UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL, CHEMICAL AND CURRENT METER DATA

CalCOFI CRUISE 7601
6–7 January 1976

CalCOFI CRUISE 7602
16–20 February 1976

CRUISE 7603 (TWATE III)
30 March–2 April 1976

CRUISE 7604
17 April–10 May 1976

CRUISE 7611
11 November 1976

SIO Reference 88-4
29 February 1988

UNIVERSITY OF CALIFORNIA

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CRUISE 7604
16 April–10 May 1976

CRUISE 7611
11 November 1976

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Approved for distribution:

Edward A. Frieman, Director

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INTRODUCTION

The data in this report were collected during CalCOFI Cruises 7601* and 7602, and Cruises 7603 and 7604 aboard the RV *Alexander Agassiz*, and Cruise 7611 aboard the RV *Ellen B. Scripps* of the Scripps Institution of Oceanography, University of California, San Diego. Although all these cruises were in the area of the California Cooperative Oceanic Fisheries Investigations (CalCOFI), only during 7601 and 7602 were planned CalCOFI station positions occupied. Cruise 7603 was a Two-Way Acoustic Transmission Experiment (TWATE III) on which the principle work accomplished was sound velocity analyses in the vicinity of locations 33°N, 118°W and 31°N, 120°W. The object of Cruise 7604 was to investigate eddies in the California Current, to determine their size, their movement in relationship to other currents, and the length of time they remain a distinguishable feature. A series of airborne expendable bathythermographs (AXBTs) used in a program to observe the thermal structure in the Central Pacific were calibrated by comparison with eight STD lowerings during Cruise 7611. This field program has been described in SIO Reference 76-19, Observation of Thermal Structure in the Central Pacific, T. P. Barnett, M. H. Sessions, and P. M. Marshall.

These data were collected and processed by personnel of the Data Collection and Processing Group, Marine Life Research Group (DCPG**, MLRG), Scripps Institution of Oceanography.

STANDARD PROCEDURES

The difference in purpose of the five cruises in this report results in a variation of the data collected. Hydrographic casts were made on all cruises but varied from only one cast of eight Nansen bottles on the STD wire for Cruise 7601 to 20 casts of 18 Nansen bottles on the hydrographic wire for Cruise 7604. Temperature and salinity were determined for all depths sampled. Oxygen and nutrients were determined for Cruise 7602 only. On Cruise 7601 the four free vehicle current meters which had been deployed during CalCOFI Cruise 7510 were recovered.

On STD lowerings during Cruises 7601, 7602, 7603, and 7611 where hydrographic casts were not made, a Nansen bottle was usually placed a few meters above the STD and another bottle was lowered to approximately 10 meters. During Cruise 7602, both down and up recordings from the STD were made on two separate DDL systems as well as analog traces for all lowerings.

Paired protected reversing thermometers were used on all Nansen bottle casts to determine temperatures which are recorded to hundredths of a degree Celsius. Sampling bottles used below a depth of 100 meters were equipped with unprotected thermometers for determination of depth of sampling.

Salinity samples were determined at sea using inductive-type salinometers. The salinity values are recorded to three decimal places.

Dissolved oxygen on Cruise 7602 was determined by the Winkler method as modified by Carpenter (1965), using the equipment and procedure outlined by Anderson (1971).

Silicate, nitrate and nitrite for Cruise 7602 were determined at sea using an automated analyzer. The procedures used are similar to those described in Atlas *et al.* (1971). Phosphate samples were determined using a Gilford modified DU spectrophotometer. Reactive phosphate was analyzed using the method of Murphy and Riley (1962), with the specific procedure outlined by Anderson (1971).

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

The STD data for Cruises 7601, 7604, and 7611 were processed by computer from the DDL recordings and appear to compare well with the hydrographic data. Although extra effort was made on Cruise 7603 to compare the STD recordings on two separate DDL instruments, the tabulated data were digitized from the analog traces and also

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* The first two digits represent the year and the last digits the month of the cruise.

** Now the Oceanographic Data Facility (ODF).

appear to compare well with the hydrographic data.

TABULATED DATA

The reported hydrographic cast time is the Greenwich Mean Time (GMT) of the messenger release. Bottom depths, determined acoustically, have been corrected using Matthews (1939) tables and are reported in meters. Weather conditions have been coded using WMO code 4051.

