

TECHNICAL REPORT

OPERATIONS DEEP FREEZE 63 AND 64  
SUMMER OCEANOGRAPHIC FEATURES  
OF THE ROSS SEA



*Ocean Surveys Division*

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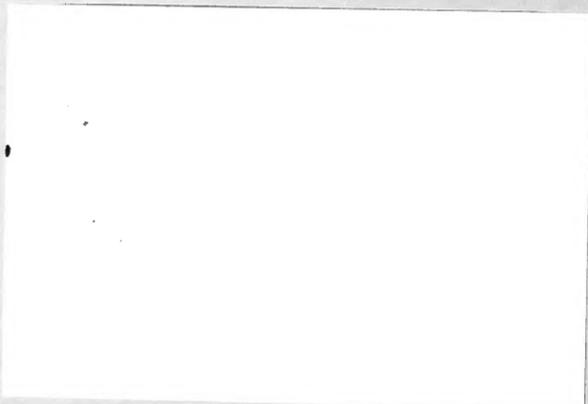
## ABSTRACT

Results of oceanographic research during the U. S. Navy operations in support of DEEP FREEZE 63 and 64, 1962-63 and 1963-64, are presented. Oceanographic observations were conducted aboard USS EDISTO (AGB-2) during DEEP FREEZE 63 and USS ATKA (AGB-3) during DEEP FREEZE 64. Emphasis was focused on the distribution of water masses in the Ross Sea and the identifying physical characteristics of each type.

U. S. Naval Oceanographic Office personnel obtained data at 122 stations during DEEP FREEZE 63 and at 79 stations during DEEP FREEZE 64. Included in these totals are 23 annual ice forecasting stations which were reoccupied both years along the Victoria Land coast and in McMurdo Sound to determine sea ice potential by the heat budget reversal. The stations occupied on DEEP FREEZE 63 were in the western half of the Ross Sea and most of those occupied on DEEP FREEZE 64 were in the eastern half.

Station data include vertical distribution of observed temperatures, salinities, dissolved oxygens, and phosphate-phosphorus and machine computed densities, specific volume anomalies, dynamic height anomalies, and sound velocities. Selected cross-section profiles of observed physical and chemical properties are presented to illustrate the water masses in the Ross Sea.

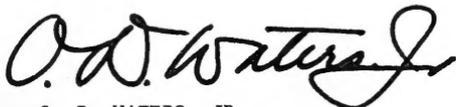
Water types are defined and discussed. From the data presented, it is evident that warmer water from oceanic depths moves in over the continental shelf and is forced to the surface causing the central Ross Sea to become ice free earlier than surrounding areas. Additionally, there is evidence of the formation of colder, more dense, Shelf Water during the austral winter which acts as a barrier to this warmer water intrusion into the south-southwestern extremities of the sea.



FOREWORD

DEEP FREEZE 63 and 64 were the ninth and tenth consecutive United States expeditions in support of Antarctic research. Personnel of the U. S. Naval Oceanographic Office, supported by the National Science Foundation, conducted oceanographic research from two icebreakers assigned to TASK FORCE 43. Oceanographic data were obtained throughout the Ross Sea.

A discussion of the distribution of water masses present in the Ross Sea during the austral summer is presented in this report. Tabulations of the Nansen cast data collected during the two cruises are included with some analysis of these data.



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Commander

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## I. INTRODUCTION

### A. General

During the austral summer of 1963 and 1964, oceanographic observations were carried out by U.S. Naval Oceanographic Office personnel aboard U.S. Navy icebreakers in the Ross Sea. These cruises were part of Operations DEEP FREEZE 63 and 64, and mark the ninth and tenth consecutive years of participation in Antarctic marine research by this Office. On these two particular oceanographic cruises, attention was again focused on the distribution of the water masses present in the Ross Sea and the identifying physical characteristics of each type.

The scientific complement from this Office for the DEEP FREEZE 63 operation was as follows:

Frank A. Anderson (Principal Investigator)  
William A. Babis  
Louis J. Francavillese  
Robert A. Schaeffer

Oceanographic stations were occupied from USS EDISTO (AGB-2) and totaled 122, including 23 annual ice forecasting stations along the Victoria Land coast and in McMurdo Sound (Fig. 1).

On DEEP FREEZE 64 the scientific complement from this Office consisted of:

James Q. Tierney (Principal Investigator)  
William A. Babis  
Stephen W. Dorey  
Robert S. Rushton  
Richard M. Wargelin

Oceanographic stations during this operation were occupied from USS ATKA (AGB-3) and totaled 79, including the annual ice forecasting stations along the Victoria Land coast and in McMurdo Sound (Fig. 2).

Both programs were supported by the National Science Foundation and the ships were assigned to Task Force 43.





## B. Observational and Analytic Techniques

Nansen bottles, with deep-sea reversing thermometers attached, were used to observe temperatures and to collect water samples for salinity, dissolved oxygen, and inorganic phosphate determinations. The bottles were placed at international standard depths; additional bottles were placed where supplementary information was desired.

Paired protected reversing thermometers were used to observe in situ water temperatures. When these paired protected thermometers differed by 0.06°C or more, the reading from the thermometer considered most reliable was used. This evaluation of reliability was based on the thermometer's previous history and the credibility of the individual temperature when plotted with better documented adjacent values.

Unprotected reversing thermometers paired with protected reversing thermometers were used to calculate thermometric depth values. Depth of the sample then was determined using these thermometric depths in conjunction with observed wire angles.

Salinities were determined by means of an inductively-coupled salinometer. Each sample was subjected to two determinations, and if differences exceeded 0.01‰ a third determination was made. Due to equipment difficulties, the 1964 salinities were analyzed at the New Zealand Oceanographic Institute by U.S. Naval Oceanographic Office personnel.

Dissolved oxygen content was determined aboard ship by this Office's modification of the Swinnerton-Linnenbom-Cheek gas chromatograph partitioner method. During the 1963 survey, aerological helium was used and the results were considered to be invalid. In 1964, however, 77 oxygen samples were analyzed by the Thompson and Robinson modification of the Winkler titration method and compared with values obtained with the gas partitioner. Using the modified Winkler method as an oxygen standard, the gas partitioner values were considered acceptable and are included on the data listings in Appendix A.

Dissolved inorganic phosphate was determined by the Strickland and Parsons spectrophotometric method. Phosphate data were obtained at less than half the DEEP FREEZE 63 stations, but the data were complete for DEEP FREEZE 64.

The above physical and chemical oceanographic data were evaluated, coded, and forwarded to the National Oceanographic Data Center for processing by electronic computer. Machine computations provided temperature, salinity, dissolved oxygen, and phosphate interpolations at standard depths, in addition to sigma-t, dynamic depth, and sound velocity calculations from the observed data.

Bottom sediments were collected with several devices: a PVC corer using a Phleger corer as a trigger weight, a PVC corer used separately, a Phleger corer, an orange peel bucket sampler, and a triangular dredge. The sediment samples were forwarded to Florida State University for analysis.

Surface biological samples (plankton) were collected with a #5 half-meter net, and bottom fauna samples were taken with a triangular dredge and a crab trap. Plankton samples, preserved in formalin, and fauna samples, either frozen or preserved in formalin or alcohol, were forwarded to the National Museum for analysis.

Special oceanographic casts were made both years to obtain water samples for geochemistry trace element studies. These one-liter samples were frozen and sent to the Science Council of Japan for analysis.

Special bottom biological samples were taken during DEEP FREEZE 63 for paleoecological investigation by the California Institute of Technology.

## II. ROSS SEA OCEANOGRAPHY

### A. General

The Ross Sea is that body of water lying between Cape Colbeck and Cape Adare, Antarctica. The sea is roughly triangular; having long north to south reach in the west, a greater length in the Pennell Bank area, and being rather narrow on the eastern side at Cape Colbeck. It is bounded on the north by the continental slope (Fig. 3) and on the south by the Antarctic Continent. The Ross Ice Shelf is the southern boundary for the upper 200 meters (656 feet) of the water column, as well as the southern limit for oceanographic observations. Along the western boundary of the Ross Sea, several small ice shelves are present, fed by the glaciers of Victoria Land.

The Ross Sea has an average shelf depth of 500 meters (1,640 feet) along its northern boundary (Fig. 3), with occasional deeper gaps or canyons along the continental slope. South of this shelf boundary, deep areas are present along the Ross Ice Shelf and the Victoria Land coast. Superimposed on this uneven continental shelf are additional smaller troughs and depressions.

The Ross Sea is subject to annual climatic changes, ranging from heavy ice cover and continuous darkness during the austral winter to almost ice free conditions and continuous daylight during the austral summer. These conditions cause the Ross Sea to approach equilibrium in the winter, but to be unstable during the summer.

In general, three water masses are present in the Ross Sea during the summer with definite and definable characteristics. These water masses are: (1) Antarctic Upper Water, (2) Antarctic Circumpolar Water, and (3) Shelf Water. They may be defined by temperature-salinity relationships as shown in figure 4.

1. The upper water mass is divided into two water types during the summer season. The temperature of the upper 100 to 200 meters (328 to 656 feet) is raised by increased solar radiation, and the salinity is reduced by the associated input of melt water. This warmer, less saline layer is termed Antarctic Surface Water by Deacon (1937). The deeper portion of the upper water mass retains the same characteristics acquired during the winter season, therefore, this portion of the upper water has been designated by Mosby as Winter Water (Mosby, 1934).

2. Antarctic Circumpolar Water, present in the Ross Sea, is a southward extension of Antarctic Deep Water (U.S. Navy Hydrographic Office, 1962). As Antarctic Deep Water moves over the Ross Sea shelf, its characteristics are modified from above by mixing with the Winter Water, and from below by mixing with very cold and saline Shelf Water. Even through modified, the

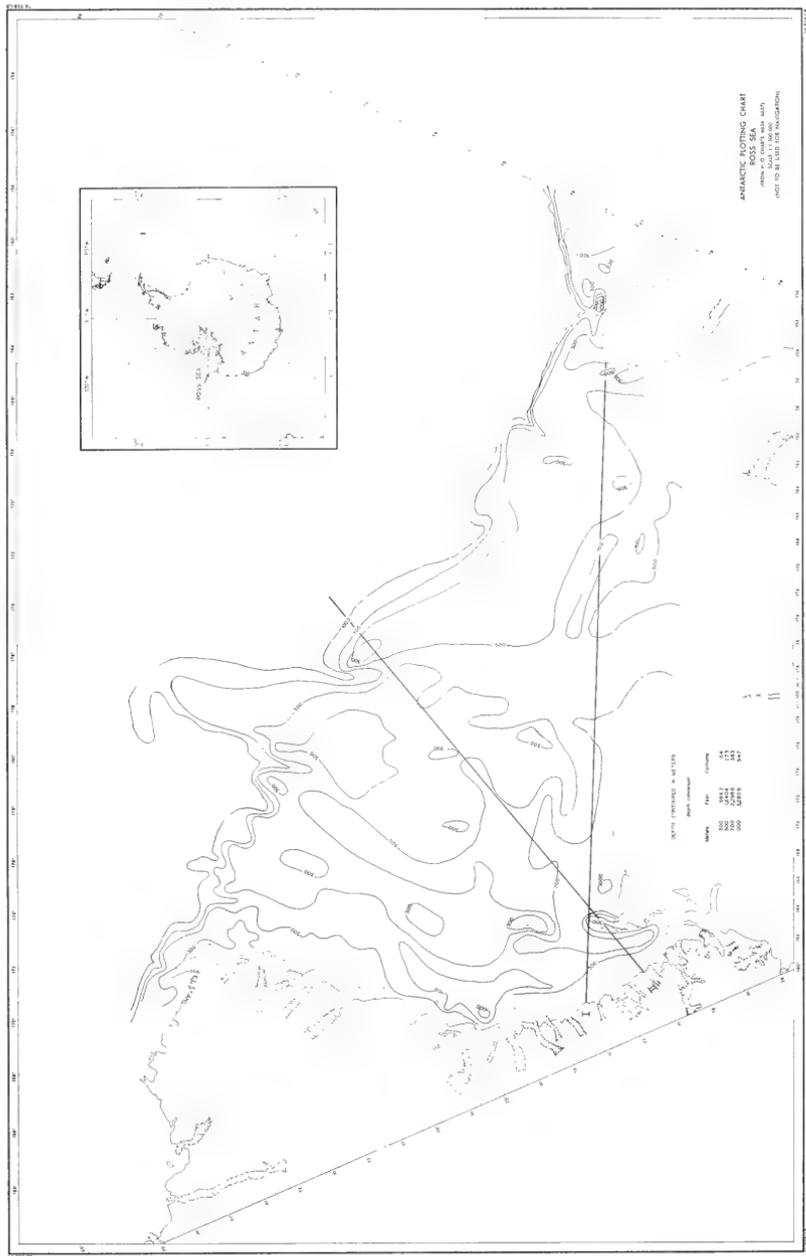


FIGURE 3. BOTTOM TOPOGRAPHY CHART-ROSS SEA

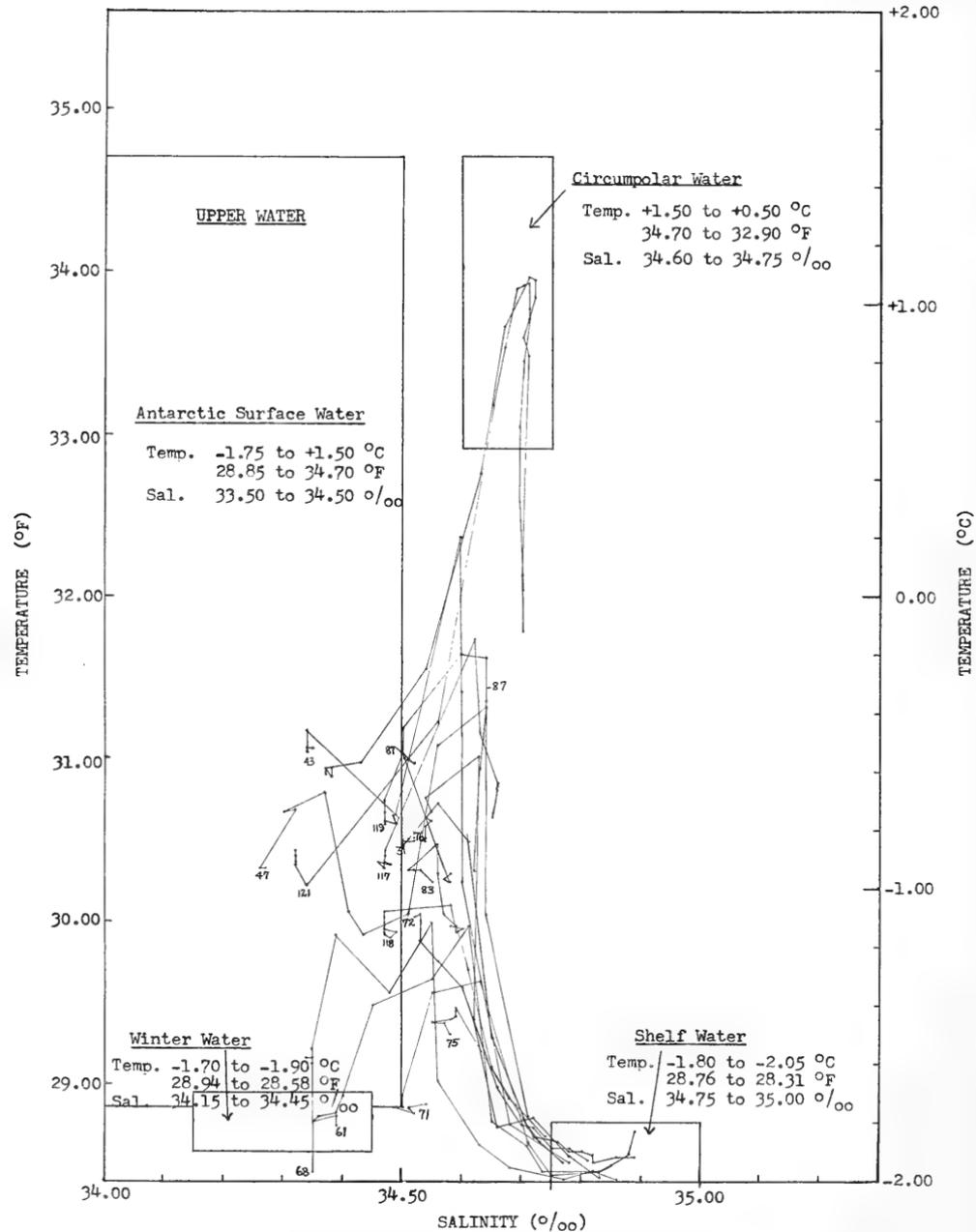


FIGURE 4. TEMPERATURE-SALINITY RELATIONSHIP OF WATER MASSES IN THE ROSS SEA

Antarctic Circumpolar Water is still recognizable throughout the Ross Sea by its relatively high temperatures and increased salinities. Oxygen minima also were used on previous oceanographic operations to identify Antarctic Circumpolar Water; unfortunately, on DEEP FREEZE 63, all oxygen values proved to be invalid because of malfunctioning equipment.

3. Shelf Water, as identified in figure 4, is the coldest, most saline, and most dense water mass in the Ross Sea. It is present mainly in the southwestern part of the sea, and, where present, seems to act as a dynamic barrier against Antarctic Circumpolar Water intrusion.

Two cross sections presenting the generalized relationship of water masses in the Ross Sea are shown in figures 5a and 5b.

#### B. Antarctic Surface Water

Antarctic Surface Water is a seasonal phenomenon derived from the upper water in the Ross Sea. It is formed by melting of the ice cover and subsequent dilution and warming of the water at the surface. Surface water temperatures vary considerably, as do the salinity and thickness of this layer (Figs. 6-10). These variations are caused by the nearness of ice shelves (Fig. 11), presence of ice cover, time of the season (Figs. 12-15), and the characteristics of the underlying Winter Water or Shelf Water. Antarctic Surface Water probably does not exist during the winter season, as surface freezing increases the salinity and decreases the temperature, causing a return to the characteristics of the underlying water.

The Antarctic Surface Water layer lies over a Winter Water layer at most stations. A noticeable temperature increase, part of the surface water caused by summer warming, sometimes is present about 50 meters (164 feet) below the surface. Below this layer with higher temperatures, a decrease in temperatures occurs representing the Winter Water layer (Figs. 8, 9, 12-15). At many of the stations, however, a definite boundary between the Antarctic Surface Water and underlying Winter Water is difficult to define.

The Antarctic Surface Water layer is thinnest along the western Ross Sea. In the vicinity of Coulman Island and Lady Newnes Ice Shelf, depth of the surface layer is only about 25 meters (82 feet). This surface layer increases in thickness to about 100 meters (328 feet) near the center of the Ross Sea. Generally, the Antarctic Surface Water grades into Winter Water or Modified Winter Water; however, along the Victoria Land coast and at the southwestern stations (Fig. 9), the Antarctic Surface Water grades directly into Shelf Water with only a suggestion of the presence of Winter Water. At other stations (Fig. 7), this surface water grades into Modified Circumpolar Water.

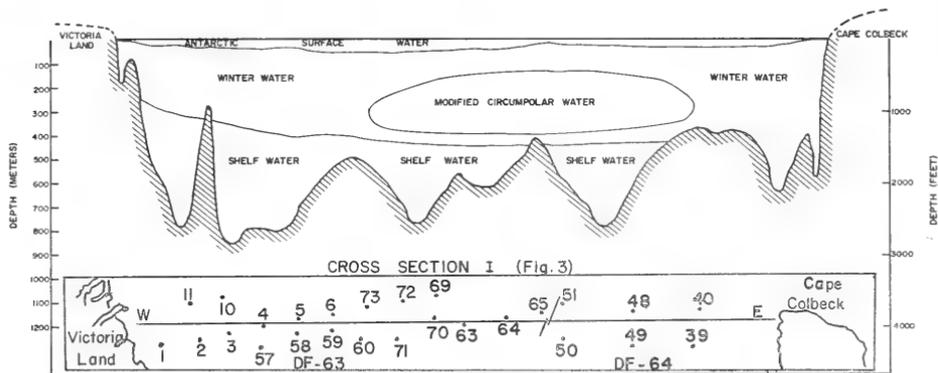


FIGURE 5a

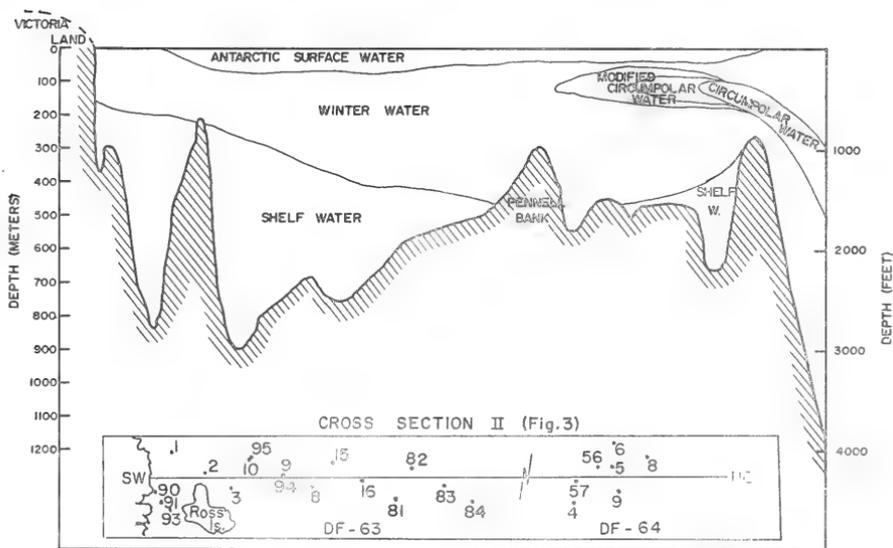


FIGURE 5b

FIGURE 5. GENERALIZED RELATIONSHIP OF WATER MASSES IN THE ROSS SEA

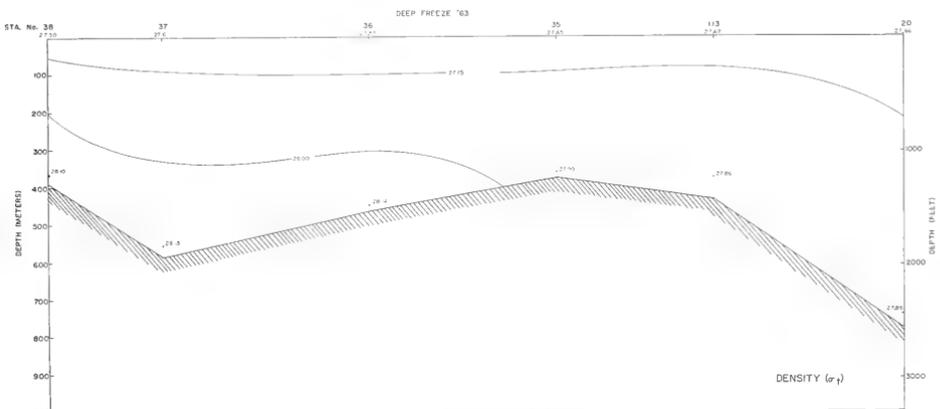
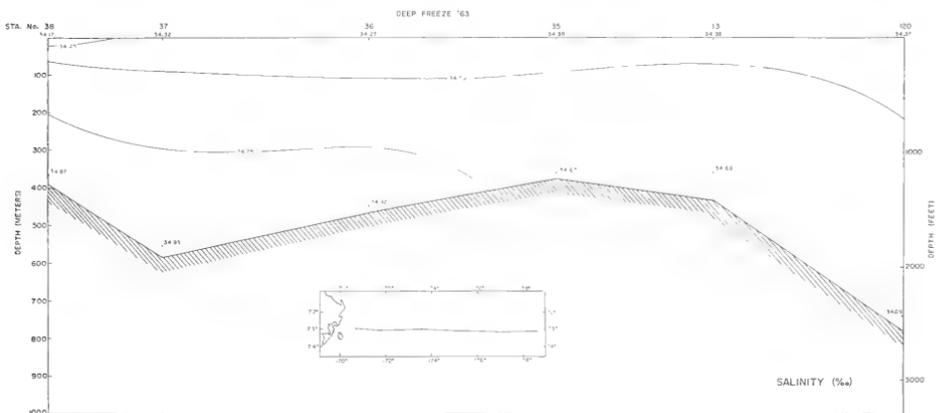
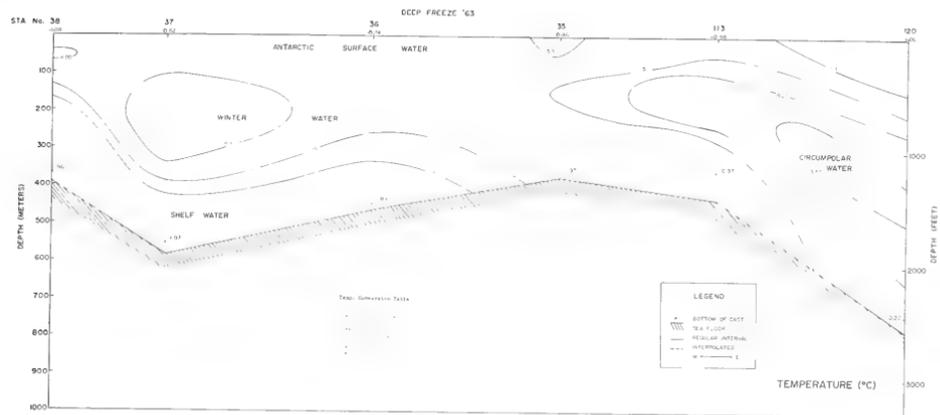


FIGURE 6. CROSS SECTION OF TEMPERATURE, SALINITY, AND SIGMA-T THROUGH STATIONS 38 TO 120

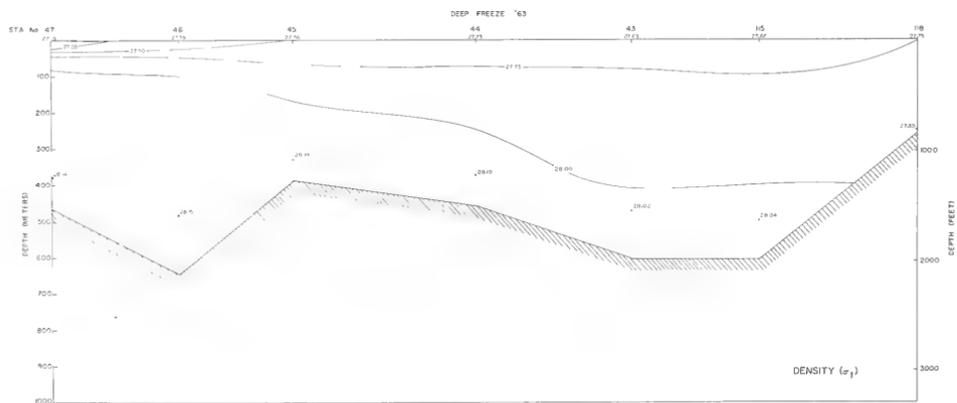
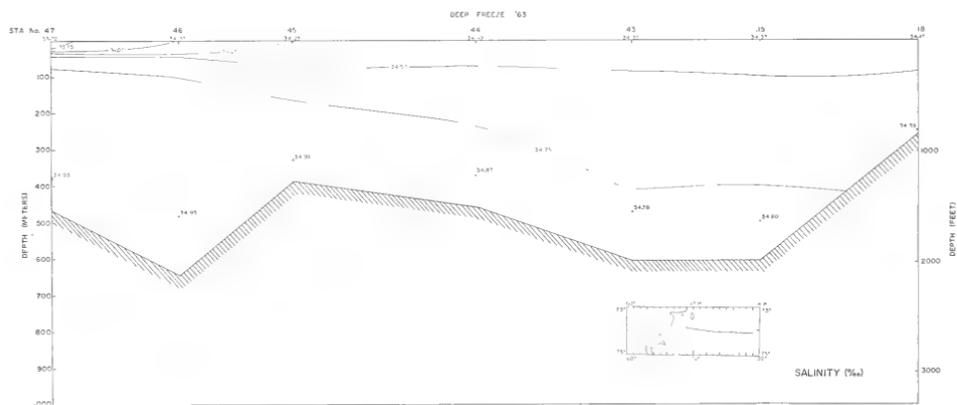
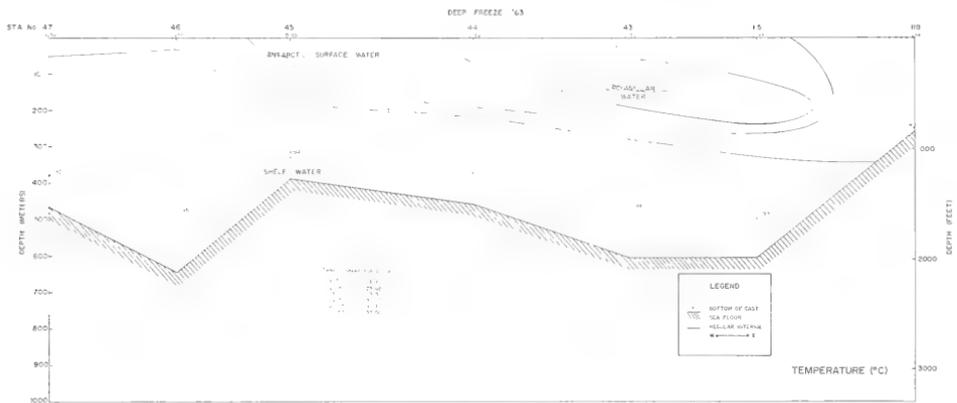


FIGURE 7. CROSS SECTION OF TEMPERATURE, SALINITY, AND SIGMA-T THROUGH STATIONS 47 TO 118

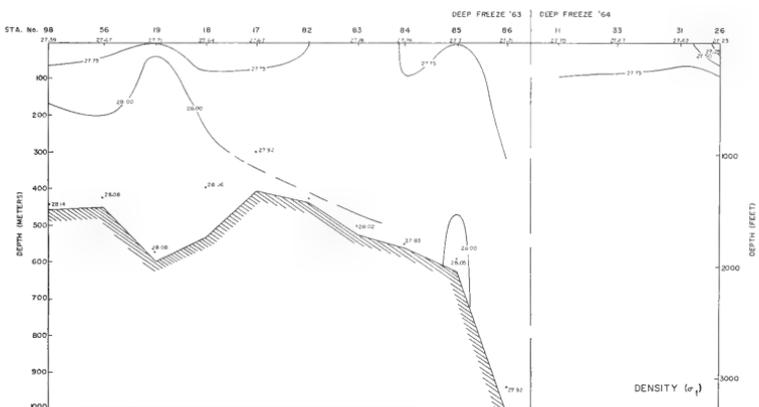
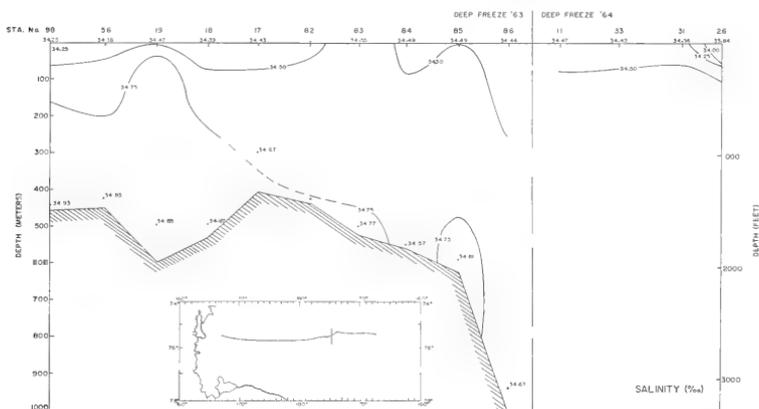
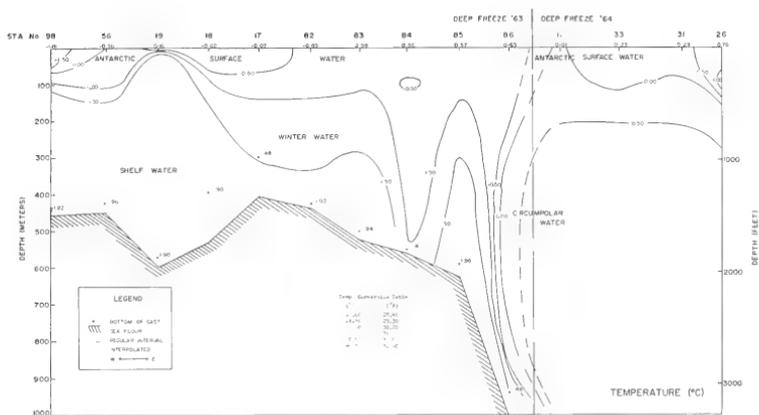


FIGURE 8. CROSS SECTION OF TEMPERATURE, SALINITY, AND SIGMA-T THROUGH STATIONS 98 TO 26

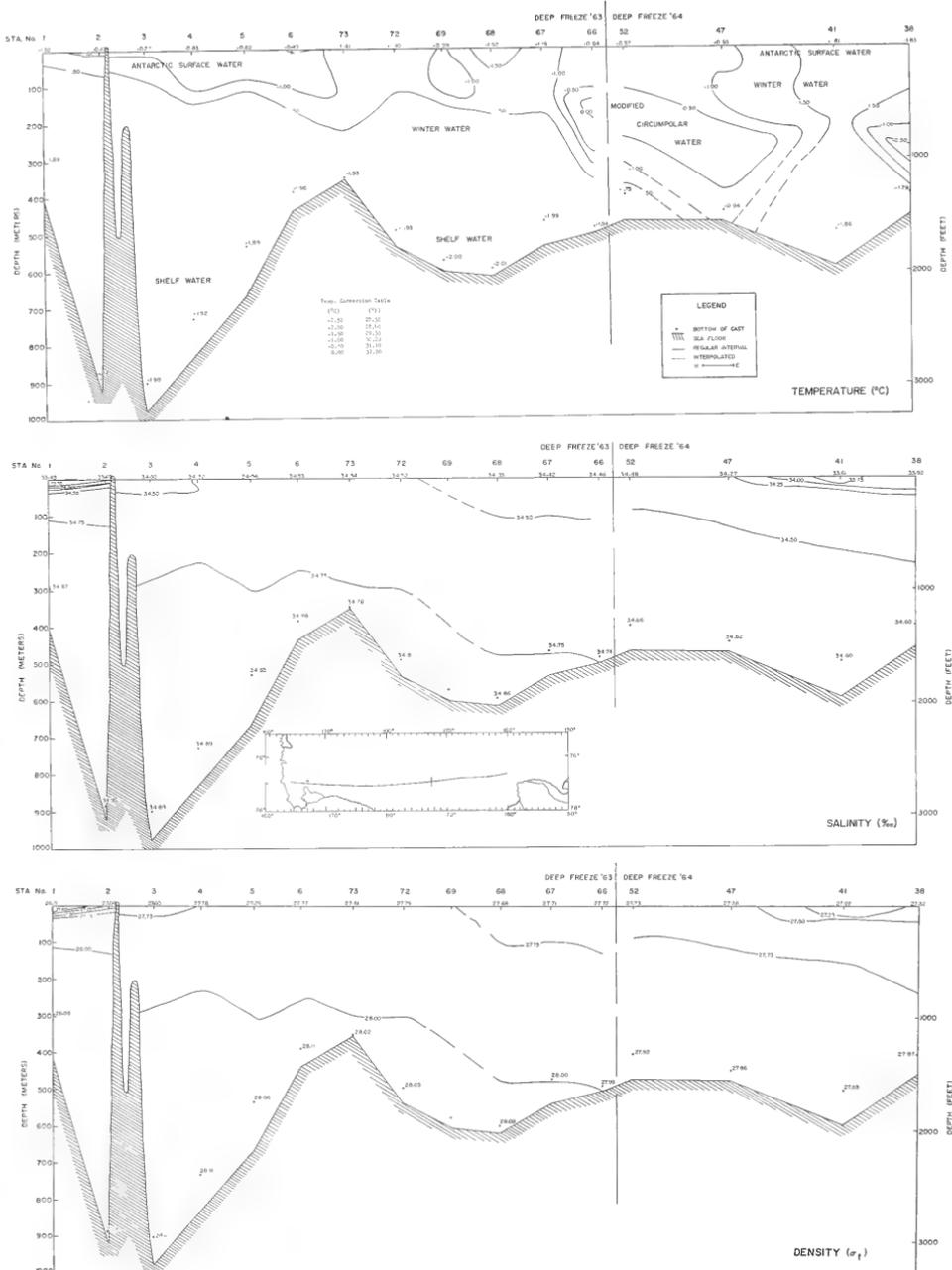


FIGURE 9. CROSS SECTION OF TEMPERATURE, SALINITY, AND SIGMA-T THROUGH STATIONS 1 TO 38

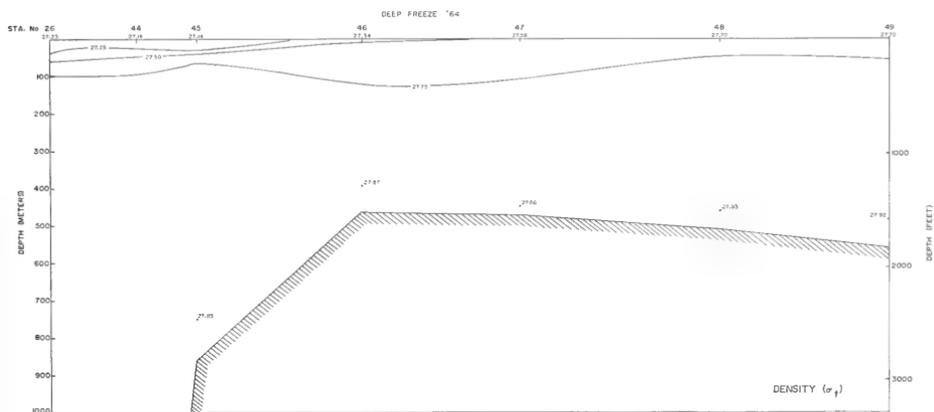
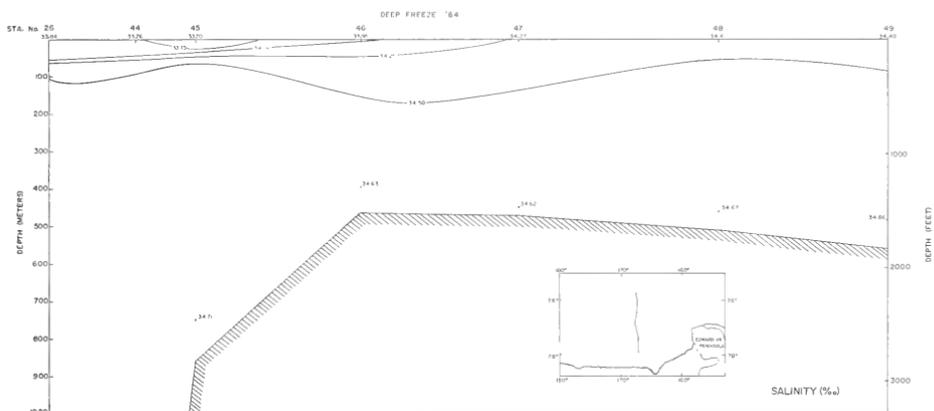
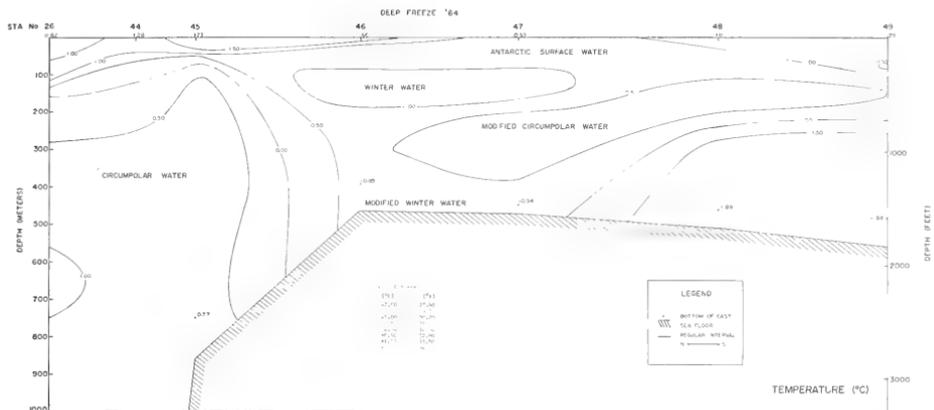
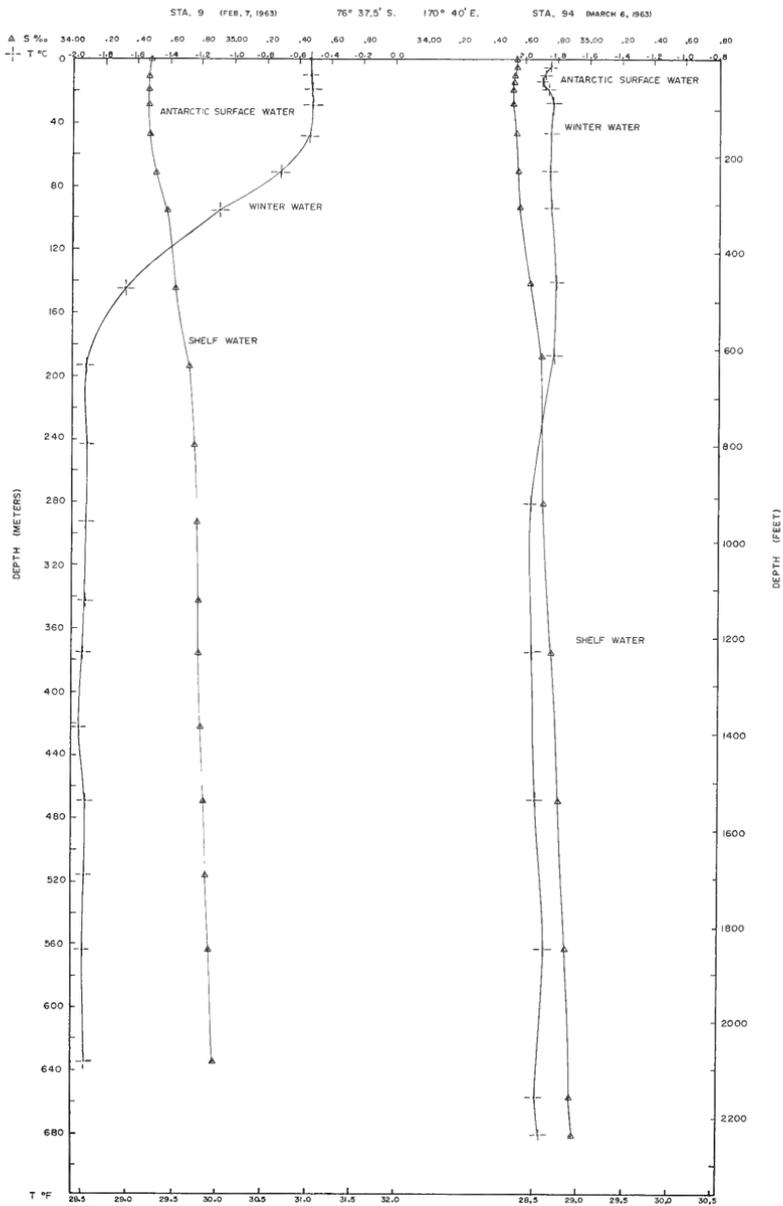


FIGURE 10. CROSS SECTION OF TEMPERATURE, SALINITY, AND SIGMA-T THROUGH STATIONS 26 TO 49





**FIGURE 12. VERTICAL DISTRIBUTION OF TEMPERATURE AND SALINITY AT STATIONS 9 AND 94**

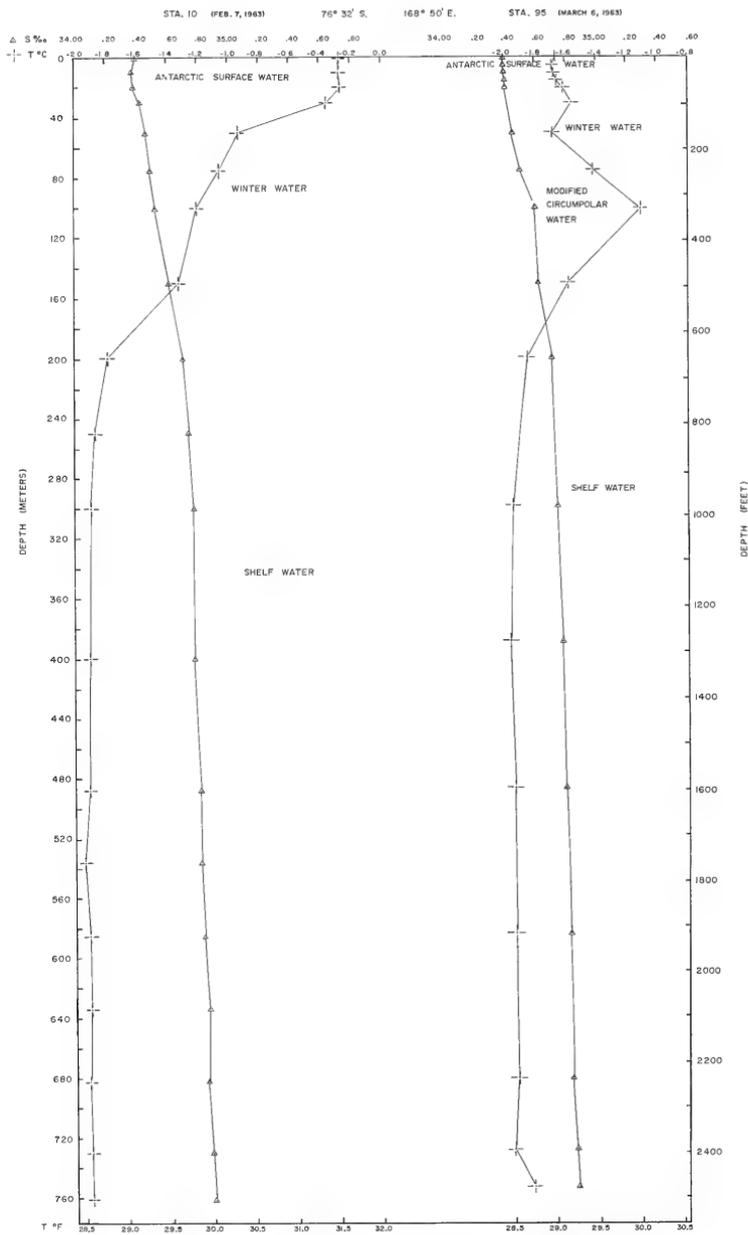
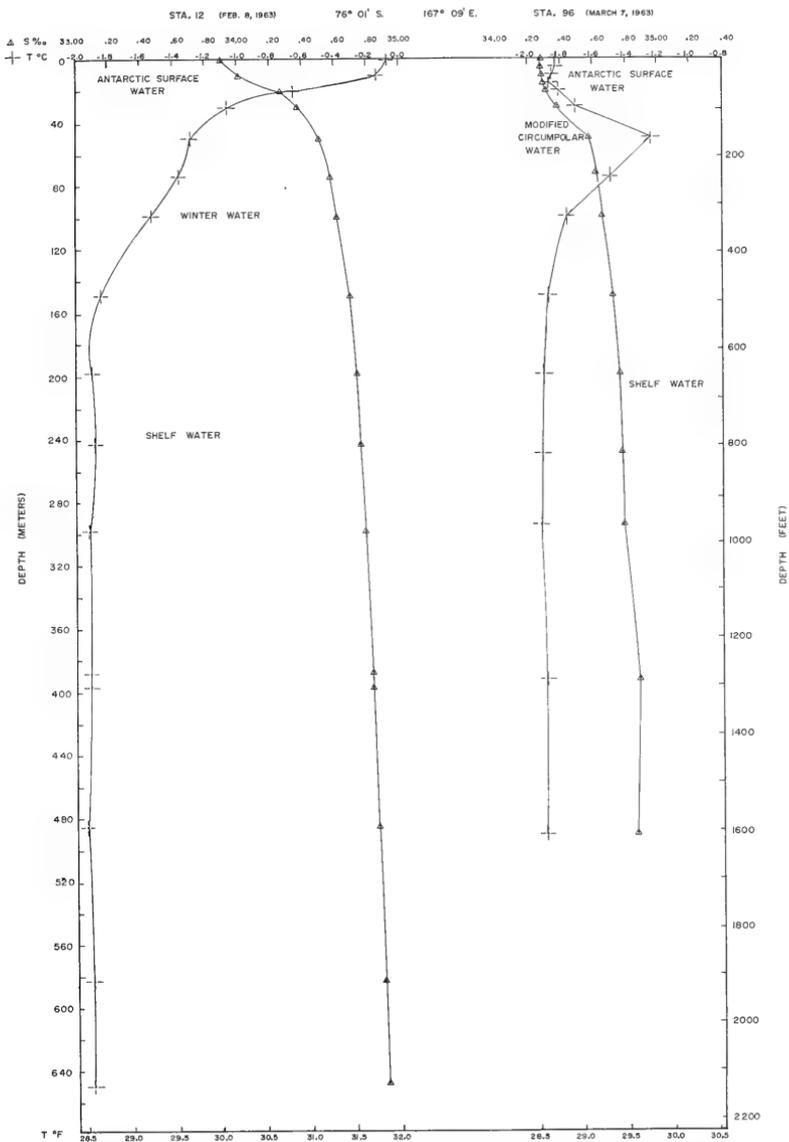


FIGURE 13. VERTICAL DISTRIBUTION OF TEMPERATURE AND SALINITY AT STATIONS 10 AND 95



**FIGURE 14. VERTICAL DISTRIBUTION OF TEMPERATURE AND SALINITY AT STATIONS 12 AND 96**

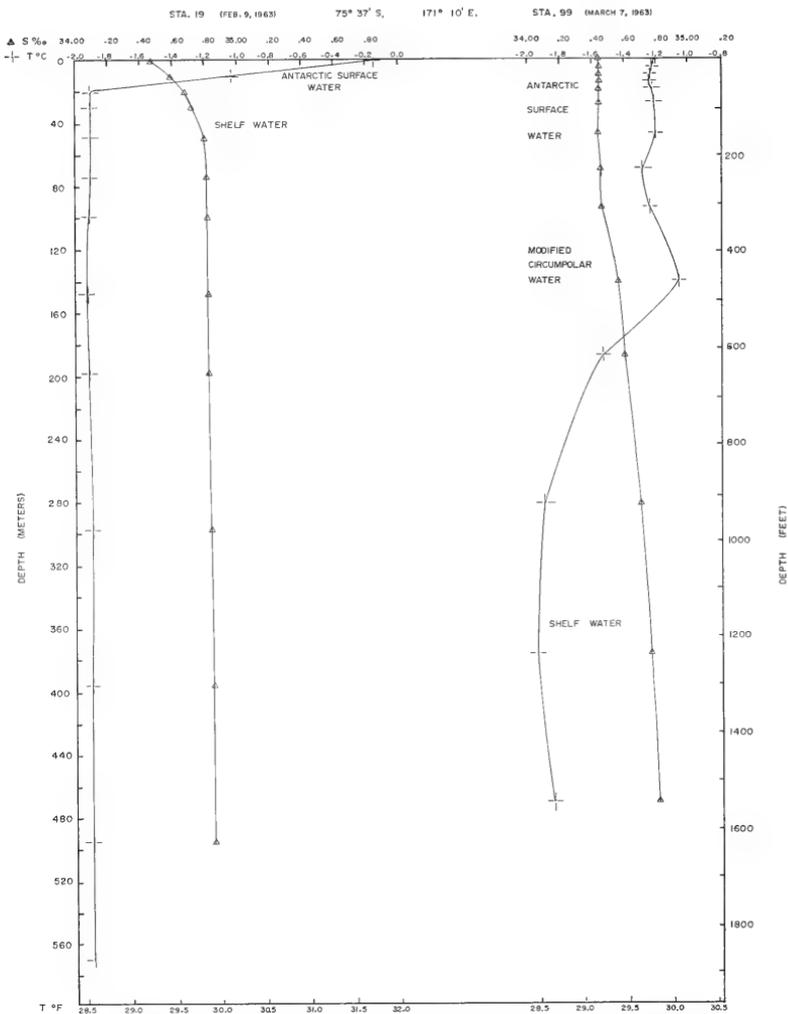


FIGURE 15. VERTICAL DISTRIBUTION OF TEMPERATURE AND SALINITY AT STATIONS 19 AND 99

### C. Winter Water

Winter Water, along with Antarctic Surface Water, composes the upper water mass of the Ross Sea. As the designation implies, this water type forms during the winter season, when surface cooling and sea ice formation create a column of relatively homogeneous water near the freezing point. Meteorological data indicate that during the winter such isothermal conditions could easily form (U.S. Navy Weather Research, 1961). Winter Water is described as having temperatures characteristically near the freezing point with corresponding uniform salinities (Mosby, 1934). Thus, Winter Water may be defined as water with temperatures ranging from  $-1.70^{\circ}\text{C}$  ( $28.94^{\circ}\text{F}$ ) to  $-1.90^{\circ}\text{C}$  ( $28.58^{\circ}\text{F}$ ), salinities of 34.15 to 34.45‰, and sigma-t values of 27.50 to 27.75 (U.S. Naval Oceanographic Office, 1965).

Winter Water is found throughout the Ross Sea. In the western portion, Winter Water is found as an intermediate layer between Antarctic Surface Water and Shelf Water (Figs. 6, 7, 8, 9), and between Antarctic Surface Water and Modified Circumpolar Water (Fig. 10). Most of the Winter Water in the western Ross Sea is modified by intrusion of the circumpolar water mass. Only in the extreme west and near the Ross Ice Shelf is Winter Water present without the presence of Modified Circumpolar Water (Fig. 16).

In the eastern Ross Sea, Winter Water is present under much the same conditions. During the austral summer, 1962, Winter Water was found in the extreme southeast with no Modified Circumpolar Water intrusion (U.S. Naval Oceanographic Office, 1965). During the austral summer, 1964, all stations in the eastern Ross Sea were observed to have Winter Water in varying amounts, as an intermediate layer between Antarctic Surface Water and Modified Circumpolar Water.

From examination of data collected on previous DEEP FREEZE operations, it was observed that Winter Water appears to exist in conjunction with Modified Circumpolar Water throughout the Ross Sea, except in the extreme southwest and near the Ross Ice Shelf.

### D. Antarctic Circumpolar Water

Antarctic Circumpolar Water is a southward continuation of Antarctic Deep Water. This water is characterized as having temperatures warmer than  $+0.50^{\circ}\text{C}$  ( $32.90^{\circ}\text{F}$ ) and salinities somewhat greater than 34.70‰ (U.S. Naval Oceanographic Office, 1965).

Originally found at depths of about 2,000 meters (6,562 feet) near the Antarctic Convergence, this water rises to near the surface as it approaches the Ross Sea, retaining its basic characteristics (U.S. Navy Hydrographic Office, 1962). Some of this water moves into the Ross Sea, penetrating to nearly every part of the area. The Antarctic Circumpolar Water, though modified by mixing with the upper and shelf water masses in the Ross Sea, is still recognizable by relatively high temperatures and low oxygen



values. A temporary subsurface layer of increased temperatures may be formed just below the sea surface by summer warming and followed by cooling of the sea surface. This layer can be differentiated from Antarctic Circumpolar Water by the low salinity and high oxygen values.

The thickness of Antarctic Circumpolar Water generally decreases in the direction of movement. Seaward of the continental slope, this water mass is about 2,000 meters (6,562 feet) thick. Within the Ross Sea, its thickness is only about 150 to 250 meters (492 to 820 feet), becoming less than 100 meters (328 feet) along the Victoria Land coast.

It was observed that Antarctic Circumpolar Water penetrates mainly the area occupied by Winter Water (Figs. 6-10). Shelf Water appears to be dense enough to act as a barrier to any extensive penetration by Antarctic Circumpolar Water (Fig. 8). Where Shelf Water is plentiful, little or no Antarctic Circumpolar Water can intrude. The data collected during DEEP FREEZE 64, for example, showed little or no Shelf Water present in the eastern Ross Sea; and circumpolar water influence was observed at all stations.

Figure 16 schematically illustrates the pattern of the Antarctic Circumpolar Water intrusion, including the subsurface temperature maxima and depths at which these maxima occurred. One of the areas of strongest intrusion is along the boundary of the 1963 and 1964 operating areas. An attempt has been made to correlate data taken on DEEP FREEZE Operations 63 and 64; however, it was observed that continuity between the two years did not exist due to unstable summer conditions.

The general vicinity of Antarctic Circumpolar Water entry into the Ross Sea, appears to be north of  $75^{\circ}30'S$  between  $176^{\circ}W$  and  $180^{\circ}$ . The lack of data from this area limits the analysis of intrusion of Antarctic Circumpolar Water.

It appears that the main intrusion moves up the continental slope and enters near the central part of the Ross Sea. This intrusion branches into southward and westward moving components, influencing much of the southwestern Ross Sea. In the vicinity of stations 72, 75, 78, 81, and 83, Antarctic Circumpolar Water is forced near the surface by the underlying Shelf Water and mixes with the Antarctic Surface Water (Figs. 17 and 18). This area of mixing becomes warmer as a result of circumpolar water influence, and this is the area which becomes ice-free first in the austral spring (U.S. Navy Hydrographic Office, 1961).

Additional intrusions of circumpolar water enter the western Ross Sea from the north between Pennell Bank and Victoria Land. These intrusions mainly affect the northwestern part of the Ross Sea.

In the eastern Ross Sea, it was observed that the main intrusion of Antarctic Circumpolar Water enters near Cape Colbeck. This intrusion penetrates throughout the eastern Ross Sea, in varying degrees, influencing all stations taken during DEEP FREEZE 64.

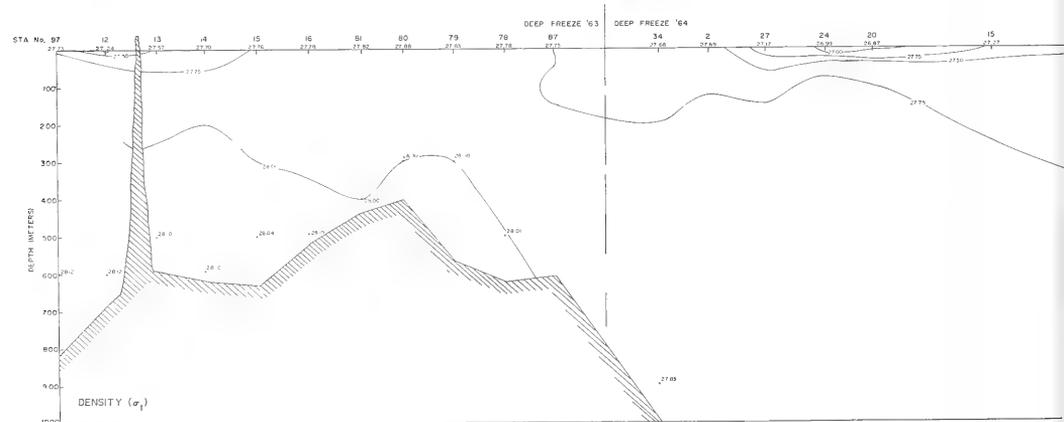
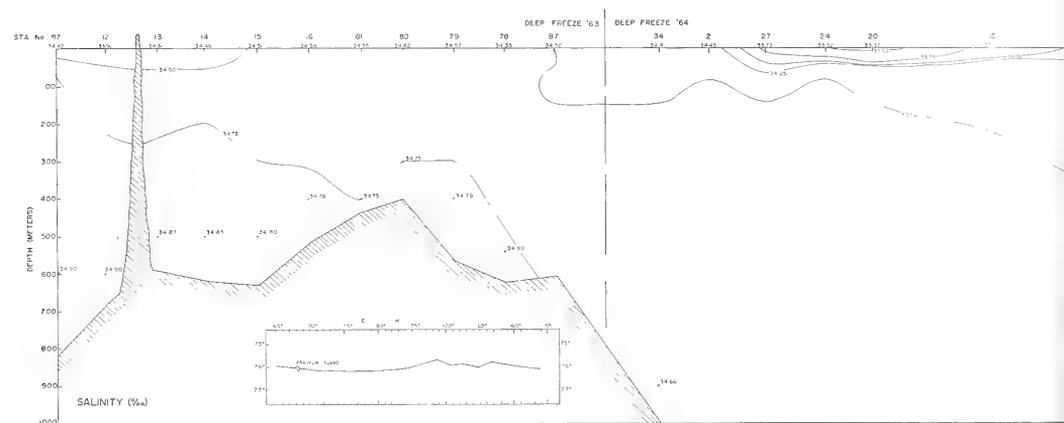
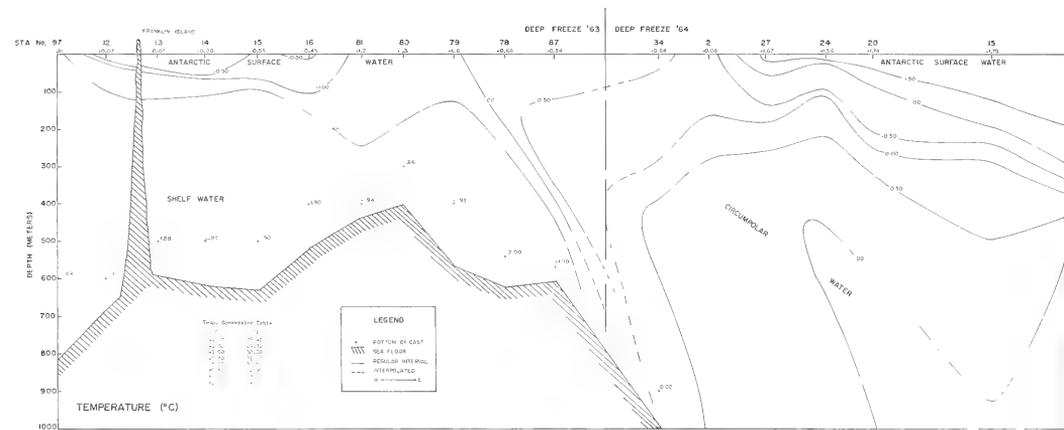


FIGURE 17. CROSS SECTION OF TEMPERATURE, SALINITY, AND SIGMA-T THROUGH STATIONS 97 TO 12

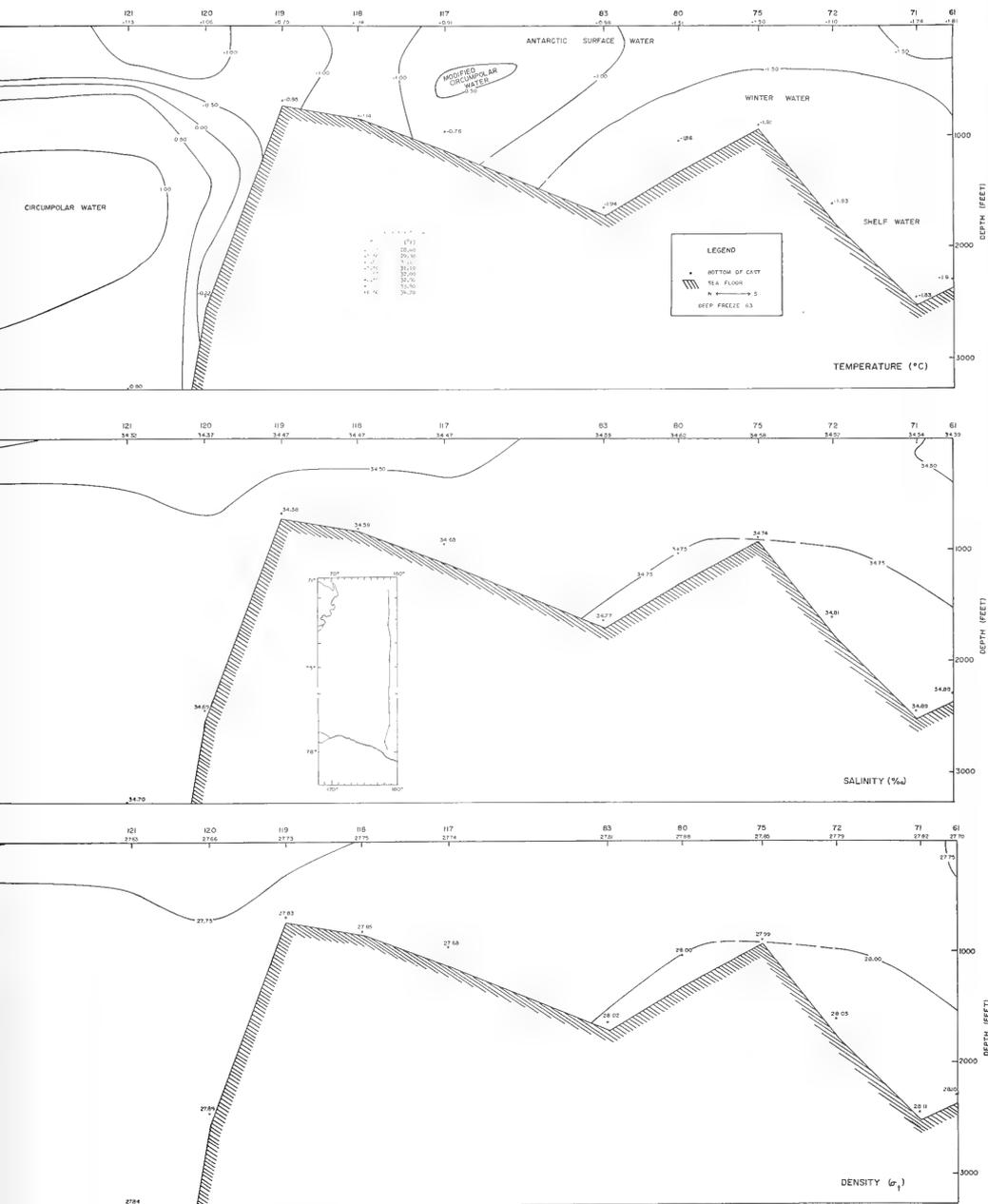


FIGURE 18. CROSS SECTION OF TEMPERATURE, SALINITY, AND SIGMA-T THROUGH STATIONS 28 TO 61

## E. Shelf Water

Shelf Water, the densest water mass found in the antarctic region, is formed on the continental shelf within the Ross Sea. Other similar shelf areas in Antarctica also may produce this water type; however, no oceanographic observations are available to substantiate this hypothesis. Shelf Water is characterized by temperatures less than  $-1.80^{\circ}\text{C}$  ( $28.76^{\circ}\text{F}$ ), salinities greater than 34.75‰, and sigma-t values equal to or greater than 28.00 (U.S. Naval Oceanographic Office, 1965).

This water mass is believed to form during the austral winter season when the formation of sea ice increases the salinity of the surface layer, causing mixing to occur. Meteorological conditions at McMurdo station are capable of forming a maximum new ice layer 190 centimeters (75 inches) thick (U.S. Navy Weather Research, 1961, and Zubov, 1943). In the western Ross Sea, this amount of ice formation causes mixing to the bottom with a resultant salinity greater than 34.75‰. Because Shelf Water is formed at freezing temperatures, unmodified Shelf Water would have a temperature of  $-1.90^{\circ}\text{C}$  ( $28.58^{\circ}\text{F}$ ). Near the bottom some temperatures were observed to average  $0.03^{\circ}\text{C}$  below the freezing point, indicating, that at times, Shelf Water may be formed under super-cooled conditions.

A continuous influx of Antarctic Circumpolar Water during the winter would hamper cooling effects, but its high salinity of 34.72‰ may play a role in the formation of Shelf Water. The large volumes of Shelf Water formed each winter probably flow north and eastward from the Ross Sea as a bottom current; Antarctic Circumpolar Water, flowing up over the continental shelf, would then replace the north and eastward tending Shelf Water.

Shelf Water appears to influence the dynamics of the Ross Sea to such an extent as to be the controlling factor. Due to its density, it may be effective in barring the entrance of Antarctic Circumpolar Water into parts of the Ross Sea during the late winter and early spring.

During the summer season, Shelf Water extends from the southwest toward the north and east (Fig. 19). In 1963, Shelf Water was found at  $173^{\circ}\text{W}$  in the south central Ross Sea at stations 65 and 66. At both of these stations, it was observed within 20 meters (66 feet) of the bottom. Farther east, during 1964, no evidence of Shelf Water was observed; however, the deepest observations were 50 to 75 meters (164 to 246 feet) from the bottom, perhaps missing the Shelf Water in that area. Year to year variations undoubtedly occur in the Ross Sea.

Only near the edge of the continental shelf and over Pennell Bank, was Shelf Water not observed in 1963. It existed in all depressions, in some cases close to the shelf edge, indicating that it is highly probable that Shelf Water spills over the slope in winter. No stations were taken over Pennell Bank east of  $179^{\circ}\text{E}$  north of  $75^{\circ}\text{S}$ ; however, the shallow nature of this bank should exclude Shelf Water during the austral summer.

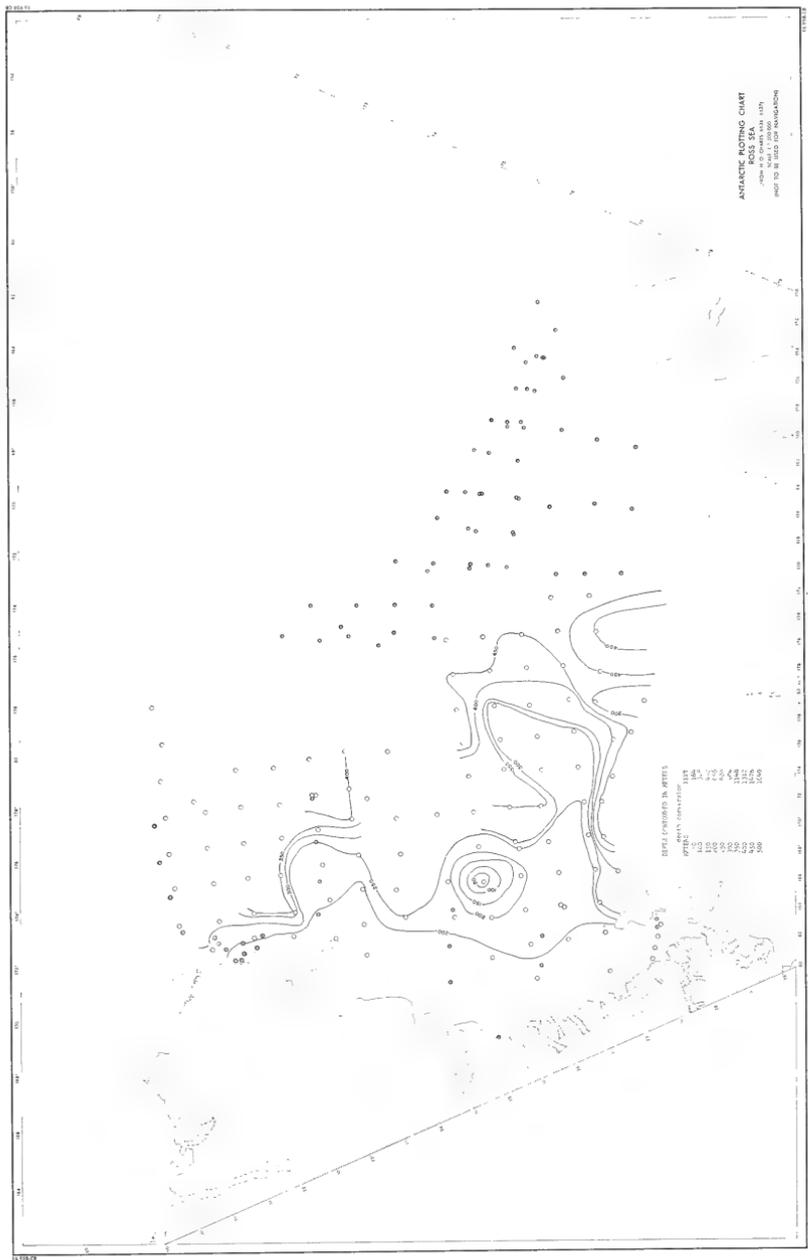


FIGURE 19. UPPER BOUNDARY OF SHELF WATER IN ROSS SEA - DEEP FREEZE 63 AND 64

The westernmost stations contained the largest percentages of Shelf Water. Two stations taken in 1964, Nos. 61 and 62, were completely Shelf Water from the surface to the bottom. These two stations, occupied on 1 March, were taken after the seasonal reversal which occurs in mid-February. Stations occupied in other years, at the same location, produced different results, indicating year to year variations.

Generally, during the summer season, Shelf Water is found below 250 meters (820 feet), west of 174°E (Fig. 19). This water layer deepens and decreases in thickness eastward, until by 175°W it is found below 470 meters (1,542 feet) and then only at the southernmost stations. North of 73°30'S the Shelf Water mass was not observed except close to the Victoria Land coast. Shelf Water is encountered deeper in the water column along the Ross Ice Shelf and the northern coast of Ross Island.

A broad mass of Shelf Water extends from the southwest area paralleling the ice shelf. This water appeared to move toward the northeast at 177°E. The Shelf Water was observed to become deeper as it traveled further north and east. The water mass also extends eastward from Lady Newnes Ice Shelf (Fig. 19). It was observed deeper toward the east, being at 82 meters (269 feet) at station 47, 100 meters (328 feet) at station 46, and at 168 meters (551 feet) at station 45.

Due to Pennell Bank acting as a barrier, Shelf Water must flow either north or east out of the Ross Sea. A small amount flows eastward, south of this barrier, but the major portion of the Shelf Water is believed to flow northward between Pennell Bank and Victoria Land. Two troughs (Fig. 3) separated by a broad ridge, parallel the coast from the southwestern corner to the continental slope. These troughs form a natural path for the outflow of Shelf Water.

An interesting feature is the high mound of Shelf Water centered at station 19 (Fig. 8). Those stations nearest station 19 show Shelf Water only below 200 meters (656 feet), while at station 19, Shelf Water was found 37 meters (121 feet) below the surface. The causes of this are unknown. The dynamic topography indicates a strong gyral encircling station 19, but the shallow reference level (200 decibars) causes the isobars to follow the 28.00 sigma-t contours. The use of the isobars as streamlines is somewhat doubtful. This position was reoccupied 26 days later with no mounding observed, Shelf Water being found at 325 meters (1066 feet), a change in depth of 288 meters (945 feet). This significant change in depth suggests that Shelf Water is flowing laterally from station 19. Other reoccupied stations (e.g. stations 18 and 100) show a similar vertical temperature fluctuation.

The bottom water in the southeastern Ross Sea over the continental shelf, has characteristics very similar to Shelf Water, but differs by having somewhat lower salinity and sigma-t values; therefore, it is not classified as Shelf Water. Its temperatures are near the freezing point

(colder than  $-1.8^{\circ}\text{C}$  ( $28.76^{\circ}\text{F}$ )), with salinities between 34.60‰ and 34.68‰, and corresponding densities ( $\sigma\text{-t}$  values) slightly less than that of Shelf Water. Previously collected data in this area during DEEP FREEZE 61 show similar temperature and salinity values. The formation of this characteristic water mass may be due to less stable winter conditions than exist for formation of Shelf Water or the proximity to Circumpolar Water intrusion.

#### F. Sound Velocity Structure

Hunkins (1962) indicated that a surface SOFAR channel should exist in the Antarctic as well as it does in the Arctic Ocean. Analysis of data from 108 DEEP FREEZE 63 and 53 DEEP FREEZE 64 oceanographic stations, indicates a surface SOFAR channel does exist in certain areas of the Ross Sea during at least part of the austral summer (Figs. 20, 21, 22). This SOFAR channel normally is associated with the Winter Water layer. Figure 23 shows a typical sound velocity trace of an undisturbed water column, consisting of Antarctic Surface Water, Winter Water, and Shelf Water.

Intrusion of Antarctic Circumpolar Water provides the basis for the formation of a secondary sound channel. The changes in the water column caused by Antarctic Circumpolar Water and resulting change in the sound velocity structure are illustrated in Figures 24 through 26. Because Antarctic Circumpolar Water is present at nearly all stations in varying amounts, it may be assumed that most sound velocity traces will be modified and show traces of a secondary sound channel.

A statistical evaluation of sound velocities compiled from data taken on DEEP FREEZE 63 shows that a surface sound channel existed at 73% of the stations. The surface configuration of sound velocity structure undoubtedly changes during the season and from year to year. For example, an analysis of DEEP FREEZE 64 data showed only 19% of the stations had a surface channel.

Of all stations with sound channels, the following characteristics of the channel were noted: mean sound velocity was 1444.3 m/sec (4738.5 ft/sec) with a range of 1441.1 to 1448.3 m/sec (4728.0 to 4751.6 ft/sec); mean axial depth was 230 meters (755 feet), with a range of 75 to 400 meters (246 to 1,312 feet).

Correlation of sound channels from a local to regional scale is difficult because of the transient character of the parameters measured. Formation of sea ice results in an increase of salinity at the surface. The resultant density inversion at the surface causes convective mixing to occur, thus modifying the entire water column. Melt water from the ice cover dilutes the surface water during the summer season, causing localized sound channels at the surface.

Data are available only for the summer and early fall of the austral year. Lack of observations during the other seasons prevents a full understanding of the sound velocity structure of the Ross Sea.

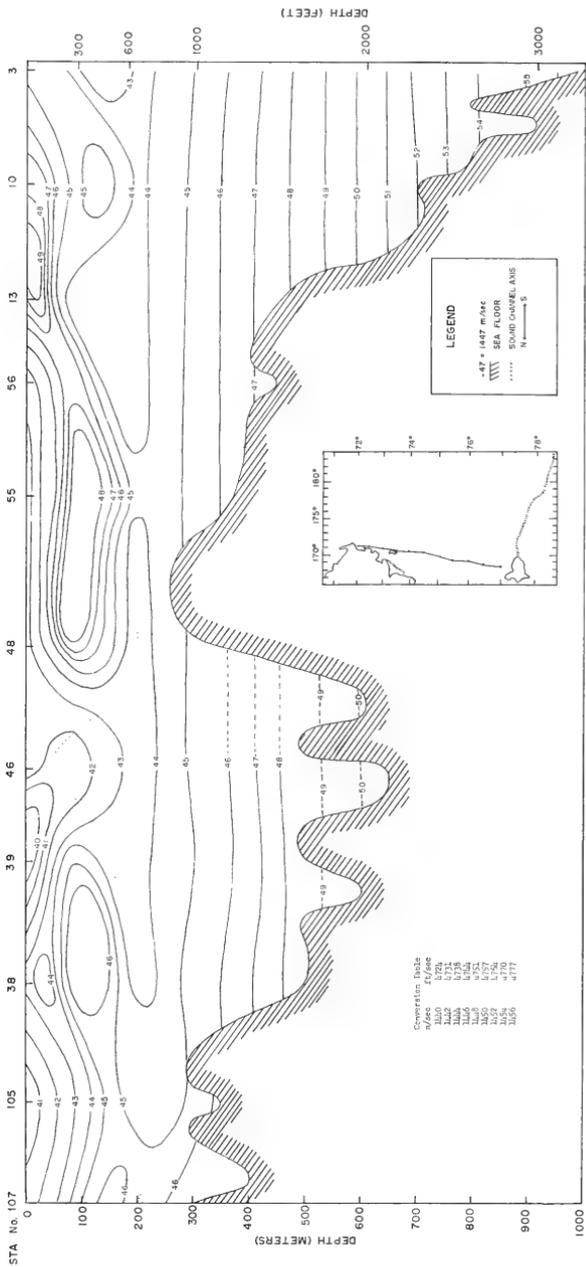


FIGURE 20. CROSS SECTION OF VERTICAL DISTRIBUTION OF SOUND VELOCITIES, STATIONS 107 THROUGH 3

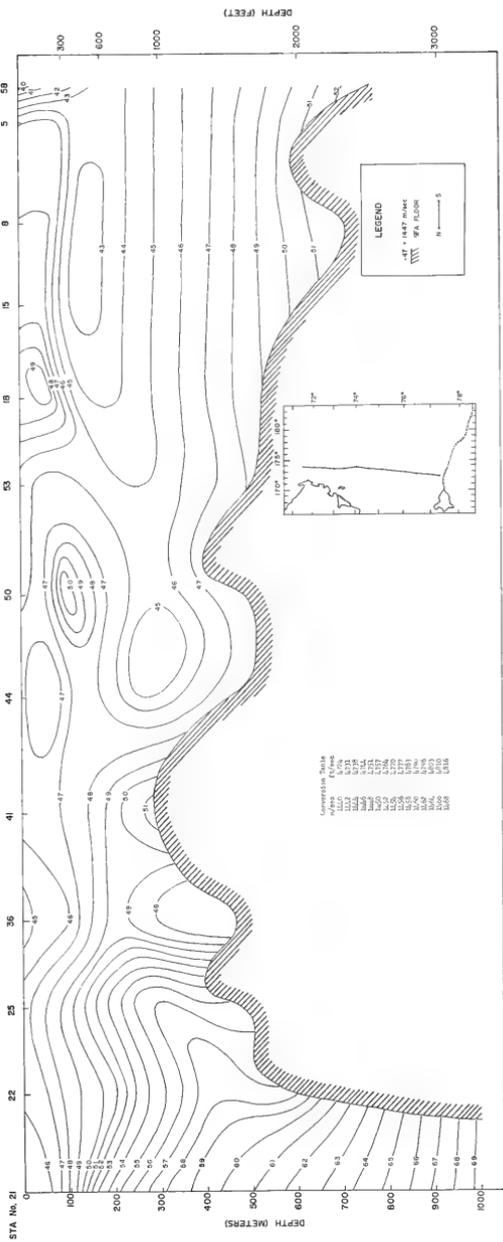


FIGURE 21. CROSS SECTION OF VERTICAL DISTRIBUTION OF SOUND VELOCITIES, STATIONS 21 THROUGH 58

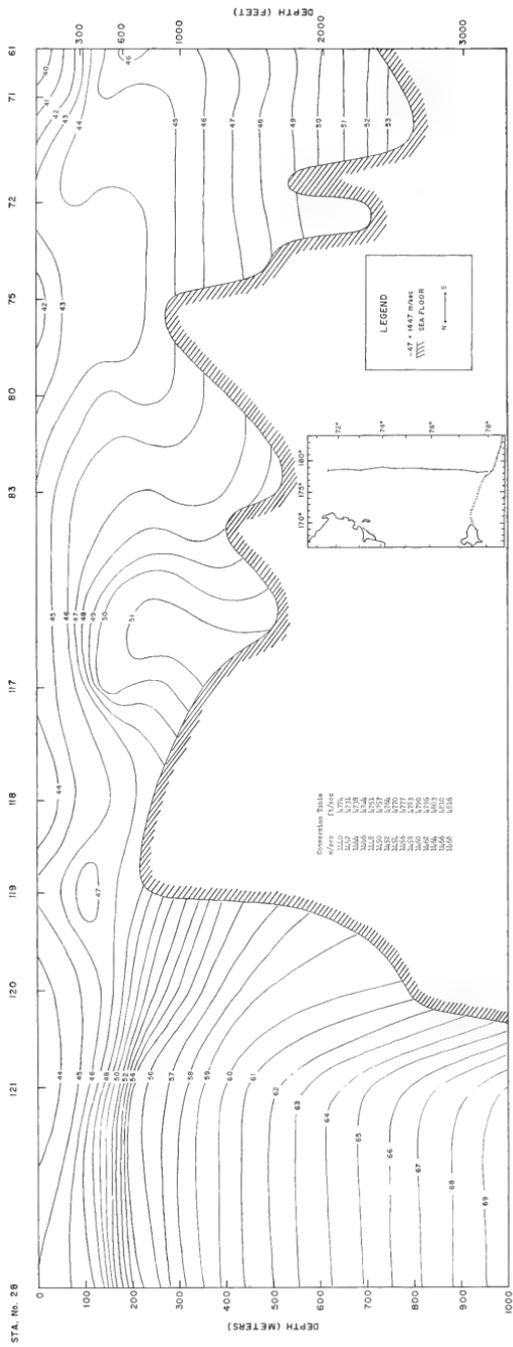


FIGURE 22. CROSS SECTION OF VERTICAL DISTRIBUTION OF SOUND VELOCITIES, STATIONS 28 THROUGH 61

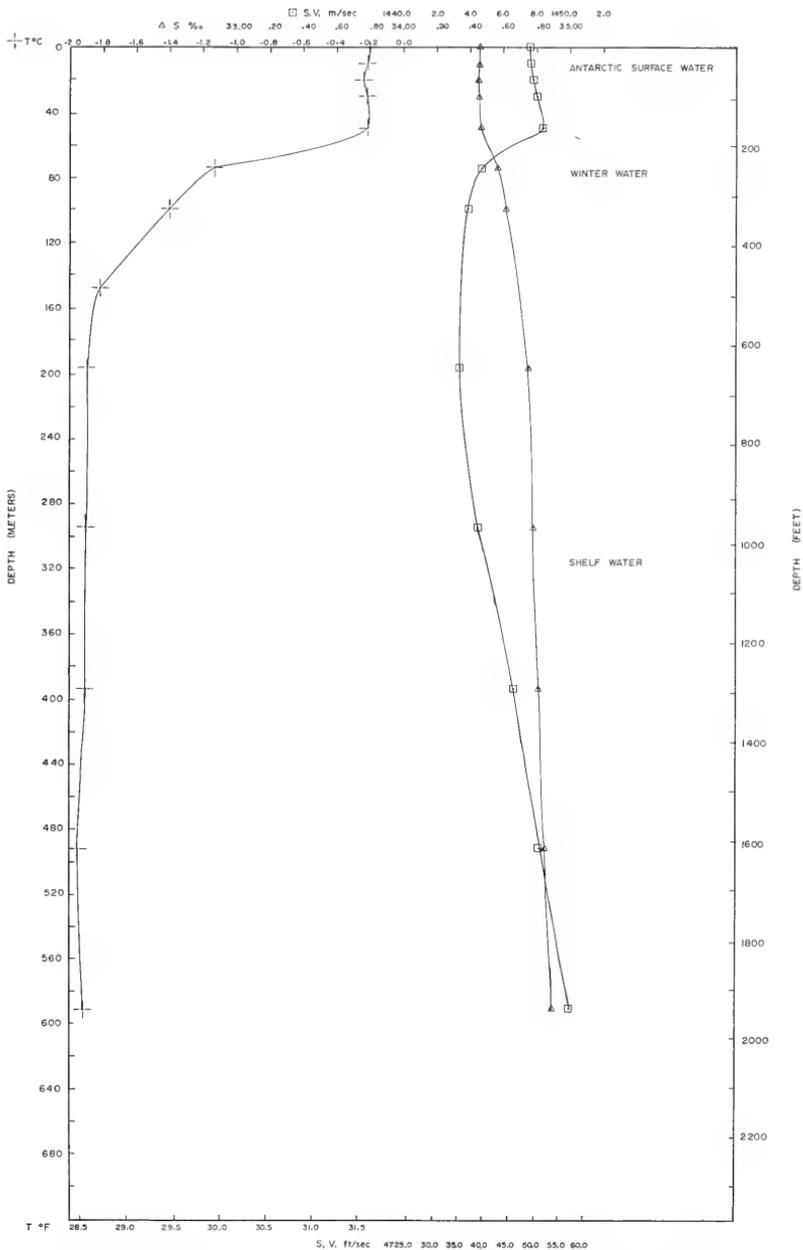


FIGURE 23. VERTICAL DISTRIBUTION OF TEMPERATURE, SALINITY, AND SOUND VELOCITY AT STATION 14, ROSS SEA

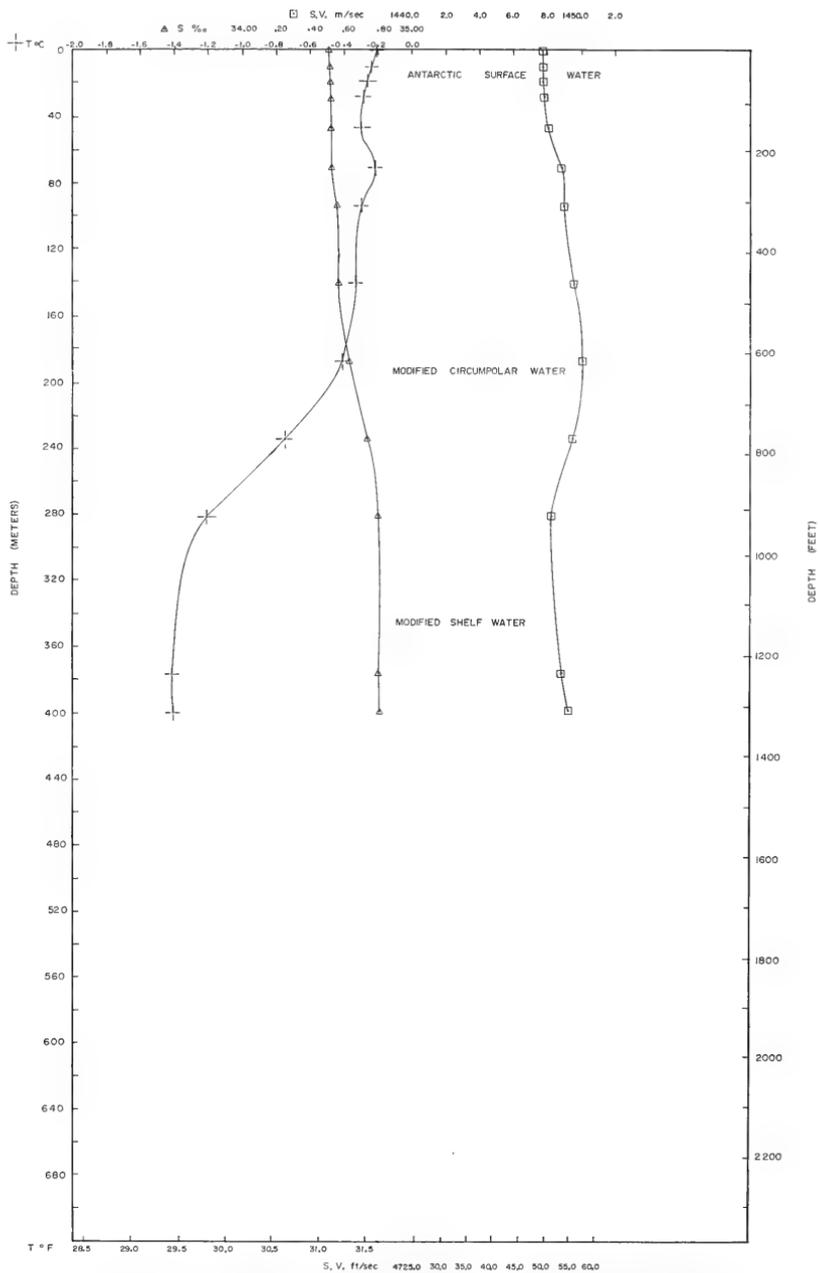


FIGURE 24. VERTICAL DISTRIBUTION OF TEMPERATURE, SALINITY, AND SOUND VELOCITY AT STATION 23, ROSS SEA

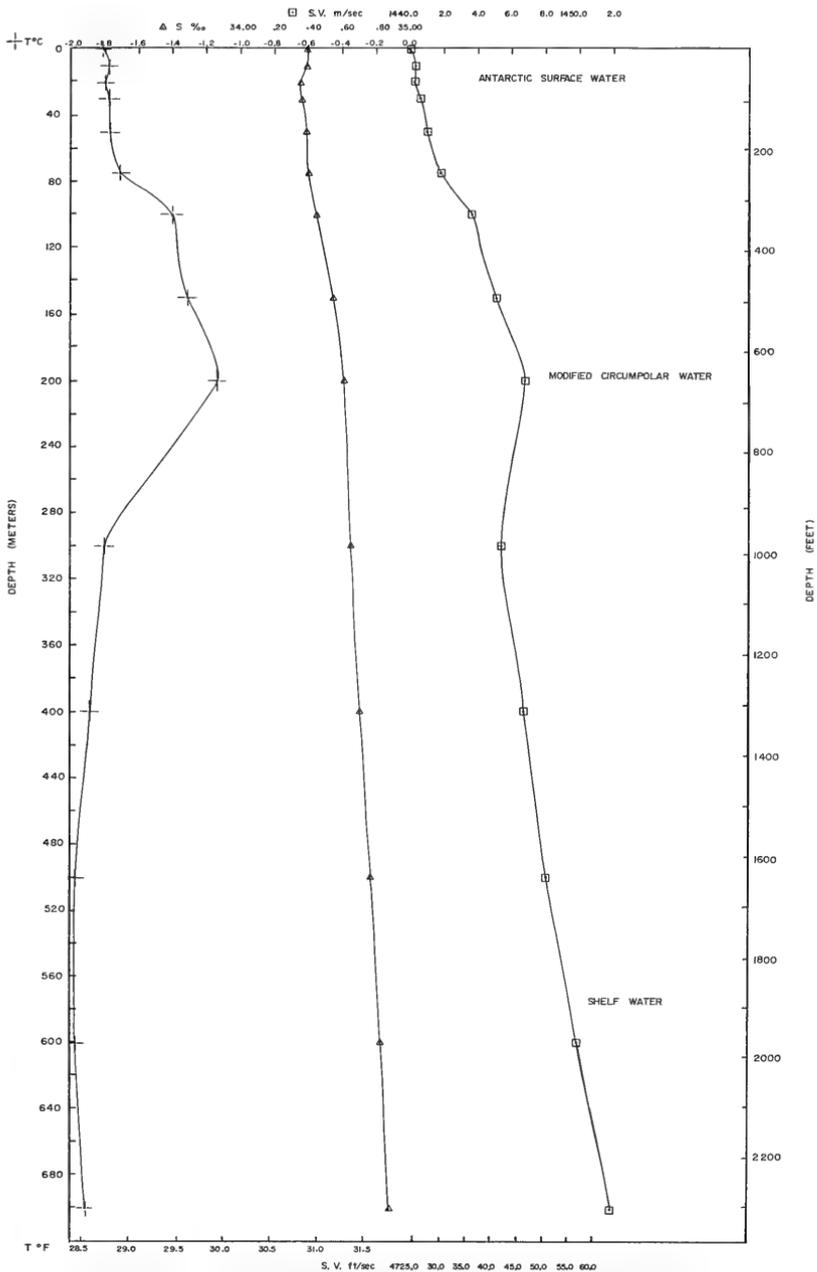


FIGURE 25. VERTICAL DISTRIBUTION OF TEMPERATURE, SALINITY,  
 AND SOUND VELOCITY AT STATION 61, ROSS SEA

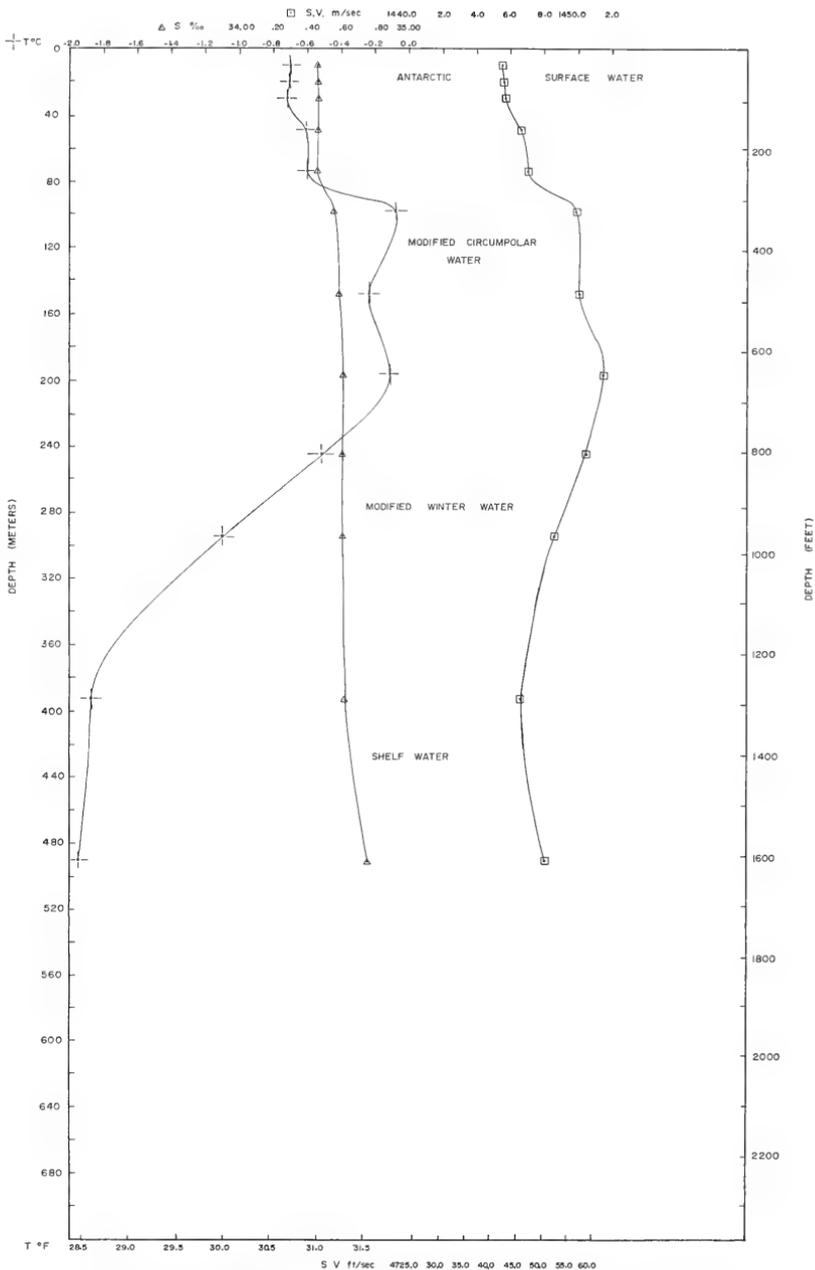


FIGURE 26. VERTICAL DISTRIBUTION OF TEMPERATURE, SALINITY, AND SOUND VELOCITY AT STATION 65, ROSS SEA

## G. Dynamic Topographies

In order to draw dynamic height charts of the Ross Sea (Figs. 27, 28, 29, and 30) and include data from all the stations, the 200-decibar level was used. This is not a level of no motion, but it does permit an estimation of circulation in the area. Comparison between the 150-decibar surface (Fig. 30) and the surface of Shelf Water (Fig. 19) shows some correlation of the streamlines with the surface of the Shelf Water mass. The streamlines determined on DEEP FREEZE 61 for the eastern Ross Sea at the 0- and 50-decibar surfaces show good correlation with DEEP FREEZE 63 and 64 determinations. Maximum currents appear at the surface decreasing with depth. Streamlines at all levels generally agreed as to direction of flow.

