UNIVERSITY OF CALIFORNIA
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

Cruise 7006
14-15 June 1970

CalCOFI Cruise 7008
17 August-2 October 1970

CalCOFI Cruise 7102
8 February-5 April 1971

Sponsored by
Marine Research Committee

and

Special Basin Cruises
1969-1971

Sponsored by
University of California

SIO Reference 79-30

Approved for distribution:

W. A. Nierenberg

W. A. Nierenberg, Director

CONTENTS

INTRODUCTION

The data in this report were collected during cruises 7008* and 7102 of the California Cooperative Fisheries Investigations (CalCOFI) program aboard the RV Alexander Agassiz, of the Scripps Institution of Oceanography. Both cruises were a continuation of the testing of zooplankton sampling gear begun on CalCOFI Cruise 6912 and consisted of opening-closing nets being deployed at selected stations both in daylight and at night to sample eight separate depth-ranges between 500m and the sea surface. Included also are two deep stations occupied in the Gulf of California in June 1970 during a special biological survey on the Agassiz. The report preceeding this one in the series was SIO Ref. 79-29, which included the data for October and December 1969.

These data were collected in part and processed completely by personnel of the Data Collection and Processing Group (DCPG, MLR)**, Scripps Institution of Oceanography.

STANDARD PROCEDURES

Hydrographic Cast Data

Typical hydrographic casts consisted of 18 bottles. At most stations the maximum sampling depth was 1000 meters, bottom depth permitting. On cruise 7008 bottom casts were lowered on three stations. Salinity samples were drawn and run from all levels of the deep casts on these stations. Temperatures, oxygen, and nutrients were determined for all depths on each station, but usually samples from only four to eight selected depths were used to determine salinity for comparison with the STD.

In general, paired protected reversing thermometers were used to determine temperatures which were recorded in hundredths of a Celsius degree. Temperatures determined using unprotected (pressure) thermometers or surface "bucket" thermometers were recorded to tenths of a degree. Sample bottles used below 100 meters were equipped with unprotected thermometers.

A Washington conductive bridge was used to analyze all salinity samples collected on cruises 7008 and 7102. A Hytech (now Grundy Environmental Systems, Inc.) was used on cruise 7006. All samples were analyzed at sea.

The salinity values were recorded and are reported to three decimal places, provided acccepted standards were met. If only one determination per sample was obtained, or there was doubt concerning the accuracy of the analytical results, the salinities are reported to two decimal places. All STD salinities are tabulated to hundredths.

Dissolved oxygen was determined by the Winkler method as modified by Carpenter (1965), using the equipment and procedure outlined by Anderson (1971).

On cruises 7008 and 7102, phosphate, silicate, nitrite, and nitrate were determined using a first generation Technicon^{R} AutoAnalyzer^{R} and methodologies developed at the National Marine Fisheries Service based on the methods of Strickland (1968). On cruise 7006, phosphates only were determined, using a Beckman spectrophotometer.

The observed data could not be evaluated using standard DCPG techniques (Klein, 1973) due to the sparsity of salinity data. Temperatures and salinities were compared with the STD values while oxygen and nutrient values were plotted against depth.

Chlorophyll and phaeophytin were determined fluormetrically according to the procedure of Yentch and Menzel (1963) as modified by Holm-Hansen et al. (1965).

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*The first two digits represent the year and the second two digits the month of the cruise. The CalCOFI station designations have been in use for over twenty years. The first part specifies a line normal to the general trend of the coast line (CalCOFI line). The second part specifies a station position relative to the coast on the CalCOFI line.

**Now the Physical and Chemical Oceanographic Data Facility (PACODF).

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

A digital data logger Model 8114 was used for recording the data from the STD on both 7008 and 7102. After a few lowerings on 7008, the digitizer malfunctioned and all data were digitized from the analog recordings. Comparison with Nansen bottle data indicated a salinity correction of -0.12% for all but a few lowerings for which the correction was less. The temperature comparison was quite erratic and resulted in various corrections, the largest being -0.20°. The digitizer worked well on 7102 requiring no correction to the temperature. The salinity correction was minor until the second leg of the cruise when there was a large off-set on the first two lowerings. After repair the last few stations were again in close agreement with the Nansen bottle data.

TABULATED DATA

The time reported is Greenwich Mean Time. For STD lowerings it is the "start down" time, and for bottle casts it is the time of messenger release. When more than one cast was lowered on a station, the messenger times for the first and last casts are given. Multiple casts, excluding the surface cast, are indicated by a footnote letter following the observed depth.

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

Data for all cruises presented in this report were obtained by bottle casts and by the STD, and appear in two forms:

1. Data from the sample casts are tabulated with the observed levels of depth on the left of a page. When salinity samples were collected and analyzed for all observed levels, interpolated and computed values at standard levels of depth appear on the right of the page.
2. For each STD lowering, temperature and salinity values are tabulated only at standard levels of depth and appear with computed values of DT and DD on the right of the page. Corrections have been applied to the temperature and salinity values as discussed previously in this report.

The same parameters have been tabulated in this report as in previous reports. The decimal has been omitted from the CalCOFI station number so station 90.65 appears in the tabulated data as 90065. 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-phosphorous	µg at/L
SiO3	"Reactive" inorganic silicate-silicon	µg at/L
NO2	"Reactive" nitrite-nitrogen	µg at/L
NO3	"Reactive" nitrate-nitrogen	µg at/L
DT	δ_T Thermosteric anomaly	cl/ton
SIGT	$\sigma_t = (\rho_{s,t,0} - 1)10^3$ where $\rho_{s,t,0}$ is the density the parcel would have if moved isothermally to the sea surface.	g/L
DD	Geopotential anomaly, referred to the sea surface.	dyn. meters

FOOTNOTES

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

U: Uncertain value. Values which are not used in interpolation because they seem to be in error without apparent reason.

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

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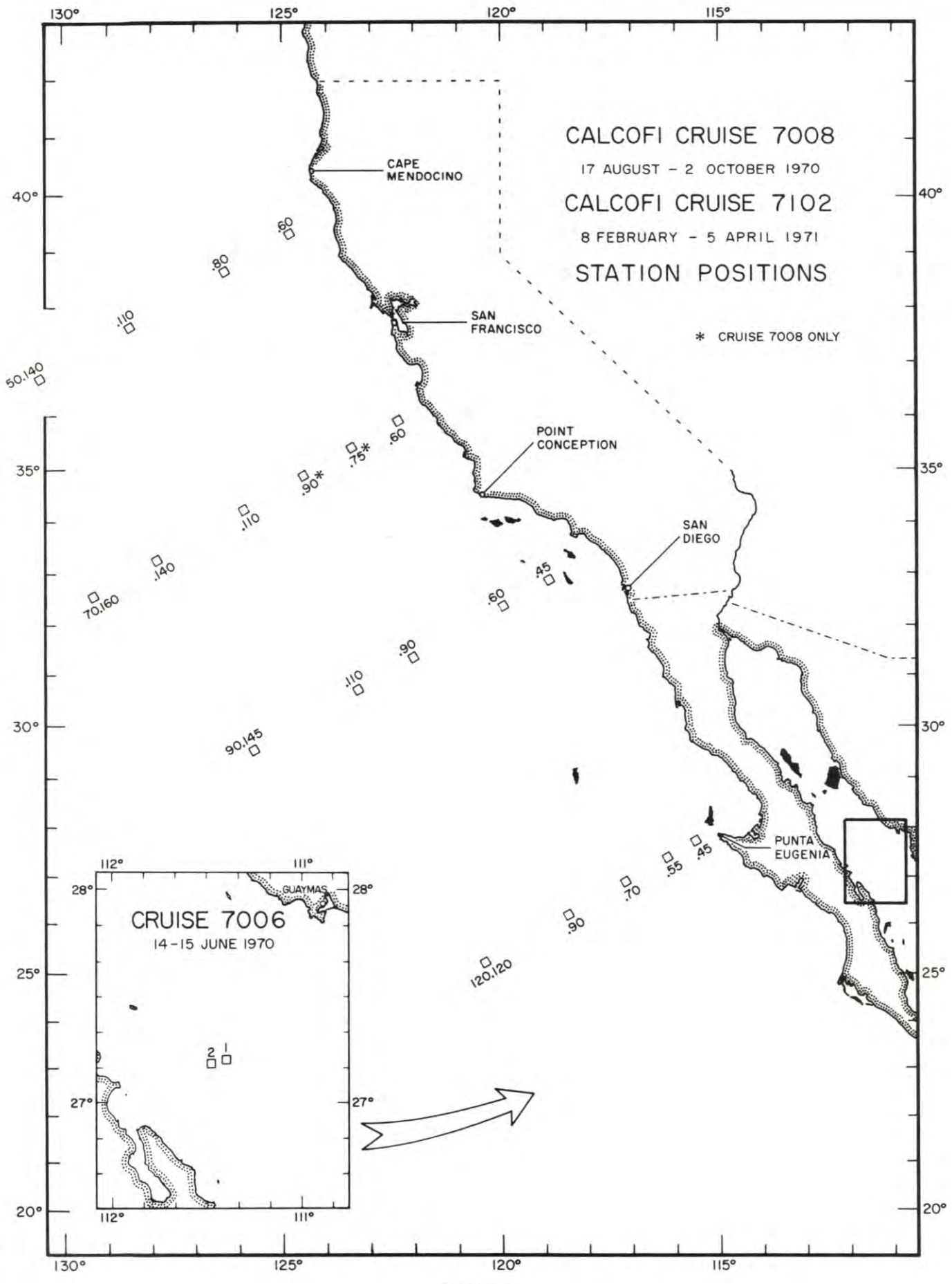
CALCOFI CRUISE 7008
17 AUGUST - 2 OCTOBER 1970
CALCOFI CRUISE 7102
8 FEBRUARY - 5 APRIL 1971
STATION POSITIONS
* CRUISE 7008 ONLY
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
GUAYMAS
CRUISE 7006
14-15 JUNE 1970
130°
125°
120°
115°
40°
35°
30°
25°
20°
112°
111°
28°
27°
.60
.80
.110
50.140
.60
.75*
.90*
.110
.140
70.160
.45
.60
.90
.110
90.145
.45
.55
.70
.90
120.120
2
1