Data tabulations are presented in the following forms:

1) Data from the sample bottle casts are tabulated with the observed levels of depth on the left of the page, and standard depth values of temperature, salinity and oxygen interpolated from these observations are on the right of the page. Additional computed values are also presented.

2) Data from the STD lowerings are presented with two stations printed side by side. Temperature and salinity are tabulated at closer standard intervals than the interpolated standard depth bottle data. Additional computed values are also presented.

3) Calibration of the AXBTs on Cruise 7611 required the data from the STD to be tabulated at approximately 10 meter intervals of depth. The additional computed values are tabulated for each depth.

4) Current meter speed and direction data were calculated over one-half-hour intervals. This report includes only the resultant speeds and directions for the entire record lengths.

The same parameters have been tabulated in this report as in previous reports. Cruises 7601 and 7602 have the CalCOFI station designations which have been in use for over thirty years. The first part specifies a line normal to the general trend of the coastline (CalCOFI line). The second part specifies a station position relative to the coast on the CalCOFI line. On some closely-spaced special inshore stations, an additional superscript number may appear after the line number or station number to indicate a finer resolution of the non-standard station location.

The column headings are to be interpreted as follows:

Z	Depth	Meters
T	Temperature	°C
S	Salinity	‰
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 of sea water would have if moved isothermally to the sea surface.	g/L
DD	Geopotential anomaly, referred to the sea surface.	dyn. meters

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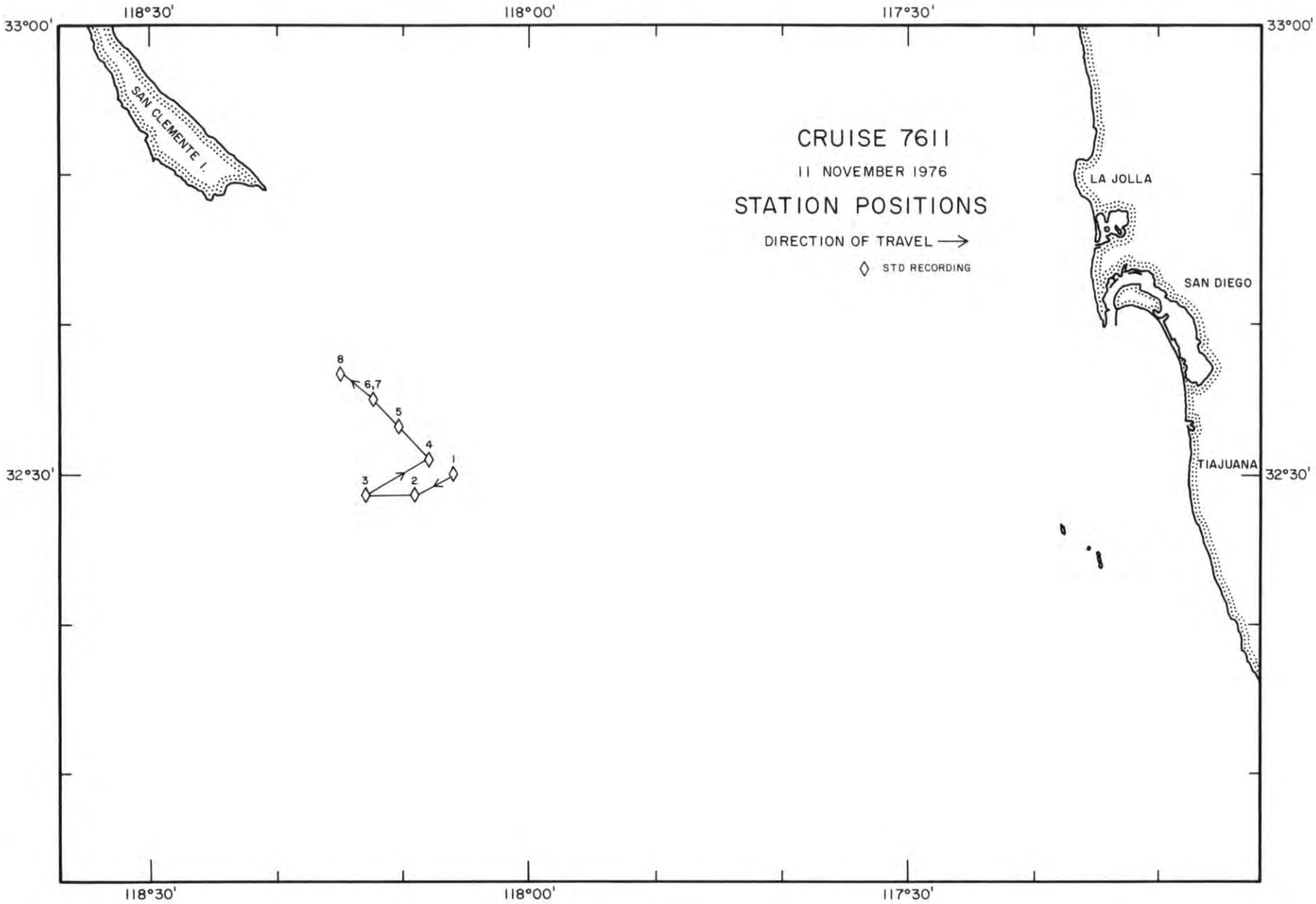
CRUISE 7611
11 NOVEMBER 1976
STATION POSITIONS
DIRECTION OF TRAVEL
STD RECORDING
SAN CLEMENTE I.
LA JOLLA
SAN DIEGO
TIAJUANA
1
2
3
4
5
6,7
8
118°30'
118°00'
117°30'
33°00'
32°30'