The main movement within the Ross Sea appears to be little more than a drift, although a current does parallel the Ross Ice Shelf. All other movement appears to be surface movement caused by wind stress. Movement of the Antarctic Circumpolar and Shelf Water masses may be caused by rapid seasonal changes with the formation of a dense water mass in the winter and the intrusion of the Antarctic Circumpolar Water in the summer.

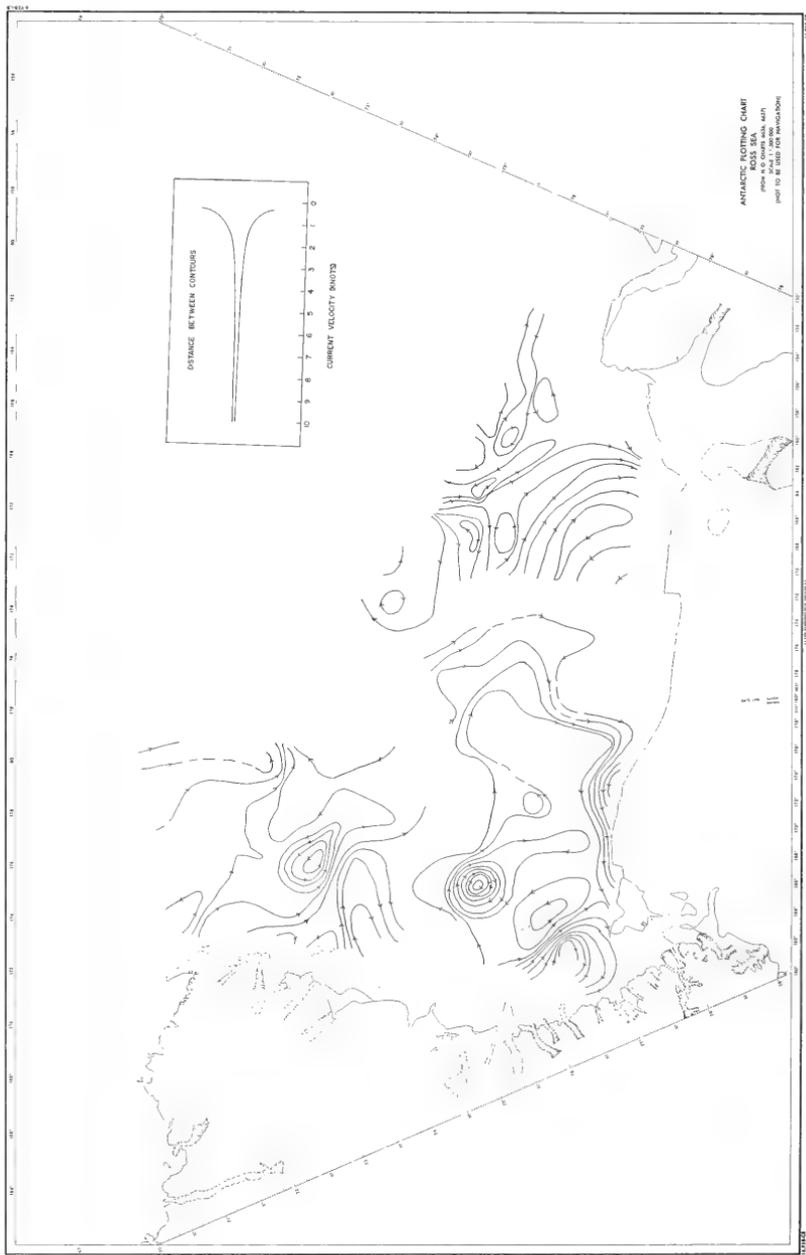


FIGURE 27. DYNAMIC TOPOGRAPHIES AT 0-DECIBAR SURFACE (REFERENCE LEVEL 200 DECIBARS)

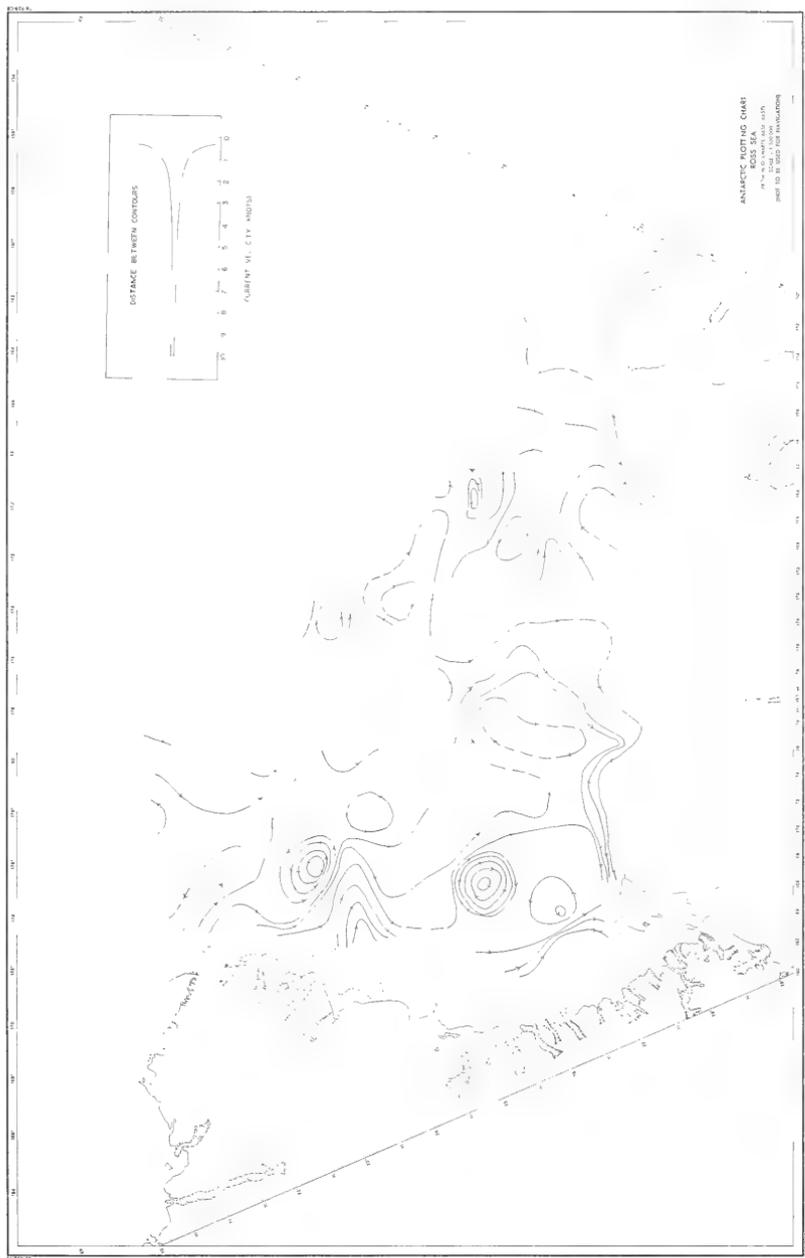


FIGURE 28. DYNAMIC TOPOGRAPHIES AT 50-DECIBAR SURFACE (REFERENCE LEVEL 200 DECIBARS)





FIGURE 30. DYNAMIC TOPOGRAPHIES AT 150-DECIBAR SURFACE (REFERENCE LEVEL 200 DECIBARS)



## REFERENCES

- Deacon, G. E. R., 1937, The Hydrology of the Southern Ocean, Discovery Reports, vol. 15, p. 1-124.
- Hunkins, K., 1962, Arctic Submarine Acoustics, Proceedings of the Arctic Basin Symposium October 1962, The Arctic Institute of North America, Tidewater Publishing Corp., Centreville, Md., p. 197-205.
- Mosby, Håkon, 1934, The Waters of the Atlantic Antarctic Ocean, Det Norske Videnskaps-Akademi i Oslo, Scientific Results of the Norwegian Antarctic Expeditions 1927-1928 et seq., no. 11, 131 p.
- U.S. Navy Hydrographic Office, 1961, Operation DEEP FREEZE 60, 1959-1960, Oceanographic Survey Results (TR-82), U.S. Navy Hydrographic Office, 231 p.
- U.S. Navy Hydrographic Office, 1962, Operation DEEP FREEZE 61, 1960-1961, Marine Geophysical Investigations (TR-105), U.S. Navy Hydrographic Office, 217 p.
- U.S. Naval Oceanographic Office, 1965, Operation DEEP FREEZE 62, 1961-1962, Marine Geophysical Investigations (TR-118), U.S. Naval Oceanographic Office, 157 p.
- U.S. Navy Weather Research Facility, 1961, Climatology of McMurdo Sound (NWRF 16-1261-052), U.S. Navy Weather Research Facility.
- Zubov, N. N., 1943, Arctic Ice translated by U.S. Naval Oceanographic Office and American Meteorological Society, edited and published by U.S. Navy Electronics Laboratory, [1963?], 491 p.



APPENDIX A

OCEANOGRAPHIC STATION DATA

	NODC Ref. No.
DEEP FREEZE 63 Stas.	31150
DEEP FREEZE 64 Stas.	31194



## EXPLANATION OF OCEANOGRAPHIC STATION DATA

Each of the items appearing on the data pages is explained below.

### Reference.

Country Code. A code indicating nationality of the institute or agency conducting the survey or expedition assigned according to WMO/IGY country code (modified). 31 is the code for the United States.

Identity Number. A reference number assigned to the survey by NODC for storage-retrieval purposes.

Ship Code. Alphabetic abbreviation of the ship's name.

Latitude. In degrees, minutes, and tenths of minutes. Hemisphere is noted by N or S.

Longitude. In degrees, minutes, and tenths of minutes. Hemisphere is noted by E or W.

Drift Indicator. The letter D appears in this column if extensive drift occurred while on station.

Marsden Square. Numbered according to the Marsden Square system in 10° and 1° squares.

Station Time (GMT). Month, day, and hour, to the nearest tenth, of the surface environmental information taken on station.

Year. The year in which the data were taken.

Originator's Cruise Number. Cruise number, alphabetic or alpha-numeric designator as assigned by the originator.

Originator's Station Number. Stations are numbered by the originator to designate a certain station location. This number is assigned either prior to the beginning of the cruise or chronologically as the stations are occupied.

Depth to Bottom. Uncorrected sounding depth in meters.

Max. Depth of Samples. Depth of deepest sample in hundreds of meters to the nearest hundred meter interval.

### Wave Observations.

Dir. Direction from which the dominant waves are coming, in tens of degrees, according to Table 1. (WMO Code 0885).

Hgt. Height of dominant waves according to WMO Code 1555.

Per. Period of dominant waves according to WMO Code 3155.

Sea Amt. Sea amount (sea state) according to Table 2 when height and period are not given.

Weather Code. If preceded by an X, weather is coded according to Table 3. A numeric two-digit entry indicates weather according to WMO Code 4677.

Cloud Codes.

Type. Cloud type is coded according to Table 4.

Amt. Cloud amount is coded according to Table 5.

NODC Station Number. This number is assigned by NODC for data storage-retrieval purposes. The reference and NODC station number combined, uniquely define each station in the NODC archives.

Water.

Color Code. Water color is given according to the Forel-Ule code in Table 6.

Trans. (m). Transparency in meters as determined by Secchi disk.

Wind.

Dir. Direction from which the wind is blowing, in tens of degrees, according to Table 1.

Speed or Force. If preceded by S, wind speed is in knots; if preceded by F, wind force is coded according to the Beaufort Code.

Barometer (mbs.). Barometric pressure of the atmosphere is coded in millibars with the hundreds and thousands digits omitted. (Range 945.1 to 1044.7).

Air Temp. °C.

Dry bulb. Dry-bulb air temperature to the nearest tenth of a degree Celsius.

Wet bulb. Wet-bulb air temperature to the nearest tenth of a degree Celsius.

Vis. Code. Visibility is coded according to Table 7.

Messenger time or Cast no. The time (GMT) of release of the messenger is given in hours and tenths of hours. If a multiple cast series extends past midnight (GMT), 24 hours are added to those times. If the messenger time is not given, the cast number is entered in this column.

Card type.

OBS. Indicates an observed or sample depth.

STD. Indicates an interpolated standard depth. Interpolation of temperature, salinity, oxygen, etc., computed by a modified 3-point LaGrange formula.

\*STD. Indicates standard depth interpolation by the originator or by hand at NODC.

LIT. Interpolated standard depth values; original observed values not available.

Note: Both OBS. and STD. lines are printed when a valid observed level and a standard level coincide.

Depth (m). Depth in meters of the sample or standard depth. The prefix letter T indicates at least one unprotected thermometer was used to determine the observed depth and that the computed thermometric depth was within  $\pm 0.5\%$  of the accepted observed depth. Accepted depths are determined by L-Z curve methods described in publication H.O. 607.<sup>1</sup> A suffix letter Q indicates the originator considers the value to be doubtful and the letter P indicates NODC considers the value to be potentially implausible.

T°C. The Celsius ( $^{\circ}\text{C}$ ) temperature is given in degrees to the nearest hundredth. (For the Q and P notation see Depth above).

S‰. Salinity is given in parts per thousand (by weight) to two decimal places. (For the Q and P notation see Depth above).

Sigma-T. Sea water density expressed as  $\sigma_t$  to hundredths. To convert to density divide by 1000 and add 1.000. Thus a  $\sigma_t$  value of 22.35 converts to a density of 1.02235. When depth, temperature, salinity, or any combination of these is doubtful, Q is suffixed.

Specific Volume Anomaly  $-10^7$ . Specific Volume Anomaly in ( $\text{cm}^3/\text{gm}$ )  $\times 10^7$ . Appears at standard depths only.

$\Sigma\Delta$  Dyn. M.  $\times 10^3$ . Dynamic depth anomaly in dynamic meters  $\times 10^3$ . Appears at standard depths only.

Sound Velocity. In meters per second to the tenth of a meter according to Wilson's formula.<sup>2</sup>

$\text{O}_2$  ml/l. Dissolved oxygen in milliliters/liter to hundredths. Q indicates a doubtful value.

$\text{PO}_4$ -P. Inorganic phosphate in microgram-atoms of P per liter to hundredths.

Depth (Ft.), Temp. ( $^{\circ}\text{F}$ ), and Sound Velocity ft/sec. These 3 columns give the english equivalents for the depths, temperatures, and sound velocities recorded in metric units to the left. The spaces used for these conversions ordinarily contain additional chemical observations which were not obtained on this cruise.

SCC A numeral appearing in this column is an Optional Chemistry Code. The optional chemistry fields are numbered from left to right beginning with  $\text{PO}_4$ -P= 1 through pH= 6. The code numeral indicates that the entry in the respective field is NOT as given on the template. (A special template

<sup>1</sup>  
U. S. Hydrographic Office, Instruction manual for oceanographic observations. Hydrographic Office Publication No. 607, 2nd ed., 210 p., 1955.

<sup>2</sup>  
WILSON, W. D., Equation for the speed of sound in sea water, Journal of the Acoustical Society of America, vol. 32, no. 10, pp. 1357, Oct. 1960.

with the correct field designator will be furnished for publication purposes by special request only).

TABLE 1. COMPASS DIRECTION CONVERSION TABLE  
FOR WIND, SEA, AND SWELL DIRECTIONS  
(Combination of WMO Codes 0885 and 0877)

<u>Code</u>	<u>Direction</u>	<u>Code</u>	<u>Direction</u>
00 ----	Calm	23 ----	225° - 234°SW
01 ----	5° - 14°	24 ----	235° - 244°
02 ----	15° - 24°NNE	25 ----	245° - 254°WSW
03 ----	25° - 34°	26 ----	255° - 264°
04 ----	35° - 44°	27 ----	265° - 274°W
05 ----	45° - 54°NE	28 ----	275° - 284°
06 ----	55° - 64°	29 ----	285° - 294°WNW
07 ----	65° - 74°ENE	30 ----	295° - 304°
08 ----	75° - 84°	31 ----	305° - 314°
09 ----	85° - 94°E	32 ----	315° - 324°NW
10 ----	95° - 104°	33 ----	325° - 334°
11 ----	105° - 114°ESE	34 ----	335° - 344°NNW
12 ----	115° - 124°	35 ----	345° - 354°
13 ----	125° - 134°	36 ----	355° - 4°N
14 ----	135° - 144°SE		
15 ----	145° - 154°	49	Waves confused, direction indeterminate (waves equal to or less than 4 3/4 metres)
16 ----	155° - 164°SSE		
17 ----	165° - 174°		
18 ----	175° - 184°S		
19 ----	185° - 194°		
20 ----	195° - 204°SSW		
21 ----	205° - 214°	99	Waves confused, direction indeterminate (waves greater than 4 3/4 metres)
22 ----	215° - 224°		Winds variable, or all directions or unknown

TABLE 2. SEA STATE (WMO Code 3700)

Code	Height*		Description
	Feet	Meters	
0	0	0	Calm-glassy
1	0 - 1/3	0 - 0.1	Calm-rippled
2	1/3 - 1 2/3	0.1 - 0.5	Smooth-wavelet
3	1 2/3 - 4	0.5 - 1.25	Slight
4	4 - 8	1.25 - 2.5	Moderate
5	8 - 13	2.5 - 4	Rough
6	13 - 20	4 - 6	Very rough
7	20 - 30	6 - 9	High
8	30 - 45	9 - 14	Very high
9	> 45	> 14	Phenomenal

\*The average wave height as obtained from the larger well-formed waves of the wave system being observed.

TABLE 3. PRESENT WEATHER (WMO Code 4501)

Code	Description
0	Clear (no cloud at any level)
1	Partly cloudy (scattered or broken)
2	Continuous layer(s) of cloud(s)
3	Sandstorm, duststorm, or blowing snow
4	Fog, thick dust or haze
5	Drizzle
6	Rain
7	Snow, or rain and snow mixed
8	Shower(s)
9	Thunderstorm(s)

TABLE 4. CLOUD TYPE (WMO Code 0500)

Code	Cloud Type	Code
0	Cirrus.....	Ci
1	Cirrocumulus.....	Cc
2	Cirrostratus.....	Cs
3	Alto cumulus.....	Ac
4	Altostratus.....	As
5	Nimbostratus.....	Ns
6	Stratocumulus.....	Sc
7	Stratus.....	St
8	Cumulus.....	Cu
9	Cumulonimbus.....	Cb
x	Cloud not visible	

TABLE 5. CLOUD AMOUNT  
(WMO Code 2700)

<u>Code</u>	
0	0
1	1/10 or less
2	2/10 - 3/10
3	4/10
4	5/10
5	6/10
6	7/10 - 8/10
7	9/10 or more
8	10/10
9	Sky obscured

TABLE 6. WATER COLOR

<u>Code</u>	<u>Percent Yellow</u>	<u>Percent Brown</u>	<u>Forel-Ule Scale</u>
01	0		I
02	2		II
03	5		III
04	9		IV
05	14		V
06	20		VI
07	27		VII
08	35		VIII
09	44		IX
10	54		X
11	65	0	XI
12		2	XII
13		5	XIII
14		9	XIV
15		14	XV
16		20	XVI
17		27	XVII
18		35	XVIII
19		44	XIX
20		54	XX
21		65	XXI

TABLE 7. VISIBILITY (WMO Code 4300)

<u>Code</u>	
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards-5/8 n.m.)
4	1-2 km (approx. 5/8-1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER	
						10'	1"	MO		DAY	HR./10'			CAUSE NO.	STATION NUMBER	Dkt.				HGT
31	150	ED	7653 S	16415 E	571	64	02	06	007	1963	201	A12	0411	03				X2	4 5	0001
					WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS					
					COLOR CODE		TRANS. DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIS CODE					
					16		S10		892		-033		-038		8					

MISSING HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
007		OBS	0000Q	-0132	3343	2691					1041Q	0000	29.62	4766
		STD	0010	-0121	3352	2698	0010832		14418			0033	29.82	4730.3
	007	OBS	0010	-0121	3352	2698			14418			0033	29.82	4730.3
		STD	0020	-0104	3415	2749	0006053		14436			0066	30.13	4736.2
	007	OBS	0020	-0104	3415	2749			14436			0066	30.13	4736.2
		STD	0030	-0143	3448	2777	0003395		14424			0098	29.43	4732.3
	007	OBS	0030	-0143	3448	2777			14424			0098	29.43	4732.3
		STD	0040	-0152	3460	2787			14423			0131	29.26	4731.9
	007	OBS	0040	-0152	3460	2787			14423			0164	29.05	4731.0
		STD	0050	-0164	3464	2790	0002097		14420			0164	29.05	4731.0
	007	OBS	0050	-0164	3464	2790			14420			0197	28.92	4730.6
		OBS	0060	-0171	3468	2794			14419			0230	28.85	4730.6
	007	OBS	0070	-0175	3470	2795			14419			0246	28.78	4730.3
		STD	0075	-0179	3471	2796	0001544		14418			0262	28.74	4730.3
	007	OBS	0080	-0181	3471	2796			14418			0295	28.71	4730.6
		OBS	0090	-0183	3472	2797			14419			0328	28.67	4731.0
	007	OBS	0100	-0185	3474	2799	0001246		14420			0328	28.67	4731.0
		STD	0110	-0188	3475	2800			14420			0361	28.62	4731.0
	007	OBS	0110	-0188	3475	2800			14420			0387	28.72	4732.6
		STD	0125	-0183	3478	2802	0000931		14426			0410	28.71	4732.9
	013	OBS	0127	-0183	3478	2802			14426			0417	28.71	4732.9
		OBS	0137	-0184	3478	2802			14427			0450	28.69	4733.2
	013	OBS	0147	-0187	3478	2802			14427			0482	28.63	4733.2
		STD	0150	-0186	3478	2802	0000893		14428			0492	28.65	4733.6
	013	OBS	0172	-0184	3480	2804			14433			0564	28.69	4735.2
		OBS	0197	-0191	3480	2804			14434			0646	28.56	4735.6
	013	OBS	0200	-0191	3480	2804	0000706		14434			0656	28.56	4735.2
		STD	0221	-0194	3481	2805			14437			0725	28.51	4736.5
	013	OBS	0246	-0196	3486	2809			14441			0807	28.47	4737.8
		STD	0250	-0193	3486	2809	0000220		14443			0820	28.53	4736.5
	013	OBS	0271	-0184	3485	2808			14450			0889	28.69	4740.8
		OBS	0296	-0189	3485	2808			14452			0971	28.60	4741.4
	013	OBS	0300		3485							0981		
		STD	0346		3487							1136		

REFERENCE CMT CODE	SHIP ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	INSTR.	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLING	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER			
						16"	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER	SEA
31	150	ED	7700 S	16630 E	E	571	76	02	06	058	1963	201	812	0923	09			0	X1	4	8		0002

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		16	S03	860	-017	-022	7		

MESSAGE TIME HR. 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MAX-T*10 <sup>3</sup>	S. A. D. DIN. W. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CORR.
058		STD	0000	-0047	3367	2708	0009946	0000	14453			0000	31.15	4711.8	
		OBS	0000	-0047	3367	2708			14453			0000	31.15	4711.8	
		STD	0010	-0109	3430	2761	0004891	0007	14434			0033	30.04	4735.5	
058		OBS	0010	-0109	3430	2761			14434			0033	30.04	4735.5	
		STD	0020	-0125	3450	2778	0003302	0012	14431			0066	29.75	4734.6	
058		OBS	0020	-0125	3450	2778			14431			0066	29.75	4734.6	
		STD	0030	-0117	3457	2783	0002788	0015	14438			0098	29.89	4736.9	
058		OBS	0030	-0117	3457	2783			14438			0098	29.89	4736.9	
058		OBS	0040	-0099	3462	2786			14449			0131	30.22	4740.5	
		STD	0050	-0109	3463	2788	0002349	0020	14446			0164	30.04	4739.5	
058		OBS	0050	-0109	3463	2788			14446			0164	30.04	4739.5	
058		OBS	0060	-0134	3464	2789			14436			0197	29.59	4736.2	
058		OBS	0070	-0161	3466	2792			14425			0230	29.10	4732.6	
		STD	0075	-0167	3467	2793	0001846	0025	14423			0216	28.99	4731.9	
058		OBS	0080	-0171	3468	2794			14422			0262	28.92	4731.6	
058		OBS	0090	-0177	3471	2796			14422			0295	28.81	4731.6	
		STD	0100	-0177	3473	2798	0001344	0029	14423			0328	28.81	4731.9	
058		OBS	0100	-0177	3473	2798			14423			0328	28.81	4731.9	
058		OBS	0110	-0179	3475	2800			14424			0361	28.78	4732.3	
065		OBS	0118	-0189	3474	2799			14421			0387	28.60	4731.6	
		STD	0125	-0189	3475	2800	0001145	0032	14422			0110	28.60	4731.6	
		STD	0150	-0189	3476	2801	0001055	0035	14427			0192	28.60	4733.2	
065		OBS	0197	-0188	3479	2803			14435			0616	28.62	4735.9	
		STD	0200	-0188	3479	2803	0000791	0039	14436			0656	28.62	4736.2	
065		OBS	0246	-0193	3481	2805			14441			0807	28.53	4737.8	
		STD	0250	-0193	3481	2805	0000595	0043	14442			0820	28.53	4738.2	
065		OBS	0296	-0193	3482	2806			14450			0971	28.53	4740.8	
		STD	0300	-0194	3482	2806	0000479	0046	14450			0984	28.51	4740.8	
065		OBS	0345	-01950	3484	2807Q						1132	28.49		
065		OBS	0394	-0200	3485	2808			14463			1293	28.40	4745.1	
		STD	0400	-0199	3485	2808	0000185	0049	14465			1312	28.42	4745.7	
065		OBS	0493	-0192	3486	2809			14484			1617	28.54	4752.0	
		STD	0500	-0193	3486	2809	0000074	0050	14484			1640	28.53	4752.0	
065		OBS	0591	-0194	3487	2810			14499			1939	28.51	4756.9	
		STD	0600	-0193	3487	2810	-0000057	0050	14501			1968	28.53	4757.5	
065		OBS	0690	-0183	3488	2810			14521			2264	28.71	4764.1	
		STD	0700	-0183	3488	2811	-0000166	0049	14523			2297	28.71	4764.7	
		STD	0800	-0184	3492	2813	-0000484	0046	14540			2625	28.69	4770.3	
065		OBS	0887	-0184	3495	2816			14555			2910	28.69	4775.2	

REFERENCE		SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATORS		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
CRUISE NO.	ID. NO.					'	"	MO		DAY	HR.			1/10	CRUISE NO.	STATION NUMBER				DIR.
31	150	ED	7703 S	16820 E	571	78	02	06	108	1963	201	C12	0978	10	16	3	X1	4	8	0003
WATER		WIND		BAROMETER (mb)	AIR TEMP. °C		VR. CORR.	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS											
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB														
	05	S11	858	-004	-011	7														

MEASURE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\Delta \rho$ DYN. M. X 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{STYI}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0077	3430	2760	0005009	0000	14448			0000	30.61	4740.1
		OBS	0000	-0077	3430	2760			14468			0000	30.61	4740.1
		STD	0010	-0099	3447	2774	0003624	0004	14442			0033	30.22	4738.2
		OBS	0010	-0099	3447	2774			14442			0033	30.22	4738.2
		STD	0020	-0102	3447	2774	0003610	0008	14442			0065	30.16	4738.2
		OBS	0020	-0102	3447	2774			14442			0066	30.16	4738.2
		STD	0030	-0104	3449	2776	0003446	0011	14443			0098	30.13	4738.5
		OBS	0030	-0104	3449	2776			14443			0098	30.13	4738.5
		OBS	0040	-0105	3451	2778			14444			0131	30.11	4738.8
		STD	0050	-0105	3452	2779	0003205	0018	14446			0164	30.11	4739.5
		OBS	0050	-0105	3452	2779			14446			0164	30.11	4739.5
		OBS	0060	-0107	3453	2779			14447			0197	30.07	4739.8
		OBS	0070	-0126	3457	2783			14440			0230	29.73	4737.5
		STD	0075	-0135	3459	2785	0002556	0025	14437			0246	29.57	4736.5
		OBS	0080	-0143	3460	2786			14434			0262	29.43	4735.5
		OBS	0090	-0157	3461	2788			14430			0295	29.17	4734.2
		STD	0100	-0169	3462	2789	0002210	0031	14426			0328	28.96	4732.9
		OBS	0100	-0170	3462	2789						0328	28.94	
		OBS	0110	-0178	3463	2790			14423			0361	28.80	4731.9
		OBS	0120	-0185	3466	2792			14422			0394	28.67	4731.6
		STD	0125	-0186	3466	2793	0001819	0036	14422			0410	28.65	4731.6
		STD	0150	-0191	3468	2794	0001661	0041	14424			0492	28.56	4732.3
		OBS	0150	-0191	3468	2794			14424			0492	28.56	4732.3
		STD	0200	-0190	3472	2797	0001328	0048	14434			0656	28.58	4735.6
		OBS	0200	-0190	3472	2797			14434			0656	28.58	4735.6
		STD	0250	-0191	3474	2799	0001144	0054	14442			0820	28.56	4738.2
		OBS	0250	-0191	3474	2799			14442			0820	28.56	4738.2
		STD	0300	-0192	3476	2801	0000959	0060	14450			0984	28.54	4740.8
		OBS	0300	-0192	3476	2801			14450			0984	28.54	4740.8
		STD	0400	-0193	3479	2803	0000670	0068	14467			1312	28.53	4746.4
		OBS	0400	-0193	3479	2803			14467			1312	28.53	4746.4
		STD	0500	-0191	3483	2806	0000317	0073	14485			1640	28.56	4752.3
		OBS	0500	-0191	3483	2806			14485			1640	28.56	4752.3
		STD	0600	-0193	3485	2808	0000102	0075	14501			1968	28.53	4757.5
		OBS	0600	-0193	3485	2808			14501			1968	28.53	4757.5
		STD	0700	-0183	3486	2809	0000016	0075	14523			2297	28.71	4764.7
		OBS	0700	-0183	3486	2809			14523			2297	28.71	4764.7
		STD	0800	-0187	3487	2809	-0000130	0075	14538			2625	28.63	4769.7
		OBS	0800	-0187	3487	2809			14538			2625	28.63	4769.7
		STD	0900	-0190	3489	2811	-0000348	0072	14553			2953	28.58	4774.6
		OBS	0900	-0190	3489	2811			14553			2953	28.58	4774.6
		OBS	0980	-0192								3215	28.54	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
CTER CODE	ID. NO.					10'	1'	MO		DAY	HR./1/10			CRUISE NO.	STATION NUMBER	DIR			
31	150	ED	7706 S	170205E	570	70	02 06	153	1963	201	D12	0832	07	16			3 6	0004	

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VEL. (KNOTS)	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANSL. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		14	S15	852	-061	-068	7		

MISSING TIME & HR 1/10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma$ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu$ g - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	CTER CODE
		STD	0000	-0083	3452	2778	0003303	0000	14448			0000	30.51	4740.1	
153		OBS	0000	-0083	3452	2778			14448			0000	30.51	4740.1	
		STD	0010	-0084	3452	2778	0003296	0003	14449			0033	30.49	4740.5	
153		OBS	0010	-0084	3452	2778			14449			0033	30.49	4740.5	
		STD	0020	-0084	3450	2776	0003446	0007	14451			0066	30.49	4741.1	
153		OBS	0020	-0084	3450	2776			14451			0066	30.49	4741.1	
153		OBS	0029	-0085	3450	2776			14452			0095	30.47	4741.4	
		STD	0030	-0085	3450	2776	0003432	0010	14452			0098	30.47	4741.4	
153		OBS	0048	-0085	3451	2777			14456			0158	30.51	4742.8	
		STD	0050	-0081	3451	2777	0003341	0017	14457			0164	30.54	4743.1	
153		OBS	0072	-0071	3456	2780			14466			0236	30.72	4746.0	
		STD	0075	-0072	3457	2781	0002943	0025	14466			0246	30.70	4746.0	
153		OBS	0096	-0084	3461	2785			14465			0315	30.49	4745.7	
		STD	0100	-0091	3461	2786	0002530	0032	14462			0328	30.36	4744.7	
		STD	0125	-0128	3463	2789	0002222	0038	14449			0410	29.70	4740.5	
153		OBS	0145	-0151	3465	2791			14442			0476	29.28	4738.2	
		STD	0150	-0155	3466	2792	0001921	0043	14441			0492	29.21	4737.8	
153		OBS	0193	-0182	3471	2796			14436			0533	28.72	4736.2	
		STD	0200	-0183	3472	2797	0001349	0051	14437			0656	28.71	4736.5	
153		OBS	0241	-0187	3476	2801			14443			0791	28.63	4738.5	
		STD	0250	-0188	3476	2801	0000969	0057	14444			0920	28.62	4738.8	
153		OBS	0290	-0190	3478	2802			14450			0981	28.58	4740.8	
		STD	0300	-0190	3478	2803	0000782	0061	14451			0984	28.58	4743.1	
153		OBS	0338	-0190	3480	2804			14458			1105	28.58	4744.4	
160		OBS	0360	-0191	3482	2806			14461			1191	28.54	4744.4	
		STD	0400	-0193	3482	2806	0000441	0067	14467			1312	28.53	4744.4	
160		OBS	0451	-0194	3482	2806			14475			1480	28.51	4745.0	
		STD	0500	-0193	3485	2808	0000157	0070	14484			1640	28.53	4752.0	
160		OBS	0542	-0192	3486	2809			14492			1778	28.54	4754.6	
		STD	0600	-0192	3487	2809	-0000015	0071	14502			1968	28.54	4757.9	
160		OBS	0635		3487							2083			
		STD	0700	-0192	3488	2810	-0000175	0070	14519			2297	28.54	4763.4	
160		OBS	0728	-0192	3489	2811			14523			2388	28.54	4764.7	

REFERENCE CITY ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDC STATION NUMBER			
					10"	1"	MO	DAY	HR./1/10		CRUISE NO.	STATION NUMBER			DIR.	HGHT	PER				SEA		
31	150	ED	770785	172280E	570	72	02	06	206	1963	201	E12	0667	05	15		4	X1	3	2	0005		
					WATER		WIND		BARO-		AIR TEMP. °C				SPECIAL								
					COLOR		SPEED		METER		DRY		WET		OBS.								
					CODE		DIR.		IMB		BULB		BULB		DEPTH		OBSERVATIONS						
					16		526		830		-049		-056		7								

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DTN. M. S. 10'	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC
		STD	0000	-0082	3454	2779	0003154	0000	14449			0000	30.52	4740.5
206		OBS	0000	-0082	3454	2779			14449			0000	30.52	4740.5
206		OBS	0008	-0082	3455	2780			14450			0026	30.52	4740.8
		STD	0010	-0083	3454	2779	0003147	0003	14450			0033	30.51	4740.8
206		OBS	0017	-0085	3453	2779			14450			0056	30.17	4740.8
		STD	0020	-0084	3453	2779	0003217	0006	14451			0066	30.19	4741.1
206		OBS	0026	-0083	3453	2779			14452			0085	30.51	4741.5
		STD	0030	-0082	3453	2779	0003222	0010	14454			0098	30.52	4742.1
206		OBS	0042	-0078	3453	2778			14457			0138	30.60	4743.1
		STD	0050	-0093	3454	2780	0003096	0016	14452			0164	30.33	4741.5
216		OBS	0050	-0093	3454	2780			14452			0164	30.33	4741.5
		STD	0075	-0093	3458	2783	0002783	0023	14457			0246	30.33	4743.1
206		OBS	0085	-0100	3459	2784			14455			0279	30.20	4742.4
		STD	0100	-0130	3461	2787	0002425	0030	14444			0328	29.66	4738.8
		STD	0125	-0166	3464	2790	0002068	0035	14432			0410	29.01	4734.9
206		OBS	0127	-0168	3464	2790			14431			0417	28.98	4734.6
		STD	0150	-0178	3466	2792	0001850	0040	14430			0492	28.80	4734.2
206		OBS	0169	-0184	3468	2794			14431			0554	28.69	4734.6
		STD	0200	-0186	3470	2796	0001493	0049	14435			0656	28.65	4735.9
206		OBS	0212	-0187	3471	2796			14437			0696	28.63	4736.5
		STD	0250	-0188	3473	2798	0001245	0055	14443			0820	28.62	4738.5
206		OBS	0254	-0188	3473	2798			14444			0833	28.62	4738.8
		STD	0291	-0192	3475	2800			14448			0955	28.54	4740.1
206		OBS	0297	-0192	3475	2800			14449			0974	28.54	4740.5
		STD	0300	-0192	3475	2800	0001028	0061	14450			0984	28.54	4740.8
216		OBS	0329	-0195	3476	2801			14453			1079	28.49	4741.8
		STD	0371	-0197	3478	2802			14460			1217	28.45	4744.1
216		OBS	0400	-0196	3479	2803	0000683	0070	14465			1312	28.47	4745.7
		STD	0411	-0195	3479	2803			14468			1348	28.45	4746.7
216		OBS	0451	-0191	3481	2805			14476			1480	28.56	4749.3
		STD	0492	-0190	3483	2806			14484			1514	28.58	4752.0
216		OBS	0500	-0190								1640	28.58	
		STD	0532	-0189								1745	28.60	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA-TH ER CODE	CLOUD CODES	NODC STATION NUMBER	
CRUISE CODE	ID. NO.					'10	'10	'10		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER				DIR.
31	150	ED	7709 S	17430 E	570	74	02	07 01 18	1963	201	F12	0439	04	15			X1	3	6	0006

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIC. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			16	523	830	-056	-060	7	

MESSAGE NO. HR. 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANDMALT-310°	Σ Δ D DYN. M. X 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - μl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	
		STD	0000	-0049	3453	2777	0003362	0000	14464			0000	31.12	4745.4	
		OBS	0000	-0049	3453	2777			14464			0000	31.12	4745.4	
		STD	0010	-0052	3452	2776	0003424	0003	14464			0033	31.06	4745.4	
		OBS	0010	-0052	3452	2776			14464			0033	31.06	4745.4	
		STD	0020	-0052	3453	2777	0003345	0007	14466			0066	31.06	4746.0	
		OBS	0020	-0052	3453	2777			14466			0066	31.06	4746.0	
		STD	0029	-0051	3453	2777			14468			0095	31.08	4746.7	
		OBS	0029	-0051	3453	2777			14468			0095	31.08	4746.7	
		STD	0030	-0042	3452	2776	0003352	0010	14468			0098	31.10	4746.7	
		OBS	0030	-0042	3452	2776			14475			0158	31.21	4749.0	
		STD	0048	-0043	3452	2776	0003441	0017	14475			0161	31.10	4749.0	
		OBS	0048	-0043	3452	2776			14475			0236	31.10	4749.3	
		STD	0072	-0050	3454	2778			14473			0216	30.99	4748.3	
		OBS	0072	-0050	3454	2778	0003163	0025	14473			0315	30.38	4748.7	
		STD	0096	-0090	3459	2784			14462			0328	30.31	4748.4	
		OBS	0096	-0090	3459	2784	0002671	0032	14461			0341	29.86	4748.8	
		STD	0100	-0094	3459	2784	0002407	0039	14453			0476	29.55	4740.5	
		OBS	0100	-0136	3463	2789			14449			0492	29.50	4740.1	
		STD	0125	-0139	3464	2789	0002166	0045	14448			0533	29.07	4739.2	
		OBS	0125	-0139	3464	2789			14445			0656	29.01	4739.2	
		STD	0150	-0163	3468	2793	0001631	0054	14445			0791	28.76	4739.5	
		OBS	0150	-0163	3468	2793			14446			0820	28.72	4739.5	
		STD	0200	-0182	3475	2800	0001095	0061	14446			0951	28.62	4741.1	
		OBS	0200	-0182	3475	2800			14451			0984	28.60	4741.5	
		STD	0241	-0188	3479	2803	0000663	0065	14452			1266	28.47	4745.4	
		OBS	0241	-0188	3479	2803			14464						
		STD	0250	-0189	3480	2804			14464						
		OBS	0250	-0189	3480	2804			14464						
		STD	0300	-0196	3488	2811			14464						
		OBS	0300	-0196	3488	2811			14464						

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA-TH ER CODE	CLOUD CODES	NODC STATION NUMBER		
CRUISE CODE	ID. NO.					'10	'10	'10		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER				DIR.	HGT
31	150	ED	7735 S	17442 E	570	74	02	07 06 68	1963	201	F11	0424	04	17			4	X1	3	7	0007

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIC. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			18	518	840	-059	-062	7	

MESSAGE NO. HR. 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANDMALT-310°	Σ Δ D DYN. M. X 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - μl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	
		STD	0000	-0045	3450	2775	0003608	0000	14465			0000	31.19	4745.7	
		OBS	0000	-0045	3450	2775			14465			0000	31.19	4745.7	
		STD	0009	-0046	3450	2775			14466			0030	31.17	4746.0	
		OBS	0009	-0046	3450	2775			14466			0033	31.17	4746.0	
		STD	0010	-0046	3450	2775	0003602	0004	14467			0059	31.19	4746.4	
		OBS	0010	-0045	3449	2774			14468			0059	31.19	4746.4	
		STD	0018	-0045	3449	2774	0003681	0007	14469			0066	31.19	4747.0	
		OBS	0018	-0045	3449	2774			14469			0089	31.17	4747.0	
		STD	0020	-0046	3449	2774	0003694	0011	14470			0098	31.19	4747.4	
		OBS	0020	-0046	3449	2774			14473			0145	31.21	4748.3	
		STD	0027	-0045	3448	2773			14473			0161	31.17	4748.3	
		OBS	0027	-0045	3448	2773	0003594	0018	14473			0223	30.94	4747.7	
		STD	0050	-0059	3455	2779			14471			0216	30.74	4746.4	
		OBS	0050	-0059	3455	2779	0003027	0026	14467			0299	30.38	4748.4	
		STD	0075	-0070	3456	2780			14461			0328	30.34	4748.4	
		OBS	0075	-0070	3456	2780	0002794	0034	14461			0328	30.34	4748.4	
		STD	0100	-0092	3458	2783	0002800	0041	14463			0410	30.24	4745.1	
		OBS	0100	-0092	3458	2783			14463			0410	30.24	4745.1	
		STD	0125	-0103	3457	2783			14465			0446	30.15	4745.7	
		OBS	0125	-0103	3457	2783	0002776	0048	14465			0492	30.16	4745.7	
		STD	0150	-0106	3458	2783			14468			0594	30.09	4746.7	
		OBS	0150	-0106	3458	2783	0002623	0061	14471			0656	30.07	4747.7	
		STD	0200	-0107	3459	2784			14475			0742	30.04	4749.0	
		OBS	0200	-0107	3459	2784	0002167	0073	14466			0820	29.53	4746.0	
		STD	0226	-0109	3460	2785			14460			0892	29.17	4748.1	
		OBS	0226	-0109	3460	2785	0001622	0083	14456			0984	28.83	4742.8	
		STD	0250	-0176	3465	2791			14461			1188	28.58	4748.4	
		OBS	0250	-0176	3465	2791			14461						
		STD	0272	-0190	3472	2797			14461						
		OBS	0272	-0190	3472	2797			14461						

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	SOUND SPEED M/S	MARS DEN SQUARE		STATION TIME LIGHTS		YEAR	ORIGINATION'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
						10'	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.	HGT		PER	SEA		TYPE
31	150	ED	7635 S	17234 E	570	62	02	07	108	1963	201	E11	0613	06	18			4		6	7		0008

WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- MIS- SIV	DIR.	SPEED OR FORCE	BARO- METER (mb)	DRY BULB		
20	530		880	-074	-079	7	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-310°	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec	SEC
		STD	0000	-0058	3450	2775	0003554	0000	14459			0000	30.96	4743.8	
		OBS	0000	-0058	3450	2775			14459			0000	30.96	4743.8	
		STD	0010	-0058	3450	2775	0003552	0004	14461			0033	30.96	4744.4	
		OBS	0010	-0058	3450	2775			14461			0033	30.96	4744.4	
		OBS	0019	-0056	3450	2775			14463			0062	30.99	4745.1	
		STD	0020	-0056	3450	2775	0003558	0007	14464			0066	30.99	4745.4	
		OBS	0029	-0058	3450	2775			14464			0095	30.96	4745.4	
		STD	0030	-0058	3450	2775	0003539	0011	14464			0098	30.96	4745.4	
		OBS	0048	-0062	3451	2776			14466			0158	30.88	4746.0	
		STD	0050	-0062	3451	2776	0003434	0018	14466			0164	30.88	4746.0	
		OBS	0072	-0079	3453	2778			14462			0236	30.58	4744.7	
		STD	0075	-0089	3454	2780	0003104	0026	14458			0246	30.40	4743.4	
		OBS	0095	-0140	3461	2787			14438			0312	29.48	4736.9	
		STD	0100	-0147	3462	2788	0002277	0033	14436			0328	29.35	4736.2	
		OBS	0119	-0168	3465	2791			14430			0390	28.98	4734.2	
		STD	0125	-0172	3466	2792	0001882	0038	14429			0410	28.90	4733.9	
		OBS	0143	-0183	3469	2795			14427			0469	28.71	4733.3	
		STD	0150	-0184	3470	2796	0001527	0042	14428			0492	28.69	4733.6	
		OBS	0191	-0190	3473	2798			14432			0627	28.58	4731.9	
		STD	0200	-0190	3473	2799	0001221	0049	14434			0656	28.40	4735.6	
		OBS	0241	-0191	3475	2800			14441			0791	28.56	4737.8	
		STD	0250	-0192	3476	2801	0000988	0054	14442			0820	28.54	4738.2	
		OBS	0286	-0193	3477	2802			14447			0938	28.53	4739.8	
		OBS	0287	-0193	3477	2802			14448			0942	28.53	4740.1	
		STD	0300	-0194	3477	2802	0000853	0059	14449			0984	28.51	4740.5	
		OBS	0333	-0196	3478	2802			14454			1192	28.47	4742.1	
		OBS	0381	-0193	3480	2804			14464			1250	28.53	4745.4	
		STD	0400	-0193	3480	2804	0000563	0066	14467			1312	28.53	4746.4	
		OBS	0430	-0193	3481	2805			14472			1411	28.53	4748.0	
		OBS	0478	-0193	3483	2806						1568	28.53		
		STD	0500	-0192								1640	28.54		
		OBS	0575	-0191								1886	28.56		

REFERENCE CTRY CODE	SHIP CODE	LATITUDE ° /10	LONGITUDE ° /10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	REAL DEPTH OF SWATH'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TFR AMT	NODC STATION NUMBER
					10 <sup>1</sup>	10 <sup>2</sup>	10 <sup>3</sup>		CRUISE NO.	STATION NUMBER			DIR.	HGT	PERI			
31	150	ED	7637 S	17041 E	570	60	02 07 165	1963	201	D11	0679	06	16		3	X7	6 8	0009

WATER		WIND		BARO- METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS M	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		18	S20	910	-099	-101	7		

MESSAGE TIME HR. /10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	SEC
165		STD	0000	-0052	3449	2774	0003655	0000	14462			0000	31.04	4744.7	
		OBS	0000	-0052	3449	2774			14462			0000	31.06	4744.7	
165		STD	0010	-0052	3448	2773	0003729	0004	14464			0033	31.06	4745.4	
		OBS	0010	-0052	3448	2773			14464			0033	31.06	4745.4	
165		OBS	0019	-0051	3448	2773			14465			0062	31.08	4745.7	
		STD	0020	-0051	3448	2773	0003731	0007	14466			0066	31.08	4746.0	
165		OBS	0029	-0051	3448	2773			14467			0095	31.08	4746.4	
		STD	0030	-0051	3448	2773	0003722	0011	14467			0158	31.08	4746.4	
165		OBS	0048	-0052	3449	2774			14470			0158	31.06	4747.4	
		STD	0050	-0053	3449	2774	0003617	0018	14470			0164	31.07	4747.4	
165		OBS	0072	-0070	3453	2778			14466			0236	30.74	4746.0	
		STD	0075	-0075	3454	2779	0003160	0027	14464			0246	30.65	4745.4	
165		OBS	0096	-0108	3460	2785			14453			0315	30.06	4741.8	
		STD	0100	-0114	3460	2786	0002512	0034	14451			0328	29.95	4741.1	
165		STD	0125	-0146	3463	2789	0002192	0040	14441			0410	29.37	4737.8	
		OBS	0145	-0166	3465	2791			14435			0476	29.01	4736.9	
165		STD	0150	-0170	3466	2792	0001874	0045	14434			0492	28.94	4735.6	
		OBS	0194	-0190	3474	2799			14433			0636	28.58	4735.2	
165		STD	0200	-0190	3474	2799	0001145	0053	14434			0656	28.58	4735.6	
		OBS	0244	-0189	3477	2801			14442			0800	28.60	4738.2	
165		STD	0250	-0189	3477	2802	0000905	0058	14443			0820	28.60	4738.5	
		OBS	0293	-0190	3479	2803			14450			0961	28.58	4740.8	
165		STD	0300	-0190	3479	2803	0000729	0062	14451			0984	28.58	4741.1	
		OBS	0343	-0190	3480	2804			14459			1125	28.58	4743.8	
175		OBS	0376	-0192	3480	2804			14463			1234	28.54	4745.1	
		STD	0400	-0193	3481	2804	0000556	0068	14467			1312	28.53	4746.4	
175		OBS	0423	-0194	3481	2805			14470			1388	28.51	4747.4	
		OBS	0470	-0190	3483	2806			14480			1542	28.58	4750.6	
175		STD	0500	-0191	3484	2807	0000273	0072	14485			1640	28.56	4752.3	
		OBS	0517	-0191	3484	2807			14488			1696	28.56	4753.3	
175		OBS	0564	-0192Q	3486	2809Q						1850	28.54		
		STD	0600	-0191	3488	2810	-0000117	0073	14502			1968	28.56	4757.9	
175		OBS	0634	-0191	3489	2811			14508			2080	28.56	4759.8	



REFERENCE CITE CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	SUN RISE HOUR	MARSDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPLG'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TEXT [AUX]	NODC STATION NUMBER
						10°	1'	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	SEA			
31	150	ED	7630 S	16649 E	571	66	02	08	004	1963	201	B11	0841	08	49		2		5	6		0011

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- M.	DIR.	SPEED OR FORCE		DAY BULB	WET BULB			
				940	-039	-042	7		

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> ?	S Δ D DIN. W. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	CONT.
004		STD	0000	-0029	3403	2736	0007269	0000	14466			0000	31.18	4716.0	
		OBS	0000	-0029	3403	2736			14466			0000	31.18	4716.0	
		STD	0010	-0163	3466	2792	0001967	0005	14414			0033	29.07	4729.0	
004		OBS	0010	-0163	3466	2792			14414			0033	29.07	4729.0	
		STD	0020	-0185	3473	2798	0001368	0006	14406			0066	28.67	4726.4	
004		OBS	0020	-0185	3473	2798			14406			0066	28.67	4726.4	
		STD	0030	-0190	3476	2801	0001119	0008	14406			0098	28.58	4726.4	
004		OBS	0030	-0190	3476	2801			14406			0098	28.58	4726.4	
		STD	0050	-0194	3478	2802	0000945	0010	14408			0164	28.51	4727.0	
004		OBS	0050	-0194	3478	2802			14408			0164	28.51	4727.0	
		STD	0075	-0190	3480	2804	0000787	0012	14414			0246	28.58	4729.0	
004		OBS	0075	-0190	3480	2804			14414			0246	28.58	4729.0	
004		OBS	0099	-0191	3480	2804			14418			0325	28.56	4730.3	
		STD	0100	-0191	3480	2804	0000770	0014	14418			0328	28.56	4730.3	
		STD	0125	-0191	3481	2805	0000679	0016	14422			0410	28.56	4731.6	
004		OBS	0149	-0191	3482	2806			14426			0489	28.56	4732.9	
		STD	0150	-0191	3482	2806	0000588	0017	14426			0492	28.56	4732.9	
004		OBS	0199	-0191	3482	2806			14435			0653	28.56	4735.9	
		STD	0200	-0191	3482	2806	0000560	0020	14435			0656	28.56	4735.9	
004		OBS	0249	-0189	3482	2805			14444			0817	28.60	4738.8	
		STD	0250	-0189	3482	2805	0000538	0023	14444			0820	28.60	4738.8	
004		OBS	0298	-0189	3483	2806			14452			0978	28.60	4741.5	
		STD	0300	-0189	3483	2806	0000434	0025	14452			0984	28.60	4741.5	
009		OBS	0398	-0192	3483	2806			14467			1306	28.54	4746.4	
		STD	0400	-0192	3483	2806	0000369	0029	14468			1312	28.54	4746.7	
009		OBS	0498	-0194	3485	2808			14483			1637	28.51	4751.6	
		STD	0500	-0194	3485	2808	0000154	0032	14484			1640	28.51	4752.0	
009		OBS	0597	-0191	3486	2809			14502			1959	28.56	4757.9	
		STD	0600	-0191	3486	2809	0000027	0033	14502			1969	28.56	4757.9	
009		OBS	0697	-0192	3488	2810			14518			2287	28.54	4763.1	
		STD	0700	-0192	3488	2811	-0000182	0032	14519			2297	28.54	4763.4	
009		OBS	0797	-0188	3491	2813			14537			2614	28.62	4769.3	

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	L. TIME 10 <sup>00</sup>	MARS DEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TFR AMT	NODC STATION NUMBER	
STY CODE	ID. NO.					10'	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	150	ED	7600 S	16711 E	571	67	02	08	103	1963	201	B10	0688	06	34				3	X1	4	1	0012
WATER		WIND		BARO-		AIR TEMP. °C		NO. OBS.		SPECIAL													
COLOR CODE		SPEED OR TORQ		METER (mbars)		WET BULB		DEPTH		OBSERVATIONS													
04		34		510		950		-027		-032		7											

PRESENCE TIME HR 1/10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-t	SPECIFIC VOLUME AND MALT=157	S Δ D DYN. V. ± 10'	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0007	3390	2724	0008360	0000	14474			0000	31.87	4718.7
		OBS	0000	-0007	3390	2724			14474			0000	31.87	4718.7
		STD	0010	-0014	3401	2734	0007486	0008	14474			0033	31.75	4718.7
103		OBS	0010	-0014	3401	2734			14474			0033	31.75	4718.7
		STD	0020	-0065	3427	2757	0005279	0014	14456			0066	30.83	4712.8
103		OBS	0020	-0065	3427	2757			14456			0066	30.83	4712.8
		STD	0030	-0106	3438	2767	0004281	0019	14440			0098	30.09	4737.5
103		OBS	0030	-0106	3438	2767			14440			0098	30.09	4737.5
		STD	0050	-0129	3451	2779	0003200	0027	14435			0164	29.68	4735.9
103		OBS	0050	-0129	3451	2779			14435			0164	29.68	4735.9
		STD	0074	-0136	3458	2785			14436			0213	29.55	4736.2
103		OBS	0074	-0136	3458	2785			14436			0213	29.55	4736.2
		STD	0075	-0137	3458	2785	0002611	0034	14436			0216	29.53	4736.2
103		OBS	0099	-0153	3462	2788			14433			0325	29.25	4735.2
		STD	0100	-0154	3462	2788	0002239	0040	14433			0328	29.23	4735.2
		STD	0125	-0172	3466	2792	0001866	0045	14429			0410	28.90	4733.9
103		OBS	0149	-0184	3470	2796			14428			0489	28.69	4733.6
		STD	0150	-0184	3470	2796	0001519	0049	14428			0492	28.69	4733.6
103		OBS	0198	-0190	3474	2799			14434			0650	28.58	4735.6
		STD	0200	-0190	3474	2799	0001168	0056	14434			0656	28.58	4735.6
103		OBS	0243	-0188	3476	2801			14442			0797	28.62	4738.2
		STD	0250	-0189	3476	2801	0000966	0061	14443			0820	28.60	4738.2
103		OBS	0298	-0192	3479	2803			14450			0978	28.54	4740.8
		STD	0300	-0192	3479	2803	0000722	0066	14450			0984	28.54	4740.8
107		OBS	0388	-0191	3483	2806			14466			1273	28.56	4746.0
		STD	0397	-0191	3483	2806			14468			1303	28.56	4746.7
103		OBS	0400	-0191	3483	2806	0000365	0071	14468			1312	28.56	4746.7
		STD	0485	-0194	3486	2809			14481			1591	28.51	4751.0
107		OBS	0500	-0193	3487	2809	0000043	0073	14484			1640	28.53	4752.0
		STD	0583	-0191	3489	2811			14500			1913	28.56	4724.4
107		OBS	0600	-0191	3490	2812	-0000269	0072	14503			1969	28.56	4725.4
		STD	0649	-0192	3491	2813			14510			2129	28.54	4727.7

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE * 1/10	LONGITUDE * 1/10	MARSDEN SQUARE INDEX	STATION TIME (GMT)			YEAR	ORIGINATOR'S STATION		DEPTH TO BOTTOM	MAX. DEPTH OF SWR'S, L'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TFR (AMT)	NODC STATION NUMBER
					15'	'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DR.	HGT	PER			
31 150	ED	7604 S	16905 E	571 69	02 08 158	1963	201 C10	0594	06	29			3	X1	6 3		0013	
					WATER		WIND	BARO- METER		AIR TEMP., °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS				
					COLOR CODE	TRANS. M	DIR.	SPEED OR FORCE	DRY BULB	WET BULB								
					06 30	S14	980	-022	-029	7								

MESSAGE# HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY=σ <sub>t</sub>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft./sec	S CODE
158		STD	0000	-0007	3431	2757	0005230	0000	14480			0000	31.87	4750.6	
		OBS	0000	-0007	3431	2757			14480			0000	31.87	4750.6	
		STD	0010	-0009	3432	2758	0005143	0005	14481			0033	31.84	4751.0	
		OBS	0010	-0009	3432	2758			14481			0033	31.84	4751.0	
158		STD	0020	-0004	3436	2761	0004861	0010	14486			0066	31.93	4752.6	
		OBS	0020	-0004	3436	2761			14486			0066	31.93	4752.6	
158		OBS	0029	-0027	3440	2766			14477			0098	31.46	4749.3	
158		STD	0030	-0030	3440	2766	0004410	0015	14476			0161	30.45	4742.1	
		OBS	0049	-0086	3446	2773			14454			0164	30.38	4741.5	
158		STD	0050	-0090	3446	2773	0003689	0023	14452			0210	29.41	4734.9	
		OBS	0073	-0144	3455	2782			14432			0216	29.43	4735.2	
158		STD	0075	-0143	3455	2783	0002814	0031	14433			0322	29.52	4737.5	
		OBS	0098	-0138	3459	2785			14440			0328	29.52	4737.5	
158		STD	0100	-0139	3459	2786	0002517	0038	14439			0410	29.26	4736.9	
		OBS	0125	-0152	3462	2788	0002264	0044	14438			0482	29.07	4736.9	
158		OBS	0147	-0163	3464	2790			14437			0492	29.03	4736.2	
		STD	0150	-0165	3465	2791	0001966	0049	14436			0610	28.65	4735.9	
		OBS	0195	-0186	3473	2798			14435			0656	28.65	4736.2	
		STD	0200	-0186	3473	2798	0001241	0057	14436			0820	28.62	4738.8	
		OBS	0250	-0188	3476	2800	0001015	0063	14444			0961	28.60	4741.1	
158		OBS	0293	-0189	3478	2802			14451			0984	28.60	4741.5	
		STD	0300	-0189	3478	2802	0000801	0067	14452			1283	28.58	4746.4	
		OBS	0391	-0190	3481	2805			14467			1312	28.58	4747.0	
158		STD	0400	-0190	3482	2806	0000452	0073	14469			1604	28.56	4752.0	
		OBS	T0489	-0190	3487	2810			14484			1640	28.56	4752.9	
		STD	0500	-0188	3487	2810	0000002	0076	14487			1844	28.94	4759.2	
158		OBS	T0562	-0170	3489	2811			14506						

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE * 1/10	LONGITUDE * 1/10	MARSDEN SQUARE INDEX	STATION TIME (GMT)			YEAR	ORIGINATOR'S STATION		DEPTH TO BOTTOM	MAX. DEPTH OF SWR'S, L'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TFR (AMT)	NODC STATION NUMBER
					15'	'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DR.	HGT	PER			
31 150	ED	76075 S	17100 E	570	61 02 08 195	1963	201 D10	0622	06	29			3	X1	6 6		0014	
					WATER		WIND	BARO- METER		AIR TEMP., °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS				
					COLOR CODE	TRANS. M	DIR.	SPEED OR FORCE	DRY BULB	WET BULB								
					30	S12	950	-017	-025	7								

MESSAGE# HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY=σ <sub>t</sub>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft./sec	S CODE
195		STD	0000	-0020	3446	2770	0004025	0000	14476			0000	31.64	4749.3	
		OBS	0000	-0020	3446	2770			14476			0000	31.64	4749.3	
		STD	0010	-0022	3446	2770	0004014	0004	14477			0033	31.60	4749.7	
195		OBS	0010	-0022	3446	2770			14477			0033	31.60	4749.7	
		STD	0020	-0024	3445	2770	0004080	0008	14478			0066	31.57	4750.0	
195		OBS	0020	-0024	3445	2770			14478			0066	31.57	4750.0	
		STD	0030	-0022	3446	2770	0004011	0012	14480			0098	31.60	4750.6	
195		OBS	0030	-0022	3446	2770			14480			0098	31.60	4750.6	
		STD	0049	-0021	3447	2771			14484			0161	31.62	4752.0	
195		OBS	0050	-0026	3447	2772	0003883	0020	14482			0164	31.53	4751.3	
		STD	0074	-0113	3457	2783			14447			0213	29.97	4739.8	
195		OBS	0075	-0114	3457	2783	0002766	0028	14447			0216	29.95	4739.8	
		STD	0099	-0140	3462	2788			14439			0325	29.48	4737.2	
195		OBS	0100	-0141	3462	2788	0002288	0035	14439			0328	29.46	4737.2	
		STD	0125	-0166	3465	2791	0001945	0040	14432			0410	29.01	4734.9	
195		OBS	0148	-0181					14429			0486	28.74		
		STD	0150	-0181	3469	2795	0001627	0044	14429			0492	28.74	4733.9	
195		OBS	0197	-0189	3475	2800			14434			0646	28.60	4735.6	
		STD	0200	-0189	3475	2800	0001094	0051	14435			0656	28.60	4735.9	
		OBS	0250	-0190	3477	2801	0000949	0056	14443			0673	28.58	4738.5	
195		OBS	0295	-0190	3478	2802			14450			0968	28.58	4740.8	
		STD	0300	-0190	3478	2802	0000797	0061	14451			0984	28.58	4741.1	
195		OBS	0394	-0190	3481	2805			14467			1293	28.58	4746.4	
		STD	0400	-0191	3481	2805	0000517	0067	14468			1312	28.56	4746.7	
195		OBS	0492	-0195	3483	2806			14482			1644	28.49	4751.3	
		STD	0500	-0195	3483	2807	0000272	0071	14483			1640	28.49	4751.6	
195		OBS	0591	-0192	3488	2810			14500			1939	28.54	4757.2	

REFERENCE CITY CODE	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	ORBIT NUMBER	MARSDES SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER			
					10'	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER	SEA	
31	150	ED	7609 S	17255 E	570	62	02	08	231	1963	201	E10	0631	06	28		3	X1	6	6		0015
				WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH		SPECIAL OBSERVATIONS								
				COLOR CODE		TRANS. 1/1		DIR. OR FORCE		DRY BULB		WET BULB		VIS. CODE								
				07		27		504		970		-010		-018		7						

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pp - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	SEC
231		STD	0000	-0055	3451	2776	0003490	0000	14461			0000	31.01	4744.4	
		OBS	0000	-0055	3451	2776			14461			0000	31.01	4744.4	
		STD	0010	-0055	3451	2776	0003488	0003	14463			0033	31.01	4745.1	
231		OBS	0010	-0055	3451	2776			14463			0033	31.01	4745.1	
		STD	0020	-0057	3451	2776	0003477	0007	14463			0066	30.97	4745.1	
231		OBS	0020	-0057	3451	2776			14463			0066	30.97	4745.1	
		STD	0030	-0058	3452	2777	0003394	0010	14465			0098	30.96	4745.7	
231		OBS	0030	-0058	3452	2777			14465			0098	30.96	4745.7	
		STD	0050	-0060	3453	2778	0003305	0017	14467			0161	30.92	4746.4	
231		OBS	0050	-0060	3453	2778			14467			0161	30.92	4746.4	
		STD	0075	-0114	3459	2785	0002628	0025	14447			0246	29.95	4739.8	
231		OBS	0075	-0114	3459	2785			14447			0246	29.95	4739.8	
		STD	0100	-0158	3461	2788	0002319	0031	14431			0328	29.16	4734.6	
231		OBS	0100	-0158	3461	2788			14431			0328	29.16	4734.6	
		STD	0125	-0179	3464	2791	0002015	0036	14425			0410	28.78	4732.6	
231		OBS	0125	-0179	3464	2791			14425			0410	28.78	4732.6	
		STD	0150	-0191	3467	2793	0001737	0041	14424			0492	28.56	4732.3	
231		OBS	0150	-0191	3467	2793			14424			0492	28.56	4732.3	
		STD	0200	-0189	3470	2796	0001484	0049	14434			0656	28.60	4735.6	
231		OBS	0200	-0189	3470	2796			14434			0656	28.60	4735.6	
		STD	0250	-0190	3473	2798	0001225	0056	14442			0820	28.58	4738.2	
231		OBS	0250	-0190	3473	2798			14442			0820	28.58	4738.2	
		STD	0299	-0190	3475	2800			14451			0981	28.58	4741.1	
231		OBS	0299	-0190	3475	2800	0001042	0061	14451			0981	28.58	4741.1	
		STD	0300	-0190	3478	2802			14468			1309	28.58	4746.7	
231		OBS	0300	-0190	3478	2802	0000757	0070	14468			1312	28.58	4752.3	
		STD	0400	-0190	3480	2804			14485			1637	28.58	4752.3	
231		OBS	0400	-0190	3480	2804	0000549	0077	14485			1640	28.58	4752.3	
		STD	0500	-0190	3484	2807			14502			1965	28.58	4757.8	
231		OBS	0500	-0190	3484	2807			14502			1965	28.58	4757.8	

REFERENCE CITY CODE	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	ORBIT NUMBER	MARSDES SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER			
					10'	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER	SEA	
31	150	ED	7610 S	174555 E	570	64	02	09	026	1963	201	F10	0517	05	29		2	X1	6	4		0016
				WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH		SPECIAL OBSERVATIONS								
				COLOR CODE		TRANS. 1/1		DIR. OR FORCE		DRY BULB		WET BULB		VIS. CODE								
				22		27		504		970		-008		-016		7						

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pp - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	SEC
026		STD	0000	-0045	3454	2778	0003303	0000	14466			0000	31.19	4746.0	
		OBS	0000	-0045	3454	2778			14466			0000	31.19	4746.0	
		STD	0010	-0047	3454	2778	0003292	0003	14467			0033	31.15	4746.4	
026		OBS	0010	-0047	3454	2778			14467			0033	31.15	4746.4	
		STD	0020	-0052	3454	2778	0003269	0007	14466			0066	31.06	4746.0	
026		OBS	0020	-0052	3454	2778			14466			0066	31.06	4746.0	
		STD	0030	-0062	3454	2778	0003225	0010	14463			0098	30.88	4745.1	
026		OBS	0030	-0062	3454	2778			14463			0098	30.88	4745.1	
		STD	0049	-0063	3454	2779			14466			0161	30.87	4746.0	
026		OBS	0049	-0063	3454	2779	0003220	0016	14466			0161	30.88	4746.0	
		STD	0074	-0053	3454	2778			14474			0243	31.05	4748.7	
026		OBS	0074	-0053	3454	2778	0003229	0024	14474			0246	31.01	4748.7	
		STD	0099	-0094	3458	2783			14460			0325	30.31	4744.1	
026		OBS	0099	-0094	3458	2783	0002767	0032	14460			0328	30.29	4744.1	
		STD	0100	-0095	3458	2783	0002636	0039	14454			0328	30.29	4744.1	
026		OBS	0100	-0095	3458	2783			14454			0328	30.29	4744.1	
		STD	0125	-0117	3459	2784			14449			0486	29.95	4740.5	
026		OBS	0125	-0117	3459	2784	0002490	0045	14448			0486	29.95	4740.5	
		STD	0150	-0138	3459	2786			14442			0646	28.94	4738.2	
026		OBS	0150	-0138	3459	2786			14442			0646	28.94	4738.2	
		STD	0197	-0170	3466	2792			14441			0656	28.90	4737.8	
026		OBS	0197	-0170	3466	2792	0001834	0056	14441			0656	28.90	4737.8	
		STD	0200	-0172	3466	2792			14441			0807	28.60	4737.8	
026		OBS	0200	-0172	3466	2792			14441			0807	28.60	4737.8	
		STD	0250	-0188	3468	2794	0001581	0064	14443			0820	28.62	4738.5	
026		OBS	0250	-0188	3468	2794			14443			0820	28.62	4738.5	
		STD	0296	-0182	3473	2798			14454			0971	28.72	4742.1	
026		OBS	0296	-0182	3473	2798	0001205	0071	14454			0981	28.72	4742.1	
		STD	0300	-0182	3473	2798			14467			1295	28.58	4746.4	
026		OBS	0300	-0182	3473	2798	0000650	0081	14467			1312	28.58	4746.4	
		STD	0400	-0190	3479	2803			14468			1620	28.58	4752.0	
026		OBS	0400	-0190	3479	2803			14468			1620	28.58	4752.0	

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER			
					10'	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA						
CTRY CODE	ID. NO.	1/10	1/10	10'	1"	MO	DAY	HR.1/10	YEAR	CRUISE NO.	STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	DIR.	HGT PER	SEA	WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
31	150	ED	7541 S	17500 E	570	55	02	09	065	1963	201	F09	0406	03	32		2	X1	6	16	0017
				WATER		WIND		BARO-METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
				COLOR CODE		DIR.		METER (mbars)		DRY BULB WET BULB		VEI. CODE									
				18		02		509		960		-017 -023		7							

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \mu\text{M}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec
065		STD	0000	-0007	3443	2767	0004315	0000	14482			0000	31.87	4751.3
		OBS	0000	-0007	3443	2767			14482			0000	31.87	4751.3
		STD	0010	-0005	3442	2766	0004399	0004	14484			0033	31.91	4752.0
065		OBS	0010	-0005	3442	2766			14484			0033	31.91	4752.0
		STD	0020	-0015	3442	2767	0004351	0009	14481			0066	31.73	4751.0
065		OBS	0020	-0015	3442	2767			14481			0066	31.73	4751.0
		STD	0030	-0018	3442	2767	0004335	0013	14482			0098	31.66	4751.3
065		OBS	0030	-0018	3442	2767			14482			0098	31.66	4751.3
		OBS	0049	-0020	3442	2767			14484			0161	31.60	4751.3
		STD	0050	-0024	3442	2767	0004274	0022	14482			0161	31.57	4751.3
065		OBS	0074	-0086	3451	2777			14459			0246	30.45	4743.8
		STD	0075	-0086	3451	2777	0003323	0031	14459			0246	30.45	4743.8
065		OBS	0099	-0080	3458	2782			14467			0325	30.56	4746.4
		STD	0100	-0081	3458	2783	0002822	0039	14466			0328	30.54	4746.4
		STD	0125	-0096	3459	2784	0002716	0046	14464			0410	30.27	4745.4
065		OBS	0148	-0104	3459	2784			14464			0466	30.13	4745.4
		STD	0150	-0103	3459	2784	0002635	0052	14465			0492	30.15	4745.7
065		OBS	0198	-0100	3461	2786			14474			0650	30.20	4746.7
		STD	0200	-0101	3461	2786	0002481	0065	14474			0656	30.18	4746.7
065		OBS	0247	-0126	3461	2787			14470			0810	29.73	4747.4
		STD	0250	-0127	3461	2787	0002327	0077	14470			0820	29.71	4747.4
065		OBS	0297	-0148	3467	2792			14469			0974	29.34	4747.0

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER			
					10'	1"	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT PER	SEA						
CTRY CODE	ID. NO.	1/10	1/10	10'	1"	MO	DAY	HR.1/10	YEAR	CRUISE NO.	STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	DIR.	HGT PER	SEA	WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
31	150	ED	7540 S	17304 E	570	53	02	09	099	1963	201	E09	0530	05	00		0	X1	6	17	0018
				WATER		WIND		BARO-METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
				COLOR CODE		DIR.		METER (mbars)		DRY BULB WET BULB		VEI. CODE									
				11		09		509		950		-014 -021		7							

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \mu\text{M}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec
099		STD	0000	-0002	3439	2764	0004644	0000	14484			0000	31.96	4752.0
		OBS	0000	-0002	3439	2764			14486			0000	31.96	4752.0
		STD	0010	0000	3440	2764	0004576	0005	14486			0033	32.00	4752.6
099		OBS	0010	0000	3440	2764			14486			0033	32.00	4752.6
		STD	0020	0003	3440	2764	0004590	0009	14489			0066	32.05	4753.6
099		OBS	0020	0003	3440	2764			14489			0066	32.05	4753.6
		OBS	0029	-0010	3440	2765			14485			0095	31.82	4752.3
		STD	0030	-0010	3440	2765	0004510	0014	14485			0098	31.82	4752.3
099		OBS	0049	-0010	3443	2767			14489			0161	31.82	4753.6
		STD	0050	-0010	3443	2767	0004272	0023	14489			0161	31.82	4753.6
099		OBS	0073	-0011	3450	2773			14493			0240	31.80	4754.9
		STD	0075	-0021	3451	2774	0003628	0032	14489			0246	31.62	4753.6
099		OBS	0098	-0111	3458	2784			14452			0322	30.00	4741.5
		STD	0100	-0112	3458	2784	0002687	0040	14452			0328	29.98	4741.5
		STD	0125	-0129	3460	2786	0002463	0047	14448			0410	29.68	4740.1
099		OBS	0147	-0144	3462	2788			14445			0482	29.41	4739.2
		STD	0150	-0147	3463	2789	0002177	0053	14445			0492	29.35	4739.2
099		OBS	0196	-0178	3471	2796			14439			0643	28.80	4737.2
		STD	0200	-0179	3471	2797	0001407	0061	14439			0656	28.78	4737.2
099		OBS	0245	-0188	3476	2801			14443			0804	28.62	4738.5
		STD	0250	-0188	3476	2801	0000977	0067	14444			0820	28.62	4738.5
099		OBS	0295	-0189	3479	2803			14451			0968	28.60	4741.1
		STD	0300	-0189	3479	2803	0000724	0072	14452			0984	28.60	4741.5
099		OBS	T0393	-0190	3482	2806			14467			1289	28.58	4746.4
		STD	0400		3482							1312		
099		OBS	0491		3487							1611		

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE MILES	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (amt)	NODC STATION NUMBER	
						10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT
31	150	ED	7538 S	17110 E	570	51	02	09	139	1963	201	D09	0594	06	49		1	X7	7 18	0019

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. MM	DIR.	SPEED OR FORCE		DRY BULB	WET BULB		
	05	S07	940	-017	-020	6		

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec.
139		STD	0000	-0016	3447	2771	0003967	0000	14478			0000	31.71	4750.0
		OBS	0000	-0016	3447	2771			14478			0000	31.71	4750.0
		STD	0010	-0103	3459	2784	0002691	0003	14441			0033	30.15	4737.8
139		OBS	0010	-0103	3459	2784			14441			0033	30.15	4737.8
		STD	0020	-0190	3468	2794	0001740	0006	14403			0066	28.58	4725.4
139		OBS	0020	-0190	3468	2794			14403			0066	28.58	4725.4
		STD	0030	-0190	3472	2797	0001427	0007	14406			0098	28.58	4726.4
139		OBS	0030	-0190	3472	2797			14406			0098	28.58	4726.4
139		OBS	0049	-0190	3480	2804			14410			0161	28.58	4727.7
		STD	0050	-0190	3480	2804	0000801	0009	14410			0161	28.58	4727.7
139		OBS	0074	-0190	3481	2805			14414			0213	28.58	4729.0
		STD	0075	-0190	3481	2805	0000710	0011	14414			0213	28.58	4729.0
139		OBS	0099	-0191	3482	2806			14418			0325	28.56	4730.3
		STD	0100	-0191	3482	2806	0000617	0013	14418			0328	28.56	4730.3
		STD	0125	-0192	3483	2806	0000563	0014	14422			0410	28.54	4731.6
139		OBS	0148	-0192	3483	2806			14426			0486	28.54	4732.9
		STD	0150	-0192	3483	2806	0000509	0016	14426			0492	28.54	4732.9
139		OBS	0198	-0191	3483	2806			14435			0650	28.56	4735.9
		STD	0200	-0191	3483	2806	0000484	0018	14435			0656	28.56	4735.9
		STD	0250	-0190	3484	2807	0000421	0020	14444			0820	28.58	4738.8
139		OBS	0297	-0189	3484	2807			14452			0974	28.60	4741.5
		STD	0300	-0189	3484	2807	0000358	0022	14453			0984	28.60	4741.5
139		OBS	0396	-0190	3485	2808			14468			1299	28.58	4746.7
		STD	0400	-0190	3485	2808	0000223	0025	14469			132	28.58	4746.7
139		OBS	0495	-0190	3485	2808			14485			1624	28.58	4752.3
		STD	0500	-0190	3485	2808			14485			1640	28.58	4752.3
139		OBS	0570	-0190	3485	2808			14485			1870	28.58	4752.3

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	OBS. NO.	MARSden SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER			
					10"	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER	SEA	
31	150	ED	7132 S	17220 E	570	12	02	10	186	1963	201	D01	1417	14	13			4	X1	47	0020	
				WATER		WIND		BARO-METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
				COLOR CODE		DIRL		SPEC. OF FORCE		DRY BULB		WET BULB		VS. CODE								
				10		14		S10		880		-012		-019		7						

REFERENCE	SHIP CODE	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu g \pm 0.1$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
186	OBS	STD	0000	-0101	3423	2755	0005459	0000	14436			0000	30.18	4736.2
	OBS	0000	-0101	3423	2755				14436			0000	30.18	4736.2
	STD	0010	-0099	3423	2755	0005461	0005		14438			0033	30.22	4736.9
186	OBS	0010	-0099	3423	2755				14438			0033	30.22	4736.9
186	OBS	0019	-0101	3423	2755				14439			0062	30.18	4737.2
	STD	0020	-0101	3423	2755	0005451	0011		14439			0066	30.18	4737.2
186	OBS	0029	-0101	3423	2755				14440			0095	30.18	4737.5
	STD	0030	-0101	3423	2755	0005439	0016		14441			0098	30.18	4737.8
186	OBS	0048	-0102	3424	2756				14443			0158	30.16	4738.5
	STD	0050	-0101	3425	2756	0005307	0027		14444			0164	30.18	4738.8
186	OBS	0072	-0093	3432	2762				14452			0236	30.33	4741.5
	STD	0075	-0086	3435	2764	0004567	0039		14457			0246	30.45	4743.1
186	OBS	0096	-0045	3449	2774				14481			0315	31.19	4751.0
	STD	0100	-0043	3449	2774	0003651	0050		14483			0328	31.23	4751.6
	STD	0125	-0033	3451	2775	0003533	0059		14492			0410	31.41	4754.6
186	OBS	0145	-0024	3453	2776				14499			0476	31.57	4756.9
	STD	0150	-0023	3453	2776	0003426	0067		14501			0492	31.59	4757.5
186	OBS	0193	0000	3457	2778				14519			0633	32.00	4763.4
	STD	0200	0010	3458	2778	0003246	0084		14525			0656	32.18	4765.4
186	OBS	0241	0056	3463	2780				14553			0791	33.01	4774.6
	STD	0250	0060	3464	2780	0003091	0100		14557			0820	33.08	4775.9
186	OBS	0290	0076	3466	2781				14571			0951	33.37	4780.5
	STD	0300	0078	3466	2781	0003057	0115		14573			0984	33.40	4781.2
194	OBS	0385	0085	3467	2781				14591			1263	33.53	4787.1
186	OBS	T0387	0078Q	3467	2782Q							1270	33.40	
	STD	0400	0085	3467	2781	0003046	0146		14593			1312	33.53	4787.7
194	OBS	0484	0081	3468	2782				14606			1588	33.46	4792.0
	STD	0500	0079	3468	2782	0002952	0176		14607			1640	33.42	4792.3
194	OBS	0580	0073	3468	2783				14618			1903	33.31	4795.9
	STD	0600	0073	3468	2783	0002923	0205		14621			1568	33.31	4796.9
194	OBS	0678	0073	3468	2783				14634			2224	33.31	4801.2
	STD	0700	0070	3468	2783	0002914	0234		14637			2297	33.26	4802.2
194	OBS	0776	0062	3468	2783				14646			2546	33.12	4805.1
	STD	0800	0061	3468	2784	0002841	0263		14649			2625	33.10	4806.1
194	OBS	0874	0056	3469	2785				14660			2867	33.01	4809.7
	STD	0900	0053	3469	2785	0002728	0291		14663			2953	32.45	4810.7
194	OBS	0972	0043	3469	2785				14670			3189	32.77	4813.0
	STD	1000	0038	3469	2786	0002615	0318		14673			3281	32.68	4814.0
194	OBS	1070	0028	3469	2786				14680			3511	32.50	4816.3
	STD	1100	0026	3469	2786	0002522	0343		14684			3609	32.47	4817.6
194	OBS	1168	0018	3469	2787				14692			3832	32.32	4820.2
	STD	1200	0010	3469	2787	0002369	0368		14694			3937	32.18	4820.9
194	OBS	T1266	-0001	3470	2789				14700			4154	31.98	4822.8
	STD	1300	-0004	3470	2789	0002198	0391		14704			4265	31.93	4824.1
194	OBS	T1364	-0004	3470	2789				14715			4475	31.93	4827.7

REFERENCE		SHIP CODE	LATITUDE ° / 10'	LONGITUDE ° / 10'	MARENGO SQUARE 10° 10'	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF F/WPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
CRUISE NO.	ID. NO.					10°	10'	MO		DAY	HR.			10'	CRUISE NO.	STATION NUMBER				DIR.
31	150	ED	7135 S	17356 E	570	13	02	11	013	1963	201	E01	2012	16	12		3	4	8	0021
WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
COLOR CODE		SPEED OR FORCE		DRY BULB		WET BULB		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS										
24		11		S04		880		-011		-016		7								
MESSNGR TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°P	S Δ D DYN. ML. X 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 6/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	REMARKS					
		STD	0000	-0069	3432	2761	0004887	0000	14452			0000	30.76	4711.5						
013		OBS	0000	-0069	3432	2761			14452			0000	30.76	4711.5						
		STD	0010	-0074	3432	2761	0004864	0005	14451			0033	30.67	4711.1						
013		OBS	0010	-0074	3432	2761			14451			0033	30.67	4711.1						
013		OBS	0019	-0076	3432	2761			14452			0062	30.63	4711.5						
		STD	0020	-0076	3432	2761	0004853	0010	14452			0066	30.63	4711.5						
013		OBS	0029	-0076	3432	2761			14453			0095	30.63	4711.8						
		STD	0030	-0076	3432	2761	0004850	0015	14453			0098	30.63	4711.8						
013		OBS	0048	-0079	3432	2761			14455			0158	30.58	4712.4						
		STD	0050	-0079	3433	2762	0004757	0024	14456			0164	30.58	4712.8						
013		OBS	0071	-0076	3443	2770			14462			0233	30.63	4714.7						
		STD	0075	-0075	3444	2771	0003923	0035	14463			0216	30.65	4715.1						
013		OBS	0095	-0070	3447	2773			14469			0312	30.74	4717.0						
		STD	0100	-0057	3449	2774	0003611	0044	14476			0328	30.97	4719.3						
		STD	0125	-0004	3457	2778	0003251	0053	14506			0410	31.93	4759.2						
013		OBS	0145	0026	3462	2781			14524			0476	32.47	4765.1						
		STD	0150	0030	3462	2781	0003033	0061	14526			0492	32.54	4765.7						
013		OBS	0190	0053	3465	2781			14544			0623	32.95	4771.6						
		STD	0200	0056	3465	2782	0002955	0076	14547			0656	33.01	4772.6						
013		OBS	0238	0069	3467	2782			14559			0781	33.24	4774.3						
		STD	0250	0077	3468	2782	0002899	0090	14565			0820	33.39	4778.5						
013		OBS	0286	0093	3469	2782			14578			0938	33.67	4782.8						
		STD	0300	0088	3469	2783	0002890	0105	14578			0981	33.58	4782.8						
018		OBS	0362	0085	3470	2784			14587			1188	33.53	4785.7						
013		OBS	0382	0090	3470	2783			14593			1253	33.62	4787.7						
		STD	0400	0089	3470	2783	0002856	0134	14595			1312	33.60	4788.4						
018		OBS	0454	0087	3469	2783			14603			1490	33.57	4791.0						
		STD	0500	0084	3469	2783	0002913	0163	14610			1610	33.51	4793.3						
018		OBS	0544	0082	3469	2783			14616			1785	33.48	4795.3						
		STD	0600	0080	3470	2784	0002855	0191	14625			1969	33.44	4798.2						
018		OBS	0634	0079	3470	2784			14630			2060	33.42	4799.9						
		STD	0700	0078	3470	2784	0002825	0220	14640			2297	33.40	4803.1						
018		OBS	0725	0076	3470	2784			14644			2379	33.37	4804.4						
029		OBS	0770	0071	3464P	2780P						2526	33.28							
		STD	0800	0073	3470	2784	0002801	0248	14655			2625	33.31	4808.1						
029		OBS	0861	0076	3470	2784			14667			2825	33.37	4812.0						
		STD	0900	0079	3470	2784	0002880	0276	14674			2953	33.42	4811.3						
		STD	1000	0085	3469	2783	0002991	0306	14694			3281	33.53	4820.9						
029		OBS	1042	0087	3469	2783			14702			3419	33.57	4823.5						
		STD	1100	0087	3469	2783	0003043	0336	14712			3609	33.57	4826.8						
		STD	1200	0088	3469	2783	0003066	0366	14729			3937	33.58	4832.3						
029		OBS	1224	0088	3469	2783			14733			4016	33.58	4833.6						
		STD	1300	0086	3469	2783	0003035	0397	14745			4265	33.55	4837.6						
		STD	1400	0083	3470	2784	0002980	0427	14761			4593	33.49	4842.8						
029		OBS	1405	0083	3470	2784			14761			4609	33.49	4842.8						
		STD	1500	0080	3470	2784	0002966	0457	14776			4921	33.44	4847.8						
029		OBS	1586	0078	3470	2784			14790			5203	33.40	4852.3						

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT DIRECTION	MARSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
						10'	1'	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA		TYPE	AMT		
31	150	ED	7206 S	17350 E		570	23	02	11	078	1963	201	E02	0585	06	12					4	5	0022	
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
						COLOR CODE	TEMP. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB
							19	07	S10	860		-009	-014	7										

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma$ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pp - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec
		STD	0000	-0035	3444	2769	0004110	0000	14469			0000	31.37	4747.0
078	OBS	0000	-0035	3444	2769	0004110	0000	14469				0000	31.37	4747.0
		STD	0010	-0038	3444	2769	0004095	0004	14469			0033	31.32	4747.0
078	OBS	0010	-0038	3444	2769	0004095	0004	14469				0033	31.32	4747.0
		STD	0020	-0042	3444	2770	0004076	0008	14469			0066	31.24	4747.0
078	OBS	0020	-0042	3444	2770	0004076	0008	14469				0066	31.24	4747.0
		STD	0030	-0044	3444	2770	0004065	0012	14470			0098	31.21	4747.4
078	OBS	0030	-0044	3444	2770	0004065	0012	14470				0098	31.21	4747.4
		STD	0050	-0042	3444	2770	0004070	0020	14474			0154	31.24	4748.7
078	OBS	0050	-0042	3444	2770	0004070	0020	14474				0154	31.24	4748.7
		STD	0075	-0040	3445	2770	0003997	0030	14479			0216	31.28	4750.3
078	OBS	0075	-0040	3445	2770	0003997	0030	14479				0216	31.28	4750.3
		STD	0100	-0036	3445	2770	0004011	0040	14485			0328	31.35	4752.3
078	OBS	0100	-0036	3445	2770	0004011	0040	14485				0328	31.35	4752.3
		STD	0125	-0036	3446	2770	0003971	0050	14490			0410	31.35	4753.9
078	OBS	0125	-0036	3446	2770	0003971	0050	14490				0410	31.35	4753.9
		STD	0149	-0035	3446	2771	0003924	0060	14494			0489	31.37	4755.2
078	OBS	0149	-0035	3446	2771	0003924	0060	14494				0489	31.37	4755.2
		STD	0199	-0029	3449	2773	0003713	0079	14506			0653	31.48	4759.2
078	OBS	0199	-0029	3449	2773	0003713	0079	14506				0653	31.48	4759.2
		STD	0200	-0028	3449	2773	0003713	0079	14506			0656	31.50	4759.2
078	OBS	0249	0013	3458	2778	0003262	0097	14534				0817	32.23	4768.4
		STD	0250	0013	3458	2778	0003262	0097	14535			0820	32.23	4768.7
078	OBS	0299	0020	3459	2779	0003224	0113	14547				0984	32.38	4772.3
		STD	0300	0021	3459	2779	0003224	0113	14547			0984	32.38	4772.3
078	OBS	0398	0052	3466	2782	0002888	0144	14578				1306	32.94	4782.8
		STD	0400	0051	3466	2782	0002888	0144	14578			1312	32.92	4782.8
078	OBS	0498	0003	3469	2787	0002347	0170	14573				1633	32.05	4781.2
		STD	0500	0002	3469	2788	0002347	0170	14573			1640	32.04	4781.2
078	OBS	0573	-0051	3474	2794			14561				1884	31.08	4777.2

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT DIRECTION	MARSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER	
						10'	1'	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA		TYPE	AMT		
31	150	ED	7204 S	17210 E		570	22	02	11	118	1963	201	D02	0448	04	10					3	X1	318	0023
						WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
						COLOR CODE	TEMP. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB
							36	S15	820		-017	-022	7											

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma$ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pp - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec
		STD	0000	-0021	3451	2774	0003638	0000	14477			0000	31.62	4749.7
118	OBS	0000	-0021	3451	2774	0003638	0000	14477				0000	31.62	4749.7
		STD	0010	-0024	3452	2775	0003547	0004	14477			0033	31.57	4749.7
118	OBS	0010	-0024	3452	2775	0003547	0004	14477				0033	31.57	4749.7
		STD	0019	-0027	3452	2775	0003532	0007	14477			0062	31.51	4749.7
118	OBS	0019	-0027	3452	2775	0003532	0007	14477				0062	31.51	4749.7
		STD	0020	-0027	3452	2775	0003532	0007	14477			0066	31.51	4749.7
118	OBS	0028	-0029	3452	2775	0003513	0011	14478				0092	31.48	4750.0
		STD	0030	-0029	3452	2775	0003513	0011	14478			0098	31.48	4750.0
118	OBS	0047	-0030	3453	2776	0003446	0018	14480				0154	31.46	4750.6
		STD	0050	-0028	3453	2776	0003446	0018	14482			0164	31.50	4751.3
118	OBS	0071	-0022	3453	2776	0003385	0026	14488				0233	31.60	4753.3
		STD	0075	-0024	3454	2777	0003385	0026	14488			0246	31.57	4753.3
118	OBS	0094	-0030	3456	2779	0003193	0034	14490				0308	31.46	4753.6
		STD	0100	-0030	3456	2779	0003193	0034	14490			0328	31.46	4753.9
118	OBS	0125	-0031	3457	2779	0003139	0042	14493				0410	31.44	4754.9
		STD	0141	-0033	3457	2780	0003026	0050	14495			0463	31.41	4755.6
118	OBS	0188	-0041	3463	2785	0002332	0063	14499				0617	31.26	4757.2
		STD	0200	-0049	3466	2788	0002332	0063	14499			0656	31.12	4756.9
118	OBS	0235	-0075	3474	2795	0001360	0073	14489				0771	30.65	4755.2
		STD	0250	-0092	3476	2798	0001360	0073	14489			0820	30.34	4753.6
118	OBS	0282	-0121	3480	2802	0000886	0078	14481				0925	29.82	4751.0
		STD	0300	-0128	3480	2802	0000886	0078	14481			0984	29.70	4751.0
118	OBS	0377	-0142	3480	2803	0000717	0086	14491				1237	29.44	4752.9
		STD	0400	-0141	3481	2803	0000717	0086	14491			1312	29.46	4754.3
118	OBS	0400	-0141	3481	2803	0000717	0086	14491				1312	29.46	4754.3

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH INCHES	MARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
							10'	1'	MO DAY HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	150	ED	7234 S	17210 E	570	22	02	11	156	1963	201	003	0589	06	02	3	X1	4	8	0024
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH		SPECIAL OBSERVATIONS				
						COLOR CODE	TRANS MITS	DIR.	SPEED OF FORCE	DRY BULB	WET BULB	WET BULB	WET BULB	WET BULB	WET BULB					
						07	36	516	810	-012	-018	7								

