

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 53.6 N	121 11.7 W	10/ 2/98	1849 UTC	32 m	02	1218 - 1807 PST	1219 PST	1807 PST	216.2 mg C/m ²

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	UPTAKE 2	(mg C/m ³) MEAN	DARK	
1	15.23	33.292	24.606	5.75	100.5	1.9	0.28	0.0	0.01	0.30	0.11	95.	A	3.5	3.9	3.7	0.03
11	15.14	33.293	24.627	5.75	100.3	1.9	0.28	0.0	0.01	0.33	0.12	37.		4.0	4.2	4.1	0.07
21	15.13	33.294	24.630	5.76	100.5	1.9	0.27	0.0	0.01	0.33	0.12						
32	15.13	33.292	24.629	5.77	100.6	1.9	0.27	0.0	0.01	0.34	0.13						
44	15.13	33.293	24.630	5.75	100.3	1.9	0.27	0.0	0.01	0.35	0.14	12.		2.8	2.9	2.8	0.03
55	15.13	33.293	24.630	5.74	100.1	1.9	0.27	0.0	0.01	0.49 U	-0.02 U						
65	15.13	33.292	24.630	5.76	100.5	1.9	0.27	0.0	0.01	0.36	0.12	4.4		1.0	1.1	1.0	0.03
76	15.10	33.296	24.640	5.74	100.0	1.9	0.27	0.0	0.01	0.13 B	0.10 B						
87	13.97	33.330	24.906	5.63	95.9	2.4	0.37	1.2	0.07	0.11	0.16	1.5		0.13	0.17	0.15	0.03
97	13.16	33.332	25.072	5.38	90.1	4.6	0.59	4.2	0.03	0.09	0.09						
110	11.78	33.464	25.441	4.68	76.2	9.7	1.00	10.7	0.04	0.08	0.10						
119	11.60	33.472	25.480	4.64	75.3	10.4	1.02	11.2	0.05	0.08	0.09	0.33		0.02	0.00	0.01	0.01

B) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 43.4 N	123 40.1 W	9/ 2/98	1850 UTC	32 m	02	1229 - 1817 PST	1229 PST	1818 PST	165.6 mg C/m ²

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	UPTAKE 2	(mg C/m ³) MEAN	DARK	
1	14.81	33.153	24.590	5.79	100.3	2.2	0.27	0.1	0.00	0.26	0.06	95.	A	1.3	1.3	1.3	0.03
10	14.80	33.153	24.593	5.79	100.2	2.1	0.27	0.1	0.00	0.27	0.07						
20	14.85	33.177	24.601	5.78	100.2	2.1	0.26	0.1	0.00	0.27	0.08	38.		2.8	2.9	2.8	0.03
31	14.97	33.197	24.590	5.79	100.6	2.1	0.25	0.0	0.00	0.25	0.07						
44	15.02	33.227	24.603	5.75	100.0	2.0	0.25	0.0	0.00	0.28	0.07	12.		2.4	2.3	2.3	0.02
54	15.12	33.256	24.604	5.74	100.1	2.0	0.25	0.0	0.00	0.29	0.09						
64	15.19	33.285	24.612	5.74	100.2	1.9	0.25	0.1	0.00	0.28	0.08	4.6		1.3	1.5	1.4	0.02
76	15.27	33.352	24.646	5.68	99.4	2.0	0.25	0.2	0.02	0.25	0.09						
86	14.48	33.502	24.932	5.58	96.2	3.0	0.31	1.1	0.11	0.22	0.15	1.6		0.44	0.41	0.42	0.02
97	12.58	33.291	25.154	5.39	89.2	5.4	0.63	5.1	0.03	0.15	0.14						
108	12.15	33.489	25.391	5.16	84.7	7.0	0.69	6.7	0.02	0.08	0.11						
119	11.76	33.520	25.488	4.99	81.3	8.2	0.80	8.5	0.02	0.07	0.08	0.33		0.01	0.01	0.01	0.01

RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 8.9 N	123 13.4 W	8/ 2/98	1828 UTC	27 m	02	1227 - 1816 PST	1227 PST	1818 PST	162.4 mg C/m ²

