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(6) PHYSICAL AND CHEMICAL DATA,

ARIES Expedition,

Leg I, 22 November-28 December 1970,
Leg II, 13 January-14 February 1971,
Leg VI, 14 June-17 July 1971,

ANTIPODE Expedition,

Leg IV, 29 August-17 September 1970,
Leg XII, 27 May 1971,
Leg XIII, 30 June-2 July 1971,

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This report presents hydrographic data for ARIES Expedition Legs I, II & VI, and ANTIPODE Expedition Legs IV, XII & XIII. Data from ARIES Legs III & IX will appear in a subsequent report. Data from ARIES Leg IV is too sparse to warrant publication. Both expeditions have had data previously published.

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SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

ARIES Expedition

Leg I, 22 November-28 December 1970
Leg II, 13 January-14 February 1971
Leg VI, 14 June-17 July 1971

Sponsored by
Office of Naval Research (Legs II, VI)
National Science Foundation (Legs I, II, VI)

ANTIPODE Expedition

Leg IV, 29 August-17 September 1970
Leg XII, 27 May 1971
Leg XIII, 30 June-2 July 1971

Sponsored by
Office of Naval Research (Leg XII)
National Science Foundation (Legs IV, XII, XIII)

SIO Reference 77-23

Approved for distribution:

W. A. Nierenberg

W. A. Nierenberg, Director

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INTRODUCTION

This report presents hydrographic data for ARIES Expedition Legs I, II and VI, and ANTIPODE Expedition Legs IV, XII and XIII. Data from ARIES Legs III and IX will appear in a subsequent report. Data from ARIES Leg IV is too sparse to warrant publication. Both expeditions have had data previously published. ARIES Leg VIII appears as Cruise 12 in NORTH PACIFIC STUDY PHYSICAL DATA REPORT, SIO Reference Series 73-26 and ANTIPODE XV and XVII in SIO Reference Series 72-77 issued by the GEOSECS Operations Group. No hydrographic data was collected on other Legs of ANTIPODE Expedition.

Preceding the tabulated data for each cruise are: 1) a description of the principal objective and the hydrographic work carried out on the cruise, 2) sponsoring agency, 3) a description of all "non-standard" procedures, 4) a list of scientific personnel participating in the collection of data and 5) a list of publications utilizing the cruise data.

STANDARD PROCEDURES

Hydrographic Casts

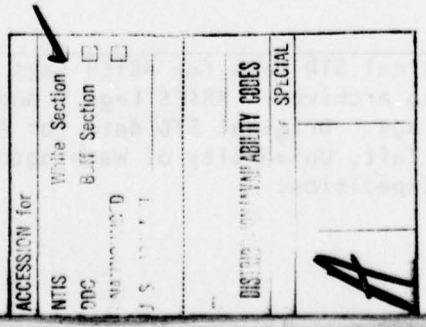
Temperature was measured using paired deep-sea reversing thermometers and is reported to hundredths of a degree Celsius. In some instances specially scaled thermometers were used which were read and the results reported to thousandths of a degree. Unprotected thermometers were included on most Nansen bottles lowered more than 100 meters.

Water samples for chemical and nutrient analyses were obtained from the Nansen bottles.

Salinity was determined with a Hytech (now Plessey Environmental Systems) inductive salinometer (ARIES I) and a University of Washington (1960) conductive salinometer (ARIES II and VI, ANTIPODE IV, XII and XIII). Salinity is reported to three decimal places provided it meets accepted standards. The values are reported to two decimal places when only one determination per sample was obtained, or when the accuracy of a particular sample, or of all samples on a station may be in doubt.

Dissolved oxygen was determined by the Winkler method as modified by Carpenter (1965). Determinations were made of phosphate, silicate, nitrite and nitrate with a DU spectrophotometer according to methods suggested by Strickland and Parsons (1968).

The observed data has been evaluated using the method described by Klein (1973). This involves consideration of their variation as functions of density or depth and their relations to each other, and comparison with adjacent observations.



TABULATED DATA

Almost all data in this report was tabulated from Nansen bottle casts.* The observed values are listed on the left of each page with interpolated and calculated values at standard depths on the right. The values at standard depths are calculated according to a modified Rattray (1962) interpolation technique.

The only data reported from STD lowerings is for stations 64, 67, 68 and 69, ARIES Expedition Leg II. Temperature, salinity and calculated values at standard depths are listed on the right of the page with any data from Nansen bottles used for calibrating the STD lowering listed on the left.

The time reported for bottle casts is the time of messenger release. When a station consists of more than one cast, the messenger times for the first and last casts are given. Multiple casts are indicated by a letter following all observed depths except the cast with the shallowest depth. For STD lowerings the time given is the "start down" time.

The bottom depth, listed in meters, was determined by applying corrections from Matthews (1939) tables to echo soundings.

The weather and dominant waves were coded using the National Oceanographic Data Center (NODC) recommended conversions.

The Column headings from the computer are explained as follows:

Z	Depth	Meters
T	Temperature	°C
S	Salinity	°/₀₀
O2	Dissolved oxygen	ml/L
PO4	"Reactive" inorganic phosphate-phosphorous	µg at/L
SiO3	"Reactive" inorganic silicate-silicon	µg at/L
NO2	"Reactive" nitrite-nitrogen	µg at/L
NO3	"Reactive" nitrate-nitrogen	µg at/L
DT	δ_T Thermosteric anomaly	cl/ton
SIGT	$\sigma_t = (\rho_{s,t,0} - 1)\ 10^3$ where $\rho_{s,t,0}$ is the density the parcel would have if moved isothermally to the sea surface.	g/L
DD	Geopotential anomaly, referred to the sea surface.	dyn. meters

*Original STD data for ARIES Legs I, II, III, IV and IX is on file in SIO data archives. ARIES Legs V and VII were geological cruises without STD lowerings. Original STD data for ARIES Leg VI is in the possession of Dr. Bruce Taft, University of Washington. No STD data was collected on ANTIPODE Expedition.

FOOTNOTES

Data which appears to be in error without obvious reason is reported, flagged uncertain with a U. Such data was not used in the determination of values at standard depths. Footnotes are used to indicate data which has required special processing.

ARIES EXPEDITION LEG I

The program on ARIES I consisted principally of biological sampling in zones immediately south of the equator in mid-ocean. Crossings of this region were made near 110°W and 120°W, and partial crossings were made as far west as 145°W. The Longhurst-Hardy plankton recorder (LHPR) or serial opening-closing nets (Bongo nets) were used for plankton sampling. Nutrients and hydrographic parameters were measured at 38 stations. Focus of study was the zone of transition between the equatorial and the central waters at 10-20°S. ARIES I provided December data and samples across this zone, to be compared with March-April (1969) data obtained earlier (PIQUERO Expedition, SIO Ref. 74-27). On each of the stations, a single Nansen bottle cast of 18 bottles was lowered to approximately 1000 meters.

ARIES I was sponsored by the National Science Foundation.

Personnel participating in the expedition were:

Ship's Captain:

Bonham, John W.

Scientific personnel:

Brinton, Dr. E. (Chief scientist)
Anderson, G. C.
Antezana, T. J.
Elston, M. B.
Ferreira, S. M.
Hamilton, B.
Hemingway, G. T.
Hester, A. W.
Kellogg, D.
Matsui, T.
Mead, R. V.
Owen, G. P.
Pearson, G.
Scruggs, F.
Stewart, C. S.
Venrick, Dr. E.
Withington, P.
Youngbluth, M.

Publications utilizing ARIES I data are:

Anderson, G. C., 1972. Double oxygen minimum in the south-eastern Pacific Ocean. J. Mar. Res., 30: 275-280.

Youngbluth, M., 1973. The vertical distribution, diel migration, and community structure of euphausiids. Ph.D. dissertation, Stanford University. 296 pp.

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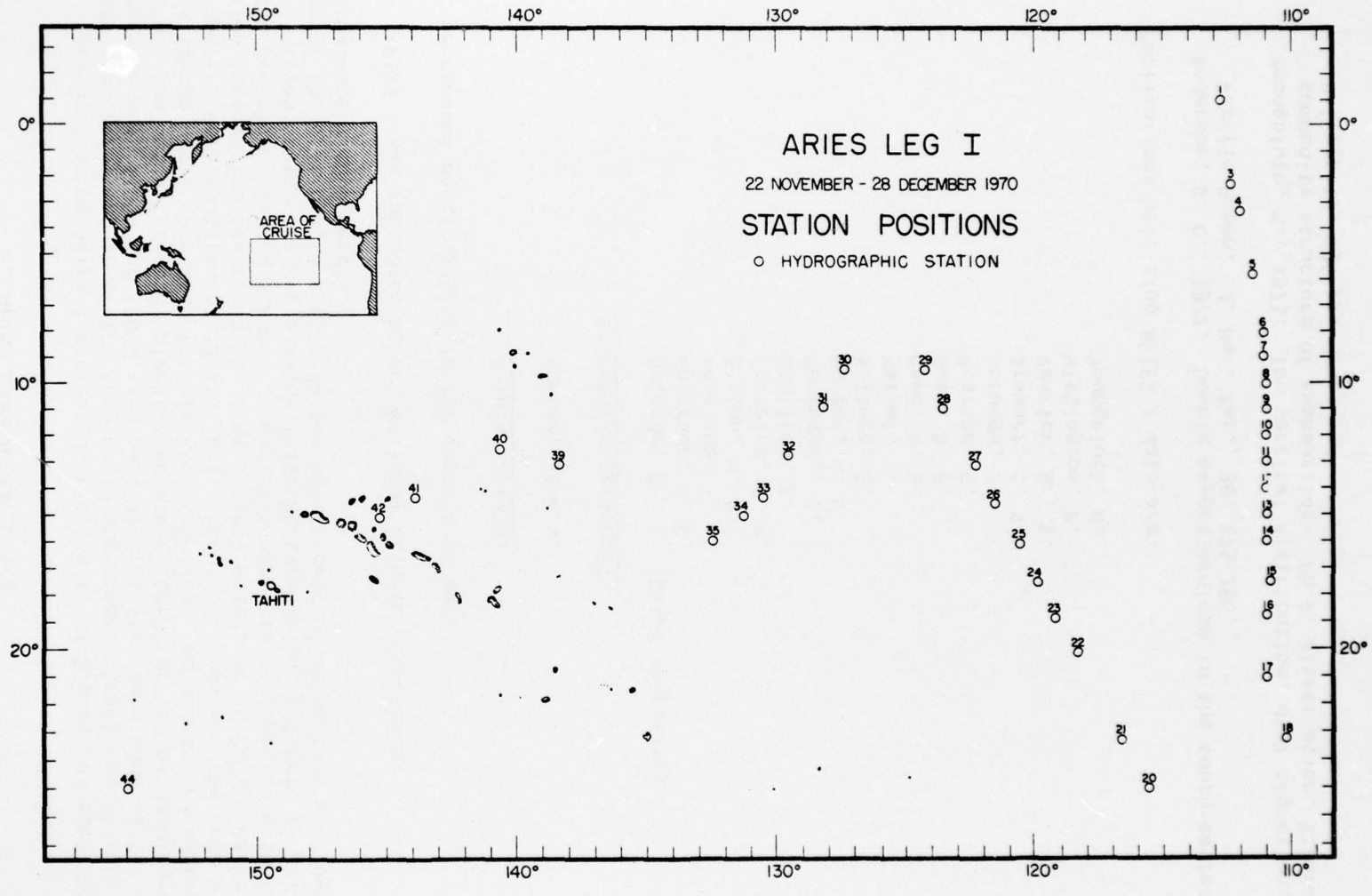
ARIES LEG I
22 NOVEMBER - 28 DECEMBER 1970
STATION POSITIONS
○ HYDROGRAPHIC STATION
AREA OF CRUISE
TAHITI
150°
140°
130°
120°
110°
0°
10°
20°

FIGURE 1

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 1

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
0 58.5N	112 45.0W	11/22/70	0626 GMT	3933M	010	15KT	1	49

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.05	34.682	4.17	1.16	12.	.20	16.2	317.2	0	19.05	34.682	4.17	24.785	317.2	0
9	18.99	34.682	4.14	1.11	12.	.20	15.8	315.7	10	18.94	34.687	4.11	24.818	314.0	.032
14	18.69	34.710	3.99	1.18	12.	.21	16.4	306.4	20	18.45	34.732	3.84	24.974	299.1	.062
24	18.26	34.744	3.73	1.22	12.	.27	17.1	293.7	30	17.47	34.775	3.36	25.247	273.2	.091
50	14.67	34.918	2.11	1.64	18.	.39	24.1	201.7	50	14.67	34.918	2.11	25.999	201.7	.139
77	13.73	34.950	1.82	1.79	19.	.03	26.8	180.4	75	13.74	34.930	1.84	26.207	182.0	.187
102	13.49	34.933	1.74	1.83	20.	.01	26.3	176.9	100	13.50	34.935	1.75	26.259	176.9	.233
127	13.19	34.934	1.50	1.94	22.	.00	28.2	171.0	125	13.21	34.934	1.52	26.317	171.5	.277
152	12.96	34.915	1.27	2.01	23.	.01	29.9	168.0	150	12.98	34.916	1.29	26.352	168.2	.320
203	12.45	34.886	.97	2.20	25.	.01	31.2	160.5	200	12.48	34.887	.98	26.427	161.0	.405
253	11.92	34.844	.79	2.25	27.	.00	32.6	153.9	250	11.96	34.846	.79	26.497	154.4	.487
304	10.97	34.785	.93	2.32	31.	.00	33.8	141.5	300	11.05	34.789	.92	26.622	142.6	.564
403	9.37	34.705	.49	2.66	40.	.04	37.5	121.2	400	9.41	34.707	.51	26.841	121.7	.704
503	8.32	34.658	.69	2.74	44.	.00	38.4	108.8	500	8.35	34.660	.68	26.974	109.1	.828
603	7.16	34.591	1.15	2.80	53.	.05	39.6	97.6	600	7.19	34.594	1.14	27.092	98.0	.941
703	6.20	34.580	1.47	2.80	59.	.08	38.9	86.2	700	6.23	34.581	1.46	27.213	86.5	1.043
855	5.30	34.574	1.73	2.81	71.	.00	38.9	76.0	800	5.58	34.576	1.67	27.292	79.0	1.136
1010	4.57	34.578	1.60	3.01	91.	.01	41.2	67.7	1000	4.61	34.579	1.61	27.406	68.2	1.304

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 3

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
2 14.0S	112 18.0W	11/23/70	2104 GMT	4078M	020	12KT	0	49 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	20.41	34.663	4.65	.90	9.	.17	11.9	352.3	0	20.41	34.663	4.65	24.416	352.3	0
10	20.23	34.667	4.62	.93	9.	.16	12.1	347.4	10	20.23	34.667	4.62	24.467	347.4	.035
25	19.97	34.675	4.53	.96	9.	.15	12.3	340.3	20	20.06	34.673	4.56	24.517	342.7	.070
50	16.54	35.037	2.39	1.61	14.	.40	22.2	233.0	30	19.50	34.754	4.16	24.724	323.0	.103
61	14.49	35.011	1.76	1.76	13.	.63	24.6	191.2	50	16.54	35.037	2.39	25.669	233.0	.159
82	13.66	34.989	1.53	1.85	19.	.35	27.6	176.1	75	13.94	34.995	1.61	26.215	181.2	.211
101	13.39	34.973	1.57	1.86	20.	.01	26.4	172.0	100	13.40	34.974	1.57	26.310	172.1	.256
127	13.21	34.975A	1.57	1.88	20.	.01	26.6	168.4	125	13.22	34.975	1.57	26.348	168.6	.299
153	13.06	34.938	1.37	1.92	21.	.00	28.0	168.2	150	13.08	34.942	1.40	26.351	168.2	.342
203	12.72	34.926	1.23	2.02	22.	.00	29.5	162.7	200	12.74	34.925	1.24	26.405	163.1	.427
254	12.23	34.887	.64	2.25	26.	.00	32.0	156.4	250	12.27	34.890	.69	26.470	157.0	.510
303	11.58	34.853	.10	2.53	31.	.00	36.0	147.2	300	11.63	34.855	.12	26.566	147.8	.590
403	9.11	34.703	.89	2.58	37.	.00	35.7	117.3	400	9.18	34.707	.85	26.879	118.2	.731
502	8.24	34.652	.78	2.84	44.	.00	38.3	108.1	500	8.25	34.653	.78	26.984	108.2	.852
602	7.17	34.599A	1.03	2.82	49.	.00	39.9	97.2	600	7.19	34.601	1.02	27.098	97.4	.965
703	6.03	34.569A	1.35	2.91	63.	.01	40.4	85.1	700	6.06	34.568	1.34	27.224	85.5	1.066
855	5.31	34.554	1.88	2.86	70.	.00	39.3	77.6	800	5.50	34.556	1.73	27.285	79.6	1.158
1008	4.61	34.564	1.67	2.99	88.	.00	41.6	69.2	1000	4.65	34.563	1.68	27.391	69.6	1.328

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 4

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
3 20.0S	111 56.0W	11/24/70	0611 GMT	3914M	120	13KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	21.27	34.724	4.94	.90	9.	.20	12.0	370.0	0	21.27	34.724	4.94	24.230	370.0	0
10	21.26	34.734	4.97	.90	9.	.20	12.2	369.0	10	21.26	34.734	4.97	24.241	369.0	.037
30	21.28	34.838	4.85	1.00	8.	.25	13.6	362.0	20	21.27	34.786	4.91	24.277	365.5	.074
45	17.38	35.045	2.64	1.54	12.	.49	20.7	251.4	30	21.28	34.838	4.85	24.314	362.0	.110
61	15.51	35.075	1.32	1.90	15.	1.27	24.8	207.8	50	16.64	35.072	2.13	25.674	232.6	.170
81	14.02	35.016	.62	2.15	20.	.79	30.8	181.3	75	14.37	35.039	.76	26.156	186.7	.223
101	13.38	34.975	.19	2.33	22.	.05	32.4	171.7	100	13.40	34.977	.20	26.312	171.9	.268
125	12.98	34.951	.15	2.36	24.	.00	32.9	165.7	125	12.98	34.951	.15	26.377	165.7	.311
150	12.81	34.940	.17	2.36	25.	.00	31.6	163.3	150	12.81	34.940	.17	26.403	163.3	.353
200	12.46	34.911	.13	2.42	27.	.00	34.0	158.9	200	12.46	34.911	.13	26.450	158.9	.436
249	12.09	34.903	.17	2.43	28.	.00	33.9	152.7	250	12.08	34.901	.17	26.517	152.5	.517
299	11.42	34.859	.17	2.52	31.	.00	35.2	143.9	300	11.40	34.857	.17	26.610	143.6	.594
397	9.33	34.742	.16	2.79	41.	.00	37.8	117.8	400	9.27	34.739	.18	26.889	117.2	.732
495	7.79	34.648	.84	2.84	46.	.00	39.0	102.0	500	7.73	34.645	.88	27.056	101.4	.850
594	6.77	34.607	1.39	2.79	52.	.00	39.4	91.3	600	6.72	34.607	1.39	27.168	90.8	.955
693	6.07	34.604	1.25	2.96	63.	.00	41.3	82.8	700	6.03	34.605	1.25	27.258	82.3	1.051
844	5.25	34.598	1.47	2.96	75.	.02	41.2	73.6	800	5.46	34.601	1.38	27.325	75.9	1.140
1000	4.66	34.593	1.75	2.95	86.	.00	41.1	67.5	1000	4.66	34.593	1.75	27.413	67.5	1.304

A) AN ERROR OF 0.01 OHMS RESISTANCE HAS BEEN ASSUMED. THE LISTED OBSERVED AND INTERPOLATED VALUES INCORPORATE THE CORRECTION.

RV THOMAS WASHINGTON ARIES EXPEDITION I 5

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
5 47.0S	111 29.5W	11/25/70	0509 GMT	3630M	110	17KT	1	110

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.68	34.999	5.09	.86	4.	.23	11.5	387.7	0	22.68	34.999	5.09	24.045	387.7	0
10	22.68	34.993	5.10	.89	4.	.24	11.8	388.1	10	22.68	34.993	5.10	24.040	388.1	.039
61	22.63	35.007	5.06	.90	4.	.24	11.8	385.7	20	22.67	34.996	5.09	24.045	387.6	.078
71	22.45	35.384	4.68	.84	3.	.45	7.6	353.6	30	22.66	34.998	5.08	24.050	387.2	.116
81	20.86	35.593	4.20	.80	3.	1.10	5.3	296.5	50	22.64	35.004	5.07	24.060	386.2	.194
91	18.51	35.194	3.16	1.33	9.	.62	16.0	267.0	75	21.94	35.514	4.53	24.644	330.6	.284
101	16.90	35.184	2.85	1.35	7.	.67	15.7	230.3	100	17.03	35.177	2.87	25.660	233.9	.356
126	14.74	35.089	1.32	1.90	13.	.15	24.3	190.6	125	14.79	35.095	1.38	26.108	191.3	.410
151	13.29	34.982	1.24	1.99	18.	.00	27.8	169.4	150	13.34	34.986	1.24	26.332	170.0	.456
201	12.16	34.919	2.20	1.79	19.	.00	26.3	152.8	200	12.17	34.919	2.18	26.513	152.9	.539
251	11.54	34.860	1.68	2.02	23.	.00	29.4	145.9	250	11.55	34.860	1.70	26.585	146.0	.616
301	10.87	34.813	.66	2.40	30.	.00	34.3	137.7	300	10.88	34.814	.68	26.671	137.9	.691
400	9.42	34.723	.35	2.71	37.	.00	36.8	120.6	400	9.42	34.723	.35	26.853	120.6	.828
499	8.10	34.643	.64	2.85	41.	.00	39.3	106.8	500	8.09	34.643	.64	27.000	106.6	.950
598	6.98	34.597	.46	3.04	52.	.00	43.4	94.8	600	6.96	34.597	.47	27.127	94.6	1.060
699	6.00	34.561	1.05	3.01	61.	.00	42.7	85.1	700	5.99	34.561	1.06	27.228	85.1	1.159
851	5.02	34.548	1.67	2.90	74.	.00	41.1	74.8	800	5.30	34.549	1.50	27.305	77.8	1.250
1007	4.38	34.547	1.87	2.90	86.	.00	41.3	68.1	1000	4.40	34.547	1.86	27.405	68.3	1.416

RV THOMAS WASHINGTON ARIES EXPEDITION I 6

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
8 03.0S	111 03.5W	11/25/70	2001 GMT	3479M	100	15KT		120 09 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.43	35.230	5.03	.78	2.	.22	10.0	391.6	0	23.43	35.230	5.03	24.003	391.6	0
10	23.40	35.231	5.02	.80	2.	.21	9.8	390.7	10	23.40	35.231	5.02	24.013	390.7	.039
50	23.23	35.472	5.02	.77	2.	.16	7.7	368.6	20	23.38	35.288	5.02	24.063	386.0	.078
66	23.06	35.478	4.96	.73	2.	.20	7.5	363.5	30	23.34	35.348	5.02	24.118	380.7	.116
71	22.64	35.533	4.79	.73	2.	.31	6.3	348.0	50	23.23	35.472	5.02	24.245	368.6	.192
83	21.82	35.710	4.57	.63	2.	.57	2.9	313.2	75	22.37	35.599	4.71	24.588	335.9	.280
103	19.73	35.589	4.07	.78	2.	1.25	5.8	266.1	100	20.07	35.626	4.16	25.240	273.8	.357
128	17.34	35.265	3.22	1.20	5.	.15	13.5	234.5	125	17.64	35.309	3.37	25.616	238.1	.422
154	14.18	34.966	.85	2.23	14.	.01	25.3	188.2	150	14.64	34.999	1.22	26.067	195.2	.478
203	11.92	34.985U	.29	2.48	26.	.00	31.9		200	11.97	34.840	.32	26.361	167.3	.571
254	11.22	34.826	.39	2.46	29.	.00	33.3	142.8	250	11.24	34.807	.38	26.600	144.6	.651
305	10.52	34.789	.40	2.55	32.	.00	34.6	133.6	300	10.59	34.795	.40	26.709	134.3	.724
404	9.30	34.712	.40	2.71	37.	.00	35.9	119.6	400	9.35	34.715	.40	26.859	120.1	.859
504	8.26	34.650	.41	2.89	41.	.00	38.4	108.6	500	8.30	34.653	.41	26.976	109.0	.982
604	7.15	34.584	.49	3.03	48.	.00	41.0	98.0	600	7.19	34.587	.49	27.087	98.4	1.095
704	6.22	34.543	.84	3.05	55.	.00	41.9	89.2	700	6.25	34.544	.82	27.181	89.5	1.199
857	4.99	34.534	1.45	2.99	72.	.00	41.2	75.5	800	5.40	34.532	1.23	27.278	80.3	1.294
1011	4.34	34.555	1.84	2.90	82.	.00	40.2	67.0	1000	4.37	34.553	1.82	27.414	67.5	1.461

RV THOMAS WASHINGTON ARIES EXPEDITION I 7

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
8 57.0S	111 03.0W	11/26/70	0540 GMT	3201M	120	15KT	0	120

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.34	35.484	4.96	.71	2.	.16		370.8	0	23.34	35.484	4.96	24.222	370.8	0
10	23.34	35.482	5.00	.71	2.	.14		370.9	10	23.34	35.482	5.00	24.220	370.9	.037
62	23.29	35.476	4.97	.72	2.	.15		370.0	20	23.33	35.479	4.99	24.222	370.8	.074
73	23.30	35.478	4.96	.73	2.	.15		370.1	30	23.32	35.477	4.99	24.224	370.6	.111
83	23.28	35.581	4.88	.64	2.	.12		362.1	50	23.30	35.476	4.98	24.228	370.2	.186
93	22.37	35.798	4.72	.49	1.	.24		321.6	75	23.30	35.498	4.95	24.246	368.5	.279
103	20.94	35.767	4.64	.49	1.	.88		286.0	100	21.39	35.792	4.67	25.009	295.8	.363
128	17.95	35.357A	3.76	.98	3.	.18		241.9	125	18.26	35.414	3.90	25.543	245.0	.431
156	15.79	35.090	2.55	1.55	7.	.01		212.7	150	16.20	35.138	2.82	25.826	218.1	.490
206	12.00	34.787	.57	2.49	20.	.00		159.6	200	12.38	34.806	.73	26.385	165.1	.589
256	11.05	34.807	1.31	2.21	24.	.00		141.3	250	11.08	34.800	1.18	26.625	142.3	.668
305	10.45	34.784	.91	2.40	29.	.00		132.8	300	10.50	34.787	.97	26.718	133.4	.740
404	9.27	34.708	.99	2.54	33.	.00		119.4	400	9.32	34.711	.99	26.861	119.9	.874
502	8.30	34.655	.64	2.78	39.	.00		108.8	500	8.32	34.657	.65	26.976	109.0	.997
600	6.94	34.587	.67	3.00	49.			95.0	600	6.94	34.587	.67	27.123	95.0	1.109
699	6.04	34.549A	.87	3.10	57.			86.5	700	6.03	34.549	.87	27.214	86.4	1.209
851	4.94	34.537	1.47	3.01	72.			74.7	800	5.26	34.537	1.26	27.299	78.3	1.301
1007	4.34	34.544	1.94	2.91	83.			67.9	1000	4.36	34.544	1.92	27.407	68.1	1.467

A) AN ERROR OF 0.01 OHMS RESISTANCE HAS BEEN ASSUMED. THE LISTED OBSERVED AND INTERPOLATED VALUES INCORPORATE THE CORRECTION.

RV THOMAS WASHINGTON ARIES EXPEDITION I 8

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
10 01.5S	110 59.0W	11/26/70	1419 GMT	3138M	120	13KT	0	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.30	35.483	4.96	.68	2.	.15	7.4	369.8	0	23.30	35.483	4.96	24.233	369.8	0
10	23.27	35.506	4.96	.72	2.	.15	7.4	367.3	10	23.27	35.506	4.96	24.259	367.3	.037
72	23.29	35.512	4.97	.75	2.	.15	7.4	367.4	20	23.27	35.507	4.96	24.259	367.3	.074
77	23.28	35.520	4.96	.71	2.	.14	7.2	366.5	30	23.28	35.508	4.96	24.258	367.3	.110
82	23.21	35.557	4.86	.71	2.	.16	6.4	361.9	50	23.28	35.510	4.97	24.258	367.3	.184
87	22.80	35.679	4.71	.63	2.	.25	3.9	341.8	75	23.28	35.516	4.96	24.263	366.9	.276
102	22.19	35.925	4.75	.45	1.	.20	0.5	307.5	100	22.26	35.907	4.74	24.852	310.8	.362
127	19.66	35.577	4.21	.78	2.	1.56	4.8	267.2	125	19.88	35.618	4.27	25.283	269.7	.436
152	18.05	35.349	3.58	1.07	3.	.35	11.4	244.8	150	18.17	35.366	3.64	25.529	246.4	.501
203	13.95	34.900	1.68	1.95	11.	.01	22.4	188.4	200	14.18	34.918	1.80	26.105	191.6	.614
252	11.76	34.786	.36	1.96	24.	.00	28.8	155.3	250	11.82	34.787	.39	26.477	156.3	.704
303	10.57	34.768	.68	2.47	27.	.00	33.3	136.0	300	10.62	34.768	.66	26.682	136.8	.780
402	9.27	34.706	.67	2.65	34.	.00	36.2	119.6	400	9.29	34.708	.67	26.862	119.7	.916
501	8.02	34.631	.63	2.90	40.	.00	39.0	106.5	500	8.03	34.632	.63	27.000	106.6	1.038
600	6.92	34.574	.69	3.02	47.	.00	41.9	95.7	600	6.92	34.574	.69	27.115	95.7	1.148
699	5.99	34.539	.79	3.12	57.	.00	43.7	86.7	700	5.98	34.539	.79	27.212	86.6	1.248
851	5.07	34.532	1.20	3.12	70.	.00	42.7	76.5	800	5.33	34.531	1.04	27.286	79.6	1.341
1007	4.36	34.542	1.77	2.99	84.	.00	41.3	68.2	1000	4.39	34.541	1.74	27.402	68.6	1.509

RV THOMAS WASHINGTON ARIES EXPEDITION I 9

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
11 01.0S	110 59.0W	11/26/70	2150 GMT	3138M	120	12KT	2	120 08 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.48	35.579	4.99	.62	2.	.12	6.5	367.8	0	23.48	35.579	4.99	24.253	367.8	0
9	23.36	35.577	5.02	.64	1.	.12	6.2	364.6	10	23.36	35.579	5.02	24.289	364.4	.037
39	23.30	35.604	5.02	.64	1.	.11	6.1	361.0	20	23.34	35.597	5.02	24.308	362.6	.073
49	23.30	35.615	5.03	.60	1.	.10	5.9	360.2	30	23.32	35.605	5.02	24.320	361.4	.109
61	22.79	35.865	5.03	.39	1.	.04	1.5	328.1	50	23.27	35.633	5.03	24.356	358.0	.182
81	22.21	36.010	4.89	.36	1.	.08	0.1	301.9	75	22.39	35.998	4.94	24.886	307.5	.266
101	21.24	35.883	4.69	.44	1.	.76	0.8	285.4	100	21.30	35.893	4.70	25.111	286.1	.341
126	19.75	35.608	4.36	.64	1.	.46	4.5	267.2	125	19.81	35.620	4.38	25.302	267.9	.411
151	18.15	35.358	3.93	.90	2.	.05	9.0	246.5	150	18.22	35.368	3.95	25.517	247.4	.477
202	13.65	34.866	1.34	2.10	13.	.00	23.2	185.0	200	13.82	34.878	1.45	26.150	187.3	.588
253	11.49	34.769	.34	2.62	25.	.00	29.1	151.8	250	11.57	34.769	.36	26.510	153.2	.676
303	10.22	34.784	.84	2.43	28.	.01	32.8	129.0	300	10.28	34.782	.79	26.754	130.0	.750
403	9.08	34.698	.64	2.70	35.	.00	36.7	117.2	400	9.10	34.702	.65	26.889	117.6	.881
502	8.15	34.643	.69	2.83	40.		38.0	107.5	500	8.17	34.645	.69	26.989	107.7	1.002
601	7.09	34.587	.59	2.97	47.		41.5	97.0	600	7.10	34.588	.59	27.101	97.1	1.114
701	6.36	34.557	.66	3.09	54.		42.2	89.9	700	6.37	34.557	.66	27.177	89.9	1.217
853	5.32	34.541	1.13	3.08	67.		42.2	78.7	800	5.66	34.543	.94	27.256	82.4	1.314
1009	4.55	34.543	1.56	3.01	80.		41.6	70.1	1000	4.59	34.543	1.54	27.381	70.5	1.487

RV THOMAS WASHINGTON ARIES EXPEDITION I 10

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
12 00.0S	111 00.0W	11/27/70	0607 GMT	3054M	120	12KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.32	35.681	5.00	.55	2.	.11		356.0	0	23.32	35.681	5.00	24.377	356.0	0
10	23.30	35.678	5.01	.58	1.	.11		355.7	10	23.30	35.678	5.01	24.380	355.7	.036
57	23.23	35.748	4.99	.58	1.	.09		348.7	20	23.29	35.692	5.01	24.396	354.2	.071
83	22.35	36.034	4.87	.35	1.	.07		304.0	30	23.27	35.707	5.00	24.411	352.7	.107
88	22.29	36.032	4.85	.38	1.	.09		302.5	50	23.24	35.737	4.99	24.443	349.7	.177
93	21.79	35.919	4.72	.43	1.	.44		297.3	75	22.60	35.962	4.91	24.797	316.0	.261
103	21.89	36.045		.38	1.	.31		290.8	100	21.86	36.011	4.70	25.044	292.4	.338
128	20.88	35.860	4.64	.46	1.	.60		277.7	125	21.07	35.904	4.65	25.182	279.3	.410
153	19.08	35.519	4.24	.74	1.	.13		257.2	150	19.31	35.560	4.29	25.388	259.7	.479
205	16.34	35.096	4.03	.88	3.	.02		224.3	200	16.61	35.131	4.05	25.725	227.7	.604
256	12.07	34.700	1.21	2.33	17.	.01		167.2	250	12.54	34.729	1.56	26.292	173.8	.707
306	10.49	34.697	.42	2.69	26.	.01		139.9	300	10.60	34.691	.44	26.626	142.1	.790
405	8.68	34.643	1.22	2.59	31.	.01		115.3	400	8.74	34.648	1.15	26.903	115.9	.926
504	7.63	34.604	1.42	2.65	37.			103.1	500	7.66	34.606	1.41	27.035	103.4	1.044
603	6.92	34.571	1.21	2.82	44.			96.0	600	6.94	34.573	1.22	27.111	96.2	1.152
703	6.10	34.537	1.42	2.89	51.			88.1	700	6.12	34.538	1.41	27.193	88.4	1.254
856	5.11	34.522	1.45	3.03	60.			77.7	800	5.43	34.524	1.44	27.268	81.3	1.349
1012	4.44	34.531	1.79	2.96	77.			69.9	1000	4.48	34.530	1.75	27.383	70.4	1.521

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 11

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
12 59.5S	111 01.5W	11/27/70	1428	3054M	130	14KT	1	140 08 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.99	35.963	5.02	.35	1.	.01	0.9	326.6	0	22.99	35.963	5.02	24.686	326.6	0
10	22.96	35.964	5.01	.36	1.	.01	1.0	325.7	10	22.96	35.964	5.01	24.695	325.7	.033
62	22.98	35.970	5.04	.36	1.	.01	0.9	325.8	20	22.96	35.965	5.02	24.695	325.7	.065
72	22.86	35.994	5.13	.34	1.	.01	0.4	320.8	30	22.97	35.966	5.02	24.695	325.7	.098
83	22.81	36.085	4.99	.31	1.	.00	0.1	312.8	50	22.98	35.968	5.03	24.694	325.8	.163
93	22.47	36.079	4.91	.34	1.	.01	0.1	304.0	75	22.85	36.015	5.10	24.767	318.8	.245
103	21.96	36.018	4.91	.35	1.	.05	0.0	294.7	100	22.11	36.036	4.91	24.994	297.3	.322
128	21.96	36.102	4.80	.37	1.	.23	0.1	288.6	125	21.96	36.091	4.81	25.077	289.3	.397
153	21.44	35.978	4.86	.41	1.	.36	0.4	283.8	150	21.54	36.002	4.80	25.127	284.6	.470
204	17.89	35.316	4.46	.55	1.	.01	4.5	243.5	200	18.24	35.372	4.49	25.515	247.6	.606
254	13.75	34.839	2.27	1.83	10.	.02	20.5	188.9	250	14.06	34.865	2.47	26.088	193.2	.720
304	11.18	34.693	.53	2.63	23.	.00	28.6	151.9	300	11.34	34.699	.64	26.498	154.3	.810
404	8.78	34.645	1.06	2.61	31.	.00	35.3	116.6	400	8.83	34.646	1.04	26.888	117.3	.953
503	7.68	34.601	1.38	2.72	37.	.00	36.8	104.0	500	7.70	34.604	1.37	27.026	104.2	1.072
601	6.68	34.552	1.29	2.86	45.	.00	40.2	94.3	600	6.69	34.553	1.29	27.130	94.4	1.180
701	5.91	34.524	1.51	2.91	52.	.00	40.2	86.8	700	5.92	34.524	1.51	27.209	86.9	1.280
853	4.90	34.523	1.52	3.05	69.	.00	42.0	75.4	800	5.22	34.520	1.52	27.290	79.2	1.373
1007	4.23	34.536	1.79	3.03	83.	.00	41.5	67.4	1000	4.25	34.535	1.77	27.412	67.6	1.539

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 12

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
14 00.0S	111 00.5W	11/27/70	2336	3176M	110	08KT	1	06 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.36	35.914	5.04	.41				340.3	0	23.36	35.914	5.04	24.541	340.3	0
10	23.33	35.913	5.07	.43				339.6	10	23.33	35.913	5.07	24.549	339.6	.034
61	23.15	35.945	5.07	.42				332.3	20	23.29	35.919	5.07	24.564	338.1	.068
87	22.63	36.108	5.69	.32				306.2	30	23.26	35.925	5.07	24.579	336.7	.102
92	22.53	36.117	5.07	.32				302.9	50	23.19	35.938	5.07	24.610	333.9	.169
97	22.47	36.107	4.99	.34				302.0	75	22.89	36.038	5.40	24.773	318.3	.251
102	22.40	36.114	4.91	.34				299.6	100	22.43	36.109	4.94	24.959	300.6	.330
127	22.21		4.82	.35					125	22.22	36.120	4.83	25.046	292.3	.405
152	21.86	36.109	4.73	.46				285.4	150	21.90	36.117	4.74	25.114	285.9	.478
203	19.80	35.652	4.58	.47				265.3	200	19.97	35.688	4.59	25.313	266.9	.620
252	16.03	35.064	4.26	.72				219.8	250	16.20	35.086	4.27	25.786	221.9	.746
303	11.95	34.618	2.61	1.72				171.1	300	12.17	34.637	2.72	26.293	173.8	.849
403	8.76	34.590	1.08	2.74				120.4	400	8.80	34.587	1.09	26.847	121.2	1.004
502	7.36	34.553	1.88	2.83				103.2	500	7.38	34.554	1.86	27.035	103.3	1.124
602	6.37	34.512	1.69	2.76				93.3	600	6.39	34.513	1.69	27.139	93.5	1.231
702	5.69	34.522	1.61					84.4	700	5.70	34.522	1.61	27.234	84.5	1.329
852	4.84	34.516	1.66	2.99				75.2	800	5.11	34.518	1.64	27.302	78.0	1.419
985	4.28	34.534	1.84	3.02				68.0	1000	4.23	34.531	1.75	27.411	67.7	1.584
995	4.25	34.531	1.69	3.00				67.9							
1005	4.21	34.533	1.89	3.00				67.4							

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 13

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
14 59.0S	110 57.0W	11/28/70	1407	3290M	120	14KT	1	100 12 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.21	35.977	5.01	.37	1.	.02	1.5	331.6	0	23.21	35.977	5.01	24.633	331.6	0
10	23.19	35.975	5.00	.40	1.	.02	1.5	331.2	10	23.19	35.975	5.00	24.637	331.2	.033
61	23.18	35.972	5.02	.39	1.	.01	1.5	331.2	20	23.19	35.974	5.00	24.637	331.2	.066
71	22.92	36.051	5.02	.35	1.	.01	0.3	318.3	30	23.19	35.973	5.01	24.637	331.2	.100
82	22.69	36.084	5.00	.32	1.	.00	0.0	309.6	50	23.18	35.972	5.02	24.638	331.2	.166
92	22.67	36.167	4.92	.31	1.	.00	0.0	303.1	75	22.82	36.062	5.01	24.810	314.7	.247
102	22.54	36.211	4.87	.34	1.	.04	0.1	296.4	100	22.57	36.204	4.88	24.990	297.6	.325
127	22.21	36.180	4.78	.35	1.	.17	0.2	289.7	125	22.24	36.188	4.79	25.071	289.9	.399
152	21.62	36.035	4.67	.42	1.	.65	0.9	284.4	150	21.68	36.050	4.68	25.123	284.9	.473
202	18.39	35.419	4.46	.49	1.	.01	3.7	247.8	200	18.55	35.445	4.47	25.495	249.6	.609
252	15.14	34.944	4.20	.79	2.	.00	8.9	209.5	250	15.27	34.960	4.22	25.900	211.1	.728
303	11.94	34.608	3.02	1.55	9.	.00	18.5	171.6	300	12.11	34.622	3.10	26.293	173.7	.828
402	8.94	34.597	.77	2.77	27.	.00	34.4	122.6	400	8.97	34.595	.80	26.825	123.3	.984
503	7.28	34.528	1.36	2.79	32.	.00	37.7	103.9	500	7.31	34.531	1.34	27.026	104.2	1.106
603	6.39	34.514	1.47	2.84	42.	.00	40.1	93.4	600	6.41	34.514	1.47	27.137	93.7	1.213
703	5.70	34.506	1.51	2.95	51.	.00	41.1	85.7	700	5.72	34.506	1.51	27.219	85.9	1.312
854	4.87	34.514	1.62	3.00	66.	.00	41.6	75.7	800	5.14	34.509	1.58	27.292	79.0	1.404
1008	4.26	34.536	1.73	3.03	81.	.00	41.8	67.7	1000	4.29	34.535	1.72	27.408	68.0	1.570

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 14

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
16 00.0S	110 58.5W	11/28/70	2117 GMT	3517M	080	16KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.15	36.109	5.00	.31	1.	.01	0.2	320.4	0	23.15	36.109	5.00	24.750	320.4	0
10	23.12	36.105	5.04	.37	1.	.01	0.2	319.9	10	23.12	36.105	5.04	24.756	319.9	.032
55	23.01	36.105	5.05	.33	1.	.01	0.3	316.9	20	23.10	36.104	5.04	24.762	319.3	.064
60	22.99	36.103	4.99	.33	1.	.01	0.3	316.5	30	23.08	36.105	5.04	24.769	318.7	.096
70	22.58	36.088	5.03	.31	1.	.00	0.0	306.3	50	23.02	36.104	5.05	24.784	317.3	.160
85	22.16	36.047	5.00	.32	1.	.01	0.0	297.9	75	22.42	36.074	5.02	24.933	303.0	.238
100	21.80	36.022	5.09	.32	1.	.01	0.1	290.1	100	21.80	36.022	5.09	25.069	290.1	.313
125	21.55	36.003	4.93	.36	1.	.08	0.1	284.8	125	21.55	36.003	4.93	25.124	284.8	.386
149	21.22	35.929	4.85	.41	1.	.34	0.4	281.5	150	21.19	35.921	4.84	25.162	281.2	.458
200	18.76	35.432	4.48	.65	1.	.03	4.7	255.7	200	18.76	35.432	4.48	25.431	255.7	.595
249	15.37	34.922	4.21	.85	2.	.01	9.0	216.0	250	15.31	34.913	4.18	25.857	215.2	.717
300	12.41	34.646	2.51	1.78	11.	.00	19.8	177.4	300	12.41	34.646	2.51	26.254	177.4	.819
400	9.04	34.568	.93	2.69	25.	.00	33.6	126.2	400	9.04	34.568	.93	26.794	126.2	.978
500	7.39	34.533	1.27	2.77	32.	.00	37.7	105.1	500	7.39	34.533	1.27	27.017	105.1	1.102
599	6.46	34.505	1.36	2.87	39.	.00	39.6	95.0	600	6.45	34.505	1.36	27.124	94.9	1.211
699	5.84	34.504	1.31	2.98	49.	.00	40.9	87.5	700	5.83	34.504	1.31	27.203	87.4	1.311
849	5.06	34.503	1.39	3.09	63.	.00	41.5	78.6	800	5.30	34.502	1.36	27.267	81.4	1.404
990	4.38	34.521	1.68	3.07	78.		41.3	70.0	1000	4.33	34.524	1.79	27.395	69.3	1.575
1000	4.329	34.524	1.79	3.00	78.			69.3							

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 15

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
17 31.5S	110 47.5W	11/29/70	1318 GMT	3442M	100	15KT	2	100 12 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.84	36.213A	5.00	.34	1.	.01	0.1	304.4	0	22.84	36.213	5.00	24.919	304.4	0
10	22.83	36.221	5.01	.32	1.	.00	0.1	303.6	10	22.83	36.221	5.01	24.928	303.6	.030
62	22.79	36.262	5.03	.29	1.	.00	0.1	299.5	20	22.83	36.224	5.01	24.931	303.2	.061
73	22.76	36.285	5.03	.29	1.	.00	0.0	297.0	30	22.82	36.230	5.02	24.937	302.7	.091
83	22.46	36.258	5.06	.29	1.	.00	0.0	290.8	50	22.81	36.247	5.03	24.955	301.0	.152
93	22.34	36.243	5.02	.29	1.	.00	0.1	288.6	75	22.70	36.280	5.04	25.010	295.8	.227
103	22.28	36.236	5.02	.28	1.	.00	0.0	287.5	100	22.29	36.237	5.02	25.093	287.8	.301
128	22.23	36.244	4.99	.29	1.	.00	0.0	285.6	125	22.23	36.242	4.99	25.115	285.8	.373
154	22.15	36.235	4.99	.32	1.	.27	0.6	284.1	150	22.17	36.238	4.99	25.130	284.3	.446
205	21.34	36.032	4.75	.32	1.	.26	0.6	277.2	200	21.42	36.051	4.78	25.197	277.9	.590
254	17.41	35.223	4.63	.48	2.	.01	3.6	239.1	250	17.78	35.289	4.64	25.566	242.8	.724
305	13.79	34.729	4.28	.87	3.	.00	10.2	197.8	300	14.11	34.762	4.34	25.999	201.7	.839
404	9.42	34.533	1.36	2.56	22.	.00	30.5	134.7	400	9.54	34.532	1.47	26.684	136.7	1.017
502	7.22	34.465	1.96	2.62	27.	.00	35.5	101.8	500	7.25	34.466	1.95	26.985	108.1	1.147
602	6.21	34.433	2.36	2.65	31.	.00	37.1	97.3	600	6.22	34.434	2.36	27.098	97.4	1.258
702	5.54	34.454	2.14	2.80	44.	.00	38.7	87.7	700	5.55	34.453	2.15	27.198	87.9	1.360
854	4.90	34.482	2.11	2.30	59.	.00	39.8	78.4	800	5.10	34.472	2.12	27.267	81.3	1.453
1010	4.30	34.520	2.02	2.74	76.	.00	40.4	69.3	1000	4.34	34.517	2.03	27.389	69.8	1.624

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 16

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18 47.5S	110 58.5W	11/30/70	0422 GMT	3393M	090	14KT	1	090 09 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.94	36.323	4.99	.25	1.	.00	0.0	299.2	0	22.94	36.323	4.99	24.973	299.2	0
9	22.95	36.322	5.03	.27	1.	.00	0.0	299.6	10	22.95	36.321	5.03	24.970	299.5	.030
61	22.83	36.318	5.02	.27	1.	.00	0.0	296.6	20	22.93	36.321	5.03	24.974	299.1	.060
71	22.82	36.316	5.01	.27	1.	.00	0.0	296.4	30	22.91	36.320	5.03	24.979	298.6	.090
81	22.78	36.311	5.05	.29	1.	.00	0.0	295.7	50	22.86	36.318	5.02	24.992	297.4	.150
91	22.58	36.270	5.03	.27	1.	.00	0.0	293.2	75	22.80	36.311	5.03	25.004	296.3	.225
101	22.33	36.236	5.08	.27	1.	.00	0.0	288.9	100	22.35	36.238	5.07	25.077	289.3	.299
126	22.25	36.260	5.1	.27	1.	.00	0.0	285.0	125	22.25	36.260	5.10	25.123	285.0	.371
151	22.07	36.226	4.98	.28	1.	.00	0.0	282.6	150	22.08	36.227	4.99	25.147	282.7	.444
202	21.63	36.108	4.86	.29	1.	.09	0.2	279.4	200	21.65	36.112	4.86	25.180	279.5	.588
251	17.55	35.242	4.71	.41	1.	.01	2.7	241.0	250	17.65	35.260	4.71	25.576	241.9	.722
302	13.96	34.720	4.27	.87	3.	.00	9.9	201.8	300	14.09	34.734	4.29	25.982	203.3	.837
400	9.11	34.463	2.33	2.24	17.	.00	27.8	135.1	400	9.11	34.463	2.33	26.700	135.1	1.015
499	6.90	34.389	3.24	2.26	18.	.00	30.8	109.3	500	6.88	34.389	3.25	26.974	109.1	1.145
598	5.77	34.426U	3.76	2.12	21.		31.0		600	5.76	34.376	3.74	27.111	96.1	1.255
698	5.42	34.415	2.52	2.68	36.		38.0	89.2	700	5.41	34.416	2.52	27.186	89.1	1.356
849	4.74	34.471	2.29	2.90	58.		39.3	77.5	800	4.96	34.457	2.36	27.271	81.0	1.450
1006	4.17	34.511	2.29	2.88	75.		39.7	68.6	1000	4.19	34.510	2.29	27.398	68.9	1.618

A) SALINITY BOTTLE NUMBERS AND ORDER DIFFER ON THE ORIGINAL DATA AND SALINITY DETERMINATION SHEETS. THEY ARE ASSUMED TO BE IN THE CORRECT ORDER.

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 17

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
21 03.5S	110 57.0W	12/01/70	0344 GMT	3470M	110	09KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.84	36.141	5.01	.23		.00	0.1	309.6	0	22.84	36.141	5.01	24.864	309.6	0
14	22.72	36.130	5.03	.22	1.	.00	0.0	307.1	10	22.75	36.132	5.02	24.883	307.8	.031
49	22.51	36.107	5.33	.25	1.	.00	0.1	303.0	20	22.68	36.126	5.08	24.898	306.4	.062
149	21.25	35.973	5.10	.21	1.	.00	0.0	279.1	30	22.62	36.119	5.16	24.910	305.2	.092
200	19.17	35.531	4.82	.34	1.	.11	1.4	258.5	50	22.51	36.108	5.33	24.934	302.9	.153
225	17.95	35.269	4.70	.42	1.	.02	3.0	248.3	75	22.41	36.100	5.27	24.978	298.8	.229
250	16.03	34.955	4.60	.59	1.	.01	5.4	227.8	100	22.16	36.070	5.21	25.035	293.4	.304
276	14.33	34.707	4.48	.74	2.	.00	8.2	210.2	125	21.77	36.040	5.16	25.105	286.7	.378
301	13.02	34.575	3.96	1.09	4.	.00	13.1	194.1	150	21.22	35.966	5.09	25.188	278.7	.450
350	11.03	34.469	3.14	1.63	10.	.00	20.2	165.9	200	19.17	35.531	4.82	25.401	258.5	.587
401	9.50	34.465	2.80	2.01	14.	.00	25.4	141.0	250	16.03	34.955	4.60	25.724	227.8	.712
451	8.32	34.448	2.53	2.25	18.	.00	31.4	124.4	300	13.07	34.580	3.98	26.072	194.7	.822
501	7.15	34.402	3.00	2.27	19.	.00	31.6	111.6	400	9.53	34.465	2.80	26.634	141.4	.998
601	5.90	34.352	4.03	2.18	20.	.00	31.6	99.6	500	7.17	34.403	2.99	26.946	111.8	1.133
701	5.25	34.355	3.60	2.39	29.	.00	34.4	91.8	600	5.91	34.352	4.02	27.074	99.6	1.246
801	4.65	34.396	3.17	2.56	43.	.00	36.6	82.2	700	5.25	34.355	3.61	27.156	91.9	1.350
901	4.27	34.435	2.91	2.70	58.	.00	37.4	75.4	800	4.66	34.396	3.17	27.257	82.3	1.446
1002	4.07	34.512	2.63	2.73	74.	.00	38.4	67.6	1000	4.07	34.510	2.64	27.411	67.7	1.613

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 18

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
23 15.0S	110 11.0W	12/02/70	0036 GMT	3366M	110	10KT		090 11 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.71	36.188	5.04	.17	1.	.00	0.0	302.6	0	22.71	36.188	5.04	24.937	302.6	0
9	22.46	36.175	5.07	.18	1.	.00	0.0	296.8	10	22.46	36.173	5.07	24.998	296.9	.030
89	21.46	36.057	5.15	.18	1.	.00	0.0	278.6	20	22.45	36.160	5.09	24.990	297.6	.060
98	21.42	36.061	5.16	.16	1.	.00	0.0	277.2	30	22.44	36.147	5.11	24.983	298.3	.090
148	20.88	35.958	5.17	.13	1.	.00	0.0	270.6	50	22.43	36.122	5.13	24.968	299.7	.150
198	19.24	35.580	5.14	.15	1.	.00	0.0	256.6	75	22.41	36.090	5.15	24.949	301.6	.226
223	18.12	35.351	4.94	.20	1.	.04	0.5	246.3	100	21.41	36.061	5.16	25.207	277.0	.299
248	17.01	35.172	4.90	.27	1.	.02	1.6	233.7	125	21.23	36.036	5.17	25.238	274.0	.369
274	15.66	34.971	4.76	.43	1.	.00	3.8	218.6	150	20.83	35.946	5.17	25.278	270.2	.438
299	14.36	34.778	4.61	.61	2.	.00	6.7	205.6	200	19.15	35.561	5.12	25.429	255.9	.573
349	12.35	34.648	4.48	.92	3.	.00	11.7	176.2	250	16.91	35.157	4.89	25.674	232.6	.699
400	10.01	34.466	4.30	1.38	6.	.00	18.7	149.1	300	14.32	34.774	4.61	25.964	205.0	.812
501	7.27	34.370	4.10	1.91	12.	.00	27.4	115.6	400	10.01	34.466	4.30	26.553	149.1	.998
601	6.11	34.327	5.06	1.88	12.	.00	26.8	104.0	500	7.29	34.370	4.10	26.904	115.8	1.138
702	5.56	34.306	4.79	2.00	16.	.00	29.6	99.0	600	6.12	34.328	5.05	27.028	104.0	1.256
851	4.65	34.353	3.75	2.43	36.	.00	34.4	85.4	700	5.57	34.306	4.80	27.080	99.1	1.366
970	4.08	34.414	3.29	2.66	55.		37.4	75.0	800	4.96	34.330	4.12	27.171	90.5	1.470
979	4.05	34.427	3.21	2.63	57.		37.4	73.8	1000	4.01	34.437		27.359	72.6	1.651
989	4.03	34.432	3.20		57.			73.2							

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 20

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 03.0S	115 30.5W	12/06/70	0220 GMT	2931M	120	22KT	6	100 18 15

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	22.92	36.146	5.03	.18	0.	.03	0.1	311.4	0	22.92	36.146	5.03	24.845	311.4	0
11	22.93	36.140	5.01	.18	1.	.02	0.1	312.1	10	22.93	36.140	5.01	24.838	312.1	.031
53	22.26	36.112	5.07	.16	0.	.00	0.1	295.9	20	22.83	36.133	5.01	24.861	309.9	.062
103	21.56	36.085	5.14	.16	0.	.01	0.0	279.2	30	22.69	36.126	5.02	24.896	306.6	.093
202	20.22	35.801	5.11	.18	0.	.00	0.0	265.0	50	22.33	36.113	5.06	24.991	297.6	.154
226	19.02	35.523	5.27	.16	0.	.03	0.0	255.4	75	21.94	36.104	5.10	25.091	288.0	.228
252	18.25	35.380	5.08	.20	0.	.06	0.2	247.3	100	21.60	36.087	5.14	25.175	280.1	.300
300	16.43	35.124	4.91	.33	1.	.02	2.0	224.2	125	21.26	36.010	5.13	25.209	276.7	.370
348	14.11	34.896	4.68	.61	1.	.00	6.9	191.9	150	20.92	35.933	5.13	25.244	273.5	.440
396	12.07	34.697	4.53	.93	3.	.01	12.0	167.5	200	20.25	35.805	5.11	25.328	265.4	.578
444	9.86	34.486	4.39	1.36	5.	.00	18.0	145.2	250	18.30	35.388	5.10	25.512	247.9	.711
492	8.21	34.413	4.37	1.64	8.		23.2	125.4	300	16.43	35.124	4.91	25.762	224.2	.833
541	7.26	34.371	4.57	1.78	9.		25.4	115.4	400	11.88	34.677	4.52	26.380	165.5	1.038
588	6.69	34.358	4.83	1.84	10.		26.3	108.9	500	8.02	34.404	4.39	26.824	123.3	1.191
685	5.84	34.312	5.00	1.94	13.	.00	27.9	101.8	600	6.56	34.352	4.85	26.989	107.7	1.316
783	5.38	34.312	4.56	2.10	19.		30.5	96.5	700	5.76	34.311	4.95	27.060	101.0	1.429
884	4.81	34.322	4.17	2.32	28.	.01	32.2	89.5	800	5.29	34.313	4.49	27.119	95.4	1.536

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 21

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
23 19.5S	116 35.0W	12/07/70	0203 GMT	3138M	040	09KT	1	010 10 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	23.66	36.333	4.97	.13	1.	.08	0.0	318.5	0	23.66	36.333	4.97	24.771	318.5	0
11	23.66	36.327	4.95	.17	1.	.00	0.1	318.9	10	23.66	36.327	4.95	24.767	318.9	.032
25	23.00	36.326	5.04	.15	1.	.00	0.0	300.7	20	23.29	36.333	5.00	24.880	308.1	.063
36	22.77	36.252	5.07	.15	1.	.00	0.0	299.7	30	22.89	36.288	5.06	24.962	300.3	.094
52	22.71	36.258	5.05	.15	1.	.00	0.1	297.6	50	22.72	36.254	5.05	24.986	298.0	.154
77	21.98	36.142	5.14	.14	1.	.00	0.0	286.2	75	22.04	36.151	5.13	25.100	287.2	.228
101	21.82	36.138	5.13	.13	1.	.00	0.0	282.2	100	21.82	36.137	5.13	25.150	282.3	.300
201	20.22	35.810	5.04	.13	1.	.00	0.0	264.4	125	21.67	36.124	5.11	25.182	279.3	.371
252	17.98	35.330	4.86	.25	1.	.03	0.9	244.6	150	21.36	36.065	5.09	25.224	275.4	.442
301	15.61	34.986	4.72	.44	1.	.00	4.1	216.4	200	20.25	35.816	5.04	25.337	264.6	.580
351	13.32	34.750	4.56	.71	2.	.00	9.0	187.0	250	18.08	35.349	4.87	25.538	245.5	.711
400	10.90	34.598	4.32	1.14	5.	.00	15.8	154.1	300	15.66	34.992	4.72	25.837	217.1	.831
501	7.56	34.397	4.61	1.66	9.	.00	24.1	117.5	400	10.90	34.598	4.32	26.500	154.1	1.026
600	6.33	34.341	5.06	1.79	10.	.00	26.5	105.6	500	7.58	34.399	4.61	26.884	117.7	1.171
701	5.48	34.299	5.03	1.87	15.	.00	28.5	98.6	600	6.33	34.341	5.06	27.011	105.6	1.291
801	4.90	34.319	5.42	2.17	27.	.00	31.7	90.7	700	5.49	34.299	5.03	27.084	98.7	1.402
903	4.45	34.374	3.67	2.44	41.	.00	34.9	81.8	800	4.90	34.319	5.42	27.168	90.8	1.505
1006	4.02	34.441	3.24	2.59	58.	.00	36.7	72.4	1000	4.04	34.437	3.27	27.356	73.0	1.686

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 22

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
20 08.5S	118 17.5W	12/08/70	0239 GMT	3479M	060	10KT	1	100 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.18	36.516	4.90	.22	1.	.00	0.0	320.0	0	24.18	36.516	4.90	24.755	320.0	0
10	24.18	36.517	4.88	.28	1.	.00	0.0	320.0	10	24.18	36.517	4.88	24.755	320.0	.032
81	23.27	36.441	5.00	.22	1.	.00	0.0	299.8	20	24.15	36.521	4.90	24.769	318.6	.064
101	22.74	36.355	5.08	.20	1.	.00	0.0	291.4	30	24.08	36.521	4.91	24.789	316.8	.096
126	22.56	36.344	5.15	.19	1.	.00	0.0	287.3	50	23.86	36.505	4.95	24.843	311.7	.159
172	22.25	36.275	4.97	.16	1.	.00	0.0	283.9	75	23.41	36.456	4.99	24.939	302.5	.236
202	21.21	36.041	4.91	.20	1.	.05	0.0	273.2	100	22.76	36.358	5.08	25.051	291.8	.312
217	19.67	35.699	5.20	.20	1.	.08	0.3	258.6	125	22.56	36.343	5.15	25.098	287.4	.385
232	18.79	35.495	4.81	.23	1.	.05	0.8	251.9	150	22.40	36.298	5.07	25.110	286.2	.458
252	18.04	35.336	4.75	.31	1.	.02	1.5	245.5	200	21.33	36.068	4.91	25.234	274.4	.601
303	15.28	34.917	4.58	.55	1.	.00	5.6	214.5	250	18.11	35.349	4.76	25.531	246.2	.736
352	12.55	34.666	4.17	.97	4.	.00	11.4	178.6	300	15.46	34.939	4.59	25.841	216.7	.856
403	10.52	34.471	3.47	1.61	9.	.00	20.2	157.1	400	10.62	34.481	3.51	26.458	158.1	1.052
503	7.29	34.402	3.06	2.27	18.	.00	31.7	113.5	500	7.37	34.401	3.07	26.917	114.6	1.197
604	6.02	34.330	4.49	1.99	15.	.00	29.7	102.7	600	6.05	34.333	4.43	27.042	102.7	1.314
704	5.38	34.336	4.00	2.28	24.	.00	33.7	94.7	700	5.40	34.335	4.02	27.123	95.0	1.421
855	4.57	34.420	3.06	2.66	50.	.00	37.9	79.6	800	4.83	34.384	3.38	27.228	85.1	1.519
1007	4.11	34.509	2.74	2.71	72.	.00	38.9	68.2	1000	4.12	34.505	2.74	27.402	68.6	1.691

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 23

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18 52.5S	119 11.0W	12/08/70	1759 GMT	3555M	080	12KT	5	09

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.40	36.449	4.92	.24	1.	.00	0.0	331.1	0	24.40	36.449	4.92	24.638	331.1	0
10	24.39	36.446	4.92	.25	1.	.00	0.0	331.1	10	24.39	36.446	4.92	24.639	331.1	.033
49	23.79	36.515	4.98	.23	1.	.00	0.0	309.0	20	24.28	36.462	4.93	24.685	326.7	.066
100	22.98	36.435	4.98	.19	1.	.00	0.0	292.2	30	24.14	36.479	4.95	24.740	321.4	.099
149	22.63	36.370	4.98	.17	1.	.00	0.0	287.3	50	23.77	36.513	4.98	24.875	308.6	.162
200	21.09	36.008	4.82	.21	1.	.15	0.0	272.4	75	23.35	36.484	4.98	24.977	298.9	.238
225	19.35	35.629	4.79	.26	1.	.08	0.4	255.8	100	22.98	36.435	4.98	25.047	292.2	.313
250	18.06	35.345	4.72	.31	1.	.01	1.9	245.4	125	22.84	36.419	4.98	25.074	289.6	.387
277	16.65	35.122	4.67	.45	1.	.01	3.6	229.3	150	22.62	36.367	4.98	25.099	287.2	.461
302	15.30	34.955	4.49	.60	2.	.00	6.4	212.1	200	21.09	36.008	4.82	25.255	272.4	.604
353	12.07	34.587	4.00	1.12	5.	.00	13.8	175.5	250	18.06	35.345	4.72	25.539	245.4	.737
403	9.69	34.459	2.97	1.89	13.	.00	23.9	144.4	300	15.41	34.968	4.51	25.874	213.5	.856
454	8.44	34.464	2.27	2.31	19.	.00	29.8	125.0	400	9.81	34.462	3.03	26.585	146.1	1.045
504	7.38	34.437	2.52	2.45	21.	.00	33.0	112.1	500	7.46	34.440	2.50	26.934	112.9	1.183
604	5.87	34.362	3.70	2.27	23.	.00	32.5	98.5	600	5.91	34.365	3.66	27.083	98.8	1.297
703	5.26	34.384	3.20	2.51	35.		35.9	89.8	700	5.27	34.383	3.23	27.176	90.0	1.399
849	4.68	34.471	2.71	2.72	58.		38.0	76.9	800	4.85	34.441	2.84	27.271	81.0	1.493
978	4.22	34.513	2.51	2.77	74.		38.8	69.0	1000	4.15	34.520		27.411	67.8	1.660
988	4.19	34.513	2.51	2.80	74.		38.9	68.7							

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 24

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
17 32.5S	119 52.0W	12/09/70	0740 GMT	3573M	100	14KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.45	36.306	4.88	.30	1.	.00	0.0	340.0	0	24.35	36.306	4.88	24.545	340.0	0
10	24.35	36.306	4.89	.30	1.	.00	0.0	340.3	10	24.36	36.306	4.89	24.542	340.3	.034
25	24.29	36.290	4.94	.28	1.	.00	0.0	339.4	20	24.32	36.298	4.92	24.548	339.7	.068
51	23.99	36.268	4.96	.30	1.	.00	0.1	332.5	30	24.25	36.281	4.95	24.557	338.8	.102
77	23.53	36.341	5.01	.31	1.	.00	0.1	314.3	50	24.01	36.267	4.96	24.619	332.9	.170
178	22.38	36.416	4.76	.31	1.	.17	0.1	293.6	75	23.56	36.334	5.01	24.800	315.7	.251
228	21.37	36.035	4.57	.37	1.	.23	1.4	277.8	100	23.30	36.360	4.99	24.897	306.5	.330
252	19.91	35.727	4.55	.35	1.	.03	1.9	262.6	125	23.18	36.420	4.95	24.977	298.8	.407
302	17.41	35.295	4.28	.61	2.	.01	5.8	233.9	150	23.07	36.430	4.87	25.017	295.1	.482
351	13.38	34.773	3.35	1.28	6.	.00	14.5	186.5	200	22.51	36.299	4.67	25.081	289.0	.632
401	10.63	34.532	2.50	1.97	13.	.00	22.4	154.4	250	20.04	35.752	4.55	25.344	263.9	.774
450	8.81	34.509	1.64	2.50	22.	.00	31.2	127.1	300	17.52	35.311	4.30	25.646	235.2	.904
500	7.59	34.455	2.28	2.45	22.	.00	32.8	113.6	400	10.67	34.535	2.52	26.491	154.9	1.108
599	6.13		3.24	2.19	23.	.00	30.8		500	7.59	34.455	2.28	26.927	113.6	1.251
699	5.35	34.416	2.93	2.57	48.	.00	36.4	88.4	600	6.12	34.416	3.24	27.097	97.4	1.365
799	4.89	34.467	2.65	2.71	53.		38.1	79.5	700	5.34	34.417	2.93	27.194	88.3	1.466
902	4.58	34.505	2.42	2.83	66.		38.0	73.3	800	4.89	34.468	2.65	27.288	79.4	1.559
1007	4.23	34.520	2.36	2.88	75.		39.5	68.6	1000	4.25	34.520	2.36	27.399	68.8	1.726

