Title

Physical, Chemical, Current Measurement and Biological Data Swan Song Expedition 21 August – 1 December 1961

Author

Scripps Institution of Oceanography

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SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL, CHEMICAL,

CURRENT MEASUREMENT AND BIOLOGICAL DATA

Swan Song Expedition

21 August - 1 December 1961

Sponsored by

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W. A. Nierenberg, Director

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INTRODUCTION

Work on the last three legs of the Swan Song Expedition (5 September-1 December 1961) aboard the RV Argo was concentrated on the study of the Cromwell Current. The specific purpose was to determine how the Cromwell Current broke down as it travelled eastward toward and beyond the Galapagos Islands. On the last two legs of the expedition a limited biological program was conducted by members of the Inter-American Tropical Tuna Commission (IATTC). This report includes most of the pertinent data concerned with the Cromwell Current study, namely some 91 hydrographic stations and 65 current measuring stations as well as most of the data from the 29 biological stations and 42 primary productivity observations (the latter group of which were made while the ship was underway). Results from some of these data have been reported by Forsbergh and Joseph (1964) and Knauss (in press).

Certain data collected in Swan Song are not reported here. The first leg of the cruise (14 August-29 August) was concerned with the collection of very large water samples for silicon-32 analysis. The work was under the direction of Dr. David R. Schink and the results have been reported elsewhere (Schink, 1962). Bathymetric data on the ship's Precision Depth Recorder and magnetic data measured by a total field proton magnetometer towed behind the ship are not reported here either.

The itinerary of Swan Song was:

14 August 1961	departed San Diego
29 August	arrived Honolulu
5 September	departed Honolulu
11 October	arrived Acapulco
15 October	departed Acapulco
10 November	arrived Talara
13 November	departed Talara
1 December	arrived San Diego

At the conclusion of Leg I the RV Argo was on display at the Tenth Pacific Science Congress in Honolulu, Hawaii, 29 August-5 September. Upon leaving Hawaii she worked two sections, the first along 140°W and from 5°N to 5°S and the second along 118°W from 5°N to 4°S. On both sections hydrographic stations to 1200 meters were taken at one degree intervals poleward of three degrees and at half degree intervals equatorward of three degrees. Buoys were anchored and current measurements made at five locations (2°N, 1°N, 0°, 1°S, 2°S) on both sections. Most buoys were

revisited and often additional hydrographic stations were made at these times (Fig. 1). At the conclusion of Leg II the Argo put in to Acapulco, Mexico, 11-15 October. On Leg III she occupied two more sections, the first at 96°W and the second at 87°W both from 5°N to 5°S. The biological program of the IATTC began on this leg. The distribution of hydrographic stations and anchored buoys was similar to that on the earlier sections (Fig. 1). In addition hydrographic measurements were made along the equator at two stations; 94°02'W and 92°16'W. Current measurements were made at the latter station. The ship stopped at Tagus Cove, Isabela Island in the Galapagos for a 24-hour period beginning the afternoon of October 28.

At the conclusion of Leg III the Argo stopped at Talara, Peru, for the period 10-13 November. After leaving Talara, a series of hydrographic current measuring and biological stations was made north, south and west of the Galapagos (Fig. 2). Work was completed on 23 November and the ship returned to San Diego on 1 December. Support from outside the University of California for this expedition was provided by the Office of Naval Research, the National Science Foundation and the Inter-American Tropical Tuna Commission.

Personnel: The scientific leader of the expedition was John A. Knauss. The master of the RV Argo was Barnes Collinson. Members of the scientific party for the three legs were as follows:

	Participation
Allen, William, Jr., SIO*	II, III, IV
Bronner, Finn E., General Electric Co.	II, III, IV
Corrigan, Donald J., SIO	II
Frey, James M., SIO	II, III, IV
Forsbergh, Eric B., IATTC**	III, IV
Gilley, E. Gene, SIO	II, III, IV
Gomez, Tomas, IATTC	III
Joseph, James, IATTC	III, IV
Kiwala, Robert S., SIO	II, III, IV
Knauss, John A., SIO	II, III, IV
Lawson, Jan B., SIO	II, III, IV
Murty, C. Balarama, Andrha University, India	II, III, IV
Psaropulos, Chris T., IATTC	II, III, IV
Vicente, Belisario, Servicio de Hidrografía Naval, Argentina	III, IV

*Scripps Institution of Oceanography
**Inter-American Tropical Tuna Commission

Non-photosynthetic uptake of carbon was measured with dark bottles for surface samples and deepest samples. Surface production was corrected by subtracting surface dark-fixation. Subsurface production was corrected by subtracting the mean of surface and deepest dark-fixation values, since these did not differ greatly.

The procedures and equipment used for measuring the radioactivity of the samples and for standardization of the radiocarbon solution were described in Scripps Inst. Oceanogr. (1961). Before counting, all phytoplankton samples were exposed to vapor of hydrochloric acid for a period of 5 minutes in order to remove any activity due to inorganic carbonate. Two standardizations were performed before the cruise, during August 1961: the mean activity of the aliquots used was 3.5×10^6 counts per minute per milliliter of solution (c/min/ml) with a coefficient of variation of ±8.9 per cent. Two additional standardizations were performed after the cruise, in February 1962: the mean activity of the aliquots used was 2.6×10^6 c/min/ml with a coefficient of variation of ±8.5 per cent. This difference is unexplained if it is assumed that the activity of the solution in the ampoules did not change appreciably in such a short time and it points to the necessity of using more exact methods of standardization such as that of Jitts and Scott (1961). The value used here to calculate the carbon uptake of the phytoplankton is the mean of all the aliquots used for all standardizations: 3.0×10^6 c/min/ml, with a coefficient of variation of ±17 per cent. Precipitate activity was counted to 10,240 counts and the standard error for the counting rate was ±1.0 per cent (given by $\frac{100}{\sqrt{N}}$). Sample activity was counted to 2,560 counts and the standard error was ±2.0 per cent for the counting rate.

Values are reported to two significant figures as milligrams of carbon per cubic meter of water per day (mg C/m^3/day), and as milligrams of carbon per square meter of sea surface per day (mg C/m^2/day) to the depth of 0.7 per cent of surface light.

Temperatures of the water flowing through the incubators at the beginning and end of each experiment are given as degrees centigrade (°C). They have been rounded off to whole degrees.

Zooplankton

Two types of hauls were made: standard oblique meter-net hauls and simultaneous horizontal closing-net hauls using enlarged Clarke-Bumpus samplers (Paquette, Scott and Sund, 1961). Three Clarke-Bumpus samplers were positioned above, in and below the thermocline. The procedures used throughout the cruise for zooplankton net hauls were the same as those described in Scripps Inst. Oceanogr. (1960).

HYDROGRAPHIC STATIONS

Except for a few 200 meter stations all stations were to 1200 meters. All casts had 21 Nansen bottles and paired protected reversing thermometers. In addition eleven of the bottles were equipped with unprotected thermometers. It is believed that the temperature data are accurate to ±0.017°C (Wooster and Taft, 1958), and that depth is accurately determined to ±0.5%.

All Nansen bottles were manufactured at the Scripps Institution and were internally coated with epoxy resin to minimize problems of contamination or oxygen uptake.

Salinity determinations were made in duplicate with a UW-ONL conductivity salinometer. When this instrument is functioning properly its precision is better than ±0.005‰. The instrument aboard the Argo developed trouble part way through the cruise which was never completely rectified. By frequent standardization with Copenhagen water, however, we are confident that most of the salinity data are known to ±0.005‰. For those data of which we are not certain, salinities are reported to the nearest hundredth rather than the nearest thousandth. In all cases we believe the salinity is known to at least ±0.01‰.

Dissolved oxygen was determined by the Winkler method, single determinations being made routinely. Precision is estimated as ±0.05 ml/L.

Interpolation of the observed properties to standard depths was done graphically by the Data Collection and Processing Group, Scripps Institution of Oceanography, from a method developed by Hans Klein.[1/] Density and dynamic heights at standard depths were machine calculated.

Current Measurements

Observations were made by lowering a modified Roberts meter and a depth gauge from the ship. The meter records on deck the speed and direction of the water. The movement of the ship over the ground was determined by measuring its position by radar from a "taut wire" anchored buoy. True velocity at any depth is determined by vector subtraction of the ship's velocity from the velocity recorded by the meter. The method has been described in some detail by Knauss (1959, 1960).

[1/] Klein, Hans T. A new technique for processing physical oceanographic data. MS.

In an attempt to make the ship velocity a constant for any given set of observations, the ship steamed slowly through the water during the period of measurement. By this technique the crab-like movement a ship usually exhibits while lying-to was eliminated. The current meter was lowered to a certain depth, an observation made, and then was lowered to the next depth. An observation was averaged over a period of two to seven minutes. Measurements were made at approximately 20 levels in the top 350 meters. After the instrument reached its greatest depth, the measurements were repeated as the meter was brought to the surface. Approximately three hours was required to complete a set of observations.

The designation "b" after a direction reading means that the direction observation is questionable, usually--but not always--because the direction values seem to oscillate more than we would like to consider in a "valid" observation.

Except for a few stations where there was indication that the buoy was dragging its anchor, it is believed that all observations are at least as reliable as those discussed by Knauss (1960) i.e. ±15 cm/sec. The depth was measured by a Vibratron kept at a constant temperature by a thermostatically controlled heater and was measured to an accuracy of ±1 meter.

Surface currents were observed with parachute drogues (Volkmann, Knauss and Vine, 1956). The drogue gives the average current on the top five meters, designated "SD" in the table. The drogues were equipped with small wire mesh radar reflectors and surface velocity was determined by radar measurements of the movement of the drogue relative to the anchored buoy. Surface current measurements represent a velocity averaged over a period of at least one hour.

Biological Program

The data fall into three classes with respect to time and position:

a. Data collected on station
   Chlorophylls a, b and c in the euphotic zone
   Astacin and non-astacin type carotenoids in the euphotic zone
   Phytoplankton productivity in the euphotic zone
   Zooplankton volume

b. Data collected between stations
   Chlorophylls a, b and c at the surface
   Astacin and non-astacin type carotenoids at the surface
   Phytoplankton productivity at the surface

c. Continuously recorded data
Incident radiation

Some of the results have been discussed by Forsbergh and Joseph (1964).

METHODS

Incident Radiation

Instruments and methods used were identical to those described by Holmes (1958). The pyrheliometer was mounted at the top of the deck crane free of any shadows cast by the superstructure of the ship. The recorder was kept operating throughout Legs III and IV. Total radiation is reported as gram calories per square centimeter per day (g cal/cm^2/day) and as gram calories per square centimeter (g cal/cm^2) for the duration of the photosynthesis experiments.

Pigment Analysis

Concentrations of chlorophylls a, b, c, astacin and non-astacin type carotenoids at the surface were measured daily at sunrise, LAN and sunset. On selected stations pigment concentrations were measured at the same depths as was primary production. Surface water was collected with a plastic bucket while the ship was underway. Subsurface water was collected with Van Dorn plastic samplers. Water samples were filtered through HA Millipore filters (pore size: 0.45 microns). The extract was prepared by the method of Creitz and Richards (1955) and the pigment concentrations were determined by the method of Richards with Thompson (1952). The calculations were performed on the CDC 1604 digital computor at the Scripps Institution of Oceanography using a program of Robert W. Holmes. Values are reported to two significant figures as milligrams per cubic meter of water (mg/m^3) for chlorophylls a, b and c and as Richards milli-specific plant units (mSPU) for astacin and non-astacin type carotenoids.

The ratio of chlorophyll c to chlorophyll a (c/a) is also reported. Strickland (1960) has pointed out that these ratios may reflect changes in the taxonomic composition of the plant populations sampled.

Primary Production

The rate of carbon fixation was measured using the C^{14} method of Steemann-Nielsen (1952). A plastic bucket was used to take surface samples and plastic Van Dorn samplers were used to take subsurface samples. Samples were filtered through

zooplankton netting with apertures 0.5 x 0.5 mm, in order to remove most of the zooplankters. Glass-stoppered bottles of 250 ml. were used in which the samples were inoculated by the use of a syringe permanently set to deliver one milliliter of radiocarbon solution. All experiments ran one-half day: from sunrise to local apparent noon (LAN) or from LAN to sunset.

Between-stations surface productivity was measured using a tank incubator exposed to sunlight on deck, which consisted of a clear plastic tank, open at the top, in which the bottles were immersed in an upright position in running sea water. It was also used to incubate dark bottles. Water-column productivity was measured using two tubular incubators essentially the same as those described in Scripps Inst. Oceanogr. (1961). Each tubular incubator consisted of seven cells, holding one bottle each, with light transmission values of 88, 47, 31, 10, 6, 2.7 and 0.7 per cent (the 88 per cent cell was for surface water and had no light filter; the transmission loss was caused by the double layer of plastic from which the incubator was built). These values were determined by the availability of the manufactured screens used as light filters and were measured with a light meter in each cell of the incubator.

Time did not permit the use of a submarine photometer, so a Secchi disk was used to measure light absorption in the water because of the speed of the measurement. Poole and Atkins (1929) found that the disk disappeared from view at a depth (D) corresponding to 16 per cent of surface light. Harvey (1955) and Doty (1961) have also used this value. For simplicity, the absorption coefficient (k) was considered constant throughout the water column; a straight line drawn on semi-log paper through surface light (100 per cent) at zero meters and through 16 per cent surface light at D meters represented the light-depth curve from which depths corresponding to transmission values of the tubular incubators could be read. This quick and rough method was considered sufficiently accurate in measuring light distribution to permit a reliable measure of water column productivity.

Water samples were taken at the indicated depths and incubated at the corresponding light levels in one incubator simulating an in situ experiment. No time was available to conduct true in situ experiments but earlier experiments with similar incubators suggest that results of simulated experiments are representative of actual in situ measurements (Scripps Inst. Oceanogr., 1961).

In the other incubator surface water was exposed to the same light values, simulating a situation in which surface phytoplankton were evenly distributed throughout the euphotic zone. Again, the earlier experiments suggest that productivity of surface water in the incubator is representative of the productivity of surface water placed at the corresponding depths in the ocean.

Wet volumes were measured by displacement and the plankton was divided into two components: organisms smaller than five centimeters in length and those larger than five centimeters. The concentrations of zooplankton are reported as milliliters per 1000 cubic meters of water (ml/1000 m^3) and were calculated to two significant figures. The method of calculation is described by the South Pacific Fishery Investigations of the U. S. Fish and Wildlife Service (1953).

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EXPLANATION OF TABLES AND SYMBOLS

Primary production tables: depths given indicate depths of sampling of subsurface samples; their only relation to surface samples is to indicate the depths at which corresponding light values occur.

LAN	Local apparent noon
Z	Depth
D	Depth at which Secchi disc disappeared
k	Vertical absorption coefficient, $k = 1.7/D$ (Poole and Atkins, 1929)
I_S	Submarine light at the surface
I_O	Incident radiation
-	No observation attempted, or no computation attempted, or sample lost
d	Values doubtful
r	Value rejected as questionable

FOOTNOTES

Extrapolated values and values interpolated between remote observations are entered within parentheses. A hyphen is used to indicate a missing observed value. The time is the time of messenger release. When more than one cast was made on a station, messenger times and wire angles are given in the order of increasing depth. A line is left blank between the observed data of each cast.

On stations where more than one cast is lowered, the various property curves may not agree perfectly. This discrepancy may be caused by changes in geographical position, real property changes with time, slight error in measurement, or a combination of these factors.

To indicate a premature or a delayed reversal of the water-sampling device which results in certain depth and property errors, the following notation is used.

p: pretrip or posttrip.

Values which are not drawn through because they seem to be in error without apparent reason are indicated by the following notation.

u: uncertain value (value may be correct; occasionally it can influence the drawing of the property curve).

FORMAT

These data are typed in the format of the University of California Press publication, Oceanic Observations of the Pacific.

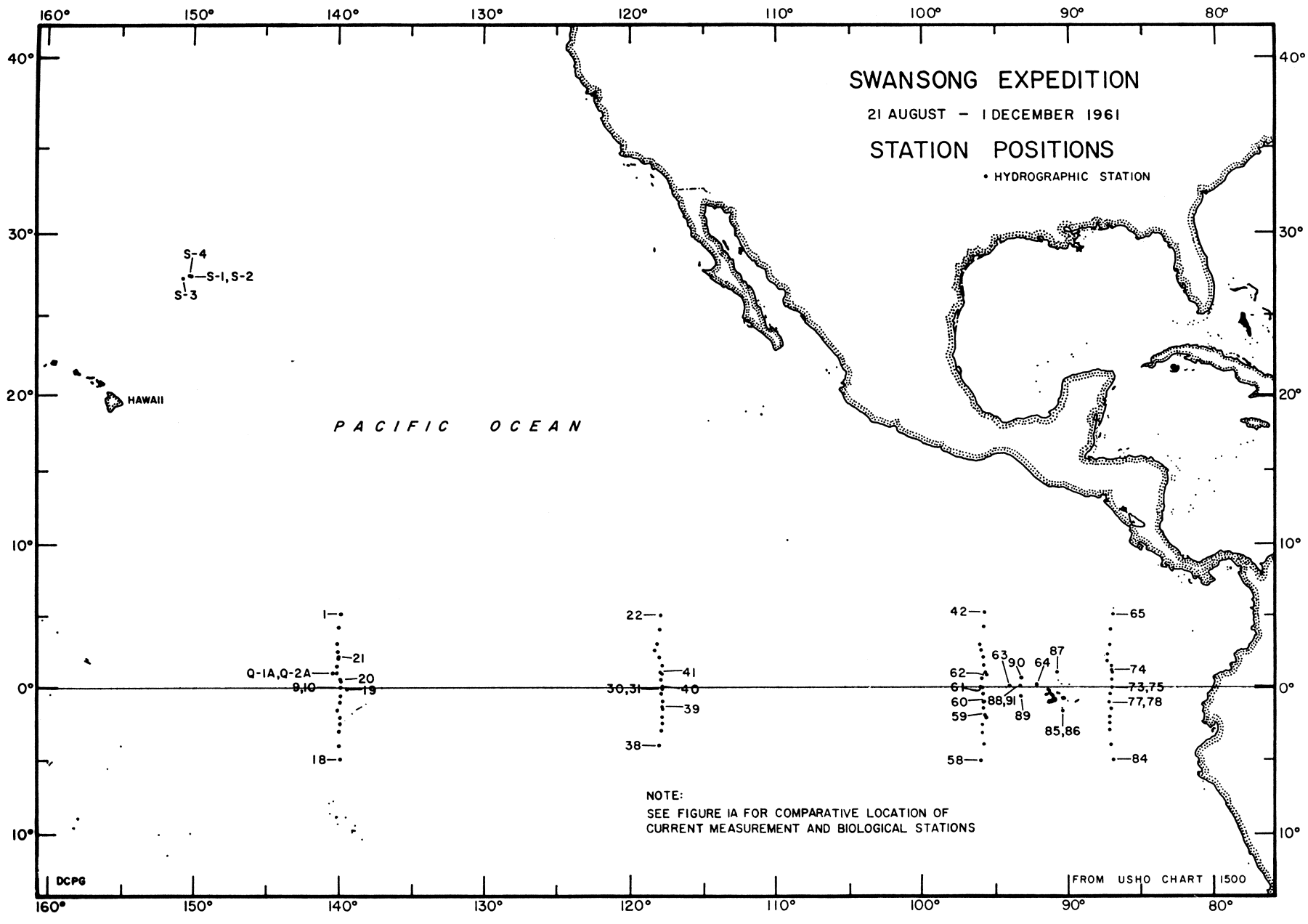
SWANSONG EXPEDITION
21 AUGUST – 1 DECEMBER 1961
STATION POSITIONS
• HYDROGRAPHIC STATION
PACIFIC OCEAN
HAWAII
S-4
S-1, S-2
S-3
Q-1A, Q-2A
9,10
1
21
20
19
18
22
41
40
30,31
39
38
42
63
90
64
87
62
61
60
88,91
59
89
85,86
58
65
74
73,75
77,78
84
NOTE:
SEE FIGURE IA FOR COMPARATIVE LOCATION OF
CURRENT MEASUREMENT AND BIOLOGICAL STATIONS
DCPG
FROM USHO CHART 1500
160°
150°
140°
130°
120°
110°
100°
90°
80°
40°
30°
20°
10°
0°

FIGURE 1

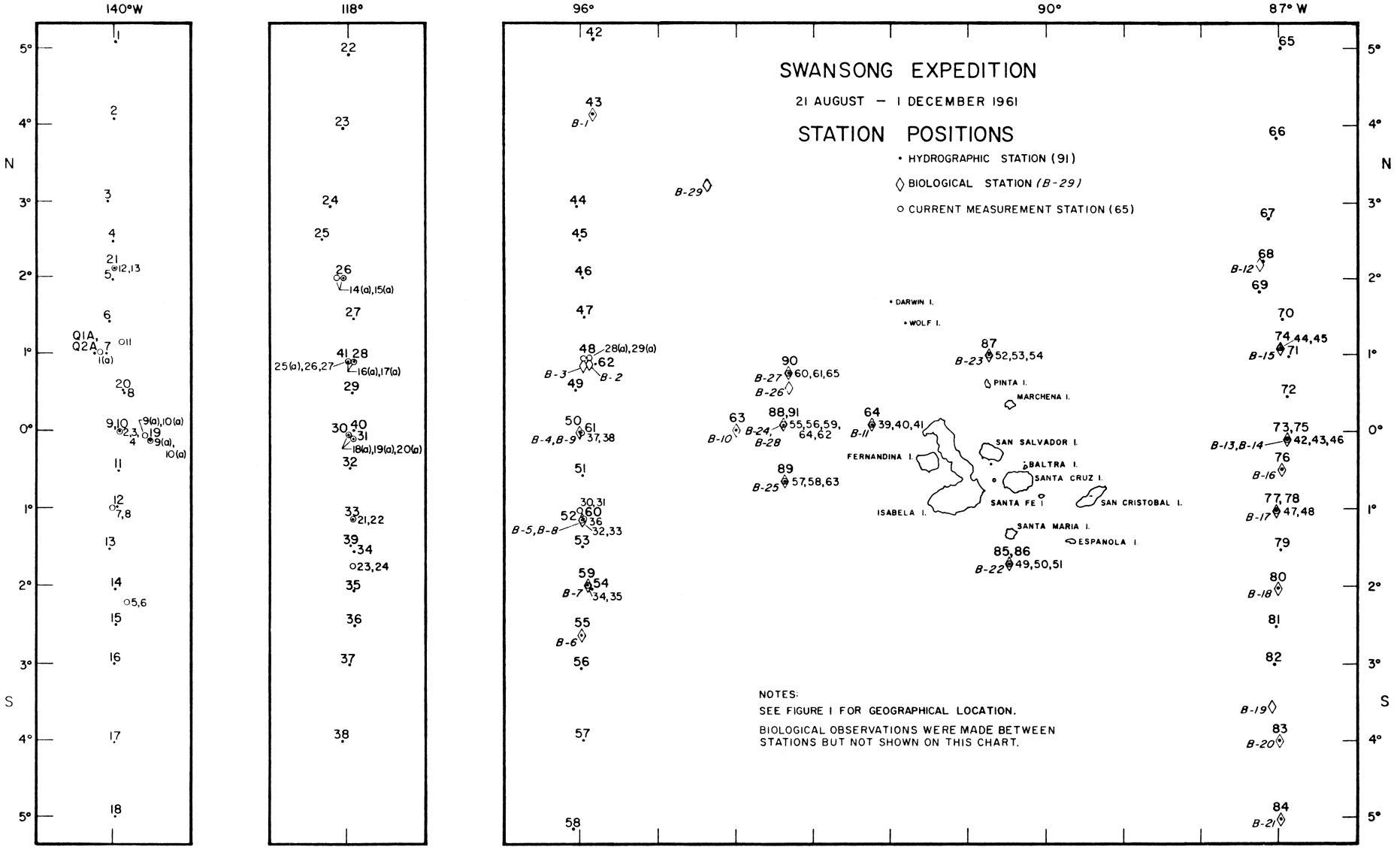
140°W
118°
96°
90°
87° W
N
S
SWANSONG EXPEDITION
21 AUGUST – 1 DECEMBER 1961
STATION POSITIONS
• HYDROGRAPHIC STATION (91)
◊ BIOLOGICAL STATION (B-29)
○ CURRENT MEASUREMENT STATION (65)
DARWIN I.
WOLF I.
PINTA I.
MARCHENA I.
SAN SALVADOR I.
FERNANDINA I.
BALTRA I.
SANTA CRUZ I.
SANTA FE I.
SAN CRISTOBAL I.
ISABELA I.
SANTA MARIA I.
ESPANOLA I.
NOTES:
SEE FIGURE 1 FOR GEOGRAPHICAL LOCATION.
BIOLOGICAL OBSERVATIONS WERE MADE BETWEEN STATIONS BUT NOT SHOWN ON THIS CHART.

FIGURE 1A

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
ARGO; September 10, 1961; 1410 GCT; 5°05'N, 139°58'W; sounding, 2380 fm; wind, 160°, force 4; weather, partly cloudy; sea, very rough; wire angle, 08°.											1
10	25.49	35.019	4.31	466	0	25.5	(35.02)		(23.22)	(466)	(0.00)
31	25.43	35.013	4.43	464	10	25.49	35.02	4.31	23.23	466	0.05
57	24.82	34.983	4.45	449	20	25.47	35.02	4.34	23.23	465	0.09
81	24.66	34.962	4.40	446	30	25.44	35.01	4.41	23.24	465	0.14
101	24.56	34.956	4.31	443	50	24.97	34.99	4.45	23.36	453	0.23
120	24.54	34.958	4.28	443	75	24.69	34.97	4.42	23.43	446	0.34
145	24.24	35.109	3.79	423	100	24.57	34.96	4.33	23.46	443	0.46
165	23.96	35.107	3.86	415	125	24.49	34.96	4.25	23.49	441	0.57
194	16.81	34.647	2.32	267	150	24.17	35.11	3.79	23.69	421	0.68
219	11.56	34.596	1.95	166	200	14.70	34.61	2.07	25.76	225	0.84
243	10.36	34.628	1.71	143	250	10.23	34.65	1.48	26.66	139	0.94
267	10.05	34.695	0.69	133	300	9.51	34.69	1.17	26.81	124	1.00
305	9.45	34.684	1.22	124	400	8.71	34.66	1.21	26.92	114	1.13
323	9.30	34.678	1.09	122	500	7.96	34.62	0.90	27.00	106	1.25
379	8.83	34.662	1.22	116	600	7.20	34.59	0.68	27.09	98	1.36
426	8.53	34.658	1.14	112	700	6.40	34.59	0.85	27.20	88	1.46
637	6.93	34.586	0.63	95	800	5.68	34.59	1.14	27.29	79	1.56
853	5.34	34.587	1.23	75	1000	4.60	34.58	1.25	27.41	68	1.73
1071	4.30	34.577	1.26	65	1200	3.88	34.59	1.37	27.49	60	1.87
1285	3.64	34.593	1.47	57							
ARGO; September 10, 1961; 2124 GCT; 4°05'N, 140°00'W; sounding, 2350 fm; wind, 140°, force 4; weather, partly cloudy; sea, very rough; wire angle, 15°.											2
9	25.68	34.967	4.73	475	0	25.8	(34.97)		(23.09)	(478)	(0.00)
28	25.49	34.968	4.76	469	10	25.67	34.97	4.74	23.13	475	0.05
53	24.74	35.012	4.61	444	20	25.57	34.97	4.75	23.17	472	0.10
77	24.71	35.009	4.66	444	30	25.46	34.97	4.75	23.20	468	0.14
96	24.56	35.061	4.61	436	50	24.97	35.00	4.66	23.37	452	0.23
115	24.42	35.097	4.51	429	75	24.72	35.01	4.65	23.45	444	0.35
139	24.04	35.115	4.16	417	100	24.52	35.07	4.59	23.56	434	0.46
159	23.97	35.111	4.24	415	125	24.34	35.10	4.41	23.64	427	0.57
185	17.76	34.714	2.72	284	150	23.98	35.11	4.22	23.75	416	0.67
208	12.75	34.576	2.11	189	200	14.48	34.61	2.27	25.80	220	0.83
230	11.19	34.585	2.01	160	250	10.57	34.66	2.02	26.61	144	0.93
252	10.50	34.665	2.02	142	300	9.86	34.68	1.84	26.75	131	1.00
285	9.96	34.677	2.15	133	400	9.27	34.69	1.46	26.85	121	1.13
302	9.84	34.685	1.82	130	500	8.30	34.64	0.87	26.97	110	1.26
353	9.56	34.701	1.69	124	600	7.27	34.60	0.63	27.09	98	1.37
396	9.30	34.690	1.49	121	700	6.46	34.58	0.92	27.18	89	1.47
592	7.34	34.599	0.62	99	800	5.75	34.56	1.24	27.26	82	1.57
795	5.78	34.559	1.22	83	1000	4.68	34.57	1.41	27.39	69	1.74
1005	4.66	34.570	1.42	69	1200	3.86	34.59	1.64	27.50	60	1.89
1208	3.83	34.589	1.66	59							

SIO

SWAN SONG

	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
3	ARGO; September 11, 1961; 0650 GCT; 3°00'N, 140°05'W; sounding, 2308 fm; wind, 120°, force 4; weather, partly cloudy; sea, moderate; wire angle, 24°.											
	10	24.92	34.720	4.61	471	0	24.9	(34.72)		(23.18)	(470)	(0.00)
	28	24.87	34.763	4.58	466	10	24.92	34.72	4.61	23.18	471	0.05
	51	24.90	34.972	4.41	452	20	24.89	34.73	4.60	23.19	469	0.09
	73	24.62	35.038	4.36	439	30	24.87	34.78	4.57	23.24	465	0.14
	91	24.56	35.053	4.23	436	50	24.90	34.96	4.42	23.36	453	0.23
	108	22.96	35.050	3.62	392	75	24.61	35.04	4.34	23.51	439	0.35
	130	20.51	34.976	2.98	332	100	24.30	35.06	4.08	23.62	428	0.45
	147	17.29	34.819	2.04	266	125	21.86	35.02	3.32	24.29	364	0.55
	172	13.06	34.761	1.88	181	150	15.27	34.81	1.90	25.78	222	0.63
	192	12.12	34.737	2.03	165	200	12.04	34.77	1.87	26.42	162	0.73
	212	11.98	34.837	1.48	156	250	11.70	34.84	1.05	26.54	150	0.81
	233	11.84	34.858	1.22	151	300	11.10	34.81	1.28	26.63	142	0.88
	264	11.54	34.831	0.89	148	400	9.90	34.74	1.28	26.79	127	1.03
	280	11.30	34.827	1.05	144	500	8.67	34.67	0.84	26.93	113	1.16
	326	10.84	34.785	1.43	139	600	7.31	34.61	0.92	27.09	98	1.27
	364	10.36	34.764	1.44	133	700	6.14	34.57	1.30	27.22	86	1.37
	541	8.12	34.633	0.72	108	800	5.44	34.57	1.46	27.30	78	1.46
	722	5.95	34.568	1.36	84	1000	4.52	34.57	1.66	27.41	68	1.63
	908	4.90	34.569	1.56	72							
	1097	4.16	34.581	1.75	63							
4	ARGO; September 11, 1961; 0928 GCT; 2°28'N, 140°01'W; sounding, 2315 fm; wind, 120°, force 5; weather, partly cloudy; sea, rough; wire angle, 15°.											
	10	24.92	34.677	4.68	474	0	24.9	(34.68)		(23.15)	(473)	(0.00)
	34	24.94	34.676	4.64	474	10	24.92	34.68	4.68	23.15	474	0.05
	58	24.87	34.726	4.55	469	20	24.93	34.68	4.63	23.14	474	0.09
	87	24.68	35.031	4.37	441	30	24.94	34.68	4.63	23.14	474	0.14
	105	23.06	35.017	3.78	397	50	24.89	34.70	4.59	23.17	471	0.24
	124	21.08	34.821	3.08	358	75	24.69	34.87	4.45	23.36	453	0.35
	151	16.16	34.824	1.70	240	100	24.10	35.02	4.24	23.65	426	0.46
	170	13.13	34.918	1.03	171	125	21.03	34.82	3.05	24.37	357	0.56
	200	12.73	34.891	1.18	165	150	16.30	34.82	1.73	25.56	244	0.64
	222	12.34	34.878	0.92	159	200	12.73	34.89	1.18	26.38	165	0.74
	242	12.04	34.857	0.82	155	250	11.95	34.85	0.86	26.50	154	0.83
	271	11.80	34.846	0.95	152	300	11.43	34.82	0.97	26.58	147	0.91
	292	11.56	34.820	0.94	149	400	10.11	34.74	1.52	26.75	130	1.05
	319	11.08	34.796	1.20	143	500	8.60	34.66	1.02	26.94	113	1.18
	369	10.50	34.76	1.67	135	600	7.10	34.60	0.77	27.11	96	1.30
	421	9.84	34.721	1.38	127	700	6.07	34.58	1.33	27.23	85	1.40
	609	6.98	34.594	0.77	95	800	5.29	34.57	1.68	27.32	76	1.49
	808	5.24	34.567	1.70	76	1000	4.48	34.58	1.71	27.42	67	1.65
	1007	4.46	34.58	1.71	66	1200	3.78	34.59	1.92	27.50	59	1.79
	1219	3.73	34.594	1.95	58							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
ARGO; September 11, 1961; 1454 GCT; 1°58'N, 140°01'W; sounding, 2330 fm; wind, 120°, force 4; weather, partly cloudy; sea, rough; wire angle, 10°.											5
11	24.72	34.672	4.69	468	0	24.8	(34.67)		(23.17)	(471)	(0.00)
35	24.71	34.674	4.69	468	10	24.8	(34.67)		(23.17)	(471)	(0.05)
60	24.72	34.716	4.69	465	20	24.72	34.67	4.69	23.20	468	0.09
89	24.24	34.953	3.67	434	30	24.71	34.67	4.69	23.20	468	0.14
109	21.51	34.998	3.40	356	50	24.71	34.69	4.69	23.22	467	0.23
128	20.53	34.970	3.12	333	75	24.41	34.83	4.22	23.41	448	0.35
156	14.53	34.868	1.44	202	100	21.90	35.00	3.43	24.27	367	0.45
175	13.05	34.910	1.13	170	125	20.83	34.98	3.24	24.54	340	0.54
207	12.32	34.897	0.85	157	150	16.88	34.92	1.98	25.50	249	0.62
229	12.18	34.881	0.94	156	200	12.41	34.90	0.85	26.45	159	0.72
250	12.04	34.872	0.84	154	250	12.04	34.87	0.84	26.50	154	0.80
281	11.81	34.858	0.61	151	300	11.62	34.84	0.55	26.56	149	0.88
303	11.58	34.836	0.55	148	400	9.89	34.71	1.63	26.76	129	1.03
332	11.22	34.806	0.80	144	500	8.43	34.64	1.30	26.95	112	1.16
383	10.21	34.731	1.63	133	600	7.23	34.60	1.21	27.09	98	1.27
438	9.28	34.682	1.49	121	700	6.29	34.57	1.44	27.20	88	1.37
638	6.84	34.589	1.22	94	800	5.54	34.55	1.84	27.28	81	1.47
851	5.21	34.553	1.90	77	1000	4.57	34.56	1.83	27.40	69	1.64
1064	4.38	34.567	1.81	67	1200	3.87	34.59	1.84	27.50	60	1.79
1287	3.54	34.598	1.94	56							
ARGO; September 11, 1961; 1911 GCT; 1°25'N, 140°03'W; sounding, 2373 fm; wind, 120°, force 4; weather, partly cloudy; sea, rough; wire angle, 13°.											6
11	24.54	34.658	4.63	464	0	24.6	(34.66)		(23.23)	(466)	(0.00)
35	24.46	34.877	4.40	446	10	24.6	(34.66)		(23.23)	(466)	(0.05)
60	23.49	34.938	4.12	414	20	24.51	34.72	4.55	23.30	459	0.09
89	22.00	35.047	3.70	366	30	24.48	34.83	4.45	23.39	450	0.14
108	21.36	34.996	3.41	353	50	23.98	34.92	4.24	23.61	429	0.23
127	21.01	34.964	3.41	346	75	22.82	34.99	3.96	24.00	392	0.33
155	15.24	34.717	2.13	228	100	21.53	35.01	3.45	24.38	356	0.42
173	13.38	34.786	1.90	186	125	21.05	34.97	3.41	24.48	346	0.51
205	12.32	34.862	1.38	160	150	17.60	34.80	2.70	25.24	274	0.59
227	12.28	34.874	0.96	158	200	12.32	34.86	1.41	26.44	160	0.70
249	12.13	34.875	1.01	155	250	12.12	34.88	1.01	26.49	155	0.78
280	11.80	34.852	0.85	151	300	11.67	34.85	0.67	26.55	149	0.86
303	11.65	34.851	0.64	149	400	10.67	34.78	0.61	26.68	137	1.01
334	11.30	34.827	0.45	144	500	8.23	34.65	0.88	26.98	108	1.15
387	10.86	34.797	0.59	139	600	7.06	34.60	1.17	27.12	96	1.26
445	9.10	34.691	0.65	118	700	6.14	34.58	1.44	27.22	85	1.36
655	6.53	34.578	1.31	90	800	5.47	34.57	1.68	27.30	78	1.45
874	5.06	34.57	1.78	74	1000	4.58	34.57	1.83	27.40	68	1.62
1086	4.26	34.572	1.85	65	1200	3.80	34.58	1.85	27.49	60	1.77
1309	3.40	34.598	1.84	55							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
7	ARGO; September 12, 1961; 0852 GCT; 1°00'N, 140°07'W; sounding, 2330 fm; wind, 120°, force 4; weather, partly cloudy; sea, very rough; wire angle, 07°.										
11	24.31	34.662	4.51	457	0	24.3	(34.66)		(23.32)	(457)	(0.00)
36	23.55a)	34.846	4.19	423	10	24.3	(34.66)		(23.32)	(457)	(0.05)
61	22.58	35.108	3.87	377	20	24.22	34.70	4.45	23.37	452	0.09
91	22.03	35.082	3.70	364	30	23.88	34.77	4.32	23.52	437	0.14
111	21.31	35.024	3.45	349	50	22.92	35.06	3.96	24.02	390	0.22
130	18.50	34.806	2.80	295	75	22.34	35.10	3.82	24.22	371	0.31
160	14.08	34.702	2.53	206	100	21.71	35.06	3.56	24.36	357	0.41
179	12.91	34.775	2.52	177	125	20.50	34.95	3.25	24.61	334	0.49
213	12.24	34.872	1.75	158	150	14.50	34.71	2.54	25.88	213	0.56
237	12.06	34.867	1.32	155	200	12.45	34.85	1.99	26.40	163	0.66
261	11.96	34.862	1.12	153	250	12.00	34.87	1.22	26.51	153	0.74
294	11.80	34.859	0.81	151	300	11.76	34.86	0.75	26.54	150	0.82
318	11.59	34.853	0.60	147	400	10.09	34.74	1.15	26.75	130	0.97
350	10.88	34.802	0.46	139	500	8.04	34.64	0.85	27.01	106	1.10
406	9.98	34.728	1.20	129	600	6.98	34.60	1.17	27.13	95	1.21
469	8.48	34.661	0.76	111	700	6.19	34.57	1.40	27.21	87	1.31
694	6.23	34.572	1.39	87	800	5.53	34.57	1.61	27.29	79	1.40
927	4.86	34.568	1.76	72	1000	4.55	34.57	1.80	27.41	68	1.57
1145	3.98	34.581	1.85	61	1200	3.80	34.59	1.88	27.50	59	1.71
1372	3.21	34.612	2.00	52							
8	ARGO; September 13, 1961; 2104 GCT; 0°28'N, 139°53'W; sounding, 2300+ fm; wind, 120°, force 4; weather, haze; sea, very rough; wire angle, 22°.										
9	23.38	34.952	4.36	410	0	23.5	(34.95)		(23.77)	(414)	(0.00)
28	22.86	35.066	4.35	388	10	23.35	34.96	4.36	23.82	409	0.04
51	22.50	35.120	3.99	374	20	23.08	35.03	4.36	23.95	396	0.08
74	22.15	35.205	3.77	358	30	22.82	35.07	4.32	24.06	386	0.12
93	20.42	35.149	3.25	317	50	22.51	35.12	3.99	24.18	374	0.20
111	18.68	35.113	3.08	277	75	22.10	35.20	3.76	24.36	357	0.29
					100	19.62	35.13	3.14	24.98	299	0.37
9	ARGO; September 14, 1961; 1100 GCT; 0°02'S, 139°57'W; sounding, 2313 fm; wind, 100°, force 4; weather, missing; sea, rough; wire angle, 25°.										
9	23.39	35.016	4.60	406	0	23.5	(35.02)		(23.82)	(409)	(0.00)
27	23.33	35.013	4.37	404	10	23.39	35.02	4.58	23.86	406	0.04
49	23.03	35.093	4.07	390	20	23.36	35.01	4.42	23.86	406	0.08
72	22.88	35.254	3.84	375	30	23.30	35.01	4.33	23.87	404	0.12
90	22.53	35.436	3.47	352	50	23.02	35.10	4.05	24.02	390	0.20
108	20.48	35.681	2.89	280	75	22.84	35.30	3.76	24.23	370	0.30
130	16.68	35.119	2.96	230	100	22.31	35.48	3.31	24.51	343	0.39
147	15.34	35.078	3.01	204	125	18.50	35.44	2.91	25.50	249	0.46
174	14.14	35.004	2.83	185	150	15.32	35.08	3.00	25.98	203	0.52
196	13.24	34.915	2.75	173	200	12.99	34.88	2.68	26.32	171	0.62
218	12.74	34.881	2.50	166	250	12.11	34.87	1.60	26.49	155	0.70
240	12.16	34.870	1.76	156	300	11.81	34.85	1.04	26.53	151	0.78
275	12.08	34.870	1.42	155	400	9.51	34.71	0.63	26.83	123	0.93
292	11.93	34.861	1.12	153	500	8.06	34.64	0.91	27.00	106	1.05
345	10.52	34.780	0.62	134	600	6.93	34.59	1.26	27.13	95	1.16
389	9.69	34.730	0.62	124	700	6.17	34.57	1.50	27.21	87	1.26
582	7.11	34.599	1.18	96	800	5.59	34.56	1.67	27.28	80	1.35
781	5.70	34.564	1.65	81	1000	4.72	34.57	1.84	27.39	70	1.52
980	4.79	34.571	1.83	71	1200	(3.91)	(34.58)		(27.48)	(61)	(1.67)
1181	3.98	34.583	1.87	61							

a) Alternate value, 24.17°C, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

10

ARGO; September 15, 1961; 0825 GCT; 0°02'S, 139°57'W; sounding, 2300 fm; wind, 120°, force 4; weather, partly cloudy; sea, rough; wire angle, 08°.

10	23.36	35.040	4.35	403	0	23.4	(35.04)		(23.87)	(404)	(0.00)
30	23.26	35.043	4.22	400	10	23.36	35.04	4.35	23.88	403	0.04
54	23.04	35.144	3.97	387	20	23.31	35.04	4.26	23.89	402	0.08
79	22.77	35.352	3.61	365	30	23.26	35.04	4.22	23.91	401	0.12
99	21.25	35.669	2.86	301	50	23.10	35.10	4.05	24.00	392	0.20
118	18.23	35.304	2.81	252	75	22.83	35.31	3.69	24.24	369	0.30
143	16.04	35.009	2.89	224	100	21.00	35.65	2.84	25.01	296	0.38
163	14.14	34.909	2.91	192	125	17.96	35.27	2.81	25.51	248	0.45
192	13.54	34.956	2.80	176	150	15.55	34.97	2.89	25.84	216	0.51
217	12.77	34.873	2.40	167	200	13.17	34.92	2.65	26.32	172	0.61
242	12.09	34.868	1.47	155	250	12.09	34.87	1.44	26.49	155	0.69
265	12.08	34.873	1.41	155	300	11.93	34.86	1.05	26.51	153	0.77
305	11.89	34.858	0.99	152	400	10.09	34.75	0.65	26.76	129	0.92
325	11.64	34.843	0.55	149	500	8.39	34.67	0.91	26.98	109	1.05
383	10.46	34.771	0.64	134	600	7.08	34.60	1.25	27.11	96	1.16
431	9.50	34.720	0.66	122	700	6.20	34.56	1.48	27.20	88	1.26
645	6.64	34.578	1.37	92	800	5.56	34.55	1.66	27.27	81	1.36
858	5.24	34.551	1.77	77	1000	4.50	34.56	1.90	27.40	68	1.53
1072	4.16	34.571	1.93	64	1200	3.65	34.58	1.98	27.51	58	1.67
1281	3.40	34.594	1.99	55							

11

ARGO; September 16, 1961; 1304 GCT; 0°32'S, 139°57'W; sounding, 2315 fm; wind, 120°, force 4; weather, missing; sea, missing; wire angle, 20°.

9	24.04	35.069	4.48	420	0	24.1	(35.07)		(23.69)	(422)	(0.00)
28	23.89	35.073	4.42	416	10	24.04	35.07	4.47	23.70	420	0.04
52	23.72	35.146	4.20	406	20	24.01	35.07	4.46	23.71	419	0.08
75	23.71	35.270	4.01	397	30	23.87	35.07	4.42	23.75	415	0.13
94	23.38	35.488	3.69	372	50	23.73	35.14	4.22	23.85	406	0.21
114	20.26	35.682	2.93	275	75	23.71	35.27	4.01	23.95	397	0.31
137	16.19	35.159	2.82	216	100	22.50	35.58	3.43	24.54	341	0.40
157	14.47	35.050	-	188	125	17.35	35.23	2.86	25.62	237	0.48
185	12.94	34.915	2.60	168	150	15.20	35.06	2.78	25.99	202	0.53
208	12.74	34.890	2.55	166	200	12.79	34.89	2.57	26.37	167	0.63
231	12.26	34.887	2.05	157	250	12.21	34.88	2.00	26.47	157	0.71
254	12.21	34.877	1.98	157	300	12.00	34.87	1.35	26.51	153	0.79
286	12.12	34.878	1.65	155	400	9.46	34.72	0.84	26.84	121	0.94
322	11.72	34.854	0.64	150	500	8.07	34.65	1.08	27.01	106	1.06
362	10.63	34.795	0.71	135	600	7.17	34.61	1.31	27.11	96	1.17
406	9.32	34.707	0.85	120	700	6.38	34.58	1.56	27.19	88	1.27
609	7.08	34.604	1.32	96	800	5.67	34.56	1.76	27.27	81	1.37
815	5.56	34.555	1.79	80	1000	4.47	34.56	1.87	27.41	68	1.54
1026	4.37	34.57	1.88	66	1200	3.83	34.59	1.91	27.50	59	1.68
1230	3.76	34.595	1.91	58							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

12 ARGO; September 16, 1961; 1656 GCT; 0°59'S, 139°58'W; sounding, 2276 fm; wind, 110°, force 4; weather, cloudy: sea, rough; wire angle, 19°.