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	UPTAKE 2	(mg C/m ³) MEAN	DARK	
1	15.09	33.190	24.558	5.77	100.5	2.0	0.27	0.1	0.00	0.24	0.08	94.	A	2.2	2.4	2.3	0.04
18	15.10	33.196	24.561	5.76	100.3	2.0	0.27	0.0	0.00	0.25	0.08	36.		3.2	3.0	3.1	0.03
28	15.11	33.198	24.561	5.76	100.4	1.9	0.27	0.0	0.00	0.28	0.09						
37	15.12	33.205	24.564	5.77	100.6	1.9	0.27	0.0	0.00	0.28	0.10	12.		2.3	2.6	2.4	0.03
45	15.14	33.209	24.563	5.75	100.3	1.9	0.27	0.0	0.00	0.29	0.10						
56	15.16	33.221	24.569	5.75	100.3	1.9	0.27	0.0	0.00	0.42	0.06	4.1		1.2	1.0	1.1	0.02
63	14.98	33.330	24.692	5.64	98.1	2.3	0.31	0.5	0.05	0.30	0.21						
72	14.69	33.443	24.842	5.47	94.6	3.0	0.43	1.8	0.10	0.31	0.51	1.7		0.83	0.85	0.84	0.03
82	13.54	33.407	25.054	5.21	88.0	5.1	0.63	5.0	0.04	0.19	0.37						
94	12.68	33.402	25.221	5.03	83.5	7.0	0.78	7.3	0.03	0.16	0.29						
102	12.17	33.410	25.325	4.94	81.1	7.7	0.86	8.4	0.03	0.16	0.29	0.30		0.04	0.03	0.04	0.02

RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.7 N	119 24.7 W	5/ 2/98	1905 UTC	3 m	04	1210 - 1759 PST	1212 PST	1759 PST	40.7 mg C/m ²

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	UPTAKE 2	(mg C/m ³) MEAN	DARK	
1	16.72	33.740	24.614	5.41	97.7	3.2	0.49	0.8	0.51	0.58	0.28	60.	A	13.6	13.4	13.5	0.13
2	16.73	33.734	24.607	5.41	97.7	3.2	0.49	0.8	0.51	0.59	0.27	36.		9.6	10.1	9.9	0.08
3	16.71	33.734	24.612	5.42	97.8	3.2	0.49	0.8	0.51	0.60	0.27	22.		3.6	3.9	3.8	0.07

6	16.71	33.734	24.612	5.42	97.8	3.2	0.50	0.8	0.51	0.60	0.28	4.6	1.1	1.1	1.1	0.06
7	16.71	33.735	24.613	5.41	97.6	3.2	0.50	0.8	0.51	0.61	0.28	2.8	0.27	0.29	0.28	0.05
11	16.71	33.735	24.613	5.41	97.6	3.1	0.49	0.8	0.51	0.56	0.28	0.36	0.01	0.00	0.01	0.05

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 35.7 N	122 49.0 W	2 / 2 / 98	1846 UTC	34 m	01	1225 - 1805 PST	1225 PST	1807 PST	115.7 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAE0	LIGHT	UPTAKE	(mg C/m3)	MEAN	DARK
m	DEG C	THETA	mL/L	PCT	uM/L	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	PCT	1	2		
1	16.03	33.459	24.557	5.69	101.2	2.0	0.27	0.1	0.00	0.13	0.02	96.	A	1.5	1.5	0.04
12	16.03	33.459	24.557	5.65	100.4	2.0	0.26	0.1	0.00	0.13	0.02					
22	16.03	33.458	24.557	5.71	101.5	2.0	0.26	0.1	0.00	0.12	0.03	37.	1.3	1.3	1.3	0.07
36	15.82	33.448	24.597	5.72	101.2	1.9	0.27	0.1	0.00	0.16	0.04					
45	15.55	33.436	24.648	5.76	101.4	1.9	0.28	0.1	0.00	0.25	0.09	13.	1.4	1.4	1.4	0.08
58	15.14	33.432	24.735	5.74	100.2	2.1	0.30	0.1	0.01	0.53	0.31					
69	14.52	33.434	24.871	5.51	95.0	3.1	0.41	1.4	0.10	0.50	B	0.40	B	4.4	1.4	0.04
81	13.65	33.418	25.040	5.27	89.2	5.0	0.60	4.5	0.05	0.30	0.27					
92	12.48	33.419	25.273	4.84	80.0	8.4	0.90	9.1	0.03	0.20	0.20	1.6	0.20	0.22	0.21	0.02
103	11.94	33.476	25.420	4.74	77.5	9.7	0.97	10.3	0.03	0.11	0.11					
118	10.75	33.544	25.689	4.21	67.1	14.9	1.32	16.0	0.02	0.08	0.09					
130	10.31	33.600	25.809	3.97	62.7	17.3	1.44	18.1	0.02	0.05	0.05	0.28	0.00	0.00	0.00	0.02

