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U.S. PROGRAM IN BIOLOGY

INTERNATIONAL INDIAN OCEAN EXPEDITION

FINAL CRUISE REPORT
ANTON BRUUN CRUISE 2

OCEANOGRAPHIC DATA

BATHYTHERMOGRAPH POSITIONS

STATION LISTS for BIOLOGICAL COLLECTIONS

INTERNATIONAL INDIAN OCEAN EXPEDITION

Woods Hole Oceanographic Institution
ATLAS - GAZETTEER COLLECTION

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JULY, 1964

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Cruise 2

U. S. PROGRAM IN BIOLOGY

INTERNATIONAL INDIAN OCEAN EXPEDITION

Final Report: R/V ANTON BRUUN, Cruise 2

Cruise 2 of the R/V ANTON BRUUN took place in the western Indian Ocean from May 22 to July 23, 1964. The following report presents the station lists for plankton collections, bathythermograph positions, and reduced oceanographic, chemical, and biological data for Cruise 2. The cruise track is shown in Figure 1, and the itinerary with ports of call is given in Table 1.

A summary of the types of scientific activities carried out during the cruise, and a list of the techniques employed are given in Tables 2 and 3, respectively. In addition to the basic hydrographic and biological programs and the researches of individual scientists, a special program of long-line fishing was carried out in a cooperative effort with the U. S. Bureau of Commercial Fisheries. Details regarding the composition of the long-line catches and associated data are on file at the Biological Laboratory; Bureau of Commercial Fisheries; U. S. Fish and Wildlife Service, Honolulu, Hawaii.

A narrative report of Cruise 2, including a list of participants and brief descriptions of their research interests and preliminary results, was issued as New Bulletin No. 3 of the U. S. Program in Biology, IIOE, dated January, 1964.

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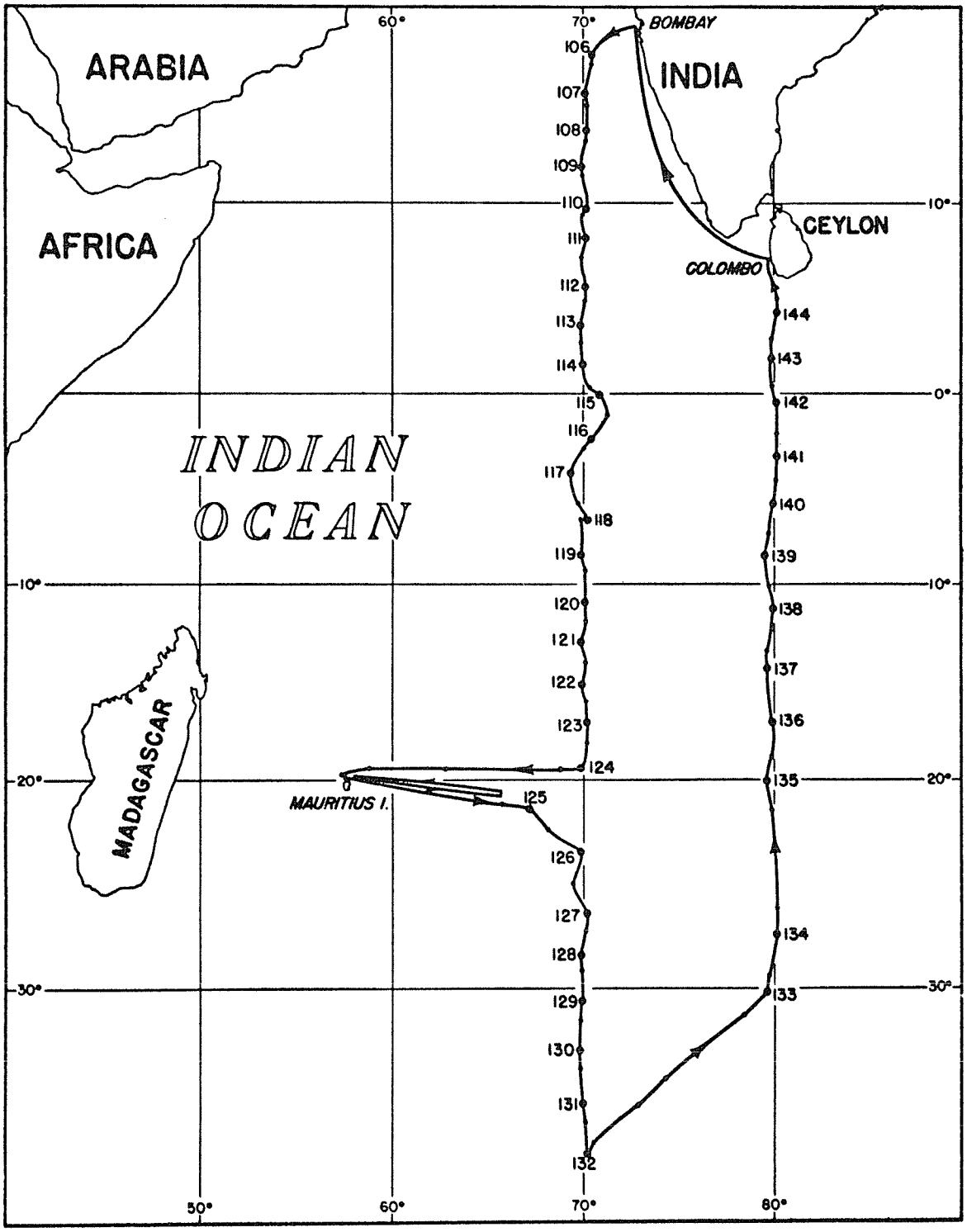
Table 1. Itinerary, Cruise 2, R/V ANTON BRUUN

May 22, 1963	Departed Bombay, India.
May 22 - June 11	Completed series of stations from 17° N. to 20° S. latitude along 70° E. longitude.
June 14	Arrived Port Louis, Mauritius (fuel and provisions).
June 18	Departed Port Louis.
June 22	Returned Port Louis (emergency call, appendicitis case on board).
June 22	Departed Port Louis.
June 25 - July 2	Completed series of stations from 22° S. to 37° S. latitude along 70°E. longitude.
July 5 - July 17	Completed series of stations from 30° S. to 4° N. latitude along 80° E. longitude.
July 18	Arrived Colombo, Ceylon (fuel and provisions).
July 19	Departed Colombo.
July 23	Arrived Bombay, - end of Cruise 2.



Track Chart of the ANTON BRUUN, Cruise 2, May 22 - July 23, 1963

FIGURE 1

Table 2. Summary of Activities, Cruise 2, R/V ANTON BRUUN

Station	Date	Latitude	Longitude	Long Line	Hydro Cast	Prim. Prod.	Plankton Tows 75M25	IOSN	Be-3	M-O	75M3
106	5/23	17°37'N	70°27'E	x	x	x	x	x	x		
106A	5/23	17°04'N	70°23'E							x	
107	5/24	15°40'N	70°07'E	x	x	x	x	x	x		
107A	5/24	15°01'N	70°09'E							x	
108	5/25	13°50'N	70°07'E	x	x	x	x	x	x		
108A	5/25	13°15'N	70°03'E							x	
109	5/26	11°59'N	69°55'E	x	x	x	x	x	x		
109A	5/26	11°28'N	69°56'E							x	
110	5/27	09°46'N	70°06'E	x	x	x	x	x	x		
110A	5/27	09°26'N	69°59'E							x	
111	5/28	08°09'N	70°02'E	x	x	x	x	x	x		
111A	5/28	07°08'N	69°57'E							x	
112	5/29	05°48'N	70°03'E	x	x	x	x	x	x		
112A	5/29	04°58'N	70°01'E							x	
113	5/30	03°33'N	69°54'E	x	x	x	x	x	x		
113A	5/30	02°46'N	69°54'E							x	
114	5/31	01°30'N	70°01'E	x	x	x	x	x	x		
114A	5/31	01°16'N	70°20'E							x	
115	6/1	01°07'S	71°00'E	x	x	x	x	x	x		
115A	6/1	01°10'S	71°08'E							x	
116	6/2	02°23'S	70°24'E	x	x	x	x	x	x		
116A	6/2	02°57'S	70°00'E							x	
117	6/3	04°22'S	69°24'E		x	x	x	x	x		
117A	6/3	05°54'S	69°47'E							x	
118	6/4	06°48'S	70°07'E		x	x	x	x			
118A	6/4	06°37'S	70°09'E							x	
118B	6/5	06°45'S	69°41'E	x							
119	6/6	08°35'S	69°55'E	x	x	x					
119A	6/6	09°26'S	70°03'E							x	
120	6/7	11°10'S	70°02'E		x	x		x	x		
120A	6/7	12°04'S	70°02'E							x	
121	6/8	13°15'S	69°51'E	x	x	x	x	x			x
121A	6/8	14°14'S	70°02'E							x	
122	6/9	15°25'S	69°58'E	x	x	x	x	x	x		
122A	6/9	16°08'S	70°02'E							x	
123	6/10	17°18'S	70°05'E	x	x	x	x	x	x		
123A	6/10	18°12'S	70°04'E							x	
124	6/11	19°30'S	69°51'E	x	x	x	x	x	x		
124A	6/11	19°32'S	68°46'E							x	
124B	6/12	19°30'S	63°50'E							x	
124C	6/13	19°27'S	58°51'E							x	
124D	6/14	19°47'S	57°28'E								
124E	6/14	19°54'S	57°36'E								

Table 2. (Page 2)

Station	Date	Latitude	Longitude	Long Line	Hydro Cast	Prim. Prod.	Plankton Tows 75M25	IOSN	Be-3	M-O	75M3
124F	6/24	21°21'S	65°52'E							x	
125	6/25	21°40'S	67°06'E	x	x	x	x	x			x
125A	6/25	22°37'S	68°04'E							x	
126	6/26	23°47'S	69°05'E	x	x	x	x	x	x		
126A	6/26	25°01'S	69°30'E							x	
127	6/27	26°34'S	70°12'E	x	x	x	x	x	x		
127A	6/27	27°23'S	70°04'E							x	
128	6/28	28°33'S	69°58'E	x	x	x		x			x
128A	6/28	29°11'S	69°57'E							x	
129	6/29	30°34'S	69°55'E	x	x	x	x	x	x		
129A	6/29	31°28'S	69°52'E							x	
130	6/30	32°52'S	69°52'E	x	x	x	x	x	x		
130A	6/30	33°42'S	69°56'E							x	
131	7/1	35°09'S	69°59'E	x	x	x	x	x	x		
131A	7/1	35°57'S	70°04'E							x	
132	7/2	37°12'S	70°10'E	x	x	x	x	x	x		
132A	7/2	36°52'S	70°39'E							x	
132B	7/3	35°17'S	72°55'E						x		
132C	7/3	34°06'S	74°26'E							x	
132D	7/4	31°08'S	78°28'E							x	
133	7/5	30°11'S	79°42'E	x	x	x	x	x	x		
133A	7/5	29°24'S	79°48'E							x	
134	7/6	27°31'S	80°08'E		x	x	x	x	x		
134A	7/6	26°17'S	80°10'E							x	
134B	7/7	21°37'S	79°55'E							x	
135	7/8	20°02'S	79°50'E	x	x	x	x	x	x		
135A	7/8	18°59'S	79°53'E							x	
136	7/9	17°14'S	79°52'E		x			x	x		
137	7/10	14°44'S	79°44'E	x	x	x		x			x
137A	7/10	13°40'S	79°48'E							x	
138	7/11	11°28'S	80°00'E		x	x		x			x
138A	7/11	10°08'S	79°48'E							x	
139	7/12	08°37'S	79°34'E	x	x	x		x			x
139A	7/12	07°24'S	79°42'E							x	
140	7/13	05°53'S	79°57'E		x	x	x	x	x		
140A	7/13	04°41'S	80°01'E							x	
141	7/14	03°13'S	80°02'E	x	x	x	x	x			x
141A	7/14	02°03'S	80°08'E							x	
142	7/15	00°33'S	80°08'E	x	x	x	x	x			x
142A	7/15	00°23'N	79°58'E							x	
143	7/16	01°54'N	79°52'E	x	x	x	x	x	x		
143A	7/16	02°51'N	79°53'E							x	
144	7/17	04°18'N	80°08'E	x	x	x	x	x	x		
144A	7/17	05°01'N	80°05'E							x	
144B	7/19									x	
144C	7/20									x	
144D	7/21									x	

Table 3. Methods and Techniques employed on Cruise 2 with references.

1. Navigation: Celestial navigation and dead reckoning. Corrected positions taken from smooth navigation plots.

2. Bottom depth: Precision Echo Sounder Recorder (Alpine Geophysical Assoc.). Note - Continuous records taken throughout Cruise 2 have been turned over to Dr. Bruce Heezen, Lamont Geological Observatory.

3. Bathythermograph observations: Taken on arrival at each station and at intervals of 1 hour or less between stations. Records deposited with National Oceanographic Data Center, Washington, D. C.

4. Temperature and depth: Paired protected and unprotected deep-sea reversing thermometers. Reliability of depth calculations shown on relative scale of 1 (high) - 3 (low).

5. Water samples
   a) Chemistry: Teflon-coated Nansen bottles (Balauf Mfg. Co., Washington, D.C.).

   b) Productivity and pigments: Large volume, all-plastic (lucite) water sampler designed by D.W. Menzel, Woods Hole Oceanographic Institution, Woods Hole, Mass.

6. Salinity: Inductance-type salinometer (Autolab Industries, Sydney, Australia).

7. Dissolved oxygen: Winkler method, biniodate standard.

8. Phosphate: Murphy, J. and J.P. Riley. 1962. A modified single solution method for the determination of phosphate in natural waters. Anal. Chim. Acta 27: 31-36.

9. Nitrite: Rider, B.F. and M.G. Mellon. 1946. Colorimetric determination of nitrites. Ind. Engin. Chem. Anal. Ed. 18: 96-99.

10. Nitrate: Mullen, J.B. and J.P. Riley. 1955. The spectrophotometric determination of nitrate in natural waters, with special reference to sea water. Anal. Chim. Acta. 12: 464-480.

11. Mullen, J.B. and J.P. Riley. 1955. The colorimetric determination of silicate with special reference to sea and natural waters. Ibid. 12: 162-175.

12. Plankton pigments:
    a) Richards, F.A. with T.G. Thompson. 1952. The estimation and characterization of plankton populations by pigment analysis. II. A spectrophotometric method for the estimation of plankton pigments. J. Mar. Res. 11: 156-172.

b) Creitz, G.I. and F.A. Richards. 1955. _____ III. A note on the use of "millipore" filters in the estimation of plankton pigments. Ibid. 14: 211-216.

c) Whatman GF/C glass fiber filters used in place of millipore filters.

d) Data for chlorophyll[a] only reported here. Optical densities of acetone extracts A/C Richards with Thompson may be obtained on request from J.H. Ryther, Woods Hole Oceanographic Institution, Woods Hole, Mass.

13. Primary production:

a) C-14-technique, basically as in: Steemann Nielsen, E. 1952. The use of radioactive carbon (C^{14}) for measuring organic production in the sea. J. Cons. Internat. Explor. Mer. 18: 117-140.

b) Millipore HA type membrane filters used throughout. Filters rinsed with 10 ml. 0.01 N HCl in 3% NaCl.

c) Simulated in situ measurements: Water samples collected from depths of penetration of 100, 50, 25, 10, and 1% incident light. Samples with C^{14} added incubated for 24 hours on deck in water cooled lucite cylinders covered with neutral density (wire mesh) filters to simulate in situ light intensities.

d) Artificially-illuminated measurements: Samples from same depths as in (c) incubated for 4 hours at approximately 1000 foot candles from fluorescent lamps.

e) Dark bottle C^{14} uptake subtracted from light bottle values for each depth and for both sets of measurements (c and d).

14. Incident Radiation: Eppley 50-junction pyrheliometer recorded on Leeds and Northrup Speedomax recorder. Records mechanically integrated with planimeter to give daily radiation. Radiation data refer to 24 hour period of simulated in situ productivity value (i.e. for 24 hours following arrival on station).

15. Biological sampling gear: See key immediately preceding station lists for biological collections.

16. Plankton displacement volume: Taken only for Indian Ocean Standard Net 200 m. vertical hauls. Volume measured on "squeeze-dried" plankton by displacement in volumetric cylinder.

17. Meteorological observations: Taken by member of International Indian Ocean Meteorology Programme. (Dr. Colin Ramage, Scientific Director).