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 25

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
16 07.5S	120 34.5W	12/10/70	0120 GMT	3555M	100	13KT	1	100 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.58	36.029	4.94	.33	1.	.01	0.9	366.6	0	24.58	36.029	4.94	24.266	366.6	0
10	24.58	36.029	4.92	.33	1.	.01	0.8	366.6	10	24.58	36.029	4.92	24.266	366.6	.037
62	24.31	36.113	4.97	.29	1.	.00	0.1	352.8	20	24.56	36.042	4.92	24.283	364.9	.073
102	23.88	36.127	4.93	.31	1.	.00	0.1	339.5	30	24.52	36.057	4.93	24.305	362.8	.110
122	23.39	36.217	4.75	.35	1.	.09	0.1	319.3	50	24.41	36.090	4.95	24.365	357.1	.182
142	22.90	36.191	4.69	.39	1.	.24	0.1	307.6	75	24.22	36.107	4.96	24.434	350.6	.271
203	20.96	35.866	4.49	.48	1.	.29	2.3	279.3	100	23.91	36.124	4.93	24.538	340.7	.359
228	20.03	35.707	4.45	.53	1.	.02	3.5	267.1	125	23.32	36.217	4.74	24.784	317.3	.442
253	18.53	35.451	4.33	.59	1.	.01	4.9	248.8	150	22.68	36.161	4.66	24.926	303.7	.521
303	14.90	34.952	3.79	.97	4.	.00	11.1	203.9	200	21.07	35.887	4.50	25.169	280.6	.670
351	11.57	34.600	2.64	1.74	11.	.00	19.6	165.6	250	18.73	35.484	4.35	25.478	251.2	.807
403	9.70	34.554	1.37	2.46	21.	.00	29.2	137.6	300	15.13	34.979	3.84	25.946	206.7	.926
501	7.71	34.503	1.62	2.62	27.	.00	35.1	111.7	400	9.78	34.553	1.43	26.661	138.9	1.108
550	7.05	34.480	2.02	2.62	29.	.00	35.6	104.5	500	7.72	34.504	1.62	26.946	111.8	1.241
602	6.60	34.486	1.89	2.68	34.	.00	36.7	98.2	600	6.61	34.486	1.90	27.087	98.4	1.355
702	5.90	34.501	1.66	2.87	47.		41.2	88.4	700	5.91	34.501	1.66	27.191	88.6	1.458
852	5.01	34.503	1.78	2.97	62.		40.9	78.1	800	5.29	34.500	1.74	27.266	81.4	1.552
1008	4.38	34.574	1.91	2.91	73.		40.6	66.0	1000	4.40	34.570	1.90	27.422	66.7	1.720

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 26

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
14 35.5S	121 32.0W	12/10/70	1902 GMT	3555M	090	09KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.64	36.066	4.92	.31	1.	.03	0.8	365.6	0	24.64	36.066	4.92	24.276	365.6	0
10	24.63	36.067	4.91	.31	1.	.01	0.9	365.3	10	24.63	36.067	4.91	24.280	365.3	.037
60	24.27	36.072	4.97	.30	1.	.01	0.6	354.6	20	24.60	36.070	4.92	24.291	364.2	.073
99	23.61	36.382	4.95	.26	1.	.00	0.1	333.6	30	24.55	36.070	4.93	24.306	362.7	.110
118	23.45	36.421	4.90	.29	1.	.01	0.0	306.3	50	24.38	36.070	4.95	24.358	357.9	.182
137	23.04	36.385	4.70	.31	1.	.47	0.2	297.5	75	24.01	36.180	4.96	24.551	339.4	.270
196	22.11	36.188	4.61	.35	1.	.48	0.9	286.4	100	23.60	36.385	4.95	24.827	313.1	.352
244	18.55	35.466	4.35	.57	1.	.00	4.7	248.2	125	23.31	36.412	4.83	24.934	303.0	.430
292	14.91	34.961	3.84	.98	4.	.00	10.9	203.5	150	22.98	36.360	4.68	25.010	295.7	.507
321	12.14	34.651	3.07	1.49	9.	.00	17.6	172.1	200	21.86	36.131	4.60	25.135	283.8	.655
350	10.58	34.555	2.02	2.10	16.	.00	24.4	151.9	250	18.13	35.399	4.32	25.564	243.0	.791
388	9.27	34.548	1.44	2.46	22.	.00	30.9	131.3	300	14.11	34.860	3.66	26.075	194.4	.904
484	7.47	34.542	1.64	2.57	32.	.00	35.9	105.5	400	8.96	34.547	1.46	26.790	126.6	1.073
557	6.76	34.531	1.93	2.60	38.	.00	36.2	96.9	500	7.29	34.541	1.70	27.037	103.1	1.196
605	6.30	34.520	2.10	2.64	42.	.00	36.9	91.9	600	6.35	34.521	2.08	27.151	92.4	1.302
678	5.81	34.509	2.18	2.70	48.		38.2	86.8	700	5.68	34.507	2.18	27.225	85.3	1.399
826	5.03	34.508	2.12	2.83	61.		38.5	77.9	800	5.15	34.507	2.14	27.288	79.3	1.491
978	4.42	34.524	2.17	2.85	74.		39.6	70.2	1000	4.33	34.527		27.397	69.1	1.659

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 27

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
13 08.5S	122 17.0W	12/11/70	0847 GMT	3675M	120	15KT	2	120 09 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.69	36.038	4.86	.37	1.	.02	1.2	369.1	0	24.69	36.038	4.86	24.240	369.1	0
9	24.67	36.039	4.88	.33	1.	.02	1.2	368.4	10	24.67	36.038	4.88	24.246	368.5	.037
49	24.70	36.035	4.88	.34	1.	.02	1.3	369.6	20	24.68	36.036	4.88	24.243	368.8	.074
76	24.63	36.052	4.86	.34	1.	.03	1.1	366.3	30	24.68	36.035	4.88	24.240	369.1	.111
101	23.56	36.293	4.68	.34	1.	.10	0.1	318.6	50	24.70	36.035	4.88	24.236	369.5	.185
136	23.32	36.352	4.55	.36	1.	.79	0.2	307.6	75	24.63	36.051	4.86	24.267	366.5	.278
151	22.93	36.287	4.51	.36	1.	1.09	0.4	301.5	100	23.60	36.282	4.69	24.749	320.6	.364
202	19.86	35.693	4.35	.53	1.	.02	3.7	263.8	125	23.37	36.322	4.58	24.849	311.1	.444
251	16.27	35.156	2.95	1.34	5.	.01	15.1	218.4	150	22.96	36.292	4.51	24.944	302.0	.522
302	12.86	34.797	1.54	2.05	14.	.00	22.4	174.8	200	20.01	35.720	4.36	25.326	265.6	.668
351	10.76	34.678	.57	2.63	24.	.00	28.4	145.8	250	16.34	35.165	2.98	25.813	219.3	.793
402	9.48	34.688	.94	2.55	25.	.01	31.8	124.2	300	12.98	34.806	1.59	26.266	176.3	.896
502	7.87	34.585	1.71	2.48	32.	.00	34.7	107.8	400	9.52	34.687	.91	26.808	124.9	1.054
600	6.73	34.540	2.00	2.62	40.	.00	36.9	95.8	500	7.89	34.589	1.70	26.986	108.0	1.179
701	5.87	34.516	2.12	2.67	49.	.00	38.5	86.9	600	6.73	34.540	2.00	27.115	95.8	1.290
801	5.33	34.512	2.07	2.79	56.		40.0	81.0	700	5.88	34.516	2.12	27.207	87.0	1.391
902	4.81	34.517	1.94	2.93	67.		40.0	74.8	800	5.33	34.512	2.07	27.271	81.0	1.484
1003	4.32	34.528	2.04	2.90	77.		41.0	68.9	1000	4.33	34.528	2.04	27.397	69.0	1.654

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 28

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
11 00.0S	123 32.0W	12/12/70	0228 GMT	3743M	120	14KT	1	150 12

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.90	35.721	4.84	.54	1.	.07	4.5	398.0	0	24.90	35.721	4.84	23.937	398.0	0
60	24.79	35.725	4.84	.56	1.	.07	4.1	394.5	10	24.88	35.717	4.84	23.940	397.7	.040
85	24.65	35.708	4.80	.57	1.	.07	4.3	391.7	20	24.86	35.715	4.84	23.944	397.3	.080
99	24.02	35.770	4.64	.58	2.	.12	3.0	369.2	30	24.84	35.714	4.84	23.949	396.8	.119
114	23.07	35.833	4.41	.62	2.	.70	2.1	338.1	50	24.81	35.719	4.84	23.964	395.4	.199
129	21.29	35.710	3.94	.81	2.	3.57	4.1	299.2	75	24.71	35.714	4.82	23.991	392.8	.298
200	15.64	35.072	3.20	1.24	5.	.01	13.6	210.8	100	23.97	35.777	4.63	24.257	367.4	.394
249	12.19	34.722	1.62	2.11	15.	.00	22.0	167.8	125	21.80	35.750	4.07	24.864	309.6	.480
280	11.12	34.672	.92	2.45	21.	.00	26.9	152.4	150	19.34	35.523	3.69	25.352	263.2	.552
300	10.14	34.657	.81	2.57	25.	.00	31.5	137.0	200	15.64	35.072	3.20	25.903	210.8	.674
325	9.58	34.656	.93	2.59	27.	.00	31.6	128.1	250	12.15	34.720	1.59	26.361	167.3	.771
350	9.16	34.648	1.16	2.55	28.	.00	33.7	122.2	300	10.14	34.657	.81	26.680	137.0	.851
401	8.42	34.636	1.76	2.42	31.	.00	33.8	111.9	400	8.43	34.637	1.75	26.943	112.1	.982
451	7.91	34.615	1.73	2.54	35.	.00	34.3	106.2	500	7.58	34.605	1.53	27.045	102.4	1.097
503	7.56	34.603	1.52	2.67	38.	.00	37.2	102.2	600	6.71	34.564	1.18	27.136	93.8	1.204
553	7.17	34.584	1.39	2.73	42.		38.9	98.3	700	5.93	34.542	1.16	27.220	85.8	1.303
603	6.68	34.563	1.17	2.94	47.		39.0	93.5	800	5.32	34.535	1.41	27.291	79.1	1.395
705	5.90	34.583U	1.16	2.97	54.		41.8		1000	4.32	34.544	2.04	27.412	67.7	1.562
855	5.02	34.533	1.60	3.02	68.		41.9	75.9							
1002	4.31	34.544	2.05	2.90	80.		39.9	67.6							

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 29

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
9 29.5S	124 12.5W	12/13/70	0230 GMT	3895M	140	09KT	1	100 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.05	35.461	5.12	.74	2.	.20	8.6	421.0	0	25.05	35.461	5.12	23.695	421.0	0
10	25.05	35.464	4.85	.76	2.	.20	8.3	420.8	10	25.05	35.464	4.85	23.697	420.8	.042
25	25.05	35.458	4.89	.76	2.	.20	8.4	421.3	20	25.05	35.459	4.88	23.694	421.1	.084
77	24.83	35.497	4.84	.76	2.	.18	8.5	412.1	30	25.03	35.461	4.89	23.702	420.4	.126
102	23.70	36.259	4.60	.41	1.	.17	0.3	325.0	50	24.94	35.476	4.87	23.739	416.8	.210
128	22.27	36.098	4.37	.50	1.	1.16	1.8	297.2	75	24.84	35.495	4.84	23.785	412.4	.315
153	20.36	35.768	4.11	.68	1.	.07	5.4	271.0	100	23.81	36.205	4.62	24.631	331.8	.409
204		35.136	3.42	1.16	4.	.01	12.4		125	22.46	36.145	4.40	24.978	298.8	.489
253	11.72	34.763	.61	2.53	21.	.00	26.6	156.3	150	20.61	35.811	4.14	25.237	274.2	.562
304	10.33	34.763	.71	2.55	28.	.00	33.2	132.3	200	15.91	35.129	3.52	25.885	212.5	.686
355	9.63	34.724	.79	2.60	31.	.00	34.2	123.9	250	11.93	34.776	.77	26.447	159.2	.782
404	9.04	34.692	.76	2.68	34.	.00	36.7	117.1	300	10.39	34.760	.70	26.717	133.5	.859
503	7.90	34.629	.90	2.84	40.	.00	38.8	105.0	400	9.09	34.695	.76	26.885	117.6	.991
601	6.88	34.580	.85	3.01	48.	.00	41.1	94.8	500	7.93	34.631	.90	27.014	105.3	1.111
701	5.93	34.545	.99	3.10	57.	.00	42.2	85.5	600	6.89	34.581	.85	27.125	94.9	1.220
802	5.29	34.546	1.36	3.10	65.		43.4	78.0	700	5.94	34.545	.99	27.223	85.6	1.320
904	4.75	34.539	1.92	2.96	72.		40.5	72.5	800	5.30	34.546	1.35	27.302	78.1	1.411
1008	4.30	34.548	2.19	2.86	80.		40.1	67.2	1000	4.33	34.547	2.18	27.413	67.6	1.577

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 30

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
9 26.5S	127 21.0W	12/14/70	0525 GMT		080	09KT	3	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.09	35.053	4.98	.79	4.	.23	9.6	422.9	0	24.09	35.053	4.98	23.675	422.9	0
10	24.07	35.059	4.99	.79	4.	.23	9.8	421.9	10	24.07	35.059	4.99	23.686	421.9	.042
25	23.86	35.213	4.96	.82	4.	.21	9.4	404.9	20	23.94	35.160	4.97	23.800	411.1	.084
50	23.41	35.140	4.91	.86	4.	.23	10.4	397.6	30	23.77	35.197	4.95	23.880	403.4	.125
101	22.72	35.077	4.71	.95	5.	.26	10.9	383.1	50	23.41	35.140	4.91	23.941	397.6	.205
151	20.09	35.657	4.01	.76	2.	1.72	5.3	272.2	75	23.18	35.110	4.85	23.985	393.4	.305
201	15.43	35.077	2.77	1.46	7.	.01	15.7	206.0	100	22.75	35.076	4.72	24.085	383.9	.403
250	11.41	34.770	.55	2.52	23.	.00	28.4	150.3	125	21.73	35.380	4.44	24.602	334.6	.493
300	10.54	34.766	.84	2.45	27.	.00	31.5	135.6	150	20.16	35.647	4.03	25.230	274.8	.571
349	9.69	34.729	.86	2.55	31.	.00	34.1	124.5	200	15.53	35.092	2.80	25.943	207.0	.694
399	9.17	34.696	.81	2.66	34.	.00	35.5	118.8	250	11.41	34.770	.55	26.540	150.3	.787
448	8.58	34.664	.80	2.73	37.	.00	37.1	112.2	300	10.54	34.766	.84	26.695	135.6	.861
508	8.09	34.632	.79	2.80	39.	.00	38.8	107.5	400	9.16	34.696	.81	26.874	118.6	.996
596	6.96	34.578	.83	3.01	47.	.00	41.6	96.0	500	8.15	34.637	.79	26.985	108.1	1.118
697	5.93	34.543	1.36	2.99	57.	.00	41.9	85.6	600	6.91	34.577	.85	27.118	95.5	1.229
797	5.32	34.533	1.56	2.96	65.	.00	42.5	79.3	700	5.91	34.543	1.37	27.224	85.4	1.328
900	4.79	34.534	1.86	2.97	74.	.00	40.8	73.3	800	5.30	34.533	1.57	27.291	79.1	1.420
1004	4.31	34.539	2.14	2.88	82.	.00	40.3	67.9	1000	4.33	34.539	2.13	27.407	68.1	1.587

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 31

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
10 55.5S	128 11.5W	12/14/70	1730 GMT	4123M	080	12KT	1	100 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.23	35.609	4.83	.61	2.	.12	6.2	415.6	0	25.23	35.609	4.83	23.752	415.6	0
57	25.19	35.607	4.85	.64	2.	.13	6.0	414.6	10	25.22	35.606	4.84	23.754	415.5	.042
62	25.19	35.612	4.85	.64	2.	.13	6.3	414.3	20	25.21	35.604	4.84	23.755	415.3	.083
67	25.19	35.608	4.89	.64	2.	.12	6.3	414.5	30	25.20	35.604	4.85	23.757	415.1	.125
82	24.62	35.919	4.76	.53	1.	.07	2.2	375.6	50	25.19	35.605	4.85	23.761	414.7	.208
102	24.35	36.313	4.67	.35	1.	.02	0.2	339.5	75	24.92	35.744	4.84	23.948	396.9	.310
152	23.01	36.221	4.36	.49	1.	2.08	0.4	308.5	100	24.37	36.279	4.68	24.520	342.4	.403
203	19.63	35.667	4.21	.60	1.	.02	4.6	260.0	125	23.91	36.300	4.52	24.744	321.0	.488
252	15.12	35.038	3.19	1.27	6.	.00	13.8	202.3	150	23.09	36.243	4.37	24.870	309.1	.568
303	11.37	34.688	1.01	2.40	20.	.00	25.9	155.6	200	19.88	35.706	4.22	25.352	263.2	.714
353	9.75	34.659	.98	2.59	26.	.00	31.7	130.6	250	15.31	35.060	3.25	25.968	204.6	.835
402	8.95	34.638	1.36	2.54	29.	.00	33.4	119.7	300	11.55	34.700	1.12	26.460	157.9	.929
452	8.21	34.626	1.80	2.47	32.	.00	33.3	109.6	400	8.97	34.640	1.34	26.860	120.0	1.075
500	7.67	34.599	1.73	2.59	37.	.00	33.5	104.0	500	7.67	34.599	1.73	27.028	104.0	1.196
599	6.84	34.566	1.57	2.73	44.	.00	38.0	95.3	600	6.83	34.567	1.57	27.121	95.2	1.304
698	6.04	34.537	1.51	2.90	52.		40.4	87.4	700	6.03	34.537	1.51	27.205	87.3	1.405
850	5.07	34.522	1.81	2.96	65.		40.8	77.3	800	5.36	34.524	1.69	27.277	80.4	1.498
1007	4.36	34.533	2.06	2.88	80.		40.2	68.9	1000	4.39	34.532	2.05	27.395	69.2	1.668

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 32

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
12 45.0S	129 31.0W	12/15/70	0804 GMT	3649M	060	14KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.74	35.954	4.79	.33	1.	.01	1.0	405.8	0	25.74	35.954	4.79	23.855	405.8	0
11	25.74	35.957	4.78	.34	1.	.01	1.0	405.6	10	25.74	35.956	4.78	23.857	405.6	.041
50	25.54	35.935	4.82	.35	1.	.02	1.3	401.3	20	25.69	35.951	4.79	23.867	404.6	.081
102	24.06	36.311	4.55	.42	1.	.11	0.2	331.4	30	25.64	35.946	4.81	23.879	403.5	.122
152	22.60	36.193	4.31	.46	1.	1.12	1.6	299.3	50	25.54	35.935	4.82	23.902	401.3	.202
202	20.18	35.788	4.27	.46	1.	.02	3.6	265.0	75	24.92	36.117	4.71	24.231	369.9	.300
252	16.76	35.239	3.81	.91	3.	.00	9.2	223.2	100	24.13	36.296	4.56	24.604	334.4	.388
302	13.48	34.838	2.68	1.55	9.	.00	16.3	183.7	125	23.45	36.305	4.43	24.811	314.6	.471
351	10.37	34.643	.95	2.46	22.	.00	28.3	141.9	150	22.67	36.204	4.32	24.962	300.3	.549
401	9.07	34.622	1.49	2.45	26.	.00	31.7	122.7	200	20.30	35.808	4.27	25.318	266.4	.694
450	8.20	34.604	2.17	2.33	29.	.00	31.4	111.1	250	16.91	35.260	3.84	25.754	224.9	.821
500	7.63	34.586	2.33	2.36	33.	.00	32.9	104.4	300	13.61	34.850	2.74	26.172	185.3	.927
599	6.70	34.557	2.14	2.57	41.	.00	36.0	94.2	400	9.08	34.623	1.48	26.829	122.9	1.089
699	5.97	34.536	1.91	2.78	51.	.00	38.1	86.6	500	7.63	34.586	2.33	27.024	104.4	1.211
750	5.69	34.527	2.01	2.74	53.	.00	38.1	84.0	600	6.69	34.557	2.14	27.133	94.1	1.319
800	5.42	34.526	1.84	2.88	59.		39.7	80.9	700	5.96	34.536	1.91	27.212	86.6	1.419
902	4.85	34.516	2.41	2.76	64.		37.8	75.3	800	5.42	34.526	1.84	27.272	80.9	1.512
1007	4.43	34.524	2.39	2.78	72.		39.3	70.3	1000	4.45	34.523	2.39	27.380	70.6	1.684

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 33

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
14 21.0S	130 31.5W	12/16/70	0410 GMT	4066M	060	06KT	2	060 07 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.83	36.211	4.73	.25	1.	.00	0.0	390.0	0	25.83	36.211	4.73	24.020	390.0	0
41	25.65	36.202	4.76	.26	1.	.00	0.1	385.3	10	25.78	36.209	4.74	24.035	388.6	.039
57	25.60	36.196	4.79	.27	1.	.00	0.1	384.3	20	25.73	36.207	4.74	24.048	387.3	.078
78	24.73	36.303	4.87	.28	1.	.00	0.1	351.1	30	25.69	36.205	4.75	24.059	386.3	.117
103	24.26	36.410	4.65	.31	1.	.19	0.2	329.9	50	25.62	36.198	4.77	24.076	384.7	.194
143	23.36	36.359	4.43	.37	1.	1.24	0.5	308.2	75	24.87	36.283	4.86	24.371	356.5	.287
174	22.50	36.212	4.40	.37	1.	.70	1.3	295.2	100	24.30	36.400	4.68	24.631	331.8	.374
204	20.68	35.870	4.27	.48	1.	.02	3.4	271.8	125	23.79	36.408	4.51	24.789	316.7	.456
253	18.35	35.483	4.31	.53	1.	.00	4.4	242.2	150	23.22	36.339	4.42	24.906	305.6	.536
303	14.78	34.972	3.91	.91	3.	.00	10.2	200.0	200	20.94	35.917	4.29	25.227	275.1	.684
352	11.07	34.590	2.41	1.89	13.	.00	22.0	157.6	250	18.50	35.506	4.31	25.554	244.0	.818
401	8.96	34.566	1.32	2.57	24.	.00	32.2	125.2	300	15.01	35.001	3.96	25.988	202.7	.934
500	7.44	34.543	1.74	2.60	33.	.00	35.7	105.0	400	8.99	34.565	1.34	26.799	125.7	1.107
598	6.30	34.505	2.25	2.62	41.	.00	36.1	93.0	500	7.44	34.543	1.74	27.018	105.0	1.230
698	5.57	34.499	2.40	2.64	51.	.00	37.0	84.7	600	6.28	34.505	2.26	27.146	92.8	1.337
799	5.09	34.502	2.47	2.71	58.		38.2	79.0	700	5.56	34.499	2.40	27.233	84.6	1.435
903	4.70	34.505	2.49	2.74	65.		38.2	74.6	800	5.09	34.502	2.47	27.292	79.0	1.525
1009	4.33	34.518	2.44	2.78	74.		39.2	69.7	1000	4.36	34.517	2.45	27.385	70.1	1.694

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 34

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
15 03.5S	131 15.5W	12/16/70	1842 GMT	4066M	070	15KT	1	10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.79	36.195	4.73	.25	1.	.00	0.1	390.0	0	25.79	36.195	4.73	24.021	390.0	0
25	25.75	36.190	4.74	.26	1.	.00	0.1	389.1	10	25.77	36.192	4.74	24.024	389.6	.039
100	24.30	36.501	4.67	.26	1.	.11	0.1	324.5	20	25.76	36.190	4.74	24.028	389.3	.078
129	24.05	36.510	4.70	.25	1.	.08	0.1	316.8	30	25.67	36.208	4.73	24.070	385.3	.117
159	23.10	36.305	4.45	.34	1.	1.00	0.7	304.9	50	25.31	36.287	4.71	24.239	369.2	.193
197	21.37	35.992	4.33	.41	1.	.11	2.7	280.9	75	24.83	36.391	4.69	24.465	347.7	.283
244	19.16	35.610	4.32	.50	1.	.01	4.0	252.5	100	24.30	36.501	4.67	24.707	324.5	.368
291	16.81	35.241	4.06	.75	2.	.00	7.6	224.2	125	24.10	36.516	4.70	24.780	317.7	.449
315	15.33	35.033	3.94	.84	3.	.01	9.5	207.0	150	23.44	36.379	4.53	24.870	309.0	.529
363	12.59	34.705	3.48	1.28	6.	.00	15.8	176.5	200	21.23	35.967	4.33	25.185	279.1	.679
386	10.95	34.569	3.02	1.67	10.	.00	21.2	157.1	250	18.88	35.564	4.29	25.500	249.1	.815
433	9.11	34.510	2.04	2.33	19.	.00	30.2	131.6	300	16.26	35.161	4.02	25.829	217.8	.937
479	8.27	34.501	1.85	2.50	23.	.00	33.2	119.8	400	10.24	34.534	2.69	26.566	147.8	1.129
575	6.71	34.473	2.33	2.52	30.	.00	36.2	100.6	500	7.88	34.492	1.93	26.913	114.9	1.269
673	5.93	34.501	2.15	2.67	43.	.00	38.1	88.8	600	6.47	34.480	2.31	27.102	97.0	1.383
772	5.29	34.500	2.20	2.78	55.		39.7	81.4	700	5.74	34.502	2.16	27.213	86.5	1.484
871	4.83	34.511	2.17	2.88	63.		40.8	75.5	800	5.15	34.503	2.20	27.285	79.6	1.576
972	4.38	34.522	2.14	2.87	73.		41.8	69.9	1000	4.28	34.525		27.401	68.7	1.744

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 35

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
16 05.0S	132 28.0W	12/18/70	0550 GMT	4055M	080	12KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.91	36.096	4.74	.29	1.	.00	0.1	400.6	0	25.91	36.096	4.74	23.909	400.6	0
10	25.92	36.100	4.76	.27	1.	.00	0.1	400.7	10	25.92	36.100	4.76	23.909	400.7	.040
50	25.85	36.216	4.79	.25	1.	.00	0.2	390.2	20	25.90	36.111	4.77	23.923	399.3	.080
76	25.57	36.265	4.81	.25	1.	.00	0.1	378.4	30	25.88	36.135	4.78	23.946	397.1	.120
101	24.88	36.424	4.67	.27	1.	.03	0.1	346.8	50	25.85	36.216	4.79	24.018	390.2	.199
126	24.27	36.419	4.50	.35	1.	.40	0.3	329.6	75	25.59	36.261	4.81	24.135	379.1	.296
151	23.52	36.317	4.49	.31	1.	.81	0.2	315.7	100	24.91	36.417	4.68	24.460	348.1	.388
201	21.15	35.951	4.25	.46	1.	.04	3.2	278.1	125	24.29	36.421	4.51	24.649	330.1	.474
251	19.14	35.629	4.28	.53	1.	.00	4.3	250.6	150	23.55	36.322	4.49	24.794	316.3	.556
301	16.37	35.188	3.97	.75	3.	.00	8.5	218.2	200	21.20	35.958	4.25	25.187	278.9	.708
350	13.12	34.771	3.15	1.35	7.	.00	15.8	181.6	250	19.18	35.636	4.28	25.478	251.2	.845
400	10.41	34.556	1.98	2.15	16.	.00	25.6	149.0	300	16.43	35.197	3.98	25.817	218.9	.967
499	7.94	34.518	1.78	2.52	26.	.00	34.2	113.8	400	10.41	34.556	1.98	26.554	149.0	1.160
598	6.54	34.487	2.40	2.54	34.	.00	35.9	97.3	500	7.92	34.518	1.79	26.927	113.6	1.300
697	5.84	34.491	2.56	2.56	44.	.00	36.1	88.5	600	6.52	34.487	2.40	27.101	97.1	1.414
797	5.30	34.498	2.46	2.65	53.		39.2	81.7	700	5.82	34.491	2.56	27.195	88.2	1.516
899	4.84	34.505	2.18	2.81	63.		40.1	76.1	800	5.29	34.498	2.45	27.266	81.5	1.610
1001	4.45	34.516	2.21	2.86	71.		41.3	71.1	1000	4.45	34.516	2.21	27.375	71.2	1.782

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 39

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
13 05.5S	138 22.5W	12/19/70	1330 GMT	4104M	100	14KT	1	100 15 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.35	35.77	4.72	.36	1.	.04	2.2	437.1	0	26.35	35.77	4.72	23.527	437.1	0
10	26.37		4.72	.39	1.	.04	2.5		10	26.37	35.78	4.72	23.529	436.9	.044
25	26.38		4.74	.39	1.	.03	2.5		20	26.38	35.79	4.73	23.532	436.6	.087
50	26.37		4.74	.40	1.	.03	2.6		30	26.38	35.79	4.74	23.535	436.3	.131
76	26.28	35.77	4.71					435.1	50	26.37	35.80	4.74	23.541	435.8	.219
100	25.34		4.42	.37	1.	.09	0.7		75	26.28	35.77	4.71	23.548	435.1	.328
125	24.86	36.34	4.28					352.5	100	25.34	36.26	4.42	24.213	371.6	.430
150	24.06	36.32	4.16	.43	1.	2.63	3.4	330.6	125	24.86	36.34	4.28	24.414	352.5	.522
201	21.70		4.04	.54	1.	.08	4.2		150	24.06	36.32	4.16	24.644	330.6	.608
251	18.97	35.63	4.05	.64	1.	.00	5.9	246.6	200	21.75	36.03	4.04	25.092	287.9	.766
302	15.61	35.10	3.61	1.00	4.	.00	11.5	208.3	250	19.03	35.64	4.05	25.518	247.4	.904
352	11.72	34.69	2.20	1.85	13.	.00	22.2	161.9	300	15.75	35.12	3.64	25.913	209.8	1.023
403	9.41	34.60	1.45	2.41	23.	.00	30.5	129.4	400	9.51	34.60	1.47	26.745	130.9	1.202
454	8.33	34.59	1.76	2.45	28.	.00	33.0	114.3	500	7.65	34.56	2.17	27.002	106.5	1.329
504	7.60	34.56	2.20	2.39	31.	.00	32.8	106.0	600	6.53	34.52	2.62	27.128	94.5	1.439
604	6.49	34.52	2.63	2.36	40.		33.8	94.1	700	5.66	34.51	2.66	27.230	84.9	1.537
704	5.63	34.51	2.66	2.55	50.		37.5	84.6	800	5.18	34.51	2.55	27.287	79.4	1.628
804	5.16	34.51	2.55	2.55	58.		37.6	79.3	1000	4.25	34.53	2.73	27.404	68.4	1.795
903	4.70	34.52	2.55	2.65	66.		38.5	73.7							
1001	4.25	34.53	2.73	2.69	74.		37.6	68.3							

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 40

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
12 31.0S	140 39.5W	12/20/70	0300 GMT	4241M	110	18KT	1	080 15 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.76	36.013	4.72	.24	1.	.00	0.2	432.2	0	26.76	36.013	4.72	23.578	432.2	0
10	26.77	36.009	4.69	.27	1.	.00	0.2	432.8	10	26.77	36.009	4.69	23.572	432.8	.043
51	26.60	36.030	4.75	.23	1.	.00	0.2	426.1	20	26.73	36.013	4.70	23.589	431.2	.087
103	25.25	36.415	4.58	.27	1.	.10	0.2	358.2	30	26.69	36.019	4.71	23.606	429.5	.130
153	24.07	36.366	4.38	.35	1.	1.07	0.4	327.7	50	26.60	36.029	4.75	23.640	426.3	.216
204	21.14	35.967	4.12	.45	1.	.02	4.0	276.7	75	26.05	36.209	4.69	23.951	396.6	.319
254	18.80	35.570	4.06	.69	2.	.01	6.3	246.7	100	25.34	36.392	4.59	24.309	362.5	.415
305	15.09	35.052	3.29	1.12	5.	.00	12.8	200.6	125	24.83	36.442	4.50	24.504	343.9	.504
354	12.26	34.791	2.78	1.54	10.	.00	16.6	164.0	150	24.16	36.379	4.39	24.657	329.3	.590
405	9.87	34.607	1.61	2.25	21.	.00	29.1	136.4	200	21.39	36.002	4.14	25.168	280.7	.746
454	8.39	34.585	1.97	2.37	26.	.00	31.8	115.3	250	19.00	35.605	4.06	25.501	249.0	.882
504	7.44								300	15.47	35.097	3.38	25.961	205.3	1.000
553	6.88	34.536	2.69	2.33	35.		32.5	98.1	400	10.07	34.620	1.70	26.662	138.7	1.181
604	6.43	34.516	2.84	2.39	39.		33.0	93.8	500	7.50	34.561	2.34	27.024	104.4	1.311
704	5.76	34.508	2.74	2.47	48.		34.6	86.2	600	6.46	34.518	2.83	27.133	94.1	1.419
805	5.21	34.508	2.70	2.57	56.		36.8	79.9	700	5.78	34.508	2.74	27.213	86.5	1.518
907	4.75	34.517	2.63	2.71	64.		37.7	74.2	800	5.23	34.508	2.70	27.279	80.2	1.611
1010	4.36	34.522	2.67	2.67	72.		37.7	69.7	1000	4.39	34.522	2.67	27.386	70.1	1.781

RV THOMAS WASHINGTON — ARIES EXPEDITION I — 41

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
14 19.5S	143 52.0W	12/21/70	0246 GMT	4218M	100	20KT	1	16

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.04	36.027	4.71	.24	1.	.00	0.1	439.7	0	27.04	36.027	4.71	23.499	439.7	0
77	26.15	36.221	4.69	.24	1.	.00	0.1	398.8	10	26.93	36.023	4.71	23.532	436.6	.044
102	25.84	36.393	4.53	.29	1.	.02	0.1	377.2	20	26.82	36.028	4.70	23.571	432.8	.087
152	24.49	36.379	4.31	.40	1.	1.50	0.5	338.8	30	26.70	36.042	4.70	23.618	428.4	.131
175	23.71	36.310	4.20	.44	1.	.90	1.6	321.6	50	26.47	36.095	4.70	23.731	417.6	.215
203	22.29	36.140	4.17	.42	1.	.03	3.1	294.7	75	26.17	36.209	4.69	23.912	400.4	.318
253	19.74	35.737	4.22	.58	1.	.00	5.1	257.6	100	25.87	36.380	4.54	24.136	379.0	.417
303	17.12 A	35.302	3.91	.78	2.	.00	8.0	226.7	125	25.31	36.427	4.42	24.345	359.0	.510
328	15.71	35.117	3.77	.93	4.	.00	10.0	209.0	150	24.56	36.385	4.32	24.543	340.2	.599
352	14.17	34.924	3.43	1.16	6.	.00	13.8	191.1	200	22.45	36.160	4.17	24.990	297.6	.762
403	11.67	34.680	2.74	1.70	11.	.00	20.7	161.5	250	19.89	35.763	4.22	25.390	259.6	.905
452	8.88	34.533	2.35	2.19	20.	.00	29.3	126.4	300	17.28	35.327	3.93	25.716	228.6	1.032
502	7.54	34.508	2.59	2.31	27.	.00	31.6	109.0	400	11.81	34.691	2.78	26.404	163.2	1.238
603	6.35	34.495	2.97	2.38	38.		33.4	94.4	500	7.57	34.508	2.57	26.971	109.4	1.383
702	5.66	34.493	3.02	2.43	46.		34.2	86.2	600	6.37	34.495	2.96	27.128	94.6	1.494
803	5.13	34.490	3.24	2.48	54.		35.8	80.4	700	5.67	34.493	3.02	27.215	86.3	1.593
904	4.77	34.496	3.08	2.54	60.		35.7	76.0	800	5.14	34.490	3.23	27.276	80.5	1.686
1008	4.42	34.505	3.03	2.55	67.		36.1	71.6	1000	4.45	34.504	3.03	27.366	72.0	1.857

A) ALTERNATE VALUE 17.77 DEGREES.

RV THOMAS WASHINGTON ARIES EXPEDITION I 42

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
15 09.5S	145 15.5W	12/21/70	1513 GMT	1829M	100	17KT	2	080 13 09

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.13	36.133	4.61	.20	1.	.00	0.0	434.9	0	27.13	36.133	4.61	23.550	434.9	0
62	27.15	36.126	4.62	.23	1.	.00	0.0	436.0	10	27.13	36.131	4.61	23.548	435.0	.044
82	27.10	36.147	4.72	.22	1.	.00	0.1	432.9	20	27.14	36.130	4.61	23.546	435.2	.087
102	26.39	36.280	4.71	.22	1.	.00	0.0	401.8	30	27.14	36.129	4.61	23.544	435.4	.131
127	25.77	36.404	4.66	.25	1.	.01	0.0	374.3	50	27.15	36.127	4.62	23.541	435.8	.218
152	25.15	36.351	4.42	.25	1.	.21	0.2	359.9	75	27.12	36.139	4.69	23.559	434.0	.328
178	23.73	36.256	4.21	.35	1.	.58	1.1	326.0	100	26.47	36.264	4.71	23.859	405.4	.433
203	22.09	36.088	4.09	.46	1.	.02	3.1	293.1	125	25.81	36.397	4.66	24.167	376.0	.532
255	19.34	35.665	4.05	.61	1.	.00	5.6	252.9	150	25.21	36.359	4.44	24.323	361.1	.626
304	17.04	35.304	3.87	.73	2.	.00	8.2	224.8	200	22.29	36.110	4.10	24.999	296.8	.794
354	14.41	34.960	3.31	1.05	5.	.00	12.2	193.3	250	19.58	35.707	4.05	25.430	255.7	.936
403	11.43	34.665	2.97	1.60	11.	.00	20.2	158.4	300	17.23	35.333	3.89	25.733	226.9	1.061
502	7.67	34.513	2.66	2.25	26.	.00	30.7	110.4	400	11.61	34.680	2.99	26.433	160.4	1.265
602	6.30	34.494	3.16	2.27	37.		31.7	93.8	500	7.72	34.513	2.67	26.954	111.1	1.410
701	5.61	34.495	3.14	2.41	46.		33.7	85.4	600	6.31	34.494	3.15	27.134	94.0	1.521
802	5.10	34.498	3.15	2.44	54.		34.6	79.4	700	5.61	34.495	3.14	27.223	85.5	1.619
904	4.74	34.509	3.12	2.52	60.		35.2	74.7	800	5.11	34.498	3.15	27.286	79.5	1.711
1008	4.25	34.516	3.02	2.58	70.		36.4	69.1	1000	4.29	34.516	3.03	27.392	69.5	1.879

RV THOMAS WASHINGTON ARIES EXPEDITION I - 44

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 01.5S	154 58.5W	12/28/70	1913 GMT	4733M	100	18KT	1	100 18 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.44	35.272	4.77	.19	1.	.02	0.1	446.1	0	25.44	35.272	4.77	23.433	446.1	0
9	25.43	35.281	4.73	.16	1.	.00	0.1	445.1	10	25.37	35.293	4.74	23.472	442.3	.044
24	24.23	35.510	4.91	.08	1.	.00	0.1	393.9	20	24.60	35.440	4.85	23.816	409.5	.087
49	23.34	35.636	5.04	.11	1.	.00	0.1	359.8	30	23.97	35.559	4.96	24.095	382.9	.127
75	22.09	35.679	5.05	.11	1.	.00	0.1	322.6	50	23.29	35.638	5.04	24.353	358.3	.201
100	21.34	35.678	4.96	.10	1.	.00	0.1	302.8	75	22.09	35.679	5.05	24.727	322.6	.287
149	20.09	35.655	4.64	.17	1.	.09	0.8	272.3	100	21.34	35.678	4.96	24.935	302.8	.366
200	18.82		4.63	.25	1.	.02	2.0		125	20.68	35.669	4.79	25.108	286.4	.441
250	17.79	35.598	4.76	.26	1.	.01	2.6	220.6	150	20.05	35.650	4.64	25.262	271.7	.512
301	16.41	35.547	4.57	.35	1.	.01	4.8	193.0	200	18.82	35.612	4.63	25.553	244.0	.644
351	15.36	35.365	4.63	.45	2.	.01	6.0	183.4	250	17.79	35.598	4.76	25.799	220.6	.764
402	13.03	35.014	4.48	.79	3.	.00	10.8	162.1	300	16.44	35.548	4.57	26.086	193.4	.872
502	9.93	34.695	4.57	1.23	5.	.00	17.4	130.8	400	13.13	35.027	4.49	26.406	163.0	1.060
603	7.74	34.485	4.94	1.52	8.	.00	21.7	113.4	500	9.98	34.699	4.57	26.740	131.3	1.218
702	6.56	34.396	5.18	1.61	10.	.00	24.5	104.4	600	7.79	34.490	4.93	26.925	113.8	1.351
801	5.72	34.353	5.01	1.84	16.		27.5	97.4	700	6.58	34.397	5.18	27.023	104.5	1.471
899	5.08	34.351	4.67	2.03	24.		29.9	90.2	800	5.73	34.353	5.01	27.098	97.4	1.582
996	4.47	34.391	4.52	2.22	36.		32.6	80.7	1000	4.45	34.393		27.278	80.4	1.780

ARIES EXPEDITION LEG II

The objective of Leg II of the ARIES Expedition was to measure the deep flow, water characteristics and topography in the area between New Zealand and Antartica. Most of the work was carried out between 60°S and 70°S. Some preliminary results have been published by Reid and Mantyla (1971) and referen in other publications listed below. The data from 12 current meter lowerings is available from NODC. On 60 stations single or multiple casts were lowered as near the bottom as possible.

ARIES II was sponsored by the National Science Foundation and the Office of Naval Research.

Personnel participating in the expedition were:

Ship's Captain:

Bonham, John W.

Scientific personnel:

Reid, J. L. (Chief scientist)
Anderson, G. C.
Bates, A. T.
Ferreira, S. M.
Graham, J. B.
Hester, A. W.
Kellogg, D.
Linick, T.
Mantyla, A. W.
Mead, R. V.
Morris, G. S. Jr.
Scruggs, F.
Steffin, O.
Withington, P.
Worthington, L. V.

Papers resulting from ARIES II are:

Reid, Joseph L., and Arnold W. Mantyla, 1971. Antartic work of the ARIES Expedition. Antartic J., U. S., 6: 111-113.

Reid, Joseph L., 1973. The shallow salinity minima of the Pacific Ocean. Deep-Sea Res., 20: 51-68.

Reid, Joseph L., 1974. Deep Pacific circulation inferred from the density field and water characteristics. Trans. Amer. Geophys. Un., 56: 1134. (Abstract only).

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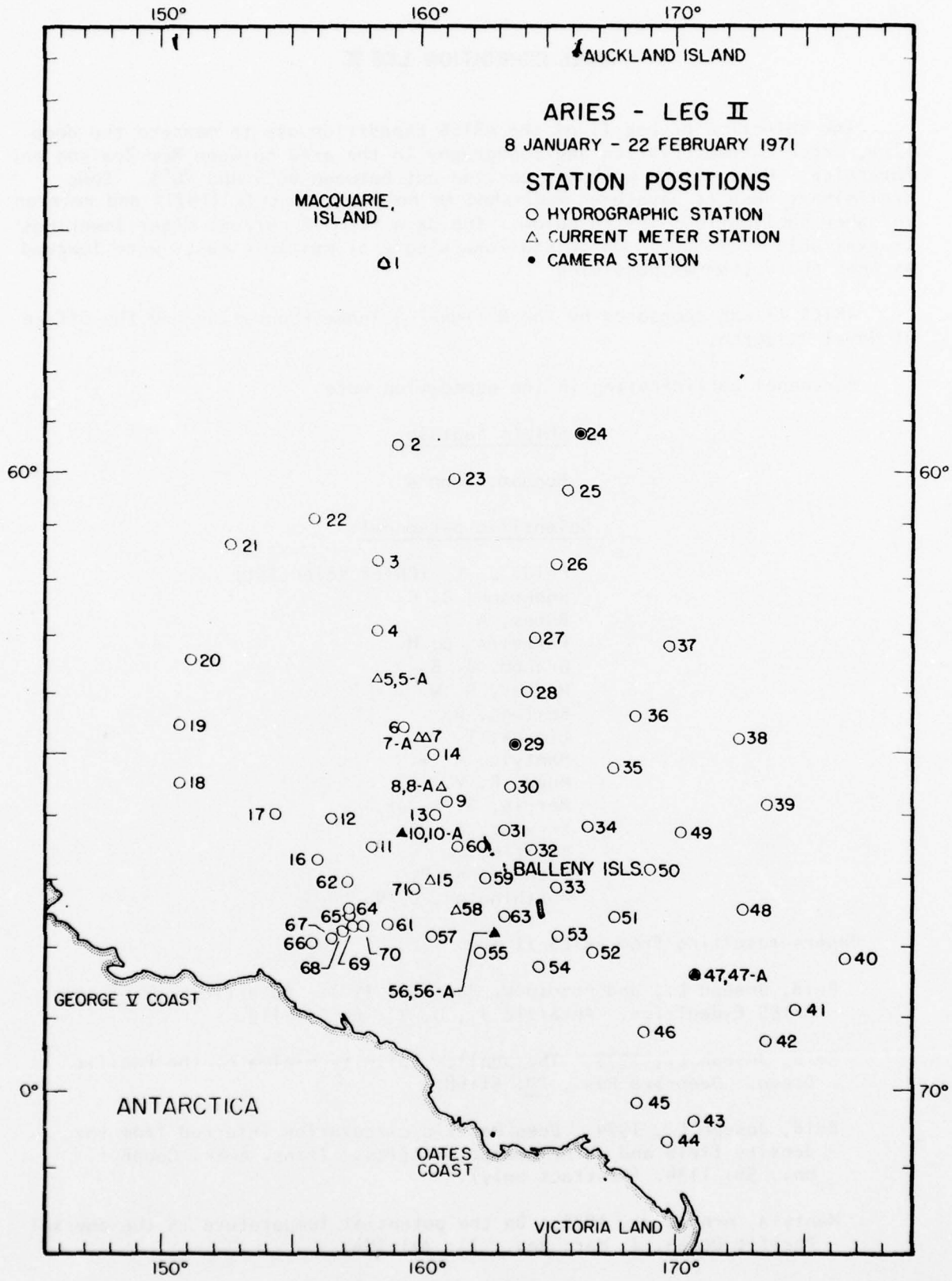

150°
160°
170°
AUCKLAND ISLAND
ARIES - LEG II
8 JANUARY - 22 FEBRUARY 1971
STATION POSITIONS
○ HYDROGRAPHIC STATION
△ CURRENT METER STATION
• CAMERA STATION
MACQUARIE ISLAND
60°
0°
70°
BALLENY ISLS.
GEORGE V COAST
ANTARCTICA
OATES COAST
VICTORIA LAND

FIGURE 2

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 1

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
55 42.5S	158 38.0E	01/13/71	0058 0415GMT	3622M	320	21KT	2	320 12 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	4.80	33.82	7.75	1.20	1.	.32	23.0	127.1	0	4.80	33.82	7.75	26.785	127.1	0
30	4.34	33.83	7.75	1.29	1.	.28	23.6	121.6	10	4.69	33.82	7.75	26.800	125.7	.013
50	3.81	33.84	7.90	1.43	3.	.30	24.2	115.6	20	4.54	33.83	7.75	26.819	123.8	.025
102	1.09	33.92	7.81	1.93	17.	.36	28.5	88.3	30	4.34	33.83	7.75	26.843	121.6	.037
127	1.04	33.97	7.59	1.96	24.	.26	29.7	84.2	50	3.81	33.84	7.90	26.906	115.6	.061
178	1.56	34.15	6.72	2.18	35.	.08	33.2	73.9	75	2.40	33.86	7.86	27.049	102.0	.089
228	2.33	34.31	5.69	2.26	46.	.01	35.2	67.4	100	1.18	33.91	7.81	27.183	89.3	.112
279	2.35	34.34	5.03	2.37	49.	.01	35.7	65.3	125	1.04	33.97	7.61	27.235	84.4	.134
353	2.36	34.41	4.60	2.39	57.	.00	36.1	60.0	150	1.21	34.05	7.24	27.287	79.5	.155
427	2.22	34.46	4.44	2.42	63.	.00	36.6	55.2	200	1.93	34.23	6.25	27.381	70.5	.193
503	2.15	34.52	4.29	2.44	68.	.00	36.6	50.1	250	2.34	34.33	5.36	27.427	66.3	.227
602	2.21	34.58	4.11	2.41	73.	.00	36.6	46.0	300	2.35	34.36	4.86	27.451	63.9	.260
701	2.21	34.62	4.05	2.37	76.	.00	36.4	43.0	400	2.28	34.44	4.48	27.525	56.9	.323
798A	2.20	34.61 U	4.06	2.36	79.		35.7		500	2.15	34.52	4.30	27.595	50.3	.379
799	2.19	34.66	4.92U	2.35	78.	.00	35.4	39.8	600	2.21	34.58	4.11	27.640	46.1	.429
898	2.18	34.68	4.09	2.33	80.	.00	34.9	38.2	700	2.21	34.62	4.05	27.672	43.0	.477
997A	2.131	34.70	4.18	2.14U	82.		33.9	36.3	800	2.19	34.66	4.06	27.706	39.8	.523
998	2.15	34.69	4.20	2.20U	82.	.00	34.2	37.2	1000	2.15	34.69	4.20	27.734	37.2	.609
1098	2.09	34.72	4.27	2.19	83.		33.5	34.5	1200	2.03	34.73	4.32	27.775	33.3	.690
1099A	2.05	34.72	4.30	2.19	82.		33.4	34.2	1500	1.71	34.75	4.54	27.815	29.4	.801
1198	2.03	34.72	4.32	2.17	85.		33.5	34.0	2000	1.44	34.74	4.65	27.828	28.3	.977
1199A	2.03	34.73	4.32	2.18	86.		34.0	33.3	2500	1.25	34.73	4.69	27.836	27.5	1.149
1299A	1.93	34.74	4.46	2.06	86.		32.6	31.8	3000	1.01	34.72	4.83	27.841	27.0	1.317
1352	1.91	34.74	4.50	2.09	88.		33.0	31.6							
1399A	1.816	34.75	4.48	2.12	87.		33.2	30.2							
1499A	1.714	34.75	4.54	2.09	94.		32.3	29.4							
1648A	1.611	34.75	4.59	2.14	93.		33.1	28.7							
1799A	1.521	34.76 U	4.57	2.10	97.		32.3								
1997A	1.44	34.74	4.65	2.05U	101.		32.9	28.3							
2196A	1.298	34.74	4.69	2.14	106.		32.8	27.3							
2396A	1.294	34.74	4.69	2.16	107.		33.4	27.3							
2594A	1.211	34.73	4.69	2.14	108.		32.4	27.5							
2793A	1.137	34.73	4.83	2.11	110.		32.6	27.1							
2992A	1.01	34.72	4.83	2.16	115.		33.2	27.0							
3190A	.926	34.72	4.85	2.18	117.		33.5	26.5							
3290A	.91	34.72	4.87	2.19	122.		32.8	26.4							
3389A	.831	34.72	4.87	2.16	118.		33.8	25.9							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 2

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
59 30.5S	159 06.5E	01/14/71	0149 0355GMT	6242M	310	15KT	2	320 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	3.23	33.899	7.74	1.44	8.	.26	25.6	105.9	0	3.23	33.899	7.74	27.008	105.9	0
20	3.04	33.907	7.76	1.51	8.	.25	25.5	103.6	10	3.13	33.903	7.75	27.020	104.8	.011
50	1.18	33.992	7.85	1.95	30.	.22	28.9	83.4	20	3.04	33.907	7.76	27.032	103.6	.021
81	.35	34.083	7.31	2.14	46.	.16	32.5	71.7	30	2.47	33.926	7.79	27.096	97.5	.031
111	.43	34.155	6.82	2.24	52.	.14	33.6	66.6	50	1.18	33.992	7.85	27.246	83.4	.049
140	1.14	34.307	5.51	2.39	61.	.11	36.5	59.2	75	.43	34.067	7.44	27.352	73.3	.069
181	1.72	34.412	4.66	2.42	67.	.05	37.3	55.1	100	.40	34.132	7.05	27.405	68.3	.086
231	1.86	34.491	4.36	2.45	73.	.02	37.1	50.1	125	.75	34.227	6.20	27.461	63.0	.103
302	2.10	34.586	4.05	2.38	81.	.01	35.8	44.7	150	1.32	34.340	5.22	27.515	57.9	.118
377	2.01	34.605	4.12	2.39	79.	.00	36.2	42.6	200	1.77	34.443	4.49	27.565	53.2	.146
452	2.11	34.651	4.09	2.27	81.	.00	35.8	39.9	250	1.94	34.521	4.25	27.615	48.4	.172
527	2.08	34.676	4.15	2.26	82.	.00	35.6	37.7	300	2.10	34.585	4.06	27.653	44.8	.196
628	2.04	34.710	4.26	2.24	86.		34.1	34.9	400	2.04	34.620	4.11	27.685	41.8	.241
728	2.00	34.728	4.35	2.20	85.		33.8	33.2	500	2.09	34.668	4.12	27.720	38.5	.283
853	1.90	34.735	4.38	2.17	90.		32.8	31.9	600	2.05	34.702	4.23	27.750	35.6	.323
981	1.83	34.754	4.47	2.13	95.	.00	33.3	30.0	700	2.01	34.724	4.33	27.771	33.6	.361
1106	1.72	34.748	4.55	2.12	94.		32.6	29.6	800	1.94	34.732	4.37	27.783	32.5	.397
1231	1.64	34.745	4.57	2.14	95.		33.5	29.3	1000	1.81	34.753	4.48	27.810	29.9	.468
1357	1.53	34.743	4.62	2.00U	100.U		32.5U	28.7	1200	1.66	34.746	4.57	27.816	29.4	.536
1399A	1.51	34.744	4.65	2.10	97.		30.4	28.5	1500	1.43	34.741	4.67	27.829	28.2	.637
1600A	1.33	34.749U	4.68	2.14	101.		33.2		2000	1.04	34.727	4.76	27.845	26.7	.797
1801A	1.17	34.727	4.68	2.13	105.		33.7	27.5	2500	.82	34.720	4.84	27.853	25.8	.950
2002A	1.04	34.727	4.76	2.19	112.		33.6	26.7	3000	.66	34.705	4.88	27.851	26.0	1.099
2252A	.90	34.719	4.79	2.22	113.		33.4	26.4	3500	.58	34.698	4.99	27.850	26.1	1.247
2504A	.82	34.720	4.84	2.24	118.		33.8	25.8	4000	.56	34.700	4.89	27.854	25.8	1.395
2804A	.71	34.708	4.98	2.18	121.		33.8	26.1	4500	.59	34.694	5.02	27.846	26.5	1.545
3105A	.64	34.704	4.83	2.23	123.		34.6	26.0	5000	.63	34.690	4.95	27.841	27.0	1.703
3405A	.59	34.697	4.98	2.23	124.		35.0	26.2	5500	.68	34.692	5.04	27.839	27.2	1.867
3706A	.562	34.700	5.01	2.27	126.		34.6	25.9	6000	.73	34.694	5.04	27.838	27.3	2.037
4007A	.556	34.700	4.89	2.24	126.		33.9	25.8							
4256A	.569	34.691	5.06	2.22	127.		34.3	26.6							
4508A	.592	34.694	5.02	2.30	126.		33.7	26.5							
4759A	.599	34.693	5.01	2.24	127.		34.0	26.6							
5010A	.631	34.690	4.95	2.24	127.		34.4	27.0							
5261A	.662	34.695	5.04	2.23	128.		34.4	26.8							
5512A	.68	34.691	5.04	2.24	129.		34.2	27.2							
5763A	.701	34.691	5.05	2.24	129.		34.7	27.3							
5914A	.73	34.698	5.04	2.27	129.		34.2	27.0							
6014A	.73	34.693	5.04	2.28	129.		34.8	27.4							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 3

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
61 33.0S	158 24.5E	01/14/71	1835 GMT	2489M	040	04KT	2	050 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	1.83	34.024	8.16	1.47	30.	.28	26.5	85.3	0	1.83	34.024	8.16	27.225	85.3	0
10	1.83	34.022	8.19	1.47	29.	.27	26.7	85.5	10	1.83	34.022	8.19	27.224	85.5	.009
25	1.79	34.021	8.67	1.49	30.	.29	26.6	85.3	20	1.80	34.022	8.51	27.225	85.3	.017
50	.73	34.059	8.45	1.82	48.	.24	28.9	75.6	30	1.64	34.027	8.63	27.241	83.8	.026
101	-.92	34.180	8.05	2.21	67.	.17	32.8	58.7	50	.73	34.059	8.45	27.328	75.6	.042
151	.30	34.445	5.87	2.31	77.	.11	36.0	43.8	75	-.65	34.104	8.25	27.434	65.5	.059
251	1.83	34.682	4.26	2.28	86.	.01	34.1	35.4	100	-.91	34.178	8.06	27.504	59.0	.075
352	1.84	34.708	4.35	2.24	87.	.00	34.0	33.5	125	-.48	34.304	7.06	27.588	50.9	.088
455	1.80	34.720	4.43	2.19	88.	.00	32.9	32.3	150	.26	34.439	5.92	27.661	44.1	.100
555	1.75	34.730	4.49	2.18	91.		33.4	31.2	200	1.50	34.571	4.75	27.688	41.5	.122
656	1.66	34.733	4.59	2.14	92.	.00	32.7	30.4	250	1.83	34.681	4.26	27.751	35.6	.141
757	1.55	34.735	4.62	2.16	95.		33.3	29.4	300	1.83	34.695	4.30	27.762	34.5	.159
858	1.47	34.732	4.68	2.14	91.		32.9	29.1	400	1.83	34.715	4.39	27.778	32.9	.195
959	1.38	34.733	4.73	2.16	93.	.00	33.2	28.4	500	1.78	34.725	4.46	27.790	31.8	.229
1060	1.30	34.728	4.75	2.06U	96.		33.1	28.3	600	1.71	34.732	4.54	27.801	30.8	.263
1161	1.20	34.725	4.75	2.18	95.	.00	33.3	27.8	700	1.61	34.734	4.61	27.810	29.9	.296
1261	1.127	34.724	4.78	2.20	97.		33.3	27.4	800	1.51	34.734	4.64	27.817	29.3	.328
1362	1.03	34.720	4.79	2.20	101.		33.7	27.1	1000	1.35	34.731	4.74	27.827	28.3	.391
1562	.898	34.711	4.83	2.21	103.		33.4	27.0	1200	1.17	34.725	4.76	27.834	27.7	.454
1762	.737	34.704	4.89	2.21	106.		34.4	26.6	1500	.94	34.714	4.82	27.841	27.0	.545
1961	.58	34.694	4.95		108.		34.0	26.4	2000	.55	34.693	4.96	27.848	26.3	.691
2160	.448	34.690	5.00	2.25	124.		34.2	26.0							
2358	.36	34.689	5.04	2.26	128.		34.7	25.6							
2457	.34	34.689	5.05	2.28	131.		34.8	25.5							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 4

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
62 57.0S	158 23.5E	01/15/71	0412 GMT	2360M	350	18KT	4	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	1.07	33.943	8.18	1.63	57.	.22	27.5	86.4	0	1.07	33.943	8.18	27.214	86.4	0
25	.99	33.950	7.96	1.69	61.	.23	31.0	85.4	10	1.04	33.946	8.07	27.218	86.0	.009
50	-.75	34.105	7.96	1.97	68.	.18	30.4U	65.1	20	1.01	33.949	7.99	27.222	85.6	.017
91	-1.66	34.309	7.22	2.22	77.	.25	33.3	46.6	30	.67	33.973	7.96	27.262	81.9	.026
131	-.35	34.483	6.08	2.22	86.	.05	33.5	37.8	50	-.75	34.105	7.96	27.439	65.1	.040
176	.97	34.654	4.87	2.20	89.	.01	33.5	31.8	75	-1.30	34.250	7.59	27.576	52.1	.055
227	1.15	34.687	4.72	2.15	94.	.00		30.4	100	-1.45	34.349	6.98	27.661	44.1	.067
303	1.19	34.704	4.70	2.19	95.	.00		29.4	125	-.61	34.457	6.26	27.717	38.7	.077
378	1.14	34.710	4.73	2.18	95.			28.6	150	.28	34.563	5.50	27.759	34.7	.086
456	1.10	34.714	4.75	2.18	101.	.00	33.3	28.0	200	1.05	34.670	4.80	27.797	31.1	.103
530	1.05	34.712	4.74	2.13	106.		33.3	27.9	250	1.16	34.693	4.71	27.809	30.0	.118
606	1.02	34.715	4.75	2.19	105.	.00	33.8	27.4	300	1.19	34.704	4.70	27.816	29.4	.134
707	.94	34.714	4.77	2.19	112.		34.6	27.0	400	1.13	34.712	4.74	27.826	28.4	.163
808	.86	34.710	4.80	2.19	111.	.00	33.3	26.8	500	1.07	34.713	4.74	27.831	27.9	.193
909	.81	34.706	4.76	2.19	118.		33.9	26.8	600	1.02	34.715	4.75	27.836	27.5	.222
1011	.74	34.708	4.81	2.22	115.	.00	34.0	26.3	700	.95	34.714	4.77	27.841	27.1	.250
1162	.63	34.697	5.55U	2.25	120.		34.1	26.5	800	.87	34.711	4.80	27.843	26.8	.279
1312	.52	34.694	4.89	2.22	121.		34.3	26.1	1000	.75	34.708	4.80	27.848	26.3	.335
1464	.45	34.695	4.92	2.25	123.		34.2	25.6	1200	.60	34.696	4.87	27.847	26.4	.391
1613	.34	34.689	4.99	2.24	126.		34.5	25.5	1500	.42	34.694	4.93	27.856	25.6	.472
1813	.22	34.686	5.14	2.26	126.		34.6	25.1	2000	.13	34.687	5.15	27.867	24.5	.599
2012	.130	34.687	5.15	2.26	130.		34.2	24.5							
2162	.097	34.685	5.14	2.24	134.		34.3	24.5							
2309	.06	34.682	5.10	2.25	136.		34.5	24.5							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 6

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
64 34.0S	159 23.5E	01/15/71	1734 1946GMT	2923M	290	24KT	2	290 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.98	33.576	8.00	1.67	59.	.25	28.1	113.8	0	.98	33.576	8.00	26.925	113.8	0
25	.96	33.592	8.04	1.67	59.	.24	28.8	112.5	10	.97	33.583	8.02	26.930	113.3	.011
50	-.92	34.330	6.62	2.09	68.	.10	32.1	47.2	20	.96	33.589	8.03	26.936	112.7	.023
76	-.22	34.457	5.77	2.23	78.	.12	33.4	40.4	30	-.40	33.731	7.79	27.122	95.1	.033
101	1.06	34.607	4.79	2.27	86.	.07	33.7	35.9	50	-.92	34.330	6.62	27.627	47.2	.047
126	1.37	34.650	4.53	2.26	88.	.03	33.9	34.7	75	-.27	34.451	5.80	27.697	40.6	.058
151	1.43	34.662	4.54	2.23	88.	.01	34.2	34.1	100	1.01	34.602	4.82	27.746	36.0	.068
202	1.51	34.688	4.51	2.23	90.	.00	34.3	32.7	125	1.37	34.650	4.53	27.760	34.7	.077
304	1.46	34.702	4.58	2.19	90.	.00	33.5	31.3	150	1.43	34.662	4.54	27.765	34.2	.085
405	1.49	34.720	4.56	2.19	94.	.00	34.2	30.2	200	1.51	34.687	4.51	27.780	32.8	.102
506	1.45	34.726	4.61	2.16	95.		33.6	29.4	250	1.50	34.698	4.54	27.789	31.9	.119
606	1.34	34.726	4.67	2.15	99.		33.2	28.7	300	1.46	34.702	4.58	27.795	31.3	.135
708	1.20	34.719	4.75	2.19	101.	.00	33.0	28.3	400	1.49	34.719	4.56	27.807	30.2	.167
808	1.08	34.716	4.80	2.16	104.		33.1	27.8	500	1.45	34.726	4.61	27.815	29.5	.199
1011	.93	34.709	4.80	2.20	110.		33.3	27.3	600	1.35	34.726	4.67	27.823	28.7	.230
1113	.85	34.707	4.84	2.23	113.	.00	33.5	27.0	700	1.21	34.720	4.74	27.827	28.3	.260
1215	.77	34.701	4.85	2.23	115.		33.5	27.0	800	1.09	34.716	4.80	27.833	27.8	.290
1316	.68	34.703	4.85	2.25	117.		33.9	26.3	1000	.94	34.710	4.80	27.837	27.4	.349
1419	.61	34.695	4.89	2.21	118.		33.8	26.5	1200	.78	34.702	4.85	27.841	27.0	.407
1498A	.52	34.695	4.87	2.21	120.		33.7	26.0	1500	.52	34.695	4.87	27.852	26.0	.492
1598A	.426	34.689	4.98	2.28	122.		33.8	25.9	2000	.20	34.686	5.11	27.863	25.0	.623
1799A	.30	34.688	5.07	2.28	124.		33.7	25.3	2500	.03	34.696	5.25	27.880	23.3	.741
2001A	.20	34.686	5.11	2.28	125.		34.1	25.0							
2202A	.111	34.684	5.16	2.25	125.		34.1	24.7							
2401A	.069	34.694	5.20	2.24	123.		34.3	23.7							
2600A	-.01	34.697	5.30	2.25	121.		34.3	23.1							
2798A	-.037	34.697	5.33	2.24	118.		34.3	22.9							
2848A	-.04	34.701	5.35	2.26	118.		33.8	22.6							
2898A	-.05	34.701	5.33	2.24	117.		34.0	22.6							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 9

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
65 47.5S	161 02.0E	01/16/71	0649 0836GMT	2947M	330	15KT	4	010 08 11

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.58	33.795	7.80	1.24	62.	.18	24.8	94.9	0	.58	33.795	7.80	27.125	94.9	0
10	.51	33.840	8.23	1.26	58.	.17	24.8	91.1	10	.51	33.840	8.23	27.165	91.1	.009
35	-.40	34.041	8.22	1.67	72.	.15	26.4	71.4	20	.28	33.906	8.23	27.230	84.9	.018
66	-1.69	34.411	6.78	2.09	87.	.13	32.3	38.7	30	-.13	33.990	8.22	27.319	76.4	.026
91	-1.38	34.456	6.52	2.14	88.	.07	32.7	36.1	50	-1.50	34.232	7.54	27.567	52.9	.039
107	-.68	34.518	5.97	2.16	88.	.03	33.6	33.8	75	-1.58	34.427	6.68	27.728	37.7	.050
122	-.04	34.573	5.54	2.18	89.	.01	33.3	32.4	100	-1.01	34.489	6.22	27.759	34.7	.059
158	.54	34.630	5.21	2.19	90.	.00	33.6	31.1	125	.05	34.582	5.49	27.786	32.2	.068
183	.50	34.635	5.17	2.20	92.	.00	33.4	30.5	150	.50	34.626	5.23	27.797	31.2	.076
218	.69	34.654	5.03	2.19	95.	.01	33.1	30.1	200	.58	34.644	5.11	27.807	30.2	.091
253	.84	34.671	4.87	2.16	100.		33.5	29.7	250	.83	34.670	4.88	27.812	29.7	.106
324	.98	34.701	4.78	2.22	102.	.00	33.8	28.3	300	.95	34.693	4.81	27.823	28.7	.121
446	.96	34.698	4.77	2.20	107.		33.6	28.4	400	.97	34.699	4.77	27.827	28.3	.150
578	.92	34.705	4.74	2.24	109.	.00	34.2	27.6	500	.95	34.701	4.76	27.830	28.1	.179
720	.85	34.704	4.77	2.21	112.		34.0	27.2	600	.91	34.706	4.74	27.836	27.5	.208
873	.75	34.699	4.84	2.18	116.	.00	34.2	27.0	700	.86	34.705	4.76	27.838	27.3	.237
1026	.68	34.700	4.83	2.24	121.		34.1	26.5	800	.80	34.702	4.81	27.840	27.1	.265
1180	.57	34.697	4.85	2.23	120.		34.4	26.1	1000	.69	34.700	4.83	27.845	26.6	.322
1354	.49	34.697	4.91	2.25	125.0		34.3	25.7	1200	.56	34.697	4.86	27.851	26.1	.377
1456A	.44	34.697	4.85	2.27	121.		35.0	25.4	1500	.42	34.698	4.86	27.859	25.3	.458
1608A	.38	34.698	4.90	2.28	123.		34.5	25.0	2000	.22	34.699	5.10	27.872	24.1	.584
1757A	.32	34.699	4.99	2.27	123.		34.5	24.6	2500	.01	34.705	5.25	27.888	22.5	.699
1908A	.26	34.698	5.26U	2.27	123.		34.8	24.4							
2058A	.189	34.699	5.12	2.28	124.		33.9	23.9							
2208A	.14	34.703	5.16	2.29	120.		34.6	23.4							
2358A	.09	34.703	5.20	2.27	117.		34.4	23.1							
2508A	.00	34.705	5.25	2.25	115.		33.6	22.5							
2658A	-.04	34.707	5.31	2.25	114.		33.8	22.1							
2807A	-.073	34.708	5.39	2.25	111.		33.8	21.9							
2857A	-.09	34.710	5.39	2.28	110.		34.1	21.7							
2887A	-.11	34.712	5.41	2.25	111.		34.1	21.4							
2903A	-.11	34.710	5.41	2.27	111.		33.9	21.6							
2908A	-.12	34.710	5.45	2.26	111.		33.8	21.5							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 11