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/SEC	S C
156		STD	0000	-0062	3425	2755	0005450	0000	14454			0000	30.88	4742.1	
		OBS	0000	-0062	3425	2755			14454	6660		0000	30.88	4742.1	
		STD	0010	-0062	3425	2755	0005447	0005	14456			0033	30.88	4742.8	
156		OBS	0010	-0062	3425	2755			14456	7950		0033	30.88	4742.8	
		STD	0020	-0063	3425	2755	0005440	0011	14457			0066	30.87	4743.1	
156		OBS	0020	-0063	3425	2755			14457	7370		0066	30.87	4743.1	
		STD	0030	-0063	3425	2755	0005437	0016	14459			0098	30.87	4743.8	
156		OBS	0030	-0063	3425	2755			14459	7710		0098	30.87	4743.8	
		STD	0049	-0068	3449	2775			14463	5100		0161	30.78	4745.1	
156		OBS	0049	-0068	3449	2775	0003566	0025	14463			0161	30.79	4745.1	
		STD	0074	-0044	3453	2777			14478	4160		0243	31.21	4750.0	
156		OBS	0074	-0044	3453	2777	0003355	0034	14480			0246	31.24	4750.6	
		STD	0098	-0007	3460	2781			14500	2910		0322	31.87	4757.2	
156		OBS	0098	-0007	3460	2781	0002994	0042	14501			0328	31.87	4757.2	
		STD	0100	-0007	3460	2781	0002825	0049	14504			0110	31.82	4758.5	
156		OBS	0100	-0007	3460	2781			14504	3750		0110	31.82	4758.5	
		STD	0125	-0010	3462	2783			14504			0110	31.82	4758.5	
156		OBS	0125	-0010	3462	2783	0002627	0056	14504			0110	31.82	4758.5	
		STD	0157	-0020	3464	2785			14494	5940		0192	31.64	4758.5	
156		OBS	0157	-0020	3464	2785	0002238	0068	14492			0192	31.64	4758.5	
		STD	0197	-0058	3466	2788			14494			0646	30.96	4755.2	
156		OBS	0197	-0058	3466	2788	0001462	0077	14464			0656	30.85	4754.6	
		STD	0200	-0064	3466	2789			14492			0820	29.81	4745.4	
156		OBS	0200	-0064	3466	2789	0001462	0077	14464			0820	29.81	4745.4	
		STD	0250	-0144	3472	2796			14451	6350		0971	28.62	4741.1	
156		OBS	0250	-0144	3472	2796	0000880	0083	14452			0984	28.62	4741.1	
		STD	0296	-0188	3477	2801			14468	5440		1293	28.62	4746.7	
156		OBS	0296	-0188	3477	2801	0000383	0090	14470			1312	28.62	4747.4	
		STD	0300	-0188	3483	2806			14485	6530		1641	28.56	4752.3	
156		OBS	0300	-0188	3483	2806	-0000223	0090	14486			1640	28.56	4752.3	
		STD	0492	-0191	3490	2812			14486			1857	28.51	4755.9	
156		OBS	0492	-0191	3490	2812			14486			1857	28.51	4755.9	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH INCHES	MARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
							10'	1'	MO DAY HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	150	ED	7234 S	17345 E	570	23	02	11	193	1963	201	E03	0466	04	02	3	X1	6	18	0025
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH		SPECIAL OBSERVATIONS				
						COLOR CODE	TRANS MITS	DIR.	SPEED OF FORCE	DRY BULB	WET BULB	WET BULB	WET BULB	WET BULB						
						21	02	510	800	-009	-017	7								

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/SEC	S C
193		STD	0000	-0039	3443	2769	0004169	0000	14467			0000	31.30	4746.4	
		OBS	0000	-0039	3443	2769			14467			0000	31.30	4746.4	
		STD	0010	-0038	3440	2766	0004401	0004	14469			0033	31.32	4747.0	
193		OBS	0010	-0038	3440	2766			14469			0033	31.32	4747.0	
		STD	0019	-0040	3440	2766			14469			0066	31.28	4747.0	
193		OBS	0019	-0040	3440	2766	0004382	0009	14470			0066	31.28	4747.0	
		STD	0020	-0040	3440	2766			14471			0098	31.28	4747.4	
193		OBS	0020	-0040	3440	2766	0004286	0013	14471			0098	31.26	4747.7	
		STD	0029	-0041	3441	2767			14478			0158	31.39	4750.0	
193		OBS	0029	-0041	3441	2767	0003935	0021	14479			0164	31.41	4750.3	
		STD	0050	-0033	3446	2771			14488			0236	31.60	4753.3	
193		OBS	0050	-0033	3446	2771	0003705	0031	14489			0216	31.62	4753.6	
		STD	0072	-0022	3449	2773			14496			0335	31.75	4755.9	
193		OBS	0072	-0022	3449	2773	0003441	0040	14498			0328	31.78	4756.5	
		STD	0075	-0021	3450	2773	0003272	0048	14508			0410	32.00	4759.8	
193		OBS	0075	-0021	3450	2773			14515			0476	32.16	4762.1	
		STD	0150	0011	3459	2779	0003162	0056	14517			0492	32.20	4762.8	
193		OBS	0150	0011	3459	2779			14531			0633	32.45	4767.4	
		STD	0200	0031	3462	2780	0003063	0072	14535			0656	32.56	4768.7	
193		OBS	0200	0031	3462	2780	0002993	0087	14536			0820	33.06	4775.6	
		STD	0250	0060	3468	2789			14564			0951	33.08	4778.2	
193		OBS	0250	0060	3468	2789	0002716	0101	14561			0984	32.88	4777.2	
		STD	0300	0049	3468	2784			14547			1266	31.77	4772.6	
193		OBS	0300	0049	3468	2784	0002246	0126	14547			1312	31.69	4772.6	
		STD	0386	-0013	3469	2788			14547			1427	31.66	4774.2	
193		OBS	0386	-0013	3469	2788			14552			1427	31.66	4774.2	

REFERENCE CITE CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	HEIGHT INCHES	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER		
						10"	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HIG				PER	SEA
31	150	ED	7136 S	17524 E	570	15	02	15	056	1963	201	F01	2067	20	25			2	X1	4 8		0026

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
	23	23	502	860	-027	-033	7		

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DIN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg = 0.1/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CIT.
		STD	0000	-0064	3433	2762	0004830	0000	14454			0000	30.85	4742.1	
		OBS	0000	-0064	3433	2762			14454			0000	30.85	4742.1	
		STD	0010	-0068	3432	2761	0004888	0005	14454			0033	30.78	4742.1	
		OBS	0010	-0068	3432	2761			14454	949Q		0033	30.78	4742.1	
		STD	0020	-0070	3432	2761	0004877	0010	14455			0066	30.74	4742.4	
		OBS	0020	-0070	3432	2761			14455	866Q		0056	30.74	4742.4	
		STD	0030	-0070	3432	2761	0004874	0015	14456			0098	30.74	4742.8	
		OBS	0030	-0070	3432	2761			14456	723Q		0098	30.74	4742.8	
		STD	0049	-0072	3434	2763			14459	803Q		0161	30.70	4743.8	
		OBS	0050	-0072	3434	2763	0004699	0024	14459			0164	30.70	4743.8	
		STD	0074	-0098	3437	2766			14451	933Q		0213	30.24	4741.1	
		OBS	0075	-0101	3437	2767	0004335	0035	14450			0216	30.18	4740.8	
		STD	0099	-0153	3444	2774			14431	936Q		0325	29.25	4734.6	
		OBS	0100	-0152	3444	2774	0003624	0045	14431			0328	29.26	4734.6	
		STD	0125	-0128	3449	2777	0003300	0054	14447			0430	29.70	4739.8	
		OBS	0148	-0089	3454	2780			14474	643Q		0486	30.40	4747.3	
		STD	0150	-0081	3455	2780	0003037	0062	14474			0482	30.54	4746.7	
		OBS	0198	0052	3467	2783			14545	374Q		0650	32.94	4772.0	
		STD	0200	0054	3467	2783	0002806	0077	14546			0656	32.97	4772.3	
		OBS	0247	0092	3471	2784			14572	454Q		0810	33.66	4780.8	
		STD	0250	0092	3471	2784	0002772	0091	14572			0820	33.66	4780.2	
		OBS	0297	0092	3470	2783			14580	527Q		0974	33.66	4783.5	
		STD	0300	0092	3470	2783	0002857	0105	14580			0984	33.66	4783.5	
		OBS	0394	0089	3471	2784			14595	549Q		1293	33.60	4788.4	
		STD	0396	0089	3470	2783			14595			1299	33.60	4788.3	
		OBS	0400	0089	3470	2783	0002856	0133	14595			1312	33.60	4788.3	
		STD	0493	0086	3471	2784			14610	619Q		1617	33.55	4793.3	
		OBS	0500	0086	3471	2784	0002777	0161	14611			1640	33.55	4793.6	
		STD	0592	0082	3471	2785			14624	502Q		1912	33.48	4797.9	
		OBS	0600	0082	3471	2785	0002765	0189	14626			1968	33.48	4798.5	
		STD	0690	0078	3471	2785			14639	332Q		2264	33.40	4802.8	
		OBS	0700	0078	3471	2785	0002750	0217	14641			2297	33.40	4803.5	
		STD	0789	0075	3471	2785			14654	416Q		2588	33.35	4807.7	
		OBS	0800	0074	3471	2785	0002734	0244	14656			2625	33.33	4808.4	
		STD	0887	0067	3470	2785			14667	367Q		2910	33.21	4812.0	
		OBS	0900	0067	3470	2785	0002759	0272	14669			2953	33.21	4812.6	
		STD	0986	0065	3471	2786			14683	367Q		3235	33.17	4817.2	
		OBS	1000	0064	3471	2786	0002679	0299	14685			3281	33.15	4818.9	
		STD	1100	0060	3471	2786	0002657	0325	14700			3609	33.08	4822.8	
		OBS	1183	0056	3471	2786			14712	229Q		3881	33.01	4826.8	
		STD	1200	0056	3471	2786	0002640	0352	14715			3937	33.01	4827.7	
		OBS	1300	0052	3470	2786	0002651	0378	14730			4265	32.94	4832.7	
		STD	1380	0048	3470	2786			14741	413Q		4528	32.80	4836.3	
		OBS	1400	0046	3470	2786	0002627	0405	14744			4593	32.83	4837.3	
		STD	1500	0039	3471	2787	0002532	0431	14758			4921	32.70	4841.8	
		OBS	1578	0035	3471	2787			14769	412Q		5177	32.63	4845.5	
		STD	1750	0029	3471	2788	0002417	0492	14796			5711	32.52	4854.3	
		OBS	1776	0028	3471	2788			14800	410Q		5826	32.50	4855.6	
		STD	T1975	0020	3471	2788			14830	507Q		6480	32.36	4865.5	

REFERENCE CEN CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	WAVE DIRECTION	HARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
						10'	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.				HGT
31	150	ED	7137 S	17700 E	570	17	02	15	122	1963	201	G01	1234	11	00			X7	7	8	0027

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANC. M	DIR.	SPEED KNOTS		DRY BULB	WET BULB		
	14	S04	810		028	-032	7	

MESSINGR TIME HR	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec
		STD	0000	-0056	3429	2758	0005168	0000	14457			0000	30.99	4743.1
122		OBS	0000	-0056	3429	2758			14457	4180		0000	30.99	4743.1
		STD	0010	-0056	3430	2759	0005089	0005	14459			0033	30.99	4743.8
122		OBS	0010	-0056	3430	2759			14459	5220		0033	30.99	4743.8
		STD	0020	-0051	3431	2759	0005030	0010	14463			0066	31.08	4745.1
122		OBS	0020	-0051	3431	2759			14463	5830		0066	31.08	4745.1
		STD	0030	-0052	3433	2761	0004871	0015	14465			0098	31.06	4745.7
122		OBS	0030	-0052	3433	2761			14465	5610		0098	31.06	4745.7
122		OBS	0049	-0051	3433	2761			14468	5820		0161	31.08	4746.7
		STD	0050	-0051	3432	2760	0004947	0025	14468			0164	31.08	4746.7
122		OBS	0074	-0057	3429	2758			14469	5650		0213	30.97	4747.0
122		OBS	0075	-0057	3430	2759	0005067	0037	14469			0216	30.97	4747.0
		STD	0098	-0056	3447	2773			14476	4310		0322	30.99	4749.3
122		OBS	0100	-0053	3448	2773	0003705	0048	14478			0328	31.05	4750.0
		STD	0125	-0021	3453	2776	0003470	0057	14498			0410	31.62	4756.5
122		OBS	0148	0008	3458	2778			14515	3320		0486	32.14	4762.1
		STD	0150	0011	3458	2778	0003231	0066	14517			0492	32.20	4762.8
122		OBS	0197	0065	3465	2781			14550	3020		0646	33.17	4773.6
		STD	0200	0066	3465	2781	0003040	0081	14551			0656	33.19	4773.9
122		OBS	0250	0084	3467	2781	0003051	0097	14568			0673	33.51	4779.5
		STD	0295	0095	3468	2781			14580	3720		0968	33.71	4783.5
122		OBS	0300	0096	3468	2781	0003029	0112	14582			0984	33.73	4784.1
		STD	0394	0101	3469	2782			14600	4870		1293	33.82	4790.0
122		OBS	0400	0100	3469	2782	0003003	0142	14600			1312	33.80	4790.0
		STD	0492	0095	3470	2783			14613	3420		1614	33.71	4794.3
122		OBS	0500	0095	3470	2783	0002919	0172	14615			1610	33.71	4794.9
128		OBS	T0563	0094	3469	2782			14625	3600		1817	33.69	4798.2
128		OBS	0600	0093	3470	2783	0002924	0201	14631			1968	33.67	4800.2
		STD	0657	0090	3471	2784			14639	3240		2156	33.62	4802.8
128		OBS	0700	0086	3471	2784	0002813	0230	14644			2297	33.55	4804.4
		STD	0751	0083	3470	2784			14651	3590		2484	33.49	4806.7
128		OBS	0800	0081	3470	2783	0002902	0258	14658			2625	33.46	4809.0
		STD	0845	0079	3469	2783			14665	3530		2772	33.42	4811.3
128		OBS	0900	0075	3469	2783	0002906	0287	14672			2953	33.35	4813.6
		STD	0942	0071	3469	2784			14678	3890		3091	33.28	4815.6
128		OBS	1000	0063	3469	2784	0002820	0316	14684			3281	33.13	4817.5
		STD	1031	0057	3469	2784			14686	3500		3383	33.03	4818.2
128		OBS	1100	0038	3470	2786	0002546	0343	14690			3609	32.68	4819.5
		STD	T1126	0029	3470	2787			14690	3720		3664	32.52	4819.5

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF TEMP'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER			
						16"	1"	NO		DAY	HR./10			CRUISE NO.	STATION NUMBER	D.R.				HGT/FT	SEA	
31	150	ED	7137 S	17836 E	570	18	02	15	172	1963	201	H01	2195	19	13		4	X1	7	8		0028

WATER		WIND		BARO- METER (INCH)	AIR TEMP. °C		VIS CODE	NO. OBS DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- MIR	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		19	13	524	780	-023	-033	6	

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-10 <sup>3</sup>	S Δ D DYN. V. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml <sup>-1</sup>	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY FK/SEC	CHIT
172		OBS	0000	-0057	34.18	2749	0006005	0000	14455			0000	30.97	4742.4	
172		OBS	0000	-0057	34.18	2749			14455	6500		0000	30.97	4742.4	
172		OBS	0009	-0058	34.18	2749			14456	5150		0030	30.96	4742.8	
172		STD	0010	-0058	34.18	2749	0005975	0006	14457			0033	30.96	4743.1	
172		OBS	0018	-0057	34.21	2752			14459	6530		0059	30.97	4743.8	
172		STD	0020	-0057	34.22	2752	0005694	0012	14459			0066	30.97	4743.8	
172		OBS	0027	-0056	34.24	2754			14461	5420		0089	30.99	4744.4	
172		STD	0030	-0056	34.26	2756	0005389	0017	14462			0098	30.99	4744.7	
172		OBS	0045	-0058	34.32	2761			14464	6580		0148	30.96	4745.4	
172		STD	0050	-0059	34.33	2761	0004844	0028	14465			0164	30.94	4745.7	
172		OBS	0068	-0070	34.36	2764			14463	7090		0223	30.74	4745.1	
172		STD	0075	-0080	34.39	2767	0004285	0039	14460			0246	30.56	4744.1	
172		OBS	0090	-0094	34.44	2772			14457	4220		0295	30.31	4743.1	
172		STD	0100	-0089	34.46	2773	0003708	0049	14461			0328	30.40	4744.4	
172		STD	0125	-0076	34.51	2777	0003372	0058	14472			0410	30.63	4748.0	
172		OBS	0136	-0070	34.53	2778			14477	4210		0446	30.74	4749.7	
172		STD	0150	-0028	34.57	2779	0003127	0066	14499			0492	31.50	4756.9	
172		OBS	0181	0043	34.63	2780			14537	3270		0554	32.77	4769.3	
172		STD	0200	0048	34.64	2781	0003012	0081	14543			0656	32.86	4771.3	
172		STD	0250	0063	34.65	2781	0003035	0096	14558			0820	33.13	4776.2	
172		OBS	0272	0070	34.66	2781			14565	3360		0892	33.26	4778.5	
172		STD	0300	0083	34.67	2781	0003023	0112	14576			0984	33.49	4782.1	
172		OBS	0362	0102	34.69	2782			14595	3410		1168	33.84	4788.4	
172		STD	0400	0105	34.69	2782	0003016	0142	14602			1312	33.89	4790.7	
172		OBS	0453	0109	34.70	2782			14613	2940		1466	33.96	4794.3	
183		OBS	0462	0108	34.71	2783			14614	3360		1516	33.94	4794.6	
183		STD	0500	0108	34.71	2783	0002938	0172	14620			1640	33.94	4796.6	
183		STD	0600	0106	34.71	2783	0002952	0201	14637			1968	33.91	4802.2	
183		OBS	0619	0106	34.71	2783			14640	3350		2031	33.91	4803.1	
183		STD	0700	0104	34.72	2784	0002919	0230	14652			2297	33.87	4807.1	
183		OBS	0781	0102Q	34.72	2784Q				3050		2562	33.84		
183		STD	0800	0101	34.72	2784	0002886	0259	14668			2625	33.82	4812.3	
183		STD	0900	0098	34.71	2784	0002927	0288	14683			2953	33.76	4817.2	
183		OBS	0948	0097	34.71	2784			14691	3470		3110	33.75	4819.9	
183		STD	1000	0096	34.71	2784	0002952	0318	14699			3281	33.73	4822.5	
183		STD	1100	0093	34.71	2784	0002945	0347	14714			3609	33.67	4827.4	
183		STD	1200	0089	34.71	2784	0002927	0377	14729			3937	33.60	4832.3	
183		OBS	1213	0088	34.71	2784			14731	3090		3980	33.58	4833.0	
183		STD	1300	0083	34.71	2784	0002889	0406	14744			4265	33.49	4837.3	
183		STD	1400	0076	34.71	2785	0002839	0434	14757			4593	33.39	4841.5	
183		STD	1500	0070	34.71	2785	0002795	0463	14772			4921	33.26	4846.4	
183		OBS	1674	0058	34.71	2786			14796	3160		5192	33.04	4851.3	
183		STD	1750	0053	34.71	2786	0002655	0531	14807			5741	32.45	4857.9	
183		OBS	T1864	0045	34.71	2787			14822	3190		6115	32.81	4862.8	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER			
						10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	D.K.	HGT				PER	SEA	
31	150	ED	7141 S	17952 W	569	19	02	16	015	1963	201	101	0997	10	14		4	X7	4 8		0029		
						WATER		WIND		BARO- METER		AIR TEMP. °C		VEL CODE		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS					
						COLOR CODE		TRANS (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB							
						23 14		520		770		-022 -033		7									

MESSINGR TIME HR#1/10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALS-30°P	Σ Δ D DYN. M. x 10 <sup>4</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - 01/1	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft/sec	STATION
		STD	0000	-0057	3413	2745	0006387	0000	14455			0000	30.97	4742.4	
015		OBS	0000	-0057	3413	2745			14455	534Q		0000	30.97	4742.4	
015		OBS	0009	-0059	3412	2744			14455	663Q		0030	30.94	4742.4	
		STD	0010	-0059	3412	2744	0006453	0006	14455			0033	30.94	4742.4	
015		OBS	0019	-0058	3412	2744			14457	589Q		0062	30.96	4743.1	
		STD	0020	-0058	3412	2744			14457			0066	30.96	4743.1	
015		OBS	0028	-0060	3413	2745			14458	600Q		0092	30.92	4743.4	
		STD	0030	-0062	3414	2746	0006282	0019	14457			0098	30.88	4743.1	
015		OBS	0046	-0082	3422	2753			14452	514Q		0151	30.52	4741.5	
		STD	0050	-0088	3423	2754	0005501	0031	14450			0164	30.42	4740.8	
015		OBS	0070	-0114	3427	2759			14442	553Q		0230	29.95	4738.2	
		STD	0075	-0123	3431	2762	0004740	0044	14439			0246	29.79	4737.2	
015		OBS	0093	-0140	3441	2771			14435	455Q		0305	29.48	4735.9	
		STD	0100	-0130	3442	2771	0003863	0055	14441			0328	29.66	4737.8	
		STD	0125	-0092	3446	2773	0003687	0064	14464			0410	30.34	4754.4	
015		OBS	0139	-0068	3449	2775			14478	449Q		0456	30.78	4750.0	
		STD	0150	-0041	3452	2776	0003445	0073	14492			0492	31.26	4754.6	
015		OBS	0185	0022	3458	2778			14528	407Q		0607	32.40	4766.4	
		STD	0200	0031	3459	2778	0003290	0090	14535			0656	32.56	4768.7	
015		OBS	0231	0050	3460	2778			14548	442Q		0758	32.90	4773.0	
		STD	0250	0064	3461	2778	0003344	0106	14558			0820	33.15	4776.2	
015		OBS	0278	0081	3463	2778			14571	356Q		0912	33.46	4780.5	
		STD	0300	0091	3464	2778	0003304	0123	14579			0984	33.64	4783.1	
015		OBS	0371	0114	3468	2780			14602	296Q		1217	34.05	4790.7	
		STD	0400	0114	3469	2781	0003115	0155	14607			1312	34.05	4792.3	
020		OBS	T0491	0115	3470	2782			14622	321Q		1611	34.07	4797.6	
		STD	0500	0114	3470	2782	0003063	0186	14623			1640	34.05	4797.6	
020		OBS	0584	0107	3468	2780			14634	339Q		1916	33.93	4801.2	
		STD	0600	0106	3468	2781	0003175	0217	14636			1968	33.91	4801.8	
020		OBS	0676	0095	3468	2781			14644	357Q		2216	33.71	4804.4	
		STD	0700	0089	3468	2782	0003061	0248	14645			2297	33.60	4804.8	
020		OBS	0768	0071	3467	2782			14648	388Q		2520	33.28	4805.8	
		STD	0800	0059	3467	2783	0002916	0278	14648			2625	33.06	4805.8	
020		OBS	0862	0040	3467	2784			14650	358Q		2828	32.72	4806.4	
		STD	0900	0032	3467	2784	0002713	0306	14653			2953	32.58	4807.4	
020		OBS	0956	0025	3466	2784			14659	354Q		3136	32.45	4809.4	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DATE	MARDEN SQUARE				STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODE	NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO	DAY	HR.	1/10		201	201			CRUISE NO.	STATION NUMBER	D X			
31	150	ED	7135 S	17816 W	569	18	02	16	054	1963	201	J01	1079	07	16			4	X7	6	8	0030
		WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
		COLOR CODE		SPEED OR DIR.		METER (mbars)		DRY BULB WET BULB														
				23 16		525		750		-027 -033		7										

MESSNGR TIME OF HR	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-3507	$\Sigma \Delta D$ DYN. M. X 10 <sup>3</sup>	VELOCITY SOUND	O <sub>2</sub> ml/l	PO <sub>2</sub> -P ug - ml <sup>-1</sup>	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0049	3415	2746	0006267	0000	14459			0000	31.12	4743.8
054	OBS	0000	-0049	3415	2746				14459	662Q		0000	31.12	4743.8
054	OBS	0008	-0050	3415	2746				14459	620Q		0026	31.10	4743.8
		STD	0010	-0050	3415	2746	0006260	0006	14460			0033	31.10	4744.1
		OBS	0016	-0051	3415	2747			14460			0052	31.08	4744.1
		STD	0020	-0054	3417	2748	0006088	0012	14460	576Q		0055	31.03	4744.1
054	OBS	0025	-0057	3419	2750				14460	576Q		0082	30.97	4744.1
		STD	0030	-0058	3420	2751	0005839	0018	14460			0098	30.96	4744.1
054	OBS	0041	-0059	3422	2753				14462	618Q		0134	30.94	4744.7
		STD	0050	-0059	3423	2753	0005602	0030	14464			0200	30.95	4745.4
054	OBS	0061	-0058	3425	2755				14466	532Q		0216	30.65	4744.4
		STD	0075	-0075	3428	2758	0005146	0043	14461			0269	30.52	4743.8
054	OBS	0082	-0082	3429	2759				14459	514Q		0328	30.06	4741.1
		STD	0100	-0108	3435	2765	0004475	0055	14451			0410	29.95	4741.5
054	OBS	0123	-0114	3441	2770				14454	384Q		0492	30.00	4742.1
		STD	0125	-0111	3442	2771	0003919	0066	14454			0538	31.05	4753.6
		STD	0150	-0072	3448	2774	0003609	0075	14477			0656	31.80	4762.1
054	OBS	0164	-0053	3451	2776				14519	388Q		0673	31.91	4763.4
		STD	0200	-0011	3457	2779	0003208	0092	14515			0807	32.76	4772.6
054	OBS	0205	-0005	3458	2779				14519	424Q		0820	32.81	4773.3
054	OBS	0246	0042	3461	2779				14547	356Q		0984	33.35	4780.8
		STD	0250	0045	3461	2779	0003202	0108	14549			1076	33.55	4784.1
		STD	0300	0075	3465	2780	0003120	0124	14572			1260	33.73	4788.7
054	OBS	0328	0086	3467	2781				14582	324Q		1312	33.66	4789.0
060	OBS	0384	0096	3469	2782			0002952	0154	341Q		1470	33.51	4790.3
		STD	0400	0092	3469	2782	0002952	0154	14597			1640	33.51	4793.3
060	OBS	0448	0084	3469	2783				14610	361Q		1680	33.51	4793.9
		STD	0500	0084	3470	2783	0002853	0183	14610			1850	33.22	4794.9
060	OBS	0512	0084	3470	2784				14612	328Q		1968	33.13	4795.6
		STD	0600	0063	3469	2784	0002774	0212	14617			2100	32.92	4795.9
060	OBS	0640	0051	3469	2785				14618	352Q		2297	32.92	4795.9
		STD	0700	0028	3468	2785	0002603	0238	14618			2316	32.45	4795.6
060	OBS	0706	0025	3468	2786				14617	372Q				

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MOUSE INSTR.	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TIME (GMT)	NODC STATION NUMBER	
						10"	1"	MO	DAY	HR.		1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER
31	150	ED	7201 S	17732 E	570	27	02	17	123	1963	201	H02	1536	14	19			4	X1	6	18	0031

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. 1m	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	20	S06	830		-035	-042	7		

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO4-P μg - μl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S CODE
123		STD	0000	-0059	3438	2765	0004467	0000	14457			0000	30.94	4743.1	
		OBS	0000	-0059	3438	2765			14457	558Q		0000	30.94	4743.1	
123		STD	0010	-0062	3438	2766	0004453	0004	14457			0033	30.88	4743.1	
		OBS	0010	-0062	3438	2766			14457	605Q		0033	30.88	4743.1	
123		STD	0019	-0059	3437	2765			14460	497Q		0062	30.94	4744.1	
		OBS	0019	-0059	3437	2765	0004539	0009	14460			0066	30.94	4744.1	
123		STD	0029	-0061	3437	2765			14461	511Q		0095	30.90	4744.4	
		OBS	0029	-0061	3437	2765	0004528	0013	14461			0098	30.90	4744.4	
123		STD	0048	-0060	3437	2765			14465	538Q		0158	30.92	4745.7	
		OBS	0048	-0060	3437	2765	0004527	0023	14465			0164	30.92	4745.7	
123		STD	0073	-0059	3437	2765			14469			0210	30.94	4747.0	
		OBS	0073	-0059	3438	2765	0004449	0034	14470			0216	30.94	4747.1	
123		STD	0097	-0057	3443	2769			14475	508Q		0318	30.97	4749.0	
		OBS	0100	-0056	3444	2770	0003997	0044	14476			0328	30.99	4749.3	
123		STD	0125	-0043	3450	2774	0003593	0054	14487			0410	31.23	4752.9	
		OBS	0145	-0025	3454	2777			14499	351Q		0476	31.55	4756.9	
123		STD	0150	-0017	3455	2777	0003334	0062	14504			0492	31.69	4758.5	
		OBS	0193	0042	3463	2781			14539	343Q		0633	32.76	4770.0	
		STD	0200	0047	3463	2780	0003059	0078	14542			0656	32.85	4771.0	
		STD	0250	0075	3465	2780	0003082	0094	14564			0673	33.35	4778.2	
127		OBS	0290	0092	3467	2781			14578	298Q		0951	33.66	4782.8	
127		STD	0300	0095	3468	2781	0003029	0109	14581			0984	33.71	4783.8	
		OBS	0386	0109	3471	2783			14602	318Q		1265	33.96	4790.7	
		STD	0400	0109	3471	2783	0002910	0139	14605			1312	33.96	4791.7	
136		OBS	0453	0108	3472	2784			14613	319Q		1486	33.94	4794.3	
		STD	0500	0105	3472	2784	0002844	0168	14620			1640	33.89	4796.6	
136		OBS	0547	0102	3472	2784			14626	340Q		1795	33.84	4798.5	
		STD	0600	0097	3472	2784	0002842	0196	14633			1968	33.75	4800.8	
		STD	0700	0090	3470	2784	0002889	0225	14646			2297	33.62	4805.1	
136		OBS	0738	0088	3470	2783			14651	331Q		2421	33.58	4806.7	
		STD	0800	0087	3470	2784	0002891	0254	14661			2625	33.57	4810.0	
		STD	0900	0084	3471	2784	0002846	0282	14677			2953	33.51	4815.3	
136		OBS	0932	0082	3471	2785			14681	349Q		3058	33.48	4816.6	
		STD	1000	0079	3471	2785	0002820	0311	14691			3281	33.42	4819.9	
		STD	1100	0068	3471	2785	0002755	0338	14703			3609	33.22	4823.8	
136		OBS	1126	0063	3466P	2782P				322Q		3694	33.13		
		STD	1200	0039	3470	2787	0002537	0365	14707			3937	32.70	4825.1	
		STD	1300	0012	3470	2788	0002325	0389	14713			4265	32.22	4826.8	
136		OBS	1323	0007	3470	2788			14712	362Q		4310	32.13	4827.1	
		STD	1400	-0008	3470	2789	0002159	0412	14719			4593	31.86	4829.1	
136		OBS	1421	-0012	3470	2789			14721	380Q		4662	31.78	4829.7	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	WIND DIRECTION	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER			
						10'	1'	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	D.R.				HGT	PER	SEA
31	150	ED	7209 S	17700 E	570	27	02	17	239	1963	201	G02	1829	17	14			3	X7	6	8		0032

WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (M)	DIR.	SPEED (KTS)	DRY BULB	WET BULB	W. CODE			
		23	14	505	820	-024	-031	7	

MESSING TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	S. Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	STATION NO.
239		STD	0000	-0069	3436	2764	0004581	0000	14452		0000	30.76	4711.5	
		OBS	0000	-0069	3436	2764			14452	569Q	0000	30.76	4711.5	
		STD	0010	-0071	3436	2764	0004570	0005	14453		0033	30.72	4711.8	
239		OBS	0010	-0071	3436	2764			14453	610Q	0033	30.72	4711.8	
		STD	0020	-0069	3436	2764	0004575	0009	14456		0066	30.76	4742.8	
239		OBS	0020	-0069	3436	2764			14456	583Q	0066	30.76	4742.8	
		STD	0030	-0071	3435	2764	0004641	0014	14456		0098	30.72	4742.8	
239		OBS	0030	-0071	3435	2764			14456	565Q	0098	30.72	4742.8	
		STD	0050	-0065	3436	2764	0004582	0023	14462		0161	30.83	4744.7	
239		OBS	0050	-0065	3436	2764			14462	585Q	0216	31.21	4750.0	
		STD	0075	-0044	3445	2770	0003979	0034	14478		0216	31.21	4750.0	
239		OBS	0075	-0044	3445	2770			14478	531Q	0216	31.21	4750.0	
		STD	0100	-0041	3450	2774	0003607	0043	14484		0328	31.26	4752.0	
239		OBS	0100	-0041	3450	2774			14484	497Q	0328	31.26	4752.0	
		STD	0125	-0039	3454	2777	0003307	0052	14489		0110	31.30	4753.6	
239		OBS	0125	-0039	3454	2777			14489	442Q	0110	31.30	4753.6	
		STD	0150	-0023	3457	2779	0003152	0060	14501		0492	31.59	4757.5	
239		OBS	0150	-0023	3457	2779			14501	318Q	0492	31.59	4757.5	
		STD	0199	0052	3461	2778			14544		0653	32.94	4771.6	
239		OBS	0199	0052	3461	2778	0003258	0076	14544	361Q	0656	32.92	4771.6	
		STD	0200	0051	3461	2778			14545		0817	32.61	4772.0	
239		OBS	0200	0051	3461	2778			14545	361Q	0820	32.63	4772.0	
		STD	0249	0034	3463	2781			14573		0981	33.37	4781.2	
239		OBS	0249	0034	3463	2781	0003004	0092	14573	342Q	0981	33.37	4781.2	
		STD	0300	0076	3468	2782			14573		0981	33.37	4781.2	
239		OBS	0300	0076	3468	2782	0002901	0106	14597	335Q	1306	33.69	4789.0	
		STD	0398	0094	3469	2782			14598		1312	33.69	4789.0	
247		OBS	0400	0094	3469	2782	0002961	0136	14611	371Q	1461	33.78	4795.6	
		STD	0461	0100	3471	2783			14611		1512	33.80	4793.6	
247		OBS	0500	0099	3471	2783	0002904	0165	14617		1640	33.78	4795.6	
		STD	0554	0098	3470	2783			14625	335Q	1818	33.78	4798.2	
247		OBS	0600	0099	3471	2783	0002929	0194	14633		1968	33.78	4800.8	
		STD	0645	0099	3471	2783			14641		2116	33.78	4803.5	
247		OBS	0700	0095	3471	2784	0002884	0223	14648	335Q	2297	33.71	4805.8	
		STD	0738	0092	3471	2784			14653		2421	33.66	4807.4	
247		OBS	0800	0090	3470	2783	0002915	0252	14663		2625	33.62	4810.7	
		STD	0830	0088	3470	2783			14667	351Q	2723	33.58	4812.0	
247		OBS	0900	0080	3469	2783	0002925	0281	14675		2953	33.44	4814.6	
		STD	0924	0077	3469	2783			14677	366Q	3032	33.39	4815.3	
247		OBS	1000	0070	3470	2784	0002819	0310	14687		3281	33.26	4818.6	
		STD	1019	0068	3470	2785			14689	379Q	3443	33.22	4819.2	
247		OBS	1100	0054	3471	2786	0002621	0337	14697		3609	32.97	4821.8	
		STD	1116	0052	3471	2786			14699	359Q	3662	32.94	4822.5	
247		OBS	1200	0050	3470	2786	0002647	0364	14712		3937	32.90	4826.8	
		STD	T1212	0049	3470	2786			14713	372Q	3976	32.88	4827.1	
247		OBS	1300	0039	3471	2787	0002498	0389	14724		4265	32.70	4830.7	
		STD	1310	0037	3471	2787			14725	416Q	4298	32.67	4831.0	
247		OBS	1400	0015	3471	2788	0002283	0413	14730		4593	32.27	4832.7	
		STD	1500	-0011	3471	2790	0002052	0435	14735		4921	31.80	4834.3	
247		OBS	T1506	-0013	3471	2790			14735	391Q	4911	31.77	4834.3	
		OBS	T1704	-0073							5590	30.69		



REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S			DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER	DIR.			HGT	PER	SEA						
31 150	ED	7236 S	17522 E	570	25	02	18	085	1963	201	F03		0475	05	13				3	X1	3	8		0034
					WATER		WIND		AIR TEMP. °C		BARO-METER		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
					COLOR CODE	TRANS. IN	DIR.	SPEED OR FORCE	BARO-METER (mbars)	DRY BULB	WET BULB	WIL. CODE												
						17	11	509	840	-034	-038	7												

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - si/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft/sec	S C C
085		STD	0000	-0065	3441	2768	0004214	0000	14455			0000	30.83	4742.4	
		OBS	0000	-0065	3441	2768			14455	5190		0000	30.83	4742.4	
		STD	0010	-0066	3441	2768	0004207	0004	14456			0033	30.81	4742.8	
		OBS	0010	-0066	3441	2768			14456	5420		0033	30.81	4742.8	
		STD	0020	-0065	3441	2768	0004209	0008	14458			0066	30.83	4743.4	
		OBS	0020	-0065	3441	2768			14458	5650		0066	30.83	4743.4	
		STD	0030	-0066	3441	2768	0004202	0013	14459			0098	30.81	4743.8	
		OBS	0030	-0066	3441	2768			14459	5420		0098	30.81	4743.8	
		STD	0050	-0063	3442	2769	0004132	0021	14464			0164	30.87	4745.4	
		OBS	0050	-0063	3442	2769			14464	5660		0164	30.87	4745.4	
		STD	0075	-0059	3444	2770	0003990	0031	14470			0246	30.94	4747.4	
		OBS	0075	-0059	3444	2770			14470	4680		0246	30.94	4747.4	
		STD	0100	-0050	3447	2772	0003795	0041	14479			0328	31.10	4750.3	
		OBS	0100	-0050	3447	2772			14479	5140		0328	31.10	4750.3	
		STD	0125	-0043	3449	2774	0003669	0050	14487			0410	31.23	4752.9	
		OBS	0125	-0033	3452	2776	0003483	0059	14496			0492	31.41	4755.9	
		STD	0200	-0007	3458	2779	0003153	0076	14517			0656	31.87	4762.8	
		OBS	0200	-0007	3458	2779			14517	4070		0656	31.87	4762.8	
		STD	0250	0026	3463	2781	0002958	0091	14541			0820	32.47	4770.7	
		OBS	0250	0026	3463	2781			14541	4350		0820	32.47	4770.7	
		STD	0300	0030	3466	2784	0002756	0105	14552			0984	32.54	4774.3	
		OBS	0300	0030	3466	2784			14552	3480		0984	32.54	4774.3	
		STD	0400	0017	3467	2785	0002601	0132	14562			1312	32.31	4777.5	
		OBS	0400	0017	3467	2785			14562	3710		1312	32.31	4777.5	
		OBS	0460	-0056	3445							1509	30.99		

REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S			DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER	DIR.			HGT	PER	SEA						
31 150	ED	7306 S	17520 E	570	35	02	18	129	1963	201	F04		0377	04	11				3	X7	3	8		0035
					WATER		WIND		AIR TEMP. °C		BARO-METER		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS									
					COLOR CODE	TRANS. IN	DIR.	SPEED OR FORCE	BARO-METER (mbars)	DRY BULB	WET BULB	WIL. CODE												
						09	510	840	-033	-040	6													

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - si/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft/sec	S C C
129		STD	0000	-0046	3438	2765	0004521	0000	14463			0000	31.17	4745.1	
		OBS	0000	-0046	3438	2765			14463	5400		0000	31.17	4745.1	
		STD	0010	-0050	3437	2764	0004578	0005	14463			0033	31.10	4745.1	
		OBS	0010	-0050	3437	2764			14463	5650		0033	31.10	4745.1	
		STD	0020	-0048	3438	2765	0004508	0009	14466			0066	31.14	4746.0	
		OBS	0020	-0048	3438	2765			14466	5980		0066	31.14	4746.0	
		STD	0030	-0049	3437	2764	0004578	0014	14467			0098	31.12	4746.4	
		OBS	0030	-0049	3437	2764			14467	6180		0098	31.12	4746.4	
		STD	0050	-0050	3437	2764	0004569	0023	14470			0164	31.10	4747.4	
		OBS	0050	-0050	3437	2764			14470	5710		0164	31.10	4747.4	
		STD	0075	-0056	3441	2768	0004232	0034	14471			0216	30.99	4747.7	
		OBS	0075	-0056	3441	2768			14471	5990		0216	30.99	4747.7	
		STD	0100	-0080	3452	2778	0003285	0043	14466			0328	30.56	4746.0	
		OBS	0100	-0080	3452	2778			14466	4440		0328	30.56	4746.0	
		STD	0125	-0045	3460	2783	0002821	0051	14487			0410	31.19	4752.9	
		OBS	0125	-0045	3460	2783			14487	4670		0410	31.19	4752.9	
		STD	0150	-0032	3465	2786	0002498	0057	14498			0492	31.42	4756.5	
		OBS	0150	-0032	3465	2786			14498	4120		0492	31.42	4756.5	
		STD	0200	-0075	3467	2790	0002135	0069	14487			0656	30.65	4752.9	
		OBS	0200	-0075	3467	2790			14487	4120		0656	30.65	4752.9	
		STD	0250	-0076	3468	2790	0002041	0079	14495			0820	30.63	4755.6	
		OBS	0250	-0076	3468	2790			14495	4120		0820	30.63	4755.6	
		STD	0300	-0077	3469	2791	0001948	0099	14503			0984	30.61	4758.2	
		OBS	0300	-0077	3469	2791			14503	4100		0984	30.61	4758.2	
		STD	0360	-0097	3467	2790			14503	4190		1181	30.25	4758.2	

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE * 1/10	LONGITUDE * 1/10	NODC INDEX	MARSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S CRUISE NO. STATION NUMBER		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10'	1'	MO	DAY	HR	1/10		NO.	NO.			D.R.	H.C.T.	SEA		TYPE	AMT	
31	150	ED	7301 S	17336 E	570	33	02	18	168	1963	201	E04	0466	04	00	X7	3	8		0036		

WATER		WIND		BARO- METER	AIR TEMP. °C		V.S. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
09	09	09	507	840	-026	-033	7		

MESSING TIME	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta \sigma$ DTN, M, $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft./sec	CORR.
		STD	0000	-0074	3427	2757	0005250	0000	14449			0000	30.67	4740.5	
		OBS	0000	-0074	3427	2757			14449	6090		0000	30.67	4740.5	
		STD	0010	-0070	3428	2758	0005186	0005	14452			0033	30.71	4741.4	
		OBS	0010	-0070	3428	2758			14452	5920		0033	30.71	4741.4	
		STD	0020	-0072	3428	2758	0005175	0010	14453			0066	30.70	4741.8	
		OBS	0020	-0072	3428	2758			14453	6010		0066	30.70	4741.8	
		STD	0030	-0073	3429	2759	0005091	0016	14454			0098	30.69	4742.1	
		OBS	0030	-0073	3429	2759			14454	5880		0098	30.69	4742.1	
		STD	0050	-0069	3431	2760	0004948	0026	14460			0164	30.76	4744.1	
		OBS	0050	-0069	3431	2760			14460	6190		0164	30.76	4744.1	
		STD	0075	-0088	3442	2770	0004025	0037	14457			0216	30.42	4743.1	
		OBS	0075	-0088	3442	2770			14457	4900		0216	30.42	4743.1	
		STD	0100	-0091	3448	2775	0003546	0046	14460			0328	30.36	4744.1	
		OBS	0100	-0091	3448	2775			14460	4230		0328	30.36	4744.1	
		STD	0125	-0079	3456	2781	0002976	0054	14471			0410	30.58	4747.7	
		OBS	0125	-0079	3456	2781			14471	4230		0410	30.71	4750.6	
		STD	0149	-0070	3461	2784			14480			0489	30.76	4750.6	
		OBS	0149	-0070	3461	2784			14480	4300		0489	30.76	4750.6	
		STD	0150	-0069	3461	2785	0002623	0061	14481			0653	30.99	4755.6	
		OBS	0150	-0069	3461	2785			14481			0656	30.97	4755.6	
		STD	0200	-0057	3466	2788	0002286	0074	14495			0820	30.25	4752.6	
		OBS	0200	-0057	3466	2788			14495	4300		0820	30.25	4752.6	
		STD	0250	-0097	3471	2794	0001711	0084	14486			0981	29.60	4750.3	
		OBS	0250	-0097	3471	2794			14486	4920		0981	29.60	4750.3	
		STD	0300	-0131	3476	2799	0001171	0091	14479			0981	29.64	4750.3	
		OBS	0300	-0131	3476	2799			14479	5000		0981	29.64	4750.3	
		STD	0398	-0180	3490	2812			14474			1306	28.76	4748.7	
		OBS	0398	-0180	3490	2812			14474	5000		1306	28.76	4748.7	
		STD	0400	-0181	3490	2812	-0000133	0096	14474			1312	28.74	4748.7	
		OBS	0400	-0181	3490	2812			14474	5320		1312	28.74	4748.7	
		STD	0448	-0189	3492	2814			14478			1470	28.60	4749.1	
		OBS	0448	-0189	3492	2814			14478	5320		1470	28.60	4749.1	

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE * 1/10	LONGITUDE * 1/10	NODC INDEX	MARSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S CRUISE NO. STATION NUMBER		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
					10'	1'	MO	DAY	HR	1/10		NO.	NO.			D.R.	H.C.T.	SEA		TYPE	AMT	
31	150	ED	7305 S	17149 E	570	31	02	18	207	1963	201	D04	0585	06	01	X7	3	8		0037		

WATER		WIND		BARO- METER	AIR TEMP. °C		V.S. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
17	14	503	810	-027	-033	7			

MESSING TIME	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta \sigma$ DTN, M, $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft./sec	CORR.
		STD	0000	-0062	3432	2761	0004914	0000	14455			0000	30.88	4742.4	
		OBS	0000	-0062	3432	2761			14455	6750		0000	30.88	4742.4	
		STD	0010	-0064	3432	2761	0004903	0005	14456			0033	30.85	4742.6	
		OBS	0010	-0064	3432	2761			14456	6630		0033	30.85	4742.6	
		STD	0020	-0058	3434	2762	0004772	0010	14460			0066	30.96	4744.1	
		OBS	0020	-0058	3434	2762			14460	7100		0066	30.96	4744.1	
		STD	0029	-0062	3435	2763			14460	6620		0095	30.88	4744.1	
		OBS	0029	-0062	3435	2763			14460	6620		0095	30.88	4744.1	
		STD	0030	-0061	3434	2762	0004757	0015	14461			0095	30.88	4744.1	
		OBS	0030	-0061	3434	2762			14461	6420		0095	30.88	4744.1	
		STD	0048	-0052	3428	2757			14467			0158	31.06	4746.4	
		OBS	0048	-0052	3428	2757			14467	6420		0158	31.06	4746.4	
		STD	0050	-0055	3429	2758	0005159	0024	14466			0164	31.01	4748.0	
		OBS	0050	-0055	3429	2758			14466	5850		0164	31.01	4748.0	
		STD	0072	-0069	3442	2769			14465			0236	30.76	4745.7	
		OBS	0072	-0069	3442	2769			14465	5850		0236	30.76	4745.7	
		STD	0075	-0067	3443	2770	0004033	0036	14467			0216	30.79	4746.4	
		OBS	0075	-0067	3443	2770			14467	5570		0216	30.79	4746.4	
		STD	0097	-0056	3452	2777			14477			0318	30.99	4749.7	
		OBS	0097	-0056	3452	2777			14477	5570		0318	30.99	4749.7	
		STD	0100	-0054	3453	2777	0003319	0045	14478			0328	31.03	4750.0	
		OBS	0100	-0054	3453	2777			14478			0328	31.03	4750.0	
		STD	0125	-0044	3458	2781	0002978	0053	14488			0410	31.21	4753.3	
		OBS	0125	-0044	3458	2781			14488	5710		0410	31.21	4753.3	
		STD	0145	-0040	3462	2784			14493			0476	31.28	4754.9	
		OBS	0145	-0040	3462	2784			14493	5710		0476	31.28	4754.9	
		STD	0150	-0041	3463	2785	0002607	0060	14494			0492	31.26	4755.2	
		OBS	0150	-0041	3463	2785			14494	4420		0492	31.26	4755.2	
		STD	0193	-0044	3467	2788			14500			0633	31.21	4757.2	
		OBS	0193	-0044	3467	2788			14500	4420		0633	31.21	4757.2	
		STD	0200	-0043	3468	2789	0002247	0072	14502			0656	31.23	4757.9	
		OBS	0200	-0043	3468	2789			14502	4840		0656	31.23	4757.9	
		STD	0250	-0035	3471	2791	0001997	0083	14514			0820	31.37	4761.8	
		OBS	0250	-0035	3471	2791			14514			0820	31.37	4761.8	
		STD	0289	-0029	3474	2793			14524			0981	31.48	4765.1	
		OBS	0289	-0029	3474	2793			14524	4840		0981	31.48	4765.1	
		STD	0300	-0035	3476	2795	0001627	0092	14511			0981	31.37	4764.7	
		OBS	0300	-0035	3476	2795			14511	5370		0981	31.37	4764.7	
		STD	0386	-0095	3486	2806			14511			1266	30.29	4766.8	
		OBS	0386	-0095	3486	2806			14511	5370		1266	30.29	4766.8	
		STD	0400	-0116	3488	2808	0000293	0101	14504			1312	29.91	4758.5	
		OBS	0400	-0116	3488	2808			14504			1312	29.91	4758.5	
		STD	0482	-0192	3493	2814			14483			1581	28.54	4751.6	
		OBS	0482	-0192	3493	2814			14483	4840		1581	28.54	4751.6	
		STD	0500	-0193	3493	2815	-0000452	0101	14485			1640	28.53	4752.3	
		OBS	0500	-0193	3493	2815			14485	4960		1640	28.53	4752.3	
		STD	0554	-0197	3493	2815			14492			1818	28.45	4754.6	
		OBS	0554	-0197	3493	2815			14492	4960		1818	28.45	4754.6	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT DIRECTION	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
							10"	1'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	150	ED	7300 S	17044 E	570	30	02	19	005	1963	201	C04	0393	04	16		3	X7	7	8	0038
				WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH		SPECIAL OBSERVATIONS							
				COLOR CODE		TRANS. DIR. SPD OR FORCE		METER (mm-h)		DRY WET BULB		VIS. CODE									
				14 18		S17		830		-046 -049		6									

MESSNGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DIN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S C
	005	STD	0000	-0108	3417	2750	0005895	0000	14431			0000	30.06	4734.6	
		OBS	0000	-0108	3417	2750			14431	766Q		0000	30.06	4734.5	
		STD	0010	-0106	3418	2751	0005820	0006	14434			0033	30.09	4735.6	
		OBS	0010	-0106	3418	2751			14434	642Q		0033	30.09	4735.6	
	005	STD	0020	-0097	3420	2752	0005694	0012	14440			0066	30.25	4737.5	
		OBS	0020	-0097	3420	2752			14440	592Q		0066	30.25	4737.5	
	005	STD	0029	-0062	3430	2759			14460	681Q		0095	30.85	4744.1	
		OBS	0029	-0062	3430	2759			14460			0095	30.79	4743.9	
	005	STD	0030	-0067	3431	2760	0004962	0017	14457			0158	29.75	4735.9	
		OBS	0048	-0125	3442	2771			14435	602Q		0164	29.80	4736.5	
	005	STD	0050	-0122	3443	2772	0003835	0026	14437			0236	30.33	4742.8	
		OBS	0072	-0093	3454	2780			14456	503Q		0216	30.38	4743.4	
	005	STD	0075	-0090	3455	2780	0003023	0034	14458			0318	30.61	4746.7	
		OBS	0097	-0077	3462	2786			14468	465Q		0328	30.60	4746.7	
	005	STD	0100	-0078	3462	2786	0002499	0041	14468			0410	30.31	4746.7	
		OBS	0125	-0094	3466	2789	0002190	0047	14466			0476	29.97	4744.1	
	005	STD	0150	-0122	3469	2793	0001806	0052	14457			0492	29.80	4743.1	
		OBS	0193	-0179	3474	2799			14438	571Q		0656	28.78	4736.9	
	005	STD	0200	-0180	3475	2800	0001129	0059	14439			0820	28.76	4737.2	
		OBS	0250	-0185	3478	2802	0000856	0064	14445			0948	28.62	4741.1	
	005	STD	0289	-0188	3481	2805			14451	477Q		0984	28.62	4741.8	
		OBS	0300	-0188	3482	2805	0000537	0068	14453			1106	28.56	4743.4	
	005	STD	0337	-0191	3484	2807			14458	636Q		1201	28.47	4744.4	
		OBS	T0366	-0196	3487	2810			14461						

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT DIRECTION	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
							10"	1'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	150	ED	7330 S	17010 E	570	30	02	19	045	1963	201	C05	0356	03	18		3	X7	6	8	0039
				WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH		SPECIAL OBSERVATIONS							
				COLOR CODE		TRANS. DIR. SPD OR FORCE		METER (mm-h)		DRY WET BULB		VIS. CODE									
				16 18		S22		830		-062 -065		7									

MESSNGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DIN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S C
	045	STD	0000	-0172	3384	2726	0008247	0000	14397			0000	28.90	4723.4	
		OBS	0000	-0172	3384	2726			14397	748Q		0000	28.90	4723.4	
	045	STD	0008	-0173	3383	2725			14397	672Q		0026	28.89	4723.4	
		OBS	0010	-0173	3383	2725	0008315	0008	14398			0033	28.89	4723.7	
	045	STD	0016	-0173	3383	2725			14399	789Q		0052	28.89	4724.1	
		OBS	0020	-0173	3384	2726	0008232	0017	14400			0066	28.89	4724.4	
	045	STD	0024	-0172	3385	2726			14401	674Q		0079	28.90	4724.7	
		OBS	0030	-0157	3402	2740	0006883	0024	14411			0098	29.17	4728.0	
	045	STD	0041	-0137	3425	2758			14426	600Q		0134	29.53	4732.9	
		OBS	0050	-0134	3434	2765	0004485	0035	14430			0154	29.59	4734.2	
	045	STD	0061	-0131	3443	2772			14434	569Q		0200	29.64	4735.6	
		OBS	0075	-0110	3451	2778	0003254	0045	14448			0246	30.02	4740.1	
	045	STD	0082	-0104	3454	2780			14452	392Q		0269	30.13	4741.5	
		OBS	0100	-0118	3459	2785	0002604	0052	14449			0328	29.88	4740.5	
	045	STD	0122	-0137	3465	2790			14445	526Q		0400	29.53	4739.2	
		OBS	0125	-0141	3466	2791	0001979	0058	14444			0410	29.46	4738.8	
	045	STD	0150	-0168	3471	2796	0001498	0063	14436			0492	29.88	4736.2	
		OBS	0164	-0177	3473	2798			14434	581Q		0538	28.61	4735.6	
	045	STD	0200	-0182	3476	2800	0001069	0069	14438			0669	28.71	4736.9	
		OBS	0204	-0183	3476	2800			14438	561Q		0804	28.62	4738.5	
	045	STD	0245	-0188	3479	2803			14443	581Q		0820	28.60	4738.8	
		OBS	0250	-0189	3480	2803	0000729	0073	14444			0842	28.53	4740.1	
	045	STD	0287	-0193	3483	2806			14448	546Q					

REFERENCE CTRY CODE	SHIP ID, NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1'	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	150	ED	7332 S	17200 E	570	32	02	19	083	1963	201	D05	0567	04	17			3	X7	4	8	0040

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. MNT	DIR.	SPEED OR FORCE		DRY BULB	WET BULB				
		16	S16	820	-062	-070	7			

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Delta \rho$ DYN. $\Delta \rho$ x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P pp - 01/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S
		STD	0000	-0101	3417	2750	0005918	0000	14435			0000	30.18	4735.9	
083		OBS	0000	-0101	3417	2750			14435	639Q		0000	30.18	4735.9	
083		OBS	0008	-0101	3417	2750			14436			0026	30.18	4736.2	
		STD	0010	-0101	3417	2750	0005914	0006	14436			0033	30.18	4736.2	
083		OBS	0016	-0101	3417	2750			14437	661Q		0052	30.18	4736.5	
		STD	0020	-0102	3417	2750	0005908	0012	14438			0066	30.16	4736.9	
083		OBS	0024	-0102	3417	2750			14438	674Q		0079	30.16	4736.9	
		STD	0030	-0101	3417	2750	0005905	0018	14440			0098	30.18	4737.5	
083		OBS	0041	-0100	3417	2750			14442	624Q		0134	30.20	4738.2	
		STD	0050	-0122	3433	2764	0004601	0028	14435			0161	29.80	4735.8	
083		OBS	0061	-0138	3447	2776			14432	519Q		0200	29.52	4734.9	
		STD	0075	-0137	3455	2782	0002855	0038	14436			0216	29.53	4736.2	
083		OBS	0082	-0137	3459	2785			14437	499Q		0269	29.53	4736.5	
		STD	0100	-0161	3460	2787	0002387	0044	14429			0328	29.10	4733.9	
083		OBS	0122	-0179	3468P	2794P				501Q		0400	28.78		
		STD	0125	-0179	3461	2788	0002244	0050	14425			0410	28.78	4732.6	
		STD	0150	-0179	3463	2790	0002077	0055	14429			0492	28.78	4733.9	
083		OBS	0164	-0179	3465	2791			14432	497Q		0538	28.78	4734.9	
		STD	0200	-0180	3470	2796	0001511	0064	14438			0656	28.76	4736.9	
083		OBS	0204	-0181	3471	2796			14439	502Q		0669	28.74	4737.2	
083		OBS	0245	-0190	3478	2802			14442	538Q		0804	28.58	4738.2	
		STD	0250	-0190	3478	2803	0000810	0070	14443			0820	28.58	4738.5	
		STD	0300	-0191	3482	2806	0000504	0073	14451			0981	28.56	4741.1	
083		OBS	0328	-0192	3484	2807			14456	513Q		1076	28.54	4742.8	
		STD	0400	-0195	3486	2809	0000130	0077	14467			1312	28.49	4746.4	
083		OBS	0410	-0196	3486	2809			14468	629Q		1345	28.47	4746.7	

REFERENCE CTRY CODE	SHIP ID, NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1'	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	150	ED	7334 S	17345 E	570	33	02	19	116	1963	201	E05	0291	03	17			4	X7	4	8	0041

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. MNT	DIR.	SPEED OR FORCE		DRY BULB	WET BULB				
		18	S20	790	-069	-073	7			

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Delta \rho$ DYN. $\Delta \rho$ x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P pp - 01/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S
		STD	0000	-0048	3433	2761	0004895	0000	14462			0000	31.14	4744.7	
116		OBS	0000	-0048	3433	2761			14462	609Q		0000	31.14	4744.7	
116		OBS	0009	-0048	3432	2760			14463	639Q		0030	31.24	4745.1	
		STD	0010	-0047	3432	2760	0004973	0005	14464			0033	31.15	4745.4	
116		OBS	0017	-0046	3431	2759			14465	652Q		0056	31.17	4745.7	
		STD	0020	-0048	3431	2759	0005043	0010	14465			0066	31.24	4745.7	
116		OBS	0026	-0050	3431	2759			14465	723Q		0085	31.20	4745.7	
		STD	0030	-0050	3431	2759	0005034	0015	14466			0098	31.20	4746.0	
116		OBS	0043	-0048	3431	2759			14468	591Q		0141	31.24	4746.7	
		STD	0050	-0064	3435	2763	0004663	0025	14463			0164	30.85	4745.1	
116		OBS	0065	-0078	3439	2767			14459	583Q		0213	30.60	4743.8	
		STD	0075	-0061	3435	2763	0004669	0036	14468			0246	30.90	4746.7	
116		OBS	0087	-0047	3431	2759			14476	632Q		0285	31.15	4749.3	
		STD	0100	-0054	3431	2760	0004975	0048	14475			0328	31.03	4749.0	
		STD	0125	-0063	3432	2761	0004883	0061	14475			0410	30.87	4749.0	
116		OBS	0130	-0064	3432	2761			14476	600Q		0426	30.85	4749.3	
		STD	0150	-0066	3439	2767	0004322	0072	14479			0492	30.81	4750.3	
116		OBS	0173	-0068	3447	2773			14483	380Q		0568	30.78	4751.6	
		STD	0200	-0052	3456	2780	0003078	0091	14496			0656	31.06	4755.9	
116		OBS	0216	-0047	3459	2782			14501	391Q		0709	31.15	4757.5	
		STD	0250	-0047	3461	2783	0002712	0105	14507			0820	31.15	4759.5	
116		OBS	0260	-0050	3461	2784			14508	356Q		0853	31.20	4759.8	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DEPTH METER	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
						10"	1"	MO DAY HR.1/10	CRUISE NO.	STATION NUMBER	DIR.		HGT	PER			SEA						
31	150	ED	7336 S	17526 E	570	35	02	19	150	1963	201	F05	0476	04	17			4	X7	4	8	0042	
						WATER		WIND		AIR TEMP. °C													
						COLOR	TRANS	DIR.	SPEED	BARO-	DRY	WET	VS.	NO.	SPECIAL								
						CODE	(mb)	(KTS)	OR	METER	BULB	BULB	CODE	OR	OBS.								
									FORCE					DEPTH	OBSERVATIONS								

MESSINER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DIN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD CODE
		STD	0000	-0038	3436	2763	0004708	0000	14467			0000	31.34	4716.4	
150		OBS	0000	-0038	3436	2763			14467	5980		0000	31.32	4715.4	
150		OBS	0009	-0043	3437	2764			14466	5850		0030	31.23	4746.0	
		STD	0010	-0043	3437	2764	0004609	0005	14466			0033	31.23	4716.0	
150		OBS	0017	-0042	3435	2762			14467	6320		0056	31.24	4716.4	
		STD	0020	-0042	3435	2763	0004739	0009	14468			0066	31.24	4716.7	
150		OBS	0026	-0043	3436	2763			14469	6220		0085	31.23	4717.4	
		STD	0030	-0042	3436	2763	0004669	0014	14470			0098	31.24	4717.4	
150		OBS	0043	-0040	3437	2764			14473	5990		0111	31.28	4718.3	
		STD	0050	-0040	3437	2764	0004636	0023	14474			0141	31.28	4718.7	
150		OBS	0065	-0040	3436	2763			14476	6270		0213	31.28	4719.3	
		STD	0075	-0054	3440	2767	0004317	0035	14472			0216	31.03	4718.0	
154		OBS	0087	-0065	3445	2771			14470	4590		0285	30.83	4717.4	
		STD	0100	-0062	3450	2775	0003514	0044	14474			0328	30.88	4718.7	
		STD	0125	-0055	3457	2781	0003003	0052	14482			0110	31.01	4751.3	
154		OBS	0130	-0054	3458	2781			14484	4130		0126	31.03	4752.0	
		STD	0150	-0055	3460	2783	0002770	0060	14487			0192	31.01	4752.9	
154		OBS	0173	-0064	3462	2785			14487	3520		0568	30.85	4752.9	
		STD	0200	-0105	3463	2787	0002342	0072	14472			0656	30.11	4718.0	
		STD	0250	-0160	3464	2790	0002023	0083	14455			0820	29.12	4712.4	
154		OBS	0260	-0168	3464	2790			14453	5480		0853	28.98	4711.8	
		STD	0300	-0179	3470	2795	0001459	0092	14455			0984	28.78	4712.4	
154		OBS	0346	-0188	3475	2800			14459	4360		1135	28.62	4713.8	
154		OBS	0389	-0192	3479	2803			14465	5350		1276	28.54	4715.7	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DEPTH METER	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
						10"	1"	MO DAY HR.1/10	CRUISE NO.	STATION NUMBER	DIR.		HGT	PER			SEA						
31	150	ED	7404 S	17540 E	570	45	19	188	1963	201	F06	0603	05	20			4	X1	6	8	0043		
						WATER		WIND		AIR TEMP. °C													
						COLOR	TRANS	DIR.	SPEED	BARO-	DRY	WET	VS.	NO.	SPECIAL								
						CODE	(mb)	(KTS)	OR	METER	BULB	BULB	CODE	OR	OBS.								
									FORCE					DEPTH	OBSERVATIONS								

MESSINER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DIN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD CODE
		STD	0000	-0052	3435	2763	0004725	0000	14460			0000	31.06	4711.1	
188		OBS	0000	-0052	3435	2763			14460	5440		0000	31.06	4711.1	
188		OBS	0008	-0052	3434	2762			14461	5780		0026	31.06	4711.4	
		STD	0010	-0052	3434	2762	0004799	0005	14462			0033	31.06	4711.7	
188		OBS	0016	-0053	3434	2762			14462	5700		0052	31.05	4711.7	
		STD	0020	-0053	3434	2762	0004793	0010	14463			0066	31.05	4715.1	
188		OBS	0024	-0053	3434	2762			14463	5420		0079	31.05	4715.1	
		STD	0030	-0053	3434	2762	0004792	0014	14465			0098	31.05	4715.7	
188		OBS	0041	-0052	3434	2762			14467	5930		0131	31.06	4716.4	
		STD	0050	-0049	3434	2762	0004801	0024	14469			0161	31.12	4717.0	
188		OBS	0061	-0046	3434	2762			14473	6140		0200	31.17	4718.3	
		STD	0075	-0071	3445	2772	0003863	0035	14465			0216	30.72	4715.7	
188		OBS	0082	-0075	3449	2775			14465	3800		0269	30.65	4715.7	
		STD	0100	-0015	3455	2777	0003350	0044	14496			0328	31.73	4755.9	
188		OBS	0122	0020	3460	2779			14517	3930		0100	32.36	4762.8	
		STD	0125	0016	3460	2780	0003129	0052	14515			0110	32.29	4762.1	
		STD	0150	-0016	3460	2781	0002959	0059	14505			0192	31.71	4758.8	
188		OBS	0164	-0033	3460	2782			14499	3590		0258	30.79	4756.9	
		STD	0200	-0067	3460	2784	0002704	0074	14490			0255	30.79	4753.9	
188		OBS	0245	-0109	3460	2785			14478	4060		0804	30.01	4750.0	
		STD	0250	-0115	3461	2786	0002406	0086	14476			0820	29.93	4719.3	
		STD	0300	-0164	3465	2791	0001893	0097	14462			0984	29.05	4711.7	
188		OBS	0328	-0181	3468	2794			14459	4990		1076	28.74	4713.8	
		STD	0400	-0189	3474	2799	0001065	0112	14468			1312	28.60	4716.7	
188		OBS	0410	-0190	3475	2800			14469	5320		1345	28.58	4717.0	
188		OBS	0472	-0194	3478	2802			14478	5390		1549	28.51	4750.0	

REFERENCE CITY CODE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
					10'	1'	MO	DAY	HR./10		201	E06			04	22					4
31	150	ED	74045 S	17350 E	570	43	02	19	233	1963	201	E06	0457	04	22					0044	
				WATER		WIND		AIR TEMP. °C													
				COLOR CODE		DR. SPCD OR FORCE		BARO-METER (mb)		DRY BULB WET BULB		VIC CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
				14		23 519		830		-062 -065		7									

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/sec
233		STD	0000	-0039	3449	2773	0003711	0000	14468			0000	31.30	4746.7
		OBS	0000	-0039	3449	2773			14468			0000	31.30	4746.7
		OBS	0009	-0038	3447	2772			14470	6560		0030	31.32	4747.4
		STD	0010	-0038	3447	2772	0003866	0004	14470			0033	31.32	4747.4
		OBS	0018	-0039	3447	2772			14471	6230		0059	31.30	4747.7
		STD	0020	-0040	3447	2772	0003855	0008	14471			0066	31.28	4747.7
		OBS	0026	-0041	3447	2772			14471			0085	31.26	4747.7
		STD	0030	-0039	3447	2772	0003858	0012	14473			0098	31.30	4748.3
		OBS	0044	-0036	3447	2772			14476	6420		0144	31.35	4749.3
		STD	0050	-0038	3448	2772	0003813	0019	14477			0164	31.32	4749.7
		OBS	0065	-0043	3449	2774			14477	6940		0213	31.23	4749.7
		STD	0075	-0062	3457	2781	0002985	0028	14471			0246	30.88	4747.7
		OBS	0088	-0079	3464	2787			14466	4520		0289	30.58	4746.0
		STD	0100	-0080	3465	2788	0002286	0034	14468			0328	30.56	4746.7
		STD	0125	-0081	3467	2790	0002099	0040	14472			0410	30.54	4748.0
		OBS	0131	-0081	3468	2791			14473	4510		0430	30.54	4748.3
		STD	0150	-0082	3465	2788	0002269	0045	14475			0492	30.52	4749.0
		OBS	0175	-0084	3464	2787			14478	4710		0574	30.49	4750.0
		STD	0200	-0122	3469	2793	0001787	0055	14465			0656	29.80	4745.7
		STD	0250	-0174	3476	2800	0001045	0062	14450			0820	28.87	4740.8
		OBS	0263	-0183	3478	2802			14448	5150		0863	28.71	4740.1
		STD	0300	-0187	3482	2805	0000517	0066	14453			0984	28.63	4741.8
		OBS	0350	-0190	3486	2809			14461	5540		1148	28.58	4744.4
		OBS	0372	-0190	3487	2810			14465	5810		1220	28.58	4745.7

REFERENCE CITY CODE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
					10'	1'	MO	DAY	HR./10		201 <th>D06 <th>03 <th>86 <th> <th>4</th> <th>X1</th> <th>6</th> <th>8</th> </th></th></th></th>	D06 <th>03 <th>86 <th> <th>4</th> <th>X1</th> <th>6</th> <th>8</th> </th></th></th>			03 <th>86 <th> <th>4</th> <th>X1</th> <th>6</th> <th>8</th> </th></th>	86 <th> <th>4</th> <th>X1</th> <th>6</th> <th>8</th> </th>	<th>4</th> <th>X1</th> <th>6</th> <th>8</th>				4
31	150	ED	7402 S	17210 E	570	42	02	20	028	1963	201	D06	0386	03	23					0045	
				WATER		WIND		AIR TEMP. °C													
				COLOR CODE		DR. SPCD OR FORCE		BARO-METER (mb)		DRY BULB WET BULB		VIC CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
				14		23 519		830		-062 -065		7									

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/sec
028		STD	0000	-0085	3425	2756	0005362	0000	14443			0000	30.47	4738.5
		OBS	0000	-0085	3425	2756			14443			0000	30.47	4738.5
		OBS	0009	-0088	3424	2755			14443	5830		0030	30.42	4738.5
		STD	0010	-0088	3424	2755	0005424	0005	14443			0033	30.42	4738.5
		OBS	0017	-0087	3424	2755			14445	6800		0056	30.43	4739.2
		STD	0020	-0088	3424	2755	0005422	0011	14445			0066	30.42	4739.2
		OBS	0026	-0089	3424	2755			14446	6760		0085	30.40	4739.5
		STD	0030	-0078	3425	2756	0005378	0016	14452			0098	30.60	4741.5
		OBS	0043	-0064	3431	2760			14461	6300		0141	30.85	4744.4
		STD	0050	-0088	3436	2765	0004492	0026	14452			0164	30.42	4741.5
		OBS	0065	-0113	3447	2775			14444	5710		0213	29.97	4738.8
		STD	0075	-0098	3456	2782	0002916	0035	14454			0246	30.24	4742.1
		OBS	0087	-0087	3464	2788			14462	4190		0285	30.43	4744.7
		STD	0100	-0087	3467	2790	0002111	0042	14465			0328	30.43	4745.7
		STD	0125	-0097	3471	2794	0001758	0046	14465			0410	30.25	4745.7
		OBS	0130	-0101	3472	2795			14464	4760		0426	30.18	4745.4
		STD	0150	-0127	3474	2797	0001406	0050	14455			0492	29.71	4742.4
		OBS	0173	-0153	3478	2801			14448	5170		0566	29.25	4740.1
		STD	0200	-0178	3488	2810	0000141	0054	14442			0656	28.80	4738.2
		OBS	0216	-0187	3491	2813			14441	5340		0709	28.63	4737.8
		STD	0250	-0186	3491	2813	-0000141	0054	14447			0820	28.65	4739.8
		OBS	0260	-0186	3491	2813			14448	5480		0853	28.65	4740.1
		STD	0300	-0189	3494	2815	-0000405	0053	14454			0984	28.60	4742.1
		OBS	0329	-0194	3499	2819			14457	6100		1079	28.51	4743.1

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	HOURS MIN	MARDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMBL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE [AMT]	NODC STATION NUMBER	
						10"	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	150	ED	7357 S	17029 E	570	30	02	20	183	1963	201	C06	0645	05	23				3	X1	6	7	0046

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- DIR.	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	12	23	S19	850	-067	-071	7		

MESSAGE TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	S & D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CTD
183		STD	0000	-0126	3402	2739	0006988	0000	14421			0000	29.78	4731.2	
		OBS	0000	-0126	3402	2739			14421	6840		0000	29.73	4731.2	
183		OBS	0008	-0129	3402	2739			14421	6620		0026	29.68	4731.2	
		STD	0010	-0129	3402	2739	0006988	0007	14421			0033	29.68	4731.2	
183		OBS	0016	-0130	3401	2738			14422	7330		0052	29.66	4731.6	
		STD	0020	-0123	3404	2740	0006833	0014	14426			0066	29.79	4732.9	
183		OBS	0024	-0121	3408	2744			14428	6900		0079	29.82	4733.6	
		STD	0030	-0139	3422	2755	0005400	0020	14423			0098	29.50	4731.9	
183		OBS	0040	-0163	3442	2772			14416	5500		0131	29.07	4729.6	
		STD	0050	-0164	3451	2780	0003094	0029	14418			0164	29.05	4730.3	
		STD	0075	-0169	3469	2794	0001687	0034	14423			0216	28.96	4731.9	
183		OBS	0080	-0170	3471	2796			14423	5650		0262	28.94	4731.9	
		STD	0100	-0180	3474	2799	0001259	0038	14422			0328	28.76	4731.6	
183		OBS	0120	-0187	3477	2801			14423	5190		0394	28.63	4731.9	
		STD	0125	-0188	3477	2802	0000963	0041	14423			0410	28.62	4731.9	
		STD	0150	-0190	3479	2803	0000798	0043	14427			0492	28.58	4733.3	
183		OBS	0160	-0191	3480	2804			14428	5930		0525	28.56	4733.6	
		STD	0200	-0192	3481	2805	0000634	0047	14434			0656	28.54	4735.5	
183		OBS	0200	-0192	3481	2805			14434	5710		0656	28.54	4735.5	
183		OBS	0240	-0190	3485	2808			14442	5430		0787	28.58	4738.2	
		STD	0250	-0190	3485	2808	0000283	0049	14444			0820	28.58	4738.8	
		STD	0300	-0190	3487	2809	0000164	0050	14452			0984	28.58	4741.4	
183		OBS	0320	-0190	3487	2810			14456	5950		1050	28.58	4742.8	
		STD	0400	-0194	3491	2813	-0000248	0050	14468			1312	28.51	4746.7	
183		OBS	0400	-0194	3491	2813			14468	5900		1312	28.51	4746.7	
183		OBS	0481	-0195	3493	2815			14481	6240		1578	28.49	4751.0	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	HOURS MIN	MARDEN SQUARE		STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMBL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE [AMT]	NODC STATION NUMBER	
						10"	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	150	ED	73525 S	16900 E	571	39	02	20	092	1963	201	B06	0466	04	23				3	X1	6	6	0047

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- DIR.	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	12	20	S16	870	-074	-079	7		

MESSAGE TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	S & D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CTD
092		STD	0000	-0138	3372	2715	0009255	0000	14411			0000	29.52	4728.0	
		OBS	0000	-0138	3372	2715			14411	6110		0000	29.52	4728.0	
092		OBS	00080	-0139	3372	2715				6590		0026	29.50		
092		OBS	00160	-0139	3373	2716				6750		0052	29.50		
092		OBS	00240	-0120	3386	2726				7540		0079	29.84		
092		OBS	00410	-0141	3447	2776				6120		0134	29.46		
092		OBS	00610	-0161	3468	2793				6050		0200	29.10		
092		OBS	00820	-0179	3476	2800				5680		0269	28.78		
092		OBS	01220	-0189	3481	2805				5530		0400	28.60		
092		OBS	01640	-0190	3483	2806				5160		0538	28.58		
092		OBS	02450	-0190	3488	2810				5920		0804	28.58		
092		OBS	03280	-0192	3490	2812				5580		1076	28.58		
092		OBS	03770	-0192	3493	2814				6010		1237	28.54		

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
CTRY CODE	ID. NO.		' /10	' /10		10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR				HG
31	150	ED	7432 S	17020 E	570	40	02	22	160	1963	201	C07	0291	03	00		X1	6	7	0048

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIC CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		02	S08	980	-031	-040	7		

MESSING TIME HR /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	SIC
160		STD	0000	-0117	3419	2752	0005712	0000	14428			0000	29.89	4733.6	
		OBS	0000	-0117	3419	2752			14428	584Q	127	0000	29.89	4733.6	
		STD	0010	-0116	3419	2752	0005711	0006	14430			0033	29.91	4734.2	
160		OBS	0010	-0116	3419	2752			14430	555Q	127	0033	29.91	4734.2	
		STD	0020	-0107	3422	2754	0005506	0011	14436			0066	30.07	4736.2	
		OBS	0020	-0107	3422	2754			14436	562Q	141	0066	30.07	4736.2	
		STD	0030	-0112	3423	2755	0005409	0017	14435			0098	29.98	4735.9	
160		OBS	0030	-0112	3423	2755			14435	585Q	132	0098	29.98	4735.9	
		STD	0050	-0096	3450	2777	0003391	0026	14450			0164	30.27	4740.8	
		OBS	0050	-0096	3450	2777			14450	386Q	241	0164	30.27	4740.8	
		STD	0075	-0035	3459	2781	0002952	0034	14484			0216	31.37	4752.0	
160		OBS	0075	-0035	3459	2781			14484	232		0216	31.37	4752.0	
		STD	0100	-0072	3461	2785	0002631	0040	14471			0328	30.70	4747.7	
		OBS	0100	-0072	3461	2785			14471	353Q	223	0328	30.70	4747.7	
		STD	0125	-0105	3462	2786	0002452	0047	14460			0410	30.11	4744.1	
		OBS	0125	-0105	3462	2786			14460	406Q	214	0410	30.11	4744.1	
		STD	0150	-0135	3462	2788	0002294	0053	14450			0492	29.57	4740.8	
160		OBS	0150	-0135	3462	2788			14450	406Q	214	0492	29.57	4740.8	
		STD	0200	-0186	3472	2797	0001340	0062	14436			0556	28.65	4736.2	
		OBS	0200	-0186	3472	2797			14436	409Q	218	0556	28.65	4736.2	
		STD	0250	-0190	3476	2801	0000994	0068	14443			0820	28.58	4738.5	
160		OBS	0250	-0190	3476	2801			14443	414Q	214	0820	28.58	4738.5	
		STD	0275	-0191	3478	2802			14447	408Q	205	0902	28.56	4739.8	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
CTRY CODE	ID. NO.		' /10	' /10		10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR				HG
31	150	ED	7438 S	17144 E	570	41	02	22	189	1963	201	D07	0540	05	00		X1	6	7	0049

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIC CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		09	02	S08	980	-024	-032	7	

MESSING TIME HR /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	SIC
189		STD	0000	-0060	3442	2769	0004158	0000	14457			0000	30.92	4743.1	
		OBS	0000	-0060	3442	2769			14457	596Q	159	0000	30.92	4743.1	
		STD	0010	-0061	3441	2768	0004227	0004	14458			0033	30.90	4743.4	
189		OBS	0010	-0061	3441	2768			14458	528Q	237	0033	30.90	4743.4	
		STD	0020	-0060	3440	2767	0004305	0008	14460			0066	30.92	4744.1	
189		OBS	0020	-0060	3440	2767			14460	510Q	146	0066	30.92	4744.1	
		STD	0030	-0062	3441	2768	0004218	0013	14461			0098	30.88	4744.4	
189		OBS	0030	-0062	3441	2768			14461	602Q	155	0098	30.88	4744.4	
		STD	0050	-0061	3441	2768	0004217	0021	14465			0164	30.90	4745.7	
189		OBS	0050	-0061	3441	2768			14465	529Q	173	0164	30.90	4745.7	
		STD	0075	-0089	3450	2776	0003409	0031	14457			0216	30.40	4743.1	
189		OBS	0075	-0089	3450	2776			14457	523Q	209	0216	30.40	4743.1	
		STD	0100	-0120	3455	2782	0002903	0039	14448			0328	29.84	4740.1	
189		OBS	0100	-0120	3455	2782			14448	368Q	223	0328	29.84	4740.1	
		STD	0125	-0132	3456	2783	0002774	0046	14446			0410	29.62	4739.5	
		OBS	0125	-0146	3458	2785	0002562	0052	14444			0492	29.37	4738.8	
189		OBS	0150	-0146	3458	2785			14444	398Q	237	0492	29.37	4738.8	
		STD	0200	-0179	3465	2791	0001896	0063	14438			0556	28.78	4736.8	
189		OBS	0200	-0179	3465	2791			14438	364Q	209	0556	28.78	4736.8	
		STD	0250	-0186	3470	2796	0001465	0072	14444			0820	28.65	4738.8	
		OBS	0300	-0190	3474	2799	0001118	0078	14451			0948	28.58	4741.1	
189		OBS	0300	-0190	3474	2799			14451	428Q	228	0948	28.58	4741.1	
		STD	0400	-0190	3478	2802	0000757	0088	14468			1312	28.58	4746.7	
189		OBS	0400	-0190	3478	2802			14468	551Q	223	1312	28.58	4746.7	
		STD	0500	-0192	3481	2805	0000465	0094	14484			1640	28.54	4752.0	
189		OBS	0520	-0193	3481	2805			14487	491Q	228	1706	28.53	4752.9	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S STATION NUMBER		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.			
31	150	ED	7439 S	17330 E	570	43	02	22	229	1963	201	E07	0476	04	02	2	X1	617	0050
						WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		SPECIAL OBSERVATIONS					
						COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	VI CODE	NO. OBS. DEPTH					
						20	05	S07	980	-027	-039	7							

MESSNGR TIME HR. 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pg - 0/1	DEPTH (Ft.)	TEMP. (°F)	SOUND VELOCITY ft./sec	CORR.
229		STD	0000	-0058	3444	2770	0004013	0000	14459			0000	30.96	4743.8	
		OBS	0000	-0058	3444	2770			14459	5580	150	0000	30.96	4743.8	
		STD	0010	-0060	3443	2770	0004079	0004	14459			0033	30.92	4743.8	
		OBS	0010	-0060	3443	2770			14459	5770	150	0033	30.92	4744.4	
		STD	0020	-0059	3443	2769	0004080	0008	14461			0066	30.94	4744.1	
		OBS	0020	-0059	3443	2769			14461	5360	146	0066	30.94	4744.4	
		STD	0030	-0062	3443	2770	0004065	0012	14461			0098	30.88	4744.4	
		OBS	0030	-0062	3443	2770			14461	5760	164	0098	30.88	4744.4	
		STD	0050	-0058	3443	2769	0004077	0020	14467			0164	30.96	4746.4	
		OBS	0050	-0058	3443	2769			14467	6400	155	0164	30.96	4746.4	
		STD	0075	-0052	3443	2769	0004097	0031	14474			0246	31.06	4748.7	
		OBS	0075	-0052	3443	2769			14474	6600	155	0246	31.06	4748.7	
		STD	0100	0012	3465	2784	0002728	0039	14510			0328	32.22	4760.5	
		OBS	0100	0012	3465	2784			14510	4190	200	0328	32.22	4760.5	
		STD	0125	-0036	3465	2786	0002483	0046	14492			0410	31.35	4754.6	
		OBS	0149	-0072	3465	2788			14480	4120	214	0489	30.70	4750.6	
		STD	0150	-0073	3465	2788	0002309	0052	14479			0492	30.69	4750.3	
		OBS	0199	-0114	3467	2791			14469	4610	223	0656	29.95	4747.0	
		STD	0200	-0115	3467	2791	0001959	0062	14468			0820	29.93	4746.7	
		STD	0250	-0159	3473	2797	0001317	0070	14457			0656	29.14	4743.1	
		OBS	0299	-0186	3479	2803			14453	5120	214	0981	28.65	4741.8	
		STD	0300	-0186	3479	2803	0000742	0076	14453			0981	28.65	4741.8	
		OBS	0398	-0189	3487	2810			14469	5180	205	1306	28.60	4747.0	
		STD	0400	-0189	3487	2810	0000067	0080	14470			1312	28.60	4747.4	
		OBS	0448	-0196	3490	2812			14475	5810	214	1470	28.47	4749.0	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S STATION NUMBER		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.			
31	150	ED	7441 S	17520 E	570	45	02	23	025	1963	201	F07	0338	03	05	2	X1	617	0051
						WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		SPECIAL OBSERVATIONS					
						COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	VI CODE	NO. OBS. DEPTH					
						22	07	S04	980	-028	-033	7							

MESSNGR TIME HR. 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pg - 0/1	DEPTH (Ft.)	TEMP. (°F)	SOUND VELOCITY ft./sec	CORR.
025		STD	0000	-0060	3445	2771	0003928	0000	14458			0000	30.92	4743.4	
		OBS	0000	-0060	3445	2771			14458	4380	150	0000	30.92	4743.4	
		STD	0010	-0059	3443	2769	0004083	0004	14460			0033	30.94	4744.1	
		OBS	0010	-0059	3443	2769			14460	5720	150	0033	30.94	4744.1	
		STD	0020	-0061	3443	2770	0004072	0008	14460			0066	30.90	4744.1	
		OBS	0020	-0061	3443	2770			14460	6680	159	0066	30.90	4744.1	
		STD	0030	-0062	3442	2769	0004142	0012	14461			0098	30.88	4744.4	
		OBS	0030	-0062	3442	2769			14461	6100	159	0098	30.88	4744.4	
		STD	0049	-0061	3445	2771			14465	5640	164	0098	30.88	4744.4	
		OBS	0049	-0061	3445	2771			14465	5640	164	0098	30.88	4744.4	
		STD	0050	-0061	3445	2771	0003911	0020	14466			0164	30.90	4745.7	
		OBS	0050	-0061	3445	2771			14466	6100	159	0164	30.90	4745.7	
		STD	0074	-0060	3444	2770			14470	5990	168	0213	30.92	4747.4	
		OBS	0074	-0060	3444	2770			14470	5990	168	0213	30.92	4747.4	
		STD	0075	-0060	3444	2770	0003986	0030	14470			0246	30.92	4747.4	
		OBS	0075	-0060	3444	2770			14470	5710	168	0246	30.92	4747.4	
		STD	0099	-0059	3444	2770			14474			0325	30.94	4748.7	
		OBS	0099	-0059	3444	2770			14474	5710	168	0325	30.94	4748.7	
		STD	0100	-0056	3445	2771	0003921	0040	14476			0328	30.99	4749.3	
		OBS	0100	-0056	3445	2771			14476	5710	168	0328	30.99	4749.3	
		STD	0125	-0000	3458	2779	0003196	0049	14508			0410	32.00	4759.8	
		OBS	0148	0028	3465	2783			14525	3390	218	0486	32.50	4765.4	
		STD	0150	0027	3465	2783	0002813	0056	14525			0492	32.49	4765.4	
		OBS	0198	0014	3466	2784			14527	3860	223	0650	32.25	4766.1	
		STD	0200	0008	3466	2785	0002627	0070	14525			0656	32.14	4765.4	
		OBS	0247	-0079	3463	2786			14492	3590	214	0810	30.58	4754.6	
		STD	0250	-0078	3463	2787	0002405	0083	14493			0820	30.60	4754.9	
		OBS	0297	-0066	3465	2788			14507	3640	218	0974	30.81	4759.5	
		STD	0300	-0066	3465	2788	0002289	0094	14508			0984	30.81	4759.8	
		OBS	0327	-0070	3467	2789			14510	3710	209	1073	30.74	4760.5	

REFERENCE ENTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	DRAUGHT FOOT	MARSden SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER										
						10"	10"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	D.K.	HGT				PER	SEA								
31	150	ED	7512 S	17512 E		570	55	02	23	0666	1963	201	F08	0335	03	13		2	X1	3	3	0052								
																						WATER	WIND		BARO- METER (mb)	AIR TEMP. °C		VIL CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB																							
			20	07	513	980	-034	-044	7																					

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S C
		STD	0000	-0061	3452	2777	0003389	0000	14458			0000	30.90	4743.4	
066		OBS	0000	-0061	3452	2777			14458			0000	30.90	4743.4	
		STD	0010	-0060	3449	2774	0003620	0004	14460	496Q	187	0033	30.52	4744.1	
066		OBS	0010	-0060	3449	2774			14460	522Q	182	0033	30.52	4744.1	
		STD	0020	-0061	3447	2773	0003766	0007	14461			0066	30.50	4744.4	
066		OBS	0020	-0061	3447	2773			14461	5500	178	0066	30.50	4744.4	
		STD	0030	-0064	3447	2773	0003751	0011	14461			0068	30.85	4744.4	
066		OBS	0030	-0064	3447	2773			14461	5200	182	0068	30.85	4744.4	
		STD	0050	-0065	3447	2773	0003742	0018	14464			016L	30.83	4745.4	
066		OBS	0050	-0065	3447	2773			14464	626Q	187	016L	30.83	4745.4	
		STD	0075	-0064	3447	2773	0003740	0028	14469			0216	30.85	4747.0	
066		OBS	0075	-0064	3447	2773			14469	5430	182	0216	30.85	4747.0	
		STD	0100	-0069	3457	2781	0002949	0036	14472			0328	30.76	4748.0	
066		OBS	0100	-0069	3457	2781			14472	3610	214	0328	30.76	4748.0	
		STD	0125	-0089	3459	2784	0002706	0043	14467			0410	30.40	4746.4	
066		OBS	0125	-0089	3459	2784			14467			0492	30.16	4745.7	
		STD	0150	-0102	3460	2785	0002570	0050	14465			0492	30.16	4745.7	
066		OBS	0150	-0102	3460	2785			14465	3930	214	0492	30.16	4745.7	
		STD	0200	-0105	3461	2786	0002464	0062	14472			0656	30.11	4748.0	
066		OBS	0200	-0105	3461	2786			14472	368Q	218	0656	30.11	4748.0	
		STD	0250	-0126	3463	2788	0002209	0074	14471			0820	29.73	4747.7	
066		OBS	0250	-0126	3463	2788			14471	363Q	241	0820	29.73	4747.7	
		STD	0300	-0122	3466	2791	0001977	0085	14482			098L	29.80	4751.3	
066		OBS	0300	-0122	3466	2791			14482	369Q	237	098L	29.80	4751.3	

REFERENCE ENTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	DRAUGHT FOOT	MARSden SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER										
						10"	10"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	D.K.	HGT				PER	SEA								
31	150	ED	7512 S	17322 E		570	53	02	23	099	1963	201	E08	0516	04	00		0	X1	6	1	0053								
																						WATER	WIND		BARO- METER (mb)	AIR TEMP. °C		VIL CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
		COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB																							
			23	14	504	980	-039	-046	7																					

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S C
		STD	0000	-0062	3442	2769	0004150	0000	14456			0000	30.88	4742.8	
099		OBS	0000	-0062	3442	2769			14456			0000	30.88	4742.8	
		STD	0010	-0065	3443	2770	0004058	0004	14457		164	0033	30.83	4743.1	
099		OBS	0010	-0065	3443	2770			14457		160	0033	30.83	4743.1	
		STD	0020	-0065	3443	2770	0004056	0008	14458			0066	30.83	4743.4	
099		OBS	0020	-0065	3443	2770			14458		164	0066	30.83	4743.4	
		STD	0030	-0062	3447	2773	0003760	0012	14462			0098	30.88	4744.7	
099		OBS	0030	-0062	3447	2773			14462		164	0098	30.88	4744.7	
		STD	0050	-0063	3446	2772	0003827	0020	14465			016L	30.87	4745.7	
099		OBS	0050	-0063	3446	2772			14465		164	016L	30.87	4745.7	
		STD	0075	-0062	3446	2772	0003825	0029	14469			0216	30.88	4747.0	
099		OBS	0075	-0062	3446	2772			14469		164	0216	30.88	4747.0	
		STD	0100	-0074	3452	2777	0003309	0038	14469			0328	30.67	4747.0	
099		OBS	0100	-0074	3452	2777			14469		191	0328	30.67	4747.0	
		STD	0125	-0105	3457	2783	0002796	0046	14459			0180	30.11	4743.8	
099		OBS	0125	-0105	3457	2783			14459		200	0180	30.11	4743.8	
		STD	0150	-0126	3461	2787	0002403	0052	14454			0492	29.73	4742.1	
099		OBS	0150	-0126	3461	2787			14454		200	0492	29.73	4742.1	
		STD	0200	-0138	3465	2790	0002033	0063	14457			0656	29.52	4743.1	
099		OBS	0200	-0138	3465	2790			14457		205	0656	29.52	4743.1	
		STD	0250	-0179	3472	2797	0001334	0072	14447			0820	28.78	4739.8	
099		OBS	0250	-0179	3472	2797			14447		228	0820	28.78	4739.8	
		STD	0300	-0188	3477	2801	0000896	0077	14452			058L	28.62	4741.5	
099		OBS	0300	-0188	3477	2801			14452		223	058L	28.62	4741.5	
		STD	0400	-0193	3482	2806	0000441	0084	14467			1312	28.53	4746.4	
099		OBS	0400	-0193	3482	2806			14467			1312	28.53	4746.4	

REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	OBS. NO.	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	150	ED	75099S	17136 E	570	51	02	23	132	1963	201	D08	0640	05	00	0	X1	616	00594

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. NO.	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			09	S08	970	-033	-044	7	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DIN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P p.p. - 01/10	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec.	ST CODE
		STD	0000	-0068	3448	2774	0003667	0000	14454			0000	30.78	4742.1	
		OBS	0000	-0068	3448	2774			14454	5360	159	0000	30.78	4742.1	
		STD	0010	-0068	3443	2770	0004046	0004	14455			0033	30.78	4742.4	
		OBS	0010	-0068	3443	2770			14455	5640	164	0033	30.78	4742.4	
		STD	0020	-0066	3445	2771	0003899	0008	14458			0066	30.81	4743.4	
		OBS	0020	-0066	3445	2771			14458	5650	168	0066	30.81	4743.4	
		STD	0030	-0068	3448	2774	0003659	0012	14459			0098	30.78	4743.8	
		OBS	0030	-0068	3448	2774			14459	5190	168	0098	30.78	4743.8	
		STD	0050	-0062	3450	2775	0003525	0019	14466			0164	30.88	4746.0	
		OBS	0050	-0062	3450	2775			14466	5360	191	0164	30.88	4746.0	
		STD	0075	-0064	3459	2783	0002824	0027	14470			0246	30.85	4747.4	
		OBS	0075	-0064	3459	2783			14470	4800	209	0246	30.85	4747.4	
		STD	0100	-0100	3461	2786	0002518	0033	14458			0328	30.20	4743.4	
		OBS	0100	-0100	3461	2786			14458	4100	218	0328	30.20	4743.4	
		STD	0125	-0111	3461	2786	0002468	0040	14457			0410	30.00	4743.1	
		OBS	0149	-0128	3461	2787			14453	3990	232	0489	29.70	4741.8	
		STD	0150	-0129	3461	2787	0002377	0046	14453			0492	29.68	4741.8	
		OBS	0199	-0184	3469	2795			14436	5100	228	0653	28.69	4736.2	
		STD	0200	-0184	3469	2795	0001568	0056	14436			0656	28.69	4736.2	
		OBS	0250	-0188	3474	2799	0001145	0062	14443			0820	28.62	4738.5	
		STD	0299	-0190	3479	2803			14451	4110		0981	28.58	4741.1	
		OBS	0300	-0190	3479	2803	0000736	0067	14451			0981	28.58	4741.1	
		STD	0398	-0192	3483	2806			14467	4390		1306	28.51	4746.4	
		OBS	0400	-0192	3483	2806	0000361	0073	14468			1312	28.51	4746.7	
		STD	0498	-0193	3488	2810			14484	4590		1640	28.53	4752.0	
		OBS	0498	-0193	3488	2810			14484	4590		1640	28.53	4752.0	

REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	OBS. NO.	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
					10"	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	150	ED	75078S	16940 E	571	59	02	23	168	1963	201	C08	0369	03	00	X1	617	00555	

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. NO.	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			10	S13	970	-025	-033	7	