FIGURE 1

PERSONNEL

Cruise 7102

SHIP'S CAPTAIN

Davis, Laurence E., RV Alexander Agassiz (Leg I)

Hansen, Terry, RV Alexander Agassiz (Leg II)

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV Alexander Agassiz:

Bryan, Walter R.	Marine Technician, (in charge)
Adair, W. Steven	Laboratory Helper, SDSC-Sea Grant
Boaz, James R.	Laboratory Helper, SDSC-Sea Grant
Brennan, Robert E.	Marine Technician
Clary, John C.	Laboratory Helper, SDSC-Sea Grant
Costello, James P.	Laboratory Technician
Daily, Debora G.	Laboratory Helper, SDSC-Sea Grant
Fey, Connie L.	Laboratory Helper, SDSC-Sea Grant
Gustafson, Ted B.	Marine Technician
Hemingway, George T.	Laboratory Technician
Kaye, H. Ross	Electronics Technician
Pierce, Stephen E.	Marine Technician
Rowe, R. Al	Marine Technician

RV ALEXANDER AGASSIZ CRUISE 7102

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
39 20.0N	124 50.7W	2/12/71	2237 GMT	2785M	310	12KT	1	260 6 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT

Z	T	S	SIGT	DT	DD
0	11.94	32.79	24.908	305.5	0.000
10	11.51	32.79	24.988	298.0	0.030
20	11.43	32.79	25.002	296.6	0.060
30	11.35	32.78	25.009	296.0	0.090
50	11.05	32.77	25.055	291.6	0.149
75	10.14	32.73	25.181	279.6	0.220
100	9.81	33.12	25.539	245.5	0.286
125	9.24	33.49	25.921	209.2	0.344
150	8.46	33.66	26.180	184.6	0.394
200	7.80	33.90	26.462	157.9	0.481
250	7.14	33.94	26.587	145.9	0.558
300	6.57	33.97	26.688	136.3	0.631
400	5.47	33.99	26.843	121.7	0.764
500	5.13	34.10	26.970	109.6	0.885
600	4.52	34.16	27.086	98.6	0.995
700	4.33	34.25	27.178	89.9	1.096
800	4.15	34.32	27.252	82.8	1.189
1000	3.68	34.41	27.372	71.5	1.359

RV ALEXANDER AGASSIZ CRUISE 7102

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
39 20.0N	124 50.7W	2/12/71	2359 GMT	2785M	310	12KT	1	260 6 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	11.71	32.798	6.40		2.	0.01	0.3	300.9
10	11.50	32.797	6.52		1.	0.01	0.1	297.3
30	11.36	32.791	6.43	0.28	1.	0.02	0.1	295.3
60	10.87		6.54	0.30	2.	0.07	1.1	
79	10.46		6.49	0.40	4.	0.22	2.6	
94	10.12		6.41	0.59	6.	0.38	4.5	
109	9.84		5.67	0.75	8.	0.10	7.9	
136	9.00		4.27	1.48	21.	0.01	19.5	
163	8.29		4.04	1.64	29.	0.01	23.8	
193	7.92							
228	7.42		3.21	2.08	39.	0.01	28.2	
298	6.53		2.39	2.50	56.	0.01	33.3	
408	5.38		1.63	3.03	76.	0.01	38.5	
517	4.97		0.87	3.33	95.	0.01	41.7	
657	4.24		0.56	3.47	113.	0.01	43.5	
814	4.10	34.334	0.34	3.56	125.	0.01	43.3	81.3
984	3.76	34.438	0.36	3.56	135.	0.01	43.7	70.1
1194	3.24		0.73	3.58	151.	0.01	44.4	

RV ALEXANDER AGASSIZ CRUISE 7102

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
38 41.0N	126 19.0W	2/15/71	0015 GMT	4110M	240	16KT	5	240 8 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT

Z	T	S	SIGT	DT	DD
0	10.97	32.77	25.069	290.3	0.000
10	10.73	32.72	25.072	289.9	0.029
20	10.40	32.75	25.152	282.3	0.058
30	10.18	32.71	25.159	281.7	0.086
50	10.11	32.74	25.194	278.4	0.142
75	9.91	32.83	25.297	268.5	0.211
100	8.99	33.28	25.797	221.0	0.272
125	8.77	33.53	26.026	199.2	0.325
150	8.27	33.76	26.282	174.8	0.373
200	8.16	33.98	26.471	156.9	0.457
250	7.44	33.96	26.561	148.4	0.535
300	7.08	34.05	26.682	136.9	0.609
400	6.22	34.10	26.836	122.3	0.743
500	5.18	34.13	26.988	107.9	0.864
600	4.88	34.22	27.093	97.9	0.973
700	4.42	34.28	27.192	88.5	1.073
800	4.10	34.34	27.274	80.8	1.165
1000	3.58	34.43	27.398	69.0	1.330

RV ALEXANDER AGASSIZ CRUISE 7102 50AA0

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
38 41.0N	126 19.0W	2/15/71	0130 GMT	4110M	240	16KT	5	240 8 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	10.96	32.730	6.65	0.46	5.	0.05	1.5	293.0							
10	10.96	32.730	6.43	0.22	5.	0.04	1.4	293.0							
30	10.36	32.719	6.72	0.28	5.	0.14	2.7	284.0							
55	10.10		6.70	0.36	5.	0.16	4.3								
71	10.14			0.36	6.	0.35	4.1								
86	9.98		6.30	0.38	7.	0.23	5.3								
101	9.64		5.85	0.69	11.	0.02	8.7								
130	8.74		4.67	1.33	20.	0.01	18.7								
154	8.36		4.26	1.64	28.	0.00	21.8								
180	8.07		3.92	1.68	34.	0.00	23.4								
214	8.02		2.98	2.00	43.	0.00	28.9								
279	7.22		2.22	2.22	51.	0.00	31.2								
388	6.35		1.57	2.46	67.	0.00	35.7								
476	5.38		1.24	2.97	83.	0.00	40.4								
608	4.84		0.55	3.39	109.	0.00	40.4								
760	4.28	34.285	0.48	3.25	118.	0.00	42.2	86.7							
909	3.86	34.381	0.38	3.35	129.	0.00	42.1	75.4							
1118	3.28		0.59	3.19	148.	0.00	46.5								

