UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CalCOFI Cruise 7712
29 November - 20 December 1977

CalCOFI Cruise 7801
5 January - 1 February 1978

CalCOFI Cruise 7803
17 February - 15 March 1978

CalCOFI Cruise 7804
29 March - 26 April 1978

CRUCERO AH-7712, JD-7712
29 de noviembre-20 de diciembre 1977

CRUCERO AH-7801, JD-7801
5 de enero-1 de febrero 1978

CRUCERO AH-7803, JD-7803
17 de febrero-15 de marzo 1978

CRUCERO AH-7804, JD-7804
29 de marzo-26 de abril 1978

Sponsored by

Marine Research Committee

SIO Reference 82-21

Approved for distribution:

W. A. Nierenberg

W. A. Nierenberg, Director

CONTENTS

INTRODUCTION

The data in this report were collected during Cruises 7712*, 7801, 7803, and 7804 of the California Cooperative Oceanic Fisheries and Investigations (CalCOFI) program aboard the RV David Starr Jordan, National Marine Fisheries Service, and the RV Alejandro de Humboldt Instituto Nacional de Pesca of the Mexican Federal Government. The report preceding this one in the series was SIO Ref. 80-21 which included data for 1972.

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, the Southwest Fisheries Center, National Marine Fisheries Service (NMFS), and the Instituto Nacional de Pesca (INP), various branches.

STANDARD PROCEDURES

Hydrographic Cast Data

Most of the hydrographic casts consisted of 18 Nansen bottles. At most stations the maximum sampling depth was 500 meters, bottom depth permitting. Temperature, salinity, oxygen, and nutrients were determined for all depths on each station.

At selected stations 10 meter bottles were cast with samples being taken for temperature, salinity, oxygen, and nutrients.

In general, paired protected reversing thermometers were used to determine temperatures which were recorded in hundredths of a Celsius degree. Unless otherwise noted, 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 for depth determination.

Salinity values on both ships for all cruises included, were determined using models 6220 and 6230 Hytech (now Grundy Environmental Systems, Inc.) inductive salinometers. A very few samples collected on the Humboldt during 7804 were analyzed on an

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

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

INTRODUCCION

Los datos de este informe fueron obtenidos durante los cruceros 7712*, 7801, 7803, y 7804 realizados dentro del programa de cooperación científico-técnico entre CalCOFI (California Cooperative Oceanic Fisheries Investigations) y el Instituto Nacional de Pesca del Departamento de Pesca** de México, a bordo del B/I David Starr Jordan, del National Marine Fisheries Service de los Estados Unidos y el B/I Alejandro de Humboldt, del Departamento de Pesca, México. El informe precedente a éste en la serie era el SIO Ref. 80-21, que incluye datos para 1972.

Estos datos fueron colectados y procesados por el personal del Data Collection and Processing Group del Marine Life Research Group (DCPG***, MLRG) del Scripps Institution of Oceanography, y por el personal del Southwest Fisheries Center del National Marine Fisheries Service (NMFS), y del Instituto Nacional de la Pesca (INP) del Departamento de Pesca.

METODOS

Obtención de Datos Hidrográficos

El mayor número de lances realizados se efectuaron con 18 botellas, muestreándose la mayoría de las estaciones hasta una profundidad máxima de 500 metros, cuando la profundidad lo permitía. Se determinó en todas las profundidades de cada estación temperatura, salinidad, oxígeno, y nutrientes. Se seleccionaron también estaciones para el muestreo a 10 metros de profundidad, para la toma de estos datos.

Para determinar temperatura se utilizaron por lo general termómetros de inversión dobles, registrándose ésta en grados centígrados, con aproximación centesímos. La temperatura superficial se determinó empleando termómetros de cubeta no protegidos, registrándola en décimas de grados. Para profundidades mayores de 100 metros se equiparon con termómetros no protegidos.

La salinidad fue determinada utilizando salinómetros de inducción modelos 6220 y 6230 Hytech (ahora Grundy Environmental Systems, Inc.). Algunas pocas muestras colectadas en el Humboldt durante 7804

* Los primeros dos dígitos representan el año y los dos que siguen, el mes en que se efectuó el crucero.

** Ahora llamado la Secretaría de Pesca.

*** Ahora llamado Physical and Chemical Oceanographic Data Facility (PACODF).

Autolab inductive salinometer. Except for a few major malfunctions when salinometers could no longer be used, problems consisted of bubbles in the cells, excessive drift (samples were rerun) and stirring motor breakdowns. With the exception of a few 10 meter samples, all samples were analyzed at sea.

The salinity values were recorded and reported to three decimal places, provided accepted standards were met. If only one determination per sample was obtained, or there was doubt concerning the accuracy of the analytical results, the salinities were reported 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). On Cruise 7804-J, problems associated with equipment malfunctions and at times poor pickling procedures resulted in unreliable data. Data for these stations have been omitted.

Phosphate, silicate, nitrite, and nitrate were determined using an automated analyzer consisting of the following components:

Sampler: A.H. Thomas Model 253 Little with a 20 position sampling rack.

Proportioning Pump: Technicon^{R} AutoAnalyzer^{R} II Proportioning Pump with air bar.

Detectors: Hitachi Model 100-10 spectophotometers with flow through cell adaptors.

Recorders: Hitachi Model 056 two-pen recorders with felt tip pens.

The procedures used are basically those described in Atlas et al. (1971). There were very few problems associated with the silicate and nitrate analyses. In general, these data were processed in a routine manner. Nitrite tend to vary between poor and very poor after the first week of each cruise depending on whether or not contamination occurred when the sample bottles were not routinely cleaned with hydrochloric acid. When contamination was evident, the typically "high" nitrite values were omitted for the station and the tabulated nitrate value is nitrate plus nitrite. This tabulated value is probably closer to the correct value than had a correction with the "high" nitrite been made.

se analizaron con un salinómetro de inducción Autolab. Excepto por algunos malos funcionamientos en que ya se podían utilizar los salinómetros, problemas consistían de la formación de burbujas en las celdas, excesivas partículas y mal funcionamiento del motor (estos mustreos se hicieron de nuevo). Con la excepción de algunas muestras de 10 metros, todas fueron analizadas a bordo.

Los valores de salinidad se registraron y se reportaron en milésimas de aproximación, de acuerdo con el procedimiento estándar aceptado. Cuando sólo se realizó una determinación por muestra ó había una duda respecto a la confiabilidad de los datos, la salinidad se reportó en centésimos.

El oxígeno disuelto fue determinado por el método Winkler modificado por Carpenter (1965) usando el equipo y procedimientos descritos por Anderson (1971). En el crucero 7804-J, problemas asociados con malos funcionamientos de equipo y malos métodos de fijación resultaron en datos desconfiables. Los datos para estas estaciones han sido suprimidos.

Fosfato, silicato, nitrito, y nitrato, se determinaron con la ayuda del analizador automático con las siguientes especificaciones:

Muestredor: A.H. Thomas Modelo 253 Little Dipper con una roseta muestreadora con 20 posiciones.

Bomba abastecedora: Technicon^{R} AutoAnalyzer^{R} II Bomba Abastecedora con barra de aire.

Sensores: Hitachi Modelo 100-10 espectrofotómetros con adaptadores que permiten el flujo libre por las celdas.

Registradores: Hitachi Modelo 056 dos registradores que consisten de plumas con puntas de fieltro.

Los procedimientos usados son básicamente los descritos en Atlas et al. (1971). Los silicatos y nitratos fueron procesados con poca dificultad y de manera rutinaria. Las muestras para determinar nitritos fueron contaminados en varios de los cruceros. Los nitritos tendían a variarse, siendo entre malos y muy malos, después de las primeras semanas de cada crucero,

Phosphate data are less reliable than the other measurements due to a number of problems including: poor sensitivity, poorly defined peaks, a serious memory effect and a very slow response time. Temperature control at the elevated temperature required for the analysis were also a problem at times. The initially calculated phosphate values were often unreasonable. Adjustments were made based on two factors: one expedition phosphate data show that there is very little phosphate variation at a depth of 500 meters (approx. 2.8 to 3.1 μg-at/L) and two, a plot of phospate vs. nitrate is essentially linear and constant, and the cruise nitrates are believed to be acceptable. The phosphate factors and baselines were adjusted to bring the phosphate results into reasonable agreement with the historical 500 m phosphate range and the phosphate-nitrate relationship.

The observed data have been evaluated using standard DCPG techniques (Klein, 1973). This involves consideration of their variation as functions of density or depth and their relations to each other, and comparison with concurrent bathythermogram (BT or XBT) or CTDO observations and with previous or adjacent observations.

In general, chlorophyll samples were collected from the first 12 levels of 18 bottle casts or all levels of shallow casts. However, during cruises 7712-J and 7801-J, samples were typically taken from only 7 of the top 12 levels.

Chlorophyll samples were analyzed on all cruises by fluorometer using one of two techniques: 7712-H, the technique of Yentsch and Menzel (1963); on all other cruises, the technique of Owen (1974). On 7801-H, both fluorometers became inoperable shortly after the cruise was started. As a result, data for about five stations have been lost. The remainder of the samples were filtered; the filters were frozen and returned to the lab for subsequent analysis. A comparison of frozen versus non-frozen samples (Owen, 1978, verbal communications) would suggest that samples from frozen filters could be low by as much as 25%.

Secchi disk observations were made on most stations occurring between 0900 and 1600 Pacific Standard Time (PST, +8) for all cruises except 7712-H. These data are tabulated following the chlorophyll data.

Tritium samples were collected on the Jordan during Cruises 7801 and 7804 at selected stations. Additional samples were taken on subsequent cruises. All tritium results may appear in a later report.

Data collected with an in situ Conductivity/Temperature/Depth/Oxygen recorder (CTDO) during the cruises in this report will appear in a separate report.

dependiendo de si la contaminación ocurrío cuando las botellas muestreadoras no fueron limpiadas rutinamente con ácido hidroclórico. Cuando la contaminación era muy evidente, los valores típicamente "altos" de nitrito eran suprimidos para aquella estación y el valor tabulado de nitrato es probablemente más cercano al valor correcto que si le hubiera hecho una corrección con el valor "alto" del nitrito.

Los datos de fosfatos son menos confiables que las otras medidas debido a una serie de problemas que incluyen lo siguiente: mala sensibilidad, picos mal definidos, un serio efecto de memoria, y un lento tiempo de respuesta. El mantenimiento de la temperatura a la temperatura elevada requerida por el análisis también resultó problemático a veces. Los valores de fosfatos que se calculaban inicialmente eran a menudo irrazonables. Se hicieron ajustes, basándose en dos factores: datos de fosfato de expedición muestran que hay muy poca variación de fosfato a una profundidad de 500 metros (approx. 2.8 a 3.1μg-at/L) y, un diagrama de fosfato contra nitrato es escencialmente linear y constante, y se cree que los nitratos de los cruceros son aceptables. Los factores de fosfato y las líneas de base fueron ajustados para que estuvieran los resultados de fosfato de acuerdo con el rango fosfático histórico de 500 metros y la relación fosfato-nitrato.

Los datos observados fueron evaluados usando las técnicas estándares del Data Collection and Processing Group (DCPG) (Klein, 1973). Estas técnicas consideran sus variaciones en función de la densidad ó profundidad y las relaciones de una con otra y en comparación con batitermogramas simultáneos (BT ó XBT) ó con CTDO, así como con observaciones previas.

En general las muestras fueron colectadas de los primeros 12 niveles de un lance de 18 botellas ó de todos los niveles en los muestreos realizados a poca profundidad, excepto durante los cruceros 7712-J y 7801-J donde las muestras fueron tomadas de los 7 primeros niveles.

Las muestras de clorofila en todos los cruceros se analizaron por fluorometría utilizando una u otra de las siguientes técnicas: Para el crucero 7712-H se utilizó la técnica de Yentsch y Menzel (1963) y para todos los demás la técnica de Owen (1974), excepto el crucero 7801-H en el cual ambos fluorómetros estuvieron fuera de operación poco después de iniciado el crucero. Como resultado se perdieron datos de 5 estaciones. Las muestras restantes fueron filtradas; los filtros se congelaron y fueron enviados al laboratorio para el análisis subsecuente. Una comparación entre las muestras congeladas y las no congeladas (Owen, comunicación personal, 1978), sugeriría que las

Starting with Cruise 7712, the standard CalCOFI oblique tow, 300 meters of wire out, depth permitting, was made with an open Bongo frame with a 505 μ net on the starboard side and a 333 μ net on the port side. Starboard samples were preserved in formalin; port samples were preserved in an alcohol solution for otolith studies.

Periodically a heretofore standard 1 m CalCOFI tow was taken in order to extend the comparisons between the Bongo and 1-m net tows made during the 1975 CalCOFI cruises.

Manta (neuston) surface tows were made on all net-tow stations, weather conditions permitting, and on selected stations vertical phytoplankton tows were made to a depth of 100 m (depth permitting).

TABULATED DATA

The time for bottle casts is reported in Greenwich Mean Time. It is the time of messenger releases. Secchi disk observations are reported in local time (PST).

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 casts, are indicated by a footnote letter following the observed depth.

Bottom depths, determined acoustically, have been corrected using Mathews (1939) tables and are reported in meters. On the Humboldt, the echo sounding units had a rated maximum sounding range of 1000 meters. Depths greater than this are from the navigational charts, and after conversion to meters have been listed to the nearest five 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 or from separate lowerings to obtain the Secchi disk data. The data appear in two 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 these observations on the right. Computed values of thermosteric anomaly (DT) are included with the observed levels and computed values of sigma-t (SIGT), thermosteric anomaly (DT), and geopotential anomaly (DD) are included with the interpolated levels.

muestras de filtros congelados podían resultar con una desviación del 25%.

Las observaciones con disco Secchi se efectuaron en todas las estaciones realizadas entre las 0900 y las 1600 horas tiempo del Pacífico (PST) para todos los cruceros, excepto para el 7712-H. Estos datos son tabulados por separado y siguen a los datos de clorofila.

Durante 7801-J y 7804-J se tomaron muestras de tritio en estaciones selectas. Adicionalmente se tomaron muestras en cruceros subsecuentes. Los resultados de estos datos serán reportados posteriormente en un informe por separado.

Iniciándose con el crucero 7712 se hizo un arrastre oblicuo estándar de CalCOFI, cuando ésto fuera permitido por una profundidad equivalente a un filar de 300 metros de cable. Se hizo con un marco abierto Bongo con una red de 505μ en el lado estribor y una red de 333μ en el lado babor. Las muestras del lado babor fueron preservados en una solución de alcohol para estudios de otolitos.

Periódicamente los arrastres CalCOFI de 1 metro que eran estándares hasta la fecha se hicieron para poder extender las comparaciones que se hicieron durante los cruceros CalCOFI de 1975.

También se hicieron arrastres superficiales Manta (neuston) y en estaciones selectas se hicieron arrastres verticales de fitoplancton hasta una profundidad de 100 metros (si la profundidad lo permitía).

DATOS TABULADOS

El tiempo registrado para los lances de botella fue el tiempo del meridiano de Greenwich. Es la hora del envío del mensajero. Las observaciones del disco de Secchi son registradas en tiempo local (hora del Pacífico).

Cuando se realizó más de un lance por estación se anota la hora del envío del primer mensajero y del último. Multiples lances, excluyendo a lances superficiales, se señalan con una letra al calce después de la profundidad observada.

Cuando la profundidad del fondo se determinó acústicamente, fue corregida utilizando las tablas de Matthews (1939), registrándola en metros. En el B/I Humboldt, las profundidades mayores de 1000 metros no fueron registradas por la ecosonda, así que éstas se obtuvieron de cartas de navegación y después de ser convertidas a metros, fueron listadas con aproximación a cinco metros. El tiempo y oleaje dominante se codificaron usando el método del National Oceanographic Data Center (NODC).

2. Chlorophyll, phaeophytin and Secchi disk data appear as separate sections.

With the addition of chlorophyll-a, phaeophytin and Secchi disk observations, 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 CalCOFI station designations have been in use for over twenty years. Th 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.] The column headings are to be interpreted as follows:

Z	Depth	Meters
T	Temperature	^{o}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" nitrate-nitrogen	μg-at/L
NO3	"Reactive" nitrate-nitrogen	μg-at/L
DT	δ_T = Thermosteric anomaly	cl/ton
SIGT	$\sigma_T = (\rho_{s,t,o} - 1)10^3$ where $\rho_{s,t,o}$ 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
CHL.A	Chlorophyll-a	mg/m^3
PHAEO	Phaeophytin	mg/m^3

Durante el crucero 7801-H, la parte que registra velocidad en el anemómetro del barco se descompuso después de la estación 103.45. Por ésto, se empezó con la estación 103.40, y se estimó la velocidad del viento basada en el oleaje causado por el viento. Estos datos deben ser considerados menos fiables que lo normal.

Los datos de todos los cruceros presentados en este informe se obtuvieron de lances con botellas ó de bajadas separadas para obtener los datos del disco Secchi. Estos datos se registran en dos formas:

1. Los datos provenientes de lances con botellas y tabulados en niveles de profundidad se ubicaron al margen izquierdo de la página y los valores de profundidades estándares correspondientes a temperatura, salinidad, oxígeno, interpolados de estas observaciones, al lado derecho. Valores computados de la anomalía termostérica (DT) se incluyen con los niveles observados, y los valores computados de sigma-t (SIGT), anomalía termostérica (DT), y anomalía geopotencial (DD) se incluyen con los niveles interpolados.

2. Clorofila, feofitina, y datos del disco Secchi aparecen en una sección separada.

Con la adición de clorofila-a, feofitina, y observaciones del disco Secchi, los mismos parámetros son tabulados en este informe como en reportes previos. El punto decimal de las estaciones de CalCOFI se omitió, así que los datos de la estación número 90.65 se registran como 90065. [Las designaciones de estaciones CalCOFI han estado en uso durante más de veinte años. La primera parte especifica una línea normal a la tendencia general de la costa (Línea CalCOFI). La segunda parte especifica la posición de una estación relativo a la costa en la línea CalCOFI.] Los símbolos del encabezado de las columnas se deben interpretar de la siguiente manera:

Z	Profundidad	Metros
T	Temperatura	^{o}C
S	Salinidad	‰
O2	Oxígeno	ml/L
PO4	Fosfato-fósforo inorgánico "reactivo"	μg-at/L
SIO3	Silicato-Silicio inorgánico "reactivo"	μg-at/L
NO2	Nitrito-nitrógeno "reactivo"	μg-at/L
NO3	Nitrito-nitrógeno "reactivo"	μg-at/L
DT	δ_T = Anomalía termostérica	cl/ton.
SIGT	σ_T $(\rho_{s,t,0} - 1)10^3$ donde $\rho_{s,t,0}$ es la densidad que tendría la parcela si ésta se moviera isotérmicamente hasta la superficie del mar.	g/L
DD	Anomalía geopotencial, referida a la superficie del mar.	metros din.
CHL.A	Clorofila-a	mg/m^3
PHAEO	Feofitina	mg/m^3

FOOTNOTES

Data which appear to be in error without obvious reason are reported, but flagged uncertain with a U. Such data were not used in the determination of data at standard depths. Footnotes are used to indicate data which have required special processing.

NOTAS AL CALCE

Los datos que aparecen con errores sin explicación obvia son reportados, pero se les señala con una U. Estos datos no fueron utilizados en la determinación de datos a profundidades estándares. Se utilizan las notas al calce para indicar los datos que han requerido un procesamiento especial.

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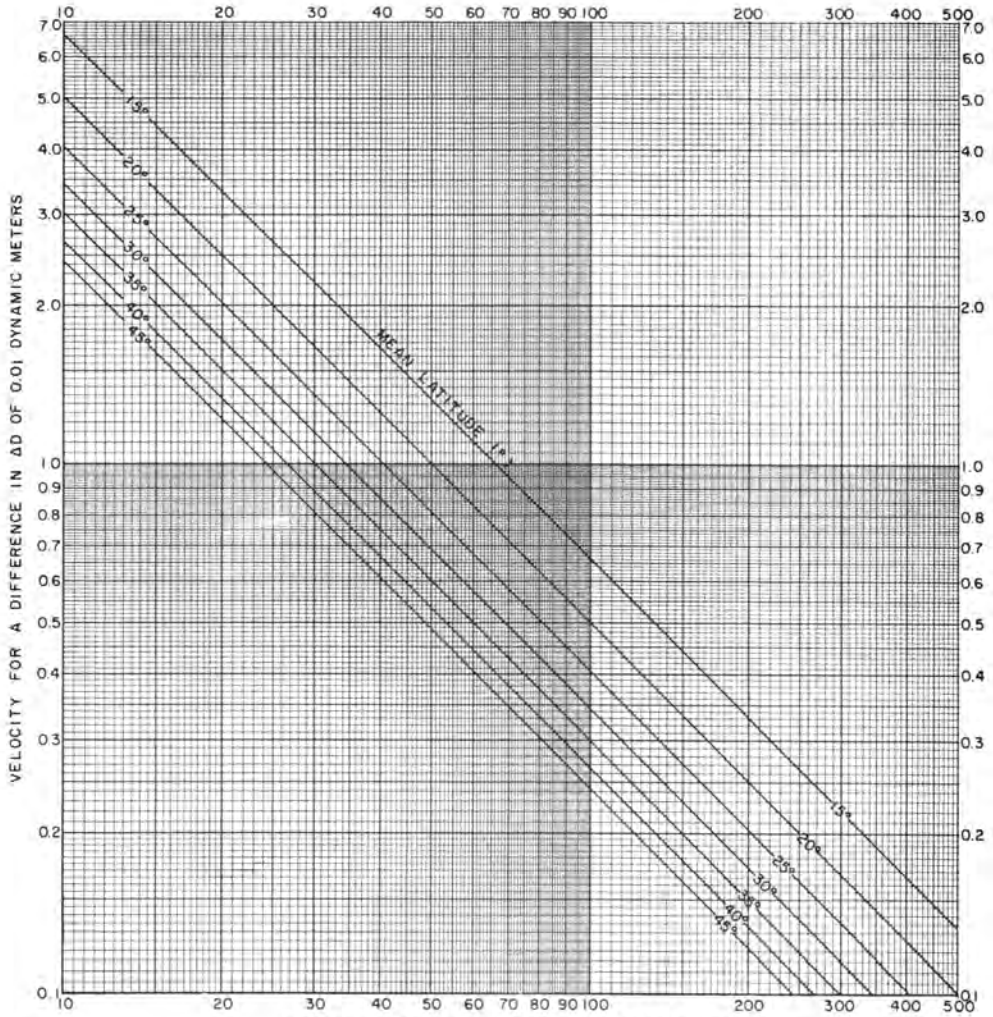

VELOCITY OF GEOSTROPHIC FLOW
(NAUTICAL MILES PER DAY)

cm/sec	0	1	2	3	4	5	6	7	8	9
0	KNOTS / N.M./DAY	0.02 / 0.47	0.04 / 0.93	0.06 / 1.40	0.08 / 1.86	0.10 / 2.33	0.12 / 2.80	0.14 / 3.26	0.16 / 3.73	0.17 / 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	177 / 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)

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

FIGURES

Cruise 7804

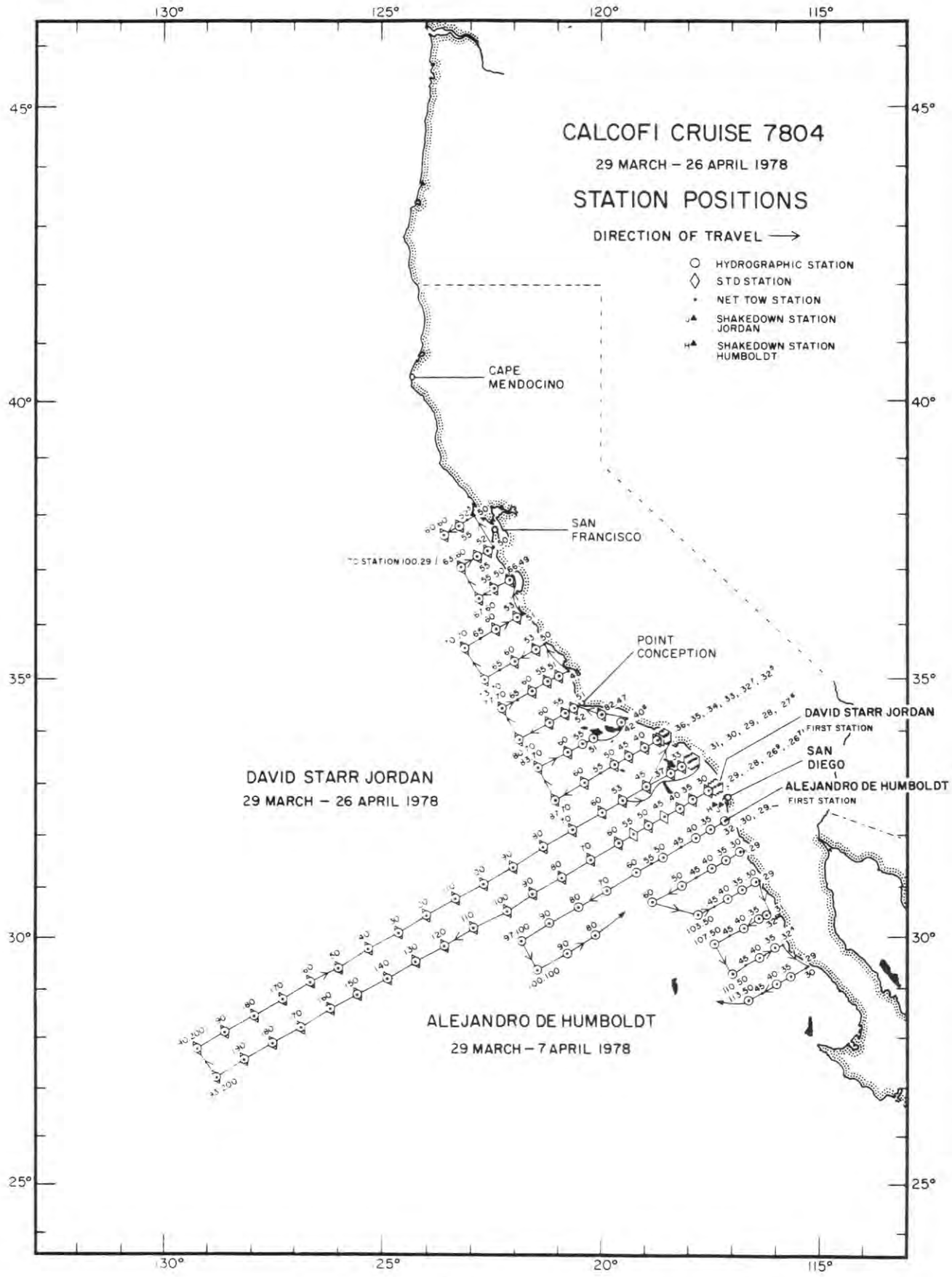
CALCOFI CRUISE 7804
29 MARCH – 26 APRIL 1978
STATION POSITIONS
DIRECTION OF TRAVEL
HYDROGRAPHIC STATION
STD STATION
NET TOW STATION
SHAKEDOWN STATION JORDAN
SHAKEDOWN STATION HUMBOLDT
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
DAVID STARR JORDAN
FIRST STATION
SAN DIEGO
ALEJANDRO DE HUMBOLDT
FIRST STATION
DAVID STARR JORDAN
29 MARCH – 26 APRIL 1978
ALEJANDRO DE HUMBOLDT
29 MARCH – 7 APRIL 1978
130°
125°
120°
115°
45°
40°
35°
30°
25°

FIGURE 1

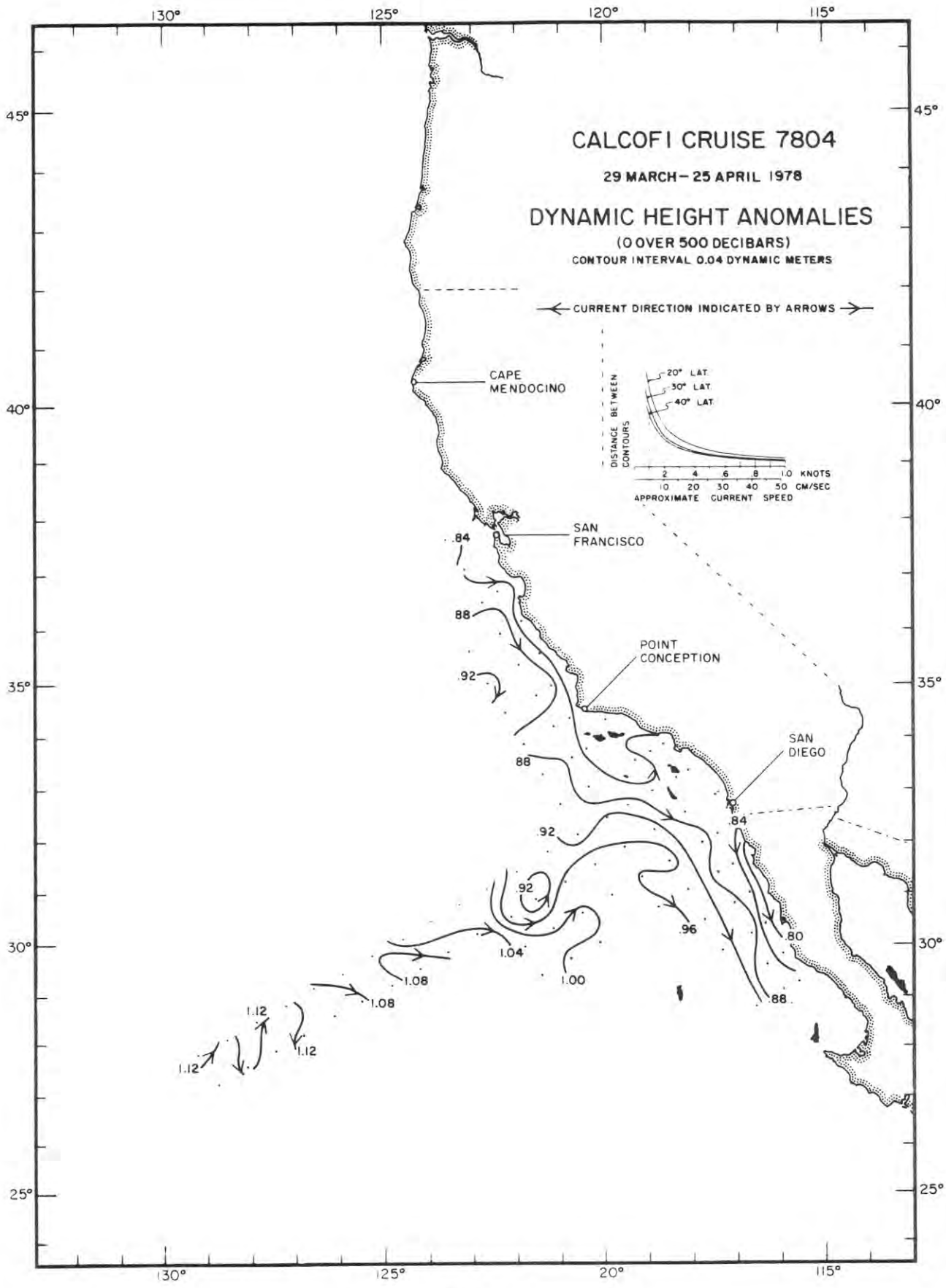
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
DYNAMIC HEIGHT ANOMALIES
(0 OVER 500 DECIBARS)
CONTOUR INTERVAL 0.04 DYNAMIC METERS
CURRENT DIRECTION INDICATED BY ARROWS
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
DISTANCE BETWEEN CONTOURS
20° LAT.
30° LAT.
40° LAT.
2 4 6 8 1.0 KNOTS
10 20 30 40 50 CM/SEC
APPROXIMATE CURRENT SPEED
.84
.88
.92
.88
.92
.84
.92
.96
.80
1.04
1.08
1.00
1.08
.88
1.12
1.12
1.12
130°
125°
120°
115°
45°
40°
35°
30°
25°

FIGURE 2

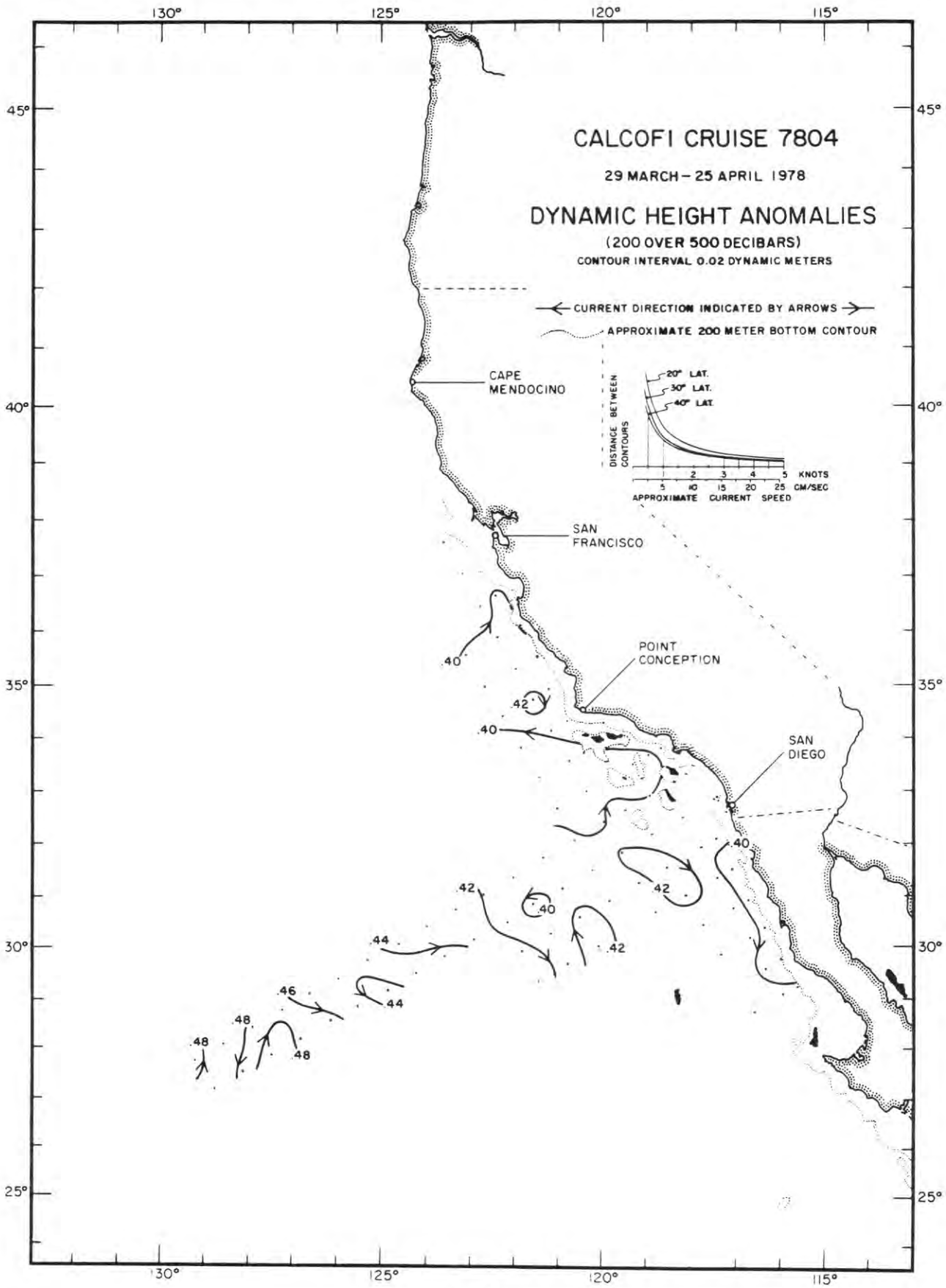
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
DYNAMIC HEIGHT ANOMALIES
(200 OVER 500 DECIBARS)
CONTOUR INTERVAL 0.02 DYNAMIC METERS
CURRENT DIRECTION INDICATED BY ARROWS
APPROXIMATE 200 METER BOTTOM CONTOUR
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
DISTANCE BETWEEN CONTOURS
20° LAT.
30° LAT.
40° LAT.
KNOTS
CM/SEC
APPROXIMATE CURRENT SPEED
130°
125°
120°
115°
45°
40°
35°
30°
25°

FIGURE 3

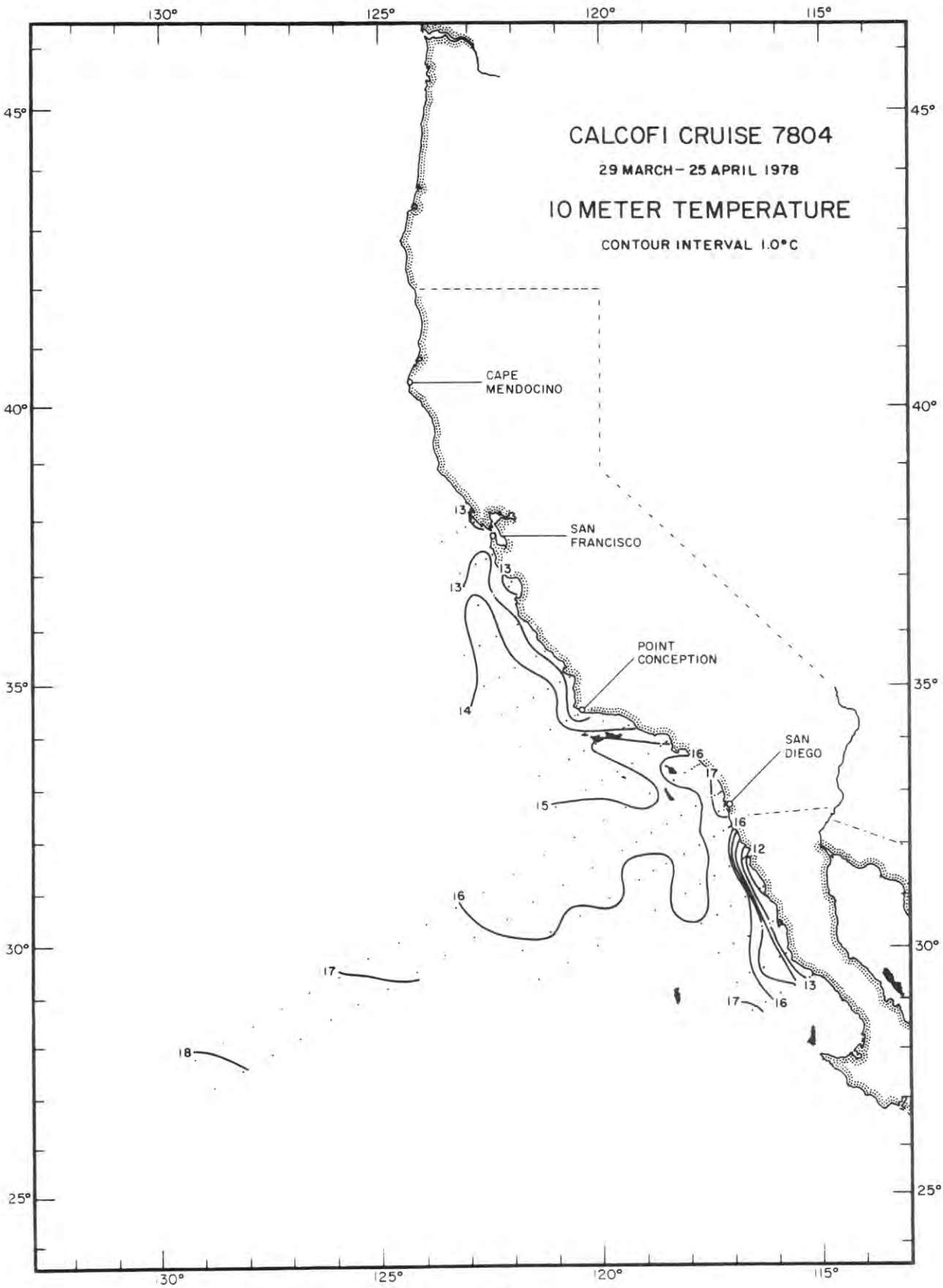
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
10 METER TEMPERATURE
CONTOUR INTERVAL 1.0°C
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
130°
125°
120°
115°
45°
40°
35°
30°
25°
13
13
13
14
15
16
16
17
17
16
12
13
17
16
17
18