FIGURE 5

PERSONNEL

Cruise 7611

SHIP'S CAPTAIN

Davis, Laurence E., RV *Ellen B. Scripps*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Sessions, Meredith H. (in charge)	Principal Development Engineer, SIO
Bryan, Cindy L.	
Bryan, Walter R.	Marine Technician, SIO
Dillon, Laurie A.	Student, Fullerton Junior College
Singleton, James R.	Electronics Technician, SIO
Thomas, Julianna O.	Lab Assistant, SIO
Wald, Steve	Asst. Development Engineer, SIO

STATION STD 1 RV ELLEN B. SCRIPPS CRUISE 7611 STATION STD 2

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 30.2 N	118 06.2 W	11/11/76	0037 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
1	20.26	33.89	23.869	404.4	0.004
11	20.25	33.89	23.872	404.2	0.044
21	20.12	33.89	23.906	400.9	0.085
23	20.06	33.90	23.929	398.7	0.093
25	19.95	33.90	23.958	396.0	0.101
32	18.95	33.98	24.276	365.7	0.128
37	16.58	33.78	24.698	325.5	0.145
41	16.07	33.69	24.746	320.9	0.158
47	15.11	33.71	24.975	299.0	0.176
52	14.14	33.71	25.182	279.3	0.191
62	12.19	33.68	25.549	244.4	0.217
67	11.62	33.64	25.626	237.2	0.229
71	11.26	33.71	25.746	225.7	0.239
82	10.46	33.70	25.880	213.0	0.263
92	10.23	33.74	25.951	206.2	0.284
102	9.90	33.79	26.046	197.2	0.305
111	9.66	33.82	26.109	191.2	0.322
120	9.48	33.85	26.162	186.2	0.339
132	9.35	33.87	26.199	182.7	0.362
141	9.18	33.91	26.258	177.1	0.378
152	9.05	33.93	26.294	173.7	0.398
162	8.92	33.94	26.323	170.9	0.415
170	8.78	33.97	26.368	166.6	0.429
180	8.68	34.00	26.407	162.9	0.446
190	8.51	34.02	26.449	158.9	0.462
201	8.38	34.05	26.492	154.8	0.480
212	8.32	34.06	26.509	153.2	0.497
221	8.28	34.07	26.523	151.9	0.511
231	8.23	34.09	26.547	149.7	0.527
241	8.20	34.11	26.567	147.8	0.542
252	8.13	34.13	26.593	145.3	0.559
261	8.09	34.14	26.607	144.0	0.572
272	8.03	34.17	26.639	140.9	0.588
281	7.94	34.19	26.668	138.1	0.601
292	7.88	34.19	26.677	137.3	0.617
302	7.78	34.18	26.684	136.6	0.631
312	7.65	34.21	26.726	132.6	0.645
321	7.60	34.21	26.734	131.9	0.658
332	7.54	34.22	26.750	130.4	0.673
342	7.50	34.22	26.756	129.8	0.686
349	7.49	34.23	26.765	128.9	0.696