RV ALEXANDER AGASSIZ CRUISE 7102 50110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 40.5N	128 41.0W	2/17/71	2147 GMT	4864M	280	13KT	1	290 9 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	11.32	32.82		25.045	292.5	0.000
									10	11.31	32.81		25.039	293.1	0.029
									20	11.29	32.82		25.051	292.0	0.059
									30	11.30	32.82		25.049	292.2	0.088
									50	11.30	32.82		25.049	292.2	0.146
									75	10.95	32.86		25.142	283.3	0.219
									100	9.20	33.30		25.779	222.7	0.282
									125	8.76	33.65		26.121	190.2	0.335
									150	8.53	33.82		26.290	174.1	0.381
									200	7.67	33.96		26.543	150.1	0.463
									250	7.17	34.03		26.654	139.6	0.537
									300	6.51	34.04		26.751	130.4	0.607
									400	5.63	34.10		26.910	115.3	0.734
									500	5.14	34.18		27.032	103.7	0.849
									600	4.79	34.28		27.151	92.4	0.953
									700	4.43	34.34		27.238	84.1	1.048
									800	4.13	34.40		27.318	76.6	1.136
									1000	3.63	34.48		27.433	65.7	1.294

RV ALEXANDER AGASSIZ CRUISE 7102 50110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 40.4N	128 43.4W	2/17/71	2253 GMT	4864M	280	13KT	1	290 9 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	11.30	32.796	6.51	0.57	4.	0.08	0.3	293.9							
10	11.29		6.27	0.34	4.	0.04	0.6								
30	11.26		6.56	0.36	3.	0.12	0.9								
61	11.24		6.49	0.36	3.	0.16	0.9								
79	9.92	32.912	5.91	0.77	8.	0.03	6.6	262.6							
95	9.36		5.29	1.13	14.	0.05	12.1								
109	8.74	33.396	4.80	1.35	19.	0.06	16.4	208.7							
138	8.60		3.94	1.82	29.	0.03	22.5								
161	8.34		3.61	1.98	34.	0.04	24.6								
191	7.86	33.946	3.27	2.10	40.	0.09	28.6	155.2							
226	7.26		3.65	2.20	46.	0.04	28.1								
293	6.58		2.39	2.69	59.	0.05	36.2								
397	5.64		1.18	3.21	80.	0.03	39.5								
503	5.06		0.65	3.45	95.	0.02	42.7								
643	4.62		0.25	3.78	115.	0.00	44.9								
802	4.10		0.45	3.66	123.	0.00	43.8								
973	3.70	34.455	0.49	3.66	131.	0.01	46.4	68.3							
1172	3.22		0.75	3.39	145.	0.04	43.4								

RV ALEXANDER AGASSIZ CRUISE 7102 50140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 39.1N	130 42.0W	2/18/71	2315 GMT	4688M	030	16KT	1	250 12 9

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	12.74	32.98		24.903	306.1	0.000
									10	12.62	33.01		24.949	301.6	0.030
									20	12.61	33.01		24.951	301.5	0.061
									30	12.60	33.01		24.953	301.3	0.091
									50	12.60	33.02		24.961	300.5	0.151
									75	12.60	33.02		24.961	300.5	0.227
									100	11.89	32.89		24.995	297.3	0.302
									125	11.01	32.88		25.147	282.8	0.375
									150	10.31	33.24		25.549	244.6	0.442
									200	8.86	33.67		26.121	190.1	0.552
									250	8.19	33.88		26.388	164.8	0.643
									300	7.47	33.94		26.541	150.3	0.724
									400	5.95	33.96		26.760	129.5	0.869
									500	5.12	34.05		26.931	113.2	0.995
									600	4.72	34.15		27.056	101.4	1.109
									700	4.60	34.26		27.172	90.4	1.211
									800	4.28	34.33		27.247	83.4	1.305
									1000	3.64	34.42		27.384	70.3	1.475

RV ALEXANDER AGASSIZ CRUISE 7102 50140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 39.1N	130 42.0W	2/19/71	0025 GMT	4688M	030	16KT	1	250 12 9

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	12.70	33.016	6.21			0.00	0.4	302.7							
10	12.61	33.014	6.22	0.16	6.	0.00	0.4	301.2							
30	12.58		6.19	0.20	4.	0.00	0.6								
61	12.56	33.022	6.31	0.18	3.	0.00	0.6	299.7							
81	12.56		6.20	0.20	3.	0.00	0.5								
96	11.68		6.25			0.00									
111	11.03		6.28	0.30	3.	0.11	0.7								
140	10.44		5.77	0.30	3.	0.15	1.1								
165	9.60		5.41	0.55	6.	0.00	5.7								
194	9.00		4.85	0.77	11.	0.00	10.8								
229	8.47		4.15	1.15	19.	0.00	17.9								
300	7.38		3.48	1.56	28.	0.00	22.6								
409	5.79		2.11	2.06	45.	0.00	28.7								
517	4.98		1.26	2.79	75.	0.00	38.1								
667	4.67		0.57	3.09	90.	0.00	42.1								
816	4.21	34.342	0.39			0.00		81.7							
985	3.66	34.435	0.36			0.00		69.4							
1190	3.18		0.77	3.37	139.	0.00	47.2								

RV ALEXANDER AGASSIZ CRUISE 7102 50140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 38.0N	130 41.0W	2/20/71	1628 GMT					

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	12.66	33.03		24.957	300.9	0.000
									10	12.67	33.03		24.955	301.1	0.030
									20	12.67	33.03		24.955	301.1	0.060
									30	12.67	33.03		24.955	301.1	0.090
									50	12.68	33.03		24.953	301.3	0.151
									75	12.67	33.05		24.970	299.6	0.226
									100	12.51	33.03		24.986	298.1	0.302
									125	10.79	33.11		25.364	262.1	0.372
									150	9.74	33.31		25.699	230.3	0.434
									200	8.69	33.74		26.202	182.4	0.539
									250	8.04	33.91		26.434	160.4	0.627
									300	7.22	33.94		26.576	147.0	0.706
									400	5.91	33.98		26.781	127.5	0.848
									500	5.00	34.04		26.937	112.7	0.974

RV ALEXANDER AGASSIZ CRUISE 7102 70060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 52.3N	122 23.8W	2/27/71	2026 GMT	2879M	310	18KT	1	310 7 12

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	10.54	33.60		25.789	221.8	0.000
									10	10.53	33.60		25.790	221.6	0.022
									20	10.52	33.61		25.800	220.7	0.044
									30	10.50	33.60		25.796	221.1	0.066
									50	10.45	33.61		25.812	219.5	0.111
									75	9.57	33.73		26.054	196.5	0.163
									100	9.11	33.88		26.246	178.3	0.210
									125	8.85	33.98		26.365	167.0	0.254
									150	8.37	34.00		26.455	158.4	0.295
									200	7.83	34.06		26.583	146.3	0.373
									250	7.41	34.09		26.667	138.3	0.446
									300	7.03	34.12		26.744	131.0	0.516
									400	6.35	34.20		26.898	116.4	0.644
									500	5.69	34.27		27.037	103.2	0.760
									600	5.02	34.31		27.149	92.6	0.865
									700	4.75	34.39		27.243	83.7	0.960
									800	4.35	34.43		27.318	76.5	1.048
									1000	3.85	34.48		27.410	67.8	1.209

RV ALEXANDER AGASSIZ CRUISE 7102 70060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 53.0N	122 21.9W	2/27/71	2139 GMT	2879M	310	18KT	1	310 7 12

