

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CalCOFI Cruise 7505
7 May - 6 June 1975

CalCOFI Cruise 7506
8 June - 12 June 1975

CalCOFI Cruise 7507
23 June - 18 July 1975

CalCOFI Cruise 7509
13 September - 22 September 1975

CalCOFI Cruise 7510
2 October - 16 November 1975

CalCOFI Cruise 7512
8 December - 14 December 1975

SIO Reference 84-13
15 June 1984

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7 May - 6 June 1975

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23 June - 18 July 1975

CalCOFI Cruise 7509
13 September - 22 September 1975

CalCOFI Cruise 7510
2 October - 16 November 1975

CalCOFI Cruise 7512
8 December - 14 December 1975

Sponsored by
Marine Research Committee

SIO Reference 84-13
15 June 1984

Approved for distribution:


W. A. Nierenberg, Director

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INTRODUCTION

The data in this report were collected during Cruises 7505*, 7506, 7507, 7509, 7510, and 7512 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV *David Starr Jordan* of the National Marine Fisheries Service and the RV *Alexander Agassiz* of the Scripps Institution of Oceanography. Cruises 7505, 7507, and 7510 extended over large parts of the CalCOFI grid, while Cruises 7506, 7509, and 7512 concentrated on the Los Angeles Bight area. The report preceding this one in the series was SIO Ref. 84-10 which included data for 1974 and 1975.

The data were collected and processed by personnel of the Data Collection and Processing Group (DCPG**), Marine Life Research Group (MLRG), and the Southwest Fisheries Center, National Marine Fisheries Service (NMFS).

STANDARD PROCEDURES

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

Plessey Environmental Systems Model 9040 STDs were used for most stations by both the *Jordan* and the *Agassiz*. Temperature and salinity offset corrections were applied to the STD data based upon Nansen bottle data comparisons. At most stations, the maximum sampling depth was 1000 meters, bottom depth permitting. An 18-bottle Nansen cast replaced the STD cast on the few stations where the STD failed.

Hydrographic Cast Data

The hydrographic casts consisted of 18 or fewer Nansen bottles lowered to a maximum sampling depth of 1000 meters, bottom depth permitting. Usually there was only one Nansen cast per CalCOFI line. Temperature, salinity, and oxygen were determined for all depths sampled.

On STD lowerings, a Nansen bottle was usually placed on the wire a few meters above the STD and another bottle was lowered to a depth of 10 meters. Temperature and salinity were determined from both bottles on most stations; dissolved oxygen was occasionally determined from the 10-meter bottle. A 10-meter bottle was also taken on most net-tow stations.

Paired protected reversing thermometers were used 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 the depth of sampling.

Salinity samples were analyzed at sea using inductive-type salinometers. The salinity values are reported to three decimal places, provided accepted standards were met. If there was doubt concerning the accuracy of the analytical results, the salinities are reported to two decimal points. All STD salinities are tabulated to two decimal places.

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

TABULATED DATA

The time reported is Greenwich Mean Time (GMT). For STD lowerings it is the "start down" time and for Nansen bottle casts it is the time of messenger release.

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

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

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

Data for all the cruises included in this report were obtained by Nansen bottle and STD casts and are presented in three forms:

1) Data from the sample bottle casts are tabulated with the observed levels of depth on the left of a page, and standard depth values of temperature, salinity and oxygen interpolated from those observations are on the right of a 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) Ten-meter temperature, salinity and occasionally oxygen data from net tow 10-meter bottles and STD 10-meter check bottles appear as separate sections.

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 93.30 appears in the tabulated data as 93030. The CalCOFI station designations have been in use for over thirty 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. 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
DT	δ_T Thermosteric anomaly	cl/ton
SIGT	$\sigma_t = (\rho_{s,t,0} - 1) 10^3$ where $\rho_{s,t,0}$ is the	g/L
or	density the parcel of sea water would have	
SIGMA T	if moved isothermally to the sea surface.	
DD	Geopotential anomaly, referred to the sea surface.	dynamic meters

FOOTNOTES

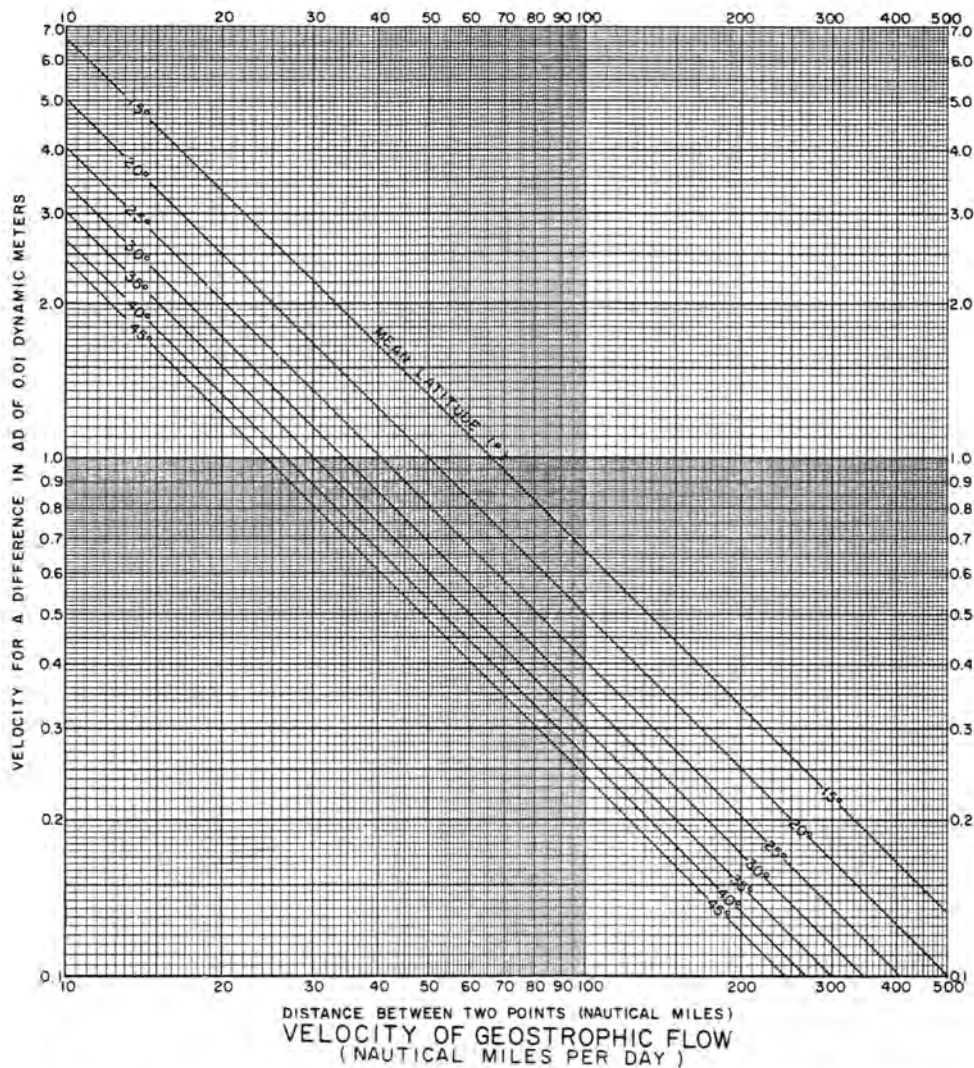
In addition to explicit footnotes, the following notations have been used.

P: Nansen bottle posttripped.

U: Uncertain value - not used in interpolation.

LITERATURE CITED

- Anderson, G. C., compiler, 1971. "Oxygen Analysis," Marine Technician's Handbook, SIO Ref. No. 71-8, Sea Grant Pub. No. 9.
- Carpenter, J. H., 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. *Limnol. Oceanogr.*, 10: 141-143.
- Klein, Hans T., 1973. A new technique for processing physical oceanographic data. SIO Ref. No. 73-14.
- Matthews, D. J., 1939. Tables of the velocity of sound in pure water and seawater for use in echosounding and sound-ranging. Second Edition. Hydrographic Department, Admiralty, H. D. 282, 52 pp.
- Plessey Environmental Systems, 1974. Instruction Manual, *In situ* Salinity/Temperature/Depth Monitoring and Recording System, Model 9040.



cm/sec	0	1	2	3	4	5	6	7	8	9
0	<i>KNOTS</i> 0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.17	
	<i>NM/DAY</i> 0.47	0.93	1.40	1.86	2.33	2.80	3.26	3.73	4.20	
10	0.19 4.66	0.21 5.13	0.23 5.59	0.25 6.06	0.27 6.53	0.29 6.99	0.31 7.46	0.33 7.93	0.35 8.39	0.37 8.86
20	0.39 9.32	0.41 9.79	0.43 10.26	0.45 10.72	0.47 11.19	0.49 11.66	0.51 12.12	0.52 12.59	0.54 13.05	0.56 13.52
30	0.58 13.99	0.60 14.45	0.62 14.92	0.64 15.38	0.66 15.85	0.68 16.32	0.70 16.78	0.72 17.25	0.74 17.72	0.76 18.18
40	0.78 18.65	0.80 19.11	0.82 19.58	0.84 20.05	0.85 20.51	0.87 20.98	0.89 21.45	0.91 21.91	0.93 22.38	0.95 22.84
50	0.97 23.31	0.99 23.78	1.01 24.24	1.03 24.71	1.05 25.17	1.07 25.64	1.09 26.11	1.11 26.57	1.13 27.04	1.15 27.51
60	1.17 27.98	1.18 28.44	1.20 28.90	1.22 29.37	1.24 29.84	1.26 30.30	1.28 30.77	1.30 31.24	1.32 31.70	1.34 32.17
70	1.36 32.63	1.38 33.10	1.40 33.57	1.42 34.03	1.44 34.50	1.46 34.96	1.48 35.43	1.50 35.90	1.52 36.36	1.53 36.83
80	1.55 37.30	1.57 37.76	1.59 38.23	1.61 38.69	1.63 39.16	1.65 39.63	1.67 40.09	1.69 40.56	1.71 41.03	1.73 41.49
90	1.75 41.96	1.77 42.42	1.79 42.89	1.81 43.36	1.83 43.82	1.85 44.29	1.86 44.76	1.88 45.22	1.90 45.69	1.92 46.15
100	1.94 46.62	1.96 47.09	1.98 47.55	2.00 48.02	2.02 48.48	2.04 48.95	2.06 49.42	2.08 49.88	2.10 50.35	2.12 50.82

CONVERSION TABLE
(CENTIMETERS / SECOND - KNOTS - NAUTICAL MILES / DAY)

1cm/sec=0.019 kts = 0.466 NAUTICAL MILES / DAY
 1kt = 24 NAUTICAL MILES / DAY = 51.48 cm/sec
 1 NAUTICAL MILE / DAY=0.042 kts = 2.14 cm/sec

FIGURES

Cruise 7512

1. CalCOFI Cruise 7512, station positions.
2. Horizontal distribution of dynamic height anomaly (0 over 300 d-bar).
3. Horizontal distribution of temperature at 10 meters.
4. Horizontal distribution of salinity at 10 meters.
5. Horizontal distribution of thermosteric anomaly at 10 meters.
6. Horizontal distribution of thermosteric anomaly at 200 meters.
7. Horizontal distribution of temperature at 200 meters.
8. Horizontal distribution of salinity at 200 meters.

