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OCEANOGRAPHY OF THE MID-ATLANTIC BIGHT IN SUPPORT OF ICNAF

September-December 1967



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UNITED STATES COAST GUARD OCEANOGRAPHIC UNIT

REPORT No. 35 CG 373-35

OCEANOGRAPHY OF THE MID-ATLANTIC BIGHT IN SUPPORT OF ICNAF

September-December 1967

By Vincent L. Whitcomb



WASHINGTON, D.C. **5** OCTOBER 1970

Abstract

The physical oceanography of the shelf and slope waters of the Mid-Atlantic Bight (Cape Cod to Cape Hatteras) in September and December of 1967 is described. Temperature, salinity, density, dissolved oxygen, and chlorophyll data are presented in surface contours and section profiles. The seasonal cycle of temperature and salinity over the continental shelf is discussed and geostrophic currents in the slope water are inferred from the density structure.

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Oceanography of the Mid-Atlantic Bight in Support of ICNAF September-December 1967

Vincent L. Whitcomb⁺

INTRODUCTION

The northwest Atlantic is one of the most important commercial fishing areas in the world. Fishing fleets of many nations return annually to this region to harvest almost 4 billion pounds of fish and mollusks. The catches of these fleets contribute significantly to their nations' economy. These extensive fishing operations cannot, however, continue indefinitely without some management to protect against a depletion of resources. Recognizing the need for such management, 15 nations that fish in the northwest Atlantic have formed the International Commission for the Northwest At-(ICNAF). lantic Fisheries The goals of ICNAF are to understand the natural fluctuations in abundance of fish stocks, to assess the effects of commercial fishing, and to devise guidelines for the international management of fishing operations. The member nations include Canada, Denmark, France, Federal Republic of Germany, Iceland, Italy, Japan, Norway, Poland, Portugal, Romania, Spain, United States, Union of Soviet Socialist Republics, and the United Kingdom.

A primary area for ICNAF investigation is Georges Bank. This area supports one of the richest and most highly exploited fisheries in the world. The fish species of greatest interest in this area are haddock, herring, and silver hake. To understand the ecology of these species, a detailed investigation of their distribution, relative abundance, and growth and mortality rate in relation to environmental conditions is required. Such an investigation entails frequent measurements over the life cycle of each species and requires a multi-ship operation. The ICNAF members recommended that the USA and the USSR devise a plan for investigating the area, and indicate the resources that could be made available for the project. The plan was submitted in 1966, and after revision, accepted in 1967. The area of coverage was expanded to include the Mid-Atlantic Bight to the south (to $35^{\circ}00'$ N) and the Gulf of Maine to the north of Georges Bank (to $41^{\circ}31'$ N).

The Bureau of Commercial Fisheries is the United States representative agency to ICNAF. Under the Northwest Atlantic Fisheries Act of 1950 (16USC981) the United States Coast Guard is charged with cooperating with BCF in matters relating to ICNAF. The role of the Coast Guard in the ICNAF program is to collect and process data on the seasonal variations of the physical and chemical oceanography of the area being studied. The initial cruise performed in February 1967 (ICNAF 67-1) was to test various types of equipment for measuring currents on the Georges Bank. The results of this cruise were inconclusive due to the severe environmental conditions encountered. The first Coast Guard ICNAF survey cruise was made in September 1967 (ICNAF 67-2, fig. 1) by the USCGC EVERGREEN (WAGO 295) in conjunction with a groundfish survey conducted in the same area by the U.S. R/V ALBATROSS IV (of BCF) and the USSR's R/V ALBATROSS. A second cruise the area was conducted by USCGC EVERGREEN in December 1967 (ICNAF 67-3, fig. 2). The purpose of the two Coast Guard cruises was to obtain data on the vertical and horizontal distribution of temperature, salinity, dissolved oxygen and chlorophyll. The results are presented in this report.

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PROCEDURES

Oceanographic Sampling

Temperature and Salinity

At each station an STD (Salinity-Temperature-Depth system) cast was taken to the bottom or to the maximum STD operating depth of 1,500 meters, yielding a continuous trace of temperature and salinity as a function of depth. In shoal waters where there was danger of losing the STD "fish" on the bottom, or when the seas were too rough to permit safe shipboard handling of the STD, a standard Nansen cast with reversing thermometers was taken to determine the temperature and salinity profiles (computation of salinity from conductivity based on tables published by UNESCO/NIO, 1966). A Nansen cast to collect water samples at standard depths of 1, 10, 20, 30, 40, 50, 75, 100, 200, and 250 meters (as depths permited) was also taken for each station. Midway between stations expendable bathythermograph (XBT) casts were made. The positions at which the XBT's were dropped are indicated on the cruise tracks for September and December (figs. 1 and 2). On the return leg of the December cruise, XBT's were dropped every 3 hours.

Chemical Analyses

Water samples were analyzed for dissolved oxygen using the modified Winkler method (Carpenter, 1965). Aliquots of 125 ml of sea water were taken from water samples collected at the standard depths down to 100 meters for a determination of the cholorophyll content. The aliquots were filtered and the filters were frozen and stored in the ship's freezer. The filters were later analyzed ashore at the BCF Biological Laboratory, Woods Hole, Mass. Chlorophyll (total pigment) determinations were made according to the method of Yentsch and Menzel (1963) as modified by Yentsch (1965).

Bathymetry and Mcteorology

A continuous sonic sounding program was carried out by bridge personnel, and LORAN C was used for navigation. Meteorological and sea surface conditions were likewise recorded at each station by bridge personnel. These data included cloud type and coverage, wind speed

and direction, air temperature, barometric pressure, wave height, wave direction, and wave period. The weather data were combined with the water temperature data and sent by radio message to the Fleet Numerical Weather Facility, Monterey, Calif., after completion of each station deeper than 100 fathoms.

Operational Summary

	September	December
Hydrographic stations		
occupied	61	34
STD casts	58	32
XBT casts	34	35
Nansen casts	48	31
Dissolved oxygen analyse	s350	220
Chlorophyll (total pigmen	nt)	
analyses	286	183

Quality Control

Every 24 hours a complete Nansen cast, with reversing thermometers, was made in conjunction with an STD cast. Water samples were drawn for a determination of salinity by shipboard salinometers. The control salinities and the corrected thermometer temperatures were then compared with the STD readings at corresponding depths. Attempts were made to take the quality control Nansen casts at the deeper stations in order to obtain comparisons over the widest range possible. The disadvantage of this method is that the STD and Nansen casts cannot be made simultaneously. Changes in the water column between casts and error in determining sampling depth limit the value of quality control data acquired by this technique in the thermocline and halocline. A Nansen bottle was hung directly above the STD during the December cruise, and data from this single bottle were used on each STD cast, along with the 24- hour quality control Nansen cast data, for calibration.

All STD traces were read twice by different personnel to reduce the possibility of reading errors. Sigma-t values were determined by computer to indicate the existence of density inversions. The salinity and temperature data which produced these inversions were then rechecked for reading errors. When the existence of density inversions could not be resolved, the data were marked as questionable. The Coast Guard Field Party maintained a time adjusted position and depth log for all hydrographic and XBT stations. This log was periodically reviewed by USCGC EVERGREEN personnel.

DATA PRESENTATION

Data Listings

The STD traces were read at the standard depths of 0, 10, 20, 30, 40, 50, 75, 100, 150, 200, 250, 300, 400, 500, 600, 700, 800, 1,000, 1,100, 1,200, 1,300, 1,400 and 1,500 meters, and at all inflection points. These data, along with the dissolved oxygen, chlorophyll, time, position, meteorological, and sea surface data were entered on the NODC Form for Reporting Electronically Obtained Serial Data. These forms were submitted to the National Oceanographic Data Center, which later provided printed data listings. In addition to the data submitted, the printed listings also contain values for Sigma-t, specific volume anomaly, dynamic height, and sound velocity computed at NODC. The printed data listings for the September and December cruise are contained in Tables I and II of Appendix A.

Surface Contours

Surface values of temperature, salinity and Sigma-t were plotted along the cruise track, and surface contours were produced from these values. Surface isotherms, isohalines and isopycnals for September and December are presented in Figures 3 through 8.

Vertical Sections

Vertical sections for temperature, salinity, Sigma-t, oxygen, and chlorophyll were drawn for both cruises. The sections were drawn for those legs of the cruise track which were approximately normal to the coastline (figs. 1 and 2). For a meaningful presentation of vertical section contours, the vertical distance scale has been greatly exaggerated in comparison to horizontal distance scale (135:1). Sections of temperature, salinity and Sigma-t were drawn to a maximum depth of 500 meters. Temperature contours for the September and December cruises (figs. 9-24) were constructed using all of the sources of temperature data (STD, reversing thermometers and XBT's) collected on these cruises. Salinity sections (figs. 25-40) and Sigma-t sections (figs. 41-56) were also drawn to a maximum

depth of 500 meters. The sections of dissolved oxygen (figs. 57–71) were drawn to a maximum depth of 250 meters and those of chlorophyll (figs. 72–86) were drawn to a maximum depth of 100 meters.

Water Masses

Vertical sections of temperature and salinity were inspected to determine the existence of water masses having characteristic properties of temperature or salinity. Isotherms and isohalines which tended to form closed loops on the vertical section contours were considered to be the boundaries of water masses. When "closed loop" isotherms (or isohalines) of identical value appear on successive sections, they were joined together by smooth lines to give a three dimensional perspective of the water masses (figs. 87–90). These figures are not a synoptic portrayal of the shape of the boundaries, but rather represent the extent of the boundaries over the time period of the cruise.

RESULTS

Temperature Distribution

The physical properties of coastal waters of the Mid-Atlantic Bight are subject to large seasonal variations. In September surface waters over the shelf ranged from 17° C to 20° C and subsurface waters were 2C° to 4C° cooler. In December the shelf water was essentially vertically isothermal and ranged from 6°C to 10° C.

Using data from various sources, Bigelow (1933) gave a description of the temperature cycle for the Mid-Atlantic Bight waters. Surface cooling and intense mixing of the vertical column occur over the shelf during the winter months. Shelf water temperatures reach a minimum during February and March. This minimum is followed by vernal warming occurring more rapidly inshore and at the surface. A thermocline of increasing steepness is developed as the warming season progresses. The thermocline is steepest in mid-September, after which autumnal cooling begins and the cycle is repeated. Daily water temperature and salinity at 13 locations along the Atlantic seaboard were tabulated for 1966 and 1967 by Chase (1969). The temperature cycles are depicted graphically in an atlas of monthly

sea temperatures from the Florida Keys to Cape Cod (Walford and Wickland, 1968).

Low Temperature Core

Vernal warming forms a layer of warm water overlying a pool of relatively cool water lying over the shelf. This pool gradually diminishes as vernal warming progresses. The remains of this cool water pool were found in September 1967 (fig. 87). It appears as a core of cool water (less than 8°C) form Cape Cod to the offing of Chesapeake Bay. Ketchum and Corwin (1969) studied the persistence of "winter" water on the continental shelf for a period of 3 years. They concluded that the pool of cool water is warmed by both vertical mixing with less saline surface water and horizontal mixing with more saline slope water. The type of mixing was related to the heat budget along the shelf.

One of the processes by which the pool of cool water is dissipated was described as "calving" (Cresswell 1967). In this process, large bubbles of cold water break off and move seaward as they mix with the slope water. The primary cause of calving was ascribed to the shoaling of internal waves. Tidal agitations were described as a secondary cause. The density structure of the water over the shelf edge in September 1967 (figs. 41-50) included a sharp vertical gradient 20 to 30 meters below the surface and either riding over or impinging upon the shelf edge. Thus, conditions for the propagation of internal waves existed in September 1967. They did not, however, exist during December 1967 (figs. 51-56).

Evidence of the calving process was found in September 1967 (fig. 10). A relatively small cold bubble $(11^{\circ}C)$ was found 30 miles seaward of the cold water on the shelf edge in section 2. This bubble appeared to be in the final stages of separation from the parent water mass. It is interesting to note that in this instance and in the examples presented by Cresswell, the bubbles are closer to the surface than their parent water masses.

The dissolved oxygen content of the cold water bubble (fig. 58) discussed above was higher than that of the surrounding warmer, water, as expected, but it was also higher than that of the parent water mass. This high oxygen content may have been the result of photosynthetic activity in the bubble after its detachment and rise into the photic zone. The relatively higher chlorophyll content of the bubble (fig. 73) supports this contention.

Salinity Distribution

In September and December, the water over the shelf generally showed weak vertical salinity gradients approaching isohaline conditions on some stations (figs. 25-40). The horizontal gradients were relatively strong, however, and reached a maximum near the shelf edge. In September surface salinity increased gradually from less than 31% near the coastline to greater than 35‰ beyond the continental shelf (fig. 5). The same general gradient of surface salinity occurred in December with an inshore salinity of less than 32% (fig. 6). The increase in salinity during December reflects high evaporation rates and low river discharges during winter months. The river discharges of the northern half of the Mid-Atlantic Bight are highest in March, April, and May. Inshore salinity reaches a minimum during this period (Ketchum and Keen, 1955). Bumpus (1969) has associated low river runoffs along the Mid-Atlantic Bight with reversals in the surface drift over the continental shelf.

A layer of high salinity was found during both cruises (figs. 89 and 90) in the same general location. The salinity values of the layer decreased slightly from September (35.75‰) to December (35.50‰). There was a surfacing of the high salinity layer along section 4 in September (fig. 28). It appears that this was the result of current induced upwelling associated with cyclonic water motion. Assuming geostrophic conditions, the density structure of the water along section 4 (fig. 44) depicts a local cyclonic eddy limited to the upper 50 meters.

Gulf Stream Counterflow

Stommel (1957) proposed that a baratropic flow opposite to the Gulf Stream could be maintained by the sinking of polar water. Swallow and Worthington (1957) observed a deep western boundary current opposite to the Gulf Stream off the Blake Plateau, south of Cape Hatteras. This current was below 2,000 meters and ranged from 9 to 18 cm/sec. Volkmann (1962) computed a western boundary current flowing opposite the Gulf Stream in an area south of Cape Cod in 1959 to 1960. The geostrophic flow below 1,400 meters was determined using a 2,000-meter reference level. Volkmann concluded that the westward flow of water may not be continous but may consist of a series of eddies or transients. He also concluded from transport calculations that large amounts of water flowing westward between Cape Cod and Cape Hatteras are recirculated by the Gulf Stream, and that the amount of water recirculated can be influenced by largescale transcients. Direct measurements of subsurface currents were made by Barrett (1955) off of Cape Hatteras in 1962. He found that the inshore westward flowing current appeared to be continous along the steep continental slope from depths of several hundred meters to depths greater than 2,500 meters.

Assuming geostrophic conditions were dominant in the water column over a depth of 500 meters or greater, several inferences concerning a counterflow west of the Gulf Stream can be drawn from the density profiles. East of 73°W longitude, counterflow was as shallow as 100 meters and within 40 miles of the edge (100 meters depth) of the continental shelf (figs. 41, 42, 44, and 53). Through sections 4and 7 in September and section 2 in December a northeastward flow below 150 meters was indicated between the counterflow and the continental slope (figs. 44, 47, and 52). Since this flow was not indicated through adjacent sections, it may represent an eddy in the counterflow. No counterflow was indicated in the upper 500 meters along section 9 in September. It is possible that a counterflow may have existed deeper than 500 meters along this section, or it may have been entrained in the Gulf Stream.

Niiler and Spiegel (1968) presented a numercial treatment of formation of a quasigeostropic jet along a shoaling coast. They assume coastal regions to be shallow on a scale comparable to the width of the boundary current and the current is assumed to be of constant potential vorticity. The significant features of the numerical solution are "(i) the appearance of a countercurrent, (ii) a pocket of warm water above the ledge where the shelf drops off into the deep ocean, and (iii) a pocket of cold water on the ledge." These features appear to be generally in good agreement with the conditions found during September.

Niiler and Spiegel's numerical treatment indicates the dependence of the current upon the topographical features of the shelf edge. As the shelf edge changes from a sharp ledge to a gradual rise, the countercurrent amplitude is decreased and the width is increased. They noted that the numerical analysis is valid only for a limited distance downstream of where the countercurrent begins. This is because the influx of water increases the horizontal density gradient to a point where the quasigeostrophic approximation is invalidated. This phenomena may explain the apparent discontinuity of the countercurrent indicated by the ICNAF data.

Shelfwater—Slope Water Boundary

A striking feature of the data collected during September and December 1967 was the evidence of dynamic processes occurring at the shelf water-slope water interface. This interface represents a boundary between markedly different temperatures and salinities, and between deep and shallow water regimes. This boundary is subject to the dynamic processes of wind mixing, tides, internal waves and currents which may be strongly influenced by transients. Due to these conditions and shallowness of the shelf edge, the assumptions of geostrophic flow were not applied to infer water motion in this area.

The physical properties of the shelf waterslope water boundary were strongly influenced by seasonal variations in 1967. The marked change in the density structure between 30 and 50 meters depth over the shelf edge from September to December indicated a strong seasonal variation in vertical mixing. The vertical lines of constant sigma-t in December (figs. 51 through 56) suggest intense mixing, probably due to strong wind mixing and convection resulting from surface cooling. In September, these mixing processes were absent and the density of this layer is well stratified (figs. 41–50).

CONCLUSIONS

A continuous core of relatively cold water existed in September along the shelf edge from Cape Cod to the offing of the Chesapeake Bay. Evidence of "calving" in which a large bubble of cold water separates from the core and moves seaward was found. Oxygen and chlorophyll concentrations were relatively high within this bubble suggesting increased photosynthetic activity.

In general, surface salinity increased gradually from the shore to the shelf edge. Layers of high salinity water were found in the slope water off the Mid-Atlantic Bight in September and December. Upwelling of this high salinity layer appears to have been caused by a local cyclonic eddy in September.

A counterflow inshore of the Gulf Stream was inferred from the slope water density. This flow may have been discontinuous in the upper 500 meters and may have reversed direction.

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Figure 1. Station and section locations ICNAF 67-2-18-29 September 1967.



Figure 2. Station and section locations ICNAF 67-3-11-23 December 1967.



Figure 3. Sea surface temperature (°C) ICNAF 67-2-18-29 September 1967.



Figure 4. See surface temperature (°C) ICNAF 67-3-11-23 December 1967.



Figure 5. Surface salinity (%) ICNAF 67-2-18-29 September 1967.



Figure 6. Surface salinity (‰) ICNAF 67-3-11-23 December 1967.



Figure 7. Surface density (ot in g/l) ICNAF 67-2-18-29 September 1967.



Figure 8. Surface density (ot in g/l) ICNAF 67-3-11-23 December 1967.



Figure 9. Vertical distribution of temperature (°C)—Section 1 ICNAF 67-2, 18-29 September 1967. 16, 17, 18, 19 and 21°C contours omitted to preserve clarity.



Figure 10. Vertical distribution of temperature (°C)—Section 2 ICNAF 67-2, 18-29 September 1967.



Figure 11. Vertical distribution of temperature (°C)-Section 3 ICNAF 67-2, 18-29 September 1967.



Figure 12. Vertical distribution of temperature (°C)—Section 4 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 (SECTION 5)



Figure 13. Vertical distribution of temperature (°C)—Section 5 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 6



Figure 14. Vertical distribution of temperature (°C)-Section 6 ICNAF 67-2, 18-29 September 1967.



Figure 15. Vertical distribution of temperature (°C)-Section 7 ICNAF 67-2, 18-29 September 1967.



Figure 16. Vertical distribution of temperature (°C)—Section 8 ICNAF 67-2, 18-29 September 1967.



Figure 17. Vertical distribution of temperature (°C)-Section 9 ICNAF 67-2, 18-29 September 1967.



Figure 18. Vertical distribution of temperature (°C)-Section 10 ICNAF 67-2, 18-29 September 1967.



Figure 19. Vertical distribution of temperature (°C)—Section 1 1CNAF 67-3, 11-23 December 1967.

ICNAF 67-3 SECTION 2



Figure 20. Vertical distribution of temperature (*C)-Section 2 ICNAF 67-3, I1-23 December 1967.


Figure 21. Vertical distribution of temperature (°C)--Section 3 ICNAF 67-3, 11-23 December 1967.



Figure 22. Vertical distribution of temperature (°C)-Section 4 ICNAF 67-3, 11-23 December 1967.







Figure 24. Vertical distribution of temperature (°C)—Section 6 ICNAF 67-3, 11-23 December 1967.



Figure 25. Vertical distribution of salinity (‰)—Section 1 ICNAF 67-2, 18-29 September 1967.



Figure 26. Vertical distribution of salinity (‰)-Section 2 ICNAF 67-2, 18-29 September 1967.



Figure 27. Vertical distribution of salinity (‰)-Section 3 ICNAF 67-2, 18-29 September 1967.



Figure 28. Vertical distribution of salinity (‰)-Section 4 ICNAF 67-2, 18-29 September 1967.



Figure 29. Vertical distribution of salinity (‰)-Section 5 ICNAF 67-2, 18-29 September 1967.



Figure 30. Vertical distribution of salinity (‰)-Section 6 ICNAF 67-2, 18-29 September 1967.





Figure 31. Vertical distribution of salinity (‰)--Section 7 ICNAF 67-2, 18-29 September 1967.



Figure 32. Vertical distribution of salinity (‰)-Section 8 ICNAF 67-2, 18-29 September 1967.



Figure 33. Vertical distribution of salinity (‰)—Section 9 ICNAF 67-2, 18-29 September 1967.



Figure 34. Vertical distribution of salinity (‰)-Section 10 ICNAF 67-2, 18-29 September 1967.



Figure 35. Vertical distribution of salinity (%)-Section 1 ICNAF 67-3, 11-23 December 1967.



Figure 36. Vertical distribution of salinity (‰)-Section 2 ICNAF 67-3, 11-23 December 1967.



Figure 37. Vertical distribution of salinity (‰)—Section 3 1CNAF 67-3, 11-23 December 1967.



Figure 38. Vertical distribution of salinity (‰)-Section 4 ICNAF 67-3, 11-23 December 1967.







Figure 40. Vertical distribution of salinity (‰)—Section 6 ICNAF 67-3, 11-23 December 1967.



Figure 41. Vertical distribution of density (ot in g/t)—Section 1 ICNAF 67-2, 18-29 September 1967.



Figure 42. Vertical distribution of density (ot in g/l)-Section 2 ICNAF 67-2, 18-29 September 1967.



Figure 43. Vertical distribution of density (σt in g/l)—Section 3 ICNAF 67-2, 18-29 September 1967.



Figure 44. Vertical distribution of density (ot in g/l)-Section 4 ICNAF 67-2, 18-29 September 1967.



Figure 45. Vertical distribution of density (ot in g/l)-Section 5 4CNAF 67-2, 18-29 September 1967.







Figure 47. Vertical distribution of density (ot in g/l)-Section 7 ICNAF 67-2, 18-29 September 1967.



Figure 48. Vertical distribution of density (ot in g/l)-Section 8 ICNAF 67-2, 18-29 September 1967.



Figure 49. Vertical distribution of density (ot in g/l)-Section 9 ICNAF 67-2, 18-29 September 1967.



Figure 50. Vertical distribution of density (ot in g/1)-Section 10 ICNAF 67-2, 18-29 September 1967.



Figure 51. Vertical distribution of density (ot in g/l)—Section 1 ICNAF 67-3, 11-23 December 1967.



Figure 52. Vertical distribution of density (ot in g/l)-Section 2 ICNAF 67-3, 11-23 December 1967.



Figure 53. Vertical distribution of density (ot in g/l)-Section 3 ICNAF 67-3, 11-23 December 1967.



Figure 54. Vertical distribution of density (ot in g/l)—Section 4 1CNAF 67-3, 11-23 December 1967.



Figure 55. Vertical distribution of density (ot in g/l)—Section 5 1CNAF 67-3, 11-23 December 1967








Figure 57. Vertical distribution of dissolved oxygen (ml/l)-Section 1 ICNAF 67-2, 18-29 September 1967.



Figure 58. Vertical distribution of dissolved oxygen (ml/l)—Section 2 ICNAF 67-2, 18-29 September 1967.



Figure 59. Vertical distribution of dissolved oxygen (ml/l)-Section 3 ICNAF 67-2, 18-29 September 1967.



Figure 60. Vertical distribution of dissolved oxygen (ml/l)-Section 4 (CNAF 67-2, 18-29 September 1967.



Figure 61. Vertical distribution of dissolved oxygen (ml/l)—Section 5 1CNAF 67-2, 18-29 September 1967.



Figure 62. Vertical distribution of dissolved oxygen (ml/l)—Section 6 ICNAF 67-2, 18-29 September 1967.



Figure 63. Vertical distribution of dissolved oxygen (ml/l)-Section 7 ICNAF 67-2, 18-29 September 1967.



Figure 64. Vertical distribution of dissolved oxygen (ml/l-Section 8 lCNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 9



Figure 65. Vertical distribution of dissolved oxygen (ml/l)-Section 9 1CNAF 67-2, 18-29 September 1967.







Figure 67. Vertical distribution of dissolved oxygen (ml/l)-Section 2 ICNAF 67-3, 11-23 December 1967.



Figure 68. Vertical distribution of dissolved oxygen (ml/l)-Section 3 lCNAF 67-3, 11-23 December 1967.



Figure 69. Vertical distribution of dissolved oxygen (ml/l)-Section # ICNAF 67-3, 11-23 December 1967.



Figure 70. Vertical distribution of dissolved oxygen (ml/l)-Section 5 1CNAF 67-3, 11-23 December 1967.

ICNAF 67-3 SECTION 6 DISSOLVED OXYGEN STA 29 STA 30 **STA 31 STA 32 STA 33 STA 34** 0 6 ° e 6.5 . 6.25 6.0 . 50 6.0 5.75 5.5 5.25 5.0 4.75 100 4.5 DEPTH (METERS) 4.25 --4.0 -150 3.75 10 ۵ MILES 3.5 200 3.25 250

Figure 71. Vertical distribution of dissolved oxygen (ml/l)-Section 6 ICNAF 67-3, 11-23 December 1967.



Figure 72. Vertical distribution of chlorophyll (mg/m³)—Section 1 1CNAF 67-2, 18-29 September 1967.



Figure 73. Vertical distribution of chlorophyll (mg/m²)-Section 2 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 3



Figure 74. Vertical distribution of chlorophyll (mg/m³)-Section 3 ICNAF 67-2, 18-29 September 1967.



Figure 75. Vertical distribution of chlorophyll (mg/m²)-Section 4 ICNAF 67-2, 18-29 September 1967.



Figure 76. Vertical distribution of chlorophyll (mg/m^{*})-Section 5 ICNAF 67-2, 18-29 September 1967.



Figure 77. Vertical distribution of chlorophyll (mg/m)-Section 6 ICNAF 67-2, 18-29 September 1967.



Figure 78. Vertical distribution of chlorophyll (mg/m³)-Section 7 ICNAF 67-2, 18-29 September 1967.



Figure 79. Vertical distribution of chlorophyll (mg/m)-Section 9 ICNAF 67-2, 18-29 September 1967.





Figure 80. Vertical distribution of chlorophyll (mg/m¹)—Section 9 ICNAF 67-2, 18-29 September 1967.



Figure 81. Vertical distribution of chlorophyll (mg/m)-Section 10 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-3 SECTION 1



Figure 82. Vertical distribution of chlorophyll (mg/m)-Section 1 ICNAF 67-3, 11-23 December 1967.



Figure 83. Vertical distribution of chlorophyll (mg/m³)-Section 2 ICNAF 67-3, 11-23 December 1967.



Figure 84. Vertical distribution of chlorophyll (mg/m)-Section 3 ICNAF 67-3, 11-23 December 1967.



Figure 85. Vertical distribution of chlorophyll (mg/m³)-Section 4 ICNAF 67-3, 11-23 December 1967.



Figure 86. Vertical distribution of chlorophyll (mg/m¹)-Section 5 lCNAF 67-3, 11-23 December 1967.



Figure 87. Cold water core (temperatures less than 8°C)-ICNAF 67-2-18-29 September 1967.



Figure 88. Warm water layer (temperatures greater than 14°C)-ICNAF 67-3-11-23 December 1967.



Figure 89. High salinity layer (salinity greater than 35.75%) ICNAF 67-2 18-29 September 1967.



Figure 90. High salinity layer (salinity greater than 35.5‰) ICNAF 67-3, 11-23 December 1967.

APPENDIX A

OCEANOGRAPHIC DATA

A complete description of the codes utilized in the tabulation of oceanographic station data can be found in National Oceanographic Data Center publication M-2, *Processing Physical and Chemical Data from Oceanographic Stations*. (Rev. August 1964, supplement issued May 1966.)

To facilitate use of the oceanographic station data listing, entry headings which are not selfexplanatory are described below.

Depth to Bottom	Corrected or uncorrected sounding in meter.
Max. Depth of Samples _	Depth of deepest sample to nearest multiple of one hundred meters.
Wave observations DIR.	Rounded to nearest multiple of 10 degrees.
HGT.	In increments of $\frac{1}{2}$ m. Sum of 5 meters plus increments of $\frac{1}{2}$ m if 50 is added to direction.
PER.	If numerals 2 through 9 are entered, period in seconds is twice the numeric entry or $2X$ (numeric entry) + 1. For other entries see WMO Code 3155.
SEA	Sea state according to WMO Code 3700
Weather Code	If preceded by X, weather according to WMO Code 4501. If a two-digit entry, weather according to WMO Code 4677.
Cloud Code	
Type	Cloud type according to WMO Code 0500.
Amount .	Cloud amount in eights. Entry of the numeral 9 indicates cloud amount could not be estimated.
Water Color Code	Color according to Forel-Ule scale.
Trans.	Transparency in whole meters as determined by Secchi disc.
Wind	
Dir.	Rounded to nearest multiple of 10 degrees.
Speed or Force	If preceded by letter S, wind speed in knots; if preceded by letter F, wind force according to Beaufort scale.
Barometer	Barometric pressure given in 10, units and tenths of millibars.
Air Temp. °C.	Air temperature to tenths of a degree centigrade.
Vis. Code	Visibility according to WMO Code 4300.
No obs. depths	Number of observed levels associated with the station.
Messenger time	Entered in hours and tenths of an hour GMT. For Nansen casts, indicates time of release of messenger applicable to the observational level. For STD casts, indicates the starting time of lowering the sensor.
Card type	OBS designates observed levels. STD indicates the values at this standard level were interpolated by a modified 3-point LaGrange formula.

Depth(m)	Depth to nearest meter. A postscript T indicates depth was obtained thermo- metrically; Z indicates uncorrected "wire out" depth. Postscript Q indicates value was marked doubtful by originator; P indicates value was considered doubtful by NODC. Postscripts P and Q retain this meaning throughout the following entries.
T °C	Temperature to hundredths of a degree Centigrade
S %0	Salinity in parts-per-thousand.
SIGMA-T	Entered to hundredths.
Specific-volume Anomaly–x 10 ⁷	Multiply entry by 10 ⁺ to obtain specific-volume anomaly in cubic centimeters per gram.
ΣΔD Dyn. M. x	10 ³ Multiply entry by 10 ⁻³ to obtain anomaly of dynamic height in dynamic meters referenced to the sea surface.
Sound Velocity	Sound velocity according to Wilson's formula entered to tenths of a meter per second.
O2 ml/1	Dissolved oxygen in milliliters per liter entered to hundredths.
PO ₄ -P ug-at/1	Inorganic phosphate in microgram-atoms per liter entered to hundredths.
Total-P ug-at/1	Total phosphous in microgram-atoms per liter entered to hundredths.
NO ₂ -N ug-at/1	Nitrite-nitrogen in microgram-atmos per liter entered to hundredths.
NO ₃ -N ug-at/1	Nitrate-nitrogen in microgram-atmos per liter entered to tenths.
SiO ₄ -Si ug-at/1	Silicate-silicon in microgram-atmos per liter entered to whole units.
pH	Entered to hundredths.
TABLE I.—Observed and interpolated oceanographic data taken by USCGC Evergreen, 19-29 September 1970, onICNAF Cruise 67-2; prepared from NoDC Listing No. 31-8023.

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		STD	0150	1075	3546	27	20	000916	8	0184	14	961	324							
		085	0150	1075	3545	8 27	20				14	961	324							
		STD	0200	0975	5 3530	27	2.5	000875	56	0229	14	931								
		OBS	0200	Ú975	3530	0 27	25				14	931 931								
		SID	0250	Ú86.	3524	27	3 H	00075,	2.3	0 4 7 -	14	597								
		085	0250	0867	3523	7 27	38				14.	897								
		STD	0300	076.	: 35UE	27	40	00074	14	0.3.07	14	865								
		OBS	0300	076.	3506	2 27	4 Û				14	865								
		STD	0400	0584	+ 349	27	57	00058	18	0373	14	810								
		OBS	0400	0584	- 349	0 27	57				14	810								
		STD	0500	0518	3 3490	27	t '	000495	2.2	0427	14	800								
		085	0500	0518	3400	21	67		-	0.74	14	800								
		0.810	0600	047	1 340	21	11	00045	(_	0475	14	500 200								
		085	0800	047	1 349*	10 Z7	71	0004-1	5.0	052	1.4	8 1). 0 1 1								
		0.00	0700	040	• 50000 - 36.11	. 2(1.7	00042	14	12721	1.4	011								
		0.650	0700	0404	+ 3071 1 3601	.4 27	76	0004-4	5.4	0.54.0	14 14	9 I I -								
		000	0000	0400	7 2-111 1 36-11	- 77	76	00042		0.204	1.4	0 E E -								
		- 105 - 110	0000	04.3	. 35.0	· 27	7 2	00043	1.	0.5.1.7	14	766 966								
		055	0960	043	- 3500	14 27	77	0.004.0		0001	14	н 33								
		570	1000	047	3 3500 1 3500		79	00042	4.5	3650	1 14	845.								
		085	1000	042	1 350	10 21	79	000.00	-		14	943								
		STD	1100	041	350/	27	80	00042	15	3642	14	855								
		STD	1200	039	7 35.10	1 27	81	00041	4	0714	14	466								
		OBS	1200	039	7 3490	10 21	81				14	86E								
		< TD	1300	038	3 35 Or	2	82	00040	ŝ F	0775	14	877								
		STD	1400	036	3500	21	84	00134	5.9	0814	14	264								
		STD	1500	035.	3500) 27	86	00038	32	0854	. 14	вчв								
		OBC	1500	0.25	3/10/	5 2 C	9.5				1.4	POA								

REFERENCE CTRY ID. CODE NO.	SHIP CODE	LATITU	UDE		A MARSO	RE	STATION (GMT		YEAR	ORIGI CRUISE	NATOR'S STATION		DEPTH TO BOILOM	DEPTH OF	08	- WAVE SERVATION	WEA THE	CCOR		т ;	n - La trans	
31902	2 5 1	100			10		MUIDAT	HR, I 10			NUMBER			STAN PL"	CIR.	HGT FER		TIPE AV			0.00855	
51602.		3401	U N	10400 W	112	9.0	<u>09</u> 19	183	1967	102 0	0.5	\rightarrow	3181	15	29	1 2	1 8 1				0004	
						OLOP	TRANS	SPEED	BAR		LAFT L	VIS	NO. OBS.	SPEC	CIAL							
						CODE	Im1 DIR.	FOPC	(mbs	BULB	8018	10008	DEPTHS	OBZERV	ATIONS							
					Í	DT	SD 31	I S10) 17	6 256	222	7										
	MESSENGR TIME	CAST NO.	C A P D T Y PE	DEPTH Im	з — т	°C	s •	SIG	M A - T	SECIFIC VOL	UME 5	A D N. M	SOU	ND	Og mi 'i	PO 4P	TOTAL	NO2-N	CHL-A	51.54=5	ен ом	
	PIR 17 10	-									`	(10 /				1.1.0	10.01	PB - 04 1		10 - 21		
			ST	່ ວາດດ	27	. 0.6	35.04		1.0	00040	1		1									
	18	3	085	0000	24	05	- 3096 - 36966	24	10	00382	58 0	000	15	358	549							
			ST	0010	24	9.	3599	24	14	00379	37 0	ំ ខេត	15	328 250	544				015			
			OBS	001Ŭ	24	сe,	3548+	24	14	0.077	., .	0.50	15	459	550							
	00	3	OBS	0018	24	62	361+0	24	3.8				15	354	250				012			
			STI	00000	24	14	3607	24	45	00349	54 0	0.75	15	342	53.4							
			085	0020	24	9.	36030	24	45				15	342	533				0.5.7			
			ST	0030	20	11	3546	25	10	00288	13 D	105	152	235	552				007			
			OBS	0050	24	-11	35454	25	10				15,	235	552				071			
			OBS	0040	15	65	35085	2.5	1 ר ר				15	102	543				0.36			
			085	0047	13	14	35-190	25	4 5				15	22								
			0.81) 0000 0765	14	ć -	3543	26	40	001564	JB 0	151	150) b Ľ	527							
			OBS	0050	14	6 - I	3041	26	40				15.	62	527				013			
			STO	0075	14	1	- 3000 J - 3540	25	-6	001376		100	15]	107								
			OBS	0075	13	1.5	3540	26	70	00111.		100	100	130	4 0							
			065	0080	19	อิษ	35546	26	н.				150	120	470				0.0.1			
			STD	0100	13	ΰŪ	3561	26	88	001203	4 O.	20	150	120	407							
			085	0100	1 4	- -	356.17	26	ян		. 0.		150	33	402				0.05			
			STO	0115	1 I	47	3544	26	94	001105	3 0.	244	150	ινõ	414				002			
			STD	0150	11	Jd	35,19	27	0 E	001026	0 0.	275	149	72	426							
			085	2150	11	0	35388	27	0.8				149	72	426							
			- ST0 - 254	· 2200	0.9	7	3523	27.	27	000419	7 0.	\$24	149	29								
			085	0200	0.0	i.,	35229	27.	20				149	29								
			0.95	0250	0.5	4 9.	3012	27.	28	006552	6 0	65	148	48								
			STD	0200	08	40 010	35110	27.	28	000710	1 0/		148	98								
			084	0300	00	diri.	35100	27	27	000764	1 04	•04	148	80								
			STD	14.Ú	Ŭ5	56	3445	27	50	000552	2 04	75	148	CU 00								
			085	040Ŭ	0.5	56	34962	274	50	0000000	e 0-	12	147	70								
			STD	050Ŭ	ΰS	U 1	3500	27	7.3	000468	5 05	26	147	93								
			OBS	0500	0.5	U 1	35,000	27	70				147	93								
			STO	0600	04	58	3498	27	7.3	00044_	2 05	72	147	91								
			OBS	0500	0.4	58	34481	27	73				147	91								
			STD	0700	04.	45	3449	271	75	000430	7 06	15	148	0.5								
			085	0700	04.	45	34990	271	75				148	ΡŪ								
			510	1800	04.	27	3499	27:	77	000420	1 06	58	148	12								
			- UES - STO	0.800	04.	1.5	34484	27	77	0.0.0.1.1			148	12								
			055	0.000	0.4	16	34432	27-	7	000412	5 06	99	148	24								
			STD	1000	0 a.	• - E	3444	211	r≓ 74	000417	1 07	1. 1	148	24								
			CBS	1000	04		34995	273	14	000417	- U/	41	140	20								
			STD	1100	قۇن	44	3499	274	10	006414	7	8.1	- 14년 149	20 6.1								
			STD	1200	C.ª.S	22	3444	276	31	200413	- 07 G 14	24	148	54								
			085	1200	(A G	12	34991	278	3	200142			148	64								
			STO	1300	0.16	ic.	3440	278		000414	e ja	r 5	145	78								
			STO	1400	03.	-	3442	278	12	000414	ي د	. ~	145	43								
			STD	1500	0.31	7 5.	35-10	278	13	000415	7	14 H	140	27								
			085	1500	037	7 5	34494	274	1.2				140	. 7								