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DIN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P p.p. - 01/10	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec.	ST CODE
		STD	0000	-0118	3421	2754	0005556	0000	14427			0000	29.88	4733.6	
		OBS	0000	-0118	3421	2754			14427	4980	146	0000	29.88	4733.6	
		STD	0010	-0116	3420	2753	0005634	0006	14430			0033	29.91	4734.2	
		OBS	0010	-0116	3420	2753			14430	5950	150	0033	29.91	4734.2	
		STD	0020	-0099	3421	2753	0005611	0011	14440			0066	30.22	4737.6	
		OBS	0020	-0099	3421	2753			14440	6740	155	0066	30.22	4737.6	
		STD	0030	-0100	3425	2757	0005297	0017	14441			0098	30.20	4737.8	
		OBS	0030	-0100	3425	2757			14441	168		0098	30.20	4737.8	
		STD	0050	-0112	3450	2777	0003334	0025	14443			0164	29.98	4738.5	
		OBS	0050	-0112	3450	2777			14443	3710	200	0164	29.98	4738.5	
		STD	0075	-0034	3461	2783	0002805	0033	14484			0246	31.39	4752.0	
		OBS	0075	-0034	3461	2783			14484	3050	241	0246	31.39	4752.0	
		STD	0100	-0046	3464	2786	0002516	0040	14483			0328	31.17	4751.6	
		OBS	0100	-0046	3464	2786			14483	4060	241	0328	31.17	4751.6	
		STD	0125	-0056	3464	2786	0002466	0046	14483			0410	30.99	4751.6	
		OBS	0149	-0080	3464	2787			14476	3680	241	0489	30.56	4749.3	
		STD	0150	-0082	3464	2787	0002339	0052	14475			0492	30.52	4749.0	
		OBS	0199	-0174	3471	2796			14445	4340	223	0653	28.87	4737.8	
		STD	0200	-0174	3471	2796	0001445	0061	14441			0656	28.87	4737.8	
		OBS	0250	-0184	3477	2801	0000967	0067	14446			0820	28.69	4739.5	
		STD	0299	-0190	3482	2806			14452	4170	232	0981	28.58	4741.5	
		OBS	0300	-0190	3482	2806	0000500	0071	14452			0981	28.58	4741.5	
		STD	0398	-0191	3488	2810			14460	4810	241	1445	28.56	4744.1	
		OBS	0398	-0191	3488	2810			14460	4810	241	1445	28.56	4744.1	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1"	MO	DAY	HR.		MIN.	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	150	ED	7536 S	16910 E	571	59	02	23	206	1963	201	C09	0448	04	14			X1	0 6	0056

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIL CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	10	18	S07	980	-027	-039	7		

MESSNGR TIME HR. 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-t	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S.D. DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - 01/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	COG
		STD	0000	-0098	3438	2767	0004320	0000	14439			0000	30.24	4737.2	
	206	OBS	0000	-0098	3438	2767			14439			0000	30.24	4737.2	
		STD	0010	-0099	3437	2766	0004389	0004	14440	507Q	164	0033	30.22	4737.6	
	206	OBS	0010	-0099	3437	2766			14440	542Q	159	0033	30.22	4737.6	
		STD	0020	-0092	3441	2769	0004105	0009	14446			0066	30.34	4739.5	
	206	OBS	0020	-0092	3441	2769			14446	566Q	178	0066	30.34	4739.5	
		STD	0030	-0091	3443	2771	0003952	0013	14448			0058	30.36	4740.1	
	206	OBS	0030	-0091	3443	2771			14448	510Q	182	0058	30.36	4740.1	
		STD	0050	-0098	3456	2782	0002925	0020	14450			0164	30.24	4740.8	
	206	OBS	0050	-0098	3456	2782			14450	384Q	264	0164	30.24	4740.8	
		STD	0075	-0075	3462	2786	0002549	0026	14466			0246	30.65	4746.0	
	206	OBS	0075	-0075	3462	2786			14466		241	0246	30.65	4746.0	
		STD	0100	-0092	3464	2788	0002320	0032	14462			0328	30.34	4744.7	
	206	OBS	0100	-0092	3464	2788			14462	403Q	241	0328	30.34	4744.7	
		STD	0125	-0128	3464	2789	0002215	0038	14449			0410	29.70	4740.5	
	206	OBS	0149	-0154	3463	2789			14441	482Q	237	0489	29.23	4737.8	
		STD	0150	-0155	3463	2789	0002135	0044	14441			0492	29.21	4737.8	
	206	OBS	0199	-0185	3475	2800			14436	491Q	237	0653	28.67	4736.2	
		STD	0200	-0185	3475	2800	0001106	0052	14437			0656	28.67	4736.6	
	206	OBS	0250	-0188	3479	2803	0000801	0056	14444			0820	28.62	4738.8	
		STD	0299	-0190	3482	2806			14452	492Q	237	0981	28.58	4741.5	
	206	OBS	0300	-0190	3482	2806	0000507	0060	14452			0984	28.58	4741.5	
		STD	0398	-0191	3486	2809			14468	414Q	209	1306	28.56	4746.7	
	206	OBS	0400	-0191	3486	2809	0000144	0063	14469			1312	28.58	4747.0	
		STD	0423	-0196	3485	2808			14470	381Q	255	1388	28.47	4747.4	

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE * 1/10	LONGITUDE * 1/10	DRIFT DIR 1/10	MARDEN SQUARE		STATION TIME IGMT		YEAR	ORIGINATORS		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLIS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1'	MO	DAY		HR. 1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	150	ED	7723 S	16958 E	571	79	02	24	096	1963	201	D13	0768	07	00	0	X1	6 7	0057

WATER		WIND		BARO- METER PRES	AIR TEMP. °C		VIL CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. M	DIR. (M)	SPEED OF 10MPS		DRY BULB	WET BULB			
			09	505	960	-139	-142	7	

MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANDMALT-210°	S Δ D DYN. AL X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 0.1/l	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY FT/SEC	DATE
		STD	0000	-0162	3450	2779	0003203	0000	14411			0000	29.08	4728.0	
		OBS	0000	-0162	3450	2779			14411	5240	159	0000	29.08	4728.0	
		STD	0010	-0164	3448	2777	0003346	0003	14411			0033	29.05	4728.0	
		OBS	0010	-0164	3448	2777			14411	5690	132	0033	29.05	4728.0	
		STD	0020	-0164	3449	2778	0003264	0007	14413			0066	29.05	4728.7	
		OBS	0020	-0164	3449	2778			14413	5600	141	0066	29.05	4728.7	
		STD	0030	-0163	3446	2776	0003491	0010	14415			0098	29.07	4729.3	
		OBS	0030	-0163	3446	2776			14415	6480	178	0098	29.07	4729.3	
		STD	0050	-0161	3449	2778	0003256	0017	14419			0164	29.10	4730.6	
		OBS	0050	-0161	3449	2778			14419	6680	159	0164	29.10	4730.6	
		STD	0075	-0159	3443	2773	0003708	0025	14424			0216	29.14	4732.3	
		OBS	0075	-0159	3443	2773			14424	6390	168	0216	29.14	4732.3	
		STD	0100	-0157	3450	2779	0003164	0034	14430			0328	29.17	4734.2	
		OBS	0100	-0157	3450	2779			14430	6100	164	0328	29.17	4734.2	
		STD	0125	-0156	3450	2779	0003155	0042	14434			0410	29.19	4735.6	
		OBS	0125	-0153	3449	2778	0003228	0050	14440			0492	29.25	4737.5	
		STD	0150	-0153	3449	2778			14440	6680	150	0492	29.25	4737.5	
		OBS	0150	-0141	3445	2774	0003550	0067	14453			0556	29.46	4741.8	
		STD	0200	-0141	3445	2774			14453	6230	164	0556	29.46	4741.8	
		OBS	0200	-0175	3462	2789	0002111	0081	14448			0820	28.85	4740.1	
		STD	0250	-0175	3462	2789			14448	4600	223	0820	28.85	4740.1	
		OBS	0250	-0175	3462	2789			14453			0820	28.85	4740.1	
		STD	0300	-0184	3469	2795	0001519	0090	14453			0584	28.69	4741.8	
		OBS	0300	-0184	3469	2795			14453	4500	214	0584	28.69	4741.8	
		STD	0400	-0189	3478	2802	0000760	0101	14468			1312	28.60	4746.7	
		OBS	0400	-0189	3478	2802			14468	4560	223	1312	28.60	4746.7	
		STD	0500	-0192	3484	2807	0000237	0106	14485			1640	28.54	4752.3	
		OBS	0500	-0192	3484	2807			14485	5550	246	1640	28.54	4752.3	
		STD	0600	-0192	3485	2808	0000106	0108	14501			1968	28.54	4757.5	
		OBS	0600	-0192	3485	2808			14501	5040	237	1968	28.54	4757.5	
		STD	0700	-0191	3485	2808			14510	5030	237	2132	28.56	4760.5	
		OBS	0700	-0190	3490	2812	-0000318	0107	14520			2297	28.58	4763.8	
		STD	0750	-0190	3490	2812			14520	5600	241	2297	28.58	4763.8	
		OBS	0750	-0190	3490	2812			14520	5380	232	2461	28.58	4763.8	

REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES (FRM AMT)	NODC STATION NUMBER			
					10"	1"	MO		DAY	HR.			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER	SEA
31	150	ED	77185S	17211 E	570	72	02	24	144	1963	201	E13	0768	07	00		0	X1	6	6	0058

WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		36	S06	940	-112	-117	8		

MESSNGR TIME HR. /10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-STEP	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0184	3443	2774	0003686	0000	14399			0000	28.64	4724.1
	144	OBS	0000	-0184	3443	2774			14399	4990	168	0000	28.64	4724.1
		STD	0010	-0180	3442	2773	0003766	0004	14403			0033	28.76	4725.4
	144	OBS	0010	-0180	3442	2773			14403		155	0033	28.76	4725.4
		STD	0020	-0180	3444	2774	0003606	0007	14405			0066	28.76	4726.0
	144	OBS	0020	-0180	3444	2774			14405	4820	173	0066	28.76	4726.0
		STD	0030	-0182	3444	2774	0003596	0011	14405			0098	28.72	4726.0
	144	OBS	0030	-0182	3444	2774			14405	5280	178	0098	28.72	4726.0
		STD	0050	-0172	3444	2774	0003609	0018	14413			0164	28.90	4728.7
	144	OBS	0050	-0172	3444	2774			14413	5290	178	0164	28.90	4728.7
		STD	0075	-0180	3447	2777	0003344	0027	14414			0216	28.76	4729.0
	144	OBS	0075	-0180	3447	2777			14414	5390	178	0216	28.76	4729.0
		STD	0100	-0185	3449	2779	0003162	0035	14416			0328	28.67	4729.6
	144	OBS	0100	-0185	3449	2779			14416	4710	168	0328	28.67	4729.6
		STD	0125	-0178	3455	2783	0002707	0042	14425			0410	28.80	4732.6
	144	OBS	0149	-0176	3460	2787			14430	3370	218	0489	28.83	4734.2
		STD	0150	-0176	3460	2787	0002308	0049	14430			0492	28.83	4734.2
	144	OBS	0199	-0189	3465	2792			14433	4540	237	0653	28.60	4735.2
		STD	0200	-0189	3465	2792	0001859	0059	14433			0656	28.60	4735.2
	144	OBS	0250	-0187	3468	2794	0001645	0068	14443			0820	28.63	4738.5
		STD	0299	-0185	3470	2796			14452	4850	228	0981	28.67	4741.5
	144	OBS	0300	-0185	3470	2796	0001440	0076	14453			0984	28.67	4741.5
		STD	0398	-0194	3474	2799			14465	5420	228	1306	28.51	4745.7
	144	OBS	0400	-0194	3474	2799	0001040	0088	14466			1312	28.51	4746.0
		STD	0498	-0197	3479	2803			14481	4800	228	1634	28.45	4751.0
	144	OBS	0500	-0197	3479	2803	0000591	0096	14482			1640	28.45	4751.3
		STD	0598	-0197	3484	2807			14499	5890	223	1962	28.45	4756.9
	144	OBS	0600	-0197	3484	2807	0000155	0100	14499			1968	28.45	4756.9
		STD	0697	-0194	3487	2810			14517	5530	232	2287	28.51	4762.6
	144	OBS	0747	-01900								2451	28.58	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	LIGHT NO.	MARSDEN SQUARE		STATION TIME IGMT		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPLS			WAVE OBSERVATIONS			WEA- THIR CODE	CLOUD CODES TFR AMT	NODC STATION NUMBER	
						10'	1"	MO	DAY		HR./1/10	CRUISE NO.		STATION NUMBER	DIR.	HGT	PER	SEA					
31	150	ED	77233S	17418 E	570	74	02	24	183	1963	201	F13	0750	07	00				0	X1	7	3	0059

WATER		WIND		AIR TEMP. °C		BARO- METER (mb)	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- (m)	DIR.	SPEED OR FORCE	WATER	WIND						
		25	18	S03	920	-094	-096	8			

MESSNGR TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND SALTY- $\sigma_{\theta}$	$\Delta \sigma_{\theta}$ DYN. AN. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \mu\text{M}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT./SEC	100
183		STD	0000	-0183	3439	2770	0003995	0000	14399			0000	28.71	1721.1	
		OBS	0000	-0183	3439	2770			14399			0000	28.71	1721.1	
		STD	0010	-0182	3438	2770	0004068	0004	14401			0033	28.72	1721.7	
183		OBS	0010	-0182	3438	2770			14401		159	0033	28.72	1721.7	
		STD	0020	-0183	3438	2770	0004060	0008	14402			0066	28.71	1725.1	
183		OBS	0020	-0183	3438	2770			14402		5630	0066	28.71	1725.1	
		STD	0030	-0182	3439	2770	0003979	0012	14405			0098	28.72	1726.0	
183		OBS	0030	-0182	3439	2770			14405		5840	0098	28.72	1726.0	
		STD	0050	-0183	3438	2770	0004042	0020	14407			0164	28.71	1726.7	
183		OBS	0050	-0183	3438	2770			14407		5350	0164	28.71	1726.7	
		STD	0075	-0180	3439	2770	0003957	0030	14413			0246	28.76	1728.7	
183		OBS	0075	-0180	3439	2770			14413		168	0246	28.76	1728.7	
		STD	0100	-0168	3440	2771	0003898	0040	14423			0328	28.99	1731.9	
183		OBS	0100	-0168	3440	2771			14423		6530	0328	28.99	1731.9	
		STD	0125	-0147	3450	2778	0003183	0049	14439			0410	29.37	1737.2	
183		OBS	0149	-0143	3457	2784			14445		5150	0489	29.43	1739.2	
		STD	0150	-0144	3457	2784	0002638	0056	14445			0492	29.44	1739.2	
183		OBS	0199	-0187	3461	2788			14433		4390	0653	28.63	1735.2	
		STD	0200	-0187	3461	2788	0002171	0068	14434			0656	28.63	1735.2	
		STD	0250	-0187	3464	2790	0001951	0078	14442			0820	28.63	1738.2	
183		OBS	0299	-0187	3466	2792			14451		4320	0981	28.63	1741.1	
		STD	0300	-0187	3466	2793	0001731	0088	14451			0984	28.63	1741.1	
183		OBS	0398	-0196	3473	2798			14464		5680	1306	28.47	1715.4	
		STD	0400	-0196	3473	2798	0001109	0102	14464			1312	28.47	1715.4	
183		OBS	0498	-0194	3479	2803			14483		4700	1634	28.51	1751.6	
		STD	0500	-0194	3479	2803	0000602	0110	14483			1640	28.51	1751.6	
183		OBS	0598	-0196	3483	2806			14499		246	1963	28.47	1756.9	
		STD	0600	-0196	3483	2807	0000235	0115	14499			1968	28.47	1756.9	
183		OBS	0697	-0191	3487	2810			14518		5110	2287	28.56	1763.1	
		STD	0700	-0190	3487	2810	-0000091	0115	14519			2297	28.58	1763.1	
183		OBS	0721	-0185	3487	2809			14525		4280	2366	28.67	1765.4	

REFERENCE CITY CODE	NO. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSDES SQUARE 1/10	STATION TIME			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (X, Y)	NODC STATION NUMBER	
						10'	11'	MO		DAY	HR.			1/10	CRUISE NO.	STATION NUMBER				D.K.
31	150	ED	7735 S	17546 E	570	75	02	25	016	1963	201	G13	0732	07	19		1	X1	6 3	0060

WATER		WIND		BARO- METER PRES	AIR TEMP. °C		VIS. COEF	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. MUT.	DIR.	SPEED OF FOOT		DRY BULB	WET BULB			
05	S08	900	-122	-125	7				

MESSNGR TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	S Δ Δ DYN. H. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	P O <sub>2</sub> -P μg - at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec
016		STD	0000	-0191	3409	2746	0006283	0000	14391			0000	28.56	1721.4
		OBS	0000	-0191	3409	2746			14391			0000	28.56	1721.4
		STD	0010	-0178	3422	2757	0005307	0006	14601			0033	28.80	1721.7
016		OBS	0010	-0178	3422	2757			14601	644Q	146	0033	28.80	1721.7
		STD	0020	-0177	3434	2766	0004382	0011	14405			0066	28.83	1726.0
016		OBS	0020	-0177	3434	2766			14405	603Q	141	0066	28.83	1726.0
		STD	0030	-0178	3434	2766	0004373	0015	14406			0098	28.80	1726.4
016		OBS	0030	-0178	3434	2766			14406	620Q	137	0098	28.80	1726.4
		STD	0050	-0182	3433	2766	0004428	0024	14407			0164	28.72	1726.7
016		OBS	0050	-0182	3433	2766			14407	688Q	141	0164	28.72	1726.7
		STD	0075	-0179	3436	2768	0004190	0035	14413			0246	28.78	1728.7
016		OBS	0075	-0179	3436	2768			14413	618Q		0246	28.78	1728.7
		STD	0100	-0177	3434	2766	0004333	0045	14418			0328	28.83	1730.3
016		OBS	0100	-0177	3434	2766			14418	636Q	155	0328	28.83	1730.3
		STD	0125	-0141	3441	2771	0003891	0056	14440			0410	29.46	1737.5
016		OBS	0149	-0130	3444	2773			14450	620Q	164	0489	29.66	1740.8
		STD	0150	-0131	3444	2773	0003684	0065	14434			0492	29.64	1740.5
016		OBS	0199	-0179	3438	2770			14434	518Q	200	0653	28.78	1735.6
		STD	0200	-0179	3439	2770	0003885	0084	14434			0656	28.78	1735.6
016		OBS	0249	-0186	3462	2789			14442	483Q	214	0817	28.65	1736.2
		STD	0250	-0186	3462	2789	0002068	0099	14443			0820	28.65	1736.2
016		OBS	0299	-0187	3468	2794			14451	525Q	205	0981	28.63	1741.1
		STD	0300	-0187	3468	2794	0001586	0108	14465			0981	28.63	1741.1
016		OBS	0398	-0194	3471	2797			14465	516Q	209	1306	28.51	1745.7
		STD	0400	-0194	3471	2797	0001269	0122	14465			1306	28.51	1745.7
016		OBS	0498	-0194	3477	2802			14482	496Q	228	1312	28.51	1745.7
		STD	0500	-0194	3477	2802	0000754	0132	14483			1634	28.51	1751.3
016		OBS	0598	-0193	3483	2806			14500	464Q	205	1640	28.51	1751.6
		STD	0600	-0193	3483	2806	0000247	0137	14501			1962	28.53	1757.2
016		OBS	0697	-0184	3487	2809			14522	474Q	200	1968	28.53	1757.5
												2287	28.71	1764.4

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S			DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER			
						19°	'	MO		DAY	HR.	MIN.			CRUISE NO.	STATION NUMBER	DIR.				HIGH	PER	SEA
31	150	ED	77545S	17824 E	570	78	02	25	051	1963	201	H14	0722	07	20			3	X4	7	3		0061

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. COOP.	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- MIS.	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			04	S05	880	-131	-136	2	

MESSENGER TIME - HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DPTH. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \text{lit}^{-1}$	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY F <sub>5000</sub>	CORR.
		STD	0000	-0181	3439	2770	0004000	0000	14400			0000	28.70	4724.4	
		OBS	0000	-0181	3439	2770			14400			0000	28.74	4724.4	
		STD	0010	-0178	3439	2770	0004001	0004	14403			0033	28.80	4725.4	
		OBS	0010	-0178	3439	2770			14403	616Q	150	0033	28.80	4725.4	
		STD	0020	-0180	3435	2767	0004298	0008	14403			0065	28.76	4725.4	
		OBS	0020	-0180	3435	2767			14403	628Q	159	0065	28.76	4725.4	
		STD	0030	-0178	3436	2768	0004220	0012	14406			0098	28.80	4726.4	
		OBS	0030	-0178	3436	2768			14406	692Q	164	0098	28.80	4726.4	
		STD	0050	-0177	3439	2770	0003980	0021	14410			0164	28.81	4727.7	
		OBS	0050	-0177	3439	2770			14410	646Q	150	0164	28.81	4727.7	
		STD	0075	-0171	3440	2771	0003904	0030	14418			0246	28.92	4730.3	
		OBS	0075	-0171	3440	2771			14418	692Q	123	0246	28.92	4730.3	
		STD	0100	-0140	3445	2774	0003600	0040	14437			0328	29.48	4736.5	
		OBS	0100	-0140	3445	2774			14437	611Q	187	0328	29.48	4736.5	
		STD	0125	-0137	3451	2779	0003140	0048	14443			0410	29.55	4738.5	
		OBS	0150	-0131	3455	2782	0002843	0056	14451			0492	29.64	4741.1	
		STD	0200	-0113	3461	2786	0002432	0069	14468			0492	29.64	4741.1	
		OBS	0200	-0113	3461	2786			14468	426Q	209	0492	29.64	4741.1	
		STD	0250	-0154	3463	2789	0002105	0080	14458			0820	29.23	4743.4	
		OBS	0250	-0154	3463	2789			14458	451Q	209	0820	29.23	4743.4	
		STD	0300	-0180	3465	2791	0001838	0090	14454			0984	28.76	4742.1	
		OBS	0300	-0180	3465	2791			14454	522Q	205	0984	28.76	4742.1	
		STD	0400	-0188	3471	2797	0001297	0106	14468			1312	28.62	4746.7	
		OBS	0400	-0188	3471	2797			14468	599Q	205	1312	28.62	4746.7	
		STD	0500	-0197	3477	2802	0000751	0116	14481			1640	28.45	4751.0	
		OBS	0500	-0197	3477	2802			14481	530Q	214	1640	28.45	4751.0	
		STD	0600	-0197	3483	2806	0000238	0121	14499			1968	28.45	4756.9	
		OBS	0600	-0197	3483	2806			14499	530Q	228	1968	28.45	4756.9	
		STD	0700	-0191	3488	2810	-0000171	0121	14519			2297	28.56	4763.4	
		OBS	0700	-0191	3488	2810			14519	583Q	228	2297	28.56	4763.4	

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS DEN SQUARE	STATION TIME IGHTS				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	M.A.R. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES FRF (A-W)	NODC STATION NUMBER	
					10'	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	Dir.	HGT				PER
31	150	ED	7807 S	17940 W	569	89	02	25	089	1963	201	114	0742	07	00		0	X4	6 1 1	0062

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY RULE	WET RULE	WIND SPEED			
	15	S05		880	-202	-203	3			

MESSNGR TIME HR. /10	CASE NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-16°	S. Δ. D D.W. SAL. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - σ <sub>T</sub> /l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY 167585
089		STD	0000	-0178	3439	2770	0004007	0000	14402			0000	28.80	4725.1
		OBS	0000	-0178	3439	2770			14402	6070	164	0000	28.80	4725.1
		STD	0010	-0175	3439	2770	0004009	0004	14405			0033	28.85	4726.0
089		OBS	0010	-0175	3439	2770			14405	6670	146	0033	28.85	4726.0
		STD	0020	-0174	3439	2770	0004005	0008	14407			0066	28.87	4726.7
089		OBS	0020	-0174	3439	2770			14407	6690	150	0066	28.87	4726.7
		STD	0030	-0173	3440	2771	0003925	0012	14409			0098	28.89	4727.3
089		OBS	0030	-0173	3440	2771			14409	6460	159	0098	28.89	4727.3
		STD	0050	-0173	3439	2770	0003990	0020	14412			0164	28.89	4728.3
089		OBS	0050	-0173	3439	2770			14412	6570	155	0164	28.89	4728.3
		STD	0075	-0158	3440	2771	0003941	0030	14424			0246	29.17	4732.3
089		OBS	0075	-0158	3440	2771			14424	6650	150	0246	29.17	4732.3
		STD	0100	-0154	3442	2772	0003786	0039	14430			0328	29.23	4734.2
089		OBS	0100	-0154	3442	2772			14430	6130	250	0328	29.23	4734.2
		STD	0125	-0139	3445	2774	0003592	0049	14442			0410	29.50	4738.2
089		OBS	0125	-0132	3449	2777			14450			0492	29.62	4740.8
		STD	0150	-0132	3449	2777	0002636	0072	14455	6070	282	0492	29.62	4740.8
089		OBS	0150	-0140	3457	2784			14455			0556	29.48	4742.4
		STD	0200	-0140	3457	2784			14455	4680	309	0556	29.48	4742.4
089		OBS	0250	-0167	3461	2788	0002213	0084	14451			0620	28.99	4741.1
		STD	0300	-0183	3464	2791	0001904	0095	14453			0984	28.71	4741.8
089		OBS	0300	-0183	3464	2791			14469	3960	232	0984	28.71	4741.8
		STD	0400	-0186	3469	2795	0001457	0111	14469			1312	28.65	4747.0
089		OBS	0400	-0186	3469	2795			14482	5300	241	1312	28.65	4747.0
		STD	0500	-0194	3474	2799	0000990	0124	14482			1640	28.51	4751.3
089		OBS	0500	-0194	3474	2799			14482	4990	241	1640	28.51	4751.3
		STD	0600	-0194	3481	2805	0000402	0131	14500			1968	28.51	4757.2
089		OBS	0600	-0194	3481	2805			14500	5090	237	1968	28.51	4757.2
		STD	0700	-0192	3486	2809	-0000024	0132	14518			2297	28.54	4763.1
089		OBS	0700	-0192	3486	2809			14518	5360	241	2297	28.54	4763.1

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS DEN SQUARE MILES	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWATH'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
						10'	'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	150	ED	7734 S	17737 W	569	77	02 25	192	1963	201	J13	0658	06	00	0	X4	9	0063	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. COEF	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
				18	S12	860	-137	-139	3

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> 10 <sup>3</sup>	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CODE
		STD	0000	-0178	3431	2764	0004622	0000	14401			0000	28.80	14721.7	
		OBS	0000	-0178	3431	2764			14401		155	0000	28.80	14721.7	
		STD	0010	-0176	3432	2765	0004544	0005	14403			0033	28.83	14725.4	
		OBS	0010	-0176	3432	2765			14403		159	0033	28.83	14725.4	
		STD	0020	-0176	3432	2765	0004538	0009	14405			0066	28.83	14726.0	
		OBS	0020	-0176	3432	2765			14405		155	0066	28.83	14726.0	
		STD	0030	-0174	3434	2766	0004383	0014	14408			0098	28.87	14727.0	
		OBS	0030	-0174	3434	2766			14408		182	0098	28.87	14727.0	
		STD	0050	-0158	3435	2767	0004338	0022	14419			0164	29.16	14730.6	
		OBS	0050	-0158	3435	2767			14419		168	0164	29.16	14730.6	
		STD	0075	-0120	3442	2771	0003893	0033	14442			0213	29.84	14738.2	
		OBS	0075	-0120	3442	2771			14442		182	0216	29.84	14738.2	
		STD	0099	-0125	3447	2775			14444			0325	29.75	14738.8	
		OBS	0100	-0125	3447	2775	0003491	0042	14444			0328	29.75	14738.8	
		STD	0125	-0115	3451	2778	0003249	0050	14454			0410	29.93	14742.1	
		OBS	0149	-0105	3454	2780			14463		173	0489	30.11	14745.1	
		STD	0150	-0104	3454	2780	0003012	0058	14463			0492	30.13	14745.1	
		OBS	0199	-0083	3460	2784			14482		205	0653	30.51	14751.3	
		STD	0200	-0084	3460	2784	0002628	0072	14482			0656	30.49	14751.3	
		OBS	0250	-0141	3462	2787	0002267	0084	14464			0820	29.46	14745.4	
		STD	0298	-0176	3463	2790			14455			0978	28.83	14742.4	
		OBS	0300	-0176	3463	2790	0001996	0095	14456		223	0978	28.83	14742.4	
		STD	0397	-0189	3467	2793			14466		205	0981	28.83	14742.8	
		OBS	0397	-0189	3467	2793			14466		205	0981	28.83	14742.8	
		STD	0400	-0189	3467	2794	0001576	0113	14467			1312	28.60	14746.4	
		OBS	0496	-0199	3477	2802			14480		218	1627	28.42	14750.6	
		STD	0500	-0199	3477	2802	0000728	0124	14480			1640	28.42	14750.6	
		OBS	0596	-0199	3482	2806			14497		228	1955	28.42	14752.6	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS DEN SQUARE MILES	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWATH'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
						10'	'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	150	ED	7731 S	17505 W	569	75	02 25	236	1963	201	K13	0558	05	15		3	X7	7 8	0064

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. COEF	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS	
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB				
				18	16	S13	840	-128	-129	3

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> 10 <sup>3</sup>	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CODE
		STD	0000	-0224	3435	2768	0004220	0000	14379			0000	27.97	14717.5	
		OBS	0000	-0224	3435	2768			14379		159	0000	27.97	14717.5	
		STD	0010	-0174	3430	2763	0004702	0004	14404			0033	28.87	14725.7	
		OBS	0010	-0174	3430	2763			14404		146	0033	28.87	14725.7	
		STD	0020	-0175	3435	2767	0004310	0009	14406			0066	28.85	14726.4	
		OBS	0020	-0175	3435	2767			14406		150	0066	28.85	14726.4	
		STD	0030	-0177	3435	2767	0004299	0013	14407			0098	28.81	14726.7	
		OBS	0030	-0177	3435	2767			14407		209	0098	28.81	14726.7	
		STD	0050	-0175	3434	2766	0004369	0022	14411			0164	28.85	14728.0	
		OBS	0050	-0175	3434	2766			14411		214	0164	28.85	14728.0	
		STD	0075	-0113	3442	2771	0003932	0032	14445			0216	29.97	14739.2	
		OBS	0075	-0113	3442	2771			14445		223	0216	29.97	14739.2	
		STD	0100	-0137	3446	2775	0003534	0042	14439			0328	29.97	14739.2	
		OBS	0100	-0137	3446	2775			14439		187	0328	29.97	14739.2	
		STD	0125	-0141	3451	2779	0003128	0050	14442			0328	29.53	14737.2	
		OBS	0125	-0141	3451	2779			14442		187	0328	29.53	14737.2	
		STD	0150	-0144	3455	2782	0002799	0057	14445			0492	29.46	14735.2	
		OBS	0150	-0144	3455	2782			14445		155	0492	29.46	14735.2	
		STD	0200	-0192	3459	2787	0002317	0070	14431			0656	28.54	14731.6	
		OBS	0200	-0192	3459	2787			14431		236	0656	28.54	14731.6	
		STD	0250	-0191	3462	2789	0002062	0081	14440			0820	28.56	14737.5	
		OBS	0250	-0191	3462	2789			14440		236	0820	28.56	14737.5	
		STD	0300	-0189	3465	2792	0001809	0091	14450			0981	28.60	14740.8	
		OBS	0300	-0189	3465	2792			14450		236	0981	28.60	14740.8	
		STD	0400	-0201	3475	2800	0000948	0105	14462			1312	28.38	14744.7	
		OBS	0400	-0201	3475	2800			14462		146	1312	28.38	14744.7	
		STD	0500	-0199	3483	2807	0000287	0111	14481			1610	28.42	14751.0	
		OBS	0500	-0199	3483	2807			14481		236	1610	28.42	14751.0	
		STD	0525	-0198	3482	2806			14486			1722	28.44	14752.6	

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE 1/10	LONGITUDE 1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
					10'	1'	NO		DAY	HR.			1/10	CRUISE NO.	STATION NUMBER				DIR.	HGT
31	150	ED	7726 S	17252 W	569	72	02	26	030	1963	201	L13	0500	05	15		X7	6	7	0065
				WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS						
				COLOR CODE	TRANS. 1/10	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	VIS CODE										
				18	05	509	820	-127	-129	3										

MESSAGE TIME HR 1/10	CAS- T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pg - $\sigma_{\theta}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	S C C
030		STD	0000				3447					0000			
		OBS	0000				3447				187	0000			
		STD	0010	-0070	3446	2772	0003809		14455			0033	30.7h	h739.2	
030		OBS	0010	-0070	3446	2772			14455		187	0033	30.7h	h739.2	
		STD	0020	-0071	3446	2772	0003802		14456			0066	30.72	h7h2.8	
030		OBS	0020	-0071	3446	2772			14456		182	0066	30.72	h7h2.8	
		STD	0030	-0072	3447	2773	0003719		14457			0098	30.70	h7h3.1	
030		OBS	0030	-0072	3447	2773			14457		196	0098	30.70	h7h3.1	
030		OBS	0049	-0061	3446	2772			14466		182	0161	30.90	h7h5.0	
		STD	0050	-0061	3446	2772	0003835		14466			016h	30.90	h7h5.0	
030		OBS	0074	-0060	3446	2772			14470		182	0213	30.92	h7h7.4	
		STD	0075	-0057	3447	2773	0003770		14472			0246	30.97	h7h8.0	
030		OBS	0098	-0008	3456	2778			14499		209	0322	31.86	h756.9	
		STD	0100	-0009	3456	2778	0003296		14499			0328	31.8h	h756.9	
030		OBS	0148	-0023	3459	2781			14501		205	0486	31.59	h757.5	
		STD	0150	-0021	3459	2781	0003002		14503			0492	31.62	h758.2	
030		OBS	0197	-0011	3462	2783			14515		200	0466	31.80	h762.1	
		STD	0200	-0013	3462	2783	0002817		14515			0656	31.77	h762.1	
030		OBS	0245	-0051	3461	2784			14505		209	090h	31.08	h757.2	
		STD	0250	-0058	3461	2784	0002659		14502			0920	30.96	h757.9	
030		OBS	0295	-0110	3461	2786			14486		191	0968	30.02	h752.6	
		STD	0300	-0116	3461	2786	0002375		14484			098h	29.91	h752.0	
030		OBS	0393	-0187	3463	2790			14466		205	1289	28.63	h745.0	
		STD	0400	-0190	3464	2791	0001824		14466			1312	28.58	h7h5.0	
030		OBS	0491	-0195	3476	2801			14480		209	1611	28.49	h750.6	

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE 1/10	LONGITUDE 1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
					10'	1'	NO		DAY	HR.			1/10	CRUISE NO.	STATION NUMBER				DIR.	HGT
31	150	ED	7656 S	17304 W	569	63	02	26	061	1963	201	L12	0503	05	16		X7	6	7	0066
				WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS						
				COLOR CODE	TRANS. 1/10	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	VIS CODE										
				16	14	512	800	-116	-119	5										

MESSAGE TIME HR 1/10	CAS- T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pg - $\sigma_{\theta}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	S C C
061		STD	0000	-0064	3446	2772	0003836	0000	14456			0000	30.85	h7h2.8	
		OBS	0000	-0064	3446	2772			14456		164	0000	30.85	h7h2.8	
		STD	0010	-0064	3445	2771	0003909	0004	14458			0033	30.85	h7h3.4	
061		OBS	0010	-0064	3445	2771			14458		178	0033	30.85	h7h3.4	
061		OBS	0019	-0065	3445	2771			14459		178	0062	30.83	h7h3.8	
		STD	0020	-0065	3445	2771	0003903	0008	14459			0066	30.83	h7h3.8	
061		OBS	0029	-0066	3445	2771			14460		164	0095	30.81	h7h4.1	
		STD	0039	-0066	3445	2771	0003896	0012	14460			0098	30.81	h7h4.1	
061		OBS	0048	-0065	3445	2771			14463		164	0158	30.83	h7h5.1	
		STD	0050	-0065	3445	2771	0003895	0019	14464			016h	30.83	h7h5.4	
061		OBS	0072	-0064	3444	2771			14468		159	0236	30.85	h7h6.7	
		STD	0075	-0064	3444	2771	0003962	0029	14468			0246	30.85	h7h6.7	
061		OBS	0097	-0062	3445	2771			14473		159	0318	30.88	h7h8.3	
		STD	0100	-0056	3446	2772	0003844	0039	14476			0328	30.99	h7h9.3	
061		OBS	0125	-0014	3454	2776	0003428	0048	14501			0410	31.75	h757.5	
		STD	0125	-0014	3454	2776			14513		191	0476	32.09	h761.5	
061		OBS	0145	0005	3458	2779			14513			0492	32.09	h761.8	
		STD	0150	0005	3458	2779	0003198	0056	14514			0636	32.00	h763.8	
061		OBS	0194	0000	3461	2781			14520			0656	31.95	h763.4	
		STD	0200	-0003	3461	2781	0002947	0772	14519		187	0820	31.42	h761.8	
061		OBS	0250	-0032	3461	2783	0002788	0086	14514			0955	30.85	h759.2	
		STD	0250	-0032	3461	2783			14506			098h	30.61	h757.9	
061		OBS	0291	-0064	3461	2784			14506		187	1250	28.92	h7h8.3	
		STD	0300	-0077	3461	2785	0002548	0099	14473			1312	28.80	h7h8.0	
061		OBS	0388	-0171	3462	2789			14472		187	159h	28.51	h750.6	
		STD	0400	-0178	3463	2790	0001942	0122	14472						
061		OBS	0486	-0194	3474	2799			14480		191				

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
						10°	'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT
31	150	ED	7701 S	17504 W	569	75	02	26	096	1963	201	K12	0540	05	16		3	X7	618	0067

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			15	S14	790	-115	-118	7	

MESSAGE TIME HR /10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CODE
096		STD	0000	-0119	3442	2771	0003943	0000	14430			0000	29.86	4734.2	
		OBS	0000	-0119	3442	2771			14430		173	0000	29.86	4734.2	
		STD	0010	-0121	3442	2771	0003932	0004	14431			0033	29.82	4734.6	
096		OBS	0010	-0121	3442	2771			14431		164	0033	29.82	4734.6	
096		OBS	0019	-0121	3441	2770			14432		150	0062	29.82	4734.9	
		STD	0020	-0121	3441	2770	0004005	0008	14432			0066	29.82	4734.9	
096		OBS	0028	-0122	3441	2770			14433		173	0092	29.80	4735.2	
		STD	0030	-0122	3441	2770	0003998	0012	14433			0058	29.80	4735.2	
096		OBS	0047	-0120	3441	2770			14437		164	0154	29.84	4736.5	
		STD	0050	-0120	3441	2770	0004003	0020	14438			0164	29.84	4736.9	
096		OBS	0071	-0119	3440	2769			14441		168	0233	29.86	4737.8	
		STD	0075	-0122	3442	2771	0003901	0030	14441			0216	29.80	4737.8	
096		OBS	0094	-0133	3448	2776			14440		246	0308	29.61	4737.5	
		STD	0100	-0131	3449	2777	0003324	0039	14442			0328	29.64	4738.2	
		STD	0125	-0123	3453	2780	0003037	0047	14450			0410	29.79	4740.8	
096		OBS	0141	-0117	3454	2781			14456		246	0463	29.89	4742.8	
		STD	0150	-0128	3454	2781	0002930	0054	14452			0492	29.70	4741.5	
096		OBS	0188	-0161	3454	2782			14443		246	0617	29.10	4738.5	
		STD	0200	-0161	3455	2783	0002718	0068	14445			0656	29.10	4739.2	
096		OBS	0235	-0166	3456	2784			14449		237	0771	29.01	4740.5	
		STD	0250	-0174	3457	2785	0002496	0081	14448			0820	28.87	4740.1	
096		OBS	0282	-0186	3458	2786			14447		241	0925	28.65	4739.8	
		STD	0300	-0188	3459	2787	0002285	0093	14450			0981	28.62	4740.8	
096		OBS	0376	-0194	3462	2789			14460		223	1231	28.51	4744.1	
		STD	0400	-0196	3464	2791	0001803	0114	14463			1312	28.47	4745.1	
096		OBS	0470	-0199	3475	2800			14475		218	1542	28.42	4749.0	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
						10°	'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT
31	150	ED	7704.5 S	17710 W	569	77	02	26	131	1963	201	J12	0616	06	16		3	X1	616	0068

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
			18	S12	780	-116	-119	7	

MESSAGE TIME HR /10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CODE
131		STD	0000	-0197	3435	2768	0004272	0000	14392			0000	28.44	4721.8	
		OBS	0000	-0197	3435	2768			14392		5230	0000	28.44	4721.8	
		STD	0010	-0158	3435	2767	0004359	0004	14412			0033	29.16	4728.3	
131		OBS	0010	-0158	3435	2767			14412		5440	0033	29.16	4728.3	
		STD	0020	-0158	3434	2766	0004431	0009	14414			0066	29.16	4729.0	
131		OBS	0020	-0158	3434	2766			14414		6050	0066	29.16	4729.0	
		STD	0030	-0158	3435	2767	0004348	0013	14415			0058	29.16	4729.3	
131		OBS	0030	-0158	3435	2767			14415		6230	0098	29.16	4729.3	
		STD	0050	-0155	3435	2766	0004346	0022	14420			0164	29.21	4731.0	
131		OBS	0050	-0155	3435	2766			14420		5460	0164	29.21	4731.0	
		STD	0075	-0116	3439	2768	0004151	0032	14443			0216	29.91	4738.5	
131		OBS	0075	-0116	3439	2768			14443		5310	0216	29.91	4738.5	
		STD	0100	-0136	3448	2776	0003384	0042	14439			0328	29.55	4737.2	
131		OBS	0100	-0136	3448	2776			14439		4530	0328	29.55	4737.2	
		STD	0125	-0114	3452	2779	0003144	0050	14454			0410	29.95	4742.1	
131		OBS	0149	-0112	3455	2781			14460		3530	0489	29.98	4744.1	
		STD	0150	-0113	3455	2781	0002909	0058	14459			0492	29.97	4743.8	
131		OBS	0199	-0166	3456	2784			14443		3730	0653	29.01	4738.5	
		STD	0200	-0166	3456	2784	0002617	0071	14443			0856	29.01	4738.5	
		STD	0250	-0179	3460	2787	0002281	0084	14446			0620	28.78	4739.5	
131		OBS	0299	-0188	3463	2790			14450		4310	0981	28.62	4740.8	
		STD	0300	-0188	3463	2790	0001957	0094	14450			0984	28.62	4740.8	
131		OBS	0398	-0196	3468	2794			14463		5170	1306	28.47	4745.1	
		STD	0400	-0196	3468	2794	0001483	0111	14464			1312	28.47	4745.4	
131		OBS	T0498	-0201	3477	2802			14479		4610	1634	28.38	4750.3	
		STD	0500	-0201	3477	2802	0000729	0122	14479			1640	28.38	4750.3	
131		OBS	0573	-0197	3482	2806			14494		4410	1880	28.45	4755.2	
131		OBS	0598	-0201	3486	2809			14497		3790	1962	28.48	4756.2	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH (m)	MARSDEN SQUARE				STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10'	1'	MO	DAY	HR	1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA	TYPE		AMT		
31	150	ED	770755	17914 W		569	79	02	26	164	1963	201	112	06.03	06	49			2	X1	6	5		0069	
						WATER		WIND		BARO-METER		AIR TEMP. °C				NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB	VIS. CODE												
							13	14	506	770	-121	-123	7												

MESSAGE NO.	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P p <sub>2</sub> -atm	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0099								0000	30.22	
		OBS	0000	-0099	3459P	2784			5510	164	0000	30.22		
		STD	0010	-0100							0033	30.20		
164		OBS	0010	-0100	3459P	2784P			5490	159	0033	30.20		
		STD	0020	-0099							0066	30.22		
164		OBS	0020	-0099	3462P	2786P			5430	168	0066	30.22		
		STD	0030	-0101							0058	30.18		
164		OBS	0030	-0101	3470P	2793P			5510	164	0058	30.18		
		STD	0050	-0092							0161	30.34		
164		OBS	0050	-0092	3478P	2799P			5260	164	0161	30.34		
		STD	0075	-0062							0246	30.88		
164		OBS	0075	-0062	3452P	2777P			3900	205	0246	30.88		
		STD	0100	-0069							0328	30.76		
164		OBS	0100	-0069	3452P	2777P			3380	228	0328	30.76		
		STD	0125	-0116							0410	29.91		
164		OBS	0125	-0116	3452P	2780P			3870	223	0410	29.91		
		STD	0150	-0148							0656	28.99		
164		OBS	0150	-0148	3450P	2779P			5090	218	0656	28.99		
		STD	0200	-0179							0820	28.78		
164		OBS	0200	-0179	3452P	2781P			4040	200	0820	28.78		
		STD	0250	-0188							0981	28.62		
164		OBS	0250	-0188	3452P	2781P			4980	191	0981	28.62		
		STD	0300	-0198							1312	28.44		
164		OBS	0300	-0198	3453P	2782P			4240	159	1312	28.44		
		STD	0400	-0197							1637	28.45		
164		OBS	0400	-0197	3460P	2788P			4050	228	1637	28.45		
		STD	0500	-0200							1883	28.40		
164		OBS	0500	-0200	3460P	2788P					1883	28.40		

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH (m)	MARSDEN SQUARE				STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10'	1'	MO	DAY	HR	1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA	TYPE		AMT		
31	150	ED	7728 S	17930 W		569	79	02	26	201	1963	201	113	06.49	06	18			2	X1	6	5		0070	
						WATER		WIND		BARO-METER		AIR TEMP. °C				NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	(mb)	DRY BULB	WET BULB	VIS. CODE												
							16	15	515	770	-124	-127	7												

MESSAGE NO.	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P p <sub>2</sub> -atm	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0166	3437	2768	0004190	0000	14407			0000	29.01	4726.7
		OBS	0000	-0166	3437	2768			14407		168	0000	29.01	4726.7
		STD	0010	-0151	3440	2770	0003995	0004	14416			0033	29.28	4729.6
201		OBS	0010	-0151	3440	2770			14416	6470		0033	29.28	4729.6
		STD	0020	-0152	3439	2770	0004064	0008	14417			0066	29.26	4730.0
201		OBS	0020	-0152	3439	2770			14417	5200		0066	29.26	4730.0
		STD	0030	-0136	3441	2771	0003952	0012	14427			0098	29.55	4733.3
201		OBS	0030	-0136	3441	2771			14427	5260	173	0098	29.55	4733.3
		STD	0050	-0126	3442	2771	0003899	0020	14435			0154	29.73	4735.9
201		OBS	0050	-0126	3442	2771			14435	6070	168	0154	29.73	4735.9
		STD	0075	-0114	3443	2772	0003852	0030	14445			0246	29.95	4739.2
201		OBS	0075	-0114	3443	2772			14445	5520	178	0246	29.95	4739.2
		STD	0100	-0098	3445	2773	0003741	0039	14457			0325	30.25	4743.1
201		OBS	0100	-0098	3445	2773			14457	6170	168	0325	30.25	4743.1
		STD	0125	-0112	3449	2776	0003411	0048	14455			0328	30.24	4743.1
201		OBS	0125	-0112	3449	2776			14455	4580	218	0328	30.24	4743.1
		STD	0150	-0124	3452	2779	0003090	0056	14454			0489	29.77	4742.1
201		OBS	0150	-0124	3452	2779			14454	5800	218	0489	29.77	4742.1
		STD	0199	-0147	3455	2782	0002754	0071	14451			0553	29.35	4741.5
201		OBS	0199	-0147	3455	2782			14451	3440	223	0553	29.35	4741.5
		STD	0200	-0148	3455	2783	0002447	0084	14447			0656	29.34	4741.5
201		OBS	0200	-0148	3455	2783			14447	5080	223	0656	29.34	4741.5
		STD	0250	-0175	3458	2785	0002166	0095	14463			0981	28.54	4740.1
201		OBS	0250	-0175	3458	2785			14463	4390	218	0981	28.54	4740.1
		STD	0298	-0192	3460	2788	0001403	0113	14480			1303	28.45	4745.1
201		OBS	0298	-0192	3460	2788			14480	4110	218	1303	28.45	4745.1
		STD	0300	-0197	3476	2801	0000812	0124	14481			1627	28.45	4750.6
201		OBS	0300	-0197	3476	2801			14481	5380	218	1627	28.45	4750.6
		STD	0500	-0192	3481	2805	0000396	0130	14501			1952	28.54	4757.2
201		OBS	0500	-0192	3481	2805			14501	3940	223	1952	28.54	4757.2
		STD	0600	-0191	3482	2806			14505			2034	28.56	4758.8
201		OBS	0600	-0191	3482	2806			14505	3940	223	2034	28.56	4758.8

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN INDEX	MARS DEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF C/WFL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
					10"	1"	M.O.	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			D.W.	HGT	PER			
31150	ED	7740 S	17803 E	570	78	02	27	011	1963	201	H13	0772	07	00	0	X4	7	6	0071		
		WATER		DIR.		SPEED OR FORCE		BARO-METER (mb)		AIR TEMP. °C		VEL. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
		COLOR CODE		TRANS (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB									
		18 18		S15		790		-173 -175		5											

WISSENGR TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MSLT-310?	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/sec
011		STD	0000	-0174	3454	2782	0002865	0000	14406			0000	28.87	4726.4
		OBS	0000	-0174	3454	2782			14406	5730	159	0000	28.87	4726.4
		STD	0010	-0175	3451	2780	0003087	0003	14406			0033	28.85	4726.4
011		OBS	0010	-0175	3451	2780			14406	6190	159	0033	28.85	4726.4
		STD	0020	-0177	3452	2781	0003000	0006	14407			0066	28.81	4726.7
011		OBS	0020	-0177	3452	2781			14407	5860	159	0066	28.81	4726.7
		STD	0030	-0175	3449	2778	0003229	0009	14409			0098	28.85	4727.3
011		OBS	0030	-0175	3449	2778			14409	6520	150	0098	28.85	4727.3
		STD	0050	-0175	3450	2779	0003141	0016	14413			0164	28.85	4728.7
011		OBS	0050	-0175	3450	2779			14413	6070	146	0164	28.85	4728.7
		STD	0075	-0171	3450	2779	0003138	0023	14419			0216	28.92	4730.6
011		OBS	0075	-0171	3450	2779			14419	146		0216	28.92	4730.6
		STD	0100	-0136	3455	2782	0002848	0031	14440			0328	29.55	4737.5
011		OBS	0100	-0136	3455	2782			14440	5390	205	0328	29.55	4737.5
		STD	0125	-0134	3459	2785	0002538	0038	14446			0410	29.59	4739.5
011		OBS	0149	-0132	3463	2788			14451	4170	223	0469	29.62	4741.1
		STD	0150	-0133	3463	2789	0002217	0044	14451			0492	29.61	4741.1
011		OBS	0199	-0173						3860	209	0653	28.89	
		STD	0200	-0173	3466	2792	0001861	0054	14441			0656	28.89	4737.8
		STD	0250	-0181	3468	2794	0001603	0062	14446			0820	28.74	4739.5
011		OBS	0299	-0187	3471	2796			14452	4210	205	0981	28.63	4741.5
		STD	0300	-0187	3471	2796	0001357	0070	14452			0984	28.63	4741.5
011		OBS	0398	-0198	3475	2800			14463	4280	191	1306	28.44	4745.1
		STD	0400	-0198	3475	2800	0000943	0081	14464			1312	28.44	4745.4
011		OBS	T0498	-0197	3483	2806			14482	4530	191	1634	28.45	4752.3
		STD	0500	-0197	3483	2806	0000295	0087	14482			1611	28.45	4751.3
011		OBS	0598	-0195	3485	2808			14500	4480	205	1962	28.49	4757.2
		STD	0600	-0195	3485	2808	0000087	0089	14500			1968	28.49	4757.2
011		OBS	T0697	-0191	3488	2810			14519	4260		2287	28.56	4763.4
		STD	0700	-0191	3488	2810	-0000176	0089	14519			2297	28.56	4763.4
011		OBS	0747	-0183	3489	2811			14531	4720		2451	28.71	4767.4

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS DINER INDEX	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
						10"	1'		MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			D.L.	HGT	PER			
31	150	ED	7709 S	17840 E	570	78	02	27	046	1963	201	H12	0538	05	14		2	X7	6	6	0072	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED (KTS)		DRY BULB	WET BULB			
	18	16	515	780	-143	-146	7		

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DYN. M. $\times 10^2$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft/sec
046		STD	0000	-0110	3452	2779	0003207	0000	14435			0000	30.02	4735.9
		OBS	0000	-0110	3452	2779			14435	5070	159	0000	30.02	4735.9
		STD	0010	-0109	3453	2780	0003130	0003	14438			0033	30.04	4736.9
046		OBS	0010	-0109	3453	2780			14438	5530	164	0033	30.04	4736.9
		STD	0020	-0111	3453	2780	0003119	0006	14438			0066	30.00	4736.9
		OBS	0020	-0111	3453	2780			14438	5590	159	0066	30.00	4736.9
046		STD	0030	-0118	3453	2780	0003091	0009	14437			0058	29.88	4736.5
		OBS	0030	-0118	3453	2780			14437	5510	159	0058	29.88	4736.5
046		STD	0049	-0125	3456	2783	0002830	0015	14437			0161	29.75	4736.5
		OBS	0049	-0125	3456	2783			14437	5150	164	0161	29.75	4736.5
046		STD	0050	-0125	3456	2783	0002830	0015	14437			0164	29.75	4736.5
		OBS	0074	-0123	3455	2782			14442	5290	182	0213	29.79	4738.2
046		STD	0075	-0123	3455	2782	0002887	0022	14442			0216	29.79	4738.2
		OBS	0098	-0134	3460	2786			14442	3840	178	0322	29.59	4738.2
046		STD	0100	-0136	3460	2786	0002450	0029	14441			0328	29.55	4737.8
		OBS	0125	-0155	3463	2789	0002148	0035	14437			0410	29.21	4736.5
046		STD	0148	-0168	3466	2792	0001862	0040	14435			0486	28.98	4736.9
		OBS	0150	-0169	3466	2792			14435	4070	187	0492	28.96	4735.9
046		STD	0197	-0181	3470	2796	0001500	0048	14437			0616	28.71	4736.5
		OBS	0200	-0181	3470	2796			14438	4020	196	0656	28.71	4736.9
046		STD	0246	-0182	3472	2797	0001306	0055	14445			0807	28.72	4739.2
		OBS	0250	-0183	3472	2797			14445	3940	214	0820	28.71	4739.2
046		STD	0295	-0189	3475	2800	0001030	0061	14451			0968	28.60	4711.1
		OBS	0300	-0189	3475	2800			14451	4020	209	0980	28.60	4711.1
046		STD	0393	-0189	3478	2802	0000745	0070	14467			1289	28.60	4716.4
		OBS	0400	-0189	3478	2802			14468	4080	218	1312	28.60	4716.7
046		STD	0491	-0193	3481	2805			14482			1611	28.53	4715.3

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS DINER INDEX	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
						10"	1'		MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			D.L.	HGT	PER			
31	150	ED	7709 S	17637 E	570	76	02	27	080	1963	201	G12	0356	03	19		2	X4	6	2	0073	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED (KTS)		DRY BULB	WET BULB			
	14	16	513	790	-126	-129	3		

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DYN. M. $\times 10^2$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft/sec
080		STD	0000	-0141	3454	2781	0002955	0000	14421			0000	29.46	4731.3
		OBS	0000	-0141	3454	2781			14421	4700	200	0000	29.46	4731.3
		STD	0010	-0141	3453	2781	0003027	0003	14423			0033	29.46	4731.9
080		OBS	0010	-0141	3453	2781			14423	5240	200	0033	29.46	4731.9
		STD	0020	-0142	3455	2782	0002866	0006	14424			0066	29.44	4732.3
		OBS	0020	-0142	3455	2782			14424	4930	196	0066	29.44	4732.3
080		STD	0030	-0132	3456	2783	0002816	0009	14431			0098	29.62	4734.6
		OBS	0030	-0132	3456	2783			14431	5120	200	0098	29.62	4734.6
080		STD	0050	-0123	3456	2782	0002837	0014	14438			0161	29.79	4736.9
		OBS	0050	-0123	3456	2782			14438	5210	205	0161	29.79	4736.9
080		STD	0075	-0123	3455	2782	0002903	0022	14442			0216	29.75	4738.2
		OBS	0075	-0123	3455	2782			14442	4750	205	0216	29.79	4738.2
080		STD	0100	-0123	3458	2784	0002663	0029	14447			0328	29.79	4739.8
		OBS	0100	-0123	3458	2784			14447	4650	209	0328	29.79	4739.8
080		STD	0125	-0112	3460	2785	0002540	0035	14456			0410	29.98	4742.8
		OBS	0150	-0109	3462	2787	0002390	0041	14462			0492	30.04	4744.7
080		STD	0200	-0109	3462	2787	0001913	0052	14462			0492	30.04	4744.7
		OBS	0200	-0129	3467	2792			14462	3600	209	0492	30.04	4744.7
080		STD	0250	-0173	3470	2795	0001506	0061	14450			0656	29.68	4744.7
		OBS	0250	-0173	3470	2795			14450	3680	218	0656	29.68	4744.7
080		STD	0300	-0187	3477	2801	0000899	0067	14453			0820	28.89	4740.8
		OBS	0300	-0187	3477	2801			14453	4100	237	0820	28.89	4740.8
080		STD	0393	-0189	3477	2801	0000899	0067	14453			0981	28.63	4711.8
		OBS	0350	-0193	3478	2802			14458	4370	241	0981	28.63	4711.8
080		STD	0491	-0193	3478	2802			14458			1118	28.53	4713.4

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	OBS. INDEX	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10°	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TR	AMT	
31	150	ED	7640 S	17646 E	570	66	02 27 116	1963	201	G11	0340	03	18	2	X1	6	4					0074	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
				16	510	800	-127	-130	7

MESSNGR TIME HR. /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma$ $\Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P pp - $\mu$ l/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0128								0000	29.70	
		OBS	0000	-0128						5370		0000	29.70	
		STD	0010	-0128								0033	29.70	
		OBS	0010	-0128						5550		0033	29.70	
		STD	0020	-0128								0066	29.70	
		OBS	0020	-0128						5230		0066	29.70	
		STD	0030	-0127								0098	29.71	
		OBS	0030	-0127						4950		0098	29.71	
		STD	0050	-0124								0161	29.71	
		OBS	0050	-0124						4880		0161	29.77	
		STD	0075	-0131								0216	29.64	
		OBS	0075	-0131						4920		0216	29.64	
		STD	0100	-0137								0328	29.53	
		OBS	0100	-0137						5120		0328	29.53	
		STD	0125	-0132								0410	29.52	
		OBS	0149	-0127						4230		0410	29.52	
		STD	0150	-0128								0489	29.71	
		OBS	0199	-0173						3990		0489	29.70	
		STD	0200	-0173								0653	28.89	
		OBS	0249	-0183						3810		0656	28.89	
		STD	0250	-0183								0817	28.71	
		OBS	0299	-0187						3930		0820	28.71	
												0981	28.63	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	OBS. INDEX	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10°	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TR	AMT	
31	150	ED	7640 S	17844 E	570	68	02 27 148	1963	201	H11	0284	03	18	3	X1	6	6					0075	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
				18	508	790	-110	-113	7

MESSNGR TIME HR. /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma$ $\Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P pp - $\mu$ l/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0150	3458	2785			14418			0000	29.30	4730.3
		OBS	0000	-0150	3458	2785		0002622	14418	5260	200	0000	29.30	4730.3
		STD	0010	-0146	3457	2784			14421			0033	29.37	4731.3
		OBS	0010	-0146	3457	2784		0002705	14421	5230	191	0033	29.37	4731.3
		STD	0020	-0146	3455	2782			14422			0066	29.37	4731.6
		OBS	0020	-0146	3455	2782		0002854	14422	5090	196	0066	29.37	4731.6
		STD	0030	-0145	3458	2785			14425			0098	29.39	4732.6
		OBS	0030	-0145	3458	2785		0002622	14425	5100	200	0098	29.39	4732.6
		STD	0050	-0144	3459	2786			14429			0098	29.41	4733.9
		OBS	0050	-0144	3459	2786		0002539	14429	4990	191	0098	29.41	4733.9
		STD	0074	-0142	3459	2786			14434			0213	29.44	4735.6
		OBS	0074	-0142	3459	2786		0002534	14434	4990	191	0213	29.44	4735.6
		STD	0075	-0142	3459	2786			14434			0216	29.44	4735.6
		OBS	0099	-0141	3459	2785			14438			0325	29.46	4736.9
		STD	0100	-0142	3459	2786			14438			0328	29.44	4736.9
		OBS	0100	-0142	3459	2786		0002507	14438	3990	209	0328	29.44	4736.9
		STD	0125	-0159	3464	2790			14435			0410	29.44	4735.9
		OBS	0125	-0159	3464	2790		0002097	14435	3990	209	0410	29.44	4735.9
		STD	0149	-0172	3468	2794			14433			0489	28.90	4735.2
		OBS	0149	-0172	3468	2794		0001707	14433	3920	218	0489	28.90	4735.2
		STD	0200	-0185	3474	2799			14436			0650	28.67	4736.2
		OBS	0200	-0185	3474	2799		0001190	14436	3890		0656	28.67	4736.2
		STD	0250	-0190	3474	2799			14442			0813	28.58	4738.2
		OBS	0250	-0190	3474	2799			14442	3790		0820	28.58	
		STD	0272	-0191								0892	28.56	
		OBS	0272	-0191								0892	28.56	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARKSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NDDC STATION NUMBER
						10'	1'	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	150	ED	7636 S	17923 W	569	69	02	27	185	1963	201	111	0610	05	19				X1	6	3	0076

WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		20	S13	790	-096	-099	7		

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ D DTM, M, ± 10'	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg = 0.1%	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FK/SEC	SIGMA-T
	185	OBS	0000	-0084	3454	2779	0003146	0000	14448			0000	30.49	4740.1	
	185	OBS	0000	-0084	3454	2779			14448	4860		0000	30.49	4740.1	
	185	OBS	0009	-0083	3454	2779			14450	5360		0030	30.51	4740.8	
		STD	0010	-0082	3454	2779	0003151	0003	14450			0033	30.52	4740.8	
	185	OBS	0018	-0079	3454	2779			14453	5160		0059	30.58	4741.8	
		STD	0020	-0078	3454	2779	0003148	0006	14454			0066	30.60	4742.1	
	186	OBS	0027	-0077	3455	2780			14456	4880		0089	30.61	4742.8	
		STD	0030	-0077	3455	2780	0003088	0009	14456			0098	30.61	4742.8	
	188	OBS	0045	-0076	3454	2779			14459	4850		0148	30.63	4743.8	
		STD	0050	-0076	3454	2779	0003149	0016	14460			0164	30.63	4744.1	
	188	OBS	0068	-0074	3455	2780			14464	5130		0223	30.67	4745.4	
		STD	0075	-0073	3455	2780	0003114	0023	14465			0216	30.69	4745.7	
	188	OBS	0091	-0069	3454	2779			14470	4990		0299	30.76	4747.4	
		STD	0100	-0066	3457	2781	0002961	0031	14473			0328	30.81	4748.3	
		STD	0125	-0058	3462	2785	0002608	0038	14482			0410	30.96	4751.3	
	188	OBS	0136	-0055	3463	2785			14485	3440		0446	31.01	4752.3	
		STD	0150	-0088	3463	2787	0002420	0044	14472			0492	30.42	4748.0	
	188	OBS	0181	-0145	3462	2788			14450	3820		0594	29.39	4740.8	
		STD	0200	-0156	3463	2789	0002123	0056	14449			0656	29.19	4739.5	
		STD	0250	-0177	3465	2791	0001875	0066	14447			0820	28.81	4740.8	
	188	OBS	0272	-0182	3466	2792			14449	4200		0892	28.72	4740.5	
		STD	0300	-0181	3468	2794	0001605	0074	14454			0984	28.74	4742.1	
	188	OBS	0363	-0179	3472	2797			14466	4100		1191	28.78	4746.0	
		STD	0400	-0185	3475	2800	0001003	0087	14470			1312	28.67	4747.4	
	188	OBS	0454	-0192	3478	2802			14476	4040		1490	28.54	4749.3	
		STD	0500	-0196	3481	2805	0000450	0095	14482			1640	28.47	4751.3	
	188	OBS	0544	-0199	3483	2807			14488	4060		1785	28.42	4753.3	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARKSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NDDC STATION NUMBER
						10'	1'	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	150	ED	76355 S	17712 W	569	67	02	27	225	1963	201	111	0564	04	23				X1	6	5	0077

WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		22	S28	780	-082	-086	7		

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ D DTM, M, ± 10'	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg = 0.1%	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FK/SEC	SIGMA-T
	225	OBS	0000	-0108	3450	2777	0003366	0000	14436			0000	30.06	4736.2	
	225	OBS	0000	-0108	3450	2777			14436	5630		0000	30.06	4736.2	
	225	OBS	0008	-0109	3450	2777			14437	5580		0026	30.04	4736.5	
		STD	0010	-0109	3451	2778	0003283	0003	14437			0033	30.04	4736.5	
	225	OBS	0016	-0110	3452	2779			14438	5030		0053	30.02	4736.9	
		STD	0020	-0110	3451	2778	0003277	0007	14439			0066	30.02	4737.2	
	225	OBS	0024	-0109	3450	2777			14440	5420		0079	30.04	4737.5	
		STD	0030	-0108	3450	2777	0003355	0010	14441			0098	30.06	4737.8	
	225	OBS	0040	-0106	3450	2777			14444			0131	30.09	4738.8	
		STD	0050	-0103	3451	2777	0003327	0017	14447			0164	30.15	4739.8	
	225	OBS	0059	-0100	3451	2778			14450			0194	30.20	4740.8	
		STD	0075	-0092	3451	2777	0003321	0025	14456			0216	30.34	4742.8	
	225	OBS	0078	-0090	3451	2777			14458	4600		0256	30.38	4743.4	
		STD	0100	-0070	3457	2781	0002945	0033	14471			0320	30.74	4747.7	
	225	OBS	0118	-0061	3461	2784			14479	3340		0387	30.90	4750.3	
		STD	0125	-0061	3462	2785	0002594	0040	14480			0410	30.90	4750.6	
		STD	0150	-0063	3464	2787	0002431	0046	14484			0492	30.87	4752.0	
	225	OBS	0158	-0063	3465	2787			14485	3250		0516	30.87	4752.3	
		STD	0200	-0126	3465	2789	0002115	0057	14463			0656	29.73	4745.1	
	225	OBS	0237	-0163	3464	2790			14452	3750		0778	29.07	4741.5	
		STD	0250	-0169	3464	2791	0001955	0067	14451			0820	28.96	4741.1	
		STD	0300	-0183	3466	2792	0001782	0077	14453			0984	28.71	4741.8	
	225	OBS	0316	-0186	3466	2792			14454	4020		1037	28.65	4742.1	
		STD	0396	-0183	3473	2798			14470	3860		1299	28.71	4747.4	
		STD	0400		3474							1312	28.31		
	225	OBS	0435	-02050	3478	28030				4240		1427			

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DEPTH INCL	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA-THER CODE	CLOUD CODES	NODC STATION NUMBER			
					10'	1"	MO	DAY		HR.	10'			1"	CRUISE NO.	STATION NUMBER				DIR.	HGT	PER
31	150	ED	7606 S	17718 W	569	67	02	28	076	1963	201	J10	0622	06	24			X1	6	7	0078	
					WATER		WIND		BARO-METER		AIR TEMP. °C		VIL. COD.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
					COLOR CODE	TRANS. (mm)	DIR.	SPEED OF FORCE	BARO-METER (mbs)	DRY BULB	WET BULB	°C	°C	°C	°C							
					14	24	S13	800	-050	-054	7											

MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°P	Σ Δ D DYN. AL. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec	COR.
076		STD	0000	-0068	3453	2778	0003284	0000	14455			0000	30.78	4742.4	
		OBS	0000	-0068	3453	2778			14455	5240	178	0000	30.78	4742.4	
		STD	0010	-0067	3453	2778	0003286	0003	14457			0033	30.79	4743.1	
076		OBS	0010	-0067	3453	2778			14457	4850	182	0033	30.79	4743.1	
		STD	0020	-0063	3452	2777	0003376	0007	14461			0066	30.87	4744.4	
076		OBS	0020	-0063	3452	2777			14461	5110	200	0066	30.87	4744.4	
		STD	0030	-0067	3452	2777	0003357	0010	14460			0098	30.79	4744.1	
076		OBS	0030	-0067	3452	2777			14460	4600	187	0098	30.79	4744.1	
		STD	0050	-0065	3451	2776	0003436	0017	14465			0164	30.83	4745.7	
076		OBS	0050	-0065	3451	2776			14465	4510	168	0164	30.83	4745.7	
		STD	0075	-0064	3452	2777	0003358	0025	14469			0246	30.85	4747.0	
076		OBS	0075	-0064	3452	2777			14469	4950	182	0246	30.85	4747.0	
		STD	0100	-0068	3452	2777	0003335	0034	14472			0328	30.78	4748.0	
076		OBS	0100	-0068	3452	2777			14472	5070	178	0328	30.78	4748.0	
		STD	0125	-0062	3454	2778	0003202	0042	14479			0410	30.88	4750.3	
076		OBS	0149	-0056	3456	2780			14486	4050	182	0489	30.99	4752.6	
		STD	0150	-0057	3456	2780	0003058	0050	14486			0492	30.97	4752.6	
076		OBS	0199	-0111	3460	2785			14469	3690	232	0653	30.00	4747.0	
		STD	0200	-0112	3460	2785	0002505	0064	14469			0656	29.98	4747.0	
076		OBS	0249	-0145	3465	2790			14462	3790	218	0817	29.39	4744.8	
		STD	0250	-0146	3465	2790	0001981	0075	14462			0820	29.37	4744.8	
076		OBS	0299	-0178	3464	2791			14455	3950	205	0981	28.80	4742.4	
		STD	0300	-0178	3464	2791	0001921	0085	14455			0984	28.80	4742.4	
076		OBS	0398	-0192	3468	2794			14465	4480	209	1306	28.54	4745.7	
		STD	0400	-0192	3468	2794	0001497	0102	14466			1312	28.54	4746.0	
076		OBS	0498	-0198	3476	2801			14480	4230	209	1633	28.44	4750.6	
		STD	0500	-0198	3476	2801	0000086	0113	14481			1610	28.44	4751.0	
076		OBS	0598	-0195	3483	2806			14499	4270	187	1962	28.49	4757.0	

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DEPTH INCL	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA-THER CODE	CLOUD CODES	NODC STATION NUMBER			
					10'	1"	MO	DAY		HR.	10'			1"	CRUISE NO.	STATION NUMBER				DIR.	HGT	PER
31	150	ED	7608 S	17916 W	569	69	02	28	106	1963	201	J10	0567	05	24			X7	6	8	0079	
					WATER		WIND		BARO-METER		AIR TEMP. °C		VIL. COD.		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
					COLOR CODE	TRANS. (mm)	DIR.	SPEED OF FORCE	BARO-METER (mbs)	DRY BULB	WET BULB	°C	°C	°C	°C							
					27	S12	810	-051	-054	6												

MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°P	Σ Δ D DYN. AL. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec	COR.
106		STD	0000	-0116	3457	2783	0002803	0000	14433			0000	29.91	4735.2	
		OBS	0000	-0116	3457	2783			14433	5470		0000	29.91	4735.2	
		STD	0010	-0116	3459	2785	0002646	0003	14435			0033	29.91	4735.9	
106		OBS	0010	-0116	3459	2785			14435	5250		0033	29.91	4735.9	
		STD	0020	-0119	3463	2788	0002326	0005	14436			0066	29.86	4736.2	
106		OBS	0020	-0119	3463	2788			14436	5500		0066	29.86	4736.2	
		STD	0030	-0120	3458	2784	0002702	0008	14437			0098	29.84	4736.5	
106		OBS	0030	-0120	3458	2784			14437	5820		0098	29.84	4736.5	
		STD	0049	-0120	3459	2785			14440			0161	29.84	4737.5	
106		OBS	0074	-0117	3459	2785			14445	5050		0164	29.84	4737.5	
		STD	0050	-0120	3459	2785	0002617	0013	14440			0213	29.89	4739.2	
106		OBS	0074	-0117	3459	2785			14445			0213	29.89	4739.2	
		STD	0075	-0117	3459	2785	0002610	0020	14446			0246	29.89	4739.5	
106		OBS	0098	-0120	3461	2786			14448	4920		0322	29.84	4740.1	
		STD	0100	-0123	3461	2787	0002411	0026	14447			0328	29.79	4739.8	
106		OBS	0148	-0168	3469	2794			14435	4300		0410	29.30	4737.2	
		STD	0125	-0150	3465	2791	0002003	0031	14439			0486	28.98	4735.9	
106		OBS	0148	-0168	3469	2794			14435			0492	28.96	4735.9	
		STD	0150	-0169	3469	2794	0001640	0036	14435			0646	28.72	4736.5	
106		OBS	0197	-0182	3471	2796			14437			0656	28.72	4736.5	
		STD	0200	-0182	3471	2797	0001413	0044	14437			0807	28.69	4739.2	
106		OBS	0246	-0184	3474	2799			14445	3700		0807	28.69	4739.2	
		STD	0250	-0184	3474	2799	0001158	0050	14445			0820	28.69	4739.2	
106		OBS	0295	-0188	3475	2800			14451	3890		0968	28.62	4741.1	
		STD	0300	-0188	3475	2800	0001033	0055	14452			0984	28.62	4741.1	
106		OBS	0393	-0193	3479	2803			14466	4180		1289	28.53	4746.0	
		STD	0400	-0193	3479	2803	0000640	0064	14467			1312	28.53	4746.0	
106		OBS	0491	-0195	3484	2807			14482	4010		1611	28.49	4751.3	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE I/10	LONGITUDE I/10	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE(A)(M)	NODC STATION NUMBER	
						10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT
31	150	ED	7610 S	17849 E	570	68	02	28	139	1963	201	H10	0402	03	26		3	X7	4 8	0080

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
				800	-064	-069	5		

MESSNGR TIME HR./10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND(MAL)-310°	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 01/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CLOUD CODE
		STD	0000	-0131	3462	2788	0002372	0000	14427			0000	29.64	4733.3	
139		OBS	0000	-0131	3462	2788			14427	4800		0000	29.64	4733.3	
139		OBS	0008	-0133	3460	2786			14427	4920		0026	29.61	4733.3	
		STD	0010	-0133	3460	2786	0002515	0002	14427			0033	29.61	4733.3	
139		OBS	0016	-0133	3460	2786			14428	5100		0053	29.61	4733.6	
		STD	0020	-0133	3460	2786	0002510	0005	14429			0066	29.61	4733.9	
139		OBS	0024	-0133	3460	2786			14430	5110		0079	29.61	4734.2	
		STD	0030	-0133	3460	2786	0002505	0007	14431			0098	29.61	4734.6	
139		OBS	0039	-0134	3460	2786			14432	5210		0128	29.59	4734.9	
		STD	0050	-0134	3460	2786	0002496	0012	14434			0164	29.59	4735.6	
139		OBS	0059	-0133	3460	2786			14436	5170		0194	29.61	4736.2	
		STD	0075	-0133	3460	2786	0002486	0019	14438			0246	29.61	4736.9	
139		OBS	0079	-0133	3460	2786			14439	5250		0259	29.61	4737.2	
		STD	0100	-0134	3460	2786	0002450	0025	14442			0328	29.59	4738.2	
139		OBS	0125	-0135	3461	2787	0002413	0031	14446			0410	29.57	4739.5	
		STD	0150	-0136	3461	2787	0002376	0037	14450			0492	29.55	4740.8	
139		OBS	0158	-0136	3461	2787			14451	4270		0518	29.55	4741.1	
		STD	0200	-0168	3468	2794	0001701	0047	14444			0656	28.68	4738.8	
139		OBS	0236	-0184	3472	2797			14443	4220		0774	28.69	4738.5	
		STD	0250	-0184	3473	2798	0001240	0054	14445			0820	28.69	4739.2	
139		OBS	0300	-0186	3475	2800	0001056	0060	14453			0984	28.65	4741.8	
		STD	0315	-0186	3475	2800			14455	4340		1033	28.65	4742.4	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE I/10	LONGITUDE I/10	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE(A)(M)	NODC STATION NUMBER	
						10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT
31	150	ED	7610 S	17706 E	570	67	02	28	186	1963	201	G10	0439	04	29		4	X1	6 3	0081

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
				800	-044	-050	7		

MESSNGR TIME HR./10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND(MAL)-310°	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 01/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CLOUD CODE
		STD	0000	-0121	3455	2782	0002940	0000	14431			0000	29.82	4734.6	
186		OBS	0000	-0121	3455	2782			14431	4630		0000	29.82	4734.6	
		STD	0010	-0122	3455	2782	0002933	0003	14432			0033	29.80	4734.9	
186		OBS	0010	-0122	3455	2782			14432	4690		0033	29.80	4734.9	
186		OBS	0019	-0122	3456	2782			14434	4930		0062	29.80	4735.6	
		STD	0020	-0122	3456	2782	0002852	0006	14434			0066	29.80	4735.6	
186		OBS	0029	-0122	3455	2782			14435	4990		0095	29.80	4735.9	
		STD	0030	-0122	3455	2782	0002925	0009	14435			0098	29.80	4735.9	
186		OBS	0048	-0122	3455	2782			14438	5010		0158	29.80	4736.9	
		STD	0050	-0122	3455	2782	0002917	0015	14439			0164	29.80	4737.2	
186		OBS	0072	-0120	3454	2781			14443	4760		0236	29.84	4738.5	
		STD	0075	-0121	3454	2781	0002986	0022	14443			0246	29.81	4738.5	
186		OBS	0096	-0123	3454	2781			14446	4800		0315	29.79	4739.5	
		STD	0100	-0122	3454	2781	0002965	0029	14447			0328	29.80	4739.8	
		STD	0125	-0119	3455	2781	0002927	0037	14452			0410	29.86	4741.5	
186		OBS	0143	-0118	3455	2781			14456	4140		0469	29.88	4742.8	
		STD	0150	-0118	3455	2781	0002890	0044	14457			0492	29.88	4743.1	
186		OBS	0191	-0122	3454	2781			14462	4860		0627	29.80	4741.7	
		STD	0200	-0128	3455	2782	0002833	0058	14461			0656	29.70	4741.4	
		STD	0250	-0156	3463	2789	0002098	0071	14457			0820	29.19	4743.1	
186		OBS	0287	-0171	3467	2793			14457	3990		0941	28.92	4743.1	
		STD	0300	-0173	3469	2795	0001556	0080	14458			0984	28.89	4743.4	
186		OBS	0383	-0190	3475	2800			14465	3700		1056	28.58	4745.7	
		STD	0400	-0194	3475	2800	0000971	0092	14466			1312	28.51	4746.0	
186		OBS	0407	-0196	3475	2800			14466	3910		1335	28.47	4746.0	

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER				
CTRY CODE	ID. NO.					10"	1"	MO		DAY	HR.			CRUISE NO.	STATION NUMBER	DIR.				HIGH	PER	SEA	TYPE
31	150	ED	7541 S	17659 E	570	56	02	28	220	1963	201	G09	0439	04	29			3	X1	6	2		0082

WATER		WIND		AIR TEMP. °C		
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	BARO- METER (mbs)	DRY BULB	WET BULB
22	27	516	810	-043	-050	7

NO. OBS. DEPTH	SPECIAL OBSERVATIONS	
	DIR.	AMT

MESSNGR TIME HR 1/10	CAS T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANGMALT-810?	± Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD
		STD	0000	-0085								0000	30.47		
		OBS	0000	-0085						5800		0000	30.47		
		STD	0010	-0088								0033	30.42		
		OBS	0010	-0088						4870		0033	30.42		
		STD	0020	-0087								0066	30.43		
		OBS	0020	-0087						4830		0066	30.43		
		STD	0030	-0088								0098	30.42		
		OBS	0030	-0088						5070		0098	30.42		
		STD	0050	-0086								0164	30.45		
		OBS	0050	-0086						4850		0164	30.45		
		STD	0075	-0081								0216	30.54		
		OBS	0075	-0081						4680		0216	30.54		
		STD	0100	-0069								0328	30.76		
		OBS	0100	-0069						3090		0328	30.76		
		STD	0125	-0095								0410	30.29		
		OBS	0149	-0108						3620		0410	30.29		
		STD	0150	-0108								0489	30.06		
		OBS	0199	-0100						3870		0492	30.20		
		STD	0200	-0100								0656	30.20		
		STD	0250	-0109								0820	30.04		
		OBS	0299	-0126						3950		0981	29.71		
		STD	0300	-0127								0984	29.71		
		OBS	0398	-0189						4000		1306	28.60		
		STD	0400	-0189								1312	28.60		
		OBS	0423	-0192						4030		1388	28.54		

REFERENCE		SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER				
CTRY CODE	ID. NO.					10"	1"	MO		DAY	HR.			CRUISE NO.	STATION NUMBER	DIR.				HIGH	PER	SEA	TYPE
31	150	ED	7540 S	17850 E	570	58	03	01	110	1963	201	H09	0521	05	10			3	X1	0	4		0083

WATER		WIND		AIR TEMP. °C		
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	BARO- METER (mbs)	DRY BULB	WET BULB
09	507	880	-037	-042	7	

NO. OBS. DEPTH	SPECIAL OBSERVATIONS	
	DIR.	AMT

MESSNGR TIME HR 1/10	CAS T NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANGMALT-810?	± Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD
		STD	0000	-0098	3455	2781	0003018	0000	14441			0000	30.24	4737.8	
		OBS	0000	-0098	3455	2781	0003182	0003	14441	3980	182	0000	30.24	4737.8	
		STD	0010	-0094	3453	2779			14445			0033	30.31	4739.2	
		OBS	0010	-0094	3453	2779			14445	5060	182	0033	30.31	4739.2	
		STD	0020	-0094	3452	2778	0003256	0006	14446			0066	30.31	4739.5	
		OBS	0020	-0094	3452	2778			14446	4610	209	0066	30.31	4739.5	
		STD	0030	-0094	3453	2779	0003176	0010	14448			0098	30.31	4740.1	
		OBS	0030	-0094	3453	2779			14448	4700	187	0098	30.31	4740.1	
		STD	0050	-0094	3451	2777	0003322	0016	14451			0164	30.31	4741.1	
		OBS	0050	-0094	3451	2777			14451	4850	182	0164	30.31	4741.1	
		STD	0075	-0085	3456	2781	0002967	0024	14460			0216	30.47	4744.1	
		OBS	0075	-0085	3456	2781			14460	4020	205	0216	30.47	4744.1	
		STD	0100	-0095	3456	2781	0002919	0031	14460			0328	30.29	4744.1	
		OBS	0100	-0095	3456	2781			14460	3430	237	0328	30.29	4744.1	
		STD	0125	-0103	3457	2782	0002842	0038	14460			0410	30.15	4744.1	
		OBS	0150	-0109	3457	2783	0002772	0045	14461			0492	30.04	4744.4	
		STD	0200	-0113	3459	2785	0002585	0059	14468			0492	30.04	4744.4	
		OBS	0200	-0113	3459	2785			14468	3300	232	0656	29.97	4746.7	
		STD	0250	-0128	3461	2787	0002354	0071	14470			0820	29.70	4747.4	
		OBS	0250	-0128	3461	2787			14470	3370	232	0820	29.70	4747.4	
		STD	0300	-0161	3465	2791	0001903	0082	14463			0981	29.10	4745.0	
		OBS	0300	-0161	3465	2791			14463	3340	223	0981	29.10	4745.0	
		STD	0400	-0185	3472	2797	0001232	0098	14469			1312	28.67	4747.0	
		OBS	0400	-0185	3472	2797			14469	4170	223	1312	28.67	4747.0	
		STD	0500	-0194	3477	2802	0000762	0107	14483			1640	28.51	4751.6	
		OBS	0500	-0194	3477	2802			14483	4000	232	1640	28.51	4751.6	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMP'L.	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER	
CRUISE NO.	ID. NO.					10'	10'	10'		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER				DIR.
31	150	ED	7538 S	17920 W	569	59	03	01	143	1963	201	109	0564	05	09	2	X1	0	7	0084

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS-P	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
07	512	870	-023	-031	7				

MESSING TIME & HR. 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°P	S. Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P (μg - 0.1%)	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft./Sec	CO <sub>2</sub> (μM)
143	STD	0000	-0056	3449	2774	0003639	0000	14460				0000	30.99	4744.1	
	OBS	0000	-0056	3449	2774			14460	477Q	191		0000	30.99	4744.1	
	STD	0010	-0058	3450	2775	0003552	0004	14461				0033	30.96	4744.4	
143	OBS	0010	-0058	3450	2775			14461		173		0033	30.96	4744.4	
	STD	0020	-0058	3449	2774	0003626	0007	14463				0066	30.96	4745.1	
143	OBS	0020	-0058	3449	2774			14463	453Q	182		0066	30.96	4745.1	
	STD	0030	-0063	3449	2775	0003603	0011	14462				0008	30.87	4744.7	
143	OBS	0030	-0063	3449	2775			14462	507Q	200		0098	30.87	4744.7	
	STD	0050	-0063	3449	2775	0003598	0018	14465				0164	30.87	4745.7	
143	OBS	0050	-0063	3449	2775			14465	499Q	178		0164	30.87	4745.7	
	STD	0075	-0059	3449	2774	0003608	0027	14471				0246	30.94	4747.7	
143	OBS	0075	-0059	3449	2774			14471	487Q	191		0246	30.94	4747.7	
	STD	0100	-0044	3454	2778	0003288	0036	14483				0328	31.21	4751.6	
143	OBS	0100	-0044	3454	2778			14483	298Q	205		0328	31.21	4751.6	
	STD	0125	-0080	3455	2780	0003087	0044	14470				0492	30.20	4745.7	
143	OBS	0125	-0080	3455	2780			14465		205		0492	30.20	4745.7	
	STD	0200	-0091	3457	2782	0002827	0066	14478				0656	30.36	4750.0	
143	OBS	0200	-0091	3457	2782			14478	333Q	200		0656	30.36	4750.0	
	STD	0250	-0077	3457	2781	0002912	0080	14493				0820	30.61	4754.9	
143	OBS	0250	-0077	3456	2781			14503				0584	30.70	4758.2	
	STD	0300	-0072	3456	2781	0002960	0095	14503				0984	30.70	4758.2	
143	OBS	0300	-0072	3451P	2776P				406Q	191		1312	30.36	4760.8	
	STD	0400	-0091	3455	2780	0002916	0124	14511				1312	30.36	4760.8	
143	OBS	0400	-0091	3455	2780			14524	304Q	200		1640	30.22	4765.1	
	STD	0500	-0099	3456	2782	0002769	0152	14524				1640	30.22	4765.1	
143	OBS	0500	-0099	3456	2782			14526	307Q	187		1604	30.22	4765.1	
143	OBS	0550	-0114	3457	2783			14526	324Q	223		1604	29.95	4765.7	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMP'L.	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER	
CRUISE NO.	ID. NO.					10'	10'	10'		MO	DAY			HR./10	CRUISE NO.	STATION NUMBER				DIR.
31	150	ED	7536 S	17725 W	569	57	03	01	177	1963	201	J09	0622	06	09	3	X7	4	8	0085

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS-P	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
14	07	S10	860	-013	-019	6			

MESSING TIME & HR. 1/10	CARD NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°P	S. Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P (μg - 0.1%)	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft./Sec	CO <sub>2</sub> (μM)
177	STD	0000	-0057	3449	2774	0003635	0000	14460				0000	30.97	4744.1	
	OBS	0000	-0057	3449	2774			14460	480Q			0000	30.97	4744.1	
	STD	0010	-0059	3453	2778	0003318	0003	14461				0033	30.94	4744.4	
177	OBS	0010	-0059	3453	2778			14461	459Q			0033	30.94	4744.4	
	STD	0020	-0059	3451	2776	0003469	0007	14462				0066	30.94	4744.7	
177	OBS	0020	-0059	3451	2776			14462	446Q			0066	30.94	4744.7	
	STD	0030	-0061	3451	2776	0003458	0010	14463				0098	30.90	4745.1	
177	OBS	0030	-0061	3451	2776			14463	469Q			0098	30.90	4745.1	
	OBS	0049	-0060	3451	2776			14467	461Q			0161	30.92	4746.4	
177	STD	0050	-0059	3451	2776	0003462	0017	14467				0164	30.94	4746.4	
177	OBS	0074	-0057	3451	2776			14472	535Q			0213	30.97	4748.0	
	STD	0075	-0058	3451	2776	0003437	0026	14472				0216	30.96	4748.0	
177	OBS	0098	-0073	3457	2781			14470	294Q			0322	30.69	4747.0	
	STD	0100	-0075	3457	2781	0002924	0034	14469				0328	30.65	4747.0	
	STD	0125	-0091	3457	2782	0002851	0041	14466				0410	30.36	4746.0	
177	OBS	0148	-0101	3457	2782			14465	319Q			0486	30.18	4745.7	
	STD	0150	-0101	3457	2782	0002803	0048	14472				0542	30.18	4745.7	
177	OBS	0197	-0104	3458	2783			14472	325Q			0616	30.13	4748.0	
	STD	0200	-0105	3458	2784	0002678	0062	14472				0656	30.11	4748.0	
177	OBS	0250	-0128	3461	2787	0002339	0074	14470				0820	29.70	4747.4	
177	STD	0295	-0148	3464	2790			14468	374Q			0968	29.34	4746.7	
	STD	0300	-0151	3464	2790	0001985	0085	14468				0984	29.28	4746.7	
177	OBS	0393	-0188	3471	2797			14467	355Q			1289	28.62	4746.4	
	STD	0400	-0188	3471	2797	0001267	0101	14468				1312	28.62	4746.7	
177	OBS	0491	-0191	3476	2801			14482	380Q			1611	28.56	4751.3	
	STD	0500	-0191	3477	2801	0000811	0112	14484				1640	28.56	4752.0	
177	OBS	0589	-0196	3481	2805			14497	396Q			1932	28.47	4756.2	

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	DEPTH METER	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
CTRY CODE	ID. NO.					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA				
31	150	ED	7532 S	17530 W		569	55	03	01	212	1963	201	K09	1006	09	09			2	X7	4	8	0086
		WATER		WIND		BARO-		AIR TEMP. °C		VEL		NO. OBS.		SPECIAL									
		COLOR CODE		DIR.		METER (mb)		DRY BULB		CODS		OBS. DEPTHS		OBSERVATIONS									
		20		34		506		840		-005		-008		6									

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-310?	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S. CODE
		STD	0000	-0065	3444	2771	0003985	0000	14455			0000	30.83	4742.4	
212		OBS	0000	-0065	3444	2771			14455	419Q		0000	30.83	4742.4	
		STD	0010	-0058	3443	2770	0004046	0004	14455			0033	30.78	4742.4	
212		OBS	0010	-0058	3443	2770			14455			0033	30.78	4742.4	
		STD	0020	-0066	3445	2771	0003899	0008	14458			0066	30.81	4743.4	
212		OBS	0020	-0066	3445	2771			14458	495Q		0066	30.81	4743.4	
		STD	0030	-0065	3444	2771	0003977	0012	14460			0098	30.83	4744.1	
212		OBS	0030	-0065	3444	2771			14460	503Q		0098	30.83	4744.1	
		STD	0049	-0066	3445	2771			14463	469Q		0161	30.81	4745.1	
212		OBS	0050	-0066	3445	2771	0003891	0020	14463			0161	30.81	4745.1	
		STD	0074	-0066	3444	2771			14467	492Q		0213	30.81	4746.4	
212		OBS	0075	-0066	3444	2771	0003960	0030	14467			0216	30.81	4746.4	
		STD	0098	-0066	3445	2771			14471	476Q		0322	30.81	4747.7	
212		OBS	0100	-0066	3445	2771	0003877	0039	14472			0328	30.81	4748.8	
		STD	0125	-0066	3445	2771	0003871	0049	14476			0410	30.81	4749.3	
212		OBS	0148	-0066	3445	2771			14479	469Q		0486	30.81	4750.3	
		STD	0150	-0066	3445	2771	0003858	0059	14480			0492	30.81	4750.6	
212		OBS	0197	-0059	3447	2773			14491	480Q		0616	30.54	4751.3	
		STD	0200	-0057	3447	2773	0003725	0078	14493			0626	30.97	4751.9	
212		OBS	0295	0003	3452	2774			14537	331Q		0988	32.05	4766.3	
		STD	0300	0005	3452	2774	0003646	0115	14538			0984	32.09	4769.7	
212		OBS	0393	0035	3458	2777			14568	296Q		1289	32.63	4779.5	
		STD	0400	0036	3459	2778	0003326	0149	14570			1312	32.65	4780.2	
212		OBS	T0491	0040	3463	2781			14588	288Q		1611	32.72	4786.4	
		STD	0500	0040	3463	2781	0003053	0181	14589			1610	32.72	4786.4	
212		OBS	0581	0037	3462	2780			14601	296Q		1906	32.67	4790.3	
		STD	0600	0028	3462	2780	0003067	0212	14600			1968	32.50	4790.0	
217		OBS	0658	0007	3461	2781			14600	331Q		2159	32.13	4790.0	
		STD	0700	0000	3463	2783	0002784	0241	14604			2297	32.00	4791.3	
217		OBS	0751	-0008	3464	2784			14609	307Q		2464	31.86	4793.0	
		STD	0800	-0015	3462	2783	0002717	0269	14614			2625	31.73	4794.6	
217		OBS	0845	-0022	3461	2782			14618	335Q		2772	31.60	4795.9	
		STD	0900	-0123	3464	2789	0001894	0292	14581			2953	29.79	4793.8	
217		OBS	T0915	-0137	3465	2790			14577	392Q		3002	29.53	4782.5	
217		OBS	T0939	-0148	3467	2792			14577	380Q		3081	29.34	4782.5	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	WIND DIRECTION	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'LS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER			
						10'	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	D.R.				HGT	PER	SEA
31	150	ED	76015 S	17522 W		569	65	03	02	010	1963	201	K10	0606	06	36		2	X7	4	8		0087

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		V.S. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (10')	DIR.	VELO OR FORCE		DRY BULB	WET BULB			
	18	36	510	830	-010	-015	6		

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P 10 <sup>-3</sup> atm	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	S CODE
010		STD	0000	-0054	3450	2775	0003571	0000	14661			0000	31.03	4744.4	
		OBS	0000	-0054	3450	2775			14661	493Q	214	0000	31.03	4744.4	
		STD	0010	-0054	3450	2775	0003568	0004	14663			0033	31.03	4745.1	
010		OBS	0010	-0054	3450	2775			14663	503Q	205	0033	31.03	4745.1	
		STD	0020	-0056	3451	2776	0003481	0007	14664			0056	30.99	4745.4	
010		OBS	0020	-0056	3451	2776			14664	502Q	218	0056	30.99	4745.4	
		STD	0030	-0057	3452	2777	0003398	0011	14665			0098	30.97	4745.7	
010		OBS	0030	-0057	3452	2777			14665	540Q	196	0098	30.97	4745.7	
		STD	0049	-0055	3450	2775			14669	468Q	187	0161	31.01	4747.0	
010		OBS	0050	-0055	3450	2775	0003555	0017	14669			0164	31.01	4747.0	
		STD	0074	-0055	3450	2775			14673	516Q	187	0213	31.01	4748.3	
010		OBS	0075	-0055	3450	2775	0003549	0026	14673			0216	31.01	4748.3	
		STD	0098	-0054	3450	2775			14677	496Q		0322	31.03	4749.7	
010		OBS	0100	-0054	3450	2775	0003550	0035	14678			0328	31.03	4750.0	
		STD	0125	-0049	3450	2775	0003565	0044	14684			0110	31.12	4752.0	
010		OBS	0148	-0045	3450	2775			14690	504Q	191	0486	31.19	4753.9	
		STD	0150	-0044	3451	2775	0003507	0053	14691			0492	31.21	4754.3	
010		OBS	0197	-0020	3460	2781			14511	328Q	218	0646	31.64	4760.8	
		STD	0200	-0020	3460	2781	0002925	0069	14511			0656	31.64	4760.8	
010		OBS	0250	-0021	3462	2783	0002757	0083	14527			0820	31.62	4763.8	
		STD	0295	-0021	3464	2785			14527	355Q	232	0968	31.62	4766.1	
010		OBS	0300	-0026	3464	2785	0002585	0097	14527			1289	30.64	4758.2	
		STD	0393	-0109	3464	2788			14503	335Q	228	1312	29.95	4757.9	
010		OBS	0491	-0168	3471	2796	0002088	0120	14502			1611	28.98	4754.9	
		STD	0500	-0172					14493	411Q	214	1610	28.90	4754.9	
010		OBS	0589	-0195								1932	28.49		