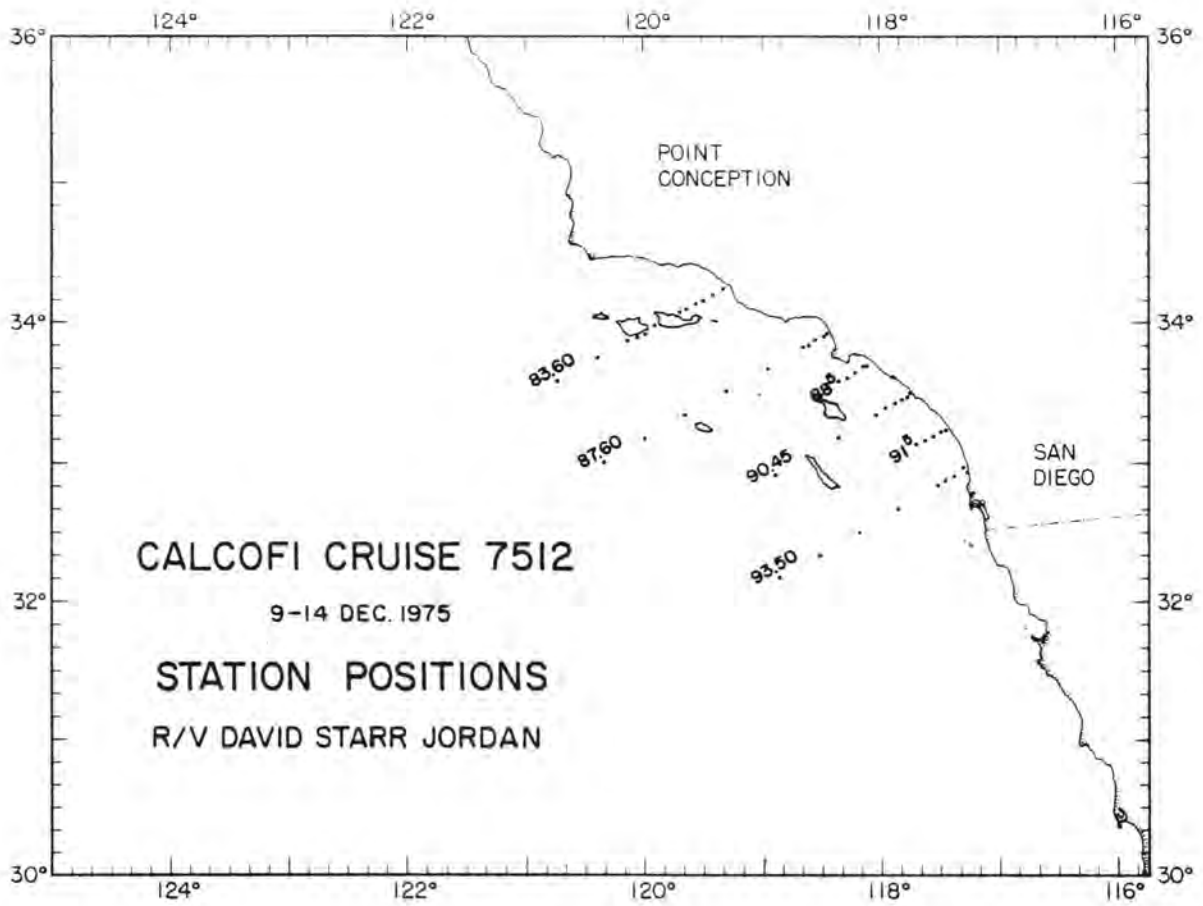


FIGURE 1

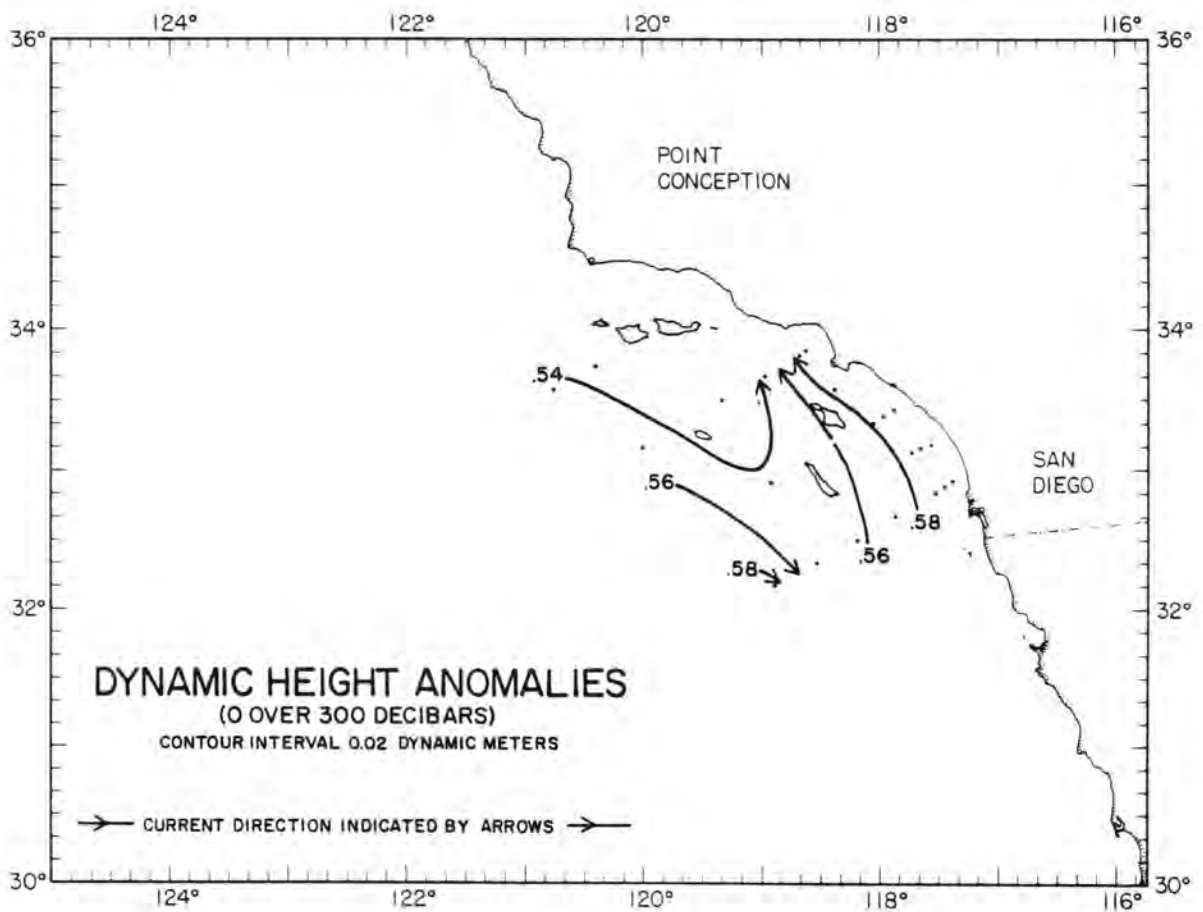


FIGURE 2

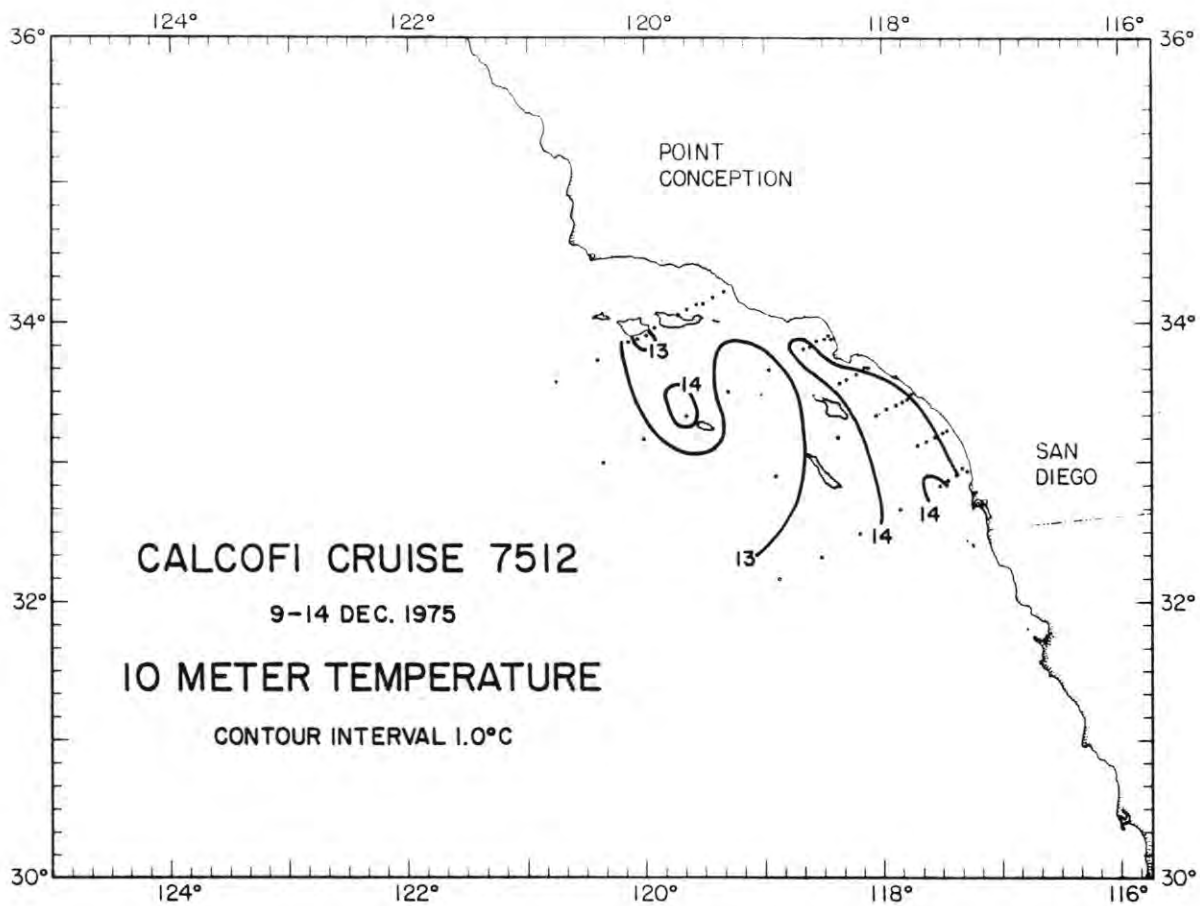


FIGURE 3

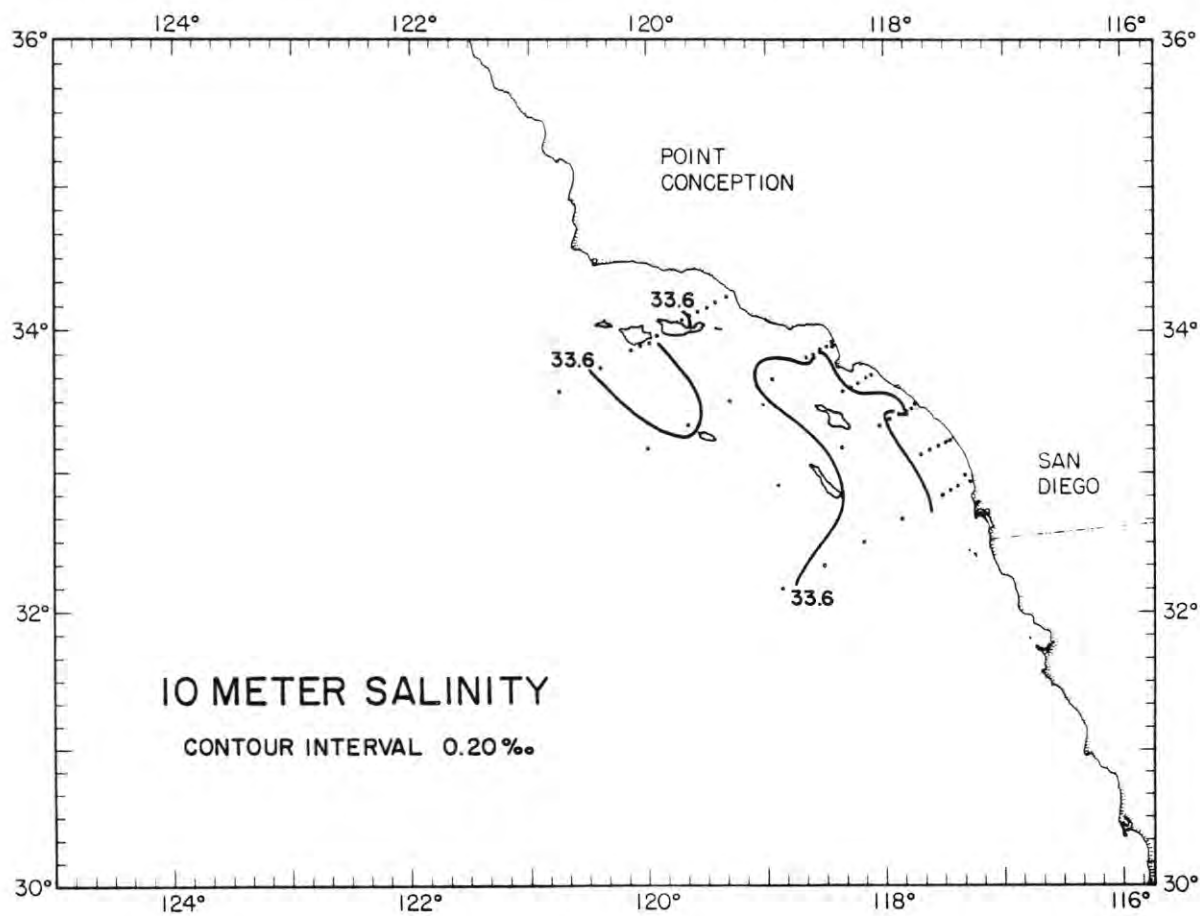


FIGURE 4

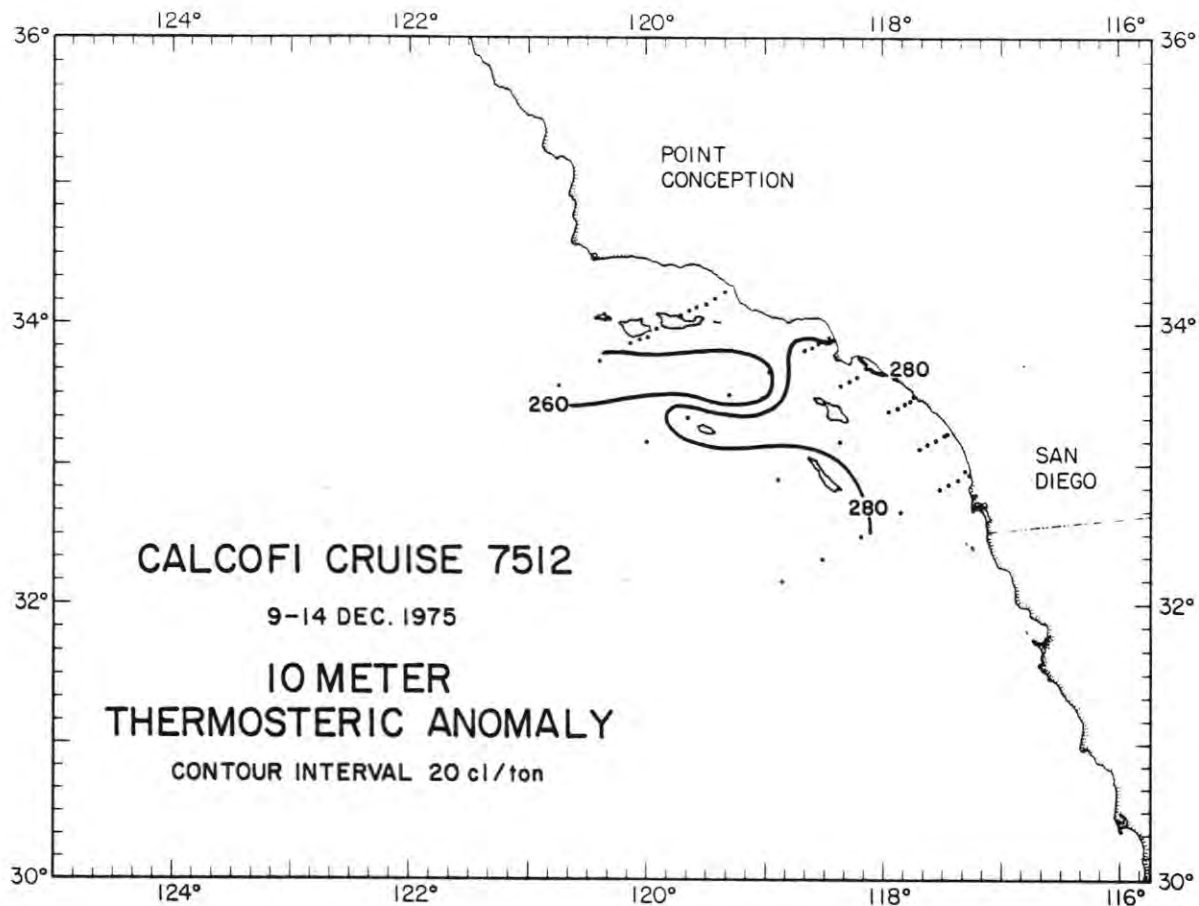


FIGURE 5

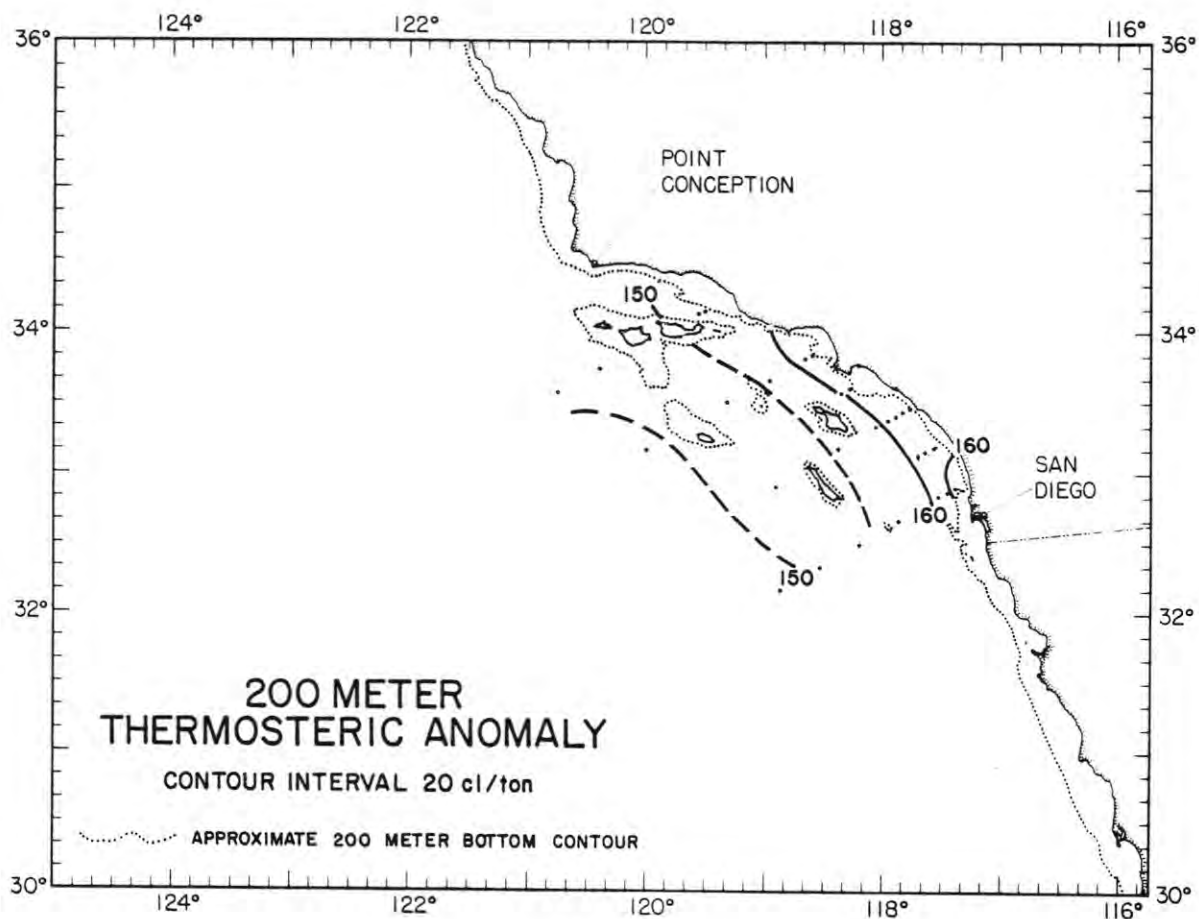


FIGURE 6

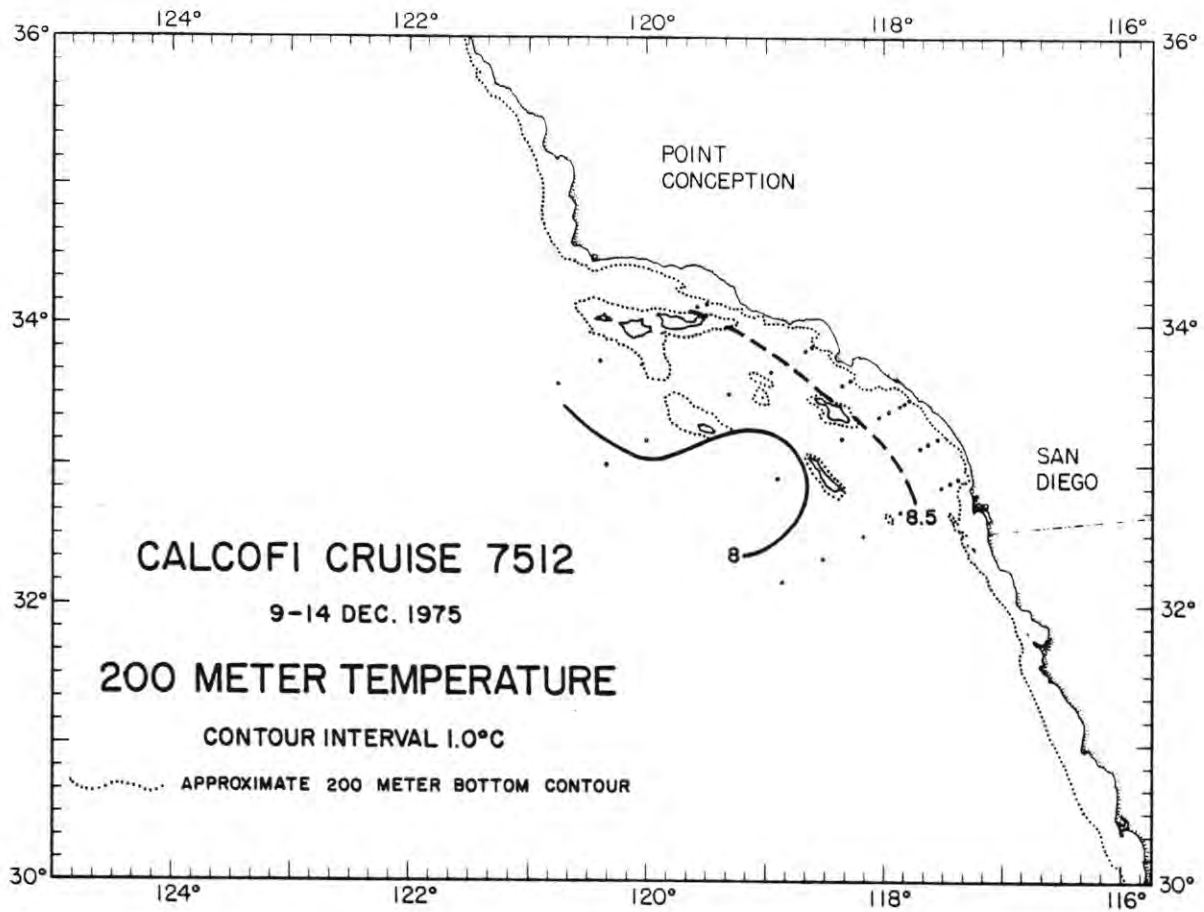


FIGURE 7

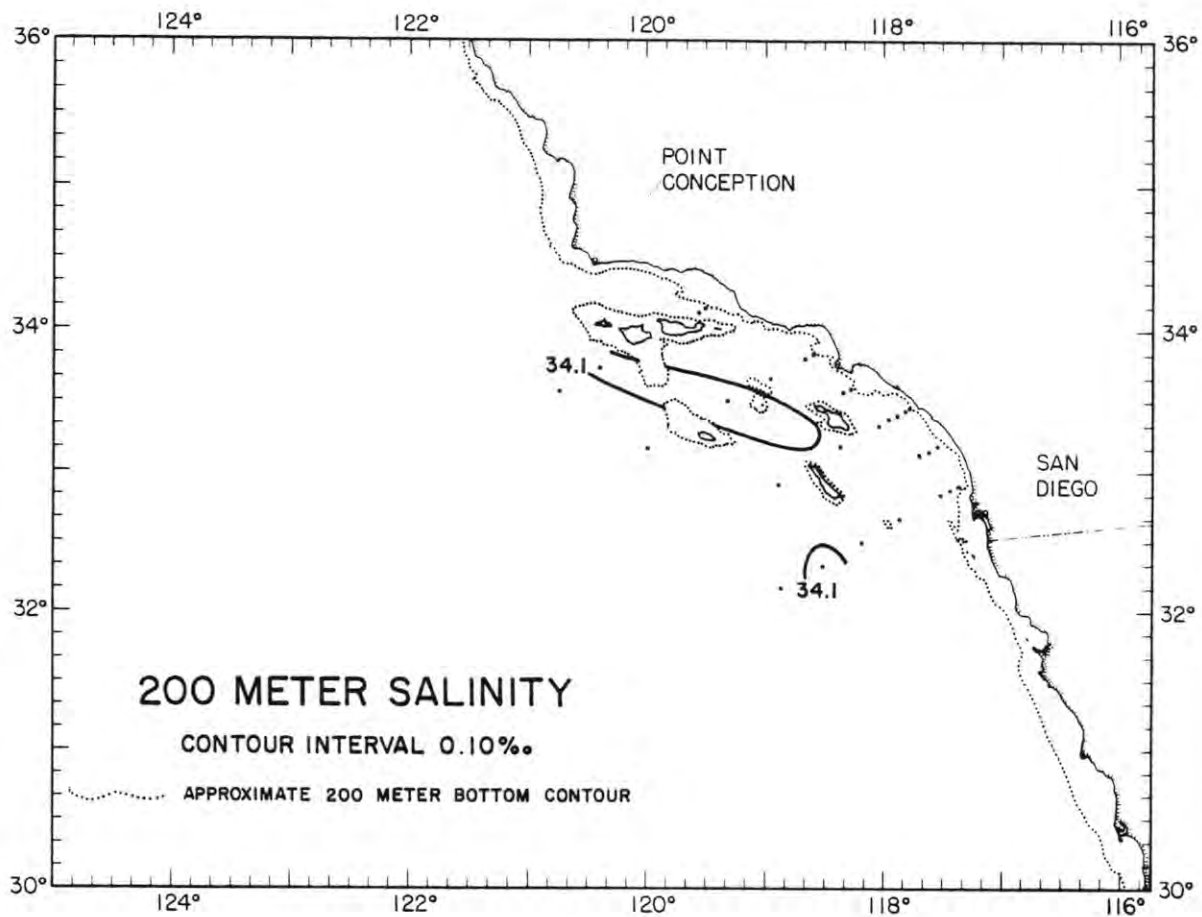


FIGURE 8

PERSONNEL

Cruise 7512

SHIP'S CAPTAIN

Forster, Charles W., *RV David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV David Starr Jordan

Counts, Robert C. (in charge)	Fishery Biologist, NMFS
