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Oceanographic Profiling Observations from the MOBY-L7 Cruise: 25 to 30 June 1994

Michael E. Feinholz, Stephanie J. Flora, and J. Andrew Gashler

Moss Landing Marine Laboratories Technical Publication 95-2

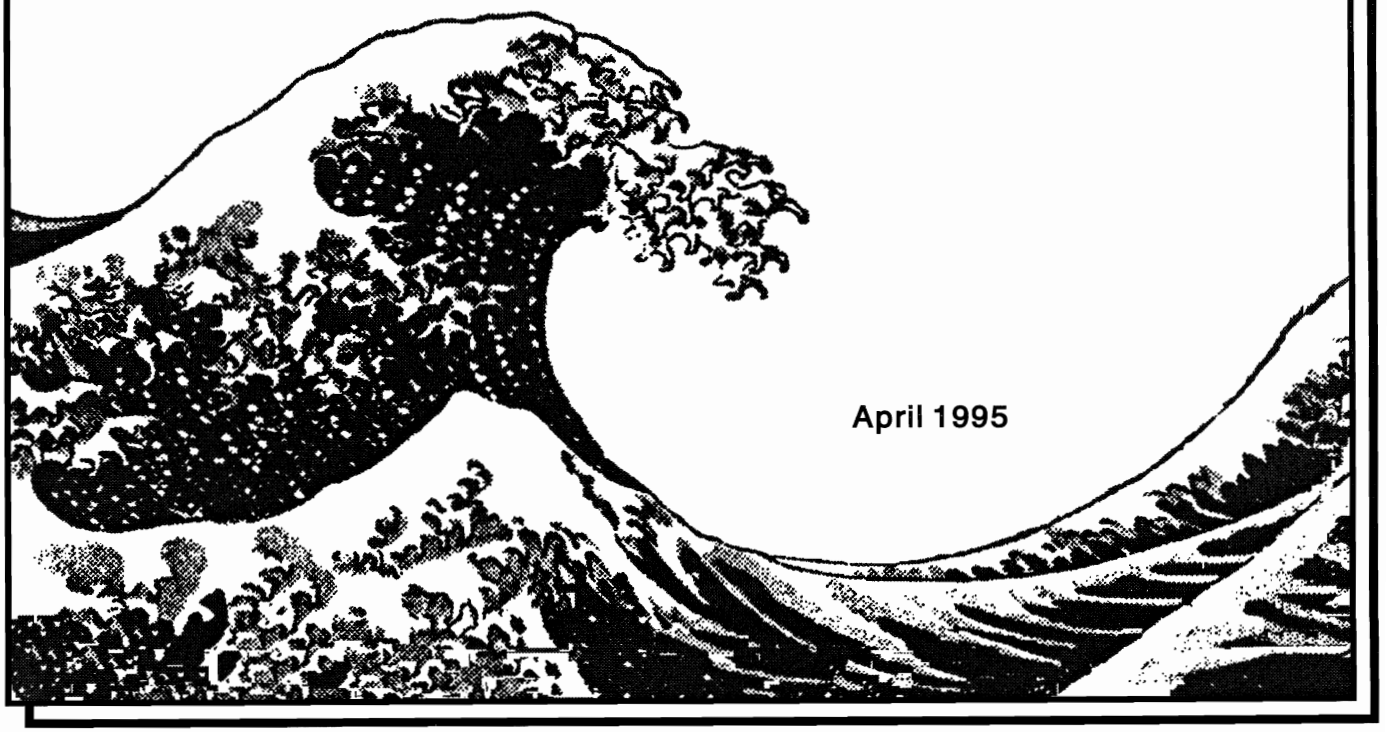

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Table of Contents

List of Tables

List of Figures

Oceanogaphic Profiling Observations from the MOBY-L7 Cruise: 25 to 30 June 1994

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Abstract

This report contains CTD profiling results from the seventh cruise to the Marine Optics Buoy (MOBY) site near the Island of Lanai. Data presented here were obtained on the University of Hawaii Research Vessel Moana Wave between 26 and 30 June 1994. Two types of data are reported: vertical profile observations of salinity, temperature beam attenuation and chlorophyll-a fluorescence, profiles; and total suspended matter and suspended organic carbon and nitrogen taken from water samplers at those stations.

Introduction

The purpose of the Marine Optical Characterization Experiment (MOCE) is to obtain *in situ* ocean data characterizing the upper ocean bio-optical properties. The purposes of these data are twofold: 1) providing surface truth for the SeaWiFS ocean color satellite which will be launched in 1995, and 2) developing bio-optical algorithms relating water-leaving radiance to dissolved and suspended particulate material concentrations in surface waters.

Oceanographic profiling data from the CTD optics profiler characterize the density stratification from salinity, temperature and pressure profiles, the biological state from, chlorophyll fluorescence profiles, and the distribution of suspended particulates by beam attenuation.

Water samples were obtained by 10-liter GoFlo bottles attached to the CTD Rosette for the determination of total suspended materials (TSM), particulate organic carbon (POC) particulate organic nitrogen (PON), and phytoplankton pigments.

All data reported here were obtained near the MOBY site near the Island of Lanai. This may be the very last cruise that the MLML CTD/rosette sees field duty since a new SeaBird 911-plus CTD has been ordered to modernize our equipment.

Cruise Personnel

Chief scientist for the MOBY-L7 cruise was Dennis Clark NOAA/NESDIS. Scientific personnel included Mark Yarbrough, Michael Feinholz, William Broenkow, Stephanie Flora, Andrew Gashler, and Peter Von Langen all from MLML, Edward King, Phillip Hovey, and Eric Stengel NOAA/NESDIS, Dr. Charles Trees and and Daniel Sullivan from CHORS, Stanley Hooker and Yungtao Ge from NASA, Larissa Koval RDC, James Brown Univ. Miami/RSMAS, and Mike Ondrusek Univ. Hawaii.

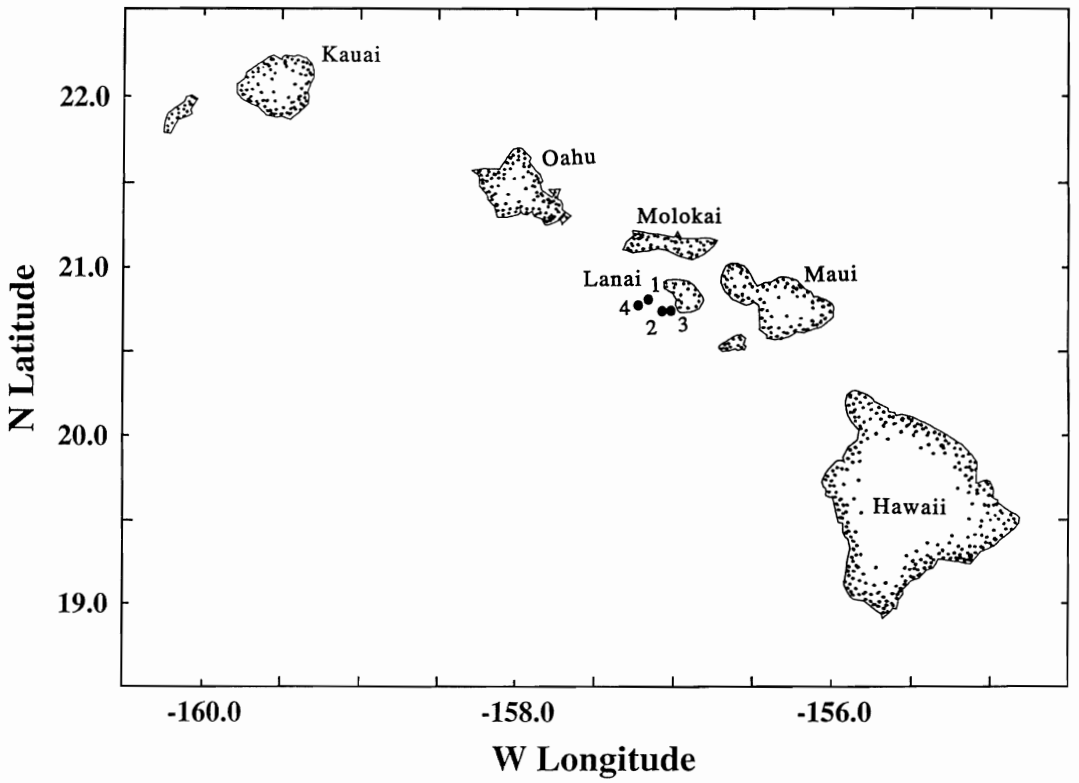

Figure 1. Station locations for MOBY-L7.

Table 1. Marine Optical Characterization Experiment MOBY-L7 Station Locations.

Station:		Latitude:	Longitude:	Date:	CTD
Stn 01	Lanai Mooring	20° 49.6' N	157° 09.9' W	26 June 1994	6004
Stn 01	Lanai Mooring	20° 48.3' N	157° 09.7' W	27 June 1994	6005
Stn 02	West of Lanai	20° 45.4' N	157° 04.7' W	28 June 1994	6006
Stn 03	Kaumalupau Harbor	20° 45.5' N	157° 01.4' W	28 June 1994	6009
Stn 03	Kaumalupau Harbor	20° 45.4' N	157° 01.4' W	29 June 1994	6010
Stn 03	Kaumalupau Harbor	20° 45.5' N	157° 01.6' W	29 June 1994	6011
Stn 03	Kaumalupau Harbor	20° 45.7' N	157° 01.8' W	29 June 1994	6012
Stn 03	Kaumalupau Harbor	20° 45.6' N	157° 01.6' W	29 June 1994	6013
Stn 03	Kaumalupau Harbor	20° 45.8' N	157° 01.3' W	29 June 1994	6014
Stn 03	Kaumalupau Harbor	20° 45.8' N	157° 01.3' W	29 June 1994	6015
Stn 04	2 Miles S of Lanai Mooring	20° 47.5' N	157° 13.7' W	30 June 1994	6016

Table 2. MOBY-L7 file naming conventions.

Calibration files	CTD_CALIB_yyjjj.MLDAT
Station profiling data	CTD_STNnn_sss.MLDAT
Corrected CTD profile files	MOBYL7_STNnn_CTD.MLDAT

Methods

The work plan at each of the bio-optical stations is generally similar to that used during Dennis Clark's CZCS optical characterization work (Clark 1981; Gordon, *et al.* 1983). When SeaWiFS is launched, the objective will be to observe in-water light fields concomitant with the SeaWiFS overpass near local apparent noon. During MOBY-L7 a different routine was followed. The R/V Moana Wave recovered the Marine Optical Buoy (MOBY) from the Lanai Mooring site on 27 June 1994. The Marine Optics System (MOS) was onboard the buoy and therefore not available for vertical profiling, but the Surface Irradiance Spectrometer (SIS) was used to collect surface-incident irradiance scans throughout the cruise. Oceanographic stations near the mooring site were occupied to characterize a suite of bio-optical ptoperties. In this report, however, only CTD profiling data are reported

Vertical profiles were made with the MLML conductivity temperature depth profiler (CTD) and 6-bottle rosette sampler. A modified Martek 1-m path transmissometer measures beam attenuation at 490 nm and the MLML 3-channel fluorometer measures chlorophyll-a fluorescence at 680 nm, phycoerytherin fluoroescence at 590 nm and bacteriochlorophyll fluorescence above 740 nm. Water samples were collected by 6 10-liter GoFlo samplers, mounted on the MLML rosette. Bottles were tripped at inflection points and other features observed in the downcast profiles. The water samples served two purposes: first to obtain water for the determination of phytoplankton pigments for HPLC and other analyses by Dr. Charles Trees CHORS, total suspended material and particulate organic matter analyses by MLML; secondly to calibrate dissolved oxygen and salinity measured by the CTD profiler.

Near local apparent noon, Secchi depth measurements were made with a 30 cm, all white, Secchi disk, carefully avoiding surface glint. The depth estimates were made both by lowering the disk until it faded from view and raising it again until it was again viewed. The reported Secchi depths are the mean of the two readings. Ocean color as sensed by the human eye was estimated by Munsell color chips (Munsell Color Company, Baltimore Md.) selected by R.W. Austin (Scripps Visibility Laboratory). Two or more observers compared the color of the Secchi disk suspended at half its disappearance depth.

Based upon inflection points indicated by the transmission, fluorescence and temperature profiles, water samples were collected by pump and by GoFlo bottle. These samples were analyzed for total and organic suspended particulate materials, scattering cross-section, fluorescence and HPLC chlorophyll pigment analyses. Results from the scattering and pigment analyses are reported elsewhere.

Total suspended particulates were determined by filtering 6 to 9 liters of water through 47 mm diameter, 0.45 μm pore-size Millepore HP/EP mixed-ester cellulose filters. These filters were desiccated and tared to a constant (±20 μg) weight and stored in separate Petri dishes. Water was vacuum filtered aboard ship using a pressure differential of 0.5 to 0.7 atmospheres. Sea salts were removed by two 10 ml rinses with deionized (Mille-Q) water. These filters have a 6 mm hydrophobic edge which eliminates the need to rinse sea salts from the filter rim. After sample collection, the filters were folded, gently creased and returned to the Petri dish. The filters were dried at 60° C. Suspended sediment weights were determined by weighing each filter on a Mettler H54-AR balance. Weighing was repeated three times or more until the difference between weights as less than 40 μg.

Separate samples were filtered for particulate organic carbon and nitrogen analyses. Approximately 1 to 4 l of water was pressure filtered through 25 mm Whatman glass fiber GF/F filters having a nominal pore size of 0.7 μm. These filters were pretreated by ashing in a muffle furnace at 500° C for two hours. Each filter was stored in an ashed aluminum-line Petri dish. Following filtration, the filters were dried and stored until analysis ashore. Organic carbon and nitrogen were determined by combustion analysis with a Leeman Labs Model 440 Element Analyzer. Acetanilide standards were analyzed every 15th sample, and the maximum deviation of these standards never exceeded the 5% limits, which are the accepted precision of the method (University of Maryland, 1992). The limits of detection are 1 μg C mg^{-1} sample for carbon and 0.1 μg N mg^{-1} for nitrogen.

Dissolved oxygen and salinity analyses as well as other details of the water sampling procedure are given in Broenkow, *et al.* 1995.

Data Management

The MLML group manages data from five instrument systems: the MLML CTD/Rosette; Fastie, an 80-channel photomultiplier scanning radiometer; SIS, the surface incident irradiance spectrometer; MOS, the high resolution spectroradiometer; and MOBY which uses MOS in the Marine Optical Buoy system. Data obtained from these instruments are similar in form, but each has its own idiosyncracies. Each data set is obtained with a high level program written in C and FORTRAN for VAXstations. Data acquisition and processing procedures are explained in detail by Feinholz and Broenkow (1993) and processing steps are illustrated in a tutorial (Broenkow, *et al.*, 1993). Data from all instruments are kept in an MLML_DBASE format which can be displayed, edited and processed with a single suite of programs (Broenkow and Reaves, 1993).

Because of the complexity of these diverse data sets, data files have been organized into a hierarchial directory structure. An advantage of VMS is its robust file naming capabilities. Each data type is identified by the instrument name (MOS or SIS or CTD), a two digit station number (STNnn), a two digit sampling depth (zzM), and by a sequential index (sss). CTD sequential file numbers have been used from the beginning of CTD work at MLML in 1974. MOS data may be obtained in a variety of sampling modes, which are reflected by file names. Each *scan set* is identified by data type: LU for upwelled radiance, ED for downwelled irradiance and ES in the unlikely event that MOS would be used to measure surface irradiance. MOS may be used in the vertical profiling mode, in which case the depth, zzM, is replaced by PRF. SIS is used mainly to take surface irradiance scans, but it could be used in other modes as well. Fastie is a general purpose instrument, and its use is similar to MOS. When an instrument is calibrated, the station designator is changed to CALIB. Any of these instruments could be used to take ship track-line data, in which case the STNnn designator is changed to TRKLN. Trackline and calibration files are identified by the year (yy) and Julian day (jjj) as well as a sequential index (sss). Each data type is identified also with a code that follows the data throughout processing. This is important because several files are merged to produce a single file containing all MOS/SIS observations at a single optics station.

To keep file naming conventions straight, the data acquisition programs (CTD, MOS, SIS, FASTIE) generate the file names with minimal user input. Files from the Marine Optical Buoy (MOBY) contain upwelled radiance, downwelled irradiance and surface irradiance scans from three depths. MOBY files are named according to instrument serial number (SNnn), year, Julian day and GMT time (hhmm). Because multiple instruments may be used, MOS, SIS and MOBY files

include a serial number in the database.