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	WIND DIRECTION	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'LS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER			
						10'	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	D.R.				HGT	PER	SEA
31	150	ED	7632 S	17515 W		569	65	03	02	048	1963	201	K11	0585	06	13		3	X7	7	8		0088

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		V.S. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (10')	DIR.	VELO OR FORCE		DRY BULB	WET BULB			
	11	05	510	820	-010	-015	5		

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P 10 <sup>-3</sup> atm	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	S CODE
048		STD	0000	-0069	3448	2774	0003663	0000	14654			0000	30.76	4742.1	
		OBS	0000	-0069	3448	2774			14654	474Q	205	0000	30.76	4742.1	
		STD	0010	-0069	3448	2774	0003660	0004	14656			0033	30.76	4742.8	
048		OBS	0010	-0069	3448	2774			14656	478Q	205	0033	30.76	4742.8	
		STD	0020	-0067	3449	2775	0003589	0007	14658			0066	30.79	4743.4	
048		OBS	0020	-0067	3449	2775			14658	490Q	187	0066	30.79	4743.4	
		STD	0030	-0070	3450	2776	0003498	0011	14659			0098	30.74	4743.8	
048		OBS	0030	-0070	3450	2776			14659	520Q	205	0098	30.74	4743.8	
		STD	0049	-0068	3448	2774			14663			0161	30.78	4745.1	
048		OBS	0050	-0068	3448	2774	0003654	0018	14663			0164	30.78	4745.1	
		STD	0074	-0066	3448	2774			14667	533Q	191	0213	30.61	4746.7	
048		OBS	0075	-0067	3448	2774	0003651	0027	14667			0216	30.79	4746.4	
		STD	0098	-0074	3449	2775			14668	526Q	191	0322	30.67	4746.7	
048		OBS	0098	-0074	3449	2775			14668			0328	30.72	4747.4	
		STD	0100	-0071	3450	2776	0003475	0036	14670			0110	31.30	4753.9	
048		OBS	0100	-0071	3450	2776	0003002	0044	14690			0110	31.30	4753.9	
		STD	0125	-0039	3463	2784			14502	331Q	223	0186	31.59	4757.9	
048		OBS	0148	-0023	3463	2784	0002695	0051	14502			0192	31.59	4757.9	
		STD	0150	-0023	3463	2784			14507	337Q	214	0646	31.49	4759.5	
048		OBS	0197	-0029	3463	2784	0002638	0065	14506			0820	30.36	4752.9	
		STD	0200	-0033	3463	2784	0002354	0077	14487			0968	29.66	4749.7	
048		OBS	0295	-0130	3463	2788			14677	405Q	214	0984	29.65	4749.3	
		STD	0300	-0133	3463	2789	0002138	0088	14676			1289	28.85	4748.0	
048		OBS	0393	-0175	3468	2794			14472	448Q	223	1312	28.81	4748.3	
		STD	0400	-0177	3469	2795	0001489	0106	14473			1611	28.51	4751.3	
048		OBS	0491	-0192	3478	2802			14482	432Q	223	1610	28.53	4751.6	
		STD	0500	-0193	3479	2803	0000614	0117	14483			1870	28.42	4754.9	
048		OBS	0570	-0199	3483	2807			14493	462Q	232				

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10°	1°	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.			
31	150	ED	774955	16631 E	571	76	03	05	057	1963	201	201	0415	04	00	0	X1	6 7	0089
				WATER		WIND		BARO- METER		AIR TEMP., °C		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS					
				COLOR CODE		TRANS (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIS. CODE			
				11		S07		870		-139		-140		6					

MESSNGR TIME & HR. /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD
057	OBS	0000	0000	-0186	3422	2757	0005295	0000	14395			0000	28.65	4722.8	
057	OBS	0000	0000	-0186	3422	2757			14395	5750	196	0000	28.65	4722.8	
057	OBS	0005	0005	-0187	3422	2757			14396	5520	278	0016	28.63	4723.1	
057	OBS	0010	0010	-0190	3421	2756	0005356	0005	14395			0033	28.58	4722.8	
057	OBS	0010	0010	-0190	3421	2756			14395	5570	218	0033	28.58	4722.8	
057	OBS	0015	0015	-0191	3420	2755			14395	5400	241	0049	28.56	4722.8	
057	OBS	0020	0020	-0188	3421	2756	0005354	0011	14398			0066	28.62	4723.7	
057	OBS	0020	0020	-0188	3421	2756			14398	5580	223	0066	28.62	4723.7	
057	OBS	0030	0030	-0184	3421	2756	0005357	0016	14401			0098	28.69	4724.7	
057	OBS	0030	0030	-0184	3421	2756			14401	6010	232	0098	28.69	4724.7	
057	OBS	0050	0050	-0172	3428	2761	0004837	0026	14411			0164	28.90	4728.0	
057	OBS	0050	0050	-0172	3428	2761			14411	5380	232	0164	28.90	4728.0	
057	OBS	0075	0075	-0162	3439	2770	0004006	0037	14422			0216	29.06	4731.6	
057	OBS	0075	0075	-0162	3439	2770			14422	5910	241	0216	29.06	4731.6	
057	OBS	0100	0100	-0154	3445	2775	0003556	0047	14430			0328	29.23	4734.2	
057	OBS	0100	0100	-0154	3445	2775			14430	5010	273	0328	29.23	4734.2	
057	OBS	0125	0125	-0150	3449	2778	0003250	0055	14437			0410	29.30	4736.5	
057	OBS	0150	0150	-0148	3454	2782	0002862	0063	14443			0492	29.34	4738.5	
057	OBS	0200	0200	-0148	3454	2782			14443	5370	305	0492	29.34	4738.5	
057	OBS	0200	0200	-0153	3464	2790	0002056	0075	14450			0656	29.25	4740.8	
057	OBS	0200	0200	-0153	3464	2790			14450	4390	255	0656	29.25	4740.8	
057	OBS	0250	0250	-0173	3467	2793	0001735	0085	14449			0820	28.89	4740.5	
057	OBS	0250	0250	-0173	3467	2793			14449	4410	278	0820	28.89	4740.5	
057	OBS	0300	0300	-0189	3477	2801	0000892	0091	14452			0984	28.60	4741.5	
057	OBS	0300	0300	-0189	3477	2801			14452	4510	228	0984	28.60	4741.5	
057	OBS	0400	0400	-0193	3482	2806	0000441	0098	14467			1312	28.53	4746.4	
057	OBS	0400	0400	-0193	3482	2806			14467	4360	246	1312	28.53	4746.4	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10°	1°	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.			
31	150	ED	7728 S	16403 E	571	74	03	05	110	1963	201	205	0228	02	00	0	X7	3 7	0090
				WATER		WIND		BARO- METER		AIR TEMP., °C		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS					
				COLOR CODE		TRANS (m)		DIR.		SPEED OR FORCE		DRY BULB		WET BULB		VIS. CODE			
				14		S20		890		-108		-111		6					

MESSNGR TIME & HR. /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - dl/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD
110	OBS	0000	0000	-0185	3439	2770	0003991	0000	14398			0000	28.67	4723.7	
110	OBS	0000	0000	-0185	3439	2770			14398	5390	191	0000	28.67	4723.7	
110	OBS	0005	0005	-0185	3441	2772			14399	5410	200	0016	28.67	4724.1	
110	OBS	0010	0010	-0185	3439	2770	0003985	0004	14400			0033	28.67	4724.4	
110	OBS	0010	0010	-0185	3439	2770			14400	5380	196	0033	28.67	4724.4	
110	OBS	0015	0015	-0188	3438	2770			14399	5480	196	0049	28.62	4724.1	
110	OBS	0020	0020	-0185	3438	2770	0004055	0008	14401			0066	28.67	4724.7	
110	OBS	0020	0020	-0185	3438	2770			14401	5660	178	0066	28.67	4724.7	
110	OBS	0030	0030	-0185	3437	2769	0004126	0012	14403			0098	28.67	4725.4	
110	OBS	0030	0030	-0185	3437	2769			14403	5500	182	0098	28.67	4725.4	
110	OBS	0050	0050	-0186	3437	2769	0004111	0020	14406			0164	28.65	4726.4	
110	OBS	0050	0050	-0186	3437	2769			14406	5400	200	0164	28.65	4726.4	
110	OBS	0075	0075	-0185	3437	2769	0004098	0031	14410			0216	28.67	4727.7	
110	OBS	0075	0075	-0185	3437	2769			14410	5510	187	0216	28.67	4727.7	
110	OBS	0100	0100	-0179	3438	2770	0004021	0041	14418			0328	28.78	4730.3	
110	OBS	0100	0100	-0179	3438	2770			14418	5450	155	0328	28.78	4730.3	
110	OBS	0125	0125	-0168	3443	2773	0003655	0050	14428			0410	28.98	4733.6	
110	OBS	0125	0125	-0168	3443	2773			14428			0492	29.10	4736.2	
110	OBS	0150	0150	-0161	3447	2776	0003356	0059	14436			0492	29.10	4736.2	
110	OBS	0150	0150	-0161	3447	2776			14436	5370	200	0492	29.10	4736.2	
110	OBS	0200	0200	-0162	3453	2781	0002867	0075	14444			0656	29.08	4738.9	
110	OBS	0200	0200	-0162	3453	2781			14444	5300	196	0656	29.08	4738.9	
110	OBS	0220	0220	-0170	3457	2785			14444	5470	214	0722	28.94	4738.9	

REFERENCE CTRY ID. NO.	SHIP CODE	LATITUDE ° ' / 10	LONGITUDE ° ' 10	MARSDEN SQUARE 10'	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL.	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TPT AMT	NODC STATION NUMBER	
					10'	MO	DAY		HR	CRUISE NO.			STATION NUMBER	DIR	HGT				PER
31	150	ED	7733 S	16441 E	571	74	03	05	121	1963	201	204	0247	02			X7	4 8	0091

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS DIR.	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		11	524	910	-107	-109	5		

MESSING TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. V. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY M/SEC
	121	OBS	0000	-0176	34.44	2774	0003628	0000	14403			0000	28.83	4725.4
	121	OBS	0000	-0176	34.44	2774			14403	5100	150	0000	28.83	4725.4
	121	OBS	0005	-0176	34.44	2774			14404	5150	136	0016	28.83	4725.7
	121	OBS	0009	-0178	34.39	2770			14403	5360	155	0030	28.80	4725.4
		STD	0010	-0177	34.37	2769		0004157	0004	14403		0033	28.81	4725.4
	121	OBS	0014	-0175	34.33	2765			14405	5130	159	0046	28.85	4726.0
	121	OBS	0019	-0175	34.41	2772			14406	6350	155	0062	28.85	4726.4
		STD	0020	-0174	34.41	2772	0003836	0008	14407			0065	28.87	4726.7
	121	OBS	0028	-0171	34.43	2773			14410	5810	146	0092	28.92	4727.7
		STD	0030	-0171	34.43	2773	0003692	0012	14410			0098	28.92	4727.7
	121	OBS	0047	-0173	34.44	2774			14412	5900	141	0154	28.89	4728.3
		STD	0050	-0173	34.44	2774	0003614	0019	14413			0164	28.89	4728.7
	121	OBS	0071	-0173	34.43	2773			14416	5950	132	0233	28.89	4729.6
		STD	0075	-0166	34.46	2776	0003458	0028	14421			0246	29.01	4731.3
	121	OBS	0094	-0144	34.56	2783			14436	5150	173	0308	29.41	4736.2
		STD	0100	-0148	34.57	2784	0002656	0035	14435			0328	29.34	4735.9
		STD	0125	-0160	34.60	2787	0002377	0042	14434			0410	29.12	4735.6
	121	OBS	0141	-0166	34.62	2789			14434	4340	200	0469	29.01	4735.6
		STD	0150	-0167	34.63	2789	0002113	0047	14435			0492	28.99	4735.9
	121	OBS	0188	-0172	34.65	2791			14439	4180	191	0517	28.90	4737.2
		STD	0200	-0174								0556	28.87	
	121	OBS	0226	-0177	34.44P	2774P				6160	136	0742	28.81	

REFERENCE CTRY ID. NO.	SHIP CODE	LATITUDE ° ' / 10	LONGITUDE ° ' 10	MARSDEN SQUARE 10'	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL.	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TPT AMT	NODC STATION NUMBER	
					10'	MO	DAY		HR	CRUISE NO.			STATION NUMBER	DIR	HGT				PER
31	150	ED	77434S	16555 E	571	75	03	05	158	1963	201	202	0543	05	14		X7	4 8	0092

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS DIR.	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		14	533	920	-118	-122	5		

MESSING TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. V. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY M/SEC
	158	OBS	0000	-0177	34.48	2778	0003318	0000	14403			0000	28.81	4725.4
	158	OBS	0000	-0177	34.48	2778			14403	4600	155	0000	28.81	4725.4
	158	OBS	0005	-0175	34.76	28000				5590	141	0016	28.85	
		STD	0010	-0171	34.45	2775	0003558	0003	14407			0033	28.92	4726.7
	158	OBS	0010	-0171	34.45	2775			14407	4820	114	0033	28.92	4726.7
	158	OBS	0014	-0169	34.46	2776			14409	5250	150	0046	28.95	4727.3
	158	OBS	0019	-0167	34.45	2775			14411	5750	146	0062	28.99	4728.0
		STD	0020	-0166	34.45	2775	0003950	0007	14412			0066	29.01	4728.3
	158	OBS	0028	-0162	34.47	2776			14415	5350	141	0092	29.08	4729.3
		STD	0030	-0163	34.47	2777	0003399	0010	14415			0098	29.07	4729.3
	158	OBS	0047	-0166	34.49	2778			14417	5490	055	0154	29.01	4730.0
		STD	0050	-0165	34.49	2778	0003237	0017	14418			0164	29.03	4730.3
	158	OBS	0071	-0157	34.50	2779			14425	4880	091	0233	29.17	4732.6
		STD	0075	-0147	34.51	2779	0003131	0025	14430			0246	29.35	4734.2
	158	OBS	0094	-0115	34.56	2782			14449	4550	073	0308	29.93	4740.5
		STD	0100	-0116	34.57	2783	0002764	0032	14450			0328	29.91	4740.8
		STD	0125	-0124	34.61	2787	0002420	0039	14451			0410	29.77	4741.1
	158	OBS	0141	-0132	34.63	2788			14450	5370	073	0463	29.62	4740.8
		STD	0150	-0140	34.64	2789	0002124	0045	14448			0492	29.48	4740.1
	158	OBS	0188	-0168	34.67	2793			14442	4130	041	0617	28.98	4738.2
		STD	0200	-0172	34.68	2794	0001689	0054	14442			0656	28.90	4738.2
		STD	0250	-0184	34.74	2799	0001165	0061	14445			0820	28.69	4739.2
	158	OBS	0282	-0189	34.77	2801			14449	3840	005	0925	28.60	4740.5
		STD	0300	-0191	34.79	2803	0000733	0066	14451			0984	28.56	4741.1
	158	OBS	0376	-0194	34.84	2807			14463	4300	187	1234	28.51	4745.1
		STD	0400	-0193	34.85	2808	0000212	0071	14467			1312	28.53	4746.4
	158	OBS	0470	-0191	34.87	2810			14480	4260	032	1542	28.56	4750.6
	158	OBS	0483	-0189	34.87	2810			14484	4250	168	1585	28.60	4752.0
		STD	0500	-0191	34.86	2809	0000089	0072	14485			1640	28.56	4752.3
	158	OBS	0507	-0194	34.86	2809			14485	4270	105	1663	28.51	4752.3

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MAGNETIC INDICATOR	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TPT/AMT	NODC STATION NUMBER
							10° ' "	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR	HGT/FT			
31	150	ED	7738 S	16518 E		571 75	03	06	094	1963	201	203	0485	05	14		2	X7	6 18	0093

WATER		WIND		BARO- METER	AIR TEMP., °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRAN- SP.	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		14	S17	960	-111	-112	5		

MESSNGR TIME HR. /10	CAST NO.	CARD TYPE	DEPTH (M)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S & D DYN. $\mu$ - $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO- $\sigma_{\theta}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/6000	CODE
		STD	0000	-0191	3448	2778	0003286	0000	14397			0000	28.58	4723.4	
094		OBS	0000	-0191	3448	2778			14397	5090	141	0000	28.58	4723.4	
094		OBS	0005	-0192	3448	2778			14397	4950	136	0016	28.56	4723.4	
		STD	0010	-0193	3447	2777	0003352	0003	14397			0033	28.53	4723.4	
094		OBS	0010	-0193	3447	2777			14397	5180	132	0033	28.53	4723.4	
094		OBS	0014	-0191	3446	2776			14399	4910	132	0016	28.56	4724.1	
094		OBS	0019	-0191	3418P	2754P				5000	127	0062	28.56		
		STD	0020	-0191	3446	2776	0003427	0007	14400			0066	28.56	4724.4	
		OBS	0028	-0191	3446	2776			14401	4950	132	0092	28.56	4724.7	
		STD	0030	-0191	3446	2776	0003421	0010	14402			0098	28.56	4725.1	
094		OBS	0047	-0189	3446	2776			14405	5350	132	0154	28.60	4726.0	
		STD	0050	-0188	3446	2777	0003385	0017	14406			0164	28.62	4726.4	
094		OBS	0071	-0179	3449	2778			14414	4980	146	0233	28.78	4729.0	
		STD	0075	-0172	3451	2780	0003058	0025	14419			0246	28.90	4730.6	
094		OBS	0094	-0152	3460	2787			14432	4390	182	0308	29.26	4734.9	
		STD	0100	-0157	3463	2789	0002169	0032	14432			0328	29.17	4734.9	
		STD	0125	-0174	3471	2796	0001493	0036	14429			0410	28.87	4733.9	
094		OBS	0141	-0181	3475	2800			14429	4160	205	0463	28.74	4733.9	
		STD	0150	-0183	3476	2800	0001070	0039	14429			0492	28.71	4733.9	
094		OBS	0188	-0188	3479	2803			14434	3990	209	0617	28.62	4735.6	
		STD	0200	-0188	3480	2804	0000722	0044	14436			0656	28.62	4736.2	
094		OBS	0235	-0190	3482	2806			14441	3900	214	0771	28.58	4737.8	
		STD	0250	-0192	3482	2806	0000529	0047	14443			0820	28.54	4738.5	
094		OBS	0282	-0194	3482	2806			14447	4210	209	0925	28.51	4739.8	
		STD	0300	-0194	3482	2806	0000465	0049	14450			0984	28.51	4740.5	
094		OBS	0376	-0192	3484	2807			14464	3720	200	1254	28.54	4745.4	
		STD	0400	-0191	3484	2807	0000273	0053	14468			1312	28.56	4746.7	
094		OBS	0461	-0190	3485	2808			14479	200		1512	28.58	4750.3	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DATE	WASDEN SQUARE			STATION TIME		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					'	'	10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.	HIGH		PER	SEA	
31	150	ED	76375S	17040 E	570	60	03	06	192	1963	201	209	0732	07	00				X2	4	8		0094

WATER		WIND		AIR TEMP. °C			NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BAROMETER (mb)	DRY BULB	WET BULB		
	18	11	S18	900	-067	-069	7	

MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	$\Sigma \Delta \rho$ DYN. (x 10 <sup>3</sup> )	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{lit}^{-1}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/Sec
		STD	0000		3454							0000		
192		OBS	0000		3454							0000		
192		OBS	0005	-0185	3454	2783			14401	4610	155	0016	28.67	4724.7
		STD	0010	-0188	3453	2782	0002902		14401			0033	28.62	4724.7
192		OBS	0010	-0188	3453	2782			14401	4640	141	0033	28.62	4724.7
192		OBS	0014	-0190	3452	2781			14400	5250	155	0046	28.58	4724.3
192		OBS	0019	-0186	3452	2781			14403	4630	164	0062	28.65	4725.4
		STD	0020	-0186	3452	2781	0002978		14403			0066	28.65	4725.4
192		OBS	0028	-0183	3452	2781			14406	4810	150	0092	28.71	4726.4
		STD	0030	-0183	3452	2781	0002964		14406			0098	28.71	4726.4
192		OBS	0047	-0185	3454	2783			14408	4670	018	0154	28.67	4727.0
		STD	0050	-0185	3454	2783	0002801		14409			0164	28.67	4727.3
192		OBS	0071	-0185	3455	2783			14412	5560	064	0233	28.67	4728.3
		STD	0075	-0185	3455	2784	0002702		14413			0246	28.67	4728.7
192		OBS	0094	-0184	3456	2784			14417	4940	041	0308	28.69	4730.0
		STD	0100	-0183	3457	2785	0002554		14418			0328	28.71	4730.3
		STD	0125	-0182	3461	2788	0002236		14424			0410	28.72	4732.3
192		OBS	0141	-0181	3463	2790			14427	4760	155	0463	28.74	4733.3
		STD	0150	-0181	3465	2791	0001918		14429			0492	28.74	4733.9
192		OBS	0188	-0182	3470	2796			14435	4190	187	0617	28.72	4735.9
		STD	0200	-0185	3470	2796	0001488		14436			0656	28.67	4736.2
		STD	0250	-0194	3471	2796	0001387		14440			0820	28.51	4737.5
192		OBS	0282	-0197	3471	2797			14444	4340	064	0925	28.45	4738.8
		STD	0300	-0197	3472	2798	0001250		14447			0984	28.45	4739.8
192		OBS	0376	-0196	3476	2801			14461	4180	173	1234	28.47	4741.4
		STD	0400	-0196	3477	2802	0000814		14465			1312	28.47	4741.7
192		OBS	0470	-0194	3480	2804			14478	4230	178	1542	28.51	4750.0
		STD	0500	-0191	3481	2805	0000469		14485			1640	28.56	4752.3
192		OBS	0564	-0189	3484	2807			14497	4160	077	1850	28.60	4756.2
		STD	0600	-0191	3485	2808	0000103		14502			1958	28.56	4757.8
192		OBS	0658	-0194	3487	2810			14510	3830	205	2159	28.51	4760.5
192		OBS	0682	-0191	3489	2811			14516	3470	200	2238	28.56	4762.4

REFERENCE CITY ID, NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS INDICATOR	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	WAVE OBSERVATIONS	WAVE PERIOD	WEA- THER CODE	CLOUD CODES (%)(K)	NODC STATION NUMBER	
					10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER							
31	150	ED	7632 S	16850 E	571	68	03	06	219	1963	201	208	0795	08	00	0	X2	4 8	0095

WATER		WIND		BARO- METER (mmHg)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRAN- SPAR- ENCY	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
14	09	S07	900	900	-048	-056	6		

MESSNGR TIME HR /10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT=35°	S & D DYN. M- X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - 0.1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S
219		STD	0000	-0166	3440	2771	0003960	0000	14407			0000	29.01	4726.7	
		OBS	0000	-0166	3440	2771			14407	4720	178	0000	29.01	4726.7	
219		OBS	0005	-0168	3440	2771			14407	5200	237	0016	28.98	4726.7	
		STD	0010	-0167	3440	2771	0003952	0004	14409			0033	28.99	4727.3	
219		OBS	0010	-0167	3440	2771			14409	4770	150	0033	28.99	4727.3	
219		OBS	0015	-0165	3441	2772			14411	4690	168	0049	29.03	4728.0	
		STD	0020	-0161	3441	2771	0003885	0008	14413			0066	29.10	4728.7	
219		OBS	0020	-0161	3441	2771			14413	5090	191	0066	29.10	4728.7	
		STD	0030	-0155	3443	2773	0003743	0012	14418			0058	29.21	4730.3	
219		OBS	0030	-0155						5130	164	0098	29.21	4730.3	
		STD	0050	-0168	3446	2776	0003466	0019	14416			0164	28.98	4729.6	
219		OBS	0050	-0168	3446	2776			14416	4760	123	0164	28.98	4729.6	
		STD	0075	-0141	3451	2779	0003150	0027	14433			02L6	29.16	4735.2	
219		OBS	0075	-0141	3451	2779			14433	4670	182	02L6	29.16	4735.2	
		STD	0100	-0110	3461	2786	0002481	0034	14453			0328	30.02	4711.8	
219		OBS	0100	-0110	3461	2786			14453	3340	214	0328	30.02	4711.8	
		STD	0125	-0136	3462	2788	0002302	0040	14445			0410	29.55	4739.2	
		STD	0150	-0157	3463	2789	0002144	0046	14440			0492	29.17	4737.5	
219		OBS	0150	-0157	3463	2789			14440	4090	200	0492	29.17	4737.5	
		STD	0200	-0184	3472	2797	0001346	0054	14437			0656	28.69	4736.5	
219		OBS	0200	-0184	3472	2797			14437	4220	205	0656	28.69	4736.5	
		STD	0250	-0189	3474	2799	0001150	0061	14449			0820	28.60	4738.5	
224		OBS	0299	-0193	3476	2801			14449	4340	205	0981	28.53	4740.5	
		STD	0300	-0193	3476	2801	0000956	0066	14450			0904	28.53	4740.8	
224		OBS	0389	-0195	3479	2803			14464	4510	182	1332	28.49	4745.4	
		STD	0400	-0195	3479	2803	0000649	0074	14466			1332	28.49	4746.0	
224		OBS	0487	-0192	3481	2805			14482	4180	187	1598	28.54	4751.3	
		STD	0500	-0192	3482	2806	0000389	0079	14484			1640	28.54	4751.9	
224		OBS	0584	-0192	3484	2807			14499	4410	168	1588	28.54	4756.9	
		STD	0600	-0192	3484	2807	0000183	0082	14501			1968	28.54	4757.5	
224		OBS	0682	-0191	3484	2807			14516	4330	200	2238	28.56	4762.5	
		STD	0700	-0192	3485	2808	0000051	0083	14518			2297	28.54	4763.1	
224		OBS	0730	-0194	3487	2810			14523	4510	218	2395	28.51	4764.7	
224		OBS	0755	-0181	3488	2810			14533	4300	196	2477	28.74	4768.0	

REF ID	SHIP	LATITUDE	LONGITUDE	MARS DEN	STATION TIME				YEAR	ORIGINATOR'S		DEPTH	MAX. DEPTH	WAVE			WEA-	CLOUD	NODC	
					10'	1'	M.O.	DAY		HR.	1/10			CRUISE	STATION	TO				OF
31	150	ED	7601 S	16709 E	571	67	03	07	022	1963	201	207	0714	06	00	0	X1	2	5	0096

WATER		WIND		BARO-	AIR TEMP. °C		VIS.	NO. OBS.	SPECIAL
COLOR	TRANS.	DIR.	SPEED		DRY	WET			
CODE	(%)		(KTS)	METER	BULB	BULB	CODE		
			06	508	-042	-047	7		

MEASUR	CAS	CARD	DEPTH	T	S	SIGMA-T	SPECIFIC VOLUME	S D D	SOUND	O <sub>2</sub>	PO <sub>2</sub> -P	DEPTH	TEMP	SOUND	VELOCITY	VELOCITY
TIME	NO.	TYPE	(m)	(°C)	(‰)		(ANOMALY-10 <sup>3</sup> )	(DYN. M. X 10 <sup>3</sup> )	VELOCITY	(ml/l)	(μg-at/l)	(Ft)	(°F)	(Ft)	(°F)	(FT/SEC)
HR	1/10															
		STD	0000	-0183	3428	2762	0004841	0000	14398			0000	28.71	4723.7		
022		OBS	0000	-0183	3428	2762			14398	557Q	141	0000	28.71	4723.7		
022		OBS	0005	-0183	3428	2762			14399	554Q	141	0016	28.71	4721.1		
		STD	0010	-0185	3429	2762	0004753	0005	14399			0033	28.67	4721.1		
022		OBS	0010	-0185	3429	2762			14399	559Q	132	0033	28.67	4721.1		
022		OBS	0015	-0187	3430	2763			14399	572Q	146	0019	28.63	4721.1		
		STD	0020	-0181	3431	2764	0004602	0009	14402			0066	28.74	4725.1		
022		OBS	0020	-0181	3431	2764			14402	504Q	136	0066	28.74	4725.1		
		STD	0030	-0171	3438	2769	0004084	0014	14410			0098	28.92	4727.7		
022		OBS	0030	-0171	3438	2769			14410	508Q	159	0098	28.92	4727.7		
		STD	0050	-0124	3458	2784	0002680	0021	14438			0164	29.77	4736.9		
022		OBS	0050	-0124	3458	2784			14438	401Q	205	0164	29.77	4736.9		
		STD	0075	-0149	3462	2788	0002282	0027	14431			0216	29.32	4731.6		
022		OBS	0075	-0149	3462	2788			14431	426Q	223	0216	29.32	4731.6		
		STD	0100	-0176	3466	2792	0001884	0032	14423			0328	28.83	4731.9		
022		OBS	0100	-0176	3466	2792			14423	398Q	218	0328	28.83	4731.9		
		STD	0125	-0183	3469	2795	0001620	0036	14424			0492	28.62	4732.9		
022		OBS	0150	-0188	3472	2797	0001363	0040	14426			0656	28.56	4735.6		
		STD	0200	-0191	3476	2801	0001019	0046	14434			0820	28.54	4738.2		
022		OBS	0200	-0191	3476	2801			14434	420Q	223	0820	28.54	4738.2		
		STD	0250	-0192	3477	2801	0000911	0051	14442			0968	28.53	4740.5		
022		OBS	0250	-0192	3477	2801			14442	406Q	178	0968	28.53	4740.5		
025		OBS	0295	-0193	3478	2802			14449	396Q	182	0968	28.53	4740.5		
		STD	0300	-0193	3479	2803	0000727	0055	14450			1269	28.58	4746.8		
025		OBS	0393	-0190	3487	2810			14468	449Q	187	1269	28.58	4746.8		
		STD	0400	-0190	3487	2810	0000071	0059	14469			1312	28.58	4747.0		
025		OBS	0491	-0191	3485	2808			14484	475Q	191	1611	28.56	4752.0		
		STD	0500		3486							1640				
025		OBS	0589		3492							1932				

REFERENCE		SHIP CODE	LATITUDE °	LONGITUDE °	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS	WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER			
CRUISE CODE	ID. NO.					10'	11'	MO		DAY	HR.							CRUISE NO.	STATION NUMBER	
31	150	ED	7556 S	16514 E	571	55	03	07	051	1963	201	206	0814	07	00	0	X1	4	6	0097

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEFIN'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		12	21	S16	850	-093	-095	7	

MESSAGING TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT- $\sigma_{\theta}$	$\Delta \rho$ D.W. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY M/SEC
	051	STD	0000	-0181	3442	2773	0003770	0000	14401			0000	28.74	4724.7
		OBS	0000	-0181	3442	2773			14401	5050	196	0000	28.74	4724.7
	051	OBS	0005	-0179	3426	2760			14400	5040	173	0016	28.80	4724.4
		STD	0010	-0178	3450	2779	0003157	0003	14405			0033	28.80	4725.0
	051	OBS	0010	-0178	3450	2779			14405	4830	196	0033	28.80	4725.0
	051	OBS	0015	-0175	3442	2773			14406	4690	259	0049	28.85	4725.4
		STD	0020	-0170	3444	2774	0003631	0007	14409			0066	28.94	4727.3
	051	OBS	0020	-0170	3444	2774			14409	4650	205	0066	28.94	4727.3
		STD	0030	-0161	3457	2784	0002653	0010	14417			0098	29.10	4730.0
	051	OBS	0030	-0161	3457	2784			14417	4260	214	0098	29.10	4730.0
		STD	0050	-0179	3468	2794	0001750	0014	14414			0164	28.78	4729.0
	051	OBS	0050	-0179	3468	2794			14414	4600	209	0164	28.78	4729.0
		STD	0075	-0190	3474	2799	0001247	0018	14413			0246	28.58	4728.7
	051	OBS	0075	-0190	3474	2799			14413	4400	209	0246	28.58	4728.7
		STD	0100	-0190	3477	2801	0001003	0021	14418			0328	28.58	4730.3
	051	OBS	0100	-0190	3477	2801			14418	4430	205	0328	28.58	4730.3
		STD	0125	-0189	3479	2803	0000838	0023	14423			0410	28.60	4732.0
	051	OBS	0149	-0188	3480	2804			14427	4350	223	0489	28.62	4733.2
		STD	0150	-0188	3480	2804	0000750	0025	14428			0492	28.62	4733.6
	051	OBS	0199	-0190	3479	2803			14435	4730	196	0653	28.58	4735.9
		STD	0200	-0190	3479	2803	0000793	0029	14435			0656	28.58	4735.9
	051	OBS	0249	-0193	3480	2804			14442	4700	223	0817	28.53	4738.2
		STD	0250	-0193	3480	2804	0000679	0033	14442			0820	28.53	4738.2
	055	OBS	0299	-0194	3481	2805			14450	4590	232	0981	28.51	4740.8
		STD	0300	-0194	3481	2805	0000571	0036	14450			0984	28.51	4740.8
	055	OBS	0398	-0191	3483	2806			14468	4690	228	1306	28.56	4746.7
		STD	0400	-0191	3483	2806	0000365	0041	14468			1312	28.56	4746.7
	055	OBS	0498	-0192	3487	2810			14485	4520	218	1634	28.54	4752.3
		STD	0500	-0192	3487	2810	0000002	0042	14485			1640	28.54	4752.3
	055	OBS	0598	-0184	3490	2812			14506	4600	205	1562	28.69	4759.2
		STD	0600	-0184	3490	2812	-0000240	0041	14506			1568	28.69	4759.2
	055	OBS	0697	-0195	3491	2813			14517	4800	164	2287	28.49	4762.8

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	INSTR INDEX	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF 'EMPL'S'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
						10'	1'	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR				HGT
31	150	ED	7528 S	16705 E	571	57	03	07	100	1963	201	229	0457	04	0	1	C	X1	4	2	0098

WATER		WIND		BARO- METER (msb)	AIR TEMP. °C		VISI- BILITY	NO. OF SPL. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		27	522	850	-121	-122	7		

MESSNGR TIME & HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIF. VOL.UM ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg-atm	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD
		STD	0000	-0181	3425	2759	0005076	0000	14398			0000	28.74	4723.7	
100		OBS	0000	-0181	3425	2759			14398	5580	173	0000	28.74	4723.7	
100		OBS	0005	-0182	3425	2759			14399	5510	155	0016	28.72	4721.1	
		STD	0010	-0182	3425	2759	0005067	0005	14399			0033	28.72	4721.1	
100		OBS	0010	-0182	3425	2759			14399	5930	146	0033	28.72	4721.1	
100		OBS	0014	-0182	3425	2759			14400	5570	155	0046	28.72	4721.4	
100		OBS	0019	-0183	3425	2759			14400	5210	159	0062	28.71	4721.4	
		STD	0020	-0183	3425	2759	0005059	0010	14401			0066	28.71	4721.7	
100		OBS	0029	-0181	3425	2759			14403	5380	150	0095	28.74	4725.4	
		STD	0030	-0180	3425	2759	0005051	0015	14404			0098	28.76	4725.7	
100		OBS	0048	-0169	3427	2760			14412	5520	155	0156	28.96	4728.3	
		STD	0050	-0157	3431	2763	0004647	0025	14419			0161	29.17	4730.6	
100		OBS	0072	-0077	3463	2786			14464	3640	214	0236	30.61	4745.4	
		STD	0075	-0081	3463	2787	0002448	0034	14463			0246	30.54	4745.1	
100		OBS	0096	-0108	3463	2788			14454	4190	218	0315	30.06	4742.1	
		STD	0100	-0116	3464	2789	0002229	0040	14451			0328	29.91	4741.1	
100		OBS	0125	-0156	3468	2793	0001777	0045	14437			0410	29.19	4736.5	
		STD	0144	-0176	3471	2796			14431	4410	228	0472	28.83	4734.6	
100		OBS	0150	-0178	3472	2797	0001391	0049	14431			0492	28.80	4734.6	
		STD	0193	-0187	3478	2802			14435	4790	196	0633	28.63	4735.9	
100		OBS	0200	-0188	3478	2802	0000852	0054	14436			0656	28.62	4736.2	
		STD	0242	-0192	3480	2804			14441	4260	205	0794	28.54	4738.5	
100		OBS	0250	-0192	3481	2804	0000644	0058	14442			0820	28.54	4738.2	
		STD	0291	-0194	3483	2806			14449	4330	223	0955	28.51	4740.5	
100		OBS	0300	-0194	3484	2807	0000343	0060	14450			0984	28.51	4740.8	
		STD	0390	-0192	3490	2812			14467	4590	218	1260	28.54	4746.4	
100		OBS	0400	-0192	3491	2813	-0000241	0061	14469			1312	28.54	4747.0	
		STD	0440	-0192	3493	2814			14476	4280	228	1628	28.54	4749.3	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	INSTR INDEX	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF 'EMPL'S'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
						10'	1'	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR			
31	150	ED	7537 S	17110 E	570	51	03	07	157	1963	201	211	0594	05	25	3	X2	4	8	0099

WATER		WIND		BARO- METER (msb)	AIR TEMP. °C		VISI- BILITY	NO. OF SPL. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		27	517	820	-082	-084	7		

MESSNGR TIME & HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIF. VOL.UM ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg-atm	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD
		STD	0000	-0120	3446	2774	0003633	0000	14430			0000	29.84	4734.2	
157		OBS	0000	-0120	3446	2774			14430	5170	164	0000	29.84	4734.2	
157		OBS	0005	-0121	3446	2774			14430	4700	155	0016	29.82	4734.2	
		STD	0010	-0122	3446	2774	0003622	0004	14431			0033	29.80	4734.6	
157		OBS	0010	-0122	3446	2774			14431	5840	114	0033	29.80	4734.6	
157		OBS	0014	-0123	3446	2774			14431	5100	150	0046	29.79	4734.6	
157		OBS	0019	-0121	3446	2774			14433	5200	141	0062	29.82	4735.2	
		STD	0020	-0121	3446	2774	0003622	0007	14433			0066	29.82	4735.2	
157		OBS	0028	-0120	3446	2774			14435	5190	146	0092	29.84	4735.9	
		STD	0030	-0120	3446	2774	0003621	0011	14435			0098	29.84	4735.9	
157		OBS	0047	-0119	3445	2773			14438	5920	127	0154	29.86	4736.9	
		STD	0050	-0121	3445	2774	0003662	0018	14438			0164	29.82	4736.9	
157		OBS	0070	-0127	3447	2775			14438	5030	009	0230	29.71	4736.9	
		STD	0075	-0126	3447	2775	0003490	0027	14440			0246	29.73	4737.5	
157		OBS	0094	-0123	3448	2776			14444	4850	005	0308	29.79	4738.8	
		STD	0100	-0121	3450	2778	0003283	0036	14447			0328	29.82	4739.8	
157		OBS	0125	-0111	3455	2781	0002926	0043	14456			0410	30.00	4742.8	
		STD	0141	-0105	3458	2783			14462	3590	086	0463	30.11	4744.7	
157		OBS	0150	-0115	3459	2784	0002627	0050	14459			0492	29.93	4743.6	
		STD	0188	-0152	3461	2787			14448	4180	168	0617	29.26	4740.1	
157		OBS	0200	-0158	3463	2789	0002116	0062	14448			0656	29.16	4740.1	
		STD	0250	-0180	3468	2794	0001636	0071	14446			0820	28.76	4739.5	
157		OBS	0282	-0189	3471	2797			14448	3550	182	0925	28.60	4740.1	
		STD	0300	-0191	3472	2797	0001268	0079	14450			0984	28.56	4740.8	
157		OBS	0377	-0194	3477	2802			14462	4470	027	1237	28.51	4744.7	
		STD	0400	-0192	3478	2802	0000750	0089	14467			1312	28.54	4746.4	
157		OBS	0471	-0185	3481	2805			14483	4420	000	1545	28.67	4751.6	
		STD	0500	-0168								1640	28.98		
157		OBS	0543	-0129	3448P	2776P				4790	000	1781	29.68		

REFERENCE ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS DEN SQUARE 10°	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	MDDC STATION NUMBER
					10°	1°	MO		DAY	HR.			1/10	CRUISE NO.	STATION NUMBER			
31 150	ED	7540 S	17308 E	570	53	03	07	188	1963	201	210	0338	03	23	3	X2	4 8	0100

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIC CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		16	S13	810	-071	-075	7		

MESSING TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 <sup>3</sup>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	CODE
188		STD	0000	-0105	3443	2771	0003913	0000	14437			0000	30.11	4736.5	
		OBS	0000	-0105	3443	2771			14437	4810	182	0000	30.11	4736.5	
188		OBS	0005	-0107	3442	2771			14436	4740	173	0016	30.07	4736.2	
		STD	0010	-0107	3443	2771	0003902	0004	14437			0033	30.07	4736.5	
188		OBS	0010	-0107	3443	2771			14437	4730	141	0033	30.07	4736.5	
188		OBS	0014	-0106	3442	2771			14438	5260	182	0016	30.09	4736.9	
188		OBS	0019	-0105	3443	2771			14440	5400	164	0062	30.11	4737.5	
		STD	0020	-0105	3443	2771	0003905	0008	14440			0062	30.11	4737.5	
188		OBS	0028	-0105	3443	2771			14441	4870	168	0092	30.11	4737.8	
		STD	0030	-0105	3443	2771	0003895	0012	14442			0098	30.11	4738.2	
188		OBS	0047	-0103	3444	2772			14445	4880	155	0150	30.15	4739.2	
		STD	0050	-0103	3444	2772	0003826	0019	14446			0160	30.15	4739.5	
188		OBS	0070	-0101	3444	2772			14450	4760	141	0210	30.18	4740.8	
		STD	0075	-0101	3445	2772	0003777	0029	14451			0236	30.18	4741.1	
188		OBS	0094	-0101	3447	2774			14455	4790	127	0308	30.18	4742.4	
		STD	0100	-0075	3450	2776	0003458	0038	14468			0328	30.65	4746.7	
188		OBS	0141	0021	3462	2781			14521	2720	205	0410	32.20	4759.8	
		STD	0150	0006	3462	2782	0002922	0054	14515			0463	32.38	4761.1	
188		OBS	0189	-0050	3462	2784			14496	2810	182	0492	32.11	4762.1	
		STD	0200	-0065	3463	2786	0002485	0067	14491			0656	30.83	4754.2	
		STD	0250	-0119	3468	2792	0001886	0078	14475			0820	29.86	4749.0	
188		OBS	0287	-0143	3471	2795			14470	3160	100	0912	29.43	4747.4	
		STD	0300	-0148	3469	2794	0001646	0087	14470			0930	29.30	4747.4	
188		OBS	0311	-0151	3466	2792			14470	4380	205	1020	29.28	4747.4	

REFERENCE ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS DEN SQUARE 10°	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	MDDC STATION NUMBER
					10°	1°	MO		DAY	HR.			1/10	CRUISE NO.	STATION NUMBER			
31 150	ED	7338 S	17705 E	570	37	03	08	061	1963	201	217	0549	05	16		6 6	0101	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIC CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		16	09	S12	800	-034	-043	8	

MESSING TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10 <sup>3</sup>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	CODE
061		STD	0000	-0091	3439	2768	0004268	0000	14443			0000	30.36	4738.5	
		OBS	0000	-0091	3439	2768			14443	5410	168	0000	30.36	4738.5	
061		OBS	0005	-0093	3439	2768			14442	5110	168	0016	30.33	4738.2	
		STD	0010	-0093	3438	2767	0004334	0004	14443			0033	30.33	4738.5	
061		OBS	0010	-0093	3438	2767			14443	5220	178	0033	30.33	4738.5	
		STD	0015	-0096	3439	2768			14443	5690	196	0019	30.27	4738.5	
061		OBS	0020	-0093	3439	2768	0004254	0009	14445			0066	30.33	4739.2	
		STD	0020	-0093	3439	2768			14445	5550	173	0066	30.33	4739.2	
061		OBS	0030	-0092	3439	2768	0004254	0013	14447			0098	30.34	4739.8	
		STD	0030	-0092	3439	2768			14447	5570	191	0098	30.34	4739.8	
061		OBS	0049	-0091	3438	2767			14450	5570	187	0161	30.36	4740.8	
		STD	0050	-0091	3438	2767	0004328	0021	14451			0160	30.36	4741.1	
061		OBS	0074	-0091	3438	2767			14455	5510	178	0213	30.36	4742.4	
		STD	0075	-0091	3438	2767	0004320	0032	14455			0216	30.36	4742.4	
061		OBS	0099	-0084	3439	2767			14462	5570	187	0325	30.49	4744.7	
		STD	0100	-0083	3439	2767	0004243	0043	14463			0328	30.51	4745.0	
		STD	0125	-0065	3448	2773	0003685	0053	14476			0410	30.83	4749.3	
061		OBS	0148	-0049	3455	2779			14489	3630	228	0486	31.12	4753.6	
		STD	0150	-0047	3455	2779	0003165	0061	14490			0492	31.15	4753.9	
061		OBS	0197	-0017	3462	2783			14513	3310	218	0616	31.69	4761.5	
		STD	0200	-0018	3462	2783	0002784	0076	14513			0656	31.68	4761.5	
061		OBS	0246	-0038	3464	2785			14511	3710	218	0807	31.32	4760.8	
		STD	0250	-0041	3464	2786	0002514	0090	14504			0820	31.26	4760.8	
061		OBS	0296	-0071	3464	2787			14504	3560	218	0971	30.72	4758.5	
		STD	0300	-0074	3465	2788	0002266	0101	14504			0960	30.67	4758.5	
061		OBS	0394	-0143	3475	2799			14489	3950	191	1293	29.43	4753.6	
		STD	0400	-0147	3476	2799	0001072	0118	14488			1292	29.35	4753.3	
061		OBS	0493	-0190	3483	2806			14484	4330	214	1617	28.58	4752.0	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARDEN SQUARE INDEX	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS.			WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER		
						10°	1'	MO		DAY	HR./10		CRUISE NO.	STATION NUMBER	DIR.	HGT	PER	SEA					
31	150	ED	7336 S	17525 E	570	35	03	08	092	1963	201	216	0485	05	14			3	X1	6	5		0102
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
					COLOR CODE		DIR. (m)		SPEED OR FORCE (m/s)		DRY BULB		WET BULB										
					09		S14		790		-027		-036		8								

MESSNGR TIME HR. /10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S. Δ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	S. CODE
092		STD	0000	-0094	34.41	2769	0004105	0000	1444.1			0000	30.31	4737.8	
		OBS	0000	-0094	34.41	2769			1444.1	4840	178	0000	30.31	4737.8	
092		OBS	0005	-0095	34.42	2770			1444.2	5500	178	0016	30.29	4738.2	
		STD	0010	-0095	34.41	2769	0004097	0004	1444.3			0033	30.29	4738.5	
092		OBS	0010	-0095	34.41	2769			1444.3	5490	178	0033	30.29	4738.5	
		OBS	0015	-0093	34.42	2770			1444.4	5860	178	0019	30.33	4738.8	
		STD	0020	-0091	34.42	2770	0004032	0008	1444.6			0066	30.36	4739.5	
092		OBS	0020	-0091	34.42	2770			1444.6	5300	178	0066	30.36	4739.5	
		OBS	0029	-0089	34.42	2770			1444.9	5450	182	0095	30.40	4740.5	
		STD	0030	-0089	34.42	2770	0004036	0012	1444.9			0098	30.40	4740.5	
092		OBS	0048	-0089	34.42	2770			1445.2	5550	164	0158	30.40	4741.5	
		STD	0050	-0089	34.42	2770	0004030	0020	1445.2			0164	30.40	4741.5	
092		OBS	0072	-0088	34.42	2770			1445.6	5740	168	0236	30.42	4742.8	
		STD	0075	-0085	34.43	2770	0003991	0030	1445.8			0262	30.44	4743.4	
092		OBS	0097	-0070	34.47	2773			1446.9	4260	205	0318	30.74	4747.0	
		STD	0100	-0070	34.48	2774	0003633	0040	1447.0			0328	30.74	4747.4	
		STD	0125	-0066	34.58	2782	0002880	0048	1447.8			0410	30.81	4750.0	
092		OBS	0145	-0063	34.63	2786			1448.3	3330	214	0476	30.87	4751.6	
		STD	0150	-0064	34.63	2786	0002493	0055	1448.3			0492	30.85	4751.6	
092		OBS	0193	-0076	34.64	2787			1448.5	3700	218	0633	30.63	4752.3	
		STD	0200	-0077	34.65	2788	0002278	0067	1448.6			0656	30.61	4752.6	
092		OBS	0241	-0104	34.68	2791			1448.0	3770	205	0791	30.13	4750.6	
		STD	0250	-0124	34.69	2793	0001760	0077	1447.3			0820	29.77	4748.3	
092		OBS	0289	-0188	34.73	2798			1445.0	4140	228	0918	28.62	4740.8	
		STD	0300	-0188	34.74	2799	0001125	0084	1445.2			0984	28.62	4741.5	
092		OBS	0386	-0188	34.82	2805			1446.7	4040	232	1322	28.62	4746.4	
		STD	0400	-0188	34.83	2806	0000383	0091	1447.0			1312	28.62	4747.4	
092		OBS	0458	-0191	34.83	2806			1447.8	4090	214	1503	28.56	4750.0	

REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARDEN SQUARE INDEX	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS.			WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER		
						10°	1'	MO		DAY	HR./10		CRUISE NO.	STATION NUMBER	DIR.	HGT	PER	SEA					
31	150	ED	7335 S	17342 E	570	33	03	08	125	1963	201	215	0329	03	13			3	X7	7	8		0103
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
					COLOR CODE		DIR. (m)		SPEED OR FORCE (m/s)		DRY BULB		WET BULB										
					09		S15		790		-044		-046		4								

MESSNGR TIME HR. /10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S. Δ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	S. CODE
125		STD	0000	-0099	34.36	2765	0004470	0000	1443.8			0000	30.22	4736.9	
		OBS	0000	-0099	34.36	2765			1443.8	5330	150	0000	30.22	4736.9	
125		OBS	0005	-0101	34.36	2765			1443.8	5560	150	0016	30.18	4736.9	
		STD	0010	-0101	34.36	2765	0004459	0004	1443.9			0033	30.18	4737.9	
125		OBS	0010	-0101	34.36	2765			1443.9	5720		0033	30.18	4737.9	
125		OBS	0014	-0102	34.36	2766			1443.9	4870	136	0062	30.16	4737.9	
125		OBS	0019	-0100	34.36	2765			1444.1	5370	141	0062	30.20	4737.8	
		STD	0020	-0100	34.36	2765	0004459	0009	1444.1			0066	30.20	4737.8	
125		OBS	0028	-0100	34.35	2765			1444.2	6030	146	0092	30.20	4738.2	
		STD	0030	-0100	34.35	2765	0004531	0013	1444.3			0098	30.20	4738.5	
125		OBS	0047	-0100	34.35	2765			1444.6	5370	127	0154	30.20	4739.5	
		STD	0050	-0100	34.35	2765	0004524	0022	1444.6			0164	30.20	4739.5	
125		OBS	0071	-0099	34.35	2765			1445.0	5470	114	0233	30.22	4740.8	
		STD	0075	-0102	34.36	2766	0004431	0034	1444.9			0216	30.16	4740.5	
125		OBS	0095	-0106	34.42	2771			1445.2	4210	168	0312	30.09	4741.5	
		STD	0100	-0093	34.44	2772	0003844	0044	1445.9			0328	30.33	4743.8	
		STD	0125	-0044	34.54	2778	0003283	0053	1448.7			0410	31.21	4752.9	
125		OBS	0143	-0023	34.59	2781			1450.0	3200	200	0469	31.59	4757.2	
		STD	0150	-0023	34.60	2782	0002924	0061	1450.2			0492	31.59	4757.8	
125		OBS	0191	-0028	34.63	2784			1450.7	3430	023	0627	31.50	4759.5	
		STD	0200	-0030	34.64	2785	0002578	0074	1450.7			0656	31.46	4759.5	
		STD	0250	-0043	34.66	2787	0002352	0087	1451.0			0820	31.23	4760.5	
125		OBS	0287	-0053	34.66	2788			1451.1	3250	150	0912	31.05	4760.8	
		STD	0300	-0057								0984	30.97		
125		OBS	0311	-0060								1020	30.92		

REFERENCE		SHIP	LATITUDE	LONGITUDE	DEPTH INDEX	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF STAMPS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER			
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10"	1"	MO	DAY	HR:10	CRUISE NO.	STATION NUMBER			0576	05	19				DIR.	HGHT	PER
31	150	ED	7232 S	17210 E	570	22	03	08	211	1963	201	218	0576	05	19				4	X7	4	8	0104

WATER		WIND		AIR TEMP. °C		VIS. CODE	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (mbs)	DIR.	SPEED OR FORCE	BARO- METER (mbs)	DRY BULB		
		20	S23	820	-077	-079	7

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY Ft./SEC
		STD	0000	-0137	3432	2763	0004654	0000	14420			0000	29.58	4731.0
211		OBS	0000	-0137	3432	2763			14420	5310	182	0000	29.53	4731.0
211		OBS	0004	-0138	3433	2764			14420	5550	178	0013	29.52	4731.0
211		OBS	0008	-0138	3433	2764			14421	5480	182	0026	29.52	4731.3
		STD	0010	-0138	3433	2764	0004569	0005	14421			0033	29.52	4731.3
211		OBS	0013	-0138	3433	2764			14422	5120	182	0043	29.52	4731.6
211		OBS	0017	-0139	3433	2764			14422	5210	146	0056	29.50	4731.6
		STD	0020	-0139	3433	2764	0004561	0009	14422			0066	29.50	4731.6
211		OBS	0025	-0139	3433	2764			14423	5010	164	0082	29.50	4731.9
		STD	0030	-0139	3437	2768	0004250	0014	14425			0098	29.50	4732.6
211		OBS	0043	-0140	3444	2773			14427	5230	032	0111	29.48	4733.2
		STD	0050	-0140	3444	2773	0003701	0022	14429			0164	29.48	4733.9
214		OBS	0061	-0140	3444	2773			14430	5020	091	0200	29.48	4734.2
		STD	0075	-0124	3445	2773	0003688	0031	14440			0269	29.77	4737.5
214		OBS	0082	-0118	3445	2773			14444	5220	018	0328	30.15	4742.4
		STD	0100	-0103	3448	2775	0003500	0040	14455			0404	30.22	4744.4
214		OBS	0123	-0099	3452	2778			14461	4430	168	0430	30.18	4744.4
		STD	0125	-0101	3452	2779	0003170	0048	14460			0492	29.79	4742.4
		STD	0150	-0123	3456	2782	0002811	0056	14455			0561	29.59	
214		OBS	0165	-0134								0656	29.21	4740.5
		STD	0200	-0155	3463	2789	0002134	0068	14449			0820	28.81	4740.1
		STD	0250	-0177	3470	2795	0001493	0077	14448			0820	28.81	4740.1
214		OBS	0250	-0177	3470	2795			14448	4280	118	0964	28.51	4740.8
		STD	0300	-0190	3471	2796	0001378	0084	14450			1102	28.51	
214		OBS	0336	-0194	3477P	2802P				4430	191	1312	28.69	4747.4
		STD	0400	-0184	3472	2797	0001258	0097	14470			1388	28.74	4749.0
214		OBS	0423	-0181	3472	2797			14475	3960	032	1608	28.90	4754.6
214		OBS	0490	-0172	3479	2803			14492	4490	055			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DEPTH INDEX	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF STAMPS	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER			
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10"	1"	MO	DAY	HR:10	CRUISE NO.	STATION NUMBER			0343	03	02				DIR.	HGHT	PER
31	150	ED	72285 S	17106 E	570	21	03	09	122	1963	201	219	0343	03	02				3	X7	7	8	0105

WATER		WIND		AIR TEMP. °C		VIS. CODE	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (mbs)	DIR.	SPEED OR FORCE	BARO- METER (mbs)	DRY BULB		
		03	S05	850	-093	-098	6

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY Ft./SEC
		STD	0000	-0173	3427	2760	0004941	0000	14402			0000	28.89	4725.1
122		OBS	0000	-0173	3427	2760			14402	5240	187	0000	28.89	4725.1
122		OBS	0005	-0174	3426	2760			14403	5190	191	0016	28.87	4725.4
		STD	0010	-0174	3425	2759	0005086	0005	14403			0033	28.87	4725.4
122		OBS	0010	-0174	3425	2759			14403	5070	164	0033	28.87	4725.4
122		OBS	0014	-0174	3425	2759			14404	5580	182	0062	28.87	4725.7
122		OBS	0019	-0174	3426	2760			14405	5250	168	0056	28.87	4726.0
		STD	0020	-0173	3426	2760	0005006	0010	14405			0066	28.89	4726.0
122		OBS	0029	-0167	3426	2759			14410	5450	059	0095	28.99	4727.7
		STD	0030	-0167	3426	2760	0005008	0015	14410			0058	28.99	4727.7
122		OBS	0048	-0162	3427	2760			14415	5170	055	0128	29.08	4729.3
		STD	0050	-0161	3427	2760	0004920	0025	14416			0164	29.10	4729.6
122		OBS	0072	-0152	3430	2762			14425	5490	059	0236	29.26	4732.6
		STD	0075	-0152	3430	2762	0004718	0037	14425			0216	29.26	4732.6
122		OBS	0097	-0149	3431	2763			14430	5150	036	0318	29.32	4734.2
		STD	0100	-0146	3432	2764	0004592	0049	14432			0328	29.37	4734.9
		STD	0125	-0127	3438	2768	0004168	0060	14446			0400	29.71	4739.5
122		OBS	0145	-0123	3443	2772			14452	4350	159	0476	29.79	4741.5
		STD	0150	-0127	3447	2775	0003469	0069	14452			0492	29.71	4741.5
122		OBS	0194	-0158	3471	2796			14448	4010	064	0636	29.16	4740.1
		STD	0200	-0163	3473	2797	0001335	0081	14447			0656	29.07	4739.8
122		OBS	0242	-0186	3481	2805			14444	4300	159	0794	28.65	4738.8
		STD	0250	-0188	3481	2805	0000618	0086	14444			0820	28.62	4738.8
122		OBS	0292	-0189	3481	2805			14451	4360	105	0958	28.60	4741.1

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NOOD STATION NUMBER	
CTRY CODE	ID. NO.					'	1/10	'	1/10	10'	1'		MO	DAY			HR.	1/10	CRUISE NO.				STATION NUMBER
31	150	ED	7219 S	170598E		570	20	03	09	015	1963	201	220	0292	02	02		1	X2			0106	
						WATER		WIND		BARO-METER		AIR TEMP. °C											
						COLOR CODE		DIR.		DRY BULB		WET BULB		VIL. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
						03		S24		850		-093		-098		7							

MESSING TIME	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg-at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC
		STD	0000	-0177	3417	2752	0005700	0000	14399			0000	28.61	4724.1
015		OBS	0000	-0177	3417	2752			14399	5170	168	0000	28.81	4724.1
015		OBS	0005	-0177	3417	2752			14400	5580	059	0016	28.81	4724.4
		STD	0010	-0178	3417	2752	0005691	0006	14400			0033	28.80	4724.4
015		OBS	0010	-0178	3417	2752			14400	5070	027	0033	28.80	4724.4
015		OBS	0014	-0177	3417	2752			14401	5290	173	0046	28.81	4724.7
015		OBS	0019	-0177	3417	2752			14402	5220	173	0062	28.81	4725.1
		STD	0020	-0177	3417	2752	0005687	0011	14402			0066	28.81	4725.1
015		OBS	0029	-0176	3417	2752			14404	5370	168	0095	28.83	4725.7
		STD	0030	-0176	3417	2752	0005683	0017	14407			0098	28.83	4725.7
015		OBS	0048	-0176	3417	2752			14407	5470	164	0150	28.83	4726.7
		STD	0050	-0176	3417	2753	0005657	0028	14408			0164	28.83	4727.0
015		OBS	0072	-0170	3419	2754			14415	5230	091	0236	28.94	4729.3
		STD	0075	-0167	3420	2755	0005449	0042	14417			0246	28.99	4730.0
015		OBS	0097	-0143	3430	2762			14433	5280	050	0318	29.13	4735.2
		STD	0100	-0137	3431	2763	0004682	0055	14436			0328	29.53	4736.2
		STD	0125	-0100	3441	2770	0004037	0066	14459			0410	30.20	4743.8
015		OBS	0145	-0092	3450	2776			14468	4320	146	0476	30.34	4746.7
		STD	0150	-0100	3453	2779	0003112	0075	14465			0492	30.20	4745.7
015		OBS	0194	-0150	3474	2798			14452	4330	100	0636	29.30	4741.5
		STD	0200	-0154	3475	2799	0001213	0086	14451			0656	29.23	4741.2
015		OBS	0242	-0160	3476	2800			14456	4500	109	0794	29.12	4742.8

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NOOD STATION NUMBER	
CTRY CODE	ID. NO.					'	1/10	'	1/10	10'	1'		MO	DAY			HR.	1/10	CRUISE NO.				STATION NUMBER
31	150	ED	7200 S	17112 E		570	21	03	09	039	1963	201	223	0278	02	19		1	X1	4	2	0107	
						WATER		WIND		BARO-METER		AIR TEMP. °C											
						COLOR CODE		DIR.		DRY BULB		WET BULB		VIL. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS					
						15		16		517		870		-082		-087		8					

MESSING TIME	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg-at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC
		STD	0000	-0144	3436	2767	0004327	0000	14417			0000	29.41	4730.0
039		OBS	0000	-0144	3436	2767			14417	4930	196	0000	29.41	4730.0
039		OBS	0005	-0144	3435	2766			14418	5130	218	0016	29.41	4730.3
		STD	0010	-0145	3435	2766	0004396	0004	14418			0033	29.39	4730.3
039		OBS	0010	-0145	3435	2766			14418	4610	196	0033	29.39	4730.3
039		OBS	0014	-0144	3435	2766			14419	4880	173	0016	29.41	4730.6
039		OBS	0019	-0145	3436	2767			14420	4890	191	0062	29.39	4731.0
		STD	0020	-0145	3436	2767	0004314	0009	14420			0066	29.39	4731.0
039		OBS	0029	-0144	3436	2767			14422	5520	146	0095	29.41	4731.6
		STD	0030	-0144	3436	2767	0004304	0013	14422			0098	29.41	4731.6
039		OBS	0048	-0143	3437	2768			14426	5090	155	0158	29.43	4732.9
		STD	0050	-0142	3437	2768	0004207	0022	14427			0164	29.44	4733.3
039		OBS	0072	-0134	3441	2771			14435	5070	132	0236	29.59	4735.9
		STD	0075	-0131	3442	2771	0003909	0032	14437			0216	29.64	4736.5
039		OBS	0097	-0111	3445	2773			14450	4540	173	0318	30.00	4740.8
		STD	0100	-0111	3447	2775	0003549	0041	14451			0328	30.00	4741.1
		STD	0125	-0106	3459	2784	0002638	0049	14459			0410	30.09	4743.8
039		OBS	0145	-0103	3466	2790			14465	3990	228	0476	30.15	4745.7
		STD	0150	-0109	3467	2791	0002008	0055	14463			0492	30.04	4745.1
039		OBS	0194	-0146	3475	2799			14454	3810	205	0636	29.37	4742.1
		STD	0200	-0149	3475	2799	0001230	0063	14454			0656	29.32	4742.1
041		OBS	0232	-0152	3475	2799			14457	4280	200	0761	29.26	4743.1

REFERENCE CTR CODE	SHIP ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	MAGNETIC INDICATOR	MAGNETIC SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER		
						10°	1°	MO	DAY		HR./1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER	SEA
31	150	ED	71485S	17050 E		570	10	03	09	067	1963	201	224	0293	03	18		1	X7	4 8		0108

WATER		WIND		BARO- METER (MM)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. MM	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
				500	870	-066	-071	5	

MESSAGE TIME HR. /1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> †	S. Δ D. DYN. (X 10 <sup>3</sup> )	SOUND VELOCITY	PO-P	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC
		STD	0000	-0084	3446	2773	0003758	0000	14447		0000	30.49	4739.8
067		OBS	0000	-0084	3446	2773			14447	200	0000	30.49	4739.8
	067	OBS	0005	-0084	3447	2774			14448	4690 214	0016	30.49	4740.1
		STD	0010	-0085	3446	2773	0003751	0004	14448		0033	30.47	4740.1
067		OBS	0010	-0085	3446	2773			14448	4780 205	0033	30.47	4740.1
	067	OBS	0015	-0085	3447	2774			14449	4930 191	0049	30.47	4740.5
		STD	0020	-0082	3446	2773	0003760	0008	14451		0066	30.52	4741.1
067		OBS	0020	-0082	3446	2773			14451	5000 196	0066	30.52	4741.1
		STD	0030	-0079	3446	2773	0003768	0011	14454		0098	30.58	4742.1
	067	OBS	0030	-0079	3446	2773			14454	4580 196	0098	30.58	4742.1
		STD	0050	-0077	3447	2773	0003693	0019	14458		0164	30.61	4743.4
	067	OBS	0050	-0077	3447	2773			14458	4650 178	0164	30.61	4743.4
		STD	0075	-0077	3447	2773	0003696	0028	14463		0246	30.61	4745.1
	067	OBS	0075	-0077	3447	2773			14463	5050 187	0246	30.61	4745.1
		STD	0100	-0068	3451	2776	0003411	0037	14471		0328	30.78	4747.7
	067	OBS	0100	-0068	3451	2776			14471	4820 196	0328	30.78	4747.7
		STD	0125	-0051	3454	2778	0003251	0045	14484		0410	31.08	4752.0
		STD	0150	-0050	3458	2781	0002946	0053	14489		0492	31.10	4753.6
	067	OBS	0150	-0050	3458	2781			14489	3840 178	0492	31.10	4753.6
		STD	0200	-0100	3470	2793	0001798	0065	14476		0656	30.20	4749.3
	067	OBS	0200	-0100	3470	2793			14476	3590 018	0656	30.20	4749.3
		STD	0250	-0145	3478	2801	0000993	0072	14464		0820	29.39	4745.4
	067	OBS	0280	-0169	3480	2803			14458	4540 023	0919	28.96	4743.4

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARSDES SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	MOSC STATION NUMBER	
					10'	1'	MO		DAY	HR			1/10	CRUISE NO.	STATION NUMBER				DIR.
31	150	ED	7133 S	17220 E	570	12	03	09	091	1963	201	225	1646	16	00	0	X2	618	0109

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS COEF	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
				500	860	-022	-031	7	

MESSING TIME	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> (°C)	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg + σ <sub>T</sub> (l)	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0111	3434	2764	0004582	0000	14432			0000	30.00	4734.9
091		OBS	0000	-0111	3434	2764			14432			0000	30.00	4734.9
091		OBS	0005	-0110	3434	2764			14434	537Q	223	0016	30.02	4735.6
		STD	0010	-0109	3433	2763	0004661	0005	14435			0033	30.04	4735.9
091		OBS	0010	-0109	3433	2763			14435			0033	30.04	4735.9
091		OBS	0015	-0111	3433	2763			14435	584Q	205	0049	30.00	4735.9
		STD	0020	-0108	3433	2763	0004661	0009	14437	556Q	237	0066	30.06	4736.5
091		OBS	0020	-0108	3433	2763			14437	521Q	259	0098	30.04	4736.9
		STD	0030	-0109	3434	2764	0004577	0014	14438			0098	30.04	4736.9
091		OBS	0030	-0109	3434	2764			14438	495Q	228	0098	30.04	4736.9
		STD	0050	-0108	3434	2764	0004572	0023	14442			0164	30.06	4738.2
091		OBS	0050	-0108	3434	2764			14442	496Q	218	0164	30.06	4738.2
		STD	0075	-0107	3434	2764	0004566	0034	14447			0246	30.07	4739.8
091		OBS	0075	-0107	3434	2764			14447	504Q	241	0246	30.07	4739.8
		STD	0100	-0088	3440	2768	0004169	0045	14461			0328	30.12	4744.4
091		OBS	0100	-0088	3440	2768			14461	465Q	228	0328	30.12	4744.4
		STD	0125	-0066	3446	2772	0003795	0055	14476			0410	30.18	4749.3
		STD	0150	-0045	3451	2775	0003502	0064	14490			0492	31.19	4753.9
091		OBS	0150	-0045	3451	2775			14490	421Q	246	0492	31.19	4753.9
		STD	0200	-0004	3458	2779	0003170	0081	14518			0656	31.93	4763.1
091		OBS	0200	-0004	3458	2779			14518	364Q	228	0656	31.93	4763.1
		STD	0250	0014	3461	2780	0003040	0097	14535			0820	32.25	4768.7
091		OBS	0250	0014	3461	2780			14535	326Q	209	0820	32.25	4768.7
097		OBS	0298	0001	3460	2780			14537	289Q	164	0978	32.02	4769.3
		STD	0300	0002	3460	2780	0003037	0112	14538			0984	32.04	4769.7
097		OBS	0398	0047	3465	2782			14575	289Q	141	1306	32.85	4781.8
		STD	0400	0048	3465	2782	0002951	0142	14576			1312	32.86	4782.1
097		OBS	0497	0066	3467	2782			14601	271Q	141	1630	33.19	4790.3
		STD	0500	0066	3467	2782	0002934	0171	14601			1640	33.19	4790.3
097		OBS	0597	0066	3468	2783			14618	279Q	237	1959	33.19	4795.9
		STD	0600	0066	3468	2783	0002871	0200	14618			1968	33.19	4795.9
097		OBS	0696	0052	3469	2784			14632	276Q	232	2284	33.12	4800.5
		STD	0700	0052	3469	2784	0002778	0228	14633			2297	33.12	4800.8
097		OBS	0796	0052	3468	2783			14649	272Q	209	2612	33.12	4806.1
		STD	0800	0060	3468	2784	0002841	0257	14649			2625	33.08	4806.1
097		OBS	0895	0018	3470	2788			14646	283Q	205	2936	32.32	4805.1
		STD	0900	0018	3470	2788	0002382	0283	14647			2953	32.32	4805.4
097		OBS	0995	0009	3470	2788			14659	303Q	214	3264	32.16	4809.4
		STD	1000	0008	3470	2788	0002305	0306	14659			3281	32.11	4809.4
097		OBS	1094	-0010	3469	2788			14667	370Q	218	3589	31.82	4812.0
		STD	1100	-0010	3469	2788	0002229	0329	14668			3609	31.82	4812.3
097		OBS	1194	-0010	3471	2790			14684	357Q	223	3917	31.82	4817.6
		STD	1200	-0010	3471	2790	0002081	0350	14685			3937	31.82	4817.9
097		OBS	1300	-0011	3471	2790	0002066	0371	14701			4265	31.80	4823.1
		STD	1393	-0013	3471	2790			14716	302Q	127	4570	31.77	4828.1
		STD	1400		3471							4593		
		STD	1500		3471							4921		
097		OBS	1632		3471					205		5354		

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	PROJECT NO.	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWATH'S	WAVE OBSERVATIONS			WEA- TER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
SHIP CODE	ID. NO.					10'	1'	MO	DAY		HR	1/10			CRUISE NO.	STATION NUMBER	DIR.				HIGH	PER
31	150	ED	7135 S	17355 E		570	13	03	09	133	1963	201	226	1737	15	10		2	X7	7 8		0110

WATER		WIND		AIR TEMP. °C			NO. OF DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	BARO- METER (mb)	DRY BULB	WET BULB		
		04	5.8	820	-0.23	-0.29	3	

MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C		SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S DYN. V. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{ml}^{-1}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CORRECTION
				t	s										
		STD	0000	-0095	3435	2764	0004560	0000	14440			0000	30.29	4737.5	
		OBS	0000	-0095	3435	2764			14440	530Q	159	0000	30.29	4737.5	
133		OBS	0005	-0095	3435	2764			14441	519Q	146	0016	30.29	4737.8	
		STD	0010	-0093	3435	2764	0004564	0005	14443			0033	30.33	4738.5	
133		OBS	0010	-0093	3435	2764			14443	554Q	214	0033	30.33	4738.5	
133		OBS	0015	-0096	3435	2765			14442	536Q	182	0009	30.27	4738.2	
		STD	0020	-0093	3435	2764	0004560	0009	14444			0066	30.33	4738.8	
133		OBS	0020	-0093	3435	2764			14444	512Q	173	0066	30.33	4738.8	
		STD	0030	-0093	3435	2764	0004557	0014	14446			0098	30.33	4739.5	
133		OBS	0030	-0093	3435	2764			14446	482Q	173	0098	30.33	4739.5	
133		OBS	0049	-0091	3435	2764			14450	487Q	114	0161	30.36	4740.8	
		STD	0050	-0091	3435	2764	0004557	0023	14450			0164	30.36	4740.8	
133		OBS	0074	-0090	3435	2764			14455	494Q	059	0213	30.38	4742.4	
		STD	0075	-0090	3435	2764	0004552	0034	14455			0216	30.38	4742.4	
133		OBS	0099	-0090	3435	2764			14459	492Q	068	0325	30.38	4743.8	
		STD	0100	-0087	3436	2765	0004479	0045	14460			0328	30.43	4744.1	
		STD	0125	-0029	3449	2773	0003735	0056	14493			0410	31.48	4754.9	
133		OBS	0148	0014	3458	2778			14518	299Q	218	0486	32.25	4763.1	
		STD	0150	0017	3458	2778	0003264	0064	14520			0492	32.31	4763.8	
133		OBS	0198	0072	3465	2780			14554	306Q	178	0650	33.30	4774.9	
		STD	0200	0072	3465	2780	0003088	0080	14554			0656	33.30	4774.9	
		STD	0250	0079	3466	2781	0003054	0096	14565			0820	33.42	4778.6	
133		OBS	0297	0085	3467	2781			14576	262Q	178	0974	33.53	4782.5	
		STD	0300	0085	3467	2781	0003036	0111	14577			0984	33.53	4782.5	
140		OBS	0350	0085	3467	2781			14585	248Q	205	1118	33.53	4785.1	
		STD	0400	0086	3468	2782	0003013	0141	14594			1312	33.55	4786.0	
140		OBS	0440	0086	3468	2782			14600	265Q	218	1444	33.55	4790.0	
		STD	0500	0087	3468	2782	0003008	0171	14611			1630	33.57	4793.6	
140		OBS	0528	0087	3468	2782			14616	257Q	205	1732	33.57	4795.3	
		STD	0600	0084	3468	2782	0003004	0201	14626			1968	33.49	4788.5	
		STD	0700	0079	3468	2782	0002986	0231	14641			2297	33.42	4803.5	
140		OBS	0708	0079	3468	2782			14642	257Q	218	2323	33.42	4803.8	
		STD	0800	0074	3468	2782	0002996	0261	14655			2625	33.33	4808.6	
140		OBS	0889	0070	3467	2782			14668	288Q	173	2917	33.26	4812.3	
		STD	0900	0070	3467	2782	0003007	0291	14670			2953	33.26	4813.0	
		STD	1000	0065	3468	2783	0002941	0321	14685			3281	33.17	4817.9	
140		OBS	1071	0062	3468	2783			14695	271Q	168	3514	33.12	4821.2	
		STD	1100	0061	3468	2783	0002889	0350	14700			3609	33.10	4822.8	
		STD	1200	0057	3468	2784	0002864	0379	14715			3937	33.01	4827.7	
		STD	1300	0051	3468	2784	0002820	0407	14729			4265	32.92	4832.3	
140		OBS	1346	0048	3468	2784			14735	287Q	196	4414	32.86	4834.3	
		STD	1400	0040	3468	2785	0002728	0435	14741			4593	32.70	4836.3	
140		OBS	1484	0036	3468	2785			14753	266Q	168	4869	32.47	4840.2	
		STD	1500	0037	3468	2785	0002703	0462	14756			4921	32.67	4841.2	
140		OBS	1530	0038	3467	2784			14762	329Q	196	5019	32.68	4843.2	

REFERENCE CTRY CODE	SHIP ID. NO.	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METERS	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL.	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
					10'	1'	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	150	ED	7137 S	17700 E	570	17	03	09	239	1963	201	228	2122	17	10		4		7	8	0111

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
TEMP	DIR.	DRY	WET		DRY	WET			
18	11	S17	770	-026	-027	5			

MESSNGR TIME NR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> (°)	Σ Δ D DYN. M. S 10'	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µS - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0106	3418	2751	0005825	0000	14433			0000	30.09	4735.2
239		OBS	0000	-0106	3418	2751			14433			0000	30.09	4735.2
239		OBS	0004	-0108	3418	2751			14432	5010	200	0013	30.06	4734.9
239		OBS	0009	-0107	3418	2751			14434	4880	223	0030	30.07	4735.6
		STD	0010	-0108	3418	2751	0005814	0006	14433			0033	30.06	4735.2
239		OBS	0013	-0109	3418	2751			14433	5160	209	0043	30.04	4735.2
239		OBS	0017	-0106	3418	2751			14435	5440	200	0056	30.09	4735.9
		STD	0020	-0107	3418	2751	0005813	0012	14435			0066	30.07	4735.9
239		OBS	0026	-0108	3418	2751			14436	5040	223	0085	30.06	4736.2
		STD	0030	-0108	3418	2751	0005806	0017	14437			0098	30.06	4736.5
239		OBS	0043	-0107	3418	2751			14439	5200	168	0111	30.07	4737.2
		STD	0050	-0106	3418	2751	0005804	0029	14441			0164	30.09	4737.8
239		OBS	0065	-0105	3418	2751			14444		178	0213	30.11	4738.8
		STD	0075	-0106	3427	2758	0005103	0043	14446			0266	30.09	4739.5
239		OBS	0087	-0108	3436	2766			14449	4750	209	0285	30.06	4740.5
		STD	0100	-0095	3439	2768	0004218	0054	14457			0328	30.29	4743.1
		OBS	0125	-0066	3445	2771	0003871	0064	14476			0410	30.81	4749.3
239		OBS	0132	-0057	3447	2773			14481	3840	196	0433	30.97	4751.0
		STD	0150	-0018	3452	2775	0003558	0074	14503			0492	31.68	4758.2
239		OBS	0180	0019	3457	2777			14525	3490	246	0590	32.34	4765.4
		STD	0200	0017	3457	2777	0003360	0091	14528			0656	32.29	4766.4
247		OBS	0216	0015	3457	2777			14530	2990	250	0709	32.27	4767.0
		STD	0250	0037	3460	2778	0003252	0108	14546			0820	32.67	4772.3
247		OBS	0290	0058	3462	2779			14562	3080	287	0951	33.04	4777.5
		STD	0300	0061	3462	2779	0003232	0124	14565			0984	33.10	4778.5
247		OBS	0364	0080	3464	2779			14585	2600	250	1194	33.44	4785.1
		STD	0400	0089	3465	2779	0003233	0156	14595			1312	33.60	4788.4
247		OBS	0444	0097	3466	2780			14606	2790	241	1457	33.75	4792.6
		STD	0500	0095	3466	2780	0003220	0188	14614			1640	33.71	4794.6
		STD	0600	0093	3466	2780	0003224	0221	14630			1968	33.67	4800.0
247		OBS	0600	0093	3466	2780			14646		387	1968	33.67	4800.0
		STD	0700	0092	3466	2780	0003235	0253	14655			2297	33.66	4805.1
247		OBS	0760	0090	3466	2780			14655	2480	232	2193	33.62	4808.1
		STD	0800	0088	3466	2780	0003206	0285	14661			2625	33.58	4810.0
		STD	0900	0083	3467	2781	0003129	0317	14676			2953	33.49	4814.9
247		OBS	0924	0081	3467	2781			14679	3010	218	3031	33.45	4815.9
		STD	1000	0072	3467	2782	0003067	0348	14688			3281	33.30	4818.9
		STD	1100	0061	3466	2782	0003015	0378	14699			3609	33.10	4822.5
247		OBS	1172	0054	3466	2782			14708	2890	287	3845	32.97	4825.4
		STD	1200	0052	3466	2782	0002969	0408	14712			3937	32.94	4826.8
		STD	1300	0044	3466	2783	0002906	0437	14725			4265	32.79	4831.0
		STD	1400	0037	3466	2783	0002849	0466	14739			4593	32.67	4835.6
		STD	1500	0031	3466	2784	0002798	0494	14753			4921	32.56	4840.2
247		OBS	1600	0025	3466	2784			14768	2240	250	5249	32.45	4845.1
247		OBS	1706	0020	3466	2784			14784	2740		5594	32.36	4850.4

REFERENCE CHIFF CODE	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	HEIGHT METERS	MARSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER	
					10"	1'	MO	DAY	HR.	MIN.		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	150	ED	7238 S	17700 E	570	27	03	10	087	1963	201	G03	1190	11	12			3	X1	6 7		0112

WATER		WIND		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	BARO- METER (mb)	DRY BULB			
		11	S18	900	-014	-039	7	

MESSAGE TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C		SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CLOUD
				T	S										
087		STD	0000	-0087	3438	2767	0004360	0000	14444			0000	30.43	4738.8	
		OBS	0000	-0087	3438	2767			14444	4920	205	0000	30.43	4738.8	
087		STD	0010	-0087	3439	2767	0004280	0004	14446			0033	30.43	4739.5	
		OBS	0010	-0087	3439	2767			14446	5380	246	0033	30.43	4739.5	
087		OBS	0019	-0087	3439	2767			14448	5270	214	0062	30.43	4740.1	
		STD	0020	-0087	3439	2767	0004276	0009	14448			0066	30.43	4740.1	
087		OBS	0029	-0088	3438	2767			14449	4780	191	0095	30.42	4740.5	
		STD	0030	-0088	3438	2767	0004338	0013	14449			0098	30.42	4740.5	
087		OBS	0048	-0085	3439	2767			14453	5530	191	0158	30.47	4741.8	
		STD	0050	-0085	3439	2767	0004274	0022	14454			0164	30.47	4742.1	
087		OBS	0072	-0084	3439	2767			14458	5100	191	0236	30.49	4743.4	
		STD	0075	-0083	3439	2767	0004258	0032	14459			0246	30.51	4743.8	
087		OBS	0097	-0070	3441	2768			14469	5080	205	0318	30.74	4747.0	
		STD	0100	-0066	3442	2769	0004106	0043	14471			0328	30.61	4747.7	
087		STD	0125	-0033	3450	2774	0003640	0052	14492			0410	31.41	4754.6	
		OBS	0145	-0012	3455	2777			14505	3300	223	0476	31.78	4758.8	
087		STD	0150	-0009	3456	2778	0003299	0061	14508			0492	31.84	4759.8	
		OBS	0193	0019	3460	2779			14528	3090	218	0633	32.34	4765.4	
087		STD	0200	0026	3461	2780	0003109	0077	14533			0656	32.47	4768.0	
		OBS	0242	0055	3465	2781			14553	2620	214	0794	32.99	4774.6	
087		STD	0250	0058	3465	2781	0002988	0092	14556			0820	33.04	4775.6	
		OBS	0290	0062	3466	2782			14564		209	0951	33.12	4778.2	
087		STD	0300	0051	3466	2782	0002880	0107	14561			0984	32.92	4777.2	
		OBS	0387	0013	3455P	2776P				3160	214	1270	32.23		
092		STD	0400	0026	3467	2785	0002643	0135	14567			1312	32.47	4779.2	
		OBS	0472	0073	3468	2783			14600	2900	218	1548	33.31	4790.0	
092		STD	0500	0073	3468	2783	0002886	0162	14605			1640	33.31	4791.7	
		OBS	0566	0066	3469	2784			14613	2870	250	1857	33.19	4794.3	
092		STD	0600	0055	3469	2785	0002715	0190	14613			1968	32.99	4794.3	
		OBS	0662	0038	3469	2786			14616	3620	228	2172	32.68	4795.3	
092		STD	0700	0031	3469	2786	0002549	0217	14619			2297	32.56	4796.2	
		OBS	0758	0020	3469	2787			14624	3370	237	2487	32.36	4797.9	
092		STD	0800	0009	3469	2787	0002377	0241	14626			2625	32.16	4798.5	
		STD	0900	-0011	3470	2789	0002191	0264	14634			2953	31.80	4801.2	
092		OBS	0952	-0018	3470	2789			14639	4080		3123	31.68	4802.8	
		STD	1000	-0018								3128	31.68		
092		STD	1100	-0019								3609	31.66		
		OBS	1146	-0019								3760	31.66		

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH IN METERS	MARSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
					10'	1"	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA				
31	150	ED	7309 S	17652 E	570	36	03	10	131	1963	201	G04	0430	04	01			4	X7	6	6	0113	
				WATER		WIND		BARO- METER		AIR TEMP. °C		VIL CODE		NO. OBS. DEPTH		SPECIAL OBSERVATIONS							
				COLOR CODE		TRANS. (M)		DIR. SPEED OR FORCE		DRY BULB		WET BULB											
				04		S14		940		-004		-022		7									

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}^0$	$\Sigma \Delta \rho$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P P <sub>2</sub> - 01/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/sec
		STD	0000	-0098	3438	2767	0004320	0000	14439			0000	30.2h	h737.2
131		OBS	0000	-0098	3438	2767			14439	466Q	182	0000	30.2h	h737.2
		STD	0010	-0095	3439	2768	0004251	0004	14442			0033	30.29	h738.2
131		OBS	0010	-0095	3439	2768			14442	442Q	055	0033	30.29	h738.2
131		OBS	0019	-0099	3438	2767			14442	474Q	182	0062	30.22	h738.2
		STD	0020	-0099	3438	2767	0004309	0009	14442			0056	30.22	h738.2
131		OBS	0028	-0098	3438	2767			14444	485Q	191	0092	30.2L	h738.8
		STD	0030	-0097	3438	2767	0004298	0013	14445			0098	30.25	h739.2
131		OBS	0047	-0086	3440	2768			14453	495Q	178	015L	30.45	h741.8
		STD	0050	-0078	3441	2769	0004148	0021	14457			016L	30.60	h743.1
131		OBS	0071	-0035	3450	2774			14482	338Q	196	0233	31.37	h751.3
		STD	0075	-0030	3451	2775	0003586	0031	14485			0216	31.46	h752.8
131		OBS	0094	-0006	3456	2777			14500	336Q	077	0308	31.89	h757.2
		STD	0100	0001	3457	2778	0003279	0040	14504			0328	32.02	h758.5
		STD	0125	0025	3460	2779	0003179	0048	14520			0410	32.45	h763.8
131		OBS	0141	0038	3462	2780			14528	291Q	073	0463	32.68	h766.4
		STD	0150	0044	3463	2780	0003061	0055	14533			0492	32.79	h768.0
131		OBS	0188	0064	3466	2782			14548	281Q	187	0617	33.15	h773.0
		STD	0200	0065	3466	2782	0002940	0070	14551			0656	33.17	h773.9
		STD	0250	0067	3467	2783	0002884	0085	14560			0820	33.21	h776.9
131		OBS	0282	0068	3468	2783			14566	296Q	187	0925	33.22	h778.9
		STD	0300	0061	3468	2783	0002800	0099	14566			098L	33.10	h778.9
131		OBS	0376	0005	3468	2787			14553	322Q	187	123L	32.09	h774.6

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH IN METERS	MARSDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
					10'	1"	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA				
31	150	ED	7336 S	17707 E	570	37	03	10	171	1963	201	G05	0549	05	10			3	X7	4	8	0114	
				WATER		WIND		BARO- METER		AIR TEMP. °C		VIL CODE		NO. OBS. DEPTH		SPECIAL OBSERVATIONS							
				COLOR CODE		TRANS. (M)		DIR. SPEED OR FORCE		DRY BULB		WET BULB											
				18		S07		940		-050		-053		6									

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}^0$	$\Sigma \Delta \rho$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P P <sub>2</sub> - 01/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/sec
		STD	0000	-0093	3439	2768	0004261	0000	14442			0000	30.35	h738.2
171		OBS	0000	-0093	3439	2768			14442	536Q	155	0000	30.33	h738.2
		STD	0010	-0095	3439	2768	0004251	0004	14442			0033	30.29	h738.2
171		OBS	0010	-0095	3439	2768			14442	535Q	146	0033	30.29	h738.2
		STD	0020	-0093	3440	2768	0004178	0008	14445			0066	30.33	h739.2
171		OBS	0020	-0093	3440	2768			14445	561Q	123	0066	30.33	h739.2
		STD	0030	-0094	3440	2768	0004170	0013	14446			0098	30.31	h739.5
171		OBS	0030	-0094	3440	2768			14446	509Q	155	0098	30.31	h739.5
171		OBS	0049	-0091	3440	2768			14451	511Q	146	0161	30.36	h741.1
		STD	0050	-0091	3440	2768	0004175	0021	14451			016L	30.36	h741.1
171		OBS	0074	-0089	3440	2768			14456	528Q	155	0243	30.40	h742.8
		STD	0075	-0089	3441	2769	0004097	0031	14456			0246	30.40	h742.8
171		OBS	0098	-0089	3451	2777			14461	407Q	200	0322	30.40	h744.4
		STD	0100	-0089	3452	2778	0003249	0041	14462			0328	30.40	h744.4
		STD	0125	-0089	3457	2782	0002859	0048	14467			0410	30.40	h746.7
171		OBS	0148	-0096	3460	2785			14468	362Q	055	0486	30.27	h746.7
		STD	0150	-0097	3460	2785	0002590	0055	14467			0492	30.25	h746.4
171		OBS	0197	-0129	3461	2787			14460	384Q	127	0646	29.68	h744.1
		STD	0200	-0131	3461	2787	0002341	0067	14460			0656	29.64	h744.1
		STD	0250	-0162	3466	2792	0001864	0078	14454			0820	29.08	h742.1
171		OBS	0296	-0181	3470	2796			14454	433Q	164	0971	28.7L	h742.1
		STD	0300	-0182	3471	2796	0001373	0086	14454			098L	28.72	h742.1
171		OBS	0395	-0191	3479	2803			14467	409Q	168	1296	28.56	h746.4
		STD	0400	-0191	3479	2803	0000669	0096	14468			1312	28.56	h746.7
171		OBS	0494	-0190	3480	2804			14484	414Q	105	1621	28.58	h752.0
		STD	0500	-0191								1640	28.56	
171		OBS	0524	-0194								1719	28.51	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS INDIC. INSTR.	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- TH- R CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
						10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA	
31	150	ED	7406 S	17710 E		570	47	03	10	213	1963	201	G06	0603	05	10		3	X2	6	18		0115

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	15	18	S10	950	-051	-054	7		

MESSAGE TIME HR. 1/10	CAS- T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°	± Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CTD
213		STD	0000	-0098	3437	2766	0004397	0000	14439			0000	30.24	4737.2	
		OBS	0000	-0098	3437	2766			14439	5290	164	0000	30.24	4737.2	
		STD	0010	-0099	3438	2767	0004313	0004	14440			0033	30.22	4737.5	
		OBS	0010	-0099	3438	2767			14440	5350	027	0033	30.22	4737.5	
		STD	0020	-0099	3438	2767	0004309	0009	14442			0066	30.22	4738.2	
		OBS	0020	-0099	3438	2767			14442	5280	064	0066	30.22	4738.2	
		STD	0030	-0102	3438	2767	0004295	0013	14442			0098	30.16	4738.2	
		OBS	0030	-0102	3438	2767			14442	5000	150	0098	30.16	4738.2	
		STD	0050	-0099	3438	2767	0004298	0022	14447			0164	30.22	4739.8	
		OBS	0050	-0099	3438	2767			14447	5140	136	0164	30.22	4739.8	
		STD	0075	-0094	3438	2767	0004308	0032	14453			0216	30.31	4741.8	
		OBS	0075	-0094	3438	2767			14453	5250	155	0216	30.31	4741.8	
		STD	0100	-0065	3451	2776	0003424	0042	14473			0328	30.83	4748.3	
		OBS	0100	-0065	3451	2776			14473	3330	191	0328	30.83	4748.3	
		STD	0125	-0040	3456	2779	0003149	0050	14489			0410	31.28	4753.6	
		OBS	0149	-0024	3460	2782			14501	3140	173	0489	31.57	4757.5	
		STD	0150	-0024	3460	2782	0002911	0058	14501			0492	31.57	4757.5	
		OBS	0199	-0019	3465	2785			14512	2960	178	0653	31.66	4761.1	
		STD	0200	-0020	3465	2785	0002553	0071	14512			0656	31.64	4761.1	
		STD	0250	-0082	3465	2788	0002280	0084	14492			0820	30.52	4754.6	
		OBS	0299	-0130	3464	2789			14477	3930	218	0981	29.66	4749.7	
		STD	0300	-0131	3464	2789	0002085	0094	14477			0984	29.64	4749.7	
		OBS	0398	-0189	3475	2800			14468	3830	136	1306	28.60	4746.7	
		STD	0400	-0190	3475	2800	0000978	0110	14468			1312	28.58	4746.7	
		OBS	0498	-0193	3480	2804			14483	3790	146	1634	28.53	4751.6	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS INDIC. INSTR.	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEA- TH- R CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
						10"	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA	
31	150	ED	7419 S	17634 E		570	46	03	11	021	1963	201	G07	0384	04	19		3	X1	4	2		0116

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	18	18	S10	950	-069	-078	8		

MESSAGE TIME HR. 1/10	CAS- T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°	± Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CTD
021		STD	0000	-0095	3442	2770	0004024	0000	14441			0000	30.29	4737.8	
		OBS	0000	-0095	3442	2770			14441	5030	146	0000	30.29	4737.8	
		OBS	0009	-0095	3442	2770			14443	4810	032	0030	30.29	4738.5	
		STD	0010	-0095	3442	2770	0004021	0004	14443			0033	30.29	4738.5	
		OBS	0019	-0095	3441	2769			14444	4950	164	0062	30.29	4738.8	
		STD	0020	-0095	3441	2769	0004079	0008	14444			0066	30.29	4738.8	
		OBS	0028	-0095	3443	2771			14446	5290	146	0092	30.29	4739.5	
		STD	0030	-0094	3443	2771	0003941	0012	14447			0098	30.31	4739.8	
		OBS	0047	-0090	3443	2771			14451	4990	178	0154	30.38	4741.1	
		STD	0050	-0089	3443	2771	0003953	0020	14452			0164	30.40	4741.5	
		OBS	0070	-0087	3443	2771			14457	5310	200	0230	30.43	4743.1	
		STD	0075	-0087	3443	2771	0003951	0030	14457			0216	30.43	4743.1	
		OBS	0094	-0089	3443	2771			14460	4960	178	0308	30.40	4744.1	
		STD	0100	-0075	3446	2773	0003763	0039	14467			0328	30.65	4746.4	
		STD	0125	-0027	3455	2778	0003288	0048	14495			0410	31.51	4755.6	
		OBS	0141	-0004	3459	2780			14509	3470	209	0463	31.93	4760.2	
		STD	0150	0006	3460	2780	0003074	0056	14515			0492	32.11	4762.1	
		OBS	0189	0029	3464	2782			14533	2630	200	0620	32.52	4768.0	
		STD	0200	0026	3464	2782	0002863	0071	14533			0656	32.47	4768.0	
		OBS	0236	0014	3465	2784			14534	2630	218	0774	32.25	4768.4	
		STD	0250	-0013	3465	2785	0002585	0085	14524			0820	31.77	4765.4	
		OBS	0284	-0058	3464	2786			14508	3270	214	0932	30.96	4759.8	
		STD	0300	-0058	3464	2787	0002406	0097	14511			0984	30.96	4760.8	
		OBS	0362	-0057	3465	2787			14522		278	1188	30.97	4764.4	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME IGHTH		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
						10'	1"		MO	DAY			HR	1/10	CRUISE NO.				STATION NUMBER
31	150	ED	7440 S	17848 E	570	48	03 11	085	1963	201	H07	0348	03	19		2	X1	6 8	0117