Dotson, Ronald C.	Biological Technician, NMFS
Fey, Connie L.	Laboratory Assistant, SIO
Halas, J.	Biological Technician, NMFS
Sanchez, Carol	Biological Technician, NMFS
Thraikill, James R.	Fishery Biologist, NMFS

83039⁴ RV DAVID STARR JORDAN
 CALCOFI CRUISE 7512 83041

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 14.7N	119 19.4W	12/13/75	0207 GMT

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 11.5N	119 26.0W	12/13/75	0012 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
18M				

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
69M				

Z	T	S	SIGMA T	DT	DD
0	13.07	33.59	25.308	267.4	0.000
5	13.07	33.59	25.308	267.4	0.013
10	13.07	33.59	25.308	267.4	0.026
15	13.07	33.59	25.308	267.4	0.040

Z	T	S	SIGMA T	DT	DD
0	13.15	33.55	25.261	271.8	0.000
10	13.13	33.56	25.273	270.7	0.027
20	12.76	33.53	25.323	266.0	0.054
30	11.67	33.51	25.515	247.7	0.079
36	11.43	33.54	25.583	241.2	0.094

83041 RV DAVID STARR JORDAN
 CALCOFI CRUISE 7512 83042

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 11.5N	119 26.0W	12/13/75	0017 GMT

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 09.6N	119 30.0W	12/12/75	2240 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
69M				