9	24.36	35.073	4.51	429	0	24.4	(35.07)		(23.60)	(430)	(0.00)
28	24.31	35.070	4.54	428	10	24.35	35.07	4.54	23.61	429	0.04
52	24.19	35.088	4.39	423	20	24.32	35.07	4.54	23.62	428	0.09
75	23.96	35.167	4.18	411	30	24.30	35.07	4.54	23.63	428	0.13
94	23.64	35.343	3.97	389	50	24.21	35.08	4.46	23.66	424	0.21
114	20.58	35.559	3.06	292	75	23.96	35.17	4.18	23.80	411	0.32
137	17.48	35.392	2.29	228	100	23.25	35.47	3.81	24.24	369	0.42
156	14.57	35.091	2.41	187	125	17.81	35.41	2.32	25.65	235	0.49
186	12.66	34.917	2.42	162	150	14.88	35.13	2.40	26.12	191	0.55
209	12.38	34.890	2.17	159	200	12.45	34.90	2.21	26.44	160	0.64
232	12.32	34.885	2.19	158	250	12.28	34.88	2.14	26.46	158	0.72
256	12.26	34.881	2.08	157	300	12.09	34.88	1.53	26.50	154	0.80
290	12.12	34.880	1.58	155	400	10.08	34.75	0.85	26.76	129	0.95
327	12.00	34.868	1.29	154	500	8.47	34.64	0.95	26.94	112	1.08
370	11.04	34.809	-	141	600	7.30	34.59	1.29	27.07	100	1.20
417	9.64	34.729	0.84	124	700	6.31	34.56	1.66	27.19	89	1.30
625	7.05	34.589	1.38	96	800	5.43	34.55	1.93	27.29	79	1.40
833	5.23	34.551	1.97	77	1000	4.57	34.56	1.90	27.40	69	1.56
1041	4.43	34.562	1.89	67	1200	3.86	34.58	2.06	27.49	60	1.71
1247	3.69	34.583	2.15	59							

13 ARGO; September 16, 1961; 2106 GCT; 1°32'S, 140°03'W; sounding, 2306 fm; wind, 120°, force 5; weather, cloudy; sea, rough; wire angle, 07°.

10	24.94	35.289	4.62	430	0	25.0	(35.29)		(23.58)	(432)	(0.00)
30	24.88	35.273	4.60	430	10	24.94	35.29	4.62	23.60	430	0.04
55	24.45	35.196	4.45	423	20	24.92	35.28	4.61	23.60	430	0.09
79	23.94	35.139	4.25	412	30	24.88	35.27	4.60	23.60	430	0.13
99	23.74	-	4.16	-	50	24.56	35.21	4.47	23.65	425	0.22
118	18.98	35.394	2.64	264	75	24.01	35.15	4.26	23.77	414	0.32
143	16.24	35.247	1.78	211	100	23.74	35.15	4.15	23.85	406	0.42
163	14.04	35.035	1.07	180	125	17.38	35.31	2.12	25.68	232	0.50
191	12.75	34.936	1.44	162	150	15.39	35.16	1.50	26.03	199	0.56
215	12.18	34.883	1.58	156	200	12.53	34.91	1.51	26.44	160	0.65
239	11.96	34.875	1.26	152	250	11.92	34.86	1.20	26.51	153	0.73
264	11.86	34.855	1.14	152	300	11.65	34.84	0.77	26.55	149	0.81
297	11.68	34.846	0.79	149	400	10.31	34.78	0.90	26.75	131	0.96
335	11.36	34.839	0.66	144	500	8.23	34.64	1.07	26.98	109	1.09
380	11.12	34.814	0.83	142	600	7.19	34.60	1.25	27.10	97	1.20
427	9.03	34.693	0.96	117	700	6.31	34.58	1.56	27.20	88	1.30
641	6.79	34.582	1.32	93	800	5.57	34.58	1.97	27.30	79	1.40
848	5.24	34.570	2.07	76	1000	4.68	34.56	2.02	27.38	70	1.57
1058	4.47	34.557	2.01	68	1200	3.78	34.57	2.10	27.49	60	1.72
1266	3.48	34.584	2.18	56							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

ARGO; September 17, 1961; 0152 GCT; 2°03'S, 139°59'W; sounding, 2326 fm; wind, 120°, force 4; weather, cloudy; sea, very rough; wire angle, 19°. 14

9	24.96	35.210	4.72	437	0	25.0	(35.21)		(23.52)	(438)	(0.00)
28	24.90	35.206	4.65	435	10	24.95	35.21	4.71	23.54	436	0.04
52	24.80	35.204	4.62	432	20	24.92	35.21	4.66	23.55	435	0.09
76	24.16	35.150	4.39	418	30	24.90	35.21	4.65	23.55	435	0.13
95	24.06	35.176	4.33	413	50	24.83	35.20	4.63	23.56	433	0.22
114	23.91	35.169	4.22	409	75	24.17	35.15	4.40	23.72	418	0.33
137	20.14	35.484	3.05	286	100	24.02	35.18	4.30	23.79	412	0.43
155	14.27	35.050	1.03	184	125	23.37	35.30	3.97	24.07	385	0.53
182	13.06	34.940	0.69	168	150	14.65	35.08	1.18	26.13	189	0.60
203	12.85	34.927	0.65	165	200	12.88	34.93	0.66	26.38	165	0.69
225	12.62	34.918	0.47	161	250	12.33	34.92	0.62	26.48	156	0.78
245	12.38	34.92	0.63	157	300	11.81	34.87	0.64	26.54	150	0.86
274	12.15	34.884	0.62	155	400	10.73	34.80	0.51	26.69	136	1.01
307	11.74	34.865	0.65	149	500	8.58	34.66	1.19	26.94	113	1.14
342	11.50	34.853	1.34	146	600	7.19	34.60	1.50	27.10	97	1.26
384	11.04	34.829	0.48	139	700	6.21	34.58	1.59	27.22	86	1.36
569	7.55	34.608	1.45	102	800	5.50	34.56	1.71	27.29	79	1.45
759	5.76	34.57	1.66	82	1000	4.47	34.55	1.98	27.40	69	1.62
959	4.64	34.552	1.97	70							
1162	3.87	34.573	2.01	61							

ARGO; September 17, 1961; 0508 GCT; 2°30'S, 139°59'W; sounding, 2334 fm; wind, 100°, force 5; weather, missing; sea, very rough; wire angle, 04°. 15

10	24.97	35.238	4.87	435	0	25.0	(35.24)		(23.54)	(436)	(0.00)
30	24.95	35.231	4.63	435	10	24.97	35.24	4.87	23.55	435	0.04
55	24.85	35.242	4.53	431	20	24.95	35.24	4.71	23.56	434	0.09
80	24.12	35.181	4.42	415	30	24.95	35.23	4.63	23.55	435	0.13
101	24.00	35.165	4.30	412	50	24.87	35.24	4.56	23.58	432	0.22
121	23.88	35.209	4.22	406	75	24.16	35.19	4.43	23.76	415	0.32
145	17.39	35.294	2.10	233	100	24.00	35.16	4.31	23.78	413	0.43
165	13.56	34.976	0.75	175	125	22.00	35.25	3.82	24.43	351	0.52
195	13.06	34.938	0.68	168	150	15.90	35.19	1.57	25.93	208	0.60
219	12.94	34.936	0.73	166	200	13.03	34.94	0.68	26.36	168	0.69
243	12.74	34.923	0.63	163	250	12.69	34.92	0.59	26.41	163	0.78
266	12.56	34.917	0.39	160	300	12.23	34.89	0.20	26.48	156	0.86
299	12.26	34.894	0.21	156	400	9.91	34.76	0.26	26.80	126	1.01
336	11.55	34.854	0.10	147	500	7.96	34.64	0.76	27.02	105	1.13
376	10.56	34.796	0.26	134	600	6.84	34.59	1.20	27.14	94	1.24
421	9.28	34.724	0.26	118	700	5.94	34.56	1.63	27.23	84	1.34
627	6.54	34.573	1.36	91	800	5.33	34.55	1.88	27.30	78	1.43
839	5.10	34.546	1.92	76	1000	4.43	34.57	1.84	27.42	67	1.60
1053	4.24	34.577	1.83	64	1200	3.77	34.58	2.00	27.50	60	1.74
1263	3.56	34.58	2.10	58							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
16	ARGO; September 17, 1961; 0905 GCT; 3°00'S, 140°00'W; sounding, 2335 fm; wind, 100°, force 5; weather, missing; sea, very rough; wire angle, 04°.										
10	24.84	35.186	4.67	435	0	24.9	(35.19)		(23.54)	(436)	(0.00)
30	24.81	35.182	4.76	434	10	24.84	35.19	4.67	23.55	434	0.04
55	24.78	35.219	4.68	431	20	24.82	35.18	4.74	23.55	435	0.09
80	24.52	35.193	4.34	425	30	24.81	35.18	4.76	23.56	434	0.13
100	24.30	35.228	4.30	416	50	24.80	35.21	4.71	23.58	432	0.22
120	23.98	35.220	4.11	408	75	24.59	35.20	4.38	23.64	427	0.33
145	19.13	35.526	3.11	258	100	24.30	35.23	4.30	23.75	416	0.43
165	14.08	35.038	1.03	181	125	23.95	35.24	4.07	23.86	405	0.54
195	13.06	34.941	0.71	168	150	17.00	35.35	2.26	25.80	221	0.61
219	12.80	34.952	0.63	162	200	12.99	34.94	0.68	26.37	167	0.71
244	12.54	34.920	0.43	160	250	12.49	34.92	0.42	26.45	159	0.80
269	12.31	34.906	0.37	156	300	12.04	34.89	0.20	26.51	153	0.88
303	12.00	34.885	0.20	152	400	10.19	34.77	0.70	26.76	130	1.03
341	11.30	34.845	0.34	143	500	8.40	34.67	0.56	26.97	109	1.16
385	10.51	34.791	0.86	133	600	7.03	34.59	1.00	27.11	96	1.27
433	9.46	34.731	0.28	121	700	6.12	34.57	1.29	27.22	86	1.37
646	6.57	34.576	1.16	91	800	5.44	34.56	1.48	27.30	79	1.46
859	5.11	34.561	1.60	75	1000	4.40	34.56	1.91	27.42	67	1.63
1072	4.10	34.563	2.04	64	1200	3.65	34.57	2.14	27.50	59	1.77
1282	3.42	34.586	2.18	56							
17	ARGO; September 17, 1961; 1521, 1555 GCT; 4°02'S, 140°00'W; sounding, 2401 fm; wind, 080°, force 4; weather, partly cloudy; sea, very rough; wire angle, 29°, 28°.										
8	24.70	35.174	4.57	432	0	24.7	(35.17)		(23.58)	(432)	(0.00)
26	24.68	35.173	4.54	431	10	24.70	35.17	4.56	23.58	432	0.04
48	24.70	35.181	4.51	431	20	24.69	35.17	4.55	23.58	432	0.09
70	24.66	35.176	4.54	430	30	24.69	35.17	4.53	23.58	432	0.13
87	24.63	35.177	4.49	429	50	24.70	35.18	4.51	23.59	431	0.22
105	24.58	35.220	4.43	425	75	24.65	35.18	4.51	23.60	430	0.32
126	24.59	35.433	4.28	410	100	24.60	35.20	4.45	23.63	427	0.43
					125	24.61	35.43	4.28	23.80	411	0.54
143	19.70	35.573	3.33	269	150	17.70	35.39	2.80	25.66	234	0.62
168	14.96	35.119	1.58	193	200	13.18	34.95	0.73	26.34	170	0.72
188	13.53	34.979	0.73	174	250	12.60	34.92	0.48	26.43	161	0.81
208	13.03	34.940	0.74	168	300	11.82	34.87	0.80	26.54	150	0.89
227	12.83	34.930	0.71	164	400	9.88	34.74	1.78	26.79	127	1.04
255	12.52	34.910	0.45	160	500	7.92	34.64	0.95	27.02	104	1.16
286	12.06	34.882	1.07	154	600	6.76	34.58	1.17	27.14	93	1.27
321	11.46	34.848	0.38	145	700	6.09	34.56	1.50	27.21	86	1.37
360	10.68	34.796	2.06	136	800	5.41	34.55	1.78	27.29	79	1.46
531	7.44	34.616	0.86	100	1000	4.32	34.55	2.17	27.42	67	1.63
709	6.01	34.557	1.56	86							
901	4.76	34.545	2.01	72							
1106	3.90	34.560	2.37	62							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; September 17, 1961; 2208 GCT; 5°00'S, 139°59'W; sounding, 2270 fm; wind, 100°, force 4; weather, partly cloudy; sea, very rough; wire angle, 08°. 18

10	26.08	35.516	4.52	447	0	26.1	(35.52)		(23.42)	(448)	(0.00)
30	25.95	35.517	4.52	443	10	26.08	35.52	4.52	23.42	447	0.04
55	25.97	35.508	4.48	445	20	26.00	35.52	4.52	23.45	445	0.09
79	25.91	35.502	4.48	443	30	25.95	35.52	4.52	23.46	443	0.13
99	25.66	35.476	4.40	438	50	25.96	35.51	4.50	23.45	444	0.22
119	25.00	35.583	4.21	411	75	25.93	35.50	4.48	23.45	444	0.33
143	20.45	35.736	3.82	276	100	25.64	35.48	4.39	23.53	437	0.45
163	17.52	35.374	2.72	231	125	24.95	35.62	4.19	23.85	407	0.55
191	14.06	35.041	1.42	180	150	19.65	35.65	3.59	25.37	262	0.64
217	12.80	34.967	2.09	161	200	13.32	34.98	1.80	26.33	170	0.75
243	11.56	34.871	1.72	145	250	11.34	34.85	1.68	26.62	143	0.83
266	10.92	34.826	1.67	138	300	10.34	34.78	1.84	26.74	131	0.90
300	10.34	34.782	1.84	131	400	9.11	34.72	0.24	26.90	116	1.03
339	9.85	34.752	0.87	125	500	8.04	34.65	0.58	27.01	105	1.15
385	9.32	34.729	0.23	119	600	7.27	34.60	0.97	27.09	98	1.26
433	8.67	34.687	0.31	112	700	6.39	34.57	1.26	27.18	89	1.37
646	6.90	34.587	1.12	95	800	5.47	34.55	1.47	27.28	80	1.46
859	5.04	34.545	1.59	75	1000	4.39	34.56	1.89	27.42	67	1.63
1073	4.12	34.566	2.02	64	1200	3.69	34.58	2.13	27.51	59	1.77
1283	3.44	34.583	2.18	56							

ARGO; September 21, 1961; 0126 GCT; 0°09'S, 139°32'W; sounding, 2000+ fm; wind, 130°, force 4; weather, partly cloudy; sea, very rough; wire angle, 08°. 19

20	23.20	35.102	4.26	394	0	23.6	(35.10)		(23.86)	(406)	(0.00)
30	23.07	35.116	4.25	390	10	23.5	(35.10)		(23.88)	(403)	(0.04)
40	23.07	35.118	4.16	390	20	23.20	35.10	4.26	23.97	395	0.08
50	22.94	35.129	4.03	385	30	23.07	35.12	4.25	24.02	390	0.12
53	22.89	35.135	3.99	384	50	22.94	35.13	4.03	24.07	385	0.20
56	22.86	35.138	3.94	383	75	22.37	35.17	3.73	24.26	367	0.29
59	22.79	35.145	3.96	380							
62	22.74	35.145	3.90	379							
65	22.72	35.150	3.86	378							
68	22.58	35.161	3.80	373							
71	22.50	35.19	3.84	369							
74	22.38	35.169	3.75	367							
77	22.20	35.181	3.71	362							

ARGO; September 21, 1961; 1055 GCT; 0°31'N, 139°54'W; sounding, 2000+ fm; wind, 140°, force 3; weather, clear; sea, very rough; wire angle, 15°. 20

10	23.84	34.927	4.60	425	0	23.9	(34.93)		(23.64)	(426)	(0.00)
29	23.55	34.927	4.35	417	10	23.84	34.93	4.60	23.66	425	0.04
48	23.32	34.958	4.24	408	20	23.81	34.93	4.57	23.67	424	0.09
67	22.98	35.007	3.84	395	30	23.54	34.93	4.34	23.74	416	0.13
87	22.60	35.038	3.99	383	50	23.29	34.96	4.23	23.84	407	0.21
106	21.08	34.963	3.32	348	75	22.82	35.02	3.92	24.02	390	0.31
130	17.14	34.929	2.94	254	100	21.61	34.99	3.55	24.34	360	0.40
149	14.98	34.795	2.87	217	125	17.65	34.93	2.96	25.32	266	0.48
173	12.76	34.832	2.45	170	150	14.88	34.80	2.87	25.86	215	0.54
196	12.32	34.858	1.65	160	200	12.24	34.86	1.63	26.45	159	0.64
220	12.00	34.862	1.17	154	250	11.88	34.88	1.03	26.54	151	0.72
242	11.94	34.878	1.07	152	300	11.39	34.83	0.41	26.59	145	0.80
271	11.70	34.848	0.66	150	400	9.19	34.70	0.60	26.87	119	0.94
293	11.49	34.834	0.41	147	500	7.97	34.63	0.87	27.01	106	1.06
341	10.67	34.781	0.49	137	600	6.97	34.59	1.13	27.12	95	1.17
388	9.40	34.711	0.58	121	700	6.15	34.57	1.46	27.22	86	1.27
580	7.14	34.595	1.07	97	800	5.44	34.56	1.70	27.30	79	1.36
776	5.60	34.56	1.67	80	1000	4.41	34.56	1.86	27.41	67	1.53
976	4.50	34.556	1.86	69	1200	(3.92)	(34.57)		(27.47)	(62)	(1.68)
1179	3.96	34.572	1.86	62							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
21	ARGO; September 22, 1961; 2352 GCT; 2°07'N, 140°00'W; sounding, 2300 fm; wind, 130°, force 5; weather, partly cloudy; sea, very rough; wire angle, 18°.										
9	25.22	34.624	4.82	486	0	25.3	(34.62)		(22.98)	(489)	(0.00)
33	25.15	34.626	4.64	484	10	25.21	34.62	4.80	23.01	486	0.05
57	25.12	34.641	4.60	482	20	25.17	34.62	4.68	23.02	485	0.10
85	25.10	34.686	4.30	478	30	25.16	34.62	4.65	23.03	485	0.15
104	24.18	35.023	4.00	428	50	25.12	34.64	4.63	23.05	482	0.24
122	22.42	34.809	3.77	394	75	25.11	34.66	4.44	23.07	480	0.36
150	13.90	34.820	1.43	193	100	25.05	34.75	4.21	23.16	472	0.48
167	12.68	34.837	1.55	168	125	22.15	34.81	3.68	24.05	387	0.59
198	12.40	34.881	0.98	160	150	13.90	34.82	1.43	26.09	193	0.67
221	12.32	34.869	1.01	159	200	12.39	34.88	0.99	26.44	160	0.76
243	12.12	34.868	0.68	156	250	12.07	34.87	0.73	26.49	155	0.84
272	12.00	34.868	0.85	154	300	11.61	34.83	0.64	26.55	149	0.92
293	11.73	34.835	0.64	151	400	9.87	34.71	1.36	26.77	129	1.06
322	11.22	34.795	0.69	145	500	8.23	34.63	1.16	26.97	110	1.19
373	10.36	34.739	1.36	135	600	6.88	34.58	0.93	27.13	95	1.30
425	9.41	34.683	1.37	123							
610	6.76	34.577	0.93	93							
22	ARGO; September 27, 1961; 2335 GCT; 4°56'N, 118°00'W; sounding, 2246 fm; wind, 180°, force 5; weather, partly cloudy; sea, rough; wire angle, 13°.										
10	24.22	34.347	4.97	477	0	24.2	(34.35)		(23.11)	(477)	(0.00)
29	24.13	34.341	4.71	475	10	24.22	34.35	4.97	23.11	477	0.05
53	24.08	34.337	4.68	474	20	24.17	34.35	4.80	23.12	476	0.10
78	23.78	34.322	4.68	467	30	24.13	34.34	4.69	23.13	475	0.14
93	23.44	34.342	4.58	456	50	24.10	34.34	4.68	23.13	475	0.24
108	23.22	34.379	4.46	447	75	23.83	34.32	4.68	23.20	468	0.36
122	22.54	34.425	4.19	425	100	23.36	34.35	4.53	23.36	453	0.47
137	21.32	34.510	3.68	387	125	22.27	34.44	4.08	23.74	417	0.58
156	18.46	34.619	2.04	308	150	20.37	34.56	3.16	24.35	359	0.68
171	14.07	34.678	0.80	207	200	12.13	34.60	2.03	26.27	176	0.82
185	13.10	34.626	1.29	192	250	10.74	34.62	1.83	26.55	150	0.90
204	11.83	34.597	2.17	170	300	10.17	34.72	1.26	26.72	133	0.97
224	11.04	34.595	2.20	157	400	9.36	34.69	0.87	26.84	122	1.11
242	10.84	34.616	1.82	152	500	8.18	34.62	0.20	26.97	110	1.23
270	10.37	34.657	1.94	141	600	7.00	34.59	0.37	27.12	96	1.35
301	10.16	34.72 a)	1.26	133	700	6.00	34.56	0.65	27.23	85	1.45
359	9.74	-	1.19	-	800	5.35	34.56	0.86	27.31	78	1.54
491	8.29	34.630	0.20	110	1000	4.42	34.57	1.17	27.42	67	1.70
661	6.34	34.565	0.55	89							
816	5.25	34.553	0.89	77							
1126	3.90	34.583	1.28	61							

a) Possible evaporation; value falls on property curve.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
ARGO; September 28, 1961; 0522 GCT; 3°57'N, 118°05'W; sounding, 2200 fm; wind, 140°, force 5; weather, partly cloudy; sea, rough; wire angle, 03°.											23
10	24.19	34.347	4.64	477	0	24.2	(34.35)		(23.11)	(477)	(0.00)
30	24.18	34.354	4.62	476	10	24.19	34.35	4.64	23.11	476	0.05
55	24.18	34.385	4.52	474	20	24.18	34.35	4.63	23.12	476	0.10
80	23.78	34.384	4.54	462	30	24.18	34.35	4.62	23.12	476	0.14
95	23.25	34.351	4.51	450	50	24.18	34.38	4.54	23.14	474	0.24
110	21.84	34.485	3.82	402	75	24.10	34.39	4.53	23.17	471	0.36
125	19.48	34.691	2.99	327	100	22.92	34.37	4.38	23.50	440	0.47
140	14.76	34.923	1.65	203	125	19.48	34.69	2.99	24.68	327	0.57
160	13.68	34.930	1.59	181	150	13.98	34.93	1.61	26.16	187	0.63
175	13.41	34.918	1.57	176	200	13.01	34.91	1.29	26.34	169	0.73
190	13.16	34.912	1.34	172	250	12.23	34.87	0.69	26.46	158	0.81
209	12.89	34.912	1.24	167	300	11.24	34.79	0.88	26.59	146	0.89
228	12.56	34.890	0.95	162	400	9.74	34.70	1.36	26.78	127	1.03
247	12.30	34.872	0.69	159	500	8.36	34.64	0.44	26.96	111	1.16
276	11.51	34.811	0.74	149	600	7.13	34.59	0.85	27.10	97	1.27
310	11.12	34.781	0.98	144	700	6.14	34.56	1.25	27.21	87	1.38
372	10.18	34.718	1.53	133	800	5.53	34.55	1.17	27.28	80	1.47
513	8.19	34.633	0.38	109	1000	4.59	34.56	1.27	27.39	69	1.64
692	6.20	34.559	1.26	88	1200	(3.83)	(34.58)		(27.49)	(60)	(1.79)
853	5.25	34.553	1.15	77							
1172	3.92	34.579	1.46	61							
ARGO; September 28, 1961; 1144 GCT; 2°56'N, 118°14'W; sounding, 2191 fm; wind, 120°, force 3; weather, overcast; sea, missing; wire angle, 11°.											24
10	24.46	34.250	4.70	491	0	24.5	(34.25)		(22.95)	(492)	(0.00)
29	24.41	34.267	4.65	489	10	24.46	34.25	4.70	22.96	491	0.05
53	24.16	34.324	4.62	477	20	24.43	34.26	4.66	22.98	490	0.10
78	20.98	34.600	3.60	371	30	24.40	34.27	4.63	22.99	488	0.15
93	19.94	34.716	3.94	337	50	24.22	34.32	4.62	23.08	479	0.24
108	17.16	34.810	2.42	263	75	21.97	34.54	3.80	23.90	402	0.36
123	15.98	34.858	1.83	234	100	19.63	34.74	3.85	24.68	327	0.45
138	14.25	34.947	1.57	191	125	15.88	34.86	1.82	25.69	231	0.52
157	13.82	34.934	1.47	183	150	14.00	34.94	1.52	26.16	186	0.57
172	13.42	34.922	1.19	176	200	13.07	34.92	1.41	26.34	170	0.66
186	13.21	34.917	1.35	173	250	12.62	34.89	1.12	26.40	163	0.75
205	13.00	34.913	1.44	169	300	11.83	34.84	0.67	26.52	153	0.83
224	12.82	34.906	1.60	166	400	10.07	34.72	1.20	26.74	131	0.98
244	12.68	34.900	1.29	164	500	8.20	34.64	0.63	26.98	108	1.11
274	12.33	34.874	0.71	159	600	6.99	34.59	1.04	27.12	95	1.22
307	11.70	34.826	0.67	151	700	6.20	34.57	1.37	27.21	87	1.32
370	10.60	34.742	1.26	138	800	5.49	34.56	1.26	27.29	79	1.41
511	8.02	34.634	0.62	106	1000	4.45	34.57	1.35	27.42	67	1.58
691	6.27	34.566	1.38	88	1200	(3.66)	(34.59)		(27.52)	(58)	(1.73)
853	5.12	34.561	1.21	75							
1172	3.76	34.583	1.60	59							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
25	ARGO; September 28, 1961; 1514 GCT; 2°30'N, 118°21'W; sounding, 2228 fm; wind, 130°, force 3; weather, cloudy; sea, rough; wire angle, 10°.										
10	24.44	34.229	4.66	492	0	24.5	(34.23)		(22.93)	(494)	(0.00)
30	24.40	34.235	4.67	491	10	24.44	34.23	4.66	22.95	492	0.05
54	23.50	34.431	4.33	451	20	24.42	34.23	4.66	22.96	492	0.10
78	20.28	34.773	4.42	341	30	24.40	34.24	4.67	22.97	490	0.15
93	18.46	34.834	3.21	292	50	24.20	34.27	4.60	23.05	482	0.25
108	15.34	34.887	1.75	218	75	20.48	34.76	4.43	24.47	347	0.35
123	14.49	34.963	1.92	195	100	16.15	34.87	1.93	25.63	237	0.42
138	14.08	34.937	1.59	188	125	14.44	34.96	1.89	26.08	194	0.48
157	13.70	34.93	1.26	181	150	13.84	34.93	1.36	26.18	184	0.53
172	13.38	34.920	1.22	176	200	13.00	34.91	1.01	26.34	169	0.62
185	13.20	34.914	1.24	173	250	12.53	34.89	0.79	26.42	162	0.70
204	12.95	34.910	0.95	168	300	11.96	34.84	0.59	26.49	155	0.79
222	12.84	34.901	0.90	167	400	9.65	34.71	0.83	26.80	125	0.93
240	12.63	34.896	0.80	163	500	7.88	34.65	0.53	27.04	103	1.06
270	12.35	34.874	0.78	160	600	6.83	34.60	1.10	27.15	93	1.16
302	11.94	34.843	0.59	154	700	6.10	34.57	1.34	27.22	86	1.26
362	10.45	34.742	0.93	136	800	5.49	34.56	1.29	27.29	79	1.35
496	7.92	34.653	0.52	103	1000	4.42	34.57	1.44	27.42	67	1.52
669	6.30	34.575	1.34	88							
823	5.36	34.559	1.28	78							
1129	3.76	34.588	1.58	59							
26	ARGO; September 28, 1961; 2226 GCT; 1°59'N, 118°04'W; sounding, 2208 fm; wind, 150°, force 4; weather, cloudy; sea, rough; wire angle, 17°.										
9	24.66	34.234	4.64	498	0	24.8	(34.23)		(22.84)	(503)	(0.00)
28	24.44	34.255	4.56	490	10	24.64	34.24	4.64	22.90	497	0.05
52	20.66	34.693	4.06	356	20	24.54	34.24	4.58	22.93	494	0.10
76	19.54	34.743	3.97	325	30	24.41	34.26	4.55	22.98	489	0.15
90	16.86	34.867	2.20	253	50	21.50	34.60	4.13	24.07	385	0.24
104	14.60	34.940	1.74	199	75	19.73	34.73	4.01	24.65	330	0.33
118	13.86	34.933	1.35	184	100	15.08	34.94	1.87	25.93	209	0.39
132	13.62	34.932	1.33	180	125	13.71	34.93	1.33	26.21	181	0.44
150	13.42	34.925	1.30	176	150	13.42	34.92	1.30	26.26	176	0.49
164	13.25	34.920	1.27	173	200	12.95	34.91	1.56	26.35	168	0.58
176	13.04	34.921	1.03	169	250	12.54	34.90	0.89	26.43	161	0.66
194	12.96	34.909	1.55	168	300	11.29	34.81	0.68	26.59	145	0.74
212	12.92	34.910	1.58	168	400	8.93	34.68	0.46	26.90	116	0.88
228	12.76	34.913	1.36	164	500	7.64	34.61	0.65	27.04	103	1.00
253	12.50	34.897	0.89	161	600	6.66	34.57	1.28	27.15	93	1.11
283	11.97	34.846	0.76	155	700	5.92	34.56	1.44	27.24	84	1.20
335	10.00	34.739	0.54	129	800	5.31	34.56	1.48	27.31	77	1.29
457	8.24	34.636	0.43	109	1000	4.37	34.57	1.53	27.43	66	1.46
614	6.54	34.571	1.32	91							
760	5.54	34.552	1.48	80							
1059	4.12	34.580	1.54	63							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

ARGO; September 29, 1961; 2110 GCT; 1°27'N, 117°56'W; sounding, 2210 fm; wind, 150°, force 4; weather, cloudy; sea, rough; wire angle, 10°. 27

10	24.35	34.299	4.63	485	0	24.4	(34.30)		(23.01)	(486)	(0.00)
30	23.39	34.354	4.27	454	10	24.35	34.30	4.63	23.03	485	0.05
54	20.17	34.794	4.38	337	20	24.23	34.30	4.56	23.07	481	0.10
79	16.54	34.879	2.00	245	30	23.39	34.35	4.27	23.35	454	0.14
93	14.68	34.930	1.73	201	50	20.19	34.78	4.37	24.56	338	0.22
108	14.14	34.925	1.53	190	75	18.00	34.87	3.20	25.19	278	0.30
123	13.90	34.929	1.54	185	100	14.32	34.93	1.59	26.08	194	0.36
138	13.62	34.936	1.40	179	125	13.87	34.93	1.54	26.18	185	0.41
157	13.26	34.922	1.52	173	150	13.40	34.93	1.47	26.28	175	0.45
172	13.12	34.922	1.41	171	200	12.87	34.91	1.05	26.37	167	0.54
186	13.02	34.910	1.30	170	250	12.10	34.86	0.89	26.48	156	0.63
205	12.80	34.908	0.96	165	300	11.37	34.80	0.64	26.57	147	0.71
223	12.42	34.878	0.76	161	400	9.17	34.69	0.61	26.87	119	0.85
243	12.20	34.864	0.95	158	500	8.16	34.65	0.64	27.00	107	0.97
269	11.81	34.840	0.71	152	600	7.01	34.59	0.98	27.12	96	1.08
303	11.32	34.800	0.63	146	700	5.99	34.57	1.40	27.24	84	1.18
362	9.62	34.706	0.61	125	800	5.18	34.56	1.66	27.33	76	1.27
499	8.18	34.645	0.64	108	1000	4.22	34.57	1.71	27.44	65	1.43
676	6.19	34.567	1.32	87							
834	4.90	34.561	1.72	73							
1151	3.78	34.581	1.68	60							

ARGO; September 30, 1961; 0310 GCT; 0°53'N, 117°56'W; sounding, 2174 fm; wind, 130°, force 3; weather, partly cloudy; sea, missing; wire angle, 03°. 28

10	23.38	34.386	4.56	451	0	23.5	(34.39)		(23.35)	(454)	(0.00)
30	20.73	34.696	4.33	358	10	23.38	34.39	4.56	23.38	451	0.05
55	19.64	34.821	4.00	322	20	23.02	34.41	4.55	23.50	439	0.09
80	15.24	34.904	1.73	215	30	20.73	34.70	4.33	24.36	358	0.13
95	14.16	34.934	1.52	190	50	19.66	34.80	4.03	24.72	324	0.20
110	13.90	34.933	1.42	185	75	16.50	34.90	2.14	25.57	242	0.27
124	13.30	34.921	1.47	174	100	14.08	34.93	1.50	26.13	189	0.32
139	13.07	34.909	1.07	171	125	13.27	34.92	1.44	26.29	174	0.37
159	12.95	34.910	1.05	168	150	13.01	34.91	1.06	26.34	169	0.41
174	12.70	34.902	0.98	164	200	12.42	34.88	1.00	26.43	160	0.50
188	12.50	34.883	0.88	162	250	12.01	34.86	0.76	26.50	154	0.58
208	12.36	34.878	1.12	159	300	10.86	34.78	0.73	26.65	140	0.66
227	12.20	34.871	0.89	157	400	9.44	34.72	0.46	26.85	121	0.80
247	12.04	34.865	0.79	155	500	8.20	34.64	0.73	26.98	108	0.92
277	11.66	34.840	0.55	150	600	7.22	34.59	1.07	27.09	99	1.03
313	10.43	34.752	0.79	135	700	6.35	34.56	1.42	27.18	90	1.14
377	9.68	34.720	0.44	125	800	5.44	34.55	1.76	27.29	79	1.23
520	7.98	34.631	0.79	106	1000	4.40	34.56	1.80	27.42	67	1.40
701	6.34	34.559	1.43	89	1200	(3.75)	(34.58)		(27.50)	(59)	(1.54)
861	5.00	34.552	1.82	74							
1179	3.82	34.576	1.73	60							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

29 ARGO; September 30, 1961; 2123 GCT; 0°28'N, 117°57'W; sounding, 2146 fm; wind, 130°, force 4; weather, cloudy; sea, moderate; wire angle, 04°.

10	22.36	34.535	4.48	413	0	22.4	(34.54)		(23.78)	(413)	(0.00)
30	20.13	34.803	4.18	335	10	22.36	34.54	4.48	23.79	412	0.04
55	18.86	34.819	3.26	303	20	21.50	34.64	4.45	24.10	382	0.08
80	15.26	34.901	1.61	215	30	20.13	34.80	4.18	24.59	335	0.12
95	14.46	34.939	1.49	196	50	19.10	34.81	3.46	24.87	309	0.18
110	14.34	34.911	1.47	195	75	16.15	34.87	1.73	25.63	237	0.25
125	13.82	34.897	1.55	186	100	14.41	34.93	1.48	26.06	195	0.31
140	13.20	34.896	1.77	174	125	13.82	34.90	1.55	26.17	186	0.35
159	12.70	34.893	1.33	165	150	12.85	34.89	1.49	26.36	168	0.40
174	12.60	34.892	1.28	163	200	12.36	34.88	1.17	26.45	159	0.48
189	12.43	34.884	1.23	160	250	12.01	34.87	0.91	26.50	154	0.56
209	12.29	34.882	1.11	158	300	10.90	34.80	0.55	26.66	139	0.64
229	12.09	34.871	0.88	155	400	9.43	34.72	0.56	26.85	121	0.78
250	12.01	34.866	0.91	154	500	8.08	34.64	0.75	27.00	107	0.90
280	11.63	34.846	0.53	149	600	6.94	34.59	1.35	27.13	95	1.01
313	10.45	34.775	0.55	133	700	6.11	34.56	1.64	27.21	87	1.11
379	9.67	34.730	0.55	124	800	5.39	34.56	1.63	27.30	78	1.20
520	7.80	34.627	0.85	104	1000	4.38	34.57	1.69	27.43	66	1.37
699	6.12	34.563	1.64	86	1200	(3.70)	(34.59)		(27.51)	(58)	(1.51)
860	4.96	34.558	1.63	73							
1180	3.76	34.587	1.81	59							

30 ARGO; October 1, 1961; 0358 GCT; 0°04'S, 118°00'W; sounding, 2220 fm; wind, 110°, force 4; weather, cloudy; sea, rough; wire angle, 05°.

10	21.10	34.723	4.59	366	0	21.1	(34.72)		(24.27)	(366)	(0.00)
30	19.86	34.871	4.12	323	10	21.10	34.72	4.59	24.27	366	0.04
55	17.56	34.849	3.16	270	20	20.77	34.75	4.53	24.39	355	0.07
80	14.94	34.895	2.95	209	30	19.86	34.87	4.12	24.72	323	0.11
95	13.80	34.900	2.78	185	50	18.70	34.86	3.58	25.01	296	0.17
110	13.42	34.862	2.30	181	75	16.10	34.88	3.01	25.65	235	0.24
124	13.10	34.90	2.08	172	100	13.69	34.89	2.63	26.19	184	0.29
139	12.91	34.91	1.77	167	125	13.09	34.90	2.06	26.32	172	0.33
158	12.66	34.91	2.14	163	150	12.75	34.91	2.08	26.39	164	0.38
173	12.61	34.91	1.78	162	200	12.49	34.91	1.72	26.44	160	0.46
187	12.54	34.90	1.75	161	250	12.10	34.90	0.96	26.51	153	0.54
206	12.44	34.91	1.69	159	300	11.65	34.87	0.61	26.57	147	0.62
225	12.25	34.90	1.21	156	400	9.42	34.74	0.60	26.87	119	0.76
244	12.13	34.90	1.01	154	500	7.99	34.66	0.78	27.03	104	0.88
274	12.00	34.89	0.89	152	600	6.71	34.61	1.10	27.17	90	0.99
307	11.50	34.86	0.54	145	700	5.85	34.58	1.53	27.26	82	1.08
369	9.92	34.77	0.58	125	800	5.55	34.57	1.82	27.29	79	1.17
506	7.91	34.66	0.81	103	1000	4.75	34.58	1.82	27.39	69	1.34
681	5.96	34.58	1.46	83							
840	5.41	34.57	1.85	78							
1158	4.09	34.59	1.77	62							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; October 2, 1961; 0327 GCT; 0°07'S, 117°56'W; sounding, 2200 fm; wind, 110°, force 3; weather, partly cloudy; sea, very rough; wire angle, 08°. 31

1	21.02	34.734	4.20	363	0	(21.02)	(34.73)	(4.20)	(24.30)	(363)	(0.00)
11	20.96	34.735	4.41	361	10	20.97	34.73	4.41	24.32	362	0.04
21	20.68	34.762	4.29	352	20	20.72	34.76	4.30	24.41	353	0.07
31	19.98	34.802	4.00	331	30	20.09	34.80	4.04	24.60	334	0.11
41	18.95	34.838	3.50	303	50	16.99	34.86	2.81	25.43	256	0.17
51	16.92	34.861	2.78	254	75	16.41	34.93	2.90	25.62	238	0.23
61	16.72	34.899	2.65	247	100	14.32	34.92	2.85	26.08	194	0.28
71	16.58	34.914	2.86	243	125	13.59	34.90	2.62	26.21	181	0.33
80	16.10	34.976	2.91	228	150	13.12	34.88	2.37	26.29	174	0.38
90	15.48	35.06	2.85	208	200	12.69	34.91	2.36	26.40	163	0.46
100	14.32	34.919	2.85	194							
110	13.80	34.909	2.81	185							
120	13.68	34.906	2.68	183							
130	13.50	34.897	2.58	180							
140	13.34	34.885	2.30	178							
149	13.17	34.883	2.39	174							
159	12.94	34.883	2.09	170							
169	12.92	34.896	2.17	169							
179	12.80	34.903	2.34	166							
189	12.76	34.918	2.51	164							
200	12.69	34.911	2.36	163							

ARGO; October 2, 1961; 0820 GCT; 0°29'S, 117°58'W; sounding, 2195 fm; wind, 090°, force 3; weather, missing; sea, very rough; wire angle, 15°. 32

10	20.63	34.751	4.40	352	0	20.7	(34.75)		(24.40)	(353)	(0.00)
29	20.15	34.789	4.13	337	10	20.63	34.75	4.40	24.42	352	0.04
53	19.12	34.887	3.67	304	20	20.44	34.76	4.32	24.48	346	0.07
77	17.32	35.096	3.13	246	30	20.11	34.79	4.12	24.59	336	0.10
91	15.66	35.150	2.77	206	50	19.27	34.87	3.21	24.87	309	0.17
106	14.84	35.029	2.95	197	75	17.75	35.06	3.26	25.40	259	0.24
120	14.17	34.972	2.81	188	100	15.25	35.09	2.87	26.00	201	0.30
134	13.69	34.948	2.73	180	125	14.00	34.96	2.78	26.17	185	0.35
153	13.38	34.951	2.64	173	150	13.43	34.95	2.67	26.29	174	0.39
167	13.09	34.952	2.24	168	200	12.53	34.90	1.95	26.43	161	0.48
180	12.60	34.911	2.18	161	250	12.20	34.89	1.29	26.48	156	0.56
199	12.53	34.906	1.98	161	300	11.90	34.87	0.72	26.53	152	0.64
218	12.44	34.893	1.75	160	400	9.97	34.76	0.64	26.79	127	0.79
235	12.26	34.894	1.38	156	500	8.09	34.65	0.69	27.01	106	0.91
263	12.18	34.884	1.21	156	600	6.79	34.59	1.17	27.15	93	1.02
295	11.96	34.874	0.75	152	700	6.06	34.57	1.49	27.23	85	1.12
353	10.94	34.817	0.63	139	800	5.72	34.56	1.65	27.26	82	1.21
481	8.38	34.668	0.65	109	1000	4.61	34.57	1.90	27.40	69	1.39
645	6.32	34.575	1.38	88							
794	5.74	34.563	1.63	82							
1095	4.08	34.579	1.95	63							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

33 ARGO; October 2, 1961; 1644 GCT; 1°08'S, 117°57'W; sounding, 2233 fm; wind, 070°, force 2; weather, cloudy; sea, rough; wire angle, 16°.

9	20.42	34.818	4.49	341	0	20.5	(34.82)		(24.51)	(343)	(0.00)
28	20.12	34.859	4.08	331	10	20.41	34.82	4.48	24.54	341	0.03
53	19.71	34.947	3.80	314	20	20.25	34.84	4.26	24.59	335	0.07
72	19.32	35.154	3.40	289	30	20.10	34.87	4.04	24.66	329	0.10
91	18.42	35.343	2.53	254	50	19.77	34.93	3.84	24.79	317	0.17
105	16.92	35.296	2.11	223	75	19.23	35.19	3.29	25.13	285	0.24
120	14.94	35.148	2.13	190	100	17.45	35.32	2.17	25.67	233	0.31
134	14.16	35.053	2.39	181	125	14.32	35.07	2.35	26.19	183	0.36
155	13.16	34.962	1.92	168	150	13.40	34.98	2.06	26.31	172	0.41
168	12.74	34.930	1.70	163	200	12.34	34.89	1.67	26.46	158	0.49
181	12.41	34.899	1.72	159	250	12.15	34.88	1.22	26.49	155	0.57
200	12.34	34.888	1.67	158	300	11.75	34.85	0.68	26.54	150	0.65
216	12.30	34.886	1.52	158	400	9.57	34.73	0.63	26.83	122	0.80
235	12.28	34.890	1.46	157	500	7.97	34.64	0.77	27.02	105	0.92
260	12.07	34.878	1.05	154	600	6.75	34.58	1.36	27.14	93	1.03
291	11.88	34.865	0.68	152	700	6.10	34.57	1.57	27.22	86	1.13
348	10.64	34.792	0.67	135	800	5.61	34.56	1.66	27.28	81	1.22
473	8.36	34.658	0.63	109	1000	4.55	34.56	1.86	27.40	69	1.39
637	6.50	34.573	1.49	90							
786	5.66	34.563	1.64	81							
1092	4.10	34.568	1.96	64							

34 ARGO; October 3, 1961; 0811 GCT; 1°33'S, 117°56'W; sounding, 2260 fm; wind, 110°, force 3; weather, missing; sea, rough; wire angle, 14°.