FIGURE 4

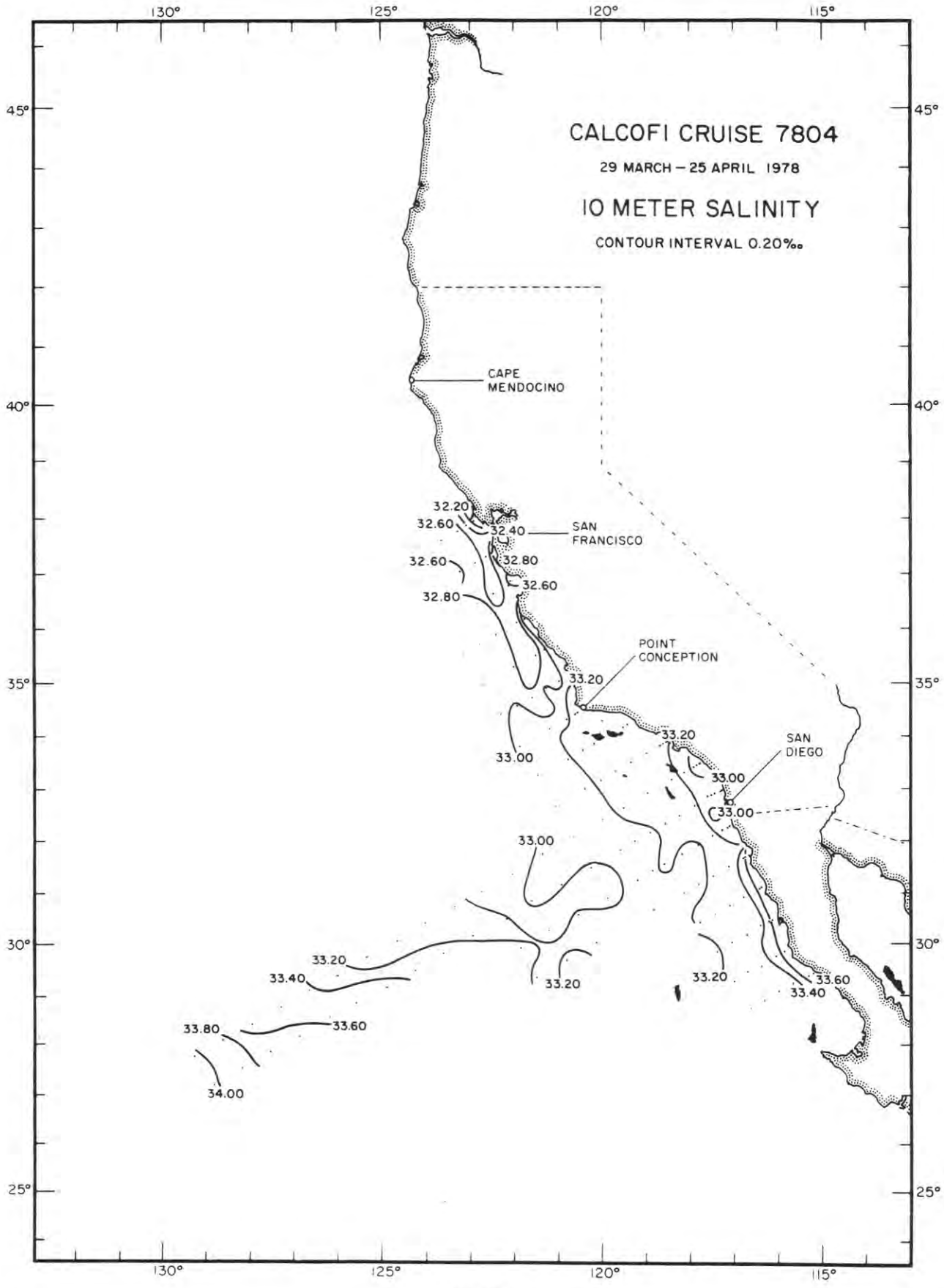
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
10 METER SALINITY
CONTOUR INTERVAL 0.20‰
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
130°
125°
120°
115°
45°
40°
35°
30°
25°
32.20
32.60
32.40
32.80
32.60
32.80
32.60
33.20
33.00
33.20
33.00
33.00
33.00
33.20
33.40
33.20
33.20
33.60
33.40
33.80
33.60
34.00

FIGURE 5

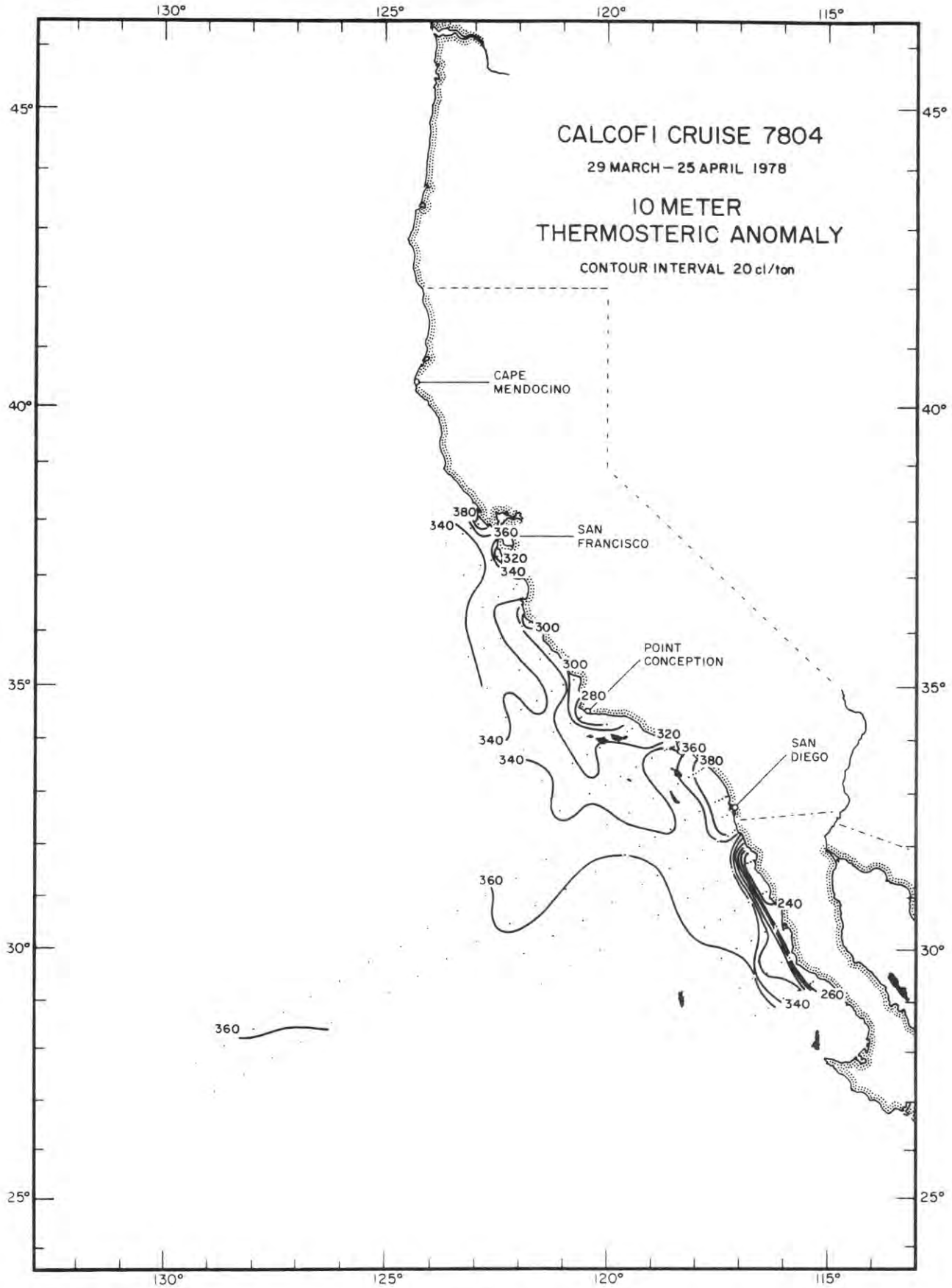
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
10 METER
THERMOSTERIC ANOMALY
CONTOUR INTERVAL 20 cl/ton
CAPE
MENDOCINO
SAN
FRANCISCO
POINT
CONCEPTION
SAN
DIEGO
130°
125°
120°
115°
45°
40°
35°
30°
25°
380
340
360
320
340
300
300
280
320
360
380
340
340
360
240
260
340
360

FIGURE 6

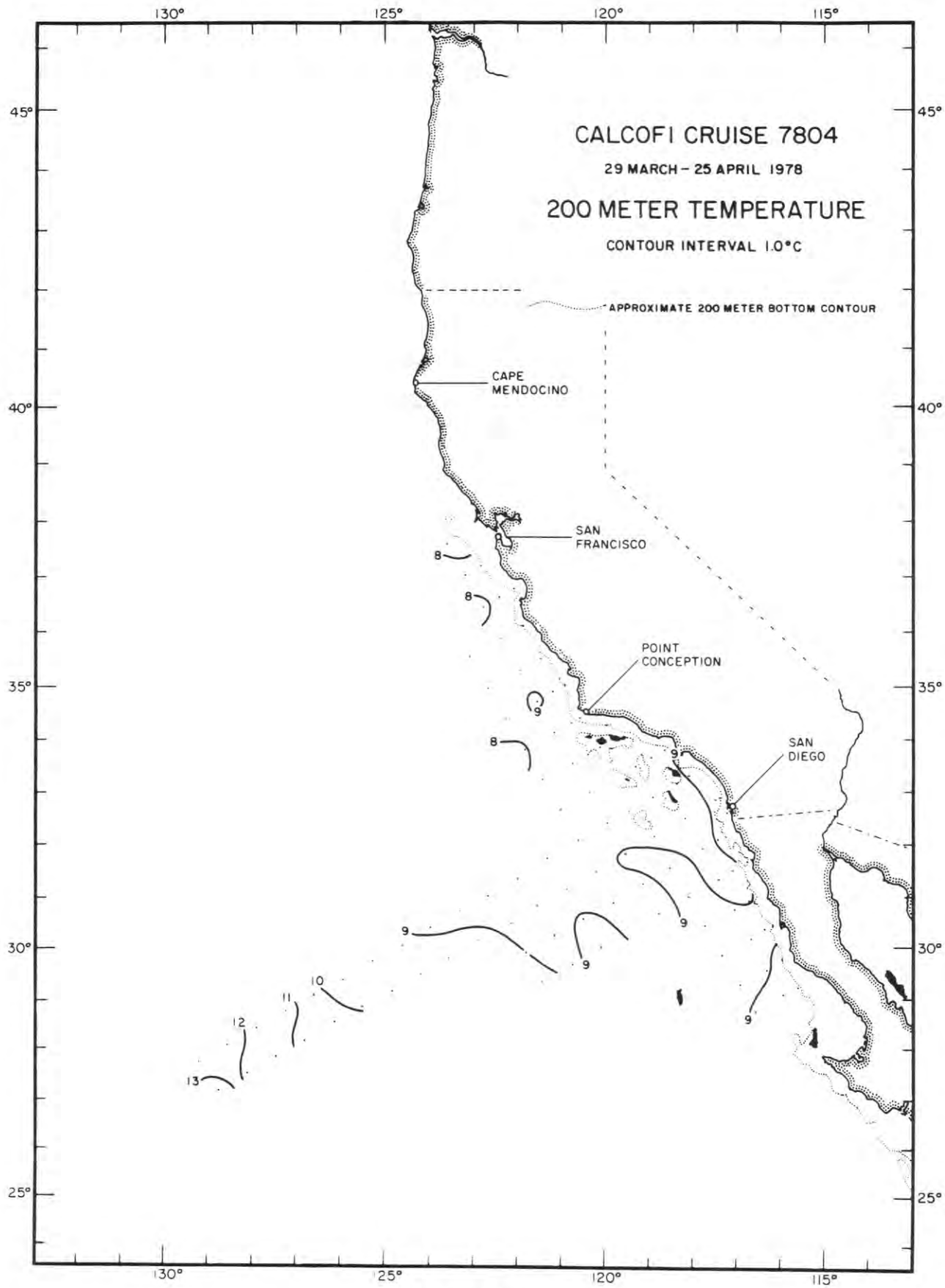
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
200 METER TEMPERATURE
CONTOUR INTERVAL 1.0°C
APPROXIMATE 200 METER BOTTOM CONTOUR
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
130°
125°
120°
115°
45°
40°
35°
30°
25°
8
8
8
9
9
9
9
9
9
10
11
12
13

FIGURE 7

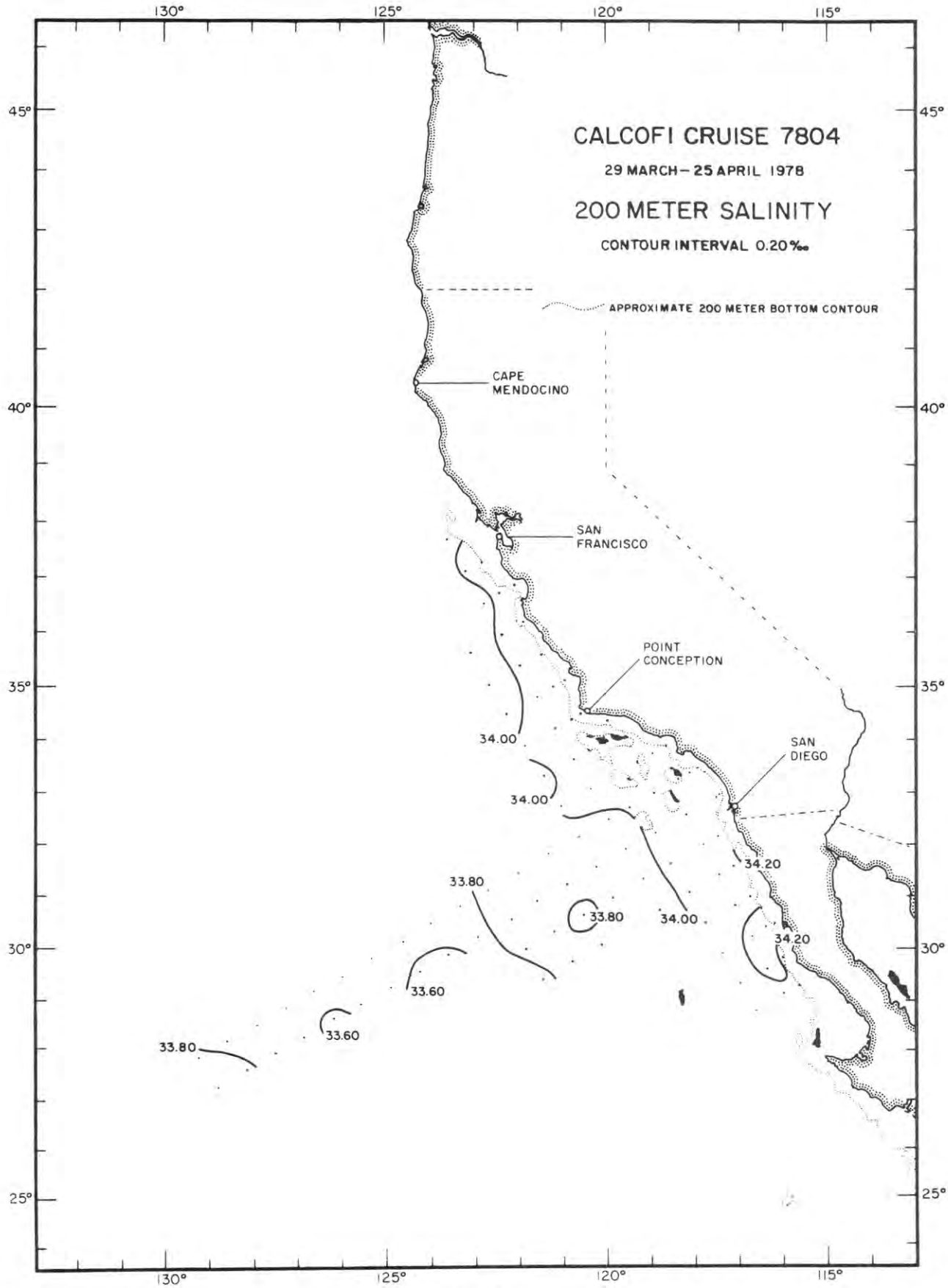
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
200 METER SALINITY
CONTOUR INTERVAL 0.20‰
APPROXIMATE 200 METER BOTTOM CONTOUR
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
34.00
34.00
34.00
34.20
34.20
33.80
33.80
33.80
33.60
33.60
130°
125°
120°
115°
45°
40°
35°
30°
25°

FIGURE 8

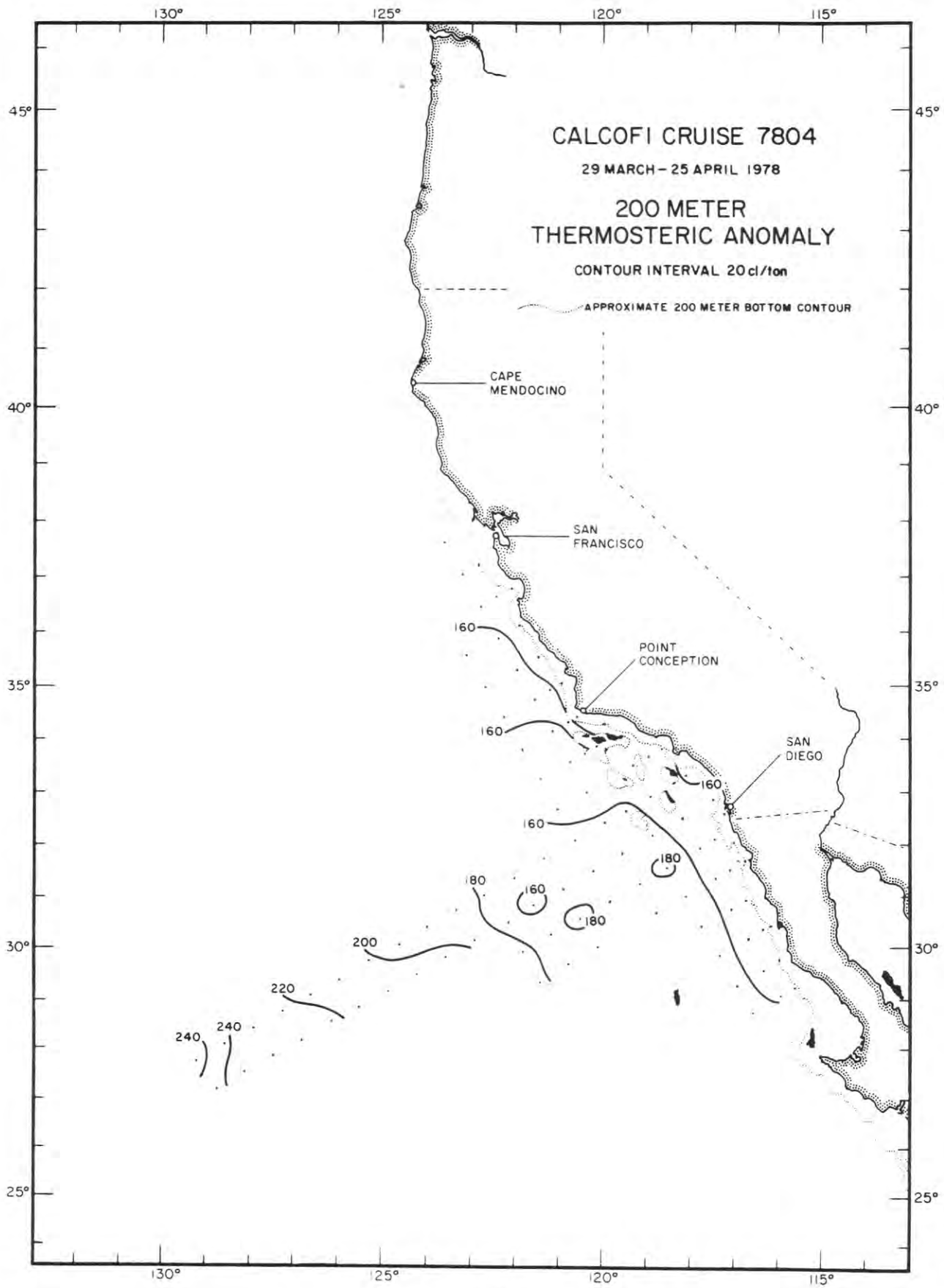
CALCOFI CRUISE 7804
29 MARCH – 25 APRIL 1978
200 METER
THERMOSTERIC ANOMALY
CONTOUR INTERVAL 20 cl/ton
APPROXIMATE 200 METER BOTTOM CONTOUR
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
160
160
160
160
180
180
180
200
220
240
240
130°
125°
120°
115°
45°
40°
35°
30°
25°

FIGURE 9

PERSONNEL

Cruise 7804

SHIP'S CAPTAINS

Roll, Milton	RV David Starr Jordan
Zatarain, José M.	RV Alejandro de Humboldt

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV David Starr Jordan:

Counts, Robert C. (in charge)	Fishery Biologist NMFS
Bryan, Walter R.	Marine Technician DCPG*
Conway, Carol	Engineering Aide DCPG
Cota V., Alfredo	Fishery Biologist INP
Dotson, Ronald C.	Biological Technician NMFS
Fastenau, Henry C.	Marine Technician DCPG
Flerx, William C.	Biological Technician NMFS
Johnson, Frank W.	Marine Technician DCPG
Lehmann, Virginia D.	Staff Research Associate DCPG
Mead, Richard V.	Marine Technician DCPG
Rowe, Raymond A.	Marine Technician DCPG
Sanchez, Carol A.	Biological Technician NMFS
Smith, Paul E.	Fishery Biologist NMFS

RV Alejandro de Humboldt:

Alvarez Mendoza, Manuel (in charge)	Oceanologist INP
Anderson, George C.	Staff Research Associate DCPG
Cid, Alejandro	INP
Costello, James P.	Marine Technician DCPG
Fastenau, Henry C.	Marine Technician DCPG
Flerx, William C.	Biological Technician NMFS
Gonzalez, Miguel Angel	INP
Mauck, William W.	Marine Technician DCPG
Mead, Richard V.	Marine Technician DCPG
Montezuma, Manuel	INP
Patrick, Ronald G.	Marine Technician DCPG

*DCPG: Now Physical & Chemical Oceanographic Data Facility (PACODF)

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 60055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 47.0N	123 15.0W	4/19/78	1852 GMT	134M	180	14KT	1	230 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	12.94	32.536	6.42	0.42	4.	0.04	0.2	342.4	0	12.94	32.536	6.42	24.521	342.4	0.000
10	12.35	32.679	6.34	0.46	5.	0.06	1.1	321.1	10	12.35	32.679	6.34	24.745	321.1	0.033
24	11.42	32.950	5.44	0.79	10.	0.26	7.2	284.6	20	11.70	32.875	5.73	25.016	295.3	0.064
33	10.70	33.084	4.97	1.04	13.	0.37	11.4	262.5	30	10.93	33.043	5.11	25.286	269.6	0.092
43	10.24	33.237	4.71	1.26	16.	0.22	14.8	243.7	50	10.11	33.333	4.43	25.654	234.6	0.143
57	10.04	33.414	4.14	1.43	21.	0.21	17.5	227.4	75	9.75	33.580	3.63	25.907	210.5	0.199
71	9.83	33.551	3.70	1.60	24.	0.17	20.2	213.9	100	9.31	33.740	3.22	26.104	191.8	0.250
95	9.37	33.704	3.32	1.75	28.	0.18	22.9	195.3							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 60060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 37.0N	123 37.0W	4/19/78	2236 GMT	3164M	210	15KT	2	200 3 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	13.29	32.731	6.36	0.39	4.	0.01	0.0	334.7	0	13.29	32.731	6.36	24.602	334.7	0.000
11	12.77	32.723	6.50	0.40	4.	0.01	0.0	325.5	10	12.81	32.726	6.49	24.691	326.2	0.033
30	12.55	32.725	6.44	0.40	4.	0.01	0.0	321.3	20	12.64	32.724	6.47	24.724	323.1	0.066
40	12.12	32.720	6.48	0.51	6.	0.04	1.3	313.9	30	12.55	32.725	6.44	24.743	321.3	0.098
49	11.50	32.817 A	6.02	0.56	6.	0.18	2.7	295.8	50	11.42	32.831	5.99	25.033	293.7	0.160
63	10.48	32.968	5.65	0.85	10.	0.11	8.0	267.5	75	9.82	33.063	5.41	25.491	250.1	0.228
77	9.74	33.076	5.37	1.08	14.	0.07	12.0	247.6	100	9.40	33.361	4.49	25.792	221.4	0.287
96	9.47	33.313	4.63	1.43	19.	0.06	17.3	225.9	125	9.17	33.606	3.67	26.021	199.7	0.340
119	9.16	33.552	3.87	1.76	26.	0.08	21.4	203.4	150	8.84	33.741	3.16	26.178	184.8	0.389
138	9.19	33.704	3.27	1.94	31.	0.06	24.1	192.6	200	7.85	33.932	2.70	26.478	156.3	0.476
166	8.29	33.772	4.00U	1.88	31.	0.06	23.0	174.2	250	7.27	33.997	2.24	26.612	143.5	0.553
193	7.87	33.903	3.69U	2.02	35.	0.03	26.1	158.6	300	6.76	34.056	1.78	26.729	132.4	0.624
221	7.80	33.989	2.98U	2.42	41.	0.09		151.2	400	5.92	34.107	1.07	26.879	118.2	0.754
258	7.11	33.994	2.82U	2.54	48.	0.03	31.6	141.5	500	5.41	34.169	0.71	26.990	107.7	0.872
314	6.68	34.076	1.65	2.85	60.	0.02	36.7	129.8							
384	5.98	34.094	1.15	3.03	71.	0.01	39.7	119.8							
454	5.74	34.148	0.85	3.06	77.	0.08	40.8	112.9							
531	5.12	34.176	0.65	3.06	88.	0.00	42.5	103.8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 63052

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 19.0N	122 36.0W	4/19/78	0930 GMT	86M	110	5KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	13.68	32.418	6.28	0.45	4.	0.03	0.1	365.2	0	13.68	32.418	6.28	24.283	365.2	0.000
10	13.34	32.477	6.33	0.48	3.	0.02	0.1	354.3	10	13.34	32.477	6.33	24.397	354.3	0.036
19	12.97	32.545	6.36	0.44	3.	0.02	0.0	342.3	20	12.92	32.552	6.35	24.535	341.1	0.071
29	12.36	32.638	6.25	0.54	4.	0.04	1.3	324.3	30	12.27	32.678	6.16	24.757	319.9	0.104
47	10.79	33.366	4.32	1.32	17.	0.24	15.2	243.2	50	10.59	33.377	4.12	25.606	239.2	0.160
70	9.84	33.576	3.46	1.65	28.	0.13	18.8	212.2	75	9.84	33.580	3.44	25.892	211.9	0.217

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 63055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 13.0N	122 50.0W	4/19/78	0641 GMT	297M	280	12KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	13.03		6.26	0.39	4.	0.00	0.1		0	13.03	32.625	6.26	24.572	337.6	0.000
10	13.03	32.625	6.32	0.38	4.	0.01	0.1	337.6	10	13.03	32.625	6.32	24.572	337.6	0.034
29	11.46	32.887	5.72	0.70	8.	0.11	5.3	290.0	20	12.31	32.738	6.09	24.797	316.2	0.066
43	10.59	33.130	5.07	1.02	14.	0.09	11.6	257.3	30	11.38	32.903	5.69	25.096	287.7	0.097
52	10.32	33.399	4.36	1.22	17.	0.17	13.9	233.0	50	10.38	33.342	4.52	25.615	238.3	0.150
66	9.66	33.630	3.58	1.59	26.	0.08	20.8	205.3	75	9.40	33.705	3.39	26.061	195.9	0.204
80	9.29	33.731	3.34	1.75	27.	0.07	23.1	192.1	100	8.95	33.855	3.07	26.250	177.9	0.251
99	8.96	33.850	3.08	1.92	30.	0.06	25.1	178.3	125	8.84	33.911	2.86	26.312	172.0	0.295
123	8.85	33.905	2.88	1.91	32.	0.03	25.2	172.6	150	8.62	33.959	2.74	26.383	165.3	0.338
142	8.70	33.948	2.75	1.99	33.	0.04	26.8	167.1	200	8.16	34.045	2.35	26.521	152.2	0.419
175	8.37	33.986	2.70	1.99	37.	0.05	26.8	159.5	250	7.48	34.100	1.81	26.665	138.5	0.494
203	8.13	34.050	2.30	2.19	41.	0.06	29.8	151.3							
241	7.57	34.087	1.91	2.35	48.	0.03	32.7	140.7							

A) AN ERROR OF 0.01 IN CONDUCTIVITY RATIO, 0.39 PPT, HAS BEEN ASSUMED FOR THIS VALUE.

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 63060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
37 03.0N	123 12.0W	4/19/78	0135 GMT	2316M	290	10KT	1	320 3 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	13.34	32.587	6.39	0.27	4.	0.02	0.2	346.2	0	13.34	32.587	6.39	24.481	346.2	0.000
10	12.67	32.593	6.47	0.27	4.	0.00	0.2	333.2	10	12.67	32.593	6.47	24.618	333.2	0.034
30	11.94	32.762	6.30	0.40	5.	0.09	2.2	307.6	20	12.25	32.651	6.39	24.741	321.5	0.067
39	11.57	32.925	5.70	0.67	9.	0.29	6.8	289.1	30	11.94	32.762	6.30	24.887	307.6	0.098
50	10.91	33.106	5.07	1.22	14.	0.35	12.0	264.4	50	10.91	33.106	5.07	25.340	264.4	0.156
63	10.09	33.302	4.47	1.25	19.	0.09	18.2	236.5	75	9.72	33.474	4.07	25.829	218.0	0.216
78	9.66	33.509	3.99	1.62	23.	0.08	21.1	214.3	100	9.25	33.677	3.47	26.063	195.7	0.268
96	9.32	33.653	3.52	1.65	26.	0.03	25.0	198.4	125	9.08	33.857	2.99	26.232	179.7	0.316
120	9.05	33.801	3.17	1.98	29.	0.04	27.8	183.3	150	8.97	33.995	2.56	26.366	166.9	0.360
137	9.14	33.975	2.57	2.05	33.	0.03	29.6	171.7	200	8.09	34.048	2.41	26.533	151.0	0.441
165	8.67	33.999	2.54	2.16	36.	0.03	30.6	162.9	250	7.43	34.060	2.15	26.640	140.9	0.516
193	8.19	34.039	2.45	2.25	40.	0.02	32.2	153.0	300	6.92	34.085	1.67	26.730	132.3	0.586
219	7.85	34.060	2.30	2.31	44.	0.02	33.3	146.6	400	6.25	34.146	0.92	26.868	119.3	0.717
256	7.35	34.058	2.12	2.41	49.	0.07	34.6	139.9	500	5.73	34.204	0.60	26.979	108.7	0.837
310	6.84	34.091	1.56	2.67	58.	0.00	38.4	130.7							
379	6.37	34.131	1.03	2.84	67.	0.00	41.2	121.8							
452	5.98	34.179	0.72	2.99	74.		42.4	113.5							
528	5.58	34.214	0.57	3.15	82.	0.00	44.3	106.1							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 67050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 48.0N	122 05.0W	4/18/78	1108 GMT	334M	360	13KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	13.60	32.644	6.32	0.48	2.	0.03	0.2	347.0	0	13.60	32.644	6.32	24.473	347.0	0.000
10	13.61	32.650	6.31	0.43	2.	0.01	0.1	346.8	10	13.61	32.650	6.31	24.475	346.8	0.035
28	12.66	32.790	6.07	0.58	5.	0.11	2.0	318.6	20	13.19	32.703	6.18	24.598	335.1	0.069
42	11.55	33.092	5.29	0.95	12.	0.35	8.8	276.4	30	12.51	32.833	5.97	24.831	312.9	0.101
56	10.45	33.308	4.58	1.31	17.	0.15	14.8	241.9	50	10.91	33.224	4.87	25.429	255.9	0.158
70	9.47	33.506	4.04	1.62	23.	0.10	19.3	211.6	75	9.32	33.544	3.94	25.948	206.6	0.216
84	9.19	33.585	3.83	1.66	25.	0.06	21.3	201.4	100	9.04	33.670	3.68	26.092	193.0	0.267
102	9.03	33.678	3.66	1.77	27.	0.04	22.9	192.1	125	9.03	33.794	3.12	26.191	183.5	0.314
125	9.03	33.794	3.12	1.89	31.	0.13	24.3	183.5	150	8.90	33.841	2.97	26.248	178.1	0.360
152	8.88	33.843	2.96	2.04	33.	0.14	25.8	177.6	200	8.28	34.027	2.29	26.488	155.3	0.445
184	8.49	33.977	2.50	2.18	38.	0.16	28.1	161.9	250	7.53	34.098	1.78	26.656	139.4	0.521
214	8.09	34.058	2.13	2.37	44.	0.08	30.7	150.1							
246	7.57	34.094	1.81	2.48	51.	0.07	32.7	140.2							
276	7.35	34.110	1.66	2.56	55.	0.09	33.6	136.0							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 67055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 39.0N	122 26.0W	4/18/78	1444 GMT	2130M	340	13KT	1	320 4 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	12.96	32.542	6.28	0.42	3.		0.2	342.4	0	12.96	32.542	6.28	24.522	342.4	0.000
11	12.97		6.30	0.43	3.		0.1		10	12.97	32.543	6.30	24.521	342.5	0.034
30	12.72	32.543	6.33	0.43	3.		0.1	337.9	20	12.85	32.543	6.31	24.544	340.2	0.068
39	12.23	32.694	6.49	0.47	5.		0.1	317.8	30	12.72	32.543	6.33	24.569	337.9	0.102
49	12.76	33.025	5.83	0.61	7.		2.6	303.1	50	12.68	33.042	5.77	24.960	300.6	0.166
63	11.20	33.147	5.05	1.01	12.		8.4	266.3	75	10.47	33.270	4.66	25.543	245.1	0.235
78	10.35	33.300	4.58	1.30	16.		14.2	240.8	100	9.87	33.561	3.89	25.871	213.9	0.293
96	10.01	33.531	3.90	1.59	21.		19.0	218.2	125	9.08	33.682	3.77	26.094	192.7	0.344
120	9.19	33.658	3.83	1.73	25.		21.4	196.0	150	8.90	33.838	3.18	26.246	178.3	0.391
138	8.90	33.743	3.54	1.85	28.		23.4	185.3	200	8.45	34.023	2.38	26.459	158.0	0.477
166	8.89	33.947	2.71	2.11	34.		26.5	170.0	250	7.86	34.092	1.92	26.604	144.3	0.554
193	8.54	34.007	2.44	2.20	37.		27.9	160.4	300	7.05	34.075	1.86	26.704	134.8	0.626
221	8.20	34.060	2.19	2.30	42.		30.0	151.5	400	6.24	34.126	1.08	26.853	120.7	0.759
259	7.74	34.096	1.85	2.48	47.		32.0	142.4	500	5.79	34.235	0.58	26.996	107.1	0.879
314	6.83	34.064	1.87	2.61	55.		34.3	132.6							
384	6.30	34.102	1.22	2.80	66.		37.6	123.1							
454	6.07	34.204	0.68	3.01	75.		39.3	112.7							
530	5.55	34.239	0.51	3.16	85.		41.8	103.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 67060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 28.0N	122 47.0W	4/18/78	1837 GMT	2974M	360	11KT	1	330 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	14.22	32.807	6.13	0.32	4.	0.05	0.1	347.2	0	14.22	32.807	6.13	24.471	347.2	0.000
10	14.09	32.836	6.00	0.36	4.	0.02	0.1	342.5	10	14.09	32.836	6.00	24.520	342.5	0.034
28	13.99	32.856	6.10	0.32	4.	0.01	0.1	339.0	20	14.05	32.853	6.06	24.540	340.6	0.069
37	13.80	32.864	6.28	0.33	4.	0.00	0.1	334.7	30	13.97	32.858	6.16	24.561	338.6	0.103
47	13.20	32.929	5.76	0.35	5.	0.00	0.1	318.4	50	13.05	32.955	5.77	24.820	314.0	0.168
61	12.36	33.038	5.88	0.53	6.	0.16	2.9	294.8	75	10.72	33.150	5.35	25.408	258.0	0.240
75	10.72	33.150	5.35	0.91	11.	0.05	9.6	258.0	100	9.25	33.315	4.84	25.781	222.5	0.301
94	9.44	33.263	4.97	1.24	17.	0.04	14.9	229.1	125	8.73	33.571	4.19	26.062	195.8	0.353
117	8.92	33.475	4.44	1.46	22.	0.06	18.9	205.5	150	8.36	33.790	3.55	26.290	174.1	0.400
136	8.51	33.692	3.86	1.68	28.	0.06	22.5	183.4	200	7.96	33.970	2.99	26.492	154.9	0.484
164	8.27	33.852	3.33	1.95	34.	0.06	25.9	168.0	250	7.34	34.027	2.60	26.627	142.1	0.560
192	8.01	33.945	3.11	2.07	38.	0.02	27.9	157.4	300	6.48	34.015	2.23	26.735	131.9	0.631
220	7.80	34.013	2.72	2.16	42.	0.06	29.1	149.4	400	5.89	34.103	1.14	26.880	118.1	0.760
257	7.21	34.024	2.58	2.30	47.	0.00	31.2	140.6	500	5.65	34.228	0.59	27.008	106.0	0.878
313	6.29	34.013	2.10	2.54	59.	0.01	34.9	129.6							
383	5.96	34.084	1.28	2.79	69.	0.01	38.3	120.3							
454	5.70	34.163	0.80	2.98	77.	0.02	40.5	111.4							
528	5.62	34.264	0.50	3.04	85.	0.11	40.2	102.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 70053

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
36 06.5N	121 54.0W	4/18/78	0145 GMT	1082M	310	18KT	1	310 3 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	13.46	32.529	6.28	0.48	4.	0.00	0.4	352.8	0	13.46	32.529	6.28	24.413	352.8	0.000
11	13.13	32.771	6.40	0.53	5.	0.04	1.4	328.7	10	13.17	32.751	6.40	24.640	331.1	0.034
28	12.51	32.992	6.12	0.62	8.	0.13	3.5	300.9	20	12.91	32.899	6.25	24.804	315.4	0.067
37	11.45	33.186	5.31	0.91	13.	0.32	9.4	267.7	30	12.27	33.040	5.94	25.037	293.3	0.097
46	10.94	33.248	4.96	1.05	14.	0.35	11.8	254.4	50	10.73	33.286	4.82	25.510	248.3	0.151
59	10.33	33.376	4.50	1.25	17.	0.17	15.3	234.9	75	9.91	33.552	3.97	25.858	215.2	0.210
72	9.98	33.524	4.05	1.41	20.	0.07	18.5	218.3	100	9.52	33.734	3.39	26.064	195.6	0.261
89	9.63	33.653	3.63	1.57	24.	0.09	21.3	203.2	125	9.34	33.847	3.08	26.182	184.3	0.309
111	9.45	33.798	3.20	1.71	27.	0.08	23.7	189.6	150	9.26	33.905	2.87	26.240	178.8	0.356
129	9.31	33.856	3.05	1.77	29.	0.03	24.9	183.2	200	8.61	34.045	2.41	26.453	158.7	0.442
155	9.24	33.915	2.83	1.91	31.	0.05	25.8	177.7	250	7.90	34.122	1.82	26.621	142.7	0.519
181	8.87	34.001	2.60	2.02	34.	0.02	27.7	165.7	300	7.46	34.168	1.37	26.720	133.3	0.590
208	8.50	34.059	2.32	2.13	38.	0.02	29.3	155.9	400	6.42	34.181	0.88	26.873	118.7	0.721
243	7.97	34.112	1.90	2.30	46.	0.08	31.5	144.4	500	5.59	34.225	0.55	27.012	105.6	0.839
295	7.51	34.165	1.41	2.51	53.	0.00	34.4	134.1							
362	6.80	34.175	1.03	2.68	64.	0.00	37.4	124.0							
428	6.16	34.187	0.79	2.79	72.	0.08	39.0	115.0							
502	5.58	34.225	0.54	2.99	84.	0.02	41.7	105.3							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 70060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 53.0N	122 22.5W	4/17/78	1937 GMT	3164M	340	9KT	1	310 6 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	14.34	32.850	6.13	0.45	4.	0.00	0.1	346.4	0	14.34	32.850	6.13	24.479	346.4	0.000
11	13.99	32.846	6.12	0.45	4.	0.00	0.1	339.8	10	14.01	32.849	6.12	24.545	340.1	0.034
30	13.96	32.848	6.18	0.45	4.	0.00	0.1	339.0	20	13.98	32.847	6.15	24.552	339.5	0.068
39	13.92	32.848	6.19	0.45	4.	0.00	0.1	338.3	30	13.96	32.848	6.18	24.556	339.0	0.102
49	13.43	32.872	6.29	0.43	4.	0.00	0.1	327.0	50	13.31	32.881	6.28	24.713	324.2	0.169
63	11.58	33.002	5.90	0.68	6.	0.10	3.9	283.6	75	10.68	33.125	5.43	25.393	259.4	0.242
76	10.63	33.133	5.39	0.91	11.	0.07	9.2	257.8	100	9.84	33.403	4.53	25.753	225.2	0.303
96	9.83	33.337	4.72	1.21	16.	0.09	14.9	229.7	125	9.99	33.751	3.50	25.998	201.8	0.357
119	10.04	33.691	3.69	1.47	21.	0.06	19.4	206.9	150	9.66	33.896	3.00	26.167	185.8	0.406
138	9.82	33.841	3.19	1.68	26.	0.06	22.4	192.2	200	8.76	34.047	2.41	26.430	160.8	0.495
166	9.42	33.944	2.82	1.93	31.	0.05	24.9	178.3	250	7.93	34.096	2.05	26.595	145.1	0.573
194	8.86	34.031	2.49	2.05	35.	0.03	27.6	163.4	300	7.45	34.127	1.66	26.689	136.2	0.646
221	8.44	34.083	2.18	2.17	40.	0.07	29.2	153.3	400	6.45	34.168	0.99	26.859	120.1	0.779
259	7.79	34.096	2.02	2.34	46.	0.00	31.8	143.1	500	5.55	34.210	0.63	27.006	106.2	0.898
314	7.37	34.137	1.53	2.50	54.	0.01	34.2	134.3							
384	6.64	34.164	1.05	2.70	64.	0.01	37.4	122.7							
453	5.88	34.183	0.81	2.88	75.	0.01	40.2	112.0							
529	5.43	34.230	0.51	2.94	85.	0.12	41.1	103.2							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 70070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 33.0N	123 06.0W	4/17/78	1320 GMT	3731M	290	8KT	1	280 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	13.77	32.818	6.20	0.21	4.		0.0	337.5	0	13.77	32.818	6.20	24.572	337.5	0.000
10	13.77	32.816	6.17	0.20	4.		0.0	337.7	10	13.77	32.816	6.17	24.571	337.7	0.034
29	13.68	32.818	6.13	0.18	4.		0.0	335.8	20	13.72	32.817	6.15	24.582	336.6	0.068
38	13.68	32.822	6.23	0.14	4.		0.0	335.5	30	13.68	32.821	6.14	24.591	335.8	0.101
48	13.57	32.825	6.16	0.13	4.		0.0	333.1	50	13.50	32.839	6.15	24.642	330.8	0.168
62	12.79	32.934	6.07	0.16	5.		0.0	310.4	75	11.63	33.042	5.85	25.161	281.5	0.245
75	11.63	33.042	5.85	0.32	6.		2.9	281.5	100	9.68	33.203	5.00	25.624	237.4	0.310
94	9.88	33.133	5.21	0.86	14.		12.5	245.6	125	9.13	33.472	4.34	25.923	209.0	0.367
117	9.39	33.402	4.48	1.24	20.		18.4	218.0	150	8.64	33.671	3.82	26.156	186.9	0.417
136	8.80	33.555	4.16	1.37	20.		18.5	197.8	200	8.22	33.929	3.09	26.420	161.7	0.505
163	8.57	33.765	3.51	1.86	31.		24.8	178.8	250	7.62	34.018	2.72	26.580	146.6	0.584
191	8.33	33.907	3.11	1.96	35.		26.5	164.8	300	6.90	34.024	2.34	26.685	136.6	0.657
219	7.98	33.955	3.08	2.04	38.		28.4	156.2	400	5.74	34.057	1.35	26.862	119.9	0.790
256	7.55	34.027	2.64	2.21	44.		30.6	144.9	500	5.31	34.163	0.68	26.998	107.0	0.909
312	6.72	34.016	2.27	2.45	54.		33.8	134.8							
383	5.85	34.039	1.52	2.72	68.		38.4	122.4							
454	5.51	34.117	0.91	2.98	79.		41.2	112.6							
530	5.18	34.188	0.60	3.17	88.		42.7	103.6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 73053

