UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6310
2 - 29 October 1963

CCOFI Cruise 6311
28 - 29 November 1963

and

CCOFI Cruise 6311 (El Golfo)
9 November - 7 December 1963

SIO Reference 65-1
9 October 1964

INSERT FOR CCOFI CRUISE 6310 (SIO Ref. 65-1)

The CCOFI cruise-numbering and station-numbering system has been slightly revised in order to make it more consistent with the system used by the National Oceanographic Data Center.

Cruise numbers. Hyphenated numbers indicating quarterly cruises (extending over a period of more than one month) will no longer be used. A four-digit number will appear instead, where the first two digits represent the year, and the last two digits the month in which the first data were collected.

Station numbers. Superscript numbers will not be used any longer, either for indication of the station line (before the decimal point) nor the station position along that line (after the decimal point). (Each station number represents, really, an area of about twelve by four nautical miles.) The exact position will be expressed by latitude and longitude.

UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6310
2 - 29 October 1963

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and

CCOFI Cruise 6311 (El Golfo)
9 November - 7 December 1963

Sponsored by

Marine Research Committee

SIO Reference 65-1
9 October 1964

Approved for distribution:

F. N. Spiess, Director

CONTENTS

INTRODUCTION

The data presented in this report were collected by the RV Black Douglas of the Bureau of Commercial Fisheries, the RV Alexander Agassiz and the RV Horizon of the Scripps Institution of Oceanography on Cruise 6310 and by the RV Horizon and the RV Alexander Agassiz on Cruise 6311 of the California Cooperative Oceanic Fisheries Investigations program. 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 6304 and 6306 (SIO Ref. 64-13) and 6307 and 6309 (SIO Ref. 64-18).

The data are tabulated at observed depths; the interpolated and computed values are tabulated at standard depths and are accompanied by charts of horizontal distribution. The presentation of data in this report does not constitute publication; however, the data contained in this report have been carefully edited and no modifications should be necessary before final publication.

STANDARD PROCEDURES

Processing of the data was carried out using the method described by Klein.[1/] 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."[2/] The values are recorded to two decimal places when obtained by chlorinity titration, or by salinometer where only one determination per sample was obtained, or where there is doubt concerning the accuracy of a particular sample, or of all samples on

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

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

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.

Extrapolated values and values interpolated between remote observations are entered within parentheses. A hyphen is used to indicate a missing observed value. The time is the time of messenger release. When more than one cast was made on a station, messenger times and wire angles are given in the order of increasing depth. A line is left blank between the observed data of each cast.

On stations where more than one cast is lowered, the various property curves may not agree perfectly. This discrepancy may be caused by changes in geographical position, real property changes with time, slight error in measurement, or a combination of these factors. Stations with overlapping casts have the following footnote: Overlapping casts; reconciliation of property curves when necessary.

FOOTNOTES

Laboratory personnel note any possible imperfections in the sealing of the bottles as follows:

Loose bottle cap:	The cap is definitely loose so that it could be moved with very little applied pressure. The salinity values obtained from these samples may be usable depending on time and/or conditions of storage.
Possible evaporation:	Either the cap was sealed with less than usual pressure, the bottle edge chipped, the rubber washer cracked, or the bale broke on opening, etc.

Use of the above values in interpolation depends upon consistency with other values of salinity and other properties, and these footnotes are supplemented with "falls on property curve" or "does not fall on property curve," depending upon whether the property curve was drawn through the value or not.

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

To indicate a premature or a delayed reversal of the water-sampling device which results in certain depth and property errors, the following notation is used.

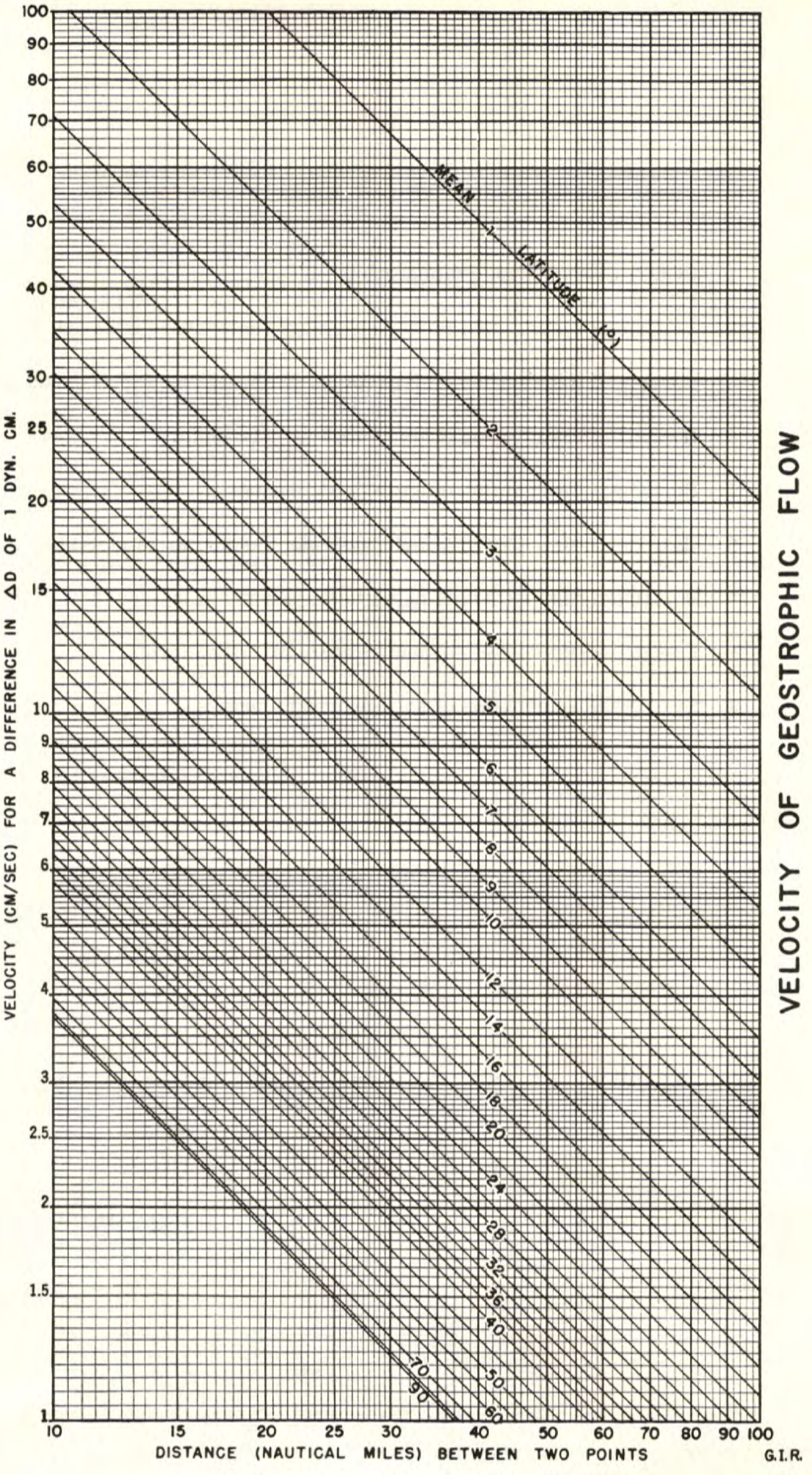
p: pretrip or posttrip.

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

u: uncertain value (value may be correct; occasionally it can influence the drawing of the property curve).

FORMAT

These data are typed in the format of the University of California Press publication, Oceanic Observations of the Pacific.