9	20.98	34.91	4.60	349	0	21.1	(34.91)		(24.42)	(352)	(0.00)
28	20.25	34.98 a)	4.33	325	10	20.92	34.91	4.58	24.47	347	0.03
53	20.18	35.11	4.18	314	20	20.43	34.94	4.37	24.62	333	0.07
73	20.30	35.21	3.85	310	30	20.24	34.98	4.31	24.70	325	0.10
92	20.14	35.22	3.75	305	50	20.19	35.10	4.21	24.81	315	0.17
107	15.32	35.12	1.47	200	75	20.30	35.21	3.83	24.86	310	0.25
121	13.98	35.024	1.11	180	100	16.00	35.13	1.77	25.87	214	0.31
136	13.34	34.971	1.42	171	125	13.88	35.02	1.16	26.25	178	0.36
155	12.88	34.924	0.99	166	150	13.04	34.94	1.08	26.36	168	0.41
169	12.64	34.910	1.20	162	200	12.38	34.89	1.41	26.45	159	0.49
184	12.52	34.904	1.27	161	250	12.15	34.87	1.18	26.48	156	0.57
204	12.34	34.887	1.42	158	300	12.01	34.86	0.96	26.50	154	0.65
223	12.22	34.879	1.35	157	400	10.30	34.76	0.89	26.73	132	0.80
242	12.18	34.874	1.31	156	500	7.79	34.62	0.90	27.03	104	0.93
270	12.06	34.867	1.04	155	600	6.80	34.58	1.48	27.14	94	1.04
303	12.00	34.862	0.94	154	700	6.06	34.56	1.96	27.22	86	1.14
362	11.30	34.826	0.91	144	800	5.43	34.54	2.08	27.28	80	1.23
495	7.86	34.624	0.89	105	1000	4.44	34.55	2.03	27.40	68	1.40
665	6.30	34.562	1.86	89							
819	5.32	34.542	2.08	79							
1132	4.00	34.564	1.99	63							

a) Alternate value, 35.03‰, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
ARGO; October 3, 1961; 1150 GCT; 2°04'S, 117°56'W; sounding, 2294 fm; wind, 100°, force 3; weather, partly cloudy; sea, very rough; wire angle, 20°.											35
9	21.16	34.989	4.55	348	0	21.2	(34.99)		(24.45)	(349)	(0.00)
28	20.80	35.026	4.45	336	10	21.15	34.99	4.55	24.47	348	0.03
52	20.74	35.111	4.12	328	20	20.97	35.00	4.53	24.52	342	0.07
70	20.66	35.127	3.91	325	30	20.79	35.03	4.43	24.59	335	0.10
89	14.16	34.994	1.00	186	50	20.76	35.10	4.16	24.65	330	0.17
103	13.50	34.963	0.70	175	75	20.62	35.13	3.88	24.71	324	0.25
117	13.14	34.945	0.88	169	100	13.61	34.97	0.72	26.26	177	0.32
130	12.92	34.932	0.87	166	125	13.00	34.94	0.87	26.36	167	0.36
149	12.76	34.921	0.67	164	150	12.74	34.92	0.67	26.40	163	0.40
163	12.62	34.910	0.72	162	200	12.27	34.89	0.83	26.47	157	0.48
176	12.52	34.910	0.80	160	250	11.99	34.87	0.82	26.51	153	0.56
195	12.32	34.893	0.82	158	300	11.76	34.86	0.73	26.54	150	0.64
212	12.17	34.880	0.88	156	400	9.80	34.74	0.78	26.80	125	0.79
230	12.10	34.876	0.92	155	500	8.07	34.65	1.06	27.01	106	0.91
257	11.94	34.868	0.80	153	600	7.14	34.60	1.47	27.11	97	1.02
289	11.83	34.863	0.75	151	700	6.33	34.57	1.67	27.19	89	1.13
345	11.16	34.826	0.73	142	800	5.58	34.55	1.79	27.27	81	1.22
471	8.37	34.662	0.97	109	1000	4.46	34.56	1.87	27.41	68	1.39
632	6.88	34.588	1.53	94							
779	5.72	34.551	1.78	83							
1075	4.14	34.566	1.88	64							
ARGO; October 3, 1961; 1505 GCT; 2°31'S, 117°56'W; sounding, 2294 fm; wind, 100°, force 3; weather, partly cloudy; sea, very rough; wire angle, 08°.											36
10	21.50	35.015	4.63	355	0	21.5	(35.02)		(24.39)	(355)	(0.00)
30	21.15	35.038	4.46	344	10	21.50	35.02	4.63	24.39	355	0.04
54	20.96	35.067	4.21	337	20	21.34	35.02	4.59	24.44	350	0.07
74	15.73	35.084	1.42	212	30	21.15	35.04	4.46	24.50	344	0.11
94	13.90	34.981	0.87	181	50	20.98	35.07	4.23	24.57	337	0.17
108	13.50	34.963	0.89	175	75	15.54	35.08	1.36	25.93	208	0.24
123	13.19	34.946	0.85	170	100	13.71	34.97	0.87	26.24	179	0.29
138	12.88	34.927	0.77	166	125	13.15	34.94	0.83	26.33	170	0.34
158	12.69	34.917	0.66	163	150	12.77	34.92	0.69	26.40	164	0.38
173	12.60	34.912	0.73	161	200	12.40	34.90	0.44	26.45	159	0.46
188	12.49	34.909	0.50	160	250	12.11	34.89	0.21	26.50	154	0.54
207	12.34	34.900	0.38	157	300	11.73	34.87	0.23	26.56	149	0.62
227	12.24	34.896	0.28	156	400	10.19	34.78	0.64	26.77	129	0.77
247	12.12	34.889	0.21	154	500	8.35	34.67	0.70	26.98	108	0.90
276	11.92	34.879	0.21	151	600	6.93	34.59	1.17	27.13	95	1.01
309	11.64	34.862	0.26	148	700	6.03	34.56	1.53	27.22	86	1.11
374	10.64	34.802	0.62	135	800	5.43	34.56	1.57	27.30	78	1.20
512	8.12	34.654	0.71	106	1000	4.50	34.57	1.70	27.41	68	1.36
688	6.12	34.564	1.52	86							
848	5.15	34.557	1.59	76							
1161	3.85	34.583	1.87	60							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

37 ARGO; October 3, 1961; 1846 GCT; 3°01'S, 117°59'W; sounding, 2337 fm; wind, 100°, force 3; weather, cloudy; sea, rough; wire angle, 12°.

10	22.40	34.931	4.95	385	0	22.4	(34.93)		(24.07)	(385)	(0.00)
29	22.08	34.944	4.87	375	10	22.40	34.93	4.95	24.07	385	0.04
53	21.30	35.018	4.68	349	20	22.31	34.93	4.92	24.10	383	0.08
73	20.18	35.037	3.76	319	30	22.07	34.95	4.86	24.18	375	0.11
93	16.82	35.108	1.88	234	50	21.39	35.01	4.70	24.41	352	0.19
108	14.72	35.084	1.24	191	75	20.04	35.04	3.67	24.80	316	0.27
123	14.06	34.990	1.04	184	100	15.20	35.10	1.37	26.02	199	0.34
137	13.34	34.952	1.07	173	125	13.94	34.98	1.05	26.20	182	0.39
156	13.12	34.944	0.98	169	150	13.18	34.95	1.02	26.34	170	0.43
169	13.06	34.935	0.96	168	200	12.68	34.92	0.92	26.41	162	0.52
184	12.93	34.931	0.92	166	250	12.32	34.90	1.09	26.47	157	0.60
202	12.66	34.917	0.92	162	300	11.98	34.87	0.69	26.51	153	0.68
220	12.54	34.910	1.16	160	400	10.09	34.76	0.66	26.77	129	0.83
239	12.40	34.899	1.24	159	500	7.96	34.64	0.91	27.02	105	0.95
266	12.22	34.896	0.67	156	600	6.77	34.58	1.55	27.14	93	1.06
299	11.98	34.877	0.70	153	700	5.97	34.56	1.70	27.23	85	1.16
358	11.01	34.821	0.61	140	800	5.49	34.56	1.57	27.29	79	1.25
495	8.03	34.645	0.89	106	1000	4.58	34.57	1.73	27.40	68	1.42
669	6.14	34.564	1.71	87							
824	5.38	34.559	1.55	78							
1135	3.88	34.584	1.95	60							

38 ARGO; October 4, 1961; 0102 GCT; 4°01'S, 118°04'W; sounding, 2240 fm; wind, 150°, force 4; weather, cloudy; sea, rough; wire angle, 12°.

10	23.28	35.243	4.76	387	0	23.3	(35.24)		(24.05)	(387)	(0.00)
29	23.05	35.216	4.81	382	10	23.28	35.24	4.76	24.05	387	0.04
53	22.29	35.009	4.64	376	20	23.18	35.23	4.78	24.08	385	0.08
73	19.38	35.066	3.16	297	30	23.01	35.22	4.81	24.12	381	0.12
93	14.14	34.990	1.50	186	50	22.45	35.21	4.72	24.27	366	0.19
107	13.59	34.978	1.32	176	75	18.40	35.05	2.78	25.23	275	0.27
122	13.40	34.963	1.49	173	100	13.77	34.99	1.86	26.25	178	0.33
136	13.18	34.950	1.55	170	125	13.36	34.96	1.51	26.31	172	0.37
155	13.08	34.939	1.55	169	150	13.09	34.94	1.55	26.35	169	0.42
171	13.02	34.933	1.35	168	200	12.80	34.93	0.83	26.40	164	0.50
185	12.92	34.932	1.46	166	250	12.47	34.91	0.60	26.45	159	0.59
203	12.78	34.925	0.81	164	300	12.12	34.89	0.32	26.50	154	0.67
221	12.63	34.923	0.78	161	400	10.69	34.80	0.43	26.69	136	0.82
241	12.51	34.914	0.66	160	500	8.65	34.68	0.51	26.94	112	0.95
268	12.36	34.904	0.31	158	600	7.29	34.61	0.98	27.09	98	1.07
299	12.13	34.891	0.31	154	700	6.33	34.57	1.24	27.19	89	1.17
357	11.42	34.848	0.40	145	800	5.58	34.56	1.41	27.28	80	1.27
487	8.88	34.697	0.45	114	1000	4.55	34.57	1.78	27.41	68	1.43
654	6.76	34.584	1.13	93							
806	5.54	34.562	1.42	80							
1114	4.09	34.571	1.93	63							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
ARGO; October 5, 1961; 0035 GCT; 1°29'S, 117°58'W; sounding, 2298 fm; wind, 120°, force 3; weather, clear; sea, rough; wire angle, 05°.											39
0	21.47	34.884	4.68	364	0	21.47	34.88	4.68	24.29	364	0.00
10	21.09	34.882	4.71	354	10	21.09	34.88	4.71	24.40	354	0.04
20	20.67	34.908	4.58	341	20	20.67	34.91	4.58	24.53	341	0.07
30	20.40	34.957	4.44	331	30	20.40	34.96	4.44	24.64	331	0.10
40	20.28	35.038	4.41	322	50	20.26	35.12	3.96	24.80	315	0.17
50	20.26	35.122	3.96	315	75	19.95'	35.26	3.41	24.99	297	0.25
60	20.42	35.213	3.75	313	100	14.03	35.02	1.02	26.21	181	0.31
70	20.36	35.235	3.78	310	125	12.97	34.94	1.26	26.37	166	0.35
80	19.21	35.263	2.77	279	150	12.53	34.90	1.20	26.43	161	0.39
90	15.23	35.095	1.27	200	200	(12.26)	(34.88)	(1.44)	(26.46)	(157)	(0.47)
100	14.03	35.016	1.02	182							
109	13.73	35.006	1.10	176							
119	13.30	34.969	1.27	171							
128	12.85	34.928	1.25	165							
138	12.67	34.919	1.06	162							
148	12.56	34.909	1.13	161							
158	12.45	34.896	1.32	160							
167	12.38	34.893	1.35	159							
177	12.32	34.887	1.44	158							
186	12.28	34.882	1.47	158							
196	12.27	34.886	1.44	157							
ARGO; October 5, 1961; 1938 GCT; 0°01'S, 117°46'W; sounding, 2000+ fm; wind, 090°, force 3; weather, cloudy; sea, rough; wire angle, 29°.											40
8	20.01	34.821	4.10	331	0	20.1	(34.82)		(24.62)	(333)	(0.00)
26	18.74	34.847	3.52	298	10	19.99	34.82	4.08	24.65	330	0.03
48	17.00	34.883	2.81	255	20	19.40	34.84	3.84	24.82	314	0.07
65	15.88	35.029	2.85	219	30	18.39	34.85	3.34	25.08	289	0.10
84	14.80	34.895	2.76	206	50	16.90	34.89	2.81	25.47	252	0.15
96	14.38	34.883	2.71	198	75	15.28	34.96	2.80	25.90	211	0.21
108	13.94	34.849	2.48	192	100	14.23	34.87	2.62	26.06	196	0.26
121	13.68	34.881	2.43	184	125	13.59	34.88	2.41	26.20	183	0.31
137	13.28	34.879	2.29	177	150	13.03	34.88	2.13	26.31	172	0.35
148	13.07	34.877	2.10	173	200	12.47	34.89	1.80	26.43	161	0.44
160	12.96	34.913	2.56	168	250	12.04	34.87	0.92	26.50	154	0.52
175	12.68	34.904	2.29	164	300	11.64	34.84	0.58	26.55	149	0.60
190	12.58	34.896	2.06	162	400	8.96	34.68	0.70	26.89	117	0.74
204	12.42	34.887	1.77	160	500	8.09	34.63	0.87	26.99	108	0.86
224	12.14	34.875	1.17	156	600	(7.33)	(34.60)	(1.09)	(27.08)	(99)	(0.97)
246	12.06	34.868	0.97	155	700	(6.56)	(34.58)	(1.35)	(27.17)	(91)	(1.08)
287	11.83	34.852	0.59	152	800	(5.81)	(34.57)	(1.55)	(27.26)	(82)	(1.18)
368	9.36	34.707	0.68	121	1000	(4.57)	(34.57)		(27.40)	(68)	(1.35)
476	8.26	34.645	0.81	109							
586	7.44	34.607	1.06	100							
844	5.50	34.571	1.62	78							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

41 ARGO; October 6, 1961; 0927 GCT; 0°53'N, 118°00'W; sounding, 2160 fm; wind, 140°, force 4; weather, clear; sea, rough; wire angle, 11°.

0	20.90	34.755	4.61	358	0	20.90	34.76	4.61	24.36	358	0.00
9	20.88	34.757	4.68	357	10	20.88	34.76	4.69	24.36	357	0.04
19	20.80	34.752	4.73	356	20	20.79	34.75	4.73	24.38	356	0.07
29	20.65	34.742	4.52	353	30	20.63	34.74	4.49	24.42	352	0.11
39	20.20	34.713	4.16	343	50	17.02	34.85	2.48	25.41	257	0.17
48	17.20	34.842	2.56	262	75	15.32	34.90	1.72	25.84	217	0.23
58	16.48	34.875	2.16	243	100	13.68	34.93	1.43	26.22	181	0.28
68	15.82	34.891	1.91	228	125	13.09	34.91	1.38	26.32	171	0.32
78	15.00	34.910	1.63	209	150	12.70	34.89	1.33	26.39	165	0.37
88	14.18	34.934	1.58	191	200	(12.34)	(34.89)	(1.15)	(26.46)	(158)	(0.45)
98	13.72	34.931	1.43	182							
108	13.52	34.930	1.41	178							
118	13.32	34.917	1.45	175							
127	13.00	34.904	1.35	170							
137	12.80	34.901	1.34	166							
147	12.74	34.897	1.33	165							
157	12.56	34.892	1.32	162							
167	12.51	34.893	1.26	161							
176	12.40	34.886	1.22	160							
186	12.36	34.885	1.19	159							
197	12.34	34.891	1.15	158							

42 ARGO; October 18, 1961; 1030 GCT; 5°06'N, 95°52'W; sounding, 1720 fm; wind, 200°, force 4; weather, missing; sea, missing; wire angle, 30°.

8	26.48	33.358	4.17	615	0	26.5	(33.36)		(21.66)	(615)	(0.00)
26	26.50	33.357	4.15	615	10	26.48	33.36	4.17	21.67	615	0.06
47	26.08	33.587	4.15	586	20	26.49	33.36	4.16	21.67	615	0.12
64	17.04	34.855	2.08	257	30	26.50	33.36	4.15	21.66	615	0.18
82	15.97	34.872	1.69	233	50	24.50	33.68	3.94	22.52	534	0.30
95	15.21	34.877	1.63	216	75	16.34	34.87	1.83	25.59	241	0.40
108	14.60	34.884	1.49	203	100	14.98	34.88	1.61	25.90	211	0.45
120	14.23	34.901	1.21	194	125	14.13	34.90	1.16	26.10	192	0.51
137	13.92	34.908	1.12	187	150	13.54	34.92	1.14	26.24	179	0.55
149	13.59	34.918	1.15	180	200	12.46	34.84	0.99	26.39	164	0.64
160	13.24	34.878	1.07	176	250	11.64	34.80	0.84	26.52	152	0.72
176	12.78	34.842	1.19	170	300	10.98	34.77	0.50	26.62	143	0.80
192	12.56	34.842	0.97	166	400	9.80	34.71	0.46	26.78	128	0.94
207	12.36	34.829	1.02	163	500	8.22	34.65	0.26	26.99	108	1.07
230	11.98	34.829	0.73	156	600	6.88	34.59	0.34	27.13	94	1.18
256	11.54	34.795	0.85	151	700	6.02	34.57	0.61	27.23	85	1.28
303	10.93	34.770	0.49	142	800	5.42	34.57	0.78	27.31	78	1.37
409	9.70	34.707	0.45	126	1000	(4.43)	(34.58)	(0.98)	(27.43)	(66)	(1.53)
546	7.44	34.619	0.21	99							
677	6.19	34.572	0.58	87							
958	4.62	34.576	0.94	68							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
ARGO; October 18, 1961; 1638 GCT; 4°08'N, 95°52'W; sounding, 1859 fm; wind, 200°, force 4; weather, cloudy; sea, rough; wire angle, 13°.											43
10	26.30	33.421	4.60a)	605	0	26.3	(33.42)		(21.77)	(605)	(0.00)
30	26.28	33.420	4.66	604	10	26.30	33.42	4.60	21.77	605	0.06
49	24.74	33.903	4.35	524	20	26.29	33.42	4.63	21.78	605	0.12
68	18.80	34.794	3.09	303	30	26.28	33.42	4.66	21.78	604	0.18
88	15.99	34.948	2.56	227	50	24.30	33.98	4.27	22.80	506	0.29
108	15.01	34.909	1.95	209	75	16.32	34.90	2.69	25.62	238	0.39
122	14.34	34.918	1.73	195	100	15.56	34.93	2.29	25.81	219	0.44
137	13.96	34.921	1.61	187	125	14.23	34.92	1.70	26.09	193	0.50
155	13.56	34.907	1.24	180	150	13.65	34.91	1.30	26.21	182	0.54
170	13.43	34.919	1.24	177	200	13.05	34.90	1.11	26.32	171	0.63
184	13.22	34.905	1.11	174	250	12.53	34.86	0.94	26.40	164	0.72
204	13.02	34.896	1.11	171	300	11.75	34.81	1.02	26.51	153	0.80
222	12.89	34.894	0.92	168	400	9.69	34.71	0.32	26.80	126	0.95
241	12.66	34.876	0.90	165	500	7.58	34.62	0.56	27.06	101	1.07
270	12.24	34.839	1.09	160	600	6.72	34.59	0.60	27.16	92	1.18
303	11.70	34.812	0.99	152	700	6.13	34.58	0.70	27.23	85	1.28
363	10.54	34.752	0.26	137	800	5.65	34.57	0.92	27.28	80	1.37
498	7.60	34.616	0.55	102	1000	4.67	34.58	1.28	27.40	69	1.54
675	6.26	34.582	0.67	87							
837	5.46	34.564	1.01	79							
1159	3.87	34.588	1.46	60							
ARGO; October 19, 1961; 0001 GCT; 2°56'N, 96°04'W; sounding, 1720 fm; wind, 200°, force 4; weather, cloudy; sea, rough; wire angle, 07°.											44
10	25.74	33.521	4.55	581	0	25.8	(33.52)		(22.00)	(583)	(0.00)
30	25.76	33.531	4.47	581	10	25.74	33.52	4.55	22.02	581	0.06
49	19.86	34.625	3.13	341	20	25.75	33.53	4.51	22.03	581	0.12
69	16.16	35.039	2.29	224	30	25.76	33.53	4.47	22.02	581	0.17
89	15.51	35.028	2.05	211	50	18.90	34.75	2.93	24.87	309	0.26
109	14.86	34.986	2.24	201	75	15.84	35.04	2.15	25.83	217	0.33
123	14.66	34.981	2.05	197	100	14.99	34.99	2.24	25.98	203	0.38
138	13.94	34.928	2.05	186	125	14.62	34.98	2.05	26.06	196	0.43
158	13.56	34.931	1.23	178	150	13.70	34.93	1.55	26.21	181	0.48
173	13.42	34.936	1.59	175	200	13.07	34.92	1.27	26.34	170	0.57
187	13.20	34.927	1.27	172	250	12.49	34.89	0.69	26.43	161	0.66
206	13.02	34.923	1.27	169	300	11.59	34.82	0.42	26.55	150	0.74
226	12.86	34.908	0.97	167	400	9.21	34.70	0.34	26.87	119	0.88
246	12.57	34.896	0.70	162	500	7.91	34.66	0.43	27.04	103	1.00
275	12.08	34.852	0.63	156	600	5.99	34.62	0.60	27.28	81	1.10
309	11.40	34.812	0.38	147	700	6.18	34.58	0.89	27.22	86	1.19
374	9.70	34.714	0.31	126	800	5.47	34.56	1.27	27.29	79	1.28
517	7.73	34.650	0.44	101	1000	4.58	34.57	1.48	27.40	68	1.45
700	6.18	34.580	0.89	86	1200	(3.90)	(34.60)		(27.50)	(59)	(1.60)
864	5.10	34.558	1.43	75							
1188	3.92	34.60	1.49	59							

a) Thirty-six hours elapsed between the addition of reagents and the titration of the oxygen samples.

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
45	ARGO; October 19, 1961; 0341 GCT; 2°30'N, 96°02'W; sounding, 1300 fm; wind, 200°, force 4; weather, cloudy; sea, rough; wire angle, 05°.										
10	25.56	33.37	4.62	587	0	25.6	(33.37)		(21.95)	(588)	(0.00)
30	25.56	33.36	4.56	587	10	25.56	33.37	4.62	21.96	587	0.06
50	16.77	34.97	2.47	243	20	25.56	33.37	4.59	21.96	587	0.12
69	15.45	34.96	2.24	215	30	25.56	33.36	4.56	21.96	587	0.18
89	15.01	35.00	2.04	203	50	16.77	34.97	2.47	25.56	243	0.26
109	14.68	34.98	2.16	197	75	15.28	34.98	2.16	25.91	210	0.32
124	14.64	34.97	2.22	197	100	14.95	35.00	2.06	26.00	201	0.37
139	14.36	34.95	2.01	193	125	14.63	34.97	2.22	26.05	197	0.42
158	13.46	34.92	1.16	177	150	13.83	34.93	1.49	26.19	184	0.47
173	13.31a)	34.93	1.45	174	200	12.95	34.91	1.08	26.35	168	0.56
188	13.10	34.92	1.35	170	250	12.39	34.86	0.67	26.42	161	0.64
208	12.86	34.90	0.97	167	300	11.40	34.80	0.40	26.57	148	0.72
228	12.66	34.89	0.78	164	400	8.59	34.66	0.32	26.94	113	0.86
247	12.42	34.86	0.69	162	500	7.57	34.63	0.42	27.07	100	0.98
276	12.06	34.84	0.67	157	600	6.75	34.59	0.72	27.15	92	1.08
310	10.98	34.78	0.26	142	700	5.99	34.57	1.06	27.24	84	1.18
375	8.96	34.67	0.30	117	800	5.34	34.56	1.27	27.31	77	1.27
515	7.43	34.62	0.46	99	1000	4.53	34.59	1.45	27.43	66	1.43
696	6.02	34.57	1.02	85	1200	(4.01)	(34.65)		(27.53)	(57)	(1.58)
860	5.02	34.56	1.31	74							
1184	4.04	34.65	1.48	57							
46	ARGO; October 19, 1961; 0721 GCT; 1°59'N, 96°00'W; sounding, 1552 fm; wind, 200°, force 3; weather, cloudy; sea, missing; wire angle, 04°.										
10	25.11	33.32	4.71	577	0	25.1	(33.32)		(22.07)	(577)	(0.00)
30	24.29	33.77	4.74	521	10	25.11	33.32	4.71	22.06	577	0.06
50	16.40	34.94	2.60	237	20	25.11	33.32	4.71	22.06	577	0.12
70	14.98	34.97	2.24	204	30	24.29	33.77	4.74	22.65	521	0.17
90	14.74	34.94	2.34	202	50	16.40	34.94	2.60	25.63	237	0.25
110	14.46	34.92	2.16	197	75	14.91	34.96	2.26	25.98	204	0.30
125	14.08	34.91	1.95	190	100	14.60	34.93	2.27	26.02	199	0.35
140	13.82	34.91	1.90	185	125	14.08	34.91	1.95	26.12	190	0.40
159	13.64	34.90	2.00	182	150	13.71	34.90	1.98	26.19	184	0.45
174	13.43	34.90	1.91	178	200	13.00	34.86	1.14	26.30	173	0.54
188	13.15	34.87	1.18	175	250	12.49	34.84	0.73	26.39	165	0.63
208	12.92	34.86	1.11	171	300	11.09	34.75	0.44	26.58	146	0.71
228	12.66	34.85	0.96	167	400	8.65	34.63	0.31	26.90	116	0.85
248	12.52	34.84	0.75	165	500	7.68	34.58	0.55	27.01	106	0.97
277	11.56	34.77	0.71	153	600	6.78	34.55	0.87	27.12	96	1.08
311	10.88	34.74	0.32	143	700	5.92	34.53	1.20	27.21	86	1.18
375	9.02	34.65	0.26	120	800	5.41	34.52	1.38	27.27	81	1.27
519	7.52	34.57	0.61	104	1000	4.73	34.52	1.54	27.35	74	1.45
703	5.90	34.53	1.22	86	1200	(4.05)	(34.53)	(1.61)	(27.43)	(66)	(1.61)
869	5.17	34.52	1.45	79							
1195	4.06	34.53	1.61	66							

a) Alternate value, 13.50°C, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

ARGO; October 19, 1961; 1059 GCT; 1°28'N, 95°58'W; sounding, 1368 fm; wind, 190°, force 4; weather, cloudy; sea, missing; wire angle, 00°. 47

10	23.67	33.981	4.67	488	0	23.7	(33.98)		(22.98)	(489)	(0.00)
30	19.63a)	34.642	4.46	334	10	23.67	33.98	4.67	22.99	489	0.05
50	15.16	34.927	2.29	211	20	23.58	33.99	4.66	23.02	485	0.10
70	14.66	34.922	2.27	201	30	19.63	34.64	4.46	24.60	334	0.14
90	13.88	34.935	1.88	184	50	15.16	34.93	2.29	25.90	211	0.19
110	13.64	34.942	1.61	179	75	14.28	34.92	2.16	26.08	194	0.24
125	13.46	34.934	1.58	176	100	13.77	34.94	1.74	26.21	182	0.29
140	13.25	34.925	1.67	173	125	13.46	34.93	1.58	26.26	177	0.34
160	13.14	34.917	1.82	171	150	13.18	34.92	1.72	26.31	172	0.38
175	13.12	34.917	1.96	171	200	12.86	34.91	1.27	26.37	166	0.47
190	12.93	34.912	1.45	168	250	12.37	34.88	0.79	26.44	159	0.55
209	12.80	34.902	1.14	166	300	11.70	34.83	0.46	26.53	151	0.63
229	12.68	34.871	0.97	166	400	9.21	34.69	0.45	26.86	120	0.78
249	12.38	34.876	0.80	160	500	7.87	34.62	0.57	27.02	105	0.90
278	12.24	34.871	0.75	158	600	6.94	34.59	0.78	27.13	95	1.01
314	11.26	34.803	0.33	145	700	6.12	34.57	1.04	27.22	86	1.11
378	9.57	34.705	0.43	124	800	5.69	34.56	1.15	27.27	82	1.20
523	7.62	34.609	0.60	103	1000	4.83	34.57	1.37	27.38	71	1.37
707	6.08	34.569	1.05	86	1200	(3.86)	(34.58)	(1.59)	(27.49)	(60)	(1.53)
873	5.41	34.565	1.22	78							
1199	3.87	34.580	1.59	60							

ARGO; October 19, 1961; 2344 GCT; 0°57'N, 95°57'W; sounding, 1898 fm; wind, 180°, force 4; weather, drizzle; sea, rough; wire angle, 08°. 48

10	23.61	34.028	4.74	483	0	23.7	(34.03)		(23.02)	(486)	(0.00)
30	18.53	34.776	4.16	298	10	23.61	34.03	4.74	23.04	483	0.05
50	15.34	34.884	2.83	218	20	23.60	34.03	4.74	23.05	483	0.10
70	13.86	34.947	1.92	183	30	18.53	34.78	4.16	24.99	298	0.14
89	13.53	34.944	1.74	177	50	15.34	34.88	2.83	25.82	218	0.19
109	13.29	34.922	1.85	174	75	13.74	34.95	1.85	26.22	181	0.24
124	13.10	34.919	1.80	170	100	13.40	34.93	1.80	26.28	175	0.28
139	12.80	34.903	1.65	166	125	13.09	34.92	1.80	26.33	170	0.33
158	12.77	34.898	1.54	166	150	12.76	34.90	1.64	26.38	165	0.37
173	12.79	34.894	1.44	166	200	12.69	34.89	1.17	26.39	165	0.45
187	12.76	34.891	1.45	166	250	12.53	34.88	1.04	26.41	162	0.54
207	12.66	34.887	1.13	164	300	12.12	34.86	0.62	26.48	156	0.62
226	12.66	34.887	1.09	164	400	9.08	34.68	0.26	26.87	119	0.77
246	12.56	34.882	1.05	163	500	7.83	34.61	0.50	27.01	105	0.89
275	12.37	34.873	0.81	160	600	6.79	34.58	0.87	27.14	94	1.00
310	11.98	34.845	0.56	155	700	6.05	34.56	1.15	27.22	86	1.10
374	9.47	34.701	0.23	123	800	5.54	34.55	1.35	27.28	81	1.19
517	7.63	34.604	0.55	103	1000	4.66	34.55	1.58	27.38	71	1.36
699	6.06	34.559	1.13	86	1200	(3.87)	(34.57)		(27.48)	(61)	(1.51)
863	5.26	34.54	1.42	78							
1188	3.90	34.568	1.66	62							

a) Alternate value, 20.63°C, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
49	ARGO; October 20, 1961; 1904 GCT; 0°31'N, 96°05'W; sounding, 1716 fm; wind, 150°, force 4; weather, cloudy; sea, very rough; wire angle, 17°.										
9	22.42	34.214	4.65	437	0	22.5	(34.21)		(23.50)	(440)	(0.00)
28	16.78	34.862	3.25	251	10	22.39	34.22	4.64	23.54	436	0.04
48	14.02	34.892	2.25	190	20	19.70	34.52	4.03	24.49	345	0.08
67	13.71	34.899	2.19	184	30	16.30	34.87	3.06	25.60	240	0.11
87	13.30	34.891	2.07	176	50	13.99	34.89	2.24	26.12	190	0.16
106	13.20	34.902	1.93	174	75	13.53	34.89	2.15	26.22	181	0.20
120	12.94	34.905	1.95	168	100	13.22	34.90	1.94	26.29	174	0.25
135	12.91	34.909	2.10	167	125	12.92	34.91	1.98	26.36	168	0.29
154	12.90	34.912	2.17	167	150	12.90	34.91	2.16	26.36	167	0.33
169	12.80	34.906	1.86	166	200	12.66	34.90	1.78	26.40	163	0.42
183	12.68	34.908	1.81	163	250	12.53	34.89	1.35	26.42	162	0.50
202	12.66	34.900	1.76	163	300	12.25	34.88	0.84	26.47	157	0.59
222	12.62	34.898	1.64	163	400	9.52	34.71	0.37	26.83	123	0.73
241	12.55	34.893	1.39	162	500	8.20	34.65	0.59	26.99	108	0.86
270	12.50	34.891	1.20	161	600	7.27	34.61	0.71	27.09	98	0.97
304	12.18	34.878	0.77	156	700	6.36	34.58	1.02	27.20	88	1.07
365	10.18	34.749	0.31	131	800	5.50	34.56	1.46	27.29	79	1.17
497	8.22	34.649	0.59	108	1000	4.49	34.57	1.66	27.41	67	1.33
668	6.66	34.592	0.87	91							
827	5.30	34.556	1.53	77							
1145	3.98	34.578	1.71	62							
50	ARGO; October 21, 1961; 0023 GCT; 0°01.5'S, 96°02'W; sounding, 1756 fm; wind, 140°, force 3; weather, cloudy; sea, rough; wire angle, 07°.										
10	20.83	34.486	4.67	376	0	21.1	(34.49)		(24.10)	(382)	(0.00)
30	16.54	34.921	3.16	241	10	20.83	34.49	4.67	24.17	376	0.04
50	14.00	34.975	2.60	184	20	18.50	34.73	3.86	24.96	300	0.07
70	13.42	34.948	2.65	174	30	16.54	34.92	3.16	25.58	242	0.10
89	13.24	34.923	2.47	173	50	14.00	34.98	2.60	26.19	184	0.14
109	13.07	34.943	2.38	168	75	13.36	34.94	2.60	26.29	174	0.19
124	13.00	34.934	2.21	167	100	13.14	34.94	2.43	26.34	170	0.23
139	12.84	34.925	2.15	165	125	13.00	34.93	2.20	26.36	168	0.27
158	12.76	34.913	2.01	164	150	12.77	34.91	2.05	26.39	165	0.32
173	12.76	34.912	1.93	164	200	12.66	34.91	1.72	26.41	163	0.40
188	12.68	34.911	1.75	163	250	12.58	34.90	1.50	26.42	162	0.48
208	12.64	34.912	1.69	162	300	12.23	34.89	0.74	26.48	156	0.57
228	12.62	34.912	1.62	162	400	9.28	34.71	0.29	26.87	119	0.71
248	12.58	34.905	1.57	162	500	8.08	34.64	0.63	27.00	107	0.83
279	12.52	34.903	1.26	161	600	7.23	34.61	0.79	27.10	97	0.95
314	11.94	34.881	0.49	152	700	6.56	34.60	0.96	27.18	89	1.05
378	9.68	34.732	0.24	124	800	5.73	34.57	1.38	27.27	81	1.14
522	7.86	34.633	0.69	104	1000	4.53	34.57	1.67	27.41	68	1.31
706	6.52	34.594	0.98	89	1200	(3.80)	(34.59)	(1.70)	(27.50)	(59)	(1.46)
871	5.15	34.561	1.61	75							
1195	3.83	34.585	1.70	60							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; October 22, 1961; 0719 GCT; 0°35'S, 95°59'W; sounding, 1761 fm; wind, 130°, force 3; weather, overcast; sea, rough; wire angle, 04°. 51

10	19.72	34.614	4.42	339	0	19.8	(34.61)		(24.54)	(341)	(0.00)
30	16.76	34.930	3.16	246	10	19.72	34.61	4.42	24.56	339	0.03
50	14.48	35.043	1.59	189	20	18.50	34.74	3.93	24.97	300	0.07
70	13.60	34.991	1.34	175	30	16.76	34.93	3.16	25.54	246	0.09
90	13.32	34.970	1.62	171	50	14.48	35.04	1.59	26.13	189	0.14
110	12.93	34.931	1.88	166	75	13.52	34.98	1.36	26.29	174	0.18
125	12.75	34.912	1.57	164	100	13.11	34.95	1.79	26.35	168	0.23
140	12.66	34.908	1.93	163	125	12.75	34.91	1.57	26.39	164	0.27
160	12.64	34.902	1.62	163	150	12.65	34.90	1.80	26.40	163	0.31
174	12.66	34.902	1.70	163	200	12.61	34.90	1.60	26.41	162	0.39
189	12.62	34.901	1.63	163	250	12.55	34.90	1.40	26.42	161	0.48
209	12.61	34.902	1.56	162	300	12.08	34.87	0.66	26.49	155	0.56
229	12.61	34.899	1.56	163	400	9.33	34.71	0.40	26.86	120	0.71
249	12.56	34.896	1.41	162	500	8.19	34.65	0.74	26.99	108	0.83
279	12.51	34.893	1.27	161	600	7.29	34.61	0.93	27.09	98	0.94
314	11.40	34.835	0.25	145	700	6.49	34.58	1.08	27.18	90	1.04
378	9.62	34.725	0.35	124	800	5.78	34.56	1.36	27.25	83	1.14
524	7.96	34.633	0.79	106	1000	4.59	34.57	1.65	27.40	69	1.31
709	6.41	34.575	1.11	89	1200	(3.71)	(34.59)	(1.68)	(27.51)	(58)	(1.46)
874	5.28	34.557	1.53	77							
1199	3.72	34.594	1.68	58							

ARGO; October 22, 1961; 1425 GCT; 1°09'S, 95°59'W; sounding, 1770 fm; wind, 120°, force 2; weather, cloudy; sea, high; wire angle, 02°. 52

10	19.00	34.729	4.25	313	0	19.1	(34.73)		(24.81)	(315)	(0.00)
30	15.50	35.017	2.22	212	10	19.00	34.73	4.25	24.83	312	0.03
50	13.74	34.981	1.88	178	20	17.40	34.93	3.16	25.38	260	0.06
70	13.12	34.944	1.75	169	30	15.50	35.02	2.22	25.89	212	0.08
90	13.01	34.931	1.66	168	50	13.74	34.98	1.88	26.24	178	0.12
110	12.92	34.929	1.64	166	75	13.08	34.94	1.73	26.35	168	0.17
125	12.85	34.922	1.59	165	100	12.97	34.93	1.65	26.36	167	0.21
140	12.82	34.926	1.63	165	125	12.85	34.92	1.59	26.38	166	0.25
159	12.69	34.908	1.62	163	150	12.76	34.92	1.63	26.40	164	0.29
174	12.66	34.911	1.54	163	200	12.59	34.91	1.43	26.42	161	0.38
189	12.60	34.905	1.43	162	250	12.23	34.90	0.35	26.49	155	0.46
209	12.58	34.910	1.43	161	300	11.46	34.85	0.29	26.59	145	0.54
229	12.56	34.904	1.34	161	400	8.70	34.68	0.84	26.94	113	0.67
249	12.26	34.899	0.35	156	500	7.68	34.62	1.01	27.04	103	0.79
278	11.95	34.878	0.40	152	600	6.99	34.60	1.16	27.13	95	0.90
313	11.11	34.828	0.22	141	700	6.41	34.59	1.28	27.20	88	1.00
379	8.99	34.695	0.78	116	800	5.75	34.57	1.49	27.27	81	1.09
522	7.50	34.616	1.05	100	1000	4.63	34.57	1.58	27.40	69	1.26
706	6.38	34.587	1.30	88	1200	(3.82)	(34.59)	(1.57)	(27.50)	(59)	(1.41)
871	5.26	34.563	1.59	76							
1195	3.83	34.594	1.57	59							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; October 23, 1961; 1850 GCT; 2°38'S, 96°00'W; sounding, 1760 fm; wind, 170°, force 3; weather, clear; sea, rough; wire angle, 25°. 55

9	19.14	34.789	4.59	312	0	19.5	(34.79)		(24.75)	(320)	(0.00)
28	17.17	34.896	3.54	257	10	19.04	34.79	4.55	24.87	309	0.03
45	15.26	34.974	2.49	210	20	18.53	34.84	4.33	25.04	293	0.06
64	14.51	34.998	2.27	193	30	16.80	34.92	3.30	25.52	247	0.09
81	13.80	34.985	1.92	179	50	15.05	34.98	2.42	25.96	205	0.13
98	13.56	34.970	1.75	176	75	14.45	35.00	2.25	26.11	191	0.18
111	13.38	34.960	1.78	173	100	13.53	34.97	1.76	26.28	175	0.23
123	13.29	34.952	1.56	172	125	13.28	34.95	1.55	26.32	172	0.27
140	13.24	34.957	1.50	170	150	13.23	34.94	1.53	26.32	171	0.32
152	13.22	34.944	1.58	171	200	12.83	34.93	0.45	26.39	164	0.40
164	13.15	34.941	1.41	170	250	12.23	34.89	0.27	26.48	156	0.49
181	13.01a)	34.943	0.76	167	300	11.05	34.82	0.14	26.65	140	0.57
197	12.86	34.928	0.48	165	400	9.13	34.71	0.21	26.89	117	0.70
213	12.74	34.922	0.38	163	500	7.68	34.64	0.38	27.06	101	0.82
235	12.48	34.906	0.33	160	600	6.76	34.60	0.72	27.16	92	0.92
263	11.96	34.876	0.22	152	700	6.07	34.58	1.23	27.23	85	1.02
314	10.73	34.801	0.13	136	800	5.50	34.57	1.45	27.30	79	1.11
427	8.68	34.685	0.25	112	1000	4.59	34.57	1.62	27.40	69	1.28
580	6.92	34.601	0.62	94							
723	5.92	34.578	1.33	83							
1027	4.47	34.565	1.63	68							

ARGO; October 23, 1961; 2213 GCT; 3°04'S, 96°00'W; sounding, 1916 fm; wind, 140°, force 4; weather, partly cloudy; sea, very rough; wire angle, 13°. 56

10	19.74	34.706	4.59	332	0	19.9	(34.71)		(24.59)	(336)	(0.00)
29	18.14	34.772	3.82	289	10	19.74	34.71	4.59	24.63	332	0.03
49	15.24	34.985	2.39	209	20	19.32	34.71	4.40	24.74	322	0.07
68	14.52	35.002	2.12	192	30	18.00	34.78	3.76	25.12	285	0.10
88	13.56	34.974	1.82	175	50	15.10	34.99	2.33	25.96	205	0.15
108	13.32	34.952	1.83	172	75	14.21	35.00	2.02	26.16	186	0.20
122	13.22	34.946	1.79	171	100	13.41	34.96	1.82	26.30	173	0.24
137	13.10	34.938	1.79	169	125	13.20	34.94	1.79	26.32	171	0.28
156	13.10	34.937	1.73	169	150	13.10	34.94	1.74	26.34	169	0.33
171	13.10	34.937	1.52	169	200	12.74	34.93	0.44	26.41	163	0.41
186	12.92	34.934	0.74	166	250	11.86	34.87	0.22	26.53	151	0.49
206	12.66	34.921	0.38	162	300	11.32	34.84	0.21	26.61	144	0.57
225	12.27	34.896	0.28	156	400	9.32	34.72	0.18	26.87	119	0.71
245	11.92	34.872	0.22	152	500	8.02	34.64	0.42	27.01	106	0.83
274	11.53	34.851	0.21	146	600	6.93	34.60	0.67	27.13	94	0.94
309	11.24	34.830	0.21	143	700	6.04	34.57	0.88	27.23	85	1.04
373	9.75	34.746	0.13	124	800	5.42	34.56	1.17	27.30	78	1.13
516	7.84	34.635	0.47	104	1000	4.54	34.56	1.53	27.40	69	1.30
697	6.06	34.572	0.88	85	1200	(3.82)	(34.58)		(27.49)	(60)	(1.45)
860	5.11	34.558	1.35	75							
1185	3.87	34.576	1.67	61							

a) Alternate value, 13.15°C, not used in interpolation.

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
57	ARGO; October 24, 1961; 0422 GCT; 4°00'S, 95°58'W; sounding, 1966 fm; wind, 140°, force 4; weather, partly cloudy; sea, rough; wire angle, 06°.										
10	-	34.84	5.00	-	0	20.3	(34.84)		(24.58)	(337)	(0.00)
30	20.22	34.87	4.79	332	10	20.3	34.84	5.00	24.58	337	0.03
49	19.72	35.08	4.51	305	20	20.20	34.85	4.82	24.61	333	0.07
69	15.16	35.03	2.16	204	30	20.22	34.87	4.79	24.62	332	0.10
89	14.44	35.03	1.85	189	50	19.70	35.08	4.49	24.92	304	0.16
109	14.12	35.00	1.49	184	75	14.87	35.03	2.05	26.04	198	0.23
123	13.93	35.00	1.72	181	100	14:27	35.01	1.62	26.16	187	0.28
138	13.65	34.98	0.97	177	125	13.89	35.00	1.68	26.23	180	0.32
158	13.24	34.96	0.62	170	150	13.35	34.97	0.68	26.32	171	0.37
174	13.14	34.95	0.57	169	200	12.86	34.94	0.52	26.39	164	0.45
188	12.99	34.94	0.53	167	250	12.34	34.90	0.14	26.46	157	0.54
209	12.78	34.93	0.52	163	300	11.76	34.87	0.12	26.55	149	0.62
229	12.64	34.92	0.18	162	400	9.76	34.74	0.18	26.81	125	0.76
248	12.36	34.90	0.15	158	500	8.09	34.64	0.31	27.00	107	0.89
279	12.00	34.88	0.13	153	600	7.13	34.60	0.50	27.11	97	1.00
314	11.55	34.86	0.12	146	700	6.30	34.57	0.75	27.20	88	1.10
379	10.20	34.77	0.17	130	800	5.57	34.56	1.05	27.28	80	1.19
521	7.84	34.63	0.36	104	1000	4.55	34.57	1.50	27.41	68	1.36
706	6.26	34.57	0.77	88	1200	(3.86)	(34.58)	(1.67)	(27.49)	(60)	(1.51)
870	5.14	34.56	1.26	75							
1195	3.88	34.58	1.67	61							
58	ARGO; October 24, 1961; 1033 GCT; 5°09'S, 96°06'W; sounding, 2025 fm; wind, 150°, force 4; weather, overcast; sea, very rough; wire angle, 13°.										
10	20.53	35.05	4.89	327	0	20.6	(35.05)		(24.66)	(329)	(0.00)
29	20.52	35.05	4.91	327	10	20.53	35.05	4.89	24.68	327	0.03
48	20.39	35.05	4.85	324	20	20.53	35.05	4.90	24.68	327	0.07
68	20.08	35.05	4.67	316	30	20.52	35.05	4.89	24.68	327	0.10
87	18.28	35.14	2.75	265	50	20.37	35.05	4.84	24.72	323	0.16
107	14.86	35.04	0.92	197	75	19.92	35.06	4.51	24.85	311	0.24
121	14.01	35.00	0.52	182	100	15.75	35.08	1.33	25.88	213	0.31
136	13.34	34.97	0.41	171	125	13.80	34.99	0.49	26.24	179	0.36
155	13.06	34.94	0.36	168	150	13.11	34.94	0.37	26.34	169	0.40
170	12.94	34.94	0.33	166	200	12.69	34.91	0.40	26.40	163	0.49
185	12.80	34.93	0.36	164	250	12.32	34.90	0.28	26.47	157	0.57
204	12.66	34.91	0.40	163	300	11.86	34.88	0.27	26.54	150	0.65
224	12.48	34.91	0.30	159	400	10.23	34.77	0.24	26.75	130	0.80
243	12.36	34.90	0.28	158	500	8.06	34.64	0.23	27.00	106	0.93
273	12.17	34.90	0.34	154	600	6.64	34.57	0.85	27.15	92	1.04
306	11.78	34.87	0.26	149	700	5.83	34.55	1.23	27.24	84	1.13
367	10.85	34.87	0.23	133	800	5.31	34.55	1.40	27.30	78	1.22
504	7.98	34.64	0.23	105	1000	4.49	34.56	1.52	27.41	68	1.39
678	5.96	34.55	1.20	85							
835	5.14	34.55	1.43	76							
1152	4.00	34.56	1.56	63							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; October 25, 1961; 0804 GCT; 2°00'S, 95°55'W; sounding, 1740 fm; wind, 120°, force 4; weather, overcast; sea, missing; wire angle, 11°. 59

0	19.36	34.78	4.80	318	0	19.36	34.78	4.80	24.78	318	0.00
10	19.36	34.78	4.59	318	10	19.36	34.78	4.59	24.78	318	0.03
20	19.08	34.77	4.44	311	20	19.08	34.77	4.44	24.84	311	0.06
30	18.36	34.83	4.16	290	30	18.36	34.83	4.16	25.07	290	0.09
39	17.92	34.89	3.91	275	50	16.17	34.95	2.73	25.69	231	0.15
49	16.28	34.95	2.81	234	75	14.00	35.01	1.80	26.21	181	0.20
59	15.18	34.99	2.22	207	100	13.49	34.98	1.90	26.30	173	0.24
68	14.22	35.01	2.12	186	125	13.24	34.95	1.80	26.32	171	0.29
78	13.90	35.01	1.72	179	150	13.04	34.93	1.80	26.35	168	0.33
88	13.58	34.98	1.86	175	200	(12.88)	(34.91)		(26.37)	(167)	(0.42)
98	13.51	34.98	1.90	174							
108	13.36	34.96	1.87	172							
118	13.28	34.96	1.86	171							
128	13.22	34.95	1.78	170							
137	13.15	34.94	1.88	170							
147	13.06	34.93	1.81	169							
156	13.04	34.93	1.79	168							
165	13.06	34.93	1.78	169							
174	13.04	34.93	1.85	168							
184	13.00	34.93	1.78	168							
193	12.93	34.92	1.68	167							

ARGO; October 25, 1961; 2228 GCT; 1°08'S, 95°58'W; sounding, 1700 fm; wind, 130°, force 3; weather, cloudy; sea, missing; wire angle, 20°. 60

1	20.20	34.63	4.63	349	0	(20.20)	(34.63)	(4.63)	(24.45)	(349)	(0.00)
10	19.54	34.64	4.41	332	10	19.54	34.64	4.41	24.63	332	0.03
20	18.37	34.76	3.82	295	20	18.37	34.76	3.82	25.02	295	0.07
29	17.20	34.90	3.22	258	30	17.10	34.91	3.22	25.44	255	0.09
39	16.98	34.94	3.20	250	50	15.72	34.99	2.30	25.82	219	0.14
48	15.91	34.98	2.43	223	75	13.69	34.96	1.86	26.24	179	0.19
57	15.19	35.00	2.01	206	100	12.98	34.93	1.57	26.36	167	0.23
66	14.46	34.99	1.94	192	125	12.89	34.92	1.68	26.37	166	0.28
76	13.60	34.96	1.82	177	150	12.80	34.91	1.74	26.38	165	0.32
85	13.32	34.94	1.69	173							
94	13.03	34.93	1.60	168							
104	12.96	34.93	1.55	167							
113	12.92	34.92	1.54	167							
122	12.90	34.92	1.68	166							
131	12.86	34.92	1.68	166							
140	12.82	34.92	1.67	165							
149	12.80	34.92	1.74	165							
158	12.81	34.91	1.70	166							
167	12.72	34.91	1.57	164							
177	12.67	34.90	1.68	164							
185	12.64	34.90	1.66	163							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

61 ARGO; October 26, 1961; 1101 GCT; 0°02'S, 96°01'W; sounding, 1700+ fm; wind, 150°, force 3; weather, drizzle; sea, missing; wire angle, 15°.

