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data report

PHYSICAL AND CHEMICAL DATA

Cato Expedition

Leg VI, 7 November - 16 December 1972

SIO Reference 79-3

15 April 1979

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The purpose of Leg VI of the Cato expedition was to study the deep circulation of the Southwestern Atlantic Ocean. From 7 November to 16 December 1972, Nansen bottle casts and in situ vertical profiles of salinity and temperature (STD lowerings) were made from the Scripps Institution of Oceanography Research Vessel Melville in the region of the Rio Grande Rise. Samples were taken for...

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PHYSICAL AND CHEMICAL DATA,

Cato Expedition,

Leg VI, 7 November - 16 December 1972,

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W. A. Nierenberg

W. A. Nierenberg, Director

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reactive silicate by the method of Strickland and Parsons (1968); nitrite by the method of Bendschneider and Robinson (1952) and nitrate by the method of Wood et al. (1967).

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.

In situ Salinity/Temperature/Depth Recorder (STD) Data

A Bissett-Berman (HYTECH) Model 9006 STD was used for most lowerings. The exceptions are lowerings 1 through 7 and 69 through 79 when a Plessey Environmental Systems Model 9040 CSTD was used. Data was recorded in analog format on the Leeds-Northrup analog recorder and in digital, at an interval of approximately one instantaneous count every 2 meters, on the shipboard IBM 1800 computer. With few exceptions, the data was recorded only during descent.

Precise PDR observations of bottom depths were recorded and a pinger was placed on the wire below the STD. Comparison of these records with the frequencies recorded by the STD on the deep lowerings was used to determine a linear correction to the depth, calculated from the pressure.

After initial smoothing of the STD data, second-order polynomial corrections to the temperature and salinity were determined by comparison with the observed Nansen bottle data. It should be noted that the two STD models, 9006 and 9040, deviated from their respective hydrographic data quite differently. Furthermore, the best fit of an individual lowering can be quite different even when the same instrument is used, primarily due to the difference (4 to 6 hours at approximately 5000 meters) between the time the

STD reaches the greatest depth and the thermometers are reversed.

All STD temperature and salinity data in this report is tabulated to the nearest hundredth from both shallow and deep lowerings.

TABULATED DATA

The time reported is Greenwich Mean Time. For STD data it is the "start down" time of the first lowering, usually the deeper, and for bottle casts it is the time of messenger release, with the first and last release times listed for multiple casts.

Bottom depths, determined acoustically, have been corrected using Matthews' (1939) tables and are reported in meters. Weather and dominant waves are coded using the National Oceanographic Data Center (NODC) method.

Data from the bottle casts appears on the even-numbered pages. The observed data was tabulated on the left of the page with computed values of thermosteric anomaly. Temperature, salinity, and oxygen interpolated at standard levels with computed values of sigma-t, thermosteric anomaly, and geopotential anomaly were included on the right.

Data from the STD lowerings appears on the facing odd-numbered pages. Temperature and salinity are tabulated at closer standard intervals than in previous reports. However, some depth intervals may not appear on stations where "spiking" caused data to be rejected.

The column headings are to be interpreted as follows:

Z	Depth	Meters
T	Temperature	°C
S	Salinity	°/₀₀
O2	Dissolved oxygen	ml/L
PO4	"Reactive" inorganic phosphate-phosphorus	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

FOOTNOTES

In addition to footnotes, several special notations are used without footnotes because the meaning is always the same.

A and B: After depth value indicates successively deeper casts on expedition legs which have multiple cast stations. The upper cast originating at or near the surface has no letter following the depth.

P: After depth value indicates the Nansen bottles posttripped.

U: Uncertain value. Values which are not used in interpolation because they seem to be in error without apparent reason. NOTE: "U" following STD station number indicates the up cast data are being reported.

V: Because of time differences, overlapping casts show some differences. Values not used in interpolation.

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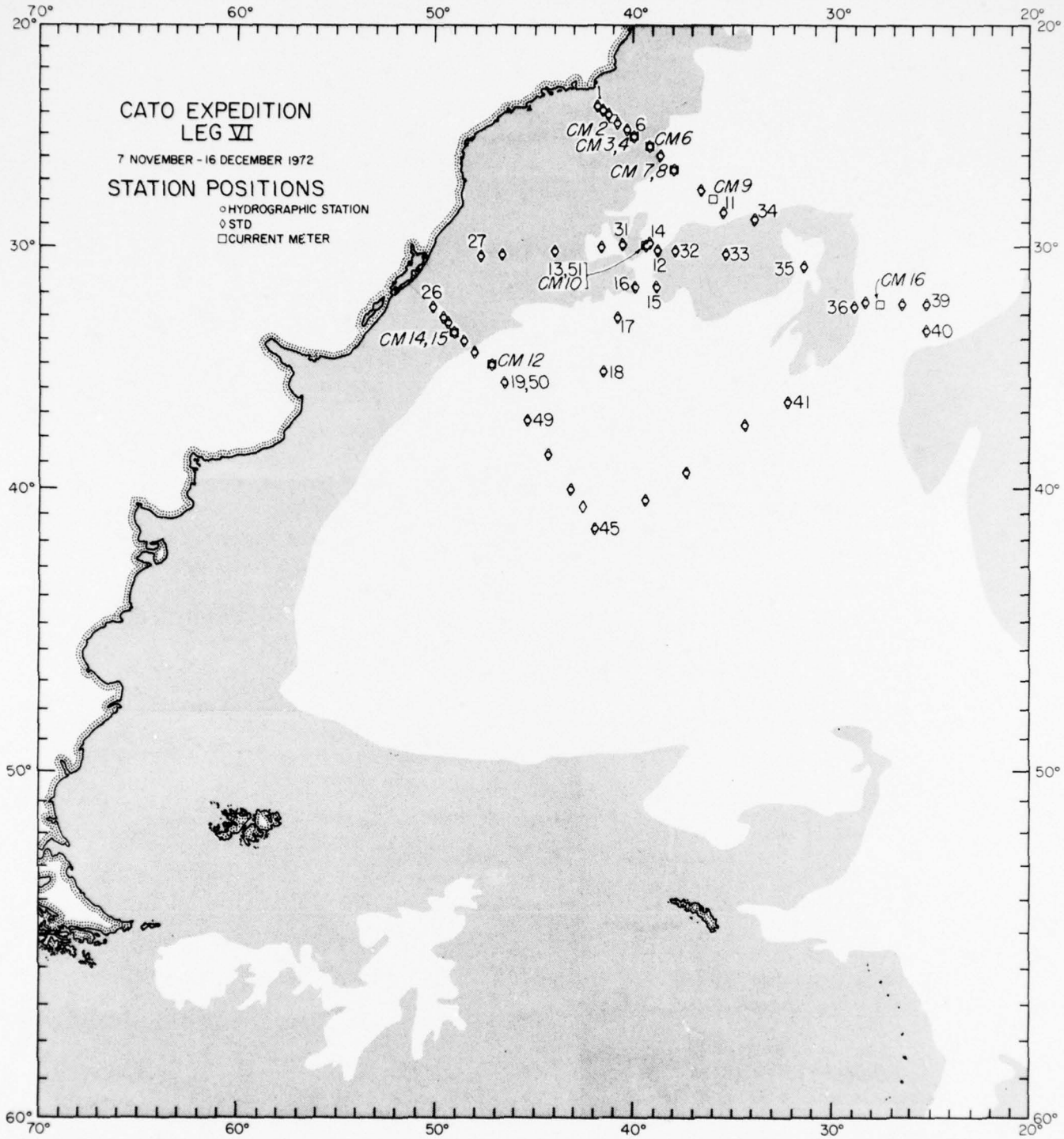
CATO EXPEDITION
LEG VI
7 NOVEMBER - 16 DECEMBER 1972
STATION POSITIONS
○ HYDROGRAPHIC STATION
◊ STD
□ CURRENT METER
70°
60°
50°
40°
30°
20°
60°
50°
40°
30°
20°
CM 2
CM 3,4
CM 6
CM 7,8
CM 9
CM 10
CM 12
CM 14,15
CM 16
1
6
11
12
13,51
14
15
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17
18
19,50
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27
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45
49

FIGURE 1

PERSONNEL

Ship's Captain: Ferris, Noel L. RV MELVILLE

Personnel Participating in the Collection of Data:

Reid, Joseph L. Prof.	Chief Scientist, Professor, SIO
Bertholini, Sergio	Commander, Navy of Brazil, Brazil Hydrographic and Navigation Office
Burgener, Bruce C.	Staff Research Associate, SIO
Coatsworth, James L.	Staff Research Associate, SIO
Costello, James P.	Staff Research Associate, SIO
Donadio, Antonio E.	Graduate Student, University of São Paulo, Brazil
Ferreira, Simon M.	Electronic Technician, SIO
Foster, Theodore D. Dr.	Associate Research Oceanographer, SIO
McKinney, Darryle	Electronic Technician, SIO
McLellan, Hugh J. Dr.	Scientist, Office of Sea Grant, NOAA, Washington, D.C.
Miranda, Luiz B. de	Oceanographer, University of São Paulo, Brazil
Moore, John M.	Programmer, SIO
Muus, David A.	Staff Research Associate, SIO
Nowlin, Worth D., Jr.	Professor, Texas A&M University
Owen, Gary P.	Staff Research Associate, SIO
Patla, Susan M.	Marine Technician, SIO
Patzert, William C. Dr.	Associate Research Oceanographer, SIO
Powell, William J.	Electronic Technician, SIO
Valentine, Sarilee	Senior Engineering Aide, SIO
Yates, Robert E.	Marine Technician, SIO

RV MELVILLE CATO EXPEDITION VI 1

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
23 54.2S	41 50.0W	11/ 8/72	0452 GMT	843M	050	18KT	1	140 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.36	35.982	5.05	0.13	1.0	0.01	0.2	308.0	0	22.36	35.982	5.05	24.880	308.0	0.000
10	22.38	35.978	5.05	0.10	1.7	0.00	0.0	308.8	10	22.38	35.978	5.05	24.872	308.8	0.031
21	22.37	35.977	5.11	0.16	1.5	0.01	0.1	308.6	20	22.37	35.976	5.10	24.873	308.7	0.062
54	20.60	36.322	5.08	0.18	1.0	0.02	0.0	237.0	30	22.07	36.081	5.10	25.039	292.9	0.092
86	17.85	35.957	4.73	0.43	2.1	0.45	2.7	195.9	50	20.91	36.284	5.08	25.513	247.8	0.146
117	15.88	35.652	4.63	0.42	2.5	0.10	5.6	173.7	75	18.61	36.112	4.85	25.937	207.5	0.204
170	14.20	35.412	4.75	0.78	2.8	0.04	7.6	155.9	100	16.87	35.807	4.66	26.182	184.3	0.254
222	13.69	35.355	4.84	0.65	3.3	0.03	8.8	149.9	125	15.52	35.598	4.64	26.334	169.8	0.299
279	12.15	35.136	4.71	0.88	5.1	0.02	12.4	136.6	150	14.64	35.473	4.68	26.433	160.4	0.341
356	10.53	34.903	4.68	1.20	7.1	0.00	16.2	125.3	200	13.89	35.378	4.82	26.521	152.1	0.422
433	8.72	34.690	4.45	1.49	11.6		21.4	112.4	250	12.98	35.253	4.79	26.611	143.6	0.499
510	7.00	34.511	4.70	1.73	15.1		24.4	101.5	300	11.69	35.069	4.70	26.720	133.3	0.572
587	5.69	34.395	4.87	1.84	19.0	0.00	27.1	93.9	400	9.50	34.777	4.53	26.882	117.9	0.705
665	5.42	34.380	4.90	1.89	20.7		27.6	91.9	500	7.21	34.532	4.66	27.042	102.8	0.824
745	5.16	34.363	4.91	1.92	22.4		28.5	90.2	600	5.65	34.396	4.88	27.141	93.3	0.929
782	5.093	34.361	4.92	1.91	22.4		28.4	89.6	700	5.30	34.372	4.90	27.165	91.1	1.030
824	4.920	34.351	4.94	1.97	23.2	0.00	28.6	88.5	800	5.03	34.362	4.93	27.188	89.2	1.129

RV MELVILLE CATO EXPEDITION VI 2

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
24 07.8S	41 38.0W	11/ 8/72	0930 1200 GMT	1776M	050	18KT	1	150 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	24.37	37.036	4.79	0.06	0.8	0.00	0.1	288.0	0	24.37	37.036	4.79	25.090	288.0	0.000
10	24.40	37.033	4.73	0.04	0.8	0.00	0.0	289.1	10	24.40	37.033	4.73	25.079	289.1	0.029
20	24.39	37.034	4.71	0.04	1.0	0.00	0.1	288.7	20	24.39	37.034	4.71	25.082	288.7	0.058
31	24.38	37.031	4.70	0.07	1.0	0.00	0.0	288.6	30	24.38	37.030	4.70	25.083	288.6	0.087
63	22.24	36.814	4.83	0.08	0.7	0.00	0.0	244.7	50	23.25	36.918	4.77	25.334	264.8	0.142
93	20.91	36.552	4.85	0.19	1.0	0.07	0.4	228.4	75	21.73	36.724	4.84	25.624	237.3	0.206
125	18.43	36.071	4.74	0.25	1.5	0.02	1.7	201.4	100	20.38	36.443	4.83	25.778	222.6	0.264
177	15.96	35.661	4.83	0.60	2.0	0.02	4.1	174.7	125	18.43	36.071	4.74	26.001	201.4	0.318
230	14.02	35.371	4.72	0.66	3.5	0.03	8.5	155.3	150	17.09	35.839	4.77	26.155	186.8	0.368
288	13.13	35.253	4.72	0.76	4.2	0.02	9.9	146.5	200	15.02	35.515	4.79	26.383	165.2	0.459
367	11.32	35.003	4.72	1.10	6.0		14.2	131.5	250	13.66	35.323	4.72	26.526	151.6	0.541
445	9.36	34.761	4.57	1.33	9.8		19.4	116.9	300	12.88	35.218	4.72	26.603	144.3	0.619
524	7.80	34.591	4.69	1.66	12.4		23.0	106.4	400	10.48	34.894	4.65	26.806	125.1	0.762
602	6.45	34.460	4.79	1.74	16.1		25.9	98.2	500	8.24	34.638	4.64	26.973	109.2	0.888
644A	5.84	34.446 U	4.68U	1.82	17.6		26.4		600	6.48	34.464	4.79	27.088	98.4	1.001
682	5.44	34.379	4.89	1.89	19.6		27.7	92.2	700	5.26	34.369	4.89	27.167	90.9	1.104
762	4.74	34.345	4.90	1.96	24.1		29.1	87.0	800	4.55	34.343	4.85	27.227	85.2	1.200
772A	4.80 V	34.348	4.93	2.01	24.2		28.8		1000	3.77	34.347	4.82	27.312	77.2	1.379
801	4.55		4.84	1.95	25.2		29.8		1200	3.50	34.441	4.51	27.433	65.7	1.539
846	4.29	34.335	4.91	2.04	28.7		30.0	83.1	1500	3.63	34.737	4.56	27.636	46.4	1.740
848A	4.32	34.336	4.87	1.94	28.0		30.4	83.3	1750	3.83	34.875	5.06	27.726	37.9	1.880
925A	3.90	34.34	4.86	2.10	32.5		31.2	78.8							
1001A	3.77	34.346	4.82	2.15	34.4		31.4	77.1							
1052A	3.69	34.357	4.77	2.16	37.0		31.6	75.6							
1129A	3.48	34.381	4.67	2.20	41.2		32.3	71.8							
1232A	3.24	34.472	4.44	2.20	48.0		33.1	62.8							
1335A	3.31	34.573	4.42	2.14	48.0		32.0	55.9							
1440A	3.505	34.676	4.46	1.99	42.8		30.1	49.8							
1547A	3.718	34.781	4.67	1.79	34.8		27.0	43.9							
1653A	3.845	34.853	4.95	1.68	29.7		25.1	39.7							
1734A	3.823	34.875	5.03	1.60	28.2		24.5	37.8							
1761A	3.839	34.876	5.09	1.60	27.7		25.2	37.9							

CATO EXPEDITION VI

1 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
23 54.2S	41 50.0W	11/08/72	0419 GMT

Z	T	S	SIGMA T	DT	DD
0	22.29	35.98	24.899	306.3	0.000
10	22.28	35.98	24.902	306.0	0.031
20	22.25	35.98	24.910	305.2	0.061
30	22.19	36.09	25.010	295.6	0.091
40	21.81	36.24	25.231	274.6	0.120
50	21.27	36.32	25.442	254.6	0.147
60	20.49	36.28	25.624	237.3	0.171
70	19.76	36.24	25.788	221.7	0.195
80	18.44	35.97	25.922	209.0	0.216
90	17.75	35.92	26.055	196.3	0.237
100	17.67	35.93	26.082	193.7	0.257
125	15.62	35.47	26.213	181.3	0.305
150	14.53	35.46	26.447	159.2	0.348
200	13.77	35.38	26.547	149.7	0.428
250	12.72	35.23	26.645	140.3	0.504
300	11.44	35.03	26.737	131.6	0.575
350	10.43	34.91	26.826	123.1	0.643
400	9.25	34.80	26.941	112.3	0.705
450	8.24	34.63	26.968	109.8	0.765
500	7.05	34.52	27.055	101.5	0.822
550	6.45	34.47	27.097	97.5	0.876
600	5.52	34.39	27.152	92.3	0.927
650	5.35	34.40	27.181	89.6	0.976
700	5.28	34.39	27.181	89.5	1.025
750	5.06	34.36	27.183	89.3	1.074
800	5.02	34.36	27.188	88.9	1.123
850	4.79	34.35	27.206	87.2	1.171

2 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
24 07.8S	41 38.0W	11/08/72	1056 GMT

Z	T	S	SIGMA T	DT	DD
0	24.03	36.96	25.134	283.8	0.000
10	24.05	36.97	25.136	263.6	0.028
20	24.06	36.97	25.133	283.9	0.057
30	24.07	36.97	25.130	284.2	0.085
40	23.83	36.90	25.148	282.4	0.114
50	22.78	36.79	25.372	261.1	0.141
60	22.19	36.75	25.511	248.0	0.167
70	21.85	36.68	25.554	243.9	0.192
80	21.31	36.62	25.659	233.9	0.216
90	20.92	36.54	25.705	229.5	0.239
100	20.72	36.48	25.714	228.7	0.263
125	18.63	35.99	25.889	212.1	0.319
150	17.29	35.81	26.083	193.7	0.371
200	14.91	35.47	26.371	166.3	0.463
250	13.21	35.21	26.531	151.2	0.546
300	12.82	35.19	26.594	145.1	0.624
350	11.73	35.01	26.667	138.3	0.699
400	10.41	34.85	26.783	127.2	0.770
450	8.87	34.68	26.909	115.4	0.835
500	7.89	34.56	26.966	110.0	0.895
550	7.01	34.51	27.053	101.7	0.953
600	6.27	34.42	27.082	99.0	1.007
650	5.80	34.40	27.126	94.8	1.060
700	5.16	34.34	27.156	91.9	1.111
750	4.89	34.34	27.187	89.0	1.160
800	4.53	34.32	27.212	86.7	1.208
850	4.29	34.33	27.246	83.5	1.254
900	4.02	34.33	27.274	80.8	1.300
950	3.84	34.33	27.292	79.0	1.344
1000	3.76	34.35	27.316	76.7	1.387
1100	3.56	34.36	27.344	74.1	1.471
1200	3.31	34.45	27.440	65.0	1.549
1300	3.27	34.54	27.515	57.9	1.620
1400	3.44	34.65	27.586	51.1	1.684
1500	3.61	34.73	27.633	46.7	1.745
1600	3.79	34.82	27.686	41.6	1.803
1700	3.84	34.87	27.721	38.4	1.858
1779	3.84	34.88	27.729	37.6	1.900

RV MELVILLE CATO EXPEDITION VI

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
24 20.9S	41 18.2W	11/ 8/72	1939 2213 GMT	2299M	070	18KT	1	050 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.08	36.789	4.93	0.03	1.0	0.01	0.0	269.5	0	23.08	36.789	4.93	25.285	269.5	0.000
9	23.11	36.789	4.59	0.02	0.8	0.00	0.0	270.5	10	23.11	36.787	4.58	25.276	270.2	0.027
20	23.09	36.792	4.43	0.02	0.8	0.00	0.0	269.5	20	23.09	36.792	4.43	25.284	269.5	0.054
30	23.09	36.791	4.77	0.04	1.0	0.00	0.0	269.6	30	23.09	36.791	4.77	25.283	269.6	0.081
62	22.28	36.873	4.85	0.05	1.0	0.00	0.0	241.5	50	22.66	36.848	4.82	25.454	253.4	0.134
93	21.47	36.685	5.16	0.08	0.8	0.07	0.1	233.4	75	21.91	36.800	5.01	25.629	236.7	0.196
125	21.14	36.612	4.73	0.10	0.8	0.16	0.0	230.1	100	21.42	36.670	5.09	25.669	232.9	0.255
177	18.57	36.101		0.35	1.3	0.01	2.2	202.6	125	21.14	36.612	4.73	25.699	230.1	0.314
229	16.15	35.702	4.82	0.48	1.7	0.01	3.7	175.9	150	20.05	36.383	4.75	25.821	218.5	0.372
286	14.74	35.471	4.87	0.55	2.5	0.00	6.0	162.7	200	17.42	35.903	4.79	26.123	189.9	0.477
363	13.25	35.273	4.80	0.76	3.6		9.7	147.x	250	15.54	35.601	4.84	26.332	170.0	0.570
433A	11.41	35.011	4.49U	1.09	6.2	0.01	14.3	132.5	300	14.47	35.434	4.87	26.440	159.8	0.657
441	11.34	35.007	4.63	1.05	5.9		14.7	131.6	400	12.17	35.111	4.72	26.662	136.8	0.816
519	9.51	34.777	4.57	1.37	9.3		18.5	118.1	500	10.09	34.851	4.58	26.841	121.7	0.957
561A	8.20	34.804 U	4.73U	1.46	10.6		19.9		600	7.53	34.560	4.52	27.018	105.0	1.080
598	7.56	34.562	4.52	1.63	13.5	0.00	23.4	105.2	700	5.79	34.403	4.60	27.129	94.5	1.190
638A	6.87	34.497	4.60	1.58	15.0		24.9	100.8	800	4.90	34.352	4.90	27.195	88.3	1.290
676	6.14	34.429	4.58	1.81	16.7		26.2	96.7	1000	3.71	34.356	4.86	27.326	75.8	1.471
716A	5.60	34.389	4.73U		19.1		27.4	93.3	1200	3.41	34.467	4.49	27.484	64.7	1.629
758	5.26	34.366	4.72	1.94	21.4		28.0	91.1	1500	3.58	34.728	4.58	27.634	46.6	1.828
792A	4.96	34.353	4.85	1.91	23.8		29.1	88.8	1750	3.87	34.886	5.13	27.731	37.4	1.969
795	4.88 V	34.346	4.91	1.98	23.5		29.1		2000	3.55	34.939	5.56	27.805	30.4	2.095
841	4.601	34.343	4.78	2.05	26.1	0.00	29.6	85.7	2250	2.93	34.935	5.87	27.862	25.0	2.204
843A	4.54	34.341	4.86	2.04	26.7		30.3	85.2							
919A	4.03	34.348	4.79	2.14	33.3	0.00	31.6	79.5							
1021A	3.65	34.358	4.87	2.16	37.5		32.2	75.1							
1124A	3.45	34.387	4.62	2.24	42.7		32.5	71.1							
1329A	3.33	34.607	4.39	2.13	48.0		31.1	53.4							
1536A	3.65	34.749	4.65	1.91	37.7		28.1	45.6							
1743A	3.88	34.885	5.12	1.61	27.0		24.2	37.6							
1953A	3.721	34.936	5.49	1.45	23.3		21.7	32.2							
2165A	2.994	34.938	5.82	1.40	29.2		20.7	25.4							
2219A	2.931	34.936	5.92	1.38	30.4		20.7	25.0							
2272A	2.924	34.935	5.84	1.38	31.0	0.00	20.6	25.0							

RV MELVILLE CATO EXPEDITION VI 4

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
24 41.3S	40 49.3W	11/ 9/72	0505 0711 GMT	2768M	100	21KT	6	100 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	23.10	36.729	4.91	0.00	0.8	0.00	0.0	274.3	0	23.10	36.729	4.91	25.233	274.3	0.000
10	23.10	36.730	5.27	0.00	1.0	0.00	0.0	274.3	10	23.10	36.730	5.27	25.234	274.3	0.027
20	23.08	36.732	4.96	0.00	0.7	0.00	0.0	273.6	20	23.08	36.732	4.96	25.242	273.6	0.055
30	23.05	36.753	5.10	0.01	0.8	0.00	0.0	271.2	30	23.05	36.753	5.10	25.266	271.2	0.082
61	22.36	36.811	5.05	0.03	0.8	0.00	0.0	248.2	50	22.64	36.794	5.07	25.418	256.8	0.135
92	21.98	36.765	5.05	0.07	0.8	0.00	0.0	241.2	75	22.21	36.805	5.05	25.549	244.4	0.199
123	20.94	36.555	5.10	0.14	0.8	0.11	0.3	229.0	100	21.79	36.726	5.06	25.607	238.8	0.260
154	18.92	36.160	4.81	0.27	1.4	0.03	1.4	206.8	125	20.82	36.527	5.08	25.725	227.6	0.319
207	16.84	35.793	4.82	0.36	1.5	0.01	2.9	184.7	150	19.19	36.209	4.85	25.914	209.7	0.375
311	14.45	35.454	4.96	0.53	2.3	0.01	6.3	158.0	200	17.05	35.827	4.82	26.155	186.8	0.477
417	12.52	35.187	4.83	0.82	4.2		11.3	139.7	250	15.69	35.620	4.88	26.314	171.7	0.571
521	10.13	34.848	4.64	1.23	7.9	0.00	17.8	122.8	300	14.64	35.477	4.95	26.437	160.0	0.658
585A	8.44	34.658	4.60	1.50	11.4	0.01	22.2	110.6	400	12.83	35.231	4.86	26.624	142.3	0.819
624	7.77	34.591	4.56	1.63	13.6		24.1	106.0	500	10.65	34.916	4.67	26.793	126.3	0.964
662A	6.82	34.513	4.54	1.80	16.9	0.00	26.0	99.0	600	8.18	34.632	4.58	26.977	108.8	1.093
726	5.68	34.414	4.63	1.91	21.0	0.00	28.5	92.3	700	6.09	34.451	4.60	27.128	94.6	1.205
739A	5.65 V	34.415	4.61	1.92	21.5		28.5		800	4.65	34.344	4.81	27.217	86.1	1.304
816A	4.48	34.336	4.87	2.05	27.4		30.1	84.9	1000	3.57	34.409	4.46	27.381	70.6	1.477
893A	4.09	34.357	4.65	1.99	33.6		31.5	79.4	1200	3.40	34.551	4.38	27.511	58.3	1.623
995A	3.59	34.406	4.46	2.10	42.6		32.7	70.9	1500	3.85	34.806	4.73	27.669	43.3	1.810
1098A	3.39	34.460	4.41	2.23	46.8	0.00	32.7	65.0	1750	3.87	34.924	5.29	27.762	34.5	1.944
1253A	3.41	34.597	4.36	2.09	46.1		31.1	54.9	2000	3.62	34.956	5.69	27.812	29.7	2.066
1405A	3.73	34.744	4.58	1.90	37.5		28.0	46.8	2250	3.33	34.952	5.80	27.837	27.3	2.181
1558A	3.89	34.837	4.83	1.72	30.7		25.8	41.3	2500	3.01	34.938	5.77	27.857	25.5	2.291
1711A	3.90	34.914	5.20	1.55	24.8		23.0	35.6	2750	2.74	34.925	5.82	27.871	24.2	2.397
1915A	3.71	34.952	5.60	1.37	22.0	0.01	21.0	30.9							
2120A	3.48	34.956	5.77	1.32	22.8		20.3	28.5							
2326A	3.24	34.950	5.82	1.31	25.6		20.2	26.7							
2534A	2.965	34.936	5.76	1.35	29.9		20.6	25.3							
2637A	2.842		5.80	1.37	32.0		20.7								
2690A	2.794	34.925	5.81	1.35	33.2		20.7	24.7							
2742A	2.75	34.925	5.82	1.36	34.1	0.00	20.9	24.3							

CATO EXPEDITION VI

3 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
24 20.9S	41 18.2W	11/08/72	1640 GMT

Z	T	S	SIGMA T	DT	DD
0	23.09	36.79	25.283	269.7	0.000
10	23.08	36.78	25.276	270.1	0.027
20	23.10	36.79	25.280	269.9	0.054
30	23.10	36.79	25.280	269.9	0.081
40	23.08	36.80	25.293	268.7	0.108
50	22.54	36.87	25.502	248.8	0.134
60	22.33	36.87	25.562	243.1	0.159
70	22.14	36.83	25.586	240.9	0.184
80	21.94	36.76	25.604	239.1	0.208
90	21.69	36.75	25.652	234.6	0.232
100	21.37	36.65	25.665	233.3	0.256
125	21.12	36.63	25.719	228.2	0.314
150	20.23	36.33	25.732	227.0	0.373
200	17.08	35.84	26.157	186.7	0.479
250	15.62	35.62	26.328	170.4	0.572
300	14.57	35.47	26.446	159.2	0.659
350	13.62	35.37	26.570	147.4	0.740
400	12.16	35.14	26.685	136.5	0.816
450	11.17	35.01	26.771	128.4	0.887
500	9.85	34.85	26.880	118.1	0.954
550	8.51	34.68	26.965	110.0	1.017
600	7.53	34.58	27.034	103.5	1.075
650A	6.77	34.51	27.086	98.6	1.131
700A	6.05	34.42	27.110	96.3	1.184
750A	5.34	34.37	27.158	91.7	1.236
800A	4.78	34.36	27.215	86.3	1.285
850A	4.48	34.35	27.241	83.9	1.331
900A	4.14	34.34	27.269	81.2	1.377
950A	3.85	34.35	27.307	77.6	1.421
1200A	3.31	34.42	27.416	67.3	1.623
1300A	3.24	34.53	27.510	58.4	1.695
1400A	3.42	34.67	27.604	49.4	1.759
1500A	3.53	34.71	27.625	47.5	1.819
1600A	3.74	34.79	27.668	43.4	1.878
1700A	3.67	34.86	27.710	39.4	1.934
1800A	3.88	34.90	27.741	36.5	1.986
1900A	3.83	34.92	27.762	34.5	2.040
2000A	3.66	34.94	27.795	31.4	2.090
2100A	3.23	34.95	27.845	26.6	2.136
2200A	2.96	34.94	27.863	25.0	2.178
2287A	2.85	34.93	27.865	24.8	2.213

4 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
24 41.3S	40 49.3W	11/09/72	0333 GMT

Z	T	S	SIGMA T	DT	DD
0	23.08	36.74	25.248	273.0	0.000
10	23.09	36.75	25.252	272.6	0.027
20	23.10	36.75	25.249	272.8	0.055
30	23.10	36.77	25.265	271.4	0.082
40	22.94	36.83	25.356	262.6	0.109
50	22.42	36.80	25.483	250.6	0.135
60	22.34	36.81	25.514	247.7	0.160
70	22.16	36.77	25.534	245.7	0.185
80	22.12	36.79	25.561	243.2	0.209
90	22.10	36.80	25.574	241.9	0.234
100	21.50	36.65	25.629	236.8	0.258
125	20.90	36.56	25.726	227.6	0.317
150	19.00	36.12	25.894	211.6	0.374
200	17.12	35.80	26.116	190.5	0.477
250	15.84	35.65	26.301	172.9	0.572
300	14.75	35.50	26.430	160.8	0.659
350	14.25	35.46	26.507	153.4	0.743
400	13.13	35.30	26.617	143.0	0.822
450	11.95	35.08	26.679	137.1	0.898
500	10.55	34.90	26.797	125.9	0.969
550	9.51	34.78	26.883	117.8	1.036
600	8.11	34.63	26.988	107.9	1.098
650	7.09	34.52	27.050	102.0	1.155
700	6.19	34.45	27.116	95.7	1.210
750A	5.37	34.38	27.163	91.3	1.261
800A	4.75	34.35	27.211	86.7	1.310
850A	4.25	34.34	27.258	82.3	1.356
900A	4.04	34.37	27.304	78.0	1.401
950A	3.80	34.38	27.336	74.9	1.443
1000A	3.62	34.41	27.378	70.9	1.483
1100A	3.39	34.46	27.440	65.0	1.560
1200A	3.41	34.57	27.526	56.9	1.629
1300A	3.48	34.64	27.574	52.3	1.694
1400A	3.71	34.74	27.631	46.9	1.755
1500A	3.86	34.80	27.663	43.8	1.813
1600A	3.89	34.86	27.708	39.6	1.869
1700A	3.91	34.91	27.746	36.0	1.922
1800A	3.81	34.94	27.780	32.8	1.972
1900A	3.72	34.95	27.797	31.2	2.021
2000A	3.59	34.96	27.818	29.2	2.068
2100A	3.47	34.96	27.830	28.1	2.114
2200A	3.36	34.95	27.833	27.8	2.159
2300A	3.26	34.94	27.834	27.6	2.204
2400A	3.16	34.95	27.852	26.0	2.249
2500A	3.01	34.94	27.858	25.4	2.292
2600A	2.89	34.93	27.861	25.1	2.335
2700A	2.79	34.92	27.862	25.0	2.378
2774A	2.63	34.90	27.860	25.2	2.409

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RV MELVILLE CATO EXPEDITION VI 5

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 01.0S	40 23.1W	11/ 9/72	1311 1545 GMT	3087M	130	17KT	1	010 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.92	36.717	4.42U	0.00	0.5	0.00	0.1	270.2	0	22.92	36.717	4.42	25.277	270.2	0.000
10	22.92	36.719	5.13	0.00	0.6	0.00	0.0	270.1	10	22.92	36.719	5.13	25.278	270.1	0.027
21	22.91	36.720	5.11	0.00	0.8	0.00	0.0	269.8	20	22.91	36.717	5.11	25.281	269.8	0.054
32	22.89	36.725	4.97	0.02	0.7	0.00	0.0	268.8	30	22.89	36.722	5.00	25.290	269.0	0.081
63	22.25	36.858	5.17	0.02	0.6	0.00	0.0	241.8	50	22.57	36.804	5.04	25.447	254.1	0.134
94	21.70	36.742		0.04	0.8	0.07	0.0	235.4	75	22.02	36.824	5.15	25.616	238.0	0.196
125	21.30	36.650	5.08	0.06	0.7	0.13	0.1	231.5	100	21.63	36.724	5.12	25.650	234.7	0.256
156	20.55	36.483	5.07	0.11	1.0	0.06	0.6	224.1	125	21.30	36.650	5.08	25.684	231.5	0.316
209	17.94	35.988	5.01	0.26	1.3	0.01	1.8	195.8	150	20.73	36.520	5.07	25.743	225.9	0.374
311	14.74	35.463	4.95	0.51	2.1	0.00	6.2	163.3	200	18.42	36.071	5.02	26.005	201.0	0.484
414	12.77	35.208	4.68	0.80	3.6	0.00	10.8	142.9	250	16.43	35.728	4.99	26.224	180.3	0.583
469A	11.69	35.064	4.71	0.99	5.2		13.5	133.6	300	15.00	35.501	4.96	26.377	165.8	0.674
516	10.55	34.913	4.19U	1.13	6.5	0.00	16.3	124.9	400	13.00	35.237	4.71	26.594	145.2	0.839
596A	8.46	34.653	4.63	1.51	10.9		21.5	111.3	500	10.95	34.965	4.69	26.776	127.9	0.987
622	7.81	34.582	4.91	1.55	11.6	0.00	22.7	107.2	600	8.36	34.643	4.67	26.959	110.6	1.118
730	5.49	34.362	5.29	1.84	17.2	0.00	27.1	94.0	700	6.05	34.413	5.18	27.104	96.9	1.232
750A	5.18	34.334	4.64	1.89	18.8		27.3	92.6	800	4.57	34.325	4.71	27.211	86.8	1.332
827A	4.33	34.333	4.75	2.04	25.0		29.4	83.6	1000	3.54	34.404	4.60	27.380	70.6	1.506
905A	3.98	34.334	4.82	2.02	31.3		31.0	80.1	1200	3.30	34.526	4.40	27.501	59.3	1.653
1007A	3.51	34.410	4.58	2.21	40.8		32.3	69.9	1500	3.81	34.815	4.65	27.681	42.2	1.838
1134A	3.27	34.465	4.40	2.17	47.4		32.7	63.6	1750	3.85	34.934	5.40	27.772	33.6	1.970
1286A	3.42	34.616	4.40	2.07	45.2		30.6	53.5	2000	3.59	34.959	5.70	27.817	29.2	2.090
1539A	3.87	34.846	4.73	1.70	30.0		25.7	40.5	2250	3.25	34.949	5.86	27.842	26.8	2.203
1743A	3.85	34.932	5.39	1.45	23.2		22.3	33.8	2500	2.97	34.938	5.80	27.860	25.2	2.311
1896A	3.71	34.954	5.59	1.38	21.4		20.9	30.8	2750	2.77	34.926	5.74	27.870	24.3	2.417
2100A	3.46	34.959	5.78	1.32	22.6		20.1	28.0	3000	2.48	34.906	5.58	27.879	23.4	2.521
2306A	3.18	34.946	5.87	1.33	26.6		20.1	26.5							
2512A	2.96	34.938		1.33	29.5		20.4	25.1							
2722A	2.800	34.929	5.73	1.35	32.2		20.7	24.4							
2933A	2.544	34.911	5.81	1.40	38.6		21.2	23.6							
2986A	2.491	34.908	5.65	1.41	39.6		21.2	23.4							
3040A	2.469	34.906	5.30	1.42	41.0		21.7	23.4							

RV MELVILLE CATO EXPEDITION VI 6

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 16.5S	40 01.5W	11/ 9/72	2114 2324 GMT	3080M	120	21KT	1	120 4 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.84	36.658	4.97	0.00	0.8	0.00	0.0	272.3	0	22.84	36.658	4.97	25.255	272.3	0.000
10	22.85	36.665	4.98	0.00	1.0	0.01	0.0	272.1	10	22.85	36.665	4.98	25.257	272.1	0.027
21	22.85	36.664	4.99	0.00	1.0	0.00	0.0	272.1	20	22.85	36.662	4.99	25.257	272.1	0.055
31	22.73	36.701	4.96	0.00	0.6	0.00	0.0	266.2	30	22.75	36.695	4.96	25.311	267.0	0.082
63	21.25	36.643	5.16	0.04	1.0	0.00	0.0	230.7	50	21.87	36.676	5.07	25.548	244.5	0.133
94	21.15	36.612	5.11	0.04	1.0	0.03	0.0	230.3	75	21.21	36.629	5.14	25.694	230.5	0.193
125	21.07	36.609	5.02	0.06	1.0	0.07	0.0	228.4	100	21.13	36.609	5.10	25.700	230.0	0.251
157	20.06	36.377	4.87	0.16	1.3	0.06	0.6	219.3	125	21.07	36.609	5.02	25.716	228.4	0.310
208	17.64	35.923	4.98	0.31	1.7	0.02	1.6	193.5	150	20.34	36.437	4.90	25.786	221.8	0.367
311	14.96	35.544	4.97	0.46	2.0	0.00	5.3	161.9	200	18.03	35.988	4.95	26.039	197.8	0.475
414	12.99	35.253	4.90	0.78	3.8		9.9	143.8	250	16.33	35.723	4.98	26.246	178.2	0.573
484A	11.34	35.001	4.66	1.06	6.3		14.5	132.0	300	15.16	35.567	4.97	26.392	164.3	0.663
517	10.73	34.922	4.62	1.14	7.2	0.00	16.0	127.3	400	13.25	35.294	4.91	26.587	145.8	0.828
613A	8.26 V	34.655	4.76	1.50	11.0		21.3		500	11.04	34.962	4.63	26.757	129.7	0.977
622	8.29	34.638	4.78	1.50	10.6		19.2	109.9	600	8.82	34.696	4.73	26.928	113.5	1.111
727	6.04	34.418	4.94	1.80	16.7	0.00	25.3	96.3	700	6.56	34.466	4.90	27.079	99.3	1.228
768A	5.43	34.367	5.05	1.86	19.3		27.2	93.0	800	4.99	34.343	5.02	27.177	89.8	1.332
846A	4.47	34.327	5.58U	2.04	26.4		29.6	85.5	1000	3.60	34.370	4.66	27.347	73.8	1.513
923A	3.99	34.330	4.90	2.12	32.1		30.5	80.5	1200	3.14	34.511	4.34	27.503	59.0	1.662
1026A	3.49	34.386	4.58	2.13	42.9		32.2	71.5	1500	3.37	34.760	4.72	27.681	42.2	1.844
1154A	3.21	34.478	4.34	2.13	50.0		32.6	62.0	1750	3.52	34.896	5.31	27.775	33.3	1.972
1308A	3.08	34.590	4.35	2.13	53.9		31.6	52.4	2000	3.47	34.947	5.73	27.820	29.1	2.089
1563A	3.49	34.812	4.88	1.76	38.6		29.0	39.4	2250	3.29	34.954	5.84	27.843	26.8	2.201
1768A	3.52	34.903	5.35	1.50	30.3		22.6	32.8	2500	3.10	34.943	5.83	27.852	26.0	2.312
1922A	3.51	34.938	5.69	1.40	24.7		21.1	30.1	2750	2.88	34.932	5.75	27.864	24.8	2.421
2128A	3.38	34.953	5.79	1.31	24.1		20.0	27.8	3000	2.63	34.915	5.82	27.873	23.9	2.528
2333A	3.22	34.952	5.86	1.31	25.6		20.1	26.4							
2541A	3.067	34.940	5.82	1.30	28.7		20.5	25.9							
2750A	2.875	34.932	5.75	1.34	31.8		20.5	24.8							
2958A	2.660	34.921	5.81	1.38	36.5		21.0	23.8							
3015A	2.612	34.914	5.82	1.36	37.3		20.9	24.0							
3070A	2.571	34.91	5.81	1.38	36.5		21.1	23.9							

CATO EXPEDITION VI

5 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
25 01.0S	40 23.1W	11/09/72	1155 GMT

Z	T	S	SIGMA T	DT	DD
0	22.78	36.71	25.312	266.9	0.000
10	22.78	36.71	25.312	266.9	0.027
20	22.78	36.71	25.312	266.9	0.053
30	22.78	36.71	25.312	266.9	0.080
40	22.78	36.75	25.342	264.0	0.107
50	22.72	36.92	25.488	250.1	0.133
60	22.42	36.87	25.536	245.5	0.158
70	22.12	36.83	25.591	240.3	0.182
80	21.89	36.75	25.595	239.9	0.207
90	21.83	36.75	25.612	238.3	0.231
100	21.74	36.74	25.630	236.6	0.255
125	21.28	36.66	25.697	230.3	0.314
150	20.80	36.53	25.730	227.1	0.373
200	18.03	35.99	26.039	197.8	0.482
250	16.31	35.73	26.254	177.4	0.580
300	14.89	35.47	26.376	165.9	0.670
350	13.91	35.35	26.494	154.7	0.755
400	13.19	35.27	26.581	146.4	0.835
450	12.23	35.12	26.656	139.3	0.912
500	11.08	34.98	26.764	129.0	0.985
550	9.81	34.81	26.856	120.4	1.054
600	8.50	34.66	26.951	111.3	1.117
650	7.29	34.51	27.014	105.4	1.177
700	6.15	34.41	27.089	98.3	1.233
750A	5.20	34.31	27.128	94.6	1.286
800A	4.55	34.30	27.194	88.4	1.335
850A	4.20	34.33	27.255	82.5	1.382
900A	3.98	34.33	27.278	80.4	1.427
950A	3.76	34.36	27.322	76.2	1.470
1000A	3.54	34.38	27.362	72.4	1.511
1100A	3.31	34.45	27.440	65.0	1.588
1200A	3.26	34.54	27.516	57.8	1.658
1300A	3.43	34.64	27.579	51.8	1.722
1400A	3.63	34.73	27.631	46.9	1.783
1500A	3.84	34.82	27.681	42.1	1.840
1600A	3.90	34.89	27.731	37.4	1.394
1700A	3.89	34.92	27.756	35.1	1.945
1800A	3.83	34.94	27.778	33.0	1.995
1900A	3.72	34.96	27.805	30.4	2.044
2000A	3.59	34.96	27.818	29.2	2.090
2100A	3.46	34.95	27.823	28.7	2.137
2200A	3.34	34.95	27.835	27.6	2.182
2300A	3.20	34.95	27.848	26.3	2.226
2400A	3.12	34.94	27.848	26.4	2.270
2500A	3.00	34.94	27.859	25.3	2.314
2600A	2.90	34.93	27.860	25.2	2.357
2700A	2.81	34.93	27.868	24.4	2.399
2800A	2.72	34.92	27.868	24.4	2.442
2900A	2.62	34.91	27.869	24.3	2.484
3000A	2.47	34.90	27.874	23.9	2.525
3083A	2.42	34.89	27.871	24.2	2.559

6 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
25 16.5S	40 01.5W	11/09/72	1957 GMT

Z	T	S	SIGMA T	DT	DD
0	22.88	36.65	25.237	274.0	0.000
10	22.87	36.66	25.248	273.0	0.027
20	22.85	36.67	25.261	271.7	0.055
30	22.51	36.67	25.359	262.4	0.081
40	21.72	36.63	25.552	244.0	0.107
50	21.29	36.57	25.626	237.0	0.131
60	21.28	36.61	25.659	233.9	0.155
70	21.17	36.58	25.667	233.1	0.179
80	21.16	36.58	25.670	232.9	0.202
90	21.16	36.58	25.670	232.9	0.226
100	21.18	36.60	25.679	232.0	0.249
125	21.05	36.61	25.723	227.8	0.308
150	20.93	36.60	25.748	225.4	0.366
200	17.82	35.96	26.068	195.0	0.474
250	16.51	35.77	26.238	178.9	0.571
300	15.06	35.57	26.415	162.1	0.661
350	14.40	35.46	26.475	156.5	0.745
400	13.22	35.29	26.591	145.5	0.826
450	12.16	35.11	26.662	138.7	0.903
500	11.14	34.97	26.746	130.8	0.976
550	9.99	34.83	26.840	121.8	1.045
600	8.76	34.68	26.926	113.7	1.110
650	7.40	34.51	26.998	106.9	1.171
700	6.33	34.45	27.097	97.5	1.227
750A	5.68	34.39	27.133	94.1	1.280
800A	4.93	34.33	27.175	90.2	1.330
850A	4.45	34.34	27.236	84.3	1.378
900A	4.13	34.33	27.262	81.8	1.424
950A	3.89	34.34	27.295	78.7	1.468
1000A	3.65	34.36	27.335	74.9	1.511
1100A	3.30	34.44	27.433	65.7	1.589
1200A	3.13	34.50	27.497	59.7	1.660
1300A	3.06	34.59	27.575	52.3	1.725
1400A	3.08	34.66	27.629	47.1	1.784
1500A	3.41	34.78	27.693	41.1	1.839
1600A	3.48	34.82	27.718	38.7	1.892
1700A	3.47	34.85	27.742	36.3	1.943
1800A	3.50	34.90	27.779	32.9	1.992
1900A	3.53	34.93	27.800	30.9	2.039
2000A	3.51	34.95	27.818	29.2	2.085
2100A	3.41	34.95	27.826	28.3	2.131
2200A	3.32	34.95	27.837	27.4	2.176
2300A	3.25	34.95	27.843	26.8	2.221
2400A	3.16	34.94	27.844	26.7	2.265
2500A	3.12	34.94	27.848	26.4	2.310
2600A	3.03	34.94	27.856	25.6	2.354
2700A	2.93	34.93	27.857	25.5	2.398
2800A	2.83	34.92	27.858	25.4	2.442
2900A	2.76	34.93	27.873	24.0	2.485
3000A	2.62	34.91	27.869	24.3	2.528
3090A	2.55	34.90	27.867	24.5	2.566