REDUCED DATA

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STATION NO. 106
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 23-V-63
RELIABILITY OF DEPTH

LAT. 17° 37' N
LONG. 70° 27' E
DEPTH 2820 M
TIME 1324
WIND

PRIMARY PROD. .09 g C /m²/day
EXT. COEFF. (k) 0.08
RADIATION 445 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 6.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	29.92	35.078	4.66						
25	—	35.376	4.89						
50	28.35	36.011	5.12						
75	27.00	36.349	4.88						
100	25.76	36.349	4.10						
125	23.92	36.174	2.54						
150	21.50	35.936	1.03						
200	16.87	35.742	0.34						
299	13.75	35.637	0.28						
399	12.67	35.628	0.21						
499	11.82	35.574	0.32						
599	11.26	35.558	0.34						
699	10.39	35.485	0.27						
798	9.66	35.430	0.17						
898	9.09	35.399	0.24						
998	8.39	35.325	0.46						
988	8.52	35.343	0.35						
1187	7.04	35.177	0.65						
1386	5.80	35.067	0.86						
1686	4.15	34.929	1.75						
1986	2.17	34.835	2.36						

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.10	5.2	16.6	
9	0.20	0.7	11.6	
17	0.14	4.2	23.6	
29	0.09	0.9	10.6	
58	0.09	0.2	2.8	

REDUCED DATA

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STATION NO. 107
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 24-V-63
RELIABILITY OF DEPTH

LAT. 15° 40' N
LONG. 70° 07' E
DEPTH 2500 M
TIME 1149
WIND

PRIMARY PROD. .09 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 383 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 9.4 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	30.52	35.358	4.83	u	0.3	0.03	2.2
25	30.09	35.322	4.84	0.01	0.3	0.03	2.5
50	27.88	36.089	5.00	0.13	0.2	0.01	2.5
74	25.18	36.264	2.71	0.79	7.7	0.09	6.0
99	22.46	35.985	1.01	1.45	16.0	u	9.4
124	20.44	35.810	0.39	1.80	18.5	0.05	16.3
149	18.52	35.652	0.30	2.07	18.2	1.35	21.3
198	15.89	35.599	0.34	2.08	16.7	2.52	25.2
298	13.53	35.585	0.27	2.31	18.7	1.88	34.3
397	12.17	35.511	0.22	2.34	22.0	0.04	36.0
496	11.49	35.483	0.16	2.54	22.4	0.06	43.9
595	11.03	35.487	0.18	2.42	20.6	0.03	46.6
694	10.38	35.449	0.17	2.49	25.2	0.03	49.7
794	9.71	35.425	0.21	2.58	27.2	0.02	56.9
893	9.02	35.372	0.18	2.69	26.2	0.05	55.8
992	8.26	35.294	0.28	2.58	33.4	0.02	69.5
994	8.26	35.295	0.46	---	---	---	--
1194	6.96	35.179	0.58	2.77	---	0.02	84.2
1394	5.66	35.065	0.84	2.95	31.7	0.02	104.9
1694	3.86	35.902	1.76	2.81	26.9	0.02	122.4
1994	2.90	34.825	2.35	2.70	30.2	0.02	134.3

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.08	3.5	3.1
10	0.07	0.7	3.1
20	0.08	1.5	3.5
33	0.10	2.3	3.8
66	0.34	u	0.1

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 108
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 25-V-63
RELIABILITY OF DEPTH

LAT. 13° 50' N
LONG. 70° 07' E
DEPTH 3710 M
TIME 1141
WIND

PRIMARY PROD. .03 g C /m²/day
EXT. COEFF. (k) 0.08
RADIATION 207 g.cal./cm.²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 9.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	30.37	34.774	5.11	0.09	0.1	u	2.0
25	29.88	35.406	5.12	0.19	0.4	0.01	2.6
50	28.18	35.527	5.65	0.22	0.5	u	2.6
75	27.19	35.880	5.13	0.28	0.5	u	2.4
100	26.57	36.369	4.44	0.49	2.8	0.41	1.9
124	23.52	35.930	2.21	1.27	22.1	0.29	7.6
149	21.10	35.700	0.96	1.82	29.8	0.50	13.1
199	17.36	35.524	0.40	2.26	32.1	2.87	23.4
299	13.94	35.480	0.22	2.28	35.3	0.84	32.0
398	12.51	35.480	0.18	2.52	38.9	0.13	36.8
498	11.99	35.540	0.27	2.59	36.6	0.27	43.5
597	11.29	35.535	0.32	2.65	39.7	0.38	48.1
697	10.17	35.408	0.28	2.78	42.6	0.37	59.4
797	9.71	35.418	0.26	2.78	45.4	1.04	65.6
896	8.78	35.329	0.30	2.84	44.6	0.47	71.9
996	7.79	35.213	0.57	2.89	44.9	0.02	81.3
1196	6.63	35.114	0.88	2.91	49.0	0.01	91.4
1396	5.48	35.034	1.08	2.83	46.5	0.04	100.3
1695	3.86	34.894	1.85	2.80	50.5	0.02	122.4
1995	2.86	34.820	2.41	2.72	45.8	0.02	130.6

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.01	1.3	2.3
9	0.02	1.9	2.2
17	0.01	0.9	0.5
29	0.05	u	3.2
58	0.09	u	u

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 109
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 26-V-63
RELIABILITY OF DEPTH

LAT. 11° 59' N
LONG. 69° 55' E
DEPTH 4300 M
TIME 1147
WIND

PRIMARY PROD. .05 g C /m²/day
EXT. COEFF. (k) 0.08
RADIATION 287 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	29.68	34.688	4.95	0.12	0.3	0.01	1.6
24	29.79	35.221	5.24	0.13	0.1	0.01	2.1
48	28.47	35.483	5.29	0.17	1.3	0.03	2.0
72	27.27	36.019	5.25	0.26	--	u	2.5
96	25.02	36.074	3.43	0.79	7.4	0.21	4.2
120	22.08	35.800	1.04	1.65	21.0	0.10	11.7
144	19.12	35.511	0.68	2.01	24.5	0.12	17.4
192	15.91	35.345	0.58	2.25	20.6	0.02	25.3
288	13.24	35.359	0.34	2.34	22.4	0.02	28.7
386	12.07	35.371	0.45	2.48	23.3	0.06	36.2
484	11.55	35.417	0.26	2.53	29.7	0.01	44.7
583	10.94	35.413	0.17	2.70	26.8	0.05	47.8
682	10.02	35.339	0.20	2.70	29.9	0.22	56.2
782	9.23	35.285	0.28	2.78	25.6	0.01	64.8
882	8.63	35.278	0.39	2.89	27.4	0.01	71.3
992	7.78	35.203	0.50	2.95	28.6	0.01	79.9
992	7.68	35.175	0.52	2.91	28.5	u	81.3
1191	6.39	35.085	0.84	2.95	28.6	u	91.5
1390	5.15	34.959	1.34	2.89	28.6	0.01	103.0
1689	--	34.817	0.18	2.75	24.6	0.01	52.4
1989	2.88	35.393	2.49	2.68	27.3	0.01	126.0

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.03	2.7	8.5
9	0.02	1.8	6.4
17	0.02	2.3	4.1
29	0.02	0.2	5.1
58	0.10	0.3	4.5

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 110
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 27-V-63
RELIABILITY OF DEPTH

LAT. 09° 46' N
LONG. 70° 06' E
DEPTH 4500 M
TIME 1309
WIND

PRIMARY PROD. .08 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 285 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.7 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	29.50	34.590	5.07	0.08	0.3	0.10	1.7		
25	29.50	34.580	4.94	0.10	0.1	0.01	2.4		
48	28.13	35.490	5.08	0.21	u	0.04	2.1		
73	26.22	36.010	3.87	0.61	5.6	0.08	3.2		
97	22.68	35.700	1.52	1.42	20.1	0.04	9.8		
121	19.38	35.407	0.70	1.95	25.9	0.02	9.2		
145	17.01	35.124	1.04	1.87	24.4	0.07	23.9		
194	15.11	35.310	0.36	2.26	27.1	0.01	25.9		
290	12.66	35.296	0.29	2.35	28.6	0.03	29.4		
387	11.58	35.277	0.34	---	28.4	0.12	35.3		
485	10.96	35.315	0.45	2.59	32.4	0.01	42.7		
583	10.34	35.329	0.46	2.65	31.8	0.01	51.8		
681	9.44	35.251	0.33	2.75	35.8	0.01	52.6		
780	8.63	35.184	0.52	2.79	33.1	u	68.1		
879	8.07	35.155	0.56	2.80	33.7	0.01	74.0		
979	7.29	35.089	0.80	2.84	34.5	0.01	82.8		
932	7.70	35.122	0.62	2.83	32.8	0.02	79.5		
1126	6.64	35.068	0.84	2.83	36.4	0.02	88.8		
1319	5.50	34.997	1.16	2.86	34.0	0.01	101.2		
1607	3.92	34.869	2.02	2.72	37.2	0.01	117.8		
1896	3.01	34.812	2.53	2.67	37.7	0.01	126.0		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.06	2.5	2.7	
10	0.04	2.5	6.6	
20	0.05	1.5	2.8	
33	0.05	0.6	2.5	
66	0.10	0.1	1.9	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 111
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 28-V-63
RELIABILITY OF DEPTH

LAT. 08° 09' N
LONG. 70° 02' E
DEPTH 4590 M
TIME 1040
WIND

PRIMARY PROD. .13 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 331 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.7 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	29.52	34.683	5.12	0.10	0.6	0.04	3.0
25	29.52	34.672	5.24	0.10	0.2	0.04	3.9
50	27.82	35.599	5.01	0.30	0.2	0.02	3.0
75	25.15	35.649	2.94	0.89	11.3	0.13	7.0
100	21.75	35.519	1.59	1.50	21.5	0.06	12.6
125	19.52	35.489	0.46	2.05	26.2	0.03	18.1
150	17.50	35.410	0.46	2.14	28.4	0.06	22.6
200	14.16	32.270	0.86	2.15	31.6	0.01	25.7
300	12.06	35.234	0.96	2.19	30.2	0.03	29.6
400	11.21	35.228	0.87	2.33	32.5	0.06	35.6
500	10.23	35.155	0.68	2.51	36.8	0.02	45.4
600	9.63	35.184	0.46	2.68	37.2	0.01	54.5
700	9.01	35.175	0.51	2.77	36.1	0.01	64.0
800	8.19	35.122	0.63	2.80	35.9	0.01	71.3
900	7.41	35.053	0.83	2.80	35.3	0.01	78.5
1000	6.83	35.009	0.96	2.83	38.5	0.01	86.5
995	6.95	35.029	0.93	2.80	38.5	0.01	85.1
1195	6.11	35.001	1.13	2.80	39.3	u	95.7
1395	5.16	34.959	1.50	2.80	37.7	0.01	104.9
1695	3.66	34.859	2.31	2.70	34.6	0.01	116.8
1995	2.83	34.809	2.75	2.61	33.5	0.02	126.0

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.01	1.7	3.3
10	0.02	2.6	5.2
20	0.02	6.8	3.8
33	u	0.6	4.4
66	0.24	u	4.5

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 112
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 29-V-63
RELIABILITY OF DEPTH

LAT. 05° 48' N
LONG. 70° 03' E
DEPTH 4040 M
TIME 1106
WIND

PRIMARY PROD. .04 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 376 g.cal./cm.²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.0 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	28.89	35.031	4.86	0.19	0.4	0.01	4.5			1	u	2.7	3.3	
24	28.86	35.031	4.86	0.19	0.4	0.01	4.6			10	0.02	0.9	5.1	
48	28.23	35.124	4.91	0.28	0.4	0.01	3.8			20	0.01	0.9	4.3	
72	25.26	35.324	3.23	0.83	10.7	0.26	8.4			33	u	u	8.5	
97	21.02	35.197	1.72	1.47	20.6	0.11	15.5			66	0.14	0.4	7.9	
121	18.55	35.127	1.24	1.73	24.0	0.03	20.1							
145	16.11	35.094	1.23	1.94	27.9	0.02	24.4							
193	13.90	35.162	1.34	1.94	28.0	0.02	24.7							
290	11.88	35.154	1.79	1.94	27.0	0.01	25.7							
387	10.99	35.123	1.43	2.15	30.6	0.01	32.7							
485	10.33	35.135	1.16	2.35	32.5	0.01	39.8							
583	9.90	35.167	0.86	2.64	32.6	0.03	46.9							
682	9.12	35.142	0.79	2.72	35.6	0.01	59.1							
780	8.42	35.126	0.95	2.78	35.9	0.03	68.0							
879	7.83	35.126	0.84	2.83	36.7	0.04	75.1							
991	7.08	35.002	0.96	2.88	31.3	0.04	83.1							
989	6.93	35.027	0.97	2.84	37.4	0.01	86.1							
1189	6.02	34.999	1.24	2.84	38.3	0.01	93.8							
1388	5.20	34.942	1.62	2.82	31.8	0.01	103.0							
1686	3.73	34.845	2.29	2.76	32.4	u	117.8							
1985	2.91	34.804	2.79	2.65	37.0	u	124.2							

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 113
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 30-V-63
RELIABILITY OF DEPTH

LAT. 03° 33' N
LONG. 69° 54' E
DEPTH 3850 M
TIME 1056
WIND

PRIMARY PROD. .08 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 377 g.cal./cm.²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 6.4 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	29.02	34.771	5.20	0.16	0.8	0.03	2.9			1	0.04	2.4	3.3	
25	28.17	34.934	5.15	0.23	1.7	0.07	3.8			12	0.02	1.9	5.6	
64	25.73	35.275	3.95	0.54	9.7	1.07	6.3			23	u	0.2	3.7	
89	24.94	35.365	3.78	0.75	10.9	0.35	6.6			36	0.02	1.8	10.4	
114	22.21	35.403	2.63	1.13	22.4	0.07	12.2			72	0.12	0.5	2.5	
138	18.63	35.319	1.86	1.54	25.6	0.04	15.6							
187	13.47	35.163	1.69	1.84	31.7	0.03	22.9							
285	11.72	35.102	1.60	2.00	30.4	0.02	28.1							
383	10.60	35.059	2.24	1.94	27.5	0.02	30.5							
482	9.99	35.081	1.59	2.19	35.5	0.02	38.7							
581	9.32	35.043	1.18	2.39	35.7	0.02	47.7							
681	9.19	35.117	1.13	2.52	35.7	0.01	53.0							
781	8.55	35.101	0.94	2.58	40.5	0.01	61.8							
881	7.88	35.080	0.91	2.67	31.1	0.07	72.9							
981	7.14	35.038	0.96	2.72	44.3	0.05	79.7							
985	7.04	35.025	0.98	2.72	35.6	0.01	79.7							
1182	5.95	34.959	1.31	2.72	38.8	0.01	91.5							
1381	5.09	34.909	1.65	2.72	33.7	0.02	100.3							
1680	3.66	34.833	2.36	2.66	35.9	u	114.1							
1980	--	34.794	2.79	2.56	39.1	0.01	122.4							

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 114
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 31-V-63
RELIABILITY OF DEPTH

LAT. 01° 30' N
LONG. 70° 01' E
DEPTH 4150 M
TIME 1009
WIND

PRIMARY PROD. .04 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 252 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 7.4 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	29.01	34.706	4.91	0.19	0.2	0.01	2.5
24	28.95	34.691	4.90	0.14	0.2	u	3.0
49	28.84	34.768	5.04	0.13	0.4	0.01	2.9
73	27.67	35.118	4.98	0.19	0.3	0.02	4.3
97	24.12	35.323	3.81	0.62	10.4	0.40	6.0
121	21.00	35.319	2.85	0.95	17.5	0.03	10.6
146	17.04	35.243	2.03	1.42	22.8	0.04	16.4
194	13.65	35.181	2.13	1.52	26.7	0.01	19.6
291	11.40	35.090	2.17	1.72	35.6	0.01	23.8
388	10.49	35.024	2.24	1.93	32.3	0.02	28.7
487	9.56	35.016	1.36	2.24	35.3	--	43.0
587	8.79	35.024	1.27	2.44	39.8	--	53.4
687	8.63	35.021	1.12	2.51	44.6	--	56.7
--	--	35.031	2.15	1.89	33.1	--	29.1
--	--	35.001	1.03	2.64	35.4	--	73.0
--	--	35.028	1.12	2.72	42.1	--	80.3
779	7.97	35.049	0.98	2.63	37.7	--	68.6
977	7.16	35.016	1.05	2.69	42.3	--	77.8
1176	5.73	34.927	1.38	2.72	42.4	--	94.8
1474	4.73	34.851	2.03	2.63	38.9	--	105.8
1771	3.34	34.812	2.58	2.57	41.2	--	115.9

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.03	1.7	5.0
10	u	0.5	2.5
20	0.03	1.5	4.8
33	0.04	0.4	4.6
66	0.16	u	6.2

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 115
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 1-VI-63
RELIABILITY OF DEPTH

LAT. 01° 07' S
LONG. 71° 00' E
DEPTH 3310 M
TIME 1154
WIND

PRIMARY PROD. .06 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 293 g.cal./cm.²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 5.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.				DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	28.95	34.689	4.60	0.20	0.3	0.03	2.9				1	0.04	1.4	--	
20	28.95	34.693	4.65	0.19	0.3	0.03	3.0				10	0.02	1.3	4.1	
39	28.92	34.839	4.70	0.22	0.4	0.02	3.3				20	0.02	1.2	5.2	
59	28.69	34.972	4.70	0.21	0.2	0.02	3.4				33	0.02	0.9	4.4	
78	27.70	35.167	4.70	0.21	25.1	0.05	3.8				66	0.04	0.2	8.2	
98	23.75	35.266	3.46	0.69	31.6	1.03	7.5								
117	19.06	35.228	3.14	1.02	32.2	0.06	11.9								
156	14.46	35.185	2.60	1.41	35.6	0.04	17.4								
234	11.96	35.080	2.59	1.67	34.8	0.06	21.2								
312	10.78	35.005	2.58	1.77	32.7	0.03	24.5								
390	10.20	34.996	1.94	1.95	29.4	0.02	32.4								
468	9.57	35.002	1.43	2.33	26.4	0.03	43.2								
554	9.46	35.002	1.29	2.45	30.5	0.04	50.0								
643	8.46	35.009	1.12	2.58	31.3	0.04	57.7								
736	7.97	34.992	1.11	2.63	25.6	0.08	65.8								
831	7.30	34.962	1.09	2.70	20.9	0.06	75.3								

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 116
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 2-VI-63
RELIABILITY OF DEPTH

LAT. 02° 23' S
LONG. 70° 24' E
DEPTH 4875 M
TIME 1227
WIND

PRIMARY PROD. .09 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 350 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 3.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	28.85	35.008	5.53	0.16	0.7	0.03	3.5
25	28.70	34.994	5.09	0.16	0.7	0.03	3.9
50	28.47	35.037	5.35	0.16	0.8	0.01	19.7
74	25.18	35.271	4.47	0.42	6.3	0.54	6.2
99	22.00	35.278	3.18	0.88	21.2	0.36	8.9
124	19.39	35.227	2.77	1.09	22.7	0.03	13.2
149	16.94	35.198	2.51	1.33	29.1	0.03	15.9
199	13.82	35.167	2.60	1.41	32.1	0.09	17.9
298	10.93	34.987	2.85	1.60	38.8	0.03	22.4
397	9.94	35.012	1.83	2.06	36.9	0.03	35.3
497	9.35	34.986	1.96	2.13	41.8	0.03	39.2
596	8.73	34.980	1.73	2.33	36.1	0.03	49.6
696	7.77	34.904	1.63	2.40	34.2	u	58.6
796	7.63	34.985	1.28	2.57	36.8	0.03	66.8
896	7.11	34.951	1.34	2.63	40.6	0.03	74.9
996	6.46	34.914	1.52	2.66	37.5	0.02	82.2
1000	6.37	34.908	1.52	2.68	38.3	0.02	--
1200	5.30	34.874	1.79	2.67	35.4	0.01	--
1400	4.88	34.878	1.84	2.68	46.8	0.01	--
1700	3.62	34.808	2.55	2.59	46.4	0.01	--
2000	2.63	34.872	3.08	2.50	34.2	u	--

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	u	1.4	3.2
10	u	3.6	3.1
20	u	1.7	3.3
33	u	1.6	4.5
66	0.07	u	4.5

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 117
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 3-VI-63
RELIABILITY OF DEPTH