0	20.46	34.51	4.62	365	0	20.46	34.51	4.62	24.29	365	0.00
10	20.43	34.51	4.53	364	10	20.43	34.51	4.53	24.29	364	0.04
19	20.20	34.52	4.42	357	20	20.18	34.52	4.42	24.37	357	0.07
29	18.88	34.64	4.06	316	30	18.65	34.66	3.99	24.87	309	0.11
38	17.31	34.74	3.50	272	50	16.00	34.82	2.94	25.63	237	0.16
48	16.26	34.80	3.06	244	75	14.23	34.94	2.51	26.11	191	0.21
58	15.04	34.89	2.66	211	100	14.09	35.00	2.45	26.19	184	0.26
68	14.40	34.97	2.58	192	125	13.38	34.92	2.46	26.27	176	0.31
78	14.18	34.94	2.50	190	150	12.97	34.91	2.31	26.35	169	0.35
87	14.29	34.99	2.66	189	200	12.72	34.90	1.82	26.39	165	0.44
96	14.24	35.02	2.41	185							
106	13.86	34.97	2.56	181							
115	13.62	34.94	2.40	179							
125	13.38	34.92	2.46	176							
134	13.25	34.95	2.38	171							
144	13.02	34.91	2.25	170							
153	12.96	34.91	2.31	168							
171	12.91	34.91	2.15	167							
191	12.78	34.90	1.94	166							
214	12.64	34.90	1.73	163							
238	12.55	34.89	-	162							

62 ARGO; October 26, 1961; 2027, 2045 GCT: 0°52'N, 95°50'W; sounding, 1850 fm; wind, 180°, force 4; weather, partly cloudy; sea, very rough; wire angle, 00°, 00°.

0	24.25	33.72	4.80	524	0	24.25	33.72	4.80	22.62	524	0.00
10	24.25	33.72	4.63	524	10	24.25	33.72	4.83	22.62	524	0.05
20	24.10	33.75	4.64	517	20	24.10	33.75	4.64	22.69	517	0.10
30	16.86	34.90	2.79	250	30	16.86	34.90	2.79	25.49	250	0.14
40	15.71	34.98	2.20	219	50	14.72	34.97	2.08	26.03	199	0.19
50	14.72	34.97	2.08	199	75	13.92	34.94	1.90	26.18	185	0.24
60	14.22	34.95	1.91	190	100	13.48	34.93	1.66	26.26	177	0.28
70	14.02	34.94	1.91	187	125	13.18	34.92	2.00	26.31	172	0.33
80	13.82	34.94	1.87	183	150	12.92	34.92	1.41	26.37	167	0.37
90	13.64	34.94	1.70	179	200	(12.60)	(34.90)	(1.60)	(26.41)	(162)	(0.45)
100	13.48	34.93	1.66	177							
110	13.34	34.93	1.67	174							
120	13.20	34.92	2.01	172							
130	13.17	34.92	1.72	172							
140	13.00	34.91	1.63	169							
150	12.92	34.92	1.41	167							
160	12.86	34.91	1.39	166							
169	12.78	34.90	1.47	166							
178	12.70	34.90	1.62	164							
188	12.61	34.90	1.58	162							
197	12.60	34.90	1.60	162							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
ARGO; October 27, 1961; 1833 GCT; 0°00', 94°02'W; sounding, 1717 fm; wind, 180°, force 4; weather, cloudy; sea, rough; wire angle, 11°.											63
10	19.59	34.643	4.96	333	0	20.5	(34.64)		(24.37)	(356)	(0.00)
30	15.36	34.899	2.54	217	10	19.59	34.64	4.96	24.61	333	0.03
49	14.31	34.918	2.13	194	20	18.50	34.74	4.35	24.97	300	0.07
69	13.53	34.894	2.13	181	30	15.36	34.90	2.54	25.83	217	0.09
88	13.21	34.897	2.32	174	50	14.30	34.92	2.13	26.08	194	0.13
108	13.08	34.897	2.03	172	75	13.40	34.90	2.22	26.25	178	0.18
123	12.95	34.911	2.26	168	100	13.13	34.90	2.16	26.31	172	0.22
137	12.92	34.912	2.22	167	125	12.94	34.91	2.25	26.35	168	0.27
157	12.80	34.903	2.06	166	150	12.84	34.90	2.12	26.37	167	0.31
171	12.76	34.903	1.92	165	200	12.68	34.90	1.80	26.40	164	0.40
186	12.68	34.899	1.80	164	250	12.57	34.89	1.35	26.41	162	0.48
206	12.68	34.906	1.80	163	300	11.87	34.86	0.63	26.52	152	0.56
225	12.64	34.898	1.49	163	400	8.83	34.68	0.48	26.91	115	0.70
244	12.62	34.894	1.46	163	500	7.94	34.63	0.60	27.01	105	0.82
273	12.30	34.879	0.90	158	600	6.91	(34.59)	(0.96)	(27.13)	(94)	(0.93)
307	11.74	34.850	0.59	150	700	6.03	(34.56)	(1.29)	(27.22)	(86)	(1.03)
370	9.22	34.701	0.49	119	800	5.49	(34.56)	(1.47)	(27.29)	(79)	(1.12)
509	7.86	34.631	0.62	104	1000	4.58	34.56	1.65	27.40	69	(1.29)
686	6.12	-	1.26	-							
846	5.26	34.556	1.51	77							
1166	3.88	34.577	1.70	61							
ARGO; October 28, 1961; 0625 GCT; 0°04'N, 92°16'W; sounding, 1600 fm; wind, 210°, force 3; weather, clear; sea, missing; wire angle, 02°.											64
10	17.16	34.90	4.51	257	0	17.3	(34.90)		(25.38)	(260)	(0.00)
30	16.35	34.90	4.24	239	10	17.16	34.90	4.51	25.42	257	0.03
50	14.24	34.91	2.30	193	20	16.83	34.90	4.43	25.50	249	0.05
70	13.77	34.91	2.09	184	30	16.35	34.90	4.24	25.61	239	0.08
90	13.36	34.90	2.05	177	50	14.24	34.91	2.30	26.09	193	0.12
110	13.06	34.91	2.09	170	75	13.66	34.91	2.06	26.21	182	0.17
125	12.98	34.92	2.09	168	100	13.19	34.90	2.07	26.30	174	0.21
140	12.86	34.92	2.02	166	125	12.98	34.92	2.09	26.35	168	0.26
160	12.80	34.92	1.89	165	150	12.82	34.92	1.96	26.39	165	0.30
175	12.78	34.90	1.85	166	200	12.71	34.90	1.83	26.39	164	0.38
190	12.72	-	1.87	-	250	12.68	34.89	1.66	26.39	165	0.47
210	12.70	34.90	1.82	164	300	12.23	34.88	1.05	26.47	157	0.55
230	12.70	34.90	1.71	164	400	9.10	34.74	0.38	26.92	114	0.69
250	12.68	34.89	1.66	165	500	8.13	34.65	0.58	27.00	107	0.81
279	12.67	34.90	1.67	164	600	7.17	34.61	0.84	27.11	96	0.92
314	11.56	34.84	0.45	148	700	6.24	34.58	1.14	27.21	87	1.03
378	9.42	34.77	0.35	117	800	5.62	34.57	1.39	27.28	80	1.12
522	7.92	34.63	0.65	105	1000	4.64	34.57	1.59	27.40	69	1.29
705	6.20	34.58	1.16	86	1200	(3.80)	(34.58)	(1.70)	(27.49)	(60)	(1.44)
868	5.27	34.56	1.49	77							
1193	3.84	34.58	1.70	60							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
65	ARGO; October 31, 1961; 2054 GCT; 5°00'N, 87°00'W; sounding, 970 fm; wind, 260°, force 4; weather, cloudy; sea, rough; wire angle, 11°.										
10	26.45	32.977	4.61	641	0	26.5	(32.98)		(21.38)	(643)	(0.00)
29	26.11	33.004	4.45	629	10	26.45	32.98	4.61	21.39	641	0.06
48	17.66	34.775	1.84	277	20	26.31	32.98	4.54	21.44	637	0.13
67	15.45	34.956	1.22	215	30	26.10	33.00	4.43	21.52	629	0.19
86	14.88	34.951	1.02	204	50	17.41	34.81	1.79	25.29	269	0.28
105	14.28	34.949	0.96	191	75	15.20	34.95	1.13	25.91	210	0.34
118	14.06	34.942	0.95	188	100	14.40	34.95	0.96	26.08	194	0.39
132	13.82	34.947	0.89	182	125	13.92	34.94	0.91	26.18	185	0.44
150	13.81	34.955	0.87	182	150	13.81	34.96	0.87	26.21	181	0.49
164	13.56	34.928	0.89	179	200	13.09	34.91	0.60	26.32	171	0.58
177	13.37	34.920	0.63	176	250	12.14	34.84	0.32	26.46	158	0.66
195	13.15	34.911	0.62	172	300	10.89	34.77	0.13	26.64	141	0.74
213	12.88	34.900	0.49	168	400	9.31	34.70	0.10	26.85	121	0.88
231	12.54	34.871	0.42	163	500	7.73	34.63	0.18	27.04	103	1.00
258	11.94	34.832	0.24	155	600	6.84	34.60	0.32	27.15	93	1.11
289	11.05	34.779	0.15	143	700	6.15	34.58	0.51	27.22	86	1.21
346	10.32	34.748	0.10	133	800	5.56	34.58	0.75	27.30	79	1.30
476	8.02	34.642	0.15	106	1000	4.64	34.59	1.01	27.41	68	1.46
642	6.52	34.590	0.40	89							
793	5.60	34.581	0.72	79							
1097	4.26	34.589	1.10	64							
66	ARGO; November 1, 1961; 0259 GCT; 3°50'N, 87°03'W; sounding, 760 fm; wind, 220°, force 4; weather, cloudy; sea, missing; wire angle, 13°.										
10	26.30	32.888	4.57	643	0	26.3	(32.89)		(21.37)	(643)	(0.00)
29	26.30	32.907	4.55	642	10	26.30	32.89	4.57	21.37	643	0.06
48	19.78	34.506	2.51	348	20	26.30	32.91	4.55	21.39	642	0.13
67	15.60	34.924	1.56	221	30	26.30	32.91	4.55	21.39	642	0.19
85	14.72	34.945	1.62	201	50	18.60	34.64	2.19	24.87	309	0.29
104	14.29	34.958	1.53	191	75	15.39	34.93	1.57	25.85	216	0.35
117	14.14	34.956	1.47	188	100	14.38	34.96	1.58	26.09	193	0.41
130	13.96	34.947	1.30	185	125	14.02	34.95	1.39	26.16	186	0.45
149	13.77	34.951	0.99	181	150	13.74	34.95	0.98	26.22	181	0.50
162	13.56	34.938	0.79	178	200	12.99	34.91	0.55	26.34	169	0.59
175	13.42	34.931	0.79	176	250	12.05	34.85	0.25	26.48	156	0.67
193	13.14	34.917	0.58	171	300	11.08	34.79	0.16	26.62	143	0.75
210	12.80	34.897	0.51	166	400	8.80	34.67	0.19	26.91	115	0.89
228	12.62	34.882	0.39	164	500	7.60	34.63	0.28	27.06	101	1.01
254	11.96	34.847	0.22	154	600	6.87	34.61	0.37	27.15	92	1.11
284	11.42	34.816	0.18	147	700	6.05	34.59	0.67	27.24	84	1.21
340	9.99	34.734	0.15	129	800	5.29	34.57	1.03	27.32	76	1.30
466	7.90	34.639	0.26	104	1000	4.51	34.58	1.24	27.42	67	1.46
630	6.62	34.602	0.42	90							
782	5.40	34.571	0.99	77							
1098	4.22	34.590	1.30	63							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED			
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m	
ARGO; November 1, 1961; 0922 GCT; 2°47'N, 87°09'W; sounding, 1498 fm; wind, 230°, force 4; weather, missing; sea, missing; wire angle, 26°.												67
9	25.72	33.191	4.53	604	0	25.7	(33.19)		(21.78)	(604)	(0.00)	
27	25.72	33.191	4.51	604	10	25.72	33.19	4.53	21.78	604	0.06	
45	22.11	34.069	3.56	440	20	25.72	33.19	4.52	21.78	604	0.12	
63	15.38	35.001	1.89	210	30	25.72	33.19	4.51	21.78	604	0.18	
81	15.08	35.029	1.85	202	50	18.00	34.72	2.27	25.08	289	0.27	
99	14.92	35.019	1.34	199	75	15.13	35.03	1.85	25.98	203	0.33	
112	14.84	35.014	1.78	198	100	14.91	35.02	1.35	26.03	199	0.38	
125	14.54	34.978	1.87	195	125	14.54	34.98	1.87	26.07	194	0.43	
142	14.16	34.958	1.92	188	150	13.95	34.95	1.80	26.18	185	0.48	
155	13.83	34.949	1.66	182	200	13.11	34.92	0.88	26.33	171	0.57	
168	13.44	34.925	1.11	177	250	12.25	34.88	0.38	26.47	157	0.66	
185	13.28	34.922	0.98	174	300	11.11	34.80	0.32	26.62	143	0.74	
201	13.10	34.914	0.88	171	400	9.01	34.70	0.18	26.90	116	0.87	
220	12.88	34.903	0.67	167	500	7.64	34.63	0.27	27.06	101	0.99	
243	12.41	34.885	0.41	160	600	6.82	34.60	0.55	27.15	93	1.10	
272	11.78	34.840	0.34	152	700	6.17	34.58	0.90	27.22	86	1.19	
325	10.47	34.768	0.27	134	800	5.62	34.58	1.07	27.29	79	1.29	
441	8.36	34.661	0.16	109	1000	4.70	34.58	1.22	27.40	69	1.46	
591	6.90	34.603	0.53	93								
734	5.94	34.580	1.00	83								
1038	4.55	34.582	1.24	67								
ARGO; November 1, 1961; 1259 GCT; 2°13'N, 87°13'W; sounding, 1477 fm; wind, 230°, force 4; weather, cloudy; sea, rough; wire angle, 15°.												68
9	25.69	33.192	4.64	603	0	25.7	(33.19)		(21.78)	(604)	(0.00)	
28	25.70	33.191	4.63	604	10	25.69	33.19	4.64	21.79	603	0.06	
48	17.18	34.855	2.52	261	20	25.70	33.19	4.63	21.78	604	0.12	
67	15.37	35.013	1.94	209	30	25.70	33.19	4.63	21.78	604	0.18	
87	15.12	35.028	1.98	203	50	16.00	34.89	2.19	25.68	232	0.27	
106	14.89	35.012	1.90	199	75	15.18	35.01	1.97	25.96	206	0.32	
120	14.52	34.978	2.05	194	100	15.00	35.02	1.92	26.01	201	0.37	
134	14.28	34.969	1.77	190	125	14.42	34.97	1.95	26.09	193	0.42	
152	14.02	34.961	1.48	185	150	14.05	34.96	1.50	26.16	186	0.47	
166	13.60	34.941	1.35	178	200	13.08	34.92	0.87	26.33	170	0.56	
180	13.36	34.935	1.17	174	250	11.40	34.82	0.30	26.58	146	0.64	
198	13.12	34.924	0.90	170	300	10.18	34.76	0.27	26.75	130	0.72	
216	12.38	34.876	0.55	160	400	9.10	34.70	0.28	26.89	117	0.85	
235	11.76	34.837	0.31	152	500	7.96	34.65	0.37	27.03	104	0.97	
262	11.10	34.804	0.28	142	600	6.97	34.67	0.64	27.18	89	1.07	
294	10.27	34.763	0.27	131	700	6.15	34.65	1.10	27.28	80	1.17	
355	9.62	34.730	0.27	123	800	5.48	34.61	1.44	27.33	75	1.25	
484	8.12	34.652	0.35	106	1000	4.59	34.59	1.40	27.42	67	1.42	
656	6.49	34.671	0.86	83								
815	5.38	34.602	1.47	75								
1136	4.17	34.591	1.32	63								

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
69	ARGO; November 1, 1961; 1600 GCT; 1°49'N, 87°16'W; sounding, 1435 fm; wind, 200°, force 4; weather, partly cloudy; sea, rough; wire angle, 09°.										
10	25.55	33.134	4.59	603	0	25.6	(33.13)		(21.77)	(605)	(0.00)
30	25.50	33.133	4.60	602	10	25.55	33.13	4.59	21.79	604	0.06
49	16.52	34.987	2.30	236	20	25.52	33.13	4.60	21.79	603	0.12
69	15.39	35.023	1.79	209	30	25.50	33.13	4.60	21.80	602	0.18
89	14.76	34.992	1.89	198	50	16.38	35.00	2.25	25.68	232	0.26
108	14.47	34.994	1.54	192	75	15.19	35.02	1.80	25.96	205	0.32
123	14.39	34.986	1.50	191	100	14.54	34.99	1.62	26.08	194	0.37
138	14.22	34.972	1.57	189	125	14.37	34.98	1.52	26.11	191	0.42
157	14.00	34.963	1.50	185	150	14.09	34.97	1.51	26.16	186	0.47
172	13.76	34.949	1.63	181	200	13.33	34.93	1.56	26.29	174	0.56
186	13.53	34.936	1.67	177	250	12.06	34.86	0.40	26.49	155	0.65
206	13.24	34.921	1.51	173	300	10.53	34.77	0.28	26.70	135	0.72
225	12.82	34.906	0.79	166	400	9.31	34.72	0.32	26.87	119	0.86
244	12.24	34.861	0.40	158	500	8.03	34.65	0.37	27.01	105	0.98
275	11.26	34.824	0.43	144	600	7.04	34.61	0.61	27.13	95	1.09
308	10.36	34.764	0.26	133	700	6.22	34.59	0.93	27.22	86	1.19
371	9.64	34.734	0.29	123	800	5.58	34.57	1.22	27.29	79	1.28
512	7.90	34.642	0.39	104	1000	4.61	34.58	1.30	27.41	68	1.45
692	6.28	34.589	0.89	86	1200	(3.96)	(34.59)		(27.49)	(61)	(1.60)
855	5.22	34.568	1.30	76							
1177	4.02	34.593	1.29	61							
70	ARGO; November 1, 1961; 2121 GCT; 1°28'N, 86°58'W; sounding, 1438 fm; wind, 180°, force 3; weather, partly cloudy; sea, rough; wire angle, 16°.										
9	25.66	33.136	4.61	606	0	25.7	(33.14)		(21.75)	(607)	(0.00)
29	25.52	33.130	4.60	603	10	25.65	33.14	4.61	21.76	606	0.06
48	17.18	34.826	2.44	263	20	25.57	33.13	4.60	21.78	604	0.12
67	14.68	34.975	1.48	198	30	25.52	33.13	4.60	21.79	603	0.18
86	14.50	34.993	1.72	193	50	16.60	34.88	2.23	25.53	246	0.27
105	14.40	34.987	1.75	191	75	14.57	34.98	1.59	26.07	195	0.32
120	14.10	34.969	2.00	186	100	14.42	34.99	1.74	26.11	191	0.37
134	14.04	34.968	1.94	185	125	14.07	34.97	1.94	26.17	186	0.42
153	13.96	34.965	2.13	184	150	13.97	34.97	2.21	26.19	184	0.47
167	13.76	34.937	2.10	182	200	13.14	34.91	1.04	26.31	172	0.56
181	13.41	34.917	1.87	177	250	12.32	34.87	0.38	26.45	159	0.64
200	13.14	34.911	1.04	172	300	11.74	34.84	0.36	26.53	151	0.72
220	12.80	34.904	0.71	166	400	9.72	34.72	0.26	26.80	126	0.87
238	12.48	34.878	0.46	162	500	7.86	34.64	0.45	27.03	104	0.99
267	12.10	34.859	0.35	156	600	6.74	34.60	0.78	27.16	91	1.10
300	11.74	34.838	0.36	151	700	5.91	34.58	1.12	27.25	83	1.20
363	10.52	34.770	0.21	135	800	5.28	34.57	1.35	27.32	76	1.29
500	7.86	34.636	0.45	104	1000	4.37	34.58	1.44	27.43	65	1.45
675	6.10	34.582	1.03	85							
832	5.08	34.564	1.41	74							
1146	3.85	34.591	1.46	59							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; November 2, 1961; 0105 GCT; 0°58'N, 86°54'W; sounding, 1380 fm; wind, 180°, force 4; weather, missing; sea, missing; wire angle, 01°. 71

10	25.21	33.723	4.64	551	0	25.2	(33.72)		(22.34)	(551)	(0.00)
30	22.74	33.601	3.98	490	10	25.21	33.72	4.64	22.33	551	0.06
50	14.56	34.996	1.75	194	20	25.20	33.72	4.64	22.34	551	0.11
70	14.49	34.994	1.68	192	30	22.74	33.60	3.98	22.97	490	0.16
90	14.39	34.993	1.79	190	50	14.56	35.00	1.75	26.09	193	0.23
110	13.92	34.961	2.07	183	75	14.47	34.99	1.72	26.10	192	0.28
125	13.70	34.942	2.18	180	100	14.19	34.98	1.93	26.15	187	0.33
140	13.40	34.920	2.16	176	125	13.70	34.94	2.18	26.22	181	0.37
160	13.20	34.912	1.68	173	150	13.29	34.91	1.92	26.28	175	0.42
176	13.11	34.918	2.01	171	200	12.90	34.91	1.64	26.36	167	0.51
190	12.96	34.911	1.75	168	250	12.02	34.86	0.86	26.50	155	0.59
210	12.84	34.911	1.50	166	300	11.72	34.85	0.46	26.54	150	0.67
230	12.42	34.889	1.27	160	400	8.95	34.69	0.29	26.90	116	0.81
250	12.02	34.862	0.86	154	500	7.72	34.63	0.50	27.05	102	0.93
280	11.82	34.843	0.46	152	600	6.72	34.60	0.78	27.16	91	1.03
314	11.66	34.852	0.45	149	700	5.94	34.58	1.03	27.25	83	1.13
378	9.31	34.712	0.26	120	800	5.30	34.57	1.30	27.32	76	1.22
520	7.48	34.625	0.56	99	1000	4.41	34.58	1.56	27.43	66	1.38
704	5.91	34.582	1.04	82	1200	(3.85)	(34.59)	(1.61)	(27.50)	(60)	(1.53)
869	4.92	34.568	1.43	72							
1195	3.86	34.594	1.61	59							

ARGO; November 2, 1961; 0436 GCT; 0°27'N, 86°55'W; sounding, 1492 fm; wind, 220°, force 4; weather, overcast; sea, missing; wire angle, 04°. 72

10	24.86	33.417	4.76	563	0	24.9	(33.42)		(22.20)	(564)	(0.00)
30	24.82	33.424	4.79	561	10	24.86	33.42	4.76	22.21	563	0.06
50	14.64	34.983	1.88	196	20	24.84	33.42	4.78	22.22	562	0.11
70	14.39	34.989	1.93	191	30	24.82	33.42	4.79	22.23	561	0.17
90	13.95	34.963	2.09	184	50	14.64	34.98	1.88	26.05	197	0.24
110	13.90	34.958	2.09	183	75	14.30	34.99	1.98	26.13	189	0.29
124	13.82	34.953	2.10	182	100	13.92	34.96	2.09	26.19	183	0.34
139	13.62	34.934	2.17	179	125	13.81	34.95	2.10	26.21	182	0.39
159	13.40	34.942	2.05	174	150	13.50	34.94	2.13	26.26	177	0.43
174	13.21	34.927	1.85	172	200	13.11	34.92	2.05	26.33	171	0.52
188	13.14	34.922	2.05	171	250	12.70	34.90	1.62	26.39	164	0.61
208	13.08	34.924	2.05	170	300	11.84	34.85	0.68	26.52	152	0.69
228	13.00	34.903	2.01	170	400	9.55	34.73	0.23	26.84	122	0.84
248	12.74	34.904	1.69	165	500	8.36	34.66	0.33	26.97	109	0.96
278	11.94	34.863	0.71	153	600	7.33	34.62	0.56	27.09	98	1.07
314	11.78	34.848	0.65	151	700	6.47	34.59	0.88	27.19	89	1.18
376	9.92	34.748	0.23	127	800	5.79	34.57	1.24	27.26	82	1.27
519	8.16	34.651	0.36	107	1000	4.74	34.57	1.56	27.39	70	1.45
703	6.44	34.587	0.90	89	1200	(3.86)	(34.59)	(1.66)	(27.50)	(60)	(1.60)
869	5.38	34.564	1.42	78							
1195	3.88	34.592	1.66	60							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

73 ARGO; November 2, 1961; 1018 GCT; 0°07'S, 86°55'W; sounding, 1510 fm; wind, 240°, force 2; weather, missing; sea, missing; wire angle, 00°.

10	24.42	33.337	4.72	556	0	24.4	(33.34)		(22.29)	(555)	(0.00)
30	21.18	33.809	3.91	434	10	24.42	34.34	4.72	22.28	556	0.06
50	14.48	34.991	1.88	192	20	24.41	33.34	4.72	22.29	556	0.11
70	14.38	34.984	1.88	191	30	21.18	33.81	3.91	23.56	434	0.16
90	14.10	34.967	2.07	186	50	14.48	34.99	1.88	26.10	193	0.22
110	13.94	34.963	2.12	184	75	14.30	34.98	1.89	26.13	190	0.27
125	13.72	34.949	2.16	180	100	14.01	34.97	2.09	26.18	184	0.32
140	13.53	34.946	1.96	177	125	13.72	34.95	2.16	26.23	180	0.37
160	13.18	34.936	1.06	171	150	13.36	34.94	1.40	26.29	174	0.41
175	13.02	34.920	1.70	169	200	12.96	34.91	1.88	26.35	168	0.50
190	12.98	34.918	1.91	168	250	12.79	34.91	1.03	26.38	165	0.59
210	12.92	34.909	1.81	168	300	11.76	34.85	0.57	26.54	151	0.67
230	12.80	34.906	1.47	166	400	9.21	34.70	0.19	26.87	119	0.81
250	12.79	34.911	1.03	165	500	8.05	34.64	0.41	27.00	106	0.93
280	11.94	34.863	0.58	153	600	7.14	34.60	0.67	27.11	97	1.04
315	11.63	34.839	0.57	149	700	6.35	34.58	0.92	27.20	88	1.14
379	9.54	34.722	0.17	123	800	5.61	34.57	1.16	27.28	80	1.24
524	7.82	34.631	0.47	104	1000	4.55	34.57	1.47	27.41	68	1.41
707	6.30	34.580	0.93	87	1200	(3.86)	(34.59)	(1.56)	(27.50)	(60)	(1.55)
871	5.14	34.563	1.32	75							
1196	3.88	34.588	1.56	60							

74 ARGO; November 4, 1961; 1346 GCT; 1°05'N, 87°00'W; sounding, 1455 fm; wind, 200°, force 4; weather, cloudy; sea, missing; wire angle, 07°.

1	25.42	33.147	4.51	599	0	(25.42)	(33.15)	(4.51)	(21.84)	(598)	(0.00)
11	25.40	33.146	4.54	598	10	25.40	33.15	4.54	21.85	598	0.06
21	25.41	33.146	4.56	598	20	25.40	33.15	4.56	21.85	598	0.12
26	25.40	33.146	4.56	598	30	25.36	33.16	4.55	21.87	596	0.18
31	25.23	33.200	4.45	589	50	14.50	34.99	1.66	26.09	193	0.26
36	15.06	34.940	1.67	208	75	14.41	34.99	1.72	26.11	191	0.31
41	14.65	34.975	1.68	197	100	13.94	34.95	2.08	26.18	185	0.35
46	14.52	34.990	1.78	193	125	13.59	34.93	2.09	26.24	179	0.40
51	14.50	34.990	1.65	193	150	13.23	34.90	2.11	26.29	174	0.45
61	14.50	34.984	1.66	193							
70	14.44	34.988	1.69	192							
80	14.37	34.989	1.78	190							
90	13.99	34.960	1.98	185							
99	13.96	34.951	2.08	185							
109	13.75	34.936	2.15	182							
119	13.65	34.931	2.15	180							
128	13.54	34.928	2.08	178							
138	13.30	34.905	2.06	175							
147	13.26	-	2.13	-							
157	13.19	34.905	2.06	173							
166	13.14	34.905	1.99	172							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
ARGO; November 6, 1961; 0148 GCT; 0°07'S, 86°55'W; sounding, 1500 fm; wind, 240°, force 3; weather, clear; sea, missing; wire angle, 06°.											75
1	24.37	33.406	4.76	550	0	(24.37)	(33.41)	(4.76)	(22.35)	(549)	(0.00)
11	24.37	33.400	4.74	550	10	24.37	33.40	4.74	22.34	550	0.05
21	24.36	33.402	4.85	550	20	24.36	33.40	4.85	22.35	550	0.11
26	24.36	33.405	4.81	549	30	24.33	33.41	4.77	22.36	548	0.17
31	24.31	33.417	4.77	547	50	14.92	34.95	1.93	25.97	205	0.24
36	16.92	34.625	2.72	272	75	14.32	34.98	1.88	26.12	190	0.29
41	15.90	34.912	2.47	228	100	13.87	34.96	2.18	26.20	182	0.34
46	15.39	34.925	2.15	216	125	13.59	34.95	1.86	26.25	178	0.38
51	14.84	34.958	1.91	202	150	13.49	34.95	1.23	26.27	176	0.43
61	14.44	34.983	1.91	192							
71	14.40	34.986	1.87	191							
80	14.15	34.973	1.89	187							
90	13.94	34.960	2.15	184							
100	13.87	34.957	2.18	183							
110	13.71	34.950	2.22	180							
119	13.62	34.949	2.04	178							
129	13.56	34.956	1.64	177							
138	13.53	34.952	1.31	176							
148	13.50	34.953	1.23	176							
158	13.39	34.943	1.14	174							
168	13.18	-	1.10	-							
ARGO; November 6, 1961; 0849 GCT; 0°30'S, 86°58'W; sounding, 1260 fm; wind, 200°, force 3; weather, cloudy; sea, missing; wire angle, 21°.											76
9	23.66	33.393	4.75	531	0	23.7	(33.39)		(22.53)	(532)	(0.00)
28	17.08	34.635	2.86	274	10	23.65	33.39	4.75	22.55	531	0.05
47	14.74	34.981	1.80	199	20	23.63	33.40	4.75	22.56	529	0.11
65	14.44	34.989	1.86	192	30	16.00	34.81	2.30	25.62	238	0.14
84	14.28	34.976	1.98	189	50	14.67	34.99	1.80	26.05	196	0.19
103	13.98	34.960	2.10	185	75	14.36	34.98	1.92	26.11	191	0.24
117	13.81	34.955	2.11	182	100	14.02	34.96	2.09	26.17	185	0.28
130	13.75	34.957	1.79	180	125	13.77	34.96	1.90	26.22	180	0.33
150	13.57	34.951	1.51	177	150	13.57	34.95	1.51	26.26	177	0.38
164	13.26	34.934	0.78	172	200	12.97	34.92	1.80	26.36	168	0.47
177	13.10	34.923	1.07	170	250	12.57	34.89	0.75	26.41	162	0.55
195	12.99	34.925	1.87	168	300	11.31	34.82	0.53	26.60	145	0.63
213	12.91	34.916	1.37	167	400	9.25	34.70	0.20	26.86	120	0.77
231	12.76	34.908	1.25	165	500	8.16	34.65	0.45	27.00	107	0.89
258	12.48	34.887	0.51	161	600	6.96	34.59	0.92	27.12	95	1.00
290	11.64	34.840	0.59	149	700	6.10	34.57	1.11	27.22	86	1.10
349	9.96	34.742	0.17	128	800	5.50	34.57	1.20	27.30	79	1.19
480	8.38	34.659	0.38	110	1000	4.54	34.57	1.42	27.41	68	1.36
647	6.50	34.576	1.06	90							
798	5.51	34.567	1.20	79							
1110	4.14	34.578	1.53	63							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
77	ARGO; November 6, 1961; 1513 GCT; 1°02'S, 87°03'W; sounding, 970 fm; wind, 180°, force 3; weather, cloudy; sea, rough; wire angle, 12°.										
10	22.82	33.670	4.79	487	0	22.9	(33.67)		(22.98)	(490)	(0.00)
29	18.02	34.606	3.56	298	10	22.82	33.67	4.79	23.00	487	0.05
49	14.66	35.00	1.80	195	20	22.20	33.81	4.68	23.28	461	0.10
68	14.45	34.993	1.75	192	30	17.98	34.62	3.53	25.01	296	0.13
88	14.30	34.983	1.74	189	50	14.62	35.00	1.78	26.07	195	0.18
108	14.20	34.975	1.94	188	75	14.40	34.99	1.74	26.11	191	0.23
122	14.14	34.972	1.94	187	100	14.24	34.98	1.94	26.14	188	0.28
137	13.97	34.973	2.03	183	125	14.12	34.97	1.95	26.16	187	0.33
156	13.94	34.965	1.98	183	150	13.95	34.97	1.98	26.19	183	0.38
171	13.75	34.955	1.89	180	200	13.19	34.93	0.68	26.32	171	0.47
185	13.45	34.942	0.95	175	250	12.50	34.90	0.30	26.43	160	0.55
204	13.18	34.931	0.64	171	300	11.52	34.83	0.59	26.57	148	0.63
224	12.82	34.915	0.40	165	400	9.42	34.71	0.23	26.84	122	0.77
242	12.59	34.901	0.30	162	500	8.37	34.65	0.49	26.96	110	0.90
271	12.26	34.886	0.32	157	600	7.18	34.61	0.75	27.11	96	1.01
303	11.46	34.825	0.60	147	700	6.13	34.57	0.97	27.22	86	1.11
365	9.86	34.733	0.20	127	800	5.57	34.56	1.22	27.28	80	1.21
503	8.34	34.650	0.50	110	1000	4.66	34.56	1.46	27.39	70	1.38
682	6.28	34.577	0.97	87							
844	5.33	34.557	1.32	78							
1168	3.98	34.578	1.56	62							
78	ARGO; November 7, 1961; 1729 GCT; 1°02'S, 87°03'W; sounding, 967 fm; wind, 160°, force 3; weather, cloudy; sea, moderate; wire angle, 15°.										
1	22.36	33.783	4.94	467	0	(22.36)	(33.78)	(4.94)	(23.21)	(467)	(0.00)
10	22.26	33.793	4.89	463	10	22.26	33.79	4.89	23.25	464	0.05
20	19.22	34.388	3.97	343	20	19.22	34.39	3.97	24.52	342	0.09
25	18.66	34.497	3.89	321	30	18.19	34.60	3.95	24.94	303	0.12
30	18.19	34.604	3.95	302	50	14.52	35.00	1.84	26.09	193	0.17
35	16.86	34.769	3.04	260	75	14.38	34.99	1.87	26.12	190	0.22
39	15.02	34.991	2.00	204	100	14.26	34.98	1.91	26.13	189	0.27
44	14.64	35.001	1.84	195	125	14.01	34.96	2.10	26.17	185	0.31
49	14.53	35.000	1.84	193	150	13.90	34.96	2.14	26.20	183	0.36
59	14.50	34.995	1.81	193							
69	14.44	34.993	1.82	191							
78	14.36	34.991	1.89	190							
88	14.35	34.994	1.88	190							
98	14.27	34.983	1.90	189							
107	14.20	34.981	1.95	187							
117	14.10	34.986	2.05	185							
127	14.00	34.965	2.14	185							
136	13.98	34.963	2.13	184							
145	13.93	34.972	2.14	183							
155	13.86	34.961	2.14	182							
165	13.76	34.962	2.02	180							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; November 8, 1961; 0104 GCT; 1°32'S, 87°00'W; sounding, 1200 fm; wind, 160°, force 2; weather, overcast; sea, missing; wire angle, 06°. 79

10	21.66	34.089	4.87	426	0	21.7	(34.09)		(23.63)	(427)	(0.00)
30	18.07	34.842	4.16	282	10	21.66	34.09	4.87	23.64	426	0.04
50	15.34	34.984	2.05	211	20	19.31	34.64	4.57	24.69	327	0.08
69	14.97	35.021	1.88	200	30	18.07	34.84	4.16	25.15	282	0.11
88	14.74	35.016	1.82	196	50	15.34	34.98	2.05	25.90	211	0.16
108	14.46	35.005	1.65	191	75	14.91	35.02	1.87	26.03	199	0.21
123	14.27	34.935	1.75	192	100	14.58	35.01	1.70	26.09	193	0.26
137	14.04	34.969	2.00	185	125	14.24	34.98	1.80	26.14	188	0.31
155	13.72	34.964	1.42	179	150	13.80	34.96	1.64	26.22	181	0.36
170	13.44	34.946	0.81	175	200	12.96	34.93	0.27	26.37	167	0.45
184	13.23	34.941	0.52	171	250	12.23	34.90	0.30	26.49	155	0.53
204	12.88	34.925	0.24	166	300	11.27	34.82	0.21	26.61	144	0.61
224	12.78	34.919	0.25	164	400	9.28	34.71	0.32	26.87	119	0.75
245	12.36	34.904	0.27	158	500	8.16	34.65	0.46	27.00	107	0.87
274	11.66	34.840	0.42	150	600	7.07	34.61	0.67	27.12	95	0.98
307	11.16	34.812	0.20	143	700	6.21	34.58	0.93	27.22	86	1.08
371	9.68	34.736	0.27	124	800	5.73	34.57	1.12	27.27	81	1.17
510	8.04	34.642	0.47	106	1000	4.83	34.57	1.38	27.38	71	1.35
689	6.28	34.578	0.92	87							
850	5.52	34.565	1.20	79							
1169	4.04	34.579	1.53	62							

ARGO; November 7, 1961; 1647 GCT; 2°02'S, 87°02'W; sounding, 1670 fm; wind, 140°, force 3; weather, missing; sea, missing; wire angle, 10°. 80

10	20.36	34.583	4.96	357	0	20.4	(34.58)		(24.36)	(358)	(0.00)
29	17.84	34.852	4.04	276	10	20.36	34.58	4.96	24.37	357	0.04
49	15.70	35.001	2.21	217	20	20.00	34.61	4.86	24.48	346	0.07
69	14.68	35.02	1.82	194	30	17.82	34.85	4.02	25.22	276	0.10
89	14.46	35.019	1.81	190	50	15.59	35.01	2.13	25.87	214	0.15
108	14.34	34.997	1.49	189	75	14.58	35.02	1.82	26.10	192	0.20
123	14.24	35.007	1.49	186	100	14.40	35.01	1.70	26.13	189	0.25
138	14.14	34.978	1.29	186	125	14.24	35.00	1.47	26.15	187	0.30
157	13.76	34.959	1.81	180	150	13.92	34.97	1.55	26.20	183	0.35
172	13.32	34.942	0.79	173	200	12.98	34.92	0.38	26.35	168	0.44
187	13.12	34.925	0.68	170	250	11.62	34.83	0.44	26.55	150	0.52
206	12.88	34.925	0.31	166	300	10.85	34.80	0.18	26.67	138	0.59
225	12.37	34.897	0.30	158	400	9.31	34.71	0.36	26.86	120	0.73
244	11.70	34.838	0.45	150	500	8.29	34.65	0.53	26.98	109	0.85
275	11.38	34.825	0.32	146	600	7.11	34.60	0.75	27.11	96	0.97
308	10.68	34.785	0.17	137	700	6.13	34.57	0.98	27.22	86	1.07
371	9.66	34.726	0.30	124	800	5.62	34.56	1.08	27.27	81	1.16
512	8.16	34.642	0.57	108	1000	4.71	34.57	1.33	27.39	70	1.33
694	6.18	34.576	0.96	86	1200	(3.89)	(34.59)		(27.49)	(60)	(1.48)
857	5.35	34.561	1.16	78							
1178	3.98	34.583	1.56	61							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
81	ARGO; November 8, 1961; 0904 GCT; 2°31'S, 87°03'W; sounding, 1708 fm; wind, 160°, force 3; weather, missing; sea, missing; wire angle, 08°.										
10	20.18	34.866	5.11	332	0	20.2	(34.87)		(24.63)	(332)	(0.00)
29	19.21	34.754	4.86	316	10	20.18	34.87	5.11	24.63	331	0.03
49	15.33	35.037	1.92	207	20	20.11	34.86	5.08	24.65	330	0.07
68	14.80	35.025	1.42	197	30	19.00	34.76	4.72	24.86	310	0.10
88	14.50	35.013	1.43	191	50	15.26	35.03	1.86	25.96	206	0.15
107	14.37	34.997	1.35	190	75	14.68	35.02	1.42	26.08	194	0.20
121	14.29	34.991	1.35	189	100	14.40	35.00	1.38	26.12	190	0.25
136	14.08	34.983	1.26	185	125	14.25	34.99	1.34	26.14	188	0.30
155	13.88	34.973	1.08	182	150	13.89	34.98	1.10	26.21	181	0.34
170	13.87	34.964	1.11	182	200	13.49	34.96	0.98	26.28	175	0.44
185	13.74	34.966	1.13	179	250	11.88	34.86	0.41	26.52	152	0.52
204	13.40	34.951	0.91	174	300	10.97	34.80	0.27	26.64	140	0.60
224	12.68	34.901	0.59	164	400	9.56	34.72	0.26	26.83	123	0.74
244	11.98	34.865	0.41	153	500	8.16	34.65	0.30	27.00	107	0.86
273	11.67	34.838	0.41	150	600	7.07	34.61	0.55	27.12	95	0.97
307	10.80	34.790	0.24	138	700	6.21	34.58	0.91	27.22	86	1.07
371	9.94	34.745	0.25	127	800	5.52	34.57	1.19	27.29	79	1.16
513	8.00	34.642	0.31	105	1000	4.59	34.57	1.45	27.40	69	1.33
696	6.24	34.581	0.89	87	1200	(4.00)	(34.58)		(27.47)	(62)	(1.48)
858	5.16	34.564	1.33	75							
1182	4.03	34.581	1.55	62							
82	ARGO; November 8, 1961; 1255 GCT; 3°01'S, 87°04'W; sounding, 1678 fm; wind, 170°, force 3; weather, overcast; sea, rough; wire angle, 19°.										
9	19.98	34.829	5.08	329	0	20.0	(34.83)		(24.65)	(330)	(0.00)
28	18.02	34.964	3.86	272	10	19.98	34.83	5.08	24.66	329	0.03
48	16.14	35.082	2.37	221	20	19.60	34 85	4.97	24.77	318	0.07
67	14.99	35.062	2.12	198	30	17.70	34.99	3.57	25.36	263	0.09
85	14.67	35.041	2.06	193	50	15.93	35.08	2.31	25.84	216	0.14
104	14.30	35.003	1.43	188	75	14.84	35.05	2.09	26.06	196	0.19
119	14.16	34.992	1.28	186	100	14.36	35.01	1.56	26.14	189	0.24
132	14.05	34.983	1.40	184	125	14.11	34.99	1.32	26.17	185	0.29
150	13.94	34.976	1.27	183	150	13.94	34.98	1.27	26.20	182	0.34
164	13.86	34.975	1.06	181	200	13.42	34.95	1.10	26.29	174	0.43
177	13.63	34.957	1.31	178	250	12.60	34.90	0.57	26.41	162	0.52
195	13.48	34.951	1.04	175	300	11.61	34.86	0.21	26.57	147	0.60
212	13.26	34.938	1.43	172	400	9.49	34.72	0.18	26.84	122	0.74
229	13.02	34.926	1.02	168	500	8.00	34.64	0.27	27.01	106	0.86
255	12.50	34.897	0.51	161	600	7.12	34.61	0.57	27.12	96	0.97
286	11.90	34.869	0.25	152	700	6.27	34.58	0.86	27.21	87	1.07
340	10.70	34.802	0.17	136	800	5.47	34.57	1.06	27.30	78	1.17
471	8.34	34.659	0.20	109	1000	4.63	34.57	1.30	27.40	69	1.33
643	6.76	34.595	0.71	92							
799	5.48	34.567	1.04	79							
1115	4.24	34.573	1.44	65							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; November 8, 1961; 2021 GCT; 4°00'S, 87°00'W; sounding, 1920 fm; wind, 140°, force 3; weather, cloudy; sea, rough; wire angle, 20°. 83

