

Cruise Report S-214

Scientific data collected aboard
SSV Robert C. Seamans

Puerto Vallarta, Mexico – Nuku Hiva, Marquesas –
Papeete, Tahiti
24 November 2007 – 3 January 2008



Sea Education Association
Woods Hole, Massachusetts

Citation:

Lavender, K., 2008. Final Report for S.E.A. Cruise S-214. Sea Education Association,
P.O. Box 6, Woods Hole, MA 02543, USA.

To obtain unpublished data, contact the Chief Scientist or the SEA Data Archivist:

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Ship's Company

SSV *Robert C. Seamans*, Cruise S-214

Scientific Staff

Kara Lavender	Chief Scientist
Skye Morét	First Assistant Scientist
Carolyn Lipke	Second Assistant Scientist
Patrick Erbland	Third Assistant Scientist

Nautical Staff

Elliot Rappaport	Captain
Jeremy Law	Chief Mate
Chris Duda	Second Mate
Nate Darling	Third Mate
Dave Reynolds	Engineer
Carolyn Moss	Assistant Engineer
Jonathan Holmes	Steward

Students

Robin Abbey-Lee	Oberlin College
Julia Beaty	Smith College
Sierra Blakely	Evergreen State College
Tyson Bottenus	University of Rhode Island
Anne Brett	Harvard University
Julia Brown	Carleton College
Amy Comer	Hawaii Pacific University
Kelly Crawford	Northeastern University
Bartholomew DiFiore	Middlebury College
Bethanie Edwards	Hendrix College
Luke Erickson	Hendrix College
Michael Gil	University of Texas, Austin
Trent Hodges	University of San Diego
Jenan Kharbush	Ripon College
Wendy Kordesch	University of California, Santa Cruz
Benjamin Kraemer	Lawrence University
Tsveta Volen Krumova	Brown University
James O'Hare	Oberlin College
James Onstad	Harvard University
Sarah Powell	Hamilton College
Catherine Schrankel	George Washington University
Anna Simeon	University of California, San Diego
Jonathan Tucker	Amherst College
Jessica Wemer	Westchester Community College

Data Description

This cruise report provides a record of data collected aboard the SSV *Robert C. Seamans* during cruise S-214 (U.S. State Department Cruise 2007-056 Leg 1), which departed from Puerto Vallarta, Mexico on 24 November 2007 and transited through the eastern tropical Pacific Ocean to Nuku Hiva, Marquesas, with a final arrival in Papeete, Tahiti on 3 January 2008 (Figure 1).

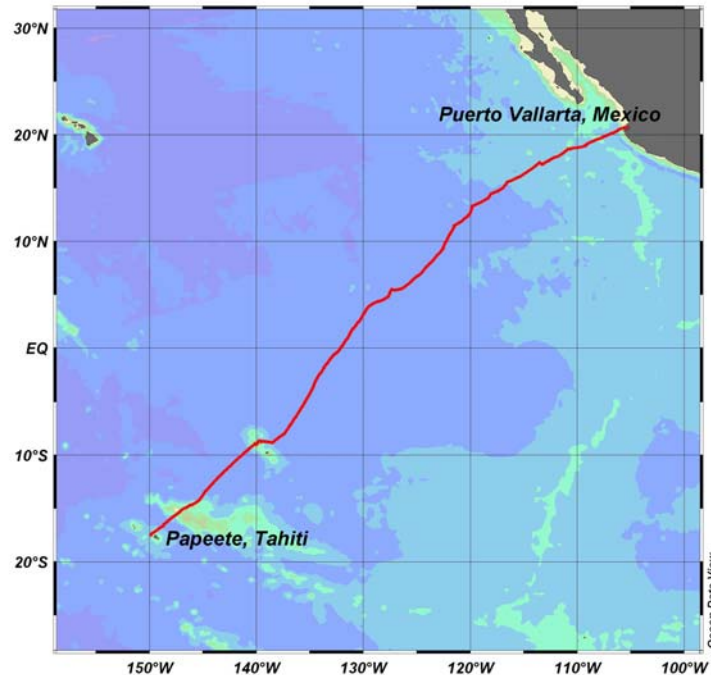


Figure 1: S-214 cruise track plotted from hourly positions.

