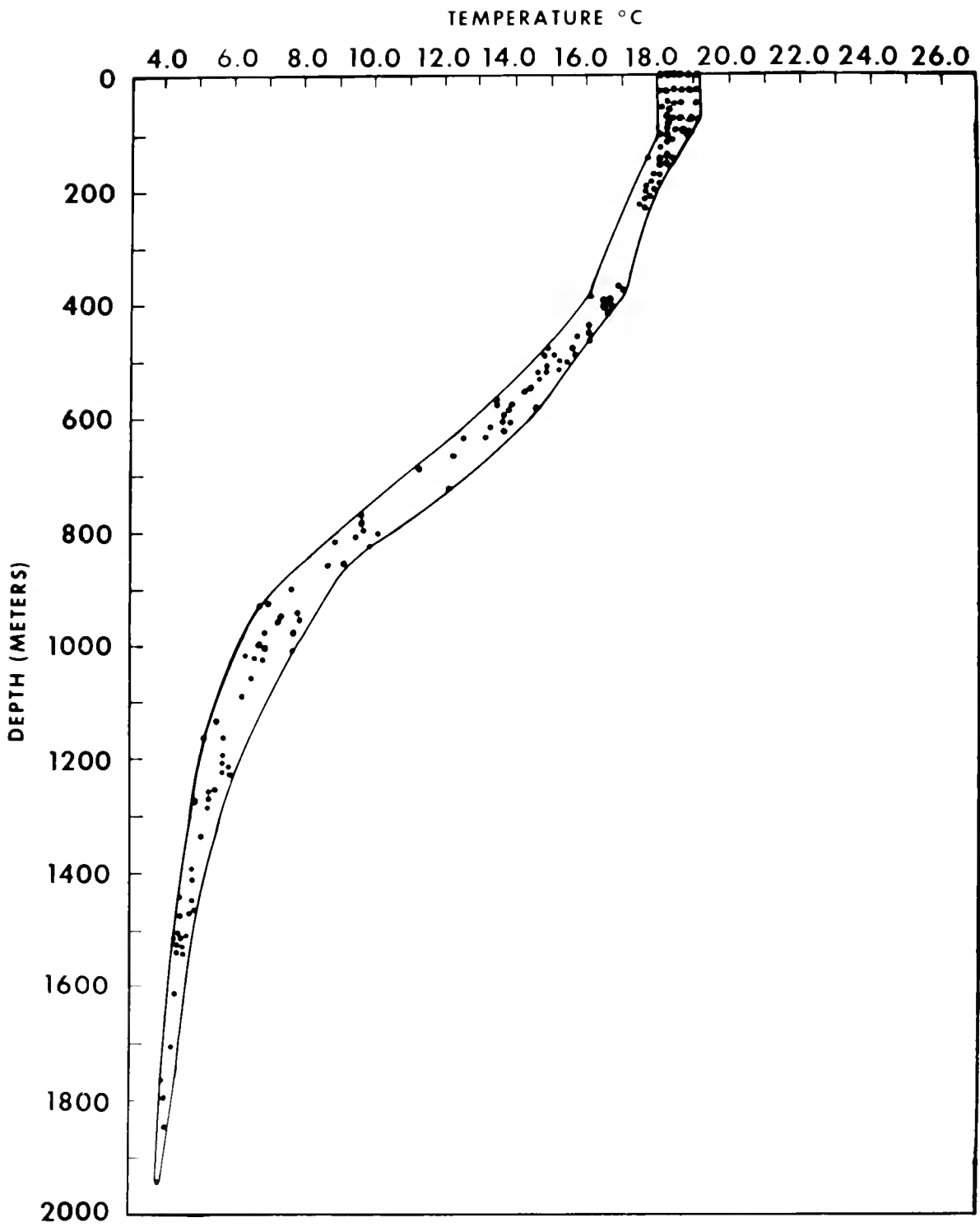


Figure 9. Envelope of temperature versus depth at oceanographic stations taken by USCGC MCCULLOCH at ocean station ECHO, 4-25 February 1967.

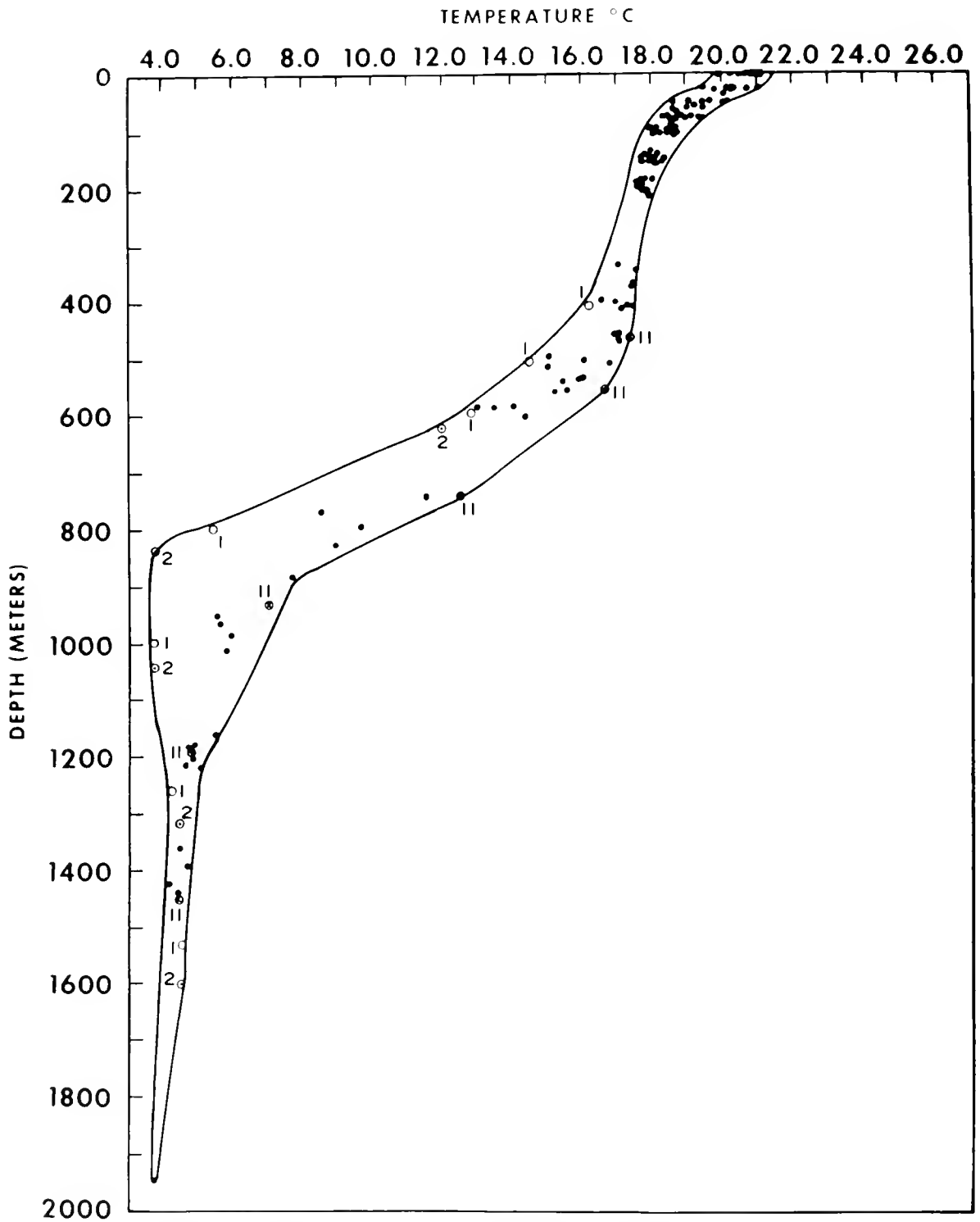


Figure 10. Envelope of temperature versus depth at oceanographic stations taken by USCGC ANDROSCOGGIN at ocean station ECHO, 1-20 June 1967.

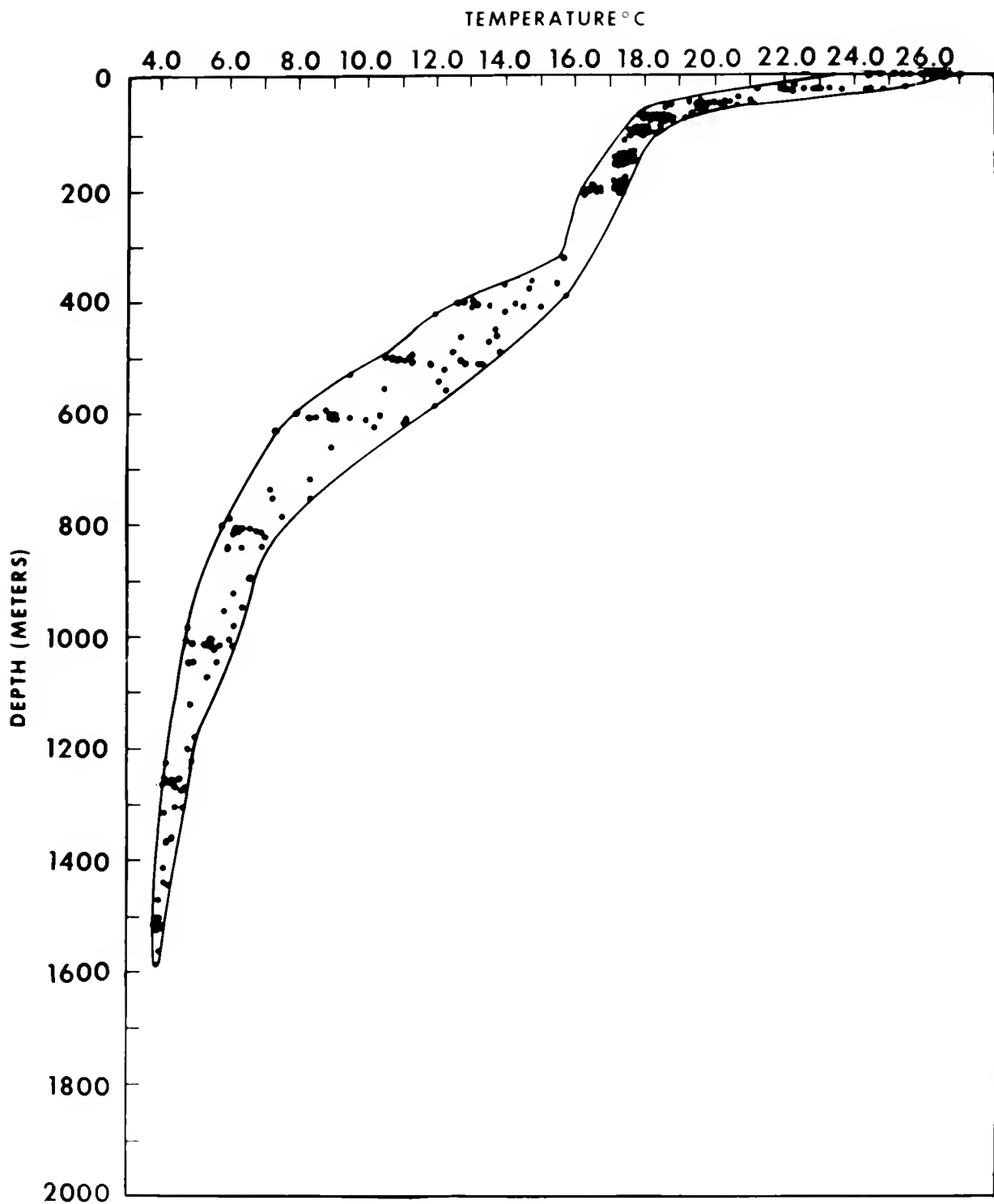
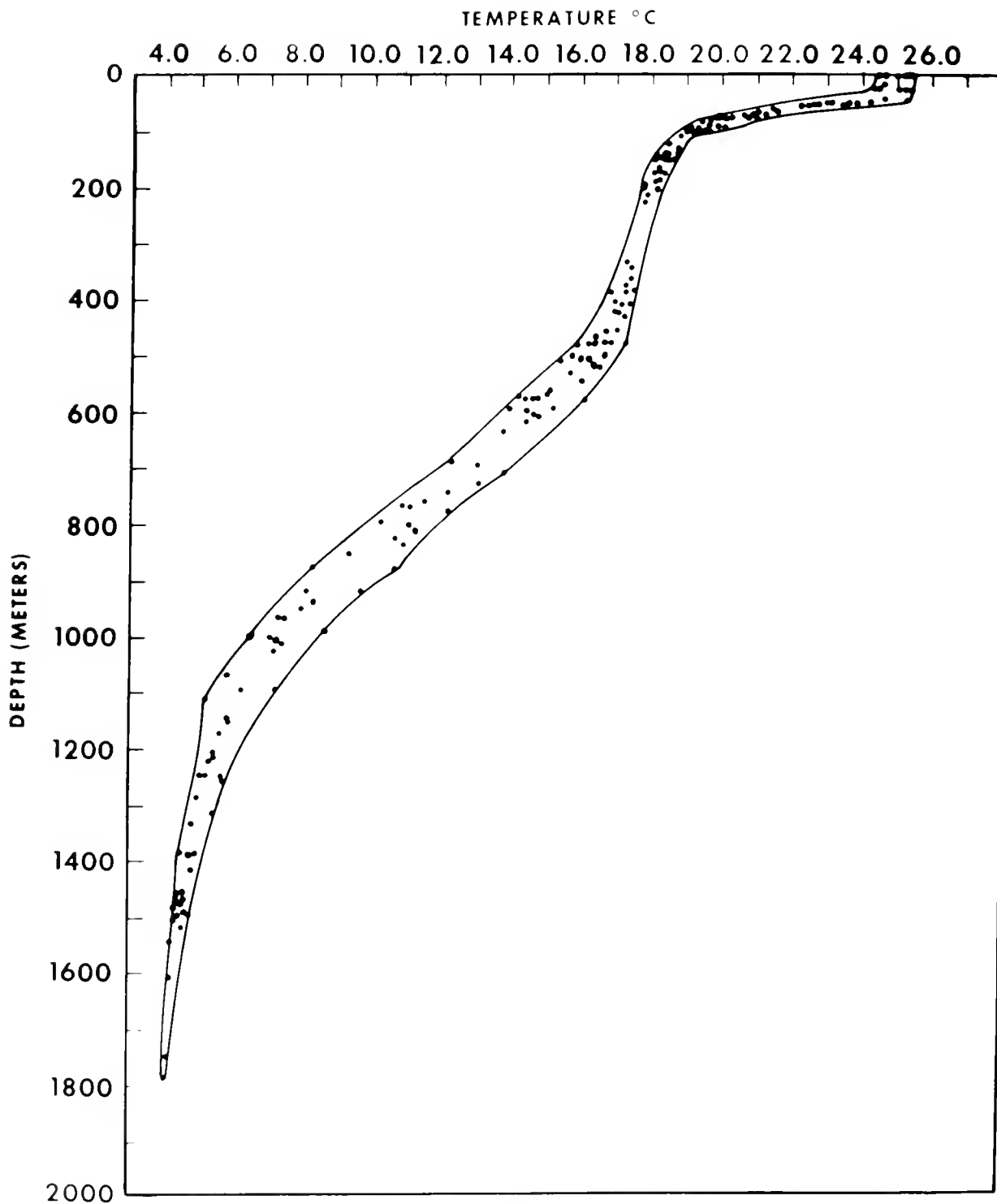


Figure 11. Envelope of temperature versus depth at oceanographic stations taken by USCGC ABSECON at ocean station ECHO, 17 July-6 August 1967.



*Figure 12.* Envelope of temperature versus depth at oceanographic stations taken by USCGC MCCULLOCH at ocean station ECHO, 27 September-13 October 1967.



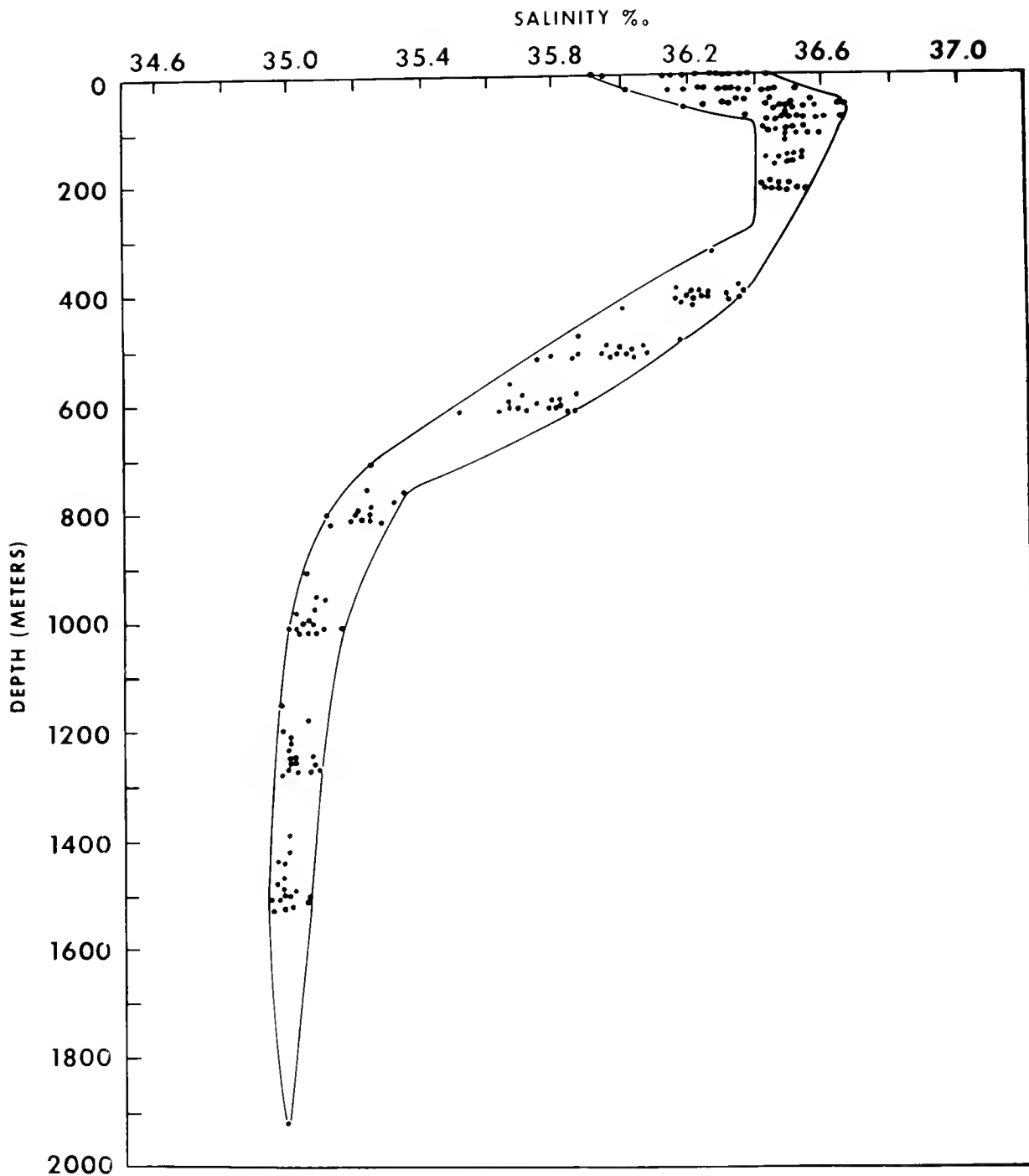
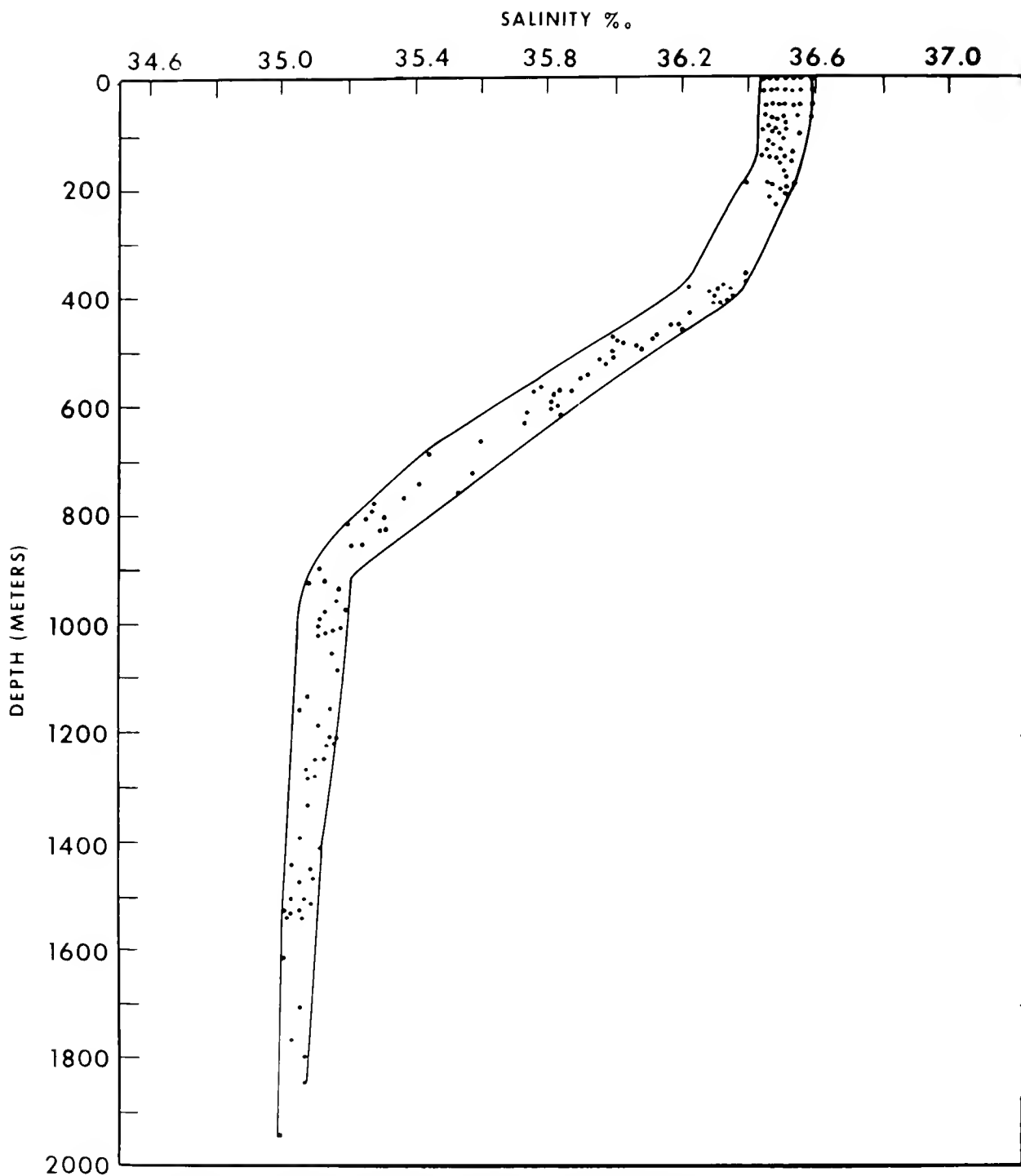


Figure 13. Envelope of salinity versus depth at oceanographic stations taken by USCGC YAKUTAT at ocean station ECHO, 21 September-13 October 1966.



*Figure 14.* Envelope of salinity versus depth at oceanographic stations taken by USCGC MCCULLOCH at ocean station ECHO, 4-25 February 1967.

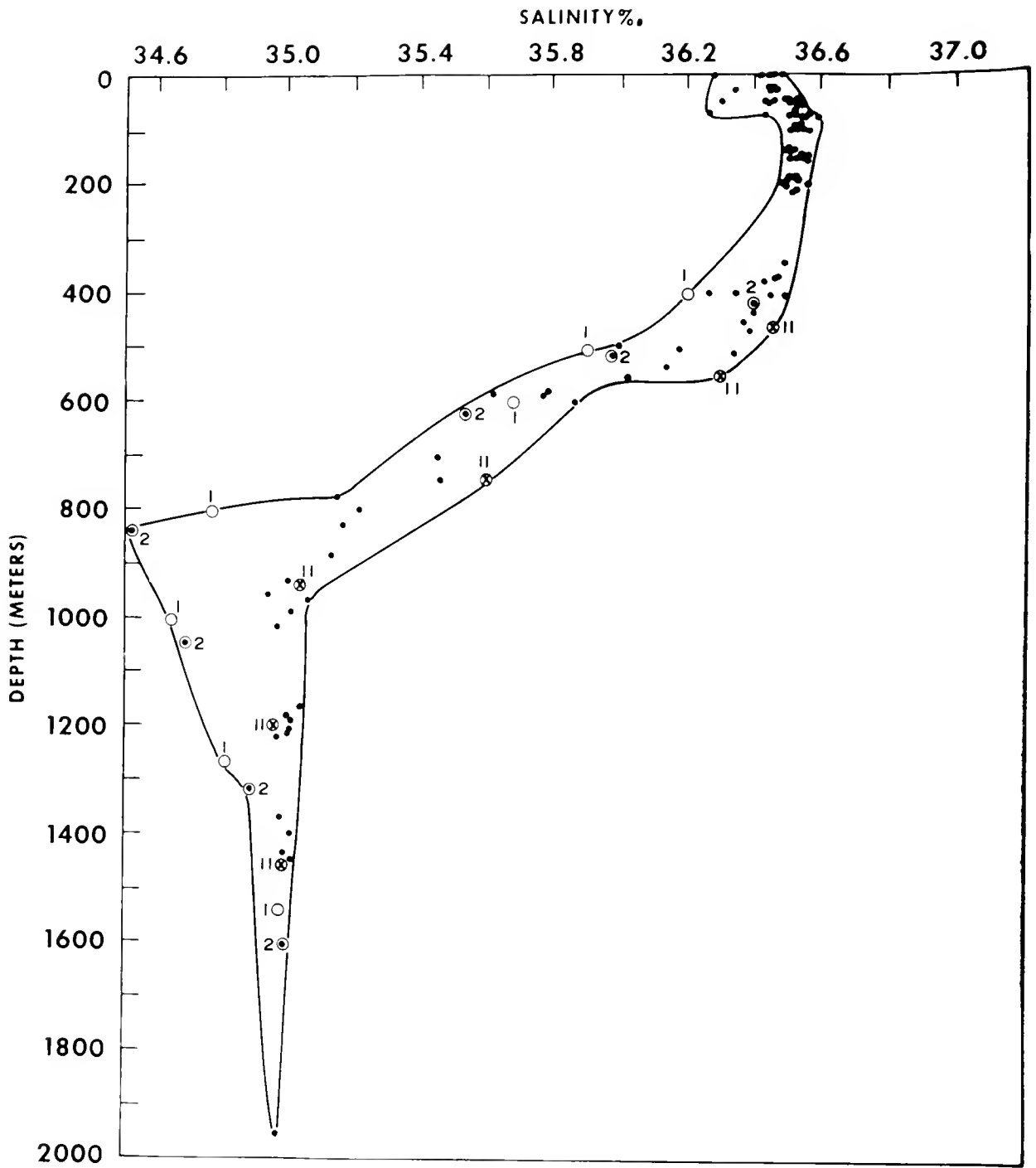


Figure 15. Envelope of salinity versus depth at oceanographic stations taken by USCGC ANDROSCOGGIN at ocean station ECHO, 1-20 June 1967.

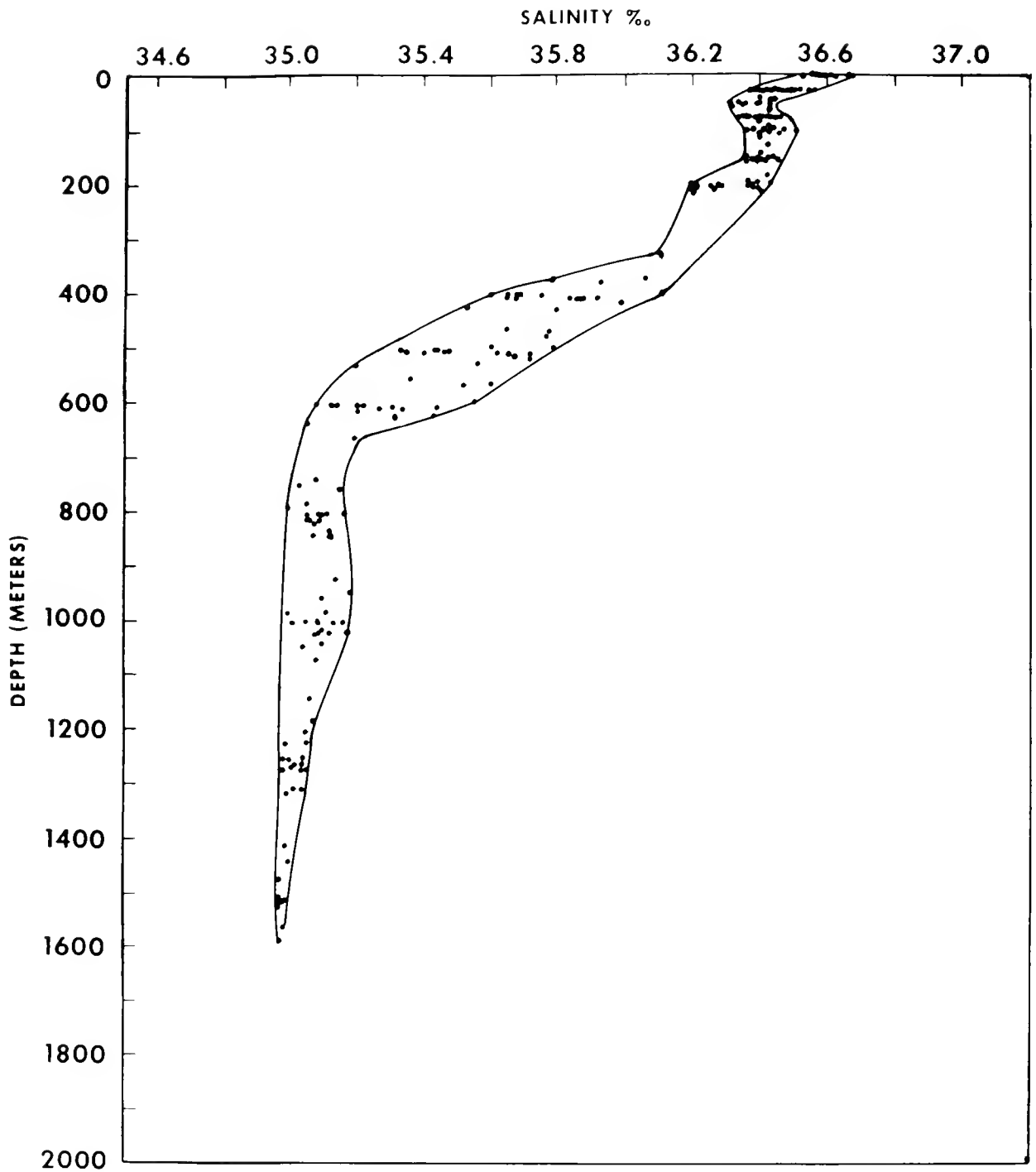


Figure 16. Envelope of salinity versus depth of oceanographic stations taken by USCGC ABSECON at ocean station ECHO, 17 July-6 August 1967.

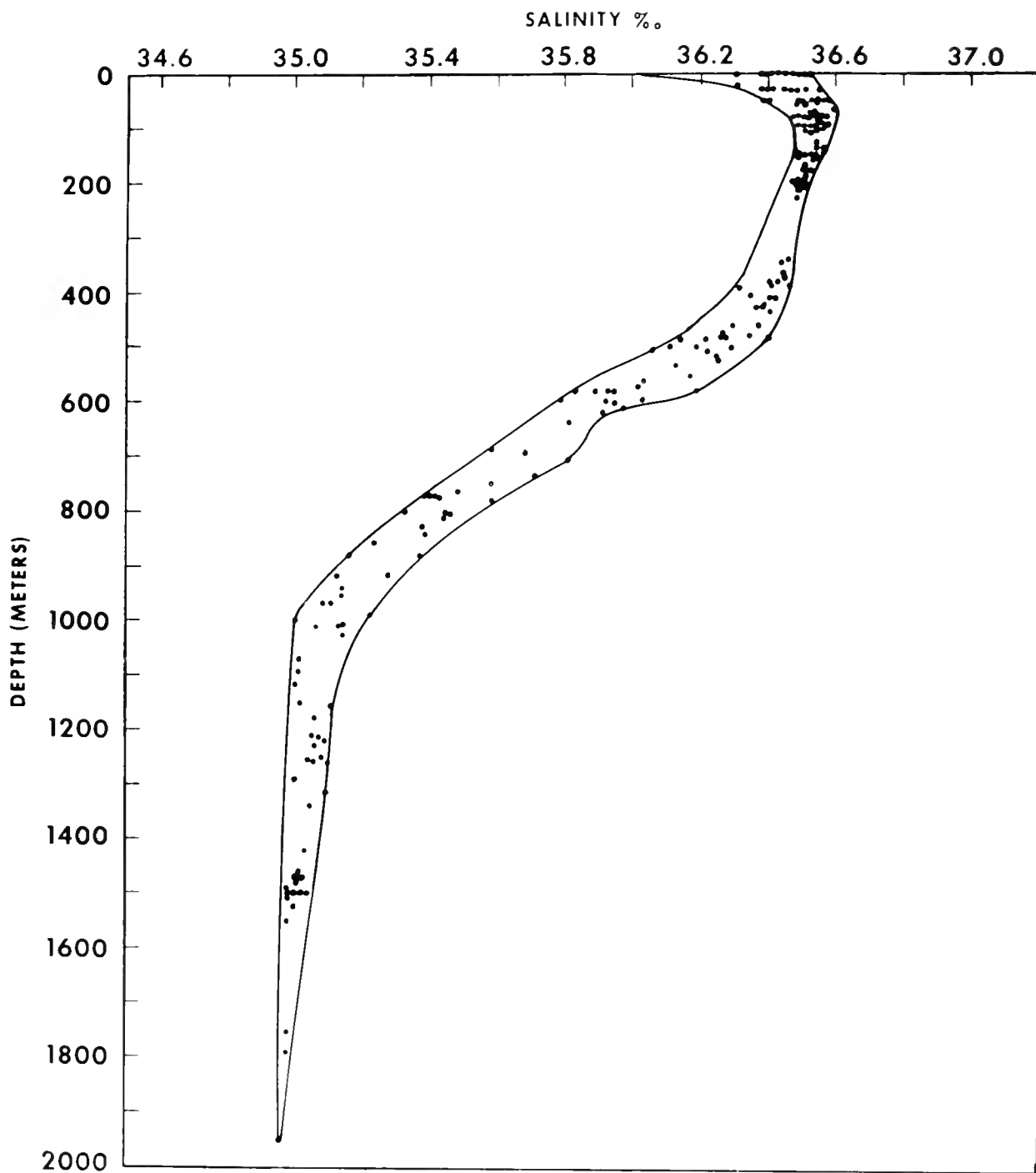


Figure 17. Envelope of salinity versus depth of oceanographic stations taken by USCGC MCCULLOCH at ocean station ECHO, 27 September-13 October 1967.

WATER TEMPERATURE VERSUS TIME AT OCEAN STATION ECHO  
20 September 1966 - 13 October 1967

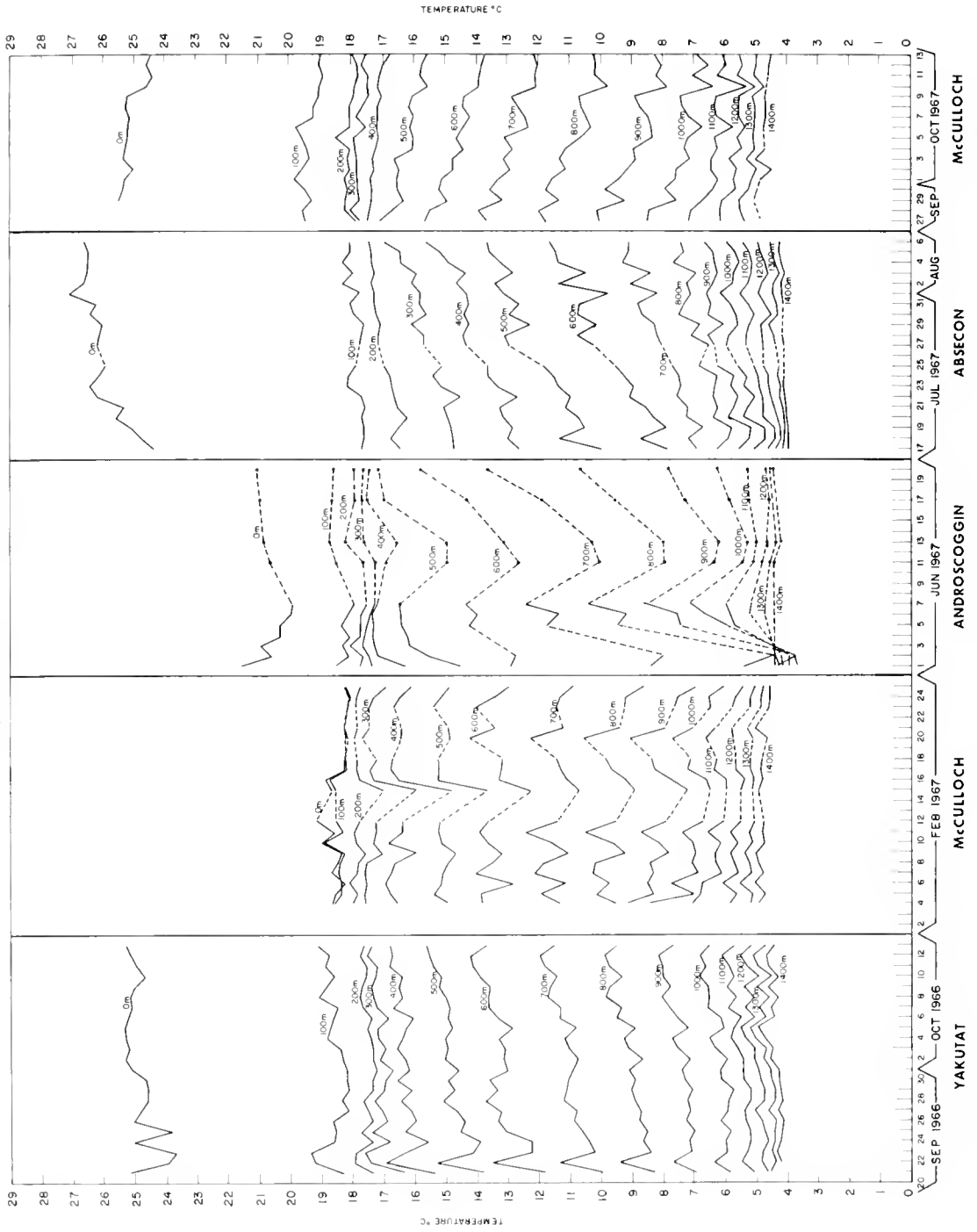


Figure 18. Water temperature versus time at selected depths at ocean station ECHO, September 1966–October 1967.