VELOCITY OF GEOSTROPHIC FLOW
VELOCITY (CM/SEC) FOR A DIFFERENCE IN ΔD OF 1 DYN. CM.
DISTANCE (NAUTICAL MILES) BETWEEN TWO POINTS
MEAN LATITUDE (φ)
1
2
3
4
5
6
7
8
9
10
12
14
16
18
20
24
28
32
36
40
50
60
70
90
100
90
80
70
60
50
40
30
25
20
15
10
9
8
7
6
5
4
3
2.5
2
1.5
1
10
15
20
25
30
40
50
60
70
80
90
100
G.I.R.

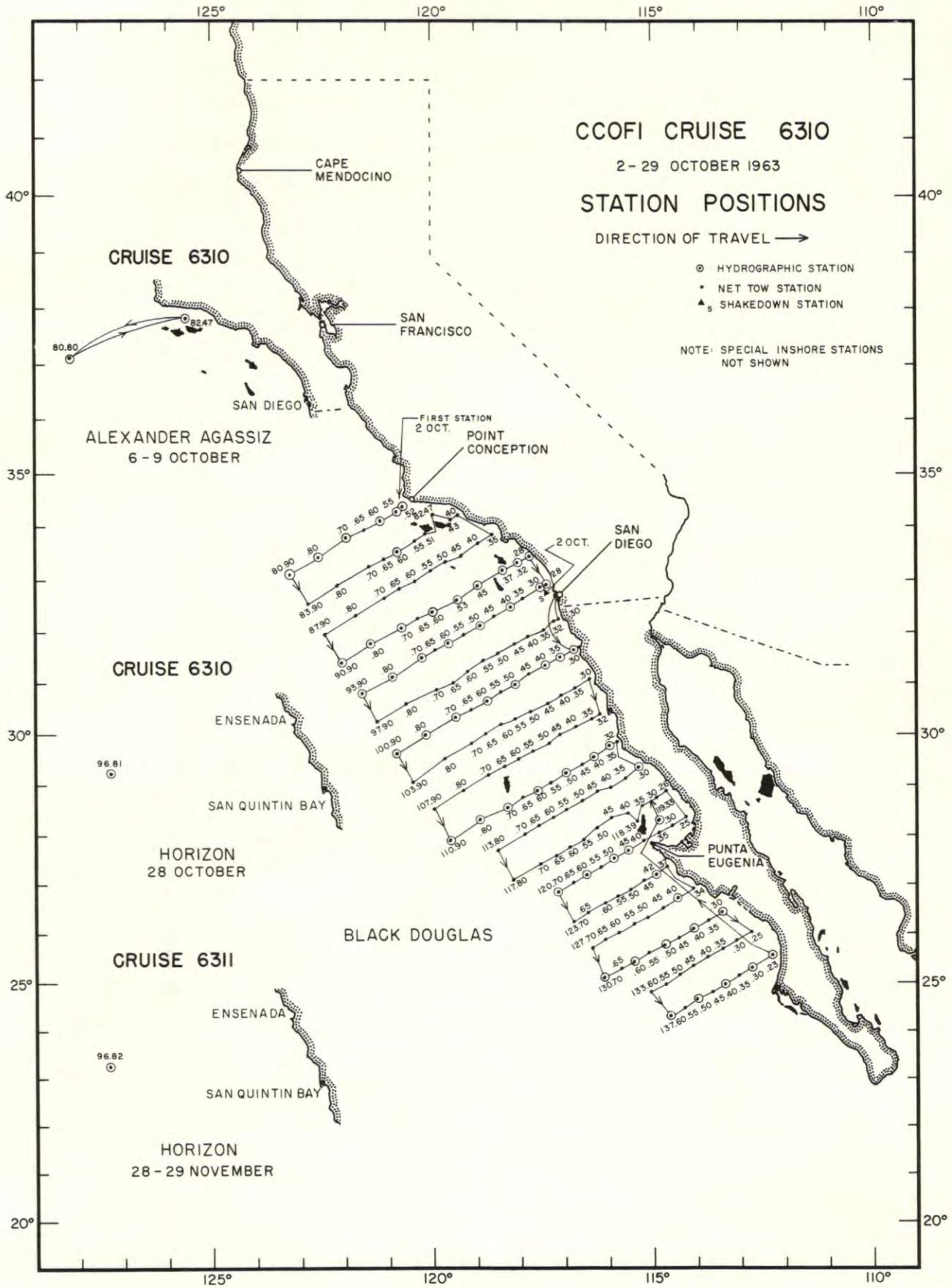

CCOFI CRUISE 6310
2 - 29 OCTOBER 1963
STATION POSITIONS
DIRECTION OF TRAVEL
HYDROGRAPHIC STATION
NET TOW STATION
SHAKEDOWN STATION
NOTE: SPECIAL INSHORE STATIONS NOT SHOWN
CAPE MENDOCINO
SAN FRANCISCO
SAN DIEGO
CRUISE 6310
ALEXANDER AGASSIZ
6 - 9 OCTOBER
FIRST STATION 2 OCT.
POINT CONCEPTION
2 OCT.
SAN DIEGO
CRUISE 6310
ENSENADA
SAN QUINTIN BAY
HORIZON
28 OCTOBER
PUNTA EUGENIA
BLACK DOUGLAS
CRUISE 6311
ENSENADA
SAN QUINTIN BAY
HORIZON
28 - 29 NOVEMBER
125°
120°
115°
110°
40°
35°
30°
25°
20°

FIGURE 1

FIGURES
Cruise 6311

1. See insert on station position chart for CCOFI Cruise 6310

PERSONNEL
Cruise 6311

SHIP'S CAPTAIN

Ferris, Noel L., RV Horizon

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV Horizon

Brennen, Robert E., Senior Marine Technician
Burns, William A., Marine Technician

SIO
CCOFI
6310

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

80.80 ALEXANDER AGASSIZ; October 8, 1963; 1355 GCT; 33°24.5'N, 122°36'W; sounding, 2114 fm; wind, 270°, force 1; weather, cloudy; sea, slight; wire angle, 11°.

1	19.44	33.085	5.32	443
49	16.30	33.016	5.95	375
98	12.01	33.039	5.63	288
291	7.30	34.028	2.39	141
485	5.69	34.171	0.52	111
972	3.90	34.459	0.35	70
1943	2.14	34.614	1.69	43
2906	1.64	34.657	2.49	36
3919	1.52	34.686	2.93a)	33
3922	1.48	-	-	
3929	1.50	-	-	

82.47 ALEXANDER AGASSIZ; October 6, 1963; 1334 GCT; 34°14'N, 122°02'W; sounding, 315 fm; wind, missing; weather, missing; sea, missing; wire angle, 01°. b)

382	7.56	34.243	0.33	129
401	7.40	34.246	0.32	126
420	7.08	34.246	0.18	122
440	6.94	34.256	0.12	120
450	6.92	34.258	0.10	119
460	6.86	34.261	0.07	118
469	6.82	34.257	0.06	118
479	6.76	34.252	0.07	118
489	6.68	34.261	0.05	116
499	6.64	34.259	0.03	116
508	6.59	34.268	0.00	114
518	6.58	34.270	-	114
528	6.56	34.266	-	114
538	6.53	34.267	0.02	114
548	6.55	34.263	0.02	114
557	6.54	34.262	0.02	114
567	6.52	34.270	0.02	113
577	6.54	34.268	0.02	113

82.47 ALEXANDER AGASSIZ; October 9, 1963; 0825 GCT; 34°14'N, 122°02'W; sounding, 320 fm; wind, 290°, force 6; weather, clear; sea, moderate; wire angle, 32°.