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 28.6 N	118 09.0 W	11/11/76	0153 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
1	20.19	33.87	23.872	404.1	0.004
12	20.19	33.89	23.887	402.7	0.048
15	20.19	33.89	23.887	402.7	0.061
20	20.06	33.91	23.937	398.0	0.081
30	19.02	33.91	24.205	372.4	0.119
33	17.91	33.88	24.458	348.3	0.130
40	17.02	33.74	24.564	338.2	0.154
43	16.07	33.76	24.799	315.8	0.164
50	15.28	33.74	24.961	300.4	0.186
60	13.18	33.73	25.395	259.1	0.214
64	12.35	33.64	25.488	250.2	0.224
71	11.47	33.66	25.669	233.1	0.241
82	10.59	33.69	25.850	215.9	0.266
91	10.24	33.75	25.957	205.7	0.285
100	10.01	33.77	26.012	200.5	0.304
111	9.81	33.80	26.069	195.0	0.325
120	9.59	33.85	26.144	187.9	0.343
130	9.47	33.84	26.156	186.8	0.362
140	9.34	33.87	26.201	182.5	0.381
149	9.21	33.91	26.253	177.6	0.397
161	9.08	33.92	26.281	174.8	0.419
170	8.95	33.97	26.341	169.2	0.434
180	8.75	33.99	26.388	164.7	0.451
191	8.55	34.03	26.451	158.8	0.470
200	8.44	34.05	26.483	155.7	0.484
210	8.31	34.07	26.519	152.3	0.500
220	8.28	34.08	26.531	151.2	0.515
229	8.20	34.10	26.559	148.5	0.529
240	8.17	34.12	26.579	146.6	0.546
250	8.13	34.13	26.593	145.3	0.561
261	8.10	34.15	26.613	143.4	0.577
270	8.07	34.18	26.641	140.7	0.590
280	7.99	34.20	26.669	138.1	0.605
290	7.89	34.20	26.683	136.7	0.619
300	7.87	34.21	26.694	135.7	0.633
310	7.75	34.23	26.727	132.5	0.647
320	7.64	34.22	26.736	131.7	0.661
330	7.52	34.21	26.745	130.8	0.675
340	7.50	34.21	26.748	130.6	0.688
352	7.39	34.22	26.772	128.3	0.704
354	7.39	34.22	26.772	128.3	0.707

STATION STD 3 RV ELLEN B. SCRIPPS CRUISE 7611 STATION STD 4

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 28.7 N	118 13.2 W	11/11/76	0613 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
1	20.07	33.88	23.911	400.4	0.004
10	20.07	33.89	23.919	399.7	0.040
17	20.07	33.89	23.919	399.7	0.068
21	19.90	33.92	23.986	393.3	0.084
28	17.97	33.92	24.473	346.8	0.110
30	17.45	33.88	24.569	337.7	0.117
36	15.89	33.77	24.848	311.1	0.136
40	15.20	33.74	24.978	298.7	0.149
42	14.95	33.71	25.010	295.7	0.154
48	12.94	33.74	25.450	253.8	0.171
50	12.55	33.75	25.534	245.8	0.176
60	11.62	33.62	25.610	238.6	0.200
62	11.54	33.63	25.633	236.5	0.205
70	10.90	33.76	25.849	215.9	0.223
80	10.55	33.74	25.896	211.5	0.245
91	10.09	33.79	26.014	200.3	0.268
99	9.72	33.84	26.115	190.7	0.284
111	9.58	33.84	26.138	188.5	0.307
120	9.37	33.87	26.196	183.0	0.324
131	9.23	33.91	26.250	177.9	0.344
139	9.07	33.93	26.291	173.9	0.358
142	9.04	33.94	26.304	172.7	0.363
152	8.89	33.97	26.351	168.3	0.381
160	8.77	34.00	26.393	164.3	0.394
172	8.60	34.02	26.435	160.3	0.414
182	8.56	34.02	26.441	159.7	0.430
190	8.41	34.05	26.488	155.2	0.443
202	8.32	34.06	26.509	153.2	0.462
210	8.13	34.08	26.554	149.0	0.474
220	8.11	34.08	26.557	148.7	0.490
231	8.11	34.15	26.612	143.5	0.506
240	7.87	34.10	26.608	143.8	0.519
252	7.87	34.14	26.639	140.9	0.537
261	7.83	34.17	26.669	138.1	0.550
270	7.78	34.16	26.668	138.1	0.563
280	7.69	34.17	26.689	136.1	0.577
291	7.65	34.19	26.711	134.1	0.592
301	7.66	34.20	26.717	133.5	0.606
310	7.66	34.21	26.725	132.8	0.619
320	7.58	34.23	26.752	130.2	0.632
330	7.45	34.22	26.763	129.1	0.646
339	7.38	34.22	26.773	128.2	0.658