SALINITY VERSUS TIME AT OCEAN STATION ECHO  
20 September 1966 - 13 October 1967

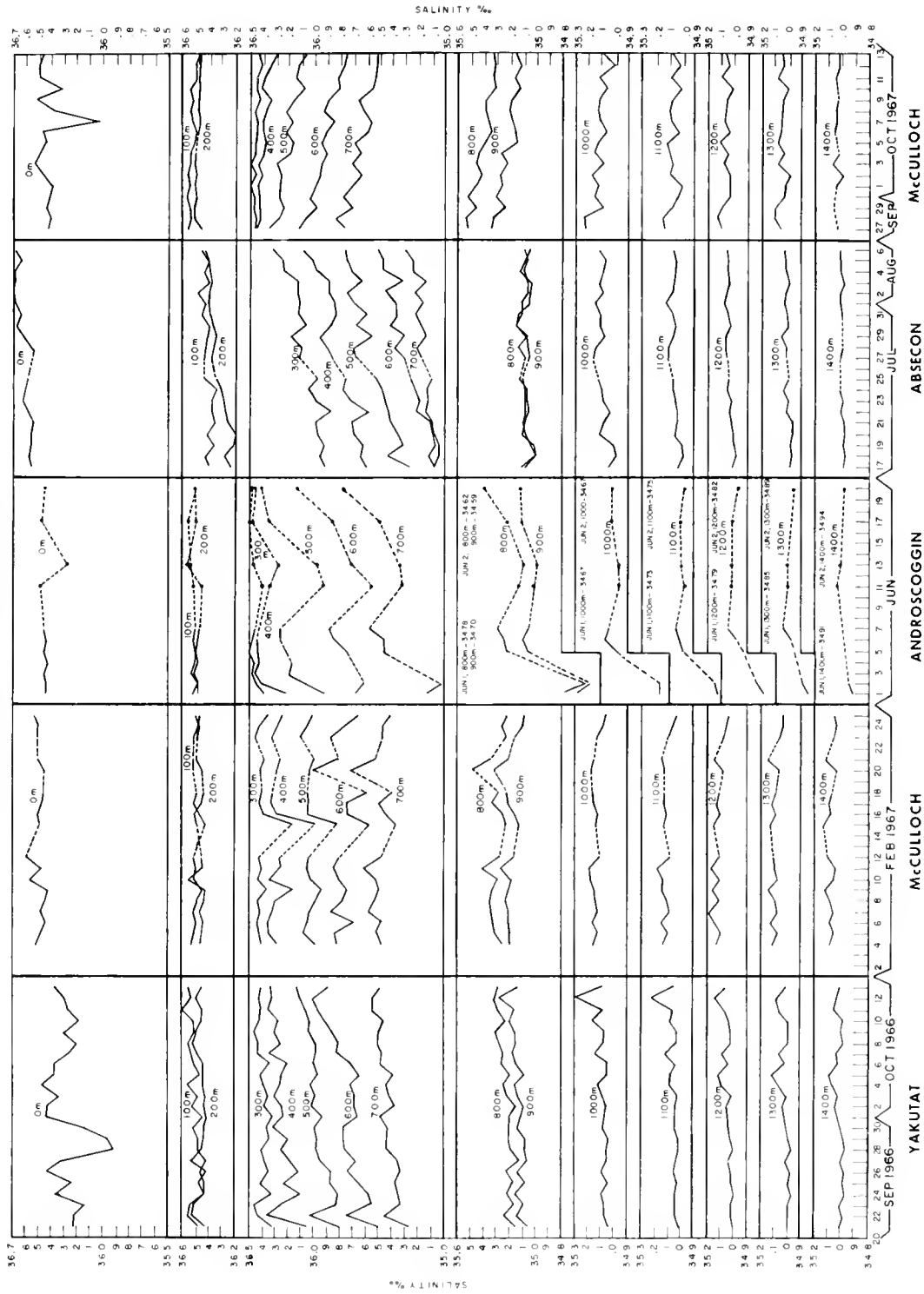


Figure 19. Salinity versus time at selected depths at ocean station ECHO, September 1966-October 1967.

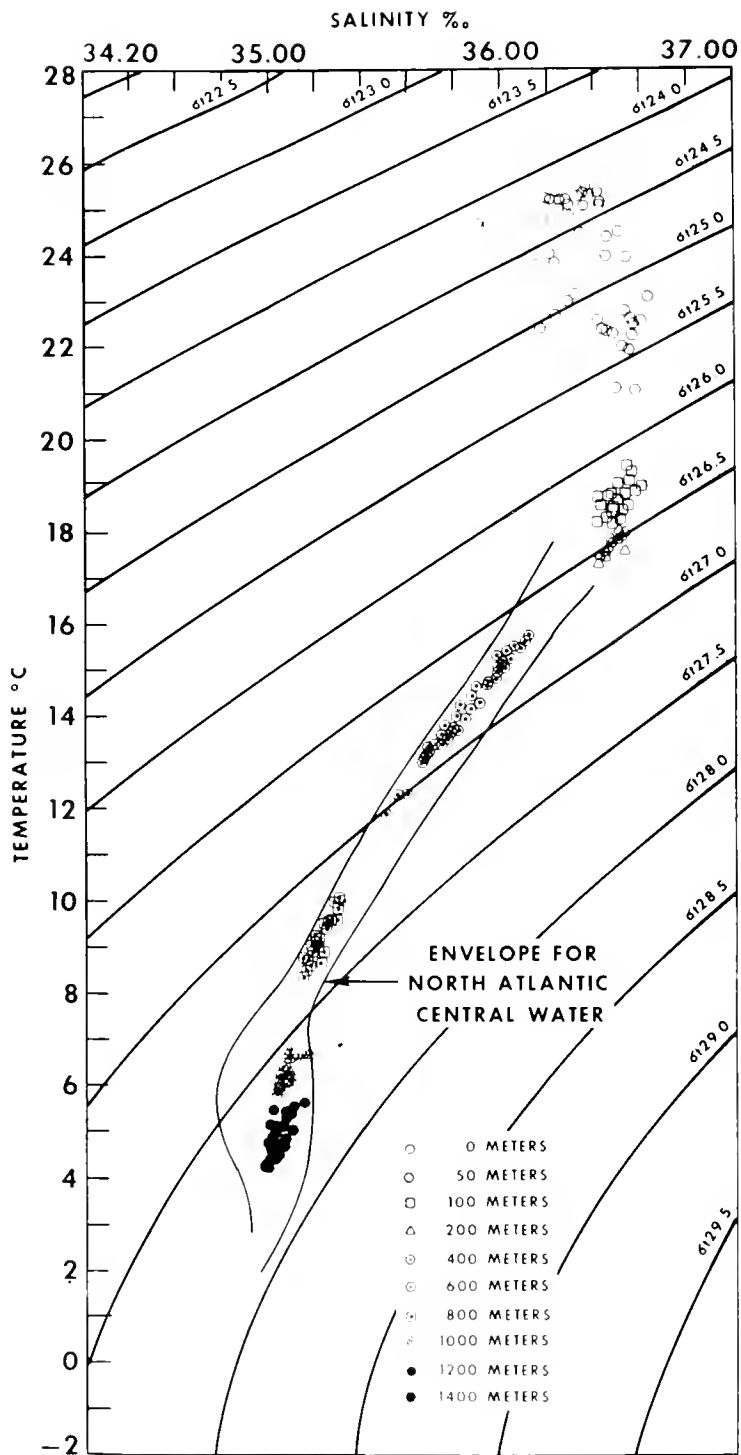


Figure 20. Temperature versus salinity at selected depths at oceanographic stations taken by USCGC YAKUTAT at ocean station ECHO, 21 September–13 October 1966.



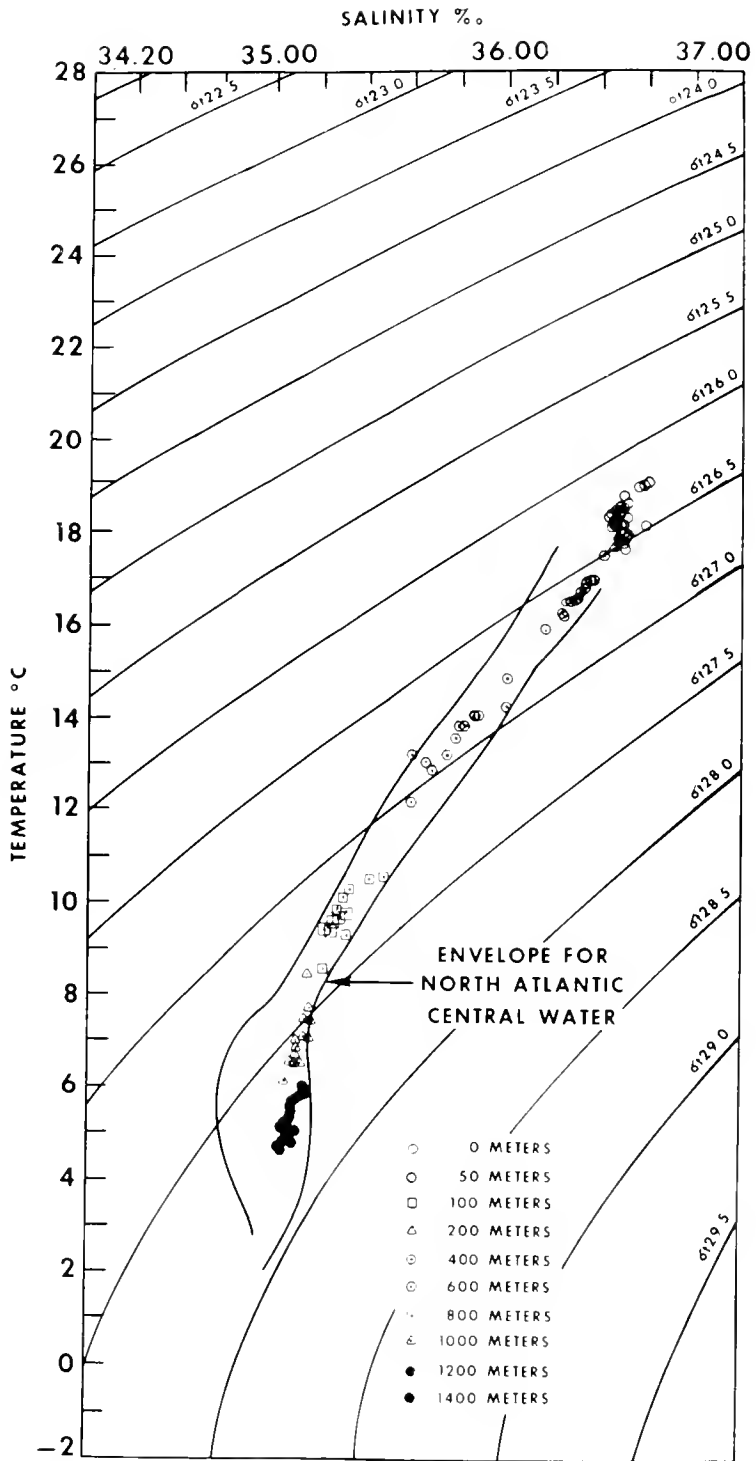


Figure 21. Temperature versus salinity at selected depths at oceanographic stations taken by USCGC MCCULLOCH at ocean station ECHO, 4-25 February 1967.

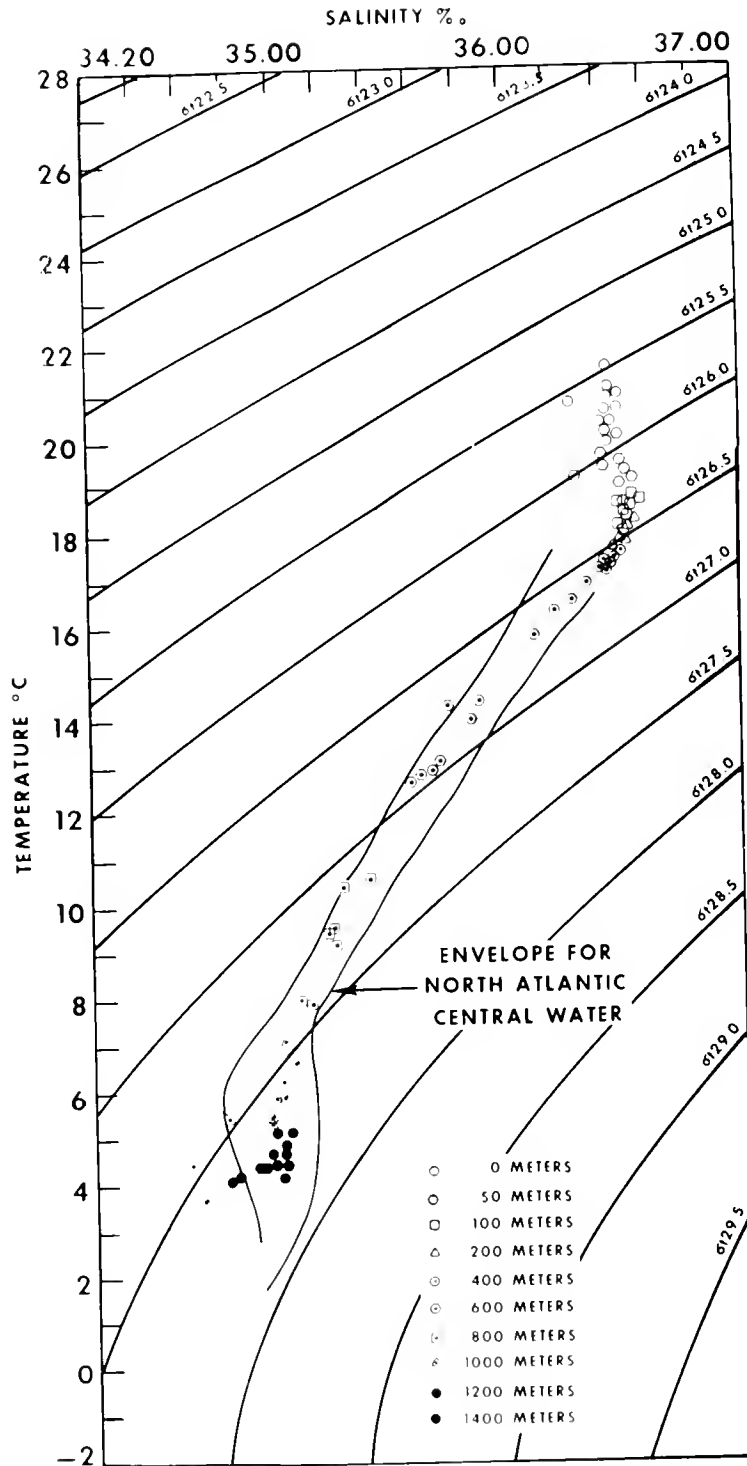


Figure 22. Temperature versus salinity at selected depths at oceanographic stations taken by USCGC ANDROSCOGGIN at ocean station ECHO, 1-20 June 1967.

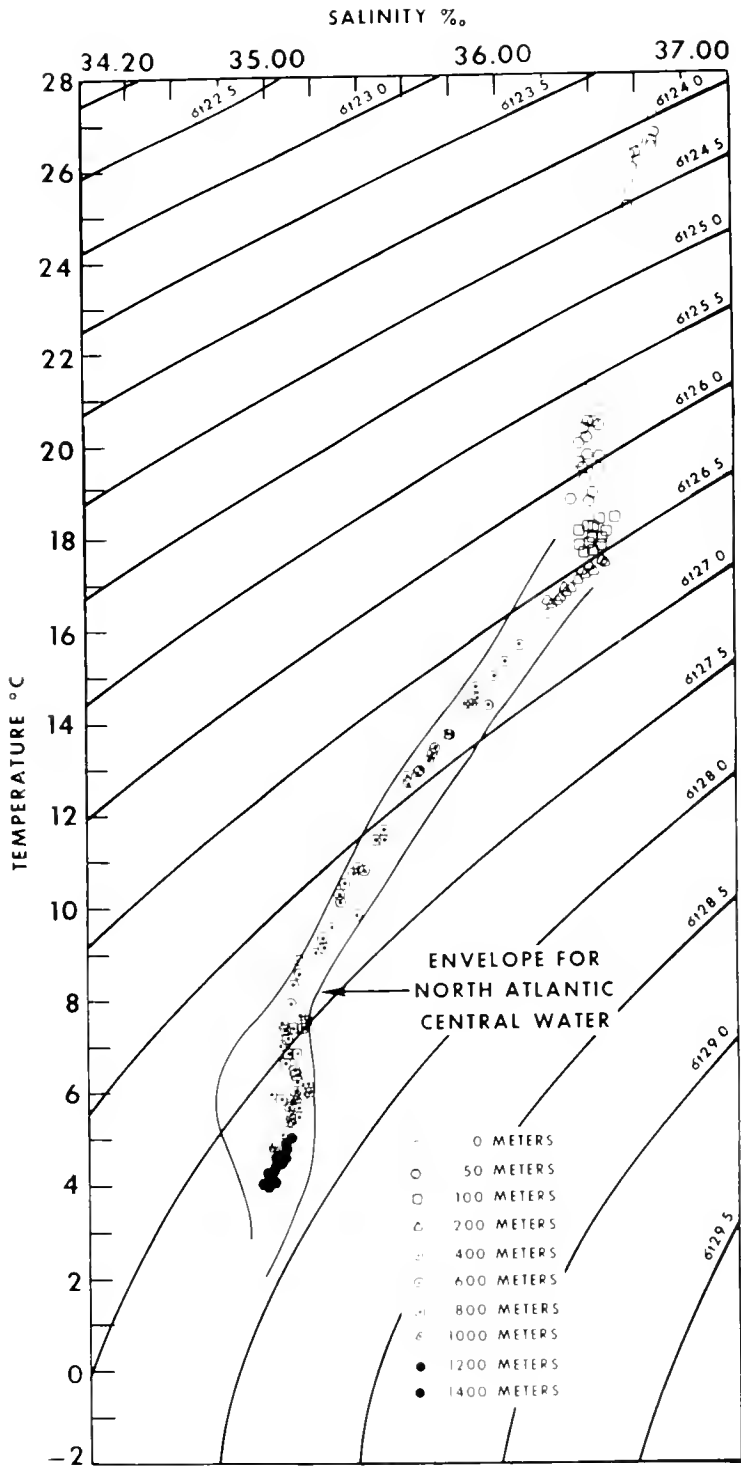


Figure 23. Temperature versus salinity at selected depths at oceanographic stations taken by USCGC ABSECON at ocean station ECHO, 17 July-6 August 1967.

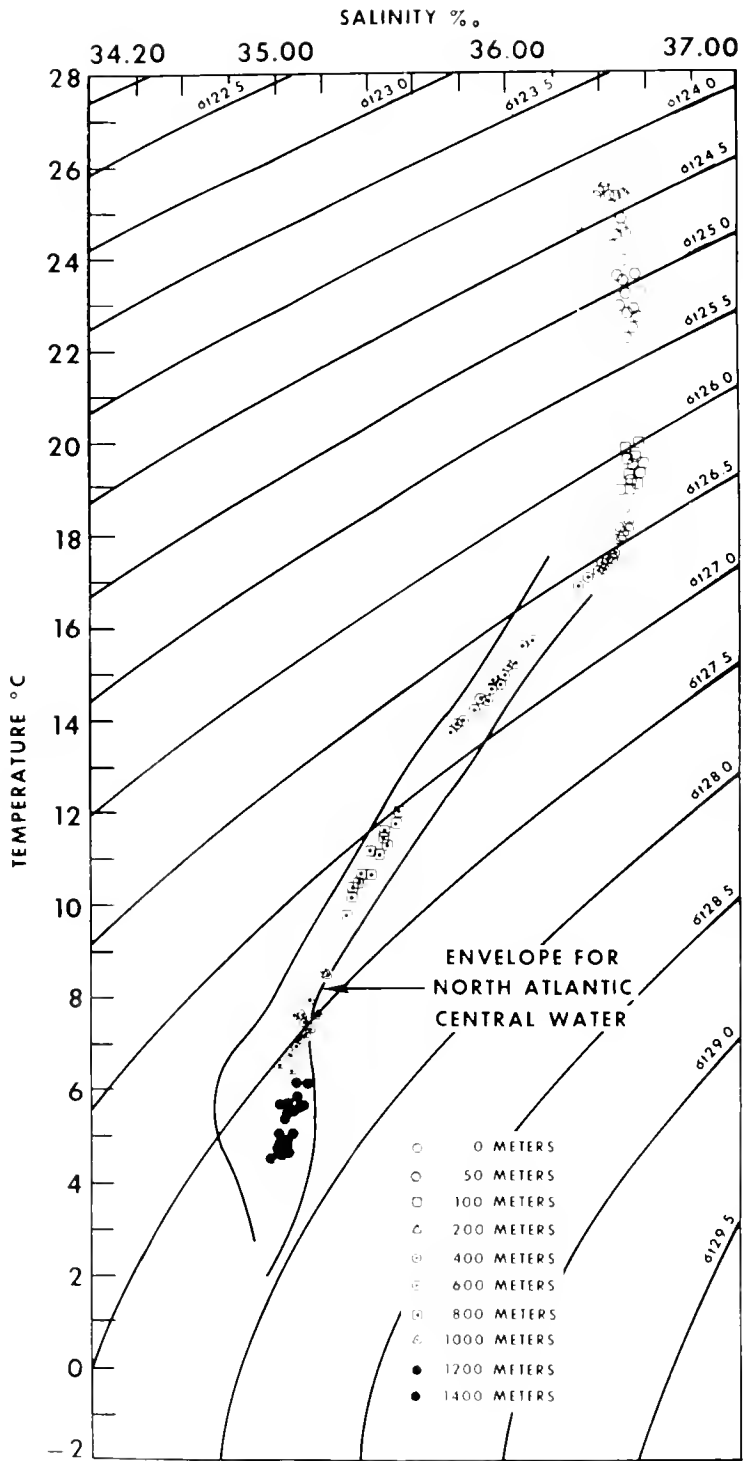


Figure 24. Temperature versus salinity at selected depths at oceanographic stations taken by USCGC MCCULLOCH at ocean station ECHO, 27 September-13 October 1967.

# Oceanographic Station Data

## Tables

Notes on oceanographic data:

YA=USCGC YUKUTAT

ML=USCGC MCCULLOCH

AI=USCGC ANDROSCOGGIN

AZ=USCGC ABSECON

T=Thermometric depths

Q=Indicates value was noted as doubtful by originator

P=Indicates value has been designated as potentially implausible by NODC

## Explanation of Oceanographic Station Data

### A. Description of Entries, Units and Codes on NODC Station Listing

#### 1. Surface Observations

<i>Entry</i>	<i>Description of Field</i>
NODC REF. ID. NO.	NODC reference identity number.
COUNTRY CODE	Indicates nationality of the institute or agency conducting the survey or expedition.
CRUISE NUMBER	A reference number assigned by NODC for storage-retrieval purposes. NODC Publication C-1, <i>Reference Sources of Oceanographic Station Data</i> , gives complete bibliographic and other pertinent information for each cruise.
SHIP CODE	Alphabetic representation of ship's name (or ICES numeric ship code).
LATITUDE	Degrees, minutes, and tenths of minutes, N or S.
LONGITUDE	Degrees, minutes, and tenths of minutes, E or W.
DRIFT INDICATOR	The letter D appears in this column if extensive drift occurred while on station.
MARSDEN SQUARE	
10°	Marsden square number according to the Marsden square system.
1°	The one-degree square number according to the Marsden square system.
STATION TIME	
(GMT)	Date and time given by the originator (GMT).
MONTH	Month (GMT).
DAY	Day (GMT).
HR. 1/10	GMT to nearest tenth of an hour.
YEAR	Year
ORIGINATOR'S CRUISE NUMBER	Alphabetic or alpha-numeric designator as assigned by the originator. If the year of the cruise forms part of the cruise numbering system, the year digits are found in preceding field.
STATION NUMBER	Originator's station number or designator.
DEPTH TO BOTTOM	Corrected or uncorrected sounding depth in meters.
MAX. DEPTH OF SAMPLES	Depth of deepest sample in hundreds of meters to nearest hundred-meter interval.
WAVE OBSERVATIONS	
DIR.	Direction from which the dominant waves are coming, in tens of degrees, according to WMO Code 0885.
HGT.	Height of dominant waves according to WMO Code 1555.
PER.	Period of dominant waves according to WMO Code 3155.
SEA AMT.	Sea amount (sea state) according to WMO Code 3700 (preceded by the letter A).
WEATHER CODE	If preceded by the letter X, weather according to WMO Code 4501. A numeric two-digit entry indicates weather according to WMO Code 4677.

<i>Entry</i>	<i>Description of Field</i>
*INSTR./CLOUD	This field is used either for recording instrument code when electronically obtained data are being reported, or for reporting cloud type and cloud amount when conventional Nansen cast data are being reported.
*INSTR.	A two character code representing instrument package of system.
TYPE	Cloud type according to WMO Code 0500.
AMT.	Cloud amount according to WMO Code 2700.
NODC STATION NUMBER	Assigned by NODC for data storage and retrieval purposes. The NODC Reference Identity and Station numbers combined, uniquely define each station in the NODC archives.
*DT/*SU/D	This indicator specifies that the reported data have been obtained electronically rather than by Nansen-type casts. U (up) and D (down) are cast indicators for electronically obtained serial data and specify that the data were taken while hoisting or lowering respectively.
WATER COLOR TRANS. (m)	Water color according to Forel-Ule Code. Water transparency in meters as determined by Secchi disc.
WIND	
DIR.	Direction from which wind is blowing in tens of degrees, according to WMO Code 0877.
SPEED OR FORCE	If preceded by letter S, wind speed in knots; if preceded by letter F, wind force in Beaufort code.
BAROMETER (mbs)	Barometric pressure in millibars; tens, units, and tenths places only.
AIR TEMPERATURE	
°C	
DRY BULB	Dry bulb air temperature in degrees centigrade, to tenths.
WET BULB	Wet bulb air temperature in degrees centigrade, to tenths.
VIS. CODE	Visibility according to WMO Code 4300.
NUMBER OBS. LEVEL	The number of observed levels associated with the station.
SPECIAL OBSERVATIONS	Entries in this space vary with individual cruises or stations. Information concerning entries in this field can be requested from the NODC.

**2. A complete description of the codes can be found in NODC publication M-2 (Rev. August 1964), "Processing Physical and Chemical Data From Oceanographic Stations."**

Table I. Observed and interpolated oceanographic data for stations taken by USCGC YAKUTAT at ocean station ECHO, 21 September-13 October 1966, prepared from NODC listing No. 31-767 YA.

REFERENCE CITY CODE	SHIP NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METER	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER		
						10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA	TYPE
31	767	YA	34540N	048020W		113	48	09	21	145	1966	05E	001	4847	14	31	5	3	X2	7	8	0001	
						WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
						COLOR CODE	TRANSP. (M)	DIR.	SPEED OR FORCE			DRY BULB	WET BULB	VIS. CODE									
							34	518	130			233	222	7	14								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	D <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C C						
		STD	0000	2519	3623	2423	0036991	0000	15366														
145		OBS	0000	2519	36228	2423			15366														
		STD	0010	2519	3623	2423	0037003	0037	15368														
		STD	0020	2518	3623	2424	0037023	0074	15370														
145		OBS	0020	2518	36231	2424			15370														
		STD	0030	2457	3638	2453	0034221	0110	15359														
145		OBS	0041	2356	36470	2490			15337														
		STD	0050	2224	3647	2529	0027149	0171	15306														
145		OBS	0060	2097	36463	2563			15274														
		STD	0075	1948	3646	2603	0020129	0230	15237														
145		OBS	0080	1909	36463	2613			15227														
		STD	0100	1834	3649	2634	0017237	0277	15209														
145		OBS	0120	1782	36498	2648			15197														
		STD	0125	1778	3649	2648	0015992	0318	15197														
		STD	0150	1754	3647	2652	0015776	0358	15195														
145		OBS	T0162	1750	36458	2653			15194														
		STD	0200	1737	3644	2655	0015650	0437	15197														
		STD	0250	1709	3640	2658	0015457	0514	15196														
		STD	0300	1608	3632	2662	0015259	0591	15191														
145		OBS	T0327	1640	36267	2665			15186														
		STD	0400	1543	3606	2671	0014663	0741	15166														
145		OBS	0422	1511	36005	2674			15159														
		STD	0500	1386	3580	2685	0013501	0882	15129														
145		OBS	0519	1354	35752	2688			15121														
		STD	0600	1185	3550	2702	0011553	1009	15074														
		STD	0700	0998	3527	2719	0010443	1121	15022														
145		OBS	0712	0977	35248	2720			15016														
		STD	0800	0631	3515	2736	0008713	1217	14975														
		STD	0900	0694	3506	2749	0007414	1297	14937														
145		OBS	T0908	0684	35053	2751			14935														
		STD	1000	0587	3503	2761	0006223	1365	14911														
		STD	1100	0509	3501	2769	0005416	1424	14896														
145		OBS	1155	0477	34998	2772			14892														
		STD	1200	0469	3500	2773	0005080	1476	14896														
		STD	1300	0453	3500	2775	0004953	1526	14906														
145		OBS	T1399	0436	35002	2777			14916														

REFERENCE		SHIP CODE	LATITUDE ° /10	LONGITUDE ° /10	DEPTH METER	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER	
CRUISE NO.	STATION NUMBER					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE		AMT
31	767	YA	35:80N	04d160W		113	58	09	22	137	1966	OSE	002	3658	15	00	6	3		X1	0	3	0002

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		34	S10	218	222	167	7	14	

MESSAGE TIME OF MR 1/10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S.C.C.
		STD	0000	2393	3622	2461	0033398	0000	15336								
137		OBS	0000	2393	36224	2461			15336								
		STD	0010	2393	3622	2461	0033438	0033	15338								
		STD	0020	2393	3622	2461	0033478	0067	15340								
137		OBS	0025	2393	36224	2461			15341								
		STD	0030	2367	3627	2472	0032453	0100	15336								
		STD	0050	2256	3642	2516	0028378	0161	15313								
137		OBS	0051	2250	36428	2518			15312								
		STD	0075	2099	3655	2564	0023348	0225	15278								
137		OBS	0076	2092	36551	2571			15277								
		STD	0100	1922	3656	2617	0018673	0278	15235								
137		OBS	0101	1917	36560	2619			15233								
		STD	0125	1861	3655	2632	0017527	0324	15221								
		STD	0150	1820	3654	2642	0016693	0366	15214								
137		OBS	0151	1819	36543	2642			15214								
		STD	0200	1794	3653	2648	0016340	0449	15214								
137		OBS	T0201	1793	36525	2647			15214								
		STD	0250	1770	3648	2650	0016266	0530	15215								
		STD	0300	1746	3644	2653	0016177	0612	15216								
		STD	0400	1698	3636	2658	0016003	0772	15217								
137		OBS	T0400	1698	36358	2658			15217								
		STD	0500	1531	3603	2671	0014930	0927	15178								
137		OBS	0500	1531	36029	2671			15178								
		STD	0600	1357	3575	2687	0013565	1070	15135								
137		OBS	T0600	1357	35747	2687			15135								
		STD	0700	1140	3545	2707	0011706	1196	15074								
137		OBS	0790	0965	35231	2723			15024								
		STD	0800	0945	3524	2725	0009952	1304	15018								
		STD	0900	0770	3514	2745	0007992	1394	14968								
137		OBS	T0978	0661	35081	2756			14937								
		STD	1000	0638	3507	2758	0006632	1467	14932								
		STD	1100	0550	3504	2767	0005731	1529	14913								
		STD	1200	0484	3501	2773	0005165	1583	14902								
137		OBS	1214	0477	35010	2773			14902								
		STD	1300	0442	3500	2776	0004812	1633	14901								
		STD	1400	0424	3499	2777	0004745	1681	14911								
137		OBS	T1451	0423	34983	2777			14919								



REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH M	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	IO. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER		SEA	TYPE	
51	767	YA	34540N	048000W		113	48	09	23	204	1966	05E	005	3058	15	20	1	3	X1	1	2	0003

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIL CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
22	SIU	340	239	340	194	7	14		

MESSNGR TIME HR 1/10	CAST NO.	CARO TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> ?	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>3</sub> -N μg - at/l	NO <sub>2</sub> -N μg - at/l	SI O <sub>4</sub> -S μg - at/l	pH	S C
		STD	0000	2374	3615	2461	0055381	0000	15331								
204		OBS	0000	2374	36152	2461			15331								
		STD	0010	2369	3615	2462	0055320	0033	15332								
		STD	0020	2365	3614	2463	0033260	0067	15332								
204		OBS	0026	2362	36142	2464			15332								
		STD	0030	2343	3615	2470	0052653	0100	15328								
		STD	0050	2232	3616	2505	0029429	0162	15304								
204		OBS	0052	2219	36167	2508			15301								
		STD	0075	2052	3636	2568	0025504	0228	15264								
204		OBS	0077	2040	36374	2572			15261								
		STD	0100	1933	3655	2614	0019217	0281	15237								
204		OBS	0103	1921	36562	2618			15235								
		STD	0125	1862	3655	2632	0017573	0327	15222								
		STD	0150	1816	3653	2642	0016662	0370	15212								
204		OBS	0154	1810	36532	2644			15211								
		STD	0200	1791	3652	2648	0016341	0453	15213								
204		OBS	T0206	1788	36516	2648			15213								
		STD	0250	1786	3651	2648	0016467	0535	15220								
		STD	0300	1762	3646	2650	0016431	0617	15221								
		STD	0400	1642	3624	2662	0015570	0777	15199								
204		OBS	T0408	1628	36213	2663			15195								
		STD	0500	1418	3583	2681	0013949	0924	15140								
204		OBS	0512	1393	35788	2683			15133								
		STD	0600	1227	3556	2699	0012324	1056	15089								
204		OBS	T0616	1193	35520	2702			15080								
		STD	0700	1021	3533	2719	0010410	1169	15031								
		STD	0800	0844	3516	2735	0008850	1266	14960								
204		OBS	0821	0811	35132	2738			14970								
		STD	0900	0706	3510	2751	0007300	1346	14942								
		STD	1000	0599	3507	2763	0006100	1413	14916								
204		OBS	1024	0578	35060	2765			14912								
		STD	1100	0532	3504	2769	0005511	1472	14906								
		STD	1200	0483	3501	2772	0005181	1525	14902								
204		OBS	1278	0453	35000	2775			14903								
		STD	1300	0452	3500	2775	0004949	1576	14906								
		STD	1400	0440	3500	2776	0004884	1625	14917								
		STD	1500	0428	3500	2778	0004815	1673	14929								
204		OBS	T1528	0424	35000	2778			14932								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	OBS. INCL. INCHES	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SEMPLS	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
CRUISE CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	767	YA	34570N	048030W		113	48	09	24	133	1966	OSE	004	4590	14	26	3	3	X1	011	0004

WATER		WIND		BAROMETER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		24	S14	189	278	239	7	14	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PD <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>4</sub> -Si μg - dl/l	pH	S C C
		STD	0000	2501	3636	2438	0035545	0000	15364								
133		OBS	0000	2501	36356	2438			15364								
		STD	0010	2500	3636	2439	0035563	0036	15365								
		STD	0020	2499	3636	2439	0035578	0071	15367								
133		OBS	0024	2499	36356	2439			15367								
		STD	0030	2488	3635	2442	0035323	0107	15366								
133		OBS	0049	2455	36344	2451			15361								
		STD	0050	2442	3635	2456	0034087	0176	15358								
133		OBS	0073	2150	36427	2546			15290								
		STD	0075	2120	3642	2554	0024836	0250	15282								
133		OBS	0097	1868	36418	2620			15217								
		STD	0100	1863	3643	2623	0018370	0304	15216								
		STD	0125	1821	3649	2638	0017013	0348	15209								
133		OBS	0145	1793	36513	2646			15205								
		STD	0150	1787	3650	2647	0016218	0389	15204								
133		OBS	T0193	1741	36435	2653			15197								
		STD	0200	1740	3643	2653	0015792	0469	15197								
		STD	0250	1720	3639	2655	0015785	0548	15199								
		STD	0300	1685	3633	2659	0015577	0627	15196								
133		OBS	0383	1589	36157	2668			15179								
		STD	0400	1558	3610	2671	0014703	0778	15171								
133		OBS	0476	1428	35872	2682			15140								
		STD	0500	1394	3582	2685	0013521	0919	15132								
133		OBS	T0570	1286	35671	2696			15106								
		STD	0600	1227	3559	2701	0012106	1047	15090								
		STD	0700	1040	3535	2717	0010602	1161	15038								
133		OBS	0765	0928	35243	2728			15006								
		STD	0800	0866	3522	2736	0008770	1258	14989								
		STD	0900	0712	3515	2754	0007025	1337	14945								
133		OBS	T0960	0637	35114	2762			14925								
		STD	1000	0600	3509	2764	0005967	1402	14917								
		STD	1100	0523	3504	2770	0005388	1459	14902								
		STD	1200	0467	3500	2773	0005040	1511	14895								
133		OBS	1205	0465	34996	2773			14895								
		STD	1300	0447	3498	2774	0005025	1561	14903								
		STD	1400	0428	3497	2775	0004946	1611	14912								
133		OBS	T1448	0419	34970	2776			14916								