LAT. 04° 22' S
LONG. 69° 24' E
DEPTH 3475 M
TIME 1003
WIND

PRIMARY PROD. .02 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 358 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 2.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	28.83	35.056	5.47	0.18	0.2	0.01	3.0			1	0.06	1.3	2.6	
25	28.78	35.054	5.74	0.18	0.2	0.02	2.9			12	0.01	u	2.3	
50	25.71	35.236	5.58	0.28	1.3	0.10	4.9			23	0.07	0.1	2.8	
75	20.78	35.258	3.75	0.77	12.8	0.08	10.0			36	0.04	0.2	3.3	
100	19.27	35.228	2.73	1.17	22.4	0.14	13.0			72	0.10	0.2	1.2	
125	17.24	35.283	2.43	1.34	20.2	0.06	17.1							
149	15.41	35.234	2.13	1.55	26.7	0.03	21.9							
199	13.65	--	2.24	1.64	29.5	0.03	25.8							
299	11.56	35.000	2.46	1.68	28.7	0.03	24.7							
398	10.25	34.918	2.45	1.83	32.5	u	28.2							
498	9.38	34.869	2.23	1.98	34.9	0.03	36.7							
598	8.33	34.813	1.98	2.23	33.9	0.02	48.0							
698	7.92	34.845	1.74	2.78	43.9	0.02	57.3							
798	7.09	34.844	1.56	2.53	37.6	0.02	70.4							
898	6.72	34.887	1.57	2.61	43.5	0.08	78.1							
--	--	34.878	1.54	2.61	42.3	0.02	83.0							
994	6.18	34.864	1.62	2.61	50.0	0.01	84.3							
1193	5.44	34.857	1.78	2.61	39.1	0.02	93.0							
1392	4.51	34.814	2.17	2.60	38.9	0.01	98.4							
1690	3.37	34.788	2.73	2.50	41.8	0.01	108.6							
--	--	34.784	3.08	2.47	42.8	0.02	115.0							

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 118
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 4-VI-63
RELIABILITY OF DEPTH

LAT. 06° 48' S
LONG. 70° 07' E
DEPTH 3745 M
TIME 1710
WIND

PRIMARY PROD. .08 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 252 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.4 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.				DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	28.20	34.981	5.36	0.20	0.1	0.01	2.9				1	0.08	3.2	8.6	
22	28.18	34.980	5.02	0.22	u	0.01	3.4				13	0.07	1.1	6.8	
45	26.69	35.198	5.88	0.20	0.1	0.01	2.7				26	0.02	1.7	5.4	
67	24.97	35.264	5.14	0.19	0.6	0.22	3.4				39	0.09	0.9	2.9	
90	22.12	35.226	4.29	0.69	8.2	0.15	7.6				78	0.14	0.2	3.2	
112	19.93	35.209	3.44	0.93	11.3	0.07	10.4								
135	16.58	35.145	2.62	1.28	19.1	0.03	16.3								
180	13.43	35.106	2.59	1.53	22.2	0.03	19.4								
269	12.11	35.059	2.69	1.54	22.6	0.04	19.3								
360	10.97	34.984	3.18	1.53	24.1	0.01	20.1								
454	10.00	34.884	3.29	1.62	11.5	0.03	23.5								
551	9.34	34.862	2.91	1.85	26.1	0.02	30.4								
649	8.29	34.810	2.23	2.22	27.6	0.02	44.9								
749	7.43	34.798	1.84	2.39	32.2	0.03	59.8								
849	6.85	34.803	1.73	2.50	28.2	0.07	69.7								
---	---	34.809	1.81	2.61	28.9	0.03	78.7								
926	6.36	34.812	1.68	2.61	32.5	0.02	78.0								
1115	5.32	34.768	1.90	2.63	31.4	0.01	91.7								
1303	4.44	34.774	2.17	2.60	32.0	0.02	104.9								
1590	3.55	34.779	2.66	2.63	31.8	0.02	96.6								
1876	2.79	34.773	3.06	2.47	33.4	0.02	108.6								

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 119
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 6-VI-63
RELIABILITY OF DEPTH

LAT. 08° 35' S
LONG. 69° 55' E
DEPTH 2505 M
TIME 0932
WIND

PRIMARY PROD. .10 g C /m²/day
EXT. COEFF. (k) 0.065
RADIATION 274 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW --- ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3Si µgA/l.		
1	27.95	35.156	5.18	0.13	u	0.03	3.4		
25	27.96	35.153	5.22	0.17	1.8	0.02	3.6		
49	27.99	35.149	5.30	0.11	0.2	0.02	2.5		
74	22.80	35.159	4.68	0.47	6.0	0.26	6.3		
99	17.45	34.998	2.58	1.20	21.4	1.01	19.0		
123	15.22	35.065	2.26	1.42	22.6	0.04	20.1		
148	14.18	35.069	2.62	1.42	20.8	0.03	21.3		
197	13.03	36.046	2.90	1.48	25.8	0.04	21.4		
296	11.17	34.967	2.99	1.57	25.0	0.03	23.3		
394	9.89	34.877	3.28	1.63	27.8	0.03	25.1		
493	9.08	34.830	2.85	1.81	34.0	0.04	31.3		
591	8.14	34.788	2.21	2.15	38.2	0.03	47.6		
690	7.82	34.786	2.15	2.27	31.5	0.02	52.2		
788	7.25	34.818	1.86	2.42	37.4	0.02	63.5		
887	6.48	34.762	1.94	2.50	34.1	0.02	76.7		
985	5.74	34.761	1.91	2.54	34.6	0.02	86.8		
966	5.79	34.755	1.90	2.55	34.7	0.02	88.0		
1157	4.94	34.772	2.01	2.60	32.5	0.02	103.0		
1354	4.28	34.771	2.24	2.61	34.8	0.01	100.3		
1649	3.29	34.774	2.79	2.52	34.9	0.02	104.9		
1948	2.66	34.765	3.18	2.44	31.8	0.02	111.3		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.06	3.0	6.0	
12	0.05	2.4	1.2	
23	0.02	u	8.0	
36	0.04	1.6	15.2	
72	0.18	0.7	12.4	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 120
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 7-VI-63
RELIABILITY OF DEPTH

LAT. 11° 10' S
LONG. 70° 02' E
DEPTH 3365 M
TIME 1324
WIND

PRIMARY PROD. .28 g C /m²/day
EXT. COEFF. (k) 0.675
RADIATION 268 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW -- ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	26.73	34.937	4.82	0.19	u	0.01	4.5		
25	26.74	34.943	4.79	0.24	3.4	0.03	3.4		
49	26.73	34.951	4.84	0.17	1.0	0.01	3.8		
74	22.05	35.096	3.12	0.79	10.9	0.77	9.7		
99	19.94	35.113	3.18	0.77	10.5	0.41	11.4		
123	17.21	35.091	2.96	0.94	14.9	0.06	17.7		
148	16.84	35.270	3.41	0.87	13.0	0.04	15.0		
197	13.18	35.058	3.02	1.27	20.2	0.06	22.8		
296	11.22	34.947	3.12	1.50	23.5	0.05	23.6		
394	9.42	34.793	3.79	1.49	23.6	0.02	21.6		
493	8.20	34.727	2.63	2.00	31.9	0.06	41.6		
592	7.46	34.725	2.16	2.27	34.6	0.03	55.2		
692	6.69	34.710	1.90	2.47	36.4	0.03	72.2		
791	6.17	34.719	1.90	2.52	30.6	0.02	78.8		
891	5.76	34.732	1.82	2.61	34.6	0.06	84.7		
991	5.42	34.734	2.00	2.49	36.6	0.03	90.6		
975	5.48	34.731	1.96	2.53	34.3	0.02	89.1		
1170	4.68	34.728	2.23	2.52	37.1	0.01	102.1		
1365	4.05	34.740	2.45	2.55	--	0.02	96.6		
1658	3.16	34.742	2.96	2.42	35.4	0.03	101.2		
1950	2.50	34.755	3.34	2.35	35.3	0.02	108.6		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.13	7.9	23.2	
11	0.17	1.7	9.4	
22	0.11	6.7	30.8	
34	0.15	5.6	37.4	
69	0.16	0.7	10.1	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 121
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 8-VI-63
RELIABILITY OF DEPTH

LAT. 13° 15' S
LONG. 69° 51' E
DEPTH 3745 M
TIME 0927
WIND

PRIMARY PROD. .10 g C /m²/day
EXT. COEFF. (k) 0.0675
RADIATION 245 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 5.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	25.45	34.695	4.64	0.16	0.6	0.02	3.3		
25	25.46	34.695	4.64	0.18	0.3	0.01	4.1		
50	25.44	34.708	4.62	0.16	0.1	0.02	4.9		
75	--	35.384	4.76	0.18	0.8	0.03	3.7		
100	20.64	35.477	4.34	0.26	1.1	0.20	4.3		
125	20.20	35.570	4.38	0.29	1.5	0.03	4.2		
150	19.55	35.656	4.28	0.30	3.7	0.02	3.7		
200	17.12	35.626	4.14	0.52	6.4	0.03	6.6		
299	12.07	35.094	3.27	1.33	20.2	u	17.1		
399	10.32	34.917	3.77	1.40	25.3	u	16.1		
499	9.48	34.775	3.65	1.67	27.1	0.02	22.0		
599	7.67	34.673	3.42	1.91	29.9	0.05	33.1		
699	6.95	34.713	2.43	2.34	38.2	0.05	54.2		
798	6.22	34.720	2.22	2.48	37.8	0.04	68.3		
898	5.95	34.748	2.00	2.52	39.1	0.05	78.8		
998	5.57	34.748	1.83	2.56	39.6	0.03	83.4		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.06	3.2	17.9	
11	0.05	4.4	16.7	
22	0.08	3.2	16.0	
34	0.09	u	12.7	
69	0.11	0.1	4.7	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 122
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 9-VI-63
RELIABILITY OF DEPTH

LAT. 15° 25' S
LONG. 69° 58' E
DEPTH 4114 M
TIME 1116
WIND

PRIMARY PROD. .28 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 269 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 1.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	25.46	34.641	5.34	0.19	0.6		4.7		
25	25.47	34.639	5.61	0.19	0.5		3.4		
50	25.47	34.634	5.71	0.18	0.5		3.7		
75	25.22	34.771	5.75	0.19	0.2		4.3		
100	22.01	35.370	5.58	0.19	0.1		3.7		
125	20.52	35.534	5.12	0.27	1.3		3.8		
150	19.77	35.623	5.19	0.32	2.5		4.2		
200	17.28	35.506	4.58	0.71	8.2		9.6		
299	13.30	--	4.79	--	--		--		
399	10.91	34.984	5.03	1.10	18.3		10.5		
499	9.16	34.754	4.62	1.35	25.1		13.3		
599	7.68	34.649	3.53	1.90	31.7		31.4		
699	6.85	34.702	2.78	2.42	43.3		55.8		
798	6.17	34.723	2.23	2.57	47.7		70.7		
898	5.72	34.719	2.52	2.61	48.6		78.7		
--	--	--	5.18	--	--		--		
987	5.52	34.721	2.47	2.61	47.2		81.6		
1187	4.73	34.721	2.49	2.61	50.1		89.7		
1387	4.13	34.734	2.89	2.61	37.7		93.8		
1687	3.38	34.737	3.44	2.55	48.0		99.4		
1987	2.48	34.734	3.98	2.41	29.9		102.1		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.07	6.9	19.2	
13	0.09	6.4	15.3	
26	0.05	6.1	12.5	
39	0.08	2.8	16.4	
78	0.09	u	10.7	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 123
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 10-VI-63
RELIABILITY OF DEPTH

LAT. 17° 18' S
LONG. 70° 05' E
DEPTH 4023 M
TIME 1028
WIND

PRIMARY PROD. .06 g C /m²/day
EXT. COEFF. (k) 0.057
RADIATION 253 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 13.4 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	25.04	34.687	5.47	0.12	0.2	0.01	2.4			1	0.04	1.8	—	
23	25.05	34.683	5.08	0.12	1.5	0.13	2.6			13	0.04	0.8	—	
47	25.06	34.689	5.40	0.08	0.1	0.06	2.6			27	"	1.2	—	
70	25.01	34.726	5.43	0.11	0.6	0.08	2.8			41	0.02	0.7	—	
93	23.08	35.232	5.46	0.07	0.7	0.14	2.4			83	0.07	"	—	
117	21.94	35.311	4.91	0.19	1.1	0.20	4.0							
140	21.09	35.427	4.80	0.21	1.6	0.39	4.0							
187	19.50	35.575	4.53	0.33	5.4	0.13	5.0							
280	16.25	35.660	4.86	0.37	6.0	0.20	4.7							
374	12.89	35.295	5.13	0.58	10.3	0.52	4.9							
468	10.98	35.004	5.51	0.81	13.6	0.04	4.3							
563	9.48	34.782	5.62	1.03	16.9	0.03	4.4							
657	7.84	34.958	4.97	1.41	25.3	0.02	14.3							
753	6.26	34.507	4.42	1.85	30.7	0.02	29.2							
849	5.37	34.567	3.17	2.23	33.1	0.37	55.8							
945	5.33	34.688	2.68	2.42	39.0	0.03	77.0							
975	5.13	34.703	2.30	2.40	31.9	0.02	79.3							
1174	4.54	34.723	2.42	2.52	38.6	0.01	86.9							
1373	3.97	34.764	2.61	2.46	34.6	0.01	95.7							
1672	3.23	34.740	2.97	2.41	31.7	0.03	99.4							
1972	2.59	34.748	3.38	2.32	35.4	0.01	104.9							

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 124
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 11-VI-63
RELIABILITY OF DEPTH

LAT. 19° 30' S
LONG. 69° 51' E
DEPTH 3146 M
TIME 1054
WIND

PRIMARY PROD. .05 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 197 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 1.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.							
1	24.16	34.972	5.24	0.12	3.2	0.03	2.9							
25	24.17	34.975	5.30	0.15	1.6	0.03	3.3							
50	24.18	34.969	5.20	0.14	1.2	0.03	2.9							
75	24.15	34.978	5.13	0.14	1.9	0.02	2.9							
100	22.75	35.291	5.25	0.08	0.8	0.02	3.0							
125	21.31	35.459	4.97	0.24	1.6	0.19	4.1							
150	20.61	35.551	4.92	0.21	1.6	0.15	3.9							
200	18.39	35.579	4.22	0.52	10.1	0.03	8.0							
300	15.67	35.637	5.19	0.38	5.3	0.05	2.9							
400	12.58	35.243	5.35	0.61	12.3	0.12	4.0							
500	11.13	35.014	5.43	0.86	15.7	0.02	4.2							
600	9.78	34.822	5.35	1.01	27.9	0.02	5.2							
700	8.36	34.648	5.10	1.38	28.2	0.02	9.7							
800	6.70	34.933	4.15	1.87	34.0	0.01	26.9							
900	5.36	34.508	3.57	2.23	41.5	0.10	46.5							
1000	4.85	34.605	2.82	2.46	58.0	0.02	70.9							
998	4.93	34.637	2.76	2.46	51.0	0.01	71.2							
1198	4.38	34.724	2.47	2.57	49.4	0.01	87.6							
1397	3.89	34.727	2.73	2.53	41.2	0.01	104.9							
1697	3.10	34.741	3.11	2.49	43.2	0.01	98.4							
1996	2.33	34.735	3.77	2.34	57.3	0.02	102.1							

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	u	2.7	---	
13	0.01	0.7	---	
26	0.01	1.1	---	
40	0.02	0.2	---	
81	0.01	u	---	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 125
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 25-VI-63
RELIABILITY OF DEPTH

LAT. 21° 40' S
LONG. 67° 06' E
DEPTH 3200 M
TIME 0857
WIND

PRIMARY PROD. .04 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 190 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 2.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	23.73	35.188	5.16	0.13	0.6	0.02	2.0
25	23.77	35.189	5.08	0.13	0.6	0.02	2.2
50	23.79	35.191	5.53	0.12	0.5	0.01	2.2
75	23.77	35.197	5.20	0.13	0.6	0.03	2.2
100	23.75	35.212	5.25	0.11	0.3	0.01	2.2
125	21.94	34.481	5.20	0.17	0.4	0.02	2.7
150	20.90	35.548	5.14	0.21	1.0	0.16	2.5
200	19.08	35.670	4.78	0.47	5.7	0.04	3.8
299	16.02	35.603	4.68	0.30	2.2	0.03	2.9
399	13.57	35.376	5.08	0.61	8.7	0.02	3.5
499	11.40	35.043	5.48	0.83	13.0	0.02	4.3
599	9.89	34.843	5.53	1.03	16.8	0.08	4.6
699	8.78	34.683	5.31	1.26	23.6	0.02	7.1
798	7.43	34.556	4.82	1.56	27.8	0.05	15.1
898	6.00	34.490	4.32	1.92	35.1	0.03	29.0
998	4.92	34.515	3.65	2.24	39.4	0.03	53.5
988	4.94	34.509	3.70	2.21	40.3	0.01	46.7
1186	4.11	34.573	3.08	2.43	40.7	0.02	73.2
1384	3.70	34.671	3.03	2.45	41.3	0.04	82.0
1682	2.80	34.693	3.54	2.38	43.5	0.06	86.7
1980	2.25	34.697	3.85	2.29	41.3	0.03	98.4

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.05	0.6	—
13	u	0.7	—
27	0.02	0.8	—
42	0.04	0.5	—
83	0.04	0.2	—

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 126
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 26-VI-63
RELIABILITY OF DEPTH