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	10.56	33.580	6.22	1.03	14.	0.16	10.2	223.6							
10	10.54	33.579	6.22	0.93	14.	0.17	10.2	223.3							
30	10.50		6.10	1.07	15.	0.19	10.5								
55	10.40		5.87	1.43	15.	0.16	13.1								
70	9.85	33.640	4.60	1.54	19.	0.08	17.5	207.6							
85	9.56		3.61	1.82	24.	0.02	22.3								
100	9.14		3.40	1.96	28.	0.04	24.3								
129	8.90		2.99	2.12	32.	0.02	26.3								
153	8.41		2.96	2.22	36.	0.04	28.3								
179	8.04		2.77	2.36	41.	0.03	29.2								
214	7.78		2.45	2.48	46.	0.02	30.7								
278	7.06		1.71	2.83	57.	0.04	34.7								
376	6.42		0.94	3.25	71.	0.03	39.9								
475	5.94		0.47	3.41	84.	0.05	39.7								
609	4.99		0.39	3.68	100.	0.05	41.3								
761	4.48	34.409	0.40	3.76	116.	0.05	44.1	79.8							
909	3.92	34.461	0.55	3.74	129.	0.04	44.1	69.9							
1118	3.60		0.72	3.72	137.	0.04	45.1								

RV ALEXANDER AGASSIZ CRUISE 7102 70110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 12.7N	125 54.0W	2/25/71	2208 GMT		360	31KT	1	360 12 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	12.81	33.05		24.943	302.2	0.000
									10	12.82	33.06		24.949	301.7	0.030
									20	12.81	33.05		24.943	302.2	0.060
									30	12.82	33.06		24.949	301.7	0.091
									50	12.62	33.05		24.980	298.7	0.151
									75	10.64	33.12		25.400	258.7	0.221
									100	9.31	33.66		26.042	197.7	0.278
									125	8.99	33.82		26.218	181.0	0.326
									150	8.48	33.88		26.344	169.0	0.371
									200	7.83	33.99		26.528	151.5	0.452
									250	7.25	34.06		26.666	138.4	0.527
									300	6.71	34.06		26.740	131.4	0.596
									400	5.73	34.12		26.914	114.9	0.724
									500	5.23	34.21		27.045	102.5	0.838
									600	4.80	34.29		27.158	91.8	0.941
									700	4.52	34.35		27.236	84.3	1.036
									800	4.19	34.40		27.312	77.2	1.124
									1000	3.70	34.46		27.410	67.9	1.285

RV ALEXANDER AGASSIZ CRUISE 7102 70110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 13.0N	125 55.2W	2/25/71	2324 GMT		360	31KT	1	360 12 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	12.74	33.058	6.50	0.34	4.	0.00	0.6	300.3							
10	12.76	33.056	6.34	0.34	3.	0.00	0.7	300.8							
30	12.78		6.30	0.34	2.	0.01	0.5								
61	12.47	33.076	6.32	0.44	2.	0.04	1.1	294.0							
81	10.68		5.09	1.15	11.	0.03	12.8								
96	9.82		4.16	1.62	16.	0.00	19.5								
111	9.34		3.82	1.82	19.	0.00	23.1								
140	8.76		3.62	1.98	25.	0.00	25.3								
166	8.35		3.16	2.20	30.	0.00	27.6								
194	7.93		2.91	2.32	37.	0.00	29.1								
231	7.55		2.41	2.55	43.	0.00	32.0								
300	6.68		1.71	3.17	54.	0.00	35.9								
409	5.69		0.95	3.33	72.	0.00	40.9								
518	5.10		0.47	3.56	87.	0.00	43.3								
664	4.60		0.37	3.68	101.	0.00	44.3								
823	4.13	34.426	0.47	3.72	111.	0.00	45.3	74.6							
988	3.61	34.483	0.71	3.76	123.	0.00	45.3	65.3							
1195	3.23		0.86	3.72	133.	0.00	43.8								

RV ALEXANDER AGASSIZ CRUISE 7102 70140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 16.3N	127 57.0W	2/24/71	2345 GMT	4498M	360	12KT	2	360 7 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	13.10	32.93		24.793	316.5	0.000
									10	13.10	32.93		24.793	316.5	0.032
									20	13.05	32.93		24.803	315.5	0.063
									30	12.97	32.91		24.804	315.5	0.095
									50	12.89	32.90		24.812	314.7	0.158
									75	12.63	32.88		24.847	311.4	0.237
									100	11.67	33.02		25.136	283.8	0.312
									125	11.21	33.14		25.313	267.0	0.381
									150	10.05	33.51		25.803	220.4	0.443
									200	9.08	33.87		26.243	178.6	0.544
									250	8.11	34.00		26.494	154.7	0.630
									300	7.35	34.02		26.620	142.7	0.706
									400	6.24	34.05		26.794	126.3	0.846
									500	5.57	34.17		26.973	109.3	0.969
									600	5.05	34.26		27.106	96.7	1.079
									700	4.69	34.33		27.202	87.6	1.178
									800	4.41	34.40		27.288	79.4	1.269
									1000	3.77	34.47		27.411	67.8	1.433

RV ALEXANDER AGASSIZ CRUISE 7102 70140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 16.3N	127 57.0W	2/25/71	0101 GMT	4498M	360	12KT	2	360 7 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	13.28	32.960	6.30	0.32	3.	0.00	0.0	317.7							
11	13.30	32.961	6.25	0.30	2.	0.00	0.1	318.0							
31	13.34		6.21	0.28	1.	0.00	0.1								
57	12.92		6.28	0.32	2.	0.00	0.1								
72	13.28		6.15	0.42	2.	0.04	0.2								
87	12.12		6.00	0.55	4.	0.14	3.7								
101	11.62	33.009	6.00	0.57	4.	0.13	3.3U	283.8							
130	10.73		5.47	0.87	7.	0.06	7.9								
154	9.91		4.33	1.52	17.	0.02	17.2								
180	9.36		3.73	1.80	25.	0.03	21.8								
215	8.73		3.58	1.86	31.	0.00	23.9								
279	7.60		3.45	2.06	42.	0.00	26.5								
379	6.38		1.85	2.83	65.	0.00	34.7								
476	5.44		1.19	3.27	87.	0.00	39.5								
610	4.96		0.45	3.51	116.U	0.00	41.5								
764	4.48	34.368	0.34	3.66	121.	0.00	45.2	82.5							
914	3.91	34.436	0.46	3.64	135.	0.00	42.5	71.7							
1124	3.35		0.72	3.58	150.	0.00	43.7								

RV ALEXANDER AGASSIZ CRUISE 7102 70160

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 32.0N	129 21.5W	2/21/71	2027 GMT	4116M	360	28KT	1	350 8 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	15.97	33.62		24.715	323.9	0.000
									10	15.99	33.64		24.726	322.9	0.032
									20	16.15	33.69		24.728	322.7	0.065
									30	16.25	33.73		24.735	321.9	0.097
									50	16.55	33.84		24.751	320.5	0.161
									75	16.59	33.86		24.757	319.9	0.242
									100	16.59	33.87		24.764	319.2	0.323
									125	15.11	33.91		25.128	284.5	0.399
									150	13.21	33.69		25.358	262.7	0.468
									200	9.84	33.76		26.033	198.6	0.585
									250	9.22	33.96		26.290	174.1	0.681
									300	8.28	34.00		26.469	157.1	0.766
									400	6.41	34.03		26.756	129.9	0.915
									500	5.54	34.11		26.929	113.5	1.043
									600	5.02	34.23		27.085	98.6	1.155
									700	4.73	34.32		27.189	88.8	1.256
									800	4.21	34.38		27.294	78.9	1.347
									1000	3.81	34.47		27.407	68.2	1.510

RV ALEXANDER AGASSIZ CRUISE 7102 70160

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 33.4N	129 20.9W	2/21/71	2134 GMT	4116M	360	28KT	1	350 8 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.08	33.642	5.87	0.26	2.	0.00	0.3	324.7							
10	16.16	33.681	5.85	0.22	1.	0.00	0.3	323.6							
30	16.30		5.79	0.20	1.	0.00	0.3								
55	16.55		5.75	0.20	1.	0.00	0.2								
71	16.58		5.76	0.20	1.	0.00	0.2								
86	16.51		5.74	0.20	1.	0.00	0.2								
101	16.55		5.71	0.20	1.	0.00	0.2								
131	14.80		5.56	0.24	2.	0.00	1.2								
155	13.40	33.737	5.49	0.44	4.	0.00	3.4	262.9							
181	11.32		5.25	0.53	7.	0.00	6.6								
216	9.69		4.29	1.56	18.	0.00	18.0								
261	8.75		4.18	1.68	28.	0.00	21.2								
379	6.78		2.66	2.55	55.	0.00	32.3								
478	5.68		1.38	3.17	81.	0.00	39.3								
611	4.92		0.47	3.54	108.	0.00	42.7								
764	4.40	34.352	0.35	3.62	124.	0.00	43.2	82.9							
910	3.99	34.442	0.56	3.62	150.0	0.00	43.9	72.0							
1117	3.54		0.81	3.64	147.	0.00	43.2								