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	OBS. NO.	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE		CLOUD CODES		NODC STATION NUMBER
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA	TYPE	AMT			
31	767	YA	34590N	048040W		113	48	09	25	131	1966	05E	005	4115	15	23	4	2	X1	313			0005	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VLS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB												
								22	S18	180	233	211	7	14										
MESSNGR TIME HR /10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C							
		STD	0000	2385	3623	2464	0033114	0000	15335															
131		OBS	0000	2385	36232	2464			15335															
		STD	0010	2383	3623	2464	0033109	0033	15336															
		STD	0020	2382	3623	2465	0033097	0066	15337															
131		OBS	0025	2381	36233	2465			15338															
		STD	0030	2370	3623	2468	0032797	0099	15336															
		STD	0050	2266	3624	2499	0029957	0162	15314															
131		OBS	0052	2251	36240	2503			15310															
		STD	0075	1993	3649	2593	0021061	0226	15249															
131		OBS	0078	1968	36502	2601			15243															
		STD	0100	1855	3644	2625	0018104	0475	15214															
131		OBS	0103	1844	36435	2628			15212															
		STD	0125	1826	3648	2636	0017205	0319	15211															
		STD	0150	1808	3651	2643	0016645	0361	15210															
131		OBS	0155	1804	36511	2644			15210															
		STD	0200	1775	3648	2648	0016252	0443	15208															
131		OBS	T0205	1772	36474	2649			15208															
		STD	0250	1765	3646	2649	0016331	0225	15213															
		STD	0300	1740	3641	2652	0016274	0606	15213															
		STD	0400	1638	3622	2661	0015624	0766	15197															
131		OBS	T0414	1618	36184	2663			15193															
		STD	0500	1459	3589	2677	0014380	0916	15154															
131		OBS	0516	1432	35846	2679			15147															
		STD	0500	1307	3567	2692	0013107	1053	15118															
131		OBS	T0618	1276	35627	2694			15110															
		STD	0700	1066	3538	2715	0010852	1173	15047															
		STD	0800	0854	3517	2734	0005939	1272	14984															
131		OBS	0821	0816	35134	2737			14972															
		STD	0900	0698	3509	2751	0007253	1353	14939															
		STD	1000	0582	3504	2763	0006080	1420	14909															
131		OBS	1022	0561	35036	2765			14904															
		STD	1100	0521	3503	2770	0005434	1477	14901															
		STD	1200	0479	3501	2773	0005127	1530	14900															
131		OBS	1272	0454	35000	2775			14902															
		STD	1300	0446	3500	2775	0004895	1580	14903															
		STD	1400	0423	3498	2777	0004805	1629	14910															
		STD	1500	0409	3497	2777	0004823	1677	14921															
131		OBS	T1516	0408	34962	2777			14923															

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARSEEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		MOOC STATION NUMBER
CTR CODE	ID. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER.	SEA.		TYPE	AMT.	
31	767	YA	35043N	048010W		115	58	09	26	132	1966	05E	006	4142	15	24	3	2	X6	7	8	0006	
		WATER		WIND		BARO-METER		AIR TEMP. °C				SPECIAL OBSERVATIONS											
		COLOR CODE	TRANS. MM	DIR.	SPEED OF FORCE	METER (mbat)		DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS												
				20	505	186		256	239	7	14												
MESSNGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	SCC						
		STD	0000	2504	3643	2443	0035129	0000	15365														
132		OBS	0000	2504	36426	2443			15365														
		STD	0010	2503	3643	2443	0035118	0035	15367														
		STD	0020	2502	3644	2444	0035063	0070	15368														
132		OBS	0025	2502	36459	2446			15369														
		STD	0030	2453	3650	2464	0033242	0104	15359														
		STD	0050	2248	3659	2531	0026913	0165	15313														
132		OBS	0050	2248	36593	2531			15313														
		STD	0075	1973	3656	2604	0020066	0423	15245														
132		OBS	0075	1973	36558	2604			15245														
132		OBS	0099	1472	36460	2623			15219														
		STD	0100	1869	3646	2623	0018299	0271	15218														
		STD	0125	1810	3644	2627	0017113	0315	15206														
132		OBS	0149	1770	36428	2646			15198														
		STD	0150	1769	3643	2646	0016316	0357	15198														
132		OBS	T0199	1740	36422	2653			15197														
		STD	0200	1740	3642	2652	0015865	0438	15197														
		STD	0250	1726	3639	2654	0015924	0517	15201														
		STD	0300	1697	3634	2657	0015781	0596	15200														
		STD	0400	1599	3616	2666	0015179	0751	15185														
132		OBS	T0403	1595	36155	2666			15184														
		STD	0500	1441	3588	2680	0014071	0897	15148														
132		OBS	0506	1443	35869	2681			15146														
		STD	0500	1336	3574	2691	0013186	1034	15128														
132		OBS	T0610	1322	35720	2692			15125														
		STD	0700	1031	3544	2715	0010871	1154	15057														
		STD	0800	0880	3522	2734	0009001	1253	14994														
132		OBS	0815	0853	35194	2736			14986														
		STD	0900	0749	3515	2752	0007283	1335	14952														
		STD	1000	0612	3509	2763	0006139	1402	14922														
132		OBS	1021	0591	35085	2765			14917														
		STD	1100	0539	3505	2769	0005534	1460	14909														
		STD	1200	0485	3501	2772	0005208	1514	14903														
132		OBS	1276	0452	34992	2775			14902														
		STD	1300	0444	3499	2775	0004912	1565	14902														
		STD	1400	0417	3497	2777	0004799	1613	14907														
		STD	1500	0404	3496	2777	0004793	1661	14919														
132		OBS	T1532	0403	34958	2777			14924														

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	MANSOEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
31	767	YA	35030N	04759W		113	57	09	27	137	1966	05E	007	4270	15	22	2	4	X2	5	8	0007

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		19	SUB	180	24.4	23.3	7	14	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SIO <sub>4</sub> -S $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C C
		STD	0000	2481	3630	2440	0035368	0000	15358								
137		OBS	0000	2481	36300	2440			15358								
		STD	0010	2481	3630	2440	0035391	0035	15360								
		STD	0020	2482	3631	2441	0035415	0071	15362								
137		OBS	0025	2482	36310	2441			15363								
		STD	0030	2434	3640	2460	0033560	0105	15354								
		STD	0050	2256	3661	2530	0026987	0166	15315								
137		OBS	0050	2256	36613	2530			15315								
		STD	0075	2008	3658	2596	0020790	0226	15254								
137		OBS	0075	2008	36580	2596			15254								
137		OBS	0099	1818	36421	2633			15203								
		STD	0100	1817	3642	2634	0017316	0273	15203								
		STD	0125	1801	3646	2640	0016754	0316	15203								
		STD	0150	1784	3650	2648	0016162	0357	15203								
137		OBS	0150	1784	36498	2648			15203								
		STD	0200	1751	3654	2659	0015252	0435	15201								
137		OBS	T0206	1747	36547	2660			15202								
		STD	0250	1732	3648	2659	0015412	0512	15204								
		STD	0300	1703	3634	2654	0015557	0590	15202								
		STD	0400	1611	3619	2665	0015231	0743	15189								
137		OBS	0404	1606	36179	2666			15186								
		STD	0500	1470	3575	2679	0014180	0691	15158								
137		OBS	0505	1463	35938	2679			15156								
		STD	0600	1323	3568	2689	0013357	1028	15123								
137		OBS	T0606	1313	35666	2690			15121								
		STD	0700	1080	3535	2710	0011325	1152	15052								
		STD	0800	0874	3513	2725	0009560	1256	14991								
137		OBS	0804	0856	35116	2729			14986								
		STD	0900	0715	3508	2748	0007598	1342	14946								
		STD	1000	0596	3504	2761	0006292	1411	14915								
137		OBS	T1019	0578	35030	2762			14911								
		STD	1100	0542	3503	2767	0005723	1471	14909								
		STD	1200	0502	3503	2772	0005299	1526	14910								
137		OBS	1266	0478	35029	2774			14911								
		STD	1300	0467	3502	2775	0005000	1578	14912								
		STD	1400	0436	3500	2777	0004832	1627	14916								
		STD	1500	0411	3496	2776	0004886	1676	14922								
137		OBS	T1517	0407	34953	2776			14923								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INCHES	MASSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10'	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER		SEA	TYPE	
31	767	YA	34580N	047582W		113	47	09	28	131	1966	05E	008	4572	15	32	3	2	X1	4	12	0008

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANSL. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		24	501	208	264	239	8	14	

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND WALT-310°	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - dl/l	TOTAL-P µg - dl/l	NO <sub>2</sub> -N µg - dl/l	NO <sub>3</sub> -N µg - dl/l	SiO <sub>4</sub> -Si µg - dl/l	pH	ST. CODE
		STD	0000	2464	3591	2416	0037678	0000	15350								
131		OBS	0000	2464	35911	2416			15350								
		STD	0010	2479	3610	2426	0036791	0037	15357								
		STD	0020	2494	3626	2433	0036114	0074	15364								
131		OBS	0026	2503	36338	2436			15368								
		STD	0030	2449	3639	2457	0033919	0109	15357								
		STD	0050	2198	3653	2540	0026016	0169	15300								
131		OBS	0053	2163	36537	2551			15291								
		STD	0075	1916	3645	2611	0019431	0225	15227								
131		OBS	0079	1888	36442	2617			15220								
		STD	0100	1840	3649	2633	0017381	0471	15211								
131		OBS	0105	1831	36494	2636			15209								
		STD	0125	1812	3649	2640	0016776	0314	15207								
		STD	0150	1793	3649	2645	0016419	0356	15205								
131		OBS	0157	1788	36491	2646			15205								
		STD	0200	1767	3647	2650	0016135	0437	15206								
131		OBS	T0210	1762	36462	2650			15206								
		STD	0250	1753	3644	2651	0016194	0518	15209								
		STD	0300	1731	3640	2653	0016136	0299	15211								
		STD	0400	1649	3625	2661	0015657	0758	15201								
131		OBS	0417	1630	36214	2663			15197								
		STD	0500	1512	3599	2673	0014797	0910	15172								
131		OBS	0519	1485	35946	2675			15166								
		STD	0600	1372	3576	2685	0013780	1053	15140								
131		OBS	T0621	1336	35713	2689			15131								
		STD	0700	1122	3544	2710	0011444	1179	15066								
		STD	0800	0895	3519	2729	0009470	1283	14999								
131		OBS	0825	0846	35144	2734			14984								
		STD	0900	0722	3509	2748	0007616	1369	14949								
		STD	1000	0593	3504	2761	0006235	1436	14914								
131		OBS	1029	0563	35030	2764			14906								
		STD	1100	0524	3502	2768	0005549	1497	14902								
		STD	1200	0479	3500	2772	0005200	1551	14900								
131		OBS	1284	0449	34987	2774			14902								
		STD	1300	0444	3498	2774	0004985	1602	14902								
		STD	1400	0420	3497	2776	0004839	1651	14909								
		STD	1500	0406	3496	2777	0004820	1699	14920								
131		OBS	T1536	0404	34951	2776			14925								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	ORIG. INCHES	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE	
31	767	YA	35044N	04005W	113	58	09	29	130	1965	05E	009	4151	15	2	2	4	X1	8	2	0009	

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		18	504	200	24.4	23.5	7	14	

MESSAGE TIME HR. / 10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	SPEC
		STD	0000	2461	3595	2419	003734	0000	15350								
		OBS	0000	2461	35946	2419			15350								
		STD	0010	2455	3598	2424	0036974	0037	15350								
		STD	0020	2450	3606	2431	0036278	0074	15352								
130		OBS	0025	2447	36100	2436			15352								
		STD	0030	2370	3623	2468	0032826	0108	15336								
		STD	0050	2102	3650	2565	0023678	0165	15274								
130		OBS	0050	2102	36502	2565			15274								
		STD	0075	1860	3638	2620	0018572	0418	15211								
130		OBS	0075	1860	36380	2620			15211								
		STD	0100	1815	3649	2639	0016819	0462	15203								
130		OBS	0100	1815	36460	2639			15203								
		STD	0125	1740	3648	2645	0016348	0513	15200								
		STD	0150	1769	3647	2649	0016026	0544	15198								
130		OBS	0150	1769	36468	2649			15198								
		STD	0200	1737	3644	2654	0015566	0523	15197								
130		OBS	T0211	1736	26434	2654			15196								
		STD	0250	1724	3641	2655	0015205	0512	15200								
		STD	0300	1700	3635	2657	0015778	0581	15201								
130		OBS	T0399	1615	36201	2665			15190								
		STD	0400	1614	3620	2666	0015226	0736	15190								
130		OBS	0400	1479	35986	2680			15161								
		STD	0500	1478	3598	2679	0014134	0683	15161								
		STD	0600	1346	3577	2691	0013173	1019	15132								
130		OBS	T0600	1346	3577	2691			15132								
		STD	0700	1111	3544	2712	0011240	1141	15064								
130		OBS	0700	0906	35205	2729			15003								
		STD	0800	0902	3520	2724	0009514	1445	14900								
		STD	0900	0705	3509	2750	0007354	1529	14842								
130		OBS	T0977	0593	35033	2761			14910								
		STD	1000	0576	3503	2763	0006097	1397	14907								
		STD	1100	0522	3502	2769	0005521	1455	14901								
		STD	1200	0477	3501	2773	0005100	1508	14899								
130		OBS	1241	0462	3500	2774			14900								
		STD	1300	0444	3500	2776	0004834	1558	14902								
		STD	1400	0423	3498	2777	0004805	1606	14910								
130		OBS	T1484	0415	34976	2777			14921								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	ORBIT INCH	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER		
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR, 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT			
31	767	YA	3500N	04800W		113	58	09	30	131	1966	OSE	010	2377	15	23	3	2	X6	8	16	0010			
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		(mb)		DRY BULB		WET BULB		VIS. CODE									
								23		518		220		261		244		7		14					

MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-210°	Σ Δ σ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	TOTAL-P µg - at/l	NO <sub>2</sub> -N µg - at/l	NO <sub>3</sub> -N µg - at/l	SiO <sub>4</sub> -Si µg - at/l	pH	S C C
		STD	0000	2467	3613	2431	0036224	0000	15353								
131		OBS	0000	2467	36125	2431			15353								
		STD	0010	2471	3615	2432	0036188	0036	15356								
		STD	0020	2474	3621	2435	0035900	0072	15359								
131		OBS	0025	2476	36247	2438			15361								
		STD	0030	2387	3634	2471	0032513	0106	15341								
		STD	0050	2100	3658	2571	0023084	0162	15275								
131		OBS	0050	2100	36577	2571			15275								
		STD	0075	1900	3654	2522	0018386	0214	15224								
131		OBS	0075	1900	36540	2622			15224								
131		OBS	0099	1823	36512	2639			15206								
		STD	0100	1822	3651	2639	0016804	0258	15206								
		STD	0125	1796	3651	2646	0016273	0299	15202								
		STD	0150	1774	3650	2650	0015897	0329	15200								
131		OBS	0150	1774	36502	2650			15200								
		STD	0200	1738	3644	2654	0015688	0418	15197								
131		OBS	0200	1738	36438	2654			15197								
		STD	0250	1719	3641	2657	0015634	0497	15199								
		STD	0300	1699	3637	2659	0015581	0575	15201								
		STD	0400	1660	3631	2663	0015482	0730	15205								
131		OBS	0400	1660	36309	2663			15205								
		STD	0500	1498	3599	2676	0014493	0880	15167								
131		OBS	0500	1498	35990	2676			15167								
131		OBS	0596	1374	35601	2688			15141								
		STD	0600	1363	3578	2689	0013449	1020	15138								
		STD	0700	1105	3543	2712	0011201	1143	15062								
		STD	0800	0894	3520	2730	0009380	1246	14999								
131		OBS	0802	0890	35195	2731			14998								
		STD	0900	0734	3514	2750	0007426	1330	14954								
		STD	1000	0512	3509	2763	0006175	1398	14922								
131		OBS	11004	0608	35033	2763			14921								
		STD	1100	0543	3505	2766	0005590	1457	14910								
		STD	1200	0470	3502	2772	0005202	1511	14905								
131		OBS	1255	0466	35007	2774			14905								
		STD	1300	0453	3501	2775	0004922	1561	14906								
		STD	1400	0431	3500	2777	0004773	1610	14914								
		STD	1500	0424	3499	2778	0004819	1658	14928								
131		OBS	11506	0424	34993	2778			14929								



REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPT INSTR	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR.		1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA	
31	767	YA	34580N	047590W		113	47	10	01	126	1966	OSE	011	4627	15	27		X1	3	3	0011	

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
				210	244	233	7	14	

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	S.A.D. DIV. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu$ g - dl/l	TOTAL-P $\mu$ g - dl/l	NO <sub>2</sub> -N $\mu$ g - dl/l	NO <sub>3</sub> -N $\mu$ g - dl/l	SiO <sub>2</sub> -S $\mu$ g - dl/l	pH	LOG
		STD	0000	2510	3643	2441	0035253	0000	15367								
126		OBS	1000	2510	36433	2441			15367								
		STD	0010	2508	3644	2442	0035223	0035	15368								
		STD	0020	2507	3644	2443	0035196	0070	15369								
126		OBS	0024	2506	36440	2443			15370								
		STD	0030	2440	3549	2467	0032941	0105	15356								
126		OBS	0049	2233	36274	2534			15309								
		STD	0050	2220	3657	2537	0026320	0164	15306								
126		OBS	0074	1955	36512	2602			15242								
		STD	0075	1958	3651	2604	0020038	0422	15240								
126		OBS	0098	1828	36451	2633			15206								
		STD	0100	1823	3645	2634	0017263	0468	15205								
		STD	0125	1774	3644	2646	0016260	0510	15195								
126		OBS	0148	1743	36424	2652			15190								
		STD	0150	1742	3643	2653	0015676	0350	15190								
		STD	0200	1721	3642	2657	0015452	0428	15192								
126		OBS	T0202	1720	36414	2657			15192								
		STD	0253	1697	3637	2659	0015395	0505	15192								
		STD	0300	1674	3632	2661	0015356	0582	15193								
126		OBS	T0345	1627	36233	2665			15194								
		STD	0400	1624	3623	2665	0015234	0735	15193								
126		OBS	0497	1472	35946	2678			15158								
		STD	0530	1467	3594	2679	0014189	0982	15157								
126		OBS	0546	1304	35674	2672			15117								
		STD	0500	1250	3567	2693	0012466	1018	15125								
		STD	0700	1095	3559	2711	0011305	1139	15058								
126		OBS	0794	0914	35203	2727			15006								
		STD	0800	0912	3520	2727	0007682	1444	15006								
		STD	0900	0742	3512	2747	0007703	1331	14957								
		STD	1000	0614	3507	2761	0006329	1401	14922								
126		OBS	T1000	0614	35068	2761			14922								
		STD	1100	0548	3503	2768	0005659	1461	14912								
		STD	1200	0495	3503	2773	0005196	1515	14907								
126		OBS	1254	0473	35024	2775			14907								
		STD	1300	0457	3502	2776	0004665	1566	14906								
		STD	1400	0434	3501	2778	0004732	1614	14915								
		STD	1500	0424	3500	2778	0004766	1661	14928								
126		OBS	1505	0424	34995	2778			14928								

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MAGNETIC CORRECTION	MAGNETIC SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10°	1°	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31	767	YA	35002N	048008W		113	58	10	02	130	1966	05E	012	4298	15	30	2	4	X1	6	6	0012

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		29	509	220	278	253	7	14	

MESSAGE TIME & HR. /10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	SIO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S.C.C.
		STD	0000	2532	3642	2434	0035990	0000	15372								
130		OBS	0000	2532	36420	2434			15372								
		STD	0010	2529	3646	2438	0035653	0036	15373								
		STD	0020	2526	3650	2442	0035318	0071	15374								
130		OBS	0026	2524	36515	2443			15375								
		STD	0030	2478	3653	2458	0033784	0106	15365								
		STD	0050	2255	3657	2528	0027248	0167	15315								
130		OBS	0052	2233	36578	2534			15309								
		STD	0075	1986	3655	2600	0020429	0226	15248								
130		OBS	0078	1961	36550	2606			15242								
		STD	0100	1839	3652	2636	0017139	0273	15211								
130		OBS	0104	1822	36513	2639			15206								
		STD	0125	1798	3650	2644	0016392	0315	15203								
		STD	0150	1773	3648	2649	0016033	0356	15199								
130		OBS	0156	1768													
		STD	0200	1739	3644	2654	0015696	0435	15197								
130		OBS	T0208	1734	36430	2655			15197								
		STD	0250	1730	3642	2655	0015800	0514	15202								
		STD	0300	1713	3639	2657	0015789	0593	15205								
		STD	0400	1636	3625	2664	0015407	0749	15198								
130		OBS	T0407	1631	36241	2665			15196								
		STD	0500	1509	3601	2675	0014587	0899	15171								
130		OBS	0513	1488	35970	2676			15160								
		STD	0600	1318	3569	2691	0013183	1038	15122								
130		OBS	T0615	1287	35643	2693			15113								
		STD	0700	1076	3538	2713	0011033	1159	15051								
		STD	0800	0870	3516	2731	0009275	1260	14989								
130		OBS	0814	0836	35130	2734			14979								
		STD	0900	0713	3510	2750	0007428	1344	14945								
		STD	1000	0598	3506	2762	0006188	1412	14916								
130		OBS	T1012	0587	35051	2763			14913								
		STD	1100	0547	3505	2766	0005645	1471	14912								
		STD	1200	0509	3505	2773	0005240	1526	14913								
130		OBS	1277	0486	35043	2775			14916								
		STD	1300	0480	3504	2775	0005030	1577	14916								
		STD	1400	0459	3504	2778	0004850	1626	14926								
		STD	1500	0445	3503	2778	0004834	1675	14937								
130		OBS	T1529	0443	35026	2778			14941								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MOON	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
CRUISE CODE	ID. NO.					10'	1'	MO	DAY	HR.		1/10	CRUISE NO.			STATION NUMBER	DIR	HGT				PER
31	767	YA	35000N	048000W		113	58	10	03	144	1966	05E	013	4224	41	24	3	2	X1	8	2	0013
						WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS				
						COLOR		DIR.		METER (mba)		DRY BULB		WET BULB								
						TRANS. (m)		SPEED OR FORCE				283		250		7		19				

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 <sup>3</sup>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>2</sub> -Si μg - dl/l	pH	Si C/C
		STD	0000	2523	3634	2430	0036338	0000	15369								
127		OBS	0000	2523	36335	2430			15369								
		STD	0010	2523	3639	2434	0035984	0036	15371								
		STD	0020	2523	3643	2437	0035737	0072	15373								
127		OBS	0025	2523	36450	2439			15374								
		STD	0030	2508	3646	2444	0035118	0107	15371								
		STD	0050	2447	3651	2466	0033101	0176	15361								
127		OBS	0050	2447	36507	2466			15361								
127		OBS	0069	2047	36550	2584			15263								
		STD	0075	1997	3654	2596	0020801	0243	15251								
127		OBS	0099	1843	36493	2632			15211								
		STD	0100	1841	3649	2633	0017405	0291	15211								
		STD	0125	1796	3648	2643	0016490	0333	15202								
		STD	0150	1764	3646	2650	0015944	0374	15197								
127		OBS	0150	1764	36463	2650			15197								
		STD	0200	1737	3643	2654	0015722	0453	15196								
127		OBS	T0200	1737	36430	2654			15196								
		STD	0250	1717	3640	2656	0015659	0531	15198								
		STD	0300	1698	3637	2659	0015596	0609	15200								
127		OBS	T0399	1659	36306	2663			15204								
		STD	0400	1658	3630	2663	0015501	0765	15204								
127		OBS	0499	1500	35994	2676			15168								
		STD	0500	1498	3599	2676	0014493	0915	15167								
		STD	0600	1317	3569	2691	0013170	1053	15121								
127		OBS	T0600	1317	35689	2691			15121								
		STD	0700	1101	3541	2711	0011273	1175	15060								
		STD	0800	0914	3521	2728	0009643	1280	15006								
127		OBS	0802	0911	35205	2728			15006								
		STD	0900	0756	3514	2747	0007773	1367	14962								
		STD	1000	0633	3508	2759	0006515	1439	14930								
127		OBS	T1005	0528	35076	2760			14929								
		STD	1100	0561	3504	2765	0005914	1501	14917								
		STD	1200	0505	3501	2770	0005479	1558	14911								
127		OBS	1254	0482	35001	2772			14910								
		STD	1300	0471	3501	2774	0005127	1611	14914								
		STD	1400	0450	3502	2777	0004874	1661	14922								
		STD	1500	0433	3502	2779	0004722	1709	14932								
127		OBS	T1500	0433	35023	2779			14932								
		STD	1750	0416	3501	2780	0004820	1828	14967								
144		OBS	T1930	0401	35005	2781			14991								
		STD	2000	0393	3500	2782	0004793	1948	14999								
144		OBS	2391	0348	34971	2784			15047								
		STD	2500	0336	3496	2784	0004654	2184	15060								
144		OBS	2857	0301	34941	2786			15106								
		STD	3000	0293	3494	2786	0004513	2414	15127								
		STD	4000	0233	3489	2788	0004395	2859	15276								
144		OBS	4011	0232	34890	2788			15278								
144		OBS	T4106	0228	34894	2789			15293								



REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH MDCM	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	767	YA	35012N	048012W	113	58	10	05	131	1966	05E	015	4480	15	03	3		X5	7	8	0015
WATER		WIND		BARO-METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
COLOR CODE		TRANS. (m)		OR.		SPEED OR FORCE		DAY BULB		WET BULB		VIS. CODE									
				28		507		165		244		6									

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $t_{10}^s$	$\Sigma \Delta D$ OBS. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	S C C
		STD	0000	2539	3638	2428	0036484	0000	15373								
131		OBS	0000	2539	36380	2428			15373								
		STD	0010	2510	3627	2429	0036467	0036	15366								
		STD	0020	2471	3621	2436	0035808	0073	15358								
131		OBS	0024	2452	36193	2441			15354								
		STD	0030	2427	3621	2450	0034585	0108	15349								
		STD	0050	2291	3630	2496	0030210	0173	15321								
131		OBS	0050	2291	36299	2496			15321								
131		OBS	0074	2022	36477	2585			15257								
		STD	0075	2015	3648	2587	0021691	0437	15255								
131		OBS	0099	1876	36481	2623			15221								
		STD	0100	1874	3648	2624	0018268	0287	15220								
		STD	0125	1827	3649	2636	0017157	0332	15211								
131		OBS	0149	1793	36499	2645			15205								
		STD	0150	1792	3650	2646	0016351	0374	15205								
131		OBS	T0149	1756	36464	2652			15202								
		STD	0200	1756	3646	2652	0015949	0454	15202								
		STD	0250	1745	3645	2653	0015934	0534	15207								
		STD	0300	1721	3641	2656	0015631	0613	15208								
121		OBS	T0394	1639	36263	2665			15197								
		STD	0400	1632	3625	2665	0015271	0769	15196								
131		OBS	0447	1495	35992	2676			15166								
		STD	0500	1489	3598	2677	0014371	0917	15164								
131		OBS	T0588	1323	35701	2691			15122								
		STD	0600	1296	3566	2693	0012958	1054	15114								
		STD	0700	1082	3539	2713	0011070	1174	15053								
131		OBS	0798	0899	35205	2730			15000								
		STD	0800	0895	3520	2730	0009397	1276	14999								
		STD	0900	0724	3510	2748	0007573	1361	14949								
		STD	1000	0605	3505	2761	0006332	1431	14918								
131		OBS	1001	0604	35047	2761			14918								
		STD	1100	0576	3509	2767	0005788	1491	14925								
		STD	1200	0551	3511	2772	0005386	1547	14931								
131		OBS	1255	0536	35120	2775			14934								
		STD	1300	0524	3511	2776	0005119	1600	14937								
		STD	1400	0497	3509	2777	0004995	1650	14942								
		STD	1500	0470	3507	2779	0004872	1700	14948								
131		OBS	1506	0468	35071	2779			14948								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARSSEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA-THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO	DAY		HR. 1/10	CRUISE NO.			STATION NUMBER	DIR	HGT PER		SEA	TYPE	
31	767	YA	35020N	048020W	113 58	10	06	129	1966	OSE	016	4115	15	19	4	2	X1	8	2	0016	
WATER		WIND		BARO-METER		AIR TEMP. °C		SPECIAL OBSERVATIONS													
COLOR CODE		DIR.		METER (mba)		DRY BULB WET BULB															
		19 S18		160		267 239		7 14													

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> ?	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>4</sub> -Si μg - dl/l	pH	S C C
		STD	0000	2526	3638	2433	0036095	0000	15370								
129		OBS	0000	2526	36381	2433			15370								
		STD	0010	2527	3638	2432	0036160	0036	15372								
		STD	0020	2528	3638	2432	0036220	0072	15373								
129		OBS	0024	2528	36382	2432			15374								
		STD	0030	2485	3634	2442	0035318	0108	15365								
		STD	0050	2307	3632	2493	0030514	0174	15325								
129		OBS	0050	2307	36318	2493			15325								
129		OBS	0074	2021	36527	2589			15257								
		STD	0075	2013	3653	2591	0021307	0439	15255								
129		OBS	0096	1866	36505	2628			15218								
		STD	0100	1862	3651	2629	0017803	0288	15217								
		STD	0125	1813	3650	2640	0016764	0331	15207								
129		OBS	0149	1778	36492	2649			15201								
		STD	0150	1777	3649	2649	0016047	0372	15201								
		STD	0200	1742	3645	2654	0015730	0451	15198								
129		OBS	T0203	1740	36442	2654			15198								
		STD	0250	1719	3640	2656	0015689	0530	15199								
		STD	0300	1689	3634	2659	0015596	0608	15198								
		STD	0400	1608	3620	2667	0015091	0761	15188								
129		OBS	T0401	1607	36194	2667			15188								
		STD	0500	1499	3600	2676	0014443	0909	15168								
129		OBS	0502	1496	35992	2676			15167								
		STD	0600	1334	3572	2690	0013290	1048	15127								
129		OBS	T0603	1329	35711	2690			15126								
		STD	0700	1137	3549	2710	0011382	1171	15074								
		STD	0800	0951	3526	2725	0009938	1278	15021								
129		OBS	0802	0947	35251	2726			15020								
		STD	0900	0756	3515	2748	0007678	1366	14963								
		STD	1000	0613	3505	2760	0006432	1436	14922								
129		OBS	T1001	0612	35051	2760			14921								
		STD	1100	0554	3505	2767	0005743	1497	14915								
		STD	1200	0507	3504	2772	0005286	1552	14912								
129		OBS	1251	0487	35034	2774			14912								
		STD	1300	0471	3503	2775	0004995	1604	14914								
		STD	1400	0445	3502	2777	0004843	1653	14920								
		STD	1500	0431	3500	2778	0004848	1701	14931								
129		OBS	T1502	0431	35002	2778			14931								

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MAGNETIC DEVIATION	MAGNETIC SQUARE				STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE NO.	STATION NUMBER					TO*	1*	MO	DAY	HR./10	CRUISE NO.	STATION NUMBER		DIR.	HGT			PER	SEA	TYPE	AMT				
31	767	YA	34530N	048040W		113	48	10	07	130	1966	OSE	017	4662	15	22	4	2	X1	8	2	0017			
WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS																
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB																			
				20	515	093	272	244	7	14															
MESSAGE TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°	Σ Δ σ OYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	TOTAL-P µg - at/l	NO <sub>2</sub> -N µg - at/l	NO <sub>3</sub> -N µg - at/l	SiO <sub>4</sub> -Si µg - at/l	pH	S C C								
		STD	0000	2514	3626	2427	0036644	0000	15366																
130		OBS	0000	2514	36256	2427			15366																
		STD	0010	2514	3628	2428	0036548	0037	15367																
		STD	0020	2514	3629	2430	0036452	0073	15369																
130		OBS	0024	2514	36301	2430			15370																
		STD	0030	2427	3638	2462	0033361	0108	15351																
		STD	0050	2186	3656	2546	0025500	0167	15297																
130		OBS	0050	2186	36557	2546			15297																
130		OBS	0074	2001	36582	2598			15252																
		STD	0075	1993	3658	2600	0020410	0224	15250																
130		OBS	0099	1851	36540	2634			15214																
		STD	0100	1850	3654	2634	0017259	0271	15214																
		STD	0125	1817	3653	2642	0016627	0314	15209																
130		OBS	0149	1794	36518	2647			15206																
		STD	0150	1794	3652	2647	0016254	0355	15206																
130		OBS	T0199	1771	36499	2651			15207																
		STD	0200	1771	3650	2651	0016018	0435	15207																
		STD	0250	1749	3646	2654	0015929	0515	15208																
		STD	0300	1726	3643	2656	0015848	0595	15210																
130		OBS	T0396	1684	36354	2661			15212																
		STD	0400	1675	3634	2662	0015602	0752	15210																
		STD	0500	1492	3599	2677	0014364	0902	15165																
130		OBS	0501	1490	35983	2677			15165																
		STD	0600	1365	3582	2691	0013201	1040	15139																
130		OBS	T0602	1362	35818	2692			15138																
		STD	0700	1135	3548	2710	0011396	1163	15073																
		STD	0800	0940	3524	2726	0009866	1269	15016																
130		OBS	0807	0928	35230	2727			15013																
		STD	0900	0782	3518	2747	0007859	1358	14973																
		STD	1000	0660	3514	2760	0006509	1429	14941																
130		OBS	T1010	0650	35130	2761			14939																
		STD	1100	0594	3512	2768	0005796	1491	14932																
		STD	1200	0539	3509	2772	0005363	1547	14926																
130		OBS	1259	0510	35078	2775			14924																
		STD	1300	0492	3507	2776	0004974	1598	14923																
		STD	1400	0453	3503	2777	0004841	1648	14923																
130		OBS	T1496	0423	34988	2777			14926																

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLING	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER	
CRUISE CODE	ID. NO.					10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA
31	767	YA	35006N	047520W	113	57	10	08	168	1966	OSE	018	3475	15	27	4	2	X5	5	8	0018

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	OIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		21	506	236	239	228	7	14	

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-X10 <sup>3</sup>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - dl/l	TOTAL-P µg - dl/l	NO <sub>2</sub> -N µg - dl/l	NO <sub>3</sub> -N µg - dl/l	SiO <sub>4</sub> -Si µg - dl/l	pH	S C C
		STD	0000	2520	3620	2421	0037193	0000	15366								
168		OBS	0000	2520	36204	2421			15366								
		STD	0010	2520	3624	2424	0036964	0037	15368								
		STD	0020	2519	3628	2427	0036705	0074	15370								
168		OBS	0025	2519	36304	2429			15371								
		STD	0030	2507	3634	2435	0035958	0110	15370								
		STD	0050	2390	3646	2480	0031814	0178	15347								
168		OBS	0052	2372	36473	2486			15343								
		STD	0075	2075	3660	2580	0022363	0246	15273								
168		OBS	0077	2055	36603	2585			15268								
		STD	0100	1902	3655	2622	0018453	0297	15229								
168		OBS	0103	1887	36548	2625			15225								
		STD	0125	1839	3655	2638	0017039	0341	15215								
		STD	0150	1801	3654	2647	0016239	0383	15208								
168		OBS	0154	1796	36543	2648			15207								
		STD	0200	1780	3652	2650	0016080	0464	15210								
168		OBS	T0206	1777	36512	2650			15210								
		STD	0250	1763	3648	2651	0016139	0544	15213								
		STD	0300	1736	3643	2654	0016036	0625	15213								
		STD	0400	1644	3626	2663	0015471	0782	15199								
168		OBS	T0405	1638	36248	2664			15198								
		STD	0500	1500	3599	2675	0014537	0932	15168								
168		OBS	0510	1486	35965	2676			15165								
		STD	0600	1369	3581	2690	0013356	1072	15140								
168		OBS	T0611	1353	35785	2691			15136								
		STD	0700	1173	3551	2705	0011897	1198	15087								
		STD	0800	0987	3528	2721	0010389	1309	15034								
168		OBS	0815	0960	35248	2723			15026								
		STD	0900	0802	3516	2742	0008353	1403	14980								
		STD	1000	0656	3508	2756	0006853	1479	14939								
168		OBS	T1018	0634	35071	2759			14933								
		STD	1100	0570	3504	2764	0006041	1543	14921								
		STD	1200	0508	3502	2770	0005447	1601	14912								
168		OBS	1272	0474	35004	2773			14910								
		STD	1300	0463	3500	2774	0005093	1654	14910								
		STD	1400	0436	3499	2776	0004905	1704	14916								
		STD	1500	0426	3499	2777	0004868	1752	14928								
168		OBS	1523	0426	34987	2777			14932								



REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	L. P. REF. NO.	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR. 1/10	CRUISE NO.			STATION NUMBER	DIR	HGT PER		SEA	TYPE		AMT
31	767	YA	35171N	047398W		113	57	10	09	125	1966	OSE	019	4389	15	19	3	2	X1	6	4	0019
WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
COLOR CODE	TRANS. IN	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																
				19	S11	226	256	233	7	14												
MESSNGR TIME & HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>4</sub> -Si μg - dl/l	pH	S.C.C.					
		STD	0000	2504	3630	2433	0036014	0000	15364													
		OBS	0000	2504	36303	2433			15364													
		STD	0010	2503	3631	2434	0036003	0036	15365													
		STD	0020	2502	3631	2434	0035999	0072	15367													
		OBS	0025	2502	36312	2435			15368													
		STD	0030	2497	3638	2441	0035379	0108	15268													
		STD	0050	2389	3654	2486	0031195	0174	15347													
		OBS	0050	2389	36542	2486			15347													
		STD	0075	2058	3651	2577	0022596	0242	15267													
		OBS	0075	2058	36507	2577			15267													
		STD	0100	1889	3651	2622	0018453	0293	15225													
		OBS	0101	1884	36506	2623			15223													
		STD	0125	1842	3652	2635	0017300	0338	15216													
		STD	0150	1809	3652	2643	0016596	0380	15210													
		OBS	0151	1808	36521	2643			15210													
		STD	0200	1777	3650	2650	0016147	0462	15209													
		OBS	0202	1776	36500	2650			15209													
		STD	0250	1765	3649	2652	0016114	0542	15214													
		STD	0300	1741	3646	2655	0015936	0623	15214													
		OBS	T0396	1663	36312	2663			15205													
		STD	0400	1658	3630	2663	0015501	0780	15204													
		OBS	0493	1539	36062	2672			15180													
		STD	0500	1529	3604	2673	0014806	0931	15178													
		OBS	T0590	1384	35808	2686			15143													
		STD	0600	1364	3578	2688	0013470	1073	15138													
		STD	0700	1167	3550	2706	0011855	1199	15084													
		OBS	0781	1014	35326	2720			15042													
		STD	0800	0973	3530	2725	0009998	1309	15029													
		STD	0900	0784	3516	2744	0008067	1399	14973													
		OBS	T0976	0675	35083	2754			14943													
		STD	1000	0659	3507	2755	0006970	1474	14940													
		STD	1100	0596	3504	2761	0006411	1541	14931													
		STD	1200	0544	3502	2766	0005946	1603	14927													
		OBS	1225	0532	35012	2767			14926													
		STD	1300	0500	3500	2770	0005597	1660	14925													
		STD	1400	0467	3500	2773	0005252	1715	14929													
		OBS	1472	0448	34999	2776			14933													

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA
31	767	YA	35200N	047300W	113	57	10	10	131	1966	05E	020	4664	15	18	3	2	X1	1	7	0020

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. 1m	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		18	516	190	256	233	7	14	

MESSAGE TIME HR 1/10	CAST OF ND.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANDMALY-210?	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	S C C
		STD	0000	2472	3619	2434	0035928	0000	15355								
131		OBS	0000	2472	36186	2434			15355								
		STD	0010	2471	3619	2434	0035953	0036	15356								
		STD	0020	2470	3618	2435	0035978	0072	15358								
131		OBS	0025	2470	36184	2435			15359								
		STD	0030	2438	3629	2452	0034323	0107	15353								
		STD	0050	2271	3654	2520	0027923	0169	15318								
131		OBS	0051	2261	36547	2524			15316								
		STD	0075	1968	3652	2602	0020216	0229	15243								
131		OBS	0076	1960	36515	2604			15241								
		STD	0100	1861	3651	2629	0017743	0277	15217								
131		OBS	0102	1855	36505	2630			15215								
		STD	0125	1817	3650	2640	0016845	0320	15208								
		STD	0150	1787	3649	2646	0016291	0362	15204								
131		OBS	0154	1783	36486	2647			15203								
		STD	0200	1763	3646	2650	0016085	0443	15204								
131		OBS	T0205	1761	36461	2650			15205								
		STD	0250	1751	3645	2652	0016074	0523	15209								
		STD	0300	1729	3642	2655	0015945	0603	15210								
		STD	0400	1649	3628	2663	0015440	0760	15201								
131		OBS	T0406	1643	36271	2664			15200								
		STD	0500	1520	3604	2675	0014610	0910	15175								
131		OBS	0508	1510	36023	2676			15173								
		STD	0600	1394	3583	2686	0013730	1052	15148								
131		OBS	T0608	1381	35812	2687			15145								
		STD	0700	1146	3547	2707	0011675	1179	15077								
		STD	0800	0939	3523	2725	0009922	1287	15016								
131		OBS	0809	0923	35213	2727			15011								
		STD	0900	0800	3520	2745	0008029	1377	14980								
		STD	1000	0682	3517	2760	0006581	1450	14951								
131		OBS	T1012	0669	35168	2761			14947								
		STD	1100	0575	3509	2768	0005745	1511	14924								
		STD	1200	0495	3503	2773	0005196	1566	14907								
131		OBS	1253	0464	35004	2774			14903								
		STD	1300	0456	3500	2775	0005002	1617	14907								
		STD	1400	0438	3499	2776	0004955	1667	14916								
131		OBS	T1491	0422	34977	2777			14925								



REFERENCE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	L. H. INDIC.	MARDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER			
					10"	1"	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT PER	SEA	TYPE		AMT					
31	767	YA	34583N	048014W			113	48	10	12	131	1966	OSE	022	4389	15	19	2	4		A5	8	5		0022

WATER COLOR CODE	TRANSP. (m)	DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
					DRY BULB	WET BULB			
			19	506	180	267	239	7	14

MESSING TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-t	SPECIFIC VOLUME ANOMALY-20°	Σ Δ σ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	TOTAL-P μg - ml/l	NO <sub>2</sub> -N μg - ml/l	NO <sub>3</sub> -N μg - ml/l	SiO <sub>4</sub> -Si μg - ml/l	pH	CTDS
		STD	0000	2515	3629	2429	0036443	0000	15366								
131		OBS	0000	2515	36288	2429			15366								
		STD	0010	2513	3629	2430	0036400	0036	15367								
		STD	0020	2510	3629	2431	0036354	0073	15368								
131		OBS	0026	2509	36294	2431			15369								
		STD	0030	2458	3633	2449	0034610	0108	15358								
		STD	0050	2226	3648	2529	0027131	0170	15350								
131		OBS	0052	2205	36499	2535			15321								
		STD	0075	1990	3654	2601	0020372	0429	15245								
131		OBS	0076	1959	36542	2607			15241								
		STD	0100	1877	3654	2627	0017914	0477	15222								
131		OBS	0103	1866	36537	2629			15220								
		STD	0125	1834	3654	2638	0016999	0321	15214								
		STD	0150	1804	3653	2645	0016383	0363	15209								
131		OBS	0155	1799	36533	2647			15208								
		STD	0200	1775	3650	2650	0016107	0444	15208								
131		OBS	T0206	1772	36499	2651			15209								
		STD	0250	1768	3646	2649	0016395	0525	15214								
		STD	0300	1751	3642	2649	0016482	0607	15217								
		STD	0400	1679	3633	2660	0015766	0769	15211								
131		OBS	T0409	1670	36322	2662			15210								
		STD	0500	1554	3610	2672	0014923	0922	15186								
131		OBS	0510	1541	36073	2673			15184								
		STD	0600	1425	3590	2685	0013675	1066	15159								
131		OBS	T0616	1400	35861	2687			15153								
		STD	0700	1199	3555	2704	0012105	1196	15096								
		STD	0800	0992	3531	2723	0010258	1308	15036								
131		OBS	0814	0966	35282	2725			15029								
		STD	0900	0816	3529	2750	0007613	1397	14987								
		STD	1000	0681	3530	2770	0005614	1463	14952								
131		OBS	1017	0662	35301	2773			14947								
		STD	1100	0612	3522	2773	0005324	1518	14940								
		STD	1200	0558	3515	2775	0005192	1570	14934								
131		OBS	1271	0524	35100	2775			14932								
		STD	1300	0511	3508	2775	0005164	1622	14931								
		STD	1400	0470	3504	2775	0005000	1673	14930								
		STD	1500	0436	3501	2778	0004857	1722	14933								
131		OBS	T1522	0429	35005	2778			14933								



Table II. Observed and interpolated oceanographic data for stations taken by USCGC MCCULLOCH at ocean station ECHO, 4-25 February 1967, prepared from NODC No. 31-855 ML.

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
CIR CODE	ID. NO.					10"	1"	MO		DAY	HR.1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA	TYPE	AMT
31	855	ML	35065N	048193W	113	58	02	04	192	1967	E03	001	4	481	15	26	2	2	X2	0	5	0001	
				WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS							
				COLOR CODE		TRANS. (m)		DIR.		SPEED OF FORCE		METER (mb)		DRY BULB		WET BULB		VIS. CODE		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS	
						20		S01		196		192		152		8		14					
MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S C C						
		STD	0000	1867	3651	2628	0017538	0000	15202														
192		OBS	0000	1867	36509	2628			15202														
		STD	0010	1859	3650	2629	0017446	0017	15201														
		STD	0020	1854	3649	2629	0017434	0035	15202														
192		OBS	0025	1852	36484	2629			15202														
		STD	0030	1852	3648	2629	0017494	0052	15202														
		STD	0050	1850	3647	2629	0017618	0088	15205														
192		OBS	0050	1850	36466	2629			15205														
		STD	0075	1849	3647	2629	0017654	0132	15209														
192		OBS	0075	1849	36470	2629			15209														
192		OBS	0099	1852	36484	2629			15214														
		STD	0100	1852	3648	2630	0017711	0176	15214														
		STD	0125	1848	3647	2630	0017790	0220	15217														
		STD	0150	1844	3646	2630	0017870	0265	15220														
192		OBS	0150	1844	36460	2630			15220														
		STD	0200	1799	3653	2646	0016495	0351	15216														
192		OBS	T0200	1799	36525	2646			15216														
		STD	0250	1786	3647	2645	0016778	0434	15219														
		STD	0300	1758	3641	2647	0016705	0518	15219														
		STD	0400	1658	3624	2662	0015559	0679	15204														
192		OBS	0402	1655	36240	2663			15203														
		STD	0500	1497	3599	2676	0014472	0829	15167														
192		OBS	0503	1493	35987	2677			15166														
		STD	0600	1382	3582	2688	0013553	0969	15144														
192		OBS	T0605	1375	35808	2688			15143														
		STD	0700	1133	3549	2711	0011286	1093	15073														
		STD	0800	0955	3526	2725	0009978	1200	15022														
192		OBS	0808	0944	35246	2726			15019														
		STD	0900	0914	3520	2727	0009890	1299	15023														
		STD	1000	0849	3516	2734	0009335	1395	15015														
192		OBS	1011	0840	35150	2735			15013														
		STD	1100	0702	3514	2755	0007259	1478	14975														
		STD	1200	0583	3513	2770	0005697	1543	14944														
192		OBS	1254	0534	35124	2775			14933														
		STD	1300	0521	3511	2776	0005080	1597	14935														
		STD	1400	0492	3509	2778	0004935	1647	14940														
		STD	1500	0463	3506	2779	0004858	1696	14944														
192		OBS	T1530	0454	35049	2779			14946														

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NOOC STATION NUMBER	
CITY CODE	ID. NO.					10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT.
31	855	ML	3504 N	04803 W	113 58	02	05	129	1967	E03	002	4481	15	31	3	2	X2	2	6	0002
WATER		WIND		BARO- METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS. IMI	DIR.	SPEED OF FORCE		DRY BULB	WET BULB														
				14	S10	213	175	136	7	14										
MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta \sigma$ DYN. M. $\times 10^2$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S C C			
		STD	0000	1855	3648	2628	0017460	0000	15198											
129		OBS	0000	1855	36480	2628			15198											
		STD	0010	1853	3648	2629	0017469	0017	15199											
		STD	0020	1851	3647	2629	0017478	0035	15200											
129		OBS	0025	1850	3647.5	2629			15201											
		STD	0030	1848	3647	2629	0017470	0052	15201											
		STD	0050	1842	3646	2630	0017462	0087	15203											
129		OBS	0050	1842	3646.1	2630			15203											
		STD	0075	1843	3647	2630	0017546	0131	15207											
129		OBS	0075	1843	3646.5	2630			15207											
		STD	0100	1840	3646	2631	0017576	0175	15210											
129		OBS	0100	1840	3646.3	2631			15210											
		STD	0125	1841	3647	2631	0017626	0219	15215											
		STD	0150	1841	3648	2632	0017660	0263	15219											
129		OBS	0150	1841	3647.9	2632			15219											
		STD	0200	1788	3651	2648	0016328	0348	15212											
129		OBS	10200	1788	3651.2	2648			15212											
		STD	0250	1782	3647	2646	0016654	0431	15218											
		STD	0300	1762	3643	2648	0016655	0514	15220											
		STD	0400	1680	3635	2661	0015674	0675	15211											
129		OBS	10401	1679	3634.5	2661			15211											
		STD	0500	1543	3608	2672	0014853	0828	15183											
129		OBS	0500	1543	3607.6	2672			15183											
129		OBS	10599	1392	3583.2	2686			15148											
		STD	0600	1390	3583	2687	0013647	0971	15147											
		STD	0700	1195	3553	2703	0012173	1100	15095											
		STD	0800	1015	3531	2719	0010666	1214	15045											
129		OBS	0802	1012	3530.7	2719			15044											
		STD	0900	0837	3520	2739	0008627	1310	14994											
		STD	1000	0699	3512	2754	0007204	1390	14957											
129		OBS	1003	0696	3511.9	2754			14956											
		STD	1100	0628	3511	2762	0006364	1457	14945											
		STD	1200	0567	3510	2769	0005687	1518	14937											
129		OBS	1251	0540	3509.6	2772			14935											
		STD	1300	0516	3508	2774	0005205	1572	14933											
		STD	1400	0474	3506	2777	0004924	1623	14932											
		STD	1500	0441	3503	2779	0004757	1671	14935											
129		OBS	11504	0440	3503.2	2779			14935											

REFERENCE	SHIP	LATITUDE	LONGITUDE	DEPTH	MARSSEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
					10"	1"	MO	DAY	HR.1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA	TYPE		AMT		
31	855	ML	35025N	048045W	113	58	02	06	129	1967	E03	003	2743	15	18	3	2	X2	4	6	0003		

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	SPEED OR FORCE	DIR.		DRY BULB	WET BULB			
		18	S13	173	178	167	7	13	

MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\frac{\Delta \sigma_t}{\Delta T}$ °C/DIV. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{at/l}$	pH	3
		STD	0000	1827	3645	2633	0016992	0000	15190								
129		OBS	0000	1827	36452	2633			15190								
		STD	0010	1828	3645	2633	0017032	0017	15192								
		STD	0020	1829	3646	2633	0017074	0034	15194								
129		OBS	0024	1829	36457	2633			15195								
		STD	0030	1830	3646	2633	0017126	0051	15196								
129		OBS	0047	1833	36459	2632			15200								
		STD	0050	1833	3646	2632	0017261	0086	15200								
129		OBS	0070	1833	36460	2632			15203								
		STD	0075	1833	3646	2632	0017347	0129	15204								
129		OBS	0094	1834	36458	2632			15208								
		STD	0100	1834	3646	2632	0017468	0172	15209								
		STD	0125	1834	3646	2632	0017578	0216	15213								
129		OBS	0141	1834	36454	2632			15215								
		STD	0150	1829	3647	2634	0017437	0260	15215								
129		OBS	T0186	1811	36507	2642			15217								
		STD	0200	1806	3650	2642	0016851	0346	15217								
		STD	0250	1785	3647	2645	0016747	0430	15219								
		STD	0300	1758	3644	2649	0016503	0513	15219								
129		OBS	0374	1704	36392	2659			15215								
		STD	0400	1697	3636	2658	0015966	0675	15217								
129		OBS	0469	1613	36202	2666			15201								
		STD	0500	1520	3605	2675	0014537	0828	15175								
129		OBS	0564	1346	35777	2692			15126								
		STD	0600	1283	3569	2698	0012481	0963	15110								
		STD	0700	1120	3549	2714	0011043	1080	15068								
		STD	0800	0977	3533	2727	0009844	1185	15031								
		STD	0900	0855	3521	2737	0008849	1278	15001								
129		OBS	T0953	0798	35171	2743			14988								
		STD	1000	0757	3517	2749	0007737	1361	14980								
		STD	1100	0679	3516	2759	0006761	1434	14966								
		STD	1200	0610	3515	2768	0005945	1497	14955								
129		OBS	1226	0594	35141	2769			14953								
		STD	1300	0552	3512	2773	0005452	1554	14948								
		STD	1400	0504	3509	2776	0005107	1607	14945								
		STD	1500	0467	3504	2777	0005064	1658	14946								
129		OBS	T1505	0465	35039	2777			14946								



REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	UNITS	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPLS	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10°	1'	MO	DAY	HR. 1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT.	PER.	SEA	TYPE		AMT.		
31	855	ML	34555N	048120W		11	48	02	07	211	1967	E03	004	457.6	15	06	4	3	4	4		0004		
WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS												
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mbs)	DRY BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB											
		09	503	264	160	100	7	14																
MESSNGR TIME & HR 1/10	CASIT NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-X10 <sup>3</sup>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	S COND.							
		STD	0000	1868	3648	2625	0017602	0000	15202															
	211	OBS	0000	1868	36476	2625			15202															
		STD	0010	1861	3648	2627	0017609	0018	15202															
		STD	0020	1855	3648	2628	0017567	0035	15202															
	211	OBS	0026	1852	36475	2629			15202															
		STD	0030	1851	3648	2629	0017509	0053	15202															
		STD	0050	1847	3647	2630	0017481	0088	15204															
	211	OBS	0053	1846	36474	2630			15204															
		STD	0075	1845	3647	2630	0017555	0132	15208															
	211	OBS	0079	1845	36470	2630			15208															
		STD	0100	1845	3648	2631	0017573	0176	15212															
	211	OBS	0105	1845	36485	2631			15213															
		STD	0125	1827	3651	2638	0017012	0219	15211															
		STD	0150	1808	3652	2643	0016572	0261	15210															
	211	OBS	0157	1803	36524	2645			15210															
		STD	0200	1785	3651	2648	0016271	0343	15211															
	211	OBS	T0210	1780	36507	2649			15212															
		STD	0250	1779	3647	2647	0016605	0425	15217															
		STD	0300	1762	3642	2647	0016727	0508	15220															
		STD	0400	1678	3632	2660	0015801	0671	15210															
	211	OBS	T0415	1659	36307	2663			15207															
		STD	0500	1516	3604	2676	0014522	0823	15174															
	211	OBS	0517	1492	35998	2678			15168															
		STD	0600	1404	3588	2688	0013577	0963	15152															
	211	OBS	0621	1376	35837	2690			15146															
		STD	0700	1218	3559	2703	0012184	1092	15103															
		STD	0800	1030	3534	2718	0010716	1206	15051															
	211	OBS	0826	0983	35295	2723			15037															
		STD	0900	0837	3521	2740	0008554	1303	14994															
		STD	1000	0684	3512	2756	0006977	1380	14951															
	211	OBS	T1022	0657	35106	2758			14944															
		STD	1100	0613	3510	2764	0006218	1446	14939															
		STD	1200	0562	3509	2769	0005689	1506	14935															
	211	OBS	1289	0522	35080	2773			14934															
		STD	1300	0517	3508	2774	0005248	1561	14933															
		STD	1400	0480	3506	2777	0004992	1612	14935															
		STD	1500	0450	3503	2778	0004902	1661	14939															
	211	OBS	T1542	0439	35014	2778			14941															

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR	HGT		PER	SEA	
31	855	ML	35015N	048065W	113	58	02	08	211	1967	E03	005	3292	15	13	3	2	X1	4	4	0005

WATER		WIND		BARO- METER (mbal)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		18	S08	274	183	168	7	14	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-210°	$\frac{\Delta \sigma}{\Delta D}$ DYN. M. X 10 <sup>3</sup>	SDUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	TOTAL-P µg - ml/l	NO <sub>2</sub> -N µg - ml/l	NO <sub>3</sub> -N µg - ml/l	SIO <sub>4</sub> -Si µg - ml/l	pH	S C
		STD	0000	1846	3645	2628	0017476	0000	15195								
211		OBS	0000	1846	36448	2628			15195								
		STD	0010	1838	3645	2630	0017327	0017	15195								
		STD	0020	1833	3645	2631	0017250	0035	15195								
211		OBS	0025	1831	36446	2632			15195								
		STD	0030	1831	3645	2632	0017232	0052	15196								
		STD	0050	1830	3644	2632	0017301	0086	15199								
211		OBS	0052	1830	36444	2632			15199								
		STD	0075	1829	3644	2632	0017386	0130	15203								
211		OBS	0077	1829	36441	2632			15203								
		STD	0100	1825	3645	2634	0017311	0173	15206								
211		OBS	0103	1824	36457	2634			15206								
		STD	0125	1816	3649	2639	0016893	0216	15208								
		STD	0150	1805	3651	2643	0016573	0258	15209								
211		OBS	0155	1803	36514	2644			15209								
		STD	0200	1780	3650	2649	0016225	0340	15210								
211		OBS	T0206	1777	36494	2649			15210								
		STD	0250	1775	3645	2646	0016640	0422	15216								
		STD	0300	1756	3640	2647	0016730	0505	15218								
		STD	0400	1665	3630	2661	0015676	0667	15206								
211		OBS	T0408	1655	36290	2663			15204								
		STD	0500	1498	3599	2676	0014493	0818	15167								
211		OBS	0515	1474	35951	2678			15162								
		STD	0600	1353	3578	2691	0013244	0957	15134								
211		OBS	T0616	1329	35744	2693			15129								
		STD	0700	1187	3554	2705	0011947	1083	15092								
		STD	0800	1023	3535	2720	0010517	1195	15048								
211		OBS	0822	0988	35313	2724			15039								
		STD	0900	0849	3523	2740	0008604	1291	14999								
		STD	1000	0707	3515	2755	0007107	1369	14960								
211		OBS	T1021	0683	35136	2757			14954								
		STD	1100	0631	3512	2763	0006335	1437	14946								
		STD	1200	0575	3511	2769	0005728	1497	14941								
211		OBS	1287	0534	35096	2773			14938								
		STD	1300	0529	3509	2773	0005343	1552	14938								
		STD	1400	0493	3508	2777	0005026	1604	14940								
		STD	1500	0467	3506	2778	0004918	1654	14946								
211		OBS	T1544	0459	35056	2779			14950								

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH IN METERS	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLING	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NDDC STATION NUMBER
						10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31	855	ML	35033N	047575W		113	57	02	09	128	1967	E03	006	3840	15	25	3	2	X1	1	2	0006

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		24	510	264	186	167	8	14	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\times 10^3$	$\frac{\Delta \rho}{\rho}$ DYN. $\times 10^3$	SOUND VELOCITY	D <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C C
		STD	0000	1836	3643	2629	0017381	0000	15192								
128		OBS	0000	1836	36428	2629			15192								
		STD	0010	1835	3643	2629	0017397	0017	15194								
		STD	0020	1834	3643	2630	0017414	0035	15195								
128		OBS	0025	1834	36428	2630			15196								
		STD	0030	1834	3643	2630	0017434	0052	15197								
		STD	0050	1833	3643	2630	0017472	0087	15200								
128		OBS	0050	1833	36430	2630			15200								
128		OBS	0074	1832	36433	2631			15203								
		STD	0075	1832	3643	2631	0017514	0131	15204								
128		OBS	0098	1832	36436	2631			15207								
		STD	0100	1830	3644	2632	0017503	0175	15207								
		STD	0115	1808	3647	2639	0016848	0418	15205								
128		OBS	0127	1806	36475	2640			15205								
		STD	0150	1793	3647	2643	0016563	0459	15205								
128		OBS	T0196	1764	36467	2650			15204								
		STD	0200	1762	3646	2650	0016090	0341	15204								
		STD	0250	1737	3643	2654	0015891	0421	15205								
		STD	0300	1701	3637	2658	0015656	0300	15201								
128		OBS	T0384	1619	36219	2666			15189								
		STD	0400	1597	3617	2667	0015062	0353	15184								
128		OBS	0478	1494	35984	2676			15162								
		STD	0500	1471	3595	2679	0014202	0800	15158								
128		OBS	T0573	1385	35831	2688			15141								
		STD	0600	1321	3575	2645	0012808	0935	15123								
		STD	0700	1106	3551	2718	0010637	1052	15063								
128		OBS	0770		35372												
		STD	0800	0928	3533	2735	0009004	1150	15013								
		STD	0900	0787	3521	2748	0007748	1434	14975								
128		OBS	T0958	0721	35162	2754			14959								
		STD	1000	0695	3516	2757	0006851	1357	14956								
		STD	1100	0638	3516	2765	0006145	1372	14950								
		STD	1200	0587	3516	2772	0005536	1430	14946								
128		OBS	1220	0577	35153	2772			14945								
		STD	1300	0541	3514	2776	0005148	1484	14944								
		STD	1400	0501	3512	2779	0004846	1534	14944								
128		OBS	T1470	0476	35098	2780			14945								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	M. NODE	MARSden SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAR. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
31	855	ML	34504N	04000W	113	40	02	10	131	1967	EOJ	007	4307	17	25	4	3		X2	7	8	0007	

WATER COLOR CODE	WIND TRANS. (mi)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
					DRY BULB	WET BULB			
			25	S20	247	191	177	7	14

MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> 10 <sup>3</sup>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	Si C C
		STD	0000	1899	3656	2623	0017953	0000	15212								
131		OBS	0000	1899	3656	2623			15212								
		STD	0010	1899	3656	2623	0017989	0018	15213								
		STD	0020	1899	3656	2623	0018033	0036	15215								
131		OBS	0026	1899	36558	2623			15216								
		STD	0030	1849	3656	2623	0018084	0054	15217								
		STD	0050	1900	3656	2623	0018193	0099	15221								
131		OBS	0053	1900	36561	2623			15221								
		STD	0075	1900	3655	2622	0018297	0136	15224								
131		OBS	0078	1900	36552	2622			15225								
		STD	0100	1896	3655	2624	0018284	0182	15227								
131		OBS	0103	1894	36553	2624			15227								
		STD	0125	1846	3654	2625	0017299	0226	15218								
		STD	0150	1811	3653	2643	0016572	0268	15211								
131		OBS	0156	1804	36524	2645			15210								
		STD	0200	1786	3652	2649	0016223	0350	15212								
131		OBS	T1208	1785	36515	2649			15212								
		STD	0250	1761	3648	2652	0016109	0431	15212								
		STD	0300	1735	3643	2655	0015991	0512	15212								
		STD	0400	1683	3634	2660	0015755	0670	15212								
131		OBS	0417	1674	36329	2661			15212								
		STD	0500	1519	3603	2674	0014660	0822	15175								
131		OBS	0524	1476	35964	2678			15165								
		STD	0600	1367	3580	2689	0013426	0963	15140								
131		OBS	0632	1316	35733	2694			15128								
		STD	0700	1161	3552	2709	0011595	1088	15083								
		STD	0800	0963	3529	2726	0009932	1176	15026								
131		OBS	0854	0870	35207	2734			15001								
		STD	0900	0815	3520	2743	0008270	1287	14986								
		STD	1000	0702	3518	2756	0006811	1362	14957								
131		OBS	T1087	0612	35164	2767			14941								
		STD	1100	0614	3516	2768	0005793	1425	14940								
		STD	1200	0491	3511	2771	0005528	1482	14935								
		STD	1300	0414	3508	2774	0005234	1535	14933								
131		OBS	1392	0432	35057	2776			14934								
		STD	1400	0479	3506	2777	0005000	1587	14934								
		STD	1500	0411	3505	2780	0004741	1635	14940								
131		OBS	T1704	0420	35047	2782			14961								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DIR. INDIC.	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31	855	ML	35044N	047538W		113	57	02	11	164	1967	E03	008	4200	18	24	4	3	X1	0	6	0008

WATER		WIND		BARO-METER (mbst)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		24	524	193	202	187	7	14	

MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	S Δ ρ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 01/l	TOTAL-P μg - 01/l	NO <sub>2</sub> -N μg - 01/l	NO <sub>3</sub> -N μg - 01/l	SiO <sub>4</sub> -Si μg - 01/l	pH	S.C.C.
		STD	0000	1859	3648	2627	0017556	0000	15200								
164		OBS	0000	1859	36480	2627			15200								
		STD	0010	1851	3647	2629	0017471	0018	15199								
		STD	0020	1844	3647	2630	0017339	0035	15198								
164		OBS	0029	1840	36460	2631	0017349	0052	15199								
		STD	0030	1840	3646	2631	0017349	0052	15199								
		STD	0050	1839	3645	2630	0017461	0087	15202								
164		OBS	0058	1838	36440	2630			15203								
		STD	0075	1838	3645	2630	0017534	0131	15205								
164		OBS	0088	1837	36453	2631			15207								
		STD	0100	1836	3646	2631	0017538	0175	15209								
164		OBS	0116	1833	36457	2632			15211								
		STD	0125	1833	3647	2633	0017445	0118	15212								
		STD	0150	1828	3649	2636	0017268	0262	15215								
164		OBS	0177	1816	36503	2640			15217								
		STD	0200	1795	3650	2645	0015581	0346	15214								
164		OBS	T0236	1762	36481	2652			15210								
		STD	0250	1755	3647	2653	0016023	0423	15210								
		STD	0300	1725	3641	2655	0015724	0908	15209								
		STD	0400	1643	3626	2663	0015448	0665	15199								
164		OBS	T0477	1560	36117	2672			15185								
		STD	0500	1529	3606	2674	0014662	0815	15178								
		STD	0600	1391	3564	2687	0013595	0956	15146								
164		OBS	0601	1370	35635	2687			15147								
		STD	0700	1246	3562	2699	0012555	1087	15114								
164		OBS	T0725	1210	35571	2703			15104								
		STD	0800	1050	3542	2721	0010494	1202	15039								
		STD	0900	0872	3527	2734	0008693	1298	15006								
164		OBS	0975	0766	35195	2750			14979								
		STD	1000	0743	3519	2753	0007371	1379	14975								
		STD	1100	0660	3519	2764	0006254	1447	14955								
		STD	1200	0569	3517	2772	0005492	1506	14947								
164		OBS	T1212	0561	35162	2773			14946								
		STD	1300	0530	3510	2774	0005284	1559	14939								
		STD	1400	0482	3505	2776	0005093	1611	14935								
		STD	1500	0445	3502	2778	0004907	1661	14937								
164		OBS	1528	0437	35013	2778			14938								
		STD	1750	0415	3503	2782	0004666	1781	14927								
164		OBS	T1847	0406	35072	2786			14980								

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DEPTH	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER
					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31	855	ML	34530N	047578W	115	47	02	12	161	1967	E03	009	+755	15	25	4	2	X1	2	4	009

MESSENGR TIME OF HR	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ O DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>2</sub> -Si μg - at/l	pH	S C C
		STD	0000	1916	3659	2621	0018123	0000	15217								
161		OBS	0000	1916	36593	2621			15217								
		STD	0010	1911	3659	2623	0018037	0018	15217								
		STD	0020	1908	3659	2624	0017999	0036	15218								
161		OBS	0024	1907	36593	2624			15218								
		STD	0030	1907	3659	2624	0018011	0054	15219								
		STD	0050	1906	3659	2624	0018073	0090	15222								
161		OBS	0050	1906	36591	2624			15222								
161		OBS	0074	1903	36589	2624			15225								
		STD	0075	1901	3658	2624	0018121	0135	15225								
161		OBS	0099	1896	36468	2627			15215								
		STD	0100	1895	3647	2626	0017667	0180	15215								
		STD	0125	1630	3651	2637	0017084	0224	15212								
161		OBS	0148	1811	36534	2644			15211								
		STD	0150	1810	3653	2644	0016546	0266	15211								
161		OBS	T0198	1779	36514	2650			15209								
		STD	0200	1778	3651	2650	0016105	0348	15209								
		STD	0250	1757	3648	2653	0015998	0428	15211								
		STD	0300	1727	3643	2656	0015826	0508	15210								
161		OBS	0397	1644	36281	2665			15199								
		STD	0400	1641	3627	2665	0015330	0663	15199								
161		OBS	0496	1526	36056	2675			15176								
		STD	0500	1521	3605	2675	0014559	0813	15175								
161		OBS	0596	1375	35814	2689			15141								
		STD	0600	1365	3580	2690	0013346	0952	15139								
		STD	0700	1143	3549	2710	0011473	1076	15076								
161		OBS	0794	0963	35276	2725			15024								
		STD	0800	0952	3527	2726	0009653	1183	15021								
		STD	0900	0792	3517	2744	0008120	1273	14977								
161		OBS	T0992	0678	35106	2755			14947								
		STD	1000	0672	3511	2756	0006900	1348	14946								
		STD	1100	0608	3510	2765	0006116	1413	14937								
		STD	1200	0554	3510	2771	0005480	1471	14932								
161		OBS	1254	0529	35102	2774			14931								
		STD	1300	0510	3510	2776	0005004	1524	14931								
		STD	1400	0478	3510	2780	0004672	1572	14934								
		STD	1500	0456	3510	2783	0004474	1616	14942								
161		OBS	T1514	0454	35095	2782			14944								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MAGNETIC ANGLE	MARSSEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPLS	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	IO. NO.					10"	1'	MO	DAY	HR.1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT PER	SEA	TYPE		AMT		
31	855	ML	34453N	040036W	113	48	02	15	171	1967	EO3	010	4755	14	36	4	3	X1	4	16	0010		

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
CDLDR CODE	TRANS. (M)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		02	515	261	14.8	11.0	7	14	

MESSAGE TIME of HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-t	SPECIFIC VOLUME AND MALT-R10 <sup>3</sup>	S Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	SEC
		STD	0000	1867	3649	2626	0017654	0000	15202								
171		OBS	0000	1867	36493	2626			15202								
		STD	0010	1867	3649	2626	0017681	0018	15203								
		STD	0020	1866	3649	2627	0017707	0035	15203								
171		OBS	0024	1866	36493	2627			15206								
		STD	0030	1867	3649	2626	0017762	0053	15207								
171		OBS	0048	1869	36495	2626			15210								
		STD	0050	1869	3650	2626	0017669	0069	15211								
171		OBS	0073	1870	36500	2626			15215								
		STD	0075	1870	3650	2626	0017939	0133	15215								
171		OBS	0096	1868	36504	2627			15216								
		STD	0100	1859	3650	2629	0017767	0178	15216								
		STD	0125	1809	3647	2639	0016871	0421	15206								
171		OBS	0143	1777	36443	2645			15199								
		STD	0150	1767	3644	2647	0016164	0463	15197								
171		OBS	T0192	1709	36387	2657			15186								
		STD	0200	1701	3637	2658	0015323	0341	15185								
		STD	0250	1651	3627	2662	0015072	0417	15177								
		STD	0300	1599	3618	2667	0014718	0492	15166								
171		OBS	T0377	1514	36035	2676			15153								
		STD	0400	1488	3600	2679	0013907	0635	15146								
171		OBS	0467	1409	35875	2686			15131								
		STD	0500	1370	3581	2689	0013698	0770	15124								
171		OBS	T0556	1298	35706	2696			15108								
		STD	0600	1231	3559	2701	0012164	0897	15091								
		STD	0700	1073	3538	2714	0010979	1012	15050								
171		OBS	0768	0961	35274	2725			15019								
		STD	0800	0894	3523	2733	0009161	1113	14999								
		STD	0900	0726	3514	2751	0007311	1195	14951								
171		OBS	0921	0698	35132	2755			14943								
		STD	1000	0650	3514	2762	0006324	1264	14936								
		STD	1100	0597	3514	2769	0005643	1324	14933								
171		OBS	1159	0570	35143	2772			14932								
		STD	1200	0553	3514	2774	0005195	1376	14932								
		STD	1300	0519	3513	2778	0004910	1429	14935								
		STD	1400	0495	3512	2780	0004762	1477	14942								
171		OBS	T1411	0493	35118	2780			14943								

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	DIR. INDICATOR	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		MOO STATION NUMBER	
						10'	1"	MO	OAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
31	855	ML	34565N	048140W		115	43	02	16	140	1967	E03	011	4755	45	51	3	4	X1	2	4	0011
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS. (m)	OIR.	SPEED OF FORCE	(mbs)	DRY BULB	WET BULB	NO. CODE					NO. OBS. DEPTHS				
								20	502	338	167	115	5	17								
MESSNGR TIME OF HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S C C					
		STD	0000	1884	3650	2623	0017536	0000	15206													
		OBS	0000	1884	36504	2623			15206													
		STD	0010	1878	3650	2624	0017884	0018	15207													
		STD	0020	1876	3650	2625	0017679	0056	15206													
		OBS	0024	1875	36501	2625			15206													
		STD	0030	1876	3650	2625	0017915	0054	15210													
		STD	0050	1876	3651	2624	0018013	0090	15213													
		OBS	0050	1878	36505	2624			15213													
		OBS	0073	1879	36508	2624			15217													
		STD	0075	1879	3651	2624	0018102	0135	15216													
		OBS	0097	1878	36509	2625			15211													
		STD	0100	1873	3651	2626	0018034	0160	15210													
		STD	0125	1839	3653	2636	0017155	0124	15215													
		OBS	0145	1816	36532	2642			15212													
		STD	0150	1812	3653	2643	0016595	0166	15211													
		OBS	T0193	1781	36494	2648			15209													
		STD	0200	1779	3649	2648	0016252	0348	15209													
		STD	0230	1761	3645	2649	0016336	0450	15212													
		STD	0300	1734	3640	2652	0016206	0511	15212													
		OBS	0384	1669	36322	2662			15205													
		STD	0400	1656	3629	2663	0015527	0670	15203													
		OBS	0480	1563	36113	2671			15186													
		STD	0500	1528	3605	2674	0014712	0821	15176													
		OBS	T0580	1380	35812	2687			15146													
		STD	0600	1332	3574	2692	0015104	0760	15127													
		STD	0700	1112	3545	2712	0011185	1081	15069													
		OBS	0781	0960	35280	2726			15021													
		STD	0800	0928	3526	2730	0009515	1185	15012													
		STD	0900	0777	3518	2747	0007810	1272	14971													
		OBS	T0979	0683	35134	2757			14947													
		STD	1000	0667	3513	2759	0006650	1344	14944													
		STD	1100	0599	3512	2767	0005868	1406	14934													
		STD	1200	0544	3510	2772	0005360	1463	14928													
		OBS	1250	0522	35095	2775			14927													
		STD	1300	0510	3509	2776	0005073	1515	14931													
		STD	1400	0485	3508	2778	0004916	1565	14937													
		STD	1500	0461	3507	2780	0004755	1613	14944													
		OBS	T1502	0460	35070	2780			14944													
		STD	1750	0414	3502	2781	0004720	1732	14966													
		OBS	T1942	0385	34993	2782			14986													
		STD	2000	0380	3499	2782	0004682	1849	14994													
		OBS	2440	0340	34973	2785			15052													
		STD	2500	0334	3497	2785	0004551	2060	15059													
		OBS	T2933	0298	34950	2787			15118													
		STD	3000	0293	3494	2787	0004485	2306	15128													
		STD	4000	0237	3489	2787	0004473	2754	15278													
		OBS	4430	0217	34889	2788			15350													
		OBS	4527	0226	34890	2788			15367													



REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	OBS. INCL. INCHES	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NOCC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR. 1/10	CRUISE NO.			STATION NUMBER	DIR	HGT	PER		SEA	TYPE		AMT
31	855	ML	35000N	048000W		113	58	02	17	127	1967	E03	012	436	15	51	3	4		1	3	4	0014

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VP CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
	23	S12		274	160	150	7	14	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	PH	S.C.C.
		STD	0000	1828	3647	2634	0016915	0000	15141								
127		OBS	0000	1828	36466	2634			15141								
		STD	0010	1827	3647	2634	0016928	0017	15142								
		STD	0020	1826	3647	2635	0016952	0034	15143								
127		OBS	0023	1826	36465	2635			15144								
		STD	0030	1827	3647	2634	0017004	0051	15145								
127		OBS	0046	1829	36468	2634			15148								
		STD	0050	1829	3647	2634	0017115	0035	15149								
127		OBS	0069	1829	36464	2634			15151								
		STD	0075	1828	3646	2634	0017193	0128	15152								
127		OBS	0091	1826	36454	2635			15205								
		STD	0100	1825	3647	2635	0017168	0171	15206								
		STD	0125	1822	3648	2637	0017119	0214	15210								
127		OBS	0138	1821	36485	2638			15211								
		STD	0150	1812	3650	2641	0015613	0255	15211								
127		OBS	T0183	1790	36519	2648			15211								
		STD	0200	1767	3651	2648	0016340	0339	15211								
		STD	0250	1773	3647	2648	0016441	0421	15216								
		STD	0300	1748	3642	2652	0016259	0503	15216								
127		OBS	T0368	1699	36385	2661			15212								
		STD	0400	1674	3633	2661	0019651	0602	15204								
127		OBS	0459	1604	36186	2667			15196								
		STD	0500	1526	3605	2674	0014666	0614	15177								
127		OBS	T0552	1429	35690	2683			15153								
		STD	0600	1327	3575	2694	0012939	0952	15128								
		STD	0700	1135	3550	2710	0011250	1073	15073								
127		OBS	0744		35413												
		STD	0800	0969	3533	2726	0009710	1178	15025								
		STD	0900	0830	3521	2741	0008440	1266	14991								
127		OBS	T0940	0752	35174	2746			14979								
		STD	1000	0723	3512	2753	0007279	1347	14966								
		STD	1100	0638	3514	2763	0006290	1415	14944								
127		OBS	1191	0576	35128	2771			14941								
		STD	1200	0571	3513	2771	0005554	1474	14935								
		STD	1300	0521	3511	2776	0005099	1527	14935								
		STD	1400	0490	3509	2778	0004911	1577	14919								
127		OBS	T1452	0480	35081	2778			14944								



REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER		
CTRY CODE	ID. NO.					10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT
31	855	ML	35115N	048210W	113	58	02	20	130	1967	E03	014	4389	15	35	4	2		X1	8	5		0014
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
					COLOR CODE	TRANS. m	DIR.	SPEED OF FORCE	BARO- METER (mb)		DRY BULB	WET BULB											
							03	507	220	156	119	7	13										
MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - dl/l	TOTAL-P µg - dl/l	NO <sub>2</sub> -N µg - dl/l	NO <sub>3</sub> -N µg - dl/l	SiO <sub>4</sub> -Si µg - dl/l	pH	S C C						
		STD	0000	1818	3645	2635	0016807	0000	15187														
130		OBS	0000	1818	36448	2635			15187														
		STD	0010	1817	3645	2636	0016809	0017	15189														
		STD	0020	1816	3645	2636	0016825	0034	15190														
130		OBS	0025	1816	36451	2636			15191														
		STD	0030	1817	3645	2636	0016667	0050	15192														
130		OBS	0049	1820	36451	2635			15196														
		STD	0050	1820	3645	2635	0017009	0084	15196														
130		OBS	0074	1821	36454	2635			15201														
		STD	0075	1821	3645	2635	0017099	0127	15201														
130		OBS	0098	1820	36456	2635			15204														
		STD	0100	1820	3646	2635	0017150	0170	15205														
		STD	0125	1821	3646	2635	0017254	0213	15209														
130		OBS	0147	1822	36457	2635			15213														
		STD	0150	1820	3646	2636	0017294	0256	15213														
130		OBS	T0198	1792	36517	2647			15213														
		STD	0200	1792	3652	2647	0016401	0340	15214														
		STD	0250	1792	3647	2643	0016914	0424	15221														
		STD	0300	1769	3642	2645	0016878	0508	15222														
130		OBS	T0391	1672	36336	2662			15207														
		STD	0400	1648	3629	2664	0015345	0669	15201														
130		OBS	0488	1489	36020	2680			15163														
		STD	0500	1488	3603	2681	0013987	0816	15165														
130		OBS	T0584	1462	36065	2684			15171														
		STD	0600	1428	3601	2692	0013142	0951	15162														
		STD	0700	1231	3573	2711	0011421	1074	15109														
		STD	0800	1056	3549	2725	0010094	1182	15062														
		STD	0900	0903	3531	2738	0008923	1277	15020														
		STD	1000	0772	3518	2748	0007901	1361	14986														
130		OBS	1005	0766	35170	2748			14984														
		STD	1100	0664	3513	2754	0006753	1434	14960														
		STD	1200	0578	3509	2767	0005918	1498	14942														
130		OBS	1270	0530	35074	2772			14934														
		STD	1300	0513	3507	2774	0005265	1554	14932														
		STD	1400	0469	3504	2776	0004986	1605	14930														
		STD	1500	0447	3503	2778	0004861	1654	14938														
130		OBS	T1536	0444	35025	2778			14942														

REFERENCE C&G CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DIR. INDIC.	MARSSEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER	
						10'	1"	MO.	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT PER	SEA		TYPE
31	355	ML	34° 45' N	048° 10' W		113	74.0	02	11	131	1967	E03	015	457.4	15	33	4	3	X1	8	14	0015

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. M	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		03	510	320	114	081	7	13	

MESSNGR TIME OF HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ ρ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>4</sub> -Si μg - dl/l	pH	3 CO
		STD	0000	18.29	3650	2636	0016713	0000	15191								
131		OBS	0000	18.29	36497	2636			15191								
		STD	0010	18.26	3650	2636	0016737	0017	15193								
		STD	0020	18.28	3649	2636	0016770	0023	15194								
131		OBS	0026	18.27	36492	2636			15195								
		STD	0030	18.28	3649	2636	0016824	0050	15196								
		STD	0050	18.30	3649	2636	0016943	0084	15200								
131		OBS	0050	18.31	36493	2636			15200								
		STD	0075	18.24	3650	2635	0017064	0127	15204								
131		OBS	0075	18.22	36495	2635			15204								
		STD	0100	18.29	3650	2636	0017059	0169	15208								
131		OBS	0100	18.29	36498	2636			15208								
		STD	0125	18.31	3650	2636	0017175	0212	15212								
131		OBS	0140	18.32	36500	2636			15216								
		STD	0150	18.31	3650	2636	0017268	0255	15216								
131		OBS	0197	17.88	36517	2649			15212								
		STD	0200	17.88	3651	2648	0016212	0339	15212								
		STD	0250	17.75	3648	2647	0016582	0421	15216								
		STD	0300	17.47	3640	2649	0016480	0504	15215								
131		OBS	0330	16.56	36401	2662			15202								
		STD	0400	16.43	3647	2664	0015376	0663	15199								
131		OBS	0405	15.13	36027	2675			15170								
		STD	0500	14.96	3600	2677	0014378	0812	15167								
131		OBS	0578	13.98	35866	2688			15147								
		STD	0630	13.45	3580	2694	0012935	0949	15132								
		STD	0700	11.25	3554	2717	0010772	1067	15070								
		STD	0800	09.42	3535	2734	0009097	1166	15019								
		STD	0900	07.96	3521	2745	0007692	1251	14974								
131		OBS	0948	07.39	35163	2751			14964								
		STD	1000	07.01	3516	2756	0006935	1326	14955								
		STD	1100	06.35	3516	2765	0005123	1391	14948								
		STD	1200	05.89	3515	2771	0003486	1449	14942								
131		OBS	1234	05.78	35153	2772			14943								
		STD	1300	05.35	3514	2777	0005063	1502	14942								
		STD	1400	05.01	3510	2779	0004846	1551	14944								
131		OBS	1440	04.83	35110	2780			14948								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE CODE	ID. NO.					10"	1"	MO		DAY	HR.1/10			CRUISE NO.	STATION NUMBER	DIR		HGT PER	SEA		TYPE
31	855	ML	35 54.4N	048 00.0W	113	58	02	23	126	1967	E03	016	4389	15	31	4	2	X	5	18	0016

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		05	S10	1061	17.9	16.2	7	14	

MESSNGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-t	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> ?	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg-at/l	TOTAL-P μg-at/l	NO <sub>2</sub> -N μg-at/l	NO <sub>3</sub> -N μg-at/l	SiO <sub>4</sub> -Si μg-at/l	pH	χ C C
		STD	0000	1816	3650	2639	0016411	0000	15187								
126	065	0000	0000	1816	36496	2639			15187								
		STD	0010	1816	3650	2639	0016446	0016	15189								
		STD	0020	1816	3650	2639	0016489	0033	15191								
126	065	0025	0025	1816	36495	2639			15192								
		STD	0030	1817	3649	2639	0016575	0049	15192								
		STD	0030	1817	3649	2639	0016597	0053	15195								
126	065	0054	0054	1819	36489	2639			15197								
		STD	0075	1819	3650	2639	0016754	0125	15201								
126	065	0078	0078	1819	36496	2639			15201								
		STD	0100	1818	3650	2639	0016820	0166	15204								
126	065	0103	0103	1818	36495	2639			15205								
		STD	0125	1818	3650	2639	0016895	0217	15209								
		STD	0150	1818	3650	2639	0016971	0251	15213								
126	065	0150	0150	1818	36498	2639			15214								
		STD	0200	1790	3651	2647	0016426	0334	15215								
126	065	T0208	T0208	1785	36506	2648			15218								
		STD	0250	1773	3649	2650	0016303	0416	15216								
		STD	0300	1746	3646	2650	0016101	0497	15216								
		STD	0400	1666	3634	2662	0015585	0656	15207								
126	065	T0414	T0414	1653	36294	2664			15205								
		STD	0500	1643	3611	2674	0014630	0807	15183								
126	065	0514	0514	1624	36063	2675			15179								
		STD	0520	1601	3587	2687	0013567	0946	15151								
126	065	T0515	T0515	1575	35827	2691			15145								
		STD	0700	1144	3549	2709	0011492	1074	15076								
		STD	0800	0923	3523	2729	0009649	1179	15016								
126	065	0817	0817	0891	35199	2731			15001								
		STD	0900	1766	3517	2742	0017741	1276	14967								
		STD	1000	0651	3513	2761	0015398	1337	14937								
126	065	T1016	T1016	0510	35126	2763			14932								
		STD	1100	0573	3511	2767	0005155	1397	14905								
		STD	1200	0527	3509	2774	0005196	1452	14901								
126	065	1276	1276	0495	35073	2776			14901								
		STD	1300	0487	3507	2777	0004906	1502	14901								
		STD	1400	0461	3506	2779	0004731	1550	14907								
		STD	1500	0447	3505	2781	0004715	1598	14906								
126	065	T1536	T1536	0440	3504	2780			14903								

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	OBS. MOON	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31	855	ML	35050N	047595W		113	57	02	24	125	1967	E03	017	4023	18	21	4	3	X1	3	6	0017
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
		COLOR CODE		TRANSL. (m)		SPEED OR FORCE		DRY BULB		WET BULB												
				21		528		220		179		14										
MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 <sup>3</sup>	Σ Δ σ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - dl/l	TOTAL-P µg - dl/l	NO <sub>2</sub> -N µg - dl/l	NO <sub>3</sub> -N µg - dl/l	SiO <sub>4</sub> -Si µg - dl/l	pH	3 CCTD					
		STD	0000	1814	3650	2641	0016313	0000	15187													
	125	OBS	0000	1814	3650.3	2641			15187													
		STD	0010	1814	3650	2640	0016360	0016	15188													
		STD	0020	1813	3650	2640	0016388	0033	15190													
	125	OBS	0027	1813	36494	2640			15191													
		STD	0030	1813	3649	2640	0016467	0049	15192													
		STD	0050	1816	3650	2639	0016587	0082	15196													
	125	OBS	0053	1816	3649.5	2639			15196													
		STD	0075	1817	3649	2639	0016716	0124	15200													
	125	OBS	0080	1817	36493	2639			15201													
		STD	0100	1813	3649	2640	0016720	0166	15203													
	125	OBS	0108	1812	36491	2640			15204													
		STD	0125	1812	3649	2640	0016798	0208	15207													
		STD	0150	1812	3649	2640	0016885	0250	15211													
	125	OBS	0162	1812	36488	2640			15213													
		STD	0200	1779	3649	2648	0016274	0333	15209													
	125	OBS	T0215	1767	36493	2651			15208													
		STD	0250	1757	3648	2653	0015998	0413	15211													
		STD	0300	1733	3643	2655	0015966	0493	15212													
		STD	0400	1651	3629	2664	0015413	0650	15202													
	125	OBS	T0434	1612	36218	2667			15195													
		STD	0500	1520	3605	2675	0014537	0800	15175													
	125	OBS	0549	1442	35916	2682			15157													
		STD	0600	1349	3576	2690	0013307	0939	15133													
	125	OBS	T0662	1232	35591	2700			15102													
		STD	0700	1137	3548	2710	0011433	1063	15074													
		STD	0800	0922	3525	2730	0009486	1167	15010													
	125	OBS	0896	0760	35106	2744			14963													
		STD	0900	0755	3511	2744	0008007	1255	14962													
		STD	1000	0653	3509	2758	0006706	1328	14936													
		STD	1100	0572	3508	2767	0005761	1391	14924													
	125	OBS	T1132	0550	35078	2770			14919													
		STD	1200	0523	3506	2772	0005360	1446	14919													
		STD	1300	0488	3505	2775	0005066	1498	14921													
		STD	1400	0459	3504	2778	0004850	1548	14926													
	125	OBS	1446	0447	35033	2778			14929													
		STD	1500	0435	3503	2780	0004668	1596	14933													
		STD	1750	0397	3504	2784	0004361	1708	14959													
	125	OBS	T1768	0396	35037	2784			14962													

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	DRIFT INDIC	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER		
CTRY CODE	IG. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPI	AMT			
31	855	ML	34545N	046000W		113	48	02	25	132	1967	E03	018	4572	18	23	4	2		X1	6	6	0018		
		WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
		COLOR CODE		TRANS. IM		DIR.		SPEED OR FORCE		METER (mbs)		DRY BULB		WET BULB											
								20		522		213		197		188		7		14					

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}^t$	$\frac{\Delta \rho}{\rho}$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S C
		STD	0000	1824	3651	2639	0016493	0000	15190								
132		OBS	0000	1824	36511	2639			15190								
		STD	0010	1824	3651	2639	0016528	0017	15192								
		STD	0020	1824	3651	2639	0016563	0033	15193								
132		OBS	0029	1824	36511	2639			15195								
		STD	0030	1824	3651	2639	0016601	0050	15195								
		STD	0050	1826	3651	2638	0016714	0083	15199								
132		OBS	0057	1827	36512	2638			15200								
		STD	0075	1826	3651	2638	0016812	0125	15203								
132		OBS	0086	1825	36505	2638			15204								
		STD	0100	1824	3650	2638	0016903	0467	15206								
132		OBS	0115	1822	36501	2638			15208								
		STD	0125	1818	3651	2640	0016796	0409	15209								
		STD	0150	1807	3652	2644	0016549	0451	15210								
132		OBS	0172	1794	36521	2647			15210								
		STD	0200	1771	3649	2650	0016085	0332	15207								
132		OBS	0229	1747	36455	2653			15204								
		STD	0250	1751	3643	2655	0015773	0412	15203								
		STD	0300	1694	3636	2659	0015535	0490	15199								
		STD	0400	1619	3624	2667	0015073	0643	15192								
132		OBS	T0459	1575	36161	2671			15187								
		STD	0500	1491	3601	2679	0014197	0790	15165								
132		OBS	0572	1347	35759	2690			15128								
		STD	0600	1292	3567	2695	0012806	0325	15113								
132		OBS	T0686	1125	35442	2709			15067								
		STD	0700	1089	3541	2713	0011052	1044	15056								
		STD	0800	0863	3523	2738	0008648	1143	14988								
		STD	0900	0694	3510	2753	0007120	1421	14938								
132		OBS	0923	0663	35081	2755			14929								
		STD	1000	0607	3507	2762	0006214	1488	14920								
		STD	1100	0547	3505	2768	0005645	1347	14912								
132		OBS	T1161	0517	35048	2771			14910								
		STD	1200	0507	3505	2773	0005228	1402	14912								
		STD	1300	0483	3505	2775	0005012	1453	14919								
		STD	1400	0462	3505	2778	0004840	1502	14927								
132		OBS	1477	0447	35047	2779			14934								
		STD	1500	0443	3505	2780	0004860	1550	14936								
		STD	1750	0425	3506	2785	0004345	1662	14964								
132		OBS	T1746	0404	35069	2786			14970								

Table III. Observed and interpolated oceanographic data for stations taken by USCGC ANDROSCOGGIN at ocean station ECHO, 1-20 June 1967, prepared from NODC listing No. 31-1087 AI.

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
CTRY CODE	ID. NO.					10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR				HGT PER	SEA
31	1087	A1	34510N	047530W	113	47	06	01	1967	E03	001	4755	15	4	4		X5	7	6	0001	
				WATER		WIND		BARO-METER		AIR TEMP. °C		VIS CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
				COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		METER (mbars)		DRY BULB		WET BULB					
						22		516		104		221		204		7		14			
MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SIO <sub>4</sub> -Si μg - dl/l	pH	S C				
194		STD	0000	2153	3644	2546	0025274	0000	15279												
		OBS	0000	2153	3644	2546			15279												
		STD	0010	2142	3643	2549	0025080	0025	15276												
		STD	0020	2123	3642	2553	0044677	0050	15274												
194		OBS	0020	2110	36420	2557			15271												
		STD	0030	2090	3642	2562	0043854	0074	15267												
		STD	0050	2014	3644	2584	0041569	0120	15250												
194		OBS	0050	2014	36439	2584			15250												
		STD	0075	1930	3639	2617	0015785	0171	15233												
194		OBS	0077	1924	3639	2623			15232												
		STD	0100	1855	3633	2632	0017452	0216	15215												
194		OBS	0102	1850	36324	2633			15214												
		STD	0125	1821	3631	2639	0016868	0259	15210												
		STD	0150	1797	3631	2645	0016382	0301	15207												
194		OBS	0152	1795	36306	2645			15206												
		STD	0200	1774	3630	2650	0016083	0334	15203												
194		OBS	0206	1771	36455	2651			15206												
		STD	0200	1764	3646	2650	0016008	0363	15213												
		STD	0300	1736	3646	2651	0016308	0344	15213												
		STD	0400	1653	3642	2652	0015582	0704	15196												
194		OBS	0405	1621	36151	2663			15193												
		STD	0500	1453	3592	2682	0014035	0352	15152												
194		OBS	0503	1448	35925	2683			15151												
		STD	0600	1284	3563	2697	0012615	0785	15112												
194		OBS	0600	1289	35688	2697			15112												
		STD	0700	1043	3514	2734	0006795	1072	14962												
194		OBS	0700	1044	34785	2747			14857												
		STD	0800	0843	3476	2747	0017209	1472	14857												
		STD	0900	0734	3471	2753	0006522	1641	14827												
		STD	1000	0571	3467	2757	0006067	1804	14817												
194		OBS	1100	0370	34667	2757			14517												
		STD	1100	0343	3473	2760	0005784	1964	14544												
		STD	1200	0213	3479	2763	0005682	1424	14870												
194		OBS	1257	0224	34809	2765			14886												
		STD	1300	0144	3485	2766	0005741	1482	14544												
		STD	1400	0042	3491	2766	0005571	1235	14417												
		STD	1500	0051	3497	2772	0005354	1043	14336												
194		OBS	1536	0054	3493	2774			14346												



REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DUR.	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE NO.	STATION NUMBER					10'	1'	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
511	087	A1	34573N	047546W	113	47	05	02	123	1967	204	002	4309	16	23	4			A2	3	1	0002	

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		21	215	166	217	201	7	14	

MESSNGR TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	S C C
122		STD	0000	2060	3644	2572	0022665	0000	15254								
		OBS	0000	2060	36436	2572			15254								
		STD	0010	2051	3644	2574	0022666	0023	15254								
		STD	0020	2042	3644	2576	0022470	0045	15253								
123		OBS	0026	2036	36437	2578			15252								
		STD	0031	2027	3646	2587	0021542	0067	15246								
		STD	0050	1911	3654	2619	0018566	0107	15223								
123		OBS	0052	1904	36546	2621			15222								
		STD	0075	1869	3650	2631	0017475	0150	15214								
123		OBS	0178	1859	36548	2633			15213								
		STD	0100	1812	3650	2641	0016662	0195	15203								
123		OBS	0103	1808	36499	2642			15202								
		STD	0125	1792	3650	2646	0016272	0236	15201								
		STD	0150	1776	3650	2649	0016042	0277	15201								
123		OBS	0155	1776	36494	2649			15201								
		STD	0200	1768	3650	2651	0015971	0357	15200								
123		OBS	T0207	1767	36496	2652			15207								
		STD	0250	1757	3648	2653	0016001	0437	15211								
		STD	0300	1744	3646	2654	0016243	0517	15215								
		STD	0400	1720	3641	2657	0016116	0678	15224								
123		OBS	T0416	1716	36406	2657			15225								
		STD	0500	1559	3606	2667	0015020	0835	15187								
123		OBS	0519	1514	35982	2671			15175								
		STD	0600	1276	3563	2694	0012817	1475	15108								
123		OBS	T0620	1214	35546	2700			15088								
		STD	0700	0800	3500	2730	0006420	1684	14740								
		STD	0800	0444	3450	2745	0007175	1455	14615								
123		OBS	0834	0372	34537	2747			14788								
		STD	0900	0370	3454	2751	0006610	1434	14600								
		STD	1000	0375	3467	2757	0006120	1446	14610								
123		OBS	1046	0376	34700	2760			14527								
		STD	1100	0394	3470	2762	0001849	1357	14540								
		STD	1200	0420	3480	2764	0003776	1416	14674								
		STD	1300	0442	3484	2768	0005610	1472	14700								
123		OBS	1318	0445	34876	2768			14904								
		STD	1400	0448	3494	2771	0003435	1526	14920								
		STD	1500	0452	3494	2774	0003246	1581	14939								
123		OBS	T1601	0456	35010	2776			14956								

REFERENCE		SHIP CODE	LATITUDE ° / 10'	LONGITUDE ° / 10'	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NDDC STATION NUMBER		
CITY CODE	ID. NO.					10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT PER	SEA
311	087	A1	35020N	0+6230W	113	58	06	03	198	1967	E04	003	4755	06	04	0	12	X2	4	8	0003

WATER		WIND		BARO-METER (mba)	AIR TEMP. °C		VIS. CODE	ND. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
			02	S10	213	206	183	7	10

MESSAGE TIME of HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> <sup>0</sup>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg · ml <sup>-1</sup>	TOTAL-P μg · ml <sup>-1</sup>	NO <sub>3</sub> -N μg · ml <sup>-1</sup>	NO <sub>2</sub> -N μg · ml <sup>-1</sup>	SiO <sub>4</sub> -Si μg · ml <sup>-1</sup>	pH	S C C
		STD	0000	2094	3645	2563	0023678	0000	15263								
198		OBS	0000	2094	36447	2563			15263								
		STD	0010	2076	3645	2568	0023257	0023	15260								
		STD	0020	2051	3645	2574	0022658	0046	15255								
198		OBS	0027	2030	36444	2580			15251								
		STD	0030	2015	3646	2585	0021668	0069	15247								
		STD	0050	1933	3652	2611	0019253	0110	15229								
198		OBS	0053	1923	36523	2614			15227								
		STD	0075	1877	3655	2628	0017788	0156	15218								
198		OBS	0079	1870	36549	2630			15216								
		STD	0100	1837	3655	2638	0016874	0199	15210								
198		OBS	0105	1831	36554	2640			15210								
		STD	0125	1829	3655	2640	0016770	0241	15212								
		STD	0150	1823	3655	2642	0016714	0283	15215								
198		OBS	0158	1821	36544	2642			15215								
		STD	0200	1802	3653	2646	0016531	0366	15217								
198		OBS	T0211	1797	36524	2646			15217								
		STD	0250	1784	3651	2648	0016422	0449	15219								
		STD	0300	1766	3649	2651	0016325	0530	15222								
		STD	0400	1731	3645	2657	0016133	0693	15228								
198		OBS	T0407	1729	36445	2657			15228								
		STD	0500	1614	3619	2665	0015614	0851	15206								
198		OBS	0503	1638	36180	2665			15204								
198		OBS	T05H1	1407	35787	2680			15149								

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	DEPTH FOOT	MARSDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10"	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER.		SEA	TYPE	
311087	AI		3452 N	04803 W		113	48	06	04	127	1967	E04	004	4705	05	05	4		X1	2	4	0004	
						WATER		WIND		BARO- METER		AIR TEMP. °C											
						COLOR CODE	TRANS. UNIT	DIR.	SPEED OR FORCE	METER (mbs)	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
								04	S17	281	181	136	7	10									
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	S Δ D DYN. W. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	TOTAL-P µg - at/l	NO <sub>2</sub> -N µg - at/l	NO <sub>3</sub> -N µg - at/l	SI O <sub>4</sub> -S µg - at/l	pH	S C C						
		STD	0000	2033	3642	2578	0022282	0000	15247														
127		OBS	0000	2033	36423	2578			15247														
		STD	0010	2002	3643	2586	0021483	0022	15240														
		STD	0020	1968	3644	2596	0020593	0043	15233														
127		OBS	0024	1954	36452	2601			15230														
		STD	0030	1925	3648	2610	0019272	0063	15223														
127		OBS	0047	1864	36520	2629			15209														
		STD	0050	1860	3652	2630	0017461	0100	15209														
127		OBS	0072	1835	36528	2637			15205														
		STD	0075	1832	3653	2638	0016825	0142	15205														
127		OBS	0095	1816	36526	2642			15203														
		STD	0100	1811	3652	2643	0016469	0184	15203														
		STD	0125	1792	3650	2646	0016250	0225	15201														
127		OBS	0142	1783	36498	2648			15201														
		STD	0150	1782	3650	2648	0016115	0465	15202														
127		OBS	0189	1775	36500	2650			15207														
		STD	0200	1773	3650	2650	0016084	0346	15208														
		STD	0250	1766	3649	2651	0016152	0427	15214														
		STD	0300	1759	3648	2652	0016213	0507	15220														
127		OBS	T0372	1748	36465	2654			15228														
		STD	0400	1734	3643	2655	0016290	0670	15228														
127		OBS	0457	1705	36370	2657			15228														
		STD	0500	1627	3618	2661	0015981	0831	15210														
127		OBS	T0532	1545	35976	2664			15187														

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	OBS. INSTR.	MARSEEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE NO.	NO.					10'	1'	MO	DAY	HR		10'	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE	
711	057	AI	35 11 N	40 50 W		113	06	06	178	1967	E04	005	2000	12	05	4	0	X1	8	4	0005		

WATER		WIND		BAROMETER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB				
				30	51.4	24.9	195	185	7	14

MESSAGE TIME (HR 1/10)	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	S.S.D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> (ml)	PO <sub>4</sub> -P (μg - ml)	TOTAL-P (μg - ml)	NO <sub>2</sub> -N (μg - ml)	NO <sub>3</sub> -N (μg - ml)	SiO <sub>4</sub> -Si (μg - ml)	pH	χ C
		STD	0000	20.31	30.45	2580	00.2136	0000	15247								
178	085	0000		20.31	30.45	2581			15247								
		STD	0010	20.25	30.45	2581	00.2196	0000	15247								
		STD	0020	20.21	30.44	2583	00.1868	0044	15247								
174	085	0025		20.18	30.44	2583			15247								
		STD	0030	19.77	30.46	2595	00.2071	0005	15237								
172	085	0040		19.13	30.49	2615			15220								
		STD	0050	19.04	30.50	2617	00.1868	0045	15221								
174	085	0050		18.77	30.51	2620			15218								
		STD	0075	18.64	30.52	2628	00.1775	0150	15211								
172	085	0090		18.53	30.52	2632			15213								
		STD	0110	18.38	30.52	2636	00.1711	0194	15210								
		STD	0125	18.27	30.51	2642	00.1653	0230	15209								
174	085	0135		17.95	30.50	2644			15209								
		STD	0150	17.41	30.51	2647	00.1641	0277	15205								
174	085	0151		17.28	30.51	2650			15206								
		STD	0200	17.25	30.51	2651	00.1603	0358	15204								
		STD	0250	17.00	30.50	2652	00.1609	0438	15215								
		STD	0300	17.02	30.50	2653	00.1619	0418	15221								
175	085	0330		17.55	30.48	2654			15227								
		STD	0400	17.34	30.44	2655	00.1625	0081	15239								
174	085	0420		17.11	30.39	2658			15227								
173	080	0530		16.07	35.73	2725											
		STD	0550	14.25	35.75	2771	00.1502		15154								
174	080	0600			35.50												
		STD	0700	11.72	30.40	2701	00.1333		15056								
		STD	0800	09.50	30.20	2707	00.1018		15020								
179	085	0820		08.41	30.16	2708			15002								
		STD	0900	07.45	30.07	2743	00.0611		14957								
		STD	1000	05.44	30.00	2757	00.0661		14913								
174	080	1012		05.79	30.02	2759			14909								
		STD	1100	04.07	30.00	2769	00.0544		14895								
175	085	1110		04.34	30.00	2771			14899								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	SURT INCH	MARSDES SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
31	087	A1	3453 N	04807 W		113	48	06	05	136	1967	ED4	006	4479	14	05	2	2		X1	2	0	0006
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	METER (mbs)	DRY BULB	WET BULB	VIS. CODE										
								05	S11	237	200	150	7										

MESSINGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C C
		STD	0000	1995	3644	2589	0021175	000	15237								
136		OBS	0000	1995	3644	2589			15237								
		STD	0010	1991	3644	2590	0021113	0021	15237								
		STD	0020	1987	3644	2591	0021054	0042	15236								
136		OBS	0024	1985	36441	2592			15238								
		STD	0030	1944	3646	2604	0019867	0063	15228								
136		OBS	0047	1864	36511	2629			15209								
		STD	0050	1862	3652	2630	0017518	0100	15209								
136		OBS	0071	1846	36559	2637			15208								
		STD	0075	1841	3655	2638	0016658	1143	15217								
136		OBS	0094	1817	36526	2642			15205								
		STD	0100	1814	3653	2642	0016505	0485	15204								
		STD	0125	1801	3652	2645	0016311	0226	15204								
136		OBS	0141	1793	36518	2647			15204								
		STD	0150	1789	3652	2648	0016150	0266	15204								
136		OBS	T0186	1773	36503	2651			15206								
		STD	0200	1771	3650	2651	0016001	0347	15207								
		STD	0250	1762	3649	2652	0016057	0427	15213								
		STD	0300	1755	3648	2653	0016123	0507	15216								
136		OBS	T0372	1744	36465	2655			15227								
		STD	0400	1737	3645	2655	0016250	0569	15230								
136		OBS	0457	1698	36366	2659			15226								
		STD	0500	1643	3626	2663	0015768	0729	15216								
136		OBS	T0536	1587	36146	2668			15203								
		STD	0600	1400	3585	2681	0013711	0777	15151								
		STD	0700	1136	3547	2704	0011487	1133	15372								
136		OBS	0702		35468												
		STD	0800	0918	3525	2731	0009418	1237	15005								
136		OBS	T0841	0776	35117	2742			14967								
		STD	0900	0757	3511	2744	0006016	1294	14962								
		STD	1000	0664	3507	2754	0007052	1371	14942								
		STD	1100	0556	3503	2761	0006349	1437	14927								
		STD	1200	0524	3499	2766	0005694	1498	14915								
136		OBS	1220	0513	34981	2767			14917								
		STD	1300	0476	3449	2771	0005360	1554	14915								
136		OBS	T1366	0453	34992	2774			14917								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH M	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
311	087	AI	3501 N	04805 W	113	58	06	07	130	1967	E04	007	4206	14	06	2	5		X2	4	5		0007
WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
COLOR CODE		TRANS. UNIT		DIR.		SPEED OR FORCE		METER (mbs)		DAY BULB		WET BULB		VIS. CODE									
						06		512		241		189		166		7		14					

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$ ?	$\Sigma \Delta D$ OBS. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{at/l}$	pH	S C C
		STD	0000	1992	3645	2591	0021049	0000	15236								
130		OBS	0000	1992	36450	2591			15236								
		STD	0010	1991	3645	2591	0021060	0021	15238								
		STD	0020	1988	3645	2592	0021022	0042	15238								
130		OBS	0025	1986	36447	2592			15239								
		STD	0030	1985	3644	2592	0021056	0063	15239								
130		OBS	0048	1968	36434	2596			15237								
		STD	0050	1967	3643	2596	0020750	0105	15237								
130		OBS	0073	1916	36426	2609			15227								
		STD	0075	1903	3644	2613	0019184	0155	15224								
130		OBS	0096	1799	36522	2646			15199								
		STD	0100	1796	3652	2646	0016113	0199	15198								
		STD	0125	1782	3651	2649	0015941	0239	15198								
130		OBS	0144	1773	36507	2651			15199								
		STD	0150	1771	3651	2651	0015797	0279	15199								
130		OBS	T0193	1760	36494	2653			15203								
		STD	0200	1759	3649	2653	0015800	0358	15204								
		STD	0250	1751	3648	2654	0015852	0437	15209								
		STD	0300	1743	3647	2656	0015901	0516	15215								
130		OBS	0379		36436												
		STD	0400	1726	3643	2656	0016174	0677	15226								
130		OBS	0470	1715	36393	2656			15234								
		STD	0500	1650	3626	2662	0015928	0837	15218								
130		OBS	T0558	1527	36031	2672			15187								
		STD	0600	1439	3589	2681	0014244	0986	15164								
		STD	0700	1241	3559	2699	0012634	1122	15111								
130		OBS	0743	1161	35473	2705			15089								
		STD	0800	1042	3529	2712	0011296	1442	15094								
		STD	0900	0859	3506	2725	0010011	1349	15001								
130		OBS	0929		35019												
		STD	1000	0711	3503	2745	0008046	1439	14960								
		STD	1100	0596	3505	2762	0006367	1511	14932								
130		OBS	1162	0545	35051	2768			14921								
		STD	1200	0519	3505	2771	0005378	1570	14917								
		STD	1300	0475	3504	2776	0004962	1621	14916								
130		OBS	T1393	0464	35027	2776			14927								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRAFT INCHES	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER			
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT		
311	087	AI	3459 N	047595W	113	47	06	11	142	1967	E04	008	4572	28	00	0	0	X1	8	1	0008				
		WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
		COLDR CODE		TRANS. (MT)		DIR.		SPEED OR FORCE		METER (mbars)		DRY BULB		WET BULB		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
				00		500		244		239		189		7		16									

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-210°	Σ Δ ρ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	CO <sub>2</sub>
		ST0	0000	2067	3648	2573	0022755	0000	15257								
142		OBS	0000	2067	36478	2573			15257								
		STD	0010	2030	3647	2582	0021903	0022	15248								
		STD	0020	1999	3646	2590	0021227	0044	15241								
142		OBS	0025	1986	36455	2593			15239								
		STD	0030	1978	3644	2594	0020880	0065	15237								
		STD	0050	1944	3643	2602	0020177	0106	15231								
142		OBS	0050	1944	36430	2602			15231								
		STD	0075	1894	3650	2620	0018558	0154	15222								
142		OBS	0075	1894	36496	2620			15222								
		STD	0100	1854	3653	2632	0017443	0199	15215								
142		OBS	0100	1854	36528	2632			15215								
		STD	0125	1837	3653	2637	0017078	0243	15214								
		STD	0150	1816	3654	2643	0016619	0285	15213								
142		OBS	0150	1816	36540	2643			15213								
		STD	0200	1766	3648	2651	0016047	0366	15206								
142		OBS	0200	1766	36479	2651			15206								
		STD	0250	1748	3645	2653	0016021	0447	15208								
		STD	0300	1729	3641	2655	0015995	0527	15210								
		STD	0400	1692	3635	2658	0015944	0686	15215								
142		OBS	T0400	1692	36347	2658			15215								
142		OBS	0494	1504	35955	2672			15168								
		STD	0500	1491	3593	2673	0014777	0840	15164								
142		OBS	T0584	1312	35624	2687			15116								
		STD	0600	1265	3558	2693	0012923	0978	15103								
		STD	0700	1003	3533	2722	0010093	1093	15024								
		STD	0800	0794	3514	2741	0008197	1185	14960								
		STD	0900	0636	3501	2753	0006930	1261	14914								
142		OBS	T0965	0562	34965	2759			14894								
		STD	1000	0547	3497	2762	0006094	1326	14894								
		STD	1100	0510	3499	2768	0005549	1384	14896								
		STD	1200	0481	3502	2773	0005117	1437	14901								
142		OBS	1206	0479	35016	2773			14901								
		STD	1300	0464	3502	2775	0004952	1488	14911								
		STD	1400	0449	3503	2778	0004817	1536	14922								
142		OBS	T1448	0442	35028	2778			14927								
		STD	1500	0433	3502	2779	0004743	1584	14932								
		STD	1750	0396	3499	2780	0004690	1702	14958								
175		OBS	T1950	0372	34975	2782			14982								
		STD	2000	0367	3497	2782	0004645	1819	14988								
175		OBS	2415	0333	34964	2785			15044								
		STD	2500	0327	3496	2785	0004523	2048	15056								
175		OBS	T2846	0310	34949	2786			15108								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DAYS MO	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR		HGT PER	SEA	
31	087	AI	35030N	047590W	11	13	06	13	129	1967	E04	009	4397	14	34	0	0	X1	8	3	0009