1	18.46	33.594	5.45	382
43	12.24	33.574	4.33	254
129	9.77	33.921	2.55	185
217	9.13	34.143	1.37	159
309	8.22	34.218	0.56	140
404	7.45	34.240	0.33	128
474	6.81	34.251	0.11	118
477	6.81	-	-	
480	6.78	-	-	
484	6.80	-	-	

a) Alternate value, 3.13 ml/L.

b) One hydrographic cast was made on this station two different days to monitor the oxygen deficiency on a time basis.

SIO
CCOFI
6310

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
HORIZON; October 28, 1963; 2241 GCT; 30°42.5'N, 120°42'W; sounding, 2014 fm; wind, 280°, force 3; weather, cloudy; sea, slight; wire angle, 18°. a)											
1	19.79	33.579		415	0	(19.79)	(33.58)		(23.76)	(415)	(0.00)
11	19.72	33.574		414	10	19.72	33.57		23.77	414	0.04
30	19.90	33.687		410	20	19.82	33.64		23.79	412	0.08
58	17.99	33.708		363	30	19.90	33.69		23.81	410	0.12
67	17.44	33.716		349	50	19.66	33.71		23.89	403	0.21
81	15.76	33.550		325	75	17.20	33.70		24.49	345	0.30
94	14.94	33.539		308	100	14.55	33.52		24.95	302	0.38
108	13.58	33.499		284	125	12.17	33.54		25.44	254	0.45
122	12.46	33.548		259	150	10.82	33.58		25.72	228	0.51
130	11.82	33.529		249	200	9.28	33.82		26.17	185	0.62
149	10.88	33.572		229	250	8.38	34.00		26.45	159	0.71
162	10.22	33.614		215	300	7.67	34.06		26.61	144	0.78
175	9.67	33.673		202	400	6.48	34.12		26.82	124	0.92
202	9.24	33.835		184	500	5.72	34.21		26.99	108	1.04
228	8.66	33.969		165							
274	8.08	34.039		151							
323	7.26	34.082		137							
401	6.45	34.127		123							
482	5.82	34.186		111							
564	5.40	34.280		99							

I
(96.81)

a) Special cast for monitoring temperature measuring devices.

SIO
CCOFI
6311

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

I
(96.82)

HORIZON; November 28, 1963; 0254, 0630 GCT; 30°42'N, 120°45.5'W; sounding, 2013 fm; wind, 330°, force 4; weather, cloudy; sea, moderate; wire angle, 14°, 00°. a)

1	16.60	33.354	357	0	(16.60)	(33.35)		(24.36)	(357)	(0.00)
11	16.58	33.349	357	10	16.58	33.35		24.37	357	0.04
30	16.25	33.382	347	20	16.30	33.38		24.45	349	0.07
40	16.16	33.397	344	30	16.25	33.38		24.47	347	0.11
58	16.09	-		50	16.10	33.40		24.52	343	0.18
67	15.28	33.298	333	75	13.95	33.23		24.85	311	0.26
81	13.51	33.221	303	100	12.53	33.28		25.17	280	0.33
96	12.78	33.265	286	125	10.00	33.36		25.69	231	0.40
110	11.69	33.330	261	150	9.27	33.54		25.95	206	0.45
133	10.00	33.422	226	200	8.89	33.88		26.28	175	0.55
142	9.42	33.499	211	250	8.19	34.01		26.49	155	0.63
151	9.26	33.541	206	300	7.54	34.06		26.62	142	0.71
179	9.05	33.834	181	400	6.44	34.11		26.81	124	0.85
206	8.82	33.893	173	500	5.90	34.21		26.96	110	0.97
233	8.40	33.979	160	600	5.28	34.27		27.09	99	1.08
278	7.84	34.044	148	700	4.85	34.34		27.19	89	1.18
334	7.09	34.063	136	800	4.50	34.40		27.28	80	1.28
409	6.37	34.124	122	1000	3.93	34.47		27.39	69	1.44
490	5.96	34.212	111	1200	3.45	34.52		27.48	61	1.59
573	5.41	34.254	101	1500	2.79	34.56		27.57	52	1.79
				2000	2.04	34.62		27.69	42	2.07
423 b)	6.31	34.123	122	2500	1.75	34.65		27.73	37	2.31
522	5.76	34.210	109	3000	1.62	34.67		27.76	35	2.54
621	5.19	34.283	97							
740	4.70	34.364	85							
839	4.39	34.419	78							
939	4.08	34.454	72							
1087	3.72	34.498	65							
1284	3.26	34.529	59							
1433	2.91	34.552	54							
1581	2.65	34.576	50							
1779	2.28	34.603	45							
1977	2.05	34.622	42							
2174	1.92	34.636	40							
2371	1.82	34.649	38							
2568	1.73	34.654	37							
2767	1.66	34.662	36							
2965	1.62	34.665	35							
3164	1.60	34.671	35							
3362	1.57	34.674	34							
3556	1.55	34.677	34							
3608	1.56	34.676	34							

b) Overlapping casts; reconciliation of property curves when necessary.

a) Special cast for monitoring temperature measuring devices

SIO
CCOFI
6311

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m
HORIZON; November 28, 1963; 1755 GCT; 30°42'N, 120°45.5'W; sounding, 2013 fm; wind, 020°, force 1; weather, cloudy; sea, slight; wire angle, 09°. a)											I-A (96.82)
36	16.50	33.351		355	0	16.9	(33.35)		(24.29)	(364)	(0.00)
95	13.71	33.239		305	10	16.9	(33.35)		(24.29)	(364)	(0.04)
144	10.54	33.388		237	20	16.7	(33.35)		(24.34)	(360)	(0.07)
242	7.72	33.958		152	30	16.5	(33.35)		(24.39)	(355)	(0.11)
339	7.10	34.052		137	50	16.50	33.35		24.39	355	0.18
416	6.36	34.117		123	75	16.22	33.34		24.44	350	0.27
513	5.77	34.190		110	100	13.22	33.24		25.01	296	0.35
609	5.26	34.266		99	125	11.68	33.31		25.36	263	0.42
820	4.49	34.411		79	150	10.28	33.42		25.69	231	0.48
1039	3.88	34.480		68	200	8.48	33.74		26.23	179	0.59
1273	3.28	34.525		59	250	7.64	33.97		26.54	150	0.67
1506	2.75	34.562		52	300	7.36	34.03		26.63	142	0.75
1766	2.34	34.593		46	400	6.49	34.11		26.81	125	0.88
2037	2.02	34.624		41	500	5.84	34.18		26.95	112	1.01
2321	1.84	34.642		39	600	5.30	34.26		27.08	99	1.12
2607	1.70	34.659		36	700	4.90	34.34		27.19	89	1.22
2903	1.63	34.664		35	800	4.56	34.40		27.27	81	1.32
3202	1.58	34.670		35	1000	3.97	34.47		27.39	70	1.48
3403	1.55	34.672		34	1200	3.46	34.51		27.47	62	1.63
3604	1.56	34.674		34	1500	2.76	34.56		27.58	52	1.83
					2000	2.06	34.62		27.68	42	2.11
					2500	1.75	34.65		27.73	37	2.36
					3000	1.62	34.66		27.75	36	2.59
HORIZON; November 29, 1963; 0008 GCT; 30°42'N, 120°45.5'W; sounding, 2013 fm; wind, 320°, force 1; weather, cloudy; sea, moderate; wire angle, 00°. a)											I-B (96.82)
36	16.80	33.284		367	0	17.7	(33.34)		(24.10)	(383)	(0.00)
95	13.76	33.226		307	10	17.6	(33.33)		(24.11)	(381)	(0.04)
149	10.12	33.438		227	20	17.6	(33.33)		(24.11)	(381)	(0.08)
248	8.42	33.971		161	30	17.6	(33.33)		(24.11)	(381)	(0.11)
347	6.94	34.086		132	50	16.73	33.28		24.28	365	(0.19)
433	6.25	34.158		118	75	16.15	33.26		24.40	354	0.28
533	5.71	34.222		107	100	13.27	33.23		24.99	298	0.36
642	5.14	34.297		95	125	10.70	33.29		25.52	247	0.43
860	4.38	34.429		77	150	10.09	33.45		25.75	225	0.49
1088	3.78	34.497		66	200	9.22	33.74		26.12	190	0.60
1337	3.12	34.547		56	250	8.38	33.98		26.44	160	0.69
1585	2.66	34.584		49	300	7.58	34.05		26.61	144	0.76
1853	2.24	34.612		44	400	6.47	34.13		26.83	123	0.90
2129	1.97	34.641		40	500	5.88	34.20		26.96	111	1.03
2417	1.79	34.656		37	600	5.36	34.27		27.08	99	1.14
2715	1.70	34.663		36	700	4.90	34.33		27.18	90	1.24
3012	1.62	34.662		35	800	4.54	34.40		27.27	81	1.33
3309	1.58	34.676		34	1000	4.02	34.47		27.38	70	1.50
3506	1.56	34.670		34	1200	3.47	34.52		27.48	61	1.65
3706	1.56	34.671		34	1500	2.81	34.57		27.58	52	1.85
					2000	2.09	34.63		27.69	41	2.13
					2500	1.75	34.66		27.75	37	2.37
					3000	1.62	34.66		27.75	36	2.60