9	20.47	34.914	5.18	336	0	20.7	(34.91)		(24.53)	(342)	(0.00)
28	20.34	35.059	5.07	322	10	20.45	34.92	5.18	24.60	335	0.03
47	17.26	35.108	2.56	244	20	20.38	35.00	5.12	24.68	327	0.07
65	14.90	35.084	1.71	194	30	20.33	35.07	5.03	24.75	321	0.10
84	14.14	35.010	1.38	184	50	16.50	35.11	2.18	25.73	227	0.15
102	13.82	34.979	0.94	180	75	14.43	35.05	1.53	26.15	187	0.21
120	13.72	34.967	0.84	179	100	13.84	34.98	0.98	26.22	180	0.25
129	13.59	34.965	1.02	177	125	13.66	34.97	0.86	26.25	178	0.30
147	13.25	34.941	0.75	172	150	13.22	34.94	0.75	26.32	171	0.34
161	13.12	34.926	0.80	170	200	12.80	34.93	0.29	26.40	164	0.43
175	13.04	34.927	0.57	169	250	12.31	34.91	0.22	26.48	156	0.51
192	12.91	34.943	0.28	165	300	11.33	34.83	0.18	26.60	144	0.59
210	12.66	34.918	0.30	162	400	9.16	34.71	0.20	26.89	118	0.73
228	12.48	34.909	0.22	159	500	7.83	34.64	0.44	27.04	103	0.85
255	12.28	34.906	0.22	156	600	7.08	34.62	0.58	27.13	94	0.96
286	11.68	34.851	0.22	149	700	6.39	34.59	0.76	27.20	88	1.06
345	10.25	34.775	0.09	130	800	5.66	34.57	0.95	27.28	80	1.15
474	8.10	34.650	0.40	106	1000	4.74	34.57	1.24	27.39	70	1.32
642	6.80	34.606	0.66	92							
799	5.67	34.570	0.94	81							
1119	4.26	34.567	1.40	65							

ARGO; November 9, 1961; 0250 GCT; 5°02'S, 86°59'W; sounding, 1630 fm; wind, 180°, force 4; weather, missing; sea, moderate; wire angle, 20°. 84

9	20.92	34.959	5.42	344	0	21.0	(34.96)		(24.48)	(346)	(0.00)
28	20.80	34.972	5.41	340	10	20.91	34.96	5.42	24.51	344	0.03
48	19.26	35.093	4.55	292	20	20.85	34.97	5.41	24.53	341	0.07
66	15.42	35.056	1.06	207	30	20.79	34.97	5.40	24.55	340	0.10
84	14.36	35.019	1.13	188	50	18.50	35.08	3.91	25.23	275	0.16
103	14.03	34.992	1.17	183	75	15.00	35.05	1.07	26.03	199	0.22
116	13.78	34.976	0.71	179	100	14.07	35.00	1.17	26.19	183	0.27
130	13.55	34.968	0.58	176	125	13.63	34.97	0.63	26.26	177	0.32
148	13.30	34.951	0.34	172	150	13.28	34.95	0.32	26.32	172	0.36
162	13.18	34.940	0.22	170	200	12.65	34.92	0.28	26.42	162	0.45
176	13.02	34.939	0.29	167	250	12.11	34.89	0.30	26.50	154	0.53
193	12.74	34.921	0.29	163	300	11.05	34.82	0.17	26.65	140	0.61
212	12.52	34.908	0.27	160	400	9.31	34.72	0.20	26.87	119	0.74
230	12.28	34.897	0.53	157	500	7.82	34.64	0.50	27.04	103	0.86
256	12.06	34.885	0.25	153	600	7.08	34.59	0.73	27.11	97	0.97
288	11.26	34.831	0.19	143	700	6.37	34.57	0.87	27.19	89	1.08
346	10.38	34.778	0.15	132	800	5.70	34.56	0.89	27.26	82	1.17
479	8.01	34.645	0.43	105	1000	4.63	34.57	1.26	27.40	69	1.34
652	6.71	34.577	0.84	93							
808	5.64	34.557	0.90	81							
1123	4.16	34.572	1.57	64							

SIO

SWAN SONG

	OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
	Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
85	ARGO; November 15, 1961; 2349 GCT; 1°43'S, 90°29'W; sounding, 1690 fm; wind, 160°, force 3; weather, cloudy; sea, rough; wire angle, missing.											
	10	20.40	34.53	4.37	362	0	20.8	(34.53)		(24.21)	(372)	(0.00)
	30	16.32	34.95	2.56	234	10	20.40	34.53	4.37	24.32	362	0.04
	50	16.04	34.99	2.34	225	20	17.27	34.72	3.18	25.25	273	0.07
	70	15.36	35.07	2.00	205	30	16.32	34.95	2.56	25.65	234	0.09
	89	14.70	35.03	1.92	194	50	16.04	34.99	2.34	25.75	225	0.14
	109	14.44	34.99	1.88	192	75	15.22	35.07	1.97	26.00	202	0.19
	124	14.26	35.00	1.72	187	100	14.54	35.00	1.89	26.09	193	0.24
	139	14.05	34.98	1.57	185	125	14.24	35.00	1.70	26.15	187	0.29
	158	13.83	34.97	1.96	181	150	13.92	34.97	1.85	26.20	183	0.34
	173	13.71	34.97	1.84	179	200	13.27	34.94	1.42	26.31	172	0.43
	188	13.38	34.94	1.63	174	250	12.77	34.92	0.62	26.40	164	0.52
	208	13.21	34.94	1.24	171	300	12.00	34.89	0.14	26.52	152	0.60
	228	13.06	34.93	0.38	169	400	9.24	34.71	0.36	26.87	119	0.74
	248	12.79	34.92	0.63	164	500	8.05	34.64	0.87	27.00	106	0.86
	277	12.39	34.91	0.18	158	600	7.17	34.60	1.04	27.10	97	0.98
	313	11.74	34.87	0.14	149	700	6.42	34.58	1.17	27.19	89	1.08
	377	9.60	34.73	0.24	123	800	5.76	34.57	1.32	27.26	82	1.17
	520	7.84	34.63	0.94	104	1000	4.66	34.58	1.52	27.40	69	1.34
	703	6.40	34.58	1.18	89	1200	(3.71)	(34.59)	(1.66)	(27.51)	(58)	(1.49)
	866	5.36	34.57	1.41	77							
	1191	3.74	34.59	1.67	58							
86	ARGO; November 17, 1961; 0204 GCT; 1°43'S, 90°29'W; sounding, 1691 fm; wind, 160°, force 2; weather, cloudy; sea, missing; wire angle, 04°.											
	10	19.62	34.568	4.32	339	0	20.6	(34.57)		(24.29)	(364)	(0.00)
	31	16.38	35.013	2.60	231	10	19.62	34.57	4.32	24.55	339	0.04
	50	15.41	35.012	2.16	210	20	16.92	34.96	2.88	25.52	247	0.06
	70	14.89	35.042	1.92	197	30	16.42	35.01	2.61	25.68	232	0.09
	90	14.36	34.987	1.99	190	50	15.41	35.01	2 16	25.91	210	0.13
	110	14.16	35.009	1.85	185	75	14.76	35.03	1.82	26.07	195	0.18
	125	13.98	34.998	2.01	182	100	14.21	34.99	1.90	26.15	187	0.23
	140	13.88	34.984	2.06	181	125	13.98	35.00	2.01	26.21	182	0.28
	160	13.69	34.979	1.98	177	150	13.78	34.98	2.06	26.24	179	0.33
	175	13.66	34.976	1.87	177	200	13.36	34.96	1.72	26.31	172	0.42
	190	13.50	34.968	1.84	175	250	12.84	34.93	0.60	26.39	165	0.50
	209	13.23	34.949	1.30	171	300	12.08	34.89	0.20	26.51	153	0.59
	229	13.04	34.947	0.34	167	400	9.42	34.72	0.35	26.85	121	0.73
	249	12.86	34.932	0.60	165	500	8.03	34.64	1.10	27.01	106	0.85
	280	12.35	34.905	0.23	157	600	6.99	34.60	1.19	27.13	95	0.96
	314	11.86	34.882	0.18	150	700	6.21	34.58	1.25	27.22	86	1.06
	376	9.86	34.747	0.19	126	800	5.72	34.57	1.37	27.27	81	1.16
	519	7.78	34.630	1.17	103	1000	4.72	34.58	1.56	27.40	69	1.33
	701	6.20	34.579	1.25	86	1200	(3.57)	(34.60)	(1.75)	(27.53)	(56)	(1.47)
	866	5.42	34.569	1.43	78							
	1190	3.63	34.598	1.75	57							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; November 18, 1961; 0143 GCT; 1°00'N, 90°45'W; sounding, 1050 fm; wind, 120°, force 3; weather, partly cloudy; sea, missing; wire angle, 10°. 87

10	21.96	33.906	4.42	447	0	22.1	(33.91)		(23.38)	(451)	(0.00)
30	20.84	34.182	4.21	398	10	21.96	33.91	4.42	23.42	447	0.04
49	14.94	34.906	2.36	208	20	21.63	33.98	4.37	23.57	433	0.09
69	13.78	34.912	2.10	184	30	20.84	34.18	4.21	23.93	398	0.13
89	13.77	34.911	2.13	184	50	14.60	34.91	2.26	26.01	201	0.19
108	13.78	34.915	2.21	184	75	13.78	34.91	2.11	26.18	184	0.24
123	13.77	34.923	2.21	183	100	13.78	34.91	2.18	26.18	184	0.29
138	13.60	34.929	2.23	179	125	13.75	34.92	2.21	26.20	183	0.33
157	13.20	34.920	2.03	172	150	13.33	34.92	2.07	26.28	175	0.38
172	13.12	34.913	2.05	171	200	12.98	34.92	2.02	26.35	168	0.47
186	13.02	34.919	2.06	169	250	12.60	34.91	1.20	26.42	162	0.55
206	12.96	34.915	2.01	168	300	11.42	34.83	0.39	26.59	146	0.63
225	12.90	34.908	1.89	167	400	9.35	34.71	0.26	26.85	121	0.77
245	12.66	34.910	1.32	163	500	8.23	34.65	0.38	26.98	108	0.90
274	12.28	34.883	0.89	158	600	7.35	34.64	0.65	27.11	97	1.01
309	11.08	34.811	0.31	141	700	6.53	34.62	0.92	27.20	87	1.11
371	9.74	34.734	0.24	125	800	5.69	34.58	1.10	27.28	80	1.20
511	8.12	34.650	0.40	107	1000	4.70	34.57	1.30	27.39	70	1.37
692	6.60	34.623	0.91	88	1200	(4.05)	(34.59)		(27.48)	(61)	(1.53)
852	5.38	34.566	1.16	77							
1171	4.13	34.584	1.41	63							

ARGO; November 20, 1961; 0537 GCT; 0°04'N, 93°24'W; sounding, 1687 fm; wind, 170°, force 2; weather, clear; sea, missing; wire angle, 05°. 88

10	19.72	34.792	4.44	326	0	19.7	(34.79)		(24.70)	(325)	(0.00)
30	17.82	34.785	3.53	280	10	19.72	34.79	4.44	24.69	326	0.03
50	15.26	34.881	2.29	217	20	19.33	34.79	4.27	24.80	316	0.06
70	14.04	34.932	2.24	188	30	17.82	34.78	3.53	25.17	281	0.09
90	13.73	34.932	2.38	182	50	15.26	34.88	2.29	25.84	217	0.14
110	13.32	34.936	2.32	173	75	13.94	34.93	2.28	26.16	186	0.20
125	13.00	34.909	2.22	169	100	13.53	34.93	2.36	26.25	178	0.24
140	12.93	34.915	2.27	167	125	13.00	34.91	2.22	26.34	169	0.29
160	12.80	34.901	2.11	166	150	12.85	34.91	2.25	26.37	166	0.33
175	12.79	34.904	1.99	166	200	12.74	34.90	1.91	26.39	165	0.41
190	12.74	34.903	1.89	165	250	12.68	34.90	1.70	26.40	164	0.50
209	12.74	34.906	1.93	164	300	12.00	34.87	0.59	26.51	153	0.58
229	12.72	34.903	1.92	164	400	9.88	34.74	0.26	26.79	127	0.73
249	12.68	34.902	1.73	164	500	8.46	34.67	0.44	26.97	110	0.86
279	12.39	34.888	0.99	159	600	7.34	34.62	0.87	27.09	98	0.97
315	11.72	34.852	0.42	150	700	6.38	34.58	1.21	27.19	88	1.07
378	10.24	34.761	0.24	131	800	5.51	34.57	1.48	27.30	79	1.17
524	8.14	34.650	0.55	107	1000	4.50	34.56	1.66	27.40	68	1.33
709	6.27	34.579	1.24	87	1200	(3.89)	(34.58)	(1.69)	(27.49)	(61)	(1.48)
871	4.99	34.557	1.61	74							
1195	3.90	34.582	1.69	61							

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
89	ARGO; November 20, 1961; 2156 GCT; 0°40'S, 93°23'W; sounding, 1743 fm; wind, 170°, force 3; weather, partly cloudy; sea, very rough; wire angle, 09°.										
10	19.14	34.810	4.06	310	0	19.7	(34.80)		(24.71)	(325)	(0.00)
30	17.25	34.915	3.15	258	10	19.14	34.81	4.06	24.86	310	0.03
49	15.60	35.141	1.82	205	20	18.12	34.84	3.72	25.14	283	0.06
69	14.37	35.065	1.91	185	30	17.25	34.92	3.15	25.41	257	0.09
89	13.77	34.978	2.26	179	50	15.59	35.14	1.82	25.97	205	0.14
108	13.31	34.951	2.15	172	75	14.19	35.04	2.01	26.20	183	0.18
123	13.22	34.960	2.00	170	100	13.45	34.95	2.22	26.28	175	0.23
138	13.15	34.956	1.95	169	125	13.21	34.96	1.98	26.34	169	0.27
158	12.96	-	1.87	-	150	13.02	34.94	1.89	26.36	167	0.32
174	12.92	34.930	1.92	166	200	12.74	34.91	1.80	26.39	164	0.40
188	12.77	34.919	1.84	164	250	12.66	34.90	1.50	26.40	163	0.49
208	12.72	34.909	1.75	164	300	11.61	34.84	0.34	26.56	149	0.57
228	12.68	34.905	1.63	163	400	9.49	34.72	0.36	26.84	122	0.71
248	12.67	34.906	1.58	163	500	7.99	34.64	0.99	27.01	105	0.83
277	12.47	34.902	0.60	160	600	7.26	34.60	1.11	27.09	98	0.94
312	11.10	34.812	0.30	142	700	6.63	34.58	1.19	27.16	92	1.05
376	9.90	34.745	0.28	127	800	5.77	34.56	1.45	27.26	82	1.15
520	7.78	34.624	1.04	104	1000	4.54	34.57	1.63	27.41	68	1.32
703	6.60	34.579	1.21	91	1200	(3.80)	(34.58)	(1.66)	(27.49)	(60)	(1.47)
869	5.20	34.562	1.59	76							
1193	3.82	34.582	1.66	60							
90	ARGO; November 21, 1961; 2021 GCT; 0°44'N, 93°20'W; sounding, 1578 fm; wind, 180°, force 3; weather, cloudy; sea, rough; wire angle, 06°.										
10	22.80	33.981	4.73	464	0	22.8	(33.98)		(23.24)	(465)	(0.00)
30	19.00	34.720	4.00	313	10	22.80	33.98	4.73	23.24	465	0.05
50	16.05	34.852	2.93	236	20	20.45	34.49	4.37	24.27	366	0.09
70	14.41	34.905	2.02	197	30	19.00	34.72	4.00	24.83	313	0.12
90	13.70	34.905	1.89	183	50	16.05	34.85	2.93	25.64	236	0.18
110	13.57	34.899	1.91	181	75	14.11	34.90	1.95	26.11	192	0.23
125	13.46	34.902	1.91	179	100	13.62	34.90	1.89	26.21	182	0.28
139	13.12	34.904	2.06	172	125	13.46	34.90	1.91	26.24	179	0.32
159	12.91	34.901	1.95	168	150	12.99	34.90	2.02	26.34	170	0.37
174	12.82	34.901	1.88	166	200	12.71	34.90	1.88	26.39	164	0.45
189	12.74	34.903	1.90	165	250	12.58	34.90	1.50	26.42	162	0.54
208	12.70	34.907	1.87	164	300	12.50	34.90	1.22	26.43	160	0.62
228	12.66	34.93	1.77	161	400	9.48	34.73	0.26	26.85	121	0.77
248	12.58	34.900	1.51	162	500	8.29	34.67	0.47	26.99	108	0.89
277	12.56	34.899	1.35	162	600	7.30	34.61	0.86	27.09	98	1.01
310	12.48	34.898	1.19	160	700	6.49	34.58	1.28	27.18	90	1.11
371	9.94	34.746	0.22	127	800	5.72	34.57	1.44	27.27	81	1.21
512	8.16	34.661	0.50	106	1000	4.63	34.57	1.60	27.40	69	1.38
691	6.56	34.578	1.27	91	1200	(3.95)	(34.58)		(27.48)	(61)	(1.53)
850	5.34	34.568	1.50	77							
1173	4.03	34.575	1.71	62							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

ARGO; November 23, 1961; 0945 GCT; 0°04'N, 93°24'W; sounding, 1685 fm; wind, 160°, force 3; weather, cloudy; sea, missing; wire angle, 12°. 91

10	21.36	34.22	4.36	409	0	21.4	(34.22)		(23.81)	(410)	(0.00)
30	16.77	34.80	2.97	255	10	21.36	34.22	4.36	23.82	409	0.04
49	15.21	34.89	2.43	215	20	20.53	34.37	4.13	24.16	377	0.08
68	14.06	34.93	2.33	188	30	16.77	34.80	2.97	25.43	255	0.11
88	13.80	34.90	2.18	185	50	15.15	34.89	2.43	25.87	214	0.16
107	13.52	34.90	2.22	180	75	13.94	34.92	2.30	26.16	187	0.21
122	13.47	34.92	2.33	177	100	13.61	34.90	2.18	26.21	182	0.26
136	13.30	34.91	2.27	175	125	13.47	34.92	2.32	26.25	177	0.30
155	12.94	34.91	2.19	168	150	12.99	34.91	2.20	26.34	169	0.35
169	12.88	34.91	2.12	167	200	12.76	34.91	1.99	26.39	165	0.43
184	12.80	34.91	2.06	165	250	12.72	34.91	1.78	26.40	164	0.52
203	12.76	34.91	1.98	165	300	12.24	34.88	0.76	26.47	157	0.60
222	12.75	34.91	1.87	164	400	9.67	34.74	0.25	26.82	123	0.75
241	12.74	34.91	1.80	164	500	8.08	34.65	0.53	27.01	106	0.87
270	12.64	34.90	1.63	163	600	7.21	34.60	0.90	27.10	98	0.98
304	12.18	34.88	0.70	156	700	6.60	34.58	1.12	27.16	91	1.09
366	10.38	34.77	0.21	133	800	5.76	34.56	1.35	27.26	82	1.18
502	8.04	34.65	0.55	105	1000	4.63	34.57	1.60	27.40	69	1.36
678	6.75	34.58	1.07	93							
837	5.42	34.56	1.43	78							
1154	4.02	34.58	1.72	62							

ARGO; November 13, 1961; 1012 GCT;[a] 1°00'N, 140°15.5'W; sounding, missing; wind, missing; weather, missing; sea, missing; wire angle, 23°. QIA

668	6.42
673	6.40
678	6.36
683	6.32
688	6.26
694	6.16
699	6.15
704	6.16
710	6.13
714	6.06
719	5.98
724	5.94
729	5.91
733	5.86
738	5.78
743	5.76
749	5.75
754	5.69
759	5.63
764	5.57

a) Special cast for the verification of the pressure factors for the unprotected reversing thermometers.

SIO

SWAN SONG

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

Q2A

ARGO; November 13, 1961; 1156 GCT;[a] 1°00'N, 140°15.5'W; sounding, missing; wind, missing; weather, missing; sea, missing; wire angle, 23°.

663	6.40	34.589	1.34	88
668	6.40	34.579	1.36	89
672	6.37	34.575	1.40	89
677	6.30	34.570	1.35	88
682	6.18	34.568	-	87
686	6.16	34.569	1.41	86
691	6.14	34.572	1.39	86
696	6.15	34.566	1.41	87
701	6.14	34.572	1.43	86
706	6.16	34.569	1.45	86
711	6.08	34.570	1.49	85
717	6.01	34.573	1.55	84
722	5.94	34.571	1.60	84
727	5.94	34.570	1.60	84
732	5.87	34.569	1.64	83
736	5.84	34.561	1.67	83
741	5.78	34.561	1.72	83
746	5.78	34.557	1.67	83
751	5.74	34.569	1.73	81
756	5.68	34.559	1.76	81

a) Special cast for the verification of the pressure factors for the unprotected reversing thermometers.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED			
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD	
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m	

ARGO; August 21-22, 1961; 0550, 0109 GCT;[a] 27°27'N, 150°08'W (27°24'N, 150°10'W); sounding, 2800 fm; wind, 090°, force 4; weather, partly cloudy; sea, slight; wire angle, 09°, 23°. S1, S2

0	25.04	35.309	4.41	432	0	25.04	35.31	4.41	23.58	432	0.00
6	25.06	35.281	4.48	434	10	25.06	35.28	4.53	23.56	434	0.04
10	-	35.283	4.53	-	20	24.94	35.32	4.62	23.62	428	0.09
15	25.05	35.274	4.52	435	30	23.96	35.46	4.74	24.02	390	0.13
20	-	35.316	4.62	-	50	23.69	35.44	4.92	24.09	384	0.21
30	23.96	35.455	4.74	390	75	19.50	35.10	5.05	24.99	298	0.29
39	23.82	35.447	4.89	387	100	17.88	34.96	4.85	25.29	269	0.36
64	20.26	35.158	5.25	313	125	17.12	34.85	4.81	25.39	260	0.43
89	18.52	35.014	4.83	280	150	16.17	34.71	4.80	25.50	249	0.49
113	17.61	34.924	4.87	265	200	13.98	34.40	4.99	25.75	226	0.62
143	16.30	34.733	4.77	250	250	12.45	34.29	4.99	25.97	204	0.73
173	15.23	34.576	5.06	238	300	11.20	34.22	4.95	26.15	187	0.83
216	13.40	34.347	4.93	218	400	9.09	34.09	4.46	26.41	162	1.01
265	12.07	34.270	5.02	199	500	6.89	34.02	2.90	26.68	137	1.17
324	10.67	34.186	4.90	181	600	5.54	34.06	1.60	26.89	117	1.30
385	9.45	34.106	4.61	167	700	4.79	34.15	0.77	27.05	102	1.42
434	8.31	34.063	4.10	153	800	4.29	34.27	0.52	27.20	88	1.52
493	7.03	34.025	3.04	138	1000	3.68	34.42	0.54	27.38	71	1.69
541	-	34.022	2.27	-	1200	3.29	34.50	0.79	27.48	61	1.84
550	6.05	34.021	2.14	126	1500	2.73	34.56	1.10	27.58	52	2.04
650	5.14	34.099	1.17	110	2000	2.07	34.62	1.60	27.68	42	2.32
759	4.46	34.220	0.52	93	2500	1.70	34.66	2.27	27.74	36	2.56
978	3.74	34.408	0.54	72	3000	1.53	34.67	2.84	27.76	34	2.78
					4000	1.48	34.69	3.30	27.78	32	3.22
675	4.96	34.130b)	0.92	105	5000	1.51	34.70	3.73	27.79	32	3.68
763	4.44	34.225	0.56	93							
969	3.78	34.408	0.46u	73							
1025	3.64	34.437	0.54	69							
1118	3.44	34.472	0.71	65							
1228	3.22	34.509	0.81	60							
1430	2.87c)	34.550	1.03	54							
1632	2.49	34.586	1.28	48							
1841	2.21	34.607	1.47	44							
2065	-	34.611u	1.74	-							
2075	2.00	34.630	1.70	41							
2272	1.87d)	34.638	1.98	39							
2476	1.72	34.652	2.15	37							
2688	1.6 e)	34.671	2.52	35							
2997	1.53	34.673	2.83	34							
3218	-	34.671	2.88	-							
3227	1.50	34.676	2.75	34							
3505	1.48	34.683	3.04	33							
3891	1.48	34.693	3.26	32							
4274	-	34.692	3.04u	-							
4284	1.48	34.694	3.48	32							
4770	1.52	34.695	3.72	32							
5052	1.51	34.699	3.73	32							

a) Special cast using 2-liter Nansen bottles for the collection of water samples to be used in the determination of rare dissolved gases in the deep ocean. Because of geographic nearness and the similarity of their property curves, Stations S1 and S2 have been treated as overlapping casts for dynamic computations to 5000 meters. The position of S2 is reported in parentheses.

b) Salinity bottle numbers were not recorded on the data sheet. Since standard handling and titrating procedures were used, these salinities are assumed to be listed in correct order.

c) Alternate value, 2.80°C, not used in interpolation.

d) Alternate value, 1.93°C, not used in interpolation.

e) Temperature inferred from pressure thermometer and wire depth.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
S3 ARGO; August 23, 1961; 0102 GCT;[a] 27°22'N, 150°35'W; sounding, 2700+ fm; wind, 080°, force 4; weather, partly cloudy; sea, moderate; wire angle, 10°.											
1	25.24	35.314	4.81	437	0	(25.24)	(35.31)	(4.81)	(23.52)	(437)	(0.00)
11	-	35.313	-	-	10	25.21	35.31	4.83	23.53	437	0.04
14	24.97	35.309	5.08	430	20	24.92	35.32	5.08	23.63	427	0.09
36	-	35.465	-	-	30	24.19	35.45	5.04	23.95	397	0.13
41	23.74	35.420	5.02	387	50	23.15	35.35	5.07	24.18	375	0.21
60	-	35.144	-	-	75	19.37	35.09	5.34	25.01	295	0.29
65	19.89	35.124	5.42b)	306	100	17.93	34.97	5.02	25.28	270	0.36
95	18.28	35.009	5.04	275	125	17.04	34.85	5.00	25.41	258	0.43
129	16.94	34.838	4.99	256	150	16.08	34.71	4.96	25.52	247	0.49
179	14.84	34.527	4.90	234	200	14.00	34.42	4.99	25.76	225	0.61
237	12.66	34.304	5.20	207	250	12.35	34.30	5.19	26.00	202	0.72
296	11.58	34.281	5.12	189	300	11.51	34.28	5.11	26.14	188	0.82
353	10.36	34.177	5.04	176	400	9.27	34.10	4.67	26.39	164	1.01
412	9.00	34.083	4.53	162	500	6.99	34.00	3.38	26.65	139	1.17
475	7.61	34.014	3.82	147	600	5.42	34.02	2.05	26.87	119	1.30
522	6.53	33.994	2.99	134	700	4.62	34.14	0.83	27.06	101	1.42
586	5.60	34.002	2.22	122	800	4.27	34.27	0.44	27.20	88	1.52
698	4.65	34.136	0.85	102	1000	3.72	34.43	0.61	27.38	70	1.70
809	4.24	34.279	0.43	87	1200	3.27	34.49	0.99	27.48	62	1.84
927	3.92	34.398	0.44	75	1500	2.72	34.56	1.40	27.58	52	2.04
1024	3.66	34.436	0.64	69	2000	2.08	34.62	1.90	27.68	42	2.32
1598	2.59	34.579	1.50	49							
2235	-	34.612u	-	-							
2244	1.85	34.637	2.09	39							
S4 ARGO; August 23, 1961; 1900 GCT;[a] 27°27'N, 150°13'W; sounding, 2800 fm; wind, missing; weather, missing; sea, missing; wire angle, 17°.											
949	3.76	34.390	0.44	74	1000	3.65	34.42	0.60	27.39	70	
1055	-	34.449	-	-	1200	3.26	34.48	0.87	27.47	62	
1065	3.51	34.453	0.70	67	1500	2.72	34.54	1.22	27.57	53	
2069	1.98	34.629	1.72	41	2000	2.04	34.62	1.65	27.69	41	
3125	-	34.680	-	-	2500	1.72	34.65	2.12	27.74	37	
3133	1.52	34.676	2.90	34	3000	1.56	34.67	2.80	27.77	34	
3525	1.49	34.688	3.20	33	4000	1.50	34.69	3.31	27.79	32	
4243	-	34.692	-	-							
4254	1.50	34.699	3.39	32							
4774	-	34.694	-	-							
4785	1.50	34.695	3.77	32							

a) Special cast using 2-liter Nansen bottles for the collection of water samples to be used in the determination of rare dissolved gases in the deep ocean.

b) Alternate value, 5.54 ml/L, not used in interpolation.

CURRENT MEASUREMENT DATA

Current Measurement: 1(a) Position: 1°00'N, 140°11'W

Date: 13 September 1961 Start: 0353 GCT Finish: 0438 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	0	73	264	16	184	77	253
2	13	89	256	"	"	95	247
3	27	64	249	"	"	72	237
4	49	26	153	"	"	40	165
5	69	35	096	"	"	38	120
6	89	37	081	"	"	36	105
7	110	68	078	"	"	65	091
8	129	68	071	"	"	63	084
9	142	66	078	"	"	63	092
10	163	57	082	"	"	50	098
11	158	65	071	"	"	61	085
12	160	49	060	"	"	42	077
13	167	32	036	"	"	21	058
14	180	27	294	"	"	25	260
15	196	33	250	"	"	41	231
16	221	29	281	"	"	31	251

Assumed buoy drift: 13 cm/sec - 270°

Current Measurement: 2 Position: 0°02'S, 139°57'W

Date: 14 September 1961 Start: 0458 GCT Finish: 0921 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	11	90	257	16	079	74	257
2	24	78	256	"	"	62	255
3	45	47	259	"	"	31	260
4	65	33	308	"	"	21	335
5	86	33	017	"	"	43	035
6	106	38	019	"	"	48	035
7	128	56	069	"	"	71	071
8	146	53	065	"	"	68	068
9	166	42	066	"	"	58	069
10	183	28	060	"	"	43	066
11	205	32	208	"	"	25	180
12	224	40	232b	"	"	27	217
13	245	38	257	"	"	22	256
14	266	42	265	"	"	27	269
15	245	46	262	"	"	31	264
16	267	48	268	"	"	33	273
17	247	45	261	"	"	29	262
18	226	38	255	"	"	23	253
19	205	30	257	"	"	15	255
20	179	40	022	"	"	50	036
21	162	55	038	"	"	68	046
22	145	65	053	"	"	79	058
23	128	58	049	"	"	73	055
24	109	55	027	"	"	66	037
25	88	39	018	"	"	49	034
26	68	38	313	"	"	31	337
27	47	49	273	"	"	34	280
28	26	78	244	"	"	63	241
29	13	89	261	"	"	74	262

Current Measurement: 3 Position: 0°02'S, 139°57'W

Date: 14 September 1961 Start: 1948 GCT Finish: 2123 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	5	86	261	33	102	56	249
2	24	81	267	"	"	50	257
3	43	61	262	"	"	32	241
4	64	41	277	"	"	7	257
5	87	44	024	"	"	60	056
6	109	63	055	"	"	89	071
7	128	65	067	"	"	94	078
8	146	40	075	"	"	86	079
9	166	37	048	"	"	62	073
10	185	30	043	"	"	55	074
11	191	23	148b	"	"	52	050
12	225	25	185b	"	"	44	137
13	260	42	256	"	"	19	206
14	285	51	266	"	"	21	240
15	308	49	265	"	"	20	236
16	332	57	274	"	"	24	263
17	355	50	264	"	"	21	234
18	325	65	271	"	"	33	260
19	300	58	267	"	"	22	248
20	280	64	260	"	"	36	240
21	257	67	255	"	"	40	233
22	229	53	252	"	"	29	217
23	211	30	184	"	"	48	140
24	190	28	111	"	"	61	106
25	169	42	036	"	"	63	064
26	150	48	074	"	"	77	085
27	130	62	074	"	"	92	083
28	112	57	065	"	"	85	078
29	89	34	241	"	"	23	174
30	68	41	275	"	"	8	249
31	47	63	265	"	"	33	248
32	28	76	263	"	"	47	249
33	8	91	262	"	"	61	251
SD	0					65	263

Current Measurement: 4 Position: 0°02'S, 139°57'W

Date: 15 September 1961 Start: 0535 GCT Finish: 0718 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	131	96	096	23	020	104	083
2	150	64	102	"	"	71	083
3	168	55	095	"	"	65	075
4	182	49	125	"	"	49	098
5	200	49	121	"	"	50	094
6	222	49	179	"	"	29	162
7	244	62	228	53	067	21	170
8	266	61	254	"	"	10	293
9	284	56	240	"	"	5	172
10	300	68	238	"	"	17	208
11	323	60	240	"	"	10	196
12	343	59	240	"	"	9	194
13	312	71	243	"	"	18	231
14	286	68	243	"	"	15	230
15	269	73	243	"	"	20	232
16	252	81	242	"	"	28	232
17	237	77	243	"	"	24	234
18	222	77	240	"	"	25	224
19	206	49	194	"	"	46	126
20	186	28	208	"	"	37	097
21	167	31	128	"	"	73	089
22	148	40	102	"	"	89	082
23	127	71	103	"	"	119	088
24	108	62	107	"	"	109	089
25	85	19	210	"	"	40	084
26	64	42	249	"	"	12	063
27	43	71	258	"	"	21	285
28	26	89	248	"	"	35	249
29	15	92	263	"	"	43	283
30	6	104	253	"	"	50	258

Current Measurement: 5 Position: 2°13'S, 139°50'W

Date: 18 September 1961 Start: 1734 GCT Finish: 1843 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	15	49	268	15	180	52	251
2	26	52	273	"	"	53	256
3	48	53	283	"	"	52	266
4	66	40	289	"	"	38	267
5	88	55	307	"	"	47	292
6	108	44	282	"	"	43	262
7	127	55	066	"	"	51	082
8	150	55	076	"	"	53	092
9	170	46	042	"	"	36	058
10	187	51	045	"	"	42	060
11	206	43	041	"	"	33	058
12	230	42	036	"	"	31	052
13	248	50	065	"	"	46	082
14	267	51	069	"	"	48	086
15	270	32	080	"	"	33	107
16	289	36	027	"	"	24	043
17	309	36	041	"	"	26	063
18	335b	37	038	"	"	27	058
19	360b	40	037	"	"	29	055

Current Measurement: 6 Position: 2°13'S, 139°50'W

Date: 18-19 September 1961 Start: 2225 GCT Finish: 0011 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	16	55	216	27	195	81	209
2	26	51	233b	"	"	74	220
3	36	57	213	"	"	83	207
4	46	45	212	"	"	83	206
5	66	39	247	"	"	59	226
6	89	64	311	"	"	58	286
7	111	52	309	"	"	48	278
8	129	62	022	"	"	35	027
9	148	52	053	"	"	35	082
10	168	58	015	"	"	30	014
11	186	58	011	"	"	31	007
12	203	53	011	"	"	22	012
13	222	49	014	"	"	26	006
14	242	56	010	"	"	29	005
15	261	59	014	"	"	32	013
16	274	62	012	"	"	35	009
17	287	60	021	"	"	33	025
18	304	60	024	"	"	34	030
19	278	68	015	"	"	73	126
20	270	64	020	"	"	37	024
21	246	70	020	"	"	43	023
22	240	66	020	"	"	39	023
23	221	61	020	"	"	35	024
25	204	70	010	"	"	43	007
26	185	74	011	"	"	47	008
27	174	70	021	"	"	43	025
28	168	70	018	"	"	44	019
29	162	66	018	"	"	39	020
30	154	59	027	"	"	33	036
31	145	76	027	"	"	49	033
32	136	80	063	"	"	65	080
33	127	65	027	"	"	39	035
34	117	51	328	"	"	38	297
35	106	53	297	"	"	54	268
36	85	62	269	"	"	74	249
37	64	45	264	"	"	60	239
38	43	61	278	"	"	70	255
39	23	60	250	"	"	78	234
40	13	55	259	"	"	71	239
SD	0					53	257

Current Measurement: 7 Position: 1°00'S, 140°02'W

Date: 19 September 1961 Start: 1113 GCT Finish: 1317 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	11	78	259	13	132	70	250
2	20	77	262	"	"	69	253
3	38	68	266	"	"	80	257
4	60	65	276	"	"	55	268
5	80	39	253	"	"	34	234
6	104	40	062	"	"	46	077
7	121	58	027	"	"	56	040
8	143	64	034	"	"	64	045
9	162	49	042	"	"	50	057
10	180	42	013	"	"	37	030
11	202	39	021	"	"	36	040
12	221	45	013	"	"	40	029
13	241	33	008	"	"	28	030
14	265	35	356	"	"	27	015
15	286	40	001	"	"	33	018
16	281	37	006	"	"	31	025
17	299	32	001	"	"	25	024
18	324	38	341	"	"	27	354
19	320	49	328	"	"	36	334
20	348	37	352	"	"	27	009
21	328	36	301	"	"	23	295
22	300	33	341	"	"	22	357
23	281	44	358	"	"	36	013
24	260	44	357	"	"	35	011
25	241	41	008	"	"	33	014
26	222	44	012	"	"	39	028
27	200	41	022	"	"	38	040
28	178	39	009	"	"	34	028
29	162	60	030	"	"	58	042
30	153	66	022	"	"	63	033
31	144	66	021	"	"	62	032
32	134	70	029	"	"	68	039
33	126	66	042	"	"	67	053
34	116	55	033	"	"	55	046
35	105	46	022	"	"	42	038
36	85	43	265	"	"	35	249
37	64	55	284	"	"	44	276
38	42	76	257	"	"	69	248
39	22	77	255	"	"	71	246
40	14	74	259	"	"	67	250

Current Measurement: 8 Position: 1°00'S, 140°02'W

Date: 20 September 1961 Start: 0153 GCT Finish: 0347 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	16	72	254	23	125	60	236
2	26	61	265	"	"	45	246
3	46	55	258	"	"	42	235
4	67	51	258	"	"	48	232
5	87	39	242	"	"	35	206
6	110	40	048	"	"	51	074
7	120	46	019	"	"	45	048
8	130	53	008	"	"	47	032
9	140	48	019	"	"	48	047
10	150	55	029	"	"	57	052
11	170	64	010	"	"	58	031
12	189	52	031	"	"	56	055
13	207	53	077	"	"	71	091
14	208	58	080	"	"	77	092
15	235	44	030	"	"	49	058
16	264	44	009	"	"	39	041
17	310	55	005	"	"	48	029
18	286	55	005	"	"	48	029
19	313	34	334	"	"	18	013
20	336	61	344	"	"	45	003
21	364	38	351	"	"	27	028
22	339	40	339	"	"	25	010
23	324	29	298	"	"	3	277
24	290	42	280	"	"	23	255
25	264	45	342	"	"	30	010
26	238	42	001	"	"	35	034
27	212	38	038	"	"	46	068
28	192	37	012	"	"	35	049
29	172	56	007	"	"	49	032
30	152	52	022	"	"	52	048
31	140	45	007	"	"	40	038
32	131	53	005	"	"	46	031
33	122	40	065	"	"	56	086
34	111	36	076	"	"	54	095
35	90	42	275	"	"	24	246
36	69	61	256	"	"	49	235
37	48	56	245	"	"	48	220
38	27	70	266	"	"	54	250
39	18	74	241	"	"	67	223
SD	0					58	242

Current Measurement: 9(a) Position: 0°05'S, 139°37'W
0°09'S, 139°32'W

Date: 20 September 1961 Start: 1353 GCT Finish: 1613 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	15	98	284	82	114	22	246
2	24	101	270	"	"	42	218
3	42	81	270	"	"	34	190
4	60	62	263	"	"	43	160
5	79	42	238	"	"	68	143
6	101	39	117	"	"	122	115
7	121	53	069	"	"	126	096
8	125	60	072	"	"	133	096
9	145	48	067	"	"	120	097
10	166	43	112	"	"	126	113
11	185	40	001	"	"	76	084
16	322	42	357	61	127	46	084
17	326	42	357	"	"	46	084
18	305	33	358	"	"	48	094
19	300	72	324	"	"	22	017
20	284	65	332	"	"	28	041
21	268	70	325	"	"	22	021
22	248	48	327	"	"	23	081
23	229	41	311	"	"	20	119
24	206	59	003	"	"	56	067
25	184	56	016	"	"	66	075
26	186	48	008	"	"	56	079
27	168	55	028	"	"	75	081
28	149	54	093	"	"	111	111
29	139	66	090	"	"	121	107
30	130	72	083	"	"	124	103
31	121	81	088	"	"	133	105
32	111	88	086	"	"	140	103
33	100	77	099	"	"	133	112
34	91	54	123	"	"	115	125
35	68	50	259	"	"	46	181
36	47	32	261	"	"	45	157
37	26	48	308	"	"	13	121
38	-	48	211	"	"	82	163

Assumed buoy drift: 25 cm/sec - 132°

Current Measurement: 10(a) Position: 0°05'S, 139°37'W
0°09'S, 139°32'W

Date: 20-21 September 1961 Start: 2347 GCT Finish: 0037 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	14	81	255	49	137	72	219
2	54	57	245	"	"	63	196
3	64	39	193	"	"	78	162
4	74	42	170	"	"	87	152
5	85	48	085	"	"	88	111
6	96	86	080	"	"	121	100
7	106	90	070	"	"	119	093
8	90	71	087	"	"	110	107
9	84	57	069	"	"	88	100
10	80	55	081	"	"	92	107
11	74	39	148	"	"	88	142
12	69	72	193b	"	"	107	171
13	64	36	181	"	"	79	155
14	59	46	206	"	"	78	170
15	54	57	234	"	"	70	190
16	44	47	204	"	"	80	170
17	14	71	237	"	"	79	200

Current Measurement: 11 Position: 1°08'N, 139°55'W

Date: 21 September 1961 Start: 1840 GCT Finish: 2118 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	12	121	280	24	039	116	291
2	20	115	276	"	"	104	287
3	37	95	281	"	"	86	295
4	51	76	255	"	"	59	269
5	69	49	213	"	"	25	207
6	79	38	196	"	"	18	166
7	90	33	192	"	"	16	150
8	102	24	169	"	"	20	105
9	112	33	100	"	"	49	075
10	122	37	063	"	"	59	053
11	132	45	103	"	"	60	082
12	154	30	085	"	"	50	064
13	175	21	187	"	"	13	100
14	194	17	157	"	"	22	082
15	215	15	231	"	"	10	020
16	235	19	240	21	039	7	330
17	261	21	184	"	"	13	112
18	284	18	148b	"	"	23	090
19	303	23	152	"	"	24	100
20	330	18	190	"	"	10	100
21	356	18	141	"	"	24	087
22	330	17	178	16	039	12	112
23	308	18	187	"	"	10	130
24	255	15	246	"	"	6	332
25	202	22	084	"	"	35	065
26	178	21	150b	"	"	21	105
27	152	47	114	"	"	53	097
28	143	67	109	"	"	74	097
29	130	61	127	"	"	64	112
30	124	57	139	"	"	56	123
31	116	45	139	"	"	45	119
32	102	33	117	"	"	40	094
33	91	27	171b	"	"	20	136
34	81	33	158	"	"	29	129
35	70	46	198	"	"	31	188
36	60	57	232	"	"	42	237
37	40	86	272	"	"	77	282
38	24	103	276	"	"	95	284
39	14	103	256	"	"	91	262
SD	0					106	274

Current Measurement: 12 Position: 2°07'N, 140°00'W

Date: 22 September 1961 Start: 1355 GCT Finish: 1642 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	16	81	244	10	190	87	238
2	26	72	250	"	"	78	243
3	45	65	243	"	"	71	237
4	65	52	214	"	"	61	210
5	74	64	194	"	"	74	193
6	84	61	182	"	"	71	183
7	103	63	172	"	"	73	174
8	124	37	185	"	"	47	186
9	132	33	022b	"	"	23	026
10	144	36	029	"	"	23	035
11	160	31	009	"	"	21	360
12	185	48	028	"	"	38	032
13	202	44	006	"	"	34	004
14	225	40	005	"	"	30	003
15	256	37	042	"	"	29	052
16	286	38	016	"	"	27	018
17	310	50	034b	"	"	41	039
18	337	48	048	"	"	40	056
19	360	37	009	"	"	27	009
22	342	32	115	23	358	29	072
23	318	36	099	"	"	38	063
24	296	44	100	"	"	45	070
25	264	55	110	"	"	51	085
26	240	50	112	"	"	46	085
27	213	43	099	"	"	45	068
28	188	35	113	"	"	33	074
29	165	34	091	"	"	40	056
30	146	65	099	"	"	64	079
31	120	81	191	"	"	59	196
32	123	72	184	"	"	49	187
33	117	83	185	"	"	60	188
34	102	100	195	"	"	78	200
35	96	94	193	"	"	72	198
36	87	88	213	"	"	71	224
37	75	80	205	"	"	60	215
38	68	84	225	"	"	71	239
39	63	74	213	"	"	57	226
40	45	76	231	"	"	65	247
41	27	91	214	"	"	74	224
42	18	74	220	"	"	59	235

Current Measurement: 13 Position: 2°07'N, 140°00'W

Date: 22 September 1961 Start: 1847 GCT Finish: 2056 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	15	76	252	13	339	77	262
2	26	60	240	"	"	59	252
3	44	59	211	"	"	52	222
4	65	57	214	"	"	49	227
5	82	72	211	"	"	64	220
6	105	83	178	"	"	71	181
7	124	55	167	"	"	42	169
8	130	42	123	"	"	32	109
9	140	46	069	"	"	48	053
10	136	52	079	"	"	52	064
11	159	39	062	"	"	43	044
12	180	39	063	"	"	42	045
13	201	42	054	"	"	47	038
14	223	33	056	"	"	38	036
15	244	49	055	"	"	53	041
16	269	40	079	"	"	40	060
17	284	30	094	"	"	28	068
18	304	39	090	"	"	36	071
19	330	65	078	"	"	65	066
20	354	50	096	"	"	46	081
21	330	44	099	"	"	39	082
22	303	50	108	"	"	43	094
23	284	57	083	"	"	55	069
24	266	48	089	"	"	45	073
25	246	39	067	"	"	43	049
26	223	47	068	"	"	49	052
27	202	36	074	"	"	37	053
28	185	42	069	"	"	44	051
29	160	47	085	"	"	45	068
30	154	46	010	"	"	58	003
31	131	65	139	"	"	53	134
32	124	63	160	"	"	50	160
33	114	76	188	"	"	64	193
34	104	81	189	"	"	70	194
35	86	62	203	"	"	53	213
36	67	66	236	"	"	64	247
37	48	78	231	"	"	75	240
38	27	68	226	"	"	64	237
39	18	71	242	"	"	70	252
SD	0					44	279