RV ALEXANDER AGASSIZ CRUISE 7102 90045

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 55.8N	118 55.4W	3/16/71	2249 GMT	1664M	300	9KT	2	300 6 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	12.99	33.39		25.170	280.6	0.000
									10	12.88	33.37		25.176	280.0	0.028
									20	12.45	33.39		25.275	270.6	0.056
									30	12.27	33.39		25.310	267.3	0.083
									50	10.09	33.68		25.928	208.5	0.130
									75	9.41	33.88		26.197	182.9	0.180
									100	9.05	34.01		26.357	167.8	0.224
									125	8.76	34.04		26.426	161.2	0.265
									150	8.74	34.14		26.507	153.5	0.305
									200	7.96	34.17		26.650	140.0	0.380
									250	7.74	34.25		26.745	130.9	0.450
									300	7.69	34.26		26.803	125.4	0.516
									400	6.70	34.32		26.946	111.9	0.640
									500	6.04	34.36		27.064	100.6	0.753
									600	5.60	34.38		27.135	93.9	0.857
									700	5.02	34.42		27.235	84.4	0.954
									800	4.63	34.45		27.304	78.0	1.044
									1000	4.08	34.49		27.395	69.3	1.209

RV ALEXANDER AGASSIZ CRUISE 7102 90045

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 55.8N	118 55.4W	3/16/71	2355 GMT	1664M	300	9KT	2	300 6 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	12.60	33.370	6.47	0.36	4.	0.07	1.1	274.8							
10	12.66	33.369		0.38	3.	0.09	1.3	276.0							
30	12.22		6.44	0.40	3.	0.10	2.1								
55	9.98		3.72	1.49	21.	0.17	19.5								
69	9.60		3.28	1.70	27.	0.08	22.7								
84	9.34	33.882	2.93	1.88	30.	0.07	25.2	181.7							
99	9.11		2.81	1.96	37.	0.07	27.8								
129	8.68		2.53	1.98	39.	0.09	29.7								
148	8.69		2.12	2.26	42.	0.05	29.9								
178	8.11		2.29	2.26	41.	0.13	30.3								
213	8.06		1.48	2.53	53.	0.10	33.4								
279	7.57		0.92	2.81	62.	0.08	35.8								
376	6.77		0.64	2.95	75.	0.18	38.9								
475	6.12		0.35	3.19	88.	0.08	41.8								
610	5.52	34.369	0.33	3.33	99.	0.10	47.60	93.8							
765	4.74		0.35	3.41	118.	0.05	45.5								
914	4.26	34.467	0.42	3.45	133.	0.13	44.9	72.8							
1123	3.90		0.57	3.35	142.	0.13	45.5								

RV ALEXANDER AGASSIZ CRUISE 7102 90060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 25.9N	119 57.8W	3/18/71	2307 GMT	920M	110	9KT	2	330 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	13.18	33.24		25.017	295.2	0.000
									10	12.74	33.19		25.065	290.6	0.029
									20	12.70	33.23		25.103	286.9	0.058
									30	12.70	33.23		25.103	286.9	0.087
									50	12.07	33.25		25.240	274.0	0.143
									75	11.12	33.44		25.562	243.3	0.208
									100	9.96	33.50		25.810	219.7	0.267
									125	9.30	33.70		26.075	194.6	0.319
									150	8.93	33.85		26.251	177.8	0.366
									200	8.01	34.00		26.509	153.3	0.450
									250	7.40	34.05		26.637	141.2	0.526
									300	7.02	34.06		26.698	135.4	0.597
									400	6.16	34.16		26.891	117.1	0.728
									500	5.78	34.28		27.034	103.5	0.845
									600	5.37	34.34		27.131	94.3	0.950
									700	4.86	34.40		27.238	84.1	1.047
									800	4.58	34.44		27.301	78.2	1.136

RV ALEXANDER AGASSIZ CRUISE 7102 90060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 24.5N	119 58.8W	3/19/71	0005 GMT	920M	110	9KT	2	330 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	13.12	33.218	6.35	0.32	5.	0.00	0.3	295.7							
10	12.72	33.212	6.08	0.32	4.	0.01	0.3	288.6							
35	12.66	33.211		0.32	4.	0.01	0.5	287.6							
45	11.90	33.295	5.97	0.48	5.	0.14	3.4	267.6							
60	11.44	33.351	5.80	0.67	7.	0.17	6.3	255.4							
75	11.03	33.429	5.65	0.87	10.	0.24	9.5	242.6							
100	9.71	33.567	4.22	1.41	18.	0.02	18.9	210.8							
120	9.31	33.688	4.00	1.47	22.	0.02	21.2	195.6							
140	8.88		3.65	1.72	27.	0.01	24.3								
170	8.54		3.40	1.82	34.	0.04	26.9								
200	8.01		3.08	2.00	37.	0.01	29.3								
240	7.48		2.58	2.28	47.	0.02	32.8								
270	7.06		2.22	2.42	53.	0.03	35.5								
320	6.66		1.81	2.65	60.	0.04	38.2								
385	6.13		1.16	2.89	74.	0.02	41.3								
483	5.81	34.252	0.54	3.17	87.	0.00	45.1	106.0							
573	5.44	34.317	0.38	3.27	98.	0.01	45.3	96.8							
649	5.08		0.48	3.27	106.	0.04	46.3								

RV ALEXANDER AGASSIZ CRUISE 7102 90090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 23.3N	122 00.0W	3/20/71	2324 GMT	4116M	270	6KT	2	330 3 13

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	14.16	33.16		24.755	320.1	0.000
									10	14.06	33.18		24.791	316.7	0.032
									20	14.05	33.20		24.809	315.0	0.063
									30	14.02	33.20		24.815	314.4	0.095
									50	13.70	33.13		24.827	313.3	0.158
									75	13.28	33.14		24.919	304.4	0.236
									100	12.20	33.07		25.076	289.6	0.310
									125	11.45	33.25		25.355	263.0	0.380
									150	10.14	33.41		25.710	229.3	0.442
									200	9.09	33.88		26.249	178.0	0.546
									250	8.58	34.00		26.423	161.5	0.633
									300	7.50	33.97		26.560	148.5	0.713
									400	6.00	34.09		26.856	120.4	0.852
									500	5.49	34.17		26.982	108.4	0.972
									600	4.83	34.25		27.123	95.1	1.080
									700	4.62	34.36		27.233	84.6	1.177
									800	4.33	34.43		27.320	76.3	1.265
									1000	3.74	34.50		27.437	65.3	1.423

RV ALEXANDER AGASSIZ CRUISE 7102 90090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 23.3N	122 00.0W	3/20/71	2349 GMT	4116M	270	6KT	2	330 3 13

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	14.06	33.153	6.07	0.30	4.	0.00	0.3	318.6							
10	14.04	33.157	6.02	0.28	3.	0.00	0.3	318.0							
30	13.88		5.95	0.22	3.	0.00	0.3								
55	13.79		5.96	0.26	2.	0.00	0.3								
70	13.43	33.078	6.21	0.26	2.	0.00	0.5	311.9							
85	13.44	33.180	5.96	0.28	3.	0.00	0.7	304.6							
100	12.51		6.07	0.34	5.	0.13	1.3								
130	11.62		5.41	0.48	6.	0.00	5.0								
155	10.00		4.93	0.97	13.	0.00	12.3								
180	9.46		4.44	1.25	19.	0.00	17.7								
214	8.98	33.922	4.27	1.45	26.	0.00	20.4	173.2							
278	7.78		3.26	2.00	41.	0.00	27.9								
380	6.16		1.74	2.75	67.	0.00	38.0								
478	5.52		0.78	3.13	86.	0.00	42.2								
612	4.74		0.41	3.31	107.	0.00	46.1								
765	4.45	34.385	0.38	3.39	121.	0.00	46.1	81.0							
915	3.90	34.442	0.46	3.37	131.	0.00	44.9	71.2							
1123	3.44		0.81	3.31	144.	0.00	45.5								