Because each data set may be taken by different workstations, it is important to consolidate all data in one location. This will be the MLML VAX 4000, whose Internet domain name is NSF.MLML.CALSTATE .EDU. All current raw and processed files are located in a directory structure as follows:

[DATA.NOAA.CRUISE.INSTRUMENT.RaW]
[DATA.NOAA.CRUISE.INSTRUMENT.PRC]
[DATA.NOAA.CRUISE.INSTRUMENT.CAL]

Thus each data type is located in its associated directory for a given cruise. Sub-directories for the raw observations, the processed files and the calibration files are grouped together. We anticipate that data may be requested by any of the MOCE investigators. Upon receipt of requests, we will make read-only ASCII files available in a top level directory, NSF::[MOCE] to Internet users who login as MOCE. The file naming convention in Table 2 will be maintained, but ASCII files will have the file extension .DAT rather than .MLDAT used for the MLML_DBASE binary files. It is unlikely that the preliminary files will be requested by MOCE investigators, but those may be requested also. The merged corrected files will be named according to cruise, station number and data type, such as MOBYL7-STN04-RADIOM.MLDAT or MOBYL7-STN04-CTD.MLDAT or their ASCII equivalents.

Acknowledgements

We appreciate the efforts of the captain and crew of R/V Moana Wave. Craig Hunter performed the TSM, POC and PON analyses. This work was supported by National Oceanic and Atmospheric, National Environmental Satellite Data Information Service Grant No. NA17ECO428 to William Broenkow.

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Appendix 1. CTD Profiling Results: Vertical profiles and data listings.

Explanation of Data Tables:

Data presented here were obtained from the MLML CTD profiler. All observations have been interpolated to 2 m intervals, but data files contain data at 1 m intervals. Data processing algorithms are those described in Fofonoff and Millard (1983). Oxygen solubility calculations are from Postma, *et al.* 1976.

Press db — Pressure in decibars (numerically equivalent to depth in m).

Temp °C — *In situ* seawater temperature in Celsius.

Theta °C — Potential temperature in Celsius.

Salin PSU — Seawater salinity in Practical Salinity Units (numerically equivalent to gm/kg).

Sigma-θ g/l — Potential seawater density anomaly based on potential temperature in grams per liter.

Oxygen µM/kg — Dissolved oxygen micro moles per kilogram determined by oxygen electrode.

AOU µM/kg — Apparent oxygen utilization micro-moles per kilogram is the difference between the observed oxygen concentration and oxygen solubility = f(S,T).

Sat % — Oxygen saturation percentage is 100 x the ratio of observed oxygen concentration to the oxygen solubility.

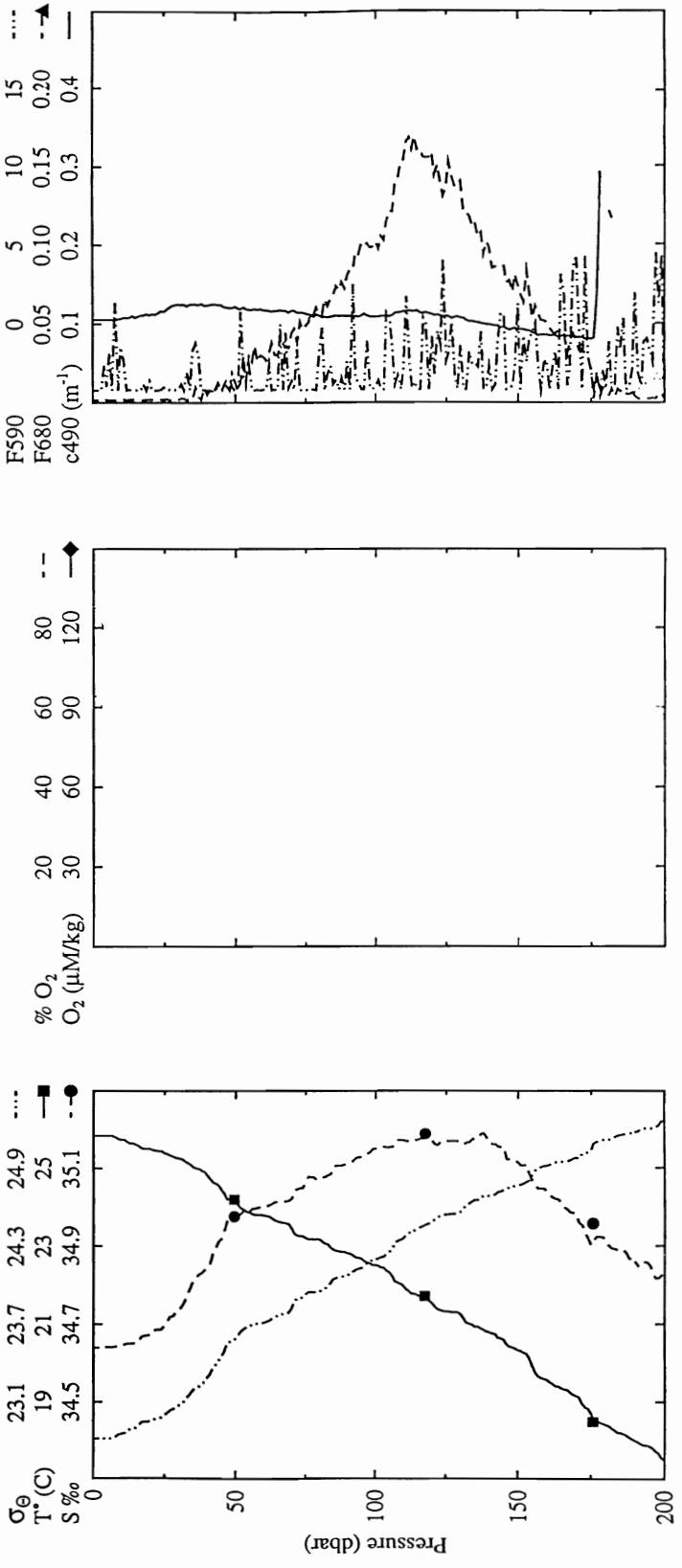
c(490) 1/m — The total attenuation coefficient in m^{-1} measured by a Martek 1-m transmissometer at 490 nm.

Fluoro (590) — *In situ* phycoerythrin fluorescence at 590 nm in relative unscaled units. 25 units = 10 x increase in fluorescence.

Fluoro (680) — *In situ* chlorophyll fluorescence at 680 nm in relative unscaled units. 25 units = 10x increase in fluorescence

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6004_PRC
STATION: 01 Lanai Mooring	DATE: 23:49 (GMT) 26 Jun 1994	WIND: 10 kts
LATITUDE: 20°49.6' N	SECCHI: 31 m	WAVE: 4 ft
LONGITUDE: 157°09.9' W	MUNSELL: 10B 7/8	CLOUD: 50% TYPE: CU



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6004_PRC
STATION: 01 Lanai Mooring	DATE: 23:49 (GMT) 26 Jun 1994	WIND: 10 kts
LATITUDE: 20°49.6' N	SECCHI: 31 m	WAVE: 4 ft
LONGITUDE: 157°09.9' W	MUNSELL: 10B 7/8	CLOUD: 50% TYPE: CU

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.64	25.84	22.81			0.105	-5.00	0.00	-4.25
2	34.64	25.84	22.81			0.105	-5.00	0.00	-4.25
4	34.64	25.84	22.82			0.105	-4.95	0.00	-2.59
6	34.64	25.84	22.82			0.105	-4.94	0.00	-1.81
8	34.64	25.79	22.83			0.105	-4.95	0.00	1.45
10	34.65	25.73	22.85			0.106	-4.90	0.00	-1.49
12	34.65	25.66	22.88			0.108	-4.93	0.00	-4.25
14	34.65	25.63	22.89			0.110	-4.90	0.00	-4.25
16	34.65	25.57	22.91			0.110	-4.90	0.00	-4.20
18	34.67	25.49	22.95			0.111	-4.93	0.00	-3.83
20	34.67	25.49	22.95			0.111	-4.87	0.00	-3.65
22	34.69	25.45	22.97			0.112	-4.90	0.00	-4.25
24	34.69	25.43	22.98			0.116	-4.73	0.00	-4.20
26	34.71	25.35	23.02			0.119	-1.59	0.00	-4.25
28	34.72	25.30	23.04			0.124	-4.77	0.00	-4.25
30	34.73	25.25	23.07			0.125	-3.37	0.00	-4.20
32	34.76	25.19	23.10			0.125	0.06	0.00	-4.21
34	34.79	25.08	23.16			0.125	-0.15	0.00	-4.20
36	34.82	25.00	23.21			0.125	14.65	0.01	-1.24
38	34.83	24.93	23.24			0.125	-3.44	0.00	-4.18
40	34.85	24.80	23.29			0.124	7.30	0.00	-4.25
42	34.88	24.64	23.37			0.125	15.67	0.01	-4.28
44	34.91	24.55	23.41			0.124	17.58	0.01	-4.21
46	34.93	24.36	23.49			0.122	15.86	0.01	-4.24
48	34.97	24.19	23.56			0.120	20.58	0.02	-4.25
50	34.97	24.12	23.59			0.122	11.67	0.01	-3.74
52	34.98	23.96	23.64			0.119	18.23	0.01	0.79
54	34.99	23.87	23.68			0.119	18.40	0.01	-3.21
56	34.99	23.81	23.70			0.118	26.38	0.03	-4.21
58	35.00	23.80	23.71			0.118	26.18	0.03	-4.20
60	35.00	23.79	23.71			0.117	27.49	0.03	-4.20
62	35.00	23.74	23.73			0.116	28.50	0.03	-2.65
64	35.01	23.66	23.76			0.117	27.90	0.03	-4.20
66	35.01	23.61	23.77			0.117	29.58	0.04	-0.05
68	35.01	23.58	23.78			0.116	29.49	0.03	-0.57
70	35.02	23.44	23.83			0.116	32.17	0.04	-3.66

MODIS Marine Optical Characterization Experiment

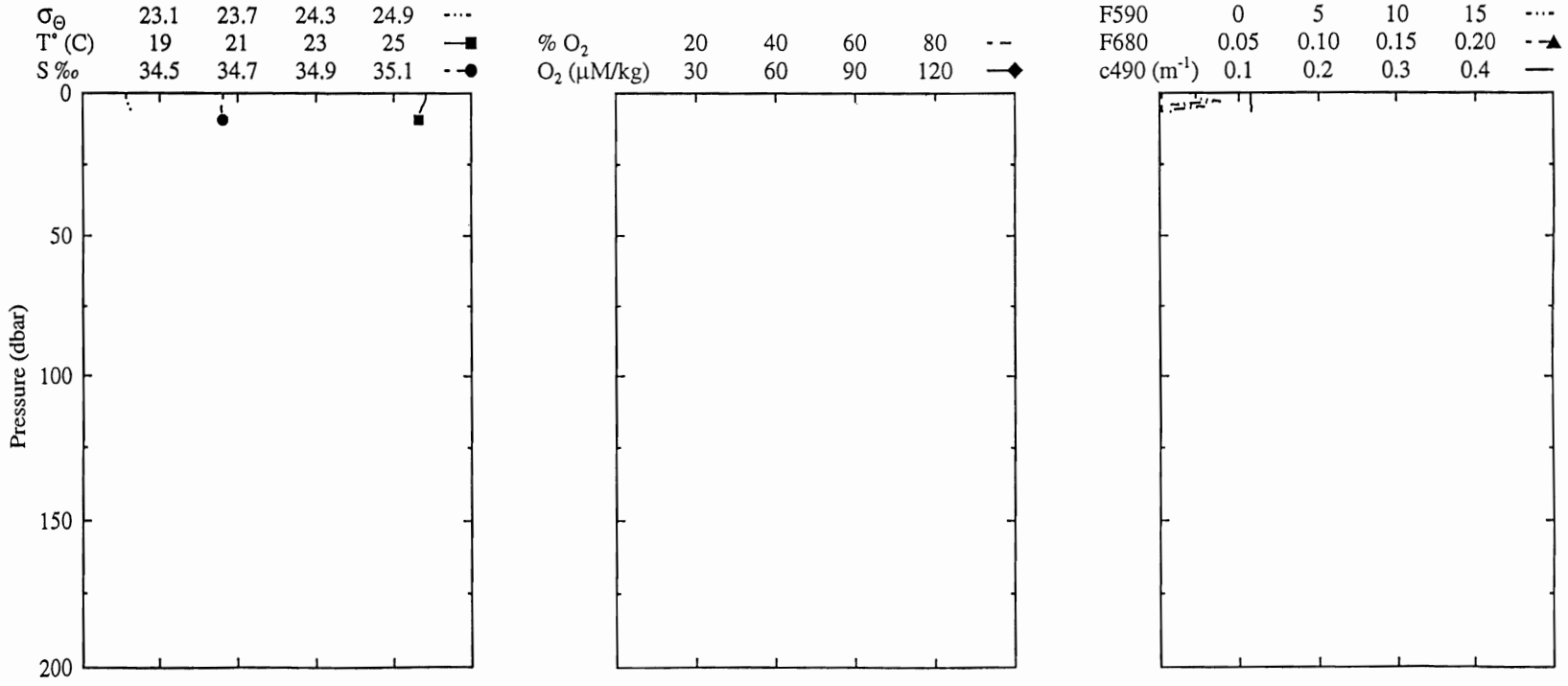
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6004_PRC
STATION: 01 Lanai Mooring	DATE: 23:49 (GMT) 26 Jun 1994	WIND: 10 kts
LATITUDE: 20°49.6' N	SECCHI: 31 m	WAVE: 4 ft
LONGITUDE: 157°09.9' W	MUNSELL: 10B 7/8	CLOUD: 50% TYPE: CU

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	35.07	23.21	23.93			0.112	33.24	0.05	-4.25
80	35.07	23.17	23.95			0.110	34.84	0.06	-1.82
85	35.10	22.91	24.04			0.109	36.94	0.07	-3.84
90	35.11	22.81	24.08			0.109	38.93	0.08	-2.41
95	35.13	22.68	24.13			0.110	41.57	0.10	-4.20
100	35.15	22.51	24.20			0.109	41.65	0.10	-4.00
105	35.15	22.32	24.25			0.109	43.60	0.12	0.50
110	35.17	21.99	24.36			0.116	46.22	0.15	-2.90
115	35.17	21.75	24.43			0.116	46.75	0.16	-4.20
120	35.17	21.54	24.48			0.111	46.64	0.16	-0.84
125	35.17	21.33	24.54			0.109	44.93	0.14	-2.36
130	35.16	21.26	24.56			0.107	45.23	0.14	-1.38
135	35.17	20.94	24.65			0.101	42.90	0.11	-2.53
140	35.16	20.80	24.68			0.098	41.22	0.10	-2.73
145	35.15	20.59	24.73			0.096	39.73	0.09	0.46
150	35.11	20.34	24.77			0.092	38.04	0.07	1.25
155	35.07	19.92	24.84			0.088	34.25	0.05	-0.59
160	35.04	19.57	24.91			0.085	33.69	0.05	-2.32
165	35.01	19.35	24.95			0.084	32.03	0.04	3.12
170	34.98	19.15	24.98			0.082	30.84	0.04	4.27
175	34.90	18.71	25.03			0.080	23.17	0.02	-3.03
180	34.92	18.41	25.11			0.852	7.28	0.00	-4.17
185	34.89	18.20	25.15			1.271	11.17	0.01	-1.70
190	34.86	18.00	25.17			0.756	4.27	0.00	1.95
195	34.85	17.85	25.20			2.130	-1.33	0.00	-1.77
200	34.81	17.50	25.26			0.074	-4.81	0.00	-4.16

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	175.7	34.92	18.48	96	34.96	187	0.19	6.00	19	3	1.28
2	175.7	34.92	18.48	96	34.96	190					
3	117.7	35.16	21.71	111	35.19	212	0.65	6.00	35	6	1.18
4	117.7	35.16	21.71	111							
5	49.5	34.94	24.18	117							
6	49.5	34.94	24.18	117	34.98	239	0.09	6.00	39	6	1.90

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6005_PRC
STATION: 01 Lanai Mooring	DATE: 01:02 (GMT) 27 Jun 1994	WIND: 3 kts
LATITUDE: 20°48.3' N	SECCHI: 31 m	WAVE: 3 ft
LONGITUDE: 157°09.7' W	MUNSELL: 10B 7/8	CLOUD: overcast TYPE: --