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 31.0 N	118 08.1 W	11/11/76	1555 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
2	19.94	33.83	23.907	400.8	0.008
10	19.94	33.83	23.907	400.8	0.040
20	19.94	33.83	23.907	400.8	0.080
30	17.99	33.74	24.331	360.3	0.118
39	16.77	33.73	24.615	333.3	0.150
45	16.10	33.74	24.777	317.9	0.169
50	14.48	33.81	25.187	278.8	0.184
57	13.05	33.66	25.366	261.8	0.203
60	12.58	33.60	25.413	257.4	0.211
70	11.57	33.69	25.674	232.6	0.236
80	10.74	33.77	25.886	212.4	0.258
91	10.38	33.73	25.917	209.4	0.282
99	10.05	33.79	26.021	199.6	0.298
102	10.00	33.78	26.021	199.6	0.304
110	9.82	33.81	26.075	194.5	0.320
121	9.56	33.85	26.149	187.4	0.341
130	9.42	33.87	26.188	183.7	0.358
140	9.21	33.91	26.253	177.6	0.377
150	9.11	33.92	26.277	175.3	0.395
161	8.88	33.94	26.329	170.3	0.414
171	8.74	33.94	26.351	168.3	0.431
181	8.56	34.00	26.426	161.2	0.448
190	8.51	34.02	26.449	158.9	0.463
202	8.49	34.05	26.475	156.4	0.482
211	8.33	34.08	26.524	151.8	0.496
220	8.28	34.10	26.547	149.7	0.510
230	8.21	34.11	26.565	147.9	0.525
240	8.16	34.13	26.589	145.7	0.540
250	8.10	34.16	26.621	142.6	0.555
260	8.09	34.17	26.630	141.7	0.570
270	8.06	34.19	26.650	139.8	0.585
280	8.00	34.21	26.675	137.5	0.599
290	7.88	34.22	26.701	135.1	0.613
300	7.87	34.22	26.702	134.9	0.627
311	7.74	34.23	26.729	132.4	0.642
320	7.60	34.22	26.742	131.2	0.655
329	7.51	34.23	26.762	129.2	0.667
341	7.47	34.23	26.768	128.7	0.683
350	7.43	34.23	26.774	128.1	0.695
360	7.32	34.23	26.789	126.6	0.708