a) Special cast for monitoring temperature measuring devices.

FIGURES
Cruise 6311 (El Golfo)

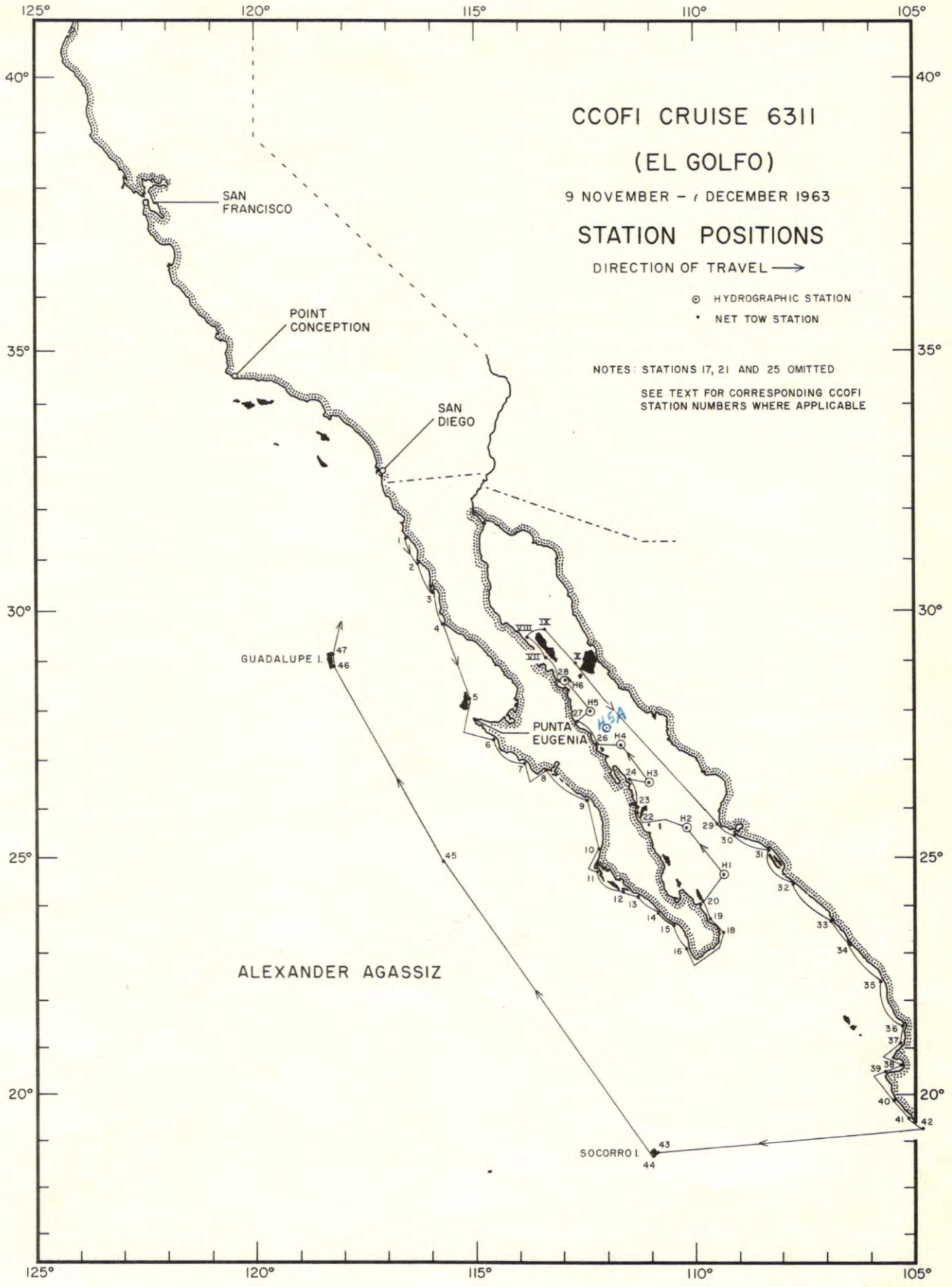

CCOFI CRUISE 6311
(EL GOLFO)
9 NOVEMBER – 7 DECEMBER 1963
STATION POSITIONS
DIRECTION OF TRAVEL
HYDROGRAPHIC STATION
NET TOW STATION
NOTES: STATIONS 17, 21 AND 25 OMITTED
SEE TEXT FOR CORRESPONDING CCOFI STATION NUMBERS WHERE APPLICABLE
SAN FRANCISCO
POINT CONCEPTION
SAN DIEGO
GUADALUPE I.
PUNTA EUGENIA
SOCORRO I.
ALEXANDER AGASSIZ
125°
120°
115°
110°
105°
40°
35°
30°
25°
20°

FIGURE 1

PERSONNEL
Cruise 6311 (El Golfo)

SHIP'S CAPTAIN

Newbegin, Robert C., RV Alexander Agassiz

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV Alexander Agassiz

*Fleminger, Dr. Abraham
Brown, Daniel M.
*Bottom, Kenneth S., Senior Marine Technician
*Clutter, Dr. Robert I., Bureau of Commercial Fisheries
Crowe, Fred J., Laboratory Assistant
*Lawson, Jan B., Senior Marine Technician
Matsui, Tetsuo, Postgraduate Research Biologist
Pine, James S., Senior Marine Technician
Smith, Dr. Paul, Bureau of Commercial Fisheries
Snyder, H. George, Museum Scientist
*Wirth, David, Marine Technician
Young, Anthony W., Marine Technician

*San Diego to Mazatlan.