A) INCUBATION LIGHT INTENSITIES WERE 95, 36, 12, 4.4, 1.6, 0.31 PERCENT RESPECTIVELY.

B) CHLOROPHYLL AND PHAEOPIGMENT SAMPLES FROM 69 TO 118 METERS WERE NUMBERED AND ANALYZED IN REVERSE ORDER.
REORDERED VALUES HERE ARE SUPPORTED BY ESTIMATED VALUES FROM CTD FLUOROMETER PROFILE.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 19.6 N	119 39.7 W	30 / 1 / 98	1914 UTC	27 m	02	1211 - 1755 PST	1212 PST	1755 PST	376.3 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAE0	LIGHT	UPTAKE	(mg C/m3)	MEAN	DARK	
m	DEG C	THETA	mL/L	PCT	uM/L	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	PCT	1	2			
2	16.16	33.699	24.712	5.58	99.6	2.5	0.37	0.6	0.15	0.68	0.24	89.	A	12.8	13.4	13.1	0.05
18	16.07	33.699	24.733	5.58	99.4	2.4	0.37	0.6	0.15	0.76	0.30	36.	11.4	11.4	11.4	0.05	
29	16.04	33.698	24.739	5.57	99.2	2.4	0.37	0.6	0.15	0.75	0.32						
36	15.59	33.663	24.813	5.36	94.6	3.2	0.45	1.7	0.23	0.33	0.23	13.	2.5	2.7	2.6	0.03	
45	14.88	33.607	24.926	5.00	86.9	5.2	0.63	4.4	0.20	0.17	0.15						
55	14.64	33.619	24.987	4.93	85.3	5.8	0.68	5.0	0.19	0.16	0.14	4.4	0.38	0.35	0.36	0.05	

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.8 N	121 1.9 W	31 / 1 / 98	1838 UTC	49 m	01	1218 - 1806 PST	1217 PST	1806 PST	194.7 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAE0	LIGHT	UPTAKE	(mg C/m3)	MEAN	DARK	
m	DEG C	THETA	mL/L	PCT	uM/L	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	PCT	1	2			
2	16.07	33.308	24.432	5.66	100.6	2.0	0.24	0.1	0.00	0.13	0.05	94.	A	1.2	1.2	1.2	0.05
18	16.06	33.463	24.553	5.69	101.2	2.0	0.24	0.1	0.00	0.15	0.04						
33	16.06	33.472	24.561	5.67	100.9	1.9	0.24	0.1	0.00	0.17	0.05	36.	1.8	1.8	1.8	0.06	
44	16.05	33.472	24.564	5.67	100.8	1.9	0.24	0.1	0.00	0.16	0.04						
55	16.03	33.465	24.563	5.68	101.0	1.9	0.24	0.1	0.00	0.18	0.05						
66	15.89	33.468	24.597	5.69	100.9	1.9	0.24	0.1	0.00	0.22	0.06	13.	1.8	1.7	1.7	0.04	
77	15.82	33.467	24.613	5.72	101.2	1.9	0.25	0.1	0.00	0.31	0.11						
89	15.53	33.476	24.685	5.66	99.6	1.9	0.28	0.1	0.05	0.32	0.18						
100	15.50	33.480	24.695	5.66	99.5	2.0	0.28	0.2	0.05	0.31	0.18	4.4	1.2	1.7	1.5	0.04	
110	14.15	33.394	24.919	5.49	93.9	3.4	0.46	2.4	0.07	0.21	0.19						
122	12.59	33.391	25.231	5.10	84.5	6.7	0.75	6.9	0.02	0.14	0.14						
132	12.25	33.400	25.303	5.00	82.2	7.5	0.82	8.2	0.02	0.11	0.14	1.6	0.22	0.23	0.22	0.01	
145	10.93	33.488	25.614	4.58	73.2	11.8	1.11	12.8	0.01	0.06	0.08						
157	10.24	33.589	25.813	4.06	64.0	15.8	1.35	16.4	0.01	0.04	0.07						
169	9.67	33.683	25.982	3.79	59.0	21.2	1.59	20.7	0.01	0.01	0.04						
185	9.34	33.775	26.108	3.48	53.8	24.3	1.72	22.5	0.01	0.00	0.03	0.30	0.00	0.01	0.01	0.01	