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
240M				

Z	T	S	SIGMA T	DT	DD
0	13.12	33.55	25.267	271.2	0.000
10	13.12	33.55	25.267	271.2	0.027
20	12.39	33.53	25.395	259.1	0.053
30	11.69	33.52	25.519	247.3	0.079
40	11.37	33.55	25.601	239.5	0.103
50	11.34	33.57	25.622	237.5	0.127
60	11.25	33.59	25.654	234.4	0.151

Z	T	S	SIGMA T	DT	DD
0	13.24	33.56	25.251	272.8	0.000
10	13.25	33.56	25.249	273.0	0.027
20	13.18	33.54	25.247	273.1	0.054
30	12.32	33.49	25.377	260.8	0.081
40	11.69	33.50	25.504	248.7	0.106
50	11.28	33.54	25.610	238.6	0.131
75	10.49	33.65	25.836	217.2	0.188
100	9.85	33.79	26.054	196.4	0.240
125	9.48	33.89	26.193	183.2	0.288
150	9.18	33.96	26.296	173.4	0.334
175	8.86	34.03	26.402	163.4	0.377
200	8.61	34.07	26.472	156.7	0.418
225	8.43	34.10	26.523	151.8	0.457

83043 RV DAVID STARR JORDAN
 CALCOFI CRUISE 7512 83044

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 08.0N	119 34.0W	12/12/75	2115 GMT

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 05.6N	119 38.2W	12/12/75	2000 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
251M				

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
185M				

Z	T	S	SIGMA T	DT	DD
0	13.29	33.58	25.256	272.3	0.000
10	13.28	33.59	25.266	271.3	0.027
20	13.14	33.58	25.286	269.4	0.054
30	12.99	33.57	25.308	267.3	0.081
40	12.47	33.57	25.410	257.6	0.107
50	11.72	33.61	25.583	241.2	0.132
75	10.57	33.70	25.861	214.8	0.189
100	9.95	33.80	26.045	197.3	0.241
125	9.48	33.89	26.193	183.2	0.290
150	9.07	33.97	26.322	171.0	0.335
175	8.65	34.05	26.450	158.8	0.377
200	8.51	34.08	26.495	154.5	0.417
225	8.36	34.09	26.526	151.6	0.456

Z	T	S	SIGMA T	DT	DD
0	13.33	33.58	25.248	273.0	0.000
10	13.27	33.59	25.268	271.2	0.027
20	13.24	33.58	25.266	271.3	0.054
30	13.03	33.58	25.308	267.3	0.081
40	12.69	33.57	25.368	261.7	0.107
50	12.22	33.57	25.458	253.1	0.133
75	10.39	33.70	25.892	211.8	0.192
100	9.65	33.84	26.126	189.6	0.242
125	9.26	33.92	26.252	177.6	0.289
150	8.95	34.00	26.364	166.9	0.333

83045 RV DAVID STARR JORDAN
 CALCOFI CRUISE 7512 83048

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
34 03.6N	119 42.2W	12/12/75	1835 GMT

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
33 58.0N	119 55.0W	12/12/75	1547 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
82M				

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
194M				

Z	T	S	SIGMA T	DT	DD
0	13.32	33.59	25.258	272.1	0.000
10	13.25	33.60	25.280	270.0	0.027
20	13.10	33.59	25.302	267.9	0.054
30	12.04	33.62	25.531	246.1	0.079
40	11.90	33.65	25.581	241.4	0.104
50	10.91	33.70	25.801	220.5	0.127
75	10.01	33.79	26.027	199.0	0.180

Z	T	S	SIGMA T	DT	DD
0	13.20	33.58	25.274	270.6	0.000
10	13.19	33.58	25.276	270.4	0.027
20	13.18	33.57	25.270	270.9	0.054
30	12.47	33.56	25.402	258.4	0.080
40	12.15	33.59	25.487	250.3	0.106
50	11.35	33.62	25.659	233.9	0.130
75	10.60	33.73	25.878	213.1	0.186
100	9.86	33.82	26.075	194.4	0.238
125	9.63	33.86	26.145	187.8	0.286
150	9.41	33.90	26.212	181.4	0.333

83049 RV DAVID STARR JORDAN
 LATITUDE 33 55.6N LONGITUDE 119 59.1W MO/DA Y/YR 12/12/75 START TIME 1444 GMT
 BOTTOM 25M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	12.88	33.61	25.361	262.3	0.000
5	12.85	33.61	25.367	261.7	0.013
10	12.85	33.61	25.367	261.7	0.026
15	12.83	33.61	25.371	261.4	0.039
20	12.78	33.61	25.381	260.4	0.052

CALCOFI CRUISE 7512 83050
 LATITUDE 33 53.6N LONGITUDE 120 03.4W MO/DA Y/YR 12/12/75 START TIME 1330 GMT
 BOTTOM 31M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	12.92	33.62	25.361	262.3	0.000
5	12.92	33.62	25.361	262.3	0.013
10	12.92	33.61	25.353	263.0	0.026
15	12.87	33.60	25.355	262.8	0.039
20	12.75	33.61	25.387	259.9	0.052
24	12.73	33.62	25.398	258.8	0.062

83051 RV DAVID STARR JORDAN
 LATITUDE 33 52.0N LONGITUDE 120 08.5W MO/DA Y/YR 12/12/75 START TIME 1210 GMT
 BOTTOM 155M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	13.02	33.61	25.333	264.9	0.000
10	13.02	33.61	25.333	264.9	0.026
20	12.99	33.60	25.331	265.1	0.053
30	12.66	33.58	25.381	260.4	0.079
40	12.16	33.59	25.485	250.5	0.105
50	11.42	33.61	25.639	235.9	0.129
75	11.01	33.68	25.767	223.7	0.187
100	9.95	33.78	26.029	198.8	0.240
125	9.90	33.80	26.053	196.5	0.290
143	9.81	33.82	26.084	193.6	0.326

CALCOFI CRUISE 7512 83055
 LATITUDE 33 44.0N LONGITUDE 120 24.5W MO/DA Y/YR 12/12/75 START TIME 0938 GMT
 BOTTOM 945M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	12.85	33.63	25.382	260.3	0.000
10	12.83	33.63	25.386	259.9	0.026
20	12.75	33.63	25.402	258.4	0.051
30	12.35	33.64	25.487	250.3	0.077
40	11.59	33.67	25.654	234.5	0.101
50	10.42	33.73	25.910	210.1	0.124
75	9.56	33.85	26.149	187.4	0.174
100	8.81	33.99	26.378	165.6	0.218
125	8.54	34.04	26.460	157.9	0.259
150	8.44	34.05	26.483	155.7	0.299
175	8.30	34.07	26.520	152.2	0.338
200	8.24	34.11	26.560	148.3	0.377
225	8.10	34.13	26.597	144.9	0.414
250	7.95	34.13	26.619	142.7	0.451
275	7.86	34.15	26.648	140.0	0.488
300	7.70	34.16	26.679	137.0	0.524

83060 RV DAVID STARR JORDAN
 LATITUDE 33 34.0N LONGITUDE 120 45.0W MO/DA Y/YR 12/12/75 START TIME 0644 GMT
 BOTTOM 1386M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	12.25	33.49	25.391	259.5	0.000
10	12.25	33.49	25.391	259.5	0.025
20	12.25	33.49	25.391	259.5	0.051
30	12.26	33.49	25.389	259.7	0.077
40	11.66	33.45	25.470	251.9	0.103
50	10.07	33.33	25.659	234.0	0.128
75	9.79	33.51	25.846	216.2	0.184
100	9.13	33.84	26.211	181.5	0.234
125	8.84	33.96	26.350	168.3	0.279
150	8.60	34.00	26.419	161.7	0.320
175	8.38	34.04	26.484	155.6	0.361
200	8.07	34.08	26.562	148.2	0.400
225	7.83	34.11	26.621	142.5	0.437
250	7.67	34.12	26.652	139.6	0.473
275	7.50	34.13	26.685	136.5	0.509
300	7.39	34.17	26.732	132.1	0.544

CALCOFI CRUISE 7512 87032⁵
 LATITUDE 33 53.5N LONGITUDE 118 26.4W MO/DA Y/YR 12/11/75 START TIME 0240 GMT
 BOTTOM 18M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	13.85	33.56	25.127	284.6	0.000
5	13.85	33.56	25.127	284.6	0.014
10	13.85	33.56	25.127	284.6	0.028
15	13.65	33.55	25.160	281.4	0.042

87032⁷ RV DAVID STARR JORDAN
 LATITUDE 33 54.5N LONGITUDE 118 28.0W MO/DA Y/YR 12/11/75 START TIME 0343 GMT
 BOTTOM 37M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	13.55	33.57	25.196	278.0	0.000
5	13.54	33.57	25.198	277.8	0.013
10	13.54	33.57	25.198	277.8	0.027
15	13.53	33.57	25.200	277.6	0.041
20	13.50	33.56	25.198	277.8	0.055
25	13.37	33.55	25.217	276.0	0.069
30	12.19	33.54	25.246	273.3	0.083

CALCOFI CRUISE 7512 87033
 LATITUDE 33 54.0N LONGITUDE 118 29.0W MO/DA Y/YR 12/11/75 START TIME 0432 GMT
 BOTTOM 49M WIND SPEED WEATHER DOMINANT WAVES

Z	T	S	SIGMA T	DT	DD
0	13.45	33.56	25.209	276.8	0.000
10	13.45	33.56	25.209	276.8	0.027
20	13.40	33.55	25.211	276.6	0.055
30	13.24	33.54	25.235	274.3	0.083
40	12.58	33.52	25.350	263.3	0.109

