UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CalCOFI Cruise 6607
8-29 July

CalCOFI Cruise 6608
5-25 August

Special Cruise 6608
27 August - 1 September

and

CalCOFI Cruise 6609
7-24 September

SIO Reference 68-21

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PHYSICAL AND CHEMICAL DATA

CalCOFI Cruise 6607
8-29 July

CalCOFI Cruise 6608
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Special Cruise 6608
27 August - 1 September

and

CalCOFI Cruise 6609
7-24 September

Sponsored by

Marine Research Committee

SIO Reference 68-21

Approved for distribution:

W. A. Nierenberg

W. A. Nierenberg, Director

CONTENTS

INTRODUCTION

The data in this report were collected on Cruises 6607, 6608 and 6609 of the California Cooperative Fisheries Investigations (CalCOFI) program by the RV David Starr Jordan of the Bureau of Commercial Fisheries and the RV Alexander Agassiz of the Scripps Institution of Oceanography. Data for Special Cruise 6608 by the RV Alexander Agassiz are also included in this report. The first two figures in this cruise-numbering system represent the year of the cruise; the last two figures, the month. The cruises preceding this one in the series are 6507 and 6509, both of which appear in Scripps Institution report, SIO Ref. 67-17; and 6601, 6602, 6604, 6605 and 6606, all of which appear in SIO Ref. 68-3.

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

TABULATED DATA

On Cruises 6607 and Special Cruise 6608 the Nansen-bottle-cast data are tabulated at observed depths; the values at standard depths are computer interpolations according to a modified Rattray technique[1/], except that some property values at standard depths have been determined from consideration of other information such as bathythermograph traces and adjacent stations. These property values were entered in the "observed" columns to prevent instabilities or to indicate features not covered by the hydrographic cast. The values are indicated by notations (see FOOTNOTES).

On Cruises 6608 and 6609 only 10-meter temperature and salinity values were collected.

The Salinity-Temperature-Depth Recorder was not used on any of the cruises in this report.

[1/] Rattray, Maurice (1962). Interpolation errors and oceanographic sampling. Deep-Sea Res. 9: 25-37.

The data tabulated are of the same type as have previously appeared in these reports; the column headings from the computer are explained as follows:

Z	Depth in meters	
T	Temperature	°C
S	Salinity	‰
OXY	Oxygen	ml/L
PHO	Phosphate	μg at/L
SIL	Silicate	μg at/L
NIT	Nitrite	μg at/L
D*T	δ_T	cl/ton
SIG*T	σ_t	g/L
DD	ΔD	dyn. m

STANDARD PROCEDURES

The observed data have been plotted and then evaluated using the method described by Klein.[2] This involves consideration of their variation as functions of density or depth and their relation to each other and comparison with concurrent bathythermograph observations and with previous or adjacent observations. The 125-meter level was introduced into the integration to obtain greater accuracy in the determination of ΔD.

To indicate degree of accuracy, temperatures are recorded in tenths of a degree when obtained by bucket thermometer, thermograph, or bathythermograph, while temperatures from reversing thermometers are recorded in hundredths of a degree. The salinity values obtained by salinometer are recorded to three decimal places, provided they meet accepted standards. The values recorded "have a reproducibility of ±0.004‰ salinity at the 95 per cent probability level, and a probable accuracy of ±0.01‰ salinity or better at the same level of probability."[3] The values are recorded to two decimal places when only one determination per sample was obtained, or where there is doubt concerning the accuracy of a particular sample, or of all samples on a station. The accuracy of all samples obtained by salinometer and recorded to two decimal places is believed to be equal to or better than those obtained by manual titration.

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[2] Klein, Hans T. A new technique for processing physical oceanographic data. MS.

[3] Quotation from Department of Oceanography, University of Washington, Tech. Rep. No. 66, UW Ref. 60-18, October 1960.

A hyphen is used to indicate a missing observed value. The time is the time of messenger release. When more than one bottle cast was made on station, messenger times and wire angles are given in order of increasing depth, and a significant change in position during a multiple cast is listed similarly. Multiple casts are indicated by a letter following all observed depths of each cast except the cast originating at the surface. Footnotes corresponding to each letter explain the type of cast.

On stations where more than one cast was lowered, slight discrepancies in the property values may be noted. These may be caused by changes in geographical position, real changes with time, slight errors in measurement or a combination of these factors. Values at standard depths in the area of these discrepancies may be determined from reconciliation of the plotted observed values and entered in the "observed" columns with notations.