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 19.5 N	123 44.6 W	1 / 2 / 98	1856 UTC	50 m	01	1229 - 1817 PST	1229 PST	1816 PST	139.5 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN mL/L	OXY PCT	SIO3 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/L	PHAE0 ug/L	LIGHT PCT	1	UPTAKE 2	(mg C/m3) MEAN	DARK	
2	16.43	33.474	24.477	5.65	101.2	2.1	0.23	0.1	0.00	0.11	0.03	94.	A	1.4	1.6	1.5	0.05
18	16.42	33.474	24.480	5.64	101.0	2.1	0.23	0.1	0.00	0.12	0.02	37.		1.4	1.4	1.4	0.05
32	16.39	33.475	24.488	5.64	101.0	2.1	0.24	0.1	0.00	0.12	0.03						
44	16.31	33.462	24.497	5.65	101.0	2.1	0.23	0.1	0.00	0.13	0.03						
57	16.29	33.460	24.500	5.66	101.1	2.1	0.23	0.1	0.00	0.13	0.04						
68	16.22	33.445	24.505	5.66	101.0	2.1	0.23	0.1	0.00	0.15	0.04	12.		0.88	0.92	0.90	0.04
79	16.05	33.431	24.533	5.67	100.8	2.0	0.23	0.1	0.00	0.19	0.06						
90	16.03	33.435	24.541	5.68	100.9	2.0	0.23	0.1	0.00	0.20	0.08						
102	16.02	33.470	24.571	5.66	100.6	2.0	0.23	0.1	0.00	0.25	0.13	4.4		0.74	0.82	0.78	0.03
112	15.90	33.488	24.612	5.63	99.8	2.0	0.24	0.1	0.04	0.30	0.21						
122	15.38	33.495	24.734	5.56	97.6	2.4	0.30	0.6	0.13	0.26	0.20						
136	12.39	33.400	25.276	5.23	86.2	5.6	0.67	5.6	0.02	0.14	0.15	1.5		0.24	0.22	0.23	0.01
148	10.92	33.466	25.599	4.68	74.8	11.5	1.08	12.5	0.02	0.05	0.08						
160	10.31	33.539	25.762	4.34	68.5	15.6	1.31	16.1	0.02	0.04	0.05						
174	9.71	33.618	25.925	4.01	62.5	19.2	1.49	19.2	0.02	0.02	0.03						
187	9.30	33.728	26.078	3.58	55.3	23.7	1.70	22.5	0.02	0.00	0.03	0.32		0.00	-0.01	0.00	0.01