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 29.5S	158 07.0E	01/17/71	0120 0347GMT	3008M	180	22KT	7	180 04 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.09	33.267	8.10	1.65	57.	.23	28.3	131.9	0	-.09	33.267	8.10	26.735	131.9	0
10	-.09	33.274	8.10	1.66	58.	.21	28.1	131.3	10	-.09	33.274	8.10	26.740	131.3	.013
51	-1.55	34.337	7.05	2.06	70.	.08	31.6	44.7	20	-.44	33.513	7.91	26.948	111.6	.025
67	-1.50	34.409	6.69	2.10	75.	.11	32.0	39.3	30	-.80	33.765	7.68	27.165	91.0	.035
102	-1.33	34.459	6.56	2.12	79.	.07	31.9	36.0	50	-1.51	34.309	7.08	27.630	47.0	.049
153	-.72	34.526	6.14	2.15	84.	.01	32.3	33.0	75	-1.47	34.427	6.66	27.725	38.0	.060
204	-.12	34.581	5.68	2.09U	88.	.00	33.2	31.4	100	-1.34	34.458	6.57	27.746	36.0	.069
306	.55	34.651	5.10	2.18	98.	.00	33.6	29.5	125	-1.08	34.490	6.39	27.763	34.4	.078
409	.75	34.680	4.93	2.17	101.		33.6	28.5	150	-.76	34.522	6.17	27.777	33.1	.086
510	.79	34.684	4.82	2.20	106.	.00	33.0	28.4	200	-.16	34.578	5.71	27.794	31.5	.102
612	.79	34.693	4.77	2.23	110.		33.3	27.7	250	.25	34.619	5.37	27.805	30.4	.117
714	.75	34.694	4.77	2.23	112.		33.9	27.4	300	.53	34.649	5.12	27.814	29.6	.132
816	.71	34.691	4.82	2.20	113.	.00	34.6	27.4	400	.75	34.679	4.94	27.825	28.5	.162
918	.65	34.695	4.96	2.23	117.		34.2	26.7	500	.79	34.684	4.83	27.826	28.4	.191
1020	.60	34.692	4.85	2.22	119.		34.7	26.7	600	.79	34.692	4.77	27.833	27.8	.220
1122	.54	34.690	4.92	2.23	119.	.00	36.0	26.5	700	.76	34.695	4.77	27.837	27.4	.249
1226	.50	34.692	4.91	2.25	122.		33.8	26.1	800	.72	34.692	4.81	27.837	27.4	.277
1329	.43	34.689	4.95	2.27	122.		34.6	26.0	1000	.61	34.693	4.87	27.844	26.7	.334
1341A	.43	34.695	4.93	2.28	122.		35.3	25.5	1200	.51	34.692	4.91	27.849	26.2	.389
1433	.37	34.677U	4.96	2.25	123.		35.0		1500	.33	34.688	5.01	27.857	25.5	.469
1536	.31	34.686	5.03	2.27	124.		35.4	25.5	2000	.03	34.686	5.19	27.871	24.1	.592
1542A	.322	34.693	5.00	2.28	124.		34.3	25.1	2500	-.07	34.700	5.37	27.888	22.6	.703
1742A	.218	34.691	5.09	2.27	122.		34.4	24.7	3000	-.34	34.712	5.58	27.911	20.4	.797
1942A	.04	34.684	5.30U	2.23	116.U		34.6	24.3							
2142A	.022	34.691	5.24	2.25	118.		34.8	23.7							
2342A	-.021	34.696	5.29	2.26	114.		33.8	23.1							
2542A	-.08	34.701	5.39	2.24	110.		33.8	22.4							
2741A	-.18	34.703	5.50	2.23	107.		33.2	21.8							
2842A	-.22	34.709	5.49	2.21	107.		32.1	21.1							
2893A	-.27	34.713	5.58	2.23	106.		33.9	20.6							
2943A	-.32	34.711	5.58	2.23	105.		32.9	20.5							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 12

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 03.0S	156 31.0E	01/17/71	1255 1432GMT	2821M	070	13KT	7	130 15 09

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.68	33.709	7.99	1.76	59.			102.0	0	.68	33.709	7.99	27.050	102.0	0
10	.67	33.707	8.04	1.77	58.			102.1	10	.67	33.707	8.04	27.049	102.1	.010
50	-1.48	34.223	7.52	1.91	65.			53.7	20	.16	33.804	8.00	27.154	92.1	.020
66	-1.55	34.351	7.07	2.05	70.			43.6	30	-.37	33.922	7.91	27.275	80.7	.029
102	-1.50	34.441	6.72	2.13	80.			36.9	50	-1.48	34.223	7.52	27.560	53.7	.042
152	-1.08	34.509	6.40	2.16	84.			33.0	75	-1.54	34.389	6.93	27.696	40.8	.054
203	-.39	34.564	5.89	2.15	89.			31.4	100	-1.50	34.440	6.73	27.736	36.9	.063
304	.35	34.632	5.31	2.21	93.			29.9	125	-1.35	34.477	6.57	27.761	34.5	.072
405	.71	34.676	5.01	2.24	97.			28.5	150	-1.10	34.507	6.41	27.777	33.0	.080
507	.79	34.685	4.83	2.23	105.			28.3	200	-.43	34.561	5.92	27.794	31.5	.096
608	.78	34.692	4.78	2.26				27.7	250	.03	34.602	5.57	27.803	30.6	.112
708	.75	34.695	4.77	2.25				27.3	300	.33	34.631	5.32	27.810	29.9	.127
809	.71	34.694	4.88	2.24				27.2	400	.70	34.675	5.02	27.824	28.6	.156
910	.66	34.693	4.85	2.27				27.0	500	.78	34.685	4.84	27.827	28.3	.185
1012	.60	34.693	4.82	2.33				26.6	600	.78	34.692	4.78	27.833	27.8	.214
1113	.56	34.689	4.99	2.27	119.			26.7	700	.75	34.695	4.77	27.837	27.3	.243
1216	.48	34.689	4.93					26.2	800	.71	34.694	4.87	27.839	27.2	.271
1318	.41	34.693	4.98	2.27	122.			25.5	1000	.61	34.693	4.82	27.845	26.6	.327
1349A	.386	34.691	4.98	2.28	122.			25.6	1200	.49	34.689	4.94	27.848	26.3	.383
1421	.31	34.688	5.02	2.26	124.			25.4	1500	.29	34.683	5.05	27.855	25.7	.463
1524	.28	34.681	5.06	2.28	122.			25.8	2000	-.02	34.682	5.37	27.871	24.2	.586
1551A	.184	34.678	5.18	2.27	124.			25.5	2500	-.09	34.702	5.38	27.890	22.4	.695
1653A	.105	34.675	5.70U	2.24	124.			25.3							
1856A	.080	34.685	5.32	2.29	125.			24.4							
2007A	-.03	34.681	5.37	2.25				24.2							
2158A	-.327														
2309A	-.113	34.686	5.37	2.24	118.			23.4							
2458A	-.08	34.700	5.36	2.26	112.			22.5							
2607A	-.13	34.703	5.43	2.26	113.			22.0							
2706A	-.19	34.706	5.46	2.20				21.5							
2756A	-.23	34.711	5.60	2.26	111.			20.9							
2805A	-.28	34.708	5.75	2.25	115.			20.9							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 13

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 00.5S	160 36.0E	01/18/71	0630 0850GMT	2857M	030	07KT	2	320 05 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.26	33.232	8.13	1.63	58.	.21	27.3	133.8	0	-.26	33.232	8.13	26.714	133.8	0
10	-.30	33.241	8.17	1.64	58.	.20	27.3	132.9	10	-.30	33.241	8.17	26.723	132.9	.013
51	-1.60	34.341	6.96	2.10	70.	.08	31.8	44.3	20	-.82	33.475	7.93	26.932	113.1	.026
77	-1.49	34.418	6.71	2.13	76.	.10	32.4	38.7	30	-1.40	33.725	7.66	27.153	92.1	.036
104	-.64	34.504	6.14	2.16	80.	.03	32.9	35.0	50	-1.59	34.310	7.00	27.633	46.7	.050
157	.13	34.588	5.55	2.19	86.	.00	33.4	32.1	75	-1.50	34.412	6.73	27.713	39.1	.060
208	.62	34.644	5.15	2.19	90.	.00	33.3	30.4	100	-.78	34.491	6.23	27.752	35.4	.070
312	.93	34.689	4.84	2.21	99.	.00	33.5	28.9	125	-.25	34.547	5.85	27.773	33.4	.078
414	.87	34.693	4.89	2.21	100.		33.2	28.2	150	.07	34.583	5.60	27.786	32.3	.086
518	.92	34.699	4.83	2.21	104.	.00	33.2	28.0	200	.56	34.637	5.20	27.803	30.6	.102
622	.87	34.699	4.78	2.24	109.		33.6	27.7	250	.75	34.665	4.96	27.813	29.6	.117
726	.83	34.706	4.73	2.26	114.		34.0	27.0	300	.89	34.685	4.85	27.820	29.0	.132
830	.77	34.704	4.78	2.26	116.	.00	34.1	26.8	400	.88	34.693	4.88	27.828	28.2	.161
934	.69	34.700	4.85	2.26	118.		34.3	26.6	500	.91	34.698	4.84	27.830	28.1	.190
1039	.60	34.695	4.89	2.26	118.		34.2	26.5	600	.88	34.699	4.79	27.832	27.8	.219
1147	.53	34.693	4.93	2.26	120.	.00	34.2	26.2	700	.84	34.705	4.74	27.839	27.2	.248
1251	.48	34.691	4.93	2.28	122.		34.1	26.1	800	.79	34.705	4.76	27.843	26.8	.276
1355	.44	34.695	4.93	2.28	125.		34.7	25.6	1000	.63	34.697	4.88	27.846	26.5	.332
1461	.40	34.693	4.97	2.28	124.		34.3	25.5	1200	.50	34.692	4.93	27.850	26.2	.387
1546A	.378	34.703	4.92	2.28	126.		34.1	24.6	1500	.39	34.698	4.95	27.861	25.1	.467
1746A	.274	34.697	5.03	2.28	126.		33.9	24.5	2000	.15	34.696	5.15	27.873	24.0	.591
1948A	.17	34.694	5.39U	2.29	126.		34.0	24.2	2500	-.04	34.710	5.27	27.894	22.0	.703
2148A	.092	34.700	5.19	2.28	122.		34.0	23.3							
2349A	.015	34.703	5.19	2.22	119.		33.8	22.7							
2549A	-.052	34.712	5.30	2.26	115.		33.9	21.7							
2650A	-.08	34.717	5.36	2.26	113.		33.6	21.2							
2750A	-.11	34.719	5.36	2.27	113.		33.7	20.9							
2800A	-.10	34.718	5.40	2.26	113.		33.7	21.0							
2850A	-.14	34.719	5.42	2.26	112.		33.7	20.8							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 14

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
65 03.0S	160 31.0E	01/18/71	2333 0057GMT	2957M	260	20KT	2	250 06 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.41	33.901	7.93	1.56	61.	.17	27.2	85.9	0	.41	33.901	7.93	27.219	85.9	0
20	.37	33.904	8.00	1.55	61.	.17	27.6	85.4	10	.39	33.903	7.96	27.222	85.7	.009
40	-1.07	34.161	7.83	1.92	73.	.13	28.4	59.7	20	.37	33.904	8.00	27.224	85.4	.017
76	-1.7 B	34.385	6.89	2.18	84.	.15	32.1	40.6	30	-.30	34.019	7.95	27.350	73.5	.025
91	-1.72	34.400	6.79	2.21	84.	.19	32.2	39.4	50	-1.55	34.250	7.56	27.583	51.4	.038
105	-1.54	34.427	6.58	2.24	86.	.13	32.6	37.8	75	-1.72	34.384	6.91	27.696	40.7	.049
120	-1.01	34.478	6.19	2.26	85.	.07	33.4	35.6	100	-1.63	34.416	6.67	27.720	38.5	.059
156	.14	34.601	5.29	2.41	92.	.05	34.2	31.1	125	-.83	34.497	6.05	27.758	34.8	.068
181	.62	34.651	4.94	2.39	96.	.04	33.7	29.9	150	-.03	34.583	5.42	27.791	31.7	.076
216	1.01	34.694	4.66	2.35	100.	.03	33.3	29.0	200	.87	34.679	4.76	27.817	29.3	.091
251	1.11	34.706	4.60	2.31	101.	.02	33.4	28.7	250	1.11	34.706	4.60	27.823	28.7	.106
321	1.10	34.712	4.61	2.34	105.	.01	33.8	28.2	300	1.10	34.711	4.61	27.827	28.3	.121
442	1.02	34.713	4.67	2.31	108.	.00	33.9	27.6	400	1.05	34.714	4.65	27.833	27.8	.150
573	.94	34.711	4.71	2.28	111.	.00	33.8	27.3	500	.98	34.713	4.69	27.837	27.4	.178
715	.85	34.708	4.75	2.34	114.		34.6	26.9	600	.92	34.711	4.72	27.839	27.2	.207
867	.75	34.700	4.80	2.37	117.	.00	34.2	26.9	700	.86	34.709	4.75	27.842	27.0	.235
1018	.64	34.698	4.89	2.35	118.		34.2	26.5	800	.79	34.704	4.77	27.842	26.9	.263
1171	.56	34.698	4.88	2.35	122.		34.6	26.0	1000	.65	34.698	4.88	27.846	26.5	.319
1332	.49	34.698	4.90	2.33	126.		34.9	25.6	1200	.55	34.698	4.88	27.852	26.0	.374
1410A	.44	34.702	4.85	2.37	126.		35.1	25.0	1500	.41	34.694	4.98	27.857	25.5	.455
1496	.41	34.694	4.98	2.38	126.		35.7	25.5	2000	.10	34.687	5.23	27.869	24.4	.580
1611A	.35	34.699	4.99	2.39	125.		35.2	24.8	2500	-.05	34.701	5.32	27.888	22.6	.693
1762A	.30	34.698	5.01	2.38	125.		34.0	24.6							
1913A	.16	34.691	5.15	2.37	124.		34.3	24.4							
2067A	.07	34.685	5.27	2.38	124.		34.5	24.4							
2219A	.042	34.693	5.22	2.35	123.		34.2	23.6							
2374A	-.02	34.697	5.35	2.37	119.		34.8	23.0							
2527A	-.061	34.701	5.31	2.35	117.		34.5	22.5							
2683A	-.09	34.707	5.33	2.35	118.		34.6	21.9							
2839A	-.11	34.711	5.46	2.34	111.		34.8	21.5							
2891A	-.09	34.710	5.39	2.35	114.		34.6	21.7							
2944A	-.10	34.709	5.39	2.41	114.		34.4	21.7							

A) CAST II.
B) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE LENGTH.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 16

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 40.5S	156 00.0E	01/21/71	0007 0300GMT	2474M	110	18KT	7	180 04 03

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.27	33.424	8.26	1.66	63.	.18	25.0	119.1	0	-.27	33.424	8.26	26.869	119.1	0
10	-.29	33.428	8.25	1.64	63.	.18	25.8	118.7	10	-.29	33.428	8.25	26.873	118.7	.012
25	-1.35	34.192	7.76	1.95	66.	.09	28.5	56.4	20	-.97	33.913	7.95	27.291	79.1	.022
71	-1.61	34.444	6.83	2.19	79.	.10	31.8	36.3	30	-1.40	34.232	7.62	27.564	53.2	.028
102	-1.29	34.489	6.61	2.17	80.	.04	31.9	33.8	50	-1.60	34.390	7.16	27.698	40.5	.038
142	-1.63	34.494	6.83	2.18	83.	.01	31.8	32.5	75	-1.57	34.452	6.78	27.747	35.9	.047
203	-.08	34.599	5.60	2.22	91.	.00	32.0	30.2	100	-1.31	34.487	6.61	27.768	33.9	.056
305	.70	34.677	4.96	2.32	101.	.00	33.0	28.4	125	-1.50	34.493	6.75	27.779	32.9	.064
407	.82	34.695	4.83	2.32	106.	.00	33.4	27.7	150	-1.47	34.504	6.70	27.787	32.1	.072
508	.77	34.697	4.82	2.33	111.	.00	34.0	27.3	200	-.18	34.593	5.68	27.806	30.3	.087
609	.70	34.698	4.82	2.32	113.	.00	33.8	26.8	250	.46	34.650	5.16	27.818	29.1	.102
711	.63	34.696	4.85	2.33	116.	.00	34.0	26.5	300	.70	34.677	4.96	27.826	28.4	.117
813	.56	34.693	4.91	2.34	117.	.00	33.6	26.4	400	.81	34.694	4.84	27.833	27.8	.145
915	.48	34.691	4.97	2.36	121.	.00	33.9	26.1	500	.78	34.697	4.82	27.838	27.3	.174
1018	.43	34.691	4.92	2.37	122.	.00	33.9	25.8	600	.71	34.698	4.82	27.843	26.8	.202
1121	.35	34.691	5.00	2.37	122.	.00	33.6	25.4	700	.64	34.697	4.85	27.846	26.6	.229
1224	.29	34.691	5.02	2.37	121.		33.2	25.0	800	.57	34.694	4.90	27.847	26.4	.256
1330	.18	34.685	5.11	2.37	124.		33.9	24.9	1000	.44	34.691	4.93	27.853	25.9	.310
1400A	.07	34.684	5.19	2.34	122.		34.3	24.4	1200	.31	34.692	5.02	27.861	25.1	.362
1433	.17	34.692	5.09	2.37	121.		34.2	24.3	1500	.12	34.691	5.16	27.870	24.2	.437
1543	.09	34.689	5.21	2.30	119.		34.1	24.2	2000	-.13	34.701	5.40	27.892	22.2	.548
1605A	-.065	34.681	5.47	2.34	115.		33.8	24.0							
1808A	-.19	34.675	5.41	2.34	110.		33.6	23.9							
2010A	-.125	34.702	5.40	2.33	111.		33.6	22.1							
2211A	-.25	34.705	5.56	2.32	106.		33.9	21.3							
2311A	-.43	34.693	5.68	2.30	104.		34.0	21.4							
2360A	-.41	34.697	5.70	2.28	103.		33.9	21.2							
2410A	-.42	34.693	5.69	2.29	104.		34.1	21.5							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 17

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
65 59.0S	154 26.5E	01/21/71	1007 1217GMT	2752M	300	08KT	7	320 04 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.97	33.819	7.96	1.93	55.	.23	29.7	95.3	0	.97	33.819	7.96	27.120	95.3	0
20	.77	33.856	8.00	1.93	56.	.21	30.0	91.3	10	.87	33.838	7.98	27.141	93.3	.009
40	-1.20	34.195	7.54	2.05	59.	.10	30.9	56.6	20	.77	33.856	8.00	27.162	91.3	.019
75	-1.02	34.421	6.47	2.27	74.	.11	33.3	39.9	30	-.20	34.009	7.81	27.337	74.7	.027
90	-.85	34.469	6.29	2.26	77.	.10	33.3	36.8	50	-1.15	34.260	7.21	27.579	51.9	.040
105	-.49	34.510	6.01	2.29	81.	.07	33.9	35.1	75	-1.02	34.421	6.47	27.705	39.9	.051
119	.04	34.559	5.74B	2.30	84.	.03	34.7	33.8	100	-.63	34.496	6.11	27.750	35.6	.060
155	-.10	34.573	5.59B	2.28	85.	.01	33.8	32.1	125	.02	34.563	5.71	27.773	33.4	.069
180	.48	34.626	5.69B	2.39U	87.	.00	33.8	31.0	150	-.08	34.573	5.61	27.786	32.2	.077
215	.67	34.647	5.30B	2.27	90.	.00	34.5	30.5	200	.63	34.642	5.49	27.802	30.7	.093
251	1.00	34.685	5.16B	2.29	92.	.00	33.9	29.6	250	.99	34.684	5.16	27.813	29.6	.108
321	1.07	34.701	4.96B	2.29	96.		33.9	28.8	300	1.05	34.698	5.01	27.820	29.0	.123
441	.81	34.685	4.85B	2.27	99.	.00	33.8	28.4	400	.91	34.692	4.89	27.825	28.5	.153
574	.82	34.697	5.04B	2.29	103.		34.3	27.6	500	.81	34.691	4.93	27.830	28.1	.182
705	.78	34.698	4.91	2.29	106.		34.6	27.3	600	.82	34.698	5.02	27.836	27.5	.210
867	.69	34.699	4.84	2.35	115.	.00	35.5	26.7	700	.78	34.698	4.92	27.838	27.3	.239
1018	.59	34.698	4.90	2.36	117.		35.2	26.2	800	.73	34.699	4.85	27.842	26.9	.267
1170	.46	34.693	4.94	2.38	121.		35.3	25.8	1000	.60	34.699	4.89	27.849	26.2	.323
1332	.37	34.691	4.93	2.36	121.		35.5	25.5	1200	.44	34.693	4.94	27.854	25.7	.377
1432A	.30	34.687	5.04	2.33	122.		35.2	25.4	1500	.25	34.686	5.15	27.859	25.3	.455
1494	.25	34.685	5.16	2.38	122.		35.5	25.3	2000	-.09	34.682	5.35	27.875	23.8	.575
1533A	.22	34.686	5.11	2.39	123.		35.4	25.1	2500	-.13	34.703	5.45	27.894	22.0	.682
1608A	.11	34.677	5.26	2.38	119.		34.6	25.2							
1683A	.04	34.671	5.29	2.37	120.		34.9	25.3							
1758A	-.08	34.665	5.22	2.34	113.U		35.4	25.2							
1834A	.04	34.686	5.20	2.32	124.		37.6U	24.1							
1910A	.04	34.696	5.27	2.34	121.		35.1	23.4							
1986A	-.05	34.684	5.35	2.32	116.		33.7	23.9							
2059A	-.25		5.50U	2.32	111.		34.2								
2135A	-.25	34.659U	5.57U	2.31	110.		34.5								
2211A	-.08	34.687	5.39	2.33	113.		34.9	23.5							
2287A	-.124	34.689	5.38	2.33	111.		34.5	23.1							
2362A	-.144	34.688	5.37	2.32	111.		34.5	23.1							
2437A	-.131	34.698	5.52	2.29	114.		34.5	22.4							
2513A	-.13	34.704	5.43	2.33	113.		34.5	21.9							
2588A	-.17	34.704	5.46	2.32	111.		34.5	21.8							
2663A	-.21	34.712	5.53	2.33	109.		35.0	21.0							
2747A	-.28	34.716	5.54	2.32	109.		35.2	20.3							

A) CAST II.
B) THIS SAMPLE WAS LISTED OUT OF SEQUENCE ON THE OXYGEN DETERMINATION SHEET. THE ORDER LISTED IS ASSUMED TO BE CORRECT.

RV THOMAS WASHINGTON ARIES EXPEDITION II 18

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
65 29.0S	150 41.0E	01/22/71	0206 0455GMT	2838M	250	14KT	2	240 05 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.64	33.882	7.99	1.88	56.	.23	28.8	88.6	0	.64	33.882	7.99	27.191	88.6	0
40	.63	33.885	7.99	1.88	56.	.20	29.0	88.3	10	.63	33.885	7.99	27.194	88.3	.009
42	-1.27	34.250	7.20	2.15	61.	.11	31.7	52.2	20	.09	33.975	7.81	27.296	78.6	.017
79	-1.13	34.414	6.21	2.21	74.	.12	33.4	40.1	30	-.50	34.087	7.57	27.414	67.5	.024
104	-.82	34.475	6.28	2.24	78.	.08	33.5	36.5	50	-1.24	34.308	6.93	27.620	47.9	.036
156	-.12	34.564	5.71	2.25	84.	.04	33.4	32.7	75	-1.15	34.409	6.29	27.699	40.4	.047
207	.38	34.615	5.37	2.25	87.	.02	33.2	31.3	100	-.89	34.466	6.27	27.736	36.9	.057
308	.89	34.676	5.01	2.25	94.	.00	33.6	29.6	125	-.20	34.535	6.09	27.762	34.5	.065
409	.78	34.677	5.07	2.25	96.	.00	33.5	28.9	150	-.14	34.560	5.79	27.778	32.9	.074
509	.91	34.699	4.95	2.24	101.	.00	33.9	28.0	200	.30	34.609	5.41	27.794	31.4	.090
609	.92	34.705		2.26	103.	.01	33.7	27.6	250	.67	34.649	5.17	27.805	30.5	.105
709	.79	34.697	4.90	2.27	108.	.01	34.0	27.4	300	.87	34.674	5.02	27.813	29.7	.121
811	.76	34.699	4.88	2.30	110.	.00	33.7	27.1	400	.80	34.678	5.06	27.821	28.9	.151
911	.65	34.695	4.92	2.32	114.	.00	33.7	26.7	500	.90	34.697	4.96	27.830	28.1	.180
1012	.59	34.692	4.92	2.32	117.	.00	34.3	26.6	600	.92	34.705	4.93	27.835	27.6	.209
1114	.50	34.690	4.98	2.32	119.	.00	34.6	26.3	700	.80	34.698	4.90	27.837	27.4	.237
1218	.43	34.70	5.02	2.32	121.		34.6	25.1	800	.76	34.699	4.88	27.840	27.1	.266
1322	.32	34.682	5.06	2.34	121.		34.8	25.9	1000	.60	34.693	4.92	27.845	26.6	.322
1348A	.32	34.687	5.04	2.35	123.		34.7	25.5	1200	.44	34.699	5.01	27.859	25.3	.376
1397A	.28	34.686	5.08	2.35	124.		34.8	25.4	1500	.22	34.684	5.10	27.860	25.2	.453
1428	.25	34.680	5.08	2.32	122.		34.3	25.7	2000	-.04	34.684	5.34	27.874	23.9	.574
1498A	.22	34.684	5.10	2.35	122.		34.6	25.2	2500	-.23	34.693	5.53	27.891	22.3	.680
1536	.19	34.680	5.13	2.34	124.		35.1	25.4							
1547A	.17	34.687	5.15	2.37	123.		34.8	24.7							
1597A	.14	34.686	5.16	2.36	124.		34.6	24.6							
1649A	.07	34.678	5.24	2.35	121.		35.2	24.9							
1698A	.05	34.682	5.26	2.35	120.		35.0	24.5							
1748A	.03	34.681	5.24	2.35	121.		34.9	24.5							
1799A	.022	34.682	5.36	2.35	123.		35.0	24.4							
1849A	-.004	34.683	5.31	2.35	124.		35.0	24.2							
1898A	-.017	34.679	5.29	2.35	122.		34.7	24.4							
1950A	-.034	34.679	5.33	2.35	123.		35.1	24.3							
1999A	-.039	34.684	5.34	2.35	120.		34.7	23.9							
2050A	-.066	34.684	5.34	2.35	120.		34.7	23.8							
2100A	-.083	34.682	5.35	2.35	122.		34.7	23.8							
2199A	-.097	34.687	5.37	2.35	117.		34.7	23.4							
2400A	-.18	34.693	5.50	2.32	114.		34.1	22.5							
2601A	-.29	34.694	5.57	2.30	107.		34.1	22.0							
2702A	-.35	34.699	5.65	2.30	104.		34.1	21.3							
2753A	-.38	34.70	5.67	2.30	105.		34.4	21.1							

RV THOMAS WASHINGTON ARIES EXPEDITION II 19

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
64 33.5S	150 43.0E	01/22/71	1206 1432GMT	3433M	270	28KT	1	260 11 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.97	33.878	7.90	1.99	60.	.24	30.7	90.8	0	.97	33.878	7.90	27.168	90.8	0
19	.98	33.880	7.91	1.99	60.	.24	31.6	90.7	10	.98	33.879	7.91	27.168	90.7	.009
44	-.07	33.997	7.70	2.04	59.	.15		76.2	20	.93	33.881	7.90	27.172	90.4	.018
76	.86	34.514	5.14	2.36	74.	.09	33.5	41.7	30	.50	33.906	7.82	27.218	86.0	.027
91	1.23	34.569	4.73	2.40	78.	.10	35.8	39.9	50	.01	34.099	7.23	27.399	68.8	.042
107	1.52	34.614	4.37	2.43	83.	.09	35.8	38.4	75	.81	34.499	5.22	27.676	42.6	.056
122	1.64	34.632	4.30	2.42	84.	.04	35.8	37.9	100	1.41	34.598	4.50	27.715	39.0	.067
158	1.69	34.655	4.30	2.40	85.	.01	35.5	36.5	125	1.64	34.635	4.30	27.727	37.8	.076
178	1.72	34.667	4.28	2.39	86.	.00	34.7	35.8	150	1.68	34.650	4.30	27.738	36.8	.086
218	1.74	34.686	4.34	2.31	85.	.00	35.2	34.5	200	1.74	34.679	4.31	27.756	35.0	.104
255	1.74	34.697	4.37	2.32	87.		34.4	33.7	250	1.74	34.696	4.37	27.770	33.8	.122
325	1.71	34.714	4.43	2.27	88.		33.7	32.1	300	1.72	34.709	4.41	27.781	32.6	.139
446	1.66	34.727	4.52	2.25	90.	.00	33.5	30.8	400	1.68	34.724	4.49	27.797	31.2	.172
579	1.57	34.735		2.23	93.		34.0	29.6	500	1.63	34.731	4.55	27.807	30.3	.205
710	1.45	34.736	4.66	2.23	96.	.00	33.5	28.7	600	1.55	34.736	4.61	27.816	29.4	.237
872	1.29	34.733	4.72	2.26	100.	.00	33.0	27.8	700	1.46	34.737	4.66	27.823	28.7	.268
1025	1.14	34.726	4.78	2.28	104.		32.6	27.4	800	1.36	34.735	4.69	27.829	28.2	.299
1179	1.01	34.721	4.80	2.28	109.		33.0	26.9	1000	1.16	34.727	4.77	27.836	27.4	.360
1344	.87	34.711	4.80	2.31	113.		33.1	26.8	1200	.99	34.720	4.80	27.842	26.9	.419
1396A	.82	34.711	4.89	2.30	114.		34.2	26.5	1500	.71	34.710	4.87	27.852	26.0	.506
1510	.70	34.709	4.87	2.32	115.		34.8	26.0	2000	.39	34.690	5.08	27.855	25.7	.643
1598A	.66	34.705	4.85	2.34	117.		34.4B	26.0	2500	.11	34.679	5.20	27.861	25.1	.771
1800A	.51	34.695	4.98	2.33	121.		34.4B	25.9	3000	-.08	34.686	5.32	27.877	23.6	.887
2002A	.39	34.690	5.08	2.32	123.		34.5B	25.7							
2204A	.27	34.681	5.08	2.33	118.U		33.5	25.7							
2405A	.16	34.677	5.14	2.37	125.		33.5	25.4							
2606A	.07	34.681	5.27	2.32	127.		33.6	24.7							
2807A	.00	34.684	5.32	2.33	123.		34.4	24.1							
3007A	-.08	34.686	5.32	2.33	119.		34.3	23.6							
3208A	-.13	34.689	5.47	2.36	117.		34.4	23.1							
3358A	-.20	34.706	5.56	2.33	108.		33.8	21.5							
3408A	-.24	34.708	5.57	2.34	105.		34.4	21.1							
3422A	-.22	34.710	5.61	2.33	106.		33.7	21.1							
3433A	-.24	34.710	5.63	2.43U	107.		33.8	21.0							

A) CAST II.
B) AN ERROR OF 0.1 ABSORBANCE HAS BEEN ASSUMED. THE LISTED VALUES INCORPORATE THE CORRECTION.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
63 28.0S	151 02.0E	01/23/71	0220 1155GMT	3724M	320	18KT	6	320 09 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	1.27	33.768	7.93	1.93	56.	.29	30.5	101.0	0	1.27	33.768	7.93	27.060	101.0	0
10	C	33.769	7.96						10	1.26	33.769	7.96	27.062	100.8	.010
24	1.24	33.770	7.91	1.97	55.	.27	26.9U	100.6	20	1.24	33.770	7.92	27.063	100.7	.020
55	-1.39	34.165	7.40	2.18	65.	.10	32.4	58.4	30	.70	33.824	7.88	27.141	93.4	.030
99	1.37	34.582	4.68	2.45	82.	.17	35.6	39.8	50	-.99	34.082	7.54	27.430	66.0	.046
125	1.67	34.631	4.34	2.42	83.	.04	36.0	38.2	75	-.43	34.375	6.14	27.644	45.7	.060
151	1.71	34.647	4.35	2.42	86.	.02	35.7	37.2	100	1.38	34.585	4.65	27.706	39.7	.070
201	1.73	34.672	4.28	2.37	86.	.01	34.8	35.5	125	1.67	34.631	4.34	27.723	38.2	.080
206	C	34.674	4.38						150	1.71	34.647	4.35	27.733	37.3	.090
303	1.75	34.699	4.38	2.35	89.	.00	34.5	33.6	200	1.73	34.672	4.28	27.751	35.5	.108
308	C	34.699	4.41						250	1.74	34.688	4.38	27.763	34.4	.126
406	1.73	34.717	4.45	2.30	89.	.00	33.3	32.1	300	1.75	34.699	4.38	27.771	33.6	.144
509	1.69	34.730	4.53	2.26	91.	.00	33.4	30.8	400	1.73	34.716	4.45	27.787	32.1	.178
514	C	34.731	4.54						500	1.70	34.729	4.52	27.800	30.9	.212
612	1.59	34.731	4.55	2.26	91.	.00	33.0	30.0	600	1.60	34.731	4.55	27.808	30.1	.244
713	1.50	34.74	4.56	2.25	95.	.00	33.1	28.7	700	1.51	34.740	4.56	27.822	28.8	..276
718	C	34.740	4.65						800	1.44	34.734	4.69	27.823	28.8	.307
814	1.43	34.733	4.70	2.23	96.	.00	32.8	28.8	1000	1.28	34.732	4.76	27.833	27.8	.370
911	1.35	34.733	4.70	2.23	100.	.00	32.9	28.2	1200	1.11	34.723	4.76	27.837	27.4	.431
917	C	34.732	4.70						1500	.88	34.711	4.81	27.842	26.9	.521
1007A	1.27	34.732	4.76	2.23	102.		33.3	27.8	2000	.53	34.693	4.97	27.849	26.2	.665
1013A	C	34.731	4.73						2500	.24	34.687	5.14	27.861	25.1	.799
1109A	1.18	34.728	4.71	2.23	103.		33.4	27.5	3000	.03	34.686	5.33	27.872	24.1	.920
1211A	1.10	34.722	4.77	2.26	106.		33.7	27.4	3500	-.13	34.699	5.50	27.890	22.3	1.027
1216A	C	34.720	4.77												
1313A	1.01	34.720	4.80	2.26	109.		34.1	27.0							
1317A	C	34.715	4.81												
1413A	.95	34.715	4.81	2.27	111.		34.0	27.0							
1617A	.78	34.706	4.82	2.31	116.		33.9	26.7							
1622A	C	34.707	4.87												
1816A	.65	34.699	4.88	2.32	118.		34.8	26.4							
1915A	.59	34.696	4.95	2.28	120.		34.4	26.3							
1920A	C	34.693	4.94												
2013A	.52	34.692	4.98	2.33	122.		34.9	26.2							
2193B	.405	34.695	5.02	2.35	123.		35.1	25.4							
2198B	C	34.685	5.04												
2396B	.30	34.690	5.11	2.33	126.		34.8	25.2							
2598B	.19	34.684	5.17	2.35	125.		34.6	25.1							
2603B	C	34.681	5.20												
2799B	.116	34.682	5.20	2.33	126.		34.6	24.8							
3000B	.035	34.686	5.33	2.35	124.		34.5	24.1							
3005B	C	34.686	5.34												
3199B	-.04	34.688	5.41	2.32	118.		34.7	23.6							
3396B	-.11	34.694	5.46	2.31	117.		34.6	22.8							
3401B	C	34.671U	5.47												
3592B	-.14	34.704	5.52	2.31	112.		34.4	21.9							
3596B	C	34.695	5.52												
3689B	-.16		5.62U	2.31	112.		34.6								
3693B	C	34.695	5.53												

A) CAST II.
B) CAST III.
C) SPECIAL NISKIN BOTTLE SAMPLE FOR SALINITY AND OXYGEN DETERMINATION. NO TEMPERATURE MEASUREMENT WAS MADE.

RV THOMAS WASHINGTON ARIES EXPEDITION II 21

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
61 24.0S	152 41.0E	01/24/71	0349 0515GMT	2942M	290	20KT	1	270 12 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	1.55	33.913	7.92	1.94	59.	.27	31.8	91.8	0	1.55	33.913	7.92	27.157	91.8	0
20	1.56	33.912	7.93	1.92	59.	.28	31.4	91.9	10	1.55	33.913	7.93	27.156	91.9	.009
45	1.52	33.915	7.66	1.95	60.	.28	32.0	91.4	20	1.56	33.912	7.93	27.155	91.9	.018
61	-.30	34.059	7.71	1.95	60.	.17	32.6	70.4	30	1.54	33.914	7.82	27.158	91.7	.028
81	-.88	34.254	6.64	2.19	69.	.12	34.6	53.2	50	.96	33.948	7.68	27.225	85.4	.045
107	1.12	34.560	4.68	2.36	81.	.18	36.5	39.9	75	-.71	34.206	7.05	27.519	57.5	.063
121	1.51	34.613	4.34	2.34	84.	.07	36.4	38.4	100	.51	34.481	5.15	27.680	42.3	.076
158	1.71	34.653	4.29	2.33	85.	.01	36.5	36.8	125	1.53	34.619	4.33	27.723	38.1	.086
178	1.73	34.662	4.27	2.32	87.	.00	36.1	36.2	150	1.67	34.647	4.30	27.736	37.0	.095
218	1.74	34.679	4.35	2.29	86.	.01	35.8	35.0	200	1.74	34.672	4.31	27.751	35.5	.114
254	1.75	34.689	4.36	2.23	87.	.02	35.6	34.3	250	1.75	34.688	4.36	27.763	34.4	.132
324	1.73	34.705	4.38	2.24	88.	.01	35.1	33.0	300	1.74	34.700	4.37	27.773	33.4	.149
445	1.71	34.721	4.49	2.19	88.	.00	34.2	31.6	400	1.72	34.716	4.44	27.788	32.1	.183
577	1.61	34.737	4.86U	2.16	92.	.00	33.8	29.7	500	1.67	34.729	4.53	27.801	30.8	.217
707	1.53	34.737	4.65	2.14	95.	.01	33.6	29.1	600	1.60	34.739	4.60	27.814	29.6	.249
868	1.39	34.736	4.69	2.16	99.	.01	33.9	28.3	700	1.53	34.738	4.65	27.818	29.2	.281
1020	1.26	34.732	4.77	2.19	103.		34.3	27.7	800	1.45	34.738	4.67	27.824	28.6	.312
1172	1.11	34.726	4.75	2.19	107.		34.1	27.2	1000	1.28	34.733	4.76	27.833	27.8	.374
1334	.99	34.717	4.78	2.20	110.		34.5	27.1	1200	1.09	34.725	4.76	27.839	27.2	.435
1386A	.92	34.726U	4.75	2.19	112.		34.6		1500	.85	34.711	4.83	27.844	26.7	.524
1499	.85	34.711	4.83	2.23	114.		34.8	26.7	2000	.49	34.697	4.93	27.855	25.7	.666
1588A	.78	34.713	4.84	2.23	117.		34.7	26.1	2500	.20	34.686	5.15	27.862	25.0	.797
1788A	.64	34.704	4.91	2.23	119.		34.8	26.0							
1989A	.50	34.697	4.92	2.25	124.		34.9	25.7							
2189A	.38	34.693	5.03	2.27	126.		35.4	25.4							
2391A	.27	34.688	5.11	2.29	129.		35.8	25.2							
2592A	.15	34.684	5.16	2.27	131.		35.6	24.9							
2743A	.12	34.687	5.12	2.27	132.		35.5	24.5							
2843A	.12	34.682	5.23	2.27	133.		35.3	24.9							
2895A	.11	34.688	5.24	2.25	134.		35.4	24.3							
2909A	.09	34.688	5.28	2.29	134.		35.4	24.2							
2920A	.10	34.685	5.19	2.26	134.		35.6	24.5							
2926A	.08	34.686	5.25					24.3							

RV THOMAS WASHINGTON ARIES EXPEDITION II 22

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
60 56.0S	155 57.0E	01/24/71	1628 1835GMT	2750M	320	12KT	6	300 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	2.85	33.955	7.74	1.42	10.	.27	25.3	98.4	0	2.85	33.955	7.74	27.087	98.4	0
50	2.84	33.958	7.74	1.42	11.	.27	26.0	98.1	10	2.85	33.956	7.74	27.088	98.4	.010
62	1.87	33.995	8.17	1.67	18.	.27	27.0	87.8	20	2.85	33.957	7.74	27.088	98.3	.020
102	-.24	34.112	7.69	2.23	52.	.20	32.1	66.6	30	2.84	33.957	7.74	27.089	98.2	.030
127	-.53	34.202	6.99	2.35	60.	.15	33.1	58.5	50	2.84	33.958	7.74	27.090	98.1	.049
152	.43	34.355	5.76	2.39	69.	.15	35.2	51.4	75	.98	34.030	8.01	27.289	79.3	.071
204	1.83	34.557	4.14	2.45	78.	.04	37.0	44.9	100	-.18	34.107	7.71	27.415	67.3	.090
306	1.97	34.642	4.09	2.36	82.	.01	35.1	39.5	125	-.51	34.196	7.06	27.502	59.1	.105
407	1.94	34.679	4.17	2.31	84.	.01	35.0	36.5	150	.33	34.342	5.86	27.578	51.9	.119
508	1.90	34.704	4.29	2.23	86.	.00	33.7	34.3	200	1.75	34.546	4.22	27.649	45.2	.144
609	1.88	34.723	4.35	2.21	87.	.01	33.4	32.7	250	1.89	34.606	4.12	27.686	41.7	.166
709	1.83	34.732	4.44	2.17	88.	.00	33.0	31.6	300	1.96	34.640	4.09	27.707	39.6	.187
810	1.78	34.736	4.50	2.13	90.	.01	33.9	31.0	400	1.94	34.678	4.16	27.739	36.6	.227
910	1.68	34.741	4.55	2.14	92.	.00	33.5	29.9	500	1.90	34.703	4.28	27.763	34.4	.264
1012	1.60	34.740	4.57	2.13	95.	.00	33.5	29.4	600	1.88	34.722	4.35	27.780	32.8	.300
1112	1.52	34.738	4.61	2.15	97.	.00	33.4	29.0	700	1.84	34.732	4.43	27.791	31.7	.336
1214	1.42	34.739	4.65	2.16	99.		32.4	28.2	800	1.79	34.736	4.49	27.798	31.0	.370
1318	1.31	34.734	4.68	2.18	104.		32.4	27.9	1000	1.61	34.741	4.57	27.815	29.4	.438
1421	1.23	34.727	4.69	2.18	105.		33.5	27.9	1200	1.43	34.740	4.64	27.827	28.3	.503
1480A	1.17	34.733	4.73	2.16	107.		33.7	27.0	1500	1.16	34.731	4.73	27.840	27.1	.598
1524	1.15	34.727	4.73	2.19	108.		34.2	27.4	2000	.79	34.711	4.83	27.848	26.4	.750
1683A	1.020	34.725	4.92U	2.17	111.		34.4	26.7	2500	.44	34.695	5.02	27.856	25.6	.891
1885A	.870	34.715	4.82	2.21	117.		34.3	26.5							
2087A	.725	34.708	4.84	2.18	120.		34.2	26.2							
2288A	.58	34.703	4.95	2.21	123.		34.6	25.7							
2488A	.45	34.695	5.02	2.22	127.		34.1	25.6							
2588A	.38	34.696	5.04	2.22	129.		34.8	25.2							

A) CAST II.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
60 08.5S	161 14.0E	01/25/71	1145 1325GMT	3754M	260	20KT	2	270 09 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	CD
0	2.43	33.955	7.80	1.58	16.	.28	26.7	95.0	0	2.43	33.955	7.80	27.123	95.0	0
20	2.44	33.957	7.82	1.60	16.	.27	27.2	94.9	10	2.43	33.956	7.81	27.123	95.0	.010
45	2.42	33.957	7.95	1.58	16.	.27	26.7	94.8	20	2.44	33.957	7.82	27.124	94.9	.019
62	2.36	33.961	7.88	1.61	17.	.28	27.1	94.0	30	2.43	33.957	7.88	27.124	94.9	.029
82	.27	34.069	7.90	2.16	43.	.21	31.0	72.4	50	2.40	33.959	7.93	27.128	94.6	.047
107	-.09	34.186	7.04	2.32	56.	.18	34.2	61.7	75	1.03	34.018	7.89	27.276	80.5	.069
122	.10	34.262	6.48	2.35	62.	.15	39.0	56.8	100	.01	34.167	7.33	27.455	63.6	.087
159	.56	34.372	5.67	2.40	69.	.14	37.2	50.8	125	.14	34.273	6.40	27.533	56.1	.102
179	.75	34.429	5.27	2.41	71.	.16	37.9	47.6	150	.46	34.351	5.83	27.578	51.9	.116
219	1.60	34.555	4.42	2.44	78.	.07	37.1	43.4	200	1.20	34.498	4.79	27.650	45.1	.140
254	1.84	34.607	4.22	2.40	80.	.04	36.0	41.2	250	1.83	34.604	4.23	27.689	41.4	.162
325	1.91	34.650	4.16	2.37	82.	.01	35.8	38.4	300	1.89	34.638	4.18	27.712	39.3	.183
446	1.91	34.697	4.25	2.29	85.	.00	33.5	34.9	400	1.91	34.682	4.20	27.745	36.1	.222
577	1.87	34.726	4.36	2.22	87.	.00	33.8	32.4	500	1.90	34.712	4.29	27.770	33.7	.259
707	1.79	34.735	4.51	2.17	89.	.00	35.0	31.1	600	1.86	34.729	4.39	27.787	32.1	.295
867	1.69	34.743	4.60	2.14	92.	.00	35.8	29.8	700	1.79	34.735	4.50	27.797	31.2	.329
1017	1.56	34.743	4.62	2.16	96.		34.1	28.9	800	1.73	34.741	4.57	27.806	30.3	.363
1169	1.41	34.737	4.66	2.17	96.		34.3	28.3	1000	1.58	34.744	4.62	27.820	29.0	.429
1333	1.30	34.734	4.70	2.17	102.		34.5	27.8	1200	1.39	34.737	4.66	27.828	28.2	.496
1423A	1.22	34.734	4.76	2.17	105.		34.7B	27.3	1500	1.17	34.729	4.75	27.838	27.3	.589
1501	1.17	34.729	4.75	2.15	107.		34.6	27.3	2000	.86	34.716	4.86	27.848	26.4	.742
1625A	1.04	34.722	4.79	2.21	111.		34.4B	27.0	2500	.65	34.704	4.94	27.852	26.0	.889
1827A	.96	34.722	4.79	2.22	115.		34.5	26.5	3000	.56	34.696	4.96	27.849	26.2	1.034
2030A	.84	34.715	4.87	2.27	118.		35.0	26.3	3500	.51	34.693	5.08	27.850	26.1	1.179
2232A	.74	34.708	4.96	2.23	121.		34.8	26.3							
2433A	.66	34.705	4.94	2.23	122.		34.7	26.0							
2634A	.62	34.703	4.94		124.		34.7	26.0							
2834A	.57	34.698	4.96		126.		34.3	26.1							
3034A	.56	34.695	4.96	2.25	127.		33.9	26.2							
3233A	.55	34.699	5.12	2.26	129.		34.4	25.9							
3430A	.52	34.692	5.07		129.		34.8	26.2							
3627A	.50	34.695	5.10	2.26	129.		34.4	25.9							
3677A	.51	34.696	5.03	2.27	131.		34.8	25.9							
3726A	.49	34.656U	4.95	2.22	116.		34.8								

A) CAST II.
B) AN ERROR OF 0.1 ABSORBANCE HAS BEEN ASSUMED. THE LISTED VALUES INCORPORATE THE CORRECTION.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
59 20.5S	166 20.0E	01/26/71	0646 1010GMT	4707M	270	25KT	2	270 10 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	5.83	33.937	7.03	1.51	3.	.24		129.8
10	B	33.941						
50	5.84	33.946	7.02	1.47	3.	.24		129.2
76	5.66	33.945	7.17	1.48	3.	.25		127.2
101	4.05	33.949	7.15	1.72	8.	.27		109.7
126	3.96	34.038	6.73	1.77	12.	.17		102.2
153	3.84	34.081	6.44	1.86	15.	.07		97.8
198	3.78	34.147	6.07	1.95	20.	.01		92.2
203	B	34.125	6.16					
304	3.21	34.221	5.56	2.14	32.	.02		81.4
400	2.45	34.253	5.36	2.26	43.	.01		72.6
405	B	34.251	5.31					
505	2.67	34.391	4.60	2.32	56.	.01		64.0
606	2.57	34.466	4.28	2.39	63.			57.5
706	2.50	34.521	4.11	2.37	69.	.01		52.8
807	2.42	34.565	4.09	2.37	71.			48.8
1001	2.30	34.637	4.11	2.30	76.			42.4
1008	B	34.635	4.07					
1206	2.20	34.688	4.18	2.23	80.	.00		37.8
1307	B	34.705	4.26					
1406	2.09	34.716	4.33	2.16	85.			34.8
1601	1.96	34.744	4.45	2.13	88.			31.7
1607	B	34.733	4.46					
1807	1.78	34.740	4.49	2.16	94.			30.7
1903	1.70	34.737	4.49	2.04U	94.			30.3
1908	B	34.738	4.56					
2002A	1.632	34.738	4.54	2.14	96.			29.8
2011	1.62	34.740	4.56	2.09	96.			29.5
2101A	1.554	34.739	4.59	2.15	101.			29.2
2202A	1.476	34.734	4.61	2.16	103.			29.0
2207A	B	34.736	4.59					
2301A	1.40	34.732		2.16	106.			28.6
2403A	1.31	34.729	4.58	2.18	107.			28.3
2503A	1.26	34.726	4.68	2.18	109.			28.2
2704A	1.143	34.720	4.72	2.21	113.			27.8
2708A	B	34.724	4.72					
2904A	1.01	34.712	4.67	2.21	118.			27.6
3205A	.879	34.707	4.84	2.23	121.			27.2
3209A	B	34.710	4.81					
3505A	.775	34.701	4.87	2.25	125.			27.0
3804A	.69	34.699	4.89	2.26	128.			26.7
3809A	B	34.702	4.93					
4103A	.631	34.695	4.84	2.26	126.			26.6
4203A	B	34.701	5.01					
4302A	.591	34.697	4.98	2.26	125.			26.2
4502A	.540	34.697	5.03	2.26	124.			26.0
4601A	.51	34.695	5.05	2.26	126.			25.9
4650A	.53	34.695	5.05	2.26	124.			26.1
4695A	B	34.697	5.04					
4700A	.51	34.696	5.06	2.26	126.			25.9

Z	T	S	O2	SIGT	DT	DD
0	5.83	33.937	7.03	26.756	129.8	0
10	5.83	33.941	7.03	26.757	129.7	.013
20	5.83	33.941	7.03	26.759	129.6	.026
30	5.84	33.943	7.02	26.760	129.5	.039
50	5.84	33.946	7.02	26.762	129.2	.065
75	5.67	33.945	7.16	26.783	127.3	.097
100	4.11	33.948	7.15	26.960	110.5	.127
125	3.96	34.036	6.75	27.046	102.3	.154
150	3.85	34.078	6.47	27.090	98.1	.179
200	3.77	34.149	6.11	27.155	92.0	.228
250	3.56	34.193	5.88	27.211	86.7	.273
300	3.24	34.220	5.58	27.263	81.8	.316
400	2.45	34.253	5.36	27.359	72.6	.396
500	2.65	34.384	4.62	27.447	64.5	.467
600	2.58	34.463	4.29	27.516	57.8	.531
700	2.50	34.518	4.12	27.566	53.0	.590
800	2.43	34.562	4.09	27.608	49.0	.645
1000	2.30	34.637	4.11	27.678	42.4	.747
1200	2.20	34.687	4.18	27.726	37.9	.838
1500	2.03	34.731	4.36	27.776	33.2	.965
2000	1.63	34.739	4.54	27.812	29.8	1.158
2500	1.26	34.726	4.68	27.829	28.2	1.339
3000	.96	34.710	4.72	27.836	27.5	1.509
3500	.78	34.701	4.87	27.841	27.0	1.673
4000	.65	34.697	4.87	27.845	26.6	1.831
4500	.54	34.697	5.03	27.852	26.0	1.984

A) CAST II.
B) SPECIAL NISKIN BOTTLE SAMPLE FOR SALINITY AND OXYGEN DETERMINATION. NO TEMPERATURE MEASUREMENT WAS MADE.

RV THOMAS WASHINGTON ARIES EXPEDITION II 25

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
60 26.5S	165 48.0E	01/27/71	0337 0556GMT	4158M	300	24KT	2	300 09 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	2.83	33.902	7.56	1.73	13.	.26	26.6	102.3	0	2.83	33.902	7.56	27.047	102.3	0
20	2.82	33.906	7.64	1.73	13.	.26	26.8	101.9	10	2.83	33.905	7.60	27.049	102.0	.010
45	2.77	33.902	7.71	1.71	12.	.28	26.8	101.8	20	2.82	33.906	7.64	27.051	101.9	.020
61	2.40	33.900	7.58	1.85	15.	.29	27.6	98.9	30	2.80	33.905	7.67	27.051	101.8	.031
80	1.42	33.953	7.30	2.11	25.	.25		87.9	50	2.69	33.900	7.68	27.057	101.3	.051
105	1.29	34.004	7.32	2.13	30.	.17	31.8	83.2	75	1.67	33.936	7.37	27.166	90.9	.075
120	1.30	34.044	7.03	2.15	33.	.15	32.6	80.2	100	1.32	34.000	7.32	27.243	83.7	.097
156	1.66	34.187	5.87	2.32	45.	.05	34.9	71.8	125	1.33	34.063	6.88	27.292	79.0	.117
176	1.99	34.259	5.33	2.36	48.	.04	35.8	68.7	150	1.57	34.162	6.08	27.354	73.1	.136
215	2.07	34.343	5.08	2.40	56.	.03	36.6	62.9	200	2.04	34.313	5.13	27.440	64.9	.171
252	2.07	34.386	4.64	2.45	61.	.01	36.6	59.6	250	2.07	34.384	4.66	27.495	59.8	.203
321	2.11	34.453	4.39	2.45	67.	.01	37.2	54.9	300	2.09	34.434	4.42	27.533	56.2	.233
461	2.22	34.571	4.10	2.44	74.	.00	36.9	46.8	400	2.18	34.524	4.19	27.598	50.0	.287
598	2.18	34.637	4.10	2.37	80.	.00	36.3	41.5	500	2.22	34.594	4.10	27.650	45.1	.337
797	2.12	34.697	4.26	2.22	82.	.00	34.8	36.5	600	2.18	34.638	4.10	27.689	41.4	.383
1195	1.87	34.735	4.49	2.19	90.	.00	33.4	31.7	700	2.15	34.673	4.17	27.719	38.6	.426
1395	1.70	34.742	4.57	2.18	94.		33.0	30.0	800	2.12	34.698	4.26	27.742	36.4	.468
1582A	1.55	34.741	4.57	2.18	96.		33.4	29.0	1000	2.01	34.725	4.39	27.772	33.5	.546
1598	1.52	34.738	4.59	2.18	100.		33.6	29.0	1200	1.87	34.735	4.49	27.792	31.7	.622
1786A	1.34	34.737	4.61	2.18	104.		33.7	27.8	1500	1.64	34.746	4.57	27.818	29.2	.729
1803	1.37	34.734	4.63	2.18	101.		33.7	28.3	2000	1.18	34.727	4.74	27.835	27.6	.898
1990A	1.19	34.727	4.74	2.23	109.		33.6	27.6	2500	.88	34.710	4.79	27.841	27.0	1.059
2011	1.17	34.727	4.73	2.23	110.		34.4	27.5	3000	.70	34.704	4.91	27.848	26.4	1.213
2195A	1.03	34.718	4.79	2.23	112.		34.2	27.3	3500	.63	34.699	4.95	27.848	26.3	1.364
2418A	.91	34.711	4.77	2.23	115.		34.1	27.1	4000	.53	34.700		27.855	25.7	1.512
2702A	.81	34.707	4.87	2.25	121.		34.8	26.8							
2903A	.74	34.705	4.92	2.29	121.		34.5	26.5							
3105A	.67	34.703	4.90	2.31	123.		34.4	26.2							
3305A	.66	34.701	4.89	2.29	128.		34.3	26.3							
3504A	.63	34.699	4.95	2.28	126.		34.5	26.3							
3701A	.61	34.701	4.99	2.22	128.		34.3	26.1							
3897A	.55	34.700	5.00	2.27	125.		35.1	25.8							

RV THOMAS WASHINGTON ARIES EXPEDITION II 26

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
61 46.5S	165 20.0E	01/27/71	2053 2250GMT	2902M	280	16KT	4	270 05 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	1.75	33.989	8.05	1.70	27.	.27	27.3	87.4	0	1.75	33.989	8.05	27.203	87.4	0
9	1.74	33.989	7.87	1.74	27.	.27	28.4	87.3	10	1.74	33.990	7.87	27.205	87.3	.009
46	1.56	34.004	7.93	1.74	32.	.28	28.1	85.0	20	1.69	33.994	7.89	27.212	86.6	.017
70	.97	34.027	7.79	1.91	39.	.26	27.2	79.4	30	1.64	33.998	7.90	27.218	86.0	.026
93	.04	34.156	7.07	2.26	54.	.20	31.2	64.6	50	1.49	34.004	7.91	27.234	84.5	.043
140	1.17	34.414	5.02	2.45	69.	.14	35.3	51.3	75	.74	34.050	7.67	27.320	76.4	.063
186	1.74	34.539	4.26	2.45	75.	.04	36.9	45.6	100	.10	34.199	6.75	27.475	61.6	.081
277	2.13	34.646	4.07	2.36	79.	.01	35.2	40.4	125	.62	34.337	5.65	27.557	53.9	.095
367	1.98	34.658	4.10	2.33	82.	.00	34.5	38.4	150	1.33	34.449	4.78	27.602	49.6	.108
457	1.97	34.694	4.21	2.26	83.	.00		35.6	200	1.85	34.565	4.23	27.657	44.5	.132
547	1.89	34.710	4.27	2.24	85.			33.8	250	2.09	34.630	4.13	27.689	41.4	.154
637	1.86	34.722	4.32	2.22	86.			32.6	300	2.11	34.653	4.08	27.706	39.8	.175
728	1.79	34.730	4.43	2.17	88.	.00		31.5	400	1.98	34.672	4.14	27.732	37.3	.215
818	1.69	34.734	4.49	2.18	90.			30.5	500	1.93	34.703	4.24	27.761	34.6	.253
910	1.64	34.739	4.52	2.17	92.	.00		29.8	600	1.87	34.718	4.30	27.777	33.0	.289
1002	1.57	34.738	4.58	2.17	94.	.00		29.3	700	1.82	34.728	4.40	27.790	31.8	.325
1095	1.48	34.740	4.63	2.17	97.			28.6	800	1.71	34.733	4.48	27.802	30.7	.359
1189	1.39	34.734	4.63	2.17	99.			28.4	1000	1.57	34.739	4.58	27.816	29.4	.426
1284	1.32	34.732	4.64	2.19	100.		32.2	28.1	1200	1.38	34.734	4.63	27.826	28.4	.491
1380	1.25	34.731	4.68	2.19	104.		32.6	27.7	1500	1.12	34.726	4.72	27.838	27.3	.586
1486A	1.13	34.726	4.72	2.19	105.		31.8	27.3	2000	.79	34.708	4.82	27.846	26.6	.738
1677A	1.01	34.721	4.74	2.22	110.		33.3	26.9	2500	.54	34.700	4.90	27.854	25.8	.882
1869A	.87	34.713	4.77	2.24	113.		33.7	26.7							
2061A	.753	34.706	4.84	2.22	116.		33.2	26.5							
2253A	.634	34.702	4.91	2.26	119.		33.3	26.1							
2447A	.563	34.700	4.89	2.26	122.		33.9	25.9							
2740A	.46	34.697	4.96	2.26	122.		33.5	25.5							
2790A	.383	34.696	4.98	2.28	124.		33.8	25.2							
2840A	.376	34.695	5.00	2.27	124.		34.0	25.2							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 27

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
63 06.0S	164 34.5E	01/28/71	1025 1139GMT	3156M	210	16KT	2	210 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	1.18	33.988	8.14	1.61	43.	.28	26.9	83.7	0	1.18	33.988	8.14	27.242	83.7	0
21	1.18	33.992	8.21	1.55	44.	.28	27.3	83.4	10	1.18	33.990	8.16	27.244	83.5	.008
52	1.14	33.992	8.45	1.59	44.	.28	27.0	83.1	20	1.18	33.992	8.20	27.245	83.4	.017
72	-.57	34.118	7.94	2.09	66.	.19	31.2	64.8	30	1.17	33.992	8.28	27.246	83.3	.025
107	.50	34.523	5.59	2.30	83.	.20	35.7	39.0	50	1.14	33.992	8.43	27.248	83.2	.042
128	1.14	34.613	4.84	2.28	85.	.14	35.7	36.0	75	-.48	34.161	7.75	27.472	61.9	.060
154	1.46	34.664	4.64	2.27	86.	.07	31.8U	34.2	100	.29	34.458	6.08	27.674	42.8	.073
178	1.46	34.674	4.64	2.25	88.	.05	31.9U	33.4	125	1.06	34.606	4.92	27.745	36.1	.083
217	1.53	34.696	4.58	2.22	88.	.01	34.6	32.2	150	1.44	34.660	4.67	27.763	34.4	.092
253	1.51	34.699	4.60	2.20	89.	.01	34.6	31.9	200	1.50	34.688	4.61	27.781	32.7	.109
322	1.52	34.714	4.67	2.19	91.	.00	33.9	30.8	250	1.51	34.699	4.60	27.789	31.9	.125
431	1.44	34.724	4.80	2.16	93.	.00	33.4	29.5	300	1.52	34.709	4.64	27.797	31.2	.142
561	1.33	34.722	4.81	2.18	96.	.00	34.1	28.9	400	1.47	34.723	4.77	27.811	29.8	.173
700	1.19	34.722	4.84	2.17	96.	.02	34.6	28.0	500	1.38	34.724	4.81	27.818	29.1	.204
852	1.06	34.718	4.99	2.19	97.	.00	34.5	27.5	600	1.29	34.722	4.82	27.824	28.7	.235
1010	.94	34.712	5.00	2.19	99.	.00	33.8	27.2	700	1.19	34.722	4.84	27.831	28.0	.265
1152A	.87	34.714	4.84	2.19	113.		34.0	26.6	800	1.10	34.720	4.94	27.835	27.6	.295
1354A	.75	34.710	4.96	2.22	117.		34.1	26.2	1000	.95	34.713	5.00	27.839	27.2	.354
1556A	.62	34.702	5.01	2.26	121.		35.1	26.0	1200	.84	34.714	4.85	27.847	26.5	.411
1758A	.46	34.692	5.14	2.27	122.		35.6	25.9	1500	.66	34.705	4.99	27.851	26.1	.496
1859A	.34	34.689	5.05	2.26	123.		35.0	25.5	2000	.27	34.687	5.12	27.859	25.3	.631
2010A	.27	34.686	5.13	2.26	126.		35.3	25.3	2500	.08	34.687	5.30	27.869	24.3	.755
2162A	.20	34.686	5.19	2.28	126.		34.5	25.0	3000	.01	34.698	5.35	27.882	23.1	.868
2312A	.13	34.685	5.30	2.27	126.		35.2	24.7							
2464A	.09	34.685	5.30	2.27	125.		34.7	24.5							
2613A	.05	34.691	5.28	2.26	121.		35.1	23.8							
2762A	.02	34.697	5.36	2.22	120.		35.0	23.2							
2910A	.00	34.697	5.38	2.24	118.		34.9	23.1							
3059A	.01	34.698	5.34	2.24	117.		35.1	23.1							
3156A	.00	34.699	5.37	2.25	118.		35.1	23.0							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 28

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
63 59.0S	164 11.5E	01/28/71	2045 2243GMT	2953M	200	07KT	7	050 05 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.82	34.048	8.06	1.56	60.	.18	25.8	77.0	0	.82	34.048	8.06	27.314	77.0	0
10	.83	34.055	8.06	1.57	60.	.16	26.1	76.5	10	.83	34.055	8.06	27.319	76.5	.008
24	.86	34.063	8.07	1.57	59.	.14	26.0	76.1	20	.85	34.061	8.07	27.322	76.2	.015
48	-.08	34.139	7.90	1.77	65.	.15	27.5	65.3	30	.67	34.076	8.05	27.345	74.0	.023
99	-1.35	34.426	6.58	2.14	82.	.18	33.1	38.5	50	-.17	34.149	7.86	27.449	64.1	.037
148	.46	34.626	5.07	2.24	92.	.06	34.4	30.9	75	-1.01	34.287	7.30	27.596	50.2	.051
196	1.06	34.691	4.61	2.26	98.	.03	34.3	29.5	100	-1.32	34.431	6.55	27.723	38.2	.062
294	1.04	34.707	4.67	2.24	102.	.01	34.9	28.2	125	-.50	34.538	5.73	27.778	33.0	.071
392	1.00	34.710	4.67	2.22	104.	.00	34.6	27.7	150	.50	34.630	5.04	27.800	30.9	.079
490	.97	34.709	4.67	2.25	107.	.00	34.4	27.6	200	1.06	34.692	4.61	27.815	29.4	.094
588	.89	34.709	4.69	2.24	111.		34.5	27.1	250	1.05	34.702	4.64	27.824	28.6	.109
686	.81	34.715U	4.77	2.24	112.		34.5		300	1.04	34.708	4.67	27.829	28.1	.123
784	.75	34.698	4.82	2.26	113.		34.0	27.1	400	1.00	34.710	4.67	27.834	27.7	.152
882	.69	34.701	4.83	2.26	115.		35.0	26.5	500	.96	34.709	4.67	27.835	27.5	.180
980	.62	34.697	4.83	2.28	118.	.00	34.6	26.4	600	.88	34.708	4.70	27.840	27.1	.209
1079	.59	34.698	4.83	2.27	121.		34.7	26.2	700	.80	34.702	4.78	27.840	27.1	.237
1178	.54	34.699	4.85	2.28	123.		34.8	25.8	800	.74	34.699	4.82	27.841	27.0	.265
1278	.47	34.695	4.87	2.28	124.		34.8	25.7	1000	.61	34.697	4.83	27.848	26.4	.321
1377	.41	34.691	4.91	2.28	125.		34.7	25.7	1200	.53	34.699	4.85	27.854	25.8	.376
1412A	.42	34.697	4.89	2.26	124.		34.9	25.3	1500	.36	34.695	4.94	27.861	25.1	.455
1476	.37	34.695	4.93	2.28	125.		35.4	25.2	2000	.15	34.698	5.13	27.875	23.8	.578
1612A	.31	34.695	4.96	2.27	126.		35.0	24.9	2500	-.06	34.704	5.27	27.891	22.3	.690
1812A	.24	34.695	5.02	2.27	126.		35.0	24.5							
2013A	.142	34.698	5.14	2.27	124.		35.0	23.7							
2215A	.07	34.701	5.17	2.26	120.		34.6	23.1							
2418A	-.047	34.702	5.24	2.24	116.		35.2	22.5							
2623A	-.07	34.706	5.31	2.24	114.		34.7	22.1							
2725A	-.069	34.709	5.32	2.28	114.		34.7	21.9							
2829A	-.09	34.709	5.30	2.26	113.		34.9	21.8							
2880A	-.09	34.712	5.29	2.24	113.		34.9	21.5							
2934A	-.094	34.713	5.31	2.23	114.		34.9	21.4							