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. M	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	WET BULB			
		14	513	950	-061	-069	8			

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	LOC.
085		STD	0000	-0091	3447	2774	0003656	0000	14444			0000	30.36	4738.8	
		OBS	0000	-0091	3447	2774			14444	5530	209	0000	30.36	4738.8	
		STD	0010	-0092	3448	2775	0003572	0004	14445			0033	30.34	4739.2	
085		OBS	0010	-0092	3448	2775			14445	5120	209	0033	30.34	4739.2	
085		OBS	0019	-0091	3446	2773			14447	4860	205	0062	30.36	4739.8	
		STD	0020	-0091	3446	2773	0003718	0007	14447			0066	30.39	4739.8	
085		OBS	0029	-0093	3447	2774			14447	5330	187	0095	30.33	4739.8	
		STD	0030	-0093	3447	2774	0003639	0011	14448			0098	30.33	4740.1	
085		OBS	0048	-0089	3447	2774			14452	5250	196	0158	30.40	4741.5	
		STD	0050	-0089	3447	2774	0003647	0018	14453			0164	30.40	4741.8	
085		OBS	0072	-0089	3447	2774			14456	4710	182	0236	30.40	4742.8	
		STD	0075	-0089	3447	2774	0003639	0027	14457			0246	30.40	4743.1	
085		OBS	0097	-0087	3447	2774			14462	5010	191	0318	30.43	4744.7	
		STD	0100	-0079	3448	2774	0003594	0036	14466			0328	30.58	4746.0	
		STD	0125	-0032	3457	2780	0003111	0045	14493			0410	31.42	4754.9	
085		OBS	0145	-0015	3462	2783			14505	3250	228	0476	31.73	4758.8	
		STD	0150	-0019	3462	2783	0002784	0052	14504			0492	31.66	4758.5	
085		OBS	0193	-0047	3463	2785			14498	3580	214	0633	31.15	4756.5	
		STD	0200	-0050	3463	2785	0002547	0065	14498			0656	31.10	4756.5	
085		OBS	0242	-0066	3464	2787			14498	3450	209	0794	30.81	4756.5	
		STD	0250	-0074	3464	2787	0002340	0078	14495			0820	30.67	4756.5	
085		OBS	0290	-0076	3465	2788			14501	3730	196	0951	30.63	4757.5	
		STD	0300	-0067								0984	30.79		
085		OBS	0328	-0023	3462P	2783P				3070	196	1076	31.59		

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN SQUARE	STATION TIME IGHTH		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
						10'	1"		MO	DAY			HR	1/10	CRUISE NO.				STATION NUMBER
31	150	ED	7406 S	17902 E	570	49	03 11	130	1963	201	H06	0256	02	13		3	X7	4 8	0118

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C			VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. M	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	WET BULB			
		16	513	960	-056	-058	7			

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	LOC.
130		STD	0000	-0114	3447	2775	0003576	0000	14433			0000	29.95	4735.2	
		OBS	0000	-0114	3447	2775			14433	4890	205	0000	29.95	4735.2	
		STD	0010	-0115	3449	2777	0003416	0003	14434			0033	29.93	4735.6	
130		OBS	0010	-0115	3449	2777			14434	5630	182	0033	29.93	4735.6	
		STD	0020	-0117	3448	2776	0003481	0007	14435			0066	29.89	4735.9	
130		OBS	0020	-0117	3448	2776			14435	5530	073	0066	29.89	4735.9	
		STD	0030	-0116	3447	2775	0003557	0010	14437			0098	29.91	4736.5	
130		OBS	0030	-0116	3447	2775			14437	5550	205	0098	29.91	4736.5	
		STD	0049	-0115	3447	2775			14441	5240	178	0161	29.93	4737.8	
130		OBS	0074	-0108	3447	2775			14448	5110	173	0164	29.93	4737.8	
		STD	0075	-0108	3448	2775	0003491	0026	14448			0243	30.06	4740.1	
130		OBS	0098	-0106	3458	2783			14454	3780	214	0246	30.06	4740.1	
		STD	0100	-0107	3458	2784	0002721	0034	14454			0328	30.07	4742.1	
		STD	0125	-0112	3459	2784	0002647	0041	14456			0410	29.98	4742.8	
130		OBS	0147	-0115	3459	2785			14458			0482	29.93	4743.4	
		STD	0150	-0115	3459	2785	0002589	0047	14459			0492	29.93	4743.8	
130		OBS	0197	-0114	3460	2785			14467	3450	182	0446	29.95	4746.4	
		STD	0200	-0114	3460	2785	0002505	0060	14468			0566	29.95	4746.7	
130		OBS	0221	-0113	3458	2784			14472	3370	237	0725	29.97	4748.8	
130		OBS	0246	-0114	3459	2785			14475	3360	191	0804	29.95	4749.0	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE °/10'	LONGITUDE °/10'	WIND INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF FATHM'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER		
						10°	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DR.	HGT	PER				SEA	
31	150	ED	7337 S	17850 E		570	38	03	11	162	1963	201	H05	0220	02	13		2	X7	4	8		0119

WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTH	
			11	S11	970	-043	-056	7

MESSAGE TIME & HR. 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND(MMT-30°)	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg ± 0.1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CTD NO.
		STD	0000	-0075	3447	2773	0003716	0000	14451				30.65	4717.1	
		OBS	0000	-0075	3447	2773			14451	5300	168	0000	30.65	4717.1	
		STD	0010	-0078	3448	2774	0003625	0004	14451			0033	30.60	4717.1	
		OBS	0010	-0078	3448	2774			14451	5140	164	0033	30.60	4717.1	
		STD	0020	-0077	3447	2773	0003702	0007	14453			0066	30.61	4717.8	
		OBS	0020	-0077	3447	2773			14453	5080	155	0066	30.61	4717.8	
		STD	0029	-0078	3447	2774			14454	5100	164	0095	30.60	4712.4	
		OBS	0029	-0078	3447	2773	0003696	0011	14455			0098	30.60	4712.4	
		STD	0030	-0078	3447	2773			14460	5050	164	0161	30.67	4714.1	
		OBS	0049	-0074	3447	2773	0003706	0018	14460			0161	30.67	4714.1	
		STD	0050	-0074	3447	2773			14466	5110	155	0213	30.74	4716.0	
		OBS	0074	-0070	3447	2773			14466			0213	30.74	4716.0	
		STD	0075	-0069	3447	2773	0003711	0028	14466			0216	30.76	4716.0	
		OBS	0075	-0069	3447	2773			14477	4400	168	0322	31.03	4719.7	
		STD	0098	-0054	3450	2775			14477			0328	31.07	4719.7	
		OBS	0098	-0054	3450	2775	0002956	0045	14469			0410	30.19	4717.0	
		STD	0100	-0057	3451	2776	0003459	0037	14477			0482	30.28	4716.0	
		OBS	0100	-0057	3451	2776			14477	3460	187	0492	30.28	4716.4	
		STD	0125	-0084	3456	2781			14475			0616	30.25	4719.0	
		OBS	0125	-0084	3456	2781	0002739	0052	14476			0656	30.27	4719.3	
		STD	0200	-0096	3457	2783	0002783	0066	14476			0676	30.29	4719.7	
		OBS	0200	-0096	3457	2783			14477	3400	196	0676	30.29	4719.7	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE °/10'	LONGITUDE °/10'	WIND INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF FATHM'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER		
						10°	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DR.	HGT	PER				SEA	
31	150	ED	7308 S	17838 E		570	38	03	11	192	1963	201	H04	0777	07	13		3	X7	4	8		0120

WATER		WIND		BARO- METER (mb)		AIR TEMP. °C		
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	VIS. CODE	NO. OBS. DEPTH	
			14	S02	980	-050	-052	6

MESSAGE TIME & HR. 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND(MMT-30°)	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg ± 0.1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CTD NO.	
		STD	0000	-0106	3437	2766	0004369	0000	14435				30.09	4735.9		
		OBS	0000	-0106	3437	2766			14435	5070	168	0000	30.09	4735.9		
		STD	0010	-0107	3436	2766	0004438	0004	14436			0033	30.07	4736.2		
		OBS	0010	-0107	3436	2766			14436	5040	018	0033	30.07	4736.2		
		STD	0020	-0106	3436	2766	0004438	0009	14438			0066	30.09	4736.9		
		OBS	0020	-0106	3436	2766			14438	5350	136	0066	30.09	4736.9		
		STD	0030	-0107	3436	2766	0004430	0013	14440			0098	30.07	4737.5		
		OBS	0030	-0107	3436	2766			14440	4770	178	0098	30.07	4737.5		
		STD	0049	-0105	3436	2766			14444	5080	178	0161	30.11	4738.8		
		OBS	0049	-0105	3436	2766	0004430	0022	14444			0161	30.11	4738.8		
		STD	0050	-0105	3436	2766			14448	4780	164	0212	30.11	4710.1		
		OBS	0074	-0105	3436	2766	0004420	0033	14448			0216	30.11	4710.1		
		STD	0075	-0105	3436	2766			14452	5000	159	0325	30.11	4711.5		
		OBS	0099	-0105	3436	2766	0004410	0044	14452			0328	30.11	4711.5		
		STD	0100	-0105	3436	2766	0004410	0055	14457			0410	30.16	4713.1		
		OBS	0100	-0105	3436	2766			14462	5000	009	0486	30.20	4714.7		
		STD	0148	-0100	3436	2765	0004342	0066	14464			0492	30.12	4715.4		
		OBS	0148	-0100	3436	2765			14490	3630	155	0650	30.88	4753.9		
		STD	0200	-0060	3449	2775	0003559	0086	14491			0656	30.92	4751.3		
		OBS	0200	-0060	3449	2775	0003379	0103	14517			0820	31.57	4762.8		
		STD	0250	-0025	3454	2777			14538	2630	178	0974	32.07	4769.7		
		OBS	0297	0004	3458	2779	0003204	0120	14540			0981	32.11	4770.3		
		STD	0300	0006	3458	2779			14576	2760	168	1299	32.90	4782.1		
		OBS	0396	0050	3464	2781	0003025	0151	14577			1312	32.90	4782.5		
		STD	0400	0050	3464	2781			14593	2900	182	1624	32.90	4787.7		
		OBS	0495	0050	3468	2784	0002732	0180	14594			1910	32.88	4788.0		
		STD	0500	0049	3468	2784			14595	2940	196	1649	32.31	4788.4		
		OBS	0594	0017	3470	2788	0002348	0205	14594			1968	32.23	4788.0		
		STD	0600	0013	3470	2788			14592	3110	027	2274	31.55	4787.4		
		OBS	0693	-0025	3469	2789	0002169	0228	14594			2297	31.55	4788.0		
		STD	0700	-0025	3469	2789			14602	3920	046	2438	31.60	4790.7		
		OBS	0743	-0022	3469	2789										

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- TER CODE	CLOUD CODE	NDC STATION NUMBER
						CRUISE NO.	STATION NUMBER	DIR.		HGT.	PER.			SEA.					
31	150	ED	7238 S	17844 E	570 28	03 11 223	1963	201	H03	2012	20	00			0	X1	6 6	0121	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB		
		31	00	500	980	-034	-050	7

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	SIGMA-T			SPECIFIC VOLUME ANGM41-010°	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S C
				T °C	S ‰	SIGMA-T									
		STD	0000	-0113	3432	2763	0004729	0000	14631			0000	29.57	4734.6	
		OBS	0000	-0113	3432	2763			14631			0000	29.97	4734.6	
		STD	0010	-0111	3432	2763	0004731	0005	14634			0033	30.00	4735.6	
		OBS	0010	-0111	3432	2763			14634	4940	205	0033	30.00	4735.6	
		STD	0020	-0111	3432	2763	0004727	0009	14635			0066	30.00	4735.9	
		OBS	0020	-0111	3432	2763			14635	5360	209	0066	30.00	4735.9	
		STD	0030	-0113	3432	2763	0004716	0014	14636			0098	29.97	4736.2	
		OBS	0030	-0113	3432	2763			14636	4840	223	0098	29.97	4736.2	
		STD	0050	-0109	3432	2763	0004722	0024	14641			0164	30.04	4737.8	
		OBS	0050	-0109	3432	2763			14641			0164	30.04	4737.8	
		STD	0075	-0108	3432	2763	0004715	0035	14646			0246	30.06	4739.5	
		OBS	0075	-0108	3432	2763			14646	5930	200	0246	30.06	4739.5	
		STD	0100	-0101	3434	2764	0004578	0047	14654			0328	30.18	4742.1	
		OBS	0100	-0101	3434	2764			14654	4690	182	0328	30.18	4742.1	
		STD	0125	-0078	3447	2774	0003667	0057	14670			0410	30.60	4747.4	
		OBS	0125	-0043	3456	2779	0003131	0066	14692			0492	31.23	4754.6	
		STD	0150	-0043	3456	2779			14692	3110	218	0492	31.23	4754.6	
		OBS	0200	0065	3465	2781	0003042	0081	14551			0656	33.17	4773.9	
		STD	0200	0065	3465	2781			14551	2930	250	0656	33.17	4773.9	
		OBS	0220	0075	3466	2781	0003037	0096	14564			0820	33.35	4776.2	
		STD	0300	0085	3467	2781	0003036	0112	14577			0984	33.53	4782.5	
		OBS	0300	0085	3467	2781			14577	2830	228	0984	33.53	4782.5	
		STD	0400	0105	3469	2781	0003047	0142	14602			1312	33.89	4790.7	
		OBS	0400	0105	3469	2781			14602	2450	223	1312	33.89	4790.7	
		STD	0500	0106	3470	2782	0003002	0172	14620			1640	33.91	4795.6	
		OBS	0500	0106	3470	2782			14620	2680	191	1640	33.91	4795.6	
		STD	0598	0107	3471	2783			14637	2590	200	1962	33.93	4802.2	
		OBS	0598	0107	3471	2783	0002957	0202	14637			1568	33.93	4802.2	
		STD	0600	0098	3471	2783			14649	3060	209	2287	33.76	4806.1	
		OBS	0697	0098	3471	2783	0002908	0231	14650			2297	33.76	4806.1	
		STD	0700	0098	3471	2783			14664			2612	33.71	4811.3	
		OBS	0796	0095	3471	2784	0002904	0260	14665			2953	33.58	4815.9	
		STD	0800	0095	3471	2784	0002902	0290	14679			3268	33.44	4819.9	
		OBS	0800	0080	3470	2784	0002889	0318	14692			3281	33.44	4820.2	
		STD	0900	0068	3470	2784	0002837	0347	14703			3609	33.22	4823.8	
		OBS	0996	0058	3469	2784			14714	3310	218	3921	33.04	4827.4	
		STD	1200	0057	3469	2784	0002790	0375	14715			3937	33.03	4827.7	
		OBS	1300	0045	3469	2785	0002692	0403	14726			4265	32.81	4831.4	
		STD	1400	0035	3469	2786	0002609	0429	14739			4593	32.63	4835.6	
		OBS	1494	0026	3469	2786			14751	2940	218	4901	32.47	4839.6	
		STD	1500	0012	3470	2787	0002527	0455	14752			4921	32.47	4839.9	
		OBS	1943	0002	3470	2788	0002359	0516	14788			5744	32.22	4851.7	
		STD	1992	-0073					14817	191		6375	32.04	4861.2	
		OBS	1992	-0073								6536	32.09		



REFERENCE CITY CODE	ID. NO.	SHIP CODE	LATITUDE ° '/10	LONGITUDE ° '/10	MARSDES SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF FMBL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
					10°	1°	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT PER	SEA				
31	194	AK	762385	169320W	568	69	02	02	230	1964		001	0585	05	18		4	X1	6	7	0001
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTH		SPECIAL OBSERVATIONS				
					COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BULB	WET BULB											
						16		515	836	-028	-039	7				00					

MISSING TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> =P pg - sv/s	DEPTH (Ft)	TEMP. (°F)	SOUND VELOCITY Ft/sec
		STD	0000	-0075	3420	2752	0005782	0000	1444.7			0000	30.65	4739.8
	236	OBS	0000	-0075	3420	2752			1444.7			0000	30.65	4739.8
	236	OBS	0009	-0071	3420	2751			1445.1			0030	30.72	4741.1
		STD	0010	-0072	3420	2752	0005782	0006	1445.0			0033	30.70	4740.8
	236	OBS	0017	-0074	3421	2752			1445.1			0056	30.67	4741.1
		STD	0020	-0074	3421	2752	0005703	0012	1445.1			0066	30.67	4741.1
	236	OBS	0026	-0074	3420	2752			1445.2			0085	30.67	4741.5
		STD	0030	-0074	3420	2752	0005761	0017	1445.3			0098	30.67	4741.9
	236	OBS	0043	-0073	3421	2752			1445.5			0111	30.69	4742.4
		STD	0050	-0073	3424	2755	0005466	0028	1445.7			0154	30.69	4743.1
	236	OBS	0065	-0074	3428	2758			1446.0			0213	30.67	4744.1
		STD	0075	-0068	3429	2759	0005026	0042	1445.5			0216	30.42	4742.4
	236	OBS	0087	-0100	3430	2761			1445.1			0285	30.20	4741.1
		STD	0100	-0098	3435	2765	0004513	0054	1445.5			0328	30.24	4742.4
		STD	0125	-0092	3443	2771	0003916	0064	1446.3			0410	30.31	4745.1
	236	OBS	0130	-0091	3444	2772			1446.5			0426	30.36	4745.7
		STD	0150	-0084	3449	2775	0003482	0073	1447.2			0492	30.49	4748.0
	236	OBS	0173	-0074	3453	2778			1448.1			0568	30.67	4751.0
		STD	0200	-0051	3455	2779	0003159	0090	1449.6			0656	31.08	4755.9
		STD	0250	-0022	3459	2781	0002993	0105	1451.9			0820	31.60	4763.4
	236	OBS	0260	-0018	3460	2781			1452.2			0853	31.68	4764.4
		STD	0300	-0012	3462	2783	0002814	0120	1453.2			0984	31.78	4767.7
	236	OBS	0346	-0010	3464	2784			1454.1			1135	31.82	4770.7
		STD	0400	-0017	3465	2785	0002534	0147	1454.7			1312	31.69	4772.6
	236	OBS	0433	-0023	3466	2786			1455.0			1421	31.59	4773.6
	236	OBS	0476	-0034	3463	2785			1455.1			1562	31.39	4773.9

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DATE	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
CRUISE CODE	ID. NO.					10'	1'	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			D.K.	HGT	PER			
31	194	AK	75532S	169310W	568	59	02	03	038	1964		002	1280	11	18			4	X1	6	7	0002
WATER COLOR CODE		WIND TRAN. (M)		WIND DIR.		WIND OR FORCE		BARO-METER (mb)		AIR TEMP. °C (DRY BULB)		WET BULB		VIB. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS				
13		524		809		-047		-051		7		00										

MESSAGING TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-310 <sup>3</sup>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP. (°F)	SOUND VELOCITY ft/sec	CLAS
043	STD	0000	-0008	3445	2769	0004157	0000	14482				0000	31.86	4751.3	
	OBS	0000	-0008	3445	2769			14482				0000	31.86	4751.3	
043	OBS	0009	-0001	3445	2768			14486				0030	31.98	4752.6	
	STD	0010	-0002	3445	2768	0004185	0004	14486				0033	31.97	4752.6	
043	OBS	0017	-0007	3445	2769			14485				0056	31.87	4752.3	
	STD	0020	-0006	3445	2769	0004165	0008	14486				0066	31.89	4752.6	
043	OBS	0026	-0005	3445	2769			14487				0085	31.91	4752.9	
	STD	0030	-0006	3445	2769	0004164	0013	14488				0098	31.89	4753.3	
043	OBS	0043	-0008	3445	2769			14489				0111	31.86	4753.6	
	STD	0050	-0007	3445	2769	0004155	0021	14490				0164	31.87	4753.9	
043	OBS	0065	-0006	3445	2769			14493				0213	31.89	4754.9	
	STD	0075	-0015	3448	2771	0003886	0031	14491				0216	31.73	4754.3	
043	OBS	0087	-0023	3450	2773			14490				0285	31.59	4753.9	
	STD	0100	-0022	3451	2774	0003628	0040	14493				0328	31.60	4754.9	
043	STD	0125	-0017	3453	2775	0003512	0049	14499				0410	31.69	4756.9	
	OBS	0130	-0016	3453	2776			14501				0426	31.71	4757.5	
043	STD	0150	-0008	3455	2777	0003380	0058	14508				0492	31.86	4759.8	
	OBS	0173	0002	3457	2778			14517				0568	32.04	4762.8	
	STD	0200	0017	3460	2780	0003134	0074	14528				0656	32.31	4766.4	
	STD	0250	0039	3464	2781	0002961	0089	14547				0820	32.70	4772.6	
043	OBS	0260	0043	3465	2782			14551				0853	32.77	4773.9	
	STD	0300	0053	3468	2784	0002749	0104	14562				0944	32.95	4777.5	
043	OBS	0346	0061	3470	2785			14574				1135	33.10	4781.5	
	STD	0400	0063	3469	2784	0002781	0131	14584				1312	33.13	4784.8	
052	OBS	0422	0064	3468	2783			14588				1384	33.15	4786.1	
043	OBS	0433	0076	3470	2784			14595				1421	33.37	4788.4	
	STD	0500	0097	3472	2784	0002798	0159	14616				1610	33.75	4795.3	
052	OBS	0508	0098	3472	2784			14618				1667	33.76	4795.9	
052	OBS	0595		3471								1952			
	STD	0600	0087	3471	2784	0002803	0187	14628				1968	33.57	4799.2	
052	OBS	0682	0080	3471	2785			14639				2236	33.44	4802.8	
	STD	0700	0080	3471	2785	0002766	0215	14642				2297	33.44	4803.8	
	STD	0800	0077	3471	2785	0002758	0243	14657				2625	33.39	4808.7	
052	OBS	T0859	0075	3471	2785			14666				2818	33.35	4811.7	
	STD	0900	0074	3471	2785	0002764	0270	14672				2953	33.33	4813.6	
	STD	1000	0067	3470	2785	0002764	0298	14686				3281	33.21	4818.2	
052	OBS	T1038	0063	3470	2785			14690				3406	33.13	4819.5	
052	OBS	T1083	0057	3470	2785			14695				3553	33.03	4821.2	

REF ID	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN INDEX	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF STMPFL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
					10'	1'	MO	DAY		HR	MIN			CAUISE NO.	STATION NUMBER	DR				HGT	PER
31	194	AK	75230S	175270W	569	55	02	04	126	1964	003	06	77	06	23		3	X2	6	8	0003

WATER		WIND		BAND-METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRNS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		23	S10	800	-050	-056	7		00

MESSNGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND WALT. REF	S & D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (FT)	TEMP. (°F)	SOUND VELOCITY ft./sec	SC
		STD	0000	-0050	3440	2767	0004352	0000	14462			0000	31.10	4744.7	
		OBS	0000	-0050	3440	2767			14462			0000	31.10	4744.7	
		STD	0010	-0048	3440	2767	0004358	0004	14464	186		0033	31.14	4745.4	
		OBS	0010	-0048	3440	2767			14464			0033	31.14	4745.4	
		STD	0020	-0041	3442	2768	0004233	0009	14469	236		0066	31.26	4747.0	
		OBS	0020	-0041	3442	2768			14469			0066	31.26	4747.0	
		STD	0030	-0038	3443	2769	0004168	0013	14473	191		0098	31.32	4748.3	
		OBS	0030	-0038	3443	2769			14473			0098	31.32	4748.3	
		STD	0049	-0043	3444	2770			14474	201		0161	31.23	4748.7	
		OBS	0050	-0042	3444	2770	0004054	0021	14474			0161	31.24	4748.7	
		STD	0074	-0031	3450	2774			14484	215		0213	31.44	4752.0	
		OBS	0074	-0031	3450	2774	0003643	0031	14484			0213	31.44	4752.0	
		STD	0098	-0026	3454	2777			14491	209		0216	31.44	4752.0	
		OBS	0100	-0024	3454	2777	0003367	0039	14492			0322	31.53	4754.2	
		STD	0125	-0008	3457	2778	0003253	0048	14504			0328	31.57	4754.6	
		OBS	0148	0002	3459	2779			14513	226		0486	32.04	4761.5	
		STD	0150	0002	3459	2780	0003115	0056	14513			0492	32.04	4761.5	
		OBS	0197	0007	3463	2782			14524	224		0646	32.13	4765.1	
		STD	0200	0009	3463	2783	0002846	0071	14525			0656	32.16	4765.4	
		OBS	0250	0037	3467	2784	0002698	0084	14547			0820	32.67	4772.6	
		STD	0295	0056	3471	2786			14563	230		0968	33.01	4777.9	
		OBS	0300	0058	3471	2786	0002554	0098	14565			0981	33.04	4778.5	
		STD	0394	0077	3470	2784			14589	232		1293	33.39	4786.4	
		OBS	0400	0075	3470	2784	0002757	0124	14589			1312	33.35	4786.4	
		STD	0492	0040	3477.0	2792.0				234		1611	32.72		
		OBS	0500	0035	3469	2786	0002569	0151	14588			1640	32.63	4786.1	
		STD	0591	-0002	3467	2786			14586	233		1939	31.96	4785.4	
		OBS	0600	-0004	3467	2786	0002462	0176	14586			1968	31.93	4785.4	
		STD	0640	-0009	3466	2786			14591	235		2100	31.84	4787.1	

REFERENCE		SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° '10	DATE YY MM DD	MARKED SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	74510S	175080W	569	45	02	04	171	1964		004	2011	17	22			3	X2	6	8	0004

WATER		WIND		BARO. METER (mbal)	AIR TEMP. °C		VE. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		21	S13	790	-043	-050	7		00

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S %.	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	VELOCITY SOUND	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - µM/l	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0013	3446	2770	0004057	0000	14480			0000	31.77	4750.6
175		OBS	0000	-0013	3446	2770			14480		196	0000	31.77	4750.6
175		OBS	0009	-0010	3446	2770			14482		208	0030	31.82	4751.3
		STD	0010	-0010	3446	2770	0004070	0004	14483			0033	31.82	4751.6
175		OBS	0019	-0010	3445	2769			14484		212	0062	31.82	4752.0
		STD	0020	-0010	3445	2769	0004145	0008	14484			0066	31.82	4752.0
175		OBS	0028	-0011	3445	2769			14485		214	0092	31.80	4752.3
		STD	0030	-0011	3445	2769	0004140	0012	14485			0098	31.80	4752.3
175		OBS	0046	-0010	3445	2769			14488		210	0151	31.82	4753.3
		STD	0050	-0009	3445	2769	0004146	0021	14489			0230	31.91	4755.6
175		OBS	0070	-0005	3445	2769			14495		213	0246	31.95	4756.2
		STD	0075	-0003	3447	2770	0004022	0031	14497			0305	32.09	4758.5
175		OBS	0093	0005	3453	2775			14504		212	0328	32.13	4759.2
		STD	0100	0007	3454	2775	0003577	0040	14506			0410	32.23	4761.5
175		OBS	0139	0016	3456	2776	0003486	0049	14513		214	0456	32.29	4762.8
		STD	0150	0018	3457	2777	0003368	0058	14520			0492	32.32	4763.8
175		OBS	0185	0026	3459	2778			14530		204	0607	32.47	4767.0
		STD	0200	0033	3460	2779	0003226	0074	14536			0656	32.59	4769.0
		STD	0250	0057	3464	2780	0003070	0090	14555			0820	33.03	4775.2
175		OBS	0278	0069	3465	2781			14566		235	0912	33.24	4778.9
		STD	0300	0079	3466	2780	0003109	0105	14574			0984	33.42	4781.5
175		OBS	0371	0104	3467	2780			14597		235	1217	33.87	4789.0
190		OBS	0392	0110	3470	2782			14604		238	1286	33.98	4791.3
		STD	0400	0111	3470	2782	0003006	0136	14605			1312	34.00	4791.7
175		OBS	0464	0116	3471	2782			14618		244	1522	34.09	4795.9
190		OBS	0468	0118	3471	2782			14620		239	1535	34.12	4796.6
		STD	0500	0118	3471	2782	0003049	0166	14625			1640	34.12	4798.2
190		OBS	0548	0118	3470	2781			14633		235	1798	34.12	4800.8
		STD	0600	0118	3471	2782	0003045	0197	14642			1968	34.12	4803.6
190		OBS	0628	0118	3472	2783			14647		237	2060	34.12	4805.4
		STD	0700	0117	3472	2783	0002987	0227	14658			2297	34.11	4809.0
190		OBS	T0792	0111	3472	2783			14671		232	2598	34.00	4813.3
		STD	0800	0109	3472	2784	0002945	0257	14671			2625	33.96	4813.3
		STD	0900	0093	3473	2785	0002787	0285	14681			2953	33.67	4816.6
190		OBS	T0960	0086	3473	2786			14688		206	3150	33.55	4818.9
		STD	1000	0086	3473	2786	0002714	0313	14695			3281	33.55	4821.2
		STD	1100	0085	3473	2786	0002724	0340	14711			3609	33.53	4826.4
		STD	1200	0084	3473	2786	0002734	0367	14728			3937	33.51	4832.0
190		OBS	T1212	0084	3473	2786			14730		221	3976	33.51	4832.7
		STD	1300	0084	3473	2786	0002750	0395	14744			4265	33.51	4837.3
		STD	1400	0083	3473	2786	0002757	0422	14761			4593	33.49	4842.8
		STD	1500	0083	3473	2786	0002774	0450	14778			4921	33.49	4848.4
190		OBS	T1684	0083	3472	2785			14809		215	5525	33.49	4856.6

REFERENCE CWT CODE	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DATE MO DAY HR:1/10	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
					10'	1'	MO	DAY	HR:1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA				TYPE
31	194	AK	740905	174480W	569	44	02	04	236	1964	005	2195	19	21				3	X2	6	8	0005

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TEMP (°C)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
	21	S13	800	-027	033	7	00		

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-STEP	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CORRECTION
241	STD	0000	-0043	3436	2763	0004687	0000	1446.4				0000	31.23	4745.4	
	OBS	0000	-0043	3436	2763			1446.4				0000	31.23	4745.4	
	STD	0010	-0045	3436	2763	0004676	0005	1446.5				0033	31.19	4745.7	
241	OBS	0010	-0045	3436	2763			1446.5		194		0033	31.19	4745.7	
241	OBS	0019	-0045	3436	2763			1446.7		200		0062	31.19	4746.4	
	STD	0020	-0045	3436	2763	0004674	0009	1446.7				0066	31.19	4746.4	
241	OBS	0029	-0044	3436	2763			1446.9		198		0095	31.21	4747.0	
	STD	0030	-0044	3436	2763	0004676	0014	1446.9				0098	31.21	4747.0	
241	OBS	0048	-0045	3436	2763			1447.1		197		0158	31.19	4747.7	
	STD	0050	-0045	3436	2763	0004669	0023	1447.2				0164	31.19	4748.0	
241	OBS	0071	-0042	3436	2763			1447.7		200		0233	31.24	4749.7	
	STD	0075	-0042	3436	2763	0004653	0035	1447.7				0246	31.24	4749.7	
241	OBS	0095	-0041	3438	2765			1448.1		189		0312	31.26	4751.0	
	STD	0100	-0041	3439	2765	0004646	0046	1448.2				0328	31.26	4751.3	
	STD	0125	-0040	3442	2768	0004214	0057	1448.7				0410	31.28	4752.9	
241	OBS	0143	-0040	3444	2769			1449.1		207		0469	31.28	4754.2	
	STD	0150	-0036	3445	2770	0004002	0067	1449.4				0492	31.35	4755.2	
241	OBS	0190	-0019	3449	2772			1450.9		212		0623	31.66	4760.2	
	STD	0200	-0016	3450	2773	0003714	0087	1451.2				0656	31.71	4761.1	
	STD	0250	-0003	3454	2776	0003475	0105	1452.7				0820	31.95	4766.1	
241	OBS	0285	0005	3456	2777			1453.6		226		0935	32.09	4769.0	
	STD	0300	0008	3457	2778	0003305	0122	1454.0				0984	32.14	4770.3	
241	OBS	0380	0022	3460	2779			1456.0		214		1247	32.40	4776.9	
251	OBS	0396	0070	3470Q	2784Q					229		1299	33.26		
	STD	0400	0071	3462	2778	0003333	0155	1458.6				1312	33.28	4785.4	
241	OBS	0476	0092Q	3462Q	2777Q					223		1562			
251	OBS	0488	0082	3466	2781			1460.6		227		1601	33.48	4792.0	
	STD	0500	0081	3466	2781	0003102	0187	1460.8				1640	33.46	4792.6	
251	OBS	0560	0079	3467	2782			1461.7		224		1837	33.42	4795.6	
	STD	0600	0084	3469	2783	0002930	0217	1462.6				1968	33.51	4798.5	
251	OBS	0644	0089	3470	2783			1463.6		231		2113	33.60	4801.8	
	STD	0700	0093	3470	2783	0002921	0246	1464.7				2297	33.67	4805.4	
	STD	0800	0099	3471	2783	0002945	0276	1466.7				2625	33.78	4812.0	
251	OBS	T0810	0100	3471	2783			1466.9		219		2658	33.80	4812.6	
	STD	0900	0108	3472	2783	0002998	0306	1468.8				2953	33.94	4818.9	
251	OBS	T0982	0109	3472	2784			1470.2		215		3222	33.96	4823.5	
	STD	1000	0107	3472	2784	0002982	0335	1470.4				3281	33.93	4824.1	
	STD	1100	0094	3471	2784	0002947	0365	1471.5				3609	33.69	4827.7	
	STD	1200	0083	3470	2784	0002917	0394	1472.7				3937	33.49	4831.7	
251	OBS	T1253	0077	3470	2784			1473.3		226		4111	33.39	4833.6	
	STD	1300	0077	3470	2784	0002908	0424	1474.1				4265	33.39	4836.3	
	STD	1400	0075	3470	2784	0002903	0453	1475.7				4593	33.35	4841.5	
	STD	1500	0069	3470	2785	0002860	0481	1477.1				4921	33.24	4846.1	
251	OBS	T1721	0042	3470	2786			1479.7		228		5646	32.76	4854.6	
	STD	1750	0037	3470	2786	0002569	0549	1479.9				5741	32.67	4855.3	
251	OBS	T1912	0004	3470	2788			1481.2		229		6273	32.07	4859.6	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS INDIC	MARS SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AM)	NODC STATION NUMBER			
						10'	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA		
31	194	AK	73520S	175290W	569	35	02	05	053	1964		006	2468	24	21			3	X2	6	8	0006		
					WATER		WIND		BARO- METER		AIR TEMP. °C		WIL CODE		NO. OBS. DEPTH		SPECIAL OBSERVATIONS							
					COLOR CODE		FRAN. (m)		DIR. S F L		SPEED OR FORCE		DRY BULB		WET BULB									
					24		S 14		B 14		-039		-049		7		00							

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP. (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0035	3442	2768	0004263	0000	14469			0000	31.37	4747.0
057		OBS	0000	-0035	3442	2768			14469			0000	31.37	4747.0
057		OBS	0009	-0026	3443	2768			14475			0030	31.53	4749.0
		STD	0010	-0026	3443	2768	0004225	0004	14475			0033	31.53	4749.0
057		OBS	0019	-0026	3442	2767			14476			0062	31.53	4749.3
		STD	0020	-0026	3442	2767	0004300	0009	14476			0066	31.53	4749.3
057		OBS	0028	-0027	3442	2767			14477			0092	31.51	4749.7
		STD	0030	-0027	3442	2767	0004294	0013	14478			0098	31.51	4750.0
057		OBS	0047	-0025	3446Q	2770Q			14482			0154	31.55	
		STD	0050	-0025	3442	2767	0004300	0021	14482			0164	31.55	4751.3
057		OBS	0070	-0026	3442	2767			14485			0230	31.53	4752.3
		STD	0075	-0026	3442	2767	0004292	0032	14486			0246	31.53	4752.6
057		OBS	0094	-0025	3442	2767			14489			0308	31.55	4753.6
		STD	0100	-0025	3443	2768	0004231	0043	14490			0328	31.55	4753.9
		STD	0125	-0024	3446	2770	0003986	0053	14495			0410	31.57	4755.6
057		OBS	0141	-0024	3448	2772			14498			0463	31.57	4756.5
		STD	0150	-0008	3451	2774	0003685	0063	14507			0492	31.86	4759.5
061		OBS	0189	0047	3461	2779			14540			0620	32.85	4770.3
		STD	0200	0052	3462	2779	0003188	0080	14544			0656	32.94	4771.6
		STD	0250	0073	3467	2782	0002948	0095	14563			0820	33.31	4777.9
061		OBS	0284	0083	3469	2783			14573			0932	33.49	4781.2
		STD	0300	0084	3469	2783	0002863	0110	14576			0984	33.51	4782.1
061		OBS	0378	0095	3470	2783			14594			1240	33.71	4788.0
		STD	0400	0098	3471	2783	0002845	0138	14600			1312	33.76	4790.0
070		OBS	0465	0115	3473	2784			14618			1526	34.07	4795.9
		OBS	0473	0118	3473	2784			14621			1552	34.12	4796.9
		STD	0500	0121	3473	2784	0002869	0167	14627			1640	34.18	4798.5
070		OBS	0558	0124	3474	2784			14638			1831	34.23	4802.9
		STD	0600	0124	3474	2784	0002864	0195	14645			1968	34.23	4804.8
070		OBS	0651	0123	3474	2784			14653			2136	34.21	4807.4
		STD	0700	0117	3475	2785	0002800	0224	14659			2297	34.11	4809.4
070		OBS	0744	0112	3475	2786			14664			2441	34.02	4811.0
		STD	0800	0107	3475	2786	0002727	0251	14671			2625	33.93	4813.3
		STD	0900	0100	3474	2786	0002727	0279	14684			2953	33.80	4817.6
070		OBS	T0930	0098	3474	2786			14689			3051	33.76	4819.2
		STD	1000	0094	3474	2786	0002711	0306	14698			3281	33.69	4822.2
		STD	1100	0089	3474	2786	0002686	0333	14713			3609	33.60	4827.1
070		OBS	T1116	0088	3474	2787			14715			3662	33.58	4827.7
		STD	1200	0084	3474	2787	0002681	0360	14728			3937	33.51	4832.0
		STD	1300	0080	3473	2787	0002683	0387	14743			4265	33.44	4836.9
070		OBS	T1396	0075	3473	2787			14757			4580	33.35	4841.5
		STD	1400	0075	3473	2787	0002681	0413	14757			4593	33.35	4841.5
		STD	1500	0073	3473	2787	0002691	0440	14773			4921	33.31	4846.8
		STD	1750	0059	3472	2787	0002620	0507	14810			5741	33.06	4858.9
070		OBS	T1868	0048	3472	2787			14825			6128	32.86	4863.8
		STD	2000	0033	3472	2788	0002393	0569	14841			6562	32.59	4869.1
070		OBS	T2356	-0023	3472	2791			14877			7730	31.59	4880.9

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	MARSDES SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL.	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
						10'	1"	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.			
31	194	AK	731705	175240W	569	35	02	05	135	1964	007	2743	27	23	3	X2	6 18	0007	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C			VIS CODE	NO. OBS DEFIN.	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB	WIND SPEED			
			24	S05	844	-029	-040	7		00

MESSING TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALT-810†	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP. (°F)	SOUND VELOCITY FT/SEC	OTHER
		STD	0000	-0032	3443	2768	0004200	0000	14670	735		0000	31.1e2	4747.4	
139		OBS	0000	-0032	3443	2768			14670	735		0000	31.1e2	4747.4	
		STD	0010	-0032	3444	2769	0004122	0004	14672	728		0033	31.1e2	4748.0	
139		OBS	0010	-0032	3444	2769			14672	728		0033	31.1e2	4748.0	
		STD	0020	-0034	3444	2769	0004111	0008	14673	751		0066	31.39	4748.3	
139		OBS	0020	-0034	3444	2769			14673			0066	31.39	4748.3	
139		OBS	0029	-0031	3443	2768			14676	759		0095	31.1e4	4749.3	
		STD	0030	-0031	3443	2768	0004199	0012	14676	757		0098	31.1e4	4749.3	
139		OBS	0049	-0033	3443	2768			14678	731		0161	31.1e1	4750.0	
		STD	0050	-0032	3443	2768	0004191	0021	14679	731		0164	31.1e2	4750.3	
139		OBS	0074	-0031	3444	2769			14683	719		0213	31.1e4	4751.6	
		STD	0075	-0032	3444	2769	0004103	0031	14683	719		0216	31.1e2	4751.6	
139		OBS	0098	-0057	3446	2772			14675	704		0322	30.97	4749.0	
		STD	0100	-0057	3446	2772	0003818	0041	14676	699		0328	30.97	4749.3	
		STD	0125	-0054	3450	2775	0003511	0050	14682	644		0410	31.03	4751.3	
139		OBS	0147	-0052	3454	2778			14687	598		0482	31.06	4752.9	
		STD	0150	-0044	3455	2779	0003202	0059	14691	591		0492	31.21	4754.2	
139		OBS	0196	0056	3465	2781			14546	504		0613	33.01	4772.3	
		STD	0200	0058	3465	2781	0002983	0074	14548	503		0656	33.0e4	4773.0	
		STD	0250	0081	3468	2782	0002940	0089	14567	494		0820	33.4e6	4779.2	
139		OBS	0294	0094	3470	2783			14580			0965	33.69	4783.4	
		STD	0300	0095	3470	2783	0002871	0103	14582	486		0984	33.71	4784.1	
139		OBS	0393	0103	3472	2784			14601	469		1289	33.85	4790.3	
		STD	0400	0104	3472	2784	0002810	0132	14602			1312	33.87	4790.7	
139		OBS	0491	0112	3472	2783			14621			1611	34.02	4796.9	
155		OBS	0492	0107	3473	2785			14619			1614	33.93	4796.2	
		STD	0500	0108	3473	2784	0002791	0160	14621			1610	33.9e4	4796.9	
155		OBS	0591	0115	3472	2783			14639			1939	34.07	4802.8	
		STD	0600	0115	3472	2783	0002938	0188	14641			1968	34.07	4803.5	
155		OBS	0689	0113	3473	2784			14655			2260	34.03	4808.1	
		STD	0700	0113	3473	2784	0002880	0218	14657			2297	34.03	4808.7	
155		OBS	0788	0108	3472	2784			14669			2595	33.9e4	4812.6	
		STD	0800	0107	3472	2784	0002929	0247	14670			2695	33.93	4813.0	
		STD	0900	0098	3472	2784	0002875	0276	14683			2953	33.76	4817.2	
155		OBS	T0984	0093	3472	2785			14695			3228	33.67	4821.2	
		STD	1000	0093	3472	2785	0002852	0304	14698			3281	33.67	4822.2	
		STD	1100	0090	3472	2785	0002844	0333	14713			3609	33.62	4827.1	
155		OBS	T1181	0087	3472	2785			14726			3875	33.57	4831.4	
		STD	1200	0086	3472	2785	0002833	0361	14728			3937	33.55	4832.0	
		STD	1300	0080	3472	2785	0002817	0389	14742			4265	33.1e4	4836.6	
		STD	1400	0075	3471	2785	0002807	0418	14757			4593	33.35	4841.5	
155		OBS	T1476	0071	3471	2785			14768			4842	33.28	4845.1	
		STD	1500	0070	3471	2785	0002795	0446	14772			4921	33.26	4846.4	
		STD	1750	0058	3471	2786	0002705	0514	14809			5711	33.0e4	4858.6	
155		OBS	T1969	0051	3471	2786			14843			6460	32.92	4869.7	
		STD	2000	0051	3471	2786	0002652	0581	14848			6562	32.92	4871.4	
155		OBS	T2461	0046	3470	2786			14925			8074	32.83	4896.6	
		STD	2500	0042	3470	2786	0002661	0714	14930			8202	32.76	4898.3	
155		OBS	T2658	0021	3470	2787			14948			8720	32.38	4904.2	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	MARS DEN SQUARE MILES	STATION TIME				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.	HGT			
31	194	AK	734505	173460W	569	33	02	05	202	1964	008	2991	29	00				X1	3	4	0008

WATER		WIND		BARO- METER CORR.	AIR TEMP. °C	NO. OF OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (%)	DIR.	1/10 SPEED OR FORCE				
			23	506	865		00
					-019	-028	7

MESSAGING TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT-216*	S/D DYN. AL. X 10 <sup>3</sup>	WAVE VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	COND.
		STD	0000	-0006	3432	2758	0005159	0000	14481			0000	31.85	h751.0	
		OBS	0000	-0006	3432	2758			14481			0000	31.89	h751.0	
		STD	0010	-0009	3430	2757	0005296	0005	14481			0033	31.81	h751.0	
		OBS	0010	-0009	3430	2757			14481			0033	31.81	h751.0	
		STD	0020	-0009	3429	2756	0005371	0011	14482			0066	31.81	h751.3	
		OBS	0020	-0009	3429	2756			14482			0066	31.81	h751.3	
		STD	0030	-0007	3429	2756	0005379	0016	14485			0098	31.87	h752.3	
		OBS	0030	-0007	3429	2756			14485			0098	31.87	h752.3	
		STD	0050	-0008	3431	2757	0005219	0027	14488			0161	31.86	h753.3	
		OBS	0050	-0008	3431	2757			14488			0161	31.86	h753.3	
		STD	0075	-0084	3444	2771	0003887	0038	14459			0216	30.19	h743.8	
		OBS	0075	-0084	3444	2771			14459			0216	30.19	h743.8	
		STD	0100	-0026	3451	2774	0003601	0047	14491			0328	31.53	h751.3	
		OBS	0100	-0026	3451	2774			14491			0328	31.53	h751.3	
		STD	0125	-0010	3455	2777	0003373	0056	14503			0110	31.82	h752.2	
		OBS	0150	0010	3458	2778	0003248	0064	14517			0192	32.18	h762.8	
		STD	0200	0061	3463	2779	0003168	0080	14549			0192	32.18	h762.8	
		OBS	0200	0061	3463	2779			14549			0656	33.10	h773.3	
		STD	0250	0078	3465	2780	0003132	0096	14565			0656	33.10	h773.3	
		OBS	0300	0090	3467	2781	0003070	0112	14579			0820	33.10	h778.5	
		STD	0300	0090	3467	2781			14579			0981	33.62	h783.1	
		OBS	0400	0103	3468	2781	0003107	0142	14601			0981	33.62	h783.1	
		STD	0400	0103	3474.0	2786.0						1312	33.85	h790.3	
		OBS	0498	0098	3469	2782			14616			1312	33.85	h790.3	
		STD	0500	0106	3471	2783	0002926	0173	14620			1631	33.76	h795.3	
		OBS	0500	0106	3471	2783			14620			1610	33.91	h795.6	
		STD	0598	0105	3470	2782			14636			1610	33.91	h795.6	
		OBS	0600	0105	3470	2782	0003018	0202	14636			1962	33.89	h801.8	
		STD	0600	0112	3472	2783			14656			1962	33.89	h801.8	
		OBS	0698	0112	3472	2783			14656			2290	31.02	h808.1	
		STD	0700	0112	3472	2783	0002946	0232	14656			2297	31.02	h808.1	
		OBS	0798	0109	3472	2784			14671			2618	33.96	h813.3	
		STD	0800	0109	3472	2784	0002945	0262	14671			2625	33.96	h813.3	
		OBS	0900	0106	3472	2784	0002943	0291	14687			2953	33.91	h818.6	
		STD	0997	0102	3469.0	2782.0			14716			3271	33.81		
		OBS	1000	0102	3472	2784	0002930	0320	14702			3281	33.81	h823.5	
		STD	1100	0097	3472	2784	0002907	0350	14716			3609	33.75	h828.1	
		OBS	T1196	0092	3472	2785			14730			3921	33.66	h832.7	
		STD	1200	0092	3472	2785	0002881	0379	14731			3937	33.66	h833.0	
		OBS	1300	0087	3472	2785	0002875	0407	14746			1265	33.57	h837.9	
		STD	1400	0083	3471	2785	0002883	0436	14761			1593	33.19	h842.8	
		OBS	1496	0079	3471	2785			14775			1908	33.12	h847.1	
		STD	1500	0079	3471	2785	0002882	0465	14776			1921	33.12	h847.8	
		OBS	1750	0070	3471	2785	0002864	0537	14814			5711	33.26	h860.2	
		STD	1995	0060	3470	2785			14852			6515	33.08	h872.7	
		OBS	T2495	0060	3470	2785	0002824	0608	14852			6562	33.08	h872.7	
		STD	2500	0034	3469	2786	0002641	0745	14927			8186	32.63	h897.0	
		OBS	T2945	-0032	3470	2790			14975			8202	32.61	h897.3	
												9662	31.12	h913.0	

REFERENCE CTRY ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	SOUND SPEED M/S	MARSden SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
					10'	1"		MO	DAY	HR.		1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER
31	194	AK	742705	173360W	569	43	02	06	039	1964	009	009	2423	24	00				X1	3	2	0009
					WATER		WIND		BARO-		AIR TEMP. °C		VS		SPECIAL							
					COLOR		DIR.		METER		DRY		NO.		OBS.							
					CODE		25		892		-018		7		00							

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY	S CTD
		STD	0000	0019	3446	2768	0004214	0000	14494			0000	32.34	4755.2	
		OBS	0000	0019	3446	2768			14494			0000	32.34	4755.2	
044		STD	0010	0004	3445	2768	0004214	0004	14489			0033	32.07	4753.6	
		OBS	0010	0004	3445	2768			14489			0033	32.07	4753.6	
044		STD	0020	0003	3445	2768	0004209	0008	14490			0066	32.05	4753.9	
		OBS	0020	0003	3445	2768			14490			0066	32.05	4753.9	
044		STD	0030	0002	3445	2768	0004203	0013	14491			0098	32.04	4754.2	
		OBS	0030	0002	3445	2768			14491			0098	32.04	4754.2	
044		STD	0050	0001	3446	2769	0004128	0021	14494			0164	32.02	4755.2	
		OBS	0050	0001					14494			0164	32.02	4755.2	
044		STD	0075	-0009	3447	2770	0003992	0031	14494			0216	31.84	4755.2	
		OBS	0075	-0009	3447	2770			14494			0216	31.84	4755.2	
044		STD	0100	-0019	3452	2775	0003559	0041	14494			0328	31.66	4755.2	
		OBS	0100	-0019	3452	2775			14494			0328	31.66	4755.2	
044		STD	0125	0003	3456	2777	0003364	0049	14509			0410	32.05	4760.2	
		OBS	0150	0027	3460	2779	0003190	0057	14525			0492	32.04	4765.4	
044		STD	0200	0082	3466	2781	0003075	0073	14559			0492	32.04	4765.4	
		OBS	0200	0082	3466	2781			14559			0556	33.48	4776.6	
044		STD	0250	0103	3469	2782	0002999	0088	14577			0650	33.48	4776.6	
		OBS	0300	0116	3470	2781	0003027	0103	14591			0826	33.85	4782.5	
044		STD	0400	0117	3470	2781	0003060	0134	14608			0984	34.09	4787.1	
		OBS	0400	0117	3470	2781			14608			0984	34.09	4787.1	
044		STD	0500	0102	3469	2782	0003047	0164	14618			1312	34.11	4792.6	
		OBS	0500	0102	3469	2782			14618			1312	34.11	4792.6	
044		STD	0600	0110	3470	2782	0003056	0195	14638			1640	33.84	4795.9	
		OBS	0600	0110	3470	2782			14638			1640	33.84	4795.9	
044		STD	0700	0112	3471	2783	0003021	0225	14656			1969	33.98	4802.5	
		OBS	0700	0112	3471	2783			14656			1969	33.98	4802.5	
044		STD	0800	0104	3471	2783	0002979	0255	14669			2297	34.02	4808.4	
		OBS	0800	0104	3471	2783			14669			2297	34.02	4808.4	
044		STD	0900	0099	3472	2784	0002920	0285	14684			2625	33.87	4812.6	
		OBS	1000	0093	3472	2785	0002852	0314	14698			2625	33.87	4812.6	
044		STD	T1000	0093	3472	2785			14698			2953	33.78	4817.6	
		OBS	T1100	0085	3472	2785	0002837	0342	14711			3281	33.67	4822.2	
044		STD	T1200	0079	3471	2785	0002837	0370	14725			3609	33.53	4826.4	
		OBS	T1200	0079	3471	2785			14725			3937	33.42	4831.0	
044		STD	T1300	0075	3471	2785	0002815	0399	14740			3937	33.42	4831.0	
		OBS	T1400	0072	3471	2785	0002801	0427	14756			4265	33.35	4835.9	
044		STD	T1500	0068	3471	2785	0002776	0455	14771			4593	33.30	4841.2	
		OBS	T1500	0068	3471	2785			14771			4921	33.22	4846.1	
044		STD	T1750	0059	3471	2786	0002752	0524	14809			4921	33.22	4846.1	
		OBS	T2000	0048	3470	2786	0002697	0592	14847			5711	33.06	4858.6	
044		STD	T2000	0048	3470	2786			14847			5662	32.86	4871.0	
		OBS	T2400	0027	3471	2788			14907			5662	32.86	4871.0	
044		STD	T2400	0027	3471	2788			14907			7874	32.49	4890.7	

REFERENCE CITY NO.	SHIP ID. NO.	LATITUDE 1/10	LONGITUDE 1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL.	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER				
					10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER	SEA	
31	194	AK	75005S	173410W	569	53	02	06	095	1964		010	2195	21	00		0	X2	6	8		0010

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIC. COR.	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY RULE	WET RULE			
			22	S08	909	-011	-027	7	00

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\frac{\Delta \sigma_t}{\Delta D}$ DIR. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \pm 0.1$	DEPTH (Ft)	TEMP. (°F)	SOUND VELOCITY Feet/sec	CLOUD CODES
099		STD	0000	0012	3450	2772	0003874	0000	14492	970		0000	32.22	4754.6	
		OBS	0000	0012	3450	2772			14492	970	179	0000	32.22	4754.6	
		STD	0010	0012	3448	2770	0004026	0004	14493	938		0033	32.22	4754.9	
099		OBS	0010	0012	3448	2770			14493		187	0033	32.22	4754.9	
		STD	0020	0012	3448	2770	0004025	0008	14495	905		0066	32.22	4755.6	
099		OBS	0020	0012	3448	2770			14495		186	0066	32.22	4755.6	
		STD	0030	0006	3448	2770	0003994	0012	14493	873		0098	32.11	4754.9	
099		OBS	0030	0006	3448	2770			14493		187	0098	32.11	4754.9	
099		OBS	0049	0003	3451	2773			14496		189	0161	32.05	4755.9	
		STD	0050	0003	3451	2773	0003726	0020	14496	809		0161	32.05	4755.9	
099		OBS	0074	0002	3458	2779			14500	731	193	0213	32.04	4755.9	
		STD	0075	0002	3458	2779	0003202	0028	14501	715		0216	32.04	4757.5	
099		OBS	0098	0002	3461	2781			14505	402	200	0322	32.04	4758.8	
		STD	0100	0003	3461	2781	0002977	0036	14506	402		0328	32.05	4759.2	
099		OBS	0125	0017	3462	2781	0002975	0044	14516	404		0410	32.31	4762.4	
		STD	0148	0029	3463	2781			14526		212	0486	32.52	4765.7	
099		OBS	0150	0030	3463	2782	0002949	0051	14526	406		0492	32.54	4765.7	
		STD	0197	0053	3472	2787			14546	410	220	0616	32.95	4772.3	
		OBS	0200	0055	3472	2787	0002448	0064	14547	411		0656	32.99	4772.6	
		STD	0250	0082	3472	2785	0002667	0077	14568	425		0820	33.48	4779.5	
099		OBS	0295	0098	3471	2783			14582		224	0968	33.76	4784.1	
		STD	0300	0098	3471	2784	0002817	0091	14583	436		0984	33.76	4784.4	
099		OBS	0394	0102	3472	2784			14601	446	221	1293	33.84	4790.3	
		STD	0400	0102	3472	2784	0002799	0119	14602	446		1312	33.84	4790.1	
109		OBS	0474	0101	3472	2784			14613	445	235	1555	33.82	4794.3	
099		OBS	0492	0102						444	231	1614	33.84		
		STD	0500	0103	3472	2784	0002829	0147	14619	450		1610	33.85	4796.2	
109		OBS	0571	0106	3471	2783			14632	483	235	1873	33.91	4800.5	
		STD	0600	0106	3471	2783	0002927	0176	14637	474		1969	33.91	4802.2	
109		OBS	0668	0106	3472	2784			14648	461	235	2192	33.91	4805.8	
		STD	0700	0104	3473	2785	0002806	0205	14653	461		2297	33.87	4807.4	
109		OBS	0766	0100	3474	2786			14662	462	241	2513	33.80	4810.4	
		STD	0800	0099	3474	2786	0002727	0232	14667	464		2625	33.78	4812.0	
109		OBS	T0962	0091	3473	2786	0002744	0260	14682	466		2953	33.69	4816.9	
		STD	0900	0094	3473	2786			14691	467	225	3156	32.64	4819.9	
109		OBS	T1159	0078	3473	2786	0002734	0287	14696	466		3281	33.58	4821.5	
		STD	1100	0082	3473	2786	0002699	0314	14710	464		3609	33.48	4826.1	
109		OBS	T1200	0077	3473	2786	0002678	0341	14724	467	224	3937	33.39	4830.7	
		STD	1300	0073	3473	2786	0002685	0368	14739	476		4265	33.31	4835.6	
109		OBS	T1457	0065	3472	2786	0002675	0395	14754	483		4593	33.22	4840.5	
		STD	1500	0065	3472	2786			14762	486	230	4760	33.17	4843.2	
109		OBS	T1950	0052	3470	2786	0002673	0421	14770	487		4921	33.17	4845.8	
		STD	1750	0023	3468	2786	0002718	0489	14806	491		5711	32.94	4857.6	
109		OBS	T1955	0023	3468	2786			14828	495	227	6414	32.41	4864.8	
		STD	2000	0015	3467	2785	0002574	0555	14832	509		6562	32.27	4866.1	
109		OBS	T2104	-0008	3466	2786			14839	549	218	6903	31.86	4868.4	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DATE	WARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'PL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO	DAY	HR.	10'		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	75290S	173300W	569	53	02	06	151	1964	011	1326	13	25		3	X7	6	8		0011	
WATER		WIND		BARO-METER (mba)	AIR TEMP. °C		VE. COEF	SPECIAL OBSERVATIONS														
COLOR CODE	TRANS. (m <sup>2</sup> )	DIR.	SPEED OR FORCE		DRY BULB	WET BULB		NO. OBS. DEPTHS														
			25	505	909	-018	-028	7	00													

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - μ/l	DEPTH (Ft)	TEMP. (°F)	SOUND VELOCITY ft/sec
155		STD	0000	0001	3447	2770	0004048	0000	14486	737		0000	32.02	4752.6
		OBS	0000	0001	3447	2770			14486	737	185	0000	32.02	4752.6
		STD	0010	0001	3447	2770	0004047	0004	14488	747		0033	32.02	4753.3
155		OBS	0010	0003	3447	2770			14488	747	184	0033	32.02	4753.3
		STD	0020	0003	3447	2770	0004056	0008	14490	751		0066	32.05	4753.9
155		OBS	0020	0003	3447	2770			14490	751	177	0066	32.05	4753.9
		STD	0030	0003	3446	2769	0004132	0012	14492	749		0098	32.05	4754.6
155		OBS	0030	0003	3446	2769			14492	749	185	0098	32.05	4754.6
		STD	0050	0002	3446	2769	0004125	0020	14495	740		0164	32.04	4755.6
155		OBS	0050	0002	3446	2769			14495	740	183	0164	32.04	4755.6
		STD	0070	0000	3449	2772	0003870	0030	14498	701		0213	32.00	4756.5
155		OBS	0070	0000	3449	2772			14498	701	196	0213	32.00	4756.5
		STD	0090	0003	3455	2776	0003436	0040	14505	589		0266	32.05	4757.8
155		OBS	0090	0003	3455	2776			14505	589	214	0266	32.05	4757.8
		STD	0100	0013	3458	2778	0003257	0048	14514	564		0325	32.05	4758.8
155		OBS	0100	0013	3458	2778			14514	564	214	0325	32.05	4758.8
		STD	0125	0022	3461	2780	0003084	0056	14522	543		0388	32.10	4761.1
155		OBS	0125	0022	3461	2780			14522	543	224	0388	32.10	4761.1
		STD	0150	0045	3467	2784	0002768	0070	14542	508		0492	32.11	4761.7
155		OBS	0150	0045	3467	2784			14542	508	224	0492	32.11	4761.7
		STD	0199	0062	3467	2783	0002874	0085	14558	494		0552	32.81	4771.0
155		OBS	0199	0062	3467	2783			14558	494	229	0552	32.81	4771.0
		STD	0200	0077	3467	2782	0002983	0099	14573	483		0598	33.39	4781.2
155		OBS	0200	0077	3467	2782			14573	483	231	0598	33.39	4781.2
		STD	0300	0087	3469	2783	0002917	0129	14594	466		1302	33.57	4786.0
155		OBS	0300	0087	3469	2783			14594	466	236	1302	33.57	4786.0
		STD	0400	0095	3471	2784	0002844	0158	14610	465		1591	33.64	4793.3
162		OBS	0400	0095	3471	2784			14610	465	237	1591	33.64	4793.3
		STD	0500	0097	3473	2785	0002731	0185	14633	465		1627	33.71	4794.6
155		OBS	0500	0097	3473	2785			14633	465	237	1627	33.71	4794.6
		STD	0600	0098	3474	2786	0002750	0213	14649	461		1660	33.75	4799.8
162		OBS	0600	0098	3474	2786			14649	461	234	1660	33.75	4799.8
		STD	0700	0093	3471	2784	0002879	0241	14664	477		1569	33.75	4800.8
155		OBS	0700	0093	3471	2784			14664	477	241	1569	33.75	4800.8
		STD	0800	0087	3471	2784	0002857	0270	14678	492		2297	33.66	4811.0
162		OBS	0800	0087	3471	2784			14678	492	241	2297	33.66	4811.0
		STD	0900	0081	3471	2785	0002806	0298	14691	494		2553	33.57	4815.6
155		OBS	0900	0081	3471	2785			14691	494	234	2553	33.57	4815.6
		STD	1000	0067	3471	2785	0002717	0326	14703	484		3281	33.42	4823.8
162		OBS	1000	0067	3471	2785			14703	484	232	3281	33.42	4823.8
		STD	1100	0056	3470	2785	0002663	0352	14710	478		3609	33.01	4826.1
155		OBS	1100	0056	3470	2785			14710	478	232	3609	33.01	4826.1
		STD	1200	0038	3469	2786			14718	501		3937	32.92	4826.8
162		OBS	1200	0038	3469	2786			14718	501	239	3937	32.92	4826.8
		STD	1268									4160	32.68	4828.7

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE *	LONGITUDE *	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S STATION		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TRF LAMT	NODC STATION NUMBER	
						MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	194	AK	76050S	156140W	567 66	02	12	147	1964	012	3200	30	00	00	0	X7	6 18	0012		
					WATER		WIND		BARO- METER		AIR TEMP. °C		SPECIAL OBSERVATIONS							
					COLOR CODE		TRANS. DIR.		SPEED OR FORCE		DRY BULB		WET BULB		WIL CODE		NO. OBS. DEPTH		09	
					10		S12		875		-058		-064		7					

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO- P μg - str/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S CODE
151		STD	0000	-0177	3404	2742	0006698	0000	14397	736		0000	28.81	4723.4	
		OBS	0000	-0177	3404	2742			14397	736	210	0000	28.81	4723.4	
		STD	0010	-0177	3401	2739	0006924	0007	14399	716		0033	28.81	4724.1	
151		OBS	0010		3401						208	0066	28.83	4724.1	
		STD	0020	-0176	3407	2744	0006457	0014	14401	700		0066	28.83	4724.7	
		OBS	0020	-0176	3407	2744			14401		213	0066	28.83	4724.7	
		STD	0030	-0171	3422	2756	0005312	0019	14408	685		0098	28.92	4727.0	
151		OBS	0030	-0171	3422	2756			14408		218	0098	28.92	4727.0	
		STD	0050	-0171	3433	2765	0004456	0029	14412	664		0161	28.92	4728.3	
		OBS	0050	-0171	3433	2765			14412		226	0161	28.92	4728.3	
		STD	0075	-0164	3436	2768	0004230	0040	14420	652		0216	29.05	4731.0	
151		OBS	0075	-0164	3436	2768			14420	652	228	0216	29.05	4731.0	
		STD	0100	-0162	3436	2767	0004222	0051	14425	656		0328	29.08	4732.6	
151		OBS	0100	-0162	3436	2767			14425	656	218	0328	29.08	4732.6	
		STD	0125	-0155	3439	2770	0004000	0061	14433	649		0410	29.21	4735.2	
		STD	0150	-0150	3440	2770	0003926	0071	14440	639		0492	29.30	4737.5	
151		OBS	0150	-0150	3440	2770			14440	639	229	0492	29.30	4737.5	
		STD	0200	-0150	3440	2770	0003901	0090	14448	613		0656	29.30	4740.1	
151		OBS	0200	-0150	3440	2770			14448	613	225	0656	29.30	4740.1	
		STD	0250	-0144	3441	2771	0003820	0110	14459	627		0820	29.41	4743.8	
		STD	0300	-0113	3444	2772	0003690	0128	14483	640		0981	29.97	4751.6	
151		OBS	0300	-0113	3444	2772			14483	640	233	0981	29.97	4751.6	
		STD	0400	0021	3459	2778	0003231	0163	14563	522		1312	32.38	4777.9	
151		OBS	0400	0021	3459	2778			14563	522	233	1312	32.38	4777.9	
		STD	0500	0111	3470	2782	0003040	0194	14622	471		1610	34.00	4797.2	
151		OBS	0500	0111	3470	2782			14622	471	236	1610	34.00	4797.2	
161		OBS	0501	0117	3471	2782			14625	484	239	1611	34.11	4798.2	
		STD	0600	0130	3473	2783	0002991	0225	14647	471		1968	34.34	4805.4	
161		OBS	0600	0130	3483Q	2791Q					238	1966	34.34	4805.4	
		STD	0700	0128	3474	2784	0002929	0254	14663	458		2297	34.30	4810.7	
161		OBS	0700	0128	3474	2784			14663	458	239	2297	34.30	4810.7	
		STD	0800	0118	3474	2785	0002872	0283	14676	496		2625	34.12	4811.9	
161		OBS	0800	0118	3474	2785			14676	496	242	2625	34.12	4811.9	
		STD	0900	0116	3474	2785	0002880	0312	14692	475		2953	34.09	4820.2	
		STD	1000	0111	3474	2785	0002861	0341	14706	465		3281	34.00	4821.8	
161		OBS	1000	0111	3474	2785			14706	465	231	3281	34.00	4821.8	
		STD	1100	0101	3474	2786	0002794	0369	14718	474		3609	33.82	4828.7	
		STD	1200	0092	3474	2786	0002732	0396	14731	481		3937	33.66	4833.0	
161		OBS	1200	0092	3474	2786			14731	481	233	3937	33.66	4833.0	
		STD	1300	0087	3474	2786	0002726	0424	14746	484		4265	33.57	4837.9	
		STD	1400	0082	3473	2786	0002726	0451	14761	487		4593	33.48	4842.8	
		STD	1500	0077	3473	2786	0002715	0478	14775	489		4921	33.39	4847.4	
161		OBS	1500	0077	3473	2786			14775	489	238	4921	33.39	4847.4	
		STD	1750	0067	3473	2787	0002649	0545	14813	490		5711	33.21	4859.9	
		STD	2000	0059	3473	2788	0002594	0611	14852	490		6562	33.06	4872.7	
161		OBS	2000	0059	3473	2788			14852	490	221	6562	33.06	4872.7	
		STD	2500	0048	3471	2787	0002659	0742	14933	508		8202	32.86	4899.3	
161		OBS	2500	0048	3471	2787			14933	508	231	8202	32.86	4899.3	
		STD	3000	0043	3473	2789	0002486	0871	15018	496		9842	32.77	4927.2	
161		OBS	3000	0043	3473	2789			15018	496	247	9842	32.77	4927.2	

REFERENCE		SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	HAUSDEN SQUARE	STATION TIME (GMT)				YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER	
CTRY CODE	ID. NO.					10'	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	D.S.	HGT PER				SEA
31	194	AK	762605	157290W	567	67	02	13	064	1964	013	1033	10	00			X7	67	0013		
				WATER		WIND		BARO-METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
				COLOR CODE		DIR. SPEED OR FORCE		912		DRY BULB		WET BULB		7		10					
				20		512		912		-0.4		-0.49		7		10					

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO-μP μg-at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
068		STD	0000	-0183	3401	2740	0006916	0000	14394	702		0000	28.71	4722.4
		OBS	0000	-0183	3401	2740			14394	702	215	0000	28.71	4722.4
		STD	0010	-0187	3401	2740	0006900	0007	14394	703		0033	28.63	4722.4
068		OBS	0010	-0187	3401	2740			14394	703	216	0033	28.63	4722.4
		STD	0020	-0184	3400	2739	0006977	0014	14397	728		0066	28.69	4723.4
068		OBS	0020	-0184	3400	2739			14397	728	218	0066	28.69	4723.4
		STD	0030	-0165	3415	2751	0005864	0020	14409	697		0098	29.03	4727.3
068		OBS	0030	-0165	3415	2751			14409	697	213	0098	29.03	4727.3
		STD	0050	-0167	3428	2761	0004850	0031	14414	686		0098	29.03	4727.3
068		OBS	0050	-0167	3428	2761			14414	686	230	0098	29.03	4727.3
		STD	0075	-0166	3434	2766	0004378	0043	14419	665		0216	29.01	4730.6
068		OBS	0075	-0166	3434	2766			14419	665	233	0216	29.01	4730.6
		STD	0100	-0171	3436	2768	0004197	0053	14421	649		0328	28.92	4731.3
068		OBS	0100	-0171	3436	2768			14421	649	221	0328	28.92	4731.3
		STD	0125	-0168	3437	2768	0004152	0064	14427	665		0410	28.98	4733.2
068		OBS	0125	-0166	3437	2768			14432	670	232	0492	29.01	4734.9
		STD	0200	-0162	3439	2770	0003938	0094	14442	648		0656	29.08	4738.2
068		OBS	0200	-0162	3439	2770			14442	648	229	0656	29.08	4738.2
		STD	0250	-0153	3440	2770	0003865	0114	14455	655		0820	29.25	4742.4
068		OBS	0250	-0144	3441	2771	0003796	0133	14468	661		0984	29.41	4746.7
		STD	0300	-0144	3441	2771			14468	661	234	0984	29.41	4746.7
		STD	0400	-0023	3454	2777	0003348	0168	14542	571		1312	31.57	4771.0
068		OBS	0400	-0023	3454	2777			14542	571	234	1312	31.57	4771.0
		STD	0500	0074	3466	2781	0003066	0201	14605	476		1640	33.33	4791.6
068		OBS	0500	0074	3466	2781			14605	476	238	1640	33.33	4791.6
074		OBS	0501	00930	3469	27820				466	239	1644	33.67	
		STD	0600	0115	3472	2783	0002946	0231	14641	442		1969	34.07	4803.5
074		OBS	0600	0115	3472	2783			14641	442	239	1969	34.07	4803.5
		STD	0700	0103	3472	2784	0002873	0260	14652	464		2297	33.85	4807.1
074		OBS	0700	0103	3472	2784			14652	464	240	2297	33.85	4807.1
		STD	0800	0105	3472	2784	0002912	0289	14670	459		2625	33.89	4813.0
074		OBS	0800	0105	3472	2784			14670	459	243	2625	33.89	4813.0
		STD	0900	0105	3472	2784	0002934	0318	14686			2953	33.89	4818.2
074		OBS	0900	0105	3472	2784	0002930	0347	14702			3281	33.84	4823.5
		STD	1000	0102	3472	2784			14702			3281	33.84	4823.5
074		OBS	1000	0102	3472	2784			14702			3281	33.84	4823.5

REFERENCE OFF CODE	SHIP ID. NO.	LATITUDE	LONGITUDE	TIME 1/10	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1"	MO	DAY	HR./1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	194	AK	76233S	159120W	567	69	02	13	214	1964		014	0373	03	00			X1	3 7	0014

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (mm)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		17	509	922	-044	-053	7		10

MESSNGR TIME HR./1/10	CAS- T NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MALT...3187	$\Sigma \Delta D$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pp - 01/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY M/S	S C
		STD	0000	-0179	3399	2738	0007078	0000	14396	716		0000	28.78	4723.1	
218		OBS	0000	-0179	3399	2738			14396	716	207	0000	28.78	4723.1	
		STD	0010	-0183	3396	2736	0007293	0007	14395	743		0033	28.71	4722.8	
218		OBS	0010	-0183	3396	2736			14395	743	212	0033	28.71	4722.8	
		STD	0020	-0181	3397	2736	0007214	0014	14398	735		0066	28.74	4723.7	
218		OBS	0020	-0181	3397	2736			14398	735	213	0066	28.74	4723.7	
		STD	0030	-0173	3409	2746	0006305	0021	14405	697		0098	28.89	4726.0	
218		OBS	0030	-0173	3409	2746			14405	697	220	0098	28.89	4726.0	
		STD	0050	-0170	3432	2764	0004535	0032	14413	682		0164	28.94	4728.7	
218		OBS	0050	-0170	3432	2764			14413	682	232	0164	28.94	4728.7	
		STD	0075	-0172	3437	2769	0004132	0043	14417	660		0216	28.90	4730.0	
218		OBS	0075	-0172	3437	2769			14417	660	241	0216	28.90	4730.0	
		STD	0100	-0171	3436	2768	0004197	0053	14421	650		0328	28.92	4731.3	
218		OBS	0100	-0171	3436	2768			14421	650	224	0328	28.92	4731.3	
		STD	0125	-0166	3437	2768	0004120	0064	14428	650		0410	29.01	4733.6	
218		OBS	0125	-0166	3437	2768	0004032	0074	14433	650		0492	29.03	4735.2	
		STD	0150	-0165	3438	2769			14433	650	233	0492	29.03	4735.2	
218		OBS	0150	-0165	3438	2769			14437	634	233	0656	28.89	4736.5	
		STD	0200	-0173	3439	2770	0003903	0094	14437	634		0820	29.08	4741.1	
218		OBS	0200	-0173	3439	2770			14451	633		0984	29.28	4745.7	
		STD	0250	-0162	3441	2772	0003758	0113	14465	630		0984	29.28	4745.7	
218		OBS	0250	-0162	3441	2772	0003617	0131	14465	630	233	0984	29.28	4745.7	
		STD	0300	-0151	3443	2773			14479	625	224	1148	29.50	4750.3	
218		OBS	0300	-0151	3443	2773			14479	625	224	1148	29.50	4750.3	

REFERENCE CTH CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	SURF NO.	MARSDES SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL.	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
						10'	1"	MO	DAY		P.	R.			1/10	CRUISE NO.	STATION NUMBER	DIR				HGT
31	194	AK	755775	159040W		567	59	02	14	048	1964	015	3338	30	00			0	X2	6	8	0015
						WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS. (m.)	DIR.	SPEED OF FORCE	BARO-METER (mb)	DRY BULB	WET BULB	VIS. CODE									
									13	515	895	-056	-059	7	10							

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	S Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP. (°F)	SOUND VELOCITY ft./sec	CTD NO.
051		STD	0000	-0179	3385	2727	0008154	0000	14394	758		0000	28.78	4722.4	
		OBS	0000	-0179	3385	2727			14394	758	193	0000	28.78	4722.4	
		STD	0010	-0182	3387	2728	0007987	0008	14394	782		0033	28.72	4722.4	
051		OBS	0010	-0182	3387	2728			14394	782	194	0033	28.72	4722.4	
		STD	0020	-0180	3386	2727	0008061	0016	14397	767		0066	28.76	4723.4	
051		OBS	0020	-0180	3386	2727			14397	767	198	0066	28.76	4723.4	
		STD	0030	-0168	3408	2745	0006394	0023	14407	760		0098	28.98	4726.7	
051		OBS	0030	-0168	3408	2745			14407	760	209	0098	28.98	4726.7	
		STD	0050	-0171	3435	2767	0004302	0034	14413	705		0164	28.92	4728.7	
051		OBS	0050	-0171	3435	2767			14413	705	222	0164	28.92	4728.7	
		STD	0075	-0165	3438	2769	0004074	0044	14420	657		0216	29.03	4731.0	
051		OBS	0075	-0165	3438	2769			14420	657	225	0216	29.03	4731.0	
		STD	0100	-0161	3439	2770	0003995	0055	14426	657		0328	29.10	4732.9	
051		OBS	0100	-0161	3439	2770			14426	657	206	0328	29.10	4732.9	
		STD	0125	-0148	3442	2772	0003792	0064	14437	658		0410	29.34	4736.5	
051		OBS	0125	-0148	3444	2773			14448	658	227	0489	29.59	4740.1	
		STD	0150	-0133	3444	2773	0003677	0074	14448	657		0482	29.61	4740.1	
051		OBS	0150	-0133	3444	2773			14474	616	224	0653	30.25	4748.7	
		STD	0200	-0095	3446	2773	0003641	0092	14475	615		0656	30.29	4749.0	
		STD	0250	-0031	3451	2775	0003546	0110	14513	588		0820	31.44	4761.5	
051		OBS	0299	-0009	3456	2777			14541	567	239	0581	32.16	4770.6	
		STD	0300	-0009	3456	2777	0003389	0127	14541	567		0584	32.16	4770.6	
051		OBS	0398	-0020	3460	2779			14563	541	231	1306	32.36	4777.9	
		STD	0400	-0021	3460	2779	0003148	0160	14563	541		1312	32.38	4777.9	
051		OBS	0498	-0051	3465	2782			14594	532	226	1634	32.92	4788.0	
		STD	0500	-0052	3465	2782	0002979	0191	14595	531		1640	32.94	4788.4	
		STD	0600	-0072	3469	2784	0002825	0220	14621	488		1969	33.30	4796.9	
077		OBS	0693	-0082	3473	2786			14642	470	234	2274	33.48	4803.8	
		STD	0700	-0082	3473	2786	0002632	0247	14643	470		2297	33.48	4803.8	
077		OBS	0792	-0083	3472	2785			14658	473	244	2598	33.49	4809.0	
		STD	0800	-0084	3472	2785	0002739	0274	14660	473		2625	33.51	4809.7	
		STD	0900	-0098	3470	2783	0003024	0303	14683	467		2553	33.76	4817.2	
077		OBS	0990	-0103	3469	2782			14700	462		3248	33.85	4822.8	
		STD	1000	-0103	3469	2782	0003163	0333	14702	465		3281	33.85	4823.5	
		STD	1100	-0098	3469	2781	0003176	0365	14716	488		3609	33.76	4817.2	
077		OBS	1188	-0094	3463	2781			14729	499	241	3898	33.69	4832.3	
		STD	1200	-0093	3468	2781	0003187	0397	14731	497		3937	33.67	4833.0	
		STD	1300	-0087	3468	2782	0003119	0429	14745	486		4265	33.57	4837.6	
		STD	1400	-0082	3469	2783	0003059	0459	14760	477		4593	33.48	4842.5	
077		OBS	1485	-0078	34470	27650			472		237	4772	33.10		
		STD	1500	-0077	3469	2783	0002996	0490	14775	472		4921	33.39	4847.4	
		STD	1750	-0069	3470	2785	0002883	0563	14814	476		5741	33.24	4860.2	
077		OBS	1980	-0062	3471	2786			14850	479	235	6496	33.12	4872.0	
		STD	2000	-0061	3471	2786	0002762	0634	14853	482		6562	33.10	4873.0	
077		OBS	2476	-0050	3471	2786			14930	520	238	8123	32.50	4898.3	
		STD	2500	-0050	3471	2786	0002683	0770	14934	520		8202	32.50	4899.6	
077		OBS	2972	0044	3472	2788			15014	509	233	9750	32.79	4925.8	

REFERENCE		SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	HARDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.					10'	1'	MO		DAY	HR./1/10			CRUISE NO.	STATION NUMBER	DIR.		HGT	PER	
31	194	AK	761705	159120W	567	69	02 14 126	1964	016		1262	12	00			0	X7	6	8	0016

WATER		WIND		AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS	
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	BARO-METER (mbal)	DRY BULB			WET BULB
		12	S15	888	-061	-067	6	09

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPEGRIC VOLUME AND MALT-0107	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 01/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CTD
130		STD	0000	-0179	3396	2735	0007309	0000	14395	746		0000	28.78	4722.8	
		OBS	0000	-0179	3396	2735			14395	746	194	0000	28.78	4722.8	
		STD	0010	-0184	3394	2734	0007444	0007	14394	772		0033	28.69	4722.4	
130		OBS	0010	-0184	3394	2734			14394	772	195	0033	28.69	4722.4	
		STD	0020	-0180	3410	2747	0006218	0014	14400	782		0066	28.76	4724.4	
130		OBS	0020	-0180	3410	2747			14400	782	195	0066	28.76	4724.4	
		STD	0030	-0173	3411	2747	0006151	0020	14405	740		0098	28.89	4726.0	
130		OBS	0030	-0173	3411	2747			14405	740	205	0098	28.89	4726.0	
		STD	0050	-0174	3431	2764	0004601	0031	14411	689		0164	28.87	4728.0	
130		OBS	0050	-0174	3431	2764			14411	689	212	0164	28.87	4728.0	
		STD	0075	-0169	3435	2767	0004293	0042	14418	672		0246	28.96	4730.3	
130		OBS	0075	-0169	3435	2767			14418	672	215	0246	28.96	4730.3	
		STD	0100	-0165	3440	2771	0003907	0053	14424	636		0328	29.03	4732.3	
130		OBS	0100	-0165	3440	2771			14424	636	206	0328	29.03	4732.3	
		STD	0125	-0171	3440	2771	0003914	0062	14426	653		0410	28.92	4732.9	
130		OBS	0125	-0171	3440	2771			14426	653	215	0410	28.92	4732.9	
		STD	0150	-0172	3439	2770	0003935	0072	14429	661		0492	28.90	4733.9	
130		OBS	0150	-0172	3439	2770			14429	661	215	0492	28.90	4733.9	
		STD	0200	-0161	3440	2771	0003864	0092	14443	648		0656	29.10	4738.5	
130		OBS	0200	-0161	3440	2771			14443	648	214	0656	29.10	4738.5	
		STD	0250	-0130	3443	2772	0003719	0111	14466	619		0820	29.66	4746.0	
130		OBS	0300	-0087	3447	2774	0003575	0129	14495	588		0984	30.43	4755.6	
		STD	0300	-0087	3447	2774			14495	588	220	0984	30.43	4755.6	
		OBS	0300	0032	3460	2779	0003225	0163	14568	519		1312	32.58	4780.0	
130		OBS	0400	0032	3460	2779			14568	519	226	1312	32.58	4780.0	
		STD	0500	0097	3468	2781	0003084	0194	14615	481		1640	33.75	4794.9	
130		OBS	0500	0097	3468	2781			14615	481	226	1640	33.75	4794.9	
		STD	0501	0101	3468	2781			14617	472	223	1644	33.82	4795.6	
135		OBS	0501	0101	3468	2781			14617	472	223	1644	33.82	4795.6	
		STD	0600	0094	3469	2782	0003006	0225	14631	493		1969	33.69	4800.2	
135		OBS	0600	0094	3469	2782			14631	493	227	1969	33.69	4800.2	
		STD	0700	0097	3470	2783	0002975	0255	14649	495		2297	33.75	4806.1	
135		OBS	0700	0097	3470	2783			14649	495	226	2297	33.75	4806.1	
		STD	0800	0096	3472	2784	0002837	0284	14666	496		2625	33.73	4811.7	
135		OBS	0800	0096	3472	2784			14666	496	227	2625	33.73	4811.7	
		STD	0900	0095	3472	2784	0002849	0312	14682	479		2953	33.71	4816.9	
135		OBS	0900	0095	3472	2784			14682	479	231	2953	33.71	4816.9	
		STD	1000	0094	3472	2785	0002860	0341	14698	478		3281	33.69	4822.2	
135		OBS	1000	0094	3472	2785			14698	478	231	3281	33.69	4822.2	
		STD	1100	0092	3473	2785	0002825	0369	14714	492		3609	33.66	4827.4	
135		OBS	1100	0092	3473	2785			14714	492	226	3609	33.66	4827.4	
		STD	1200	0089	3473	2786	0002779	0397	14730	521		3937	33.60	4832.7	
135		OBS	1200	0089	3473	2786			14730	521	226	3937	33.60	4832.7	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1'	MO DAY HR. 10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	762205	161100W	568	61	02	14	188	1964		017	0457	04	00	0	X2	6 8	0017

WATER		WIND		BARO- METER (mba)	AIR TEMP. °C		NO. OBS. DEFINIS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB		
	03	S16	905	-061	-068	7		10

MESSAGE TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALT-112?	± Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - AT/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0179	3363	2709	0009845	0000	14390	735		0000	28.78	4721.1
		OBS	0000	-0179	3363	2709			14390	735	186	0000	28.78	4721.1
		STD	0010	-0181	3361	2707	0009987	0010	14391	796		0033	28.7h	4721.4
		OBS	0010	-0181	3361	2707			14391	796	196	0066	28.80	4723.1
		STD	0020	-0178	3373	2717	0009065	0019	14396	761		0066	28.80	4723.1
		OBS	0020	-0178	3373	2717			14396	761	192	0098	28.90	4725.0
		STD	0030	-0172	3389	2730	0007843	0028	14402	798		0098	28.90	4725.0
		OBS	0030	-0172	3389	2730			14402	798	194	0164	29.1h	4730.3
		STD	0050	-0159	3432	2764	0004565	0040	14418	662		0216	29.05	4731.0
		OBS	0050	-0159	3432	2764			14418	662	217	0216	29.05	4731.0
		STD	0075	-0164	3437	2768	0004154	0051	14420	650		0328	29.05	4732.6
		OBS	0075	-0164	3437	2768			14420	650	221	0328	29.05	4732.6
		STD	0100	-0164	3440	2771	0003910	0061	14425	625		0410	29.26	4735.9
		OBS	0100	-0164	3440	2771			14425	625	216	0410	29.26	4735.9
		STD	0125	-0152	3443	2773	0003703	0071	14435	639		0492	29.46	4739.2
		OBS	0150	-0141	3445	2774	0003573	0080	14445	644		0492	29.46	4739.2
		STD	0200	-0126	3447	2775	0003451	0097	14460	625	220	0656	29.73	4744.1
		OBS	0200	-0126	3447	2775			14460	625	224	0656	29.73	4744.1
		STD	0250	-0068	3452	2777	0003296	0114	14496	607		098h	31.21	4762.4
		OBS	0250	-0068	3452	2777			14496	607		098h	31.21	4762.4
		STD	0300	-0044	3456	2779	0003098	0130	14516	588		1312	30.18	4760.0
		OBS	0300	-0044	3456	2779			14516	588	229	1312	30.18	4760.0
		STD	0400	-0101	3460	2785	0002490	0158	14507	549		1459	28.7h	4750.0
		OBS	0400	-0101	3460	2785			14507	549	229	1459	28.7h	4750.0
		OBS	0445	-0181	3461	2788			14477	634	224			



REFERENCE		SHIP CODE	LATITUDE '/10	LONGITUDE '/10	DEPTH 100'	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CRUISE CODE	ID. NO.					10'	1'	MO	DAY	HR	10'		1'	MO			CRUISE NO.	STATION NUMBER	D.S.		HGT	PER	
31	194	AK	76080S	161140W	568	61	02	15	055	1964		019	2560	25	00			0	X7	6	8	0019	

WATER		WIND		BARO. METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
10	504	895	039	-052	6			10	

MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-t	SPECFIC VOLUME ANOMALY (δσ <sub>t</sub> )	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0176	3350	2698	0010851	0000	14390	804		0000	28.83	4721.1
		OBS	0000	-0176	3350	2698			14390	804	175	0000	28.83	4721.1
		STD	0010	-0168	3350	2698	0010862	0011	14395	779		0033	28.98	4722.8
059		OBS	0010		3250					779	175	0033		
		STD	0020	-0159	3370	2714	0009340	0021	14404	750		0066	29.14	4725.7
059		OBS	0020	-0159	3370	2714			14404	750	182	0066	29.14	4725.7
		STD	0030	-0149	3432	2764	0004604	0028	14419	680		0098	29.32	4730.6
059		OBS	0030	-0149	3432	2764			14419	680	208	0098	29.32	4730.6
		STD	0050	-0162	3437	2768	0004173	0037	14417	611		0164	29.08	4730.0
059		OBS	0050	-0162	3437	2768			14417	611	224	0164	29.08	4730.0
		STD	0075	-0152	3443	2770	0003958	0047	14426	617		0246	29.26	4732.9
059		OBS	0075	-0152	3443	2770			14426	617	222	0246	29.26	4732.9
		STD	0100	-0155	3441	2771	0003860	0057	14429	630		0328	29.21	4733.9
059		OBS	0100	-0155	3441	2771			14429	630	220	0328	29.21	4733.9
		STD	0125	-0128	3444	2773	0003706	0266	14447	598		0410	29.70	4739.8
		STD	0150	-0114	3445	2773	0003669	0275	14457	581		0492	29.95	4743.1
059		OBS	0150	-0114	3445	2773			14457	581	224	0492	29.95	4743.1
		STD	0200	-0127	3445	2774	0003600	0293	14460	589		0656	29.71	4744.1
059		OBS	0200	-0127	3445	2774			14460	589	218	0656	29.71	4744.1
		STD	0250	-0071	3451	2776	0003358	0111	14495	557		0820	30.72	4755.6
		STD	0300	-0030	3455	2778	0003247	0127	14523	535		0984	31.46	4761.7
059		OBS	0300	-0030	3455	2778			14523	535	228	0984	31.46	4761.7
		STD	0400	0010	3461	2781	0003012	0159	14558	522		1312	32.18	4776.2
059		OBS	0400	0010	3461	2781			14558	522	229	1312	32.18	4776.2
		STD	0500	0059	3467	2783	0002884	0188	14598	484		1640	33.06	4789.4
059		OBS	0500	0059	3467	2783			14598	484	231	1640	33.06	4789.4
068		OBS	0501	0048	3464	2781			14593	485	229	1644	32.86	4787.7
		STD	0600	0074	3467	2782	0003005	0218	14622	458		1968	33.33	4797.2
068		OBS	0600	0074	3467	2782			14622	458	230	1968	33.33	4797.2
		STD	0700	0092	3469	2782	0003010	0248	14647	470		2297	33.66	4805.4
068		OBS	0700	0092	3469	2782			14647	470	232	2297	33.66	4805.4
		STD	0800	0105	3471	2783	0002987	0278	14669	474		2625	33.89	4812.6
068		OBS	0800	0105	3471	2783			14669	474	229	2625	33.89	4812.6
		STD	0900	0104	3472	2784	0002963	0307	14686	460		2953	33.87	4818.2
		STD	1000	0102	3472	2784	0002930	0337	14702	456		3281	33.84	4823.5
068		OBS	1000	0102	3472	2784			14702	456	223	3281	33.84	4823.5
		STD	1100	0098	3472	2784	0002916	0366	14717	471		3609	33.76	4828.4
		STD	1200	0094	3472	2785	0002899	0395	14732	481		3937	33.69	4833.3
068		OBS	1200	0094	3472	2785			14732	481	231	3937	33.69	4833.3
		STD	1300	0089	3472	2785	0002871	0424	14747	481		4265	33.60	4838.2
		STD	1400	0084	3472	2785	0002841	0453	14761	481		4593	33.51	4842.8
		STD	1500	0079	3472	2786	0002809	0481	14776	481		4921	33.42	4847.8
068		OBS	1500	0079	3472	2786			14776	481	227	4921	33.42	4847.8
		STD	1750	0070	3472	2786	0002790	0551	14814	469		5741	33.26	4860.2
		STD	2000	0062	3471	2786	0002772	0620	14853	462		6562	33.12	4873.0
068		OBS	2000	0062	3471	2786			14853	462	227	6562	33.12	4873.0
		STD	2500	0050	3473	2788	0002537	0753	14934	465		8202	32.90	4899.6
068		OBS	2500	0050	3473	2788			14934	465	231	8202	32.90	4899.6

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DEPTH INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER	
					10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	194	AK	75460.5	163200W	568	53	02	15	133	1964	020	2706	25	00	00	0	X7	6	8	0020	
					WATER		WIND		BARO-METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
					COLOR CODE		DIR. (mi)		SPEED (kt)		DRY BULB		WET BULB								
							29		505		881		-056 -063		7						

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} - \mu\text{g/l}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY (ft/sec)
		STD	0000	-0174	3337	2687	0011855	0000	14389	793		0000	28.87	4720.8
137		OBS	0000	-0174	3337	2687			14389	793	191	0000	28.87	4720.8
		STD	0010	-0178	3354	2701	0010532	0011	14391	837		0033	28.80	4721.4
137		OBS	0010	-0178	3354	2701			14391	837	199	0033	28.80	4721.4
		STD	0020	-0179	3357	2704	0010292	0022	14393	802		0066	28.78	4722.1
137		OBS	0020	-0179	3357	2704			14393	802	202	0066	28.78	4722.1
		STD	0030	-0172	3358	2704	0010224	0032	14398	799		0098	28.90	4723.7
137		OBS	0030	-0172	3358	2704			14398	799	203	0098	28.90	4723.7
		STD	0050	-0140	3434	2765	0004467	0047	14427	703		0161	29.48	4733.2
137		OBS	0050	-0140	3434	2765			14427	703	226	0161	29.48	4733.2
		STD	0075	-0126	3441	2770	0003964	0057	14439	631		0216	29.73	4737.2
137		OBS	0075	-0126	3441	2770			14439	631	233	0216	29.73	4737.2
		STD	0100	-0086	3448	2775	0003566	0067	14463	588		0328	30.45	4745.1
137		OBS	0100	-0086	3448	2775			14463	588	228	0328	30.45	4745.1
		STD	0125	-0089	3449	2776	0003470	0075	14466	583		0410	30.40	4746.0
137		OBS	0125	-0089	3449	2776			14466	583	235	0410	30.38	4747.0
		STD	0150	-0090	3450	2776	0003381	0084	14469	581		0492	30.38	4747.0
137		OBS	0150	-0090	3450	2776			14469	581	235	0492	30.38	4747.0
		STD	0200	-0084	3452	2778	0003238	0100	14481	583		0656	30.49	4751.0
137		OBS	0200	-0084	3452	2778			14481	583	232	0656	30.49	4751.0
		STD	0250	-0009	3458	2779	0003138	0116	14524	532		0820	31.84	4765.1
137		OBS	0250	-0009	3458	2779			14524	532	243	0820	31.84	4765.1
		STD	0300	0042	3462	2780	0003133	0132	14557	493		0984	32.76	4775.9
137		OBS	0300	0042	3462	2780			14557	493	246	0984	32.76	4775.9
		STD	0400	0071	3467	2782	0002956	0162	14587	449		1312	33.28	4785.7
137		OBS	0400	0071	3467	2782			14587	449	243	1312	33.28	4785.7
		STD	0496	0075	3467	2782			14605	469	244	1627	33.35	4791.6
145		OBS	0496	0075	3467	2782			14605	469	244	1627	33.35	4791.6
		STD	0500	0086	3468	2782	0003003	0192	14610	483		1600	33.55	4793.3
137		OBS	0500	0086	3468	2782			14610	483	243	1600	33.55	4793.3
		STD	0595	0104	3471	2783			14635	455	248	1952	33.87	4801.5
145		OBS	0595	0104	3471	2783			14635	455	248	1952	33.87	4801.5
		STD	0600	0104	3471	2783	0002934	0222	14636	456		1968	33.87	4801.8
145		OBS	0694	0102	3471	2783			14650	463	247	2277	33.84	4806.4
		STD	0700	0103	3471	2783	0002941	0251	14652	463		2297	33.85	4807.1
145		OBS	0794	0108	3473	2784			14670	460	250	2605	33.94	4813.0
		STD	0800	0108	3473	2784	0002862	0280	14671	461		2625	33.94	4813.3
145		OBS	0900	0103	3473	2785	0002843	0309	14686	473		2953	33.85	4818.2
		STD	T0993	0099	3473	2785			14699	479	237	3258	33.78	4822.5
145		OBS	1000	0099	3473	2785	0002829	0337	14701	479		3281	33.78	4823.1
		STD	1100	0094	3473	2785	0002842	0366	14715	476		3609	33.68	4827.7
145		OBS	T1192	0089	3472	2785			14728	474	238	3911	33.60	4832.0
		STD	1200	0089	3472	2785	0002853	0394	14730	474		3937	33.60	4832.0
145		OBS	1300	0083	3472	2785	0002815	0422	14744	474		4295	33.49	4837.3
		STD	1400	0078	3472	2786	0002784	0450	14759	473		4593	33.40	4842.2
145		OBS	T1490	0074	3472	2786			14772	473	243	4888	33.33	4846.4
		STD	1500	0074	3472	2786	0002760	0478	14774	473		4921	33.33	4847.1
145		OBS	1750	0067	3472	2786	0002723	0547	14813	474		5711	33.21	4859.9
		STD	2000	0061	3472	2787	0002688	0614	14853	475		6562	33.10	4873.0
145		OBS	T2088	0059	3472	2787			14867	475	246	6851	33.06	4877.6
145		OBS	T2488	0050	3471	2786			14932	468	241	8163	32.90	4898.9