During the six-week voyage we collected samples or data at 103 discrete oceanographic stations (Table 1), surface samples at 79 locations (Table 2), and we continuously sampled water depth and sub-bottom profiles (CHIRP system), upper ocean currents (Acoustic Doppler Current Profiler, or ADCP), and sea surface temperature, salinity and *in vivo* fluorescence (seawater flow-through system). This report summarizes sea surface biological and chemical characteristics (Tables 2 and 3), and biological and chemical properties with depth (Tables 4 and 5). Lengthy CTD, CHIRP, ADCP, and flow-through data are not reported here. All unpublished data can be made available by arrangement with the Sea Education Association (SEA) data archivist (contact information, p. 2). The information in this report is not intended to represent final

interpretation of the data and should not be excerpted or cited without written permission from SEA.

Cruise S-214 is the sea-going component of the Oceans and Climate SEA Semester program. As part of this educational program, students conduct oceanographic research at sea for studies they have designed prior to the cruise. Student projects span the physical, chemical, and biological subdisciplines of oceanography, with a focus on the ocean carbon cycle (Table 6). Student research efforts culminate in a written paper and an oral presentation to the ship's company. The student research papers from cruise S-214 are available upon request from SEA.

Kara Lavender
Chief Scientist, S-214

Table 1: Oceanographic sampling stations.

Station Number	Date	Local Time [#]	Latitude	Longitude	Cast Depth (m)	General Locale
Bathypotometer						
S214-001-BP	25-Nov-07	2201	20°26.9' N	106°08.5' W	107	Coastal Mexico
S214-006-BP	26-Nov-07	2059	19°44.1' N	107°37.7' W	103	N Pac. Subtropical Gyre
S214-010-BP	27-Nov-07	2014	19°02.1' N	109°12.0' W	100	N Pac. Subtropical Gyre
S214-017-BP	29-Nov-07	2127	17°32.3' N	112°41.8' W	101	N Pac. Subtropical Gyre
S214-021-BP	30-Nov-07	2006	17°06.2' N	113°50.5' W	113	N Pac. Subtropical Gyre
S214-028-BP	2-Dec-07	2113	14°45.7' N	117°19.0' W	99	N Pac. Subtropical Gyre
S214-035-BP	4-Dec-07	2100	12°23.4' N	120°13.7' W	100	North Equatorial Current
S214-042-BP	6-Dec-07	2019	10°12.9' N	122°08.3' W	106	North Equatorial Current
S214-049-BP	8-Dec-07	2013	7°33.6' N	124°07.7' W	106	N Equatorial Countercurrent
S214-056-BP	10-Dec-07	2118	5°28.7' N	127°19.3' W	107	Equatorial Region