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANSP. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		20	S12	193	228	200	7	13	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ OYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	STC
		STD	0000	2083	3628	2553	0024586	0000	15259								
		OBS	0000	2083	36282	2553			15259								
		STD	0010	2037	3632	2569	0023167	0024	15248								
		STD	0020	1998	3634	2581	0022070	0046	15240								
		OBS	0026	1977	36341	2586			15235								
		STD	0030	1968	3634	2589	0021354	0068	15233								
		STD	0050	1920	3631	2599	0020453	0110	15223								
		OBS	0051	1917	36305	2599			15222								
		STD	0075	1843	3626	2615	0019003	0159	15205								
		OBS	0076	1842	36262	2615			15205								
		STD	0100	1876	3625	2626	0017817	0205	15222								
		OBS	0101	1877	36557	2629			15222								
		STD	0125	1859	3655	2632	0017493	0249	15221								
		STD	0150	1841	3654	2637	0017197	0293	15220								
		OBS	0151	1840	36543	2637			15220								
		STD	0200	1828	3656	2641	0016944	0378	15224								
		OBS	0203		36560												
		STD	0250	1803	3653	2645	0016728	0462	15225								
		STD	0300	1766	3647	2650	0016453	0545	15222								
		STD	0400	1655	3628	2662	0015591	0706	15203								
		OBS	T0400	1655	36278	2662			15203								
		OBS	0495	1504	36001	2675			15169								
		STD	0500	1497	3599	2676	0014472	0856	15167								
		OBS	0589	1346	35769	2691			15130								
		STD	0600	1312	3572	2694	0012844	0992	15120								
		STD	0700	1030	3535	2719	0010424	1109	15034								
		OBS	0774	0855	35149	2732			14979								
		STD	0800	0748	3511	2738	0008480	1202	14962								
		STD	0900	0620	3499	2754	0006848	1280	14907								
		OBS	T0951	0554	34950	2759			14888								
		STD	1000	0535	3497	2763	0005946	1344	14889								
		STD	1100	0500	3501	2771	0005297	1400	14892								
		OBS	1189	0473	35022	2775			14896								
		STD	1200	0471	3502	2775	0004933	1451	14897								
		STD	1300	0444	3502	2778	0004692	1499	14903								
		STD	1400	0423	3501	2779	0004586	1546	14911								
		OBS	T1429	0418	35001	2779			14913								



REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARSOEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER		
CTRY CODE	ID. NO.					10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA	TYPE
31	1087	AI	35000N	048000W	113	58	06	17	175	1967	E04	010	4430	12	00	0	0	X2	B	8	0010	
				WATER		WIND		BARO-METER		AIR TEMP. °C			NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
				COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	METER (mb)	DRY BULB	WET BULB	VIS. CODE											
						06	510	207	233	217	7	13										
MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\frac{\sigma_t}{\sigma_{t0}}$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S/C					
		STD	0000	2096	3648	2565	0023477	0000	15264													
175		OBS	0000	2096	36482	2565			15264													
		STD	0010	2079	3647	2569	0023161	0023	15261													
		STD	0020	2056	3646	2574	0022678	0046	15257													
175		OBS	0026	2040	36459	2579			15254													
		STD	0030	2023	3647	2584	0021836	0068	15250													
		STD	0050	1952	3650	2605	0019898	0110	15234													
175		OBS	0052	1946	36499	2606			15233													
		STD	0075	1895	3656	2624	0018119	0158	15213													
175		OBS	0078	1890	36564	2626			15222													
		STD	0100	1870	3657	2631	0017541	0202	15210													
175		OBS	0104	1866	36569	2632			15220													
		STD	0125	1849	3657	2636	0017143	0246	15218													
		STD	0150	1829	3656	2641	0016785	0288	15217													
175		OBS	0156	1825	36559	2642			15216													
		STD	0200	1794	3652	2647	0016412	0371	15214													
175		OBS	T0211	1787	36513	2648			15214													
		STD	0250	1780	3651	2649	0016337	0453	15218													
		STD	0300	1771	3650	2651	0016338	0535	15224													
		STD	0400	1753	3649	2655	0016336	0698	15235													
175		OBS	T0409	1751	36488	2655			15236													
		STD	0500	1693	3636	2659	0016201	0861	15232													
175		OBS	0506	1680	36338	2661			15229													
		STD	0500	1440	3588	2680	0014336	1013	15164													
175		OBS	T0602	1435	35872	2680			15163													
		STD	0700	1187	3550	2702	0012238	1146	15091													
175		OBS	0746	0962	35229	2721			15024													
		STD	0800	0957	3523	2722	0010253	1259	15023													
		STD	0900	0736	3512	2748	0007633	1348	14954													
175		OBS	T0986	0597	35022	2759			14913													
		STD	1000	0559	3502	2761	0006305	1418	14912													
		STD	1100	0528	3502	2768	0005616	1477	14904													
		STD	1200	0468	3502	2775	0004939	1530	14896													
175		OBS	1217	0458	35015	2776			14894													

REFERENCE CFT CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NOCC STATION NUMBER
						10'	1'	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
311087	AI		35030N	048060W	113	58	06	20	130	1967	E04	011	2926	15	00	0	0	X1	3	2	0011
		WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIC. CODE							
				12		S13		234		222		206		7		14					

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\frac{\Delta \sigma}{\sigma}$ D. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - dl/l	TOTAL-P µg - dl/l	NO <sub>2</sub> -N µg - dl/l	NO <sub>3</sub> -N µg - dl/l	SiO <sub>4</sub> -Si µg - dl/l	pH	S C
		STD	0000	2108	3645	2559	0024042	0000	15267								
130		OBS	0000	2108	36447	2559			15267								
		STD	0010	2071	3645	2569	0023099	0024	15259								
		STD	0020	2043	3645	2577	0022417	0046	15253								
130		OBS	0024	2034	36451	2580			15251								
		STD	0030	2033	3645	2580	0022170	0069	15252								
130		OBS	0047	2014	36463	2586			15250								
		STD	0050	2005	3648	2589	0021345	0112	15248								
130		OBS	0071	1942	36557	2612			15235								
		STD	0075	1927	3655	2615	0018978	0163	15232								
130		OBS	0094	1870	36526	2628			15219								
		STD	0100	1862	3652	2630	0017694	0208	15217								
		STD	0125	1834	3651	2636	0017180	0252	15213								
130		OBS	0141	1821	36509	2639			15212								
		STD	0150	1817	3651	2640	0016860	0295	15212								
130		OBS	T0188	1801	36519	2645			15214								
		STD	0200	1796	3652	2646	0016489	0378	15215								
		STD	0250	1778	3650	2650	0016320	0460	15218								
		STD	0300	1763	3649	2652	0016223	0541	15221								
130		OBS	T0372	1748	36474	2655			15228								
		STD	0400	1745	3647	2655	0016287	0704	15232								
130		OBS	0464	1738	36464	2656			15241								
		STD	0500	1718	3641	2657	0016424	0867	15240								
130		OBS	T0556	1662	36303	2662			15231								
		STD	0600	1581	3613	2668	0015615	1028	15212								
		STD	0700	1367	3577	2687	0013680	1175	15155								
130		OBS	0746	1255	35613	2698			15124								
		STD	0800	1065	3541	2718	0010840	1299	15064								
		STD	0900	0782	3513	2742	0008254	1394	14972								
130		OBS	T0936	0702	35058	2748			14946								
		STD	1000	0626	3502	2756	0006854	1470	14926								
		STD	1100	0532	3499	2765	0005878	1533	14905								
130		OBS	1193	0472	34969	2770			14896								
		STD	1200	0471	3497	2771	0005316	1589	14896								
		STD	1300	0459	3497	2772	0005261	1642	14908								
		STD	1400	0447	3499	2775	0005056	1694	14920								
130		OBS	T1452	0441	35003	2777			14927								

Table IV. Observed and interpolated oceanographic data for stations taken by USCGC ABSECON at ocean station ECHO, 17 July-6 August 1967, prepared from NODC listing No. 31-1140 AZ.

REFERENCE CTRY CODE	SHIP NO.	SHIP CODE	LATITUDE °	LONGITUDE °	MARSDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER																											
						MO	DAY	HR.	MIN.		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER		SEA	TYPE		AMT																										
311140	AZ		35043N	047545W	113 57	07 17	137	1967	E-5	001		4654	16	0	3		X1	B	5	0001																												
<table border="1"> <thead> <tr> <th colspan="3">WATER</th> <th colspan="2">WIND</th> <th rowspan="2">BARO- METER (mb)</th> <th colspan="2">AIR TEMP. °C</th> <th rowspan="2">VIS CODE</th> <th rowspan="2">NO. OBS. DEPTHS</th> <th rowspan="2">SPECIAL OBSERVATIONS</th> </tr> <tr> <th>COLOR CODE</th> <th>TRANS. (m)</th> <th>DIR.</th> <th>SPEED OR FORCE</th> <th>DRY BULB</th> <th>WET BULB</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>07</td> <td>S02</td> <td>268</td> <td>26</td> <td>22</td> <td>7</td> <td>14</td> <td></td> <td></td> </tr> </tbody> </table>																					WATER			WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB			07	S02	268	26	22	7	14		
WATER			WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS																																						
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB		WET BULB																																										
		07	S02	268	26	22	7	14																																								
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. AL. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	$\frac{\partial C}{\partial t}$																															
		STD	0000	2438	3656	2473	0032236	0000	15351																																							
137		OBS	0000	2438	36563	2473			15351																																							
		STD	0010	2366	3649	2489	0030760	0031	15335																																							
		STD	0020	2287	3643	2507	0029037	0061	15316																																							
137		OBS	0027	2226	36393	2522			15301																																							
		STD	0030	2191	3638	2531	0026834	0089	15293																																							
		STD	0050	1991	3635	2583	0021932	0138	15243																																							
137		OBS	0053	1966	36345	2589			15236																																							
		STD	0075	1823	3638	2629	0017683	0188	15200																																							
137		OBS	0080	1802	36391	2635			15195																																							
		STD	0100	1768	3640	2644	0016294	0430	15189																																							
137		OBS	0107	1758	36408	2647			15187																																							
		STD	0125	1747	3639	2649	0015976	0470	15187																																							
		STD	0150	1724	3637	2652	0015694	0310	15184																																							
137		OBS	0160	1712	36360	2655			15182																																							
		STD	0200	1649	3623	2660	0015154	0387	15168																																							
137		OBS	T0212	1629	36196	2662			15163																																							
		STD	0250	1566	3608	2667	0014557	0461	15149																																							
		STD	0300	1474	3592	2676	0013891	0533	15126																																							
		STD	0400	1262	3561	2696	0012122	0663	15069																																							
137		OBS	T0427	1198	35528	2702			15051																																							
		STD	0500	0998	3528	2719	0009940	0773	14989																																							
137		OBS	0531	0925	35200	2725			14966																																							
		STD	0600	0790	3509	2738	0008151	0863	14925																																							
137		OBS	T0633	0738	35052	2743			14910																																							
		STD	0700	0690	3509	2752	0006423	0938	14903																																							
		STD	0800	0623	3512	2764	0005793	1001	14893																																							
137		OBS	0841	0597	35125	2768			14890																																							
		STD	0900	0558	3510	2771	0005177	1056	14884																																							
		STD	1000	0501	3506	2774	0004628	1106	14877																																							
137		OBS	T1048	0479	35042	2775			14875																																							
		STD	1100	0462	3503	2776	0004648	1154	14877																																							
		STD	1200	0435	3502	2779	0004474	1199	14882																																							
		STD	1300	0413	3500	2779	0004433	1244	14889																																							
137		OBS	1316	0410	34999	2780			14891																																							
		STD	1400	0397	3499	2780	0004391	1288	14899																																							
		STD	1500	0387	3498	2781	0004423	1332	14912																																							
137		OBS	T1590	0383	34970	2780			14925																																							

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	OBS. NO.	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
311	140	AZ	34572N	048041W	113	40	07	18	130	1967	E-5	002	4755	15	35	0	4	X1	8	12		0002	
WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS													
COLOR CODE		TRANS. IM		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIS CODE											
								32		S03		285		257		23		7		14			

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10 <sup>3</sup>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>4</sub> -Si μg - dl/l	pH	CO <sub>2</sub>
		STD	0000	2474	3657	2463	0033221	0000	15360								
130		OBS	0000	2474	36570	2463			15360								
		STD	0010	2362	3650	2491	0030576	0032	15334								
		STD	0020	2246	3645	2521	0027772	0061	15306								
130		OBS	0025	2187	36431	2536			15292								
		STD	0030	2106	3642	2558	0024277	0087	15271								
		STD	0050	1872	3639	2617	0018666	0130	15210								
130		OBS	0051	1864	36390	2619			15208								
		STD	0075	1789	3643	2641	0016542	0174	15191								
130		OBS	0076	1787	36426	2641			15191								
		STD	0100	1763	3643	2647	0015996	0215	15188								
130		OBS	0100	1763	36429	2647			15188								
		STD	0125	1756	3642	2648	0015998	0255	15190								
		STD	0150	1740	3641	2651	0015789	0294	15189								
130		OBS	0151	1739	36406	2652			15189								
		STD	0200	1678	3628	2657	0015404	0372	15177								
130		OBS	T0203	1672	36268	2657			15176								
		STD	0250	1577	3612	2668	0014494	0447	15153								
		STD	0300	1480	3597	2678	0013676	0518	15129								
		STD	0400	1298	3566	2692	0012493	0648	15082								
130		OBS	T0402	1295	35650	2692			15081								
130		OBS	0499	1134	35447	2708			15039								
		STD	0500	1131	3544	2708	0011136	0767	15038								
130		OBS	T0598	0880	35135	2728			14959								
		STD	0600	0876	3513	2728	0009211	0868	14958								
		STD	0700	0712	3505	2746	0007440	0952	14911								
130		OBS	0792	0598	35008	2758			14881								
		STD	0800	0592	3501	2759	0006187	1020	14880								
		STD	0900	0523	3500	2767	0005414	1078	14868								
130		OBS	0786	0478	35000	2772			14864								
		STD	1000	0473	3500	2773	0004903	1129	14864								
		STD	1100	0444	3500	2776	0004665	1177	14869								
		STD	1200	0421	3499	2778	0004492	1223	14876								
130		OBS	1229	0416	34992	2778			14879								
		STD	1300	0405	3499	2779	0004403	1267	14886								
		STD	1400	0395	3498	2780	0004438	1312	14898								
130		OBS	T1472	0392	34970	2779			14909								

REFERENCE		SHIP CODE	LATITUDE ° /10	LONGITUDE ° /10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	HODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR			
311	140	AZ	3459 N	04800 W	113 48	07 19	131	1967	E-5	003	4261	15	34	0	2	X1	8 14	0003	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		34	S07	298	27	24	8	14	

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	Si Cl
		STD	0000	2510	3656	2451	0034375	0000	15368								
131		OBS	0000	2510	36555	2451			15368								
		STD	0010	2412	3649	2475	0032060	0033	15346								
		STD	0020	2310	3644	2502	0029599	0064	15322								
131		OBS	0025	2259	36420	2515			15310								
		STD	0030	2197	3640	2531	0026850	0092	15295								
		STD	0050	1992	3635	2583	0021971	0141	15243								
131		OBS	0050	1992	36346	2583			15243								
		STD	0075	1834	3635	2624	0018185	0191	15203								
131		OBS	0075	1834	36347	2624			15203								
		STD	0100	1762	3636	2643	0016444	0235	15187								
131		OBS	0100	1762	36364	2643			15187								
		STD	0125	1744	3636	2647	0016124	0275	15165								
		STD	0150	1720	3636	2653	0015667	0315	15182								
131		OBS	0150	1720	36360	2653			15182								
131		OBS	T0199	1652	36211	2657			15168								
		STD	0200	1651	3621	2657	0015359	0393	15168								
		STD	0250	1572	3607	2665	0014769	0468	15150								
		STD	0300	1485	3593	2674	0014044	0540	15130								
		STD	0400	1286	3565	2694	0012276	0672	15076								
131		OBS	0401	1284	35650	2695			15077								
		STD	0500	1053	3533	2713	0010554	0786	15009								
131		OBS	0500	1053	35327	2713			15009								
		STD	0600	0791	3508	2737	0006254	0880	14925								
131		OBS	T0600	0791	35078	2737			14925								
		STD	0700	0672	3506	2753	0006784	0955	14895								
		STD	0800	0580	3505	2764	0005714	1017	14875								
131		OBS	0802	0578	35049	2764			14875								
		STD	0900	0520	3503	2770	0005168	1072	14867								
		STD	1000	0473	3502	2774	0004793	1122	14864								
131		OBS	T1006	0471	35014	2774			14865								
		STD	1100	0446	3501	2777	0004588	1169	14870								
		STD	1200	0425	3501	2779	0004418	1214	14876								
131		OBS	1256	0415	35006	2780			14883								
		STD	1300	0408	3500	2780	0004368	1258	14887								
		STD	1400	0396	3499	2780	0004400	1301	14899								
		STD	1500	0389	3497	2780	0004493	1346	14913								
131		OBS	T1506	0389	34973	2780			14914								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	LIGHT NO.	MARS DEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NOOC STATION NUMBER			
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	TYPE	AMT
		WATER		WIND		BARO- METER		AIR TEMP. °C			NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
		COLOR CODE	TRANS. LM1	DIR.	SPEED OR FORCE	METER (mbx)	DRY BULB	WET BULB	VIS. CODE																
					35	S03	282	26	23	7	14														
MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta D$ OYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{at/l}$	pH	SEA CODE								
		STD	0000	2562	3656	2435	0035881	0000	15380																
124		OBS	0000	2562	36558	2435			15380																
		STD	0010	2482	3651	2456	0033926	0035	15363																
		STD	0020	2381	3646	2482	0031439	0068	15340																
124		OBS	0025	2322	36439	2498			15326																
		STD	0030	2230	3641	2522	0027666	0097	15303																
		STD	0050	1948	3635	2595	0020834	0146	15231																
124		OBS	0050	1948	36353	2595			15231																
		STD	0075	1795	3639	2637	0016931	0193	15192																
124		OBS	0075	1795	36392	2637			15192																
		STD	0100	1768	3641	2645	0016251	0234	15189																
124		OBS	0100	1768	36410	2645			15189																
		STD	0125	1747	3639	2648	0016020	0275	15187																
		STD	0150	1716	3636	2654	0015560	0314	15181																
124		OBS	0151	1715	36361	2654			15181																
		STD	0200	1626	3620	2663	0014855	0390	15160																
124		OBS	T0201	1624	36195	2663			15160																
		STD	0250	1567	3609	2668	0014507	0464	15149																
		STD	0300	1495	3598	2676	0013901	0535	15133																
		STD	0400	1311	3570	2693	0012430	0666	15087																
124		OBS	0404	1303	35688	2694			15084																
		STD	0500	1073	3536	2712	0010668	0782	15017																
124		OBS	0503	1066	35353	2713			15015																
		STD	0600	0830	3510	2733	0008698	0879	14941																
124		OBS	T0607	0817	35088	2734			14937																
		STD	0700	0722	3509	2748	0007294	0959	14915																
		STD	0800	0640	3510	2760	0006181	1026	14900																
124		OBS	0805	0637	35102	2761			14900																
		STD	0900	0593	3511	2767	0005564	1085	14898																
		STD	1000	0545	3512	2774	0004950	1137	14895																
124		OBS	1005	0543	35125	2774			14895																
		STD	1100	0481	3506	2777	0004677	1185	14885																
		STD	1200	0433	3501	2778	0004521	1231	14881																
124		OBS	1257	0413	34988	2778			14882																
		STD	1300	0409	3499	2779	0004491	1276	14888																
		STD	1400	0400	3498	2779	0004513	1321	14900																
		STD	1500	0390	3497	2779	0004531	1367	14913																
124		OBS	T1502	0390	34971	2780			14913																

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INDEX	MARSSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- TNER CODE	CLOUD CODES		NOOC STATION NUMBER					
CTRY CODE	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			E-5	005	4297		15	00		0	X	X1	8	3
311	140	AZ	3501 N	04754 W	113	57	07	21	132	1967											0005						

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu g - at/l$	TOTAL-P $\mu g - at/l$	NO <sub>2</sub> -N $\mu g - at/l$	NO <sub>3</sub> -N $\mu g - at/l$	SiO <sub>2</sub> -Si $\mu g - at/l$	pH	S C C
		STD	0000	2540	3653	2439	0035448	0000	15375								
132		OBS	0000	2540	36528	2439			15375								
		STD	0010	2450	3648	2463	0033218	0034	15355								
		STD	0020	2348	3645	2491	0030584	0066	15331								
132		OBS	0025	2292	36430	2506			15318								
		STD	0030	2211	3642	2528	0027081	0095	15298								
		STD	0050	1970	3639	2592	0021137	0143	15238								
132		OBS	0050	1970	36387	2592			15238								
		STD	0075	1861	3635	2617	0018835	0193	15211								
132		OBS	0075	1861	36347	2617			15211								
		STD	0100	1758	3636	2643	0016387	0437	15185								
132		OBS	0100	1758	36359	2643			15185								
		STD	0125	1739	3636	2648	0016037	0278	15184								
		STD	0150	1715	3636	2654	0015573	0317	15181								
132		OBS	0150	1715	36357	2654			15181								
		STD	0200	1653	3625	2660	0015099	0394	15169								
132		OBS	T0201	1652	36248	2660			15169								
		STD	0250	1584	3612	2666	0014663	0468	15155								
		STD	0300	1506	3599	2674	0014064	0540	15137								
		STD	0400	1324	3571	2691	0012616	0674	15091								
132		OBS	T0408	1308	35684	2692			15087								
		STD	0500	1108	3541	2710	0010934	0791	15030								
132		OBS	0504	1099	35395	2710			15027								
		STD	0600	0858	3513	2731	0008922	0891	14951								
132		OBS	T0607	0844	35120	2732			14947								
		STD	0700	0723	3512	2750	0007117	0971	14916								
		STD	0800	0625	3511	2763	0005881	1036	14894								
132		OBS	0809	0618	35112	2764			14893								
		STD	0900	0576	3510	2769	0005401	1092	14891								
		STD	1000	0531	3509	2773	0004994	1144	14889								
132		OBS	T1012	0526	35091	2774			14889								
		STD	1100	0477	3505	2776	0004697	1193	14883								
		STD	1200	0435	3502	2779	0004474	1239	14882								
132		OBS	1266	0414	35002	2779			14884								
		STD	1300	0411	3499	2779	0004476	1283	14888								
		STD	1400	0401	3498	2779	0004518	1328	14901								
		STD	1500	0392	3497	2779	0004555	1374	14914								
132		OBS	T1516	0390	34969	2779			14916								

REFERENCE CITY CODE	SHIP NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS SQUA RE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NOOC STATION NUMBER	
						10'	1'	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.				HGT PER
11140	AZ		34577N	048112W	113	48	07	22	136	1967	E-5	006	4572	15	15	0	2	X1	8	2	0006

MESSENGER TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY x 10 <sup>3</sup>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>2</sub> -Si μg - at/l	pH	S CC	
																		WATER
		WATER	WIND	BARO- METER (mb)	AIR TEMP. °C	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	VIS. CODE										
			00	S00	298	28	24	7	14									
		STD	0000	2621	3658	2418	0037460	0000	15394									
136		OBS	0000	2621	36583	2418			15394									
		STD	0010	2468	3649	2458	0038665	0036	15359									
		STD	0020	2333	3643	2494	0030310	0068	15327									
136		OBS	0024	2283	36412	2507			15316									
		STD	0030	2219	3641	2525	0027369	0096	15300									
136		OBS	0049	2035	36387	2574			15255									
		STD	0050	2025	3638	2577	0022576	0146	15252									
136		OBS	0074	1841	36355	2622			15205									
		STD	0075	1837	3636	2624	0018163	0197	15204									
136		OBS	0098	1770	36378	2642			15189									
		STD	0100	1769	3638	2642	0016507	0241	15189									
		STD	0125	1749	3638	2647	0016103	0281	15187									
136		OBS	0149	1727	36384	2653			15185									
		STD	0150	1726	3638	2653	0015660	0321	15184									
		STD	0200	1666	3627	2659	0015256	0398	15173									
136		OBS	0200	1666	36269	2659			15173									
		STD	0250	1560	3606	2667	0014571	0473	15147									
		STD	0300	1458	3588	2676	0013844	0544	15120									
		STD	0400	1268	3560	2694	0012312	0675	15071									
136		OBS	T0403	1263	35591	2694			15070									
		STD	0500	1097	3543	2713	0010588	0789	15026									
136		OBS	0504	1090	35425	2714			15024									
		STD	0600	0905	3523	2731	0008951	0887	14970									
136		OBS	T0606	0895	35220	2732			14968									
		STD	0700	0757	3515	2742	0007379	0969	14930									
		STD	0800	0640	3510	2760	0006181	1036	14900									
136		OBS	0809	0631	35095	2761			14898									
		STD	0900	0562	3508	2768	0005415	1094	14885									
		STD	1000	0502	3505	2774	0004893	1146	14877									
136		OBS	1011	0497	35050	2774			14877									
		STD	1100	0471	3505	2777	0004618	1193	14881									
		STD	1200	0446	3504	2779	0004470	1239	14887									
136		OBS	1254	0432	35035	2780			14892									
		STD	1300	0425	3503	2780	0004369	1283	14895									
		STD	1400	0407	3501	2781	0004375	1327	14904									
		STD	1500	0393	3499	2781	0004428	1371	14915									
136		OBS	T1510	0392	34987	2781			14916									



REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
CITY CODE	ID. NO.					10"	1"	MO		DAY	HR. 1/10			CRUISE NO.	STATION NUMBER	DIR.	HGT			
31	140	AZ	3500 N	04750 W	113 57	07 23	124	1967	E-5	007	4389	15	13	0	3	X1	8 1 1	0007		

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		00	500	328	29	24	8	14	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	STATUS
		STD	0000	2646	3661	2413	0027990	0000	15400								
124		OBS	0000	2646	3661	2413			15400								
		STD	0010	2444	3655	2469	0026886	0035	15354								
		STD	0020	2276	3646	2513	0026519	0066	15314								
124		OBS	0025	2205	36427	2531			15296								
		STD	0030	2153	3639	2542	0025751	0093	15265								
		STD	0050	1476	3631	2584	0021830	0141	15238								
124		OBS	0050	1476	36312	2584			15238								
		STD	0075	1828	3635	2625	0018035	0192	15201								
124		OBS	0075	1828	36348	2625			15201								
		STD	0100	1814	3638	2631	0017592	0235	15202								
124		OBS	0100	1814	36375	2631			15202								
		STD	0125	1766	3638	2643	0016500	0278	15192								
		STD	0150	1727	3639	2653	0015625	0318	15187								
124		OBS	0151	1726	36386	2653			15185								
		STD	0205	1677	3628	2657	0015412	0395	15177								
124		OBS	T0201	1676	36280	2657			15177								
		STD	0250	1546	3614	2665	0014827	0471	15159								
		STD	0300	1514	3594	2672	0014236	0544	15146								
		STD	0400	1354	3570	2690	0012744	0679	15095								
124		OBS	T0406	1319	35701	2691			15091								
		STD	0500	1138	3547	2709	0011046	0797	15041								
124		OBS	0505	1127	35457	2710			15038								
		STD	0600	0898	3520	2730	0009056	0898	14967								
124		OBS	T0604	0890	35196	2731			14965								
		STD	0700	0745	3514	2749	0007270	0980	14925								
		STD	0800	0634	3510	2761	0006096	1046	14897								
124		OBS	0809	0626	35096	2762			14896								
		STD	0900	0586	3507	2767	0005606	1105	14895								
		STD	1000	0542	3509	2772	0005144	1159	14894								
124		OBS	T1012	0537	35092	2773			14894								
		STD	1100	0492	3506	2775	0004623	1209	14896								
		STD	1200	0452	3503	2778	0004622	1256	14889								
124		OBS	1263	0432	35016	2779			14891								
		STD	1300	0422	3501	2779	0004454	1301	14893								
		STD	1400	0403	3500	2781	0004374	1345	14902								
		STD	1500	0395	3499	2781	0004426	1389	14915								
124		OBS	T1509	0395	34993	2781			14917								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER						
CRUISE NO.	STATION NUMBER					10"	1"	MO		DAY	HR.1/10			CRUISE NO.	STATION NUMBER	DIR	HGT		PER	SEA		TYPE	AMT				
311	140	AZ	3504 N	04754 W	113	57	07	24	132	1967	E-5	008	2560	15	10	0	2	X1	8	4	0008						
WATER		WIND		BARO-		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS																	
COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		BARO-METER (mba)		DRY BULB		WET BULB		VIS CODE													
						07		S08		323		27		23		7											

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> ?	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SI O <sub>2</sub> -SI μg - at/l	pH	S C
		STD	0000	2622	3660	2419	0037374	0000	15394								
132		OBS	0000	2622	36599	2419			15394								
		STD	0010	2569	3658	2434	0035972	0037	15384								
		STD	0020	2490	3655	2456	0033911	0072	15367								
132		OBS	0026	2430	36521	2472			15353								
		STD	0030	2361	3648	2490	0030772	0104	15337								
		STD	0050	2087	3636	2558	0024314	0159	15269								
132		OBS	0052	2066	36357	2564			15264								
		STD	0075	1921	3638	2604	0020083	0215	15228								
132		OBS	0077	1910	36379	2607			15225								
		STD	0100	1807	3635	2631	0017578	0262	15200								
132		OBS	0102	1800	36352	2632			15198								
		STD	0125	1770	3637	2641	0016667	0304	15193								
		STD	0150	1739	3639	2651	0015868	0345	15188								
132		OBS	0154	1734	36396	2652			15188								
		STD	0200	1680	3630	2658	0015350	0423	15178								
132		OBS	T0206	1672	36287	2659			15176								
		STD	0250	1615	3618	2664	0014915	0499	15165								
		STD	0300	1542	3605	2670	0014406	0572	15149								
		STD	0400	1366	3578	2688	0012955	0709	15106								
132		OBS	T0408	1350	35757	2689			15102								
		STD	0500	1150	3549	2708	0011122	0829	15046								
132		OBS	0509	1130	35469	2710			15040								
		STD	0600	0923	3523	2728	0009249	0931	14977								
132		OBS	T0611	0901	35208	2730			14970								
		STD	0700	0750	3516	2749	0007228	1014	14927								
		STD	0800	0626	3510	2762	0005998	1080	14894								
132		OBS	0814	0613	35090	2763			14891								
		STD	0900	0575	3509	2768	0005461	1137	14890								
		STD	1000	0534	3510	2773	0004998	1189	14890								
132		OBS	1017	0527	35098	2774			14890								
		STD	1100	0495	3508	2777	0004716	1238	14891								
		STD	1200	0461	3506	2779	0004520	1284	14893								
132		OBS	1271	0440	35044	2780			14896								
		STD	1300	0432	3504	2781	0004387	1329	14898								
		STD	1400	0408	3501	2781	0004388	1372	14904								
		STD	1500	0390	3498	2780	0004462	1417	14913								
132		OBS	T1524	0386	34972	2780			14915								

REFERENCE		SHIP CODE	LATITUDE ° /10	LONGITUDE ° /10	MARS DEN INDEX	MARS DEN SQUARE			STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA-TNER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
311	140	AZ	3458 N	04800 W	113	48	07	25	128	1967	E-5	009	+206	14	00	0	X		X1	8	3	0009	
				WATER		WIND		BARO-METER		AIR TEMP. °C			NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
				COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		METER		DRY BULB		WET BULB		VIS. CODE					
								12		504		322		263		243		8				14	

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	TOTAL-P µg - at/l	NO <sub>2</sub> -N µg - at/l	NO <sub>3</sub> -N µg - at/l	SiO <sub>4</sub> -S µg - at/l	pH	S CL
		STD	0000	2594	3659	2428	0036573	0000	15388								
128		OBS	0000	2594	36594	2428			15388								
		STD	0010	2400	3649	2479	0031719	0034	15345								
		STD	0020	2238	3641	2520	0027644	0064	15304								
128		OBS	0023	2196	36393	2531			15293								
		STD	0030	2122	3639	2551	0024934	0090	15275								
128		OBS	0048	1955	36379	2595			15233								
		STD	0050	1934	3638	2601	0020292	0136	15228								
128		OBS	0072	1786	36385	2638			15189								
		STD	0075	1788	3640	2639	0016708	0182	15191								
128		OBS	0095	1794	36442	2641			15196								
		STD	0100	1788	3644	2642	0016504	0223	15195								
		STD	0125	1760	3642	2648	0016077	0264	15191								
128		OBS	0144	1743	36406	2651			15189								
		STD	0150	1740	3640	2651	0015840	0304	15189								
128		OBS	T0194	1712	36370	2655			15187								
		STD	0200	1696	3634	2657	0015426	0382	15189								
		STD	0250	1600	3614	2664	0014872	0458	15160								
		STD	0300	1511	3598	2672	0014244	0531	15139								
128		OBS	T0374	1394	35792	2683			15111								
		STD	0400	1369	3577	2686	0013089	0667	15107								
128		OBS	0455	1272	35652	2697			15084								
		STD	0503	1183	3555	2705	0011448	0790	15057								
128		OBS	T0557	1049	35364	2717			15018								
		STD	0605	0951	3527	2726	0009425	0894	14988								
		STD	0700	0771	3512	2743	0007813	0981	14935								
128		OBS	0740	0715	35087	2746			14920								
		STD	0800	0582	3511	2756	0006641	1053	14917								
		STD	0900	0423	3514	2765	0005789	1115	14910								
128		OBS	0922	0310	35142	2767			14909								
		STD	1000	0201	3512	2774	0005199	1170	14902								
		STD	1100	0107	3508	2775	0004677	1220	14896								
128		OBS	1149	0484	35066	2777			14894								
		STD	1200	0463	3505	2778	0004620	1268	14894								
		STD	1300	0428	3501	2779	0004555	1314	14896								
128		OBS	T1372	0410	34982	2778			14900								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	OBS. DEPTH	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER	
CRUISE CODE	ID. NO.					10'	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT. PER	SEA		TYPE	AMT		
31114	42	35055N	110	110	113	57	17	27	124	1967	E-5	010	4115	15	13	0	c	X1	8	2	0010		
		WATER		WIND		BARO-METER		AIR TEMP. °C		VIS CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE		TRANS. ml		DIR.		SPEED OR FORCE		METER (mb)		DRY BULB		WET BULB									
				26		504		295		27		25		7		14							

MESSAGE TIME	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-t	SPECIFIC VOLUME ANOMALY- $\sigma_t$	S/D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S.C.C.
		STD	0000	2626	3656	2415	0037804	0000	15395								
124		OBS	0000	2626	36556	2415			15395								
		STD	0010	2396	3647	2474	0031750	0035	15342								
		STD	0020	2207	3641	2524	0027007	0064	15296								
124		OBS	0025	2127	36391	2550			15276								
		STD	0030	2065	3639	2567	0023439	0089	15260								
		STD	0050	1883	3640	2615	0018917	0132	15214								
124		OBS	0051	1877	36397	2616			15212								
		STD	0075	1805	3645	2638	0016618	0176	15197								
124		OBS	0076	1806	36452	2639			15196								
		STD	0100	1773	3644	2646	0016143	0218	15191								
124		OBS	0101	1772	36440	2646			15191								
		STD	0125	1756	3643	2644	0015440	0256	15190								
		STD	0150	1740	3641	2652	0015760	0297	15189								
124		OBS	0152	1739	36410	2652			15189								
		STD	0200	1713	3637	2655	0015600	0376	15189								
124		OBS	T0204	1710	36366	2656			15188								
		STD	0250	1649	3624	2661	0015154	0453	15175								
		STD	0300	1574	3611	2668	0014672	0527	15160								
		STD	0400	1432	3587	2681	0012664	0569	15128								
124		OBS	T0407	1422	35659	2682			15126								
		STD	0500	1296	3569	2695	0012474	0600	15098								
124		OBS	0529	1276	35662	2697			15093								
		STD	0600	1024	3531	2717	0010390	0914	15015								
124		OBS	T0611	0997	35274	2719			15007								
		STD	0700	0800	3512	2743	0007883	1005	14948								
		STD	0800	0607	3517	2755	0006645	1078	14906								
124		OBS	0838	0644	35061	2756			14904								
		STD	0900	0531	3511	2762	0006124	1142	14913								
		STD	1000	0548	3516	2770	0005403	1199	14917								
124		OBS	T1006	0546	35166	2771			14917								
		STD	1100	0533	3511	2774	0005011	1251	14907								
		STD	1200	0479	3506	2777	0004760	1300	14901								
124		OBS	1257	0454	35040	2778			14900								
		STD	1300	0438	3503	2779	0004532	1347	14900								
		STD	1400	0411	3501	2780	0004442	1392	14906								
		STD	1500	0397	3499	2780	0004511	1436	14916								
124		OBS	T1508	0396	34984	2780			14917								

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DRIFT	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NDDC STATION NUMBER
					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31114	AZ	34555N	04755 W	113	47	07	28	154	1967	E-5	011	4389	44	28	1	1		X1	9	6	0011	
				WATER		WIND		BARO-METER		AIR TEMP. °C		VIS CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
				COLOR CODE		DIR.		METER		DRY BULB		WET BULB										
				26		S12		281		26		23		7		19						

MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\frac{\Delta \sigma_t}{\Delta z}$ OVI. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SI O <sub>4</sub> -S $\mu\text{g} - \text{dl/l}$	pH	SIC
		STD	0000	2623	3655	2415	0037771	0000	15394								
130		OBS	0000	2623	36548	2415			15394								
		STD	0010	2381	3646	2482	0031395	0035	15338								
		STD	0020	2190	3640	2533	0026624	0054	15291								
130		OBS	0024	2126	36333	2544			15276								
		STD	0030	2066	3637	2565	0023624	0069	15260								
130		OBS	0048	1926	36359	2601			15225								
		STD	0050	1919	3637	2604	0019994	0132	15223								
130		OBS	0072	1846	36440	2628			15207								
		STD	0075	1835	3644	2630	0017535	0179	15205								
130		OBS	0095	1775	36430	2645			15190								
		STD	0100	1770	3643	2646	0016153	0421	15190								
		STD	0125	1750	3641	2649	0015915	0461	15188								
130		OBS	0148	1736	36395	2652			15167								
		STD	0150	1736	3641	2652	0015778	0301	15185								
130		OBS	T0192	1724	36386	2654			15191								
		STD	0200	1712	3636	2655	0015649	0380	15188								
		STD	0250	1641	3622	2661	0015209	0457	15173								
		STD	0300	1572	3617	2667	0014701	0532	15159								
130		OBS	T0379	1465	35425	2677			15137								
		STD	0400	1447	3542	2680	0013761	0674	15134								
130		OBS	0474	1352	35765	2690			15113								
		STD	0500	1309	3571	2693	0012661	0806	15102								
130		OBS	T0567	1185	35525	2704			15069								
		STD	0600	1078	3539	2714	0012765	0923	15055								
		STD	0700	0823	3511	2735	0009697	1025	14955								
130		OBS	0755	0725	35125	2742			14925								
		STD	0800	0705	3503	2749	0017289	1100	14926								
		STD	0850	0658	3516	2752	0006148	1168	14924								
130		OBS	0947	0555	35175	2767			14922								
		STD	1000	0596	3515	2770	0005470	1426	14916								
		STD	1100	0534	3511	2774	0005025	1478	14907								
130		OBS	1144	0491	35073	2776			14903								
		STD	1200	0485	3507	2777	0004768	1527	14903								
		STD	1300	0448	3503	2775	0004672	1574	14904								
		STD	1400	0417	3500	2774	0004580	1621	14908								
130		OBS	T1415	0413	34992	2779			14905								
		STD	1500	0402	3499	2780	0004547	1666	14918								
		STD	1750	0374	3498	2782	0004464	1679	14944								
		STD	2000	0351	3497	2783	0004424	1690	14961								
154		OBS	T0058	0347	34969	2784			14989								
		STD	2500	0328	3497	2785	0004502	1913	15057								
154		OBS	2584	0322	34964	2786			15069								
		STD	3000	0275	3494	2788	0004213	2441	15120								
154		OBS	T0092	0267	34935	2788			15133								
		STD	4000	0234	3492	2790	0004220	2952	15277								
154		OBS	4344	0222	34902	2790			15333								
154		OBS	T4445	0224	34895	2789			15351								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH (M)	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO	DAY	HR		MIN	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA	
311	140	AZ	35030N	047590W		113	57	07	29	132	1967	E-5	012	4023	13	29	1	2	X1	8	4	0012

WATER		WIND		BARO-METER (mba)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	WIND			
		29	S17	261	26	23	8	14		

MESSNGR TIME OF HR	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	$\sigma_c$
		STD	0000	2607	3661	2425	0036817	0000	15391								
132		OBS	0000	2607	36614	2425			15391								
		STD	0010	2378	3650	2486	0031025	0034	15338								
132		OBS	0019	2226	36429	2525			15301								
		STD	0020	2220	3643	2526	0027227	0063	15299								
		STD	0030	2150	3641	2545	0025498	0089	15283								
132		OBS	0039	2074	36402	2565			15264								
		STD	0050	1938	3642	2603	0020101	0135	15229								
132		OBS	0059	1860	36430	2623			15209								
		STD	0075	1807	3643	2637	0016925	0181	15196								
132		OBS	0079	1796	36433	2640			15194								
		STD	0100	1762	3641	2646	0016110	0223	15187								
132		OBS	0119	1741	36400	2651			15184								
		STD	0125	1740	3640	2651	0015755	0462	15185								
		STD	0150	1733	3639	2652	0015750	0302	15187								
132		OBS	T0159	1729	36389	2653			15187								
		STD	0200	1706	3634	2655	0015656	0380	15186								
		STD	0250	1664	3627	2659	0015367	0458	15181								
		STD	0300	1607	3618	2666	0014896	0534	15171								
132		OBS	T0327	1570	36119	2669			15163								
		STD	0400	1428	3595	2688	0012999	0673	15128								
132		OBS	0409		35918												
132		OBS	T0492	1246	35546	2698			15079								
		STD	0500	1228	3557	2700	0012015	0798	15073								
		STD	0600	1015	3531	2719	0010232	0909	15012								
132		OBS	0663	0898	35192	2729			14978								
		STD	0700	0833	3516	2737	0006441	1003	14958								
		STD	0800	0687	3504	2754	0006832	1079	14916								
132		OBS	0840	0635	35077	2754			14906								
		STD	0900	0605	3508	2763	0005549	1143	14901								
		STD	1000	0561	3508	2769	0005493	1201	14901								
132		OBS	1072	0532	35082	2772			14901								
		STD	1100	0522	3508	2773	0005081	1253	14902								
		STD	1200	0489	3507	2775	0004621	1303	14905								
		STD	1300	0462	3505	2778	0004713	1351	14910								
132		OBS	T1305	0461	35044	2778			14911								

REFERENCE		SHIP CODE	LATITUDE ° / 10'	LONGITUDE ° / 10'	DEPTH FATHOMS	MARSSEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CFR CODE	ID. NO.					10"	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31	140	AZ	35005N	047585W	113	57	07	30	124	1967	E-5	013	4206	14	30	1	3		X1	9	1	0013	
		WATER		WIND		BARO-METER (mb)		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
		COLOR CODE		TRANS (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIS CODE									
				31		508		278		26		23		7		14							

MESSAGE TIME NR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-2107	Σ Δ D OYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	S C C
		STD	0000	2641	3666	2418	0037493	0000	15399								
124		OBS	0000	2641	3666	2418			15399								
		STD	0010	2498	3655	2454	0034103	0036	15367								
		STD	0020	2362	3647	2489	0030832	0068	15335								
124		OBS	0023	2322	36450	2499			15326								
		STD	0030	2220	3641	2525	0027396	0097	15301								
124		OBS	0046	2035	36366	2573			15254								
		STD	0050	2004	3638	2582	0022043	0147	15247								
124		OBS	0070	1880	36424	2618			15216								
		STD	0075	1859	3641	2622	0018330	0197	15211								
124		OBS	0093	1799	36392	2636			15197								
		STD	0100	1792	3640	2638	0016889	0241	15196								
		STD	0125	1769	3642	2645	0016288	0283	15193								
124		OBS	0140	1759	36431	2649			15193								
		STD	0150	1757	3643	2649	0016019	0323	15194								
124		OBS	T0186	1743	36425	2652			15196								
		STD	0200	1720	3637	2653	0015762	0403	15191								
		STD	0250	1640	3621	2660	0015259	0480	15173								
		STD	0300	1566	3607	2667	0014786	0555	15157								
124		OBS	T0368	1474	35921	2676			15137								
		STD	0400	1442	3588	2679	0013501	0698	15132								
124		OBS	0456	1370	35794	2688			15117								
		STD	0500	1294	3569	2696	0012434	0829	15097								
124		OBS	T0546	1209	35582	2704			15075								
		STD	0600	1073	3541	2716	0010532	0944	15034								
		STD	0700	0870	3519	2733	0008865	1041	14973								
124		OBS	0722	0834	35159	2737			14963								
		STD	0800	0750	3516	2749	0007360	1122	14944								
124		OBS	T0896	0658	35164	2763			14924								
		STD	0900	0654	3516	2763	0006089	1190	14923								
		STD	1000	0567	3511	2770	0005356	1247	14904								
		STD	1100	0501	3506	2774	0004943	1298	14893								
124		OBS	1121	0490	35056	2775			14892								
		STD	1200	0456	3503	2777	0004675	1346	14891								
		STD	1300	0432	3501	2778	0004607	1393	14896								
124		OBS	T1366	0427	35004	2778			14906								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INCHES	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER				
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA							
31	140	AZ	35031N	047589W		113	57	07	31	126	1967	E-5	014	4206	16	30	1	2	X1	8	4	0014			
		WATER		WIND		BARO-METER (mb)		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS											
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB													
						30		S11		288		26		24		7		14							

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta \sigma$ OYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	3 C C
		STD	0000	2627	3663	2420	0037302	0000	15396								
126		OBS	0000	2627	36630	2420			15396								
		STD	0010	2452	3652	2466	0032988	0035	15356								
		STD	0020	2298	3644	2505	0029268	0066	15319								
126		OBS	0026	2216	36409	2526			15299								
		STD	0030	2164	3641	2541	0025876	0094	15286								
		STD	0050	1966	3644	2596	0020682	0140	15237								
126		OBS	0052	1952	36438	2600			15234								
		STD	0075	1868	3646	2623	0018207	0189	15214								
126		OBS	0079	1856	36460	2627			15211								
		STD	0100	1803	3646	2640	0016714	0233	15200								
126		OBS	0104	1795	36456	2642			15198								
		STD	0125	1771	3644	2646	0016190	0274	15194								
		STD	0150	1748	3642	2650	0015682	0314	15191								
126		OBS	0156	1744	36411	2651			15191								
		STD	0200	1729	3639	2653	0015826	0393	15194								
126		OBS	0209	1724	36383	2653			15194								
		STD	0250	1665	3626	2658	0015462	0471	15181								
		STD	0300	1590	3612	2665	0014953	0547	15165								
		STD	0400	1431	3585	2679	0013788	0691	15128								
126		OBS	0422	1395	35795	2683			15119								
		STD	0500	1262	3561	2696	0012385	0822	15085								
126		OBS	0523	1221	35561	2700			15075								
		STD	0600	1070	3537	2714	0010770	0938	15032								
126		OBS	0627	1020	35317	2718			15018								
		STD	0700	0889	3523	2734	0008813	1036	14979								
		STD	0800	0737	3514	2750	0007315	1116	14938								
126		OBS	0837	0693	35121	2754			14927								
		STD	0900	0648	3512	2761	0006296	1284	14920								
		STD	1000	0583	3511	2768	0005580	1244	14910								
126		OBS	1045	0557	35104	2771			14907								
		STD	1100	0525	3508	2773	0005122	1297	14903								
		STD	1200	0476	3505	2776	0004793	1347	14899								
		STD	1300	0439	3502	2778	0004626	1394	14901								
126		OBS	1306	0437	35018	2778			14901								
		STD	1400	0413	3500	2779	0004527	1440	14906								
		STD	1500	0400	3499	2780	0004521	1485	14917								
126		OBS	1566	0397	34983	2780			14927								



REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER			
CRM CODE	IO. NO.					10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.	HGT		PER	SEA		1/10	AMT	
311	140	AZ	3458 N	04755 W	113 47	08 01	192	1967	E-5	015	4092	15	03	0	3	X1	8	3	0015					
WATER		WIND		BARO-		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS														
COLOR CODE		TRANS. IMI		DIR.		SPEED OR FORCE		METER (mbs)		DRY BULB		WET BULB		VIS. CODE										
		03		S10		268		28		25		7		14										

MESSNGR TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> ?	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	Si O <sub>4</sub> -Si μg - at/l	pH	CLAS
		STD	0000	2708	3667	2397	0039453	0000	15414								
192		OBS	0000	2708	36673	2397			15414								
		STD	0010	2568	3659	2435	0035670	0038	15383								
		STD	0020	2431	3601	2471	0032499	0072	15352								
192		OBS	0025	2365	36475	2488			15337								
		STD	0030	2288	3645	2509	0028953	0103	15318								
		STD	0050	2034	3636	2572	0022986	0155	15255								
192		OBS	0057	1765	36321	2588			15237								
		STD	0075	1833	3641	2629	0017705	0205	15204								
192		OBS	0076	1828	36413	2630			15202								
		STD	0100	1777	3643	2644	0016324	0248	15192								
192		OBS	0101	1775	36430	2645			15191								
		STD	0125	1753	3642	2649	0015913	0288	15189								
		STD	0150	1737	3642	2652	0015625	0328	15188								
192		OBS	0152	1736	36417	2653			15186								
		STD	0200	1727	3643	2654	0015707	0406	15193								
192		OBS	T0206	1724	36299	2655			15193								
		STD	0250	1656	3625	2666	0015330	0484	15176								
		STD	0300	1561	3611	2666	0014627	0559	15162								
		STD	0400	1434	3586	2680	0013778	0702	15129								
192		OBS	T0410	1420	35842	2681			15126								
		STD	0500	1302	3570	2695	0012521	0833	15100								
192		OBS	0510	1280	35676	2697			15094								
		STD	0600	0977	3538	2731	0009062	0941	14999								
192		OBS	0612	0945	35343	2733			14989								
		STD	0700	0820	3518	2740	0008136	1027	14954								
		STD	0800	0712	3507	2748	0007452	1105	14928								
192		OBS	0816	0698	35064	2749			14925								
		STD	0900	0661	3513	2760	0006412	1175	14925								
		STD	1000	0614	3516	2766	0005654	1235	14924								
192		OBS	1020	0604	35167	2770			14923								
		STD	1100	0552	3513	2774	0005128	1289	14915								
		STD	1200	0496	3508	2776	0004843	1339	14908								
192		OBS	1276	0462	35051	2778			14906								
		STD	1300	0453	3504	2778	0004665	1386	14907								
		STD	1400	0420	3501	2779	0004546	1432	14909								
		STD	1500	0399	3499	2781	0004508	1478	14917								
192		OBS	T1529	0395	34979	2780			14920								

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH METERS	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER						
					10'	1'	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE		AMT					
311140	AZ	34551N	047570W	113	47	08	02	129	1967	E-5	016	4389	15	05	0	2		X1	8	4	0016						
		WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS													
		COLOR CODE		TRANS. (m)		ORL.		SPEED OR FORCE		METER (mbs)		DRY BULB		WET BULB		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
								07		512		274		26		23		8		14							

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta \sigma_t$ DYN. M. $\times 10^2$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{dl/l}$	TOTAL-P $\mu\text{g} - \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{dl/l}$	pH	S.C.
		STD	0000	2666	3668	2411	0038142	0000	15405								
129		OBS	0000	2666	36677	2411			15405								
		STD	0010	2614	3663	2424	0036954	0038	15394								
		STD	0020	2534	3658	2445	0034981	0074	15377								
129		OBS	0025	2484	36551	2458			15366								
		STD	0030	2401	3652	2481	0031613	0107	15347								
		STD	0050	2121	3640	2552	0024934	0163	15278								
129		OBS	0051	2109	36391	2555			15275								
		STD	0075	1886	3643	2617	0018840	0418	15219								
129		OBS	0077	1875	36433	2620			15216								
		STD	0100	1836	3650	2635	0017183	0263	15210								
129		OBS	0102	1833	36510	2636			15209								
		STD	0125	1803	3648	2642	0016642	0305	15204								
		STD	0150	1775	3645	2646	0016283	0347	15200								
129		OBS	0152	1773	36450	2647			15199								
		STD	0200	1737	3640	2652	0015940	0427	15196								
129		OBS	T0204	1734	36395	2652			15196								
		STD	0250	1671	3626	2657	0015599	0206	15185								
		STD	0300	1603	3613	2663	0015170	0583	15169								
		STD	0400	1469	3590	2675	0014227	0730	15141								
129		OBS	T0412	1453	35882	2677			15137								
		STD	0500	1341	3575	2691	0012942	0866	15114								
129		OBS	0513	1320	35721	2693			15108								
		STD	0600	1139	3547	2709	0011305	0987	15058								
129		OBS	T0612	1114	35440	2711			15051								
		STD	0700	0906	3522	2730	0009239	1090	14987								
		STD	0800	0729	3507	2745	0007708	1174	14934								
129		OBS	0818	0704	35057	2748			14927								
		STD	0900	0641	3508	2758	0006488	1245	14917								
		STD	1000	0575	3509	2768	0005614	1306	14907								
129		OBS	1021	0563	35091	2769			14906								
		STD	1100	0525	3508	2773	0005122	1360	14903								
		STD	1200	0483	3506	2776	0004814	1409	14902								
129		OBS	1273	0457	35040	2778			14904								
		STD	1300	0449	3503	2778	0004685	1457	14905								
		STD	1400	0422	3501	2779	0004572	1503	14910								
		STD	1500	0403	3498	2779	0004634	1549	14919								
129		OBS	T1520	0400	34971	2778			14921								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	OBS. INSTR.	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA		TYPE	AMT	
311	140	AZ	35076N	048025W		113	58	08	03	129	1967	E-5	017	4023	15	05	1	2	X1	8	5	0017
WATER		WIND		BARO-METER (mb)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS												
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																
				06	510	278	268	233	7	14												
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>4</sub> -Si μg - dl/l	pH	ST. CODE					
		STD	0000	2657	3667	2413	0037927	0000	15403													
	129	OBS	0000	2657	36669	2413			15403													
		STD	0010	2544	3658	2442	0035233	0037	15378													
		STD	0020	2426	3651	2473	0032356	0070	15351													
	129	OBS	0025	2365	36481	2489			15337													
		STD	0030	2287	3646	2510	0028860	0101	15318													
		STD	0050	2036	3641	2576	0022639	0152	15256													
	129	OBS	0051	2026	36406	2578			15253													
		STD	0075	1863	3643	2622	0018289	0204	15212													
	129	OBS	0076	1858	36430	2624			15211													
		STD	0100	1793	3640	2638	0016912	0248	15196													
	129	OBS	0101	1791	36399	2638			15196													
		STD	0125	1771	3641	2644	0016393	0289	15194													
		STD	0150	1754	3643	2649	0015978	0330	15193													
	129	OBS	0152	1753	36427	2650			15193													
	129	OBS	T0198	1733	36394	2552			15195													
		STD	0200	1730	3639	2653	0015849	0409	15194													
		STD	0250	1663	3626	2659	0015417	0487	15181													
		STD	0300	1593	3613	2665	0014947	0263	15166													
		STD	0400	1442	3589	2680	0013729	0707	15132													
	129	OBS	0406	1433	35871	2681			15130													
		STD	0500	1281	3565	2695	0012468	0838	15092													
	129	OBS	0507	1267	35627	2696			15089													
		STD	0600	1048	3532	2714	0010742	0954	15024													
	129	OBS	T0604	1039	35310	2714			15021													
		STD	0700	0842	3515	2735	0008706	1051	14962													
		STD	0800	0692	3506	2750	0007229	1131	14920													
	129	OBS	0812	0678	35054	2751			14916													
		STD	0900	0629	3508	2760	0006301	1198	14912													
		STD	1000	0575	3511	2769	0005446	1257	14907													
	129	OBS	T1020	0564	35119	2771			14906													
		STD	1100	0515	3508	2774	0004986	1309	14899													
		STD	1200	0465	3504	2777	0004720	1358	14895													
	129	OBS	1269	0439	35017	2778			14895													
		STD	1300	0429	3501	2778	0004568	1404	14896													
		STD	1400	0407	3499	2779	0004522	1450	14904													
		STD	1500	0397	3498	2779	0004554	1495	14916													
	129	OBS	T1518	0397	34975	2779			14919													

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	TIME HOUR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER
STATION CODE	ID. NO.					10"	1"	MO	DAY	HR.		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE	
311	140	AZ	35012N	047563W	113	57	08	04	129	1967	E-5	018	4206	14	06	0	2	X1	8	6	0018	
WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS										
COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		METER (mks)		DRY BULB		WET BULB										
		06		S12		298		26		231		7		14								

MESSENGER TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl/l}$	TOTAL-P $\mu\text{g} \cdot \text{dl/l}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl/l}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl/l}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl/l}$	pH	S.C.C.
		STD	0000	2653	3667	2415	0037770	0000	15402								
129		OBS	0000	2653	36674	2415			15402								
		STD	0010	2639	3662	2415	0037777	0038	15400								
		STD	0020	2566	3657	2434	0035996	0075	15384								
129		OBS	0022	2544	36564	2441			15380								
		STD	0030	2305	3651	2491	0030668	0108	15338								
129		OBS	0046	2100	36444	2561			15273								
		STD	0050	2065	3644	2570	0023167	0162	15264								
129		OBS	0069	1933	36427	2604			15231								
		STD	0075	1906	3643	2611	0019352	0215	15224								
129		OBS	0092	1844	36425	2627			15210								
		STD	0100	1830	3643	2631	0017612	0261	15207								
		STD	0125	1792	3642	2640	0016801	0304	15200								
129		OBS	0139	1776	36423	2644			15198								
		STD	0150	1769	3642	2645	0016374	0346	15198								
129		OBS	T0183	1745	36418	2651			15196								
		STD	0200	1735	3640	2652	0015893	0426	15195								
		STD	0250	1696	3632	2655	0015737	0505	15191								
		STD	0300	1644	3623	2661	0015366	0583	15183								
129		OBS	T0372	1546	36062	2670			15162								
		STD	0400	1493	3597	2675	0014232	0731	15149								
129		OBS	0466	1376	35784	2686			15120								
		STD	0500	1327	3572	2691	0012877	0867	15109								
129		OBS	T0561	1230	35598	2701			15085								
		STD	0600	1138	3543	2710	0011213	0987	15058								
		STD	0700	0931	3524	2727	0009511	1091	14997								
129		OBS	0756	0832	35148	2736			14968								
		STD	0800	0764	3514	2746	0007729	1177	14949								
		STD	0900	0636	3511	2761	0006195	1247	14915								
129		OBS	0953	0563	35097	2767			14902								
		STD	1000	0558	3509	2770	0005379	1304	14900								
		STD	1100	0511	3507	2774	0005005	1356	14897								
		STD	1200	0472	3505	2777	0004716	1405	14898								
129		OBS	1200	0472	35053	2777			14898								
		STD	1300	0441	3503	2779	0004579	1451	14902								
		STD	1400	0419	3501	2780	0004533	1497	14909								
129		OBS	T1445	0411	34996	2779			14913								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH IN METERS	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER			
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT PER	SEA						
311	140	AZ	3506 N	047545 W	113	57	08 05 124	1967	E-5	019			3475	15	06	1	2		X1	8 5		0019		
		WATER		WIND		BARO-METER		AIR TEMP. °C			VIS CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
						06		508		295		27		24		8		14						

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-210?	$\Sigma \Delta D$ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S/C
		STD	0000	2655	3663	2411	0038118	0000	15402								
124		OBS	0000	2655	36634	2411			15402								
		STD	0010	2494	3655	2455	0033986	0036	15366								
		STD	0020	2351	3649	2493	0030379	0068	15233								
124		OBS	0025	2286	36468	2511			15217								
		STD	0030	2226	3646	2527	0027197	0097	15203								
		STD	0050	2031	3643	2579	0022367	0147	15255								
124		OBS	0052	2015	36427	2583			15251								
		STD	0075	1888	3641	2615	0019034	0198	15219								
124		OBS	0078	1875													
		STD	0100	1807	3640	2634	0017244	0244	15200								
124		OBS	0103	1800	36395	2626			15198								
		STD	0125	1783	3640	2640	0016762	0286	15197								
		STD	0150	1765	3640	2645	0016425	0326	15196								
124		OBS	0155	1762	36405	2646			15196								
		STD	0200	1738	3640	2652	0015941	0409	15196								
124		OBS	T0210	1731	36403	2653			15196								
		STD	0250	1697	3633	2656	0015688	0428	15192								
		STD	0300	1647	3624	2661	0015361	0505	15184								
		STD	0400	1520	3602	2673	0014452	0714	15158								
124		OBS	T0414	1500	35987	2675			15154								
		STD	0500	1360	3576	2688	0013256	0853	15120								
124		OBS	0516	1330	35718	2691			15112								
		STD	0600	1143	3548	2709	001306	0976	15059								
124		OBS	T0620	1100	35434	2713			15047								
		STD	0700	0913	3525	2731	0009136	1078	14990								
		STD	0800	0735	3510	2747	0007578	1161	14937								
124		OBS	0822	0704	35074	2749			14928								
		STD	0900	0639	3508	2758	0006474	1232	14916								
		STD	1000	0571	3508	2768	0005603	1292	14905								
124		OBS	1025	0556	35085	2770			14903								
		STD	1100	0526	3507	2772	0005209	1346	14904								
		STD	1200	0489	3505	2775	0004968	1397	14905								
124		OBS	1277	0463	35038	2777			14907								
		STD	1300	0456	3503	2777	0004779	1446	14908								
		STD	1400	0427	3501	2779	0004639	1493	14912								
		STD	1500	0402	3498	2779	0004620	1539	14918								
124		OBS	T1526	0396	34976	2779			14920								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	L. TO B. ZONE	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPLS	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NDDC STATION NUMBER
CRUISE CODE	ID. NO.					13°	1'	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31	1140	AZ	3535 N	04752 W		113	57	08	06	126	1967	E-5	020	3840	14	10	0	2	X1	8	4	0020

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. M	DIR.	SPEED OR FORCE		DRY BULB	WET BULB				
		08	S08	295	27	25	7	14		

MESSAGE TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S. ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 <sup>3</sup>	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	D <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	TOTAL-P μg - dl/l	NO <sub>2</sub> -N μg - dl/l	NO <sub>3</sub> -N μg - dl/l	SiO <sub>4</sub> -Si μg - dl/l	pH	S/C
		STD	0000	2666	3666	2410	0038272	0000	15405								
126		OBS	0000	2666	36659	2410			15405								
		STD	0010	2585	3659	2430	0036375	0037	15387								
		STD	0020	2481	3653	2458	0033794	0072	15364								
126		OBS	0024	2433	36503	2470			15353								
		STD	0030	2320	3646	2500	0029772	0104	15326								
126		OBS	0049	2046	36385	2571			15258								
		STD	0050	2038	3639	2574	0022835	0157	15256								
126		OBS	0074	1881	36436	2618			15217								
		STD	0075	1877	3644	2620	0018549	0209	15216								
126		OBS	0098	1811	36465	2638			15202								
		STD	0100	1809	3646	2638	0016857	0253	15201								
		STD	0125	1782	3645	2644	0016376	0294	15198								
126		OBS	0147	1764	36440	2648			15196								
		STD	0150	1763	3644	2648	0016088	0335	15196								
126		OBS	T0196	1742	36426	2652			15197								
		STD	0200	1742	3642	2652	0015911	0415	15198								
		STD	0250	1727	3639	2653	0015948	0495	15201								
		STD	0300	1693	3632	2656	0015633	0574	15198								
126		OBS	T0394	1576	36112	2667			15176								
		STD	0400	1564	3609	2669	0014908	0728	15173								
126		OBS	0491	1384	35787	2685			15127								
		STD	0500	1367	3577	2687	0013327	0869	15122								
126		OBS	T0589	1194	35547	2704			15076								
		STD	0600	1162	3550	2707	0011517	0993	15066								
		STD	0700	0910	3520	2728	0009452	1098	14988								
126		OBS	0786	0755	35054	2740			14942								
		STD	0800	0743	3506	2743	0007994	1185	14940								
		STD	0900	0665	3510	2757	0006690	1259	14926								
126		OBS	0980	0610	35112	2765			14918								
		STD	1000	0598	3511	2766	0005792	1321	14916								
		STD	1100	0544	3508	2771	0005384	1377	14911								
		STD	1200	0497	3506	2775	0005003	1429	14908								
126		OBS	1225	0487	35055	2776			14908								
		STD	1300	0458	3504	2778	0004732	1477	14909								
		STD	1400	0427	3501	2779	0004639	1524	14912								
126		OBS	T1446	0415	34998	2779			14915								

Table V. Observed and interpolated oceanographic data for stations taken by USCGC MCCULLOCH at ocean station ECHO, 27 September-13 October 1967, prepared from NODC listing No. 31-1164.

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	DUBLIN NUMBER	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	164	ML	34475N	047520W		113	47	09	27	167	1967	E06	001	4755	15	34	2	3		4	5		0001
WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS														
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																	
				30	S08	169	250	228	7	14													
MESSNGR TIME HR /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta \theta$ OYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C C						
		STD	0000		3641																		
167		OBS	0000		36409																		
		STD	0010		3641																		
		STD	0020		3641																		
167		OBS	0025		36412																		
		STD	0030		3645																		
167		OBS	0049	2367	36550	2493				15342													
		STD	0050	2356	3655	2496	0030208			15339													
		STD	0075	2111	3656	2507	0023604			15282													
167		OBS	0076	2103	36558	2509				15280													
		STD	0100	1947	3657	2612	0019428			15242													
167		OBS	0101	1942	36569	2613				15240													
		STD	0125	1877	3654	2627	0018003			15226													
167		OBS	0148	1831	36512	2637				15216													
		STD	0150	1829	3651	2637	0017147			15216													
167		OBS	T0194	1784	36467	2645				15210													
		STD	0200	1784	3647	2645	0016559			15211													
		STD	0250	1780	3647	2646	0016643			15218													
		STD	0300	1773	3647	2648	0016655			15224													
167		OBS	T0382	1757	36464	2652				15233													
		STD	0400	1752	3646	2652	0016527			15234													
167		OBS	0479	1729	36401	2654				15240													
		STD	0500	1709	3636	2655	0016573			15237													
167		OBS	0577	1615	36193	2665				15219													
		STD	0600	1567	3611	2664	0015446			15207													
		STD	0700	1368	3578	2687	0013628			15156													
167		OBS	0775	1227	35583	2701				15119													
		STD	0800	1179	3553	2706	0012110			15105													
		STD	0900	1002	3535	2724	0010356			15057													
167		OBS	0985	0870	35229	2736				15021													
		STD	1000	0848	3522	2739	0008845			15015													
		STD	1100	0718	3515	2753	0007434			14981													
		STD	1200	0613	3510	2764	0006355			14956													
167		OBS	1250	0571	35072	2767				14947													
		STD	1300	0535	3506	2770	0005655			14940													
		STD	1400	0483	3503	2774	0005238			14936													
		STD	1500	0457	3501	2775	0005174			14941													
167		OBS	T1518	0455	35001	2775				14943													

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE				STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NOOC STATION NUMBER
CRUISE CODE	ID. NO.				10"	1"	MO	DAY	HR./10	1967	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA		TYPE	AMT	
311	164	ML	35015N	048110W	113	58	09	28	130	1967	E06	002	3109	13	33	3	4		8	4	0002		
		WATER		WIND		BARO-METER (mb)		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE		TRANS. (m)		DIR. SPEED OR FORCE		DRY BULB WET BULB															
				31		S15		163		244		217		7		14							
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>T</sub>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	TOTAL-P µg - at/l	NO <sub>2</sub> -N µg - at/l	NO <sub>3</sub> -N µg - at/l	SiO <sub>4</sub> -Si µg - at/l	pH	S C C						
		STD	0000		3640																		
	130	OBS	0000		36400																		
		STD	0010		3640																		
		STD	0020		3641																		
	130	OBS	0025		36406																		
		STD	0030		3647																		
	130	OBS	0047	2302	36584	2515			15326														
		STD	0050	2269	3657	2523	0027652		15318														
	130	OBS	0069	2101	36532	2568			15278														
		STD	0075	2066	3654	2578	0022564		15269														
	130	OBS	0091	1988	36546	2599			15251														
		STD	0100	1958	3655	2607	0019869		15244														
		STD	0125	1894	3655	2624	0018361		15231														
	130	OBS	0132	1880	36548	2627			15228														
		STD	0150	1863	3654	2631	0017751		15226														
	130	OBS	T0177	1840	36530	2636			15224														
		STD	0200	1822	3652	2640	0017082		15222														
		STD	0250	1789	3649	2646	0016683		15221														
		STD	0300	1763	3646	2650	0016454		15221														
	130	OBS	T0341	1747	36442	2652			15223														
		STD	0400	1741	3643	2653	0016489		15230														
	130	OBS	0430	1728	36410	2655			15231														
		STD	0500	1670	3629	2659	0016172		15224														
	130	OBS	0518	1652	36259	2661			15221														
		STD	0600	1550	3607	2670	0015356		15201														
		STD	0700	1398	3583	2685	0014094		15166														
	130	OBS	0707	1386	35611	2686			15163														
		STD	0800	1199	3554	2703	0012425		15113														
	130	OBS	0873	1064	35375	2715			15075														
		STD	0900	1013	3534	2721	0010626		15061														
		STD	1000	0845	3523	2741	0008722		15014														
	130	OBS	1090	0724	35158	2753			14982														
		STD	1100	0712	3516	2755	0007297		14979														
		STD	1200	0614	3513	2766	0006150		14956														
		STD	1300	0551	3510	2772	0005554		14947														
	130	OBS	T1310	0547	35101	2772			14947														



REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	DEPTH INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
311	164	ML	35065N	047597W		113	57	09	29	137	1967	E06	003	2195	15	32	3	3		8	3	0003
WATER		WIND		SAR- METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS													
CDLDR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB																
		32	S11	176	244	233	7	14														
MESSAGE TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	D <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SI O <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C					
		STD	0000	2550	3642	2428	0036498	0000	15376													
	137	OBS	0000	2550	36423	2428			15376													
		STD	0010	2549	3642	2429	0036502	0037	15377													
		STD	0020	2547	3642	2429	0036507	0073	15378													
	137	OBS	0027	2546	36420	2429			15379													
		STD	0030	2500	3644	2445	0035035	0109	15369													
		STD	0050	2242	3654	2529	0027132	0171	15311													
	137	OBS	0051	2231	36545	2532			15308													
		STD	0075	2031	3657	2589	0021448	0432	15260													
	137	OBS	0077	2019	36572	2593			15258													
		STD	0100	1929	3656	2616	0019046	0282	15237													
	137	OBS	0101	1926	36556	2616			15236													
		STD	0125	1891	3656	2625	0018229	0329	15230													
		STD	0150	1861	3656	2633	0017587	0374	15226													
	137	OBS	0151	1860	36556	2633			15225													
		STD	0200	1822	3652	2640	0017060	0460	15222													
	137	OBS	T0205	1819	36520	2641			15222													
		STD	0250	1815	3650	2640	0017232	0546	15228													
		STD	0300	1800	3648	2642	0017211	0632	15232													
		STD	0400	1740	3643	2653	0016451	0800	15230													
	137	OBS	T0404	1737	36430	2654			15230													
		STD	0500	1639	3623	2662	0015893	0962	15214													
	137	OBS	0505	1633	36221	2663			15213													
		STD	0600	1495	3599	2676	0014725	1115	15183													
	137	OBS	0605	1487	35975	2677			15181													
		STD	0700	1320	3571	2692	0013347	1256	15139													
		STD	0800	1139	3547	2709	0011781	1381	15091													
	137	OBS	0808	1124	35448	2710			15087													
		STD	0900	0923	3523	2728	0009847	1489	15027													
		STD	1000	0757	3509	2743	0008321	1580	14979													
	137	OBS	1010	0743	35076	2744			14975													
		STD	1100	0676	3509	2754	0007249	1658	14964													
		STD	1200	0610	3510	2764	0006325	1726	14954													
	137	OBS	1256	0577	35105	2769			14951													
		STD	1300	0553	3510	2771	0005612	1786	14948													
		STD	1400	0504	3507	2775	0005254	1840	14945													
	137	OBS	T1492	0467	35032	2776			14944													

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN. SURF. PRESS.	MARS DEN. SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
					10'	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
31164	ML	35315N	048005W		113	58	09	30	127	1967	E06	004	4480	14	34	2	3		8	3	0004