REFERENCE CTR CODE	SHIP ID. NO. CODE	LATITUDE ° '/10	LONGITUDE ° '/10	MARS DEN- SQUARE MILES	STATION TIME (GMT)			YEAR	ORIGINATOR'S IDENTIFICATION NUMBER		DEPTH TO BOTTOM	MAX. DEPTH OF SWATH	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TFR AMT	NODC STATION NUMBER			
					15'	'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER	SEA
31	194	AK	76110S	163130W	568	63	02	15	189	1964	021	1280	12	00		0	X7	6	8	0021	
					WATER		WIND		BARO- METER		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS						
					COLOR CODE	TRANS (m)	DIR.	SPEED OF FORCE	NO.	DRY BULB	WET BULB										
						25	S15	868		-056	-061	7		10							

MESSNGR TIME HR / 10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_t$	$\frac{\Delta \rho}{\rho}$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu g - 0.1/l$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CTD CODE
		STD	0000	-0175	3339	2689	0011699	0000	14389	787		0000	28.85	4720.8	
		OBS	0000	-0175	3339	2689			14389	787	190	0000	28.85	4720.8	
192		STD	0010	-0148	3365	2710	0009759	0011	14407	780		0033	29.34	4726.7	
		OBS	0010	-0148	3365	2710			14407	780	200	0033	29.34	4726.7	
192		STD	0020	-0138	3433	2764	0004564	0018	14423	688		0066	29.52	4731.9	
		OBS	0020	-0138	3433	2764			14423	688	214	0066	29.52	4731.9	
192		STD	0030	-0145	3438	2769	0004155	0022	14422	665		0098	29.39	4731.6	
		OBS	0030	-0145	3438	2769			14422	665	225	0098	29.39	4731.6	
192		STD	0050	-0152	3440	2770	0003971	0030	14422	623		0164	29.26	4731.6	
		OBS	0050	-0152	3440	2770			14422	623	233	0164	29.26	4731.6	
192		STD	0075	-0142	3446	2775	0003529	0040	14432	616		0246	29.44	4734.9	
		OBS	0075	-0142	3446	2775			14432	616	239	0246	29.44	4734.9	
192		STD	0100	-0137	3448	2776	0003381	0048	14439	597		0328	29.53	4737.2	
		OBS	0100	-0137	3448	2776			14439	597	226	0328	29.53	4737.2	
192		STD	0125	-0112	3449	2776	0003381	0057	14455	583		0410	29.98	4742.4	
		OBS	0149	-0085	3451	2777			14472	568	236	0489	30.47	4748.0	
192		STD	0150	-0083	3451	2777	0003326	0065	14473	567		0492	30.51	4748.3	
		OBS	0199	-0018	3458	2780			14512	532	237	0653	31.68	4761.1	
		STD	0200	-0017	3458	2780	0003093	0081	14513	532		0656	31.69	4761.5	
		STD	0250	0019	3462	2781	0003023	0097	14538	520		0820	32.34	4769.7	
192		OBS	0299	0050	3465	2782			14560	505	243	0981	32.90	4776.9	
		STD	0300	0051	3465	2782	0002955	0112	14561	504		0984	32.92	4777.2	
		OBS	0398	0096	3470	2783			14598	465	243	1306	33.73	4789.4	
		STD	0400	0096	3470	2783	0002906	0141	14599	463		1312	33.73	4789.7	
246		OBS	0472	0091	34840	2794.0			14613	479	230	1548	33.64		
192		OBS	0498	0091	3472	2785			14613	479	239	1634	33.64	4794.3	
		STD	0500	0091	3472	2785	0002741	0169	14613	479		1640	33.64	4794.3	
246		OBS	0566	0101	3471	2783			14629	465	233	1857	33.82	4799.5	
		STD	0600	0109	3472	2784	0002898	0197	14638	451		1968	33.96	4802.5	
246		OBS	0662	0116	3473	2784			14652	442	229	2172	34.09	4807.1	
		STD	0700	0111	3473	2784	0002863	0226	14656	456		2297	34.00	4808.4	
246		OBS	0758	0105	3472	2784			14663	470	233	2487	33.89	4810.7	
		STD	0800	0100	3472	2784	0002870	0255	14667	468		2625	33.80	4812.0	
		STD	0900	0090	3472	2785	0002807	0283	14680	462		2953	33.62	4816.3	
246		OBS	0951	0087	3472	2785			14687	459	236	3120	33.57	4818.6	
		STD	1000	0086	3472	2785	0002766	0311	14695	460		3281	33.55	4821.2	
		STD	1100	0083	3473	2786	0002723	0338	14710	474		3609	33.49	4826.1	
246		OBS	1144	0082	3473	2786			14717	485	224	3753	33.48	4828.4	
246		OBS	T1192	0053	3470	2786			14712	501	251	3911	32.95	4826.8	

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH IN FOOT	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
CRUISE NO.	ID. NO.					10'	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	194	AK	762755	163210W	568	63	02	16	033	1964		022	0521	05	00				X1	6	5	0022
		WATER		WIND		BARO-		AIR TEMP. °C						SPECIAL								
		COLOR		TRANSP.		METER		DRY		WET		VIS.		OBS.								
		CODE		DIR.		SPEED		BULB		BULB		CODE		DEPTH'S								
				21		515		875		-062		-067		7		00						

MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
036		STD	0000	-0177	3345	2694	0011234	0000	14389	826		0000	28.81	4720.8
		OBS	0000	-0177	3345	2694			14389	826	137	0000	28.81	4720.8
036		STD	0010	-0180	3344	2693	0011297	0011	14389	847		0033	28.76	4720.8
		OBS	0010	-0180	3344	2693			14389	847	142	0033	28.76	4720.8
036		STD	0020	-0162	3391	2731	0007720	0021	14406	773		0066	29.08	4726.4
		OBS	0020	-0162	3391	2731			14406	773	194	0066	29.08	4726.4
036		STD	0029	-0149	3425	2758	0005107	0027	14418	740	206	0095	29.32	4730.3
		OBS	0029	-0150	3425	2759			14418	737		0098	29.30	4730.3
036		STD	0049	-0156	3433	2765	0004474	0037	14420	681	221	0161	29.19	4730.6
		OBS	0049	-0156	3433	2765			14420	681		0164	29.19	4731.0
036		STD	0050	-0152	3441	2771	0003875	0047	14427	643	220	0243	29.26	4732.9
		OBS	0074	-0152	3441	2771			14426	643		0246	29.26	4733.2
036		STD	0075	-0152	3441	2771	0003663	0057	14436	642	222	0322	29.14	4736.2
		OBS	0098	-0143	3444	2773			14435	644		0328	29.05	4739.5
036		STD	0100	-0142	3444	2773	0003569	0066	14446	621		0410	29.65	4739.5
		OBS	0147	-0116	3447	2775			14456	612	230	0482	29.91	4742.8
036		STD	0150	-0113	3447	2775	0003490	0074	14458	613		0492	29.97	4743.4
		OBS	0196	-0072	3454	2779			14486	620	227	0543	30.70	4752.6
036		STD	0200	-0070	3455	2780	0003071	0091	14488	614		0656	30.74	4753.3
		OBS	0250	-0046	3460	2783	0002793	0106	14508	561		0820	31.17	4759.8
036		STD	0294	-0025	3462	2783	0002668	0119	14520	565	233	0964	31.55	4765.4
		OBS	0300	-0039	3462	2784			14520	565		0984	31.30	4763.8
036		STD	0393	-0181	3459	2787	0002211	0144	14468	671	228	1289	28.74	4746.7
		OBS	0400	-0186	3459	2787			14467	670		1312	28.65	4746.4
036		OBS	0491	-0186	3460	2788			14482	656	229	1611	28.65	4751.3

REFERENCE		SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	DEPTH IN FOOT	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
CRUISE NO.	ID. NO.					10'	1"	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	194	AK	762205	165170W	568	65	02	16	082	1964		023	0448	04	00				X2	6	8	0023
		WATER		WIND		BARO-		AIR TEMP. °C						SPECIAL								
		COLOR		TRANSP.		METER		DRY		WET		VIS.		OBS.								
		CODE		DIR.		SPEED		BULB		BULB		CODE		DEPTH'S								
				23		517		888		-063		-072		7		00						

MESSAGE TIME HR 1/10	CAS NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
085		STD	0000	-0164	3361	2707	0010033	0000	14397	823		0000	29.05	4723.4
		OBS	0000	-0164	3361	2707			14397	823	135	0000	29.05	4723.4
085		STD	0009	-0164	3362	2708	0009964	0010	14399	823	132	0030	29.05	4724.1
		OBS	0010	-0164	3362	2707			14399	823		0033	29.05	4724.1
085		STD	0018	-0164	3360	2706	0009446	0020	14400	809	139	0059	29.05	4724.4
		OBS	0020	-0148	3369	2713			14409	806		0066	29.34	4727.3
085		STD	0027	-0105	3393	2731	0007441	0028	14434	792	167	0088	30.11	4735.6
		OBS	0030	-0100	3397	2734			14437	786		0098	30.20	4736.5
085		STD	0045	-0094	3417	2750	0005421	0041	14445	748	177	0148	30.31	4739.2
		OBS	0050	-0106	3423	2755			14442	721		0164	30.09	4738.2
085		STD	0068	-0140	3438	2768	0004095	0053	14427	654	220	0223	29.48	4734.6
		OBS	0091	-0164	3439	2770			14423	645	227	0246	29.30	4733.2
085		STD	0100	-0157	3441	2771	0003854	0063	14428	633		0299	29.05	4731.9
		OBS	0125	-0140	3445	2774	0003589	0072	14441	610		0328	29.17	4733.6
085		STD	0136	-0133	3447	2775	0003316	0081	14444	604	233	0410	29.48	4737.8
		OBS	0150	-0127	3449	2777			14452	605		0446	29.61	4739.8
085		STD	0181	-0109	3452	2779	0003064	0097	14466	606	229	0492	29.71	4741.4
		OBS	0200	-0089	3454	2780			14479	606		0594	30.04	4746.0
085		STD	0227	-0074	3457	2781	0002793	0111	14491	603	229	0656	30.40	4750.3
		OBS	0250	-0078	3458	2782			14493	592		0745	30.67	4751.2
085		STD	0272	-0087	3459	2784	0002506	0125	14492	599	224	0852	30.43	4754.6
		OBS	0300	-0105	3460	2785			14489	596		0984	30.11	4753.6
085		OBS	0363	-0175	3460	2787			14466	658	229	1191	28.85	4746.0

REFERENCE CITY COORD	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	OBS. NO.	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (amt)	MODC STATION NUMBER	
							10 <sup>h</sup>	1 <sup>h</sup>	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	SEA				
31	194	AK	76000S	165170W	568	65	02	16	125	1964	024	1353	12	00			0	X2	6	8	0024

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. M	DIR.	DRY BULB		WET BULB	VIS. CODE		
		24	5.0	905	-056	-062	7	08

MESSAGE NO.	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND SALINITY	Z D CM.	S M.	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> =P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	SC
128		STD	0000	-0156	3352	2699	0010743	0000	14400	829			0000	29.19	4724.4	
		OBS	0000	-0156	3352	2699			14400	829	199		0000	29.19	4724.4	
128		STD	0010	-0158	3352	2699	0010732	0011	14400	841			0033	29.16	4724.4	
		OBS	0010	-0158	3352	2699			14400	841	198		0033	29.16	4724.4	
128		STD	0019	-0154	3353	2700			14404	841	202		0062	29.23	4725.7	
		OBS	0019	-0154	3353	2700			14404	841	202		0062	29.23	4725.7	
128		STD	0020	-0143	3357	2703	0010380	0021	14410	835			0066	29.43	4727.7	
		OBS	0020	-0143	3357	2703			14410	835			0066	29.43	4727.7	
128		STD	0029	-0072	3388	2726			14449	792	202		0095	30.70	4740.5	
		OBS	0029	-0072	3388	2726			14449	792	202		0095	30.70	4740.5	
128		STD	0030	-0073	3391	2728	0007998	0030	14449	790			0058	30.69	4740.5	
		OBS	0030	-0073	3391	2728			14449	790			0058	30.69	4740.5	
128		STD	0048	-0084	3434	2763			14453	741	221		0198	30.49	4741.8	
		OBS	0048	-0084	3434	2763			14453	741	221		0198	30.49	4741.8	
128		STD	0050	-0088	3435	2764	0004568	0043	14452	732			0164	30.42	4741.4	
		OBS	0050	-0088	3435	2764			14452	732	240		0164	30.42	4741.4	
128		STD	0072	-0092	3446	2773			14455	647			0236	30.31	4742.4	
		OBS	0072	-0092	3446	2773			14455	647			0236	30.31	4742.4	
128		STD	0075	-0081	3448	2774	0003594	0053	14461	636			0246	30.54	4744.4	
		OBS	0075	-0081	3448	2774			14461	636	242		0246	30.54	4744.4	
128		STD	0097	-0018	3457	2779			14495	570			0318	31.68	4755.6	
		OBS	0097	-0018	3457	2779			14495	570	242		0318	31.68	4755.6	
128		STD	0100	-0014	3458	2780	0003126	0062	14497	566			0328	31.75	4756.2	
		OBS	0100	-0014	3458	2780			14497	566			0328	31.75	4756.2	
128		STD	0125	0014	3461	2780	0003042	0069	14515	538			0410	32.25	4782.1	
		OBS	0125	0014	3461	2780			14515	538			0410	32.25	4782.1	
128		STD	0145	0030	3463	2781			14526	522	248		0476	32.54	4765.7	
		OBS	0145	0030	3463	2781			14526	522	248		0476	32.54	4765.7	
128		STD	0150	0031	3463	2781	0002978	0077	14527	520			0482	32.56	4766.1	
		OBS	0150	0031	3463	2781			14527	520			0482	32.56	4766.1	
128		STD	0193	0043	3464	2781			14540	505	254		0633	32.77	4770.3	
		OBS	0193	0043	3464	2781			14540	505	254		0633	32.77	4770.3	
128		STD	0200	0045	3464	2781	0002986	0092	14542	502			0656	32.81	4771.0	
		OBS	0200	0045	3464	2781			14542	502			0656	32.81	4771.0	
128		STD	0250	0055	3465	2782	0002969	0107	14555	505			0820	32.99	4775.2	
		OBS	0250	0055	3465	2782			14555	505			0820	32.99	4775.2	
128		STD	0300	0067	3466	2782	0002968	0122	14568	494			0951	33.15	4778.5	
		OBS	0300	0067	3466	2782			14568	494			0951	33.15	4778.5	
128		STD	0386	0085	3469	2783			14591	478	257		1266	33.53	4787.1	
		OBS	0386	0085	3469	2783			14591	478	257		1266	33.53	4787.1	
134		STD	0400	0086	3469	2783	0002910	0151	14594	482			1312	33.55	4788.0	
		OBS	0400	0086	3469	2783			14594	482			1312	33.55	4788.0	
134		STD	0444	0089	3469	2782			14603	483	249		1457	33.60	4791.0	
		OBS	0444	0089	3469	2782			14603	483	249		1457	33.60	4791.0	
134		STD	0483	0100	3470	2783			14614	471	260		1585	33.80	4794.6	
		OBS	0483	0100	3470	2783			14614	471	260		1585	33.80	4794.6	
134		STD	0500	0095	3470	2783	0002919	0180	14615	471			1640	33.71	4794.9	
		OBS	0500	0095	3470	2783			14615	471			1640	33.71	4794.9	
134		STD	0533	0090	3470	2783			14618	470	255		1749	33.62	4795.9	
		OBS	0533	0090	3470	2783			14618	470	255		1749	33.62	4795.9	
134		STD	0600	0101	3474	2786	0002685	0208	14635	469			1968	33.62	4801.5	
		OBS	0600	0101	3474	2786			14635	469	250		1968	33.62	4801.5	
134		STD	0623	0102	3475	2786			14639	468			2044	33.84	4802.8	
		OBS	0623	0102	3475	2786			14639	468			2044	33.84	4802.8	
134		STD	0700	0096	3475	2787	0002592	0234	14649	469			2297	33.73	4806.1	
		OBS	0700	0096	3475	2787			14649	469			2297	33.73	4806.1	
134		STD	0714	0095	3475	2787			14651	469	255		2342	33.71	4806.7	
		OBS	0714	0095	3475	2787			14651	469	255		2342	33.71	4806.7	
134		STD	0800	0092	3474	2786	0002655	0261	14664	472			2625	33.66	4811.0	
		OBS	0800	0092	3474	2786			14664	472			2625	33.66	4811.0	
134		STD	T0898	0087	3473	2786			14678	477	256		2946	33.57	4815.6	
		OBS	T0898	0087	3473	2786			14678	477	256		2946	33.57	4815.6	
134		STD	0900	0087	3473	2786	0002707	0288	14678	477			2953	33.57	4815.6	
		OBS	0900	0087	3473	2786			14678	477			2953	33.57	4815.6	
134		STD	1000	0081	3473	2786	0002674	0314	14693	484			3281	33.46	4820.5	
		OBS	1000	0081	3473	2786			14693	484			3281	33.46	4820.5	
134		STD	T1083	0075	3473	2787			14704	489	251		3553	33.35	4824.1	
		OBS	T1083	0075	3473	2787			14704	489	251		3553	33.35	4824.1	
134		STD	1100	0074	3473	2787	0002614	0341	14706	490			3609	33.33	4824.8	
		OBS	1100	0074	3473	2787			14706	490			3609	33.33	4824.8	
134		OBS	T1176	0066	3474	2788			14716	493	264		3858	33.19	4828.1	

REFERENCE		SHIP	LATITUDE	LONGITUDE	L M S E Z D R	MARESD SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH	MAX. DEPTH	WAVE OBSERVATIONS				WEA- THER	CLOUD	NODC		
CTN CODE	ID. NO.	CODE	1/10	1/10		10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER	TO BOTTOM	OF SAMPL'S	DIR	HGT	PER	SEA	CODE		TYPE	AMT
31	194	AK	75420S	165170W		568	55	02	16	171	1964	025	2560	25	00				0	X7	9	5	0025

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED FORCE		DRY BULB	WET BULB			
	14	S25	915	915	-055	-083	7		00

MISSING TIME HR	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec	LOC
		STD	0000	-0147	3363	2708	0009921	0000	14406			0000	29.35	4726.4	
		OBS	0000	-0147	3363	2708			14406			0000	29.35	4726.4	
		STD	0010	-0144	3363	2708	0009923	0010	14409	783	190	0033	29.41	4727.3	
		OBS	0010	-0144	3363	2708			14409	783	191	0033	29.41	4727.3	
		STD	0020	-0140	3367	2711	0009621	0020	14413	786		0066	29.48	4728.7	
		OBS	0020	-0140	3367	2711			14413	786	190	0066	29.48	4728.7	
		STD	0030	-0133	3439	2769	0004115	0027	14428	754		0098	29.61	4733.6	
		OBS	0030	-0097Q	3439	2768Q			14428	754		0098	29.61	4733.6	
		STD	0050	-0123	3439	2769	0004138	0035	14436	673	192	0164	29.79	4736.2	
		OBS	0050	-0123	3439	2769			14436	673		0164	29.79	4736.2	
		STD	0075	-0119	3450	2777	0003299	0044	14443	598	237	0246	29.86	4738.5	
		OBS	0075	-0119	3450	2777			14443	598		0246	29.86	4738.5	
		STD	0100	-0084	3454	2779	0003116	0052	14464	549	239	0328	30.49	4745.4	
		OBS	0100	-0084	3454	2779			14464	549		0328	30.49	4745.4	
		STD	0125	-0039	3458	2781	0003002	0060	14490	550		0110	31.30	4753.9	
		OBS	0125	-0039	3458	2781			14490	550		0110	31.30	4753.9	
		STD	0149	-0007	3461	2782	0002935	0067	14509	551		0492	31.89	4760.5	
		OBS	0149	-0006	3461	2782			14509	550		0492	31.89	4760.5	
		STD	0199	0024	3463	2782	0002952	0082	14532	506	244	0653	32.43	4767.7	
		OBS	0199	0024	3463	2782			14532	506		0656	32.45	4767.7	
		STD	0200	0025	3463	2781	0002972	0097	14551	493		0820	32.85	4773.9	
		OBS	0200	0025	3463	2781			14551	493		0820	32.85	4773.9	
		STD	0250	0047	3465	2781	0002959	0112	14566	485	243	0981	33.12	4778.9	
		OBS	0250	0047	3465	2781			14566	485		0984	33.12	4778.9	
		STD	0300	0062	3466	2782	0002880	0141	14587	495	244	1306	33.26	4785.4	
		OBS	0300	0062	3466	2782			14587	495		1312	33.28	4785.7	
		STD	0400	0071	3468	2783	0002908	0170	14604	498	244	1617	33.33	4791.3	
		OBS	0400	0071	3468	2783			14604	476	244	1634	33.31	4791.3	
		STD	0500	0074	3468	2783	0002856	0199	14605	475	244	1640	33.33	4791.6	
		OBS	0500	0074	3468	2783			14605	475		1640	33.33	4791.6	
		STD	0592	0094	3471	2784	0002869	0227	14630	460	244	1942	33.69	4799.8	
		OBS	0592	0094	3471	2784			14630	462	246	1968	33.69	4800.2	
		STD	0600	0094	3471	2784	0002869	0227	14646	478	246	2264	33.69	4805.1	
		OBS	0600	0094	3471	2784			14646	478		2264	33.69	4805.1	
		STD	0700	0094	3471	2784	0002821	0256	14665	471	245	2297	33.69	4805.8	
		OBS	0700	0094	3471	2784			14665	471		2297	33.69	4805.8	
		STD	0800	0094	3472	2785	0002815	0284	14680	470		2625	33.69	4811.3	
		OBS	0800	0094	3472	2785			14680	470		2625	33.69	4811.3	
		STD	0900	0091	3472	2785	0002807	0312	14693	468	244	2953	33.64	4816.3	
		OBS	0900	0091	3472	2785			14693	468		2953	33.64	4816.3	
		STD	T0986	0088	3472	2785	0002807	0312	14695	467		3235	33.58	4820.5	
		OBS	T1000	0087	3472	2785			14695	467		3281	33.57	4821.2	
		STD	1100	0084	3471	2785	0002835	0340	14710	461		3609	33.51	4826.1	
		OBS	T1184	0081	3471	2785			14723	460	243	3885	33.46	4830.4	
		STD	1200	0081	3471	2785	0002840	0368	14726	462		3937	33.46	4831.4	
		OBS	1300	0078	3472	2786	0002754	0396	14742	470		4265	33.40	4836.6	
		STD	1400	0075	3473	2787	0002667	0424	14757	478		4593	33.35	4841.5	
		OBS	T1480	0073	3474	2788			14770	482	247	4856	33.31	4845.8	
		STD	1500	0072	3474	2788	0002593	0450	14773	482		4921	33.30	4846.8	
		OBS	1500	0072	3474	2788			14773	482		4921	33.30	4846.8	
		STD	1750	0062	3475	2789	0002488	0513	14811	484	230	5741	33.12	4859.2	
		OBS	T1972	0054	3475	2789			14846	486		6470	32.97	4870.7	
		STD	2000	0053	3475	2790	0002383	0574	14850	487		6582	32.95	4872.0	
		OBS	T2470	0042	3471	2787			14925	511	242	8104	32.76	4896.6	

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
					CRUISE NO.	STATION NUMBER	DIR		HGT	PER			SEA	TYPE	AMT				
31	194	AK	752905	167250W	568	57	02 17 005	1964	026		26.06	24	28		3	X1	6 6	0026	

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VLS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	20	S05	946		-015	-024	7		00

MESSAGE TIME OF HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-2167	Σ Δ D DYN. W. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY Ft./sec
010		STD	0000	-0076	3384	2723	0008534	0000	14442	785		0000	30.63	4736.2
		OBS	0000	-0076	3384	2723			14442	785	177	0000	30.63	4736.2
		STD	0010	-0077	3384	2723	0008526	0009	14443	789		0033	30.61	4738.5
012		OBS	0010	-0077	3384	2723			14443	789	177	0033	30.61	4738.5
012		OBS	0019	-0076	3384	2723			14445	779	178	0066	30.63	4739.2
		STD	0020	-0076	3384	2723	0008527	0017	14445	779		0066	30.63	4739.2
012		OBS	0029	-0074	3384	2722			14447	780	177	0095	30.67	4739.8
		STD	0030	-0073	3384	2723	0008510	0026	14448	782		0098	30.69	4740.1
012		OBS	0048	-0072	3390	2727			14452	788	179	0157	30.70	4741.5
		STD	0050	-0080	3396	2732	0007581	0042	14450	780		0164	30.56	4740.8
012		OBS	0072	-0134	3439	2769			14434	696	221	0236	29.59	4735.6
		STD	0075	-0134	3440	2770	0004016	0056	14435	682		0246	29.59	4735.5
012		OBS	0096	-0131	3447	2775			14441	600	232	0315	29.64	4737.8
		STD	0100	-0121	3448	2776	0003435	0065	14446	592		0328	29.82	4739.5
		STD	0125	-0065	3453	2778	0003265	0074	14477	550		0410	30.83	4749.7
012		OBS	0144	-0030	3457	2779			14497	525	236	0472	31.46	4756.2
		STD	0150	-0021	3458	2780	0003086	0082	14502	519		0492	31.62	4757.9
012		OBS	0192	0028	3464	2782			14533	488	237	0630	32.50	4768.0
		STD	0200	0030	3464	2782	0002897	0097	14535	488		0656	32.54	4768.7
		STD	0250	0042	3465	2782	0002933	0111	14549	489		0820	32.76	4773.3
012		OBS	0288	0052	3465	2782			14559	490	237	0944	32.94	4776.6
		STD	0300	0057	3466	2782	0002926	0126	14564	490		0984	33.03	4778.2
012		OBS	0385	0083	3469	2783			14590	487	237	1263	33.49	4786.7
		STD	0400	0084	3469	2783	0002871	0155	14593	482		1312	33.51	4787.7
021		OBS	0475	0087	3471	2784			14607	455	241	1558	33.57	4792.3
012		OBS	0481	0084	3469	2783			14607	470	237	1578	33.51	4792.3
		STD	0500	0089	3470	2783	0002874	0184	14612	462		1640	33.60	4793.9
021		OBS	0570	0100	3473	2785			14629	446	242	1870	33.80	4799.5
		STD	0600	0101	3473	2785	0002738	0212	14635	450		1568	33.82	4801.5
021		OBS	0665	0102	3474	2786			14646	458	243	2182	33.84	4805.1
		STD	0700	0101	3473	2785	0002782	0239	14651	458		2297	33.82	4806.7
021		OBS	0760	0099	3472	2784			14660		252	2493	33.78	4809.7
		STD	0800	0097	3472	2785	0002831	0267	14666	457		2625	33.75	4811.7
		STD	0900	0092	3473	2785	0002772	0295	14681	456		2953	33.66	4816.6
021		OBS	T0952	0090	3473	2786			14689	456	243	3123	33.62	4815.2
		STD	1000	0088	3474	2786	0002681	0323	14696	454		3211	33.58	4821.5
		STD	1100	0084	3475	2788	0002545	0349	14711	450		3605	33.54	4826.4
021		OBS	T1145	0082	3476	2789			14718	448	242	3757	33.48	4828.7
		STD	1200	0080	3474	2787	0002623	0375	14726	453		3837	33.44	4831.4
		STD	1300	0076	3471	2785	0002824	0402	14741	461		4265	33.37	4836.3
		STD	1400	0072	3469	2784	0002949	0431	14755	466		4593	33.30	4840.9
021		OBS	T1438	0071	3468	2783			14761	468	249	4718	33.28	4842.8
		STD	1500	0069	3468	2783	0003000	0461	14771	468		4921	33.24	4846.1
		STD	1750	0062	3469	2784	0002922	0535	14810	467		5711	33.12	4858.9
021		OBS	T1930	0056	3469	2785			14838	466	239	6332	33.01	4868.1
		STD	2000	0054	3469	2785	0002826	0606	14850	468		6562	32.97	4872.0
021		OBS	T2423	0040	3470	2786			14916	492	241	7950	32.72	4893.7

REFERENCE CTRY CODE	SHIP NO.	LATITUDE V/10	LONGITUDE W/10	HEIGHT M	MARS DEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES (TYPE AMT)	NODC STATION NUMBER
					'S	'E	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	755205	167260W	568	57	02	17	072	1964	027	1417	14	00	0	X7	X9	0027		
					WATER		WIND		BARO- METER (MM)	AIR TEMP. °C		VIB. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS						
					COLOR	TRANS	DIR.	SPEED (KTS)		DRY RULE	WET RULE									
					23	515	950	032	-039	3	00									

MESSAGE TIME HR. V/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	S Δ D DIN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY LT/SEC	W CODE
075		STD	0000	-0167	3373	2717	0009104	0000	14398	777		0000	28.99	4723.7	
		OBS	0000	-0167	3373	2717			14398	777	192	0000	28.99	4723.7	
		STD	0010	-0163	3373	2716	0009107	0009	14401	763		0033	29.07	4724.7	
075		OBS	0010	-0163	3373	2716			14401	763	198	0033	29.07	4724.7	
		STD	0020	-0150	3381	2723	0008519	0018	14410	783		0066	29.30	4727.7	
075		OBS	0020	-0150	3381	2723			14410	783	202	0066	29.30	4727.7	
		STD	0030	-0132	3390	2729	0007674	0026	14421	745		0098	29.62	4731.3	
075		OBS	0030	-0132	3390	2729			14421	745	204	0098	29.62	4731.3	
		STD	0050	-0108	3405	2741	0006792	0041	14438	697		0164	30.06	4736.9	
075		OBS	0050	-0108	3405	2741			14438	697	208	0164	30.06	4736.9	
		STD	0075	-0078	3430	2760	0004981	0055	14460	621		0216	30.60	4744.1	
075		OBS	0075	-0078	3430	2760			14460	621	221	0216	30.60	4744.1	
		STD	0100	-0086	3432	2762	0004788	0068	14460	617		0328	30.45	4744.1	
075		OBS	0100	-0086	3432	2762			14460	617	224	0328	30.45	4744.1	
		STD	0125	-0056	3443	2769	0004067	0079	14480	600		0410	30.99	4750.6	
075		OBS	0149	-0031	3451	2775			14497	581	235	0489	31.44	4756.2	
		STD	0150	-0030	3451	2775	0003559	0088	14497	581		0492	31.46	4756.2	
075		OBS	0199	0009	3460	2780			14524	536	237	0653	32.16	4765.1	
		STD	0200	0010	3460	2780	0003087	0105	14525	536		0656	32.18	4765.1	
		STD	0250	0045	3464	2781	0002990	0120	14550	518		0820	32.81	4779.6	
075		OBS	0299	0066	3468	2783			14568	498	242	0941	33.19	4779.6	
081		OBS	0300	0066	3468	2783	0002834	0135	14568	480		0941	33.19	4779.6	
075		OBS	0398	0072	3468	2783			14587	451	245	1299	33.30	4785.7	
		STD	0400	0077	3469	2783	0002848	0163	14590	487	243	1601	33.39	4786.7	
081		OBS	0495	0086	3470	2783			14610	478	235	1312	33.39	4786.7	
		STD	0500	0086	3470	2784	0002846	0192	14611	478		1624	33.55	4793.2	
081		OBS	0594	0089	3471	2784			14628		236	1610	33.55	4793.6	
		STD	0600	0089	3471	2784	0002819	0220	14629	485		1949	33.60	4799.2	
081		OBS	0693	0090	3471	2784			14645		237	1969	33.60	4799.5	
		STD	0700	0090	3471	2784	0002844	0248	14646	492		2274	33.62	4804.8	
081		OBS	0792	0086	3471	2784			14660	498	237	2297	33.62	4804.8	
		STD	0800	0086	3471	2784	0002831	0277	14661	498		2599	33.55	4809.7	
		STD	0900	0082	3471	2785	0002815	0305	14676	502		2625	33.55	4810.0	
081		OBS	T0991	0065	3470	2785			14683	505	238	2853	33.48	4811.9	
		STD	1000	0060	3470	2785	0002720	0332	14683	508		3252	33.17	4817.2	
		STD	1100	0012	3467	2785	0002558	0359	14677	541		3281	33.08	4817.2	
081		OBS	T1190	-0015	3466	2786			14680	561	230	3609	32.22	4815.3	
		STD	1200	-0015	3466	2786	0002412	0384	14682	563		3904	31.73	4816.9	
		STD	1300	-0017	3465	2785	0002462	0408	14698	573		4265	31.69	4822.2	
081		OBS	T1390	-0019	3465	2785			14712	573	226	4560	31.66	4826.8	

REFERENCE CHP CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN METERS	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SHELF*	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER			

31	194	AK	762405	167270W	568	67	02	17	127	1964	028	0476	04	00				0	X2	6	8		0028
						WATER		WIND		BARO- METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS (m)	DIR.	DIR.	SPEED OF FORCE	DRY BULB	WET BULB				0	00						

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma$ Δ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY FT/SEC
129		STD	0000	-0089	3406	2741	0006802	0000	14439	787		0000	30.10	4737.2
		OBS	0000	-0089	3406	2741			14439	787	161	0000	30.10	4737.2
		STD	0010	-0103	3406	2741	0006750	0007	14434	763		0033	30.15	4735.6
129		OBS	0010	-0103	3406	2741			14434	763	165	0033	30.15	4735.6
		STD	0020	-0098	3408	2743	0006610	0013	14438	795		0066	30.24	4736.9
129		OBS	0020	-0098	3408	2743			14438	795	162	0066	30.24	4736.9
		STD	0030	-0092	3410	2744	0006474	0020	14443	794		0098	30.34	4738.5
129		OBS	0030	-0092	3410	2744			14443	794	164	0098	30.34	4738.5
		STD	0050	-0078	3432	2761	0004836	0031	14456	689		0164	30.60	4742.8
129		OBS	0050	-0078	3432	2761			14456	689	190	0164	30.60	4742.8
		STD	0075	-0087	3434	2763	0004640	0043	14456	669		0246	30.43	4742.8
129		OBS	0075	-0087	3434	2763			14456	669	199	0246	30.43	4742.8
		STD	0100	-0125	3442	2771	0003880	0054	14444	628		0328	29.75	4738.8
129		OBS	0100	-0125	3442	2771			14444	628	217	0328	29.75	4738.8
		STD	0125	-0124	3445	2774	0003643	0063	14449	626		0410	29.77	4740.5
129		OBS	0125	-0124	3445	2774	0003436	0072	14457	615		0492	29.93	4743.1
		STD	0150	-0115	3448	2776	0003125	0088	14485	563		0592	29.93	4743.1
129		OBS	0150	-0115	3448	2776			14485	563	238	0592	29.93	4743.1
		STD	0200	-0075	3454	2779	0002888	0103	14486	584		0656	30.65	4752.3
129		OBS	0200	-0075	3454	2779			14486	584	238	0656	30.65	4752.3
		STD	0250	-0091	3456	2781	0002523	0117	14491	593		0820	30.36	4752.6
129		OBS	0250	-0091	3456	2781			14491	593	237	0820	30.36	4752.6
		STD	0300	-0101	3460	2785	0001479	0137	14507	577		0984	30.18	4751.2
129		OBS	0300	-0101	3460	2785			14507	577	238	0984	30.18	4751.2
		STD	0400	-0106	3473	2796			14507	577		1309	30.09	4759.5
129		OBS	0400	-0106	3473	2796			14507	577		1312	30.09	4759.5
		STD	0449	-0107	3473	2796			14514	586	238	1473	30.07	4761.8

REFERENCE CHP CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH IN METERS	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SHELF*	WAVE OBSERVATIONS				WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1"	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT	PER			

31	194	AK	762255	169200W	568	69	02	17	178	1964	029	0595	05	00				0	X7	6	8		0029
						WATER		WIND		BARO- METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS								
						COLOR CODE	TRANS (m)	DIR.	DIR.	SPEED OF FORCE	DRY BULB	WET BULB				0	00						

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma$ Δ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY FT/SEC
181		STD	0000	-0102	3422	2754	0005532	0000	14435			0000	30.16	4735.9
		OBS	0000	-0102	3422	2754			14435		167	0000	30.16	4735.9
		OBS	0009	-0105	3421	2754			14435	765	178	0030	30.11	4735.9
		STD	0010	-0105	3421	2754	0005587	0006	14435	768		0033	30.11	4735.9
181		OBS	0019	-0104	3422	2754			14437	779	174	0052	30.13	4736.5
		STD	0020	-0104	3422	2754	0005518	0011	14437	775		0066	30.13	4736.5
181		OBS	0028	-0101	3422	2754			14440	754	177	0092	30.18	4737.5
		STD	0030	-0101	3422	2754	0005523	0017	14440	758		0058	30.18	4737.5
181		OBS	0047	-0102	3422	2754			14443	771	173	0154	30.15	4738.5
		STD	0050	-0100	3423	2755	0005480	0028	14444	762		0164	30.20	4738.8
181		OBS	0070	-0091	3426	2757			14452	715	187	0290	30.36	4741.5
		STD	0075	-0091	3427	2758	0005160	0041	14453	708		0246	30.36	4741.8
181		OBS	0094	-0091	3431	2761			14457	683	196	0308	30.36	4743.1
		STD	0100	-0091	3432	2762	0004769	0053	14458	673		0328	30.36	4743.4
		STD	0125	-0090	3436	2765	0004457	0065	14463	637		0410	30.38	4745.1
181		OBS	0141	-0090	3440	2768			14466	619	216	0463	30.38	4746.0
		STD	0150	-0084	3443	2771	0003940	0075	14471	612		0492	30.49	4747.7
181		OBS	0188	-0060	3453	2778			14490	587	228	0617	30.92	4753.9
		STD	0200	-0053	3454	2778	0003226	0093	14495	578		0656	31.05	4755.6
		STD	0250	-0028	3458	2780	0003037	0109	14516	550		0820	31.50	4762.5
181		OBS	0281	-0017	3460	2781			14526	539	230	0922	31.69	4765.7
		STD	0300	-0012	3461	2782	0002890	0124	14532	538		0984	31.78	4767.7
181		OBS	0376	-0007	3465	2785			14547	537	232	1234	31.87	4772.6
		STD	0400	-0009	3465	2785	0002595	0151	14550	538		1312	31.84	4773.6
181		OBS	0470	-0028	3465	2786			14553	547	232	1542	31.50	4774.6

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER	
					MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER				SEA
31	174	AK	755155	169330	568	59	02 17 226	1964	030		0973	08	03		3	X2	6	8	0030

WATER		WIND		BARO-METER (lbs)	AIR TEMP. °C		NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED (KTS)		DRY BULB	WET BULB		
		04	S22	865	-013	-022	6	00

MISSING TIME HR./10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME (ANOMALOUS)	$\Sigma \Delta \sigma$ (DYN. M. X 10 <sup>-3</sup> )	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P (µg - ml/l)	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY (ft./sec)
		STD	0000	-0069	3426	2756	0005346	0000	14451	795		0000	30.76	4711.1
229		OBS	0000	-0069	3426	2756			14451	795		0000	30.76	4711.1
229		OBS	0009	-0071	3427	2757			14452	790	200	0030	30.72	4711.4
		STD	0010	-0071	3427	2757	0005259	0005	14452	787		0033	30.72	4711.4
229		OBS	0019	-0070	3427	2757			14454	766	204	0062	30.74	4712.1
		STD	0020	-0067	3428	2758	0005195	0011	14455	766		0066	30.79	4712.4
229		OBS	0028	-0045	3433	2761			14468	763	207	0092	31.19	4716.7
		STD	0030	-0041	3434	2761	0004842	0016	14470	757		0098	31.26	4717.4
229		OBS	0046	-0018	3442	2767			14484	719	212	0151	31.68	4752.0
		STD	0050	-0019	3443	2768	0004251	0025	14485	715		0164	31.66	4752.3
229		OBS	0070	-0024	3448	2772			14486	696	218	0230	31.57	4752.6
		STD	0075	-0024	3448	2772	0003828	0035	14487	691		0245	31.57	4752.9
229		OBS	0093	-0024	3449	2773			14490	676	214	0305	31.57	4753.9
		STD	0100	-0023	3450	2773	0003691	0044	14492	672		0328	31.59	4754.6
		STD	0125	-0020	3454	2777	0003399	0053	14498	657		0410	31.64	4756.5
229		OBS	0139	-0018	3455	2777			14502	647	224	0456	31.68	4757.9
		STD	0150	-0014	3456	2777	0003312	0061	14505	638		0492	31.75	4758.8
229		OBS	0185	0004	3457	2778			14519	608	234	0607	32.07	4763.4
		STD	0200	0022	3459	2778	0003236	0078	14530	586		0656	32.10	4767.0
		STD	0250	0066	3466	2782	0002978	0093	14560	528		0820	33.19	4776.9
229		OBS	0278	0082	3468	2782			14572	505	236	0912	33.18	4780.8
		STD	0300	0084	3468	2782	0002939	0108	14576	495		0984	33.51	4782.1
229		OBS	0371	0087	3469	2783			14590	476	236	1217	33.57	4786.7
		STD	0400	0086	3469	2783	0002879	0137	14594	478		1312	33.55	4788.0
233		OBS	0449	0084	3470	2784			14601		241	1473	33.51	4790.3
229		OBS	0464	0089	3471	2784			14606	485	233	1522	33.60	4792.0
		STD	0500	0083	3471	2784	0002755	0165	14610	498		1640	33.49	4793.3
233		OBS	0540	0077	3471	2785			14614		241	1772	33.39	4794.6
		STD	0600	0072	3471	2785	0002690	0193	14621	523		1968	33.30	4796.9
233		OBS	0630	0067	3471	2785			14624	527	242	2067	33.21	4797.9
		STD	0700	0047	3470	2785	0002628	0219	14626	529		2297	32.85	4798.5
233		OBS	0721	0041	3469	2785			14627	530	237	2366	32.74	4798.9
		STD	0800	0018	3467	2785	0002607	0245	14630			2625	32.32	4799.8
233		OBS	T0813	0014	3467	2785			14630		231	2667	32.25	4799.8

REFERENCE	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSON SQUARE				STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S/MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES TYPE AMT	STATION NUMBER	
				10'	1"	MO	DAY	HR	1/10	CRUISE NO.		STATION NUMBER	DIR			HGT	PER	SEA					
31	194	AK	751855	169300W	56	8	5	02	18	14	45	1964		031	2195	20	04		4	X7	6	8	0031

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	06	S22	797		-J06	-011	7		00

MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY (ml/g)	Σ Δ D DYN. M. x 10 <sup>4</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg = 0.111	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/Sec
047	STD		0000	-0029	3436	2762	0004748	0000	14471	819		0000	31.48	4747.7
	OBS		0000	-0029	3436	2762			14471	819	184	0000	31.48	4747.7
047	STD		0010	-0031	3436	2763	0004737	0005	14472	834		0033	31.44	4748.0
	OBS		0010	-0031	3436	2763			14472	834	179	0033	31.44	4748.0
047	STD		0019	-0032	3437	2763			14473	820		0062	31.42	4748.3
	OBS		0019	-0032	3437	2763	0004654	0009	14473	821		0066	31.42	4748.3
047	STD		0029	-0032	3436	2763			14474	828		0095	31.42	4748.7
	OBS		0029	-0033	3436	2763	0004717	0014	14474	833	179	0098	31.41	4748.7
047	STD		0048	-0040	3438	2765			14474	839		0158	31.28	4748.7
	OBS		0048	-0039	3440	2766	0004391	0023	14475	814		0164	31.30	4749.0
047	STD		0071	-0023	3458	2780			14488	623	238	0233	31.59	4755.2
	OBS		0071	-0012	3459	2780	0003063	0033	14494	609		0246	31.78	4755.2
047	STD		0100	0030	3463	2781	0002978	0040	14518	556	232	0312	32.52	4762.8
	OBS		0100	0036	3463	2781	0003013	0048	14525	552		0328	32.54	4763.1
047	STD		0125	0040	3463	2781			14530	543	236	0410	32.65	4765.4
	OBS		0125	0041	3463	2781	0003020	0055	14531	533		0469	32.72	4767.0
047	STD		0150	0046	3465	2782			14541	493	246	0492	32.74	4767.4
	OBS		0150	0049	3465	2782	0002927	0070	14544	499		0623	32.83	4770.6
047	STD		0200	0062	3466	2782	0002930	0085	14558	522		0656	32.88	4771.6
	OBS		0200	0068	3467	2782			14567	528	238	0820	33.12	4779.2
047	STD		0300	0069	3467	2782	0002914	0099	14569	521		0935	33.22	4779.2
	OBS		0300	0076	3468	2782			14586	506	234	0984	33.24	4779.8
047	STD		0400	0078	3468	2783	0002908	0128	14590	524		1217	33.37	4785.4
	OBS		0400	0084	3469	2783			14602	526	239	1312	33.40	4786.4
054	STD		0452	0092	3470	2783			14609	505	238	1562	33.66	4793.0
	OBS		0452	0094	3471	2784	0002836	0157	14614	491		1640	33.69	4794.6
054	STD		0476	0096	3472	2784			14623	480	241	1782	33.73	4797.6
	OBS		0476	0096	3471	2784	0002842	0185	14632	506		1968	33.73	4800.5
054	STD		0500	0096	3471	2784			14638	514	242	2080	33.73	4802.5
	OBS		0500	0094	3472	2784	0002824	0214	14648	511		2297	33.69	4805.8
054	STD		0543	0093	3472	2785			14652	510	243	2382	33.67	4807.1
	OBS		0543	0089	3472	2785	0002813	0242	14663	514		2625	33.60	4810.7
054	STD		0600	0085	3471	2784	0002828	0270	14677	520		2953	33.53	4815.3
	OBS		0600	0084	3471	2784			14678	520	235	2822	33.51	4815.6
054	STD		1000	0080	3471	2784	0002829	0298	14692	520		3281	33.44	4820.2
	OBS		1000	0076	3471	2785	0002825	0327	14707	520		3609	33.37	4825.1
054	STD		1100	0072	3470	2785	0002818	0355	14722	520		3937	33.30	4830.0
	OBS		1100	0068	3470	2785	0002810	0383	14737	520		4265	33.22	4835.0
054	STD		1300	0065	3470	2785			14747	520	237	4488	33.17	4838.2
	OBS		1300	0064	3470	2785	0002800	0411	14752	520		4593	33.15	4839.9
054	STD		1400	0062	3470	2785	0002792	0439	14768	521		4921	33.12	4845.1
	OBS		1400	0051	3470	2786	0002708	0508	14806	523		5741	32.92	4857.6
054	STD		1500	0045	3470	2786			14818	524	225	6030	32.81	4861.5
	OBS		1500	0034	3470	2787			14837	526	233	6496	32.61	4867.8

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE +	LONGITUDE +	MO INDEX	MARS DEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NOCC- STATION NUMBER
						10'	1'	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	194	AK	744355	171250W	569	41	02	18	119	1964		032	2332	20	09		5	X7	6	8		0032

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
		13	520	705	-009	-017	7		00

MEASURER HR	TIME 1/10	CAS- NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (ft)	TEMP (°F)	SOUND VELOCITY ft/sec	ST CODE
			STD	0000	-0023	34.44	2769	0004164	0000	14475	768		0000	31.59	4749.0	
122			OBS	0000	-0023	34.44	2769			14475	768	194	0000	31.59	4749.0	
122			OBS	0009	-0022	34.44	2769			14477	764	200	0030	31.60	4749.7	
			STD	0010	-0023	34.44	2769	0004155	0004	14476	769		0033	31.59	4749.3	
122			OBS	0018	-0026	34.45	2770			14476	791	198	0059	31.53	4749.3	
			STD	0020	-0025	34.45	2770	0004075	0008	14477	786		0056	31.55	4749.7	
122			OBS	0027	-0021	34.45	2769			14480	775	202	0089	31.62	4750.6	
			STD	0030	-0020	34.45	2770	0004074	0012	14481	779		0098	31.64	4751.0	
122			OBS	0045	-0015	34.47	2771			14486	788	198	0118	31.73	4752.6	
			STD	0050	-0015	34.47	2771	0003950	0020	14487	780		0164	31.73	4752.9	
122			OBS	0068	-0015	34.48	2771			14490	758	202	0223	31.73	4753.9	
			STD	0075	-0015	34.48	2771	0003888	0030	14491	755		0266	31.73	4754.2	
122			OBS	0091	-0014	34.48	2771			14494	748	199	0299	31.74	4755.2	
			STD	0100	-0011	34.49	2772	0003827	0040	14497	712		0388	31.80	4756.2	
			STD	0125	-0003	34.53	2775	0003561	0049	14506	634		0410	31.95	4759.2	
122			OBS	0136	0001	34.55	2776			14510	609	224	0446	32.02	4760.5	
			STD	0150	0005	34.57	2778	0003297	0058	14514	596		0492	32.09	4761.8	
122			OBS	0181	0017	34.61	2780			14525	569	228	0594	32.31	4765.4	
			STD	0200	0030	34.62	2780	0003057	0074	14535	548		0656	32.54	4768.7	
			STD	0250	0056	34.65	2781	0002990	0089	14555	508		0820	33.01	4775.2	
122			OBS	0272	0063	34.66	2782			14562	498	231	0892	33.13	4777.5	
			STD	0300	0064	34.66	2782	0002949	0103	14567	499		0984	33.15	4779.2	
122			OBS	0363	0065	34.67	2782			14578	502	230	1191	33.17	4782.8	
			STD	0400	0066	34.67	2782	0002919	0133	14585	485		1312	33.19	4785.1	
129			OBS	0422	0066	34.67	2782			14588	481	233	1384	33.19	4786.1	
122			OBS	0453	0073	34.68	2783			14597	483	232	1486	33.31	4789.0	
			STD	0500	0089	34.70	2783	0002897	0162	14612	471		1640	33.60	4793.9	
129			OBS	0508	0091	34.70	2783			14614	470	234	1667	33.64	4794.6	
129			OBS	0596	0095	34.70	2783			14631	473	230	1955	33.71	4800.2	
			STD	0600	0095	34.70	2783	0002940	0191	14631	474		1568	33.71	4800.2	
129			OBS	0684	0097	34.71	2784			14646	489	235	2244	33.75	4805.1	
			STD	0700	0096	34.71	2784	0002892	0220	14649	488		2297	33.73	4806.1	
			STD	0800	0092	34.71	2784	0002879	0249	14664	482		2625	33.66	4811.0	
129			OBS	T0862	0089	34.71	2784			14673	478	229	2828	33.60	4811.0	
			STD	0900	0088	34.71	2784	0002850	0278	14679	476		2953	33.58	4815.9	
			STD	1000	0084	34.72	2785	0002789	0306	14694	471		3251	33.51	4820.8	
129			OBS	T1040	0082	34.72	2785			14700	469	231	3412	33.48	4822.8	
			STD	1100	0079	34.72	2786	0002747	0334	14708	466		3609	33.42	4825.4	
			STD	1200	0074	34.72	2786	0002717	0361	14723	461		3937	33.33	4830.4	
			STD	1300	0069	34.72	2786	0002686	0388	14738	457		4265	33.24	4835.3	
129			OBS	T1312	0068	34.72	2786			14739	456	230	4304	33.22	4835.6	
			STD	1400	0064	34.72	2786	0002682	0415	14752	474		4593	33.15	4839.9	
			STD	1500	0059	34.71	2786	0002675	0442	14767	494		4921	33.06	4844.8	
			STD	1750	0049	34.70	2786	0002681	0509	14805	544		5711	32.88	4857.3	
129			OBS	T1780	0048	34.70	2786			14809	550	234	5839	32.86	4858.6	
129			OBS	T1976	0042	34.70	2786			14840	491	231	6483	32.76	4868.8	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	WAVE DIRECTION	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLE	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TIME (AMT)	NODC STATION NUMBER			
						10'	1'	MO.	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	D.O.				HIGHER	SEA	
31	194	AK	75112S	171270W		569	51	02	18	189	1964		033	1829	16	16		4	X2	6	8		0033
					WATER		WIND		SAND- METER		AIR TEMP. °C		VIS CODE		NO. OF DEPTH'S		SPECIAL OBSERVATIONS						
					COLOR CODE		TRANS. (m)		DIR. FORCE		DRY BULB		WET BULB										
					18		516		760		-014		-022		7		00						

MESSAGE HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SHEAR VOLUME ANOMALY (10 <sup>3</sup> )	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	NO m/l	PO <sub>2</sub> -P μg - ml/l	TEMP (°F)	SOUND VELOCITY ft/sec	SIGMA-T
		STD	0000	-0023	3442	2767	0004316	0000	14474	779		0000	31.59	4748.7
192		OBS	0000	-0023	3442	2767			14474	779	182	0000	31.59	4748.7
194		OBS	0009	-0025	3442	2767			14475	764	182	0030	31.55	4749.0
		STD	0010	-0026	3442	2767	0004301	0004	14475	774		0033	31.53	4749.0
194		OBS	0019	-0027	3442	2767			14475	819	184	0059	31.51	4749.3
		STD	0020	-0026	3442	2767	0004300	0009	14476	816		0066	31.53	4749.3
194		OBS	0027	-0023	3442	2767			14479	803	183	0089	31.59	4750.3
		STD	0030	-0025	3443	2768	0004264	0013	14479	796		0098	31.55	4750.3
194		OBS	0045	-0027	3445	2770			14480	765	191	0118	31.51	4750.6
		STD	0050	-0021	3446	2770	0004013	0021	14484	763		0164	31.62	4752.0
194		OBS	0068	-0010	3449	2772			14493	724	209	0223	31.82	4754.9
		STD	0075	-0014	3451	2774	0003662	0021	14492	678		0266	31.75	4754.6
194		OBS	0091	-0016	3456	2778			14495	598	229	0299	31.71	4755.6
		STD	0100	-0008	3458	2779	0003157	0029	14500	589		0328	31.86	4757.2
		STD	0125	0013	3462	2781	0002961	0047	14514	564		0410	32.23	4761.8
194		OBS	0136	0020	3463	2782			14520	553	234	0446	32.36	4763.8
		STD	0150	0027	3463	2782	0002940	0054	14525	535		0492	32.49	4765.4
194		OBS	0181	0041	3464	2781			14537	507	235	0504	32.74	4769.3
		STD	0200	0047	3465	2782	0002930	0069	14543	509		0656	32.85	4771.3
		STD	0250	0060	3466	2782	0002940	0084	14557	515		0820	33.08	4775.9
194		OBS	0272	0065	3467	2782			14563	517	241	0892	33.17	4777.9
		STD	0300	0068	3468	2783	0002846	0098	14569	496		0984	33.22	4779.8
194		OBS	0363	0075	3469	2783			14583	473	241	1191	33.35	4784.4
		STD	0400	0080	3470	2783	0002830	0127	14591	483		1312	33.44	4787.1
201		OBS	0436	0085	3470	2784			14600	487	235	1430	33.53	4790.0
194		OBS	0453	0082	3469	2783			14601	241		1486	33.48	4793.4
		STD	0500	0089	3470	2783	0002874	0155	14612	476		1640	33.60	4793.9
201		OBS	0526	0092	3471	2784			14618	475	239	1726	33.66	4795.9
		STD	0600	0094	3471	2784	0002853	0184	14631	484		1968	33.69	4800.2
201		OBS	0616	0094	3471	2784			14634	486	237	2021	33.69	4801.2
		STD	0700	0093	3471	2784	0002869	0212	14647	466		2297	33.67	4805.4
201		OBS	0707	0093	3471	2784			14649	465	236	2320	33.67	4806.1
		STD	0800	0088	3471	2784	0002847	0241	14662	468		2625	33.58	4810.4
201		OBS	T0889	0084	3471	2784			14675	474	233	2917	33.51	4814.6
		STD	0900	0084	3471	2784	0002831	0269	14677	474		2953	33.51	4815.3
		STD	1000	0080	3471	2785	0002814	0297	14692	484		3261	33.44	4820.2
201		OBS	T1073	0076	3471	2785			14702	489	226	3521	33.37	4823.5
		STD	1100	0074	3471	2785	0002778	0325	14706	490		3609	33.33	4824.8
		STD	1200	0068	3471	2785	0002738	0353	14720	492		3937	33.22	4829.4
		STD	1300	0058	3471	2786	0002696	0380	14734	494		4205	33.12	4834.0
201		OBS	T1352	0058	3471	2786			14741	496	233	4436	33.04	4836.3
		STD	1400	0054	3471	2786	0002633	0407	14748	497		4593	32.97	4838.6
		STD	1500	0047	3470	2786	0002651	0433	14761	501		4921	32.85	4842.8
201		OBS	T1635	0035	3469	2786			14779	506	230	5364	32.63	4848.7

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NOCG STATION NUMBER
						10'	1'	MO DAY HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER			
31	194	AK	75396S	171275W	569	51	02 19 019	1964	034		1006	09	16		5	X1	6 6	0034	
WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH'S		SPECIAL OBSERVATIONS									
COLOR		SPEED DIR.		METER		DRY BULB		WET BULB		VIB CODE									
CODE		(KTS)		(MBS)		-044		-050		7									
20		S26		810						00									

MESSAGE TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P ( $\mu$ - M)	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FE/SEC	COG
		STD	0000	-0064	3441	2768	0004218	0000	14455	807		0000	30.85	4742.4	
023		OBS	0000	-0064	3441	2768			14455	807	196	0000	30.85	4742.4	
023		OBS	0008	-0066	3438	2766			14455	816	196	0026	30.81	4742.4	
		STD	0010	-0066	3438	2766	0004437	0004	14456	816		0033	30.81	4742.8	
023		OBS	0016	-0066	3438	2766			14457	811	199	0052	30.81	4743.1	
		STD	0020	-0065	3438	2765	0004468	0009	14458	771		0056	30.83	4743.4	
023		OBS	0025	-0063	3437	2765			14459	743	198	0082	30.87	4743.8	
		STD	0030	-0061	3438	2766	0004452	0013	14461	771		0095	30.90	4744.4	
023		OBS	0041	-0055	3440	2767			14466	813	195	0131	31.01	4746.0	
		STD	0050	-0049	3441	2767	0004268	0022	14471	822		0161	31.12	4747.7	
023		OBS	0061	-0039	3443	2769			14477	823	199	0200	31.30	4749.7	
		STD	0075	-0022	3446	2770	0004005	0032	14488	805		0216	31.60	4753.3	
023		OBS	0082	-0016	3447	2771			14492	798	201	0269	31.71	4754.6	
		STD	0100	-0015	3447	2771	0003929	0042	14495	796		0328	31.73	4755.6	
023		OBS	0123	-0014	3448	2771			14500	793	204	0401	31.75	4757.2	
		STD	0125	-0014	3448	2772	0003879	0052	14500	787		0410	31.75	4757.2	
		STD	0150	-0011	3450	2773	0003747	0062	14506	717		0492	31.80	4759.2	
023		OBS	0164	-0009	3451	2774			14509	683	220	0538	31.84	4760.2	
		STD	0200	-0013	3452	2775	0003578	0080	14513	620		0656	31.77	4761.5	
023		OBS	0246	-0018	3455	2777			14519	560	233	0807	31.68	4763.4	
		STD	0250	-0015	3455	2777	0003303	0097	14521	557		0820	31.73	4764.1	
		STD	0300	0020	3460	2780	0003127	0113	14546	524		0948	32.36	4772.3	
023		OBS	0328	0034	3463	2781			14558	510	239	1076	32.61	4776.2	
		STD	0400	0052	3467	2783	0002865	0143	14578	491		1312	32.94	4782.8	
023		OBS	0410	0053	3467	2783			14580	488	235	1345	32.55	4783.4	
029		OBS	0453	0054	3468	2784			14588	474	237	1486	32.97	4786.1	
		STD	0500	0056	3469	2784	0002750	0171	14597	487		1640	33.01	4789.0	
029		OBS	0550	0058	3469	2784			14606	498	227	1804	33.04	4792.0	
		STD	0600	0049	3469	2785	0002710	0198	14611	508		1968	32.88	4793.6	
029		OBS	0648	0042	3468	2785			14615	509	236	2126	32.76	4794.9	
		STD	0700	0038	3468	2785	0002675	0225	14622	494		2297	32.68	4797.2	
029		OBS	0746	0032	3468	2785			14627	488	236	2448	32.58	4799.9	
		STD	0800	0023	3468	2786	0002569	0252	14632	489		2625	32.41	4800.5	
		STD	0900	0002	3466	2785	0002563	0277	14639	514		2953	32.04	4802.8	
029		OBS	T0919	-0003	3466	2785			14640	522	234	3015	31.95	4803.1	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICATOR	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH 10 BOTTOM	MAX. DEPTH OF TEMP.	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER			
							12	17	MO.		DAY	HR./1/10			CRUISE NO.	STATION NUMBERS	DIR				HGT	PER	SEA
31	194	AK	75530S	17127W		569	51	02	19	067	1964		035	0475	04	19		5	X2	6	8		0035

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. NO.	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		20	S15	815	-056	-063	7		00

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DIR. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>s-p</sub> μg - σ <sub>T</sub>	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft./sec
070		STD	0000	-0125	3414	2749	0006070	0000	14423	804		0000	29.75	4731.9
		OBS	0000	-0125	3414	2749			14423	804	190	0000	29.75	4731.9
070		OBS	0009	-0127	3414	2749			14424	806	195	0030	29.71	4732.3
		STD	0010	-0127	3414	2749	0006060	0006	14424	812		0033	29.71	4732.3
070		OBS	0018	-0126	3414	2749			14426	844	196	0059	29.73	4732.9
		STD	0020	-0120	3414	2749	0006045	0012	14426	847		0066	29.75	4732.9
070		OBS	0027	-0120	3415	2749			14430	850	194	0089	29.84	4734.2
		STD	0030	-0114	3417	2751	0005862	0018	14434	839		0058	29.55	4735.6
070		OBS	0045	-0093	3426	2757			14447	789	212	0148	30.33	4739.8
		STD	0050	-0095	3427	2758	0005154	0029	14447	773		0164	30.29	4739.8
070		OBS	0068	-0100	3430	2761			14448	734	224	0223	30.20	4740.1
		STD	0075	-0101	3432	2762	0004742	0041	14449	734		0246	30.18	4740.5
070		OBS	0091	-0102	3438	2767			14452	728	226	0299	30.16	4741.4
		STD	0100	-0089	3441	2769	0004089	0052	14460	717		0328	30.04	4741.1
		STD	0125	-0059	3449	2774	0003596	0062	14479	682		0410	30.04	4750.3
070		OBS	0136	-0047	3452	2776			14487	664	232	0446	31.15	4752.9
		STD	0150	-0034	3456	2779	0003174	0071	14496	629		0492	31.39	4755.9
070		OBS	0181	-0013	3462	2783			14512	573	246	0594	31.77	4761.1
		STD	0200	-0015	3463	2783	0002761	0085	14514	578		0656	31.73	4761.8
		STD	0250	-0020	3464	2785	0002601	0099	14520	588		0820	31.64	4763.8
070		OBS	0272	-0022	3465	2786			14523	592	237	0892	31.60	4764.7
		STD	0300	-0026	3465	2786	0002510	0112	14526	595		0984	31.53	4765.7
070		OBS	0363	-0034	3465	2786			14533	602	237	1191	31.39	4768.0
		STD	0400	-0037	3464	2795	0002512	0137	14537	615		1312	31.33	4769.3
070		OBS	0409	-0038	3464	2785			14538	619	235	1342	31.32	4769.7

REFERENCE CITY NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMALL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD COVER (1/10)	NODC STATION NUMBER				
					15'	'	MO		DAY	HR.			1/10	CRUISE NO.	STATION NUMBER				DIR.	HGT	PER	SEA
31	194	AK	760805	160060W	568	60	02	21	015	1964		036	2286	22	00		0	X1	6	7		0036

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. M	DIR.	SPED OF FORCE		DAY BULB	WET BULB			
		20	S15	824	-059	-070	7		00

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S & D OBS. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO- $\mu$ g - si/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0180	3406	2744	0006538	0000	14396	682		0000	28.76	1723.1
		OBS	0000	-0180	3406	2744			14396	682	207	0000	28.76	1723.1
		STD	0010	-0184	3405	2743	0006599	0007	14396	719		0033	28.69	1723.1
		OBS	0010	-0184	3405	2743			14396	719	208	0033	28.69	1723.1
		STD	0020	-0183	3408	2745	0006364	0013	14398	747		0066	28.71	1723.7
		OBS	0020	-0183	3408	2745			14398	747	212	0066	28.71	1723.7
		STD	0030	-0170	3427	2760	0004930	0019	14409	712		0098	28.94	1727.3
		OBS	0030	-0170	3427	2760			14409	712	217	0098	28.94	1727.3
		STD	0050	-0171	3434	2766	0004379	0028	14413	706		0164	28.92	1728.7
		OBS	0050	-0171	3434	2766			14413	706	221	0164	28.92	1728.7
		STD	0075	-0167	3436	2768	0004222	0039	14419	681		0216	28.99	1730.6
		OBS	0075	-0167	3436	2768			14419	681	225	0216	28.99	1730.6
		STD	0100	-0167	3438	2769	0004055	0049	14423	658		0328	28.99	1731.9
		OBS	0100	-0167	3438	2769			14423	658	208	0328	28.99	1731.9
		STD	0125	-0154	3441	2771	0003850	0059	14434	664		0410	29.23	1735.6
		OBS	0150	-0144	3442	2772	0003793	0069	14443	669		0492	29.41	1738.5
		OBS	0150	-0144	3442	2772			14443	669	223	0492	29.41	1738.5
		STD	0200	-0131	3442	2771	0003814	0088	14457	633		0656	29.64	1743.1
		OBS	0200	-0131	3442	2771			14457	633	216	0656	29.64	1743.1
		STD	0250	-0093	3447	2774	0003564	0106	14484	593		0820	30.33	1752.0
		OBS	0250	-0055	3451	2776	0003423	0123	14511	568		0984	31.01	1760.8
		OBS	0300	-0055	3451	2776			14511	568	227	0984	31.01	1760.8
		STD	0400	0023	3460	2779	0003168	0156	14564	566		1312	32.41	1778.2
		OBS	0400	0023	3460	2779			14564	566	230	1312	32.41	1778.2
		STD	0500	0114	3470	2782	0003063	0188	14623	517		1610	34.05	1797.6
		OBS	0500	0114	3470	2782			14623		234	1610	34.05	1797.6
		OBS	0501	0089	3472	2785			14613		234	1614	33.60	1794.3
		STD	0600	0118	3472	2783	0002970	0218	14642	490		1910	34.12	1803.8
		OBS	0600	0118	3472	2783			14642		236	1910	34.12	1803.8
		STD	0700	0110	3472	2784	0002930	0247	14655	486		2297	33.98	1808.1
		OBS	0700	0110	3472	2784			14655	486	230	2297	33.98	1808.1
		STD	0800	0107	3473	2785	0002854	0276	14671	504		2625	33.93	1813.3
		OBS	0800	0107	3473	2785			14671	504	234	2625	33.93	1813.3
		STD	0900	0102	3473	2785	0002834	0305	14685	476		2953	33.84	1817.9
		OBS	0900	0097	3473	2785	0002812	0333	14700	468		3281	33.75	1822.8
		STD	1000	0097	3473	2785			14700	468	225	3281	33.66	1822.8
		OBS	1000	0097	3473	2785			14700	468		3281	33.57	1827.4
		STD	1100	0092	3473	2785	0002787	0361	14714	499		3609	33.57	1832.3
		OBS	1100	0092	3473	2785			14714	499	236	3609	33.57	1832.3
		STD	1200	0087	3473	2786	0002761	0389	14729	515		3937	33.57	1837.3
		OBS	1200	0087	3473	2786			14729	515	236	3937	33.57	1837.3
		STD	1300	0082	3473	2786	0002754	0416	14744	498		4265	33.40	1842.2
		OBS	1300	0082	3473	2786			14744	498		4265	33.40	1842.2
		STD	1400	0078	3472	2786	0002762	0444	14759	486		4593	33.40	1847.1
		OBS	1400	0078	3472	2786			14759	486	260	4593	33.40	1847.1
		STD	1500	0074	3472	2786	0002760	0471	14774	477		4921	33.33	1854.1
		OBS	1500	0074	3472	2786			14774	477		4921	33.33	1854.1
		STD	1750	0068	3473	2787	0002696	0540	14814	483		5714	33.22	1860.2
		OBS	2000	0061	3473	2787	0002615	0606	14853	491		6562	33.10	1873.0
		STD	2000	0061	3473	2787			14853	491	235	6562	33.10	1873.0
		OBS	2200	0054	3470	2785			14884	498	221	7218	32.97	1883.2

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° '/10	LONGITUDE ° '/10	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER				
						10'	1'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER	SEA	
31	194	AK	762205	159140W	567	69	C2	21	062	1964		037	1015	10	00		0	X7	6	8		0037	
					WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTH		SPECIAL OBSERVATIONS								
					COLOR CODE		SPEED DIRL		DRY BULB		WET BULB		VIS. CODE										
					17		S12		B14		-044		-050		7		00						

MESSAGE TIME HR/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-t	SPEED VOLUME AND WAVE DIR?	S D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> μM ± 0.1 μM	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY Ft/sec	S C
065		STD	0000	-0183	3401	2740	0006916	0000	14394	709		0000	28.71	4722.4	
		OBS	0000	-0183	3401	2740			14394	709	214	0000	28.71	4722.4	
		STD	0010	-0185	3400	2739	0006981	0007	14394	766		0033	28.67	4722.4	
065		OBS	0010	-0185	3400	2739			14394	766	214	0033	28.67	4722.4	
		STD	0020	-0185	3401	2740	0006898	0014	14396	736	221	0066	28.67	4723.1	
065		OBS	0020	-0185	3401	2740			14396	736	221	0066	28.67	4723.1	
		STD	0030	-0183	3407	2744	0006434	0021	14400	723	213	0098	28.71	4724.4	
065		OBS	0030	-0183	3407	2744			14400	723	213	0098	28.71	4724.4	
		STD	0050	-0168	3435	2767	0004310	0031	14414	709	232	0164	28.98	4729.0	
065		OBS	0050	-0168	3435	2767			14414	709	232	0164	28.98	4729.0	
		STD	0075	-0167	3434	2766	0004375	0042	14419	657	244	0246	28.99	4730.6	
065		OBS	0075	-0167	3434	2766			14419	657	244	0246	28.99	4730.6	
		STD	0100	-0171	3437	2769	0004120	0053	14421	662	228	0328	28.92	4731.3	
065		OBS	0100	-0171	3437	2769			14421	662	228	0328	28.92	4731.3	
		STD	0125	-0168	3438	2769	0004076	0063	14427	652		0410	28.98	4733.2	
065		OBS	0125	-0168	3438	2769			14427	652		0410	28.98	4733.2	
		STD	0150	-0162	3438	2769	0004041	0073	14434	644	237	0492	29.08	4735.6	
065		OBS	0150	-0162	3438	2769			14434	644	237	0492	29.08	4735.6	
		STD	0200	-0138	3442	2772	0003789	0093	14454	637	232	0656	29.52	4702.1	
065		OBS	0200	-0138	3442	2772			14454	637	232	0656	29.52	4702.1	
		STD	0250	-0128	3445	2774	0003574	0111	14467	631		0820	29.70	4746.4	
065		OBS	0250	-0128	3445	2774			14467	631		0820	29.70	4746.4	
		STD	0300	-0099	3445	2776	0003369	0129	14490	612	244	0984	30.22	4753.9	
065		OBS	0300	-0099	3445	2776			14490	612	244	0984	30.22	4753.9	
		STD	0400	0018	3458	2778	0003288	0162	14562	536	241	1312	32.32	4777.5	
065		OBS	0400	0018	3458	2778			14562	536	241	1312	32.32	4777.5	
		STD	0500	0105	3469	2781	0003069	0194	14619	465	243	1640	33.89	4796.2	
065		OBS	0500	0105	3469	2781			14619	465	243	1640	33.89	4796.2	
068		STD	0501	0101	3469	2782			14617	474	240	1644	33.82	4795.6	
068		OBS	0501	0101	3469	2782			14617	474	240	1644	33.82	4795.6	
		STD	0600	0095	3470	2783	0002939	0224	14631	478	251	1968	33.71	4800.2	
068		OBS	0600	0095	3470	2783			14631	478	251	1968	33.71	4800.2	
		STD	0700	0109	3472	2784	0002922	0253	14655	483	236	2297	33.96	4808.1	
068		OBS	0700	0109	3472	2784			14655	483	236	2297	33.96	4808.1	
		STD	0800	0109	3473	2784	0002871	0282	14672	474	236	2625	33.96	4813.6	
068		OBS	0800	0109	3473	2784			14672	474	236	2625	33.96	4813.6	
		STD	0900	0105	3474	2785	0002785	0310	14687	476		2953	33.89	4818.6	
068		OBS	0900	0105	3474	2785			14687	476		2953	33.89	4818.6	
		STD	1000	0096	3475	2787	0002654	0337	14700	490	247	3281	33.73	4822.8	
068		OBS	1000	0096	3475	2787			14700	490	247	3281	33.73	4822.8	

REFERENCE CTR CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
						10 <sup>h</sup>	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	194	AK	76420S	160020W	568	10	02	21	144	1964	038	0457	04	00	0	X1	612	0038	

WATER		WIND		SPEED OF FORCE	BARO- METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	DRY BULB			WET BULB				
				20	510	858	-083	-089	7	00

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANGMALT-310 <sup>3</sup>	Σ Δ D DYN. V. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - σT/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CORR
148	STD	0000	0000	-0183	3392	2732	0007607	0000	14393	779		0000	28.71	4722.1	
		0000	0000	-0183	3392	2732			14393	779		0000	28.71	4722.1	
148	OBS	0010	0010	-0185	3390	2731	0007750	0008	14393	800	186	0033	28.67	4722.1	
		0020	0020	-0185	3390	2731	0007743	0015	14395	799	186	0066	28.67	4722.8	
148	OBS	0030	0030	-0177	3398	2737	0007140	0023	14401	778	202	0098	28.61	4724.7	
		0050	0050	-0168	3428	2761	0004847	0035	14413	688	223	0164	28.98	4728.7	
148	OBS	0075	0075	-0168	3437	2768	0004143	0046	14419	669	237	0216	28.98	4730.6	
		0100	0100	-0164	3442	2772	0003757	0056	14425	640	222	0328	29.05	4732.6	
148	OBS	0150	0150	-0137	3443	2772	0003740	0075	14446	663		0443	29.32	4736.5	
		0200	0200	-0120	3446	2774	0003550	0093	14463	634	230	0492	29.53	4739.5	
148	OBS	0250	0250	-0053	3451	2776	0003443	0110	14503	575	227	0656	29.84	4745.1	
		0300	0300	-0041	3455	2778	0003190	0127	14518	556		0984	31.26	4763.1	
148	OBS	0400	0400	-0179	3460	2787	0002167	0154	14471	635	234	1312	28.78	4747.7	
		0500	0500	-0179	3460	2787			14471	635	235	1312	28.78	4747.7	

REFERENCE CTR CODE	ID. NO.	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARS SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER
						10 <sup>h</sup>	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	194	AK	77500S	163160W	568	73	02	22	059	1964	039	0631	05	00	0	X1	611	0039	

WATER		WIND		SPEED OF FORCE	BARO- METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	DRY BULB			WET BULB				
				16	517	929	-106	-116	7	00

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANGMALT-310 <sup>3</sup>	Σ Δ D DYN. V. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - σT/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CORR
062	STD	0000	0000	-0178	3403	2741	0006773	0000	14397	930		0000	28.60	4723.4	
		0000	0000	-0178	3403	2741			14397	930	128	0000	28.60	4723.4	
062	OBS	0010	0010	-0183	3402	2740	0006832	0007	14396	946	126	0033	28.71	4723.1	
		0020	0020	-0182	3402	2740	0006828	0014	14398	927		0066	28.72	4723.7	
062	OBS	0030	0030	-0182	3402	2740	0006900	0020	14400	944	123	0098	28.74	4724.4	
		0050	0050	-0167	3422	2756	0005310	0033	14413	821	123	0098	28.74	4724.4	
062	OBS	0075	0075	-0173	3427	2760	0004896	0045	14415	736	212	0164	28.99	4728.7	
		0100	0100	-0174	3433	2765	0004418	0057	14419	726	218	0216	28.89	4729.3	
062	OBS	0150	0150	-0174	3433	2765	0004096	0068	14424	722	214	0328	28.87	4730.6	
		0200	0200	-0171	3443	2773	0003850	0078	14428	714		0328	28.87	4730.6	
062	OBS	0250	0250	-0171	3440	2771	0003603	0096	14439	687		0656	28.92	4737.2	
		0300	0300	-0158	3448	2777	0003237	0113	14454	679	221	0656	28.92	4737.2	
062	OBS	0400	0400	-0181	3458	2786	0002916	0129	14464	672	221	0820	29.16	4742.1	
		0500	0500	-0181	3458	2786	0002312	0155	14469	661	222	0984	29.21	4745.4	
062	OBS	0500	0500	-0181	3460	2787	0002104	0177	14486	679	217	1312	28.74	4747.0	
		0500	0500	-0181	3460	2787			14486	679	217	1312	28.74	4747.0	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	HOURS IN DAY	MARESEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WML'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER	
						10'	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER
31	194	AK	772305	163140W		568	73	02	22	088	1964		040	058	05	00	0	X1	6	2	0040

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TEMP. (M)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		18	S13	932	-107	-119	7		10

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S.A.D DIN. M. ( $\times 10^3$ )	SOUND VELOCITY	O <sub>2</sub> ml./l.	PO <sub>2</sub> -P pp - 0/1/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	C
091		STD	0000	-0175	3383	2725	0008317	0000	14395	959		0000	28.85	4722.8	
		OBS	0000	-0175	3383	2725			14395	959	097	0000	28.85	4722.8	
		STD	0010	-0182	3381	2723	0008448	0008	14393	961		0033	28.72	4722.1	
091		OBS	0010	-0182	3381	2723			14393	961	094	0033	28.72	4722.1	
		STD	0020	-0184	3381	2723	0008437	0017	14394	963		0066	28.69	4722.4	
091		OBS	0020	-0184	3381	2723			14394	963	096	0066	28.69	4722.4	
		STD	0030	-0180	3382	2724	0008362	0025	14398	960		0098	28.76	4723.7	
091		OBS	0030	-0180	3382	2724			14398	960	100	0098	28.76	4723.7	
		STD	0050	-0146	3438	2769	0004142	0038	14425	711		0164	29.37	4732.6	
091		OBS	0050	-0146	3438	2769			14425	711	223	0164	29.37	4732.6	
		STD	0075	-0156	3443	2773	0003717	0048	14425	695		0216	29.19	4732.6	
091		OBS	0075	-0156	3443	2773			14425	695	235	0216	29.19	4732.6	
		STD	0100	-0152	3445	2774	0003563	0057	14431	683		0328	29.26	4734.6	
091		OBS	0100	-0152	3445	2774			14431	683	228	0328	29.26	4734.6	
		STD	0125	-0149	3446	2775	0003483	0065	14437	674		0443	29.32	4736.5	
091		OBS	0125	-0149	3446	2775			14437	674		0443	29.32	4736.5	
		STD	0150	-0141	3448	2777	0003344	0074	14445	669		0492	29.46	4739.2	
091		OBS	0150	-0141	3448	2777			14445	669	232	0492	29.46	4739.2	
		STD	0200	-0113	3453	2780	0003043	0090	14467	673		0556	29.97	4746.4	
091		OBS	0200	-0113	3453	2780			14467	673	231	0556	29.97	4746.4	
		STD	0250	-0127	3455	2782	0002816	0105	14469	687		0820	29.71	4747.0	
091		OBS	0250	-0127	3455	2782			14469	687		0820	29.71	4747.0	
		STD	0300	-0143	3457	2784	0002580	0118	14470	697		0984	29.43	4747.4	
091		OBS	0300	-0143	3457	2784			14470	697	228	0984	29.43	4747.4	
		STD	0400	-0183	3458	2786	0002305	0143	14468	703		1312	28.71	4746.7	
091		OBS	0400	-0183	3458	2786			14468	703	226	1312	28.71	4746.7	
		STD	0500	-0186	3460	2788	0002085	0164	14484	691		1640	28.65	4752.0	
091		OBS	0500	-0186	3460	2788			14484	691	227	1640	28.65	4752.0	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	HOURS IN DAY	MARESEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WML'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER	
						10'	1'	MO	DAY		HR./10	CRUISE NO.			STATION NUMBER	DIR.	HGT				PER
31	194	AK	770105	163140W		568	73	02	22	123	1964		041	0595	05	00	0	X1	6	2	0041

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TEMP. (M)	DIR.	SPEED OF FORCE		DRY BULB	WET BULB			
		18	S14	929	-105	-117	7		10

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	S.A.D DIN. M. ( $\times 10^3$ )	SOUND VELOCITY	O <sub>2</sub> ml./l.	PO <sub>2</sub> -P pp - 0/1/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	C
126		STD	0000	-0181	3361	2707	0009995	0000	14389			0000	28.74	4720.8	
		OBS	0000	-0181	3361	2707			14389			0000	28.74	4720.8	
		STD	0010	-0182	3360	2706	0010062	0010	14390			0033	28.72	4721.1	
126		OBS	0010	-0182	3360	2706			14390			0033	28.72	4721.1	
		STD	0020	-0182	3361	2707	0009978	0020	14392			0066	28.72	4721.8	
126		OBS	0020	-0182	3361	2707			14392			0066	28.72	4721.8	
		STD	0030	-0158	3403	2741	0006804	0028	14411			0098	29.16	4728.0	
126		OBS	0030	-0158	3403	2741			14411			0098	29.16	4728.0	
		STD	0050	-0174	3435	2767	0004295	0040	14411			0164	28.87	4728.0	
126		OBS	0050	-0174	3435	2767			14411			0164	28.87	4728.0	
		STD	0075	-0169	3439	2770	0003986	0050	14418			0246	28.96	4730.3	
126		OBS	0075	-0169	3439	2770			14418			0246	28.96	4730.3	
		STD	0100	-0159	3442	2772	0003771	0060	14428			0328	29.14	4733.6	
126		OBS	0100	-0159	3442	2772			14428			0328	29.14	4733.6	
		STD	0125	-0163	3443	2773	0003669	0069	14430			0410	29.07	4734.2	
126		OBS	0125	-0163	3443	2773			14430			0410	29.07	4734.2	
		STD	0150	-0164	3445	2775	0003500	0078	14434			0492	29.05	4735.6	
126		OBS	0150	-0164	3445	2775			14434			0492	29.05	4735.6	
		STD	0200	-0157	3450	2779	0003113	0094	14446			0556	29.17	4739.5	
126		OBS	0200	-0157	3450	2779			14446			0556	29.17	4739.5	
		STD	0250	-0162	3454	2782	0002765	0109	14453			0820	29.08	4741.8	
126		OBS	0250	-0162	3454	2782			14453			0820	29.08	4741.8	
		STD	0300	-0168	3456	2784	0002565	0122	14459			0984	28.98	4743.8	
126		OBS	0300	-0168	3456	2784			14459			0984	28.98	4743.8	
		STD	0400	-0185	3458	2786	0002298	0147	14467			1312	28.67	4746.4	
126		OBS	0400	-0185	3458	2786			14467			1312	28.67	4746.4	
		STD	0500	-0186	3460	2788	0002085	0169	14484			1640	28.65	4752.0	
126		OBS	0500	-0186	3460	2788			14484			1640	28.65	4752.0	

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DEPTH	MARS DEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NDDC STATION NUMBER
CTR CODE	ID. NO.					10"	1"	MO	DAY		HR. 1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	194	AK	762705	163140W	568	63	02	22	166	1964	042	0494	04	00			X1	4	5	0042

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		14	507	885	-094	-111	7		08

PRESSENCE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-20°	Σ Δ Δ DYN. M. 2 10'	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	S
		STD	0000	-0177	3368	2713	0009465	0000	14392	849		0000	28.81	4721.8	
169		OBS	0000	-0177	3368	2713			14392	849		0000	28.81	4721.8	
		STD	0010	-0183	3366	2711	0009599	0010	14391	869		0033	28.71	4721.4	
169		OBS	0010	-0183	3366	2711			14391	869		0033	28.71	4721.4	
		STD	0020	-0182	3367	2712	0009517	0019	14393	869		0066	28.72	4722.1	
169		OBS	0020	-0182	3367	2712			14393	869		0066	28.72	4722.1	
		STD	0030	-0160	3412	2748	0006108	0027	14411	773		0098	29.12	4728.0	
169		OBS	0030	-0160	3412	2748			14411	773		0098	29.12	4728.0	
		STD	0050	-0152	3438	2769	0004125	0037	14422	727		0164	29.26	4731.6	
169		OBS	0050	-0152	3438	2769			14422	727		0164	29.26	4731.6	
		STD	0075	-0146	3442	2772	0003823	0047	14430	691		0246	29.37	4734.2	
169		OBS	0075	-0146	3442	2772			14430	691		0246	29.37	4734.2	
		STD	0100	-0121	3447	2775	0003511	0056	14446	669		0328	29.82	4739.5	
169		OBS	0100	-0121	3447	2775			14446	669		0328	29.82	4739.5	
		STD	0125	-0091	3450	2776	0003385	0065	14465	648		0410	30.36	4751.7	
169		OBS	0125	-0091	3450	2776			14465	648		0410	30.36	4751.7	
		STD	0150	-0064	3453	2778	0003263	0073	14482	629		0492	30.85	4751.3	
169		OBS	0150	-0064	3453	2778			14482	629		0492	30.85	4751.3	
		STD	0200	-0020	3456	2778	0003237	0089	14511	591		0656	31.64	4760.8	
169		OBS	0200	-0020	3456	2778			14511	591		0656	31.64	4760.8	
		STD	0250	0016	3460	2780	0003127	0105	14536	564		0820	32.29	4769.0	
169		OBS	0250	0016	3460	2780			14536	564		0820	32.29	4769.0	
		STD	0300	0040	3463	2781	0003045	0121	14556	548		0984	32.72	4775.6	
169		OBS	0300	0040	3463	2781			14556	548		0984	32.72	4775.6	
		STD	0400	0051	3467	2783	0002820	0150	14578	550		1312	32.92	4782.8	
169		OBS	0400	0051	3467	2783			14578	550		1312	32.92	4782.8	
169		OBS	0450	0048	3468	2784			14585			1476	32.86	4785.1	

REF ID	SHIP	LATITUDE	LONGITUDE	MARDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWELL	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
				10'	10'	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA				TYPE	AMT
31	194	AK	761505	163140W	568	63	02	22	225	1964		043	1783	17	00		0	X1	4	5	0043	
				WATER		WIND		BARO-METER		AIR TEMP. °C		VIS. CODE		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
				COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB	DRY BULB	WET BULB	NO. OBS. DEPTHS										
							14	S11	B44	-062	-068	7										

MESSING TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-35P	Σ Δ DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0178	3374	2718	0009002	0000	14392	794		0000	28.80	4721.8
228		OBS	0000	-0178	3374	2718			14392	794	194	0000	28.80	4721.8
		STD	0010	-0184	3373	2717	0009059	0009	14391	807		0033	28.69	4721.4
228		OBS	0010	-0184	3373	2717			14391	807	197	0033	28.69	4721.4
		STD	0020	-0182	3375	2718	0008902	0018	14394	821		0066	28.72	4722.4
228		OBS	0020	-0182	3375	2718			14394	821	198	0066	28.72	4722.4
		STD	0030	-0146	3420	2754	0005533	0025	14419	752		0098	29.37	4730.6
228		OBS	0030	-0146	3420	2754			14419	752	210	0098	29.37	4730.6
		STD	0050	-0154	3441	2771	0003889	0035	14422	681		0164	29.23	4731.6
228		OBS	0050	-0154	3441	2771			14422	681	230	0164	29.23	4731.6
		STD	0075	-0134	3444	2773	0003708	0044	14436	649		0246	29.59	4736.2
228		OBS	0075	-0134	3444	2773			14436	649	229	0246	29.59	4736.2
		STD	0100	-0123	3445	2774	0003657	0053	14445	631		0328	29.79	4739.2
228		OBS	0100	-0123	3445	2774			14445	631	221	0328	29.79	4739.2
		STD	0125	-0122	3446	2774	0003574	0062	14450	638		0410	29.80	4740.8
228		OBS	0149	-0121	3447	2775			14454	641	229	0409	29.82	4742.1
		STD	0150	-0121	3447	2775	0003491	0071	14455	641		0492	29.82	4742.4
228		OBS	0199	-0112	3448	2776			14467	632	230	0553	29.98	4746.4
		STD	0200	-0109	3448	2776	0003425	0089	14469	630		0656	30.04	4747.0
228		OBS	0299	0084	3465	2780			14576	488	233	0820	32.18	4768.0
		STD	0300	0084	3465	2780	0003182	0122	14576	488		0984	33.51	4782.1
228		OBS	0398	0101	3469	2782			14600	497	235	1306	33.82	4790.0
		STD	0400	0101	3469	2782	0003017	0153	14601	497		1312	33.82	4790.3
228		OBS	0498	0101	3470	2782			14617	487	232	1634	33.82	4795.6
		STD	0500	0103	3470	2782	0002979	0183	14618	479		1640	33.85	4795.9
239		OBS	0500	0103	3470	2782			14618	479	237	1640	33.85	4795.9
		STD	0600	0103	3471	2783	0002926	0212	14635	477		1968	33.85	4801.5
239		OBS	0600	0103	3471	2783			14635	477	242	1968	33.85	4801.5
		STD	0700	0114	3472	2783	0002963	0242	14657	481		2297	34.05	4808.7
239		OBS	0700	0114	3472	2783			14657	481	239	2297	34.05	4808.7
		STD	0800	0106	3472	2784	0002920	0271	14670	482		2625	33.91	4813.0
239		OBS	0800	0106	3472	2784			14670	482	239	2625	33.91	4813.0
		STD	0900	0096	3473	2785	0002820	0300	14682	483		2953	33.73	4816.9
239		OBS	1000	0089	3473	2786			14696	484	226	3281	33.60	4821.5
		STD	1100	0089	3473	2786	0002742	0328	14696	484		3281	33.60	4821.5
239		OBS	T1000	0089	3473	2786			14712	488		3609	33.55	4826.8
		STD	1200	0082	3472	2785	0002771	0355	14727	492		3937	33.48	4831.7
239		OBS	T1200	0082	3472	2785			14727	492	223	3937	33.48	4831.7
		STD	1300	0078	3472	2786	0002771	0411	14742	496		4265	33.40	4836.6
239		OBS	1400	0075	3472	2786			14757	499		4593	33.35	4841.5
		STD	1500	0071	3472	2786	0002753	0438	14772	503		4921	33.28	4846.4
239		OBS	T1500	0071	3472	2786			14772	503	238	4921	33.28	4846.4
239		OBS	T1700	0035	3470	2787	0002731	0466	14772	503	223	5577	32.63	4852.4

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARSden SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEA-THER CODE	CLOUD CODES	NOOD STATION NUMBER					
					10'	1'	MO		DAY	HR.			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER	SEA		
31	194	AK	753905	167240W	568	57	02	23	068	1964		044	2103	20	00			X1	4	5		0044	
				WATER		WIND		BARO-METER		AIR TEMP. °C		VR		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
				COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE	DRY BUL	WET BUL	VS. OBS.													
						11	S10	844	-054	-061	7												

MESSAGING TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub> <sup>t</sup>	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	DATE
071		STD	0000	-0128	3376	2718	0008976	0000	14416	795		0000	29.70	4729.6	
		OBS	0000	-0128	3376	2718			14416	795		0000	29.70	4729.6	
		STD	0010	-0129	3376	2718	0008967	0009	14418	799	193	0033	29.68	4730.3	
		OBS	0010	-0129	3376	2718			14418	799	190	0033	29.68	4730.3	
		STD	0020	-0136	3378	2720	0008788	0018	14416	805		0066	29.55	4729.6	
		OBS	0020	-0136	3378	2720			14416	805	193	0066	29.55	4729.6	
		STD	0030	-0125	3384	2724	0008355	0026	14424	817		0058	29.75	4732.3	
		OBS	0030	-0125	3384	2724			14424	817	202	0058	29.75	4732.3	
		STD	0050	-0076	3414	2747	0006220	0041	14454	786		0098	29.75	4732.3	
		OBS	0050	-0076	3414	2747			14454	786	215	0164	30.63	4742.1	
		STD	0075	-0033	3444	2769	0004106	0054	14482	663		0246	31.11	4751.3	
		OBS	0075	-0033	3444	2769			14482	663	231	0246	31.11	4751.3	
		STD	0100	-0010	3452	2774	0003603	0064	14498	611		0328	31.82	4756.5	
		OBS	0100	-0047Q	3452	2776Q				611	241	0328	31.15		
		STD	0125	0009	3459	2779	0003167	0072	14512	546		0110	32.16	4761.1	
		OBS	0125	0024	3463	2782	0002945	0080	14524	508		0492	32.13	4765.1	
		STD	0150	0024	3463	2782			14524	508	251	0492	32.13	4765.1	
		OBS	0150	0042	3465	2782	0002900	0094	14540	514		0656	32.76	4770.3	
		STD	0200	0042	3465	2782			14540	514	248	0656	32.76	4770.3	
		OBS	0200	0048	3466	2783	0002864	0109	14552	511		0820	32.86	4774.3	
		STD	0250	0056	3467	2783	0002844	0123	14564	504		0984	33.01	4778.2	
		OBS	0300	0056	3467	2783			14564	504	248	0984	33.01	4778.2	
		STD	0400	0075	3469	2783	0002832	0151	14589	479		1312	33.35	4786.4	
		OBS	0400	0075	3469	2783			14589	479	252	1312	33.35	4786.4	
		STD	0500	0082	3470	2784	0002823	0180	14609	470		1640	33.48	4793.0	
		OBS	0500	0082	3470	2784			14609	470	244	1640	33.48	4793.0	
		STD	0600	0086	3472	2785			14611	462	242	1644	33.55	4793.6	
		OBS	0600	0090	3472	2785	0002750	0207	14629	459		1968	33.62	4799.5	
		STD	0700	0089	3473	2786			14629	459	250	1968	33.62	4799.5	
		OBS	0700	0089	3473	2786	0002686	0235	14646	478		2297	33.60	4805.1	
		STD	0800	0091	3472	2785			14646	478	249	2297	33.60	4805.1	
		OBS	0800	0091	3472	2785	0002796	0262	14663	474		2625	33.64	4810.7	
		STD	0900	0086	3473	2785			14663	474	254	2625	33.64	4810.7	
		OBS	0900	0082	3473	2786	0002736	0290	14678	490		2953	33.55	4815.6	
		STD	1000	0082	3473	2786	0002682	0317	14693	496		3281	33.48	4820.5	
		OBS	1000	0082	3473	2786			14693	496	247	3281	33.48	4820.5	
		STD	1100	0078	3473	2786	0002701	0344	14708	483		3609	33.40	4825.4	
		OBS	1100	0075	3472	2786	0002726	0371	14723	478		3937	33.35	4830.4	
		STD	1200	0075	3472	2786			14723	478	248	3937	33.35	4830.4	
		OBS	1200	0075	3472	2786			14723	478		4265	33.30	4835.6	
		STD	1300	0072	3472	2786	0002691	0398	14739	490		4593	33.24	4840.9	
		OBS	1300	0069	3473	2787	0002647	0425	14755	500		4921	33.17	4845.8	
		STD	1400	0065	3473	2787	0002599	0451	14770	506		5251	33.11	4851.8	
		OBS	1400	0065	3473	2787			14770	506	255	5251	33.11	4851.8	
		STD	1500	0053	3472	2787	0002581	0516	14807	499		5711	32.95	4857.9	
		OBS	1500	0053	3472	2787			14807	499		6040	32.87	4863.9	
		STD	2000	0037	3470	2786	0002581	0580	14842	492		6562	32.67	4869.4	
		OBS	2000	0037	3470	2786			14842	492	246	6562	32.67	4869.4	