FOOTNOTES

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

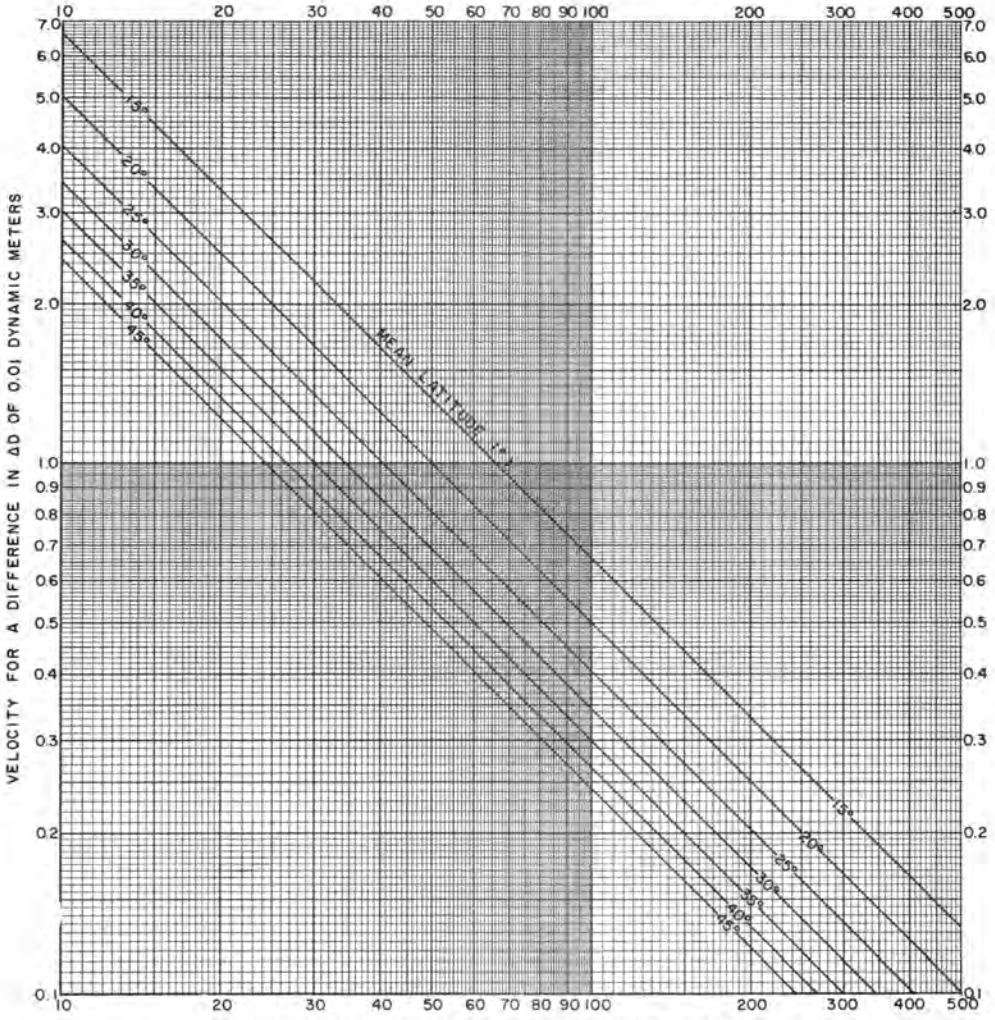
Values which are not used in interpolation because they seem to be in error without apparent reason are indicated by the following notation.

u: uncertain value

Values at standard levels of depth entered in the observed columns to limit machine interpolations may have either of the following notations.

k: a value determined from another measurement such as a bathythermogram or STD recording.

g: a value determined from considerations such as stability or previous or surrounding stations.



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	1.77 / 42.42	1.79 / 42.89	1.81 / 43.36	1.83 / 43.82	1.85 / 44.29	1.86 / 44.76	1.88 / 45.22	1.90 / 45.69	1.92 / 46.15
100	1.94 / 46.62	1.96 / 47.09	1.98 / 47.55	2.00 / 48.02	2.02 / 48.48	2.04 / 48.95	2.06 / 49.42	2.08 / 49.88	2.10 / 50.35	2.12 / 50.82