STATION STD 5 RV ELLEN B. SCRIPPS CRUISE 7611

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 33.3 N	118 10.4 W	11/11/76	1820 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
1	19.96	33.83	23.902	401.3	0.004
11	19.98	33.85	23.912	400.3	0.044
20	19.97	33.86	23.922	399.4	0.080
21	19.97	33.86	23.922	399.4	0.084
30	18.01	33.92	24.464	347.7	0.118
35	17.11	33.79	24.581	336.6	0.135
40	16.02	33.90	24.918	304.5	0.151
43	15.00	33.86	25.114	285.8	0.160
52	12.91	33.80	25.502	248.9	0.184
59	12.10	33.66	25.551	244.2	0.202
64	11.92	33.62	25.554	243.9	0.214
70	11.35	33.87	25.853	215.5	0.228
80	10.53	33.73	25.891	211.9	0.249
90	10.25	33.77	25.971	204.3	0.270
92	10.18	33.77	25.983	203.2	0.274
100	9.92	33.80	26.050	196.8	0.290
109	9.71	33.81	26.093	192.7	0.308
122	9.44	33.87	26.184	184.1	0.333
131	9.25	33.90	26.239	178.9	0.350
139	9.16	33.91	26.261	176.8	0.364
150	8.93	33.91	26.298	173.3	0.384
161	8.78	33.93	26.337	169.6	0.403
170	8.74	33.97	26.374	166.0	0.418
180	8.65	33.99	26.404	163.2	0.435
190	8.54	34.00	26.429	160.9	0.451
200	8.36	34.03	26.480	156.0	0.468
210	8.35	34.07	26.513	152.9	0.483
220	8.28	34.09	26.539	150.4	0.499
230	8.01	34.06	26.556	148.8	0.514
240	8.06	34.10	26.580	146.5	0.529
250	8.07	34.14	26.610	143.7	0.544
260	8.10	34.16	26.621	142.6	0.559
270	8.07	34.18	26.641	140.7	0.574
280	7.76	34.18	26.687	136.4	0.588
290	7.58	34.14	26.682	136.9	0.602
300	7.56	34.15	26.692	135.8	0.616
310	7.52	34.15	26.698	135.3	0.630
320	7.46	34.16	26.715	133.7	0.644
325	7.40	34.17	26.731	132.2	0.651

STATION STD 6

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 34.9 N	118 12.4 W	11/11/76	2009 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
1	19.99	33.87	23.925	399.1	0.004
9	19.98	33.87	23.927	398.9	0.036
14	19.98	33.87	23.927	398.9	0.056
20	19.98	33.87	23.927	398.9	0.080
30	18.18	33.92	24.422	351.7	0.117
34	16.95	33.81	24.634	331.5	0.131
38	15.85	33.78	24.864	309.6	0.144
40	15.32	33.79	24.990	297.6	0.150
44	13.93	33.72	25.234	274.4	0.162
50	12.85	33.74	25.468	252.2	0.177
60	11.94	33.62	25.550	244.3	0.202
71	10.78	33.62	25.762	224.2	0.228
80	10.54	33.67	25.843	216.5	0.248
89	10.32	33.71	25.912	209.9	0.268
101	10.14	33.75	25.974	204.0	0.293
110	9.89	33.78	26.040	197.8	0.311
121	9.68	33.81	26.098	192.3	0.333
132	9.49	33.83	26.145	187.8	0.354
142	9.22	33.89	26.236	179.2	0.373
151	8.92	33.90	26.291	173.9	0.389
160	8.81	33.95	26.348	168.5	0.404
170	8.72	33.98	26.385	165.0	0.421
180	8.53	33.99	26.423	161.4	0.438
191	8.50	34.00	26.435	160.3	0.456
201	8.38	34.05	26.492	154.8	0.472
210	8.37	34.08	26.517	152.4	0.486
220	8.25	34.11	26.559	148.5	0.502
230	8.11	34.12	26.588	145.7	0.517
240	7.93	34.12	26.615	143.2	0.532
252	7.84	34.11	26.620	142.7	0.549
260	7.83	34.11	26.622	142.5	0.561
272	7.78	34.13	26.645	140.4	0.579
280	7.72	34.14	26.661	138.8	0.590
290	7.67	34.13	26.661	138.8	0.605
300	7.69	34.15	26.674	137.6	0.619
310	7.69	34.16	26.681	136.9	0.633
320	7.78	34.21	26.708	134.4	0.647
330	7.68	34.22	26.730	132.3	0.661
340	7.65	34.24	26.750	130.4	0.675
346	7.53	34.23	26.759	129.5	0.683