REFERENCE CITY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	MARS DEPTH	MARS DEN SITY		MARS DEN SITY			STATION TIME GMT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWAYL	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES [T][M][A][S]	NODC STATION NUMBER	
						16'	1"	MO	DAY	HR.	MIN.	CRUISE NO.	STATION NUMBER		DIR.	HGT			PER	SEA					
31	194	AK	76085S	167210W	568	67	02	23	124	1964					045		0860	07	00		0	X7	6	8	0045
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS DEPTHS		SPECIAL OBSERVATIONS									
						COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE	RE- CORR.	DRY BULB	WET BULB	VIS. CODE												
						22	502		854		-056	-062	7	10											

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALT-10 <sup>3</sup>	S Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0173	3370	2714	0009320	0000	14394			0000	28.89	4722.4
		OBS	0000	-0173	3370	2714			14394		187	0000	28.89	4722.4
		STD	0010	-0177	3369	2714	0009381	0009	14394	718		0033	28.81	4722.4
139		OBS	0010	-0177	3369	2714			14394	718	185	0033	28.81	4722.4
		STD	0020	-0174	3371	2715	0009227	0019	14397	722		0066	28.87	4723.4
139		OBS	0020	-0174	3371	2715			14397	722	190	0066	28.87	4723.4
		STD	0030	-0156	3380	2722	0008574	0028	14409	713		0098	29.19	4727.3
139		OBS	0030	-0156	3380	2722			14409	713	194	0098	29.19	4727.3
		STD	0050	-0064	3433	2762	0004816	0041	14462	611		0164	30.85	4714.7
139		OBS	0050	-0064	3433	2762			14462	611	216	0164	30.85	4714.7
		STD	0075	0004	3457	2778	0003296	0051	14501	526		0246	32.07	4757.5
139		OBS	0075	0004	3457	2778			14501	526	227	0246	32.07	4757.5
		STD	0100	0048	3465	2782	0002929	0059	14527	455		0328	32.86	4766.1
139		OBS	0100	0048	3465	2782			14527	455	235	0328	32.86	4766.1
		STD	0125	0057	3467	2783	0002832	0066	14535	460		0410	33.03	4768.7
139		OBS	0125	0057	3467	2783			14535	460	223	0410	33.03	4768.7
		STD	0150	0064	3468	2783	0002802	0073	14542	461		0492	33.15	4771.0
139		OBS	0150	0064	3468	2783			14542	461	223	0492	33.15	4771.0
		STD	0200	0072	3468	2783	0002859	0087	14554	449		0656	33.30	4774.9
139		OBS	0200	0072	3468	2783			14554	449	231	0656	33.30	4774.9
		STD	0250	0084	3469	2783	0002869	0102	14568	450		0820	33.51	4779.5
139		OBS	0250	0084	3469	2783			14568	450	231	0820	33.51	4779.5
		STD	0300	0091	3470	2783	0002850	0116	14580	451		0984	33.64	4783.4
139		OBS	0300	0091	3470	2783			14580	451	212	0984	33.64	4783.4
		STD	0400	0090	3471	2784	0002787	0144	14596	469		1312	33.62	4788.7
139		OBS	0400	0090	3471	2784			14596	469	212	1312	33.62	4788.7
		STD	0500	0080	3471	2785	0002733	0172	14608	453		1610	33.44	4792.6
139		OBS	0500	0080	3471	2785			14608	453	206	1610	33.44	4792.6
		STD	0600	0052	3470	2786	0002619	0198	14612	449		1610	33.44	4792.6
139		OBS	0600	0052	3470	2786			14612	449	232	1610	33.44	4792.6
		STD	0700	0067	3471	2785	0002666	0225	14636	445		1968	32.94	4793.9
139		OBS	0700	0067	3471	2785			14636	445	236	1968	32.94	4793.9
		STD	0750	0077	3471	2785			14649	443	237	2297	33.21	4801.8
139		OBS	0750	0077	3471	2785			14649	443	237	2297	33.21	4801.8
												2461	33.39	4806.1

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	NODC INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10'	1"	MO	DAY	HR.		1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA	

31	194	AK	76310S	167180W		568	67	02	23	169	1964		046	04	00		0	X2	6	8		0046
WATER		WIND		BARO-		AIR TEMP. °C		VR		NO.		SPECIAL										
COLOR		DIR.		METER		DRY		CODE		OBS.		OBSERVATIONS										
CODE		SPEED		(mb)		BULB		NO.		DEFTHS												
		(kts)				WET		7		00												
		(ft)				BULB																
						-064		-072														

MESSNGR TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALT-31P?	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg + 81/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	COG
172		STD	0000	-0166	3395	2734	0007416	0000	14401			0000	29.01	4721.7	
		OBS	0000	-0166	3395	2734			14401		167	0000	29.01	4721.7	
		STD	0010	-0107	3415	2749	0006047	0007	14433			0033	30.07	4735.2	
172		OBS	0010	-0107	3415	2749			14433		161	0033	30.07	4735.2	
		STD	0020	-0096	3418	2751	0005851	0013	14441			0066	30.27	4737.8	
172		OBS	0020	-0096	3418	2751			14441		158	0066	30.27	4737.8	
		STD	0030	-0089	3421	2753	0005643	0018	14446			0098	30.40	4739.5	
172		OBS	0030	-0089	3421	2753			14446		158	0098	30.40	4739.5	
		STD	0049	-0086	3426	2757			14451		166	0161	30.45	4741.1	
172		OBS	0049	-0086	3426	2757	0005234	0029	14451			0161	30.45	4741.1	
		STD	0074	-0087	3436	2765			14456		196	0243	30.43	4742.8	
172		OBS	0074	-0087	3436	2765	0004460	0041	14456			0246	30.42	4742.8	
		STD	0098	-0114	3444	2772			14449		214	0322	29.95	4740.5	
172		OBS	0098	-0114	3444	2772	0003748	0052	14449			0328	29.93	4740.5	
		STD	0100	-0115	3444	2773	0003518	0061	14450			0410	29.79	4740.8	
172		OBS	0100	-0115	3444	2773			14450		230	0486	29.66	4740.8	
		STD	0125	-0123	3447	2775	0003301	0069	14452			0492	29.71	4741.4	
172		OBS	0125	-0123	3447	2775			14452		229	0646	30.70	4752.6	
		STD	0197	-0072	3455	2780			14486			0656	30.87	4752.9	
172		OBS	0197	-0072	3455	2780	0003049	0085	14487			0820	30.70	4752.2	
		STD	0200	-0072	3455	2780	0002800	0100	14500			0981	30.94	4760.5	
172		OBS	0200	-0072	3455	2780			14511		230	0981	30.94	4760.5	
		STD	0250	-0063	3459	2782			14510		235	1132	30.54	4759.8	
172		OBS	0250	-0063	3459	2782	0002567	0113	14510			1293	30.47	4761.8	
		STD	0295	-0056	3462	2785			14508		227				
172		OBS	0295	-0056	3462	2785			14514						
		STD	0300	-0059	3462	2785									
172		OBS	0300	-0059	3462	2785									
		STD	0345	-0081	3462	2786									
172		OBS	0345	-0081	3462	2786									
		STD	0394	-0085	3463	2787									
172		OBS	0394	-0085	3463	2787									

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	NODC INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES		NODC STATION NUMBER
						10'	1"	MO	DAY	HR.		1/10	CRUISE NO.			STATION NUMBER	DIR.	HGT		PER	SEA	

31	194	AK	76528S	167150W		568	67	02	23	200	1964		047	04	00		0	X2	6	8		0047
WATER		WIND		BARO-		AIR TEMP. °C		VR		NO.		SPECIAL										
COLOR		DIR.		METER		DRY		CODE		OBS.		OBSERVATIONS										
CODE		SPEED		(mb)		BULB		NO.		DEFTHS												
		(kts)				WET		7		00												
		(ft)				BULB																
						-078		-086														

MESSNGR TIME HR 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALT-31P?	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg + 81/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	COG
203		STD	0000	-0093	3427	2758	0005180	0000	14440			0000	30.33	4737.5	
		OBS	0000	-0093	3427	2758			14440		170	0000	30.33	4737.5	
		STD	0010	-0093	3426	2757	0005253	0005	14441			0033	30.33	4737.8	
203		OBS	0010	-0093	3426	2757			14441		167	0033	30.33	4737.8	
		STD	0020	-0073	3432	2761	0004865	0010	14453			0066	30.69	4741.8	
203		OBS	0020	-0073	3432	2761			14453		158	0066	30.69	4741.8	
		STD	0030	-0074	3430	2760	0005011	0015	14454			0098	30.67	4742.1	
203		OBS	0030	-0074	3430	2760			14454		158	0098	30.67	4742.1	
		STD	0050	-0069	3437	2765	0004490	0025	14461			0161	30.76	4744.4	
203		OBS	0050	-0069	3437	2765			14461		176	0161	30.76	4744.4	
		STD	0075	-0108	3441	2770	0004026	0035	14447			0246	30.06	4739.8	
203		OBS	0075	-0108	3441	2770			14447		235	0246	30.06	4739.8	
		STD	0100	-0117	3446	2774	0003602	0045	14448			0328	29.89	4740.1	
203		OBS	0100	-0117	3446	2774			14448		245	0328	29.89	4740.1	
		STD	0125	-0113	3449	2776	0003378	0054	14454			0410	29.97	4742.1	
203		OBS	0125	-0113	3449	2776			14460		253	0410	29.97	4742.1	
		STD	0149	-0109	3451	2778	0003226	0062	14461			0489	30.04	4741.4	
203		OBS	0149	-0109	3451	2778			14496		252	0489	30.06	4741.4	
		STD	0200	-0051	3456	2780	0003076	0078	14497			0653	31.08	4755.9	
203		OBS	0200	-0051	3456	2780			14497		252	0656	31.08	4756.2	
		STD	0250	-0039	3460	2782	0002819	0092	14511			0820	31.30	4760.8	
203		OBS	0250	-0039	3460	2782			14511		253	0820	31.30	4760.8	
		STD	0299	-0028	3464	2785			14525			0981	31.50	4765.4	
203		OBS	0299	-0028	3464	2785	0002575	0106	14525			0981	31.50	4765.4	
		STD	0300	-0028	3464	2785			14527		249	1306	31.50	4765.4	
203		OBS	0300	-0028	3464	2785	0002464	0131	14527			1312	30.92	4766.1	
		STD	0400	-0060	3463	2786			14527		246	1470	30.31	4763.4	
203		OBS	0400	-0060	3463	2786			14519						

REFERENCE CTR CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INCHES	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
						10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGR	PER				SEA
31	194	AK	772535	167130W	568	77	02	24	003	1964		048	0508	05	00				X1	6	5	0048

WATER COLOR CODE	FRANK (m)	DIR.	WIND SPEED OR FORCE	BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
					DRY BULB	WET BULB			
	15	520	885		-082	-088	7		00

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	ST CODE
006		STD	0000	-0101	3441	2770	0004080	0000	14438			0000	30.18	4736.9	
		OBS	0000	-0101	3441	2770			14438			0000	30.18	4736.9	
		STD	0010	-0101	3441	2770	0004076	0004	14440			0033	30.18	4737.5	
006		OBS	0010	-0101	3441	2770			14440			0033	30.18	4737.5	
006		OBS	0019	-0104	3442	2770			14440			0062	30.13	4737.5	
		STD	0020	-0103	3442	2770	0003989	0008	14441			0066	30.15	4737.8	
006		OBS	0029	-0099	3442	2770			14444			0095	30.22	4738.8	
		STD	0030	-0098	3442	2770	0003980	0012	14445			0098	30.21	4739.2	
006		OBS	0048	-0090	3448	2775			14452			0158	30.38	4741.4	
		STD	0050	-0090	3449	2776	0003490	0020	14453			0164	30.38	4741.8	
006		OBS	0072	-0091	3454	2780			14457			0203	30.36	4743.1	
		STD	0075	-0088	3455	2780	0003031	0028	14459			0213	30.12	4743.8	
006		OBS	0097	-0067	3458	2782			14472			0318	30.79	4748.0	
		STD	0100	-0063	3458	2782	0002883	0035	14475			0328	30.87	4749.0	
		STD	0125	-0040	3460	2783	0002822	0042	14490			0410	31.28	4753.9	
006		OBS	0145	-0032	3462	2784			14497			0476	31.12	4756.2	
		STD	0150	-0032	3462	2784	0002712	0049	14498			0492	31.12	4756.5	
006		OBS	0193	-0048	3464	2786			14498			0633	31.11	4756.5	
		STD	0200	-0060	3464	2786	0002447	0062	14494			0656	30.92	4755.2	
		STD	0250	-0133	3462	2788	0002243	0074	14468			0820	29.61	4746.7	
006		OBS	0290	-0170	3461	2788			14457			0951	28.94	4743.1	
		STD	0300	-0172	3462	2789	0002094	0085	14458			0984	28.90	4743.4	
006		OBS	0386	-0185	3468	2794			14467			1266	28.67	4746.4	
		STD	0400	-0186	3468	2794	0001533	0103	14468			1312	28.65	4746.7	
006		OBS	0459	-0189	3467	2793			14477			1506	28.60	4749.7	

REFERENCE CTR CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH INCHES	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
						10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGR	PER				SEA
31	194	AK	775405	167240W	568	77	02	24	042	1964		049	0558	05	00				X1	3	4	0049

WATER COLOR CODE	FRANK (m)	DIR.	WIND SPEED OR FORCE	BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
					DRY BULB	WET BULB			
	14	520	902		-090	-095	7		00

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	ST CODE
045		STD	0000	-0129	3440	2770	0004065	0000	14425			0000	29.68	4732.6	
		OBS	0000	-0129	3440	2770			14425			0000	29.68	4732.6	
		STD	0010	-0132	3440	2770	0004051	0004	14425			0033	29.62	4732.6	
045		OBS	0010	-0132	3440	2770			14425			0033	29.62	4732.6	
045		OBS	0019	-0130	3440	2770			14428			0062	29.66	4733.6	
		STD	0020	-0130	3440	2770	0004054	0008	14428			0066	29.66	4733.6	
045		OBS	0029	-0125	3440	2770			14432			0095	29.75	4734.9	
		STD	0030	-0122	3440	2770	0004058	0012	14433			0098	29.80	4735.2	
045		OBS	0048	-0102	3444	2772			14446			0158	30.16	4739.5	
		STD	0050	-0109	3444	2773	0003773	0020	14443			0164	30.04	4738.5	
045		OBS	0072	-0152	3449	2778			14427			0236	29.26	4733.2	
		STD	0075	-0148	3450	2778	0003243	0029	14430			0246	29.31	4734.2	
045		OBS	0097	-0118	3453	2780			14448			0318	29.88	4740.1	
		STD	0100	-0111	3454	2780	0003012	0037	14452			0328	30.00	4741.4	
		STD	0125	-0068	3458	2782	0002871	0044	14477			0410	30.78	4749.7	
045		OBS	0145	-0050	3460	2783			14488			0476	31.10	4753.3	
		STD	0150	-0051	3460	2783	0002789	0051	14489			0492	31.08	4753.6	
045		OBS	0193	-0070	3460	2784			14487			0633	30.74	4752.9	
		STD	0200	-0081	3460	2784	0002641	0065	14483			0656	30.54	4751.6	
		STD	0250	-0144	3460	2786	0002370	0077	14462			0820	29.41	4741.7	
045		OBS	0290	-0176	3460	2787			14454			0951	28.83	4742.1	
		STD	0300	-0177	3460	2788	0002207	0089	14455			0984	28.81	4742.4	
045		OBS	0386	-0185	3463	2790			14466			1266	28.67	4746.1	
		STD	0400	-0186	3463	2790	0001883	0109	14468			1312	28.65	4746.7	
045		OBS	0483	-0188	3466	2792			14481			1585	28.62	4751.0	

REFERENCE ENTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INCHES	MARSden SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER
						10'	1'	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	77510S	171380W	569	71	02	24	105	1964		050	0485	04	00			0	X1	6	3	0050

WATER		WIND		AIR TEMP. °C		BARO- METER (mbars)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB		DRY BULB	WET BULB			
		10	S08	915	-089	-100	7			00	

MESSNGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-TEMP	± Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO-σ-t σ <sub>t</sub> - σ <sub>t</sub> (1)	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CTD
		STD	0000	-0177	3412	2748	0006084	0000	14398			0000	28.81	4723.7	
		OBS	0000	-0177	3412	2748			14398		097	0000	28.81	4723.7	
		STD	0010	-0180	3412	2748	0006070	0006	14399			0033	28.76	4724.1	
		OBS	0010	-0180	3412	2748			14399		093	0033	28.76	4724.1	
		STD	0020	-0181	3412	2748	0006062	0012	14400			0066	28.74	4724.4	
		OBS	0020	-0181	3412	2748			14400		097	0066	28.74	4724.4	
		STD	0030	-0177	3413	2749	0005988	0018	14403			0098	28.81	4725.4	
		OBS	0030	-0177	3413	2749			14403		100	0098	28.81	4725.4	
		STD	0050	-0015	3444	2768	0004194	0028	14487			0164	31.73	4752.9	
		OBS	0050	-0015	3444	2768			14487		164	0164	31.73	4752.9	
		STD	0075	-0160	3444	2774	0003629	0038	14423			0216	29.12	4731.9	
		OBS	0075	-0160	3444	2774			14423		235	0216	29.12	4731.9	
		STD	0100	-0147	3449	2778	0003272	0047	14434			0328	29.35	4735.6	
		OBS	0100	-0147	3449	2778			14434		235	0328	29.35	4735.6	
		STD	0125	-0118	3453	2780	0003053	0055	14453			0410	29.88	4741.8	
		OBS	0125	-0118	3453	2780	0002852	0062	14462			0492	30.06	4744.7	
		STD	0150	-0108	3456	2782			14462		236	0492	30.06	4744.7	
		OBS	0150	-0108	3456	2782	0002536	0076	14452			0566	29.35	4741.4	
		STD	0200	-0147	3458	2785			14452		232	0566	29.35	4741.4	
		OBS	0200	-0147	3458	2785	0002269	0088	14459			0820	29.28	4743.8	
		STD	0250	-0151	3461	2787	0002063	0098	14464			0984	29.14	4745.4	
		OBS	0250	-0151	3461	2787			14464		236	0984	29.14	4745.4	
		STD	0300	-0159	3463	2789	0001758	0117	14468			1312	28.63	4746.7	
		OBS	0300	-0159	3463	2789			14468		226	1312	28.63	4746.7	
		STD	0400	-0187	3465	2792			14476		230	1476	28.63	4749.3	
		OBS	0400	-0187	3465	2792			14476			1476	28.63	4749.3	

REFERENCE ENTRY CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	DEPTH INCHES	MARSden SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER
						10'	1'	MO	DAY	HR	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	77244S	171400W	569	71	02	24	143	1964		051	0448	04	00			0	X2	6	8	0051

WATER		WIND		AIR TEMP. °C		BARO- METER (mbars)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OF FORCE	DRY BULB	WET BULB		DRY BULB	WET BULB			
		09	S10	912	-076	-083	7			00	

MESSNGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY-TEMP	± Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO-σ-t σ <sub>t</sub> - σ <sub>t</sub> (1)	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft./sec	CTD
		STD	0000	-0081	3440	2768	0004229	0000	14447			0000	30.54	4739.8	
		OBS	0000	-0081	3440	2768			14447		170	0000	30.54	4739.8	
		STD	0010	-0082	3440	2768	0004222	0004	14448			0033	30.52	4740.1	
		OBS	0010	-0082	3440	2768			14448		173	0033	30.52	4740.1	
		STD	0020	-0083	3440	2768	0004215	0008	14450			0066	30.51	4740.8	
		OBS	0020	-0083	3440	2768			14450		193	0066	30.51	4740.8	
		STD	0030	-0078	3440	2768	0004231	0013	14454			0098	30.60	4742.1	
		OBS	0030	-0078	3440	2768			14454		172	0098	30.60	4742.1	
		STD	0050	-0075	3441	2769	0004160	0021	14458			0164	30.65	4743.4	
		OBS	0050	-0075	3441	2769			14458		177	0164	30.65	4743.4	
		STD	0075	-0062	3449	2774	0003596	0031	14470			0216	30.88	4747.4	
		OBS	0075	-0062	3449	2774			14470		231	0216	30.88	4747.4	
		STD	0100	-0058	3451	2776	0003454	0040	14476			0328	30.56	4749.3	
		OBS	0100	-0058	3451	2776			14476		241	0328	30.56	4749.3	
		STD	0125	-0032	3453	2776	0003416	0048	14492			0410	31.42	4754.6	
		OBS	0125	-0032	3453	2776			14492		242	0410	31.42	4754.6	
		STD	0150	-0012	3456	2778	0003284	0057	14506			0492	31.78	4759.2	
		OBS	0150	-0012	3456	2778			14506		242	0492	31.78	4759.2	
		STD	0200	0010	3464	2783	0002791	0072	14526			0656	32.18	4765.7	
		OBS	0200	0010	3464	2783			14526		244	0656	32.18	4765.7	
		STD	0250	-0007	3465	2784	0002656	0085	14526			0820	31.87	4765.7	
		OBS	0250	-0007	3465	2784			14526		239	0820	31.87	4765.7	
		STD	0300	-0045	3465	2787	0002410	0098	14517			0984	31.19	4762.8	
		OBS	0300	-0045	3465	2787			14517		239	0984	31.19	4762.8	
		STD	0400	-0182	3467	2793	0001623	0118	14470			1312	28.72	4747.4	
		OBS	0400	-0182	3467	2793			14470		230	1312	28.72	4747.4	

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN INDEX	MARS DEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1'	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	D.R.			HGT	PER	SEA			
31	194	AK	76570S	171420W	569	61	02	24	180	1964	052	0466	04	00	0	X1	6	5	0052		

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		WET BULB	WV. CORR.	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB				
00	00	00	500	905	-0.6	-0.7	7		00	

MESSAGE TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg-at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
182	STD	0000	-0057	3448	2773	0003711	0000	14460				0000	30.97	4741.1
	OBS	0000	-0057	3448	2773			14460			158	0000	30.97	4741.1
	STD	0010	-0059	3449	2774	0003624	0004	14460				0033	30.94	4741.1
182	OBS	0010	-0059	3449	2774			14460			159	0033	30.94	4741.1
	STD	0020	-0060	3449	2774	0003617	0007	14462				0066	30.92	4741.7
182	OBS	0020	-0060	3449	2774			14462			159	0066	30.92	4741.7
	STD	0030	-0058	3450	2775	0003547	0011	14464				0098	30.96	4745.4
182	OBS	0030	-0058	3450	2775			14464			160	0098	30.96	4745.4
	STD	0050	-0060	3449	2774	0003610	0018	14467				0164	30.92	4746.4
182	OBS	0050	-0060	3449	2774			14467			163	0164	30.92	4746.4
	STD	0075	-0060	3449	2774	0003604	0027	14471				0246	30.92	4747.7
182	OBS	0075	-0060	3449	2774			14471			163	0246	30.92	4747.7
	STD	0100	-0057	3453	2777	0003306	0036	14477				0328	30.97	4748.7
182	OBS	0100	-0057	3453	2777			14477			205	0328	30.97	4748.7
	STD	0125	-0024	3458	2780	0003074	0044	14497				0410	31.57	4756.2
	STD	0150	-0007	3462	2782	0002853	0051	14509				0492	31.87	4760.2
182	OBS	0150	-0007	3462	2782			14509			237	0492	31.87	4760.2
	STD	0200	-0022	3464	2785	0002618	0065	14511				0556	31.60	4760.8
182	OBS	0200	-0022	3464	2785			14511			235	0556	31.60	4760.8
	STD	0250	-0053	3464	2786	0002455	0077	14505				0820	31.05	4758.8
	STD	0300	-0089	3464	2788	0002272	0089	14497				0984	30.40	4756.2
182	OBS	0300	-0089	3464	2788			14497			235	0984	30.40	4756.2
	STD	0400	-0175	3466	2792	0001725	0109	14473				1312	28.85	4748.3
182	OBS	0400	-0175	3466	2792			14473			230	1312	28.85	4748.3

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	MARS DEN INDEX	MARS DEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1'	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	D.R.			HGT	PER	SEA			
31	194	AK	76196S	171310W	569	61	02	24	222	1964	053	0457	04	00	0	X1	4	4	0053		

WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		WET BULB	WV. CORR.	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB				
12	508	902	-0.6	-0.6	7		00			

MESSAGE TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P μg-at/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
226	STD	0000	-0103	3429	2760	0004992	0003	14435				0000	30.15	4735.9
	OBS	0000	-0103	3429	2760			14435			161	0000	30.15	4735.9
	STD	0010	-0108	3428	2759	0005048	0005	14435				0033	30.06	4735.9
226	OBS	0010	-0108	3428	2759			14435			165	0033	30.06	4735.9
	STD	0020	-0108	3428	2759	0005044	0010	14436				0066	30.06	4736.2
226	OBS	0020	-0108	3428	2759			14436			164	0066	30.06	4736.2
	STD	0030	-0106	3429	2760	0004970	0015	14439				0066	30.06	4737.2
226	OBS	0030	-0106	3429	2760			14439			166	0066	30.06	4737.2
	STD	0050	-0101	3430	2761	0004903	0025	14445				0098	30.18	4739.2
226	OBS	0050	-0101	3430	2761			14445			167	0098	30.18	4739.2
	STD	0075	-0052	3430	2759	0005089	0037	14472				0246	31.06	4748.0
226	OBS	0075	-0052	3430	2759			14472			184	0246	31.06	4748.0
	STD	0100	-0077	3444	2771	0003908	0049	14466				0328	30.61	4746.0
226	OBS	0100	-0077	3444	2771			14466			203	0328	30.61	4746.0
	STD	0125	-0080	3448	2774	0003585	0058	14470				0410	30.56	4747.4
	STD	0150	-0082	3452	2778	0003262	0067	14473				0492	30.52	4748.3
226	OBS	0150	-0082	3452	2778			14473			229	0492	30.52	4748.3
	STD	0200	-0037	3458	2781	0002999	0082	14503				0656	31.33	4758.2
226	OBS	0200	-0037	3458	2781			14503			231	0656	31.33	4758.2
	STD	0250	-0016	3462	2783	0002797	0097	14522				0820	31.71	4761.4
226	OBS	0250	-0016	3462	2783			14522			229	0820	31.71	4761.4
	STD	0300	-0024	3464	2785	0002596	0110	14527				0984	31.57	4766.1
226	OBS	0300	-0024	3464	2785			14527			227	0984	31.57	4766.1
	STD	0400	-0045	3464	2786	0002468	0136	14534				1312	31.19	4768.4
226	OBS	0400	-0045	3464	2786			14534			231	1312	31.19	4768.4

REFERENCE CITY ID. NO.	SHIP CODE	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	ORIG. NO.	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAR. DEPTH OF S'AMP'L	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NOCD STATION NUMBER	
					10"	1"	MO	DAY		HR.	10"			CRUISE NO.	STATION NUMBER	DIR.				HGT
31	194	AK	755435	171250W	569	51	02	25	018	1964	054	0978	09	00			X1	4	4	0054

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (mm)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	19	S06	892		-044	-056	7		00

MESSNGR TIME OF HR. 1/10	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DIN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - 01/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	ST C
022		STD	0000	-0047	3445	2771	0003982	0000	14464			0000	31.15	4745.4	
		OBS	0000	-0047	3445	2771			14464			0000	31.15	4745.4	
		STD	0010	-0049	3442	2768	0004201	0004	14464			0033	31.12	4745.4	
022		OBS	0010	-0049	3442	2768			14464		193	0033	31.12	4745.4	
		STD	0020	-0049	3450	2775	0003587	0008	14467			0066	31.12	4746.4	
022		OBS	0020	-0049	3450	2775			14467		192	0066	31.12	4746.4	
		STD	0030	-0045	3444	2770	0004061	0012	14470			0098	31.19	4747.4	
022		OBS	0030	-0045	3444	2770			14470		198	0098	31.19	4747.4	
		STD	0050	-0047	3444	2770	0004048	0020	14472			0164	31.15	4748.0	
022		OBS	0050	-0047	3444	2770			14472		198	0164	31.15	4748.0	
		STD	0075	-0022	3449	2773	0003776	0030	14488			0246	31.60	4753.3	
022		OBS	0075	-0022	3449	2773			14488		210	0246	31.60	4753.3	
		STD	0100	-0010	3449	2772	0003832	0039	14498			0328	31.82	4756.5	
022		OBS	0100	-0010	3449	2772			14498		220	0328	31.82	4756.5	
		STD	0125	-0008	3450	2773	0003766	0049	14503			0410	31.86	4758.2	
		STD	0150	-0005	3452	2774	0003624	0058	14509			0492	31.91	4760.2	
022		OBS	0150	-0005	3452	2774			14509		232	0492	31.91	4760.2	
		STD	0200	0035	3456	2775	0003541	0076	14536			0656	32.63	4769.0	
022		OBS	0200	0035	3456	2775			14536		234	0656	32.63	4769.0	
		STD	0250	0067	3459	2776	0003515	0093	14559			0820	33.21	4776.6	
022		OBS	0299	0086	3462	2777			14576		237	0981	33.55	4782.1	
		STD	0300	0086	3462	2777	0003413	0111	14576			0984	33.55	4782.1	
022		OBS	0399	0088	3469	2783			14595		239	1309	33.58	4788.4	
		STD	0400	0084	3469	2783	0002896	0142	14593			1312	33.51	4787.7	
030		OBS	0495	0068	3470	2785			14602		244	1624	33.22	4790.7	
022		OBS	0499	0084	3470	2784			14610		237	1637	33.51	4793.3	
		STD	0500	0084	3470	2784	0002838	0171	14610			1640	33.51	4793.3	
030		OBS	0595	0067	3471	2785			14618		245	1952	33.21	4795.9	
		STD	0600	0066	3471	2786	0002645	0198	14619			1968	33.19	4796.2	
030		OBS	0694	0048	3468	2784			14626		239	2277	32.86	4798.5	
		STD	0700	0046	3468	2784	0002733	0225	14626			2297	32.83	4798.5	
030		OBS	0794	0021	3467	2785			14630		237	2605	32.38	4799.8	
		STD	0800	0019	3467	2785	0002614	0252	14630			2625	32.34	4799.8	
030		OBS	T0894	-0004	3466	2785			14635		239	2933	31.93	4801.5	

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARSden SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1'	MO	DAY	HR	10'		10'	CRUISE NO.			STATION NUMBER	DIR.	HGT			
31	194	AK	75160S	171230W	569	51	02	25	06	1964	055	1829	16	09				X1	6	7	0055

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VR CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRNSL. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	12	516		865	-038	-050	7		00

MESSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-30°S	Σ Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY FT/SEC
		STD	0000	-004.3	34.39	2766	0004457	0000	14465			0000	31.23	4745.7
072		OBS	0000	-004.3	34.39	2766			14465		179	0000	31.23	4745.7
		STD	0010	-004.6	34.39	2766	0004443	0004	14465			0033	31.17	4745.7
072		OBS	0010	-004.6	34.39	2766			14465		178	0033	31.17	4745.7
		STD	0020	-004.8	34.40	2767	0004355	0009	14466			0066	31.11	4746.0
072		OBS	0020	-004.8	34.40	2767			14466		185	0066	31.11	4746.0
		STD	0030	-004.6	34.39	2766	0004438	0013	14468			0058	31.17	4746.7
072		OBS	0030	-004.6	34.39	2766			14468		182	0058	31.17	4746.7
		STD	0050	-003.9	34.42	2768	0004236	0022	14475			0161	31.30	4749.0
072		OBS	0050	-003.9	34.42	2768			14475		191	0161	31.30	4749.0
		STD	0075	-003.8	34.50	2774	0003625	0032	14481			0216	31.32	4751.0
072		OBS	0075	-003.8	34.50	2774			14481		229	0216	31.32	4751.0
		STD	0100	002.6	34.62	2781	0003032	0040	14516			0328	32.47	4762.4
072		OBS	0100	002.6	34.62	2781			14516		238	0328	32.47	4762.4
		STD	0125	003.3	34.63	2781	0002996	0048	14524			0410	32.59	4765.1
072		OBS	0125	003.3	34.63	2781			14524		237	0410	32.59	4765.1
		STD	0150	003.9	34.64	2781	0002955	0055	14531			0492	32.70	4767.4
072		OBS	0150	003.9	34.64	2781			14531		237	0492	32.70	4767.4
		STD	0200	004.9	34.64	2781	0003018	0070	14543			0656	32.88	4771.3
072		OBS	0200	004.9	34.64	2781			14543		236	0656	32.88	4771.3
		STD	0250	005.9	34.66	2782	0002933	0085	14556			0820	33.06	4775.6
072		OBS	0250	005.9	34.66	2782			14556		237	0820	33.06	4775.6
		STD	0300	006.8	34.67	2782	0002922	0099	14569			0984	33.22	4779.8
072		OBS	0300	006.8	34.67	2782			14569		237	0984	33.22	4779.8
		STD	0400	008.5	34.69	2783	0002903	0129	14594			1312	33.53	4788.0
072		OBS	0400	008.5	34.69	2783			14594		236	1312	33.53	4788.0
		STD	0476	008.6	34.68	2782			14606		237	1562	33.55	4792.0
072		OBS	0476	008.6	34.68	2782	0002964	0158	14613			1640	33.64	4794.3
		STD	0500	009.1	34.69	2782			14624			1883	33.62	4797.9
072		OBS	0500	009.1	34.69	2782			14624		235	1883	33.62	4797.9
		STD	0571	009.0	34.70	2783	0002901	0187	14629			1968	33.62	4799.5
072		OBS	0571	009.0	34.70	2783			14629		238	1968	33.62	4799.5
		STD	0667	009.0	34.71	2784			14644			2188	33.62	4803.5
072		OBS	0667	009.0	34.71	2784	0002844	0216	14646		242	2188	33.62	4803.5
		STD	0762	008.8	34.70	2783			14655			2297	33.62	4805.1
072		OBS	0762	008.8	34.70	2783			14655		242	2297	33.62	4805.1
		STD	0800	008.6	34.70	2783	0002920	0245	14661			2500	33.58	4808.1
072		OBS	0800	008.6	34.70	2783			14661		231	2500	33.58	4808.1
		STD	0900	008.1	34.69	2783	0002933	0274	14675			2625	33.55	4810.0
072		OBS	0900	008.1	34.69	2783			14683		231	2625	33.55	4810.0
		STD	T0954	007.8	34.69	2783			14683			2953	33.46	4814.6
072		OBS	T0954	007.8	34.69	2783			14683		231	2953	33.46	4814.6
		STD	1000	007.7	34.70	2784	0002900	0303	14690			3130	33.40	4817.2
072		OBS	1000	007.7	34.70	2784			14690		234	3130	33.40	4817.2
		STD	1100	007.3	34.71	2785	0002806	0332	14705			3281	33.39	4819.5
072		OBS	1100	007.3	34.71	2785			14712		234	3281	33.39	4819.5
		STD	T1146	007.1	34.71	2785			14720			3609	33.31	4821.5
072		OBS	T1146	007.1	34.71	2785			14720		234	3609	33.31	4821.5
		STD	1200	006.8	34.71	2785	0002753	0360	14735			3766	33.28	4826.8
072		OBS	1200	006.8	34.71	2785			14735		234	3766	33.28	4826.8
		STD	1300	006.3	34.71	2785	0002742	0387	14749			4265	33.13	4831.3
072		OBS	1300	006.3	34.71	2785			14749		237	4265	33.13	4831.3
		STD	1400	005.7	34.70	2785	0002728	0414	14754			4593	33.03	4838.9
072		OBS	1400	005.7	34.70	2785			14754		237	4593	33.03	4838.9
		STD	T1436	005.5	34.70	2785			14763			4711	32.99	4840.5
072		OBS	T1436	005.5	34.70	2785			14763		237	4711	32.99	4840.5
		STD	1500	005.1	34.70	2786	0002688	0441	14763			4921	32.92	4843.5
072		OBS	1500	005.1	34.70	2786			14763		234	4921	32.92	4843.5
		STD	T1631	004.2	34.69	2785			14781			5351	32.76	4849.4
072		OBS	T1631	004.2	34.69	2785			14781		234	5351	32.76	4849.4

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	DEPTH (m)	MARSDEN SQUARE				STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WATH	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER
						10"	1'	MO	DAY	HR	MIN	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA			
31	194	AK	74150S	175180W		569	45	02	25	193	1964		056		2012	04	12		4	X2	6	8	0056

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OF DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRNSP. M	DIR.	SPEED OF WIND (kts)		DRY BULB	WET BULB			
		12	S22	793	-0.28	-0.38	7		00

MESSAGE TIME HR / 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CTD NO.
	197	STD	0000	-0053	3436	2764	0004645	0000	14460			0000	31.05	4744.1	
		OBS	0000	-0053	3436	2764			14460			0000	31.05	4744.1	
	197	OBS	0008	-0056	3443	2769			14461		203	0026	30.99	4744.4	
		STD	0010	-0056	3442	2769	0004172	0004	14461		206	0033	30.99	4744.4	
	197	OBS	0016	-0055	3439	2766			14462		207	0052	31.01	4744.7	
		STD	0020	-0055	3438	2765	0004479	0009	14462			0066	31.01	4744.7	
	197	OBS	0025	-0055	3437	2764			14463		204	0082	31.01	4745.1	
		STD	0030	-0055	3437	2764	0004551	0013	14464			0098	31.01	4745.4	
	197	OBS	0041	-0056	3437	2765			14465		204	0134	30.99	4745.7	
		STD	0050	-0045	3440	2766	0004362	0022	14472			0164	31.19	4748.0	
	200	OBS	0057	-0039	3442	2768			14476		215	0187	31.30	4749.3	
		STD	0075	-0031	3446	2770	0003993	0033	14484			0216	31.44	4752.0	
	200	OBS	0077	-0030	3446	2771			14484		215	0253	31.46	4752.0	
		STD	0100	-0023	3450	2773	0003692	0042	14492			0328	31.59	4754.6	
	200	OBS	0115	-0016	3452	2775			14498		224	0377	31.71	4756.5	
		STD	0125	-0011	3453	2775	0003535	0051	14502			0410	31.80	4757.9	
	200	STD	0150	0005	3455	2776	0003464	0060	14514			0492	32.09	4761.8	
	200	OBS	0153	0007	3455	2776			14515		228	0502	32.13	4762.1	
		STD	0200	0075	3461	2777	0003423	0077	14555			0656	33.35	4775.2	
	203	OBS	0230	0102	3489Q	2798Q					236	0755	33.84		
		STD	0250	0105	3467	2780	0003163	0094	14577			0820	33.89	4782.5	
	203	STD	0300	0112	3473	2784	0002750	0108	14590			0984	34.02	4786.7	
	203	OBS	0306	0113	3474	2785			14591		240	1004	34.03	4787.1	
		STD	0383	0111	3474	2785			14603		238	1256	34.00	4791.0	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	DEPTH (m)	MARSDEN SQUARE				STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WATH	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NDDC STATION NUMBER
						10"	1'	MO	DAY	HR	MIN	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA			
31	194	AK	74380S	175450W		569	45	02	26	002	1964		057		2195	04	14		4	X1	6	6	0057

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OF DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRNSP. M	DIR.	SPEED OF WIND (kts)		DRY BULB	WET BULB			
		15	S19	780	-0.31	-0.43	7		03

MESSAGE TIME HR / 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CTD NO.
	006	STD	0000	-0038	3445	2770	0004021	0000	14468			0000	31.32	4746.7	
		OBS	0000	-0038	3445	2770			14468		210	0000	31.32	4746.7	
	006	OBS	0009	-0040	3446	2771			14469		211	0030	31.28	4747.0	
		STD	0010	-0039	3446	2771	0003930	0004	14469			0033	31.30	4747.0	
	006	OBS	0018	-0032	3447	2772			14474		215	0059	31.42	4748.7	
		STD	0020	-0030	3447	2772	0003885	0008	14475			0066	31.46	4749.0	
	006	OBS	0027	-0026	3448	2772			14478		214	0089	31.53	4750.0	
		STD	0030	-0026	3448	2772	0003840	0012	14479			0098	31.53	4750.3	
	006	OBS	0045	-0026	3448	2772			14481		216	0148	31.53	4751.0	
		STD	0050	-0024	3449	2772	0003808	0019	14483			0164	31.57	4751.6	
	006	OBS	0067	-0016	3450	2773			14490		215	0220	31.71	4753.9	
		STD	0075	-0010	3451	2774	0003682	0029	14494			0216	31.82	4755.2	
	006	OBS	0090	0000	3452	2774			14501		215	0295	32.00	4757.0	
		STD	0100	0006	3453	2774	0003609	0038	14506			0328	32.11	4759.2	
	006	STD	0125	0018	3455	2775	0003520	0047	14516			0410	32.32	4762.4	
	006	OBS	0135	0021	3456	2776			14519		221	0443	32.38	4763.4	
		STD	0150	0022	3456	2776	0003445	0055	14522			0492	32.40	4764.4	
	006	OBS	0180	0025	3457	2777			14528		223	0590	32.45	4766.4	
		STD	0200	0034	3458	2777	0003384	0073	14536			0656	32.61	4769.0	
	006	STD	0250	0056	3461	2778	0003293	0089	14554			0820	33.01	4774.9	
	006	OBS	0270	0063	3463	2779			14561		228	0896	33.13	4777.2	
		STD	0300	0075	3467	2782	0002969	0105	14572			0984	33.35	4780.8	
	006	OBS	0360	0090	3471	2784			14589		231	1161	33.62	4786.4	
		STD	0400	0091	3471	2784	0002797	0134	14597			1312	33.64	4789.0	
	006	OBS	0450	0093	3469	2782			14605		223	1476	33.67	4791.6	

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARSden SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1'	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	77460S	166210E	571	76	02	29	119	1964	058	0302	02	00	0	0	X4	8	8	0058	
				WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VELOCITY CODES	NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
COLOR CODE		TRANS. (m <sup>2</sup> )	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB		WET BULB												
		13		516			827	-183	-190	4			00								

MESSAGE TIME	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO-μ-P p.p.t/10 <sup>3</sup>	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0178								0000	28.80	
124		OBS	0000	-0178						834		0000	28.80	
124		OBS	0005	-0178						865		0016	28.80	
124		OBS	0005	-0178								0030	28.80	
		STD	0010	-0178								0033	28.80	
124		OBS	0014	-0179						837		0046	28.78	
124		OBS	0019	-0178								0052	28.80	
		STD	0020	-0177						836		0065	28.81	
124		OBS	0023	-0176						849		0075	28.83	
		STD	0030	-0175						845		0098	28.85	
124		OBS	0047	-0171								0151	28.92	
		STD	0050	-0170						834		0161	28.94	
124		OBS	0070	-0164								0230	29.05	
		STD	0075	-0161						819		0246	29.10	
		STD	0100	-0151						805		0328	29.28	
		STD	0125	-0146						791		0410	29.37	
124		OBS	0141	-0145								0463	29.39	
		STD	0150	-0145						777		0492	29.39	
124		OBS	0188	-0154						755		0617	29.23	

REFERENCE	SHIP CODE	LATITUDE	LONGITUDE	DATE	MARSden SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER
					10'	1'	MO	DAY	HR.	1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	77385S	165460E	571	75	02	20	145	1964	059	0612	02	00	0	0	X4	4	3	0059	
				WATER		WIND		BARO-METER (mb)	AIR TEMP. °C		VELOCITY CODES	NO. OBS. DEPTHS		SPECIAL OBSERVATIONS							
COLOR CODE		TRANS. (m <sup>2</sup> )	DIR.	SPEED OR FORCE	DRY BULB	WET BULB	DRY BULB		WET BULB												
		18		532			827	-139	-146	6			00								

MESSAGE TIME	CASST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-σ <sub>t</sub>	Δ D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO-μ-P p.p.t/10 <sup>3</sup>	DEPTH (Ft.)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0168								0000	28.98	
148		OBS	0000	-0168								0000	28.98	
148		OBS	0005	-0168								0016	28.98	
148		OBS	0009	-0166								0030	29.01	
		STD	0010	-0166								0033	29.01	
148		OBS	0014	-0165								0046	29.03	
148		OBS	0019	-0165								0062	29.03	
		STD	0020	-0165								0066	29.03	
148		OBS	0023	-0165								0076	29.03	
		STD	0030	-0165								0098	29.03	
148		OBS	0046	-0165								0151	29.03	
		STD	0050	-0162								0161	29.06	
148		OBS	0070	-0149								0230	29.32	
		STD	0075	-0145								0246	29.39	
148		OBS	0093	-0133								0305	29.61	
		STD	0100	-0133								0328	29.61	
		STD	0125	-0133								0410	29.61	
148		OBS	0139	-0133								0456	29.61	
		STD	0150	-0141								0492	29.46	
148		OBS	0185	-0163								0607	29.07	
		STD	0200	-0170								0656	28.94	
148		OBS	0232	-0180								0761	28.78	

REFERENCE CITE CODE	ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	DEPTH METER	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER		
						10'	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER
31	194	AK	76115S	167250E		571	67	03	01	048	1964		060	0677	02	18		4	X4	6	8	0060

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED (KTS)		DRY BULB	WET BULB			
		16	S15	74.9	-077	-083	5		10

MISSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0189	3454	2783	0002829	0000	14399			0000	28.60	4721.1
052		OBS	0000	-0189	3454	2783			14399			0000	28.60	4721.1
052		OBS	0004	-0190	3452	2781			14398			0013	28.58	4723.7
052		OBS	0008	-0191	3452	2781			14399			0026	28.56	4724.1
		STD	0010	-0191	3452	2781	0003011	0003	14399			0033	28.56	4724.1
052		OBS	0012	-0191	3451	2780			14399			0039	28.56	4724.1
052		OBS	0016	-0190	3452	2781			14400			0052	28.58	4724.4
		STD	0020	-0189	3451	2780	0003048	0006	14401			0066	28.60	4724.7
052		OBS	0020	-0189	3451	2780			14403			0066	28.60	4725.4
		STD	0030	-0189	3452	2781	0003004	0009	14403			0130	28.62	4726.4
052		OBS	0041	-0188	3452	2781			14406			0164	28.65	4727.0
		STD	0050	-0186	3453	2782	0002852	0015	14408			0200	28.71	4728.3
052		OBS	0061	-0183	3455	2783			14412			0246	28.78	4730.6
		STD	0075	-0179	3475	2800	0001199	0020	14419			0269	28.80	4731.3
052		OBS	0082	-0178	3482	2805			14421			0328	28.80	4732.6
		STD	0100	-0178	3484	2807	0000499	0022	14425			0404	28.80	4733.9
052		OBS	0123	-0178	3486	2808			14429			0410	28.78	4733.9
		STD	0125	-0179	3486	2808	0000330	0023	14429			0492	28.62	4733.9
		STD	0150	-0188	3487	2809	0000237	0024	14429			0538	28.56	4733.9
052		OBS	0164	-0191	3487	2810			14436			0656	28.58	4736.2
		STD	0200	-0190	3487	2810	0000181	0025	14437			0673	28.60	4736.5
052		OBS	0205	-0189	3487	2810			14437					

REFERENCE CITE CODE	ID. NO.	SHIP CODE	LATITUDE °	LONGITUDE °	DEPTH METER	MARSDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'AMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER		
						10'	1"	MO	DAY		HR.	1/10			CRUISE NO.	STATION NUMBER	DIR.				HGT	PER
31	194	AK	76045S	165560E		571	65	03	01	083	1964		061	0558	02	00		0	X7	6	8	0061

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED (KTS)		DRY BULB	WET BULB			
		04	S12	780	-073	-081	4		08

MISSING TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S %	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0191	3482	2806	0000674	0000	14402			0000	28.56	4725.1
088		OBS	0000	-0191	3482	2806			14402			0000	28.56	4725.1
088		OBS	0005		3482							0016		
		STD	0010	-0192	3482	2806	0000665	0001	14403			0033	28.54	4725.4
088		OBS	0010	-0192	3482	2806			14403			0033	28.54	4725.4
088		OBS	0015	-0192	3482	2806			14404			0049	28.54	4725.7
		STD	0020	-0192	3482	2806	0000660	0001	14404			0066	28.54	4725.7
088		OBS	0020	-0192	3482	2806			14404			0066	28.54	4725.7
088		OBS	0025	-0191	3482	2806			14406			0082	28.56	4726.4
		STD	0030	-0191	3483	2806	0000581	0002	14407			0098	28.56	4726.7
		STD	0050	-0189	3484	2807	0000497	0003	14411			0164	28.60	4728.0
088		OBS	0050	-0189	3484	2807			14411			0164	28.60	4728.0
		STD	0075	-0186	3483	2806	0000567	0004	14417			0246	28.65	4730.0
088		OBS	0075	-0186	3483	2806			14417			0246	28.65	4730.0
		STD	0100	-0185	3483	2806	0000556	0006	14421			0328	28.67	4731.3
088		OBS	0100	-0185	3483	2806			14421			0328	28.67	4731.3
		STD	0125	-0188	3486	2809	0000304	0007	14424			0410	28.62	4732.3
		STD	0150	-0190	3488	2810	0000132	0007	14428			0492	28.58	4733.6
088		OBS	0150	-0190	3488	2810			14428			0492	28.58	4733.6
		STD	0200	-0192	3488	2810	0000098	0008	14435			0656	28.54	4735.9
088		OBS	0200	-0192	3488	2810			14435			0656	28.54	4735.9
		STD	0250	-0189								0820	28.60	
088		OBS	0250	-0189	3492Q	2814Q						0820	28.60	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- TH- R CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER	
						10'	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA
31	194	AK	74500S	166310E	571	46	03	01	187	1964		062	0933	02	00				X2	6	8	0062

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. 100'	DIR.	SPEED (KTS)		DRY BULB	WET BULB			
		28	524	827	-067	-072	4		10

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-2107	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P pg - 01/1	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY ft/sec	S C
190		STD	0000	-0189	3480	2804	0000832	0000	14402			0000	28.60	4725.1	
190		OBS	0000	-0189	3480	2804			14402			0000	28.60	4725.1	
190		OBS	0004	-0192	3480	2804			14401			0013	28.54	4724.7	
190		OBS	0008	-0192	3480	2804			14402			0026	28.54	4725.1	
190		STD	0010	-0192	3480	2804	0000820	0001	14403			0033	28.54	4725.4	
190		OBS	0012	-0191	3480	2804			14403			0039	28.56	4725.4	
190		OBS	0016	-0190	3493Q	2814Q			0052			0052	28.58		
190		STD	0020	-0188	3482	2805	0000669	0002	14406			0066	28.62	4726.4	
190		OBS	0020	-0188	3482	2805			14406			0066	28.62	4726.4	
190		STD	0030	-0188	3481	2805	0000741	0002	14408			0098	28.62	4727.0	
190		OBS	0041	-0188	3480	2804			14410			0134	28.62	4727.7	
190		STD	0050	-0185	3480	2804	0000814	0004	14412			0164	28.67	4728.3	
190		OBS	0061	-0184	3480	2804			14415			0200	28.69	4729.3	
190		STD	0075	-0189	3480	2804	0000789	0006	14415			0246	28.60	4729.3	
190		OBS	0082	-0191	3480	2804			14415			0269	28.56	4729.3	
190		STD	0100	-0191	3481	2805	0000693	0008	14418			0328	28.56	4730.3	
190		OBS	0123	-0191	3482	2806			14422			0404	28.56	4731.6	
190		STD	0125	-0191	3482	2806	0000587	0009	14422			0410	28.56	4731.6	
190		STD	0150	-0192	3485	2808	0000333	0010	14426			0492	28.54	4732.9	
190		OBS	0164	-0193	3487	2810			14429			0538	28.53	4733.9	

REFERENCE CTRY CODE	SHIP ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DEPTH METER	MARDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLER	WAVE OBSERVATIONS			WEA- TH- R CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER		
						10'	1"	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	
31	194	AK	74580S	168180E	571	48	03	01	234	1964		063	0375	02	00						3	2	0063

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. 100'	DIR.	SPEED (KTS)		DRY BULB	WET BULB			
		13	510	834	-061	-067	7		06

MESSAGE TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-2107	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P pg - 01/1	DEPTH (FT)	TEMP (°F)	SOUND VELOCITY ft/sec	S C
236		STD	0000	-0155	3428	2761	0004910	0000	14411			0000	29.21	4728.0	
236		OBS	0000	-0155	3428	2761			14411			0000	29.21	4728.0	
236		OBS	0005	-0160	3428	2761			14409			0016	29.12	4727.3	
236		STD	0010	-0157	3427	2760	0004976	0005	14412			0033	29.17	4728.3	
236		OBS	0010	-0157	3427	2760			14412			0033	29.17	4728.3	
236		OBS	0015	-0158	3428	2761			14412			0049	29.16	4728.3	
236		STD	0020	-0160	3428	2761	0004886	0010	14412			0066	29.12	4728.3	
236		OBS	0020	-0160	3428	2761			14412			0066	29.12	4728.3	
236		STD	0030	-0152	3428	2761	0004902	0015	14417			0098	29.26	4730.0	
236		OBS	0030	-0152	3428	2761			14417			0098	29.26	4730.0	
236		STD	0050	-0142	3432	2764	0004614	0024	14426			0164	29.44	4732.9	
236		OBS	0050	-0142	3432	2764			14426			0164	29.44	4732.9	
236		STD	0075	-0163	3472	2797	0001474	0032	14426			0216	29.07	4732.9	
236		OBS	0075	-0163	3472	2797			14426			0216	29.07	4732.9	
236		STD	0100	-0186	3478	2802	0000937	0035	14420			0328	28.65	4731.0	
236		OBS	0100	-0186	3478	2802			14420			0328	28.65	4731.0	
236		STD	0125	-0189	3480	2804	0000761	0037	14423			0410	28.60	4731.9	
236		OBS	0149	-0190	3481	2805			14427			0480	28.58	4733.2	
236		STD	0150	-0190	3481	2805	0000668	0039	14427			0492	28.58	4733.2	
236		OBS	0199	-0189	3480	2804			14435			0653	28.60	4735.9	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN HEIGHT	MARS DEN SQUARE			STATION TIME ICHT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
						10'	1"	MO	DAY	HR./1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA.			
31	194	AK	75080S	170040E	570	50	03	02	021	1964	064	0375	02	00	0	X1	3	6			0064	
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS (mm)	DIR.	SPEED OR FORCE	DIR.	DRY BULB	WET BULB	VIS. CODE									
						28	S12		831		-050	-059	7	06								

MESSNGR TIME & HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CODE
025		STD	0000	-0151	3436	2767	0004307	0000	14414			0000	29.28	4729.0	
		OBS	0000	-0151	3436	2767			14414			0000	29.28	4729.0	
025		OBS	0005	-0152	3434	2766			14414			0016	29.26	4729.0	
		STD	0010	-0154	3434	2765	0004485	0004	14414			0033	29.23	4729.0	
025		OBS	0010	-0154	3472P	2796P						0033	29.23	4729.0	
025		OBS	0015	-0153	3433	2765			14415			0019	29.25	4729.3	
		STD	0020	-0154	3433	2765	0004518	0009	14415			0066	29.23	4729.3	
025		OBS	0020	-0154	3433	2765			14415			0066	29.23	4729.3	
		STD	0030	-0150	3434	2765	0004448	0013	14419			0098	29.30	4730.6	
025		OBS	0030	-0150	3434	2765			14419			0098	29.30	4730.6	
		STD	0050	-0092	3462	2786	0002488	0020	14454			0164	30.34	4742.1	
025		OBS	0050	-0092	3462	2786			14454			0164	30.34	4742.1	
		STD	0075	-0139	3466	2791	0002008	0026	14436			0216	29.50	4736.2	
025		OBS	0075	-0139	3466	2791			14436			0216	29.50	4736.2	
		STD	0100	-0175	3470	2795	0001580	0030	14424			0328	28.85	4732.3	
025		OBS	0100	-0175	3470	2795			14424			0328	28.85	4732.3	
		STD	0125	-0184	3473	2798	0001311	0034	14424			0410	28.69	4732.3	
025		OBS	0149	-0190	3476	2801			14426			0489	28.58	4732.9	
		STD	0150	-0190	3476	2801	0001043	0037	14426			0492	28.58	4732.9	
025		OBS	0199	-0191	3479	2803			14434			0653	28.56	4735.6	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARS DEN HEIGHT	MARS DEN SQUARE			STATION TIME ICHT			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPLS'	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
						10'	1"	MO	DAY	HR./1/10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA.			
31	194	AK	73340S	176500E	570	36	03	02	139	1964	065	0594	02			X1	6	6			0065	
						WATER		WIND		BARO- METER		AIR TEMP. °C		NO. OBS. DEPTHS		SPECIAL OBSERVATIONS						
						COLOR CODE	TRANS (mm)	DIR.	SPEED OR FORCE	DIR.	DRY BULB	WET BULB	VIS. CODE									
						26	S22		814		-032	-046		00								

MESSNGR TIME & HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta$ D DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P $\mu\text{g} \cdot \text{dl}^{-1}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec	CODE
143		STD	0000	-0067	3447	2773	0003747	0000	14455			0000	30.79	4742.4	
		OBS	0000	-0067	3447	2773			14455			0000	30.79	4742.4	
143		OBS	0005	-0069	3447	2773			14455			0016	30.76	4742.4	
		STD	0010	-0068	3447	2773	0003740	0004	14456			0033	30.78	4742.8	
143		OBS	0010	-0068	3447	2773			14456			0033	30.78	4742.8	
143		OBS	0014	-0068	3447	2773			14457			0046	30.78	4743.1	
143		OBS	0019	-0068	3448	2774			14458			0062	30.78	4743.4	
		STD	0020	-0068	3448	2774	0003662	0007	14458			0066	30.78	4743.4	
143		OBS	0029	-0067	3446	2772			14459			0095	30.79	4743.8	
		STD	0030	-0067	3446	2772	0003808	0011	14460			0098	30.79	4744.1	
143		OBS	0048	-0065	3447	2773			14464			0158	30.83	4745.4	
		STD	0050	-0064	3447	2773	0003723	0019	14464			0164	30.85	4745.4	
143		OBS	0072	-0044	3451	2775			14478			0236	31.21	4750.0	
		STD	0075	-0037	3453	2777	0003401	0028	14482			0216	31.33	4751.3	
143		OBS	0097	-0003	3462	2782			14502			0318	31.95	4757.9	
		STD	0100	-0003	3462	2782	0002862	0035	14503			0328	31.95	4758.2	
143		STD	0125	-0005	3464	2784	0002728	0042	14506			0410	31.91	4759.2	
		OBS	0145	-0011	3465	2785			14507			0476	31.80	4755.5	
143		STD	0150	-0013	3465	2785	0002579	0049	14507			0492	31.77	4759.5	
143		OBS	0193	-0042	3467	2788			14501			0633	31.24	4757.5	

REFERENCE CITY CODE	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARSden SQUARE EQUATORIAL MILES	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WAMP	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
					10'	1'	MO DAY HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	73300S	174580E	570	34	03 02 184	1964	066		0362	02	23		4	X2	6 8	0066

WATER		WIND		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- M.	DIR.	SPEED OR FORCE	BARO- METER (mb)	DRY BULB			
		23	S25	84	-043	-052	7	00

MESSNGR TIME HR /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALT-310°	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 0/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0071	34.46	2772	0003808	0000	1445.3			0000	30.72	4711.8
187		OBS	0000	-0071	34.46	2772			1445.3			0000	30.72	4711.8
187		OBS	0005	-0073	34.46	2772			1445.3			0016	30.69	4711.8
187		OBS	0009	-0074	34.46	2773			1445.3			0030	30.67	4711.8
		STD	0010	-0073	34.47	2773	0003721	0004	1445.4			0033	30.69	4712.1
187		OBS	0014	-0072	34.49	2775			1445.5			0016	30.70	4742.4
187		OBS	0018	-0072	34.49	2775			1445.6			0059	30.70	4742.8
		STD	0020	-0072	34.49	2775	0003570	0007	1445.6			0066	30.70	4742.8
187		OBS	0027	-0071	34.48	2774			1445.8			0089	30.72	4743.4
		STD	0030	-0071	34.48	2774	0003647	0011	1445.8			0098	30.72	4743.4
187		OBS	0045	-0070	34.48	2774			1446.1			0118	30.74	4744.4
		STD	0050	-0070	34.48	2774	0003644	0018	1446.2			0164	30.74	4744.7
187		OBS	0068	-0071	34.48	2774			1446.4			0223	30.72	4745.4
		STD	0075	-0070	34.48	2774	0003638	0027	1446.6			0216	30.74	4746.0
187		OBS	0091	-0068	34.48	2774			1447.0			0299	30.78	4747.4
		STD	0100	-0048	34.53	2777	0003346	0036	1448.1			0328	31.11	4751.0
		STD	0125	-0011	34.62	2783	0002835	0044	1450.3			0410	31.80	4758.2
187		OBS	0136	-0003	34.65	2785			1450.9			0416	31.95	4760.2
		STD	0150	-0011	34.67	2787	0002455	0050	1450.8			0492	31.80	4759.8
187		OBS	0181	-0027	34.68	2788			1450.6			0594	31.51	4759.2

REFERENCE CITY CODE	SHIP CODE	LATITUDE ° ' /10	LONGITUDE ° ' /10	MARSden SQUARE EQUATORIAL MILES	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'WAMP	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
					10'	1'	MO DAY HR./10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER			
31	194	AK	73270S	173270E	570	33	03 02 218	1964	067		0376	02	21		3	X2	6 8	0067

WATER		WIND		AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS- M.	DIR.	SPEED OR FORCE	BARO- METER (mb)	DRY BULB			
		27	S20	895	-054	-061	7	00

MESSNGR TIME HR /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANGMALT-310°	S Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - 0/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0103	34.48	2775	0003537	0000	1443.8			0000	30.15	4736.9
220		OBS	0000	-0103	34.48	2775			1443.8			0000	30.15	4736.9
220		OBS	0005	-0105	34.48	2775			1443.8			0016	30.11	4736.9
		STD	0010	-0106	34.47	2775	0003599	0004	1443.8			0033	30.09	4736.9
220		OBS	0010	-0106	34.47	2775			1443.8			0033	30.09	4736.9
220		OBS	0014	-0103	34.47	2774			1444.0			0016	30.15	4737.5
220		OBS	0019	-0104	34.48	2775			1444.1			0062	30.13	4737.8
		STD	0020	-0104	34.48	2775	0003527	0007	1444.1			0066	30.13	4737.8
220		OBS	0029	-0101	34.48	2775			1444.4			0095	30.18	4738.8
		STD	0030	-0099	34.48	2775	0003525	0011	1444.5			0098	30.22	4739.2
220		OBS	0048	-0077	34.51	2777			1445.9			0158	30.61	4743.8
		STD	0050	-0076	34.52	2777	0003315	0017	1446.0			0164	30.63	4744.1
220		OBS	0072	-0069	34.61	2784			1446.8			0236	30.76	4746.7
		STD	0075	-0069	34.62	2785	0002612	0025	1446.8			0216	30.76	4746.7
220		OBS	0097	-0079	34.680	2774.0						0318	30.58	
		STD	0100	-0084	34.65	2788	0002260	0031	1446.6			0328	30.49	4746.0
		STD	0125	-0119	34.69	2793	0001827	0036	1445.4			0410	29.86	4742.1
220		OBS	0145	-0143	34.72	2796			1444.7			0476	29.43	4739.8
		STD	0150	-0148	34.73	2797	0001409	0040	1444.5			0492	29.34	4739.2
220		OBS	0193	-0181	34.80	2804			1443.8			0633	28.74	4736.9

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	PORT INDICATOR	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
CTRY CODE	ID. NO.						10'	10'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.			
31	194	AK	732305	171290E	570	31	03	03	011	1964	068	0521	02	00	00	0	X1	6	12	0068

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C			VIC. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. IN)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	WET WIRE			
	04	S11	698	-0.49	-0.59	7			10	

MESSNGR TIME HR./10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO- $\mu$ $\mu\text{g} - \text{ml}^{-1}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY % / sec
013		STD	0000	-0178	3406	2744	0006543	0000	14397			0000	28.80	1723.4
		OBS	0000	-0178	3406	2744			14397			0000	28.80	1723.4
013		OBS	0005	-0180	3406	2744			14397			0036	28.76	1723.4
		STD	0010	-0182	3406	2744	0006527	0007	14397			0033	28.72	1723.4
013		OBS	0010	-0182	3406	2744			14397			0033	28.72	1723.4
		OBS	0015	-0181	3406	2744			14398			0049	28.78	1723.4
		STD	0020	-0180	3406	2744	0006525	0013	14399			0066	28.76	1724.1
013		OBS	0020	-0180	3406	2744			14399			0066	28.76	1724.1
		STD	0030	-0179	3407	2744	0006444	0020	14402			0098	28.78	1725.1
013		OBS	0030	-0179	3407	2744			14402			0098	28.78	1725.1
		STD	0050	-0172	3412	2748	0006064	0032	14409			0164	28.90	1727.3
013		OBS	0050	-0172	3412	2748			14409			0164	28.90	1727.3
		STD	0075	-0175	3416	2752	0005734	0047	14412			0246	28.85	1728.3
013		OBS	0075	-0175	3416	2752			14412			0246	28.85	1728.3
		STD	0100	-0174	3418	2753	0005568	0061	14417			0328	28.87	1730.1
013		OBS	0100	-0174	3418	2753			14417			0328	28.87	1730.1
		STD	0125	-0129	3434	2765	0004467	0073	14445			0410	29.68	1739.2
		STD	0150	-0104	3447	2775	0003554	0083	14462			0492	30.13	1747.7
013		OBS	0150	-0104	3447	2775			14462			0492	30.13	1747.7
		STD	0200	-0117	3467	2791	0001959	0097	14467			0656	29.89	1746.4
013		OBS	0200	-0117	3467	2791			14467			0656	29.89	1746.4

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	PORT INDICATOR	MARSSEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE (AMT)	NODC STATION NUMBER
CTRY CODE	ID. NO.						10'	10'	MO		DAY	HR./10			CRUISE NO.	STATION NUMBER	DIR.			
31	194	AK	723605	171065E	570	21	03	03	083	1964	069	0439	02	00	00	0	X1	6	11	0069

WATER		WIND		BARO- METER (mm)	AIR TEMP. °C			VIC. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. IN)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB	WET WIRE			
	03	S13	875	-0.42	-0.51	7			10	

MESSNGR TIME HR./10	CST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY- $\sigma_{\theta}$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O <sub>2</sub> ml/l	PO- $\mu$ $\mu\text{g} - \text{ml}^{-1}$	TOTAL- $\mu$ $\mu\text{g} - \text{ml}^{-1}$	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY % / sec
085		STD	0000	-0180	3416	2752	0005770	0000	14397				0000	28.76	1723.4
		OBS	0000	-0180	3416	2752			14397				0000	28.76	1723.4
085		OBS	0005	-0181	3416	2752			14398				0036	28.78	1723.7
		STD	0010	-0179	3416	2752	0005765	0006	14400				0033	28.78	1724.4
085		OBS	0010	-0179	3416	2752			14400				0033	28.78	1724.4
		OBS	0015	-0180	3416	2752			14400				0049	28.76	1724.4
		STD	0020	-0180	3416	2752	0005757	0012	14401				0066	28.76	1724.7
085		OBS	0020	-0180	3416	2752			14401				0066	28.76	1724.7
		STD	0030	-0179	3417	2752	0005676	0017	14403				0098	28.78	1725.4
085		OBS	0030	-0179	3417	2752			14403				0098	28.78	1725.4
		STD	0050	-0172	3418	2753	0005604	0029	14410				0164	28.90	1727.7
085		OBS	0050	-0172	3418	2753			14410				0164	28.90	1727.7
		STD	0075	-0140	3431	2763	0004684	0041	14431				0246	29.48	1734.6
085		OBS	0075	-0140	3431	2763			14431				0246	29.48	1734.6
		STD	0100	-0095	3452	2778	0003225	0051	14459				0328	30.29	1743.8
085		OBS	0100	-0095	3452	2778			14459				0328	30.29	1743.8
		STD	0125	-0104	3462	2787	0002418	0058	14460				0410	30.13	1744.1
		STD	0150	-0119	3470	2794	0001741	0064	14459				0492	29.86	1743.8
085		OBS	0150	-0119	3470	2794			14459				0492	29.86	1743.8
		STD	0200	-0169	3478	2802	0000934	0070	14445				0656	28.96	1739.2
085		OBS	0200	-0169	3478	2802			14445				0656	28.96	1739.2

REFERENCE CTN CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	HOURS IN FIX	MAREDDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1"	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA			
31	194	AK	72290S	170380E	570	20	03	03	101	1964		070	0335	02	00				X1	6	2	0070

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	02	S08	875		-066	-072	7		10

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-STEP	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	CTD NO.
		STD	0000	-0179	3408	2745	0006387	0000	14397			0000	28.78	4723.4	
103		OBS	0000	-0179	3408	2745			14397			0000	28.78	4723.4	
103		OBS	0005	-0180	3408	2745			14397			0016	28.76	4723.4	
		STD	0010	-0179	3408	2745	0006380	0006	14398			0033	28.78	4723.7	
103		OBS	0010	-0179	3408	2745			14398			0033	28.78	4723.7	
103		OBS	0015	-0177	3409	2746			14400			0049	28.81	4724.4	
		STD	0020	-0177	3408	2745	0006378	0013	14401			0065	28.81	4724.7	
103		OBS	0020	-0177	3408	2745			14401			0065	28.81	4724.7	
		STD	0030	-0175	3408	2745	0006377	0019	14404			0098	28.85	4725.7	
103		OBS	0030	-0175	3408	2745			14404			0098	28.85	4725.7	
		STD	0050	-0168	3415	2751	0005845	0031	14411			0164	28.98	4728.0	
103		OBS	0050	-0168	3415	2751			14411			0164	28.98	4728.0	
		STD	0075	-0139	3422	2755	0005377	0045	14430			0246	29.50	4734.2	
103		OBS	0075	-0139	3422	2755			14430			0246	29.50	4734.2	
		STD	0100	-0137	3430	2762	0004758	0058	14436			0328	29.53	4735.2	
103		OBS	0100	-0137	3430	2762			14436			0328	29.53	4735.2	
		STD	0125	-0143	3455	2782	0002814	0068	14441			0410	29.43	4737.8	
		STD	0150	-0152	3472	2796	0001472	0073	14443			0492	29.26	4738.5	
103		OBS	0150	-0152	3472	2796			14443			0492	29.26	4738.5	
		STD	0200	-0177	3483	2806	0000526	0078	14441			0656	28.81	4737.8	
103		OBS	0200	-0177	3483	2806			14441			0656	28.81	4737.8	

REFERENCE CTN CODE	ID. NO.	SHIP CODE	LATITUDE 1/10	LONGITUDE 1/10	HOURS IN FIX	MAREDDEN SQUARE			STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TYPE AMT	NODC STATION NUMBER
						10'	1"	MO	DAY	HR./10	CRUISE NO.		STATION NUMBER	DIR.			HGT	PER	SEA			
31	194	AK	72180S	170290E	570	20	03	03	116	1964		071	0260	02	00				X0	0	0071	

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
	00	S0C	881		-060	-066	7		10

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-STEP	Σ Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P µg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	CTD NO.
		STD	0000	-0162	3415	2750	0005890	0000	14406			0000	29.08	4725.4	
118		OBS	0000	-0162	3415	2750			14406			0000	29.08	4725.4	
118		OBS	0005	-0168	3415	2751			14404			0016	28.98	4725.7	
		STD	0010	-0166	3416	2751	0005797	0006	14406			0033	29.01	4726.4	
118		OBS	0010	-0166	3416	2751			14406			0033	29.01	4726.4	
118		OBS	0015	-0169	3417	2752			14405			0049	28.96	4726.0	
		STD	0020	-0169	3418	2753	0005630	0012	14406			0066	28.96	4726.4	
118		OBS	0020	-0169	3418	2753			14406			0066	28.96	4726.4	
		STD	0030	-0165	3425	2759	0005097	0017	14411			0098	29.03	4728.0	
118		OBS	0030	-0165	3425	2759			14411			0098	29.03	4728.0	
		STD	0050	-0169	3434	2766	0004384	0026	14413			0164	28.96	4728.7	
118		OBS	0050	-0169	3434	2766			14413			0164	28.96	4728.7	
		STD	0075	-0097	3460	2784	0002653	0035	14460			0246	30.43	4744.1	
118		OBS	0075	-0097	3460	2784			14460			0246	30.43	4744.1	
		STD	0100	-0114	3460	2785	0002542	0042	14451			0328	29.95	4741.1	
118		OBS	0100	-0114	3460	2785			14451			0328	29.95	4741.1	
		STD	0125	-0139	3470	2794	0001680	0047	14445			0410	29.50	4739.2	
118		OBS	0125	-0139	3470	2794			14445			0410	29.50	4739.2	
		STD	0150	-0154	3476	2800			14443			0492	29.23	4738.5	
118		OBS	0150	-0154	3476	2800	0001159	0051	14443			0492	29.23	4738.5	
		STD	0199	-0156	3478	2801			14451			0653	29.19	4741.1	

REFERENCE	CTRY CODE	ID. NO.	SHIP CODE	LATITUDE	LONGITUDE	INCLIN	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S		WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
							16"	1'	MO	DAY		HR./10	CRUISE NO.		STATION NUMBER	DIR	HGT	PER	SEA				DIR	HGT
31	194	AK		72152S	170170E		570	20	03	03	132	1964		072	0347	02	00			0	X1	61		0072

WATER		WIND		BARO-METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANK. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		00	500	881	-062	-069	7		08

MISSING TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MANT-181P	S & D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0179	3412	2748	0006079	0000	14397	719		0000	28.78	4723.4
		OBS	0000	-0179	3412	2748			14397	719		0000	28.78	4723.4
134		OBS	0005	-0180	3411	2748			14398	704		0016	28.76	4723.7
		STD	0010	-0179	3410	2747	0006226	0006	14399	720		0033	28.78	4724.1
134		OBS	0010	-0179	3410	2747			14399	720		0033	28.78	4724.1
134		OBS	0015	-0179	3411	2748			14400	713		0049	28.78	4724.4
		STD	0020	-0180	3410	2747	0006218	0012	14400	716		0066	28.76	4724.4
134		OBS	0020	-0180	3410	2747			14400	716		0066	28.76	4724.4
		STD	0030	-0177	3411	2748	0006141	0019	14403	753		0098	28.81	4725.4
134		OBS	0030	-0177	3411	2748			14403	753		0098	28.81	4725.4
		STD	0050	-0172	3418	2753	0005604	0030	14410	705		0164	28.90	4727.7
134		OBS	0050	-0172	3418	2753			14410	705		0164	28.90	4727.7
		STD	0075	-0163	3433	2765	0004463	0043	14420	695		0216	29.07	4731.0
134		OBS	0075	-0163	3433	2765			14420	695		0216	29.07	4731.0
		STD	0100	-0159	3448	2777	0003312	0053	14428	629		0328	29.14	4733.6
134		OBS	0100	-0159	3448	2777			14428	629		0328	29.14	4733.6
		STD	0125	-0158	3452	2780	0002995	0060	14434	666		0410	29.16	4735.6
		STD	0150	-0157	3458	2785	0002527	0067	14439	677		0492	29.17	4737.2
134		OBS	0150	-0157	3458	2785			14439	677		0492	29.17	4737.2
		STD	0200	-0160	3477	2801	0001040	0076	14449	618		0656	29.12	4740.5
134		OBS	0200	-0160	3477	2801			14449	618		0656	29.12	4740.5

REFERENCE	CTRY CODE	ID. NO.	SHIP CODE	LATITUDE	LONGITUDE	INCLIN	MARDEN SQUARE		STATION TIME (GMT)		YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S		WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES	NODC STATION NUMBER		
							16"	1'	MO	DAY		HR./10	CRUISE NO.		STATION NUMBER	DIR	HGT	PER	SEA				DIR	HGT
31	194	AK		72100S	170190E		570	20	03	03	148	1964		073	0517	02	00			0	X0	0		0073

WATER		WIND		BARO-METER	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANK. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		00	500	885	-078	-089	7		10

MISSING TIME & HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME AND MANT-181P	S & D DYN. M. X 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY ft/sec
		STD	0000	-0180	3403	2741	0006769	0000	14396			0000	28.76	4723.1
		OBS	0000	-0180	3403	2741			14396			0000	28.76	4723.1
150		OBS	0005	-0181	3402	2740			14396			0016	28.74	4723.1
		STD	0010	-0180	3403	2741	0006762	0007	14397			0033	28.76	4723.4
150		OBS	0010	-0180	3403	2741			14397			0033	28.76	4723.4
150		OBS	0015	-0176	3404	2742			14400			0049	28.83	4724.4
		STD	0020	-0176	3403	2741	0006765	0014	14401			0062	28.83	4724.7
150		OBS	0020	-0176	3403	2741			14401			0062	28.83	4724.7
		STD	0030	-0170	3405	2743	0006619	0020	14406			0098	28.94	4726.4
150		OBS	0030	-0170	3405	2743			14406			0098	28.94	4726.4
		STD	0050	-0155	3414	2749	0005956	0033	14417			0164	29.21	4730.0
150		OBS	0050	-0155	3414	2749			14417			0164	29.21	4730.0
		STD	0075	-0136	3423	2756	0005310	0047	14432			0216	29.55	4734.9
150		OBS	0075	-0136	3423	2756			14432			0216	29.55	4734.9
		STD	0100	-0097	3443	2771	0003905	0058	14457			0328	30.25	4743.1
150		OBS	0100	-0097	3443	2771			14457			0328	30.25	4743.1
		STD	0125	-0129	3456	2783	0002785	0067	14448			0410	29.68	4738.5
		STD	0150	-0151	3465	2791	0002011	0073	14443			0492	29.28	4738.5
150		OBS	0150	-0151	3465	2791			14443			0492	29.28	4738.5
		STD	0200	-0162	3474	2798	0001262	0061	14447			0656	29.08	4739.8
150		OBS	0200	-0162	3474	2798			14447			0656	29.08	4739.8

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TFRH AMT	NODC STATION NUMBER				
					10"	'	"		DAY	HR.			10"	CRUISE NO.	STATION NUMBER				DIR.	HGT	PER	SEA
31	194	AK	7204.75	170530E	570	20	03	03	175	1964		074	0329	02	00		0	X1	6	2		0074
				WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. COG.	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS									
				COLOR CODE	TRANSL (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB												
				25	502	888	-086	-096	7	08												

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANDALMT-210*	± Δ D DTN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pp - 0/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	S C C
		STD	0000	-0178	3407	2744	0006466	0000	14397	714		0000	28.80	4723.4	
178		OBS	0000	-0178	3407	2744			14397	714		0000	28.80	4723.4	
178		OBS	0005	-0180	3406	2744			14397	713		0016	28.76	4723.4	
		STD	0010	-0179	3406	2744	0006534	0006	14398	724		0033	28.78	4723.7	
178		OBS	0010	-0179	3406	2744			14398	724		0033	28.78	4723.7	
178		OBS	0015	-0176	3408	2745			14401	734		0049	28.83	4724.7	
		STD	0020	-0174	3408	2745	0006385	0013	14402	742		0062	28.87	4725.1	
178		OBS	0020	-0174	3408	2745			14402	742		0062	28.87	4725.1	
		STD	0030	-0171	3408	2745	0006386	0019	14406	723		0098	28.92	4726.4	
178		OBS	0030	-0171	3408	2745			14406	723		0098	28.92	4726.4	
		STD	0050	-0140	3421	2755	0005463	0031	14425	689		0164	29.48	4732.6	
178		OBS	0050	-0140	3421	2755			14425	689		0164	29.48	4732.6	
		STD	0075	-0095	3444	2772	0003845	0043	14454	663		0216	30.29	4742.1	
178		OBS	0075	-0095	3444	2772			14454	663		0216	30.29	4742.1	
		STD	0100	-0041	3452	2776	0003454	0052	14484	656		0328	31.26	4752.0	
178		OBS	0100	-0041	3452	2776			14484	656		0328	31.26	4752.0	
		STD	0125	-0057	3457	2781	0002995	0060	14481	603		0328	31.26	4752.0	
178		OBS	0125	-0057	3457	2781			14481	603		0328	31.26	4752.0	
		STD	0150	-0077	3461	2785	0002596	0067	14477	584		0452	30.61	4749.7	
178		OBS	0150	-0077	3461	2785			14477	584		0452	30.61	4749.7	
		STD	0200	-0131	3469	2793	0001753	0078	14461	649		0656	29.64	4744.4	
178		OBS	0200	-0131	3469	2793			14461	649		0656	29.64	4744.4	

REFERENCE CITY CODE	SHIP ID. NO.	LATITUDE ° ' 10"	LONGITUDE ° ' 10"	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TFRH AMT	NODC STATION NUMBER				
					10"	'	"		DAY	HR.			10"	CRUISE NO.	STATION NUMBER				DIR.	HGT	PER	SEA
31	194	AK	715855	171317E	570	11	03	03	192	1964		075	0389	02	00		0	X2	1	7		0075
				WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. COG.	NO. OBS. DEPTH'S	SPECIAL OBSERVATIONS									
				COLOR CODE	TRANSL (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB												
				23	512	888	-049	-057	7	06												

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANDALMT-210*	± Δ D DTN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pp - 0/1	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC	S C C
194		STD	0000	-0120	3433	2764	0004629	0000	14428			0000	29.84	4733.6	
		OBS	0000	-0120	3433	2764			14428			0000	29.84	4733.6	
194		OBS	0005	-0123	3433	2764			14428			0016	29.79	4733.6	
		STD	0010	-0122	3433	2764	0004619	0005	14429			0033	29.80	4733.9	
194		OBS	0010	-0122	3433	2764			14429			0033	29.80	4733.9	
194		OBS	0015	-0121	3433	2764			14430			0049	29.82	4731.2	
		STD	0020	-0122	3433	2764	0004614	0009	14430			0062	29.80	4731.2	
194		OBS	0020	-0122	3433	2764			14430			0062	29.80	4731.2	
		STD	0030	-0118	3433	2764	0004623	0014	14434			0098	29.88	4735.6	
194		OBS	0030	-0118	3433	2764			14434			0098	29.88	4735.6	
		STD	0050	-0109	3435	2765	0004492	0023	14442			0164	30.04	4738.2	
194		OBS	0050	-0109	3435	2765			14442			0164	30.04	4738.2	
		STD	0075	-0082	3441	2769	0004125	0034	14459			0216	30.52	4743.8	
194		OBS	0075	-0082	3441	2769			14459			0216	30.52	4743.8	
		STD	0100	-0071	3445	2772	0003856	0044	14469			0328	30.72	4747.0	
194		OBS	0100	-0071	3445	2772			14469			0328	30.72	4747.0	
		STD	0125	-0054	3448	2773	0003695	0053	14482			0452	31.03	4751.3	
194		OBS	0125	-0049	3452	2776	0003407	0062	14489			0452	31.12	4753.6	
		STD	0150	-0049	3452	2776			14489			0452	31.12	4753.6	
194		OBS	0150	-0049	3452	2776			14489			0452	31.12	4753.6	
		STD	0200	-0077	3463	2786	0002431	0077	14486			0656	30.61	4752.6	
194		OBS	0200	-0077	3463	2786			14486			0656	30.61	4752.6	

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE *	LONGITUDE * /10	MO 10	DAY 03	HR./10 03	YEAR 1964	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
									CRUISE NO.	STATION NUMBER			DIR.	HGT/PER	SEA				
31	194	AK	71350S	172033E	570	12	03	03	215	1964	076	0610	02	20	3	X2	4	8	0076

WATER		WIND		BARO- METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		19	S19	865	-039	-044	5		00

MESSNGR HR /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY=σ <sub>t</sub>	S Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - o/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY M/SEC	
		STD	0000	-0096	3440	2769	0004174	0000	14440			0000	30.27	4737.6	
216		OBS	0000	-0096	3440	2769			14440			0000	30.27	4737.6	
216		OBS	0005	-0101	3439	2768			14439			0000	30.18	4737.2	
		STD	0010	-0098	3439	2768	0004240	0004	14441			0033	30.24	4737.8	
216		OBS	0010	-0098	3439	2768			14441			0033	30.24	4737.8	
216		OBS	0015	-0098	3439	2768			14442			0049	30.24	4738.2	
		STD	0020	-0098	3439	2768	0004236	0008	14443			0062	30.24	4738.5	
216		OBS	0020	-0098	3439	2768			14443			0062	30.24	4738.5	
		STD	0030	-0097	3439	2768	0004236	0013	14445			0098	30.25	4739.2	
216		OBS	0030	-0097	3439	2768			14445			0098	30.25	4739.2	
		STD	0049	-0095	3440	2769			14449			0161	30.29	4740.5	
216		OBS	0050	-0094	3440	2769	0004148	0021	14450			0164	30.31	4740.8	
		STD	0074	-0075	3444	2771			14463			0243	30.65	4745.1	
216		OBS	0075	-0075	3444	2771	0003925	0031	14463			0246	30.65	4745.1	
		STD	0098	-0064	3445	2771			14472			0322	30.85	4748.0	
216		OBS	0098	-0064	3445	2771	0003867	0041	14473			0328	30.87	4748.3	
		STD	0100	-0063	3445	2772			14473			0410	31.05	4751.3	
216		OBS	0100	-0063	3445	2772	0003637	0050	14482			0486	31.21	4754.3	
		STD	0125	-0053	3449	2774			14491			0492	31.23	4754.3	
216		OBS	0125	-0053	3449	2774	0003405	0059	14491			0446	31.58	4763.8	
		STD	0148	-0044	3452	2776			14520						
216		OBS	0148	-0044	3452	2776									
		STD	0150	-0043	3452	2776									
216		OBS	0150	-0043	3452	2776									
		STD	0197	-0001	3461	2781									
216		OBS	0197	-0001	3461	2781									

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE *	LONGITUDE * /10	MO 10	DAY 03	HR./10 04	YEAR 1964	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SWPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES	NODC STATION NUMBER	
									CRUISE NO.	STATION NUMBER			DIR.	HGT/PER	SEA				
31	194	AK	71350S	173360E	570	13	03	04	000	1964	077	2012	02	19	4	X2	6	8	0077

WATER		WIND		BARO- METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		16	S20	837	-036	-043	5		00

MESSNGR HR /10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY=σ <sub>t</sub>	S Δ D DYN. M. x 10 <sup>2</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>4</sub> -P μg - o/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY M/SEC
		STD	0000	-0078	3440	2768	0004240	0000	14449			0000	30.60	4740.5
002		OBS	0000	-0078	3440	2768			14449			0000	30.60	4740.5
		OBS	0005	-0081	3440	2768			14448			0016	30.54	4750.6
		STD	0010	-0079	3441	2769	0004157	0004	14450			0033	30.58	4740.8
002		OBS	0010	-0079	3441	2769			14450			0033	30.58	4740.8
		OBS	0015	-0074	3442	2769			14453			0049	30.67	4741.8
		STD	0020	-0074	3442	2769	0004096	0008	14454			0062	30.67	4742.1
002		OBS	0020	-0074	3442	2769			14454			0062	30.67	4742.1
		STD	0030	-0070	3442	2769	0004109	0012	14458			0098	30.74	4743.4
002		OBS	0030	-0070	3442	2769			14458			0098	30.74	4743.4
		STD	0050	-0072	3442	2769	0004096	0021	14460			0164	30.70	4744.1
002		OBS	0050	-0072	3442	2769			14460			0164	30.70	4744.1
		STD	0075	-0069	3442	2769			14466			0246	30.76	4746.0
002		OBS	0075	-0069	3442	2769	0004101	0031	14466			0246	30.76	4746.0
		STD	0100	-0063	3448	2774			14473			0246	30.76	4746.0
002		OBS	0100	-0063	3448	2774	0003661	0041	14473			0328	30.87	4748.3
		STD	0125	-0044	3453	2777			14473			0328	30.87	4748.3
002		OBS	0125	-0044	3453	2777	0003359	0049	14487			0410	31.21	4752.9
		STD	0150	-0033	3457	2780			14497			0452	31.41	4756.2
002		OBS	0150	-0033	3457	2780	0003103	0057	14497			0452	31.41	4756.2
		STD	0200	-0032	3465	2786			14507			0656	31.42	4759.5
002		OBS	0200	-0032	3465	2786	0002491	0071	14507			0656	31.42	4759.5

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	BUREAU INDEX	MARSSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TIME (AMT)	NODC STATION NUMBER		
						10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	
31	194	AK	712805	175020E		570	15	03	04	039	1964		078	2195	02	19		3	X2		8		0078

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		02	516	777	-005	-011	7		00

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALOUS <sup>σ<sub>t</sub></sup>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC
		STD	0000	-0083	3437	2766	0004451	0000	14446			0000	30.51	4739.5
041		OBS	0000	-0083	3437	2766			14446			0000	30.51	4739.5
041		OBS	0005	-0086	3437	2766			14445			0016	30.45	4739.2
041		OBS	0009	-0086	3437	2766			14446			0030	30.45	4739.5
		STD	0010	-0086	3437	2766	0004437	0004	14446			0033	30.45	4739.5
041		OBS	0014	-0085	3437	2766			14447			0046	30.47	4739.8
041		OBS	0019	-0082	3438	2766			14450			0062	30.52	4740.8
		STD	0020	-0082	3438	2766	0004372	0009	14450			0066	30.52	4740.8
041		OBS	0028	-0082	3438	2766			14451			0092	30.52	4741.1
		STD	0030	-0082	3438	2766	0004368	0013	14452			0098	30.52	4741.4
041		OBS	0047	-0083	3438	2766			14454			0154	30.51	4742.1
		STD	0050	-0083	3438	2766	0004359	0022	14454			0164	30.51	4742.1
041		OBS	0070	-0081	3438	2766			14459			0230	30.54	4743.8
		STD	0075	-0081	3438	2767	0004342	0033	14459			0246	30.54	4743.8
041		OBS	0094	-0081	3439	2767			14463			0308	30.54	4745.1
		STD	0100	-0054	3444	2770	0004006	0043	14477			0328	31.03	4749.7
		STD	0125	0034	3461	2779	0003154	0052	14524			0410	32.61	4765.1
041		OBS	0141	0071	3468	2783			14544			0463	33.28	4771.6
		STD	0150	0085	3470	2784	0002782	0060	14552			0492	33.53	4774.3
041		OBS	0188	0089	3470	2783			14560			0517	33.60	4776.9

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE * 1/10	LONGITUDE * 1/10	BUREAU INDEX	MARSSEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SAMPL'S	WAVE OBSERVATIONS			WEA- THER CODE	CLOUD CODES TIME (AMT)	NODC STATION NUMBER		
						10'	1'	MO	DAY	HR./10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER				SEA	
31	194	AK	713305	176460E		570	16	03	04	120	1964		079	1006	02				X2	6	8		0079

WATER		WIND		BARO- METER (mb)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTH	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
		34	510	793	-006	-006	7		00

MESSNGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALOUS <sup>σ<sub>t</sub></sup>	Σ Δ D DYN. M. x 10 <sup>3</sup>	SOUND VELOCITY	O <sub>2</sub> ml/l	PO <sub>2</sub> -P pg - ml/l	DEPTH (Ft)	TEMP (°F)	SOUND VELOCITY FT/SEC
		STD	0000	-0057	3435	2763	0004705	0000	14458			0000	30.97	4743.4
123		OBS	0000	-0057	3435	2763			14458			0000	30.97	4743.4
123		OBS	0004	-0058	3435	2763			14458			0013	30.96	4743.4
123		OBS	0008	-0060	3435	2763			14458			0026	30.92	4743.4
		STD	0010	-0058	3435	2763	0004698	0005	14459			0033	30.96	4743.8
123		OBS	0013	-0057	3435	2763			14460			0043	30.97	4744.1
123		OBS	0017	-0058	3435	2763			14460			0056	30.96	4744.1
		STD	0020	-0057	3435	2763	0004700	0009	14461			0066	30.97	4744.4
123		OBS	0025	-0056	3435	2763			14462			0082	30.99	4744.7
		STD	0030	-0055	3435	2763	0004681	0014	14463			0098	31.01	4745.1
123		OBS	0042	-0054	3436	2764			14466			0138	31.03	4746.0
		STD	0050	-0050	3437	2764	0004592	0023	14469			0164	31.10	4747.0
123		OBS	0064	-0042	3438	2765			14476			0210	31.24	4749.3
		STD	0075	-0035	3441	2767	0004325	0035	14481			0246	31.37	4751.0
123		OBS	0085	-0029	3444	2769			14486			0279	31.48	4752.6
		STD	0100	-0023	3448	2772	0003845	0045	14492			0328	31.59	4754.6
		STD	0125	-0013	3454	2776	0003434	0054	14501			0410	31.77	4757.5
123		OBS	0127	-0012	3455	2777			14502			0430	31.78	4757.9
		STD	0150	0020	3461	2780	0003075	0062	14522			0492	32.36	4764.4
123		OBS	0170	0062	3466	2782			14545			0558	33.42	4772.0



## DOCUMENT CONTROL DATA - R&amp;D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

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		2b. GROUP	
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d.			
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13. ABSTRACT Results of oceanographic research during the U.S. Navy operations in support of DEEP FREEZE 63 and 64, 1962-63 and 1963-64, are presented. Oceanographic observations were conducted aboard USS EDISTO (AGB-2) during DEEP FREEZE 63 and USS ATKA (AGB-3) during DEEP FREEZE 64. Emphasis was focused on the distribution of water masses in the Ross Sea and the identifying physical characteristics of each type. NAVOCEANO personnel obtained data at 122 stations during DF-63 and at 79 stas. during DF-64. Included in these totals are 23 annual ice forecasting stations which were reoccupied both years along the Victoria Land coast and in McMurdo Sound to determine sea ice potential by the heat budget reversal. The stations occupied on DF-63 were in the western half of the Ross Sea and most of those occupied on DF-64 were in the eastern half. Station data include vertical distribution of observed temperatures, salinities, dissolved oxygens, and phosphate-phosphorus and machine computed densities, specific volume anomalies, dynamic height anomalies, and sound velocities. Selected cross-section profiles of observed physical and chemical properties are presented to illustrate the water masses in the Ross Sea. Water types are defined and discussed. From the data presented, it is evident that warmer water from oceanic depths moves in over the continental shelf and is forced to the surface causing the central Ross Sea to become ice free earlier than surrounding areas. Additionally, there is evidence of the formation of colder, more dense, Shelf Water during the austral winter which acts as a barrier to this warmer water intrusion into the south-southwestern extremities of the sea.			

14.	KEY WORDS	LINK A		LINK B		LINK C	
		ROLE	WT	ROLE	WT	ROLE	WT
	Antarctic - oceanography Antarctic - water masses USS EDISTO - DEEP FREEZE 63 oceanographic cruise USS ATKA - DEEP FREEZE 64 oceanographic cruise						

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U.S. Naval Oceanographic Office  
OPERATIONS DEEP FREEZE 63 AND 64,  
SUMMER OCEANOGRAPHIC FEATURES OF THE  
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