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

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 6609

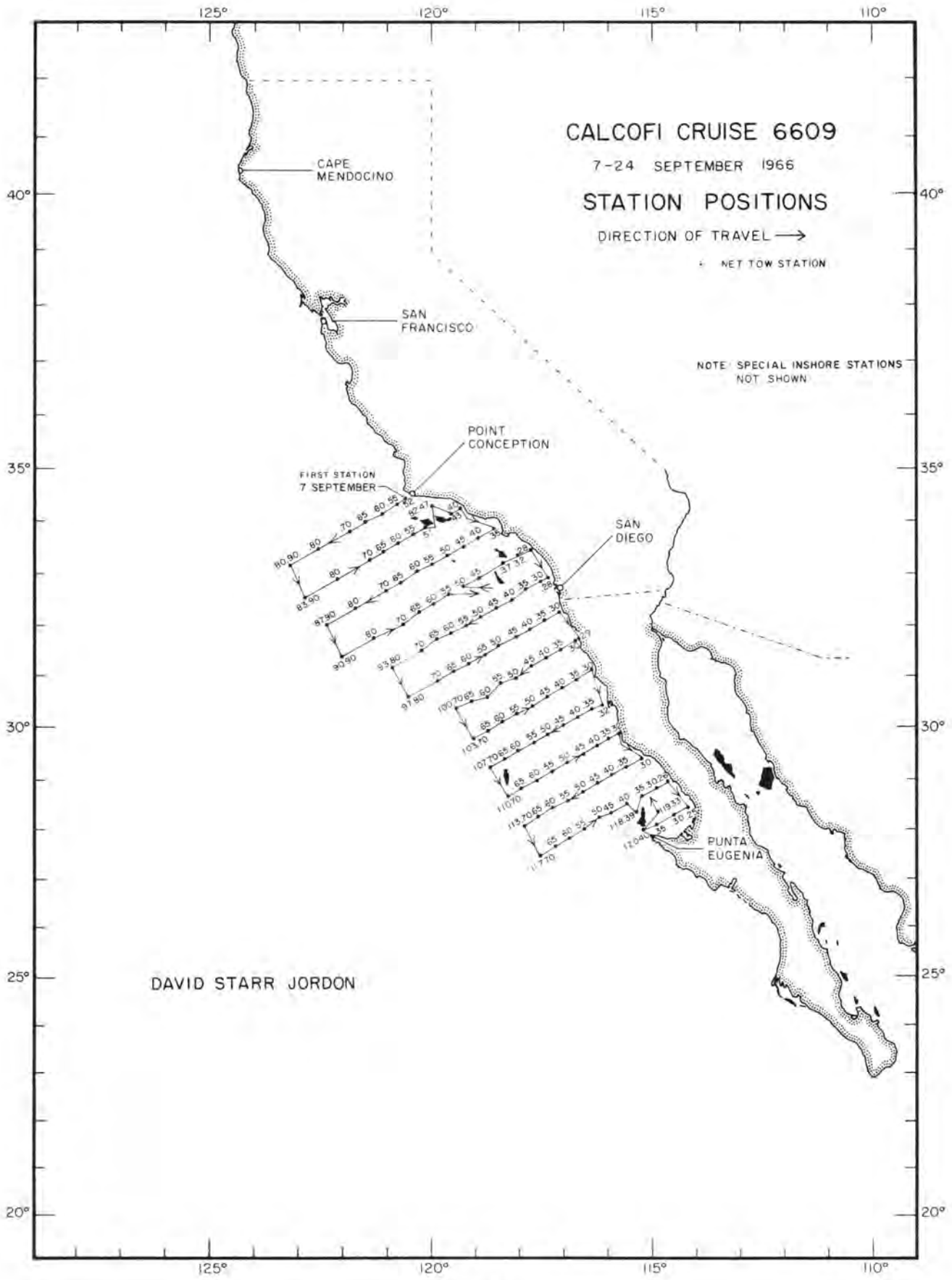

CALCOFI CRUISE 6609
7-24 SEPTEMBER 1966
STATION POSITIONS
DIRECTION OF TRAVEL →
+ NET TOW STATION
NOTE: SPECIAL INSHORE STATIONS NOT SHOWN
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
FIRST STATION 7 SEPTEMBER
SAN DIEGO
PUNTA EUGENIA
DAVID STARR JORDON
125°
120°
115°
110°
40°
35°
30°
25°
20°

FIGURE 1

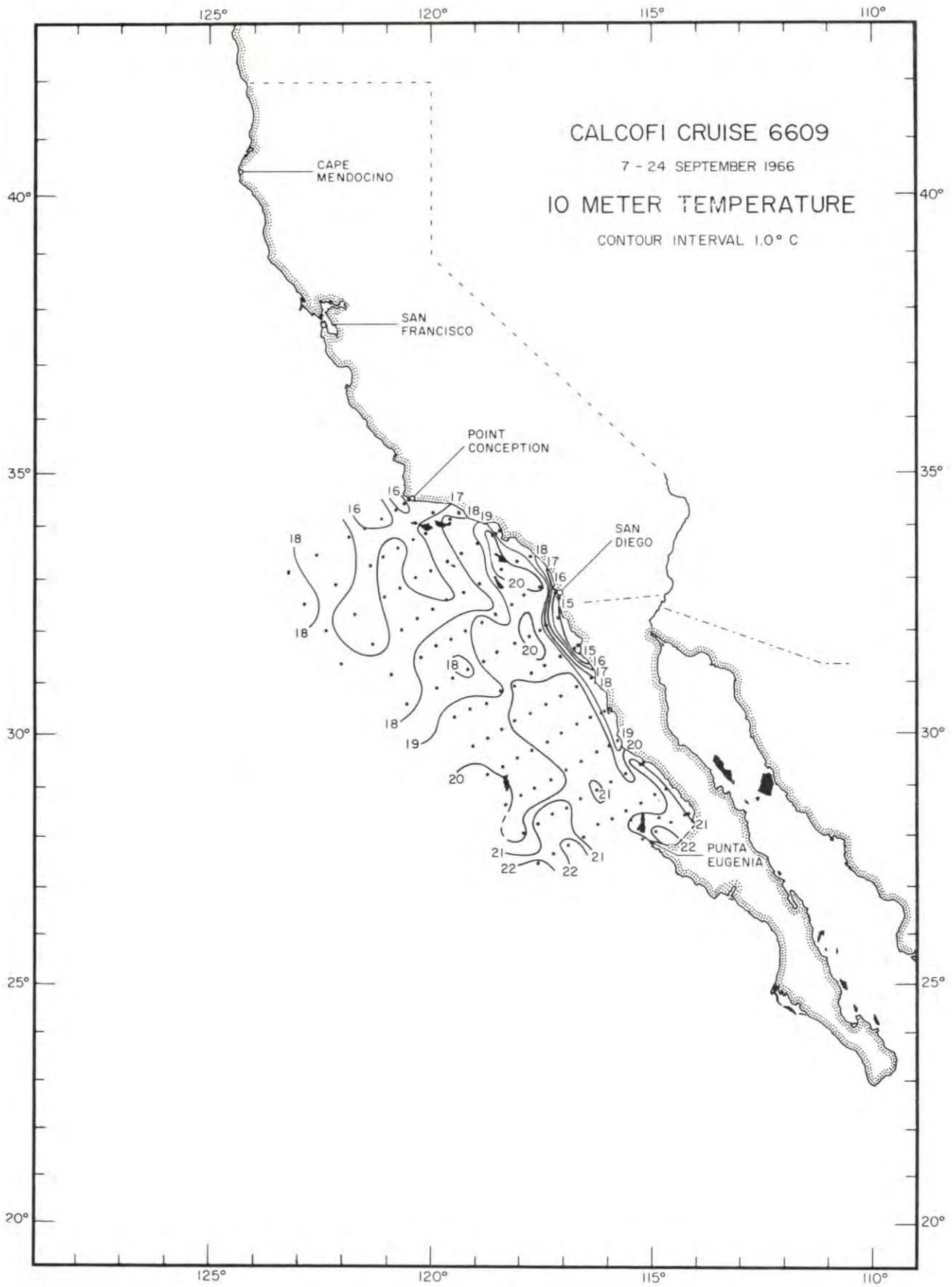

CALCOFI CRUISE 6609
7 - 24 SEPTEMBER 1966
10 METER TEMPERATURE
CONTOUR INTERVAL 1.0° C
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
125°
120°
115°
110°
40°
35°
30°
25°
20°