Current Measurement: 14(a) Position: 1°59'N, 118°04'W
1°59'N, 118°08'W

Date: 28-29 September 1961 Start: 2324 GCT Finish: 0138 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	10	122	253	22	341	124	263
2	20	115	248	"	"	115	259
3	35	86	234	"	"	82	249
4	52	71	205	"	"	57	221
5	72	66	184	"	"	46	194
6	90	54	189	"	"	36	205
7	102	34	206	"	"	24	246
8	112	36	178	"	"	15	203
9	111	41	191	"	"	24	218
10	122	45	177	"	"	24	191
11	138	42	168	"	"	20	175
12	159	37	157	"	"	15	150
13	177	37	149	"	"	16	131
14	193	41	164	"	"	18	167
15	212	36	170	30	012	15	115
16	227	31	178	"	"	8	100
17	244	34	173	"	"	12	113
18	264	33	172	"	"	12	107
19	286	27	193	"	"	3	360
20	282	32	188	"	"	3	140
21	296	27	190	"	"	3	040
22	309	24	191	"	"	6	015
23	330	27	171	"	"	11	075
24	309	26	184	"	"	6	053
25	284	31	190	"	"	1	140
26	265	38	183	"	"	10	155
27	236	39	186	"	"	10	165
28	221	39	184	"	"	11	160
29	204	41	185	"	"	12	165
30	188	45	185	"	"	16	170
31	172	41	191	"	"	11	189
32	160	39	190	"	"	9	183
33	141	47	183	"	"	18	167
34	125	50	189	"	"	20	184
35	106	51	208	"	"	24	228
36	96	54	203	"	"	25	215
37	87	68	209	"	"	40	221
38	82	65	194	"	"	35	195
39	72	72	202	"	"	42	208
40	64	76	205	"	"	47	213
41	58	73	213	"	"	47	226
42	50	80	215	"	"	53	227
43	43	77	228	"	"	56	246
44	37	98	236	"	"	79	251
45	30	113	244	"	"	97	258
46	26	119	247	"	"	104	261
47	18	124	254	"	"	113	267
48	10	132	261	"	"	124	274
SD	0					131	275

Assumed buoy drift: 10 cm/sec - 270°

Current Measurement: 15(a) Position: 1°59'N, 118°04'W
1°59'N, 118°08'W

Date: 29 September 1961 Start: 1325 GCT Finish: 1623 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	10	112	251	22	050	91	256
2	19	108	255	"	"	88	261
3	27	108	247	"	"	87	252
4	34	105	246	"	"	84	251
5	42	94	233	"	"	72	234
6	49	78	227	"	"	56	226
7	57	65	218	"	"	43	212
8	66	59	219	"	"	38	213
9	74	55	202	"	"	37	186
10	84	57	207	"	"	37	194
11	95	45	222	"	"	24	215
12	102	38	221	"	"	17	210
13	109	36	215	"	"	16	193
14	120	35	216	"	"	14	195
15	126	36	216	"	"	15	197
16	137	32	214	"	"	12	181
17	153	31	216	"	"	11	186
18	169	24	226	"	"	3	190
19	190	25	218	"	"	6	161
20	210	23	227	"	"	2	180
21	226	26	223	"	"	5	190
22	245	27	229	"	"	4	230
23	268	27	234	24	062	5	180
24	292	21	212	"	"	12	121
25	317	17	207	"	"	15	108
26	336	11	219	"	"	15	081
27	326	15	218	"	"	13	095
28	342	9	246	"	"	15	060
29	320	19	256	"	"	7	024
30	297	23	247	"	"	3	360
31	270	30	238	"	"	7	220
32	266	29	239	"	"	6	220
33	247	33	228	"	"	12	199
34	221	32	223	"	"	12	181
35	208	30	234	"	"	8	205
36	195	30	228	"	"	9	186
37	205	26	220	"	"	10	153
38	188	27	228	25	082	16	160
39	168	26	235	"	"	12	157
40	140	36	231	"	"	20	187
41	122	39	247	"	"	17	221
42	110	44	256	"	"	19	246
43	102	46	247	"	"	23	230
44	106	42	257	"	"	17	249
45	102	43	250	"	"	19	233
46	94	58	226	"	"	41	204
47	79	54	213	"	"	42	186
48	73	65	216	"	"	52	194
49	64	61	215	"	"	48	192
50	57	66	221	"	"	50	201
51	49	101	240	"	"	78	233
52	40	116	255	"	"	91	253
53	35	117	254	"	"	93	251
54	29	121	256	25	082	96	255
55	22	126	255	"	"	101	253
56	16	119	259	"	"	94	257
57	9	125	264	"	"	100	264

Assumed buoy drift: 10 cm/sec - 270°

Current Measurement: 16(a) Position: 0°53'N, 117°56'W
0°53'N, 118°00'W

Date: 30 September 1961 Start: 0440 GCT Finish: 0718 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	1	68	280	23	145	55	262
2	22	80	246	"	"	79	229
3	32	55	236	"	"	60	212
4	41	40	222	"	"	51	195
5	52	43	237	"	"	49	208
6	63	34	212	"	"	48	185
7	72	42	252	"	"	42	219
8	82	34	237	"	"	41	202
9	94	29	275	"	"	23	223
10	106	29	267	"	"	26	218
11	114	30	279	"	"	22	229
12	122	36	283	"	"	25	242
13	133	35	290	"	"	21	250
14	144	35	291	"	"	21	251
15	166	33	300	"	"	16	260
16	185	28	294	"	"	15	240
17	205	27	305	"	"	10	247
18	224	28	323	"	"	5	312
19	245	25	325	"	"	2	310
20	267	32	330	"	"	8	340
21	288	33	328	"	"	10	331
22	304	26	318	"	"	4	270
23	328	35	312	"	"	13	288
24	350	26	330	"	"	4	360
25	370	22	323	"	"	3	178
26	394	28	286	"	"	19	231
27	389	30	314	"	"	9	280
28	370	25	340	24	130	13	050
29	349	31	349	"	"	19	040
30	326	37	342	"	"	20	021
31	303	32	328	"	"	11	010
32	284	41	324	"	"	19	343
33	263	35	334	"	"	16	011
34	243	33	330	"	"	13	010
35	224	28	332	"	"	12	025
36	205	28	316	"	"	5	345
37	185	33	296	"	"	11	265
38	165	39	297	"	"	16	278
39	142	44	300	"	"	21	289
40	134	43	290	"	"	22	269
41	124	46	286	"	"	25	264
42	114	31	295	"	"	10	255
43	105	34	307	"	"	10	300
44	95	31	287	"	"	13	240
45	84	31	275	"	"	18	224
46	74	35	204	"	"	48	174
47	64	36	219	"	"	43	185
48	54	39	218	"	"	47	187
49	42	34	244	"	"	33	201
50	32	59	243	"	"	54	219
51	22	89	258	"	"	76	244
52	12	112	249	"	"	101	237

Assumed buoy drift: 14 cm/sec - 270°

Current Measurement: 17(a) Position: 0°53'N, 117°56'W
0°53'N, 118°00'W

Date: 30 September 1961 Start: 1628 GCT Finish: 1811 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	2	88	245	20	093	71	238
2	21	86	231	"	"	72	220
3	32	60	228	"	"	49	211
4	43	52	210	"	"	46	187
5	52	51	220	"	"	42	197
6	63	55	208	"	"	50	187
7	72	55	213	"	"	48	192
8	82	55	223	"	"	45	202
9	93	58	255	"	"	40	246
10	103	50	235	"	"	36	215
11	113	44	258	"	"	26	245
12	122	44	261	"	"	25	251
13	132	40	257	"	"	22	241
14	142	42	262	"	"	22	251
15	162	44	230	"	"	33	205
16	180	40	257	"	"	22	241
17	198	37	263	"	"	17	250
18	215	37	269	"	"	16	262
19	236	37	277	"	"	17	281
20	258	27	283	"	"	8	308
21	281	32	289	"	"	13	311
22	303	33	287	"	"	15	306
23	324	32	284	"	"	13	300
24	344	35	302	"	"	20	330
25	361	33	301	"	"	18	332
26	358	35	287	"	"	18	303
27	340	35	300	"	"	19	326
28	321	35	296	"	"	18	320
29	304	36	292	"	"	18	313
30	287	35	296	"	"	18	320
31	270	35	291	"	"	16	312
32	247	29	296	"	"	13	330
SD	0					81	258

Assumed buoy drift: 14 cm/sec - 270°

Current Measurement: 18(a) Position: 0°04'S, 118°00'W
0°07'S, 117°56'W

Date: 1 October 1961 Start: 0508 GCT Finish: 0738 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	12	81	249	59	123	68	203
2	20	54	258	"	"	44	185
3	32	39	222	"	"	66	160
4	42	37	191	"	"	81	149
5	54	23	300	"	"	36	126
6	63	37	074	"	"	88	105
7	74	64	057	"	"	103	088
8	85	55	039	"	"	84	083
9	95	44	357	"	"	49	076
10	105	45	333	"	"	30	076
11	116	46	324	"	"	23	080
12	126	40	305	46	125	5	120
13	135	51	293	"	"	11	235
14	144	56	308	"	"	11	323
15	165	52	300	"	"	7	269
16	182	52	292	"	"	13	238
17	202	47	300	"	"	4	230
18	220	53	296	"	"	10	254
19	236	47	297	"	"	6	220
20	257	46	291	"	"	11	209
21	272	53	289	"	"	16	235
22	268	52	293	"	"	11	240
23	287	51	291	"	"	12	231
24	309	53	291	"	"	14	237
25	326	58	294	"	"	16	261
26	346	60	293	"	"	18	261
27	342	61	290	"	"	20	255
28	363	65	284	"	"	27	249
29	374	70	289	"	"	28	264
30	353	65	300	"	"	20	290
31	323	67	296	"	"	23	279
32	302	70	293	"	"	27	272
33	282	70	294	"	"	26	277
34	258	66	297	"	"	21	281
35	240	68	297	"	"	23	282
36	226	77	299	59	120	18	295
37	212	73	307	"	"	16	332
38	204	68	301	"	"	9	305
39	198	64	308	"	"	10	002
40	184	65	309	"	"	12	002
41	174	62	312	"	"	13	024
42	160	61	299	"	"	2	270
43	143	57	308	"	"	8	050
44	135	51	304	"	"	9	095
45	126	46	310	"	"	16	090
46	116	45	334	"	"	33	071
47	105	41	359	"	"	51	077
48	96	47	008	"	"	60	074
49	86	55	039	"	"	87	082
50	75	57	053	"	"	97	087
51	65	39	032	"	"	72	087
52	54	21	200	"	"	66	138
53	44	30	209	"	"	67	146
54	34	50	260	59	120	39	178
55	23	73	259	"	"	48	206
56	13	89	258	"	"	60	217

Assumed buoy drift: 17 cm/sec - 270°

Current Measurement: 19(a) Position: 0°04'S, 118°00'W
0°07'S, 117°56'W

Date: 1 October 1961 Start: 1553 GCT Finish: 1900 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	11	76	239	76	121	78	179
2	22	64	238	"	"	73	171
3	32	46	234	"	"	72	156
4	43	31	171	"	"	99	135
5	53	43	106	"	"	118	115
6	64	51	096	"	"	125	111
7	75	62	069	"	"	125	097
8	85	51	066	"	"	114	099
9	96	41	051	"	"	99	096
10	105	38	011	"	"	73	091
11	115	34	352	"	"	61	095
12	126	35	316	"	"	43	109
13	137	48	294	"	"	29	132
14	147	47	302	"	"	29	118
15	167	50	295	"	"	26	132
16	187	51	306	"	"	25	110
17	206	48	300	"	"	28	122
18	224	50	309	"	"	27	105
19	242	55	294	"	"	22	137
20	259	49	291	"	"	29	138
21	276	52	287	"	"	28	146
22	288	55	292	"	"	24	141
23	305	58	290	"	"	22	151
24	309	64	289	69	123	18	190
25	319	67	294	"	"	12	195
26	336	68	299	"	"	6	210
27	354	66	291	"	"	15	195
28	371	74	289	"	"	19	222
29	340	76	300	"	"	8	270
30	318	76	299	"	"	9	260
31	308	78	297	"	"	12	258
32	297	72	299	"	"	6	240
33	279	73	304	"	"	4	310
34	263	71	296	"	"	10	222
35	262	66	297	"	"	8	184
36	251	66	306	"	"	4	080
37	249	66	309	"	"	7	060
38	234	70	310	"	"	8	028
39	226	62	309	62	126	3	045
40	209	58	324	"	"	19	057
41	197	60	323	"	"	18	050
42	181	65	312	"	"	8	013
43	164	58	313	"	"	9	070
44	146	50	321	"	"	19	082
45	135	46	334	"	"	30	082
46	125	37	009	"	"	56	090
47	115	44	355	"	"	47	080
48	109	48	018	"	"	66	082
49	96	53	041	"	"	86	087
50	86	53	065	"	"	100	097
51	81	65	063	"	"	108	093
52	76	72	085	"	"	126	104
53	71	68	088	"	"	123	106
54	66	76	093	62	126	133	108
55	60	65	113	"	"	126	119
56	57	56	104	"	"	116	115
57	45	39	119	"	"	101	122
58	34	33	133	"	"	96	128
59	24	63	216	"	"	89	171
60	14	74	235	"	"	79	187
SD	0					59	202

Assumed buoy drift: 21 cm/sec - 153°

Current Measurement: 20(a) Position: 0°04'S, 118°00'W
0°07'S, 117°56'W

Date: 2 October 1961 Start: 0000 GCT Finish: 0240 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	13	78	253	67	127	67	198
2	22	62	241	"	"	70	180
3	34	40	239	"	"	64	162
4	45	32	091	"	"	95	115
5	54	40	086	"	"	102	112
6	64	53	090	"	"	115	111
7	73	66	065	"	"	114	096
8	86	71	057	"	"	114	091
9	96	55	051	"	"	97	094
10	105	47	026	"	"	75	088
11	115	48	010	"	"	63	083
12	126	38	007	"	"	58	092
13	137	35	328	"	"	37	107
14	146	46	319	"	"	24	103
15	168	55	313	"	"	14	104
16	184	49	330	"	"	29	085
17	203	46	325	"	"	28	096
18	220	46	315	"	"	23	110
19	241	49	296	"	"	21	153
20	254	53	295	"	"	19	162
21	270	58	297	"	"	14	171
22	283	58	305	"	"	9	140
23	305	63	298	"	"	11	190
24	306	71	296	71	126	12	211
25	323	66	295	"	"	14	191
26	343	65	296	"	"	14	182
27	368	71	291	"	"	18	210
28	355	67	298	"	"	10	190
29	339	71	301	"	"	6	220
30	318	77	299	"	"	11	248
31	312	73	294	"	"	15	220
32	305	71	296	"	"	12	211
33	291	72	299	"	"	9	220
34	280	71	301	"	"	6	220
35	264	68	300	"	"	7	197
36	247	70	304	"	"	2	210
37	235	66	305	"	"	5	135
38	225	64	306	"	"	7	125
39	212	60	307	"	"	10	120
40	196	60	317	"	"	17	081
41	180	54	330	"	"	31	080
42	164	58	302	"	"	13	142
43	146	42	324	"	"	34	103
44	137	49	303	"	"	22	133
45	126	49	009	"	"	65	084
46	116	49	016	"	"	71	085
47	105	50	026	"	"	79	087
48	96	55	055	"	"	103	095
49	85	72	064	"	"	122	094
50	77	63	078	"	"	123	103
51	66	46	101	"	"	114	116
52	54	39	098	"	"	107	116
53	43	37	182	"	"	96	144
54	35	47	209	71	126	89	157
55	24	65	251	"	"	63	184
56	13	96	265	"	"	63	218

Assumed buoy drift: 21 cm/sec - 153°

Current Measurement: 21 Position: 1°08'S, 117°57'W

Date: 2 October 1961 Start: 1734 GCT Finish: 2018 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	12	68	219	46	054	26	193
2	20	65	221	"	"	22	194
3	33	48	202	"	"	26	132
4	43	44	197	"	"	28	121
5	50	56	178	"	"	48	126
6	65	42	125	"	"	72	087
7	74	50	094	"	"	90	074
8	84	44	097	"	"	84	075
9	95	31	067	"	"	77	059
10	104	74	119	"	"	103	095
11	115	34	107	"	"	72	076
12	122	32	100	"	"	72	072
13	133	39	120	"	"	72	084
14	144	35	086	"	"	77	077
15	155	34	115	"	"	69	079
16	163	28	159	"	"	47	089
17	183	23	174b	"	"	40	084
18	207	32	208	"	"	22	092
19	224	35	171	"	"	43	100
20	246	30	228	"	"	16	064
21	268	33	239	"	"	14	042
22	287	43	229	43	054	4	140
23	304	44	219	"	"	12	140
24	328	46	233	"	"	3	212
25	349	47	236	"	"	4	254
26	370	47	215	"	"	15	148
27	392	53	225	"	"	13	192
28	387	46	225	28	054	18	211
29	364	50	227	"	"	22	218
30	340	53	224	"	"	26	214
31	319	55	222	"	"	28	210
32	300	54	233	"	"	26	232
33	284	42	232	"	"	14	229
34	268	40	230	"	"	12	220
35	246	40	205b	"	"	20	165
SD	0					33	225

Current Measurement: 22 Position: 1°08'S, 117°57'W

Date: 2-3 October 1961 Start: 2355 GCT Finish: 0326 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	12	76	263	58	099	26	224
2	22	66	244	"	"	38	183
3	33	44	264	"	"	19	136
4	44	30	300	"	"	31	080
5	54	24	354	"	"	57	075
6	64	27	032	"	"	72	079
7	75	45	017	"	"	78	064
8	86	38	013	"	"	71	067
9	96	28	343	"	"	52	070
10	106	32	002	"	"	62	069
11	116	35	352	"	"	58	064
12	128	35	321	"	"	39	063
13	137	26	024	"	"	69	077
14	146	26	289	"	"	32	092
15	158	38	273	"	"	21	112
16	172	56	307	"	"	28	027
17	187	42	279	"	"	15	100
18	207	36	279	"	"	22	100
19	227	38	259	"	"	26	130
20	246	37	268	"	"	23	118
21	266	54	278	"	"	4	113
22	285	53	276	"	"	6	130
23	301	50	271	"	"	11	129
24	340	61	266	"	"	14	196
25	359	55	269	"	"	10	167
26	376	53	269	"	"	13	160
27	362	58	268	"	"	11	183
28	337	70	265	"	"	14	218
29	319	65	257	"	"	15	194
30	303	65	263	"	"	19	203
31	287	64	275	"	"	7	240
32	276	61	271	"	"	9	204
33	258	58	279	"	"	0	150
34	242	50	277	"	"	8	101
35	226	39	271	"	"	20	116
36	216	40	279	"	"	18	101
37	206	35	271	"	"	24	111
38	186	36	277	"	"	22	103
39	167	42	277	"	"	16	107
40	158	41	295	"	"	21	068
49	12	76	256	"	"	32	210
50	22	60	259	"	"	20	185
51	34	41	264	"	"	21	130
52	54	39	279	"	"	19	100
55	54	23	310	58	099	40	082
56	66	29	039	"	"	77	080
57	75	40	030	"	"	82	072
58	86	35	296	"	"	26	077
59	97	34	272	"	"	24	109
60	108	28	352	"	"	56	071
61	118	30	285	"	"	28	093
62	127	31	287	"	"	27	090
63	138	28	271	"	"	30	107

Current Measurement: 23 Position: 1°45'S, 117°57'W

Date: 4 October 1961 Start: 1435 GCT Finish: 1702 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	12	91	258	60	080	31	254
2	22	67	241	"	"	22	178
3	32	54	266	"	"	8	040
4	42	37	248	"	"	25	098
5	53	31	275	"	"	31	066
6	64	31	290	"	"	36	055
7	75	31	279	"	"	32	063
8	85	52	257	"	"	8	101
9	95	53	265	"	"	8	050
10	105	50	268	"	"	12	049
11	114	59	240	"	"	21	157
12	124	55	261	"	"	5	074
13	134	57	257	"	"	5	126
14	143	62	246	"	"	15	169
15	162	59	257	"	"	3	152
16	182	49	248	"	"	16	120
17	192	53	252	"	"	11	128
18	208	49	262	"	"	11	074
19	222	48	256	"	"	12	096
20	239	49	263	"	"	11	068
21	255	49	261	"	"	11	079
22	275	50	263	"	"	10	068
23	298	49	263	"	"	11	067
24	316	46	248	"	"	17	113
25	335	50	250	"	"	14	120
26	360	49	246	"	"	17	125
27	378	40	237	"	"	28	115
28	393	40	232	"	"	31	118
29	368	53	241	"	"	20	142
30	342	61	256	"	"	5	179
31	323	55	257	54	071	5	336
32	306	51	262	"	"	10	004
33	287	52	256	"	"	5	015
34	269	58	256	"	"	6	307
35	250	62	261	"	"	12	308
36	236	54	259	"	"	7	345
37	220	57	272	"	"	20	343
38	207	53	267	"	"	15	353
39	190	58	267	"	"	16	334
40	173	70	264	"	"	21	300
41	158	65	257	"	"	12	284
42	141	68	254	"	"	15	264
43	134	57	238	"	"	12	167
44	125	58	228	"	"	13	173
45	115	53	250	"	"	1	110
46	105	58	250	"	"	4	235
47	96	55	254	"	"	3	323
48	91	44	249	"	"	10	082
49	85	40	248	"	"	14	018
50	76	30	256	"	"	24	064
51	65	33	288	"	"	34	035
52	56	30	280	"	"	31	043
53	44	41	279	"	"	21	023
54	34	40	271	54	071	21	031
55	24	53	248	"	"	5	140
56	13	74	248	"	"	20	240

Current Measurement: 24 Position: 1°45'S, 117°57'W

Date: 4 October 1961 Start: 1833 GCT Finish: 2117 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	13	72	255	50	075	22	254
2	22	61	246	"	"	14	211
3	33	44	266	"	"	11	026
4	44	40	280	"	"	21	024
5	54	26	231	"	"	28	096
6	66	21	210b	"	"	38	098
7	75	27	299	"	"	35	043
8	86	35	253	"	"	15	080
9	90	41	275	"	"	18	024
10	96	49	269	"	"	12	358
11	107	50	242	"	"	11	158
12	115	48	261	"	"	5	010
13	125	49	254	"	"	1	120
14	135	57	258	"	"	7	280
15	148	52	264	"	"	8	336
16	165	49	258	"	"	3	011
17	183	50	270	"	"	13	353
18	201	49	269	"	"	12	358
19	218	44	271	"	"	14	018
20	233	46	273	"	"	16	009
21	250	46	254	"	"	4	085
22	270	47	254	"	"	3	090
23	288	49	247	"	"	7	150
24	308	48	282	"	"	23	003
25	328	42	254	"	"	8	081
26	344	46	243	"	"	11	136
27	366	44	248	"	"	9	115
28	392	44	251	"	"	7	102
29	381	43	246	"	"	10	118
30	352	55	259	"	"	6	296
31	328	51	260	"	"	4	338
32	310	54	254	"	"	3	240
33	293	49	262	"	"	6	360
34	275	55	261	"	"	7	308
35	263	49	252	"	"	3	140
36	246	51	254	"	"	1	198
37	232	47	250	"	"	5	125
38	218	44	262	"	"	8	035
39	197	50	265	"	"	8	350
40	178	56	262	"	"	8	305
41	160	66	254	"	"	15	250
42	142	58	260	"	"	9	287
43	134	59	262	"	"	11	298
44	126	55	246	"	"	9	190
45	116	48	265	"	"	8	004
46	106	50	235	"	"	17	154
47	96	44	236	"	"	17	135
48	91	47	258	"	"	4	040
49	86	40	243	"	"	14	112
50	75	33	219	"	"	30	114
51	65	29	240b	"	"	23	094
52	54	38	271	"	"	17	038
53	44	35	237	"	"	20	108
54	34	49	246	50	075	8	151
55	23	55	244	"	"	11	186
56	13	76	246	"	"	28	230
SD	0					43	247

Current Measurement: 25(a) Position: 0°53'N, 118°00'W

Date: 6 October 1961 Start: 0518 GCT Finish: 0831 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	14	52	259	94	026	75	353
2	24	43	228	"	"	57	009
3	35	49	165	"	"	66	055
4	44	50	136	"	"	90	057
5	54	67	145	"	"	85	069
6	64	80	126	"	"	113	071
7	74	78	132	"	"	105	072
8	84	72	141	"	"	91	072
9	92	67	147	"	"	83	070
10	102	65	140	"	"	90	067
11	108	62	163	"	"	65	066
12	118	54	156	"	"	72	061
13	126	54	176	"	"	54	056
14	134	52	178	"	"	55	053
16	154	45	188	"	"	53	042
17	170	48	175	"	"	59	051
18	188	49	192	"	"	48	040
19	205	54	194	"	"	42	041
20	218	63	206	"	"	31	026
21	235	63	205	"	"	31	028
22	255	64	212	"	"	31	013
23	270	67	212	"	"	29	011
24	291	70	222	"	"	33	350
25	344	68	206	"	"	26	026
26	328	76	208	"	"	19	016
27	351	68	209	"	"	26	018
28	379	70	205	"	"	25	029
29	336	83	211	"	"	13	352
30	258	92	224	"	"	29	309
31	248	86	215	"	"	17	330
32	228	83	208	"	"	12	011
33	208	78	205	"	"	16	030
34	196	72	195	"	"	28	056
35	187	66	206	"	"	28	026
36	179	60	202	"	"	34	033
37	170	64	188	"	"	39	058
38	154	57	190	"	"	42	048
39	145	58	185	"	"	45	054
40	126	52	179	"	"	53	051
41	117	55	172	"	"	59	058
42	105	71	148	"	"	82	073
43	97	77	167	"	"	59	081
44	92	74	148	"	"	83	075
45	85	83	157	"	"	74	084
46	78	89	138	"	"	103	079
47	69	92	131	"	"	113	077
48	61	95	141	"	"	102	084
49	55	86	132	"	"	109	076
50	45	64	150	"	"	79	068
51	35	55	181	"	"	50	053
52	24	44	191	"	"	53	038
53	15	48	237	"	"	58	001
SD	0					72	339

Assumed buoy drift: 18 cm/sec - 340°

Current Measurement: 26 Position: 0°53'N, 118°00'W

Date: 6 October 1961 Start: 0518 GCT Finish: 0831 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	3	64	262	87	058	38	015
2	12	94	252	"	"	23	316
3	21	88	249	"	"	17	329
4	31	80	244	"	"	11	010
5	42	84	239	"	"	3	030
6	50	78	236	"	"	9	077
7	58	77	227	"	"	18	111
8	67	65	220	"	"	32	097
9	76	54	204	"	"	52	095
10	86	71	218	"	"	31	109
11	93	78	219	"	"	28	122
12	101	80	212	"	"	38	126
13	108	78	217	"	"	31	122
14	115	77	215	"	"	34	120
15	121	74	216	"	"	33	115
16	136	64	225	"	"	28	089
17	149	66	227	"	"	25	089
18	164	74	224	"	"	23	110
19	174	74	220	"	"	28	113
20	174	85	219	"	"	28	135
21	184	79	222	"	"	25	123
22	162	52	355	54	189	14	260
23	179	50	355	"	"	14	253
24	202	54	002	"	"	7	272
25	226	50	359	"	"	10	246
26	242	55	355	"	"	13	274
27	255	61	352	"	"	18	290
28	297	61	355	"	"	16	296
29	328	56	355	"	"	14	278
30	360	50	353	"	"	15	254
31	328	65	348	"	"	24	293
32	302	72	354	"	"	24	317
33	281	77	360	"	"	25	339
34	264	72	004	"	"	18	348
35	250	70	010	"	"	16	013
36	242	67	012	"	"	12	025
37	227	65	015	42	187	19	036
38	220	65	013	"	"	18	038
39	211	65	017	"	"	20	040
40	194	58	015	"	"	13	044
41	179	49	009	"	"	3	050
42	167	44	007	"	"	3	190
43	151	56	007	"	"	9	010
44	133	60	014	"	"	17	053
45	126	51	015	"	"	8	072
46	118	44	009	"	"	3	157
47	108	42	004	"	"	6	210
48	100	39	015	"	"	10	151
49	97	53	019	"	"	12	074
50	80	68	044	"	"	41	087
51	71	63	016	"	"	18	040
52	62	61	358	"	"	16	332
53	53	73	341	"	"	37	307
54	43	63	323	47	187	44	275
55	33	74	338	"	"	40	303
56	24	78	328	"	"	51	292
57	14	88	337	"	"	53	311
SD	0					42	318

Current Measurement: 27 Position: 0°53'N, 118°00'W

Date: 6 October 1961 Start: 1242 GCT Finish: 1538 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	13	84	358	47	237	71	324
2	24	78	356	"	"	69	320
3	33	71	003	"	"	57	322
4	43	53	005	"	"	44	308
5	55	60	020	"	"	35	328
6	64	66	043	"	"	23	014
7	72	76	052	"	"	29	045
8	84	57	047	"	"	13	010
9	92	51	048	"	"	8	351
10	101	47	052	"	"	4	320
11	110	53	060	"	"	7	085
12	120	50	046	"	"	9	340
13	127	60	048	"	"	15	021
14	135	58	032	"	"	25	340
15	152	46	030	"	"	21	311
16	171	49	038	"	"	16	324
17	189	47	045	"	"	9	320
18	205	48	042	"	"	12	325
19	220	53	042	"	"	14	344
20	232	56	044	"	"	15	001
21	245	54	036	"	"	19	337
22	263	55	035	"	"	21	339
23	275	58	034	"	"	23	342
24	292	60	033	"	"	25	345
25	378	41	358	13	183	28	355
26	403	27	334	"	"	16	310
27	398	36	349	"	"	23	340
28	355	40	344	"	"	28	334
29	331	50	343	"	"	38	336
30	311	47	352	"	"	34	348
31	294	59	357	"	"	45	355
32	280	47	004	"	"	33	004
33	262	48	358	"	"	34	356
34	242	42	002	"	"	29	001
35	223	40	358	"	"	27	355
36	204	38	001	"	"	25	360
37	188	41	004	"	"	28	004
38	168	36	354	"	"	23	348
39	148	33	335	"	"	23	318
40	138	34	347	"	"	21	336
41	127	43	358	"	"	30	355
42	111	28	342	"	"	17	325
43	106	33	354	"	"	19	347
44	97	24	315	"	"	18	282
45	87	35	349	"	"	22	340
46	76	51	036	"	"	40	046
47	66	50	011	"	"	37	013
48	56	46	357	"	"	30	356
49	46	51	343	"	"	39	336
50	36	49	328	"	"	39	317
51	25	60	343	"	"	48	337
52	15	62	340	"	"	50	334

Current Measurement: 28(a) Position: 0°57'N, 95°55'W
0°57'N, 95°59'W

Date: 19 October 1961 Start: 1952 GCT Finish: 2235 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	12	107	274	31	172	105	257
2	22	72	268	"	"	76	244
3	32	59	321	"	"	37	294
4	42	54	352	"	"	23	351
5	52	43	338	"	"	15	308
6	64	36	329	"	"	15	270
7	74	30	343	"	"	5	250
8	85	31	331	"	"	12	251
9	95	29	328	"	"	13	242
10	105	31	355	"	"	2	090
11	115	29	329	"	"	12	242
12	125	33	315	"	"	21	249
13	137	31	346	"	"	3	260
14	148	31	344	"	"	5	260
15	169	37	004	"	"	9	047
16	189	30	018	"	"	14	097
17	207	31	356	"	"	3	085
18	230	30	356	"	"	2	105
19	247	37	354	"	"	6	002
20	268	36	357	"	"	6	025
21	287	38	351	"	"	7	345
22	302	41	358	"	"	11	014
23	306	30	359	"	"	4	100
24	328	28	341	"	"	6	235
25	350	28	309	"	"	22	235
26	377	41	334	"	"	15	294
27	354	26	340	"	"	8	215
28	329	28	335	"	"	9	239
29	305	29	350	"	"	2	200
30	283	39	348	"	"	9	332
31	255	42	354	"	"	11	359
32	234	44	350	"	"	13	344
33	216	46	355	"	"	15	002
34	205	39	358	"	"	9	018
35	188	39	017	"	"	17	066
36	167	41	360	"	"	12	023
37	148	39	358	"	"	9	018
38	127	34	348	"	"	4	305
39	117	31	350	"	"	1	270
40	106	37	353	"	"	5	350
41	95	34	331	"	"	12	266
42	85	36	334	"	"	12	280
43	74	33	340	"	"	7	277
44	64	40	344	"	"	11	320
45	54	38	332	"	"	15	284
46	44	44	003	"	"	15	025
47	33	54	340	"	"	25	325
48	23	60	274	"	"	62	245
49	12	103	265	"	"	105	248
SD	0					84	290

Assumed buoy drift: 9 cm/sec - 270°

Current Measurement: 29(a) Position: 0°57'N, 95°55'W
0°57'N, 95°59'W

Date: 20 October 1961 Start: 1242 GCT Finish: 1532 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	12	77	245	15	277	91	250
2	23	54	249	"	"	67	255
3	33	26	217	"	"	35	238
4	44	27	029	"	"	26	358
5	54	52	089	"	"	37	086
6	64	36	079	"	"	23	068
7	75	38	101	"	"	23	103
8	86	40	094	"	"	26	092
9	97	42	085	"	"	28	079
10	106	42	100	"	"	28	102
11	117	35	072	"	"	23	056
12	128	38	085	"	"	23	078
13	148	47	074	"	"	34	064
14	167	51	080	"	"	38	073
15	186	53	074	"	"	40	066
16	205	47	053	"	"	38	038
17	224	46	063	"	"	35	050
18	241	44	048	"	"	37	031
19	266	43	076	"	"	31	066
20	287	37	058	"	"	27	038
21	303	36	081	"	"	23	071
22	328	31	018	"	"	32	352
23	348	33	058	"	"	24	035
24	369	37	062	"	"	26	043
25	390	31	043	15	216	17	049
26	412	38	021	"	"	25	013
27	383	36	036	"	"	22	035
28	350	31	027	"	"	17	020
29	327	38	020	"	"	25	010
30	306	40	033	"	"	26	030
31	286	48	047	"	"	34	051
32	272	48	051	"	"	34	057
33	251	50	033	"	"	35	032
34	230	57	051	"	"	43	056
35	212	65	095	"	"	59	107
36	199	55	064	"	"	43	073
37	186	50	051	"	"	36	057
38	167	54	036	"	"	40	036
39	146	44	037	"	"	30	037
40	129	39	058	"	"	31	066
41	118	35	055	"	"	22	067
42	108	40	067	"	"	28	082
43	97	34	057	"	"	22	070
44	88	37	054	"	"	24	062
45	76	35	044	"	"	22	050
46	66	58	050	"	"	44	054
47	55	55	063	"	"	43	072
48	45	25	335	"	"	22	300
49	35	61	227	"	"	75	225
50	24	72	254	"	"	83	248
51	14	71	259	"	"	82	252

Assumed buoy drift: 9 cm/sec - 270°

Current Measurement: 30 Position: 0°01.5'S, 96°02'W

Date: 21 October 1961 Start: 0120 GCT Finish: 0410 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	14	98	270	15	132	88	263
2	21	43	261	"	"	35	241
3	35	32	086	"	"	44	100
4	43	60	072	"	"	69	083
5	53	73	082	"	"	84	090
6	64	70	071	"	"	78	081
7	74	65	070	"	"	73	081
8	84	53	060	"	"	60	074
9	95	50	043	"	"	53	060
10	105	45	051	"	"	50	069
11	115	32	043	"	"	35	068
12	125	35	039	"	"	38	063
12	145	33	031	"	"	34	057
14	166	24	009	"	"	20	048
14	188	25	118	"	"	40	123
16	207	26	044	"	"	30	074
17	228	27	335	"	"	13	360
18	250	26	347	"	"	16	020
19	270	26	332	"	"	12	355
20	290	25	349	"	"	15	023
21	309	21	016	"	"	20	059
22	333	25	341	"	"	13	013
23	358	27	006	"	"	22	040
26	381	23	048	22	125	35	085
27	355	32	012	"	"	30	053
28	330	43	326	"	"	23	344
29	306	25	350	"	"	18	050
30	288	29	338	"	"	15	022
31	268	34	345	"	"	21	023
32	246	29	001	"	"	24	049
33	227	31	014	"	"	25	056
34	207	23	009	"	"	23	066
35	186	29	004	"	"	25	051
36	164	36	014	"	"	34	050
37	146	35	034	"	"	41	066
38	125	37	026	"	"	39	059
39	114	46	026	"	"	47	053
40	104	44	041	"	"	51	066
41	95	49	040	"	"	55	063
42	86	48	046	"	"	56	068
43	74	56	044	"	"	63	064
44	65	60	045	"	"	67	064
45	54	67	060	"	"	79	075
46	44	61	064	"	"	74	079
47	34	30	067	"	"	45	091
48	30	18	056	"	"	33	094
49	24	32	263	"	"	22	218
50	18	51	255	"	"	41	230
51	13	77	256	"	"	65	241

Current Measurement: 31 Position: 0°01.5'S, 96°02'W

Date: 22 October 1961 Start: 0135 GCT Finish: 0425 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	13	99	258	76	157	113	216
2	22	70	262	"	"	90	207
3	33	37	287	"	"	60	185
4	43	37	350	"	"	42	146
5	54	59	010	"	"	42	107
6	64	81	009	"	"	44	077
7	74	81	014	"	"	50	080
8	82	80	001	"	"	32	073
9	88	85	359	"	"	32	063
10	99	77	355	"	"	24	077
11	100	86	353	"	"	24	053
12	103	78	001	"	"	32	076
13	122	67	351	"	"	20	105
14	141	59	337	"	"	18	158
15	160	62	335	"	"	14	166
16	168	67	327	"	"	16	203
17	120	81	358	"	"	29	068
18	146	73	344	"	"	10	093
19	162	67	352	"	"	21	113
20	196	61	335	"	"	15	165
21	225	58	336	"	"	20	160
22	252	58	334	"	"	20	167
23	275	55	325	"	"	25	184
24	210	72	337	"	"	5	160
25	293	64	338	"	"	12	153
26	318	57	336	"	"	21	160
27	350	59	335	"	"	17	165
28	382	53	334	"	"	24	164
29	329	65	346	"	"	16	119
30	283	77	336	"	"	1	238
31	241	77	335	"	"	3	239
32	217	83	337	"	"	6	334
33	194	76	339	"	"	2	083
34	182	77	341	"	"	5	070
35	163	80	347	"	"	19	057
36	179	70	337	"	"	6	152
37	160	76	340	"	"	4	090
38	157	72	345	"	"	11	099
39	145	80	343	"	"	8	044
40	131	77	343	"	"	8	070
41	119	80	354	"	"	23	066
42	108	77	353	"	"	21	076
43	102	76	358	"	"	27	080
44	97	76	359	"	"	29	080
45	97	70	352	"	"	20	093
46	86	77	358	"	"	28	077
47	78	80	002	"	"	34	074
48	74	81	001	"	"	33	070
49	66	84	005	"	"	39	069
50	56	84	002	"	"	36	067
51	46	49	356	"	"	34	130
52	36	39	280	"	"	64	188
53	24	83	261	"	"	98	212
54	14	103	261	"	"	112	219
SD	0					100	293

Current Measurement: 32 Position: 1°09'S, 95°59'W

Date: 21 October 1961 Start: 1626 GCT Finish: 1905 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	11	66	191	31	075b	39	172
2	22	42	172	"	"	28	124
3	32	38	099	"	"	59	090
4	42	32	184	"	"	17	112
5	53	39	210	"	"	8	190
6	64	35	198	"	"	10	140
7	74	39	189	"	"	17	137
8	85	42	181	"	"	23	123
9	95	41	201	"	"	14	165
10	104	40	200	"	"	13	160
11	114	39	201	"	"	12	160
12	124	39	173	"	"	26	120
13	145	37	185	"	"	19	126
14	165	36	179	"	"	21	119
15	183	36	185	"	"	18	124
16	203	36	177	"	"	22	118
17	223	30	166	"	"	25	098
18	242	34	170	"	"	25	117
19	258	39	181	"	"	22	128
20	277	36	165	"	"	29	108
21	293	42	184	"	"	22	137
22	317	41	186	"	"	20	138
23	336	34	180	"	"	20	115
24	332	39	187	"	"	19	136
25	370	38	183	"	"	20	128
26	348	36	176	"	"	23	116
27	323	40	177	"	"	25	127
28	303	43	184	"	"	23	139
29	282	42	190	"	"	19	146
30	267	43	184	"	"	23	139
31	249	40	180	"	"	23	130
32	232	40	180	"	"	23	130
33	215	38	174	"	"	25	120
34	199	34	183	"	"	18	118
35	181	35	181	"	"	20	120
36	166	38	181	"	"	21	127
37	145	38	171	"	"	27	118
38	125	37	195	"	"	13	140
39	115	38	206	"	"	9	172
40	106	42	202	"	"	13	173
41	97	47	185	"	"	25	147
42	85	49	189	"	"	25	156
43	75	41	176	"	"	26	127
44	66	43	199	"	"	15	165
45	55	46	199	"	"	18	171
46	44	33	178	"	"	20	111
47	34	33	111	"	"	50	075
48	29	51	104	"	"	68	079
49	23	48	152	"	"	44	113
50	14	66	180	"	"	44	156
SD	0					99	243

Current Measurement: 33 Position: 1°09'S, 95°59'W

Date: 23 October 1961 Start: 0407 GCT Finish: 0649 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	77	207	18	027	59	207
2	11	63	188	"	"	46	181
3	17	55	182	"	"	39	171
4	23	44	158	"	"	35	135
5	23	44	128	"	"	44	104
6	32	32	088	"	"	43	067
7	38	29	111	"	"	35	081
8	42	31	149	"	"	26	104
9	53	39	187	"	"	23	171
10	74	39	188	"	"	22	174
11	85	41	182	"	"	26	166
12	105	42	186	"	"	26	172
13	125	38	188	"	"	21	172
14	145	35	182	"	"	20	160
15	166	33	168	"	"	22	137
16	186	33	147	"	"	29	115
17	206	29	159	"	"	21	121
18	231	27	154b	"	"	21	111
19	257	33	170	"	"	21	140
20	285	26	175	"	"	14	133
21	308	27	160	"	"	19	118
22	332	25	162b	"	"	18	117
23	357	26	154	"	"	20	110
24	383	19	337	"	"	33	002
25	406	24	028	"	"	42	027
26	407	22	076	"	"	36	054
27	382	29	358	"	"	45	009
28	359	22	062	"	"	38	046
29	334	25	161	"	"	18	115
30	310	24	195	"	"	7	164
31	287	25	108	"	"	33	076
32	262	26	167	"	"	17	125
33	234	26	183	"	"	12	145
34	207	30	167	"	"	20	133
35	186	31	178	"	"	17	148
36	165	40	172	"	"	27	150
37	143	42	197	"	"	24	190
38	124	41	204	"	"	23	202
39	106	44	194	"	"	27	186
40	85	49	193	"	"	32	185
41	75	42	215	"	"	24	220
42	66	44	212	"	"	26	216
43	54	35	203	"	"	17	199
44	44	19	074	"	"	34	051
45	39	29	103	"	"	37	075
46	34	26	113	"	"	32	080
47	29	30	117	"	"	35	086
48	24	48	170	"	"	35	152
49	18	66	189	"	"	49	182
50	13	76	199	"	"	58	197
51	7	78	199	"	"	61	197
SD	0					51	231

Current Measurement: 34 Position: 2°00'S, 95°55'W

Date: 25 October 1961 Start: 0416 GCT Finish: 0712 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	59	276	28	138	42	249
2	10	48	259	"	"	41	223
3	16	40	270	"	"	30	225
4	21	30	262	"	"	27	203
5	27	25	252	"	"	29	189
6	32	31	306	"	"	7	246
7	37	33	300	"	"	11	246
8	43	38	311	"	"	11	292
9	64	38	275	17	138	29	251
10	85	37	248	"	"	35	220
11	104	38	256	"	"	34	229
12	126	34	252	"	"	31	222
13	147	25	259	"	"	22	211
14	168	36	274	"	"	26	246
15	188	32	192	"	"	44	174
16	207	27	241	"	"	29	205
17	234	32	279	"	"	21	247
18	261	38	158	"	"	55	152
19	286	20	271	"	"	15	214
20	309	33	313	"	"	16	306
21	332	28	291	"	"	15	260
22	357	31	326	"	"	14	334
23	381	31	017	"	"	26	050
24	407	29	017	"	"	25	053
25	407	29	009	"	"	22	044
26	381	26	007	"	"	19	049
27	357	26	333	"	"	10	358
28	332	31	291	"	"	18	265
29	309	21	302	"	"	7	256
30	286	32	219	"	"	38	193
31	261	27	308	"	"	10	288
32	234	25	221	"	"	32	189
33	207	33	269	"	"	26	239
34	187	30	264	"	"	25	229
35	167	38	274	"	"	25	249
36	146	47	265	"	"	39	244
37	127	32	243	"	"	32	211
38	105	33	205	"	"	21	258
39	85	39	241	"	"	39	216
40	63	45	271	"	"	35	250
41	43	47	276	28	138	32	240
42	54	41	273	"	"	31	250
43	38	47	301	"	"	21	277
44	33	49	324	"	"	21	332
45	30	38	291	"	"	19	248
46	22	35	375	"	"	24	221
47	18	32	269	"	"	25	210
48	12	44	268	"	"	36	246
49	7	51	265	"	"	41	231
SD	0					31	265

Current Measurement: 35 Position: 2°00'S, 95°55'W

Date: 25 October 1961 Start: 0844 GCT Finish: 1200 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	53	274	21	126	37	256
2	12	50	267	"	"	36	245
3	17	39	266	"	"	27	236
4	22	35	283	"	"	18	256
5	28	30	277	"	"	16	236
6	33	33	295	"	"	13	277
7	38	33	314	"	"	12	325
8	43	39	320	"	"	19	334
9	54	49	300	"	"	28	295
10	64	42	267	"	"	29	239
11	74	48	266	"	"	35	243
12	85	40	247	"	"	34	216
13	105	43	252	"	"	27	213
14	126	35	237	"	"	34	202
15	146	42	262	"	"	30	233
16	163	39	300	"	"	18	292
17	187	28	261	"	"	20	215
18	207	27	248	"	"	24	199
19	232	26	229	"	"	29	185
20	258	29	271	"	"	17	226
21	284	25	260	"	"	18	205
22	304	28	268	"	"	17	220
23	330	30	273	"	"	17	230
24	355	26	271	"	"	14	217
25	280	22	359	"	"	19	060
26	405	29	293	"	"	10	265
27	427	27	307	"	"	5	310
28	428	25	353	"	"	18	048
29	404	38	313	"	"	18	320
30	380	28	330	"	"	12	012
31	357	27	297	"	"	7	268
32	330	24	307	"	"	3	313
33	306	26	270	"	"	15	215
34	292	30	211b	"	"	38	178
35	252	35	206	"	"	44	178
36	226	38	207	"	"	46	180
37	202	44	227	"	"	45	200
38	183	43	228	"	"	44	200
39	161	49	256	"	"	39	231
40	144	41	244	"	"	36	213
41	123	51	237	"	"	48	213
42	104	51	252	"	"	42	228
43	85	47	251	"	"	39	224
44	76	53	253	"	"	44	231
45	65	51	253	"	"	42	230
46	54	50	250	"	"	42	225
47	45	45	264	"	"	33	239
48	39	42	296	"	"	21	286
49	34	32	306	"	"	10	304
50	29	32	299	"	"	11	285
51	24	34	259	"	"	25	220
52	16	34	266	"	"	23	230
53	12	44	264	"	"	32	238
54	8	52	280	"	"	35	264
SD	0					32	265