							-								+	-		
REFEREN	CE			- E	MARSDEN	STATION TH	ME	ORIGINA	TOR'S	DEPTH	MAX. DÉPTH	0856	WAVE	WEA-	CLOUD			DODC
CTRY 1	D, CODE	LATITU	DE U	ONGITUDE NO	SQUARE	GMT	YEAR	CRUISE ST	ATION	BOTTOM	OF	0856	RVAHONS	CODE	CODES	-	N N	UMBER
CODE	0.	· · · · ·	1/10	1/10 -	10* 1*	MO DAY H	R,1/10	NU. N	OWRER		S'MPL'S	DIR.	HGT PEP SEA		TYPE AM	·		
3180	23 EV	3900	NO	7000 W	116 90	09 19 4	237 196	7 102 00	7	2834	15	27	0 2	X0		1		0007
					WAT	ER V	IND BA	RO- AIR TEN	P. C	NO.	SPECI	A1						
					COLOP	TRANS DIR.	SPEED ME	TER DRY	WET COO	E DEPTHS	OBSERVA	NONS						
					CODE	Imt	FORCE (m	51] 80L8		++								
					DT	SD 32	S05 1	86 228	211 7	19								
	MESSENC	a carr	CARD	1	1		1	SPECIFIC VOLU	AF SAD	500	ND		POARP	IGTAL-P	NO1-N		SI Or-SI	
	TIANE	V NO.	TYPE	DEPTH (m)	1 1.0	s •/	SIG MA -T	ANOMALY-I	7 DYN, N x 10 ³	A. VELO	CITY) ₂ m l/l	µg • 01/L	µg = at/1	µg = a1/1	CHLA	µg = a1,'l	PH
	HR 1/1	0						-		- +							<u>+ · —</u>	1
							1						j l		1		1	I
			STD	0000	2112	3530	2471	003244	2 0000	0 152	255	531						
	23	37	OBS	0000	2112	35300	2471			15.	255	531				013		
			STD	0010	2088	3528	2476	963500	8 003.	2 15.	250	539						
			085	0010	2088	35279	2476			15.	250	539				014		
			STD	0020	2060	3525	2481	003157	1 006	4 15.	244	538						
	0(03	OBS	0020	2060	35245	2481			15,	244	538				021		
			STC	0030	2040	3525	2487	003105	1 009	5 15,	240	538				a. 11		
			OBS	0030	2040	35251	2487			15	240	538				025		
			OBS	0040	1675	35185	2573			15	131	5:10				054		
			STC	0050	1592	3557	2622	001821	7 014	5 15	118	465						
			OBS	0050	1592	35569	2622			15	118	465				023		
			STO	0075	1340	3568	2685	001225	8 018	3 15	043	347				0.10		
			OBS	0075	1340	35679	2685			15	043	347				018		
			STU	0100	1112	3542	2710	000448	1 021	0 14	966	331				0.00		
			OBS	0100	1112	35419	2710	000000	2 0 12	14	965	331				000		
			STO	0125	0472	3525	2721	000891	1 023	4 14 c 16	917	341						
			STU	0150	0864	3514	2730	000815	1 025	5 14	882	354						
			OBS	0150	0864	35140	2730	0.047.1		14	882	354						
			STL	0200	0775	3508	2739	000732	2 029	4 14	855	363						
			OBS	0200	0775	35076	2739	000/17		14	853	363						
			STL	0250	0696	3504	2141	000657	1 032	9 14	830	411						
			OBS	0250	0696	35038	2747	000515	2 040	14	830	411						
			STO	0300	0590	3501	2760	000545	2 035	9 14	146							
			OBS	0300	0590	35011	2760	000/7:		14	796							
			STO	0400	0518	3500	2768	000476	· (14.]	0 14	182							
			OBS	0400	0518	35001	2768			14	183							
			ST	0500	0474	3499	2771	000447	2 045	6 14 14	782							
			OBS.	0500	0474	34985	2771	000.00		14	782							
			STO	0600	0457	3499	2113	000438	U 000	0 14	791							
			OBS	0600	0457	34485	2113		1 01	14	141							
			STI	0700	0440	3498	2775	000432	1 024	4 14	801							
			ST	0080 0	0423	3498	2117	000422	1 028	1 14	018							
			OB5	0800	0423	34479	2717	0000115		14	810							
			STI	0 0400	0406	3497	2778	000418	002	.9 14	813							
			STI	U 1000	0393	3496	2779	000416	5 05/	1 14	15.8							
			OBS	1000	0393	34964	2779	000/1/	(07)	14	831							
			ST	U 1100	0386	3497	2779	000416	00 071	2 14	544							
			ST	0 1200	0380	3497	2780	000418	SI 075	4 14	10.24							
			OBS	1200	0380	34965	2780	00011	0 030	14	1859							
			ST	0 1300	0375	3497	2781	000418	54 U/4	0 14	815							
			5 T	0 1400	0370	3497	2781	00041	1 083	0 14	666							
			ST	0 1500	0366	3497	2782	000421	0880 088	10 14								
			085	1500	0366	34971	2782			14	110.5							

REFERENCI	SHI COD	ξ	LATITU	DE		MARS	DEN ARE	STATIO	N TIN ATL	NE .	YEAR		DRIGIN		'5 DN	DEPT	H DEP	TH OB	WAVE	IS TH	EA-				N TATI TH	(
31307		- +	2020	Fr 10	1/10	10*	+ $+$ $+$	MO DA	Y HP.	1'10		NO.	1	NUME		80110	S.W.F	L'5 DIP	HGT PER	SEA C.C	OE UP	1 A 9 1		+	51 12 8 - P	1
211002	: Y C V		34 XI	N 1)/000-W;	110	90 WA1	04/20	0 0	<u>34 1</u>	967	102	0.0	8	. T	256	0 1	5 20	In F.	×	0				0008	J.
							COLOR	TRANS		SPEED	BARC			Two	VIS.	NO.	s	PECIAL								
						1	CODE	Iml	18	OR FORCE	(mbs	1 В	ULB	BUI	.8	DEPTH	HS OBSE	RVATIONS								
							DI	SD C	13	503	10	7 2	28	21	10 7	19	2									
	HR 1	NGR E or 10	CAST NO.	C A PD TYPE	DEPTH Imi	T	°C	s • .		SIGM	A - T	SPECIFIC	VOLU ALY=11	A1 E 0 '	₹ _ D DYN, M x 10 ³	s vi	IOUND ELOCITY	0 ; m1	PO4=P	FOTAL UQ - ST	-P NO	2 = 14 of 1	СН1 А	04-5 40-01	рH	
																		1	+	1					*	t
				STL) 0060	2	251	3505	5	241	3	003	792	3	0000) <u>i</u>	5288	520	1							1
	Ű.	34		OBS	000C	2	251	3906)	241	3					1	5288	520					211			
				ST	0010	2	135	3506		244	e	003	482	9	003E	5 1	5260	515					5-1			
				085	0010	2	135	3505	8	244	6					1	5260	515					016			
	0	0.3		085	0020	1	774	4514	1	254	5	00 z	541	7	0066	, <u>1</u>	2195	527								
		÷ .		STI	0020	1	663	2012		204	5		0.20			1	5162	527					025			
				085	0030	0	9 RUP	3450	D	200	10	002	0.34	0	0084	1 1	5197	591								
				OBS	0040	1	11.P	3526	P	200	6 D							536					062			
				STO	0.050	1	285	3518		265	8	0.01	u 7 R	1	1125	1	6.7.1	613					054			
				OBS	0050	1.	285	3518	0	265	8		• • •	*	0.46.2	1	5014	615					0.7.1			
				STE	0075	1.	275	3547		268	3	001	253	0	1159	i 1	5014	450					0.51			
				OBS	0075	1.	275	3547	0	268	3					ĩ	5018	450					0.00			
				STD	0100	1.	205	3538		268	0	001	194	4	0189	1	4998	454					004			
				OBS	0100	1,	205	3538	0	268	Q					1	4998	454					100			
				STO	0125	1	129	3533		270	0	001	Û49	7	0418	1	4.75	402								
				516	0150	10	155	3526		270	н	001	028	1	0 4 4 5	1	4952	363								
				005	0150	10	195 116	3526	Ĵ.	270	8					1	4952	363								
				OHC	0200	0.0	710	3509		271	8	000	434	7	0244	1	4 707	3 2 5								
				STD	0250	0.	71.) 780	3497	9	271	8	000				1	4907	325								
				OBS	0250	0.1	780	3497	0	273	0	000	020	8	0238	1	4862	345								
				STD	0300	0.6	. 75	3495	Ų	274	3	000	702	,	0374	1	4862	345								
				OBS	0300	0.6	75	3495	0	274	3	000	+ U L .	·	0570	1	4820									
				SID	0400	0.5	4Ū	3487	Ť	275	5	000	-00	7	3441	1	4829									
				OBS	040Ŭ	05	54U	3487	0	275	5				0.41	ī.	4791									
				STD	0500	05	10	3494		276	3	000	27	в	0497	1.	4796									
				OBS	0500	05	10	3493	5	276.	3					14	4796									
				STD	0600	04	180	3495		2761	8	0004	+91	7	0548	14	4×00									
				085	0600	04	80	3495	0	2768	8					14	4900									
				510	0700	04	.51	3446		277	ł	0004	+72.	2	0597	14	4909									
				OBS	0800	04	42	3447	~	2114	+	0004	1559	9	0543	14	4819									
				SID	0900	04	35	3497)	2110	4	2004				14	4819									
				STD	1000	04	.25	3497		2776		0004	1240	ر	0089	14	4832									
				OBS	1000	0.4	25	3496	5	2779		0004	100		5134	14	4944									
				STD	1100	04	14	3497	-	277	7	0004	51	3	0774	1	4044 4856									
				STD	1200	04	0.5	3497		277	7	0004	494	•	3824	14	4869									
				085	1200	04	Ū5	3496	5	277	7					14	4869									
				STD	1300	03	97	3497		2778	3	0004	484	•	0869	14	4882									
				STD	1400	03	90	3497		2779	\$	0004	484	•	0414	14	4896									
				STD	1500	03	85	3497		2780)	0004	507	7	0754	14	4911									
				085	1500	03	85	34969	ċ	2780)					14	911									

REFERENCE	EPENCE SHIP LATITL		CE	LON	GITUDI	DINET DINET	M A R SQU	SDEN ARE	STA	TION IG MT	TIME	YEAP		DRIGINA	TOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF	085	WA Y	TIONS		WEA- THER	CLOUD		S	NODC
	2 5		1 10			10	10-	1.	MO	DAY	HR 1 10		NO.	N) AN BEN	-+		S.W. bf.	S DIR.	HGT	PER S	EA .		TYPE A 41	1		
31802	¶ EV	4,000		0.71	000	W (152	100	09	20	067	1967	102	000)		0164	01	0.0	0		Ŧ	ХÜ		1		0009
								W A			WIND T	BAR	o-	T TEM	r 1	VIS	NO,	SPE	CIAL								
								CODE	18.4 N (m1	DIR	OR FORC	E Imbr	ER [1 81 8	ULB	W ET BUL9	CODE	DEPTHS	OBSERV	ATIONS								
								DT	SL	07	504	/ 20	3 1	94	103	7	08										
	MESSEN P CAS		C A TY	PD PE	DEPT	H (m)	т	°c		•4.	SIG		SPECIFIC ANOM	- VOLUN ALY-X10	E S DY X	D D N, M 10 ³	SOU	UND	Og mirk	Pr VQ	0.4~P	101 19	A L - P - ut 1	NO2-N 29 + 01	CHL-A	51 O.4-51 µg = ot/1	рн
							1													1							
	067		S	TD	0.0	00U	Ż	2009	34	+53	24	40	003	15370	0	000	15	218									
			08	5	0.0	900	Ž	009	- 34	+531	24	40					15	218							008		
			S	10	00	:10	Z	800	3.	•52	24	40	063	5446	0	035	15	220	552								
			08	5	- 00	010	č	3008	31	+52 -	24	40					15	220	552						005		
			S	TD	0.0	0 ₄ ()]	993	- 34	+71	24	57	00;	378	0	070	- 15	219	546								
	0 C	0	ОB	S	00	020	1	993	34	+70+	24	+ 5 7					15	219	546						800		
			5	ТD	00	130	- L	005	- 34	+82	24	+63	003	328	· 0	104	15	2.15	552								
			08	S	00	0 F (2	005	- 34	820	24	63					1-	225	552						027		
			08	S	00)40	1	745	34	+355	24	+93					15	148	558						036		
			S	σto	0.0	000]	025	34	•00	26	15	001	888	0	156	14	800	570								
			08	S	00	0-0	1	025	3	3991	26	15					14	908	570						051		
			S	TD	00)75	0	985	34	+65	26	572	0.001	344	0 7	196	14	906	506								
			OB	S	00	275	C	985	34	+050	26	72					14	006	506						007		
			S	TD	0	UŬ	C	995	34	+77	26	79	001	286.	+ 0.	229	14	917	476								
			ОB	S	0	100	C	998	30	.76	- 26	79					14	917	476						007		

PEFERENCE	FERENCE SHIP LATITUD		30	LONGITUDE	RIFT Doctor	M AR SQL	SDEN JARE	ST A	TION	TIME	YEAR	C P1	ORIGIN		*S		DEPTH	DEPTH	085	WAVE ERVATION	s	WEA- THER	CLOUD		s	NODC	
CODE NO	CODE	·	1 10	1, 1	0	10*	1.	MO	DAY	HP 1 TO		N	0.	NUM	IE R	80	DTTOM	SIMPL	S DIP	HGTPER	SEA.	3005	TYP] & At	7	1.	L Nº BER	
31802	3 EV	4029	N	07005	w	152	00	09	20	098	1967	I	02 01	0		C	000	01	00	0 2		40				0010	
							W A	TER		WIND	BAR	. I	A IR TE	M.P. 1	2	.	NO,	5.01									
							COLOR	TSAN Imi	5 DIR.	SPEED OP FOR_	E Imb	ER Ll	DRY BULB	W B	T CO	DEC	OBS. SEPTHS	OBSER	VATIONS								
							DT	SI	0 10	510) 22	0	167	1.	44 7		07										
	HR 1 1D	CAST ND.	САР	PD DEPTH	(m.)	Т	°C		s •4.	SIG	M A —1	SPEC	IFIC VOLU	0.7	≦ ∆ DYN. x 10	D M.	AFro 200	UND DCITY	Oş mirl	P⊖ _ — P µg - of	1 TO	(TA L= P g + a U	NO₂+N µg + ol l		SI C 4-5 49 - 61 1	рн	S C C
																											T
			S	TD 00	00	1	148	3.	221	2.	886	0	04029	9t	300	÷	15	133	617								
	098	3	08	5 00	ÚŪ]	148U	3	2205	2	388						-15	035	617					047			
			S	TD	10	1	1565	3.	320	24	446)	03483	5	003	8	15	074	619								
			08	5 00	10	1	1565	3.	3200) 24	46						15	074	619					046			
			5	TD 00	20	1	1681	٦	358	24	449	0	03459	с, ғ	007	2	15	116	613								
	0.01	,	08	S 00	-0]	1681	- 3	357	24	4 U						15	116	613					051			
			S	10 00	30	ì	1725	3	361	24	¥41	0	03537	76	010	7	15	131	ちじ4								
			08	s nu	30	1	1726	- 3	3613	24	441						15	131	604					054			
			08	s 00	чŨ	1	129.	3	3683	2 !	541						14	945	579					040			
			5	TD ŬŬ	50	C	28→1	3.	400	21	537	D,	01673	3.5	015	Q.	14	859	60L								
			ОB	S 00	50	L	1891	3.	4000	28	577						14	859	602					0.14			
			08	S 00	60	C	816	3.	4278	2 8	570						14	836									

REFER	REFERENCE SHIP			DE	LONGITUDE	Defet 40C1P	MARS SQU	DEN ARE	STA	TIDN IG M	TIME	Y	EAP	CRUIS	ORIGIN	ATOR	s N	0	TO	MAX. DEPTH OF	085	W A ERV	VE A TION	5	WEA-	CLOUD		s	NODC	
CODE	NO.		•	1,10		10 4	10*	1.	MÖ	DAY	HR,1/1	01		NO.		A U W B	R	80	100M	S'MPL"	S C IF	HG*	PEP	tea.	CODE	TYPE A N	Ť		UNBER	
31	8023	Εv	4100	N	07000	W	152	10	09	20	130	1	967	10	2 01	1		c	0 - 7	00	0.6	1	2		хo				0011	
							[WA	ER	T	WIND		84.80	D+	AR TE	4.9 °C		. [ND.		CIAL									
								COLOR CODE	tpan Imi	S DIF	. SPE C FO	ED P RCE	M ETE (mbs	R 1)	D PY BUL9	W E B U L	8	D	OBS. EPTHS	OBSERV	ATIONS									
								DT	S	0 0	7 50	9	23	7	172	1:	9 7		06											
		MESSENG TIME	CAST	C A R TYP	D DEPTH	+ (m.)	Ţ	'C		۰	s	IGM A	т_т	SPECIE	NALT-1	₩E 0`	≦ ∴ C DYN, J x 10 ³	D M. 3	SOU VELC	IND CITY	0.2 m1/l	P	'O 4− P 9 - 01/1	TO Pi	*AL=P p = o1/l	ND2=N µg - al 1	CHL-A	SIO4+-Si µg = al l	pн	100
								-	1																					T
		1		' s	rd' 00	00	1	459	3	54		234	2	00	4476	4	000	0	15	e18	603									
	130		80	0B	5 00	00	1	459	3.	153	8 2	234	2						15	018	603						100			
				08	5 00	04	1	454	3	153	0 2	234	2						15	017										
				S	TD 00	10	1	436	3	154	2	234	7	00	4432	3	004	5	15	012	611									
			00	08	s 00	10	1	436	3	153	9	234	7						15	012	611						094			
				08	5 00	17	1	410	3	158	2	235	5						15	006										
				S	TD 00	20	1	409	3	154		235	6	0.0	4347	1	008	8	15	006	624									
				08	s 00	20	1	409	3	15 H	6 2	235	6						15	006	624						093			
			05	5 00	26	1	405	3	159	1	236	7						15	0.6											

REFERENCE CTAY ID. CODE NO. CODE 318023 EV	LATITU - - - - -	08 IN 1 10 7 N 1 7	4GITUDE 1 10 1 10 1 1 ★	MARSDEN SDUARE 10° 1° 152 11 		AE YEAR 7 2 1967 100 50550 MET 04 F 804 tmb	PIGINAT(RUITE STA N NL I I On AIR TENNE ER DPY AI BULB	CR'S TION ABE0 TC VE1 COOR UUB	DEPTH M AX CEPTH TO SF BOITOV S*APL'S J.D.4 JO N.D. SPEC DEPTHS DBSEPV		it FA. tinED tinE tinE	• • • •	
MESSEN	CAST	0.490			55 11	505 25	SPECIFIC VOLUME	1: H \$ 10	35 SOUND	PC F			т
	2 NO 10	TYPE	C DE LA LAUY			i soma-i	ANDMAL-10	× 10 ³	- ELOCITY			CHL-	▲ +
1	78	STD OBS OBS	0000 0000 101	1620 1620 150	31663 31663 31689	2016 2016 2040	JU47186	2000	15.71 15071				
٦	e P	510 085	0010	1485	3172	2352	ણે વ્યુપ્યત્વ	0046	150×1 15031				
		085 085	0020 0020 0025	1419 1419 1390	31768 31741	2368 2368 2371	1146336	Û Û K K	15011 15002				
		STD 065	0030 0030	1257 1257	3197 31973	2416 2416	.037774	:129	14961 14961				

REFEREN CTAY I CODE N	ICE ID IC	SHIP	LATITU •	DE 1	LCN	SITUDE 1 IN	I.AUT	VAS SQC	DAN ARE	ST A	TION T IGMTI	146 1 1	r E A R	CRUIS	ORIGIN	STATICT	, p	DEP TC BOTT	TH D DM	MAX, DEPTH OF	0	W A BSER	A TIC N	5	WEA- THER DODE	CLCUD			NC. NATON LINKER
3180	23	ΕV	4100	N	071	.00 🔺		152	11 AAT COLOR CODE) 9 EP	20	1 44 1 1 NINO SPEED CIR FC PC E	967 BARC METE (mbs	1). R	DRY BULB	3 NP C WET BULE			• ð 5. HS	00 SPE OBSERV	L 1 -		4	-	×Э		+		0013
									DT	50	13	SUB	24	0	161	14	4 7	1,07	3						_	_			
		MESNEND TINE HR 1 10	CAST NO	C A T Y I	P E	O \$PTH	m J	Т	*c	S	·	SIGAN	A − T	SPECIEL AN DA	E VOLU ALY-II	IN E	ξ Δ D 2 10 ³ x 10 ³		SOU-	ND CITY	0.2 ml	· •	204=P 2 + 51	10 - 1	TA L - P	NO;=N vg - at i	CHL-A	SL⊃ ₄ ⇔Si ug = at	рн
												,						Ţ											
		19	4	S 0 B	TD S	000 000	0	1	548 548	32	205 2050 2070	236	2	0.0	4 z d 3	1	2000)	150 150)53)53	63. 63.	3					028		
		0.0	ń.	06 S 08	s TD S	001	0	1	470 408 408	32	207 2057	239	3	00	3989	6	004		15) 150 151	-28 115 115	64	2					104		
				08 5	S TD	001 002	4 0	1	38 119	32	0.25 75	240 242	1	Эr	2683	99)U 93		150 140	204 204	621	>					192		
				08 08	S S	002	0 2	1	119	31	760 640	242 243	4						140 148	a)q 372	626	D					195		
				08 08 04	TD S S	003 003 004	0 0 0	0	997 997 985	- 32 - 32 - 32	125 1245 1290	248 248 248	3.0	00	3133	8	0114	+ .	148 148 148	872 872 971	58. 58. 58.	L 7					0 4 T		

EFRENCE SHIP DE NO. CODE	LATITU	DE 1.10		MAR SQU	SDEN ARE	TAT2	ION TI IGMTI DAY (H	MAE	YEAR	CRUISE NO.	IGINATO STA	DR'S TION ABER	DEPT TC BOTTO		A X. PT H D F P L "S	OBSE	WAVE RVATION	S TH	EA- HER DDE	CLOUD CODES			NODC STATION NUMBER	
8023 EV	4030	N	U7100 W	152	01	09	20 .	223 1	967	102	014		201	10 0	110	0.9	0 2		хn		T		0016	
					WAT	TER	V	VIND	0.4.90	AI	R TEMP.	°C	T NO				01=1						0014	
					COLOR	TRANS Iml	DIR,	SPEED OR FORCE	ANETE	R DR) BUI	γ γ LB 8	VET COL	DE DEPT	HS OBS	SPEC14 ERVAT	TIONS								
					DT	1 D	10	507	22	7 16	51	44 7	1 4	-										
AMESSENG TRAVE H.R. 1, 10	CAST	C A R T Y P	D DEPTH (m)	1	*c	s	•	SIG M	A = T	SPECIFIC ANON A	VOLUME	\$ 1 DYN x 10	D M V	SOUND	0	9 m1/1	PO4-P	101A 1	L – P	NO2-N 29 - 01 1	CHL-A	51 O 4 49 - 01	Sr pH	500
						17																	-	T
1		S	TD' 0000	. 1	520	+2	03	2.16	ht i	0042	2347	000	ο.	15044	4	6.21								,
2.2	3	OB:	5 0000	1	1520	32	030	236	56					15044	4	621					042			
		08	5 0004	1	1521	3.2	040	234	- 7					1504	5									
0.0	Q.	08	S 0006	1	470	32	0.7.0	235	3.0					1502	Q.									
		S	D 0010	1	462	32	àd.	24	16	0.038	3602	004	n -	15033	1	632								
		08	5 0010	1	46≟	32	390	24.	:6					15030	1	632					044			
		08	5 0014	1	423	32	300	241	i H					15018	8									
		S	10.000 GT	1	191	3.2	28	245	52	0034	4305	0.07	7	1494	1	617								
		OB:	S 0020	1	191	32	280	245	5 <					1494	ļ.	617					056			
		08.	5 0024]	1165	3.2	250	246	54					1493.	_									
		OB:	S 0026	1	180	32	300	24	5 5					14931	8									
		S	1D 0030	1	1101	32	15	24	5.8	003.	1772	011	1	14909	9	605								
		08	s 0030]	101	.12	145	245	5.8					149.04	9	605					026			
		CB	s 0040	C	0851	32	4 <u>2</u> ∩	250	2.0					1482.	2	590					035			
		S	TD 0050	C	823	32	52	25	31	0026	76+	017	2	1481	4	572								
		05	5 0050	C	823	3.2	515		3.1					14914	4	572					024			
		5	TD 0075	C	755	32	65	254	h 2	0024	4831	023	6	1479	4									
		-08	5 0075	0	755	32	654	254	52					1479	4									

REFERENCE CTRY ID. CODE NO,	SHIP CODE	LATITU	DE			SDEN JARE	STATION IGM	TIME T)	YEAR	CRUISE NO.	IGINATO STA1 NUA	DR'S LION ABER	DEPTH TO BOTTO	MAX DEPTH OF S'MPL	4 OBS	WAVE EPVATIO	DNS T SEA	WEA- THER CODE	CLOUD	T		NODC STATION NUMBER	
31802	3 EV	4000	N	07100 W	152	01 WA	09 21 TER	013 WIND	196 BA	7 102	015 R TEMP	°C	029. NO.	5 <u>0</u> 2 SPI		0 2		×1				0015	
						COLOR	TRANS D	IR. O	R (ml	1EP DR 51 BU	Y W	VET COD ULB	DEPTH	S OBSERV	ATIONS								
						DI	SD 1	0 51	.1 2	20 18	91	61 8	11										
	MESSENG TIME HR 1/10	CAST NO.	C A R T Y P	D DEPTH (m)	1	r 'c	s */.	• S	G M A = 1	SPECIFIC	VOLUME	₹ Δ D DYN, M x 10 ³	0 <u>50</u> ∧ ∨€	LOCITY	0 2 ml/t	PO 4-	-9	FOTAL-P Vg - at I	NO2-N V9 - 01/l	CHL-A	51 O 4++- 49 + 01	Si pH	s c c
					1																		
			S	rD 0000		2000	3480	2	463	0033	3203	0000	0 1	5219	541								
	01	3	089	5 0000	ć	2000	3480	0 2	2463				1	5219	541					021			
			S	rD 0010		2050	3476	4	2446	0034	+820	0034	4 1	5234	547								
			0B	5 0010	4	2050	3475	6 4	446				1	5234	547					031			
	0.0	0	5	10 0020	4	2052 -	3482		2450	0034	+4/4	005	9 1	5231	544					a 10			
	0.0	C	UD:	5 0020	4	2092	3401	2 4	2450	00.0	- 407	210	. 1	5237	544					320			
			0 H	0030		2005	3440	· ·	2430	000	1041	310	4 1	5221	202					0.2.2			
			08	s 0050		1675	3440	5 2	2503				1	2221 5091	500					052			
			5	ID 0050		1870	3314		573	0.022	2401	016	4 Î.	4840	570					0.72			
			OB	5 0050	C	0870	3314	0 2	574			0 - 0	1.	4840	570					055			
			S	TD 0075		1018	3473		673	0013	3396	0208	6 Î.	4919	574					0.2.5			
			OB:	5 0075		1018	3473	0 2	2673				1	4919	574					017			
			5	rD 0100		1208	3518	2	2673	001	3460	024	1 1.	4996	496								
			OB	5 0100		1208	3518	1 2	2673				1	4996	496					900			
			S	rD 0125		1203	354)	ć	2691	001	1824	0273	31	5001	438								
			S	TD 0150		1165	3546	-	203	0010)751	000	1 1	4993	390								
			0B	5 0150		1165	3540	0 2	2703				1	4993	390								
			S	FD 0200	0	0000	3508	2	2705	0010	1625	035	5 1	49.54	325								
			OB	5 0200	(0990	3508	C Z	2705				1	4734	325								
			5	rD 0250	(0816	3508	2	2733	000	1971	040	1 1	4877	347								
			0 B '	5 0250	(0816	3508	2 3	2733				1.	4877	347								

REFERENCE	SHIP LATIT	UDE		A' ARSDEN SQUARE	STATION T IGMT	IME	YE▲R		ATOR'S	Ŧ	DEPTH	MAX DEPTH OF	085	WAVE	₩ £ A - TH EP	T		T IN	A.*
CODE NO.		1/10	* 11 10 ^{~ 2}	10" 1"	MO DAY H	R,1 10		NO.	NU MBER		BUTTOM	S'MPL'S	DIR	HGT FEE S	FA T	TPE A Nº 1		4. 	Nº R F B
31802	3 EV 391	5 N	37100 W	116 91	09 21	044	967	102 01	6		2377	15	11	χτ	×р				016
				W A	TER V	VIND	BARC	AIR TE	P C	VIS.	NO.	SPECI	IAL						
				COLOR	TRANS. DIR.	SPEED	AM ETE	R DRY BULB	W ET BULB	CODE	DEPTHS	OBSERVA	TIONS						
				DT	CD 12	C 0 9	2.2	6 211	1.446	7	2.0								
		1		- <u></u>	1 20 12	508	1 4 4	4 211	144	(201				T 1				
	MESSENGE CAST	C A R D TYPE	DEP*H Im!	1.0	s •	SIG M	A - T	SPECIFIC VOLU ANOMALT-11	DYP		SOU VELO	ND CITY	0 ₂ mil	PO4=P	TOTAL-P/ N	iC j=N a = of	CHL- A	51 (° 4 - 5) - NG (?	p.»+
	HR 1/10	+				-			`	10*	+			-	-	÷.			
					-														
		51	0000	2109	3515	246	50	003344	.a 00	100	15.	252	549						
	044	085	0000	2104	- 301hU - 3614	240	50	004344			10	252	549				013		
		086	0010	2000	25155	24	4U 20	003066	00	172	15	220	550				019		
		005	0.0020	1710	3520	24	40) 6.6	002343		150	15	144	533				018		
	003	0.8 c	0020	1710	35200	254	50	00234	0 00	1.19	15	144	623				6.7.2		
	005	51	0.000	1450	2536	26	2.6	001691	6 01	179	15	177 076	552				500		
		085	0010	1460	35355	26	36	00101			15	070	552				0.2.1		
		085	0040	1425	35640	266	55				15	0.64	542				032		
		ST	D 0050	1430	3574	26	71	001354	5 01	110	15	069	527				0		
		OBS	0050	1430	35740	26	71				15	069	527				048		
		ST	D 0075	1380	3570	26	79	001289	9 01	143	15	056	470						
		085	0075	1380	35700	26	79				15	056	470				019		
		ST	D 0100	1318	3566	261	89	001203	6 0	174	15	0.3.9	402						
		085	0100	1318	35660	261	<u>g</u> q				15	039	402				004		
		ST	D 0125	1276	3560	269	92	00117	2 04	∠ " 4	15	129	414						
		ST	D 0150	1220	3553	260	98	001128	8 04	- × 2	15	013	426						
		085	0150	1220	35525	264	9.6				15	013	426						
		ST	D 0200	1070	3532	27	10	001020	7 04	286	14	966	344						
		085	0200	1070	35321	27	10				14	966	344						
		ST	D 0250	0940	3514	27.	18	000947	1 0:	335	14	925	327						
		OBS	0250	0945	35140	27	18	0.000			14	425	321						
		51	0300	U 520 0 606	3505	21.	24	000821	. 0:	280	14	889							
		035	D 0400	0623	35000	271	2 C 6 D	000000		. 6. /	14	00-							
		0.00	0400	0540	35000	27	52	00.00	-1 0-	1,2	14	033 032							
		005	0400	0640	35000	27	52 58				14	825							
		C U S 5 T	0,400	0560	3500.	27.		000543	2 04	511	14	817							
		ORS	0500	056	35000	271	6.2	011-242		- 1 1	14	817							
		ST	0 3600	0490	3497	270	68	DC 1480	1 0:	563	14	91.7 805							
		OBS	0600	0490	34970	274	58				14	805							
		ST	D 0700	0475	3500	27	73	000459	7 06	510	14	815							
		ST	D 0800	0460	3502	27	76	000431	4 00	555	14	826							
		OBS	0800	0460	35020	27	76				14	826							
		ST	0900 O	0445	3501	27	77	000436	8 00	544	14	836							
		ST	D 1000	0432	3501	27	78	000431	6 2	746	14	645							
		085	1000	0432	35009	27	78				14	948							
		ST	D 1100	0422	3501	27	79	001428	Q 41	185	14	860							
		ST	D 1200	0412	3501	271	80	000425	01	828	14	873							
		085	1200	0412	35009	271	8.0				14	873							
		51	D 1300	0402	3501	271	81	000423	2 01	870	14	885							
		ST	D 1400	0392	35Ú1	271	82	000420	9 01	13	14	898							
		ST	D 1500	0382	3501	271	Н 3	000411	0 د	4-4	14	810 -							
		OHC	1500	0.4.8.2	25005	274					1.74	e) 1.0							

REFERENCE	SHIP	LATITUI	DE	LONGITUD	C BIFT	MARS	DEN ARE	STATIC		VE	1E A R		OPIGIN	ATOR'S		DEPTH TO BOTTO	DEPT OF	н ов	WAVE SERVATION	S TH	EA- ER DDE	CLOUD CODES		S	NODC TATION UMBER	
- HO			1 10		. 10 -	10*	1.	MO DA	Y HR	1,1 10		NU.					5.00 6	.S DIF	HGT PER	SEA	-+	TYPE A MIT				
31802	3 EV	3858	N	07100	W	110	81	09 2	1 0	80	1967	10.	01	7	,	100	5 0	9 14	10121		< 2 T	1	1		0017	
							WAT	EP	w	IND	BAR		AIR TE	MP. C	- vis	NO.	SF	ECIAL								
							COLOR	TRANS.	DIP,	OR	METE	R	DPY	WET BULB	COD	DEPTH	S OBSER	VATIONS								
							0.7		1.4	FORCE		0	21.2	200		1.7	+									
							DT	501	14	508	22	0 4	<u> 11</u>	200	11	<u> </u>								r		-
	MESSENCE TIME HIR: 1/10	CAST ND	С А Р ТҮР	D DEP	[H (m)	τ	°C	5.	4.	SIGN	4 - T	SPECIFI	C VOLL	IME C	ΔD YN, M X 10 ³	SC ∀E	DUND LOCITY	Og mb	PO4-P vg - at f	IOIAL بور ا	n − P n T	NO2~N µg = ol/l	CHL-A	SIO4++Si µg = ot/1	рН	000
																					ł					
			5	TD 0	000	ł	88U	357	4	25	65	00.	2344	+0 (0000) 1	5197	568								
	080	0	ОB	s 0	000	1	880	357	30	2.5	65					1	5197	568					031			
			S	TD O	010	1	860	355	4	25	55	00.	2443	37 (0024	+ 1	5190	577								
			ОB	s 0	010	1	860	355	40	25	<u>ئ</u> ر م						5140	57/					038			
			S	TD 0	020	1	780	357	3	25	90	00	2119	96 ()U4	7 1	5171	586								
	00,	2	08	s 0	020	1	781	357	30	25	9 Č					1	5171	585					049			
			S	TD O	040	1	650	358	8	- 26	13	0.0	1716	-7 (0058	5 1	5136	518								
			OB	s 0	030	1	650	358	80	- 26	33 -					1	5135	515					023			
			08	S 0	040	1	671	359	9.8	26	21					. 1	5145						053			
			S	TD 0	050	1	635	360	0	26	45	0.0	1002	25 (10.4.	/ 1 1	2130	444					0.27			
			08	S O	050	1	635	360	00	26	45	0.0	1 4 7 6		. 1	. <u>1</u>	2130	409					036			
			5		075	1	620	301	4	20	54	00	1473	54 (1 30	, 1 1	2121 6127	415					013			
			08	≤ 0. ∗α α	100	1	620	201		20	19 D	0.0	1340			. 1	5157	41-					010			
			C	10 0 5 0	100	1	470	350	45	20	72	00	1000			> 1 1	5091	417					0.0.6			
			00	5 U TD 0	126	1	410	257	4	20	77	0.0	1 2 -		20.	, 1	5071						000			
			2	TD 0	125	1	3400	251		20	0)	0.0	1270	20.0) 2 U) 2 3 (, <u>1</u>	5055	- <u></u>								
			- OH	10 0 6 0	150	1	340	350	4	20	0 C 1 D D	00	161-	-0 (, , ,	· 1	5055	411								
			c	5 0 10 0	200	1	249	355	4	26	9.2	0.0	119.	29	130	ı î	5031	40.								
			08	c 0	200	1	249	355	30	26	92	00				`	5031	402								
			5	1D 0	250	1	0.65	353	2	27	11	0.0	1024	44	135	s i	4972	33:								
			08	5 0	250	j	0.65	353	2n.	27	11	0.				ī	4972	33:								
			S	TD 0	300	Ċ	940	351	7	27	2.0	00	6930	ə1 i	040	5 1	4933									
			0.8	5 0	300	0	941)	351	65	27	20			-		1	4933									
			S	TD 0	40Ŭ	Ċ	1705	350	1	27	43	0.0	0720	03	048	5 1	4859									
			08	5 0	400	C	705	350	05	27	43					1	4859									
			ŝ	TD 0	500	C C	578	350	2	27	62	00	055.	21	0>5	2 1	4824									
			OB	5 0	500	C	0578	350	18	27	62					1	4824									
			5	TD 0	600	C	0520	350	3	27	70	00	148	19	<u>э</u> бр.	4 1	4818									
			OB	s ()	600	0	0520	350	30	27	7 <u>O</u>					1	4818									
			S	TD 0	700	C)483	350	3	27	74	0.0	045	11	065	5 1	4819									
			S	TD O	800	C)46Ü	350	2	27	16	0.0	143	74	369	5 1	4826									
			ОB	S 0	008	0)46Ű	350	20	27	76					1	4826									
			S	1D 0	90U	Ç)450	350	2	27	77	00	0 4 3!	56	073	н 1	4838									
			OB	s 0	9.Ū.U	(1450	350	20	27	77					1	4838									