FIGURE 2

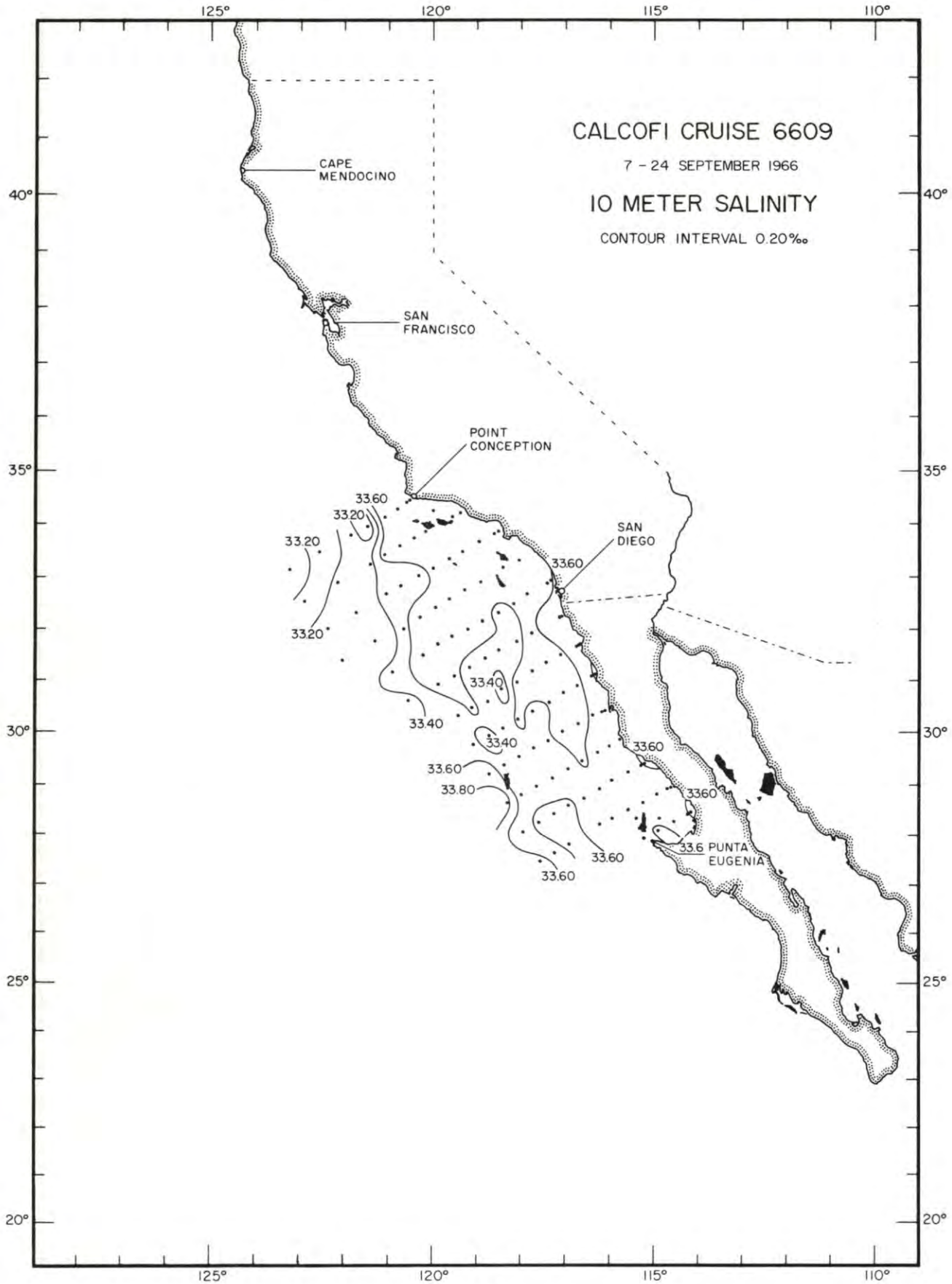

CALCOFI CRUISE 6609
7 - 24 SEPTEMBER 1966
10 METER SALINITY
CONTOUR INTERVAL 0.20‰
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
33.60
33.20
33.20
33.20
33.60
33.40
33.40
33.40
33.60
33.60
33.80
33.60
33.60
33.60
33.6
125°
120°
115°
110°
40°
35°
30°
25°
20°