MODIS Marine Optical Characterization Experiment

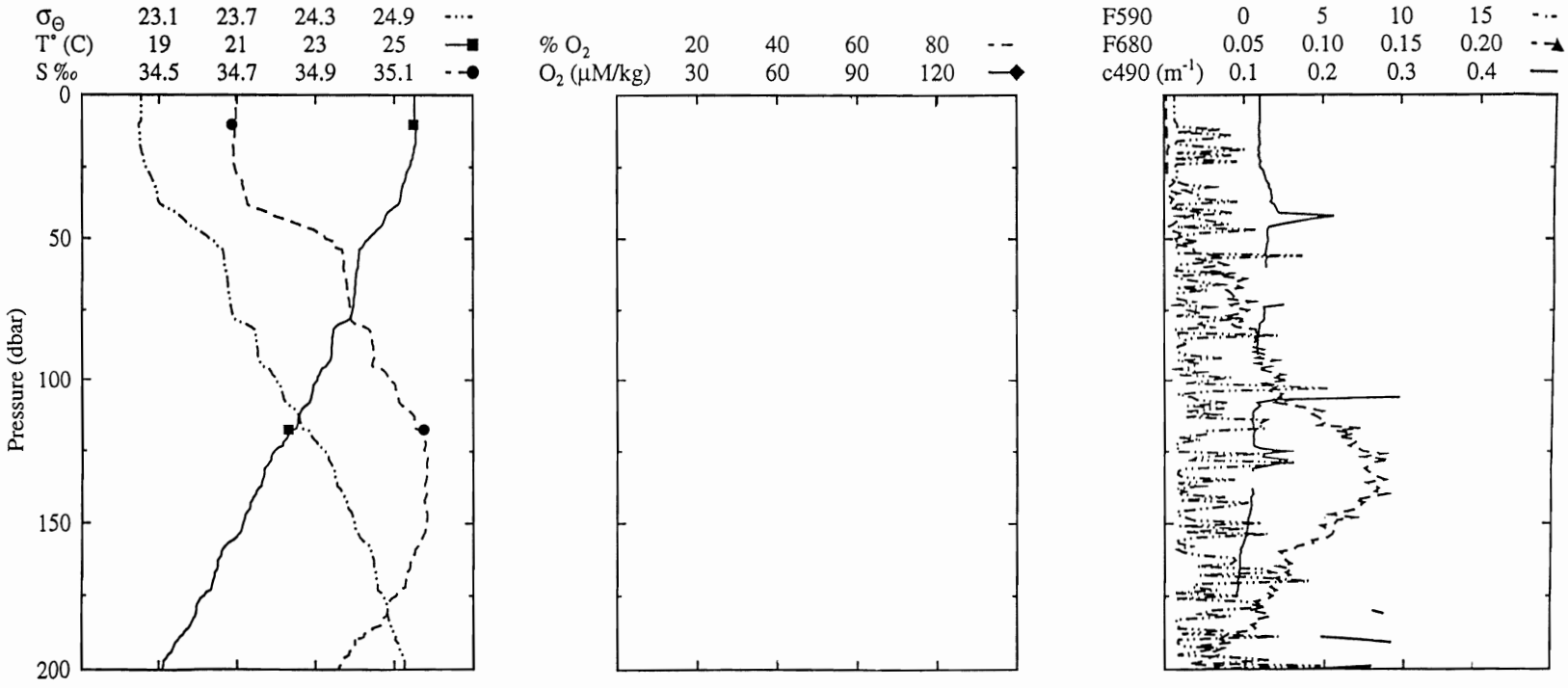
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6005_PRC
STATION: 01 Lanai Mooring	DATE: 01:02 (GMT) 27 Jun 1994	WIND: 3 kts
LATITUDE: 20°48.3' N	SECCHI: 31 m	WAVE: 3 ft
LONGITUDE: 157°09.7' W	MUNSELL: 10B 7/8	CLOUD: overcast TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.66	25.81	22.84			0.115	-5.00	0.00	-2.70
2	34.66	25.81	22.84			0.115	-5.00	0.00	-2.70
4	34.66	25.76	22.85			0.115	-5.00	0.00	-4.29
6	34.66	25.69	22.87			0.116	-4.95	0.00	-4.30
7	34.66	25.65	22.89			0.116	-4.84	0.00	-4.30

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	9.6	34.64	25.63	3	34.66	212					
2	9.6	34.64	25.63	3	34.66	226	0.12	8.00	24	4	3.90
3	9.6	34.64	25.63	3			0.11	8.00	28	5	3.68
4	9.6	34.64	25.63	3							
5	9.6	34.64	25.63	3							
6	9.6	34.64	25.63	3							
7	9.6	34.64	25.63	3							
8											

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6006_PRC
STATION: 02 West of Lanai	DATE: 05:21 (GMT) 28 Jun 1994	WIND: 6 kts
LATITUDE: 20°45.4' N	SECCHI: 32 m	WAVE: 2 ft
LONGITUDE: 157°04.7' W	MUNSELL: 10B 7/8	CLOUD: broken TYPE: --



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6006_PRC
STATION: 02 West of Lanai	DATE: 05:21 (GMT) 28 Jun 1994	WIND: 6 kts
LATITUDE: 20°45.4' N	SECCHI: 32 m	WAVE: 2 ft
LONGITUDE: 157°04.7' W	MUNSELL: 10B 7/8	CLOUD: broken TYPE: --

Press	Salin	Temp	Sigma	Dissolved	Oxygen	c490	Fluorescence		
dbar	PSU	° C	Theta	uM/kg	%	m^{-1}	680'	680	590
0	34.70	25.51	22.96			0.120	-5.00	0.00	-4.35
2	34.70	25.51	22.96			0.120	-5.00	0.00	-4.35
4	34.70	25.51	22.96			0.120	-5.00	0.00	-4.35
6	34.70	25.51	22.96			0.120	-5.00	0.00	-4.35
8	34.70	25.51	22.96			0.120	-5.00	0.00	-4.35
10	34.69	25.56	22.94			0.119	-3.50	0.00	-4.20
12	34.69	25.55	22.94			0.118	-4.17	0.00	-1.41
14	34.69	25.54	22.95			0.119	-3.67	0.00	-0.86
16	34.69	25.54	22.95			0.119	-2.15	0.00	-4.20
18	34.69	25.51	22.95			0.119	2.05	0.00	-2.63
20	34.69	25.49	22.96			0.120	-4.77	0.00	-4.21
22	34.69	25.46	22.97			0.119	-4.90	0.00	-4.28
24	34.69	25.41	22.99			0.120	-4.90	0.00	-4.25
26	34.70	25.33	23.01			0.124	-4.90	0.00	-4.20
28	34.70	25.29	23.03			0.126	1.73	0.00	-4.22
30	34.71	25.25	23.05			0.129	10.75	0.01	-4.25
32	34.72	25.20	23.07			0.131	-1.74	0.00	-2.10
34	34.72	25.17	23.09			0.134	13.78	0.01	-3.20
36	34.72	25.15	23.09			0.136	9.44	0.01	-2.80
38	34.73	25.10	23.11			0.139	4.40	0.00	-4.19
40	34.77	24.90	23.20			0.142	19.61	0.01	-1.98
42	34.79	24.79	23.26			0.214	20.67	0.02	-3.94
44	34.84	24.73	23.31			0.169	12.19	0.01	-1.97
46	34.87	24.66	23.35			0.132	-4.84	0.00	-4.20
48	34.91	24.50	23.43			0.130	15.56	0.01	-2.80
50	34.93	24.36	23.48			0.131	16.80	0.01	-4.30
52	34.95	24.23	23.54			0.129	11.93	0.01	-4.22
54	34.97	24.11	23.59			0.128	22.02	0.02	-4.20
56	34.97	24.10	23.60			0.128	29.29	0.03	3.68
58	34.97	24.08	23.60			0.127	28.75	0.03	-1.89
60	34.97	24.07	23.60			0.128	25.78	0.03	-4.20
62	34.98	24.03	23.62			0.723	31.41	0.04	-1.15
64	34.98	24.02	23.62			1.068	33.67	0.05	-3.88
66	34.98	24.01	23.63			1.576	32.06	0.04	-1.56
68	34.98	24.00	23.63			1.770	30.81	0.04	-2.32
70	34.98	23.99	23.64			1.895	31.94	0.04	-4.20

MODIS Marine Optical Characterization Experiment

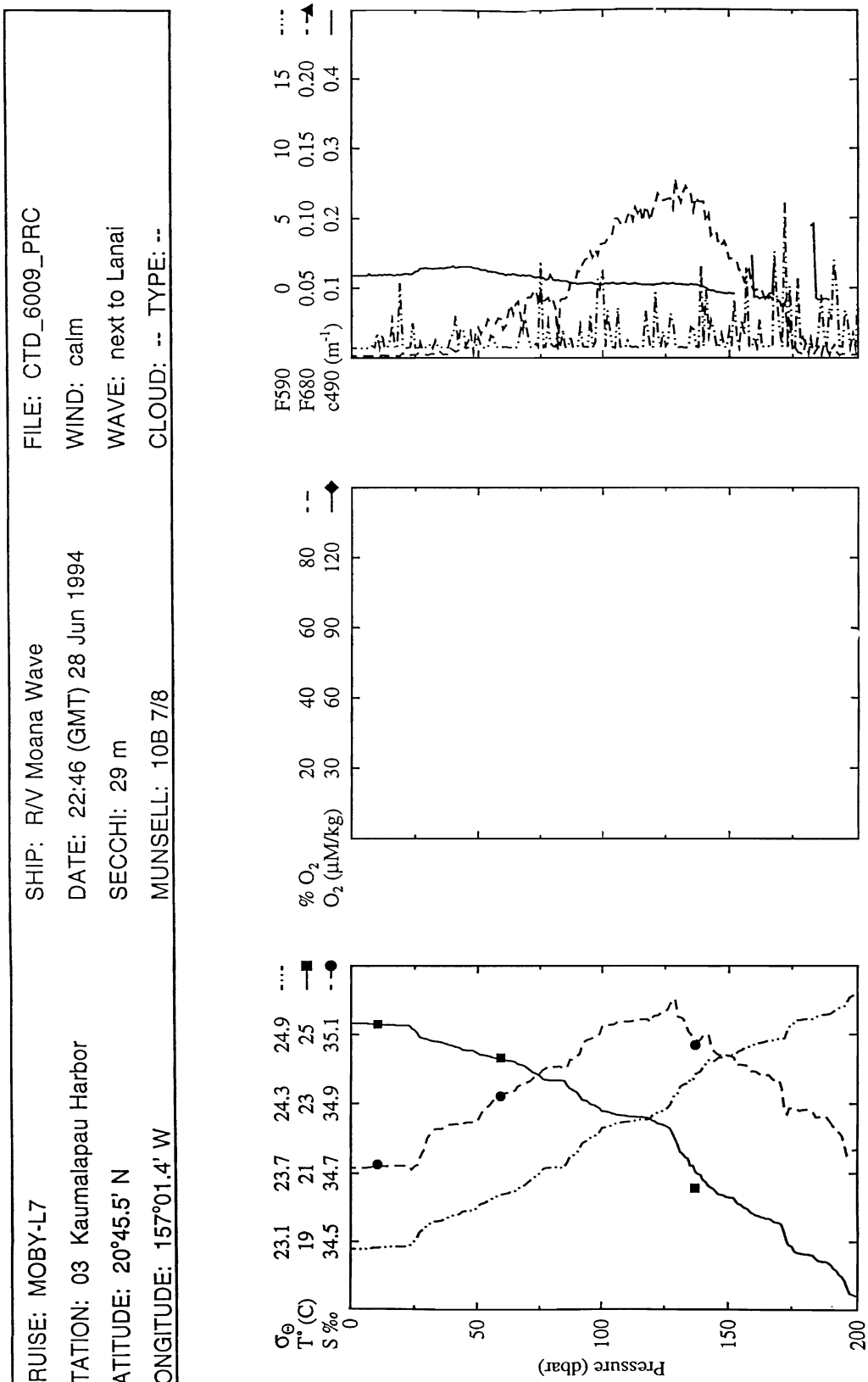
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6006_PRC
STATION: 02 West of Lanai	DATE: 05:21 (GMT) 28 Jun 1994	WIND: 6 kts
LATITUDE: 20°45.4' N	SECCHI: 32 m	WAVE: 2 ft
LONGITUDE: 157°04.7' W	MUNSELL: 10B 7/8	CLOUD: broken TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	34.99	23.94	23.66			0.126	34.13	0.05	-3.41
80	35.00	23.59	23.77			0.120	31.61	0.04	-2.82
85	35.04	23.43	23.85			0.118	34.98	0.06	-3.25
90	35.05	23.41	23.86			0.117	35.01	0.06	-4.14
95	35.04	23.27	23.90			1.062	36.84	0.07	-3.22
100	35.08	23.05	23.99			0.895	38.59	0.08	-2.13
105	35.11	22.91	24.05			0.539	38.00	0.07	-4.20
110	35.13	22.67	24.13			0.115	40.25	0.09	-1.29
115	35.15	22.55	24.19			0.110	41.61	0.10	1.06
120	35.17	22.29	24.27			0.111	42.36	0.11	-4.13
125	35.18	21.96	24.37			0.153	43.92	0.12	-4.25
130	35.18	21.78	24.43			0.130	44.35	0.13	1.14
135	35.18	21.66	24.46			0.850	45.09	0.14	-0.63
140	35.18	21.48	24.51			0.111	45.20	0.14	-4.20
145	35.18	21.32	24.55			0.108	43.59	0.12	-2.77
150	35.18	21.16	24.60			0.105	42.17	0.11	1.09
155	35.17	20.98	24.64			0.101	41.65	0.10	-3.20
160	35.15	20.60	24.73			0.095	37.73	0.07	-3.90
165	35.14	20.50	24.75			0.094	37.54	0.07	-2.98
170	35.13	20.38	24.77			0.091	37.76	0.07	4.06
175	35.10	20.16	24.81			0.091	36.95	0.07	-0.44
180	35.08	19.95	24.85			0.260	34.17	0.05	-2.04
185	35.07	19.80	24.88			1.488	34.47	0.05	-4.10
190	35.00	19.50	24.90			0.242	29.30	0.03	-4.15
195	34.98	19.23	24.96			0.815	29.45	0.03	-4.20
200	34.96	19.09	24.98			0.176	27.18	0.03	-4.16

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	117.5	35.15	22.31	3	35.17	217	0.11	13.00			
2	117.5	35.15	22.31	3			0.11	13.00	22	4	5.70
3	117.5	35.15	22.31	3					22	4	5.70
4	10.4	34.66	25.47	3	34.69	209	0.13	10.98			
5	10.4	34.66	25.47	3			0.13	10.98	31	5	3.80
6	10.4	34.66	25.47	3							

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6009_PRC
STATION: 03 Kaumalapau Harbor	DATE: 22:46 (GMT) 28 Jun 1994	WIND: calm
LATITUDE: 20°45.5' N	SECCHI: 29 m	WAVE: next to Lanai
LONGITUDE: 157°01.4' W	MUNSELL: 10B 7/8	CLOUD: -- TYPE: --



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6009_PRC
STATION: 03 Kaumalapau Harbor	DATE: 22:46 (GMT) 28 Jun 1994	WIND: calm
LATITUDE: 20°45.5' N	SECCHI: 29 m	WAVE: next to Lanai
LONGITUDE: 157°01.4' W	MUNSELL: 10B 7/8	CLOUD: -- TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.72	25.32	23.03			0.118	-5.00	0.00	-4.30
2	34.72	25.32	23.03			0.118	-5.00	0.00	-4.30
4	34.72	25.32	23.03			0.118	-5.00	0.00	-4.30
6	34.72	25.32	23.03			0.118	-5.00	0.00	-4.30
8	34.72	25.30	23.04			0.118	-4.95	0.00	-4.15
10	34.72	25.29	23.04			0.118	-3.86	0.00	-3.25
12	34.72	25.28	23.05			0.118	-4.24	0.00	-3.32
14	34.72	25.28	23.05			0.119	-4.95	0.00	-4.30
16	34.72	25.27	23.05			0.119	-4.99	0.00	-2.46
18	34.72	25.27	23.05			0.119	-4.95	0.00	-4.30
20	34.72	25.26	23.05			0.120	2.72	0.00	-4.10
22	34.72	25.26	23.06			0.120	-4.95	0.00	-4.29
24	34.71	25.17	23.07			0.121	-1.06	0.00	-2.53
26	34.72	25.03	23.13			0.124	1.45	0.00	-4.30
28	34.76	24.89	23.19			0.128	7.60	0.01	-4.30
30	34.80	24.85	23.24			0.128	-3.18	0.00	-4.27
32	34.82	24.82	23.26			0.128	1.37	0.00	-4.29
34	34.83	24.79	23.28			0.128	6.50	0.00	-4.25
36	34.83	24.76	23.29			0.128	-0.66	0.00	-4.21
38	34.84	24.71	23.31			0.129	-1.93	0.00	-4.28
40	34.84	24.67	23.33			0.132	8.04	0.01	-3.29
42	34.84	24.63	23.34			0.129	8.48	0.01	-4.25
44	34.84	24.54	23.36			0.131	10.07	0.01	-2.95
46	34.85	24.53	23.37			0.130	16.99	0.01	-4.28
48	34.85	24.53	23.37			0.129	1.81	0.00	-4.27
50	34.85	24.45	23.40			0.128	24.04	0.02	-3.59
52	34.88	24.40	23.43			0.126	23.66	0.02	-4.27
54	34.89	24.38	23.45			0.123	26.88	0.03	-4.25
56	34.91	24.33	23.48			0.122	25.38	0.02	-3.53
58	34.92	24.29	23.50			0.121	27.19	0.03	-4.27
60	34.93	24.27	23.51			0.120	23.17	0.02	-4.25
62	34.93	24.23	23.53			0.120	28.72	0.03	-4.28
64	34.93	24.22	23.53			0.120	28.20	0.03	-4.28
66	34.95	24.14	23.57			0.118	31.10	0.04	-3.86
68	34.96	24.10	23.58			0.118	23.45	0.02	-2.99
70	34.96	24.02	23.61			0.118	32.00	0.04	-3.64