SIO
CCOFI
6311
EL GOLFO

OBSERVED							COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	PO_4-P	SiO_3-Si	NO_2-N	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	µg at/L	µg at/L	µg at/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m
1	27.38	35.277	4.86	0.59	4	0.03	504	0	(27.38)	(35.28)	(4.86)	(22.83)	(504)	(0.00)
11	27.22	35.277	4.85	0.58	4	0.02	499	10	27.24	35.28	4.85	22.87	500	0.05
31	27.20	35.270	4.84	0.62	4	0.03	499	20	27.20	35.28	4.85	22.89	498	0.10
56	22.80	34.971	3.37	1.52	7	0.43	393	30	27.20	35.27	4.84	22.88	499	0.15
70	20.82	35.057	3.08	1.93	14	0.10	334	50	25.00	35.09	4.05	23.43	446	0.24
84	19.28	35.028	2.57	2.18	17	0.06	298	75	20.30	35.05	2.93	24.74	321	0.34
99	16.89	34.974	1.99	2.60	16	0.04	245	100	16.78	34.97	1.94	25.56	243	0.41
123	14.84	34.916	1.40	2.88	23	-	205	125	14.72	34.91	1.38	25.98	203	0.47
142	13.80	34.895	1.16	3.06	28	0.02	186	150	13.55	34.88	1.02	26.21	182	0.52
161	13.22	34.860	0.87	3.00	29	-	177	200	12.24	34.82	0.75	26.42	162	0.61
191	12.46	34.828	0.79	3.00	30	0.02	165	250	11.27	34.74	0.56	26.54	150	0.69
239	11.45	34.754	0.57	2.98	30	0.79	152	300	10.56	34.66	0.52	26.61	144	0.76
293	10.66	34.674	-	3.06	32	0.57	144	400	9.24	34.61	0.51	26.79	126	0.91
371	9.64	34.620	0.49	3.19	35	0.07	132	500	7.85	34.57	0.55	26.98	109	1.03
469	8.26	34.590	0.57	3.28	36	-	113	600	6.74	34.53	0.45	27.11	97	1.14
574	6.98	34.526	0.48	3.48	39	0.04	100	700	5.98	34.52	0.40	27.20	88	1.25
722	5.82	34.521	0.40	3.45	50	-	86	800	5.31	34.53	0.47	27.29	79	1.34
875	4.89	34.539	0.56	3.64	69	0.03	74	1000	4.49	34.54	0.78	27.39	70	1.51
1029	4.40	34.547	0.80	3.63	91	-	68							
1112	4.11	34.553	0.99	3.62	106	0.03	65							

146G.70 (H-1) ALEXANDER AGASSIZ; November 13, 1963; 1818 GCT; 24°38'N, 109°22'W; sounding, 1200 fm; wind, 390°, force 2; weather, partly cloudy; sea, moderate; wire angle, 10°.

146G.70 (H-1B) ALEXANDER AGASSIZ; November 15, 1963; 0021 GCT; 24°38'N, 109°22'W; sounding, 1280 fm; wind, 160°, force 2; weather, clear; sea, slight; wire angle, 04°.

1	27.72	35.305	4.76	0.58	2	0.00	513	0	(27.72)	(35.30)	(4.76)	(22.73)	(513)	(0.00)
11	27.30	35.295	4.79	0.58	2	0.00	500	10	27.32	35.30	4.79	22.86	501	0.05
31	27.23	35.277	4.85	0.58	3	0.01	499	20	27.26	35.28	4.82	22.87	500	0.10
56	23.74	35.092	3.75	1.44	9	0.56	410	30	27.24	35.28	4.85	22.87	500	0.15
71	21.50	35.056	2.99	1.86	12	0.18	352	50	27.20	35.27	4.84	22.88	499	0.25
87	18.44	35.042	2.42	2.24	19	0.07	276	75	19.82	35.05	2.67	24.87	309	0.35
102	16.04	34.974	1.57	2.73	23	0.01	227	100	16.31	34.98	1.68	25.68	232	0.42
126	14.36	34.885	1.12	3.24	28	-	198	125	14.41	34.89	1.13	26.03	198	0.48
146	13.85	34.877	0.93	3.00	26	0.00	188	150	13.74	34.88	0.90	26.17	186	0.52
166	13.23	34.871	0.83	3.20	34	-	176	200	12.46	34.83	0.60	26.39	165	0.61
195	12.54	34.835	-	3.15	35	0.00	166	250	11.58	34.74	0.44	26.49	155	0.70
244	11.69	34.746	0.44	3.17	33	0.01	157	300	10.71	34.70	0.52	26.61	143	0.78
299	10.72	34.698	0.52	2.98	37	1.40	144	400	9.26	34.61	0.41	26.79	127	0.92
379	9.55	34.623	0.39	3.18	37	0.08	130	500	7.98	34.57	0.54	26.96	110	1.04
479	8.22	34.585	0.55	3.24	51	-	113	600	6.90	34.52	0.43	27.08	100	1.16
585	7.04	34.530	0.44	3.48	61	0.02	101	700	6.04	34.52	0.40	27.19	89	1.26
735	5.77	34.515	0.39	3.74	71	-	86	800	5.30	34.52	0.41	27.28	80	1.36
890	4.82	34.524	0.47	3.68	80	0.00	74	1000	4.49	34.55	0.50	27.40	69	1.52
1045	4.36	34.560	0.56	3.64	110	-	67							
1129	4.13	34.567	0.68	3.91	105	0.00	64							

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OBSERVED							COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	PO_4-P	SiO_3-Si	NO_2-N	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	µg at/L	µg at/L	µg at/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

ALEXANDER AGASSIZ; November 17, 1963; 1235 GCT; 25°35.5'N, 110°14.5'W; sounding, 1140 fm; wind, 360°, force 4; weather, partly cloudy; sea, missing; wire angle, 33°. 139G.60 (H-2)

2	27.28	35.276	4.90	0.56	2	0.01	501	0	(27.28)	(35.28)	(4.90)	(22.86)	(501)	(0.00)
10	27.31	35.274	5.18	0.68	2	-	502	10	27.31	35.27	5.18	22.84	502	0.05
27	27.31	35.272	5.03	0.68	2	0.00	502	20	27.31	35.27	5.10	22.84	502	0.10
53	24.00	35.127	3.82	1.48	7	0.44	415	30	27.31	35.27	5.02	22.84	502	0.15
70	20.62	35.110	2.98	2.18	18	0.09	325	50	25.00	35.16	4.17	23.48	441	0.25
82	18.94	35.079	2.63	2.45	22	0.05	286	75	19.88	35.10	2.82	24.89	307	0.34
95	17.17	35.033	2.20	2.75	22	0.04	247	100	16.60	35.02	2.08	25.64	236	0.41
115	15.25	34.989	1.74	3.18	31	-	209	125	14.50	34.96	1.49	26.07	195	0.46
131	14.15	34.948	1.36	3.28	42	0.00	189	150	13.40	34.91	1.13	26.26	177	0.51
151	13.35	34.906	1.12	3.30	35	-	176	200	11.88	34.80	0.83	26.48	156	0.60
176	12.44	34.844	0.99	3.44	37	0.01	163	250	10.91	34.73	0.59	26.60	145	0.67
217	11.52	34.774	0.74	3.59	42	-	152	300	10.12	34.68	0.47	26.70	135	0.75
266	10.62	34.710	0.52	3.48	43	0.03	141	400	8.85	34.62	0.51	26.86	120	0.88
341	9.56	34.653	0.41	3.68	50	-	128	500	7.58	34.56	0.49	27.01	106	1.00
433	8.44	34.602	0.57	3.82	55	0.02	115	600	6.42	34.55	0.40	27.16	91	1.11
525	7.26	34.550	0.44	3.90	67	-	102	700	5.69	34.54	0.38	27.25	83	1.20
662	5.90	34.545	0.38	3.94	76	-	85	800	5.20	34.53	0.39	27.30	78	1.29
810	5.16	34.532	0.39	4.04	97	0.01	78	1000	4.20					
954	4.40	34.62 a)	0.84	3.88	96	-	63							
1033	4.08	34.64 a)	0.79	3.94	110	-	58							