REFERENCE	SHIP	LATITU	DEL		MARSDEN SQUARE	STATION T	IME	YEAR	ORIO	GINATO	R'S	DEPTH TO	MAX	085	W A VE ER + A TIONS	A EA			N	.* N	
CODE NO.	CODE	•	1, 10	• 1 10 ³ ¥	10* 1*	MO DAY H	R.1 10		NO	NUM	BER	BOTTON	S"MPL"	2.0	HGT PER S	EA C IT E	T1 A 911	1		57 5 c F	
319023	EV	1421	AL D		116 42	70 11	1.3.6	1967	101	119		2798	1.6	0.0			1 1	+	+	0.1.4	
1 2 10 0 2 2		50.11		120	110 02	TER	+ 20 T	1.0	AIR	TENIP	°C	1.0	1	<u> </u>	10				(JOI N	
					COLOR	TRANS DIA	SPEED	- BAR	R DRY	W	ET CODI	OBS	SPEI OBSERV	ATIONS							
					CODE	Im I DIK	FCRCE	Imbi	0 BULE	91	J L B	DEPTHS	00000								
					DŤ	SD 17	S04	21	3 23	4 6	22 5	24	I								
ſ						·• •	-				5 .5 D	1							- ·	-	
	TATE OF	CAST	CARD	DEPTH (m)	⊺ °C	s •	SIGA	A - T	ANOMAL*	-1°0'	DYN. M	- SO	OCITY -	0; ml 1	PC14=P	1 TOTAL-P	NO 2=84 V0 = 01	CHL A	4-1	p H	
	HR 1 TD										¥ 10°		+		1						t-
												1									
			STC	0000	2028	3425	24	13	0037	930	0000	15	220	539							
	138		OES	0000	2018	34245	24	1 *	0.0.05			15	220	534				9 O H			
			STD	0010	2027	3462	24	42	0035	222	0037	15	226	242							
			085	0010	2021	34620	24	42	00.14		0.0.7	10	226	542				0.02			
	003		085	0020	2017	34645	24	47	00.4	024	0072	16	225	547				0.01			
	000		STD	0020	1910	3446	24	60	0013	551	0104	15	145	549				001			
			084	0030	1910	34460	24	ъC				15	195	549				0.02			
			085	0040	1263	34415	26	03				14	995	561				011			
			OBS	0042	1185	34500	26	25				14	970								
			OBS	0045	1195	34570	26	2.9				14	•975								
			STD	0050	1275	3491	26	4.0	0016	477	0156	5 15	006	578							
			085	005ú	1270	34910	26	40				15	006	570				056			
			085	0056	1238	35040	26	57				14	997								
			085	0009	1308	35300	26	63				15	026								
			OBS	0071	1254	35140	26	61		-	2101	15	7007	<i>c</i>							
			510	0075	1260	3532	26	14	0013	346	0193	5 40	110	586				0.6.1			
			085	0075	1260	35320	20	14	2011	- 17	0.00	. 16	1110	200				051			
				0100	1023	3547	20	43	JOIT	010	0666	• 1.2 1.6	5005	492				0.21			
			005 ST	0125	1198	35470	20	a7	0.011	555	0253	ι <u>1</u> -	5000	- 499 - 440				0 - 1			
			STE	0150	1153	3546	27	15	0010	534	0220	14	+989	415							
			085	0150	1153	35460	27	36			0=00	14	080	415							
			STO	0200	1000	3521	2.7	13	0009	833	0333	14	4939	327							
			085	0200	1000	35210	27	1.3				14	•939	327							
			STD	0250	0865	3514	27	30	0008	323	0376	5 14	897	342							
			085	0250	0865	35135	27	30				14	+897	342							
			STO) n300	0741	3505	27	42	0007	201	0419	5 14	+850								
			OBS	0300	0741	35050	27	42				14	+856								
			089	0345	0631	34983	27	52				14	•820								
			STD	0400	0588	3497	27	57	0005	847	0480) 14	+811								
			085	0400	0588	34973	27	57	0004	003	0536	14	+511								
			516	0500	0520	3499	21	00	0004	993	023:) <u>1</u>	+801								
			005	0560	0.052.0	34940	27	47				14	-001								
			085	0580	0505	35022	27	71				14	808								
			STL	0600	0497	35022	27	72	0004	606	0583	3 14	808								
			085	0600	0497	35020	27	72	0000		0-0.	14	808								
			STO	0700	0475	3502	27	74	0004	434	0628	a 14	+816								
			085	0700	0475	35022	27	74				14	+816								
			STO	0800	0453	3502	27	77	0004	288	007	1 14	+823								
			OBS	0800	0453	35020	27	77				14	+823								
			STO	0900	0440	3502	27	78	0004	232	0714	4 14	+834								
			OBS	0900	0440	35020	27	78				14	+834								
			STO	0 1000	0428	3501	27	79	0004	258	075	7 14	+846								
	138		085	1000	0428	35010	27	79	0.0.0.1		0.7.0.1	14	+846								
			STO	2 1100	0418	3501	27	80	0004	231	0.00	4 14 1 .4	+858 .071								
			085	1200	0409	35000	21	90	0004	660	004	1 1	-071 1871								
			005 ST	1300	0401	3501	27	81	0004	205	088	3 14	4885								
			510) 140Ú	0393	3501	27	82	0004	193	092	5 14	4898								
			STO	1500	0387	3501	27	83	0004	189	096	7 14	4913								
			OBS	1500	0387	35012	27	83				14	4913								

REFERENCE	SHIP	LATITU	DE	LONG		MARS SQU	DEN ARE	STATION TU (GMT)	ME 1	re a p	ORIG CRUISE NO.	INATO STATI	R'S ON BER	DEPTH TO BOTTOM	MAX. DEPTH OF	085	WAVE ERVATIONS	WEA THEP CODI	CLOUC CODES		ST N	IODC ATION JMBER
318023	EV	3900	N	0.7.2	00	116	42	09 21 1	69 1	967	102 0	110		2341	15	17	1 2	×/.	1111	1		
310013		- 00		0.2	00 41 1	1.0	WAT	ER W	IND	BARC	AIR	TEMP.	τ	NO.			1 6	1 14	· I ·	I.	1	0019
							COLOR	TRANS DIR.	SPEED OR	METE	R DRY	W	ET COD	DEPTHS	OBSERV	ATIONS						
							DI	SD 17	SOR	10	3 250		22 /	22								
		1					UT		500	1 1 4	5 250	<u>'</u>	5 1 1	1 32	L		T		1	1	r i	1.
	TIME	V NO.	C ARI	D E	DEPTH (m)	Т	"C	s •4.	SIGM	A - I	ANOMALY	-#10 ⁷	DYN. N	VEL	UND OCITY	02 ml/l	PO4-P	TOTAL=F ug = st/l	NO2-N 29-01	OL-4	SIO ₄ Sι μο - σι/Ι	PH C
	HK 1/10									- 1				+								
			51	r D	0000	2	082	3604	253	15	00263	311	0000) 15	256	518	1		1		1 1	1
	16	9	OBS	5	0000	ć	0.82	36040	253	15				15	256	518				007		
			OBS	5	0005	2	050	36050	254	5				15	248	513						
	0.0	3	08		0010	1	980	3607	256	5	00235	>36	0025	5 15	230	512				200		
)	08	5	0015	1	879	36081	259	12				15	203	506				008		
			51	D	0020	i	832	3611	260	6	00196	064	0041	7 15	191	508						
			OBS	5	0020	1	832	36110	260	6				15	191	508				011		
			OBS	5	0025	1	830	36135	260	8				15	191	505						
			51	10	0030	1	773	3622	262	9	00175	07	0065	5 15	177	488				0.75		
			085	5	0040	1	770	30220	262	7				15	180					025		
			OBS	5	0044	1	765	36450	264	9				15	179							
			51	D	0050	1	769	3645	264	8	00158	312	0048	3 15	182	435						
			OBS	5	0050	1	769	36450	264	8	00210		012	15	182	201				048		
				10	0075	1	610 610	3608 36080	265	. 7	00149	104	013	15	134	396				017		
			51	r D	0100	i	515	3593	266	7	00141	111	017	3 15	105	402				017		
			OBS	5	0100	1	515	35926	266	7				15	106					003		
			51	D	0125	1	361	3565	267	9	00130	27	020	7 15	058	413						
			085	5	0125	1	361	35650	267	19 10	0012	24.4	0.2.20	15	058	413						
			089	s l	0150	1	312	35635	268	10	00122	40	0235	7 ID 15	045	440						
			OBS	5	0175	i	290	35635	269	12				15	042	447						
			51	D	0200	1	215	3554	270	0	00112	214	029	7 15	019	418						
			OBS	5	0200	1	215	35540	270	0				15	019							
			085	5	0225	1	160	35493	270	1	0010	212	0.16	15	004	359						
			089	5	0250	1	105	35420	271	1	00104	212	035	14	900							
			51	TD .	0300	ō	966	3525	272	2	00091	91	0399	5 14	944							
			OBS	5	0300	0	966	35250	272	2				14	944							
			51	D	0400	0	718	3503	274	4	00071	81	048	1 14	864							
			085	5	0400	0	718	35031	274	4	0005	76 3	0544	14	864							
			084	5	0500	0	574	34980	275	99	0005	121	0.946	14	822							
			OBS	5	0526	ō	539	34970	276	3				14	812							
			OBS	5	0532	0	552	34990	276	3				14	819							
			085	5	0559	0	547	35001	276	4				14	821							
			UDS 51	5 1 D	0574	0	512 508	34977	276	.7	00050	130	05.07	14	-804 -812							
			OBS	5	0600	ŏ	508	34980	276	7	00000	/	0000	14	812							
			ST	r D	0700	0	486	3502	277	3	00046	08	0648	14	820							
	16	a l	OBS	5	0700	0	486	35017	277	3				14	820							
			51	r D	0800	0	460	3502	277	6	00044	04	0693	3 14	826							
			51	n TD	0900	0	400	35016	277	7	00043	0.2	074	14 7 14	836							
	0.0	3	OBS	5	0900	ő	445	35019	277	7	900 4 .		212	14	936							
			51	D	1000	0	430	3502	277	9	00042	246	0779	9 14	847							
			OBS	5	1000	0	430	35015	277	9				14	847							
			51		1200	0	421	3501	277	19	00042	269	0822	2 14	860							
			089	5	1200	0	412	35009	278	10	00042	- 94	006	14	873							
			SI	T D	1300	0	404	3501	278	1	00042	251	090	7 14	886							
			51	D	1400	0	397	3501	278	2	00042	252	0950	14	900							
			SI	T D	1500	0	390	3501	278	3	00042	250	0993	2 14	914							
			083	>	1200	0	390	35009	278	13				14	914							

REFER CTAT COOF	ID, NO,	SHIP CODE		DE I	LONGITUDE	Delif I	ARSDEN SOUARE	STATION T	IME	YEAR	CPUISE NO.	ORIGIN	A TOR'S TATION	-	DEPTH TO BOTTOM	DEPTH	28,	WAVE ERVATION	T MEA S THEF			, h ; *	17 A.7 % A.485#
	0.0.2.2	E.1.	10.10		0.7.200											SAL	-		1.4	TTPE A D	+	+	
1 3 11	8023	EVI	3430	N	07200 W		10 92	09 21	203	196	1 102	02	0	7	0685	06	117	01-1					onia -
							C0108	Terrer P	SPEED	BAR	0		WET C	VIS	NO. OBS	SPE	CIAL						
							CODE	In DIR.	FORCE	lmb	s1 B	ULB	BULB	1 CODE	DEPTHS	CR2ER/	ATIONS						
							DT	SD 19	505	16	9 2	50	222	e e	19								
		MESSENGR TIME HR 1/30	CAST NO.	CARD	DEPTH (mi	3 1	s •4.	SIGA	A A = T	SPECIFIC	VOLU ALT-T	ME D	10 ³	SOU VELC	JND DCITY	02 ml i	PO4=P	TOTA	NC y=N VV - DI	04-4	т 51 д~5 -0 ^{ог} 1 -	
				ST	D 000	0	2148	3552	24	77	003	3182	8 Q	0000	15	267	542						
		203	3	OBS	000	Ū	2148	35515	24	77					15	267	542				011		
				ST	D 001	0	2137	3558	24	85	003	110	7 0	0031	15	266	527						
				OBS	001	0	2137	35580	24	85					15	266	527				004		
		00.	l	OBS	001	3	2052	35460	24	99					15	243							
				085	001	2	2062	35400	24	92	0.0.3				15	246							
				080	0 002	0	2013	3720	24	90	00.	10 10	1 (062	15	230	524						
				51	0.002	a	1620	30200	24	60	0.0	5.50	3 0	000	15	233	524				013		
				DRC DRC	003	ñ	1620	34675	25	4 / // T	1102	120	2 1	10.4.1	10	112	522				0.11		
				085	004	ŭ	1511		25	n 7					15	0.86	537				041		
				ST	0 005	5	1447	3537	26	3.2	001		1	1142	15	070	510				J. 4		
				085	005	õ	1447	35371	26	40	001		1 (15	070	510				0.4.1		
				51	D 007	5	1389	3549	26	61	001	460	1 0	171	15	057	450				0.0		
				085	007	5	1389	35492	26	61					15	257	450				20%		
				ST	D 010	C	1375	3561	26	73	001	351	4 C	206	15	058	438				000		
				OBS	010	C	1375	35612	26	13					15	058	438				0.2.6		
				5 T	D 012	5	1317	3557	26	82	001	274	5 C	239	15	042	435						
				SŤ	D 015	0	1281	3555	26	87	001	226	1 0	270	15	034	425						
				085	015	J	1281	35550	- 26	87					15	034	425						
				085	017	8	1267	35565	26	91					15	034							
				ST	D 020	0	1215	3552	26	98	001	139	8 C	1330	15	019	386						
				085	020	0	1215	35515	26	98					15	019	386						
				SŤ	D 025	Ĵ	1059	3533	27	12	001	800	8 C	1383	14	970	342						
				OBS	025	J	1059	35327	27	12					14	970	342						
				ST	D 030	Û	0905	3517	27	26	000	677	6 0	9430	14	920							
				OBS	030	0	0905	35172	27	56					14	920							
				51	040	0	0675	3005	21	51	000	1542	3 C	3000	14	847							
				085	040	5	0675	35052	27	51 CC					14	847							
				085	0.42	2	0600	35014	21	- 5 - 5	000	5.3.		r	14	821							
				51	0 000		0553	3000	21	63	000	236	2 3	1265	14	814							
				005	0.000	2	0523	34496	21	6 J	0.000	6.30	,	un 1.0	14	814							
					040	J	0521	34004	21	0/	0.00	9.78	2 .	018	14	510							
				003	000	~	V J 6 1	J 🖛 7 7 D	÷ 1	07					1.4	010							

REA CTR	ID,	SHIP	LATITU	DE	LONGITUDE	DAIFT NDC18	MARS	ARE	514	G M	TIME T)	YEAR	CRU	ORIGI	NATO STAT	R*5 0 N	-	DEPTH TO	MAX. DEPTH OF	01	W A SER //	TION	s	WEA- THER	CLOUE	2		NODC STATION	
3	18023	EV	40.00	1/10 N	07200	- 0	10"	1.	00	DAY	HR.1/10	1206	2 1.0). 	NUN 2.1	BEP	-	0110.	S'MPL"S	DIR.	HGT	154	SEA	CODE	TYPE A 4		• +		-
	1002.	n – • (4000		01200	nr I	1176	WA	TER	21	WIND	1140			G 1 EMP	rI	4		01	13	101	∠						06-1	i.
								01.08			SPEI	D AAFI	0-	0.89	Tw	ET CO	21	OBS.	SPEC	CIAL									
								CODE	1.00	2	R. 01 FOR	. (mt	1	BULB	80	18	10	DEPTHS	OBZERA	ATIONS	1								
								DT	S	D 1	9 50	8 1	+6	222	2	00 7	,	0.6			1								
		MESSENGI TIME HR 1/10	CAST	C A TY	RD DEPTH	(m.)	τ	°C	1	s •4.	SH	GMA-T	SPECI	FIC VOL	UME 10"	∑ ∆ DYN, x 10	D M 3	SOU VELO	ND CITY	0, ml	" P 1 25	D 4 - P 7 01	ro P	01AL−₽ g - 011	NO ₂ -N pg - et i	CHRA	51 T.4 199 -	-5. FH	s c c
																										1	+		
				S	TD 000	00	1	820	3	355	2	413	0.0	1479	16	000	0.0	15	153	575	5								
		23	6	08	5 001	00	1	820	3	355	2 C	413						15	153	575						025			
				S	00 CT	10	1	819	3	391	2	44I	00	1353	36	003	17	15	159	594	•								
				08	\$ 00	10	1	819	- 3	391	<u>2</u> 2	441						15	159	594	•					097			
		00	0	OB	S 00	18	1	780	- 3	386	n 2	447						15	148										
				5	TD 00.	20	1	64Ŭ	- 3	380	2	464	00	1531	3 l	0Ū7	1	15	121	58	3								
				OB	\$ 00.	20	1	690	3	380	0 Z	464						15	121	583	5					ひ4ヒ			
				S	TD 00	30	1	353	3	343	2	507	0.0	288	73	010	12	15:	014	582	;								
				08	S 00	30	1	353	3	343	0 2	509						150	012	583	3					200			
				OВ	S 004	40	0	920	3.	280	0 2	539						143	853	500)					040			
				S	TD 005	50	0	797	3.	289	2	564	00	236	2.8	015	4	148	809	600)								
				08	S 00	50	0	797	3.	283	8 2	554						148	909	610)					224			
				S	TD 00	75	0	758	3	318	2	542	0.0	209	94	0∠1	-	148	802	569	2								
				08	s 00'	75	0	758	٦	317	5 2	592						148	802	554						013			

REFERE	NCE	SHIP		or T			N E	ST A 1	ION T	ME	FAR		ORIGIN	ATOR'S	_	DEPTH	MA) DEPT	H OBS	WAVE	WEA	CLOUD			NODC	
CCDE	RD. NO.	CODE	+	3/10	1/10	10*	1*	10	DAY H	R.1/10		CRUISI NU,	5	NUMBE	4 R	BOTTON	1 S"AAPL	*S D19	HGT PEP S	CODE	TYPE A 1/1			NUMBER	
318	023	ΕV	4030	N	07200 W	152 (0.2	0.9	22	024 1	967	10.	02	2		0060	0	0 19	0 2	¥4				0022	
							WAT	ER	1	VIND	BAR		AIR TEA	W.P. °C	_	NO.		CIA:							
						C C C	DLOP ODE	TRANS Iml	DIR	SPEED OR FOPCE	M ET E	R 1)	DRY BULB	W ET BULB	CODI	OBS, DEPTHS	OBSEP	VATIONS							
							DT	SD	18	520	12	9	194	18	3 6	05									
		MESSENG TIME	T CAST	C A R (TYPE	DEPTH (m)	T "C	2	5	*/ _{**}	SIGM	^ - ⊺	SPECIFI	C VOLU AALY-31	.∿€ 0. ⁷	≶ <u>1</u> D DYN M X 10 ³	SO VEL	UND OCITY	0.2 m1/1	PO4+P 20 - 01/1	TOTA (- P µg = a1.9	NÖ3+N µg + of l	CHL - A	51 O 4- 49 - 01	Si pH	500
			-																						
		1		51	rb ouqu	16	03	32	47	238	12	00	4092	3	0000	1	5075	587						1	
		0.2	4	OBS	0010	16	0.3	3.2	470	238	12					1 9	5075	587				025			
				51	D 0010	16	13	32	46	238	1	00	4102	4	0041	1 .	50.77	599				-			
				OB	; noiu	1 1	6.0	32	4 H O	234	1					1 5	5077	599				026			
				51	0020	15	2+-	32	34	238		0.0	4029	Ю. —	0082	- 19	5053	601							
		0.0	0	089	0020	15	26	- 32	341	5 - 6	9					1 5	5053	601				038			
				51	1D 0030	13	Ŭ5	- 32	2.2	242	ь.,	(1 ()	36 n 8	1	0120) 14	+981	600							
				OBS	5 - 003U	13	05	3.2	215	242	5					14	186	600				040			
				089	5 0040	00	42	32	385	250	3					14	+856	539				043			

REFE	RENCE	SHIP LATITUDE					- #	MARSO	DEN	STA	TION T	IME			ORIGIN	A TOR'S	1	DEPTH	MAX,		WAVE		WEA.	CLOUD			NODC	
CTRY CODE	ID. NO	CODE	LATITU	101E 1010	LON	GITUDE 17/10	DON -	10*	1"	MO	DAY P	IR,1/10	YEAR	CRUISE	S N	TATION UMBER		to Bottom	OF S'MPL'S	08:	ERVA 11 HG1 PE	ONS R SEA	CODE	CODES			TATION FUMBER	
31	8 O Z 3	Εv	410	N	07	1545W		152	11	09	22	056	1967	102	50 2	3		0013	00	21	3 2		×6				0023	
								1.1	WA	TER	1	WIN D	BAR	2.	AIR TEA	AP °C		NO.	196/	° 1 A 1								
								C	CODE	FRAMS (m)	DIR	SPEED OR FORC		R L) E	ORY SULB	W ET BULB	con	OBS. DEPTHS	OBSERV	ATIONS								
									ÐŤ	SC	19	\$22	2 07	1	178	178	6	02										
		MESSENG TIME HR 1/1	CAST NO.	C A TY	RD PE	DEPTH (m)	T	°C	s	•4.	sig	MA =1	SPECIFI	C VOLU		∆ 0 N. M 10 ³	. VELO	IND CITY	0 2 ml/l	PO 4	-9 T	OTAL-P Pg = atri	NO2-N 48 - 01.1	CHL-A	SI O4⇔S ⊮g = ¤1;	рн	500
				5	STD.	000	ا ن	10	572	31	32	22	18	00	5062	J 0	000) 15	ا د 80	604	[ļ						
		05	6	08	35	000	Ũ	10	572	31	320	22	278					15	083	604					157			
				5	STD -	001	0	10	553	ا ذ	33	2.	283	0.0	5039	ь 0	051	15	079	617								
				06	35	001	U	-1e	553	31	325	22	283					15	079	617					185			

REFEREN	NCE	SHIP	LATITU		LONGITUDE	CTR C	M A R S L	DEN	\$TA	TION I IGMTI	TIME	YEAR	-	ORIGIN	ATOR'S		DEPTH	DEPT	х. н _о	WAV BSERVA	E TIONS	WE	∆- (R	CLOUD			
CODE	NO,	CODE	•	1/10	97		10"	1*	MO	DAY	HR.1/10		NO.		NUMBER		BOTTO	N S'MP	L*S DIP	HGT	PERÍSE	A COD)E	YPE 4 517		Ň	UMSER
318	023	Εv	4030	N	07300	W	152	03	ΰa	22	117	1967	102	02	4		0030	0 0	0 20	3	2	x	1				0024
							ſ	WAT	ER	T	WIND	BAR		AIR TE	MP. *C		NO.			1							
							0	COLOR CODE	1RAN S	D1R.	SPEED DR FORCE	MET! Imbs	ER sì E	DRY	WET BULB	COD	E OBS. DEPTH	S OBSEI	VATIONS	5							
								DT	SD	22	S12	22	0 1	88	183	6	04			1							
		MESSENG TIME HIP 177	PLCAST	C A T Y	RD DEPTH	((m)	г	*c	s	•4.	SIGA	^ A = T	SPECIFII	C VOLU NALY-XI	IME 2	A D N. A1 x 10 ³	SC VE	LOCITY	0 2 mi	/1 PC 1/1)4-P - 01/1	-) ATOT	. P N 17 PS	102–N 9 - 01/1	CHL—A	SI O 4-Si yg - of 'l	рH
		1	7	S OH	.10 00 .5 10	00 00	+ 1	710 710	 31 31	50 500	22	83 83	003	5034	+3 0	000) 1 1	5096 5096	570 570				l		065		
				0 F	TD ยุง 5 เงิง	10 10	1	650 650	31 31	78 780	23	18 18	004	4700)7 0	Ŭ4¢) 1 1	5085 5083	560	5					078		
		υľ) Ü	9 02 04	TD 0.0 (S 0.0 (S 0.0	20 20 25	1 e 1 e 1 e	613 613 613	31 31 31	.82 .820 .825	23) 23 23	30 30 30	004	4594	+3 0	09	5 1 1 1	5.174 5074 5075	53. 53.	1					084		

REFERENCE CODE NO. 318-22	SHIP CODE	LATITUL + 1214	DE 1 10	104517UDE 11 10	10°	RSDEN UARE J' UARE UA COLOP CODE	STATION 1 IGMTI MO DAY J 2 2 SER TRANS DIR SD 30	IME RT 10 142 1901 AND BAR SPEED MET 1-9 E Imb 012 UP	2010/14.47 28.16 574 NC NI 1.1)2 U.25 0. ATP TEMP 68. DRC 1.1 BUL8 B 55. 2.2.2	CP'S TICN VBER F V V V V V V V V V V V V V V V V V V	DEPTH TD I TT 4 IIII B IIII B MO PES TEPTHS(V A F EPTH DF 11 22 DECTA BLOPN AT DN		-50 * *]	• +	s. 1 05
	MESTENDA TIME HR 1 10	CAST NO.	CARC TYPE	DEPTH	m	t "C	s •	SIGA*A=T	SPECIFIC VOLUME ANONALTURIO	₹ <u></u> D D`* X	5; 4 16005	9, in +	PC4+P 	- 1 - 7 A 4 = 0 1 - 7 A 1 1	ст 12:-5 СА-А 11 - 4	4" 4" 1 "
	14.	4	ST OBS OBS THS THS	0 100 000 515 0 101 51 004	ປ ປ 	1920 192 1723 1722 1722 1722	3028 30280 31360 31362 31362 31351	214 214 2270 2270 227 2270	0004074 7151546	00000	451 151 151 151 151 151	44 62 44 62 31 10 42 00 42 31	-) 			

REFE	RENCE	SH.P	(A TITU	0.5	1.05-01	•	1.2		DEN	ST A	TION TI	₩ E	YEAD		ORIGIN	ATOR	· s	DEFTH	V AX CEPTI	a	ULA VE SERUATIONS	 	- 1.1.0			
C187 C D D E	10. NO	SCOF		1.10		11.10	문학	121		¥0.	CAYIN	R 1 10		in Ruise Liino		(TAT.) NU.№8	EP.	BOTTON	S™PL	1 24	- PEP 1	FA T	E PHILE AN	1		
31	8 123	ΞV	ч ^т	N.	074			152	164	. 9	22	17011	01-7	to	02	5		0020	j be	12	0 2	×1			0025	
									6 A.	R	V	IND	BARC		A IP TE	M.P. 10		NO.		C101						
									COLD#	TRANS	DIR	SPEED DIP FORDE	M ETE	R	DBA DBA	A E	t coo .8	E EPTHS	OBSER	VATIONS						
									ΡŢ	SD	3.0	S13	0.4	1	20 h	11	1 7	Ω4								
		NESSENGE NE HR 1 10	CAST	С.А.Р ТтР	Ð	DEPTH	(m.)	1	°C	s	۰.,	SIG M	A - T	SPECIAL	C VOLU NAUY-I	5 E	₹ <u>0</u> D DYN, A x 10 ³	, SO √EL	UND DCITY	02.00	PO 4 = P	тота _в _ л ти т	- <u> </u>	Сні. – 🔺	1471 1-25	-
			-																							
				÷	тΡ	5.1	U	1	Q_7	3.0	8.4	216	35	j.	5.475	7	500	1	2147	582						
		17	Q	0 F	5	000	0	1	0.7	4.0	153A	215	3 6					1 4	5147	532				481		
				0 B	-	000	Ę.,	1	884	3.5	840	21	21					1 *	141							
				S	ΤÐ	0Ul	Ú.		bUz.	- ÷ .	11	26	3.1	10	-533	3.2	00-	4 I.:	aici.	548						
)_		υB	5	101	J	1	802	31	105	22.	4 1					1 :	121	548				514		
				<u></u>	\$	001	ь	1	79∪	31	155	22	a g					1 5	5119							

REFERENCE	SHIP			12 ²	MARSDEN	STATION TI	ME		OPIGIN	ATOR'S	CEPTH	DEPTH		A A VE	A EA	- cuella		4	2.
CODE NO.	CODE		1 10	1 10	10" 1"	MO DAY HI	21.10	K FRU N	1156 S	TATION NUMBER	BOTTOM	OF S'MPL"	0.00	HGT PER	EI EI	TIFE A		4.	5 F . P
313-23	ы с. Т	4	N La	1+20 N	152 03	04 22	1.20	57 I	1 02	7	<u>.</u>) i o			÷			- 0	027
					A A 1	TER V	IND 8	APO-	AI₽ TE	VP C	1.50	(5 P F	1A1						
					COLCR	"RANG DIR	SPEED A	ETER mbs:	DRY BULS	A ET BULB	E, ERSHE	1.13568.4	ATIONS						
).	no 31	505	091	210	157 H	0.5					_	_		
	MESSENDR TIME	LCAST NO	CARO TYPE	DEPTH (m)	t to	s •	SIG ₩ A – T	SPE A+	01F10 + 010 2014 4 24 - 81	υε ο' ΕΥΝ ε'ιο) SOI - EU	UND D' TY I	ا اس : (PO 4= P	1714.L=9 1.J	505-54 1970)	CHL A	a= 2 - 31	14
										-					÷		т 1		
	1		ราว	່ງມີມູ	1750	2100	2245		94419	4 000	1 15	0.45 [°]							
	182	2	635	0000	1700	31627	2245				15	0.45							
			STO	010	1670	3172	2314	0	C 4791	H ÖV4	4 15	~ d +							
			1 5 5	.1.	1670	317.5	2 - 1 -				1 5	69							
			SID	1. L V	1542	2196	2140		الم به بال	8 1.4	- 15	64							
			1.51	ć.	15 -	41961	2 34E				1.5	5. A							
			ςτö	2740	1538	3211	241.4		··· 6	1 114	× 15	1-6							
			.4 5	0 40	15 +8	50010	2364				1 5	156							
) H C	164.	1530	2,1120	2 + 71				15	⊂ 4							
			1 B S	11 37	1247	9.1.0	1.41				14	25.3							

E o	SHIP	LATITU	DE 1/10	LONG	NOCIA SOUTI	MAR SQU	ARE	51A1	GMT	R 1/10	rear		ORIGIN	A TOR	N R	8	DEPTH TO OTTOM	DEPT OF S'MPI	H OBS	WAVE FRVATIO	NS T SEA	WEA- THER CODE	CLOUE	5		NODC STATION NUMBER	
1	i.v	4000	N	0/3	uc W	152	U3 WA COLOR CODE	0.9 TER TRANS Imi		ZZ4 1 VINO SPEED OP FORCE	967 BARC METE (mbx)- R 1	OZ OZ AIR TEP ORY BULB	8 WP °C WE BUL	t c	VIS	NO. 085. DEPTHS	O (SP OBSER	30 ECIAL VATIONS	2 4		× 1				0028	3
							DT	SD	31	510	09	1	189	15	6	8	07										
N	AESSENGE TIME 0	CASI NO.	C ARE TYPE		DEPTH (m)	Т	°C	s	* '* *	SIGM	A = T	SPE AP	CIFIC VOLU NOMALY-11	M E 0 7	≨ DYN. x 1	D M 10 ³	SOL VELC	IND CITY	0.2 ml/l	PO 4-	- P T	OTAL−₽ µg + σ[/]	NO2=N VQ = of L	CHL-A	51 O 4 1 9 g - 01	Si рн	S C C
ſ																											
			S1	Ð	0000	1	679	32	14	233	12	0	04572	2	0.0	0.0	15	094	588								
	224		089		0000	1	479	32	130	233	2						15	094	588					030			
			OBS		0005	1	ちちち	3.2	U 2 O	273	1.1						14	089									
			51	D	n010	1	521	36	1 4	2.17	2	0	04180	7	00	44	15	047	597								
)()()		ΟÊς		0010	1	521	32	117	237	2						15	047	597					038			
			ST	D	0020	1	329	크고	30	242	7	0	03668	5	0υ	83	14	988	603								
			0.83		0020	1	324	34	300	242	1						14	988	603					088			
			081		0027	U	813	36	520	251	8						14	804									
			SI	D	10.301	0	HUL	32	33	252	20	0	102481	9	ΰ1	15	14	800	590								
			0.65		0.50		2081	- 12	330	252	0						14	800	590					0.95			
			ΟBS	1	0040	Ļ	801	32	150	252	' Ľ						14	802	520					076			

REFEREN	CE	S LUIR						MARS	DEN	STAT	ION TI	ME		}	ORIGIN	ATOR	s	DEPTH	MAX		w	A V E		WEA-	CLOUD			NODC	
CTH I	D.	CODE	LATITU	301	LONG	GITUDE	N D G	50 U	A R E		GMT	Y	EAR		S	TATIO	N	TO	OF	0	OBSER	VATION		THER	CODES	_	5	TATION UMBER	
	.0.			1/10		'U 10	-	10*	1.	MOL	DAY HI	2,1710		NU.	- n	10 000			S-Wh	S DIF	» н(GT PER	EA .		1461 1 10				
- 1 A .	123	ΕV	49.41	15N	07:	00 W		116	33	04	23 0	15 1	967	10.	02	9		0080	00	3	4 ×			× 1	1			0029	
									WAT	T E R	W	1N O	8ARC	-	AIR TEA	MP "C	VIS	ND,	SPE	CIAL									
									COLOR	1RANS (m)	D1R.	SPEED OR FORCE	METE {mbs	R 1 1	DRY BULB	W E BUL	8	OBS. DEPTHS	OBSERV	A TION	15								
									DT	SD.	34	S17	11	5	178	le	7 8	00											
		MESSENGE TIME HR 1/10	CAST NO.	C A1	R D PE	DEPTH (m į	T	°C	s	۰. ۲/ _{۴۰۰}	SIG M A	_T	SPECIFI	C VOLU	м.е 0.7	≦ ∆ D DYN_ M x 10 ³	SO VEL	UND OCITY	0 2 m	971	PO4=P µg + σt/1	TOT	A L — ₽ • 01/1	NO ₂ —N µg - al/l	CHE A	51 O 4 + 51 µg = a1 1	pН	500
	t																												T
	(S	10	000	0	1	669	32	2.3	234	ą į	0.04	4409	3	0000	15	50.93	59	io '								
		0 1	£.,	0.8	c	0.00	0	1	669	32	272	234	Q.					15	093	59	0					024			
				5	10	-097	U	1	665	+2	24	235	0	0.0	4397	4	0044	15	640	61	1								
				0.6	S	101	Ũ	1	665	32	240	235	0					1 5	093	61	1					028			
				S	TD	002	Ū	1	580	- 4 s	c. 6	217	1	0.0	4202	3	0087	15	0004	-61	0								
		20	Ċ.	08	S	2 נירי	J	1	58J	3 L	гнЭ	237	1					1 *	0069	61	0					039			
				5	TO	003	Ū	U	73J	36	5 I	253	3	0.0	-655	2	0121	14	•773	59	15								
				C 5	5	0 J 3	Ũ	Ũ	73Ú	32	47 N	2.5 %	5					14	+773	- 59	6					076			
				ΟB	r	104	0	J	706	32	450	254	3					14	+766	56	5 1					044			
				S	TD	ついき	J	,	7Un	42	44	254	5	0 C .	2544	н	0174	14	•768	57	13								
				Оb	<	0 U ⁶	J	.)	706	32	480	254	5					14	+768	57	3					043			

REFERENCE	SHIP	LATITU	D٤	LONGITUD	E LING	E MA	RSDEN UARE	STA	IG M1	TIME .	YEAR	CRUIS		ATOP	5	DEPTH TO	MAX. DEPTH	OBS	W A '	TIONS	W E TH	A- ER	CLOUD		s	NODC	
CODE NO.	0000	•	1/10	' 'I	/10	2 10*	1*	MO	DAY	88,1/10		NÔ.	1	10.778	ER	BOTTOM	S'MPL"	DIR.	HGT	PEP 5	A CO		13 PL A.M	Ť	N	UMBER	
-1802	- ĒV	39.00	N	07300	W	11	6 93	04	23	045	1967	10	2 03	0		0034	0.1	35	1	2	x	1				0030	
							W A	TER		WIND		o. L	AIR TE	VIP °C		NO.	SPE	141									
							COLOR	TRAN (m)	5 D18	R OF	D MET	ER s1	DRY BULB	W E B U L	t con	E OBS. DEPTHS	OBSERV	A TIONS									
							DT	SI	D 3	3 51	7 01	2	161	1:	10 7	07											
	MESSENIU TIME	CAST	C A R TYP	D DEP	1H (m)	-	t "C		s •4.	SI	5 M A - T	SPECIF	IC VOLU MALY-XI	₩.E 0.7	₹ △ D OYN, N x 10 ³	SOL VELC	UND DCITY	0.2 ml/l	PI VQ	D.4 - P - of I	IOTAL- pg - of	- P 1 1 1	NO ₂ =N +g = of 1	CHL—A	51 O 4 - 51 99 - 01 1	рН	500
	1111 17 10	, 						- +		+				+		-			+		-	+-		t			÷
		1	S	to o	0.00		2055	- i - 3.	458	2	431	00	10/2	1	000	1 15	2 11	532	1			I		1		1	
	. 4	5	08	c 0	0.00		2055	3.	457	5 2	431	00		-	000	15	231	532						015			
			5	n GT	οiυ		2055	3.	458	2	431	00	3625	н	0036	15	233	536						<i>Q</i> 1 <i>P</i>			
			06	ç 0	010		2055	3.	447	5 Z	431					15	233	530						0.1.2			
			S	TD C	020		2071	3	468	2	435	0.0	3594	2	007.	2 15	240	540						0.10			
	0.0	0	06	s n	020		2071	3	468	0 2	435					15	240	540						012			
			S	tD 0	030		1765	3	400	2	461	00	3345	Q.	010	7 15	148	531									
			08	S O	030		1765	3	400	0 2	461					15	148	531						016			
			ОB	S 0	Ŭ4U		0998	3	335	0 2	585					14	852	592						050			
			5	TD 0	J50		0814	3	350	2	610	0.0	1931	7	0160) 14	823	590									
			0.8	s n	050		0814	3	350	0 2	610					14	823	590						019			
			S	TD O	075		8080	3	366	2	623	0.0	1808	4	020	7 14	827										
			OB	s 0	075		0808	3	3661	0 2	623					14	827							013			

REFEREN CTRY CODE	ICE ID. NO.	SHIP	LATITU	JDE L		MARS SQUA	DEN APE	STAT	ION T IGMTI DAY H	IANE IR 1, 10	YEAR	CRUISE	C'RIGIN A		'S DN BER	DEPTH TO BOTTOP	MA DEPT OF S'MPL	н Н 1785 *S Сій	WAVE SERVATIONS	A EA THER				N 14.1 H 1.1 1994 H	
3160	523	Ēν	3900	IN O	7330 W	116	93	09	63	078	1967	102	03	1		0042	2 01	34	3 2	1	· ·	Î	Ť	0031	
						[W A1	ER	V	VIND	BAR	o- L	A IP TEN	P 1		NO.		CIA)							
							COLOR	TRANS (m)	DIR	SPEED DR FORCE	M ET {mb	ER st B	DRY IULB	W 8 8 U 8	T CODE	CIBS. DEPTH:	OBSER	VATIONS							
							DT	SD	32	\$15	11	9]	50	1	50 8	05									
		MESSENGA TIME HR 1, 10	CAST NO.	C ARD TYPE	DEPTH (m)	T	'C	5	·	SIGN	1 A - 1	SPECIFI	C VOLUA 1417-110	A E	Σ Δ D Dyn, M x 10 ³	SC VEL	UND	Og mi i	PO4-P	103AL-P	NO2+N 20-0	CHL - A	T 4- 4- 10 - يونو	й рн	1
				510	0000	1	785	33	47	24] 6,	00.	3772	1	0000	19	5142								ţ
		07	8	OBS	0000	1	785	33	465	24	15					1 !	5142								
				STD	0 0010	1.	827	34	0.8	24	52	0.0	\$425	в	0036	1	5163								
				085	0010	1	827	34	080	24	52					- 19	5163								
				STD	0020	1	710	34	9.2	24	76	0.03	3202	7	0069	1 :	5130								
		0.0	0	OBS	0.020	1	710	24	020	24	76					1 1	5130								
				STD	0500	1.	288	33	14	251	00	000	976	4	0100	14	4986								
				OBS	0030	1.	288	33	140	251	0.0					14	4986								
				065	0040	1	182	32	928	25	0.4					14	4949								