RV MELVILLE CATO EXPEDITION V1 7

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 47.3S	39 23.7W	11/10/72	1517 2030 GMT	3911M	110	22KT	1	150 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	23.05	36.888	4.96	0.00	1.2	0.00	0.1	261.5
10	23.06	36.886	5.01	0.00	1.0		0.1	261.9
26	23.09	36.888	5.04	0.00	1.0	0.00	0.0	262.6
42	22.43	36.797	5.06	0.02	1.2		0.0	251.1
78	22.15	36.859	4.99	0.05	1.0	0.00	0.1	239.0
115	21.35	36.664	4.98	0.06	1.0	0.11	0.1	231.8
146	20.83	36.549	4.94	0.10	1.2	0.12	0.3	226.5
177	18.73	36.121	4.77	0.29	1.5	0.02	1.6	205.0
234	16.34	35.721	4.93	0.38	1.8		3.2	178.7
353	14.27	35.437	4.92	0.56	2.8		7.1	155.5
568	9.46	34.777	4.63	1.35	9.2		19.2	117.3
720	6.20	34.430	4.95	1.74	16.8		26.2	97.4
847	4.61	34.327	5.05	2.00	25.0	0.00	29.6	87.0
975	3.79	34.354	4.72	2.14	37.0		32.2	76.7
1102	3.32	34.434	4.46	2.24	48.6		33.4	66.3
1230	3.03	34.503	4.39	2.20	54.4		32.9	58.6
1396A	2.95	34.618	4.43	2.15	57.9	0.00	31.6	49.2
1436	3.04	34.672	4.50	2.00	54.0		30.2	45.9
1572A	3.12	34.763	4.78	1.99	49.1		28.0	39.7
1646	3.230	34.805	5.00	1.76	43.2	0.00	26.8	37.6
1649A	3.19	34.792 V	4.94V	1.83	46.0		27.0	
1800A	3.14	34.851	5.43	1.80	41.2		24.8	33.3
1951A	3.32	34.918	5.55	1.33	29.9		22.2	29.8
2104A	3.35	34.947	5.75	1.29	25.2	0.00	20.7	27.9
2257A	3.20	34.945	5.81	1.30	26.8		20.6	26.7
2411A	3.10	34.938	5.80	1.36	29.2		20.7	26.4
2419B	3.10	34.939	5.88	1.38	28.8		20.7	26.3
2618A	2.97	34.936	5.83	1.32	30.3		20.7	25.4
2623B	2.97	34.936	5.50U	1.33	30.4	0.00	20.7	25.4
2824B	2.85	34.928	5.80	1.39	33.1		21.0	24.9
3027B	2.75	34.924	5.81	1.35	34.7		20.9	24.4
3231B	2.60	34.913	5.87	1.38	37.6		21.2	23.9
3438B	2.34	34.889	5.78	1.45	47.3		22.2	23.7
3644B	1.58	34.808	5.39	1.75	79.2	0.00	26.4	24.1
3853B	0.87	34.735	5.24	2.05	109.7		30.4	25.0
3933B	0.756	34.720	5.16	2.10	114.2		31.3	25.5
3959B	0.710	34.717	5.16	2.11	118.8	0.00	31.2	25.4

Z	T	S	SIGT	DT	DD
0	23.05	36.888	25.368	261.5	0.000
10	23.06	36.886	25.364	261.9	0.026
20	23.08	36.885	25.360	262.3	0.052
30	22.94	36.863	25.383	260.1	0.079
50	22.37	36.823	25.317	247.3	0.130
75	22.17	36.858	25.599	239.6	0.191
100	21.69	36.752	25.654	234.4	0.251
125	21.26	36.641	25.690	231.0	0.311
150	20.59	36.495	25.762	224.1	0.369
200	17.60	35.918	26.092	192.7	0.476
250	15.96	35.666	26.287	174.3	0.572
300	14.97	35.531	26.405	163.1	0.660
400	13.27	35.289	26.580	146.5	0.825
500	11.04	34.979	26.770	128.5	0.974
600	8.71	34.686	26.939	112.5	1.106
700	6.58	34.465	27.075	99.6	1.223
800	5.09	34.350	27.171	90.5	1.327
1000	3.68	34.369	27.339	74.6	1.510
1200	3.08	34.487	27.490	60.2	1.661
1500	3.09	34.726	27.680	42.3	1.844
1750	3.16	34.834	27.760	34.6	1.970
2000	3.33	34.928	27.819	29.1	2.086
2250	3.21	34.944	27.843	26.8	2.197
2500	3.05	34.938	27.853	25.9	2.306
2750	2.90	34.931	27.861	25.2	2.416
3000	2.76	34.924	27.868	24.5	2.525
3250	2.59	34.911	27.874	23.9	2.633
3500	2.13	34.865	27.875	23.7	2.738
3750	1.18	34.766	27.867	24.5	2.831
4000	0.66	34.716	27.860	25.2	2.911

RV MELVILLE CATO EXPEDITION V1 8

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
26 11.0S	38 45.8W	11/11/72	0353 0650 GMT	4058M	050	18KT	1	080 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	22.78	36.835	4.98	0.00	1.0	0.00	0.0	257.9
10	22.79	36.833	4.97	0.00	0.7	0.00	0.0	258.3
26	22.77	36.830	5.01	0.00	1.0	0.00	0.0	258.0
42	22.50	36.787	5.02	0.00	1.0	0.00	0.0	253.7
78	21.04	36.609	5.13	0.02	1.0	0.00	0.0	227.7
115	20.21	36.449	5.08	0.06	0.8	0.08	0.0	217.9
146	18.43	36.087	4.95	0.20	1.3	0.03	1.2	200.2
177	16.96	35.827	4.73	0.41	2.0	0.01	3.6	184.9
235	15.38	35.581	4.84	0.47	2.1	0.01	5.2	168.1
353	13.66	35.358	4.90	0.69	3.2	0.01	8.8	149.1
568	8.75	34.688	4.72	1.45	10.4	0.00	20.5	113.0
722	5.49	34.365	5.11	1.85	18.2	0.00	26.9	93.8
851	4.30	34.328	4.96	2.09	28.5	0.00	30.4	83.7
978	3.70	34.385	4.54	2.20	40.3	0.00	32.6	73.5
1066A	3.31	34.423	4.47	2.25	48.1	0.00	33.1	67.1
1107	3.22	34.439	4.48	2.24	50.0	0.00	33.3	65.1
1219A	3.30	34.560	4.39	2.20	49.8		31.7	56.6
1236	3.33	34.573	4.38	2.15	48.4	0.00	31.6	55.9
1372A	3.26	34.652	4.44	2.05	50.5		30.5	49.4
1576A	3.61	34.838	4.93	1.78	35.1		25.4	38.6
1780A	3.69	34.927	5.38	1.40	26.0		22.5	32.6
1983A	3.52	34.948	5.71	1.32	24.1	0.00	21.0	29.4
2188A	3.37	34.958	5.80	1.37	24.5		20.5	27.3
2188A	3.20	34.946	5.79	1.33	26.5		20.5	26.6
2596A	3.07	34.937	5.86	1.38	29.0		20.5	26.2
2800A	2.94	34.935	5.83	1.35	31.2		20.8	25.2
3005A	2.82	34.927	5.82	1.42	33.7	0.00	21.0	24.7
3211A	2.63	34.913	5.82	1.38	36.9		21.0	24.2
3417A	2.37	34.893	5.80	1.46	45.8		22.0	23.6
3626A	1.595	34.814	5.49	1.75	78.4		26.3	23.7
3835A	0.99	34.745	5.16	1.97	103.1		29.5	25.0
3913A	0.817	34.732	5.18	2.07	112.0	0.00	30.4	24.9
3992A	0.685	34.717	5.15	2.13	117.2		31.1	25.3
4045A	0.510	34.701	5.10	2.19	124.7	0.00	32.2	25.5

Z	T	S	SIGT	DT	DD
0	22.78	36.835	25.406	257.9	0.000
10	22.79	36.833	25.402	258.3	0.026
20	22.78	36.829	25.404	258.1	0.052
30	22.73	36.820	25.413	257.3	0.078
50	22.20	36.748	25.508	248.2	0.128
75	21.17	36.623	25.700	229.9	0.189
100	20.59	36.530	25.789	221.5	0.246
125	19.67	36.334	25.884	212.5	0.301
150	18.22	36.046	26.036	198.1	0.354
200	16.21	35.705	26.258	177.0	0.451
250	15.12	35.547	26.384	165.1	0.540
300	14.35	35.447	26.476	156.4	0.624
400	12.67	35.209	26.640	140.8	0.782
500	10.40	34.893	26.818	123.9	0.926
600	7.98	34.599	26.982	108.4	1.053
700	5.89	34.397	27.112	96.1	1.165
800	4.65	34.328	27.204	87.4	1.265
1000	3.59	34.397	27.370	71.8	1.441
1200	3.29	34.541	27.514	58.0	1.587
1500	3.46	34.770	27.679	42.4	1.770
1750	3.68	34.916	27.775	33.3	1.899
2000	3.51	34.949	27.817	29.3	2.017
2250	3.18	34.945	27.846	26.6	2.129
2500	3.10	34.939	27.849	26.3	2.239
2750	2.97	34.936	27.858	25.4	2.350
3000	2.82	34.926	27.865	24.8	2.461
3250	2.60	34.911	27.872	24.1	2.571
3500	2.08	34.862	27.877	23.7	2.675
3750	1.21	34.770	27.868	24.5	2.768
4000	0.66	34.715	27.859	25.3	2.848

CATO EXPEDITION VI

7 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
25 47.3S	39 23.7W	11/10/72	0936 GMT

Z	T	S	SIGMA T	DT	DD
0	23.08	36.89	25.361	262.2	0.000
10	23.08	36.89	25.361	262.2	0.026
20	23.09	36.88	25.351	263.2	0.053
30	23.08	36.88	25.354	262.9	0.079
40	22.62	36.76	25.396	258.9	0.105
50	22.22	36.78	25.525	246.6	0.131
60	22.27	36.86	25.572	242.2	0.155
70	22.22	36.86	25.586	240.8	0.180
80	22.15	36.85	25.598	239.7	0.204
90	22.04	36.82	25.606	238.9	0.228
100	21.82	36.77	25.630	236.6	0.252
125	21.40	36.72	25.710	229.1	0.312
150	20.70	36.50	25.734	226.7	0.370
200	17.78	35.95	26.071	194.6	0.479
250	16.00	35.64	26.257	177.2	0.575
300	14.91	35.53	26.418	161.9	0.664
350	14.25	35.45	26.484	155.6	0.748
400	13.22	35.25	26.560	148.4	0.830
450	12.30	35.12	26.643	140.6	0.908
500	11.20	34.99	26.750	130.4	0.981
550	9.79	34.81	26.859	120.1	1.050
600	8.58	34.65	26.931	113.2	1.114
650	7.39	34.50	26.991	107.5	1.174
700	6.56	34.45	27.067	100.4	1.232
750	5.80	34.38	27.110	96.3	1.286
800	5.13	34.37	27.183	89.4	1.337
850	4.63	34.33	27.209	87.0	1.386
900	4.22	34.32	27.245	83.5	1.432
950	3.87	34.33	27.289	79.3	1.477
1000	3.67	34.36	27.333	75.1	1.520
1100	3.28	34.43	27.427	66.3	1.599
1200	3.08	34.48	27.485	60.7	1.670
1300	2.91	34.56	27.564	53.2	1.736
1400	2.94	34.63	27.617	48.2	1.796
1500	3.08	34.72	27.676	42.6	1.851
1600	3.13	34.77	27.711	39.3	1.903
1700A	3.10	34.80	27.738	36.8	1.953
1800A	3.24	34.88	27.789	32.0	2.001
1900A	3.11	34.86	27.785	32.3	2.047
2000A	3.41	34.94	27.820	29.0	2.093
2100A	3.34	34.94	27.827	28.4	2.138
2200A	3.27	34.94	27.833	27.7	2.183
2300A	3.17	34.94	27.843	26.8	2.227
2400A	3.12	34.93	27.840	27.1	2.271
2500A	3.04	34.93	27.847	26.4	2.316
2600A	2.99	34.94	27.860	25.2	2.360
2700A	2.91	34.93	27.859	25.3	2.403
2800A	2.87	34.93	27.863	25.0	2.447
2900A	2.81	34.93	27.868	24.4	2.491
3000A	2.74	34.93	27.875	23.8	2.534
3100A	2.68	34.93	27.880	23.3	2.577
3200A	2.62	34.92	27.877	23.6	2.619
3300A	2.53	34.91	27.877	23.6	2.662
3400A	2.41	34.90	27.879	23.4	2.705
3500A	2.28	34.90	27.890	22.3	2.746
3600A	1.94	34.85	27.878	23.5	2.786
3700A	1.46	34.80	27.874	23.9	2.823
3800A	0.98	34.75	27.867	24.5	2.857
3900A	0.77	34.72	27.857	25.5	2.889
3988A	0.67	34.71	27.855	25.7	2.916

8 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
26 11.0S	38 45.8W	11/11/72	0217 GMT

Z	T	S	SIGMA T	DT	DD
0	22.80	36.82	25.389	259.5	0.000
10	22.76	36.84	25.410	257.5	0.026
20	22.79	36.85	25.415	257.1	0.052
30	22.79	36.85	25.415	257.1	0.077
40	22.71	36.82	25.415	257.1	0.103
50	22.44	36.77	25.455	253.3	0.129
60	22.04	36.74	25.546	244.7	0.154
70	21.50	36.67	25.644	235.3	0.178
80	21.03	36.60	25.720	228.0	0.202
90	20.92	36.56	25.720	228.1	0.225
100	20.78	36.53	25.735	226.6	0.248
125	19.72	36.30	25.844	216.3	0.304
150	18.45	36.08	26.003	201.2	0.358
200	16.45	35.68	26.183	184.1	0.457
250	15.27	35.57	26.368	166.6	0.548
300	14.32	35.43	26.469	157.1	0.633
350	13.79	35.37	26.535	150.8	0.715
400	12.59	35.16	26.617	143.0	0.794
450	11.61	35.04	26.713	133.9	0.868
500	10.59	34.90	26.790	126.6	0.939
550	9.24	34.71	26.872	118.8	1.006
600	7.93	34.58	26.975	109.0	1.068
650	6.72	34.45	27.045	102.4	1.126
700	5.59	34.37	27.126	94.6	1.180
750	5.07	34.33	27.158	91.7	1.231
800	4.62	34.30	27.186	89.1	1.280
850	4.30	34.33	27.244	83.6	1.328
900	4.08	34.35	27.284	79.8	1.373
950	3.89	34.37	27.319	76.5	1.416
1000	3.63	34.39	27.361	72.5	1.457
1100	3.28	34.45	27.443	64.8	1.534
1200	3.15	34.52	27.510	58.3	1.604
1300A	3.31	34.62	27.575	52.2	1.668
1400A	3.48	34.72	27.638	46.2	1.728
1500A	3.57	34.79	27.685	41.8	1.784
1600A	3.63	34.85	27.727	37.8	1.837
1700A	3.71	34.90	27.758	34.9	1.888
1800A	3.69	34.93	27.784	32.4	1.937
1900A	3.59	34.95	27.810	29.9	1.984
2000A	3.51	34.95	27.818	29.2	2.030
2100A	3.45	34.96	27.832	27.9	2.075
2200A	3.37	34.96	27.840	27.1	2.120
2300A	3.30	34.95	27.838	27.3	2.165
2400A	3.21	34.95	27.847	26.4	2.210
2500A	3.13	34.94	27.847	26.5	2.255
2600A	3.06	34.94	27.853	25.8	2.299
2700A	2.98	34.93	27.853	25.9	2.344
2800A	2.94	34.93	27.856	25.5	2.389
2900A	2.87	34.93	27.863	25.0	2.433
3000A	2.82	34.92	27.859	25.3	2.478
3100A	2.73	34.92	27.868	24.5	2.522
3200A	2.63	34.91	27.868	24.4	2.566
3300A	2.54	34.90	27.868	24.4	2.610
3400A	2.38	34.89	27.874	23.9	2.653
3500A	2.19	34.87	27.874	23.9	2.695
3600A	1.72	34.83	27.879	23.4	2.734
3700A	1.41	34.80	27.878	23.5	2.770
3800A	1.10	34.77	27.875	23.8	2.804
3900A	0.83	34.73	27.861	25.1	2.836
4000A	0.64	34.70	27.849	26.3	2.867
4079A	0.45	34.68	27.844	26.8	2.891

RV MELVILLE CATO EXPEDITION V1 9

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
26 45.7S	37 59.0W	11/11/72	1540 1847 GMT	4295M	080	14KT	2	049 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	21.77	36.518	5.16	0.00	0.8	0.01	0.0	253.5	0	21.77	36.518	5.16	25.453	253.5	0.000
10	21.77	36.514	5.11	0.00	0.8	0.00	0.0	253.7	10	21.77	36.514	5.11	25.450	253.7	0.025
26	21.76	36.508	5.15	0.00	1.0	0.00	0.0	253.9	20	21.76	36.508	5.14	25.449	253.9	0.051
42	21.38	36.533	5.22	0.00	1.0	0.00	0.0	242.1	30	21.68	36.512	5.17	25.475	251.4	0.076
80	20.53	36.484	5.22	0.02	1.0	0.00	0.0	223.5	50	21.29	36.551	5.22	25.614	238.1	0.125
116	17.76	35.956	4.89	0.22	1.5	0.05	1.9	193.9	75	20.70	36.509	5.22	25.743	225.9	0.184
148	16.85	35.816	4.89	0.28	1.6	0.02	3.0	183.2	100	18.99	36.185	5.03	25.946	206.6	0.239
179	15.91	35.663	4.97	0.46	2.1	0.01	4.3	173.5	125	17.43	35.903	4.89	26.120	190.1	0.290
236	14.97	35.542	4.99	0.47	2.3	0.01	5.5	162.3	150	16.79	35.804	4.89	26.200	182.5	0.337
354	13.68	35.386	4.97	0.64	3.0	0.01	8.4	147.4	200	15.49	35.604	4.98	26.346	168.7	0.428
569	8.90	34.699	4.97	1.41	9.7	0.00	20.3	114.4	250	14.82	35.525	4.99	26.435	160.3	0.514
721	5.56	34.362	5.22	1.81	17.2	0.00	26.6	94.8	300	14.27	35.463	4.98	26.504	153.7	0.596
849	4.22	34.300	5.30	2.02	26.4	0.00	29.7	85.0	400	12.79	35.246	4.97	26.645	140.4	0.753
891P	3.86	34.300	5.20	1.98	29.9	0.00	30.4	81.5	500	10.60	34.923	4.97	26.807	125.1	0.897
997P	3.44	34.360	4.78	2.16	41.6	0.00	31.8	73.0	600	8.14	34.609	5.02	26.966	109.9	1.025
1106P	3.17	34.427	4.57	2.22	48.1	0.00	32.8	65.5	700	5.96	34.395	5.18	27.101	97.2	1.139
1194P	3.05	34.488	4.40	2.21	53.3	0.00	32.8	59.9	800	4.63	34.311	5.27	27.192	88.5	1.240
1347A	3.03	34.591	4.37	2.16	55.1	0.00	31.8	51.9	1000	3.43	34.362	4.77	27.357	72.8	1.417
1499A	2.94	34.685	4.55	2.03	55.5		29.7	44.0	1200	3.05	34.493	4.40	27.498	59.5	1.566
1653A	2.86	34.741	4.70	1.92	55.2		28.5	39.1	1500	2.94	34.686	4.55	27.662	44.0	1.749
1856A	3.18	34.877	5.31	1.62	36.8		24.0	31.7	1750	2.99	34.805	4.97	27.753	35.4	1.876
2059A	3.38	34.954	5.79	1.32	24.1		20.5	27.7	2000	3.35	34.940	5.69	27.825	28.5	1.991
2262A	3.11	34.935	5.71	1.35	29.0	0.00	21.0	26.7	2250	3.13	34.938	5.71	27.845	26.7	2.101
2466A	3.01	34.925	5.73	1.35	30.7		21.0	26.5	2500	2.99	34.925	5.75	27.848	26.3	2.210
2670A	2.91	34.930	5.84	1.35	31.5		20.7	25.3	2750	2.86	34.928	5.85	27.862	24.9	2.319
2874A	2.79	34.926	5.87	1.39	33.6		21.0	24.6	3000	2.72	34.921	5.85	27.870	24.3	2.427
3079A	2.67	34.918	5.83	1.38	35.8		21.1	24.2	3250	2.52	34.911	5.82	27.880	23.3	2.534
3286A	2.48	34.91	5.82	1.49	42.1	0.00	21.1	23.2	3500	2.09	34.866	5.67	27.879	23.4	2.637
3492A	2.11	34.869	5.68	1.56	55.6		23.5	23.4	3750	1.44	34.797	5.44	27.874	23.9	2.731
3700A	1.56	34.808	5.50	1.79	79.7		26.5	24.0	4000	0.78	34.735	5.13	27.867	24.6	2.814
3909A	1.05	34.765	5.25	1.98	99.2		29.6	23.8	4250	0.34	34.690	5.13	27.858	25.4	2.886
4119A	0.50	34.701	5.07	2.17	123.9		32.5	25.4							
4198A	0.422	34.695	5.14	2.21	124.4	0.00	31.9	25.5							
4277A	0.302	34.687	5.12	2.25	128.6		32.6	25.4							
4330A	0.290	34.683	5.13	2.26	129.2	0.00	32.9	25.7							

RV MELVILLE CATO EXPEDITION V1 10

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 41.3S	36 42.2W	11/12/72	0658 1012 GMT	4677M	090	17KT	2	090 6 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	21.43	36.536	5.14	0.02	1.0	0.00	0.0	243.2	0	21.43	36.536	5.14	25.562	243.2	0.000
10	21.44	36.531	5.17	0.00	0.8	0.00	0.0	243.8	10	21.44	36.531	5.17	25.555	243.8	0.024
26	21.44	36.531	5.17	0.00	0.8	0.00	0.0	243.8	20	21.44	36.529	5.17	25.555	243.8	0.049
41	21.43	36.535	5.18	0.01	1.0	0.00	0.0	243.2	30	21.44	36.530	5.17	25.557	243.6	0.073
78	20.47	36.419	5.25	0.04	0.8	0.00	0.0	226.7	50	21.32	36.530	5.19	25.590	240.5	0.122
114	18.29	35.977	5.32	0.14	1.0	0.01	0.1	204.9	75	20.60	36.436	5.24	25.715	228.5	0.181
155	17.28	35.848	5.23	0.25	1.4	0.10	0.7	190.7	100	19.14	36.144	5.30	25.877	213.2	0.237
186	16.32	35.721	4.93	0.41	1.7		3.2	178.3	125	17.96	35.926	5.30	26.009	200.6	0.290
258	14.93	35.543	5.00	0.48	2.0	0.01	5.4	161.4	150	17.37	35.854	5.24	26.099	192.2	0.340
361	13.70	35.395	4.99	0.63	3.0	0.01	8.1	147.2	200	15.99	35.677	4.94	26.289	174.1	0.435
566	9.27	34.743	4.75	1.36	8.9	0.00	19.1	116.8	250	15.04	35.557	4.99	26.409	162.7	0.522
720	5.88	34.389	5.16	1.77	15.8	0.00	25.8	96.6	300	14.41	35.485	5.00	26.491	154.9	0.606
873	4.18	34.288	5.32	2.03	24.5	0.00	29.5	85.5	400	12.96	35.278	4.92	26.634	141.4	0.764
1027	3.44	34.350	4.82	2.20	38.7	0.00	32.2	73.8	500	10.85	34.958	4.79	26.790	126.5	0.909
1181	3.06	34.444	4.51	2.25	50.0	0.00	33.2	63.3	600	8.45	34.644	4.83	26.946	111.9	1.039
1336	2.93	34.551	4.39	2.12	55.1	0.00		54.1	700	6.27	34.423	5.10	27.083	98.9	1.155
1492	2.84	34.651	4.47	2.08	56.2	0.00		45.8	800	4.83	34.315	5.24	27.174	90.3	1.259
1573A	2.82	34.681	4.56	2.06	56.6	0.01	30.4	43.3	1000	3.52	34.333	4.92	27.326	75.8	1.441
1648	2.789	34.716	4.69	1.97	55.8	0.00		40.4	1200	3.04	34.457	4.48	27.471	62.1	1.595
1778A	2.79	34.777	4.87	1.87	51.3		27.4	35.8	1500	2.84	34.656	4.48	27.647	45.5	1.783
1983A	2.83	34.828	5.19	1.72	47.0		25.4	32.3	1750	2.79	34.767	4.83	27.740	36.7	1.913
2187A	2.89	34.878	5.48	1.61	38.6		23.2	29.0	2000	2.84	34.832	5.22	27.788	32.0	2.029
2391A	2.92	34.910	5.65	1.38	33.3		21.5	26.9	2250	2.91	34.889	5.54	27.828	28.2	2.141
2595A	2.87	34.916	5.75	1.40	33.8	0.00	21.2	26.0	2500	2.90	34.913	5.71	27.847	26.3	2.249
2800A	2.79	34.921	5.81	1.38	33.8		21.0	24.9	2750	2.81	34.919	5.80	27.860	25.2	2.358
3107A	2.63	34.914	5.82	1.42	36.2		21.1	24.1	3000	2.69	34.916	5.82	27.869	24.2	2.466
3209A	2.57	34.905	5.85	1.44	38.6		21.3	24.3	3250	2.53	34.902	5.84	27.871	24.2	2.573
3415A	2.33	34.887	5.80	1.47	45.1		22.4	23.7	3500	2.19	34.873	5.75	27.877	23.6	2.678
3621A	1.97	34.853	5.66	1.65	59.9	0.00	24.2	23.5	3750	1.70	34.822	5.54	27.874	23.9	2.777
3827A	1.55	34.805	5.47	1.78	78.4		26.7	24.1	4000	1.34	34.782	5.39	27.869	24.4	2.869
4034A	1.31	34.779	5.38	1.93	88.2		27.9	24.5	4250	1.12	34.753	5.31	27.860	25.0	2.958
4241A	1.143	34.758	5.32	1.97	97.1		29.1	25.0	4500	0.39	34.689	5.07	27.854	25.8	3.036
4449A	0.57	34.698	5.04	2.17	118.4		32.0	26.1							
4555A	0.23	34.681	5.10	2.25	127.0	0.00	32.9	25.5							
4606A	0.186	34.675	5.17	2.26	130.1		32.9	25.7							
4659A	0.189	34.674	5.16	2.27	128.2	0.00	33.0	25.8							

CATO EXPEDITION V1

9 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
26 45.7S	37 59.0W	11/11/72	1359 GMT

Z	T	S	SIGMA T	DT	DD
0	21.81	36.52	25.443	254.4	0.000
10	21.78	36.51	25.444	254.3	0.025
20	21.79	36.52	25.449	253.9	0.051
30	21.77	36.51	25.447	254.0	0.076
40	21.36	36.54	25.584	241.0	0.101
50	20.84	36.52	25.712	228.9	0.125
60	20.80	36.51	25.715	228.6	0.148
70	20.78	36.54	25.743	225.9	0.171
80	20.67	36.50	25.743	225.9	0.194
90	19.94	36.32	25.801	220.4	0.217
100	18.86	36.06	25.884	212.6	0.239
125	17.60	35.87	26.054	196.4	0.291
150	16.75	35.78	26.189	183.6	0.339
200	15.62	35.64	26.344	168.9	0.430
250	14.84	35.54	26.441	159.7	0.516
300	14.40	35.50	26.505	153.6	0.598
350	13.75	35.39	26.559	148.5	0.678
400	12.83	35.24	26.631	141.7	0.756
450	11.67	35.08	26.732	132.0	0.830
500	10.65	34.92	26.795	126.1	0.900
550	9.35	34.69	26.839	122.0	0.966
600	8.08	34.59	26.961	110.4	1.031
650	6.85	34.48	27.051	101.8	1.090
700	5.91	34.38	27.096	97.6	1.144
750	5.20	34.31	27.128	94.6	1.197
800	4.63	34.30	27.185	89.2	1.247
850	4.18	34.29	27.226	85.4	1.295
900	3.84	34.31	27.276	80.5	1.340
950	3.72	34.33	27.304	77.9	1.384
1000	3.45	34.37	27.363	72.3	1.425
1100	3.17	34.43	27.437	65.3	1.501
1200	3.04	34.49	27.497	59.6	1.572
1300	2.92	34.57	27.572	52.5	1.636
1400A	2.98	34.62	27.606	49.3	1.696
1500A	3.03	34.69	27.657	44.5	1.753
1600A	2.87	34.71	27.688	41.6	1.807
1700A	2.98	34.78	27.733	37.2	1.858
1800A	3.10	34.83	27.762	34.5	1.906
1900A	3.26	34.89	27.795	31.4	1.953
2000A	3.23	34.93	27.829	28.1	1.998
2100A	3.24	34.92	27.820	29.0	2.042
2200A	3.14	34.93	27.838	27.3	2.086
2300A	3.11	34.93	27.841	27.0	2.130
2400A	3.06	34.93	27.845	26.6	2.174
2500A	2.96	34.93	27.855	25.7	2.218
2600A	2.93	34.93	27.857	25.5	2.261
2700A	2.88	34.92	27.854	25.6	2.304
2800A	2.81	34.92	27.860	25.2	2.348
2900A	2.75	34.92	27.866	24.7	2.392
3000A	2.70	34.92	27.870	24.3	2.435
3100A	2.63	34.92	27.876	23.7	2.477
3200A	2.58	34.92	27.881	23.3	2.520
3300A	2.47	34.91	27.882	23.1	2.562
3400A	2.33	34.90	27.886	22.7	2.603
3500A	2.15	34.88	27.885	22.8	2.644
3600A	1.83	34.84	27.879	23.5	2.683
3700A	1.58	34.81	27.873	23.9	2.720
3800A	1.32	34.79	27.876	23.7	2.756
3900A	1.11	34.77	27.875	23.8	2.790
4000A	0.75	34.73	27.866	24.7	2.821
4100A	0.48	34.70	27.858	25.4	2.850
4200A	0.42	34.70	27.862	25.1	2.878
4300A	0.27	34.69	27.862	25.0	2.905
4371A	0.26	34.68	27.855	25.7	2.924

10 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
27 41.3S	36 42.2W	11/12/72	0520 GMT

Z	T	S	SIGMA T	DT	DD
0	21.43	36.52	25.549	244.3	0.000
10	21.44	36.52	25.547	244.6	0.024
20	21.43	36.52	25.549	244.3	0.049
30	21.44	36.52	25.547	244.6	0.074
40	21.44	36.53	25.554	243.9	0.098
50	21.45	36.53	25.551	244.1	0.123
60	21.41	36.59	25.608	238.7	0.147
70	21.36	36.60	25.630	236.7	0.171
80	21.13	36.50	25.617	237.9	0.195
90	19.80	36.19	25.739	226.3	0.219
100	19.72	36.22	25.783	222.1	0.241
125	18.01	35.94	26.006	200.9	0.295
150	17.45	35.87	26.090	193.0	0.346
200	16.18	35.70	26.261	176.7	0.441
250	15.09	35.57	26.409	162.8	0.529
300	14.44	35.50	26.497	154.4	0.613
350	13.76	35.40	26.564	148.0	0.693
400	13.20	35.30	26.603	144.4	0.771
450	11.92	35.10	26.700	135.1	0.847
500	10.74	34.93	26.787	126.9	0.918
550	9.58	34.78	26.871	118.9	0.985
600	8.28	34.62	26.954	111.1	1.048
650	7.21	34.47	26.993	107.3	1.108
700	6.28	34.41	27.072	99.8	1.165
750	5.49	34.35	27.125	94.9	1.218
800	4.90	34.32	27.170	90.6	1.269
850	4.27	34.28	27.208	87.0	1.318
900	4.06	34.30	27.246	83.4	1.364
950	3.67	34.31	27.273	80.8	1.410
1000	3.52	34.33	27.324	76.0	1.453
1100	3.24	34.39	27.399	68.9	1.533
1200	3.05	34.46	27.472	62.0	1.607
1300	2.97	34.52	27.527	56.8	1.674
1400	2.88	34.60	27.599	49.9	1.737
1500	2.82	34.65	27.644	45.7	1.794
1600	2.79	34.70	27.687	41.6	1.848
1700A	2.81	34.74	27.717	38.8	1.898
1800A	2.79	34.78	27.751	35.6	1.947
1900A	2.81	34.81	27.773	33.5	1.994
2000A	2.82	34.83	27.788	32.1	2.039
2100A	2.87	34.86	27.807	30.2	2.084
2200A	2.89	34.88	27.821	28.9	2.128
2300A	2.91	34.90	27.835	27.5	2.172
2400A	2.91	34.91	27.843	26.8	2.215
2500A	2.90	34.91	27.844	26.7	2.259
2600A	2.84	34.92	27.858	25.4	2.302
2700A	2.81	34.92	27.860	25.2	2.345
2800A	2.77	34.92	27.864	24.8	2.388
2900A	2.74	34.93	27.875	23.8	2.430
3000A	2.67	34.92	27.873	24.0	2.473
3100A	2.63	34.91	27.868	24.4	2.516
3200A	2.57	34.91	27.874	23.9	2.559
3300A	2.48	34.90	27.873	23.9	2.602
3400A	2.36	34.89	27.876	23.7	2.644
3500A	2.22	34.88	27.879	23.4	2.686
3600A	2.03	34.86	27.879	23.4	2.726
3700A	1.80	34.84	27.881	23.2	2.765
3800A	1.62	34.82	27.879	23.5	2.803
3900A	1.45	34.79	27.867	24.6	2.839
4000A	1.33	34.77	27.859	25.3	2.876
4100A	1.24	34.77	27.866	24.7	2.912
4200A	1.17	34.76	27.863	25.0	2.947
4300A	1.10	34.76	27.867	24.5	2.982
4400A	0.87	34.73	27.858	25.4	3.015
4500A	0.45	34.69	27.852	26.0	3.046
4600A	0.21	34.68	27.857	25.5	3.073
4682A	0.17	34.67	27.852	26.0	3.094

RV MELVILLE CATO EXPEDITION VI 11

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 35.0S	35 28.2W	11/12/72	2123 0024 GMT	4334M	090	11KT	1	090 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	20.63	36.225	5.24	0.06	1.0	0.00	0.0	244.8
10	20.62	36.219	5.32	0.05	1.0	0.00	0.0	245.0
21	20.40	36.204	5.39	0.06	1.2	0.00	0.0	240.4
42	20.01	36.169	5.31	0.06	1.0	0.00	0.0	233.1
62	19.42	36.128	5.40	0.07	0.8	0.00	0.0	221.3
94	19.41	36.174	5.28	0.08	1.0	0.00	0.0	217.8
125	19.33	36.165	5.28	0.11	1.0	0.00	0.0	216.4
156	18.74	36.038	5.33	0.14	1.2	0.11	0.1	211.2
208	16.37	35.701	5.11	0.46	1.7	0.01	2.4	180.8
260	15.08	35.506	5.13	0.56	2.1	0.01	4.6	167.2
312	14.23	35.414	5.10		2.6	0.01	6.1	156.4
415	13.05	35.271	5.08	0.73	3.3	0.00	9.5	143.6
569	9.39	34.758	4.84	1.35	8.8	0.00	19.0	117.6
723	6.36	34.435	5.06	1.75	15.6	0.00	25.5	99.0
876	4.59	34.318	5.16	1.99E	24.1	0.00	28.6E	87.4
921A	4.31	34.317	5.11	2.08	26.9	0.01	30.0	84.6
1031	3.70	34.344	4.91	2.14E	36.5	0.00	31.2E	76.6
1076A	3.61	34.363	4.77	2.19	38.0		31.8	74.4
1229A	3.16	34.458	4.45	2.27	51.2		32.8	63.1
1382A	3.00	34.551	4.35	2.34	55.4		31.9	54.7
1536A	2.87	34.646	4.51	2.08	57.7		30.8	46.4
1739A	2.81	34.742	4.83	1.83	53.4	0.00	28.1	38.6
1943A	2.79	34.807	5.02	1.66	49.2		26.2	33.5
2197A	2.98	34.893	5.53	1.47	35.9		22.6	28.7
2453A	2.94	34.917	5.74	1.45	32.8		21.5	26.5
2708A	2.85	34.927	5.85	1.38	32.0		20.8	25.0
2964A	2.72	34.913	5.84	1.44	34.9	0.00	20.9	25.0
3222A	2.54	34.905	5.86	1.41	38.7		21.1	24.1
3479A	2.24	34.878	5.83	1.52	50.1		22.6	23.7
3738A	1.69	34.821	5.55	1.71	72.2		25.6	23.9
3999A	1.39	34.783	5.31	1.84	85.4		27.5	24.7
4208A	1.187	34.766	5.33	1.94	94.8	0.00	28.8	24.6
4261A	1.157	34.760	5.42	1.99	96.1		29.0	24.9
4312A	1.137	34.757	5.33	1.99	98.0	0.00	28.9	25.0

Z	T	S	O2	SIGT	DT	DD
0	20.63	36.225	5.24	25.544	244.8	0.000
10	20.62	36.219	5.32	25.542	245.0	0.025
20	20.42	36.204	5.39	25.585	241.0	0.049
30	20.24	36.188	5.36	25.621	237.5	0.073
50	19.76	36.148	5.34	25.719	228.2	0.120
75	19.42	36.145	5.36	25.807	219.9	0.176
100	19.39	36.170	5.28	25.831	217.6	0.232
125	19.33	36.165	5.28	25.843	216.4	0.287
150	18.90	36.068	5.32	25.882	212.8	0.342
200	16.76	35.749	5.15	26.165	185.9	0.445
250	15.27	35.534	5.13	26.342	169.1	0.537
300	14.40	35.430	5.11	26.452	158.6	0.623
400	13.23	35.296	5.08	26.594	145.2	0.785
500	11.13	34.989	4.93	26.762	129.3	0.933
600	8.70	34.676	4.87	26.931	113.2	1.066
700	6.75	34.471	5.02	27.057	101.3	1.184
800	5.31	34.356	5.11	27.150	92.5	1.291
1000	3.84	34.334	4.98	27.295	78.8	1.481
1200	3.24	34.439	4.49	27.437	65.3	1.642
1500	2.90	34.626	4.46	27.617	48.2	1.840
1750	2.81	34.747	4.84	27.722	38.3	1.975
2000	2.83	34.828	5.13	27.785	32.3	2.094
2250	2.97	34.899	5.59	27.829	28.1	2.206
2500	2.93	34.918	5.77	27.849	26.2	2.315
2750	2.83	34.924	5.85	27.862	25.0	2.423
3000	2.70	34.912	5.84	27.864	24.8	2.532
3250	2.52	34.902	5.86	27.873	24.0	2.640
3500	2.20	34.873	5.81	27.876	23.7	2.745
3750	1.67	34.819	5.54	27.874	23.9	2.843
4000	1.39	34.783	5.31	27.866	24.7	2.936
4250	1.16	34.761	5.40	27.864	24.8	3.025

RV MELVILLE CATO EXPEDITION VI 12

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 15.2S	38 48.5W	11/13/72	211A 0207 GMT	4135M	030	14KT	1	040 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	20.53 U	36.032	5.27	0.03	1.0	0.01	0.0	
10	20.69	36.046	5.26	0.02	1.0	0.00	0.0	259.3
36	20.22	36.117	5.28	0.02	1.0	0.00	0.0	242.2
63	18.39	35.940	5.44	0.06	0.8	0.00	0.0	210.0
95	17.65	35.898	5.22	0.17	1.4	0.05	0.3	195.6
113A	17.27	35.835	5.26	0.14	1.5	0.00	0.4	191.4
157	16.05	35.665	5.12	0.34	1.8	0.02	2.7	176.4
216A	15.14	35.589	5.06	0.43	2.1		4.5	162.4
319A	14.06	35.440	5.02	0.59	2.8	0.00	7.2	151.1
422A	12.79	35.239	4.93	0.81	3.9		10.2	141.0
525A	10.75	34.939	4.78	0.96	6.4		15.3	126.4
629A	8.00	34.595	4.82	1.51	11.3		21.6	108.9
732A	5.89	34.376	5.32	1.71	14.7		24.9	97.7
887A	4.31	34.281	5.47	1.95	22.9	0.00	28.2	87.3
990A	3.67	34.288	5.27	2.05	31.2		30.3	80.6
1247A	2.95	34.443	4.57	2.26	52.8		32.8	62.4
1451A	2.82	34.564	4.42	2.16	59.2	0.00	31.9	52.2
1644B	2.81	34.695	4.51	2.04	57.7	0.00	29.8	42.2
1654A	2.80	34.693	4.61	2.02	57.8		29.7	42.2
1951B	2.90	34.828	5.29	1.70	47.1	0.00	25.2	32.9
2258B	2.94	34.891	5.65	1.50	37.1	0.00	22.6	28.5
2566B	2.877	34.919	5.83	1.40	33.7		21.4	25.8
2874B	2.74	34.911	5.81	1.36	35.2		21.0	25.3
3284B	2.319	34.884	5.78	1.47	47.1		22.1	23.9
3699B	1.585	34.812	5.50	1.77	77.4		26.2	23.8
4012B	1.222	34.766	5.34	1.93	94.7		29.0	24.9
4116B	1.100	34.752	5.30	1.99	99.4		28.3U	25.1

Z	T	S	O2	SIGT	DT	DD
0	20.70	36.032	5.27	25.379	260.6	0.000
10	20.69	36.046	5.26	25.392	259.3	0.026
20	20.51	36.044	5.27	25.440	254.7	0.052
30	20.33	36.078	5.28	25.515	247.6	0.077
50	19.29	36.028	5.37	25.750	225.2	0.125
75	18.02	35.919	5.36	25.990	202.5	0.179
100	17.55	35.881	5.23	26.076	194.3	0.229
125	16.93	35.783	5.23	26.148	187.4	0.278
150	16.24	35.688	5.15	26.238	178.9	0.325
200	15.34	35.601	5.07	26.378	165.6	0.413
250	14.76	35.544	5.05	26.462	157.7	0.498
300	14.24	35.470	5.03	26.517	152.5	0.579
400	13.10	35.288	4.95	26.614	143.3	0.737
500	11.31	35.018	4.81	26.751	130.3	0.885
600	8.77	34.684	4.81	26.927	113.6	1.019
700	6.47	34.431	5.16	27.064	100.6	1.137
800	5.03	34.313	5.39	27.149	92.6	1.243
1000	3.62	34.293	5.24	27.284	79.8	1.432
1200	3.01	34.409	4.69	27.434	65.6	1.594
1500	2.82	34.613	4.44	27.614	48.6	1.791
1750	2.83	34.729	4.83	27.706	40.2	1.929
2000	2.91	34.841	5.37	27.789	32.0	2.050
2250	2.94	34.889	5.64	27.825	28.6	2.162
2500	2.90	34.915	5.81	27.849	26.2	2.272
2750	2.81	34.915	5.82	27.857	25.4	2.380
3000	2.64	34.905	5.80	27.864	24.8	2.488
3250	2.36	34.887	5.78	27.873	24.0	2.594
3500	1.94	34.845	5.65	27.875	23.8	2.695
3750	1.52	34.804	5.47	27.873	24.0	2.789
4000	1.23	34.768	5.35	27.864	24.8	2.878

E) NUTRIENT SAMPLES AT 876 AND 1031 METERS APPEAR TO HAVE BEEN REVERSED. THEY ARE ASSUMED TO NOW BE IN THE CORRECT ORDER.