MODIS Marine Optical Characterization Experiment

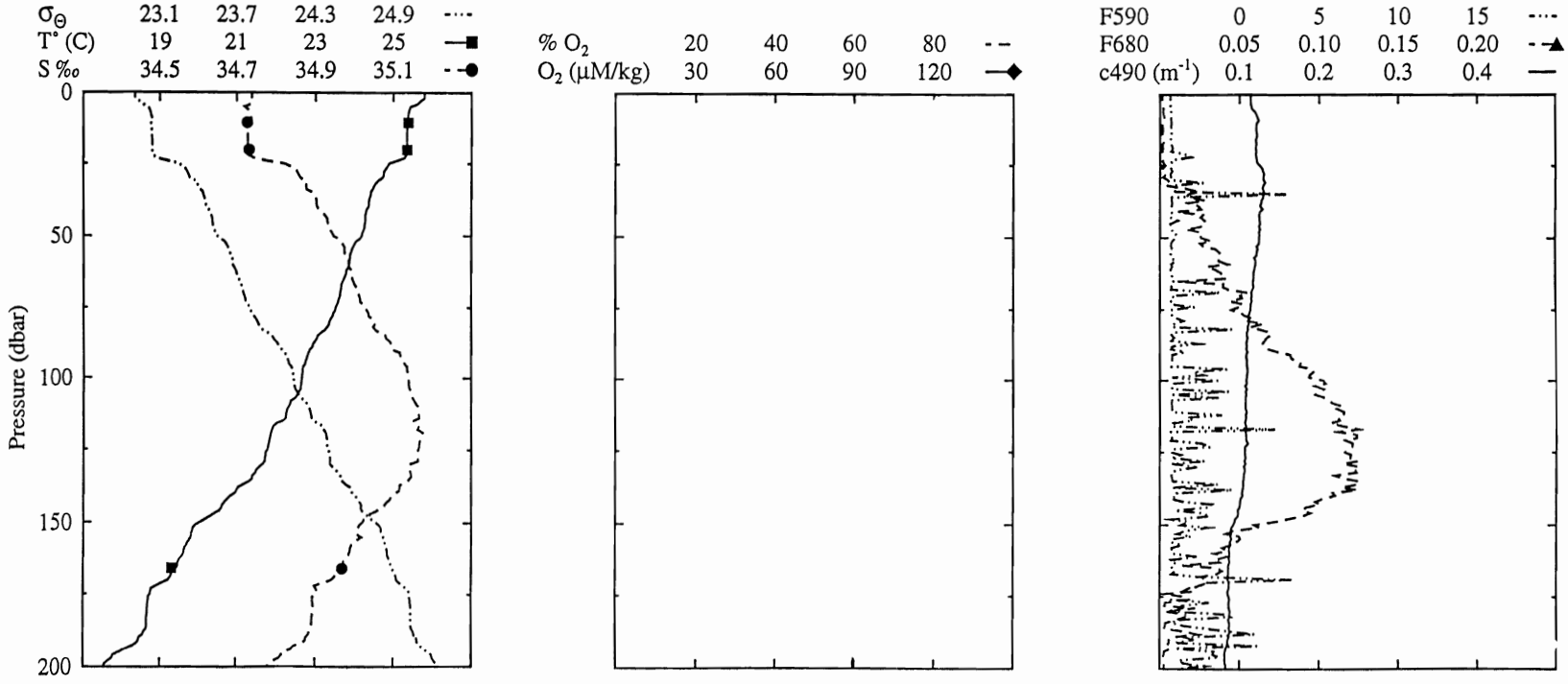
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6009_PRC
STATION: 03 Kaumalapau Harbor	DATE: 22:46 (GMT) 28 Jun 1994	WIND: calm
LATITUDE: 20°45.5' N	SECCHI: 29 m	WAVE: next to Lanai
LONGITUDE: 157°01.4' W	MUNSELL: 10B 7/8	CLOUD: -- TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	34.99	23.79	23.70			0.114	33.16	0.05	1.89
80	35.01	23.67	23.75			0.112	31.48	0.04	-4.20
85	35.00	23.66	23.75			0.110	31.65	0.04	-4.25
90	35.04	23.33	23.87			0.106	36.01	0.06	-4.21
95	35.09	23.00	24.00			0.108	38.34	0.08	-1.88
100	35.12	22.79	24.09			0.105	39.16	0.08	1.41
105	35.13	22.70	24.12			0.106	41.38	0.10	-4.29
110	35.14	22.66	24.14			0.105	41.50	0.10	-3.80
115	35.14	22.62	24.16			0.106	42.27	0.11	-4.24
120	35.15	22.51	24.20			0.104	42.06	0.11	-4.24
125	35.16	22.37	24.25			0.106	42.80	0.11	-4.20
130	35.15	21.82	24.39			0.105	43.18	0.12	-4.27
135	35.10	21.23	24.52			0.105	43.29	0.12	-2.83
140	35.10	20.82	24.63			0.102	42.66	0.11	-4.20
145	35.04	20.48	24.68			0.094	40.23	0.09	-4.20
150	35.04	20.31	24.72			0.093	37.50	0.07	-3.06
155	35.01	20.08	24.76			1.563	35.85	0.06	-2.32
160	34.99	19.83	24.81			0.087	33.02	0.05	-3.52
165	34.98	19.68	24.84			0.087	30.86	0.04	-4.21
170	34.97	19.55	24.86			0.532	31.11	0.04	-3.28
175	34.89	18.86	24.98			0.312	6.99	0.00	-4.27
180	34.88	18.64	25.03			0.921	16.41	0.01	-3.98
185	34.86	18.45	25.06			0.083	12.46	0.01	-2.97
190	34.84	18.33	25.08			0.962	10.15	0.01	-2.30
195	34.78	17.86	25.15			1.283	-0.18	0.00	-1.62
200	34.77	17.40	25.25			1.148	2.82	0.00	-0.39

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	137.0	35.05	20.56	2	35.07	199	0.08	7.26	15	3	3.96
2	137.0	35.05	20.56	2			0.08	7.26			
3	59.2	34.89	24.31	3	34.92	218					
4	59.2	34.89	24.31	3							
5	10.5	34.70	25.30	3	34.73	206	0.20	7.48	27	5	3.66
6	10.5	34.70	25.30	3			0.20	7.48			

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6010_PRC
STATION: 03 Kaumalapau Harbor	DATE: 02:02 (GMT) 29 Jun 1994	WIND: 8 kts 330° T
LATITUDE: 20°45.4' N	SECCHI: --	WAVE: 1 ft
LONGITUDE: 157°01.4' W	MUNSELL: --	CLOUD: -- TYPE: CU



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6010_PRC
STATION: 03 Kaumalapau Harbor	DATE: 02:02 (GMT) 29 Jun 1994	WIND: 8 kts 330 ° T
LATITUDE: 20°45.4' N	SECCHI: --	WAVE: 1 ft
LONGITUDE: 157°01.4' W	MUNSELL: --	CLOUD: -- TYPE: CU

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.74	25.78	22.90			0.114	-5.05	0.00	-4.35
2	34.74	25.78	22.90			0.114	-5.05	0.00	-4.35
4	34.74	25.60	22.96			0.115	-5.00	0.00	-4.35
6	34.73	25.39	23.02			0.119	-4.40	0.00	-4.30
8	34.73	25.37	23.03			0.122	-0.26	0.00	-4.30
10	34.73	25.36	23.03			0.122	-5.00	0.00	-4.26
12	34.73	25.35	23.03			0.121	-3.85	0.00	-4.29
14	34.73	25.34	23.03			0.122	-5.00	0.00	-4.25
16	34.73	25.34	23.04			0.121	-4.96	0.00	-4.29
18	34.73	25.33	23.04			0.121	-5.00	0.00	-4.26
20	34.73	25.33	23.04			0.121	-4.97	0.00	-4.30
22	34.73	25.32	23.04			0.121	-4.97	0.00	-3.01
24	34.77	25.10	23.14			0.122	-4.69	0.00	-4.25
26	34.84	24.84	23.27			0.129	-3.45	0.00	-4.30
28	34.85	24.75	23.31			0.131	4.25	0.00	-4.33
30	34.86	24.71	23.33			0.130	6.50	0.00	-4.32
32	34.88	24.54	23.39			0.130	4.34	0.00	-4.32
34	34.88	24.47	23.41			0.131	25.77	0.03	-4.04
36	34.90	24.41	23.45			0.131	21.48	0.02	-4.27
38	34.90	24.38	23.46			0.128	22.20	0.02	-4.25
40	34.91	24.35	23.47			0.129	26.18	0.03	-4.22
42	34.92	24.30	23.50			0.125	26.57	0.03	-4.25
44	34.93	24.28	23.51			0.126	27.11	0.03	-3.87
46	34.93	24.27	23.52			0.125	26.60	0.03	-4.27
48	34.94	24.24	23.53			0.125	26.35	0.03	-4.25
50	34.95	24.18	23.55			0.125	26.09	0.03	-4.04
52	34.97	24.04	23.61			0.125	25.84	0.03	-4.32
54	34.98	23.97	23.64			0.123	29.56	0.04	-4.25
56	34.98	23.91	23.65			0.122	30.64	0.04	-4.34
58	34.99	23.88	23.67			0.120	30.12	0.04	-4.00
60	34.99	23.87	23.67			0.120	27.53	0.03	-4.25
62	34.99	23.80	23.70			0.118	30.57	0.04	-4.25
64	34.99	23.77	23.71			0.118	31.61	0.04	-4.30
66	35.00	23.70	23.73			0.117	30.98	0.04	-4.30
68	35.01	23.67	23.75			0.117	31.88	0.04	-4.29
70	35.01	23.64	23.76			0.115	33.67	0.05	-4.25

MODIS Marine Optical Characterization Experiment

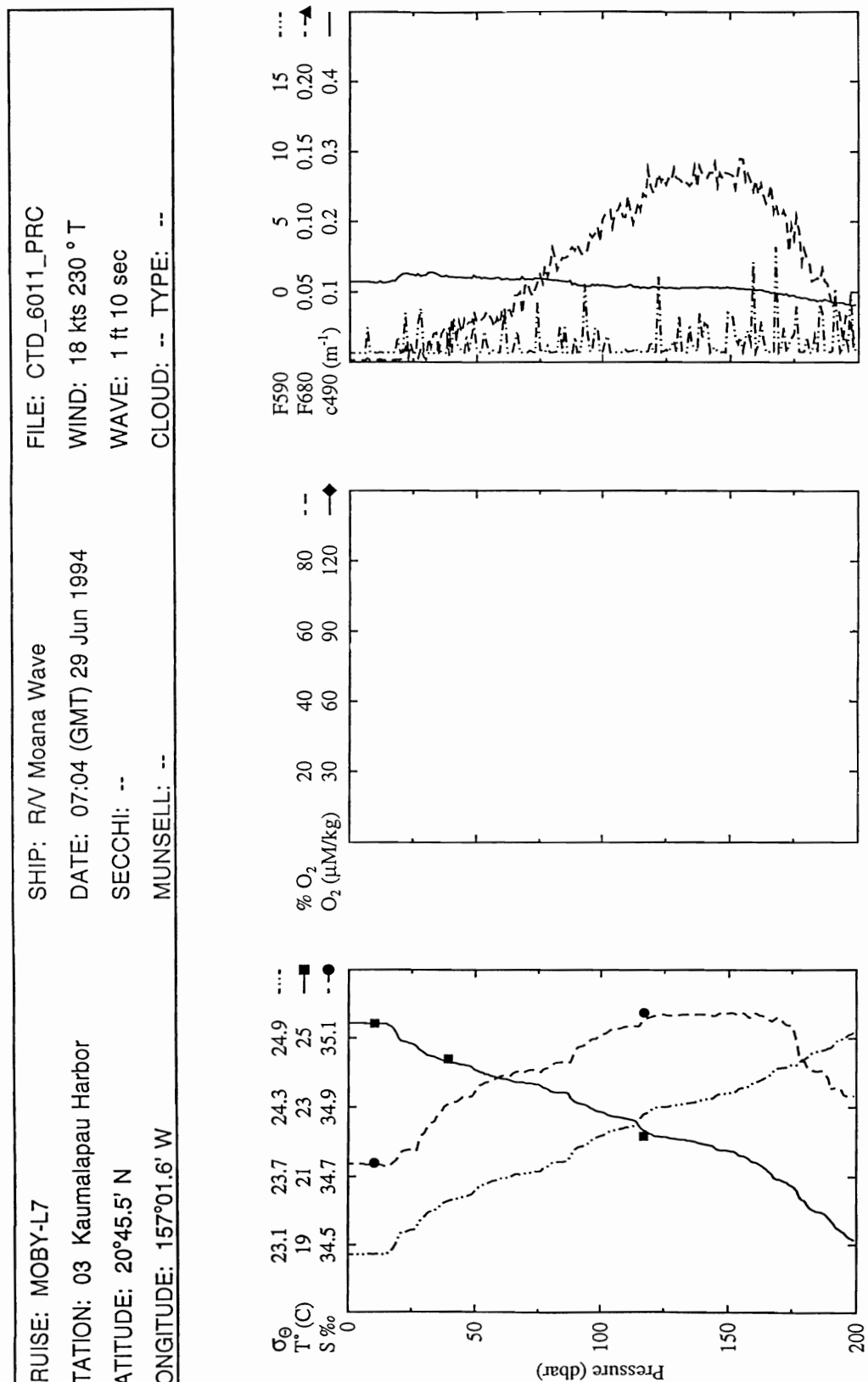
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6010_PRC
STATION: 03 Kaumalapau Harbor	DATE: 02:02 (GMT) 29 Jun 1994	WIND: 8 kts 330 ° T
LATITUDE: 20°45.4' N	SECCHI: --	WAVE: 1 ft
LONGITUDE: 157°01.4' W	MUNSELL: --	CLOUD: -- TYPE: CU

Press	Salin	Temp	Sigma	Dissolved	Oxygen	c490	Fluorescence		
dbar	PSU	° C	Theta	uM/kg	%	m^{-1}	680'	680	590
75	35.03	23.53	23.81			0.114	32.37	0.04	-4.31
80	35.05	23.37	23.87			0.112	36.55	0.07	-4.11
85	35.08	23.08	23.98			0.110	36.96	0.07	-4.11
90	35.10	22.88	24.05			0.110	37.94	0.07	-3.46
95	35.13	22.76	24.11			0.109	39.96	0.09	-4.26
100	35.14	22.68	24.14			0.109	41.72	0.10	-1.34
105	35.15	22.60	24.17			0.108	41.16	0.10	-4.34
110	35.16	22.35	24.25			0.108	42.62	0.11	-4.25
115	35.15	22.21	24.28			0.107	42.23	0.11	-4.25
120	35.18	21.89	24.39			0.109	43.85	0.12	-4.25
125	35.16	21.81	24.41			0.107	43.16	0.12	-4.25
130	35.14	21.69	24.42			0.105	44.00	0.13	-2.54
135	35.14	21.42	24.49			0.105	44.00	0.13	-4.20
140	35.10	20.99	24.58			0.104	42.51	0.11	-3.86
145	35.06	20.63	24.65			0.098	40.16	0.09	-4.03
150	35.02	20.06	24.77			0.092	35.54	0.06	-3.68
155	35.02	19.85	24.82			0.090	33.68	0.05	-4.28
160	34.99	19.67	24.85			0.088	29.33	0.03	-4.25
165	34.97	19.49	24.88			0.086	29.80	0.04	-4.24
170	34.94	19.21	24.93			0.087	27.76	0.03	-2.20
175	34.90	18.75	25.02			0.087	21.65	0.02	-4.20
180	34.90	18.67	25.04			0.088	1.64	0.00	-4.20
185	34.89	18.66	25.03			0.087	3.12	0.00	-3.57
190	34.88	18.45	25.08			0.086	9.32	0.01	-2.83
195	34.82	17.91	25.16			0.081	0.00	0.00	-1.69
200	34.78	17.52	25.23			0.083	-1.38	0.00	-4.09

CTD					Rosette Calibration						
Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	166.0	34.93	19.31	2	34.97	204	0.08	6.54	7	2	3.96
2	166.0	34.93	19.31	2			0.08	6.54			
3	20.3	34.70	25.33	3	34.73	219	1.35	6.13	25	4	3.95
4	20.3	34.70	25.33	3			1.35	6.13			
5	10.5	34.71	25.37	3	34.73		0.04	7.66	34	6	3.86
6	10.5	34.71	25.37	3			0.04	7.66			

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6011_PRC
STATION: 03 Kaumalapau Harbor	DATE: 07:04 (GMT) 29 Jun 1994	WIND: 18 kts 230 ° T
LATITUDE: 20°45.5' N	SECCHI: --	WAVE: 1 ft 10 sec
LONGITUDE: 157°01.6' W	MUNSELL: --	CLOUD: -- TYPE: --



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6011_PRC
STATION: 03 Kaumalapau Harbor	DATE: 07:04 (GMT) 29 Jun 1994	WIND: 18 kts 230 ° T
LATITUDE: 20°45.5' N	SECCHI: --	WAVE: 1 ft 10 sec
LONGITUDE: 157°01.6' W	MUNSELL: --	CLOUD: -- TYPE: --