A) CAST II.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
64 52.0S	163 46.5E	01/29/71	0621 1232GMT	2974M	250	12KT	2	250 04 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	.88	34.087	7.96	1.70	66.	.25	27.8	74.3	0	.88	34.087	7.96	27.341	74.3	0
10A	C	34.096	7.91						10	.85	34.096	7.91	27.344	74.1	.007
35	.77	34.093	7.94	1.73	65.	.24	28.1	73.2	20	.82	34.091	7.92	27.348	73.7	.015
52A	C	34.210	7.82						30	.79	34.092	7.93	27.351	73.4	.022
58A	-1.66	34.312						46.4	50	-.91	34.233	7.83	27.548	54.7	.035
66	-1.68	34.316	7.40	2.01	73.	.16	31.0	46.0	75	-1.72	34.335	7.23	27.657	44.4	.047
86	-1.76	34.366	7.06	2.07	76.	.28	32.2	42.0	100	-1.60	34.403	6.88	27.709	39.5	.058
121	-1.02	34.472	6.43	2.13	82.	.09	33.4	36.0	125	-.83	34.491	6.25	27.754	35.2	.067
141	-.10	34.568	5.55	2.19	90.	.04	34.3	32.5	150	.10	34.592	5.37	27.791	31.7	.075
168	.36	34.620	5.15	2.25	92.	.04	34.7	30.8	200	.91	34.686	4.70	27.820	29.0	.090
193	.82	34.675	4.79	2.28	96.	.04	35.1	29.3	250	1.07	34.707	4.60	27.826	28.4	.105
206A	C	34.695	4.63						300	1.05	34.712	4.64	27.831	27.9	.119
211A	1.01	34.697						28.8	400	1.00	34.710	4.67	27.834	27.7	.148
233	1.07	34.706	4.59	2.26	96.	.01	34.7	28.4	500	.93	34.709	4.70	27.837	27.4	.177
269	1.08	34.708	4.61	2.26	96.	.02	34.7	28.4	600	.88	34.708	4.70	27.840	27.1	.205
304A	C	34.712	4.64						700	.82	34.707	4.77	27.843	26.9	.233
309A	1.05	34.712						27.9	800	.76	34.704	4.81	27.844	26.7	.261
321	1.07	34.711	4.63	2.26	97.	.01	34.8	28.1	1000	.64	34.700	4.84	27.848	26.3	.317
417	C	34.710	4.68						1200	.55	34.704	4.87	27.857	25.5	.371
423	.98	34.710	4.70	2.25	97.U	.01	34.8	27.6	1500	.39	34.698	4.95	27.861	25.1	.450
519	C	34.714	4.70						2000	.20	34.700	5.09	27.873	24.0	.575
524	.92	34.708	4.72	2.27	110.		34.8	27.4	2500	.00	34.708	5.27	27.891	22.3	.688
620	C	34.709	4.70												
626	.86	34.708	4.74	2.28	112.	.00	35.2	27.0							
778	.77	34.704	4.80	2.26	114.		34.9	26.8							
931	.69	34.701	4.83	2.25	119.	.00	35.1	26.5							
1129	C	34.700	4.86												
1134	.57	34.700	4.86	2.27	122.		35.0	25.9							
1144B	.57	34.704	4.86	2.24	123.		36.0	25.6							
1345B	.45	34.702	4.91	2.26	124.		35.8	25.1							
1545B	C	34.697	4.96												
1556B	.37	34.696	4.94	2.26	126.		35.5	25.1							
1752B	.31	34.701	5.02	2.27	128.		35.9	24.4							
1904B	.25	34.702	5.04	2.28	127.		35.2	24.0							
2049B	C	34.700	5.11												
2055B	.18	34.698	5.03	2.26	127.		35.0	23.9							
2206B	.13	34.702	5.02	2.26	124.		34.6	23.4							
2350B	C	34.701	5.17												
2356B	.07	34.708	5.17	2.26	121.		35.1	22.6							
2505B	.00	34.708	5.27	2.23	117.		34.7	22.3							
2648B	C	34.711	5.30												
2653B	-.09	34.715	5.30	2.24	114.		35.0	21.3							
2802B	-.12	34.719	5.38	2.26	112.		34.4	20.8							
2935B	C	34.719	5.38												
2962B	-.156	34.719	5.37	2.26	112.		34.6	20.7							

A) CAST III.
B) CAST II.
C) SPECIAL NISKIN BOTTLE SAMPLE FOR SALINITY AND OXYGEN DETERMINATION. NO TEMPERATURE MEASUREMENT WAS MADE.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 30

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
65 32.0S	163 32.0E	01/29/71	2140 2335GMT	2968M	170	05KT	2	270 03 09

Z	T	S	C2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.66	34.066	7.95	1.65	69.	.20	26.9	74.7	0	.66	34.066	7.95	27.338	74.7	0
46	-.28	34.148	7.83	1.74	69.	.15	29.1	63.7	10	.63	34.078	7.92	27.348	73.7	.007
72	-1.62	34.360	6.89	2.03	78.	.15	32.6	42.8	20	.61	34.089	7.90	27.359	72.7	.015
93	-1.27	34.434	6.47	2.12		.12	33.4	38.1	30	.58	34.100	7.87	27.370	71.6	.022
123	.30	34.604	5.23	2.21	90.	.10	34.5	31.7	50	-.55	34.178	7.69	27.490	60.3	.035
155	.85	34.671	4.76	2.23	96.	.06	34.7	29.7	75	-1.57	34.375	6.83	27.685	41.8	.048
205	1.11	34.704	4.56	2.21	100.	.06	35.4	28.9	100	-.91	34.472	6.18	27.742	36.4	.057
305	1.09	34.712	4.59	2.22	104.	.01	35.5	28.1	125	.36	34.612	5.18	27.793	31.5	.066
405	1.02	34.713	4.63	2.21	106.	.01	34.9	27.6	150	.81	34.667	4.80	27.811	29.9	.074
505	.98	34.713	4.65	2.20	109.	.00	35.2	27.4	200	1.10	34.704	4.56	27.821	28.9	.089
605	.90	34.711	4.69	2.22	110.		35.5	27.0	250	1.10	34.709	4.57	27.826	28.4	.103
706	.84	34.708	4.70	2.23	114.		35.4	26.9	300	1.09	34.712	4.59	27.829	28.1	.118
806	.79	34.705	4.81	2.23	115.	.00	35.6	26.8	400	1.02	34.713	4.63	27.835	27.6	.146
906	.72	34.704	4.77	2.23	119.		35.7	26.5	500	.98	34.713	4.65	27.837	27.4	.175
1007	.67	34.701	4.79	2.23	119.		34.9	26.4	600	.90	34.711	4.69	27.841	27.0	.203
1109	.61	34.700	4.83	2.25	121.		34.8	26.1	700	.84	34.708	4.70	27.842	26.9	.231
1210	.57	34.699	4.85	2.26	122.		35.4	26.0	800	.79	34.705	4.80	27.843	26.8	.259
1314	.51	34.698	4.85	2.23	123.		35.1	25.7	1000	.67	34.701	4.79	27.847	26.4	.315
1417	.47	34.700	4.88	2.23	123.		36.2	25.3	1200	.57	34.699	4.85	27.852	26.0	.370
1432A	.47	34.700	4.88	2.24	123.		35.1	25.3	1500	.44	34.698	4.90	27.859	25.3	.451
1523	.43	34.697	4.90	2.26	124.		36.1	25.3	2000	.23	34.702	5.05	27.874	23.9	.577
1532A	.41	34.701	4.90	2.26	124.		35.1	24.9	2500	.05	34.708	5.20	27.888	22.6	.693
1732A	.34	34.701	4.93	2.26	124.		36.0	24.6							
1932A	.25	34.700	5.01	2.25	124.		35.9	24.2							
2132A	.192	34.705	5.12	2.26	122.		35.4	23.5							
2334A	.112	34.706	5.14	2.25	119.		35.5	23.0							
2536A	.037	34.708	5.22	2.21	116.		34.8	22.5							
2739A	-.036	34.715	5.30	2.23	113.		35.6	21.6							
2841A	-.078	34.717	5.36	2.23	110.		34.9	21.2							
2892A	-.085	34.715	5.33	2.23	110.		35.2	21.3							
2943A	-.087	34.718	5.35	2.22	110.		35.3	21.1							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 31

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 14.5S	163 09.0E	01/30/71	0515 0610GMT	2451M	210	05KT	7	04 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.90	34.109	7.91	1.39	72.	.10	16.8	72.8	0	.90	34.109	7.91	27.358	72.8	0
20	.69	34.128	8.10	1.38	73.	.09	17.1	70.1	10	.79	34.119	8.00	27.372	71.5	.007
50	-.93	34.367	6.72	2.09	85.	.08	26.5	44.4	20	.69	34.128	8.10	27.386	70.1	.014
71	-1.34	34.444	6.60	2.19	88.	.10	29.2	37.1	30	.17	34.199	7.67	27.472	62.0	.021
107	-1.25	34.487	6.48	2.17	88.	.12	29.8	34.1	50	-.93	34.367	6.72	27.658	44.4	.032
127	-1.03	34.512	6.22	2.18	90.	.10	29.9	32.9	75	-1.33	34.449	6.60	27.738	36.8	.042
152	-.36	34.568	5.67	2.17	91.	.09	34.1	31.3	100	-1.27	34.479	6.52	27.760	34.7	.050
179	.18	34.617	5.03	2.22	94.	.11	34.9	30.1	125	-1.06	34.509	6.25	27.777	33.0	.059
219	.59	34.657	5.12	2.22	96.	.08	34.6	29.3	150	-.42	34.563	5.72	27.795	31.4	.067
255	.76	34.678	4.90	2.22	101.	.06	34.5	28.7	200	.44	34.642	5.08	27.814	29.6	.082
325	.60	34.670	4.98	2.22	101.	.05	34.5	28.4	250	.75	34.676	4.93	27.823	28.7	.097
435	.55	34.672		2.22	105.	.03	34.4	27.9	300	.69	34.677	4.95	27.826	28.4	.111
567	.62	34.683	4.97	2.22	108.	.02	34.8	27.5	400	.57	34.672	4.98	27.830	28.1	.140
707	.62	34.693	4.96	2.23	114.	.00	35.2	26.7	500	.58	34.677	4.97	27.834	27.7	.168
857	.58	34.694	4.93	2.24	116.	.01	34.8	26.4	600	.62	34.686	4.97	27.838	27.3	.196
1006	.56	34.695	4.93	2.22	120.	.00	35.2	26.2	700	.62	34.693	4.96	27.844	26.8	.224
1034A	.52	34.698	4.92	2.24	117.		35.2	25.8	800	.60	34.695	4.94	27.846	26.5	.252
1186A	.46	34.695	5.04	2.26	121.		35.2	25.7	1000	.56	34.695	4.93	27.849	26.2	.306
1338A	.40	34.688	5.00	2.24	119.		34.7	25.9	1200	.45	34.695	5.04	27.855	25.7	.360
1489A	.33	34.698		2.27	124.		35.1	24.7	1500	.32	34.698	5.02	27.865	24.7	.438
1640A	.26	34.697	5.04	2.24	123.		34.7	24.4	2000	.14	34.705	5.11	27.881	23.2	.559
1792A	.20	34.700	5.07	2.27	123.		34.9	23.9							
2044A	.12	34.705	5.13	2.28	121.		34.9	23.1							
2151A	.06	34.704	5.19	2.26	119.		34.7	22.9							
2208B	.01	34.705	5.24	2.26	117.		34.8	22.5							
2275B	-.01	34.705	5.41	2.26	117.		34.6	22.4							
2335B	-.05	34.706	5.34	2.24	115.		34.6	22.2							

A) CAST II.
B) THE NANSEN BOTTLE AT THIS DEPTH ON CAST II PRETRIPPED. THE DEPTH MAY BE SLIGHTLY IN ERROR.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 32

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 36.5S	164 23.0E	01/30/71	1121 1310GMT	2685M	120	08KT	1	120 02 02

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.52	34.127	8.00	1.28	69.	.09	16.9	69.3	0	.52	34.127	8.00	27.395	69.3	0
39	-.54	34.229	7.38	1.67	77.	.08	22.8	56.4	10	.24	34.144	7.84	27.423	66.6	.007
79	-1.58	34.439	6.75	2.17	85.	.12	32.8	36.8	20	-.03	34.167	7.68	27.456	63.4	.013
98	-1.69	34.454	6.81	2.14	84.	.15	33.2	35.4	30	-.30	34.197	7.52	27.493	59.9	.019
108	-1.72	34.461	6.83	2.13	86.	.14	32.9	34.8	50	-.88	34.293	7.16	27.596	50.2	.030
147	-1.37	34.489	6.44	2.14	86.	.06	33.4	33.6	75	-1.50	34.421	6.79	27.721	38.4	.041
197	-.38	34.569	5.72	2.24	95.	.07	34.1	31.1	100	-1.70	34.456	6.82	27.754	35.2	.051
294	.58	34.664	5.01	2.22	96.	.03	34.7	28.7	125	-1.64	34.472	6.72	27.765	34.2	.059
392	.71	34.683	4.90	2.22	96.	.02	34.6	28.0	150	-1.31	34.493	6.40	27.773	33.4	.067
490	.71	34.684	4.89	2.25	104.	.01	34.6	27.9	200	-.33	34.574	5.69	27.799	31.0	.083
587	.71	34.692	4.85	2.24	107.	.01	34.7	27.3	250	.27	34.632	5.24	27.815	29.5	.098
685	.74	34.700	4.76	2.24	111.	.01	34.8	26.9	300	.59	34.666	5.00	27.824	28.6	.113
782	.70	34.696	4.87	2.24	113.	.00	35.0	27.0	400	.71	34.683	4.90	27.831	28.0	.142
880	.65	34.698	4.90	2.25	114.	.00	35.2	26.5	500	.71	34.685	4.89	27.832	27.9	.170
978	.58	34.695	4.83	2.26	114.	.01	35.0	26.3	600	.72	34.694	4.83	27.839	27.2	.199
1077	.54	34.695	4.92	2.26	118.	.00	34.7	26.1	700	.74	34.700	4.77	27.842	26.9	.227
1177	.52		4.91	2.26	120.		34.9		800	.69	34.697	4.88	27.842	26.9	.255
1277	.45	34.695	4.87	2.27	120.		34.9	25.6	1000	.57	34.695	4.85	27.849	26.3	.310
1310A	.45	34.694	4.91	2.28	126.U		35.3	25.7	1200	.50	34.698	4.90	27.855	25.7	.364
1378	.40	34.698	4.89	2.27	122.		35.3	25.1	1500	.35	34.698	4.97	27.864	24.8	.442
1481	.35	34.698	4.96	2.28	121.		35.7	24.8	2000	.16	34.702	5.10	27.878	23.5	.565
1569A	.34	34.697	5.01	2.30	120.		35.1	24.9	2500	.01	34.709	5.19	27.891	22.3	.677
1861B	.215	34.702	5.07	2.27	123.		34.9	23.8							
2063B	.141	34.702	5.12	2.27	119.		35.3	23.4							
2266B	.08		5.16	2.29	121.										
2469B	.025	34.709	5.18	2.28	117.		35.0	22.3							
2572B	-.011	34.708	5.22	2.32	117.		35.5	22.2							
2623B	-.008	34.710	5.15	2.30	116.		35.1	22.1							
2674B	-.004	34.71	5.19	2.31	119.		34.9	22.1							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 33

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 07.0S	165 22.5E	01/30/71	1815 1903GMT	2429M	300	09KT	1	280 03 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.37	34.150	8.22	1.32	73.	.07	18.8	66.7	0	.37	34.150	8.22	27.422	66.7	0
21	.11	34.156	8.09	1.35	74.	.07	19.5	64.9	10	.27	34.155	8.19	27.431	65.8	.007
53	-.65	34.233	7.40	1.70	77.	.08	23.4	55.3	20	.13	34.156	8.10	27.440	65.0	.013
73	-1.31	34.348	6.87	2.02	81.	.08	29.0	44.6	30	-.06	34.169	7.94	27.460	63.1	.020
108	-1.33	34.484	6.53	2.13	87.	.11	33.3	34.1	50	-.56	34.226	7.48	27.529	56.6	.032
129	-1.18	34.497	6.32	2.13	88.	.09	33.8	33.6	75	-1.31	34.360	6.84	27.665	43.7	.044
155	-.68	34.545	6.06	2.18	90.	.06	34.0	31.7	100	-1.33	34.466	6.58	27.752	35.5	.054
180	-.07	34.599	5.43	2.18	95.	.07	34.2	30.2	125	-1.22	34.494	6.36	27.771	33.7	.062
220	.37	34.641	5.12	2.22	98.	.04	34.5	29.3	150	-.79	34.534	6.13	27.787	32.1	.070
256	.61	34.663	4.92	2.22	99.	.03	34.9	28.9	200	.20	34.626	5.22	27.813	29.6	.086
327	.76	34.685	4.84	2.22	104.	.02	35.0	28.1	250	.58	34.661	4.95	27.820	29.0	.100
437	.80	34.696	4.77	2.22	107.	.01	35.0	27.5	300	.73	34.680	4.87	27.826	28.4	.115
564	.79	34.704	4.77	2.24	110.	.00	34.6	26.9	400	.79	34.693	4.79	27.834	27.7	.144
703	.73	34.702	4.79	2.26	114.	.00	34.5	26.7	500	.80	34.701	4.77	27.839	27.2	.172
853	.65	34.699	4.84	2.26	117.	.00	35.0	26.4	600	.78	34.704	4.77	27.843	26.8	.200
1004	.59	34.700	4.85	2.23	119.		34.8	26.0	700	.73	34.702	4.79	27.844	26.7	.227
1015B	.58	34.700	4.85	2.25	120.		35.0	26.0	800	.68	34.700	4.82	27.846	26.5	.255
1166B	.51	34.700	4.90	2.26	121.		35.7	25.6	1000	.59	34.700	4.85	27.851	26.0	.310
1314B	.43	34.699	4.95	2.24	123.		35.1	25.2	1200	.49	34.700	4.91	27.857	25.5	.363
1465B	.37	34.699	4.95	2.27	124.		35.1	24.9	1500	.36	34.700	4.96	27.865	24.8	.441
1614B	.31	34.701	5.01	2.26	125.		35.0	24.4	2000	.16	34.704	5.11	27.879	23.4	.564
1763B	.23	34.700	5.05	2.26	124.		35.0	24.0							
1914B	.18	34.701	5.04	2.26	122.		35.0	23.7							
2014B	.16	34.704	5.12	2.27	122.		35.3	23.4							
2114B	.13	34.705	5.14	2.26	122.		35.1	23.1							
2215B	.07	34.704	5.17	2.26	119.		35.0	22.9							
2315B	.05	34.709	5.19	2.26	119.		36.4U	22.4							
2417B	-.02	34.710	5.18	2.28	120.		34.7	22.0							

A) THE NANSEN BOTTLE AT THIS DEPTH ON CAST II PRETRIPPED. THE DEPTH MAY BE SLIGHTLY IN ERROR.
B) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 34

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME		BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 14.0S	166 32.0E	01/31/71	0138	0337GMT	2914M	240	06KT	1	290 03 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.80	34.037	8.02	1.61	63.	.16	25.7	77.7	0	.80	34.037	8.02	27.306	77.7	0
40	.18	34.078	7.96	1.69	64.	.11	26.1	71.2	10	.65	34.047	8.00	27.323	76.1	.008
61	-1.66	34.315	7.55	1.99	71.	.13	30.7	46.1	20	.49	34.057	7.99	27.340	74.4	.015
93	-1.46	34.405	7.02	2.09	78.	.26	32.5	39.8	30	.33	34.067	7.97	27.357	72.8	.023
113	-.46	34.514	6.15	2.18	83.	.11	33.7	35.0	50	-.73	34.184	7.78	27.501	59.2	.036
154	1.05	34.677	4.71	2.24	93.	.08	34.5	30.5	75	-1.57	34.354	7.38	27.669	43.3	.048
203	1.18	34.702	4.62	2.18	96.	.02	34.5	29.5	100	-1.14	34.441	6.73	27.725	38.0	.059
303	1.16	34.714	4.64	2.24	101.	.01	34.8	28.4	125	.09	34.572	5.64	27.776	33.1	.067
403	1.09	34.714	4.67	2.23	104.	.00	34.1	28.0	150	.95	34.666	4.81	27.802	30.7	.075
502	1.03	34.713	4.69	2.23	107.	.00	34.2	27.7	200	1.17	34.701	4.63	27.814	29.5	.091
600	.95	34.712	4.75	2.24	108.		34.5	27.2	250	1.17	34.710	4.63	27.822	28.8	.106
699	.85	34.704	4.84	2.23	111.		34.5	27.2	300	1.16	34.714	4.64	27.826	28.4	.120
797	.83	34.706	4.81	2.24	113.	.00	34.3	27.0	400	1.09	34.714	4.67	27.831	28.0	.149
896	.77	34.706	4.83	2.27	116.		35.1	26.6	500	1.03	34.713	4.69	27.834	27.7	.178
995	.71	34.703	4.83	2.24	118.		34.3	26.5	600	.95	34.712	4.75	27.839	27.2	.207
1096	.68	34.703	4.86	2.23	120.	.00	35.0	26.3	700	.85	34.704	4.84	27.839	27.2	.235
1196	.64	34.703	4.85	2.27	121.		34.8	26.1	800	.83	34.706	4.81	27.842	27.0	.264
1299	.57	34.700	4.89	2.27	122.		34.8	25.9	1000	.71	34.703	4.83	27.847	26.5	.320
1401	.53	34.702	4.90	2.27	121.		31.5U	25.5	1200	.64	34.703	4.85	27.851	26.1	.376
1492A	.48	34.703	4.90	2.24	123.		31.5U	25.2	1500	.49	34.702	4.91	27.859	25.3	.452
1506	.50	34.701	4.91	2.27	124.		31.8U	25.4	2000	.28	34.704	5.06	27.872	24.0	.585
1692A	.42	34.704	4.93	2.29	126.		35.2	24.8	2500	.10	34.707	5.20	27.885	22.8	.702
1892A	.329	34.703	5.19U	2.27	126.		35.2	24.3							
2093A	.247	34.705	5.10	2.28	123.		35.1	23.8							
2295A	.17	34.706	5.11	2.27	122.		35.2	23.3							
2496A	.104	34.707	5.20	2.27	118.		35.2	22.9							
2699A	-.03	34.712	5.34	2.28	112.		34.7	21.8							
2801A	-.171	34.713	5.42	2.23	107.		34.3	21.1							
2852A	-.200	34.709	5.44	2.22	104.		34.4	21.2							
2904A	-.203	34.711	5.51	2.22	106.		34.3	21.1							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 35

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME		BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
65 16.5S	167 28.5E	01/31/71	1034	1157GMT	3463M	220	14KT	1	200 06 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	1.03	34.011	8.04	1.63	62.	.22	26.6	81.0	0	1.03	34.011	8.04	27.271	81.0	0
20	.77	34.019	8.10	1.63	62.	.21	27.2	78.9	10	.91	34.015	8.08	27.281	80.0	.008
51	-1.55	34.285	8.02	1.86	70.	.15	29.7	48.7	20	.77	34.019	8.10	27.293	78.9	.016
71	-1.68	34.344	7.62	2.00	76.	.17	31.3	43.8	30	.01	34.090	8.07	27.393	69.4	.023
106	-1.52	34.410	7.13	2.12	80.	.30	33.2	39.2	50	-1.48	34.275	8.02	27.601	49.7	.035
126	-.97	34.469	6.59	2.17	82.	.11	33.4	36.4	75	-1.66	34.353	7.57	27.670	43.2	.047
153	.37	34.600	5.25	2.24	88.	.10	34.4	32.4	100	-1.55	34.401	7.23	27.706	39.8	.057
178	.76	34.654	4.96	2.23	93.	.06	34.4	30.5	125	-1.01	34.466	6.62	27.740	36.6	.066
219	1.04	34.688	4.78	2.23	96.	.02	34.1	29.6	150	.23	34.586	5.39	27.780	32.8	.075
255	1.11	34.701	4.74	2.24	97.	.01	34.2	29.1	200	.95	34.678	4.83	27.811	29.8	.091
325	1.08	34.706	4.71	2.22	101.	.01	34.3	28.5	250	1.11	34.700	4.74	27.818	29.1	.106
430	1.04	34.710	4.71	2.22	104.	.01	34.1	28.0	300	1.09	34.705	4.72	27.823	28.7	.121
544	.98	34.711	4.78	2.23	107.	.00	34.5	27.5	400	1.05	34.709	4.71	27.830	28.1	.150
647B	.91	34.709	4.98U	2.22	111.	.00	34.9	27.2	500	1.01	34.711	4.75	27.834	27.7	.179
766B	.81	34.705	4.78	2.24	112.	.00	34.9	26.9	600	.94	34.710	4.78	27.837	27.3	.208
893B	.74	34.702	4.82	2.27	116.	.00	34.9	26.7	700	.86	34.708	4.78	27.840	27.1	.236
1113A	.62	34.706	4.78	2.23	116.		34.9	25.7	800	.79	34.704	4.79	27.842	26.9	.264
1320A	.54	34.702	4.86	2.26	125.		35.0	25.6	1000	.68	34.704	4.80	27.849	26.2	.320
1527A	.40	34.695	4.96	2.28	123.		35.3	25.3	1200	.59	34.705	4.81	27.855	25.7	.375
1733A	.30	34.692	5.00	2.31	127.		35.6	25.0	1500	.42	34.696	4.95	27.858	25.4	.455
1939A	.26	34.697	5.03	2.28	127.		35.1	24.4	2000	.25	34.701	5.04	27.872	24.1	.582
2143A	.21	34.708	5.06	2.30	125.		35.1	23.3	2500	.05	34.705	5.12	27.886	22.8	.698
2345A	.10	34.702	5.10	2.30	122.		35.1	23.2	3000	-.09	34.718	5.38	27.904	21.0	.801
2544A	.04	34.706	5.13	2.28	122.		34.8	22.6							
2741A	-.03	34.715	5.28	2.27	115.		34.6	21.6							
2935A	-.08	34.718	5.38	2.25	113.		34.6	21.1							
3125A	-.11	34.718	5.39	2.24	112.		35.0	21.0							
3312A	-.10	34.720	5.40	2.26	112.		34.9	20.9							
3421A	-.12	34.728	5.39	2.29	113.		34.6	20.2							

A) CAST II.
B) THE NANSEN BOTTLE AT THIS DEPTH ON CAST I PRETRIPPED. THE DEPTH MAY BE SLIGHTLY IN ERROR.

RV THOMAS WASHINGTON ARIES EXPEDITION II 36

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
64 24.0S	168 27.0E	01/31/71	1930 2152GMT	3223M	220	17KT	1	220 04 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	1.31	34.013	8.02	1.63	55.	.27	27.0	82.6	0	1.31	34.013	8.02	27.254	82.6	0
40	.75	34.050	8.09	1.72	60.	.24	28.1	76.4	10	1.17	34.022	8.03	27.270	81.1	.008
63	-1.18	34.190	8.18	1.93	68.	.16	30.1	57.1	20	1.03	34.031	8.04	27.287	79.5	.016
83	-1.55	34.274	7.65	2.09	78.	.17	31.5	49.6	30	.89	34.041	8.06	27.303	78.0	.024
104	-1.49	34.330	7.30	2.18	80.	.21	32.1	45.4	50	-.12	34.102	8.13	27.408	68.0	.039
156	-.74	34.480	6.27	2.21	84.	.10	33.3	36.4	75	-1.40	34.250	7.88	27.579	51.8	.054
207	.45	34.620	5.17	2.23	90.	.06	33.4	31.3	100	-1.50	34.322	7.36	27.640	46.0	.066
309	1.09	34.698	4.74	2.23	98.	.01	33.8	29.2	125	-1.27	34.390	6.90	27.688	41.5	.077
411	1.08	34.705	4.69	2.21	102.	.01	33.7	28.6	150	-.86	34.462	6.40	27.732	37.3	.086
512	1.05	34.715	4.76	2.21	104.	.00	33.0	27.6	200	.29	34.603	5.31	27.790	31.8	.103
612	1.01	34.714	4.74	2.22	107.	.00	33.7	27.5	250	.72	34.653	4.99	27.805	30.4	.119
713	.93	34.710	4.71	2.23	110.		33.8	27.3	300	1.03	34.691	4.78	27.816	29.4	.134
814	.88	34.715	4.79	2.25	111.	.00	34.6	26.6	400	1.08	34.705	4.70	27.824	28.6	.164
917	.81	34.712	4.82	2.23	113.		34.8	26.4	500	1.05	34.714	4.75	27.833	27.7	.193
1018	.77	34.707	4.80	2.25	117.		34.6	26.5	600	1.02	34.714	4.74	27.836	27.5	.222
1121	.68	34.703	4.88	2.30	118.	.00	34.2	26.3	700	.94	34.711	4.71	27.838	27.3	.251
1224	.62	34.725U	4.88	2.27	120.		34.7		800	.89	34.714	4.78	27.844	26.7	.280
1328	.53	34.695	4.88	2.26	122.		34.7	26.1	1000	.78	34.708	4.80	27.846	26.5	.336
1433	.47	34.694	4.89	2.26	124.		34.8	25.8	1200	.63	34.701	4.88	27.849	26.2	.392
1498A	.44	34.697	4.96	2.26	125.		34.4	25.4	1500	.44	34.697	4.96	27.858	25.4	.473
1539	.42	34.693	4.97	2.27	125.		35.3	25.6	2000	.20	34.696	5.12	27.870	24.3	.600
1695A	.31	34.697	5.03	2.29	126.		35.1	24.7	2500	.05	34.699	5.24	27.881	23.3	.717
1893A	.26	34.699	5.60U	2.27	127.		34.9	24.3	3000	-.05	34.712	5.34	27.897	21.7	.823
2091A	.15	34.692	5.14	2.28	126.		34.5	24.2							
2290A	.08	34.691	5.16	2.30	126.		34.9	24.0							
2490A	.05	34.698	5.24	2.29	121.		35.1	23.3							
2691A	-.003	34.702	5.28	2.27	119.			22.7							
2895A	-.045	34.709	5.30	2.26	117.		34.9	22.0							
2997A	-.051	34.712	5.34	2.27	114.		34.8	21.7							
3101A	-.06	34.712	5.39	2.26	115.		34.8	21.7							
3145A	-.09	34.717	5.31	2.26	114.		34.6	21.1							
3199A	-.089	34.715	5.30	2.26	114.		35.1	21.3							

RV THOMAS WASHINGTON ARIES EXPEDITION II 37

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
63 15.5S	169 45.0E	02/01/71	0843 GMT	2140M	220	15KT	1	210 11 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	1.74	33.951	8.04	1.40	25.	.26	26.0	90.2	0	1.74	33.951	8.04	27.174	90.2	0
20	1.73	33.953	8.04	1.41	25.	.26	26.3	90.0	10	1.74	33.952	8.04	27.175	90.1	.009
40	1.56	33.960	8.06	1.45	27.	.26	26.3	88.3	20	1.73	33.953	8.04	27.176	90.0	.018
61	-.19	34.044	7.98	2.05	56.	.22	30.4	72.1	30	1.64	33.957	8.05	27.185	89.1	.027
81	-.40	34.190	7.12	2.25	64.	.20	34.2	60.0	50	.73	33.985	8.02	27.268	81.3	.044
100	-.80	34.217	7.19	2.25	70.	.21	34.3	56.3	75	-.34	34.154	7.37	27.461	63.0	.062
115	.20	34.345	6.04	2.34	71.	.16	36.5	51.0	100	-.80	34.217	7.19	27.531	56.3	.077
151	1.00	34.478	5.07	2.39	77.	.09	37.6	45.3	125	.54	34.398	5.63	27.612	48.7	.090
170	1.36	34.531	4.65	2.40	78.	.05	36.9	43.6	150	.99	34.477	5.08	27.647	45.4	.102
205	1.83	34.614	4.18	2.38	81.	.03	36.6	40.6	200	1.78	34.605	4.22	27.693	41.0	.124
251	2.00	34.667	4.13	2.31	82.	.01	35.4	37.8	250	2.00	34.666	4.13	27.726	37.9	.144
321	1.92	34.696	4.21	2.24	84.	.01	35.0	35.0	300	1.94	34.690	4.18	27.749	35.7	.163
443	1.88	34.717	4.34	2.20	87.	.00	34.4	33.2	400	1.89	34.712	4.30	27.771	33.6	.199
577	1.75	34.735	4.47	2.15	90.	.00	34.2	30.8	500	1.83	34.726	4.40	27.787	32.1	.234
730	1.63	34.737	4.52	2.16	94.	.00	33.9	29.8	600	1.73	34.737	4.48	27.803	30.6	.268
932	1.47	34.733	4.61	2.18	96.	.00	34.1	29.0	700	1.65	34.739	4.51	27.810	30.0	.301
1133	1.31	34.733	4.66	2.18	97.		33.9	28.0	800	1.57	34.736	4.55	27.814	29.5	.333
1327	1.07	34.720	4.75	2.19	97.		34.2	27.4	1000	1.42	34.734	4.63	27.824	28.7	.398
1516	.94	34.713	4.74	2.21	114.		34.2	27.1	1200	1.23	34.729	4.69	27.834	27.7	.461
1653	.82	34.711	4.81	2.19	117.		35.3	26.5	1500	.95	34.714	4.74	27.840	27.1	.552
1740	.696	34.704	4.87	2.23	120.		34.6	26.3	2000	.59	34.701		27.852	25.9	.698
1824	.65	34.702	4.87	2.25	121.		35.0	26.2							
1906	.65	34.702	4.89	2.24	122.		34.9	26.2							
1946	.61	34.701	4.88	2.22	124.		34.8	26.1							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 38

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
64 44.0S	172 22.0E	02/01/71	2302 0045GMT	3006M	320	13KT	2	340 05 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	1.01	34.017	7.95	1.74	64.	.28	28.6	80.4	0	1.01	34.017	7.95	27.277	80.4	0
35	.77	34.047	8.02	1.75	65.	.25	29.4	76.7	10	.94	34.026	7.97	27.288	79.4	.008
62	-1.27	34.244	7.96	1.89	69.	.16	30.6	52.7	20	.87	34.034	7.99	27.299	78.3	.016
102	-1.35	34.370	7.19	2.13	79.	.27	33.2	42.8	30	.80	34.043	8.01	27.310	77.3	.024
132	-.87	34.464	6.66	2.15	81.	.16	34.2	37.2	50	-.36	34.144	7.99	27.454	63.6	.038
164	.45	34.600	5.45	2.19	86.	.05	33.8	32.8	75	-1.30	34.309	7.75	27.623	47.6	.052
204	1.13	34.678	4.82	2.19	89.	.03	33.9	31.0	100	-1.35	34.369	7.24	27.674	42.9	.063
305	1.18	34.705	4.76	2.17	94.	.01	34.3	29.2	125	-1.04	34.441	6.81	27.721	38.3	.073
405	1.12	34.714	4.73	2.13	98.	.01	33.6	28.2	150	-.14	34.540	5.98	27.762	34.5	.082
506	1.09	34.716	4.77	2.16	101.	.00	34.1	27.8	200	1.09	34.674	4.85	27.798	31.0	.098
605	1.05	34.718	4.76	2.17	104.	.00	34.4	27.4	250	1.15	34.695	4.79	27.811	29.9	.114
706	.96	34.714	4.75	2.15	108.		33.9	27.2	300	1.18	34.705	4.76	27.817	29.3	.129
807	.89	34.713	4.76	2.19	110.		34.6	26.8	400	1.12	34.714	4.73	27.828	28.2	.159
910	.83	34.712	4.81	2.20	112.		34.4	26.5	500	1.09	34.716	4.77	27.832	27.8	.188
1014	.77	34.707	4.81	2.17	115.	.00	34.5	26.5	600	1.05	34.718	4.76	27.837	27.4	.217
1110A	.72	34.706	4.85	2.22	116.		34.7	26.3	700	.97	34.714	4.75	27.839	27.2	.245
1210A	.65	34.705	4.88	2.21	118.		34.8	26.0	800	.89	34.713	4.76	27.843	26.8	.274
1310A	.59	34.700	4.91	2.22	120.		34.8	26.0	1000	.78	34.708	4.81	27.846	26.5	.330
1410A	.53	34.703	4.94	2.23	121.		34.9	25.4	1200	.66	34.705	4.88	27.852	26.0	.386
1511A	.47	34.700	4.94	2.23	123.		34.8	25.3	1500	.48	34.701	4.94	27.858	25.4	.467
1711A	.385	34.696	5.02	2.23	123.		35.1	25.2	2000	.23	34.698	5.09	27.871	24.2	.595
1912A	.285	34.698	5.07	2.25	125.		35.0	24.5	2500	.04	34.703	5.22	27.885	22.8	.711
2113A	.163	34.698	5.13	2.24	123.		34.8	23.9							
2317A	.06	34.699	5.25	2.25	121.		34.9	23.3							
2419A	.05	34.703	5.27	2.24	120.		34.8	22.9							
2470A	.034	34.704	5.25	2.24	121.		34.7	22.7							
2522A	.036	34.701	5.18	2.23	119.		34.5	23.0							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 39

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
65 51.0S	174 35.0E	02/02/71	0952 1107GMT	3311M	020	13KT	2	020 05 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.19	33.706	8.05	1.81	66.	.20	28.8	97.9	0	-.19	33.706	8.05	27.093	97.9	0
20	-.26	33.712	8.03	1.83	68.	.19	29.0	97.1	10	-.22	33.709	8.04	27.097	97.5	.010
52	-1.62	34.255	7.36	1.91	67.	.08	30.4	50.8	20	-.26	33.712	8.03	27.101	97.1	.019
71	-1.72	34.312	7.11	1.99	68.	.09	31.0	46.2	30	-.68	33.874	7.85	27.250	83.0	.028
108	-1.10	34.429	6.41	2.13	75.	.07	33.1	39.0	50	-1.53	34.219	7.41	27.558	53.8	.042
128	.16	34.563	5.28	2.20	84.	.02	34.4	34.1	75	-1.65	34.324	7.08	27.646	45.4	.054
153	.83	34.640	4.76	2.26	90.	.02	35.2	32.0	100	-1.23	34.403	6.65	27.698	40.6	.065
178	1.03	34.663	4.64	2.28	92.	.02	35.5	31.5	125	-.03	34.542	5.45	27.759	34.8	.074
219	1.22	34.689	4.52	2.28	96.	.02	35.1	30.7	150	.79	34.636	4.79	27.787	32.1	.083
254	1.28	34.700	4.47	2.23	98.	.01		30.3	200	1.15	34.679	4.57	27.798	31.0	.099
326	1.28	34.711	4.48	2.25	102.	.00		29.4	250	1.28	34.699	4.47	27.806	30.3	.114
437	1.21	34.713	4.47	2.24	104.	.00		28.8	300	1.28	34.708	4.48	27.813	29.7	.130
569	1.15	34.717	4.53	2.25	108.	.00	35.0	28.1	400	1.24	34.713	4.47	27.820	29.0	.160
710	1.08	34.718	4.59	2.25	112.	.00	35.5	27.6	500	1.18	34.715	4.49	27.826	28.5	.190
857	.99	34.713	4.63	2.27	115.	.01	35.0	27.4	600	1.14	34.718	4.54	27.831	28.0	.220
1000	.91	34.712	4.71	2.23	117.	.00	34.8	27.0	700	1.09	34.718	4.59	27.834	27.6	.249
1148A	.84	34.717	4.71	2.26	120.	.00	34.8	26.2	800	1.03	34.715	4.61	27.836	27.5	.279
1298A	.76	34.714	4.67	2.28	122.		35.0	25.9	1000	.91	34.712	4.71	27.841	27.0	.337
1448A	.71	34.711	4.78	2.30	124.		35.0	25.9	1200	.81	34.717	4.69	27.851	26.1	.394
1599A	.64	34.710	4.81	2.31	128.		35.6	25.5	1500	.69	34.711	4.79	27.854	25.8	.478
1751A	.58	34.708	4.79	2.27	127.		34.9	25.3	2000	.46	34.706	4.91	27.864	24.9	.613
1901A	.50	34.705	4.88	2.29	127.		35.2	25.1	2500	.27	34.705	4.91	27.874	23.9	.740
2103A	.43	34.707	4.92	2.32	130.		34.9	24.6	3000	.05	34.707	5.23	27.887	22.6	.856
2303A	.34	34.706	4.96	2.28	130.		35.2	24.2							
2502A	.27	34.705	4.91	2.28	129.		35.6	23.9							
2702A	.21	34.705	5.08	2.29	127.		35.5	23.6							
2899A	.12	34.707	5.17	2.29	122.		35.1	22.9							
3096A	-.01	34.707	5.29	2.25	117.		34.8	22.3							
3194A	-.03	34.711	5.32	2.25	114.		34.6	21.9							
3291A	-.12	34.712	5.41	2.25	112.		34.4	21.4							

A) CAST II.

RV THOMAS WASHINGTON ARIES EXPEDITION II 40

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
68 10.5S	176 35.5E	02/03/71	0250 0440GMT	3427M	070	19KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.15	34.093	8.32	1.58	69.	.06	23.3	68.5	0	-.15	34.093	8.32	27.403	68.5	0
29	-.25	34.093	8.20	1.60	70.	.06	23.4	68.0	10	-.18	34.093	8.28	27.405	68.3	.007
59	-1.77	34.357	6.57	2.03	72.	.10	31.9	42.6	20	-.22	34.093	8.24	27.406	68.2	.014
89	-1.65	34.389	6.52	2.08	73.	.06	32.0	40.5	30	-.30	34.101	8.15	27.416	67.2	.020
117	-.77	34.473	5.93	2.12	80.	.01	33.0	36.8	50	-1.32	34.272	7.06	27.594	50.4	.032
157	.21	34.572	5.23	2.21	87.	.01	33.7	33.7	75	-1.71	34.374	6.54	27.688	41.5	.044
195	.73	34.632	4.85	2.22	90.	.01	34.0	32.0	100	-1.34	34.419	6.31	27.714	39.1	.053
290	1.14	34.683	4.59	2.19	98.	.00	33.8	30.6	125	-.54	34.495	5.77	27.745	36.1	.063
385	1.16	34.704	4.54	2.22	101.	.00	34.6	29.2	150	.07	34.557	5.34	27.766	34.1	.072
479	1.15	34.709	4.63	2.23	104.	.01	34.4	28.7	200	.75	34.636	4.84	27.790	31.9	.088
573	1.13	34.711	4.54	2.23	106.		35.7	28.4	250	.97	34.665	4.70	27.799	31.0	.104
667	1.09	34.712	4.54	2.19	108.		34.9	28.1	300	1.14	34.686	4.58	27.804	30.5	.120
761	1.04	34.714	4.59	2.23	110.	.00	34.4	27.6	400	1.16	34.706	4.56	27.819	29.1	.150
856	.97	34.710	4.69	2.23	112.		34.5	27.5	500	1.15	34.710	4.61	27.824	28.7	.180
952	.96	34.715	4.67	2.22	114.		33.6	27.1	600	1.12	34.712	4.54	27.827	28.4	.210
1047	.92	34.711	4.67	2.24	116.	.00	34.0	27.1	700	1.07	34.713	4.55	27.831	27.9	.240
1144	.87	34.712	4.72	2.23	118.		34.6	26.8	800	1.01	34.712	4.64	27.835	27.6	.270
1242	.82	34.710	4.72	2.24	121.		34.6	26.6	1000	.94	34.713	4.67	27.840	27.1	.328
1342	.79	34.708	4.71	2.22	119.		34.6	26.6	1200	.84	34.711	4.72	27.845	26.6	.386
1444	.74	34.709	4.76	2.24	122.		35.0	26.2	1500	.74	34.709	4.80	27.850	26.2	.472
1561A	.74	34.709	4.83	2.21	123.		34.9	26.2	2000	.52	34.706	4.86	27.860	25.2	.610
1712A	.65	34.708	4.80	2.22	126.		35.0	25.8	2500	.37	34.707	4.99	27.870	24.2	.742
1915A	.56	34.705	4.84	2.23	126.		34.9	25.5	3000	.20	34.707	5.14	27.880	23.4	.864
2118A	.47	34.707	4.89	2.26	128.		35.1	24.8							
2320A	.415	34.708		2.26	128.		35.1	24.4							
2523A	.36	34.707	4.99	2.26	130.		35.2	24.2							
2725A	.289	34.707	4.98	2.27	128.		35.1	23.8							
2927A	.22	34.708	5.10	2.26	127.		35.1	23.4							
3132A	.151	34.705	5.20	2.26	122.		35.1	23.3							
3336A	.05	34.708	5.24	2.23	117.		35.1	22.5							
3388A	.028	34.707	5.16U	2.23	115.		34.8	22.5							
3440A	.017	34.709	5.38	2.26	115.		34.8	22.3							

RV THOMAS WASHINGTON ARIES EXPEDITION II 41

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
68 53.0S	174 36.0E	02/03/71	1156 1319GMT	3638M	110	22KT	2	120 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.36	34.188	7.97	1.74	68.	.09	28.7	60.3	0	-.36	34.188	7.97	27.489	60.3	0
20	-.36	34.189	7.96	1.74	69.	.09	29.2	60.2	10	-.36	34.189	7.96	27.490	60.3	.006
50	-.60	34.206	7.79	1.83	69.	.08	29.0	57.9	20	-.36	34.189	7.96	27.490	60.2	.012
71	-1.44	34.340	6.90	2.00	73.	.07	31.3	44.8	30	-.44	34.195	7.90	27.498	59.5	.018
107	-.80	34.480	6.04	2.11	80.	.06	33.6	36.2	50	-.60	34.206	7.79	27.514	57.9	.030
127	-.49	34.511	5.74	2.14	82.	.05	33.6	35.1	75	-1.43	34.361	6.77	27.670	43.2	.042
152	.38	34.598	5.09	2.24	89.	.02	35.3	32.6	100	-1.02	34.461	6.16	27.737	36.8	.052
178	.67	34.629	4.88	2.24	92.	.01	35.7	31.9	125	-.53	34.508	5.77	27.755	35.1	.061
218	1.07	34.674	4.59	2.26	96.	.01	35.6	30.9	150	.31	34.592	5.14	27.780	32.8	.070
254	1.18	34.690	4.52	2.26	98.	.01	35.1	30.4	200	.91	34.656	4.70	27.796	31.3	.086
323	1.23	34.705	4.48	2.24	101.	.00	35.2	29.6	250	1.18	34.689	4.52	27.805	30.4	.101
433	1.19	34.715	4.46	2.25	105.	.01	35.0	28.5	300	1.21	34.701	4.49	27.811	29.8	.117
563	1.14	34.716	4.52	2.24	108.	.00	35.3	28.1	400	1.21	34.714	4.47	27.822	28.8	.147
704	1.07	34.717	4.56	2.23	112.	.00	35.2	27.6	500	1.17	34.716	4.49	27.828	28.3	.177
856	.97	34.715	4.59	2.23	115.	.00	35.0	27.1	600	1.12	34.717	4.53	27.831	28.0	.206
1008	.90	34.711	4.66	2.23	118.	.00	34.9	27.0	700	1.07	34.717	4.56	27.834	27.6	.236
1059A	.86	34.718	4.66	2.26	118.		34.8	26.2	800	1.01	34.716	4.58	27.838	27.3	.265
1262A	.74	34.713	4.73	2.25	122.		35.2	25.9	1000	.90	34.711	4.66	27.841	27.0	.323
1463A	.69	34.709	4.77	2.26	124.		35.3	25.9	1200	.77	34.714	4.70	27.852	26.0	.380
1666A	.62	34.713	4.78	2.24	127.		35.1	25.2	1500	.68	34.710	4.77	27.854	25.8	.464
1816A	.56	34.713	4.76	2.24	128.		35.5	24.9	2000	.49	34.710	4.89	27.865	24.7	.599
1969A	.51	34.710	4.88	2.28	129.		35.5	24.8	2500	.32	34.707	4.99	27.873	24.0	.727
2071A	.46	34.711	4.90	2.29	130.		35.2	24.4	3000	.16	34.707	5.11	27.882	23.2	.847
2172A	.43	34.711	4.88	2.26	131.		35.2	24.3	3500	.01	34.713	5.29	27.894	22.0	.957
2323A	.37	34.705	4.93	2.22	122.U		35.0	24.4							
2474A	.33	34.707	4.99	2.28	130.		35.4	24.0							
2674A	.25	34.705	5.01	2.27	128.		35.4	23.8							
2875A	.20	34.707	5.00	2.26	123.		35.1	23.4							
3069A	.14	34.707	5.17	2.26	123.		35.1	23.0							
3275A	.06		5.24	2.27	116.		35.4								
3476A	.01	34.712	5.28	2.26	116.		34.8	22.0							
3576A	-.02	34.714	5.33	2.26	115.		34.6	21.7							
3625A	-.07	34.716	5.37	2.27	112.		34.5	21.3							

AI CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 42

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
69 22.0S	173 28.0E	02/03/71	2101 2255GMT	3040M	100	19KT	2	100 07 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.49	34.205	7.96	1.74	69.	.09	28.8	58.5	0	-.49	34.205	7.96	27.509	58.5	0
25	-.51	34.217	7.96	1.76	69.	.09	29.1	57.5	10	-.50	34.208	7.96	27.512	58.2	.006
49	-.62	34.239	7.88	1.80	69.	.09	28.9	55.3	20	-.51	34.214	7.96	27.516	57.8	.012
75	-1.63	34.360	6.80	2.06	75.	.09	32.1	42.7	30	-.53	34.222	7.94	27.524	57.0	.017
99	-1.08	34.481	6.25	2.13	77.	.08	33.1	35.1	50	-.67	34.242	7.84	27.546	54.9	.029
148	.77	34.652	4.72	2.22	93.	.01	34.9	30.7	75	-1.63	34.360	6.80	27.675	42.7	.041
198	1.01	34.677	4.60	2.23	95.	.01	34.9	30.3	100	-1.04	34.484	6.21	27.756	35.0	.050
297	1.24	34.712	4.47	2.25	101.	.00	34.8	29.1	125	-.06	34.567	5.39	27.780	32.8	.059
395	1.20	34.717	4.45	2.26	103.	.00	35.0	28.4	150	.78	34.654	4.72	27.802	30.7	.067
492	1.13	34.715	4.51	2.21	107.	.00	34.8	28.1	200	1.02	34.678	4.60	27.807	30.2	.082
589	1.10	34.720	4.50	2.23	110.		35.1	27.6	250	1.17	34.699	4.52	27.813	29.6	.097
688	1.03	34.717	4.53	2.23	112.		34.9	27.4	300	1.24	34.712	4.47	27.819	29.1	.112
785	.99	34.714	4.60	2.20	113.	.00	34.8	27.3	400	1.20	34.717	4.45	27.826	28.4	.142
884	.94	34.714	4.65	2.23	117.		35.0	27.0	500	1.13	34.716	4.51	27.829	28.1	.172
983	.87	34.714	4.69	2.21	117.		34.9	26.6	600	1.09	34.720	4.50	27.835	27.5	.201
1083	.83	34.710	4.71	2.23	119.	.00	34.6	26.7	700	1.02	34.717	4.54	27.837	27.4	.230
1184	.78	34.710	4.74	2.21	121.		34.8	26.4	800	.98	34.714	4.61	27.838	27.3	.259
1287	.73	34.707	4.75	2.21	123.		35.1	26.3	1000	.86	34.714	4.69	27.845	26.6	.316
1391	.69	34.707	4.73	2.23	123.		34.7	26.1	1200	.77	34.710	4.74	27.848	26.3	.373
1498	.65	34.707	4.80	2.23	125.		34.7	25.8	1500	.65	34.707	4.80	27.854	25.8	.457
1551A	.62	34.711	4.79	2.21	124.		30.7U	25.4	2000	.42	34.708	4.97	27.868	24.5	.590
1650A	.56	34.708	4.83	2.21	123.		34.8	25.2	2500	.21	34.708	5.05	27.880	23.3	.714
1798A	.51	34.704	4.84	2.21	123.		35.0	25.3	3000	-.05	34.718	5.24	27.902	21.2	.822
1998A	.425	34.708	4.97	2.16	126.		34.8	24.5							
2199A	.323	34.709	5.00	2.22	123.		34.8	23.9							
2402A	.24	34.707	5.00	2.21	123.		35.2	23.6							
2608A	.167	34.710	5.13	2.21	117.		34.9	23.0							
2816A	.04	34.715	5.26	2.21	113.		34.6	21.9							
2921A	-.026	34.713	5.28	2.21	111.		34.7	21.8							
2974A	-.059	34.716	5.22	2.18	111.		34.4	21.4							
3026A	-.049	34.720	5.30	2.21	111.		34.2	21.1							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 43

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
70 25.0S	170 41.5E	02/04/71	1022 1133GMT	2522M	150	21KT	1	160 09 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.59	34.239	8.14	1.68	70.	.12	29.0	55.4	0	-.59	34.239	8.14	27.541	55.4	0
20	-.60	34.242	8.13	1.69	71.	.12	29.4	55.2	10	-.59	34.241	8.13	27.542	55.3	.006
50	-.64	34.290	8.04	1.76	69.	.10	29.3	51.3	20	-.60	34.242	8.13	27.543	55.2	.011
72	-.90	34.311	7.80	1.85	72.	.10	29.4	48.8	30	-.61	34.255	8.10	27.555	54.1	.017
107	-1.59	34.420	6.64	2.07	78.	.11	32.0	38.2	50	-.64	34.290	8.04	27.584	51.3	.027
127	-1.35	34.484	6.38	2.08	82.	.02	32.8	34.0	75	-.98	34.318	7.70	27.620	47.9	.039
152	-.20	34.575	5.63	2.15	89.	.01	33.7	31.5	100	-1.49	34.394	6.87	27.698	.5	.050
177	.81	34.666	4.87	2.20	96.	.00	34.2	29.9	125	-1.37	34.479	6.41	27.763	34.4	.060
218	.62	34.665	4.95	2.20	96.		33.6	28.9	150	-.31	34.568	5.70	27.793	31.6	.068
253	.83	34.683	4.80	2.20	102.	.00	34.8	28.7	200	.70	34.668	4.91	27.819	29.1	.083
323	.83	34.695	4.78	2.22	105.		34.8	27.8	250	.81	34.682	4.81	27.823	28.7	.098
432	.81	34.695	4.76	2.22	108.		34.5	27.7	300	.83	34.691	4.79	27.829	28.1	.112
562	.80	34.697	4.79	2.22	110.	.00	35.0	27.5	400	.82	34.695	4.76	27.833	27.7	.141
702	.78	34.700	4.81	2.22	113.		34.4	27.1	500	.80	34.696	4.77	27.835	27.6	.169
858	.76	34.705	4.75	2.23	117.		34.9	26.6	600	.79	34.698	4.80	27.837	27.4	.197
1016	.69	34.701	4.81	2.24	121.	.00	35.4	26.5	700	.78	34.700	4.81	27.840	27.1	.226
1093A	.64	34.707	4.78	2.23	123.		34.8	25.8	800	.77	34.704	4.77	27.843	26.8	.254
1246A	.57	34.705	4.76	2.23	124.		34.8	25.5	1000	.70	34.702	4.80	27.846	26.5	.310
1399A	.51	34.705	4.88	2.32	123.		34.9	25.2	1200	.59	34.706	4.77	27.856	25.6	.365
1549A	.45	34.702	4.91	2.26	123.		34.9	25.1	1500	.47	34.703	4.90	27.861	25.1	.444
1700A	.39	34.699	4.89	2.27	124.		35.1	25.0	2000	.18	34.696	5.12	27.872	24.1	.571
1852A	.25	34.698	5.05	2.29	121.		35.1	24.3	2500	-.39	34.735	5.62	27.932	18.4	.668
2003A	.18	34.696	5.12	2.29	120.		35.1	24.1							
2104A	.13	34.704	5.11	2.45U	120.		34.9	23.2							
2204A	.10	34.710	5.09	2.27	119.		35.2	22.6							
2305A	.05	34.711	5.25	2.29	113.		34.9	22.3							
2404A	-.11	34.714	5.38	2.34	108.		35.0	21.3							
2454A	-.16	34.728	5.46	2.31	107.		34.6	20.0							
2480A	-.325	34.731	5.58	2.21	105.		34.5	19.0							
2504A	-.40	34.736	5.62	2.21	103.		34.4	18.3							

A) CAST II.

RV THOMAS WASHINGTON ARIES EXPEDITION II 44

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
70 40.0S	169 38.0E	02/04/71	1723 GMT	1997M	070	06KT	2	080 04 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.93	34.054	8.04	1.73	74.	.13		68.3	0	-.93	34.054	8.04	27.405	68.3	0
10	-.94	34.053	8.05	1.72	75.	.13		68.4	10	-.94	34.053	8.05	27.404	68.4	.007
25	-.91	34.058	8.04	1.74	74.	.13		68.1	20	-.92	34.057	8.04	27.406	68.2	.014
50	-.38	34.383	7.22	1.92	82.	.12		45.3	30	-.81	34.117	7.90	27.450	64.0	.020
77	-.30	34.464	6.76	2.02	86.	.10		39.5	50	-.38	34.383	7.22	27.648	45.3	.031
128	-.24	34.524	6.17	2.09	90.	.08		35.2	75	-.31	34.463	6.78	27.709	39.5	.042
180	-.37	34.556	6.33	2.09	89.	.08		32.1	100	-.27	34.499	6.43	27.736	36.9	.051
283	-.44	34.576	6.32	2.12	90.	.07		30.3	125	-.24	34.522	6.19	27.754	35.3	.060
386	-.46	34.590	6.19	2.12	92.	.07		29.2	150	-.29	34.540	6.24	27.770	33.7	.069
436	-.42	34.606	6.14	2.12	92.	.07		28.1	200	-.38	34.563	6.33	27.793	31.5	.085
489	-.29	34.620	5.93	2.13	95.	.06		27.6	250	-.42	34.575	6.32	27.803	30.6	.100
549	-.10	34.648	5.60	2.17	99.	.05		26.4	300	-.44	34.579	6.30	27.808	30.1	.115
591	-.14	34.663	5.62	2.20	99.	.05		25.0	400	-.45	34.595	6.18	27.822	28.8	.144
693	.10	34.693	5.28	2.26	107.	.03		23.9	500	-.25	34.626	5.86	27.836	27.4	.172
795	.06	34.692	5.30	2.23	106.	.03		23.8	600	-.12	34.667	5.59	27.864	24.8	.197
896	.07	34.698	5.31	2.20	106.	.03		23.4	700	.10	34.693	5.28	27.874	23.9	.221
997	.05	34.696	5.32	2.21	107.			23.4	800	.06	34.693	5.30	27.875	23.8	.245
1202	-.03	34.702	5.34	2.22	106.			22.6	1000	.05	34.696	5.32	27.879	23.4	.292
1408	-.05	34.710	5.34	2.22	106.			21.9	1200	-.03	34.702	5.34	27.888	22.6	.337
1620	-.23	34.703	5.58	2.15	101.			21.6	1500	-.11	34.709	5.41	27.897	21.7	.400

RV THOMAS WASHINGTON ARIES EXPEDITION II 45

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
70 09.0S	168 29.5E	02/04/71	2300 2351GMT	2412M	310	06KT	2	070 02 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-1.66	33.910	7.40	1.90	77.	.11	29.4	77.2	0	-1.66	33.910	7.40	27.311	77.2	0
20	-1.73	33.986	7.10	1.90	77.	.10	29.8	71.2	10	-1.70	33.941	7.22	27.336	74.8	.008
46	-1.78	34.178	7.12	1.93	75.	.10	30.8	56.4	20	-1.73	33.986	7.10	27.374	71.2	.015
78	-1.75	34.415	6.83	1.98	77.	.14	32.1	38.2	30	-1.78	34.054	7.11	27.430	66.0	.022
109	-1.74	34.457	6.94	2.00	78.	.12	31.9	35.0	50	-1.78	34.213	7.08	27.559	53.7	.034
130	-1.76	34.473	6.94	2.02	79.	.09	32.3	33.7	75	-1.75	34.397	6.86	27.708	39.6	.045
157	-1.76	34.477	7.03	2.02	79.	.01	32.3	33.4	100	-1.74	34.445	6.90	27.747	35.9	.055
182	-1.76	34.483	7.05	2.03	80.	.01	32.7	33.0	125	-1.76	34.470	6.94	27.767	34.0	.063
222	-1.77	34.484		2.03	80.	.00	32.4	32.9	150	-1.76	34.476	7.01	27.772	33.5	.071
259	-1.58	34.494	6.92	2.04	81.	.00	32.5	32.6	200	-1.76	34.484	7.02	27.778	32.9	.087
329	-.10	34.607	5.10	2.18	102.		34.2	29.5	250	-1.63	34.492	6.94	27.781	32.7	.103
421	.38	34.657	4.99	2.22	108.		34.4	28.1	300	-.45	34.573	5.86	27.804	30.5	.118
512	.56	34.678	5.00	2.22	110.	.00	34.6	27.5	400	.33	34.652	5.02	27.828	28.3	.148
633	.46	34.680	5.28U	2.21	113.		34.7	26.8	500	.55	34.677	5.00	27.835	27.6	.176
765	.24	34.667	5.09	2.21	112.		34.6	26.6	600	.49	34.680	5.04	27.841	27.0	.204
916	.28	34.682	5.05	2.23	119.	.00	34.6	25.7	700	.34	34.673	5.07	27.844	26.7	.231
1068	.24	34.698		2.25	121.		34.6	24.3	800	.25	34.670	5.08	27.847	26.5	.258
1092A	.23	34.697	5.20	2.21	121.		34.7	24.3	1000	.27	34.694	5.11	27.865	24.8	.309
1243A	.04	34.687	5.27	2.25	116.		34.5	24.1	1200	.10	34.690	5.25	27.871	24.1	.358
1395A	-.01	34.696	5.41	2.21	107.		34.2	23.1	1500	-.05	34.693	5.49	27.881	23.2	.428
1547A	-.06	34.692	5.51	2.18	105.		33.9	23.2	2000	-.06	34.717	5.41	27.901	21.3	.534
1699A	-.05	34.693	5.53	2.16	105.		32.3U	23.2							
1850A	.03	34.715	5.32	2.18	105.		34.6	21.9							
2002A	-.06	34.717	5.41	2.18	104.		33.8	21.3							
2103A	-.09	34.715	5.43	2.20	105.		33.7	21.3							
2204A	-.15	34.718	5.46	2.20	106.		34.2	20.8							
2305A	-.17	34.726	5.53	2.21	104.		34.0	20.1							
2356A	-.21	34.728	5.55	2.21	104.		33.6	19.7							
2386A	-.21	34.732	5.56	2.16	104.		33.6	19.4							
2406A	-.24	34.731	5.56	2.23	104.		33.6	19.4							

A) CAST II.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
69 13.0S	168 52.0E	02/05/71	0656 0842 GMT	2625M	310	13KT	1	100 03 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.96	34.014	8.12	1.68	77.	.13	28.0	71.2	0	-.96	34.014	8.12	27.374	71.2	0
30	-1.39	34.075	7.78	1.80	75.	.10	29.7	65.2	10	-1.10	34.034	8.07	27.395	69.2	.007
50	-1.69	34.216	7.25	1.91	77.	.09	30.2	53.6	20	-1.24	34.055	7.95	27.416	67.2	.014
77	-1.65	34.345	6.72	2.05	80.	.13	32.6	43.8	30	-1.39	34.075	7.78	27.438	65.2	.020
113	-1.58	34.421	6.64	2.04	84.	.09	32.8	38.2	50	-1.69	34.216	7.25	27.560	53.6	.032
154	-1.16	34.482	6.34	2.08	85.	.03	33.3	34.7	75	-1.65	34.338	6.75	27.658	44.3	.044
206	-1.22	34.514	6.58	2.09	86.	.01	32.8	32.1	100	-1.61	34.402	6.67	27.708	39.6	.055
310	.41	34.637	5.18	2.20	96.	.00	34.2	29.8	125	-1.45	34.442	6.54	27.736	36.9	.064
414	.63	34.678	4.94	2.22	97.		34.6	27.9	150	-1.20	34.477	6.36	27.757	35.0	.073
516	.76	34.696	4.82	2.26	113.	.00	35.0	27.3	200	-1.21	34.511	6.55	27.785	32.3	.089
619	.70	34.696	4.84	2.22	114.	.00	34.9	26.9	250	-.23	34.583	6.07	27.802	30.7	.105
721	.67	34.701	4.82	2.24	116.	.01	35.0	26.4	300	.34	34.632	5.34	27.810	29.9	.120
821	.64	34.700	4.86	2.24	119.	.01	35.0	26.3	400	.60	34.673	4.97	27.829	28.1	.149
920	.58	34.697	4.92	2.26	123.	.01	35.1	26.2	500	.75	34.695	4.83	27.838	27.3	.178
1015	.50	34.696	4.94	2.27	124.	.01	34.8	25.8	600	.72	34.697	4.84	27.841	27.0	.206
1110	.44	34.694	5.00	2.19	124.	.00	34.8	25.6	700	.68	34.700	4.82	27.846	26.5	.233
1202	.38	34.693	4.97	2.22	124.		34.4	25.4	800	.65	34.701	4.85	27.848	26.3	.261
1291	.28	34.687	4.99	2.24	124.		34.3	25.3	1000	.51	34.696	4.94	27.853	25.9	.315
1377	.24	34.691	5.08	2.22	122.		34.5	24.8	1200	.38	34.693	4.97	27.858	25.4	.368
1456	.20	34.696	5.09	2.27	126.U		34.7	24.2	1500	.22	34.699	5.08	27.872	24.0	.443
1499A	.22	34.699	5.08	2.24	116.		34.6	24.1	2000	-.08	34.709	5.33	27.896	21.8	.555
1597A	.13	34.701	5.16	2.21	117.		34.6	23.4	2500	-.22	34.731	5.54	27.921	19.4	.649
1794A	.001	34.705	5.27	2.20	115.		34.5	22.5							
1993A	-.075	34.708	5.32	2.22	110.		34.5	21.9							
2194A	-.14	34.722	5.48	2.22	108.		33.7	20.5							
2400A	-.183	34.730	5.54	2.22	107.		34.3	19.7							
2506A	-.228	34.731	5.54	2.20	107.		33.8	19.4							
2560A	-.27	34.734	5.45U	2.22	108.		34.0	19.0							
2613A	-.357	34.738	5.64	2.20	104.		33.8	18.3							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
68 24.0S	170 45.5E	02/05/71	1949 2050GMT	3171M	350	10KT	2	330 03 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.32	33.626	8.12	1.80	67.	.19	28.3	103.4	0	-.32	33.626	8.12	27.034	103.4	0
20	-.40	33.698	8.11	1.83	68.	.18	28.3	97.6	10	-.36	33.662	8.11	27.065	100.5	.010
50	-1.44	34.176	7.35	1.89	71.	.07	29.9	57.4	20	-.40	33.698	8.11	27.096	97.6	.020
71	-1.61	34.301	7.02	1.98	72.	.07	31.2	47.3	30	-.74	33.851	7.89	27.233	84.6	.029
106	-.92	34.449	6.24	2.17	80.	.13	33.1	38.1	50	-1.44	34.176	7.35	27.520	57.4	.043
126	-.54	34.507	5.82	2.15	85.	.06	33.4	35.2	75	-1.56	34.321	6.94	27.641	45.9	.056
151	.06	34.582	5.39	2.19	89.	.02	34.4	32.2	100	-1.08	34.428	6.38	27.712	39.2	.067
177	.52	34.633	5.06	2.23	92.	.01	34.6	30.7	125	-.56	34.504	5.84	27.754	35.3	.076
217	.90	34.675	4.77	2.26	95.	.01	34.8	29.7	150	.04	34.580	5.41	27.785	32.3	.084
254	1.12	34.698	4.63	2.23	98.	.01	35.0	29.4	200	.77	34.662	4.87	27.809	30.0	.100
324	1.09	34.706	4.59	2.25	101.	.00	34.6	28.6	250	1.10	34.697	4.64	27.816	29.4	.115
434	.95	34.698	4.69	2.23	103.	.00	34.6	28.3	300	1.10	34.704	4.60	27.822	28.8	.130
566	.94	34.704	4.74	2.25	106.		35.5	27.8	400	.99	34.701	4.65	27.827	28.3	.159
706	.88	34.707	4.76	2.26	110.	.00	35.1	27.2	500	.94	34.701	4.72	27.830	28.1	.189
860	.81	34.701	4.78	2.26	114.		35.9	27.2	600	.93	34.706	4.75	27.835	27.6	.218
1013	.71	34.702	4.83	2.25	116.	.00	35.4	26.6	700	.88	34.707	4.76	27.839	27.2	.246
1127A	.68	34.704	4.81	2.26	118.		35.0	26.2	800	.84	34.704	4.77	27.839	27.2	.275
1228A	.67	34.709	4.81	2.26	121.		34.7	25.8	1000	.72	34.702	4.83	27.845	26.6	.331
1381A	.58	34.706	4.89	2.26	121.		34.8	25.5	1200	.67	34.708	4.81	27.853	25.9	.387
1532A	.54	34.704	4.85	2.27	122.		34.8	25.4	1500	.55	34.705	4.86	27.857	25.4	.469
1685A	.48	34.704		2.30	123.		34.9	25.1	2000	.36	34.702	5.04	27.867	24.6	.600
1836A	.42	34.705	4.99	2.26	123.		34.9	24.7	2500	.19	34.704	5.16	27.878	23.5	.723
1988A	.36	34.702	5.04	2.27	127.		35.1	24.6	3000	-.01	34.714	5.41	27.896	21.8	.833
2139A	.33	34.705	5.06	2.26	127.		35.3	24.2							
2291A	.27	34.705	5.07	2.26	127.		34.8	23.9							
2441A	.21	34.703	5.14	2.26	123.		34.3	23.7							
2592A	.16	34.707	5.18	2.26	120.		34.8	23.1							
2741A	.12	34.711	5.24	2.26	116.		35.1	22.6							
2891A	.05	34.713	5.31	2.26	116.		34.9	22.1							
3040A	-.04	34.715	5.46	2.23	113.		34.6	21.5							
3138A	-.18	34.726	5.59	2.22	106.		34.6	20.0							
3163A	-.19	34.730	5.48	2.21	106.		34.6	19.7							