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 31.4N	121 28.6W	4/16/78	1817 GMT	741M	130	14KT	6	260 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	13.11	32.634		0.84U	5.	0.08	0.6	338.4	0	13.11	32.634		24.563	338.4	0.000
10	13.07	32.643		0.58	6.	0.08	0.5	337.0	10	13.07	32.643		24.578	337.0	0.034
29	12.86	32.745		0.58	5.	0.41	1.4	325.6	20	12.96	32.699		24.641	331.0	0.067
39	12.44	32.942		0.73	9.	0.27	4.0	303.3	30	12.83	32.766		24.718	323.6	0.100
53	11.46	33.138		0.98	11.	0.27	9.7	271.5	50	11.70	33.108		25.198	278.0	0.160
67	10.29	33.189		1.16	13.	0.10	12.1	248.1	75	10.00	33.267		25.621	237.7	0.225
90	9.76	33.434		1.42	19.	0.06	17.3	221.4	100	9.58	33.537		25.901	211.1	0.282
109	9.47	33.625		1.57	24.	0.10	20.8	202.8	125	9.50	33.786		26.107	191.5	0.333
128	9.51	33.809		1.73	27.	0.07	23.0	189.7	150	9.18	33.885		26.237	179.1	0.380
146	9.25	33.869		1.82	30.	0.06	24.7	181.3	200	8.47	34.043		26.472	156.8	0.465
174	8.77	33.966		2.26U	35.	0.04	27.1	166.8	250	8.00	34.090		26.580	146.6	0.543
207	8.41	34.058		2.21	40.	0.09	29.1	154.7	300	7.41	34.128		26.696	135.6	0.616
234	8.21	34.083		2.26	43.	0.11	30.0	150.0	400	6.65	34.207		26.863	119.7	0.749
281	7.57	34.102		2.43	50.	0.12	32.1	139.6	500	5.91	34.230		26.977	108.9	0.869
332	7.19	34.171		2.61	58.	0.03	35.1	129.4							
411	6.56	34.208		2.79	68.	0.03	37.4	118.4							
491	5.97	34.226		2.87	77.		39.3	109.8							
571	5.51	34.257		2.98	86.		41.0	102.1							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 73060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 17.5N	121 57.9W	4/16/78	2325 GMT	2222M	310	10KT	1	280 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	14.55	32.826	6.07	0.36	5.	0.00	0.1	352.4	0	14.55	32.826	6.07	24.416	352.4	0.000
11	14.12	32.814	6.10	0.37	5.	0.00	0.1	344.7	10	14.15	32.817	6.10	24.491	345.2	0.035
30	14.05	32.813	6.12	0.36	5.	0.00	0.1	343.4	20	14.09	32.816	6.11	24.504	344.1	0.069
39	14.03	32.816	6.14	0.36	5.	0.01	0.0	342.8	30	14.05	32.813	6.12	24.511	343.4	0.104
49	13.30	32.877	6.25	0.34	5.	0.01	0.0	324.2	50	13.21	32.888	6.23	24.736	321.9	0.171
63	12.00	32.995	5.81	0.52	7.	0.17	2.6	291.5	75	10.74	33.059	5.55	25.332	265.2	0.244
77	10.56	33.072	5.50	0.82	11.	0.09	8.3	261.1	100	10.35	33.499	4.26	25.741	226.3	0.306
96	10.39	33.436	4.43	1.25	17.	0.05	15.7	231.4	125	9.94	33.751	3.52	26.007	201.0	0.360
119	10.08	33.711	3.64	1.54	23.	0.03	20.6	206.0	150	9.40	33.856	3.22	26.178	184.7	0.409
137	9.66	33.805	3.34	1.76	26.	0.03	23.1	192.4	200	8.80	34.008	2.65	26.394	164.2	0.498
165	9.16	33.902	3.10	2.00	31.	0.04	25.4	177.5	250	8.12	34.062	2.42	26.539	150.4	0.579
193	8.87	33.991	2.71	2.09	35.	0.10	26.9	166.5	300	7.43	34.082	1.96	26.657	139.3	0.653
220	8.57	34.040	2.51	2.24	39.	0.03	28.9	158.4	400	6.48	34.161	0.95	26.850	120.9	0.789
258	8.00	34.063	2.39	2.39	44.	0.07	30.7	148.5	500	5.68	34.220	0.58	26.998	106.9	0.909
312	7.29	34.087	1.81	2.61	54.	0.03	34.0	136.9							
381	6.74	34.160	1.06	2.87	65.	0.03	37.7	124.3							
452	5.82	34.164	0.76	3.07	79.	0.12	40.6	112.7							
529	5.59	34.242	0.48	3.25	87.	0.04	42.5	104.2							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 73070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 58.0N	122 40.0W	4/17/78	0618 GMT	3919M	320	8KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	14.15	32.861	6.00	0.41	4.		0.1	341.8	0	14.15	32.861	6.00	24.527	341.8	0.000
10	14.05	32.857	6.05	0.42	4.		0.1	340.2	10	14.05	32.857	6.05	24.545	340.2	0.034
29	13.92	32.845	6.06	0.39	4.		0.1	338.5	20	13.98	32.850	6.06	24.552	339.5	0.068
38	13.86	32.847	6.08	0.35	4.		0.1	337.2	30	13.91	32.846	6.06	24.565	338.2	0.102
47	13.75	32.844	6.14	0.35	4.		0.2	335.2	50	13.74	32.878	6.14	24.624	332.6	0.169
61	13.49	32.986	6.08	0.31	3.		0.2	319.8	75	12.35	32.929	5.99	24.938	302.7	0.249
75	12.35	32.929	5.99	0.43	4.		0.8	302.7	100	10.20	33.133	5.17	25.482	251.0	0.319
94	10.61	33.071	5.34	0.92	10.		9.5	262.0	125	9.17	33.389	4.58	25.851	215.8	0.378
117	9.38	33.308	4.75	1.24	17.		14.9	224.9	150	8.69	33.594	4.17	26.087	193.4	0.430
136	8.97	33.487	4.37	1.50	22.		18.8	205.4	200	8.18	33.892	3.43	26.399	163.8	0.520
164	8.47	33.685	3.97	1.81	28.		22.0	183.3	250	7.61	34.000	2.84	26.567	147.8	0.600
192	8.30	33.863	3.45	1.97	32.		25.2	167.6	300	7.01	34.018	2.43	26.665	138.5	0.674
219	7.87	33.938	3.40	2.08	36.		26.2	155.9	400	5.92	34.068	1.36	26.848	121.2	0.809
257	7.56	34.008	2.70	2.26	42.		27.2	146.5	500	5.70	34.196	0.61	26.976	109.0	0.929
313	6.83	34.014	2.38	2.51	51.		32.7	136.4							
383	5.92	34.035	1.58	2.81	66.		37.0	123.5							
454	5.93	34.157	0.75	3.06	76.		38.0	114.5							
530	5.46	34.203	0.52	3.27	84.		41.1	105.6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 77051

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
35 02.0N	120 56.5W	4/16/78	0853 GMT	277M	310	12KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	13.30	32.721	6.20	0.44	4.	0.00	0.0	335.6	0	13.30	32.721	6.20	24.592	335.6	0.000
10	13.30	32.723	6.19	0.42	4.	0.01	0.3	335.5	10	13.30	32.723	6.19	24.594	335.5	0.034
28	12.80	33.024	5.81	0.67	8.	0.07	4.1	303.9	20	13.02	32.830	5.98	24.729	322.6	0.067
42	11.47	33.346	4.76	1.09	14.	0.38	11.6	256.3	30	12.62	33.079	5.65	25.000	296.8	0.098
51	10.88	33.394	4.52	1.18	16.	0.18	12.7	242.7	50	10.94	33.394	4.54	25.557	243.8	0.152
65	10.23	33.443	4.33	1.36	17.	0.09	16.1	228.3	75	9.96	33.575	3.92	25.867	214.3	0.209
79	9.89	33.632	3.74	1.58	22.	0.05	19.7	208.8	100	9.74	33.812	3.16	26.089	193.2	0.261
97	9.78	33.799	3.19	1.74	26.	0.13	22.0	194.7	125	9.39	33.879	3.00	26.198	182.9	0.308
120	9.44	33.856	3.06	1.83	27.	0.02	23.4	185.2	150	9.13	33.977	2.63	26.317	171.6	0.353
139	9.27	33.938	2.80	1.93	30.	0.05	24.8	176.5	200	8.63	34.069	2.13	26.469	157.1	0.437
172	8.86	34.032	2.34	2.18	36.	0.04	27.5	163.3							
200	8.63	34.069	2.13	2.27	38.	0.05	29.0	157.1							
238	8.30	34.107	1.87	2.24	43.	0.14	27.9	149.5							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 77055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 54.5N	121 13.0W	4/16/78	0445 GMT	556M	310	20KT		280 5 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	14.54	33.005	5.81	0.52	5.		0.1	339.1	0	14.54	33.005	5.81	24.556	339.1	0.000
11	14.54	33.002	5.73	0.45	5.		0.1	339.3	10	14.54	33.005	5.74	24.554	339.3	0.034
30	14.43	32.978	6.02	0.42	5.		0.1	338.8	20	14.49	32.993	5.86	24.556	339.1	0.068
39	13.26	32.962	6.00	0.46	6.		0.1	317.1	30	14.43	32.978	6.02	24.559	338.8	0.102
48	12.26	33.095	5.45	0.70	8.		4.2	288.8	50	12.09	33.113	5.38	25.129	284.5	0.164
62	11.22	33.165	5.09	0.82	10.		5.8	265.3	75	10.45	33.226	4.86	25.512	248.1	0.231
76	10.41	33.230	4.84	1.15	14.		10.8	247.0	100	10.34	33.509	4.36	25.750	225.4	0.291
95	10.42	33.443	4.51	1.31	17.		14.5	231.4	125	9.84	33.750	3.53	26.024	199.4	0.345
118	9.97	33.706	3.77	1.60	23.		19.3	204.6	150	9.38	33.863	3.18	26.188	183.7	0.393
136	9.64	33.799	3.21	1.75	25.		21.6	192.5	200	8.63	34.023	2.40	26.432	160.7	0.481
164	9.13	33.917	3.14	1.99	31.		24.1	175.9	250	8.02	34.091	2.00	26.578	146.8	0.560
191	8.75	33.996	2.56	2.18	35.		25.9	164.3	300	7.34	34.074	1.84	26.663	138.7	0.633
219	8.39	34.066	2.15	2.26	40.		28.5	153.8	400	6.53	34.145	0.99	26.831	122.7	0.769
255	7.96	34.090	1.99	2.40	44.		30.5	145.9	500	5.97	34.235	0.51	26.974	109.2	0.892
310	7.21	34.068	1.80	2.54	51.		32.5	137.3							
380	6.59	34.118	1.14	2.74	62.		35.7	125.5							
449	6.37	34.205	1.02U	2.92	69.		37.2	116.3							
526	5.69	34.239	0.46	3.15	83.		40.6	105.5							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 77060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 44.0N	121 34.0W	4/16/78	0000 GMT	888M	250	29KT	6	270 6 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	14.19	32.833	6.09	0.46	5.	0.00	0.0	344.7	0	14.19	32.833	6.09	24.497	344.7	0.000
11	14.20	32.831	6.11	0.44	5.	0.00	0.0	345.0	10	14.20	32.832	6.11	24.494	345.0	0.034
31	14.01	32.946	6.17	0.43	5.	0.00	0.0	332.8	20	14.11	32.885	6.14	24.551	339.5	0.069
40	13.77	33.109	5.98	0.49	5.	0.20	0.6	316.2	30	14.02	32.943	6.17	24.615	333.4	0.102
49	12.92	33.234	5.56	0.66	6.	0.22	4.5	290.7	50	12.80	33.250	5.49	25.098	287.4	0.165
64	11.31	33.413	4.60	1.11	13.	0.06	12.7	248.6	75	11.01	33.465	4.40	25.599	239.8	0.231
78	10.99	33.472	4.37	1.27	15.	0.03	14.7	238.8	100	10.52	33.637	3.83	25.819	218.8	0.289
96	10.63	33.606	3.93	1.43	19.	0.03	17.6	222.8	125	9.89	33.774	3.39	26.033	198.5	0.342
120	9.99	33.756	3.43	1.63	23.	0.07	21.0	201.2	150	9.52	33.863	3.11	26.165	186.0	0.390
139	9.67	33.813	3.30	1.76	26.	0.03	22.8	192.0	200	9.04	34.028	2.42	26.371	166.4	0.480
165	9.34	33.928	2.83	1.99	31.	0.04	25.2	178.3	250	8.60	34.117	1.97	26.510	153.2	0.562
192	9.09	34.010	2.50	2.11	33.	0.02	26.9	168.4	300	8.05	34.160	1.63	26.628	142.0	0.638
219	8.93	34.061	2.26	2.20	36.	0.01	28.1	162.2	400	7.25	34.206	1.13	26.780	127.6	0.779
255	8.54	34.123	1.92	2.33	41.	0.04	29.6	151.8	500	6.24	34.251	0.63	26.952	111.3	0.905
309	7.96	34.163	1.58	2.49	49.	0.00	32.4	140.5							
378	7.51	34.192	1.28	2.63	56.	0.01	34.2	132.1							
446	6.69	34.233	0.82	2.81	67.	0.10	36.8	118.2							
519	6.12	34.252	0.60	3.00	76.	0.02	39.4	109.7							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 77070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 25.0N	122 16.0W	4/15/78	1614 GMT	3919M	180	19KT	1	180 5 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	14.26	32.815	5.11U	0.39	5.	0.00	0.1	347.4	0	14.26	32.815	5.57	24.469	347.4	0.000
10	14.27	32.815	5.77	0.32	4.	0.00	0.1	347.6	10	14.27	32.815	5.77	24.467	347.6	0.035
29	14.08	32.818	5.75	0.29	4.	0.00	0.1	343.6	20	14.17	32.816	5.76	24.480	346.3	0.069
38	14.38	32.958	6.17	0.28	4.	0.00	0.1	339.3	30	14.12	32.835	5.80	24.512	343.2	0.104
47	14.36	33.055	5.99	0.28	4.	0.00	0.1	331.8	50	14.16	33.090	5.87	24.699	325.5	0.171
62	13.09	33.194	5.40	0.45	6.	0.46	2.6	296.9	75	12.05	33.221	5.14	25.220	275.9	0.247
76	11.97	33.220	5.12	0.69	8.	0.12	7.0	274.4	100	10.41	33.438	4.01	25.683	231.8	0.311
95	10.66	33.393	4.04	1.08	14.	0.03	14.8	239.0	125	9.63	33.620	3.72	25.956	205.8	0.366
119	9.76	33.582	3.88	1.37	20.	0.00	19.7	210.5	150	9.37	33.780	2.89	26.124	189.9	0.416
138	9.45	33.693	3.30	1.56	24.	0.00	22.3	197.4	200	8.62	33.982	2.03	26.402	163.5	0.506
166	9.27	33.881	2.41	1.87	29.	0.00	25.1	180.7	250	7.82	34.042	1.89	26.569	147.6	0.586
194	8.74	33.968	2.11	1.95	33.	0.02	27.1	166.2	300	7.18	34.048	1.82	26.665	138.5	0.659
222	8.19	34.015	1.81	2.03	38.	0.00	28.9	154.7	400	6.48	34.154	1.27	26.845	121.5	0.795
259	7.72	34.046	1.95	2.21	44.	0.02	31.2	145.8	500	5.75	34.208	0.61	26.980	108.7	0.916
315	7.01	34.048	2.36	2.37	53.	0.04	33.7	136.1							
385	6.61	34.146	1.74	2.69	64.	0.00	37.6	123.7							
455	6.00	34.173	0.81	2.85	75.	0.09	40.1	114.2							
532	5.64	34.238	0.49	3.04	83.	0.00	42.5	105.0							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 80052

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 24.8N	120 36.0W	4/14/78	1856 GMT	277M	280	6KT	2	290 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	13.13	33.181		0.63	9.	0.14	3.9	298.6	0	13.13	33.181		24.981	298.6	0.000
11	12.17	33.355		0.96	13.	0.41	9.5	268.0	10	12.24	33.343		25.277	270.4	0.028
30	11.40	33.559		1.26	18.	0.24	15.4	239.4	20	11.78	33.460		25.456	253.4	0.055
44	10.42	33.738		1.53	22.	0.09	20.1	209.6	30	11.40	33.559		25.603	239.4	0.079
54	10.34	33.770		1.59	23.	0.09	20.6	205.9	50	10.35	33.762		25.946	206.8	0.124
68	9.87	33.859		1.72	26.	0.06	23.4	191.7	75	9.77	33.890		26.144	187.9	0.174
82	9.71	33.913		1.88	29.	0.05	24.7	185.2	100	9.46	33.962		26.251	177.8	0.220
101	9.45	33.963		2.03	32.	0.14	25.9	177.4	125	9.24	34.003		26.319	171.3	0.264
124	9.25	34.000		2.03	36.	0.07	27.1	171.6	150	9.01	34.038		26.383	165.2	0.307
143	9.10	34.027		2.13	36.	0.11	27.6	167.3	200	8.47	34.121		26.534	150.9	0.388
172	8.73	34.069		2.25	41.	0.08	29.3	158.6							
196	8.50	34.109		2.33	44.	0.04	30.7	152.2							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 80055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 19.0N	120 48.0W	4/14/78	2227 GMT	778M	240	10KT	1	270 3 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	14.47	33.009	6.33	0.31	6.		0.3	337.4	0	14.47	33.009	6.33	24.574	337.4	0.000
9	13.29	33.058	6.17	0.47	7.		1.7	310.7	10	13.27	33.067	6.16	24.862	309.9	0.032
28	12.99	33.111	5.90	0.53	8.		3.5	301.1	20	13.12	33.080	6.01	24.926	303.8	0.063
37	12.70	33.298	5.24	0.71	10.		7.4	281.9	30	12.94	33.154	5.76	24.997	297.1	0.093
46	12.24	33.395	4.81	0.84	12.		10.3	266.4	50	12.03	33.447	4.58	25.398	258.9	0.149
59	11.58	33.546	4.10	1.13	17.		14.4	243.5	75	10.91	33.643	3.71	25.755	224.9	0.210
73	11.04	33.622	3.78	1.36	19.		16.9	228.5	100	9.73	33.837	3.05	26.110	191.2	0.262
91	9.95	33.796	3.16	1.60	26.		22.2	197.6	125	9.46	33.900	2.87	26.203	182.4	0.310
113	9.59	33.866	2.98	1.67	29.		23.9	186.8	150	9.23	33.945	2.68	26.277	175.4	0.355
131	9.41	33.913	2.81	1.85	30.		25.0	180.5	200	8.76	34.039	2.32	26.425	161.3	0.441
157	9.16	33.954	2.64	2.01	34.		26.2	173.6	250	8.15	34.129	1.79	26.589	145.7	0.520
185	8.88	34.014	2.45	2.06	35.		27.6	164.9	300	7.69	34.167	1.41	26.687	136.4	0.592
211	8.66	34.055	2.22	2.12	38.		28.5	158.6	400	6.73	34.222	0.81	26.864	119.7	0.726
246	8.19	34.123	1.83	2.28	45.		30.9	146.7	500	5.90	34.281	0.43	27.019	105.0	0.844
300	7.69	34.167	1.41	2.47	52.		33.0	136.4							
368	7.12	34.202	1.00	2.65	61.		35.4	126.1							
439	6.28	34.245	0.61	2.87	75.		38.3	112.2							
515	5.86	34.288	0.41	3.06	82.		40.6	103.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 80060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 09.0N	121 10.0W	4/15/78	0315 GMT	2222M	190	14KT	1	210 2 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	14.36	33.179	6.76	0.31	2.	0.00	0.1	322.7	0	14.36	33.179	6.76	24.728	322.7	0.000
10	14.30	33.177	6.72	0.29	2.	0.00	0.1	321.7	10	14.30	33.177	6.72	24.739	321.7	0.032
28	13.72	33.192	6.43	0.33	5.	0.08	0.7	309.1	20	14.04	33.182	6.56	24.796	316.3	0.064
37	13.28	33.222	5.89	0.46	7.	0.22	3.2	298.4	30	13.63	33.199	6.32	24.893	307.0	0.095
46	12.77	33.283	5.35	0.63	8.	0.31	6.2	284.3	50	12.35	33.332	5.08	25.247	273.2	0.154
59	11.41	33.444	4.54	0.99	13.	0.16	12.8	248.0	75	10.71	33.563	4.16	25.729	227.4	0.217
73	10.72	33.548	4.19	1.23	17.	0.07	16.5	228.6	100	10.40	33.707	3.64	25.895	211.7	0.272
91	10.62	33.636	3.88	1.36	19.	0.04	18.2	220.4	125	9.84	33.868	3.06	26.116	190.6	0.323
114	10.02	33.813	3.26	1.55	24.	0.03	21.8	197.5	150	9.37	33.953	2.77	26.260	177.0	0.369
132	9.73	33.894	2.96	1.79	27.	0.02	23.8	186.9	200	8.66	34.091	2.21	26.481	156.0	0.454
159	9.19	33.977	2.69	2.01	32.	0.03	26.1	172.4	250	8.21	34.122	1.93	26.575	147.1	0.532
186	8.84	34.066	2.33	2.15	36.	0.03	28.4	160.5	300	7.58	34.168	1.48	26.703	134.9	0.605
214	8.50	34.106	2.12	2.20	40.	0.00	29.6	152.5	400	6.69	34.213	0.87	26.863	119.7	0.738
250	8.21	34.122	1.93	2.30	43.	0.02	30.6	147.1	500	5.96	34.278	0.47	27.009	105.9	0.857
306	7.50	34.173	1.42	2.52	53.	0.00	34.3	133.4							
374	6.94	34.199	1.02	2.69	61.	0.00	36.8	124.0							
446	6.28	34.241	0.64	3.01	71.	0.04	38.8	112.5							
519	5.88	34.290	0.43	3.02	80.	0.02	40.9	104.0							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 80070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 48.5N	121 51.0W	4/15/78	0953 GMT	3738M	350	20KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	14.58	33.093	6.02		4.	0.02	0.0	333.4
10	14.61	33.101	6.00	0.38	4.	0.02	0.0	333.5
29	14.49	33.158	6.02	0.37	4.	0.00	0.0	326.9
38	14.33	33.182	6.10	0.33	4.	0.00	0.0	321.9
47	13.14	33.232	5.59	0.56	7.	0.28	3.5	295.0
61	11.75	33.388	4.68	0.92	11.	0.08	10.7	258.1
75	11.32	33.464	4.40	1.04	13.	0.03	13.1	245.0
94	9.98	33.534	4.08	1.29	18.	0.02	18.3	217.5
117	9.41	33.751	3.46	1.53	24.	0.04	22.3	192.5
135	8.92	33.849	3.16	1.74	29.	0.02	25.0	177.8
163	8.56	33.980	2.64	1.94	35.	0.03	27.6	162.7
191	8.06	34.012	2.78	2.02	38.	0.04	28.4	153.1
219	7.55	34.025	2.55	2.15	43.	0.03	30.5	145.1
256	7.36	34.054	2.14	2.27	48.	0.04	31.8	140.3
311	6.84	34.060	1.70	2.47	55.	0.00	35.2	133.0
381	6.25	34.132	0.92	2.71	68.	0.01	38.9	120.3
451	5.82	34.165	0.70	2.84	76.		40.0	112.6
525	5.43		0.51	2.94	84.		41.7	

Z	T	S	O2	SIGT	DT	DD
0	14.58	33.093	6.02	24.615	333.4	0.000
10	14.61	33.101	6.00	24.615	333.5	0.033
20	14.55	33.121	6.01	24.642	330.9	0.067
30	14.47	33.163	6.03	24.690	326.3	0.100
50	12.78	33.266	5.37	25.115	285.9	0.161
75	11.32	33.464	4.40	25.544	245.0	0.228
100	9.78	33.591	3.92	25.910	210.2	0.285
125	9.18	33.800	3.32	26.171	185.4	0.335
150	8.71	33.929	2.84	26.347	168.8	0.380
200	7.88	34.018	2.73	26.541	150.2	0.461
250	7.38	34.051	2.21	26.640	140.9	0.536
300	6.95	34.060	1.79	26.706	134.6	0.607
400	6.12	34.143	0.83	26.881	118.0	0.738
500	5.55	34.205	0.57	27.003	106.5	0.856

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 82047

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 16.5N	119 59.0W	4/14/78	1320 GMT	547M	250	14KT	2	270 2 3

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	13.74	33.333	5.41	0.67	8.	0.10	2.4	299.2
10	13.21	33.367	5.37	0.73	9.	0.18	4.0	286.4
29	11.26	33.546	3.65U	1.25	16.	0.12	14.7	237.9
43	10.64	33.620	3.79	1.42	19.	0.11	17.5	221.9
52	10.40	33.682	2.79U	1.59	20.	0.09	19.4	213.4
66	10.14	33.741	3.42	1.65	22.	0.09	20.5	204.8
80	9.94	33.813	3.46U	1.73	24.	0.06	22.3	196.2
94	9.78	33.859		1.82	26.	0.06	23.7	190.3
117	9.51	33.928		1.93	29.	0.08	25.0	180.9
135	9.43	33.992	2.17U	2.11	32.	0.06	27.2	174.9
163	9.15	34.041	1.76U	2.22	36.	0.08	28.7	167.0
191	8.77	34.098	1.78	2.36	41.	0.10	30.8	157.0
219	8.50	34.129	1.52	2.49	45.	0.09	32.6	150.8
256	8.07	34.160	1.14	2.62	50.	0.08	34.3	142.3
312	7.72	34.183	0.83	2.69	56.	0.05	36.5	135.6
363	7.29	34.201	0.75	2.68	63.	0.06	37.1	128.4
419	6.76	34.230	0.40	2.95	76.		36.0	119.3
476	6.55	34.243	0.26	3.14	87.		33.8	115.7

Z	T	S	O2	SIGT	DT	DD
0	13.74	33.333	5.41	24.975	299.2	0.000
10	13.21	33.367	5.37	25.109	286.4	0.029
20	12.17	33.456	4.94	25.378	260.8	0.057
30	11.20	33.554	4.47	25.634	236.4	0.082
50	10.45	33.670	3.64	25.858	215.1	0.127
75	10.01	33.790	3.28	26.027	199.1	0.179
100	9.70	33.878	2.90	26.147	187.7	0.228
125	9.47	33.959	2.56	26.247	178.1	0.274
150	9.30	34.023	2.24	26.326	170.7	0.318
200	8.68	34.111	1.70	26.493	154.8	0.401
250	8.14	34.157	1.20	26.612	143.5	0.478
300	7.79	34.181	0.87	26.683	136.8	0.551
400	6.93	34.221	0.52	26.837	122.2	0.686
500	6.45	34.244	0.22	26.919	114.4	0.810

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 83042

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
34 10.0N	119 29.5W	4/13/78	1700 GMT	205M	300	4KT	2	260 2 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	14.02	33.297	5.67U	0.86	7.	0.24	1.6	307.3
10	13.96	33.296	6.02	0.81	8.	0.21	1.6	306.2
29	13.28	33.342	4.69U	1.07	9.	0.29	4.9	289.6
38	12.28	33.421	4.03U	0.98	12.	0.32	10.2	265.2
52	11.37	33.518	4.30	1.78	15.	0.14	14.2	241.9
66	10.87	33.662	3.17U	2.13U	19.	0.12	17.4	222.7
80	10.50	33.727		1.80	20.	0.10	19.1	211.7
98	10.10	33.838	3.09	1.93	25.	0.13	21.8	197.0
121	9.59	33.972	2.55	1.94	30.	0.11	25.1	178.9
144	9.19	34.070	2.28	2.11	36.	0.10	27.5	165.5

Z	T	S	O2	SIGT	DT	DD
0	14.02	33.297	6.02	24.890	307.3	0.000
10	13.96	33.296	6.02	24.901	306.2	0.031
20	13.77	33.310	5.71	24.993	297.5	0.061
30	13.17	33.352	5.34	25.103	287.0	0.090
50	11.46	33.506	4.41	25.549	244.5	0.144
75	10.62	33.709	3.64	25.858	215.2	0.201
100	10.05	33.852	3.04	26.067	195.3	0.253
125	9.51	33.993	2.49	26.269	176.2	0.300
150	9.13	34.090	2.23	26.406	163.1	0.343

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 83051

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 52.0N	120 08.5W	4/13/78	1137 GMT	233M	270	9KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	15.03	33.270	6.15	0.29	3.	0.00	0.0	329.7
10	15.02	33.267	6.15	0.31	3.	0.00	0.0	329.7
29	12.72	33.406	5.27	0.61	9.	0.15	6.0	274.4
43	11.86	33.509	4.59	0.83	13.	0.27	10.7	251.1
52	11.81	33.520	4.51	0.89	14.	0.20	11.7	249.4
66	11.03	33.635	3.91	1.13	18.	0.32	13.7	227.4
81	10.76	33.687	3.69	1.22	20.	0.04	16.8	219.0
99	10.14	33.821	3.17	1.40	26.	0.04	20.8	198.9
123	9.85	33.886	2.89	1.56	28.	0.05	22.2	189.4
142	9.58	33.945	2.66	1.80	31.	0.08	24.5	180.8
172	9.29	34.009	2.41	1.80	34.	0.15	25.5	171.5
195	9.18	34.029	2.33	1.89	35.	0.19	26.2	168.3

Z	T	S	O2	SIGT	DT	DD
0	15.03	33.270	6.15	24.655	329.7	0.000
10	15.02	33.267	6.15	24.654	329.7	0.033
20	13.91	33.324	5.76	24.931	303.4	0.065
30	12.63	33.417	5.21	25.260	272.0	0.094
50	11.82	33.519	4.53	25.494	249.8	0.146
75	10.85	33.669	3.76	25.787	221.9	0.205
100	10.12	33.826	3.15	26.035	198.3	0.258
125	9.82	33.894	2.86	26.139	188.5	0.307
150	9.49	33.967	2.58	26.252	177.7	0.354
200	9.12	34.030	2.30	26.361	167.4	0.442

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 83055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 44.0N	120 24.5W	4/13/78	0824 GMT	1073M	280	9KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	14.23	33.311	6.42	0.21	1.	0.03	0.1	310.4
10	14.21	33.310	6.42	0.21	1.	0.02	0.1	310.1
29	13.60	33.343	5.73	0.46	6.	0.11	2.8	295.7
38	12.75	33.409	5.12	0.69	9.	0.28	6.9	274.7
47	11.59	33.465	4.62	0.89	12.	0.08	10.6	249.6
61	10.42	33.447	4.48	1.11	15.	0.07	15.0	231.1
75	9.92	33.507	4.30	1.23	18.	0.07	17.2	218.6
93	9.84	33.659	3.81	1.58	22.	0.10	19.3	206.0
116	9.27	33.792	3.49	1.54	25.	0.04	22.1	187.3
134	9.27	33.977	2.74	1.79	31.	0.00	24.3	173.6
162	9.04	34.028	2.56	1.98	34.	0.02	25.9	166.3
190	8.85	34.097	2.15	2.06	36.	0.04	28.1	158.3
217	8.65	34.136	1.91	2.10	40.	0.03	27.8	152.4
254	7.88	34.092	2.04	2.25	44.	0.02	30.7	144.6
310	7.44	34.202	1.15	2.56	55.	0.02	34.7	130.4
380	6.72	34.243	0.75	2.73	65.	0.01	37.2	117.9
450	6.33	34.263	0.55	2.76	71.		37.1	111.4
525	5.96	34.291	0.39	2.93	78.		39.8	104.9

Z	T	S	O2	SIGT	DT	DD
0	14.23	33.311	6.42	24.857	310.4	0.000
10	14.21	33.310	6.42	24.860	310.1	0.031
20	14.04	33.369	6.17	24.940	302.5	0.062
30	13.52	33.352	5.66	25.032	293.7	0.092
50	11.28	33.465	4.59	25.551	244.3	0.146
75	9.92	33.507	4.30	25.822	218.6	0.204
100	9.66	33.698	3.73	26.013	200.4	0.257
125	9.27	33.893	3.11	26.229	179.9	0.305
150	9.15	34.024	2.64	26.350	168.4	0.349
200	8.79	34.118	2.04	26.480	156.0	0.432
250	7.97	34.098	2.03	26.591	145.5	0.509
300	7.49	34.179	1.34	26.724	132.9	0.581
400	6.59	34.250	0.68	26.905	115.7	0.711
500	6.08	34.282	0.44	26.997	107.0	0.828

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 83060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 34.3N	120 45.0W	4/13/78	0400 GMT	1387M	260	8KT	2	310 4 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	14.95	33.198	5.96	0.35	4.	0.01	0.1	333.3
10	14.88	33.194	5.98	0.34	4.	0.02	0.1	332.2
29	14.64	33.226	6.02	0.32	5.	0.00	0.1	324.9
39	14.53	33.228	5.99	0.31	5.	0.00	0.1	322.5
48	14.05	33.237	5.79	0.40	5.	0.24	1.3	312.3
62	12.73	33.238	5.43	0.52	7.	0.06	4.5	286.9
76	10.95	33.333	4.79	0.88	12.	0.01	11.6	248.3
95	10.13	33.502	4.26	1.16	17.	0.03	16.4	222.3
118	9.45	33.724	3.63		25.	0.01	21.5	195.1
137	9.21	33.833	3.29	1.57	27.	0.00	23.6	183.3
165	8.75	33.962	2.80	1.93	33.	0.07	26.2	166.8
192	8.32	34.018	2.56	1.98	37.	0.10	27.9	156.4
220	8.07	34.046	2.38	2.10	41.	0.05	28.9	150.7
257	7.66	34.095	1.92	2.30	47.	0.07	31.4	141.4
313	7.20	34.138	1.41	2.44	55.	0.05	33.2	131.9
383	6.68	34.193	0.90	2.63	64.	0.04	35.7	121.1
453	6.26	34.258	0.54	2.77	73.		37.5	111.0
529	5.64	34.262	0.38	2.97	83.		41.3	103.2

Z	T	S	O2	SIGT	DT	DD
0	14.95	33.198	5.96	24.617	333.3	0.000
10	14.88	33.194	5.98	24.629	332.2	0.033
20	14.73	33.213	6.01	24.673	327.9	0.066
30	14.64	33.226	6.02	24.705	324.9	0.099
50	13.90	33.237	5.75	24.867	309.4	0.163
75	11.07	33.326	4.84	25.481	251.0	0.233
100	9.95	33.555	4.11	25.854	215.6	0.292
125	9.35	33.771	3.49	26.121	190.2	0.343
150	9.00	33.901	3.05	26.278	175.2	0.390
200	8.24	34.028	2.51	26.496	154.6	0.474
250	7.74	34.087	2.01	26.616	143.1	0.550
300	7.30	34.131	1.51	26.714	133.8	0.621
400	6.58	34.212	0.80	26.876	118.4	0.753
500	5.90	34.260	0.41	27.010	105.8	0.871

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 83070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 14.5W	121 26.0W	4/12/78	2110 GMT	3738M	290	8KT	2	320 6 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	14.94	33.022	5.98	0.97	4.	0.01	0.1	346.0
9	14.88	33.020	5.97	0.59	3.	0.00	0.1	344.9
28	14.81	33.021	5.99	0.51	3.	0.01	0.1	343.4
37	14.67	33.067	6.07	0.48	4.	0.00	0.1	337.2
47	14.55	33.091	6.08	0.46	4.	0.01	0.1	333.0
60	13.86	33.128	6.03	0.42	4.	0.07	0.1	316.5
74	12.79	33.291	5.28	0.77	8.	0.12	6.5	284.1
93	11.58	33.442	4.59	1.06	13.	0.08	12.5	251.1
116	10.01	33.486	4.32	1.28	18.	0.09	17.1	221.6
135	9.34	33.739	3.60	1.64	24.	0.06	22.5	192.3
162	8.86	33.877	3.22	2.01	31.	0.07	25.2	174.8
190	8.43	33.964	2.92	2.05	35.	0.09	27.4	162.0
218	8.12	34.003	2.78	2.11	39.	0.25	27.9	154.6
255	7.52	34.055	2.13	2.45	47.	0.03	32.0	142.4
310	7.07	34.125	1.39	2.65	57.	0.01	35.5	131.2
379	6.43	34.161	0.87	2.81	68.	0.00	38.4	120.3
448	6.00	34.212	0.60	2.96	76.	0.02	39.0	111.2
523	5.63	34.248	0.47	3.06	84.		40.6	104.2

Z	T	S	O2	SIGT	DT	DD
0	14.94	33.022	5.98	24.484	346.0	0.000
10	14.88	33.020	5.97	24.495	344.9	0.035
20	14.85	33.021	5.98	24.502	344.2	0.069
30	14.78	33.033	6.01	24.524	342.1	0.103
50	14.45	33.097	6.07	24.648	330.3	0.171
75	12.72	33.304	5.23	25.154	282.1	0.248
100	11.06	33.449	4.51	25.577	241.9	0.314
125	9.64	33.604	3.98	25.943	207.1	0.371
150	9.04	33.837	3.34	26.223	180.5	0.420
200	8.32	33.982	2.88	26.448	159.1	0.506
250	7.60	34.049	2.23	26.607	144.1	0.584
300	7.13	34.115	1.50	26.725	132.8	0.655
400	6.28	34.178	0.77	26.888	117.3	0.785
500	5.73	34.240	0.49	27.007	106.0	0.903

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 87036

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 49.0N	118 40.0W	4/11/78	0257 GMT	833M	280	17KT	1	280 3 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.39	33.192	6.08	0.24	5.	0.01	0.1	342.9	0	15.39	33.192	6.08	24.516	342.9	0.000
11	15.24	33.188	6.09	0.22	5.	0.02	0.1	340.0	10	15.26	33.190	6.09	24.541	340.5	0.034
30	13.44	33.319	5.98	0.31	6.	0.13	0.5	294.4	20	14.97	33.204	6.04	24.617	333.3	0.068
39	12.68	33.373	5.52	0.55	7.	0.27	5.0	276.0	30	13.44	33.319	5.98	25.025	294.4	0.099
49	12.07	33.424	4.94	0.69	10.	0.34	8.5	261.2	50	11.99	33.433	4.89	25.394	259.2	0.155
63	11.08	33.548	4.25	0.99	15.	0.10	14.2	234.7	75	10.69	33.681	3.74	25.825	218.3	0.215
77	10.64	33.701	3.66	1.22	20.	0.04	18.0	215.9	100	10.04	33.868	3.10	26.082	193.8	0.267
96	10.09	33.844	3.17	1.43	24.	0.10	21.2	196.3	125	9.76	33.993	2.69	26.226	180.2	0.314
120	9.85	33.965	2.78	1.67	28.	0.07	23.7	183.5	150	9.45	34.082	2.35	26.347	168.7	0.359
138	9.54	34.052	2.47	1.78	32.	0.03	25.5	172.2	200	8.95	34.157	1.94	26.487	155.4	0.441
166	9.36	34.104	2.23	1.88	34.	0.03	26.9	165.6	250	8.50	34.186	1.57	26.580	146.6	0.519
194	9.00	34.149	1.99	2.01	38.	0.02	28.4	156.7	300	8.07	34.218	1.29	26.670	138.0	0.592
221	8.78	34.175	1.76	2.08	41.	0.08	29.3	151.5	400	7.00	34.267	0.65	26.862	119.8	0.727
258	8.42	34.187	1.53	2.25	45.	0.04	31.1	145.3	500	6.29	34.309	0.34	26.991	107.5	0.847
313	7.96	34.227	1.22	2.40	51.	0.05	33.2	135.7							
383	7.16	34.257	0.74	2.57	62.	0.00	36.4	122.5							
454	6.57	34.293	0.45	2.76	71.	0.07	38.5	112.2							
532	6.14	34.315	0.31	2.91	80.	0.04	39.7	105.2							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 87040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 40.0N	118 58.0W	4/11/78	0812 GMT	851M	210	5KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.02	33.282	5.88	0.43	3.	0.03	0.0	349.7	0	16.02	33.282	5.88	24.445	349.7	0.000
10	15.65	33.274	5.98	0.42	3.	0.02	0.0	342.4	10	15.65	33.274	5.98	24.521	342.4	0.035
30	14.65	33.290	6.14	0.48	4.	0.01	0.0	320.4	20	15.15	33.283	6.06	24.637	331.4	0.068
39	12.86	33.354	5.76	0.62	7.	0.22	4.0	280.8	30	14.65	33.290	6.14	24.752	320.4	0.101
49	12.44	33.381	5.52	0.68	8.	0.09	5.7	271.0	50	12.35	33.391	5.45	25.295	268.7	0.160
63	11.17	33.522	4.43	1.09	13.	0.12	13.1	238.1	75	10.92	33.622	4.03	25.737	226.6	0.222
77	10.91	33.634	3.99	1.23	16.	0.06	15.7	225.4	100	10.26	33.780	3.46	25.975	204.0	0.277
96	10.36	33.755	3.54	1.37	21.	0.09	18.3	207.3	125	9.71	33.918	2.99	26.176	185.0	0.326
119	9.84	33.883	3.12	1.55	25.	0.05	21.8	189.5	150	9.33	34.027	2.57	26.323	170.9	0.371
138	9.47	33.983	2.72	1.73	31.	0.05	24.0	176.2	200	8.66	34.159	1.89	26.534	151.0	0.453
166	9.17	34.071	2.39	1.97	34.	0.06	26.2	165.1	250	8.31	34.194	1.54	26.616	143.2	0.529
193	8.74	34.149	1.96	2.15	39.	0.00	28.8	152.8	300	7.86	34.216	1.21	26.699	135.3	0.601
221	8.48	34.174	1.72	2.28	43.	0.03	28.6	147.1	400	6.98	34.270	0.66	26.867	119.3	0.734
258	8.26	34.197	1.50	2.38	45.	0.05	31.1	142.2	500	6.24	34.315	0.40	27.002	106.5	0.853
314	7.72	34.220	1.12	2.55	53.	0.04	33.8	132.9							
384	7.12	34.260	0.73	2.74	63.	0.01	36.1	121.8							
454	6.55	34.297	0.48	2.81	73.	0.14	36.1	111.7							
530	6.06	34.322	0.38	2.95	82.	0.05	38.6	103.7							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 87045