Press	Salin	Temp	Sigma	Dissolved	Oxygen	c490	Fluorescence		
dbar	PSU	° C	Theta	uM/kg	%	m^{-1}	680'	680	590
0	34.74	25.42	23.02			0.115	-5.05	0.00	-4.35
2	34.74	25.42	23.02			0.115	-5.05	0.00	-4.35
4	34.74	25.42	23.02			0.115	-5.05	0.00	-4.35
6	34.74	25.42	23.02			0.115	-5.05	0.00	-4.35
8	34.74	25.41	23.02			0.114	-5.00	0.00	-4.30
10	34.73	25.42	23.02			0.114	-4.62	0.00	-4.30
12	34.74	25.41	23.02			0.116	-0.71	0.00	-4.26
14	34.73	25.42	23.01			0.114	-5.00	0.00	-4.35
16	34.73	25.38	23.03			0.115	-1.79	0.00	-4.32
18	34.74	25.28	23.06			0.116	-3.70	0.00	-4.30
20	34.76	24.98	23.17			0.123	-4.10	0.00	-4.35
22	34.78	24.90	23.21			0.126	15.66	0.01	-1.48
24	34.78	24.86	23.22			0.125	18.88	0.01	-4.16
26	34.78	24.81	23.23			0.124	9.22	0.01	-4.35
28	34.81	24.67	23.30			0.122	15.90	0.01	-1.17
30	34.83	24.58	23.34			0.125	-4.03	0.00	-4.34
32	34.85	24.49	23.39			0.128	16.29	0.01	-4.30
34	34.86	24.47	23.40			0.126	23.84	0.02	-4.30
36	34.88	24.41	23.44			0.123	23.36	0.02	-4.30
38	34.90	24.34	23.47			0.124	25.57	0.02	-4.35
40	34.91	24.30	23.49			0.122	28.47	0.03	-4.30
42	34.92	24.29	23.50			0.121	22.21	0.02	-3.72
44	34.92	24.25	23.51			0.121	23.61	0.02	-4.26
46	34.93	24.23	23.52			0.121	26.47	0.03	-3.08
48	34.93	24.20	23.54			0.120	27.35	0.03	-3.12
50	34.95	24.10	23.58			0.121	27.56	0.03	-3.99
52	34.96	24.03	23.61			0.120	28.06	0.03	-4.26
54	34.97	23.97	23.63			0.120	30.00	0.04	-3.63
56	34.98	23.93	23.65			0.119	27.80	0.03	-4.11
58	34.98	23.90	23.66			0.121	28.39	0.03	-4.30
60	34.99	23.84	23.69			0.118	30.18	0.04	-2.90
62	34.99	23.83	23.69			0.119	30.10	0.04	-4.35
64	34.99	23.78	23.71			0.118	28.47	0.03	-4.35
66	35.00	23.74	23.73			0.119	33.03	0.05	-2.80
68	35.00	23.74	23.72			0.122	29.32	0.03	-4.30
70	35.01	23.71	23.74			0.119	35.05	0.06	-4.31

MODIS Marine Optical Characterization Experiment

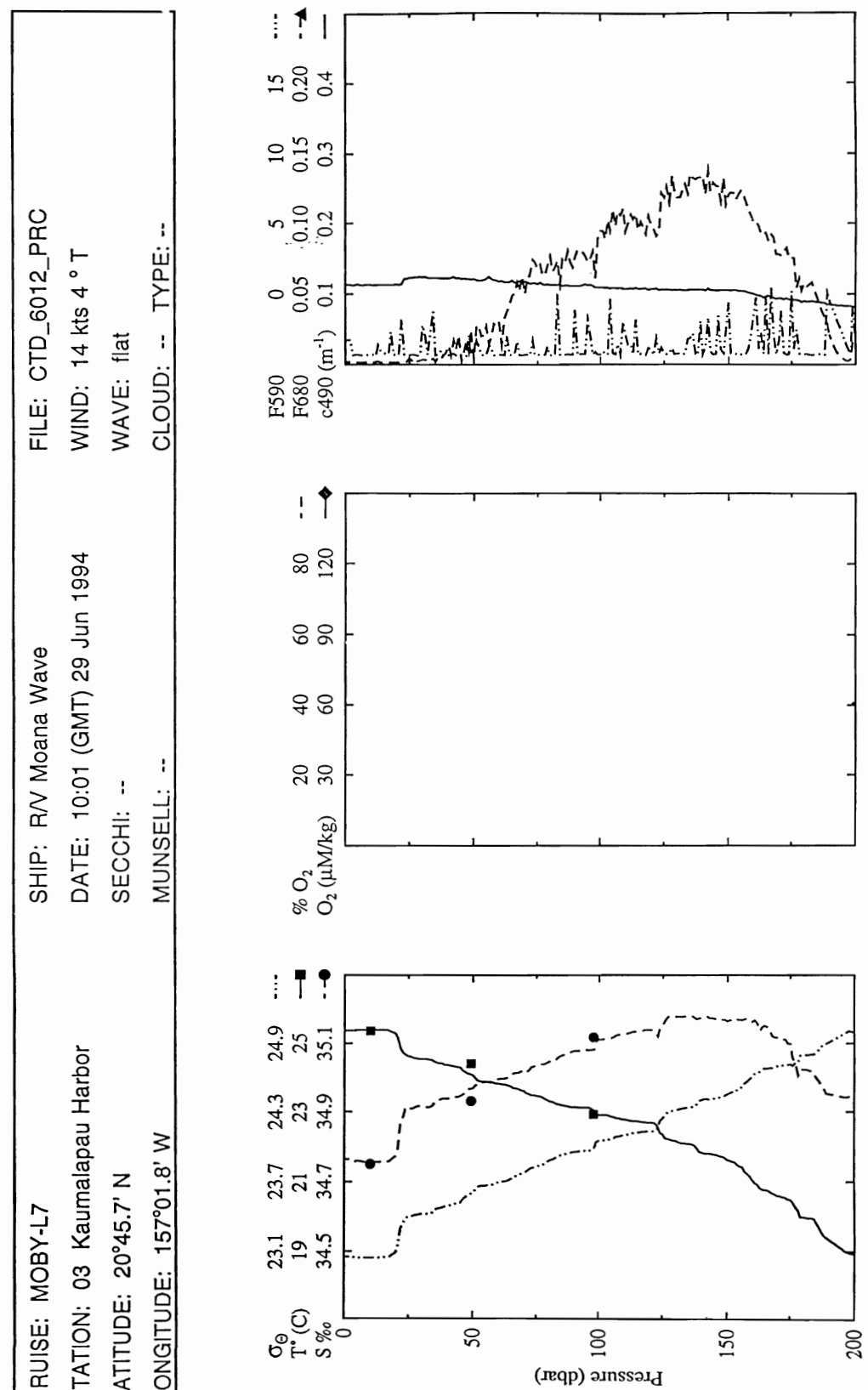
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6011_PRC
STATION: 03 Kaumalapau Harbor	DATE: 07:04 (GMT) 29 Jun 1994	WIND: 18 kts 230 ° T
LATITUDE: 20°45.5' N	SECCHI: --	WAVE: 1 ft 10 sec
LONGITUDE: 157°01.6' W	MUNSELL: --	CLOUD: -- TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	35.01	23.67	23.75			0.119	36.10	0.06	-4.16
80	35.02	23.47	23.82			0.117	39.05	0.08	-4.30
85	35.03	23.44	23.84			0.116	38.01	0.07	-2.32
90	35.06	23.16	23.94			0.110	39.46	0.08	-4.30
95	35.08	23.04	23.99			0.109	40.34	0.09	-4.27
100	35.11	22.88	24.06			0.110	41.62	0.10	-4.29
105	35.12	22.76	24.11			0.107	42.15	0.11	-4.30
110	35.13	22.69	24.13			0.109	43.33	0.12	-4.29
115	35.13	22.51	24.18			0.106	42.30	0.11	-4.25
120	35.16	22.24	24.28			0.107	43.51	0.12	-4.34
125	35.17	22.17	24.31			0.106	44.06	0.13	-4.13
130	35.17	22.11	24.32			0.105	44.42	0.13	-1.63
135	35.17	22.05	24.34			0.106	44.14	0.13	-3.72
140	35.17	21.97	24.37			0.107	44.63	0.13	-2.22
145	35.17	21.82	24.40			0.107	43.99	0.13	-4.27
150	35.17	21.76	24.42			0.106	44.69	0.13	-1.64
155	35.17	21.61	24.47			0.105	45.55	0.14	-4.21
160	35.17	21.43	24.52			0.103	44.34	0.13	-4.26
165	35.16	21.24	24.56			0.101	43.15	0.12	-4.30
170	35.16	20.94	24.64			0.098	41.82	0.10	-3.93
175	35.14	20.75	24.68			0.095	40.02	0.09	-2.97
180	35.03	20.28	24.72			0.091	38.04	0.07	-3.18
185	35.01	19.96	24.79			0.088	35.30	0.06	-0.83
190	34.96	19.71	24.81			0.085	31.17	0.04	-4.25
195	34.94	19.36	24.89			0.083	29.04	0.03	-3.18

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	117.1	35.15	22.19	3	35.17	217		6.80	19	4	3.90
2	117.1	35.15	22.19	3			0.22	6.80			
3	39.4	34.86	24.41	3			0.19	7.00			
4	39.4	34.86	24.41	3							
5	10.3	34.71	25.42	3	34.74	219	0.36	7.34	30	5	3.99
6	10.3	34.71	25.42	3			0.36	7.34			

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6012_PRC
STATION: 03 Kaumalapau Harbor	DATE: 10:01 (GMT) 29 Jun 1994	WIND: 14 kts 4 ° T
LATITUDE: 20°45.7' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.8' W	MUNSELL: --	CLOUD: -- TYPE: --



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6012_PRC
STATION: 03 Kaumalapau Harbor	DATE: 10:01 (GMT) 29 Jun 1994	WIND: 14 kts 4 ° T
LATITUDE: 20°45.7' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.8' W	MUNSELL: --	CLOUD: -- TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.76	25.36	23.05			0.114	-3.95	0.00	-3.25
2	34.76	25.36	23.05			0.114	-3.95	0.00	-3.25
4	34.76	25.37	23.05			0.113	-5.05	0.00	-4.31
6	34.76	25.39	23.04			0.112	-5.05	0.00	-4.35
8	34.76	25.38	23.04			0.113	-5.05	0.00	-4.30
10	34.76	25.38	23.04			0.113	-3.04	0.00	-4.30
12	34.76	25.39	23.04			0.112	-4.42	0.00	-4.38
14	34.76	25.39	23.04			0.113	-5.05	0.00	-4.07
16	34.76	25.38	23.05			0.113	-5.05	0.00	-4.22
18	34.76	25.36	23.05			0.113	-5.01	0.00	-2.68
20	34.77	25.29	23.08			0.114	-5.03	0.00	-4.35
22	34.87	24.85	23.29			0.114	-0.59	0.00	-1.79
24	34.91	24.66	23.38			0.122	-4.86	0.00	-4.31
26	34.91	24.61	23.40			0.123	-0.31	0.00	-4.32
28	34.92	24.57	23.41			0.124	-1.42	0.00	-4.37
30	34.92	24.55	23.42			0.124	3.14	0.00	-2.23
32	34.91	24.54	23.42			0.124	-3.08	0.00	-4.30
34	34.92	24.52	23.43			0.123	5.31	0.00	-1.24
36	34.94	24.44	23.47			0.124	9.42	0.01	-4.31
38	34.94	24.42	23.48			0.123	10.04	0.01	-4.32
40	34.94	24.37	23.49			0.123	18.90	0.01	-4.35
42	34.94	24.35	23.50			0.125	21.37	0.02	-4.23
44	34.94	24.31	23.51			0.123	23.61	0.02	-4.30
46	34.95	24.22	23.54			0.122	12.87	0.01	-4.35
48	34.97	24.13	23.58			0.122	14.20	0.01	-2.89
50	34.97	24.07	23.60			0.122	5.20	0.00	-4.33
52	34.98	23.92	23.65			0.119	27.10	0.03	-3.70
54	34.99	23.89	23.67			0.121	23.80	0.02	-4.35
56	34.99	23.88	23.67			0.125	19.61	0.01	-3.66
58	34.99	23.86	23.68			0.120	27.47	0.03	-4.33
60	34.99	23.82	23.70			0.118	28.01	0.03	-4.30
62	35.00	23.80	23.70			0.117	28.85	0.03	-4.35
64	35.00	23.77	23.72			0.117	31.65	0.04	-4.30
66	35.01	23.70	23.75			0.116	33.71	0.05	-4.23
68	35.01	23.65	23.76			0.119	33.98	0.05	-4.34
70	35.02	23.60	23.78			0.118	33.54	0.05	-4.30

MODIS Marine Optical Characterization Experiment

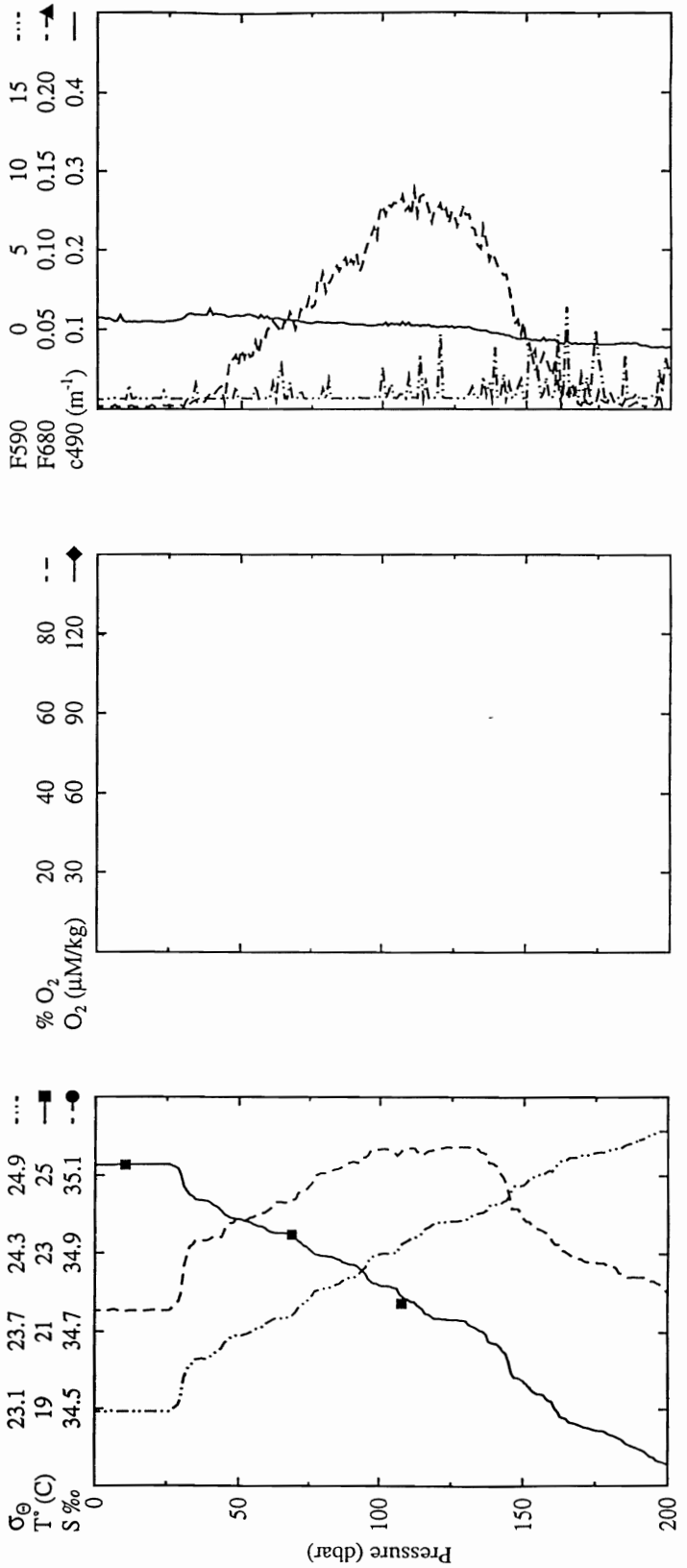
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6012_PRC
STATION: 03 Kaumalapau Harbor	DATE: 10:01 (GMT) 29 Jun 1994	WIND: 14 kts 4 ° T
LATITUDE: 20°45.7' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.8' W	MUNSELL: --	CLOUD: -- TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	35.04	23.47	23.83			0.114	37.01	0.07	-4.30
80	35.05	23.32	23.88			0.114	38.42	0.08	-4.35
85	35.06	23.21	23.93			0.112	38.09	0.07	-4.30
90	35.08	23.15	23.96			0.111	38.32	0.08	-1.11
95	35.08	23.13	23.96			0.112	37.79	0.07	-1.87
100	35.11	22.92	24.05			0.109	40.79	0.09	-4.31
105	35.11	22.87	24.07			0.109	42.53	0.11	-4.25
110	35.13	22.79	24.10			0.107	40.73	0.09	-2.85
115	35.13	22.74	24.12			0.107	40.84	0.10	-4.30
120	35.14	22.69	24.14			0.107	41.21	0.10	-3.97
125	35.15	22.35	24.24			0.106	43.31	0.12	-4.25
130	35.18	22.17	24.31			0.105	43.31	0.12	-4.22
135	35.18	22.08	24.34			0.106	44.81	0.14	-3.15
140	35.18	21.84	24.41			0.106	44.72	0.13	-4.26
145	35.17	21.78	24.42			0.105	44.09	0.13	-4.29
150	35.16	21.63	24.46			0.105	43.49	0.12	-0.62
155	35.17	21.44	24.51			0.104	43.76	0.12	-4.32
160	35.16	21.06	24.61			0.100	41.48	0.10	-1.71
165	35.15	20.77	24.68			0.096	40.58	0.09	-0.21
170	35.12	20.59	24.70			0.094	38.68	0.08	-3.32
175	35.10	20.49	24.72			0.092	38.23	0.08	0.19
180	35.02	19.99	24.79			0.090	35.23	0.06	-4.28
185	35.00	19.84	24.81			0.089	33.08	0.05	-4.26
190	34.95	19.35	24.90			0.085	23.84	0.02	-0.43
195	34.94	19.09	24.97			0.083	5.37	0.00	-2.88
200	34.93	18.92	25.00			0.082	23.47	0.02	-3.27