RV ALEXANDER AGASSIZ CRUISE 7102 90110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 46.0N	123 19.0W	3/22/71	2305 GMT	4378M	310	7KT	2	340 2 11

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	14.61	33.19		24.683	326.9	0.000
									10	14.05	33.19		24.801	315.7	0.032
									20	14.02	33.19		24.807	315.1	0.064
									30	14.03	33.19		24.805	315.3	0.095
									50	13.89	33.18		24.826	313.3	0.158
									75	13.85	33.18		24.835	312.5	0.237
									100	13.61	33.18		24.884	307.9	0.315
									125	12.69	33.22		25.098	287.5	0.390
									150	11.44	33.44		25.504	248.8	0.458
									200	9.68	33.77		26.067	195.3	0.571
									250	8.55	33.97		26.404	163.3	0.663
									300	7.89	34.00		26.527	151.6	0.744
									400	6.68	34.10		26.776	128.0	0.889
									500	5.92	34.18		26.937	112.7	1.016
									600	5.30	34.27		27.084	98.8	1.128
									700	5.01	34.36		27.189	88.8	1.229
									800	4.66	34.40		27.261	82.0	1.323
									1000	3.90	34.47		27.397	69.1	1.491

RV ALEXANDER AGASSIZ CRUISE 7102 90110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 46.4N	123 19.2W	3/23/71	0005 GMT	4378M	310	7KT	2	340 2 11

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	14.55	33.212	6.15	0.24	7.	0.02	0.0	324.1							
10	14.10	33.218	6.12	0.24	5.	0.02	0.0	314.7							
30	13.96	33.200	5.99	0.26	4.	0.03	0.0	313.2							
55	14.03	33.239	5.81	0.22	4.	0.02	0.0	311.7							
70	14.05	33.244	6.15	0.24	5.	0.02	0.0	311.8							
85	13.68	33.183	5.82	0.24	3.	0.01	0.0	309.0							
100	13.52		6.09	0.24	3.	0.02	0.0								
129	12.60		5.54	0.26	4.	0.15	1.8								
153	11.42		5.38	0.61	6.	0.03	6.7								
178	10.17		4.37	0.73	6.	0.08	8.1								
213	9.36		3.71	1.47	21.	0.05	19.9								
279	8.10		3.51	1.90	37.	0.03	27.3								
378	6.94		1.85	2.63	63.	0.08	36.3								
475	6.06		1.01	3.17	76.	0.00	41.3								
605	5.27		0.49	3.37	97.	0.02	44.4								
757	4.86	34.384	0.42	3.37	123.0	0.03	44.7	85.4							
905	4.28	34.440	0.58	3.43	123.	0.04	46.1	75.1							
1114	3.59		0.86	3.35	144.	0.07	47.7								

RV ALEXANDER AGASSIZ CRUISE 7102 90145

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 37.5N	125 38.4W	3/24/71	2259 GMT	4093M	300	2KT	2	070 2 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	16.19	33.55		24.611	333.8	0.000
									10	15.81	33.53		24.720	323.4	0.033
									20	15.60	33.52		24.721	323.3	0.065
									30	15.59	33.53		24.731	322.4	0.098
									50	15.76	33.60		24.747	320.9	0.162
									75	15.56	33.57		24.768	318.8	0.243
									100	15.93	33.76		24.831	312.8	0.322
									125	14.42	33.68		25.100	287.2	0.398
									150	11.90	33.47		25.442	254.7	0.467
									200	9.88	33.82		26.073	194.6	0.581
									250	8.83	33.94		26.337	169.7	0.674
									300	7.84	33.98		26.519	152.4	0.757
									400	6.50	34.05		26.760	129.5	0.903
									500	6.00	34.17		26.919	114.4	1.031
									600	5.12	34.19		27.042	102.7	1.147
									700	4.67	34.31		27.188	88.9	1.249
									800	4.38	34.39		27.283	79.9	1.341
									1000	3.89	34.48		27.406	68.2	1.506

RV ALEXANDER AGASSIZ CRUISE 7102 90145

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 41.2N	125 35.1W	3/24/71	2355 GMT	4093M	300	2KT	2	070 2 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.18	33.531	5.89	0.24	5.	0.00	0.0	335.0							
10	15.72	33.542	5.94	0.22	5.	0.00	0.0	324.3							
30	15.76	33.585	5.92	0.18	4.	0.00	0.0	322.0							
55	15.84	33.625	5.76	0.22	4.	0.00	0.0	320.8							
70	15.67		5.90	0.20	4.	0.00	0.0								
85	15.36	33.540	5.94	0.18	4.	0.00	0.0	316.8							
100	15.76	33.691	5.63	0.16	4.	0.00	0.0	314.2							
130	14.29		5.69	0.22	5.	0.00	1.2								
155	11.76		5.07	0.53	8.	0.01	5.6								
180	11.19		5.28	0.59	9.	0.02	6.4								
215	9.68		4.52	1.17	20.	0.13	16.5								
282	8.38		3.45	1.80	35.	0.01	24.8								
381	6.80		2.21	2.42	58.	0.01	34.1								
479	6.07		1.04	2.95	77.	0.02	39.0								
613	4.98	34.231	0.46	3.27	105.	0.00	43.0	98.1							
765	4.56		0.37	3.39	119.	0.01	44.2								
914	4.06	34.454	0.71	3.41	138.	0.05	44.5	71.8							
1122	3.52		0.88	3.31	141.	0.02	45.2								

RV ALEXANDER AGASSIZ CRUISE 7102 94032

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 40.0N	117 35.0W	2/ 8/71	2138 GMT	1114M	310	10KT	2	310 1 5

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0B	14.08A	33.15A		24.764	319.3	0.000
									10	13.96A	33.19A		24.820	313.9	0.032
									20	13.15A	33.29A		25.061	291.0	0.062
									30	12.83A	33.32A		25.148	282.7	0.091
									50	11.40A	33.28A		25.387	259.9	0.145
									75	10.15A	33.60A		25.856	215.4	0.205
									100	9.81A	33.79A		26.061	195.9	0.257
									125	9.12A	33.89A		26.252	177.7	0.304
									150	8.74A	33.96A		26.367	166.8	0.348
									200	8.95A	34.22A		26.537	150.7	0.429
									250	8.54A	34.26A		26.632	141.6	0.504
									300	8.25A	34.28A		26.692	135.9	0.576
									400	7.22	34.28		26.843	121.6	0.710
									500	6.36	34.31		26.983	108.3	0.832
									600	5.76	34.34		27.084	98.8	0.943

RV ALEXANDER AGASSIZ CRUISE 7102 94032

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 40.0N	117 35.3W	2/ 8/71	2219 GMT	1114M	310	10KT	2	310 1 5

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0B	14.10	33.146	6.31					319.9	0	14.10	33.146	6.31	24.757	319.9	0.000
10	14.00	33.172	6.29					316.1	10	14.00	33.172	6.29	24.797	316.1	0.032
20	13.32	33.281	6.43					294.9	20	13.32	33.281	6.43	25.020	294.9	0.062
30	12.86	33.312	6.28					283.9	30	12.86	33.312	6.28	25.136	283.9	0.091
40	12.68	33.320	6.17					279.9	50	11.62	33.249	6.01	25.323	266.1	0.147
50	11.62	33.249	6.01					266.1	75	10.27	33.517	4.50	25.770	223.6	0.208
60	10.86	33.316	5.16					248.4	100	9.62	33.777	3.54	26.049	197.0	0.261
70	10.52	33.474	4.61					230.7	125	9.16	33.885	3.47	26.241	178.8	0.309
80	10.03	33.552	4.42					217.0	150	8.87	33.994	2.95	26.373	166.2	0.352
90	9.78	33.680	4.44D					203.5							
100	9.82	33.777	3.54					197.0							
110	9.44	33.798	3.60					189.5							
120	9.26	33.853	3.55					182.9							
130	9.04	33.909	3.40					175.1							
139	8.93	33.933	3.38					171.7							
149	8.88	33.990	2.95					166.7							
159	8.65	34.015	2.98					161.4							
169		34.019	2.55												