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 30.0N	119 19.0W	4/11/78	1246 GMT	1664M	280	12KT	2	300 4 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.20	33.286	4.90U	0.34	4.	0.03	0.1	332.0	0	15.20	33.286	6.08	24.630	332.0	0.000
11	15.09	33.293	5.38U	0.34	3.	0.06	0.0	329.2	10	15.10	33.294	6.11	24.656	329.5	0.033
30	13.08	33.399	5.06U	0.55	8.	0.15	3.8	281.6	20	14.33	33.326	6.14	24.845	311.5	0.065
39	11.86	33.508	4.73	0.98	12.	0.35	10.6	251.2	30	13.08	33.399	5.63	25.159	281.6	0.095
48	11.02	33.609	4.03	1.08	16.	0.06	15.3	229.1	50	10.89	33.629	4.00	25.749	225.5	0.146
62	10.36	33.708	4.07U	1.30	20.	0.10	17.4	210.8	75	10.25	33.735	3.60	25.942	207.2	0.200
77	10.25	33.736	3.57	1.37	21.	0.09	18.3	206.9	100	9.78	33.879	2.95	26.134	188.9	0.250
95	9.85	33.853	2.98	1.54	25.	0.03	21.8	191.8	125	9.46	33.998	2.77	26.280	175.0	0.296
119	9.56	33.964	2.89	1.76	29.	0.02	24.5	179.0	150	9.13	34.087	2.36	26.403	163.4	0.339
137	9.26	34.056	2.52	1.91	33.	0.02	26.2	167.6	200	8.62	34.150	1.91	26.532	151.1	0.419
165	9.00	34.103	2.22	2.02	37.	0.05	27.5	160.1	250	8.19	34.188	1.71	26.629	141.9	0.495
193	8.67	34.145	1.95	2.07	40.	0.10	28.6	152.1	300	7.76	34.226	1.23	26.722	133.1	0.566
221	8.49	34.157	1.81	2.16	43.	0.02	29.9	148.5	400	6.92	34.275	0.70	26.880	118.1	0.697
258	8.10	34.196	1.67	2.34	48.	0.02	32.0	140.0	500	6.07	34.323	0.45	27.030	103.9	0.815
314	7.66	34.232	1.08	2.44	55.	0.05	33.5	131.2							
384	7.08	34.266	0.77	2.52	64.	0.00	35.9	120.8							
455	6.40	34.303	0.49	2.72	75.	0.14	37.5	109.3							
532	5.89	34.333	0.42	2.89	85.	0.08	39.7	100.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90037

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
33 11.0N	118 22.5W	4/ 9/78	1742 GMT	1165M	130	6KT	1	270 3 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.12	33.251	5.91	0.30	1.	0.02	0.1	354.1	0	16.12	33.251	5.91	24.398	354.1	0.000
10	16.08	33.250	5.94	0.30	1.	0.02	0.0	353.3	10	16.08	33.250	5.94	24.407	353.3	0.035
29	14.56	33.271	6.27	0.32	3.	0.00	0.0	320.0	20	16.00	33.252	6.12	24.426	351.4	0.071
39	13.78	33.286	6.26	0.34	4.	0.03	0.0	303.4	30	14.48	33.275	6.27	24.776	318.1	0.104
49	12.42	33.304	5.49	0.67	7.	0.31	5.8	276.3	50	12.33	33.312	5.43	25.237	274.2	0.164
63	11.46	33.405	4.81	0.94	11.	0.12	10.7	251.8	75	10.99	33.506	4.42	25.635	236.4	0.228
77	10.93	33.521	4.37	1.15	14.	0.01	13.8	234.1	100	10.16	33.708	3.74	25.937	207.7	0.284
96	10.29	33.673	3.85	1.37	18.	0.05	18.1	212.3	125	9.61	33.867	3.20	26.153	187.1	0.334
118	9.68	33.835	3.32	1.63	25.	0.05	22.1	190.5	150	9.36	33.962	2.81	26.269	176.1	0.380
138	9.52	33.911	3.01	1.76	27.	0.02	23.7	182.3	200	8.70	34.125	2.04	26.501	154.1	0.464
165	9.13	34.020	2.55	1.97	32.	0.06	26.2	168.3	250	8.24	34.186	1.57	26.620	142.8	0.540
193	8.78	34.109	2.12	2.11	37.	0.06	28.5	156.4	300	7.84	34.218	1.23	26.705	134.7	0.612
220	8.49	34.154	1.83	2.28	42.	0.02	30.1	148.7	400	7.09	34.261	0.71	26.846	121.3	0.746
256	8.19	34.189	1.53	2.38	46.	0.00	31.4	141.8	500	6.31	34.304	0.42	26.984	108.3	0.867
311	7.75	34.222	1.16	2.55	52.	0.00	33.0	133.2							
381	7.24	34.252	0.79	2.67	60.	0.00	35.5	124.0							
454	6.65	34.284	0.52	2.81	68.	0.13	37.2	113.9							
530	6.11	34.315	0.38	2.98	77.	0.06	40.0	104.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90045

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 54.5N	118 55.5W	4/ 9/78	2338 GMT	1664M	280	15KT	0	280 2 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.26	33.296	6.11	0.33	3.	0.01	0.0	332.5	0	15.26	33.296	6.11	24.624	332.5	0.000
10	14.70	33.290	6.16	0.30	2.	0.00	0.0	321.4	10	14.70	33.290	6.16	24.741	321.4	0.033
29	14.59	33.290	6.14	0.29	2.	0.00	0.0	319.2	20	14.64	33.290	6.15	24.754	320.2	0.065
38	13.30	33.371	5.56	0.56	5.	0.20	3.5	287.9	30	14.47	33.301	6.09	24.797	316.1	0.097
48	12.11	33.335	5.13	0.86	8.	0.33	8.4	268.4	50	11.93	33.364	4.99	25.353	263.2	0.155
62	11.12	33.564	4.20	1.22	14.	0.16	14.7	234.2	75	10.66	33.655	3.85	25.810	219.7	0.216
75	10.66	33.655	3.85	1.41	17.	0.06	17.7	219.7	100	10.06	33.786	3.40	26.014	200.3	0.269
94	10.26	33.763	3.44	1.57	21.	0.04	20.1	205.1	125	9.47	33.882	3.12	26.187	183.9	0.317
117	9.56	33.842	3.28	1.75	25.	0.03	22.9	188.1	150	9.10	33.960	2.84	26.309	172.3	0.362
135	9.39	33.925	2.92	1.90	28.	0.01	24.8	179.3	200	8.45	34.066	2.37	26.494	154.7	0.446
162	8.86	33.979	2.81	2.02	32.	0.02	26.5	167.2	250	8.02	34.138	1.80	26.615	143.2	0.522
190	8.56	34.051	2.46	2.16	36.	0.05	28.2	157.4	300	7.67	34.196	1.26	26.711	134.1	0.594
218	8.26	34.086	2.20	2.25	40.	0.01	29.7	150.5	400	6.96	34.264	0.71	26.866	119.5	0.726
254	7.99	34.143	1.75	2.44	46.	0.06	31.4	142.4	500	6.24	34.311	0.40	26.999	106.8	0.846
308	7.62	34.202	1.19	2.65	53.	0.01	33.9	132.8							
377	7.12	34.251	0.81	2.84	62.	0.00	36.1	122.5							
447	6.64	34.286	0.53	2.90	67.		37.7	113.6							
523	6.06	34.320	0.36	3.05	79.		39.7	103.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90053

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 39.0N	119 29.0W	4/ 8/78	1412 GMT	1202M	310	28KT	1	310 8 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.05	33.206	5.90	0.48	3.		0.1	334.8	0	15.05	33.206	5.90	24.601	334.8	0.000
11	15.05	33.203	5.92	0.46	3.	0.02	0.1	335.0	10	15.05	33.205	5.92	24.599	335.0	0.034
29	15.06	33.206	5.89	0.44	3.	0.02	0.1	335.0	20	15.06	33.207	5.91	24.599	335.0	0.067
53	14.88	33.190	5.96	0.45	3.	0.00	0.1	332.4	30	15.05	33.205	5.89	24.600	334.8	0.101
62	13.37	33.116	5.95	0.51	4.	0.06	1.4	307.9	50	14.90	33.194	5.95	24.622	332.8	0.168
72	12.89	33.126	5.85	0.62	5.	0.04	2.3	298.1	75	12.63	33.139	5.78	25.045	292.5	0.246
86	11.62	33.202	5.46	0.84	8.	0.00	6.6	269.5	100	10.70	33.316	4.97	25.540	245.4	0.314
100	10.70	33.316	4.97	1.16	12.	0.00	12.1	245.4	125	9.83	33.672	3.97	25.964	205.0	0.371
123	9.87	33.651	4.03	1.54	20.	0.05	19.0	207.1	150	9.49	33.837	3.45	26.149	187.5	0.421
142	9.58	33.794	3.57	1.71	24.	0.01	21.7	191.9	200	8.73	34.006	2.87	26.403	163.4	0.510
165	9.32	33.896	3.29	1.87	27.	0.05	23.2	180.4	250	8.07	34.122	2.10	26.595	145.2	0.589
193	8.83	33.982	2.99	2.01	32.	0.06	25.5	166.5	300	7.54	34.166	1.58	26.707	134.5	0.661
221	8.46	34.065	2.50	2.23	38.	0.00	28.3	154.9	400	6.83	34.221	0.94	26.849	121.0	0.794
258	7.97	34.132	2.01	2.44	46.	0.00	31.1	142.9	500	6.14	34.295	0.52	26.999	106.8	0.915
314	7.42	34.171	1.46	2.62	54.	0.00	33.1	132.4							
384	6.94	34.208	1.03	2.79	61.	0.00	35.4	123.3							
455	6.45	34.262	0.66	2.91	70.	0.07	37.0	113.0							
530	5.93	34.314	0.46	3.11	80.	0.00	40.4	102.8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 25.0N	119 57.5W	4/ 8/78	0815 GMT	901M	320	29KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	15.25	33.048	5.87	0.38	3.	0.00	0.1	350.5
10	15.25	33.048	5.94	0.38	3.	0.02	0.0	350.5
29	15.27	33.050	5.88	0.36	3.	0.00	0.1	350.7
57	14.72	33.082	5.97	0.37	3.	0.03	0.0	337.1
66	13.23	33.080	6.01	0.41	4.	0.08	0.9	307.9
80	11.41	33.040	5.74	0.67	6.	0.08	4.9	277.8
94	10.60	33.186	5.28	0.90	10.	0.07	9.6	253.3
108	10.00	33.277	5.01	1.01	13.	0.06	12.2	236.9
132	9.50	33.545	4.28	1.31	19.	0.09	17.7	209.2
150	9.37	33.717	3.80	1.52	22.	0.01	20.8	194.4
179	8.95	33.905	3.16	1.75	28.	0.01	24.3	174.1
207	8.25	33.999	2.89	1.87	34.	0.05	26.6	156.8
235	7.85	34.068	2.28	2.11	42.	0.00	29.9	146.0
280	7.57	34.141	1.62	2.34	50.	0.00	31.8	136.7
331	7.15	34.192	1.08	2.54	57.	0.00	34.7	127.3
411	6.67	34.239	0.73	2.71	64.	0.00	37.0	117.5
491	6.17	34.268	0.50	2.78	72.	0.05	37.7	109.1
572	5.78	34.313	0.34	2.90	80.		39.6	101.1

Z	T	S	O2	SIGT	DT	DD
0	15.25	33.048	5.87	24.436	350.5	0.000
10	15.25	33.048	5.94	24.436	350.5	0.035
20	15.26	33.051	5.92	24.435	350.6	0.070
30	15.25	33.053	5.88	24.439	350.3	0.105
50	14.86	33.076	5.94	24.541	340.5	0.175
75	11.97	33.048	5.87	25.101	287.2	0.253
100	10.32	33.227	5.16	25.536	245.8	0.320
125	9.59	33.464	4.51	25.842	216.7	0.379
150	9.37	33.717	3.80	26.077	194.4	0.431
200	8.42	33.982	2.96	26.431	160.7	0.521
250	7.74	34.097	2.03	26.625	142.3	0.599
300	7.41	34.165	1.38	26.725	132.8	0.670
400	6.73	34.235	0.76	26.874	118.6	0.801
500	6.12	34.273	0.48	26.985	108.2	0.921

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 04.5N	120 38.3W	4/ 8/78	0153 GMT	3546M	340	25KT	1	330 10 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
2	15.65	33.130	5.85	0.26	4.	0.01	0.0	352.9
11	15.65	33.126	5.88	0.27	3.	0.00	0.0	353.2
30	15.68	33.122	5.89	0.26	3.	0.00	0.0	354.1
53	14.19	33.158	6.11	0.26	3.	0.01	0.0	320.9
62	12.93	33.165	6.00	0.40	5.	0.06	2.1	296.0
71	11.83	33.179	5.66	0.64	7.	0.16	5.9	274.9
85	11.08	33.265	5.20	0.90	10.	0.10	10.1	255.6
99	10.44	33.331	4.96	1.07	12.	0.06	12.8	240.0
122	9.74	33.533	4.38	1.34	18.	0.05	17.8	213.8
141	9.47	33.709	3.82	1.54	22.	0.09	21.5	196.5
164	9.10	33.872	3.30	1.73	27.	0.03	24.7	178.8
192	8.73	33.964	2.90	1.93	32.	0.03	27.3	166.4
219	8.35	34.022	2.63	2.05	37.	0.03	29.0	156.5
256	7.78	34.068	2.28	2.20	43.	0.00	31.3	145.0
312	7.20	34.119	1.56	2.51	54.	0.01	35.3	133.4
382	6.76	34.189	0.98	2.72	63.	0.01	38.0	122.4
451	6.26	34.265	0.50	2.87	73.	0.08	40.0	110.4
527	5.85	34.300	0.36	3.03	81.	0.03	42.0	102.9

Z	T	S	O2	SIGT	DT	DD
0	15.65	33.130	5.85	24.411	352.9	0.000
10	15.65	33.127	5.88	24.409	353.1	0.035
20	15.66	33.124	5.88	24.404	353.5	0.071
30	15.68	33.122	5.89	24.398	354.1	0.106
50	14.52	33.155	6.09	24.674	327.8	0.175
75	11.55	33.203	5.51	25.299	268.4	0.249
100	10.40	33.340	4.94	25.609	238.8	0.313
125	9.69	33.563	4.29	25.903	210.9	0.370
150	9.32	33.782	3.60	26.134	189.0	0.421
200	8.62	33.985	2.81	26.404	163.3	0.510
250	7.87	34.063	2.34	26.579	146.7	0.590
300	7.30	34.110	1.71	26.697	135.5	0.663
400	6.63	34.211	0.83	26.870	119.1	0.795
500	5.98	34.294	0.41	27.019	104.9	0.913

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90080

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 44.5N	121 19.5W	4/ 7/78	1937 GMT	3546M	290	18KT	1	300 9 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	15.08	33.024	5.92	0.44	3.	0.03	0.1	348.7
10	15.08	33.022	5.98	0.45	3.	0.01	0.0	348.9
29	15.09	33.027	5.98	0.44	3.	0.00	0.1	348.7
53	14.97	33.026	6.00	0.42	3.	0.00	0.1	346.3
62	14.23	32.977	6.08	0.44	3.	0.00	0.1	334.9
71	12.99	33.008	6.16	0.49	4.	0.03	0.0	308.7
85	11.70	33.039	5.89	0.68	6.	0.05	3.4	283.0
99	10.78	33.136	5.38	1.03	10.	0.03	9.5	260.0
123	9.87	33.387	4.72	1.36	16.	0.01	16.2	226.7
142	9.52	33.587	4.21	1.58	20.	0.00	19.7	206.4
165	9.22	33.833	3.49	1.94	26.	0.11	23.4	183.5
192	8.89	33.921	3.24	1.96	30.	0.08	25.3	172.0
221	8.47	34.021	2.72	2.20	36.	0.00	28.5	158.3
258	8.03	34.064	2.27	2.41	42.	0.00	31.3	148.8
314	7.07	34.063	1.84	2.62	53.	0.00	34.5	135.8
384	6.52	34.131	1.12	2.90	64.	0.01	38.3	123.7
454	6.08	34.185	0.75	2.98	72.	0.04	40.5	114.2
531	5.67	34.260	0.47	3.30	82.	0.01	43.2	103.7

Z	T	S	O2	SIGT	DT	DD
0	15.08	33.024	5.92	24.455	348.7	0.000
10	15.08	33.022	5.98	24.453	348.9	0.035
20	15.09	33.025	5.98	24.453	348.8	0.070
30	15.09	33.027	5.98	24.455	348.7	0.105
50	14.99	33.026	6.00	24.476	346.7	0.175
75	12.56	33.017	6.12	24.964	300.2	0.256
100	10.73	33.148	5.35	25.403	258.5	0.326
125	9.82	33.410	4.67	25.761	224.4	0.387
150	9.41	33.683	3.94	26.043	197.6	0.440
200	8.77	33.952	3.10	26.354	168.0	0.534
250	8.13	34.061	2.35	26.539	150.5	0.615
300	7.30	34.065	1.94	26.661	138.8	0.690
400	6.41	34.144	1.02	26.845	121.4	0.825
500	5.83	34.229	0.57	26.987	108.0	0.946

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 22.3N	122 01.4W	4/ 7/78	1235 GMT	3926M	300	23KT	1	300 7 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	15.10	32.924	5.91	0.31	3.	0.00	0.1	356.4	0	15.10	32.924	5.91	24.374	356.4	0.000
11	15.09	32.924	5.89	0.32	3.	0.05	0.0	356.2	10	15.09	32.924	5.89	24.376	356.2	0.036
31	15.11	32.919	5.92	0.31	3.	0.03	0.0	357.0	20	15.10	32.923	5.90	24.373	356.5	0.071
40	15.08	32.918	5.92	0.32	3.	0.03	0.0	356.5	30	15.11	32.920	5.92	24.369	356.9	0.107
49	14.33	32.901	6.05	0.33	3.	0.02	0.0	342.5	50	14.27	32.910	6.05	24.537	340.8	0.177
64	13.63	33.028	6.11	0.39	3.	0.01	0.0	319.4	75	13.19	33.089	6.02	24.896	306.7	0.258
78	13.02	33.096	5.97	0.45	4.	0.16	1.4	302.8	100	10.37	33.111	5.40	25.437	255.2	0.329
96	10.68	33.090	5.47	0.82	9.	0.04	7.9	261.8	125	9.40	33.301	5.08	25.745	225.9	0.390
120	9.48	33.253	5.14	1.09	14.	0.11	13.3	230.5	150	9.17	33.582	4.54	26.003	201.4	0.444
138	9.31	33.431	4.87	1.29	17.	0.05	15.9	214.7	200	8.68	33.991	2.87	26.399	163.8	0.537
166	8.98	33.770	3.99	1.63	24.	0.05	21.8	184.5	250	7.94	34.089	2.17	26.588	145.8	0.616
193	8.79	33.966	2.96	1.98	32.	0.07	26.6	167.1	300	7.48	34.154	1.55	26.707	134.6	0.689
220	8.35	34.033	2.71	2.11	37.	0.04	29.2	155.7	400	6.61	34.205	0.86	26.866	119.4	0.821
258	7.85	34.100	2.02	2.41	45.	0.02	31.9	143.6	500	5.80	34.251	0.56	27.007	106.0	0.940
313	7.38	34.165	1.44	2.65	54.	0.01	35.4	132.3							
383	6.78	34.201	0.94	2.83	64.	0.00	38.6	121.8							
455	6.11	34.220	0.68	2.94	74.	0.07	40.3	112.0							
532	5.63	34.280	0.49	3.11	83.		42.3	101.8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 02.0N	122 42.2W	4/ 7/78	0546 GMT	3738M	330	20KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
3	15.44	32.947	5.84	0.39	4.	0.00	0.3	361.8	0	15.44	32.947	5.84	24.317	361.8	0.000
12	15.45	32.945	5.85	0.39	2.	0.02	0.2	362.2	10	15.45	32.945	5.85	24.313	362.2	0.036
31	15.46	32.947	5.88	0.38	2.	0.00	0.2	362.3	20	15.46	32.946	5.86	24.312	362.3	0.072
41	15.46	32.946	5.90	0.37	2.	0.00	0.2	362.3	30	15.46	32.947	5.88	24.313	362.3	0.109
50	15.32	32.927	5.91	0.37	2.	0.00	0.2	360.8	50	15.32	32.927	5.91	24.328	360.8	0.181
64	14.46	32.885	6.01	0.40	3.	0.00	0.2	346.3	75	14.15	32.978	6.04	24.616	333.4	0.269
77	14.09	32.995	6.04	0.40	4.	0.00	0.2	330.8	100	12.54	33.085	6.01	25.021	294.8	0.348
97	12.75	33.088	6.03	0.40	5.	0.00	0.3	298.3	125	10.76	33.093	5.66	25.355	263.0	0.418
120	11.13	33.065	5.75	0.57	8.	0.01	3.7	271.2	150	9.55	33.336	5.01	25.748	225.7	0.480
139	9.87	33.206	5.34	0.90	13.	0.01	9.6	240.1	200	8.94	33.826	3.63	26.229	179.8	0.583
167	9.33	33.537	4.47	1.33	21.	0.02	17.3	207.1	250	8.26	34.023	2.73	26.489	155.2	0.669
194	8.97	33.777	3.82	1.58	25.	0.03	22.0	183.9	300	7.42	34.049	2.26	26.633	141.5	0.745
222	8.80	33.963	3.00	1.82	31.	0.05	24.8	167.5	400	6.60	34.160	1.08	26.832	122.6	0.882
259	8.06	34.027	2.69	2.05	38.	0.02	28.8	152.0	500	5.93	34.260	0.50	26.998	106.9	1.003
315	7.23	34.053	2.09	2.33	49.	0.01	33.0	138.7							
385	6.73	34.144	1.21	2.62	60.	0.02	36.9	125.4							
456	6.17	34.214	0.70	2.76	71.		37.9	113.1							
532	5.81	34.292	0.41	3.00	80.	0.05	40.9	103.0							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 45.1N	123 19.9W	4/ 6/78	2330 GMT	3738M	300	18KT	2	280 4 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.04	33.039	5.79	0.59	3.	0.00	0.0	367.9	0	16.04	33.039	5.79	24.254	367.9	0.000
10	16.04	33.037	5.83	0.57	2.	0.00	0.0	368.0	10	16.04	33.037	5.83	24.252	368.0	0.037
29	16.02	33.037	5.85	0.55	2.	0.00	0.0	367.6	20	16.03	33.037	5.84	24.255	367.8	0.074
39	15.95	33.037	5.88	0.52	2.	0.00	0.0	366.1	30	16.02	33.037	5.85	24.257	367.6	0.110
48	15.79	33.053	5.86	0.50	2.	0.00	0.0	361.5	50	15.76	33.052	5.86	24.324	361.2	0.184
62	15.59	33.026	5.88	0.49	2.	0.00	0.0	359.2	75	14.48	32.938	6.02	24.515	343.0	0.272
76	14.39	32.930	6.03	0.51	2.	0.00	0.0	341.6	100	13.13	33.002	6.06	24.842	311.9	0.354
94	13.63	32.989	6.08	0.58	3.	0.00	0.0	322.3	125	10.99	33.065	5.73	25.292	269.0	0.428
118	11.50	33.043	5.87	0.77	5.	0.04	3.6	279.2	150	9.86	33.230	5.19	25.616	238.2	0.492
136	10.33	33.111	5.47	1.05	10.	0.02	8.7	254.5	200	8.90	33.778	4.09	26.199	182.8	0.599
164	9.57	33.377	4.90	1.34	15.	0.02	13.8	222.7	250	8.20	33.986	3.27	26.469	157.1	0.686
191	9.04	33.704	4.25	1.59	22.	0.02	18.9	190.3	300	7.26	34.019	2.55	26.631	141.8	0.763
219	8.62	33.888	3.78	1.76	27.	0.01	22.2	170.4	400	6.33	34.122	1.17	26.839	122.0	0.900
256	8.11	33.994	3.17	2.09	35.	0.02	26.1	155.2	500	5.82	34.226	0.56	26.985	108.1	1.021
311	7.06	34.018	2.40	2.36	48.	0.02	30.0	139.0							
380	6.42	34.095	1.38	2.73	61.	0.02	35.0	125.1							
449	6.13	34.181	0.78	2.89	71.	0.05	36.9	115.1							
526	5.63	34.242	0.53	3.08	80.	0.04	40.1	104.6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90120

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 25.1N	123 59.9W	4/ 6/78	1740 GMT	4117M	240	19KT	1	280 4 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.43	33.055		0.38	2.	0.01	0.0	375.1	0	16.43	33.055		24.178	375.1	0.000
11	16.41	33.054		0.35	2.	0.01	0.0	374.8	10	16.41	33.056		24.181	374.8	0.038
29	16.41	33.051		0.36	2.	0.00	0.0	375.0	20	16.41	33.055		24.180	374.9	0.075
39	16.28	33.040		0.35	2.	0.00	0.0	373.0	30	16.40	33.052		24.180	374.9	0.113
48	16.10	33.039		0.34	2.	0.00	0.0	369.1	50	16.08	33.046		24.247	368.5	0.187
62	15.98	33.074		0.34	2.	0.00	0.0	364.0	75	15.66	33.087		24.373	356.5	0.278
77	15.56	33.085		0.34	3.	0.00	0.0	354.3	100	13.01	33.091		24.933	303.1	0.361
94	13.47	33.101		0.43	3.	0.00	0.0	311.0	125	11.42	33.074		25.222	275.7	0.434
118	11.92	33.058		0.60	5.	0.01	2.7	285.4	150	10.01	33.283		25.632	236.7	0.499
136	10.69	33.127		0.80	9.	0.02	7.0	259.2	200	8.97	33.789		26.196	183.1	0.606
164	9.53	33.459		1.27	17.	0.04	15.9	216.0	250	8.15	33.980		26.471	156.9	0.693
192	9.12	33.727		1.55	24.	0.02	20.7	189.8	300	7.28	34.007		26.620	142.8	0.770
220	8.58	33.903		1.79	30.	0.02	23.9	168.7	400	6.14	34.081		26.831	122.7	0.908
258	8.04	33.986		1.95	35.	0.01	25.9	154.8	500	5.46	34.182		26.995	107.2	1.028
314	7.03	34.008		2.29	52.	0.00	31.1	139.4							
384	6.27	34.066		2.66	63.	0.01	36.4	125.4							
456	5.74	34.134		2.88	75.	0.04	38.7	114.0							
531	5.28	34.216		3.08	86.	0.13	40.1	102.6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90130

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 04.1N	124 37.8W	4/ 6/78	1126 GMT	4309M	250	7KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.51	33.075	5.73	0.41	3.	0.01	0.0	375.4	0	16.51	33.075	5.73	24.174	375.4	0.000
10	16.51	33.073	5.76	0.41	2.	0.02	0.0	375.6	10	16.51	33.073	5.76	24.173	375.6	0.038
29	16.46	33.065	5.77	0.41	2.	0.00	0.0	375.1	20	16.48	33.071	5.77	24.176	375.3	0.075
40	16.36	33.058	5.84	0.41	2.	0.00	0.0	373.4	30	16.46	33.067	5.78	24.179	375.0	0.113
48	16.16	33.059	5.84	0.56	2.	0.01	0.0	369.0	50	16.12	33.061	5.85	24.251	368.1	0.187
63	15.90	33.056	5.89	0.49	2.	0.01	0.0	363.6	75	15.70	33.052	5.85	24.337	359.9	0.279
77	15.67	33.048	5.85	0.46	2.	0.01	0.0	359.3	100	13.23	33.101	6.05	24.898	306.5	0.363
96	13.57	33.101	6.08	0.47	3.	0.02	0.0	312.9	125	11.30	33.111	5.66	25.272	270.9	0.435
119	11.79	33.092	5.76	0.69	5.	0.06	3.3	280.6	150	9.93	33.264	5.15	25.630	236.8	0.500
138	10.37	33.173	5.41	0.96	9.	0.04	8.8	250.5	200	9.05	33.779	3.98	26.175	185.0	0.607
166	9.60	33.409	4.77	1.32	15.	0.04	14.9	220.8	250	8.28	33.975	3.08	26.449	159.1	0.695
194	9.13	33.733	4.12	1.56	21.	0.02	19.4	189.5	300	7.60	34.019	2.71	26.583	146.3	0.773
222	8.75	33.892	3.52	1.83	27.	0.04	23.5	172.0	400	6.14	34.058	1.55	26.812	124.5	0.914
258	8.14	33.987	2.98	2.06	34.	0.01	26.8	156.1	500	5.40	34.160	0.76	26.984	108.2	1.036
314	7.43	34.018	2.64	2.27	42.	0.01	30.0	144.0							
382	6.34	34.042	1.78	2.63	58.	0.00	35.6	128.1							
452	5.71	34.110	1.01	2.87	71.		37.8	115.4							
528	5.27	34.188	0.72	3.02	82.		40.0	104.6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 45.1N	125 19.6W	4/ 6/78	0540 GMT	4213M	280	6KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.61	33.045	5.72	0.34	3.	0.00	0.0	379.8	0	16.61	33.045	5.72	24.129	379.8	0.000
11	16.41	33.039	5.75	0.32	3.	0.00	0.0	375.9	10	16.43	33.042	5.75	24.167	376.2	0.038
30	16.30	33.040	5.76	0.30	3.	0.00	0.0	373.4	20	16.36	33.042	5.75	24.182	374.7	0.075
38	16.45	33.176	5.81	0.28	4.	0.01	0.0	366.7	30	16.30	33.040	5.76	24.196	373.4	0.113
49A	16.15	33.095	5.81	0.29	5.	0.01	0.0	366.1	50	16.09	33.088	5.81	24.280	365.4	0.187
63	15.99	33.096	5.79	0.31	5.	0.00	0.0	362.6	75	16.00	33.200	5.80	24.386	355.2	0.278
77A	15.78	33.165	5.80	0.28	2.	0.01	0.0	353.1	100	15.06	33.413	5.81	24.755	320.1	0.363
94	15.69	33.448	5.81	0.26	3.	0.01	0.0	330.5	125	12.70	33.288	5.71	25.147	282.8	0.439
118	13.01	33.262	5.79	0.47	5.	0.04	1.9	290.4	150	11.82	33.414	5.45	25.412	257.6	0.507
137	12.35	33.354	5.56	0.54	6.	0.03	3.6	271.4	200	9.90	33.620	4.87	25.914	209.9	0.626
164	11.26	33.473	5.33	0.64	8.	0.01	6.1	243.3	250	8.73	33.982	4.21	26.385	165.1	0.722
193	10.31	33.590	5.01	0.90	12.	0.02	10.7	218.7	300	7.86	33.991	3.78	26.524	151.9	0.803
221	9.26	33.890	4.47	1.23	20.	0.05	16.9	179.9	400	6.55	34.021	2.03	26.730	132.3	0.951
259	8.60	33.974	4.15	1.56	27.	0.01	21.1	163.7	500	5.62	34.129	0.91	26.933	113.1	1.079
315	7.60	33.988	3.61	1.88	37.	0.03	24.9	148.5							
385	6.73	34.010	2.25	2.25	53.	0.00	31.5	135.4							
455	5.95	34.070	1.35	2.66	68.	0.02	36.4	121.3							
530	5.48	34.174	0.67	3.02	81.	0.07	40.7	108.0							

A) THE STANDARD DEPTH VALUES BETWEEN THESE TWO OBSERVED DEPTHS, WERE DETERMINED FROM COMPARISON WITH THE CTD ANALOG FOR THIS STATION.

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90150

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 23.0N	125 59.8W	4/ 5/78	2305 GMT	4314M	020	10KT	1	010 5 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	17,28	33,358	5,68	0,33	1.	0,01	0,3	371,9	0	17,28	33,358	5,68	24,211	371,9	0,000
10	17,04	33,348	5,70	0,30	0.	0,00	0,3	367,3	10	17,04	33,348	5,70	24,260	367,3	0,037
38	17,06	33,378	5,72	0,27	0.	0,01	0,3	365,5	20	17,05	33,361	5,71	24,266	366,7	0,074
61	17,13	33,470	5,69	0,27	0.	0,01	0,3	360,4	30	17,05	33,371	5,71	24,273	366,0	0,110
80	17,15	33,570	5,67	0,23	0.	0,00	0,2	353,6	50	17,10	33,422	5,71	24,302	363,3	0,184
94	16,62	33,593	5,71	0,22	0.	0,00	0,2	340,1	75	17,14	33,535	5,68	24,377	356,1	0,274
108	15,25	33,482	5,84	0,23	1.	0,00	0,2	318,7	100	16,07	33,551	5,77	24,637	331,3	0,361
127	13,64	33,410	5,68	0,38	2.	0,04	1,3	291,6	125	13,81	33,418	5,71	25,026	294,3	0,440
145	12,00	33,334	5,52	0,54	4.	0,02	4,5	266,5	150	11,57	33,349	5,43	25,407	258,0	0,509
169	10,32	33,466	5,03	0,84	10.	0,03	10,8	228,0	200	9,73	33,713	4,56	26,014	200,4	0,626
192	9,91	33,657	4,61	1,06	13.	0,05	14,6	207,3	250	8,53	33,945	3,87	26,386	165,0	0,719
216	9,34	33,806	4,46	1,26	18.	0,02	17,7	187,3	300	7,46	34,000	3,18	26,589	145,7	0,799
244	8,69	33,928	3,94	1,50	24.	0,07	21,7	168,5	400	6,38	34,056	1,64	26,780	127,6	0,941
277	7,86	33,989	3,59	1,71	33.	0,02	25,3	152,0	500	5,67	34,147	0,82	26,941	112,3	1,067
324	7,13	34,000	2,72	2,08	44.	0,01	30,5	141,3							
385	6,50	34,043	1,80	2,39	55.	0,00	35,3	130,0							
455	5,99	34,102	1,15	2,64	66.	0,09	37,9	119,4							
530	5,47	34,178	0,64	2,87	79.	0,10	40,0	107,6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90160

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 05.1N	126 38.8W	4/ 5/78	1630 GMT	4314M	010	10KT	1	340 6 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	17,11	33,409		0,39	0.	0,00	0,1	364,4	0	17,11	33,409		24,290	364,4	0,000
10	17,07	33,413		0,35	0.	0,00	0,1	363,2	10	17,07	33,413		24,302	363,2	0,036
39	17,06	33,408		0,34U	0.	0,00	0,1	363,3	20	17,07	33,413		24,302	363,3	0,073
62	17,04	33,408		0,35	0.	0,00	0,1	362,9	30	17,06	33,412		24,302	363,3	0,109
81	16,97	33,457		0,32	0.	0,00	0,0	357,8	50	17,05	33,410		24,303	363,1	0,182
95	15,85	33,442		0,31	0.	0,00	0,0	334,3	75	16,99	33,443		24,343	359,4	0,273
109	15,30	33,444		0,30	1.	0,00	0,0	322,6	100	15,64	33,444		24,653	329,8	0,360
129	14,01	33,463		0,32	1.	0,03	0,6	294,9	125	14,29	33,461		24,957	300,8	0,439
146	12,87	33,452		0,43	3.	0,06	2,5	273,8	150	12,66	33,454		25,283	269,8	0,511
170	11,75	33,480		0,57	5.	0,01	5,5	251,3	200	10,47	33,632		25,825	218,3	0,635
193	10,79	33,579		0,77	8.	0,01	9,4	227,5	250	8,66	33,939		26,362	167,3	0,734
216	9,75	33,756		1,10	15.	0,00	15,9	197,4	300	7,72	33,999		26,549	149,5	0,816
245	8,77	33,924		1,44	24.	0,00	22,5	170,0	400	6,37	34,070		26,792	126,5	0,959
277	8,18	33,978		1,73	31.	0,00	25,2	157,4	500	5,70	34,167		26,954	111,1	1,084
324	7,27	34,011		2,03	43.	0,00	30,3	142,3							
384	6,50	34,053		2,43	56.	0,00	35,3	129,3							
454	6,03	34,124		2,61	68.	0,08	36,7	118,2							
530	5,47	34,191		2,78	78.	0,09	39,2	106,6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 90170

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 45.1N	127 17.3W	4/ 5/78	1058 GMT	4314M	040	14KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	17,47	33,532	5,63	0,36	1.	0,00	0,1	363,6	0	17,47	33,532	5,63	24,298	363,6	0,000
9	17,44	33,530	5,63	0,34	1.	0,00	0,1	363,1	10	17,44	33,537	5,63	24,308	362,7	0,036
28	17,42	33,624	5,65	0,34	1.	0,03	0,0	355,7	20	17,43	33,537	5,64	24,347	358,9	0,072
38	17,38	33,626	5,67	0,30	1.	0,00	0,0	354,7	30	17,41	33,626	5,65	24,383	355,5	0,108
47	17,51	33,705	5,72	0,30	1.	0,00	0,0	351,9	50	17,51	33,717	5,70	24,430	351,0	0,179
61	17,50	33,760	5,62	0,27	1.	0,00	0,0	347,7	75	17,42	33,814	5,60	24,526	341,9	0,266
75	17,42	33,814	5,60	0,25	1.	0,00	0,0	341,9	100	17,50	33,882	5,59	24,559	338,8	0,352
94	17,50	33,879	5,59	0,21	1.	0,01	0,0	339,0	125	16,81	33,928	5,59	24,756	319,9	0,435
117	17,16	33,928	5,60	0,20	1.	0,02	0,0	327,7	150	15,28	33,853	5,52	25,047	292,2	0,513
136	16,20	33,907	5,58	0,20	1.	0,01	0,0	307,9	200	11,80	33,648	5,25	25,598	239,9	0,648
164	14,27	33,784	5,45	0,28	2.	0,08	1,4	276,6	250	9,68	33,843	4,69	26,123	190,0	0,758
193	12,22	33,650	5,31	0,49	5.	0,03	5,1	247,2	300	8,34	33,983	4,11	26,445	159,4	0,848
221	10,70	33,684	5,05	0,68	9.	0,10	8,5	218,2	400	6,42	34,001	2,21	26,731	132,3	0,999
258	9,46	33,888	4,58	1,04	16.	0,04	15,2	183,1	500	5,48	34,098	1,02	26,926	113,7	1,128
314	8,02	33,991	3,93	1,54	30.	0,01	23,4	154,1							
385	6,64	33,990	2,47	2,15	50.	0,00	32,2	135,7							
455	5,80	34,048	1,44	2,47	67.		36,4	121,1							
530	5,36	34,133	0,84	2,70	78.		38,1	109,7							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 90180

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 25.1N	127 57.4W	4/ 5/78	0427 GMT	4508M	030	15KT	1	020 2 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	17.42	33.532	5.66	0.31	0.	0.01	0.0	362.4	0	17.42	33.532	5.66	24.310	362.4	0.000
11A	17.39	33.537	5.66	0.24	0.	0.00	0.0	361.4	10	17.39	33.537	5.66	24.320	361.6	0.036
41A	17.70	33.897	5.67	0.19	0.	0.00	0.0	342.3	20	17.30	33.540	5.66	24.345	359.1	0.072
65	17.69	33.925	5.61	0.27	1.	0.00	0.0	340.0	30	17.46	33.700	5.67	24.428	351.3	0.108
82	17.74	33.964	5.55		5.	0.05	0.0	338.3	50	17.70	33.909	5.65	24.531	341.4	0.177
97	17.71	33.971	5.60	0.24	1.	0.01	0.0	337.1	75	17.72	33.950	5.57	24.556	339.0	0.263
111	17.62	33.972	5.54	0.20	0.	0.01	0.0	335.0	100	17.69	33.972	5.59	24.581	336.7	0.348
130	16.46	33.931	5.54	0.19	1.	0.01	0.0	311.9	125	16.81	33.943	5.54	24.767	318.9	0.431
150	15.51	33.915	5.43	0.32	1.	0.02	0.8	292.5	150	15.51	33.915	5.43	25.044	292.5	0.508
172	13.86	33.795	5.33	0.36	3.	0.02	2.3	267.6	200	11.57	33.719	5.13	25.695	230.7	0.641
196	11.84	33.712	5.17	0.56	5.	0.00	6.1	235.8	250	9.57	33.915	4.57	26.198	182.8	0.747
220	10.49	33.782	4.90	0.84	10.	0.00	11.0	207.5	300	8.28	34.004	4.00	26.470	157.0	0.835
248	9.63	33.907	4.60	1.15	16.	0.00	15.8	184.4	400	6.67	34.007	2.47	26.703	134.9	0.986
280	8.69	33.989	4.14	1.45	24.	0.01	20.2	163.9	500	5.76	34.090	1.21	26.885	117.6	1.119
326	7.85	33.999	3.80	1.71	32.	0.01	23.4	151.1							
385	6.87	33.997	2.74	2.14	46.	0.02	29.4	138.1							
456	6.09	34.053	1.61	2.60	62.	0.01	35.5	124.2							
532	5.60	34.114	1.06	3.00	73.	0.04	39.9	113.9							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 90190

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 05.1N	128 36.5W	4/ 4/78	2223 GMT	4698M	350	10KT	1	360 4 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	18.14	33.854	5.58	0.25	1.	0.00	0.1	355.6	0	18.14	33.854	5.58	24.382	355.6	0.000
10	17.82	33.840	5.59	0.20	1.	0.04	0.1	349.2	10	17.82	33.840	5.59	24.449	349.2	0.035
38	17.86	33.880	5.60	0.16	1.	0.04	0.1	347.2	20	17.83	33.856	5.59	24.457	348.5	0.070
60	18.16	34.057	5.59	0.13	1.	0.02	0.1	341.3	30	17.85	33.870	5.60	24.464	347.8	0.105
80	18.26	34.115	5.52	0.11	1.	0.02	0.0	339.5	50	18.02	33.977	5.59	24.504	344.0	0.175
94	18.26	34.153	5.49	0.13	1.	0.02	0.0	336.7	75	18.25	34.107	5.54	24.547	339.9	0.261
108	18.26	34.210	5.48	0.08	1.	0.02	0.0	332.6	100	18.26	34.175	5.49	24.596	335.2	0.346
127	17.69	34.161	5.51	0.05	1.	0.02	0.0	322.8	125	17.77	34.170	5.51	24.713	324.1	0.429
145	17.03	34.135	5.50	0.08	1.	0.01	0.0	309.7	150	16.82	34.119	5.49	24.900	306.2	0.509
169	15.74	34.010	5.43	0.12	2.	0.06	0.6	290.5	200	12.78	33.778	5.22	25.509	248.3	0.650
192	13.58	33.811	5.22	0.32	3.	0.04	3.2	261.0	250	9.98	33.812	4.82	26.048	197.1	0.764
216	11.38	33.752	5.20	0.58	7.	0.03	7.1	224.8	300	8.80	33.986	4.17	26.377	165.8	0.857
244	10.18	33.783	4.88	0.87	12.	0.02	12.6	202.3	400	7.01	34.049	2.24	26.690	136.1	1.014
277	9.26	33.943	4.50	1.22	19.	0.05	17.4	175.9	500	6.18	34.161	1.05	26.888	117.3	1.147
323	8.39	33.999	3.79	1.57	29.	0.01	23.1	158.8							
384	7.22	34.041	2.45	2.14	46.	0.01	30.5	139.4							
455	6.48	34.088	1.64	2.40	57.		35.5	126.4							
530	6.06	34.226	0.62	2.80	71.		37.9	110.9							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 90200

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 45.1N	129 15.5W	4/ 4/78	1627 GMT	4218M	290	7KT	1	340 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	18.15	34.068	5.19U	0.35	0.		0.1	340.3	0	18.15	34.068	5.60	24.542	340.3	0.000
10	18.14	34.061	5.43	0.32	0.		0.1	340.6	10	18.14	34.061	5.43	24.540	340.6	0.034
39	18.15	34.065	5.51	0.29	0.		0.1	340.5	20	18.15	34.064	5.46	24.540	340.6	0.068
63	18.08	34.059	5.50	0.29	0.		0.1	339.3	30	18.15	34.066	5.49	24.540	340.5	0.102
81	18.19	34.140	5.25	0.27	0.		0.1	336.0	50	18.11	34.056	5.51	24.543	340.3	0.171
96	18.39	34.294	5.43	0.24	0.		0.1	329.5	75	18.14	34.104	5.32	24.572	337.5	0.256
110	18.29	34.299	5.44	0.21	0.		0.1	326.8	100	18.36	34.294	5.43	24.662	328.9	0.340
128	17.47	34.211	5.28	0.21	0.		0.1	314.1	125	17.63	34.230	5.30	24.791	316.6	0.421
147	16.59	34.135	5.40	0.20	1.		0.1	299.9	150	16.24	34.094	5.38	25.016	295.2	0.499
170	13.84	33.859	5.17	0.30	3.		2.2	262.5	200	12.17	33.821	4.79	25.661	233.9	0.634
193	12.70	33.850	4.98	0.52	4.		5.5	241.3	250	9.74	33.915	3.85	26.169	185.6	0.741
217	10.94	33.772	4.30	0.89	9.		11.5	215.7	300	8.35	34.006	3.23	26.462	157.8	0.829
244	9.94	33.892	3.97	1.11	15.		14.7	190.4	400	6.65	34.017	2.28	26.714	133.9	0.981
277	8.92	33.986	3.35	1.39	23.		19.2	167.6	500	5.50	34.097	1.16	26.923	114.0	1.111
323	7.86	34.005	3.18	1.86	34.		25.9	150.8							
384	6.88	34.010	2.50	2.29	48.		28.4	137.3							
455	5.95	34.052	1.58	2.49	65.		34.3	122.6							
531	5.25	34.134	0.95	2.74	79.		36.7	108.4							

A) THE STANDARD DEPTH VALUES BETWEEN THESE TWO OBSERVED DEPTHS, WERE DETERMINED FROM COMPARISON WITH THE CTD ANALOG FOR THIS STATION.