87034		RV DAV ID STARR JORDAN		CALCOFI CRUISE 7512		87035					
LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	LATITUDE	LONGITUDE	MO/DAY/YR	START TIME				
33 52.0N	118 33.0W	12/11/75	0544 GMT	33 50.0N	118 37.5W	12/11/75	0653 GMT				
BOTTOM	WIND	SPEED	WEATH'R	DOMINANT WAVES	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES		
71M					611M						
Z	T	S	SIGMA T	DT	DD	Z	T	S	SIGMA T	DT	DD
0	14.12	33.60	25.101	287.0	0.000	0	14.48	33.61	25.033	293.5	0.000
10	13.67	33.56	25.164	281.1	0.028	10	14.39	33.61	25.052	291.7	0.029
20	13.45	33.55	25.201	277.6	0.056	20	13.51	33.55	25.189	278.7	0.057
30	12.38	33.53	25.397	258.9	0.083	30	12.67	33.51	25.325	265.7	0.085
40	12.04	33.53	25.461	252.7	0.108	40	12.38	33.52	25.389	259.7	0.111
50	11.63	33.54	25.546	244.7	0.133	50	11.46	33.55	25.585	241.0	0.136
60	11.03	33.61	25.709	229.2	0.157	75	10.62	33.63	25.797	220.8	0.194
						100	10.04	33.76	25.998	201.7	0.248
						125	9.60	33.85	26.142	188.1	0.297
						150	9.44	33.91	26.215	181.1	0.344
						175	9.17	33.99	26.321	171.0	0.388
						200	8.81	34.06	26.433	160.4	0.431
						225	8.64	34.09	26.483	155.6	0.471
						250	8.36	34.12	26.550	149.3	0.511
						275	8.09	34.15	26.614	143.2	0.548
						300	7.88	34.18	26.669	138.1	0.585

87036		RV DAV ID STARR JORDAN		CALCOFI CRUISE 7512		87040					
LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	LATITUDE	LONGITUDE	MO/DAY/YR	START TIME				
33 48.5N	118 40.0W	12/11/75	0820 GMT	33 40.0N	118 58.0W	12/11/75	1138 GMT				
BOTTOM	WIND	SPEED	WEATH'R	DOMINANT WAVES	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES		
492M					927M						
Z	T	S	SIGMA T	DT	DD	Z	T	S	SIGMA T	DT	DD
0	14.41	33.61	25.048	292.1	0.000	0	12.90	33.62	25.365	261.9	0.000
10	14.09	33.59	25.100	287.1	0.028	10	12.77	33.62	25.390	259.5	0.026
20	13.54	33.54	25.175	280.0	0.057	20	12.60	33.62	25.424	256.4	0.051
30	12.99	33.53	25.277	270.3	0.084	30	12.41	33.60	25.445	254.3	0.077
40	12.21	33.51	25.414	257.3	0.111	40	11.42	33.61	25.639	235.9	0.102
50	11.81	33.53	25.505	248.6	0.136	50	10.46	33.66	25.849	215.9	0.124
75	10.72	33.61	25.764	224.0	0.196	75	9.96	33.75	26.004	201.2	0.177
100	10.04	33.74	25.983	203.2	0.250	100	9.61	33.82	26.117	190.4	0.226
125	9.69	33.83	26.111	191.0	0.299	125	9.06	33.92	26.284	174.5	0.272
150	9.39	33.92	26.231	179.6	0.347	150	8.64	34.01	26.421	161.6	0.315
175	9.14	34.00	26.334	169.8	0.391	175	8.40	34.06	26.497	154.4	0.355
200	8.91	34.05	26.410	162.6	0.433	200	8.26	34.08	26.534	150.9	0.394
225	8.63	34.10	26.493	154.8	0.474	225	8.05	34.11	26.589	145.6	0.432
250	8.45	34.12	26.536	150.7	0.513	250	7.96	34.12	26.610	143.6	0.470
275	8.13	34.15	26.608	143.8	0.551	275	7.74	34.15	26.666	138.3	0.506
300	7.84	34.18	26.675	137.5	0.588	300	7.50	34.19	26.732	132.1	0.541

87045		RV DAV ID STARR JORDAN		CALCOFI CRUISE 7512		87050					
LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	LATITUDE	LONGITUDE	MO/DAY/YR	START TIME				
33 30.0N	119 19.0W	12/11/75	1429 GMT	33 20.0N	119 39.5W	12/11/75	1732 GMT				
BOTTOM	WIND	SPEED	WEATH'R	DOMINANT WAVES	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES		
1664M					73M						
Z	T	S	SIGMA T	DT	DD	Z	T	S	SIGMA T	DT	DD
0	12.31	33.56	25.433	255.4	0.000	0	14.12	33.61	25.109	286.3	0.000
10	12.31	33.56	25.433	255.4	0.025	10	14.11	33.61	25.111	286.1	0.028
20	12.22	33.57	25.458	253.1	0.051	20	13.82	33.59	25.156	281.8	0.057
30	11.77	33.61	25.574	242.1	0.075	30	12.98	33.52	25.272	270.8	0.084
40	10.82	33.63	25.762	224.1	0.099	40	12.15	33.52	25.433	255.5	0.111
50	10.29	33.69	25.901	210.9	0.121	50	11.50	33.54	25.570	242.5	0.136
75	9.52	33.81	26.124	189.8	0.171	65	11.04	33.65	25.739	226.4	0.171
100	9.16	33.91	26.260	176.8	0.217						
125	8.86	33.96	26.347	168.6	0.261						
150	8.63	34.02	26.430	160.7	0.303						
175	8.28	34.09	26.538	150.4	0.342						
200	8.06	34.14	26.626	142.0	0.380						
225	8.08	34.18	26.639	140.9	0.416						
250	7.83	34.17	26.668	138.1	0.452						
275	7.86	34.20	26.687	136.3	0.487						
300	7.56	34.19	26.723	132.9	0.522						

87055 RV DAVID STARR JORDAN CALCOFI CRUISE 7512 87060

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	LATITUDE	LONGITUDE	MO/DAY/YR	START TIME				
33 10.0N	120 00.0W	12/11/75	2043 GMT	33 00.0N	120 21.5W	12/12/75	0154 GMT				
BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES	BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES				
1201M				61M							
Z	T	S	SIGMA T	DT	DD	Z	T	S	SIGMA T	DT	DD
0	12.32	33.48	25.369	261.5	0.000	0	12.58				
10	12.32	33.48	25.369	261.5	0.026	10	12.58				
20	12.32	33.51	25.393	259.3	0.052	20	12.57				
30	12.31	33.53	25.410	257.6	0.078	30	12.45				
40	11.40	33.41	25.487	250.3	0.103	40	12.32				
50	10.63	33.39	25.609	238.7	0.128	50	12.12				
75	9.65	33.58	25.923	208.8	0.184	75	10.15				
100	9.29	33.73	26.099	192.1	0.235	100	9.27				
125	9.05	33.91	26.278	175.1	0.281	125	8.75				
150	8.89	33.96	26.342	169.0	0.325	150	8.44				
175	8.63	34.04	26.446	159.2	0.366	175	7.97				
200	8.46	34.06	26.488	155.2	0.407	200	7.71				
225	8.06	34.07	26.556	148.7	0.446	225	7.40				
250	7.81	34.09	26.609	143.8	0.483	250	7.24				
275	7.54	34.11	26.663	138.5	0.520	275	7.04				
300	7.29	34.14	26.722	132.9	0.555	300	7.14				

5 4 88030 RV DAVID STARR JORDAN CALCOFI CRUISE 7512 88031

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	LATITUDE	LONGITUDE	MO/DAY/YR	START TIME				
33 41.4N	118 07.1W	12/10/75	2059 GMT	33 40.3N	118 09.4W	12/10/75	2145 GMT				
BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES	BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES				
16M				26M							
Z	T	S	SIGMA T	DT	DD	Z	T	S	SIGMA T	DT	DD
0	13.72	33.54	25.138	283.5	0.000	0	13.95	33.57	25.114	285.8	0.000
5	13.56	33.54	25.171	280.4	0.014	5	13.80	33.57	25.145	282.9	0.014
10	13.49	33.54	25.185	279.1	0.028	10	13.60	33.54	25.162	281.2	0.028
						15	13.53	33.53	25.169	280.6	0.042
						20	13.29	33.52	25.210	276.7	0.056

5 88032 RV DAVID STARR JORDAN CALCOFI CRUISE 7512 88033

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	LATITUDE	LONGITUDE	MO/DAY/YR	START TIME				
33 38.3N	118 13.5W	12/11/75	2245 GMT	33 36.3N	118 17.6W	12/11/75	2345 GMT				
BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES	BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES				
29M				267M							
Z	T	S	SIGMA T	DT	DD	Z	T	S	SIGMA T	DT	DD
0	14.34	33.59	25.048	292.1	0.000	0	14.28	33.60	25.068	290.2	0.000
5	14.24	33.59	25.069	290.1	0.014	10	14.23	33.60	25.078	289.2	0.028
10	14.35	33.60	25.053	291.6	0.029	20	13.86	33.59	25.148	282.6	0.057
15	14.30	33.59	25.056	291.3	0.043	30	13.18	33.53	25.240	273.8	0.085
20	14.27	33.59	25.062	290.7	0.058	40	12.11	33.50	25.425	266.2	0.112
25	13.22	33.55	25.247	273.1	0.072	50	11.23	33.53	25.611	238.5	0.136
						75	10.56	33.64	25.816	219.1	0.194
						100	10.18	33.71	25.936	207.7	0.248
						125	9.56	33.86	26.156	186.7	0.298
						150	9.33	33.93	26.249	177.9	0.344
						175	9.00	34.02	26.372	166.2	0.388
						200	8.81	34.05	26.425	161.1	0.430
						225	8.55	34.10	26.505	153.6	0.470
						250	8.40	34.12	26.544	149.9	0.509

5 88034 RV DAVID STARR JORDAN CALCOFI CRUISE 7512 90027⁶

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME	LATITUDE	LONGITUDE	MO/DAY/YR	START TIME				
33 34.3N	118 21.8W	12/10/75	1354 GMT	33 29.3N	117 45.5W	12/10/75	0045 GMT				
BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES	BOTTOM	WIND SPEED	WEATHER	DOMINANT WAVES				
896M				40M							
Z	T	S	SIGMA T	DT	DD	Z	T	S	SIGMA T	DT	DD
0	14.12	33.60	25.101	287.0	0.000	0	14.53	33.59	25.007	296.0	0.000
10	14.12	33.60	25.101	287.0	0.028	10	13.96	33.55	25.096	287.5	0.029
20	13.78	33.57	25.149	282.5	0.057	20	13.52	33.53	25.171	280.4	0.057
30	13.22	33.54	25.239	273.9	0.085	28	13.01	33.52	25.266	271.4	0.079
40	12.40	33.54	25.400	258.6	0.111						
50	11.45	33.56	25.594	240.1	0.136						
75	10.46	33.65	25.841	216.7	0.194						
100	10.04	33.74	25.983	203.2	0.247						
125	9.60	33.83	26.126	189.5	0.296						
150	9.29	33.95	26.271	175.8	0.343						
175	9.00	34.02	26.372	166.2	0.386						
200	8.78	34.06	26.438	160.0	0.428						
225	8.55	34.10	26.505	153.6	0.468						
250	8.30	34.13	26.567	147.7	0.507						
275	8.06	34.15	26.619	142.8	0.544						
300	7.84	34.18	26.675	137.5	0.581						