CATO EXPEDITION VI

11 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
28 35.0S	38 28.2W	11/12/72	2002 GMT

Z	T	S	SIGMA T	DT	DD
0	20.62	36.22	25.543	244.9	0.000
10	20.59	36.21	25.544	244.9	0.025
20	20.48	36.21	25.573	242.1	0.049
30	20.42	36.21	25.589	240.5	0.073
40	20.38	36.20	25.593	240.2	0.097
50	19.82	36.15	25.703	229.7	0.121
60	19.40	36.11	25.783	222.1	0.144
70	19.36	36.13	25.808	219.7	0.166
80	19.37	36.16	25.829	217.6	0.188
90	19.40	36.18	25.836	217.1	0.210
100	19.39	36.18	25.839	216.8	0.232
125	19.31	36.17	25.852	215.6	0.287
150	19.14	36.11	25.850	215.6	0.343
200	16.70	35.70	26.140	188.3	0.447
250	15.21	35.51	26.336	169.7	0.540
300	14.33	35.41	26.451	158.7	0.626
350	13.88	35.39	26.531	151.1	0.708
400	13.28	35.32	26.602	144.4	0.787
450	12.32	35.16	26.670	138.0	0.863
500	11.32	35.00	26.736	131.7	0.937
550	9.86	34.82	26.855	120.4	1.006
600	8.70	34.68	26.936	112.8	1.070
650	7.81	34.57	26.985	108.1	1.131
700	6.70	34.46	27.056	101.4	1.188
750	6.01	34.40	27.099	97.3	1.243
800	5.23	34.34	27.148	92.7	1.296
850	4.72	34.32	27.191	88.7	1.346
900	4.39	34.31	27.219	86.0	1.394
950	4.04	34.32	27.264	81.7	1.440
1000	3.78	34.33	27.298	78.4	1.484
1100A	3.56	34.37	27.352	73.4	1.568
1200A	3.23	34.43	27.431	65.8	1.647
1300A	3.05	34.49	27.496	59.7	1.718
1400A	2.98	34.55	27.550	54.6	1.785
1500A	2.88	34.61	27.607	49.2	1.846
1600A	2.84	34.67	27.658	44.3	1.903
1700A	2.82	34.73	27.708	39.6	1.956
1800A	2.80	34.76	27.734	37.2	2.006
1900A	2.79	34.79	27.758	34.8	2.054
2000A	2.79	34.81	27.774	33.3	2.100
2100A	2.84	34.84	27.794	31.5	2.146
2200A	2.98	34.89	27.821	28.9	2.191
2300A	2.99	34.90	27.828	28.3	2.236
2400A	2.98	34.92	27.845	26.7	2.280
2500A	2.96	34.92	27.847	26.5	2.323
2600A	2.88	34.92	27.854	25.8	2.367
2700A	2.86	34.92	27.856	25.6	2.410
2800A	2.81	34.92	27.860	25.2	2.454
2900A	2.73	34.92	27.868	24.5	2.497
3000A	2.70	34.92	27.870	24.3	2.540
3100A	2.64	34.92	27.875	23.7	2.583
3200A	2.57	34.90	27.866	24.7	2.626
3300A	2.48	34.91	27.881	23.2	2.669
3400A	2.37	34.90	27.883	23.1	2.711
3500A	2.19	34.87	27.874	23.9	2.752
3600A	2.02	34.85	27.872	24.1	2.793
3700A	1.80	34.83	27.873	24.0	2.833
3800A	1.64	34.81	27.869	24.4	2.871
3900A	1.50	34.79	27.863	24.9	2.909
4000A	1.40	34.79	27.870	24.2	2.946
4100A	1.29	34.77	27.862	25.0	2.982
4200A	1.20	34.77	27.869	24.4	3.017
4300A	1.14	34.77	27.873	24.0	3.052
4360A	1.03	34.75	27.864	24.9	3.072

12 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 15.2S	38 48.5W	11/13/72	1952 GMT

Z	T	S	SIGMA T	DT	DD
0	20.74	36.04	25.374	261.0	0.000
10	20.64	36.04	25.401	258.5	0.026
20	20.32	36.05	25.495	249.6	0.051
30	20.20	36.06	25.534	245.8	0.076
40	20.17	36.13	25.595	240.0	0.101
50	19.93	36.13	25.659	233.9	0.125
60	18.78	36.02	25.874	213.5	0.147
70	17.76	35.85	25.999	201.6	0.168
80	17.61	35.87	26.051	196.7	0.188
90	17.46	35.84	26.065	195.4	0.208
100	17.31	35.85	26.109	191.2	0.228
125	16.73	35.76	26.179	184.6	0.276
150	16.33	35.70	26.226	180.0	0.322
200A	15.35	35.59	26.366	166.8	0.412
250A	14.83	35.56	26.458	158.0	0.497
300A	14.31	35.49	26.517	152.5	0.578
350A	13.74	35.41	26.576	146.9	0.658
400A	13.04	35.28	26.620	142.7	0.735
450A	12.15	35.13	26.679	137.1	0.811
500A	11.14	34.99	26.761	129.3	0.883
550A	10.22	34.86	26.824	123.4	0.953
600A	8.71	34.67	26.926	113.7	1.018
650A	7.76	34.56	26.985	108.1	1.079
700A	6.79	34.46	27.044	102.6	1.137
750A	5.72	34.34	27.088	98.3	1.192
800A	5.12	34.30	27.129	94.5	1.245
850A	4.68	34.28	27.163	91.2	1.296
900A	4.18	34.27	27.210	86.9	1.345
950A	3.94	34.27	27.235	84.5	1.392
1000A	3.55	34.27	27.274	80.8	1.437
1100A	3.24	34.34	27.359	72.7	1.522
1200A	3.02	34.42	27.443	64.7	1.598
1300A	2.92	34.47	27.492	60.1	1.669
1400A	2.84	34.53	27.547	54.9	1.735
1500A	2.80	34.60	27.606	49.3	1.796
1600A	2.79	34.67	27.663	43.9	1.853
1700A	2.82	34.72	27.700	40.4	1.906
1800A	2.83	34.76	27.731	37.4	1.956
1900A	2.86	34.81	27.768	33.9	2.004
2000A	2.92	34.84	27.787	32.2	2.050
2100A	2.94	34.87	27.809	30.1	2.095
2200A	2.94	34.88	27.817	29.3	2.140
2300A	2.94	34.90	27.833	27.8	2.184
2400A	2.90	34.91	27.844	26.7	2.228
2500A	2.91	34.92	27.851	26.0	2.271
2600A	2.87	34.92	27.855	25.7	2.314
2700A	2.82	34.91	27.851	26.0	2.357
2800A	2.76	34.91	27.857	25.5	2.401
2900A	2.71	34.92	27.869	24.3	2.444
3000A	2.65	34.91	27.867	24.6	2.487
3100A	2.56	34.90	27.867	24.6	2.530
3200A	2.47	34.90	27.874	23.9	2.572
3300A	2.36	34.88	27.868	24.5	2.614
3400A	2.19	34.89	27.890	22.4	2.655
3500A	1.98	34.86	27.883	23.1	2.694
3600A	1.74	34.83	27.878	23.6	2.733
3700A	1.62	34.81	27.870	24.2	2.770
3800A	1.48	34.79	27.865	24.8	2.807
3900A	1.32	34.78	27.868	24.4	2.843
4000A	1.22	34.76	27.859	25.3	2.879
4100A	1.08	34.75	27.861	25.2	2.914
4142A	1.05	34.74	27.856	25.6	2.928

RV MELVILLE CATO EXPEDITION VI 13

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 09.3S	39 24.7W	11/14/72	0949	1209	4760M	010	9KT	1	010 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	20.60	36.206	5.23	0.02	1.5	0.01	0.0	245.4
36A	20.28	36.236	5.21	0.10	0.7	0.00	0.0	235.1
53	19.97	36.212	5.29	0.02	1.0	0.00	0.0	229.0
94	18.41	35.980	5.31	0.08	1.2	0.01	0.0	207.5
112A	17.86	35.902		0.19	1.2	0.04	0.1	200.2
126	17.64	35.893	5.46	0.10	1.3	0.02	0.0	195.7
157	17.12	35.831	5.20	0.19	1.0	0.09	1.0	188.2
188A	16.34	35.739	5.15	0.29	1.3	0.04	2.0	177.4
289A	14.65	35.526	4.99	0.49	2.0	0.01	5.8	156.8
440A	12.88	35.255	4.94	0.80	3.7	0.01	10.2	141.5
591A	9.58	34.780	4.78	1.29	8.0	0.00	18.5	118.9
895A	4.47	34.282	5.45	1.93	21.1		28.0	88.9
1298A	2.96	34.435	4.56	2.26	51.8		32.9	63.1
1500A	2.81	34.567	4.34	2.18	59.3		32.1	51.8
1904A	2.87	34.791	4.92	1.85	51.6	0.00	27.0	35.4
2208A	2.95	34.873	5.42	1.56	40.1		23.3	29.9
2614A	2.89	34.914	5.75	1.40	33.6		21.4	26.3
3022A	2.67	34.911	5.81	1.39	37.0		21.1	24.7
3537A	1.934	34.844	5.54	1.61	62.1		24.0	23.9
4056A	0.407	34.689	5.13	2.22	124.9	0.00	32.5	25.8
4370A	0.242	34.678	5.15	2.26	129.7		32.7	25.8
4634A	0.239	34.675	5.14	2.26	131.2		32.7	26.0
4687A	0.238	34.675	5.18	2.23	131.4	0.00	32.6	26.0

Z	T	S	O2	SIGT	DT	DD
0	20.60	36.206	5.23	25.538	245.4	0.000
10	20.56	36.224	5.22	25.564	242.9	0.024
20	20.48	36.235	5.22	25.594	240.1	0.049
30	20.37	36.237	5.21	25.626	237.0	0.073
50	20.04	36.217	5.28	25.699	230.1	0.120
75	19.18	36.095	5.30	25.830	217.6	0.176
100	18.21	35.948	5.35	25.964	204.9	0.230
125	17.65	35.892	5.46	26.058	196.0	0.281
150	17.25	35.848	5.27	26.122	189.9	0.330
200	16.09	35.708	5.13	26.288	174.2	0.424
250	15.20	35.599	5.05	26.407	162.9	0.512
300	14.53	35.510	4.98	26.485	155.5	0.596
400	13.38	35.338	4.95	26.596	145.0	0.756
500	11.63	35.062	4.86	26.726	132.7	0.906
600	9.39	34.754	4.80	26.883	117.8	1.044
700	7.43	34.523	5.01	27.003	106.5	1.168
800	5.77	34.371	5.23	27.106	96.7	1.280
1000	4.08	34.333	5.29	27.269	81.2	1.476
1200	3.33	34.408	4.84	27.404	68.4	1.643
1500	2.81	34.567	4.34	27.579	51.8	1.849
1750	2.85	34.720	4.61	27.697	40.6	1.991
2000	2.90	34.823	5.09	27.775	33.3	2.115
2250	2.94	34.877	5.47	27.814	29.4	2.230
2500	2.91	34.902	5.69	27.838	27.0	2.341
2750	2.84	34.915	5.77	27.854	25.6	2.451
3000	2.69	34.911	5.81	27.865	24.7	2.560
3250	2.42	34.888	5.72	27.869	24.4	2.667
3500	2.01	34.850	5.57	27.873	24.0	2.770
3750	1.26	34.771	5.35	27.865	24.7	2.863
4000	0.55	34.703	5.16	27.856	25.6	2.942
4250	0.31	34.683	5.14	27.854	25.8	3.012
4500	0.24	34.677	5.15	27.853	25.9	3.078

RV MELVILLE CATO EXPEDITION VI 14

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 07.0S	39 19.7W	11/14/72	1518	1730	4833M	080	12KT	6	080 4 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	20.52	36.218	5.23	0.03	1.0	0.00	0.0	242.5
52A	20.22	36.268	5.21	0.05	1.0	0.00	0.0	231.2
53	20.18	36.266	5.28	0.02	0.6	0.00	0.0	230.4
78A	19.06	36.067	5.35	0.08	1.0	0.00	0.0	216.9
95	18.09	35.920	5.42	0.08	0.8	0.00	0.0	204.3
127	17.22	35.840	5.24	0.19	1.2	0.09	0.7	189.9
129A	17.60 V	35.865 V	5.36V	0.14	1.0	0.04	0.0	
158	16.17	35.682	5.04	0.34	1.7	0.02	2.6	177.8
207A	15.71	35.624	5.02	0.42	1.8	0.01	3.5	172.0
284A	14.78	35.519	4.99	0.49	2.0	0.01	5.5	160.0
387A	13.85	35.426	5.02	0.60	2.5	0.01	7.6	147.9
541A	10.49	34.902	4.79	1.17	6.8		16.2	124.7
694A	7.15	34.500	5.03	1.57	12.2		23.0	104.3
1002A	3.87	34.270	5.39	2.03	26.9		29.6	83.8
1412A	2.84	34.524	4.41	2.22	58.8		32.8	55.3
1617A	2.80	34.653	4.52	2.08	58.8		30.6	45.3
2026A	2.91	34.831	5.19	1.68	46.0		25.1	32.8
2332A	2.96	34.901	5.60	1.49	37.3	0.00	22.5	27.9
2742A	2.81	34.917	5.82	1.40	34.9		21.5	25.4
3150A	2.552	34.903	5.84	1.43	40.1		21.5	24.3
3664A	1.673	34.822	5.45	1.75	74.2		26.0	23.7
4182A	0.54	34.694	5.06	2.21	125.2		32.1	26.2
4495A	0.177	34.670	5.17	2.28	132.5		33.1	26.1
4755A	0.198	34.677	5.18	2.26	132.3		33.2	25.6
4807A	0.208	34.674	5.17	2.24	132.5	0.00	33.4	25.9

Z	T	S	O2	SIGT	DT	DD
0	20.52	36.218	5.23	25.569	242.5	0.000
10	20.46	36.226	5.23	25.591	240.3	0.024
20	20.40	36.235	5.22	25.614	238.2	0.048
30	20.35	36.245	5.22	25.637	236.0	0.072
50	20.23	36.264	5.21	25.683	231.7	0.119
75	19.21	36.097	5.34	25.823	218.3	0.176
100	17.92	35.901	5.41	26.000	201.6	0.229
125	17.26	35.842	5.26	26.115	190.6	0.279
150	16.42	35.720	5.09	26.221	180.5	0.327
200	15.73	35.625	5.02	26.307	172.4	0.418
250	15.19	35.563	5.00	26.381	165.4	0.505
300	14.66	35.510	5.00	26.458	158.1	0.591
400	13.61	35.387	5.00	26.585	146.0	0.753
500	11.50	35.052	4.84	26.743	131.1	0.903
600	9.13	34.722	4.86	26.899	116.3	1.039
700	7.05	34.490	5.04	27.031	103.8	1.160
800	5.64	34.363	5.22	27.116	95.7	1.270
1000	3.88	34.271	5.39	27.241	83.9	1.468
1200	3.37	34.400	4.92	27.393	69.5	1.639
1500	2.82	34.585	4.46	27.591	50.7	1.845
1750	2.82	34.722	4.71	27.701	40.3	1.985
2000	2.90	34.822	5.14	27.775	33.3	2.109
2250	2.95	34.886	5.50	27.821	28.9	2.223
2500	2.92	34.909	5.73	27.842	26.5	2.333
2750	2.81	34.916	5.82	27.858	25.4	2.442
3000	2.68	34.910	5.83	27.865	24.6	2.550
3250	2.41	34.889	5.78	27.871	24.2	2.657
3500	2.00	34.851	5.60	27.874	23.9	2.758
3750	1.47	34.798	5.36	27.872	24.1	2.853
4000	0.91	34.735	5.16	27.859	25.3	2.938
4250	0.43	34.687	5.08	27.850	26.2	3.015
4500	0.18	34.671	5.17	27.851	26.1	3.083
4750	0.20	34.678	5.18	27.856	25.6	3.148

CATO EXPEDITION VI

13 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 09.3S	39 24.7W	11/14/72	0748 GMT

Z	T	S	SIGMA T	DT	DD
0	20.62	36.21	25.536	245.6	0.000
10	20.52	36.22	25.570	242.4	0.024
20	20.35	36.23	25.623	237.3	0.048
30	20.29	36.23	25.639	235.8	0.072
40	20.17	36.24	25.679	232.0	0.096
50	20.02	36.21	25.696	230.4	0.119
60	19.77	36.19	25.747	225.5	0.142
70	19.59	36.20	25.802	220.3	0.165
80	18.91	36.06	25.871	213.8	0.187
90	18.65	36.02	25.907	210.4	0.208
100	18.19	35.96	25.977	203.7	0.229
125	17.70	35.90	26.052	196.6	0.280
150	17.45	35.87	26.090	193.0	0.330
200A	16.19	35.80	26.336	169.6	0.423
250A	15.10	35.59	26.422	161.5	0.510
300A	14.57	35.55	26.507	153.4	0.593
350A	14.18	35.49	26.545	149.8	0.673
400A	13.60	35.40	26.597	144.8	0.752
450A	12.81	35.24	26.635	141.3	0.830
500A	11.81	35.09	26.714	133.8	0.904
550A	10.74	34.92	26.779	127.6	0.976
600A	9.62	34.76	26.849	121.1	1.045
650A	8.25	34.61	26.951	111.4	1.109
700A	7.08	34.43	26.980	108.6	1.169
750A	6.27	34.40	27.066	100.5	1.227
800A	5.64	34.35	27.106	96.7	1.281
850A	4.88	34.29	27.149	92.6	1.334
900A	4.53	34.26	27.164	91.2	1.384
950A	4.13	34.26	27.207	87.1	1.433
1000A	3.90	34.27	27.239	84.1	1.480
1100A	3.46	34.31	27.314	77.0	1.569
1200A	3.15	34.37	27.391	69.6	1.651
1300A	2.96	34.43	27.456	63.5	1.726
1400A	2.86	34.48	27.505	58.8	1.795
1500A	2.82	34.56	27.573	52.5	1.860
1600A	2.79	34.63	27.631	46.9	1.920
1700A	2.81	34.69	27.677	42.6	1.975
1800A	2.84	34.74	27.714	39.0	2.027
1900A	2.85	34.78	27.745	36.1	2.077
2000A	2.92	34.83	27.779	32.9	2.125
2100A	2.96	34.86	27.799	31.0	2.171
2200A	2.95	34.87	27.808	30.2	2.216
2300A	2.93	34.89	27.825	28.5	2.261
2400A	2.97	34.91	27.838	27.3	2.306
2500A	2.94	34.91	27.840	27.1	2.350
2600A	2.89	34.91	27.845	26.6	2.394
2700A	2.88	34.92	27.854	25.8	2.438
2800A	2.81	34.92	27.860	25.2	2.482
2900A	2.77	34.92	27.864	24.8	2.525
3000A	2.70	34.91	27.862	25.0	2.569
3100A	2.63	34.91	27.868	24.4	2.612
3200A	2.52	34.91	27.878	23.5	2.655
3300A	2.39	34.89	27.873	24.0	2.697
3400A	2.25	34.88	27.877	23.6	2.739
3500A	2.09	34.86	27.874	23.9	2.779
3600A	1.89	34.83	27.866	24.7	2.820
3700A	1.60	34.82	27.874	23.9	2.858
3800A	1.54	34.80	27.868	24.4	2.896
3900A	0.98	34.73	27.851	26.1	2.931
4000A	0.66	34.70	27.847	26.4	2.964
4100A	0.40	34.69	27.855	25.7	2.993
4200A	0.27	34.68	27.854	25.8	3.020
4300A	0.25	34.68	27.855	25.7	3.047
4400A	0.23	34.67	27.848	26.3	3.073
4500A	0.23	34.67	27.848	26.3	3.100
4600A	0.23	34.67	27.848	26.3	3.127
4700A	0.24	34.67	27.848	26.4	3.153
4762A	0.23	34.67	27.848	26.3	3.170

14 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 07.0S	39 19.7W	11/14/72	1337 GMT

Z	T	S	SIGMA T	DT	DD
0	20.55	36.22	25.562	243.1	0.000
10	20.50	36.24	25.591	240.4	0.024
20	20.36	36.23	25.621	237.5	0.048
30	20.26	36.21	25.632	236.5	0.072
40	20.23	36.21	25.640	235.7	0.096
50	20.22	36.25	25.673	232.5	0.119
60	20.20	36.26	25.686	231.3	0.143
70	20.03	36.22	25.701	229.9	0.166
80	19.48	36.13	25.777	222.7	0.189
90	19.15	36.02	25.779	222.5	0.211
100	18.59	35.98	25.891	211.8	0.233
125	17.75	35.87	26.017	199.9	0.286
150	17.08	35.80	26.126	189.6	0.336
200	15.82	35.62	26.283	174.7	0.430
250	15.17	35.57	26.391	164.4	0.518
300	14.49	35.51	26.494	154.7	0.602
350	14.21	35.49	26.538	150.4	0.683
400	13.46	35.37	26.603	144.3	0.762
450	12.52	35.20	26.662	138.8	0.838
500	11.43	35.02	26.731	132.2	0.912
550	10.43	34.88	26.803	125.4	0.983
600	9.35	34.74	26.878	118.3	1.050
650	8.37	34.63	26.948	111.7	1.113
700	7.23	34.50	27.014	105.4	1.173
750	6.40	34.42	27.065	100.6	1.230
800	5.58	34.31	27.106	96.7	1.285
850	4.87	34.29	27.150	92.5	1.337
900	4.48	34.27	27.177	89.9	1.387
950	4.06	34.26	27.214	86.4	1.435
1000	3.81	34.26	27.240	84.0	1.482
1100	3.38	34.31	27.322	76.2	1.570
1200	3.04	34.35	27.385	70.2	1.651
1300	2.97	34.44	27.463	62.8	1.726
1400	2.86	34.51	27.529	56.6	1.795
1500	2.81	34.57	27.581	51.6	1.858
1600	2.80	34.63	27.630	47.0	1.917
1700	2.81	34.69	27.677	42.6	1.972
1800	2.83	34.74	27.715	38.9	2.025
1900	2.85	34.78	27.745	36.1	2.074
2000	2.91	34.83	27.780	32.8	2.122
2100	2.93	34.86	27.802	30.7	2.168
2200	2.97	34.89	27.822	28.8	2.213
2300	2.96	34.90	27.831	28.0	2.257
2400	2.94	34.91	27.840	27.1	2.300
2500	2.93	34.92	27.849	26.2	2.344
2600	2.89	34.93	27.861	25.1	2.387
2700	2.85	34.93	27.865	24.8	2.430
2800	2.79	34.93	27.870	24.3	2.473
2900	2.75	34.93	27.874	23.9	2.515
3000	2.69	34.92	27.871	24.2	2.558
3100	2.61	34.92	27.878	23.5	2.600
3200	2.52	34.91	27.878	23.5	2.642
3300	2.40	34.90	27.880	23.3	2.684
3400	2.23	34.89	27.887	22.7	2.725
3500	2.08	34.86	27.875	23.8	2.765
3600	1.85	34.84	27.877	23.6	2.805
3700	1.65	34.82	27.876	23.7	2.842
3800	1.48	34.80	27.873	24.0	2.879
3900	1.33	34.78	27.867	24.5	2.915
4000	1.18	34.77	27.870	24.3	2.950
4100	0.88	34.73	27.858	25.4	2.983
4200	0.53	34.69	27.847	26.4	3.014
4300	0.33	34.68	27.851	26.1	3.043
4400	0.17	34.67	27.852	26.0	3.070
4500	0.16	34.67	27.852	26.0	3.095
4600	0.17	34.67	27.852	26.0	3.121
4700	0.17	34.67	27.852	26.0	3.147
4800	0.19	34.67	27.851	26.1	3.173
4829	0.19	34.67	27.851	26.1	3.180

RV MELVILLE CATO EXPEDITION VI 15

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 54.7S	38 57.0W	11/15/72	0750 0956 GMT	4040M	150	15KT	1	160 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	18.98	35.994	5.44	0.03	1.0	0.01	0.0	220.3
43	18.60	36.013	5.58	0.04	0.8	0.00	0.0	209.7
85	18.31	35.999	5.46	0.04	1.0	0.00	0.0	203.8
93A	18.12 V	35.981 V	5.48V	0.10	1.2	0.01	0.0	
107	18.07	35.967	5.41	0.06	1.0	0.00	0.0	200.4
128	17.63	35.925	5.52	0.09	1.2	0.11	0.1	193.1
195A	16.61	35.837	5.40	0.19	1.5	0.04	1.1	176.3
297A	15.00	35.570	5.00	0.54	2.7	0.01	5.4	160.9
400A	13.76	35.406	5.00	0.55	3.1		7.9	147.6
502A	12.00	35.112	4.84	0.90	4.8		12.7	135.6
707A	6.74	34.423	5.39	1.66	11.3		23.8	104.7
809A	5.19	34.299	5.65	1.77	15.6	0.00	26.2	95.3
911A	4.54	34.293	5.37	1.95	22.1		28.6	88.8
1267A	3.00	34.385	4.74	2.23	49.2		33.2	67.2
1421A	2.82	34.486	4.46	2.25	58.2		33.5	58.0
1676A	2.83	34.670	4.57	2.11	61.5		30.7	44.2
1982A	2.97	34.809	5.07	1.76	49.2	0.00	26.5	34.9
2339A	3.09	34.913	5.69	1.46	33.4		21.8	28.1
2647A	2.96	34.923	5.85	1.39	32.1		21.0	26.2
2852A	2.83	34.918	5.74	1.39	34.1		21.1	25.5
3263A	2.631	34.911	5.82	1.43	38.0		21.2	24.4
3625A	1.916	34.842	5.62	1.67	66.0	0.00	24.7	23.9
3987A	1.221	34.765	5.34	1.97	96.2		28.8	24.9
4040A	1.158	34.756	5.29	1.97	100.0	0.00	29.1	25.2

Z	T	S	O2	SIGT	DT	DD
0	18.98	35.994	5.44	25.803	220.3	0.000
10	18.89	35.999	5.49	25.831	217.6	0.022
20	18.80	36.005	5.54	25.859	214.9	0.044
30	18.71	36.009	5.56	25.885	212.5	0.065
50	18.56	36.013	5.57	25.926	206.6	0.107
75	18.38	36.005	5.50	25.963	205.0	0.160
100	18.16	35.977	5.42	25.998	201.7	0.211
125	17.70	35.930	5.50	26.076	194.3	0.262
150	17.26	35.895	5.48	26.155	186.8	0.311
200	16.53	35.823	5.38	26.276	175.3	0.404
250	15.72	35.695	5.18	26.363	167.1	0.493
300	14.96	35.565	5.00	26.433	160.4	0.579
400	13.76	35.406	5.00	26.569	147.6	0.743
500	12.04	35.118	4.84	26.692	135.9	0.897
600	9.45	34.733	5.03	26.855	120.4	1.038
700	6.91	34.441	5.36	27.011	105.7	1.162
800	5.29	34.307	5.64	27.113	96.0	1.273
1000	4.03	34.297	5.19	27.246	83.3	1.471
1200	3.19	34.353	4.84	27.374	71.2	1.642
1500	2.82	34.548	4.49	27.563	53.4	1.856
1750	2.86	34.710	4.67	27.688	41.5	2.001
2000	2.98	34.816	5.11	27.762	34.5	2.127
2250	3.08	34.894	5.56	27.816	29.4	2.245
2500	3.04	34.923	5.77	27.842	26.9	2.358
2750	2.89	34.920	5.80	27.853	25.8	2.470
3000	2.79	34.918	5.76	27.861	25.0	2.580
3250	2.64	34.911	5.82	27.869	24.4	2.691
3500	2.19	34.867	5.71	27.872	24.1	2.798
3750	1.65	34.812	5.53	27.870	24.1	2.896
4000	1.20	34.762	5.33	27.862	25.0	2.987

RV MELVILLE CATO EXPEDITION VI 16

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 54.0S	39 55.1W	11/15/72	1716 1928 GMT	4005M	180	14KT	1	180 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	19.73	36.163	5.33	0.02	1.2	0.00	0.0	226.5
41	19.47	36.162	5.36	0.01	1.0	0.00	0.0	220.1
73A	19.30	36.154	5.32	0.08	1.0	0.00	0.0	216.5
83	19.00	36.119	5.34	0.03	1.0	0.00	0.0	211.7
105	18.22	35.961	5.37	0.07	1.0	0.00	0.0	204.4
125A	17.46	35.867	5.23	0.18	1.2	0.10	0.6	193.4
126	17.45	35.861	5.23	0.11	1.3	0.10	0.6	193.6
229A	15.22	35.599	5.00	0.47	2.1	0.01	5.0	163.4
333A	14.01	35.434	4.99	0.60	2.7		7.6	150.5
436A	12.69	35.224	4.91	0.80	3.7		10.8	140.2
641A	8.54	34.654	4.83	1.47	9.8		21.1	112.4
744A	6.23	34.414	5.14	1.72	14.1		25.0	98.9
847A	4.99	34.311	5.37	1.85	18.2		27.2	92.2
1206A	3.22	34.379	4.72	2.23	44.5		32.5	69.6
1361A	2.91	34.463	4.51	2.27	54.2		33.0	60.5
1574P	2.83	34.599	4.61	2.18	58.9	0.00	31.7	49.6
1826P	2.89	34.729	4.61	1.97	56.5		29.1	40.3
2117P	3.24	34.881	5.35	1.55	35.9		23.4	31.9
2366P	3.23	34.922	5.69	1.40	29.0		21.3	28.7
2530P	3.16	34.931	5.70	1.36	28.4		20.9	27.4
2856P	2.950	34.934	5.84	1.36	30.4	0.00	20.5	25.3
3140P	2.599	34.891	5.64	1.48	43.7		22.5	25.6
3451P	2.066	34.837	5.44	1.68	64.7		25.0	25.5
3488P	1.98	34.844	5.52	1.64	63.4	0.00	24.6	24.3

Z	T	S	O2	SIGT	DT	DD
0	19.73	36.163	5.33	25.737	226.5	0.000
10	19.66	36.162	5.34	25.755	224.8	0.023
20	19.60	36.162	5.34	25.772	223.1	0.045
30	19.54	36.162	5.35	25.788	221.6	0.067
50	19.42	36.158	5.34	25.815	219.1	0.112
75	19.25	36.147	5.32	25.852	215.6	0.167
100	18.41	35.998	5.36	25.952	206.1	0.220
125	17.46	35.867	5.23	26.085	193.4	0.271
150	16.99	35.761	5.19	26.118	190.3	0.320
200	15.92	35.628	5.08	26.268	176.1	0.415
250	14.94	35.564	5.00	26.438	160.0	0.502
300	14.34	35.485	4.99	26.506	153.5	0.585
400	13.19	35.304	4.94	26.608	143.8	0.743
500	11.54	35.049	4.89	26.733	132.0	0.893
600	9.47	34.767	4.85	26.878	118.3	1.030
700	7.16	34.503	5.00	27.026	104.2	1.153
800	5.47	34.348	5.28	27.125	94.9	1.263
1000	3.90	34.292	5.22	27.255	82.4	1.458
1200	3.23	34.376	4.74	27.388	69.9	1.628
1500	2.86	34.556	4.55	27.565	53.1	1.840
1750	2.87	34.694	4.61	27.674	42.8	1.986
2000	3.10	34.826	5.03	27.758	34.8	2.115
2250	3.23	34.906	5.57	27.810	29.9	2.236
2500	3.18	34.929	5.70	27.834	27.6	2.353
2750	3.03	34.935	5.81	27.852	25.8	2.467
3000	2.79	34.913	5.76	27.857	25.5	2.580
3250	2.44	34.874	5.57	27.856	25.6	2.690
3500	1.96	34.846	5.54	27.873	24.0	2.793

CATO EXPEDITION VI

15 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
31 54.7S	38 57.0W	11/15/72	0618 GMT

Z	T	S	SIGMA T	DT	DD
0	19.24	36.05	25.779	222.6	0.000
10	19.18	36.05	25.794	221.1	0.022
20	18.85	36.03	25.864	214.5	0.044
30	18.69	36.03	25.904	210.6	0.065
40	18.61	36.02	25.917	209.4	0.087
50	18.60	36.01	25.912	209.9	0.108
60	18.57	36.01	25.919	209.2	0.129
70	18.53	36.01	25.930	208.2	0.150
80	18.45	36.01	25.950	206.3	0.171
90	18.31	36.01	25.985	203.0	0.192
100	18.22	36.01	26.007	200.8	0.212
125	17.95	35.97	26.044	197.4	0.263
150A	17.27	35.93	26.180	184.5	0.312
200A	16.58	35.85	26.283	174.7	0.404
250A	15.64	35.66	26.354	167.9	0.494
300A	14.97	35.61	26.466	157.3	0.579
350A	14.43	35.54	26.530	151.3	0.661
400A	13.80	35.44	26.587	145.9	0.741
450A	12.85	35.28	26.658	139.1	0.818
500A	12.10	35.14	26.697	135.4	0.893
550A	11.11	34.99	26.767	128.8	0.965
600A	9.96	34.63	26.846	121.3	1.034
650A	8.33	34.62	26.946	111.6	1.099
700A	7.04	34.45	27.002	106.6	1.159
750A	5.73	34.33	27.079	99.2	1.216
800A	5.22	34.30	27.117	95.6	1.269
850A	4.88	34.31	27.165	91.1	1.320
900A	4.53	34.29	27.188	88.9	1.370
950A	4.29	34.29	27.214	86.5	1.418
1000A	4.03	34.28	27.233	84.6	1.466
1100A	3.52	34.31	27.308	77.5	1.555
1200A	3.19	34.36	27.379	70.8	1.638
1300A	2.98	34.42	27.447	64.4	1.714
1400A	2.85	34.47	27.498	59.5	1.785
1500A	2.82	34.55	27.565	53.2	1.850
1600A	2.80	34.62	27.622	47.8	1.910
1700A	2.84	34.68	27.666	43.6	1.967
1800A	2.86	34.73	27.704	40.0	2.020
1900A	2.91	34.78	27.740	36.6	2.071
2000A	3.01	34.83	27.770	33.7	2.119
2100A	3.08	34.87	27.796	31.3	2.166
2200A	3.11	34.90	27.817	29.3	2.212
2300A	3.09	34.91	27.827	28.4	2.258
2400A	3.07	34.92	27.836	27.4	2.303
2500A	3.04	34.93	27.847	26.4	2.347
2600A	3.00	34.93	27.851	26.1	2.391
2700A	2.95	34.92	27.848	26.4	2.436
2800A	2.87	34.92	27.855	25.7	2.481
2900A	2.82	34.92	27.859	25.3	2.525
3000A	2.78	34.92	27.863	24.9	2.569
3100A	2.74	34.92	27.867	24.6	2.614
3200A	2.68	34.91	27.864	24.8	2.658
3300A	2.64	34.91	27.867	24.5	2.703
3400A	2.50	34.90	27.872	24.1	2.747
3500A	2.33	34.87	27.862	25.0	2.790
3600A	2.06	34.85	27.868	24.4	2.832
3700A	1.84	34.83	27.870	24.3	2.873
3800A	1.57	34.80	27.866	24.6	2.911
3900A	1.36	34.77	27.857	25.5	2.948
4000A	1.19	34.76	27.861	25.1	2.984
4074A	0.92	34.73	27.855	25.7	3.009

16 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
31 54.0S	39 55.1W	11/15/72	1547 GMT

Z	T	S	SIGMA T	DT	DD
0	19.84	36.21	25.744	225.9	0.000
10	19.82	36.20	25.741	226.1	0.023
20	19.76	36.18	25.742	226.0	0.045
30	19.68	36.17	25.755	224.7	0.068
40	19.47	36.16	25.803	220.3	0.090
50	19.45	36.15	25.800	220.5	0.112
60	19.40	36.15	25.813	219.2	0.135
70	19.30	36.14	25.832	217.5	0.157
80	19.01	36.11	25.884	212.6	0.179
90	18.92	36.08	25.884	212.6	0.200
100	18.42	35.99	25.942	207.0	0.221
125	17.45	35.85	26.075	194.4	0.273
150A	17.16	35.80	26.107	191.4	0.322
200A	15.98	35.67	26.284	174.5	0.416
250A	15.13	35.56	26.392	164.3	0.504
300A	14.47	35.48	26.475	156.5	0.589
350A	13.98	35.41	26.526	151.7	0.671
400A	13.23	35.26	26.566	147.9	0.751
450A	12.62	35.20	26.642	140.6	0.828
500A	11.64	34.99	26.668	138.1	0.904
550A	10.23	34.83	26.799	125.7	0.976
600A	9.19	34.70	26.873	118.8	1.043
650A	8.21	34.56	26.916	114.5	1.108
700A	7.08	34.44	26.988	107.8	1.169
750A	6.13	34.36	27.052	101.7	1.227
800A	5.45	34.32	27.106	96.7	1.281
850A	4.96	34.29	27.140	93.5	1.334
900A	4.62	34.28	27.170	90.6	1.384
950A	4.30	34.27	27.197	88.1	1.433
1000A	3.97	34.28	27.239	84.0	1.481
1100A	3.56	34.31	27.302	78.1	1.571
1200A	3.27	34.35	27.364	72.2	1.654
1300A	3.06	34.43	27.447	64.3	1.731
1400A	2.85	34.47	27.498	59.5	1.802
1500A	2.80	34.53	27.550	54.6	1.868
1600A	2.81	34.61	27.613	48.6	1.929
1700A	2.90	34.68	27.661	44.1	1.987
1800A	2.86	34.71	27.688	41.5	2.041
1900A	2.90	34.77	27.733	37.3	2.093
2000A	3.07	34.83	27.765	34.2	2.142
2100A	3.18	34.87	27.786	32.2	2.190
2200A	3.22	34.90	27.806	30.3	2.238
2300A	3.22	34.93	27.830	28.0	2.284
2400A	3.18	34.93	27.834	27.7	2.329
2500A	3.15	34.94	27.845	26.6	2.375
2600A	3.09	34.94	27.851	26.1	2.420
2700A	3.05	34.94	27.854	25.8	2.465
2800A	2.97	34.94	27.862	25.1	2.510
2900A	2.91	34.93	27.859	25.3	2.554
3000A	2.80	34.92	27.861	25.1	2.599
3100A	2.63	34.90	27.860	25.2	2.643
3200A	2.50	34.88	27.856	25.6	2.687
3300A	2.34	34.87	27.861	25.1	2.731
3400A	2.06	34.84	27.860	25.2	2.772
3500A	1.85	34.83	27.869	24.4	2.812
3600A	1.38	34.78	27.864	24.9	2.849
3700A	0.93	34.73	27.854	25.7	2.884
3800A	0.63	34.70	27.849	26.2	2.915
3900A	0.42	34.69	27.854	25.8	2.944
4000A	0.36	34.68	27.849	26.3	2.972

RV MELVILLE CATO EXPEDITION V1 17

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 10.2S	40 44.5W	11/16/72	1035 1231 GMT	4723M	130	18KT	1	180 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	18.65	36.032	5.72	0.05	1.5	0.00	0.0	209.5
21A	18.40	36.088	5.58	0.13	1.0	0.00	0.0	199.4
42	18.32	36.083	5.62	0.04	1.0	0.00	0.0	197.9
63	18.29	36.093	5.47	0.09	0.8	0.00	0.0	196.5
99A	17.59	36.016	5.51	0.12	1.2	0.01	0.0	185.6
105	17.31	35.963	5.56	0.09	1.3	0.03	0.0	183.0
126	16.85	35.900	5.43	0.13	1.2	0.20	0.6	177.1
203A	15.82	35.746	5.25	0.34	1.5	0.01	3.2	165.5
358A	14.05	35.470	4.96	0.54	2.6	0.01	7.8	148.7
514A	10.80	34.928	4.85	1.08	5.5	0.01	15.3	128.1
719A	6.01	34.383	5.44	1.71	12.3		24.1	98.6
1027A	3.71	34.280	6.10	2.06	28.5		30.0	81.5
1233A	2.99	34.353	4.86	2.23	44.5		32.5	69.5
1438A	2.74	34.473	4.47	2.25	57.0	0.01	32.6	58.4
1644P	2.82	34.626	4.39	2.13	58.7		31.4	47.5
1824P	2.97	34.740	4.70	1.97	53.1		28.3	40.1
2049P	3.09	34.831	5.15	1.69	42.4		25.0	34.3
2358P	3.15	34.914	5.62	1.47	31.7		22.0	28.6
2660P	2.99	34.922	5.81	1.40	30.5	0.00	20.6	26.6
3035P	2.74	34.913	5.78	1.38	34.6		20.9	25.1
3406P	1.652	34.810	5.28	1.81	77.1		26.5	24.5
3624P	1.115	34.733	4.98	2.07	106.1		30.2	26.7
3804P	0.840	34.716	5.100	2.16	112.5		31.1	26.3
3842P	0.78	34.715	4.96	2.17	114.5	0.00	31.5	26.0

Z	T	S	O2	SIGT	DT	DD
0	18.65	36.032	5.72	25.916	209.5	0.000
10	18.51	36.065	5.63	25.978	203.7	0.021
20	18.41	36.085	5.58	26.019	199.7	0.041
30	18.35	36.080	5.60	26.029	198.8	0.061
50	18.31	36.082	5.57	26.042	197.6	0.101
75	18.20	36.096	5.48	26.080	193.9	0.150
100	17.54	36.006	5.52	26.172	185.2	0.198
125	16.86	35.899	5.44	26.255	177.3	0.245
150	16.47	35.844	5.35	26.305	172.5	0.290
200	15.85	35.750	5.25	26.376	165.8	0.377
250	15.34	35.677	5.15	26.436	160.1	0.462
300	14.77	35.589	5.05	26.494	154.7	0.545
400	13.26	35.330	4.93	26.613	143.4	0.704
500	11.13	34.978	4.86	26.754	130.0	0.852
600	8.67	34.645	5.05	26.913	115.0	0.986
700	6.41	34.416	5.37	27.060	101.1	1.105
800	5.05	34.316	5.61	27.149	92.6	1.211
1000	3.76	34.276	6.04	27.257	82.4	1.403
1200	3.07	34.337	5.08	27.372	71.4	1.574
1500	2.76	34.522	4.45	27.547	54.9	1.789
1750	2.91	34.697	4.55	27.674	42.9	1.937
2000	3.07	34.815	5.05	27.753	35.4	2.068
2250	3.13	34.889	5.48	27.807	30.3	2.188
2500	3.09	34.922	5.74	27.837	27.4	2.304
2750	2.97	34.924	5.80	27.849	26.2	2.417
3000	2.78	34.915	5.78	27.860	25.2	2.529
3250	2.15	34.854	5.52	27.865	24.7	2.634
3500	1.40	34.775	5.13	27.858	25.5	2.730
3750	0.92	34.721	4.97	27.848	26.4	2.816

RV MELVILLE CATO EXPEDITION V1 18

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 26.5S	41 29.0W	11/17/72	0349 0559 GMT	4839M	160	12KT	1	180 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	18.36	35.949	5.46	0.09	1.4	0.00	0.0	208.6
41	17.94	35.998	5.53	0.07	1.0	0.00	0.0	195.1
63	17.34	35.979	5.54	0.10	1.2	0.00	0.0	182.5
105	17.00	35.958	5.40	0.15	1.3	0.05	0.9	176.3
125A	16.62 V	35.901 V	5.26V	0.24	1.5	0.02	1.9	
126	16.77	35.923	5.27	0.23	1.3	0.02	1.8	173.6
158	16.09	35.786	5.12	0.34	1.5	0.02	3.4	168.5
203A	15.10	35.642	5.06					157.7
280A	14.59	35.583	5.31	1.49	2.2	0.02	15.4	151.4
385A	13.40	35.352	5.11	0.75	3.1	0.01	8.7	144.4
540A	8.47	34.583	5.20	1.30	7.6	0.01	19.5	116.6
695A	5.19	34.248	5.97	1.69	11.8		24.2	99.2
900A	4.09	34.227	5.89	1.96	19.9		27.4	89.2
1207A	2.95	34.313	5.08	2.24	42.3		32.4	72.2
1412A	2.68	34.441	4.54	2.25	57.8		33.5	60.3
1616A	2.82	34.585	4.35	2.23	60.6	0.00	32.1	50.6
1820A	2.90	34.689	4.48	2.09	59.5		30.1	43.4
2024A	3.02	34.781	4.86	1.92	52.5		27.3	37.5
2329A	3.19	34.895	5.48	1.51	36.0		21.8	30.4
2736A	2.89	34.90	5.65	1.50	38.7		21.5	27.4
3144A	2.576	34.890	5.69	1.47	44.6	0.00	22.1	25.5
3658A	1.129	34.734	4.96	2.14	109.4		30.6	26.7
4175A	0.354	34.686	5.11	2.27	128.8		32.6	25.8
4489A	0.209	34.671	5.18	2.28	130.1		32.4	26.1
4751A	0.163							
4804A	0.162	34.663 E	5.18	2.29	132.2	0.00	33.1	26.5

Z	T	S	O2	SIGT	DT	DD
0	18.36	35.949	5.46	25.926	208.6	0.000
10	18.26	35.943	5.48	25.948	206.5	0.021
20	18.16	35.949	5.50	25.978	203.6	0.041
30	18.05	35.966	5.52	26.016	200.0	0.062
50	17.69	35.990	5.53	26.124	189.8	0.101
75	17.20	35.974	5.52	26.232	179.5	0.148
100	17.02	35.961	5.43	26.265	176.4	0.193
125	16.78	35.924	5.28	26.293	173.7	0.238
150	16.28	35.822	5.15	26.333	169.9	0.282
200	15.16	35.648	5.06	26.454	158.4	0.367
250	14.72	35.598	5.21	26.512	152.9	0.448
300	14.45	35.558	5.29	26.539	150.4	0.528
400	12.97	35.272	5.12	26.628	142.0	0.684
500	9.84	34.765	5.18	26.815	124.3	0.828
600	6.98	34.411	5.50	26.979	108.7	0.954
700	5.14	34.246	5.97	27.083	98.8	1.067
800	4.38	34.213	5.93	27.143	93.2	1.170
1000	3.64	34.244	5.67	27.243	83.9	1.363
1200	2.97	34.311	5.10	27.360	72.6	1.535
1500	2.72	34.505	4.42	27.537	55.8	1.753
1750	2.87	34.657	4.44	27.644	45.6	1.905
2000	3.00	34.771	4.81	27.724	38.1	2.042
2250	3.16	34.871	5.34	27.789	31.9	2.168
2500	3.10	34.907	5.55	27.824	28.6	2.287
2750	2.89	34.900	5.65	27.838	27.3	2.402
3000	2.73	34.897	5.68	27.850	25.9	2.516
3250	2.30	34.857	5.54	27.855	25.7	2.625
3500	1.60	34.781	5.18	27.848	26.2	2.726
3750	0.94	34.721	4.99	27.846	26.5	2.816
4000	0.54	34.696	5.06	27.851	26.1	2.895
4250	0.30	34.682	5.13	27.853	25.8	2.965
4500	0.21	34.671	5.18	27.850	26.2	3.032
4750	0.16	34.665	5.18	27.847	26.4	3.098

E) MEAN VALUE OF 34.655 AND 34.671 PPT.