S214-064-BP	12-Dec-07	2114	3°11.3' N	129°57.4' W	104	Equatorial Region
S214-068-BP	13-Dec-07	2017	1°47.7' N	130°56.1' W	97	Equatorial Cold Tongue
S214-072-BP	14-Dec-07	1959	0°09.3' N	131°59.1' W	98	Equatorial Cold Tongue
S214-079-BP	16-Dec-07	2009	2°17.3' S	133°57.8' W	97	Equatorial Cold Tongue
S214-087-BP	18-Dec-07	2016	5°25.5' S	135°40.7' W	100	South Equatorial Current
S214-094-BP	20-Dec-07	2012	8°21.7' S	137°55.6' W	107	South Equatorial Current
S214-097-BP	27-Dec-07	2018	10°27.9' S	141°52.2' W	102	SW of Marquesas
S214-101-BP	29-Dec-07	2113	13°40.4' S	144°57.1' W	102	N of Tuamotus
CTD						
S214-003-HC	26-Nov-07	0913	20°05.5' N	106°51.1' W	519	Coastal Mexico
S214-006-HC	26-Nov-07	2011	19°44.6' N	107°37.7' W	510	N Pac. Subtropical Gyre
S214-008-HC	27-Nov-07	0913	19°18.9' N	108°42.5' W	645	N Pac. Subtropical Gyre
S214-010-HC	27-Nov-07	2048	19°01.5' N	109°12.1' W	518	N Pac. Subtropical Gyre
S214-012-HC	28-Nov-07	0913	18°40.0' N	110°42.1' W	515	SE of Isla Socorro
S214-012-CTD	28-Nov-07	0922	18°39.7' N	110°42.0' W	515	SE of Isla Socorro
S214-014-HC	28-Nov-07	2025	18°17.7' N	111°16.6' W	519	N Pac. Subtropical Gyre
S214-014-CTD	28-Nov-07	2035	18°17.7' N	111°16.6' W	506	N Pac. Subtropical Gyre
S214-016-HC	29-Nov-07	1031	17°54.1' N	112°01.9' W	542	N Pac. Subtropical Gyre
S214-019-HC	30-Nov-07	0925	17°13.8' N	113°18.6' W	632	N Pac. Subtropical Gyre
S214-021-HC	30-Nov-07	2043	17°05.8' N	113°50.6' W	508	N Pac. Subtropical Gyre
S214-023-HC	1-Dec-07	0912	16°14.4' N	115°04.9' W	527	N Pac. Subtropical Gyre
S214-023-CTD	1-Dec-07	0926	16°14.4' N	115°04.9' W	515	N Pac. Subtropical Gyre
S214-024-HC	1-Dec-07	2013	15°55.8' N	115°40.8' W	525	N Pac. Subtropical Gyre
S214-026-HC	2-Dec-07	0900	15°32.0' N	116°33.8' W	512	N Pac. Subtropical Gyre
S214-030-HC	3-Dec-07	0918	14°12.9' N	118°12.6' W	613	N Pac. Subtropical Gyre
S214-031-HC	3-Dec-07	2023	13°39.7' N	118°59.2' W	502	North Equatorial Current
S214-033-HC	4-Dec-07	0910	13°08.1' N	119°51.4' W	548	North Equatorial Current
S214-037-HC	5-Dec-07	0914	11°48.3' N	120°54.5' W	544	North Equatorial Current
S214-037-CTD	5-Dec-07	0925	11°48.2' N	120°54.6' W	532	North Equatorial Current
S214-038-HC	5-Dec-07	2003	11°27.5' N	121°30.7' W	505	North Equatorial Current
S214-040-HC	6-Dec-07	0903	10°48.4' N	121°48.7' W	530	North Equatorial Current
S214-042-HC	6-Dec-07	2043	10°12.5' N	122°08.1' W	533	N Equatorial Countercurrent
S214-044-HC	7-Dec-07	0909	9°22.9' N	122°32.0' W	535	N Equatorial Countercurrent