FIGURE 3

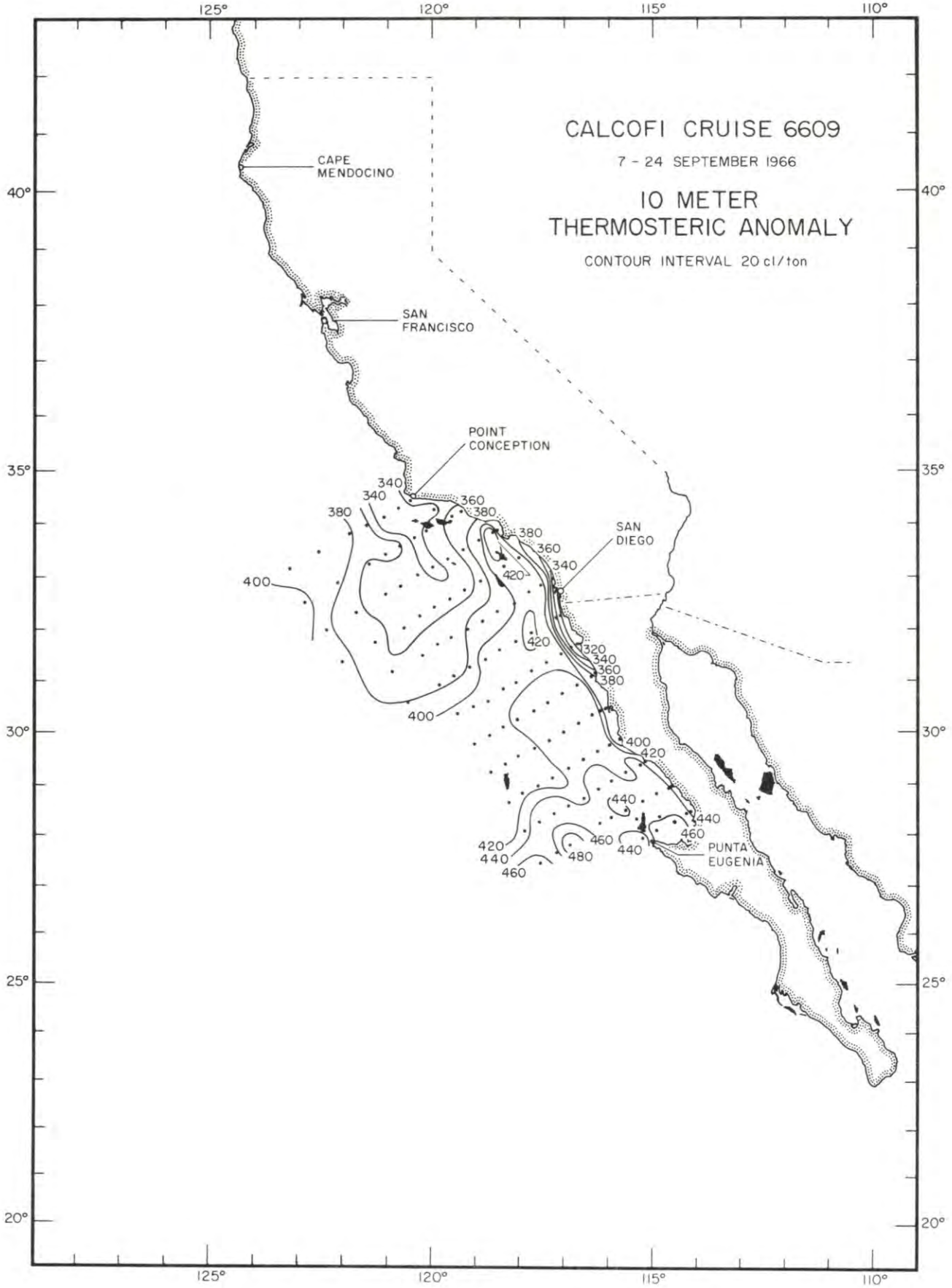

CALCOFI CRUISE 6609
7 - 24 SEPTEMBER 1966
10 METER
THERMOSTERIC ANOMALY
CONTOUR INTERVAL 20 cl/ton
CAPE MENDOCINO
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
PUNTA EUGENIA
125°
120°
115°
110°
40°
35°
30°
25°
20°
340
340
360
380
380
380
360
340
420
400
420
320
340
360
380
400
420
440
460
420
440
460
480
440
460

FIGURE 4

PERSONNEL
Cruise 6609

SHIP'S CAPTAIN

Forster, Charles W., RV David Starr Jordan

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV David Starr Jordan

Counts, Robert C., Fishery Biologist (in charge), Bureau of Commercial Fisheries
Reeder, David, Biological Technician, Bureau of Commercial Fisheries