LAT. 23° 47' S
LONG. 69° 05' E
DEPTH 2780 M
TIME 0953
WIND

PRIMARY PROD. .04 g C /m²/day
EXT. COEFF. (k) 0.05
RADIATION 225 g.cal./cm.²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.7 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	22.70	35.382	5.15	0.13	1.9	0.01	2.2		
24	22.47	35.431	5.30	0.14	3.6	0.02	2.4		
48	21.73	35.535	5.30	0.15	1.6	0.01	2.2		
72	20.53	35.585	5.25	0.21	1.4	0.05	2.4		
96	19.57	35.644	4.81	0.27	2.9	0.05	2.9		
120	19.08	35.681	4.70	0.31	3.3	0.05	3.4		
144	18.28	35.693	5.02	0.31	2.9	0.02	3.0		
192	16.63	35.646	5.08	0.41	5.1	0.02	2.6		
289	14.28	35.452	5.21	0.54	7.4	0.01	2.4		
386	12.46	35.202	5.42	0.73	12.3	0.01	3.2		
485	11.37	35.039	5.55	0.85	15.0	0.02	3.5		
583	10.23	34.880	5.42	0.99	18.0	0.02	4.2		
682	9.36	34.756	5.46	1.19	21.5	0.01	5.1		
781	8.30	34.626	5.12	1.38	26.9	0.01	8.7		
880	6.63	34.495	4.70	1.76	31.6	0.02	20.2		
980	5.29	34.449	4.34	2.01	28.5	0.01	30.5		
997	5.22	34.434	4.51	2.63	29.4	0.02	33.2		
1197	3.87	34.509	3.52	2.39	17.6	0.01	63.8		
1396	3.50	34.589	3.27	2.44	21.5	0.02	78.2		
1696	2.65	34.682	3.70	2.35	18.9	0.03	86.3		
1995	2.14	34.783	4.05	2.23	33.2	0.02	91.7		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.03	0.2	3.6	
14	0.03	0.6	2.9	
28	u	0.6	3.1	
47	0.03	0.3	2.9	
94	u	0.4	0.4	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 127
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 27-VI-63
RELIABILITY OF DEPTH

LAT. 26° 34' S
LONG. 70° 12' E
DEPTH 2780 M
TIME 1116
WIND

PRIMARY PROD. .03 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 233 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 3.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	21.23	35.623	5.26	0.12	1.5	0.04	2.2		
24	21.20	35.618	5.26	0.11	1.2	0.03	3.4		
48	21.21	35.619	5.42	0.11	1.7	0.03	2.4		
73	21.05	35.613	5.36	0.11	1.2	0.01	2.4		
97	18.96	35.676	5.25	0.22	2.8	0.13	2.7		
121	18.10	35.646	5.21	0.27	3.0	0.09	3.5		
145	17.40	35.650	5.31	0.27	3.0	0.07	3.4		
194	15.69	35.570	5.25	0.40	3.7	0.06	2.9		
290	13.74	35.369	5.14	0.59	8.4	0.02	3.7		
387	12.81	35.260	5.32	0.70	11.0	0.03	4.3		
484	--	35.101	5.37	0.82	15.6	0.02	4.6		
581	10.90	34.973	5.42	0.96	17.9	0.02	5.9		
680	9.94	34.883	5.31	1.13	22.4	0.01	6.0		
779	8.81	34.691	5.14	1.32	26.3	0.01	8.8		
878	7.78	34.579	5.14	1.54	18.9	0.03	13.5		
978	5.89	34.447	4.68	1.90	29.9	0.01	26.4		
988	5.65	34.446	4.62	1.93	37.7	0.03	28.3		
1187	4.03	34.466	3.94	2.32	39.5	0.03	56.4		
1386	3.42	34.555	3.60	2.41	35.5	0.03	73.0		
1686	2.65	34.673	3.82	2.35	45.3	0.03	84.4		
1986	2.20	34.696	3.98	2.30	37.5	0.05	97.5		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	u	0.9	3.2	
13	u	0.5	4.3	
26	u	0.7	4.0	
39	u	0.3	4.0	
78	0.03	--	3.6	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 128
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 28-VI-63
RELIABILITY OF DEPTH

LAT. 28° 33' S
LONG. 69° 56' E
DEPTH 3640 M
TIME 1541
WIND

PRIMARY PROD. g C /m²/day
EXT. COEFF. (k) --
RADIATION 176 g.cal./cm.²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 1.3 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	21.19	35.656	5.14	0.13	0.4	0.05	2.9
24	21.22	35.603	4.98	0.13	0.4	0.03	2.6
48	21.22	35.652	5.14	0.09	0.4	0.05	2.2
72	20.45	35.734	5.20	0.11	0.5	0.05	2.4
96	19.22	35.731	5.29	0.14	0.4	0.07	2.0
120	17.37	35.648	5.26	0.24	0.8	0.16	2.4
144	16.15	35.568	5.31	0.27	1.8	0.17	2.6
193	14.79	35.490	5.14	0.44	4.9	0.04	2.6
290	13.35	35.286	5.29	0.59	7.5	0.04	3.4
389	12.47	35.152	5.25	0.72	10.0	0.01	4.0
488	11.70	35.059	5.34	0.80	11.8	0.01	4.5
587	10.95	34.964	5.28	0.90	15.0	0.01	4.3
686	10.07	34.789	5.25	1.03	14.5	0.03	5.5
786	9.07	34.729	5.14	1.21	21.1	0.03	7.0
886	7.72	34.583	4.83	1.53	26.5	0.05	12.5
985	6.12	34.474	4.52	1.83	30.5	0.01	23.3

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.03	0.8	6.8

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 129
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 29-VI-63
RELIABILITY OF DEPTH

LAT. 30° 34' S
LONG. 69° 55' E
DEPTH 3740 M
TIME 1056
WIND

PRIMARY PROD. .06 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 126 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 1.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	17.13	35.626	6.04	0.19	0.6	0.03	2.9		
25	17.11	35.612	5.81	0.21	1.2	0.05	1.6		
50	17.13	35.624	5.77	0.18	0.5	0.02	2.1		
75	17.11	35.625	5.87	0.18	0.4	0.02	2.0		
100	15.22	35.459	5.60	0.38	2.9	0.23	--		
125	13.83	35.347	5.64	0.57	6.5	0.05	4.8		
150	13.57	35.313	5.53	0.64	7.3	0.05	5.1		
200	13.11	35.271	5.60	0.65	8.0	0.05	3.8		
299	12.64	35.204	6.10	0.72	8.4	0.04	4.2		
399	12.08	35.079	5.57	0.80	10.8	0.04	6.0		
499	11.52	35.043	5.65	0.87	10.9	0.03	4.6		
598	10.89	34.946	5.77	0.97	12.0	0.01	5.8		
698	10.13	34.842	5.81	1.10	13.1	0.02	7.0		
798	9.15	34.717	5.07	1.28	17.1	0.03	8.1		
897	7.70	34.562	5.01	1.61	20.8	0.08	14.3		
997	6.02	34.448	4.99	1.90	23.9	0.05	22.9		
998	6.02	34.453	4.64	1.77	25.0	0.05	22.4		
1198	4.09	34.413	4.30	2.17	27.8	0.01	43.5		
1397	3.35	34.506	3.87	2.34	30.7	0.02	62.0		
1697	2.74	34.637	3.85	2.28	31.1	0.01	74.3		
1996	2.36	34.709	4.05	2.22	29.7	0.01	83.9		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.03	2.2	6.4	
11	0.01	1.8	7.0	
22	0.04	1.3	6.5	
35	0.03	0.8	5.6	
70	0.07	u	6.4	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 130
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 30-VI-63
RELIABILITY OF DEPTH

LAT. 32° 52' S
LONG. 69° 52' E
DEPTH 3931 M
TIME 1152
WIND

PRIMARY PROD. .06 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 160 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 1.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	16.88	35.748	5.77	0.20	0.5	0.03	2.5			1	u	1.8	u	
25	16.90	35.748	5.70	0.20	0.8	0.06	2.6			13	0.07	1.0	8.3	
50	16.91	35.742	5.47	0.18	0.4	0.03	2.0			27	0.02	1.2	8.7	
75	16.88	35.741	5.69	0.21	0.4	0.06	2.2			42	0.06	0.6	9.0	
100	16.06	35.649	5.48	0.27	0.7	0.16	1.7			83	0.02	0.1	u	
125	14.41	35.453	5.42	0.43	3.0	0.28	2.7							
150	13.96	35.406	5.44	0.51	4.4	0.07	2.9							
200	13.35	35.331	5.42	0.59	5.8	0.04	4.1							
299	12.66	35.247	5.30	0.70	7.0	0.04	3.5							
399	11.94	35.134	5.47	0.79	7.8	0.04	4.1							
499	11.38	35.037	5.42	0.88	9.8	0.03	5.0							
599	10.69	34.941	5.53	0.98	10.5	0.03	5.0							
699	9.79	34.798	5.30	1.14	13.4	0.04	6.3							
798	8.65	34.682	5.08	1.35	15.2	0.04	8.9							
898	7.32	34.452	4.74	1.64	23.1	0.03	15.2							
998	6.00	34.448	4.90	1.88	26.8	0.04	23.6							
1000	5.96	34.446	4.68	1.90	23.5	0.02	22.6							
1200	3.98	34.389	4.67	2.18	31.6	0.02	41.4							
1400	3.26	34.500	3.99	2.36	30.3	0.03	61.6							
1700	2.68	34.635	3.93	2.29	26.6	0.02	74.5							
2000	2.27	34.705	4.08	2.25	24.1	0.02	85.6							

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 131
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 1-VII-63
RELIABILITY OF DEPTH

LAT. 35° 09' S
LONG. 69° 59' E
DEPTH 4297 M
TIME 1194
WIND

PRIMARY PROD. .15 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 96 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 0.7 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	15.03	35.386	5.77	0.27	1.4	0.11	1.4		
25	15.03	35.380	5.78	0.28	1.3	0.11	1.6		
50	15.05	35.372	5.87	0.28	1.2	0.10	1.9		
75	14.98	35.361	5.87	0.28	1.3	0.10	1.6		
100	14.66	35.305	5.81	0.31	1.9	0.16	1.6		
124	14.52	35.275	5.80	0.33	1.9	0.19	2.4		
149	14.42	35.274	5.81	0.38	2.5	0.23	2.9		
199	13.27	35.280	5.63	0.66	8.1	0.03	2.9		
299	12.84	35.237	5.53	0.69	8.0	0.05	4.6		
398	12.04	35.127	5.54	0.79	9.6	0.05	5.0		
498	11.75	35.078	5.64	0.85	10.7	0.05	4.5		
597	10.77	34.916	5.40	1.01	11.8	0.04	5.5		
697	9.65	34.777	5.24	1.22	14.6	0.04	8.0		
796	8.55	34.649	5.02	1.42	18.0	0.03	10.9		
896	7.37	34.532	4.95	1.65	21.5	0.04	15.9		
995	6.19	34.473	4.84	1.87	21.1	0.02	21.9		
995	6.10	34.464	4.79	1.89	26.3	0.04	22.4		
1193	4.08	34.387	4.74	2.17	26.7	0.03	35.9		
1392	3.31	34.453	4.39	2.37	28.9	0.02	52.2		
1688	2.78	34.597	4.16	2.37	29.4	0.02	56.9		
1986	2.50	34.703	4.22	2.25	28.2	0.03	74.5		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.06	4.7	16.1	
12	0.07	3.1	18.7	
23	0.10	2.8	15.1	
36	0.06	2.0	19.7	
72	0.08	0.1	16.7	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 132
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 2-VII-63
RELIABILITY OF DEPTH

LAT. 37° 12' S
LONG. 70° 10' E
DEPTH 3949 M
TIME 1142
WIND

PRIMARY PROD. .12 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 125 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 1.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	13.99	35.260	5.65	0.36	0.3	0.19	1.7		
21	13.99	35.250	5.74	0.38	1.6	0.18	2.4		
46	13.99	35.256	5.76	0.37	0.7	0.20	2.0		
70	13.99	35.256	5.64	0.39	0.9	0.21	1.9		
95	13.97	35.252	5.65	0.39	1.1	0.21	2.2		
119	14.00	35.258	5.70	0.37	1.1	0.18	2.1		
144	14.01	35.259	5.68	0.38	0.5	0.20	2.0		
192	12.89	35.217	5.31	0.72	9.0	0.04	4.9		
290	12.45	35.164	5.37	0.74	9.4	0.03	4.5		
388	11.95	35.109	5.39	0.83	10.6	0.01	5.0		
488	11.50	35.036	5.42	0.89	11.7	0.03	5.5		
588	10.52	34.981	5.30	0.99	11.0	0.01	6.0		
688	9.60	34.780	5.19	1.19	18.7	0.03	7.0		
788	8.37	34.637	4.87	1.47	24.5	0.03	12.1		
888	7.11	34.534	4.71	1.70	29.0	0.02	17.2		
988	5.90	34.460	4.67	1.89	28.2	0.12	24.0		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.12	2.8	13.4	
12	0.10	2.0	7.9	
23	0.08	3.5	16.0	
36	0.08	1.4	12.9	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 133
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 5-VII-63
RELIABILITY OF DEPTH

LAT. 30° 11' S
LONG. 79° 42' E
DEPTH 3310 M
TIME 1124
WIND

PRIMARY PROD. .03 g C /m²/day
EXT. COEFF. (k) 0.05
RADIATION 208 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 1.4 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	18.53	35.961	5.30	0.14	0.1	0.07	2.2			1	0.01	0.77	2.7	
25	18.49	35.961	5.30	0.12	u	0.02	2.5			14	0.01	0.57	3.9	
50	18.53	35.996	5.30	0.14	0.2	0.03	2.5			28	u	0.63	4.0	
75	18.47	36.006	5.24	0.15	u	0.04	2.2			47	0.01	0.19	3.4	
100	16.24	35.672	5.55	0.21	u	0.05	2.4			94	0.06	0.09	2.9	
125	15.27	35.620	5.36	0.30	1.4	0.25	2.2							
150	14.44	35.520	5.28	0.42	3.4	0.05	2.6							
200	13.36	35.370	5.24	0.57	6.8	0.02	2.9							
300	12.26	35.193	5.36	0.73	10.0	0.02	3.8							
400	11.52	35.079	5.45	0.82	11.3	0.03	4.2							
500	10.75	34.953	5.42	0.92	11.8	0.01	5.1							
599	10.04	34.846	5.42	1.02	15.8	0.01	5.1							
699	8.98	34.705	5.22	1.26	17.5	u	6.6							
799	8.03	34.610	4.97	1.45	22.5	0.02	10.4							
899	6.73	34.505	4.67	1.75	22.3	0.02	18.4							
999	5.29	34.427	4.48	2.00	29.2	0.03	29.3							
999	5.26	34.424	4.49	2.02	30.1	0.01	29.8							
1199	3.87	34.466	3.93	2.25	31.0	0.03	55.2							
1399	3.31	34.568	3.57	2.42	26.4	0.01	73.7							
1698	--	34.678	3.53	2.42	31.9	0.01	88.1							
1998	2.44	34.728	3.88	2.34	30.9	0.01	92.9							

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 134
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 6-VII-63
RELIABILITY OF DEPTH

LAT. 27° 31' S
LONG. 80° 08' E
DEPTH 3835 M
TIME 1106
WIND

PRIMARY PROD. .04 g C /m²/day
EXT. COEFF. (k) 0.05
RADIATION 221 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 2.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	19.51	35.855	5.36	0.14	0.5	0.03	2.5
25	18.75	35.900	5.47	0.13	0.4	0.02	--
50	18.62	35.901	5.54	0.12	0.5	0.03	1.7
75	18.59	35.900	5.57	0.12	0.7	0.04	2.1
100	16.37	35.906	5.48	0.13	u	0.03	1.3
125	16.28	35.663	5.32	0.25	1.5	0.02	2.2
150	15.23	35.571	5.26	0.36	3.4	0.06	2.4
200	13.78	35.392	5.24	0.52	5.7	0.03	3.2
300	12.56	35.212	5.42	0.66	11.9	0.02	3.8
400	11.77	35.061	5.45	0.74	10.9	0.02	4.0
500	11.15	35.000	5.47	0.84	12.0	0.03	4.7
599	10.16	34.815	5.44	0.99	15.4	0.01	5.7
699	9.10	34.718	5.32	1.17	18.4	0.01	6.8
799	8.01	34.578	5.03	1.40	21.4	0.02	10.9
899	6.56	34.484	4.68	1.72	30.4	0.01	19.9
999	5.06	34.420	4.56	2.00	31.5	0.01	34.3
977	5.24	34.419	4.49	1.98	34.2	0.01	32.0
1177	3.92	34.484	3.76	2.28	36.2	u	59.4
1377	3.42	34.569	3.42	2.38	35.9	0.01	77.5
1677	2.97	34.684	3.46	2.39	36.0	0.01	92.9
1977	2.45	34.710	3.85	2.26	32.9	0.01	93.8

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.01	0.6	3.0
14	u	0.5	1.1
29	u	0.6	3.9
49	0.02	0.3	4.6
99	0.07	u	5.6

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 135
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 8-VII-63
RELIABILITY OF DEPTH

LAT. 20° 02' S
LONG. 79° 50' E
DEPTH 4773 M
TIME 1101
WIND

PRIMARY PROD. .06 g C /m²/day
EXT. COEFF. (k) 0.05
RADIATION 195 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 2.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	22.72	35.006	4.93	0.05	u	0.04	3.5		
25	22.70	34.991	5.04	0.06	0.3	0.04	3.9		
50	22.72	35.007	5.04	0.05	0.4	0.02	3.7		
74	22.71	35.059	5.04	0.04	0.2	0.03	3.5		
99	22.73	35.208	4.98	0.03	0.2	0.02	3.2		
124	21.25	35.531	4.94	0.13	0.6	0.10	3.9		
149	19.94	35.571	4.30	0.28	3.1	0.02	5.2		
199	18.50	35.775	4.85	0.18	0.9	0.02	2.9		
298	14.90	35.573	4.88	0.44	5.6	0.01	3.8		
397	12.22	35.199	5.24	0.63	9.6	0.01	3.7		
497	10.48	34.927	5.35	0.84	14.6	0.02	4.9		
596	9.19	34.740	5.32	1.09	16.3	0.02	6.6		
695	7.62	34.584	4.64	1.51	26.0	0.01	16.5		
794	6.39	34.553	3.44	2.05	32.9	0.01	43.5		
894	5.51	34.577	2.83	2.31	34.0	0.01	63.0		
993	5.14	34.628	2.60	2.45	32.0	0.03	77.4		
1192	4.45	34.673	2.56	2.47	33.4	u	90.1		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.02	1.4	4.4	
14	u	1.1	3.2	
28	u	1.2	4.0	
46	0.02	0.7	4.0	
91	0.05	u	4.4	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 136
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 9-VII-63
RELIABILITY OF DEPTH