RV ALEXANDER AGASSIZ CRUISE 7102 120045

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 42.5N	115 32.8W	4/ 4/71	2318 GMT	2359M	300	7KT	4	300 5 10

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	14.56	33.74		25.123	285.0	0.000
									10	14.18	33.73		25.190	278.7	0.028
									20	14.12	33.73		25.202	277.5	0.056
									30	14.00	33.72		25.219	275.9	0.084
									50	12.00	33.72		25.617	238.1	0.135
									75	11.51	34.02		25.941	207.3	0.191
									100	10.69	34.12		26.166	185.8	0.241
									125	11.18	34.40		26.296	173.5	0.287
									150	10.88	34.45		26.389	164.7	0.330
									200	10.23	34.50		26.542	150.1	0.410
									250	9.68	34.51		26.644	140.5	0.485
									300	9.10	34.49		26.723	132.9	0.557
									400	7.93	34.47		26.889	117.2	0.688
									500	7.13	34.45		26.989	107.8	0.808
									600	6.36	34.43		27.078	99.3	0.920
									700	5.73	34.47		27.190	88.7	1.023
									800	5.19	34.47		27.255	82.5	1.118
									1000	4.37	34.50		27.372	71.5	1.291

A) THE DATA FOR THIS LOWERING WERE NOT RECORDED BY THE DIGITAL DATA LOGGER. THESE TABULATED VALUES WERE DIGITIZED FROM THE ANALOG RECORDING AND THE SAME CORRECTION APPLIED AS TO THE DATA FROM THE TAPE.
B) A SHAKEDOWN STATION.

RV ALEXANDER AGASSIZ CRUISE 7102 120045

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 43.1N	115 32.8W	4/ 5/71	0019 GMT	2359M	300	7KT	4	300 5 10

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	14.66	33.740	5.96	0.59	12.	0.19	3.3	287.7
9	14.19		5.95	0.63	10.	0.19	3.3	
29	13.71	33.674	5.72	0.63	10.	0.19	3.6	273.5
54	11.80		4.09	1.33	18.	0.41	16.3	
69	11.20		3.48	1.56	20.	0.17	18.3	
84	10.82	34.059	2.51	1.94	25.	0.06	24.2	192.5
99	10.98		1.93	2.16	28.	0.05	26.3	
129	11.16	34.410	1.23	2.46	34.	0.03	29.1	172.4
153	10.82		0.86	2.48	37.	0.07	29.8	
178	10.50		1.29U	2.46U	35.0	0.05U	29.0U	
214	10.03	34.526	0.46	2.81	43.	0.05	30.8	144.9
278	9.25		0.37	2.93	50.	0.02	32.7	
378	8.24		0.27	3.05	60.	0.01	34.2	
476	7.17		0.24	3.17	71.	0.00	38.1	
609	6.22	34.449	0.21	3.29	86.	0.00	41.0	96.2
762	5.42		0.23	3.39	95.	0.03	45.4	
902	4.66	34.497	0.38	3.41	110.	0.00	44.7	74.9
1119	3.90		0.64	3.39	127.	0.01	45.3	

RV ALEXANDER AGASSIZ CRUISE 7102 120055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 23.0N	116 13.2W	4/ 3/71	0006 GMT	3641M	320	17KT	0	330 5 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT

Z	T	S	SIGT	DT	DD
0	15.63	33.59	24.768	318.8	0.000
10	15.49	33.59	24.799	315.9	0.032
20	15.33	33.58	24.827	313.2	0.063
30	14.36	33.53	24.998	297.0	0.094
50	13.76	33.61	25.184	279.2	0.152
75	12.23	33.65	25.519	247.4	0.218
100	11.60	34.06	25.955	205.9	0.275
125	10.55	34.10	26.175	185.0	0.325
150	10.21	34.17	26.289	174.2	0.370
200	9.65	34.29	26.477	156.3	0.455
250	9.09	34.36	26.623	142.4	0.532
300	8.54	34.36	26.710	134.2	0.603
400	7.58	34.39	26.878	118.3	0.736
500	6.78	34.41	27.006	106.2	0.855
600	5.93	34.41	27.117	95.6	0.964
700	5.30	34.43	27.211	86.8	1.063
800	4.88	34.46	27.283	79.9	1.155
1000	4.10	34.51	27.408	68.0	1.321

RV ALEXANDER AGASSIZ CRUISE 7102 120055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 23.0N	116 13.2W	4/ 3/71	0108 GMT	3641M	320	17KT	0	330 5 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	15.56	33.606	6.05	0.34	6.	0.00	0.0	316.2
10	15.54		4.51U	0.30	5.	0.00	0.0	
30	14.62	33.609	5.47	0.42	5.	0.28	0.3	296.4
59	13.43		4.70	0.73	9.	0.17	6.4	
79	12.18		3.69	1.17	13.	0.03	14.4	
95	11.62		2.78	1.74	24.	0.01	21.0	
110	11.21		2.51	1.84	24.	0.00	24.0	
138	10.38	34.136	2.39	2.06	31.	0.00	25.4	179.5
163	9.86		2.08	2.16	35.	0.01	28.6	
193	9.72		1.82	2.32	38.	0.01	27.8U	
228	9.37		1.05	2.61	48.	0.00	32.7	
297	8.54		0.51	2.81	54.	0.01	33.4	
405	7.52			3.13	68.	0.00	36.8	
511	6.60		0.18	3.27	81.	0.00	40.1	
648	5.50	34.431	0.23	3.33	97.	0.00	43.3	89.0
807	4.80		0.34	3.41	111.	0.00	44.2	
975	4.14	34.505	0.53	3.35	125.	0.00	45.6	68.8
1185	3.64		0.71	3.33	137.	0.00	45.9	

RV ALEXANDER AGASSIZ CRUISE 7102 120070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
26 52.2N	117 09.8W	4/ 1/71	0041 GMT	3737M	330	12KT	2	330 6 10

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	15,44	33,243	6,01	0,30	5,	0,00	0,0	340,2	0	15,44	33,243	6,01	24,544	340,2	0,000
10	15,43	33,248	6,11	0,30	5,	0,00	0,0	339,6	10	15,44	33,248	6,11	24,550	339,6	0,034
30	14,84	33,207	6,07	0,30	4,	0,00	0,0	330,4	20	15,16	33,231	6,09	24,596	335,3	0,068
55	14,72	33,205	5,99	0,24	4,	0,00	0,0	328,1	30	14,84	33,207	6,07	24,647	330,4	0,101
70	14,56	33,199	6,05	0,28	4,	0,00	0,0	325,3	50	14,74	33,212	6,00	24,670	328,2	0,167
84	14,30	33,235		0,28	4,	0,00	0,0	317,4	75	14,46	33,207	6,02	24,726	322,9	0,249
99	14,24	33,302	5,86	0,32	5,	0,06	0,2	306,9	100	14,17	33,370	5,84	24,913	305,1	0,328
128	11,78	33,534	5,12	0,57	8,	0,09	5,6	247,9	125	12,08	33,517	5,23	25,442	254,7	0,399
154	10,44	33,703	3,86	1,27	17,	0,07	16,8	212,5	150	10,59	33,678	4,06	25,839	217,0	0,459
179	9,94	33,892		1,68	25,	0,05	21,0	190,4	200	9,50	34,015	2,71	26,286	174,4	0,558
213	9,26	34,076	2,51	1,98	34,	0,03	25,9	166,1	250	8,99	34,214	1,71	26,525	151,8	0,642
277	8,88	34,278	1,21	2,53	47,	0,03	32,5	145,3	300	8,62	34,307	0,95	26,656	139,4	0,717
376	7,68	34,333	0,51	2,93	62,	0,04	35,0	123,9	400	7,45	34,339	0,48	26,856	120,4	0,853
473	6,82	34,350	0,37	3,11	77,	0,02	39,3	111,2	500	6,57	34,355	0,34	26,993	107,3	0,974
606	5,69	34,396	0,28	3,23	97,	0,03	44,2	93,8	600	5,73	34,394	0,28	27,129	94,5	1,083
758	5,06	34,455	0,30	3,39	108,	0,07	44,0	82,2	700	5,26	34,434	0,29	27,218	86,0	1,181
905	4,42	34,495	0,46	3,39	123,	0,04	46,2	72,4	800	4,87	34,468	0,34	27,290	79,2	1,272
1115	3,76	34,535	0,51	3,33	148,	0,07	45,9	62,5	1000	4,08	34,517	0,48	27,416	67,3	1,437