CATO EXPEDITION VI

17 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
33 10.2S	40 44.5W	11/16/72	0902 GMT

Z	T	S	SIGMA T	DT	DD
0	18.57	36.02	25.927	208.4	0.000
10	18.59	36.03	25.930	208.2	0.021
20	18.38	36.08	26.021	199.5	0.041
30	18.32	36.08	26.036	198.1	0.061
40	18.30	36.09	26.048	196.9	0.081
50	18.30	36.09	26.048	196.9	0.101
60	18.27	36.09	26.056	196.2	0.121
70	17.74	36.01	26.126	189.5	0.140
80	17.74	36.06	26.165	185.9	0.159
90	17.21	35.93	26.194	183.1	0.178
100	16.98	35.92	26.242	178.6	0.197
125	16.72	35.92	26.304	172.7	0.241
150	16.37	35.85	26.332	170.0	0.285
200	15.84	35.77	26.393	164.2	0.372
250	14.91	35.60	26.471	156.8	0.455
300	14.65	35.58	26.513	152.9	0.537
350	14.11	35.48	26.552	149.1	0.617
400	13.41	35.35	26.598	144.8	0.696
450	12.37	35.16	26.660	138.9	0.773
500	11.33	34.99	26.726	132.7	0.846
550	9.89	34.81	26.842	121.7	0.916
600	8.53	34.62	26.915	114.7	0.981
650	7.24	34.48	26.997	107.0	1.042
700	6.09	34.34	27.042	102.8	1.099
750	5.48	34.30	27.086	98.6	1.154
800	5.04	34.25	27.099	97.4	1.208
850	4.67	34.26	27.149	92.6	1.259
900	4.33	34.25	27.178	89.9	1.309
950	4.03	34.25	27.209	86.9	1.358
1000	3.84	34.26	27.237	84.3	1.405
1100	3.41	34.30	27.311	77.3	1.494
1200	3.08	34.33	27.366	72.1	1.577
1300	2.85	34.38	27.426	66.3	1.654
1400	2.79	34.45	27.488	60.5	1.726
1500	2.80	34.53	27.550	54.6	1.792
1600	2.83	34.59	27.596	50.3	1.854
1700	2.84	34.67	27.658	44.3	1.912
1800	2.92	34.72	27.691	41.2	1.967
1900	3.00	34.77	27.723	38.1	2.019
2000	3.05	34.82	27.759	34.8	2.069
2100	3.10	34.86	27.786	32.2	2.117
2200	3.11	34.88	27.801	30.6	2.165
2300	3.13	34.91	27.823	28.7	2.211
2400	3.15	34.93	27.837	27.4	2.256
2500	3.14	34.94	27.846	26.6	2.301
2600	3.02	34.93	27.849	26.2	2.346
2700	2.97	34.93	27.854	25.8	2.391
2800	2.93	34.94	27.865	24.7	2.435
2900	2.82	34.92	27.859	25.3	2.479
3000	2.77	34.92	27.864	24.8	2.523
3100	2.65	34.91	27.867	24.6	2.567
3200	2.52	34.90	27.870	24.3	2.610
3300	2.24	34.86	27.862	25.1	2.653
3400	1.75	34.80	27.853	[illegible]	2.693
3500	1.49	34.77	27.848	26.4	2.732
3600	1.23	34.76	27.858	[illegible]	2.768
3700	1.02	34.72	27.841	27.1	2.802
3800	0.85	34.71	27.844	26.8	2.836
3900	0.67	34.69	27.839	27.2	2.869
4000	0.45	34.68	27.844	26.8	2.899
4100	0.31	34.67	27.844	26.8	2.928
4200	0.21	34.66	27.841	27.0	2.955
4300	0.15	34.65	27.837	27.4	2.982
4400	0.11	34.65	27.839	27.2	3.009
4500	0.08	34.64	27.832	27.8	3.035
4600	0.06	34.64	27.833	27.8	3.061
4653	0.04	34.63	27.826	28.4	3.075

18 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
35 26.5S	41 29.0W	11/17/72	0215 GMT

Z	T	S	SIGMA T	DT	DD
0	18.47	35.97	25.914	209.7	0.000
10	18.49	35.98	25.917	209.4	0.021
20	18.48	35.98	25.919	209.2	0.042
30	18.48	35.98	25.919	209.2	0.063
40	18.11	36.02	26.042	197.5	0.083
50	17.70	36.00	26.129	189.3	0.103
60	17.38	35.98	26.191	183.4	0.122
70	17.27	35.97	26.210	181.6	0.140
80	17.20	35.97	26.227	179.9	0.159
90	17.13	35.99	26.259	176.9	0.177
100	17.09	35.99	26.269	176.0	0.195
125	16.76	35.93	26.302	172.9	0.239
150	16.22	35.79	26.321	171.0	0.283
200	15.17	35.66	26.460	157.9	0.368
250	14.95	35.70	26.540	150.3	0.449
300	14.66	35.62	26.542	150.1	0.528
350	14.39	35.55	26.546	149.7	0.608
400	13.07	35.25	26.590	145.5	0.687
450	11.42	35.00	26.717	133.5	0.762
500	9.80	34.74	26.803	125.4	0.832
550	7.86	34.49	26.915	114.8	0.897
600	6.59	34.36	26.992	107.5	0.957
650	5.67	34.28	27.047	102.2	1.014
700	5.09	34.23	27.077	99.4	1.068
750	4.79	34.23	27.111	96.2	1.121
800	4.50	34.22	27.136	93.9	1.173
850	4.23	34.22	27.165	91.1	1.223
900	4.05	34.21	27.176	90.1	1.272
950	3.82	34.22	27.207	87.1	1.320
1000	3.63	34.23	27.234	84.6	1.367
1100	3.23	34.27	27.304	77.9	1.456
1200	2.99	34.30	27.350	73.5	1.540
1300	2.77	34.36	27.418	67.2	1.618
1400	2.70	34.42	27.472	62.0	1.690
1500	2.73	34.50	27.533	56.2	1.758
1600	2.63	34.58	27.588	51.0	1.821
1700	2.87	34.63	27.624	47.6	1.881
1800	2.90	34.68	27.661	44.1	1.939
1900	2.95	34.73	27.696	40.7	1.994
2000	3.04	34.78	27.728	37.7	2.046
2100	3.04	34.82	27.760	34.7	2.097
2200	3.08	34.86	27.788	32.1	2.146
2300	3.10	34.88	27.802	30.7	2.194
2400	3.14	34.90	27.814	29.6	2.241
2500	3.11	34.91	27.825	28.6	2.288
2600	2.99	34.91	27.836	27.5	2.334
2700	2.87	34.90	27.839	27.2	2.379
2800	2.86	34.91	27.848	26.4	2.425
2900	2.81	34.91	27.852	25.9	2.469
3000	2.75	34.91	27.858	25.4	2.514
3100	2.63	34.91	27.868	24.4	2.558
3200	2.53	34.90	27.869	24.4	2.601
3300	2.22	34.84	27.847	26.4	2.644
3400	1.85	34.80	27.845	26.6	2.686
3500	1.64	34.80	27.861	25.1	2.725
3600	1.32	34.75	27.844	26.7	2.762
3700	1.11	34.72	27.835	27.6	2.799
3800	0.93	34.72	27.847	26.5	2.833
3900	0.76	34.71	27.849	26.2	2.866
4000	0.57	34.69	27.845	26.7	2.897
4100	0.44	34.68	27.845	26.7	2.927
4200	0.33	34.68	27.851	26.1	2.955
4300	0.28	34.68	27.854	25.8	2.982
4400	0.23	34.67	27.848	26.3	3.009
4500	0.19	34.67	27.851	26.1	3.036
4600	0.19	34.67	27.851	26.1	3.062
4700	0.17	34.67	27.852	26.0	3.088
4800	0.16	34.66	27.844	26.7	3.114
4833	0.17	34.66	27.844	26.8	3.122

RV MELVILLE CATO EXPEDITION VI 19

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 52.9S	46 37.3W	11/18/72	0612 0921	4907M	040	30KT	6	040 12

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.23	36.085	5.35	0.11	1.1	0.00	0.0	219.8	0	19.23	36.085	5.35	25.808	219.8	0.000
41	17.44	35.798	5.70	0.15	1.4	0.00	0.0	198.0	10	18.71	35.968	5.44	25.853	215.5	0.022
62	16.87	35.833	5.86	0.14	1.4	0.00	0.0	182.4	20	18.24	35.883	5.53	25.905	210.6	0.043
104	15.20	35.656	5.19	0.43	1.8	0.07	4.7	158.8	30	17.83	35.826	5.61	25.964	204.9	0.064
109A	15.07 V	35.635 V	5.22V	0.44	2.0		4.8		50	17.19	35.810	5.79	26.107	191.3	0.104
125	15.03	35.629	5.27	0.43	2.0	0.04	4.8	157.2	75	16.30	35.783	5.66	26.299	173.1	0.150
155	14.94	35.662	5.45	0.42	1.8	0.02	4.5	152.9	100	15.34	35.675	5.26	26.435	160.2	0.192
187A	14.80	35.650	5.47	0.43	1.8		4.4	150.8	125	15.03	35.629	5.27	26.467	157.2	0.233
264A	14.55	35.602	5.56	0.42	1.9		5.1	149.2	150	14.95	35.654	5.42	26.505	153.6	0.273
367A	12.64	35.212	4.99	0.88	3.6		4.7U	140.1	200	14.79	35.650	5.49	26.537	150.5	0.351
522A	8.37	34.577	5.37	1.38	7.6		4.9U	115.6	250	14.63	35.619	5.54	26.548	149.5	0.430
677A	5.37	34.275	5.84	1.61	11.7		4.5U	99.2	300	14.03	35.489	5.37	26.577	146.8	0.508
3226P	2.30	34.850	5.35	1.70	58.9		24.8	26.3	400	11.75	35.057	5.07	26.700	135.1	0.658
3738P	1.000	34.722	4.93	2.21	111.4		31.7	26.8	500	8.99	34.653	5.32	26.868	119.2	0.795
4251P	0.33	34.682	5.10	2.26	126.4		33.0	26.0	600	6.76	34.400	5.60	27.000	106.7	0.918
4561P	0.196	34.676	5.17	2.31	128.6		33.0	25.7	3250	2.23	34.843	5.32	27.849	26.3	
4820P	0.159	34.673	5.17	2.32	129.9		33.2	25.7	3500	1.58	34.776	5.10	27.846	26.6	
4872P	0.164	34.670	5.20	2.28	129.4		32.9	26.0	3750	0.98	34.721	4.93	27.844	26.8	
									4000	0.58	34.696	4.98	27.848	26.4	
									4250	0.33	34.683	5.10	27.852	26.0	
									4500	0.21	34.677	5.16	27.855	25.7	
									4750	0.17	34.675	5.17	27.855	25.7	

RV MELVILLE CATO EXPEDITION VI 20

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 11.9S	47 07.3W	11/18/72	1944 2317	4821M	280	29KT	2	280 10 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.27	35.898	5.33	0.08	1.3	0.00	0.1	234.3	0	19.27	35.898	5.33	25.655	234.3	0.000
42	19.25	35.908	5.33	0.08	0.8	0.00	0.0	233.1	10	19.27	35.899	5.33	25.658	234.0	0.023
47A	18.95	36.035	5.26	0.09	1.4	0.01	0.1	216.6	20	19.26	35.902	5.33	25.661	233.7	0.047
63	18.84	36.125	5.35	0.07	1.0	0.00	0.0	207.4	30	19.26	35.904	5.33	25.664	233.4	0.070
98A	18.07	36.105	5.12	0.18	0.8	0.05	0.9	190.4	50	18.93	36.050	5.26	25.860	214.8	0.115
105	18.04	36.094	5.11	0.16	1.3	0.03	1.1	190.5	75	18.56	36.136	5.29	26.020	199.6	0.168
127	17.89	36.093	5.07	0.17	1.0	0.01	1.3	187.0	100	18.06	36.100	5.12	26.117	190.4	0.217
158	17.57	36.029	5.09	0.19	1.0	0.01	1.8	184.2	125	17.91	36.091	5.07	26.148	187.4	0.266
176A	17.67	36.082	5.12	0.21	1.0	0.01	1.4	182.7	150	17.63	36.038	5.08	26.176	184.8	0.313
279A	15.35	35.649	4.96	0.48	2.1	0.01	4.9	162.5	200	17.31	36.024	5.10	26.242	178.5	0.407
435A	13.48	35.353	4.88	0.70	3.1	0.01	9.0	145.9	250	16.21	35.816	5.03	26.345	168.8	0.498
589A	9.97	34.827	4.72	1.22	7.2	0.01	17.3	121.7	300	15.09	35.607	4.95	26.438	160.0	0.584
795A	6.00	34.383	5.29	1.79	14.1		24.8	98.5	400	13.89	35.417	4.89	26.551	149.3	0.749
1103A	3.68	34.283	5.26	2.10	29.5		30.2	81.0	500	12.07	35.127	4.79	26.693	135.8	0.904
1307A	3.06	34.375	4.75	2.26	45.1		33.1	68.5	600	9.72	34.793	4.75	26.857	120.2	1.044
1511A	2.94	34.511	4.39	2.27	54.5	0.01	33.1	57.2	700	7.66	34.544	5.00	26.987	108.0	1.170
1715A	3.26	34.689	4.53	2.04	47.0		29.2	46.6	800	5.94	34.379	5.29	27.091	98.1	1.285
2022A	3.57	34.864	5.16	1.68	32.4		24.2	36.2	1000	4.12	34.277	5.27	27.221	85.8	1.488
2327A	3.26	34.890	5.34	1.58	35.8		22.9	31.4	1200	3.31	34.318	5.03	27.334	75.0	1.667
2736A	2.84	34.895	5.51	1.54	41.2		22.5	27.3	1500	2.95	34.505	4.40	27.517	57.8	1.894
3145A	2.182	34.828	5.18	1.76	66.5	0.00	25.9	27.0	1750	3.32	34.716	4.60	27.650	45.1	2.052
3657A	1.116	34.751	4.84	2.17	110.5		31.2	26.8	2000	3.56	34.856	5.11	27.738	36.8	2.191
4174A	0.34	34.689	5.06	2.23	125.7		32.1	25.5	2250	3.37	34.890	5.32	27.785	32.3	2.321
4485A	0.185	34.680	5.16	2.23	130.2		33.2	25.3	2500	3.10	34.898	5.45	27.817	29.3	2.442
4747A	0.144	34.672	5.16	2.30	132.2		32.7	25.7	2750	2.82	34.892	5.50	27.838	27.3	2.558
4800A	0.160	34.678	5.16	2.27	130.9	0.00	33.1	25.4	3000	2.44	34.853	5.32	27.840	27.1	2.669
									3250	1.96	34.806	5.08	27.841	27.0	2.776
									3500	1.44	34.758	4.91	27.842	26.9	2.874
									3750	0.94	34.720	4.86	27.846	26.6	2.963
									4000	0.55	34.699	4.96	27.853	25.9	3.042
									4250	0.29	34.686	5.09	27.858	25.4	3.112
									4500	0.18	34.680	5.16	27.859	25.4	3.177
									4750	0.14	34.667	5.16	27.850	25.7	3.240

CATO EXPEDITION VI

19 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
35 52.9S	46 37.3W	11/18/72	0425 GMT

Z	T	S	SIGMA T	DT	DD
0	19.34	36.10	25.791	221.4	0.000
10	19.36	36.11	25.793	221.2	0.022
20	19.17	36.09	25.827	217.9	0.044
30	17.86	35.76	25.906	210.5	0.066
40	17.53	35.81	26.025	199.2	0.086
50	17.18	35.82	26.117	190.4	0.106
60	17.06	35.81	26.138	188.4	0.125
70	16.65	35.89	26.297	173.3	0.143
80	16.60	35.95	26.355	167.8	0.161
90	16.51	35.94	26.368	166.5	0.178
100	15.81	35.76	26.392	164.3	0.194
150	14.96	35.69	26.530	151.3	0.275
200	14.79	35.67	26.552	149.2	0.353
250	14.56	35.64	26.579	146.6	0.430
300	14.31	35.59	26.594	145.1	0.507
350	13.21	35.33	26.624	142.3	0.584
400	11.95	35.11	26.702	134.9	0.658
450	10.55	34.88	26.782	127.4	0.729
500	9.07	34.68	26.877	118.4	0.795
550	7.42	34.47	26.964	110.2	0.857
600	6.48	34.39	27.030	103.8	0.915
650	5.77	34.30	27.051	101.9	0.971
700	5.00	34.24	27.095	97.7	1.025
750	4.90	34.26	27.123	95.1	1.077
800	4.53	34.24	27.148	92.7	1.128
850	4.23	34.22	27.165	91.1	1.178
900	3.96	34.22	27.193	88.5	1.226
950	3.74	34.23	27.223	85.6	1.274
1000	3.56	34.24	27.249	83.1	1.320
1100	3.40	34.28	27.296	78.7	1.409
1200	3.01	34.30	27.348	73.7	1.493
1300	2.68	34.37	27.416	67.3	1.571
1400	2.72	34.40	27.454	63.7	1.645
1500	2.69	34.48	27.520	57.4	1.714
1600	2.70	34.53	27.559	53.7	1.779
1700	2.80	34.59	27.598	50.0	1.841
1800	2.73	34.63	27.636	46.4	1.900
1900	3.03	34.73	27.689	41.4	1.956
2000	3.00	34.76	27.716	38.9	2.010
2100	2.99	34.78	27.732	37.3	2.062
2200	3.00	34.81	27.755	35.1	2.113
2300	2.96	34.83	27.775	33.3	2.163
2400	2.98	34.85	27.789	31.9	2.212
2500	2.96	34.87	27.807	30.3	2.260
2600	2.98	34.90	27.829	28.2	2.307
2700	2.81	34.88	27.828	28.2	2.353
2800	2.90	34.92	27.852	26.0	2.398
2900	2.72	34.89	27.845	26.7	2.443
3000	2.59	34.87	27.840	27.1	2.488
3100	2.52	34.88	27.854	25.8	2.532
3200	2.31	34.86	27.856	25.6	2.575
3300	2.16	34.85	27.860	25.2	2.617
3400	1.77	34.80	27.851	26.1	2.658
3500	1.54	34.78	27.852	26.0	2.696
3600	1.24	34.74	27.842	27.0	2.733
3700	1.07	34.73	27.845	26.6	2.769
3800	0.93	34.72	27.847	26.5	2.803
3900	0.74	34.70	27.842	26.9	2.836
4000	0.56	34.69	27.846	26.6	2.867
4100	0.45	34.69	27.852	26.0	2.896
4200	0.36	34.68	27.849	26.3	2.925
4300	0.29	34.68	27.853	25.9	2.952
4400	0.23	34.68	27.856	25.6	2.978
4500	0.20	34.67	27.850	26.2	3.005
4600	0.18	34.67	27.851	26.1	3.031
4700	0.17	34.67	27.852	26.0	3.057
4800	0.15	34.67	27.853	25.9	3.082
4900	0.16	34.67	27.852	26.0	3.108

20 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
35 11.9S	47 07.3W	11/18/72	1644 GMT

Z	T	S	SIGMA T	DT	DD
0	19.26	35.93	25.682	231.7	0.000
10	19.25	35.93	25.685	231.5	0.023
20	19.25	35.93	25.685	231.5	0.046
30	19.28	35.93	25.677	232.2	0.070
40	19.24	35.93	25.687	231.3	0.093
60	18.83	36.12	25.937	207.5	0.137
70	18.75	36.10	25.942	207.0	0.158
80	18.39	36.11	26.041	197.6	0.179
90	18.16	36.10	26.091	192.9	0.198
100	18.10	36.09	26.098	192.2	0.218
125	17.88	36.10	26.161	186.3	0.266
250A	15.79	35.72	26.366	166.7	0.495
300A	15.04	35.62	26.458	158.0	0.580
350A	14.40	35.53	26.528	151.4	0.662
400A	13.87	35.43	26.564	148.0	0.743
450A	12.96	35.27	26.628	141.9	0.821
600A	9.74	34.78	26.844	121.5	1.037
650A	8.25	34.59	26.935	112.9	1.102
700A	7.34	34.51	27.006	106.1	1.162
750A	6.45	34.41	27.050	102.0	1.220
950A	4.64	34.29	27.176	90.1	1.432
1000A	4.28	34.29	27.215	86.4	1.481
1100A	3.71	34.29	27.274	80.8	1.574
1200A	3.40	34.31	27.320	76.4	1.661
1300A	3.20	34.36	27.379	70.8	1.744
1400A	3.01	34.42	27.444	64.6	1.821
1700A	3.17	34.67	27.628	47.2	2.021
1800A	3.40	34.75	27.670	43.2	2.080
1900A	3.48	34.81	27.710	39.5	2.136
2000A	3.50	34.85	27.739	36.6	2.190
2200A	3.51	34.91	27.786	32.2	2.293
2300A	3.29	34.90	27.800	30.9	2.342
2500A	3.22	34.92	27.822	28.8	2.439
2600A	3.20	34.94	27.840	27.1	2.486
2700A	3.03	34.92	27.840	27.1	2.532
2800A	2.81	34.90	27.844	26.7	2.578
3200A	2.12	34.82	27.840	27.2	2.753
3300A	1.82	34.80	27.847	26.4	2.794
3400A	1.54	34.76	27.836	27.5	2.833
3500A	1.34	34.75	27.843	26.9	2.871
3600A	1.22	34.75	27.851	26.1	2.907
3700A	1.02	34.73	27.849	26.3	2.942
3800A	0.86	34.71	27.843	26.8	2.975
4100A	0.44	34.69	27.853	25.9	3.067
4200A	0.35	34.69	27.858	25.5	3.095
4300A	0.25	34.68	27.855	25.7	3.122
4400A	0.20	34.68	27.858	25.4	3.148
4500A	0.16	34.68	27.860	25.2	3.173
4600A	0.14	34.67	27.853	25.9	3.198
4800A	0.15	34.67	27.853	25.9	3.249

RV MELVILLE CATO EXPEDITION VI 21

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 37.5S	47 59.0W	11/19/72	1007 1229 GMT	4495M	180	21KT	1	220 10 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.29	35.825	5.32	0.14	1.6	0.00	0.0	240.1	0	19.29	35.825	5.32	25.594	240.1	0.000
42	19.28	35.826	5.33	0.12	1.6	0.00	0.0	239.8	10	19.29	35.824	5.32	25.595	240.0	0.024
64	18.82	36.051	5.39	0.10	1.0	0.00	0.0	212.2	20	19.29	35.824	5.32	25.596	239.9	0.048
105	18.19	36.126	5.17	0.14	1.0	0.05	0.7	191.7	30	19.28	35.825	5.33	25.597	239.9	0.072
117A	18.12	36.120	5.12	0.18	1.0	0.03	0.8	190.5	50	19.13	35.905	5.36	25.698	230.2	0.119
126	18.02	36.119	5.16	0.16	1.0	0.02	1.0	188.2	75	18.61	36.099	5.35	25.979	203.5	0.174
158	17.93	36.129	5.20	0.13	1.0	0.01	1.1	185.3	100	18.24	36.131	5.21	26.095	192.4	0.224
194A	17.74	36.106	5.17	0.20	1.2	0.01	1.2	182.5	125	18.03	36.117	5.15	26.138	188.4	0.273
271A	15.88	35.704	5.06	0.39	1.8	0.01	4.4	169.9	150	17.94	36.125	5.19	26.167	185.6	0.321
374A	14.71	35.553	4.89	0.53	2.4	0.01	6.5	156.1	200	17.62	36.076	5.16	26.209	181.7	0.416
529A	12.32	35.159	4.80	0.90	4.1	0.00	12.0	138.1	250	16.44	35.821	5.09	26.293	173.7	0.509
683A	8.93	34.689	4.87	1.26	8.8		19.1	115.6	300	15.49	35.645	5.01	26.377	165.7	0.598
990A	4.27	34.226	5.91	1.82	17.5		27.1	91.1	400	14.37	35.498	4.67	26.510	153.1	0.768
1396A	3.04	34.381	4.71	2.00	47.1		32.7	67.9	500	12.83	35.243	4.82	26.633	141.5	0.928
1599A	2.79	34.487	4.42	2.26	58.8		33.6	57.7	600	10.78	34.928	4.83	26.780	127.6	1.076
2005A	3.13	34.750	4.71	1.91	50.5		28.0	40.8	700	8.59	34.646	4.93	26.925	113.8	1.210
2207A	3.16	34.832	5.02	1.72	44.9	0.00	25.5	34.9	800	6.80	34.439	5.29	27.025	104.3	1.331
2510A	3.34	34.927	5.70	1.36	28.8		20.9	29.3	1000	4.24	34.232	5.89	27.172	90.4	1.547
2813A	3.14	34.936	5.92	1.34	28.5		20.7	26.9	1200	3.63	34.316	5.42	27.302	78.2	1.733
3217A	2.66	34.917	5.76	1.40	39.5		21.5	24.6	1500	2.88	34.434	4.53	27.466	62.5	1.972
3621A	0.920	34.737	4.90	2.12	115.1		31.5	25.7	1750	2.87	34.590	4.53	27.590	50.8	2.140
3924A	0.335	34.678	5.05	2.24	128.0	0.00	32.9	25.5	2000	3.12	34.747	4.71	27.694	41.0	2.286
4228A	0.171	34.675	5.14	2.27	129.3		32.7	25.4	2250	3.19	34.868	5.12	27.768	33.9	2.419
4431A	0.119	34.671	5.18	2.27	132.0		32.8	25.7	2500	3.34	34.923	5.68	27.815	29.5	2.543
									2750	3.20	34.939	5.91	27.839	27.2	2.664
									3000	3.01	34.935	5.85	27.854	25.5	2.782
									3250	2.52	34.894	5.68	27.866	24.7	2.895
									3500	1.45	34.780	5.13	27.859	25.3	2.994
									3750	0.61	34.707	4.96	27.856	25.6	3.076
									4000	0.27	34.684	5.08	27.857	25.5	3.146
									4250	0.16	34.678	5.15	27.858	25.4	3.210
									4500	0.10	34.669	5.19	27.855	25.7	3.273

RV MELVILLE CATO EXPEDITION VI 22

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 11.4S	48 32.0W	11/19/72	2123 2310 GMT	3571M	220	16KT	1	220 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.19	35.935	5.15	0.10	1.5	0.01	0.0	229.7	0	19.19	35.935	5.15	25.704	229.7	0.000
42	18.98	35.935	5.35	0.10	1.5	0.00	0.0	224.5	10	19.14	35.934	5.20	25.717	228.4	0.023
63	18.08	36.000	5.27	0.13	1.5	0.06	0.1	198.2	20	19.09	35.934	5.25	25.730	227.2	0.046
104A	17.40 V	35.985 V	5.15V	0.18	1.6	0.04	1.3		30	19.04	35.934	5.29	25.742	226.0	0.069
105	17.77	36.101	4.88	0.19	1.3	0.02	1.4	183.6	50	18.64	35.956	5.33	25.861	214.7	0.113
126	17.14	35.945	4.99	0.24	1.6	0.02	2.0	180.4	75	17.95	36.015	5.13	26.079	194.1	0.165
158	16.54	35.834	5.00	0.31	1.8	0.01	2.8	174.9	100	17.79	36.081	4.91	26.170	185.3	0.213
207A	15.61	35.665	5.07	0.40	1.9	0.01	4.2	166.9	125	17.17	35.952	4.98	26.221	180.5	0.259
311A	14.87	35.618	5.17	0.44	2.2	0.01	5.4	154.6	150	16.67	35.854	5.00	26.265	176.3	0.305
414A	13.40	35.340	5.02	0.76	3.6		9.4	145.3	200	15.73	35.685	5.06	26.354	168.0	0.394
518A	11.54	35.036	4.82	0.96	5.7	0.01	13.6	133.0	250	15.25	35.635	5.13	26.424	161.2	0.480
621A	8.91	34.692	4.80	1.05	9.3		19.9	115.1	300	14.93	35.619	5.17	26.483	155.7	0.563
826A	5.17	34.295	5.64	1.79	15.3		25.5	95.4	400	13.63	35.384	5.05	26.579	146.6	0.725
982A	4.15	34.276	5.38	1.99	24.3		29.4	86.1	500	11.90	35.091	4.85	26.697	135.4	0.877
1187A	3.35	34.307	5.12	2.12	36.6	0.00	31.7	76.2	600	9.46	34.756	4.80	26.873	118.7	1.017
1391A	2.85	34.409	4.61	2.25	51.8	0.01	32.9	64.1	700	7.19	34.488	5.13	27.010	105.7	1.141
1597A	3.08	34.584	4.43	2.06	53.5	0.00	31.4	52.9	800	5.51	34.326	5.54	27.102	97.1	1.253
1802A	3.41	34.749	4.69	1.92	43.0		28.0	43.4	1000	4.06	34.277	5.36	27.227	85.2	1.454
2007A	3.49	34.838	5.01	1.66	36.9		24.6	37.4	1200	3.30	34.312	5.09	27.330	75.4	1.632
2212A	3.52	34.900	5.17	1.51	30.3		22.9	33.0	1500	2.92	34.498	4.51	27.514	58.0	1.860
2417A	3.442	34.920	5.57	1.40	27.0	0.00	21.4	30.8	1750	3.33	34.712	4.60	27.645	45.6	2.018
2623A	3.29	34.942	5.78	1.34	27.4		21.0	27.8	2000	3.49	34.836	5.00	27.730	37.6	2.159
2881A	2.980	34.926	5.76	1.40	32.6		20.9	26.2	2250	3.51	34.904	5.24	27.782	32.6	2.290
3138A	2.235	34.850	5.47	1.60	56.8		23.8	25.8	2500	3.39	34.929	5.68	27.814	29.5	2.416
3449A	0.968	34.721	4.74	2.07	114.3		31.9	26.7	2750	3.17	34.940	5.77	27.843	26.8	2.536
3553A	0.563	34.701	4.78	2.22	123.7	0.00	31.9	25.8	3000	2.68	34.894	5.66	27.852	26.0	2.651
									3250	1.80	34.802	5.16	27.851	26.1	2.756
									3500	0.77	34.713	4.76	27.851	26.3	2.844

21 STD

CATO EXPEDITION VI

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 37.5S	47 59.0W	11/19/72	0829 GMT

Z	T	S	SIGMA T	DT	DD
0	19.31	35.83	25.593	240.2	0.000
10	19.31	35.83	25.593	240.2	0.024
20	19.32	35.83	25.590	240.5	0.048
30	19.31	35.83	25.593	240.2	0.072
40	19.31	35.84	25.601	239.5	0.096
50	19.30	35.86	25.618	237.8	0.120
60	18.94	36.15	25.932	206.0	0.143
70	18.77	36.17	25.991	202.4	0.164
80	18.57	36.17	26.042	197.6	0.184
90	18.46	36.17	26.069	194.9	0.204
100	18.31	36.15	26.092	192.8	0.224
125	18.10	36.15	26.144	187.8	0.272
150	17.93	36.16	26.182	184.2	0.320
200	17.72	36.12	26.215	181.1	0.414
400	14.72	35.56	26.482	155.8	0.770
450	13.83	35.39	26.542	150.1	0.852
600	10.83	34.92	26.763	129.2	1.082
650	9.90	34.79	26.825	123.3	1.152
700	8.48	34.62	26.923	114.0	1.218
750	7.08	34.47	27.012	105.6	1.279
800	6.38	34.40	27.051	101.8	1.337
850	5.50	34.28	27.068	100.3	1.393
900	4.91	34.23	27.098	97.5	1.447
950	4.58	34.24	27.143	93.2	1.499
1000	4.22	34.21	27.158	91.8	1.550
1100	4.00	34.27	27.228	85.1	1.648
1200	3.44	34.27	27.284	79.8	1.740
1300	3.07	34.32	27.359	72.7	1.825
1400	3.11	34.40	27.419	67.0	1.904
1500	2.96	34.44	27.464	62.7	1.978
1700	2.87	34.57	27.576	52.1	2.114
1800	2.87	34.62	27.616	48.4	2.175
1900	3.00	34.69	27.660	44.2	2.234
2000	3.06	34.76	27.708	39.6	2.290
2100	3.11	34.79	27.729	37.6	2.343
2200	3.14	34.83	27.758	34.9	2.395
2300	3.24	34.88	27.789	32.0	2.445
2400	3.37	34.92	27.808	30.1	2.494
2500	3.36	34.93	27.817	29.3	2.543
2600	3.29	34.94	27.832	27.9	2.592
2700	3.28	34.94	27.837	27.6	2.640
3000	2.98	34.94	27.861	25.1	2.781
3100	2.88	34.93	27.862	25.0	2.827
3200	2.72	34.92	27.868	24.4	2.872
3300	2.49	34.90	27.873	24.0	2.916
3400	1.96	34.84	27.868	24.4	2.957
3500	1.44	34.77	27.852	26.0	2.995
3600	1.03	34.73	27.848	26.4	3.030
3700	0.76	34.71	27.849	26.2	3.063
3800	0.46	34.70	27.859	25.3	3.093
3900	0.34	34.69	27.858	25.4	3.120
4000	0.27	34.69	27.862	25.0	3.147
4100	0.20	34.68	27.858	25.4	3.172
4200	0.17	34.67	27.852	26.0	3.196
4300	0.13	34.67	27.854	25.8	3.223
4400	0.10	34.67	27.855	25.7	3.248
4500	0.10	34.67	27.855	25.7	3.273

22 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 11.4S	48 32.0W	11/19/72	2008 GMT

Z	T	S	SIGMA T	DT	DD
0	19.23	35.90	25.667	233.2	0.000
10	19.25	35.92	25.677	232.2	0.023
20	19.22	35.95	25.692	230.8	0.046
30	19.07	35.94	25.739	226.4	0.069
40	19.00	35.93	25.749	225.4	0.092
50	18.93	35.93	25.767	223.7	0.115
70	17.76	36.01	26.116	190.5	0.157
80	18.02	36.14	26.157	186.6	0.176
90	17.89	36.12	26.173	185.0	0.195
100	17.74	36.11	26.203	182.3	0.213
125	17.18	35.93	26.201	182.4	0.260
150	16.47	35.80	26.270	175.8	0.306
200A	15.68	35.69	26.368	166.6	0.394
250A	15.30	35.68	26.446	159.2	0.479
300A	14.86	35.62	26.498	154.3	0.562
350A	14.47	35.56	26.537	150.6	0.643
400A	13.73	35.41	26.578	146.7	0.722
450A	12.77	35.25	26.651	139.8	0.800
500A	11.79	35.08	26.710	134.2	0.874
550A	10.78	34.93	26.780	127.6	0.946
600A	9.07	34.70	26.892	116.9	1.013
650A	7.86	34.53	26.947	111.8	1.076
700A	6.42	34.39	27.038	103.1	1.135
750A	5.65	34.30	27.066	100.5	1.191
800A	5.33	34.31	27.112	96.1	1.245
850A	5.02	34.32	27.156	91.9	1.297
900A	4.78	34.31	27.176	90.1	1.347
950A	4.34	34.27	27.193	88.5	1.396
1000A	4.05	34.28	27.231	84.8	1.444
1100A	3.66	34.30	27.287	79.6	1.535
1200A	3.30	34.31	27.329	75.5	1.621
1300A	3.17	34.36	27.381	70.6	1.703
1400A	2.89	34.40	27.439	65.1	1.780
1500A	3.00	34.50	27.508	58.5	1.851
1600A	3.06	34.59	27.573	52.4	1.917
1700A	3.15	34.65	27.614	48.5	1.979
1800A	3.35	34.74	27.667	43.5	2.039
1900A	3.33	34.78	27.700	40.3	2.095
2000A	3.47	34.84	27.734	37.1	2.149
2100A	3.48	34.87	27.757	34.9	2.202
2200A	3.51	34.90	27.778	33.0	2.253
2300A	3.48	34.92	27.797	31.2	2.304
2400A	3.45	34.93	27.808	30.1	2.353
2500A	3.40	34.93	27.813	29.7	2.403
2600A	3.33	34.95	27.836	27.5	2.452
2700A	3.23	34.94	27.837	27.4	2.495
2800A	3.12	34.94	27.848	26.4	2.547
2900A	2.96	34.93	27.855	25.7	2.593
3000A	2.75	34.90	27.850	26.2	2.638
3100A	2.38	34.88	27.866	24.7	2.682
3200A	1.80	34.78	27.833	27.8	2.723
3300A	1.42	34.75	27.837	27.4	2.762
3400A	1.11	34.72	27.835	27.6	2.798
3500A	0.83	34.70	27.837	27.4	2.832
3570A	0.53	34.68	27.839	27.2	2.854

RV MELVILLE CATO EXPEDITION V1 23

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 43.3S	49 02.7W	11/20/72	050A	0644	3307M	260	16KT	0	240 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.40	35.990	5.35	0.09	1.3	0.01	0.0	230.8	0	19.40	35.990	5.35	25.691	230.8	0.000
42	19.55	36.082	5.35	0.09	1.3	0.01	0.0	227.9	10	19.44	36.010	5.35	25.699	230.1	0.023
51A	19.30	36.078	5.27	0.11	1.3	0.00	0.0	222.0	20	19.47	36.032	5.35	25.706	229.4	0.046
63	18.57	36.068	5.28	0.11	1.2	0.01	0.0	205.0	30	19.51	36.054	5.35	25.714	228.7	0.069
77A	18.17	36.055	5.20	0.19	1.4	0.07	0.4	196.4	50	19.34	36.077	5.28	25.775	222.8	0.115
105	17.76	36.027	5.19	0.21	1.4	0.02	1.6	188.4	75	18.21	36.056	5.21	26.046	197.1	0.168
181A	17.47	36.023	5.29	0.22	1.5	0.01	1.8	182.3	100	17.81	36.030	5.19	26.126	189.5	0.217
258A	15.76	35.693	4.94	0.41	1.7	0.02	4.3	168.1	125	17.69	36.036	5.23	26.159	186.4	0.265
361A	14.72	35.574	5.08	0.50	2.2	0.01	5.9	154.7	150	17.60	36.038	5.26	26.183	184.1	0.312
464A	12.93	35.257	4.99	0.75	3.8	0.01	10.3	142.3	200	17.08	35.943	5.21	26.237	179.0	0.406
568A	10.68	34.922	5.06	1.10	5.4	0.00	14.9	126.5	250	15.95	35.728	4.98	26.336	169.6	0.497
670A	7.88	34.543	5.15	1.45	9.6	0.02	20.6	111.1	300	15.29	35.636	4.97	26.415	162.2	0.584
772A	6.19	34.392	5.33	1.67	12.9	0.00	24.3	100.1	400	14.11	35.466	5.05	26.541	150.2	0.751
925A	4.638	34.298	5.33	1.90	20.6	0.00	28.0	89.4	500	12.21	35.146	5.00	26.680	137.0	0.906
1128A	3.49	34.273	5.35	2.10	31.8	0.01	30.4	80.0	600	9.77	34.789	5.08	26.845	121.4	1.048
1333A	3.10	34.410	4.63	2.19	47.3	0.01	32.3	66.2	700	7.30	34.485	5.21	26.992	107.5	1.175
1536A	2.93	34.547	4.41	2.22	54.9		32.4	54.4	800	5.84	34.367	5.33	27.094	97.8	1.288
1740A	3.16	34.693	4.53	2.00	50.3		29.0	45.4	1000	4.11	34.273	5.34	27.219	85.9	1.491
2047A	3.42	34.862	5.21	1.61	35.1	0.01	24.1	35.0	1200	3.30	34.313	5.11	27.332	75.3	1.670
2252A	3.44	34.907	5.64	1.42	26.9		21.6	31.8	1500	2.94	34.523	4.42	27.532	56.3	1.895
2458A	3.32	34.942	5.72	1.37	27.4	0.00	20.9	28.0	1750	3.17	34.701	4.55	27.652	45.0	2.050
2666A	3.090	34.936	5.81	1.36	28.6	0.00	20.5	26.4	2000	3.39	34.842	5.09	27.744	36.2	2.187
2875A	2.502	34.885	5.61	1.51	46.6		22.7	25.4	2250	3.44	34.906	5.64	27.791	31.8	2.315
2980A	1.274	34.744	4.90	2.05	101.4	0.01	30.1	26.9							

RV MELVILLE CATO EXPEDITION V1 24

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 20.8S	49 21.5W	11/20/72	1712	1838	2333M	210	20KT	1	210 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.77	36.034	5.26	0.10	1.6	0.00	0.0	236.8	0	19.77	36.034	5.26	25.628	236.8	0.000
42	19.68	36.069	5.33	0.09	1.6	0.00	0.0	232.1	10	19.75	36.041	5.27	25.640	235.7	0.024
57A	19.30	36.073	5.36	0.12V	1.6	0.00	0.0	222.4	20	19.73	36.049	5.29	25.652	234.6	0.047
63	18.76	36.138	5.32	0.09	1.2	0.00	0.0	204.5	30	19.71	36.057	5.31	25.664	233.4	0.071
105	17.89	36.082	5.00	0.20	1.5	0.02	1.5	187.8	50	19.48	36.069	5.35	25.733	226.9	0.117
126	17.92	36.134	5.09	0.17	1.5	0.02	1.3	184.7	75	18.51	36.120	5.20	26.019	199.7	0.171
161A	17.80	36.120	5.20	0.17	1.6		1.2	182.9	100	17.99	36.087	5.02	26.123	189.8	0.220
265A	15.94	35.735	4.94	0.38	2.0		4.2	168.9	125	17.92	36.131	5.08	26.176	184.8	0.268
369A	14.53	35.526	4.82	0.50	2.9		6.7	154.3	150	17.86	36.133	5.17	26.191	183.3	0.315
472A	12.84	35.246	4.72	0.80	4.1		10.8	141.4	200	17.21	35.991	5.15	26.243	178.5	0.409
575A	10.83	34.948	4.83	1.04	5.9	0.01	14.7	127.1	250	16.26	35.798	5.00	26.318	171.4	0.500
678A	8.32	34.609	4.88	1.40	9.6		20.4	112.5	300	15.46	35.659	4.89	26.396	164.0	0.588
780A	6.28	34.410	5.13	1.68	13.9		24.8	99.8	400	14.05	35.446	4.78	26.538	150.4	0.756
934A	4.77	34.307	5.24	1.88	20.2		27.9	90.2	500	12.33	35.169	4.74	26.674	137.6	0.912
1087A	3.59	34.278	5.18	2.02	30.5		30.0	80.6	600	10.22	34.859	4.84	26.823	123.5	1.056
1240A	3.20	34.361	4.66	2.19	44.3	0.00	32.3	70.8	700	7.83	34.555	4.93	26.971	109.5	1.185
1394A	3.06	34.475	4.36	2.22	52.2		32.7	60.9	800	6.02	34.390	5.14	27.089	98.3	1.300
1548A	2.78	34.526	4.27	2.21	60.4		32.7	54.7	1000	4.19	34.284	5.21	27.218	86.0	1.504
1702A	3.07	34.663	4.41	2.00	53.7		30.4	46.8	1200	3.25	34.334	4.81	27.352	73.3	1.681
1907A	3.467	34.83	4.88	1.67	37.0		25.4	37.8	1500	2.84	34.509	4.30	27.530	56.5	1.903
2113A	3.565	34.923	5.35	1.44	27.9	0.00	22.4	31.7	1750	3.18	34.707	4.51	27.656	44.5	2.057
2270A	3.371	34.903	5.36	1.50	32.8		22.9	31.4	2000	3.51	34.879	5.12	27.762	34.5	2.193
2321A	3.24		5.39	1.53	36.7	0.00	23.3		2250	3.41	34.907	5.36	27.794	31.5	2.319

RV MELVILLE CATO EXPEDITION V1 25

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME GMT	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 08.9S	49 35.5W	11/20/72	2119	2213	1399M	160	17KT	0	190 3 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.50	35.920	5.53	0.10	1.7	0.00	0.0	238.4	0	19.50	35.920	5.53	25.612	238.4	0.000
41	19.52	35.918	5.58	0.10	1.7	0.00	0.0	239.0	10	19.50	35.918	5.49	25.610	238.6	0.024
48A	19.51	35.918	5.32	0.11	1.6	0.01	0.0	238.8	20	19.51	35.918	5.46	25.609	238.7	0.048
63	19.43		5.35	0.10	1.6	0.00	0.0		30	19.51	35.917	5.42	25.607	238.9	0.072
100A	18.88	36.233	5.41	0.08	1.0	0.01	0.0	200.5	50	19.50	35.930	5.32	25.620	237.7	0.120
104	18.71	36.201	5.23	0.10	1.0	0.04	0.1	198.7	75	19.25	36.071	5.37	25.793	221.2	0.178
126	18.11	36.124	5.30	0.15	1.2	0.02	1.1	189.9	100	18.88	36.233	5.41	26.011	200.5	0.231
153A	17.92	36.099	5.31	0.12	1.0	0.02	1.1	187.3	125	18.13	36.123	5.30	26.118	190.2	0.281
257A	16.80	35.884	4.99	0.28	1.5	0.02	3.0	177.1	150	17.93	36.099	5.31	26.149	187.3	0.330
360A	14.87	35.580	4.95	0.50	2.2	0.01	6.3	157.4	200	17.50	36.019	5.18	26.192	183.3	0.425
463A	13.64	35.372	4.92	0.65	3.1		8.6	147.7	250	16.90	35.902	5.02	26.248	178.0	0.519
566A	11.59	35.046	4.98	0.99	5.0		13.8	133.1	300	16.00	35.753	4.97	26.344	168.9	0.610
666A	8.92	34.691	4.88	1.34	8.8		19.4	115.3	400	14.40	35.502	4.93	26.508	153.3	0.782
768A	6.64	34.440	5.17	1.65	12.7		24.0	102.1	500	12.99	35.264	4.95	26.617	142.9	0.943
870A	5.23	34.313	5.50	1.80	15.8	0.01	26.1	94.7	600	10.70	34.917	4.93	26.786	127.0	1.092
1022A	4.26	34.300	5.20	2.02	25.9		29.3	85.4	700	8.09	34.594	4.95	26.962	110.3	1.223
1124A	3.76	34.306	5.07	2.07	31.8		30.2	80.1	800	6.12	34.390	5.29	27.077	99.5	1.340
1227A	3.52	34.340	4.89	2.15	38.0		31.4	75.2	1000	4.35	34.296	5.27	27.212	86.6	1.546
1331A	3.290	34.388	4.70	2.21	44.3		32.4	69.5	1200	3.57	34.330	4.94	27.319	76.5	1.728
1383A	3.146	34.442		2.22	50.0	0.01	32.3	64.2							

CATO EXPEDITION VI

23 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
33 43.3S	49 02.7W	11/20/72	0350 GMT

Z	T	S	SIGMA T	DT	DD
0	19.40	35.99	25.691	230.8	0.000
10	19.42	36.00	25.694	230.6	0.023
20	19.46	36.04	25.709	229.2	0.046
30	19.55	36.07	25.713	228.8	0.069
40	19.53	36.07	25.719	228.3	0.092
50	19.40	36.06	25.745	225.8	0.115
60	18.88	36.03	25.856	215.2	0.137
70	18.44	36.02	25.960	205.3	0.158
80	18.11	36.02	26.042	197.5	0.179
90	18.04	36.08	26.106	191.5	0.199
100	17.77	36.02	26.127	189.5	0.218
150A	17.78	36.15	26.224	180.3	0.313
300A	15.26	35.66	26.440	159.8	0.578
350A	14.71	35.59	26.508	153.4	0.662
400A	14.43	35.55	26.538	150.5	0.743
450A	13.48	35.36	26.591	145.4	0.823
500A	12.43	35.19	26.671	137.8	0.900
550A	11.34	35.04	26.763	129.1	0.974
600A	9.83	34.75	26.805	125.1	1.044
650A	8.04	34.54	26.928	113.6	1.110
700A	7.44	34.52	27.000	106.7	1.170
750A	6.39	34.42	27.066	100.5	1.228
900A	4.63	34.27	27.161	91.5	1.387
950A	4.32	34.28	27.203	87.5	1.436
1000A	4.12	34.29	27.232	84.8	1.483
1100A	3.62	34.29	27.283	79.9	1.575
1200A	3.39	34.33	27.337	74.8	1.661
1300A	3.17	34.39	27.405	68.3	1.741
1400A	2.93	34.44	27.467	62.5	1.816
1500A	2.86	34.51	27.529	56.6	1.885
1600A	2.98	34.58	27.574	52.3	1.949
1800A	3.16	34.73	27.677	42.6	2.068
1900A	3.35	34.80	27.714	39.0	2.123
2000A	3.49	34.86	27.748	35.6	2.176
2100A	3.50	34.89	27.771	33.6	2.227
2400A	3.37	34.93	27.816	29.4	2.376
2500A	3.27	34.92	27.818	29.2	2.424
2600A	3.16	34.93	27.836	27.5	2.472
2700A	3.01	34.93	27.850	26.2	2.518
2800A	2.87	34.92	27.855	25.7	2.563
2900A	2.25	34.85	27.853	25.9	2.605
3000A	1.26	34.74	27.840	27.1	2.643

24 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
33 20.8S	49 21.5W	11/20/72	1615 GMT

Z	T	S	SIGMA T	DT	DD
0	19.77	36.03	25.625	237.1	0.000
10	19.78	36.04	25.630	236.7	0.024
20	19.72	36.05	25.654	234.4	0.047
30	19.68	36.05	25.664	233.4	0.071
40	19.70	36.07	25.674	232.5	0.094
50	19.69	36.06	25.684	231.5	0.118
60	18.89	36.01	25.838	216.9	0.140
70	18.38	36.08	26.021	199.5	0.161
80	18.12	36.06	26.071	194.8	0.181
90	18.00	36.06	26.100	192.0	0.201
100	17.69	36.07	26.135	188.7	0.220
125	17.92	36.13	26.174	185.0	0.268
150A	17.78	36.06	26.155	186.8	0.316
200A	17.46	36.01	26.195	183.0	0.411
250A	16.38	35.74	26.246	178.2	0.505
300A	15.34	35.66	26.422	161.5	0.594
350A	14.79	35.58	26.482	155.7	0.679
400A	14.21	35.47	26.523	151.9	0.761
450A	13.30	35.32	26.598	144.8	0.841
500A	12.36	35.13	26.639	140.9	0.919
550A	11.27	35.00	26.745	130.9	0.993
600A	10.34	34.86	26.803	125.3	1.064
650A	9.21	34.70	26.870	119.1	1.132
700A	7.66	34.54	26.984	108.2	1.195
750A	6.72	34.44	27.038	103.2	1.253
800A	5.61	34.35	27.085	98.6	1.309
850A	5.12	34.29	27.121	95.2	1.363
900A	4.94	34.30	27.130	92.5	1.414
950A	4.75	34.32	27.187	89.0	1.465
1000A	4.29	34.31	27.230	85.0	1.513
1100A	3.55	34.30	27.293	78.9	1.604
1200A	3.34	34.35	27.357	72.8	1.689
1300A	3.21	34.41	27.417	67.2	1.768
1400A	3.10	34.49	27.491	60.2	1.841
1500A	3.04	34.56	27.553	54.3	1.908
1600A	2.90	34.57	27.573	52.4	1.972
1700A	3.28	34.68	27.626	47.4	2.033
1800A	3.36	34.77	27.689	41.4	2.091
1900A	3.42	34.83	27.731	37.4	2.145
2000A	3.57	34.90	27.772	33.5	2.197
2100A	3.61	34.92	27.784	32.4	2.247
2200A	3.50	34.93	27.803	30.6	2.296
2300A	3.35	34.89	27.786	32.2	2.346
2339A	3.25	34.89	27.796	31.3	2.365

25 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
33 08.9S	49 35.5W	11/20/72	2029 GMT

Z	T	S	SIGMA T	DT	DD
0	19.50	35.92	25.612	238.4	0.000
10	19.53	35.93	25.612	238.4	0.024
20	19.51	35.92	25.609	238.6	0.048
30	19.51	35.92	25.609	238.6	0.072
40	19.53	35.92	25.604	239.1	0.096
50	19.51	35.93	25.617	237.9	0.120
60	19.45	35.89	25.602	239.3	0.144
70	19.39	35.88	25.610	238.6	0.168
80	18.87	36.17	25.965	204.8	0.190
90	18.87	36.23	26.011	200.5	0.211
100	18.73	36.23	26.047	197.1	0.231
125	18.12	36.13	26.124	189.7	0.281
150A	17.99	36.12	26.149	187.4	0.329
200A	17.89	36.14	26.189	183.6	0.425
250A	17.04	35.93	26.235	179.2	0.519
300A	15.73	35.69	26.357	167.6	0.610
350A	15.04	35.62	26.458	158.0	0.697
400A	14.64	35.53	26.477	156.3	0.781
450A	13.81	35.42	26.569	147.5	0.863
500A	12.83	35.24	26.631	141.7	0.942
550A	11.58	35.04	26.718	133.4	1.017
600A	10.45	34.88	26.800	125.7	1.089
750A	7.05	34.47	27.016	105.2	1.281
800A	6.23	34.40	27.071	100.0	1.338
850A	5.44	34.33	27.115	95.8	1.392
900A	4.97	34.30	27.146	92.9	1.444
950A	4.46	34.27	27.180	89.7	1.495
1000A	4.26	34.29	27.217	86.2	1.543
1100A	3.91	34.31	27.269	81.2	1.636
1200A	3.60	34.33	27.316	76.7	1.725
1300A	3.34	34.37	27.373	71.3	1.808
1400A	3.05	34.49	27.496	59.7	1.884

RV MELVILLE CATO EXPEDITION VI 26

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 47.9S	50 11.7W	11/21/72	0258 0344 GMT	839M	220	19KT	1	220 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	22.11	36.670	4.98	0.07	1.0	0.00	0.0	251.6	0	22.11	36.670	4.98	25.473	251.6	0.000
41	21.96	36.691	5.03	0.06	1.4	0.00	0.0	246.0	10	22.07	36.670	5.00	25.485	250.5	0.025
62	21.88	36.713	5.03	0.06	1.2	0.00	0.0	242.3	20	22.04	36.674	5.01	25.498	249.2	0.050
84A	21.89	36.728	5.00	0.05	0.8	0.00	0.0	241.5	30	22.00	36.680	5.02	25.513	247.8	0.075
104	21.79	36.748	5.04	0.05	1.0	0.00	0.0	237.4	50	21.92	36.698	5.03	25.549	244.3	0.125
125	21.11	36.633	4.85	0.09	1.0	0.07	0.2	227.7	75	21.89	36.720	5.01	25.575	241.9	0.186
137A	20.02	36.407	4.95	0.15	1.2	0.09	0.7	216.1	100	21.81	36.737	5.04	25.610	238.5	0.247
187A	17.97	36.075	5.17	0.20	1.2	0.04	1.0	190.2	125	21.11	36.633	4.85	25.724	227.7	0.306
239A	16.49	35.776	4.87	0.37	1.6	0.01	3.4	178.0	150	19.26	36.272	5.05	25.943	207.0	0.362
336A	13.08	35.269	4.85	0.78	3.9	0.01	10.3	144.3	200	17.58	35.997	5.11	26.157	186.6	0.463
409A	9.13	34.743	4.77	1.40	9.7		19.7	114.7	250	16.18	35.725	4.87	26.282	174.7	0.557
478A	6.64	34.460	4.98	1.70	13.9		24.6	100.6	300	14.52	35.471	4.86	26.458	158.1	0.645
549A	5.44	34.362	5.08	1.84	18.2	0.01	27.1	93.4	400	9.61	34.799	4.77	26.881	118.0	0.792
619A	4.63	34.299	5.31	1.93	20.9	0.03	27.9	89.3	500	6.17	34.420	5.01	27.093	97.9	0.907
688A	4.28	34.297	5.20	1.99	24.7	0.00	29.2	85.8	600	4.81	34.312	5.26	27.174	90.2	1.008
759A	3.83	34.304	5.11	2.10	30.5		30.5	80.9	700	4.20	34.298	5.18	27.230	85.0	1.102
806A	3.69	34.315	5.04	2.10	33.2	0.00	30.8	78.7	800	3.70	34.314	5.05	27.293	78.9	1.190