DATA AT NET TOW STATIONS										10 METERS		
Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	T °C	S ‰	δ_T cl/ton
80.51-J	IX-7	1725	34°26.0'	120°32.5'	60	280°	3	clear	moderate	16.84	33.641	342
80.52-J	7	2230	34°26.0'	120°37.5'	170	280°	3	clear	moderate	15.92	33.614	323
80.55-J	8	0035	34°19.0'	120°48.0'	420	300°	3	clear	moderate	16.18	33.643	327
80.60-J	8	0305	34°09.0'	121°09.0'	1200	290°	2	clear	slight	15.98	33.639	323
80.65-J	8	0520	33°59.0'	121°30.0'	1800	290°	3	clear	moderate	16.00	33.054	366
80.70-J	8	0745	33°48.5'	121°51.0'	2000	290°	3	clear	moderate	17.55	33.229	387
80.80-J	8	1110	33°28.0'	122°33.5'	2160	300°	3	clear	moderate	17.14	33.017	394
80.90-J	8	1520	33°09.0'	123°13.0'	2275	270°	3	partly cloudy	moderate	18.26	33.365	394
82.47-J	9	1815	34°15.0'	119°59.0'	310	250°	3	partly cloudy	moderate	16.30	33.728	323
83.40-J	9	2205	34°14.0'	119°22.0'	11	280°	4	partly cloudy	rough	17.92	33.623	367
83.43-J	9	2040	34°08.0'	119°34.0'	130	260°	5	partly cloudy	rough	18.34	33.730	369
83.51-J	9	1435	33°52.0'	120°08.5'	65	320°	6	cloudy	rough	17.12	33.651	347
83.55-J	9	1210	33°44.5'	120°23.0'	600	320°	6	missing	rough	16.22	33.624	329
83.60-J	9	0900	33°33.5'	120°45.5'	800	320°	6	missing	rough	17.86	33.668	362
83.65-J	9	0620	33°24.0'	121°05.5'	1950	320°	5	missing	rough	17.88	33.666	363
83.70-J	9	0400	33°14.5'	121°26.0'	1950	320°	4	missing	rough	16.44	33.363	353
83.80-J	8	2320	32°54.0'	122°08.0'	2200	320°	3	partly cloudy	moderate	17.50	33.208	388
83.90-J	8	1930	32°31.5'	122°52.0'	2100	300°	3	partly cloudy	moderate	18.18	33.186	405
87.33-J	10	0300	33°54.0'	118°29.5'	30	250°	4	missing	rough	18.74	33.657	384

DATA AT NET TOW STATIONS										10 METERS		
Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	T °C	S ‰	δ_T cl/ton
87.35-J	IX-10	0415	33°50.0'	118°37.5'	310	260°	4	missing	moderate	20.40	33.696	422
87.40-J	10	0630	33°40.0'	119°58.0'	490	280°	4	missing	moderate	18.96	33.675	388
87.45-J	10	0850	33°30.0'	119°19.0'	900	280°	5	missing	rough	18.17	33.696	368
87.50-J	10	1115	33°20.0'	119°39.0'	38	300°	5	missing	rough	17.30	33.696	348
87.55-J	10	1345	33°10.0'	120°00.0'	670	320°	4	missing	rough	16.84	33.693	338
87.60-J	10	1620	33°01.5'	120°20.0'	420	320°	5	overcast	very rough	16.66	33.516	347
87.65-J	10	1855	32°49.5'	120°41.5'	2050	320°	5	overcast	very rough	17.05	33.569	351
87.70-J	10	2100	32°39.5'	121°02.0'	2100	320°	6	overcast	very rough	17.03	33.526	354
87.80-J	11	0130	32°19.5'	121°43.0'	2150	330°	5	overcast	very rough	16.43	33.240	362
87.90-J	11	0620	32°00.0'	122°24.0'	2400	340°	5	missing	very rough	17.85	33.227	395
90.28-J	15	1345	33°28.5'	117°46.5'	220	350°	1	clear	moderate	18.74	-	
90.32-J	15	1155	33°20.5'	118°03.0'	400	320°	1	missing	moderate	19.88	33.747	406
90.37-J	15	0920	33°11.0'	118°22.5'	630	260°	3	missing	moderate	25.17a)	33.785	545a)
90.45-J	15	0555	32°54.5'	118°55.5'	950	280°	3	missing	rough	18.36	33.775	366
90.50-J	15	0330	32°45.0'	119°16.0'	150	320°	5	missing	rough	17.24	33.746	343
90.55-J	12	0305	32°35.0'	119°37.0'	550	330°	5	missing	very rough	16.98	33.658	344
90.60-J	12	0045	32°25.0'	119°57.5'	550	330°	5	partly cloudy	very rough	17.40	33.714	349

a) Possible error in reading. Alternate values: 20.52°C; 419 cl/ton.

DATA AT NET TOW STATIONS										10 METERS		
Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	T °C	S ‰	δ_T cl/ton
90.65-J	IX-11	2145	32°14.5'	120°18.0'	2050	330°	6	partly cloudy	very rough	17.26	33.669	348
90.70-J	11	1925	32°01.0'	120°39.0'	2100	330°	6	partly cloudy	rough	17.27	33.586	355
90.80-J	11	1515	31°45.0'	121°19.5'	2000	340°	5	cloudy	rough	16.84	33.208	373
90.90-J	11	1030	31°23.0'	122°02.0'	2100	340°	5	missing	very rough	17.65	33.244	388
93.27-J	15	1750	32°56.0'	117°19.0'	130	290°	1	partly cloudy	moderate	16.60	33.594	340
93.28-J	15	1840	32°54.5'	117°22.0'	350	290°	1	partly cloudy	moderate	19.14	33.703	391
93.30-J	15	2010	32°50.5'	117°31.0'	450	280°	2	partly cloudy	moderate	20.21	33.795	410
93.35-J	15	2205	32°40.5'	117°51.5'	350	280°	3	partly cloudy	moderate	19.88	33.765	404
93.40-J	16	0020	32°30.0'	118°11.5'	960	280°	3	clear	moderate	19.23	33.656	396
93.45-J	16	0245	32°20.0'	118°32.0'	750	380°	2	missing	moderate	18.02	33.425	384
93.50-J	16	0505	32°10.0'	118°52.5'	750	320°	3	missing	moderate	19.19	33.783	386
93.55-J	16	0715	32°00.0'	119°13.5'	880	320°	3	missing	moderate	18.51	33.643	380
93.60-J	16	0920	31°50.5'	119°34.5'	1400	300°	3	missing	moderate	18.56	33.707	376
93.65-J	16	1130	31°43.0'	119°52.5'	2050	300°	3	missing	moderate	18.26	33.637	374
93.70-J	16	1440	31°30.0'	120°14.0'	2000	320°	4	clear	rough	18.03	33.625	370
93.80-J	16	1825	31°10.0'	120°54.5'	2450	330°	4	clear	rough	17.38	33.464	366
97.29-J	17	2020	32°17.5'	117°04.5'	27	310°	2	clear	slight	14.86	33.423	315
97.30-J	17	1945	32°16.0'	117°07.0'	33	290°	2	clear	moderate	15.32	33.460	322
97.35-J	17	1735	32°05.5'	117°27.5'	750	290°	3	clear	moderate	19.00	-	