[#] Local time is +6 GMT until 2300 27-Nov-07, +7 GMT until 2300 5-Dec-07, +8 GMT until 2300 13-Dec-07, +9 GMT until 1000 22-Dec-07, +9.5 GMT until 1400 27-Dec-07, and +10 GMT afterwards.

Table 1 continued

Station Number	Date	Local Time [#]	Latitude	Longitude	Cast Depth (m)	General Locale
CTD continued						
S214-047-HC	8-Dec-07	0919	8°02.2' N	123°39.0' W	513	N Equatorial Countercurrent
S214-049-HC	8-Dec-07	2048	7°33.8' N	124°07.5' W	505	N Equatorial Countercurrent
S214-051-HC	9-Dec-07	0904	6°45.5' N	124°52.1' W	545	N Equatorial Countercurrent
S214-051-CTD	9-Dec-07	0915	6°45.5' N	124°52.0' W	531	N Equatorial Countercurrent
S214-052-HC	9-Dec-07	2006	6°15.9' N	125°29.5' W	519	N Equatorial Countercurrent
S214-054-HC	10-Dec-07	0915	5°30.0' N	126°32.8' W	493	Equatorial Region
S214-056-CTD	10-Dec-07	2039	5°27.8' N	127°18.8' W	530	Equatorial Region
S214-058-HC	11-Dec-07	0917	4°40.0' N	127°51.2' W	561	Equatorial Region
S214-060-HC	11-Dec-07	2021	4°22.3' N	128°33.5' W	531	Equatorial Region
S214-062-HC	12-Dec-07	0903	3°56.9' N	129°22.3' W	582	Equatorial Region
S214-066-HC	13-Dec-07	0905	2°26.2' N	130°24.9' W	574	Equatorial Cold Tongue
S214-068-HC	13-Dec-07	2053	1°47.3' N	130°57.2' W	479	Equatorial Cold Tongue
S214-070-HC	14-Dec-07	0901	0°46.5' N	131°33.3' W	526	Equatorial Cold Tongue
S214-070-CTD	14-Dec-07	0910	0°46.4' N	131°33.6' W	515	Equatorial Cold Tongue
S214-072-HC	14-Dec-07	2027	0°09.2' N	131°59.8' W	620	Equatorial Cold Tongue
S214-074-HC	15-Dec-07	0939	0°26.7' S	132°27.2' W	581	Equatorial Cold Tongue
S214-076-HC	15-Dec-07	2013	0°46.4' S	132°50.3' W	506	Equatorial Cold Tongue
S214-078-HC	16-Dec-07	0912	1°28.5' S	133°23.9' W	510	Equatorial Cold Tongue
S214-079-HC	16-Dec-07	2042	2°17.7' S	133°58.9' W	555	Equatorial Cold Tongue
S214-081-HC	17-Dec-07	0910	3°03.0' S	134°27.2' W	810	Equatorial Cold Tongue
S214-083-HC	17-Dec-07	2013	3°42.8' S	134°43.0' W	676	Equatorial Cold Tongue
S214-085-HC	18-Dec-07	0907	4°38.8' S	135°13.4' W	659	South Equatorial Current
S214-085-CTD	18-Dec-07	0916	4°39.0' S	135°13.5' W	648	South Equatorial Current
S214-087-HC	18-Dec-07	2043	5°26.1' S	135°41.5' W	589	South Equatorial Current
S214-089-HC	19-Dec-07	0912	6°26.7' S	136°18.8' W	569	South Equatorial Current
S214-091-HC	19-Dec-07	2019	7°10.6' S	136°49.5' W	623	South Equatorial Current
S214-093-HC	20-Dec-07	0813	7°59.9' S	137°22.8' W	562	South Equatorial Current
S214-093-CTD	20-Dec-07	0821	7°59.9' S	137°22.8' W	531	South Equatorial Current
S214-096-HC	27-Dec-07	0905	9°45.1' S	141°05.0' W	573	SW of Marquesas
S214-098-HC	28-Dec-07	0915	11°23.3' S	142°50.8' W	544	SW of Marquesas
S214-100-HC	29-Dec-07	0906	12°58.5' S	144°22.4' W	549	N of Tuamotus
S214-102-HC	30-Dec-07	0909	14°26.7' S	145°39.2' W	541	N of Tuamotus
Hydrocast						
S214-003-HC	26-Nov-07	0913	20°05.5' N	106°51.1' W	519	Coastal Mexico
S214-006-HC	26-Nov-07	2011	19°44.6' N	107°37.7' W	510	N Pac. Subtropical Gyre
S214-008-HC	27-Nov-07	0913	19°18.9' N	108°42.5' W	645	N Pac. Subtropical Gyre
S214-010-HC	27-Nov-07	2048	19°01.5' N	109°12.1' W	518	N Pac. Subtropical Gyre
S214-012-HC	28-Nov-07	0913	18°40.0' N	110°42.1' W	515	SE of Isla Socorro
S214-014-HC	28-Nov-07	2025	18°17.7' N	111°16.6' W	519	N Pac. Subtropical Gyre
S214-016-HC	29-Nov-07	1031	17°54.1' N	112°01.9' W	542	N Pac. Subtropical Gyre
S214-019-HC	30-Nov-07	0925	17°13.8' N	113°18.6' W	632	N Pac. Subtropical Gyre
S214-021-HC	30-Nov-07	2043	17°05.8' N	113°50.6' W	508	N Pac. Subtropical Gyre
S214-023-HC	1-Dec-07	0912	16°14.4' N	115°04.9' W	527	N Pac. Subtropical Gyre