REFEI	ENCE						V AR	SDEN	A T Z	TION 1	TIME		ORIO	GINAT	08*5		DEPTH	MAT	· · · ·	₩ A V E	WEA	a liese a	oT.	Τ.	AF C	
CTRV	ID. NO.	CODE	LATITU *	DE	LONGITU	DE 400N	10"	A R E	MO	DAY I	HR 1-10	YE A P	CRUISE NO.	STA" NUN	ELO N A BER	8	TO MOTTO	OF S'MPL'S	OBS DVR	ERVATIOI	45 THE SEA CCC	R CIDE	5	N	UN REP	
31	8023	EV	39.10	N	07400	W	110	94	09	23	0.94	1967	103 (32		C	036	00	33	3 2					0032	
								W A	TER		WIND	BAR	AIR	TE MP.	°C		NO.	5.957	141							
								COLOR	TRAN Uni	S. DIR.	SPEED OR FORCE	A1ETE Imba	R DRY	8	VET C	ODE	OBS DEPTHS	OBSERV	ATIONS							
								DT	S	34	518	13	9 13	<u>،</u> ا	100	R.	04									
		MESSENGR TIME HR 1, 10	CAST NO.	C AI TY	PE DE	PTH im)	1	°C		s•	SLG M	NA ~T	SPECIFIC VI		S L DYN X	D 03	SOL	UND DCITY	0.2 m1/4	PO 4=	fotAL- l yg+ot	P NOp=N µg - of	CHL - A	51 114 = 5 49 - 61	pН	
				5	TD (1000	1	748				1							560	1						
		04	4	08	s (000	1	748	31	476P	25	23P							560				081			
				S	тD	010	1	748											569							
				OB	5 0	1010	1	748	34	476P	25	23P											067			
				5	TD (020	1	538											572							
		, FF	Ê)	0 B	s (020	1	538	3.	209P	23	67P							572				226			
				S	TD 0	1080	1	477											540							
				OB	5 0	080	1	477	3.	211P	23	R2P							540				176			

				-7																			tagen and		
REFE	PENCE	CHIR			- 2	MARS	DEN	STA	TION 1	FL6AE			ORIGINA	ATOR'S		DEPTH	NAX DEPTH		WAVE	WEA-	CLOUD			400. I	
CTRY	ID.	CODE	LATITU	DIE	LONGITUDE ES	\$00	ARE		IG M T		YEAP	CRUI	SE 51	TATION	١.	1 OT	ÖF	OBS	EPVATIONS	THER	CODES		S N	LAT N	
0008	NO.			1 10	1, 10	10"	1*	MO	DAY	HR.1 10		NO	. N	UMBER	0	UTION 1	S' M PL'	DIR	HGT MR SIA	CODE	TYPE A VI	1.		UNBER	
31	8023	ΕV	3859	7 N	074445#	116	84	09	23	126	1967	10	2 03	3	10	010	00	33	1 -	× 1				0033	
						[WA	TER	Γ.	WIND	BAR	. L	AIR TEA	AP C		NO,	1.01							••••	
							COLOR	TRAN Im1	DIR.	SPEED OR FORC	AAETE	R)	DRY BULB	WET CO BULB	DDF	OBS. DEPTHS	OBSERV	ATIONS							
						ĺ	DT	SD	34	514	+ 15	b	100	0-4-0-1	7	0 4									
		MESSENGI TIME HR 1710	CAST NO.	C A R TYPI	D DEPTH (m)	т	*⊂	5	•1.	SIG	MA-T	SPECI ANO	IC VOLUA M 4 (1-110	NI ∑ DYN. x 10	D M 0 ³	SOUI VELOI	ND CITY	0.2 m1/1	PO 4-P	TOTAL=P µg = ol I	NO2~N vg + at	CHL – 🔺	SLO ₄ =5i µg − at	рН	S C C
		12	6	5 08: 08:	TD 0000 5 0000 5 กมชั9	1 1 1	960 960	3. 3. 3.	56 560	21	5] 5] 5]	n n	6300	4 000	9.6	151 151 151	158 158 150	547 547 548				532 666			

REFERENCE	SHIP	LATITU	301	LONGIT	UDE	DCTR	MARS	DEN ARE	51A	TION T	IME	YEAR	CRUIS	ORIGINA	ATOP'S	N	DEPTH TO	MAX. DEPTH	08	WA SERVA	VE		WEA- THER	CLOUD		s	NODC TATION	
SHOE NO	e one	·	1, 10	•	1 10	1 Z	10*	11	MO	DAY	IP.1 10		NO.	N	UMBE	R	BOTTOM	S'MPL'S	DIR	HGT	PER	EA C	ODE	TYPE AM	ī		UMBER	
118023	ΕV	3800	N	0750	10 W		110	85	04	23	199	1967	10	2 03	6		0010	00	01	0	2		X 1				0034	
							[WA	ER	1 V	N IN D	BAR)-	AIR TEN	∧P. °C	_	NG.	S P C/	- IA I									
								COLOR	TRAN (m.)	DIR	SPEED OP EORCE	METE (mbs	R	DR7 BULB	W ET BULE	cop	DEPTHS	GBSERV	ATIONS									
								DT	50	33	506	15	2	200	13	8 0	02											
	MESSENG TIME H.P. 171	CAST NO.	САР Түр	E E	СЕРТН	(m)	T	'c	5	•	\$IG I	MA-T	SPECIFI	C VOLUA	мЕ) ⁷	∑ ∆ 0 DYN. N X 10 ³	SOI VEL	UND DCITY	02 ml/	P + 1	04-P 2 · 01'l	101 194	A L = ₽ - o1/1	NO2=N µg = atri	CHL-A	SLO ₄ —Si µg = at/i	рн	500
	19	q	5 08 08	TD S S	000 000 000	10 10	1 1 1	952 952 952	3. 30 30	188 1880 1880	2 1 2 1 2 1	77 77 77	00	60 4 8	2	000) 15 15 15	150 160 161	556 556						130			ŢŢ

REFERENCE	SHIP	LATITUDE	LONGITUDE	N N	ARSDEN QUARE	57	IGM1	TIME D	YEAR		RIGINATOR'S STATION	DEPTH	DEPTH	08	WAVE SERVATIONS	WEA- THER	CLOUD	NODC STATION
CODE NO	CODE	1/10	1/10	Z 10	n* 1*	MO	DAY	HR,1/10		NO.	NUMBER	BOTTOM	S'MPL'S	DIR	HIGT PER SE	A CODE	TYPE AM1	 NUMBER
31802	EV	1800 N	07430 W	1	16 84	09	23	221	1967	102	037	0043	0.0	35	0 2	×1		0035
					COLO	R TRAP	S DIR		BARO METER	R (IR TEMP C	NO. OBS. DEPTHS	SPEC Observa	IAL TIONS				

			0000		FORCE	1			1 5	1								
			DT	SD 34	508	146	190	140	8	07								
MESSENGR CAST TIME OF NO. HR 1/10	CARD TYPE	DEPTH (m)	T °C	s •4.	SIGMA	х_т ¹	SPECIFIC VOLUN ANOMALY	ye S	A D YN M. X 10 ³	SOUND	0.2 ml/l	PO4-P	ТОТА L — Р µg = q1/1	NO2-N µg = a1'l	CHL - A	51 O 4 – 51 9 – 9t/1	рН	s c c
	5.70	0.000	1.50	334.0	1	_	0040+30			1600	E					1	1	
2.2.1	OBC	0000	1659	2200	230	2	004060	9 0	000	1509	5							
661	003	0.010	1654	22075	2.50	0	202011			1510	ן ו							
	040	2010	1000	2200	241	0	003651	5 0	10 19	1510	1							
	UPS	1010	1990	23000	241	0				1210	1							
0.00	OBS	0012	1720	33300	241	8				1512	3							
	085	0017	1735	33355	241	9				1512	9							
	STD	0020	1729	3338	242	2	0037119	+ 0	077	1512	8							
	065	ういこい	1729	33380	242					1512	8							
	STD	0030	1649	3386	246	6	0032976	5 0	112	1512	6							
	0.85	0030	1699	33860	246	6				1512	6							
	065)()4U	1698	33960	247	4				1512	9							

ENCE				MAR	SDEN	STA	HON T	IM1E		1	ORIGIN	ATOP	'S	In	FRTH	MAX		WAVE		w14-	CLOUT	,		NODC
ID. CODE LATITU	DE	LONGITUE	E Se	g sou	ARE		(G M T)		YEAR	CPUISE	5	TATI	DN		10	OF OF	0858	RVATION	45	THER	CODE	5		STATION
NO	1 10	· · ·	1 10	f 10*	1.	MO	DAY	19 1.10		NO	1	NU MI	ER	80	TIOM	S'MPL'S	C P	H GT PEP	5£ A	CODE	TYPE AA	1		NUMBER
5023 EV 38 10	N	1174Ju	W	110	84	09	24	006	1967	102	03	8		01	100	01	35	0 2		xo				003
					WAT	E R	T,	MIND			AIR TEA	4 P 1		1	v0.									
					COLOP	TRANS Im)	DIR.	SPEED OR FORCE	M ET (mb	ER E	DRY ULB	90 BU	1 COI .8	DE	DBS. PTHS	OBSERVA	TIONS							
					ÐT	SD	35	\$13	14	9	150	1	06 8	1	08									
MESSENGE CAST TIME OF NO. HR 1 10	⊂ a r I y p	D DEF	TH (m)	T	°C	s	•/	SIGA	1 A – T	SPECIFI	C VOLU	ме 0'	₹ △ C DYN, 7 x 10 ³	ж.	SOU VELO	ND CITY	0 ₂ ml/l	PO4-F 29 - 01.	, T	OTAL-P Pg - ot 'l	NO₂−N µg•obl		21 D.4-5 10 - 94	рн
								-														-	1	
	S	tD 0	000	1	931	34	16	24	32	00	3613	9	000	0 '	15	192	553							
0.06	08	s n	000	1	931	34	160	24	32						15	192	553					031		
	<	tD u	010	1	931	34	16	24	3.	00.	1617	2	003	6	15;	94	570					-		
	0 d	° 0	010	1	931	34	160	24	3 '						15	94	570					026		
	5	ro o	020	1	928	33	94	24	16	00.	\$772	Q.	007	3	15	192	570							
0.00	0.8	s ü	ULU	1	928	33	940	2.4	16						15	92	570					0.34		
	5	tu ut	J30	1	695	33	31	64	25	00.	1042	Ū	011	0	15:	118	586							
	Оd.	5 0	030	1	695	33	305	24	5						15	118	588					130		
	0.6	<)	040	l	150	3.5	143	25	6 D						144	740	564					040		
		(о . J	i	0.5	33	05	25	40	00.	591	4	017	ł.	14)	188	580							
	i a	د ۲	u-u	1	005	37	000	<u>, 5</u>	4 1						148	าสล	58.					0.32		
	S	th c	0.75	C	798	34	34	3.6	10	003	0.32	6	023	1	1.47	919	598							
	ŪН	5 0	0.75	Ú.	798	3.3	345	2.6	00						148	419	598					025		
	c.	to of	tňυ	1	1996	34	411	26	52	0.0	544	9	027	6	140	10.9	527					_		
	1161	c i	100		, 990	34	347	26	5.						140	နှင့်န	527					015		

REFERENCE CTRY ID. CODE NO.	SHIP	LATITU	DE LO		MARSDEN SQUARE	STATION TO IGMT	ME 1	FEAR	DRIGIN CRUISE S NO P	ATOR'S	BOI	EPTH DEPT	H (B)	WAVE SERVATIONS	WEA THE	E CIF		74 1 A T 64 - 1 - 10
110023	EV	1000	N IN	7240	116 0 4	0.01 14	12011	067	101 03	0	+ 1.			tat +	ł	,		*
1 210053	LV	2000		1000 W				401		14 14 17 1	110	. 1	2	1014				0.147
					01.08	TRANT -	57680	BARO METEI	R DPY	WET	15 O	40, 5F 085 0 0000	ECIAL LATIONS					
					CODE	Imi DIR	FORCE	Imbal	8018	801.8	DE	PTHS COSC	SATURS					
					DT	SD 34	512	14	6 161	124 8	4 3	19						
				1			1		_							· ·		
	TIME 0	CAST NO.	CARD	DEPTH (m)	5° T	s *·	SIG 44	A T	ANOMALTER	ME DYN	N 1	SOUND	0 r. m.	$P \cap 4 = P$	1014.	* NC2+N C	HL A	4-1
	HR 1/10						-			x 1	°		1	+-	2	+		·
			STD	1000	2008	3480	246	1	003343	4 000	0.0	15221						
	() 3 C		085	0000	2008	34800	246	1				15221						
			510	0010	1960	- 3472	246	, /	003284	4 00.	5 5	15209						
			065	0010	1460	34717	245					15209						
	0.03		510	3020	1870	2488	200) 2	005901	0 001	54	15187						
	005	5	510	0020	1670	34074	200	12	002201		51	15107						
			086	0030	1600	34940	251	12	002271	.4 .00	* 1	15109						
			085	0040	1600	36700	263	1				15104						
			CODS CTD	0050	1420	3526	20:	9 I.	001540		20	15034						
			ORS	0050	1340	35240	265	() ()	001240	0.1		15033						
			STD	0075	1355	3569	268	11	001251	0 017	4	15048						
			085	0075	1355	35685	268		0			15048						
			STD	0100	1252	3561	209	8	001117	1 01	2.5	15016						
			OBS	0100	1252	35605	269	8				15016						
			STD	7125	1138	3547	270	19	001012	9 04.	2.0	14980						
			STD	0150	1025	1534	271	9	000921	9 024	44	14942						
			DBS	0120	1025	35335	271	9				14942						
			STD	0200	0806	±504	273	32	000798	14 021	7	14800						
			OBS	0200	0800	35035	273	3 -				14863						
			STD	0250	0705	3506	274	•8	000651	25 03	24	14834						
			085	0250	0705	35055	274	+8				14834						
			STD	0300	0622	3500	275	54	000591	3 23	55	14809						
			OBS	0300	0622	14995	275	4				14809						
			STD	0400	0535	1500	276	55	00049.	/4 0 4	10	14790						
			005	0405	0535	35000	276	2				14790						
			005	0490	0510	4600	276	> ど 7 つ	000461	0 04	6.0	14/88						
			510	0500	0476	1501	211	7.2	000401	19 09	20	14700						
			085	0000 0600	.476	35017	273	7 D 7 A	000440	0000	0.0	14700						
			CDD CT0	0000	0454	3562	275	77	000419	a na	4.6	14807						
			STD	0800	0436	3503	275	79	000400)6 05	87	14816						
			OBS	0800	0436	35030	27	79				14816						
			510	0.000	0423	3503	278	àΰ	00039	79 05	27	14827						
			STC	1000	0411	3502	278	81	000399	9 06	67	14839						
			OBS	1000	0411	35022	278	31				14839						
			STD	1100	0401	3502	278	3.3	00034	16 07	06	14851						
			STC	1200	0391	3503	278	34	00038	76 07	45	14864						
			085	1200	0391	35025	278	3.4				14864						
			STO	1300	Ú3h2	3503	278	÷ ÷	00C-8	16 07	83	14877						
			STC	1400	0375	د ټکې	278	96	00038	15 36	21	14891						
			STC	1500	0368	3503	278	36	00030	10 00	60	14905						
			OBS	1500	0368	35030	278	3.6				14905						

NODC STATION NUMBE			CLOUD CODES	WEA- THER CODE	INS SFA	WAVE SERVATION	OBS	DEPTH OF	DEPTH TO BOTTOM		STATIO	ORIGI	EAR	ME	STATION TU IGMTI	MARSDEN		E LON	SHIP LATITUE
-	- 1		int ami		SCA.	NG1 /11		3 10 1 2 3		-+				7,1/10	NO DAY HE	10" 1" /	1 10 -	1/10	+
1 003	1	1		X⊥	I	11141	36	15	2500	- 4	+0	104 04	967	150 1	04 24 5	116 73	400 W	$N \mid \rightarrow l$	EV 3758
							IAL	SPEC	NO, OBS,	VI5.	MP C		BARO	SPEED	ER W	WAT			
							ATIONS	OB2ERA	DEPTHS	CODE	BUL	BULB	(mbs)	OR FORCE	Im) DIR.	CODE			
									20	8	11	157	139	516	50 33	DT			
04-5) g = al/(SLO.	CHL A	NO2~N µg = al/l	DTAL-P /g = aF/I	-P 1 1/1	PO4~P	0 2 ml/l		SO VEL	∆ D YN, M X 10 ³	UME:107	SPECIFIC VOL ANOMALY-1	N-T	SIG M.	s •/	т°с	DEPTH Imi	C ARD TYPE	TIME OF NO
														1					
							556	197	15	000	74	00312	3	248	3480	1922	0000	STD	
		051					556	197	15				3	248	34800	1922	0.000	085) 5 5
		04.0					561	199	15) 0 3 1	Н4	00312	13	24 P	3400	1921	0010	SID	
		040					561	201	10		~		3	24 4	34800	1921	0010	OBS	
		0.5.1					574	202	1.5	1062	44	00300		240	3495	1921	0020	STD	
		051					5/4	202	10	war		00344		245	34 1 / 1	1921	0020	065	0.03
		068					552	2124	1 1 2	1084	31	01)248	2	255	3911	1740	0030	STD	
		0.00					222	2124	15				2	255	35107	1/40	0030	CBS	
		0.52					441	0000	1 1 5	1.1.0	20	0.017	5	267	10148	1440	0.040	085	
		0.1.9				,	400	001	1 1 1 1	1124	3.4	00147		201	5224	1415	3050	510	
		010				, \	490	10.73	1.		7.1	00113	14	20.	30000	1415	00.75	085	
		0.06				,)	420	5033		1 1 1 2	11	0.0110	12	20.5	35770	1310	0.975	314	
		000				,	356	6012	1 1 -	1189	n a	00103	, , \c	201	35720	1310	0120	- UNS - CTD	
		0.03				, ,	356	012	1.6		50	00107	10	271	35610	1240	0100	510	
		000				,)	340	4980	14	1216	24	00103	17	270	3545	1240	0125	005	
						, A	328	054	14	241	20	000098	2	271	3633	1141	0150	510 670	
						, {	328	4954	14		2 '	0.0070	3	271	35333	1050	0150	- STU - NA C	
						, i	318	922	x 14	าวลล	0.2	00087	55	271	3605	1000	0200	100	
						í	318	+922	14	200	C L	00001	i Li	27	35252	0950	0200	0 4 6	
						,)	325	4885	1 14	329	24	00079	14	271	3515	0330	0250	- CO	
							325	+885	14			0000	34	27	35127	0835	0250	085	
								4843	5 14	1365	04	0.0066	. H	210	3506	07.5	0.500	002	
								4843	14		•••	00000	. 9	27/	35062	0705	0300	046	
								4786	5 14	1426	1.2	00055	•0 •0	276	3442	0527	0.00	105 670	
								4786	14	5.21	• -	000000	,0	2.74	34915	0527	0400	040	
								4789	14				.8	271	34005	0512	0450	005	
								4784	14	0476	69	00044	12	27	3500	0480	0500	510	
								4784	14		-	÷	72	27	34905	0480	0500	085	
								4792	1 i	0520	56	00042	75	27	3501	0459	0500	STD	
								4792	14		- 0	5.90 10	75	27	35005	0459	0600	0.65	
								4802	1 14	0561	48	00040	78	27	3502	0442	0700	STO	
								4812	1 14	000	95	00038	30	27	3503	0425	0800	STD	
								4812	14				10	271	35027	0425	0800	CBS	
								4821	9 1	0639	70	00037	32	271	3503	0407	0900	STE	
								4832	7 1	0671	20	00037	34	271	3503	0395	1000	STU	
								4832	14				34	211	35028	0395	1000	OBS	
								4848	4 14	0714	83	00037	54	271	3503	0392	1100	STD	
								4863	2 1	0752	51	00038	34	27	3503	0389	1200	STD	
								4863	1				34	27	35025	0389	1200	085	
								4878	1 1	0793	84	00038	34	271	3503	0385	1300	STD	
								4893	0 1	083(08	00039	35	271	3503	0380	1400	STD	
								4907	9 1	0860	10	00039	36	271	3503	0374	1500	STD	
								4907	14				9.6	2.7	360.27	0374	1500	OFF	

REFERENCE	T					MAR	SDEN	STATE	ON TI	ANE .		ORIGI	NATOR	*5	DERTH	MAK		- WAVE		Lenn	- 1		
CTRY ID.	CODE	LATITU	DF	LONGITU	DE 1907	sou	ARE	10	MTI		YE AR	CRUISE	STATIC	ON T	TO	DEPTH OF	085	ERVATIONS	THER	LUCES		s t	ATE N
CODE NO.		-	1/10		1,:10 =	10*	1.	WO D	AY H	R.1/10		NO.	NUME	IF R	001107	S'MPL'S	DIF.	HGT PUR S	EA.	17P1 A M	1	-+	, <u>1</u> , 1, 1, 1, 2
31802	¥ EV	375 <i>t</i>	N	07230	•	116	72	0 7 2	4 (285 1	967	102 0	41		4389	15	33	1 2	- × 1				0039
							W A	TER	N	IND	BARO	A IR T	EMP. 1		NO.	SPEC	IAL						
							COLOR	TRANS, Lm1	DIR.	01	Imbai	R DRY BULB	8U	T CODE	DEPTHS	OBSERV	4 TION S						
							DI	50	31	522	01	1.1.1	1	20	20								
	r	1						1 301	- +	522	101	. 1 101	1 1		20			T			-		
	TIME	CAST	CARD	DE	PTH (m)	т	*C	5	•••	SIGM	A - T	SPECIFIC VOI	UME	DYN. M	SO	UND	0.2 mi (PO 4-P	TOTAL-P	NO ₂ =N	CHL-A	51.7.4-51	2.41
	HR 1/10		-					-		-				x 10 ¹		ooni		- DG F GF F		5g - 61		+	· · · · ·
				Г -																			
	2.0	-	SI	0 C	000	4	150	351	1	244	+6	00348	17	0000	15	263							
	0.8	2	085		000	4	150	351	.09	240	16		- .	011.2.5	15	263					019		
			OBS	U !		-	120 1157	321	20	244	• /	00347	14	0035	10	204	521				0.10		
			51	י ה מ	1020		57.	354	20	2.44	•	00184	4.1	0.461	15	104 106	527				020		
	0.0	3	OBS	Č	020	i	573	354	70	26	9	00104	1.	0001	15	5105	527				019		
			ST	D r	ŬεUi	1	479	350	8	264	56	00149	35	0078	15	0.81	524				<u> </u>		
			065	C	0000]	479	350	80	265	bь				15	081	524				020		
			085	C	1U 4Ū	1	419	357	160	26	72				15	6663	545				037		
			ST	D c	05Û	3	375	356	8	26	78	00128	73	0106	15	050	504						
			Оbs	ſ	1050	1	375	350	8 0	2.6	78				15	050	504				063		
			ST	2 0	075	1	300	350	N N	261	74	00114	85	0136	15	029	418						
			085	0	10.75	1	300	356	78	269	94				15	029	418				028		
			060	0 2	100	1	222	300	22	269	76 24	00112	67	0165	15	006	411				0.0.7		
			51	a c	125	i	0.61	350	36	20	*0 1	00099	34	0191	14	1958	379				007		
			ST	D C	150	Ċ	960	352	2	272	>1	00089	93	0215	14	4917	354						
			085	- -	150	C	960	352	20	272	21				14	917	354						
			ST	0 U	2ŬV	C	1790	350	1Z	27	32	00079	69	0257	14	+858	322						
			085	U	200	Ç	1790	350	18	273	32				14	858	322						
			ST	D C	250	C	705	350	6	274	48	00065	37	0 < 9 4	14	834	331						
			085		250	0	0705	350	60	270	¥8				14	834	331						
			ST	D C	0050	6	615	35	/1	275	56	00058	18	0325	14	+806							
			085		1200	(0615	350	05	279	56				14	+806							
			51	9 n	1400	6	518	350	4	27	70	00045	10	0376	14	+784							
			005		460		1018 1095	300		27	70				14	+784							
			005 5 T	6 C	1500		400	350	130	27	15 76	00040	04	0410	14	1779							
			ST	D C	600	Č	429	350	4	278	40 40	000+0	79	0457	14	780							
			OBS	-	600	ć	429	350	35	278	30	000,00		0.01	14	+780							
			ST	0 0)7ÚU	0	425	35	4	278	31	00037	20	0494	14	795							
			ST	D I	0080	C	418	350) 4	278	3.2	00037	23	0531	. 14	809							
			065	5)80U	Ç	418	350) 39	271	32				14	+809							
			ST	D	1900	Ċ	405	350	4	271	83	00036	94	0568	3 14	+820							
			SŤ	D 1	000	Ċ) 395	350	د ز	278	34	00037	05	0605	> 14	+832							
			085	1	000	C	395	350	30	271	84		_		14	+8 32							
			ST	0 1	100	0	1389	350	3	271	34	00037	24	064	14	+847							
			ST	נט	200	0	1383	350	13	271	5	00037	40	0680	2 14	+861							
			085	0	1200		1277	200	10U 12	211	5 T 6 4	00037	4.6	0713	14 7 17	+001							
			51	ן ס ו ה	400		375	200	13	271	30	- 00037	40	0755	14	1890							
			51	0 1	500	1	1300	350	3	27	87	00037	70	0793	, 1- 1 4	+904							
			085	1	500	Č	366	350	32	27	87				14	+904							

REFERENCE					MARS	DEN	STAT	ION TI	ME			ORIGIN	A TOR'S		DE	PTH C	MAX. DEPTH	OBS	WAVE	WEA	. CLOUE			ODC	
CTPY ID.	CODE	LATITU	DE LOI	NGITUDE	500	AKE		GMI		YEAR	CRUISE	S	TA TIOP		801	non e	OF AND S	00	HOT PER S	COD			Ň	UMBER	
CODE ND.			1 10	1 10	10.	1.	MU	DAY H	K, 17 10				-	-								1			
318027	EV	3730	N 07	1245 W	116	72	20	24	21	1967	1102	04	2		28	1221	15		1 2	×1		1	I	0040	
						WAI	ER .	L ~	SPEED	8ARC)-	ORY	WET	VIS	м 0	×O,)85,	SPEC	AL							
						CODE	TRANS (m)	DIR,	OR	(mbs	0 0	IULB	BULB	1000	DEF	PTHS	RZEKAN	1045							
						DI	SD	29	517	01	5	205	19	4	2	24									
					T		1		T					5 ^ 0	1					[[5
	MESSENUR TIME O	CAST	CARD	DEPTH (m)	т	°C	s	•4.	SIGM	1 – A	ANON	C VOLU 1ALF-XI	ME 07	YN. M	v. -	VELOCI	D ITY	07 ml/i	PO4-P	TOTAL=	ug + 61/1	CHL-A	hð • 04/1	ρН	Ċ
	HR 1/10	[+		-							X 10 ²	-						+				+
					1		1									160	1.5	6.7	1		1				
			STD	0000	1	981	34	87	24	15	00	5262	9	0000	J	152	15	541				043			
	121		085	0000	1	981	34	1004	24	75 35	0.0	2020	a .	กม่างเ	1	151	84	547				049			
			092	0110	1	862	34	90	2.51	05	0.1	2460	2	0001	1	151	84	552				030			
			STD.	00.0	1	742	35	020	25	45	0.0	2547	7	0058	8	151	51	538				910			
	00-	ι.	085	0020	1	742	35	020	2.5	45						151	51	538				074			
			STD	0030	1	611	35	18	25	8.8	0.0	2140	15	008	1	151	16	515							
			OBS	0030	i	611	35	180	25	88						151	16	515				044			
			OBS	A040	1	500	- 35	540	26	41						150	87	495				028			
			STD	0050	1	34 J	35	58	26	78	0.0	1284	18	0116	ь	150	37	461							
			085	C 0 5 U	1	340	35	582	26	78						150	37	461				017			
			OBS	0057	1	378	- 35	5700	26	79				. 1	_	150	53								
			STD	-)075	4	251	12	155	26	93 03	0.0	1148	14	014/	5	150	11	444				004			
			OBS	0075	1	201	- 50 3 R	222U	20	93						150	10	444				004			
			085	0080	1	240	25	10 12	27	04						150	17								
			- UBS - CTD	0080	1	220). 	58 58	27	02	0.0	1075	4	017	4	150	0.5	354							
			085	0100	1	220	34	580	27	02	00	1012		÷		150	05	354				002			
			STD	0125	1	109	3	41	27	10	0.0	1005	5	020	0	149	69	354							
			5.T.D.	0150]	011	35	28	27	17	0.0	0939	7	022	4	149	36	353							
			OBS	0150]	011	3.5	279	27	17						149	36	353							
			STD	0200	C	858	- 35	10	27	29	0.0	0834	• 7	026	9	148	85	352							
			OBS	0200		858	3	5104	27	29						148	185	352							
			STD	0250	0	0715	31	202	27	44	0.0	0641	3	030	7	148	38	384							
			085	0250	()/15	3 :	5028	27	44					0	148	38	384							
			STD	0300	1	1001 1001	34	+99	21	57	011	0574	4 I	023	4	140	100								
			005	0600	(15 41	24	100 1441	21	27	0.0	1447		0.29	2	147	189								
			085	0400	ŕ)531	34	493	27	55	00	0.70		0.4.7		147	89								
			STO	0500)483	2	505	27	76	0.0	0410	04	043	8	147	86								
			OBS	0500)483	3	5049	27	76						147	86								
			STD	0600	0	9461	3	5 U 7	27	80	0.0	0370	¥ 7	047	7	147	94								
			085	0600	(0461	3	5070	27	80						147	94								
			STD	0700)446	5	505	27	8 O	0.0	0.3.8	37	051	5	148	3Ú4								
			OBS	0100)446	3	5055	27	80						148	304								
			STD	0500	0	1423	5	504	27	81	00	031	15	055	3	148	511								
			085	0800		0423	31	5040	21	81	0.0	~ · · ·		050	1	148	126								
			STU	0400		2416	د	204	21	84	00	050	40	034	1	140	125								
			085 015	1000	6	1410 1405		بر بر من م	27	83	0.0	0371	50	062	9	148	337								
			085	1000)405	ر بە	 50 49	27	83	00	2211				148	337								
			STD	1100	í	3397	3	504	27	84	0.0	0376	5.5	066	7	148	350								
			STD	1200	,	0.950	3	5Ũ4	27	85	0.0	0.57)	5.3	070	4	148	864								
			OBS	1200	(0990	3	60.35	2.7	Вè						148	364								
			STD	1300	l	0384	3	504	27	45	0.0	037	77	074	2	148	578								
			STD	1400	(0377	3	504	27	Rt.	0.0	037	89	078	0	148	392								
			STÜ	1500	(0371	3	504	27	47	0.0	037	40	081	8	149	405								
			085	1500	(.371	- 3	5038		H [149	-00								

REFERENCE CTRY ID. CODE NO.	SHIP LAT	TITUDE 1 10	1.0		N ARSDEN SOU ARE	CATION TU IGMTI	VE YEAR		1 14 1 14 1 16	DEPT-I LIVAX	9.4.1 9.5 1.4.1 1.4.1 1.4.1 1.4.1	-	2
31002	+- + - 4 = v =	11 N	+		116 74	3 14 3	54 196	7 10 1 6 43		100-16			-
1 TICCLE	• L¥ , 21				110 1-1 [WA1	ER V	IND	AIR TEMP	t []	<u> </u>	L ., 1) L	· .	101, 14 T
					COLOP	PANS DIR	SPEED A+E OP ETETE Im	RO- TER (TR) (V 51- 8'-8 80	ET SCIE	CIBS DEPTHS	CIAL ATIONS		
					DT	: 26	518 1	50 200 1	44 8	24			
	MESSEN SEL CA	ST CA	RC .	DEPTH (m)	тт.	····· ··· ·	SIGNA-T	SPECIFIC LONE	2 _ 0	SOUND	P^ 4=	E TITA ER NOVO de la	4 -
	HR 1 10 10		PE			1	3101001	AM 1 M AL1-310	• 10	VELOCITY	- 11 Jun 1	C. C.	14 C 1
				+	1				1		t	* * *	4
			ST N	0000	1996	3.14	2368	0044241	0000	15201	541		
	154	Ōt	3 5	0000	1995	33400	2358			15201	541	024	
		06	35	0004	1976	33-50	2369			15197			
			-TU	0010	1945	3343	2373	0041814	∩∪4∃	15189	545		
	11 H	Ot	51	0010	1945	3 14 1 Č	247:			15189	544	014	
		<	SΤŬ	$\exists U \in U$	1635	3144	2488	0120369	0079	15106	568		
		· · ć	4 C	<u>1020</u>	1635	33912	2488			15106	568	0.2.7	
			T L L	îŲ∃U.	0747	3355	254+	0.07	01n5	14871	60 R		
		GE	35	10 - 0	0.147	33545	1593			14871	608	031	
		0.6	25	130 +0	1015	34100	2624			14904	1244	0.41	
			TD.	0050	1075	3450	2045	0012446	0142	14932	604		
		08		0050	11/1	264401	2545		11.47	14932	604) -	
			ene.	0075	1204	3530	2682	0112577	0177	14994	5118	2.0	
			т.	10 7 ~	120-	102.40	1000	. 16.00		14004	2011	11.54	
				11111	1104	2245 26711	3004	1.1.4.4.4	CE 1154	15119	471	0.1.5	
			12 T 1	1175	1.04	1545	. 0544 7825-0	V. Lete	< 2 a a	15005	4 1 1	0.0	
			ано. Стра	15	11.5	1.540 5546	2034		7.67	14088	405		
		Э.F	3<	1150	11-	35455	2714			14988	405		
			T.C.	1200	نَ يُوْبُ	4542	27.13	0068895	0315	14937	400		
		0.5	1	72 6	ن با با ن	35315	27			14937	410		
		6	л.	0250	684	350.0	273	0.0.8.73	1358	14887	313		
		-, 6	4 <	524	584	25.120	272			14887	31.5		
		-	5T -	05.00	107-	2704	2740	0006614	1395	14818			
		O B	35	0300	1000	95642	2748			14838			
		c	CT2	n4 nů	2524	3430	2765	01104979	2453	14788			
		0 E	4 5	0400	0529	34490	2765			14780			
		-	STL	050U	0489	15-11	2771	0004503	0501	14788			
		Ob	K S	050U	0489	35005	2771			14788			
		9	T.C	0600	0467	350.4	2777	つけいね に 9 え	1544	14796			
		0E	łς	1500	0467	3504C	2777			14796			
		9	STD.	3700	0452	さちいち	2179	0.010.428.4	0284	148116			
		Ub	55	0700	0452	35045	2179			14805			
		(ътD	0800	0435	3505	2781	0.0010808	0023	14816			
		0.8	35	09900	0435	35047	2781			14816			
		ç	STÚ.	990U	042 -	3504	275-	11115534	(10.62	14825			
		Q P	95	0900	242	35041	2782			14920			
			T D	1010	고유민용	35-3	2783	· ~814	1755	14836			
		C F	35	1000	<u></u> 0404	35020	1783			14936			
		-	STD	1100	0337	3503	2784	0.0.400	073e	14810			
			ST 2	EF.00	0391	3514	2764	1 1.2	0775	14864			
		0.6	35	12.10	3395	35035	278-	_		14864			
			5 T D -	1300	6383	3504	2785	0 1 4 4 2	014	14875			
		0	a Lu	1400	0377	3304 3507	278t	111 14 4	しゅうと	14892			
			10	1200	011.	3504	2/8/	11 190	16.4	149.6			
		- C 1		1000	JST	32-132	2187			14906			

REFERENCE	T-	T					MARS	DEN	STATIC	N TI	ME			ORIGIN	ATOP'S		DEPTH	MAX		WAV	£	WEA-	CLOUD	T	T	NODC	
CTRY ID.		HIP DDE	LATITU	DE	LONG	ITUDE SO	squ	APE	(G	W II		YEAR	CRUIS	E S	TATION		TO	OF		SERVA	fions	CODE	CODES		S N	TATION UMBER	
CODE NO.				1/10		'1.10 =	10"	1" /	40 D/	LY HI	R,1/10		NU.	+	NUMBER			SWIPL	S DIR	HGTI	EX SEA	-	TTPL AM				
31802	4 1	- V	3700	N	073	30 W	110	73	04 2	4 1	87	1967	10	4 04	4	- I	2908	9 19	30	1	2	X1		1	1	0042	1
								WAT	ER		SPEED	BAR	o- -	AIR TE/	MP C	VIS.	NO, 085,	SP	CIAL								
								COLOR	IRANS (m)	DIR.	OR FORCE	imbi		BULB	BULB	COD	DEPTH	SOBSER	VANONS								
								0.T	SD	25	\$12	13	19	183	144	8	22			1							
					1-		T	1								Δ D		1					NO. N		U.O. 1	T	5
	AA E	TIME O	LCAST V NO.	CAR	D	DEPTH Imi	1	•C	5.	4.	SIG	1 – A N	ANO	VALY~I	D D	N M	VEI SL	LOCITY	0 g ml/	1 10	- at/1	20 - 01/1	NO2=N µg = at∕l	CHL-A	ug - 01/	рH	C
	HR	1/10			-												-									1	+
				~		20(00)		0.46		a	24	3.4	00	1500		юл		5194									11
		197	7	08	c l	0000	1	935	342	υn.	24	34	00	5577	0 0	000	î	5194									
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				ОB	s	0010	1	40Ú	342	50	25	63					1	5034									
		001	٦	OB	S	0015	1	070	342	55	26	27					1	4922									
				S	TD	0020	1	115	346	5	26	50	0.0	1550)5 C	049	9 1	4944									
				08	S	0020	1	115	346	50	2.6	50					1	4944									
				S	TD	0030	1	258	352	2	26	67	0.0	1392	23 C	10.64	4 1	5002									
				08	S	0030	1	258	354	20	- 26	67					1	5002									
				08	5	0040	1	282	303	17	26	74	0.0	1 4 2 0	3 2 0	n) q.	ı 1	5015									
				с – – – – – – – – – – – – – – – – – – –	1 <i>U</i> c	0050	1	280	35:	70	26	74	00	175	·		1	5015									
				S	TD	0075	i	267	355	2	26	88	0.0	1201	11 0	12	3 1	5016									
				- 03	5	0075	1	267	355	20	26	88					1	5016									
				5	TD	0100	1	250	355	4	26	,93	00	1161	17 0	15	3 1	5015									
				OB	S	0100	1	250	355	39	2 F	,93					1	5015									
				- 5	TD	0125	3	194	354	9	27	00	00	1099	98 C	018	1 1	4999									
				S	τD	0150	1	130	354	-2	27	107	-00	1038	36 0	201	8 I	4980									
				ов	5	0150	1	130	354	24	21	107	0.0	0.0.26			7 1	4980									
				- 5	1 D c	0200	0	981	352	· 3 3 2	21	718 718	00	17752	20 1	12.5	í 1	4933									
				5	s TD	0250	0	830	351	0	21	13	0.0	0804	48 C	100	0 1	4883									
				06	S	0250	G	830	351	00	21	733						4883									
				S	TD	0300	U	720	350) 3	2	743	00	0708	B1 () 3 3	8 1	4848									
				ОB	5	0300	C	0720	35(26	2	743					1	4848									
				5	ТD	0400	C	552	360) 1	2	764	0.0	0510	D1 0) 39	9 1	4797									
				ОB	5	0400	C	552	350	12	2	764					- 1	4797									
				S	TD	2500	C	488	350	2	2	773	00	043	79 ()44	/ 1	4788									
				05	5	0100	0	488	370	120	2	115	0.0	0.1	(m.)	14.8	0 1	4/00									
				5 	10	0600		1400	350	115	2	776	00	041	40 (, • 0	1	4791									
				5	э .тр	0700	0	437	350	2	2	778	00	039	88 ()53	0 1	4800									
				08	S	0700	Č	437	350	20	2	778					1	4800									
				S	TD	0800	C	423	350	12	- 21	780	0.0	039	53 () 5 7	0 i	4811									
				OB	S	0800	L	423	350	016	5	780					1	4811									
				S	TD	0900	Ú	410	351	2	5.	781	00	0391	02 (000	a 1	4822									
				08	S	0900	0)410	350	015	2	781					1	4822									
				S	TD.	1000	0	390	350)2	2	783	00	1031	33 ()64	1 1	4830									
				08	5	1000	(1340	300	7.2 7 I H	2	183	0.0	037	03 /	16.8	1 5 1	4846									
				5	TD	1500		1386	300	32	2	784 784	00	038	75 (26 (172	3 1	4861									
				с О Р	s	1200	((384	35.	20	2	784	00	2201			1	4861									
				5	TD	1300	(379	350	2	2	785	0.0	038	52 ()76	1 1	4876									
				5	TO	1400	(373	350	2	2	785	00	038	55 () 8 ()	0 1	4890									
				5	TD	1500	(366	350	D 2	2	786	0.0	038	50 () B 3	8 1	4904									
				0 F	5	1500	(366	350	221	2	786					1	4904									