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 28.5 N	117 45.5 W	29/ 1/98	1817 UTC	13 m	03	1204 - 1747 PST	1204 PST	1748 PST	335.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN mL/L	OXY PCT	SIO3 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/L	PHAE0 ug/L	LIGHT PCT	1	UPTAKE 2	(mg C/m3) MEAN	DARK	
2	17.54	33.940	24.573	5.45	100.1	2.7	0.38	0.4	0.22	1.55	0.63	79.	A	18.0	18.0	0.12	
9	17.55	33.943	24.573	5.44	99.9	2.7	0.37	0.4	0.22	1.54	0.63	35.		19.8	19.5	19.6	0.17
18	17.57	33.957	24.580	5.44	100.0	2.8	0.37	0.3	0.22	1.23	0.51	12.		7.1	7.1	7.1	0.12
27	17.57	33.965	24.586	5.40	99.2	2.8	0.36	0.4	0.25	0.92	0.42	4.1		1.5	1.3	1.4	0.08
35	17.36	33.931	24.611	5.39	98.6	2.8	0.36	0.3	0.18	0.43	0.32	1.6		0.29	0.33	0.31	0.04
42	17.22	33.906	24.625	5.13	93.6	3.8	0.48	1.5	0.33	0.28	0.22						
49	17.24	33.919	24.631	5.06	92.4	4.1	0.50	1.8	0.43	0.27	0.24	0.31		0.01	0.00	0.00	0.05

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.0 N	119 28.9 W	28/ 1/98	1833 UTC	37 m	02	1213 - 1750 PST	1211 PST	1751 PST	181.7 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN mL/L	OXY PCT	SIO3 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/L	PHAE0 ug/L	LIGHT PCT	1	UPTAKE 2	(mg C/m3) MEAN	DARK	
1	16.15	33.515	24.572	5.64	100.5	1.7	0.26	0.0	0.00	0.22	0.08	96.	A	1.1	1.5	1.3	0.04
13	16.14	33.514	24.574	5.64	100.5	1.7	0.26	0.0	0.00	0.24	0.08						
25	16.14	33.514	24.575	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.08	35.		3.1	3.0	3.0	0.03
38	16.14	33.514	24.575	5.63	100.3	1.7	0.26	0.0	0.00	0.23	0.09						
51	16.14	33.514	24.576	5.64	100.5	1.7	0.26	0.0	0.00	0.26	0.10	12.		2.0	2.3	2.2	0.03
62	16.14	33.514	24.576	5.62	100.1	1.7	0.26	0.0	0.00	0.24	0.08						
76	16.14	33.514	24.577	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.09	4.3		1.1	1.0	1.0	0.03
82	16.14	33.514	24.577	5.63	100.3	1.7	0.26	0.0	0.00	0.24	0.09						
90	15.96	33.508	24.613	5.59	99.2	1.8	0.29	0.2	0.04	0.22	0.10						
99	15.53	33.474	24.683	5.57	98.0	2.2	0.33	0.6	0.08	0.19	0.14	1.6		0.29	0.31	0.30	0.02
109	13.61	33.370	25.012	5.39	91.2	4.0	0.53	3.2	0.03	0.16	0.17						
120	12.88	33.378	25.164	5.19	86.5	5.8	0.68	5.5	0.02	0.12	0.15						
129	12.37	33.424	25.299	4.92	81.1	7.5	0.83	8.0	0.01	0.08	0.10						
138	11.83	33.502	25.461	4.51	73.5	10.9	1.06	11.1	0.01	0.05	0.08	0.33		0.03	0.01	0.02	0.01

A) INCUBATION LIGHT INTENSITIES WERE 95, 36, 12, 4.4, 1.6, 0.31 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 24.9 N	121 59.0 W	27/ 1/98	1916 UTC	34 m	02	1221 - 1758 PST	1221 PST	1759 PST	205.8 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN mL/L	OXY PCT	SIO3 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/L	PHAE0 ug/L	LIGHT PCT	1	UPTAKE 2	(mg C/m3) MEAN	DARK	
2	15.66	33.465	24.644	5.97	105.4	2.2	0.28	0.0	0.00	0.17	0.04	91.	A	2.4	2.5	2.4	0.08
12	15.60	33.464	24.657	5.77	101.7	2.2	0.28	0.0	0.00	0.19	0.04						
23	15.53	33.459	24.669	5.79	101.9	2.1	0.28	0.0	0.00	0.20	0.06	35.		2.7	2.7	2.7	0.11
35	15.49	33.458	24.678	5.77	101.5	2.1	0.28	0.0	0.00	0.26	0.08						
48	15.42	33.460	24.695	5.78	101.5	2.0	0.28	0.0	0.00	0.35	0.11	11.		2.6	2.9	2.8	0.06
58	15.45	33.478	24.703	5.72	100.5	2.1	0.30	0.1	0.02	0.50	0.25						
68	15.22	33.474	24.751	5.64	98.6	2.4	0.33	0.4	0.12	0.44	0.26	4.6		1.8	1.7	1.8	0.04
79	14.58	33.409	24.839	5.55	95.8	3.0	0.41	1.4	0.13	0.36	0.24						
92	13.72	33.394	25.007	5.29	89.7	4.8	0.58	4.0	0.03	0.18	0.16	1.6		0.33	0.42	0.37	0.02
104	11.76	33.442	25.427	4.78	77.8	9.5	0.99	10.2	0.02	0.08	0.09						
115	11.18	33.506	25.583	4.57	73.5	11.7	1.10	12.5	0.01	0.06	0.07						