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	98.0	35.09	22.93	3	35.12	212	0.07	6.98	19	4	4.08
2	98.0	35.09	22.93	3			0.07	6.98			
3	49.3	34.91	24.41	3	34.93	249	0.49	6.64	28	5	4.10
4	49.3	34.91	24.41	3			0.49	6.64			
5	10.4	34.72	25.35	3	34.75	226	0.35	6.65	26	5	4.10
6	10.4	34.72	25.35	3			0.35	6.65			

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6013_PRC
STATION: 03 Kaumalapau Harbor	DATE: 14:36 (GMT) 29 Jun 1994	WIND: 10 kts 75 ° T
LATITUDE: 20°45.6' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.6' W	MUNSELL: --	CLOUD: dark TYPE: --



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6013_PRC
STATION: 03 Kaumalapau Harbor	DATE: 14:36 (GMT) 29 Jun 1994	WIND: 10 kts 75 ° T
LATITUDE: 20°45.6' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.6' W	MUNSELL: --	CLOUD: dark TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.75	25.27			58	0.115	-3.20	0.00	-4.40
2	34.75	25.27			58	0.115	-3.20	0.00	-4.40
4	34.75	25.27			57	0.114	-5.05	0.00	-4.35
6	34.76	25.26			56	0.110	0.52	0.00	-4.32
8	34.75	25.27			55	0.118	-5.05	0.00	-4.35
10	34.75	25.28			56	0.110	-5.05	0.00	-4.38
12	34.75	25.28			56	0.109	-0.89	0.00	-4.35
14	34.76	25.28			55	0.110	-4.96	0.00	-4.14
16	34.75	25.28			55	0.110	-5.05	0.00	-4.35
18	34.75	25.28			55	0.110	-5.05	0.00	-4.35
20	34.76	25.27			55	0.110	-5.00	0.00	-4.30
22	34.75	25.27			55	0.109	-5.00	0.00	-4.35
24	34.75	25.27			55	0.110	-3.84	0.00	-4.32
26	34.75	25.27			55	0.110	-4.89	0.00	-4.35
28	34.77	25.21			55	0.112	1.29	0.00	-4.34
30	34.80	25.00			55	0.114	-5.05	0.00	-4.35
32	34.89	24.61			56	0.120	2.45	0.00	-4.31
34	34.92	24.47			57	0.118	8.77	0.01	-3.47
36	34.93	24.38			57	0.118	5.96	0.00	-4.35
38	34.93	24.36			57	0.118	11.60	0.01	-4.35
40	34.94	24.32			56	0.118	12.46	0.01	-4.35
42	34.94	24.22			56	0.119	18.40	0.01	-4.31
44	34.94	24.09			56	0.118	4.39	0.00	-4.35
46	34.96	23.97			56	0.116	28.25	0.03	-4.34
48	34.98	23.91			55	0.117	29.10	0.03	-3.58
50	34.99	23.89			55	0.117	30.32	0.04	-4.31
52	34.99	23.84			55	0.118	30.09	0.04	-4.34
54	34.99	23.81			55	0.117	29.04	0.03	-4.35
56	35.00	23.73			54	0.114	29.38	0.03	-4.35
58	35.00	23.70			54	0.114	31.56	0.04	-4.30
60	35.01	23.61			53	0.114	33.90	0.05	-4.30
62	35.03	23.55			53	0.114	34.21	0.05	-4.35
64	35.03	23.53			53	0.113	33.06	0.05	-2.24
66	35.03	23.53			53	0.112	34.09	0.05	-4.35
68	35.04	23.48			53	0.111	35.15	0.06	-4.35
70	35.04	23.40			53	0.111	34.83	0.06	-4.26

MODIS Marine Optical Characterization Experiment

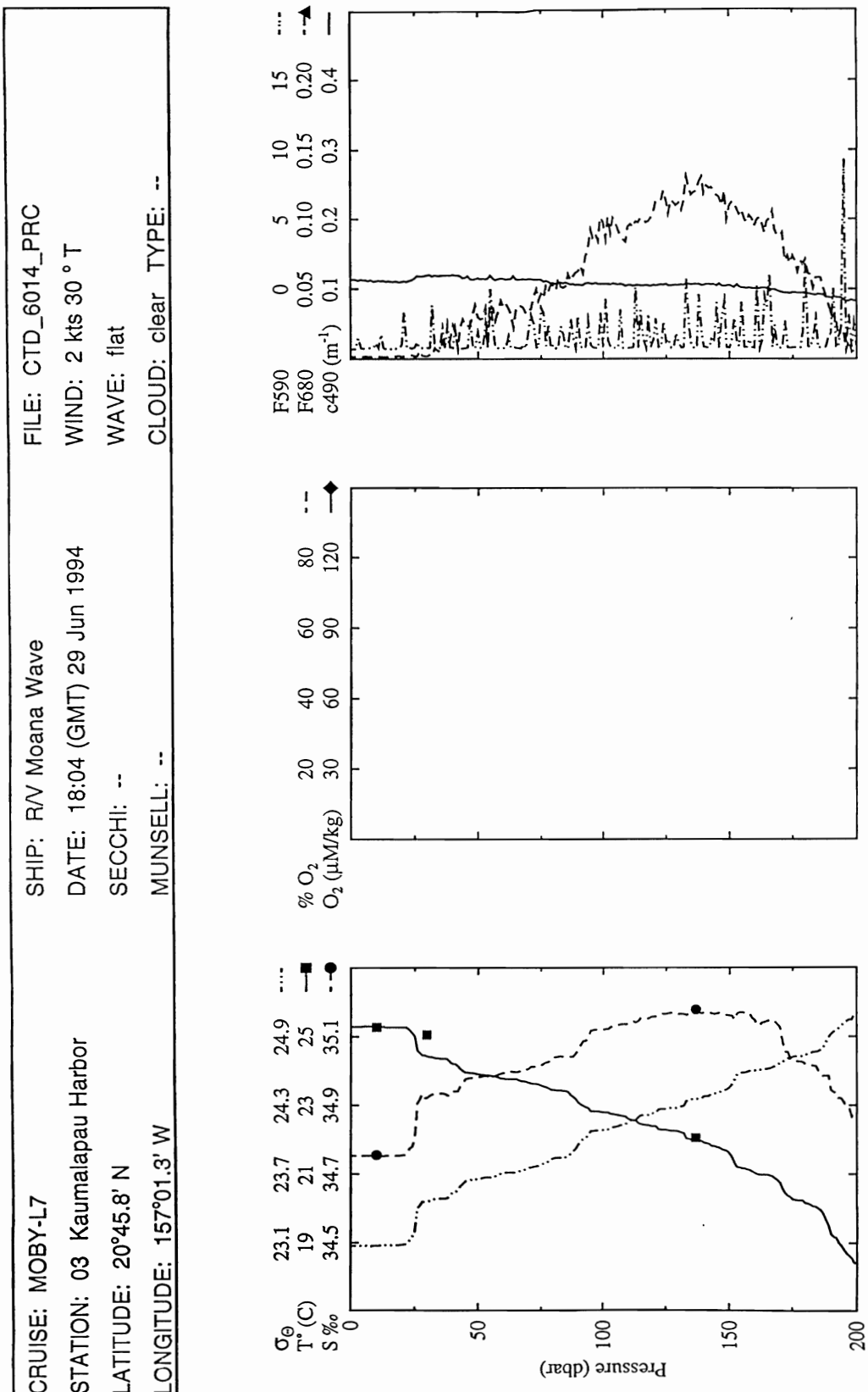
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6013_PRC
STATION: 03 Kaumalapau Harbor	DATE: 14:36 (GMT) 29 Jun 1994	WIND: 10 kts 75 ° T
LATITUDE: 20°45.6' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.6' W	MUNSELL: --	CLOUD: dark TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	35.07	23.11	23.96			0.107	36.29	0.06	-4.30
80	35.11	22.95	24.04			0.108	37.91	0.07	-4.37
85	35.12	22.87	24.07			0.109	39.83	0.09	-4.30
90	35.13	22.73	24.12			0.106	40.39	0.09	-4.30
95	35.15	22.49	24.20			0.105	42.02	0.11	-4.30
100	35.17	22.20	24.30			0.105	44.23	0.13	-2.34
105	35.16	22.14	24.31			0.107	44.36	0.13	-4.30
110	35.17	21.84	24.40			0.105	43.65	0.12	-4.29
115	35.15	21.59	24.45			0.105	44.64	0.13	-3.35
120	35.17	21.34	24.54			0.104	44.30	0.13	-0.32
125	35.17	21.31	24.55			0.102	43.61	0.12	-4.30
130	35.17	21.28	24.56			0.103	43.73	0.12	-4.05
135	35.16	21.03	24.62			0.099	42.96	0.11	-2.97
140	35.13	20.70	24.68			0.095	40.20	0.09	-4.33
145	35.05	20.22	24.75			0.090	36.54	0.07	-4.27
150	34.99	19.75	24.83			0.088	31.05	0.04	-4.25
155	34.96	19.38	24.91			0.085	27.41	0.03	-4.30
160	34.93	19.19	24.93			0.086	28.40	0.03	-3.86
165	34.90	18.75	25.02			0.083	18.25	0.01	-4.30
170	34.89	18.56	25.05			0.082	12.43	0.01	-4.25
175	34.88	18.45	25.08			0.081	16.74	0.01	-1.96
180	34.87	18.33	25.10			0.082	8.72	0.01	-4.28
185	34.85	18.12	25.13			0.083	-2.65	0.00	-4.34
190	34.84	17.95	25.17			0.080	-1.36	0.00	-4.30
195	34.83	17.74	25.22			0.078	2.39	0.00	-4.26
200	34.80	17.55	25.24			0.078	2.26	0.00	-3.11

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	107.7	35.16	21.73	3							
2	107.7	35.16	21.73	3							
3	68.9	35.01	23.49	3							
4	68.9	35.01	23.49	3							
5	10.5	34.73	25.26	3							
6	10.5	34.73	25.26	3							

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6014_PRC
STATION: 03 Kaumalapau Harbor	DATE: 18:04 (GMT) 29 Jun 1994	WIND: 2 kts 30 ° T
LATITUDE: 20°45.8' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.3' W	MUNSELL: --	CLOUD: clear TYPE: --



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6014_PRC
STATION: 03 Kaumalapau Harbor	DATE: 18:04 (GMT) 29 Jun 1994	WIND: 2 kts 30 ° T
LATITUDE: 20°45.8' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.3' W	MUNSELL: --	CLOUD: clear TYPE: --

Press	Salin	Temp	Sigma	Dissolved	Oxygen	c490	Fluorescence		
dbar	PSU	° C	Theta	uM/kg	%	m^{-1}	680'	680	590
0	34.75	25.28	23.07			0.113	-4.95	0.00	-4.30
2	34.75	25.28	23.07			0.113	-4.95	0.00	-4.30
4	34.75	25.28	23.07			0.113	-4.95	0.00	-4.25
6	34.75	25.29	23.07			0.112	-3.30	0.00	-4.25
8	34.75	25.29	23.07			0.112	-4.95	0.00	-4.25
10	34.75	25.28	23.07			0.111	-4.95	0.00	-3.87
12	34.75	25.27	23.07			0.111	-4.95	0.00	-3.27
14	34.75	25.27	23.08			0.111	-4.95	0.00	-4.30
16	34.75	25.27	23.08			0.110	-4.18	0.00	-4.30
18	34.75	25.26	23.08			0.111	-3.05	0.00	-4.26
20	34.75	25.26	23.08			0.110	-4.95	0.00	-4.01
22	34.76	25.24	23.09			0.110	-4.08	0.00	-4.23
24	34.78	25.10	23.15			0.112	0.33	0.00	-4.28
26	34.91	24.59	23.40			0.119	-4.92	0.00	-3.82
28	34.93	24.46	23.46			0.118	-2.03	0.00	-4.25
30	34.92	24.42	23.46			0.119	-2.64	0.00	-4.22
32	34.93	24.40	23.47			0.118	-1.20	0.00	-1.15
34	34.93	24.37	23.49			0.119	8.88	0.01	-4.22
36	34.93	24.36	23.49			0.120	17.62	0.01	-2.78
38	34.93	24.34	23.49			0.120	16.06	0.01	-2.60
40	34.94	24.21	23.54			0.120	25.34	0.02	-4.25
42	34.94	24.15	23.56			0.119	11.99	0.01	-4.22
44	34.96	24.00	23.62			0.116	27.16	0.03	-4.27
46	34.98	23.95	23.65			0.119	25.00	0.02	-4.20
48	34.98	23.94	23.65			0.114	28.69	0.03	-4.20
50	34.98	23.91	23.66			0.116	27.78	0.03	-3.10
52	34.98	23.89	23.67			0.115	27.37	0.03	-4.20
54	34.98	23.87	23.67			0.115	12.57	0.01	-4.25
56	34.99	23.85	23.68			0.115	29.95	0.04	-2.97
58	34.99	23.82	23.69			0.114	29.14	0.03	-4.25
60	34.99	23.78	23.71			0.115	30.20	0.04	-4.25
62	35.00	23.76	23.71			0.114	29.89	0.04	-3.37
64	35.00	23.76	23.71			0.119	24.55	0.02	-4.13
66	35.00	23.73	23.72			0.114	30.45	0.04	-4.25
68	35.00	23.71	23.74			0.114	30.04	0.04	-3.97
70	35.01	23.65	23.75			0.114	29.60	0.04	-2.85