REFERENCE	SHIP				E MAR	SDEN	STATIO	TIME			ORIGI	VATOR	2'5	DE	EPTH	MAX	0.05	WAVE	WEA	CLOUD	T	Τ.,	ODC
CTRY ID.	CODE	. LATITU		UNGITUDE	2 10	1 1.	10 0	n H Film 17	1100	CPU	15 E O.	STATION	O N BER	801	NOT	OF STMPLTS	0.03	lucture i unit	CODE	CODES CODES	-	N N	IN SEP
212.0.1	5.5.1	3.7.0.0	1/10	7/ 00	10		mo DA		1.0	-					I	1.0				1001 -0			
1 3 10 0 2 3	* E V	3700	i ni U	7400 WI	116	14	104 24		1140	<u>/] 1</u>	04 U4	45	r T	125	586	15	24	22	X]	ł	1		0043
						COLOR	TRANS	SP	ED ME	RO-	DRY	W			NO. 085.	SPEC							
						CODE	(m)	1R. 0	RCE (m	bs 1	BULB	BU	LB	DE	PTHS	0036644	- HOIRS						
						DT	SD	24 S	4 1	32	178	1	55 7	2	23								
	MESSENGE	CAST	C 4 9D	T		·	1			SPEC	UBC VOL	LIME	٤ ۵ ۵	5	sour	ND		POLER	10141-8	NON-N		SLD1-SI	
	TIME C	NO.	TYPE	DEPTH (m	,] ,	D" 1	5.0	. 5	IGMA-T	AN	OMALY-	107	DYN. A X 10 ³	M.	VELO	CITY	O2 m1/1	+9 - 01.1	49 - ot-l	µg = 01	CHL-A	ug = 01.1	рН
	HR 1710	ł — — ·								+													
			STD	0000	<u> </u>	1780	3 49	3	452	1	0.142	20	000	o –	151	46	569		1		l		
	21	ι	OBS	0000		1780	339.	50	452				0 - 0	-	151	46	569				015		
			STO	0010		1772	339	Ľ,	2453	0	0342	12	003	4	151	45	578						
			055	0010		1772	339	10	2453						15]	145	578				018		
			STD	0020		1662	3381	2	2476	0	0319	74	006	7	151	114	605						
	00	3	085	0020		1662	338	30	2476						15]	114	605				0.32		
			STD	0030		1120	3.38	5	2587	0	0214	39	009	4	140	737	623						
			OBS	0.030		1120	3380	50	2587						140	937	623				041		
			OBS	0033	l.	1930 2051	3384	+0 . 70	2618						148	369	. 1 7						
			005	0040		1420	340	, U	2632	0	0167	2.0	013	2	148	58Z	612				079		
			OBS	0050		1985	3420	, , , ,	2637	0	0107.	29	013	2	140	370	600				033		
			STO	0075		1200	349	5	2657	0	0149	46	017	2	140	286	544				0 9 9		
			OBS	0075		1200	349	50	2657	0			0 - 1		140	986	544				007		
			085	0079		1247	353	۰O	2682						150	009							
			STO	n100		1250	354	7	2687	С	0121	60	040	6	150	14	472						
			OBS	0100		1250	3540	55	2687						150	14	472				000		
			510	0125		1235	3556	5	2697	0	0112	47	023	5	150	14	430						
			STD	0150		1220	355	7.	2701	0	0109	73	026	3	150	013	390						
			OBS	0150		1220	3550	58 .	2701						150	013	390						
			510	0200		1035	353		2718	0	0043	92	031	4	149	354	316						
			005	0200		1035	353	2U . 2	2720	0	6003	2.5	036	D	149	754 204	310						
			085	0250	1	1887	351		2730	U	0083	2)	000	0	143	206	210						
			STD	0220	Č	0752	350	5	2741	Ó	0072	69	0.59	7	149	361	21,						
			OBS	0300	(0752	350	52	2741	0		0	0		146	361							
			STO	0400	(0565	349	, , ,	2761	0	0054	65	0+6	1	148	302							
			OBS	0400		0565	349	35	2761						148	302							
			STO	0500	(0497	35Ü	2	2771	0	0045	25	05l	0	14	791							
			085	0500		0497	350	15	2771						14	791							
			STD) 0600		0465	350	2	2775	0	0042	16	055	4	14	795							
			OBS	0600		0465	350	20	2775			7.0		,	14	795							
			SIL	0700		3450	350	3	2778	0	0040	10	029	6	148	505							
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			ORC	0800		1435	350	4 3.0	2780	U	0039	21	005	0	140	916							
			510	0.000		0420	350	3	2781	0	0039	13	067	5	148	926							
			OBS	0900		0420	350	30	2781			-		-	148	826							
			STC	1000		0410	350	3	2782	0	0038	95	071	4	14	839							
			OBS	1000		0410	350	29	2782						148	839							
			STD	1100		0400	350	3	2783	0	0038	67	075	3	148	851							
			STD	1200		392	350	3	2784	0	0038	67	079	1	14	864							
			OBS	1200		392	350	28	2784				A ··· -	~	14(864							
			STC	1300		1386	350	2	2785	0	8600	6/	083	0	14(879							
			516) 1400) 1500		1381 1378	350	2	2706	0	0038	91 20	006	9	148	593							
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FERENCE	SHIP LATITU	DIF LON		NARSDEN SOUARE	STATION T IGMTI	1AFE YEAR	OPIGI CRUISE NO.	NATOR'S STATION NUMBER		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL*S	085	WAVE SERVATIONS	WEA- THER CODE	CLOUD CODES		44 510 NL	UDC A TION I M REP
1.1.2.3	1.2	1.1.1	4. S	11: 74	1 . 1	1 6 1 20 7	1.1.1.1	47,		.112	15	24	101-1	× 1	1		(0044
				V-AT	E P I	WIND BAR	0+ AIR T	EMP. C	- VIS	NO. OBS	SPEC	TAL						
				CODE	TRAINS DIR	OR IND	ST BULB	BUEB	CODE	DEPTHS	OBSERV	ATIONS						
				· · T		14 1	1	1 -										
	MESSENCE CASE	CAPD TTPE	DEPTH Imp	T to	s *	SIG M A = T	SPECIFIC VOL ANOMALY-	UME	₹ △ D DYN, M ¥ 10 ³	SOL VELC	ND CIT/	0 ₂ m l l	P⊖ 4 ± P vg = o ^{i t}	TOTAL_P + g - of 1	NO2=N ug = at l	CHL-A	SICia−Si µg-otil	, н
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REFER	ID,	SHIP	LATITU	DE	LONGITUDE	Tana 20	ARSDEN DUAPE	STA	TION IGMT	TEAME	TEAR	CRIUS			0N	DEPTH	DEPT	u H Dire	AAVE SERVATION?	JA F.A. THEES			чі - д. т т.
CODI	NO.	10001	•	1 10	<u> </u>	10	1.	M0	DAY	HR.1 1C		- NP	1	VU M	BEP	BOTTOM	STAPL	*S = 10	HIST FER SEA	- T 75	1171 4 1		ALC: N. A. A.
31	802	EV	47:	i N	.7500 ¥	. 11	o 75	ΰQ	25	030	1967	10	2 04	7		0044	5	24	0 <	X]			0.0 (+) >
							W'A	TER	T	W IN D	84.0		AIP TE	n,4 P	r [NO.							
							COLOR	TRAN	DIR	SPEED OR FL RC F	∧ª ET (mb	ER 1	D'RY BULB	BL	ET COCF	OBS. DEPTHS	OBSEP	VATION!					
							DŤ	- st	25	5.12	15		194	1	678	05							
		MESSENGI TIME HIR 1 10	CAST	⊂ A I T Y I	RD DEPTH	(m)	т "с	s	• • • •	SIGA	A A - T	SPECIF	IC VOUS VAGT-1	•• E 0 [™]	\$ ∆ 0 DYN, N 10 ³	SDI VEL	LND DGITY	5.2 ml	PO4-P	n na lue Na lue	Nr g=h	CHL - A	Tia=5 29 - 11
								· · · ·				1							+				
				S	TD 000	Ú (1680	- 32	245	43	63	ЭÖ	4 = 74	4	3000	1.5	. 49	596					
		03	6	08	\$ 000) U	168	32	450	23	ь3 —					15	0.00	596				054	
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				-08	s ou!	Ų	1621	3.	$^{-1}81$. 23	85					15	034	618				065	
				S	TD Dec	J	+528	32	260	24	<u>∩</u> ⊊	0.0	384]	4	0051	15	057	5.27					
		- F - C	2	36	s an,	2.0	1528	3.3	502F	2.4	41E							6.27				187	
				S	TD 00:	5 Ũ	1504	3.	ъз	24	$1 \in \mathbb{N}$	ШŌ	4717	6	0119	15	051	530					
				ОB	5 000	3 U	1504	- 3.2	ÛВР	23	74P							530				0.41	
				ОB	c n0:	+U	1092	32	2650	24	4					14	914	514				195	

REFE	RENCE							AT A P	DEN .	ST A	TION	TIME :		1	OPIGH	NATOR	·5	DEPTH	MAX		V. A S E	Δ.	A. IL	0.5		4.5	
CTRY	HD. NO.	CODE	: A TIT U •	DE 1 10	LON	GITUDI 1 1	10	500 197	A R E	NO .	DAY	HR,1-10	YEAR	CRUIS NO	٤	STATIC N 1: M B	EP	to BOTTO/	OF Stert	- OE - S C P	H ST FER	5 TH 54A CC	ER CI CE (**Pi	1333		1411 N. 1	195¢
31	8023	EV	3660	N	0.75	530	~	110	65	ñ4	25	058	1967	10	2 00	4.8		00.1	00	,		T				0	045
									Vi A	TER		WIND	B A R	j. L	AIR TE	EN P 1		NO.		C.A.	1						
									COLOP CODE	10AN 1m1	5 DIR	OR DR FCPD	An ET Imb	ER	DIRY 8ULB	vi€ B∪l	T 500	DBS. DEPTH	S OBSEP	VATIONS							
									DT	SI)							03			1						
		MESSENGE TIME H.R. 1, 10	CAST NO.	CA TY	P D PE	DEPT	H Imi	т	٠.		· •	51G	MA-T	SPECII AISC	NALY-	U M E 10 7	§ <u>∧</u> D DYN, <i>№</i> ¥ 10 ⁷		UND LOCITY	0;ml	PO4=P	1014 L 19 + 0	-P NO VQ -	of CHL-	- • SI 5	1-1- 01 -	рH
				S	tD.	00	00Ū	1	94.	3.	380	21	74	U 0	50 7	74	000		5155				Ì				
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		0.0	n	00 5 08	TD S	00	020 020	1	891 891	3	200' 117 117	2 - 2 - 2 - 2 - 2 -	.15 .15 .15	0.0	569	6 l	011	9 Î 1	5149 5149								

REFERENCE	6 M ID					MARS	DEN	57 A 1	ION 1	ME			C	RIGINA	TOR'S		DEPTH	D SPT	5	w.	/AV	/E		WEA-	CLOR	UD			10DC	
C1ex FD.	CODE	LATIN	1DE	LONGIT	UDE 🔡	sau	APE		IGMTI		YEAP	C	RUISE	51	ATION		10	OF	"	OBSER	VA	TIONS		THEP	COD	DES		51	ATION	
CCDE NO	10001	•	1, 10		1 10	10*	11.	MO	DAY	P.1/10			NO.	N	UMBER		BOLLON	S'MPL	.*s 0	HR, H	GT	PER S	٤A	CODE	TYPE A	A M T		T4	UWBER	
31802	3 EV	3558	39N	0753	0.2 W	116	55	09	25	155	196	7	102	05	1		0018	00	0 0	02	3	2		×о					0047	
							WA	t e P	V	VIND		·	A	IR TEM	P C		NO.		C.A.											
							COLOR	T BAN S	DIR	SPEED OR FORCE	M ET	6P 1)	C 81	JLB	W ET BULB	COD	e OBS. DEPTHS	OBSER	VATIC	N S										
							DT	5D	0.2	514	2	٦4	1	67	128	8	02													
	MESSENG TIME H.R. 1/11	CAST NO.	C A R TYP	D C	(EPTH im)	1	۰c	s	•/	sig	M A — T	51	REC IFIC	VOLUA ALY-X10		∆ D YN. M X 10 ³	SO VEL	UND OCITY	02	m1/1	PC P 9	04-P - 01/1	101 99	A L - P - a1/i	NO2- 19 - 01	N 1/1	CHL-A	\$1.0 ₄ —\$1 µg + of/1	рH	200
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	1	1	S	тр 👘	0000	2	057	28	84	<u>_</u> 19	995		007	793	8 (000	נ <u>י</u> נ	0165	5	54				,						
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			0B.	c,	0610	2	n 5 5	29	960	20) R 1						15	5179	5	21							146			

REFER	ID.	SHIP	LATITU	DE	LONGIT	NDE	4DCTB	ARSDE QUAR	N E	51 A	tion tg mt	TIME I	YEAR		CRUISE	PIGIN/	ATOR'S TATION		DEPTH TO	DEP 0	AX, PTH)F	OB	WAV SERVA	E		WEA-	CLOUD			NODC	Ì
CODE	NO.			1/10		1 10	= î	j•	1.	MÖ	DAY	HR,1/10		_	NO.	N	UMBER		801107	" S'MI	PL'S	DIR	HGTP	ER ()	EA		TYPE A M	1		10/0/00	-
318	3023	Ēν	3554	N	0750	in w	1	10 1	55	09	25	177	196	7	102	05	2		0028	s c	00	36	1	2		хo			1	0048	5
								Ĺ	WAT	ER		WIND	8.4	RO		IR TEA	∧P. ℃		NO.		SPECT.	A.I.									
								CC	ODE	TRANS (m)	DIP	SPEL OF FOR	D MI	ETER 1651	t D 81	JLB	W ET Bulb	CODI	OBS. DEPTH	OBSE	ERVA	TIONS									
									DT	SD	Ω.	2 51	2 2	3	7 1	78	100	8	03												
		MESSENG TIME HR 1/10	CAST NO.	C A F T Y F	PE I	DEP1H In	1	1 1	2	s	•4.	\$10	GMA-T		SPECIFIC	VOLU/ ALY-XIC	ut \$ 07 D	Δ D YN, M X 10 ³	. SC	UND OCITY	6	0.2 m1/	PO پ	4-9 • 01/1	тот. 99	AL—₽ • aP	NO2+N 99 - 01/1	Сні —▲	51 O 4 — 5 99 + 91	PH	5 C C
																	ł								[ļ]			
				S	1 D	0000)	17	79	31	96	- 2	302		004	854	4 0	000) 1	12	3	589									
		17	7	OВ	S	0000)	17	79	31	960	2	302						1	512	3	589						032			
				5	t D	0010)	17	60	31	99	2	309		004	794	3 0	048	3 L'	5119	3	588									
				08	5	001)	17	60	- 31	98	7 2	309						1.	5119	9	588						034			
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		ΰŬ	U.	08	ç	0050)	17	60	31	94	D 2	309						1	512	1	584						037			

CIN ID. CODE NO.	CODE	LATITU •	DE 1. 10		MARSDEN SQUAPE	STATION TI IGMTI MO DAY H	415 Y	EAR	ORIGIN RUISE NO.	ATOP'S		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL	1.8	WAVE ERVATION		с. Р ^{ст} . Ег		** . **	T IN CALE
31802	3 E√	36-10	/ N	7430 W	115 54	04 25 .	0u 1	967	10.2 05		+	18.5	1.5	1 2.	1 4				+	
					WA	TER V	IND	BARO	A IR TE	MP. C		NO.	1.12		11, 1	<i>,</i> ,			0	049
					COLOR	TRANS DIR	SPEED	AA ET ER	DRY	WET	CODE	OBS. DEPTHS	OBSERV	ATIONS						
					D.I.	50 36	512	234	183	1 4 3	9	70								
	MESSENGE	CAST	C 4 9 D						10,			1 1					т т	-		
	11/4E	NO.	TYPE	DEPTH (m1	t "C	s •	SIG M A	-T 5	PECIFIC VOLU		N N	SQL VELC	OND CITY	0 ; ml 'l	PO 4 - P	10141-	P NO ₂ -N	CHL-A	4-5	pH 1
												-						- +		-
		. ,	51	ວ ດາວວບ	2103	3396	237.	2 1	004190	57 O	uan	15	2 + 7							
	2.01	۲	OBS	3000	2103	13400	237	L				15	237							
		_	085	000 S	2112	34150	2184	4				15	242							
	. 01	4	085	1.004	2748	34210	240	5				15	226							
			ORC	0010	2985	3522	247.	ć 1	003235	ь 0	037	15	248							
			OBS	0010	1401	30220	247					15	248							
			CBS	0017	1042	34200	24.94	+ 0				15	125							
			STI	0 0020	1700	3471	2530	י ר ו	002685		0 . 7	15	210							
			085	0020	1700	34700	2531		0.02.00.	. 0	007	15	122							
			085	0022	1607	34820	256	1				15	109							
			OBS	nic2o	1717	35420	258	1				15	150							
			STO	0 1030	1660	3570	2616	n (001870	<i>è</i> 0	0.90	15	137							
			065	0030	1660	35700	2616	<u>_</u>				15	137							
			085	0031	1617	35800	2634	•				15	125							
			085	0036	1731	36205	2638	9				15	165							
			STE	0.040	1600	35900	2641					15	123							
			ORS	0050	1519	35710	264	, (101564	1 0	124	150	097							
			STD	0075	1334	3565	2683	r A r	101245	1 0	160	150	147							
			OBS	0075	1334	35650	2683	2 L	001240	1 0	194	15/	342							
			STO	0 010ŭ	1275	3367	2700) (001092	7 0	188	150	742 724							
			085	0100	1270	15685	2700)			- 00	150	124							
			STO	0125	1127	3547	2713	. (000993	3 0	214	140	76							
			STD	015U	1002	3531	2721	. (000904	1 0	238	140	33							
			065	0150	1005	35 107	2721					149	933							
			STD	0200	0810	3513	2738	0 0	000745	6 0	279	148	368							
			085	0200	0810	35127	2738	1				148	368							
			OBS	02.0	0640	3508	2751		000625	1 0	314	148	331							
			STD	0300	0609	35030	2750			1	213	148	331							
			085	0300	0609	35025	2756		1003-54	1 0	543	148	504							
			STD	0400	0515	3500	2768	, L C	00470	5 0	305	1.40	792							
			OBS	040U	0515	35004	2768			5 0	.,,,	141	182							
			SID	0500	047H	3501	2773	0	000436	3 04	440	14	783							
			085	N5U0	0478	35006	2773			-		14	783							
			STD	0600	Ú462	3502	2775	0	00419	5 04	483	147	94							
			OBS	0600	0462	35018	2775					147	94							
			STD	0700	0449	3502	2777	0	00411	7 0	524	148	305							
			085	0700	0449	35022	2777					148	805							
			OBC	0800	0434	3502	2779	0	00404	8 0;	265	148	115							
			510	0300	0434	35021	2779		00400			148	315							
			085	0900	0424	35024	2780	0	00400	5 00	205	145	28							
			STD	1000	0411	3502	2781	Ω	49500	7 0*	545	148	130							
	200		OBS	1000	0411	35021	2781				>	149	39							
			STD	1100	U406	4502	2782	0	00400	0 00	\$85	148	153							
			STD	1200	Ú401	3502	2702	0	00403	9 0	725	148	68							
			OBS	1200	0401	35020	2782					148	68							
			STD	1300	0396	3502	2783	0	00406	7 0	765	148	83							
			510	1400	0390	3502	2783	0	00407.	3 QC	5Ú7	148	97							
	د ۵۵		0.95	1500	0384	1502	2784	0	004084	4 08	547	149	11							
			U U D	100	0.584	10021	2144					149	11							