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93029

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 52.6N	117 26.6W	3/30/78	0833 GMT	593M	160	9KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.96	33.085	5.93	0.14	5.	0.00	0.0	384.7	0	16.96	33.085	5.93	24.078	384.7	0.000
10	16.63	33.078	6.00	0.11	5.	0.01	0.0	377.9	10	16.63	33.078	6.00	24.149	377.9	0.038
29	14.18	33.289	5.61	0.21	6.	0.15	0.5	311.0	20	15.43	33.176	5.86	24.493	345.0	0.074
43	13.00	33.361	5.14	0.47	9.	0.11	6.4	282.9	30	14.09	33.297	5.58	24.873	308.9	0.107
53	11.94	33.434	4.75	0.68	12.	0.14	9.9	258.1	50	12.24	33.412	4.87	25.331	265.3	0.165
67	11.33	33.551	4.28	0.90	15.	0.08	13.3	238.7	75	11.13	33.600	4.07	25.683	231.8	0.227
81	11.02	33.630	3.93	0.99	17.	0.06	15.6	227.6	100	10.61	33.750	3.48	25.892	211.9	0.283
95	10.74	33.707	3.62	1.19	20.	0.06	17.4	217.2	125	9.98	33.935	2.87	26.145	187.9	0.334
119	10.11	33.904	2.97	1.50	25.	0.03	21.8	192.2	150	9.66	34.050	2.50	26.289	174.2	0.380
137	9.76	33.984	2.70	1.66	28.	0.05	23.7	180.7	200	8.98	34.139	2.04	26.468	157.2	0.464
165	9.55	34.110	2.29	1.83	32.	0.02	25.6	168.1	250	8.51	34.202	1.61	26.590	145.6	0.542
193	9.03	34.127	2.10	1.82	37.	0.03	27.3	158.8	300	7.99	34.226	1.22	26.688	136.3	0.615
221	8.85	34.172	1.86	2.06	39.	0.02	28.5	152.7	400	7.05	34.263	0.70	26.852	120.7	0.749
259	8.40	34.207	1.54	2.27	44.	0.01	30.3	143.5	500	6.32	34.310	0.31	26.988	107.8	0.870
315	7.85	34.229	1.12	2.45	51.	0.04	32.6	134.0							
366	7.36	34.248	0.84	2.58	57.	0.04	34.6	125.9							
423	6.86	34.273	0.61	2.65	65.	0.02	36.4	117.4							
481	6.44	34.302	0.38	2.86	72.		37.9	109.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 50.5N	117 31.0W	3/30/78	1112 GMT	815M	130	14KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.81	33.088	5.89		2.	0.00	0.0	381.1	0	16.81	33.088	5.89	24.115	381.1	0.000
10	16.14	33.107	6.01		2.	0.00	0.0	365.0	10	16.14	33.107	6.01	24.283	365.0	0.037
29	15.10	33.233	5.96		2.	0.01	0.0	333.8	20	15.60	33.173	5.98	24.454	348.8	0.073
39	14.40	33.272	5.50		3.	0.26	0.4	316.7	30	15.04	33.239	5.92	24.627	332.3	0.107
48	13.50	33.324	5.30		5.	0.20	4.8	295.2	50	13.33	33.333	5.26	25.056	291.4	0.170
62	12.41	33.387 A	4.93		8.	0.21	8.0	270.0	75	11.43	33.534	4.26	25.578	241.8	0.237
77	11.29	33.557	4.15		13.	0.05	14.0	237.6	100	10.46	33.756	3.50	25.923	208.9	0.294
95	10.53	33.716	3.65		19.	0.02	18.2	213.0	125	10.15	33.922	2.95	26.105	191.6	0.344
119	10.28	33.883	3.02		24.	0.02	21.2	196.6	150	9.69	34.053	2.59	26.285	174.5	0.391
137	9.88	33.990	2.82		28.	0.01	23.5	182.2	200	9.26	34.178	1.97	26.454	158.5	0.476
165	9.53	34.107	2.33		32.	0.02	25.8	168.0	250	8.76	34.231	1.55	26.574	147.1	0.554
193	9.32	34.163	2.05		34.	0.01	27.1	160.6	300	8.29	34.251	1.22	26.664	138.6	0.628
220	9.06	34.211	1.76		38.	0.01	28.4	153.0	400	7.18	34.254	0.79	26.827	123.1	0.765
257	8.69	34.231	1.51		41.	0.00	29.9	146.0	500	6.52	34.291	0.50	26.946	111.8	0.889
312	8.17	34.254	1.15		49.	0.01	31.9	136.7							
383	7.32	34.248	0.84		58.	0.00	35.0	125.3							
455	6.80	34.274	0.63		63.	0.00	36.8	116.6							
531	6.35	34.301	0.41		75.	0.00	38.4	108.9							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 30.0N	118 11.5W	3/30/78	1954 GMT	1757M	110	16KT	2	140 3 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.94	33.288	5.87	0.63	3.	0.01	0.0	347.5	0	15.94	33.288	5.87	24.467	347.5	0.000
10	15.94	33.287	5.89	0.53	2.	0.00	0.0	347.6	10	15.94	33.287	5.89	24.466	347.6	0.035
29	14.61	33.279	6.02	0.43	2.	0.01	0.0	320.4	20	15.38	33.281	5.96	24.585	336.3	0.069
38	13.82	33.295	5.85	0.55	3.	0.21	0.9	303.5	30	14.55	33.282	6.02	24.766	319.1	0.102
47	12.11	33.342	5.17	0.86	10.	0.26	6.5	267.9	50	11.83	33.368	5.02	25.375	261.1	0.160
61	11.25	33.448	4.66	1.08	14.	0.07	12.0	245.0	75	10.57	33.526	4.34	25.726	227.7	0.222
75	10.57	33.526	4.34	1.46	17.	0.05	15.4	227.7	100	10.12	33.709	3.75	25.944	207.0	0.276
93	10.21	33.653	3.94	1.44	20.	0.03	18.0	212.4	125	9.82	33.877	3.13	26.126	189.7	0.326
116	9.95	33.825	3.32	1.73	25.	0.01	21.4	195.5	150	9.46	34.007	2.65	26.287	174.3	0.373
135	9.67	33.926	2.94		31.	0.12		183.6	200	8.81	34.119	2.15	26.479	156.1	0.457
162	9.29	34.058	2.46	1.75	34.	0.03	26.4	167.9	250	8.32	34.175	1.65	26.600	144.7	0.534
190	8.92	34.104	2.22	1.87	39.	0.01	28.0	158.8	300	7.89	34.219	1.25	26.698	135.4	0.607
217	8.63	34.138	2.01	2.42	41.	0.01	29.5	152.0	400	7.10	34.265	0.73	26.847	121.2	0.741
254	8.28	34.178	1.61	2.73	46.	0.00	31.1	143.9	500	6.31	34.300	0.37	26.981	108.5	0.862
309	7.82	34.225	1.19	2.48	53.	0.00	33.4	133.9							
379	7.31	34.254	0.84	2.97	60.	0.00	35.5	124.8							
450	6.62	34.286	0.508	2.83	71.	0.00	38.1	113.4							
527	6.20	34.302	0.34	2.98	79.	0.01	39.3	106.9							

A) ALTERNATE VALUE, 33.42 PPT.
B) NO OXYGEN SAMPLE WAS DRAWN FOR THIS LEVEL. THE VALUE LISTED, 6000 TO .05 ML/L, IS THAT SUGGESTED BY COMPARISON OF THE DISCRETE DATA FOR THIS STATION WITH THE CTDO RECORDING.

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 10.0N	118 53.0W	3/31/78	0631 GMT	1387M	150	22KT	5	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	15.84	33.145	5.80	0.42	3.	0.06	0.1	355.8	0	15.84	33.145	5.80	24.380	355.8	0.000
11	15.81	33.144	5.81	0.31	3.	0.06	0.1	355.3	10	15.81	33.146	5.81	24.385	355.4	0.036
30	15.68	33.172	5.85	0.20	3.	0.01	0.1	350.5	20	15.75	33.160	5.83	24.410	353.0	0.071
41	14.98	33.201	5.95	0.25	3.	0.00	0.1	333.7	30	15.68	33.172	5.85	24.437	350.5	0.106
50	14.85	33.216	5.96	0.25	2.	0.01	0.1	329.9	50	14.85	33.216	5.96	24.652	329.9	0.175
64	13.94	33.248	5.73	0.35	3.	0.36	1.4	309.3	75	13.07	33.277	5.49	25.066	290.5	0.252
78	12.83	33.282	5.42	0.53	6.	0.31	5.1	285.5	100	11.52	33.335	5.00	25.407	258.0	0.322
97	11.70	33.311	5.10	0.60	9.	0.11	8.9	262.9	125	10.34	33.593	4.13	25.817	219.1	0.382
120	10.48	33.534	4.29	0.97	16.	0.04	15.6	225.6	150	9.70	33.829	3.41	26.109	191.3	0.434
139	10.02	33.742	3.71	1.16	20.	0.02	19.4	202.8	200	8.87	34.037	2.57	26.406	163.1	0.524
167	9.25	33.927	3.02	1.71	28.	0.00	24.1	177.0	250	8.15	34.086	2.30	26.554	149.0	0.604
195	8.94	34.027	2.60	1.82	33.	0.00	26.3	164.9	300	7.86	34.161	1.52	26.672	137.8	0.678
223	8.52	34.063	2.48	2.04	37.	0.01	28.0	155.9	400	7.05	34.259	0.75	26.849	121.1	0.813
260	8.04	34.094	2.20	2.21	43.	0.01	30.0	146.7	500	6.33	34.294	0.46	26.974	109.3	0.935
317	7.81	34.217	1.22	2.45	52.	0.01	33.3	134.4							
386	7.16	34.253	0.80	2.79	61.	0.03	36.1	122.8							
456	6.66	34.275	0.59	2.98	69.	0.02	38.0	114.7							
533	6.08	34.308	0.36	3.11	78.	0.00	40.3	105.0							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 50.4N	119 33.7W	3/31/78	1552 GMT	1856M	180	17KT	1	220 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.92	33.153	5.77	0.37	2.	0.00	0.0	356.9	0	15.92	33.153	5.77	24.368	356.9	0.000
10	15.90	33.152	5.76	0.31	2.	0.00	0.0	356.6	10	15.90	33.152	5.76	24.372	356.6	0.036
29	15.91	33.158	5.81	0.30	2.	0.00	0.0	356.4	20	15.91	33.157	5.78	24.373	356.5	0.071
38	15.54	33.171	5.86	0.27	2.	0.00	0.0	347.6	30	15.87	33.162	5.82	24.385	355.4	0.107
48	15.45	33.175	5.88	0.24	2.	0.00	0.0	345.4	50	15.39	33.173	5.88	24.501	344.3	0.177
62	15.03	33.168	5.87	0.26	2.	0.00	0.0	337.1	75	13.35	33.128	5.91	24.894	306.9	0.259
76	13.21	33.124	5.91	0.33	3.	0.05	0.9	304.3	100	11.48	33.181	5.47	25.294	268.8	0.332
95	11.82	33.144	5.61	0.51	6.	0.07	5.5	277.3	125	10.49	33.402	4.80	25.643	235.6	0.395
118	10.58	33.340	4.94	0.78	11.	0.03	12.0	241.6	150	10.17	33.584	4.41	25.838	217.0	0.452
137	10.42	33.497	4.60	0.95	13.	0.02	14.1	227.4	200	9.01	33.876	3.56	26.257	177.2	0.553
165	9.82	33.672	4.20	1.19	17.	0.01	17.7	204.8	250	8.14	34.007	2.72	26.494	154.7	0.638
193	9.15	33.844	3.72	1.47	24.	0.00	21.8	181.6	300	7.50	34.059	2.20	26.629	142.0	0.714
221	8.63	33.945	3.11	1.64	30.	0.00	25.6	166.3	400	6.66	34.166	1.08	26.829	122.9	0.852
259	8.00	34.018	2.63	1.94	39.	0.00	28.9	151.8	500	6.17	34.291	0.47	26.993	107.5	0.974
315	7.35	34.068	2.05	2.15	49.	0.00	32.5	139.2							
386	6.73	34.145	1.20	2.33	61.	0.00	36.8	125.3							
456	6.42	34.242	0.69	2.74	69.	0.00	38.7	114.1							
532	5.96	34.319	0.35	2.91	79.	0.00	40.5	102.8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.0N	120 14.0W	4/ 1/78	0137 GMT	3926M	240	25KT	6	210 10 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	15.60	32.912	5.86	0.36	3.	0.00	0.1	367.8	0	15.60	32.912	5.86	24.255	367.8	0.000
12	15.61	32.922	5.87	0.33	3.	0.01	0.1	367.2	10	15.61	32.923	5.87	24.259	367.4	0.037
30	15.61	32.972	5.89	0.30	3.	0.00	0.1	363.6	20	15.61	32.939	5.88	24.271	366.2	0.073
54	14.98	32.985	5.94	0.29	2.	0.00	0.1	349.5	30	15.61	32.972	5.89	24.299	363.6	0.110
63	14.74	32.994	5.92	0.26	2.	0.01	0.1	343.9	50	15.11	32.987	5.94	24.418	352.2	0.182
73	14.01	33.033	6.06	0.33	2.	0.02	0.1	326.5	75	13.78	33.047	6.05	24.745	321.1	0.266
88	12.22	33.097	5.88	0.41	4.	0.09	2.1	287.9	100	11.19	33.050	5.69	25.246	273.4	0.341
102	11.05	33.040	5.66	0.57	7.	0.08	6.2	271.7	125	10.13	33.210	5.27	25.556	243.9	0.407
125	10.13	33.210	5.27	0.74	10.	0.04	10.8	243.9	150	9.48	33.521	4.39	25.904	210.8	0.464
143	9.54	33.428	4.66	1.05	16.	0.02	16.3	218.4	200	8.75	33.963	2.94	26.367	166.8	0.560
167	9.41	33.724	3.77	1.33	21.	0.02	21.2	194.5	250	8.05	34.029	2.62	26.525	151.8	0.642
195	8.80	33.941	3.03	1.58	29.	0.01	25.7	169.1	300	7.37	34.074	2.07	26.659	139.1	0.717
224	8.53	34.017	2.67	1.76	34.	0.02	27.7	159.5	400	6.57	34.169	0.99	26.844	121.5	0.852
261	7.84	34.028	2.60	1.91	40.	0.01	29.4	148.8	500	5.92	34.257	0.46	26.997	107.0	0.973
318	7.21	34.097	1.77	2.21	51.	0.00	33.4	135.1							
388	6.66	34.158	1.08	2.51	62.	0.00	36.9	123.4							
458	6.15	34.216	0.64	2.75	71.	0.01	39.5	112.7							
534	5.77	34.290	0.36	2.94	81.	0.00	41.1	102.7							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 93080

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 10.0N	120 54.4W	4/ 1/78	0858 GMT	4213M	320	26KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.61	33.008	5.83	0.37	10.	0.01	0.1	361.0	0	15.61	33.008	5.83	24.326	361.0	0.000
11	15.62	33.008	5.82	0.34	7.	0.00	0.1	361.2	10	15.62	33.011	5.82	24.324	361.1	0.036
30	15.59	33.012	5.82	0.31	6.	0.01	0.1	360.2	20	15.61	33.012	5.82	24.329	360.7	0.072
39	15.49	33.022	5.95	0.30	8.	0.01	0.1	357.4	30	15.59	33.012	5.82	24.334	360.2	0.108
48	15.37	33.038	5.89	0.31	9.	0.01	0.1	353.7	50	15.34	33.040	5.89	24.408	353.2	0.180
63	15.10	33.040	5.90	0.31	9.	0.00	0.1	347.9	75	14.74	33.089	5.95	24.575	337.2	0.267
77	14.65	33.096	5.95	0.30	3.	0.08	0.0	334.6	100	12.34	33.148	5.76	25.109	286.4	0.345
96	12.76	33.174	5.81	0.46	5.	0.05	2.8	292.2	125	10.37	33.209	5.15	25.513	248.0	0.413
118	10.71	33.096	5.54	0.64	9.	0.03	7.4	261.8	150	9.53	33.582	4.20	25.944	206.9	0.470
137	9.95	33.433	4.47	1.09	16.	0.03	16.3	224.5	200	8.57	33.914	3.35	26.356	167.9	0.565
165	9.14	33.703	4.04	1.38	22.	0.03	20.4	191.9	250	7.81	34.017	2.73	26.551	149.3	0.647
193	8.68	33.882	3.44	1.65	28.	0.01	24.4	171.7	300	7.12	34.050	2.03	26.675	137.6	0.721
220	8.26	33.975	3.14	1.83	33.	0.02	26.5	158.7	400	6.25	34.133	0.98	26.858	120.2	0.855
256	7.72	34.019	2.64	2.07	41.	0.00	29.6	147.8	500	5.69	34.212	0.58	26.990	107.6	0.974
311	6.99	34.055	1.88	2.38	53.	0.00	33.5	135.4							
380	6.36	34.117	1.09	2.71	66.	0.00	38.2	122.7							
452	5.99	34.170	0.80	2.89	74.	0.01	40.1	114.3							
528	5.50	34.238	0.44	3.11	85.	0.01	42.1	103.4							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 93090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 51.0N	121 34.5W	4/ 1/78	1507 GMT	4022M	280	17KT	1	280 7 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.49	33.016	5.23U	0.67	3.	0.03	0.1	357.8	0	15.49	33.016	5.23	24.359	357.8	0.000
10	15.49	33.014	5.84	0.67	3.	0.00	0.1	358.0	10	15.49	33.014	5.84	24.357	358.0	0.036
29	15.48	33.018	5.67	0.65	3.	0.02	0.1	357.5	20	15.48	33.019	5.74	24.360	357.7	0.072
38	15.40	33.029	5.24U	0.61	2.	0.00	0.0	355.0	30	15.48	33.022	5.67	24.364	357.3	0.107
47	15.12	33.037	5.55U	0.58	2.	0.00	0.0	348.6	50	14.73	33.058	5.58	24.555	339.2	0.177
61	12.98	33.132	5.07U	0.66	4.	0.05	1.7	299.4	75	11.32	33.109	5.47	25.269	271.2	0.254
75	11.32	33.109	5.47	0.86	7.	0.10	6.6	271.2	100	9.85	33.308	4.47	25.677	232.4	0.317
93	10.11	33.228	4.69	1.01	11.	0.03	10.3	242.3	125	9.39	33.566	3.88	25.955	206.0	0.373
116	9.51	33.489	4.07	1.27	17.	0.08	15.7	213.5	150	9.00	33.776	3.32	26.181	184.4	0.422
135	9.27	33.641	3.67	1.58	21.	0.02	20.5	198.5	200	8.08	33.967	2.83	26.472	156.8	0.509
162	8.76	33.867	3.07	1.89	29.	0.02	24.9	174.0	250	7.32	34.014	2.60	26.619	142.9	0.586
190	8.26	33.953	2.78	2.00	34.	0.05	26.8	160.3	300	6.78	34.064	1.67	26.734	132.0	0.657
219	7.75	33.981	2.92	2.06	38.	0.00	28.1	151.1	400	6.08	34.133	1.00	26.879	118.2	0.787
256	7.25	34.019	2.50	2.34	45.	0.06	31.2	141.5	500	5.52	34.214	0.56	27.013	105.5	0.904
312	6.67	34.074	1.45	2.54	57.	0.04	35.9	129.8							
381	6.20	34.117	1.09	2.76	67.	0.04	38.3	120.8							
451	5.78	34.175	0.77	2.82	77.	0.12	38.2	111.4							
527	5.39	34.233	0.44	3.02	85.	0.10	41.2	102.5							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 93100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 30.0N	122 09.0W	4/ 1/78	2120 GMT	4117M	310	18KT	1	310 8 8

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.78	33.069	5.84	0.48	2.	0.00	0.0	360.1	0	15.78	33.069	5.84	24.335	360.1	0.000
11	15.73	33.063	5.84	0.46	2.	0.00	0.0	359.5	10	15.74	33.066	5.84	24.341	359.6	0.036
30	15.57	33.044	5.86	0.43	2.	0.00	0.0	357.5	20	15.69	33.065	5.85	24.352	358.5	0.072
38	15.38	33.081	5.92	0.38	2.	0.00	0.0	350.8	30	15.57	33.044	5.86	24.363	357.5	0.108
48	15.17	33.116	5.93	0.36	2.	0.00	0.0	343.8	50	15.05	33.120	5.94	24.533	341.3	0.178
63	13.95	33.126	5.98	0.38	3.	0.02	0.3	318.4	75	12.60	33.164	5.78	25.071	290.1	0.257
77	12.37	33.170	5.73	0.55	5.	0.13	3.9	285.3	100	10.68	33.267	5.10	25.505	248.8	0.325
96	10.85	33.258	5.15	0.84	9.	0.05	10.4	252.2	125	9.94	33.418	4.63	25.748	225.7	0.385
119	10.12	33.339	4.85	0.99	13.	0.02	14.0	234.2	150	9.36	33.686	3.84	26.053	196.6	0.438
138	9.59	33.592	4.12	1.38	19.	0.01	19.7	207.1	200	8.64	33.926	3.16	26.355	167.9	0.531
167	9.10	33.772	3.58	1.62	25.	0.02	23.2	186.2	250	7.84	34.023	2.74	26.551	149.3	0.612
195	8.71	33.906	3.21	1.80	30.	0.01	25.5	170.4	300	7.20	34.060	2.10	26.672	137.8	0.686
223	8.28	33.989	2.97	1.94	35.	0.01	27.3	158.0	400	6.20	34.141	0.94	26.871	119.0	0.820
261	7.67	34.028	2.63	2.13	41.	0.02	29.7	146.5	500	5.52	34.220	0.49	27.017	105.1	0.938
317	7.02	34.071	1.85	2.41	54.	0.02	33.8	134.6							
387	6.31	34.128	1.04	2.70	67.	0.00	37.9	121.3							
457	5.77	34.189	0.63	2.91	78.	0.01	40.0	110.2							
533	5.38	34.237	0.43	3.08	87.	0.02	41.3	102.1							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 93110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 09.6N	122 54.7W	4/ 2/78	0418 GMT	3169M	330	15KT		340 3 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.57	33.137	5.73	0.67	2.	0.00	0.0	372.2	0	16.57	33.137	5.73	24.208	372.2	0.000
11	16.56	33.139	5.73	0.69	2.	0.00	0.0	371.9	10	16.56	33.139	5.73	24.212	371.9	0.037
30	16.58	33.171	5.74	0.64	2.	0.01	0.0	370.0	20	16.57	33.152	5.73	24.218	371.3	0.074
54	16.71	33.287	5.76	0.62	2.	0.01	0.0	364.4	30	16.58	33.171	5.74	24.232	370.0	0.112
63	16.92	33.457	5.73	0.60	2.	0.01	0.0	356.6	50	16.69	33.270	5.76	24.281	365.3	0.185
72	17.19	33.633	5.65	0.58	2.	0.01	0.0	349.9	75	17.06	33.634	5.66	24.473	346.9	0.275
86	16.19	33.546	5.75	0.56	3.	0.03	0.0	334.1	100	15.02	33.480	5.85	24.818	314.1	0.358
100	15.02	33.480	5.85	0.55	3.	0.01	0.0	314.1	125	12.83	33.299	5.73	25.131	284.3	0.434
124	12.94	33.308	5.74	0.66	5.	0.07	2.2	285.7	150	11.05	33.283	5.44	25.450	253.9	0.502
142	11.16	33.193	5.54	0.88	7.	0.04	4.5	262.2	200	9.51	33.768	4.52	26.093	192.9	0.615
165	10.85	33.447	5.22	1.02	10.	0.03	8.7	238.2	250	8.47	33.964	3.75	26.410	162.8	0.706
193	9.66	33.721	4.70	1.38	17.	0.03	16.3	198.6	300	7.58	34.009	3.17	26.578	146.8	0.786
221	9.15	33.866	4.02	1.62	22.	0.02	20.2	180.0	400	6.51	34.057	1.66	26.789	126.7	0.928
257	8.31	33.978	3.71	1.93	30.	0.03	23.9	159.2	500	5.88	34.202	0.91	26.959	110.6	1.052
312	7.41	34.006	3.00	2.22	42.	0.01	28.7	144.6							
382	6.52	34.036	1.91	2.62	56.	0.01	33.5	130.8							
452	5.88	34.125	1.10	2.88	72.	0.11	37.4	116.3							
529	5.88	34.225	0.80	3.14	74.	0.07	37.1	108.8							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 93120

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 49.0N	123 35.0W	4/ 2/78	1022 1124 GMT	3926M	310	13KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.95	33.324	5.65	0.32	3.	0.00	0.1	367.0	0	16.95	33.324	5.65	24.263	367.0	0.000
11	16.93	33.324	5.64	0.31	3.	0.00	0.1	366.6	10	16.93	33.326	5.64	24.267	366.6	0.037
30	16.95	33.323	5.68	0.25	3.	0.00	0.0	367.1	20	16.94	33.325	5.66	24.265	366.7	0.073
56A	16.94	33.339	5.66	0.26	3.	0.00	0.0	365.7	30	16.95	33.323	5.68	24.262	367.1	0.110
194B	9.98	33.529	4.78	0.81	14.	0.03	13.4	217.9	50	16.94	33.325	5.66	24.266	366.7	0.184
221B	9.41	33.735	4.41	1.09	19.	0.03	17.3	193.7	75	17.14	33.615	5.63	24.440	350.1	0.274
259B	8.56	33.944	3.79	1.51	28.	0.01	22.7	165.4	100	15.19	33.433	5.66	24.745	321.1	0.358
314B	7.51	33.998	3.02	1.90	42.	0.02	28.5	146.5	125	13.22	33.273	5.41	25.034	293.5	0.436
385B	6.66	34.026	2.05	2.34	56.	0.05	33.8	133.3	150	11.22	33.221	5.22	25.374	261.2	0.506
456B	5.99	34.100	1.18	2.62	70.	0.07	37.2	119.5	200	9.85	33.576	4.70	25.888	212.3	0.626
532B	5.47	34.184	0.62	2.92	83.	0.04	40.2	107.1	250	8.76	33.907	3.94	26.321	171.2	0.724
									300	7.75	34.001	3.21	26.547	149.7	0.807
									400	6.50	34.041	1.85	26.751	130.3	0.952
									500	5.66	34.149	0.81	26.944	112.0	1.079

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 93130

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 29.0N	124 14.0W	4/ 2/78	1646 GMT	4213M	250	5KT	1	340 6 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	16.90	33.311	5.49U	0.42	3.	0.02	0.0	366.8	0	16.90	33.311	5.65	24.264	366.8	0.000
12	16.89	33.309	5.65	0.35	3.	0.01	0.0	366.8	10	16.89	33.312	5.65	24.265	366.8	0.037
40	16.90	33.318	5.66	0.34	3.	0.00	0.0	366.3	20	16.89	33.314	5.65	24.267	366.6	0.073
64	16.90	33.389	5.51U	0.32	2.	0.00	0.0	361.1	30	16.90	33.317	5.66	24.268	366.5	0.110
83	16.96	33.560	5.64	0.33	3.	0.00	0.0	350.0	50	16.90	33.338	5.66	24.283	365.0	0.184
98	16.11	33.509	5.60	0.30	3.	0.00	0.0	335.0	75	16.93	33.477	5.64	24.382	355.6	0.274
111	15.78	33.503	5.63	0.29	3.	0.00	0.0	328.4	100	16.05	33.509	5.60	24.610	333.9	0.361
130	14.95	33.472	5.70	0.30	3.	0.02	0.1	313.2	125	15.25	33.486	5.69	24.772	318.5	0.443
149	12.90	33.402	5.49	0.42	5.	0.03	2.8	278.0	150	12.82	33.401	5.48	25.210	276.8	0.519
173	11.34	33.397	5.31	0.60	8.		6.8	250.3	200	9.82	33.581	4.67	25.895	211.6	0.643
196	9.99	33.555	4.84	0.94	14.		12.9	216.1	250	8.68	33.938	3.95	26.358	167.6	0.740
217	9.25	33.685	3.99	1.36	21.		20.0	194.9	300	7.91	34.004	3.21	26.525	151.8	0.822
245	8.77	33.919	3.99	1.48	26.		21.4	170.3	400	6.50	34.052	1.80	26.760	129.5	0.968
276	8.22	33.979	3.63	1.69	32.		24.4	157.8	500	5.71	34.144	0.94	26.935	112.9	1.095
323	7.64	34.014	2.78	1.99	41.		28.9	147.1							
383	6.68	34.040	1.98	2.38	55.		34.1	132.5							
454	6.06	34.093	1.31	2.67	67.		38.0	120.9							
531	5.49	34.184	0.72	2.96	81.		41.3	107.4							

A) THE LAST SEVEN BOTTLES OF CAST I PRETRIPPED AND WERE OMITTED. THE INTERPOLATED DATA BETWEEN 50 AND 200 METERS HAVE BEEN DERIVED FROM THE CTD DATA.
B) CAST II.

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 09.0N	124 53.0W	4/ 2/78	2303 GMT	4314M	020	15KT	1	010 8 3

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	17.56	33.569	5.63	0.46	3.	0.00	0.0	362.9
10	17.47	33.564	5.62	0.43	2.	0.00	0.0	361.3
39	17.41	33.559	5.62	0.41	3.	0.01	0.0	360.3
62	17.40	33.580	5.63	0.37	2.	0.02	0.0	358.5
81	17.29	33.612	5.65	0.38	2.	0.00	0.0	353.7
95	16.70	33.693	5.73	0.37	2.	0.00	0.0	334.5
109	15.30	33.570	5.78	0.35	3.	0.01	0.0	313.3
128	14.57	33.577	5.68	0.37	3.	0.05	0.4	297.8
147	13.28	33.483	5.55	0.44	4.	0.06	2.5	279.3
170	11.57	33.426	5.31	0.63	6.	0.03	6.5	252.1
193	10.16	33.625	4.71	0.95	13.	0.02	13.5	213.7
217	9.36	33.802	4.05	1.29	20.	0.01	19.4	187.9
245	8.77	33.963	3.77	1.49	26.	0.01	22.4	167.1
278	8.11	34.002	3.43	1.72	34.	0.00	25.4	154.6
325	7.28	34.026	2.63	2.08	45.	0.01	30.3	141.4
386	6.48	34.067	1.59	2.46	59.	0.01	36.0	128.0
456	5.88	34.141	0.94	2.73	72.	0.00	39.2	115.1
531	5.54	34.222	0.55	2.96	81.	0.01	40.9	105.1

Z	T	S	O2	SIGT	DT	DD
0	17.56	33.569	5.63	24.305	362.9	0.000
10	17.47	33.564	5.62	24.323	361.3	0.036
20	17.45	33.564	5.62	24.326	360.9	0.072
30	17.43	33.562	5.62	24.330	360.6	0.109
50	17.41	33.566	5.62	24.339	359.7	0.181
75	17.32	33.604	5.64	24.387	355.2	0.271
100	16.20	33.654	5.76	24.687	326.6	0.356
125	14.66	33.576	5.70	24.968	299.8	0.436
150	13.05	33.468	5.53	25.216	276.2	0.508
200	9.88	33.682	4.50	25.965	205.0	0.631
250	8.67	33.976	3.72	26.390	164.7	0.725
300	7.70	34.016	3.08	26.566	147.9	0.806
400	6.34	34.082	1.43	26.806	125.1	0.948
500	5.64	34.190	0.67	26.979	108.8	1.070

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93150

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 50.4N	125 33.6W	4/ 3/78	0452 GMT	4411M	070	10KT		050 5 2

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
2	17.30	33.466	5.67	0.45	2.	0.01	0.1	364.5
11	17.28	33.453	5.67	0.42	1.	0.01	0.1	365.0
30	17.11	33.420	5.70	0.37	1.	0.00	0.1	363.6
53	17.08	33.427	5.67	0.36	1.	0.01	0.1	362.4
63	17.14	33.498	5.71	0.33	1.	0.01	0.1	358.6
72	17.24	33.603	5.65	0.29	1.	0.01	0.1	353.2
86	17.38	33.701	5.63	0.73U	0.	0.00	0.1	349.2
100	16.61	33.673	5.68	0.41	0.	0.01	0.1	334.0
122	14.83	33.498	5.76	0.40	1.	0.03	0.2	308.9
142	13.12	33.444	5.56	0.51	1.	0.04	2.3	279.1
165	11.47	33.390	5.33	0.72	4.	0.02	6.7	253.0
193	10.23	33.620	4.62	1.09	12.	0.01	13.8	215.2
221	9.43	33.837	4.22	1.31	18.	0.01	18.2	186.4
259	8.70	33.959	3.89	1.62	25.	0.01	21.8	166.3
315	7.68	33.998	3.09	2.02	37.	0.00	27.5	148.9
385	6.77	34.046	2.02	2.48	52.	0.00	33.9	133.2
455	6.01	34.116	1.11	2.84	66.	0.01	38.4	118.5
530	5.45	34.176	0.70	3.15	76.	0.00	41.3	107.5

Z	T	S	O2	SIGT	DT	DD
0	17.30	33.466	5.67	24.289	364.5	0.000
10	17.28	33.457	5.67	24.284	365.0	0.036
20	17.20	33.438	5.68	24.289	364.5	0.073
30	17.11	33.420	5.70	24.298	363.6	0.110
50	17.08	33.428	5.67	24.309	362.6	0.182
75	17.27	33.622	5.65	24.414	352.6	0.272
100	16.61	33.673	5.68	24.609	334.0	0.359
125	14.57	33.488	5.74	24.920	304.4	0.439
150	12.49	33.414	5.50	25.284	269.8	0.512
200	10.00	33.682	4.50	25.944	207.0	0.633
250	8.85	33.944	3.96	26.336	169.8	0.729
300	7.94	33.997	3.33	26.516	152.6	0.813
400	6.59	34.062	1.80	26.757	129.8	0.959
500	5.64	34.155	0.79	26.951	111.3	1.086

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93160

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 33.2N	126 10.7W	4/ 3/78	1022 GMT	4411M	040	7KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	17.44	33.566	5.64	0.22	0.	0.00	0.2	360.4
11	17.45	33.564	5.65	0.16	0.	0.00	0.2	360.8
30	17.37	33.563	5.66	0.13	0.	0.00	0.1	359.0
54	17.33	33.561	5.73	0.13	0.	0.00	0.1	358.3
64	17.37	33.562	5.67	0.13	0.	0.00	0.1	359.1
73	17.33	33.572	5.65	0.11	0.	0.00	0.1	357.5
87	16.83	33.605	5.68	0.13	0.	0.05	0.0	343.8
101	16.10	33.558	5.81	0.14	0.	0.05	0.0	331.2
125	15.00	33.670	5.63	0.04	1.	0.06	0.0	299.8
143	12.92	33.457	5.49	0.40	3.	0.22	1.9	274.3
166	11.59	33.454	5.28	0.57	6.	0.34	5.3	250.4
194	10.75	33.551	4.99	0.87	11.	0.03	10.3	228.9
221	10.01	33.716	4.57	0.92	13.	0.08	13.0	204.5
258	8.86	33.947	3.97	1.53	23.	0.02	21.4	169.6
313	7.95	33.995	3.51	1.88	32.	0.04	25.3	152.8
382	6.73	34.028	2.15	2.44	50.	0.02	32.8	134.0
448	6.06	34.079	1.41	2.78	64.	0.04	37.2	121.9
530	5.42	34.151	0.84	2.66	77.		38.9	109.0

Z	T	S	O2	SIGT	DT	DD
0	17.44	33.566	5.64	24.332	360.4	0.000
10	17.45	33.566	5.65	24.328	360.8	0.036
20	17.42	33.565	5.65	24.335	360.1	0.072
30	17.37	33.563	5.66	24.346	359.0	0.108
50	17.34	33.563	5.73	24.353	358.4	0.180
75	17.28	33.580	5.65	24.379	355.9	0.270
100	16.15	33.563	5.80	24.628	332.2	0.357
125	15.00	33.670	5.63	24.968	299.8	0.436
150	12.41	33.439	5.43	25.320	266.3	0.508
200	10.59	33.587	4.90	25.769	223.7	0.633
250	9.10	33.904	4.09	26.266	176.4	0.735
300	8.12	33.991	3.62	26.493	154.8	0.820
400	6.52	34.042	1.91	26.751	130.4	0.968
500	5.63	34.125	1.00	26.929	113.5	1.096

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93170

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 10.4N	126 52.0W	4/ 3/78	1624 GMT	4411M	060	4KT	5	350 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	17.74	33.786	5.56	0.35	1.	0.01	0.1	351.3	0	17.74	33.786	5.56	24.427	351.3	0.000
11	17.73	33.786	5.57	0.31	0.	0.00	0.1	351.0	10	17.73	33.787	5.57	24.430	351.1	0.035
39	17.77	33.795	5.57	0.27	0.	0.00	0.0	351.3	20	17.74	33.790	5.57	24.429	351.1	0.070
62	17.87	33.872	5.59	0.30	0.	0.00	0.1	348.0	30	17.76	33.794	5.57	24.428	351.2	0.106
81	17.97	33.930	5.54	0.29	1.	0.01	0.1	346.1	50	17.81	33.830	5.58	24.442	349.9	0.176
96	17.69	33.898	5.52	0.84U	1.	0.01	0.1	342.0	75	17.94	33.911	5.56	24.473	346.9	0.264
109	16.83	33.848	5.66	0.44	2.	0.00	0.1	326.1	100	17.45	33.884	5.56	24.571	337.6	0.350
128	15.68	33.794	5.55	0.32	2.	0.01	0.1	305.0	125	15.87	33.807	5.58	24.880	308.2	0.431
147	14.24	33.644	5.54	0.47	3.	0.01	1.4	286.2	150	14.00	33.634	5.52	25.151	282.4	0.506
171	12.45	33.610	5.33	0.58	5.	0.02	4.1	254.4	200	10.86	33.661	5.07	25.778	222.7	0.634
194	11.11	33.644	5.12	0.81	9.	0.02	5.1	228.1	250	9.20	33.953	4.47	26.288	174.3	0.736
218	10.23	33.732	4.90	1.03	12.	0.00	11.8	206.9	300	8.14	33.996	3.86	26.485	155.6	0.821
246	9.29	33.939	4.50	1.26	19.	0.05	15.8	176.7	400	6.71	34.040	2.04	26.724	132.9	0.971
278	8.63	33.989	4.22	1.63	25.	0.00	20.5	163.1	500	5.74	34.143	0.88	26.930	113.4	1.100
325	7.63	33.993	3.39	2.01	37.	0.05	25.3	148.5							
386	6.88	34.025	2.28	2.46	50.	0.00	28.7	136.2							
456	6.09	34.101	1.23	2.87	65.	0.00	36.1	120.6							
534	5.54	34.169	0.78	3.26	78.	0.00	40.8	109.1							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93180