ALEXANDER AGASSIZ; November 19, 1963; 0614 GCT; 26°31.5'N, 111°03.5'W; sounding, 740 fm; wind, 350°, force 4; weather, missing; sea, missing; wire angle, 17°. 132G.50 (H-3)

1	26.05	35.368	5.03	0.68	3	0.00	457	0	(26.05)	(35.37)	(5.03)	(23.32)	(457)	(0.00)
11	26.07	35.365	5.03	1.21	3	-	458	10	26.07	35.36	5.03	23.30	458	0.05
35	26.08	35.366	4.98	0.86	4	-	458	20	26.07	35.36	5.01	23.30	458	0.09
63	22.48	35.112	3.03	1.99	18	0.24	374	30	26.07	35.37	4.99	23.31	458	0.14
87	18.62	35.110	2.51	2.68	28	-	276	50	24.95	35.27	4.17	23.58	432	0.23
101	17.17	35.082	2.13	2.74	35	-	244	75	20.45	35.11	2.77	24.75	321	0.32
115	15.90	35.049	1.86	3.08	41	0.00	218	100	17.22	35.08	2.14	25.54	245	0.39
145	14.86	34.998	1.57	3.25	45	-	200	125	15.53	35.03	1.76	25.90	212	0.45
163	14.07	34.961	1.30	3.36	47	-	186	150	14.68	34.99	1.50	26.05	197	0.50
187	13.44	34.948	1.21	3.40	46	0.00	175	200	13.08	34.94	1.13	26.35	168	0.60
221	12.45	34.768	1.01	3.43	49	-	169	250	12.06	34.86	0.93	26.49	155	0.68
279	11.70	34.820	0.85	3.54	53	-	152	300	11.35	34.80	0.72	26.57	147	0.76
337	10.63	34.768	0.50	3.56	56	0.02	137	400	9.38	34.71	0.45	26.85	121	0.90
424	8.98	34.692	0.44	3.82	73	-	116	500	8.08	34.64	0.48	27.00	107	1.02
552	7.59	34.62 b)	0.50	3.78	86	-	101	600	7.19	34.62	0.44	27.11	96	1.13
665	6.67	34.611	0.34	3.74	96	0.00	90	700	6.37	34.60	0.34	27.21	87	1.24
827	5.30	34.556	0.37	3.76	108	-	77	800	5.52	34.56	0.36	27.29	80	1.33
994	4.45	34.554	0.47	3.80	128	-	68	1000	4.43	34.55	0.48	27.40	68	1.50
1194	3.76	34.610u	0.65	3.88	149	0.00		1200	3.74	34.58	0.71	27.50	59	1.64
1274	3.60	34.582	0.82	3.78	158	-	58							

a) Possible evaporation.
b) Broken bottle cap; value falls on property curve.

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OBSERVED							COMPUTED	INTERPOLATED				COMPUTED		
Z m	T °C	S ‰	O_2 ml/L	PO_4-P µg at/L	SiO_3-Si µg at/L	NO_2-N µg at/L	δ_T cl/ton	Z m	T °C	S ‰	O_2 ml/L	σ_t g/L	δ_T cl/ton	ΔD dyn m

132G.50
(H—3B)

ALEXANDER AGASSIZ; November 20, 1963; 1650 GCT; 26°31.5'N, 111°03.5'W; sounding, 845 fm; wind, 270°, force 1; weather, cloudy; sea, smooth; wire angle, 02°.

1	25.94	35.411	5.14	0.70	2	-	451	0	(25.94)	(35.41)	(5.14)	(23.38)	(451)	(0.00)
12	25.93	35.408	5.00	0.77	3	-	451	10	25.93	35.41	5.02	23.39	451	0.05
31	25.93	35.409	5.04	0.84	3	0.00	451	20	25.93	35.41	5.02	23.39	451	0.09
57	24.12	35.219	3.97	1.52	10	0.38	412	30	25.93	35.41	5.04	23.39	451	0.14
71	20.28	35.116	2.70	2.24	24	0.06	316	50	25.90	35.41	5.01	23.39	450	0.23
87	18.65	35.123	2.41	2.51	26	-	275	75	19.93	35.12	2.61	24.89	307	0.32
102	16.80	35.044	1.99	2.98	31	-	238	100	17.05	35.06	2.02	25.57	243	0.39
126	15.18	35.007	1.76	3.28	38	0.01	206	125	15.23	35.01	1.77	25.95	207	0.45
146	14.43	34.957	1.34	3.24	40	-	194	150	14.29	34.96	1.33	26.11	191	0.50
165	13.82	34.956	1.31	3.32	44	-	182	200	13.14	34.92	1.20	26.32	171	0.59
195	13.24	34.922	1.22	3.32	45	0.00	173	250	12.05	34.84	0.91	26.47	157	0.68
245	12.13	34.845	0.94	3.50	49	-	158	300	11.06	34.77	0.66	26.60	144	0.75
300	11.06	34.774	0.66	3.49	50	-	144	400	9.25	34.67	0.70	26.84	122	0.89
379	9.58	34.684	0.79	3.54	63	0.00	126	500	8.06	34.61	0.40	26.98	109	1.02
479	8.27	34.620	0.44	3.62	71	-	111	600	7.15	34.58	0.35	27.09	98	1.13
586	7.26	34.589	0.35	3.80	81	-	99	700	6.37	34.57	0.37	27.19	89	1.23
735	6.09	34.560	0.38	3.80	96	0.00	86	800	5.66	34.55	0.39	27.26	82	1.33
891	5.10	34.547	0.40	4.14	105	-	76	1000	4.43	34.56	0.50	27.41	68	1.50
1046	4.19	34.563	0.55	3.89	124	-	65							
1130	3.98	34.585	0.60	3.94	137	0.00	61							

126G.40
(H—4)

ALEXANDER AGASSIZ; November 21, 1963; 1636 GCT; 27°18'N, 111°42.5'W; sounding, 900 fm; wind, 240°, force 3; weather, partly cloudy; sea, missing; wire angle, 04°.

1	23.78	35.468	4.83	0.94	4	0.08	384	0	(23.78)	(35.47)	(4.83)	(24.08)	(384)	(0.00)
11	23.78	35.474	4.84	1.04	4	0.14	384	10	23.78	35.47	4.84	24.08	384	0.04
31	23.18	35.440	4.73	1.21	7	0.28	370	20	23.60	35.47	4.81	24.14	379	0.08
61	21.52	35.321	3.32	1.94	14	0.88	333	30	23.21	35.44	4.75	24.23	370	0.11
82	17.94	35.110	2.07	2.55	31	0.06	260	50	22.40	35.39	4.03	24.42	352	0.19
97	17.06	35.094	2.01	2.78	39	0.04	241	75	19.20	35.18	2.37	25.13	285	0.27
112	16.18	35.085	1.67	2.78	42	-	222	100	16.85	35.09	1.97	25.64	236	0.33
136	14.98	35.016	1.60	2.98	42	0.02	201	125	15.80	35.07	1.64	25.87	214	0.39
156	13.94	34.971	1.33	3.10	43	-	183	150	14.21	34.98	1.40	26.15	188	0.44
180	13.27	34.933	1.21	3.23	44	-	173	200	12.83	34.89	1.12	26.36	167	0.53
209	12.62	34.872	1.06	3.24	40	0.00	165	250	11.57	34.79	0.76	26.53	152	0.61
260	11.32	34.775	0.69	3.20	44	-	148	300	10.65	34.72	0.43	26.64	141	0.69
319	10.34	34.699	0.40	3.26	42	-	137	400	9.10	34.67	0.52	26.86	120	0.83
410	8.93	34.665	0.52	3.48	61	0.00	117	500	7.59	34.57	0.47	27.02	105	0.95
520	7.29	34.556	0.45	3.60	67	-	102	600	6.47	34.54	0.39	27.15	93	1.06
630	6.24	34.536	0.38	3.69	76	-	90	700	5.87	34.54	0.36	27.23	85	1.15
791	5.41	34.535	0.34	3.64	88	0.00	80	800	5.36	34.54	0.35	27.29	79	1.25
962	4.54	34.549	0.48	3.73	103	-	70	1000	4.43	34.55	0.51	27.40	68	1.41
1122	4.00	34.564	0.65	3.78	126	-	63	1200	3.71	34.58	0.64	27.50	59	1.56
1202	3.69	34.576	0.64	3.78	133	0.00	59							