DATA AT NET TOW STATIONS										10 METERS		
Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	T °C	S ‰	δ_T cl/ton
97.40-J	IX-17	1520	31°56.0'	117°48.0'	800	290°	3	clear	moderate	20.38	33.686	422
97.45-J	17	1300	31°46.0'	118°08.5'	900	340°	1	missing	moderate	19.34	33.535	408
97.50-J	17	1035	31°36.0'	118°30.5'	1300	320°	3	missing	rough	19.30	33.554	405
97.55-J	17	0820	31°25.5'	118°49.5'	400	320°	2	missing	rough	19.10	33.420	410
97.60-J	17	0610	31°15.0'	119°10.0'	1955	320°	3	missing	rough	17.94	33.444	381
97.65-J	17	0345	31°05.0'	119°31.0'	1950	280°	3	missing	rough	18.18	33.625	374
97.70-J	17	0150	30°55.0'	119°50.5'	2100	300°	3	overcast	rough	18.20	33.653	372
97.80-J	16	2150	30°35.0'	120°31.0'	2100	330°	3	clear	rough	17.76	33.392	380
100.29-J	18	0025	31°42.0'	116°43.5'	60	300°	2	clear	slight	14.69	33.426	312
100.30-J	18	0110	31°40.5'	116°46.5'	280	300°	2	clear	slight	14.80	33.426	314
100.35-J	18	0320	31°30.5'	117°07.0'	650	300°	3	missing	moderate	19.84	33.630	413
100.40-J	18	0600	31°21.0'	117°27.0'	1150	320°	3	missing	moderate	19.95	33.644	414
100.45-J	18	0810	31°10.5'	117°46.5'	1000	310°	3	missing	moderate	19.90	33.635	414
100.50-J	18	1025	30°58.0'	118°08.0'	970	300°	3	missing	moderate	20.03	33.671	414
100.55-J	18	1240	30°50.5'	118°27.5'	1200	280°	3	missing	moderate	18.98	33.369	411
100.60-J	18	1500	30°35.5'	118°46.5'	1500	300°	4	overcast	moderate	19.56	33.465	418
100.65-J	18	1710	30°30.0'	119°07.0'	1200	300°	3	overcast	moderate	19.56	33.617	407
100.70-J	18	1910	30°20.5'	119°27.5'	2000	290°	3	overcast	rough	19.36	33.582	405
103.29-J	19	1815	31°07.0'	116°21.0'	18	310°	4	drizzle	moderate	17.38	33.396	371

DATA AT NET TOW STATIONS										10 METERS		
Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	T °C	S ‰	δ_T cl/ton
103.30-J	IX-19	1735	31°06.0'	116°24.5'	34	310°	4	drizzle	moderate	18.50	33.437	394
103.35-J	19	1525	30°56.0'	116°45.0'	1000	290°	3	cloudy	moderate	20.50	33.619	430
103.40-J	19	1300	30°46.0'	117°04.5'	1000	320°	4	drizzle	moderate	20.40	33.619	428
103.45-J	19	1035	30°36.0'	117°24.0'	1200	330°	3	missing	rough	20.40	33.601	429
103.50-J	19	0820	30°26.0'	117°44.5'	1150	330°	3	missing	rough	20.20	33.563	427
103.55-J	19	0600	30°15.5'	118°05.0'	1150	330°	4	missing	rough	20.14	33.606	422
103.60-J	19	0345	30°06.0'	118°25.0'	1750	320°	4	missing	rough	19.70	33.587	413
103.65-J	19	0120	29°56.5'	118°44.0'	1700	320°	4	overcast	rough	19.08	33.391	412
103.70-J	18	2300	29°46.5'	119°04.0'	1800	300°	4	overcast	rough	19.46	33.413	419
107.31-J	19	2200	30°28.0'	116°07.0'	22	320°	4	cloudy	rough	18.03	33.427	384
107.32-J	19	2300	30°26.0'	116°11.0'	360	320°	4	cloudy	rough	19.88	33.579	417
107.35-J	20	0020	30°21.5'	116°22.5'	1000	320°	4	cloudy	rough	20.74	33.590	438
107.40-J	20	0245	30°11.0'	116°42.0'	1500	320°	4	missing	rough	20.27	33.611	425
107.45-J	20	0450	30°01.0'	117°01.5'	1200	330°	3	missing	moderate	20.60	33.631	432
107.50-J	20	0700	29°50.5'	117°22.0'	1575	330°	2	missing	rough	20.34	33.589	428
107.55-J	20	0910	29°41.0'	117°42.0'	1750	-	1	missing	rough	19.92	33.595	417
107.60-J	20	1130	29°32.0'	118°01.5'	1950	140°	2	missing	rough	19.22	33.463	410
107.65-J	20	1350	29°21.0'	118°21.0'	1600	120°	2	clear	rough	19.49	33.482	415
107.70-J	20	1610	29°11.5'	118°41.0'	1750	var.	3	partly cloudy	rough	20.31	33.712	419