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 50.8N	127 30.9W	4/ 3/78	2242 GMT	4508M	060	4KT	1	010 7 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	18.19	33.743	5.59	0.30	2.	0.00	0.0	364.9	0	18.19	33.743	5.59	24.285	364.9	0.000
10	17.75	33.739	5.60	0.29	2.	0.00	0.0	354.9	10	17.75	33.739	5.60	24.389	354.9	0.036
39	17.66	33.731	5.62	0.26	2.	0.00	0.0	353.4	20	17.72	33.738	5.61	24.394	354.4	0.072
62	17.59	33.718	5.64	0.25	2.	0.00	0.0	352.8	30	17.69	33.735	5.61	24.400	353.9	0.107
81	17.69	33.818	5.60	0.26	2.	0.00	0.0	347.8	50	17.61	33.722	5.63	24.408	353.1	0.178
95	17.66	33.885	5.58	0.23	2.	0.00	0.0	342.2	75	17.66	33.783	5.61	24.443	349.8	0.266
109	17.62	33.892	5.56	0.21	2.	0.00	0.0	340.8	100	17.65	33.886	5.57	24.526	341.9	0.353
128	16.97	33.874	5.58	0.21	3.	0.00	0.0	327.4	125	17.13	33.881	5.58	24.646	330.5	0.438
146	15.48	33.806	5.57	0.20	4.	0.00	0.0	299.9	150	15.15	33.778	5.56	25.018	295.0	0.518
169	13.66	33.654	5.48	0.40	5.	0.06	1.8	274.0	200	11.58	33.667	5.21	25.653	234.6	0.652
192	12.20	33.648	5.32	0.58	7.	0.16	4.6	247.0	250	9.75	33.876	4.59	26.137	188.7	0.760
215	10.55	33.722	5.00	0.97	12.	0.01	11.0	212.9	300	8.59	33.998	4.06	26.418	161.9	0.851
243	9.93	33.844	4.70	1.10	16.	0.09	13.5	193.8	400	6.76	34.013	2.47	26.695	135.7	1.005
275	9.12	33.966	4.23	1.57	24.	0.00	19.9	172.1	500	5.74	34.107	1.15	26.902	116.1	1.137
322	8.17	34.000	3.90	1.88	32.	0.01	23.9	155.6							
382	7.05	34.003	2.79	2.39	47.	0.00	30.6	140.0							
453	6.09	34.054	1.64	2.86	65.	0.01	36.3	124.1							
529	5.63	34.142	0.95	3.02	78.	0.10	37.8	112.1							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93190

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 30.5N	128 09.8W	4/ 4/78	0427 GMT	4508M	340	3KT	1	100 3 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	18.53	33.811	5.55	0.21	3.	0.01	0.2	368.0	0	18.53	33.811	5.55	24.252	368.0	0.000
11	17.97	33.818	5.59	0.19	3.	0.00	0.2	354.3	10	18.01	33.819	5.59	24.385	355.3	0.036
39	17.85	33.815	5.59	0.16	3.	0.01	0.2	351.7	20	17.93	33.819	5.59	24.405	353.5	0.072
63	17.80	33.808	5.61	0.10	3.	0.00	0.2	351.1	30	17.89	33.817	5.59	24.414	352.5	0.107
82	18.13	34.009	5.53	0.14	2.	0.00	0.2	344.1	50	17.83	33.813	5.60	24.426	351.4	0.178
96	18.12	34.059	5.56	0.13	2.	0.00	0.2	340.2	75	18.01	33.934	5.56	24.473	346.9	0.265
110	18.37	34.270	5.47	0.05	2.	0.00	0.1	330.8	100	18.19	34.113	5.53	24.566	338.1	0.352
129	16.44	33.942	5.58	0.09	3.	0.00	0.1	310.6	125	16.92	34.026	5.56	24.806	315.2	0.434
147	15.48	33.901	5.36	0.25	3.	0.04	0.1	292.9	150	15.24	33.886	5.32	25.082	289.0	0.511
171	13.48	33.799	5.05	0.45	5.	0.02	4.1	259.9	200	11.79	33.822	4.86	25.733	227.0	0.642
194	12.13	33.821	4.89	0.69	8.	0.03	7.2	233.0	250	9.88	33.924	4.06	26.153	187.1	0.748
218	10.90	33.830	4.72	0.85	12.	0.01	10.5	210.8	300	8.51	34.013	3.54	26.443	159.6	0.837
246	10.01	33.912	4.11	1.29	18.	0.00	16.7	190.0	400	7.28	34.163	1.46	26.742	131.2	0.989
278	9.04	33.990	3.80	1.72	26.	0.10	20.4	169.1	500	6.64	34.279	0.56	26.920	114.3	1.118
325	8.03	34.031	3.15	2.07	38.	0.03	26.2	151.3							
384	7.41	34.140	1.71	2.65	51.	0.03	32.4	134.6							
454	6.92	34.227	0.89	2.65	62.		31.7	121.6							
529	6.49	34.308	0.44	3.05	72.	0.06	36.5	110.1							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 93200

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
27 10.4N	128 48.9W	4/ 4/78	1031 GMT	4411M	300	14KT	5	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	18.33	34.021	5.52	0.31	3.	0.02	0.0	347.9	0	18.33	34.021	5.52	24.462	347.9	0.000
11	18.26	34.014	5.52	0.26	2.	0.00	0.0	346.8	10	18.27	34.016	5.52	24.473	346.9	0.035
39	18.14	34.028	5.53	0.24	2.	0.00	0.0	343.0	20	18.21	34.016	5.52	24.488	345.5	0.069
63	18.16	34.053	5.57	0.23	2.	0.01	0.0	341.6	30	18.16	34.021	5.53	24.502	344.1	0.104
82	18.18	34.052	5.51	0.22	2.	0.01	0.0	342.2	50	18.15	34.044	5.55	24.524	342.1	0.173
96A	18.18	34.087	5.49	0.20	2.	0.00	0.0	339.6	75	18.17	34.054	5.53	24.525	342.0	0.259
110A	18.31	34.219	5.47	0.17	2.	0.02	0.0	333.1	100	18.30	34.180	5.48	24.591	335.7	0.344
129	18.28	34.349	5.49	0.16	2.	0.01	0.0	322.9	125	18.29	34.313	5.48	24.695	325.7	0.428
148A	16.16	33.960	5.48	0.24	3.	0.02	0.2	303.2	150	16.30	34.050	5.47	24.969	299.7	0.507
171A	15.13	33.997	5.29	0.31	3.	0.02	1.2	278.6	200	13.26	33.898	4.92	25.506	248.6	0.647
195	13.81	33.933	5.03	0.41	5.	0.01	4.5	256.5	250	10.48	33.896	4.41	26.028	199.0	0.761
218	11.40	33.808	4.56	0.84	11.	0.00	10.7	221.0	300	8.93	34.009	3.90	26.374	166.1	0.855
245	10.68	33.881	4.43	0.87	14.	0.00	11.8	203.3	400	7.07	34.057	2.37	26.687	136.4	1.012
277	9.44	33.968	4.23	1.29	21.	0.00	17.7	176.9	500	5.82	34.132	1.11	26.912	115.1	1.144
322	8.56	34.029	3.53	1.55	30.	0.01	21.5	159.1							
382	7.35	34.040	2.68	2.00	46.	0.02	28.1	141.3							
453	6.38	34.106	1.53	2.51	64.	0.01	33.9	123.8							
530	5.49	34.138	0.99	2.93	79.	0.03	39.5	110.8							

RV ALEJANDRO DE HUMBOLDT — CALCOFI CRUISE 7804 — 95029

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 36.1N	117 15.2W	3/30/78	0353 GMT	650M	180	6KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0B	17.19	33.151	5.84		0.	0.15	0.0	385.0	0	17.19	33.151	5.84	24.074	385.0	0.000
10	17.15	33.140	6.04		0.	0.06	0.0	384.9	10	17.15	33.140	6.04	24.075	384.9	0.039
30	13.68	33.328	6.04		3.	0.33	1.1	298.3	20	15.62	33.212	6.04	24.478	346.5	0.075
40	12.40	33.397	5.12		11.	0.28	7.1	269.1	30	13.68	33.328	6.04	24.983	298.3	0.107
55	11.63	33.466	4.66		13.	0.14	10.5	250.2	50	11.80	33.446	4.75	25.440	254.9	0.163
70	10.96	33.582	4.19		18.	0.12	14.8	230.1	75	10.84	33.636	3.99	25.763	224.2	0.223
96	10.51	33.839	3.24		28.	0.09	20.1	203.6	100	10.44	33.866	3.17	26.012	200.5	0.277
116	10.15	33.946	2.99		29.	0.11	22.5	189.8	125	10.01	33.986	2.90	26.180	184.6	0.325
136	9.85	34.027	2.78		33.	0.10	24.1	179.0	150	9.69	34.079	2.51	26.304	172.7	0.371
156	9.63	34.097	2.39		36.	0.09	24.4	170.3	200	9.08	34.197	1.98	26.497	154.5	0.454
186	9.19	34.165	2.10		41.			158.4	250	8.68	34.232	1.59	26.588	145.8	0.532
221	8.95	34.229	1.82		46.	0.02	28.2	150.0	300	8.09	34.250	1.25	26.692	136.0	0.605
251	8.67	34.231	1.58		47.			145.7	400	7.20	34.262	0.81	26.831	122.8	0.740
302	8.07	34.250	1.24		55.	0.01	24.6	135.6	500	6.42	34.303	0.50	26.970	109.6	0.863
357	7.58	34.249	1.00		61.			128.8	600	5.86	34.345	0.32	27.074	99.7	0.975
443	6.84	34.279	0.64		72.	0.00	35.0	116.7							
529	6.23	34.315	0.45		82.	0.00	37.6	106.3							
614	5.80	34.349	0.30		91.	0.00	39.0	98.6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 95030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 34.3N	117 22.1W	3/30/78	0045 GMT	307M	200	8KT	1	240 2 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1B	18.0	32.957	6.10		7.	0.03	0.7	417.6	0	18.00	32.957	6.10	23.732	417.6	0.000
11		32.957	6.23		4.	0.00	0.4		10	16.98	32.957	6.22	24.088	383.7	0.040
20	15.25	33.239	5.98		5.	0.08	0.0	336.5	20	15.25	33.239	5.98	24.583	336.5	0.076
29	13.16	33.366	5.24		8.	0.37	0.0	285.6	30	13.02	33.375	5.19	25.151	282.4	0.107
39	12.17	33.421	4.85		9.	0.26	8.7	263.2	50	11.52	33.505	4.48	25.537	245.7	0.160
48	11.63	33.497	4.50	0.80	11.	0.11	12.1	248.0	75	10.83	33.723	3.52	25.833	217.5	0.218
57	11.22	33.526	4.40	0.93	13.	0.08	13.8	238.7	100	10.17	33.907	2.92	26.091	193.1	0.270
66	11.02	33.621	4.01	1.03	15.	0.08	15.9	228.3	125	9.88	33.984	2.67	26.200	182.6	0.318
75	10.83	33.723	3.52	1.34	18.	0.12	18.1	217.5	150	9.59	34.079	2.31	26.322	171.0	0.363
84	10.66	33.806	3.22	1.52	21.	0.05	19.8	208.5							
93	10.33	33.875	3.00	1.73	24.	0.06	21.6	198.0							
102	10.13	33.912	2.90	1.58	26.	0.02	22.7	192.0							
111	9.97	33.952	2.76	1.54	28.	0.04	23.6	186.4							
121	9.91	33.968	2.71	1.68	28.	0.03	23.9	184.3							
130C	9.83	34.009	2.60	1.98	29.	0.02	24.6	180.0							
140C	9.69	34.056	2.40	2.11	32.	0.00	25.7	174.3							
149C	9.60	34.076	2.32	1.97	32.	0.02	26.0	171.4							
159C	9.49	34.098	2.18	2.04	35.	0.02	26.5	168.0							

RV ALEJANDRO DE HUMBOLDT — CALCOFI CRUISE 7804 — 97030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 15.9N	117 07.0W	4/ 4/78	2347 GMT	58M	240	9KT	1	260 3 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	17.41	33.092	5.88		3.	0.00	0.0	394.3	0	17.41	33.092	5.88	23.977	394.3	0.000
10	16.97	33.086	5.96		3.	0.00	0.0	384.8	10	16.97	33.086	5.96	24.076	384.8	0.039
20	16.01	33.168	6.05		2.	0.00	0.0	357.8	20	16.01	33.168	6.05	24.360	357.8	0.076
30	13.72	33.347	5.44		5.	0.16	2.4	297.7	30	13.72	33.347	5.44	24.990	297.7	0.109
50	12.03	33.534	4.32		11.	0.12	12.0	252.3	50	12.03	33.534	4.32	25.467	252.3	0.164

A) THE STANDARD DEPTH VALUES BETWEEN THESE TWO OBSERVED DEPTHS, WERE DETERMINED FROM COMPARISON WITH THE CTD ANALOG FOR THIS STATION.
B) A SHAKEDOWN STATION.
C) THESE DEPTHS WERE DETERMINED FROM AN EXTRAPOLATED DEPTH CURVE BECAUSE THERE WERE NO PRESSURE THERMOMETERS IN THE LAST FOUR NANSEN BOTTLES.

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 97035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
32 05.5N	117 27.5W	4/ 5/78	0500 GMT	1210M	310	20KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.18	33.216	5.88		3.	0.02	0.0	357.9	0	16.18	33.216	5.88	24.358	357.9	0.000
11	16.17	33.213	5.89		4.	0.02	0.0	357.9	10	16.17	33.216	5.89	24.358	357.9	0.036
31	14.78	33.262	6.32		4.	0.04	0.0	325.1	20	15.64	33.232	6.11	24.489	345.4	0.071
40	14.23	33.278	6.19		4.	0.04	0.0	312.9	30	14.87	33.261	6.30	24.681	327.2	0.105
55	12.78	33.296	5.52		8.	0.34	5.0	283.6	50	13.30	33.285	5.78	25.026	294.3	0.167
69	11.42	33.421	4.76		15.	0.14	11.6	249.9	75	11.05	33.473	4.57	25.598	239.9	0.234
93	10.41	33.620	4.11		19.	0.06	16.6	218.1	100	10.29	33.690	3.86	25.901	211.1	0.291
113	10.13	33.804	3.43		24.	0.07	20.5	200.0	125	9.93	33.876	3.20	26.107	191.5	0.342
132	9.81	33.907	3.09		28.	0.06	22.5	187.2	150	9.56	33.990	2.78	26.257	177.3	0.389
151	9.55	33.993	2.76		31.	0.05	24.4	176.7	200	9.06	34.175	2.02	26.483	155.8	0.474
179	9.17	34.105	2.33		36.	0.06	26.4	162.6	250	8.62	34.223	1.64	26.589	145.7	0.551
212	9.01	34.202	1.88		39.	0.00	27.0	152.9	300	8.03	34.254	1.24	26.704	134.8	0.624
240	8.75	34.216	1.71		42.	0.00	28.9	148.0	400	7.06	34.277	0.71	26.863	119.7	0.757
287	8.15	34.245	1.35		48.	0.00	30.8	137.1	500	6.34	34.312	0.47	26.987	107.9	0.877
338	7.72	34.274	0.94		54.	0.00	32.4	128.9							
419	6.87	34.278	0.67		65.	0.00	35.3	117.2							
500	6.34	34.312	0.47		75.	0.00	37.3	107.9							
584	5.74	34.282	U 0.42		83.	0.00	38.3								

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 97040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 56.0N	117 48.0W	4/ 5/78	0909 GMT	1456M	140	15KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	15.75	33.199	5.90		1.	0.02	0.0	350.0	0	15.75	33.199	5.90	24.442	350.0	0.000
9	15.78	33.196	5.90		4.	0.02	0.0	350.8	10	15.77	33.197	5.90	24.436	350.5	0.035
27	15.24	33.219	6.01		4.	0.02	0.0	337.8	20	15.53	33.210	5.96	24.498	344.6	0.070
37	14.71	33.245	6.02		4.	0.03	0.0	324.9	30	15.10	33.230	6.01	24.606	334.3	0.104
50	13.68	33.246	5.92		5.	0.16	1.3	304.4	50	13.68	33.246	5.92	24.920	304.4	0.168
64	12.51	33.244	5.56		6.	0.31	5.3	282.4	75	11.73	33.317	5.16	25.353	263.2	0.239
86	11.10	33.423	4.72		13.	0.08	12.6	244.2	100	10.54	33.585	4.20	25.775	223.0	0.301
104	10.42	33.626	4.07		19.	0.07	17.1	217.9	125	9.95	33.747	3.69	26.003	201.3	0.354
122	10.00	33.726	3.75		21.	0.05	19.6	203.6	150	9.41	33.911	3.20	26.221	180.7	0.403
140	9.68	33.845	3.39		24.	0.06	22.0	189.7	200	8.75	34.114	2.31	26.485	155.6	0.488
167	8.98	34.008	2.88		31.	0.00	25.5	166.9	250	8.27	34.169	1.81	26.602	144.5	0.565
198	8.77	34.110	2.33		36.	0.01	27.6	156.2	300	7.86	34.224	1.32	26.705	134.7	0.638
225	8.48	34.138	2.07		40.	0.00	28.9	149.8	400	7.08	34.282	0.76	26.864	119.6	0.770
269	8.12	34.191	1.61		47.	0.00	30.9	140.7	500	6.29	34.317	0.54	26.997	107.0	0.890
319	7.71	34.240	1.16		54.	0.00	32.8	131.3							
396	7.11	34.280	0.77		63.	0.00	34.8	120.2							
476	6.46	34.306	0.59		74.	0.01	36.7	109.9							
558	5.94	34.343	0.41		80.	0.01	38.3	100.7							

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 97050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 33.6N	118 32.5W	4/ 5/78	1731 GMT	2600M	280	14KT	1	280 4 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.11	33.209	5.83		3.			356.9	0	16.11	33.209	5.83	24.368	356.9	0.000
11	16.10	33.206	5.86		2.			356.9	10	16.10	33.207	5.86	24.369	356.9	0.036
35	15.26	33.224	5.97		1.			337.8	20	15.91	33.210	5.89	24.413	352.7	0.071
45	14.78	33.234	6.02		1.			327.2	30	15.52	33.219	5.94	24.506	343.8	0.106
60	14.42	33.244	5.99		1.			319.1	50	14.68	33.239	6.01	24.704	325.0	0.173
75	13.21	33.274	5.54		3.			293.3	75	13.21	33.274	5.54	25.037	293.3	0.251
99	11.31	33.390	4.89		9.			250.3	100	11.27	33.410	4.81	25.310	248.3	0.319
119	10.84	33.734	3.44		18.			216.9	125	10.78	33.778	3.26	25.884	212.7	0.377
138	10.68	33.825	3.06		22.			207.5	150	10.53	33.869	2.91	25.998	201.9	0.430
168	10.29	33.920	2.75		25.			194.0	200	9.88	34.006	2.55	26.217	181.0	0.527
198	9.90	34.000	2.56		28.			181.8	250	9.20	34.119	2.17	26.416	162.1	0.616
237	9.41	34.092	2.30		35.			167.2	300	8.56	34.180	1.79	26.565	147.9	0.696
266	8.95	34.146	2.02		36.			156.2	400	7.39	34.229	1.11	26.779	127.7	0.839
316	8.40	34.188	1.70		42.			144.9	500	6.23	34.248	0.76	26.951	111.3	0.966
380	7.66	34.228	1.20		52.			131.5	600	5.65	34.295	0.53	27.062	100.9	1.079
478	6.41	34.232	0.86		72.			114.8							
567	5.81	34.291	0.54		80.			103.1							
641	5.49	34.297	0.52		82.			98.9							

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 97090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 15.5N	121 10.5W	4/ 6/78	1823 GMT	3900M	250	10KT	1	320 7 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.99	32.981	5.85		2.	0.04	0.0	371.0	0	15.99	32.981	5.85	24.221	371.0	0.000
11	15.98	32.982	5.85		2.	0.05	0.0	370.7	10	15.98	32.982	5.85	24.224	370.7	0.037
31	15.78	32.956	6.01		2.	0.05	0.0	368.4	20	15.92	32.983	5.92	24.235	369.7	0.074
61	15.15	32.958	5.95		2.	0.05	0.0	355.0	30	15.80	32.962	6.00	24.247	368.5	0.111
72	14.77	32.984	6.05		2.	0.05	0.0	345.3	50	15.44	32.957	5.96	24.325	361.1	0.184
87	13.67	33.181	6.04		3.	0.05	0.0	308.9	75	14.58	33.030	6.05	24.565	338.3	0.272
102	12.45	33.098	5.94		4.	0.10	2.0	292.1	100	12.61	33.110	5.96	25.028	294.1	0.352
117	11.40	33.115	5.69		6.	0.09	5.1	272.1	125	10.82	33.170	5.50	25.404	258.3	0.421
142	9.84	33.334	5.07		13.	0.05	12.9	230.1	150	9.64	33.419	4.88	25.798	220.9	0.482
162	9.47	33.543	4.61		18.	0.05	16.7	208.8	200	8.82	33.887	4.05	26.295	173.6	0.582
192	8.97	33.841	4.20		23.	0.05	20.2	179.1	250	8.06	34.023	2.84	26.518	152.5	0.666
222	8.44	33.963	3.58		30.	0.00	24.1	162.2	300	7.44	34.080	2.07	26.653	139.6	0.741
252	8.04	34.024	2.79		38.	0.00	28.1	151.9	400	6.50	34.172	1.04	26.856	120.4	0.876
302	7.42	34.080	2.05		48.	0.00	31.3	139.2	500	6.08	34.295	0.41	27.007	106.0	0.996
357	6.78	34.102	1.52		58.	0.00	34.6	129.1	600	5.58	34.325	0.35	27.094	97.8	1.105
441	6.32	34.243	0.64		74.	0.00	37.2	112.8							
525	5.98	34.307	0.38		82.	0.00	38.7	103.9							
610	5.53	34.327	0.35		89.	0.00	39.7	97.1							

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 97100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 55.0N	121 50.0W	4/ 7/78	0015 GMT	4100M	270	16KT	1	280 4 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.89	33.256	5.69		2.	0.00	0.0	370.6	0	16.89	33.256	5.69	24.225	370.6	0.000
9	16.88	33.254	5.72		3.	0.00	0.0	370.6	10	16.88	33.258	5.72	24.226	370.5	0.037
40	16.99	33.359	5.73		3.	0.00	0.0	365.4	20	16.91	33.283	5.72	24.239	369.3	0.074
67	17.03	33.459	5.73		4.	0.00	0.0	359.0	30	16.95	33.317	5.73	24.257	367.6	0.111
84	16.92	33.493	5.72		4.	0.00	0.0	354.0	50	17.00	33.395	5.73	24.303	363.2	0.184
98	15.85	33.545	5.81		5.	0.00	0.0	326.8	75	16.98	33.477	5.73	24.371	356.6	0.275
111	14.57	33.514	5.77		6.	0.02	0.1	302.4	100	15.67	33.540	5.80	24.721	325.3	0.360
128	12.72	33.404	5.60		8.	0.04	2.9	274.5	125	13.04	33.422	5.64	25.184	279.3	0.437
145	11.33	33.456	5.34		12.	0.03	7.0	245.7	150	10.95	33.464	5.25	25.610	238.8	0.502
171	9.68	33.541	4.73		20.	0.03	15.2	212.3	200	9.00	33.818	3.79	26.213	181.5	0.609
192	9.13	33.776	4.00		28.	0.02	20.6	186.3	250	8.33	33.976	3.34	26.442	159.7	0.696
213	8.84	33.856	3.55		33.	0.00	23.3	176.0	300	7.56	34.051	2.31	26.614	143.3	0.774
243	8.44	33.956	3.50		37.	0.00	24.5	162.7	400	6.53	34.133	1.27	26.821	123.7	0.913
277	7.88	34.030	2.65		48.	0.00	28.6	149.3	500	5.93	34.199	0.70	26.951	111.4	1.037
320	7.30	34.058	2.10		55.	0.00	31.5	139.2							
380	6.62	34.104	1.45		69.	0.00	35.0	127.0							
455	6.32	34.196	0.87		71.	0.00	37.0	116.3							
532	5.55	34.202	0.65		82.	0.00	38.5	106.7							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 100030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 40.5N	116 46.5W	4/22/78	0331 GMT	399M	320	13KT	1	340 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	14.87	33.379	6.30	0.37	2.	0.09	0.7	318.4	0	14.87	33.379	6.30	24.773	318.4	0.000
10	13.49	33.413	5.77	0.57	4.	0.24	2.8	288.4	10	13.49	33.413	5.77	25.088	288.4	0.030
29	10.59	33.801	3.34	1.35	20.	0.11	18.8	207.7	20	11.80	33.600	4.47	25.561	243.4	0.057
43	10.16	33.951	2.86	1.66	25.	0.06	22.2	189.6	30	10.53	33.817	3.28	25.957	205.7	0.079
58	9.84	34.027	2.56	1.85	29.	0.08	24.2	178.8	50	10.00	33.997	2.68	26.190	183.6	0.119
72	9.56	34.036	2.60	1.80	30.	0.07	24.2	173.7	75	9.56	34.052	2.55	26.305	172.7	0.163
85	9.57	34.096	2.32	1.97	32.	0.03	25.7	169.4	100	9.55	34.148	2.03	26.382	165.4	0.206
104	9.54	34.156	1.97	2.12	35.	0.04	26.8	164.5	125	9.48	34.175	1.88	26.416	162.2	0.248
127	9.47	34.175	1.88	2.16	36.	0.08	27.4	162.0	150	9.34	34.203	1.76	26.460	157.9	0.288
154	9.31	34.207	1.74	2.22	38.	0.02	27.5	157.2	200	9.04	34.247	1.47	26.543	150.1	0.367
187	9.12	34.237	1.54	2.35	41.	0.02	28.2	152.0	250	8.64	34.255	1.26	26.613	143.5	0.443
219	8.90	34.255	1.38	2.44	43.	0.03	29.5	147.3	300	8.05	34.272	1.03	26.716	133.7	0.514
256	8.58	34.254	1.24	2.49	47.	0.02	30.6	142.6							
298	8.07	34.270	1.04	2.60	52.	0.04	32.3	134.1							
336	7.61	34.278	0.84	2.72	58.	0.06	34.1	127.1							

RV DAVID STARR JORDAN CALCOFI CRUISE 7804 100035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 30.5N	117 07.0W	4/22/78	0725 GMT	1202M	320	10KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.33	33.250	5.84	0.25	3.		0.1	358.7	0	16.33	33.250	5.84	24.350	358.7	0.000
11	16.33	33.245	5.85	0.29	3.		0.1	359.1	10	16.33	33.248	5.85	24.346	359.1	0.036
29	14.95	33.271	6.03	0.31	4.		0.1	327.9	20	15.82	33.259	5.95	24.471	347.2	0.071
39	13.73	33.275	5.95	0.41	6.		0.6	303.2	30	14.84	33.273	6.02	24.696	325.7	0.105
48	12.45	33.319	5.31	0.65	9.		4.2	275.8	50	12.22	33.330	5.21	25.272	270.9	0.165
62	11.18	33.404	4.72	0.97	14.		11.0	247.0	75	10.62	33.554	4.23	25.737	226.7	0.227
76	10.59	33.563	4.20	1.24	19.		15.5	225.3	100	9.68	33.706	3.84	26.016	200.1	0.281
95	9.82	33.670	3.92	1.45	20.		18.7	204.9	125	9.28	33.861	3.33	26.202	182.5	0.330
118	9.34	33.823	3.49	1.62	25.		21.0	186.1	150	9.24	33.978	2.76	26.301	173.1	0.375
137	9.24	33.917	3.05	1.96	29.		24.1	177.6	200	8.86	34.137	2.07	26.485	155.6	0.459
165	9.23	34.041	2.48	2.00	34.		25.1	168.2	250	8.32	34.196	1.60	26.615	143.2	0.535
192	8.94	34.120	2.16	2.14	38.		27.9	158.0	300	7.78	34.232	1.12	26.724	132.9	0.607
220	8.66	34.166	1.86	2.27	42.		29.3	150.4	400	6.89	34.276	0.61	26.885	117.6	0.738
257	8.24	34.200	1.54	2.41	48.		30.7	141.7	500	6.20	34.328	0.35	27.017	105.1	0.855
313	7.65	34.239	1.01	2.64	56.		33.6	130.5							
383	7.01	34.263	0.69	2.70	64.		35.9	120.1							
454	6.52	34.311	0.40	2.66	73.		36.1	110.2							
530	6.00	34.332	0.32	3.02	80.		40.4	102.3							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 100040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 20.9N	117 27.1W	4/22/78	1051 GMT	1943M	310	15KT		

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16,11	33,269	5,30U	0,27	3,		0,0	352,6	0	16,11	33,269	5,77	24,414	352,6	0,000
11	16,11	33,269	5,77A	0,29	3,		0,0	352,6	10	16,11	33,271	5,77	24,414	352,6	0,035
29	14,81	33,242	6,12	0,31	3,		0,0	327,2	20	15,55	33,255	6,00	24,527	341,9	0,070
39	14,17	33,252	5,77	0,39	4,		0,3	313,6	30	14,76	33,245	6,08	24,692	326,1	0,104
48	13,05	33,273	5,87	0,55	6,		4,1	290,3	50	12,76	33,277	5,75	25,126	284,8	0,165
62	11,30	33,311	4,91	0,75	10,		6,7	255,9	75	10,76	33,409	4,88	25,601	239,6	0,231
77	10,72	33,424	4,87	1,06	13,		12,5	237,8	100	10,06	33,648	4,11	25,907	210,5	0,287
95	10,15	33,596	4,26	1,27	17,		16,4	215,7	125	9,73	33,853	3,38	26,123	190,0	0,338
119	9,82	33,815	3,56	1,63	24,		21,8	194,2	150	9,26	33,929	3,05	26,260	177,0	0,385
137	9,53	33,907	3,09	1,76	29,		23,5	182,8	200	8,83	34,119	2,09	26,477	156,4	0,470
165	8,98	33,952	3,00	1,89	31,		24,7	171,0	250	8,40	34,180	1,68	26,590	145,6	0,547
193	8,85	34,102	2,18	2,16	37,		27,9	157,9	300	7,92	34,220	1,35	26,695	135,6	0,620
221	8,72	34,145	1,93	2,21	40,		29,0	152,8	400	6,91	34,261	0,78	26,871	119,0	0,753
258	8,30	34,187	1,61	2,40	45,		31,0	143,5	500	6,26	34,314	0,39	27,000	106,8	0,872
314	7,79	34,227	1,28	2,58	53,		33,3	133,3							
384	7,01	34,246	0,87	2,72	63,		35,8	121,4							
454	6,60	34,304	0,51	2,89	71,		37,7	111,8							
531	6,01	34,317	0,37	3,02	80,		40,2	103,5							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 100050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 00.5N	118 07.0W	4/22/78	1635 GMT	1763M	310	15KT	1	310 8 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15,82	33,151	5,88	0,27	2,		0,0	355,0	0	15,82	33,151	5,88	24,389	355,0	0,000
10	15,78	33,149	5,96	0,31	3,		0,0	354,3	10	15,78	33,149	5,96	24,397	354,3	0,035
29	15,77	33,147	5,92	0,25	3,		0,0	354,2	20	15,77	33,150	5,94	24,397	354,2	0,071
53	14,80	33,142	6,03	0,28	3,		0,0	334,3	30	15,73	33,139	5,92	24,398	354,1	0,106
62	13,69	33,128	6,07	0,30	4,		0,2	313,2	50	14,92	33,145	6,01	24,558	338,9	0,176
72	13,14	33,166	5,90	0,36	5,		0,9	299,9	75	12,86	33,187	5,79	25,037	293,3	0,255
86	11,88	33,297	5,23	0,71	8,		7,2	267,1	100	11,39	33,542	4,19	25,592	240,4	0,323
100	11,39	33,542	4,19	1,07	14,		13,4	240,4	125	10,79	33,780	3,18	25,883	212,8	0,380
123	10,83	33,768	3,22	1,42	21,		18,6	214,2	150	10,34	33,874	2,91	26,035	198,4	0,432
141	10,52	33,842	3,01	1,66	23,		21,3	203,5	200	9,63	34,023	2,52	26,272	175,8	0,527
164	10,08	33,916	2,78	1,84	27,		23,1	190,9	250	9,01	34,131	2,05	26,456	158,4	0,613
192	9,71	34,001	2,59	1,90	29,		24,9	178,7	300	8,26	34,200	1,53	26,627	142,1	0,691
220	9,42	34,068	2,34	2,04	32,		26,4	169,2	400	7,06	34,233	0,98	26,828	123,1	0,829
257	8,91	34,142	1,98	2,07	37,		27,8	155,9	500	6,37	34,293	0,65	26,967	109,8	0,952
312	8,08	34,209	1,41	2,48	47,		32,4	138,7							
382	7,18	34,221	1,02	2,66	57,		35,4	125,5							
453	6,77	34,269 B	0,86	2,72	63,		36,3	116,6							
530	6,07	34,304	0,48	2,93	75,		39,6	105,2							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 100060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 40.5N	118 47.5W	4/22/78	2219 GMT	2791M	310	21KT	1	320 5 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16,30	33,119	5,86	0,26	2,		0,2	367,6	0	16,30	33,119	5,86	24,256	367,6	0,000
11	16,28	33,117	5,81	0,24	2,		0,1	367,3	10	16,28	33,117	5,81	24,259	367,3	0,037
31	16,15	33,116	5,83	0,24	3,		0,1	364,6	20	16,23	33,116	5,82	24,270	366,3	0,073
53	16,13	33,117	5,84	0,22	3,		0,1	364,1	30	16,16	33,116	5,83	24,286	364,8	0,110
62	15,34	33,064	5,95	0,23	3,		0,1	351,2	50	16,13	33,117	5,84	24,293	364,1	0,183
72	14,21	33,023	6,10	0,23	3,		0,1	331,1	75	13,98	33,033	6,11	24,693	326,0	0,270
86	13,26	33,081	6,14	0,25	4,		0,0	308,4	100	12,25	33,148	5,76	25,125	284,9	0,347
101	12,18	33,151	5,73	0,50	6,		3,9	283,2	125	10,99	33,310	5,10	25,484	250,7	0,414
125	10,99	33,310	5,10	0,84	10,		9,6	250,7	150	9,57	33,608	4,04	25,957	205,7	0,472
141	9,86	33,500	4,38	1,26	17,		17,2	218,1	200	8,88	33,931	3,28	26,321	171,1	0,568
167	9,33	33,776	3,56	1,67	26,		22,0	189,4	250	8,13	34,009	2,89	26,498	154,4	0,651
196	8,95	33,918	3,32	1,78	29,		24,3	173,1	300	7,48	34,044	2,40	26,620	142,9	0,728
223	8,46	33,976	3,08	1,88	33,		25,9	161,5	400	6,20	34,114	1,26	26,848	121,1	0,865
261	8,01	34,016	2,81	1,97	38,		27,8	152,1	500	5,74	34,218	0,64	26,989	107,7	0,985
319	7,22	34,054	2,17	2,30	49,		32,1	138,5							
389	6,29	34,102	1,35	2,64	64,		36,6	123,0							
459	5,89	34,175	0,87	2,66	74,		37,1	112,7							
535	5,65	34,253	0,48	2,96	82,		40,7	104,0							

A) DUE TO PROBLEMS ASSOCIATED WITH THE PICKLING OF THE OXYGEN SAMPLES, ALL CONCENTRATIONS ON THIS STATION HAVE BEEN ADJUSTED BY A FACTOR OF 1.56. MORE THAN THE NORMAL AMOUNT OF SCATTER CAN BE EXPECTED IN THIS DATA SET.
B) AN ERROR OF -0.001 IN THE CONDUCTIVITY RATIO, 0.039 PPT, HAS BEEN ASSUMED FOR THIS VALUE.

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 100080

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 01.0N	120 07.0W	4/ 7/78	1831 GMT	3400M	290	22KT	1	270 10 12

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.27	33.110	5.87		2.	0.00	0.0	367.6	0	16.27	33.110	5.87	24.256	367.6	0.000
11	16.23	33.106	5.92		2.	0.00	0.0	367.1	10	16.23	33.109	5.92	24.262	367.1	0.037
32	16.24	33.109	5.91		2.	0.00	0.0	367.1	20	16.23	33.107	5.92	24.263	367.0	0.074
62	15.96	33.148	5.89		3.	0.00	0.0	358.2	30	16.24	33.109	5.91	24.262	367.1	0.110
72	15.42	33.143	5.97		4.	0.00	0.0	347.1	50	16.07	33.135	5.90	24.316	361.7	0.183
88	13.27	33.192	5.96		4.	0.08	0.0	300.4	75	15.02	33.151	5.97	24.565	338.2	0.271
103	12.65	33.418	5.23		7.	0.05	1.0	272.2	100	12.75	33.375	5.39	25.208	277.0	0.349
118	11.57	33.462	4.80		10.	0.03	4.2	248.0	125	11.21	33.522	4.65	25.607	239.0	0.414
143	10.57	33.639	4.29		15.	0.03	11.7	219.4	150	10.41	33.703	4.08	25.889	212.2	0.471
163	10.16	33.807	3.73		20.	0.01	17.0	200.2	200	9.15	33.892	3.70	26.248	178.1	0.570
193	9.28	33.873	3.71		24.	0.01	19.9	181.4	250	8.34	33.978	3.50	26.441	159.8	0.657
222	8.81	33.942	3.67		29.	0.00	22.5	169.2	300	7.39	34.027	2.62	26.620	142.8	0.735
252	8.31	33.979	3.48		34.	0.00	25.2	159.1	400	6.75	34.171	1.14	26.821	123.7	0.873
301	7.37	34.027	2.60		47.	0.00	33.0	142.5	500	5.91	34.248	0.62	26.992	107.5	0.995
355	7.20	34.113	1.71		56.	0.00	37.0	133.8	600	5.45	34.297	0.44	27.087	98.5	1.105
439	6.32	34.210	0.79		72.	0.00	44.1	115.3							
524	5.78	34.257	0.60		81.	0.00	46.3	105.2							
611	5.41	34.301	0.42		88.	0.00	47.5	97.7							

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 100090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 40.5N	120 47.0W	4/ 7/78	1115 GMT	3926M	340	18KT	5	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16.82	33.363	5.65		2.	0.00	0.0	361.3	0	16.82	33.363	5.65	24.323	361.3	0.000
10	16.81	33.359	5.67		2.	0.00	0.0	361.3	10	16.81	33.359	5.67	24.322	361.3	0.036
29	16.82	33.364	5.72		2.	0.00	0.0	361.2	20	16.82	33.364	5.70	24.323	361.3	0.072
57	16.71	33.405	5.69		2.	0.00	0.0	355.8	30	16.82	33.367	5.72	24.326	361.0	0.109
67	16.13	33.395	5.75		3.	0.00	0.0	343.8	50	16.74	33.397	5.70	24.366	357.1	0.181
81	13.93	33.232	5.89		4.	0.06	0.2	310.3	75	14.93	33.305	5.84	24.700	325.3	0.266
95	12.36	33.161	5.79		6.	0.08	2.3	285.8	100	11.95	33.153	5.75	25.186	279.0	0.342
109	11.32	33.153	5.64		8.	0.02	5.1	267.9	125	10.41	33.231	5.28	25.524	247.0	0.409
132	10.08	33.282	5.09		14.	0.02	12.2	237.8	150	9.38	33.454	4.56	25.862	214.8	0.467
151	9.35	33.454 A	4.53		19.	0.01	17.7	213.6	200	8.70	33.930	3.55	26.348	168.6	0.565
178	9.05	33.810	3.77		25.	0.02	21.7	182.6	250	7.86	34.009	2.92	26.538	150.5	0.646
206	8.60	33.944	3.51		31.	0.01	23.8	166.0	300	7.18	34.052	2.20	26.668	138.2	0.721
233	8.15 B	33.988	3.18		36.	0.01	26.1	156.2	400	6.34	34.136	1.18	26.848	121.2	0.856
278	7.42	34.035	2.48		47.	0.01	29.9	142.6	500	5.74	34.243	0.54	27.008	105.9	0.975
329	6.93	34.071	1.88		56.	0.01	32.9	133.4							
407	6.29	34.142	1.12		69.	0.00	36.5	120.0							
487	5.81	34.230	0.60		82.	0.00	38.8	107.6							
570	5.45	34.301	0.39		90.	0.00	39.8	98.1							

RV ALEJANDRO DE HUMBOLDT CALCOFI CRUISE 7804 100100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 20.0N	121 26.5W	4/ 7/78	0527 GMT	4000M	320	15KT	5	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.73	33.162	5.70		4.	0.03	0.0	373.9	0	16.73	33.162	5.70	24.190	373.9	0.000
11	16.72	33.160	5.72		4.	0.02	0.0	373.9	10	16.72	33.162	5.72	24.191	373.9	0.037
30	16.39	33.100	5.78		4.	0.04	0.0	371.0	20	16.58	33.134	5.75	24.202	372.7	0.075
40	16.30	33.097	5.76		4.	0.03	0.0	369.2	30	16.39	33.100	5.78	24.221	371.0	0.112
54	15.85	33.055	5.81		3.	0.03	0.0	362.6	50	15.99	33.068	5.79	24.286	364.8	0.186
68	15.55	33.072	5.86		3.	0.03	0.0	355.0	75	15.24	33.150	5.87	24.515	343.0	0.275
92	14.16	33.304	5.91		4.	0.03	0.0	309.6	100	13.46	33.261	5.86	24.974	299.2	0.356
111	12.55	33.210	5.75		5.	0.09	2.5	285.6	125	11.88	33.348	5.50	25.350	263.5	0.427
129	11.74	33.397	5.43		7.		5.4	257.3	150	11.00	33.543	5.19	25.662	233.8	0.490
148	11.10	33.536	5.22		9.	0.03	8.0	235.9	200	9.28	33.765	4.27	26.127	189.6	0.597
175	9.79	33.605	4.79		15.	0.07	14.1	209.2	250	8.18	33.997	3.38	26.481	156.0	0.686
207	9.18	33.812	4.12		22.	0.04	19.6	184.4	300	7.49	34.021	2.77	26.601	144.6	0.763
234	8.45 B	33.963	3.58		31.	0.04	24.1	162.4	400	6.44	34.104	1.50	26.810	124.8	0.903
279	7.80	34.009	3.08		40.	0.04	26.0	149.7	500	5.70	34.223	0.71	26.998	106.9	1.025
329	7.09	34.035	2.33		50.	0.04	31.3	138.2							
407	6.39	34.111	1.43		65.		35.8	123.5							
488	5.77	34.211	0.74		79.		38.8	108.6							
571	5.41	34.270	0.56		87.		39.3	100.0							

A) AN ERROR OF -0.02 IN THE CONDUCTIVITY RATIO, 0.781 PPT, HAS BEEN ASSUMED FOR THIS VALUE.
B) TEMPERATURE, GOOD TO 0.05 DEGREES, INFERRED FROM PRESSURE THEROMETER AND WIRE DEPTH.