90028		RV DAVID STARR JORDAN			
LATITUDE	LONGITUDE	MO/DA/YR	START TIME		
33 28.5N	117 46.7W	12/10/75	0200 GMT		
BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES	
351M					
Z	T	S	SIGMA T	DT	DD
0	15.10	33.56	24.861	309.8	0.000
10	14.31	33.57	25.039	293.0	0.030
20	14.15	33.56	25.064	290.5	0.059
30	12.75	33.49	25.294	268.7	0.087
40	11.92	33.50	25.461	252.8	0.113
50	11.70	33.52	25.517	247.4	0.138
75	10.78	33.60	25.746	225.7	0.198
100	10.21	33.69	25.915	209.7	0.253
125	9.77	33.80	26.075	194.5	0.304
150	9.35	33.92	26.238	179.0	0.351
175	9.02	34.01	26.361	167.3	0.395
200	8.86	34.05	26.418	161.9	0.437
225	8.58	34.08	26.485	155.5	0.478
250	8.45	34.09	26.512	152.9	0.518
275	8.31	34.13	26.565	147.9	0.556
300	8.06	34.16	26.626	142.0	0.594

CALCOFI CRUISE 7512		90029			
LATITUDE	LONGITUDE	MO/DA/YR	START TIME		
33 27.0N	117 49.5W	12/10/75	0404 GMT		
BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES	
647M					
Z	T	S	SIGMA T	DT	DD
0	14.72	33.63	24.997	296.9	0.000
10	14.49	33.61	25.031	293.7	0.029
20	14.21	33.55	25.044	292.5	0.058
30	13.02	33.50	25.248	273.0	0.087
40	12.58	33.50	25.335	264.8	0.114
50	11.68	33.48	25.490	250.0	0.140
75	10.79	33.59	25.736	226.6	0.200
100	10.28	33.68	25.895	211.5	0.255
125	9.94	33.74	26.000	201.6	0.307
150	9.54	33.85	26.152	187.1	0.356
175	8.96	33.98	26.347	168.6	0.402
200	8.79	34.05	26.429	160.9	0.444
225	8.64	34.11	26.499	154.2	0.484
250	8.40	34.12	26.544	149.9	0.523
275	8.20	34.15	26.598	144.8	0.561
300	8.01	34.18	26.649	139.9	0.598

90030		RV DAVID STARR JORDAN			
LATITUDE	LONGITUDE	MO/DA/YR	START TIME		
33 25.0N	117 53.5W	12/10/75	0608 GMT		
BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES	
647M					
Z	T	S	SIGMA T	DT	DD
0	14.30	33.60	25.064	290.6	0.000
10	14.27	33.60	25.070	290.0	0.029
20	13.98	33.57	25.107	286.4	0.057
30	13.83	33.56	25.131	284.2	0.086
40	12.22	33.50	25.404	258.2	0.113
50	11.32	33.55	25.611	238.6	0.138
75	10.73	33.59	25.747	225.6	0.197
100	10.29	33.69	25.901	210.9	0.252
125	9.79	33.79	26.064	195.5	0.303
150	9.57	33.88	26.170	185.4	0.351
175	9.25	33.94	26.269	176.0	0.397
200	8.89	34.05	26.413	162.3	0.440
225	8.46	34.07	26.495	154.5	0.481
250	8.34	34.12	26.553	149.0	0.520
275	8.17	34.15	26.602	144.4	0.558
300	7.97	34.17	26.648	140.0	0.595

CALCOFI CRUISE 7512		90031			
LATITUDE	LONGITUDE	MO/DA/YR	START TIME		
33 23 N	117 57.7W	12/10/75	0805 GMT		
BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES	
369M					
Z	T	S	SIGMA T	DT	DD
0	14.59	33.59	24.994	297.2	0.000
10	14.25	33.57	25.051	291.8	0.029
20	13.89	33.57	25.126	284.7	0.058
30	12.37	33.50	25.375	260.9	0.085
40	11.87	33.49	25.462	252.7	0.111
50	11.35	33.52	25.582	241.3	0.136
75	10.55	33.64	25.817	218.9	0.194
100	10.11	33.73	25.963	205.0	0.247
125	9.64	33.85	26.135	188.7	0.297
150	9.44	33.92	26.223	180.4	0.344
175	9.13	34.00	26.336	169.7	0.388
200	8.86	34.04	26.410	162.6	0.431
225	8.58	34.10	26.500	154.0	0.471
250	8.39	34.13	26.553	149.0	0.510
275	8.15	34.16	26.613	143.3	0.548
300	7.91	34.17	26.656	139.2	0.585

90032		RV DAVID STARR JORDAN			
LATITUDE	LONGITUDE	MO/DA/YR	START TIME		
33 20.5N	118 03.3W	12/10/75	1022 GMT		
BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES	
795M					
Z	T	S	SIGMA T	DT	DD
0	14.59	33.60	25.002	296.5	0.000
10	14.48	33.61	25.033	293.5	0.029
20	14.19	33.58	25.071	289.9	0.058
30	13.40	33.53	25.195	278.1	0.087
40	12.34	33.50	25.381	260.4	0.114
50	11.74	33.51	25.502	248.9	0.139
75	10.44	33.65	25.844	216.4	0.198
100	10.06	33.72	25.964	205.0	0.251
125	9.41	33.87	26.189	183.6	0.300
150	9.16	33.97	26.307	172.4	0.345
175	8.88	34.04	26.407	162.9	0.388
200	8.64	34.07	26.468	157.1	0.429
225	8.39	34.11	26.537	150.5	0.468
250	8.17	34.12	26.578	146.6	0.506
275	8.00	34.14	26.620	142.7	0.544
300	7.82	34.19	26.686	136.5	0.580

CALCOFI CRUISE 7512		90037			
LATITUDE	LONGITUDE	MO/DA/YR	START TIME		
33 11.0N	118 22.5W	12/13/75	0958 GMT		
BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES	
1201M					
Z	T	S	SIGMA T	DT	DD
0	13.74	33.59	25.172	280.2	0.000
10	13.74	33.59	25.172	280.2	0.028
20	13.74	33.59	25.172	280.2	0.056
30	13.74	33.59	25.172	280.2	0.084
40	12.41	33.55	25.406	258.0	0.111
50	11.07	33.57	25.671	232.8	0.135
75	10.47	33.67	25.855	215.4	0.192
100	10.00	33.74	25.990	202.6	0.244
125	9.23	33.92	26.257	177.1	0.292
150	8.91	34.01	26.378	165.6	0.336
175	8.59	34.06	26.467	157.1	0.377
200	8.29	34.09	26.537	150.6	0.416
225	8.15	34.16	26.613	143.3	0.454
250	7.86	34.16	26.656	139.2	0.490
275	7.65	34.17	26.695	135.6	0.526
300	7.48	34.21	26.750	130.3	0.560

90045 RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
32 54.5N	118 55.5W	12/13/75	1457 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
1756M				

Z	T	S	SIGMA T	DT	DD
0	12.73	33.57	25.360	262.4	0.000
10	12.74	33.57	25.358	262.6	0.026
20	12.74	33.57	25.358	262.6	0.052
30	12.57	33.56	25.383	260.2	0.078
40	11.30	33.56	25.622	237.5	0.103
50	11.24	33.64	25.695	230.6	0.127
75	10.53	33.63	25.813	219.3	0.183
100	9.58	33.74	26.060	195.9	0.236
125	8.98	33.89	26.274	175.6	0.283
150	8.44	33.96	26.412	162.4	0.326
175	8.08	34.00	26.498	154.2	0.366
200	7.87	34.05	26.568	147.6	0.404
225	7.72	34.10	26.629	141.8	0.442
250	7.59	34.13	26.672	137.8	0.477
275	7.46	34.15	26.706	134.5	0.513
300	7.31	34.17	26.743	131.0	0.547

CALCOFI CRUISE 7512 91026

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
33 14.7N	117 27.7W	12/09/75	2205 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
16M				

Z	T	S	SIGMA T	DT	DD
0	14.46	33.59	25.022	294.6	0.000
5	14.17	33.59	25.083	288.7	0.014
10	13.96	33.58	25.119	285.3	0.028
12	13.77	33.58	25.158	281.6	0.034

91026⁸ RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
33 14.0N	117 29.5W	12/09/75	2111 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
59M				

Z	T	S	SIGMA T	DT	DD
0	14.02	33.58	25.107	286.5	0.000
10	13.85	33.57	25.134	283.9	0.028
20	13.23	33.52	25.222	275.5	0.056
30	12.32	33.49	25.377	260.8	0.083
40	11.57	33.51	25.534	245.9	0.108
50	11.32	33.55	25.611	238.6	0.133

CALCOFI CRUISE 7512 91028

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
33 11.7N	117 34.0W	12/09/75	1900 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
647M				

Z	T	S	SIGMA T	DT	DD
0	14.95	33.58	24.909	305.3	0.000
10	14.19	33.58	25.071	289.9	0.029
20	14.12	33.58	25.086	288.5	0.058
30	13.82	33.56	25.133	284.0	0.087
40	13.37	33.50	25.178	279.7	0.115
50	11.64	33.50	25.513	247.9	0.142
75	10.78	33.59	25.738	226.4	0.201
100	10.17	33.71	25.937	207.5	0.256
125	9.75	33.80	26.078	194.1	0.307
150	9.42	33.89	26.203	182.3	0.355
175	9.06	33.98	26.331	170.1	0.399
200	8.88	34.05	26.414	162.2	0.442
225	8.65	34.08	26.474	156.6	0.483
250	8.43	34.10	26.523	151.8	0.522
275	8.33	34.13	26.562	148.2	0.561
300	8.00	34.16	26.635	141.2	0.599