RV MELVILLE CATO EXPEDITION VI 27

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 35.4S	47 40.6W	11/21/72	2306 0016 GMT	1594M	190	20KT	2	170 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	21.99	36.834	5.11	0.06	1.0	0.00	0.0	236.5	0	21.99	36.834	5.11	25.631	236.5	0.000
10	22.01	36.831	5.13	0.05	1.0	0.00	0.0	237.3	10	22.01	36.831	5.13	25.623	237.3	0.024
21	21.95	36.828	5.08	0.03	0.8	0.00	0.0	235.9	20	21.96	36.826	5.09	25.636	236.1	0.047
41	21.77	36.817	5.08	0.04	1.0	0.00	0.0	231.9	30	21.87	36.821	5.08	25.657	234.1	0.071
82	21.59	36.799	5.07	0.05	0.8	0.00	0.0	228.4	50	21.73	36.807	5.08	25.686	231.4	0.118
113	20.33	36.494	5.05	0.10	0.8	0.14	0.4	217.7	75	21.62	36.797	5.07	25.708	229.2	0.176
144	18.58	36.139	5.18	0.13	1.0	0.13	0.5	200.1	100	20.95	36.638	5.06	25.773	223.0	0.233
185	17.64	36.029	5.16	0.19	1.0	0.04	1.4	185.8	125	19.63	36.341	5.10	25.901	210.9	0.289
208A	17.26	35.943	5.09	0.27	1.3	0.02	2.3	183.3	150	18.38	36.111	5.18	26.045	197.3	0.341
260A	16.17	35.757	4.98	0.37	1.6	0.02	3.8	172.3	200	17.39	35.973	5.12	26.184	184.0	0.439
311A	15.12	35.610	4.92	0.49	2.0	0.02	5.8	160.5	250	16.39	35.790	5.00	26.282	174.8	0.533
364A	14.35	35.501	4.97	0.53	2.4	0.01	7.2	152.5	300	15.33	35.637	4.93	26.407	162.9	0.622
465A	11.80	35.079	4.88	0.96	4.6		13.3	134.5	400	13.54	35.363	4.94	26.582	146.3	0.786
567A	8.91	34.696	4.96	1.31	9.2		19.5	114.8	500	10.81	34.939	4.91	26.781	127.5	0.935
670A	6.23	34.396	5.40	1.67	12.9		24.6	100.4	600	7.97	34.584	5.09	26.971	109.5	1.064
770A	4.77	34.274	5.72	1.76	17.4		26.3	92.6	700	5.68	34.344	5.54	27.096	97.6	1.177
871A	4.36	34.300	5.29	1.91	19.7	0.01	29.2	86.4	800	4.60	34.276	5.62	27.168	90.8	1.280
974A	3.78	34.321	5.02	2.12	33.2		30.9	79.1	1000	3.71	34.326	4.98	27.302	78.1	1.465
1075A	3.54	34.347	4.88	2.13	38.8	0.00	31.9	74.9	1200	3.17	34.433	4.66	27.439	65.1	1.625
1177A	3.18	34.422	4.67	2.18	48.4	0.03	32.0	66.0	1500	3.21	34.633	4.54	27.593	50.5	1.828
1280A	3.12	34.458	4.63	2.23	50.4	0.02	32.6	62.7							
1434A	3.082	34.563	4.45	2.10	53.8	0.02	31.6	54.5							
1538A	3.312	34.674	4.62	2.00	47.2	0.03	29.7	48.2							
1590A	3.436	34.729	4.72	1.90	43.7	0.02	28.4	45.2							

RV MELVILLE CATO EXPEDITION VI 28

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 35.6S	46 40.1W	11/22/72	0729 0905 GMT	3261M	140	9KT	1	210 10 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	20.65	36.408	5.24	0.05	1.0	0.00	0.0	232.1	0	20.65	36.408	5.24	25.678	232.1	0.000
42	20.68	36.413	5.18	0.04	1.0	0.00	0.0	232.5	10	20.66	36.407	5.22	25.677	232.2	0.023
63	19.45	36.302	5.16	0.07	1.3	0.00	0.0	209.5	20	20.66	36.408	5.21	25.676	232.3	0.047
105	17.91	36.124	5.28	0.14	1.2	0.12	0.5	185.2	30	20.67	36.410	5.19	25.675	232.4	0.070
146	17.45	36.023	5.14	0.21	1.4	0.02	1.7	181.8	50	20.24	36.371	5.17	25.761	224.2	0.116
165A	16.98	35.923	5.01	0.28	1.7	0.02	2.5	178.4	75	18.89	36.242	5.20	26.016	200.0	0.169
187	16.33	35.797	4.91	0.37	1.9	0.02	3.9	173.0	100	18.03	36.141	5.27	26.155	186.8	0.219
269A	14.85	35.573	4.94	0.54	2.4	0.01	6.0	157.5	125	17.67	36.067	5.24	26.189	183.6	0.266
372A	13.61	35.377	4.81	0.66	3.3	0.01	9.0	146.7	150	17.36	36.002	5.11	26.214	181.2	0.313
476A	11.61	35.055	4.79	1.01	5.2	0.01	13.4	132.8	200	16.03	35.746	4.91	26.332	170.1	0.403
579A	9.05	34.713	4.76	1.35	9.4		20.2	115.6	250	15.11	35.605	4.93	26.432	160.5	0.489
681A	6.99		4.95	1.66	13.3	0.00	24.3		300	14.48	35.517	4.90	26.502	153.9	0.572
784A	5.63	34.367	5.12	1.86	17.3		26.8	95.3	400	13.14	35.298	4.80	26.614	143.3	0.731
887A	4.50	34.301	5.22	1.94	23.8		29.3	87.8	500	11.02	34.969	4.78	26.767	128.8	0.878
1040A	3.72	34.333	4.93	2.17	35.1		31.7	77.6	600	8.58	34.654	4.79	26.934	113.0	1.010
1194A	3.22	34.398	4.52	2.26	46.8		33.4	68.2	700	6.70	34.452	4.98	27.049	102.1	1.129
1348A	3.06	34.508	4.43	2.26	50.3	0.00	33.5	58.4	800	5.43	34.354	5.15	27.134	94.0	1.237
1502A	3.14	34.631	4.45	2.09	52.1		31.4	49.9	1000	3.86	34.318	5.04	27.280	80.2	1.429
1655A	3.37	34.746	4.68	1.89	44.2		28.7	43.3	1200	3.21	34.403	4.52	27.411	67.8	1.594
1911A	3.52	34.871	5.27	1.62	33.0		24.3	35.2	1500	3.14	34.631	4.45	27.599	50.0	1.800
2218A	3.375	34.929	5.53	1.43	27.4		21.5	29.5	1750	3.46	34.801	4.90	27.705	39.9	1.943
2525A	3.12	34.936	5.83	1.33	28.3	0.00	20.6	26.7	2000	3.50	34.895	5.37	27.776	33.2	2.073
2730A	2.943	34.931	5.83	1.34	30.3		20.7	25.5	2250	3.35	34.931	5.57	27.819	29.1	2.194
2937A	2.724	34.915	5.82	1.36	36.0		19.7	24.8	2500	3.14	34.937	5.81	27.843	26.8	2.309
3143A	2.080	34.853	5.60	1.65	60.2		24.4	24.4	2750	2.93	34.930	5.83	27.858	25.4	2.421
3246A	1.987	34.846	5.59	1.67	64.3	0.00	24.9	24.2	3000	2.52	34.894	5.75	27.866	24.7	2.529
									3250	1.98	34.846	5.59	27.871	24.1	2.630

CATO EXPEDITION VI

26 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 47.9S	50 11.7W	11/21/72	0212 GMT

Z	T	S	SIGMA T	DT	DD
0	22.11	36.67	25.473	251.6	0.000
10	22.09	36.67	25.478	251.1	0.025
20	22.06	36.68	25.495	249.5	0.050
30	21.97	36.69	25.528	246.4	0.075
40	21.94	36.70	25.544	244.9	0.100
50	21.91	36.70	25.552	244.1	0.124
60	21.91	36.70	25.552	244.1	0.149
70	21.91	36.70	25.552	244.1	0.174
80	21.90	36.72	25.570	242.3	0.198
90	21.81	36.74	25.610	238.5	0.223
100	21.78	36.75	25.626	237.0	0.247
125	20.93	36.56	25.717	228.3	0.306
150A	19.32	36.30	25.948	206.4	0.362
200A	17.88	36.10	26.161	186.3	0.463
250A	15.70	35.67	26.349	168.5	0.555
300A	14.68	35.57	26.455	158.4	0.641
350A	12.36	35.12	26.631	141.7	0.721
400A	9.39	34.76	26.887	117.4	0.790
450A	7.44	34.53	27.008	106.0	0.850
500A	6.22	34.41	27.080	99.1	0.905
550A	5.45	34.36	27.137	93.7	0.956
600A	4.76	34.31	27.178	89.6	1.005
650A	4.44	34.30	27.206	87.2	1.053
700A	4.24	34.30	27.227	85.2	1.099
750A	3.88	34.31	27.272	80.9	1.144
800A	3.65	34.31	27.295	78.7	1.187
835A	3.54	34.31	27.306	77.7	1.217

27 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 35.4S	47 40.6W	11/21/72	2212 GMT

Z	T	S	SIGMA T	DT	DD
0	22.00	36.83	25.625	237.1	0.000
10	22.00	36.83	25.625	237.1	0.024
20	21.95	36.82	25.632	236.5	0.047
30	21.83	36.81	25.658	234.0	0.071
40	21.81	36.81	25.664	233.4	0.095
50	21.77	36.80	25.667	233.1	0.118
60	21.60	36.76	25.684	231.5	0.142
70	21.61	36.80	25.712	228.8	0.165
80	21.58	36.79	25.713	228.8	0.188
90	21.51	36.77	25.717	228.4	0.211
100	21.39	36.75	25.735	226.6	0.234
125A	19.84	36.34	25.843	216.4	0.291
150A	18.77	36.20	26.014	200.2	0.344
200A	17.52	35.97	26.150	187.3	0.444
250A	16.48	35.79	26.260	176.8	0.539
300A	15.39	35.65	26.403	163.3	0.628
350A	14.49	35.53	26.509	153.2	0.712
400A	13.60	35.38	26.582	146.3	0.792
450A	12.42	35.18	26.666	138.4	0.869
500A	11.05	34.94	26.739	131.5	0.943
550A	9.33	34.75	26.889	117.2	1.011
650A	6.80	34.45	27.035	103.4	1.151
700A	5.60	34.31	27.079	99.2	1.187
750A	4.95	34.28	27.133	94.1	1.239
800A	4.85	34.31	27.168	90.8	1.290
850A	4.46	34.30	27.203	87.4	1.339
900A	4.16	34.30	27.235	84.4	1.386
950A	3.89	34.32	27.279	80.3	1.431
1000A	3.74	34.33	27.302	78.1	1.475
1100A	3.46	34.36	27.354	73.2	1.559
1200A	3.19	34.43	27.435	65.5	1.636
1300A	3.12	34.47	27.473	61.8	1.709
1500A	3.29	34.66	27.609	49.0	1.840
1600A	3.45	34.74	27.657	44.5	1.899

28 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 35.6S	46 40.1W	11/22/72	0614 GMT

Z	T	S	SIGMA T	DT	DD
0	20.67	36.42	25.682	231.7	0.000
10	20.68	36.42	25.679	232.0	0.023
20	20.68	36.42	25.679	232.0	0.046
30	20.68	36.42	25.679	232.0	0.070
40	20.68	36.42	25.679	232.0	0.093
50	20.68	36.42	25.679	232.0	0.116
60	19.52	36.30	25.896	211.3	0.139
70	18.56	36.11	25.998	201.7	0.160
80	18.31	36.07	26.031	198.6	0.180
90	17.99	36.11	26.141	188.1	0.200
100	17.90	36.11	26.163	186.0	0.219
125	17.79	36.11	26.190	183.4	0.266
150	17.27	35.96	26.203	182.3	0.313
200A	15.95	35.68	26.299	173.1	0.404
250A	15.16	35.65	26.454	158.4	0.491
300A	14.50	35.56	26.530	151.2	0.572
350A	14.02	35.47	26.563	148.1	0.652
400A	13.15	35.32	26.628	141.9	0.730
450A	11.97	35.11	26.699	135.3	0.805
500A	10.85	34.94	26.775	128.0	0.876
550A	9.67	34.77	26.848	121.1	0.944
600A	8.54	34.65	26.937	112.7	1.008
650A	7.73	34.57	26.997	107.0	1.069
700A	6.61	34.45	27.060	101.0	1.126
750A	5.93	34.37	27.086	98.6	1.181
800A	5.29	34.33	27.133	94.1	1.234
850A	4.75	34.30	27.171	90.5	1.285
900A	4.32	34.30	27.218	86.0	1.333
950A	4.07	34.31	27.253	82.6	1.380
1000A	3.85	34.32	27.283	79.9	1.425
1100A	3.48	34.35	27.344	74.1	1.510
1200A	3.23	34.40	27.408	68.1	1.590
1300A	3.06	34.47	27.479	61.3	1.663
1400A	3.05	34.54	27.536	55.9	1.731
1500A	3.13	34.64	27.608	49.1	1.794
1600A	3.24	34.70	27.645	45.5	1.853
1700A	3.45	34.77	27.681	42.2	1.909
1800A	3.60	34.84	27.722	38.3	1.964
1900A	3.52	34.89	27.769	33.8	2.015
2000A	3.52	34.91	27.785	32.3	2.065
2100A	3.57	34.94	27.804	30.5	2.113
2200A	3.44	34.94	27.817	29.3	2.161
2300A	3.33	34.94	27.828	28.3	2.208
2400A	3.25	34.94	27.835	27.5	2.254
2500A	3.15	34.94	27.845	26.6	2.299
2600A	3.07	34.93	27.844	26.7	2.345
2700A	2.96	34.93	27.855	25.7	2.389
2800A	2.90	34.92	27.852	26.0	2.434
2900A	2.77	34.92	27.864	24.8	2.478
3000A	2.61	34.90	27.862	25.0	2.522
3100A	2.33	34.88	27.870	24.3	2.564
3200A	1.96	34.84	27.868	24.4	2.603
3270A	1.95	34.83	27.861	25.1	2.631

RV MELVILLE CATO EXPEDITION VI 29

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 19.1S	43 59.6W	11/23/72	0315 0457 GMT	3439M	060	7KT	1	190 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.99	36.142	5.38	0.02	1.0	0.00	0.0	234.5	0	19.99	36.142	5.38	25.652	234.5	0.000
41	18.87	36.037	5.53	0.03	1.0	0.00	0.0	214.5	10	19.72	36.114	5.42	25.704	229.6	0.023
51A	18.18	35.996	5.50	0.08	1.2	0.00	0.0	200.9	20	19.44	36.087	5.45	25.756	224.7	0.046
63	17.86	36.003	5.58	0.04	1.2	0.00	0.1	192.8	30	19.17	36.062	5.49	25.807	219.8	0.068
104	16.98	35.910	5.16	0.17	1.6	0.04	1.9	179.3	50	18.24	35.998	5.50	25.993	202.2	0.111
131	16.36	35.819	5.16	0.26	1.5	0.03	3.0	172.0	75	17.59	35.987	5.49	26.146	187.6	0.160
155A	15.77	35.709	5.06	0.36	1.8	0.02	3.9	167.1	100	17.06	35.923	5.21	26.226	180.1	0.207
258A	14.56	35.536	5.07	0.58	2.3	0.01	6.3	154.2	125	16.50	35.840	5.16	26.295	173.5	0.252
									150	15.89	35.731	5.08	26.353	168.0	0.296
									200	14.98	35.576	5.06	26.439	159.9	0.380
									250	14.58	35.533	5.07	26.493	154.7	0.462

RV MELVILLE CATO EXPEDITION VI 30

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 16.2S	41 39.5W	11/23/72	1806 2010 GMT	3829M	320	8KT	1	180 5 9

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	20.35	36.093	5.26	0.05	1.0	0.00	0.0	247.2	0	20.35	36.093	5.26	25.519	247.2	0.000
41	19.73	36.071	5.32	0.03	0.8	0.00	0.0	233.2	10	20.31	36.088	5.30	25.526	246.5	0.025
73	18.17	35.941	5.38	0.07	1.0	0.00	0.0	204.6	20	20.20	36.082	5.32	25.551	244.2	0.049
114	17.48	35.882	5.32	0.12	1.0	0.07	0.2	192.8	30	20.02	36.079	5.32	25.597	239.8	0.074
157	16.76	35.766	5.05	0.29	1.5	0.04	1.8	184.8	50	19.30	36.034	5.34	25.753	225.0	0.120
207A	16.14 V	35.746 V	5.21V	0.27	1.4	0.02	2.2		75	18.12	35.936	5.38	25.977	203.7	0.175
219	15.72	35.664	5.08	0.33	1.6	0.01	3.1	169.3	100	17.63	35.898	5.34	26.068	195.0	0.225
310A	14.73	35.548	5.08	0.48	2.2	0.01	5.4	156.8	125	17.30	35.852	5.25	26.115	190.6	0.274
413A	13.62	35.383	5.02	0.55	3.0		8.3	146.5	150	16.88	35.784	5.09	26.163	186.0	0.322
517A	11.31	35.010	4.83	0.98	5.4		14.0	130.8	200	16.02	35.689	5.07	26.290	174.0	0.415
620A	8.53	34.659	4.85	1.47	9.8		20.5	111.8	250	15.35	35.623	5.08	26.393	164.2	0.503
722A	6.74	34.462	5.10	1.60	13.4		23.3	101.8	300	14.82	35.560	5.08	26.460	157.8	0.588
825A	5.32	34.340	5.29	1.80	17.3	0.02	26.3	93.7	400	13.79	35.411	5.03	26.566	147.8	0.751
1031A	3.87	34.291	5.26	2.03	29.2	0.02	29.0	82.2	500	11.75	35.076	4.86	26.715	133.7	0.904
1236A	3.15	34.389	4.74	2.23	45.8	0.01	32.2	68.2	600	9.05	34.718	4.85	26.909	115.3	1.040
1441A	2.89	34.530	4.42	2.22	57.2		32.2	55.3	700	7.07	34.497	5.04	27.034	103.5	1.161
1687A	2.83	34.649	4.52	2.10	58.1		30.4	45.8	800	5.63	34.364	5.25	27.118	95.5	1.271
1955A	3.24	34.858	5.31	1.55	38.0		23.2	33.6	1000	4.01	34.288	5.26	27.241	83.9	1.469
2262A	3.11	34.905	5.57	1.49	32.6		21.9	28.9	1200	3.23	34.367	4.84	27.380	70.7	1.641
2469A	3.05	34.917	5.85	1.43	32.4	0.01	21.0	27.5	1500	2.87	34.569	4.45	27.574	52.4	1.853
2674A	3.00	34.929	5.79	1.33	30.2		20.4	26.2	1750	2.96	34.726	4.77	27.691	41.2	1.997
2880A	2.898	34.929	5.82	1.37	31.9		20.5	25.3	2000	3.24	34.870	5.36	27.782	32.6	2.124
3085A	2.754	34.922	5.87	1.38	33.7		20.6	24.6	2250	3.12	34.904	5.56	27.820	29.0	2.240
3396A	2.331	34.885	5.73	1.45	47.5		22.0	23.9	2500	3.04	34.918	5.84	27.838	27.3	2.354
3706A	1.133	34.759	5.18	1.99	96.2		28.4	24.8	2750	2.97	34.929	5.79	27.854	25.8	2.466
3809A	0.899	34.735	5.15	2.08	109.1	0.01	29.2	25.2	3000	2.82	34.925	5.85	27.864	24.8	2.578
									3250	2.59	34.908	5.80	27.871	24.1	2.688
									3500	1.93	34.840	5.53	27.871	24.1	2.791
									3750	1.02	34.748	5.17	27.863	25.0	2.881

CATO EXPEDITION VI

29 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 19.1S	43 59.6W	11/23/72	0158 GMT

Z	T	S	SIGMA T	DT	DD
0	19.98	36.14	25.654	234.4	0.000
10	19.98	36.14	25.654	234.4	0.023
20	19.78	36.13	25.699	230.1	0.047
30	19.77	36.13	25.701	229.9	0.070
40	19.76	36.14	25.712	228.9	0.093
50	19.05	36.03	25.812	219.3	0.115
60	17.98	35.96	26.029	198.8	0.137
70	17.77	35.99	26.104	191.7	0.156
80	17.49	35.97	26.157	186.6	0.176
90	17.42	35.97	26.174	185.0	0.194
100	17.30	35.97	26.203	182.2	0.213
125	16.41	35.80	26.284	174.5	0.259
150	16.16	35.79	26.335	169.7	0.303
200	15.33	35.67	26.432	160.5	0.388
250	14.81	35.59	26.486	155.4	0.470
300	14.26	35.51	26.543	150.0	0.551
350	13.42	35.36	26.604	144.2	0.629
400	12.40	35.18	26.670	138.0	0.705
450	11.49	35.04	26.735	131.8	0.777
500	10.25	34.87	26.827	123.1	0.847
550	9.01	34.70	26.902	116.0	0.912
600	7.91	34.58	26.978	108.8	0.973
650	6.82	34.45	27.032	103.7	1.032
700	5.84	34.35	27.081	99.0	1.087
750	5.03	34.27	27.116	95.8	1.140
800	4.52	34.24	27.149	92.6	1.191
850	4.21	34.26	27.198	87.9	1.240
900	3.98	34.26	27.222	85.6	1.288
950	3.71	34.26	27.250	83.1	1.334
1000	3.49	34.29	27.295	78.7	1.378
1100	3.20	34.34	27.363	72.3	1.461
1200	2.96	34.41	27.440	65.0	1.538
1300	2.95	34.48	27.497	59.6	1.608
1400	2.86	34.54	27.553	54.3	1.674
1500	2.86	34.61	27.609	49.0	1.735
1600	2.86	34.66	27.649	45.2	1.792
1700	2.97	34.73	27.694	40.9	1.846
1800	3.16	34.79	27.725	38.1	1.898
1900	3.35	34.87	27.770	33.7	1.948
2000	3.34	34.90	27.795	31.4	1.996
2100	3.35	34.94	27.826	28.5	2.043
2200	3.33	34.95	27.836	27.5	2.088
2300	3.27	34.95	27.841	27.0	2.132
2400	3.21	34.95	27.847	26.4	2.177
2500	3.16	34.95	27.852	26.0	2.222
2600	3.09	34.96	27.866	24.6	2.266
2700	3.03	34.95	27.864	24.8	2.309
2800	2.95	34.95	27.871	24.1	2.353
2900	2.90	34.94	27.868	24.4	2.397
3000	2.84	34.94	27.874	23.9	2.441
3100	2.76	34.93	27.873	24.0	2.485
3200	2.65	34.92	27.875	23.8	2.528
3300	2.45	34.91	27.884	22.9	2.571
3400	2.03	34.84	27.863	25.0	2.612
3500	1.72	34.82	27.871	24.2	2.651
3520	1.62	34.81	27.870	24.2	2.658

30 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 16.2S	41 39.5W	11/23/72	1622 GMT

Z	T	S	SIGMA T	DT	DD
0	20.17	36.07	25.550	244.3	0.000
10	19.88	36.10	25.650	234.8	0.024
20	19.79	36.10	25.673	232.6	0.047
30	19.76	36.09	25.673	232.5	0.071
40	19.74	36.09	25.679	232.0	0.094
50	19.69	36.08	25.684	231.5	0.117
60	19.07	36.03	25.807	219.8	0.140
70	18.56	35.98	25.894	211.6	0.162
80	18.33	35.91	25.904	210.7	0.183
90	18.06	35.92	25.978	203.6	0.204
100	17.98	35.91	25.991	202.4	0.225
125	17.54	35.88	26.076	194.3	0.276
150	17.03	35.83	26.161	186.3	0.324
200	16.30	35.75	26.272	175.7	0.418
250	15.36	35.62	26.387	164.8	0.506
300	14.77	35.53	26.448	159.0	0.591
350	14.33	35.52	26.536	150.7	0.674
400	13.82	35.42	26.567	147.7	0.754
450	13.10	35.31	26.631	141.7	0.832
500	12.07	35.14	26.703	134.9	0.907
550	10.78	34.95	26.795	126.1	0.979
600	9.33	34.74	26.881	118.0	1.046
650	7.99	34.57	26.959	110.6	1.109
700	7.15	34.50	27.025	104.3	1.169
750	6.37	34.43	27.076	99.5	1.225
800	5.62	34.36	27.117	95.7	1.279
850	5.08	34.33	27.157	91.8	1.331
900	4.60	34.29	27.180	89.6	1.381
950	4.33	34.29	27.210	86.9	1.429
1000	4.01	34.29	27.243	83.7	1.477
1100	3.53	34.32	27.315	76.8	1.565
1200	3.24	34.39	27.399	68.9	1.647
1300	3.04	34.44	27.457	63.4	1.722
1400	2.96	34.50	27.512	58.2	1.792
1500	2.86	34.56	27.569	52.8	1.856
1600	2.83	34.61	27.611	48.8	1.917
1700	2.85	34.68	27.665	43.7	1.974
1800	2.88	34.74	27.711	39.4	2.027
1900	2.94	34.77	27.738	36.8	2.078
2000	3.15	34.86	27.781	32.7	2.126
2100	3.18	34.89	27.802	30.7	2.173
2200	3.08	34.89	27.812	29.8	2.219
2300	3.14	34.92	27.830	28.1	2.264
2400	3.05	34.92	27.838	27.3	2.309
2500	3.04	34.93	27.847	26.4	2.354
2600	3.01	34.93	27.850	26.2	2.398
2700	2.99	34.94	27.860	25.2	2.442
2800	2.96	34.94	27.863	25.0	2.486
2900	2.89	34.94	27.869	24.4	2.531
3000	2.84	34.93	27.866	24.7	2.575
3000	2.84	34.93	27.866	24.7	2.575
3100	2.75	34.92	27.866	24.7	2.619
3200	2.66	34.91	27.866	24.7	2.663
3300	2.54	34.90	27.868	24.4	2.707
3400	2.35	34.88	27.869	24.4	2.751
3500	1.98	34.84	27.867	24.6	2.792
3600	1.63	34.81	27.870	24.3	2.831
3700	1.19	34.75	27.853	25.9	2.867
3800	0.87	34.72	27.850	26.1	2.901
3834	0.86	34.72	27.851	26.1	2.912

RV MELVILLE CATD EXPEDITION VI 31

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 09.5S	40 32.0W	11/24/72	0427 0639 GMT	4218M	330	15KT	1	190 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.33	36.015	5.34	0.03	1.0	0.00	0.0	227.3	0	19.33	36.015	5.34	25.729	227.3	0.000
41	19.12	35.989	5.43	0.04	1.0	0.00	0.0	224.0	10	19.28	36.007	5.36	25.737	226.5	0.023
73	18.43	35.975	5.49	0.04	1.0	0.00	0.0	208.4	20	19.23	36.001	5.39	25.745	225.7	0.045
114	17.76	35.902	5.44	0.06	1.0	0.00	0.0	197.8	30	19.18	35.995	5.41	25.754	224.9	0.068
157	17.27	35.881	5.32	0.14	1.0	0.09	0.6	188.0	50	18.94	35.985	5.45	25.807	219.9	0.113
209A	16.11	35.716	5.17	0.20	1.5	0.02	2.2	174.0	75	18.39	35.970	5.49	25.935	207.7	0.167
218	15.92	35.694	5.20	0.30	1.5	0.01	2.6	171.5	100	17.96	35.926	5.46	26.008	200.8	0.219
311A	14.91	35.566	5.05	0.48	1.9	0.01	5.1	159.3	125	17.64	35.898	5.41	26.065	195.3	0.269
413A	13.79	35.408	5.03	0.57	2.6		7.7	148.0	150	17.36	35.885	5.34	26.125	189.6	0.318
516A	11.89	35.099	4.89	0.95	4.8		12.7	134.6	200	16.33	35.746	5.18	26.263	176.6	0.413
617A	9.49	34.767	4.81	1.23	8.2		18.8	118.5	250	15.47	35.640	5.15	26.377	165.7	0.502
719A	7.49	34.541	4.96	1.53	12.1		22.3	105.8	300	14.98	35.576	5.07	26.437	160.0	0.588
921A	4.50	34.280	5.54	1.89	20.5		27.8	89.4	400	13.95	35.432	5.03	26.549	149.4	0.753
1124A	3.56	34.299	5.16	2.09	33.7	0.01	30.8	78.7	500	12.23	35.152	4.91	26.682	136.9	0.908
1327A	3.06	34.432	4.57	2.22	50.5		32.6	64.2	600	9.90	34.818	4.81	26.847	121.2	1.050
1529A	2.87	34.559	4.41	2.15	57.5		31.9	53.0	700	7.83	34.578	4.92	26.987	107.9	1.177
1730A	2.86	34.682	4.59	2.01	56.9		30.0	43.6	800	6.09	34.402	5.23	27.090	98.2	1.291
2034A	3.07	34.832	5.18	1.66	43.6		24.7	34.1	1000	3.99	34.269	5.46	27.228	85.1	1.494
2336A	3.21	34.928	5.73	1.38	28.6		21.0	28.1	1200	3.33	34.344	4.93	27.353	73.3	1.670
2538A	3.10	34.930	5.83	1.35	29.4	0.01	20.6	27.0	1500	2.88	34.542	4.43	27.552	54.4	1.889
2841A	2.93	34.927	5.87	1.33	31.5		20.3	25.7	1750	2.87	34.694	4.62	27.674	42.8	2.037
3146A	2.727	34.914	5.88	1.36	35.1		20.7	24.9	2000	3.04	34.817	5.11	27.758	34.9	2.167
3450A	2.062	34.853	5.65	1.58	59.1		23.9	24.2	2250	3.19	34.908	5.60	27.816	29.4	2.286
3757A	0.871	34.732	5.21	2.04	108.3		30.0	25.2	2500	3.13	34.930	5.82	27.840	27.1	2.401
4063A	0.374	34.687	5.11	2.21	126.6		32.2	25.8	2750	2.98	34.927	5.86	27.851	26.0	2.514
4166A	0.335	34.683	5.12	2.21	128.9	0.01	32.3	25.9	3000	2.86	34.923	5.88	27.859	25.3	2.626
									3250	2.55	34.898	5.83	27.866	24.6	2.737
									3500	1.86	34.831	5.57	27.869	24.3	2.840
									3750	0.90	34.735	5.22	27.860	25.2	2.929
									4000	0.42	34.693	5.13	27.855	25.7	3.004

RV MELVILLE CATD EXPEDITION VI 32

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 19.2S	37 51.1W	11/24/72	2100 2245 GMT	3473M	310	12KT	1	310 3 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	20.47	36.168	5.27	0.05	1.4	0.00	0.0	244.8	0	20.47	36.168	5.27	25.544	244.8	0.000
41	20.35	36.168	5.27	0.05	1.2	0.00	0.0	241.8	10	20.44	36.167	5.27	25.554	243.9	0.024
62	20.31	36.165	5.27	0.05	1.0	0.00	0.0	241.0	20	20.40	36.167	5.27	25.562	243.1	0.049
82A	19.51 V	36.172	5.30	0.07	1.3	0.00	0.0		30	20.38	36.167	5.27	25.570	242.4	0.073
83	19.55	36.171	5.36	0.08	1.0	0.00	0.0	221.4	50	20.33	36.165	5.27	25.580	241.4	0.122
126	19.35	36.164	5.28	0.08	0.8	0.00	0.0	217.0	75	19.86	36.166	5.29	25.707	229.3	0.181
160A	17.98	35.932	5.09	0.20	1.3	0.05	0.7	200.8	100	19.46	36.164	5.33	25.809	219.7	0.238
263A	15.34	35.590	5.01	0.39	1.7	0.01	4.4	166.6	125	19.35	36.162	5.28	25.836	217.1	0.294
366A	14.04	35.441	5.03	0.61	2.8	0.01	7.3	150.6	150	18.43	36.004	5.15	25.953	206.0	0.348
469A	12.31	35.160	4.88	0.86	4.3	0.01	11.7	137.8	200	16.74	35.755	5.06	26.173	185.1	0.449
572A	9.95	34.822	4.75	1.24	7.4	0.01	17.5	121.8	250	15.57	35.613	5.02	26.334	169.8	0.541
675A	7.75	34.575	4.82	1.59	12.6	0.01	23.0	106.9	300	14.82	35.535	5.02	26.442	159.6	0.628
778A	5.89	34.397 E	5.06	1.69U	16.8	0.01	26.4	96.1	400	13.53	35.359	4.99	26.581	146.4	0.791
881A	4.70	34.299	5.2	1.95	21.5	0.01	28.2	90.0	500	11.62	35.055	4.83	26.721	133.1	0.942
1086A	3.51	34.328	4.99	2.12	36.9	0.01	31.6	76.1	600	9.33	34.747	4.77	26.887	117.5	1.080
1290A	3.01	34.446	4.53	2.22	51.2	0.00	33.1	62.7	700	7.25	34.525	4.88	27.030	103.9	1.202
1496A	2.86	34.580	4.41	2.15	57.7	0.01	31.9	51.3	800	5.59	34.370	5.10	27.127	94.6	1.312
1701A	2.82	34.692	4.62	2.03	56.8	0.01	29.5	42.5	1000	3.87	34.294	5.08	27.260	82.0	1.507
2008A	2.89	34.814	5.10	1.74	47.1	0.00	25.9	33.9	1200	3.17	34.389	4.73	27.404	68.4	1.674
2316A	2.921	34.882	5.54	1.51	38.4	0.00	22.7	29.0	1500	2.86	34.584	4.41	27.587	51.1	1.881
2522A	2.925	34.910	5.73	1.41	34.0	0.00	21.3	26.9	1750	2.83	34.716	4.69	27.695	40.8	2.022
2727A	2.846	34.918	5.78	1.40	33.5	0.00	21.1	25.6	2000	2.89	34.811	5.09	27.767	34.0	2.147
3036A	2.72	34.911	5.85	1.40	35.5	0.01	21.0	25.1	2250	2.92	34.871	5.46	27.812	29.8	2.263
3347A	2.501	34.897	5.86	1.44	41.2		21.5	24.3	2500	2.92	34.907	5.72	27.840	27.1	2.375
3451A	2.235	34.874	5.78	1.51	49.7	0.00	22.6	24.0	2750	2.84	34.917	5.79	27.856	25.6	2.485
									3000	2.74	34.911	5.84	27.861	25.1	2.595
									3250	2.57	34.901	5.86	27.867	24.6	2.704
									3500	2.21	34.872	5.77	27.874	23.9	2.811

E) ALTERNATE VALUE. 34.409 PPT.

CATO EXPEDITION VI

31 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 09.5S	40 32.0W	11/24/72	0253 GMT

Z	T	S	SIGMA T	DT	DD
0	19.60	36.06	25.693	230.7	0.000
10	19.32	36.04	25.750	225.2	0.023
20	19.29	36.03	25.750	225.2	0.045
30	19.21	36.03	25.771	223.3	0.068
40	19.17	36.03	25.781	222.3	0.090
50	19.14	36.02	25.782	222.3	0.113
60	18.78	35.99	25.851	215.7	0.135
70	18.36	35.99	25.957	205.6	0.156
80	18.30	35.98	25.964	204.9	0.177
90	18.12	35.97	26.002	201.4	0.197
100	17.94	35.95	26.031	198.6	0.218
125	17.71	35.93	26.073	194.6	0.268
150	17.41	35.91	26.130	189.1	0.317
200	16.29	35.74	26.267	176.2	0.411
250	15.61	35.67	26.369	166.5	0.501
300	14.96	35.59	26.453	158.6	0.586
350	14.47	35.53	26.513	152.6	0.669
400	13.92	35.44	26.561	148.2	0.749
450	13.17	35.30	26.609	143.8	0.828
500	12.23	35.15	26.679	137.1	0.905
550	11.02	34.96	26.760	129.5	0.978
600	9.99	34.81	26.825	123.3	1.048
650	8.71	34.68	26.934	113.0	1.113
700	7.84	34.56	26.973	109.3	1.175
750	6.91	34.42	26.996	107.1	1.235
800	6.10	34.36	27.056	101.4	1.292
850	5.34	34.33	27.127	94.7	1.347
900	4.72	34.27	27.151	92.4	1.398
950	4.32	34.28	27.203	87.5	1.448
1000	4.07	34.27	27.221	85.8	1.496
1100	3.66	34.30	27.287	79.6	1.587
1200	3.24	34.33	27.351	73.5	1.672
1300	3.09	34.41	27.429	66.1	1.751
1400	2.97	34.49	27.503	59.0	1.822
1500	2.97	34.56	27.559	53.7	1.888
1600	2.84	34.61	27.611	48.9	1.950
1700	2.86	34.67	27.657	44.5	2.007
1800	2.89	34.72	27.694	41.0	2.062
1900	2.95	34.78	27.736	37.0	2.113
2000	3.04	34.83	27.768	34.0	2.162
2100	3.20	34.88	27.792	31.6	2.210
2200	3.22	34.91	27.814	29.5	2.257
2300	3.24	34.92	27.820	29.0	2.303
2400	3.17	34.93	27.835	27.6	2.349
2500	3.13	34.93	27.839	27.2	2.395
2600	3.04	34.93	27.847	26.4	2.440
2700	3.01	34.93	27.850	26.2	2.485
2800	2.94	34.93	27.856	25.5	2.530
2900	2.88	34.92	27.854	25.8	2.575
3000	2.82	34.92	27.859	25.3	2.620
3100	2.74	34.92	27.867	24.6	2.664
3200	2.67	34.92	27.873	24.0	2.708
3300	2.54	34.90	27.868	24.4	2.752
3400	2.35	34.88	27.869	24.4	2.795
3500	1.86	34.84	27.876	23.7	2.836
3600	1.45	34.79	27.867	24.6	2.873
3700	1.16	34.75	27.855	25.7	2.908
3800	0.77	34.72	27.857	25.5	2.941
3900	0.56	34.70	27.853	25.8	2.971
4000	0.45	34.69	27.852	26.0	3.000
4100	0.34	34.68	27.850	26.2	3.028
4200	0.32	34.68	27.851	26.0	3.056

32 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 19.2S	37 51.1W	11/24/72	1938 GMT

Z	T	S	SIGMA T	DT	DD
0	20.65	36.18	25.505	248.6	0.000
10	20.44	36.18	25.561	243.2	0.025
20	20.38	36.18	25.577	241.7	0.049
30	20.38	36.18	25.577	241.7	0.073
40	20.36	36.18	25.583	241.2	0.097
50	20.36	36.18	25.583	241.2	0.122
60	20.11	36.18	25.649	234.8	0.146
70	19.67	36.18	25.766	223.8	0.169
80	19.58	36.16	25.789	221.5	0.191
90	19.50	36.18	25.810	219.5	0.214
100	19.45	36.17	25.816	219.0	0.236
125	19.32	36.15	25.834	217.3	0.292
150	18.47	36.20	26.090	193.0	0.344
200	16.49	35.73	26.212	181.4	0.441
250	15.34	35.59	26.368	166.6	0.531
300	14.57	35.47	26.446	159.2	0.617
350	14.07	35.41	26.507	153.5	0.700
400	13.32	35.28	26.563	148.2	0.780
450	12.42	35.13	26.627	142.0	0.859
500	11.51	34.99	26.693	135.8	0.934
550	10.21	34.81	26.787	126.9	1.006
600	9.09	34.67	26.865	119.4	1.073
650	7.95	34.53	26.933	113.0	1.137
700	6.96	34.44	27.005	106.3	1.198
750	6.21	34.38	27.058	101.2	1.255
800	5.46	34.31	27.097	97.6	1.310
850	4.89	34.28	27.140	93.5	1.362
900	4.57	34.27	27.168	90.8	1.413
950	4.13	34.26	27.207	87.1	1.462
1000	3.89	34.29	27.256	82.5	1.508
1100	3.45	34.30	27.307	77.6	1.597
1200	3.17	34.35	27.373	71.3	1.680
1300	3.00	34.41	27.437	65.3	1.756
1400	2.92	34.50	27.516	57.8	1.827
1500	2.87	34.55	27.560	53.6	1.892
1600	2.83	34.61	27.611	48.8	1.953
1700	2.82	34.67	27.660	44.1	2.010
1800	2.84	34.72	27.698	40.5	2.064
1900	2.87	34.77	27.735	37.0	2.115
2000	2.90	34.80	27.757	35.0	2.164
2100	2.91	34.83	27.780	32.8	2.212
2200	2.90	34.84	27.788	32.0	2.259
2300	2.94	34.87	27.809	30.1	2.305
2400	2.96	34.90	27.831	28.0	2.351
2500	2.93	34.90	27.833	27.7	2.395
2600	2.92	34.90	27.834	27.6	2.440
2700	2.88	34.91	27.846	26.5	2.485
2800	2.84	34.91	27.850	26.2	2.530
2900	2.79	34.91	27.854	25.8	2.575
3000	2.76	34.91	27.857	25.5	2.619
3100	2.67	34.91	27.865	24.8	2.664
3200	2.60	34.91	27.871	24.2	2.707
3300	2.53	34.91	27.877	23.6	2.750
3400	2.43	34.89	27.870	24.3	2.793
3456	2.22	34.87	27.871	24.1	2.817

RV MELVILLE CATO EXPEDITION VI 33

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 26.5S	35 19.6W	11/25/72	1150 GMT	1413M	200	11KT	1	240 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.59	36.029	5.38	0.04	1.0	0.00	0.0	232.7	0	19.59	36.029	5.38	25.672	232.7	0.000
11	19.47	36.027	5.36	0.05	1.0	0.00	0.0	229.9	10	19.48	36.025	5.36	25.699	230.1	0.023
33	19.46	36.052	5.46	0.08	1.0	0.00	0.0	227.8	20	19.47	36.036	5.39	25.710	229.1	0.046
54	18.48	35.961	5.49	0.09	1.0	0.00	0.0	210.6	30	19.46	36.047	5.44	25.720	228.1	0.069
75	17.76	35.872	5.48	0.11	1.0	0.00	0.0	200.0	50	18.69	35.980	5.49	25.867	214.2	0.114
127	16.63	35.769	5.28	0.20	1.4		1.4	181.7	75	17.76	35.872	5.48	26.016	200.0	0.166
179	15.79	35.673	5.19	0.30	1.5		2.5	170.2	100	17.14	35.811	5.39	26.121	190.1	0.215
232	14.99	35.581	5.15	0.43	1.7		4.4	159.8	125	16.66	35.770	5.29	26.203	182.2	0.263
283	14.40	35.509	5.18	0.48	2.2	0.01	5.8	152.9	150	16.24	35.725	5.23	26.268	176.1	0.309
387	13.33	35.340	5.11	0.65	3.0	0.01	8.6	143.9	200	15.46	35.634	5.17	26.376	165.8	0.397
490	11.17	34.991	4.87	1.02	5.3	0.01	14.3	129.8	250	14.77	35.554	5.16	26.468	157.1	0.481
593	9.11	34.712	4.96	1.33	8.1		19.1	116.6	300	14.26	35.489	5.17	26.528	151.4	0.562
695	6.70	34.449	5.11	1.62	12.2		23.3	102.2	400	13.08	35.298	5.08	26.624	142.3	0.719
797	5.42	34.333	5.39	1.78	15.4		25.9	95.4	500	10.98	34.963	4.88	26.770	128.5	0.866
899	4.61	34.310	5.22	1.93	21.6	0.01	28.0	88.3	600	8.93	34.691	4.97	26.907	115.6	1.000
1001	4.02	34.296	5.21	2.02	27.6		29.4	83.3	700	6.62	34.441	5.13	27.052	101.8	1.119
1104	3.611	34.325	4.98	2.08	33.4		31.0	77.2	800	5.39	34.332	5.39	27.122	95.2	1.228
1207	3.311	34.367	4.77	2.18	42.2		31.6	71.3	1000	4.02	34.297	5.21	27.247	83.4	1.425
1362	3.003	34.459	4.55	2.19	48.7		31.8	61.6	1200	3.33	34.365	4.78	27.369	71.7	1.597
1414	2.985	34.465	4.61	2.21	51.5	0.01	32.3	61.0							

RV MELVILLE CATO EXPEDITION VI 34

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 56.7S	33 51.5W	11/26/72	0214 0437 GMT	5782M	340	16KT	1	220 6 3

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.51	35.765	4.87	0.08	1.0	0.00	0.1	249.9	0	19.51	35.765	4.87	25.491	249.9	0.000
31	19.05	35.761	5.16	0.07	0.8	0.00	0.0	238.4	10	19.42	35.757	4.95	25.510	248.1	0.025
62	17.97	35.812	5.57	0.07	1.0	0.00	0.0	209.3	20	19.27	35.756	5.04	25.548	244.5	0.050
103	17.18	35.828	5.24	0.13	1.0	0.01	0.6	189.8	30	19.05	35.759	5.15	25.605	239.0	0.074
144	16.59	35.752	5.21	0.20	1.0	0.02	1.3	182.0	50	18.39	35.789	5.44	25.797	220.9	0.120
161A	16.06	35.676	5.31	0.18	1.3	0.17	0.9	175.8	75	17.67	35.824	5.50	26.002	201.3	0.173
185	15.77	35.641	5.29	0.22	1.2	0.10	1.5	172.1	100	17.22	35.828	5.28	26.114	190.7	0.223
264A	14.53	35.520	5.10	0.48	2.0	0.02	5.6	154.8	125	16.91	35.802	5.22	26.168	185.5	0.271
367A	13.57	35.384	5.09	0.57	2.7	0.03	7.8	145.4	150	16.40	35.723	5.25	26.229	179.8	0.318
470A	11.16	34.986	4.78	1.04	5.9	0.01	14.5	130.0	200	15.53	35.616	5.26	26.345	168.7	0.408
573A	8.67	34.671	4.71	1.37	10.3	0.01	20.8	113.0	250	14.75	35.540	5.13	26.461	157.8	0.493
677A	6.43	34.447	4.90	1.67	16.0		24.8	99.0	300	14.23	35.489	5.10	26.533	151.0	0.574
780A	5.06	34.343	5.08	1.89	21.7		28.0	90.6	400	12.88	35.264	4.99	26.639	140.9	0.730
883A	4.26	34.315	5.06	1.98	28.2	0.03	29.2	84.3	500	10.42	34.884	4.76	26.807	125.0	0.874
1088A	3.32	34.388	4.67	2.13	45.1	0.03	32.0	69.8	600	8.03	34.602	4.75	26.976	109.0	1.002
1292A	2.98	34.516	4.41	2.17	56.4	0.02	32.5	57.1	700	6.06	34.416	4.95	27.105	96.8	1.115
1498A	2.83	34.641	4.50	2.02	58.1	0.02	30.8	46.4	800	4.87	34.334	5.08	27.183	89.3	1.217
1702A	2.80	34.731	4.80	1.88	55.2		27.50	39.4	1000	3.63	34.345	4.86	27.324	76.1	1.399
2009A	2.79	34.821	5.22	1.67	47.7		27.70	32.5	1200	3.08	34.456	4.50	27.465	62.6	1.554
2316A	2.85	34.880	5.56	1.49	38.7	0.02	22.5	28.6	1500	2.83	34.643	4.50	27.637	46.3	1.744
2521A	2.83	34.898	5.68	1.43	36.8	0.03	21.6	27.0	1750	2.80	34.749	4.87	27.724	38.1	1.876
2726A	2.796	34.908	5.75	1.40	35.8	0.01	21.4	26.0	2000	2.79	34.819	5.21	27.781	32.6	1.995
3035A	2.654	34.906	5.78	1.39	37.8		21.0	24.9	2250	2.84	34.870	5.50	27.818	29.2	2.107
3345A	2.392	34.884	5.79	1.45	46.4		21.8	24.4	2500	2.83	34.896	5.67	27.839	27.1	2.217
3657A	1.751	34.822		1.68	71.8		25.2	24.3	2750	2.79	34.908	5.75	27.853	25.9	2.327
3761A	1.673	34.814	5.54	1.69	75.1	0.02	25.4	24.3	3000	2.68	34.906	5.78	27.862	25.0	2.436
									3250	2.50	34.893	5.79	27.867	24.5	2.544
									3500	2.06	34.850	5.73	27.869	24.4	2.648
									3750	1.68	34.814	5.55	27.870	24.3	2.747