STATION STD 7 RV ELLEN B. SCRIPPS CRUISE 7611

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 34.9 N	118 12.4 W	11/11/76	2053 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
1	19.93	33.85	23.925	399.1	0.004
10	19.93	33.86	23.933	398.4	0.040
21	19.93	33.86	23.933	398.4	0.084
30	18.39	33.99	24.424	351.5	0.118
32	17.87	33.90	24.483	345.9	0.125
34	17.24	33.86	24.604	334.4	0.131
38	15.67	34.08	25.135	283.8	0.144
39	14.78	33.94	25.223	275.4	0.147
41	14.40	33.82	25.212	276.5	0.152
43	13.83	33.80	25.316	266.6	0.158
47	12.91	33.67	25.402	258.4	0.168
50	12.56	33.64	25.447	254.1	0.176
54	12.33	33.62	25.476	251.4	0.186
60	11.77	33.65	25.606	239.1	0.201
71	10.66	33.63	25.791	221.4	0.226
80	10.53	33.67	25.845	216.3	0.246
90	10.31	33.73	25.930	208.3	0.268
100	10.07	33.77	26.002	201.4	0.288
110	9.78	33.81	26.081	193.8	0.308
121	9.65	33.79	26.088	193.3	0.330
130	9.50	33.87	26.175	185.0	0.347
141	9.18	33.91	26.258	177.1	0.367
150	9.00	33.90	26.279	175.1	0.383
162	8.89	33.97	26.351	168.3	0.404
170	8.67	34.01	26.416	162.0	0.418
181	8.64	33.97	26.390	164.5	0.436
190	8.56	34.04	26.457	158.2	0.451
200	8.41	34.07	26.504	153.8	0.467
210	8.38	34.09	26.524	151.8	0.483
219	8.24	34.10	26.553	149.1	0.496
230	8.09	34.11	26.583	146.2	0.513
240	7.96	34.12	26.610	143.6	0.528
250	7.87	34.12	26.624	142.3	0.543
260	7.74	34.09	26.619	142.8	0.557
270	7.81	34.14	26.648	140.0	0.572
280	7.74	34.15	26.666	138.3	0.586
289	7.89	34.13	26.629	141.9	0.599
301	7.90	34.23	26.706	134.6	0.617
310	7.79	34.26	26.745	130.8	0.629
320	7.76	34.22	26.718	133.4	0.643
330	7.72	34.25	26.747	130.6	0.656
340	7.63	34.24	26.753	130.1	0.670
344	7.61	34.24	26.756	129.8	0.676

STATION STD 8

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	BOTTOM
32 36.7 N	118 15.0 W	11/11/76	2136 GMT	M

WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	CLOUDS

Z	T	S	SIGT	DT	DD
1	19.92	33.82	23.905	401.0	0.004
10	19.93	33.86	23.933	398.4	0.040
16	19.92	33.86	23.935	398.1	0.064
20	19.91	33.87	23.945	397.1	0.080
30	18.41	33.94	24.381	355.7	0.118
32	17.93	34.02	24.560	338.6	0.125
38	16.77	33.82	24.684	326.8	0.145
40	16.03	33.84	24.870	309.1	0.151
44	14.79	33.77	25.090	288.1	0.163
45	13.83	33.62	25.178	279.8	0.166
48	13.24	33.54	25.236	274.2	0.174
51	12.95	33.59	25.332	265.0	0.182
60	12.25	33.64	25.507	248.4	0.205
72	11.10	33.64	25.720	228.1	0.234
80	10.64	33.59	25.763	224.1	0.252
90	10.42	33.70	25.887	212.3	0.274
100	10.12	33.75	25.977	203.7	0.295
110	9.92	33.76	26.019	199.8	0.316
120	9.68	33.82	26.106	191.5	0.336
130	9.52	33.83	26.140	188.3	0.355
141	9.14	33.87	26.233	179.4	0.375
150	9.04	33.88	26.257	177.2	0.392
160	8.88	33.94	26.329	170.3	0.409
172	8.78	33.99	26.384	165.1	0.430
179	8.72	34.00	26.401	163.5	0.442
190	8.49	34.06	26.483	155.7	0.460
201	8.47	34.06	26.486	155.4	0.477
210	8.45	34.10	26.521	152.1	0.491
219	8.30	34.14	26.575	147.0	0.505
231	7.99	34.12	26.606	144.1	0.523
240	7.83	34.09	26.606	144.0	0.536
250	7.90	34.09	26.596	145.0	0.551
261	7.88	34.13	26.630	141.8	0.567
269	7.95	34.14	26.628	142.0	0.579
280	7.91	34.21	26.688	136.2	0.595
290	7.83	34.19	26.684	136.6	0.609
300	7.77	34.18	26.686	136.5	0.623
309	7.77	34.19	26.693	135.8	0.636
320	7.80	34.22	26.713	133.9	0.651
330	7.74	34.24	26.737	131.6	0.665
340	7.71	34.25	26.749	130.5	0.679
347	7.59	34.25	26.767	128.8	0.688

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