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Table 1 continued

Station Number	Date	Local Time [#]	Latitude	Longitude	Cast Depth (m)	General Locale
Hydrocast continued						
S214-024-HC	1-Dec-07	2013	15°55.8' N	115°40.8' W	525	N Pac. Subtropical Gyre
S214-026-HC	2-Dec-07	0900	15°32.0' N	116°33.8' W	512	N Pac. Subtropical Gyre
S214-030-HC	3-Dec-07	0918	14°12.9' N	118°12.6' W	613	N Pac. Subtropical Gyre
S214-031-HC	3-Dec-07	2023	13°39.7' N	118°59.2' W	502	North Equatorial Current
S214-033-HC	4-Dec-07	0910	13°08.1' N	119°51.4' W	548	North Equatorial Current
S214-037-HC	5-Dec-07	0914	11°48.3' N	120°54.5' W	544	North Equatorial Current
S214-038-HC	5-Dec-07	2003	11°27.5' N	121°30.7' W	505	North Equatorial Current
S214-040-HC	6-Dec-07	0903	10°48.4' N	121°48.7' W	530	North Equatorial Current
S214-042-HC	6-Dec-07	2043	10°12.5' N	122°08.1' W	533	N Equatorial Countercurrent
S214-044-HC	7-Dec-07	0909	9°22.9' N	122°32.0' W	535	N Equatorial Countercurrent
S214-047-HC	8-Dec-07	0919	8°02.2' N	123°39.0' W	513	N Equatorial Countercurrent
S214-049-HC	8-Dec-07	2048	7°33.8' N	124°07.5' W	505	N Equatorial Countercurrent
S214-051-HC	9-Dec-07	0904	6°45.5' N	124°52.1' W	545	N Equatorial Countercurrent
S214-052-HC	9-Dec-07	2006	6°15.9' N	125°29.5' W	519	N Equatorial Countercurrent
S214-054-HC	10-Dec-07	0915	5°30.0' N	126°32.8' W	493	Equatorial Region
S214-058-HC	11-Dec-07	0917	4°40.0' N	127°51.2' W	561	Equatorial Region
S214-060-HC	11-Dec-07	2021	4°22.3' N	128°33.5' W	531	Equatorial Region
S214-062-HC	12-Dec-07	0903	3°56.9' N	129°22.3' W	479	Equatorial Region
S214-066-HC	13-Dec-07	0905	2°26.2' N	130°24.9' W	526	Equatorial Cold Tongue
S214-068-HC	13-Dec-07	2053	1°47.3' N	130°57.2' W	479	Equatorial Cold Tongue
S214-070-HC	14-Dec-07	0901	0°46.5' N	131°33.3' W	526	Equatorial Cold Tongue
S214-072-HC	14-Dec-07	2027	0°09.2' N	131°59.8' W	620	Equatorial Cold Tongue
S214-074-HC	15-Dec-07	0939	0°26.7' S	132°27.2' W	581	Equatorial Cold Tongue
S214-076-HC	15-Dec-07	2013	0°46.4' S	132°50.3' W	506	Equatorial Cold Tongue
S214-078-HC	16-Dec-07	0912	1°28.5' S	133°23.9' W	510	Equatorial Cold Tongue
S214-079-HC	16-Dec-07	2042	2°17.7' S	133°58.9' W	555	Equatorial Cold Tongue
S214-081-HC	17-Dec-07	0910	3°03.0' S	134°27.2' W	810	Equatorial Cold Tongue
S214-083-HC	17-Dec-07	2013	3°42.8' S	134°43.0' W	676	Equatorial Cold Tongue
S214-085-HC	18-Dec-07	0907	4°38.8' S	135°13.4' W	659	South Equatorial Current
S214-087-HC	18-Dec-07	2043	5°26.1' S	135°41.5' W	589	South Equatorial Current
S214-089-HC	19-Dec-07	0912	6°26.7' S	136°18.8' W	569	South Equatorial Current
S214-091-HC	19-Dec-07	2019	7°10.6' S	136°49.5' W	623	South Equatorial Current
S214-093-HC	20-Dec-07	0812	7°59.9' S	137°22.8' W	562	South Equatorial Current
S214-096-HC	27-Dec-07	0905	9°45.1' S	141°05.0' W	573	SW of Marquesas
S214-098-HC	28-Dec-07	0915	11°23.3' S	142°50.8' W	544	SW of Marquesas
S214-100-HC	29-Dec-07	0906	12°58.5' S	144°22.4' W	549	N of Tuamotus
S214-102-HC	30-Dec-07	0909	14°26.7' S	145°39.2' W	541	N of Tuamotus
Meter Net						
S214-007-MN	26-Nov-07	2148	19°44.0' N	107°37.1' W	181	N Pac. Subtropical Gyre
S214-011-MN	27-Nov-07	2220	18°58.8' N	109°11.6' W	112	N Pac. Subtropical Gyre
S214-015-MN	28-Nov-07	2145	18°16.2' N	111°18.2' W	120	N Pac. Subtropical Gyre
S214-022-MN	30-Nov-07	2144	17°05.9' N	113°51.5' W	123	N Pac. Subtropical Gyre