LAT. 17° 14' S
LONG. 79° 52' E
DEPTH 4956 M
TIME 1145
WIND

PRIMARY PROD. .28 g C /m²/day
EXT. COEFF. (k) 0.05
RADIATION 259 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 3.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	23.86	34.601	5.21	0.16	0.2	0.06	3.3		
25	23.89	34.593	5.27	0.17	0.1	0.05	3.7		
50	23.92	34.593	5.48	0.16	u	0.01	3.5		
75	24.07	34.353	5.17	0.13	0.1	0.05	3.0		
100	23.61	34.914	4.98	0.26	2.0	0.33	4.6		
125	22.00	35.303	4.90	0.22	0.5	0.28	4.0		
150	21.03	35.473	4.85	0.24	1.8	0.04	3.5		
200	19.37	35.625	4.80	0.39	5.2	0.05	5.2		
299	15.84	35.653	4.82	0.46	5.2	0.04	3.7		
399	12.12	35.157	5.21	0.75	12.5	0.05	4.6		
499	10.26	34.887	5.50	1.00	16.9	0.03	5.6		
599	8.68	34.682	4.88	1.34	23.6	0.03	10.9		
699	6.73	34.547	3.94	1.93	28.8	0.08	31.2		
798	5.95	34.627	2.64	2.39	33.8	0.04	62.9		
898	5.47	34.674	2.27	2.52	35.4	0.03	77.9		
998	5.00	34.677	2.31	2.57	34.1	0.03	85.7		
989	5.10	34.678	2.37	2.55	36.5	0.09	84.2		
1188	4.50	34.703	2.34	2.54	37.9	0.34	95.7		
1386	3.86	34.710	2.62	2.55	37.0	0.04	100.3		
1686	3.13	34.731	3.01	2.52	35.9	0.03	106.7		
1986	2.56	34.742	3.31	2.51	32.8	0.02	113.2		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.09	4.3	4.5	
14	0.10	5.9	21.4	
28	0.11	3.7	25.0	
47	0.13	3.2	28.9	
94	0.10	0.5	6.5	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 137
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 10-VII-63
RELIABILITY OF DEPTH

LAT. 14° 44' S
LONG. 79° 44' E
DEPTH 5303
TIME 0903
WIND

PRIMARY PROD. .15 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 313 g.cal./cm.²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 2.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	24.17	34.770	5.20	0.08	0.2	0.05	3.3		
24	24.18	34.758	4.92	0.11	0.5	0.04	2.9		
48	24.19	34.758	5.44	0.09	0.1	0.03	3.7		
72	24.17	34.758	5.11	0.10	u	0.01	3.4		
96	24.16	34.781	5.16	0.09	0.3	0.01	3.2		
120	22.29	35.274	4.65	0.19	1.2	0.33	4.7		
144	20.49	35.354	4.13	0.46	6.4	0.02	6.6		
192	16.97	35.492	3.92	0.59	9.1	0.03	9.2		
288	14.31	35.407	4.41	0.67	10.5	0.02	7.6		
384	11.54	35.073	5.26	0.79	10.9	u	4.7		
481	9.37	34.772	5.07	1.14	18.7	0.02	8.0		
578	7.79	34.614	4.41	1.60	25.7	0.03	9.9		
675	6.70	34.653	2.70	2.26	34.1	0.02	53.0		
772	6.12	34.677	2.33	2.43	40.7	0.02	70.4		
869	5.70	34.708	2.09	2.55	37.3	0.02	81.2		
967	5.26	34.702	2.16	2.64	40.3	0.03	91.8		
1162	4.60	34.719	2.32	2.60	45.1	0.03	97.5		
1135	4.65	34.706	2.23	2.58	38.8	0.03	98.4		
1333	3.98	34.708	2.49	2.44	44.0	0.02	115.9		
1630	3.13	34.731	2.94	2.45	45.3	0.02	110.4		
1926	2.62	34.717	3.22	2.58	41.8	0.02	104.9		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.08	1.3	7.4	
13	0.08	1.2	12.9	
27	0.04	2.4	11.1	
42	0.08	2.8	13.0	
83	0.05	0.5	11.3	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 138
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 11-VII-63
RELIABILITY OF DEPTH

LAT. 11° 28' S
LONG. 80° 00' E
DEPTH 3338 M
TIME 1150
WIND

PRIMARY PROD. .28 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 268 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 3.7 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	26.31	34.678	4.99	0.18	0.4	0.02	3.8		
25	26.32	34.670	5.03	0.26	0.4	0.02	3.8		
49	26.32	34.665	4.93	0.18	0.3	0.01	4.2		
74	26.30	34.670	5.09	0.19	0.3	0.02	4.0		
99	20.73	35.124	3.27	0.84	10.6	1.44	9.7		
124	18.85	35.127	2.59	1.17	15.4	0.04	14.4		
148	17.36	35.104	2.25	1.29	19.2	0.04	18.9		
198	14.25	34.924	2.04	1.60	24.0	0.03	26.2		
297	11.66	34.927	2.38	1.70	26.7	0.03	30.0		
397	9.93	34.851	2.94	1.72	26.2	0.03	27.0		
497	8.51	34.706	2.71	1.59	24.7	0.04	38.8		
596	7.66	34.715	2.15	2.26	37.1	0.03	54.8		
696	7.00	34.709	2.04	2.42	34.4	0.02	63.0		
796	6.35	34.707	1.87	2.59	36.3	0.02	75.3		
896	5.76	34.696	1.94	2.60	38.6	0.02	86.8		
995	5.24	34.704	1.98	2.55	26.0	0.02	90.5		
1195	4.59	34.704	2.20	2.63	31.3	0.01	96.6		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.13	5.5	29.7	
13	0.12	6.1	9.6	
26	---	5.3	24.4	
39	0.07	3.0	25.2	
78	0.08	1.1	24.6	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 139
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 12-VII-63
RELIABILITY OF DEPTH

LAT. 08° 37' S
LONG. 79° 34' E
DEPTH 4975 M
TIME 0901
WIND

PRIMARY PROD. .12 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 211 g.cal./cm²/day
ZOOPLANKTON VOL. 2.9
IOSN STD. TOW ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	26.57	34.554	5.03	0.11	0.2	0.02	3.8			1	0.08	1.4	20.1	
23	26.48	34.549	5.16	0.12	0.4	0.01	4.2			13	0.17	5.2	15.5	
46	26.76	34.546	5.26	0.11	u	0.04	4.1			26	0.06	2.1	20.6	
69	20.93	34.704	3.02	0.89	13.4	0.47	15.0			39	0.05	0.8	3.2	
92	18.10	34.750	2.32	1.29	18.9	0.08	21.0			78	0.14	u	17.7	
115	17.32	36.128	2.22	1.32	17.9	0.03	17.2							
138	16.07	35.097	2.49	1.32	19.2	0.09	19.2							
186	14.49	35.134	2.61	1.40	20.5	0.02	19.0							
282	11.94	35.016	2.66	1.55	20.5	0.03	22.2							
380	10.34	34.910	2.39	1.83	27.0	0.03	27.8							
479	9.10	34.808	2.69	1.95	28.5	0.02	35.1							
579	8.09	34.797	1.87	2.34	32.1	0.01	53.1							
678	7.34	34.780	1.74	2.48	32.8	0.03	64.8							
779	6.80	34.768	1.70	2.52	34.9	0.01	72.4							
879	6.11	34.708	1.87	2.55	34.2	u	84.5							
979	5.80	34.738	1.83	2.59	35.6	0.03	88.3							
1179	5.26	34.787	1.87	2.60	—	0.02	94.8							

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 140
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 13-VII-63
RELIABILITY OF DEPTH

LAT. 05° 53' S
LONG. 79° 57' E
DEPTH 5020 M
TIME 1105
WIND

PRIMARY PROD. .11 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 207 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.1 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.		
1	27.97	34.582	4.78	0.14	0.8	0.01	2.7		
25	28.07	34.610	4.75	0.17	u	0.01	2.6		
49	28.07	34.662	5.00	0.14	0.3	u	2.7		
74	24.33	35.214	3.34	0.73	13.9	0.59	7.2		
99	21.17	35.184	2.30	1.15	19.9	0.10	11.0		
123	18.90	35.084	1.78	1.39	30.4	0.04	16.3		
148	17.11	35.159	2.15	1.37	30.6	0.04	16.3		
197	14.77	35.109	2.22	1.48	30.3	0.02	19.5		
296	11.78	34.969	2.22	1.72	38.6	0.02	25.0		
395	11.22	34.898	2.66	1.76	40.4	0.02	26.0		
495	8.89	34.813	2.27	2.04	35.9	0.02	38.7		
593	8.03	34.813	1.79	2.39	40.3	u	53.2		
693	7.24	34.796	1.55	2.62	43.6	0.03	69.4		
793	6.57	34.788	1.53	2.64	38.6	0.01	78.9		
892	6.01	34.780	1.64	2.68	44.0	0.01	85.4		
992	5.63	34.791	1.78	2.70	41.3	0.04	91.4		
980	5.58	34.782	1.68	2.66	39.8	0.04	87.3		
1177	4.78	34.769	1.93	2.69	44.2	0.04	95.7		
1375	4.19	34.787	2.20	2.66	48.8	0.04	104.9		
1673	3.22	34.778	2.69	2.64	40.4	0.04	107.6		
1972	2.60	34.768	3.06	2.54	48.5	0.03	113.2		

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	0.03	2.9	12.7	
11	0.06	1.8	8.6	
22	0.04	0.1	8.9	
35	0.11	1.1	7.1	
69	0.29	2.2	7.7	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 141
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 14-VII-63
RELIABILITY OF DEPTH

LAT. 03° 13' S
LONG. 80° 02' E
DEPTH 4879 M
TIME 0949
WIND

PRIMARY PROD. .11 g C /m²/day
EXT. COEFF. (k) 0.06
RADIATION 337 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 3.8 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3Si µgA/l.				DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	28.53	34.793	4.82	0.16	0.3	0.01	2.5				1	0.01	2.2	12.8	
25	28.51	34.793	4.69	0.16	0.2	u	2.5				14	0.02	2.6	12.0	
49	28.35	34.924	4.70	0.16	u	0.01	2.7				27	0.03	1.9	7.9	
74	24.25	35.224	3.38	0.64	9.7	0.59	6.6				43	0.04	1.0	10.7	
98	21.51	35.092	2.05	1.10	19.0	0.04	11.4				86	0.10	0.1	0.8	
123	19.14	35.130	1.88	1.36	23.3	0.04	15.1								
147	15.93	34.941	1.58	1.62	26.3	0.04	16.6								
196	13.01	34.896	1.64	1.79	31.0	0.03	29.4								
295	11.44	35.000	2.00	1.78	34.6	0.02	24.3								
393	10.06	34.912	1.98	1.98	32.5	0.02	30.0								
492	9.27	34.896	1.88	2.15	31.6	0.03	38.0								
590	8.59	34.924	1.67	2.38	43.0	0.01	50.0								
690	8.13	34.946	1.42	2.50	44.6	0.01	58.6								
788	7.46	34.928	1.41	2.58	39.9	0.02	66.6								
887	7.13	34.948	1.30	2.65	38.5	0.02	73.6								
986	6.46	34.899	1.36	2.70	40.0	0.01	82.6								
1184	5.19	34.817	1.76	2.69	40.4	0.02	95.7								

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 142
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 15-VII-63
RELIABILITY OF DEPTH

LAT. 00° 33' S
LONG. 80° 08' E
DEPTH 4629 M
TIME 0924
WIND

PRIMARY PROD. .10 g C /m²/day
EXT. COEFF. (k) 0.07
RADIATION 342 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 3.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.
1	29.02	34.929	4.54	0.14	0.3	0.02	2.5
24	28.92	34.523	4.59	0.16	0.5	0.02	2.7
48	28.88	34.630	5.38	0.16	u	u	3.0
72	28.73	34.804	4.87	0.14	u	0.01	3.0
97	21.94	35.271	3.25	0.99	15.7	0.06	10.9
121	15.95	35.139	1.52	1.63	28.0	0.02	21.8
145	15.20	35.146	1.74	1.66	27.1	0.08	21.7
193	13.71	35.152	2.03	1.58	26.4	0.12	20.7
289	12.02	35.073	1.87	1.79	27.1	0.02	24.1
386	11.10	35.033	2.05	1.83	31.7	0.03	25.6
482	9.98	34.978	2.02	2.00	31.7	0.03	32.2
577	9.43	35.000	1.50	2.31	32.7	0.02	41.3
672	8.44	35.016	1.05	2.57	37.4	0.06	59.2
766	8.03	34.998	1.02	2.62	24.7	0.05	62.4
862	7.47	34.988	1.04	2.67	34.8	0.06	73.0
958	6.55	34.945	1.23	2.70	38.0	0.07	85.3
960	6.54	34.929	1.24	2.63	35.8	0.14	86.0
1160	5.76	34.920	1.46	2.69	37.7	0.09	94.8
1359	4.83	34.861	1.79	2.64	35.2	0.06	101.2
1658	3.45	34.806	2.52	2.57	31.5	0.09	108.6
1958	2.64	34.775	2.97	2.47	39.3	0.07	--

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.
1	0.01	2.6	3.8
14	0.02	2.0	5.4
28	0.02	2.1	4.0
47	0.02	1.2	4.8
94	0.10	0.1	6.1

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 143
CRUISE NO. 2
VESSEL *R/V ANTON BRUUN*
DATE 16-VII-63
RELIABILITY OF DEPTH

LAT. 01° 54' N
LONG. 79° 52' E
DEPTH 4188 M
TIME 1110
WIND

PRIMARY PROD. .12 g C /m²/day
EXT. COEFF. (k) 0.05
RADIATION 300 gcal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 4.7 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.							
1	28.81	34.338	4.98	0.11	0.2	0.15	2.6							
23	28.66	34.301	4.93	0.11	0.3	0.06	2.5							
47	28.69	34.311	5.02	0.12	0.4	0.01	2.5							
70	26.20	35.124	3.84	0.48	4.4	0.79	2.9							
94	22.39	35.164	2.41	1.19	17.5	0.07	11.9							
117	18.04	35.166	1.79	1.52	21.0	0.04	17.7							
140	16.69	35.161	1.90	1.63	24.4	0.02	19.0							
187	13.91	35.038	1.28	2.10	27.4	0.01	29.0							
281	11.99	35.080	2.30	1.78	23.7	0.02	23.5							
374	11.31	35.073	2.08	1.93	22.0	0.01	27.5							
468	10.37	35.057	1.47	2.28	31.7	0.02	39.3							
562	9.46	35.022	1.33	2.39	32.5	0.02	45.4							
659	8.77	35.000	1.39	2.53	35.1	0.02	54.4							
757	8.27	35.021	1.11	2.62	29.0	0.02	63.3							
855	7.56	34.992	1.19	2.70	32.5	0.03	74.2							
953	6.79	34.961	1.20	2.73	31.9	--	83.3							
1152	5.62	34.913	1.68	2.70	32.0	0.08	96.6							

DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	u	3.2	5.3	
14	u	1.9	5.3	
28	0.01	2.4	6.5	
47	0.01	0.9	7.2	
99	0.10	--	2.6	

REDUCED DATA

U. S. PROGRAM IN BIOLOGY — INTERNATIONAL INDIAN OCEAN PROGRAM

STATION NO. 144
CRUISE NO. 2
VESSEL R/V ANTON BRUUN
DATE 17-VII-63
RELIABILITY OF DEPTH

LAT. 04° 18' N
LONG. 80° 08' E
DEPTH 4215 M
TIME 1009
WIND

PRIMARY PROD. .28 g C /m²/day
EXT. COEFF. (k) 0.08
RADIATION 190 g.cal./cm²/day
ZOOPLANKTON VOL.
IOSN STD. TOW 11.9 ml./m.²

DEPTH	TEMP.	SAL. ‰	O_2 ml./l.	PO_4-P µgA/l.	NO_3-N µgA/l.	NO_2-N µgA/l.	SiO_3 Si µgA/l.			DEPTH	Chl. a µg/l.	INSITU C^{14} µgC/l./d.	C^{14}-1000 fc µgC/l./d.	
1	28.06	34.324	4.98	0.13	0.7	0.03	1.9			1	0.05	12.9	32.4	
25	27.93	34.317	4.70	0.14	0.6	0.03	2.2			9	0.04	10.5	33.3	
50	28.05	34.393	4.65	0.12	0.4	0.04	1.7			18	0.06	7.2	28.4	
75	27.48	34.995	3.99	0.31	2.3	0.64	3.7			30	0.12	2.1	25.6	
100	22.79	34.797	1.40	1.29	28.9	0.14	13.9			61	0.11	0.6	7.2	
125	19.35	34.893	0.77	1.70	35.7	0.05	20.5							
150	17.38	35.008	0.78	1.83	37.9	0.06	23.2							
200	14.71	35.102	1.09	1.85	37.9	0.07	25.2							
299	11.73	35.097	1.16	2.10	43.1	0.05	30.7							
399	10.91	35.083	1.46	2.10	46.2	0.06	32.5							
499	9.97	35.071	1.05	2.38	45.4	0.02	43.3							
599	9.12	35.042	0.91	2.58	46.7	0.03	53.5							
699	8.62	35.038	0.91	2.61	57.0	0.05	61.0							
798	8.15	35.023	0.75	2.68	52.4	0.03	66.4							
898	7.44	34.992	0.84	2.64	52.3	0.14	75.5							
998	6.71	34.959	1.09	2.70	50.4	0.01	83.9							
1195	5.64	34.913	1.40	2.68	54.7	0.05	92.9							
1392	4.67	34.881	1.75	2.72	52.6	0.03	98.4							
1694	3.27	34.826	2.58	2.60	51.0	0.03	119.6							
1992	2.63	34.796	2.81	2.57	50.6	0.03	123.3							
2492	2.08	34.767	3.14	2.51	48.4	0.01	133.4							
2993	1.65	34.748	3.42	2.45	46.0	u	139.8							
3492	1.48	34.746	3.58	2.33	46.8	0.10	173.9							
4091	1.44	34.735	3.84	2.35	48.5	0.03	174.8							