AJ CAST II.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 28.0S	172 40.0E	02/06/71	0459 0646GMT	3423M	310	10KT	2	290 04 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.40	33.850	7.98	1.82	69.	.16	28.3	86.0	0	-.40	33.850	7.98	27.218	86.0	0
45	-.41	33.872	7.99	1.80	69.	.16	28.6	84.2	10	-.40	33.855	7.98	27.223	85.6	.009
61	-1.34	34.114	7.43	1.90	70.	.10	29.5	62.4	20	-.40	33.860	7.98	27.227	85.2	.017
82	-1.63	34.312	6.7	2.00	72.	.10	29.6	46.4	30	-.41	33.865	7.99	27.231	84.8	.026
102	-1.24	34.396	6.40	2.09	76.	.09	31.2	41.1	50	-.71	33.944	7.83	27.307	77.6	.042
154	.97	34.663	4.69	2.24	92.	.01	34.1	31.1	75	-1.53	34.264	6.92	27.594	50.4	.058
204	1.28	34.701	4.49	2.22	94.	.00	34.8	30.2	100	-1.30	34.390	6.43	27.689	41.4	.069
305	1.29	34.719	4.56	2.23	96.	.00	34.0	28.9	125	-.25	34.516	5.63	27.749	35.8	.079
407	1.23	34.724	4.53	2.24	97.	.00	34.2	28.1	150	.80	34.644	4.82	27.793	31.6	.087
507	1.16	34.720	4.59	2.24	106.	.00	34.2	28.0	200	1.26	34.698	4.51	27.807	30.3	.103
609	1.09	34.722	4.63	2.25	108.		34.2	27.4	250	1.28	34.710	4.52	27.815	29.5	.118
710	1.00	34.718	4.62	2.23	111.		34.2	27.1	300	1.29	34.718	4.56	27.821	28.9	.133
812	.96	34.717	4.67	2.25	113.	.00	34.1	26.9	400	1.24	34.724	4.53	27.829	28.1	.163
913	.89	34.716	4.73	2.24	116.		34.0	26.6	500	1.17	34.721	4.58	27.831	28.0	.192
1016	.83	34.713	4.75	2.25	117.	.00	34.0	26.4	600	1.10	34.722	4.63	27.837	27.4	.221
1118	.79	34.709	4.79	2.26	120.		34.5	26.5	700	1.01	34.719	4.62	27.840	27.1	.250
1222	.74	34.711	4.79	2.25	121.		34.1	26.0	800	.96	34.717	4.66	27.842	26.9	.278
1327	.67	34.706	4.78	2.26	122.		34.2	26.0	1000	.84	34.714	4.75	27.847	26.4	.335
1432	.63	34.704	4.81	2.26	124.		34.4	25.9	1200	.75	34.711	4.79	27.850	26.1	.392
1540	.58	34.705	4.85	2.26	125.		34.7	25.6	1500	.60	34.704	4.84	27.854	25.8	.475
1596A	.55	34.708	4.86	2.26	125.		35.3	25.2	2000	.38	34.704	4.94	27.867	24.5	.607
1798A	.460	34.708	4.91	2.28	127.		34.6	24.7	2500	.20	34.706	5.11	27.878	23.5	.731
2002A	.378	34.704	4.94	2.27	128.		34.6	24.5	3000	-.00	34.713	5.30	27.895	21.9	.841
2205A	.311	34.706	5.16U	2.28	128.		34.7	24.0							
2407A	.243	34.707	5.07	2.27	127.		35.2	23.6							
2608A	.158	34.705	5.15	2.26	125.		35.6	23.3							
2810A	.077	34.709	5.19	2.23	118.		35.3	22.6							
3011A	-.009	34.713	5.31	2.23	115.		34.1	21.8							
3213A	-.08	34.711	5.38	2.23	112.		33.3	21.6							
3315A	-.12	34.712	5.44	2.23	110.		34.0	21.4							
3365A	-.13	34.711	5.46	2.22	109.		33.6	21.4							
3421A	-.16	34.710	5.47	2.23	108.		33.7	21.3							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 17.0S	170 05.0E	02/06/71	2016 2116GMT	3324M	070	20KT	7	060 08 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.87	34.071	7.94	1.73	66.	.27	27.9	75.5	0	.87	34.071	7.94	27.329	75.5	0
20	.90	34.075	7.92	1.80	66.	.26	28.2	75.4	10	.88	34.073	7.93	27.329	75.5	.008
50	.82	34.077	7.94	1.76	66.	.25	28.4	74.8	20	.90	34.075	7.92	27.330	75.4	.015
71	-1.48	34.272	8.27U	1.95	71.	.15	30.0	49.9	30	.87	34.076	7.93	27.332	75.2	.023
106	-1.38	34.393	7.09	2.16	79.	.32	31.9	40.9	50	.82	34.077	7.94	27.337	74.8	.038
126	-1.09	34.441	6.70	2.15	80.	.26	32.5	38.1	75	-1.47	34.286	7.65	27.610	48.9	.053
151	-.18	34.534	5.85	2.25	84.	.08	32.8	34.7	100	-1.40	34.372	7.22	27.678	42.4	.064
177	.69	34.629	5.11	2.22	88.	.04	33.5	32.0	125	-1.11	34.439	6.72	27.722	38.3	.074
217	1.05	34.676	4.82	2.21	91.	.01	33.4	30.6	150	-.22	34.530	5.89	27.759	34.8	.083
253	1.20	34.699	4.73	2.20	92.	.01	33.3	29.8	200	.98	34.666	4.94	27.799	31.0	.100
322	1.19	34.710	4.72	2.20	96.	.00	33.4	28.9	250	1.19	34.698	4.73	27.811	29.9	.115
431	1.12	34.714	4.69	2.22	101.	.01	33.9	28.2	300	1.19	34.708	4.72	27.818	29.1	.130
561	1.03	34.716	4.73	2.19	106.	.01	33.1	27.4	400	1.14	34.714	4.70	27.827	28.3	.160
702	.93	34.714	4.76	2.23	110.	.00	34.2	27.0	500	1.07	34.716	4.71	27.833	27.7	.189
855	.85	34.714	4.74	2.27	114.	.00	34.3	26.5	600	1.00	34.716	4.74	27.838	27.3	.218
1011	.77	34.707	4.81	2.26	115.	.00	33.9	26.5	700	.93	34.714	4.76	27.841	27.0	.247
1310A	.62	34.709	4.83	2.26	122.		34.6	25.5	800	.88	34.714	4.75	27.845	26.6	.275
1462A	.52	34.703	4.90	2.26	123.		34.6	25.4	1000	.78	34.708	4.80	27.846	26.5	.331
1613A	.43	34.696	4.93	2.27	122.		34.6	25.4	1200	.68	34.708	4.82	27.853	25.9	.387
1816A	.38	34.701	4.96	2.27	125.		35.2	24.8	1500	.49	34.701	4.91	27.858	25.4	.468
2017A	.27	34.699	5.03	2.28	125.		34.9	24.3	2000	.28	34.700	5.02	27.869	24.4	.597
2219A	.21	34.701	5.03	2.27	125.		34.6	23.9	2500	.10	34.706	5.12	27.884	22.9	.716
2421A	.12	34.705	5.09	2.26	123.		34.6	23.1	3000	-.09	34.712	5.37	27.899	21.5	.821
2623A	.075	34.707	5.18	2.26	119.		34.5	22.7							
2825A	.02	34.708	5.28	2.23	115.		33.8	22.4							
3027A	-.11	34.712	5.38	2.23	111.		34.0	21.4							
3228A	-.15	34.712	5.45	2.23	108.		33.9	21.2							
3329A	-.17	34.709	5.48	2.23	107.		34.4	21.4							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 50

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 55.0S	169 00.0E	02/07/71	0310 0514GMT	2895M	120	20KT	7	120 05 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.10	33.789	7.98	1.77	67.	.19	27.6	92.9	0	.10	33.789	7.98	27.146	92.9	0
35	.09	33.793	7.96	1.73	67.	.18	27.8	92.5	10	.10	33.791	7.97	27.147	92.8	.009
57	-1.56	34.303	7.30	1.95	68.	.12	30.6	47.3	20	.09	33.792	7.97	27.148	92.7	.019
77	-1.38	34.366	6.75	2.07	75.	.18	31.8	43.0	30	.09	33.793	7.96	27.149	92.6	.028
102	-.40	34.498	5.86	2.13	84.	.09	33.2	36.4	50	-1.07	34.140	7.53	27.479	61.3	.043
152	1.08	34.673	4.66	2.22	92.	.02	34.2	31.0	75	-1.40	34.360	6.81	27.668	43.4	.056
203	1.22	34.700	4.53	2.22	95.	.01	34.1	29.9	100	-.49	34.487	5.93	27.736	36.9	.066
305	1.22	34.718	4.56	2.17	99.	.01	34.3	28.5	125	.40	34.595	5.19	27.777	33.1	.075
405	1.16	34.720	4.56	2.22	103.		33.8	28.0	150	1.04	34.669	4.69	27.798	31.1	.083
505	1.10	34.720	4.58	2.22	106.	.00	33.9	27.6	200	1.21	34.699	4.54	27.810	29.9	.098
605	1.01	34.719	4.63	2.22	109.		33.9	27.1	250	1.22	34.710	4.54	27.819	29.1	.114
704	.92	34.714	4.62	2.21	111.		34.1	26.9	300	1.22	34.718	4.56	27.825	28.5	.128
804	.87	34.712	4.72	2.22	113.	.00	34.7	26.8	400	1.16	34.720	4.56	27.831	28.0	.158
904	.81	34.711	4.75	2.22	117.8		35.1	26.5	500	1.10	34.720	4.58	27.835	27.6	.186
1004	.76	34.709	4.72	2.22	117.8		34.6	26.3	600	1.01	34.719	4.63	27.840	27.1	.215
1104	.70	34.709	4.79	2.22	120.	.00	34.7	26.0	700	.92	34.714	4.62	27.842	26.9	.244
1207	.65	34.708	4.81	2.23	122.		34.7	25.8	800	.87	34.712	4.72	27.844	26.8	.272
1309	.59	34.702	4.80	2.25	123.		35.5	25.9	1000	.76	34.709	4.72	27.848	26.3	.328
1413	.54	34.702	4.80	2.23			34.6	25.6	1200	.65	34.708	4.81	27.854	25.8	.383
1518	.50	34.704	4.86	2.27			34.6	25.2	1500	.51	34.704	4.85	27.859	25.3	.464
1624A	.47	34.706	4.90	2.21			34.6	24.9	2000	.28	34.703	4.96	27.871	24.1	.592
1823A	.35	34.705	4.92	2.26	127.		34.8	24.3	2500	.07	34.706	5.19	27.886	22.7	.709
2024A	.27	34.702	4.97	2.27	127.		34.3	24.1							
2225A	.196	34.703	5.10	2.24	123.		34.0	23.6							
2427A	.108	34.706	5.18	2.26	120.		34.8	23.0							
2632A	-.002	34.707	5.22	2.26	114.		34.7	22.3							
2734A	-.033	34.709	5.30	2.23	112.		34.6	22.0							
2837A	-.146	34.710	5.44	2.23	107.		34.0	21.4							
2889A	-.176	34.707	5.40	2.19	107.		33.9	21.5							
2940A	-.180	34.709	5.39	2.17	107.		34.0	21.3							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 51

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 36.0S	167 41.0E	02/07/71	1247 1344GMT	2116M	190	22KT	2	170 05 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.06	33.907	8.29	1.52	70.	.09	23.8	83.7	0	.06	33.907	8.29	27.243	83.7	0
20	.05	33.908	8.22	1.53	70.	.09	23.9	83.5	10	.06	33.908	8.25	27.243	83.6	.008
50	-1.52	34.258	7.16	1.99	75.	.07	24.9	50.9	20	.05	33.908	8.22	27.244	83.5	.017
72	-1.65	34.352	7.02	2.07	77.	.12	31.7	43.3	30	-.46	34.012	7.87	27.351	73.4	.025
107	-1.13	34.453	6.35	2.14	84.	.12	32.7	37.1	50	-1.52	34.258	7.16	27.589	50.9	.037
127	-.36	34.547	5.67	2.17	92.	.03	33.4	32.9	75	-1.64	34.361	6.99	27.676	42.7	.049
152	.24	34.619	5.21	2.23	96.	.01	33.6	30.3	100	-1.31	34.432	6.53	27.724	38.1	.059
178	.53	34.653	5.00	2.25	96.	.01	34.0	29.3	125	-.44	34.538	5.74	27.775	33.3	.067
218	.72	34.677	4.87	2.25	97.	.01	34.3	28.5	150	.21	34.616	5.23	27.805	30.4	.075
254	.82	34.691	4.79	2.24	104.	.01	34.2	28.0	200	.66	34.669	4.91	27.822	28.8	.090
323	.79	34.695	4.70	2.24	107.	.01	34.2	27.6	250	.81	34.690	4.80	27.830	28.1	.105
434	.67	34.691	4.83	2.24	109.	.00	34.2	27.2	300	.80	34.695	4.72	27.834	27.7	.119
565	.74	34.700	4.79	2.25	113.	.01	34.5	26.9	400	.70	34.693	4.78	27.838	27.3	.147
706	.68	34.702	4.84	2.26	116.	.00	35.0	26.4	500	.70	34.695	4.82	27.841	27.0	.175
861	.61	34.699	4.85	2.26	119.	.00	34.3	26.2	600	.73	34.701	4.80	27.844	26.8	.202
1018	.54	34.699	4.91	2.26	121.	.00	34.6	25.8	700	.68	34.702	4.84	27.847	26.4	.230
1095A	.51	34.701	5.40U	2.26	122.		34.7	25.5	800	.64	34.701	4.85	27.849	26.3	.257
1244A	.44	34.701	4.94	2.26	124.		34.3	25.1	1000	.55	34.699	4.90	27.853	25.9	.311
1395A	.40	34.701	4.96	2.25	124.		34.4	24.9	1200	.46	34.702	4.94	27.860	25.2	.364
1645A	.29	34.703	5.05	2.26	125.		34.6	24.1	1500	.36	34.702	4.99	27.866	24.6	.441
1795A	.21	34.707	5.11	2.31	124.		34.6	23.4	2000	.09	34.708	5.16	27.886	22.8	.561
1946A	.1 D	34.703	5.12	2.28	123.		34.6	23.1							
2047A	.084	34.709	5.20	2.22	120.		34.2	22.6							
2098C	.038	34.701						23.0							

A) CAST II.
B) AN ERROR OF 0.1 ABSORBANCE HAS BEEN ASSUMED. THE LISTED VALUES INCORPORATE THE CORRECTION.
C) THE NANSEN BOTTLE AT THIS DEPTH ON CAST II HIT BOTTOM. THE WATER SAMPLE CONTAINED MUD.
D) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE LENGTH.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
68 06.5S	166 46.0E	02/08/71	0933 1121GMT	2548M	200	11KT	2	200 04 03

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.24	33.833	8.54	.94	60.	.10	14.9	90.2	0	.24	33.833	8.54	27.174	90.2	0
20	.26	33.835	8.54	.95	60.	.10	15.1	90.1	10	.25	33.834	8.54	27.174	90.2	.009
61	-1.75	34.375	6.65	2.07	84.	.15	31.2	41.3	20	.26	33.835	8.54	27.174	90.1	.018
101	-1.73	34.411	6.68	2.06	79.	.16	31.8	38.6	30	-.20	33.952	8.11	27.291	79.1	.026
151	-.92	34.515	6.22	2.13	86.	.05	32.9	33.1	50	-1.18	34.213	7.19	27.542	55.3	.040
203	.12	34.615	5.42	2.19	96.	.01	33.7	30.0	75	-1.74	34.388	6.66	27.700	40.3	.052
254	.48	34.651	5.05	2.23	99.	.01	33.5	29.1	100	-1.73	34.410	6.68	27.718	38.6	.062
304	.67	34.673	4.92	2.21	104.	.00	34.0	28.5	125	-1.41	34.457	6.51	27.747	35.9	.071
404	.76	34.689	4.80	2.23	106.	.01	33.4	27.8	150	-.94	34.513	6.23	27.776	33.2	.079
504	.80	34.698	4.77	2.22	110.	.01	34.7	27.4	200	.07	34.611	5.46	27.809	30.1	.095
605	.73	34.698	4.78	2.25	112.	.00	34.3	27.0	250	.47	34.650	5.07	27.818	29.1	.110
705	.66	34.696	4.79	2.23	115.	.01	34.7	26.7	300	.66	34.672	4.93	27.824	28.6	.124
805	.63	34.697	4.84	2.25	117.	.00	35.0	26.5	400	.76	34.689	4.80	27.832	27.9	.153
905	.58	34.697	4.86	2.27	120.	.00	34.3	26.2	500	.80	34.698	4.77	27.837	27.4	.181
1006	.52	34.694	4.85	2.26	121.	.00	34.9	26.1	600	.73	34.698	4.78	27.841	27.0	.209
1107	.47	34.696	4.92	2.26	122.	.01	34.9	25.6	700	.66	34.696	4.79	27.844	26.7	.237
1209	.41	34.694	4.94	2.27	123.		34.8	25.5	800	.63	34.697	4.84	27.847	26.5	.265
1311	.34	34.693	4.95	2.26	124.		35.1	25.2	1000	.52	34.694	4.85	27.851	26.1	.319
1414	.28	34.694	4.97	2.26	124.		35.3	24.8	1200	.42	34.695	4.94	27.857	25.5	.372
1429A	.280	34.695	5.02	2.26	124.		35.0	24.7	1500	.26	34.696	5.04	27.868	24.5	.449
1518	.25	34.696	5.04	2.26	124.		35.2	24.5	2000	.04	34.697	5.22	27.880	23.3	.568
1630A	.207	34.698	5.07	2.27	122.		35.0	24.1	2500	-.30	34.706	5.46	27.905	21.0	.669
1831A	.128	34.702	5.13	2.25	120.		34.9	23.4							
2033A	.026	34.696	5.24	2.29	116.		34.6	23.3							
2234A	-.071	34.698	5.33	2.21	112.		35.0	22.7							
2436A	-.231	34.702	5.44	2.19	106.		34.3	21.6							
2488A	-.294	34.705	5.44	2.22	105.		34.0	21.1							
2537A	-.315	34.710	5.56	2.20	107.		34.1	20.6							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 50.0S	165 23.0E	02/08/71	1850 1937GMT	2610M	270	04KT	7	300 02 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.59	33.860	8.21	.03	54.	.11	14.2	90.0	0	.59	33.860	8.21	27.176	90.0	0
21	.57	33.895	8.18	1.03	56.	.11	14.5	87.2	10	.58	33.877	8.20	27.190	88.7	.009
47	.35	34.079	8.09	1.30	62.	.13	17.5	72.0	20	.57	33.894	8.18	27.204	87.3	.018
80	-1.26	34.402	6.64	2.14	82.	.09	31.0	40.6	30	.49	33.943	8.15	27.248	83.2	.026
111	-1.12	34.489	6.37	2.18	85.	.10	33.1	34.4	50	.20	34.110	7.96	27.399	68.9	.041
132	-.47	34.550	5.82	2.19	90.		33.6	32.2	75	-1.03	34.355	6.87	27.651	45.0	.056
157	-.10	34.588	5.55	2.23	91.	.08	33.4	30.9	100	-1.17	34.458	6.44	27.740	36.6	.066
184	.16	34.616	5.34	2.24	94.	.09	34.3	30.1	125	-.69	34.530	6.00	27.780	32.8	.074
224	.47	34.648	5.11	2.23	97.	.07	34.0	29.3	150	-.18	34.581	5.60	27.797	31.2	.082
260	.64	34.664	4.98	2.24	98.	.04	34.3	29.0	200	.30	34.631	5.24	27.812	29.7	.097
329	.76	34.684	4.84	2.23	103.	.04	34.3	28.2	250	.60	34.661	5.01	27.819	29.1	.112
437	.79	34.691	4.80	2.25	106.	.02	34.3	27.9	300	.73	34.678	4.88	27.825	28.6	.127
566	.76	34.695	4.81	2.26	109.	.00	34.7	27.4	400	.78	34.690	4.81	27.831	27.9	.156
707	.71	34.700	4.83	2.23	114.	.00	35.0	26.7	500	.78	34.694	4.80	27.834	27.6	.184
866	.62	34.696	4.84	2.26	117.	.00	34.8	26.5	600	.75	34.697	4.81	27.839	27.2	.212
1035	.55	34.695	4.87	2.28	120.	.00	34.8	26.2	700	.71	34.700	4.83	27.844	26.7	.240
1079A	.51	34.696	4.84	2.27	120.			25.9	800	.66	34.698	4.84	27.846	26.6	.268
1232A	.42	34.697	4.93	2.28	122.			25.3	1000	.57	34.696	4.86	27.849	26.2	.323
1384A	.35	34.693	5.02	2.28	122.			25.2	1200	.43	34.697	4.90	27.858	25.4	.376
1536A	.28	34.699	5.04	2.26	123.			24.4	1500	.30	34.698	5.04	27.866	24.6	.453
1688A	.22	34.701	5.05	2.27	123.			23.9	2000	.07	34.700	5.17	27.881	23.2	.573
1838A	.17	34.700	5.10	2.27	121.			23.7	2500	-.28	34.710	5.51	27.906	20.8	.675
1990A	.08	34.700	5.17	2.24	117.			23.3							
2139A	.00	34.701	5.23	2.26	114.			22.8							
2291A	-.101	34.701	5.35	2.26	110.			22.3							
2390A	-.18	34.703	5.46	2.22	107.			21.8							
2489A	-.27	34.709	5.50	2.24	105.			20.9							
2563A	-.35	34.713	5.57	2.22	104.			20.2							
2589A	-.39	34.717	5.59	2.23	103.			19.8							

AI CAST II.

RV THOMAS WASHINGTON ARIES EXPEDITION II 54

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
68 17.5S	164 39.0E	02/09/71	0058 0238GMT	2532M	260	04KT	1	340 03 11

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.68	33.214	9.29	.77	60.	.09	14.3	133.6	0	-.68	33.214	9.29	26.717	133.6	0
10	-.73	33.236	9.25	.79	59.	.09	14.4	131.7	10	-.73	33.236	9.25	26.736	131.7	.013
25	-.15	33.796	8.35	1.12	58.	.10	17.5	91.2	20	-.32	33.584	8.71	27.000	106.6	.025
50	-1.74	34.320	6.76	2.01	79.	.09	31.0	45.5	30	-.40	33.937	7.98	27.288	79.4	.034
76	-1.82	34.390	6.69	2.04	78.	.13	32.2	40.0	50	-1.74	34.320	6.76	27.645	45.5	.047
127	-1.75	34.429	6.73	2.04	78.	.08	32.4	37.1	75	-1.82	34.387	6.69	27.702	40.2	.058
203	-.23	34.584	5.65	2.13	92.	.01	33.3	30.6	100	-1.79	34.416	6.71	27.724	38.0	.067
304	.59	34.666	4.99	2.13	101.	.00	34.3	28.6	125	-1.75	34.429	6.73	27.734	37.2	.076
405	.74	34.689	4.83	2.19	106.	.00	34.5	27.7	150	-1.34	34.471	6.45	27.756	35.1	.085
506	.79	34.699	4.78	2.20	110.	.00	34.5	27.3	200	-.30	34.578	5.70	27.800	30.9	.102
606	.72	34.699	4.79	2.22	112.		34.7	26.8	250	.28	34.630	5.26	27.813	29.7	.117
707	.65	34.696	4.77	2.21	115.	.00	34.7	26.7	300	.58	34.664	5.00	27.823	28.7	.131
807	.63	34.697	4.87	2.22	116.		34.6	26.5	400	.73	34.688	4.83	27.833	27.7	.160
908	.57	34.697	4.98	2.21	119.		34.9	26.1	500	.79	34.699	4.78	27.838	27.3	.188
1009	.51	34.695	4.86	2.22	119.	.00	34.5	25.9	600	.73	34.699	4.79	27.842	26.9	.216
1110	.46	34.694	4.96	2.22	119.		34.9	25.7	700	.65	34.697	4.77	27.845	26.7	.244
1211	.39	34.694	4.96	2.24	122.		35.0	25.4	800	.63	34.697	4.86	27.846	26.5	.271
1313	.29	34.689	5.01	2.22	122.		35.2	25.2	1000	.52	34.696	4.87	27.852	26.0	.326
1415	.26	34.692	5.01	2.22	121.		34.5	24.8	1200	.40	34.694	4.96	27.858	25.4	.379
1518	.21	34.694	5.08	2.25	122.		35.0	24.4	1500	.22	34.694	5.07	27.868	24.5	.455
1609A	.150	34.699	5.13	2.22	120.		34.6	23.7	2000	-.08	34.700	5.33	27.889	22.5	.569
1811A	.033	34.698	5.22	2.21	116.		34.5	23.2	2500	-.36	34.717	5.57	27.916	19.9	.664
2015A	-.092	34.700	5.34	2.21	111.		33.8	22.4							
2221A	-.199	34.705	5.45	2.20	110.		33.6	21.5							
2324A	-.284	34.703	5.52	2.18	107.		34.1	21.3							
2430A	-.323	34.712	5.53	2.18	104.		33.9	20.4							
2482A	-.348	34.713	5.55	2.18	104.		33.8	20.3							
2535A	-.391	34.729	5.61	2.18	102.		33.6	18.8							

RV THOMAS WASHINGTON ARIES EXPEDITION II 55

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
68 03.5S	162 12.5E	02/09/71	0959 1058GMT	2466M	020	07KT	2	330 02 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.35	33.457	8.47	.95	53.	.13	17.1	116.2	0	-.35	33.457	8.47	26.899	116.2	0
20	-.06	34.044	8.37	1.18	54.	.13	21.2	72.6	10	-.20	33.779	8.42	27.152	92.3	.010
45	-1.59	34.367	6.71	2.15	92.0	.10	29.8	42.3	20	-.06	34.044	8.37	27.359	72.6	.019
67	-1.76	34.405	6.68	2.16	79.	.16	32.5	39.0	30	-.63	34.214	7.70	27.522	57.2	.025
107	-1.09	34.494	6.35	2.34	85.	.09	33.4	34.1	50	-1.63	34.376	6.70	27.687	41.5	.035
127	-.65	34.539	6.00	2.18	88.	.10	33.9	32.3	75	-1.69	34.422	6.65	27.726	37.9	.045
153	-.13	34.584	5.60	2.26	92.	.09	33.5	31.1	100	-1.26	34.477	6.44	27.758	34.8	.054
177	.22	34.623	5.33	2.28	96.	.08	34.4	29.9	125	-.69	34.535	6.04	27.784	32.4	.062
217	.54	34.655	5.07	2.21	98.	.07	34.4	29.2	150	-.18	34.580	5.64	27.797	31.2	.070
254	.64	34.671	4.96	2.21	101.	.06	34.4	28.5	200	.44	34.646	5.16	27.816	29.4	.085
323	.76	34.687	4.82	2.24	104.	.02	34.4	28.0	250	.63	34.670	4.97	27.824	28.6	.100
432	.78	34.696	4.75	2.28	110.	.01	34.4	27.4	300	.73	34.684	4.86	27.829	28.1	.114
563	.74	34.698	4.80	2.25	112.	.00	34.5	27.0	400	.77	34.694	4.77	27.835	27.6	.142
703	.66	34.700	4.83	2.27	117.	.00	35.0	26.4	500	.77	34.698	4.77	27.839	27.2	.171
858	.56	34.696	4.87	2.26	119.	.00	34.4	26.1	600	.72	34.699	4.81	27.842	26.9	.198
1014	.45	34.693	4.94	2.23	122.	.00	34.6	25.8	700	.66	34.700	4.83	27.847	26.4	.226
1101A	.39	34.698	4.91	2.20	124.		34.5	25.1	800	.60	34.698	4.85	27.849	26.2	.253
1252A	.30	34.697	5.01	2.27	124.		34.2	24.6	1000	.46	34.693	4.94	27.854	25.8	.307
1404A	.21	34.695	5.07	2.26	124.		34.7	24.3	1200	.33	34.698	4.97	27.865	24.7	.359
1554A	.14	34.697	5.12	2.28	120.		34.9	23.8	1500	.16	34.696	5.10	27.873	24.0	.433
1705A	.08	34.700	5.21	2.28	119.		34.5	23.3	2000	-.10	34.701	5.32	27.890	22.3	.545
1805A	.03	34.697	5.22	2.24	116.		34.8	23.3							
1906A	-.04	34.701	5.29	2.23	114.		34.3	22.6							
2005A	-.10	34.701	5.32	2.24	112.		34.3	22.3							
2105A	-.14	34.701	5.39	2.22	109.		34.1	22.1							
2205A	-.253	34.704	5.48	2.22	106.		34.6	21.4							
2303A	-.29	34.709	5.53	2.24	106.		33.8	20.8							
2402A	-.37	34.714	5.59	2.20	105.		34.2	20.1							
2451A	-.43	34.717	5.61	2.20	105.		34.2	19.6							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 57

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 50.5S	160 25.0E	02/09/71	2326 0102GMT	2453M	240	05KT	7	070 03 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.30	33.450	8.23	.68	46.	.17	21.7	117.0	0	-.30	33.450	8.23	26.891	117.0	0
20	-.02	33.758	8.10	.90	53.	.15	24.3	94.7	10	-.16	33.570	8.17	26.982	108.4	.011
40	-1.54	34.249	7.27	2.07	77.	.09	29.9	51.5	20	-.02	33.758	8.10	27.127	94.7	.021
76	-1.75	34.447	6.82	2.08	83.	.19	33.5	35.8	30	-.73	34.005	7.70	27.357	72.9	.030
101	-1.77	34.464	6.92	2.08	83.	.10	33.1	34.4	50	-1.60	34.304	7.15	27.628	47.1	.042
203	-1.80	34.481	6.94	2.06	82.	.02	32.7	33.0	75	-1.74	34.442	6.83	27.744	36.2	.052
253	-1.78	34.484	6.96	2.03	81.	.01	33.3	32.8	100	-1.77	34.463	6.91	27.762	34.5	.061
304	-1.63	34.496	6.84	2.08	84.	.00	33.7	32.3	125	-1.78	34.468	6.92	27.766	34.1	.069
406	-.04	34.620	5.49	2.15	98.	.01	34.7	28.8	150	-1.78	34.472	6.93	27.770	33.7	.077
436	-.08	34.619	5.52	2.17	96.	.00	34.5	28.7	200	-1.80	34.481	6.94	27.777	33.1	.094
507	.30	34.660	5.18	2.17	103.	.00	34.8	27.5	250	-1.78	34.484	6.96	27.779	32.9	.109
557	.15	34.652	5.24	2.20	106.	.00	35.0	27.3	300	-1.65	34.495	6.85	27.784	32.4	.125
609	.22	34.661	5.20	2.20	108.	.00	34.7	27.0	400	-.12	34.613	5.56	27.820	29.0	.155
711	.39	34.684	5.04	2.25	117.	.00	35.7	26.1	500	.26	34.656	5.22	27.835	27.6	.183
787	.17	34.666	5.15	2.22	114.	.00	35.0	26.3	600	.20	34.659	5.21	27.841	27.0	.210
865	-.08	34.645	5.36	2.20	110.	.00	34.3	26.7	700	.38	34.683	5.05	27.850	26.2	.237
915	-.11	34.643	5.37	2.22	109.		34.6	26.7	800	.12	34.662	5.19	27.847	26.4	.263
1069	-.22	34.642	5.46	2.20	111.		34.5	26.3	1000	-.19	34.641	5.44	27.846	26.5	.315
1172	-.12	34.655	5.33	2.21	111.		35.0	25.7	1200	-.15	34.654	5.37	27.855	25.7	.365
1275	-.24	34.650	5.47	2.21	110.		34.1	25.6	1500	.02	34.692	5.16	27.877	25.6	.437
1312A	-.08	34.676	5.31	2.19	114.		34.8	24.3	2000	-.19	34.698	5.42	27.892	22.1	.545
1411A	-.10	34.675	5.32	2.20	113.		34.9	24.3							
1511A	.03	34.694	5.15	2.21	120.U		35.0	23.5							
1611A	-.09	34.688	5.36	2.21	112.		35.0	23.4							
1813A	-.052	34.705	5.28	2.15	114.		35.1	22.2							
2017A	-.203	34.697	5.44	2.06U	107.		34.8	22.1							
2121A	-.285	34.694	5.54	2.15	105.		34.4	22.0							
2226A	-.303	34.702	5.56	2.15	105.		34.4	21.3							
2332A	-.385	34.705	5.57	2.17	103.		34.6	20.7							
2386A	-.409	34.710	5.58	2.17	104.		34.5	20.2							
2439A	-.437	34.719	5.64	2.17	103.		34.2	19.4							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 59

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 00.0S	162 26.5E	02/10/71	0935 1044GMT	2647M	260	18KT	1	250 05 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.57	34.029	7.93	1.38	62.	.12	22.7	77.0	0	.57	34.029	7.93	27.313	77.0	0
20	.45	34.042	8.00	1.34	63.	.12	22.2	75.4	10	.51	34.036	7.96	27.322	76.2	.008
45	-1.72	34.409	6.81	2.14	76.	.15	32.1	38.8	20	.45	34.042	8.00	27.331	75.4	.015
76	-1.75	34.433	6.75	2.08	80.	.12	32.4	36.8	30	-.40	34.175	7.55	27.481	61.1	.022
107	-1.68	34.455	6.81	2.08	81.	.12	32.6	35.3	50	-1.72	34.413	6.80	27.720	38.4	.032
127	-1.10	34.498	6.30	2.17	84.	.09	32.8	33.7	75	-1.75	34.432	6.75	27.737	36.9	.041
153	-.53	34.546	5.94	2.22	87.	.07	34.0	32.2	100	-1.70	34.450	6.80	27.749	35.7	.050
178	-.62	34.555	6.04	2.16	87.	.03	33.1	31.2	125	-1.16	34.493	6.36	27.768	33.9	.059
218	-.16	34.598	5.63	2.19	93.	.01	34.0	29.9	150	-.57	34.542	5.96	27.784	32.4	.067
255	.46	34.651	5.14	2.22	98.	.00	34.9	29.0	200	-.43	34.576	5.87	27.805	30.4	.083
325	.59	34.671	5.00	2.22	107.	.01	34.8	28.2	250	.38	34.645	5.20	27.819	29.1	.097
436	.67	34.684	4.87	2.23	107.	.00	34.9	27.7	300	.54	34.665	5.05	27.826	28.4	.112
568	.79	34.701	4.82	2.26	110.	.01	35.2	27.1	400	.65	34.681	4.90	27.832	27.8	.140
711	.70	34.700	4.82	2.25	115.	.00	35.0	26.7	500	.74	34.694	4.84	27.837	27.4	.169
867	.62	34.698	4.84	2.26	116.	.00	35.0	26.3	600	.78	34.702	4.82	27.841	27.0	.197
1024	.53	34.696	4.91	2.28	120.	.00	35.3	26.0	700	.71	34.701	4.82	27.844	26.7	.224
1074A	.50	34.697	4.90	2.26	122.		35.3	25.7	800	.65	34.699	4.83	27.847	26.5	.252
1225A	.40	34.697	4.92	2.30	122.		35.3	25.2	1000	.54	34.696	4.90	27.851	26.1	.307
1376A	.32	34.696	5.02	2.40	123.		35.3	24.8	1200	.42	34.697	4.92	27.859	25.3	.360
1527A	.15	34.687	5.16	2.31	120.		34.9	24.6	1500	.18	34.689	5.14	27.866	24.7	.436
1678A	.09	34.694	5.14	2.39	119.		34.8	23.8	2000	-.07	34.691	5.38	27.881	23.2	.552
1829A	-.05	34.685	5.35	2.32	113.		34.8	23.8	2500	-.33	34.711	5.58	27.909	20.5	.651
1981A	-.07	34.690	5.38	2.29	113.		34.8	23.3							
2081A	-.10	34.694	5.38	2.36	112.		34.8	22.8							
2181A	-.15	34.696	5.36	2.33	109.		34.4	22.5							
2282A	-.17	34.701	5.44	2.26	107.		34.2	22.0							
2383A	-.24	34.705	5.50	2.24	106.		34.1	21.4							
2484A	-.32	34.710	5.57	2.30	104.		33.8	20.6							
2585A	-.39	34.714	5.62	2.26	104.		33.8	20.0							
2635A	-.44	34.720	5.61	2.43U	104.		33.8	19.3							

AJ CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 60

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
66 31.0S	161 26.0E	02/10/71	1757 1941GMT	2729M	260	20KT	1	260 11 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.65	33.657	8.01	1.46	60.	.21	25.4	105.8	0	.65	33.657	8.01	27.010	105.8	0
20	.55	34.139	7.74	1.53	73.	.10	20.1	68.5	10	.60	33.931	7.90	27.232	84.7	.010
51	-.64	34.313	6.92	1.95	82.	.09	26.9	49.6	20	.55	34.139	7.74	27.403	68.5	.017
77	-.62	34.428	6.37	2.17	88.	.09	30.1	40.9	30	.16	34.233	7.49	27.500	59.3	.024
103	-1.52	34.460	6.53	2.20	85.	.14	33.4	35.4	50	-.60	34.313	6.95	27.601	49.8	.034
155	-.02	34.583	5.60	2.20	86.	.02	34.0	31.7	75	-.62	34.422	6.40	27.689	41.4	.046
206	.34	34.627	5.31	2.24	90.	.02	33.9	30.2	100	-1.42	34.457	6.50	27.748	35.9	.055
310	.63	34.668	4.94	2.24	98.	.02	33.8	28.7	125	-1.08	34.507	6.20	27.777	33.1	.064
412	.84	34.694	4.89	2.22	101.	.00	34.2	27.9	150	-.23	34.570	5.71	27.790	31.8	.072
522	.87	34.702	4.74	2.24	108.	.01	34.3	27.5	200	.33	34.626	5.33	27.806	30.3	.088
624	.64	34.687	4.89	2.26	109.	.03	34.4	27.3	250	.50	34.650	5.12	27.816	29.4	.103
728	.40 U	34.707	4.80	2.27	112.	.01	34.5		300	.62	34.666	4.96	27.822	28.8	.117
835	.73	34.702	4.85	2.25	113.	.00	34.5	26.7	400	.82	34.692	4.90	27.831	28.0	.146
939	.66	34.702	4.89	2.25	117.	.00	34.4	26.3	500	.86	34.701	4.76	27.835	27.6	.175
1045	.59	34.697	4.86	2.26	119.	.00	34.9	26.2	600	.70	34.691	4.85	27.838	27.3	.203
1149	.52	34.699	4.91	2.29	121.	.00	34.9	25.7	700	.67	34.692	4.83	27.840	27.1	.231
1261	.44	34.694	4.95	2.32	123.		35.1	25.6	800	.72	34.700	4.83	27.843	26.8	.259
1369	.37	34.692	4.98	2.28	124.		35.1	25.4	1000	.62	34.699	4.87	27.849	26.3	.315
1477	.32	34.692	4.95	2.26	124.		35.2	25.1	1200	.48	34.697	4.93	27.855	25.7	.369
1550A	.26	34.690	5.00	2.31	123.		35.1	25.0	1500	.30	34.692	4.96	27.862	25.1	.447
1585	.26	34.689	5.02	2.26	126.		35.2	25.0	2000	.18	34.702	5.07	27.876	23.7	.570
1759A	.180	34.690	5.11	2.28	127.		35.0	24.5	2500	-.02	34.707	5.27	27.891	22.3	.682
1969A	.193	34.702	5.06	2.26	125.		35.0	23.7							
2182A	.057	34.696	5.17	2.28	117.		35.0	23.5							
2399A	.001	34.700	5.30	2.26	114.		35.0	22.9							
2508A	-.020	34.707	5.27	2.26	113.		34.6	22.2							
2617A	-.053	34.709	5.27	2.30	113.		34.7	21.9							
2674A	-.102	34.710	5.23	2.26	113.		34.6	21.6							
2729A	-.279	34.707	5.51	2.21	105.		34.5	21.0							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 61

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 40.0S	158 40.0E	02/11/71	0629 0713GMT	2379M	320	04KT	1	310 06 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.29	34.007	8.04	1.00	56.	.14	23.1	77.2	0	.29	34.007	8.04	27.311	77.2	0
20	.10	34.034	8.08	.93	56.	.13	22.8	74.2	10	.19	34.021	8.06	27.327	75.7	.008
58	-1.74	34.436	6.79	2.12	79.	.14	31.7	36.6	20	.10	34.034	8.08	27.343	74.2	.015
79	-1.59	34.467	6.75	2.12	80.	.13	31.7	34.6	30	-.56	34.149	7.75	27.466	62.5	.022
111	-.94	34.524	6.30	2.13	84.	.04	32.6	32.3	50	-1.73	34.400	7.07	27.710	39.4	.032
131	-.92	34.531	6.28	2.13	84.	.02	32.7	31.8	75	-1.64	34.461	6.76	27.756	35.0	.041
160	-.36	34.579	5.80	2.16	88.	.01	32.6	30.4	100	-1.15	34.506	6.45	27.778	33.0	.050
186	.11	34.621	5.39	2.23	94.	.01	33.4	29.5	125	-.93	34.529	6.29	27.789	32.0	.058
229	.49	34.658	5.03	2.21	98.	.01	34.0	28.6	150	-.59	34.560	5.99	27.799	31.0	.065
267	.60	34.669	4.96	2.22	100.	.01	34.0	28.4	200	.28	34.637	5.23	27.819	29.1	.080
338	.78	34.692	4.80	2.17	105.	.01	34.2	27.7	250	.56	34.666	4.98	27.825	28.5	.095
451	.80	34.700	4.74	2.21	109.	.01	34.3	27.2	300	.69	34.681	4.88	27.829	28.1	.109
589	.74	34.701	4.78	2.26	113.		34.2	26.8	400	.79	34.697	4.77	27.837	27.4	.137
738	.57	34.695	4.88	2.24	116.		34.5	26.3	500	.79	34.702	4.75	27.840	27.1	.165
896	.50	34.695	4.90	2.27	119.		34.2	25.9	600	.73	34.701	4.79	27.844	26.8	.193
1065	.31	34.686	5.05	2.26	117.	.00	34.0	25.5	700	.61	34.697	4.86	27.847	26.4	.221
1079B	.25	34.680	5.10	2.23	117.		34.0	25.7	800	.54	34.695	4.89	27.850	26.1	.248
1231B	.21	34.685	5.12	2.26	119.		34.2	25.1	1000	.38	34.690	4.99	27.855	25.7	.301
1382B	.19	34.693	5.09	2.24	121.		34.5	24.4	1200	.22	34.684	5.12	27.860	25.2	.352
1533B	.11	34.698	5.14	2.24	118.		34.8	23.6	1500	.13	34.697	5.12	27.875	23.7	.426
1685B	.05	34.701	5.21	2.24	116.		34.1	23.0	2000	-.18	34.700	5.40	27.893	22.0	.535
1786B	-.01	34.700	5.29	2.23	112.		34.0	22.8							
1887B	-.06	34.705	5.30	2.23	112.		33.8	22.2							
1989B	-.17	34.700	5.39	2.21	107.		33.9	22.1							
2090B	-.23	34.698	5.49	2.21	104.		33.6	21.9							
2193B	-.27	34.706	5.52	2.21	104.		33.7	21.1							
2295B	-.33	34.709	5.56	2.21	103.		33.7	20.6							
2346B	-.37	34.709	5.60	2.21	103.		33.6	20.5							
2372B	-.45	34.717	5.60	2.21	104.		33.6	19.5							

A] CAST II. POSSIBLE ERROR IN WIRE LENGTHS. DEPTHS MAY BE SLIGHTLY IN ERROR.
B] CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 62

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 04.0S	157 07.5E	02/11/71	1629 1807 GMT	2362M	300	09KT	4	320 03 03

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	-.23	33.716	8.23	.94	51.	.16	20.0	96.8	0	-.23	33.716	8.23	27.104	96.8	0
20	-.18	33.720	8.23	.96	51.	.16	19.6	96.8	10	-.20	33.718	8.23	27.104	96.8	.010
40	-1.57	34.176	7.27	2.00	76.	.14	28.7	57.0	20	-.18	33.720	8.23	27.105	96.8	.019
101	-1.77	34.451	6.81	2.12	82.	.15	32.2	35.4	30	-.84	33.932	7.79	27.303	78.0	.028
203	-1.79	34.476	7.57U	2.08	82.	.03	32.3	33.4	50	-1.61	34.237	7.19	27.575	52.2	.041
255	-1.80	34.479	6.95	2.07	81.	.02	32.0	33.1	75	-1.72	34.390	7.01	27.702	40.2	.053
304	-1.79	34.483	6.92	2.06	81.	.01	32.3	32.9	100	-1.77	34.450	6.82	27.752	35.5	.062
404	-1.50	34.511	6.69	2.13	86.	.00	33.9	31.5	125	-1.77	34.457	6.83	27.758	34.9	.070
504	-1.11	34.548	6.21	2.14	91.		33.1	29.8	150	-1.78	34.463	6.85	27.763	34.4	.079
605	-.75	34.582	5.90	2.17	97.	.00	33.2	28.6	200	-1.79	34.475	6.90	27.773	33.5	.095
705	-.64	34.599	5.77	2.17	99.	.00	33.5	27.7	250	-1.80	34.479	6.95	27.776	33.2	.111
805	-.73	34.595	5.84	2.19	98.	.01	33.3	27.6	300	-1.79	34.483	6.92	27.779	32.9	.127
905	-.14	34.650	5.42	2.22	111.	.00	31.8	26.0	400	-1.52	34.510	6.70	27.793	31.5	.157
1006	-.29	34.645	5.52	2.21	108.	.00	33.4	25.7	500	-1.13	34.547	6.23	27.810	29.9	.186
1108	-.57	34.620U	5.76	2.21	102.		33.3		600	-.78	34.582	5.91	27.824	28.6	.214
1209	-.35	34.651	5.56	2.19	106.	.00	33.7	25.0	700	-.65	34.599	5.77	27.833	27.7	.240
1261	.03	34.696	5.22	2.24	117.		34.4	23.3	800	-.73	34.596	5.84	27.834	27.6	.266
1311	.01	34.694	5.21	2.24	115.		33.3	23.4	1000	-.28	34.646	5.51	27.855	25.7	.316
1414	-.07	34.691	5.23	2.24	114.		34.2	23.2	1200	-.37	34.650	5.58	27.862	25.0	.364
1516	-.11	34.691	5.36	2.23	112.		33.9	23.0	1500	-.10	34.691	5.34	27.883	23.0	.431
1518A	-.12	34.695	5.33	2.24	113.		34.2	22.7	2000	-.28	34.693	5.54	27.893	22.0	.535
1719A	-.227	34.690	5.44	2.27	106.		33.3	22.5							
1921A	-.26	34.691	5.54	2.23	106.		33.4	22.3							
2125A	-.330	34.698	5.92U	2.21	105.		33.2	21.5							
2228A	-.373	34.704	5.55	2.19	102.		33.5	20.8							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 63

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 33.5S	163 24.0E	02/12/71	0953 1057GMT	2625M	320	16KT	7	320 06 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	.49	34.018	7.95	1.42	68.	.12	22.0	77.4	0	.49	34.018	7.95	27.309	77.4	0
20	.41	34.035	7.91	1.42	66.	.12	22.4	75.7	10	.45	34.027	7.93	27.318	76.5	.008
45	-1.62	34.401	6.84	2.08	80.	.12	31.4	39.6	20	.41	34.035	7.91	27.327	75.7	.015
77	-1.69	34.441	6.70	2.07	81.	.12	32.3	36.4	30	-.38	34.168	7.50	27.474	61.7	.022
107	-1.17	34.500	6.42	2.13	82.	.08	32.8	33.4	50	-1.63	34.407	6.82	27.713	39.1	.032
127	-.61	34.546	5.99	2.14	86.	.06	33.0	31.9	75	-1.69	34.439	6.71	27.740	36.6	.042
153	-.51	34.557	5.94	2.14	86.	.05	33.7	31.5	100	-1.33	34.485	6.51	27.767	34.0	.050
178	.21	34.619	5.39	2.17	91.	.04	33.6	30.1	125	-.66	34.542	6.03	27.788	32.0	.058
217	.56	34.655	5.11	2.19	94.	.02	33.7	29.3	150	-.52	34.556	5.94	27.794	31.5	.066
252	.67	34.667	5.03	2.17	97.	.01	34.1	29.0	200	.48	34.647	5.18	27.815	29.5	.082
321	.74	34.683	4.94	2.18	99.	.01	34.2	28.2	250	.67	34.667	5.03	27.820	29.0	.096
429	.84	34.698	4.79	2.19	106.	.01	34.2	27.6	300	.73	34.679	4.96	27.826	28.4	.111
560	.80	34.701	4.81	2.18	108.	.00	34.2	27.2	400	.82	34.695	4.82	27.833	27.7	.139
702	.75	34.703	4.82	2.19	113.	.00	34.2	26.7	500	.82	34.700	4.80	27.837	27.4	.168
858	.64	34.699	4.73	2.17	116.	.00	34.2	26.4	600	.79	34.702	4.81	27.841	27.0	.196
1025	.55	34.696	4.87	2.24	119.	.00	34.8	26.1	700	.75	34.703	4.82	27.844	26.7	.224
1116A	.48	34.701	4.88	2.26	122.		34.5	25.3	800	.68	34.701	4.76	27.846	26.5	.252
1266A	.40	34.694	4.89	2.27	122.		34.5	25.4	1000	.56	34.697	4.85	27.850	26.1	.306
1415A	.32	34.694	5.00	2.32	124.		34.8	25.0	1200	.43	34.697	4.89	27.858	25.4	.360
1565A	.25	34.695	4.99	2.32	125.			24.5	1500	.29	34.696	4.99	27.865	24.7	.437
1713A	.05	34.680	5.21	2.32	116.		33.9	24.7	2000	.06	34.702	5.20	27.883	23.0	.556
1864A	.03	34.687	5.22	2.32	117.		34.6	24.0	2500	-.23	34.706	5.49	27.901	21.3	.659
1988A	.07	34.702	5.19	2.31	118.		34.6	23.1							
2114A	-.01	34.700	5.29	2.32	114.		34.7	22.8							
2215A	-.04	34.701	5.29	2.31	112.		34.0	22.6							
2315A	-.07	34.709	5.32	2.35	113.		34.0	21.8							
2416A	-.15	34.707	5.41	2.35	108.		33.8	21.6							
2517A	-.25	34.706	5.50	2.30	107.		33.8	21.2							
2569A	-.30	34.711	5.53	2.26	106.		34.0	20.6							
2612A	-.38	34.716	5.59	2.24	104.		33.7	19.9							

RV THOMAS WASHINGTON — ARIES EXPEDITION II — STD 64

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 28.5S	157 10.5E	02/13/71	0521 GMT	1080M		KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	-.048	33.468		26.889	117.2	0
									10	-.50	33.51		26.949	111.5	.011
									20	-1.63	34.32		27.643	45.8	.019
									30	-1.67	34.42		27.725	38.0	.023
									50	-1.67	34.46		27.757	34.9	.031
									75	-1.74	34.48		27.775	33.2	.039
									100	-1.74	34.48		27.775	33.2	.047
									125	-1.76	34.49		27.784	32.4	.055
									150	-1.76	34.49		27.784	32.4	.063
									200	-1.74	34.50		27.792	31.7	.079
									250	-1.67	34.51		27.798	31.1	.094
									300	-1.35	34.52		27.796	31.2	.109
									400	-.82	34.57		27.818	29.2	.138
									500	-.30	34.61		27.827	28.3	.166
									600	-.25	34.63		27.841	27.0	.192
									700	-.26	34.63		27.841	27.0	.219
									800	-.27	34.65		27.858	25.4	.244
									1000	-.24	34.68		27.881	23.2	.290

A) CAST II.
B) THE DATA FROM THE STD HAS BEEN TABULATED FOR THIS STATION.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 65

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 30.0S	157 09.0E	02/13/71	0654 GMT	426M	120	09KT	7	050 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	-.52	33.357	8.51	.75	32.	.22	15.4	123.1
5	-.51	33.363	8.55	.73	33.	.22	15.6	122.7
52	-1.73	34.437	6.75	2.14	93.0	.22	32.6	36.5
98	-1.77	34.473	6.88	2.10	81.	.03	32.6	33.7
141	-1.81	34.484	6.95	2.09	81.	.02	32.7	32.7
186	-1.79	34.483	6.93	2.06	81.	.01	32.5	32.9
228	-1.77	34.488	6.94	2.07	81.	.01	32.6	32.5
272	-1.66	34.497	6.82	2.09	84.	.01	33.0	32.1
320	-1.35	34.523	6.58	2.14	88.	.01	33.2	31.0
364	-1.31	34.541	6.49	2.15	90.	.01	33.2	29.7

Z	T	S	O2	SIGT	DT	DD
0	-.52	33.357	8.51	26.827	123.1	0
10	-.72	33.531	8.41	26.975	109.1	.012
20	-1.19	33.908	8.08	27.296	78.6	.021
30	-1.72	34.340	7.72	27.661	44.0	.027
50	-1.73	34.428	6.85	27.733	37.2	.035
75	-1.75	34.455	6.82	27.755	35.1	.044
100	-1.77	34.474	6.88	27.771	33.6	.053
125	-1.80	34.482	6.93	27.778	32.9	.061
150	-1.81	34.484	6.95	27.780	32.8	.069
200	-1.78	34.484	6.93	27.780	32.8	.085
250	-1.73	34.492	6.89	27.784	32.4	.100
300	-1.47	34.511	6.68	27.793	31.5	.115
400	-1.20	34.550	6.20	27.816	29.4	.144

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 66

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 57.0S	155 43.0E	02/13/71	1312 GMT	636M	140	10KT	2	110 04 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	-.43	33.670	8.86	.71	57.	.15	14.7	99.5
57	-1.77	34.455	7.08	2.17	84.	.16	32.2	35.1
160	-1.82	34.489	7.13	2.14	83.	.09	32.8	32.3
264	-1.84	34.510	7.18	2.14	84.	.02	32.4	30.7
369	-1.88	34.537	7.29	2.10	82.	.02	32.9	28.5
475	-1.91	34.570	7.34	2.06	82.	.01	32.9	25.9
566	-1.92	34.598	7.33	2.08	81.	.03	32.5	23.7
595	-1.91	34.614	7.36	2.11	82.	.01	32.7	22.5
630	-1.93	34.641	7.37	2.07	81.	.01	32.8	20.4

Z	T	S	O2	SIGT	DT	DD
0	-.43	33.670	8.86	27.075	99.5	0
10	-.45	33.720	8.45	27.117	95.6	.010
20	-1.60	34.080	8.09	27.448	64.3	.018
30	-1.69	34.182	7.78	27.531	56.4	.024
50	-1.74	34.384	7.23	27.698	40.6	.033
75	-1.78	34.461	7.09	27.761	34.6	.043
100	-1.79	34.469	7.10	27.768	33.9	.051
125	-1.80	34.478	7.11	27.775	33.3	.059
150	-1.82	34.486	7.13	27.782	32.6	.067
200	-1.83	34.498	7.15	27.792	31.7	.083
250	-1.84	34.508	7.17	27.800	30.9	.098
300	-1.85	34.519	7.22	27.810	30.0	.112
400	-1.89	34.548	7.31	27.833	27.8	.139
500	-1.91	34.577	7.34	27.858	25.4	.163
600	-1.91	34.618	7.36	27.891	22.3	.183

RV THOMAS WASHINGTON — ARIES EXPEDITION II — STD 67

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 51.0S	156 29.0E	02/13/71	1539 GMT	549M	140	11KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
536	-1.932	34.650	7.29	2.13	83.	.02	33.1	19.7
541	-1.930	34.653	7.33	2.11	84.	.02	33.2	19.5

Z	T	S	O2	SIGT	DT	DD
0	.05A	33.70A		27.077	99.3	0
10	.05	33.72		27.093	97.8	.010
20	-.05	33.71		27.090	98.1	.020
30	-1.64	33.70		27.141	93.3	.029
50	-1.71	34.42		27.726	37.9	.042
75	-1.73	34.46		27.759	34.8	.051
100	-1.73	34.47		27.767	34.0	.060
125	-1.72	34.48		27.775	33.3	.068
150	-1.70	34.48		27.774	33.3	.076
200	-1.72	34.48		27.775	33.3	.092
250	-1.71	34.49		27.783	32.5	.108
300	-1.60	34.51		27.796	31.3	.123
400	-1.56	34.53		27.811	29.9	.152
500	-1.90	34.62		27.893	22.1	.176

RV THOMAS WASHINGTON — ARIES EXPEDITION II — STD 68

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 45.5S	156 56.0E	02/13/71	1749 GMT	900M		KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
485	-1.88	34.635	7.15	2.14	84.	.02	33.2	21.0
490	-1.88	34.636	7.19	2.13	84.	.03	33.0	20.9

Z	T	S	O2	SIGT	DT	DD
0	-.60A	33.43A		26.889	117.2	0
10	-.19	33.43		26.872	118.9	.012
20	-.33	33.71		27.103	96.9	.023
30	-1.14	33.95		27.329	75.5	.031
50	-1.75	34.15		27.508	58.5	.045
75	-1.78	34.43		27.736	37.0	.056
100	-1.79	34.45		27.752	35.4	.065
125	-1.80	34.47		27.769	33.8	.074
150	-1.84	34.48		27.778	33.0	.082
200	-1.84	34.48		27.778	33.0	.098
250	-1.81	34.49		27.785	32.3	.114
300	-1.75	34.51		27.800	30.9	.129
400	-1.16	34.53		27.798	31.1	.158
500	-1.88	34.65		27.917	19.8	.181

A) THE DATA FROM THE STD HAS BEEN TABULATED FOR THIS STATION. THE DATA FROM THE TWO NANSEN BOTTLES PLACED A FEW METERS ABOVE THE STD FOR CALIBRATION ARE ALSO LISTED.

RV THOMAS WASHINGTON — ARIES EXPEDITION II — STD 69

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 42.5S	157 23.0E	02/13/71	1928 GMT	M		KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
451	-1.05	34.599	6.22	2.12	95.	.01	33.3	26.2
457	-1.10	34.607	5.45	2.12	94.	.01	33.6	25.1

Z	T	S	O2	SIGT	DT	DD
0	-.30A	33.46A		26.901	116.1	0
10	-.30	33.46		26.901	116.1	.012
20	-1.60	34.00		27.383	70.4	.021
30	-1.64	34.35		27.667	43.4	.027
50	-1.68	34.41		27.717	38.7	.035
75	-1.71	34.45		27.750	35.6	.044
100	-1.71	34.47		27.766	34.1	.053
125	-1.75	34.48		27.776	33.2	.061
150	-1.76	34.48		27.776	33.2	.069
200	-1.76	34.49		27.784	32.4	.085
250	-1.73	34.50		27.791	31.7	.100
300	-1.49	34.52		27.801	30.8	.115
400	-.85	34.57		27.819	29.1	.144

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 70

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 39.5S	157 38.0E	02/13/71	2200 2233 GMT	1334M	180	09KT	7	360 04 09

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	-.48	33.458	8.56	.61	36.	.21	16.6	115.5
5	-.48	33.460	8.57	.59	36.	.21	16.7	115.4
34	-1.65	34.332	6.89	2.12	83.	.14	31.4	44.8
132	-1.72	34.469	6.87	2.07	85.	.03	31.2	34.1
232	-1.71	34.485	6.90	2.04	83.	.01	32.4	32.9
332	-1.35	34.520	6.53	2.09	88.	.00	33.4	31.2
434	-.79	34.573	5.97	2.13	95.	.01	33.8	29.1
535	-.73	34.588	5.90	2.13	99.	.01	34.0	28.2
639	-.53	34.610	5.70	2.14	104.	.00	33.9	27.3
847	-.30	34.646	5.49	2.16	108.	.00	33.6	25.6
1059	-.27	34.665	5.49	2.26	107.	.01	33.7	24.2
1166	-.28	34.678	5.47	2.18	108.	.00	34.0	23.2
1221B	-.31	34.678	5.49	2.21	106.	.00	34.0	23.1
1276B	-.36	34.676	5.52	2.18	107.	.00	33.6	23.0

Z	T	S	O2	SIGT	DT	DD
0	-.48	33.458	8.56	26.907	115.5	0
10	-.48	33.460	8.36	26.908	115.4	.012
20	-1.60	33.845	7.84	27.257	82.3	.021
30	-1.64	34.300	7.19	27.627	47.3	.028
50	-1.66	34.374	6.89	27.688	41.5	.037
75	-1.68	34.440	6.88	27.741	36.4	.046
100	-1.70	34.453	6.88	27.752	35.4	.055
125	-1.72	34.466	6.87	27.763	34.4	.064
150	-1.72	34.474	6.88	27.769	33.8	.072
200	-1.71	34.482	6.89	27.776	33.1	.088
250	-1.67	34.490	6.85	27.782	32.6	.104
300	-1.49	34.507	6.68	27.790	31.8	.120
400	-.96	34.556	6.14	27.812	29.8	.149
500	-.75	34.585	5.92	27.826	28.4	.177
600	-.61	34.602	5.78	27.834	27.6	.203
700	-.44	34.623	5.61	27.843	26.8	.229
800	-.33	34.640	5.52	27.852	25.9	.254
1000	-.28	34.660	5.49	27.866	24.6	.303
1200	-.30	34.679	5.48	27.882	23.1	.348

RV THOMAS WASHINGTON — ARIES EXPEDITION II — 71

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
67 10.5S	159 48.0E	02/14/71	1048 1225GMT	2567M	150	30KT	2	130 17 11

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	.06	33.651	7.99	.91	48.	.17	24.9	103.2
20	.05	33.664	7.99	.95	49.	.17	25.3	102.2
45	-1.59	34.412	6.84	2.10	73.	.12	32.0	38.9
77	-1.50	34.456	6.65	2.07	78.	.15	33.2	35.7
107	-1.02	34.508	6.31	2.09	82.	.03	33.3	33.3
128	-.44	34.555	5.89	2.14	84.	.01	33.4	31.9
155	-.03	34.596	5.58	2.16	90.	.01	33.7	30.7
181	.28	34.629	5.36	2.16	92.	.01	34.0	29.7
223	.52	34.655	5.15	2.17	94.	.01	33.9	29.0
260	.66	34.671	5.03	2.17	98.	.01	33.6	28.6
330	.79	34.690	4.88	2.18	103.	.01	33.6	27.9
443	.79	34.699	4.79	2.15	108.	.00	33.6	27.3
576	.77	34.702	4.80	2.17	111.	.00	34.1	26.9
725	.69	34.706	4.83	2.19	114.	.00	34.4	26.1
891	.58	34.700	4.87	2.25	118.	.00	34.4	26.0
968B	.52	34.702	4.88	2.23	120.		34.6	25.5
1054	.45	34.695	4.96	2.23	120.	.00	34.6	25.6
1116B	.44	34.698	4.98	2.23	123.		34.4	25.3
1263B	.35	34.693	5.00	2.38	122.		35.3	25.2
1409B	.27	34.699	5.04	2.30	123.		35.3	24.3
1555B	.18	34.698	5.06	2.45	124.		35.1	23.9
1702B	.09	34.693	5.18	2.30	123.		34.5	23.9
1847B	.03	34.698	5.22	2.32	121.		34.7	23.2
1944B	.033	34.706	5.15	2.35	120.		34.7	22.6
2041B	-.01	34.706	5.17	2.29	118.		34.4	22.4

Z	T	S	O2	SIGT	DT	DD
0	.06	33.651	7.99	27.037	103.2	0
10	.06	33.658	7.99	27.042	102.7	.010
20	.05	33.664	7.99	27.048	102.2	.021
30	-.59	33.948	7.55	27.305	77.8	.030
50	-1.58	34.419	6.81	27.721	38.4	.041
75	-1.51	34.453	6.66	27.747	35.9	.050
100	-1.17	34.495	6.41	27.769	33.8	.059
125	-.52	34.548	5.95	27.787	32.1	.067
150	-.09	34.591	5.62	27.800	30.9	.075
200	.41	34.644	5.25	27.816	29.3	.090
250	.63	34.668	5.06	27.823	28.7	.105
300	.75	34.684	4.93	27.828	28.2	.119
400	.79	34.697	4.81	27.836	27.5	.147
500	.79	34.701	4.79	27.840	27.1	.175
600	.76	34.703	4.80	27.843	26.8	.203
700	.71	34.706	4.82	27.849	26.3	.231
800	.64	34.703	4.85	27.851	26.1	.258
1000	.49	34.699	4.92	27.857	25.5	.311
1200	.39	34.696	4.93	27.859	25.3	.364
1500	.21	34.699	5.05	27.872	24.0	.439
2000	.01	34.707	5.16	27.890	22.4	.554

A) THE DATA FROM THE STD HAS BEEN TABULATED FOR THIS STATION. THE DATA FROM THE TWO NANSEN BOTTLES PLACED A FEW METERS ABOVE THE STD FOR CALIBRATION ARE ALSO LISTED.
B) CAST II.