					T						T	OPI	GINATO)R'S	- T	TIFFTH	MAX.	T	WA	VE	WE	A -	CLOUD		N	ooc	
REFERENCI	SHIP	LAT	TUDE	LON	GITUDE S	SQU	ARE	(GMT)		YEAR	CR	NUISE	STAT	ION		TO	10291H	085	SERV	ATIONS		ER DE	CODES		ST N	J M BER	
CODE NO	. CODE	•	1/10		· 1/10	10*	1'	MO DAY HR	1/10		+ '	NO.	NUA	ABER	-+		SWPL	DIR	RG	T PER SE	<u></u>					0050	
3180.	EV EV	30	00 N	0.7	400 W	116	64	04 25 2	25	1967	1 1	102	054	to.		2834	<u>+ 15</u>	35	13	2	X	01			1	0050	
							WAT	ER W	IN D	BAR	0-	AIR	TEMP.	°C .	VIS.	NO. 085.	SPE										
							COLOR	TRANS DIR. 1	DR	- MET - (mb	ER s}	BUL	8 8	ULB	CODE	OEPTH	SUBSERV	ATIONS									
							DI	SD 35	516	20	40	16	7	128	8	25											
						T					1			٤	Δ D				T	PO -P	TOTAL	- P	NO2-N	~	SI 04-51		
	MESSE		S1 C.	APD	DEPTH lml	T	"C	s 14.	SIG	M A – ĭ	SP	ANOMAL	/OLUME	0	(N, M	· VE	LOCITY	02 mt/		µg + α1/1		vi	ug - at/l	CHL-A	yg = al/ł	prs	Ì
	HR 1	/10	0. 1	110		-					-			+ '					+			+				-	T
						1		2.115	1	נפר	1	0063	1216	1	unc		5281	477	7		1		1		1		,
				STD	0000	4	2308	23150	2	253		002-	1210		000	í	5281	47	7					017			
	ć	225	0	85	0000		200	33180	2	254						1	5283										
			0	65 6 T D	0008		2345	3332	2	255		0053	3042	0	053	3 1	5294	520)								
		0.2	0	BC BC	0010		2345	33320	2	255						1	5294	520)					015			
		505	0	BS	0012		2306	33730	2	298						1	5289										
			0	STD	0020		2581	3580	2	372		004	1979	Ç	010	1 1	5379	516	5					0 7 7			
			0	BS	0020		2581	35800	2	372						1	5379	C 1	,					022			
				SID	0030		2610	3619	2	392		0040	0081	C) 14.	2 1	5392	514	2					041			
			0	BS	0030		2610	36190	2	392						1	5272	67	1					046			
			С	BS	0040		2515	36260	2	427		002	607A		120	a 1	5289	47	.								
				STD	0050		2169	3629	2	0 ° C		002	0714		120	, i	5289	47	6					042			
			C	BS	0050		2109	36290		604						1	4981										
			C)85 6 T D	0069		1430	3505	2	618		001	8662	(026	6 1	5064	46	4								
			0	BS	0075		1430	35050	2	618						1	15064	46	4					028			
)BS	0084		1760	36300	2	638						1	15183										
				STD	0100		1485	3605	2	683		001	2572	2	030	5 1	15098	45	7					012			
			C	BS	0100		1485	36050	2	683						2	15098	45	1					ŲΙċ			
				STD	0125		1243	3571	2	707		001	0298	3 (250	ງ 1 ດ 1	15019	30	9								
				STD	0150		1068	3545	2	720		000	9106		000	8	14999	33	8								
			(DBS	0150		1068	35450	2	720		000	REGU		<u>640</u>	2	14910	32	6								
				STD	0200		0920	35200	2	726		000	000		0.0	-	14910	32	6								
			(085	0200		0920	3525	2	735		000	7832	2	044	3	14907	32	5								
			,	210	0250		0888	35250	2	735							14907	32	5								
			```	STD	0300		0750	3511	Z	2746		000	687	1	048	10	14861										
				OBS	0300		0750	35112	2	2746							14861										
				STD	0400		0519	3501	2	2768		000	4680	þ	053	8	14784										
				OBS	0400		0519	35013	3	2768							14784	ł									
				STD	0500		0480	3501	4	2772		000	4 3 9 :	2	028	5.5	14704	,									
				OBS	0500		0480	35005	) (	2112		0.00		7	062	6	14794										
				STD	0600		0462	3502		2110		000	1421	,	002	.0	14794										
				OBS	0600		0462	: 3501: - 3502		2778		000	404	8	066	57	14802										
				SIU	0700		0442	35020	5	2778		ÇÇ.		-			14802	2									
				003 0172	0,000		0430	3503		2780		000	394	1	070	7	14814	÷									
				OBS	0800		0430	3502	• ;	2780							14814	+									
				STC	0900		0420	3503		2781		000	392	0	074	+ 7	14826	>									
				OBS	0900		0420	3502	ς, ε	2781					0.7		14826	2									
				STO	1000		0400	9 3503		2782		000	)391	3	078	56	14830	2									
				OBS	1000		0409	9 3502	5	2782		0.07	1380	a	0.8	25	1485	1									
				STO	) 1100		0390	4 3502 1 3502		2183		000	1301	7	0.84	64	14864	-									
				STO	1200		039.	1 3602	n	∠ (02 2783		000		-	001		1486	4									
				UBS	1300		038	4 3502	Ŷ	2784		0.00	0389	3	09	0.3	1487	8									
				010	1400		037	9 3503		2785		00	0388	8	09	42	1489	2									
				511	5 1500		037	5 3503		2786		0.0	0390	1	09	81	1490	8									
				OBS	1500		037	5 3503	0	2786							1490	8									

REFERENCE CTRY ID. CODE ND.	SHIP LATITL	1/10 LOP		MARSDEN SOUARE	STATION TI (GMT) MO DAY H	ME YE	AP C	DRIGIN	ATOR'S	N R	DEPTH TO BOTTOM	DEPTH OF S'MPL'S	O\$S DIR	WAVE ERVATIONS	WEA- THER CODE	CLOUD CODES		SN	NE UN BER
318023	EV 3604	N 07	330 W	116 63	09 26 0	116 19	267	102.05	5		3300	15	0.7	2 2	X O				0.05.1
1 2 1005 3				WA	TER W	IND		AIR TE	WP. 10	T	NO		1 0 -	1 - 1 - 1	1 .0	1 1			0021
				COLOR	TRANS DIR.	SPEED OR FORCE	METER (mbs)	DRY BULB	W ET BULB	CODE	DBS. DEPTHS	OBSERV	ATIONS						
				DT	SD 02	S18	251	183	17	8 8	19								
	MESSENGE CAST TIME OT ND. HR 1/10	CARD TYPE	DEPTH (m)	5° T	5 •/.,	SIGMA-	-T 5	PECIFIC VOLU ANOMALY-X1	ME 07	E ∆ D DYN. M. X 10 ³	SD1 VELC	UND DCITY	©₂ ml/l	PO₄−P yg = ot/l	FOTAL=P µg = at/?	ND2+N µg - atri	08A	SID4—Si µg=di	pН
																			1
		STO	0000	2626	3629	2394	+	003975	3	0000	15	392	477						
	016	OBS	0000	2626	36285	2394	+				15	392	477				008		
		STO	0010	2625	3629	2395	2	003975	0	0040	15	393	479						
		UBS	0010	2625	36287	2395	2				15	1393	479				008		
	0.0.7	SID	0020	2625	3629	2395	2	003977	1	0080	15	395	493						
	003	UBS	0020	2625	36284	239:	5	002001	~	0110	15	395	493				010		
		OBS	0030	2020	36780	2295	5	003481	4	0114	15	396	481				0.0.0		
		OBS	0040	2625	36290	2304	5				15	1040	401				008		
		STO	0050	2583	3634	2410	2	003827	9	0197	15	3.91	479				012		
		OBS	0050	2583	36340	2412	2	00.001		<b>vx</b> · /	15	391	479				015		
		STD	0075	2379	3669	2500	5	002994	8	0283	15	351	477				012		
		OBS	0075	2379	36690	2500	)				15	351	477				013		
		STO	0100	2185	3678	2563	3	002405	8	0350	15	307	448						
		OBS	0100	2185	36780	2563	3				15	307					017		
		STO	0125	2071	3674	2592	2	002143	7	0407	15	281	433						
		STO	0150	1976	3670	2614	+	001939	1	0458	15	259	430						
		OBS	0150	1976	36700	2614	•				15	259	430						
		STO	0200	1843	3663	2643	3	001679	9	0549	15	230	463						
		OBS	0200	1843	36629	2643	3				15	230	463						
		STD	0250	1749	3636	264t	>	001667	9	0632	15	207	473						
		OBS	0250	1749	36360	2646	5			_	15	207	473						
		STO	0300	1578	3617	2671	1	001432	5	0710	15	162							
		085	0300	1578	36170	2671	1				15	162							
		STU	0400	1218	3551	2691	7	001200	5	0841	15	053							
		085	0400	1218	35510	2697	-				15	053							
		085	0450	1057	35360	2715	2	000030	6	007.0	10	003							
		510	0500	0780	3512	2723	2	000770	2	1024	14	635							
		086	0600	0780	25120	2742	2	000770	4	1034	14	022							
		STO	0700	0583	3505	2763	2	000562	0	1100	14	922							
		STO	0800	0459	3501	2776	5,	000443	16	1151	14	825							
		085	0800	0459	35010	2776	5	000140	.0	1.1.2.1	14	825							
		STD	0900	0444	3502	2778	9	000428	2	1194	14	836							
		STD	1000	0430	3503	2780	)	000413	6	1236	14	847							
		QBS	1000	0430	35030	2780	)				14	847							
		STO	1100	0415	3503	2782	2	000404	7	1277	14	857							
		ST0	1200	0403	3503	2783	3	000402	0	1318	14	869							
		OBS	1200	0403	35026	2783	3				14	869							
		STD	1300	0394	3503	2784	•	000399	1	1358	14	882							
		STD	1400	0389	3503	2784	•	000400	9	1398	14	897							
		STD	1500	0386	3503	2785	5	000405	1	1438	14	912							
		QBS	1500	0386	35029	2785	5				14	912							

REFERENC	E SHIP	T		Louginor Eg	MARSOE	NT.		IME	¥6.4.0	C	DRIGIN	A TO 8"5		DEPTH	MAX. DEPTH	085		WEA	CLOUD		T,	NODC
CTRY IC CODE N	O. CODE	•	1/10	1/10	10"	· M	O DAY H	IR. 1710	10.44	CRUISE NO,	5	TATION IUMBEI	R	BOTTON	S'MPL.	DIR	HGT PER SE	A CODE	TYPE A M	1	ŕ	UMBER
3180	23 EV	3531	N	07395 W	116 -	3 0	9 26	055	1967	10.2	05	6		3621	15	36	02	X.O				0052
1 100		1 2224		• • • • • •		WATE	R	NIND			NIR TEA	AP. C	- <b>1</b> '	NO.			1 91 - 1	1	4			0014
					CO	LOR 1 DDE	mans. Dir.	SPEED OR FORU	A ETE	R () 1 ()	DRY ULB	W ET BULB	COD	OBS. DEPTHS	OBSERV	A TION S						
					[	T	SD 04	S12	2 26	1 2	00	20	0 7	19								
	MESSEN TIME H.R. 17	GP CAST	C A P TYP	D DEPTH (m)	1 "C		s *	\$FC	M A = T	SPECIFIC	VOLU ALY-1	ME 07	ΣΔD 2 N. M X 10 ³	. SO VEL	UND OCITY	02 mi/i	PO4-P P0 - 01/1	101AL⇒P µg - s1/1	NOg=N µg = ot/l	CHL-A	\$104-5 20-017	рН
		-																			T	
			S	TD 0000	25	50	3033	24	421	003	\$719	6	0000	19	5375	481						
	0	55	ОB	s 0000	25	υc	36326	54	+21					14	5375	481				005		
			S	TD 0010	255	50	3633	24	421	003	3723	7	003	11	5376	493						
			ОB	S 0010	251	υ	36326	24	+21					15	5376	493				003		
			S	TD 0020	25	οt	3633	24	421	003	727	9	0074	4 15	5378	486						
	0	03	08	5 0020	25	U C	36326	24	+21				- 1 1	1	5378	486				004		
			S	TD 0030	25	рÜ	3633	24	421	003	\$132	1	041/	1	>380	487						
			OB	5 0040	25	50	36326	20	+21					11	>380	487				007		
			08	5 0043	25	30	36460	24	437				<u></u>	13	5378	494				0.05		
			S	TD 0050	24	10	3668	24	493	003	9051	4	0180	) <u>1</u>	5352	486						
			0B	S 0050	24	10	36685		493					1:	2352	486				005		
			S	TD 0075	221	51	3677	2:	54±	0.02	61.6	1	0250	) 11	5323	488						
			08	S 0075	221	51	36774	2	541					13	5323	488				026		
			S	TD 0100	21	12	3672	2	574	002	255	6	031.		5288	481						
			08	S 0100	21	12	36720	2	579					1 1	5288	481				017		
			S	TD 0125	19	78	3669	21	507	001	942	. /	0364	+ 1	5261	434						
			S	TD 0150	19	21	3666	20	525	001	1830	15	041	1	5244	411						
			OB	S 0150	19	21	36660	20	525					1 1	5244	411						
			S	TD 0200	18	50	3661	20	532	001	1/83	1	050	2 13	5240	434						
			08	s 0200	18	80	36610	20	532					1	5240	434						
			S	TD 0250	18	28	3656	24	545	001	1603	10	058,	9 1	5227	466						
			ОB	s 0250	18	18	36560	20	646					1	5227	466						
			S	TD 0300	17	2.9	3647	20	552	0.01	621	3	067		5220							
			OB	S 0300	17	54	36472	- 28	552	_				1	5220							
			S	TD 0400	16	10	3614	20	564	001	2 5 4	15	0.85	5 T :	5185							
			08	S 0400	16	0.0	3513F	2	587P													
			08	S 0450	14	78	35960	20	578	0.6			0.07	. 1	5152							
			S	TD 0500	13	27	3573	21	592	001	1280	14	097(	1	5109							
			S	TD 0600	10	50	35.18	2	716	001	1051	. В	10.84	- 41 	5029							
			OB	5 0600	10	50	35380	2	715			-	110		2029							
			S	TD 0700	0.8	54	3520	2	740	000	0851	. 2	118	) į	4960							
			S	10 0800	06	512	3500	2	157	000	10-4	÷	Lehi	* <u>1</u> '	4903							
			08	5 0800	06	50	35040	2	157					 	4908							
			S	TD 0900	05	45	3509	2	/ 7 1	000	1507	4	131.	2 I I	4878							
			S	TD 1000	04	67	35.38	2	780	000	)423	3.7	1051	a ti	4865							
			ОB	S 1000	04	67	35080	2	180					1.	4863							
			S	TD 1100	04	41	3506	2	781	000	)415	6	1400	) i	4868							
			S	TD 1200	04	20	3504	2	182	000	)413	5.5	144.	2 - 10 	4876							
			ОB	SSSSSSS	04	20	35041	2	782					1.	4876							
			S	TD 1300	04	15	3514	2	783	000	)4^_	3.6	148.	3 1	4887							
			S	TD 1400	03	95	3504	2	784	000	300	) U	152	3 1	4899							
			S	TD 1500	03	41	3504	5	785	000	1403	16	156	4 L-	4914							
			08	< 1500	03	91	35040	1 2	785					1.	4914							

REFERENCE CTAY ID. COOF NO.	SHIP	LA TITU	DE L		MARSDEN SQUARE	STATION T IGMTJ	ANE YEA	P C.P	ORIGINA PUISE S	ATOR'S	1	DEPTH DEPT TO OF	H OBS	A A VE	THE	- C		
318023	ΕV	3517	NO	7348 W	116 53	00 14	136 3.0					13 10 12	SI DIR	HGTPERS	EA	Trb fas	-r	* * * * * * *
				i si ce ni li li	WAT	ER T V	/IND	<u> </u>	LUA 15 AIR TEN	/ 	- 4	3475 19	5 25	1 2	1.1			1053
					COLOR	TRANS. DIR	SPEED M DR I FORCE I	ARO- ETER mbs)	DRY BULB	WET C BULB	DDE DDE	OBS. DEPTHS OBSER	ECIAL VATIONS					
		-			DT	SD 05	S12   ;	251	200	197	8	14	_					
	MESSENGR TIME O HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	2' T	s •	SIGMA-1	591 A	ECIFIC VOLUA NOMALY-110	TE SA DYN.	D M 0 ³	SOUND	Og mel I	PO4=P 29 + 01/1	TOTAL_I	NO ₂ =N µg + al.	CHL-A	St_(4=5) (29 = 0) (21)
1	0.05	1	STD	0000	2540	3633	2422	1	0 3 7 0 7 1	- 00	00	15374	486					++
	0.95		085	0000	2546	36326	2422					15374	480				018	
			SID	0010	2545	3633	2423	Ć	103706	1 00	37	15375	500					
			005	0010	2545	36330	2423					15375	50C				007	
	0.03		OBC	0020	2545	3633	2423	G	037048	4 OU	74	15377	505					
	000		STD	0020	2740	36332	2423					15377	505				007	
			OBS	0030	2545	36330	2423	U	037086	> 01	11	15379	498					
			055	0040	2545	36345	2422					15379	498				007	
			SID	3050	2338	3676	2424					15380	508				007	
			085	0050	2338	36760	2510	0	058141	01	11	15337	512					
			STD	0075	2165	3673	5210	0		0.11		15337	512				007	
			OBS	0075	2165	36725	2564	0	060625	+ U24	+ 2	15298	407					
			STD	0100	2045	3675	2504	a	020603		77	15298	447				032	
			085	0100	2045	36751	2594	0	020.90	02	7 (	15270	490					
			STD	0125	1972	3671	2616	0	019126	0.17	. 7	15250	602				019	
			STD	0150	1920	3668	2627	Ő	018136	11:	т. 3 4 -	15204	508					
			0 B S	0150	1920	36681	2527	-				15244	508					
			SID	0200	1882	3667	2636	0	017452	044	12	15241	504					
			OBS	0200	1882	366 "0	2636					15241	504					
			STD	0250	1842	3664	2644	0	016871	056	8	15238	468					
			OBS	0250	1842	36640	2644					15238	468					
			STD	0300	1811	3661	2649	0	016521	065	52	15237	.00					
			OBS	0300	1811	36609	2649					15237						
			STD	0400	1737	3647	2657	0	016142	081	5	15230						
			OBS	0400	1737	36465	2657					15230						
			085	0450	1686	36372	2661					15222						
			510	0500	1526	3608	2070	0	014451	096	9.8	15177						
			086	0600	1277	3562	2694	0	012870	11C	4	15107						
			610	0800	1277	35620	2694					15107						
			STD	0700	1068	2526	2692	0	013200	143	15	15096						
			OBS	0800	1068	25262	2705	Ų	012045	136	1	15063						
			STD	0900	0803	3516	2705	0.	000040	1	-	15063						
			STD	1000	0614	3510	2761	0	000264	140	5	14981						
			OBS	1000	0614	35100	2762	0	000094	153	Ĵ	14923						
			STD	1100	0529	3508	2773	0	005177	150	2	14923						
			STD	1200	0468	3507	2778	0	002177	1.54		14905						
			OBS	1200	0468	35065	2778			104	0	14804						
			STD	1300	0453	3506	2780	0/	004523	168	6	14007						
			STD	1400	0439	3506	2781	0.0	004429	173	1	14018						
			SID	1500	0424	3506	2783	0.0	004329	177	ŝ	14028						
			085	1500	0424	35060	2783			. · /	-	14928						

REFEREN	CE	-		- T		E.E.	MARS	DEN	STA	NON TI	ME			ORIGIN	ATOR'S	;	DEPTH	MAI DEPT		W	AVE	WEA-	CLOUD			NODC
CTRY I	o.	CODE	LATITU	DE	LON	SITUOL SU	sau	ARE		GMT		YEAR				N I	BOTTO	M	15 00	- 14		COOL	1781 144	-	1	UMBER
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		TIME	LCAST 및 NO.	C A R TYP	E	OEPTH (m)	1	*C	S	•/	SIG	M A - T	ANDA	AALY-X	07	DYN, M	1. VE	LOCITY	02 m	1/1	40 - ot/l	µg • ₀1/1	ug - ot/ł	CHL-A	µg + αl/	pH
		HR 1/10					-		-							x 10	-+			-						
					_	0.0			1	2.0	1	100	0.0			0.000		520+			1		1	l		
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				5	TD	0300	1	781	31	558	2	654	0.0	160	50	069	4 1	15227								
				ОB	S	0300		1781	31	5575	2	654	0.0	2.5.7		0.47	1 1	15221								
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				ОB	15	0400		1640	31	6250	2	563			~ .	0.00		12146								
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				0 5	35	1200		0436	7	5055	2	781	50				- 1	1488	3							
				00	STD	1300		3419	3	505	2	783	0.0	041	44	152	5	1489.	5							
				<	STD	1400		0404	3	504	- 2	784	00	041	16	126	6	1490	3							
				<	STD	1500	(	0391	3	502	2	783	0 C	041	68	160	8	14914	•							
				OE	35	1500		0391	3	5022	2	783						14914	•							
					-																					
REFERENCE CTAY IO. CODI NO.	SHIP	LATITU			MARSDEN SQUARE	STATION TH	MEYEAR		ATOR'S	OEPTH TO	MAX. DEPTH OBS	WAVE ERVATION!	S WEA	CLOUD	T	F,										
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					COLOR	TRANS. DIR	OP IN	NDRY BULB	WET COD BULB	E DEPTHS O	BSERVATIONS															
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	[	1		T	1					2+		· · · · ·			_			_								
	MESSENGR TIME d HR 1/10	CAST NO,	C A PO TYPE	DEPTH Im1	1 °C	s •4.	SIG M A -T	SPECIFIC VOLUA	AE S A D 7 DYN, M X 10 ³	SOUN VELOCI	D Og ml/d	PO4+P #8 * 01/0	TOTAL=F ug + of 1	NO2=N 20 - 05.1	CHL-A	SI 4+Si PQ + of T	рH	100								
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	1 ( )		STD	0000	2760	3631	2353	004366	6 0000	154.	22 468															
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			055	0010	2760	36320	2354			154.	23 443				0.0.8											
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				0030	2620	3625	2343	003994	9 0120	a 1539	95 463															
			085	0030	2620	36250	2343			1539	95 463				008											
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			OBC	0050	2429	3637	2460	003371	5 0202	2 1539	55 451															
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			OBS	0100	1990	36600	2603	002028,	0332	1521	54 377															
			SID	0125	1873	3655	2600	001783		1021	04 377				012											
			STD	0150	1785	3650	202-	001617		) 1.522 / 1.657	25 371															
			OBS	0150	1785	36500	2647	001017.	1 0422	16020	12 364															
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			STD	0250	1510	3603	2676	001370	7 0572	1016	3D 429 31 307															
			OBS	0250	1510	36030	2676	001010	0.0016	1513	31 397															
			STD	0300	1339	3579	2694	001205	7 0637	1506	11 391															
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			OBS	0500	0845	35140	2733			140	30															
			STD	0600	0564	3509	2769	0004939	9 090 <del>8</del>	148	10															
			OBS	0600	0564	35090	2769		0.00	1483	16															
			STD	0700	0489	3507	2776	0004260	0954	1482	1															
			OBS	0700	0489	35069	2776			1482	2															
			STD	0800	0461	3506	2779	0004083	3 0995	1482	27															
			085	0800	0461	35061	2779			1482	7															
			STD	0900	0434	3507	2782	0003826	1035	1483	32															
			OBS	0900	0434	35065	2782			1483	12															
			STD	1000	0437	3507	2782	0003936	1074	1485	0															
			OBS	1000	0437	35069	2782			1485	0															
			STD	1100	0418	3504	2782	0004011	1114	1485	9															
			STD	1200	0402	3503	2783	0004015	1154	1486	8															
			OBS	1200	0402	35025	2783			1486	8															
			STD	1300	039Ú	3503	2784	0003954	1194	1488	0															
			STD	1400	0383	3502	2784	0003961	1233	1489	4															
			STD	1500	0379	3502	2785	0003997	1273	1490	9															
			085	1500	0379	35024	2785			1490	Q															

CODI         NO.         TUTO	NODC				CLOU	EA-		NS	re Tio	WAV ERVA	085	TH F	OEF	DEPTH TO	_	OR'S	RIGINA	CRUISE	EAR	NE N	TIA T)	IGM	STA	DEN ARE	MARS	DelFT LOCTR	GITUDE	104	DE	LATITU	E SHIP CODE		NCE ID.	REFER
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MESENCA Intel of NO.         CAST NO.         CARD TYPE         DEPTH Int         T. °C         S. °         SIGMA=T         SPECIFIC VOLUME ANOMALY-STP?         SOUND VELOCITY         D_2 mi/l         POP ve - or n         TOTAL-P ve - or n         NO_P-N ve - or n         CHL- ve - or n         NO_P-N ve - or n         NO_P-N ve - or n         CHL- ve - or n         NO_P-N ve - or n														07	8	189	50	7 2	25	S05	3	D 1	S	DT										
STD         00000         2188         3123         2141         0063931         0000         15228           208         0B5         0000         2188         31225         2141         15228           0B5         0009         2181         3200         2202         15236           STD         0010         2228         3282         2251         0059         15258           000         0B5         0010         2228         3282         2251         15258           000         0B5         0014         2403         34100         2297         15317           STD         0020         2438         3452         2319         0047035         0109         15331	O ₄ —Si g = ot/1 pH	51 O 4 19 -	CHL-A	N 21	NO2=N 29 = 01/	1 - P a) (1	1014	P 7	)4- - 01	PO +9	⊃g m1/1	c	UND	SOI VEL	△ D N. M 10 ³	S DY X	VOLUM	SPECIFIC	A-T	SIG M/		s •4.		٣	т	lm )	DEPTH	ARD	C,	CAST NO.		MESSENG TIME HR 1110		
STD         0000         2188         3123         2141         0063931         0000         15228           208         0BS         0000         218B         31225         2141         15228           0BS         0009         2181         31200         2202         15236           STD         0010         2228         3282         2251         0053475         0059         15258           000         0BS         0010         2228         3282         2251         15258           000         0BS         0010         2228         32400         2297         15317           STD         0020         2438         3452         2319         0047035         0109         15331           085         0020         2438         3452         2319         0047035         0109         15331				1		-		1		1													-											
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REFE	RENCE	C 14 10					- 2	MAR	SDEN	ST.A	TIDN	TIME .			C	RIGINA	TOR*S		DEPTH	MAX.		WA	VE	we	A-	CLOUD			NODC	
CTRY CODE	ID. NO.	CODE	LA 1111	JOE 1/10	LON	517UD8 //*	10 10	10	1-	MO	DAY	HR,1/10	YEAI	<b>۲</b>	NO.	ŠT N	ATION UMBER		TO BOTTOM	OF S'MPL	OB S DIR	THGT	PER S	TH CO	ER DE	CODES		S N	UMBER	
31	8023	ΕV	3500	) N	0.76	02	W	116	56	09	26	238	196	57	102	061	l			00									0057	
									WA	TER		WIND	R	A 80.	A	IR TEM	P. °C		NO,		C141									
									COLOR CODE	TRAN (m)	S. OIR	SPEEC OR FORC	P M	ETER mbs)	C 8(	AIR TEMP. "C DRY WE BULB BUL		CODE	OBS. DEPTHS	OBSERV	ATIONS									
									DT	SI									02											
		MESSENGI TIME MR 3 10	CAST NO.	C A TY	PD PE	DEPT	Hilm 1	τ	٣		s •4.	sig	MA-T		ANOM	VOLUA ALY-X10	ye S DY X	∆ D N, M 10 ³	SOL	DOCITY	02 m1/	P ور	0 <b>4-</b> P	10TA L- µg - 01	- P   1 /1   1	NO2-N 9 - a1/l	CHL-A	SIO4—Si µg - ог I	рН	
		23	8	5 08	TD S	00	000	2	200 200	30 30	)47 )47(	20	081 081		006	972(	0	<b>v</b> 00	 15 15	223 223	537 537						042			Ţ
				OE	STD IS	00	010 010	2	200	3	130 1300	2	144 144		006	3736	0	067	15 15	234 234										

## **TABLE II.**—Observed and interpolated oceanographic data taken by USCGC Evergreen, 11-23 December 1967, onICNAF Cruise 67-3; prepared from NoDC Listing No. 31-8029.

REF	ID.	SHIP	LATITU	/DE	LONGITUDE	MAR SQL	SDEN	ST 4	GMT	TIME	TEAR	CRUISE	ORGIN:	ATOR'S		DEPTH TO	DEPTE	OBS	WAVE ERVATIONS	W E A TH FR	- <u>6.</u> 6 58			· - 11
CODE	NO.		•	1.10	1 10	10*	1.	MO	DAY	HR,1/10		NO	N	UMBER		BOTTOM	S"AT PL	S DIP	HOT NET ST	EA L' DE I	TrP  A O	τ	1	• • A E A
3	18024	EV	4100	) N	07006 W	152	2 10	12	15	154	1967		00	1		0022	00	13	3 2	× 1			, 0	001
							A W	TEP		WIND	RAR		AIP TEA	AP ℃		NO.								
							COLOR	TRA N	5 DIR	SPEED OF FORC	e (mba	R 1 8	DRY ULB	W ET BULB	COD	OBS. DEPTHS	OBSER	ATIONS						
							DT	S	31	527	7 11	9 0	)39	017	7	03								
		MESSENGE TIME H.R. 1/10	C AST	C AI T YI	RD CEPTH Imi	1	°C		s •	SIG	M.AT	SPECIFIC A N D N	ALT-KI	vi S	10 ³	SOL VELO	JND DOITY	0.2 ml.'l	PO4-P	fotal=P Pg = 11	NC2-N Valiot	CHL-A	5 4=5 94 - 51	<u>р</u> м 1
		15	4	0B	TD 0000 S 00000	) (	)555 )555(	3	203	2 2	28	002	2697	6 0	000	) 14 14	693 693	716	Ĭ			204		+
				08 08 08 08	S 0010 S 00100 TD 0020 S 00200		)558 )558 )558 )558(	3 3 3 3	203 2032 203 2032	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	528 528 528	002	2699 2698	1 0	102	7 14 14 4 14 14	696 696 698 698	726 726 721 721				218 200		

REFER	NCE	ГТ		1			. *	MAR	SDEN	STA	TION 1	IME		1	ORIGIN	ATOR	's	T OE	PTH	MAX.	1	٧	VAVE		WEA	. cı	LOUD		N	000	
	10. NO	CODE	LATITU	DE ,	LONG	SITUOE	DON IN DO	SQU 10*	ARE	401	GMT	HR 1/10	YEAR	C RL	JISE S	TATIO	) N E R	1 109	IO TOM	OF S'MPL"	S DI	OBSER	RVA TIO	DINIS I SEA	CODE	C IVP	DOES .		ST NI	A TION	
2.2	10.20	EV	4046	1/ 10	0.70	0.254		152	0.0	12	15	182	1967	, –	0.0	2		0.0	63	0.0	1	3	4 2		×1					0002	
210	5027		4045	IN	0.00	NC J J W		172	WA	TER		WIND	1.0	1	A IR TE	M.P. 70			0			<u>'</u>		1	,						
									COLOR	TRAN Im I	S DIR.	SPEED OR FORC		ER \$1	DRY BULB	W E B U I	1 COC	DEP	85. PTHS	OBSERV	(A 110)	чs									
									DT	S	31	526	5 10	)5	039	0	17 7	0	7												
		MESSENGR TIME HR 1/10	CASI NO,	CAL	R () PE	DEPTH I		Т	°C		5 *4.	sig	M A = I	SPE	CIFIC VOLU NOMALY-31	ME 07	∑ ∆ D DYN. / X 10 ³	О М. 1	\$OU VELO	INO CITY	021	nt/I	PO a	P 01/1	TOTAL=₹ µg = ol/l	NO Pg ·	02=N - aI∕I	CM-A	S1 O ₄ — Si µg = o1/l	pН	S C C
					_													1													
				S	TD	000	0	C	691	3.	208	25	516	0	02816	6	000	0	14	749	6	72									
		180	C	08	S	000	00	C	691	3	2082	2 2	516						14	749	6	72						104			
				S	TD	001	0	0	1691	3	209	25	16	0	02814	• 1	002	8	14	750	6	+⊥ - 2						0.0.2			
				08	S	001	00	0	691	3	2087	25	16				000	,	14	750	60	91						082			
				S	TD	002	0	(	1641	<u>ر</u>	209	2:	516	0	02815	ور	005	0	14	762	60	30						076			
				08	S	002	00		00410	5 5	2087	2:	10						14	752	00							0.0			
				08	5	002	20		1090.	y 3 2	2001	2.	516	0	0.2816	. a	00.8		14	754	6.5	97									
				2		003	00		1071	ر د ۱	209	2 24	516	0	0201.	0	000	-	14	754	68	87 87						074			
				00	5	003	00		691	0 3	2000	2	516						14	755	6	90						074			
				00	, э :тп	005	0	č	1691	3	209	2	516	C	02818	32	014	1	14	757	6	90									
				08	s	005	00	(	0691	0 3	2088	3 2	516			_			14	757	6	90						069			

REFERENC	E SHIP CODE	LATITU	DE		MARSI SQUA	PE 1	STATION IGM	TIME	YEAR	CRUISE NO,	ORIGIN A	ATOR'S TATION		DEPTH TO BOTTOM	MAX, DEPTH OF S"MPL"	OBS DIR.	WAVE ERVATIO	N S SE A	WEA- THER CODE	CLOUD CODES		S	NODC TATION UMBER
3180	29 EV	3959	N	07001 W	116	90 WAT	12 15 ER TRANS 0	21 WINE	3 196 BA EED ME OH (T)	7 RO- TER bal	OO AIR TEN ORY SULB	3 AP. "C WET BULB	VIS. CODE	0165 NO. 085. OEPTHS	01 SPE OBSERV	12 CIAL ATIONS	5 3		×1				0003
					ŀ	DT	SD 3	1 5	30 0	85	050	028	8 7	17									
	MESSEHG TIME	CAST	C A R D T Y PE	DEP1H (m)	7	°C	s •4		SIGMA-T	SPECIFI	C VOLUA	ME 2	8 △ D DYN, M X 10 ³	SOI	UND DCITY	02 ml/l	PO4-	P 1	FOTAL-F PQ = 61/1	NO ₂ =N µg - a1/1	СНІ — А	\$104=\$1 µg = ot/1	pН
	116 17 13																						
	1		ST	D 0000	0	825	3286	5	2558	00	2413	5 (	0000	14	118	658					068		
	21	.3	OBS	00000	0	8250	3286	2	2558	00	2415		0024	14	813	667					000		
			ST	D 0010	0	825	3280	5	2558	00	2419	1 1	0024	14	813	667					065		
			085	00100	0	8250	3286	52	2558					14	814	658							
			065	D 00190	0	825	3286	5	2558	00	2416	7	0048	14	814	660							
			085	00200	õ	8250	3286	5.2	2558					14	814						061		
			085	00250	0	8250	3286	57	2559					14	815								
			085	00280	0	8250	328	77	2559					14	+816	661							
			ST	D 0030	0	825	328	9	2560	00	2399	17	0072	2 14	816	656							
			085	00300	0	8250	328	87	2560					14	+816						059		
			085	00370	0	8410	329	27	2561					14	824	636							
			085	00400	0	8750	329	97	2561					14	+838						072		
			085	00470	0	9300	332	50	2572			-		14	+863	603							
			ST	D 0050	0	940	333	1	2575	00	2261	9	0119	<i>y</i> 14	+808	598					059		
			OBS	00500	0	9400	) 3330	07	2575					1.	+800	546					0,2,7		
			085	00700	1	0380	335	27	2576		1010		0171	1	4910	558							
			51	D 0075	1	010	339	3	2612	00	1414	/4	01/1	14	4900	,,,,					036		
			085	00750	1	0100	339	21	2612					1	4900	5.24					0.00		
			085	5 00940	0	8320	0 338	11	2030	0.0	1405	5.7	0213	3 14	4864	512							
			51	0100	0	070	545 0 363	37	2666	00	1401	~ L	0-1.	í i	4864						011		
			089	01000	0	043	349	5	2703	0.0	1066	51	0244	4 ī	4903	456							
			0.00	0120	0	960	0 351	31	2714					14	4914	418							
			005	s 01400	0	960	351	8	2718	0.0	0931	11	026	9 14	4916								
			080	\$ 01500	C	960	0 351	77	2718					1.	4916								

REFERENCE CTRY ID. CODE NO.	SHIP LA CODE	TITUDE 1/10	LONGITUDE	MARSDEN SQUARE	STATION T (GMT)	IME	YEAR	ORI CRUISE NO.	GINATO STATI	R'S ON BER	DEPTH TO BOTTON	MAX. DEPTH OF S'MPL'S	085	WAVE ERVATIONS [HGT[PLF] SI	WEA- THER I DDE	CL 10 C 085		24	NUL FATE (N UNTRER
318029	EV 39	287N	07000 W	116 90	12 17	166	1967		004		2468	15	13	4 3	×1				0004
				W A	TER 1	VIND	BAR	O- AIR	TEMP	<u>c</u>	NO.	SPEC	141						
				COLOR	TRANS. DIR	SPEED	M ET I	ER DRY	9 W	ET CODI	DEPTHS	OBSERV	ATIONS						
				OT	SD 29	522	12	2 08	3 0	61 8	22								
	MELLENCE		-			-	-			5.10	1				1			T T	
	TIME OF N	0. CA	PE DEPTH (m)	5 7	5.144	SIGM	A T	ANDMAL	OLUME 	DYN. M	VEL	OCITY	0 ; ml	PO 4 P	POTAL-P	N O 2 - 01 1	CHL-A	1 - 4 - St No - 01	pн
	HR 1/10								-	x 10-							-		+
			10 0000	0900	3311	254	6.6	0023	403	00.00	14	943	634						
	166	0.6	s 0000	00000	33107	25/	56	0029	405	0000	14	843	634				045		
	100	S	TO 0010	0900	3311	256	56	0023	421	0023	i 14	844	631				040		
		08	5 00100	09000	33107	250	56	0015		0+2.5	14	844	631				057		
		s	TD 0020	1225	3473	26	35	0016	905	0044	14	983	631				0		
		OB	s 00200	12250	34727	26	35				14	983	631				044		
		08	s 00250	13246	35097	26	44				15	022							
		S	TD 0030	1385	3527	26	45	0016	010	0060	) 15	045	611						
		08	S 00300	13850	35271	26	45				15	045	611				047		
		08	s 00400	13950	35307	26	45				15	050	558				039		
		S	TD 0050	1398	3532	26	45	0015	990	0092	2 15	053	557						
		08	s 00500	13980	35317	26	45				15	053	557				039		
		S	TD 0075	1442	3551	26	51	0015	568	0131	1 1 5	074	536						
		08	S 00750	) 14420	35507	26	51			. 1	15	074	536				032		
			TD 0100	1459	3556	26	51	0015	612	0170	1 15	084	539						
			5 01000	14590	30004	20	54	0014		0.200	13	084	539				032		
		5	TO 0125	1450	3570	20	ວວ <b>າ</b> ວ	0014	214	0200	2 1 6	0.007	300						
		3	C 0150	1440	) ) / / / / / / / / / / / / / / / / / /	20	12	0015	110	044	) I.		300						
		00	TD 0200	1255	3560	26	96	0011	553	0304	1	0034	366						
		08	s 0200	12550	35597	26	96	0011	111	0.200	1=	1034	366						
		٥ <i>ت</i>	TD 0250	1100	3529	270	n2	0011	100	0363	1 14	984	366						
		08	\$ 02500	11000	35287	27	02	0011	100	0.00	14	984	366						
		S	TD 0300	0920	3511	27	19	0009	458	0414	. 14	925	500						
		QB	s 03000	09200	35112	27	19				14	925							
		08	s 03500	0 8010	35037	27	32				14	888							
		S	TD 0400	0679	3489	27	38	0007	662	0500	14	847							
		08	s 04000	06790	34892	27	38				14	847							
		08	s 04500	05950	34887	27	49				14	821							
		S	TD 0500	0552	3490	27	56	0006	047	0568	3 14	812							
		08	s 05000	05520	34902	27	56				14	812							
		S	TD 0600	0482	3491	270	54	0005	260	0625	D 14	800							
		08	S 06000	04820	34907	270	54				14	800							
		S	TD 0700	0459	3493	210	59	0004	920	0676	5 14	808							
		3	10 0800 6 08000	0444	3490	21	72	0004	680	0124	* 14	010							
		00	TO 0900	04440	34922	27	12	0004	550	0770	14	835							
		د د	TO 1000	0441	3499	27	75	0004	591	0816	14	851							
		08	s 1000r	04410	34987	27	75	0004	- / *	0.010	14	851							
		ŝ	TD 1100	0429	3498	27	76	0004	591	0862	2 14	863							
		s	TD 1200	0418	3498	27	77	0004	571	0908	3 14	875							
		OB	s 12000	04180	34977	27	77				14	875							
		s	TD 1300	0408	3498	27	78	0004	552	0953	3 14	887							
		S	10 1400	0399	3497	27	79	0004	534	0999	9 14	+900							
		S	TD 1500	0391	3497	27	79	0004	534	1044	+ 14	914							
		08	s 15000	03910	34972	27	79				14	914							

REFERENCE	SHIP	LATITU	DE V10		SOL	SDEN ARE	STATI	ON TI	ME 8,1/10	YEAP	CRUISE NO.	OPIGIN	A TOR'S	_	DEPTH TO BOTTON	DEPTH OF S'MPL"	085	WAVE ERVATION	S SEA	WEA- THER CODE	CLOUG CODES		N ST NI	IODC ATION UMBER	
318029	EV	3859	N	070015₩	116	80	12 1	7 1	99	1967		00	5		2834	15	11	3 2		<b>X</b> 1			(	0005	
51002 ·		, ,00		0.00124	1	WAT	ER		IND			AIR TE	VP C	1	NO.										
						COLOR	TRANS	DIR	SPEED	METI	ER I	DRY	WET	CODI	OBS.	OBSERV	CIAL ATIONS								
						CODE	(m.)		FORCE	(mb)	s) 6	ULB	BULB		UCT III										
						DT	50	30	522	14	6 0	94	067	17	22	1									_
	MESSENGR	CAST	CAR	D		10		• /			SPECIFI	C VOLU	ME		so	UND	0	PO4-P	101	TA L P	NO2-N	CN4 .	\$1 O 4 Si	- 14	1
	11ME -	NO.	TYP	E DEPTH UNI		Ç	``	(+ +	SIG	NA~1	ANON	ALY-X1	o' U	x 10 ³	VEL	OCITY	0.2 10071	Vg = 01/1	ι νg	+ a1/1	ug = 01/1	CHL-A	µg = ot∕ l	pri	č
	118 17 10	+			-				1				-												T
		1	S	TD 0000	0	1939	333	33	25	77	002	236	2 ' O	000	14	860	627								,
	199	9	OB	s 0 <b>00</b> 00	) (	9390	333	327	25	77					14	860	627					054			
			S	TD 0010	1	100	343	33	26	27	001	760	5 0	020	14	933	638								