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		33	S15	186	250	233	7	14	

MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°	Σ Δ D CYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-N μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	Si O <sub>4</sub> -Si μg - at/l	pH	S C
		STD	0600	2540	3641	2430	0036312	0400	15373								
		OBS	0600	2540	36408	2430			15373								
		STD	0610	2541	3641	2430	0036355	0036	15375								
		STD	0620	2542	3641	2430	0036401	0073	15377								
		OBS	0624	2542	36415	2430			15378								
		STD	0630	2496	3648	2449	0034630	0108	15369								
		OBS	0646	2361	36574	2497			15340								
		STD	0650	2318	3657	2509	0029003	0172	15330								
		OBS	0670	2129	36550	2561			15285								
		STD	0675	2086	3656	2574	0022937	0237	15275								
		OBS	0692	1968	36579	2607			15246								
		STD	0100	1950	3658	2611	0019452	0290	15243								
		STD	0125	1879	3657	2624	0018346	0337	15232								
		OBS	0137	1879	36563	2629			15229								
		STD	0150	1863	3655	2632	0017679	0362	15226								
		OBS	0188	1822	36516	2639			15220								
		STD	0200	1817	3651	2640	0017020	0409	15221								
		STD	0250	1796	3649	2644	0016828	0553	15223								
		STD	0300	1774	3647	2648	0016614	0637	15224								
		OBS	0362	1747	36450	2653			15226								
		STD	0400	1738	3643	2654	0016418	0662	15230								
		OBS	0453	1706	36371	2657			15228								
		STD	0500	1654	3627	2662	0015948	0764	15219								
		OBS	0543	1601	36177	2667			15209								
		STD	0600	1518	3603	2674	0014939	1118	15191								
		STD	0700	1360	3578	2689	0013652	1461	15153								
		OBS	0729	1311	35710	2694			15141								
		STD	0800	1173	3552	2706	0012667	1930	15112								
		STD	0900	0984	3530	2722	0010487	2533	15052								
		OBS	0912	0968	35283	2725			15048								
		STD	1000	0793	3515	2742	0008456	3598	14993								
		STD	1100	0642	3505	2756	0007010	4675	14930								
		OBS	1149	0587	35024	2761			14936								
		STD	1200	0568	3503	2764	0006213	5741	14937								
		STD	1300	0531	3504	2769	0005721	6811	14936								
		OBS	1348	0448	35053	2774			14940								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT IN/10	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	IO. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		SEA	TYPE	
311	164	ML	34560N	048000W		113	48	10	01	194	1967	E06	005	4389	17	06	4	3				0005
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
		COLOR CODE		TRANS. DIR.		SPEED OR FORCE		DRY BULB		WET BULB												
		06		516		139		24.4		23.9		7		14								
MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta$ OYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-N $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	S C					
		STD	0000	2530	3640	2432	0036097	0000	15371													
194		OBS	0000	2530	36297	2432			15371													
		STD	0010	2531	3640	2432	0036169	0036	15373													
		STD	0020	2533	3640	2432	0036242	0072	15375													
194		OBS	0023	2533	36399	2432			15375													
		STD	0030	2533	3640	2432	0036271	0109	15377													
194		OBS	0045	2532	36405	2432			15379													
		STD	0050	2423	3645	2469	0032824	0178	15354													
194		OBS	0066	2161	36541	2552			15293													
		STD	0075	2100	3655	2569	0023374	0248	15279													
194		OBS	0089	2017	36568	2593			15259													
		STD	0100	1988	3656	2600	0020521	0303	15253													
		STD	0125	1927	3655	2615	0019159	0352	15240													
194		OBS	0133		36544																	
		STD	0150	1873	3654	2628	0017994	0399	15229													
194		OBS	T0174	1830	36524	2638			15220													
		STD	0200	1821	3652	2640	0017058	0486	15222													
		STD	0250	1801	3652	2645	0016752	0571	15224													
		STD	0300	1780	3650	2649	0016568	0654	15226													
194		OBS	T0367	1748	36453	2653			15227													
		STD	0400	1740	3644	2654	0016393	0819	15230													
194		OBS	0475	1690	36342	2658			15227													
		STD	0500	1657	3627	2661	0016017	0981	15220													
194		OBS	0591	1526	36026	2672			15192													
		STD	0600	1510	3600	2674	0014980	1136	15188													
		STD	0700	1335	3571	2689	0013654	1275	15144													
		STD	0800	1156	3547	2705	0012142	1408	15097													
194		OBS	0837	1092	35392	2711			15079													
		STD	0900	0949	3527	2727	0010005	1519	15037													
		STD	1000	0761	3512	2745	0008165	1610	14981													
194		OBS	1093	0628	35020	2755			14943													
		STD	1100	0624	3502	2756	0006964	1686	14942													
		STD	1200	0572	3503	2763	0006293	1752	14938													
		STD	1300	0527	3503	2769	0005732	1812	14937													
		STD	1400	0489	3504	2774	0005270	1867	14938													
194		OBS	1419	0483	35040	2775			14939													
		STD	1500	0459	3503	2777	0005026	1916	14942													
194		OBS	T1746	0413	34987	2778			14964													

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	ORIG. PROJ. NO.	MARSSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF 'SAMPL'S'	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NOOC STATION NUMBER
CTRY CODE	ID. NO.					T0	T1	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA			
311	164	ML	35050N	047520W		113	57	10	02	127	1967	E06	006	4389	15	07	3	3			0006
WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
COLOR CODE		TRANS. (m)		OIR.		SPEED OR FORCE		METERS (mbars)		DRY BULB		WET BULB									
				07		S11		149		250		239									
										7		14									

MESSNGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta \sigma_{\theta}$ DWN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	SEC
		STD	0000	2503	3645	2445	0034905	0000	15365								
127		OBS	0000	2503	36453	2445			15365								
		STD	0010	2503	3645	2445	0034958	0035	15367								
		STD	0020	2504	3645	2445	0035011	0070	15369								
127		OBS	0024	2504	36453	2445			15369								
		STD	0030	2450	3648	2463	0033300	0104	15358								
		STD	0050	2277	3653	2516	0028131	0166	15320								
127		OBS	0050	2277	36534	2518			15320								
		STD	0075	2076	3653	2574	0022932	0229	15273								
127		OBS	0075	2076	36532	2574			15273								
		STD	0100	1960	3657	2608	0019767	0283	15245								
127		OBS	0100	1960	36567	2608			15245								
		STD	0125	1899	3655	2623	0018469	0330	15232								
		STD	0150	1854	3653	2632	0017605	0376	15223								
127		OBS	0151	1852	36529	2633			15223								
		STD	0200	1807	3651	2643	0016795	0462	15218								
127		OBS	T0204	1804	36507	2643			15218								
		STD	0250	1797	3648	2643	0016917	0546	15223								
		STD	0300	1783	3646	2645	0016943	0631	15227								
		STD	0400	1730	3641	2654	0016396	0797	15227								
127		OBS	0409	1724	36402	2655			15227								
		STD	0500	1650	3627	2662	0015856	0958	15218								
127		OBS	0511	1636	36250	2664			15215								
		STD	0600	1473	3596	2679	0014466	1110	15176								
127		OBS	0615	1446	35917	2681			15169								
		STD	0700	1290	3566	2694	0013102	1248	15128								
		STD	0800	1111	3542	2710	0011618	1372	15080								
127		OBS	0822	1072	35380	2714			15070								
		STD	0900	0919	3528	2733	0009414	1477	15026								
		STD	1000	0757	3518	2750	0007663	1562	14980								
127		OBS	1027	0720	35151	2753			14970								
		STD	1100	0647	3510	2759	0006718	1634	14952								
		STD	1200	0564	3504	2765	0006083	1698	14935								
127		OBS	1286	0508	35002	2769			14926								
		STD	1300	0500	3500	2770	0005590	1756	14925								
		STD	1400	0455	3499	2774	0005132	1810	14924								
		STD	1500	0429	3499	2777	0004930	1860	14924								
127		OBS	T1544	0423	34984	2777			14934								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	THER INDEX	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
CTRY CODE	ID. NO.					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	164	ML	34580N	048135W	113	48	10	03	144	1967	E06	007	4572	15	30	3	4		8	2	0007

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. 1m	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		31	S12	146	244	233	7	14	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t^s$	$\Sigma \Delta \sigma$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{ml}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{ml}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{ml}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{ml}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{ml}^{-1}$	pH	S C
		STD	0000	2541	3652	2439	0035521	0000	15375								
144		OBS	0000	2541	36522	2439			15375								
		STD	0010	2539	3652	2439	0035544	0036	15376								
		STD	0020	2536	3651	2439	0035574	0071	15377								
144		OBS	0025	2537	36511	2439			15378								
		STD	0030	2485	3651	2455	0034095	0106	15367								
		STD	0050	2281	3651	2515	0028421	0168	15320								
144		OBS	0050	2281	36509	2515			15320								
		STD	0075	2033	3657	2589	0021528	0231	15261								
144		OBS	0076	2026	36568	2591			15259								
		STD	0100	1939	3656	2613	0019265	0282	15239								
144		OBS	0101	1936	36564	2614			15239								
		STD	0125	1894	3655	2624	0018324	0329	15231								
		STD	0150	1858	3654	2632	0017623	0374	15225								
144		OBS	0152	1856	36540	2633			15224								
		STD	0200	1816	3652	2641	0016974	0460	15220								
144		OBS	T0207	1811	36511	2642			15220								
		STD	0250	1800	3651	2645	0016801	0545	15224								
		STD	0300	1732	3650	2648	0016616	0628	15227								
		STD	0400	1732	3643	2655	0016277	0793	15228								
144		OBS	T0402	1731	36425	2655			15228								
		STD	0500	1663	3630	2662	0015953	0954	15222								
144		OBS	0500	1663	36298	2662			15222								
		STD	0600	1477	3595	2677	0014625	1107	15177								
144		OBS	0601	1475	35946	2677			15176								
		STD	0700	1314	3571	2693	0013247	1246	15137								
		STD	0800	1132	3547	2710	0011685	1371	15088								
144		OBS	0801	1130	35462	2710			15088								
		STD	0900	0889	3523	2734	0009270	1476	15014								
		STD	1000	0712	3509	2749	0007651	1560	14961								
144		OBS	1000	0712	35086	2749			14961								
		STD	1100	0644	3509	2758	0006776	1632	14951								
		STD	1200	0586	3509	2766	0006063	1696	14945								
144		OBS	1249	0561	35086	2769			14943								
		STD	1300	0538	3508	2771	0005544	1755	14942								
		STD	1400	0500	3507	2775	0005197	1808	14943								
144		OBS	T1496	0474	35048	2776			14946								

REFERENCE CTRY NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT DIR SPD	MARSJOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOOC STATION NUMBER
					10'	1"	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE	
311	164	ML	35000N	048010W	113	58	10	04	126	1967	E06	008	4206	40	11	3	3		6	6	0008

WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS MHT	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
		27	S05	193	261	244	7	19	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ σ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg-at/l	TOTAL-P μg-at/l	NO <sub>2</sub> -N μg-at/l	NO <sub>3</sub> -N μg-at/l	SiO <sub>4</sub> -Si μg-at/l	pH	STATUS
		STD	0000	2531	3649	2439	0035464	0000	15372								
126		OBS	0000	2531	36489	2439			15372								
		STD	0010	2531	3649	2439	0035520	0035	15374								
		STD	0020	2531	3649	2439	0035509	0071	15375								
126		OBS	0024	2531	36485	2439			15376								
		STD	0030	2451	3650	2464	0033185	0105	15358								
		STD	0050	2225	3652	2532	0026815	0165	15306								
126		OBS	0050	2225	36520	2532			15306								
		STD	0075	2027	3653	2588	0021620	0226	15259								
126		OBS	0075	2027	36532	2588			15259								
		STD	0100	1946	3656	2611	0019468	0277	15241								
126		OBS	0100	1946	36560	2611			15241								
		STD	0125	1890	3655	2625	0018248	0324	15230								
		STD	0150	1847	3654	2635	0017349	0369	15221								
126		OBS	0150	1847	36542	2635			15221								
		STD	0200	1804	3651	2644	0016716	0454	15217								
126		OBS	T0201	1803	36510	2644			15217								
		STD	0250	1803	3648	2642	0017060	0539	15225								
		STD	0300	1790	3646	2643	0017124	0624	15229								
		STD	0400	1724	3640	2655	0016292	0791	15225								
126		OBS	T0402	1722	36401	2655			15225								
		STD	0500	1604	3619	2667	0015388	0950	15202								
126		OBS	0500	1604	36190	2667			15203								
126		OBS	T0595	1452	35923	2681			15168								
		STD	0600	1444	3591	2681	0014206	1097	15166								
		STD	0700	1283	3566	2696	0012961	1233	15126								
126		OBS	0799	1113	35450	2712			15081								
		STD	0800	1111	3545	2712	0011400	1355	15081								
		STD	0900	0898	3528	2736	0009057	1457	15018								
		STD	1000	0732	3516	2752	0007418	1540	14970								
126		OBS	T1006	0723	35154	2753			14967								
		STD	1100	0628	3510	2762	0006437	1609	14945								
		STD	1200	0549	3506	2769	0005724	1670	14929								
126		OBS	1248	0519	35045	2771			14925								
		STD	1300	0502	3503	2772	0005405	1726	14927								
		STD	1400	0472	3502	2774	0005174	1778	14931								
126		OBS	T1496	0447	35003	2776			14936								
		STD	1500	0446	3500	2776	0005067	1830	14937								
		STD	1750	0403	3497	2778	0004932	1955	14961								
161		OBS	T1946	0378	34965	2780			14983								
		STD	2000	0377	3497	2781	0004785	2076	14992								
161		OBS	2459	0354	34989	2785			15061								
		STD	2500	0350	3498	2784	0004716	2314	15066								
161		OBS	T2943	0305	34946	2786			15123								
		STD	3000	0298	3494	2786	0004561	2545	15130								
161		OBS	3927	0232	34905	2789			15263								
		STD	4000	0230	3490	2789	0004287	2988	15175								
161		OBS	T4030	0230	34899	2789			15280								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH INCHES	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER	
CIRY CODE	ID. NO.					10'	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT		PER	SEA		TYPE
311	164	ML	35000N	04804W		113	58	10	05	126	1967	E06	009	4206	14	25	2	3		8	3	0009

WATER		WIND		BARO-METER (mba)	AIR TEMP. °C		VIC CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		25	506	166	250	244	7	14	

MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta \sigma_t$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{at/l}$	TOTAL-P $\mu\text{g} - \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} - \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} - \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} - \text{at/l}$	pH	S.C.C.
		STD	0000	2530	3644	2436	0035809	0000	15371								
126		OBS	0000	2530	36437	2436			15371								
		STD	0010	2530	3644	2436	0035803	0036	15373								
		STD	0020	2529	3645	2437	0035796	0072	15375								
126		OBS	0024	2529	36449	2437			15375								
		STD	0030	2477	3646	2453	0034223	0107	15364								
126		OBS	0048	2310	36486	2503			15329								
		STD	0050	2293	3649	2510	0028868	0170	15323								
126		OBS	0072	2092	36494	2567			15275								
		STD	0075	2074	3650	2572	0023060	0235	15271								
126		OBS	0096	1969	36519	2602			15246								
		STD	0100	1960	3653	2605	0020035	0289	15245								
		STD	0125	1906	3656	2621	0018618	0337	15235								
126		OBS	0143	1875	36563	2630			15228								
		STD	0150	1873	3655	2629	0017922	0383	15229								
126		OBS	0190		36504												
		STD	0200	1853	3650	2630	0017974	0472	15231								
		STD	0250	1828	3648	2635	0017689	0501	15232								
		STD	0300	1796	3646	2642	0017239	0649	15230								
126		OBS	T0377	1734	36429	2655			15225								
		STD	0400	1714	3639	2656	0016144	0816	15222								
126		OBS	0468	1642	36261	2664			15210								
		STD	0500	1600	3618	2667	0015371	0973	15201								
126		OBS	0560	1516	36036	2675			15184								
		STD	0600	1465	3594	2679	0014438	1122	15173								
		STD	0700	1305	3570	2694	0013115	1260	15134								
126		OBS	0743	1222	35588	2702			15112								
		STD	0800	1061	3540	2718	0010840	1380	15062								
		STD	0900	0836	3516	2736	0008903	1479	14993								
126		OBS	T0913	0812	35137	2738			14986								
		STD	1000	0722	3513	2751	0007491	1500	14966								
		STD	1100	0634	3512	2762	0005372	1630	14948								
126		OBS	1151	0596	35116	2767			14941								
		STD	1200	0564	3511	2771	0005571	1690	14936								
		STD	1300	0511	3508	2775	0005164	1743	14931								
126		OBS	T1389	0479	35045	2776			14932								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'G	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NOCC STATION NUMBER	
CTRY CODE	ID. NO.					10"	1'	MO		DAY	HR.1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER		SEA
31	164	ML	35010N	048020W	113	58	10	06	127	1967	E06	010	4206	16	17	2	3		3	7	0010

WATER		WIND		BARO- METER (mbal)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		16	S09	132	250	239	7	14	

MESSAGE TIME OF HR. 1/10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10 <sup>7</sup>	Σ Δ ρ DYN. M. x 10 <sup>7</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	S C
127		STD	0000	2530	3647	2438	0035601	0000	15372								
		OBS	0000	2530	36466	2438			15372								
		STD	0010	2530	3647	2438	0035625	0036	15373								
		STD	0020	2531	3647	2438	0035678	0071	15375								
127		OBS	0026	2531	36475	2438			15376								
		STD	0030	2505	3648	2446	0034921	0107	15371								
		STD	0050	2351	3648	2493	0030564	0172	15337								
127		OBS	0051	2342	36481	2495			15335								
		STD	0075	2099	3650	2566	0023709	0240	15278								
127		OBS	0077	2084	36504	2570			15274								
		STD	0100	1980	3651	2598	0020681	0295	15250								
127		OBS	0102	1972	36511	2601			15248								
		STD	0125	1907	3652	2618	0018861	0345	15234								
		STD	0150	1855	3654	2633	0017538	0390	15223								
127		OBS	0155	1844	36539	2636			15221								
		STD	0200	1802	3650	2643	0016748	0476	15216								
127		OBS	T0211	1793	36492	2645			15215								
		STD	0250	1778	3647	2647	0016545	0559	15217								
		STD	0300	1759	3645	2650	0016442	0642	15219								
		STD	0400	1721	3640	2656	0016231	0805	15224								
127		OBS	0422	1712	36388	2657			15225								
		STD	0500	1617	3621	2666	0015538	0964	15207								
127		OBS	0528	1575	36136	2670			15198								
		STD	0600	1441	3591	2682	0014142	1112	15165								
127		OBS	T0631	1382	35613	2687			15149								
		STD	0700	1234	3590	2701	0012424	1245	15109								
		STD	0800	1034	3534	2718	0010787	1361	15052								
127		OBS	0850	0941	35245	2726			15025								
		STD	0900	0838	3517	2737	0008862	1459	14994								
		STD	1000	0672	3507	2753	0007164	1540	14945								
127		OBS	T1068	0589	35022	2761			14923								
		STD	1100	0576	3503	2763	0006221	1607	14923								
		STD	1200	0538	3504	2768	0005706	1666	14925								
		STD	1300	0505	3506	2773	0005264	1721	14926								
127		OBS	1335	0494	35060	2775			14930								
		STD	1400	0475	3505	2777	0004996	1772	14933								
		STD	1500	0450	3504	2779	0004829	1821	14939								
127		OBS	T1608	0427	35000	2778			14947								



REFERENCE		SHIP CODE	LATITUDE ° /10	LONGITUDE ° /10	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER							
CTRY CODE	IG. ND.					10"	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR				HGT	PER	SEA	TYPE	AMT		
31	164	ML	34580N	048000W	11348	10	07	127	1967	EOG	011	4309	15	15	0	2	21	6	17	0011						
WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS														
COLOR CODE		TRANS. (m)		DIR.		SPEED OF FORCE		METER (mbst)		DRY BULB		WET BULB		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
						33		S15		122		233		228		7		14								

MESSNGR TIME HR	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta$ D OTN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	TOTAL-P µg - ml/l	NO <sub>2</sub> -N µg - ml/l	NO <sub>3</sub> -N µg - ml/l	SiO <sub>4</sub> -Si µg - ml/l	pH	ST C
		STD	0000	2521	3602	2407	0038547	0000	15365								
127		OBS	0000	2521	36020	2407			15365								
		STD	0010	2532	3625	2421	0037255	0038	15371								
		STD	0020	2538	3642	2432	0036249	0075	15376								
127		OBS	0024	2539	36463	2435			15378								
		STD	0030	2537	3648	2437	0035815	0111	15376								
127		OBS	0048	2529	36495	2440			15380								
		STD	0050	2483	3649	2454	0034263	0181	15369								
127		OBS	0072	2097	36481	2565			15276								
		STD	0075	2073	3649	2572	0023106	0252	15271								
127		OBS	0096	1936	36533	2612			15237								
		STD	0100	1926	3653	2614	0019189	0305	15235								
		STD	0125	1875	3653	2627	0018027	0352	15225								
127		OBS	0144	1845	36529	2635			15220								
		STD	0150	1840	3652	2635	0017339	0396	15219								
127		OBS	T0191	1807	36492	2641			15216								
		STD	0200	1807	3649	2641	0016947	0462	15216								
		STD	0250	1800	3647	2641	0017090	0567	15223								
		STD	0300	1783	3645	2644	0016994	0652	15227								
127		OBS	T0385	1730	36418	2655			15225								
		STD	0400	1720	3640	2656	0016212	0618	15224								
127		OBS	0478	1639	36262	2664			15211								
		STD	0500	1600	3618	2667	0015371	0976	15201								
127		OBS	T0575	1466	35933	2678			15169								
		STD	0600	1422	3586	2682	0014101	1123	15156								
		STD	0700	1243	3559	2698	0012674	1257	15112								
127		OBS	0770	1115	35428	2710			15077								
		STD	0800	1046	3536	2717	0010858	1375	15057								
		STD	0900	0848	3519	2737	0008880	1474	14998								
127		OBS	T0964	0748	35109	2746			14969								
		STD	1000	0712	3511	2751	0007512	1556	14961								
		STD	1100	0626	3509	2761	0006452	1625	14944								
		STD	1200	0556	3508	2769	0005654	1686	14933								
127		OBS	1209	0531	35082	2770			14932								
		STD	1300	0505	3506	2774	0005227	1740	14928								
		STD	1400	0471	3504	2776	0005014	1792	14931								
127		OBS	T1455	0460	35020	2776			14935								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSSEN NO. 10	MARSSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NO. C STATION NUMBER		
CITY CODE	IO. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA	
311	164	ML	34550N	048030W	113	48	10	08	201	1967	E06	012	4572	15	05	5	3		6	6	0012		
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTH		SPECIAL OBSERVATIONS									
		COLOR CODE		TRANS. (m)		OIR.		SPEED OR FORCE		(mbs)		DRY BULB		WET BULB									
						07		S15		179		239		233		7		14					

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-t	SPECIFIC VOLUME ANOMALY-210°	$\Sigma \Delta \sigma$ DTN. M. x 10 <sup>6</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - dl/l	TOTAL-P µg - dl/l	NO <sub>2</sub> -N µg - dl/l	NO <sub>3</sub> -N µg - dl/l	SiO <sub>2</sub> -Si µg - dl/l	pH	S C C
		STD	0000	2535	3638	2430	0036373	0000	15372								
201		OBS	0000	2535	36379	2430			15372								
		STD	0010	2536	3638	2429	0036445	0036	15374								
		STD	0020	2537	3638	2429	0036520	0073	15376								
201		OBS	0024	2537	36376	2429			15376								
		STD	0030	2488	3641	2446	0034901	0109	15366								
201		OBS	0049	2305	36487	2507			15326								
		STD	0050	2290	3649	2511	0028805	0172	15322								
201		OBS	0071	2040	36526	2584			15262								
		STD	0075	2020	3653	2589	0021457	0235	15257								
201		OBS	0097	1930	36539	2614			15236								
		STD	0100	1924	3654	2615	0019074	0286	15235								
		STD	0125	1881	3654	2626	0018137	0332	15227								
201		OBS	0145	1853	36532	2633			15222								
		STD	0150	1848	3653	2634	0017460	0377	15222								
201		OBS	T0195	1808	36503	2642			15217								
		STD	0200	1807	3650	2642	0016867	0463	15218								
		STD	0250	1790	3649	2645	0016707	0547	15221								
		STD	0300	1769	3647	2649	0016524	0630	15223								
201		OBS	T0378	1728	36404	2654			15223								
		STD	0400	1722	3639	2654	0016331	0794	15224								
201		OBS	0473	1664	36279	2660			15218								
		STD	0500	1620	3621	2665	0015606	0954	15208								
201		OBS	0568	1505	36020	2676			15181								
		STD	0600	1447	3592	2681	0014198	1103	15167								
		STD	0700	1263	3563	2697	0012779	1238	15119								
201		OBS	0758	1156	35488	2707			15090								
		STD	0800	1065	3539	2716	0010986	1356	15064								
		STD	0900	0877	3521	2734	0009215	1457	15009								
201		OBS	T0949	0800	35150	2741			14987								
		STD	1000	0739	3513	2749	0007718	1542	14972								
		STD	1100	0636	3510	2761	0006533	1613	14948								
		STD	1200	0558	3507	2768	0005763	1675	14933								
201		OBS	1207	0553	35070	2769			14932								
		STD	1300	0533	3505	2773	0005272	1730	14927								
		STD	1400	0471	3504	2776	0005014	1781	14931								
201		OBS	T1469	0463	35032	2776			14939								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DRIFT INCHES	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NDDC STATION NUMBER
CRUISE NO.	IO. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER		SEA	TYPE	
311164		ML	34400N	048210W	113	48	10	09	175	1967	E06	013	4572	18	06	6	3	21	6	8	0013	

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		08	S17	251	24.4	23.9	7	14	

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Sigma \Delta \sigma_t$ DIV. BY $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{at/l}$	TOTAL-P $\mu\text{g} \cdot \text{at/l}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{at/l}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{at/l}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{at/l}$	pH	SIC
		STD	0000	2532	3651	2441	0035314	0000	15373								
175		OBS	0000	2532	36514	2441			15373								
		STD	0010	2532	3654	2443	0035168	0035	15375								
		STD	0020	2532	3655	2443	0035138	0070	15376								
175		OBS	0027	2532	36554	2444			15378								
		STD	0030	2499	3655	2454	0034214	0105	15370								
		STD	0050	2284	3652	2515	0028424	0168	15321								
175		OBS	0053	2253	36519	2524			15314								
		STD	0075	2018	3653	2590	0021436	0230	15256								
175		OBS	0080	1981	36535	2600			15247								
		STD	0100	1907	3653	2619	0018691	0280	15230								
175		OBS	0109	1881	36533	2626			15224								
		STD	0125	1862	3653	2630	0017711	0326	15221								
		STD	0150	1835	3652	2637	0017219	0369	15218								
175		OBS	0167	1820	36512	2640			15216								
		STD	0200	1799	3650	2644	0016676	0454	15215								
175		OBS	T0226	1784	36485	2647			15215								
		STD	0250	1773	3647	2648	0016479	0537	15216								
		STD	0300	1750	3643	2650	0016403	0619	15217								
		STD	0400	1705	3635	2655	0016243	0782	15219								
175		OBS	T0457	1679	36302	2658			15220								
		STD	0500	1602	3616	2665	0015560	0941	15202								
175		OBS	0574	1478	35947	2677			15173								
		STD	0600	1443	3589	2680	0014329	1091	15165								
175		OBS	0692	1305	35694	2694			15133								
		STD	0700	1286	3567	2696	0012949	1227	15127								
		STD	0800	1072	3539	2715	0011114	1348	15066								
		STD	0900	0891	3520	2731	0009523	1451	15014								
175		OBS	0933	0839	35152	2735			15000								
		STD	1000	0746	3512	2747	0007929	1538	14975								
		STD	1100	0631	3509	2760	0006554	1610	14946								
175		OBS	T1174	0565	35068	2767			14932								
		STD	1200	0553	3506	2768	0005780	1672	14931								
		STD	1300	0513	3505	2772	0005412	1728	14931								
		STD	1400	0479	3503	2774	0005197	1781	14934								
175		OBS	1478	0457	35019	2776			14938								
		STD	1500	0452	3502	2776	0005025	1832	14939								
		STD	1750	0412	3499	2779	0004696	1956	14965								
175		OBS	T1785	0410	34988	2774			14970								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	PORT	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NDOC STATION NUMBER		
CTRY CODE	ID. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	
21	164	ML	35080N	047430W		11	57	10	10	127	1967	E06	014	2377	14	03	6	3		6	1	0014	
		WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		METER (mbs)		DRY BULB		WET BULB									
						09		521		322		24.4		23.9		7		14					

MESSAGE# TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta \rho$ DYN. M. $\times 10^3$	SOUND VELOCITY	$D_2$ ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{ml}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{ml}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{ml}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{ml}^{-1}$	SiO <sub>2</sub> -Si $\mu\text{g} \cdot \text{ml}^{-1}$	pH	S C
		STD	0000	2455	3631	2446	0034855	0000	15355								
127		OBS	0000	2465	36307	2446			15355								
		STD	0010	2467	3631	2445	0034920	0035	15357								
127		OBS	0019	2468	36312	2445			15359								
		STD	0020	2468	3632	2445	0034950	0070	15359								
		STD	0030	2465	3635	2449	0034846	0105	15360								
127		OBS	0041	2461	36390	2453			15361								
		STD	0050	2319	3631	2504	0029463	0169	15350								
127		OBS	0050	2196	36630	2542			15292								
		STD	0075	2013	3637	2594	0021036	0232	15255								
127		OBS	0083	1944	36549	2611			15238								
		STD	0100	1901	3655	2622	0018450	0281	15229								
127		OBS	0104	1854	36545	2634			15219								
		STD	0125	1853	3654	2634	0017420	0326	15219								
		STD	0150	1829	3652	2638	0017075	0369	15216								
127		OBS	T017	1808	36501	2642			15214								
		STD	0200	1776	3649	2644	0016677	0454	15214								
		STD	0209	1773	3643	2649	0016376	0536	15216								
		STD	0300	1751	3645	2652	0016244	0616	15217								
127		OBS	T0234	1736	36431	2654			15218								
		STD	0400	1719	3641	2657	0016117	0780	15224								
127		OBS	0421	1699	36366	2658			15221								
		STD	0500	1557	3648	2669	0015134	0936	15167								
127		OBS	T0506	1546	36050	2672			15184								
		STD	0530	1398	3581	2683	0013959	1081	15153								
127		OBS	0529	1236	35527	2699			15107								
		STD	0700	1205	3556	2733	0012207	1212	15099								
		STD	0800	0977	3531	2725	0009095	1323	15031								
127		OBS	T0875	0831	3517	2734			14987								
		STD	0900	768	3515	2743	0006203	1414	14975								
		STD	1000	0642	3507	2757	0006720	1489	14933								
		STD	1100	0536	3502	2767	0005713	1551	14907								
127		OBS	1116	0523	35011	2768			14904								
		STD	1200	0502	3501	2770	0002444	1607	14910								
		STD	1300	0477	3501	2773	0002235	1600	14916								
127		OBS	T1383	0426	35003	2775			14921								

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDIC	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER				
CTRY CODE	NO.					10"	1"	MO	DAY	HR.		1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER		SEA	TYPE		AMT			
311	164	ML	3500N	047560W		11	57	10	11	127	1967	E06	015	+389	15	08	4	3			3	6		0015			
		WATER		WIND		BARO- METER		AIR TEMP. °C		VIS.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS													
		COLOR CODE		TRANS. (M)		DIR.		SPEED OR FORCE		METER (mb)		DRY BULB		WET BULB		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
						09		S17		325		239		228		7		14									

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\frac{\delta \Delta D}{D}$ DIR. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	TOTAL-P $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>2</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	NO <sub>3</sub> -N $\mu\text{g} \cdot \text{dl}^{-1}$	SiO <sub>4</sub> -Si $\mu\text{g} \cdot \text{dl}^{-1}$	pH	S C C
		STD	0000	2447	3650	2466	0032933	0000	15353								
127		OBS	0000	2447	36502	2466			15353								
		STD	0010	2446	3650	2466	0032951	0033	15354								
		STD	0020	2445	3650	2466	0032959	0066	15355								
127		OBS	0024	2445	36503	2466			15356								
		STD	0030	2440	3651	2468	0032791	0099	15356								
127		OBS	0048	2424	36514	2474			15355								
		STD	0050	2369	3651	2485	0031340	0163	15346								
127		OBS	0072	2063	36485	2574			15267								
		STD	0075	2036	3649	2581	0022205	0250	15261								
127		OBS	0096	1900	36517	2620			15227								
		STD	0100	1691	3651	2622	0018473	0281	15225								
		STD	0125	1843	3650	2633	0017469	0326	15216								
127		OBS	0144	1816	36496	2639			15211								
		STD	0150	1811	3650	2641	0016825	0366	15211								
127		OBS	0192	1783	36488	2647			15209								
		STD	0200	1781	3649	2647	0016350	0451	15210								
		STD	0250	1766	3647	2650	0016316	0333	15214								
		STD	0300	1752	3645	2652	0016282	0615	15217								
127		OBS	T0382	1728	36415	2655			15223								
		STD	0400	1714	3639	2656	0016144	0777	15222								
127		OBS	0478	1623	36318	2665			15205								
		STD	0500	1581	3614	2669	0015234	0334	15195								
127		OBS	0573	1443	35898	2681			15161								
		STD	0600	1395	3582	2685	0013824	1075	15149								
		STD	0700	1215	3555	2701	0012416	1210	15102								
127		OBS	0767	1093	35401	2712			15068								
		STD	0800	1018	3533	2720	0010574	1325	15046								
		STD	0900	0825	3517	2739	0008651	1421	14985								
127		OBS	T0961	0733	35109	2748			14963								
		STD	1000	0701	3511	2752	0007322	1501	14957								
		STD	1100	0625	3510	2762	0006364	1569	14944								
		STD	1200	0561	3510	2770	0005601	1629	14935								
127		OBS	1214	0553	35094	2771			14934								
		STD	1300	0508	3508	2775	0005122	1683	14930								
		STD	1400	0465	3504	2777	0004932	1733	14928								
127		OBS	T1469	0442	35005	2777			14930								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH M	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NDDC STATION NUMBER
CTRY CODE	IG. NO.					10"	1"	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
311	164	ML	35000N	048010W		113	58	10	12	127	1967	E06	016	4206	15	11	3	3		3	3		0016

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		12	S10	298	250	222	7	14	

MESSAGE TIME OF HR 1/10	CAST NO.	CARGO TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-210°	$\frac{\Delta \sigma}{\sigma}$ 0 GYN. ML. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	TOTAL-P µg - at/l	NO <sub>2</sub> -N µg - at/l	NO <sub>3</sub> -N µg - at/l	SiO <sub>4</sub> -Si µg - at/l	pH	CTRY CODE
		STD	0000	2460	3650	2461	0033357	0000	15356								
127		OBS	0000	2460	36495	2461			15356								
		STD	0010	2459	3650	2462	0033364	0033	15357								
		STD	0020	2458	3650	2462	0033370	0067	15358								
127		OBS	0025	2457	36495	2462			15359								
		STD	0030	2443	3650	2467	0032949	0100	15356								
		STD	0050	2386	3652	2485	0031297	0164	15346								
127		OBS	0050	2386	36516	2485			15346								
		STD	0075	2076	3648	2570	0023278	0232	15271								
		OBS	0075	2076	36477	2570			15271								
		STD	0100	1904	3651	2618	0018820	0485	15229								
127		OBS	0100	1904	36506	2618			15229								
		STD	0125	1851	3650	2631	0017662	0331	15218								
		STD	0150	1813	3649	2640	0016916	0374	15211								
127		OBS	0150	1813	36489	2640			15211								
		STD	0200	1784	3648	2646	0016457	0457	15211								
127		OBS	0200	1784	36481	2646			15211								
		STD	0250	1784	3645	2644	0016868	0541	15219								
		STD	0300	1770	3642	2645	0016945	0625	15222								
		STD	0400	1701	3635	2656	0016138	0740	15218								
127		OBS	0401	1700	36348	2657			15217								
127		OBS	0499	1578	36119	2668			15194								
		STD	0500	1576	3612	2668	0015296	0948	15193								
127		OBS	0593	1400	35797	2682			15149								
		STD	0600	1387	3578	2683	0013947	1094	15146								
		STD	0700	1203	3553	2701	0012328	1225	15097								
127		OBS	0797	1024	35327	2718			15048								
		STD	0800	1017	3532	2719	0010629	1340	15046								
		STD	0900	0806	3512	2738	0008710	1437	14981								
127		OBS	0995	0659	35006	2750			14938								
		STD	1000	0656	3501	2751	0007388	1517	14938								
		STD	1100	0597	3502	2760	0006543	1587	14932								
		STD	1200	0545	3504	2768	0005607	1649	14928								
127		OBS	1247	0523	35049	2771			14927								
		STD	1300	0500	3504	2773	0005304	1704	14926								
		STD	1400	0464	3502	2775	0005064	1756	14928								
		STD	1500	0434	3499	2776	0004976	1806	14932								
127		OBS	1501	0434	34985	2776			14932								

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARSOEN INDEX	MARSOEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NOCC STATION NUMBER		
CRUISE CODE	ID. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	
311	164	ML	3458N	04758 W	112	47	10	13	127	1967	E06	017	4389	15	15	2	2		8	2	0017		
		WATER		WIND		BARO-METER		AIR TEMP. °C				NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
		COLOR CODE		TRANS. (m)		DIR.		SPEED OR FORCE		METER (mb)		DRY BULB		WET BULB		VIS. CODE							
				17		S15		278		244		228		7		14							

MESSAGING TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ O OYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - at/l	TOTAL-P μg - at/l	NO <sub>2</sub> -N μg - at/l	NO <sub>3</sub> -N μg - at/l	SiO <sub>4</sub> -Si μg - at/l	pH	SEC
		STD	0000	2447	3648	2464	0033120	0000	15352								
127		OBS	0000	2447	36476	2464			15352								
		STD	0010	2444	3648	2465	0033074	0033	15353								
		STD	0020	2440	3647	2466	0033024	0066	15354								
127		OBS	0024	2439	36473	2466			15354								
		STD	0030	2424	3649	2472	0032495	0099	15352								
127		OBS	0047	2383	36503	2485			15345								
		STD	0050	2336	3650	2499	0030008	0161	15334								
127		OBS	0071	2073	36468	2570			15270								
		STD	0075	2038	3647	2580	0022350	0427	15261								
127		OBS	0094	1909	36486	2615			15229								
		STD	0100	1898	3649	2618	0018789	0478	15247								
		STD	0125	1858	3650	2629	0017831	0324	15220								
127		OBS	0141	1838	36506	2635			15217								
		STD	0150	1831	3650	2636	0017268	0368	15216								
127		OBS	0193	1801	36484	2642			15215								
		STD	0200	1799	3648	2642	0016821	0453	15215								
		STD	0250	1781	3646	2645	0016710	0337	15216								
		STD	0300	1755	3643	2650	0016482	0620	15218								
127		OBS	T0388	1690	36318	2657			15212								
		STD	0400	1682	3630	2657	0016052	0783	15211								
127		OBS	0480	1595	36144	2666			15196								
		STD	0500	1555	3607	2669	0015162	0939	15186								
127		OBS	T0570	1421	35839	2681			15152								
		STD	0600	1375	3576	2684	0013842	1084	15141								
		STD	0700	1215	3553	2699	0012561	1216	15101								
127		OBS	0769	1097	35389	2710			15070								
		STD	0800	1025	3533	2719	0010699	1332	15049								
		STD	0900	0827	3517	2739	0008683	1429	14990								
127		OBS	T0967	0723	35098	2748			14960								
		STD	1000	0694	3509	2752	0007319	1509	14954								
		STD	1100	0616	3508	2762	0006393	1578	14940								
		STD	1200	0551	3507	2769	0005666	1636	14930								
127		OBS	1224	0537	35066	2770			14929								
		STD	1300	0498	3505	2774	0005003	1692	14925								
		STD	1400	0458	3502	2776	0004483	1743	14925								
127		OBS	T1485	0424	34955	2776			14929								









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