ARIES EXPEDITION LEG VI

The Kuroshio flows south of Japan as an intense western boundary current On this expedition temperature measurements were made to provide data on the spacial scales of the meanders of the near-surface Kuroshio between Kyushu and eastern Honshu. Four surface drogues were tracked for a five-day period while XBTs were taken to estimate the near-surface velocity distribution and relate it to the 200m temperature distribution. Meander spacial scales were obtained by analysis of maps of the 15°C isotherm at 200m which were based on XBT drops at five-mile intervals.

In order to define the deep circulation under the Kuroshio and to determine whether or not the deep motions appear to be coherent with the surface flow, an array of current meters was deployed. Nine current meters were placed 100m off the bottom beneath the Kuroshio surface current; eight were recovered with good velocity records which ranged from 29 to 103 days. Four deep hydrographic sections were made over the current meters, which included measurements of dissolved oxygen, inorganic phosphate and silicate concentrations. The geostrophic current distribution determined on the sections has been referenced to the current meter measurements for computation of transport.

On each of 51 stations single or multiple Nansen bottle casts were lowered as near the bottom as possible.

ARIES VI was sponsored by the Office of Naval Research and the National Science Foundation.

Personnel participating in the expedition were:

Ship's Captain:

Ferris, Noel L.

Scientific personnel:

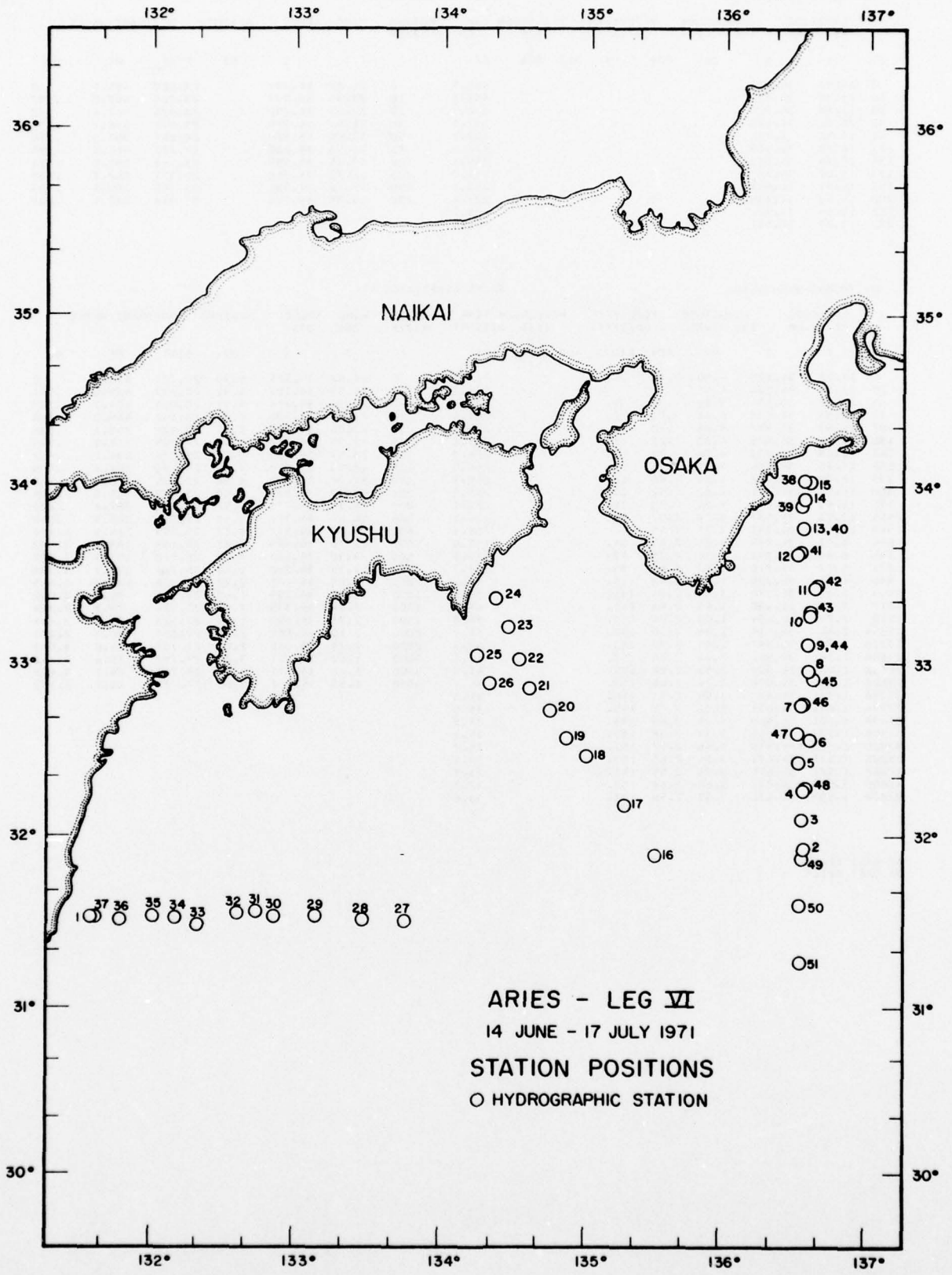
Taft, Dr. B. A. (Chief scientist)
Armstrong, H. C.
Buland, R.
Connors, R. A.
Cunningham, L. M. Jr.
Flick, R. E.
Flierl, G.
Graham, J. B.
Hasunuma, K.
Mantyla, A. W.
Matsuyama, M.
Morris, G. S., Jr.
Robinson, Prof. A. R.

Scharff, J. M., III
Shuto, K.
Soloman, H.
Stock, G. G.
Thomas, J. E.
Wells, J. A.

Publications utilizing ARIES VI data are:

Solomon, H., 1974. Observations of thermal microstructure in the Kuroshio off of southern Honshu and Shikoku. Jour.Oceanogr. Sc. Japan, 30: 108-120.

Taft, B. A., A. R. Robinson and W. J. Schmitz, Jr., 1973. Current path and bottom velocity of the Kuroshio. Jour. Phys. Ocean. 3: 347-350.


132°
133°
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31°
30°
NAIKAI
OSAKA
KYUSHU
ARIES - LEG VI
14 JUNE - 17 JULY 1971
STATION POSITIONS
O HYDROGRAPHIC STATION

FIGURE 3

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 1

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.9N	131 37.8E	06/14/71	0821 GMT	221M				

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.87	34.099						485.5	0	23.87	34.099		23.020	485.5	0
10	23.39	34.237						462.2	10	23.39	34.237		23.264	462.2	.047
30	21.66	34.524						394.7	20	22.55	34.396		23.626	427.6	.092
50	20.60	34.520						367.5	30	21.66	34.524		23.971	394.7	.133
81	18.52	34.714						302.1	50	20.60	34.520		24.257	367.5	.210
111	16.78	34.569						272.5	75	18.93	34.680		24.813	314.5	.295
151	15.76	34.583						249.1	100	17.35	34.633		25.167	280.8	.371
173	15.27	34.565						240.0	125	16.33	34.566		25.357	262.7	.439
193	14.41	34.548						223.4	150	15.78	34.583		25.496	249.5	.504
202	14.33	34.548						221.8	200	14.35	34.544		25.780	222.5	.625
212	13.55	34.522						208.2							
232	13.29	34.511						204.0							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 2

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 49.0N	136 31.2E	06/27/71	1631 2115GMT	4187M	260	08KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	24.92	34.125	4.90	.14	4.			513.5	0	24.92	34.125	4.90	22.727	513.5	0
20	23.99	34.164	4.95					484.2	10	24.39	34.107	4.92	22.873	499.6	.051
44	22.67	34.506	5.16	.22	5.			423.0	20	23.99	34.164	4.95	23.034	484.2	.100
73	19.65	34.837	5.46	.06	2.			320.6	30	23.80	34.300	5.03	23.192	469.0	.148
102	18.53	34.832	5.04	.12	1.			293.8	50	22.00	34.590	5.25	23.925	399.1	.235
136	17.90	34.828	4.83	.22	7.			279.2	75	19.53	34.842	5.44	24.783	317.3	.325
167	17.69	34.823	4.76	.27	6.			274.7	100	18.57	34.838	5.08	25.026	294.2	.402
196	17.36	34.806	4.61	.36	9.			268.3	125	18.04	34.829	4.87	25.150	282.4	.475
235	16.92	34.782	4.54	.45	10.			260.1	150	17.79	34.826	4.80	25.209	276.8	.546
300	16.08	34.721	4.42	.52	13.			245.9	200	17.32	34.803	4.60	25.307	267.5	.685
375	14.61	34.608	4.24	.79	18.			223.1	250	16.75	34.771	4.51	25.416	257.1	.820
455	12.91	34.487	4.00	1.07	26.			198.5	300	16.08	34.721	4.42	25.533	245.9	.950
545	10.59	34.337	3.73	1.45				168.1	400	14.10	34.572	4.17	25.853	215.6	1.191
646	8.33	34.215	3.25	2.05	54.			141.9	500	11.76	34.409	3.87	26.195	183.1	1.402
746	6.60	34.202	2.56	2.75U	77.			119.4	600	9.30	34.261	3.49	26.510	153.1	1.582
871	5.17	34.216	1.97	2.60	99.			101.3	700	7.33	34.200	2.88	26.764	129.1	1.734
995	4.41	34.296	1.63	2.98	115.			87.2	800	5.89	34.202	2.27	26.958	110.7	1.865
1143	3.64	34.370	1.42	2.94	135.			74.1	1000	4.38	34.299	1.62	27.211	86.7	2.082
1317	3.122	34.440	1.46	2.94	142.			64.1	1200	3.44	34.395	1.43	27.384	70.3	2.258
1510	2.744	34.494	1.68	2.94	150.			56.8	1500	2.76	34.492	1.66	27.523	57.1	2.476
1575A	2.64	34.510	1.84	2.90	150.			54.7	2000	2.10	34.587	2.34	27.654	44.7	2.777
1771A	2.38	34.547	2.04	2.90	153.			49.8	2500	1.79	34.635	2.87	27.717	38.8	3.033
1968A	2.14	34.581	2.30	2.88	157.			45.4	3000	1.60	34.661	3.25	27.752	35.4	3.268
2168A	1.94	34.608	2.56	2.88	155.			41.9	3500	1.52	34.671	3.51	27.766	34.1	3.495
2368A	1.84	34.626	2.74	2.66	155.			39.8	4000	1.53	34.677	3.60	27.770	33.7	3.723
2573A	1.76	34.638	2.94	2.73	156.			38.3							
2779A	1.671	34.651	3.12	2.77	155.			36.6							
2989A	1.601	34.660	3.24	2,43	153.			35.5							
3180B	1.557	34.661	3.39	2.38	153.			35.1							
3378B	1.525	34.670	3.46	2.37	152.			34.2							
3580B	1.521	34.671	3.54	2.41	153.			34.1							
3786B	1.527	34.676	3.58	2.55	152.			33.7							
4000B	1.530	34.677	3.60	2.68	152.			33.7							
4220B	1.555	34.678	3.57	2.58	153.			33.8							

A) CAST II.
B) CAST III.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 05.0N	136 29.2E	06/28/71	0145 0504GMT	3922M	240	11KT		250 04 03

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.08	34.313	4.83	.03	10.			534.0	0	26.08	34.313	4.83	22.512	534.0	0
20	25.71	34.327	5.03	.07	8.			522.0	10	25.90	34.320	4.94	22.575	528.0	.053
40	23.56 C	34.705	5.11	.13	9.			433.1	20	25.71	34.327	5.03	22.638	522.0	.106
69	21.00	34.786	5.18					358.5	30	24.73	34.507	5.08	23.073	480.5	.156
96	19.70	34.838	4.96	.11	8.			321.8	50	22.57	34.763	5.13	23.898	401.7	.244
129	18.94	34.851	5.05	.11	12.			302.2	75	20.64	34.800	5.13	24.459	348.2	.339
159	18.48	34.848	4.95	.17	12.			291.4	100	19.58	34.841	4.97	24.771	318.5	.423
187	18.11	34.837	4.86	.25	10.			283.4	125	19.00	34.851	5.03	24.927	303.6	.502
225	17.77	34.835	5.00	.38	17.			275.7	150	18.60	34.850	4.99	25.026	294.2	.577
287	16.94	34.788	4.61	.43	15.			260.1	200	17.99	34.836	4.91	25.168	280.7	.724
362	15.89	34.713	4.53	.61	19.			242.4	250	17.46	34.820	4.87	25.285	269.5	.865
436A	13.94	34.543	4.24					214.4	300	16.79	34.780	4.59	25.413	257.4	1.001
525A	11.42	34.386	3.85	1.25	33.			178.7	400	14.95	34.629	4.40	25.714	228.7	1.255
654A	8.66	34.236	3.37	1.81				145.2	500	12.11	34.424	3.96	26.139	188.3	1.476
785A	6.15	34.183	2.42	2.56	82.			115.2	600	9.73	34.290	3.59	26.462	157.7	1.661
958A	4.55	34.306	1.62	2.85	120.			87.9	700	7.70	34.202	3.05	26.712	134.0	1.819
1185A	3.45	34.409	1.38	2.87	143.			69.4	800	5.96	34.191	2.33	26.940	112.4	1.953
1405B	2.88	34.479	1.62	3.06	146.			59.1	1000	4.28	34.329	1.58	27.245	83.5	2.168
1427A	2.86	34.478	1.63	3.05	148.			59.0	1200	3.39	34.417	1.39	27.405	68.3	2.339
1601B	2.54	34.524	1.89	3.01	150.			52.9	1500	2.74	34.492	1.72	27.525	56.9	2.554
1796B	2.24	34.568	2.23	2.95	167.U			47.2	2000	2.04	34.596	2.51	27.666	43.6	2.850
1992B	2.05	34.595	2.50	2.93	159.			43.7	2500	1.74	34.642	3.05	27.726	37.9	3.100
2187B	1.93	34.608	2.66	2.74	162.			41.8	3000	1.53	34.670	3.43	27.764	34.3	3.328
2384B	1.79	34.636	2.92	2.83	153.			38.6	3500	1.51	34.680	3.57	27.774	33.3	3.549
2582B	1.71	34.644	3.13	2.73	157.			37.5							
2780B	1.59	34.661	3.26	2.79	157.			35.3							
2980B	1.53	34.669	3.42	2.90	153.			34.3							
3181B	1.52	34.672	3.49	2.61	157.			34.0							
3386B	1.51	34.678	3.55	2.71	151.			33.5							
3592B	1.51	34.681	3.59	2.64	148.			33.2							
3801B	1.50	34.683	3.61	2.71	157.			33.0							
3906B	1.52	34.684	3.44	2.54	162.			33.1							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 14.4N	136 29.4E	06/28/71	0752 0938GMT	4125M	240	20KT	1	250 08 07

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.81	34.316	4.82	.23	6.			525.8	0	25.81	34.316	4.82	22.598	525.8	0
20	25.01	34.377	4.90	.12	8.			498.0	10	25.48	34.327	4.87	22.708	515.3	.052
44	23.30	34.673	4.85	.25	10.			428.2	20	25.01	34.377	4.90	22.889	498.0	.103
75	22.13	34.837	5.03	.16	6.			384.5	30	24.30	34.493	4.88	23.188	469.4	.151
104	20.80	34.751	4.65	.26	9.			355.9	50	23.04	34.726	4.90	23.735	417.2	.240
139	19.54	34.814	4.49	.32	9.			319.6	75	22.13	34.837	5.03	24.078	384.5	.341
169	18.75	34.816	4.54	.37	11.			300.2	100	20.98	34.766	4.71	24.340	359.5	.435
199	17.91	34.799	4.49	.49	13.			281.5	125	20.00	34.782	4.52	24.615	333.3	.522
238	17.36	34.815	4.65	.47	11.			267.7	150	19.24	34.818	4.50	24.841	311.8	.604
302	16.39	34.753	4.51	.62	11.			250.4	200	17.89	34.799	4.49	25.164	281.1	.755
378	15.04	34.640	4.19	.94	18.			229.7	250	17.19	34.808	4.62	25.342	264.2	.895
457	13.7 D	34.535	4.07	1.15	24.			210.2	300	16.42	34.756	4.51	25.481	250.9	1.029
547	11.12	34.366	3.81	1.43	37.			175.0	400	14.71	34.615	4.15	25.757	224.7	1.277
647	8.60	34.240	3.26	1.99	57.			144.0	500	12.52	34.451	3.97	26.082	193.8	1.498
746	6.47	34.176	2.54	2.42	81.			119.7	600	9.74	34.292	3.55	26.463	157.6	1.686
871	5.24	34.247	1.98	2.72	104.			99.8	700	7.37	34.194	2.87	26.753	130.1	1.842
996	4.24	34.322	1.54	3.03	122.			83.5	800	5.82	34.199	2.27	26.963	110.1	1.972
1147	3.54	34.390	1.41	3.16	136.			71.7	1000	4.22	34.324	1.54	27.248	83.2	2.185
1323	3.02	34.456	1.50	3.06	145.			62.0	1200	3.36	34.412	1.44	27.404	68.4	2.355
1472B	2.73	34.502	1.73	3.01	150.			56.1	1500	2.69	34.509	1.73	27.543	55.2	2.567
1510	2.67	34.511	1.73	3.07	152.			54.9	2000	2.02	34.600	2.58	27.672	43.1	2.857
1662B	2.45 E	34.540	1.92	2.98	152.			50.9	2500	1.71	34.648	3.07	27.733	37.2	3.103
1852B	2.17	34.574	2.27	2.83	150.			46.2	3000	1.52	34.672	3.34	27.767	34.1	3.329
2042B	1.98	34.606	2.65	2.88	157.			42.3	3500	1.51	34.681	3.46	27.775	33.3	3.549
2233B	1.86	34.627	2.74	2.75	153.			39.8	4000	1.53	34.683	3.66	27.775	33.2	3.774
2425B	1.75	34.642	3.00	2.74	153.			37.9							
2618B	1.651	34.654	3.15	2.70	153.			36.3							
2812B	1.558	34.637U	3.19	2.54U	140.U										
3007B	1.524	34.672	3.35	2.61	150.			34.0							
3206B	1.495	34.679	3.49	2.63	152.			33.3							
3405B	1.501	34.680	3.40	2.56	147.			33.3							
3607B	1.510	34.681	3.54	2.62	151.			33.2							
3812B	1.506	34.683	3.60	2.65	151.			33.1							
4020B	1.530	34.683	3.67	2.59	151.			33.2							

A) THE NANSEN BOTTLE AT THIS LEVEL ON CAST I PRETRIPPED. THE DEPTH MAY BE SLIGHTLY IN ERROR.
B) CAST II.
C) ALTERNATE VALUE 23.39 DEGREES.
D) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE LENGTH.
E) ALTERNATE VALUE 2.67 DEGREES.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 24.7N	136 28.8E	06/28/71	1302 1520GMT	4287M	240	21KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.39	34.224	4.85	.07	5.			520.1	0	25.39	34.224	4.85	22.658	520.1	0
20	25.34	34.222	4.89	.07	5.			518.7	10	25.36	34.223	4.87	22.665	519.4	.052
46	24.31	34.567	4.98	.06	5.			464.2	20	25.34	34.222	4.89	22.672	518.7	.104
78	22.56	34.842	5.21		7.			395.7	30	25.03	34.338	4.92	22.854	501.4	.155
109	21.21	34.817	4.95	.05	6.			361.7	50	24.10	34.615	5.02	23.342	454.7	.251
145	20.13	34.870	4.88	.11	7.			330.2	75	22.73	34.825	5.20	23.900	401.5	.359
177	19.35	34.859	4.66	.18	6.			311.6	100	21.56	34.835	5.04	24.234	369.6	.456
208	18.67	34.849	4.58	.27	8.			295.9	125	20.68	34.839	4.92	24.477	346.5	.546
247	17.71	34.785	4.44	.44	9.			277.9	150	20.00	34.869	4.85	24.682	326.9	.632
312	16.67	34.740	4.35	.54	23.U			257.5	200	18.85	34.853	4.60	24.967	299.8	.791
386	14.93	34.632	4.29	.76	10.			228.0	250	17.66	34.783	4.43	25.208	276.9	.939
461	13.20	34.504	4.11	.99	23.			202.8	300	16.85	34.748	4.36	25.374	261.0	1.078
543	11.06	34.361	3.87	1.36	34.			174.3	400	14.61	34.610	4.26	25.773	223.1	1.331
632	8.41	34.249	3.31	1.85	48.			140.5	500	12.22	34.434	4.02	26.128	189.5	1.549
717	6.8 B	34.238	2.79	2.46	74.			119.3	600	9.33	34.278	3.53	26.520	152.2	1.732
819	5.35	34.228	2.16	2.58	88.			102.5	700	7.07	34.238	2.89	26.830	122.8	1.881
914	4.48	34.268	1.65	2.88	100.			90.1	800	5.58	34.228	2.27	27.017	105.1	2.005
1022	3.88	34.343	1.50	2.92	97.			78.4	1000	3.98	34.327	1.51	27.275	80.6	2.209
1134	3.41	34.413	1.45	3.01				68.7	1200	3.17	34.439	1.49	27.444	64.6	2.372
1240	3.04	34.451	1.53	3.05				62.6	1500	2.64	34.520	1.83	27.556	53.9	2.575
1435A	2.74	34.504	1.75	2.80	160.U			56.0	2000	2.03	34.605	2.52	27.674	42.8	2.862
1631A	2.44	34.549	1.99	2.94	149.			50.2	2500	1.69	34.667	3.08	27.750	35.6	3.103
1826A	2.19	34.580	2.24	2.89	155.			45.9	3000	1.51	34.678	3.41	27.772	33.5	3.322
2022A	2.01	34.607	2.55	2.82	151.			42.4	3500	1.50	34.687	3.53	27.780	32.8	3.540
2218A	1.85	34.644	2.80	2.80	154.			38.5	4000	1.53	34.687	3.62	27.779	32.9	3.763
2413A	1.73	34.661	2.96	2.64	153.			36.3							
2610A	1.64	34.671	3.23	2.71	152.			34.9							
2809A	1.56	34.673	3.35	2.69	152.			34.2							
3007A	1.51	34.678	3.41	2.66	151.			33.5							
3207A	1.50	34.683	3.43	2.61	150.			33.0							
3406A	1.50	34.687	3.51	2.61	150.			32.7							
3608A	1.51	34.686	3.55	2.64	149.			32.9							
3810A	1.52	34.688	3.57	2.61	151.			32.8							
4017A	1.53	34.687	3.62	2.69	149.			32.9							
4222A	1.55	34.689	3.64	2.57	151.			32.9							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 33.2N	136 32.4E	06/28/71	2100 2139GMT	4430M	280	24KT	2	280 15 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	26.15	34.278	4.80	.04	4.			538.6	0	26.15	34.278	4.80	22.464	538.6	0
19	25.90	34.311	4.78	.05	2.			528.8	10	26.15	34.278	4.79	22.464	538.6	.054
43	23.77	34.567	5.00	.07	4.			448.9	20	25.82	34.320	4.79	22.597	525.9	.107
72	22.42	34.75	4.98		5.			398.6	30	25.00	34.415	4.88	22.922	494.9	.158
101	21.48	34.836	4.91	.05	3.			367.4	50	23.36	34.624	5.00	23.563	433.6	.251
135	20.12	34.853	4.76	.10	12.			331.2	75	22.32	34.762	4.98	23.969	394.9	.356
164	19.40	34.848	4.59	.19	15.			313.7	100	21.51	34.834	4.91	24.248	368.3	.452
194	18.84	34.859	4.64	.29	9.			299.2	125	20.51	34.853	4.81	24.535	340.9	.542
232	17.98	34.834	4.57	.27	6.			280.6	150	19.71	34.850	4.66	24.743	321.1	.625
295	16.90	34.781	4.51	.45	6.			259.7	200	18.70	34.856	4.63	25.005	296.2	.783
369	15.30	34.659	4.34	.60	12.			233.7	250	17.66	34.822	4.55	25.238	274.1	.929
447	13.74	34.545	4.00	.94	20.			210.3	300	16.80	34.773	4.50	25.407	257.9	1.067
537	10.99	34.342	3.84	1.33	36.			174.5	400	14.72	34.619	4.20	25.758	224.6	1.318
635	8.42	34.228	3.24	1.86	54.			142.2	500	12.16	34.421	3.91	26.128	189.4	1.537
735	6.58	34.208	2.50	2.28	77.			118.7	600	9.27	34.257	3.49	26.513	152.9	1.720
859	5.07	34.276	1.82	2.65	100.			95.7	700	7.15	34.207	2.76	26.795	126.1	1.871
984	4.02	34.338	1.48	2.92	121.			80.2	800	5.71	34.239	2.11	27.010	105.8	1.997
1135	3.44	34.407	1.46	2.97	133.			69.5	1000	3.94	34.346	1.48	27.295	78.8	2.201
1310	2.939	34.473	1.62	2.95	143.			60.0	1200	3.24	34.433	1.51	27.433	65.6	2.362
1493	2.561	34.526	1.80	2.96	151.			52.9	1500	2.55	34.527	1.81	27.569	52.8	2.566
1552A	2.51	34.529	1.85	2.75	149.			52.2	2000	2.02	34.602	2.49	27.673	42.9	2.848
1748A	2.25	34.567	2.12	2.72	150.			47.3	2500	1.68	34.653	3.04	27.740	36.6	3.092
1945A	2.06	34.595	2.41	2.72	153.			43.7	3000	1.51	34.673	3.42	27.769	33.8	3.315
2142A	1.91	34.617	2.68	2.62	153.			40.9	3500	1.50	34.682	3.52	27.776	33.1	3.534
2341A	1.76	34.638	2.93	2.93U				38.3	4000	1.53	34.685	3.58	27.777	33.1	3.758
2539A	1.66	34.655	3.07	2.65	153.			36.3							
2737A	1.59	34.666	3.27	2.65	152.			34.9							
2936A	1.52	34.673	3.41	2.61	150.			33.9							
3134A	1.494	34.673	3.43	2.61	152.			33.7							
3334A	1.498	34.681	3.42	2.58	152.			33.2							
3532A	1.500	34.682	3.54	2.61	150.			33.1							
3731A	1.514	34.684	3.57	2.54	148.			33.0							
3929A	1.527	34.685	3.57	2.58	148.			33.1							
4129A	1.540	34.684	3.59	2.59	148.			33.2							
4328A	1.565	34.682	3.59	2.57	147.			33.6							

A) CAST II.
B) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE LENGTH.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 7

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 45.9N	136 29.6E	06/29/71	0205 0442GMT	4507M	290	17KT		270 06 03

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.80	34.301	4.72	.12	4.			556.5	0	26.80	34.301	4.72	22.277	556.5	0
20	26.65	34.303	4.72	.03	6.			551.9	10	26.72	34.302	4.72	22.302	554.2	.056
45	24.34	34.615	4.98	.05	5.			461.6	20	26.65	34.303	4.72	22.326	551.9	.111
75	23.05	34.847	5.16		4.			408.8	30	25.80	34.409	4.81	22.671	518.8	.165
105	21.03	34.814	4.92	.07	5.			357.2	50	24.09	34.671	5.03	23.385	450.6	.262
139	19.95	34.859	4.73	.12	7.			326.5	75	23.05	34.847	5.16	23.824	408.8	.370
170	19.13	34.860	4.65	.15	6.			306.2	100	21.36	34.824	4.97	24.283	365.0	.467
200	18.36	34.846	4.64	.26	8.			288.7	125	20.31	34.839	4.80	24.578	336.8	.556
240	17.62	34.818	4.58	.33	7.			273.4	150	19.65	34.862	4.69	24.768	318.7	.639
305	16.44	34.752	4.49	.49	11.			251.6	200	18.36	34.846	4.64	25.084	288.7	.794
380	14.60	34.602	4.26	.76	17.			223.4	250	17.45	34.811	4.57	25.280	270.0	.938
459	12.54	34.440	4.12	1.07	24.			195.0	300	16.54	34.758	4.50	25.457	253.2	1.073
548	10.14								400	14.09	34.560	4.23	25.848	216.1	1.318
647	7.79	34.242	2.95	2.10	63.			132.2	500	11.42	34.370	3.93	26.227	180.0	1.527
745	5.91	34.228	2.23	2.52	87.			109.0	600	8.86	34.258	3.31	26.580	146.5	1.702
866	4.71	34.287	1.76		106.			91.0	700	6.70	34.227	2.55	26.873	118.8	1.845
987	3.9 B	34.362	1.55	2.95	126.			77.2	800	5.26	34.250	1.97	27.072	99.8	1.964
1131	3.31	34.424	1.46	2.95	136.			67.0	1000	3.83	34.369	1.54	27.323	76.1	2.158
1296	2.91	34.480	1.60	2.90	144.			59.3	1200	3.12	34.450	1.50	27.457	63.4	2.314
1467	2.61	34.519	1.76	2.92	151.			53.8	1500	2.55	34.524	1.84	27.567	52.9	2.514
1518A	2.52 C	34.527	1.89	2.90	151.			52.5	2000	2.02	34.605	2.49	27.674	42.8	2.796
1715A	2.29	34.565	2.12	2.87	153.			47.8	2500	1.70	34.651	3.09	27.737	36.9	3.041
1912A	2.10	34.595	2.36	2.66	152.			44.0	3000	1.54	34.674	3.41	27.767	34.0	3.265
2109A	1.93	34.613	2.65	2.68	153.			41.4	3500	1.53	34.681	3.46	27.774	33.4	3.486
2306A	1.80								4000	1.55	34.682	3.61	27.773	33.5	3.714
2503A	1.70	34.651	3.09	2.71	152.			36.9	4500	1.59	34.688	3.61	27.775	33.3	3.949
2700A	1.63	34.661	3.20	2.64	152.			35.6							
2898A	1.57	34.669	3.36	2.64	150.			34.6							
3096A	1.52	34.677	3.45	2.61	152.			33.6							
3295A	1.51	34.676	3.49	2.61	151.			33.6							
3495A	1.53	34.681	3.46	2.62	151.			33.4							
3695A	1.52	34.682	3.57	2.62	152.			33.2							
3897A	1.54	34.682	3.60	2.62	155.			33.4							
4099A	1.56	34.682	3.62	2.62	154.			33.5							
4303A	1.57	34.684	3.63	2.71	152.			33.4							
4508A	1.59	34.688	3.61	2.64	156.			33.3							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 8

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 55.6N	136 31.5E	06/29/71	0751 0928GMT	4449M	290	17KT	1	290 12 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.09	34.338	4.77	.05	4.			562.7	0	27.09	34.338	4.77	22.213	562.7	0
20	26.54	34.418	4.86		7.			540.3	10	27.09	34.338	4.82	22.213	562.7	.056
45	24.22	34.638	4.90	.03	8.			456.5	20	26.54	34.418	4.86	22.447	540.3	.111
76	22.23	34.696	4.53	.17	8.			397.4	30	25.65	34.511	4.88	22.793	507.2	.164
106	21.04	34.806	4.57	.12	11.			358.1	50	23.84	34.654	4.84	23.447	444.7	.259
141	19.72	34.825	4.52	.21	6.			323.2	75	22.28	34.696	4.54	23.928	398.8	.365
171	18.84	34.850	4.70	.17	6.			299.9	100	21.25	34.786	4.56	24.284	364.9	.462
200	18.17	34.845	4.52	.27	8.			284.3	125	20.30	34.822	4.53	24.567	337.9	.551
240	17.31	34.795	4.51	.40	9.			268.0	150	19.43	34.833	4.58	24.802	315.5	.634
303	15.65	34.679	4.27	.66	16.			239.7	200	18.17	34.845	4.52	25.130	284.3	.786
376	13.76	34.533	4.17	.89	20.			211.5	250	17.06	34.778	4.48	25.349	263.5	.927
453	11.57	34.373	3.97	1.22	31.			182.3	300	15.73	34.685	4.28	25.585	241.1	1.057
538	8.99	34.238	3.51	1.71	47.			150.0	400	13.10	34.482	4.12	25.991	202.4	1.289
633	6.66	34.196	2.60	2.34	72.			120.6	500	10.13	34.288	3.75	26.395	164.1	1.483
726	5.38	34.268	2.04	2.61	94.			99.8	600	7.38	34.197	2.92	26.755	129.9	1.640
845	4.47	34.309	1.74	2.82	114.			86.9	700	5.66	34.246	2.17	27.020	104.8	1.766
962	3.82	34.364	1.56	3.00	126.			76.3	800	4.75	34.297	1.82	27.168	90.7	1.873
1107	3.28	34.425	1.47	3.03	137.			66.7	1000	3.65	34.382	1.52	27.351	73.4	2.053
1276	2.951	34.470	1.54	3.00	142.			60.4	1200	3.08	34.452	1.51	27.462	62.9	2.206
1460	2.590	34.519	1.78	3.00	150.			53.6	1500	2.53	34.527	1.84	27.571	52.6	2.404
1752A	2.25	34.566	2.19	3.07	147.			47.4	2000	2.03	34.597	2.47	27.668	43.4	2.687
1970A	2.05	34.594	2.44	3.01	150.			43.7	2500	1.71	34.639	3.01	27.726	37.8	2.936
2187A	1.91	34.611	2.64	2.88	153.			41.4	3000	1.55	34.664	3.28	27.759	34.8	3.165
2405A	1.75	34.634	2.92	2.82	151.			38.5	3500	1.51	34.678	3.55	27.773	33.5	3.388
2622A	1.67	34.644	3.12	2.70	149.			37.2	4000	1.54	34.680	3.56	27.772	33.5	3.614
2841A	1.59	34.660	3.29	2.70	148.			35.4							
3062A	1.538	34.665	3.28	2.62	151.			34.7							
3284A	1.525	34.674	3.48	2.61	152.			33.9							
3508A	1.51	34.678	3.55	2.66	151.			33.5							
3708A	1.521	34.677	3.52	2.60	151.			33.6							
3861A	1.537	34.677	3.46	2.65	149.			33.7							
4014A	1.538	34.680	3.57	2.65	153.			33.5							
4116A	1.552	34.680	3.59	2.60	151.			33.6							
4219A	1.557	34.679	3.60	2.75	149.			33.7							
4323A	1.573	34.681	3.60	2.73	151.			33.7							
4428A	1.584														

A) CAST II.
B) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE LENGTH.
C) ALTERNATE VALUE 2.72 DEGREES.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 05.2N	136 31.1E	06/29/71	1430 1705GMT	3361M	130	06KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.99	34.369	4.84	.08	9.			527.3	0	25.99	34.369	4.84	22.582	527.3	0
20	25.98	34.412	4.85	.07	8.			523.9	10	25.98	34.391	4.84	22.600	525.6	.053
45	23.91	34.547	4.88	.07	7.			454.3	20	25.98	34.412	4.85	22.618	523.9	.105
75	22.48	34.704	4.56	.15	8.			403.6	30	25.24	34.457	4.86	22.879	498.9	.156
103	20.56	34.809	4.63	.17	15.			345.5	50	23.65	34.577	4.83	23.444	445.0	.251
136	18.66	34.814	4.50	.31	17.			298.2	75	22.48	34.704	4.56	23.878	403.6	.358
166	18.08	34.804	4.47	.34	18.			285.1	100	20.77	34.800	4.62	24.423	351.6	.453
193	17.39	34.783	4.45	.42	20.			270.7	125	19.20	34.819	4.55	24.852	310.8	.537
228	16.37	34.725	4.32	.59	23.			252.0	150	18.33	34.812	4.48	25.065	290.5	.613
286	13.90	34.549	4.11	.94	30.			213.1	200	17.21	34.775	4.43	25.311	267.1	.755
351	12.31	34.430	4.08	1.19	32.			191.5	250	15.43	34.657	4.23	25.630	236.7	.885
416	10.60	34.311	3.89	1.39	37.			170.2	300	13.51	34.522	4.10	25.938	207.5	1.000
488	8.47								400	11.04	34.338	3.96	26.273	175.7	1.200
565	6.89	34.256	2.49	2.29	86.			119.1	500	8.19	34.270	3.13	26.693	135.8	1.365
640	5.59	34.241	2.09	2.59	114.			104.2	600	6.23	34.246	2.28	26.948	111.6	1.497
730	4.82	34.286	1.77	2.80	111.			92.3	700	5.02	34.269	1.86	27.116	95.7	1.608
819	4.29	34.320	1.60	2.93	122.			84.2	800	4.39	34.313	1.63	27.221	85.7	1.707
926	3.80	34.364	1.47	3.00	132.			76.1	1000	3.57	34.394	1.48	27.369	71.7	1.880
1051	3.44	34.414	1.49	2.92	139.			68.9	1200	2.99	34.471	1.58	27.486	60.7	2.029
1188	3.02	34.468	1.57	3.06	147.			61.1	1500	2.54	34.525	1.90	27.569	52.7	2.223
1451A	2.60	34.516	1.87	2.86	151.			54.0	2000	2.04	34.603	2.52	27.672	43.0	2.506
1640A	2.37	34.551	2.02	2.79	150.			49.5	2500	1.73	34.644	3.00	27.728	37.7	2.754
1829A	2.16	34.585	2.33	2.87	154.			45.2	3000	1.56	34.668	3.39	27.761	34.6	2.983
2019A	2.03	34.604	2.54	2.86	154.			42.8							
2208A	1.87	34.622	2.78	2.80	154.			40.3							
2399A	1.78	34.636	2.89	2.77	155.			38.6							
2591A	1.69	34.649	3.10	2.72	157.			36.9							
2785A	1.62	34.659	3.26	2.70	155.			35.7							
2980A	1.57	34.667	3.37	2.67	155.			34.7							
3178A	1.52	34.674	3.53	2.64	158.			33.8							
3276A	1.51	34.674	3.51	2.75	159.			33.8							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 15.3N	136 32.5E	06/29/71	2107 GMT	1807M	060	09KT		060 06 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.97	34.405	4.80					524.1	0	25.97	34.405	4.80	22.616	524.1	0
19	23.94 C	34.675	4.82	.04	7.			445.9	10	25.87	34.410	4.81	22.651	520.8	.052
44	21.77	34.300	4.83	.12	7.			413.8	20	23.80	34.639	4.82	23.448	444.6	.101
75	20.31	34.422	4.76	.19	8.			367.2	30	22.64	34.374	4.82	23.582	431.8	.145
1308	18.41	34.736	4.26	.42	13.			297.9	50	21.42	34.298	4.83	23.865	404.8	.228
1798	16.64	34.696	4.21	.58	15.			260.1	75	20.31	34.422	4.76	24.259	367.2	.326
2148	15.06	34.621	4.13	.75	20.			231.5	100	19.40	34.583	4.53	24.620	332.9	.414
2728	12.91	34.496	3.87	1.10	31.			197.8	125	18.57	34.714	4.31	24.931	303.2	.494
3398	10.97	34.344	3.79	1.32	33.			174.0	150	17.72	34.744	4.24	25.162	281.2	.568
4108	9.64	34.313	3.13	1.78	54.			154.5	200	15.70	34.653	4.17	25.568	242.6	.702
4888	7.05	34.275	2.85	2.10	67.			119.7	250	13.67	34.544	3.97	25.923	208.9	.818
5768	5.43	34.250	2.04	2.72	95.			101.7	300	12.02	34.426	3.85	26.158	186.6	.921
6638	4.54	34.303	1.80	2.71	109.			88.0	400	9.83	34.315	3.23	26.465	157.4	1.101
7738	4.26	34.327	1.61	2.82	117.			83.4	500	6.77	34.269	2.74	26.896	116.5	1.245
8838	3.82	34.363	1.47	2.93	126.			76.3	600	5.12	34.263	1.94	27.099	97.3	1.359
10178	3.316	34.430	1.47	2.92	137.			66.6	700	4.40	34.314	1.73	27.220	85.8	1.458
11788	2.950	34.472	1.59	2.92	145.			60.2	800	4.16	34.335	1.57	27.262	81.8	1.549
13518	2.668	34.511	1.77	2.92	151.			54.9	1000	3.37	34.422	1.47	27.411	67.8	1.713
14878	2.541	34.531	1.87	2.86	152.			52.3	1200	2.91	34.478	1.61	27.499	59.4	1.856
16368	2.368	34.555	2.08	2.90	152.			49.1	1500	2.53	34.533	1.88	27.576	52.1	2.047

A) CAST II.
B) POSSIBLE PRETRIP. THE DEPTH MAY BE SLIGHTLY IN ERROR.
C) ALTERNATE VALUE 24.62 DEGREES.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 11

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 24.5N	136 34.3E	06/30/71	0242 0340GMT	2002M	050	10KT		050 04 03

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.54	33.716	5.00		4.			532.1	0	24.54	33.716	5.00	22.532	532.1	0
25	22.34	34.276	5.23	.02	6.			430.7	10	24.50	33.720	5.09	22.547	530.7	.053
50	19.54	34.646	4.13	.34	10.			331.8	20	23.18	34.065	5.18	23.194	468.9	.103
105	16.09	34.597	4.22	.63	18.8			255.2	30	21.71	34.387	5.03	23.853	405.9	.147
188A	12.16	34.458	3.71	1.01	33.8			186.7	50	19.54	34.646	4.13	24.631	331.8	.221
221A	11.20	34.412	3.50	1.43	41.			173.0	75	17.70	34.620	4.17	25.139	283.4	.298
249A	10.78	34.393	3.40	1.46	44.			167.2	100	16.31	34.600	4.21	25.410	257.6	.367
277A	10.17	34.365	3.29	1.61	51.			159.1	125	14.97	34.564	4.13	25.660	233.9	.429
313A	9.18	34.324	3.11	1.79	55.			146.5	150	13.73	34.525	3.99	25.895	211.5	.486
374A	7.63	34.260	2.79	2.09	68.			128.7	200	11.76	34.440	3.63	26.219	180.8	.586
443A	6.61	34.254	2.43		80.			115.6	250	10.76	34.392	3.40	26.365	166.9	.676
517A	5.76	34.252	2.13	2.49	91.			105.4	300	9.55	34.339	3.18	26.532	151.1	.758
600A	4.98	34.277	1.87	2.71	107.			94.7	400	7.19	34.254	2.65	26.827	123.1	.901
692A	4.36	34.342	1.66	2.87	118.			83.3	500	5.94	34.252	2.19	26.991	107.5	1.023
784A	3.95	34.381	1.51	2.95	123.			76.2	600	4.98	34.277	1.87	27.126	94.7	1.131
876A	3.64	34.406	1.50	2.95	132.			71.4	700	4.32	34.346	1.64	27.255	82.5	1.226
968A	3.41	34.406	1.50	3.01	137.			69.3	800	3.89	34.387	1.51	27.332	75.2	1.312
1086A	3.12	34.448	1.54	2.98	142.			63.5	1000	3.33	34.416	1.51	27.410	67.8	1.469
1203A	2.89	34.476	1.62	2.97	148.			59.4	1200	2.90	34.475	1.62	27.498	59.5	1.612
1345A	2.68	34.513	1.79	2.93	151.			54.8	1500	2.48	34.541	1.98	27.586	51.1	1.802
1513A	2.47	34.543	2.00	2.90	153.			50.9							
1696A	2.31	34.563	2.15	2.90	155.			48.1							
1837A	2.20	34.575	2.34	2.90	155.			46.3							
1989A	2.02	34.603	2.52	2.96	158.			42.8							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 12

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 36.3N	136 27.5E	06/30/71	0615 GMT	2046M	090	10KT	2	020 03 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	23.92	33.794	5.06		7.			508.9	0	23.92	33.794	5.06	22.775	508.9	0
20	17.54	34.372	4.79	.41	18.			304.0	10	20.48	34.078	4.96	23.953	396.5	.045
45	14.28	34.529	4.15	.89	27.			222.2	20	17.54	34.372	4.79	24.923	304.0	.080
76	13.32	34.500	4.19	.98	35.			205.4	30	15.70	34.514	4.52	25.461	252.8	.108
106	12.59	34.472	4.00	1.06	31.			193.6	50	14.00	34.520	4.16	25.835	217.2	.156
141	11.32	34.416	3.83	1.35	41.			174.8	75	13.33	34.501	4.19	25.958	205.6	.209
172	10.37	34.365	3.54	1.52	47.			162.4	100	12.75	34.479	4.05	26.059	196.0	.260
201	9.75	34.334	3.35	1.67	52.			154.6	125	11.92	34.443	3.91	26.192	183.4	.308
242	8.92	34.301	3.15	1.84	57.			144.2	150	11.02	34.400	3.75	26.324	170.8	.353
307	7.79	34.266	2.86	2.05	68.			130.4	200	9.77	34.335	3.36	26.492	154.9	.436
382	6.92	34.239	2.61	2.14	78.			120.7	250	8.77	34.296	3.11	26.624	142.3	.513
462	5.68	34.224	2.20	2.51	91.			106.6	300	7.90	34.269	2.89	26.736	131.7	.584
552	5.05	34.254	1.94	2.72	103.			97.2	400	6.63	34.232	2.52	26.886	117.5	.714
652	4.43	34.289	1.72	2.88	115.			88.0	500	5.36	34.235	2.07	27.048	102.1	.829
751	4.02	34.325	1.53	2.98	125.			81.1	600	4.73	34.271	1.83	27.149	92.5	.933
876	3.65	34.377	1.54	2.94	133.			73.7	700	4.21	34.306	1.62	27.234	84.5	1.028
999	3.29	34.426	1.47	3.06	140.			66.7	800	3.86	34.345	1.53	27.301	78.1	1.116
1149	2.96	34.474	1.59	3.04	147.			60.1	1000	3.29	34.427	1.47	27.423	66.6	1.275
1323	2.672	34.516	1.76	3.02	151.			54.5	1200	2.87	34.488	1.64	27.510	58.3	1.415
1509	2.432	34.545		2.99	152.			50.4	1500	2.44	34.544	1.97	27.592	50.6	1.602
1660	2.277	34.568	2.17	2.92	155.			47.4	2000	1.97	34.616	2.55	27.688	41.5	1.874
1812	2.126	34.596	2.37	2.91	155.			44.2							
1914	2.038	34.609	2.48	2.92	155.			42.5							
2016	1.952	34.616	2.56	2.87	158.			41.3							

A) CAST I.
B) THE SAMPLES APPEAR TO HAVE BEEN REVERSED. THEY ARE ASSUMED TO BE IN THE CORRECT ORDER.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 13

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 45.4N	136 30.1E	06/30/71	0905 GMT	2037M	060	07KT		070 02 03

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	21.06	34.181	5.40	.13	11.			403.8	0	21.06	34.181	5.40	23.875	403.8	0
19	16.91	34.442	5.21	.43	17.			284.6	10	18.57	34.324	5.34	24.633	331.6	.037
44	15.23	34.502	4.43	.82	25.			243.7	20	16.79	34.449	5.18	25.160	281.5	.067
75	14.47	34.517	4.37	.85	27.			226.9	30	15.85	34.500	4.86	25.417	257.0	.094
105	13.70	34.500	4.28	.93	29.			212.8	50	15.03	34.510	4.42	25.607	238.9	.144
140	12.56	34.469	4.12	1.15	36.			193.2	75	14.47	34.517	4.37	25.733	226.9	.203
171	11.26	34.414	3.82	1.38	44.			173.9	100	13.84	34.504	4.30	25.857	215.1	.259
201	10.26	34.358	3.56	1.61	48.			161.1	125	13.09	34.485	4.20	25.996	202.0	.312
241	9.21	34.314	3.27	1.83	57.			147.7	150	12.14	34.452	4.03	26.156	186.8	.361
307	7.88	34.259	2.99	2.10	67.			132.2	200	10.29	34.360	3.57	26.422	161.5	.450
383	7.17	34.239	2.72		75.			124.0	250	8.99	34.305	3.22	26.595	145.1	.529
463	6.12	34.218	2.38	2.46	87.			112.2	300	7.99	34.264	3.01	26.717	133.5	.601
553	5.15	34.240	1.97	2.76	102.			99.3	400	6.95	34.233	2.65	26.842	121.6	.735
654	4.60	34.272	1.74	2.90	113.			91.0	500	5.68	34.224	2.20	27.001	106.6	.855
753	3.97	34.325	1.51	2.99	126.			80.6	600	4.86	34.254	1.85	27.121	95.2	.962
878	3.62	34.378A	1.47	3.06	134.			73.3	700	4.29	34.296	1.62	27.217	86.1	1.059
1002	3.32	34.419	1.50	3.09	141.			67.5	800	3.81	34.347	1.49	27.309	77.4	1.148
1151	3.02	34.458	1.54	3.07	147.			61.9	1000	3.32	34.419	1.50	27.413	67.6	1.307
1326	2.76	34.499	1.70	3.03	151.			56.6	1200	2.94	34.470	1.57	27.490	60.3	1.450
1512	2.49	34.534	1.98	2.99	155.			51.7	1500	2.50	34.532	1.96	27.577	52.0	1.643
1664	2.39	34.547	2.15	2.94	154.			49.9	2000	1.99	34.594	2.55	27.668	43.4	1.924
1816	2.22	34.572	2.29	2.94	155.			46.7							
1918	2.08	34.608U	2.44	2.92	164.U										
2020	1.97	34.595	2.57	2.87	158.			43.1							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 14

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 56.1N	136 31.2E	06/30/71	1128 GMT	1274M	070	09KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	21.57	34.034	5.38	.11	8.			427.8	0	21.57	34.034	5.38	23.625	427.8	0
20	20.38	34.259	5.63	.06	7.			380.8	10	21.27	34.162	5.51	23.803	410.7	.042
45	15.57	34.515	4.43	.76	21.			250.0	20	20.38	34.259	5.63	24.117	380.8	.082
75	14.08	34.512	4.31	.92	26.			219.4	30	18.40	34.368	5.19	24.708	324.5	.117
105	12.67	34.471		1.11	30.			195.1	50	15.16	34.514	4.41	25.581	241.4	.174
140	11.97	34.467	4.14	1.26	33.			182.6	75	14.08	34.512	4.31	25.812	219.4	.232
171	11.17	34.422	3.85	1.42	39.			171.7	100	12.88	34.478	4.27	26.031	198.7	.285
201	10.51	34.380	3.54	1.63	46.			163.6	125	12.22	34.470	4.20	26.155	186.9	.334
241	9.30	34.318	3.23	1.83	54.			148.8	150	11.71	34.454	4.06	26.239	178.9	.380
306	8.07	34.264	2.95	2.08	64.			134.5	200	10.53	34.382	3.55	26.397	163.9	.468
381	7.27	34.233	2.74	2.13	72.			125.8	250	9.09	34.308	3.18	26.583	146.2	.548
462	6.44	34.224	2.51	2.40	80.			115.7	300	8.15	34.268	2.97	26.697	135.5	.621
552	5.39	34.239	2.06	2.74	96.			102.1	400	7.08	34.229	2.69	26.822	123.6	.756
652	4.57	34.289	1.76	2.91	111.			89.4	500	5.99	34.227	2.32	26.965	110.0	.879
753	3.91	34.335	1.50	3.05	125.			79.3	600	4.96	34.262	1.90	27.116	95.7	.989
877	3.52	34.393	1.53	3.05	132.			71.3	700	4.23	34.311	1.62	27.237	84.2	1.085
1002	3.18	34.431	1.48	3.06	140.			65.3	800	3.73	34.358	1.51	27.325	75.8	1.172
1102	2.99	34.455	1.56	3.06	143.			61.8	1000	3.18	34.431	1.48	27.436	65.4	1.327
1203	2.921	34.470	1.64	3.04	144.			60.1	1200	2.92	34.470	1.64	27.491	60.1	1.467

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 15

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 02.6N	136 31.7E	06/30/71	1305 GMT	528M	060	06KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	21.66	34.222	5.38	.10	8.			416.5	0	21.66	34.222	5.38	23.742	416.5	0
20	19.57	34.320	5.54	.18	32.			356.1	10	20.78	34.271	5.46	24.019	390.1	.040
44	15.33	34.525	4.42	.79	23.			244.2	20	19.57	34.320	5.54	24.376	356.1	.078
76	14.13	34.513	4.31	.93	29.			220.4	30	17.74	34.393	5.11	24.890	307.2	.111
106	13.15	34.484	4.22	1.07	30.			203.3	50	15.10	34.522	4.40	25.599	239.7	.166
142	12.15	34.450	4.08	1.25	37.			187.1	75	14.17	34.513	4.31	25.795	221.1	.224
177	11.49	34.425	3.87	1.37	41.			177.1	100	13.34	34.491	4.24	25.950	206.4	.278
204	10.65	34.388	3.64	1.55	46.			165.4	125	12.59	34.465	4.15	26.079	194.1	.329
245	9.63	34.339	3.30	1.80	55.			152.4	150	12.01	34.446	4.04	26.177	184.8	.377
311	8.54	34.286	3.06	1.98	63.			139.7	200	10.78	34.394	3.68	26.363	167.1	.467
384	7.30	34.250	2.72	2.20	79.			124.9	250	9.54	34.334	3.28	26.530	151.2	.549
407	6.62	34.240	2.52	2.40	87.			116.8	300	8.70	34.294	3.09	26.633	141.5	.625
446	5.79	34.240	2.24	2.62	96.			106.6	400	6.83	34.242	2.58	26.867	119.3	.761
493	5.68	34.246	2.18	3.16	110.			104.9							

A) AN ERROR OF 0.1 OHMS RESISTANCE HAS BEEN ASSUMED. THE LISTED OBSERVED AND INTERPOLATED VALUES INCORPORATE THE CORRECTION.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 52.6N	135 30.0E	07/04/71	0920 1244GMT	4441M	2C0	06KT	1	240 03 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	CT	Z	T	S	O2	SIGT	DT	CD
0	28.50	34.446	4.73	.06	4.			598.8	0	28.50	34.45	4.73	21.836	598.8	0
21	27.08	34.467	4.78	.17	3.			553.1	10	27.85	34.43	4.75	22.036	579.6	.059
46	25.12	34.78	5.06	.10	4.			472.1	20	27.15	34.46	4.78	22.285	555.8	.116
77	22.91	34.805	5.34	.09	6.			407.9	30	26.38	34.58	4.87	22.616	524.1	.170
107	21.87	34.805	5.15	.11	8.			379.9	50	24.80	34.79	5.11	23.269	461.7	.269
141	21.04	34.814	4.86	.14	4.			357.5	75	23.03	34.81	5.33	23.801	410.9	.378
172	20.39	34.830	4.74	.20	5.			339.7	100	22.05	34.81	5.22	24.077	384.6	.479
202	19.70	34.833	4.74	.21	4.			322.2	125	21.40	34.81	4.99	24.259	367.2	.574
243	18.89	34.847	4.75	.24	5.			301.3	150	20.85	34.82	4.81	24.417	352.2	.665
303	18.00	34.826	4.73	.32	8.			281.7	200	19.75	34.83	4.74	24.720	323.3	.837
383	16.57	34.753	4.54	.56	10.			254.4	250	18.78	34.85	4.75	24.979	298.7	.996
463	14.82	34.616	4.38	.76	15.			226.9	300	18.04	34.83	4.73	25.149	282.5	1.146
553	12.67	34.442	4.20	1.11	23.			197.3	400	16.22	34.73	4.50	25.507	248.5	1.423
652	9.85	34.282	3.67	1.67	41.			160.1	500	13.97	34.55	4.32	25.860	214.9	1.667
751	7.35	34.218	2.84	2.23	68.			128.0	600	11.34	34.36	3.99	26.231	179.6	1.878
875	5.57	34.219	2.11	2.72	94.			105.7	700	8.56	34.24	3.27	26.613	143.4	2.053
998	4.43	34.291	1.64	3.03	114.			87.8	800	6.52	34.21	2.52	26.884	117.7	2.196
1148	3.62	34.373	1.53	3.17	132.			73.7	1000	4.42	34.29	1.64	27.201	87.6	2.422
1323	3.10	34.447	1.53	3.11	142.			63.4	1200	3.43	34.40	1.53	27.386	70.1	2.599
1511	2.70	34.500	1.65	3.12	142.			56.0	1500	2.72	34.50	1.64	27.531	56.3	2.816
1730A	2.37	34.551	2.05	3.00	154.			49.5	2000	2.07	34.60	2.44	27.665	43.6	3.111
1927A	2.14	34.588	2.32	2.84	158.			44.9	2500	1.78	34.64	2.98	27.719	38.5	3.363
2125A	1.96	34.609	2.62	2.82	155.			41.9	3000	1.61	34.67	3.36	27.759	34.8	3.596
2322A	1.86	34.627	2.80	2.83	156.			39.8	3500	1.53	34.68	3.50	27.770	33.8	3.821
2520A	1.77	34.637	3.00	2.81	154.			38.4	4000	1.55	34.68	3.62	27.774	33.4	4.049
2717A	1.69	34.652	3.13	2.78	154.			36.7							
2915A	1.63	34.665	3.30	2.71	155.			35.3							
3114A	1.57	34.674	3.42	2.71	154.			34.2							
3122B	1.565														
3304B	1.535														
3313A	1.53	34.680	3.49	2.69	154.			33.5							
3489B	1.521														
3513A	1.532	34.676	3.50	2.82	152.			33.8							
3679B	1.525														
3714A	1.520	34.685	3.60	2.67	152.			33.0							
3875B	1.533														
3916A	1.544	34.682	3.62	2.66	152.			33.4							
4077B	1.555														
4119A	1.551	34.684	3.63	2.71	151.			33.3							
4235B	1.550														
4273A	1.564	34.687	3.66	2.64	151.			33.2							
4398B	1.58														
4427A	1.567	34.683	3.67	2.66	151.			33.5							

A) CAST II.
B) CAST III.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 17

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 09.5N	135 17.0E	07/04/71	1632 1955GMT	4969M	190	07KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.39	34.486	4.73	.02	5.			592.4	0	28.39	34.486	4.73	21.902	592.4	0
20	27.17	34.517	4.79	.03	5.			552.3	10	27.91	34.499	4.76	22.068	576.5	.058
45	24.16	34.627	5.10	.04	6.			455.6	20	27.17	34.517	4.79	22.322	552.3	.115
75	23.19	34.765	5.19	.04	6.			418.5	30	25.94	34.548	4.91	22.731	513.1	.168
105	22.13	34.773	5.16	.07	5.			389.2	50	23.90	34.657	5.11	23.432	446.2	.265
140	20.58	34.820	5.26	.10	6.			345.2	75	23.19	34.765	5.19	23.721	418.5	.373
170	19.75	34.819	5.21	.11	7.			324.4	100	22.32	34.775	5.17	23.978	394.0	.476
200	19.16	34.853	4.83	.21	8.			307.4	125	21.23	34.799	5.22	24.299	363.4	.571
239	18.51	34.834	4.88	.22	7.			293.1	150	20.26	34.820	5.24	24.574	337.2	.660
304	17.56	34.816	4.71	.36B	8.			272.2	200	19.16	34.853	4.83	24.887	307.4	.824
379	16.35	34.741	4.53	.58B	11.			250.4	250	18.35	34.832	4.86	25.076	289.4	.977
459	14.99	34.628	4.38	.77	15.			229.5	300	17.62	34.817	4.72	25.245	273.4	1.123
548	12.36	34.433	4.07	1.17	26.			192.2	400	16.04	34.718	4.49	25.539	245.4	1.393
647	9.42	34.247	3.66	1.20U	35.			155.9	500	13.85	34.539	4.25	25.880	213.0	1.635
746	7.43	34.217	2.87	2.17	65.			129.1	600	10.76	34.321	3.88	26.310	172.2	1.841
871	5.34	34.234	2.05	2.71	98.			101.9	700	8.28	34.221	3.25	26.641	140.7	2.010
995	4.24	34.299	1.58	2.98	117.			85.3	800	6.44	34.217	2.48	26.899	116.3	2.151
1143	3.61	34.381	1.44	3.07	132.			73.0	1000	4.21	34.302	1.58	27.231	84.8	2.372
1317	3.05	34.456	1.56	3.08	143.			62.3	1200	3.42	34.408	1.48	27.396	69.2	2.545
1376A	2.86	34.477	1.66	2.87	148.			59.1	1500	2.64	34.512	1.79	27.550	54.5	2.757
1498	2.64	34.512	1.79	3.07	151.			54.6	2000	2.08	34.588	2.56	27.657	44.5	3.049
1573A	2.48	34.520	1.90	3.00	152.			52.7	2500	1.71	34.638	3.04	27.725	38.0	3.301
1771A	2.29	34.556	2.16	2.87	152.			48.4	3000	1.54	34.663	3.47	27.758	34.9	3.531
1966A	2.11	34.585	2.49	2.88	155.			44.9	3500	1.52	34.669	3.60	27.765	34.2	3.756
2161A	1.93	34.597	2.87	2.58U	137.U			42.6	4000	1.54	34.675	3.61	27.768	33.9	3.985
2357A	1.78	34.626	2.98	2.78	152.			39.3	4500	1.58	34.675	3.70	27.765	34.2	4.223
2552A	1.69	34.640	3.07	2.63	155.			37.6							
2747A	1.61	34.653	3.27	2.71	154.			36.1							
2943A	1.55	34.661	3.43	2.69	154.			35.0							
3140A	1.53	34.664	3.52	2.72	154.			34.7							
3337A	1.52	34.664	3.47	2.64	154.			34.6							
3535A	1.52	34.670	3.63	2.65	153.			34.2							
3736A	1.52	34.671	3.63	2.70	153.			34.1							
3938A	1.54	34.675	3.60	2.69	154.			33.9							
4142A	1.55	34.674	3.65	2.66				34.1							
4348A	1.57	34.673	3.68	2.62	151.			34.3							
4557A	1.58	34.675	3.71	2.66	153.			34.2							
4768A	1.59	34.677	3.68					34.1							

RV THOMAS WASHINGTON — *ARIES EXPEDITION VI* — 18

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 26.7N	135 01.6E	07/04/71	2300 0201GMT	4574M	220	06KT	1	220 02 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.60	34.410	4.72	.05	1.			604.6	0	28.60	34.410	4.72	21.776	604.6	0
20	27.48	34.365	4.84	.05	3.			572.7	10	28.50	34.410	4.79	21.809	601.4	.060
46	24.98	34.557	4.89	.09	4.			484.1	20	27.48	34.365	4.84	22.108	572.7	.119
78	22.65	34.693	4.55	.20	6.			408.9	30	26.47	34.416	4.86	22.467	538.4	.175
108	21.80	34.744	4.43	.31	8.			382.5	50	24.63	34.579	4.85	23.157	472.4	.276
144	20.67	34.796	4.66	.24	6.			349.3	75	22.82	34.685	4.59	23.767	414.2	.388
175	19.64	34.816	4.60	.34	6.			321.9	100	21.97	34.737	4.44	24.047	387.5	.489
205	19.03	34.814	4.58	.34	6.			307.1	125	21.28	34.771	4.53	24.264	366.8	.584
245	18.11	34.808	4.57	.40	8.			285.6	150	20.46	34.801	4.66	24.509	343.5	.674
311	17.11	34.781	4.59	.61	8.			264.4	200	19.12	34.815	4.58	24.868	309.2	.840
385	15.21	34.642	4.24	.83	16.			233.1	250	18.03	34.808	4.57	25.136	283.8	.992
463	13.25	34.488	4.30	1.03	21.			204.9	300	17.28	34.790	4.59	25.306	267.6	1.134
551	10.968	34.346	3.79	1.50	33.			173.9	400	14.83	34.613	4.25	25.728	227.4	1.393
649	7.832	34.164	3.31	2.04	56.			138.6	500	12.33	34.429	4.12	26.103	191.8	1.614
745	6.180	34.196	2.45	2.41	81.			114.6	600	9.35	34.236	3.57	26.484	155.6	1.800
865	4.891	34.264	1.87	2.75	104.			94.7	700	6.83	34.170	2.86	26.809	124.8	1.951
986	3.94	34.330	1.52	3.01	123.			80.0	800	5.51	34.227	2.14	27.023	104.5	2.076
1133	3.340	34.407	1.51	2.98	136.			68.6	1000	3.87	34.338	1.52	27.296	78.7	2.277
1306	2.900	34.468	1.61	3.00	143.			60.1	1200	3.14	34.434	1.53	27.443	64.7	2.438
1496	2.629	34.506	1.85	2.99	148.			54.9	1500	2.62	34.507	1.85	27.547	54.8	2.643
1746A	2.33	34.556	2.14	2.83	150.			48.8	2000	2.06	34.595	2.52	27.664	43.8	2.933
1945A	2.11	34.588	2.38	2.94	152.			44.6	2500	1.75	34.638	2.97	27.722	38.2	3.185
2141A	1.94	34.608	2.86	2.87	151.			41.9	3000	1.56	34.667	3.39	27.760	34.7	3.415
2337A	1.84	34.627	2.90	2.78	150.			39.7	3500	1.53	34.672	3.55	27.767	34.1	3.640
2534A	1.73	34.639	2.99	2.61	149.			38.0	4000	1.54	34.677	3.56	27.770	33.8	3.869
2730A	1.64	34.652	3.18	2.66	149.			36.4							
2929A	1.578	34.663	3.34	2.69	149.			35.1							
3126A	1.543	34.671	3.45	2.71	149.			34.2							
3323A	1.529	34.671	3.44	2.70	148.			34.1							
3520A	1.526	34.672	3.56	2.55	148.			34.0							
3719A	1.52	34.674	3.57	2.61	146.			33.8							
3919A	1.534	34.675	3.54	2.55	146.			33.9							
4118A	1.551	34.679	3.59	2.55	148.			33.7							
4223C	1.567	34.677	3.62	2.49				33.9							
4388C	1.575	34.677	3.61	2.54	148.			34.0							
4447C	1.565	34.679	3.68	2.59	148.			33.8							