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	10 METERS T °C	10 METERS S ‰	10 METERS δ_T cl/ton
				DATA AT NET TOW STATIONS								
110.32-J	IX-21	1325	29°52.0'	115°48.0'	14	340°	4	clear	moderate	18.18	33.507	382
110.35-J	21	1155	29°46.0'	116°00.0'	680	340°	4	missing	rough	20.25	33.530	430
110.40-J	21	0950	29°38.5'	116°16.0'	1350	340°	4	missing	rough	20.30	33.597	427
110.45-J	21	0740	29°28.0'	116°36.5'	230	360°	3	missing	rough	20.40	33.601	429
110.50-J	21	0525	29°17.0'	116°58.0'	2000	340°	3	missing	rough	20.18	33.594	424
110.55-J	21	0310	29°06.5'	117°19.0'	1900	260°	2	missing	rough	19.70	33.552	415
110.60-J	21	0050	28°56.5'	117°39.0'	1950	360°	2	clear	rough	19.36	33.409	417
110.65-J	20	2225	28°46.0'	117°59.0'	1925	010°	2	clear	rough	19.84	33.569	417
110.70-J	20	2010	28°37.0'	118°18.5'	1850	070°	2	clear	rough	20.40	33.805	414
113.29-J	21	1750	29°24.0'	115°13.0'	15	290°	3	clear	moderate	20.51	33.624	430
113.30-J	21	1835	29°22.0'	115°18.0'	25	290°	3	clear	moderate	21.38	33.536	459
113.35-J	21	2100	29°11.5'	115°38.0'	770	320°	5	clear	rough	19.96	33.424	430
113.40-J	21	2315	29°02.0'	115°57.0'	1020	320°	5	clear	rough	20.60	33.469	443
113.45-J	22	0120	28°52.0'	116°18.0'	1050	330°	5	clear	rough	21.08	33.565	449
113.50-J	22	0340	28°42.0'	116°37.0'	2100	330°	4	missing	moderate	20.28	33.551	430
113.55-J	22	0550	28°32.0'	116°56.5'	1880	330°	5	missing	rough	21.16	33.605	448
113.60-J	22	0755	28°22.0'	117°15.5'	1900	330°	5	missing	rough	21.42	33.668	450
113.65-J	22	1005	28°12.0'	117°35.5'	2100	340°	5	missing	rough	21.51	33.671	452
113.70-J	22	1215	28°02.0'	117°55.0'	1800	340°	5	missing	rough	19.97	33.559	421

DATA AT NET TOW STATIONS										10 METERS		
Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Force	Weather	Sea	T °C	S ‰	δ_T cl/ton
117.25-J	IX-23	1705	28°58.0'	114°36.5'	28	290°	1	clear	moderate	20.33	33.559	430
117.26-J	23	1610	28°56.0'	114°41.5'	38	290°	1	clear	moderate	21.24	33.543	455
117.30-J	23	1406	28°48.0'	114°56.5'	56	060°	2	clear	moderate	20.72	33.506	444
117.35-J	23	1150	28°38.0'	115°16.0'	113	300°	3	missing	rough	20.66	33.465	445
117.40-J	23	0745	28°28.0'	115°35.5'	350	330°	2	missing	rough	20.48	33.508	438
117.45-J	23	0505	28°18.5'	115°59.0'	1750	330°	4	missing	rough	20.76	33.501	445
117.50-J	23	0310	28°12.0'	116°14.0'	2200	330°	5	missing	rough	20.74	33.510	444
117.55-J	23	0015	27°59.0'	116°35.0'	1850	330°	5	clear	very rough	20.84	-	
117.60-J	22	2100	27°47.0'	116°55.0'	2000	340°	5	clear	very rough	22.86	33.681	488
117.65-J	22	1845	27°38.0'	117°13.0'	1950	340°	5	clear	very rough	21.02	33.516	451
117.70-J	22	1625	27°27.5'	117°32.5'	2010	340°	5	clear	very rough	22.28	33.629	476
118.39-J	23	0920	28°18.5'	115°23.5'	147	300°	5	missing	rough	21.37	33.563	456
119.33-J	24	0840	28°19.0'	114°53.0'	58	300°	3	missing	moderate	21.14	33.550	452
120.24-J	23	2210	28°25.0'	114°10.5'	17	320°	2	clear	moderate	20.34	33.624	426
120.25-J	23	2310	28°22.5'	114°15.0'	28	320°	2	clear	moderate	21.38	33.573	456
120.30-J	24	0115	28°13.0'	114°34.0'	52	320°	2	clear	moderate	21.82	33.576	468
120.35-J	24	0325	28°03.0'	114°54.0'	47	350°	4	missing	moderate	22.30	33.605	478
120.40-J	24	0525	27°56.5'	115°14.0'	20	070°	2	missing	moderate	20.42	33.545	434

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MR. HAJIME YAMANAKA
DIVISION OF OCEANOGRAPHY
NANKAI REGIONAL FISH. RES. LAB.
2-6, SANBASHI-DORI,KOCHI-SHI
KOCHI, JAPAN

DR. KOZO YOSHIDA
GEOPHYSICAL INST.
UNIVERSITY OF TOKYO
HONGO, TOKYO, JAPAN