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
908	23 V 63	0735	17°41'N	70°23'E	29.9
909		1510	17°37'N	70°28'E	31.2
910		1800	17°35'N	70°31'E	30.6
911		1900	17°26'N	70°29'E	31.4
912		2000	17°16'N	70°26'E	31.4
913		2100	17°04'N	70°23'E	31.2
914		2300	16°49'N	70°19'E	30.6
915	24 V 63	0000	16°38'N	70°16'E	30.4
916		0100	16°27'N	70°14'E	30.5
917		0200	16°16'N	70°11'E	30.6
918		0500	15°43'N	70°03'E	30.8
919		1255	15°40'N	70°08'E	30.9
920		1800	15°32'N	70°09'E	31.5
921		1900	15°21'N	70°10'E	30.9
922		2000	15°11'N	70°10'E	30.3
923		2100	15°01'N	70°09'E	29.9
924		2300	14°47'N	70°08'E	30.5
925		2400	14°36'N	70°08'E	30.1
926	25 V 63	0100	14°26'N	70°07'E	30.4
927		0200	14°15'N	70°07'E	30.5
928		0300	14°05'N	70°06'E	30.1
929		0400	13°54'N	70°05'E	30.2
930		0505	13°44'N	70°05'E	30.6
931		1310	13°51'N	70°07'E	30.5
932		1800	13°48'N	70°06'E	29.2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
933	25 V 63	1900	13°37'N	70°05'E	29.5
934		2000	13°26'N	70°04'E	29.5
935		2100	13°15'N	70°03'E	28.6
936		2300	13°02'N	70°01'E	29.5
937	26 V 63	0000	12°51'N	70°00'E	29.3
938		0100	12°40'N	69°59'E	29.1
939		0200	12°30'N	69°58'E	29.2
940		0300	12°19'N	69°57'E	29.0
941		0400	12°08'N	69°56'E	29.0
942		0500	11°57'N	69°55'E	29.6
943		1420	12°00'N	69°55'E	29.8
944		1800	12°01'N	69°55'E	29.7
945		1900	11°50'N	69°56'E	28.5
946		2000	11°39'N	69°56'E	29.0
947		2105	11°28'N	69°56'E	29.5
948		2300	11°13'N	69°56'E	29.7
949	27 V 63	0000	11°01'N	69°56'E	29.8
950		0100	10°50'N	69°57'E	29.7
951		0200	10°38'N	69°57'E	29.7
952		0300	10°27'N	69°58'E	29.9
953		0400	10°15'N	69°58'E	29.9
954		0635	09°54'N	70°06'E	29.3
955		1315	09°46'N	70°06'E	29.8
956		2000	09°37'N	70°00'E	29.1
957		2100	09°26'N	69°59'E	29.1

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
958	27 V 63	2300	09°10'N	69°58'E	29.4
959	28 V 63	0001	08°58'N	69°56'E	29.3
960		0100	08°47'N	69°56'E	29.2
961		0200	08°36'N	69°55'E	29.4
962		0300	08°25'N	69°54'E	29.3
963		0400	08°14'N	69°53'E	29.4
964		1215	08°09'N	70°02'E	29.7
965		1700	07°58'N	69°55'E	29.4
966		1800	07°46'N	69°55'E	29.3
967		1900	07°34'N	69°56'E	28.8
968		2000	07°22'N	69°56'E	28.6
969		2100	17°10'N	69°57'E	28.5
970		2300	06°52'N	69°57'E	28.5
971		2400	06°40'N	69°58'E	28.1
972	29 V 63	0100	06°29'N	69°58'E	28.8
973		0200	06°18'N	69°59'E	29.0
974		0300	06°06'N	69°59'E	28.1
975		0400	05°54'N	70°00'E	28.9
976		1215	05°48'N	70°03'E	29.2
977		1700	05°43'N	69°59'E	29.2
978		1800	05°32'N	70°01'E	28.7
979		1905	05°21'N	70°02'E	28.6
980		2000	05°10'N	70°02'E	28.4
981		2100	04°58'N	70°01'E	28.5
982		2300	04°41'N	69°59'E	28.5

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
983	29 V 63	2400	04°28'N	69°59'E	27.8
984	30 V 63	0100	04°15'N	69°58'E	29.1
985		0200	04°02'N	69°58'E	29.1
986		0300	03°50'N	69°57'E	28.5
987		0400	03°37'N	69°57'E	28.5
988		1230	03°33'N	69°55'E	29.3
989		1702	03°32'N	69°50'E	28.4
990		1800	03°22'N	69°51'E	28.1
991		1900	03°11'N	69°51'E	28.2
992		2000	02°59'N	69°52'E	29.1
993		2100	02°47'N	69°54'E	29.1
994		2300	02°30'N	69°56'E	29.1
995	31 V 63	0000	02°19'N	69°57'E	28.9
996		0100	02°09'N	69°58'E	28.2
997		0200	01°58'N	69°59'E	28.0
998		0300	01°48'N	70°01'E	29.0
999		0400	01°37'N	70°02'E	28.9
1000		1105	01°30'N	70°01'E	29.2
1001		1700	01°05'N	70°09'E	28.6
1002		1900	00°41'N	70°15'E	28.2
1003		2000	00°30'N	70°17'E	29.0
1004		2100	00°17'N	70°20'E	29.0
1005		2300	00°00'N	70°25'E	28.3
1006	1 VI 63	0000	00°12'S	70°27'E	28.2
1007		0100	00°23'S	70°30'E	29.1

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1008	1 VI 63	0200	00°35'S	70°33'E	29.1
1009		0300	00°47'S	70°35'E	28.2
1010		0400	00°59'S	70°37'E	28.4
1011		1405	01°08'S	71°03'E	29.1
1012		2000	01°08'S	71°07'E	29.0
1013		2100	01°12'S	71°07'E	28.9
1014		2300	01°29'S	70°57'E	28.3
1015		2400	01°37'S	70°51'E	28.2
1016	2 VI 63	0100	01°45'S	70°46'E	27.5
1017		0200	01°53'S	70°40'E	28.7
1018		0300	02°01'S	70°35'E	28.0
1019		0400	02°09'S	70°29'E	28.2
1020		1400	02°22'S	70°26'E	29.0
1021		1800	02°29'S	70°20'E	28.7
1022		1900	02°38'S	70°15'E	28.9
1023		2000	02°47'S	70°08'E	27.9
1024		2100	02°56'S	70°01'E	29.0
1025		2300	03°08'S	69°51'E	28.6
1026	3 VI 63	0000	03°12'S	69°44'E	28.8
1027		0100	03°26'S	69°38'E	28.5
1028		0215	03°38'S	69°30'E	28.5
1029		0300	03°46'S	69°28'E	27.9
1030		0400	03°57'S	69°26'E	28.9
1031		1100	04°22'S	69°25'E	28.9
1032		1300	04°30'S	69°28'E	29.0

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1033	3 VI 63	1400	04°43'S	69°30'E	29.0
1034		1500	04°53'S	69°32'E	28.8
1035		1600	05°04'S	69°35'E	28.2
1036		1700	05°14'S	69°37'E	28.2
1037		1800	05°24'S	69°39'E	28.8
1038		1910	05°35'S	69°43'E	28.6
1039		2000	05°43'S	69°45'E	28.5
1040		2100	05°53'S	69°48'E	28.6
1041		2300	06°06'S	69°51'E	28.7
1042		2400	06°15'S	69°54'E	28.5
1043	4 VI 63	0100	06°24'S	69°58'E	28.4
1044		0200	06°31'S	70°04'E	28.3
1045		0300	06°37'S	70°12'E	27.8
1046		1815	06°49'S	70°05'E	28.2
1047	5 VI 63	1815	06°52'S	69°26'E	28.4
1048		1920	06°57'S	69°29'E	28.2
1049		2000	07°04'S	69°31'E	27.5
1050		2100	07°14'S	69°34'E	27.5
1051		2300	07°32'S	69°39'E	25.0
1052	6 VI 63	0000	07°42'S	69°42'E	27.9
1053		0100	07°52'S	69°45'E	27.7
1054		0200	08°01'S	69°47'E	27.7
1055		0300	08°11'S	69°50'E	25.9
1056		0400	08°21'S	69°53'E	26.0
1057		1120	08°35'S	69°54'E	27.2

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1058	6 VI 63	1700	08°50'S	69°59'E	27.3
1059		1800	08°59'S	70°00'E	27.7
1060		1900	09°07'S	70°01'E	27.6
1061		2000	09°16'S	70°02'E	27.3
1062		2100	09°25'S	70°03'E	27.7
1063		2300	09°37'S	70°04'E	27.0
1064	7 VI 63	0100	09°59'S	70°06'E	27.2
1065		0300	10°19'S	70°07'E	26.7
1066		0500	10°38'S	70°09'E	27.0
1067		0710	10°57'S	70°10'E	26.8
1068		1410	11°10'S	70°03'E	26.9
1069		1700	11°23'S	70°01'E	26.4
1070		1800	11°34'S	70°01'E	26.5
1071		1905	11°44'S	70°02'E	26.3
1072		2000	11°54'S	70°01'E	26.4
1073		2100	12°03'S	70°02'E	26.4
1074		2300	12°18'S	69°57'E	26.1
1075	8 VI 63	0000	12°29'S	69°53'E	26.2
1076		0100	12°41'S	69°48'E	25.9
1077		0200	12°49'S	69°51'E	25.0
1078		0300	12°57'S	69°52'E	26.1
1079		0400	13°07'S	69°56'E	25.9
1080		0500	13°16'S	69°56'E	25.8
1081		1035	13°14'S	69°53'E	25.7
1082		1505	13°20'S	69°59'E	25.5

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1083	8 VI 63	1600	13°28'S	70°00'E	25.5
1084		1800	13°45'S	70°00'E	25.4
1085		1900	13°55'S	70°01'E	25.3
1086		2000	14°04'S	70°01'E	25.2
1087		2160	14°14'S	70°01'E	25.1
1088		2300	14°26'S	70°00'E	25.5
1089	9 VI 63	0100	14°46'S	70°00'E	25.5
1090		0315	15°06'S	69°59'E	24.4
1091		0400	15°13'S	70°00'E	24.0
1092		1300	15°24'S	69°56'E	25.5
1093		1700	15°32'S	69°59'E	25.4
1094		1800	15°41'S	70°00'E	25.6
1095		1900	15°52'S	70°00'E	25.3
1096		2000	16°03'S	69°59'E	24.9
1097		2100	16°05'S	70°01'E	24.7
1098		2305	16°17'S	70°01'E	25.3
1099	10 VI 63	0001	16°26'S	70°01'E	25.3
1100		0100	16°37'S	70°00'E	25.0
1101		0200	16°49'S	70°00'E	25.0
1102		0300	16°59'S	70°01'E	25.1
1103		0400	17°09'S	70°04'E	24.9
1104		1200	17°18'S	70°06'E	25.3
1105		1700	17°30'S	70°06'E	24.8
1106		1800	17°41'S	70°06'E	24.7
1107		1900	17°49'S	70°06'E	24.7

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1108	10 VI 63	2000	18°00'S	70°05'E	24.0
1109		2100	18°11'S	70°05'E	24.0
1110		2300	18°26'S	70°02'E	24.7
1111	11 VI 63	0000	18°37'S	70°00'E	24.9
1112		0100	18°49'S	69°58'E	24.4
1113		0200	18°59'S	69°58'E	24.1
1114		0307	19°11'S	69°58'E	24.0
1115		0400	19°20'S	69°56'E	24.0
1116		1230	19°31'S	69°51'E	24.4
1117		1700	19°32'S	69°41'E	24.5
1118		2100	19°32'S	68°50'E	25.0
1119	12 VI 63	2100	19°31'S	68°51'E	25.5
1120	13 VI 63	2100	19°27'S	58°51'E	25.8
1121	18 VI 63	1800	20°01'S	57°52'E	24.5
1122		1900	20°02'S	58°02'E	24.8
1123		2000	20°04'S	58°12'E	24.0
1124		2100	20°06'S	58°22'E	23.3
1125		2200	20°07'S	58°31'E	24.3
1126		2300	20°08'S	58°41'E	24.3
1127	19 VI 63	0001	20°10'S	58°51'E	22.0
1128		0100	20°11'S	59°00'E	22.8
1129		0200	20°13'S	59°11'E	23.0
1130		0300	20°14'S	59°21'E	23.0
1131		0400	20°16'S	59°31'E	24.0
1132		0500	20°17'S	59°40'E	24.3

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1133	19 VI 63	0600	20°19'S	59°50'E	23.8
1134		0700	20°20'S	60°00'E	24.1
1135		0800	20°22'S	60°10'E	24.4
1136		0900	20°23'S	60°20'E	24.4
1137		1000	20°25'S	60°30'E	24.4
1138		1100	20°27'S	60°40'E	24.6
1140		1200	20°28'S	60°50'E	23.5
1141		1300	20°29'S	61°00'E	23.5
1142		1400	20°31'S	61°10'E	24.0
1143		1500	20°32'S	61°20'E	23.7
1144		1600	20°33'S	61°30'E	24.3
1145		1700	20°34'S	61°40'E	24.0
1146		1800	20°36'S	61°49'E	22.7
1147		1900	20°37'S	61°59'E	23.2
1148		2000	20°38'S	62°08'E	22.5
1149		2100	20°39'S	62°18'E	22.7
1150		2300	20°42'S	62°36'E	22.5
1151	20 VI 63	0100	20°45'S	62°56'E	22.4
1152		0300	20°49'S	63°16'E	22.5
1153		0500	20°52'S	63°35'E	23.4
1154		0700	20°56'S	63°53'E	23.1
1155		0905	21°00'S	64°14'E	23.0
1156		1105	21°03'S	64°32'E	23.0
1157		1300	21°06'S	64°52'E	22.8
1158		1400	21°07'S	65°04'E	23.0

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1159	20 VI 63	1500	21°09'S	65°16'E	23.4
1160		1600	21°10'S	65°27'E	23.3
1161		1700	21°12'S	65°38'E	23.3
1162		1800	21°14'S	65°48'E	22.5
1163	24 VI 63	2100	21°20'S	65°52'E	22.3
1164	25 VI 63	1030	21°40'S	67°06'E	23.8
1165		1700	22°02'S	67°35'E	23.7
1166		1800	22°10'S	67°42'E	23.7
1167		1900	22°19'S	67°50'E	22.8
1168		2020	22°31'S	68°00'E	22.5
1169		2100	22°37'S	68°04'E	22.7
1170		2300	22°50'S	68 16'E	22.6
1171		2400	22°59'S	68°24'E	22.8
1172	26 VI 63	0100	23°07'S	68°32'E	22.5
1173		0200	23°16'S	68°39'E	22.0
1174		0300	23°25'S	68°46'E	21.2
1175		0400	23°33'S	68°54'E	21.0
1176		1035	23°47'S	69°04'E	22.5
1177		1600	24°07'S	69°13'E	22.8
1178		1800	24°30'S	69°18'E	22.7
1179		1900	24°40'S	69°22'E	22.2
1180		2100	25°01'S	69°30'E	22.5
1181		2300	25°18'S	69°37'E	22.0
1182	27 VI 63	0000	25°30'S	69°42'E	22.0
1183		0100	25°54'S	69°51'E	22.3

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1184	27 VI 63	0200	25°54'S	69°51'E	21.2
1185		0300	26°05'S	69°56'E	21.4
1186		0400	26°17'S	70°00'E	21.4
1187		1300	26°33'S	70°13'E	21.4
1188		1700	26°44'S	70°10'E	21.5
1189		1800	26°56'S	70°09'E	20.5
1190		1920	27°08'S	70°07'E	20.0
1191		2000	27°15'S	70°06'E	20.5
1192		2300	27°36'S	70°02'E	20.7
1193	28 VI 63	0100	27°49'S	70°02'E	20.7
1194		0300	28°03'S	70°02'E	20.7
1195		1700	28°36'S	69°56'E	19.9
1196		1900	28°52'S	69°56'E	18.4
1197		2000	29°02'S	69°57'E	17.7
1198		2100	29°10'S	69°57'E	17.0
1199		2300	29°28'S	69°58'E	17.0
1200		2400	29°38'S	69°58'E	16.5
1201	29 VI 63	0100	29°48'S	69°59'E	18.9
1202		0200	29°57'S	69°59'E	18.8
1203		0300	30°08'S	69°59'E	18.2
1204		0400	30°18'S	70°00'E	17.5
1205		1245	30°34'S	69°52'E	17.2
1206		1700	30°45'S	69°52'E	16.6
1207		1800	30°55'S	69°52'E	16.8
1208		1900	31°06'S	69°52'E	17.1

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1209	29 VI 63	2000	31°17'S	69°52'E	16.5
1210		2100	31°28'S	69°52'E	16.5
1211		2300	31°45'S	69°52'E	16.5
1212		2359	31°56'S	69°52'E	16.0
1213	30 VI 63	0100	32°08'S	69°53'E	16.5
1214		0205	32°19'S	69°53'E	16.5
1215		0300	32°29'S	69°53'E	16.9
1216		0400	32°41'S	69°53'E	16.4
1217		1315	32°52'S	69°51'E	16.7
1218		1700	33°02'S	69°52'E	16.6
1219		1800	33°12'S	69°53'E	16.6
1220		1900	33°22'S	69°54'E	15.6
1221		2000	33°32'S	69°55'E	15.8
1222		2100	33°42'S	69°56'E	15.6
1223		2300	33°58'S	69°57'E	15.9
1224		2400	34°09'S	69°58'E	15.9
1225	1 VII 63	0100	34°20'S	69°59'E	15.0
1226		0200	34°31'S	70°00'E	15.3
1227		0300	34°42'S	70°01'E	15.4
1228		0400	34°53'S	70°02'E	15.2
1229		1345	35°08'S	69°56'E	15.0
1230		1700	35°16'S	70°01'E	15.5
1231		1800	35°26'S	70°02'E	15.0
1232		1900	35°37'S	70°02'E	15.1
1233		2100	35°57'S	70°03'E	13.9

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1234	1 VII 63	2300	36°15'S	70°04'E	14.0
1235		2400	36°25'S	70°05'E	14.4
1236	2 VII 63	0100	36°35'S	70°06'E	13.9
1237		0200	36°46'S	70°06'E	13.8
1238		0300	36°54'S	70°07'E	13.5
1239		0400	37°03'S	70°07'E	13.7
1240		1700	37°10'S	70°13'E	13.8
1241		1900	36°54'S	70°34'E	14.0
1242		2100	36°50'S	70°46'E	13.8
1243	3 VII 63	0100	36°21'S	71°25'E	13.9
1244		0300	36°07'S	71°44'E	14.3
1244A		0500	35°53'S	72°03'E	14.5
1245		0700	35°39'S	72°22'E	14.4
1246		1000	35°17'S	72°51'E	14.5
1247		1400	35°00'S	73°15'E	14.5
1248		1505	34°51'S	73°26'E	15.5
1249		1700	34°37'S	73°46'E	15.4
1250		1900	34°21'S	74°06'E	14.5
1251		2100	34°06'S	74°26'E	15.0
1252		2300	33°59'S	74°43'E	14.0
1253	4 VII 63	0100	33°43'S	75°04'E	14.2
1254		0300	33°28'S	75°24'E	15.3
1255		0500	33°12'S	75°45'E	15.0
1256		0700	32°57'S	76°06'E	15.0
1257		0900	32°41'S	76°27'E	15.6