128	10.54	33.606	25.774	4.14	65.7	16.2	1.36	16.6	0.01	0.02	0.04	0.31	0.00	0.00	0.00	0.02
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RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 93 26.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.2 N	117 18.5 W	23/ 1/98	1920 UTC	27 m	02	1201 - 1742 PST	1201 PST	1742 PST	378.9 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	mL/l	PCT	uM/l	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	17.95	34.049	24.557	5.30	98.2	2.1	0.40	0.5	0.32	0.80	0.26	94. A	12.1	12.4	12.3	0.05
11	17.85	34.047	24.580	5.30	98.0	2.1	0.40	0.5	0.32	0.68	0.29					
18	17.85	34.048	24.581	5.29	97.8	2.1	0.40	0.5	0.32	0.70	0.31	36.	9.3	9.3	9.3	0.06
28	17.84	34.049	24.585	5.28	97.6	2.1	0.41	0.4	0.33	0.70	0.31					
37	17.83	34.047	24.586	5.28	97.6	2.1	0.41	0.5	0.34	0.71	0.35	12.	4.6	5.0	4.8	0.05
46	17.83	34.047	24.587	5.27	97.4	2.1	0.41	0.6	0.33	0.63	0.31					
56	16.94	33.897	24.685	4.65	84.4	4.5	0.66	4.2	0.20	0.19	0.16	4.1	0.36	0.36	0.36	0.02 B

B) DARK VALUE ESTIMATED, MEASURED VALUE LOST.

RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.7 N	118 53.8 W	24/ 1/98	1751 UTC	18 m	02	1208 - 1747 PST	1208 PST	1749 PST	115.5 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	mL/l	PCT	uM/l	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	16.30	33.598	24.602	5.62	100.5	1.8	0.29	0.1	0.00	0.39	0.14	84. A	3.3	3.1	3.2	0.05
13	16.26	33.598	24.612	5.62	100.4	1.7	0.29	0.1	0.00	0.37	0.15	33.	4.0	4.0	4.0	0.10
25	16.26	33.598	24.612	5.62	100.4	1.7	0.29	0.1	0.00	0.37	0.15	12.	2.3	2.5	2.4	0.05
36	16.26	33.598	24.612	5.63	100.6	1.7	0.30	0.1	0.00	0.37	0.16	4.6	0.85	0.88	0.86	0.06
42	16.26	33.598	24.613	5.62	100.4	1.7	0.30	0.1	0.00	0.37	0.16					
48	16.24	33.620	24.634	5.60	100.1	1.8	0.30	0.2	0.01	0.50	0.22	1.7	0.50	0.46	0.48	0.03
58	16.14	33.647	24.678	5.61	100.0	1.9	0.32	0.2	0.01	0.63	0.26					
68	15.94	33.592	24.682	5.62	99.8	1.9	0.32	0.2	0.02	0.43	0.23	0.30	0.04	0.02	0.03	0.02