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 103030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
31 06.0N	116 24.5W	4/23/78	1913 GMT	63M	290	8KT	1	290 5 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	12,92	33,712	7,38	0,81	7,		2,3	255,6	0	12,92	33,712	7,38	25,433	255,6	0,000
10	11,64	33,715	4,69	1,48	15,		14,6	232,1	10	11,64	33,715	4,69	25,680	232,1	0,024
19	10,68	33,791	3,42	1,75	20,		19,3	210,0	20	10,62	33,802	3,40	25,930	208,3	0,046
29	10,33	33,887	3,17	1,95	23,		21,8	197,1	30	10,31	33,898	3,14	26,059	196,0	0,067
48	10,08	34,007	2,70	2,14	27,		23,9	184,1	50	10,07	34,012	2,67	26,190	183,6	0,105

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 103035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 56.0N	116 45.0W	4/23/78	1600 GMT	1849M	310	15KT	1	300 5 6

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
0	16,45	33,258	5,95	0,24	2,		0,1	360,8	0	16,45	33,258	5,95	24,328	360,8	0,000
10	16,36	33,256	5,97	0,26	2,		0,1	358,9	10	16,36	33,256	5,97	24,347	358,9	0,036
28	14,52	33,222	6,10	0,31	3,		0,1	322,8	20	16,02	33,254	6,04	24,423	351,7	0,072
37	13,56	33,222	6,12	0,37	4,		0,4	303,8	30	14,27	33,223	6,10	24,778	317,9	0,105
47	12,57	33,235	5,75	0,53	6,		4,2	284,2	50	12,17	33,269	5,54	25,233	274,6	0,165
61	10,96	33,434	4,74	0,88	7,		10,6	241,0	75	10,80	33,634	4,08	25,769	223,6	0,227
75	10,80	33,634	4,08	1,16	16,		15,4	223,6	100	10,46	33,779	3,53	25,940	207,3	0,282
93	10,60	33,752	3,63	1,32	19,		18,0	211,5	125	9,94	33,902	3,14	26,126	189,7	0,332
117	10,09	33,844	3,31	1,55	23,		21,5	196,3	150	9,47	34,051	2,63	26,319	171,3	0,378
135	9,76	33,974	2,91	1,74	28,		23,7	181,4	200	8,98	34,142	2,15	26,469	157,1	0,461
164	9,25	34,098	2,42	2,00	34,		26,5	164,3	250	8,34	34,180	1,79	26,600	144,7	0,539
192	9,08	34,134	2,20	2,11	36,		27,7	159,0	300	7,99	34,240	1,27	26,700	135,2	0,611
220	8,71	34,154	2,03	2,16	39,		29,1	152,0	400	6,98	34,303	0,63	26,895	116,7	0,743
258	8,25	34,187	1,72	2,33	45,		31,2	142,8	500	6,25	34,337	0,40	27,019	105,0	0,860
314	7,91	34,256	1,12	2,52	51,		33,3	132,9							
384	7,13	34,295	0,70	2,71	62,		36,0	119,3							
455	6,52	34,323	0,47	2,86	71,		38,6	109,3							
531	6,11	34,342	0,38	2,96	78,		40,8	102,8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 103040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 46.0N	117 04.5W	4/23/78	1215 GMT	1763M	320	14KT	1	300 5 5

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
3	16,29	33,240	5,82	0,19	3,		0,1	358,6	0	16,29	33,240	5,82	24,351	358,6	0,000
11	16,28	33,238	5,83	0,18	3,		0,1	358,5	10	16,28	33,240	5,83	24,352	358,5	0,036
30	16,16	33,232	5,83	0,17	3,		0,1	356,4	20	16,22	33,237	5,83	24,363	357,5	0,072
40	15,72	33,231	5,95	0,18	3,		0,1	347,0	30	16,16	33,232	5,83	24,375	356,4	0,107
49	14,33	33,222	6,13	0,19	3,		0,1	319,0	50	14,23	33,225	6,12	24,788	317,0	0,175
63	13,21	33,244	5,76	0,40	5,		2,3	295,5	75	12,02	33,311	5,21	25,295	268,7	0,249
76	11,92	33,317	5,16	0,76	9,		7,9	266,3	100	10,68	33,610	4,09	25,770	223,5	0,311
94	10,73	33,534	4,30	1,10	15,		14,4	229,8	125	10,42	33,836	3,31	25,993	202,4	0,364
118	10,53	33,760	3,55	1,38	20,		17,8	209,8	150	10,02	33,986	2,82	26,178	184,8	0,414
136	10,22	33,937	2,98	1,66	24,		21,8	191,6	200	9,11	34,146	2,14	26,452	158,7	0,501
164	9,80	34,007	2,73	1,85	29,		22,9	179,6	250	8,54	34,173	1,83	26,563	148,2	0,580
192	9,20	34,135	2,20	2,11	35,		27,1	160,8	300	8,07	34,238	1,27	26,686	136,5	0,654
219	8,94	34,149	2,06	2,19	38,		28,0	155,8	400	6,73	34,240	0,77	26,878	118,3	0,787
257	8,45	34,178	1,77	2,29	43,		29,6	146,4	500	6,14	34,317	0,42	27,017	105,1	0,905
314	7,94	34,253	1,12	2,53	51,		32,5	133,5							
382	6,87	34,225	0,87	2,70	63,		36,3	121,1							
452	6,45	34,290	0,49	2,65	72,		34,4	110,9							
531	5,92	34,325	0,37	2,93	80,		40,2	101,8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 103050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 26.0N	117 44.5W	4/23/78	0540 GMT	2602M	340	10KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16,05	33,210	5,85	0,25	2,		0,1	355,6	0	16,05	33,210	5,85	24,383	355,6	0,000
10	16,00	33,207	5,82	0,26	2,		0,1	354,7	10	16,00	33,207	5,82	24,392	354,7	0,036
29	15,87	33,207	5,85	0,23	2,		0,1	351,9	20	15,93	33,207	5,83	24,407	353,2	0,071
53	15,86	33,206	5,84	0,26	2,		0,1	351,8	30	15,87	33,207	5,85	24,421	351,9	0,106
63	15,32	33,198	5,94	0,27	3,		0,1	341,0	50	15,86	33,206	5,84	24,422	351,8	0,177
72	14,15	33,174	6,07	0,23	3,		0,1	318,9	75	13,91	33,185	6,03	24,825	313,5	0,260
86	13,11	33,246	5,65	0,47	5,		3,0	293,4	100	11,61	33,375	4,90	25,422	256,6	0,332
100	11,61	33,375	4,90	0,77	10,		9,5	256,6	125	10,34	33,547	4,35	25,781	222,5	0,393
124	10,36	33,534	4,39	1,09	15,		14,0	223,7	150	9,93	33,826	3,32	26,068	195,2	0,446
142	10,09	33,738	3,66	1,34	20,		19,1	204,2	200	9,46	34,071	2,27	26,337	169,6	0,539
165	9,65	33,958	2,76	1,79	29,		23,6	180,9	250	8,16	34,047	2,58	26,524	151,9	0,621
193	9,50	34,050	2,36	1,95	32,		25,5	171,7	300	7,22	34,065	2,19	26,673	137,7	0,696
221	9,19	34,103	2,14	2,05	35,		27,0	163,0	400	6,93	34,259	0,69	26,866	119,5	0,830
258	7,85	34,029	2,71	2,01	41,		27,5	148,9	500	5,99	34,308	0,34	27,028	104,1	0,948
314	7,15	34,091	1,89	2,33	54,		33,5	134,8							
384	7,10	34,248	0,81	2,62	62,		35,7	122,4							
454	6,29	34,273	0,48	2,73	74,		37,9	110,2							
531	5,90	34,336	0,29	2,90	81,		39,9	100,8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 107032

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 25.8N	116 11.0W	4/24/78	0141 GMT	482M	330	10KT	1	290 3 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
2	13.90	33.624	8.79	0.37	1.		0.5	280.9	0	13.90	33.624	8.79	25.166	280.9	0.000
10	12.38	33.595	6.67	0.58	4.		3.2	254.2	10	12.38	33.595	6.67	25.447	254.2	0.027
30	11.11	33.592	4.19	1.12	14.		15.3	231.9	20	11.80	33.595	5.06	25.557	243.7	0.052
43	10.70	33.750	3.60	1.40	19.		19.3	213.3	30	11.11	33.592	4.19	25.682	231.9	0.076
53	10.33	33.987	2.73	2.22U	26.		24.2	189.7	50	10.43	33.920	2.98	26.055	196.4	0.119
67	10.27	34.066	2.40	1.85	28.		24.9	182.9	75	10.08	34.086	2.41	26.245	178.4	0.166
81	9.93	34.093	2.42	1.98	30.		26.3	175.4	100	9.80	34.145	2.19	26.339	169.5	0.210
95	9.79	34.114	2.34	2.06	31.		26.9	171.6	125	9.82	34.273	1.50	26.436	160.3	0.251
118	9.83	34.250	1.61	2.27	36.		28.6	162.1	150	9.73	34.311	1.29	26.480	156.1	0.292
136	9.78	34.295	1.39	2.40	38.		29.9	158.0	200	9.51	34.351	1.05	26.547	149.7	0.370
165	9.67	34.319	1.21	2.25	40.		31.6	154.5	250	8.96	34.349	0.93	26.634	141.4	0.445
192	9.59	34.345	1.09	2.37	41.		33.2	151.3	300	8.46	34.339	0.83	26.705	134.7	0.517
224	9.22	34.357	0.94	2.45	44.		33.9	144.6	400	7.80	34.340	0.58	26.807	125.1	0.653
275	8.73	34.337	0.93	2.57	47.		34.8	138.7							
325	8.22	34.342	0.72	2.72	54.		35.8	130.9							
380	7.93	34.339	0.63	2.84	56.		36.7	127.0							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 107035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 21.5N	116 22.5W	4/24/78	0358 GMT	1757M	330	10KT	1	290 3 7

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.96	33.269	6.11	0.20	3.	0.03	0.1	349.3	0	15.96	33.269	6.11	24.448	349.3	0.000
11	14.92	33.282	6.33	0.22	2.	0.00	0.1	326.5	10	15.02	33.283	6.31	24.666	328.6	0.034
29	13.27	33.287	5.94	0.35	5.	0.04	1.2	293.5	20	14.12	33.284	6.14	24.859	310.2	0.066
39	12.06	33.353	5.30	0.66	9.	0.17	7.0	266.2	30	13.14	33.294	5.88	25.064	290.7	0.096
48	11.41	33.407	4.81	0.85	11.	0.17	10.5	250.7	50	11.29	33.419	4.75	25.513	248.0	0.150
62	10.83	33.516	4.43	0.97	14.	0.09	12.2	232.8	75	10.81	33.755	3.75	25.860	214.9	0.208
76	10.81	33.770	3.70	1.24	18.	0.01	17.0	213.7	100	10.36	33.875	3.30	26.032	198.6	0.260
95	10.48	33.837	3.44	1.38	21.	0.00	18.8	203.2	125	10.02	34.074	2.54	26.246	178.3	0.308
118	10.03	34.020	2.74	1.71	27.	0.02	23.6	182.4	150	9.89	34.201	2.02	26.367	166.8	0.352
136	10.01	34.140	2.26	1.89	31.	0.00	25.0	173.2	200	9.39	34.282	1.55	26.513	153.0	0.434
165	9.73	34.241	1.84	2.07	35.	0.00	26.7	161.2	250	8.79	34.307	1.26	26.628	142.0	0.510
193	9.51	34.280	1.57	2.20	37.	0.01	28.0	154.9	300	8.26	34.300	1.01	26.707	134.6	0.581
220	9.05	34.281	1.51	2.31	42.	0.00	29.6	147.7	400	7.11	34.306	0.69	26.879	118.2	0.714
258	8.74	34.312	1.19	2.42	45.	0.01	30.8	140.7	500	6.40	34.336	0.43	26.997	107.0	0.833
314	8.08	34.292	0.97	2.53	51.	0.00	32.9	132.6							
383	7.25	34.301	0.74	2.63	60.	0.00	35.1	120.5							
454	6.72	34.320	0.53	2.77	68.	0.03	37.2	112.1							
530	6.21	34.346	0.37	2.93	76.	0.00	40.2	103.8							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 107040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
30 11.0N	116 42.0W	4/24/78	0740 GMT	2697M	300	16KT	1	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.39	33.254	5.76	0.26	3.		0.1	359.7	0	16.39	33.254	5.76	24.339	359.7	0.000
11	16.38	33.250	5.79	0.24	3.		0.1	359.8	10	16.38	33.251	5.79	24.339	359.7	0.036
29	16.13	33.232	5.82	0.24	2.		0.1	355.7	20	16.26	33.243	5.81	24.360	357.8	0.072
39	14.54	33.232	6.30	0.25	3.		0.1	322.4	30	15.99	33.234	5.88	24.413	352.6	0.108
48	13.41	33.223	5.97	0.35	4.		0.9	300.8	50	13.17	33.231	5.86	25.010	295.9	0.173
62	11.96	33.299	5.20	0.69	7.		7.5	268.4	75	11.19	33.410	4.74	25.524	246.9	0.241
76	11.15	33.417	4.71	0.94	11.		12.1	245.5	100	10.25	33.628	4.32	25.860	215.0	0.299
95	10.44	33.575	4.50	1.04	13.		14.3	222.0	125	9.75	33.864	3.37	26.127	189.6	0.350
118	9.74	33.805	3.60	1.37	21.		20.3	193.6	150	9.57	33.991	2.81	26.256	177.3	0.397
137	9.78	33.936	3.04	1.62	24.		23.4	184.6	200	9.56	34.250	1.66	26.460	158.0	0.482
165	9.34	34.048	2.56	1.87	30.		25.5	169.4	250	8.96	34.294	1.21	26.593	145.4	0.560
193	9.59	34.225	1.79	2.11	34.		28.6	160.2	300	8.07	34.272	1.05	26.712	134.0	0.633
221	9.36	34.288	1.38	2.24	37.		29.4	151.9	400	7.28	34.302	0.61	26.850	120.9	0.766
258	8.83	34.294	1.19	2.32	41.		30.5	143.4	500	6.45	34.322	0.38	26.980	108.7	0.888
314	7.85	34.265	0.99	2.55	53.		34.0	131.3							
385	7.40	34.300	0.64	2.71	59.		36.7	122.5							
453	6.85	34.303	0.51	2.67	66.		35.2	115.0							
528	6.21	34.338	0.29	2.91	75.		40.8	104.4							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 107050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 50.7N	117 22.0W	4/24/78	1328 GMT	2416M	330	12KT	1	310 4 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.21	33.166	5.80	0.36	3.		0.1	362.3	0	16.21	33.166	5.80	24.313	362.3	0.000
10	16.21	33.161	5.82	0.36	3.		0.0	362.6	10	16.21	33.161	5.82	24.309	362.6	0.036
29	16.21	33.186	5.84	0.35	3.		0.0	360.8	20	16.21	33.172	5.83	24.316	362.0	0.073
38	16.12	33.178	5.82	0.36	3.		0.0	359.4	30	16.20	33.187	5.84	24.330	360.6	0.109
47	15.58	33.140	5.96	0.33	3.		0.0	350.7	50	15.50	33.143	5.97	24.453	348.8	0.180
62	14.87	33.145	5.99	0.37	3.		0.0	335.5	75	12.90	33.115	5.98	24.976	299.1	0.261
75	12.90	33.115	5.98	0.48	4.		1.1	299.1	100	10.81	33.301	5.12	25.508	248.5	0.330
94	10.86	33.159	5.43	0.79	9.		7.7	259.7	125	10.47	33.691	4.19	25.870	214.0	0.389
118	10.65	33.636	4.29	1.16	15.		14.2	220.9	150	9.89	33.854	3.56	26.096	192.5	0.440
135	10.19	33.739	4.08	1.32	18.		17.1	205.7	200	9.13	34.061	2.59	26.383	165.3	0.531
164	9.67	33.950	3.05	1.83	29.		23.0	181.8	250	8.49	34.159	1.98	26.560	148.5	0.612
190	9.31	34.042	2.65	1.92	31.		25.4	169.4	300	7.92	34.212	1.38	26.687	136.4	0.686
219	8.80	34.088	2.49	2.03	36.		27.2	158.2	400	6.94	34.254	0.74	26.861	119.9	0.819
256	8.44	34.170	1.87	2.25	43.		29.5	146.8	500	6.22	34.315	0.40	27.005	106.3	0.939
311	7.79	34.215	1.29	2.50	52.		33.2	134.2							
380	7.11	34.240	0.84	2.66	61.		35.9	123.1							
450	6.56	34.288	0.53	2.85	70.		38.0	112.5							
525	6.07	34.325	0.36	2.97	79.		40.2	103.6							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 110035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 46.0N	116 00.0W	4/25/78	0440 GMT	1298M	330	10KT	2	

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.15	33.457	6.51	0.24	1.		0.1	318.5	0	15.15	33.457	6.51	24.772	318.5	0.000
11	14.63	33.470	6.57	0.22	1.		0.1	306.8	10	14.68	33.471	6.56	24.882	308.0	0.031
30	13.52	33.478	5.64	0.37	3.		0.9	284.2	20	14.27	33.472	6.32	24.970	299.6	0.062
39	12.11	33.527	4.59	0.77	9.		8.8	254.3	30	13.52	33.478	5.64	25.132	284.2	0.091
49	11.55	33.623	4.15	1.05	14.		13.4	237.3	50	11.50	33.641	4.08	25.648	235.1	0.143
63	10.92	33.845	3.19	1.38	21.		17.5	210.0	75	10.71	33.931	2.90	26.016	200.1	0.198
77	10.68	33.938	2.88	1.57	23.		20.5	199.1	100	10.06	34.007	2.72	26.187	183.9	0.246
96	10.17	34.006	2.70	1.70	26.		22.5	185.7	125	9.54	34.025	2.75	26.288	174.3	0.292
119	9.61	34.005	2.81	1.72	28.		23.4	176.8	150	9.22	34.076	2.58	26.380	165.6	0.335
138	9.41	34.067	2.61	1.89	31.		25.2	169.1	200	8.74	34.156	2.03	26.519	152.3	0.416
166	8.98	34.080	2.52	2.00	35.		26.1	161.5	250	8.72	34.311	1.08	26.644	140.5	0.491
194	8.79	34.142	2.12	2.13	38.		27.9	154.1	300	8.27	34.341	0.73	26.746	130.9	0.562
222	8.60	34.209	1.65	2.24	43.		29.8	146.3	400	7.18	34.333	0.46	26.890	117.2	0.692
259	8.75	34.339	0.92	2.44	48.		30.4	138.9	500	6.49	34.348	0.33	26.996	107.1	0.811
314	8.05	34.343	0.66	2.66	55.		33.6	128.4							
384	7.34	34.330	0.50	2.73	63.		35.6	119.5							
454	6.71	34.342	0.36	2.80	71.		37.2	110.3							
531	6.42	34.349	0.31	2.87	75.		38.2	106.1							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 110040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 33.0N	116 21.0W	4/25/78	0040 GMT	2089M	310	12KT	2	310 3 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	15.35	33.285	6.38	0.21	2.		0.1	335.2	0	15.35	33.285	6.38	24.596	335.2	0.000
10	14.57	33.306	6.84	0.19	1.		0.1	317.6	10	14.57	33.306	6.84	24.781	317.6	0.033
29	13.37	33.246	6.04	0.29	3.		1.0	298.4	20	14.01	33.286	6.58	24.882	308.0	0.064
38	12.20	33.230	5.60	0.52	6.		5.3	277.8	30	13.23	33.244	5.99	25.008	296.1	0.094
48	11.76	33.293	5.27	0.67	9.		7.7	265.3	50	11.66	33.307	5.20	25.360	262.5	0.150
61	11.17	33.395	4.81	0.87	12.		11.4	247.5	75	11.00	33.587	4.17	25.697	230.4	0.212
75	11.00	33.587	4.17	1.07	15.		15.0	230.4	100	10.46	33.877	3.23	26.017	200.1	0.267
94	10.56	33.824	3.42	1.35	20.		19.5	205.5	125	10.15	33.996	2.76	26.163	186.2	0.315
116	10.25	33.970	2.86	1.65	25.		22.8	189.6	150	9.86	34.055	2.55	26.258	177.1	0.362
135	10.05	34.014	2.69	1.79	27.		24.3	183.1	200	9.22	34.236	1.73	26.504	153.7	0.446
162	9.71	34.095	2.40	1.99	32.		25.8	171.7	250	8.36	34.231	1.42	26.637	141.1	0.522
191	9.41	34.241	1.72	2.21	38.		29.2	156.2	300	7.99	34.254	1.13	26.710	134.2	0.593
218	8.83	34.205	1.76	2.21	41.		29.8	150.0	400	7.07	34.282	0.65	26.865	119.5	0.726
255	8.30	34.237	1.36	2.40	48.		32.2	139.8	500	6.29	34.315	0.37	26.995	107.2	0.846
310	7.94	34.255	1.09	2.58	52.		33.7	133.3							
379	7.24	34.275	0.73	2.79	61.		37.2	122.3							
449	6.69	34.296	0.49	2.79	70.		37.3	113.5							
525	6.10	34.324	0.32	2.95	79.		41.6	104.1							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 110050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 14.9N	116 58.2W	4/24/78	1834 GMT	3169M	300	14KT	1	310 4 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT	Z	T	S	O2	SIGT	DT	DD
1	16.68	33.283	5.82	0.20	2.	0.03	0.1	364.0	0	16.68	33.283	5.82	24.294	364.0	0.000
10	16.64	33.280	5.85	0.18	2.	0.03	0.0	363.3	10	16.64	33.280	5.85	24.301	363.3	0.036
29	16.61	33.280	5.86	0.18	2.	0.03	0.0	362.7	20	16.62	33.282	5.86	24.305	363.0	0.073
52	16.24	33.267	5.90	0.21	1.	0.02	0.0	355.5	30	16.59	33.282	5.86	24.311	362.4	0.109
61	14.95	33.297		0.23	2.	0.02	0.0	326.0	50	16.27	33.270	5.89	24.377	356.2	0.181
71	13.40	33.242	5.97	0.29	3.	0.03	0.0	299.3	75	12.92	33.219	5.89	25.051	292.0	0.263
84	12.17	33.211	5.60	0.57	5.	0.07	4.3	278.6	100	12.01	33.481	4.72	25.429	256.0	0.332
98	12.05	33.456	4.82	0.79	9.	0.02	8.5	258.4	125	11.23	33.708	3.74	25.749	225.5	0.392
122	11.35	33.677	3.82	1.21	15.	0.04	15.6	229.8	150	10.58	33.925	3.12	26.033	198.5	0.446
140	10.69	33.848	3.40	1.47	20.	0.02	19.5	205.9	200	9.47	34.102	2.49	26.360	167.5	0.540
164	10.46	34.002	2.78	1.79	26.	0.03	22.1	190.7							
193	9.47	34.054	2.60	1.92	30.	0.04	25.4	171.0							
221	9.46	34.200	1.98	2.14	36.	0.00	27.7	160.0							

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 113035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 12.0N	115 38.0W	4/25/78	1457 GMT	1298M	260	11KT	1	300 3 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
1	15.75	33.347	6.07	0.40	1.		0.5	339.2
9	15.73	33.345	6.07	0.28	1.		0.3	338.9
29	15.18	33.342	6.24	0.22	1.		0.1	327.5
38	14.09	33.320	6.09	0.26	1.		0.1	307.0
48	12.45	33.382	5.11	0.59	7.		6.3	271.1
62	11.85	33.455		0.81	10.		9.9	254.9
76	11.19	33.592	4.35	1.04	13.		14.4	233.3
94	10.00	33.713	4.19	1.24	18.		18.0	204.6
117	10.02	33.859	3.49	1.46	22.		20.9	194.1
136	9.83	33.980	2.96	1.71	26.		24.8	182.1
163	9.46	34.125	2.31	2.02	34.		27.4	165.5
191	8.92	34.153	2.09	2.22	38.		31.0	155.2
218	8.93	34.250	1.53	2.39	42.		32.2	148.2
256	8.83	34.304	1.18	2.51	45.		33.3	142.6
310	8.38	34.328	0.86	2.67	51.		35.3	134.2
379	7.57	34.311	0.65	2.83	58.		39.1	124.0
449	6.82	34.316	0.45	2.83	68.		38.7	113.7
526	6.24	34.342	0.30	3.08	76.		45.0	104.4

Z	T	S	O2	SIGT	DT	DD
0	15.75	33.347	6.07	24.555	339.2	0.000
10	15.70	33.345	6.08	24.565	338.2	0.034
20	15.43	33.345	6.22	24.625	332.5	0.067
30	15.09	33.340	6.22	24.694	325.9	0.100
50	12.31	33.394	5.06	25.305	267.8	0.160
75	11.24	33.584	4.38	25.650	234.9	0.223
100	10.01	33.769	4.03	26.011	200.7	0.278
125	9.95	33.912	3.26	26.131	189.2	0.327
150	9.65	34.066	2.59	26.301	173.1	0.373
200	8.92	34.191	1.91	26.517	152.5	0.457
250	8.86	34.300	1.21	26.614	143.4	0.533
300	8.48	34.328	0.91	26.693	135.8	0.605
400	7.33	34.311	0.59	26.851	120.8	0.739
500	6.41	34.332	0.34	26.994	107.3	0.860

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 113040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
29 02.8N	115 58.3W	4/25/78	1817 GMT	1856M	270	16KT	1	280 4 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
0	15.84	33.337	5.99	0.18	1.	0.00	0.1	341.8
10	15.71	33.343	6.15	0.16	1.	0.00	0.1	338.6
28	14.33	33.314	6.26	0.18	1.	0.00	0.1	312.2
38	13.87	33.312	6.12	0.22	2.	0.00	0.1	303.2
47	13.09	33.299	5.77	0.35	4.	0.16	2.2	289.2
61	12.10	33.366	4.99	0.54	8.	0.30	5.4	266.0
76	11.45	33.445	4.43	0.77	11.	0.09	9.9	248.6
94	11.01	33.731	3.49	1.07	17.	0.00	15.8	220.0
118	10.17	33.920	3.14	1.40	23.	0.02	21.1	192.0
137	9.50	33.900	3.60	1.41	24.	0.00	21.1	182.8
165	9.21	33.961	3.21	1.60	29.	0.04	22.5	173.8
193	9.03	34.076	2.62	1.78	33.	0.05	25.7	162.6
221	8.63	34.166	2.01	2.11	40.	0.00	29.0	149.9
258	8.33	34.228	1.53	2.30	46.	0.03	30.8	140.9
314	7.92	34.261	1.12	2.46	51.	0.00	32.8	132.6
384	7.57	34.308	0.72	2.52	57.	0.00	33.0	124.3
454	6.60	34.306	0.54	2.65	70.	0.00	36.2	111.6
529	6.23	34.354	0.35	2.88	77.	0.02	39.6	103.4

Z	T	S	O2	SIGT	DT	DD
0	15.84	33.337	5.99	24.527	341.8	0.000
10	15.71	33.343	6.15	24.561	338.6	0.034
20	14.99	33.328	6.21	24.706	324.8	0.067
30	14.25	33.316	6.25	24.856	310.5	0.099
50	12.85	33.310	5.60	25.135	284.0	0.159
75	11.48	33.439	4.47	25.494	249.8	0.226
100	10.81	33.801	3.40	25.895	211.6	0.284
125	9.90	33.919	3.31	26.145	187.8	0.334
150	9.31	33.920	3.51	26.244	178.5	0.381
200	8.93	34.102	2.46	26.447	159.2	0.467
250	8.38	34.220	1.61	26.624	142.4	0.545
300	8.01	34.257	1.20	26.709	134.3	0.616
400	7.35	34.308	0.67	26.846	121.4	0.750
500	6.29	34.332	0.42	27.009	105.9	0.870

RV DAVID STARR JORDAN — CALCOFI CRUISE 7804 — 113050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES
28 41.5N	116 36.0W	4/26/78	0026 GMT	3358M	280	16KT	0	290 3 4

Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
3	17.12	33.344	5.86	0.16	3.		0.1	369.4
11	17.00	33.343	5.83	0.13	3.		0.1	366.7
31	16.66	33.312	5.87	0.13	3.		0.1	361.4
53	14.46	33.349	6.11	0.15	1.		0.1	312.3
62	13.56	33.385	5.59	0.33	4.		3.0	291.8
71	12.92	33.414	5.07	0.56	7.		6.2	277.5
85	12.13	33.469	4.75	0.75	9.		9.7	258.9
98	11.19	33.488	4.65	0.87	12.		12.3	241.0
122	10.25	33.579	4.44	1.06	15.		15.7	218.5
141	10.08	33.768	3.81	1.29	20.		19.4	201.8
165	9.85	33.943	3.12	1.54	25.		22.9	185.2
192	9.09	34.046	2.68	1.80	32.		26.3	165.7
220	8.71	34.070	2.60	1.90	36.		27.4	158.2
258	8.05	34.102	2.28	2.06	43.		29.4	146.3
313	7.22	34.103	1.82	2.33	53.		33.9	134.8
385	7.00	34.254	0.77	2.64	63.		36.7	120.7
455	6.60	34.312	0.48	2.80	72.		37.9	111.2
529	6.22	34.358	0.30	2.88	80.		39.8	103.0

Z	T	S	O2	SIGT	DT	DD
0	17.12	33.344	5.86	24.238	369.4	0.000
10	17.02	33.343	5.83	24.261	367.2	0.037
20	16.85	33.331	5.85	24.290	364.4	0.073
30	16.68	33.316	5.87	24.318	361.7	0.110
50	14.82	33.340	6.08	24.753	320.3	0.178
75	12.69	33.433	4.94	25.260	272.0	0.253
100	11.08	33.493	4.65	25.609	238.8	0.317
125	10.21	33.609	4.35	25.851	215.8	0.375
150	10.02	33.844	3.53	26.067	195.3	0.427
200	8.96	34.059	2.64	26.407	163.0	0.518
250	8.19	34.097	2.36	26.557	148.7	0.598
300	7.38	34.101	1.94	26.679	137.2	0.672
400	6.92	34.272	0.67	26.877	118.4	0.805
500	6.36	34.343	0.36	27.008	106.0	0.924

			Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
60.050	04/19/78 1458GMT 37 57.5N 122 53.1W BOTTOM 47M WIND 170 14KT WEATHER 6 DOMINANT WAVES 260 03 05		10	13.09	32.044	6.33	0.45	4.	0.04	0.2	381.4
60.052[5]	04/19/78 1644GMT 37 52.5N 123 03.5W BOTTOM 90M WIND 200 13KT WEATHER 1 DOMINANT WAVES 250 05 05		10	12.87	32.415	5.48	0.69	4.	0.23	1.7	350.0
63.050	04/19/78 1054GMT 37 23.3N 122 27.8W BOTTOM 28M WIND 090 06KT WEATHER DOMINANT WAVES		10	12.64	32.865	5.67	0.63	7.	0.23	3.9	312.7
66.049	04/18/78 0927GMT 36 53.0N 122 01.7W BOTTOM 24M WIND 350 11KT WEATHER DOMINANT WAVES		10	13.58	32.587	6.29	0.58	3.	0.04	0.3	350.8
70.051	04/18/78 0356GMT 36 11.3N 121 43.9W BOTTOM 121M WIND 350 10KT WEATHER 1 DOMINANT WAVES 160 02 07		10	12.64	33.048	6.08	1.00	11.	0.22	4.5	299.2
70.065	04/17/78 1609GMT 35 43.0N 122 45.0W BOTTOM 1849M WIND 350 04KT WEATHER 1 DOMINANT WAVES 290 05 06		10	14.14	32.831	6.08					343.8
73.050	04/16/78 1536GMT 35 37.0N 121 17.0W BOTTOM 104M WIND 070 06KT WEATHER 1 DOMINANT WAVES 300 05 05		10	12.78	32.989	6.12	0.64	8.	0.19	2.9	306.1
73.065	04/17/78 0239GMT 35 08.0N 122 19.0W BOTTOM 3825M WIND 300 12KT WEATHER 1 DOMINANT WAVES 260 05 05		10	14.29		6.08	0.40	5.	0.02	0.1	
77.048	04/16/78 1112GMT 35 08.3N 120 43.7W BOTTOM 28M WIND 080 10KT WEATHER DOMINANT WAVES		10	12.62	33.162	6.40	0.59	4.	0.16	1.7	290.5
77.065	04/15/78 1930GMT 34 34.0N 121 55.0W BOTTOM 3731M WIND 190 26KT WEATHER 6 DOMINANT WAVES 190 06 05		10	14.46	33.019	6.05	0.50	5.	0.01	0.1	336.4
80.051	04/14/78 1722GMT 34 26.0N 120 32.6W BOTTOM 121M WIND 210 04KT WEATHER 1 DOMINANT WAVES 290 03 05		10	12.42	33.266	5.25	0.34	13.	0.31	7.2	279.1
83.040[6]	04/13/78 1848GMT 34 12.5N 119 24.2W BOTTOM 35M WIND 260 06KT WEATHER 2 DOMINANT WAVES 270 02 05		10	13.86	33.285	5.81	0.56	8.	0.25	2.3	305.0
87.032[5]	04/10/78 0748GMT 33 53.5N 118 26.5W BOTTOM 21M WIND 180 02KT WEATHER 1 DOMINANT WAVES		10	14.13	33.292	5.57	0.65	13.	0.11	2.8	309.8
87.032[7]	04/10/78 0849GMT 33 54.5N 118 28.0W BOTTOM 35M WIND 170 04KT WEATHER 1 DOMINANT WAVES		10	15.18	33.243	5.95	0.37	10.	0.02	0.6	334.8
87.033	04/10/78 0952GMT 33 53.9N 118 29.0W BOTTOM 50M WIND 160 04KT WEATHER 1 DOMINANT WAVES		10	15.17	33.235	6.02	0.34	9.	0.00	0.5	335.1
87.034	04/10/78 1113GMT 33 52.0N 118 33.2W BOTTOM 73M WIND 130 03KT WEATHER 1 DOMINANT WAVES		10	14.40	33.230	5.86	0.42	8.	0.02	0.6	319.8
87.035	04/10/78 1242GMT 33 50.0N 118 37.8W BOTTOM 574M WIND 260 06KT WEATHER 1 DOMINANT WAVES 240 02 04		10	15.14	33.162	6.20	0.33	6.	0.00	0.2	339.9
87.055	04/11/78 2055GMT 33 10.0N 120 00.0W BOTTOM 1202M WIND 310 17KT WEATHER 2 DOMINANT WAVES 310 03 08		10	14.52	33.238	6.05	0.45	4.	0.01	0.0	321.6
90.027[6]	04/09/78 0220GMT 33 29.0N 117 45.5W BOTTOM 50M WIND 070 10KT WEATHER 1 DOMINANT WAVES 090 02 06		10	16.52	32.939	6.55	1.44	5.	0.04	0.1	385.6
90.028	04/09/78 0356GMT 33 28.5N 117 46.7W BOTTOM 464M WIND 080 06KT WEATHER 1 DOMINANT WAVES		10	16.49	32.943	6.30	0.27	2.	0.02	0.0	384.6
90.029	04/09/78 0543GMT 33 27.0N 117 49.5W BOTTOM 630M WIND 110 06KT WEATHER 1 DOMINANT WAVES		10	16.06	33.123	6.07	1.05	4.	0.00	0.1	362.1
90.030	04/09/78 0719GMT 33 25.0N 117 53.5W BOTTOM 621M WIND 160 08KT WEATHER 1 DOMINANT WAVES		10	16.07	33.096	6.11	0.22	3.	0.00	0.0	364.3
90.031	04/09/78 1007GMT 33 23.0N 117 57.7W BOTTOM 460M WIND 220 05KT WEATHER 1 DOMINANT WAVES		10	15.70	33.120	6.14	0.29	3.	0.03	0.0	354.7
93.026[7]	03/30/78 0319GMT 32 57.0N 117 17.4W BOTTOM 37M WIND 180 07KT WEATHER 1 DOMINANT WAVES 160 01 06		10	17.04	33.051	6.03	0.23	7.	0.06	0.0	388.9

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

10 METER DATA

				Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
93.026[9]	03/30/78 0423GMT 32 56.7N 117 18.4W BOTTOM 69M WIND 170 05KT WEATHER 1 DOMINANT WAVES			10	17.08	33.052	6.03	0.54	7.	0.06	0.0	389.7
93.028	03/30/78 0601GMT 32 54.7N 117 21.8W BOTTOM 574M WIND 180 06KT WEATHER 1 DOMINANT WAVES			10	17.05	33.089	5.96	0.13	6.	0.02	0.1	386.4
93.035	03/30/78 1440GMT 32 40.5N 117 51.5W BOTTOM 539M WIND 120 10KT WEATHER 1 DOMINANT WAVES 220 04 05			10	15.56	33.264	5.94		3.	0.00	0.1	341.2
93.045	03/31/78 0052GMT 32 20.0N 118 32.0W BOTTOM 1202M WIND 090 15KT WEATHER 2 DOMINANT WAVES 100 03 05			10	15.48	33.270	5.94	0.74	3.	0.01	0.0	339.1
93.055	03/31/78 1049GMT 32 00.0N 119 13.5W BOTTOM 1392M WIND 210 18KT WEATHER 1 DOMINANT WAVES			10	15.89	33.154	5.78	0.61	6.	0.00	0.2	356.2

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

10 METER DATA

				Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
97.029	04/04/78 2220GMT 32 17.5N 117 04.7W BOTTOM 38M WIND 260 06KT WEATHER 1 DOMINANT WAVES 260 03 05			10	16.83	33.126 A	6.13	0.75	4.	0.04	0.0	378.8
97.032	04/05/78 0203GMT 32 12.0N 117 15.2W BOTTOM 1387M WIND 310 17KT WEATHER 1 DOMINANT WAVES 310 03 04			10	16.67	33.129 A	5.83	0.68	3.	0.00	0.0	375.0
97.045	04/05/78 1345GMT 31 46.0N 118 08.5W BOTTOM 1857M WIND 320 09KT WEATHER 1 DOMINANT WAVES 320 06 05			10	15.56	33.180 A	5.88	0.82	1.	0.02	0.0	347.3
97.055	04/05/78 2040GMT 31 25.5N 118 49.5W BOTTOM 925M WIND 320 19KT WEATHER 1 DOMINANT WAVES 290 05 06			10	16.22	33.190 A	5.80		2.			360.7

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

10 METER DATA

				Z	T	S	O2	PO4	SIO3	NO2	NO3	DT
100.029	04/22/78 0219GMT 31 42.0N 116 43.4W BOTTOM 112M WIND 300 14KT WEATHER 1 DOMINANT WAVES 260 05 05			10	11.14	33.745	4.02	1.11	17.	0.14	15.7	221.2
100.045	04/22/78 1337GMT 31 10.5N 117 46.5W BOTTOM 1485M WIND 300 16KT WEATHER 1 DOMINANT WAVES 310 08 05			10	15.62	33.168	5.84	0.26	3.		0.1	349.5
103.029	04/23/78 2013GMT 31 07.0N 116 21.0W BOTTOM 30M WIND 290 05KT WEATHER 1 DOMINANT WAVES 290 04 07			10	11.70	33.735	4.81	1.37	16.		13.7	231.6
103.045	04/23/78 0901GMT 30 36.0N 117 24.0W BOTTOM 2135M WIND 320 14KT WEATHER 1 DOMINANT WAVES			10	16.17	33.243	5.82	0.19	3.		0.1	355.8
107.031	04/24/78 0026GMT 30 27.8N 116 07.0W BOTTOM 41M WIND 310 13KT WEATHER 0 DOMINANT WAVES 260 03 07			10	12.64	33.603	6.68	0.88	3.		1.6	258.4
107.045	04/24/78 1028GMT 30 01.5N 117 02.0W BOTTOM 1485M WIND 300 18KT WEATHER 1 DOMINANT WAVES			10	16.44	33.280	5.85	0.37	3.		0.2	358.9
110.032[4]	04/25/78 0645GMT 29 51.2N 115 49.7W BOTTOM 47M WIND 290 13KT WEATHER 2 DOMINANT WAVES			10	12.14	33.646	5.29	0.66	6.		5.8	246.1
110.045	04/24/78 2135GMT 29 26.5N 116 39.5W BOTTOM 1670M WIND 300 11KT WEATHER 1 DOMINANT WAVES 310 04 04			10	16.56	33.269	5.80	0.27	3.	0.04	0.1	362.4
113.029	04/25/78 1126GMT 29 24.5N 115 13.5W BOTTOM 26M WIND 320 11KT WEATHER 1 DOMINANT WAVES			10	12.70	33.728	5.12	0.88	13.		9.3	250.3
113.030	04/25/78 1219GMT 29 22.0N 115 18.0W BOTTOM 60M WIND 010 09KT WEATHER 1 DOMINANT WAVES 290 03 05			10	12.86	33.707	4.97	1.12	15.		11.0	254.8
113.045	04/25/78 2125GMT 28 52.0N 116 18.0W BOTTOM 2135M WIND 280 19KT WEATHER 0 DOMINANT WAVES 270 03 04			10	16.78	33.302	5.92	0.17	2.	0.01	0.1	364.8

A) THESE SALINITY SAMPLES WERE ANALYZED ASHORE SIX WEEKS AFTER THE TIME OF COLLECTION.