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Table 1 continued

Station Number	Date	Local Time [#]	Latitude	Longitude	Cast Depth (m)	General Locale
Meter Net continued						
S214-025-MN	1-Dec-07	2102	15°55.2' N	115°40.5' W	140	N Pac. Subtropical Gyre
S214-032-MN	3-Dec-07	2125	13°39.2' N	118°59.8' W	198	North Equatorial Current
S214-039-MN	5-Dec-07	2114	11°26.5' N	121°30.6' W	133	North Equatorial Current
S214-043-MN	6-Dec-07	2135	10°11.1' N	122°08.0' W	102	N Equatorial Countercurrent
S214-050-MN	8-Dec-07	2136	7°33.7' N	124°07.5' W	147	N Equatorial Countercurrent
S214-053-MN	9-Dec-07	2105	6°16.0' N	125°30.0' W	157	Equatorial Region
S214-060-MN	11-Dec-07	2120	4°28.4' N	128°34.8' W	136	Equatorial Region
S214-069-MN	13-Dec-07	2200	1°46.7' N	130°59.3' W	82	Equatorial Cold Tongue
S214-073-MN	14-Dec-07	2145	0°08.5' N	132°01.4' W	85	Equatorial Cold Tongue
S214-080-MN	16-Dec-07	2200	2°19.1' S	134°01.6' W	119	Equatorial Cold Tongue
S214-084-MN	17-Dec-07	2122	3°44.4' S	134°44.3' W	123	Equatorial Cold Tongue
S214-088-MN	18-Dec-07	2152	5°27.7' S	135°43.4' W	106	South Equatorial Current
S214-092-MN	19-Dec-07	2127	7°12.3' S	136°51.4' W	116	South Equatorial Current
S214-103-2MN	1-Jan-08	2029	16°33.2' S	148°41.2' W	563	N of Tahiti
Neuston Net						
S214-002-NT	25-Nov-07	2222	20°26.7' N	106°8.8' W	0	Coastal Mexico
S214-004-NT	26-Nov-07	0953	20°05.1' N	106°50.7' W	0	Coastal Mexico
S214-007-NT	26-Nov-07	2132	19°43.9' N	107°37.4' W	0	N Pac. Subtropical Gyre
S214-009-NT	27-Nov-07	1032	19°18.4' N	108°41.7' W	0	N Pac. Subtropical Gyre
S214-011-NT	27-Nov-07	2200	18°59.7' N	109°12.1' W	0	N Pac. Subtropical Gyre
S214-013-NT	28-Nov-07	1028	18°38.2' N	110°42.3' W	0	SE of Isla Socorro
S214-015-NT	28-Nov-07	2129	18°16.7' N	111°17.9' W	0	N Pac. Subtropical Gyre
S214-018-NT	29-Nov-07	2157	17°32.4' N	112°42.4' W	0	N Pac. Subtropical Gyre
S214-020-NT	30-Nov-07	1047	17°14.7' N	113°18.3' W	0	N Pac. Subtropical Gyre
S214-027-NT	2-Dec-07	0943	15°30.9' N	116°34.0' W	0	N Pac. Subtropical Gyre
S214-029-NT	2-Dec-07	2149	14°44.9' N	117°19.2' W	0	N Pac. Subtropical Gyre
S214-034-NT	4-Dec-07	1005	13°06.9' N	119°51.2' W	0	North Equatorial Current
S214-036-NT	4-Dec-07	2127	12°22.8' N	120°13.4' W	0	North Equatorial Current
S214-041-NT	6-Dec-07	0955	10°47.5' N	121°48.8' W	0	North Equatorial Current
S214-045-NT	7-Dec-07	0950	9°22.3' N	122°31.7' W	0	N Equatorial Countercurrent
S214-046-NT	7-Dec-07	2353	8°34.1' N	123°11.5' W	0	N Equatorial Countercurrent
S214-048-NT	8-Dec-07	1007	8°02.1' N	123°39.1' W	0	N Equatorial Countercurrent
S214-055-NT	10-Dec-07	0952	5°30.5' N	126°33.5' W	0	Equatorial Region
S214-057-NT	10-Dec-07	2205	5°29.4' N	127°20.0' W	0	Equatorial Region
S214-059-NT	11-Dec-07	1010	4°40.6' N	127°52.0' W	0	Equatorial Region
S214-063-NT	12-Dec-07	0955	3°57.4' N	129°23.2' W	0	Equatorial Region
S214-065-NT	12-Dec-07	2139	3°11.1' N	129°58.1' W	0	Equatorial Cold Tongue
S214-067-NT	13-Dec-07	1048	2°25.9' N	130°27.7' W	0	Equatorial Cold Tongue
S214-071-NT	14-Dec-07	1020	0°45.7' N	131°35.8' W	0	Equatorial Cold Tongue
S214-074-NT	15-Dec-07	1131	0°26.5' S	132°30.0' W	0	Equatorial Cold Tongue
S214-077-NT	15-Dec-07	2121	0°46.6' S	132°52.3' W	0	Equatorial Cold Tongue
S214-082-NT	17-Dec-07	1050	3°04.6' S	134°28.6' W	0	Equatorial Cold Tongue
S214-086-NT	18-Dec-07	1021	4°40.1' S	135°15.0' W	0	South Equatorial Current