91029⁵ RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
33 09.7N	117 38.0W	12/09/75	1722 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
814M				

Z	T	S	SIGMA T	DT	DD
0	14.22	33.57	25.057	291.2	0.000
10	14.19	33.58	25.071	289.9	0.029
20	13.85	33.56	25.127	284.6	0.057
30	12.43	33.46	25.333	265.0	0.085
40	11.68	33.50	25.506	248.6	0.111
50	11.26	33.51	25.590	240.5	0.135
75	10.60	33.60	25.778	222.7	0.193
100	10.23	33.70	25.919	209.2	0.248
125	9.83	33.81	26.073	194.7	0.299
150	9.54	33.90	26.191	183.4	0.347
175	9.12	33.99	26.329	170.3	0.392
200	8.84	34.05	26.421	161.6	0.434
225	8.52	34.07	26.486	155.4	0.475
250	8.32	34.10	26.540	150.2	0.514
275	8.21	34.13	26.580	146.4	0.553
300	7.80	34.13	26.641	140.7	0.590

CALCOFI CRUISE 7512 91030

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
33 07.7N	117 42.2W	12/09/75	1530 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
832M				

Z	T	S	SIGMA T	DT	DD
0	14.35	33.60	25.053	291.6	0.000
10	14.22	33.59	25.073	289.7	0.029
20	14.13	33.58	25.084	288.7	0.058
30	12.93	33.53	25.289	269.1	0.086
40	12.10	33.50	25.427	256.0	0.112
50	11.53	33.52	25.549	244.4	0.137
75	10.60	33.61	25.785	222.0	0.196
100	10.14	33.70	25.935	207.8	0.250
125	9.80	33.77	26.047	197.1	0.301
150	9.44	33.89	26.199	182.6	0.349
175	9.14	34.02	26.349	168.3	0.394
200	8.87	34.07	26.432	160.6	0.436
225	8.67	34.09	26.479	156.1	0.476
250	8.35	34.10	26.536	150.7	0.516
275	8.03	34.12	26.599	144.6	0.554
300	7.94	34.17	26.652	139.6	0.591

93026⁷ RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
32 57.0N	117 17.5W	12/09/75	0515 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35M				

Z	T	S	SIGMA T	DT	DD
0	13.82	33.56	25.133	284.0	0.000
5	13.80	33.56	25.137	283.6	0.014
10	13.71	33.55	25.148	282.6	0.028
15	13.47	33.54	25.189	278.7	0.042
20	13.33	33.54	25.217	276.0	0.056
25	13.09	33.53	25.258	272.1	0.070
29	12.72	33.53	25.331	265.2	0.080

CALCOFI CRUISE 7512 93026⁹

LATITUDE	LONGITUDE	MO/DA Y/YR	START TIME
32 58.8N	117 18.3W	12/09/75	0757 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
68M				

Z	T	S	SIGMA T	DT	DD
0	13.72	33.55	25.146	282.8	0.000
10	13.65	33.55	25.160	281.4	0.028
20	13.12	33.52	25.244	273.4	0.056
30	12.41	33.51	25.375	260.9	0.082
40	12.05	33.52	25.452	253.7	0.108
50	11.59	33.54	25.553	244.0	0.133

43028 RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 54.7N	117 21.8W	12/09/75	0912 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
497M				

Z	T	S	SIGMA T	DT	DD
0	14.02	33.57	25.099	287.2	0.000
10	14.00	33.58	25.111	286.1	0.028
20	13.85	33.56	25.127	284.6	0.057
30	13.34	33.51	25.192	278.4	0.085
40	12.12	33.48	25.408	257.9	0.112
50	11.36	33.54	25.595	240.0	0.137
75	10.49	33.65	25.836	217.2	0.194
100	10.23	33.71	25.927	208.5	0.248
125	9.82	33.80	26.067	195.2	0.299
150	9.34	33.92	26.239	178.8	0.347
175	9.02	34.03	26.377	165.8	0.390
200	8.75	34.07	26.450	158.8	0.432
225	8.55	34.10	26.505	153.6	0.472
250	8.39	34.11	26.537	150.5	0.511
275	8.20	34.14	26.590	145.5	0.549
300	7.92	34.17	26.655	139.3	0.586

CALCOFI CRUISE 7512 93029

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 52.7N	117 26.6W	12/09/75	1037 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
611M				

Z	T	S	SIGMA T	DT	DD
0	14.42	33.59	25.031	293.7	0.000
10	14.18	33.58	25.073	289.7	0.029
20	14.10	33.57	25.082	288.8	0.058
30	12.56	33.50	25.339	264.4	0.085
40	11.69	33.51	25.512	248.0	0.111
50	11.07	33.55	25.656	234.3	0.135
75	10.54	33.66	25.835	217.3	0.192
100	9.99	33.74	25.991	202.4	0.245
125	9.68	33.84	26.121	190.1	0.295
150	9.45	33.95	26.245	178.3	0.341
175	9.14	33.98	26.318	171.3	0.386
200	8.89	34.05	26.413	162.3	0.429
225	8.63	34.09	26.485	155.5	0.469
250	8.45	34.11	26.528	151.4	0.509
275	8.18	34.14	26.593	145.3	0.547
300	7.93	34.17	26.654	139.5	0.584

93030 RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 50.5N	117 31.0W	12/09/75	1207 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
850M				

Z	T	S	SIGMA T	DT	DD
0	13.94	33.56	25.108	286.4	0.000
10	13.87	33.56	25.122	285.0	0.028
20	13.64	33.55	25.162	281.2	0.056
30	13.26	33.53	25.224	275.4	0.084
40	12.38	33.49	25.366	261.9	0.111
50	11.61	33.51	25.526	246.6	0.137
75	10.67	33.60	25.765	223.8	0.196
100	10.25	33.70	25.916	209.6	0.251
125	9.73	33.81	26.089	193.1	0.302
150	9.38	33.92	26.232	179.4	0.349
175	9.09	34.00	26.342	169.1	0.393
200	8.79	34.06	26.436	160.1	0.435
225	8.57	34.10	26.502	153.9	0.475
250	8.41	34.12	26.542	150.1	0.515
275	8.12	34.15	26.610	143.7	0.552
300	7.89	34.19	26.675	137.4	0.589

CALCOFI CRUISE 7512 93035

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 40.0N	117 51.5W	12/15/75	0025 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
602M				

Z	T	S	SIGMA T	DT	DD
0	14.13	33.64	25.130	284.3	0.000
10	14.10	33.64	25.136	283.7	0.028
20	13.97	33.62	25.148	282.5	0.056
30	13.89	33.61	25.157	281.7	0.085
40	12.97	33.50	25.258	272.1	0.112
50	11.29	33.54	25.608	238.8	0.138
75	10.30	33.66	25.876	213.3	0.195
100	9.84	33.84	26.094	192.6	0.246
125	9.59	33.92	26.198	182.7	0.294
150	9.06	33.97	26.323	170.8	0.338
175	8.77	34.02	26.408	162.8	0.381
200	8.48	34.06	26.485	155.5	0.422
225	8.34	34.12	26.553	149.0	0.461
250	8.15	34.13	26.589	145.6	0.499
275	7.98	34.17	26.646	140.2	0.535
300	7.75	34.18	26.688	136.2	0.571

93040 RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 30.0N	118 11.5W	12/14/75	2135 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
1664M				

Z	T	S	SIGMA T	DT	DD
0	12.78	33.62	25.187	278.8	0.000
10	13.77	33.62	25.189	278.6	0.027
20	13.72	33.61	25.192	278.4	0.055
30	13.69	33.61	25.198	277.8	0.083
40	13.15	33.56	25.269	271.1	0.111
50	11.19	33.57	25.649	234.9	0.136
75	10.16	33.67	25.908	210.3	0.192
100	9.55	33.82	26.127	189.5	0.243
125	9.12	33.93	26.282	174.7	0.289
150	8.90	34.01	26.380	165.5	0.332
175	8.42	34.05	26.486	155.4	0.373
200	8.16	34.09	26.556	148.7	0.412
225	7.80	34.08	26.602	144.4	0.449
250	7.88	34.14	26.637	141.0	0.486
275	7.76	34.16	26.671	137.9	0.522
300	7.42	34.17	26.728	132.5	0.557

CALCOFI CRUISE 7512 93045

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 20.0N	118 32.0W	12/14/75	1840 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
1295M				

Z	T	S	SIGMA T	DT	DD
0	14.01	33.68	25.186	278.9	0.000
10	13.98	33.68	25.192	278.4	0.027
20	13.96	33.68	25.196	278.0	0.055
30	13.95	33.68	25.198	277.8	0.083
40	11.64	33.65	25.629	236.8	0.109
50	10.72	33.66	25.803	220.3	0.132
75	9.90	33.76	26.022	199.5	0.185
100	9.37	33.87	26.195	183.0	0.233
125	9.08	33.99	26.336	169.7	0.278
150	8.66	34.01	26.418	161.9	0.320
175	8.37	34.08	26.517	152.5	0.360
200	8.27	34.12	26.563	148.0	0.398
225	8.13	34.15	26.608	143.8	0.436
250	7.89	34.16	26.652	139.7	0.472
275	7.65	34.20	26.718	133.4	0.507
300	7.39	34.21	26.763	129.1	0.541

93050 RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	MO/DAY/YR	START TIME
32 10.0N	118 52.5W	12/13/75	2345 GMT

BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
1386M				

Z	T	S	SIGMA T	DT	DD
0	13.42	33.58	25.230	274.8	0.000
10	13.41	33.58	25.232	274.6	0.027
20	13.38	33.57	25.230	274.7	0.054
30	13.34	33.57	25.238	274.0	0.082

93050 CONTINUED

40	13.25	33.56	25.249	273.0	0.109
50	12.84	33.54	25.315	266.7	0.137
75	11.69	33.59	25.573	242.1	0.201
100	9.89	33.74	26.008	200.8	0.256
125	9.48	33.86	26.170	185.4	0.305
150	9.15	33.94	26.285	174.4	0.351
175	8.75	34.04	26.427	161.0	0.394
200	8.44	34.05	26.483	155.7	0.434
225	8.16	34.11	26.572	147.2	0.473
250	7.87	34.12	26.623	142.4	0.510
275	7.75	34.14	26.656	139.2	0.546
300	7.72	34.18	26.692	135.8	0.582

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