RV MELVILLE CATO EXPEDITION VI

CATO EXPEDITION VI

33 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 26.5S	35 19.8W	11/25/72	1051 GMT

Z	T	S	SIGMA T	DT	DD
0	19.42	36.04	25.724	227.7	0.000
10	19.42	36.05	25.732	227.0	0.023
20	19.40	36.04	25.730	227.2	0.046
30	19.41	36.05	25.735	226.7	0.068
40	19.42	36.06	25.740	226.3	0.091
50	19.35	36.05	25.750	225.3	0.114
60	18.30	35.95	25.942	207.1	0.136
70	17.96	35.88	25.973	204.1	0.156
80	17.57	35.84	26.038	197.9	0.177
90	17.39	35.83	26.074	194.5	0.197
100	17.17	35.83	26.127	189.4	0.216
125	16.65	35.77	26.205	182.1	0.264
150	16.29	35.74	26.267	176.2	0.309
200	15.56	35.63	26.350	168.4	0.398
250	14.95	35.58	26.447	159.1	0.484
300	14.35	35.50	26.516	152.5	0.566
350	13.93	35.46	26.575	147.0	0.645
400	13.25	35.31	26.600	144.6	0.723
450	11.84	35.08	26.700	135.1	0.799
500	10.98	34.96	26.767	128.8	0.871
550	9.95	34.77	26.801	125.6	0.940
600	8.71	34.64	26.903	115.9	1.006
650	7.53	34.50	26.971	109.4	1.068
700	6.46	34.43	27.065	100.6	1.126
750	5.54	34.34	27.111	96.2	1.180
800	5.17	34.30	27.123	95.0	1.232
850	4.81	34.31	27.173	90.4	1.283
900	4.55	34.31	27.201	87.6	1.332
950	4.32	34.31	27.226	85.3	1.380
1000	4.04	34.31	27.256	82.5	1.427
1100	3.63	34.33	27.313	77.0	1.515
1200	3.37	34.37	27.370	71.6	1.598
1300	3.14	34.42	27.432	65.8	1.676
1400	3.01	34.45	27.468	62.4	1.749
1429	2.94	34.47	27.490	60.3	1.770

34 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
28 56.7S	33 51.5W	11/26/72	0042 GMT

Z	T	S	SIGMA T	DT	DD
0	19.57	35.80	25.502	248.8	0.000
10	19.53	35.79	25.505	248.6	0.025
20	19.11	35.77	25.599	239.7	0.049
30	19.04	35.76	25.609	238.7	0.073
40	18.95	35.76	25.632	236.5	0.097
50	18.38	35.76	25.776	222.8	0.120
60	18.14	35.77	25.851	215.6	0.142
70	17.86	35.81	25.944	206.9	0.164
80	17.52	35.79	26.012	200.4	0.184
90	17.33	35.83	26.089	193.1	0.204
100	17.17	35.83	26.127	189.4	0.224
125	16.84	35.78	26.168	185.6	0.272
150	16.52	35.71	26.190	183.5	0.319
200A	15.42	35.63	26.381	165.4	0.409
250A	14.64	35.54	26.484	155.6	0.493
300A	14.26	35.49	26.528	151.4	0.573
350A	13.81	35.43	26.577	146.8	0.653
400A	12.67	35.20	26.632	141.6	0.730
450A	11.59	35.03	26.709	134.3	0.804
500A	10.34	34.86	26.803	125.3	0.875
550A	9.30	34.71	26.863	119.7	0.942
600A	8.11	34.59	26.956	110.9	1.005
650A	7.33	34.51	27.008	106.0	1.064
700A	6.10	34.42	27.104	96.9	1.120
750A	5.42	34.37	27.149	92.6	1.172
800A	4.91	34.34	27.185	89.2	1.222
850A	4.40	34.32	27.226	85.3	1.270
900A	4.10	34.32	27.258	82.3	1.316
950A	3.79	34.32	27.289	79.3	1.360
1000A	3.55	34.35	27.337	74.8	1.403
1100A	3.29	34.41	27.410	67.9	1.482
1200A	3.08	34.47	27.477	61.5	1.555
1300A	2.97	34.52	27.527	56.8	1.622
1400A	2.89	34.59	27.590	50.8	1.685
1500A	2.85	34.64	27.634	46.7	1.743
1600A	2.83	34.69	27.675	42.7	1.798
1700A	2.80	34.73	27.710	39.4	1.850
1800A	2.80	34.76	27.734	37.2	1.900
1900A	2.78	34.79	27.759	34.7	1.948
2000A	2.80	34.82	27.782	32.7	1.994
2100A	2.81	34.83	27.789	32.0	2.040
2200A	2.83	34.85	27.803	30.6	2.085
2300A	2.84	34.87	27.818	29.2	2.130
2400A	2.84	34.87	27.818	29.2	2.175
2500A	2.85	34.90	27.841	27.0	2.220
2600A	2.81	34.90	27.844	26.7	2.263
2700A	2.80	34.90	27.845	26.6	2.307
2800A	2.76	34.91	27.857	25.5	2.351
2900A	2.72	34.91	27.860	25.2	2.395
3000A	2.68	34.90	27.856	25.6	2.438
3100A	2.65	34.90	27.859	25.3	2.483
3200A	2.53	34.90	27.869	24.4	2.526
3300A	2.47	34.89	27.866	24.6	2.569
3400A	2.27	34.88	27.875	23.8	2.612
3500A	2.13	34.86	27.871	24.2	2.653
3600A	1.94	34.84	27.870	24.3	2.693
3700A	1.72	34.82	27.871	24.2	2.732
3787A	1.62	34.81	27.870	24.2	2.765

RV MELVILLE CATO EXPEDITION VI 35

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 56.2S	31 23.9W	11/26/72	2138 2354 GMT	4078M	040	35KT	2	040 14

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	19.46	35.926	5.36	0.06	1.0	0.00	0.0	237.0
31	19.49	35.921	5.36	0.05	0.8	0.00	0.0	238.1
62	17.47	35.777	5.64	0.09	1.0	0.00	0.0	200.2
94	16.88	35.772	5.51	0.13	1.0	0.00	0.0	187.1
125	16.02	35.678	5.15	0.32	1.5	0.04	2.8	174.8
144A	15.95 V	35.677 V	5.24V	0.31	1.4	0.04	2.6	
154	15.44	35.607	5.10	0.40	1.6	0.01	3.8	167.5
247A	14.34	35.435	5.05	0.56	2.1	0.02	6.2	157.1
350A	13.53	35.365	5.04	0.63	2.7	0.02	8.2	146.0
453A	11.53	35.041	4.85	1.02	5.0	0.01	13.4	132.4
583A	8.53	34.649	4.83	1.41	9.7	0.01	21.0	112.6
737A	5.68	34.367	5.20	1.79	16.2	0.01	26.0	95.8
865A	4.32	34.270	5.45	1.95	22.4		28.0	88.3
1070A	3.37	34.308	5.11	2.13	36.7		31.4	76.3
1275A	3.02	34.435	4.56	2.19	51.2		32.0	63.6
1480A	2.82	34.563	4.45	2.19	63.2		31.7	52.2
1685A	2.79	34.688	4.56	2.00	58.6	0.01	29.6	42.5
1992A	2.79	34.787	5.06	1.79	51.2		26.0	35.1
2301A	2.80	34.853	5.47	1.57	42.7		23.0	30.2
2506A	2.79	34.880	5.59	1.41	39.0		22.5	28.0
2712A	2.76	34.895	5.69	1.42	37.3		21.4	26.6
3021A	2.60	34.893	5.77	1.41	41.1	0.01	21.5	25.5
3331A	2.300	34.874	5.69	1.56	51.0		22.8	24.5
3642A	1.845	34.827	5.51	1.70	69.6		25.0	24.6
3954A	1.364	34.768	5.45U	1.94	93.1		27.6	25.7
4058A	1.138	34.747	5.19	1.99	102.3	0.01	28.5	25.8

Z	T	S	O2	SIGT	DT	DD
0	19.46	35.926	5.36	25.627	237.0	0.000
10	19.47	35.923	5.36	25.623	237.3	0.024
20	19.48	35.921	5.36	25.620	237.7	0.048
30	19.49	35.920	5.36	25.616	238.0	0.071
50	18.29	35.827	5.54	25.851	215.7	0.117
75	17.16	35.773	5.59	26.087	193.3	0.169
100	16.71	35.755	5.44	26.179	184.5	0.217
125	16.02	35.678	5.15	26.281	174.8	0.262
150	15.51	35.615	5.11	26.350	168.3	0.306
200	14.80	35.510	5.08	26.426	161.1	0.391
250	14.32	35.433	5.05	26.471	156.8	0.474
300	13.97	35.409	5.04	26.527	151.5	0.555
400	12.65	35.221	4.95	26.652	139.7	0.711
500	10.44	34.886	4.84	26.806	125.1	0.854
600	8.16	34.608	4.86	26.961	110.3	0.983
700	6.27	34.418	5.10	27.080	99.2	1.098
800	4.92	34.308	5.35	27.158	91.7	1.202
1000	3.58	34.280	5.29	27.278	80.4	1.391
1200	3.10	34.384	4.75	27.406	68.2	1.556
1500	2.82	34.578	4.45	27.586	51.2	1.761
1750	2.79	34.716	4.65	27.699	40.5	1.902
2000	2.79	34.789	5.07	27.758	34.9	2.027
2250	2.80	34.844	5.42	27.801	30.8	2.143
2500	2.79	34.879	5.59	27.830	28.1	2.256
2750	2.75	34.895	5.71	27.846	26.5	2.366
3000	2.62	34.893	5.77	27.857	25.5	2.476
3250	2.39	34.880	5.72	27.865	24.7	2.583
3500	2.06	34.849	5.60	27.867	24.5	2.687
3750	1.70	34.808	5.44	27.863	24.9	2.787
4000	1.27	34.759	5.24	27.855	25.7	2.881

RV MELVILLE CATO EXPEDITION VI 36

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 39.2S	28 51.1W	11/27/72	1848 GMT	3479M	230	40KT	6	230 25

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	18.00 C	35.88 C						205.1
60	18.00 C	35.88 C						205.1
115	17.20	35.802	5.45	0.12	1.0	0.00	0.0	192.2
216	15.08	35.561	5.25	0.37	1.6	0.02	3.7	163.2
316	14.01	35.454	5.10	0.49	2.3	0.01	6.8	149.0
415	12.44	35.185	4.99	0.83	3.6		14.6	138.4
515	10.44	34.887	4.79	1.10	6.0		15.9	125.0
614	8.11	34.594	4.82	1.45	10.1		20.2U	110.6
713	5.95	34.370	5.34	1.70	13.2		22.8U	98.8
813	4.95	34.296	5.46	1.81	17.5	0.02	25.1U	92.9
911	4.25	34.257	5.32	1.93	20.9		25.7U	88.5
1108	3.26	34.297	5.14	2.12	36.1		28.0U	76.1
1305	2.92	34.410	4.63	2.22	48.5		28.1U	64.6
1503	2.80	34.532	4.41	2.19	58.6		29.1U	54.4
1800	2.80	34.713	4.50	1.98	56.1		26.8U	40.7
2100	2.83	34.804	4.92	1.73	50.6	0.00	24.4	34.1
2455	2.793	34.866	5.46	1.55	41.1		21.7	29.1
2657	2.76	34.888	5.51U	1.47	40.2		21.0	27.2
2812	2.670	34.888	5.63	1.46	41.4		21.0	26.4
3022	2.514	34.879	5.63	1.50	45.7		21.4	25.8
3341	2.150	34.845	5.56	1.61	59.2		22.7	25.5
3449	2.045	34.836	5.44	1.64	64.4	0.00	23.2	25.4
3500	2.01	34.832						25.4

Z	T	S	O2	SIGT	DT	DD
0	18.00	35.880		25.963	205.1	0.000
10	18.00	35.879		25.963	205.1	0.021
20	18.00	35.879		25.963	205.1	0.041
30	18.00	35.879		25.963	205.1	0.062
50	18.00	35.879		25.963	205.1	0.103
75	17.73	35.852		26.008	200.7	0.154
100	17.30	35.812		26.082	193.7	0.204
125	17.02	35.779	5.43	26.125	189.7	0.253
150	16.55	35.723	5.38	26.194	183.1	0.301
200	15.46	35.601	5.28	26.349	168.4	0.392
250	14.69	35.528	5.19	26.465	157.4	0.476
300	14.16	35.473	5.12	26.536	150.7	0.557
400	12.71	35.231	5.01	26.649	140.0	0.712
500	10.76	34.932	4.82	26.784	127.1	0.857
600	8.44	34.633	4.82	26.938	112.6	0.988
700	6.20	34.393	5.27	27.069	100.1	1.105
800	5.04	34.302	5.44	27.139	93.5	1.211
1000	3.73	34.261	5.25	27.248	83.2	1.405
1200	3.05	34.346	4.90	27.381	70.6	1.575
1500	2.80	34.531	4.41	27.551	54.6	1.789
1750	2.80	34.688	4.48	27.675	42.7	1.936
2000	2.82	34.780	4.76	27.748	35.8	2.064
2250	2.82	34.835	5.17	27.792	31.7	2.184
2500	2.79	34.872	5.50	27.824	28.6	2.298
2750	2.71	34.888	5.62	27.844	26.7	2.409
3000	2.53	34.880	5.63	27.853	25.9	2.518
3250	2.26	34.854	5.58	27.856	25.5	2.625
3500	2.01	34.832		27.858	25.4	2.729

C) THESE VALUES HAVE BEEN ENTERED FROM THE STD AS NO NANSEN BOTTLES WERE PLACED ON THE WIRE ABOVE 115 METERS.

CATO EXPEDITION VI

35 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 56.2S	31 23.9W	11/26/72	1955 GMT

Z	T	S	SIGMA T	DT	DD
0	19.42	35.88	25.602	239.3	0.000
10	19.43	35.88	25.600	239.6	0.024
20	19.41	35.89	25.613	238.3	0.048
30	19.41	35.89	25.613	238.3	0.072
40	19.36	35.86	25.603	239.3	0.096
50	18.31	35.74	25.779	222.6	0.119
60	17.64	35.78	25.975	203.9	0.141
70	17.36	35.80	26.058	196.0	0.161
80	17.08	35.82	26.141	188.1	0.180
90	16.87	35.77	26.153	187.0	0.199
100	16.63	35.76	26.202	182.3	0.218
125	15.98	35.66	26.277	175.3	0.264
150	15.50	35.58	26.325	170.7	0.308
200A	15.08	35.58	26.418	161.8	0.394
250A	14.33	35.46	26.490	155.1	0.476
300A	14.17	35.47	26.532	151.1	0.557
350A	13.52	35.36	26.583	146.2	0.636
400A	12.71	35.22	26.639	140.9	0.713
450A	11.78	35.04	26.681	137.0	0.788
500A	10.41	34.85	26.783	127.2	0.859
550A	9.24	34.74	26.896	116.6	0.926
600A	8.29	34.55	26.898	116.4	0.990
650A	7.15	34.49	27.018	105.0	1.050
700A	6.38	34.41	27.059	101.1	1.107
750A	5.67	34.35	27.103	97.0	1.161
800A	4.84	34.27	27.137	93.7	1.213
850A	4.33	34.27	27.194	88.4	1.263
900A	4.09	34.28	27.227	85.2	1.311
950A	3.79	34.27	27.250	83.1	1.357
1000A	3.53	34.30	27.299	78.4	1.401
1100A	3.28	34.34	27.355	73.1	1.484
1200A	3.11	34.40	27.419	67.0	1.563
1300A	2.99	34.47	27.485	60.7	1.635
1400A	2.92	34.52	27.532	56.3	1.702
1500A	2.83	34.56	27.588	51.0	1.765
1600A	2.82	34.63	27.628	47.2	1.824
1700A	2.80	34.69	27.678	42.5	1.880
1800A	2.79	34.72	27.703	40.1	1.932
1900A	2.79	34.75	27.727	37.8	1.983
2000A	2.78	34.79	27.759	34.7	2.032
2100A	2.78	34.81	27.775	33.2	2.079
2200A	2.79	34.84	27.798	31.1	2.126
2300A	2.79	34.85	27.806	30.3	2.171
2400A	2.80	34.87	27.821	28.9	2.216
2500A	2.79	34.88	27.830	28.0	2.260
2600A	2.78	34.88	27.831	28.0	2.305
2700A	2.77	34.89	27.840	27.1	2.350
2800A	2.74	34.89	27.843	26.9	2.394
2900A	2.70	34.90	27.854	25.8	2.438
3000A	2.63	34.89	27.852	25.9	2.482
3100A	2.57	34.89	27.858	25.4	2.526
3200A	2.50	34.89	27.864	24.9	2.570
3300A	2.38	34.88	27.866	24.7	2.613
3400A	2.22	34.86	27.863	24.9	2.655
3500A	2.12	34.85	27.864	24.9	2.697
3600A	1.97	34.83	27.860	25.3	2.738
3700A	1.76	34.81	27.860	25.2	2.778
3800A	1.59	34.79	27.857	25.5	2.818
3900A	1.45	34.78	27.859	25.3	2.856
4000A	1.28	34.76	27.855	25.7	2.893
4088A	1.08	34.73	27.845	26.7	2.924

36 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 39.2S	28 51.1W	11/27/72	1642 GMT

Z	T	S	SIGMA T	DT	DD
0	18.00	35.88	25.963	205.1	0.000
10	17.99	35.88	25.965	204.8	0.021
20	18.01	35.88	25.960	205.3	0.041
30	18.01	35.88	25.960	205.3	0.062
40	18.00	35.88	25.963	205.1	0.082
50	16.00	35.88	25.963	205.1	0.103
60	18.00	35.88	25.963	205.1	0.124
70	17.96	35.88	25.973	204.1	0.144
80	17.94	35.87	25.970	204.4	0.165
90	17.71	35.83	25.996	201.9	0.186
100	17.18	35.78	26.086	193.3	0.206
125	16.67	35.72	26.162	186.1	0.254
150	16.01	35.63	26.247	178.1	0.301
200	15.20	35.57	26.384	165.1	0.389
250	14.62	35.53	26.481	155.9	0.473
300	14.26	35.48	26.520	152.2	0.554
350	13.81	35.43	26.577	146.8	0.633
400	13.23	35.31	26.604	144.2	0.711
450	12.15	35.09	26.649	140.0	0.788
500	10.95	34.92	26.741	131.2	0.862
550	9.86	34.77	26.816	124.1	0.931
600	8.85	34.64	26.881	118.0	0.998
650	7.74	34.50	26.941	112.3	1.061
700	6.73	34.43	27.028	104.0	1.120
750	5.80	34.32	27.063	100.8	1.177
800	5.19	34.28	27.105	96.8	1.231
850	4.75	34.26	27.140	93.5	1.283
900	4.31	34.27	27.196	88.2	1.333
950	4.09	34.24	27.195	88.2	1.381
1000	3.84	34.26	27.237	84.3	1.428
1100	3.34	34.29	27.310	77.4	1.517
1200	3.09	34.34	27.373	71.4	1.600
1300	2.93	34.40	27.435	65.5	1.676
1400	2.83	34.48	27.508	58.6	1.747
1500	2.78	34.54	27.560	53.6	1.812
1600	2.77	34.61	27.617	48.3	1.873
1700	2.77	34.65	27.649	45.2	1.930
1800	2.78	34.70	27.688	41.5	1.984
1900	2.79	34.74	27.719	38.6	2.036
2000	2.81	34.77	27.741	36.5	2.087
2100	2.82	34.80	27.764	34.3	2.135
2200	2.81	34.83	27.789	32.0	2.183
2300	2.82	34.84	27.796	31.3	2.229
2400	2.80	34.86	27.813	29.6	2.275
2500	2.80	34.87	27.821	28.9	2.320
2600	2.78	34.89	27.839	27.2	2.365
2700	2.73	34.89	27.844	26.8	2.409
2800	2.68	34.89	27.848	26.4	2.453
2900	2.60	34.89	27.855	25.7	2.496
3000	2.53	34.88	27.853	25.9	2.539
3100	2.46	34.88	27.859	25.3	2.582
3200	2.39	34.87	27.857	25.5	2.625
3300	2.20	34.85	27.857	25.5	2.668
3400	2.09	34.84	27.858	25.4	2.709
3484	2.00	34.83	27.857	25.5	2.744

RV MELVILLE CATO EXPEDITION VI 37

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 27.9S	28 13.0W	11/28/72	1015 1250 GMT	4085M	210	17KT	0	200 10 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	17.82	35.738	5.67	0.12	1.6	0.00	0.0	211.2
41	17.73	35.760	5.53	0.11	1.2	0.00	0.0	207.5
82	17.18	35.735	5.62	0.10	1.3	0.00	0.0	196.6
124	16.13	35.656	5.41	0.21	1.6	0.06	1.0	178.8
166	15.10	35.530	5.22	0.38	1.7	0.01	4.0	165.9
207	14.59	35.486	5.14	0.47	2.1	0.00	5.3	158.5
233A		35.506 V	5.13V	0.46	2.2	0.01	5.7	
336A	13.41	35.351	5.07	0.65	3.0	0.01	8.3	144.7
439A	11.77	35.063	4.67	0.88	4.8	0.01	12.3	135.1
542A	9.13	34.723	4.89	1.37	8.2	0.00	18.2	116.1
645A	6.80	34.445	5.18	1.60	11.7	0.00	25.5	103.8
749A	5.10	34.281	5.63	1.80	14.9	0.03	27.2	95.7
851A	4.43	34.266	5.56	1.95	20.2	0.01	25.0U	89.7
1057A	3.46	34.299	5.15	2.12	34.7	0.02	24.4U	77.8
1261A	2.91	34.381	4.75	2.22	48.7	0.01	22.7U	66.7
1466A	2.79	34.521	4.40	2.22	59.0	0.00	20.8U	55.1
1671A	2.78	34.642	4.49	2.10	59.6	0.00	23.7U	45.9
1979A	2.80	34.752	4.94	1.84	53.6	0.02	25.2	37.8
2286A	2.82	34.839	5.34	1.57	45.5	0.00	22.8	31.4
2492A	2.80	34.869	5.48	1.54	42.2	0.00	22.0	29.0
2697A	2.76	34.878	5.59	1.50	41.2	0.01	20.9	27.9
3007A	2.565	34.882	5.64	1.50	45.2	0.00	21.2	26.0
3316A	2.167	34.842	5.56	1.60	57.5	0.00	22.7	25.9
3626A	1.56	34.785	5.38	1.83	83.6	0.00	25.1	25.7
3937A	1.219	34.756	5.38U	1.98	96.4	0.00	25.0U	25.6
4041A	1.162	34.737	5.21	1.99	100.4	0.00	21.1U	26.7

Z	T	S	O2	SIGT	DT	DD
0	17.82	35.738	5.67	25.899	211.2	0.000
10	17.80	35.733	5.61	25.901	210.9	0.021
20	17.78	35.735	5.57	25.908	210.2	0.042
30	17.75	35.743	5.54	25.920	209.2	0.063
50	17.65	35.758	5.55	25.957	205.7	0.105
75	17.31	35.742	5.61	26.028	198.9	0.156
100	16.76	35.706	5.55	26.131	189.1	0.205
125	16.10	35.652	5.40	26.243	178.5	0.252
150	15.46	35.575	5.28	26.330	170.2	0.297
200	14.66	35.490	5.15	26.443	159.5	0.382
250	14.21	35.456	5.11	26.512	153.0	0.463
300	13.76	35.402	5.09	26.567	147.7	0.542
400	12.49	35.185	4.94	26.657	139.2	0.695
500	10.25	34.857	4.88	26.817	124.0	0.838
600	7.76	34.555	5.03	26.981	108.5	0.965
700	5.80	34.342	5.44	27.080	99.1	1.078
800	4.70	34.265	5.60	27.149	92.6	1.183
1000	3.68	34.284	5.28	27.271	81.0	1.373
1200	3.03	34.352	4.87	27.387	70.0	1.540
1500	2.79	34.544	4.41	27.562	53.4	1.751
1750	2.78	34.676	4.59	27.668	43.4	1.897
2000	2.80	34.759	4.97	27.733	37.3	2.028
2250	2.82	34.831	5.30	27.788	32.0	2.150
2500	2.80	34.869	5.49	27.821	28.9	2.265
2750	2.74	34.879	5.60	27.835	27.6	2.377
3000	2.57	34.881	5.64	27.851	26.0	2.488
3250	2.27	34.852	5.59	27.853	25.9	2.596
3500	1.80	34.807	5.46	27.854	25.8	2.699
3750	1.39	34.771	5.32	27.855	25.7	2.795
4000	1.18	34.748	5.22	27.852	26.2	2.885

RV MELVILLE CATO EXPEDITION VI 38

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 29.9S	26 29.2W	11/29/72	0058 0307 GMT	4435M	260	7KT	1	240 3 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	17.87	35.608	5.46	0.12	1.3	0.01	0.0	221.8
21	17.84	35.619	5.53	0.10	1.0	0.00	0.0	220.3
41	17.75	35.615	5.54	0.10	1.0	0.00	0.0	218.5
62	16.90	35.664	5.56	0.17	1.2	0.00	0.0	195.4
82	16.07	35.624	5.44	0.20	1.2	0.00	0.3	179.9
103	15.34	35.544	5.25	0.36	1.5	0.00	2.9	169.9
124	14.93	35.489	5.12	0.44	1.7	0.00	4.2	165.3
155	14.55	35.446	5.08	0.50	1.9	0.00	5.2	160.6
186A	14.21	35.402	5.07	0.56	2.3		6.1	156.9
206	14.02	35.389	4.94	0.57	2.2	0.00	6.7	154.0
290A	13.57	35.326	5.18	0.63	2.3		7.4	149.7
393A	12.05	35.124	5.01	0.86	3.9		11.4	135.7
496A	9.83	34.808	4.81	1.28	7.5		17.6	120.9
652A	6.88	34.477	4.91	1.68	13.6		24.4	102.5
755A	5.17	34.323	5.27	1.83	17.9		26.9	93.3
909A	3.94	34.276	5.31	2.06	27.0		29.7	84.0
1114A	3.19	34.341	4.73	2.21	42.1		32.1	72.2
1320A	2.90	34.458	4.45	2.25	54.5		32.1	60.8
1525A	2.78	34.591	4.07U	2.20	61.1		32.1	49.8
1730A	2.79	34.695	4.52	2.04	59.1		29.9	42.0
2037A	2.79	34.797	4.85	1.74	52.0		26.3	34.3
2344A	2.76	34.851	5.20	1.60	45.8		24.1	30.0
2549A	2.73 E	34.876	5.45	1.56	42.1		23.1	27.8
2857A	2.71	34.893	5.69	1.48	39.3		21.6	26.4
3166A	2.513	34.886	5.64	1.55	45.2		22.4	25.3
3681A	1.748	34.810	5.39		75.1		26.1	25.1
4096A	1.21	34.754	5.25	1.99	98.9		29.1	25.7
4304A	1.057	34.734	5.07	2.06	105.4		30.0	26.2
4410A	1.038	34.731	4.99	2.09	109.4		30.0	26.3

Z	T	S	O2	SIGT	DT	DD
0	17.87	35.608	5.46	25.787	221.8	0.000
10	17.86	35.612	5.50	25.794	221.1	0.022
20	17.84	35.617	5.53	25.802	220.4	0.044
30	17.80	35.616	5.53	25.811	219.5	0.066
50	17.43	35.637	5.55	25.916	209.5	0.110
75	16.35	35.644	5.49	26.178	184.6	0.159
100	15.43	35.555	5.28	26.322	171.0	0.204
125	14.92	35.487	5.12	26.384	165.1	0.247
150	14.60	35.451	5.09	26.425	161.2	0.289
200	14.07	35.391	4.98	26.492	154.8	0.371
250	13.79	35.363	5.01	26.529	151.3	0.451
300	13.46	35.312	5.18	26.558	148.5	0.529
400	11.91	35.102	4.99	26.705	134.6	0.680
500	9.75	34.798	4.81	26.856	120.3	0.818
600	7.81	34.573	4.88	26.986	108.0	0.943
700	6.03	34.395	5.08	27.093	97.9	1.055
800	4.70	34.296	5.28	27.173	90.3	1.158
1000	3.52	34.294	5.08	27.295	78.7	1.344
1200	3.03	34.386	4.58	27.414	67.4	1.505
1500	2.79	34.577	4.48	27.588	51.0	1.709
1750	2.79	34.704	4.54	27.689	41.4	1.851
2000	2.79	34.787	4.80	27.756	35.0	1.976
2250	2.77	34.838	5.09	27.798	31.0	2.093
2500	2.74	34.869	5.39	27.827	28.3	2.206
2750	2.72	34.886	5.63	27.842	26.7	2.316
3000	2.64	34.892	5.67	27.853	25.8	2.427
3250	2.40	34.874	5.60	27.860	25.3	2.535
3500	2.04	34.838	5.48	27.860	25.2	2.640
3750	1.65	34.799	5.37	27.860	25.2	2.740
4000	1.32	34.765	5.29	27.856	25.5	2.834
4250	1.09	34.739	5.12	27.851	26.1	2.924

E) ALTERNATE VALUE, 2.69 DEGREES CELSIUS.

CATO EXPEDITION VI

37 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 27.9S	28 13.0W	11/28/72	0820 GMT

Z	T	S	SIGMA T	DT	DD
0	17.97	35.76	25.879	213.1	0.000
10	17.96	35.77	25.889	212.1	0.021
20	17.82	35.77	25.923	208.8	0.042
30	17.81	35.76	25.918	209.3	0.063
40	17.73	35.76	25.938	207.5	0.084
50	17.68	35.76	25.950	206.3	0.105
60	17.62	35.76	25.965	204.9	0.126
70	17.57	35.75	25.969	204.5	0.147
80	17.19	35.72	26.038	197.9	0.167
90	17.02	35.73	26.087	193.3	0.187
100	16.60	35.69	26.156	186.8	0.206
125	16.11	35.66	26.247	178.1	0.253
150	15.46	35.58	26.334	169.9	0.297
200	14.68	35.48	26.429	160.8	0.383
250A	14.35	35.49	26.509	153.3	0.464
300A	13.92	35.44	26.561	148.2	0.544
350A	13.31	35.32	26.596	145.0	0.622
400A	12.50	35.16	26.635	141.3	0.698
450A	11.48	35.03	26.729	132.3	0.772
500A	10.53	34.88	26.785	127.0	0.842
550A	9.25	34.71	26.871	118.9	0.910
600A	7.74	34.58	27.004	106.4	0.971
650A	6.67	34.43	27.036	103.3	1.029
700A	5.63	34.33	27.092	98.0	1.084
750A	5.07	34.30	27.135	93.9	1.136
800A	4.65	34.28	27.167	90.9	1.186
850A	4.45	34.28	27.189	88.8	1.235
900A	4.11	34.27	27.217	86.2	1.283
950A	3.94	34.28	27.242	83.7	1.330
1000A	3.73	34.30	27.280	80.2	1.375
1100A	3.32	34.31	27.328	75.7	1.461
1200A	3.08	34.35	27.382	70.5	1.542
1300A	2.92	34.42	27.452	63.9	1.617
1400A	2.87	34.48	27.504	58.9	1.688
1500A	2.83	34.54	27.556	54.0	1.753
1600A	2.81	34.60	27.605	49.4	1.815
1700A	2.80	34.65	27.646	45.5	1.873
1800A	2.81	34.70	27.685	41.8	1.928
1900A	2.82	34.74	27.716	38.9	1.980
2000A	2.81	34.76	27.733	37.3	2.031
2100A	2.79	34.80	27.766	34.1	2.080
2200A	2.80	34.82	27.782	32.7	2.127
2300A	2.81	34.84	27.797	31.2	2.174
2400A	2.80	34.85	27.805	30.4	2.220
2500A	2.79	34.87	27.822	28.8	2.265
2600A	2.77	34.88	27.832	27.9	2.310
2700A	2.72	34.88	27.836	27.4	2.355
2800A	2.66	34.88	27.842	26.9	2.399
2900A	2.60	34.88	27.847	26.4	2.443
3000A	2.53	34.87	27.845	26.6	2.487
3100A	2.41	34.86	27.848	26.4	2.531
3200A	2.32	34.87	27.863	24.9	2.573
3300A	2.17	34.84	27.852	26.0	2.616
3400A	1.97	34.82	27.852	26.0	2.657
3500A	1.79	34.81	27.858	25.5	2.697
3600A	1.64	34.80	27.861	25.1	2.736
3700A	1.46	34.78	27.858	25.4	2.774
3800A	1.33	34.77	27.859	25.3	2.810
3900A	1.23	34.76	27.858	25.4	2.846
4000A	1.18	34.76	27.862	25.0	2.881
4089A	1.13	34.75	27.857	25.5	2.912

38 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 29.9S	26 29.2W	11/28/72	2302 GMT

Z	T	S	SIGMA T	DT	DD
0	17.86	35.63	25.806	219.9	0.000
10	17.84	35.63	25.811	219.5	0.022
20	17.85	35.63	25.809	219.7	0.044
30	17.79	35.62	25.816	219.0	0.066
40	17.74	35.62	25.828	217.9	0.088
50	17.69	35.62	25.840	216.7	0.110
60	17.38	35.59	25.893	211.7	0.131
70	16.70	35.59	26.055	196.3	0.152
80	16.28	35.60	26.161	186.2	0.171
90	15.70	35.58	26.279	175.0	0.190
100	15.49	35.56	26.311	172.0	0.207
125	14.92	35.50	26.392	164.3	0.250
150	14.64	35.47	26.430	160.7	0.292
200	14.34	35.46	26.488	155.3	0.374
300A	13.50	35.37	26.595	145.1	0.531
350A	12.79	35.24	26.639	140.9	0.607
400A	12.04	35.10	26.677	137.3	0.681
450A	10.86	34.93	26.765	128.9	0.753
500A	9.89	34.82	26.850	120.9	0.821
550A	8.92	34.65	26.877	118.3	0.886
600A	7.59	34.53	26.986	108.0	0.948
650A	6.89	34.45	27.022	104.6	1.006
700A	6.00	34.37	27.077	99.4	1.062
750A	5.14	34.30	27.127	94.7	1.115
850A	4.38	34.29	27.204	87.4	1.214
900A	4.03	34.27	27.225	85.4	1.261
950A	3.76	34.28	27.261	82.0	1.307
1000A	3.56	34.29	27.288	79.4	1.351
1100A	3.24	34.33	27.351	73.5	1.436
1200A	3.02	34.38	27.411	67.8	1.514
1400A	2.84	34.51	27.531	56.4	1.655
1500A	2.77	34.59	27.601	49.8	1.717
1600A	2.77	34.63	27.633	46.7	1.775
1700A	2.76	34.69	27.681	42.1	1.830
2200A	2.72	34.83	27.797	31.2	2.075
2300A	2.73	34.85	27.812	29.8	2.120
2400A	2.74	34.86	27.819	29.1	2.165
2500A	2.73	34.87	27.828	28.3	2.209
3000A	2.64	34.89	27.852	26.0	2.430
3100A	2.58	34.89	27.857	25.5	2.474
3200A	2.49	34.89	27.865	24.8	2.518
3300A	2.37	34.87	27.859	25.3	2.561
3400A	2.18	34.86	27.867	24.6	2.603
3500A	2.03	34.83	27.855	25.7	2.645
3600A	1.87	34.83	27.867	24.5	2.685
3700A	1.73	34.81	27.862	25.0	2.725
3800A	1.61	34.79	27.855	25.7	2.764
3900A	1.46	34.78	27.858	25.4	2.802
4000A	1.32	34.76	27.852	26.0	2.839
4100A	1.20	34.76	27.861	25.2	2.876
4200A	1.12	34.74	27.850	26.2	2.911
4300A	1.05	34.73	27.847	26.5	2.947
4400A	1.03	34.73	27.848	26.4	2.982
4446A	1.02	34.72	27.841	27.1	2.999

RV MELVILLE CATO EXPEDITION VI 39

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 30.0S	25 14.9W	11/29/72	1125 1409 GMT	4290M	270	14KT	1	280 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	18.07	35.767	5.48	0.11	1.2	0.00	0.0	214.9	0	18.07	35.767	5.48	25.859	214.9	0.000
32	17.94	35.767	5.49	0.10	1.3	0.00	0.0	211.9	10	18.02	35.767	5.48	25.871	213.7	0.021
63	17.87	35.759	5.52	0.10	1.2	0.00	0.0	210.8	20	17.98	35.767	5.49	25.882	212.8	0.043
95	17.39	35.705	5.55	0.10	1.2	0.00	0.0	203.6	30	17.95	35.766	5.49	25.890	212.0	0.064
126	16.08	35.610	5.65	0.15	1.4	0.00	0.0	181.1	50	17.90	35.758	5.51	25.895	211.5	0.107
150A	15.69	35.587	5.53	0.20	1.4		0.9	174.3	75	17.77	35.744	5.53	25.917	209.4	0.160
157	15.42	35.569	5.53	0.12	1.4	0.25	1.1	169.8	100	17.18	35.687	5.57	26.017	200.0	0.212
254A	14.20	35.399	5.07	0.52	2.5		6.0	156.9	125	16.12	35.612	5.65	26.208	181.8	0.260
357A	12.89	35.242	5.04	0.64	3.3		9.1	142.7	150	15.69	35.587	5.53	26.287	174.3	0.306
461A	11.25	35.003	4.88	1.02	5.4		13.8	130.3	200	14.59	35.409	5.35	26.395	164.1	0.393
564A	8.91	34.695	4.80	1.31	9.1		19.6	114.9	250	14.20	35.392	5.09	26.465	157.4	0.477
667A	6.94	34.486	4.90	1.62	15.0		23.8	102.6	300	13.64	35.332	5.06	26.538	150.5	0.558
874A	4.75	34.329	5.05	1.94	23.6		28.9	88.3	400	12.28	35.153	4.98	26.674	137.6	0.711
1078A	3.38	34.308	5.09	2.09	37.0		31.1	76.4	500	10.38	34.881	4.83	26.813	124.5	0.853
1284A	2.91	34.427	4.56	2.21	52.4		31.2	63.3	600	8.17	34.611	4.83	26.963	110.2	0.981
1489A	2.80	34.561	4.39	2.17	60.4		31.4	52.2	700	6.48	34.446	4.93	27.073	99.8	1.097
1795A	2.78	34.728	4.70	1.90	58.2		28.7	39.4	800	5.35	34.362	5.01	27.150	92.5	1.203
2103A	2.80	34.815	5.09	1.67	51.4		25.6	33.0	1000	3.80	34.301	5.07	27.272	80.9	1.394
2308A	2.78	34.850	5.32	1.62	46.5		24.6	30.2	1200	3.02	34.370	4.79	27.402	68.6	1.560
2615A	2.76	34.884	5.57	1.45	41.4		22.6	27.5	1500	2.80	34.570	4.39	27.581	51.7	1.766
2924A	2.69	34.897	5.69	1.44	40.4		21.4	25.9	1750	2.78	34.708	4.63	27.694	41.0	1.908
3231A	2.483	34.888	5.70	1.42	46.6		22.0	24.9	2000	2.79	34.793	4.96	27.760	34.7	2.033
3542A	2.08	34.852	5.60	1.58	61.1		23.9	24.4	2250	2.79	34.841	5.26	27.800	30.9	2.149
3854A	1.573	34.798	5.44	1.74	81.8		26.2	24.8	2500	2.77	34.871	5.49	27.825	28.3	2.262
4166A	1.189	34.756	5.20	1.93	100.2		29.0	25.4	2750	2.74	34.890	5.64	27.843	26.7	2.373
4272A	0.858	34.721	5.12	2.06	117.7		30.4	26.0	3000	2.65	34.896	5.69	27.855	25.6	2.483
									3250	2.46	34.885	5.70	27.864	24.8	2.592
									3500	2.14	34.857	5.62	27.868	24.4	2.698
									3750	1.74	34.815	5.50	27.866	24.6	2.798
									4000	1.44	34.782	5.33	27.861	25.0	2.893
									4250	0.94	34.729	5.14	27.853	25.9	2.982

RV MELVILLE CATO EXPEDITION VI 40

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 40.9S	25 15.3W	11/30/72	0019 0320 GMT	4623M	320	24KT	1	340 4 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	17.49	35.661	5.57	0.13	1.4		0.1	209.1	0	17.49	35.661	5.57	25.920	209.1	0.000
21	17.49	35.658	5.48	0.14	1.3		0.0	209.3	10	17.49	35.659	5.51	25.919	209.2	0.021
42	17.39	35.640	5.50	0.14	1.5		0.0	208.3	20	17.49	35.657	5.48	25.918	209.3	0.042
63	17.20	35.623	5.46	0.16	1.2		0.0	205.2	30	17.46	35.650	5.49	25.921	209.1	0.063
83	16.66	35.630	5.60	0.16	1.5		0.0	192.5	50	17.35	35.641	5.48	25.941	207.1	0.105
104	15.84	35.610	5.54	0.24	1.4		0.2	175.9	75	16.91	35.626	5.55	26.034	198.3	0.156
136	15.16	35.512	5.26	0.40	1.7		3.2	168.5	100	15.99	35.615	5.55	26.240	178.8	0.204
177	14.54	35.45	5.22	0.52	2.1		4.7	160.1	125	15.35	35.547	5.36	26.335	169.7	0.248
209	14.44	35.459	5.30	0.49	2.1		4.8	157.4	150	14.90	35.481	5.25	26.382	165.2	0.291
312	13.71	35.406	5.28	0.58	2.3		6.7	146.6	200	14.45	35.454	5.27	26.459	158.0	0.375
399A	12.42	35.189	4.92	0.82	3.8		10.8	137.7	250	14.24	35.459	5.29	26.509	153.2	0.456
415	12.32	35.166	5.15	0.91	3.9		11.3	137.6	300	13.83	35.421	5.28	26.565	147.9	0.535
502A	10.26	34.867	4.83	1.20	6.6		16.4	123.5	400	12.41	35.187	4.93	26.673	137.7	0.687
605A	7.79	34.553	5.00	1.42	10.1		21.6	109.1	500	10.32	34.874	4.84	26.818	123.9	0.829
708A	6.19	34.392	4.99	1.75	13.1		24.6	100.1	600	7.90	34.567	4.99	26.968	109.7	0.956
811A	4.94	34.289	5.36	1.80	16.7		26.8	93.4	700	6.29	34.402	4.99	27.064	100.6	1.072
914A	4.20	34.258	5.44	1.95	21.8		28.4	88.0	800	5.05	34.298	5.32	27.135	94.0	1.179
1119A	3.34	34.300	5.08	2.18	35.9		31.7	76.6	1000	3.76	34.265	5.34	27.248	83.2	1.373
1324A	2.96	34.402	4.51	2.27	49.3		32.4	65.6	1200	3.15	34.336	4.85	27.364	72.3	1.545
1529A	2.77	34.540	4.27	2.24	60.0		32.5	53.5	1500	2.79	34.520	4.28	27.543	55.2	1.763
1733A	2.78	34.666	4.43	2.10	60.9		30.6	44.1	1750	2.78	34.675	4.44	27.667	43.5	1.911
2040A	2.84	34.785	4.68	1.85	53.8		27.3	35.6	2000	2.83	34.773	4.64	27.741	36.5	2.042
2346A	2.85	34.867	5.22	1.66	46.6		24.4	29.5	2250	2.85	34.847	5.06	27.799	31.0	2.161
2550A	2.79	34.872	5.37	1.60	43.7		23.6	28.6	2500	2.81	34.872	5.34	27.823	28.8	2.275
2857A	2.66	34.889	5.55	1.50	42.4		23.0	26.3	2750	2.72	34.884	5.50	27.840	27.1	2.387
3164A	2.378	34.872	5.55	1.56	50.9		23.3	25.2	3000	2.54	34.882	5.55	27.854	25.7	2.497
3472A	1.991	34.841	5.49	1.69	64.4		24.6	24.6	3250	2.28	34.863	5.54	27.862	25.0	2.603
3884A	1.472	34.766	5.19	1.88	87.0		27.3	25.0	3500	1.96	34.837	5.47	27.866	24.6	2.706
4195A	1.083	34.743	5.12	2.05	103.3		29.7	25.7	3750	1.64	34.803	5.29	27.864	24.9	2.803
4507A	0.818	34.714	5.03	2.15	115.4		31.5	26.3	4000	1.32	34.769	5.16	27.859	25.3	2.897
4611A	0.824	34.714	5.00	2.15	116.3		31.1	26.3	4250	1.02	34.737	5.10	27.854	25.8	2.985
									4500	0.82	34.715	5.03	27.849	26.3	3.070

CATO EXPEDITION VI

39 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 30.0S	25 14.9W	11/29/72	0949 GMT

Z	T	S	SIGMA T	DT	DD
3	18.15	35.82	25.880	213.0	0.000
10	18.09	35.82	25.895	211.5	0.021
20	18.08	35.82	25.897	211.3	0.042
30	18.09	35.83	25.902	210.8	0.064
40	18.08	35.82	25.897	211.3	0.085
50	18.06	35.82	25.902	210.8	0.106
60	18.00	35.81	25.909	210.2	0.127
70	18.00	35.80	25.902	210.9	0.149
80	17.97	35.82	25.924	208.7	0.170
90	17.80	35.79	25.943	206.9	0.191
100	17.48	35.75	25.991	202.4	0.212
125	16.43	35.66	26.172	185.2	0.261
150	15.68	35.65	26.338	169.5	0.307
200	14.87	35.52	26.419	161.8	0.392
250	14.35	35.46	26.485	155.5	0.475
300	13.78	35.39	26.552	149.1	0.555
350	13.11	35.30	26.621	142.6	0.632
400	12.40	35.19	26.677	137.3	0.707
450	11.37	35.02	26.742	131.1	0.780
500	10.21	34.87	26.834	122.5	0.849
550	9.22	34.76	26.915	114.8	0.913
600	8.36	34.63	26.949	111.5	0.975
650	7.60	34.56	27.008	105.9	1.035
700	6.45	34.44	27.074	99.7	1.092
750	5.89	34.41	27.122	95.1	1.146
800	5.37	34.38	27.163	91.3	1.197
850	4.82	34.34	27.195	88.2	1.247
900A	4.43	34.31	27.215	86.4	1.295
950A	4.04	34.30	27.248	83.2	1.342
1000A	3.65	34.29	27.280	80.2	1.387
1100A	3.17	34.32	27.350	73.6	1.471
1200A	2.97	34.38	27.416	67.3	1.549
1300A	2.89	34.45	27.479	61.4	1.622
1400A	2.84	34.52	27.539	55.6	1.689
1500A	2.83	34.57	27.580	51.8	1.752
1600A	2.80	34.62	27.622	47.8	1.812
1700A	2.79	34.69	27.679	42.4	1.867
1800A	2.80	34.73	27.710	39.4	1.919
1900A	2.80	34.76	27.734	37.2	1.970
2000A	2.80	34.79	27.758	34.9	2.018
2100A	2.80	34.82	27.782	32.7	2.066
2200A	2.80	34.84	27.797	31.1	2.112
2300A	2.80	34.86	27.813	29.6	2.157
2400A	2.79	34.88	27.830	28.0	2.201
2500A	2.78	34.88	27.831	28.0	2.245
2600A	2.77	34.90	27.848	26.4	2.289
2700A	2.77	34.91	27.856	25.6	2.332
2800A	2.75	34.92	27.866	24.7	2.375
2900A	2.72	34.92	27.868	24.4	2.417
3000A	2.64	34.91	27.867	24.5	2.460
3100A	2.59	34.91	27.872	24.1	2.503
3200A	2.49	34.90	27.873	24.0	2.545
3300A	2.38	34.90	27.882	23.1	2.587
3400A	2.28	34.88	27.874	23.9	2.628
3500A	2.07	34.86	27.876	23.7	2.669
3600A	1.92	34.85	27.880	23.4	2.709
3700A	1.74	34.83	27.878	23.6	2.747
3800A	1.61	34.81	27.871	24.2	2.785
3900A	1.48	34.80	27.873	24.0	2.822
4000A	1.36	34.79	27.873	24.0	2.858
4100A	1.24	34.76	27.858	25.4	2.894
4200A	0.91	34.73	27.856	25.6	2.928
4272A	0.84	34.73	27.860	25.2	2.952