RV ALEXANDER AGASSIZ CRUISE 7102 120070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
26 52.2N	117 09.8W	4/ 1/71	0120 GMT	3737M	330	12KT	2	330 6 10

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	15,46	33,25		24,545	340,1	0,000
									10	15,46	33,25		24,545	340,1	0,034
									20	15,03	33,22		24,616	333,3	0,068
									30	14,87	33,22		24,651	330,0	0,101
									50	14,75	33,21		24,669	328,3	0,167
									75	14,44	33,18		24,712	324,2	0,249
									100	14,03	33,36		24,936	302,9	0,328
									125	10,94	33,42		25,579	241,7	0,397
									150	10,41	33,74		25,920	209,3	0,454
									200	9,33	34,05		26,343	169,1	0,550
									250	9,11	34,25		26,534	150,9	0,632
									300	8,58	34,31		26,665	138,5	0,707
									400	7,44	34,34		26,859	120,1	0,843
									500	6,60	34,37		26,999	106,8	0,963
									600	5,81	34,39		27,117	95,7	1,072
									700	5,35	34,44		27,212	86,6	1,171
									800	4,93	34,47		27,285	79,7	1,263
									1000	4,09	34,53		27,425	66,4	1,427

RV ALEXANDER AGASSIZ CRUISE 7102 120090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
26 15.6N	118 29.9W	3/29/71	2235 GMT	4116M	300	6KT	1	320 4 11

Z	T	S	O2	PO4	SI03	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	16,58	33,42		24,468	347,4	0,000
									10	16,41	33,46		24,492	345,1	0,035
									20	16,31	33,48		24,530	341,5	0,069
									30	16,05	33,41		24,536	341,0	0,103
									50	15,52	33,41		24,655	329,7	0,171
									75	14,37	33,35		24,857	310,4	0,251
									100	13,16	33,51		25,229	275,0	0,325
									125	11,58	33,63		25,625	237,3	0,389
									150	10,59	33,69		25,850	215,9	0,447
									200	9,93	34,08		26,267	176,3	0,547
									250	9,06	34,20		26,503	153,8	0,632
									300	8,78	34,31		26,634	141,5	0,708
									400	7,34	34,31		26,850	121,0	0,845
									500	6,62	34,36		26,988	107,8	0,967
									600	5,78	34,38		27,113	96,0	1,076
									700	5,29	34,42		27,204	87,4	1,176
									800	4,76	34,44		27,281	80,1	1,268
									1000	4,08	34,50		27,403	68,6	1,435

RV ALEXANDER AGASSIZ CRUISE 7102 120090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
26 15.6N	118 29.9W	3/29/71	2337 GMT	4116M	300	6KT	1	330 4 11

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.30	33.430	5.98	0.26	4.	0.01	0.4	344.9							
9	16.36		5.93	0.26	4.	0.00	0.3								
29	16.30	33.508	5.89	0.26	3.	0.00	0.3	339.2							
54	15.58		5.94	0.24	3.	0.01	0.3								
69	15.55		5.89	0.26	3.	0.00	0.3								
84	14.71	33.363	5.90	0.32	3.	0.02	0.3	316.3							
99	13.44		5.53	0.48	4.	0.06	2.7								
130	11.43	33.650	4.55	0.97	9.	0.04	11.1	233.2							
154	10.42		3.91	1.41	16.	0.03	17.8								
178	10.06		3.24	1.76	23.	0.03	23.0								
214	9.51	34.116	2.61	2.08	31.	0.02	27.0	167.0							
278	9.22		1.06	2.69	43.	0.02	32.1								
377	7.80	34.333	0.67	2.97	58.	0.02	36.8	125.6							
476	6.92		0.32	3.19	72.	0.01	40.8								
610	5.69	34.398	0.29	3.31	89.	0.00	44.0	93.7							
764	4.93		0.37	3.39	105.	0.01	46.5								
914	4.34	34.480	0.52	3.39	118.	0.00	48.3	72.7							
1122	3.72		0.74	3.37	131.	0.01	47.9								

RV ALEXANDER AGASSIZ CRUISE 7102 120120

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 08.4N	120 24.0W	3/27/71	2325 GMT	4121M	240	10KT	0	360 2 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	17.19	33.69		24.486	345.7	0.000
									10	17.14	33.70		24.505	343.9	0.034
									20	17.09	33.69		24.510	343.5	0.069
									30	17.08	33.69		24.512	343.2	0.103
									50	17.07	33.69		24.514	343.0	0.172
									75	17.00	33.70		24.538	340.7	0.258
									100	14.51	33.44		24.897	306.6	0.340
									125	12.37	33.54		25.407	258.1	0.411
									150	11.07	33.67		25.749	225.5	0.472
									200	9.74	33.99		26.228	179.9	0.575
									250	8.78	34.12		26.485	155.6	0.661
									300	8.02	34.18		26.649	140.1	0.738
									400	7.47	34.31		26.831	122.8	0.875
									500	6.80	34.40		26.995	107.2	0.997
									600	5.99	34.39		27.094	97.8	1.107
									700	5.42	34.44		27.204	87.4	1.208
									800	4.90	34.47		27.289	79.3	1.300
									1000	4.14	34.53		27.420	66.9	1.465

RV ALEXANDER AGASSIZ CRUISE 7102 120120

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 08.4N	120 24.0W	3/28/71	0035 GMT	4121M	240	10KT	0	360 2 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	17.20	33.698	5.81	0.30	4.	0.03	0.4	345.4							
9	17.20		5.82	0.22	3.	0.03	0.4								
29	17.08	33.686	5.75	0.22	3.	0.03	0.4	343.5							
54	17.08		5.55	0.22	3.	0.02	0.4								
69	17.02	33.696	5.76	0.22	2.	0.02	0.4	341.5							
84	16.99		5.76	0.22	1.	0.01	0.4								
98	16.90	33.685	5.72	0.22	2.	0.01	0.4	339.6							
128	12.87		5.20	0.55	5.	0.05	4.2								
152	11.42		4.39	0.97	11.	0.08	11.6								
177	10.69		4.25	1.13	14.	0.48	13.9								
212	9.86		2.95	1.80	27.	0.09	24.3								
276	8.14		2.72	2.12	42.	0.06	29.2								
372	7.88	34.331	0.76	2.83	56.	0.09	35.0	126.9							
469	6.90		0.30	3.19	73.	0.10	39.2								
601	5.90		0.27	3.31	99.U	0.04	42.8								
750	5.10	34.451	0.39	3.49	108.	0.06	46.6	83.0							
900	4.40	34.488	0.52	3.37	115.	0.05	50.4U	72.7							
1108	3.80		0.71	3.35	131.	0.09	45.1								

RV ALEXANDER AGASSIZ CRUISE 7102 120120

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
25 11.9N	120 21.7W	3/28/71	1859 GMT					

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
									0	17.12	33.71		24.518	342.7	0.000
									10	17.11	33.72		24.528	341.7	0.034
									20	17.12	33.71		24.518	342.7	0.069
									30	17.12	33.71		24.518	342.7	0.103
									50	17.11	33.71		24.520	342.5	0.172
									75	17.01	33.70		24.536	340.9	0.258
									100	16.03	33.53		24.632	331.8	0.342
									125	12.89	33.72		25.445	254.5	0.416
									150	11.19	33.66		25.720	228.3	0.477
									200	9.91	33.98		26.192	183.4	0.582
									250	8.62	34.10		26.495	154.7	0.669
									300	7.79	34.14		26.651	139.8	0.745
									400	7.40	34.33		26.857	120.3	0.881
									500	6.66	34.37		26.991	107.6	1.002

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