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1258	4 VII 63	1100	32°26'S	76°48'E	16.0
1259		1330	32°06'S	77°13'E	15.7
1260		1500	31°54'S	77°29'E	17.3
1261		1700	31°38'S	77°49'E	17.6
1262		1900	31°23'S	78°09'E	17.7
1263		2100	31°08'S	78°28'E	17.9
1264		2300	30°56'S	78°41'E	17.8
1265	5 VII 63	0100	30°41'S	79°01'E	17.5
1266		0300	30°27'S	79°18'E	16.8
1267		1245	30°12'S	79°39'E	18.4
1268		1700	30°08'S	79°44'E	18.3
1269		1800	29°56'S	79°45'E	18.6
1270		1900	29°46'S	79°46'E	18.3
1271		2000	29°35'S	79°47'E	18.0
1272		2100	29°24'S	79°48'E	18.0
1273		2300	29°07'S	79°50'E	17.8
1274		2400	28°56'S	79°52'E	18.0
1275	6 VII 63	0100	28°44'S	79°53'E	18.2
1276		0200	28°33'S	79°55'E	18.2
1277		0300	28°21'S	79°56'E	18.4
1278		0400	28°09'S	79°57'E	18.5
1279		1245	27°31'S	80°09'E	18.5
1280		1500	27°23'S	80°12'E	19.2
1281		1600	27°13'S	80°12'E	19.8
1282		1700	27°02'S	80°12'E	20.0

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1283	6 VII 63	1900	26°39'S	80°11'E	20.0
1284		2000	26°28'S	80°11'E	20.2
1285		2050	26°19'S	80°10'E	19.5
1286		2300	25°59'S	80°08'E	19.8
1287		2400	25°48'S	80°07'E	19.9
1288	7 VII 63	0100	25°36'S	80°06'E	19.5
1289		0200	25°22'S	80°05'E	19.8
1290		0300	25°10'S	80°04'E	20.0
1291		0400	24°57'S	80°03'E	20.0
1292		0500	24°43'S	80°02'E	19.7
1293		0600	24°32'S	80°01'E	19.8
1294		0700	24°20'S	80°00'E	19.8
1295		0800	24°09'S	79°59'E	20.0
1296		0900	23°58'S	79°59'E	20.5
1297		1000	23°46'S	79°58'E	20.9
1298		1100	23°34'S	79°57'E	21.1
1299		1200	23°21'S	79°56'E	22.2
1300		1300	23°10'S	79°56'E	22.4
1301		1400	22°57'S	79°56'E	22.4
1302		1500	22°46'S	79°56'E	22.4
1303		1600	22°35'S	79°56'E	22.5
1304		1700	22°23'S	79°56'E	22.0
1305		1800	22°11'S	79°56'E	22.4
1306		1900	22°00'S	79°55'E	22.2
1307		2000	21°49'S	79°55'E	22.2

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1308	7 VII 63	2100	21°38'S	79°55'E	22.1
1309		2300	21°22'S	79°54'E	22.4
1310		2400	21°11'S	79°54'E	22.3
1311	8 VII 63	0100	21°00'S	79°54'E	22.3
1312		0200	20°48'S	79°54'E	22.4
1313		0300	20°35'S	79°55'E	22.6
1314		0400	20°33'S	79°55'E	22.2
1315		1100	20°02'S	79°50'E	22.8
1316		1500	20°05'S	79°52'E	22.7
1317		1600	19°53'S	79°52'E	
1318		1700	19°43'S	79°52'E	22.7
1319		1800	19°32'S	79°52'E	22.9
1320		1900	19°21'S	79°52'E	23.0
1321		2050	19°01'S	79°52'E	23.7
1322		2300	18°39'S	79°53'E	23.5
1323	9 VII 63	0001	18°28'S	79°53'E	23.3
1324		0100	18°17'S	79°53'E	23.5
1325		0200	18°06'S	79°53'E	23.7
1326		0300	17°56'S	79°53'E	24.0
1327		0400	17°46'S	79°53'E	23.5
1328		0500	17°36'S	79°53'E	23.5
1329		0600	17°26'S	79°53'E	23.5
1330		1300	17°13'S	79°53'E	23.9
1331		1700	17°16'S	79°50'E	23.8
1332		1800	17°02'S	79°50'E	23.5

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1333	9 VII 63	1900	16°47'S	79°50'E	23.5
1334		2000	16°33'S	79°49'E	23.6
1335		2100	16°18'S	79°49'E	24.1
1336		2300	16°03'S	79°50'E	23.3
1337	10 VII 63	0001	15°51'S	79°49'E	23.4
1338		0100	15°39'S	79°50'E	23.4
1339		0200	15°27'S	79°52'E	23.4
1340		0300	15°14'S	79°54'E	23.4
1341		0400	15°02'S	79°56'E	23.1
1342		0500	14°50'S	79°57'E	23.4
1343		1100	14°45'S	79°44'E	23.8
1344		1500	14°49'S	79°48'E	23.5
1345		1600	14°37'S	79°48'E	23.5
1346		1700	14°26'S	79°48'E	23.2
1347		1800	14°15'S	79°48'E	24.0
1348		1900	14°03'S	79°48'E	23.2
1349		2000	13°52'S	79°48'E	23.5
1350		2100	13°40'S	79°48'E	24.2
1351		2300	13°29'S	79°50'E	24.5
1352		2400	13°17'S	79°50'E	24.6
1353	11 VII 63	0100	13°06'S	79°50'E	24.4
1354		0200	12°54'S	79°50'E	24.3
1355		0300	12°43'S	79°51'E	24.3
1356		0400	12°32'S	79°51'E	24.0
1357		0500	12°22'S	79°52'E	23.9

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1358	11 VII 63	0600	12°11'S	79°52'E	25.5
1359		0700	12°00'S	79°53'E	25.7
1360		0800	11°50'S	79°54'E	25.8
1361		0900	11°39'S	79°54'E	25.8
1362		1300	11°31'S	79°51'E	25.8
1363		1400	11°24'S	79°51'E	25.8
1364		1500	11°13'S	79°50'E	25.9
1365		1600	11°03'S	79°50'E	25.9
1366		1700	10°52'S	79°49'E	25.9
1367		1800	10°41'S	79°49'E	26.5
1368		1900	10°30'S	79°49'E	25.8
1369		2000	10°19'S	79°48'E	26.1
1370		2100	10°09'S	79°48'E	25.8
1371		2300	09°49'S	79°47'E	26.0
1372	12 VII 63	0001	09°38'S	79°46'E	26.1
1373		0200	09°16'S	79°45'E	26.2
1374		0300	09°06'S	79°45'E	26.0
1375		0400	08°55'S	79°44'E	25.8
1376		1415	08°35'S	79°37'E	26.5
1377		1510	08°26'S	79°35'E	26.8
1378		1600	08°17'S	79°36'E	27.1
1378A		1700	08°07'S	79°37'E	27.2
1379		1800	07°56'S	79°39'E	26.8
1380		1900	07°46'S	79°40'E	25.2
1381		2000	07°34'S	79°41'E	27.4

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1382	12 VII 63	2100	07°24'S	79°42'E	27.6
1383		2300	07°11'S	79°46'E	27.6
1384		2400	07°01'S	79°47'E	27.6
1385	13 VII 63	0100	06°51'S	79°48'E	27.4
1386		0200	06°41'S	79°50'E	27.6
1387		0300	06°30'S	79°51'E	27.2
1388		0400	06°20'S	79°52'E	27.0
1389		0500	06°09'S	79°54'E	27.4
1390		0600	05°59'S	79°55'E	27.5
1391		1220	05°53'S	79°58'E	28.0
1392		1500	05°46'S	80°00'E	28.1
1393		1600	05°35'S	80°00'E	28.0
1394		1700	05°24'S	80°01'E	28.2
1395		1800	05°13'S	80°01'E	28.2
1396		1900	05°02'S	80°01'E	28.3
1397		2000	04°52'S	80°01'E	28.2
1398		2100	04°41'S	80°02'E	27.8
1399		2200	04°35'S	80°02'E	27.5
1400		2300	04°23'S	80°02'E	27.8
1401		2400	04°12'S	80°02'E	27.5
1402	14 VII 63	0100	04°01'S	80°02'E	27.9
1403		0200	03°51'S	80°02'E	28.3
1404		0300	03°40'S	80°03'E	28.3
1405		0400	03°29'S	80°03'E	28.1
1406		0945	03°13'S	80°02'E	28.5

BATHYTHERMOGRAPH LOG

R/V ANTON BRUUN, CRUISE 2

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1407	14 VII 63	1500	03°09'S	80°07'E	28.4
1408		1600	02°58'S	80°07'E	28.8
1409		1700	02°47'S	80°07'E	28.8
1410		1800	02°36'S	80°07'E	28.8
1411		1900	02°25'S	80°07'E	29.0
1412		2000	02°14'S	80°07'E	29.0
1413		2100	02°03'S	80°07'E	28.9
1414		2300	01°45'S	80°08'E	29.0
1415	15 VII 63	0001	01°34'S	80°08'E	28.4
1416		0100	01°25'S	80°08'E	28.7
1417		0200	01°15'S	80°08'E	28.5
1418		0300	01°06'S	80°09'E	28.6
1419		0400	00°55'S	80°09'E	28.8
1420		1030	00°33'S	80°07'E	28.9
1421		1700	00°18'S	80°01'E	29.2
1422		1800	00°08'S	80°00'E	29.1
1423		1900	00°03'N	79°59'E	29.1
1424		2020	00°16'N	79°58'E	29.1
1425		2055	00°22'N	79°58'E	28.9
1426		2300	00°39'N	79°56'E	28.7
1427		2400	00°49'N	79°55'E	28.3
1428	16 VII 63	0100	00°59'N	79°54'E	28.7
1429		0200	01°02'N	79°53'E	27.5
1430		0300	01°18'N	79°52'E	28.5
1431		0400	01°28'N	79°51'E	28.5

SLIDE NO.	DATE	ZONE TIME	POSITION		SURF. TEMP. (°C)
			LAT.	LONG.	
1432	16 VII 63	1115	01°52'N	79°53'E	28.8
1433		1500	01°47'N	79°45'E	28.7
1434		1600	01°58'N	79°47'E	28.7
1435		1700	02°08'N	79°48'E	28.7
1436		1800	02°19'N	79°49'E	28.7
1437		1900	02°30'N	79°51'E	28.7
1438		2000	02°40'N	79°52'E	28.7
1439		2100	02°51'N	79°53'E	28.8
1440		2300	03°08'N	79°55'E	28.8
1441	17 VII 63	0001	03°13'N	79°56'E	28.6
1442		0100	03°23'N	79°57'E	28.8
1443		0200	03°35'N	79°58'E	28.6
1444		0300	03°45'N	80°00'E	28.6
1445		0400	03°56'N	80°02'E	28.4
1446		1015	04°17'N	80°08'E	28.0
1447		1810	04°33'N	80°05'E	28.1
1448		1900	04°41'N	80°05'E	28.4
1449		2000	04°51'N	80°05'E	28.5
1450		2100	05°01'N	80°05'E	28.4
1451		2300	05°19'N	80°04'E	28.4
1452		0000	05°31'N	80°04'E	28.2

KEY TO ABBREVIATIONS

A. PLANKTON NETS AND TYPES OF TOWS

IOSN:	Indian Ocean Standard Net 113 cm diameter 0.33 mm mesh aperture
75-M-25:	75 cm diameter 0.064 mm mesh aperture (No. 25 mesh)
Be-3:	Be multiple plankton sampler 70.7 cm by 70.7 cm (square opening) 0.333 mm mesh aperture (No. 3 mesh)
M-O:	1 meter diameter 0.6 mm mesh aperture (No. 0 mesh)
V:	Vertical
H:	Horizontal
Q;	Oblique

B. INSTITUTIONS

SOSC:	Smithsonian Oceanographic Sorting Center U. S. National Museum Washington, D. C.
IOBC:	Indian Ocean Biological Center Ernakulam Cochin, India
POFI:	Bureau of Commercial Fisheries U. S. Fish & Wildlife Service Honolulu, Hawaii

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	23-V-63	106	17°37'N	70°27'E	2820	V 0-200	0925-0935	IOSN	522	IOBC
						V 0-200	0907-0920	75M25	523	SOSC
						Q 0-125	1055-1215	Be-3	524	SOSC
						Q 125-250	1055-1215	Be-3	525	SOSC
						Q 250-500	1055-1215	Be-3	526	SOSC
						Q 500-1000	1030-1245	Be-3	527	SOSC
Plankton	23-V-63	106A	17°04'N	70°23'E		Q 0-29	2114-2129	M-0	528	POFI
						H-surface	2109-2140	M-0	529	POFI
									530	
Plankton	24-V-63	107	15°40'N	70°07'E	2500	V 0-200	1237-1245	IOSN	536	IOBC
						Q 0-125	-0935	Be-3	531	SOSC
						Q 125-250	-0935	Be-3	532	SOSC
						Q 250-500	-0935	Be-3	533	SOSC
						Q 500-1000	0805-1015	Be-3	534	SOSC
Plankton	24-V-63	107A	15°01'N	70°09'E		Q 0-<20	2112-2125	M-0	538	POFI
(Surface sample in three jars,						H-surface	2108-2129	M-0	539	POFI
discarded 2½qts. of ostracods)									540	
									541	
Plankton	25-V-63	108	13°50'N	70°07'E	3710	V 0-200	0740-0750	IOSN	543	IOBC
						V 0-200	0720-0737	75M25	544	SOSC
						Q 0-125	0845-1110	Be-3	545	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	25-V-63	108	13°50'N	70°07'E		Q 125-250	0845-1110	Be-3	546	SOSC
						Q 250-500	0845-1110	Be-3	547	SOSC
						Q 0-1000	0825-1030	Be-3	548	SOSC
						Q 1000-2000	0800-1100	Be-3	549	SOSC
Plankton	25-V-63	108A	13°15'N	70°03'E		H-surface	-2155	M-0	550	POFI
						Q 0-235		M-0	551	POFI
Plankton	26-V-63	109	11°59'N	69°55'E	4300	V 0-200	ca. 0700	IOSN	552	IOBC
						V 0-200	ca. 0700	75M25	553	SOSC
						Q 0-125	0900-1000	Be-3	554	SOSC
						Q 125-250	0900-1000	Be-3	555	SOSC
						Q 250-500	0900-1000	Be-3	556	SOSC
						Q 500-1000	0835-1020	Be-3	557	SOSC
						Q 1000-2000	0812-1100	Be-3	558	SOSC
Plankton	26-V-63	109A	11°28N	69°56'E		Q 0-20	2121-2124	M-0	559	POFI
						H-surface	2120-2147	M-0	560	POFI
Plankton	27-V-63	110	09°46'N	70°06'E	4500	V 0-200	0735-0747	IOSN	561	IOBC
						V 0-200	1430-1450	75M25	562	SOSC
						Q 0-250	0905-	Be-3	563	SOSC
						Q 250-500	0905-	Be-3	564	SOSC
						Q 0-2000	0815-1215	Be-3	565	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	27-V-63	110A	09°26'N	69°59'E		H-surface	2103-2129	M-0	566	POFI
						Q 0-50	2111-2125	M-0	567	POFI
Plankton	28-V-63	111	08°09'N	70°02'E	4590	V 0-200	0635-0647	IOSN	568	IOBC
						V 0-200	0610-0630	75M25	569	SOSC
						Q 0-900		Be-3	570	SOSC
						Q 0-125	0835-0950	Be-3	571	SOSC
						Q 125-250	0835-0950	Be-3	572	SOSC
						Q 250-500	0835-0950	Be-3	573	SOSC
Plankton	28-V-63	111A	07°08'N	69°57'E		Q 0-40	2111-2121	M-0	574	POFI
						H-surface	2107-2137	M-0	575	POFI
Plankton	29-V-63	112	05°48'N	70°03'E	4040	V 0-200	0615-0627	IOSN	576	IOBC
						V 0-200	0600-0620	75M25	577	SOSC
						Q 250-500	0750-0915	Be-3	578	SOSC
						Q 500-1000	0715-0940	Be-3	579	SOSC
						Q 1000-2000	0650-1025	Be-3	580	SOSC
Plankton	29-V-63	112A	04°58'N	70°01'E		H-surface	2103-2140	M-0	581	POFI
						Q 0-90	2115-2131	M-0	582	POFI
Plankton	30-V-63	113	03°33'N	69°54'E	3850	V 0-200	0554-0609	IOSN	583	IOBC
						V 0-200	0535-0550	75M25	584	SOSC
						Q 0-125	0735-0905	Be-3	585	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	30-V-63	113	03°33'N	69°54'E		Q 125-250	0735-0905	Be-3	586	SOSC
						Q 250-500	0735-0905	Be-3	587	SOSC
						Q 1000-2000	0640-1005	Be-3	588	SOSC
Plankton	30-V-63	113A	02°46'N	69°54'E		H-surface	2102-2135	M-0	589	POFI
						Q 0-50	2113-2130	M-0	590	POFI
Plankton	31-V-63	114	01°30'N	70°01'E	4150	V 0-200	0547-0600	IOSN	591	IOBC
						V 0-200	0528-0545	75M25	592	SOSC
						Q 0-125	0715-0840	Be-3	593	SOSC
						Q 0-250	0715-0840	Be-3	594	SOSC
						Q 0-500	0715-0840	Be-3	595	SOSC
						Q 500-1000	0655-0905	Be-3	596	SOSC
						Q 1000-2000	0625-0930	Be-3	597	SOSC
Plankton	31-V-63	114A	01°16'N	70°20'E		H-surface	2101-2129	M-0	598	POFI
						Q 0-50		M-0	600	POFI
Plankton	1-VI-63	115	01°07'S	71°00'E	3310	V 0-200	0555-0612	IOSN	599	IOBC
						V 0-200	0530-0550	75M25	601	SOSC
						Q 500-1000	0705-0900	Be-3	602	SOSC
						Q 0-250	0940-	Be-3	603	SOSC
						Q 250-500	0940-	Be-3	604	SOSC
Plankton	1-VI-63	115A	01°10'S	71°08'E		H-surface-	2015-	M-0	605	POFI
						Q 0-80	2019-2050	M-0	606	POFI