40 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
33 40.9S	25 15.3W	11/29/72	2234 GMT

Z	T	S	SIGMA T	DT	DD
0	17.50	35.68	25.933	207.9	0.000
10	17.52	35.67	25.920	209.1	0.021
20	17.50	35.67	25.925	208.7	0.042
30	17.44	35.65	25.924	208.7	0.063
40	17.38	35.63	25.923	208.8	0.084
50	17.29	35.62	25.938	207.5	0.105
60	17.19	35.60	25.946	206.6	0.126
70	16.97	35.61	26.007	200.9	0.146
80	16.82	35.62	26.050	196.8	0.166
90	16.04	35.58	26.202	182.4	0.186
100	15.78	35.59	26.269	176.0	0.204
125	15.30	35.51	26.316	171.6	0.248
150	14.81	35.46	26.386	164.9	0.291
200	14.48	35.45	26.450	158.9	0.375
250	14.13	35.46	26.532	151.0	0.456
300	13.82	35.44	26.582	146.3	0.534
350	13.44	35.39	26.623	142.4	0.611
400	12.51	35.19	26.656	139.3	0.686
450A	11.41	34.96	26.688	136.3	0.760
500A	10.54	34.89	26.791	126.5	0.832
550A	9.14	34.69	26.873	118.7	0.898
600A	7.90	34.51	26.925	113.8	0.962
650A	6.95	34.47	27.030	103.9	1.021
700A	6.27	34.41	27.074	99.7	1.077
750A	5.55	34.34	27.109	96.4	1.131
800A	5.00	34.29	27.135	93.9	1.183
850A	4.54	34.26	27.163	91.3	1.234
900A	4.26	34.26	27.193	88.4	1.283
950A	3.96	34.26	27.225	85.4	1.331
1000A	3.79	34.27	27.250	83.1	1.377
1100A	3.41	34.29	27.303	78.0	1.466
1200A	3.13	34.33	27.361	72.5	1.549
1300A	3.02	34.40	27.427	66.2	1.627
1400A	2.89	34.46	27.487	60.6	1.699
1500A	2.82	34.53	27.549	54.7	1.766
1600A	2.77	34.58	27.593	50.5	1.828
1700A	2.79	34.64	27.639	46.2	1.887
1800A	2.80	34.69	27.678	42.5	1.942
1900A	2.82	34.74	27.716	38.9	1.995
2000A	2.83	34.78	27.747	35.9	2.045
2100A	2.84	34.80	27.762	34.5	2.094
2200A	2.84	34.83	27.786	32.2	2.142
2300A	2.83	34.84	27.795	31.4	2.188
2400A	2.82	34.86	27.812	29.8	2.234
2500A	2.77	34.87	27.824	28.6	2.279
2600A	2.75	34.88	27.834	27.7	2.324
2700A	2.69	34.88	27.839	27.2	2.368
2800A	2.66	34.89	27.850	26.2	2.412
2900A	2.63	34.88	27.845	26.7	2.456
3000A	2.54	34.89	27.860	25.2	2.499
3100A	2.45	34.88	27.860	25.2	2.542
3200A	2.34	34.87	27.861	25.1	2.585
3300A	2.23	34.87	27.871	24.2	2.626
3400A	2.11	34.84	27.856	25.6	2.668
3500A	1.97	34.84	27.868	24.5	2.708
3600A	1.83	34.82	27.863	25.0	2.748
3700A	1.70	34.81	27.865	24.8	2.787
3800A	1.56	34.80	27.867	24.6	2.825
3900A	1.46	34.80	27.874	23.9	2.862
4000A	1.36	34.77	27.857	25.5	2.899
4100A	1.24	34.76	27.858	25.4	2.935
4200A	1.08	34.75	27.861	25.2	2.970
4300A	0.91	34.73	27.856	25.6	3.004
4400A	0.83	34.72	27.853	25.9	3.037
4500A	0.81	34.71	27.846	26.5	3.070
4600A	0.82	34.71	27.846	26.6	3.104
4643A	0.81	34.71	27.846	26.5	3.118

RV MELVILLE CATO EXPEDITION VI 41

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 35.2S	32 15.5W	12/ 3/72	0019 0315 GMT	4558M	220	28KT	2	210 17

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	15.45	35.724	5.78	0.20	1.0		1.2	159.1
101	15.46	35.721	5.70	0.21	1.2		1.3	159.6
153	15.16	35.688	5.43	0.28	1.3		2.9	155.6
202	14.81	35.642	5.45	0.38	1.7		4.4	151.6
279	14.55	35.587	5.39	0.44	2.0		5.4	150.3
356	13.89	35.461	5.31	0.55	2.2		6.9	146.1
420A	12.64	35.220	5.01	0.71	3.6		10.4	139.6
458	11.58	35.047	4.94	0.97	4.6		12.9	132.9
523A	9.54	34.740	5.00	1.06	6.5		17.4	121.3
627A	6.32	34.358	5.59	1.31	10.6		22.5	104.2
730A	5.04	34.257	5.90	1.71	12.8		24.5	96.8
833A	4.42	34.218	5.96	1.72U	15.6		26.3	93.2
936A	3.92	34.224	5.79	1.71U	21.4		27.9	87.8
1090A	3.32	34.245	5.56	1.92U	30.5		29.8	80.6
1244A	2.90	34.314	5.11	1.98U	41.9		31.6	71.7
1449A	2.72	34.440	4.52	1.73U	56.7		32.0	60.7
1654A	2.69	34.566	4.26	2.07U	64.1		32.0	50.9
1961A	2.82	34.723	4.53	1.92U	63.0		29.6	40.1
2268A	2.93	34.826	5.03	1.92U	50.5		25.8	33.3
2472A	2.93	34.869	5.32	1.37U	45.8		23.7	30.1
2676A	2.76	34.870	5.36	1.36U	47.6		23.4	28.5
2984A	2.44	34.854	5.33	1.64U	56.9		23.4	27.1
3292A	1.774	34.780	4.96	1.83	86.3		27.8	27.6
3704A	1.127	34.730	4.93	1.99	110.1		30.9	27.0
4119A	0.526	34.694	5.04	1.75U	123.7		31.7	26.1
4432A	0.302	34.681	5.13	2.25	128.2		31.9	25.9
4537A	0.29	34.679	5.14	2.26	123.1		32.2	26.0

Z	T	S	O2	SIGT	DT	DD
0	15.45	35.724	5.78	26.446	159.1	0.000
10	15.45	35.723	5.77	26.446	159.2	0.016
20	15.45	35.722	5.76	26.446	159.2	0.032
30	15.45	35.722	5.76	26.445	159.3	0.048
50	15.45	35.721	5.74	26.444	159.4	0.080
75	15.46	35.721	5.72	26.443	159.5	0.120
100	15.46	35.720	5.70	26.442	159.6	0.161
125	15.34	35.707	5.57	26.459	157.9	0.201
150	15.18	35.689	5.44	26.481	155.9	0.242
200	14.82	35.643	5.45	26.524	151.8	0.321
250	14.65	35.610	5.42	26.537	150.6	0.400
300	14.44	35.565	5.37	26.548	149.5	0.479
400	13.10	35.305	5.10	26.627	142.1	0.635
500	10.28	34.845	4.98	26.803	125.3	0.780
600	7.06	34.434	5.42	26.985	108.1	0.907
700	5.28	34.274	5.84	27.089	98.3	1.019
800	4.58	34.226	5.94	27.131	94.3	1.123
1000	3.65	34.230	5.71	27.232	84.8	1.318
1200	3.00	34.291	5.25	27.342	74.3	1.493
1500	2.71	34.474	4.42	27.513	58.1	1.717
1750	2.72	34.621	4.29	27.629	47.1	1.873
2000	2.84	34.740	4.59	27.713	39.1	2.010
2250	2.93	34.821	5.00	27.771	33.6	2.137
2500	2.91	34.870	5.33	27.812	29.8	2.256
2750	2.70	34.868	5.35	27.829	28.1	2.371
3000	2.41	34.850	5.31	27.840	27.1	2.482
3250	1.87	34.790	5.01	27.836	27.5	2.588
3500	1.43	34.752	4.94	27.838	27.4	2.687
3750	1.05	34.725	4.94	27.843	26.9	2.778
4000	0.68	34.703	5.00	27.848	26.3	2.861
4250	0.40	34.687	5.08	27.852	26.0	2.935
4500	0.23	34.680	5.14	27.853	25.9	3.004

RV MELVILLE CATO EXPEDITION VI 42

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 30.0S	34 19.7W	12/ 3/72	1825 2055 GMT	4690M	180	14KT	1	180 6 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	15.40	35.667	5.87	0.22	1.2		1.3	162.2
10	15.38	35.666	5.88	0.21	1.2		1.3	161.9
31	15.33	35.665	5.88	0.20	1.2		1.3	160.9
62	15.28	35.664	5.83	0.22	1.2		1.4	159.9
93	15.25	35.666	5.81	0.24	1.2		1.6	159.1
125	15.06	35.669	5.72	0.30	1.4		2.2	154.9
156	14.90	35.642	5.60	0.35	1.5		3.2	153.5
207	14.42	35.578	5.54	0.43	1.7		4.6	148.3
260	14.21	35.533	5.57	0.44	1.7		4.8	147.3
312		35.470	5.45	0.51	2.0		5.8	
351A	13.51	35.383	5.32	0.61	2.4		7.4	144.3
454A	10.77	34.922	4.88	1.10	5.4		14.5	128.0
557A	7.70	34.512	5.26	1.39	8.5		20.5	110.9
660A	5.46	34.286	5.86	1.76U	13.2		24.9	99.4
763A	4.54	34.226	6.01	1.67	14.7		25.3	93.8
865A	4.08	34.225	5.90	1.83	18.8		26.4	89.3
1070A	3.30	34.252	5.55	2.05	30.5		30.2	79.9
1173A	2.96	34.296	5.27	2.12	37.0		30.7	73.6
1378A	2.71	34.410	4.69	2.24	53.0		32.7	62.9
1583A	2.69	34.531	4.39	2.24	62.2		32.7	53.6
1890A	2.81	34.693	4.46	2.05	62.2		29.4	42.3
2197A	2.87	34.789	4.89	1.85	57.6		26.3	35.6
2402A	2.82	34.826	5.09	1.76	53.6		25.8	32.4
2607A	2.66		5.16	1.71	56.7		25.0	
2915A	2.384	34.833	5.20	1.73	62.7		25.3	28.2
3325A	1.790		5.09	1.90	84.0		27.6	
3737A	1.169	34.736	5.04	2.05	102.4		28.9	26.8
4149A	0.475							
4563A	0.197	34.673	5.20	2.23	129.4		32.4	25.9
4668A	0.15	34.669	5.21	2.23	129.6		31.8	26.0

Z	T	S	O2	SIGT	DT	DD
0	15.40	35.667	5.87	26.414	162.2	0.000
10	15.38	35.666	5.88	26.418	161.9	0.016
20	15.36	35.664	5.88	26.423	161.4	0.032
30	15.33	35.664	5.88	26.428	160.9	0.049
50	15.30	35.663	5.85	26.435	160.2	0.081
75	15.27	35.661	5.82	26.440	159.8	0.121
100	15.21	35.667	5.79	26.456	158.2	0.162
125	15.06	35.669	5.72	26.491	154.9	0.202
150	14.93	35.648	5.62	26.504	153.7	0.241
200	14.49	35.586	5.55	26.554	149.0	0.320
250	14.24	35.539	5.57	26.570	147.5	0.397
300	14.03	35.500	5.49	26.585	146.0	0.475
400	12.36	35.176	5.07	26.675	137.4	0.626
500	9.37	34.720	4.99	26.859	120.0	0.765
600	6.63	34.396	5.52	27.014	105.4	0.887
700	5.00	34.252	5.92	27.105	96.8	0.996
800	4.34	34.223	5.99	27.154	92.1	1.099
1000	3.55	34.237	5.69	27.247	83.3	1.289
1200	2.90	34.311	5.19	27.366	72.1	1.460
1500	2.70	34.485	4.48	27.523	57.2	1.678
1750	2.75	34.626	4.43	27.630	47.0	1.833
2000	2.84	34.734	4.60	27.709	39.5	1.971
2250	2.87	34.801	4.95	27.760	34.7	2.099
2500	2.75	34.829	5.13	27.793	31.3	2.220
2750	2.54	34.832	5.18	27.814	29.1	2.336
3000	2.27	34.823	5.18	27.830	28.1	2.447
3250	1.91	34.792	5.11	27.834	27.7	2.552
3500	1.53	34.762	5.06	27.839	27.2	2.651
3750	1.14	34.734	5.04	27.844	26.8	2.744
4000	0.71	34.703	5.09	27.846	26.4	2.829
4250	0.38	34.682	5.14	27.849	26.1	2.905
4500	0.22	34.674	5.19	27.852	25.9	2.975

CATO EXPEDITION VI

41 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
36 35.2S	32 15.5W	12/02/72	2253 GMT

Z	T	S	SIGMA T	DT	DD
0	15.42	35.70	26.435	160.3	0.000
10	15.42	35.70	26.435	160.3	0.016
20	15.40	35.70	26.439	159.8	0.032
30	15.42	35.71	26.442	159.5	0.048
40	15.43	35.71	26.440	159.7	0.064
50	15.45	35.72	26.443	159.4	0.080
60	15.44	35.72	26.446	159.2	0.096
70	15.44	35.72	26.446	159.2	0.113
80	15.44	35.71	26.438	160.0	0.129
90	15.46	35.71	26.434	160.4	0.145
100	15.45	35.71	26.436	160.2	0.161
125	15.41	35.71	26.445	159.3	0.202
150	15.20	35.70	26.484	155.6	0.243
200	14.81	35.64	26.524	151.8	0.322
250	14.60	35.61	26.547	149.6	0.401
300	14.37	35.58	26.573	147.1	0.479
350	13.90	35.47	26.589	145.7	0.557
400	13.11	35.31	26.629	141.9	0.634
450	11.83	35.11	26.725	132.7	0.708
500A	10.35	34.81	26.763	129.2	0.779
550A	9.02	34.68	26.885	117.6	0.847
600A	7.19	34.42	26.957	110.8	0.909
650A	6.17	34.32	27.016	105.2	0.967
700A	5.27	34.26	27.080	99.2	1.023
750A	4.92	34.23	27.097	97.6	1.076
800A	4.58	34.21	27.119	95.5	1.128
850A	4.33	34.21	27.146	92.9	1.179
900A	4.12	34.22	27.176	90.0	1.229
950A	3.91	34.22	27.198	88.0	1.278
1000A	3.68	34.22	27.221	85.8	1.325
1100A	3.27	34.25	27.285	79.8	1.416
1200A	3.00	34.29	27.341	74.4	1.501
1300A	2.81	34.36	27.414	67.5	1.579
1400A	2.80	34.42	27.463	62.9	1.653
1500A	2.73	34.47	27.509	58.5	1.722
1600A	2.72	34.54	27.565	53.1	1.787
1700A	2.72	34.60	27.613	48.6	1.848
1800A	2.75	34.65	27.650	45.1	1.906
1900A	2.78	34.69	27.680	42.3	1.961
2000A	2.85	34.74	27.713	39.1	2.015
2100A	2.89	34.78	27.741	36.4	2.066
2200A	2.93	34.81	27.762	34.5	2.116
2300A	2.95	34.84	27.784	32.4	2.165
2400A	2.93	34.86	27.802	30.7	2.212
2500A	2.90	34.87	27.812	29.7	2.259
2600A	2.84	34.88	27.826	28.5	2.305
2700A	2.74	34.87	27.827	28.4	2.351
2800A	2.64	34.87	27.836	27.5	2.396
2900A	2.50	34.85	27.832	27.9	2.441
3000A	2.41	34.86	27.848	26.4	2.484
3100A	2.27	34.84	27.843	26.8	2.527
3200A	1.97	34.80	27.836	27.5	2.570
3300A	1.75	34.78	27.837	27.4	2.610
3400A	1.59	34.77	27.841	27.0	2.650
3500A	1.41	34.76	27.846	26.6	2.688
3600A	1.30	34.75	27.846	26.6	2.725
3700A	1.12	34.74	27.850	26.2	2.760
3800A	0.95	34.72	27.845	26.6	2.795
3900A	0.82	34.71	27.846	26.6	2.828
4000A	0.68	34.70	27.846	26.5	2.860
4200A	0.43	34.69	27.853	25.9	2.920
4300A	0.36	34.69	27.857	25.5	2.947
4400A	0.32	34.68	27.851	26.0	2.975
4500A	0.28	34.68	27.854	25.8	3.002
4558A	0.28	34.68	27.854	25.8	3.017

42 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 30.0S	34 19.7W	12/03/72	1653 GMT

Z	T	S	SIGMA T	DT	DD
0	15.42	35.68	26.419	161.7	0.000
10	15.39	35.67	26.418	161.8	0.016
20	15.38	35.67	26.421	161.6	0.032
30	15.37	35.68	26.431	160.6	0.049
40	15.38	35.65	26.405	163.1	0.065
50	15.27	35.65	26.430	160.7	0.081
60	15.26	35.65	26.432	160.5	0.097
70	15.25	35.66	26.442	159.6	0.114
80	15.25	35.67	26.450	158.8	0.130
90	15.25	35.67	26.450	158.8	0.146
100	15.20	35.66	26.453	158.5	0.162
125	15.04	35.67	26.497	154.4	0.202
150	14.97	35.64	26.489	155.1	0.242
200	14.45	35.58	26.556	148.7	0.320
250	14.26	35.56	26.582	146.3	0.398
300	14.04	35.51	26.590	145.5	0.474
350A	13.68	35.42	26.596	144.9	0.552
400A	12.51	35.19	26.656	139.3	0.628
450A	11.23	34.96	26.721	133.1	0.701
500A	9.83	34.78	26.829	122.9	0.771
550A	8.15	34.57	26.935	112.9	0.835
600A	6.32	34.34	27.012	105.6	0.894
650A	5.59	34.27	27.049	102.1	0.950
700A	4.97	34.24	27.099	97.4	1.004
750A	4.62	34.21	27.115	95.9	1.056
800A	4.40	34.21	27.139	93.6	1.107
850A	4.16	34.21	27.164	91.2	1.157
900A	3.92	34.21	27.189	88.8	1.206
950A	3.67	34.22	27.222	85.7	1.253
1000A	3.49	34.23	27.248	83.3	1.299
1100A	3.14	34.26	27.305	77.9	1.388
1200A	2.90	34.31	27.366	72.0	1.470
1300A	2.75	34.36	27.419	67.0	1.547
1400A	2.68	34.41	27.465	62.6	1.620
1500A	2.64	34.47	27.517	57.8	1.688
1600A	2.67	34.53	27.562	53.5	1.753
1700A	2.71	34.59	27.606	49.3	1.814
1800A	2.78	34.65	27.648	45.3	1.873
1900A	2.80	34.69	27.678	42.5	1.928
2000A	2.83	34.74	27.715	38.9	1.981
2100A	2.84	34.77	27.738	36.8	2.033
2200A	2.85	34.80	27.761	34.6	2.083
2300A	2.85	34.82	27.777	33.1	2.131
2400A	2.85	34.84	27.793	31.6	2.179
2500A	2.76	34.84	27.801	30.8	2.226
2600A	2.69	34.85	27.815	29.5	2.272
2700A	2.61	34.85	27.822	28.8	2.318
2800A	2.54	34.85	27.828	28.2	2.363
2900A	2.43	34.85	27.838	27.3	2.407
3000A	2.27	34.83	27.835	27.6	2.450
3100A	2.12	34.82	27.840	27.2	2.492
3200A	1.93	34.80	27.839	27.2	2.534
3300A	1.79	34.79	27.842	27.0	2.575
3400A	1.62	34.78	27.847	26.5	2.614
3500A	1.50	34.77	27.847	26.4	2.652
3600A	1.35	34.76	27.850	26.2	2.689
3700A	1.21	34.75	27.852	26.0	2.725
3800A	1.06	34.74	27.854	25.8	2.760
3900A	0.86	34.72	27.851	26.1	2.793
4000A	0.69	34.70	27.846	26.6	2.825
4100A	0.56	34.69	27.846	26.6	2.856
4200A	0.42	34.68	27.846	26.6	2.886
4300A	0.34	34.68	27.850	26.2	2.914
4400A	0.26	34.67	27.847	26.5	2.942
4500A	0.21	34.67	27.849	26.2	2.968
4600A	0.17	34.66	27.844	26.8	2.995
4693A	0.13	34.65	27.838	27.3	3.019

RV MELVILLE CATO EXPEDITION VI 43

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
39 18.0S	37 23.3W	12/ 4/72	1554 1909 GMT	5155M	230	6KT	1	130 4 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	14.96	34.716	6.32	0.49	1.5		4.7	222.4	0	14.96	34.716	6.32	25.781	222.4	0.000
21	12.55	34.707	6.29	0.48	1.3		4.5	175.6	10	13.53	34.702	6.31	26.073	194.7	0.021
42	12.40	34.712	6.43	0.50	1.5		4.6	172.4	20	12.61	34.707	6.29	26.261	176.8	0.039
63	12.24	34.730	6.23	0.54	2.1		5.1	168.1	30	12.49	34.710	6.36	26.288	174.2	0.057
84	10.80	34.733	6.12	0.74	3.0		9.4	142.4	50	12.34	34.719	6.37	26.325	170.8	0.092
105	10.46	34.734	6.07	0.80	3.3		10.0	136.6	75	11.43	34.730	6.16	26.506	153.5	0.133
137	9.40	34.595	6.15	0.90	3.5		12.2	129.8	100	10.50	34.739	6.08	26.680	137.1	0.170
179	8.51	34.548	5.92	1.14	4.8		15.6	119.8	125	9.82	34.652	6.12	26.730	132.3	0.204
210	8.13	34.542	6.04	1.16	5.2		15.5	114.7	150	9.07	34.571	6.07	26.791	126.6	0.237
262	7.33	34.491	5.88	1.33	7.1		18.7	107.4	200	8.24	34.544	6.00	26.900	116.2	0.299
340	5.29	34.256	6.09	1.63	9.9		23.8	99.7	250	7.54	34.510	5.93	26.977	108.9	0.358
417	4.49	34.194	6.22	1.73	12.6		25.0	95.7	300	6.32	34.373	5.95	27.038	103.2	0.413
519	4.01	34.187	6.14	1.83	16.8		26.8	91.4	400	4.60	34.201	6.20	27.109	96.4	0.517
578A	3.77	34.189	6.00	1.88	19.6		27.9	89.0	500	4.07	34.186	6.15	27.154	92.2	0.615
681A	3.35	34.208	5.79	1.99	25.0		30.6	83.6	600	3.68	34.193	5.96	27.199	87.9	0.710
784A	3.01	34.244	5.45	2.03	34.0		28.0U	77.9	700	3.28	34.214	5.73	27.254	82.6	0.800
887A	2.72	34.293	5.15	2.23U	42.4		32.9	71.8	800	2.96	34.252	5.40	27.314	77.0	0.885
990A	2.58	34.348	4.89	2.20	49.4		33.3	66.5	1000	2.57	34.354	4.87	27.430	66.0	1.039
1092A	2.49	34.396	4.70	2.27	56.1		33.3	62.1	1200	2.49	34.450	4.50	27.513	58.1	1.175
1195A	2.49	34.447	4.51	2.32	60.5		33.5	58.3	1500	2.62	34.614	4.32	27.633	46.8	1.355
1400A	2.57	34.561	4.28	2.24	66.3		31.9	50.3	1750	2.76	34.727	4.56	27.711	39.4	1.488
1605A	2.67	34.664	4.37	2.13	66.7		30.7	43.3	2000	2.63	34.806	4.94	27.767	34.0	1.610
1912A	2.84	34.784	4.82	1.88	56.7		27.9	35.7	2250	2.80	34.849	5.22	27.805	30.4	1.726
2219A	2.81	34.846	5.19	1.70	50.8		24.8	30.8	2500	2.57	34.844	5.26	27.821	28.8	1.837
2423A	2.68	34.853	5.31	1.64	52.8		24.3	29.1	2750	2.21	34.815	5.08	27.829	28.1	1.944
2628A	2.37	34.829	5.14	1.75	63.6		25.9	28.4	3000	1.84	34.784	4.97	27.832	27.8	2.047
2935A	1.96	34.795	5.01	1.87	78.2		26.8	27.8	3250	1.40	34.744	4.86	27.833	27.8	2.144
3345A	1.23	34.728	4.83	2.05	108.1		30.6	27.8	3500	1.03	34.717	4.86	27.837	27.4	2.235
3756A	0.746	34.703	4.96	2.18	120.0		31.7	26.7	3750	0.75	34.704	4.96	27.844	26.7	2.318
4170A	0.329	34.683	5.13	2.23	126.9		32.0	25.9	4000	0.48	34.690	5.06	27.850	26.1	2.394
4584A	0.193	34.670	5.24	2.23	129.4		32.4	26.1	4250	0.29	34.680	5.16	27.853	25.9	2.464
5003A	0.159	34.670	5.25	2.27	129.9		32.4	26.0	4500	0.21	34.672	5.22	27.851	26.1	2.530
5109A	0.163	34.670	5.25	2.25	130.2		31.6	26.0	4750	0.18	34.671	5.24	27.851	26.1	2.595
									5000	0.16	34.671	5.25	27.852	26.0	2.660

RV MELVILLE CATO EXPEDITION VI 44

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
40 25.0S	39 27.1W	12/ 5/72	0844 1130 GMT	5172M	030	5KT	2	110 3 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	13.49	34.572	6.41	0.60	1.1		5.6	203.4	0	13.49	34.572	6.41	25.981	203.4	0.000
21	11.70	34.586	6.61	0.53	0.9		5.4	169.0	10	12.35	34.576	6.51	26.212	181.5	0.019
31	11.67	34.591	6.56	0.57	0.9		5.9	168.0	20	11.73	34.586	6.60	26.337	169.6	0.037
63	12.19	34.954	5.93	0.60	2.2		7.5	150.7	30	11.67	34.592	6.57	26.352	168.1	0.054
95	11.73	34.992	5.88	0.72	2.8		9.1	139.6	50	11.98	34.794	6.19	26.452	158.7	0.087
126	11.21	34.913	5.69	0.84	3.2		11.1	136.2	75	12.08	34.994	5.91	26.588	145.7	0.125
158	10.54	34.84	5.55	0.98	4.0		12.9	130.2	100	11.65	34.983	5.85	26.660	138.9	0.161
207	9.47	34.700	5.61	1.14	5.2		15.3	123.1	125	11.23	34.916	5.70	26.688	136.3	0.196
262	7.89	34.482	5.70	1.33	6.5		19.0	115.8	150	10.71	34.858	5.58	26.736	131.7	0.231
313	6.84	34.38	5.68	1.49	8.4		21.1	109.2	200	9.63	34.723	5.60	26.817	124.0	0.297
364	6.03	34.322	5.77	1.63	9.9		22.6	103.4	250	8.23	34.527	5.68	26.888	117.3	0.359
414A	4.92	34.224	6.06	1.71	11.9		24.7	98.0	300	7.08	34.400	5.68	26.957	110.8	0.418
517A	4.38	34.212	6.19	1.80	14.2		25.5	93.2	400	5.22	34.250	5.98	27.077	99.4	0.528
620A	4.01	34.218	5.89	1.83	20.0		26.3	89.1	500	4.47	34.219	6.17	27.137	93.7	0.630
723A	3.48	34.216	5.79	2.03	25.0		28.4	84.2	600	4.08	34.218	5.96	27.178	89.9	0.726
826A	3.22	34.251	5.46	2.06	32.3		30.9	79.2	700	3.59	34.216	5.81	27.226	85.3	0.820
1032A	2.83	34.341	4.88	2.25	45.8		32.2	69.1	800	3.27	34.241	5.55	27.277	80.5	0.908
1237A	2.54	34.435	4.55	2.34	59.5		33.8	59.6	1000	2.88	34.327	4.96	27.380	70.6	1.071
1442A	2.54	34.537	4.29	2.30	67.0		33.4	51.9	1200	2.58	34.418	4.60	27.480	61.2	1.216
1646A	2.60	34.631	4.28	2.22	69.4		31.4	45.3	1500	2.56	34.567	4.29	27.600	49.9	1.406
1952A	2.63	34.736	4.53	2.03	67.2		29.1	37.6	1750	2.61	34.672	4.34	27.679	42.4	1.545
2258A	2.58	34.801	4.88	1.86	63.8		27.4	32.2	2000	2.63	34.750	4.59	27.741	36.5	1.672
2462A	2.49	34.813	5.01	1.83	63.9		26.6	30.6	2250	2.58	34.800	4.87	27.785	32.3	1.790
2666A	2.28	34.804	4.98	1.87	70.9		27.4	29.6	2500	2.46	34.812	5.00	27.805	30.4	1.903
2972A	1.91	34.777	4.88	1.96	83.9		28.5	28.8	2750	2.18	34.797	4.95	27.816	29.3	2.012
3382A	1.339	34.736	4.88	2.10	106.5		29.6	27.9	3000	1.87	34.774	4.88	27.823	28.8	2.118
3792A	0.908	34.712	4.90	2.18	117.6		31.0	27.0	3250	1.52	34.749	4.88	27.828	28.2	2.218
4204A	0.456	34.689	5.01	2.24	126.2		32.3	26.1	3500	1.21	34.729	4.89	27.834	27.6	2.312
4618A	0.236	34.675	5.22	2.27	126.9		31.9	26.0	3750	0.95	34.715	4.90	27.840	27.1	2.400
5034A	0.194	34.671	5.22	2.27	132.9		32.7	26.1	4000	0.67	34.700	4.94	27.846	26.5	2.482
5139A	0.188	34.672	5.23	2.51U	130.3		32.5	26.0	4250	0.42	34.687	5.04	27.851	26.1	2.556
									4500	0.28	34.678	5.17	27.852	26.0	2.626
									4750	0.22	34.674	5.22	27.852	26.0	2.692
									5000	0.20	34.672	5.22	27.851	26.1	2.757

43 STD — CATO EXPEDITION VI

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
39 18.0S	37 23.3W	12/04/72	1420 GMT

Z	T	S	SIGMA T	DT	DD
0	13.52	34.69	26.066	195.3	0.000
10	12.69	34.69	26.233	179.4	0.019
20	12.54	34.70	26.271	175.9	0.037
30	12.50	34.72	26.294	173.7	0.054
40	12.50	34.73	26.302	172.9	0.072
50	12.43	34.74	26.323	170.9	0.089
60	11.73	34.76	26.484	155.2	0.105
70	11.57	34.79	26.526	151.6	0.121
80	10.92	34.77	26.630	141.8	0.136
90	10.68	34.74	26.650	139.9	0.150
100	10.50	34.71	26.659	139.1	0.164
125	9.60	34.63	26.751	130.4	0.198
150	8.97	34.55	26.791	126.5	0.231
200	8.14	34.55	26.920	114.3	0.293
250	7.42	34.48	26.971	109.4	0.351
300	5.92	34.29	27.024	104.5	0.406
350	4.99	34.20	27.065	100.6	0.460
400	4.57	34.17	27.088	98.3	0.511
450	4.29	34.17	27.119	95.5	0.562
500	4.18	34.16	27.122	95.1	0.612
550A	3.91	34.16	27.150	92.5	0.661
600A	3.71	34.17	27.178	89.8	0.709
650A	3.50	34.17	27.199	87.9	0.756
700A	3.30	34.19	27.234	84.6	0.801
750A	3.14	34.20	27.257	82.4	0.846
800A	3.01	34.23	27.293	79.0	0.889
850A	2.89	34.26	27.327	75.7	0.930
900A	2.75	34.28	27.356	73.0	0.970
950A	2.67	34.30	27.378	70.8	1.008
1000A	2.59	34.33	27.409	67.9	1.046
1100A	2.51	34.39	27.464	62.8	1.117
1200A	2.50	34.45	27.513	58.1	1.184
1300A	2.56	34.50	27.548	54.8	1.247
1400A	2.59	34.56	27.593	50.5	1.308
1500A	2.59	34.62	27.641	46.0	1.364
1600A	2.69	34.66	27.664	43.8	1.419
1700A	2.70	34.70	27.695	40.9	1.471
1800A	2.83	34.75	27.723	38.2	1.522
1900A	2.87	34.78	27.743	36.3	1.571
2000A	2.88	34.81	27.766	34.1	1.620
2100A	2.90	34.84	27.788	32.0	1.667
2200A	2.83	34.84	27.795	31.4	1.713
2300A	2.81	34.86	27.813	29.7	1.758
2400A	2.68	34.86	27.824	28.6	1.802
2500A	2.58	34.85	27.825	28.5	1.846
2600A	2.40	34.84	27.832	27.8	1.889
2700A	2.27	34.83	27.835	27.6	1.931
2800A	2.13	34.82	27.839	27.2	1.972
2900A	1.99	34.80	27.834	27.7	2.013
3000A	1.80	34.79	27.841	27.0	2.053
3100A	1.55	34.77	27.844	26.8	2.091
3200A	1.41	34.76	27.846	26.6	2.128
3300A	1.28	34.75	27.847	26.5	2.164
3400A	1.17	34.74	27.847	26.5	2.199
3500A	1.07	34.73	27.845	26.6	2.233
3600A	0.93	34.73	27.854	25.7	2.267
3700A	0.81	34.72	27.854	25.8	2.299
3800A	0.68	34.71	27.854	25.8	2.330
3900A	0.55	34.71	27.862	25.0	2.359
4000A	0.47	34.71	27.867	24.6	2.387
4100A	0.37	34.70	27.865	24.8	2.414
4200A	0.32	34.69	27.859	25.3	2.441
4300A	0.27	34.70	27.870	24.3	2.467
4400A	0.23	34.69	27.864	24.8	2.492
4500A	0.21	34.69	27.866	24.7	2.517
4600A	0.19	34.68	27.859	25.4	2.543
4700A	0.18	34.68	27.859	25.3	2.568
4800A	0.17	34.68	27.860	25.3	2.593
4900A	0.16	34.68	27.860	25.2	2.618
5000A	0.15	34.67	27.853	25.9	2.643
5100A	0.16	34.67	27.852	26.0	2.669

44 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
40 25.0S	39 27.1W	12/05/72	0708 GMT

Z	T	S	SIGMA T	DT	DD
0	13.49	34.53	25.949	206.5	0.000
10	11.81	34.57	26.311	172.1	0.019
20	11.67	34.59	26.353	168.1	0.036
30	11.65	34.59	26.356	167.8	0.053
40	11.74	34.71	26.432	160.5	0.069
50	12.14	34.87	26.480	156.0	0.085
60	12.19	34.96	26.540	150.3	0.101
70	12.22	35.04	26.596	145.0	0.116
80	12.10	35.07	26.643	140.6	0.130
90	11.85	35.02	26.652	139.7	0.144
100	11.76	35.00	26.653	139.5	0.159
125	11.22	34.89	26.669	138.1	0.194
150	10.71	34.86	26.738	131.5	0.228
200	9.57	34.71	26.818	124.0	0.294
250	7.94	34.44	26.864	119.6	0.357
300	7.11	34.41	26.960	110.5	0.417
350	6.31	34.32	26.998	106.9	0.474
400A	4.96	34.23	27.092	98.0	0.527
450A	4.69	34.21	27.107	96.6	0.578
500A	4.44	34.20	27.126	94.7	0.629
550A	4.29	34.21	27.150	92.5	0.678
600A	4.09	34.23	27.187	89.0	0.726
650A	3.92	34.23	27.205	87.3	0.773
700A	3.57	34.21	27.224	85.5	0.819
750A	3.49	34.22	27.240	84.0	0.864
800A	3.33	34.24	27.271	81.1	0.908
850A	3.17	34.26	27.302	78.1	0.951
900A	3.10	34.28	27.324	76.0	0.992
950A	2.95	34.29	27.346	74.0	1.033
1000A	2.84	34.31	27.372	71.5	1.072
1100A	2.66	34.37	27.435	65.5	1.147
1200A	2.56	34.41	27.476	61.6	1.217
1300A	2.54	34.46	27.517	57.7	1.284
1400A	2.54	34.52	27.565	53.2	1.347
1500A	2.56	34.58	27.611	48.8	1.406
1600A	2.58	34.62	27.641	45.9	1.462
1700A	2.57	34.65	27.666	43.6	1.517
1800A	2.62	34.68	27.686	41.7	1.570
1900A	2.73	34.73	27.716	38.9	1.621
2000A	2.61	34.74	27.735	37.1	1.671
2100A	2.59	34.76	27.752	35.4	1.720
2200A	2.59	34.79	27.776	33.2	1.767
2300A	2.56	34.80	27.787	32.2	1.813
2400A	2.48	34.81	27.802	30.7	1.858
2500A	2.43	34.81	27.806	30.4	1.903
2600A	2.37	34.82	27.819	29.1	1.947
2700A	2.26	34.81	27.820	29.0	1.990
2800A	2.18	34.80	27.819	29.1	2.033
2900A	2.15	34.81	27.829	28.1	2.075
3000A	1.90	34.77	27.817	29.3	2.117
3100A	1.85	34.76	27.829	28.2	2.159
3200A	1.70	34.77	27.832	27.8	2.199
3300A	1.50	34.75	27.831	27.9	2.239
3400A	1.32	34.74	27.836	27.5	2.276
3500A	1.23	34.73	27.834	27.7	2.313
3600A	1.16	34.73	27.839	27.2	2.349
3700A	1.03	34.72	27.840	27.1	2.385
3800A	0.90	34.71	27.840	27.1	2.419
3900A	0.75	34.70	27.842	26.9	2.452
4000A	0.64	34.69	27.841	27.1	2.484
4100A	0.50	34.69	27.849	26.3	2.514
4200A	0.42	34.69	27.854	25.8	2.543
4300A	0.37	34.68	27.849	26.3	2.571
4400A	0.29	34.68	27.853	25.9	2.599
4500A	0.27	34.68	27.854	25.8	2.626
4600A	0.24	34.68	27.856	25.6	2.652
4700A	0.22	34.67	27.849	26.3	2.679
4800A	0.21	34.68	27.857	25.5	2.705
4900A	0.20	34.67	27.850	26.2	2.731
5000A	0.19	34.67	27.851	26.1	2.757
5100A	0.19	34.67	27.851	26.1	2.783
5156A	0.19	34.67	27.851	26.1	2.797

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
41 28.6S	41 52.3W	12/ 6/72	0119 0416 GMT	5164M	070	10KT	1	310 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	12.81	34.516	6.45	0.62	1.5		7.3	194.5	0	12.81	34.516	6.45	26.075	194.5	0.000
21	10.58	34.490	6.67	0.68	1.2		7.9	156.7	10	11.56	34.497	6.58	26.300	173.1	0.018
42	9.82	34.471	6.70	0.73	1.0		9.0	145.6	20	10.65	34.491	6.66	26.461	157.9	0.035
63	9.52	34.484	6.67	0.78	1.3		9.8	139.9	30	10.14	34.482	6.68	26.544	150.0	0.050
95	8.82	34.509	6.52	0.89	2.2		11.1	127.3	50	9.69	34.475	6.70	26.615	143.3	0.080
116	8.28	34.487	6.32	1.01	3.8		14.2	121.0	75	9.28	34.498	6.63	26.699	135.2	0.115
147	7.98	34.519	6.32	1.08	4.7		15.4	114.3	100	8.68	34.504	6.47	26.800	125.6	0.148
189	7.30	34.479	5.98	1.32	6.3		19.0	107.4	125	8.17	34.496	6.32	26.873	118.8	0.179
210	6.79	34.419	6.00	1.40	7.3		21.0	105.6	150	7.94	34.520	6.29	26.926	113.7	0.209
262	5.32	34.256	6.06	1.63	9.9		24.8	100.0	200	7.04	34.450	5.99	27.001	106.7	0.265
314	4.66	34.202	6.20	1.72	11.6		25.5	96.9	250	5.64	34.289	6.04	27.058	101.2	0.319
417	4.07	34.194	6.12	1.82	16.3		27.5	91.5	300	4.79	34.211	6.16	27.096	97.6	0.370
520	3.58	34.186	6.19	1.90	20.4		29.0	87.4	400	4.13	34.192	6.13	27.152	92.3	0.469
610A	3.21	34.203	5.77	2.02	26.4		31.2	82.8	500	3.67	34.187	6.18	27.196	88.2	0.563
622	3.18	34.207	5.76	1.99	27.0		30.4	82.2	600	3.24	34.200	5.81	27.247	83.3	0.653
713A	2.92	34.245	5.45	2.13	34.3		32.6	77.1	700	2.96	34.239	5.51	27.304	77.8	0.738
816A	2.78	34.299	5.01	2.12	41.6		32.7	71.8	800	2.80	34.291	5.07	27.360	72.6	0.817
919A	2.63	34.350	4.89	2.28	49.7		32.5	66.7	1000	2.55	34.392	4.78	27.461	63.0	0.963
1022A	2.54	34.403	4.74	2.23	56.0		35.5	62.0	1200	2.53	34.517	4.37	27.563	53.4	1.092
1228A	2.53	34.533	4.32	2.26	66.8		34.6	52.1	1500	2.57	34.654	4.33	27.669	43.3	1.261
1433A	2.56	34.622	4.25	2.22	69.7		33.3	45.6	1750	2.58	34.743	4.59	27.739	36.7	1.385
1741A	2.59	34.742	4.60	1.99	68.9		30.8	36.8	2000	2.28	34.730	4.46	27.754	35.3	1.501
2048A	2.24	34.726	4.44	2.09	81.8		31.5	35.2	2250	2.43	34.780	4.75	27.782	32.6	1.615
2253A	2.43	34.781	4.76	1.90	70.8		28.9	32.5	2500	2.40	34.821	5.05	27.817	29.3	1.725
2458A	2.44	34.821	5.05	1.78	62.8		27.5	29.6	2750	2.04	34.791	4.96	27.823	28.7	1.831
2662A	2.19	34.805	5.04	1.82	72.2		28.0	28.8	3000	1.60	34.753	4.82	27.826	28.4	1.931
2970A	1.64	34.756	4.80	2.03	94.4		31.0	28.5	3250	1.28	34.732	4.96	27.832	27.9	2.026
3277A	1.25	34.730	4.98	2.11	109.6		32.2	27.8	3500	1.04	34.718	4.86	27.837	27.4	2.115
3585A	0.96	34.713	4.81	2.15	115.2		32.0	27.2	3750	0.77	34.704	4.91	27.844	26.7	2.199
3996A	0.502	34.692	5.10	2.21	125.4		32.4	26.1	4000	0.50	34.692	5.10	27.851	26.1	2.275
4202A	0.334	34.680	5.15	2.22	126.8		33.2	26.1	4250	0.31	34.679	5.16	27.851	26.1	2.346
4512A	0.221	34.674	5.22	2.23	131.5		32.5	26.0	4500	0.22	34.675	5.22	27.852	26.0	2.413
5031A	0.140	34.668	5.28	2.26	130.4		27.6U	26.0	4750	0.17	34.671	5.26	27.852	26.0	2.478
5135A	0.138	34.670	5.28	2.26	131.9		24.7U	25.9	5000	0.14	34.669	5.28	27.852	26.0	2.542

45 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
41 28.6S	41 52.3W	12/05/72	2328 GMT

Z	T	S	SIGMA T	DT	DD
0	12.84	34.55	26.096	192.5	0.000
20	10.30	34.50	26.530	151.3	0.034
30	10.11	34.49	26.555	148.9	0.049
40	9.89	34.50	26.600	144.6	0.064
50	9.79	34.51	26.625	142.3	0.079
60	9.62	34.51	26.654	139.6	0.093
70	9.24	34.51	26.716	133.6	0.107
80	8.97	34.54	26.783	127.3	0.120
90	8.87	34.53	26.791	126.5	0.133
100	8.66	34.56	26.846	121.1	0.145
125	8.08	34.50	26.890	117.1	0.176
150	7.99	34.56	26.951	111.4	0.205
200	6.76	34.42	27.016	105.2	0.260
250	5.49	34.26	27.053	101.7	0.314
300	4.86	34.21	27.088	98.4	0.365
350	4.44	34.16	27.111	96.3	0.416
400	4.15	34.18	27.141	93.5	0.465
450	3.89	34.17	27.160	91.5	0.513
500	3.69	34.18	27.188	88.9	0.560
550	3.51	34.19	27.214	86.5	0.606
600	3.26	34.19	27.238	84.2	0.651
650A	3.10	34.22	27.276	80.5	0.694
700A	2.95	34.24	27.306	77.7	0.736
750A	2.89	34.27	27.335	74.9	0.776
800A	2.80	34.29	27.359	72.7	0.815
850A	2.72	34.31	27.382	70.5	0.854
900A	2.65	34.34	27.412	67.7	0.891
950A	2.59	34.37	27.441	64.9	0.926
1000A	2.55	34.39	27.461	63.1	0.961
1100A	2.53	34.46	27.518	57.6	1.027
1200A	2.55	34.52	27.564	53.2	1.089
1300A	2.54	34.55	27.589	50.9	1.149
1400A	2.55	34.61	27.636	46.4	1.205
1500A	2.58	34.66	27.673	42.9	1.258
1600A	2.65	34.71	27.707	39.7	1.309
1700A	2.60	34.73	27.727	37.8	1.358
1800A	2.58	34.75	27.745	36.1	1.405
1900A	2.41	34.75	27.760	34.7	1.451
2000A	2.25	34.72	27.749	35.7	1.497
2100A	2.30	34.75	27.769	33.8	1.542
2200A	2.38	34.77	27.778	33.0	1.587
2300A	2.47	34.80	27.795	31.4	1.632
2400A	2.47	34.83	27.818	29.2	1.676
2500A	2.37	34.81	27.811	29.9	1.719
2600A	2.32	34.82	27.823	28.7	1.762
2700A	2.10	34.78	27.809	30.0	1.805
2800A	1.93	34.79	27.831	28.0	1.846
2900A	1.74	34.76	27.821	28.9	1.887
3000A	1.60	34.76	27.832	27.9	1.926
3100A	1.46	34.74	27.826	28.4	1.964
3200A	1.33	34.73	27.827	28.3	2.002
3300A	1.22	34.73	27.835	27.6	2.039
3400A	1.11	34.72	27.835	27.6	2.074
3500A	1.03	34.72	27.840	27.1	2.109
3600A	0.93	34.71	27.838	27.3	2.143
3700A	0.83	34.71	27.845	26.7	2.177
3800A	0.70	34.70	27.845	26.7	2.209
3900A	0.59	34.69	27.844	26.8	2.240
4000A	0.48	34.69	27.850	26.2	2.269
4100A	0.40	34.69	27.855	25.7	2.298
4200A	0.33	34.68	27.851	26.1	2.326
4300A	0.29	34.68	27.853	25.9	2.353
4400A	0.25	34.68	27.855	25.7	2.379
4500A	0.22	34.67	27.849	26.3	2.406
4600A	0.21	34.68	27.857	25.5	2.432
4700A	0.19	34.67	27.851	26.1	2.458
4800A	0.19	34.67	27.851	26.1	2.484
4900A	0.18	34.67	27.851	26.1	2.510
5000A	0.16	34.67	27.852	26.0	2.536
5100A	0.13	34.67	27.854	25.8	2.561
5162A	0.14	34.67	27.853	25.9	2.577

46 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
40 47.7S	42 31.1W	12/06/72	1033 GMT