	DEPTH	CHL A	PHAEO
STATION 60055	0	0.47	0.18
04/19/78	10	0.66	0.33
1852 GMT	24	0.59	0.34
	33	0.46	0.25
37 47.0N	43	0.30	0.13
123 15.0W	57	0.15	0.11
	71	0.12	0.28
	95	0.07	0.27
STATION 60060	2	0.35	0.15
04/19/78	11	0.52	0.20
2236 GMT	30	0.54	0.28
	40	0.79	0.47
37 37.0N	49	0.37	0.17
123 37.0W	63	0.14	0.13
	77	0.11	0.08
	96	0.05	0.02
	119	0.04	0.07
	138	0.07	0.14
	166	0.03	0.04
	193	0.02	0.04
STATION 63052	0	0.66	0.19
04/19/78	10	0.55	0.23
0930 GMT	19	0.49	0.16
	29	0.60	0.20
37 19.0N	47	0.34	0.25
122 36.0W	70	0.17	0.41
STATION 63055	1	0.18	0.42
04/19/78	10	0.26	0.20
0641 GMT	29	0.51	0.12
	43	0.32	0.27
37 13.0N	52	0.16	0.09
122 50.0W	66	0.06	0.12
	80	0.05	0.11
	99	0.06	0.06
	123	0.02	0.10
	142	0.03	0.09
	175	0.03	0.08
	203	0.05	0.09
STATION 63060	1	0.13	0.07
04/19/78	10	0.16	0.12
0135 GMT	30	0.99	0.59
	39	0.69	0.57
37 03.0N	50	0.66	0.33
123 12.0W	63	0.26	0.16
	78	0.17	0.51
	96	0.05	0.15
	120	0.02	0.08
	137	0.05	0.10
	165	0.02	0.12
	193	0.03	0.09
STATION 67050	0	0.26	0.20
04/18/78	10	0.30	0.16
1108 GMT	28	1.15	0.53
	42	0.79	0.28
36 48.0N	56	0.32	0.25
122 05.0W	70	0.06	0.15
	84	0.07	0.18
	102	0.06	0.41
	125	0.09	0.13
	152	0.14	0.07
	184	0.07	0.17
	214	0.03	0.10
STATION 67055	1	0.17	0.04
04/18/78	11	0.15	0.05
1444 GMT	30	0.14	0.09
	39	0.69	0.24
36 39.0N	49	1.02	0.34
122 26.0W	63	0.55	0.00
	78	0.22	0.00
	96	0.07	0.04
	120	0.01	0.04
	138	0.01	0.04
	166	0.05	0.05
	193	0.03	0.09
STATION 67060	0	0.09	0.03
04/18/78	10	0.10	0.04
1837 GMT	28	0.15	0.04
	37	0.16	0.05
36 28.0N	47	0.38	0.17
122 47.0W	61	0.68	0.25
	75	0.30	0.10
	117	0.02	0.03
	136	0.00	0.02
STATION 70053	2	0.44	0.18
04/18/78	11	0.69	0.26
0145 GMT	28	1.05	0.72
	37	0.85	0.90
36 06.5N	46	0.53	0.56
121 54.0W	59	0.34	0.61
	72	0.18	0.21
	89	0.13	0.25
	111	0.06	0.16
	129	0.05	0.24
	155	0.03	0.10
	181	0.02	0.11
STATION 70060	1	0.09	0.03
04/17/78	11	0.09	0.03
1937 GMT	30	0.11	0.02
	39	0.12	0.04
35 53.0N	49	0.26	0.07
122 22.5W	63	0.61	0.28
	76	0.26	0.12
	96	0.07	0.07
	119	0.01	0.04
	138	0.00	0.04
	166	0.01	0.04
	194	0.02	0.06
STATION 70070	1	0.12	0.04
04/17/78	10	0.12	0.04
1320 GMT	29	0.13	0.04
	38	0.13	0.04
35 33.0N	48	0.29	0.00
123 06.0W	62	0.63	0.20
	75	0.34	0.23
	94	0.11	0.06
	117	0.02	0.02
	136	0.01	0.02
	163	0.01	0.03
	191	0.00	0.03
STATION 73053	1	0.47	0.14
04/16/78	10	0.60	0.07
1817 GMT	29	0.66	0.37
	39	0.76	0.41
35 31.4N	53	0.33	0.31
121 28.6W	67	0.22	0.16
	90	0.11	0.11
	109	0.06	0.11
	128	0.05	0.14
	146	0.05	0.15
	174	0.02	0.11
	207	0.02	0.08
STATION 73060	1	0.06	0.06
04/16/78	11	0.09	0.02
2325 GMT	30	0.10	0.03
	39	0.10	0.04
35 17.5N	49	0.18	0.08
121 57.9W	63	0.55	0.23
	77	0.19	0.16
	96	0.07	0.09
	119	0.00	0.08
	137	0.01	0.08
STATION 73070	1	0.07	0.02
04/17/78	10	0.09	0.01
0618 GMT	29	0.08	0.02
	38	0.11	0.01
34 58.0N	47	0.11	0.04
122 40.0W	61	0.18	0.06
	75	0.38	0.35
	94	0.21	0.12
	117	0.03	0.02
	136	0.02	0.01
	164	0.01	0.01
STATION 77051	1	0.79	0.00
04/16/78	10	0.45	0.22
0853 GMT	28	0.85	0.68
	42	0.45	0.41
35 02.0N	51	0.34	0.30
120 56.5W	65	0.24	0.06
	79	0.09	0.09
	97	0.07	0.10
	120	0.04	0.09
	139	0.02	0.07
	172	0.02	0.09
	200	0.03	0.14
STATION 77055	1	0.24	0.07
04/16/78	11	0.23	0.08
0445 GMT	30	0.33	0.16
	39	0.66	0.21
34 54.5N	48	0.50	0.17
121 13.0W	62	0.28	0.23
	76	0.19	0.13
	95	0.14	0.07
	118	0.07	0.04
	136	0.02	0.06
	164	0.02	0.05
	191	0.02	0.06
STATION 77060	2	0.28	0.06
04/16/78	11	0.24	0.07
0000 GMT	31	0.52	0.21
	40	0.82	0.46
34 44.0N	49	0.53	0.30
121 34.0W	64	0.14	0.15
	78	0.16	0.10
	96	0.06	0.10
	120	0.03	0.08
	139	0.04	0.08
	165	0.02	0.06
	192	0.02	0.07
STATION 77070	1	0.18	0.02
04/15/78	10	0.21	0.00
1614 GMT	29	0.26	0.09
	38	0.29	0.13
34 25.0N	47	0.50	0.27
122 16.0W	62	0.46	0.22
	76	0.34	0.26
	95	0.16	0.15
	119	0.03	0.07
	138	0.01	0.08
	166	0.01	0.05
	194	0.01	0.06

	DEPTH	CHL A	PHAEO
STATION 80052	0	2.87	0.63
04/14/78	11	1.74	0.66
1856 GMT	30	0.39	0.42
	44	0.13	0.31
34 24.8N	54	0.11	0.36
120 36.0W	68	0.06	0.25
	82	0.04	0.15
	101	0.05	0.13
	124	0.05	0.18
	143	0.03	0.13
	172	0.05	0.11
	196	0.03	0.09
STATION 80055	0	1.08	0.32
04/14/78	9	0.69	0.47
2227 GMT	28	1.08	0.71
	37	0.59	0.71
34 19.0N	46	0.53	0.54
120 48.0W	59	0.22	0.33
	73	0.15	0.28
	91	0.13	0.24
	113	0.09	0.26
	131	0.08	0.13
	157	0.06	0.19
	185	0.08	0.15
STATION 80060	0	2.67	0.42
04/15/78	10	2.08	0.53
0315 GMT	28	2.87	0.69
	37	2.08	1.07
34 09.0N	46	1.18	1.46
121 10.0W	59	0.43	0.38
	73	0.24	0.56
	91	0.39	0.19
	114	0.10	0.40
	132	0.03	0.11
	159	0.02	0.10
	186	0.04	0.06
STATION 80070	1	0.15	0.03
04/15/78	10	0.14	0.05
0953 GMT	29	0.18	0.07
	38	0.37	0.18
33 48.5N	47	0.69	0.28
121 51.0W	61	0.27	0.14
	75	0.14	0.10
	94	0.07	0.07
	117	0.02	0.05
	135	0.02	0.04
	163	0.00	0.04
	191	0.02	0.04
STATION 82047	1	2.01	0.00
04/14/78	10	2.08	0.65
1320 GMT	29	0.66	0.37
	43	0.21	0.23
34 16.5N	52	0.17	0.17
119 59.0W	66	0.09	0.18
	80	0.12	0.08
	94	0.06	0.12
	117	0.06	0.13
	135	0.07	0.12
	163	0.07	0.11
	191	0.05	0.08
STATION 83042	0	1.05	0.41
04/13/78	10	1.08	0.45
1700 GMT	29	0.62	0.36
	38	0.28	0.38
34 10.0N	52	0.24	0.44
119 29.5W	66	0.16	0.35
	80	0.07	0.20
	98	0.06	0.15
	121	0.03	0.11
	144	0.03	0.10
STATION 83051	0	0.30	0.11
04/13/78	10	0.28	0.14
1137 GMT	29	1.68	0.61
	43	1.22	0.50
33 52.0N	52	0.72	0.30
120 08.5W	66	0.54	0.24
	81	0.40	0.26
	99	0.24	0.30
	123	0.12	0.13
	142	0.13	0.18
	172	0.07	0.06
	195	0.08	0.11
STATION 83055	1	1.96	0.07
04/13/78	10	1.96	0.00
0824 GMT	29	2.81	1.55
	38	1.31	0.65
33 44.0N	47	0.79	0.41
120 24.5W	61	0.47	0.44
	75	0.30	0.12
	93	0.13	0.15
	116	0.16	0.13
	134	0.22	0.07
	162	0.07	0.12
	190	0.12	0.16
STATION 83060	1	0.27	0.07
04/13/78	10	0.39	0.09
0400 GMT	29	0.79	0.22
	39	0.76	0.31
33 34.3N	48	0.46	0.31
120 45.0W	62	0.41	0.32
	76	0.23	0.18
	95	0.11	0.13
	118	0.06	0.11
	137	0.05	0.15
	165	0.06	0.02
	192	0.02	0.05
STATION 83070	0	0.11	0.02
04/12/78	9	0.11	0.02
2110 GMT	28	0.15	0.04
	37	0.23	0.10
33 14.5W	47	0.33	0.09
121 26.0W	60	0.66	0.25
	74	0.23	0.18
	93	0.17	0.30
	116	0.09	0.17
	135	0.02	0.03
	162	0.01	0.03
	190	0.00	0.03
STATION 87036	1	0.32	0.11
04/11/78	11	0.35	0.12
0257 GMT	30	1.38	0.28
	39	1.18	0.39
33 49.0N	49	0.59	0.20
118 40.0W	63	0.28	0.09
	77	0.09	0.03
	96	0.03	0.03
	120	0.06	0.07
	138	0.04	0.05
	166	0.04	0.04
	194	0.03	0.03
STATION 87040	1	0.29	0.00
04/11/78	10	0.18	0.03
0812 GMT	30	0.58	0.00
	39	1.55	0.13
33 40.0N	49	1.91	0.38
118 58.0W	63	0.49	0.20
	77	0.17	0.08
	96	0.08	0.03
	119	0.03	0.05
	138	0.05	0.01
	166	0.07	0.01
	193	0.04	0.05
STATION 87045	1	0.55	0.00
04/11/78	11	0.38	0.16
1246 GMT	30	3.96	0.67
	39	1.22	0.66
33 30.0N	48	0.29	0.13
119 19.0W	62	0.12	0.08
	77	0.07	0.07
	95	0.04	0.07
	119	0.02	0.04
	137	0.02	0.03
	165	0.04	0.03
	193	0.02	0.02
STATION 87050	1	0.54	0.24
04/11/78	11	0.79	0.26
1653 GMT	20	0.72	0.32
33 20.0N	30	5.05	1.60
119 39.5W	49	0.45	0.40
STATION 87060	0	0.14	0.03
04/12/78	10	0.17	0.02
0614 GMT	29	0.38	0.05
	38	0.72	0.14
33 00.0N	48	0.85	0.35
120 21.5W	62	0.54	0.24
	76	0.23	0.10
	95	0.09	0.06
	118	0.03	0.03
	137	0.02	0.02
	165	0.01	0.02
	193	0.01	0.01
STATION 87070	2	0.16	0.01
04/12/78	11	0.17	0.00
1406 GMT	30	0.15	0.02
	39	0.20	0.03
32 39.6N	49	0.28	0.05
121 02.0W	63	0.89	0.30
	77	0.39	0.22
	95	0.18	0.04
	119	0.03	0.02
	137	0.02	0.02
	165	0.00	0.02
	193	0.00	0.02
STATION 90033	1	0.55	0.04
04/09/78	10	0.56	0.00
1329 GMT	30	0.40	0.18
	40	1.51	0.12
33 18.5N	48	2.67	1.31
118 07.0W	62	0.63	0.31
	77	0.21	0.37
	95	0.03	0.14
	118	0.02	0.05
	136	0.01	0.05
	164	0.02	0.06
	192	0.00	0.11
STATION 90037	1	0.44	0.07
04/09/78	10	0.38	0.08
1742 GMT	29	0.16	0.06
	39	0.92	0.22
33 11.0N	49	1.71	0.46
118 22.5W	63	0.85	0.31
	77	0.22	0.20
	96	0.08	0.08
	118	0.02	0.05
	138	0.02	0.06
	165	0.01	0.04
	193	0.02	0.04

	DEPTH	CHL A	PHAEO
STATION 90045	1	0.58	0.12
04/09/78	10	0.52	0.13
2338 GMT	29	0.92	0.24
	38	4.46	1.01
32 54.5N	48	1.39	0.75
118 55.5W	62	0.46	0.14
	75	0.22	0.22
	94	0.12	0.18
	117	0.07	0.10
	135	0.13	0.12
	162	0.10	0.07
	190	0.09	0.16
STATION 90053	1	0.20	0.05
04/08/78	11	0.18	0.06
1412 GMT	29	0.17	0.08
	53	0.23	0.10
32 39.0N	62	0.44	0.15
119 29.0W	72	0.39	0.19
	86	0.27	0.18
	100	0.13	0.12
	123	0.03	0.07
	142	0.01	0.04
STATION 90060	1	0.12	0.02
04/08/78	10	0.11	0.03
0815 GMT	57	0.19	0.10
	66	0.54	0.23
32 25.0N	80	0.27	0.26
119 57.5W	94	0.16	0.10
	108	0.11	0.07
	132	0.04	0.03
	150	0.02	0.04
	179	0.02	0.01
	207	0.02	0.02
STATION 90070	2	0.08	0.01
04/08/78	11	0.08	0.01
0153 GMT	30	0.08	0.01
	53	0.12	0.01
32 04.5N	62	0.43	0.16
120 38.3W	71	0.35	0.23
	85	0.23	0.15
	99	0.17	0.08
	122	0.06	0.02
	141	0.03	0.01
	164	0.01	0.02
	192	0.03	0.01
STATION 90080	1	0.11	0.03
04/07/78	10	0.12	0.02
1937 GMT	29	0.13	0.01
	53	0.16	0.03
31 44.5N	62	0.27	0.08
121 19.5W	71	0.51	0.25
	85	0.33	0.23
	99	0.23	0.08
	123	0.07	0.04
	142	0.03	0.01
	165	0.01	0.01
	192	0.01	0.01
STATION 90090	2	0.10	0.00
04/07/78	11	0.10	0.00
1235 GMT	31	0.10	0.00
	40	0.11	0.00
31 22.3N	49	0.14	0.02
122 01.4W	64	0.50	0.12
	78	0.47	0.19
	96	0.21	0.10
	120	0.07	0.02
	138	0.06	0.00
	166	0.02	0.00
	193	0.04	0.00
STATION 90100	3	0.06	0.00
04/07/78	12	0.07	0.00
0546 GMT	31	0.07	0.00
	41	0.08	0.00
31 02.0N	50	0.08	0.01
122 42.2W	64	0.12	0.01
	77	0.29	0.04
	97	0.39	0.19
	120	0.24	0.15
	139	0.07	0.03
	167	0.07	0.00
	194	0.02	0.02
STATION 90110	1	0.05	0.01
04/06/78	10	0.05	0.00
2330 GMT	29	0.06	0.00
	39	0.07	0.00
30 45.1N	48	0.08	0.01
123 19.9W	62	0.10	0.00
	76	0.19	0.04
	94	0.55	0.06
	118	0.25	0.13
	136	0.18	0.01
	164	0.05	0.01
	191	0.01	0.01
STATION 90120	1	0.07	0.00
04/06/78	11	0.06	0.00
1740 GMT	29	0.07	0.01
	39	0.08	0.00
30 25.1N	48	0.07	0.02
123 59.9W	62	0.15	0.00
	77	0.16	0.04
	94	0.43	0.15
	118	0.29	0.19
	136	0.16	0.07
	164	0.02	0.02
	192	0.02	0.00
STATION 90130	0	0.06	0.00
04/06/78	10	0.05	0.01
1126 GMT	29	0.06	0.00
	40	0.07	0.00
30 04.1N	48	0.08	0.01
124 37.8W	63	0.10	0.01
	77	0.15	0.01
	96	0.45	0.03
	119	0.27	0.16
	138	0.10	0.04
	166	0.04	0.02
	194	0.01	0.01
STATION 90140	1	0.05	0.01
04/06/78	11	0.06	0.01
0540 GMT	30	0.06	0.01
	38	0.07	0.01
29 45.1N	49	0.06	0.02
125 19.6W	63	0.11	0.00
	77	0.12	0.05
	94	0.17	0.10
	118	0.20	0.13
	137	0.11	0.08
	164	0.05	0.03
	193	0.03	0.00
STATION 90150	0	0.06	0.00
04/05/78	10	0.06	0.01
2305 GMT	38	0.07	0.01
	61	0.10	0.01
29 23.0N	80	0.12	0.03
125 59.8W	94	0.15	0.04
	108	0.25	0.16
	127	0.27	0.18
	145	0.13	0.07
	169	0.04	0.01
	192	0.00	0.03
	216	0.00	0.02
STATION 90160	1	0.07	0.01
04/05/78	10	0.06	0.02
1630 GMT	39	0.07	0.01
	62	0.09	0.01
29 05.1N	81	0.10	0.03
126 38.8W	95	0.13	0.06
	109	0.19	0.09
	129	0.29	0.16
	146	0.17	0.05
	170	0.07	0.02
	193	0.04	0.00
	216	0.01	0.01
STATION 90170	0	0.03	0.01
04/05/78	9	0.07	0.01
1058 GMT	28	0.06	0.01
	38	0.05	0.01
28 45.1N	47	0.05	0.01
127 17.3W	61	0.09	0.00
	75	0.06	0.01
	94	0.07	0.01
	117	0.12	0.00
	136	0.15	0.10
	164	0.09	0.05
	193	0.03	0.01
STATION 90180	1	0.06	0.01
04/05/78	11	0.11	0.05
0427 GMT	41	0.05	0.01
	65	0.07	0.01
28 25.1N	82	0.08	0.01
127 57.4W	97	0.11	0.02
	111	0.13	0.03
	130	0.31	0.09
	150	0.17	0.06
	172	0.07	0.03
	196	0.03	0.00
	220	0.01	0.00
STATION 90190	0	0.06	0.01
04/04/78	10	0.06	0.01
2223 GMT	38	0.07	0.01
	60	0.08	0.02
28 05.1N	80	0.10	0.01
128 36.5W	94	0.12	0.03
	108	0.17	0.04
	127	0.17	0.09
	145	0.18	0.10
	169	0.17	0.08
	192	0.07	0.04
	216	0.02	0.02
STATION 90200	1	0.05	0.01
04/04/78	10	0.07	0.00
1627 GMT	39	0.06	0.01
	63	0.07	0.01
27 45.1N	81	0.09	0.02
129 15.5W	96	0.09	0.03
	110	0.12	0.04
	128	0.13	0.08
	147	0.19	0.12
	170	0.08	0.04
	193	0.03	0.01
	217	0.01	0.02
STATION 93040	1	0.24	0.05
03/30/78	10	0.26	0.04
1954 GMT	29	0.32	0.09
	38	0.76	0.11
32 30.0N	47	0.45	0.18
118 11.5W	61	0.24	0.15
	75	0.08	0.10
	93	0.10	0.00
	116	0.02	0.07
	135	0.02	0.03
	162	0.01	0.04
	190	0.02	0.03
STATION 93050	2	0.14	0.00
03/31/78	11	0.11	0.01
0631 GMT	30	0.12	0.04
	41	0.21	0.06
32 10.0N	50	0.24	0.08
118 53.0W	64	0.36	0.09
	78	0.17	0.12
	97	0.15	0.11
	120	0.05	0.05
	139	0.03	0.09
	167	0.00	0.04
	195	0.01	0.03
STATION 93060	1	0.15	0.00
03/31/78	10	0.12	0.01
1552 GMT	29	0.15	0.04
	38	0.23	0.00
31 50.4N	48	0.26	0.00
119 33.7W	62	0.26	0.10
	76	0.32	0.04
	95	0.17	0.09
	118	0.10	0.06
	137	0.06	0.05
	165	0.02	0.05
	193	0.00	0.01
STATION 93070	2	0.10	0.00
04/01/78	12	0.06	0.00
0137 GMT	30	0.10	0.00
	54	0.15	0.02
31 30.0N	63	0.22	0.06
120 14.0W	73	0.25	0.09
	88	0.23	0.14
	102	0.23	0.11
	125	0.09	0.06
	143	0.03	0.04
	167	0.00	0.02

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	DEPTH	CHL A	PHAEO
STATION 93080	1	0.07	0.05
04/01/78	11	0.06	0.01
0858 GMT	30	0.07	0.01
	39	0.07	0.01
31 10.0N	48	0.10	0.01
120 54.4W	63	0.12	0.03
	77	0.20	0.10
	96	0.30	0.00
	118	0.12	0.04
	137	0.05	0.06
	165	0.00	0.02
	193	0.00	0.01
STATION 93090	1	0.10	0.01
04/01/78	10	0.10	0.01
1507 GMT	29	0.10	0.01
	38	0.11	0.02
30 51.0N	47	0.13	0.04
121 34.5W	61	0.29	0.16
	75	0.26	0.21
	93	0.09	0.09
	116	0.18	0.00
	135	0.01	0.02
STATION 93100	1	0.08	0.01
04/01/78	11	0.08	0.00
2120 GMT	30	0.08	0.01
	38	0.10	0.02
30 30.0N	48	0.12	0.04
122 09.0W	63	0.27	0.16
	77	0.25	0.16
	96	0.16	0.10
	119	0.08	0.06
	138	0.02	0.03
	167	0.00	0.02
STATION 93110	1	0.05	0.00
04/02/78	11	0.06	0.00
0418 GMT	30	0.06	0.00
	54	0.07	0.01
30 09.6N	63	0.09	0.01
122 54.7W	72	0.11	0.02
	86	0.13	0.05
	100	0.22	0.14
	124	0.21	0.17
	142	0.12	0.08
	165	0.05	0.03
	193	0.00	0.02
STATION 93120	1	0.10	0.00
04/02/78	11	0.13	0.00
1022 GMT	30	0.08	0.00
29 49.0N	56	0.08	0.00
123 35.0W			
STATION 93130	2	0.07	0.01
04/02/78	12	0.07	0.01
1646 GMT	40	0.08	0.01
	64	0.07	0.01
29 29.0N	83	0.15	0.00
124 14.0W	98	0.21	0.04
	111	0.26	0.13
	130	0.31	0.20
	149	0.15	0.10
	173	0.05	0.04
	196	0.01	0.02
STATION 93140	1	0.04	0.00
04/02/78	10	0.04	0.00
2303 GMT	39	0.05	0.00
	62	0.07	0.00
29 09.0N	81	0.10	0.02
124 53.0W	95	0.14	0.04
	109	0.17	0.11
	128	0.26	0.17
	147	0.18	0.10
	170	0.07	0.04
	193	0.02	0.01
	217	0.00	0.00
STATION 93150	2	0.00	0.01
04/03/78	11	0.00	0.01
0452 GMT	30	0.00	0.01
	53	0.01	0.01
28 50.4N	63	0.01	0.01
125 33.6W	72	0.01	0.01
	86	0.00	0.02
	100	0.03	0.07
	122	0.07	0.20
	142	0.02	0.09
	165	0.00	0.03
	193	0.01	0.01
STATION 93160	1	0.06	0.01
04/03/78	11	0.06	0.01
1022 GMT	30	0.07	0.02
	54	0.08	0.01
28 33.2N	64	0.08	0.01
126 10.7W	73	0.08	0.01
	87	0.10	0.03
	101	0.12	0.05
	125	0.20	0.11
	143	0.13	0.07
	166	0.06	0.04
	194	0.03	0.02
STATION 93170	1	0.08	0.01
04/03/78	11	0.09	0.01
1624 GMT	39	0.08	0.01
	62	0.10	0.01
28 10.4N	81	0.10	0.01
126 52.0W	96	0.11	0.04
	109	0.15	0.07
	128	0.26	0.15
	147	0.15	0.09
	171	0.05	0.03
	194	0.02	0.01
	218	0.00	0.00
STATION 93180	1	0.00	0.01
04/03/78	10	0.01	0.00
2242 GMT	62	0.00	0.01
	81	0.07	0.04
27 50.8N	95	0.03	0.00
127 30.9W	109	0.00	0.02
	128	0.01	0.01
	146	0.01	0.03
	169	0.01	0.03
STATION 93190	1	0.03	0.02
04/04/78	11	0.05	0.01
0427 GMT	39	0.05	0.01
	63	0.06	0.01
27 30.5N	82	0.05	0.02
128 09.8W	96	0.05	0.02
	110	0.07	0.04
	129	0.18	0.13
	147	0.16	0.11
	171	0.07	0.03
	194	0.02	0.02
	218	0.01	0.00
STATION 93200	1	0.07	0.01
04/04/78	11	0.07	0.01
1031 GMT	39	0.08	0.01
	63	0.08	0.02
27 10.4N	82	0.10	0.04
128 48.9W	96	0.13	0.05
	110	0.12	0.05
	129	0.14	0.09
	148	0.15	0.14
	171	0.10	0.08
	195	0.04	0.04
	218	0.01	0.02

ALEJANDRO DE HUMBOLDT — CHLOROPHYLL-A AND PHAEOPHYTIN — CALCOFI CRUISE 7804

	DEPTH	CHL A	PHAEO
STATION 95029	0	0.13	0.05
03/30/78	10	0.22	0.02
0353 GMT	30	0.85	0.17
	40	0.59	1.40
32 36.1N	55	0.27	0.28
117 15.2W	70	0.14	0.17
	96	0.03	0.07
	116	0.02	0.08
	136	0.01	0.06
	156	0.01	0.04
	186	0.00	0.03
	221	0.00	0.04
STATION 97030	0	0.34	0.02
04/04/78	10	0.40	0.04
2347 GMT	20	0.57	0.13
32 15.9N	30	1.27	0.24
117 07.0W	50	0.42	0.27
STATION 97035	1	0.18	0.02
04/05/78	11	0.17	0.00
0500 GMT	31	0.26	0.04
	40	0.42	0.12
32 05.5N	55	0.81	0.25
117 27.5W	69	0.25	0.16
	93	0.07	0.09
	113	0.02	0.06
	132	0.01	0.04
	151	0.01	0.03
	179	0.01	0.02
	212	0.01	0.02

ALEJANDRO DE HUMBOLDT — CHLOROPHYLL-A AND PHAEOPHYTIN — CALCOFI CRUISE 7804

	DEPTH	CHL A	PHAEO
STATION 97040	0	0.16	0.02
04/05/78	9	0.14	0.04
0909 GMT	27	0.16	0.04
	37	0.23	0.09
31 56.0N	50	0.67	0.19
117 48.0W	64	0.32	0.27
	86	0.15	0.16
	104	0.06	0.09
	122	0.03	0.05
	140	0.01	0.04
	167	0.01	0.08
	198	0.01	0.03

	DEPTH	CHL A	PHAEO
STATION 97050	1	0.17	0.01
04/05/78	11	0.12	0.02
1731 GMT	35	0.16	0.04
	45	0.15	0.06
31 33.6N	60	0.39	0.18
118 32.5W	75	0.35	0.16
	99	0.13	0.21
	119	0.03	0.06
	138	0.03	0.02
	168	0.01	0.02
	198	0.00	0.03
	237	0.01	0.02

	DEPTH	CHL A	PHAEO
STATION 97060	0	0.13	0.00
04/06/78	10	0.12	0.01
0014 GMT	29	0.13	0.01
	39	0.16	0.02
31 15.5N	53	0.19	0.04
119 10.0W	68	0.43	0.13
	91	0.27	0.18
	110	0.17	0.18
	129	0.06	0.11
	147	0.01	0.04
	175	0.00	0.03
	207	0.00	0.01

	DEPTH	CHL A	PHAEO
STATION 97070	0	0.08	0.00
04/06/78	9	0.08	0.00
0622 GMT	27	0.07	0.01
	54	0.11	0.03
30 55.0N	62	0.16	0.05
119 50.5W	76	0.19	0.06
	89	0.24	0.09
	102	0.32	0.19
	106	0.32	0.11
	137	0.28	0.13
	169	0.06	0.04
	201	0.01	0.04

	DEPTH	CHL A	PHAEO
STATION 97080	1	0.09	0.00
04/06/78	11	0.08	0.00
1216 GMT	35	0.09	0.00
	65	0.14	0.05
30 35.0N	75	0.31	0.15
120 31.0W	95	0.25	0.24
	109	0.20	0.12
	124	0.17	0.10
	154	0.07	0.04
	174	0.02	0.03
	204	0.01	0.02
	238	0.01	0.01

	DEPTH	CHL A	PHAEO
STATION 97090	1	0.08	0.00
04/06/78	11	0.08	0.01
1823 GMT	31	0.14	0.00
	61	0.15	0.03
30 15.5N	72	0.20	0.03
121 10.5W	87	0.45	0.26
	102	0.35	0.20
	142	0.06	0.05
	162	0.02	0.03
	192	0.02	0.01
	222	0.01	0.01

	DEPTH	CHL A	PHAEO
STATION 97100	0	0.08	0.00
04/07/78	9	0.08	0.00
0015 GMT	40	0.09	0.00
	67	0.07	0.01
29 55.0N	84	0.12	0.03
121 50.0W	98	0.20	0.06
	111	0.31	0.27
	128	0.15	0.24
	145	0.10	0.07
	171	0.02	0.05
	192	0.01	0.02
	213	0.00	0.01

RV DAVID STARR JORDAN — CHLOROPHYLL-A AND PHAEOPHYTIN — CALCOFI CRUISE 7804

	DEPTH	CHL A	PHAEO
STATION 100030	1	2.57	0.51
04/22/78	10	5.44	1.33
0331 GMT	29	0.22	0.23
	43	0.09	0.13
31 40.5N	58	0.04	0.08
116 46.5W	72	0.01	0.05
	85	0.03	0.06
	104	0.11	0.12
	127	0.17	0.14
	154	0.02	0.06
	187	0.02	0.05
	219	0.02	0.04

	DEPTH	CHL A	PHAEO
STATION 100035	1	0.24	0.06
04/22/78	11	0.24	0.07
0725 GMT	29	0.27	0.12
	39	0.69	0.47
31 30.5N	48	0.59	0.45
117 07.0W	62	0.23	0.29
	76	0.07	0.11
	95	0.03	0.08
	118	0.03	0.02
	137	0.00	0.04
	165	0.00	0.04
	192	0.01	0.03

	DEPTH	CHL A	PHAEO
STATION 100040	1	0.24	0.03
04/22/78	11	0.19	0.05
1051 GMT	29	0.18	0.15
	39	0.62	0.23
31 20.9N	48	0.50	0.36
117 27.1W	62	0.21	0.13
	77	0.11	0.13
	95	0.05	0.09
	119	0.01	0.04
	137	0.01	0.04
	165	0.01	0.05
	193	0.01	0.03

	DEPTH	CHL A	PHAEO
STATION 100050	1	0.08	0.01
04/22/78	10	0.07	0.02
1635 GMT	29	0.09	0.01
	53	0.13	0.05
31 00.5N	62	0.27	0.09
118 07.0W	72	0.24	0.11
	86	0.18	0.15
	100	0.13	0.12
	123	0.02	0.04
	141	0.00	0.05
	164	0.00	0.02
	192	0.00	0.03

	DEPTH	CHL A	PHAEO
STATION 100060	1	0.07	0.01
04/22/78	11	0.07	0.01
2219 GMT	31	0.07	0.01
	53	0.09	0.01
30 40.5N	62	0.11	0.03
118 47.5W	72	0.13	0.04
	86	0.17	0.07
	101	0.12	0.06
	125	0.14	0.13
	141	0.07	0.07
	167	0.00	0.04
	196	0.00	0.02

ALEJANDRO DE HUMBOLDT — CHLOROPHYLL-A AND PHAEOPHYTIN — CALCOFI CRUISE 7804

	DEPTH	CHL A	PHAEO
STATION 100080	1	0.11	0.00
04/07/78	11	0.12	0.00
1831 GMT	32	0.11	0.00
	62	0.15	0.02
30 01.0N	72	0.23	0.04
120 07.0W	88	0.46	0.19
	103	0.34	0.16
	118	0.18	0.12
	143	0.03	0.03
	163	0.01	0.04
	193	0.01	0.01
	222	0.00	0.01

	DEPTH	CHL A	PHAEO
STATION 100090	0	0.13	0.00
04/07/78	10	0.09	0.01
1115 GMT	29	0.13	0.00
	57	0.15	0.04
29 40.5N	67	0.22	0.02
120 47.0W	81	0.40	0.17
	95	0.14	0.09
	109	0.11	0.09
	132	0.10	0.08
	151	0.02	0.03
	178	0.00	0.02
	206	0.00	0.01

	DEPTH	CHL A	PHAEO
STATION 100100	1	0.08	0.00
04/07/78	11	0.10	0.00
0527 GMT	30	0.10	0.00
	40	0.12	0.00
29 20.0N	54	0.12	0.02
121 26.5W	68	0.17	0.04
	92	0.45	0.25
	111	0.33	0.19
	129	0.16	0.13
	148	0.06	0.08
	175	0.02	0.02
	207	0.00	0.02

	DEPTH	CHL A	PHAEO
STATION 103030	19	4.87	2.87
04/23/78	29	1.70	1.87
1913 GMT	48	0.83	1.25
31 06.0N			
116 24.5W			

	DEPTH	CHL A	PHAEO
STATION 103035	0	0.26	0.07
04/23/78	10	0.27	0.05
1600 GMT	28	0.29	0.15
	37	0.32	0.18
30 56.0N	47	0.38	0.21
116 45.0W	61	0.18	0.17
	75	0.12	0.16
	93	0.04	0.08
	117	0.01	0.05
	135	0.00	0.04
	164	0.00	0.02
	192	0.00	0.03

	DEPTH	CHL A	PHAEO
STATION 103040	3	0.10	0.05
04/23/78	11	0.11	0.04
1215 GMT	30	0.10	0.08
	40	0.13	0.06
30 46.0N	49	0.21	0.17
117 04.5W	63	0.32	0.22
	76	0.19	0.18
	94	0.07	0.10
	118	0.02	0.05
	136	0.00	0.02
	164	0.00	0.02
	192	0.00	0.02

	DEPTH	CHL A	PHAEO
STATION 103050	1	0.06	0.09
04/23/78	10	0.09	0.05
0540 GMT	29	0.12	0.03
	53	0.17	0.03
30 26.0N	63	0.21	0.03
117 44.5W	72	0.21	0.06
	86	0.45	0.21
	100	0.27	0.19
	124	0.07	0.06
	142	0.01	0.05
	165	0.00	0.07
	193	0.02	0.04

	DEPTH	CHL A	PHAEO
STATION 107032	30	0.56	0.41
04/24/78	43	0.13	0.23
0141 GMT	53	0.05	0.12
	67	0.06	0.16
30 25.8N	81	0.09	0.34
116 11.0W	95	0.09	0.11
	118	0.35	0.25
	136	0.04	0.08
	165	0.03	0.11
	192	0.02	0.10

	DEPTH	CHL A	PHAEO
STATION 107035	1	0.55	0.15
04/24/78	11	1.22	0.36
0358 GMT	29	1.38	0.53
	39	0.72	0.38
30 21.5N	48	0.37	0.26
116 22.5W	62	0.12	0.13
	76	0.06	0.06
	95	0.03	0.03
	118	0.01	0.02
	136	0.02	0.05
	165	0.01	0.03
	193	0.02	0.03

	DEPTH	CHL A	PHAEO
STATION 107040	1	0.08	0.06
04/24/78	11	0.09	0.04
0740 GMT	29	0.10	0.05
	39	0.13	0.07
30 11.0N	48	0.29	0.23
116 42.0W	62	0.22	0.20
	76	0.12	0.14
	95	0.06	0.06
	118	0.02	0.02
	137	0.01	0.03
	193	0.00	0.03

	DEPTH	CHL A	PHAEO
STATION 107050	1	0.07	0.03
04/24/78	10	0.07	0.02
1328 GMT	29	0.08	0.03
	38	0.09	0.02
29 50.7N	47	0.11	0.04
117 22.0W	62	0.13	0.07
	75	0.29	0.24
	94	0.15	0.11
	118	0.04	0.04
	135	0.02	0.03
	164	0.00	0.02

	DEPTH	CHL A	PHAEO
STATION 110035	49	1.15	0.60
04/25/78	63	0.24	0.25
0440 GMT	77	0.15	0.16
	96	0.11	0.09
29 46.0N	119	0.04	0.09
116 00.0W	138	0.02	0.06
	166	0.04	0.08
	194	0.02	0.06

	DEPTH	CHL A	PHAEO
STATION 110040	1	0.82	0.22
04/25/78	10	1.78	0.89
0040 GMT	29	2.37	0.77
	38	0.51	0.34
29 33.0N	48	0.23	0.20
116 21.0W	61	0.15	0.13
	75	0.09	0.12
	94	0.04	0.04
	116	0.05	0.13
	135	0.06	0.06
	162	0.02	0.03
	191	0.02	0.03

	DEPTH	CHL A	PHAEO
STATION 110050	1	0.21	0.09
04/24/78	10	0.22	0.03
1834 GMT	29	0.21	0.04
	52	0.34	0.00
29 14.9N	61	0.32	0.11
116 58.2W	71	0.76	0.23
	84	0.50	0.22
	98	0.28	0.27
	122	0.12	0.18
	140	0.03	0.06
	164	0.03	0.05
	193	0.01	0.07

	DEPTH	CHL A	PHAEO
STATION 113035	1	0.51	0.09
04/25/78	9	0.56	0.08
1457 GMT	29	0.63	0.13
	38	1.58	0.53
29 12.0N	48	0.56	0.43
115 38.0W	62	0.27	0.21
	76	0.12	0.10
	94	0.03	0.07
	117	0.02	0.04
	136	0.03	0.05
	163	0.01	0.05
	191	0.02	0.02

	DEPTH	CHL A	PHAEO
STATION 113040	0	0.50	0.08
04/25/78	10	0.50	0.09
1817 GMT	28	2.67	0.89
	38	2.57	1.11
29 02.8N	47	2.37	0.77
115 58.3W	61	1.32	0.70
	76	0.49	0.37
	94	0.23	0.16
	118	0.06	0.14
	137	0.07	0.08
	165	0.02	0.03
	193	0.01	0.03

	DEPTH	CHL A	PHAEO
STATION 113050	3	0.15	0.05
04/26/78	11	0.13	0.04
0026 GMT	31	0.17	0.07
	53	0.32	0.26
28 41.5N	62	0.76	0.64
116 36.0W	71	0.38	0.51
	85	0.16	0.21
	98	0.06	0.12
	122	0.04	0.05
	141	0.02	0.06
	165	0.04	0.01
	192	0.04	0.08

Secchi Disk Observations

CalCOFI Cruise 7804

Stat #	Mo	Dy	Local Time (+8: PST)	Depth (m)	Weather	Clouds Type/Amt
60.052[5]	4	19	0848	5	1	8 1
60.055	4	19	1100	14	1	6 7
60.060	4	19	1410	17	2	6 8
67.060	4	18	1056	24	1	0 1
70.060	4	17	1200	20	1	0 3
73.053	4	16	1050	17	6	6 6
73.060	4	16	1500	27	1	8 2
77.065	4	15	1133	13	6	6 8
77.070	4	15	0849	17	1	6 7
80.051	4	14	0924	9	1	6 7
80.052	4	14	1107	8	2	6 8
80.055	4	14	1405	13	1	4 7
83.040[6]	4	13	1102	13	2	6 8
83.042	4	13	0908	16	2	6 8
83.070	4	12	1227	26	2	7 8
87.050	4	11	0915	13	2	7 8
87.055	4	11	1300	15	2	7 8
90.037	4	9	1005	22	1	8 1
90.045	4	9	1515	14	0	- 0
90.080	4	7	1158	16	1	8 3
90.110	4	6	1505	29	2	5 8
90.120	4	6	1000	23	1	6 7
90.150	4	5	1440	44	1	3 2
90.160	4	5	0903	31	1	8 5
90.190	4	4	1400	21	1	8 6
90.200	4	4	0921	52	1	6 6
93.040	3	30	1230	15	2	6 8
93.060	3	31	0900	25	1	8 2
93.100	4	1	1255	20	1	8 2
93.130	4	2	0916	24	1	6 7
93.140	4	2	1421	29	1	6 7
93.170	4	3	0900	34	5	6 7
93.180	4	3	1420	48	1	3 4
95.030	3	29	1614	14	1	6 7
97.029	4	4	1430	7	1	4 4
97.030	4	4	1530	14	1	4 7
97.050	4	5	0956	22	1	8 3

Secchi Disk Observations

CalCOFI Cruise 7804

Stat #	Mo	Dy	Local Time (+8: PST)	Depth (m)	Weather	Clouds Type/Amt
97.055	4	5	1256	23	1	8 3
97.060	4	5	1545	28	1	8 3
97.090	4	6	0950	31	1	6 7
97.100	4	6	1529	31	1	8 2
100.050	4	22	0912	30	1	8 3
100.060	4	22	1440	19	1	8 5
100.080	4	7	0914	28	1	8 2
103.029	4	23	1205	5	1	0 1
103.030	4	23	1120	4	1	0 1
110.045	4	24	1340	22	1	6 7
110.050	4	24	1050	15	1	6 7
113.040	4	25	0955	14	1	0 1
113.045	4	25	1328	15	0	- 0

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