Current meter lost blade sometime during lowering

Current Measurement: 36 Position: 1°08'S, 95°58'W

Date: 25 October 1961 Start: 1811 GCT Finish: 2146 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	60	245	12	042	49	250
2	13	50	219	"	"	38	218
3	16	44	204	"	"	33	197
4	21	29	173	"	"	23	149
5	26	18	063b	"	"	30	055
6	32	14	054	"	"	26	049
8	36	27	037	"	"	38	038
9	38	24	340	"	"	31	360
10	42	20	173b	"	"	15	137
11	53	32	170	"	"	26	149
12	63	39	211	"	"	27	206
13	74	42	228	"	"	30	230
14	84	35	202	"	"	24	192
15	105	26	164	"	"	22	137
16	126	33	187	"	"	24	170
17	146	24	123	"	"	28	098
18	167	23	157	"	"	21	126
19	187	34	171	"	"	28	151
20	206	23	166	"	"	19	135
21	232	29	159	"	"	26	134
22	257	29	178	"	"	22	156
23	284	28	146	"	"	28	122
24	308	27	099	"	"	34	082
25	332	33	144	"	"	33	123
26	355	33	090	"	"	42	077
27	380	30	135	"	"	32	113
27	402	34	123	"	"	38	106
28	377	35	178	"	"	28	160
29	352	33	152	"	"	31	131
30	329	30	131	"	"	32	109
31	306	31	155	"	"	28	132
32	284	30	134	"	"	32	112
33	253	27	104	"	"	34	086
34	232	29	127	"	"	32	106
35	207	30	129	"	"	33	107
36	186	28	125	"	"	32	103
37	167	36	151	"	"	34	132
38	146	29	192	"	"	20	174
39	135	32	223	"	"	20	223
40	126	32	193b	"	"	22	177
41	105	29	161	"	"	25	137
42	85	31	174b	"	"	24	153
43	74	37	193	"	"	27	181
44	63	24	193b	"	"	15	170
45	53	24	295	"	"	23	324
46	43	28	293	"	"	27	318
47	38	36	305	"	"	38	215
48	32	23	357	"	"	32	012
50	22	26	188	"	"	17	165
51	17	34	198	"	"	24	186
52	12	42	218	"	"	30	216
53	7	55	238	"	"	44	242
SD	0					41	261

Current Measurement: 37 Position: 0°02'S, 96°01'W

Date: 26 October 1961 Start: 0654 GCT Finish: 1011 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	8	65	241	15	119	58	228
2	13	59	250	"	"	50	237
3	17	64	230	"	"	60	216
4	22	55	218	"	"	55	202
5	28	41	188	"	"	48	171
6	33	38	173	"	"	49	158
7	38	38	135	"	"	53	130
8	44	53	107	"	"	68	109
9	54	83	088	"	"	97	092
10	63	88	082	"	"	100	087
11	72	88	078	"	"	100	083
12	78	85	082	"	"	98	087
13	87	76	085	"	"	89	090
14	94	73	076	"	"	85	083
15	102	53	079	18	119	68	089
16	122	35	079	"	"	50	092
17	142	34	061	"	"	46	080
18	160	29	059	"	"	41	080
19	180	27	073	"	"	42	091
20	200	26	037	"	"	33	069
21	224	30	338	"	"	20	013
22	250	28	325	"	"	14	358
23	277	27	303	"	"	8	310
24	302	41	343	"	"	30	006
25	326	25	331	"	"	13	015
26	354	19	270	"	"	9	200
27	376	28	298	"	"	10	295
28	396	28	275	"	"	14	140
29	402	34	358	34	109	18	183
30	379	33	266	"	"	13	183
31	354	35	273	"	"	10	195
32	330	30	273	"	"	10	168
33	309	32	277	"	"	7	174
34	285	32	256	"	"	19	175
35	260	33	279	"	"	6	185
36	232	31	295	"	"	4	068
37	210	33	274	"	"	9	183
38	187	25	318	"	"	17	066
39	167	31	319	"	"	17	044
40	146	28	006	"	"	38	064
41	126	32	048	"	"	56	080
42	115	42	072	"	"	72	088
43	105	44	079	"	"	75	092
44	95	55	074	"	"	85	087
45	85	66	083	"	"	98	091
46	75	68	083	"	"	100	091
47	65	73	083	"	"	105	090
48	54	56	082	"	"	87	092
49	43	31	158	"	"	59	132
50	32	45	234	"	"	38	187
51	22	81	246	"	"	61	223
52	12	103	251	"	"	79	235
53	8	95	245	"	"	74	226
SD	0					59	244

Current Measurement: 38 Position: 0°02'S, 96°01'W

Date: 27 October 1961 Start: 0200 GCT Finish: 0512 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
SD	0					85	283
1	8	91	252	41	021	72	278
2	12	94	243	"	"	69	266
3	21	88	240	"	"	62	264
4	31	73	212	"	"	34	226
5	41	65	183	"	"	29	157
6	51	65	159	"	"	44	120
7	60	71	154	"	"	53	119
8	67	80	138	"	"	71	117
9	78	84	127	"	"	83	098
10	82	94	115	"	"	100	091
11	86	100	124	"	"	99	100
12	96	87	127	"	"	85	099
13	103	84	133	"	"	79	104
14	118	71	137	"	"	64	102
15	132	54	061	24	171	51	087
16	147	49	039	"	"	37	068
17	171	40	042	"	"	31	079
18	182	43	025	"	"	26	055
19	208	18	359	30	125	24	088
20	232	33	326	"	"	12	030
21	255	34	316	"	"	7	010
22	281	34	312	"	"	5	350
23	304	30	297	"	"	4	184
24	332	29	277	"	"	14	197
25	356	28	241	"	"	31	181
26	378	28	251	"	"	26	184
27	405	27	288	"	"	9	183
28	380	37	251	"	"	31	200
29	356	31	263	"	"	22	195
30	332	36	268	"	"	21	210
31	308	26	267	"	"	18	185
32	285	38	301	"	"	8	287
33	255	40	315	"	"	11	341
34	232	31	312	"	"	12	026
35	207	25	332	"	"	14	070
36	188	23	164	"	"	50	142
37	168	22	319	"	"	10	095
38	148	19	085	"	"	46	109
39	127	28	059	"	"	49	093
40	116	37	078	"	"	62	099
41	107	47	054	"	"	64	081
42	96	47	075	"	"	70	094
43	86	52	110	"	"	81	115
44	74	62	081	"	"	86	095
45	64	30	088	"	"	57	106
46	53	15	156	"	"	43	135
47	42	14	257	"	"	33	151
48	34	27	250	"	"	26	181
49	22	80	268	"	"	58	250
50	13	119	278	"	"	93	270
51	8	105	275	"	"	90	265
SD	0					86	297

Current Measurement: 39 Position: 0°04'N, 92°16'W

Date: 28 October 1961 Start: 0717 GCT Finish: 1041 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	58	326	7	050	60	333
2	12	47	298	"	"	45	307
3	22	44	305	"	"	43	314
4	35	40	288	"	"	37	298
5	44	42	283	"	"	38	292
6	54	31	275	"	"	27	286
7	64	23	299	"	"	21	316
8	75	26	020	"	"	32	026
9	86	28	031	"	"	35	035
10	96	36	027	"	"	42	031
11	106	33	020	"	"	40	025
12	118	30	022	"	"	37	022
13	128	31	035	"	"	37	037
14	148	23	066	"	"	30	061
15	170	19	308b	"	"	19	330
16	190	19	328	"	"	21	347
17	210	25	340	"	"	28	354
18	235	31	009	"	"	36	016
19	260	20	347	"	"	24	002
20	285	34	012	"	"	30	020
21	310	23	057	"	"	30	055
22	335	24	160b	"	"	22	142
23	360	25	134b	"	"	26	118
24	383	17	072	"	"	24	065
25	407	20	103b	"	"	25	090
26	402	22	312	24	220	32	262
27	376	19	312	"	"	30	259
28	354	20	296	"	"	35	253
29	331	18	270	"	"	38	241
30	308	19	031	"	"	6	250
31	283	25	353	"	"	19	288
32	257	25	354	"	"	18	289
33	233	26	340	"	"	25	283
34	206	28	004	"	"	17	307
35	187	26	343	"	"	24	285
36	167	30	355	"	"	21	303
37	147	33	348	"	"	26	302
38	126	38	029	"	"	15	012
39	116	49	037	"	"	25	035
40	106	38	010	"	"	21	336
41	96	43	028	"	"	20	014
42	86	50	034	"	"	26	028
43	75	39	022	"	"	18	357
44	65	30	334	"	"	30	286
45	54	32	318	"	"	37	278
46	44	42	300	"	"	52	272
47	34	53	315	"	"	56	289
48	24	56	319	"	"	57	294
49	13	53	314	"	"	56	289
50	7	52	321	"	"	52	294
SD	0					40	354

Current Measurement: 40 Position: 0°04'N, 92°16'W

Date: 28 October 1961 Start: 1330 GCT Finish: 1641 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	61	342	17	215	52	327
2	12	51	332	"	"	46	313
3	22	42	341	"	"	35	318
4	33	36	333	"	"	31	305
5	43	26	331	"	"	24	292
6	53	33	004	"	"	20	339
7	63	35	030	"	"	18	025
8	74	45	035	"	"	28	035
9	85	37	023	"	"	20	012
10	96	32	031	"	"	15	026
11	106	32	037	"	"	15	039
12	115	32	034	"	"	15	032
13	127	31	051	"	"	15	067
14	147	32	024	"	"	15	012
15	168	22	016	"	"	8	330
16	188	18	012	"	"	7	304
17	208	21	025	"	"	5	348
18	232	22	039	"	"	5	050
19	259	22	025	"	"	6	353
20	285	26	084	"	"	19	125
21	309	22	210	24	215	46	212
22	333	17	204	"	"	40	210
23	357	16	229	"	"	39	220
24	381	22	335	"	"	23	269
25	405	20	037	"	"	6	246
26	406	18	048	"	"	7	180
27	379	26	017	"	"	8	310
28	354	15	026	"	"	10	228
29	328	17	290	"	"	32	245
30	305	22	263	"	"	41	237
31	279	32	014	"	"	8	330
32	254	33	356	"	"	21	310
33	228	32	360	"	"	18	312
34	205	35	350	"	"	25	307
35	184	35	360	"	"	20	318
36	165	35	012	"	"	15	336
37	144	41	034	"	"	17	033
38	124	49	032	"	"	25	030
39	115	49	040	"	"	25	045
40	106	45	036	"	"	21	038
41	96	49	029	"	"	25	023
42	86	53	041	"	"	25	046
43	76	42	036	"	"	18	037
44	66	30	036	"	"	41	037
45	56	29	010	"	"	12	317
46	45	29	306	"	"	37	266
47	34	30	296	"	"	41	260
48	24	39	310	"	"	44	277
49	13	48	329	"	"	45	299
50	8	55	340	"	"	45	314

Current Measurement: 41 Position: 0°04'N, 92°16'W

Date: 30 October 1961 Start: 0437 GCT Finish: 0803 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
SD	0					40	004
1	7	53	340	12	163b	41	339
2	12	43	327	"	"	32	321
3	22	36	287	"	"	31	269
4	33	38	280	"	"	35	262
5	43	34	295	"	"	27	276
6	54	26	322	"	"	15	306
7	64	29	355	"	"	18	003
8	75	27	030	"	"	21	055
9	86	36	028	"	"	29	045
10	97	35	032	"	"	28	050
11	106	33	032	"	"	27	052
12	117	30	016	"	"	21	032
13	128	26	027	"	"	19	052
14	148	28	045	"	"	25	070
15	170	27	049	"	"	25	075
16	189	21	348	"	"	9	354
17	208	24	326	"	"	14	310
18	233	19	297	"	"	14	260
19	260	19	326	"	"	9	302
20	286	21	329	"	"	10	310
21	309	23	321	"	"	13	300
22	333	20	002	"	"	10	026
23	357	24	265	"	"	15	237
24	381	17	275	"	"	16	233
25	407	21	323	"	"	11	300
26	407	24	307	"	"	16	281
27	383	19	272	"	"	28	248
28	358	22	265	"	"	23	235
29	334	18	345	"	"	7	349
30	310	23	311	"	"	14	285
31	286	25	306	"	"	17	281
32	260	20	011	"	"	11	040
33	235	23	301	"	"	16	271
34	210	23	315	"	"	14	290
35	190	23	353	"	"	11	004
36	169	28	034	"	"	23	057
37	149	22	027	"	"	15	060
38	127	39	018	"	"	30	031
39	117	31	023	"	"	23	042
40	107	41	043	"	"	37	059
41	98	38	029	"	"	32	045
42	86	31	033	"	"	25	054
43	76	29	011	"	"	20	028
44	66	24	317	"	"	15	296
45	55	24	326	"	"	14	310
46	44	29	301	"	"	22	280
47	34	34	283	"	"	29	263
48	23	38	293	"	"	33	277
49	13	43	307	"	"	34	295
50	8	49	320	"	"	39	313
SD	0					63	004

Current Measurement: 42 Position: 0°07'S, 86°55'W

Date: 2 November 1961 Start: 1233 GCT Finish: 1535 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	48	267	36	107	18	229
2	12	42	266	"	"	13	220
3	22	40	266	"	"	13	203
4	32	77	247	"	"	53	223
5	42	59	256	"	"	33	224
6	52	56	257	"	"	29	222
7	62	53	255	"	"	28	216
8	72	57	266	"	"	26	239
9	81	58	258	"	"	31	226
10	101	46	265	"	"	17	220
11	120	40	265	"	"	14	202
12	135	34	263	"	"	13	175
13	156	26	271	"	"	12	135
14	182	15	292	"	"	21	100
15	203	14	274	"	"	22	112
16	228	18	295	"	"	18	096
17	256	22	323	"	"	23	070
18	283	29	300	"	"	10	060
19	304	27	265	"	"	14	144
20	326	32	271	"	"	9	160
21	346	40	263	"	"	15	200
22	374	47	253	"	"	25	204
23	393	39	258	"	"	18	193
24	368	68	285	51	136	36	237
25	359	71	288	"	"	35	245
26	340	66	283	"	"	36	232
27	320	59	297	"	"	20	239
28	313	56	298	"	"	17	232
29	289	65	315	"	"	14	310
30	284	67	323	"	"	16	344
31	272	65	324	"	"	16	350
32	258	62	327	"	"	15	007
33	224	55	335	"	"	18	044
34	211	54	331	"	"	14	042
35	185	58	324	"	"	10	012
36	167	58	320	"	"	8	344
37	152	52	302	"	"	12	220
38	128	63	290	"	"	28	237
39	114	63	286	"	"	31	231
40	102	63	280	"	"	37	225
41	84	74	280	"	"	45	237
42	77	72	277	"	"	45	232
43	68	73	265	"	"	57	221
44	60	72	268	"	"	53	223
45	52	73	266	"	"	56	222
46	42	81	252	"	"	75	213
47	38	81	251	"	"	74	214
48	32	55	254	"	"	55	198
49	29	52	261	"	"	47	199
50	24	52	260	"	"	48	198
51	18	46	256	"	"	49	190
52	13	46	251	"	"	52	188
53	8	47	251	"	"	52	189
SD	0					8	310

Current Measurement: 43 Position: 0°07'S, 86°55'W

Date: 4 November 1961 Start: 0038 GCT Finish: 0331 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
SD	0					17	253
1	7	50	214	23	054	30	197
2	12	42	256	"	"	22	277
3	18	39	216	"	"	19	192
4	23	39	221	"	"	17	204
5	28	40	208	"	"	22	180
6	33	64	220	"	"	42	212
7	38	53	229	"	"	30	224
8	42	47	238	"	"	24	240
9	53	31	231	"	"	8	220
10	63	33	242	"	"	11	257
11	74	33	214	"	"	14	180
12	84	30	293	"	"	26	340
13	105	23	179	"	"	21	117
14	126	24	133	"	"	36	095
15	146	11	138	"	"	26	078
16	166	20	114	"	"	37	082
17	188	20	142	"	"	31	095
18	208	24	105	"	"	43	080
19	233	20	119	"	"	36	084
20	259	20	262	"	"	10	355
21	285	28	220	"	"	8	177
22	308	31	222	"	"	10	190
23	332	29	240	"	"	7	257
24	356	38	232	"	"	15	228
25	379	38	243	"	"	16	255
26	402	31	251	"	"	11	286
27	400	37	248	"	"	16	268
28	371	55	240	"	"	32	244
29	347	48	232	"	"	25	230
30	326	43	238	"	"	20	241
31	307	38	216	"	"	18	192
32	284	31	205	"	"	16	157
33	258	25	276	"	"	16	340
34	232	23	130	"	"	35	091
35	207	26	141	"	"	36	101
36	186	27	152	"	"	33	109
37	163	25	120	"	"	40	089
38	147	14	236	"	"	9	055
39	127	23	163	"	"	27	109
40	106	25	193	"	"	17	130
41	85	32	285	"	"	24	330
42	75	37	246	"	"	15	264
43	64	44	234	"	"	21	233
44	53	52	233	"	"	28	232
45	43	53	244	"	"	30	250
46	38	53	242	"	"	30	248
47	33	53	248	"	"	31	258
48	28	62	220	"	"	40	211
49	22	49	205	"	"	31	184
50	18	38	213	"	"	19	187
51	13	44	185	"	"	34	154
52	8	44	205	"	"	27	180
SD	0					12	154

Current Measurement: 44 Position: 1°05'N, 87°00'W

Date: 4 November 1961 Start: 1423 GCT Finish: 1700 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	42	227	25	055	18	216
2	13	42	208	"	"	23	176
3	18	44	221	"	"	21	205
4	22	44	203	"	"	27	175
5	23	45	229	32	088	28	183
6	28	50	224	"	"	35	184
7	33	65	243	"	"	38	222
8	38	70	245	"	"	42	228
9	43	67	248	"	"	38	231
10	53	58	247	"	"	30	225
11	63	62	249	"	"	33	230
12	72	59	246	"	"	31	224
13	83	50	248	"	"	23	218
14	104	40	254	"	"	12	211
15	123	30	226	"	"	23	152
16	145	21	205	"	"	29	127
17	165	18	261	"	"	14	096
18	185	25	247	"	"	13	132
19	205	27	251	"	"	10	135
20	231	27	271	"	"	6	080
21	257	30	273	"	"	3	043
22	283	34	248	"	"	12	176
23	306	36	247	"	"	13	182
24	328	44	248	"	"	18	209
25	350	40	249	"	"	15	201
26	372	42	243	"	"	18	196
27	398	49	244	"	"	24	210
28	401	39	231	"	"	24	176
29	376	42	252	"	"	14	211
30	352	42	248	"	"	16	205
31	326	42	252	"	"	14	211
32	304	42	251	"	"	14	209
33	282	37	267	"	"	4	258
34	258	24	218	"	"	25	135
35	231	26	296	"	"	15	038
36	207	22	211	"	"	27	130
37	187	24	248	"	"	13	129
38	165	23	247	"	"	14	126
39	140	29	231	"	"	20	151
40	122	34	232	"	"	20	164
41	103	43	253	"	"	15	219
42	82	49	245	"	"	23	212
43	72	58	244	"	"	32	219
44	63	62	241	"	"	36	217
45	53	68	246	"	"	40	228
46	43	70	241	"	"	44	221
47	38	77	244	"	"	49	228
48	33	73	245	"	"	45	229
49	28	78	247	"	"	49	234
50	23	53	240	"	"	29	208
51	19	48	249	"	"	21	218
52	14	47	245	"	"	21	209
53	9	50	241	"	"	26	206

Current Measurement: 45 Position: 1°05'N, 87°00'W

Date: 5 November 1961 Start: 1447 GCT Finish: 1825 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	49	241	44	035	21	305
2	12	40	221	"	"	5	353
3	18	48	224	"	"	8	278
4	23	47	213	"	"	7	050
5	27	70	228	"	"	29	247
6	33	67	216	"	"	23	218
7	38	70	211	"	"	26	203
8	42	71	198	"	"	31	173
9	52	71	201	"	"	30	179
10	61	67	211	"	"	13	196
11	72	59	202	"	"	19	168
12	81	52	201	"	"	14	150
13	102	44	184	"	"	14	110
14	120	53	178	"	"	32	122
15	135	50	171	"	"	36	111
16	157	43	169	"	"	34	102
17	174	44	145	"	"	51	090
18	191	47	157	"	"	44	099
19	208	42	167	"	"	35	097
20	230	39	171	"	"	32	095
21	253	43	166	"	"	36	100
22	246	42	167	"	"	35	097
23	208	29	016	22	130	29	060
24	234	25	006	"	"	22	061
25	260	24	286	"	"	10	212
26	286	18	295	"	"	6	178
27	308	20	272	"	"	14	193
28	329	30	224	"	"	35	187
29	356	29	238	"	"	31	195
30	380	36	273	"	"	23	237
31	406	33	264	"	"	24	223
32	405	34	232	"	"	36	196
33	382	26	254	"	"	23	201
34	358	33	227	"	"	37	190
35	334	24	248	"	"	24	190
36	310	23	280	"	"	12	211
37	286	18	282	"	"	10	190
38	261	20	317	"	"	3	082
39	235	22	022	"	"	26	076
40	210	18	084	"	"	37	109
41	188	27	079	"	"	44	101
42	166	25	087	"	"	44	107
43	148	21	061	"	"	36	096
44	127	20	208	"	"	32	167
45	107	22	264	"	"	17	195
46	86	28	264	"	"	21	214
47	77	34	253	"	"	29	213
48	65	45	254	"	"	37	225
49	54	38	253	"	"	32	218
50	44	38	252	"	"	33	217
51	38	46	256	"	"	37	228
52	33	35	235	"	"	36	199
53	29	50	258	"	"	40	233
54	24	51	257	"	"	41	233
55	18	24	270	22	130	16	206
56	13	33	280	"	"	18	242
57	9	29	297	"	"	9	263

Current Measurement: 46 Position: 0°07'S, 86°55'W

Date: 6 November 1961 Start: 0227 GCT Finish: 0505 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	46	347	32	164	14	353
2	12	45	347	"	"	13	354
3	18	46	344	"	"	14	343
4	22	42	346	"	"	9	352
5	28	38	319	"	"	16	260
6	33	39	325	"	"	14	275
7	38	39	326	"	"	13	277
8	44	58	293	"	"	46	260
9	54	52	280	"	"	48	242
10	64	44	265	"	"	50	225
11	74	39	265	"	"	46	221
12	85	37	279	"	"	37	227
13	104	35	293	"	"	29	233
14	126	30	305	"	"	21	230
15	146	39	322	"	"	15	270
16	166	44	318	"	"	20	274
17	185	42	347	"	"	9	360
18	206	36	009	"	"	15	072
19	232	31	006	"	"	12	090
20	257	35	012	"	"	16	078
21	282	24	312	"	"	18	211
22	305	22	298	"	"	23	206
23	326	26	272	"	"	34	209
24	349	32	279	"	"	34	221
25	374	37	296	"	"	28	237
26	401	38	284	"	"	35	232
27	400	40	297	"	"	30	245
28	378	39	289	"	"	34	237
29	354	46	266	26	164	48	233
30	331	29	248	"	"	41	209
31	308	27	261	"	"	35	213
32	283	27	315	"	"	18	235
33	257	39	349	"	"	13	360
34	232	30	350	"	"	10	025
35	207	28	008	"	"	12	073
36	187	36	334	"	"	11	310
37	168	38	331	"	"	14	306
38	149	33	323	"	"	12	276
39	128	24	304	"	"	17	227
40	107	21	325	"	"	9	210
41	86	34	279	"	"	33	233
42	75	43	284	"	"	37	247
43	64	42	268	"	"	43	232
44	55	32	276	"	"	32	228
45	44	40	272	"	"	40	234
46	39	55	273	"	"	52	245
47	34	58	277	"	"	53	250
48	29	44	257	"	"	45	233
49	24	44	297	"	"	32	261
50	19	37	321	"	"	16	280
51	14	41	314	"	"	22	279
52	8	44	326	"	"	20	303
SD	0					10	033

Current Measurement: 47 Position: 1°02'S, 87°03'W

Date: 6 November 1961 Start: 1641 GCT Finish: 1940 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	62	286	26	133	40	269
2	12	54	302	"	"	29	292
3	17	56	282	"	"	36	260
4	22	33	275	"	"	21	225
5	28	42	285	"	"	23	252
6	32	38	266	"	"	28	224
7	38	32	260	"	"	27	208
8	42	32	279	"	"	17	224
9	47	39	275	"	"	25	235
10	53	35	274	"	"	22	226
11	64	44	275	"	"	29	241
12	74	42	272	"	"	28	234
13	85	40	275	"	"	26	236
14	104	39	280	"	"	23	241
15	124	41	270	"	"	28	231
16	144	32	285	"	"	15	230
17	165	31	291	"	"	12	235
18	185	17	260	"	"	21	175
19	207	20	388	"	"	11	086
20	231	24	292	"	"	9	200
21	257	23	292	"	"	9	195
22	285	14	275	14	133	9	203
23	308	20	243	"	"	20	202
24	331	27	259	"	"	22	227
25	354	33	273	"	"	23	250
26	375	35	270	"	"	27	247
27	397	39	274	"	"	30	256
28	396	44	273	28	133	29	234
29	376	40	255	"	"	35	212
30	352	44	265	"	"	33	225
31	329	30	246	"	"	32	192
32	307	24	248	"	"	28	183
33	284	20	222	"	"	35	168
34	256	17	234	"	"	30	166
35	232	18	267	"	"	20	172
36	207	19	282	"	"	15	173
37	186	18	344	"	"	15	096
38	168	20	269	"	"	20	178
39	147	27	333	"	"	9	060
40	126	30	269	"	"	22	206
41	105	45	272	"	"	30	234
42	84	46	298	"	"	20	277
43	74	41	278	"	"	25	236
44	64	39	279	"	"	23	235
45	53	38	265	"	"	29	218
46	48	37	270	"	"	25	220
47	43	41	276	"	"	25	233
48	38	44	266	"	"	32	226
49	32	50	277	"	"	32	245
50	28	58	287	"	"	35	266
51	22	56	297	"	"	19	281
52	18	48	292	"	"	24	267
53	13	48	280	"	"	29	248
54	7	54	292	"	"	29	271

Current Measurement: 48 Position: 1°02'S, 87°03'W

Date: 7 November 1961 Start: 1757 GCT Finish: 2059 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	8	50	256	38	054	20	299
2	12	45	252	"	"	15	304
3	18	35	255	"	"	13	247
4	25	34	253	"	"	12	251
5	28	40	252	"	"	12	322
6	33	39	238	"	"	9	322
7	38	55	208	"	"	27	169
8	42	31	230	"	"	7	073
9	48	31	225	"	"	9	087
10	54	32	234	"	"	6	055
11	64	28	234	"	"	10	055
12	75	34	219	"	"	10	115
13	85	30	230	"	"	8	070
14	106	29	228	"	"	9	074
15	126	37	238	"	"	3	035
16	146	34	245	"	"	7	360
17	165	39	212	"	"	15	138
18	186	44	179	"	"	38	125
19	204	38	176	"	"	37	116
20	225	34	209	"	"	16	118
21	251	32	208	"	"	17	110
22	277	32	179	"	"	33	106
23	294	36	194	"	"	25	120
24	315	42	225	"	"	7	170
25	336	49	218	"	"	16	178
26	353	50	220	"	"	16	185
27	375	44	222	"	"	11	175
28	401	34	319	33	117	22	209
29	374	40	264	"	"	13	032
30	366	46	257	"	"	30	212
31	336	56	248	"	"	42	212
32	313	43	254	"	"	30	204
33	291	40	252	"	"	29	198
34	263	33	263	"	"	19	190
35	242	38	263	"	"	21	204
36	222	35	270	"	"	16	200
37	198	31	254	"	"	23	181
39	175	34	250	"	"	27	186
40	155	42	261	"	"	25	209
41	121	45	261	"	"	27	215
42	102	49	263	"	"	28	323
43	82	48	272	"	"	23	235
44	74	45	272	"	"	20	229
45	63	44	267	"	"	23	270
46	53	45	273	"	"	20	230
47	48	37	265	"	"	19	201
48	43	35	277	"	"	12	206
49	38	33	262	"	"	20	190
50	32	46	266	"	"	14	222
51	27	59	285	"	"	28	271
52	22	63	284	"	"	32	270
53	18	55	293	"	"	22	287
54	12	55	284	"	"	24	266
55	8	65	281	"	"	35	265

Current Measurement: 49 Position: 1°43'S, 90°29'W

Date: 16 November 1961 Start: 0025 GCT Finish: 0338 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
5	33	14	280	22	148	17	187
6	44	25	248	"	"	30	202
7	54	26	255	"	"	28	207
8	65	24	256	"	"	27	205
9	75	24	269	"	"	23	212
10	86	26	273	"	"	22	217
11	107	28	277	"	"	22	225
12	128	27	266	"	"	25	215
13	148	31	274	"	"	25	229
14	168	28	308	"	"	10	260
15	189	26	323	"	"	4	296
16	210	20	297	"	"	12	212
17	228	25	305	"	"	10	240
18	250	17	326	"	"	6	150
19	271	25	316	"	"	6	260
20	290	30	323	"	"	8	310
21	309	31	310	"	"	12	272
22	335	27	310	"	"	9	260
23	358	24	349	"	"	9	058
24	380	21	306	"	"	8	216
25	404	24	298	"	"	12	230
26	400	27	326	"	"	4	318
27	374	30	327	"	"	8	325
28	355	34	338	"	"	13	357
29	332	30	288	"	"	19	240
30	308	28	293	"	"	16	240
31	289	26	310	"	"	10	240
32	268	31	322	"	"	9	309
33	249	21	286	"	"	15	214
34	229	25	286	"	"	17	225
35	207	26	293	"	"	15	234
36	188	23	299	"	"	11	227
37	169	27	280	"	"	20	225
38	149	31	263	"	"	29	220
39	129	30	258	"	"	31	215
40	108	30	271	"	"	26	225
41	88	27	282	"	"	19	227
42	77	31	276	"	"	14	231
43	66	34	257	"	"	34	219
44	56	35	259	"	"	34	222
45	43	34	263	"	"	32	224
46	34	40	273	"	"	33	240
47	24	34	266	"	"	30	227
48	13	30	256	"	"	31	214
49	8	43	251	"	"	44	222
SD	0					57	255

Current Measurement: 50 Position: 1°43'S, 90°29'W

Date: 16 November 1961 Start: 1955 GCT Finish: 2228 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	66	257	23	034	51	275
2	11	59	233	"	"	38	244
3	22	49	197	"	"	28	183
4	33	28	227	"	"	8	267
5	42	36	229	"	"	15	252
6	53	36	214	"	"	13	213
7	64	33	206	"	"	11	190
8	74	31	220	"	"	8	237
9	85	32	224	"	"	10	247
10	106	24	223	"	"	3	296
11	126	26	208	"	"	4	170
12	146	33	198	"	"	13	168
13	165	26	211	"	"	3	188
14	186	26	166	"	"	20	107
15	206	30	158	"	"	26	110
16	226	25	143	"	"	28	092
17	247	31	146	"	"	31	102
18	266	27	166	"	"	21	110
19	260	33	159	"	"	28	116
20	304	33	150	"	"	31	108
21	327	36	192	"	"	17	161
22	351	30	155	"	"	27	118
23	374	32	149	"	"	30	106
24	397	29	171	"	"	20	120
25	392	33	165	"	"	25	122
26	368	35	183	29	034	18	128
27	342	40	194	"	"	16	156
28	317	40	184	"	"	21	140
29	292	40	192	"	"	17	153
30	276	34	183	"	"	18	124
31	260	36	170	"	"	25	117
32	242	38	162	"	"	31	114
33	223	32	159	"	"	28	102
34	204	31	149	"	"	32	094
35	184	33	184	"	"	16	123
36	166	31	197	"	"	9	128
37	145	33	218	"	"	10	242
38	126	32	207	"	"	4	157
39	105	35	215	"	"	6	219
40	85	35	220	"	"	7	245
41	74	39	208	"	"	11	194
42	64	41	208	"	"	12	195
43	53	37	191	"	"	15	143
44	44	44	212	"	"	15	207
45	33	39	187	"	"	19	142
46	22	51	185	"	"	29	156
47	12	55	219	"	"	26	225
48	7	65	246	"	"	43	266

Current Measurement: 51 Position: 1°43'S, 90°29'W

Date: 17 November 1961 Start: 0412 GCT Finish: 0725 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
9	85	15	260	12	136	12	209
10	106	19	292	"	"	10	260
11	126	25	302	"	"	13	290
12	148	18	260	"	"	15	220
13	168	26	292	"	"	15	274
14	188	24	352	"	"	16	018
15	208	15	298	"	"	5	251
16	227	22	286	"	"	13	258
17	249	20	345	17	136	10	043
18	271	17	313	"	"	1	212
19	290	23	290	"	"	11	248
20	307	26	286	"	"	14	249
21	330	29	279	"	"	19	247
22	355	27	306	"	"	11	290
23	380	16	310	"	"	2	190
24	406	14	299	"	"	5	186
25	404	18	275	"	"	12	214
26	376	21	265	"	"	16	214
27	352	27	326	25	144	1	360
28	329	22	279	"	"	18	202
29	302	28	281	"	"	20	221
30	285	26	301	"	"	10	227
31	263	28	297	"	"	13	235
32	242	25	317	"	"	3	225
33	224	27	275	"	"	21	214
34	206	23	273	"	"	21	204
35	186	32	284	"	"	20	232
36	167	27	290	"	"	15	222
37	146	28	266	"	"	25	210
38	125	33	264	"	"	30	218
39	105	41	274	"	"	31	236
40	84	45	279	"	"	32	246
41	74	45	296	"	"	26	269
42	64	40	280	"	"	28	242
43	54	42	272	"	"	30	235
44	44	36	267	"	"	30	223
45	33	50	259	"	"	45	229
46	23	43	263	"	"	48	228
47	12	43	250	"	"	44	216
48	8	57	262	"	"	50	236

Current Measurement: 52 Position: 1°00'N, 90°45'W

Date: 18 November 1961 Start: 0222 GCT Finish: 0517 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	98	252	41	051	61	261
2	12	98	246	"	"	59	257
3	22	85	249	"	"	47	265
4	32	64	249	"	"	28	277
5	43	28	215	"	"	16	080
6	53	9	275	"	"	35	041
7	64	13	130	"	"	45	068
8	73	18	132	"	"	47	073
9	84	10	088	"	"	49	058
10	105	17	037	"	"	58	047
11	127	13	055	"	"	55	052
12	147	31	051	"	"	72	051
13	167	33	101	"	"	68	073
14	188	31	086	"	"	69	066
15	209	30	115	"	"	61	078
16	229	27	101	"	"	62	071
17	248	30	109	"	"	63	075
18	268	35	163	"	"	43	100
19	287	36	143	"	"	54	093
20	305	29	114	"	"	61	076
21	327	17	149	"	"	42	075
22	355	23	179	32	007	10	026
23	380	21	197	"	"	12	350
24	402	21	218	"	"	18	330
25	391	24	193	"	"	8	350
26	363	30	172	"	"	8	074
27	340	18	147	"	"	21	040
28	300	40	115	"	"	43	070
29	280	45	135	"	"	36	090
30	263	48	144	"	"	33	102
31	244	49	140	"	"	36	099
32	229	48	122	"	"	45	082
33	219	45	122	"	"	43	079
34	196	50	124	"	"	45	085
35	178	48	109	"	"	52	072
36	159	49	099	"	"	57	065
37	143	47	093	"	"	59	060
38	126	39	075	"	"	59	045
39	106	40	073	"	"	60	044
40	86	44	087	"	"	59	054
41	76	38	089	"	"	53	052
42	65	29	057	"	"	55	031
43	55	33	031	"	"	64	019
44	45	26	095	"	"	41	045
45	34	25	226	"	"	40	315
46	24	46	218	"	"	24	260
47	14	65	226	"	"	45	253
48	9	76	236	"	"	60	260

Current Measurement: 53 Position: 1°00'S, 90°45'W

Date: 18 November 1961 Start: 1928 GCT Finish: 2246 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	123	296	30	148	99	286
2	10	117	299	"	"	92	290
3	20	103	293	"	"	80	280
4	30	59	320	"	"	30	311
5	40	55	342	"	"	26	357
6	50	63	341	"	"	35	352
7	58	50	343	"	"	22	003
8	67	41	002	"	"	23	047
9	79	39	360	"	"	21	048
10	103	35	350	"	"	13	046
11	122	48	348	"	"	22	014
12	141	35	351	"	"	14	049
13	158	27	352	"	"	12	084
14	178	16	330	"	"	14	146
15	200	8	310	"	"	21	156
16	222	4	345	"	"	23	143
17	236	10	342	"	"	21	140
18	258	6	317	"	"	22	152
19	287	5	320	"	"	23	151
20	299	5	325	"	"	22	148
21	300	15	051	8	175	16	123
22	329	8	280	"	"	18	205
23	355	12	287	"	"	18	213
24	377	15	248	"	"	27	207
25	405	20	240	"	"	32	209
26	404	18	218	"	"	35	197
27	381	23	202	"	"	41	190
28	355	7	253	"	"	21	197
29	333	4	125	"	"	23	162
30	307	14	081	"	"	22	137
31	289	14	106	"	"	27	146
32	268	16	087	"	"	25	135
33	244	9	073	"	"	19	146
34	224	7	055	"	"	16	148
35	198	12	354	12	219	8	280
36	177	18	340	"	"	16	300
37	154	33	325	"	"	31	304
38	134	47	346	"	"	40	332
39	119	62	023	"	"	50	020
40	100	58	030	"	"	46	029
41	81	45	025	"	"	33	021
42	82	40	024	"	"	28	019
43	62	38	025	"	"	26	020
44	51	43	349	"	"	35	335
45	41	57	344	"	"	44	332
46	31	36	299	"	"	39	281
47	20	86	282	"	"	91	275
48	10	118	284	"	"	123	279
49	6	118	292	"	"	121	286

Current Measurement: 54 Position: 1°00'N, 90°45'W

Date: 19 November 1961 Start: 1048 GCT Finish: 1335 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	-	81	265	13	316	90	271
2	11	76	264	"	"	84	270
3	22	68	252	"	"	75	261
4	32	45	242	"	"	50	251
5	43	18	189	"	"	15	231
6	53	32	003	"	"	41	350
7	64	28	356	"	"	39	343
8	74	29	348	"	"	40	338
9	84	10	030	"	"	18	347
10	104	25	020	"	"	32	360
11	126	32	009	"	"	40	354
12	146	40	358	"	"	50	348
13	167	35	007	"	"	44	354
14	186	30	023	"	"	36	004
15	206	30	041	"	"	33	019
16	226	31	066	"	"	29	041
17	245	26	067	"	"	24	037
18	260	30	046	"	"	32	023
19	282	26	051	"	"	28	024
20	302	29	065	"	"	27	039
21	326	21	053	"	"	23	020
22	350	15	043	"	"	20	003
23	371	17	098	"	"	10	050
24	386	15	109	"	"	7	052
25	396	15	111	19	342	15	034
26	376	17	139	"	"	7	046
27	353	11	096	"	"	17	015
28	328	10	081	"	"	20	011
29	303	28	078	"	"	32	042
30	284	28	084	"	"	30	041
31	264	35	099	"	"	31	061
32	242	36	091	"	"	35	060
33	224	35	094	"	"	33	062
34	205	39	081	"	"	41	053
35	182	41	060	"	"	49	038
36	160	50	071	29	327	51	037
37	141	54	077	"	"	52	045
38	123	53	074	"	"	53	042
39	104	52	084	"	"	46	050
40	85	51	091	"	"	42	056
41	75	42	086	"	"	37	043
42	64	35	058	"	"	45	017
43	54	33	050	"	"	46	012
44	44	34	089	33	327	34	024
45	33	41	181	"	"	23	245
46	22	65	241	"	"	77	270
47	13	78	255	"	"	96	276
48	8	78	254	"	"	96	276

Current Measurement: 55 Position: 0°04'N, 93°24'W

Date: 20 November 1961 Start: 0625 GCT Finish: 0917 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
SD						16	228
1	6	33	246	22	108	22	204
2	12	32	216	"	"	32	176
3	22	32	168	"	"	37	144
4	33	32	083	"	"	53	092
5	43	51	076	"	"	71	085
6	54	63	056	"	"	79	069
7	64	66	054	"	"	81	066
8	73	65	058	"	"	81	070
9	74	55	042	"	"	67	059
10	85	37	057	"	"	54	075
11	106	22	337	"	"	18	043
12	127	24	301	"	"	5	008
13	147	28	312	"	"	12	360
14	168	29	254	"	"	16	204
15	188	28	246	"	"	19	194
16	210	33	261	"	"	17	224
17	229	28	243	"	"	20	191
18	250	32	242	"	"	23	198
19	271	34	233	"	"	28	193
20	289	34	233	"	"	28	193
21	308	35	271	"	"	15	245
22	333	35	269	"	"	16	241
23	358	35	261	"	"	18	227
24	381	28	247	"	"	18	197
25	405	33	275	"	"	13	250
26	404	37	233	"	"	30	195
27	379	35	258	"	"	19	223
28	355	43	244	"	"	31	214
29	331	37	241	"	"	27	205
30	306	40	237	"	"	31	203
31	289	34	247	"	"	22	207
32	269	35	245	"	"	24	205
33	248	26	254	"	"	14	194
34	229	30	254	"	"	17	206
35	209	28	258	"	"	14	207
36	188	32	251	"	"	19	207
37	167	27	286	"	"	9	275
38	146	28	326	"	"	18	018
39	126	32	354	"	"	30	036
40	105	42	022	"	"	49	049
41	85	56	049	"	"	70	065
42	75	65	046	"	"	78	061
43	65	56	046	"	"	69	062
44	54	41	051	"	"	56	070
45	44	30	074	"	"	50	088
46	33	49	193	"	"	55	169
47	23	47	188	"	"	55	164
48	13	39	200	"	"	44	170
49	8	42	214	"	"	41	183
SD						15	218

Current Measurement: 56 Position: 0°04'N, 93°24'W

Date: 20 November 1961 Start: 1135 GCT Finish: 1515 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	49	269	29	168	52	235
2	11	37	237	"	"	54	207
3	22	35	238	"	"	52	206
4	32	27	230	"	"	48	197
5	43	31	102	"	"	50	134
6	54	47	057	"	"	45	094
7	63	67	050	"	"	59	076
8	74	71	044	"	"	60	068
9	83	84	035	"	"	68	063
10	92	77	041	"	"	64	062
11	100	77	034	"	"	61	054
12	106	60	023	"	"	40	048
13	53	30	065	29	168	37	115
14	65	44	045	"	"	37	085
15	74	65	038	"	"	51	063
16	85	74	048	"	"	65	071
17	94	64	040	"	"	51	063
18	104	56	036	"	"	42	066
19	122	50	004	"	"	23	023
20	133	53	014	"	"	30	039
21	52	47	347	"	"	17	345
22	169	43	344	"	"	14	335
23	184	42	335	"	"	15	308
24	208	40	330	"	"	15	293
25	232	40	306	"	"	27	259
26	259	34	302	"	"	25	245
27	284	31	282	"	"	33	228
28	212	29	291	"	"	28	230
29	348	27	252	"	"	42	208
30	278	36	270	"	"	41	226
31	397	29	272	"	"	36	220
32	393	34	276	40	107	10	150
33	366	48	275	"	"	13	232
34	342	37	264	"	"	16	172
35	318	39	265	"	"	15	183
36	294	46	247	"	"	30	187
37	271	51	260	"	"	24	209
38	249	48	265	"	"	19	211
39	226	48	271	"	"	15	223
40	205	43	260	"	"	19	193
41	187	42	253	"	"	24	183
42	169	34	270	"	"	13	160
43	148	34	241	"	"	29	163
44	127	32	249	"	"	25	160
45	106	28	331	"	"	28	062
46	98	50	358	"	"	53	044
47	85	65	035	"	"	86	061
48	76	51	028	"	"	70	062
49	65	44	034	"	"	68	068
50	54	30	025	"	"	53	073
51	44	17	054	"	"	52	092
52	33	33	177	"	"	60	138
53	23	56	233	"	"	45	188
54	13	67	239	"	"	49	202
55	8	71	241	"	"	52	207

Current Measurement: 57 Position: 0°40'S, 93°23'W

Date: 20-21 November 1961 Start: 2243 GCT Finish: 0118 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	44	225	24	110	40	193
2	11	36	202	"	"	42	168
3	22	25	132	"	"	48	121
4	32	41	063	"	"	60	080
5	43	63	036	"	"	73	054
6	53	48	032	"	"	57	055
7	64	36	341	"	"	27	023
8	74	30	357	"	"	30	043
9	85	26	001	"	"	28	052
10	106	27	331	"	"	17	031
11	126	28	284	"	"	6	249
12	146	35	258	"	"	20	217
13	167	34	258	"	"	20	217
14	187	31	259	"	"	16	210
15	206	29	268	"	"	11	215
16	231	25	279	"	"	5	205
17	256	26	255	"	"	15	190
18	282	31	276	31	110	8	192
19	305	37	270	"	"	14	215
20	328	43	275	"	"	15	242
21	350	32	258	"	"	17	187
22	368	33	264	"	"	15	193
23	385	37	268	"	"	14	212
24	271	42	276	"	"	14	242
25	351	42	263	"	"	20	218
26	332	53	257	"	"	32	225
27	315	55	256	"	"	34	225
28	295	50	251	"	"	32	213
29	279	44	256	"	"	25	212
30	262	36	262	"	"	17	201
31	242	36	254	"	"	21	193
32	224	37	277	"	"	10	230
33	205	36	262	"	"	21	193
34	184	36	273	"	"	11	218
35	167	40	271	"	"	15	227
36	146	36	264	"	"	16	205
37	126	30	285	"	"	3	174
38	106	23	299	"	"	8	087
39	85	30	328	"	"	19	042
40	75	30	331	"	"	21	044
41	64	32	331	"	"	21	040
42	54	33	340	"	"	27	041
43	44	40	024	"	"	52	060
44	32	48	047	"	"	68	071
45	28	39	066	"	"	65	085
46	22	29	079	"	"	58	095
47	18	28	132	"	"	58	121
48	13	31	203	"	"	42	157
49	7	38	224	"	"	38	175
SD	0					30	186