MODIS Marine Optical Characterization Experiment

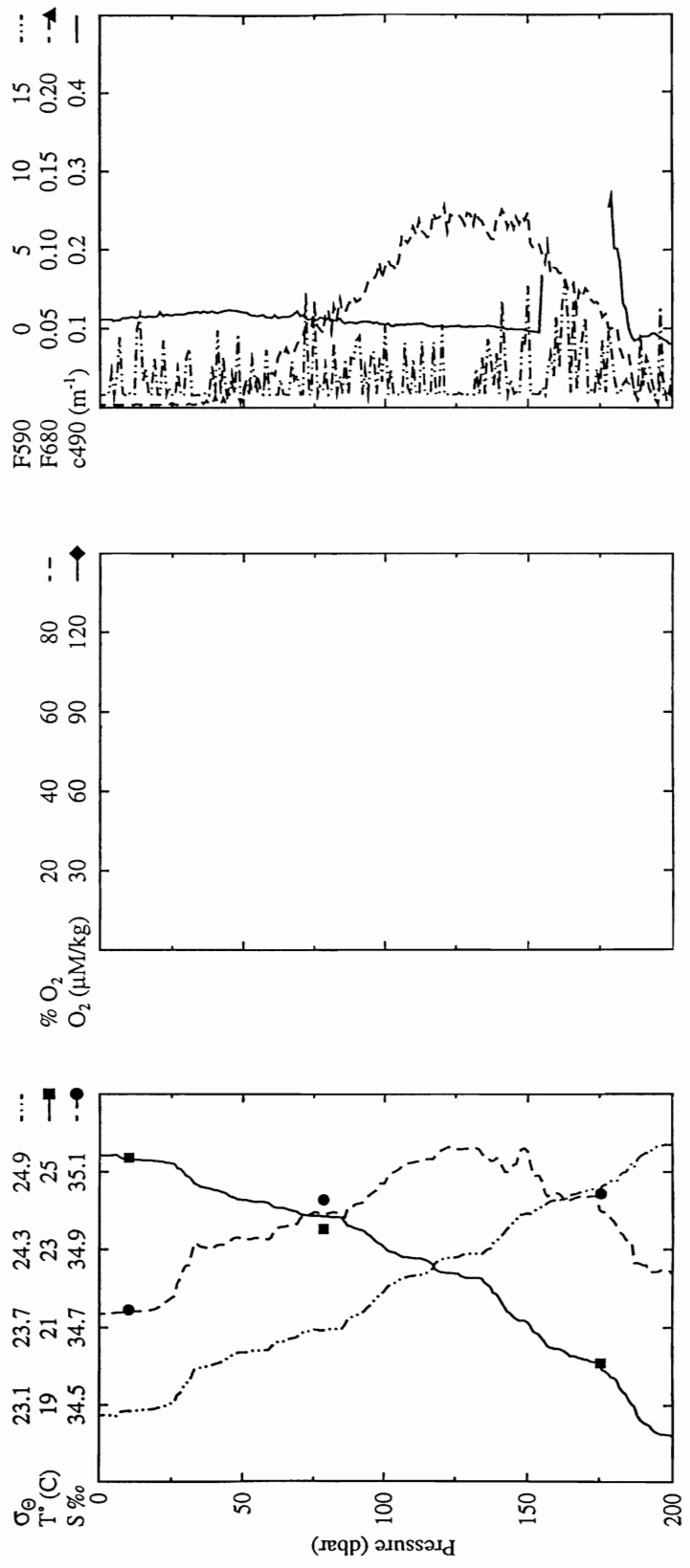
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6014_PRC
STATION: 03 Kaumalapau Harbor	DATE: 18:04 (GMT) 29 Jun 1994	WIND: 2 kts 30 ° T
LATITUDE: 20°45.8' N	SECCHI: --	WAVE: flat
LONGITUDE: 157°01.3' W	MUNSELL: --	CLOUD: clear TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	35.02	23.58	23.78			0.113	32.72	0.05	-1.35
80	35.04	23.45	23.84			0.109	34.09	0.05	-3.98
85	35.04	23.42	23.85			0.110	33.91	0.05	-4.21
90	35.06	23.10	23.96			0.106	36.07	0.06	-1.91
95	35.12	22.84	24.08			0.108	40.50	0.09	-4.02
100	35.12	22.81	24.09			0.107	41.23	0.10	-4.24
105	35.13	22.74	24.11			0.107	41.14	0.10	-4.25
110	35.14	22.61	24.16			0.105	40.79	0.09	-4.24
115	35.15	22.46	24.21			0.105	41.46	0.10	-1.56
120	35.16	22.40	24.23			0.105	41.96	0.10	-3.67
125	35.17	22.29	24.27			0.107	42.83	0.11	-3.81
130	35.17	22.24	24.28			0.105	42.66	0.11	-3.89
135	35.17	22.00	24.35			0.106	43.24	0.12	-4.02
140	35.17	21.92	24.38			0.106	43.34	0.12	-4.16
145	35.17	21.80	24.41			0.105	43.21	0.12	-0.95
150	35.16	21.61	24.46			0.105	42.49	0.11	-4.25
155	35.17	21.17	24.58			0.102	42.15	0.11	-0.89
160	35.15	21.04	24.60			0.101	40.80	0.09	-4.21
165	35.14	20.98	24.62			0.101	41.27	0.10	-1.30
170	35.13	20.74	24.67			0.096	39.98	0.09	-4.24
175	35.03	20.27	24.73			0.095	38.01	0.07	-4.18
180	35.02	20.16	24.74			0.094	37.60	0.07	1.88
185	35.00	20.00	24.77			0.093	35.35	0.06	-4.23
190	34.94	19.25	24.92			0.088	28.86	0.03	-3.22
195	34.91	18.79	25.01			0.084	21.53	0.02	9.27
200	34.87	18.38	25.09			0.083	11.94	0.01	-4.22

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	136.7	35.16	22.06	3	35.18	211	0.35	7.54	16	3	3.90
2	136.7	35.16	22.06	3			0.35	7.54			
3	29.7	34.79	25.05	3			0.24	6.54	24	4	4.08
4	29.7	34.79	25.05	3			0.24	6.54			
5	10.2	34.73	25.26	3	34.75	212	0.26	6.96	26	4	4.07
6	10.2	34.73	25.26	3			0.26	6.96			

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6015_PRC
STATION: 03 Kaumalapau Harbor	DATE: 22:42 (GMT) 29 Jun 1994	WIND: 2 kts 30° T
LATITUDE: 20°45.8' N	SECCHI: 33 m	WAVE: flat
LONGITUDE: 157°01.3' W	MUNSELL: 5B 7/8	CLOUD: -- TYPE: CU



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6015_PRC
STATION: 03 Kaumalapau Harbor	DATE: 22:42 (GMT) 29 Jun 1994	WIND: 2 kts 30 ° T
LATITUDE: 20°45.8' N	SECCHI: 33 m	WAVE: flat
LONGITUDE: 157°01.3' W	MUNSELL: 5B 7/8	CLOUD: -- TYPE: CU

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.74	25.41	23.02			0.112	-4.90	0.00	-4.20
2	34.74	25.41	23.02			0.112	-4.90	0.00	-4.20
4	34.74	25.41	23.02			0.112	-4.02	0.00	-2.72
6	34.74	25.43	23.01			0.111	-4.83	0.00	-2.86
8	34.74	25.33	23.05			0.113	-4.90	0.00	-4.12
10	34.74	25.32	23.05			0.113	-4.91	0.00	-4.03
12	34.74	25.31	23.06			0.114	-4.90	0.00	-4.20
14	34.74	25.30	23.06			0.116	-3.16	0.00	0.77
16	34.74	25.29	23.06			0.114	-4.66	0.00	-2.45
18	34.75	25.29	23.06			0.115	-4.90	0.00	-4.23
20	34.75	25.27	23.07			0.116	-4.90	0.00	-4.19
22	34.76	25.25	23.08			0.115	-1.99	0.00	-0.74
24	34.77	25.22	23.10			0.117	-4.90	0.00	-3.72
26	34.78	25.19	23.12			0.118	-4.90	0.00	-4.22
28	34.83	25.07	23.19			0.118	-4.90	0.00	-4.19
30	34.86	24.90	23.27			0.118	-3.93	0.00	-1.82
32	34.88	24.81	23.31			0.119	-4.79	0.00	-4.25
34	34.91	24.66	23.38			0.121	0.11	0.00	-4.20
36	34.91	24.61	23.39			0.122	-1.80	0.00	-4.20
38	34.90	24.58	23.40			0.120	-0.68	0.00	-4.20
40	34.91	24.53	23.42			0.120	11.78	0.01	-4.20
42	34.91	24.50	23.43			0.121	-2.62	0.00	-4.20
44	34.91	24.45	23.45			0.123	-3.91	0.00	-4.20
46	34.93	24.36	23.48			0.122	19.86	0.01	-2.86
48	34.93	24.30	23.51			0.122	10.63	0.01	-0.35
50	34.93	24.28	23.51			0.121	16.75	0.01	-4.20
52	34.93	24.26	23.51			0.118	23.14	0.02	-4.24
54	34.93	24.23	23.52			0.116	16.33	0.01	-3.00
56	34.93	24.23	23.52			0.117	15.83	0.01	-4.11
58	34.93	24.22	23.53			0.114	23.92	0.02	-1.37
60	34.93	24.15	23.55			0.113	24.37	0.02	-4.22
62	34.96	24.08	23.59			0.113	28.26	0.03	-4.20
64	34.96	24.07	23.60			0.115	28.87	0.03	-4.16
66	34.96	24.03	23.61			0.115	29.13	0.03	-4.20
68	34.97	24.00	23.62			0.118	29.65	0.04	-3.27
70	34.98	23.93	23.65			0.115	32.04	0.04	-4.20

MODIS Marine Optical Characterization Experiment

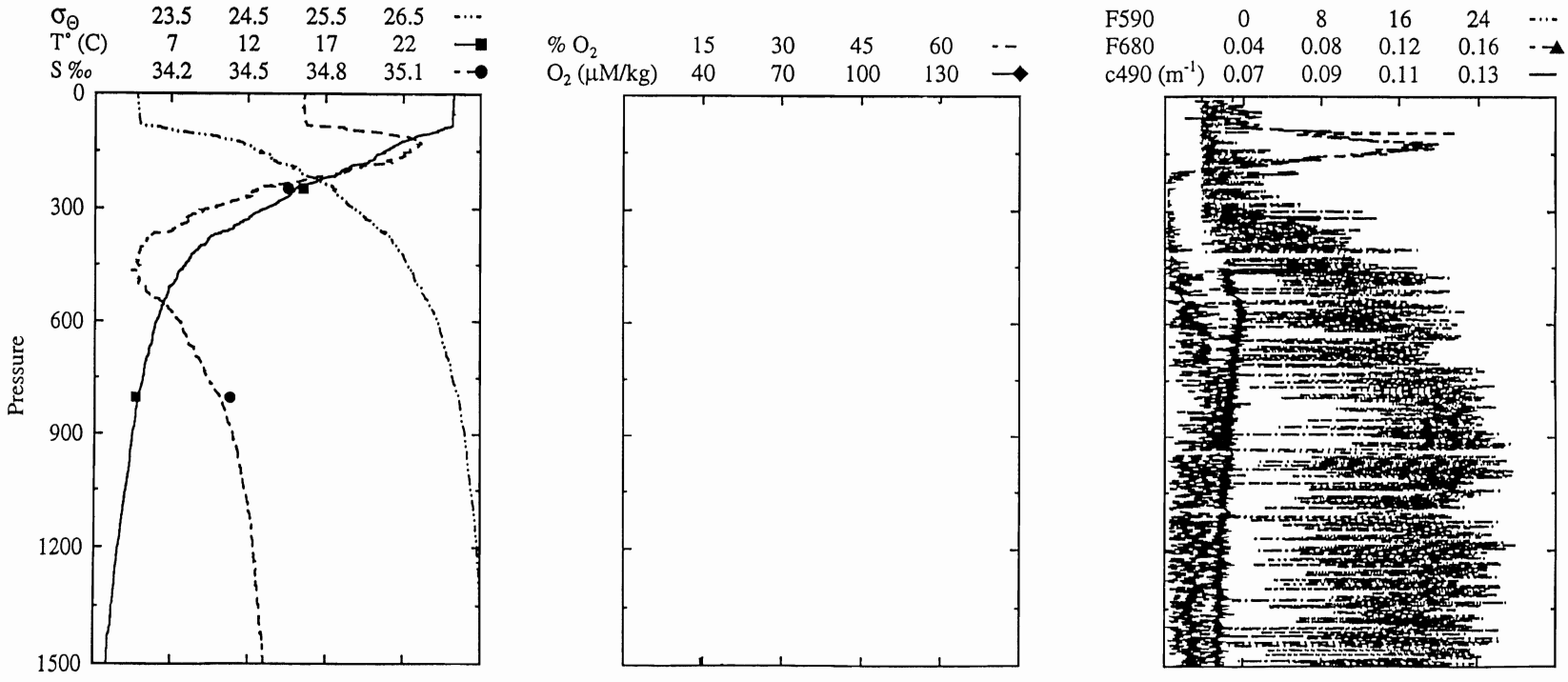
CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6015_PRC
STATION: 03 Kaumalapau Harbor	DATE: 22:42 (GMT) 29 Jun 1994	WIND: 2 kts 30 ° T
LATITUDE: 20°45.8' N	SECCHI: 33 m	WAVE: flat
LONGITUDE: 157°01.3' W	MUNSELL: 5B 7/8	CLOUD: -- TYPE: CU

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	35.00	23.87	23.68			0.110	36.27	0.06	1.73
80	34.99	23.86	23.69			0.113	36.03	0.06	-4.20
85	34.99	23.82	23.69			0.109	35.80	0.06	-4.20
90	35.02	23.54	23.80			0.106	36.84	0.07	-0.76
95	35.04	23.34	23.87			0.108	38.76	0.08	-1.75
100	35.07	23.05	23.98			0.105	40.07	0.09	0.13
105	35.11	22.87	24.06			0.104	40.81	0.09	-4.20
110	35.12	22.78	24.10			0.105	42.95	0.11	-1.96
115	35.13	22.72	24.12			0.103	42.21	0.11	-4.17
120	35.16	22.41	24.23			0.102	43.65	0.12	0.22
125	35.16	22.38	24.24			0.102	43.56	0.12	-4.20
130	35.16	22.28	24.27			0.102	43.70	0.12	-4.15
135	35.14	22.16	24.28			0.103	42.79	0.11	-4.16
140	35.13	21.79	24.39			0.101	43.32	0.12	-4.16
145	35.12	21.27	24.52			0.099	42.82	0.11	-4.17
150	35.15	21.14	24.58			0.096	43.79	0.12	2.69
155	35.07	20.72	24.64			0.168	41.05	0.10	-3.74
160	35.04	20.46	24.68			0.646	39.97	0.09	0.65
165	35.03	20.27	24.72			1.313	38.00	0.07	-4.09
170	35.04	20.17	24.75			1.053	38.22	0.08	0.71
175	35.00	20.06	24.76			0.393	36.29	0.06	-3.90
180	34.97	19.71	24.83			0.202	33.93	0.05	-3.13
185	34.92	19.14	24.93			0.100	29.12	0.03	-3.63
190	34.86	18.56	25.04			0.090	25.16	0.02	-3.59
195	34.84	18.27	25.09			0.090	-2.37	0.00	-3.94
200	34.84	18.19	25.11			0.081	8.75	0.01	-2.63
210	34.77	17.55	25.22			0.081	0.92	0.00	-0.11

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	175.4	35.02	20.09	2	35.04	191	0.07	7.46	11	2	3.71
2	175.4	35.02	20.09	2			0.07	7.46			
3	78.4	35.00	23.53	3	35.03	220	0.11	4.28	22	4	3.75
4	78.4	35.00	23.53	3			0.11	4.28			
5	10.4	34.72	25.35	3	34.74	214	0.09	6.68	28	5	3.80
6	10.4	34.72	25.35	3			0.09	6.68			

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6016_PRC
STATION: 04 2 mi S of Lanai Mooring	DATE: 05:37 (GMT) 30 Jun 1994	WIND: 20 kts 60° T
LATITUDE: 20°47.5' N	SECCHI: --	WAVE: 4 ft
LONGITUDE: 157°13.7' W	MUNSELL: --	CLOUD: clear TYPE: --



MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6016_PRC
STATION: 04 2 mi S of Lanai Mring	DATE: 05:37 (GMT) 30 Jun 1994	WIND: 20 kts 60°T
LATITUDE: 20°47.5' N	SECCHI: --	WAVE: 4 ft
LONGITUDE: 157°13.7' W	MUNSELL: --	CLOUD: clear TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
0	34.72	25.24	23.06			0.135	29.35	0.03	-4.30
2	34.72	25.24	23.06			0.135	29.35	0.03	-4.30
4	34.72	25.24	23.06			0.135	29.35	0.03	-4.30
6	34.72	25.24	23.06			0.135	29.35	0.03	-4.30
8	34.72	25.24	23.06			0.135	29.35	0.03	-4.30
10	34.72	25.24	23.06			0.135	29.35	0.03	-4.30
12	34.72	25.24	23.06			0.135	29.35	0.03	-4.30
14	34.72	25.22	23.06			0.135	25.49	0.02	-3.11
16	34.72	25.22	23.06			0.134	26.38	0.03	-3.35
18	34.72	25.22	23.06			0.133	27.26	0.03	-3.59
20	34.72	25.22	23.07			0.132	28.14	0.03	-3.83
22	34.72	25.22	23.07			0.132	29.02	0.03	-4.07
24	34.72	25.22	23.07			0.134	31.05	0.04	-3.51
26	34.72	25.23	23.06			0.132	30.07	0.04	-4.30
28	34.72	25.23	23.06			0.133	28.69	0.03	-4.29
30	34.72	25.23	23.06			0.132	29.19	0.03	-1.83
32	34.72	25.23	23.06			0.133	28.57	0.03	-4.25
34	34.72	25.22	23.07			0.132	29.84	0.04	-4.25
36	34.72	25.21	23.07			0.132	29.37	0.03	-4.28
38	34.72	25.21	23.07			0.132	30.50	0.04	-2.06
40	34.72	25.21	23.07			0.133	31.49	0.04	-4.28
42	34.72	25.21	23.07			0.131	33.44	0.05	-4.26
44	34.72	25.21	23.07			0.132	31.04	0.04	-4.30
46	34.72	25.19	23.07			0.129	28.79	0.03	-1.92
48	34.72	25.19	23.08			0.130	32.05	0.04	-4.25
50	34.72	25.19	23.08			0.129	32.08	0.04	-4.30
52	34.72	25.19	23.08			0.130	32.67	0.05	-3.94
54	34.72	25.19	23.08			0.128	30.90	0.04	-3.89
56	34.72	25.19	23.08			0.129	31.89	0.04	-4.25
58	34.72	25.19	23.08			0.128	29.43	0.03	-3.00
60	34.72	25.19	23.08			0.129	29.85	0.04	-4.30
62	34.72	25.19	23.08			0.130	30.29	0.04	-2.42
64	34.72	25.19	23.08			0.129	29.18	0.03	-4.30
66	34.72	25.19	23.08			0.128	31.70	0.04	-4.30
68	34.72	25.18	23.08			0.128	32.22	0.04	-4.29
70	34.72	25.18	23.08			0.132	31.79	0.04	-0.64