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	2-VI-63	116	02°23'S	70°24'E	4875	V 0-200	0752-0805	IOSN	607	IOBC
						V 0-200	0727-0748	75M25	608	SOSC
						Q 0-250	0925-1120	Be-3	609	SOSC
						Q 250-500	0925-1120	Be-3	610	SOSC
						Q 500-1000	0905-	Be-3	611	SOSC
						Q 1000-2000	0825-	Be-3	612	SOSC
Plankton	2-VI-63	116A	02°57'S	70°00'E		H-surface	2102-2135	M-0	613	POFI
						Q 0-50	2106-2133	M-0	614	POFI
Plankton	3-VI-63	117	04°22'S	69°24'E	3475	V 0-200	1040-1052	IOSN	619	IOBC
						V 0-200	1055-1115	75M25	620	SOSC
						Q 0-250	0720-0930	Be-3	615	SOSC
						Q 250-500	0720-0930	Be-3	616	SOSC
						Q 500-1000	0700-0855	Be-3	617	SOSC
						Q 1000-2000	0630-0825	Be-3	618	SOSC
Plankton	3-VI-63	117A	05°54'S	69°47'E		Q 0-<50	2121-2140	M-0	621	POFI
						H-surface	2120-2146	M-0	622	POFI
Plankton	4-VI-63	118	06°48'S	70°07'E	3745	V 0-200	1450-1512	IOSN	623	IOBC
						V 0-200	1520-1555	75M25	624	SOSC
						Q 0-125	0735-0915	Be-3	628	SOSC
						Q 125-250	0735-0915	Be-3	629	SOSC
						Q 250-500	0735-0915	Be-3	630	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	4-VI-63	118	06°48'S	70°07'E		Q 0-1000	0710-0935	Be-3	631	SOSC
						Q 1000-2000	0635-	Be-3	632	SOSC
Plankton	4-VI-63	118A	06°37'S	70°09'E		H-surface	2105-	M-0	625	POFI
(Thermocline at 45 M)						Q 0-30	2112-	M-0	626	POFI
Plankton	6-VI-63	119A	09°26'S	70°03'E		H-surface	2142-2202	M-0	633	POFI
Plankton	7-VI-63	120	11°10'S	70°02'E	3365	V 0-200	1235-1250	IOSN	637	IOBC
						Q 0-125	0955-1120	Be-3	634	SOSC
						Q 125-250	0955-1120	Be-3	635	SOSC
						Q 250-500	0955-1120	Be-3	636	SOSC
Plankton	7-VI-63	120A	12°04'S	70°02'E		H-surface	2103-	M-0	637	POFI
(Thermocline 60 M)						Q 0-70	2110-2134	M-0	638	POFI
Plankton	8-VI-63	121	13°15'S	69°51'E	3745	V 0-200	0639-0655	IOSN	641	IOBC
						V 0-200	0615-0635	75M25	642	SOSC
						Q 0-125	0720-0734	75M3	639	SOSC
						Q 0-250	0720-0734	75M3	640	SOSC
Plankton	8-VI-63	121A	14°14'S	70°02'E		H-surface	2106-2131	M-0	643	POFI
(Thermocline 60 M)						Q 0-50	2110-2130	M-0	644	POFI

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	9-VI-63	122	15°25'S	69°58'E	4114	V 0-200	0629-0640	IOSN	645	IOBC
						V 0-200	0604-0622	75M25	646	SOSC
						Q 0-125	0810-0930	Be-3	647	SOSC
						Q 125-250	0810-0930	Be-3	648	SOSC
						Q 250-500	0810-0930	Be-3	649	SOSC
						Q 500-1000	0740-0955	Be-3	650	SOSC
						Q 1000-2000	0715-1025	Be-3	651	SOSC
Plankton (Thermocline 70 M)	9-VI-63	122A	16° 08'S	70°02'E		Q 0-70	2140-2206	M-0	652	POFI
						H-surface	2137-2210	M-0	653	POFI
Plankton	10-VI-63	123	17° 18'S	70°05'E	4023	V 0-200	0620-0635	IOSN	654	IOBC
						V 0-200	0555-0615	75M25	655	SOSC
						Q 0-500	0755-	Be-3	656	SOSC
						Q 500-1000	0735-	Be-3	657	SOSC
						Q 1000-2000	0700-0915	Be-3	658	SOSC
Plankton (Thermocline 80 M)	10-VI-63	123A	18°12'S	70°04'E		Q 0-65	2124-2144	M-0	659	POFI
						H-surface	2119-2141	M-0	660	POFI
Plankton	11-VI-63	124	19°30'S	69°51'E	3146	V 0-200	0621-0630	IOSN	661	IOBC
						V 0-200	0558-0619	75M25	662	SOSC
						Q 0-125	0750-0910	Be-3	664	SOSC
						Q 125-250	0750-0910	Be-3	665	SOSC
						Q 250-500	0750-0910	Be-3	666	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	11-VI-63	124	19°30'S	69°51'E	3200	Q 500-1000	0730-0935	Be-3	667	SOSC
						Q 1000-2000	0703-	Be-3	668	SOSC
						Q 0-125	0833-0848	Be-3	663	SOSC
Plankton	11-VI-63	124A	19°32'S	68°46'E		H-surface	2121-2154	M-0	669	POFI
(Thermocline 90 M)						Q 0-75	2120-2152	M-0	670	POFI
Plankton	12-VI-63	124B	19°30'S	63°50'E		H-surface	2110-2135	M-0	671	POFI
(Thermocline indefinite-						Q 0-50	2115-2130	M-0	672	POFI
isothermal to about 50 M)										
Plankton (Thermocline 90 M)	13-VI-63	124C	19°27'S	58°51'E		Q 0-45	2122-2153	M-0	674	POFI
						H-surface	2115-2140	M-0	675	POFI
Plankton	24-VI-63	124F	21°21'S	65°52'E		H-surface	2112-2142	M-0	676	POFI
(Thermocline 100 M)						Q 0-60	2114-2135	M-0	677	POFI
Plankton	25-VI-63	125	21°40'S	67°06'E	3200	V 0-200	0605-0615	IOSN	678	IOBC
						V 0-200	0545-0602	75M25	679	SOSC
						Q 0-125	1113-1126	75M3	680	SOSC
						Q 0-250	1113-1126	75M3	681	SOSC
Plankton (Thermocline 90 M)	25-VI-63	125A	22°37'S	68°04'E		Q 0-90	2114-2135	M-0	682	POFI
						H-surface	2104-2138	M-0	683	POFI
Plankton	26-VI-63	126	23°47'S	69°05'E	2600	V 0-200	0655-0705	IOSN	684	IOBC
						V 0-200	0633-0654	75M25	685	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	26-VI-63	126	23°47'S	69°05'E		Q 0-125	0749-0908	Be-3	686	SOSC
						Q 125-250	0749-0908	Be-3	687	SOSC
						Q 250-500	0749-0908	Be-3	688	SOSC
						Q 500-1000	0723-0849	Be-3	689	SOSC
Plankton	26-VI-63	126A	25°01'S	69°30'E		Q 0-60	2118-2142	M-0	690	POFI
						H-surface	2110-2145	M-0	691	POFI
Plankton (Thermocline 80 M)	27-VI-63	127	26°34'S	70°12'E	2780	V 0-200	0705-0720	IOSN	692	IOBC
						V 0-200	0650-0700	75M25	693	SOSC
						Q 0-125	0830-1005	Be-3	694	SOSC
						Q 125-250	0830-1005	Be-3	695	SOSC
						Q 250-500	0830-1005	Be-3	696	SOSC
						Q 500-1000	0812-	Be-3	697	SOSC
						Q 1000-2000	0740-	Be-3	698	SOSC
Plankton	27-VI-63	127A	27°23'S	70°04'E		H-surface	2105-2130	M-0	699	POFI
(Thermocline 70 M)						Q 0-65	2110-2124	M-0	700	POFI
Plankton	28-VI-63	128	28°33'S	69°56'E	3640	V 0-200	0840-0858	IOSN	701	IOBC
						Q 0-125	0907-0921	75M3	702	SOSC
						Q 0-250	0907-0921	75M3	703	SOSC
Plankton	28-VI-63	128A	29°11'S	69°57'E		H-surface	2104-2134	M-0	704	POFI
(Thermocline 130 M)						Q 0-125	2114-2130	M-0	705	POFI

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	29-VI-63	129	30°34'S	69°55'E	3740	V 0-200	0700-0715	IOSN	706	IOBC
						V 0-200	0635-0655	75M25	707	SOSC
						Q 0-125	0828-0945	Be-3	708	SOSC
						Q 125-250	0828-0945	Be-3	709	SOSC
						Q 250-500	0828-0945	Be-3	710	SOSC
						Q 500-1000	0804-1004	Be-3	711	SOSC
						Q 1000-2000	0738-	Be-3	712	SOSC
Plankton	29-VI-63	129A	31°28'S	69°52'E		H-surface	2110-	M-0	713	POFI
(Thermocline 110 M)						Q 0-95	2114-2130	M-0	714	POFI
Plankton	30-VI-63	130	32°52'S	69°52'E	3931	V 0-200	1359-1410	IOSN	721	IOBC
					3931	V 0-200	0635-0650	75M25	715	SOSC
						Q 0-125	0832-0950	Be-3	716	SOSC
						Q 125-250	0832-0950	Be-3	717	SOSC
						Q 250-500	0832-0950	Be-3	718	SOSC
						Q 1000-2000	0738-1055	Be-3	720	SOSC
Plankton	30-VI-63	130A	33°42'S	69°56'E		H-surface	2115-2140	M-0	722	POFI
(Thermocline 120 M, contained one						Q 0-105	2120-2138	M-0	723	POFI
pyrosoma, vol. about 3/4 gal. -										
20" long, 8-10" diam., saved small										
piece only. Surf. temp. 15.4°C.)										
Plankton	1-VII-63	131	35°09'S	69°59'E	4233	V 0-200	0745-0755	IOSN	724	IOBC
						V 0-200	0721-0741	75M25	725	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	1-VII-63	131	35°09'S	69°59'E		Q 0-250	0900-0945	Be-3	726	SOSC
						Q 250-500	0900-0945	Be-3	727	SOSC
						Q 1000-2000	0812-1030	Be-3	728	SOSC
Plankton (Thermocline nearly gone,	1-VII-63	131A	35°57'S	70°04'E		Q 0-90	2109-2126	M-0	729	POFI
suggestion of one at 98-115 M;										
surface temp. 13.9°C.)						H-surface	2106-2130	M-0	730	POFI
Plankton	2-VII-63	132	37°12'S	70°10'E	3949	V 0-200	0700-0717	IOSN	731	IOBC
						V 0-200	0642-0659	75M25	732	SOSC
						Q 0-125	0845-0940	Be-3	733	SOSC
						Q 125-250	0845-0940	Be-3	734	SOSC
						Q 250-500	0845-0940	Be-3	735	SOSC
						Q 500-1000	0820-1008	Be-3	736	SOSC
						Q 1000-2000	0750-1030	Be-3	737	SOSC
Plankton	2-VII-63	132A	36°52'S	70°39'E		Q 0-85	1937-1950	M-0	739	POFI
						H-surface	1940-2010	M-0	740	POFI
Plankton	3-VII-63	132C	34°06'S	74°26'E		H-surface	2106-2136	M-0	743	POFI
(Thermocline 70 M, surface temp.						Q 0-60	2116-2130	M-0	744	POFI
15°C., 2 gal. pyrosoma - 3 very										
large salps)										
Plankton	4-VII-63	132D	31°08'S	78°28'E		H-surface	2115-2136	M-0	745	POFI
(Thermocline 150 M, surface temp.						Q 0-150	2120-2130	M-0	746	POFI
17.9°C.)										

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	5-VII-63	133	30°11'S	79°42'E	3310	V 0-200	0649-0705	IOSN	747	IOBC
						V 0-200	0717-0740	75M25	748	SOSC
						Q 0-125	0845-0955	Be-3	749	SOSC
						Q 125-250	0845-0955	Be-3	750	SOSC
						Q 250-500	0845-0955	Be-3	751	SOSC
						Q 500-1000	0820-1015	Be-3	752	SOSC
						Q 1000-2000	0750-1045	Be-3	753	SOSC
Plankton (Thermocline - 102 M,	5-VII-63	133A	29°24'S	79°48'E		Q 0-100	2111-	M-0	754	POFI
Surface temp. 18°C.)						H-surface	2104-	M-0	755	POFI
Plankton	6-VII-63	134	27°31'S	80°08'E	3835	V 0-200	0725-0737	IOSN	756	IOBC
						V 0-200	0710-0720	75M25	757	SOSC
						Q 0-125	0835-0945	Be-3	758	SOSC
						Q 125-250	0835-0945	Be-3	759	SOSC
						Q 250-500	0835-0945	Be-3	760	SOSC
						Q 500-1000	0815-1005	Be-3	761	SOSC
						Q 1000-2000	0750-1035	Be-3	762	SOSC
Plankton	6-VII-63	134A	27°17'S	80°10'E		H-surface	2114-2135	M-0	763	POFI
(Thermocline 135M, surf. temp. 20°C.)						Q 0-125	2115-2134	M-0	764	POFI
Plankton (Thermocline 110M, surf.	7-VII-63	134B	21°37'S	79°55'E		Q 0-85	2110-2129	M-0	765	POFI
temp. 22°C.)						H-surface	2105-2135	M-0	767	POFI

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	8-VII-63	135	20°02'S	79°50'E	4773	V 0-200	0656-0715	IOSN	766	IOBC
						V 0-200	0635-0654	75M25	768	SOSC
						Q 0-125	0810-0925	Be-3	769	SOSC
						Q 0-250	0810-0925	Be-2	770	SOSC
						Q 250-500	0810-0925	Be-3	771	SOSC
						Q 500-1000	0755-0945	Be-3	772	SOSC
						Q 1000-2000	0730-1015	Be-3	773	SOSC
Plankton	8-VII-63	135A	18°59'S	79°53'E		H-surface	2103-2134	M-0	774	POFI
(Thermocline 82M, surf. temp. 24°C.)						Q 0-65	2108-2133	M-0	775	POFI
Plankton	9-VII-63	136	17°14'S	79°52'E	4956	V 0-200	0740-0755	IOSN	776	IOBC
						Q 0-125	0855-1000	Be-3	777	SOSC
						Q 125-250	0855-1000	Be-3	778	SOSC
						Q 250-500	0855-1000	Be-3	779	SOSC
						Q 500-1000	0830-1030	Be-3	780	SOSC
						Q 1000-2000	0805-1050	Be-3	781	SOSC
Plankton (Thermocline 120 M)	9-VII-63	136A				Q 0-115	2110-2133	M-0	782	POFI
						H-surface	2106-2134	M-0	783	POFI
Plankton	10-VII-63	137	14°44'S	79°44'E	5303	V 0-200	0620-0650	IOSN	784	IOBC
						Q 0-125	0716-0730	75M3	786	SOSC
						Q 0-250	0716-0730	75M3	787	SOSC

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton (Thermocline 95 M)	10-VII-63	137A	13°40'S	79°48'E		Q 0-80	2115-2141	M-0	788	POFI
						H-surface	2111-2144	M-0	789	POFI
Plankton	11-VII-63	138	11°28'S	80°00'E	3338	V 0-200	1050-1110	IOSN	790	IOBC
						Q 0-125	1015-1024	75M3	791	SOSC
						Q 0-250	1015-1024	75M3	792	SOSC
Plankton (Thermocline 80 M)	11-VII-63	138A	10°08'S	79°48'E		Q 0-65	2108-2123	M-0	793	POFI
Plankton	12-VII-63	139	08°37'S	79°34'E	4975	V 0-200	0630-0644	IOSN	797	IOBC
						Q 0-125	0655-0703	75M3	795	SOSC
						Q 0-250	0655-0703	75M3	796	SOSC
						Q 0-1000	0706-0724	75M3	797	SOSC
Plankton	12-VII-63	139A	07°24'S	79°42'E		H-surface	2106-2135	M-0	799	POFI
						Q 0-40	2110-2130	M-0	800	POFI
Plankton	13-VII-63	140	05°53'S	79°57'E	5020	V 0-200	1030-1042	IOSN	807	IOBC
						V 0-200	0150-0210	75M25	814	SOSC
						Q 0-125	0810-0912	Be-3	801	SOSC
						Q 125-250	0810-0912	Be-3	802	SOSC
						Q 250-500	0810-0912	Be-3	803	SOSC
						Q 500-1000	0752-0945	Be-3	804	SOSC
						Q 1000-2000	0720-1015	Be-3	805	SOSC
Plankton (Thermocline 80-90 M)	13-VII-63	140A	04°41'S	80°01'E		Q 0-65	2105-2124	M-0	815	POFI
						H-surface	2103-	M-0	816	POFI

BIOLOGICAL LOG —— R/V ANTON BRUUN, CRUISE 2

COLLECTION	DATE	STA.	POSITION LAT.	POSITION LONG.	BOTTOM DEPTH (M)	SAMPLING DEPTH (M)	ZONE TIME	SAMP. GEAR	LABEL NO.	CURRENT CUSTODY
Plankton	14-VII-63	141	03°13'S	80°02'E	4879	V 0-200	0850-0903	IOSN	808	IOBC
						V 0-200	0830-0847	75M25	809	SOSC
						Q 0-125		75M3	817	SOSC
						Q 0-250		75M3	818	SOSC
						Q 0-1000	0752-0803	75M3	819	SOSC
Plankton	14-VII-63	141A	02°03'S	80°08'E		H-surface	2106-2153	M-0	810	POFI
(Thermocline 75 M)						Q 0-50	2110-2129	M-0	811	POFI
Plankton	15-VII-63	142	00°33'S	80°08'E	4629	V 0-200	0845-0900	IOSN	821	IOBC
						V 0-200	0823-0843	75M25	822	SOSC
						Q 0-125	0753-0820	75M3	812	SOSC
						Q 0-250	0753-0820	75M3	813	SOSC
						Q 0-300	0753-0820	75M3	820	SOSC
Plankton (Thermocline 70 M)	15-VII-63	142A	00°23'N	79°58'E		Q	2109-2129	M-0	823	POFI
						H-surface	2104-	M-0	824	POFI
Plankton	16-VII-63	143	01°54'N	79°52'E	4188	V 0-200	1013-1024	IOSN	827	IOBC
						V 0-200	0945-1010	75M25	828	SOSC
						Q 0-500	0720-0835	Be-3	825	SOSC
						Q 1000-2000	0641-0925	Be-3	826	SOSC
Plankton	16-VII-63	143A	02°51'N	79°53'E		H-surface	2109-2132	M-0	829	POFI
(Thermocline 90-100 M)						Q 0-80	2110-2129	M-0	830	POFI