A) CAST II.
B) THE SAMPLES APPEAR TO HAVE BEEN REVERSED. THEY ARE ASSUMED TO BE IN THE CORRECT ORDER.
C) THE NANSEN BOTTLE AT THIS LEVEL ON CAST II POSTTRIPPED. THE DEPTH MAY BE SLIGHTLY IN ERROR.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 33.5N	134 54.2E	07/05/71	0507 0635GMT	4597M	210	07KT	1	210 02 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	28.92	34.338	4.73	.02	4.			619.9	0	28.92	34.338	4.73	21.615	619.9	0
22	27.09	34.394	4.92	.03	5.			558.7	10	28.15	34.351	4.82	21.878	594.7	.061
46	25.26	34.551	4.97	.04	6.			492.7	20	27.26	34.385	4.91	22.193	564.5	.119
77	23.14	34.719	4.78	.12	6.			420.5	30	26.45	34.443	4.94	22.494	535.7	.174
106	21.69	34.760	4.52	.23	4.			378.4	50	24.96	34.578	4.96	23.055	482.2	.276
141	20.47	34.806	4.63	.21	4.			343.5	75	23.26	34.711	4.80	23.659	424.5	.390
171	19.72	34.849	4.76	.19	4.			321.5	100	21.95	34.756	4.56	24.066	385.6	.492
201	18.84	34.845	4.73	.23	6.			300.2	125	20.97	34.785	4.58	24.359	357.7	.586
240	18.02	34.804	4.55	.37	6.			283.7	150	20.24	34.821	4.68	24.582	336.4	.674
305	16.71	34.748	4.63	.65	10.			257.8	200	18.87	34.845	4.73	24.956	300.9	.836
379	15.01	34.630	4.25	.78	15.			229.8	250	17.82	34.796	4.56	25.179	279.7	.985
457	12.38	34.463	3.77	1.23	29.			190.3	300	16.81	34.753	4.62	25.388	259.8	1.125
545	9.85	34.374	3.19	1.73	49.			153.3	400	14.33	34.582	4.13	25.813	219.4	1.374
643	6.93	34.157	2.90	2.22	63.			127.0	500	11.12	34.421	3.47	26.323	170.9	1.581
739	5.56	34.207	2.15	2.54	87.			106.4	600	8.12	34.238	3.03	26.678	137.2	1.746
858	4.57	34.281	1.72	2.78	106.			90.0	700	6.00	34.174	2.46	26.922	114.1	1.881
978	3.86	34.353	1.50	2.96	120.			77.5	800	4.99	34.245	1.88	27.101	97.1	1.996
1120	3.35	34.425	1.62	2.83	126.			67.3	1000	3.77	34.366	1.51	27.328	75.6	2.186
1282	2.92	34.475	1.68	2.97	143.			59.7	1200	3.12	34.453	1.64	27.460	63.1	2.341
1455	2.66	34.512	1.94	2.92	149.			54.7	1500	2.60	34.521	1.98	27.560	53.6	2.542
1795A	2.25	34.568	2.24	2.91	151.			47.2	2000	2.05	34.596	2.48	27.665	43.7	2.829
1991A	2.06	34.594	2.47	2.90	152.			43.8	2500	1.71	34.642	3.06	27.728	37.7	3.078
2186A	1.90	34.617	2.68	2.82	150.			40.9	3000	1.55	34.667	3.36	27.761	34.6	3.307
2382A	1.77	34.635	2.92	2.89	150.			38.6	3500	1.52	34.675	3.55	27.769	33.8	3.530
2578A	1.684	34.645	3.14	2.81	151.			37.2	4000	1.56	34.676	3.63	27.768	34.0	3.760
2775A	1.610	34.658	3.27	2.71	151.			35.7							
2972A	1.554	34.666	3.34	2.77	149.			34.7							
3170A	1.533	34.669	3.50	2.71	150.			34.3							
3368A	1.51	34.680U	3.54	2.70	149.										
3568A	1.518	34.675	3.56	2.71	149.			33.8							
3768A	1.531	34.673	3.62	2.71	149.			34.0							
3969A	1.56	34.676	3.63	2.72	149.			34.0							
4171A	1.548	34.677	3.63	2.74	149.			33.8							
4375A	1.573	34.683	3.62	2.67	149.			33.5							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 43.4N	134 46.6E	07/05/71	1015 1150GMT	3037M	190	10KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	28.36	33.963	4.79	.07	30.			629.1	0	28.36	33.963	4.79	21.519	629.1	0
20	26.44	34.359	4.94	.08	27.			541.5	10	27.42	34.179	4.88	21.987	584.3	.061
45	24.29	34.531	4.94	.10	27.			466.2	20	26.44	34.359	4.94	22.434	541.5	.117
75	23.04	34.560	4.80	.18	28.			429.2	30	25.49	34.458	4.94	22.803	506.2	.170
104	21.83	34.749	4.61	.24	28.			382.9	50	24.03	34.538	4.92	23.303	458.4	.266
138	19.98	34.784	4.44	.33	28.			332.7	75	23.04	34.560	4.80	23.609	429.2	.378
169	18.96	34.776	4.37	.44	27.			308.2	100	22.01	34.723	4.64	24.026	389.5	.481
198	18.09	34.817	4.64	.36	27.			284.4	125	20.67	34.783	4.50	24.438	350.2	.574
237	16.61	34.691	4.27	.70	28.			259.8	150	19.54	34.780	4.41	24.734	322.0	.660
300	15.59	34.685	4.47	.69	31.			238.0	200	18.01	34.811	4.63	25.144	283.0	.814
372	13.30	34.521	3.90	1.16	35.			203.4	250	16.37	34.688	4.30	25.441	254.7	.952
449	10.62	34.389	3.43	1.61	45.			164.8	300	15.59	34.685	4.47	25.617	238.0	1.079
536	8.48	34.331	2.92	2.09	59.			135.5	400	12.30	34.463	3.72	26.135	188.8	1.302
628	6.09	34.178	2.46	2.57				114.9	500	9.32	34.357	3.13	26.584	146.1	1.480
720	4.93	34.222	1.80	2.81	98.			98.3	600	6.76	34.216	2.61	26.856	120.4	1.622
831	4.43	34.324	1.64	2.94	111.			85.3	700	5.10	34.204	1.93	27.055	101.5	1.741
945	3.75	34.374	1.52	3.07	124.			74.8	800	4.53	34.297	1.68	27.193	88.4	1.844
1078	3.23	34.429	1.54	3.07	137.			65.9	1000	3.50	34.398	1.53	27.379	70.7	2.019
1231	2.92	34.473	1.71	3.04	143.			59.9	1200	2.97	34.466	1.67	27.483	60.9	2.167
1389	2.66	34.508	1.83	3.08	146.			55.0	1500	2.51	34.530	1.95	27.576	52.1	2.361
1686A	2.30	34.561	2.17	2.94	151.			48.1	2000	2.06	34.596	2.53	27.665	43.7	2.644
1886A	2.14	34.585	2.41	2.92	153.			45.1	2500	1.73	34.642	3.07	27.726	37.9	2.894
2087A	2.00	34.603	2.61	2.92	155.			42.7	3000	1.55	34.667	3.51	27.761	34.6	3.123
2288A	1.87	34.624	2.80	2.86	154.			40.1							
2488A	1.74	34.640	3.06	2.81	153.			38.0							
2692A	1.66	34.654	3.23	2.77	153.			36.3							
2895A	1.58	34.664	3.43	2.77	151.			35.0							
3096A	1.52	34.668	3.56	2.67	151.			34.3							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 21

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 50.5N	134 38.9E	07/05/71	1610 GMT	1276M	210	09KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	28.62	33.941	4.71	.06	4.			638.9	0	28.62	33.941	4.71	21.417	638.9	0
21	26.59	34.501	4.87	.09	4.			535.8	10	28.52	34.220	4.79	21.659	615.7	.063
47	23.53	34.321	5.03	.17	5.			460.0	20	26.76	34.479	4.86	22.423	542.6	.121
78	21.66	34.469	4.68	.24	7.			398.7	30	26.60	34.600	4.95	22.565	529.0	.174
108	20.18	34.536	4.70	.37	9.			355.7	50	23.24	34.321	5.00	23.372	451.9	.273
143	19.20	34.740	4.29	.45	9.			316.6	75	21.73	34.442	4.72	23.890	402.4	.380
174	17.77	34.746	4.33	.53	10.			282.1	100	20.53	34.517	4.69	24.273	365.9	.477
203	16.54	34.664	4.16	.70	15.			260.2	125	19.70	34.642	4.50	24.588	335.9	.566
241	14.61	34.559	4.13	.90	20.			226.7	150	18.89	34.752	4.29	24.878	308.3	.647
304	12.71	34.479	3.81	1.22	30.			195.3	200	16.67	34.675	4.18	25.361	262.3	.793
376	10.77	34.390	3.39	1.55	41.			167.2	250	14.28	34.545	4.10	25.795	221.1	.917
451	8.93	34.331	2.96	1.95	58.			142.2	300	12.80	34.483	3.84	26.051	196.8	1.025
535	7.23	34.303	2.55	2.33	75.			120.0	400	10.15	34.367	3.25	26.451	158.7	1.211
628	5.06	34.207	1.98	2.83	96.			100.8	500	7.93	34.317	2.72	26.769	128.6	1.363
723	4.44	34.260	1.59	2.96	110.			90.2	600	5.65	34.229	2.15	27.009	105.8	1.489
842	3.77	34.362		3.06	126.			75.9	700	4.51	34.241	1.67	27.150	92.4	1.595
965	3.31	34.415	1.49	3.14	137.			67.7	800	3.99	34.327	1.56	27.274	80.7	1.689
1121	3.05	34.450	1.60	3.14	142.			62.7	1000	3.22	34.426	1.50	27.429	66.0	1.850

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 22

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 00.9N	134 34.1E	07/05/71	359 GMT	254M	200	07KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.00	33.855	4.84	.08	4.			594.7	0	27.00	33.855	4.84	21.878	594.7	0
20	24.97	33.861	5.03	.08	3.			534.0	10	25.98	33.860	4.94	22.202	563.7	.058
44	22.61	34.383	5.21	.09	4.			430.3	20	24.97	33.861	5.03	22.512	534.0	.113
71	20.48	34.472	4.97	.19	6.			367.9	30	23.95	34.059	5.13	22.964	490.8	.164
104	17.91	34.597	4.41	.56	11.			296.2	50	22.11	34.426	5.19	23.771	413.8	.255
129	16.50	34.591	4.33	.70	15.			264.6	75	20.15	34.490	4.90	24.354	358.2	.352
149	16.07	34.665	4.23	.72	15.			249.8	100	18.20	34.586	4.47	24.924	303.9	.436
179	14.78	34.595	4.22	.81	16.			227.6	125	16.68	34.592	4.33	25.296	268.5	.508
203	14.45	34.566	4.11	.95	20.			222.9	150	16.03	34.664	4.23	25.502	248.9	.574
									200	14.46	34.560	4.13	25.769	223.5	.694

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 23

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 11.0N	134 28.0E	07/05/71	2125 GMT	1160M	190	05KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	25.54	33.042	5.14	.03	6.			609.6	0	25.54	33.042	5.14	21.722	609.6	0
20	24.66	33.743	5.11	.04	9.			533.6	10	25.10	33.339	5.12	22.079	575.5	.059
44	21.18	34.252	5.12	.12	7.			401.8	20	24.66	33.743	5.11	22.517	533.6	.115
79	19.60	34.564	4.59	.39	10.			339.2	30	23.25	33.980	5.11	23.109	477.0	.165
103	17.63	34.587	4.40	.56	11.			290.5	50	20.82	34.341	5.04	24.063	386.0	.252
137	15.22	34.551	4.16	.88	21.			239.9	75	19.71	34.554	4.66	24.516	342.7	.344
167	12.67	34.479	3.80	1.26	32.			194.6	100	17.89	34.589	4.42	25.003	296.4	.424
197	11.16	34.412	3.52	1.55	41.			172.3	125	16.07	34.574	4.25	25.421	256.6	.494
236	10.11	34.366	3.27	1.74	47.			158.1	150	14.08	34.518	4.01	25.818	218.9	.555
301	8.64	34.301	2.97	2.03	59.			140.0	200	11.06	34.408	3.50	26.323	170.9	.654
375	7.28	34.255	2.62	2.25	71.			124.3	250	9.77	34.350	3.20	26.504	153.7	.738
455	6.14	34.255	2.27	2.54	87.			109.7	300	8.66	34.302	2.97	26.646	140.3	.814
646	4.48	34.299	1.69	3.08	112.			87.7	400	6.89	34.252	2.51	26.866	119.4	.950
746	4.06	34.339	1.59	3.09	121.			80.5	500	5.63	34.261	2.09	27.036	103.2	1.067
847	3.71	34.370	1.54	2.93	131.			74.8	600	4.76	34.285	1.79	27.158	91.7	1.171
973	3.42	34.405	1.55	3.02	135.			69.4	700	4.23	34.321	1.62	27.244	83.5	1.265
1111	3.15	34.443	1.56	3.12	141.			64.1	800	3.86	34.356	1.56	27.311	77.2	1.352
									1000	3.36	34.413	1.55	27.404	68.3	1.512

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 24

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 20.6N	134 23.5E	07/05/71	2326 GMT	300M	200	07KT	1	160 02 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.73	33.368	5.14	.02	6.			562.7	0	24.73	33.368	5.14	22.213	562.7	0
20	22.08	33.798	5.32	.07	7.			458.3	10	23.30	33.582	5.23	22.795	507.0	.054
45	19.96	34.302	4.81	.27	10.			367.1	20	22.08	33.798	5.32	23.305	458.3	.102
76	18.44	34.492	4.50	.50	12.			316.3	30	21.10	34.022	5.15	23.742	416.5	.146
109	16.69	34.570	4.31	.67	19.			270.4	50	19.68	34.354	4.74	24.373	356.3	.223
142	13.44	34.511	3.92	1.14	31.			206.9	75	18.48	34.491	4.51	24.783	317.4	.308
172	12.38	34.469	3.73	1.35	34.			189.9	100	17.25	34.564	4.36	25.140	283.4	.384
202	10.87	34.407	3.58	1.59	42.			167.7	125	15.07	34.539	4.12	25.619	237.8	.450
244	9.62	34.341	3.25					152.1	150	13.09	34.504	3.86	26.009	200.7	.506
									200	10.97	34.411	3.59	26.342	169.1	.600

RV THOMAS WASHINGTON ARIES EXPEDITION VI 25

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 01.6N	134 15.8E	07/06/71	0239 GMT	893M	120	05KT	1	210 04 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	26.63	33.851	4.98	.06	4.			583.8	0	26.63	33.851	4.98	21.992	583.8	0
22	24.23	34.025	5.13	.07	5.			501.0	10	25.61	33.909	5.05	22.352	549.3	.057
47	21.26	34.420	5.22	.14	6.			391.7	20	24.46	34.003	5.12	22.771	509.2	.110
79	19.44	34.603	4.68	.41	9.			332.4	30	23.21	34.149	5.16	23.249	463.7	.158
109	17.68	34.614	4.38	.61	14.			289.6	50	21.04	34.450	5.18	24.084	383.9	.243
144	16.22	34.581	4.30	.74	17.			259.2	75	19.61	34.598	4.76	24.577	337.0	.334
174	14.67	34.556	4.14	.95	22.			228.2	100	18.19	34.621	4.45	24.954	301.0	.415
203	13.46	34.517	3.98	1.20	27.			206.8	125	17.00	34.604	4.33	25.230	274.8	.487
241	12.37	34.460	3.76	1.35	32.			190.4	150	15.91	34.577	4.27	25.461	252.8	.555
304	10.16	34.375	3.26	1.80	48.			158.2	200	13.57	34.522	4.00	25.925	208.7	.672
375	7.68	34.240	2.89	2.22	65.			130.8	250	12.07	34.448	3.69	26.167	185.7	.774
451	6.44	34.244	2.42	2.53	81.			114.2	300	10.31	34.381	3.29	26.435	160.2	.864
537	5.24	34.266	1.95	2.82	100.			98.4	400	7.18	34.235	2.74	26.812	124.5	1.012
635	4.37	34.308	1.66	3.03	115.			85.9	500	5.72	34.255	2.14	27.021	104.7	1.133
737	3.82	34.359	1.55	3.11	127.			76.6	600	4.63	34.292	1.74	27.178	89.8	1.237
843	3.60	34.375	1.51	3.12	131.			73.4	700	3.98	34.342	1.57	27.287	79.4	1.328
									800	3.65	34.374	1.52	27.346	73.9	1.411

RV THOMAS WASHINGTON ARIES EXPEDITION VI 26

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 51.7N	134 20.8E	07/06/71	0515 GMT	1356M	100	06KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.66	33.774	5.00	.03	5.			590.2	0	26.66	33.774	5.00	21.925	590.2	0
20	24.55	34.098	5.17	.04	6.			504.9	10	25.55	33.931	5.09	22.387	546.0	.057
45	22.49	34.544	4.72	.18	6.			415.4	20	24.55	34.098	5.17	22.817	504.9	.109
77	20.80	34.707	4.45	.35	8.			359.1	30	23.65	34.290	5.02	23.229	465.5	.158
107	19.53	34.716	4.28	.44	10.			326.4	50	22.18	34.591	4.66	23.877	403.7	.245
142	17.92	34.732	4.31	.49	11.			286.6	75	20.88	34.707	4.46	24.321	361.3	.341
172	16.24	34.582	4.30	.68	16.			259.6	100	19.82	34.721	4.31	24.616	333.2	.429
202	15.32	34.567	4.29	.82	18.			240.9	125	18.73	34.738	4.30	24.907	305.5	.510
241	13.90	34.535	3.98	1.09	23.			214.2	150	17.45	34.692	4.31	25.189	278.7	.584
305	11.62	34.431	3.56	1.42	37.			179.0	200	15.37	34.567	4.29	25.574	242.0	.717
380	9.77	34.357	3.18	1.75	51.			153.3	250	13.56	34.520	3.91	25.927	208.5	.833
458	8.06	34.312	2.85	2.09	66.			130.8	300	11.79	34.439	3.59	26.214	181.3	.934
545	6.01	34.286	2.22	2.55	88.			105.8	400	9.33	34.344	3.10	26.572	147.3	1.106
642	4.72	34.241	1.76	2.87	104.			94.6	500	7.03	34.296	2.55	26.882	117.9	1.246
740	4.13	34.323	1.54	2.90	120.			82.4	600	5.17	34.255	1.93	27.087	98.4	1.361
860	3.55	34.385	1.49	2.97	132.			72.1	700	4.32	34.284	1.61	27.205	87.2	1.461
981	3.18	34.432	1.51	3.08	140.			65.2	800	3.82	34.358	1.51	27.316	76.7	1.550
1129	2.91	34.462	1.65	3.01	145.			60.6	1000	3.14	34.437	1.53	27.445	64.5	1.705
1290	2.74	34.495	1.75	3.19	148.			56.7	1200	2.82	34.477	1.70	27.506	58.8	1.843

RV THOMAS WASHINGTON ARIES EXPEDITION VI 27

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 29.7N	133 53.4E	07/07/71	1057 1426GMT	4774M	240	21KT	1	240 05 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	28.21	34.664	4.65	.06	3.			574.0	0	28.21	34.664	4.65	22.095	574.0	0
21	28.21	34.663	4.66	.14	4.			574.1	10	28.21	34.664	4.65	22.094	574.0	.057
46	23.07	34.808	5.30	.12	4.			412.1	20	28.21	34.664	4.66	22.094	574.1	.115
77	20.94	34.834	4.93	.18	4.			353.5	30	26.51	34.686	4.90	22.657	520.2	.170
107	19.94	34.811	4.67	.30	5.			329.7	50	22.63	34.821	5.29	23.924	399.2	.262
142	19.38	34.830	4.64	.38	5.			314.5	75	20.99	34.839	4.97	24.394	354.4	.357
173	18.72	34.842	4.71	.32	5.			297.6	100	20.11	34.817	4.72	24.615	333.4	.443
202	18.22	34.835	4.75	.38	6.			286.2	125	19.62	34.818	4.65	24.741	321.3	.526
242	17.79	34.826	4.83	.43	6.			276.8	150	19.21	34.834	4.66	24.860	310.0	.606
309	16.78	34.773	4.65	.66	9.			257.6	200	18.25	34.835	4.75	25.103	286.8	.759
384	15.55	34.674	4.45	.73	11.			237.9	250	17.68	34.821	4.82	25.232	274.6	.903
464	13.59	34.514	4.24	1.04	18.			209.6	300	16.93	34.782	4.69	25.383	260.2	1.041
553	11.101	34.343	3.87	1.46	30.			176.4	400	15.20	34.645	4.41	25.673	232.6	1.298
652	9.132	34.278	3.20	2.00	46.			149.2	500	12.56	34.435	4.11	26.061	195.8	1.524
751	6.849	34.179	2.73	2.35	68.			124.3	600	10.13	34.309	3.56	26.410	162.7	1.716
874	5.287	34.248	1.95	2.86	95.			100.3	700	7.99	34.220	2.97	26.684	136.6	1.878
997	4.130	34.327	1.59	3.17	117.			82.1	800	6.12	34.196	2.41	26.924	113.9	2.015
1144	3.337	34.406	1.46		133.			68.6	1000	4.11	34.329	1.59	27.263	81.7	2.230
1314	2.912	34.469	1.60	3.19	141.			60.1	1200	3.17	34.430	1.48	27.437	65.3	2.395
1399A	2.71	34.496	1.74	2.91U	146.			56.4	1500	2.49	34.522	1.81	27.570	52.6	2.597
1494	2.502	34.520	1.80	3.23	149.			52.9	2000	1.98	34.607	2.51	27.679	42.3	2.877
1596A	2.35	34.550	2.00	2.82U	150.			49.4	2500	1.76	34.635	2.90	27.719	38.5	3.124
1793A	2.10	34.582	2.27	2.87	153.			45.0	3000	1.67	34.654	3.19	27.741	36.4	3.362
1990A	1.99	34.605	2.50	2.88	153.			42.4	3500	1.56	34.668	3.41	27.761	34.6	3.595
2187A	1.88	34.618	2.68	2.85	153.			40.7	4000	1.56	34.677	3.58	27.768	34.0	3.827
2390B	1.781	34.630	2.86	2.84	153.			39.0	4500	1.59	34.682	3.67	27.770	33.7	4.064
2588B	1.754	34.638	2.92	2.82	153.			38.2							
2787B	1.721	34.645	2.96	2.77	151.			37.5							
2985B	1.677	34.653	3.18	2.74	150.			36.5							
3184B	1.623	34.663	3.33	2.75	150.			35.4							
3383B	1.563	34.665	3.41	2.71				34.8							
3584B	1.562	34.670	3.42	2.67	148.			34.4							
3786B	1.551	34.675	3.54	2.71	149.			34.0							
3991B	1.560	34.676	3.58	2.68	149.			34.0							
4194B	1.568	34.680	3.62	2.65	148.			33.7							
4401B	1.579	34.681	3.69	2.71	148.			33.7							
4614B	1.596	34.683	3.64	2.65	149.			33.7							

RV THOMAS WASHINGTON ARIES EXPEDITION VI 28

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.8N	133 29.6E	07/07/71	1943 2055GMT	4899M	240	22KT	1	180 06 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	28.06	34.557	4.62	.04	3.			577.0	0	28.06	34.557	4.62	22.064	577.0	0
20	28.04	34.559	4.65	.03	3.			576.2	10	28.05	34.558	4.63	22.067	576.6	.058
44	23.83	34.722	5.15	.09	3.			439.4	20	28.04	34.559	4.65	22.072	576.2	.115
74	21.91	34.775	4.94	.10	3.			383.1	30	26.43	34.605	4.86	22.623	523.5	.170
103	20.71	34.860	4.72	.12	4.			345.7	50	23.27	34.743	5.11	23.681	422.4	.265
137	19.30	34.836	4.81	.12	4.			312.1	75	21.86	34.778	4.93	24.108	381.6	.366
167	18.77	34.852	4.77	.25	4.			298.1	100	20.82	34.853	4.74	24.451	349.0	.459
198	18.26	34.847	4.85	.25	5.			286.3	125	19.75	34.848	4.77	24.732	322.2	.543
237	17.70	34.829	4.71	.36	6.			274.5	150	19.03	34.842	4.79	24.913	304.9	.623
303	16.84	34.780	4.57	.54	8.			258.4	200	18.23	34.846	4.85	25.116	285.6	.774
378	15.40	34.671	4.40	.70	12.			235.0	250	17.54	34.822	4.68	25.267	271.3	.917
456	13.16	34.484	4.11	1.07	20.			203.5	300	16.88	34.783	4.58	25.394	259.1	1.054
547	10.60	34.311	3.76	1.51	34.			170.2	400	14.80	34.620	4.32	25.740	226.3	1.307
648	7.94	34.174	3.28	2.04	54.			139.4	500	11.91	34.394	3.95	26.155	186.8	1.525
747	6.88	34.289	2.39	2.36	75.			116.5	600	9.09	34.216	3.54	26.510	153.2	1.707
871	5.21	34.337	1.98	2.74	99.			92.7	700	7.30	34.227	2.81	26.789	126.7	1.858
997	3.82	34.364	1.49	3.04	124.			76.3	800	6.17	34.316	2.17	27.012	105.5	1.985
1148	3.19	34.427	1.54	3.05	137.			65.7	1000	3.80	34.365	1.49	27.324	76.0	2.186
1322	2.84	34.478	1.67	3.05	145.			58.8	1200	3.07	34.444	1.57	27.457	63.4	2.342
1470	2.52	34.524	1.88	3.05	149.			52.7	1500	2.48	34.531	1.91	27.578	51.9	2.540
1696A	2.29	34.563	2.10	3.02	152.			47.9	2000	2.02	34.605	2.49	27.675	42.7	2.819
1894A	2.11	34.591	2.34	2.81	152.			44.4	2500	1.74	34.640	3.05	27.724	38.1	3.067
2095A	1.95	34.614	2.63	2.85	152.			41.5	3000	1.57	34.675	3.34	27.765	34.2	3.296
2289A	1.86	34.628	2.87	2.82	153.			39.7	3500	1.52	34.672	3.61	27.767	34.0	3.519
2487A	1.75	34.638	3.04	2.77	152.			38.2	4000	1.54	34.680	3.55	27.772	33.6	3.748
2684A	1.67	34.654	3.15	2.75	152.			36.4	4500	1.59	34.678	3.65	27.766	34.1	3.985
2882A	1.60	34.669	3.30	2.75	152.			34.8							
3079A	1.56	34.676	3.36	2.65	151.			34.0							
3277A	1.54	34.676	3.48	2.65	151.			33.8							
3476A	1.52	34.672	3.61	2.70	151.			34.0							
3674A	1.521	34.672	3.54	2.68	151.			34.0							
3874A	1.526	34.679	3.51	2.64	151.			33.5							
4074A	1.556	34.680	3.59	2.65	151.			33.6							
4274A	1.574	34.682	3.66	2.64	151.			33.6							
4476A	1.588	34.678	3.65	2.65	151.			34.0							
4678A	1.603	34.675	3.66	2.63	151.			34.3							
4881A	1.624	34.676	3.59	2.65	151.			34.4							

A) CAST II.
B) CAST III.

RV THOMAS WASHINGTON ARIES EXPEDITION VI 29

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.5N	133 04.4E	07/08/71	0108 0355GMT	3474M	220	18KT		

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.74	34.140	4.52	.06	4.			597.0	0	27.74	34.140	4.52	21.855	597.0	0
20	27.56	34.183	4.79	.07	5.			588.3	10	27.65	34.162	4.69	21.900	592.6	.060
45	24.60	34.560	4.78	.12	5.			473.0	20	27.56	34.183	4.79	21.945	588.3	.119
75	23.16	34.685	4.65	.22	6.			423.5	30	26.46	34.319	4.79	22.397	545.1	.175
105	21.04	34.743	4.46	.26	7.			362.6	50	24.30	34.599	4.76	23.268	461.8	.276
139	19.72	34.802	4.56	.29	7.			324.9	75	23.16	34.685	4.65	23.669	423.5	.388
170	19.23	34.797	4.50	.35	8.			313.2	100	21.39	34.734	4.48	24.206	372.3	.488
199	18.25	34.834	4.72	.31	7.			287.0	125	20.14	34.783	4.51	24.578	336.9	.578
238	17.22	34.799	4.57	.49	9.			265.6	150	19.54	34.801	4.53	24.750	320.5	.661
304	15.50	34.675	4.45	.70	12.			236.8	200	18.22	34.833	4.72	25.109	286.3	.816
379	13.44	34.506	4.22	1.01	20.			207.3	250	16.91	34.780	4.54	25.386	259.9	.956
458	11.01	34.339	3.90	1.41	32.			175.1	300	15.61	34.684	4.46	25.613	238.4	1.085
546	8.95	34.238	3.52	1.78	45.			149.4	400	12.78	34.456	4.14	26.034	198.3	1.313
643	7.74	34.303	2.64	2.24	67.			127.0	500	9.93	34.275	3.75	26.419	161.8	1.503
740	5.91	34.312	2.11	2.54	90.			102.7	600	8.25	34.270	3.04	26.684	136.6	1.663
856	4.61	34.339	1.76	2.81	112.			86.1	700	6.66	34.308	2.29	26.941	112.2	1.798
973	3.41	34.406	1.48	3.06	135.			69.3	800	5.17	34.324	1.91	27.142	93.2	1.910
1109	3.15	34.436	1.48	3.01	142.			64.7	1000	3.36	34.419	1.48	27.410	67.8	2.088
1259	2.77	34.489	1.72	3.02	147.			57.4	1200	2.92	34.468	1.61	27.490	60.3	2.231
1409	2.48	34.527	1.92	3.01	150.			52.1	1500	2.40	34.540	1.99	27.592	50.6	2.421
1608A	2.34	34.552	2.08	2.86	153.			49.1	2000	1.98	34.606	2.64	27.678	42.4	2.695
1797A	2.12	34.580	2.39	2.91	152.			45.3	2500	1.69	34.644	3.10	27.731	37.4	2.939
1988A	1.99	34.604	2.63	2.86	151.			42.5	3000	1.53	34.666	3.48	27.761	34.6	3.166
2179A	1.86	34.616	2.81	2.86	151.			40.7							
2373A	1.747	34.633	2.98	2.75	149.			38.6							
2569A	1.670	34.648	3.17	2.75	151.			36.9							
2768A	1.600	34.652	3.33	2.73	150.			36.1							
2972A	1.535	34.664	3.47	2.72	148.			34.7							
3180A	1.524	34.672	3.52	2.70	148.			34.0							
3390A	1.53	34.672	3.55	2.67	148.			34.1							

RV THOMAS WASHINGTON ARIES EXPEDITION VI 30

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.2N	132 53.8E	07/08/71	0700 0815GMT	3041M	220	20KT	1	220 04 04

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.27	34.182	4.70	.02	2.			610.5	0	28.27	34.182	4.70	21.713	610.5	0
20	27.65	34.290	4.77	.02	2.			583.4	10	27.96	34.260	4.74	21.873	595.2	.060
45	25.08	34.516	4.83	.07	3.			490.0	20	27.65	34.290	4.77	21.996	583.4	.119
76	22.94	34.724	4.59	.15	3.			414.6	30	26.73	34.366	4.79	22.348	549.8	.176
106	21.43	34.744	4.41	.23	5.			372.7	50	24.68	34.559	4.80	23.128	475.2	.279
142	20.56	34.769	4.38	.28	5.			348.4	75	23.00	34.720	4.60	23.743	416.4	.391
172	19.43	34.759	4.29	.48	7.			320.9	100	21.68	34.747	4.44	24.135	379.1	.491
201	17.89	34.646	4.18	.56	12.			292.2	125	20.94	34.760	4.39	24.348	358.7	.584
240	16.39	34.654	4.14	.69	15.			257.6	150	20.30	34.773	4.36	24.529	341.5	.673
304	14.40	34.563	3.98	.90	20.			222.1	200	17.94	34.650	4.18	25.037	293.2	.835
377	12.16	34.456	3.60	1.27	32.			186.8	250	16.06	34.645	4.12	25.479	251.1	.974
453	10.18	34.360	3.32	1.59	42.			159.7	300	14.52	34.572	3.99	25.765	223.9	1.097
537	8.881	34.335	2.94	1.90	58.			141.1	400	11.50	34.422	3.51	26.253	177.6	1.307
630	6.539	34.284	2.32	2.36	80.			112.5	500	9.44	34.346	3.12	26.554	149.0	1.480
723	5.085	34.356		2.64	99.			89.9	600	7.30	34.291	2.52	26.840	121.9	1.625
838	3.914	34.362	1.51	2.86	120.			77.3	700	5.38	34.337	1.95	27.126	94.7	1.742
952	3.393	34.410	1.45	2.95	131.			68.8	800	4.23	34.363	1.59	27.278	80.3	1.838
1091	3.060	34.455	1.52	2.94	137.			62.4	1000	3.26	34.427	1.46	27.426	66.3	1.999
1253	2.739	34.497	1.66	2.96	144.			56.5	1200	2.84	34.484	1.60	27.510	58.3	2.139
1428	2.468	34.534	1.93	2.92	148.			51.5	1500	2.38	34.546	2.01	27.599	50.0	2.325
1570A	2.311	34.557	2.08	2.88				48.5	2000	1.96	34.612	2.62	27.685	41.8	2.595
1758A	2.115	34.591	2.33	2.79				44.5	2500	1.69	34.649	3.11	27.736	36.9	2.836
1949A	1.997	34.607	2.56	2.73				42.3							
2141A	1.864	34.622	2.77	2.72				40.2							
2335A	1.761	34.637	2.96	2.64				38.3							
2534A	1.674	34.651	3.14	2.64				36.7							
2734A	1.590	34.660	3.28	2.64				35.4							
2937A	1.560	34.666	3.37	2.59				34.7							

1 CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 31

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 32.0N	132 44.7E	07/08/71	1055 1203GMT	2893M	220	18KT	1	210 03 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.99	34.212	4.70	.08	2.			599.6	0	27.99	34.212	4.70	21.827	599.6	0
20	27.94	34.233	4.72	.08	2.			596.5	10	27.96	34.223	4.71	21.843	598.0	.060
45	25.66	34.538	4.86	.07	2.			505.4	20	27.94	34.233	4.72	21.859	596.5	.120
76	23.71	34.697	4.69	.25	3.			437.9	30	27.14	34.342	4.78	22.200	563.9	.178
106	21.82	34.761	4.69	.23	3.			381.8	50	25.31	34.577	4.84	22.947	492.5	.284
140	19.44	34.756	4.31	.45	8.			321.3	75	23.77	34.695	4.70	23.501	439.6	.401
170	18.68	34.758	4.27	.52	9.			302.7	100	22.21	34.754	4.69	23.994	392.5	.506
199	18.13	34.751	4.25	.55	17.			290.2	125	20.41	34.759	4.48	24.490	345.2	.599
239	15.75	34.594	3.96	.92	21.			248.1	150	19.11	34.758	4.30	24.829	313.0	.682
302	13.64	34.528	3.90	1.15	37.			209.5	200	18.08	34.747	4.24	25.078	289.2	.836
374	11.35	34.419	3.45	1.53	47.			175.1	250	15.31	34.578	3.94	25.598	239.8	.972
450	9.87	34.358	3.20	1.85	64.			154.8	300	13.69	34.529	3.90	25.907	210.4	1.088
534	8.16	34.331	2.79	2.14	94.			130.8	400	10.79	34.395	3.36	26.361	167.3	1.286
627	5.72	34.315	2.10	2.68	113.			100.2	500	8.89	34.340	2.98	26.640	140.8	1.449
717	4.26	34.316	1.59	2.97	126.			84.2	600	6.41	34.315	2.30	26.980	108.6	1.583
833	3.65	34.366	1.52	3.11	134.			74.5	700	4.47	34.315	1.67	27.214	86.4	1.688
949	3.27	34.416	1.49	3.14				67.2	800	3.74	34.351	1.54	27.318	76.5	1.776
1086	2.97	34.453	1.55	3.07	145.			61.8	1000	3.15	34.431	1.50	27.440	65.0	1.931
1241	2.68	34.496	1.75	3.05	146.			56.1	1200	2.75	34.485	1.69	27.518	57.6	2.068
1391	2.42	34.540	1.96	3.03	149.			50.7	1500	2.30	34.556	2.04	27.613	48.6	2.250
1581A	2.232	34.564	2.10	2.90	152.			47.4	2000	1.89	34.620	2.76	27.697	40.6	2.513
1764A	2.061	34.591	2.37	2.85	152.			44.0	2500	1.69	34.644	3.08	27.732	37.4	2.752
1952A	1.914	34.616	2.71	2.80	150.			41.1							
2144A	1.833	34.626	2.85	2.75	150.			39.7							
2344A	1.738	34.636	2.99	2.77	150.			38.3							
2551A	1.678	34.646	3.11	2.74	150.			37.1							
2770A	1.603	34.658	3.27	2.72	150.			35.6							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 32

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 32.9N	132 37.0E	07/08/71	1438 1537GMT	2460M	350	16KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	27.13	33.973	4.78	.08	5.			590.2	0	27.13	33.973	4.78	21.925	590.2	0
20	25.15	34.503	4.87	.07	5.			493.0	10	26.08	34.274	4.82	22.484	536.7	.056
44	23.98	34.566	4.65	.13	6.			454.9	20	25.15	34.503	4.87	22.942	493.0	.108
74	23.13	34.652	4.52	.18	6.			425.0	30	24.55	34.572	4.79	23.176	470.6	.156
103	21.14	34.748	4.59	.25	8.			364.9	50	23.83	34.585	4.61	23.397	449.5	.249
138	19.75	34.786	4.36	.31	7.			326.8	75	23.06	34.656	4.52	23.674	423.0	.358
168	18.32	34.753	4.30	.47	10.			294.5	100	21.35	34.739	4.58	24.218	371.2	.458
198	16.55	34.576	3.94	.76	18.			266.8	125	20.22	34.784	4.46	24.558	338.7	.548
237	14.43	34.534	3.84	.96	25.			224.9	150	19.21	34.785	4.35	24.822	313.6	.631
303	12.19	34.462	3.66	1.27	33.			186.9	200	16.43	34.572	3.93	25.337	264.6	.778
379	10.45	34.387	3.33	1.60	44.			162.1	250	13.89	34.520	3.81	25.857	215.1	.901
460	8.76	34.343	2.91	1.92	60.			138.7	300	12.27	34.466	3.67	26.143	188.0	1.006
551	6.44	34.299	2.33	2.41	82.			110.1	400	10.02	34.375	3.23	26.480	156.0	1.186
652	4.89	34.299	1.81	2.75	102.			92.1	500	7.71	34.317	2.66	26.801	125.6	1.335
753	3.99	34.341	1.50	2.88	119.			79.6	600	5.58	34.295	2.06	27.069	100.1	1.456
875	3.42	34.411	1.47	2.97	132.			69.0	700	4.40	34.316	1.63	27.222	85.6	1.556
996	3.15	34.442	1.52	3.01	139.			64.2	800	3.72	34.369	1.49	27.335	74.9	1.643
1142	2.80	34.484	1.65	2.98	146.			58.0	1000	3.14	34.443	1.52	27.450	64.0	1.795
1305	2.56	34.521	1.84	2.97	148.			53.2	1200	2.71	34.498	1.71	27.532	56.2	1.930
1445	2.31	34.553	2.05	2.93	151.			48.8	1500	2.26	34.568	2.16	27.626	47.4	2.108
1492A	2.265	34.565	2.14	2.96	151.			47.6	2000	1.93	34.610	2.67	27.686	41.7	2.370
1711A	2.046	34.596	2.48	2.83	152.			43.6							
1922A	1.958	34.605	2.63	2.79	151.			42.2							
2132A	1.890	34.617	2.75	2.78	151.			40.8							
2338A	1.816	34.627	2.93	2.73	151.			39.5							

A) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 33

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 27.7N	132 21.6E	07/08/71	1844 1947GMT	2271M	240	12KT	1	240 04 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	27.46	33.964	4.73	.03	6.			601.0	0	27.46	33.964	4.73	21.813	601.0	0
20	24.22	34.231	5.13	.03	6.			485.9	10	25.80	34.095	5.00	22.434	541.6	.057
45	21.44	34.454	4.73	.22	7.			394.0	20	24.22	34.231	5.13	23.016	485.9	.109
74	19.93	34.737	4.36	.34	10.			334.8	30	22.92	34.329	5.03	23.467	442.8	.155
103	18.76	34.781	4.40	.37	10.			303.0	50	21.10	34.512	4.65	24.115	381.0	.238
137	17.86	34.726	4.23	.49	13.			285.7	75	19.88	34.742	4.36	24.614	333.4	.328
166	16.10	34.584	3.95	.81	20.			256.4	100	18.86	34.784	4.40	24.910	305.3	.408
195	13.77	34.518	3.79	1.09	27.			212.8	125	18.22	34.760	4.31	25.053	291.6	.484
233	12.66	34.485	3.71	1.23	31.			193.9	150	17.16	34.663	4.10	25.236	274.2	.556
296	10.67	34.387	3.34	1.56	42.			165.8	200	13.56	34.514	3.78	25.921	209.1	.679
368	9.51	34.349	3.11	1.81	55.			149.7	250	12.09	34.456	3.62	26.169	185.5	.781
445	7.40	34.299	2.60	2.23	74.			122.6	300	10.60	34.385	3.33	26.387	164.8	.871
530	5.860	34.271	2.19	2.54	90.			105.2	400	8.65	34.324	2.91	26.665	138.4	1.030
625	4.596	34.291	1.70	2.88	109.			89.5	500	6.33	34.278	2.33	26.961	110.4	1.162
721	4.035	34.338	1.52	2.94	120.			80.3	600	4.87	34.282	1.82	27.143	93.1	1.270
839	3.481	34.389	1.53	3.01	134.			71.2	700	4.12	34.328	1.54	27.261	82.0	1.364
957	3.185	34.427	1.53	3.08	140.			65.7	800	3.64	34.373	1.53	27.346	73.9	1.449
1100	2.874	34.472	1.68		146.			59.6	1000	3.08	34.441	1.57	27.454	63.7	1.600
1264	2.617	34.507	1.74	3.04	149.			54.8	1200	2.71	34.494	1.71	27.529	56.5	1.734
1440	2.339	34.548	2.03	3.01	153.			49.4	1500	2.28	34.557	2.11	27.616	48.3	1.913
1629A	2.166	34.572	2.27	2.89	157.			46.3	2000	1.93	34.612	2.74	27.688	41.5	2.178
1832A	2.001	34.601	2.63	2.87	154.			42.8							
2039A	1.916	34.612	2.75	2.83	154.			41.4							
2251A	1.886	34.617	2.87	2.82	154.			40.8							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 34

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 29.3N	132 11.3E	07/08/71	2158 GMT	2163M	230	15KT	2	220 03 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.95	33.866	4.81	.06	3.			592.4	0	26.95	33.866	4.81	21.902	592.4	0
20	24.68	34.208	5.06	.06	3.			500.6	10	25.74	34.050	4.98	22.421	542.8	.057
45	22.73	34.459	4.86	.14	4.			428.0	20	24.68	34.208	5.06	22.861	500.6	.109
76	20.37	34.520	4.50	.36	8.			361.6	30	23.84	34.333	5.02	23.205	467.8	.158
106	18.30	34.497	4.17	.57	13.			312.6	50	22.34	34.481	4.81	23.749	415.9	.246
142	16.15	34.637	4.18	.68	15.			253.6	75	20.44	34.521	4.51	24.299	363.4	.344
173	14.88	34.594	4.05	.87	20.			229.7	100	18.70	34.500	4.22	24.736	321.8	.431
203	13.91	34.561	4.10	.97	20.			212.4	125	17.10	34.573	4.18	25.182	279.4	.507
243	12.28	34.469	3.66	1.29	32.			188.1	150	15.78	34.634	4.14	25.533	245.9	.573
309	10.56	34.389	3.36	1.61	43.			163.8	200	14.01	34.565	4.10	25.869	214.1	.691
374	9.15	34.338	3.08	1.88	53.			145.0	250	12.06	34.458	3.62	26.176	184.9	.794
465	6.80	34.249	2.57	2.34	73.			118.4	300	10.75	34.398	3.38	26.371	166.4	.885
554	5.29	34.259	1.97	2.73	94.			99.5	400	8.46	34.306	2.95	26.680	137.0	1.043
655	4.25	34.331	1.64	2.96	115.			83.0	500	6.13	34.245	2.32	26.962	110.3	1.174
753	3.67	34.375	1.45	2.99	126.			74.0	600	4.74	34.290	1.79	27.164	91.2	1.281
877	3.22	34.424	1.46	3.06	137.			66.2	700	3.95	34.354	1.53	27.300	78.3	1.372
1001	2.98	34.465	1.59	3.04	142.			61.0	800	3.47	34.395	1.45	27.380	70.7	1.453
1150	2.69	34.504	1.69	3.02	148.			55.6	1000	2.98	34.465	1.59	27.482	61.0	1.598
1322	2.46	34.535	1.92	3.01	149.			51.4	1200	2.61	34.514	1.75	27.554	54.2	1.727
1506	2.28	34.556	2.12	2.97	151.			48.4	1500	2.28	34.555	2.11	27.614	48.5	1.903
1661	2.187	34.574	2.28	2.94	151.			46.3	2000	1.99	34.604	2.61	27.677	42.6	2.171
1856	2.036	34.602	2.53	2.92	152.			43.0							
2048	1.983	34.605	2.62	2.88	152.			42.4							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 35

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.8N	132 03.0E	07/09/71	0107 GMT	1400M	030	15KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.79	33.909	4.80	.03	4.			584.4	0	26.79	33.909	4.80	21.985	584.4	0
20	24.13	34.096	5.43	.05	4.			493.1	10	26.70	33.930	5.24	22.030	580.2	.058
45	22.04	34.416	4.78	.16	6.			412.6	20	24.13	34.096	5.43	22.941	493.1	.112
76	19.69	34.587	4.37	.41	9.			339.7	30	22.91	34.252	5.25	23.413	447.9	.159
106	17.99	34.695	4.20	.53	11.			291.0	50	21.63	34.454	4.69	23.926	399.0	.244
141	15.93	34.644	4.16	.74	14.			248.3	75	19.76	34.585	4.38	24.527	341.7	.337
172	14.33	34.581	4.01	.97	19.			219.4	100	18.31	34.683	4.22	24.971	299.4	.418
202	13.21	34.499	3.76	1.18	24.			203.3	125	16.86	34.680	4.18	25.320	266.2	.490
241	11.99	34.447	3.65	1.36	30.			184.4	150	15.43	34.628	4.13	25.608	238.8	.554
307	10.33	34.370	3.51	1.67	39.			161.4	200	13.28	34.504	3.78	25.973	204.2	.667
381	8.44	34.320	2.84	2.08	53.			135.7	250	11.75	34.436	3.64	26.218	180.9	.766
461	6.98	34.298	2.50	2.39	68.			117.1	300	10.49	34.378	3.53	26.401	163.5	.856
549	5.07	34.209	1.98	2.80	84.			100.8	400	8.08	34.317	2.75	26.747	130.7	1.009
648	4.47	34.321	1.69	2.88	97.			86.0	500	6.07	34.248	2.26	26.971	109.4	1.136
873	3.28	34.420	1.49	3.10	119.			67.0	600	4.66	34.258	1.80	27.148	92.7	1.244
1000	2.99	34.458	1.63	3.15	125.			61.6	700	4.15	34.355	1.64	27.280	80.2	1.337
1156	2.74	34.489	1.75	3.12	128.			57.1	800	3.61	34.402	1.55	27.372	71.4	1.419
12938	2.53	34.515	1.86	3.06	131.			53.5	1000	2.99	34.458	1.63	27.476	61.6	1.565
13228	2.44	34.529	1.97	3.05	132.			51.7	1200	2.69	34.494	1.79	27.531	56.4	1.697

A) CAST II.
B) POSSIBLE POSTTRIP. THE DEPTH MAY BE SLIGHTLY IN ERROR.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 36

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.0N	131 49.0E	07/09/71	0335 GMT	868M	300	06KT	2	200 03 07

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.00	33.805	4.75	.04	4.			598.3	0	27.00	33.805	4.75	21.841	598.3	0
20	24.27	34.399	5.05	.06	4.			475.2	10	26.80	33.820	4.97	21.915	591.2	.059
46	21.45	34.502	4.66	.24	6.			390.8	20	24.27	34.399	5.05	23.128	475.2	.113
77	18.46	34.537	4.23	.52	13.			313.5	30	22.85	34.500	4.95	23.619	428.3	.158
108	16.30	34.589	4.20	.70	16.			260.4	50	21.05	34.503	4.59	24.122	380.3	.239
143	14.57	34.576	4.03	.88	20.			224.6	75	18.65	34.533	4.25	24.774	318.2	.327
174	13.34	34.515	3.90	1.09	25.			204.7	100	16.79	34.580	4.21	25.260	272.0	.402
205	12.18	34.457	3.67	1.29	33.			187.1	125	15.39	34.593	4.12	25.590	240.5	.467
245	11.14	34.405	3.50	1.44	38.			172.5	150	14.28	34.564	4.00	25.811	219.5	.525
311	9.79	34.351	3.25	1.75	50.			154.0	200	12.35	34.466	3.71	26.125	189.7	.630
386	7.24	34.261	2.65	2.26	70.			123.3	250	11.04	34.402	3.48	26.321	171.1	.723
467	5.54	34.218	2.15	2.65	89.			105.4	300	10.03	34.361	3.30	26.468	157.1	.808
556	4.936	34.275	1.85	2.80	102.			94.4	400	6.87	34.248	2.55	26.866	119.4	.952
655	4.496	34.299	1.70	2.90	110.			87.9	500	5.23	34.236	2.01	27.065	100.5	1.068
753	3.906	34.345	1.52	2.83	120.			78.5	600	4.74	34.287	1.77	27.162	91.3	1.170
									700	4.24	34.317	1.62	27.240	84.0	1.264

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 37

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.0N	131 38.2E	07/09/71	0526 GMT	268M	240	12KT	1	220 04 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	26.90	33.968	5.36	.03	7.			583.5	0	26.90	33.968	5.36	21.995	583.5	0
20	24.35	34.190	5.07	.04	7.			492.5	10	26.90	33.980	5.20	22.004	582.7	.058
45	21.53	34.448	4.92	.14	8.			396.8	20	24.35	34.190	5.07	22.947	492.5	.112
76	19.56	34.662	4.33	.41	11.			331.1	30	22.85	34.328	5.01	23.488	440.8	.159
106	17.52	34.621	4.08	.65	18.			285.4	50	21.16	34.497	4.83	24.088	383.5	.242
142	15.36	34.640	4.15	.80	18.			236.4	75	19.61	34.659	4.35	24.623	332.6	.332
173	13.42	34.514	3.91	1.08	27.			206.3	100	17.92	34.637	4.11	25.031	293.7	.411
203	11.61	34.427	3.60	1.43	38.			179.1	125	16.37	34.639	4.12	25.404	258.2	.481
244	10.30	34.373	3.31	1.66	53.			160.7	150	14.86	34.613	4.11	25.722	228.0	.542
									200	11.77	34.434	3.63	26.212	181.5	.647
									250	10.15	34.370		26.454	158.4	.735

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 38

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 01.2N	136 29.0E	07/14/71	1850 GMT	496M	170	04KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.84	33.717	5.48	.08	10.			484.6	0	22.84	33.717	5.48	23.029	484.6	0
20	16.33	34.487	4.77	.59	19.			268.5	10	19.00	34.137	5.09	24.383	355.6	.042
45	14.81	34.512	4.26	.88	24.			234.3	20	16.33	34.487	4.77	25.296	268.5	.073
76	13.94	34.513	4.21	.95	29.			216.6	30	15.72	34.494	4.52	25.440	254.8	.100
110	12.88	34.483	4.12	1.09	32.			198.2	50	14.63	34.515	4.25	25.696	230.4	.148
141	11.93	34.441	3.75	1.29	38.			183.8	75	13.96	34.514	4.21	25.839	216.9	.205
172	11.11	34.405	3.62	1.47	43.			171.9	100	13.20	34.494	4.15	25.981	203.4	.258
202	10.74	34.384	3.60	1.52	44.			167.2	125	12.41	34.463	3.94	26.112	190.9	.308
237	9.97	34.350	3.30	1.58	52.			157.0	150	11.66	34.429	3.69	26.229	179.8	.355
263	9.59	34.325	3.27	1.75	54.			152.8	200	10.76	34.386	3.60	26.359	167.5	.444
312	8.21	34.269	2.93	2.06	66.			136.2	250	9.79	34.338	3.28	26.492	154.9	.527
378	7.43	34.246	2.83	2.13	73.			127.0	300	8.56	34.280	3.02	26.645	140.4	.603
429	6.72	34.233	2.59	2.29	80.			118.6	400	7.14	34.240	2.74	26.823	123.5	.741

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 39

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 55.2N	136 30.6E	07/14/71	2023 GMT	1267M	240	05KT	1	49 01

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.00	33.879	5.42	.06	9.			477.3	0	23.00	33.879	5.42	23.106	477.3	0
20	17.77	34.397	5.88	.10	12.			307.5	10	20.05	34.160	5.65	24.127	379.8	.043
45	14.96	34.523	4.11	.82	21.			236.6	20	17.77	34.397	5.88	24.886	307.5	.077
76	13.84	34.512	4.16	.96	26.			214.7	30	16.30	34.498	5.23	25.313	266.9	.106
106	12.64	34.477	3.90	1.15	35.			194.1	50	14.69	34.531	4.12	25.695	230.5	.156
141	11.70	34.438	3.81	1.28	41.			179.9	75	13.86	34.515	4.16	25.861	214.8	.212
172	11.02	34.408	3.68	1.48	42.			170.2	100	12.87	34.485	3.96	26.039	197.9	.264
203	10.68	34.387	3.64	1.52	47.			166.0	125	12.09	34.456	3.84	26.169	185.5	.313
237	10.03	34.356	3.45	1.57	49.			157.5	150	11.48	34.429	3.77	26.263	176.6	.359
263	9.32	34.290	3.41	1.72	60.			151.2	200	10.71	34.389	3.64	26.371	166.3	.447
314	8.35	34.261	3.09	1.96	71.			138.8	250	9.68	34.323	3.43	26.498	154.3	.529
379	7.39	34.248	2.80	2.18	80.			126.3	300	8.58	34.262	3.19	26.627	142.0	.606
454	6.442	34.241	2.48	2.40	93.			114.5	400	7.11	34.245	2.71	26.830	122.8	.745
529	5.582	34.246	2.19	2.65	100.			103.8	500	5.89	34.243	2.30	26.990	107.6	.866
604	5.064	34.255	1.99	2.68	112.			97.3	600	5.09	34.254	2.00	27.096	97.6	.975
679	4.451	34.300	1.71	2.78	118.			87.4	700	4.35	34.309	1.67	27.222	85.6	1.074
754	4.120	34.328	1.59	2.96	132.			81.9	800	3.86	34.348	1.50	27.305	77.8	1.162
854	3.583	34.372	1.43		135.			73.4	1000	3.36	34.412	1.50	27.404	68.4	1.323
977	3.390	34.408	1.49	2.93	140.			68.9	1200	3.05	34.462	1.60	27.473	61.8	1.469
1125	3.193	34.437	1.56	3.00	145.			65.0							
1222	2.998	34.470	1.61					60.8							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 40

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 45.4N	136 30.5E	07/14/71	2318 GMT	2037M	140	01KT	1	210 01 05

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.26	33.823	5.06	.08	6.			488.5	0	23.26	33.823	5.06	22.989	488.5	0
20	17.39	34.485	5.34	.38	13.			292.4	10	19.98	34.210	5.20	24.184	374.4	.043
40	14.27	34.501	4.24	.97	26.			224.0	20	17.39	34.485	5.34	25.045	292.4	.077
71	13.35	34.498	4.12	1.05	29.			206.1	30	15.53	34.539	4.83	25.517	247.4	.104
102	12.53	34.476	4.03	1.20	32.			192.2	50	13.97	34.499	4.20	25.825	218.3	.150
137	11.76	34.452	3.98	1.30	35.			179.9	75	13.24	34.496	4.11	25.973	204.1	.204
168	11.18	34.417	3.80	1.43	40.			172.3	100	12.58	34.478	4.03	26.091	193.0	.254
198	10.59	34.391	3.65	1.53	44.			164.1	125	12.01	34.461	4.00	26.189	183.7	.302
232	10.01	34.364	3.43	1.63	48.			156.6	150	11.51	34.438	3.91	26.263	176.6	.347
258	9.57	34.319	3.43	1.66	48.			152.9	200	10.55	34.390	3.63	26.400	163.6	.435
308	8.92	34.296	3.19	1.90	57.			144.6	250	9.70	34.333	3.43	26.501	154.0	.516
373	7.80	34.265	2.90	2.08	66.			130.6	300	9.02	34.297	3.24	26.585	146.1	.594
447	6.63	34.236	2.59	2.29	79.			117.2	400	7.35	34.252	2.79	26.802	125.4	.736
523	5.77	34.238	2.24	2.63	88.			106.6	500	6.01	34.235	2.35	26.969	109.6	.860
598	4.99	34.265	1.89	2.66	99.			95.7	600	4.97	34.266	1.88	27.118	95.4	.969
672	4.41	34.289	1.67	3.01	104.			87.8	700	4.28	34.300	1.62	27.222	85.6	1.066
746	4.10	34.319	1.57	2.94	111.			82.4	800	3.85	34.347	1.56	27.304	77.9	1.155
844	3.671	34.369	1.55	3.02	126.			74.5	1000	3.34	34.411	1.48	27.406	68.2	1.315
969	3.400	34.402A	1.48	2.91	134.			69.5	1200	2.98	34.464	1.59	27.481	61.1	1.460
1116	3.115	34.445A	1.70U	3.02	141.			63.7	1500	2.53	34.531	1.90	27.574	52.3	1.655
1313	2.805	34.487	1.71	3.04	147.			57.8	2000	1.99	34.611	2.59	27.682	42.1	1.933
1513	2.514	34.534	1.92	2.97	150.			51.9							
1763	2.235	34.572	2.27	2.96	152.			46.8							
2019	1.973	34.613	2.61	2.86	155.			41.7							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 41

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 36.0N	136 29.4E	07/15/71	0210 0335GMT	2050M	070	05KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.67	33.853	5.26	.05	5.			526.0	0	24.67	33.853	5.26	22.597	526.0	0
20	17.45	34.456	5.35	.35	10.			295.8	10	20.48	34.204	5.31	24.049	387.4	.046
45	14.05	34.490	4.18	1.03	24.			220.4	20	17.45	34.456	5.35	25.009	295.8	.080
76	13.02	34.473	4.07	1.10	29.			201.6	30	15.58	34.500	4.91	25.477	251.3	.107
105	11.99	34.447	4.05	1.23	33.			184.4	50	13.77	34.480	4.16	25.852	215.6	.154
140	11.10	34.407	3.73	1.40	38.			171.6	75	13.04	34.473	4.07	25.996	202.0	.207
171	10.71	34.387	3.67	1.52	41.			166.5	100	12.17	34.452	4.05	26.151	187.2	.256
201	10.21	34.360	3.51	1.63	45.			160.1	125	11.43	34.424	3.87	26.268	176.1	.302
235	9.54	34.328	3.33	1.68	50.			151.8	150	10.96	34.401	3.71	26.335	169.7	.346
261	9.17	34.306	3.25	1.77	52.			147.7	200	10.23	34.361	3.52	26.434	160.4	.431
310	8.30	34.273	3.06	1.99	59.			137.1	250	9.32	34.315	3.28	26.550	149.3	.510
375	7.32	34.243	2.79	2.20	69.			125.7	300	8.48	34.279	3.10	26.655	139.4	.585
449	6.52	34.225	2.55	2.35	79.			116.7	400	7.04	34.235	2.71	26.833	122.6	.722
523	5.64	34.236	2.20	2.61	90.			105.2	500	5.90	34.231	2.31	26.979	108.7	.844
597	5.07	34.245	1.90	2.59	99.			98.1	600	5.05	34.246	1.89	27.094	97.8	.954
671	4.62	34.275	1.76	2.81	108.			91.0	700	4.41	34.290	1.68	27.201	87.7	1.053
739	4.15	34.311	1.57	2.92	118.			83.5	800	3.92	34.334	1.53	27.286	79.5	1.144
842	3.81	34.347	1.50	2.99	124.			77.4	1000	3.33	34.409	1.47	27.405	68.3	1.306
964	3.41	34.398	1.47	2.98	132.			69.9	1200	2.97	34.461	1.61	27.480	61.2	1.451
1109	3.13	34.437	1.52	3.06	138.			64.4	1500	2.51	34.527	1.95	27.573	52.4	1.646
1237B	2.902	34.470	1.65	2.94	142.			59.9	2000	2.00	34.600	2.60	27.672	43.0	1.927
1481B	2.537	34.523	1.92	2.93	148.			52.9							
1683B	2.296	34.560	2.20	2.88	151.			48.2							
1892B	2.095	34.585	2.49	2.83	152.			44.8							
2002B	1.999	34.599	2.60	2.81	152.			43.0							

A) THE SALINITY BOTTLE NUMBERS AND ORDER DIFFER ON THE ORIGINAL DATA AND SALINITY DETERMINATION SHEETS. THEY ARE ASSUMED TO BE IN THE CORRECT ORDER.
B) CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 42

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 25.9N	136 35.2E	07/15/71	0620 0716GMT	2028M	230	06KT	1	150 01 06

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.32	34.060	4.76	.08	4.			620.9	0	28.32	34.060	4.76	21.605	620.9	0
20	23.59	34.374	5.21	.12	4.			457.8	10	25.79	34.224	5.08	22.536	531.8	.058
45	19.58	34.555	4.70	.31	10.			339.3	20	23.59	34.374	5.21	23.309	457.8	.107
75	17.12	34.551	4.32	.64	16.			281.4	30	21.75	34.471	5.07	23.906	400.9	.150
104	14.79	34.542	4.08	.86	22.			231.7	50	19.08	34.567	4.62	24.689	326.3	.223
138	12.69	34.480	3.82	1.17	31.			194.9	75	17.12	34.551	4.32	25.160	281.4	.300
168	11.91	34.446	3.75	1.30	34.			183.0	100	15.10	34.544	4.11	25.619	237.8	.365
196	11.00	34.405	3.48	1.47	41.			170.1	125	13.38	34.505	3.91	25.953	206.1	.422
229	9.81	34.348	3.34	1.57	48.			154.6	150	12.33	34.468	3.80	26.131	189.1	.472
253	9.04	34.311	3.15	1.74	54.			145.3	200	10.86	34.398	3.46	26.353	168.1	.563
299	8.21	34.272	3.02	1.93	60.			135.9	250	9.13	34.315	3.17	26.582	146.3	.644
360	7.50	34.260	2.78	2.09	68.			126.9	300	8.20	34.272	3.02	26.693	135.8	.717
429	6.765	34.242	2.60	2.22	75.			118.5	400	7.08	34.250	2.68	26.838	122.1	.852
497	5.845	34.235	2.28	2.47	87.			107.7	500	5.81	34.236	2.26	26.994	107.2	.973
565	5.164	34.250	1.97	2.52	98.			98.7	600	4.93	34.262	1.88	27.120	95.3	1.081
635	4.733	34.276	1.80	2.67	106.			92.1	700	4.29	34.304	1.62	27.225	85.4	1.178
704	4.260	34.306	1.61	2.82	115.			85.0	800	3.81	34.349	1.47	27.310	77.3	1.266
798	3.813	34.348	1.47	2.83	123.			77.4	1000	3.27	34.417	1.43	27.417	67.2	1.424
917	3.465	34.388	1.35	2.88	131.			71.1	1200	2.89	34.477	1.69	27.500	59.3	1.566
1068	3.132	34.440	1.53	2.90	138.			64.2	1500	2.52	34.527	1.92	27.572	52.5	1.758
1262A	2.794	34.491	1.75	2.87	142.			57.4	2000	2.01	34.599	2.55	27.671	43.1	2.040
1456A	2.574	34.519	1.88	2.88	146.			53.5							
1704A	2.313	34.561	2.15	2.92	148.			48.2							
1840A	2.214	34.574	2.29	2.86	150.			46.5							
2000A	2.011	34.599	2.55	2.75	151.			43.1							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 43

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 16.4N	136 33.5E	07/15/71	1003 GMT	1848M	250	10KT	1	250 01 08

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.39	34.039	4.80	.10	4.			624.6	0	28.39	34.039	4.80	21.566	624.6	0
18	25.45	34.280	5.08	.15	4.			517.8	10	26.60	34.187	4.99	22.254	558.8	.059
43A	23.44	34.335	5.00	.15	3.			456.5	20	25.24	34.291	5.07	22.753	511.0	.113
73A	21.02	34.473	4.72	.42	7.			381.7	30	24.34	34.328	5.04	23.055	482.1	.162
102A	19.18	34.646	4.32	.53	10.			322.9	50	22.85	34.361	4.95	23.513	438.4	.255
136A	17.17	34.679	4.17	.68	14.			273.2	75	20.88	34.487	4.69	24.155	377.2	.357
164A	15.48	34.591	4.16	1.21	18.			242.5	100	19.30	34.637	4.35	24.686	326.5	.446
192A	14.46	34.552	4.07	1.29	22.			224.2	125	17.81	34.687	4.19	25.097	287.4	.524
224A	13.54	34.518	3.89	1.30	24.			208.3	150	16.29	34.638	4.16	25.422	256.5	.593
247A	12.76	34.478	3.78	1.41	28.			196.3	200	14.23	34.545	4.03	25.806	220.0	.715
291A	11.66	34.427	3.61	1.52	34.			180.0	250	12.68	34.474	3.77	26.068	195.1	.821
349A	10.06	34.408	3.50	1.58	38.			154.2	300	11.41	34.425	3.60	26.271	175.8	.917
412A	8.45	34.307	2.93	2.28	59.			136.8	400	8.74	34.326	3.05	26.652	139.7	1.082
475A	7.16	34.289	2.54	2.65	73.			120.2	500	6.46	34.239	2.39	26.913	114.9	1.217
537A	5.58	34.185	2.20	2.65	85.			108.3	600	5.25	34.254	2.02	27.076	99.5	1.331
598A	5.27	34.252	2.03	2.67	96.			99.8	700	4.45	34.306	1.76	27.208	87.0	1.431
658A	4.72	34.286	1.73	2.77	107.			91.2	800	3.99	34.339	1.62	27.284	79.8	1.522
738A	4.26	34.320	1.78	2.92	113.			83.9	1000	3.30	34.411	1.50	27.410	67.9	1.684
838A	3.845	34.350	1.51	3.00	123.			77.6	1200	2.92	34.465	1.62	27.487	60.5	1.828
959A	3.408	34.397	1.48	2.97	132.			69.9	1500	2.53	34.524	1.91	27.569	52.8	2.022
1105A	3.072	34.443	1.56	2.97	139.			63.5							
1330A	2.758	34.490	1.72	3.04	145.			57.2							
1582A	2.416	34.539	2.02	2.92	149.			50.7							

A) CAST II.