Z	T	S	SIGMA T	DT	DD
0	14.76	35.07	26.097	192.4	0.000
10	14.74	35.07	26.101	192.0	0.019
20	14.48	35.26	26.319	171.3	0.037
30	14.49	35.31	26.340	169.3	0.055
40	14.45	35.31	26.348	168.5	0.072
50	13.95	35.25	26.409	162.8	0.088
60	12.60	35.11	26.576	146.9	0.104
70	11.90	34.99	26.619	142.8	0.119
80	12.40	35.16	26.654	139.5	0.133
90	11.45	35.05	26.750	130.3	0.147
100	11.11	35.05	26.813	124.4	0.160
125	11.25	35.11	26.834	122.4	0.191
150	11.68	35.23	26.847	121.2	0.222
200	10.89	35.06	26.661	119.9	0.285
250	8.69	34.60	26.875	118.6	0.347
300	6.65	34.30	26.937	112.7	0.407
350	5.87	34.25	26.999	106.8	0.464
400	5.23	34.21	27.045	102.5	0.519
450	4.91	34.19	27.066	100.5	0.572
500	4.57	34.18	27.098	97.6	0.624
550	4.30	34.18	27.126	94.8	0.674
600	4.08	34.16	27.133	94.1	0.724
650	3.73	34.15	27.160	91.5	0.773
700	3.54	34.17	27.195	88.2	0.821
750	3.41	34.18	27.216	86.3	0.867
800	3.29	34.20	27.243	83.7	0.913
850	3.12	34.21	27.267	81.5	0.957
900	3.02	34.24	27.300	78.3	1.000
950	2.96	34.28	27.337	74.8	1.041
1000	2.84	34.31	27.372	71.5	1.080
1100	2.75	34.36	27.419	67.0	1.156
1200	2.69	34.41	27.464	62.7	1.228
1300	2.71	34.47	27.510	58.3	1.296
1400	2.73	34.53	27.557	54.0	1.360
1500	2.73	34.57	27.589	51.0	1.421
1600	2.73	34.62	27.628	47.2	1.480
1700	2.80	34.65	27.646	45.5	1.537
1800	2.87	34.70	27.680	42.3	1.592
1900	2.87	34.74	27.711	39.3	1.645
2000	2.91	34.76	27.740	36.6	1.696
2100	2.87	34.80	27.759	34.8	1.745
2200	2.67	34.78	27.761	34.6	1.794
2300	2.67	34.81	27.785	32.3	1.841
2400	2.58	34.82	27.801	30.8	1.887
2500	2.62	34.84	27.813	29.6	1.932
2600	2.51	34.84	27.823	28.7	1.976
2700	2.42	34.84	27.831	28.0	2.020
2800	2.26	34.82	27.828	28.2	2.063
2900	2.08	34.80	27.827	28.4	2.105
3000	1.80	34.77	27.825	28.6	2.146
3100	1.65	34.76	27.828	28.2	2.186
3200	1.53	34.75	27.829	28.2	2.226
3300	1.40	34.75	27.838	27.3	2.264
3400	1.29	34.74	27.838	27.3	2.300
3500	1.17	34.73	27.838	27.3	2.337
3600	1.06	34.73	27.846	26.6	2.372
3700	0.96	34.72	27.845	26.7	2.406
3800	0.85	34.71	27.844	26.8	2.439
3900	0.71	34.71	27.852	26.0	2.471
4000	0.61	34.70	27.851	26.1	2.502
4100	0.54	34.70	27.855	25.7	2.532
4200	0.48	34.69	27.850	26.2	2.561
4300	0.43	34.69	27.853	25.9	2.590
4400	0.33	34.68	27.851	26.1	2.618
4500	0.22	34.67	27.849	26.3	2.645
4600	0.17	34.67	27.852	26.0	2.671
4700	0.17	34.66	27.844	26.8	2.697
4800	0.17	34.66	27.844	26.8	2.723
4900	0.17	34.66	27.844	26.8	2.750
5000	0.16	34.66	27.843	26.8	2.776
5100	0.17	34.66	27.844	26.8	2.803
5141	0.16	34.65	27.836	27.5	2.814

RV MELVILLE — CATO EXPEDITION VI

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
40 10.2S	43 10.0W	12/ 6/72	2029 2329 GMT	5135M	090	22KT	2	120 5 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.47	35.680	5.76	0.15	1.4		0.0	184.6	0	16.47	35.680	5.76	26.179	184.6	0.000
21	16.48	35.681	5.77	0.12	1.3		0.0	184.7	10	16.47	35.680	5.76	26.178	184.7	0.018
31	16.47	35.677	5.79	0.13	1.5		0.0	184.8	20	16.48	35.680	5.77	26.177	184.7	0.037
41	16.48	35.679	5.80	0.14	1.3		0.0	184.9	30	16.47	35.676	5.79	26.176	184.8	0.056
73	16.48	35.834	5.16	0.23	1.4		1.3	173.6	50	16.48	35.713	5.62	26.202	182.4	0.093
104	15.76	35.708	5.57	0.30	1.7		1.7	167.0	75	16.44	35.827	5.18	26.299	175.1	0.137
135	15.35	35.686	5.64	0.30	1.8		2.8	159.8	100	15.86	35.728	5.50	26.356	167.7	0.181
176	14.84	35.607	5.46	0.37	1.9		3.8	154.8	125	15.46	35.688	5.62	26.417	162.0	0.223
228	14.49	35.582	5.41	0.46	2.5		5.4	149.4	150	15.15	35.656	5.58	26.463	157.6	0.264
290	13.37	35.368	5.66	0.51	2.4		6.2	142.7	200	14.69	35.599	5.44	26.519	152.3	0.344
363	11.68	35.055	4.90	0.94	4.8		13.4	134.1	250	14.15	35.520	5.53	26.574	147.1	0.422
466	9.01	34.690	4.96	1.30	8.5		19.3	116.7	300	13.16	35.325	5.57	26.632	141.6	0.498
569	6.33	34.381	5.51	1.58	11.6		23.4	102.6	400	10.74	34.914	4.92	26.775	128.0	0.642
672	5.11	34.280	5.82	1.71	14.3		24.8	95.9	500	8.05	34.570	5.13	26.949	111.5	0.771
699A	4.70	34.250	5.92	1.72	15.0		18.6	93.7	600	5.91	34.345	5.61	27.068	100.4	0.885
775	4.58	34.277	5.62	1.82	19.3		27.8	90.4	700	4.70	34.251	5.92	27.138	93.7	0.990
802A	4.11	34.244	5.74	1.89	20.5		25.7	88.1	800	4.15	34.248	5.73	27.195	88.3	1.088
877	3.91	34.249	5.65	1.94	23.8		28.9	85.8	1000	3.38	34.278	5.29	27.295	78.8	1.270
905A	3.67	34.247	5.55	1.88	26.5		28.4	83.6	1200	3.00	34.371	4.80	27.405	68.3	1.432
1008A	3.38	34.281	5.27	1.61U	33.5		30.3	78.4	1500	2.75	34.524	4.39	27.549	54.7	1.642
1111A	3.20	34.338	4.97	1.60U	39.7		32.5	72.5	1750	2.78	34.647	4.40	27.645	45.6	1.792
1315A	2.79	34.413	4.64	2.22	53.2		33.2	63.3	2000	2.93	34.762	4.71	27.724	38.1	1.928
1519A	2.75	34.534	4.37	2.23	60.7		33.2	53.8	2250	3.00	34.839	5.16	27.779	32.9	2.053
1826A	2.79	34.678	4.41	2.08	63.5		31.5	43.3	2500	2.73	34.847	5.11	27.810	30.0	2.171
2133A	3.02	34.816	4.98	1.74	50.4		26.3	34.9	2750	2.49	34.833	5.10	27.820	28.9	2.284
2337A	2.98	34.853	5.24	1.63	47.5		24.3	31.7	3000	2.18	34.805	5.00	27.825	28.6	2.394
2541A	2.66	34.844	5.07	1.71	58.1		26.8	29.7	3250	1.77	34.775	4.91	27.831	27.9	2.499
2848A	2.41	34.829	5.12	1.70	63.8		26.2	28.8	3500	1.45	34.757	4.98	27.841	27.0	2.597
3155A	1.89	34.781	4.89	1.94	85.9		29.2	28.4	3750	1.03	34.724	4.94	27.843	26.9	2.688
3462A	1.51	34.763	4.98	1.98	96.1		30.3	27.0	4000	0.67	34.701	4.99	27.847	26.5	2.770
3770A	1.00	34.721	4.94	2.09	112.5		29.1U	26.9	4250	0.40	34.685	5.08	27.851	26.1	2.845
4080A	0.576	34.695	5.02	2.18	124.1		29.4U	26.3	4500	0.23	34.676	5.18	27.853	25.9	2.913
4391A	0.284	34.679	5.13	2.20	126.7		33.7	25.9	4750	0.17	34.674	5.24	27.854	25.8	2.978
4704A	0.165	34.673	5.25	2.22	130.6		32.9	25.8	5000	0.17	34.675	5.21	27.855	25.7	3.041
5020A	0.171	34.674	5.21	2.23	132.6		33.0	25.7							
5125A	0.165	34.675	5.23	2.23	130.5		33.0	25.7							

RV MELVILLE — CATO EXPEDITION VI — 4A

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 40.4S	44 15.8W	12/ 7/72	1234 1545 GMT	5146M	080	25KT	2	090 10 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	18.53	35.753	5.50	0.14	1.3		0.0	226.9	0	18.53	35.753	5.50	25.733	226.9	0.000
41	18.29	35.751	5.48	0.13	1.1		0.0	221.3	10	18.47	35.751	5.50	25.748	225.5	0.023
72	17.34	35.850	5.55	0.13	1.2		0.0	191.9	20	18.41	35.751	5.49	25.762	224.2	0.045
103	16.26	35.736	5.43	0.24	1.7		1.7	175.9	30	18.35	35.750	5.49	25.776	222.8	0.068
134	15.63	35.707	5.22	0.36	1.7		4.0	164.2	50	18.05	35.785	5.51	25.877	213.2	0.111
165	15.20	35.652	5.19	0.42	1.8		4.7	159.1	75	17.23	35.840	5.54	26.122	190.0	0.162
206	14.92	35.634	5.29	0.44	2.0		5.1	154.5	100	16.36	35.749	5.45	26.258	177.0	0.209
257	14.62	35.607	5.43	0.45	1.9		5.3	150.3	125	15.78	35.712	5.28	26.363	167.1	0.253
308	13.73	35.414	5.57	0.64	2.5		8.0	146.4	150	15.38	35.677	5.20	26.426	161.1	0.295
411	9.90	34.776	5.09	1.04	5.0		14.7	124.3	200	14.95	35.634	5.27	26.489	155.1	0.377
513	7.06	34.452	5.34	1.56	10.0		22.2	106.7	250	14.68	35.615	5.41	26.535	150.8	0.457
616	5.11	34.237	6.19	1.68	11.0		24.5	99.1	300	13.91	35.452	5.56	26.573	147.1	0.535
715A	4.51	34.226	6.19	1.78	14.9		23.2U	93.5	400	10.35	34.839	5.15	26.785	127.1	0.681
718	4.45	34.218	6.14	1.77	14.7		26.2	93.5	500	7.37	34.483	5.31	26.981	108.5	0.807
818A	3.92		5.95	1.80	17.3		24.1U		600	5.34	34.262	6.07	27.072	99.9	0.919
921A	3.54	34.232	5.67	1.92	26.5		28.2	83.6	700	4.65	34.245	6.19	27.139	94.0	1.023
1024A	3.31	34.279	5.28	2.16U	33.1		30.8	77.9	800	4.02	34.197	5.98	27.168	90.7	1.122
1126A	3.08	34.336	4.97	2.14	41.6		33.2	71.6	1000	3.36	34.267	5.37	27.289	79.3	1.306
1324A	2.72	34.427	4.54	2.29	55.2		34.1	61.7	1200	2.92	34.371	4.78	27.413	67.6	1.468
1536A	2.71	34.547	4.34	2.29	60.7		34.2	52.5	1500	2.71	34.529	4.36	27.557	53.9	1.675
1841A	2.72	34.671	4.39	2.20	64.8		32.4	43.2	1750	2.72	34.639	4.38	27.644	45.7	1.824
2147A	2.81	34.786	4.81	1.87	58.8		28.2	35.3	2000	2.77	34.736	4.59	27.717	38.8	1.959
2352A	2.79	34.829	5.07	1.76	53.8		26.2	31.9	2250	2.80	34.810	4.95	27.774	33.4	2.084
2555A	2.73	34.851	5.23	1.69	51.8		25.3	29.7	2500	2.76	34.848	5.20	27.808	30.2	2.202
2860A	2.34	34.825	5.16	1.78	63.9		26.9	28.5	2750	2.51	34.840	5.19	27.823	28.7	2.315
3166A	1.74	34.767	4.84	2.00	89.8		30.4	28.3	3000	2.07	34.798	5.01	27.826	28.4	2.424
3472A	1.31	34.738	4.87	2.10	103.3		31.3	27.6	3250	1.61	34.757	4.85	27.829	28.2	2.527
3779A	0.92	34.713	4.87	2.18	114.4		32.5	27.0	3500	1.27	34.736	4.87	27.836	27.5	2.622
4086A	0.543	34.690	5.06	2.19	121.5		32.8	26.5	3750	0.96	34.716	4.87	27.841	27.0	2.711
4394A	0.292	34.678	5.11	2.24	116.2		33.4	26.0	4000	0.64	34.696	5.00	27.845	26.6	2.792
4703A	0.198	34.672	5.19	2.25	127.9		33.5	26.0	4250	0.39	34.683	5.09	27.849	26.2	2.867
5013A	0.178	34.672	5.18	2.29	129.9		33.5	25.9	4500	0.25	34.676	5.14	27.851	26.0	2.935
5116A	0.166	34.670	5.24	2.28	128.4		32.8	26.0	4750	0.19	34.673	5.19	27.852	26.0	3.001
									5000	0.18	34.673	5.18	27.853	25.9	3.066

CATO EXPEDITION VI

47 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
40 10.2S	43 10.0W	12/06/72	1640 GMT

Z	T	S	SIGMA T	DT	DD
0	16.47	35.67	26.171	185.3	0.000
10	16.46	35.67	26.173	185.1	0.019
20	16.46	35.67	26.173	185.1	0.037
30	16.45	35.67	26.175	184.9	0.056
40	16.46	35.67	26.173	185.1	0.074
50	16.47	35.67	26.171	185.3	0.093
60	16.80	35.81	26.200	182.5	0.112
70	16.48	35.84	26.299	173.2	0.130
80	16.03	35.76	26.342	169.1	0.147
90	15.90	35.75	26.364	167.0	0.164
100	15.86	35.74	26.366	166.8	0.181
125	15.37	35.69	26.438	159.9	0.223
150	15.25	35.69	26.465	157.4	0.263
200	14.82	35.65	26.530	151.3	0.343
250	14.39	35.56	26.554	149.0	0.422
300	13.59	35.38	26.584	146.1	0.499
350	11.80	35.07	26.700	135.1	0.574
400	10.28	34.84	26.798	125.8	0.644
450	9.19	34.72	26.888	117.3	0.709
500	7.64	34.50	26.955	110.9	0.770
550	6.84	34.42	27.006	106.2	0.829
600	5.59	34.31	27.081	99.1	0.884
650	5.25	34.30	27.114	95.9	0.937
700	4.72	34.25	27.135	93.9	0.988
750	4.70	34.29	27.169	90.7	1.038
800	4.30	34.24	27.173	90.3	1.087
850	4.06	34.25	27.206	87.2	1.135
900A	3.80	34.27	27.249	83.1	1.181
950A	3.57	34.27	27.272	81.0	1.226
1000A	3.38	34.28	27.298	78.5	1.270
1100A	3.23	34.33	27.352	73.4	1.353
1200A	2.94	34.34	27.387	70.1	1.433
1300A	2.82	34.43	27.469	62.3	1.507
1400A	2.76	34.49	27.522	57.2	1.575
1500A	2.77	34.54	27.561	53.5	1.639
1600A	2.81	34.60	27.605	49.4	1.700
1700A	2.73	34.63	27.636	46.4	1.758
1800A	2.77	34.67	27.665	43.7	1.815
1900A	2.80	34.71	27.694	41.0	1.869
2000A	2.89	34.76	27.726	38.0	1.921
2100A	2.98	34.81	27.757	35.0	1.971
2200A	2.99	34.83	27.772	33.5	2.020
2300A	3.00	34.85	27.787	32.1	2.069
2400A	2.88	34.85	27.798	31.1	2.117
2500A	2.78	34.86	27.815	29.5	2.163
2600A	2.59	34.83	27.808	30.1	2.209
2700A	2.50	34.82	27.808	30.2	2.254
2800A	2.41	34.82	27.816	29.4	2.300
2900A	2.33	34.83	27.830	28.0	2.344
3000A	2.21	34.82	27.832	27.6	2.387
3100A	1.99	34.79	27.826	28.4	2.430
3200A	1.89	34.81	27.850	26.2	2.471
3300A	1.80	34.80	27.849	26.3	2.510
3400A	1.60	34.77	27.840	27.1	2.549
3500A	1.45	34.76	27.843	26.8	2.588
3600A	1.29	34.75	27.846	26.5	2.625
3700A	1.08	34.73	27.845	26.7	2.660
3800A	0.95	34.72	27.845	26.6	2.695
3900A	0.79	34.70	27.839	27.2	2.728
4000A	0.65	34.69	27.840	27.1	2.760
4100A	0.55	34.69	27.846	26.5	2.791
4200A	0.44	34.69	27.853	25.9	2.821
4300A	0.34	34.68	27.850	26.2	2.849
4400A	0.27	34.68	27.854	25.8	2.876
4500A	0.19	34.68	27.859	25.4	2.902
4600A	0.16	34.68	27.860	25.2	2.927
4700A	0.16	34.67	27.852	26.0	2.952
4800A	0.15	34.67	27.853	25.9	2.978
4900A	0.17	34.68	27.860	25.3	3.003
5000A	0.17	34.66	27.860	25.3	3.028
5100A	0.19	34.66	27.859	25.4	3.053
5149A	0.20	34.67	27.850	26.2	3.066

48 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
38 40.4S	44 15.8W	12/07/72	1042 GMT

Z	T	S	SIGMA T	DT	DD
0	18.61	35.76	25.719	228.3	0.000
10	18.61	35.77	25.726	227.6	0.023
20	18.57	35.76	25.744	225.9	0.046
30	18.54	35.79	25.759	224.4	0.068
40	18.44	35.78	25.777	222.8	0.091
50	18.26	35.75	25.799	220.7	0.113
60	18.02	35.74	25.851	215.7	0.135
70	17.56	35.84	26.040	197.7	0.156
80	17.24	35.88	26.149	187.4	0.175
90	16.66	35.78	26.210	181.5	0.194
100	16.44	35.77	26.276	175.2	0.212
125	15.90	35.74	26.357	167.7	0.256
150	15.29	35.66	26.433	160.4	0.298
200	14.91	35.64	26.502	153.9	0.379
250	14.70	35.62	26.533	151.0	0.459
300	14.11	35.46	26.537	150.6	0.538
350	11.84	35.05	26.677	137.3	0.615
400	10.29	34.80	26.765	128.9	0.686
450	8.84	34.57	26.828	123.1	0.753
500	7.25	34.45	26.972	109.4	0.815
550	6.24	34.36	27.038	103.1	0.872
600	5.23	34.25	27.077	99.5	0.927
650	4.77	34.23	27.114	96.0	0.979
700	4.53	34.23	27.140	93.4	1.030
750A	4.31	34.22	27.156	91.9	1.080
800A	4.06	34.21	27.175	90.2	1.129
850A	3.65	34.20	27.208	87.0	1.177
900A	3.51	34.21	27.230	84.9	1.223
950A	3.49	34.26	27.271	81.0	1.268
1000A	3.37	34.27	27.291	79.2	1.312
1100A	3.11	34.32	27.355	73.1	1.395
1200A	2.97	34.38	27.416	67.3	1.473
1300A	2.78	34.42	27.465	62.7	1.546
1400A	2.73	34.48	27.517	57.7	1.614
1500A	2.69	34.53	27.560	53.6	1.679
1600A	2.70	34.57	27.591	50.7	1.740
1700A	2.66	34.61	27.625	47.5	1.799
1800A	2.75	34.67	27.666	43.6	1.856
1900A	2.73	34.70	27.692	41.1	1.909
2000A	2.77	34.74	27.720	38.4	1.962
2100A	2.78	34.78	27.751	35.5	2.012
2200A	2.74	34.80	27.771	33.7	2.060
2300A	2.80	34.81	27.774	33.4	2.108
2400A	2.79	34.83	27.790	31.8	2.156
2500A	2.77	34.85	27.808	30.1	2.203
2600A	2.64	34.84	27.812	29.8	2.248
2700A	2.55	34.84	27.820	29.1	2.294
2800A	2.46	34.83	27.819	29.1	2.339
2900A	2.29	34.82	27.826	28.5	2.383
3000A	2.13	34.81	27.831	28.0	2.426
3100A	1.91	34.78	27.824	28.6	2.468
3200A	1.71	34.76	27.824	28.7	2.509
3300A	1.54	34.74	27.820	29.0	2.550
3400A	1.38	34.74	27.832	27.9	2.589
3500A	1.26	34.74	27.839	27.2	2.626
3600A	1.15	34.73	27.840	27.1	2.662
3700A	1.02	34.72	27.841	27.1	2.697
3800A	0.89	34.71	27.841	27.0	2.731
3900A	0.76	34.70	27.841	27.0	2.764
4000A	0.61	34.69	27.842	26.9	2.796
4100A	0.52	34.68	27.840	27.1	2.827
4200A	0.41	34.68	27.846	26.5	2.856
4300A	0.34	34.67	27.842	26.9	2.885
4400A	0.28	34.67	27.846	26.6	2.913
4500A	0.24	34.67	27.848	26.4	2.940
4600A	0.21	34.67	27.849	26.2	2.967
4700A	0.20	34.67	27.850	26.2	2.993
4800A	0.19	34.67	27.851	26.1	3.019
4900A	0.18	34.67	27.851	26.1	3.045
5000A	0.18	34.66	27.859	25.3	3.071
5100A	0.16	34.66	27.860	25.2	3.096
5143A	0.16	34.67	27.852	26.0	3.107

RV MELVILLE CATO EXPEDITION VI 49

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 16.5S	45 19.2W	12/ 8/72	0440 0733 GMT	5129M	120	14KT	2	080 8 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	15.72	34.856	5.94	0.29	1.7		1.6	228.3	0	15.72	34.856	5.94	25.719	228.3	0.000
10	15.71	34.859	5.94	0.30	1.7		1.6	227.9	10	15.71	34.859	5.94	25.724	227.9	0.023
21	15.69	34.852	5.97	0.28	1.7		1.5	227.9	20	15.69	34.852	5.97	25.723	227.9	0.046
52	13.86	34.871	6.19	0.40	1.8		3.4	188.7	30	15.24	34.845	6.05	25.817	219.0	0.068
82	13.00	35.014	5.95	0.56	2.0		5.6	161.5	50	14.00	34.865	6.18	26.101	192.0	0.109
103	12.62	35.053	5.85	0.61	2.4		7.4	151.4	75	13.14	34.981	6.02	26.367	166.7	0.155
135	11.70	34.995	5.71	0.79	3.1		10.1	138.8	100	12.67	35.051	5.86	26.516	152.6	0.195
166	10.96	34.915	5.69	0.90	3.6		12.0	131.8	125	12.00	35.022	5.75	26.624	142.3	0.233
208	10.30	34.857	5.68	1.00	4.8		13.4	124.9	150	11.32	34.956	5.70	26.702	135.0	0.268
260	7.96	34.479	5.85	1.32	6.6		18.5	117.0	200	10.45	34.875	5.68	26.796	126.1	0.336
311	7.01	34.370	5.94	1.44	7.8		20.5	112.1	250	8.42	34.550	5.81	26.877	118.4	0.399
415	5.60	34.265	6.14	1.61	10.1		23.8	102.6	300	7.15	34.383	5.92	26.933	113.1	0.459
520	5.14	34.283	5.85	1.76	14.1		25.9	96.0	400	5.75	34.273	6.13	27.031	103.8	0.573
559A	4.71	34.246	5.99	1.80	15.0		24.8	94.1	500	5.23	34.283	5.89	27.102	97.0	0.679
622	4.43	34.239	5.95	1.84	17.3		27.4	91.7	600	4.53	34.241	5.96	27.149	92.6	0.779
662A	4.00	34.217	6.13	1.86	17.8		22.6U	89.1	700	3.86	34.215	6.05	27.199	87.9	0.876
723	3.83	34.218	6.00	1.94	21.3		28.0	87.4	800	3.59	34.240	5.68	27.245	83.5	0.967
765A	3.73	34.232	5.78	1.90	24.1		28.0	85.3	1000	2.92	34.293	5.22	27.350	73.6	1.137
867A	3.29	34.250	5.56	2.10	32.0		28.9	79.9	1200	2.75	34.410	4.66	27.459	63.2	1.287
970A	2.97	34.277	5.31	2.13	38.4		31.3	75.1	1500	2.69	34.570	4.40	27.590	50.8	1.483
1174A	2.76	34.394	4.71	2.27	51.9		30.6U	64.5	1750	2.74	34.674	4.45	27.670	43.2	1.625
1378A	2.70	34.514	4.42	2.31	61.6		33.0	54.9	2000	2.95	34.791	4.89	27.745	36.1	1.755
1684A	2.68	34.638	4.36	2.19	67.2		31.4	45.4	2250	2.91	34.842	5.21	27.790	31.9	1.876
1988A	2.95	34.788	4.87	1.86	54.9		27.2	36.4	2500	2.68	34.844	5.25	27.811	29.8	1.992
2292A	2.90	34.848	5.25	1.70	48.9		25.1	31.4	2750	2.40	34.828	5.21	27.823	28.6	2.104
2495A	2.69	34.845	5.25	1.72	55.4		25.0	29.8	3000	2.06	34.803	5.11	27.831	27.9	2.211
2799A	2.34	34.825	5.20	1.78	65.1		26.5	28.5	3250	1.62	34.764	4.95	27.834	27.7	2.312
3104A	1.89	34.790	5.05	1.95	83.2		28.6	27.7	3500	1.19	34.729	4.88	27.836	27.5	2.406
3409A	1.33	34.737	4.87	2.14	106.2		30.0	27.8	3750	0.87	34.711	4.96	27.843	26.9	2.493
3715A	0.91	34.713	4.95	2.22	117.8		31.7	26.9	4000	0.58	34.693	5.05	27.846	26.5	2.572
4022A	0.554	34.691	5.06	2.24	123.6		31.5U	26.5	4250	0.34	34.683	5.15	27.851	26.0	2.645
4331A	0.288	34.680	5.18	2.28	128.6		32.8	25.9	4500	0.22	34.678	5.24	27.854	25.8	2.712
4641A	0.194	34.676	5.27	2.29	129.8		33.2	25.7	4750	0.19	34.675	5.27	27.854	25.8	2.777
4953A	0.171	34.671	5.27	2.30	131.5		30.3U	26.0	5000	0.17	34.671	5.28	27.852	26.0	2.841
5058A	0.168	34.670	5.30	2.30	130.3		29.0U	26.0							

RV MELVILLE CATO EXPEDITION VI 50

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 53.0S	46 37.9W	12/ 8/72	1754 2056 GMT	4915M	130	11KT	0	130 6 9

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	19.76	36.104	5.38	0.11	1.2		0.0	231.5	0	19.76	36.104	5.38	25.684	231.5	0.000
31	19.03	36.044	5.47	0.11	0.7		0.0	217.8	10	19.50	36.084	5.42	25.737	226.5	0.023
63	18.48	35.975	5.48	0.12	0.9		0.0	209.6	20	19.27	36.064	5.45	25.784	222.1	0.045
104	17.69	36.073	5.20	0.19	1.1		1.5	183.8	30	19.05	36.045	5.47	25.824	218.2	0.068
136	16.76	35.909	5.21	0.27	1.4		2.4	174.4	50	18.69	35.995	5.48	25.877	213.2	0.111
167	16.41	35.870	5.25	0.29	1.6		2.8	169.4	75	18.28	36.010	5.40	25.994	202.1	0.163
209	15.39	35.680	5.11	0.42	1.8		4.6	161.1	100	17.78	36.065	5.23	26.160	186.3	0.213
261	14.93	35.637	5.30	0.42	1.8		4.9	154.5	125	17.06	35.968	5.21	26.260	176.9	0.259
312	14.65	35.606	5.50	0.45	1.9		5.3	150.9	150	16.59	35.889	5.23	26.311	172.0	0.304
416	13.81	35.439	5.28	0.58	2.4		7.4	146.1	200	15.61	35.720	5.14	26.408	162.8	0.390
518	10.89	34.936	5.33	1.00	4.6		13.8	129.0	250	14.98	35.636	5.24	26.484	155.6	0.473
621	7.75	34.528	5.26	1.47	9.2		21.8	110.4	300	14.71	35.613	5.46	26.526	151.6	0.554
663A	6.53	34.404	5.46	1.63	11.1		22.6	103.4	400	14.02	35.482	5.33	26.573	147.2	0.714
724	5.69	34.315	5.76	1.67	11.6		24.3	99.9	500	11.49	35.029	5.32	26.728	132.5	0.865
766A	5.26	34.299 E	5.76	1.67	12.5		24.4	96.1	600	8.39	34.601	5.27	26.922	114.2	1.000
869A	4.54	34.255	5.79	1.77	17.1		26.6	91.6	700	5.94	34.342	5.66	27.062	100.9	1.118
972A	4.01	34.262	5.56	2.03	23.5		29.0	85.8	800	4.99	34.282	5.77	27.130	94.4	1.225
1075A	3.63	34.276	5.34	2.04	30.0		31.1	81.1	1000	3.90	34.265	5.50	27.234	84.5	1.421
1177A	3.26	34.304	5.16	2.15	36.9		32.1	75.6	1200	3.20	34.315	5.10	27.342	74.3	1.596
1383A	2.90	34.415	4.67	2.30	51.1		34.4	64.1	1500	2.79	34.481	4.51	27.512	58.2	1.822
1588A	2.76	34.531	4.44	2.25	59.5		33.8	54.1	1750	2.83	34.627	4.51	27.624	47.6	1.979
1895A	2.98	34.711	4.57	2.00	56.4		29.8	42.4	2000	3.14	34.781	4.87	27.719	38.6	2.120
2202A	3.39	34.891	5.46	1.55	32.5		23.2	32.5	2250	3.38	34.902	5.54	27.793	31.5	2.248
2405A	3.34	34.926	5.67	1.42	28.4		21.8	29.4	2500	3.18	34.908	5.60	27.817	29.2	2.369
2610A	2.97	34.887	5.49	1.62	41.6		23.5	29.1	2750	2.83	34.885	5.53	27.831	28.0	2.487
2917A	2.69	34.886	5.59	1.59	45.5		23.3	26.7	3000	2.59	34.877	5.56	27.846	26.5	2.600
3225A	2.21	34.844	5.39	1.68	61.1		25.1	26.0	3250	2.14	34.835	5.35	27.850	26.1	2.707
3533A	1.35	34.746	4.91	2.09	104.5		28.8	27.2	3500	1.44	34.756	4.96	27.840	27.1	2.807
3842A	0.847	34.712	4.96	2.19	116.1		32.2	26.6	3750	0.97	34.720	4.95	27.843	26.9	2.897
4153A	0.414	34.687	5.07	2.25	125.7		33.8	26.0	4000	0.61	34.698	5.01	27.849	26.3	2.978
4463A	0.225	34.678	5.22	2.28	127.2		33.4	25.7	4250	0.34	34.683	5.12	27.853	25.9	3.050
4776A	0.162	34.676	5.24	2.45U	131.2		33.6	25.5	4500	0.21	34.678	5.22	27.855	25.7	3.117
4881A	0.162		5.23	2.29	129.9		33.4		4750	0.16	34.677	5.24	27.857	25.5	3.181

E) AN ERROR OF 1 OHM, .057 PPT, HAS BEEN ASSUMED FOR THIS VALUE.

CATO EXPEDITION VI

49 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
37 16.5S	45 19.2W	12/08/72	0302 GMT

Z	T	S	SIGMA T	DT	DD
0	15.67	34.88	25.749	225.5	0.000
10	15.71	34.89	25.747	225.6	0.023
20	15.76	34.91	25.751	225.2	0.045
30	16.29	35.09	25.768	223.6	0.068
40	15.68	34.91	25.770	223.5	0.090
50	13.74	34.82	26.121	190.1	0.111
60	13.54	34.92	26.240	178.8	0.130
70	12.97	34.92	26.356	167.8	0.147
80	12.95	35.04	26.452	158.6	0.164
90	12.65	35.03	26.504	153.7	0.179
100	12.63	35.08	26.547	149.6	0.195
125	12.32	35.05	26.585	146.1	0.233
150	11.47	34.96	26.677	137.3	0.269
200	10.51	34.91	26.812	124.5	0.336
250	8.63	34.60	26.884	117.7	0.399
300	7.17	34.38	26.928	113.5	0.459
350	6.76	34.39	26.993	107.4	0.517
400	5.69	34.27	27.037	103.2	0.572
450	5.18	34.26	27.090	98.2	0.625
500	5.05	34.27	27.113	96.0	0.677
550	4.71	34.25	27.136	93.8	0.727
600	4.40	34.22	27.147	92.8	0.776
650	4.05	34.21	27.176	90.1	0.825
700	3.92	34.21	27.189	88.8	0.873
750A	3.78	34.23	27.219	86.0	0.920
800A	3.43	34.22	27.245	83.5	0.965
850A	3.38	34.26	27.282	80.0	1.009
900A	3.14	34.25	27.297	78.6	1.052
950A	3.01	34.27	27.324	76.0	1.093
1000A	3.01	34.31	27.356	73.0	1.134
1100A	2.84	34.35	27.403	68.5	1.211
1200A	2.76	34.40	27.450	64.0	1.284
1300A	2.68	34.46	27.505	58.6	1.353
1400A	2.70	34.52	27.551	54.5	1.418
1500A	2.72	34.59	27.605	49.4	1.479
1600A	2.68	34.61	27.625	47.5	1.537
1700A	2.74	34.67	27.667	43.5	1.592
1800A	2.77	34.70	27.689	41.5	1.646
1900A	2.81	34.75	27.725	38.0	1.698
2000A	2.87	34.78	27.743	36.3	1.747
2100A	2.93	34.82	27.770	33.8	1.796
2200A	2.95	34.83	27.776	33.2	1.845
2300A	2.85	34.84	27.793	31.6	1.892
2400A	2.82	34.85	27.804	30.6	1.939
2500A	2.71	34.84	27.805	30.4	1.985
2600A	2.54	34.83	27.812	29.7	2.030
2700A	2.53	34.84	27.821	28.9	2.075
2800A	2.35	34.82	27.821	29.0	2.119
2900A	2.17	34.81	27.828	28.3	2.163
3000A	2.01	34.79	27.824	28.6	2.205
3100A	1.92	34.79	27.832	27.9	2.247
3200A	1.71	34.77	27.832	27.9	2.287
3300A	1.47	34.74	27.825	28.5	2.327
3400A	1.34	34.74	27.835	27.6	2.365
3500A	1.21	34.73	27.836	27.5	2.402
3600A	1.08	34.71	27.829	28.2	2.438
3700A	0.97	34.71	27.836	27.5	2.473
3800A	0.83	34.70	27.837	27.4	2.507
3900A	0.70	34.70	27.845	26.7	2.540
4000A	0.57	34.69	27.845	26.7	2.571
4100A	0.47	34.69	27.851	26.1	2.601
4200A	0.38	34.68	27.848	26.4	2.629
4300A	0.32	34.68	27.851	26.0	2.657
4400A	0.26	34.68	27.855	25.7	2.684
4500A	0.22	34.68	27.857	25.5	2.710
4600A	0.19	34.67	27.851	26.1	2.736
4700A	0.18	34.67	27.851	26.1	2.762
4800A	0.17	34.67	27.852	26.0	2.788
4900A	0.16	34.67	27.852	26.0	2.814
5000A	0.16	34.68	27.860	25.2	2.839
5100A	0.16	34.67	27.852	26.0	2.864

50 STD

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
35 53.0S	46 37.9W	12/08/72	1619 GMT

Z	T	S	SIGMA T	DT	DD
0	19.76	36.11	25.689	231.1	0.000
10	19.71	36.10	25.694	230.6	0.023
20	19.45	36.10	25.762	224.1	0.046
30	19.10	36.05	25.815	219.1	0.068
40	18.63	36.01	25.853	215.4	0.090
50	18.72	35.99	25.866	214.2	0.112
60	18.61	35.96	25.871	213.6	0.133
70	17.94	35.87	25.970	204.4	0.154
80	17.89	36.04	26.112	190.9	0.174
90	17.78	36.05	26.147	187.6	0.194
100	17.73	36.09	26.190	183.5	0.212
125	17.08	35.96	26.248	177.9	0.259
150	16.63	35.91	26.317	171.4	0.303
200	15.59	35.70	26.396	163.9	0.390
250	15.00	35.62	26.467	157.2	0.474
300	14.80	35.62	26.511	153.0	0.556
350	14.55	35.60	26.550	149.3	0.636
400	14.25	35.52	26.553	149.0	0.716
450	12.64	35.19	26.630	141.8	0.795
500	11.27	34.91	26.675	137.5	0.870
550	9.57	34.69	26.802	125.4	0.942
600	7.91	34.52	26.931	113.2	1.007
650A	6.81	34.47	27.049	102.1	1.066
700A	6.06	34.37	27.069	100.1	1.121
750A	5.30	34.29	27.100	97.3	1.175
800A	4.97	34.29	27.138	93.6	1.227
850A	4.66	34.28	27.166	91.0	1.278
900A	4.38	34.27	27.188	88.9	1.327
950A	4.16	34.27	27.212	86.7	1.376
1000A	3.94	34.27	27.235	84.5	1.423
1100A	3.57	34.29	27.288	79.5	1.513
1200A	3.18	34.32	27.349	73.7	1.598
1300A	3.02	34.38	27.411	67.8	1.677
1400A	2.89	34.43	27.463	62.9	1.751
1500A	2.77	34.49	27.521	57.3	1.821
1600A	2.74	34.53	27.556	54.0	1.886
1700A	2.79	34.60	27.607	49.2	1.948
1800A	2.84	34.66	27.650	45.1	2.006
1900A	2.96	34.72	27.687	41.6	2.061
2000A	2.97	34.75	27.710	39.4	2.115
2100A	3.25	34.85	27.764	34.3	2.167
2200A	3.41	34.89	27.780	32.8	2.217
2300A	3.34	34.91	27.803	30.6	2.267
2400A	3.33	34.93	27.820	29.0	2.315
2500A	3.28	34.93	27.824	28.6	2.363
2600A	2.92	34.88	27.818	29.1	2.410
2700A	2.95	34.91	27.840	27.1	2.456
2800A	2.71	34.87	27.829	28.1	2.502
2900A	2.74	34.90	27.851	26.1	2.547
3000A	2.64	34.89	27.852	26.0	2.591
3100A	2.53	34.88	27.853	25.9	2.635
3200A	2.33	34.86	27.854	25.8	2.679
3300A	2.01	34.82	27.848	26.3	2.721
3400A	1.60	34.77	27.840	27.1	2.761
3500A	1.43	34.75	27.836	27.5	2.799
3600A	1.24	34.74	27.842	27.0	2.837
3700A	1.10	34.73	27.843	26.8	2.872
3800A	0.95	34.72	27.845	26.6	2.907
3900A	0.75	34.70	27.842	26.9	2.940
4000A	0.64	34.70	27.849	26.3	2.971
4100A	0.49	34.69	27.850	26.2	3.001
4200A	0.37	34.69	27.857	25.6	3.030
4300A	0.31	34.68	27.852	26.0	3.057
4400A	0.26	34.68	27.855	25.7	3.084
4500A	0.20	34.68	27.858	25.4	3.110
4600A	0.18	34.68	27.859	25.3	3.135
4700A	0.15	34.67	27.853	25.9	3.161
4800A	0.16	34.68	27.860	25.2	3.186
4900A	0.16	34.68	27.860	25.2	3.211

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 10.0S	39 21.8W	12/12/72	1256 1536	GMT	4829M	270	19KT	1	260 6 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	21.12	36.049	5.22	0.01			0.0	270.2
10	21.10	36.045	5.21	0.00	0.8		0.0	270.0
51	20.94	36.090	5.26	0.01			0.0	262.6
62	19.88	36.230	5.42	0.01	1.0		0.0	225.4
103	17.60	35.890	5.45	0.09			0.0	195.0
134	16.91	35.807	5.28	0.18	1.3		0.7	185.2
165	16.05	35.683	5.10	0.34			3.0	175.1
207	15.46	35.640	5.14	0.35	1.7		3.8	165.5
259	14.90	35.582	5.06	0.47			5.5	157.9
311	14.33	35.508	5.07	0.53	2.4		6.7	151.6
415	12.82	35.253	4.96	0.75			10.4	140.5
519	10.84	34.950	4.83	1.08	6.0		15.7	127.1
571	9.43	34.765	4.82	1.28			19.4	117.7
622	8.16	34.617	4.86	1.46	10.2		22.2	109.6
725	5.95	34.385	5.28	1.68	13.9		25.8	97.7
826	4.58	34.271	5.66	1.83	17.6		27.7	90.9
927	4.02	34.287	5.37		25.6		30.5	84.0
1101A	3.33	34.352	4.88	2.10	38.8		31.4	72.6
1203A	3.10	34.420	4.66	2.10	45.0		32.2	65.4
1306A	3.00	34.476	4.49	2.05	50.7		32.1	60.3
1409A	2.86	34.546	4.41	2.14	54.8		32.4	53.9
1562A	2.85	34.640	4.50	2.00	54.9		31.8	46.7
1715A	2.90	34.727	4.74	1.79	50.7		28.1	40.5
1921A	2.95	34.802	5.04	1.70	46.2		26.1	35.3
2227A	3.00	34.885	5.54	1.34	35.7		21.4	29.5
2432A	2.97	34.908	5.70	1.31	32.6		20.4	27.5
2636A	2.95	34.926	5.86	1.30	29.5		20.0	25.9
2841A	2.85	34.925	5.87	1.31	30.6		20.1	25.2
3045A	2.74	34.920	5.88	1.29	33.2		19.9	24.6
3250A	2.55	34.907	5.88	1.32	37.2		21.1	24.0
3558A	2.08	34.862	5.78	1.49	53.5		23.6	23.7
3866A	1.44	34.794	5.49	1.74	79.5		26.1	24.2
4174A	0.722	34.718	5.23	2.01	108.1		30.6	25.4
4482A	0.206	34.676	5.19	2.16	123.8		33.4	25.7
4585A	0.223	34.676	5.19	2.19	123.0		32.5	25.8
4690A	0.233	34.676	5.24	2.17	123.4		33.1	25.9
4793A	0.244	34.675	5.24	2.12	123.7		32.6	26.0

Z	T	S	O2	SIGT	DT	DD
0	21.12	36.049	5.22	25.277	270.2	0.000
10	21.10	36.045	5.21	25.280	270.0	0.027
20	21.06	36.054	5.22	25.299	268.2	0.054
30	21.02	36.065	5.23	25.318	266.4	0.081
50	20.94	36.087	5.26	25.356	262.8	0.134
75	18.93	36.038	5.43	25.850	215.8	0.194
100	17.70	35.889	5.45	26.045	197.2	0.247
125	17.07	35.826	5.34	26.148	187.5	0.296
150	16.45	35.739	5.18	26.228	179.9	0.343
200	15.53	35.642	5.13	26.366	166.8	0.432
250	14.99	35.592	5.08	26.448	159.0	0.517
300	14.46	35.525	5.07	26.513	152.8	0.599
400	13.07	35.295	4.98	26.626	142.1	0.757
500	11.26	35.010	4.85	26.755	129.9	0.904
600	8.69	34.678	4.84	26.934	112.9	1.037
700	6.43	34.432	5.16	27.070	100.1	1.154
800	4.86	34.291	5.60	27.151	92.4	1.260
1000	3.69	34.309	5.15	27.290	79.2	1.448
1200	3.10	34.418	4.67	27.433	65.6	1.610
1500	2.85	34.606	4.46	27.605	49.3	1.809
1750	2.91	34.743	4.79	27.710	39.5	1.947
2000	2.97	34.828	5.18	27.773	33.5	2.070
2250	3.00	34.888	5.56	27.818	29.2	2.186
2500	2.97	34.914	5.76	27.842	26.9	2.298
2750	2.90	34.925	5.87	27.857	25.4	2.408
3000	2.77	34.921	5.88	27.865	24.7	2.518
3250	2.55	34.907	5.88	27.873	24.0	2.627
3500	2.18	34.871	5.81	27.876	23.7	2.732
3750	1.70	34.820	5.61	27.873	23.9	2.830
4000	1.12	34.759	5.36	27.865	24.7	2.920
4250	0.55	34.704	5.22	27.857	25.5	2.999
4500	0.21	34.677	5.19	27.854	25.8	3.068
4750	0.24	34.676	5.24	27.852	26.0	3.134

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
30 10.0S	39 21.8E	12/12/72	1109 GMT

Z	T	S	SIGMA T	DT	DD
0	21.12	36.05	25.278	270.2	0.000
10	21.12	36.05	25.278	270.2	0.027
20	21.08	36.06	25.296	268.4	0.054
30	21.06	36.08	25.317	266.4	0.081
40	21.10	36.10	25.321	266.0	0.108
50	21.00	36.08	25.333	264.9	0.134
60	20.10	36.12	25.606	238.9	0.160
70	19.56	36.20	25.805	220.1	0.193
80	18.64	36.04	25.925	208.7	0.205
90	17.93	35.91	26.003	201.2	0.225
100	17.74	35.90	26.042	197.5	0.246
125	17.25	35.86	26.131	189.1	0.295
150	16.44	35.74	26.231	179.6	0.342
200	15.56	35.67	26.380	165.4	0.431
250	15.00	35.59	26.444	159.4	0.516
300	14.31	35.50	26.525	151.7	0.598
350	13.79	35.41	26.566	147.9	0.677
400	13.02	35.28	26.624	142.4	0.755
450	12.13	35.13	26.683	136.7	0.830
500	11.18	34.99	26.754	130.0	0.903
550	9.90	34.80	26.833	122.6	0.972
600	8.70	34.66	26.920	114.3	1.037
650	7.37	34.50	26.994	107.3	1.098
700	6.49	34.45	27.076	99.5	1.155
750	5.58	34.36	27.121	95.2	1.208
800	4.81	34.30	27.165	91.1	1.259
850	4.45	34.26	27.189	88.8	1.309
900	4.17	34.30	27.234	84.5	1.356
950	4.00	34.32	27.268	81.3	1.402
1000	3.80	34.33	27.296	78.6	1.446
1100	3.53	34.39	27.371	71.6	1.530
1200A	3.11	34.41	27.427	66.3	1.607
1300A	2.98	34.47	27.486	60.6	1.679
1400A	2.90	34.54	27.549	54.6	1.745
1500A	2.85	34.60	27.602	49.7	1.807
1600A	2.85	34.66	27.649	45.2	1.864
1700A	2.89	34.72	27.694	41.0	1.918
1800A	2.91	34.76	27.724	38.1	1.970
1900A	2.92	34.80	27.755	35.2	2.019
2000A	2.99	34.84	27.780	32.8	2.066
2100A	3.00	34.86	27.795	31.4	2.113
2200A	3.01	34.88	27.810	29.9	2.159
2300A	2.98	34.89	27.821	28.9	2.204
2400A	2.98	34.90	27.829	28.2	2.249
2500A	2.97	34.91	27.838	27.3	2.294
2600A	2.96	34.93	27.855	25.7	2.338
2700A	2.92	34.92	27.850	26.1	2.382
2800A	2.86	34.93	27.864	24.9	2.426
2900A	2.81	34.92	27.860	25.2	2.470
3000A	2.75	34.92	27.866	24.7	2.514
3100A	2.69	34.91	27.863	24.9	2.558
3200A	2.62	34.91	27.869	24.3	2.602
3300A	2.50	34.90	27.872	24.1	2.645
3400A	2.36	34.69	27.876	23.7	2.688
3500A	2.20	34.87	27.873	24.0	2.730
3600A	1.98	34.85	27.875	23.8	2.770
3700A	1.76	34.83	27.876	23.7	2.809
3800A	1.53	34.80	27.869	24.4	2.847
3900A	1.41	34.79	27.870	24.3	2.883
4000A	1.26	34.77	27.864	24.8	2.919
4100A	0.97	34.74	27.860	25.2	2.953
4200A	0.63	34.71	27.857	25.5	2.985
4300A	0.40	34.69	27.855	25.7	3.014
4400A	0.27	34.68	27.854	25.8	3.041
4500A	0.21	34.67	27.849	26.2	3.068
4600A	0.22	34.68	27.857	25.5	3.094
4700A	0.23	34.68	27.856	25.6	3.120
4800A	0.24	34.68	27.856	25.6	3.146
4824A	0.23	34.67	27.848	26.3	3.152

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