[#] Local time is +6 GMT until 2300 27-Nov-07, +7 GMT until 2300 5-Dec-07, +8 GMT until 2300 13-Dec-07, +9 GMT until 1000 22-Dec-07, +9.5 GMT until 1400 27-Dec-07, and +10 GMT afterwards.

Table 1 continued

Station Number	Date	Local Time[#]	Latitude	Longitude	Cast Depth (m)	General Locale
Neuston Net continued						
S214-090-NT	19-Dec-07	1051	6°29.2' S	136°22.2' W	0	South Equatorial Current
S214-095-NT	20-Dec-07	2050	8°22.4' S	137°56.1' W	0	South Equatorial Current
S214-099-NT	28-Dec-07	2117	12°08.3' S	143°36.9' W	0	N of Tuamotus
Phytoplankton Net						
					Wire Out (m)	
S214-008-PNA	27-Nov-07	0930	19°18.7' N	108°42.4' W	0-125	N Pac. Subtropical Gyre
S214-008-PNB	27-Nov-07	0938	19°18.7' N	108°42.3' W	0-25	N Pac. Subtropical Gyre
S214-019-PNA	30-Nov-07	0944	17°14.1' N	113°18.4' W	0-131	N Pac. Subtropical Gyre
S214-019-PNB	30-Nov-07	0954	17°14.2' N	113°18.3' W	0-25	N Pac. Subtropical Gyre
S214-030-PNA	3-Dec-07	0934	14°12.7' N	118°12.9' W	0-135	N Pac. Subtropical Gyre
S214-030-PNB	3-Dec-07	0944	14°12.6' N	118°13.0' W	0-35	N Pac. Subtropical Gyre
S214-066-PNA	13-Dec-07	0931	2°26.1' N	130°25.5' W	0-278	Equatorial Cold Tongue
S214-066-PNB	13-Dec-07	0947	2°26.1' N	130°26.0' W	0-70	Equatorial Cold Tongue
S214-074-PNA	15-Dec-07	1011	0°26.6' S	132°28.1' W	0-219	Equatorial Cold Tongue
S214-074-PNB	15-Dec-07	1027	0°26.6' S	132°28.5' W	0-38	Equatorial Cold Tongue
S214-081-PNA	17-Dec-07	0935	3°03.5' S	134°27.6' W	0-198	Equatorial Cold Tongue
S214-081-PNB	17-Dec-07	0949	3°03.5' S	134°27.8' W	0-30	Equatorial Cold Tongue
S214-089-PNA	19-Dec-07	0938	6°27.3' S	136°19.7' W	0-249	South Equatorial Current
S214-089-PNB	19-Dec-07	0955	6°27.8' S	136°20.2' W	0-40	South Equatorial Current
Secchi Disk						
S214-005-SD	26-Nov-07	1528	19°54.7' N	107°14.3' W	32.5	N Pac. Subtropical Gyre

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Table 2: Surface station data.