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 05.2N	136 32.0E	07/15/71	1421 1631GMT	3530M	230	12KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.62	33.898	4.67	.08	3.			642.0	0	28.62	33.898	4.67	21.385	642.0	0
20	27.51	34.273	4.77	.06	3.			580.3	10	28.19	34.113	4.72	21.687	613.0	.063
45	24.69	34.472	4.91	.13	4.			481.9	20	27.51	34.273	4.77	22.029	580.3	.122
75	22.27	34.648	4.44	.28	5.			401.9	30	26.43	34.369	4.85	22.444	540.6	.179
105	20.39	34.544	4.44	.38	7.			360.4	50	24.23	34.514	4.84	23.226	465.8	.280
139	19.44	34.811	4.48	.32	5.			317.3	75	22.27	34.648	4.44	23.895	401.9	.389
169	18.22	34.777	4.38	.46	7.			290.4	100	20.65	34.560	4.44	24.273	365.9	.485
197	16.99	34.757	4.42	.53	10.			263.5	125	19.78	34.698	4.47	24.608	334.0	.574
230	15.88	34.694	4.32	.70	12.			243.6	150	19.02	34.812	4.44	24.892	307.0	.655
254	14.89	34.617	4.14	.85	15.			228.2	200	16.89	34.753	4.42	25.370	261.4	.800
300	13.35	34.522	3.81	1.12	24.			204.3	250	15.06	34.631	4.17	25.693	230.7	.927
361	11.70	34.400	3.81	1.30	27.			182.7	300	13.35	34.522	3.81	25.971	204.3	1.039
429	10.25	34.380	3.29	1.68	43.			159.3	400	10.88	34.386	3.54	26.339	169.3	1.235
497	8.25	34.307	2.84	2.11	60.			133.9	500	8.15	34.305	2.81	26.726	132.7	1.395
564	6.32	34.269	2.30	2.38	80.			110.9	600	5.69	34.249	2.13	27.019	104.8	1.522
630	5.32	34.237	2.02	2.71	92.			101.5	700	4.75	34.266	1.75	27.144	93.0	1.628
698	4.76	34.265	1.75	2.87	102.			93.2	800	4.23	34.325	1.61	27.248	83.2	1.723
787	4.29	34.318	1.63	2.92	113.			84.4	1000	3.46	34.402	1.51	27.387	70.0	1.892
900	3.78	34.368	1.50	2.94	126.			75.6	1200	2.96	34.468	1.64	27.485	60.7	2.038
1038	3.36	34.414	1.51	3.03	134.			68.2	1500	2.51	34.525	1.83	27.571	52.6	2.233
1155A	3.06	34.454	1.60	2.96	137.			62.5	2000	2.01	34.603	2.53	27.674	42.8	2.514
1346A	2.71	34.503	1.76	3.01	145.			55.8	2500	1.72	34.642	3.05	27.728	37.7	2.761
1537A	2.47	34.529	1.85	2.82	145.			51.9	3000	1.55	34.665	3.41	27.759	34.8	2.990
1727A	2.25	34.565	2.18	2.85	148.			47.5							
1918A	2.08	34.595	2.45	2.83	150.			43.9							
2110A	1.93	34.610	2.63	2.77	150.			41.6							
2304A	1.816	34.625	2.80	2.73	150.			39.7							
2499A	1.717	34.641	3.05	2.71	148.			37.7							
2696A	1.65	34.653	3.17	2.64	148.			36.3							
2896A	1.577	34.661	3.37	2.63	147.			35.2							
3098A	1.534	34.667	3.44	2.71	148.			34.5							
3304A	1.517	34.675	3.52	2.57	147.			33.8							

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 53.4N	136 34.0E	07/15/71	1952 2131GMT	4313M	270	10KT	1	270 04 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.66	34.097	4.63	.11	3.			628.9	0	28.66	34.097	4.63	21.521	628.9	0
20	28.36	34.234	4.68	.02	2.			609.6	10	28.51	34.166	4.66	21.622	619.3	.062
44	24.88	34.474	4.93	.09	3.			487.2	20	28.36	34.234	4.68	21.723	609.6	.124
74	23.25	34.781	5.14	.09	3.			419.0	30	27.00	34.316	4.78	22.225	561.5	.183
103	21.51	34.795	4.99	.11	3.			371.1	50	24.44	34.551	4.99	23.192	469.1	.286
138	20.27	34.844	4.70	.20	3.			335.6	75	23.19	34.783	5.14	23.736	417.1	.397
167	19.42	34.858	4.62	.22	4.			313.4	100	21.68	34.799	5.02	24.175	375.3	.497
196	18.83	34.865	4.62	.27	4.			298.6	125	20.66	34.826	4.80	24.473	346.8	.588
230	18.00	34.844	4.87	.39	5.			280.4	150	19.89	34.851	4.65	24.696	325.6	.674
254	17.62	34.826	4.70	.36	5.			272.8	200	18.73	34.863	4.66	25.005	296.2	.832
302	16.68	34.764	4.53	.60	9.			256.0	250	17.68	34.829	4.74	25.239	274.0	.979
364	15.33	34.656	4.26	.74	13.			234.6	300	16.72	34.767	4.54	25.420	256.7	1.116
436	13.199	34.557	4.03	.96	19.			198.9	400	14.34	34.616	4.14	25.836	217.1	1.363
506	10.505	34.306	3.78	1.47	32.			169.0	500	10.72	34.324	3.81	26.318	171.4	1.568
577	9.144	34.338	3.02	1.82	51.			144.9	600	8.69	34.333	2.88	26.665	138.4	1.734
647	7.716	34.310	2.65	2.17	67.			126.1	700	6.47	34.277	2.31	26.942	112.2	1.870
718	6.073	34.268	2.20	2.69	85.			107.9	800	4.90	34.267	1.78	27.128	94.6	1.983
811	4.789	34.269	1.74	2.78	103.			93.2	1000	3.71	34.373	1.51	27.339	74.6	2.169
928	4.068	34.337	1.52	2.92	117.			80.7	1200	3.12	34.444	1.57	27.453	63.8	2.324
1067	3.447	34.401	1.50	3.09	131.			70.0	1500	2.55	34.526	1.86	27.569	52.8	2.524
1141A	3.25	34.426	1.54	2.92	133.			66.3	2000	1.98	34.601	2.61	27.675	42.7	2.805
1330A	2.866	34.481	1.67	2.97	143.			58.8	2500	1.70	34.645	3.01	27.732	37.4	3.050
1565A	2.44	34.541	1.95	2.73	146.			50.8	3000	1.54	34.670	3.40	27.764	34.3	3.277
1801A	2.147	34.574	2.38	2.80	151.			46.0	3500	1.51	34.678	3.56	27.772	33.5	3.499
2086A	1.92	34.611	2.68	2.77	151.			41.5	4000	1.54	34.678	3.61	27.770	33.8	3.726
2373A	1.754	34.638	2.92	2.68	150.			38.2							
2662A	1.643	34.651	3.12	2.62	150.			36.4							
2954A	1.543	34.668	3.38	2.60	150.			34.5							
3248A	1.519	34.673	3.48	2.56	148.			33.9							
3545A	1.512	34.678	3.57	2.57	149.			33.5							
3797A	1.523	34.678	3.57	2.57	148.			33.6							
4052A	1.550	34.677	3.62	2.54	146.			33.8							

AI CAST II.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 46

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 45.7N	136 29.8E	07/16/71	0036 0155GMT	4513M	270	10KT	0	270 01 09

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.69	34.218	4.62	.05	4.			621.2	0	28.69	34.218	4.62	21.602	621.2	0
20	28.41	34.223	4.68	.08	4.			612.0	10	28.55	34.221	4.64	21.650	616.6	.062
45	25.38	34.594	4.85	.05	5.			493.1	20	28.41	34.223	4.68	21.698	612.0	.123
76	22.70	34.815	5.18	.07	4.			401.5	30	27.33	34.351	4.74	22.145	569.2	.183
107	21.01	34.825	5.19	.07	5.			355.9	50	24.87	34.646	4.91	23.133	474.7	.287
141	19.92	34.833	4.56	.22	7.			327.6	75	22.77	34.812	5.17	23.878	403.6	.398
171	19.25	34.852	4.59	.25	6.			309.7	100	21.32	34.833	5.19	24.300	363.4	.494
201	18.29	34.842	4.75	.25	6.			287.3	125	20.36	34.829	4.85	24.555	339.0	.583
235	17.71	34.831	4.71	.36	7.			274.6	150	19.72	34.840	4.57	24.733	322.1	.667
260	17.37	34.814	4.65	.38	7.			268.0	200	18.32	34.842	4.75	25.091	288.0	.823
308	16.47	34.748	4.49	.50	10.			252.5	250	17.51	34.822	4.68	25.275	270.5	.966
370	15.33	34.658	4.30	.71	15.			234.4	300	16.63	34.760	4.52	25.436	255.2	1.102
443	13.99	34.576	4.10	.91	20.			212.9	400	14.86	34.634	4.21	25.739	226.4	1.353
515	11.42	34.371	3.95	1.28	31.			179.8	500	11.97	34.406	3.98	26.153	187.0	1.571
586	9.76	34.378	3.13	1.67	49.			151.5	600	9.32	34.354	3.03	26.581	146.4	1.750
657	7.55	34.256	2.71	2.11	65.			127.9	700	6.48	34.218	2.48	26.894	116.7	1.893
728	5.91	34.207	2.34	2.42	83.			110.5	800	5.09	34.243	1.94	27.087	98.4	2.010
823	4.93	34.261	1.82	2.65	102.			95.3	1000	3.83	34.360	1.59	27.316	76.7	2.202
942	4.137	34.330	1.80U	2.95U	118.			81.9	1200	3.11	34.445	1.53	27.454	63.6	2.359
1087	3.459	34.400	1.47	2.85	133.			70.2	1500	2.52	34.519	1.88	27.566	53.1	2.560
1328A	2.829	34.485	1.67	2.97	143.			58.2	2000	1.99	34.608	2.50	27.679	42.3	2.841
1523A	2.49	34.523	1.91	2.93	147.			52.5	2500	1.71	34.645	3.09	27.731	37.4	3.085
2005A	1.99	34.608	2.51	2.72	147.			42.2	3000	1.53	34.671	3.37	27.766	34.1	3.312
2293A	1.80	34.631	2.89	2.72	150.			39.1	3500	1.50	34.676	3.62	27.772	33.6	3.533
2584A	1.68	34.650	3.15	2.70	150.			36.8	4000	1.54	34.677	3.63	27.770	33.8	3.760
2873A	1.553	34.667	3.32	2.67	150.			34.6							
3165A	1.516	34.674	3.43	2.62	148.			33.8							
3460A	1.502	34.676	3.62	2.62	148.			33.6							
3756A	1.521	34.677	3.61	2.58	148.			33.6							
4058A	1.544	34.677	3.63	2.59	148.			33.8							
4261A	1.561	34.678	3.63	2.59	148.			33.8							
4465A	1.578	34.681	3.65	2.58	148.			33.7							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 47

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 35.1N	136 27.8E	07/16/71	0521 0707GMT	4496M	250	12KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.77	34.528	4.66	.10	3.			601.5	0	28.77	34.528	4.66	21.808	601.5	0
20	27.87	34.520	4.75	.01	3.			573.7	10	28.53	34.524	4.71	21.884	594.1	.060
44	24.61	34.714	5.14	.04	3.			462.2	20	27.87	34.520	4.75	22.098	573.7	.118
75	22.58	34.829	5.11	.06	4.			397.2	30	26.57	34.582	4.92	22.562	529.3	.174
105	21.27	34.795	4.85	.17	4.			364.8	50	24.09	34.750	5.13	23.445	444.9	.271
140	20.41	34.860	4.88	.13	4.			338.0	75	22.58	34.829	5.11	23.945	397.2	.377
170	19.15	34.841	5.21U	.09	4.			308.1	100	21.45	34.803	4.89	24.242	368.9	.474
200	18.72	34.855	4.78	.23	4.			296.6	125	20.77	34.832	4.87	24.447	349.3	.564
235	18.23	34.844	4.67	.32	5.			285.8	150	19.97	34.854	4.87	24.678	327.4	.650
261	17.79	34.834	4.65	.32	6.			276.2	200	18.72	34.855	4.78	25.000	296.6	.809
310	16.99	34.800	4.57	.42	7.			260.3	250	17.98	34.838	4.66	25.172	280.3	.957
377	15.69	34.699	4.43	.63	11.			239.1	300	17.16	34.809	4.59	25.349	263.4	1.098
452	14.02	34.566	4.22	.87	17.			214.3	400	15.22	34.661	4.37	25.682	231.8	1.356
527	11.86	34.419	4.00	1.17	25.			184.1	500	12.65	34.466	4.10	26.069	195.1	1.582
601	10.08	34.357	3.36	1.63	43.			158.2	600	10.10	34.358	3.37	26.453	158.6	1.771
676	8.2 B	34.240	3.09	1.95	55.			138.2	700	7.71	34.234	2.93	26.736	131.7	1.929
749	6.82	34.239	2.58	2.28	73.			119.4	800	5.95	34.232	2.25	26.974	109.2	2.060
845	5.29	34.234	1.99	2.60	93.			101.3	1000	3.97	34.347	1.59	27.292	79.0	2.267
963	4.21	34.324	1.61	2.79	115.			83.1	1200	3.24	34.428	1.53	27.428	66.1	2.430
1099	3.50	34.397	1.52	2.93	130.			70.8	1500	2.62	34.516	1.79	27.554	54.1	2.636
1242A	3.17	34.438	1.53	2.82	136.			64.7	2000	2.07	34.594	2.44	27.662	43.9	2.926
1437A	2.73	34.501	1.72	2.85	145.			56.2	2500	1.75	34.641	3.03	27.725	38.0	3.177
1681A	2.37	34.549	2.02	2.79	149.			49.6	3000	1.56	34.669	3.38	27.761	34.6	3.407
1926A	2.13	34.582	2.31	2.54	145.			45.2	3500	1.52	34.677	3.54	27.771	33.6	3.630
2218A	1.90	34.621	2.79	2.45	149.			40.6	4000	1.55	34.677	3.59	27.769	33.8	3.858
2513A	1.74	34.641	3.04	2.77	149.			37.9							
2808A	1.61	34.659	3.22	2.72	150.			35.6							
3104A	1.545	34.672	3.45	2.63	149.			34.2							
3403A	1.514	34.678	3.52	2.67	149.			33.5							
3705A	1.53	34.674	3.58	2.64				33.9							
4009A	1.55	34.677	3.59	2.62	148.			33.8							
4316A	1.571	34.680	3.62	2.64	148.			33.7							
4419A	1.581	34.680	3.62	2.59	148.			33.8							

A) CAST II.
B) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE LENGTH.

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 48

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 15.2N	136 30.9E	07/16/71	1223 1407GMT	4150M	270	10KT	1	270 03

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.18	34.581	4.75	.03	3.			579.0	0	28.18	34.581	4.75	22.042	579.0	0
21	26.79	34.459	4.88	.03	3.			544.9	10	27.66	34.489	4.81	22.143	569.4	.057
46	23.65	34.714	5.07	.06	3.			435.0	20	26.88	34.459	4.87	22.369	547.7	.113
77	22.55	34.772	4.86	.14	4.			400.5	30	25.64	34.528	4.96	22.812	505.4	.166
107	21.45	34.830	4.86	.14	3.			367.0	50	23.42	34.732	5.05	23.629	427.4	.260
142	20.59	34.832	4.72	.18	4.			344.6	75	22.57	34.774	4.88	23.904	401.1	.364
173	19.98	34.841	4.69	.21	4.			328.6	100	21.69	34.818	4.86	24.185	374.3	.462
203	19.29	34.846	4.78	.24	5.			311.1	125	20.97	34.835	4.79	24.397	354.1	.554
239	18.52	34.843	4.89	.31	5.			292.7	150	20.43	34.834	4.71	24.541	340.4	.642
265	18.18	34.843	4.92	.26	5.			284.7	200	19.36	34.845	4.77	24.830	312.8	.808
315	17.70	34.833	4.83	.35	6.			274.2	250	18.36	34.843	4.91	25.081	288.9	.962
380	16.56	34.764	4.59	.52	8.			253.3	300	17.85	34.838	4.87	25.204	277.2	1.108
455	14.991	34.633	4.33	.77	12.			229.2	400	16.18	34.733	4.53	25.519	247.3	1.382
529	12.864	34.499	3.83	1.16	26.			196.7	500	13.74	34.554	4.01	25.916	209.6	1.623
603	10.639	34.313	3.89	1.46	31.			170.7	600	10.72	34.319	3.89	26.315	171.7	1.827
677	9.0 B	34.294	3.16	1.89	52.			146.0	700	8.38	34.262	3.03	26.657	139.2	1.996
752	7.057	34.202	2.78	2.20	68.			125.3	800	6.22	34.211	2.43	26.923	114.0	2.134
849	5.568	34.239	2.07	2.60	90.			104.1	1000	4.15	34.305	1.51	27.239	84.0	2.352
970	4.356	34.284	1.58	2.90	111.			87.6	1200	3.35	34.414	1.43	27.406	68.2	2.522
1113	3.602	34.381	1.40	3.01	128.			72.9	1500	2.71	34.504	1.80	27.537	55.8	2.735
1275A	3.199	34.434	1.51	2.97	138.			65.3	2000	2.08	34.592	2.51	27.660	44.1	3.030
1473A	2.760	34.497	1.77	2.75	140.			56.7	2500	1.72	34.644	2.93	27.729	37.6	3.280
1719A	2.358	34.550	2.03	2.86	152.			49.4	3000	1.53	34.671	3.46	27.766	34.1	3.508
1966A	2.110	34.586	2.46	2.85	154.			44.8	3500	1.50	34.682	3.68	27.776	33.2	3.728
2261A	1.848	34.626	2.78	2.73	153.			39.8	4000	1.53	34.683	3.64	27.775	33.2	3.953
2558A	1.697	34.646	2.97	2.68	152.			37.2							
2855A	1.557	34.666	3.37	2.63	152.			34.7							
3155A	1.513	34.674	3.52	2.60	151.			33.8							
3458A	1.504	34.681	3.69	2.64	151.			33.2							
3763A	1.504	34.682	3.61	2.60	150.			33.1							
4132A	1.548	34.683	3.66	2.57	149.			33.4							

RV THOMAS WASHINGTON — ARIES EXPEDITION VI — 49

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 53.3N	136 31.3E	07/16/71	1756 1905GMT	4157M	250	17KT	1	250 01 09

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.07	34.506	4.66	.04	4.			580.9	0	28.07	34.506	4.66	22.022	580.9	0
20	27.49	34.486	4.81	.03	4.			564.3	10	28.00	34.500	4.73	22.040	579.2	.058
45	24.30	34.628	5.04	.09	5.			459.5	20	27.49	34.486	4.81	22.195	564.3	.115
76	23.13	34.730	4.85	.08	4.			419.4	30	26.26	34.522	4.92	22.614	524.3	.170
107	22.02	34.774	4.74	.14	5.			386.1	50	24.00	34.652	5.02	23.397	449.4	.267
142	21.11	34.824	4.68	.16	4.			358.6	75	23.14	34.729	4.86	23.707	419.9	.377
173	20.38	34.841	4.70	.18	5.			338.6	100	22.26	34.766	4.76	23.989	393.0	.479
203	19.56	34.843	4.94	.16	4.			318.0	125	21.52	34.802	4.70	24.220	371.0	.576
238	18.97	34.843	4.79	.39	6.			303.5	150	20.92	34.830	4.69	24.405	353.3	.668
264	18.44	34.829	4.65	.31	6.			291.8	200	19.64	34.843	4.92	24.756	319.9	.839
313	17.69	34.818	4.62	.37	7.			275.0	250	18.72	34.836	4.72	24.985	298.1	.997
379	16.39	34.722	4.35	.61	12.			252.6	300	17.88	34.822	4.63	25.184	279.1	1.146
453	15.17	34.685	4.37	.64	13.			229.1	400	16.07	34.717	4.36	25.532	246.1	1.420
528	13.11	34.499	3.93	1.10	25.			201.4	500	13.93	34.574	4.11	25.890	212.0	1.662
602	10.99	34.358	3.77	1.43	35.			173.4	600	11.05	34.361	3.77	26.289	174.1	1.869
677	9.0 B	34.252	3.38	1.84	48.			149.1	700	8.46	34.235	3.23	26.624	142.4	2.040
750	7.41	34.213	2.88	2.18	65.			129.2	800	6.49	34.199	2.52	26.878	118.3	2.182
847	5.78	34.200	2.21	2.57	87.			109.5	1000	4.44	34.294	1.64	27.200	87.7	2.409
968	4.67	34.273	1.72		107.			91.7	1200	3.47	34.399	1.49	27.383	70.3	2.586
1111	3.81	34.359	1.48	2.97	125.			76.5	1500	2.78	34.493	1.72	27.523	57.1	2.805
1267A	3.28	34.424	1.50	3.13	137.			66.7	2000	2.12	34.588	2.43	27.653	44.8	3.106
1467A	2.84	34.485	1.69	3.08	146.			58.3	2500	1.77	34.635	2.94	27.718	38.6	3.362
1716A	2.43	34.539	1.95	2.96	152.			50.8	3000	1.59	34.663	3.30	27.755	35.2	3.595
1966A	2.15	34.583	2.38	2.90	153.			45.3	3500	1.52	34.677	3.54	27.770	33.7	3.821
2266A	1.91	34.614	2.73	2.88	154.			41.2	4000	1.53	34.681	3.61	27.773	33.4	4.048
2564A	1.74	34.639	2.99	2.80	152.			38.0							
2863A	1.637	34.657	3.17	2.75	151.			36.0							
3159A	1.545	34.668	3.43	2.70	151.			34.5							
3455A	1.522	34.675	3.52	2.67	151.			33.8							
3750A	1.526	34.680	3.60	2.60	150.			33.4							
3944A	1.524	34.680	3.61	2.72	150.			33.4							
4138A	1.545	34.681	3.63	2.69	149.			33.5							

A) CAST II.
B) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE LENGTH.

RV THOMAS WASHINGTON ARIES EXPEDITION VI 50

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 34.1N	136 28.5E	07/16/71	2203 0009GMT	4260M	310	15KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.06	34.445	4.66	.04	3.			585.0	0	28.06	34.445	4.66	21.979	585.0	0
20	27.95	34.443	4.68	.03	3.			581.7	10	28.00	34.444	4.67	21.997	583.4	.058
45	25.28	34.643	5.02	.06	3.			486.7	20	27.95	34.443	4.68	22.014	581.7	.117
75	22.75	34.814	5.10	.04	3.			402.9	30	27.02	34.508	4.81	22.362	548.4	.173
105	21.68	34.810	5.04	.09	3.			374.5	50	24.78	34.679	5.03	23.186	469.6	.275
141	20.96	34.856	4.82	.14	3.			352.4	75	22.75	34.814	5.10	23.885	402.9	.385
172	20.02	34.873	4.81	.18	3.			327.2	100	21.79	34.816	5.05	24.156	377.0	.483
201	19.11	34.854	4.72	.24	4.			306.1	125	21.27	34.834	4.91	24.315	361.9	.577
242	18.57	34.844	4.84	.29	4.			293.8	150	20.70	34.863	4.82	24.490	345.2	.666
308	17.61	34.806	4.53	.41	6.			274.1	200	19.14	34.854	4.72	24.894	306.8	.833
384	16.11	34.724	4.46	.58	8.			246.4	250	18.47	34.841	4.81	25.054	291.5	.986
466	14.32	34.579	4.22	.87	15.			219.3	300	17.74	34.812	4.58	25.211	276.6	1.133
556	11.64	34.393	3.97	1.26	27.			182.1	400	15.79	34.700	4.42	25.583	241.2	1.402
658	9.38	34.260	3.54	1.70	41.			154.3	500	13.31	34.503	4.13	25.964	205.0	1.638
759	7.54	34.214	2.94	2.40	61.			130.9	600	10.59	34.326	3.80	26.344	168.9	1.838
883	5.43	34.228	2.07	2.69	91.			103.4	700	8.58	34.233	3.31	26.604	144.3	2.008
1007	4.37	34.285	1.62	2.91	110.			87.6	800	6.78	34.210	2.64	26.849	121.0	2.153
1157	3.61	34.378	1.42	3.01	128.			73.2	1000	4.41	34.282	1.64	27.194	88.3	2.384
1326	3.11	34.444	1.54	3.06	139.			63.7	1200	3.46	34.398	1.43	27.384	70.3	2.561
1503	2.76	34.496	1.72	3.01	145.			56.8	1500	2.76	34.496	1.72	27.526	56.8	2.779
1541A	2.74	34.490	1.73	2.91	144.			57.1	2000	2.11	34.589	2.37	27.654	44.7	3.079
1785A	2.35	34.551	2.03	2.82	148.			49.3	2500	1.75	34.638	2.94	27.722	38.2	3.333
2074A	2.05	34.598	2.49	2.80	150.			43.4	3000	1.58	34.664	3.25	27.756	35.1	3.565
2365A	1.83	34.628	2.81	2.79	150.			39.5	3500	1.53	34.676	3.52	27.769	33.8	3.791
2658A	1.68	34.647	3.06	2.68	149.			37.0	4000	1.53	34.678	3.60	27.771	33.7	4.019
2953A	1.595	34.662	3.21	2.66	148.			35.3							
3252A	1.535	34.670	3.43	2.65	148.			34.3							
3556A	1.53	34.676	3.53	2.60	147.			33.8							
3865A	1.528	34.677	3.58	2.63	146.			33.7							
4180A	1.543	34.679	3.61	2.62	147.			33.6							
4191A	1.556	34.682	3.61	2.59	148.			33.5							

RV THOMAS WASHINGTON ARIES EXPEDITION VI 51

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 15.6N	136 29.0E	07/17/71	0343 0525GMT	4564M	260	17KT	1	260 04 04

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	27.94	34.430	4.69	.08	2.			582.3	0	27.94	34.430	4.69	22.007	582.3	0
20	27.12	34.345	4.83	.09	2.			563.1	10	27.71	34.420	4.74	22.075	575.9	.058
45	24.02	34.820	5.21	.06	2.			437.7	20	27.12	34.345	4.83	22.208	563.1	.115
76	22.38	34.850	5.26	.08	2.			390.3	30	25.92	34.495	4.99	22.698	516.3	.169
106	21.39	34.843	4.95	.13	2.			364.	50	23.65	34.848	5.22	23.650	425.3	.263
141	20.53	34.864	4.82	.16	3.			340.8	75	22.41	34.854	5.26	24.013	390.7	.366
173	19.93	34.855	4.76	.19	3.			326.3	100	21.56	34.845	5.02	24.244	368.7	.462
203	19.34	34.850	4.67	.26	4.			312.0	125	20.89	34.854	4.86	24.433	350.7	.553
243	18.65	34.830	4.57	.37	5.			296.8	150	20.35	34.862	4.80	24.583	336.4	.640
308	17.41	34.788	4.49	.47	6.			270.8	200	19.40	34.850	4.68	24.824	313.4	.805
384	16.27	34.723	4.40	.63	9.			249.9	250	18.51	34.825	4.56	25.030	293.8	.961
465	14.44	34.588	4.25	.85	14.			221.1	300	17.56	34.793	4.50	25.240	273.8	1.108
554	11.903	34.427	3.81	1.30	27.			184.3	400	15.95	34.700	4.38	25.546	244.7	1.378
654	9.212	34.255	3.47	1.74	43.			152.1	500	13.47	34.524	4.09	25.948	206.5	1.616
753	7.402	34.223	2.86	2.18	63.			128.3	600	10.60	34.337	3.66	26.350	168.4	1.817
876	5.489	34.216	2.10	2.65	87.			104.9	700	8.30	34.232	3.20	26.646	140.3	1.984
1000	4.384	34.298	1.61	2.87	111.			86.8	800	6.60	34.212	2.55	26.874	118.7	2.125
1148	3.652	34.369	1.41	3.00	125.			74.3	1000	4.38	34.298	1.61	27.210	86.8	2.352
1319	3.112	34.438	1.50	3.04	137.			64.2	1200	3.46	34.392	1.44	27.378	70.8	2.528
1497	2.702	34.499	1.69	3.01	145.			56.1	1500	2.70	34.500	1.69	27.535	56.0	2.746
1651A	2.49	34.537	1.94	2.92	146.			51.5	2000	2.08	34.591	2.32	27.659	44.3	3.042
1847A	2.261	34.562	2.13	2.89	150.			47.8	2500	1.72	34.641	3.03	27.727	37.8	3.293
2091A	1.988	34.607	2.45	2.74	153.			42.3	3000	1.56	34.668	3.27	27.760	34.7	3.522
2335A	1.794	34.634	2.86	2.72	151.			38.8	3500	1.52	34.678	3.71	27.772	33.6	3.744
2629A	1.678	34.644	3.12	2.72	151.			37.2	4000	1.54	34.681	3.68	27.773	33.5	3.971
2922A	1.581	34.663	3.26	2.62	148.			35.1	4500	1.58	34.683	3.63	27.771	33.7	4.207
3218A	1.531	34.677	3.35	2.58	149.			33.7							
3517A	1.517	34.700U	3.73	2.58	148.										
3818A	1.533	34.681	3.56	2.53	148.			33.4							
4123A	1.553	34.681	3.76	2.62	148.			33.5							
4356A	1.569	34.682	3.62	2.60	148.			33.6							
4589A	1.594	34.682	3.64	2.57	148.			33.8							

A) CAST II.

ANTIPODE EXPEDITION LEG IV

The objective of Leg IV of ANTIPODE Expedition was to investigate the influence of productivity, as reflected in zooplankton standing crop, on the distribution of deep-sea fishes in the western Pacific Ocean. On each of the hydrographic stations single Nansen bottle casts, each with 13 bottles, were lowered to approximately 1600 meters.

ANTIPODE IV was sponsored by the National Science Foundation.

The Nansen bottles were more widely spaced than usual. An expendable bathythermogram (XBT) was used on most stations to aid in determining the temperature at standard levels above 450 meters. Only observed values of salinity and oxygen are reported.

Personnel participating in the expedition were:

Ship's Captain:

Ferris, Noel L.

Scientific personnel:

Rosenblatt, Dr. R. H. (Chief scientist)
Butler, C. M.
Copp, J. F.
Dockins, D. M.
Greenbaum, M. H.
Hartwick, R. F.
Hester, A. W.
Johnson, R. K.
Karig, Dr. D. K.
Liebertz, P. J.
Nolan, R. S.
O'Neill, P. V.
Saban, D. D.

Publications resulting from ANTIPODE IV are:

Johnson, Robert Karl, and Richard H. Rosenblatt, 1971. A new Melanostomiatid fish, Eustomias gibbsi, from the central and western Pacific Ocean. Copeia, 1971: 307-311.

Johnson, Robert Karl, and Michael A. Barnett, 1972. Geographic meristic variation in Diplophos taenia Gunther (Salmoniformes: Gonostomatidae). Deep-Sea Res., 19: 813-821.

Johnson, Robert Karl, 1974. Five new species and a new genus of alepisauroid fishes of the Scopelarchidae (Pisces: Myctophiformes). Copeia, 1974: 449-457.

Johnson, Robert Karl, 1975. Revision of the alepisauroid family Scopelarchidae (Pisces: Myctophiformes). Fieldiana, Zool., 66: 1-249.

Johnson, Robert Karl, 1975. A new Myctophid fish, Bolinichthys distofax, from the western and central North Pacific Ocean, with notes on other species of Bolinichthys. Copeia, 1975: 53-60.

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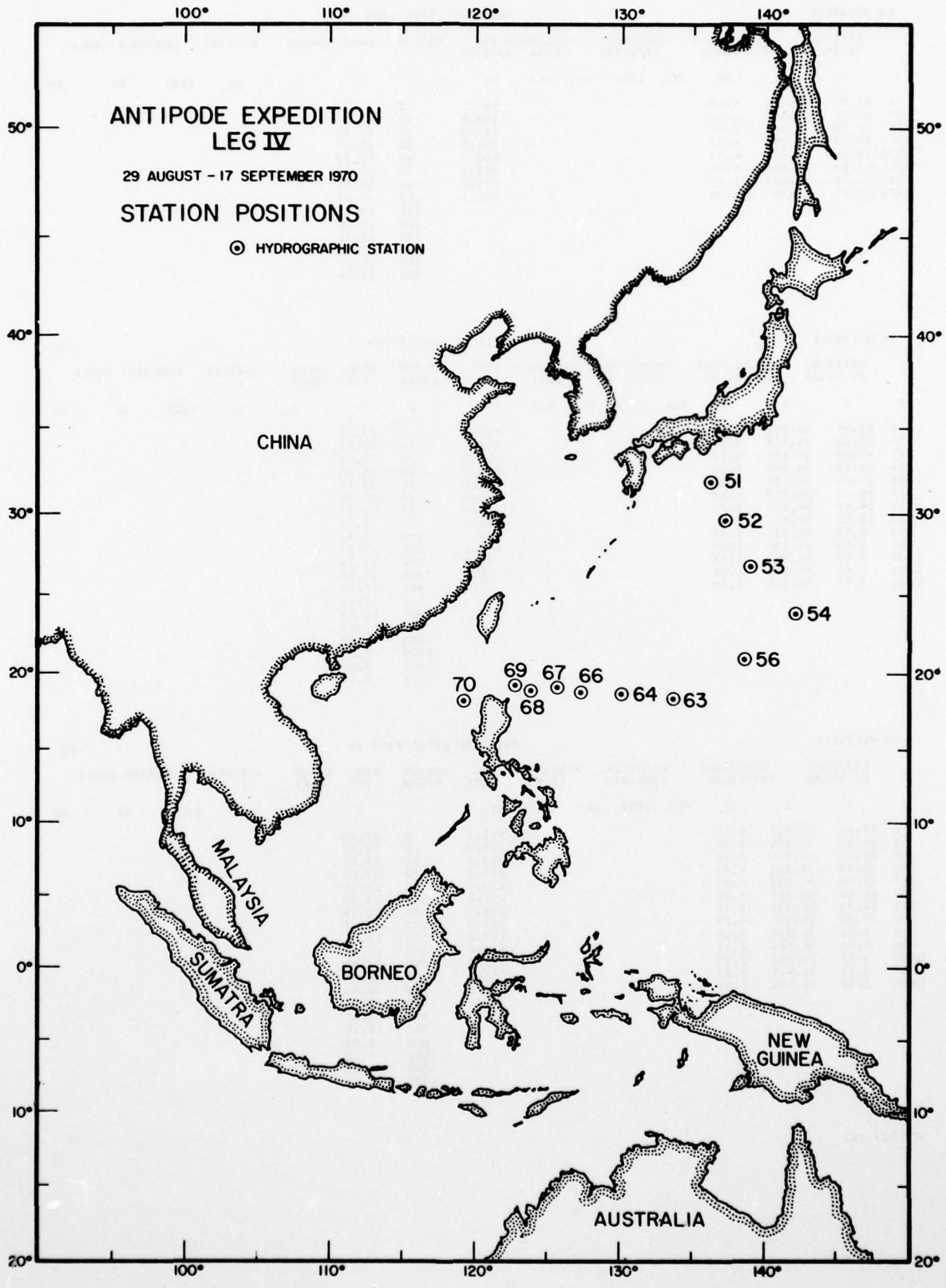
ANTIPODE EXPEDITION
LEG IV
29 AUGUST - 17 SEPTEMBER 1970
STATION POSITIONS
HYDROGRAPHIC STATION
100°
110°
120°
130°
140°
50°
40°
30°
20°
10°
0°
CHINA
51
52
53
54
56
69
67
66
70
68
64
63
MALAYSIA
SUMATRA
BORNEO
NEW GUINEA
AUSTRALIA

FIGURE 4

RV MELVILLE ANTIPODE EXPEDITION IV 51

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 46.6N	136 16.0E	08/29/70	0044 0225GMT					

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
4	27.02	34.561	4.64					544.5
50	22.79	34.748	5.26					408.8
101	18.79	34.847	4.97					298.9
152	18.19	34.856	4.93					284.0
203A	18.06	34.864	4.74					280.3
305A	17.19	34.816	4.71					263.7
407A	15.56	34.687	5.11					237.2
512A	13.20	34.50	4.25					203.1

Z	T	S	O2	SIGT	DT	DD
0	27.02					
10	26.67					
20	25.96					
30	25.07					
50	22.79					
75	20.57					
100	18.85					
125	18.51					
150	18.21					
200	18.06					
250	17.76					
300	17.25					
400	15.69					
500	13.50					

RV MELVILLE ANTIPODE EXPEDITION IV 52

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 34.0N	137 17.0E	08/30/70	0844 GMT	4745M	120	04KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
4	27.55	34.361	4.70					575.2
50	22.20	34.707	5.04					395.8
103	19.62	34.851	4.97					318.9
154	18.25	34.865	4.84					284.7
208	17.60	34.837	4.89					271.6
310	16.42	34.759	4.62					250.6
415	14.42	34.603	4.33					219.6
520	12.21	34.44	4.0					188.9
623	9.42	34.273	3.45					154.0
831	5.45	34.236	2.04					103.0
1039	3.75	34.355	1.37					76.3
1248	3.14	34.431	1.52					65.0
1666	2.35	34.544	1.80					49.8

Z	T	S	O2	SIGT	DT	DD
0	27.55					
10	27.55					
20	27.55					
30	26.93					
50	22.20					
75	20.98					
100	19.77					
125	18.92					
150	18.32					
200	17.67					
250	17.16					
300	16.55					
400	14.74					
500	12.66					
600	10.05					
700	7.69					
800	5.90					
1000	3.94					
1200	3.23					
1500	2.60					

RV MELVILLE ANTIPODE EXPEDITION IV 53

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
26 45.0N	139 03.3E	08/31/70	1705 GMT	4503M	150	09KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
6	27.82	34.952	4.50					541.1
51	26.82	34.825	4.72					519.4
104	20.25	34.865	4.94					333.6
156	18.39	34.845	4.83					289.5
207	17.85	34.838	4.83					277.3
309	16.45	34.755	4.62					251.6
413	14.34	34.594	4.42					218.7
516	12.04	34.458	4.27					184.5
618	9.56	34.235	3.80					159.0
824	5.66	34.164	2.12					110.8
1030	3.95	34.298	1.39					82.5
1237	3.15	34.410	1.22					66.6
1656	2.34	34.540	1.78					50.1

Z	T	S	O2	SIGT	DT	DD
0	27.82					
10	27.82					
20	27.81					
30	27.80					
50	26.89					
75	23.89					
100	20.76					
125	19.15					
150	18.45					
200	17.89					
250	17.33					
300	16.60					
400	14.63					
500	12.41					
600	9.99					
700	7.79					
800	6.02					
1000	4.10					
1200	3.25					
1500	2.51					

A) CAST II.

RV MELVILLE ANTIPODE EXPEDITION IV 54

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
23 46.4N	142 11.2E	09/02/70	0935 GMT	2994M	110	15KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
5	28.51	34.885	4.56					567.6	0	28.51					
49	25.96	34.928	5.02					486.2	10	28.47					
99	21.19	34.965	5.14					350.5	20	28.38					
148	19.01	34.888	4.79					301.2	30	28.29					
198	17.54	34.827	4.68					270.9	50	25.83					
298	15.56	34.690	4.57					237.0	75	22.99					
397	12.81	34.457	4.34					198.8	100	21.13					
496	9.62	34.227	3.93					160.5	125	19.83					
595	6.95	34.113	3.11					130.5	150	18.94					
795	4.54	34.206	1.58					95.3	200	17.50					
995	3.59	34.360	1.17					74.4	250	16.48					
1196	3.02	34.438	1.32					63.4	300	15.51					
1602	2.20	34.562	1.89					47.3	400	12.71					
									500	9.50					
									600	6.86					
									700	5.34					
									800	4.51					
									1000	3.57					
									1200	3.01					
									1500	2.36					

RV MELVILLE ANTIPODE EXPEDITION IV 56

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
20 58.2N	138 42.4E	09/04/70	1358 GMT	4575M	190	10KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
5	28.00	34.497	4.54					579.4	0	28.00					
51	23.42	34.882	4.98					416.5	10	27.97					
103	20.73	34.875	4.77					345.1	20	27.92					
154	18.25	34.856	4.55					285.4	30	26.93					
206	17.37	34.818	4.55					267.7	50	23.61					
309	14.64	34.588	4.39					225.2	75	21.71					
412	10.99	34.314	3.79					176.6	100	20.78					
515	8.31	34.166	3.20					145.2	125	19.55					
618	6.36	34.168	2.12					118.9	150	18.41					
825	4.55	34.325	1.42					86.5	200	17.44					
1032	3.53	34.432	1.44					68.4	250	16.34					
1239	2.98	34.507	1.77					57.8	300	14.92					
1658	2.39	34.587	2.40					46.9	400	11.41					
									500	8.65					
									600	6.65					
									700	5.43					
									800	4.67					
									1000	3.65					
									1200	3.06					
									1500	2.53					

RV MELVILLE ANTIPODE EXPEDITION IV 63

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18 18.4N	133 42.7E	09/09/70	0705 GMT	5970M	100	16KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
5	28.70	34.557	4.51					597.2	0	28.70					
51	28.57	34.554	4.53					593.3	10	28.69					
104	26.69	34.807	4.69					516.8	20	28.66					
156	23.55	34.918	4.29					417.5	30	28.63					
209	20.27	34.943	4.33					328.5	50	28.57					
313	16.47	34.753	4.52					252.2	75	27.53					
417	12.17	34.385	3.84					192.2	100	26.80					
520	8.79	34.223	2.84					148.1	125	25.58					
624	6.80	34.243	1.96					118.9	150	23.98					
831	4.59	34.413	1.66					80.3	200	20.75					
1038	3.67	34.492	1.92					65.2	250	19.36					
1245	3.08	34.548	2.10					55.6	300	17.16					
1665	2.46	34.603	2.47					46.2	400	12.81					
									500	9.36					
									600	7.17					
									700	5.78					
									800	4.81					
									1000	3.78					
									1200	3.19					
									1500	2.61					

RV MELVILLE ANTIPODE EXPEDITION IV 64

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18 36.5N	130 06.0E	09/10/70	1728 GMT	5946M	130	11KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
5	28.13	34.429	4.46					588.4	0	28.13					
51	28.04	34.444	4.52					584.5	10	28.13					
103	24.77	34.881	4.41					454.7	20	28.12					
153	21.60	34.954	4.33					362.0	30	28.10					
205	18.97	34.909	4.33					298.7	50	28.04					
308	15.70	34.682	4.39					240.6	75	27.25					
413	11.15	34.318	3.64					179.1	100	25.08					
517	7.89	34.186	2.66					137.8	125	23.28					
622	6.14	34.246	1.74					110.4	150	21.77					
832	4.45	34.395	1.54					80.2	200	19.19					
1041	3.65	34.508	1.96					63.8	250	17.46					
1250	3.02	34.556	2.09					54.5	300	15.93					
1668	2.40	34.608	2.44					45.4	400	11.71					
									500	8.33					
									600	6.42					
									700	5.32					
									800	4.60					
									1000	3.77					
									1200	3.15					
									1500	2.55					

RV MELVILLE ANTIPODE EXPEDITION IV 66

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18 43.5N	127 28.0E	09/12/70	0301 GMT	4974M	49	01KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
5	28.99	34.355	4.50					620.9	0	29.02					
52	28.89	34.356	4.47					617.7	10	28.98					
103	25.75	34.789	4.58					490.0	20	28.96					
155	21.94	34.864	4.42					377.5	30	28.94					
208	19.60	34.872	4.60					316.8	50	28.89					
311	16.00	34.710	4.37					245.0	75	27.71					
415	12.35	34.405	3.81					194.1	100	25.99					
516	9.25	34.242	2.99					153.6	125	24.08					
621	6.48	34.197	2.05					118.2	150	22.29					
827	4.47	34.392	1.53					80.6	200	19.89					
1032	3.55	34.499	1.82					63.5	250	18.06					
1237	2.99	34.553	2.08					54.4	300	16.35					
1649	2.37	34.607	2.48					45.2	400	12.86					
									500	9.71					
									600	6.97					
									700	5.38					
									800	4.57					
									1000	3.65					
									1200	3.07					
									1500	2.52					

RV MELVILLE ANTIPODE EXPEDITION IV 67

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
19 02.0N	125 45.0E	09/13/70	0905 GMT	5422M	090	10KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
42	29.35	34.322	4.47					634.9	0	29.5					
122	25.08	34.744	4.48					473.6	10	29.46					
156	22.74	34.854	4.33					399.8	20	29.43					
215	19.61	34.906	4.23					314.6	30	29.39					
314	16.28	34.732	4.38					249.5	50	29.08					
420	12.07	34.396	3.69					189.6	75	28.01					
523	9.08	34.263	2.88					149.5	100	26.60					
628	7.17	34.298	2.01					119.6	125	24.87					
834	5.28	34.400	1.80					88.8	150	23.15					
1040	4.25	34.512	1.98					69.4	200	20.31					
1247	3.39	34.533	1.96					59.5	250	18.33					
1650	2.64	34.590	2.36					48.7	300	16.70					
1661	2.64	34.591	2.39					48.6	400	12.85					
									500	9.65					
									600	7.59					
									700	6.32					
									800	5.48					
									1000	4.41					
									1200	3.56					
									1500	2.76					

RV MELVILLE ANTIPODE EXPEDITION IV 68

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18 52.0N	123 57.0E	09/14/70	1229 GMT	5546M	110	12KT	8	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
5	29.25	34.159	4.38					643.4
51	29.04	34.209	4.42					633.0
103	26.29	34.697	4.52					512.7
154	23.21	34.833	4.50					414.2
206	21.45	34.899	4.42					362.0
309	17.50	34.825	4.53					270.1
413	13.71	34.506	3.85					212.5
517	10.35	34.305	3.27					166.5
620	7.59	34.222	2.48					130.9
827	5.02	34.320	1.55					91.9
1034	4.02	34.464	1.76					70.7
1242	3.36	34.532	2.03					59.3
1650	2.49	34.596	2.43					47.0
1660	2.50	34.597	2.45					47.0

Z	T	S	O2	SIGT	DT	DD
0	29.25					
10	29.23					
20	29.18					
30	29.14					
50	29.04					
75	27.96					
100	26.49					
125	24.90					
150	23.43					
200	21.62					
250	19.79					
300	17.85					
400	14.17					
500	10.86					
600	8.07					
700	6.27					
800	5.20					
1000	4.12					
1200	3.47					
1500	2.63					

RV MELVILLE ANTIPODE EXPEDITION IV 69

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
19 10.1N	122 57.6E	09/15/70	1950 GMT	4662M	140	15KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
5	28.83	34.438	4.46					609.9
51	28.84	34.473	4.39					607.7
104	26.67	34.739	4.59					521.1
155	24.72	34.868	4.24					454.2
208	21.58	34.871	4.38					367.5
311	16.46	34.734	4.24					253.3
415	11.70	34.354	3.79					186.0
519	9.23	34.254	3.01					152.4
623	7.55	34.296	2.02					124.9
830	4.68	34.365	1.55					84.9
1038	3.68	34.511	1.94					63.9
1246	3.09	34.534	1.96					56.7
1651	2.47							
1662	2.45	34.600	2.45					46.4

Z	T	S	O2	SIGT	DT	DD
0	28.83					
10	28.83					
20	28.83					
30	28.84					
50	28.84					
75	28.01					
100	26.87					
125	25.91					
150	24.93					
200	22.08					
250	19.39					
300	16.97					
400	12.30					
500	9.57					
600	7.88					
700	6.34					
800	5.02					
1000	3.78					
1200	3.19					
1500	2.67					

RV MELVILLE ANTIPODE EXPEDITION IV 70

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18 05.5N	119 24.0E	09/17/70	0556 GMT	3184M	240	7KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
3	28.66	33.239	4.53					690.6
50	28.12	33.409	4.49					661.4
100	24.79	34.295	3.58					497.5
154	20.00	34.550	3.28					350.1
207	16.02	34.616	3.24					252.3
312	12.09	34.481	3.03					183.7
415	10.00	34.434	2.79					151.3
518	8.48	34.409	2.29					129.7
621	7.48	34.440	1.90					113.2
828	5.60	34.485	1.90					86.1
1035	4.24	34.536	2.03					67.5
1241	3.45	34.570	2.11					57.3
1649	2.75							
1660	2.73	34.601	2.29					48.6

Z	T	S	O2	SIGT	DT	DD
0	28.66					
10	28.58					
20	28.46					
30	28.35					
50	28.12					
75	26.70					
100	24.79					
125	22.60					
150	20.36					
200	16.49					
250	13.98					
300	12.36					
400	10.23					
500	8.71					
600	7.66					
700	6.72					
800	5.83					
1000	4.43					
1200	3.57					
1500	2.94					

ANTIPODE EXPEDITION LEG XII

The objective of ANTIPODE XII was to determine the seismic anisotropy of compressional velocity of the upper mantle. The hydrographic work comprised one station made up of two casts with the deeper cast lowered to near the bottom.

ANTIPODE XII was sponsored by the Office of Naval Research and the National Science Foundation.

The single hydrographic station was made to study principally the deep and near-bottom region, therefore the observations in the shallower portion of the cast are more widely spaced than usual. Temperature interpolations have been made with the aid of an expendable bathythermogram (XBT) record to 500m depth. Salinity and oxygen interpolation should be used with caution because of the wider-than-usual spacing of the observations.

Personnel participating in the expedition were:

Ship's Captain:

Phinney, Alan W.

Scientific personnel:

Sclater, Dr. J. G. (Co-chief scientist)
Raitt, Dr. R. W. (Co-chief scientist)
Baba, K.
Butler, C. M.
Forsman, K. G.
Foster, T. D.
Henry, A.
Hester, A. W.
Hohnhaus, G. W.
Hubenka, F.
Kirk, H. K.
McGowan, D. D.
Newhouse, D. A.
O'Neill, P. V.
Walsh, T. J.

A paper utilizing data from ANTIPODE XII is:

Raitt, R. W., G. G. Shor, Jr., H. K. Kirk and M. Henry, 1972. Anisotropy of the oceanic upper mantle. Geological Society of America, Abstracts with Programs, 4: 222. (Abstract only)

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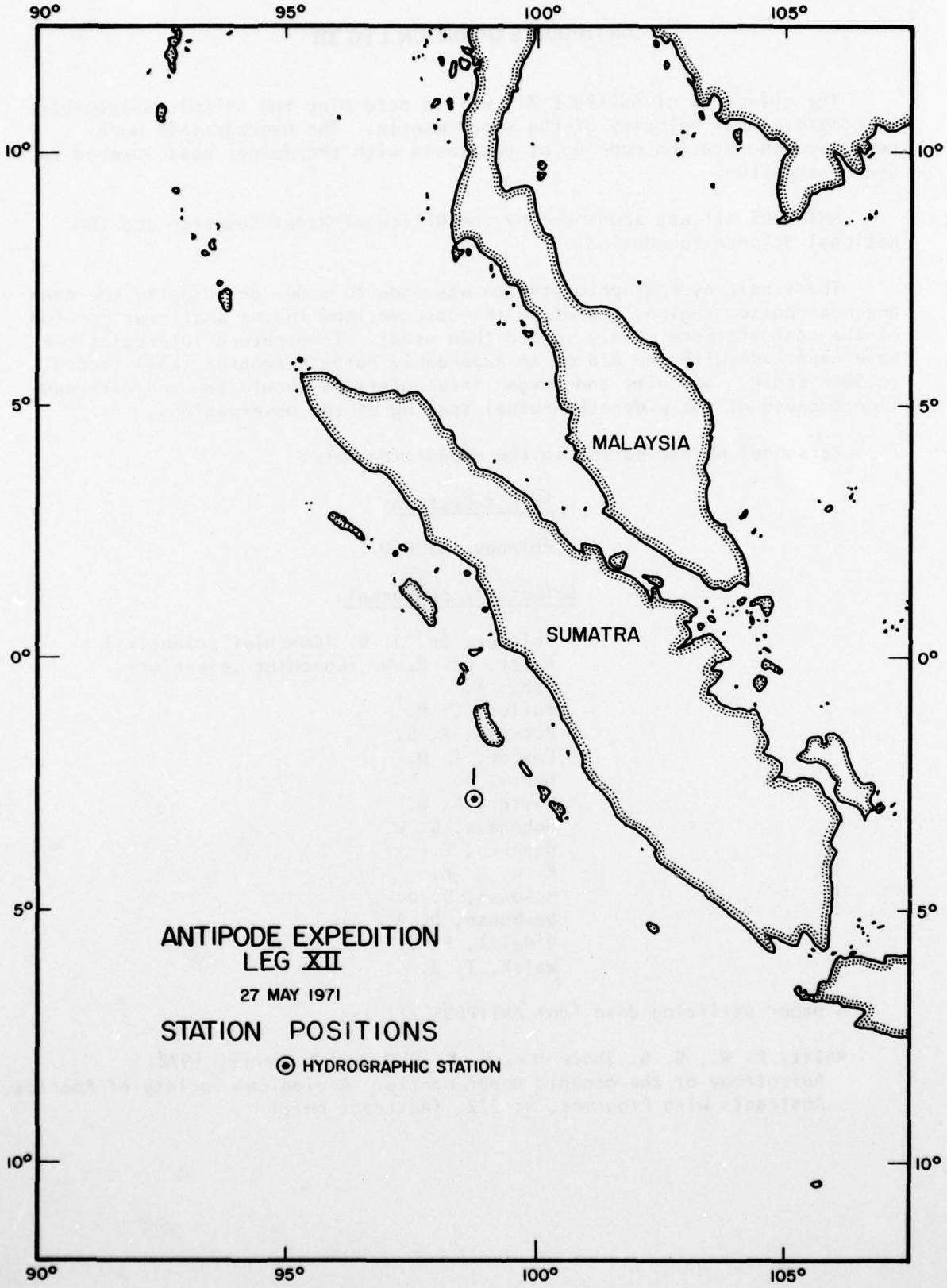
90°
95°
100°
105°
10°
5°
0°
5°
10°
MALAYSIA
SUMATRA
ANTIPODE EXPEDITION
LEG XII
27 MAY 1971
STATION POSITIONS
HYDROGRAPHIC STATION

FIGURE 5

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
2 48.0S	98 47.5E	05/27/71	0257 0705GMT	5705M				

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	29.38	33.991	5.71					659.6	0	29.38	33.991	5.71	21.201	659.6	0
104	26.30	34.824	3.78					503.8	10	29.38	33.991	5.71	21.201	659.6	.066
206	14.50	35.066	1.63					187.4	20	29.38	33.991	5.71	21.201	659.6	.132
307	11.48	34.963	1.79					137.3	30	29.38	33.991	5.70	21.201	659.6	.198
513	9.21	34.879	1.60					105.8	50	29.38	33.991	5.70	21.201	659.6	.330
770	7.57	34.921	1.30					78.6	75	29.00	34.180	5.10	21.470	633.8	.493
1028	6.12	34.900	1.51					61.3	100	27.60	34.420	3.98	22.110	572.5	.644
1540	4.05	34.824	2.33					43.9	125	20.75	35.040	3.11	24.611	333.7	.759
2054	2.59	34.770	3.16					34.7	150	18.20	35.070	2.47	25.295	268.6	.835
2567	2.02	34.747	3.55					31.9	200	14.80	35.067	1.68	26.085	193.5	.953
3083	1.67	34.731	3.86					30.6	250	13.00	35.025	1.70	26.431	160.7	1.045
3392	1.49	34.726	3.89					29.7	300	11.64	34.970	1.78	26.652	139.6	1.124
3687A	1.24	34.720	4.40					28.5	400	10.09	34.911	1.75	26.887	117.4	1.260
3795A	1.20	34.720	4.48					28.2	500	9.27	34.881	1.62	27.002	106.4	1.382
3899A	1.17	34.717	4.61					28.3	600	8.57	34.889	1.47	27.120	95.3	1.494
4006A	1.15	34.716	4.52					28.2	700	7.94	34.906	1.36	27.230	84.9	1.596
4113A	1.16	34.715	4.18					28.3	800	7.39	34.919	1.31	27.321	76.2	1.689
4219A	1.16	34.714	4.09					28.4	1000	6.27	34.903	1.47	27.463	62.8	1.856
4324A	1.16	34.716	4.97U					28.3	1200	5.33	34.875	1.76	27.559	53.7	2.002
4430A	1.15	34.715	4.58					28.3	1500	4.18	34.830	2.26	27.654	44.7	2.194
4535A	1.17	34.714	4.67					28.5	2000	2.71	34.775	3.08	27.753	35.3	2.462
4641A	1.17	34.714	4.61					28.5	2500	2.06	34.750	3.51	27.788	32.1	2.691
4746A	1.19	34.715	4.62					28.5	3000	1.72	34.733	3.82	27.801	30.7	2.906
4852A	1.195	34.713	4.62					28.7	3500	1.39	34.723	4.07	27.818	29.2	3.110
4956A	1.20								4000	1.15	34.716	4.53	27.828	28.2	3.302
5062A	1.208	34.714	4.56					28.7	4500	1.16	34.714	4.65	27.826	28.4	3.493
5166A	1.226	34.714	4.73					28.8	5000	1.20	34.714	4.58	27.823	28.7	3.691
5270A	1.240	34.715	4.64					28.9	5500	1.27	34.716	4.62	27.820	29.0	3.899
5374A	1.242	34.715	4.67					28.9							
5478A	1.269	34.716	4.61					29.0							
5581A	1.276	34.717	4.70					28.9							
5684A	1.285	34.716	4.75					29.1							

A) CAST II.

ANTIPODE EXPEDITION LEG XIII

The objective of ANTIPODE XIII was to determine the age and the mean heat flow of the western Philippine Basin. The two hydrographic stations were made up of multiple casts with the deepest cast lowered to the bottom.

ANTIPODE XIII was sponsored by the National Science Foundation.

These hydrographic stations were made to study principally the deep and near-bottom region, therefore, the observations in the shallower portion of the casts are more widely spaced than usual. Temperature interpolations have been made with the aid of the expendable bathythermogram (XBT) to 500m depth. Salinity and oxygen interpolations should be used with caution because of the wider-than-usual spacing of the observations.

Personnel participating in the expedition were:

Ship's Captain:

Bonham, John W.

Scientific personnel:

Sclater, Dr. J. G. (Chief scientist)
Baba, K.
Dixon, F. S.
Henry, A. J.
Hester, A. W.
Hilde, T. W.
Hubenka, F.
Isezaki, N.
Karig, D. E.
McKinney, D.
Rogers, J. E.
Trier, R. M.
Walsh, T. J.
Yasui, M.

Papers utilizing data from ANTIPODE XIII are:

Sclater, J. G., D. Karig, L. A. Lawver and K. Louden, 1976. Heat flow, depth and coastal thickness of the west Philippine Basin. J. Geophys. Res., 81: 309-318.

Louden, K. E., 1976. Magnetic Anomalies in the West Philippine Basin. P. 253-267 in The Geophysics of the Pacific Ocean Basin and Its Margin G. H. Sutton, M. H. Manghnani, R. Moberly, editors. Geophysical Monograph 19 (Woollard Volume). American Geophysical Union, Washington, D.C., 480 pp.

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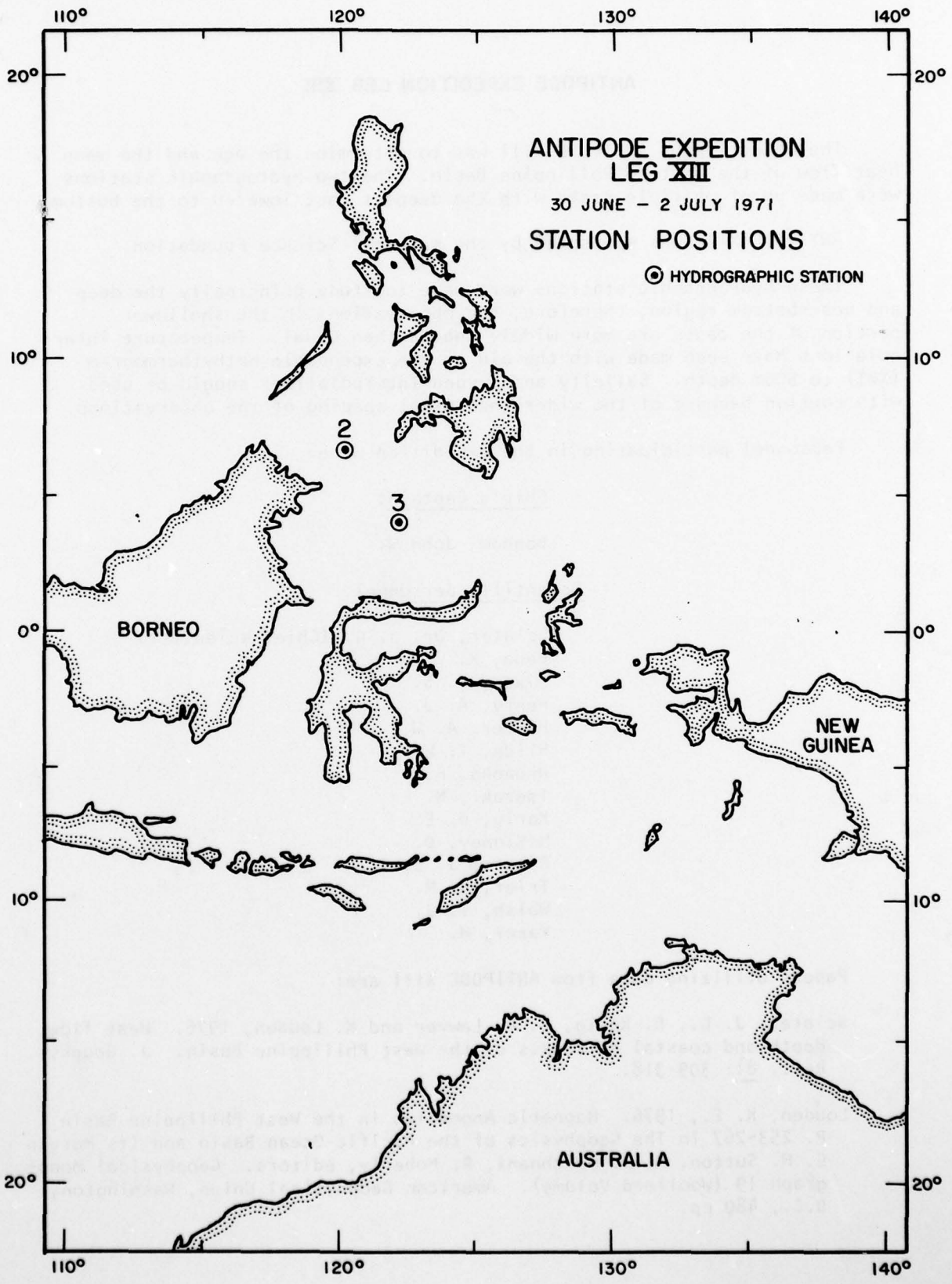
ANTIPODE EXPEDITION
LEG XIII
30 JUNE – 2 JULY 1971
STATION POSITIONS
HYDROGRAPHIC STATION
2
3
BORNEO
NEW GUINEA
AUSTRALIA
110°
120°
130°
140°
20°
10°
0°

FIGURE 6

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
6 39.3N	120 08.2E	06/30/71	0928 2350GMT	4523M				

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	28.42	33.742	4.75					646.9	0	28.42	33.742	4.75	21.334	646.9	0
100	22.77	34.232	2.81					445.5	10	28.42	33.742	4.75	21.334	646.9	.065
202	14.83	34.462	1.93					238.3	20	28.42	33.742	4.75	21.334	646.9	.129
302	12.83	34.466	1.60					198.5	30	27.65	33.831	4.56	21.650	616.6	.193
402	11.73	34.462	1.69					178.6	50	25.70	34.060	4.14	22.440	541.0	.309
503	10.99	34.454	1.71					166.3	75	23.91	34.188	3.52	23.076	480.2	.437
704	10.25	34.449	1.74					154.2	100	22.77	34.232	2.81	23.439	445.5	.554
893A	10.10	34.450	1.66					151.7	125	21.89	34.243	2.49	23.693	421.2	.663
909	10.11	34.451	1.69					151.8	150	18.25	34.330	2.23	24.717	323.6	.757
1009	10.09	34.451	1.68					151.5	200	14.90	34.461	1.94	25.598	239.8	.901
1092A	10.06	34.452	1.62					150.9	250	13.46	34.464	1.71	25.904	210.7	1.016
1111	10.08	34.451	1.64					151.3	300	12.85	34.466	1.60	26.029	198.8	1.123
1212	10.07	34.456	1.57					150.8	400	11.75	34.462	1.69	26.238	179.0	1.320
1294A	10.08	34.454	1.54					151.1	500	11.01	34.454	1.71	26.369	166.6	1.503
1314	10.08	34.455	1.50					151.0	600	10.53	34.451	1.72	26.450	158.8	1.678
1417	10.09	34.458	1.58					150.9	700	10.26	34.449	1.74	26.498	154.3	1.849
1497A	10.09	34.458	1.50					150.9	800	10.17	34.450	1.70	26.512	152.9	2.019
1519	10.10	34.459	1.52					151.0	1000	10.09	34.451	1.68	26.528	151.5	2.361
1699A	10.12	34.462	1.42					151.1	1200	10.07	34.456	1.59	26.535	150.8	2.710
1724	10.11	34.464	1.46					150.8	1500	10.09	34.458	1.50	26.533	151.0	3.246
1903A	10.13	34.463	1.42					151.2	2000	10.15	34.466	1.46	26.529	151.3	4.182
1929	10.14	34.465	1.42					151.2	2500	10.21	34.471	1.38	26.524	151.9	5.167
2106A	10.17	34.469	1.51					151.4	3000	10.29	34.473	1.34	26.511	153.1	6.204
2136	10.16	34.467	1.47					151.4	3500	10.36	34.473	1.38	26.498	154.3	7.295
2342	10.18	34.469	1.38					151.6	4000	10.44	34.473	1.36	26.484	155.6	8.438
2360A	10.19	34.471	1.39					151.6	4500	10.52	34.472	1.36	26.469	157.1	9.634
2367B	10.18	34.470	1.39					151.5							
2569B	10.22	34.472	1.38					152.0							
2615A	10.22	34.473	1.38					152.0							
2771B	10.26	34.472	1.38					152.7							
2819A	10.24	34.475	1.38					152.1							
2975B	10.28	34.472	1.35					153.0							
3023A	10.29	34.473	1.600					153.1							
3179B	10.31	34.475	1.28					153.3							
3229A	10.32	34.472	1.36					153.7							
3282B	10.32	34.471	1.36					153.8							
3383B	10.34	34.473	1.51					153.9							
3433A	10.35	34.473	1.36					154.1							
3485B	10.36	34.473	1.38					154.3							
3589B	10.37	34.472	1.40					154.5							
3638A	10.39	34.473	1.37					154.8							
3692B	10.38	34.473	1.42					154.6							
3795B	10.42	34.472	1.37					155.3							
3843A	10.41	34.473	1.38					155.1							
3898B	10.43	34.472	1.39					155.5							
4002B	10.44	34.473	1.36					155.6							
4047A	10.46	34.476	1.35					155.7							
4107B	10.47	34.473	1.40					156.1							
4211B	10.48	34.471	1.36					156.4							
4252A	10.48	34.475	1.36					156.1							
4316B	10.51	34.473	1.37					156.8							
4421B	10.52	34.473	1.38					156.9							
4458A	10.52	34.472	1.37					157.0							
4526B	10.53	34.472	1.35					157.2							

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
3 57.0N	122 15.2E	07/02/71	0227 1250GMT	4972M				

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	CD
0	28.46	34.069	5.01					624.6	0	28.46	34.069	5.01	21.566	624.6	0
98	25.86	34.637	4.54					504.2	10	28.46	34.069	5.01	21.566	624.6	.062
196	13.96	34.518	3.19					216.6	20	28.46	34.069	5.01	21.566	624.6	.125
387	8.39	34.463	2.11					124.3	30	28.46	34.069	5.01	21.566	624.6	.188
577	6.87	34.538	2.36					97.8	50	28.20	34.070	4.96	21.652	616.4	.312
766	5.83	34.541	2.37					84.6	75	27.89	34.177	4.77	21.834	598.9	.465
952	5.12	34.553	2.28					75.5	100	25.49	34.638	4.51	22.939	493.2	.602
1139	4.37	34.568	2.26					66.4	125	20.91	34.619	4.18	24.249	368.2	.711
1327	4.01	34.574	2.22					62.3	150	19.20	34.508	3.83	24.614	333.4	.800
1515	3.81	34.579	2.25					60.0	200	13.95	34.518	3.15	25.843	216.5	.940
1706	3.70	34.582	2.29					58.7	250	12.50	34.500	2.71	26.124	189.8	1.044
1899	3.65	34.582	2.19					58.2	300	10.65	34.480	2.39	26.453	158.6	1.135
2095	3.62	34.584	2.26					57.8	400	8.20	34.468	2.13	26.846	121.3	1.282
2196	3.62	34.586	2.35					57.6	500	7.17	34.512	2.26	27.031	103.8	1.402
2297	3.60	34.584	2.29					57.6	600	6.72	34.540	2.36	27.116	95.7	1.510
2369A	3.56	34.590	2.24					56.8	700	6.15	34.544	2.37	27.195	88.2	1.611
2399	3.61	34.587	2.30					57.5	800	5.69	34.543	2.35	27.252	82.8	1.707
2502	3.59	34.587	2.25					57.3	1000	4.91	34.557	2.27	27.356	72.9	1.884
2570A	3.57	34.591	2.22					56.8	1200	4.22	34.572	2.24	27.443	64.7	2.045
2607	3.59	34.585	2.37					57.4	1500	3.82	34.580	2.25	27.491	60.1	2.269
2726B	3.59	34.589	2.27					57.1	2000	3.63	34.584	2.23	27.514	58.0	2.637
2772A	3.59	34.589	2.25					57.1	2500	3.59	34.588	2.25	27.521	57.3	3.015
2928B	3.59	34.593	2.25					56.8	3000	3.59	34.592	2.25	27.524	57.0	3.408
2973A	3.59	34.591	2.26					57.0	3500	3.63	34.593	2.20	27.522	57.2	3.820
3127B	3.60	34.591	2.20					57.1	4000	3.68	34.590	2.28	27.515	57.9	4.252
3176A	3.60	34.593	2.20					56.9	4500	3.74	34.592	2.29	27.509	58.4	4.706
3327B	3.62	34.596	2.20					56.9							
3377A	3.62	34.589	2.22					57.4							
3529B	3.63	34.593	2.20					57.2							
3580A	3.64	34.590	2.22					57.5							
3730B	3.65	34.591	2.18					57.5							
3782A	3.67	34.591	2.25					57.7							
3831B	3.68	34.591	2.42					57.8							
3933B	3.68	34.593	2.16					57.7							
3985A	3.68	34.589	2.32					58.0							
4033B	3.67	34.591	2.18					57.7							
4086A	3.69	34.591	2.17					57.9							
4135B	3.70	34.592	2.17					57.9							
4187A	3.70	34.589	2.18					58.2							
4236B	3.71	34.592	2.20					58.0							
4290A	3.72	34.590	2.31					58.3							
4338B	3.73	34.591	2.19					58.3							
4391A	3.74	34.591	2.20					58.4							
4439B	3.74	34.595	2.21					58.1							
4493A	3.74	34.591	2.30					58.4							
4540B	3.76	34.591	2.22					58.6							
4594A	3.77	34.591	2.25					58.7							
4643B	3.77	34.591	2.22					58.7							
4696A	3.77	34.591	2.22					58.7							
4746B	3.78	34.595	2.18					58.5							
4848B	3.802	34.593	2.23					58.8							
4951B	3.814	34.592	2.22					59.0							

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