			OB	5 00100	) ]	1000	343	327	26	27			2 0	0.2.7	14	933	638					056			
			S	TD 0020		450	354	+4	26	44	001	608	2 0	031	12	067	578					0.4.0			
			08	5 00200		4500	354	101	20	44					19	061	5/6					049			
			08	5 00250	1	4390	354	+20	20	40	001	571	0 0	053	19	063	539								
			08	< 0030	n i	4340	354	447	26	48	001		0 0		19	5063	539					036			
			0.0	5 00400	0 1	4420	354	+72	26	48					19	6068	528					026			
			Š	TD 0050	1	444	354	9	26	49	001	567	4 0	084	1 1 5	070	535								
			OB	s 00500	0 1	4440	354	88	26	49					15	070	535					022			
			S	TD 0075	1	460	356	50	26	54	001	526	7 0	123	1 1 5	081	525								
			ОB	S 0075(	) I	4600	35!	599	26	54					19	081	525					028			
			5	TD 0100		1550	359	76	26	61	001	1463	5 0	160	) 19	118	518					0.25			
			OB	s 0100	0	15500	359	757	26	61				1.0.7	11	9118	518					025			
			S	TD 0125		1494	351	32	26	63	001	451	5 0	291	1 12	5095	4 3 2								
			5	TU 0150	<u>,</u>	1430	35	706	20	69	00.	408	0 0	2.92	1 1	5085	376								
			00	5 0100 TD 0200	,	1275	35	56	26	90	00	1219	3 0	298	a 19	5040	358								
			0 B	s 0200	0	12750	35	562	26	90	00.			- /(	19	5040	358								
			Š	TD 0250	~	1160	35	40	2.6	99	00	1137	2 0	351	7 1	5007	363								
			OB	s 0250	0	11600	35	397	26	99					1 9	5007	363								
			5	TD 0300		1040	35.	27	27	11	00	1031	5 0	41]	1 14	4971									
			ОB	S 0300	0	10400	35.	267	27	11					14	4971									
			08	S 0350	0	09100	350	097	27	20					. 14	4929									
			S	TD 0400	(	0776	35	00	27	33	000	0821	4 (	1204	4 14	+886									
			08	5 0400	0	)//60	34	997	27	33					1.	4886									
			08	5 0450 TD 0500	0	16500	34	940 87	27	47	000	1690	1 0	1580	1	4830									
			08	s 0500	0	)598n	34	867	27	47	001				14	4830									
			Š	TD 0600		0501	34	93	27	64	000	539	52 0	64	1 14	4808									
			08	s 0600	0	05010	34	926	27	64					14	4808									
			S	TD 0700		0471	34	94	27	68	00	0499	93 (	693	3 1	4813									
			S	TD 0800		0450	34	95	27	71	00	0479	91 (	742	2 1	4821									
			OB	5 0800	0	04500	34	947	27	71					1	4821									
			S	TO 0900		0444	34	96	27	73	00	0472	25 (	) / 84	9 14	4835									
			S	TD 1000	~	0435	34	97	21	74	0.0	046	10 0	030	D 1.	4848									
			08	5 1000	U	04350 0433	34	700 97	2	14	0.0	0461	10 /	1883	a 1.	4860									
			5	TD 1200		0422	- 34 - 34	97 97	21	777	0.0	0451	43 (	)920 )920	9 1.	4872									
			с 0 Р	1200	0	04120	34	965	27	77	0.0				ĺ.	4872									
			00	TD 1300	9	0403	34	97	2	78	0.0	0456	51 (	97	5 Î.	4885									
			ç	TD 1400		0395	34	97	27	79	00	0454	+1 1	02	0 1	4898									
			5	TD 1500		0388	34	97	27	79	00	0453	38 1	06	6 1	4912									
			OB	5 1500	0	03880	34	966	2	779					1	4912									

REFERENCE SHIP LATITE	UDE LONG		MARSDEN SQUARE	STATION TH IG MT	ME Y	EAR		IN ATOR	TS	DEPTH TO BOTTO M	M A X DEPTH OF	- RS	WAVE ERVATIONS	A EA- THEP	n:		14 14 14
22002 NO.	1 10	1 10 -	10 1.	1 2 3 0 0		0 ( 7	11.0	0.		1200	16	12	A 1		+ +	+-	
318029 EV 383	) 4 N - 57 G	157	116,80		16 1	961	0	06	~ 1	3200	10	12	4 .	₹∠			0006
			601.00	C* VY	SPEED	BARO		- we	VIS	N:0, 085	SPEC	IAL					
			CODE	Im DIR,	FCA1E	(mbai	BULB	BU	LB	DEPTHS	OBSERVS	- 110 43					
			DT	SD 31	S16	183	3 089	0	72 7	23							
MESSENGE - LOT	C 100			T			UNDER VO	LUINE	\$ <u>.</u> D	500	ND		PO P	1074			
TIALE OF NO	TYPE	D EFTH Im'	T °C	s • • •	SIG AA A	-T	ANOMALT	1'0	DYN, M x 10 ³	VELC	CITY	C 2 ml 1	24 - 27 - 1	1 101221	LQ = 01	CHL- A	4
HR 1 10	++		+		+					-	+						+
	< <b>T</b> D	0000	1515	3650	263		00169	50	0000	150	185	537					
0.17	OBS	00000	15150	35495	263	4	00107	20	0000	150	185	537				0.24	
	STD	0010	1515	3550	263	4	00169	81	0017	150	186	555				02.	
	035	00100	15150	35495	263	4			00.	150	186	555				0.3.1	
	STD	0020	1524	3552	263	4	00170	04	0034	150	91	542					
	OBS	00200	15240	35522	263	4	0.0 - 0			150	91	542				027	
	285	00250	15260	35527	263	4				150	093					-	
	STD	0020	1527	3553	263	4	00170	32	0051	150	94	536					
	085	00300	15270	35531	263	4				150	)94	536				027	
	085	00400	15270	35531	263	4				150	95	535				017	
	STD	0050	1527	3554	263	5	00170	14	0085	150	97	533					
	OBS	00500	15270	35542	263	5				15	97	533				0.0.0	
	STD	0075	1490	3548	263	8	00167	83	0127	15(	089	542					
	OBS	00750	14900	35477	263	8				150	89	542				016	
	OBS	00850	12000	35247	268	$\cap$				14	992						
	STO	0100	1290	3548	268	0	00127	97	0164	150	28	485					
	0 B S	01000	12900	35482	268	0				150	28	485				014	
	STD	0125	1246	3544	268	6	00123	34	0196	15(	016	432					
	STD	0150	1185	3537	269	2	00117	99	0226	14	999	399					
	OBS	01500	11850	35367	269	2				14	99 <b>9</b>	399					
	STD	0200	1009	3517	270	9	00103	07	0281	14	942	391					
	OBS	02000	10090	35166	270	9				14	942	391					
	STD	0250	0839	3503	272	6	00087	23	0329	14	885	342					
	OBS	02500	08390	35027	272	6				14	885	342					
	STD	0300	0728	3499	273	9	00074	90	0369	14	851						
	03S	03000	07280	34986	273	9				14	851						
	OBS	03500	06350	34927	274	7				14	821						
	STD	0400	0565	3492	275	5	00055	10	0436	14	801						
	OBS	04000	05650	34917	275	5				14	801						
	OBS	04500	05350	34935	276	0				14	798						
	STD	0500	0511	3494	276	3	00052	68	0493	14	196						
	OBS	05000	05110	34938	276	3		7.0	0540	14	796						
	STD	0600	0475	3495	276	8	00048	18	0543	14	798						
	UBS	06000	04750	34947	270	8	00046	07	0501	14	198						
	SID	0700	0456	3491	277	۲ ۲	00045	47	0536	14	817						
	SIU	08000	0440	2470	277	5	00044		0030	14	017 017						
	610	00000	04400	3400	277	6	00044	41	0680	14	830						
	STD	1000	0420	3497	277	6	00044	30	0725	14	842						
	DBC	10000	04200	34072	277	6			5.25	14	842						
	STD	1100	0409	3497	277	7	00044	13	0769	14	854						
	STD	1200	0199	3497	277	8	00044	0.3	0813	14	867						
	085	12000	03990	34967	277	8		-		14	867						
	STD	1300	0391	3497	277	9	00043	93	0857	14	880						
	STD	1400	0385	3497	278	0	0004	97	0901	14	894						
	STD	1500	0380	3497	278	0	00044	19	0945	14	909						
	OBS	15000	03800	34968	278	Ú.				14	909						

TRY ID.	SHIP	LATITU	DE	LONGITUD	DRIFT MDC1a	M A R S SQU A	OEN ARE	STAT	ION T	IME	YEAR	C		RIGIN A	TOR'S		DE BOT	PTH TO TTOM	MAX. DEPTH OF	085	WAVE ERVATIO	NS	WEA- THER CODE	CLOUD		st N	ATION UMBER	
NO.	+		1/10	1	/10 -	10*	11 1	MO   I	DAYH	R.1/10	1.07	-	NU.	0.0.7	UMBER		2.0		SIMPLIS	DIR	HGT PER	SEA		TYPE AM	T			
318029	ΕV	3859	N	07058	W	110	80	12	18 10	063	196	1		001	p %	1	28	134	15	12	3 2		1 X Z	1	I		0007	
							COLOR	TRANS	- · ·	SPEED	84	RO-	DE	Y I I	WET	VIS.		10, 185.										
							CODE	[m]	DIR.	OR FORC	E [77	nbal	80	LB	BULB	000	DE	PTHS	OBJER V									
							OT	50	34	512	1	93	10	0	078	8	2	3										
[	MESSENGE	t carr	C 4.05			[				1	1		RECIEIC	VOLDA	٤ ٤	ΔD	T	sou	ND		PO	P		NOn-N		5101-51		T
	t(M)	Y NO.	TYPE	DEP	TH (m)	T	°C	S	•/	SIG	MA-T	1	ANOMA	LY-x10	; D	(N. M ( 10 ³	5	VELO	CITY	0 2 ml/1	40 D	1/1	µg • ol/l	µg - al/l	CHL A	µg = a1/1	ρH	6
	HK 1/10	-								+		+					+					-+-						+
		1			000	1.1	208	35	30	26		I.	0015	003	.   	000	,	150	145	553					1			
	0.6	3	085	0 01	0000	1	3980	35	297	26	44		0015	, , , .	, 0	000	,	150	45	553					039			
	00		51	0 01	010	1	398	35	30	26	44		0016	000	) 0	016	,	150	)46	578					0.0.1			
			085	01	0100	1	3980	35	300	26	44							150	)46	578					039			
			ST	D O	020	1	399	35	30	26	44		0016	020	0 0	032	2	150	)48	570								
			OBS	0	0200	1	3990	35	304	26	44							150	)48	570					035			
			OBS	0	0250	1	3900	35	300	26	46		_	_		_		150	)46									
			ST	0 01	030	1:	380	35	30	26	48		0015	719	0	048	9	150	)44	569								
			085	01	0300	1	3800	35	297	26	48							150	)44 )45	5570					038			
			005 61		0400	1.	375	35	297 20	26	40		0015	743	1	079	,	150	145	564					012			
			085	0	0500	1	3750	35	288	26	48		0015		, 0	. , <i>,</i>		150	)45	564					035			
			ST	D O	075	1	360	35	27	26	50		0015	654	• 0	119	)	150	)44	553					-			
			085	0	0750	1	3600	35	269	26	50							150	)44	553					034			
			OBS	0	0900	1	3980	35	727	26	77							150	)65									
			ST	D 0	100	1	363	35	65	26	78		0013	8018	3 0	154	•	150	)54	367								
			OBS	. 0	1000	1	3630	35	647	26	78					1.05		150	)54	367					002			
			ST	0 0	125	1.	232	35	51	26	94		0011		0	185	,	150	113	334								
			080	0	1500	1	1250	30	39	21	105		0010	1200	, 0	213	,	145	970 978	312								
			51	0 0	200	0	980	35	22	27	118		0009	44	3 0	263		149	32	301								
			085	0.	2000	ŏ	9800	35	218	27	18					- 0 -		149	32	301								
			ST	D 0.	250	0	875	35	11	27	26		0008	36.99	<b>)</b> 0	308	3	149	900	323								
			OBS	0	2500	0	8750	35	105	27	26							149	900	323								
			ST	D 0	300	0	763	35	01	27	735		0007	7835	5 0	350	)	148	364									
			085	0	3000	0	7630	35	007	2	735							148	364									
			085	0	3500	0	7000	35	008	2	145		0005			<b>/</b> 1 0		148	348									
			51	0 0	400	0	6010	34	98	2	754		000:	) <del>9</del> 3 4	• 0	410	,	140	317									
			005	. 0	4500	0	5400	34	970	27	761							148	304									
			505		500	ő	519	34	98	2	766		0005	5040	0 0	473	3	148	100									
			085	. o	5000	ŏ	5190	34	982	2	166		0000			, -		148	300									
			ST	D 0	600	0	481	34	97	2	169		0004	+79	5 0	522	2	146	801									
			085	Õ	6000	0	4810	34	968	2	769							148	301									
			ST	υ ο	700	0	458	34	98	27	73		0004	+538	9 O	569	,	148	308									
			ST	D 0	800	0	440	34	99	27	775		0004	+37:	3 0	614	÷	148	317									
			OBS	0	8000	0	4400	34	987	2	775							148	317									
			ST	D 0	900	0	429	34	99	2	76		0004	+355	5 0	657	7	148	329									
			ST	D 1	000	0	419	34	98	2	77		0004	+346	5 0	/01	L	148	342									
			OBS	1	0000	0	4190	34	983	2	77					· · ·		148	542									
			ST	0 1	100	0	409	34	98	2	78		0004	+ 54(	, 0	700	+	148	3 2 4									
			51	U I	200	0	400 4000	34	70	~ ~ ~	770		0004	7344	- 0	100	,	140	367									
			005	- I D 1	3000	0	392	34	98	2	780		0004		2 0	831		146	381									
			ा इ.स.	0 1	400	n	385	34	98	2-	780		0004	+330	- 0 3 N	874		146	394									
			ST	0 1	500	ŏ	379	34	98	2	781		0004	4341	. 0 3 0	918	3	149	909									
			085	1	5000	0	3790	34	976	2	781				ĩ			149	909									

REFERENCE CTRY ID. CODE NO	SHIP CODE	ATITUDE	LON		MARSDEN	STATION TI	ME	YEAR	CRUISE NO	RIGINA	TOR'S ATION		DEPTH TO NOTIOM	MAX DEPTH OF	OBSI	WAVE ERVATIONS		165	_	N ****	14 4 17
			10	0.005.00	10. 1.	DAT H	0.0	047		0.0.0		-+	2617	1.6			^ 		1	+	
318029	EV   2	9287	N 07	0595WI	116 90 WAT	12 18 0 ER 1 W		1967		IR TEM	5 P. °C	T	2514	15	14	2 2	X 1			0.0	08
					COLOR	TRANS. DIR	SPEED ON FORCE	BARO METE Imbs	R C	JLB	W ET BULB	CODF	OBS. DEPTHS	SPE DBSERV	CIAL ATIONS						
					DT	SD 35	S07	21	3 0	89	067	7	22								
	MESSENGE C	AST NO.	CARD TYPE	DEPTH Iml	r °c	s ·	SIG M	A = T	SPECIFIC ANOM	VOLUM ALY110	ι Σ. 	ΔD rN. M. c 10 ³	SOL	UND DCITY	Og mili	P⊖₄=P µg = 0111	1014L-1 19 - 01 1	NO2-N Ly - at 1	CHI-A	51 O 4 - 5 µg + of 1	рн С
																		-			i l
	,		STD	0000	1457	3531	26	32	001	7117	7 0	000	15	064	544						
	093		OBS	00000	14570	35307	26	32					15	064	544				027		
			STD	0010	1458	3531	26	32	001	/14:	> 0	017	15	066	553						
				00100	14580	35310	26.	32	001	716	7 0	024	10	0000	555				023		
			OBC .	0020	14580	35311	20.	32	001	110	, 0	0 9 4	15	068	555				023		
			OBS	00250	14590	35312	26	32					15	069	111				020		
			STD	0030	1459	3531	26	32	001	719	5 0	051	15	070	558						
			OBS	00300	14590	35314	26	32					15	070	558				032		
			OBS	00400	14590	35314	26	32					15	071					033		
			STD	0050	1460	3532	26	32	001	725:	3 0	086	15	073	548						
			085	00500	14600	35317	26	32					15	073	548				027		
			STD	0075	1431	354Z	264	46	001	5985	5 0	127	15	069	545				0.7.5		
			085	00750	14310	35419	264	46	0.0.1	606/	~ ~	1.7	10	059	545				032		
			SID	0100	1430	3543	201	41	001	2920	5 0	101	15	073	491				011		
			005 CTD	0125	1331	3553	26	76	001	331	1 0	204	15	046	413				011		
			STD	0150	1239	3555	26	96	001	1476	5 0	235	15	020	357						
			OBS	01500	12390	35548	26	96					15	020	357						
			STD	0200	1075	3533	27	10	001	0220	o c	289	14	968	309						
			OBS	02000	10750	35331	27	10					14	968	309						
			STD	0250	0995	3516	27	10	001	0242	2 O	340	14	945	299						
			085	02500	09950	35158	27	10					14	945	299						
			STD	0300	0790	3503	27	33	000	806(	0 0	386	14	875							
			OBS	03000	07900	35030	27:	33					14	875							
			UUS	03500	06530	34950	214	4 / c /	0.00	6120		4.57	14	829							
			OBC	0400	0571	3431	27	54	000	0120	5 0		14	804							
			OBC	04500	05390	34927	27	59					14	799							
			STD	0500	0525	3492	27	60	000	556	7 0	515	14	802							
			OBS	05000	05250	34921	27	60	000				14	802							
			STD	0600	0482	3496	27	68	000	488	9 0	568	14	801							
			OBS	06000	04820	34957	27	68					14	801							
			STD	0700	0465	3498	27	72	000	462	з с	615	14	811							
			STD	0800	0450	3500	27	75	000	442	1 0	660	14	4822							
			OBS	08000	04500	34997	27	75		_		_	14	822							
			STD	0900	0440	3499	27	76	000	4454	+ 0	705	14	834							
			STD	1000	0428	3499	27	17	000	442	1 0	149	14	846							
				11000	04280	34988	21	11	000	1. 266	5 0	703	14	040							
			STD	1200	0397	3490	21	10	000	4303	, 0	837	14	866							
			085	12000	03970	34976	27	79	000	4714	. 0	1001	14	866							
			STD	1300	0387	3498	271	BO	000	4276	5 0	879	14	878							
			STD	1400	0382	3498	271	81	000	429	3 č	1922	14	893							
			STD	1500	0380	3498	27	81	000	4354	4 Č	966	14	909							
			085	15000	03800	34977	27	81					14	909							

REFERENCE	SHIP CODE	LATITU	DE 1 10	LONGITUDE	MAR SQU	SDEN ARE	STA MO	TION (GMT DAY	TIME T	YEA	AR	CRUISE NO,	DRIGIN S	A TO P"	N	DEP TC BOTT	O O M	MAX. DEPTH DF S'MPL"	OB RIG	W. SERV	A VE VA TIONS	EA	WEA- THER CODE		0			NODC STATION NUMBER	]
318029	EV	3958	15 N	07101 W	116	91	12	18	134	19	67		00	9		04	12	04	17	1	3		<b>X</b> 1					0009	1
						WAT	ER	Ť	WIND	1-1-1-			IR TE/	лр *C		( NC	5.			ľ									
						COLOR	IRAN (m)	5 DIR	SPE1	ED ,	METER (mba)	R (	DRY ULB	WET	C 0 0	E DEPI	is. THS	OBSERV	ATIONS										
						DT	SE	2	1 50	2	885	5 0	78	06	1 7	1	5												
	MESSENG TIME H.R. 1, 10	P CAST	C A P	D DEPTH (m)	T	°C		•4.	SI	G M A =	- T	SPECIFIC	VOLU	€ 0.7	₹ △ C DYN. A x 10 ³		SOU VELO	ND CITY	Og ml/		PO4=P vg = of 1	ro	ita L—P g + a1/l	NO2-1 µg - 01/	сн		St⊖ ₄ µg - ot	Si pH	s c c
						0.00		77		667		0.0.7	4.4.0	2	000		1 /. 0	204	61.7										1
	1.2		S	0000	0	909	20	75	7 2	552		002	409	2	0000	,	148	304	642						0.5	0			
	1 -	4	S	TD 0010	0	809	32	76	2	553		002	407	8	002	5	148	105	653						0.2	0			
			08	5 00100	c	8090	32	76	1 2	553		001			0.2.	-	148	305	653						04	7			
			S	TD 0020	0	809	32	77	2	553		002	465	6	004	Ð	148	807	656										
			OB	5 00200	С	8090	32	76	5 2	553							148	807	656						04	9			
			0B	s 00250	Ċ	8090	32	276	7 2	553	,						148	808											
			S	TD 0030	C	809	32	277	2	553		002	464	9	007	+	148	809	656	•									
			OB	s 00300	C	8090	32	276	92	553							148	809	656	•					04	6			
			OB	s 00400	C	8100	32	98	7 2	570	1						148	813	666						04	7			
			S	TD 0050	1	110	34	11	2	608		001	949	0	011	3	14	940	653							~			
			OB	s 00500	1	1100	34	+10	7 2	608	1						149	940	653						04	9			
			5	TD 0075	1	419	3 5	23	_ 2	634	ł	001	714	4	016	4	150	063	528										
			0B	s 00750	1	4190	35	22	7 2	634	ł					,	15(	063	528	5					02	1			
			S	TD 0100	1	370	3	36	2	654		001	527	4	020	4	150	053	412							~			
			0B	5 01000		3700	3:	535	1 2	654	ł		222	,	<u></u>		100	222	412						00	2			
			S	TD 0125	1	264	3:	35	2	6/5		001	333	4	0241	J	100	121	401										
			5		1	170	37	233	, 2	692		001	191	9	027	2	141	492	202										
			UB	S 01500		0100	2	22	1 2	710		0.01	012	2	032	,	141	993	204										
		(		0200	1	0160	20	21	7 2	710		001	012	2	092	'	149	945	320	,									
				S 02000	1	0100	20	10	1 2	722	1	0.00	000	3	037	5	143	944-J 019	315	,									
				0250		1922	24	516	2 2 2	722	,	000	303	,	051		140	010	315										
				5 02900 TD 0300	د د	77220	- 9: 21	503. 503	- 2 2	723		0.00	800	7	041		14	910	515										
				r 03000		172	22	103	ے م		,	000	0.04		0,1		140	976											
			08	5 03500	, ,	11720	3	.80	- 2 6 2	123							144	923											
			00	5 03900 TD 0400		6400	3	105	· 2	760		0.00	565	8	048	5	141	802											
			08	s 04000	0	,5650 )5650	34	+90 +95	92	759	,	000	,	0	0.0		14(	802											
				0.000			_																						

REFERE	NCE	SHIP	LATITU	DE	LONG	GITUDE	M A R SQL	SDEN FARE	ST A	IGMT	TIME	YEAF		DRIG RUISE	NATO STAT	R'S		DEPTH TO	DEPTH	0	W / B SERV	A VE	INS.	WEA- THER	CLOU	D	s	NODC TATION
CODE	NO.	CODE	·	1/10		• '1/10 [°] ≝	10*	1.	MO	DAY	HR.1/10			NO.	NUM	BER	8	MOTTOR	S'MPL*	S DIR	НG	TPER	SEA	CODE	TYPE A	M.T	N	UMBER
318	3029	ΕV	4032	5N	070	0590W	152	00	12	18	169	196	7	0	10		0	079	00	19	1	2		X 2				0010
								WA	TER		WIND	R	. RO.	AIR 1	E M P.	°C		NO.	101	CIAL								
								COLOR	TRAN (m)	S. DIR.	SPEE OR EORC		ETER nbs}	DRY BULB	W BL	ET CC	DE	OBS. DEPTHS	OBSERV	ATION S	5							
								DT	51	0 16	50	4 2	24	067	0	44 7		07										
		MESSENG TIME H.R. 1/11	CAST	C A T Y	RD PE	DEPTH (m)	1	°C		s •4.	SIC	SMA-T	s	PECIFIC VO	UME x10 ⁷	ΣΔ DYN, τΙΟ	D M 3	SOL VELC	JND DCITY	0 g ml	71	PO 4-	- P   f	0141=8 49 - 01/1	1402-1 vg - al	сн. —	SLO4-St pg - at 1	рH
				S	TD	0000	0	0800	3.	227	2	515		00282	02	000	0	14	794	640	)							
		16	9	08	S	00000	0	8000	) 3	2269	2	515			c 7	00.7		14	794	640	)					043		
				5	10	0010	L C	1800	3	228	2	516		00281	57	002	8	14	795	600	2					0/2		
				08	5	00100		8000	د ر	2211	2	516		00281	67	005	6	14	790	6000	,					042		
				08	(U)	0020		004	1 3	227 2295	2	516		00201	0 /	000	U.	14	700	647	,					040		
				08	с с	00200	0	18040	1 3	2285	2	516						14	8.00	04.						0.00		
				50	TD	0030	, C	804	3	229	2	516		00281	82	00.8	5	14	800	642	2							
				08	S	00300	Č	8040	3	2285	2	516						14	800	642	2					040		
				OB	S	00400	Ċ	8310	3	2352	2	517						14	813	640	)					046		
				S	TD	0050	C	845	3.	239	2	518		00280	38	014	1	14	821	640	)							
				08	S	00500	Ç	8450	3	2386	2	518						14	821	640	)					030		

REFERE	NCE	C MIR					A ARS	DEN	STA	TION 1	TIVE		2816	INATO	OR'S		MAX		NANE NEAL
ODE	ID. NO.	CODE	LA 111 U	1 DE 1 10	LONGITUDE	0.040	10*	1"	10	DAY	HR,1 10	EAR	CRUISE NO.	STA 1	I DN 7 BER	10 IC TEC M	OF STAPU	* 8 'S' 07	568 x A 1(1) R2
318	029	ΕV	4100	ON	071000	N	152	11	12	18	195 1	967	0	11		0049	00	18	
							-	W A	TER	-	WIND	8 A P.	A IR	FEASP	10 VIS	ND.	SPE	CA.	
								CODE	TSANT	DIP	1.0 FT.FT.F	AA E TI (mbr	ER DRY BULB	B	VET DIC DIB	CEPTHS	906RN	A TON'	
							-	DT	SD	36	508	21	3 106	0	83 7	00			
		ntessenge time H.R. 1. 10	NO.	C A R T Y P	DEPTH	lm 1	т	°C	S	•	SIGM	-1	SPECIFIC VO ANONIALY-	LUME NOT	₹ <u>1</u> D DYN, M x 10 ³	S VELO	NC CITY	j¢ m	$\frac{P \cap q = P - (1 \cap \gamma_{A_{A_{a}}} - \beta - \gamma_{A_{a}}^{-1} -$
							1										- +		
				S	TO 000	00	01	740	32	18	251	7	00280	84	0000	) 14	769	658	
		19	5	08:	s 000	000	07	7400	32	177	251	7				14	769	65 ਰ	054
				S	TD 001	10	07	740	32	18	251	7	00280	60	0028	14	771	663	
				OB:	s 001	00	07	7400	32	182	251	7				14	771	663	0 4 0
				S	TD 00.	20	07	740	32	20	251	8	00279	61	0056	14	773	666	
				OB:	s 00;	200	07	7400	32	197	251	8				14	773	666	0 4 5
				OB	s 00.	250	07	7450	32	216	251	9				14	776		
				S	TD 003	30	07	750	32	24	252	0	00278	23	0084	14	779	659	
				08	s 001	300	07	7500	32	235	252	0				14	779	659	061
				OB:	s 004	•00	0.7	7520	32	239	252	<u>0</u>				14	781	667	053

REFER	ENCE ID.	SHIP	LATITU	DE	LONG	GITUDE	DRFT	MARS	DEN ARE	STA	tion (GMT	TIME J	YEAR	CRUISI	ORIGIN E S	ATOR'S	_	DEPTH TO	DEPTH OF	08	VVA SER√	VE A TION!	1	N EA -	CLEUD CIDES			ACO T	
31	NO. 3029	ΕV	4058	1, 10	071	1.10 580W	-	10° 152	01	12	DAY 18	HR, 1/10 239	1967	NO.	01	имве 2	1	0018	S'MPL	01 5 01	H G 1	PER S	EA C	×1	LANG A V.	-		0012	
									COLOR CODE	TER TRAN IMI	DIR	WIND SPEE OR FOR	BARI 0 METI 26 (mbr	D-	DRY BULB	NP C WET BULB	- vis	NO, OBS, DEPTHS	SPE	CIAL (ATIONS									
			_						DT	SD	18	512	2 17	6 0	78	072		02			1								
		MESSENG TIME HR 1 10	CAST NO.	C A R T Y P	D E	DEPTH	(m.)	T	°C	5	۰.,	sic	M A = T	SPECIFI	C VOLU PALY-XII		E A D YN, M x 10 ²	SOI VEL	DAU VIIDC	02 #1/		04-P 9 - 01 1	*07A	or	NQ2=N µg = at	CHI — A	5 € 4 → Si µg = 01 1	рн	
		23	9	5 08:	rD 5	000	0 00	0	675 6750	31 31	70 697	24	488 488	003	3084	6 (	0000	14 14	737 737	670 670						201			
				S OBS	r D S	001	0 00	0	680 6800	31 31	75 753	24	491 491	003	3050	0 (	031	14 14	742 742	678 678						215			

REFERENCE	SHIP	LATITU	DE 1/10	LONGITUDE	INDCT	MARSI SQUA	DEN ARE	51A	IGMT	TIANE 1 HR.1.10	YEAR		ORIGI CRUISE NO	STAT	R'S IDN BEP	-	DEPTH TO BOTTOM	MAX DEPTI OF S'MPL	i s o	OBSE	WAVE RVATI	IONS R SE		EA+ IER DDE	CLDUD CDDES		51 N	ATION UMBER	
31802	9 EV	4031	5 N	072020W	1	152	02	12	19	026	196	7	0	3		1	0057	00		1	1 2		×	(1)				0013	
							WA1 COLOR CODE	TRANS Imi	DIR	WIND SPEED OR FORC	BA ME E Em	RO ETER	AIP TI DRY BULB	MP.	ET C	VIS	NO. DBS. DEPTHS	S P O B S E P	EC IA L V A TIO	NS									
							DT	SD	18	\$15	1	69	9 100	0	94	7	07											-	
	MESSENC TIME HR 1, 1	CAST	C A R TYP	DEPTH I	n i	T	°C	s	۰.,	SIG	M A =T		SPECIFIC VOL ANOMALY-1	UME:10'	≨ ∆ D1N,	03 M	SOL VELC	IND DCITY	02	m1/1	PO .	-P 01 1	101A) 99 - 94	L -= P 21 - 1	NO ₂ =N vg - at 1	CHLA	51 O 4 51 29 + 61/1	pН	S C C
																													T
	0.2	6	OB:	TD 0000 S 0000	) ) ()	0 8 0 8	862 8620	32 32	57 569	25 25	30 30		002684	+2	00(	00	14) 14)	821 821	63 63	33 33						059			
			5 08:	TD 0010 S 0010	) 00	08 08	862 8620	32 32	57 569	25	530 530		002685	6	00;	27	148 148	823 823	64 64	+0 +0						069			
			S OB	TD 0020 S 0020	) ) ()	08 08	863 8630	32 32	57 571	25 25	530 530		00268	74	00	54	14:	825 825	61	39 39						053			
			0B: 5	S 0029 TD 0030	50	08 08	8646 866	32 32	573 58	25	530 530		002684	90	00	81	14: 14:	826 828	64	4									
			OB	s 0030	00	30	8660	32	577	25	30						14	828	64	+4						078			
			5	TD 0050	)	08	368 368	32	58	25	530		002690	70	01	34	14	832	63	•0 33						001			
			OB	5 0050	00	08	8680	32	583	25	30						14	832	6	33						049			

														-	-		-		-										
REFER	ENCE	C MIR				- 7	MAR	SDEN	\$T#	TION	TIME			ORIGIN	ATD	R*5		DEPTH	MAX.	ĺ .	. w/	VE		WEA.	CLOUD			NODC	
CTRY	ID.	CODE	LATITU	DE	LONGITUDE	180	sou	ARE		IG M1	1	YEAR	CRU	SE	STAT	ION		TO	DF	0	BSER∨	ATIONS		THER	CODES		5	TATION	
CODE	ND			1/10	[] hu	0 =	10*	1.	MD	DAY	HR.1710		I NO	,	NUM	8EP		001107	S'MPL'S	DIR	HG	PERS	£A .	CODE	TYPE A N	1	~	UNDER	
31	3029	ΕV	3959	ON	072010	W	116	92	12	19	058	1967		01	4			0091	01	03	0	2		<b>X</b> 2				0014	
								WA	TER		WIND	BAR	)- L	A IR TE	M.P	°C	MIE	NO.	105	1A1	7								
								COLOR	TRA N (m)	DIR	SPEEL OR FORC	D AAET (mb:	R	DRY BULB	90 10	ET ILB	CODE	OBS. DEPTHS	OBSERV	ATIONS									
								DT	SI	22	2 515	5 15	6	111	1	11	5	08	-		1								
		MESSENG TIMU H.R. 1, 10	NO.	C AI TYI	RD DEPTH	i (m)	Т	'C		s •4.	SIG	M A - 1	SPEC	IFIC VOLU	JME 10 ⁷	ž DYP X	A D 4. M 10 ³	SOL VELO	DAL	D ₂ ml	4	PO4-P g = ot/l	rot Pg	ΓΑ L - P - α?/l	NO2-N V9 - of.')	CHL A	SIO4→Si µg + oF/t	pН	-00
									1																				t
				S	TD 00	00	0	875	3.	266	25	535	00	2636	2	00	00	14	827	624	•								
		05	8	08	S 00	000	0	8750	3	2659	25	535						14	827	624						052			
				S	1D 00	10	0	873	3.	266	2 5	535	00	2635	57	00	26	14	828	636									
				08	5 00	100	0	8730	3.	2658	3 25	535						14	828	636	,					050			
				S	TO 00.	20	0	873	3.	266	2 5	535	00	2636	6	00	53	14	830	630	1								
				OB	S 00	200	0	8730	3.	2659	9 25	535						14	830	630	)					044			
				ОB	S 00	250	0	8720	3.	2659	9 25	535						14	830										
				S	TD 00	30	0	872	3.	266	25	535	00	12636	8	00	179	14	831	629	1								
				OB	5 00	300	0	8720	3	2659	9 25	535						14	831	629	2					041			
				08	S 00	400	0	8710	3	265	7 25	535						14	832	624	•					036			
				S	TO 00	50	C	871	3	268	2 5	537	00	12625	53	01	32	14	834	624	•								
				<b>0</b> В	S 00	500	0	8710	3	267	7 25	537						14	834	624	•					052			
				S	TD 00	75	1	081	3	288	2 5	518	00	2812	23	02	200	14	918	552									
				- 08	5 00	750	1	0810	3.	2871	7 25	518						14	918	552						027			

REFERENCE		LATITUE	E	LONGITUDE	MAR	SDEN	STA	ION TI	ΜĘ	YEAR	CRU	ORIGIN		's	B	DEPTH TO OTTOM	DEPTH	C/85	WAVE EP+ATIONS	MEA THEF				4 *41 N
COUL NO.			1/10	1/10	10'	1.	MO	DAY H	R.1.10		1 140	· · ·	NUME	ER	+	onon	S'MPL'	S DIF	HGT PER S	(4 -00)	1991 A.A	-	÷.	1.12.6116
31802	9 EV	3931	D'N	072025W	116	92	12	19 0	87	1967	1	01	5		0	1667	06	03	1 2	<b>X</b> 2				0015
						WA	TER	W	IND	BAR	0- L	AIR TE	MP 1			NO.	C D C	C (A)						
						COLOR	TRANS Im1	DIR.	SPEED	ALET1	ER	DRV BULB	- W E 6 U I	T CO	ое с	OBS. DEPTHS	OBSERV	ATIONS						
						0.7	6.0	26	FORCE	1.0	2	1.1.1			-	201								
							50	23	511	15	2	111	11	1 5		20								
	MESSENG	CAST	CAR	D DEPTH (m)	1	o" t	s	·	SIG A	A – T	SPEC	FIC VOLU	MI	₹ ∆ I DYN.	D	sou	ND	Og mi i	$P \bigcirc a = P$	TOTAL	NO ₂ -N	CHI-A	si∩ ₄ ⇒si	0.11
	HR 1/10	1	1171						1					x 10	1	VELO	cm		PB - at I	PQ + als)	49 - 01 3		µg + α1	
																					+			
			ST	0000 D	1	125	- 34	34	263	23	00	1794	7	000	0	149	940	587						
	08	7	OBS	00000	1	1250	34	336	26	23						14<	740	587				054		
			ST	0 0010	1	286	34	93	26	38	00	1655	0	001	7	150	005	590						
			085	00100	1	2860	34	927	26:	38						150	005	590				040		
			ST	D 0020	1	328	35	04	26:	39	00	1653	1	003	4	150	22	587						
			085	00200	1	3280	35	043	26	39						150	022					033		
			085	00250	1	3390	35	080	26	39			-			150	27							
			51	0 0030	1	350	35	12	264	40	00	)1644	5	005	0	150	32	583						
			085	00300	1	3500	35	117	264	40						150	32	583				031		
			085	00400	1	3860	35	227	264	41			_		_	150	047	552				027		
			51	0 0050	1	400	35	28	264	42	00	)1627	9	008	3	150	353	555						
			085	00500	1	4000	35	283	264	42			-			150	353	555				020		
			51	0075	1	349	35	24	26	50	00	11265	1	012	3	150	)40	488						
			085	00750	1	3490	35	239	26	50						150	040	488				010		
			085	00850	1	3550	35	267	20	14						150	248							
			085	00900	1	3650	35	604	26	74	~ ~		2	0)0	~	150	153							
			0.00	0100		1335	دو ءد	04	261	83	00	11200	2	015	8	100	)45	380						
			065	S 01000		13350	30	635	261	83	~ ~		2	. 1 .	_	150	J45	380				002		
			51	0 0125	1	2/8	30	23 43	201	87	00	11228	3	018	9	150	128	368						
			080	0 0150		200	22	4) / ) (	20	9 <b>4</b>	00	1105	0	UεI	9	150	105	352						
			005	01500		2000	30	422	20	17	0.0	0047	2	027	2	100	202	352						
			080	0200	0	0904	35	66 272	27	17	00	10941	2	047.	۷	143	724	309						
			003	D 0250	0	1896	35	13	27	25	0.0	0.883	6	031	a	140	208	300						
			080	02500	0	18960	36	131	27	25	00	0000	0	0.21	0	140	208	300						
			503	0 0300	0	1803	35	04	27	32	0.0	0814	4	036	0	149	880	500						
			089	03000	ć	19030	15	042	27	27	00			0-0	0	140								
			OBS	03500	c	7150	34	998	27	42						148	854							
			C 1	0400	0	1629	34	99	27	52	0.0	10629	5	043	1	144	828							
			OBS	04000	Ő	6290	34	985	27	52	00	, , , , , , , , , , , , , , , , , , , ,	-	J.J	-	148	828							
			089	04500	0	5620	34	928	27	56						143	809							
			51	0 0500	c	534	34	93	27	60	00	0.562	7	049	2	148	805							
			OBS	05000	Č	5340	34	928	27	60	00		•	÷ · /	-	143	805							
			51	D 0600	č	515	34	94	270	63	00	00540	8	054	7	148	814							
			OBS	06000	Č	5150	34	942	27	63			2	<b>.</b>		144	814							

REFERENCE SHIP LATITUDE LO	NGITUDE	STATION IGM	TIME TIME HR 1, 10	ORIGINAT CRUISE STA NO, NU	OR'S TION MREP	DEPTH TO BOTTOM	MAX, DEPTH OF S'MPL'S	OBS	WAVE EPVATIONS	WEA- THEP CODE	CLOUD CODES		ST N	A TION
318029 EV 38599N 01	72011W 116 8	2 12 19	121 196	7 016		2360	15	20	3 3	<b>x</b> 2			(	0016
	(	NATER	WIND BAI	PO- AIR TEMP	°C	NO.	SPEC.	IAL						
	co	OR TRANS DI	A. SPEED M.E.	TER DPY bs) BUL8	WET COD	E DEPTHS	OBSERVA	TIONS						
		T SD 2	3 5 2 2 1	79 122	122 4	22								
· · · · · · · · · · · · · · · · · · ·		1 30 2	522 1	17 122	122 4	122								
TIME OF NOT TYPE	DEPTH Im1 T C	s */	SIG M A-T	ANOMALY-110	DYN M	VELO	ND CITY	Oç mi i	PO 4 - P	101AL=P	NO 2~ N µg - al. i		SLO₄~Si ⊮g + al. I	рH
HR 1 10					x 10°									
	103	0 0611	21.25	0016920	0000	160		55/	1					
121 086	0000 137	0 3510	2035	0010029	0000	150	133	554				047		
121 005	0010 137	4 3537	2654	0015016	0016	5 150	139	565				0		
OBS	00100 137	40 3536	9 2654			150	39	565				039		
STD	0020 137	4 3537	2655	0015023	0031	150	41	554						
OBS	00200 137	40 3537	2 2655			150	041	554				045		
OBS	00250 137	40 3537	4 2655			150	042							
STO	0030 137	4 3538	2655	0015029	0046	5 150	043	554						
OBS	00300 137	40 3537	5 2655			150	043	554				040		
OBS	00400 137	00 3536	7 2655	0014003	0070	100	045	547				040		
STU	0050 137	00 3537	2000	0014792	0076	150	045 145	552				033		
	00500 137	1 3537	2657	0014957	0113	3 150	046	536				022		
085	00750 136	10 3536	7 2657	0011101	0-1	150	046	536				036		
STO	0100 121	0 3541	2691	0011801	014	7 15	000	536						
OBS	01000 121	00 3541	2 2691			15	000	536				025		
STO	0125 107	3 3531	2708	0010164	0174	4 14	955	394						
STD	0150 097	0 3522	2720	0009141	0198	8 14	920	308						
OBS	01500 097	00 3522	2 2720	0008005	0.21.5	144	920	308						
STD	0200 081	0 3507	2124	0000805	024	144	007	302						
OBS	02000 087	0 3505	2727	0007594	0284	4 14	855	327						
085	0250 076	0 3502	2 2737	0001001	0-0	14	855	327						
STD	0300 060	0 3500	2757	0005650	031	7 14	800							
OBS	03000 060	03 3500	2 2757			14	800							
OBS	03500 056	00 3496	8 2760			14	792							
STD	0400 052	2 3496	2764	0005102	037	1 14	784							
OBS	04000 052	20 3496	2 2764			14	784							
085	04500 050	20 3495	5 2766			14	784							
STD	0500 049	6 3500	2770	0004647	0420	0 14	791							
OBS	05000 049	00 3499	7 2770	0004541	0464	6 14	791							
STU	0600 04:	30 3490	7 7772	0004941	0400	14	789							
005 STD	00000 04	1 3496	2773	0004481	051	1 14	801							
510	0800 041	2 3497	2775	0004439	055	6 14	814							
OBS	08000 04	20 3496	5 2775			14	814							
STD	0900 042	7 3497	2775	0004471	. 060	0 14	828							
STD	1000 04	0 3497	2776	0004476	064	5 14	842							
OBS	10000 04	00 3496	7 2776		<u> </u>	14	842							
STD	1100 040	9 3497	2777	0004436	068	9 14	854							
STD	1200 040	00 349/	2118	0004416	013	4 14 14	967							
OBS	12000 040	100 3496	2770	0004606	077	8 14	880							
510	1400 03	15 3407	2780	0004406	0.82	2 14	894							
510	1500 03	30 3497	2780	0004427	086	6 14	909							
OBS	15000 03	300 3496	7 2780		_	14	909							

REFERENCE					MARSDEN	STATION	TIME		ORIGIN	ATC P'S	DERTH Y	AAX -	4. A. 25	
CTRr ID.	CODE	LATITU	DE LO	NGITUDE BE	SQUARE	IG M	11	YE A P	CRUISE S	TATION	10 5	EPTH R	SERVATI NO THER -	· · · · ·
CODE NO.			1 10	1 10 =	10" 1"	NO DAY	HP 10		NC N	U %*88P	BOALC W S.+	VIPL'S	NGT PLATINA TOP: A ANY	
31802	9 EV	3828	15N 07	72011W	116 82	12 19	157 1	967	01	7	2743	15 09	1. XO	0017
					WAT	ER	AIND	SARO	AIR TEN	AP 10	NC.	SPECIAL		
					COLOR	TRANS DI	R OR	METER	R DRY	WET Cho	EDEPTHS OB	SERV ATIONS		
					DI	CD 3	10P2E	2.2.4	150	1.20 7				
		T			01	50 5	0 512	210	150	134 1	22			
	MESSENGE TIME	CAST	CARD	DEPTH IMI	T °C	s • .	SIGM	A - 1	SPECIFIC LOLU		SOUND	0 a mili	PO4-P TOTALLY NOI-N ON	
	H.P. 1.10	I	TTPL						ANUWA, CHI	× 10 ²	VELOCIT	· · · ·	sand agent up of CR	• va -
							,							* + +
			STD	0000	1160	3463	263	39	001641	7 0000	1495	6 606		
	15	7	08s	00000	11600	3462	7 263	99			1495	6 606	034	
			STD	0010	1229	3488	264	+6	001585	1 0016	1498	5 611		
			OBS	00100	12290	3487	7 264	•6			1498	5 611	041	
			STD	0020	1229	3488	264	+6	001583	9 0032	2 1498	6 598		
			085	00200	12290	3488	2 264	+6			1498	6 598	033	
			085	00250	12470	3494	6 264	• 7			1499	4		
			510	0030	1271	3503	264	•9	001558	5 0048	1500	4 582		
			005	00300	12710	3502	7 264	+9			1500	4 582	034	
			005	00400	13200	3510	2 200	0	001/01	0.070	1502	4 564	028	
			086	00500	13290	3527	200	- 7	001491	8 00 18	1503	0 564		
			570	0075	1300	3555	200	13	001266	5 0113	1503	9 4 29	006	
			085	00750	13000	3554	7 268	33	001244	J 0114	1502	0 427 9 420	0.03	