120G.30
(H—5)

ALEXANDER AGASSIZ; November 23, 1963; 0311 GCT; 28°00.5'N, 112°23'W; sounding, 500 fm; wind, 350°, force 5; weather, clear; sea, rough; wire angle, 50°.

2	21.48	35.386	4.39	1.46	16	0.95	328	0	(21.48)	(35.39)	(4.39)	(24.68)	(327)	(0.00)
8	21.48	35.386	4.69	1.58	14	0.96	328	10	21.49	35.39	4.67	24.68	328	0.03
24	21.51	35.386	4.52	1.60	15	0.93	328	20	21.50	35.39	4.56	24.67	328	0.07
44	20.93	35.336	3.81	1.81	19	0.82	317	30	21.42	35.38	4.42	24.69	326	0.10
50	20.00	35.270	3.29	2.18	23	0.65	298	50	20.00	35.27	3.29	24.99	298	0.16
63	18.46	35.162	2.55	2.38	33	0.17	268	75	18.23	35.15	2.72	25.35	264	0.23
73	18.26	35.154	2.73	2.44	37	0.18	264	100	16.36	35.06	1.90	25.73	227	0.29
82	18.06	35.146	2.42	2.49	34	0.16	260	125	15.45	35.02	1.68	25.91	211	0.35
103	16.15	35.052	1.86	2.78	42	0.06	223	150	14.85	34.99	1.67	26.02	200	0.40
116	15.78	35.031	1.71	2.78	44	0.08	217							
135	15.11	35.004	1.67	2.84	45	0.04	205							
158	14.71	34.988	1.67	3.00	44	0.04	197							

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OBSERVED							COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O_2	PO_4-P	SiO_3-Si	NO_2-N	δ_T	Z	T	S	O_2	σ_t	δ_T	ΔD
m	°C	‰	ml/L	µg at/L	µg at/L	µg at/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

120G.30
(H-5A)

ALEXANDER AGASSIZ; November 27, 1963; 0219 GCT; 28°01'N, 112°22.5'W; sounding, 570 fm; wind, 340°, force 5; weather, clear; sea, rough; wire angle, 45°.

1	21.34	35.393	4.60	1.50	16	0.48	323	0	(21.34)	(35.39)	(4.60)	(24.72)	(324)	(0.00)
9	21.34	35.393	4.62	1.56	19	0.50	323	10	21.34	35.39	4.62	24.72	324	0.03
22	21.32	35.389	4.53	1.57	29	0.48	323	20	21.33	35.39	4.55	24.72	323	0.06
41	20.49	35.347	4.10	1.78	25	1.10	305	30	21.20	35.38	4.46	24.75	321	0.10
51	20.35	35.342	4.11	1.81	22	1.14	302	50	20.37	35.34	4.11	24.94	302	0.16
60	18.96	35.227	2.98	2.18	31	0.36	275	75	17.60	35.14	2.27	25.50	250	0.23
71	18.17	35.173	2.51	2.41	38	0.10	260	100	16.16	35.05	1.74	25.77	224	0.29
87	16.77	35.092	1.93	2.64	42	0.03	234	125	15.32	35.02	1.63	25.93	208	0.34
100	16.16	35.052	1.74	2.68	43	0.04	224	150	13.63	34.93	1.40	26.23	180	0.39
114	15.77	35.037	1.67	2.72	57	0.04	216	200	11.77	34.81	0.80	26.50	154	0.48
135	14.71	34.993	1.57	2.90	49	0.02	197	250	11.37	34.80	0.76	26.57	147	0.56
169	12.58	34.870	1.09	3.14	52	0.01	164	300	10.39	34.74	0.68	26.70	135	0.63
206	11.69	34.801	0.78	3.21	47	0.02	153	400	8.96	34.66	0.45	26.88	118	0.76
260	11.28	34.797	0.75	3.22	53	0.02	146	500	7.85	34.60	0.42	27.00	106	0.89
327	9.75	34.702	0.61	3.38	60	0.03	127	600	6.92	34.57	0.38	27.11	96	1.00
401	8.95	34.655	0.44	3.46	66	0.01	118	700	6.16	34.55	0.39	27.20	88	1.10
506	7.78	34.599	0.41	3.56	74	-	106	800	5.33	34.55	0.42	27.30	78	1.19
617	6.78	34.560	0.37	3.63	82	-	95							
733	5.91	34.548	0.40	3.64	100	0.00	85							
801	5.31	34.549	0.42	3.73	108	-	78							

116G.25
(H-6)

ALEXANDER AGASSIZ; November 24, 1963; 0445 GCT; 28°37.5'N, 112°56.5'W; sounding, 750 fm; wind, 330°, force 5; weather, clear; sea, moderate; wire angle, 30°.

2	21.07	35.501	4.55	1.60	12	0.51	309	0	(21.07)	(35.50)	(4.55)	(24.87)	(309)	(0.00)
11	21.07	35.501	4.53	1.67	14	0.50	309	10	21.07	35.50	4.53	24.87	309	0.03
32	21.02	35.496	4.43	1.70	13	0.49	308	20	21.06	35.50	4.48	24.88	308	0.06
59	19.68	35.317	3.05	2.09	28	0.57	287	30	21.03	35.50	4.44	24.89	308	0.09
80	17.78	35.193	2.51	2.37	36	0.21	250	50	20.51	35.42	3.82	24.96	300	0.15
93	17.58	35.187	2.46	2.46	41	0.17	246	75	18.40	35.23	2.65	25.37	262	0.22
106	17.12	35.159	2.28	2.66	43	0.13	237	100	17.40	35.18	2.39	25.57	242	0.29
133	15.81	35.075	2.01	2.84	46	0.09	214	125	16.00	35.09	2.04	25.83	217	0.35
150	15.75	35.070	1.99	2.72	46	0.03	213	150	15.75	35.07	1.99	25.88	213	0.40
172	14.70	35.013	1.68	2.90	49	0.01	195	200	13.64	34.95	1.45	26.24	179	0.50
202	13.54	34.950	1.44	2.99	58	-	177	250	12.94	34.95	1.40	26.38	165	0.59
254	12.90	34.949	1.40	3.10	59	-	164	300	12.57	34.92	1.25	26.43	160	0.68
307	12.52	34.916	1.23	3.34	59	0.00	160	400	12.07	34.88	1.15	26.50	154	0.84
386	12.12	34.884	1.16	3.34	60	-	155	500	11.80	34.85	1.11	26.53	151	1.01
500	11.80	34.853	1.11	3.76	58	-	151	600	11.68	34.84	0.98	26.54	150	1.17
600	11.68	34.839	0.98	3.30	58	0.00	150	700	11.54	34.83	0.99	26.56	148	1.33
748	11.49	34.819	1.00	3.36	58	-	148	800	11.45	34.81	1.01	26.56	148	1.50
903	11.38	34.803	1.02	3.39	53	-	147	1000	11.25	34.79	0.98	26.59	146	1.84
1096	11.19	34.788	0.93	3.41	57	0.00	145	1200	(11.13)	(34.78)		(26.60)	(145)	(2.18)
1174	11.14	34.781	1.00	3.94	57	-	145							