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 11.1 N	120 56.9 W	25/ 1/98	1834 UTC	30 m	01	1215 - 1803 PST	1216 PST	1805 PST	76.3 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	mL/l	PCT	uM/l	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	16.69	33.567	24.488	5.59	100.7	0.6	0.23	0.1	0.00	0.19	0.05	90. A	1.4	1.4	1.4	0.02
10	16.68	33.569	24.492	5.61	101.1	0.6	0.24	0.0	0.00	0.17	0.05					
20	16.68	33.568	24.492	5.60	100.9	0.6	0.24	0.0	0.00	0.02	0.21	36.	1.5	1.5	1.5	0.03
30	16.68	33.565	24.490	5.59	100.7	0.6	0.24	0.0	0.00	0.19	0.03					
41	16.68	33.558	24.502	5.60	100.9	0.6	0.24	0.0	0.00	0.18	0.04	12.	0.89	0.84	0.86	0.03
51	16.68	33.565	24.491	5.60	100.9	0.6	0.23	0.0	0.00	0.18	0.04					
60	16.65	33.560	24.494	5.60	100.8	0.6	0.24	0.0	0.00	0.19	0.07	4.6	0.40	0.59	0.50	0.02
71	16.52	33.540	24.509	5.60	100.5	0.6	0.24	0.0	0.00	0.22	0.07					
81	16.43	33.517	24.513	5.62	100.7	0.6	0.24	0.0	0.00	0.20	0.06	1.6	0.15	0.14	0.15	0.01
92	16.01	33.463	24.567	5.63	100.0	0.8	0.26	0.0	0.03	0.28	0.13					
101	15.20	33.439	24.729	5.54	96.8	2.7	0.36	0.8	0.12	0.28	0.21					
113	14.22	33.440	24.940	5.45	93.4	3.5	0.45	2.0	0.06	0.20	0.25	0.31	0.03	0.02	0.03	0.01

RV DAVID STARR JORDAN

CALCOFI CRUISE 9802

STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 50.9 N	123 35.9 W	26/ 1/98	1844 UTC	44 m	01	1227 - 1811 PST	1227 PST	1812 PST	91.7 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	mL/l	PCT	uM/l	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK

3	17.86	33.720	24.327	5.48	101.1	1.6	0.22	0.1	0.00	0.09	0.02	90.	A	1.3	0.84	1.1	0.05	B
17	17.78	33.717	24.345	5.49	101.1	1.6	0.23	0.1	0.00	0.10	0.02							
29	17.78	33.718	24.346	5.49	101.1	1.6	0.23	0.1	0.00	0.08	0.03	36.		0.98	0.98	0.98	0.05	
44	17.66	33.704	24.365	5.49	100.9	1.6	0.23	0.2	0.00	0.11	0.03							
61	17.65	33.688	24.356	5.50	101.0	1.6	0.23	0.2	0.00	0.12	0.04	12.		0.65	0.66	0.65	0.05	
69	17.66	33.695	24.359	5.47	100.5	1.6	0.23	0.2	0.00	0.13	0.04							
78	17.66	33.694	24.359	5.49	100.9	1.7	0.23	0.2	0.00	0.16	0.05							
89	17.63	33.684	24.359	5.50	101.0	1.8	0.23	0.2	0.00	0.18	0.05	4.5		0.44	0.42	0.43	0.01	
100	17.59	33.681	24.367	5.48	100.5	1.8	0.23	0.2	0.00	0.18	0.07							
110	16.74	33.522	24.446	5.57	100.4	1.8	0.23	0.2	0.01	0.26	0.17							
118	15.97	33.476	24.587	5.60	99.4	1.9	0.25	0.2	0.07	0.25	0.19	1.6		0.38	0.34	0.36	0.01	
130	14.52	33.429	24.869	5.58	96.2	2.7	0.35	1.2	0.10	0.20	0.19							
141	13.82	33.412	25.002	5.42	92.1	3.9	0.49	3.0	0.02	0.15	0.17							
153	12.86	33.399	25.185	5.20	86.6	5.4	0.66	5.6	0.01	0.11	0.14							
165	11.66	33.468	25.467	4.82	78.3	9.1	0.94	10.1	0.00	0.05	0.07	0.32		0.02	0.00	0.01	0.01	

A) INCUBATION LIGHT INTENSITIES WERE 95, 36, 12, 4.4, 1.6, 0.31 PERCENT RESPECTIVELY.

B) DARK VALUE ESTIMATED, MEASURED VALUE LOST.