			STD	0100	1255	3555	269	, ) ) 2	001165	3 0143	1501	7 401	005	
			085	01000	12550	3554	7 269	2	001109	5 0.4.	1501	7 401	0.00	
			STD	0125	1177	3543	269	99	001112	7 0171	1499	3 364	000	
			STD	0150	1100	3534	270	)6	001049	4 0198	1496	9 337		
			085	01500	11000	3533	7 270	)6			1496	9 337		
			STD	0200	0950	3519	272	20	000918	1 0247	1492	1 314		
			OBS	02000	09500	3518	7 272	20			1492	1 314		
			STD	0250	0840	3509	273	0	000829	5 0291	1488	7 323		
			OBS	02500	08400	3508	7 273	80			1488	7 323		
			STD	0300	0750	3503	273	0	0007500	0 0330	1486	0		
			085	03000	07500	3502	7 273	99			1486	0		
			085	03500	06150	3497	7 275	54			1481	4		
			STD	0400	0552	3499	276	52	0005294	4 0394	1479	7		
			085	04000	05520	3498	6 276	2			1479	7		
			085	04500	04850	3494	2 216	o /			1477	1		
			SIU	0500	0480	3497	276	.4	000467	1 0444	1478	4		
			005 CTD	05000	04600	3490	י 210 דרכ	12	0004400	0.460	1478	4		
			085	06000	04550	3494	וז <i>ב</i> רר ק	2	0004490	0.49(	1479	0		
			STD	0700	0442	3498	· 217	5	000434	5 0534	1480	1		
			STD	0800	0430	3498	277	6	0004289	9 0577	1481	à		
			085	08000	04300	3498	2 277	6	000.20	/ 0/11	1481	ă.		
			STD	0900	0421	3499	277	8	0004220	0620	1482	6		
			STD	1000	0412	3499	277	9	000419	3 0662	1483	9		
			08S	10000	04120	3499.	2 277	9			1483	9		
			STD	1100	0403	3499	278	0	000419	1 0704	1485	2		
			STD	1200	0395	3499	278	0	0004213	3 0746	1486	5		
			08s	12000	03950	3498	5 278	0			1486	5		
			STD	1300	0388	3499	278	31	000421	5 0788	1487	9		
			STD	1400	0383	3499	278	12	0004232	2 0830	1489	4		
			STD	1500	0378	3499	278	2	0004254	4 0873	1490	8		
			OBS	15000	03780	3498	7 278	12			1490	8		

REFERENCE	SHIP	LATIT	UDE	LON	GITUDE	M AR SQU	SDEN ARE	STA	GMT	AM E	YEA	R	CRUISE	PIGIN	ATOR" TATIO	N	DEP		MAX. DEPTH OF	DBS	WAVE	DNS	W	EA -	CLOU	23			NODC	
CODE NO.	COD	· ·	1/10		* "1∕10 ² ≛	10°	1.	MO	DAY H	R.1/10			NO,	ħ	U M BE	R	8011	IOM S	MPL*S	DIA	H GT PE	\$ 587		) DE	TYPE	LM.T			NUMBE	1
31802	9 E.V	382	90N	07	3000W	116	83	12	19	226	196	57		01	8		228	86	15				$\rightarrow$	0		ļ			001	8
							W 4 1	ER	V	IND	8	ARD	. ^	AST RI	лР. °С	- VIS.	NO	o.	SPEC	IAL										
							COLOR	TRANS (m.)	DIP.	OR		ETER mbs1	: 0	ULB	W E1 BUL		DEPT	1HS 0	BSER∨	A TION S										
							DT	50	20	C 1 7		7.10	1	1.1.		7	2	2												
			т				01	30	20	512		1	, 1	4 .4	T		121				1							T		
	- MESSEI TIM	E OF NO	CAL	RO I	DEPTH (m)	T	"C	5	•4.	51G	M A +	т	SPECIFIC ANOM	VOLU ALY-XI	ME 07	Z A D		200N	D	0 2 m1/1	PO4	-P	1014	L = P	ND 2-	N	CHLA	5104-	-5i pi	4
	HR 1	/10	1					-				_			-	X 102	-								Py			- PR -		
						1				1				7	_			140		( 3.0				}						
			S	TO	0000	1	059	33	79	25	92		002	081	(	0000		149	10	628							050			
	2	26	OB	5	00000	1	125	20	181	22	14		0.01	887		0020		149	10	619							000			
				10	0010	1	1350	34	237	20	.14		001	001	4	0020		140	4 ~ 4	619							043			
			00	5 T D	00100	1	190	34	53	26	26		001	773	8	0038		149	59 59	614							140			
			08	۰ <i>۲</i>	00200	1	1900	34	527	26	26		501		-			149	59	614							034			
			ÖB	s	00250	1	2110	34	630	26	30							149	78											
			5	TD	0030	1	229	34	71	26	32		001	715	1	0056		1498	36	614										
			ОB	S	00300	1	2290	34	707	26	32							149	86	614							031			
			ØВ	S	00400	1	3050	34	928	2 £	35							150	16	587							041			
			S	TD	0050	1	270	34	96	26	44		001	613	Z	0089		150	06	586										
			ОB	5	00500	1	2700	34	957	26	644							150	06	586							037			
			5	TD	0075	1	190	34	93	26	57		001	493	3	0128		149	83	460										
			ØВ	S	00750	1	1900	34	927	26	57				,	a1 ( 7		149	83	460							011			
			S	TD	0100	1	330	35	63	26	84		001	241	6	0162		120	43	416							003			
			OB	S	01000	1	3300	1 30	10 12	26	84		0.07	222	2	0103		150	45	410							005			
			S	TU	0120	1	207	30	37	20	286		001	194	6	0193	) L	150	2 I 0 2	390										
				10	0150	1	1950	- 37 - 35	372	20	201		001	144	0	066.		150	02	390										
			00	⊃ <b>⊤</b> ∩	0200	1	105	35	36	27	707		001	051	8	0279	,	149	79	349										
			0.8	s	02000	1	1050	35	362	27	107		0.01	· · ·	0	0011		149	79	349										
			Š	TD	0250	c	985	35	23	27	717		000	956	8	0330	)	149	42	327										
			0.B	5	02500	Ċ	9850	35	227	21	717							149	42	327										
			5	TD	0300	c	840	35	08	27	730		000	842	7	0375		148	95											
			08	s	03000	C	8400	35	082	21	730							148	95											
			ОB	5	03500	C	7000	34	977	27	742							148	48											
			S	ТD	0400	C	610	34	92	27	750		000	654	9	0450	)	148	19											
			ОB	S	04000	C	6100	34	917	27	750							148	19											
			ОB	5	04500	C	5650	34	959	2	759							148	10											
			S	ТD	0500	C	509	34	95	2	164		000	517	6	0>08	5	147	95											
			OB	5	05000	C	5090	34	947	27	164				E	0557	,	147	95 04											
			S	TD	0600	C	470	34	148	2	111		000	409	5	0251		141	70											
			OB	S	26000		14700 17.52	- 34	100	2	772		000	41.7	7	0603	,	147	90 06											
			5	TD	0100	~	1473	- 24 20	00	2	775		000	441	á	0602		148	17											
			0	i U	0800		;44∪ \ <b>66</b> 00	54	084	2	775		000	+ 20	9	0041		148	17											
			0 0	TD	0900	C	434	3,6	50 <b>0</b>	2	778		000	427	2	0690	)	148	32											
			2	TD	1000	Ċ	425	35	02	2	779		000	417	7	0732	2	148	45											
			OB	s	10000	Č	4250	35	5016	2	779							148	45											
			S	TD	1100	Ċ	411	35	500	2.	780		000	421	7	0774	+	148	55											
			Š	ΤO	1200	C	400	34	99	2.	7 <b>8</b> 0		000	426	9	0816	Ś	148	67											
			ОB	5	12000	C	4000	34	987	2.	780							148	67											
			5	TO	1300	C	392	34	99	2	781		000	425	9	0859	9	148	81											
			S	τD	1400	C	386	34	•99	2	781		000	427	1	0901		148	95											
			5	TD	1500	C	384	34	+99	2	781		000	433	3	094	5	149	11											
			OF	35	15000	C	3840	1 34	+987	2.	781							149	11											

REFERENCE CODE NO. 31802	SHIP CODE 9 EV	LATITUU 3858	DE 1/10 O <b>N</b>	LONGITUDE 1/10 073000W	2 10°	ISDEN JARE	STA MO 12	TION T IGMT	IME IR 1 10 025	YEAR 1967	CRUI		STAT NUM	R'S ION BEP		DEPTH TO BOTTOM	MA DEPT OF S'MP	ск. тн F PU*S 1	36	WAY SERVA	TIONS	[ A ]	WEA- THEP CICCIE		ES			N N MAN 001	n LP
						COLOR CODE	TRANS Imi	DIR	VIND SPEED OR FORCE	BARO METE (mbs	.R 1	AIR TE DRY BULB	MP. W	°C ET (	VIS CODE	NO. OBS. DEPTHS	0856	PECIA RVA1	10145										
						DT	SD	27	514	23	7	106	0	94	8	80													
	MESSENGR TIME HR 1/10	CAST NO	C A R D TYPE	DEPTH Im)		r °c	s	•	SIG/	T - A N	SPECI ANO	FIC VOLU	J M E 10"	₹ 2 DYN x	A D. 1. M. 10 ³	SO VEL	UND OCITY	c	ç mi		0.4→P - ±1 1	101 - J	≜ L = P 0 ¹	NO2= 29 - 01	N C	HL A	\$1 -74- 202 + 01	s T	H
																						-					+	1	
			ST	0 0000	C	913	32	84	25	43	00	2556	55	00	00	14	844		574										
	02	5	085	00000	> 0	9130	32	842	25	43						14	844	6	574						C	)57			
			ST	0 0010		0910 0910	- 32	84	25	44	00	2553	90	00	26	14	845		568										
			085	n 00100	5 (	00100	32	843	25	44	0.0	26.20		~ ~ ~	6.1	14	845								C	)53			
			080	0020		0110	22	.00	22	40	00	2028	50	00	21	14	047		202										
			005	00200		09110	22	000	25	40						14	041		202						C	) 74			
			005 6 T	00200		1923	32	91	25	45	0.0	2526	7	00	76	14	854	. ,	5.50										
			OBS	00300		0230	32	907	25	47	00	2720	, ,	00	10	14	854		559							147			
			085	00400		9600	33	126	25	5.8						14	872		548						~	138			
			ST	0 0050	i	081	33	86	25	94	00	2083	38	01	22	14	927		559							040			
			085	00500	o 1	0810	33	857	25	94	20			5-		14	927		559						(	126			
			ST	D 0075		202	34	62	26	31	00	1743	30	01	70	14	983		527										
			OBS	00750		2020	34	617	26	31						14	983		527						C	30			

PEFEREN	ICE	SHIP					MAR	SDEN	STA	TION	TIME			ORIGIN	A TO R'S		DEPTH	DEPT	х		WAV	E		WEA-	CLOUD			NODC	
CTRY	ID.	CODE	LATITU	DE	LONGIT	DE 53	sar Z	ARE		GMT	)	YEAR	CRUISE	s s	TATIO	4	TO	OF		OBS	SERVA	TIONS		THER	CODE		5	TATION LUZIBER	
	NO.			1/10		1/10 -	10*	1.	MO	DAY	HR,1/10		NO.		UMBE	×		S'MP	L*S ·	DIR	HGTI	EF S	EA		TYPE AN	T			
3180	029	Εv	3929	5N	0725	95W	116	92	12	20	057	1967		02	0		0064	0	0	16	1	2		ХO				0020	
								WA	TER		WIND	BAR	o-	AIR TEA	лР. °С		NO.		PECIAI	1									
								COLOR	TRAN (m)	S. DIR.	SPEE OR FOR	D MET	ER 11)	DRY BULB	₩ E T BULE	COD	DEPTHS	OBSER	RVATI	ONS									
								DT	s٥	33	51	0 24	0 0	)94	08	3 8	07												
		MESSENG TIME	CAST	C A I T Y	RD D	EPTH (m)	1	*с		s •4.	\$10	5MA-I	SPECIFI	C VOLU	ме 0 ⁷	- ≦∆D DYN.₩ × 10 ³	N. SO VEL	UND. OCITY	02	րանի	PC PB	14-P - 01/1	10	)TAL—₽ g = o!/I	- NO2=Ν μg + αt/l	CHLA	51 04-51 199 - 01	рн	s c c
	ł				-				+		+								+	-	-		+					+	-
	I			s	TD	0000	Ċ	888	32	257	2	526	002	2719	8 '	0000	) 14	831	6	69			1	1					
		05	7	ОB	5	00000	0	8880	32	2572	2	526					14	831	6	69						142			
				S	TD	0010	C	889	3	258	2	526	002	2720	8	0027	14	833	- 6	66									
				ОB	5	00100	0	8890	32	2575	2	526					14	833	6	66						195			
				5	TÐ	0020	C	889	3	258	2	526	002	2721	0	0054	14	835	6	72									
				OB	S	00200	0 0	8890	32	2577	2	526					14	835	6	72						124			
				ОB	S	00250		8890	3.	2582	2	527					14	836											
				S	ТD	0030	9	889	3.	259	2	527	002	2711	5	0082	2 14	837	6	63									
				OB	5	00300	) (	8890	3	2592	2	527					14	+837	6	63						173			
				ОB	S	00400	) (	8900	3	2718	2	537					14	840	6	49						087			
				S	TO	0050	(	910	3	294	2	551	002	2491	0	0134	+ 14	+852	6	45									
				ОB	S	00500	) (	9100	) 3	2936	, 2	551					14	+852	6	45						061			

CTRY ID	SHIP	LATITU			SQL 10*	SDEN ARE	ST.A	TION (GMT	TIME 1	YE	AR	CRUISE	RIGINAT STA NU	OR'S TION MBER		DEPTI TO BOTTO	H (	MAX DEPTH OF S'MPL'S	OBS	WAVE EPVATION	S SEA	WEA- THER CODE		-	S	NODC TATION UMBER
318029	EV	4000	ON 0	73000W	152	03	12	20	089	19	67		021			005	1	00	16	1 2		хo				0021
						WA	TER		WIND		BARO	A	IR TEANP	°C		NO.	1	5.05/								
						COLOR	TRAN Im1	S. DIR	. SPE 0 FOR	ED I. f	METE (mbs)	R D 1 80	JLB E	N ET IULB	cop	OBS. DEPTH	0 2	DBSERVA	TIONS							
						01	st	34	51	9	244	+ 08	33 (	77	8	06										
	MESSENGI TIML HR 1/10	CAST NO	CARD TYPE	DEPTH IN	i T	'C		5 •4.	S	GMA-	-1	SPECIFIC ANOMA	VOLUME	N D	∆ D YN, M x 10 ³	S V I	OUN	ID Sity	02 ml/l	PO_4=P yg = a1/1	101	TAL-P • 01/1	NÖ2-N 49 - al/l	CHL-A	SI O 4—S 99 - a1/	рн
			STD	0000	0	829	32	36	2	518		002	7949	0	000	1	48	06								
	08	9	08 S	0000	0 0	8290	32	357	2	518						1	48(	06						128		
			STD	0010	0	829	32	36	2	518		002	7927	0	028	1	48(	08	675							
			OBS	0010	0 0	8290	- 32	2362	2 2	518						1	48	08	675					146		
			STD	0020	0	839	- 32	246	2	525		002	7340	0	056	1	48	14	675							
			OBS	0020	0 0	8390	32	2462	2 2	525						1	48	14						181		
			OBS	0025	0 C	8410	32	2496	> 2	527						1	48	16								
			STD	0030	0	842	32	252	2	529	•	0026	6960	0	083	1	48	18	675							
			OBS	0030	0 0	8420	32	2521	2	529	)					1	48	18	675					146		
			OBS	0040	0 0	8780	32	2638	3 2	533						1	48	35	652					111		

REFE	RENCE	SHIP	LATITU	101	LONGITUDE	PIFT DCTP	MARS	DEN ARE	S⊺ ▲	TION IG MT	TIME 1	YEAR	CRUISE	ORIGIN	ATOP'S		DEPTH TO	DEPTH	D85	WAN ERVA	VE TIDNS	WEA THE	CLOUD		s	NODC	
CODE	NO.	CODE	•	1/10	* *1/10	Ē	10*	1.	MO	DAY	HR,1/10		NO.	N	UMBER		8D TTOM	S'MPL'S	DIR	HGT	2ER 58	A COD	E TYPE A A	1	N	UMBER	
31	8029	Εv	4035	0 N	073000W		152	03	12	20	126	1967		02	2		0022	00	12	0	2	X 1				0022	
							[	WA	TER		WIND	6480		AIR TEN	A.P. °C		NO.	505/									
								COLDR	TRAN (m)	S DIR	SPLET OR FORC	M ETE	R } B	DRY IULB	W ET BULB	CODE	OBS. DEPTHS	OBSERV	A TION S								
							ſ	DT	SC	30	510	) 17	9 0	78	061	8	03										
		MESSENIG TIME MR 1110	CAST NO	САР Түр	D DEPTH	(m )	T	°C		s •4.	SIG	MA-T	SPECIFIC	C VOLUA	ve X	∆ D YN, M x 10 ³	SOL VELC	DUD 1100	Og mill	P( ولا	D <b>⊿</b> —P - a! !	fotal- vg-atri	NO2=N µg + of 1	CHL-A	SIDa⊷S⊢ µg∝oti	рН	500
		12	6	5 089	TO 000	0 00	00	620 6200	31 31	55 547	24	+83 +83	003	131;	2 0	000	14 14	713 713	712 712					329			
				OB:	TD 001 5 001	00	00	620 6200 675	31	.59 .587 .74	24	+86 +86	003	102	20	031	14	715 715 741	708 708					288			
				OB	s 002	00	04	6 <b>75</b> 0	31	742	24	91	002		2 0	002	14	741	698					275			

REF	ERENCE	SHIP	LATITU	DE	LON	GITUDE	RIFT DCTR	MARS SQUA	DEN ARE	51 /	IG MT	TIME 1	YEAP		ORIGIN	ATOP	1°5 2 N	DEPTH TO	DEPTH	OB	WA' SERVA	TIONS	W E	A - EP	CLOUD	ļ		NODC	
COD	NO.	CODE	•	1.10		° '1.:10	0 2	10"	1.	ANO.	DAY	HR,1/10		1	NO.	NUM	BER	BOTIOM	S'MPL'	S DIR	HGT	PER SE	CO	DE	TYPE AMT	1		NUMBER	
3	18029	Εv	4029	6N	073	3296W		152	03	12	20	147	196	7	02	3		0020	00				x	1				0023	
								ſ	W A1	EP		WIND	BA	RO+	AIR TE	WP 1	C VIE	NO.	5.05	CIAL	1								
									COLOP	TRAN Imf	S DIR	SPEE OP FOR	D ME (m	TER 5s1	DRY BULB	8U	T COD	DEPTHS	OBSERV	A TION S									
								[	DT	st	23	50	8 3	01	067	05	0 8	02											
		MESSENG TIME H.R. 1. 10	CAST NO	C A P T Y P	PD PE	DEPTH	(m)	Т	°C		s •	SIC	GMA-T	SPI A	ECIFIC VOLUNOMALT-X	∧A € 0 ⁷	≦ △ D DYN, M ¥ 10 ³	SOL	JND DCITY	Og ml/	Р(   Р9	04-P - 01 1	FOTAL- US = 61		NÖ2~N vg + al I	CHL-A	\$1.0.4- 29 + 0	Si pH	SOD
		1		S	TD	000	0	0.	580	3	69	2	486	0	03099	0	0000	14	739	678									
		14	7	OB.	S	000	0.0	0 (	6800	3	1686	2	486					14	739	678						347			
				S	тD	001	0	0	772	32	200	2	498	0	02987	1	0030	14	781	669									
				OB:	S	001	00	0	7720	3	1996	2	498					14	781	669						354			

REFER CTAY CODE	ID, NO.	SHIP CODE	LA TITU	DE 1, 10	LONGITUI	DE 1 10	DRIFT INDCTP	MARS SQUA	DEN ARE	AT2	ION I	1 MAE	YEAR		- TRIGIN	ATOR [®] STATIC NUMB	5 N	180	TO M	MAX DEPTH OF S'MFL'S	08	WAVE SERVATION	A EA THEF	5 5 <u>1+1   1</u>			ti T	4. - 9+2	
31	8029	Εv	3959	5 N	07400	w		116	94	12	20	185	1967		02	4		00	020	00	36	0 2	×1	+ +	+		•	024	
								ļ	ψ, Δ	TER		A IN D	BAR	>-	AIR TE	ANP C		, •	NC	5057	1A.(								
									COLOR	TRANS	DIR.	SPEEC OR FORC	2 A1 ET E E Imba	R 5	DRY BULB	W E BUL	8	DE DE	DBS. EPTHS	OBSERV	ATIONS								
									DT	SD	00	500	29	5	089	06	78	(	02										
		MESSENGR TIME HR 1, 10	CAST	C A S TYP	E DEI	21H (r	m )	T	°C	5	- 14	SIG	M A = T	SPEC) ANC	NC VOLU MALT-N	J M € 10 1	∑ ∆ I DYN, x 10	D M 3	SDU VELO	ND CITY	0 ; ml	PO4=P	101A ( -) 93 - 61	р NC (ч) ид - 61	ч сні -		4- 44- 44-01	рн —	
		18	5	S OB S	TD 0 S 0 TD 0	000	0 0 0	00	672 672 ( 682	31 31 31	02 017 56	24 24 24	35 35 76	00	3589 3 <b>19</b> 9	8	000	0 4	147 147 147	727 72 <b>7</b> 740	718 718 702				52	2			
				S OB	TD C S 0	010	) ) ()	06	682 6820	31 31	56 557	24 24	76	00	3199	1	003	4	147	740	702 702				32	8			

REFE	RENCE	SHIP				- 8	MAPS	DEN	STA	TIDN T	1 1 1 2			ORIGINAT	OR'S	0	DEPTH	DUNTH		A A	4 E		A E A =	CLCLC				
CTRY	ID.	CODE	LATITU	DE	LONGITUDE	a g	SQU A	A RE		GMT		YEAP	CRUISE	ST A	TIDN		10	OF	OBS	ERVA	TION	s ,	THER	CODE		57	ATIN	
CODE	NO.			1, 10	1.10	-	10"	1*	MO	DAY	HR.1/10		NO.	NU	MBER		TIOM	S'M PL'S	G19	HGT	PER	SEA		TYPE A V	Ϋ́.	N-	O M BER	
31	8029	Εv	3930	ON	074000W		116	94	12	20	211	1967		025		00	018	00	18	0	2		X1			(	0025	
								Vr A T	ξR		WIND	BAR		A IR TEMP	°C		NO.	(1100										
							4	COLO# CODE	TEANS Imi	DIR.	SPEED OR FORCE	M ETE (mbs	R	DPY ULB	WET CO BULB		OBS EPTHS	OBSERVIA	TIONS									
								ÐŤ	SD	05	S02	23	0 0	94	078 7	(	02											
		MESSENG TIANÉ HIRI U TI	CAST	C A R ( T Y P E	D DEPTH In	n)	Ţ	°C	5	•4.	\$IG/	M A – T	SPECIFI	NOLUMI Aut-x10 ⁷	₹ ∆ DYN. x 10	D M 3	SOUI VELO	ND CITY	0 g m'	Pi v g	0 <b>4-</b> P - o1	101	A 1 = P + 07 I	NČy=ti vg + al l	CHL-A	<ol> <li>1 = 4+5</li> <li>yg + 54</li> </ol>	£H	5
																							1					

HR 1, 10 NO.	TYPE	DEPTH (m)	5.1	5 *4	SIG M A - T	ANOMALT-2107	DYN, M X 10 ³	VELOCITY	C 2 m'	2 + 01 I	49 + 07 I	+g = a1 )	CHL - A	µg = a1	рH	
	STD	0000	0700	3161	2477	0031829	0000	14746	713					i		
211	085 570	00000	07000	31607	2477	0031629	0032	14746	713				333			
	OBS	00100	06950	31627	2480	0001022	0092	14746	725				369			

DEEEDE	NCE												1	-	0.810	IN A TO	Dir.	1		N	АX						C1.01.0				
* LT CRC	n Ct	SHIP	LATIT	104	LONG	ituos	11 1	SOU	APE	20	IGMT	11ME	YEAD	-		- INA IC		_	DEPTH	DEP	РТН	OB	ERVA T	IDNS.	1	C 0	CODES		c	NEEC	
CODE	ID.	CDDE		506	10/110		S G							C	RUISE.	STAT	1DN	- 1	BOTTON	0.0	25				- 00	DE		-	i. i	0.1812	
	NO.			1/10		.1	10 -	10*	1-	MO	DAY	HR,1/10		-	14U.	140 /	. DÇ H	-		15 M	PL-5	D 18	HGT PE	N SE	A	-	TYPE A A*		+		
318	029	Eν	390	15N	074	01	W	116	94	12	20	237	196	7	0	26			0034	0	00	18	0 2		X	1				0026	
									W A	TER		WIND	8.4	RO-	AIR	TEMP	*C		ND.		SPECT	A :									
									CDLDP CODE	18,4 N (m)	S D1R	SPEE OR FORC	D ME	TER 155)	DRY BULB	81	ULB C	1001	DBS DEPTHS	OBS	ERVAT	IDNS									
									DT	St	0 05	50:	3 2	98	094	0	78	8	05												
		MESSENGI TIME	CAST NO.	C A TY	RD PE	DEPT	H (m)	T	٦		s•	SIC	SM A = T	s	PECIFIC VO ANOMALI	UUME 	₹ Ľ DYN X	10 ³	SD VEL	UND DCITY	, 0	ig mi l	PO.	- P	101AL 29 - 0	- *	NC2+N 23 * 01 1		1   SIO4-Si   V9 - 01 1	p∺	
				5	TD	0.0	00	0	889	3	244	2	516		00.281	79	00	0.0	14	830		670								+	
		23	7	0 B	S	00	000	0	8890	3	2442	2	516		00281	95	00	28	14	830		670						391			
				OB	S	00	100	0	8890	) 3	2442	2	516 518		00280	34	0.Ū	56	14	832	2 (	674						351			
				OB	S	00	200	Ő	8890	3	2466	2	518		00200		00	50	14	833	3 (	674						404			
				S	TD	00	30	0	889	3	250	2	520		00277	83	00	84	14	836	5 1	670									
				ОB	S	00	300	0	8890	3.	250.	2	520						14	836	5 (	670						338			

REFEREI	NCE	SHIP	LATITU	DE	LONGITUDE	CTP CTP	MARS	DEN	STA	TION	TIME	YEAR	-	ORIGIN	A TOR'S		DEPTH	DEPTH	0	W A BSERV		is	WEA-	CLOUD		Τ.	NODC	
CODE	NG.	CODE		1/10	1/10	N D	10*	1.	MO	DAY	HR.1/10		NO.	N N	UMBER		BDITOM	OF S'MPL'S	DIR	HG	PER	5EA	CODE	TYPE AM		i	NUMBER	
318	029	ΕV	3829	5N	074464W		116	84	12	21	061	1967		021	8		0023	00	18	0	2		ХO				0027	
							{	WA	TER		WIND	BAR	2- 1	AIR TEA	AP °C	1	ND.		-	<u>۲</u>								
								COLOR	1 KA N (m)	5. DiR	SPEED OR FORCI	M ETE (mbs	R (	ULB	WET BULB	COD	OBS. DEPTHS	OBSERV	ATION	5								
							Ī	DT	St	00	500	30	5 0	94	083	6	03			1								
		MESSENIU TIME H.R.: 1.130	AST NO.	C A R TYP	D DEPTH	(m.)	т	°C		5 * 5.	SIG	M A - T	SPECIFIC	VOLU ALY-EII	ME C	E △ D YN, M X 10 ³	SOL VELC	лиа Осяти	O ₂ ml	1	04=P 9 + 01/	ד ו ע ו	0 F A L — P g = a1/1	NO2=N µg = a1/1	OR	51 04-5 29 - 01/	pH	
				S	TD 000	0	00	682	30	)56	23	97	003	946	3 0	0000	14	725	706	,								1
		0.6	1	OB	s 000	00	0.0	5820	30	)557	23	97					14	725	706	,					472			
				S	TD 001	0	01	862	- 32	233	25	11	002	867	2 0	034	14	820	683	3								
				OB	s 001	00	0.	8620	- 32	2325	25	11					14	820	683	3					360			
				S	TD 002	0	0	866	37	235	25	12	002	856	8 (	063	14	823	638	3								
				OB	s 002	00	0	8660	32	2349	25	12					14	823	638	3					378			

REFER	ENCE	SHIP		0.0	LONGIU	5		SDEN	51	ATION	TIM	-	YEAD		ORIGIN	ATO9	'5	_	DEPTH	DEPTH	1 08		VE A TION		WEA-	CLOI	00			NDOC	
CODE	NO.	CODE	- LAINU	1.10	LONGITO .	1/10	Z 10"	1 1*	MO	DAY	HR 1	/10	ICAK.	CRUIS	E S	TATIC UMB	D N BER		BOTTOM	OF S'MPL	S DIP	HG	PER	SEA	CODE	TYPE	A AST			NUMBER	
318	3029	Εv	3800	N	07430	5W	116	84	12	21	11	6 ]	1967		03	)		1	0034	00		T			X 1		_			0028	
								WA	TER		WIN	D	8480	<u>.</u>	AIR TEA	AP "	c		NO,		-										
								COLDE	TRAP Im	15 0	IR.	OPCE	M ETI (mbs	R 1	DRY BULB	W E B U I	IT C	ODE	OBS. DEPTHS	OBSER	ATIONS										
								DT	S	D 1	2 5	07	29	5	117	10	00	7	05												
		MESSENC TIME HR 1/1	CAST	C A T Y	PE DE	7⊢im)		°C		s•4	•	SIGM	^ - T	SPECIF	IC VOLU	м.е. 12	₹ △ DYN. X 1	03	SOL VELO	UND DCITY	02 m1/1		PO4=P g = 01/l	01 14	TA L - P	NO2- µg - at	<b>N</b> 21	CHL-A	\$1 O ₄ - \$ vg - at/	рН	S C C
				s	10 0	000	0	952	3.	269		252	25	00	2730	7	000	0	14	857	_	ļ									-
		11	6	ОВ	S 0	0000	) (	952(	3	268	7	252	25						14	857											
				S	TD 0	010	C	952	3.	269		252	25	00	2732	5	002	27	14	858											
				08	S C	010(	) (	1952(	3	268	7	252	25						14	858											
				S	10 0	020	0	1955	3.	271		252	26	00	2719	7	009	55	14	861											
				08	S 0	0200	) (	1955(	3	271	3	252	26						14	861											
				ОB	S 0	0250	) (	9580	3.	272	7	252	27						14	863											
				S	TO 0	030	(	961	3	274		252	28	00	2708	>	008	32	14	866											
				ОB	S 0	0300	) (	9610	3	274	3	252	28						14	866											

REFE	RENCE	SHIP	LATITU	OE	LONGITUDE	MAP SQU	SDEN	STA	TION IGMT	T I AA E J	YEAR	CRUIS		ATOR'S	N	DEPTH TD	DEPT OF	н ов	W A BSERV	A VE / A TIONS	S T	HER	CLOUD			NODC STATION	Ĺ
CODE	NO.			1/10	1/10	10*	1.	MD	DAY	HR 1/10		NO.	'	VU MBE	R	101107	S'MP	S DIR	HG	T PER S	EA	001	TYPE A M	T			-
31	8029	EV	3759	15N	073585W	116	73	12	21	143	1967		03	1		0139	0	1 27	0	2		<b>X</b> 1				0029	
							W A1	ER		WIND	BAR	o	AIR TE	MP °C		NO.	5	EC IA I	]								
							COLOR CODE	TRANS tml	DIR	- OR FORC	ο MET (mb)	ER Ll (	DRY BUL8	W ET BULE	cob	E DEPTH	OBSER	VATIONS									
							DT	SD	09	\$ 504	+ 30	1 1	. 2 2	10	0 8	10											
		ANESSENG TIME	CAST	C A R TYP	D QEPTH (m)	1	'C	s	• 4.	SIG	MA-T	SPECIFI	C VOLU	AA E 0 ⁷	₹ △ D DYN N X 10 ³	SC VEI	UND OCITY	D ₂ ml/	а "	PO4-P 4 g - a1/1	ATOTA - gu	L - P 01/1	NO2-N 29 - 01/1	CML-A	SI O4- 29 - 81	-Sc	500
			1											1					+		1					-	-11
				S	TD 0000	0	953	33	13	2 9	59	002	407	5	0000	14	863	647									
		14	3	OB:	s 00000	0	9530	33	125	25	559					14	+863	647						227			
				5	το 0010	0	959	33	20	2 5	564	002	2362	4 1	0024	14	867	648									
				08	s 00100	0	9590	33	201	. 25	64					14	867	648						122			
				S	TD 0020	0	960	33	24	25	666	002	2339	9 (	0047	14	+870	652									
				OB	s 00200	0	9600	33	236	25	66					14	+870	652						178			
				OB	s 00250	- 0	9640	33	293	2 2 5	570					14	+873										
				5	0030 OT	0	970	33	36	25	574	002	2267	9	0070	+ 14	+87 <b>7</b>	652									
				081	5 00300	0	9700	33	357	25	74					14	+877	652						132			
				06	5 00400	0	.44T0	- 33	44/	25	78					14	+887	629						068			
				5	0050	1	040	- 53	15		243	004	0.96	4 1	0114	· 14	+911	580									
				08	5 00500	1	0400	33	141	25	543	0.01	6.77	-	0.16.0	14	+911	580						031			
				5	10 0075	1	220	- 34	96	20	>>4	001	526	5	0122	14	4443	472						010			
				OB	S 00750	· 1	2200	- 34	451	20	354		74.0		1.05	14	443	472						019			
				5	10 0100 c 01000	1	245	- 35	28	20	74	001	. 540	8 (	0195	10	010	411						007			
				00	5 01000	1	2420	20	204	: 20	174	0.01	24.0			1:	010	411						007			
				OB	s 0125	1	245 2450	35	417	26	584 584	001	. 248	4	J 4 Z 8	19	016										

REFERENCE	(1)0		Т	- F	MARSDEN	STATION TI	ME		OR'S	DEPTH DEPTH	WAVE	W.EA	P1
CTRY ID. CODE NO.	CODE	LATITU	DE LO		SQU ARE	(GMT)	YEAR	CRUISE STA	TION	OF OF OF	18SERVATION	THEF F	CAT N
318029	FV	3758	5N 07	13310W	116 73	12 21 1	66 196	7 032	-	1646 15 3		x 1	0030
1 stbers					( WA)	EP W	IND	AIR TEMP	°C	NO		. 1	0000
					COLOR	TRANS DIR	SPEED MET	TER DRY	VET COD	BALL OBS OBSERVATION	15		
					CODE	Im :	LORCE [mt	SSI BULB B	ULB	1			
					DT	50 10	506 29	98 122	11 8	22			
	MESSENGR TIME C	CAST	CAPD	DEPTH (m)	T °C	1 5 *	SIG M A -T	SPECIFIC VOLUME	S ≙ D DYN M	SOUND	PO4-P TO	TALEP "" - " CH	1 A 4
	HR 1 10	1							x 10 ³	VEDCHT			
								1					
	1		STD	0000	1070	3387	2597	0020470	0000	14915			
	166		085	00000	10700	33867	2597	0017545	0010	14915			
			ORC	00100	1066	2420	2628	0017545	0014	14920			
			005	00100	1182	34237	2620	0017521	0037	14920			
			080	0020	11820	34537	2626	0017921	0057	14966			
			005	00200	12640	34871	2628			14000			
			stn	002.0	1335	3510	2642	0016299	0053	14444			
			080	00300	13350	35097	2642	00102 + 3	00,0	15027			
			OBC	00400	13420	35197	2642			15032			
			570	0050	1360	3525	2648	0015709	00.85	15040			
			OBS	00500	13600	35252	2648	0.912101	0000	15040			
			STD	0075	1369	3541	2658	0014823	0124	15049			
			085	00750	13690	35407	2658	001.015		15049			
			STD	0100	1366	3560	2674	0013407	0159	15054			
			OBS	01000	13660	35602	2674			15054			
			STD	0125	1275	3550	2685	0012445	0191	15027			
			STD	0150	1195	3542	2694	0011616	0221	15003			
			OBS	01500	11950	35417	2694			15003			
			STU	0200	1069	3531	2709	0010300	0276	14965			
			OBS	02000	10690	35306	2700			14965			
			STO	0250	0905	3510	2721	0009228	0325	14911			
			OBS	02500	09050	35097	2721			14911			
			STD	0300	0780	3502	2734	0007972	0368	3 14871			
			085	03000	07800	35022	2734			14871			
			085	03500	06750	34967	2745			14838			
			STU	3400	0601	3499	2756	0005912	0437	14817			
			OBS	04000	06010	34987	2756			14817			
			085	04500	05300	34966	2763		0.07	14796			
			STU	0500	0500	3447	2161	0004926	0442	2 14792			
			OBS	05000	05000	34966	2767	0004562	0530	14792			
			SIU	0600	0485	3501	2112	0004962	20294	14803			
			005	08000	04850	35000	2775	0004317	0593	14805			
			STU	0800	0492	3500	2775	0004317	0626	14800			
			OBC	08000	04280	34997	2779		0020	14812			
			510	0900	0418	3499	2778	0004184	0067	7 14825			
			STD	1000	0410	3498	2778	0004242	0710	14838			
			OBS	10000	04100	34982	2778		0.10	14838			
			STD	1100	0405	3499	2779	0004253	0752	14853			
			STD	1200	0399	3499	2780	0004256	0795	14867			
			085	12000	03990	34987	2780			14867			
			STD	1300	0392	3499	2781	0004259	0037	14881			
			STD	1400	0384	3499	2781	0004253	0880	14894			
			STD	1500	0375	3499	2782	0004223	0922	2 14907			
			085	15000	03750	34986	2782			14907			

REFERENCE SHIP	LATITUDE	10	NGITUDE	M ARSD SQU AI	RE	STATION (GM	TIME	YE	A, R	CRUISE	RIGINA	TOR'S		DEP TO BOTT	TOM	MAX DEPTH OF	OBS	WAVE ERVATIONS	WEA THER COD	- CLOUD CODES		N ST N	ODC ATION DABER	
LODE NO		. 10	1 10	10*	1* N	AO DAY	HR 1/10					UMBER				S-MPL-S	DIR,	HGT PEP 5	A	TTPI AM	1			
318029 EV	38005	N 01	7301 W	116	83 1	2 21	195	19	67		03	3	T-1	250	60	15	36	0 2	X 1			(	0031	
				-	WATE	. K	SPEE	D	BARO MAETER		PY	WET	VIS	NC OB	0. 85	SPEC	IAL JAI							
				0	ODE	tm1 D16	OR FOPO	1	(mbs)	81	LB	BULS	000	DEP	THS	JUSERVA	CDUPI S							
				_	DT	SD 14	+ 500	5	271	1 14	44	128	8	2.	2									
MESSEN	T				- 'I					MORE			ΔD	т.	SOUN	n l		00	10141	10		SID51		1
TIME	NO T NO	TYPE	DEPTH (m)	1	°C	s •	SIC	-MA	-1	ANOM	1.7-110	7 0	YN, AA x 10 ³	•	VELOC	TITY	0.2 mi/l	pg at/l	µg + o1/l	ug = at/l	CHL - A	yg - at l	pн	
HR 1	10 + -													-+-						+				+
		SID	0000	10	75	3418	21	520		001	8264	• o	0.00		149	20	615		1		1			
1 <	95	085	00000	10	750	3417	7 24	520	,	0.71	0 2 0	• •			149	20	615				054			
-		STD	0010	11	80	3463	2	53E	,	001	679	8 0	018		149	65	608							
		085	00100	11	800	3462	7 20	536	<b>,</b>						149	65	608				067			
		STD	0020	12	50	3481	2	636	•	001	678	0 0	034		149	93	630							
		OBS	00200	12	500	3480	7 2	536	0						149	93	630				082			
		085	00250	12	500	3482	4 2	637	7			_			149	94								
		SID	0030	12	54	3483	2	637	7	001	669	7 0	051		149	96	616							
		085	00300	12	540	3483.	2 2	637	r						149	96	616				054			
		OBS	00400	12	100	3492	7 21	641 643	2	0.01	620	2 0	0.94		150	13	590				047			
		SIU	00500	12	900	3499	7 2	642 643	-	001	027	2 0	0.04		150	13	608				045			
		510	0075	13	10	3534	2	665	-	001	417	8 O	122		150	29	581				0.5			
		OBS	00750	13	100	3533	7 2	665	5	004					150	29	581				040			
		STD	0100	13	24	3553	2.	671	,	001	309	0 0	156	,	150	40	449							
		OBS	01000	13	240	3553	2 2	67	7						150	40	449				011			
		STD	0125	12	35	3550	2	693	3	001	168	7 C	187	,	150	13	415							
		STD	0150	11	50	3544	2	704	4	001	064	9 0	215	,	149	87	390							
		OBS	01500	11	500	3543	7 2	704	•						149	87	390							
		STD	0200	0 9	95	3523	2	716	ò	000	958	<b>8</b> C	266	,	149	38	369							
		OBS	02000	0 9	950	3523	22	716	2						149	38	369							
		STO	0250	08	169	3505		124	_	000	903	5 0	1312		148	197	325							
		OBS	02500	08	1090	3504	1 2	120	-	000	707	7 0		,	140	191	529							
		510	03000	07	22	3503	7 2	740	•	000	102	, ,	212		148	40								
		OBS	03500	0.4	500	3498	7 2	75(	• ר						148	128								
		5TD	0400	0.5	78	3498	2	758	à	000	568	9 0	416	,	148	107								
		OBS	04000	05	780	3497	7 2	758	ŝ	000			•••		148	107								
		OBS	04500	05	300	3497	7 2	764	+						147	96								
		STD	0500	05	00	3498	2	768	3	000	484	<b>4</b> C	469	,	147	92								
		OBS	05000	05	000	3497	7 2	768	3						147	92								
		STD	0600	04	59	3499	2	77	3	000	438	9 0	515	5	147	192								
		OBS	06000	04	<b>5</b> 90	3498	72	77	3						147	92								
		STD	0700	04	+41	3499	2	77	5	000	428	1 0	)558	3	148	301								
		STD	0800	04	+25	3499	_ 2	77	7	000	419	1 0	601		148	311								
		OBS	08000	04	250	3498	7 2	77	7	000	. 1 7		64.3	<b>,</b>	148	511								
		510	0900	04	+11	3498	2	770	5	000	417	2 U 7 U	1686		140	34								
		OBC	10000	0.	1000	3407	ے د 7	770	ว	0000	41)		,504	,	149	34								
		STO	1100	0.2	394	3498	2	780	5	000	417	6 (	726	5	146	348								
		510	1200	0	388	3498	2	78	5	000	419	2 0	768	3	148	362								
		OBS	12000	0	3880	3497	7 2	78	С	0					146	362								
		STD	1300	0	182	3498	2	78	1	000	418	3 (	5804	÷	148	376								
		STD	1400	0 3	377	3498	2	78	2	0.00	420	7 (	)851	L	146	91								
		STD	1500	03	372	3499	2	78	3	0.00	417	6 (	893	3	149	906								
		0BS	15000	0 3	3720	3498	7 2	78	3						149	906								

REFE	RENCE	SHIP	LATITU	DE		MAR SQU		STAT	ON T	IME	YEAR				N	DEPTH TO BOTTOP	DEP O	X TH (85	WAVE ERVATIONS	WEA THER DE	- E	s	Pa Tu ka Pa ka	
	NU.	Eur		1 10	070000	10			DAY F	18,1 10 2 2 6	10/ 7	1	1 0 0	/	- -	2013	1 1	с <u>ск</u>	HOLME 25	*   	- 1		+	
31	8029	ΕV,	3759	0 N	072300W	110		12		225	1967	1	0.5	4 4 m	- 1	3017		5		×⊥			0032	
							COLOR	TPANS		SPEED	BAR MET	0	DRY	WET		NO, 085.	0856	PECIAL						
							CODE	im I	DIR.	OR FORCE	(m b	1	BULB	BULE		DEPTH	5 00050							
							DT	50	16	507	27	1	150	13	3 8	22								
		MESSENG	CALL	C + 0				1		1	1	SPECI	EC VOLU	ME	5 <u>1</u> 0			T Ó	PO c=P	1014	Dir	-	F	
		TUAL	PLAST NO.	TYP	DEPTH (m)	T	°C	5	•••	SIG N	^ A — T	AND	DAPALY-1	07	DIN, M X 10 ³	VE	LOCITY	0.2 mil	10.441	11110122	1.4 - 31	CH1 A	47 pH	
		HR 1 10																			+ -	+	+ +	
					0000	1	258	34	RO	26	41	0.0	1630	4	0000	14	1003	5.88						
		22	5	089	s 00000	1	258n	34	385	26	41	00	10.00	-	0000	14	4993	588				032		
				51	0010	1	260	34	72	26	43	0.0	1614	0	0016	14	+996	610				0,72		
				OBS	00100	1	2600	34	916	26	43					14	996	610				046		
				ST	0200	1	260	34	72	26	43	0.0	1616	6	0032	14	4997	598						
				085	5 00200	1	2600	34	916	26	43					14	<b>9</b> 97	598				042		
				085	00250 n	1	2600	34	ə15	26	43					14	998							
				51	ID 0030	1	260	34	92	26	43	00	1619	2	0049	14	4999	608						
				039	5 00300	1	2600	34	916	26	43					14	4999	608				048		
				089	5 00400	. 1	2600	34	-10	26	43	0.0	1410	2	00.01	1 :	5001	581				052		
				0.00	0050	. 1	261	34	99 770	20	42	00	1010	5	00.91	14	5003	585				062		
				51	ID 0075	' <b>1</b>	2010	35	72 ( 14	26	4.J 5.2	00	1542	4	0120	1 1	5022	574				002		
				OB	00750	1	2990	35	138	26	52	00			0 - L 0	19	5022	574				033		
				51	D 0100	i	315	35	58	26	83	0.0	1258	5	0155	1 1	5037	455						
				089	01000	1	3150	35	577	26	83					1 5	5037	455				010		
				51	D 0125	1	269	35	52	26	88	0.0	1218	4	0186	5 19	5025	425						
				5	rD 0150	1	206	35	45	26	94	0.0	1160	7	0216	-19	5007	392						
				OBS	01500	1	2060	35	446	26	94					1	007	392						
				51	0 0200	1	029	35.	28	27	14	00	0482	9	0270	1 14	+951	321						
				089	02000	1	0290	35.	278	21	14	0.0	0802	2	0317	1	4921	321						
				080	0250	. 0	3950	35	12	27	24	00	10072	2	0,1,	14	4908	319						
				51	rb 0300	õ	774	35	36	27	38	0.0	0763	3	0358	i	4869							
				089	5 03000	Ū.	7740	35	0.56	27	38					14	4869							
				089	03500	0	6750	35	007	27	48					14	4838							
				SI	rD 0400	0	585	34	99	27	58	0.0	0571	2	0425	5 14	4810							
				089	5 04000	0	5850	34	986	27	58					14	4810							
				OBS	5 04500	0	5250	34	987	27	66					14	4794							
				S	FD 0500	0	489	34	98	27	69	00	0471	1	0477	14	4788							
				083	5 05000	0	4890	34	977	21	72	0.0	10/120	4	<u>052</u> 7	1	4788 4701							
				0.00	00000	0	400	34	999 999	21	13	00	70439	-	0 7 2 2	1	+172 4797							
				003	06000 0 0700	0	4000	34	700 90	27	75	00	0427	3	0566	14	4801							
				51	00800	0	427	34	99	27	77	00	0420	8	0608	, <u>1</u> 4	4812							
				08	5 08000	i õ	4270	34	988	27	77	0.0			••••	14	4812							
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