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	Surface T	Surface S
1 (102.29)-G	XI-9	0155	31°25.5'	116°32.5'	9	080°	2	clear	missing	16.9a)	33.582
2 (104.30)-G	9	0600	30°56.5'	116°18.0'	8	320°	2	clear	missing	16.2	33.557
3 (108.30)-G	9	1105	30°21.0'	115°56.5'	9	040°	3	clear	missing	16.6	33.530
4 (111.32)-G	9	1555	29°43.0'	115°42.0'	-	340°	2	clear	moderate	15.9	33.562
5 (119.37)-G	10	0040	28°13.0'	115°10.0'	25	130°	2	clear	smooth	19.7	-
6 (123.37)-G	10	0705	27°25.5'	114°33.5'	11	080°	2	clear	missing	19.1	34.063
7 (127.31)-G	10	1220	26°57.5'	113°52.5'	13	010°	3	clear	smooth	18.4	34.111
8 (129.26)-G	10	1715	26°47.0'	113°24.0'	4	040°	4	clear	moderate	21.0	-
9 (133.20)-G	10	2350	26°14.5'	112°28.0'	5	270°	6	clear	moderate	21.5	34.394
10 (139.24)-G	11	0635	25°11.0'	112°11.0'	8	060°	2	clear	slight	22.5	34.513
11 (140.28)-G	11	1050	24°46.0'	112°14.5'	8	360°	2	partly cloudy	missing	22.2	34.506
12 (143.23)-G	11	1545	24°18.5'	111°40.0'	10	360°	5	missing	calm	23.4	34.632
13 (145.19)-G	11	1910	24°14.0'	111°18.0'	8	220°	4	clear	smooth	22.9	34.365
14 (148.18)-G	11	2300	23°53.5'	110°48.5'	9	290°	4	clear	moderate	25.2	34.570
15 (150.15)-G	12	0240	23°38.0'	110°29.0'	13	290°	2	clear	missing	27.3	34.774
16 (152.15)-G	12	0645	23°06.5'	110°08.0'	27	290°	2	clear	missing	27.8	34.797
18 (153G.38)-G	13	0150	23°25.0'	109°24.5'	12	320°	3	clear	missing	27.8	35.000

a) Bucket temperatures.

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	Surface T	Surface S
19 (150G.32)-G	XI-13	0525	23°42.0'	109°41.0'	130	270°	3	missing	missing	27.9	35.003
20 (148G.35)-G	13	0940	24°04.0'	109°52.0'	23	200°	3	clear	missing	27.3	35.091
22 (134G.20)-G	18	1730	25°54.5'	111°17.5'	138	300°	5	partly cloudy	slight	26.3	35.338
23 (135G.23)-G	18	1845	26°00.5'	111°20.0'	8	250°	4	partly cloudy	smooth	26.3	35.356
24 (131G.30)-G	19	0010	26°34.0'	111°32.0'	9	020°	4	partly cloudy	slight	25.1	35.479
26 (124G.20)-G	22	1630	27°19.0'	112°16.0'	14	330°	2	partly cloudy	missing	23.3	35.463
26 ABC	22										35.486a)
26 ABC	22										35.501
27 (121G.10)-G	22	2100	27°45.5'	112°41.5'	21	360°	4	partly cloudy	moderate	20.6	35.368
27 A	22										35.384
27 B	22										35.377
28 (116G.15)-G	25	2055	28°34.5'	113°07.0'	4	340°	4	partly cloudy	moderate	21.6	35.584
28 A	25										33.495
VII (112G.15)-G	26	0105	29°04.0'	113°22.5'	500	320°	6	partly cloudy	rough	21.1	35.520
VIII (109G.12)-G	26	0700	29°30.5'	113°47.5'	375	340°	6	missing	very rough	21.7	
IX (109G.30)-G	26	1110	29°37.5'	113°25.5'	130	040°	6	missing	missing	22.6	35.692
X (115G.42)-G	26	1930	28°55.5'	112°42.5'	280	350°	2	clear	moderate	21.5	35.563

a) These salinity samples were collected by a skiff taking one-half-meter net samples as near the shore as surf conditions permitted. No temperatures were determined.

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	Surface T	Surface S
29 (141G.100)-G	XI-28	1640	25°42.5'	109°27.0'	4	090°	3	overcast	missing	22.9	35.493
29 A	28										35.217
30 (143G.110)-G	28	2000	25°28.5'	109°08.5'	4	-	1	cloudy	missing	23.4	35.379
31 (147G.140)-G	29	0140	25°02.5'	108°19.0'	5	290°	3	cloudy	smooth	23.3	35.293
31 A	29										35.436
32 (151G.145)-G	29	0725	24°28.0'	107°45.0'	5	360°	2	cloudy	smooth	24.1	35.239
33 (158G.50)-G	29	1410	23°41.5'	106°50.5'	5	060°	4	cloudy	smooth	23.6	34.320
33 A	29										33.439
34 (161G.52)-G	30		Mazatlan Harbor								34.747
35 (166G.54)-G	XII-1	2230	22°28.5'	105°46.0'	4	300°	4	cloudy	slight	25.5	34.457
35 A	1										33.820
36 (171G.53)-G	2	0620	21°26.5'	105°15.0'	5	120°	1	partly cloudy	smooth	26.1	34.045
36 A	1										34.046
37 (172G.50)-G	2	0950	21°04.0'	105°18.0'	13	080°	1	overcast	smooth	26.6	34.246
37 A	2										34.219
38 (175G.46)-G	2	1700	20°36.0'	105°16.0'	118	320°	1	overcast	smooth	26.7	34.236
38 A	2										34.404
39 (174G.40)-G	2	1955	20°27.0'	105°39.0'	60	360°	2	cloudy	smooth	26.8	34.330
39 A	2										34.286

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind Dir	Wind Force	Weather	Sea	Surface T	Surface S
40 (177G.39)-G	XII-3	0005	19°58.0'	105°29.5'	11	330°	4	cloudy	moderate	26.9	34.250
40 A	3										34.328
41 (180G.40)-G	3	0420	19°32.0'	105°08.0'	35	080°	2	partly cloudy	slight	27.8	34.205
41 A	3										34.286
42 (182G.41)-G	3	0830	19°15.5'	104°50.5'	30	360°	2	partly cloudy	smooth	27.5	34.206
42 A	3										34.239
43 (169.56)-G	4	1650	18°45.5'	110°54.5'	35	350°	2	cloudy	slight	26.6	34.416
44 (169.58)-G	4	2005	18°44.0'	110°59.5'	5	360°	4	cloudy	smooth	26.6	34.798
44 A	4										34.731
45 (132.69)-G	6	1725	24°55.0'	115°46.0'	30	020°	3	clear	very rough	20.6	34.097
46 (109.67)-G	7	1820	28°53.5'	118°16.0'	30	050°	3	clear	slight	18.1	33.659
46 A	7										33.651
47 (108.66)-G	7	2000	29°08.0'	118°18.5'	180	310°	2	clear	smooth	18.3	33.660
47 A	7										33.653

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