Current Measurement: 58 Position: 0°40'S, 93°23'W

Date: 21 November 1961 Start: 0330 GCT Finish: 0613 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	44	230	57	113	54	160
2	12	31	225	"	"	54	145
3	22	18	111	"	"	75	113
4	33	29	057	"	"	77	095
5	44	46	005	"	"	61	067
6	54	35	313	"	"	26	088
7	65	31	296	"	"	26	110
8	75	32	293	"	"	25	113
9	86	36	299	"	"	21	103
10	106	36	288	"	"	21	110
11	126	44	291	"	"	13	122
12	143	48	285	"	"	11	150
13	160	48	289	"	"	9	135
14	173	56	283	"	"	11	194
15	180	62	265	60	098	14	190
16	200	51	261	"	"	19	151
17	222	45	261	"	"	22	137
18	241	45	259	"	"	23	139
19	267	51	252	"	"	27	156
20	285	49	262	"	"	19	146
21	306	47	258	"	"	23	144
22	332	64	261	"	"	20	192
23	350	65	264	"	"	16	200
24	350	71	264	"	"	20	215
25	326	65	276	"	"	6	248
26	311	66	271	"	"	10	220
27	291	57	260	48	098	19	207
28	285	53	260	"	"	17	196
29	266	53	265	"	"	13	206
30	247	53	257	"	"	19	191
31	237	48	272	"	"	6	190
32	220	50	262	"	"	14	187
33	199	53	253	"	"	22	187
34	179	62	249	"	"	34	199
35	162	72	252	"	"	36	214
36	143	64	261	"	"	23	222
37	127	44	268	"	"	9	157
38	108	32	287	"	"	18	082
39	87	36	324	"	"	34	050
40	77	44	359	"	"	60	051
41	68	40	061	"	"	84	081
42	54	27	098	"	"	75	098
43	44	30	172	"	"	63	125
44	34	50	196	"	"	64	148
45	23	65	208	"	"	66	165
46	14	68	210	"	"	67	168
47	9	70	217	"	"	63	175
SD	0					57	174

Current Measurement: 59 Position: 0°04'N, 93°24'W

Date: 21 November 1961 Start: 1028 GCT Finish: 1315 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	61	237	37	164	80	211
2	12	55	226	"	"	79	208
3	22	50	225	"	"	75	199
4	32	45	181	"	"	81	173
5	43	32	068	"	"	46	121
6	53	63	052	"	"	60	086
7	63	86	040	"	"	72	065
8	73	83	056	"	"	80	082
9	82	67	047	"	"	59	081
10	92	58	038	"	"	47	077
11	106	48	025	"	"	31	075
12	122	35	009	"	"	15	094
13	141	36	336	"	"	5	237
14	157	36	351	"	"	4	095
15	166	36	285	46	122	16	163
16	186	38	279	"	"	18	175
17	205	42	267	"	"	27	186
18	224	44	270	"	"	25	191
19	250	40	275	"	"	21	183
20	276	38	262	"	"	30	178
21	300	37	257	"	"	33	174
22	322	42	260	"	"	32	184
23	342	38	263	"	"	29	179
24	364	46	284	"	"	14	202
25	384	39	272	"	"	23	180
26	391	45	274	"	"	22	195
27	374	47	269	"	"	26	197
28	348	47	274	"	"	23	199
29	332	46	272	"	"	24	196
30	311	42	261	"	"	31	184
31	296	39	251	"	"	37	177
32	274	40	264	"	"	29	182
33	252	38	278	"	"	20	176
34	230	41	261	"	"	31	183
35	207	38	267	"	"	27	178
36	187	35	266	"	"	27	172
37	168	33	267	"	"	27	167
38	148	29	267	"	"	28	150
39	126	25	337	"	"	29	093
40	105	35	336	"	"	15	073
41	96	47	023	"	"	60	072
42	85	52	037	"	"	72	076
43	74	58	036	"	"	76	073
44	65	56	033	"	"	73	072
45	53	32	006	"	"	42	080
46	43	10	322	"	"	37	117
47	32	37	209	"	"	60	159
48	19	78	222	"	"	83	189
49	12	85	237	"	"	78	205
50	7	90	241	"	"	79	210
SD	0					69	240

Current Measurement: 60 Position: 0°44'N, 93°20'W

Date: 21-22 November 1961 Start: 2100 GCT Finish: 0000 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	47	280	12	238	56	272
2	12	47	226	"	"	58	228
3	22	39	207	"	"	50	213
4	32	36	214	"	"	57	218
5	42	31	221	"	"	42	226
6	53	17	240	"	"	28	239
7	63	15	316	"	"	22	274
8	74	15	049	"	"	3	016
9	84	27	077	"	"	15	091
10	105	38	074	"	"	27	081
11	126	40	046	"	"	28	041
12	146	30	063	"	"	18	067
13	167	32	056	"	"	19	055
14	186	30	066	"	"	18	071
15	206	21	063	"	"	9	071
16	232	22	051	"	"	10	043
17	257	22	059	"	"	10	060
18	284	29	076	"	"	18	088
19	307	31	063	"	"	19	067
20	330	28	067	"	"	17	073
21	354	27	051	"	"	15	045
22	379	26	066	"	"	14	072
23	406	21	058	"	"	9	057
24	405	19	053	"	"	7	047
25	380	20	069	"	"	9	083
26	355	15	050	"	"	3	028
27	332	14	090	"	"	7	147
28	308	20	073	"	"	9	091
29	284	22	067	"	"	10	077
30	257	25	081	"	"	15	100
31	232	21	070	"	"	10	085
32	207	17	047	"	"	5	023
33	186	24	044	"	"	13	031
34	187	24	074	"	"	13	088
35	146	26	081	"	"	15	098
36	126	31	041	"	"	20	031
37	105	23	080	"	"	13	100
38	96	21	067	"	"	9	078
39	85	12	012	"	"	9	302
40	74	18	267	"	"	29	255
41	63	20	297	"	"	28	275
42	53	23	256	"	"	34	249
43	43	31	235	"	"	43	235
44	33	46	213	"	"	47	219
45	21	28	189	"	"	38	203
46	11	42	239	"	"	54	239
47	6	45	242	"	"	57	240
SD	0					55	255

Current Measurement: 61 Position: 0°44'N, 93°20'W

Date: 22 November 1961 Start: 0305 GCT Finish: 0603 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	54	267	12	123	46	261
2	13	50	240	"	"	46	228
3	19	33	185	"	"	40	170
4	33	31	211	"	"	33	221
5	43	23	249	"	"	19	221
6	54	14	310	"	"	4	330
7	64	20	013	"	"	20	045
8	76	16	027	"	"	18	066
9	85	25	051	"	"	30	072
10	96	30	035	"	"	33	055
11	104	31	033	"	"	33	052
12	127	24	034	"	"	27	059
13	147	27	045	"	"	31	065
14	168	26	063	"	"	33	079
15	188	19	058	"	"	26	080
16	207	16	025	"	"	18	061
17	234	18	045	"	"	23	072
18	260	14	049	"	"	20	080
19	286	19	070	"	"	28	088
20	310	14	042	"	"	19	076
21	333	23	332	"	"	15	352
22	357	22	024	"	"	23	052
23	381	22	019	"	"	23	047
24	406	16	006	"	"	15	046
25	405	19	330	"	"	11	358
26	382	18	328	"	"	10	358
27	358	19	060	"	"	26	082
28	333	22	350	"	"	16	019
29	310	17	073	"	"	25	092
30	285	22	041	"	"	26	066
31	260	19	160	"	"	26	145
32	234	17	071	"	"	25	090
33	208	20	046	"	"	25	071
34	188	17	006	"	"	15	050
35	168	24	017	"	"	23	043
36	148	26	051	"	"	31	070
37	127	22	059	"	"	28	079
38	106	22	009	"	"	20	038
39	97	29	350	"	"	23	010
40	86	25	351	"	"	19	015
41	74	13	277	"	"	6	218
42	65	27	271	"	"	18	252
43	54	30	261	"	"	23	243
44	44	40	263	"	"	33	250
45	33	41	245	"	"	36	230
46	22	37	206	"	"	39	190
47	13	65	238	"	"	61	229
49	8	59	242	"	"	55	232

Current Measurement: 62 Position: 0°04'N, 93°24'W

Date: 22 November 1961 Start: 0955 GCT Finish: 1237 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	7	88	267	60	121	51	226
2	11	84	257	"	"	58	211
3	22	58	253	"	"	48	185
4	32	28	266	"	"	41	144
5	42	32	322	"	"	33	101
6	53	50	022	"	"	72	077
7	64	47	356	"	"	51	071
8	73	38	329	"	"	32	087
9	83	32	308	"	"	29	113
10	95	34	302	"	"	26	120
11	105	32	286	"	"	30	137
12	125	40	284	"	"	25	150
13	143	40	279	"	"	27	154
14	164	44	283	"	"	23	158
15	182	50	278	"	"	24	175
16	200	51	277	"	"	25	179
17	223	47	280	"	"	24	167
18	245	47	262	"	"	38	172
19	267	47	259	"	"	40	172
20	287	41	255	"	"	43	164
21	298	33	264	33	148	36	205
22	316	37	295	"	"	20	230
23	342	48	288	"	"	31	245
24	368	36	300	"	"	16	232
25	392	29	268	"	"	31	201
26	377	36	303	"	"	15	235
27	355	50	303	"	"	24	270
28	335	48	296	"	"	26	255
29	317	41	292	"	"	24	239
30	302	30	268	"	"	32	203
31	280	27	285	"	"	22	200
32	251	32	283	"	"	25	212
33	226	36	293	"	"	21	227
34	203	35	282	"	"	26	219
35	183	31	281	"	"	26	210
36	166	26	298	"	"	16	199
37	143	30	329	"	"	3	130
38	123	35	328	"	"	2	330
39	103	49	013	"	"	36	055
40	82	73	030	"	"	66	057
41	74	68	035	"	"	64	064
42	64	68	042	"	"	68	069
43	53	65	039	"	"	64	069
44	43	37	015	"	"	28	074
45	33	20	235	"	"	39	178
46	22	64	233	"	"	74	206
47	12	68	245	"	"	72	217
48	7	68	253	"	"	68	225

Current Measurement: 63 Position: 0°40'S, 93°23'W

Date: 22 November 1961 Start: 1645 GCT Finish: 1931 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	8	65	237	45	102	46	193
2	13	63	217	"	"	60	174
3	23	42	198	"	"	58	147
4	33	31	101	"	"	76	102
5	44	48	057	"	"	86	078
6	55	47	035	"	"	77	067
7	66	39	012	"	"	60	060
8	75	36	352	"	"	48	056
9	86	28	276	"	"	18	111
10	107	26	258	"	"	24	127
11	128	30	253	"	"	24	140
12	148	26	255	"	"	25	130
13	168	34	255	"	"	22	147
14	188	41	239	"	"	32	163
15	208	38	251	"	"	24	160
16	232	36	266	"	"	15	143
17	257	34	271	"	"	14	130
18	282	39	260	"	"	17	160
19	304	39	271	"	"	10	150
20	325	41	262	"	"	15	166
21	347	42	252	"	"	23	169
22	367	36	263	"	"	16	148
23	387	40	262	"	"	15	161
24	380	42	256	"	"	20	169
25	354	48	264	"	"	15	195
26	329	58	274	"	"	15	248
27	308	51	278	"	"	7	250
28	290	51	274	"	"	9	230
29	271	48	256	"	"	21	186
30	250	42	260	"	"	16	166
31	228	40	254	"	"	22	164
32	206	42	273	"	"	8	160
33	188	41	261	"	"	18	169
34	168	39	256	"	"	20	160
35	148	34	258	"	"	20	146
36	128	31	279	"	"	15	110
37	106	34	318	"	"	26	054
38	86	18	303	"	"	28	089
39	76	12	284	"	"	33	100
40	66	29	343	"	"	40	063
41	54	55	036	"	"	85	065
42	45	51	062	"	"	90	080
43	45	49	063	"	"	89	082
44	33	35	084	"	"	79	094
45	24	39	189	"	"	62	141
46	30	45	210	"	"	53	156
47	19	63	223	"	"	55	178
48	13	73	231	"	"	57	192
49	8	74	232	"	"	57	194

Current Measurement: 64 Position: 0°04'N, 93°24'W

Date: 23 November 1961 Start: 1400 GCT Finish: 1643 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	100	258	60	083	40	250
2	11	96	240	"	"	47	209
3	21	84	232	"	"	46	188
4	33	42	206	"	"	51	126
5	42	32	149	"	"	78	105
6	52	29	078	"	"	88	081
7	62	37	048	"	"	93	070
8	73	31	062	"	"	90	076
9	83	24	114	"	"	81	092
10	95	26	191	"	"	58	108
11	104	25	164	"	"	69	104
12	126	23	223	"	"	45	102
13	146	33	233	"	"	36	111
14	167	38	247	"	"	26	107
15	187	40	242	45	074	10	125
16	206	38	247	"	"	8	105
17	232	44	229	"	"	19	147
18	254	46	225	"	"	22	150
19	277	50	228	"	"	22	162
20	299	50	217	"	"	30	154
21	319	45	233	"	"	16	152
22	339	49	256	"	"	4	288
23	344	50	247	"	"	7	200
24	367	42	249	"	"	5	115
25	387	45	233	"	"	16	152
26	400	45	232	"	"	17	151
27	286	46	243	"	"	9	162
28	267	43	250	"	"	3	120
29	248	30	260	"	"	16	061
30	227	27	253	"	"	19	075
31	207	23	234	"	"	25	091
32	185	25	149	"	"	57	099
33	164	25	149	"	"	57	099
34	146	22	098	"	"	66	082
35	125	31	052	"	"	75	065
36	104	35	076	"	"	80	074
37	84	46	071	"	"	91	072
38	74	54	073	"	"	99	073
39	63	50	077	"	"	95	076
40	52	36	091	"	"	81	082
41	42	36	182	"	"	49	119
42	31	61	195	"	"	53	149
43	21	89	230	"	"	51	209
44	12	89	237	"	"	48	221
45	7	81	238	"	"	39	220

Current Measurement: 65 Position: 0°44'N, 93°20'W

Date: 24 November 1961 Start: 0113 GCT Finish: 0314 GCT

No.	Depth	Relative Velocity		Ship Velocity		True Velocity	
		Speed	Dir.	Speed	Dir.	Speed	Dir.
1	6	78	256	36	071	42	260
2	10	78	245	"	"	43	239
3	21	83	253	"	"	46	254
4	30	107	238	"	"	72	231
5	37	91	231	"	"	59	218
6	47	86	230	"	"	53	215
7	56	83	240	"	"	48	231
8	64	73	249	"	"	36	246
9	74	70	251	"	"	33	250
10	76	37	229	"	"	14	151
11	112	36	228	"	"	14	149
12	124	21	013	"	"	51	051
13	143	25	288	"	"	22	030
14	164	23	255	"	"	14	065
15	185	34	276	30	096	3	290
16	206	26	261	"	"	9	148
17	230	27	268	"	"	6	135
18	257	51	276	"	"	20	278
19	283	28	257	"	"	10	170
21	283	29	248	"	"	15	165
22	268	32	256	"	"	11	180
23	236	32	249	"	"	15	175
24	206	31	277	"	"	1	310
25	185	30	267	"	"	6	208
26	164	30	254	"	"	12	170
27	143	33	261	"	"	9	194
28	124	20	309	"	"	16	057
29	103	27	259	"	"	9	160
30	93	29	270	"	"	4	150
31	82	35	265	"	"	7	212
32	72	44	259	"	"	17	227
33	62	53	246	"	"	30	216
34	52	59	239	"	"	39	211
35	42	72	237	"	"	52	215
36	32	78	239	"	"	56	221
37	22	77	253	"	"	50	240
38	12	51	259	"	"	23	237
39	7	53	266	"	"	23	252

BIOLOGICAL DATA

STATION B-1

October 18, 1961; 4°08'N, 95°52'W; D = 30, k = .057

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 227 g cal/cm^2; Temp. = 26- - °C

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)	(mg/m^3)				(mSPU)		(mg C/m^3/day)	
88	0	0.029	0.024	0.062	2.1			1.1	2.4
47	12	0.020	0.025	0.041	2.1			5.4	0.0
31	19	0.045	0.029	0.18	3.9			3.6	0.18
10	38	0.040	0.022	0.21	5.2			3.4	7.5
6	46	0.065	0.037	0.25	3.8			1.5	1.6
2.7	59	-	-	-	-			0.18	1.8
0.7	81	0.14	0.085	0.42	3.0			-	0.0
						(mg C/m^2/day)		150	190

STATION B-2

October 19, 1961; 0°52'N, 95°55'W; D = 18, k = .094

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 117 g cal/cm^2; Temp. = -

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)	(mg/m^3)				(mSPU)		(mg C/m^3/day)	
88	0	0.16	0.040	0.24	1.5			15.0	20.0
47	8	0.17	0.038	0.28	1.6			21.0	4.0
31	12	0.17	0.050	0.18	1.0			18.0	14.0
10	23	0.38	0.24	2.2	5.8			11.0	19.0
6	28	0.30	0.082	0.55	1.9			5.1	12.0
2.7	36	0.33	0.16	1.2	3.2			2.0	8.0
0.7	49	0.34	0.10	0.59	1.8			0.54	0.80
						(mg C/m^2/day)		460	500

STATION B-3

October 20, 1961; 0°52'N, 95°59'W

ZOOPLANKTON

Type of net and haul	Local time		Z	Water strained	Volume	
	Start	End			Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0449	0520	448	390	120	140

STATION B-4

October 21, 1961; 0°02'S, 96°02'W

ZOOPLANKTON

Type of net and haul	Local time Start	Local time End	Z	Water strained	Volume Small	Volume Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0432	0503	386	740	150	240

STATION B-5

October 22, 1961; 1°09'S, 95°59'W

ZOOPLANKTON

Type of net and haul	Local time Start	Local time End	Z	Water strained	Volume Small	Volume Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0905	0929	277	620	140	140

STATION B-6

October 23, 1961; 2°38'S, 96°00'W; D = 23, k = .074

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_O = 286 g cal/cm^2; Temp. = 21-21°C

I_S	Z	Chlorophylls a	b	c	c/a	Carotenoids Ast.	non-A	Productivity Surf.	Subsurf.
(%)	(m)		(mg/m^3)			(mSPU)		(mg C/m^3/day)	
88	0	0.094						7.8	8.3
47	13	0.085						14.0	3.4
31	20	0.035						12.0	8.5
10	29	0.12						8.5	7.2
6	36	0.11						5.3	7.0
2.7	43	-						2.0	7.7
0.7	53	0.25						0.0	4.3
						(mg C/m^2/day)		410	350

STATION B-7

October 24, 1961; 2°00'S, 95°56'W

ZOOPLANKTON

Type of net and haul	Local time Start	Local time End	Z	Water strained	Volume Small	Volume Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	2109	2137	329	580	150	270

STATION B-8

October 25, 1961; 1°08'S, 95°58'W; D = 12, k = .14

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 296 g cal/cm^2; Temp. = 22- - °C

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)	(mg/m^3)				(mSPU)		(mg C/m^3/day)	
88	0							20.0	17.0
47	5							32.0	12.0
31	8							32.0	13.0
10	15							25.0	6.9
6	18							15.0	20.0
2.7	23							5.2	3.4
0.7	32							0.10	2.8
						(mg C/m^2/day)		520	380

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Clarke-Bumpus	1734	1804	11	86	1700[d]	1700[d]
" "	"	"	42	40	150	330

STATION B-9

October 26, 1961; 0°02'S, 96°01'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0611	0642	448	630	55	140

STATION B-10

October 27, 1961; 0°00', 94°02'W; D = 16, k = .11

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 264 g cal/cm^2; Temp. = 22-20°C

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)	(mg/m^3)				(mSPU)		(mg C/m^3/day)	
88	0	0.066	0.000	0.000	0.0	0.006	0.013	6.3	12.0
47	6	0.16	0.041	0.30	1.8	0.052	0.035	18.0	2.7
31	10	0.10	0.045	0.25	2.4	0.047	0.028	7.3	33.0
10	20	0.16	0.063	0.39	2.4	0.063	0.033	10.0	35.0
6	25	0.18	0.058	0.34	1.9	0.041	0.033	5.3	5.5
2.7	32	0.19	0.048	0.33	1.7	0.037	0.047	0.4	1.7
0.7	44	0.15	0.038	0.25	1.6	0.046	0.025	0.0	1.4
						(mg C/m^2/day)		310	1640

STATION B-11

October 28, 1961; 0°04'N, 92°16'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0455	0524	355	660	120	340
Clarke-Bumpus	0639	0709	10	75	260	260
" "	"	"	35	72	560	620
" "	"	"	100	45	630	630

STATION B-12

November 1, 1961; 2°10'N, 87°16'W; D = 23, k = .074

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 258 g cal/cm^2; Temp. = 27-25°C

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)	(mg/m^3)				(mSPU)		(mg C/m^3/day)	
88	0	0.096	0.025	0.14	1.5	0.023	0.023	5.2	5.9
47	9	0.067	0.029	0.23	3.5	0.037	0.001	10.0	0.0
31	15	0.092	0.037	0.27	2.9	0.032	0.005	8.0	0.0
10	29	0.12	0.048	0.43	3.5	0.042	0.005	6.3	0.0
6	35	0.058	0.020	0.15	2.6	0.033	0.014	3.3	0.10
2.7	45	0.13	0.048	0.33	2.5	0.039	0.025	0.60	0.0
0.7	62	0.24	0.13	0.51	2.1	0.066	0.040	0.0	0.0
						(mg C/m^2/day)		230	40

STATION B-13

November 2, 1961; 0°08'S, 86°55'W

ZOOPLANKTON

Type of net and haul	Local Time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0550	0618	190	490	110	120

STATION B-14

November 3, 1961; 0°08'S, 86°55'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	1250	1320	350	680	120	120
Clarke-Bumpus	1520	1550	20	12	490	490
" "	"	"	38	53	660	660
" "	"	"	75	55	73	73

STATION B-15

November 4, 1961; 1°05'N, 87°00'W; D = 23, k = .074

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_O = 126 g cal/cm^2; Temp. = 27-26°C

I_s	Z	Chlorophylls a	b	c	c/a	Carotenoids Ast.	non-A	Productivity Surf.	Subsurf.
(%)	(m)		(mg/m^3)			(mSPU)		(mg C/m^3/day)	
88	0	0.070	0.021	0.079	1.1	0.017	0.034	7.6	7.0
47	9	0.080	0.034	0.19	2.3	0.045	0.021	9.8	0.30
31	15	0.095	0.039	0.19	2.0	0.042	0.033	8.8	4.3
10	29	0.20	0.047	0.37	1.8	0.035	0.077	4.8	3.3
6	35	0.34	0.098	0.53	1.6	0.053	0.067	3.2	2.7
2.7	45	0.25	0.060	0.36	1.4	0.037	0.062	1.8	2.3
0.7	62	0.27	0.065	0.32	1.2	0.034	0.090	0.0	0.0
						(mg C/m^2/day)		260	180

STATION B-16

November 6, 1961; 0°30'S, 86°58'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0346	0416	245	620	160	240

STATION B-17

November 6, 1961; 1°03'S, 87°03'W; D = 20, k = 085

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 163 g cal/cm^2; Temp. = 23-22°C

I_s	Z	Chlorophylls a	b	c	c/a	Carotenoids Ast.	non-A	Productivity Surf.	Subsurf.
(%)	(m)		(mg/m^3)			(mSPU)		(mg C/m^3/day)	
88	0	0.14	0.051	0.16	1.2	0.027	0.039	10.0	12.0
47	8	0.16	0.053	0.28	1.7	0.038	0.040	14.0	1.9
31	13	0.16	0.046	0.22	1.2	0.036	0.041	8.0	5.0
10	25	0.24	0.074	0.37	1.5	0.044	0.074	8.0	0.90
6	30	0.25	0.078	0.40	1.6	0.044	0.056	1.7	1.4
2.7	39	0.31	0.120	0.46	1.5	0.054	0.063	2.1	1.1
0.7	54	0.34	0.087	0.46	1.3	0.054	0.095	0.0	2.1
						(mg C/m^2/day)		300	120

STATION B-18

November 7, 1961; 2°01'S, 87°02'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	2322	2351	190	780	140	160

STATION B-19

November 8, 1961; 3°33'S, 87°06'W; D = 21, k = .081

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 227 g cal/cm^2; Temp. = 22-21°C

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)	(mg/m^3)				(mSPU)		(mg C/m^3/day)	
88	0	0.10	0.038	0.32	3.1	0.025	0.14	14.0	-
47	9	0.11	0.046	0.24	2.1	0.046	0.024	15.0	0.0
31	15	0.10	0.030	0.30	3.0	0.034	0.17	44.0	1.3
10	29	0.24	0.091	0.49	2.1	0.047	0.047	7.9	6.9
6	35	0.25	0.12	0.58	2.4	0.047	0.33	7.1	3.1
2.7	45	0.24	0.12	0.42	1.8	0.045	0.077	1.2	0.0
0.7	62	0.17	0.083	0.29	1.7	0.041	0.053	0.0	0.0
						(mg C/m^2/day)		630	150

STATION B-20

November 8, 1961; 4°00'S, 87°00'W

ZOOPLANKTON

Type of net and haul	Local time		Z	Water strained	Volume	
	Start	End			Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	1454	1530	218	700	150	170

STATION B-21

November 8, 1961; 5°01'S, 86°59'W

ZOOPLANKTON

Type of net and haul	Local time		Z	Water strained	Volume	
	Start	End			Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	2124	2152	277	610	120	140

STATION B-22

November 16, 1961; 1°43'S, 90°29'W; D = 21, k = .081

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 229 g cal/cm^2; Temp. = 22-21°C

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)		(mg/m^3)			(mSPU)		(mg C/m^3/day)	
88	0	0.16	0.028	0.23	1.5	0.020	0.057	15.0	15.0
47	9	0.15	0.027	0.33	2.2	0.041	0.030	17.0	5.1
31	15	0.15	0.038	0.30	2.0	0.064	0.022	16.0	12.0
10	29	0.16	0.059	0.31	1.9	0.044	0.037	9.1	2.5
6	35	0.14	0.062	0.28	2.0	0.036	0.024	4.7	0.80
2.7	45	0.20	0.10	0.41	2.1	0.044	0.041	1.0	0.0
0.7	62	0.19	0.079	0.40	2.1	0.069	0.046	0.0	0.50
						(mg C/m^2/day)		500	280

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0748	0822	318	520	190	190
Clarke-Bumpus	1845	1920	3	67	270	270
" "	"	"	15	10	480[d]	480[d]
" "	"	"	70	13	150[d]	150[d]

STATION B-23

November 18, 1961; 1°00'N, 90°45'W; D = 17, k = .10

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 254 g cal/cm^2; Temp. = 23-22°C

I_s	Z	Chlorophylls				Carotenoids		Productivity	
		a	b	c	c/a	Ast.	non-A	Surf.	Subsurf.
(%)	(m)		(mg/m^3)			(mSPU)		(mg C/m^3/day)	
88	0	0.12	0.015	0.14	1.1	0.030	0.048	-	14.0
47	7	0.12	0.049	0.35	3.0	0.025	0.41	18.0	2.7
31	11	0.13	0.020	0.14	1.0	0.032	0.039	22.0	8.3
10	22	0.17	0.065	0.44	2.6	0.034	0.53	12.0	5.0
6	26	0.22	0.066	0.41	1.9	0.069	0.065	-	16.0
2.7	34	-	-	-	-	-	-	2.7	-
0.7	46	0.29	0.15	0.61	2.1	0.053	0.35	-	-
						(mg C/m^2/day)		480	270

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	1659	1729	369	640	130	140

STATION B-24

November 20, 1961; 0°04'N, 93°24'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	0331	0409	139	580	140	140
Clarke-Bumpus	0442	0512	10	87	240	240
" "	"	"	55	r	r	r
" "	"	"	160	r	r	r

STATION B-25

November 20, 1961; 0°40'S, 93°24'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	1935	2010	238	790	82	140
Clarke-Bumpus	2038	2108	55	r	r	r
" "	"	"	160	8.7	57	57

STATION B-26

November 21, 1961; 0°32'N, 93°20'W; D = 21, k = .081

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 257 g cal/cm^2; Temp. = 24- - °C

I_s	Z	Chlorophylls a	b	c	c/a	Carotenoids Ast.	non-A	Productivity Surf.	Subsurf.
(%)	(m)		(mg/m^3)			(mSPU)		(mg C/m^3/day)	
88	0	0.077	0.019	0.088	1.1	0.026	0.020	9.3	9.3
47	9	0.12	0.071	0.44	3.5	0.084	0.60	13.0	4.0
31	14	0.056	0.034	0.21	3.8	0.050	0.21	8.3	12.0
10	26	0.13	0.077	0.28	2.2	0.027	0.46	12.0	1.2
6	32	0.16	0.082	0.37	2.3	0.049	0.033	4.2	6.7
2.7	41	0.15	0.078	0.34	2.2	0.030	0.24	2.9	6.0
0.7	57	0.17	0.092	0.41	2.4	0.036	0.26	0.80	4.1
						(mg C/m^2/day)		370	340

STATION B-27

November 21, 1961; 0°44'N, 93°20'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	1854	1939	318	850	330[d]	340[d]
Clarke-Bumpus	2019	2049	10	7.3	410	410
" "	"	"	55	1.5	330	330

STATION B-28

November 23, 1961; 0°04'N, 93°24'W; D = 28, k = .061

PIGMENTS AND PRODUCTIVITY

Begin C^{14} experiment: LAN During experiment: I_o = 301 g cal/cm^2; Temp. = 24- - °C

I_s	Z	Chlorophylls a	b	c	c/a	Carotenoids Ast.	non-A	Productivity Surf.	Subsurf.
(%)	(m)		(mg/m^3)			(mSPU)		(mg C/m^3/day)	
88	0	0.070	0.020	0.14	2.0	0.017	0.052	2.4	7.4
47	11	0.089	0.040	0.15	1.7	0.016	0.19	2.5	2.4
31	18	0.10	0.037	0.24	2.3	0.051	0.042	2.7	11.0
10	35	0.15	0.080	0.35	2.3	0.029	0.28	1.9	3.5
6	43	0.16	0.089	0.34	2.1	0.049	0.035	1.5	2.4
2.7	55	0.22	0.13	0.43	1.9	0.029	0.22	0.90	2.5
0.7	76	0.16	0.075	0.29	1.8	0.012	0.21	0.10	0.0
						(mg C/m^2/day)		160	300

STATION B-29

November 24, 1961; 3°13'N, 94°23'W

ZOOPLANKTON

Type of net and haul	Local time Start	End	Z	Water strained	Volume Small	Total
			(m)	(m^3)	(ml/1000 m^3)	
Standard oblique	1232	1305	301	780	58	120

DAILY INCIDENT RADIATION

Date	Noon Position		Radiation
	Latitude	Longitude	g cal/cm^2
October 18	4°03'N	95°52'W	477
" 19	0°52'N	95°55'W	251
" 20	0°32'N	96°05'W	290
" 21	0°02'S	96°02'W	431
" 22	1°13'S	95°59'W	555
" 23	2°33'S	96°00'W	603
" 24	3°43'S	96°02'W	614
" 25	1°11'S	95°57'W	527
" 26	0°45'N	96°01'W	468
" 27	0°00'	94°02'W	537
" 28	0°02'S	92°09'W	425
" 30	1°05'N	91°09'W	381
" 31	4°32'N	87°15'W	409
November 1	1°51'N	87°16'W	483
" 2	0°07'S	86°55'W	340
" 3	0°07'S	86°55'W	367
" 4	1°05'N	87°00'W	317
" 5	1°05'N	87°00'W	273
" 6	1°03'S	87°03'W	258
" 7	1°03'S	87°03'W	409
" 8	3°39'S	87°01'W	413
" 9	4°34'S	84°03'W	457
" 10	Talara, Peru		615
" 11	Talara, Peru		379
" 14	3°38'S	84°08'W	438
" 15	1°54'S	89°25'W	608
" 16	1°44'S	90°29'W	347
" 17	0°17'S	90°54'W	476
" 18	1°00'N	90°45'W	435
" 19	0°45'N	91°17'W	472
" 20	0°20'S	93°24'W	625
" 21	0°38'N	93°18'W	530
" 22	0°40'S	93°24'W	342
" 23	0°03'N	93°23'W	551
" 24	2°52'N	94°09'W	286
" 25	7°08'N	98°06'W	437
" 26	11°30'N	101°35'W	492
" 27	15°40'N	104°53'W	492
" 28	19°49'N	108°22'W	315

Date	Collection	Position		Chlorophyllis			
				a	b	c	c/a
1961	time	Latitude	Longitude		(mg/m^3)		
October 18	Sunrise	4°53'N	95°49'W	0.048	0.026	0.18	3.7
" 18	Sunset	3°02'N	96°03'W	0.087	0.033	0.31	3.5
" 19	Sunrise	1°29'N	95°58'W	0.090	0.023	0.19	2.1
" 19	Sunset	0°52'N	95°59'W	0.24	0.034	0.40	1.7
" 20	Sunrise	0°52'N	95°59'W	0.20	0.039	0.36	1.8
" 20	LAN	0°32'N	96°05'W	0.27	0.041	0.54	2.0
" 20	Sunset	0°02'S	96°02'W	0.24	0.031	0.34	1.5
" 21	Sunrise	0°02'S	96°02'W	0.43	0.19	2.6	5.9
" 21	LAN	0°02'S	96°02'W	0.25	0.10	0.00	0.00
" 21	Sunset	0°02'S	96°02'W	0.22	0.046	0.00	0.00
" 22	Sunrise	1°09'S	95°59'W	0.098	0.021	0.00	0.00
" 22	LAN	1°13'S	95°59'W	0.10	0.057	0.11	1.1
" 22	Sunset	1°09'S	95°59'W	0.11	0.000	0.00	0.00
" 23	Sunrise	1°40'S	95°57'W	0.12	0.021	0.14	1.1
" 24	Sunrise	5°01'S	96°06'W	-	-	-	-
" 24	LAN	3°43'S	96°02'W	-	-	-	-
" 25	Sunrise	2°00'S	95°56'W	-	-	-	-
" 26	Sunrise	0°02'S	96°01'W	0.34	0.10	0.58	1.7
" 26	LAN	0°45'N	96°01'W	0.12	0.042	0.34	2.8
" 26	Sunset	0°08'N	96°03'W	0.099	0.035	0.21	2.1
" 27	Sunrise	0°01'S	94°55'W	0.17	0.047	0.32	1.9
" 27	Sunset	0°02'N	92°50'W	0.22	0.065	0.34	1.5
" 28	Sunrise	0°04'N	92°16'W	0.98	0.030	1.0	1.0
" 28	LAN	0°02'N	92°09'W	0.40	0.070	0.60	1.5
" 29	Sunset	0°02'S	91°41'W	1.8	0.043	1.5	0.81
" 30	Sunrise	0°26'N	91°51'W	0.26	0.037	0.36	1.4
" 30	LAN	1°05'N	91°09'W	0.18	0.070	0.055	0.32
" 30	Sunset	1°58'N	90°12'W	0.049	0.027	0.000	0.00
" 31	Sunrise	3°25'N	87°49'W	0.050	0.046	0.000	0.00
" 31	LAN	4°32'N	87°15'W	0.13	0.037	0.000	0.00
" 31	Sunset	4°38'N	87°02'W	0.055	0.011	0.027	0.49
November 1	Sunrise	2°26'N	87°12'W	0.043	0.016	0.14	3.2
" 1	Sunset	1°01'N	86°55'W	0.047	0.022	0.14	2.9
" 2	Sunrise	0°07'S	86°55'W	0.044	0.020	0.14	3.2
" 2	Sunset	0°07'S	86°55'W	0.15	0.041	0.21	1.4
" 3	Sunrise	0°07'S	86°55'W	0.091	0.017	0.32	3.5
" 3	LAN	0°07'S	86°55'W	-	-	-	-
" 3	Sunset	0°07'S	86°55'W	0.13	0.034	0.21	1.6
" 4	Sunrise	0°58'N	87°00'W	0.074	0.023	0.16	2.2
" 4	Sunset	1°05'N	87°00'W	0.11	0.027	0.19	1.8
" 5	Sunrise	1°05'N	87°00'W	0.067	0.034	0.18	2.6
" 5	LAN	1°05'N	87°00'W	0.078	0.020	0.13	1.7
" 5	Sunset	0°13'N	86°56'W	0.10	0.032	0.15	1.5
" 6	Sunrise	0°37'S	86°59'W	0.077	0.039	0.093	1.2
" 6	Sunset	1°03'S	87°03'W	0.15	0.041	0.20	1.3
" 7	Sunrise	1°03'S	87°03'W	0.18	0.045	0.30	1.7

BETWEEN STATIONS

Carotenoids Ast. (mSPU)	Carotenoids non-A (mSPU)	Surface Productivity tank incubator (mg C/m^3/day) Replicates		Mean	Dark Bottle	Tank temperature °C	Incident radiation during C^{14} experiment (g cal/cm^2)
-	-	2.0	1.9	2.0	0.62	27-	250
-	-	-	-	-	-	-	-
-	-	12.0	8.0	10.0	0.16	24-	105
-	-	-	-	-	-	-	-
-	-	26.0	24.0	25.0	1.1	24-	111
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	31.0	30.0	30.0	1.4	20-	214
-	-	29.0	35.0	32.0	2.4	20-	217
-	-	-	-	-	-	-	-
-	-	22.0	19.0	20.0	1.0	20-	223
-	-	19.0	21.0	20.0	1.4	21-20	332
-	-	-	-	-	-	-	-
-	-	18.0	16.0	17.0	1.2	20-21	317
-	-	7.2	8.2	7.7	2.5	21-21	299
-	-	13.0	8.7	11.0	1.0	22-21	315
-	-	15.0	12.0	14.0	1.3	20-22	231
0.049	0.071	50.0	47.0	48.0	1.3	21-25	202
0.046	0.022	12.0	7.8	10.0	1.6	25-26	267
0.026	0.028	-	-	-	-	-	-
0.043	0.049	37.0	30.0	34.0	1.1	-22	273
0.045	0.035	-	-	-	-	-	-
0.049	0.27	110.0	76.0	93.0	1.5	18-18	166
0.051	0.072	-	-	-	-	-	-
0.16	0.35	-	-	-	-	-	-
0.041	0.071	28.0	28.0	28.0	1.6	21-25	256
0.034	0.049	9.6	11.0	10.0	1.1	25-22	125
0.036	0.017	-	-	-	-	-	-
0.047	0.000	24.0	36.0	30.0	1.3	27-27	214
0.042	0.000	12.0	13.0	12.0	2.8	27-27	196
0.017	0.024	-	-	-	-	-	-
0.031	0.094	10.0	6.4	8.3	2.4	24-27	224
0.019	0.065	-	-	-	-	-	-
0.013	0.100	22.0	26.0	24.0	1.7	24-25	156
0.035	0.040	-	-	-	-	-	-
0.028	0.14	15.0	-	-	1.4	-26	178
-	-	23.0	21.0	22.0	1.6	26-24	189
0.030	0.031	-	-	-	-	-	-
0.030	0.010	16.0	18.0	17.0	3.1	25-27	191
0.042	0.020	-	-	-	-	-	-
0.033	0.025	17.0	15.0	16.0	1.0	25-26	94
0.018	0.027	13.0	13.0	13.0	1.0	26-25	178
0.023	0.036	-	-	-	-	-	-
0.025	0.028	20.0	18.0	19.0	2.1	23-23	96
0.025	0.056	-	-	-	-	-	-
0.038	0.048	15.0	13.0	14.0	1.4	-	184

Date 1961	Collection time	Position Latitude	Position Longitude	Chlorophyllis a	b	c	c/a
				(mg/m^3)			
November 7	LAN	1°03'S	87°03'W	0.21	0.048	0.30	1.5
" 7	Sunset	1°32'S	87°00'W	0.14	0.046	0.30	2.1
" 8	Sunrise	2°46'S	87°03'W	0.18	0.050	0.26	1.5
" 8	Sunset	4°28'S	86°57'W	0.14	0.048	0.27	2.0
" 9	Sunrise	4°47'S	85°32'W	0.13	0.064	0.28	2.2
" 9	LAN	4°34'S	84°13'W	0.086	0.056	0.12	1.4
" 9	Sunset	4°07'S	82°44'W	0.072	0.034	0.18	2.6
" 14	Sunrise	4°03'S	82°54'W	0.15	0.084	0.46	3.1
" 14	LAN	3°38'S	84°08'W	0.13	0.040	0.19	1.4
" 14	Sunset	3°10'S	85°29'W	0.17	0.039	0.30	2.2
" 15	Sunrise	2°17'S	88°11'W	0.17	0.044	0.27	1.6
" 15	LAN	1°54'S	89°25'W	0.15	0.043	0.23	1.5
" 15	Sunset	1°43'S	90°29'W	0.18	0.032	0.27	1.5
" 16	Sunrise	1°43'S	90°29'W	0.19	0.021	0.31	1.6
" 16	Sunset	1°43'S	90°29'W	0.15	0.038	0.30	2.0
" 17	Sunrise	1°24'S	90°36'W	0.14	0.033	0.22	1.6
" 17	LAN	0°17'S	90°54'W	0.18	0.070	0.37	2.1
" 17	Sunset	1°00'N	90°45'W	0.15	0.053	0.40	2.7
" 18	Sunrise	1°00'N	90°45'W	0.17	0.035	0.18	1.1
" 18	Sunset	1°00'N	90°45'W	0.22	0.032	0.33	1.5
" 19	Sunrise	1°00'N	90°45'W	0.19	0.037	0.30	1.6
" 19	LAN	0°45'N	91°17'W	0.15	0.032	0.25	1.7
" 19	Sunset	0°11'N	92°43'W	0.16	0.040	0.23	1.4
" 20	Sunrise	0°04'N	93°25'W	0.17	0.046	0.19	1.2
" 20	LAN	0°20'S	93°24'W	0.090	0.047	0.18	2.0
" 20	Sunset	0°40'S	93°24'W	0.040	0.036	0.15	3.8
" 21	Sunrise	0°04'N	93°24'W	0.16	0.059	0.26	1.6
" 21	Sunset	0°44'N	93°20'W	0.077	0.030	0.14	1.9
" 22	Sunrise	0°04'N	93°24'W	0.093	0.046	0.19	2.0
" 22	LAN	0°40'S	93°24'W	0.16	0.052	0.13	0.81
" 23	Sunrise	0°04'N	93°24'W	0.12	0.051	0.22	1.9
" 24	Sunrise	1°40'N	93°41'W	0.078	0.030	0.25	3.2
" 24	LAN	2°52'N	94°09'W	0.057	0.037	0.20	3.6
" 24	Sunset	4°02'N	96°00'W	0.071	0.028	0.24	3.4
" 25	Sunrise	6°02'N	97°21'W	0.043	0.036	0.15	3.6
" 25	LAN	7°08'N	98°06'W	0.094	0.053	0.19	2.0
" 26	Sunrise	10°27'N	100°43'W	0.095	0.038	0.20	2.1
" 26	LAN	11°30'N	101°35'W	0.053	0.029	0.20	3.7
" 26	Sunset	12°40'N	102°27'W	0.067	0.028	0.18	2.8
" 27	Sunrise	14°38'N	104°03'W	0.030	0.012	0.11	3.5
" 27	LAN	15°40'N	104°53'W	0.024	0.012	0.063	2.6
" 27	Sunset	16°47'N	105°48'W	0.044	0.036	0.21	4.8
" 28	Sunrise	18°51'N	107°30'W	0.041	0.025	0.092	2.3
" 28	LAN	19°49'N	108°22'W	0.041	0.030	0.011	0.26
" 28	Sunset	20°53'N	109°17'W	0.050	0.003	0.16	3.2
" 29	Sunrise	22°56'N	110°56'W	0.14	0.028	0.18	1.3

BETWEEN STATIONS (cont.)

Carotenoids Ast.	Carotenoids non-A	Surface Productivity tank incubator (mg C/m^3/day)				Tank temperature	Incident radiation during C^{14} experiment
(mSPU)		Replicates		Mean	Dark Bottle	°C	(g cal/cm^2)
0.031	0.061	27.0	28.0	28.0	1.0	24-21	225
0.038	0.047	-	-	-	-	-	-
0.029	0.058	22.0	24.0	23.0	1.2	21-22	186
0.040	0.050	-	-	-	-	-	-
0.054	0.058	14.0	16.0	15.0	2.2	21-21	284
0.034	0.015	13.0	13.0	13.0	0.41	21-21	172
0.028	0.012	-	-	-	-	-	-
0.056	0.11	32.0	28.0	30.0	4.2	20-21	230
0.038	0.029	25.0	22.0	24.0	1.1	21-21	208
0.042	0.032	-	-	-	-	-	-
0.032	0.054	21.0	18.0	20.0	2.0	20-22	327
0.043	0.053	24.0	19.0	22.0	1.3	22-21	281
0.056	0.075	-	-	-	-	-	-
0.040	0.066	24.0	26.0	25.0	0.80	-22	90
0.031	0.043	-	-	-	-	-	-
0.026	0.035	24.0	24.0	24.0	1.2	20-22	234
0.077	0.027	60.0	42.0	51.0	1.2	22-22	242
0.063	0.010	-	-	-	-	-	-
0.035	0.075	25.0	21.0	23.0	1.7	21-23	182
0.031	0.072	-	-	-	-	-	-
0.032	0.064	26.0	22.0	24.0	1.7	22-24	197
0.025	0.042	25.0	24.0	24.0	1.4	24-21	275
0.032	0.043	-	-	-	-	-	-
0.028	0.056	20.0	20.0	20.0	1.0	20-26	280
0.030	0.022	13.0	11.0	12.0	1.70	26-26	346
0.029	0.008	-	-	-	-	-	-
0.029	0.044	24.0	23.0	24.0	0.90	21-24	273
0.020	0.033	-	-	-	-	-	-
0.026	0.029	20.0	21.0	20.0	1.3	22-22	127
0.028	0.057	21.0	27.0	24.0	0.90	22-22	215
0.025	0.056	16.0	16.0	16.0	0.90	22-24	250
0.035	0.037	26.0	22.0	24.0	1.0	25-26	149
0.028	0.023	6.4	6.8	6.6	0.90	26-	137
0.033	0.064	-	-	-	-	-	-
0.021	0.083	3.6	-	-	1.9	27-28	196
0.024	0.086	8.3	13.0	11.0	0.6	28-27	241
0.024	0.13	13.0	14.0	14.0	1.6	-28	255
0.030	0.072	8.4	10.0	9.0	0.64	28-	237
0.029	0.086	-	-	-	-	-	-
0.025	0.12	4.1	4.9	4.5	1.0	28-30	261
0.015	0.078	3.9	3.4	3.6	1.2	30-28	231
0.032	0.022	-	-	-	-	-	-
0.024	0.015	8.1	7.7	7.9	0.51	25-28	142
0.021	0.034	7.9	8.3	8.1	1.0	28-27	173
0.027	0.045	-	-	-	-	-	-
0.044	0.020	12.0	10.0	11.0	0.70	23-25	159