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6016_PRC
STATION: 04 2 mi S of Lanai Mring	DATE: 05:37 (GMT) 30 Jun 1994	WIND: 20 kts 60° T
LATITUDE: 20°47.5' N	SECCHI: --	WAVE: 4 ft
LONGITUDE: 157°13.7' W	MUNSELL: --	CLOUD: clear TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
75	34.72	25.17	23.09			0.126	32.99	0.05	-4.25
80	34.73	25.16	23.09			0.125	31.90	0.04	-4.25
85	34.78	25.00	23.18			0.118	35.89	0.06	-3.95
90	34.87	24.60	23.37			0.116	39.63	0.09	-4.09
95	34.90	24.29	23.49			0.117	45.98	0.15	-4.27
100	35.00	24.01	23.64			0.105	37.37	0.07	-4.30
105	35.03	23.60	23.79			0.104	39.69	0.09	-4.25
110	35.08	22.92	24.03			0.104	40.76	0.09	-4.25
115	35.13	22.71	24.12			0.100	41.82	0.10	-4.22
120	35.15	22.34	24.25			0.098	43.84	0.12	-1.08
125	35.16	21.91	24.37			0.100	44.54	0.13	-4.22
130	35.17	21.71	24.43			0.101	44.30	0.13	-4.25
135	35.16	21.48	24.49			0.098	44.15	0.13	-3.12
140	35.15	21.25	24.55			0.099	43.70	0.12	-4.28
145	35.13	21.08	24.58			0.097	42.56	0.11	-1.69
150	35.13	20.82	24.65			0.094	42.88	0.11	-2.44
155	35.09	20.70	24.65			0.094	41.34	0.10	-3.70
160	35.10	20.28	24.78			0.087	38.85	0.08	0.89
165	35.10	20.20	24.79			0.085	37.91	0.07	-4.06
170	35.07	20.12	24.79			0.109	37.40	0.07	4.86
175	35.04	19.88	24.83			0.577	35.15	0.06	-1.99
180	35.05	19.77	24.87			1.668	33.87	0.05	-4.25
185	35.00	19.31	24.95			1.924	29.82	0.04	-2.61
190	34.94	18.65	25.08			0.589	25.89	0.03	-1.55
195	34.92	18.51	25.09			0.099	26.37	0.03	-0.99
200	34.89	18.13	25.17			0.081	16.59	0.01	1.64
210	34.84	17.83	25.20			0.124	-2.08	0.00	-3.40
220	34.76	17.03	25.34			0.158	-3.53	0.00	-3.34
230	34.70	16.45	25.42			1.501	-3.77	0.00	2.07
240	34.60	15.56	25.55			0.151	-4.89	0.00	-4.24
250	34.54	15.08	25.61			0.067	-4.95	0.00	-3.55
260	34.51	14.85	25.64			0.068	-4.90	0.00	-3.91
270	34.51	14.61	25.69			0.966	-2.29	0.00	-2.28
280	34.46	14.13	25.75			0.067	-4.95	0.00	-1.25
290	34.41	13.75	25.79			2.578	-4.53	0.00	-4.06
300	34.36	13.19	25.87			1.073	-4.90	0.00	-2.74

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6016_PRC
STATION: 04 2 mi S of Lanai Mring	DATE: 05:37 (GMT) 30 Jun 1994	WIND: 20 kts 60° T
LATITUDE: 20°47.5' N	SECCHI: --	WAVE: 4 ft
LONGITUDE: 157°13.7' W	MUNSELL: --	CLOUD: clear TYPE: --

Press	Salin	Temp	Sigma	Dissolved	Oxygen	c490	Fluorescence		
dbar	PSU	° C	Theta	uM/kg	%	m^{-1}	680'	680	590
310	34.32	12.71	25.93			0.479	-4.51	0.00	1.18
320	34.28	12.25	25.99			0.088	-0.86	0.00	2.30
330	34.28	11.99	26.04			0.076	-4.90	0.00	1.23
340	34.26	11.48	26.12			0.132	4.47	0.00	3.63
350	34.22	11.07	26.17			0.557	5.47	0.00	12.16
360	34.20	10.57	26.24			1.342	12.07	0.01	10.72
370	34.12	9.84	26.30			0.813	-4.77	0.00	-1.32
380	34.10	9.46	26.35			0.069	8.20	0.01	9.75
390	34.10	9.35	26.36			0.106	-3.61	0.00	1.65
400	34.09	8.92	26.42			0.064	-0.42	0.00	0.30
410	34.08	8.73	26.45			0.097	2.61	0.00	9.63
420	34.07	8.43	26.49			0.426	2.67	0.00	10.80
430	34.07	8.26	26.51			0.205	-3.30	0.00	-0.32
440	34.06	8.10	26.53			0.089	-4.90	0.00	10.55
450	34.07	7.94	26.56			0.238	11.12	0.01	17.26
460	34.06	7.75	26.58			0.067	1.58	0.00	4.18
470	34.07	7.47	26.63			0.066	8.14	0.01	3.19
480	34.07	7.41	26.64			0.066	16.92	0.01	12.42
490	34.08	7.33	26.65			0.067	5.12	0.00	7.33

MODIS Marine Optical Characterization Experiment

CRUISE: MOBY-L7	SHIP: R/V Moana Wave	FILE: CTD_6016_PRC
STATION: 04 2 mi S of Lanai Mring	DATE: 05:37 (GMT) 30 Jun 1994	WIND: 20 kts 60° T
LATITUDE: 20°47.5' N	SECCHI: --	WAVE: 4 ft
LONGITUDE: 157°13.7' W	MUNSELL: --	CLOUD: clear TYPE: --

Press dbar	Salin PSU	Temp ° C	Sigma Theta	Dissolved uM/kg	Oxygen %	c490 m^{-1}	Fluorescence 680'	680	590
500	34.07	7.14	26.68			0.067	8.35	0.01	11.09
550	34.17	6.54	26.83			0.069	19.37	0.01	11.92
600	34.23	6.04	26.95			0.070	24.24	0.02	22.00
650	34.26	5.76	27.01			0.068	17.26	0.01	4.38
700	34.31	5.39	27.09			0.069	5.40	0.00	16.80
750	34.35	5.18	27.14			0.067	29.85	0.04	22.67
800	34.39	4.86	27.22			0.067	28.01	0.03	21.20
850	34.42	4.69	27.26			0.066	26.14	0.03	14.06
900	34.44	4.48	27.30			0.065	21.92	0.02	15.40
950	34.46	4.36	27.33			0.066	8.82	0.01	20.30
1000	34.47	4.26	27.35			0.064	12.84	0.01	23.83
1050	34.49	4.07	27.38			0.063	20.33	0.02	19.72
1100	34.51	3.88	27.42			0.067	15.89	0.01	13.28
1150	34.52	3.72	27.44			0.063	7.03	0.00	15.27
1200	34.53	3.55	27.46			0.065	-0.38	0.00	1.60
1250	34.53	3.43	27.48			0.063	9.95	0.01	11.93
1300	34.54	3.34	27.49			0.064	23.42	0.02	22.18
1350	34.54	3.20	27.51			0.063	21.48	0.02	19.74
1400	34.55	3.13	27.52			0.065	-3.04	0.00	-3.41
1450	34.56	2.93	27.55			0.062	22.19	0.02	20.44
1500	34.56	2.88	27.56			0.063	19.50	0.01	19.07
1516	34.56	2.88	27.56			0.063	-2.94	0.00	2.06

CTD Bot #	Press dbar	Salin PSU	Temp C	Oxy uM/kg	Rosette Calibration Salin PSU	Oxy uM/kg	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l
1	1511.0	34.53	2.88	2		147	0.11	10.34			
2	1511.0	34.53	2.88	2			0.11	10.34	0	0	3.90
3	804.1	34.40	4.71	2	34.43	39	0.03	10.80			
4	804.1	34.40	4.71	2			0.03	10.80	4	1	3.70
5	249.1	34.61	15.57	3	34.66	187	0.05	11.86			
6							0.05	11.86	6	1	3.79

Appendix 2. Total Suspended Material and Particulate Organic Carbon and Nitrogen.

Explanation of Data Tables:

CTD#	CTD sequential cast number provide cross-reference to Appendix 2.
Bot#	GoFlo Bottle Number
Sal	Salinity from MLML CTD (PSU)
Temp	Temperature from MLML CTD (°C)
Press	Pressure from MLML CTD (dbar)
c490	Beam Attenuation Coefficient from MLML CTD (490 nm) (m^{-1})
F680	Chlorophyll fluorescence from MLML CTD (excitation @ 490 nm, emission @ 680 nm) in unscaled units. 25 units indicate a 10x increase in fluorescence.
TSM_V	Water filtered (ml) for Total Suspended Material
TSM	Total Suspended Material (mg l^{-1})
POC_V	Water filtered (ml) for POC and PON
POC	Particulate Organic Carbon (µg l^{-1})
PON	Particulate Organic Nitrogen (µg l^{-1})
OM	Organic Matter = 2xPOM (µg l^{-1})
%OM	Weight percent of organic matter in TSM

STATION: 01 Lanai Mooring DATE: 23:49 (GMT) 26 Jun 1994 CTD: CTD_6004_PRC
LATITUDE: 20°49.6' N LONGITUDE: 157°09.9' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp ° C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
1	175.7	34.92	18.48	0.080	0.015	0.19	6.00	18.9	2.8	1.28	37.6	20
3	117.7	35.16	21.71	0.120	0.164	0.65	6.00	34.8	5.7	1.18	69.6	11
6	49.5	34.94	24.18	0.128	0.028	0.09	6.00	38.8	6.0	1.90	77.6	86

STATION: 01 Lanai Mooring DATE: 01:02 (GMT) 27 Jun 1994 CTD: CTD_6005_PRC
LATITUDE: 20°48.3' N LONGITUDE: 157°09.7' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp ° C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
2	9.6	34.64	25.63	0.118	0.002	0.12	8.00	24.2	4.1	3.90	48.4	40
3	9.6	34.64	25.63	0.118	0.002	0.11	8.00	28.2	4.6	3.68	56.4	51

STATION: 02 West of Lanai DATE: 05:21 (GMT) 28 Jun 1994 CTD: CTD_6006_PRC
LATITUDE: 20°45.4' N LONGITUDE: 157°04.7' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp ° C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
2	117.5	35.15	22.31	0.115	0.120	0.11	13.00	21.8	3.7	5.70	43.6	40
5	10.4	34.66	25.47	0.124	0.002	0.13	10.98	30.8	4.9	3.80	61.6	47

STATION: 03 Kaumalapau Harbor DATE: 22:46 (GMT) 28 Jun 1994 CTD: CTD_6009_PRC
LATITUDE: 20°45.5' N LONGITUDE: 157°01.4' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp ° C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
1	137.0	35.05	20.56	0.100	0.094	0.08	7.26	14.8	2.5	3.96	29.6	37
5	10.5	34.70	25.30	0.122	0.002	0.20	7.48	27.4	4.9	3.66	54.8	27

STATION: 03 Kaumalapau Harbor DATE: 02:02 (GMT) 29 Jun 1994 CTD: CTD_6010_PRC
LATITUDE: 20°45.4' N LONGITUDE: 157°01.4' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp °C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
1	166.0	34.93	19.31	0.087	0.034	0.08	6.54	7.2	2.1	3.96	14.4	18
3	20.3	34.70	25.33	0.123	0.002	1.35	6.13	25.0	4.3	3.95	50.0	4
5	10.5	34.71	25.37	0.125	0.003	0.04	7.66	34.3	5.5	3.86	68.6	171

STATION: 03 Kaumalapau Harbor DATE: 07:04 (GMT) 29 Jun 1994 CTD: CTD_6011_PRC
LATITUDE: 20°45.5' N LONGITUDE: 157°01.6' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp °C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
1	117.1	35.15	22.19	0.108	0.121	0.22	6.80	19.2	3.6	3.90	38.4	17
3	39.4	34.86	24.41	0.129	0.010	0.19	7.00	--	--	--	--	--
5	10.3	34.71	25.42	0.119	0.002	0.36	7.34	30.1	5.1	3.99	60.2	17

STATION: 03 Kaumalapau Harbor DATE: 10:01 (GMT) 29 Jun 1994 CTD: CTD_6012_PRC
LATITUDE: 20°45.7' N LONGITUDE: 157°01.8' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp °C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
1	98.0	35.09	22.93	0.110	0.089	0.07	6.98	19.2	3.8	4.08	38.4	55
3	49.3	34.91	24.41	0.124	0.004	0.49	6.64	28.2	5.0	4.10	56.4	12
5	10.4	34.72	25.35	0.115	0.002	0.35	6.65	25.8	4.5	4.10	51.6	15

STATION: 03 Kaumalapau Harbor DATE: 18:04 (GMT) 29 Jun 1994 CTD: CTD_6014_PRC
LATITUDE: 20°45.8' N LONGITUDE: 157°01.3' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp °C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
1	136.7	35.16	22.06	0.107	0.121	0.35	7.54	16.0	3.3	3.90	32.0	9
3	29.7	34.79	25.05	0.118	0.002	0.24	6.54	24.0	4.3	4.08	48.0	20
5	10.2	34.73	25.26	0.115	0.002	0.26	6.96	25.8	4.4	4.07	51.6	20

STATION: 03 Kaumalapau Harbor DATE: 22:42 (GMT) 29 Jun 1994 CTD: CTD_6015_PRC
LATITUDE: 20°45.8' N LONGITUDE: 157°01.3' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp ° C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
1	175.4	35.02	20.09	0.089	0.062	0.07	7.46	11.0	1.9	3.71	22.0	31
3	78.4	35.00	23.53	0.113	0.074	0.11	4.28	21.9	4.0	3.75	43.8	40
5	10.4	34.72	25.35	0.119	0.002	0.09	6.68	28.2	4.8	3.80	56.4	63

STATION: 04 2 mi S of Lanai Mooring DATE: 05:37 (GMT) 30 Jun 1994 CTD: CTD_6016_PRC
LATITUDE: 20°47.5' N LONGITUDE: 157°13.7' W INSTRUMENT: CTD

CTD Bot #	Press dbar	Salin PSU	Temp ° C	c490	F680	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM
2	1511.0	34.53	2.88	0.067	0.007	0.11	10.34	0.8	0.4	3.90	1.6	1
4	804.1	34.40	4.71	0.078	0.011	0.03	10.80	3.7	0.6	3.70	7.4	25
6	250.0	--	--	--	--	0.05	11.86	5.9	1.0	3.79	11.8	24

STATION: Lania Mooring Area (Cast 2 up) DATE: 27 Jun 1994
LATITUDE: 20°46.9' N LONGITUDE: 157°04.9' W INSTRUMENT: VLST

Press dbar	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM	Time (GMT)
5	0.19	11.04	27.1	4.2	7.62	54.2	29	--
120	0.41	16.05	17.1	2.9	7.93	34.2	8	--

STATION: Lania Mooring Area (Track 2) DATE: 20:42 (GMT) 28 Jun 1994
LATITUDE: 20°45.8' N LONGITUDE: 157°06.2' W INSTRUMENT: VLST

Press dbar	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM	Time (GMT)
7.5	0.18	16.02	21.0	3.7	7.76	42.0	23	20:42
7.1	0.26	15.0	24.5	4.4	8.02	49.0	19	21:34

STATION: Lania Mooring Area (Profile 2) DATE: 05:29 (GMT) 29 Jun 1994
LATITUDE: 20°45.5' N LONGITUDE: 157°01.8' W INSTRUMENT: VLST

Press dbar	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM	Time (GMT)
3	0.10	7.89	23.9	4.2	4.03	47.8	48	06:16
127	0.46	8.03	18.9	3.7	4.10	37.8	9	05:29

STATION: Lania Mooring Area (Profile 5 Upcast) DATE: 20:45 (GMT) 29 Jun 1994
LATITUDE: 20°46.1' N LONGITUDE: 157°01.3' W INSTRUMENT: VLST

Press dbar	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM	Time (GMT)
2	0.08	8.12	22.8	4.0	4.03	45.6	57	22:27
140	0.06	8.03	15.8	3.1	4.00	31.6	53	20:45

STATION: Lania Mooring Area (Profile 8 Upcast) DATE: 09:55 (GMT) 29 Jun 1994
LATITUDE: 20°48.7' N LONGITUDE: 157°11.7' W INSTRUMENT: VLST

Press dbar	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM	Time (GMT)
6	0.21	7.10	29.9	5.1	4.02	60.0	28	10:27
95	0.07	8.11	26.2	4.9	4.12	52.4	75	09:55

STATION: Lania Mooring Area (Profile 10) DATE: 22:23 (GMT) 30 Jun 1994
LATITUDE: 20°45.0' N LONGITUDE: 157°01.6' W INSTRUMENT: VLST

Press dbar	TSM mg/l	Vol l	POC ug/l	PON ug/l	Vol l	OM ug/l	%OM	Time (GMT)
3	0.91	7.48	28.6	4.4	3.88	57.2	6	--
29	0.43	7.70	28.1	5.0	3.96	56.2	13	--
60	0.55	7.45	26.2	4.5	3.73	52.4	9	--
90	0.25	8.00	24.8	4.5	3.69	49.6	20	22:23