Station Number	Date	Local Time[#]	Latitude	Longitude	Chl a (µg/l)	PO₄[*] (µM)
SS-001	25-Nov-07	2246	20°26.4' N	106°08.3' W	0.491	1.273
SS-002	27-Nov-07	2230	18°58.6' N	109°11.3' W	0.097	0.614
SS-003	28-Nov-07	2202	18°15.9' N	111°18.6' W	0.094	0.603
SS-004	30-Nov-07	0000	17°28.7' N	112°49.3' W	0.016	
SS-005	30-Nov-07	0300	17°20.8' N	113°02.1' W	0.124	
SS-006	30-Nov-07	0605	17°15.1' N	113°11.1' W	0.103	
SS-007	30-Nov-07	0901	17°13.6' N	113°18.5' W	0.213	0.938
SS-008	30-Nov-07	1157	17°15.9' N	113°20.9' W	0.089	
SS-009	30-Nov-07	1500	17°22.2' N	113°30.5' W	0.186	
SS-010	30-Nov-07	1800	17°16.3' N	113°39.2' W	0.141	
SS-011	30-Nov-07	2100	17°05.6' N	113°50.7' W	0.119	0.614
SS-012	1-Dec-07	0004	16°56.2' N	114°03.1' W	0.141	
SS-013	1-Dec-07	0300	16°40.8' N	114°23.4' W	0.140	
SS-014	1-Dec-07	0600	16°27.1' N	114°44.1' W	0.124	
SS-015	1-Dec-07	0900	16°14.4' N	115°04.9' W	0.150	
SS-016	1-Dec-07	1200	16°10.2' N	115°10.6' W	0.139	
SS-017	1-Dec-07	1500	16°03.3' N	115°21.5' W	0.080	
SS-018	1-Dec-07	1801	15°58.8' N	115°33.5' W	0.069	
SS-019	1-Dec-07	2100	15°55.2' N	115°40.4' W	0.117	
SS-020	2-Dec-07	0002	15°50.8' N	115°50.2' W	0.102	
SS-021	2-Dec-07	0300	15°43.8' N	116°03.7' W	0.066	
SS-022	2-Dec-07	0601	15°37.5' N	116°19.3' W	0.064	
SS-023	2-Dec-07	0900	15°32.0' N	116°33.8' W	0.102	
SS-024	2-Dec-07	1200	15°20.7' N	116°39.1' W	0.110	
SS-025	2-Dec-07	1500	15°06.9' N	116°50.4' W	0.097	
SS-026	2-Dec-07	1807	14°54.6' N	117°03.9' W	0.091	
SS-027	2-Dec-07	2102	14°45.9' N	117°18.8' W	0.080	
SS-028	3-Dec-07	0000	14°41.3' N	117°27.1' W	0.062	
SS-029	8-Dec-07	0000	8°34.0' N	123°11.5' W	0.108	0.529
SS-030	10-Dec-07	2215	5°29.4' N	127°20.4' W	0.050	0.815
SS-031	12-Dec-07	2140	3°11.1' N	129°58.1' W	0.067	0.786
SS-032	13-Dec-07	1200	2°22.9' N	130°30.9' W	0.059	
SS-033	13-Dec-07	1500	2°09.0' N	130°39.4' W	0.054	
SS-034	13-Dec-07	1800	1°55.8' N	130°48.8' W	0.041	
SS-035	13-Dec-07	2100	1°47.3' N	130°57.4' W	0.060	
SS-036	14-Dec-07	0002	1°32.4' N	131°07.3' W	0.063	
SS-037	14-Dec-07	0312	1°15.7' N	131°16.2' W	0.074	
SS-038	14-Dec-07	0600	1°00.3' N	131°24.4' W	0.113	
SS-039	14-Dec-07	1201	0°39.1' N	131°40.1' W	0.088	
SS-040	14-Dec-07	1500	0°26.5' N	131°47.7' W	0.112	
SS-041	14-Dec-07	1800	0°15.2' N	131°54.9' W	0.107	
SS-042	14-Dec-07	2056	0°09.1' N	132°00.4' W	0.112	

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^{*} Blank spaces indicate no data collected

Table 2 continued

Station Number	Date	Local Time[#]	Latitude	Longitude	Chl a (µg/l)	PO₄[*] (uM)
SS-043	15-Dec-07	0000	0°01.7' N	132°05.3' W	0.006	
SS-044	15-Dec-07	0300	0°08.6' S	132°11.9' W	0.009	
SS-045	15-Dec-07	0600	0°17.9' S	132°18.5' W	0.006	
SS-046	15-Dec-07	0901	0°27.0' S	132°26.1' W	0.018	
SS-047	15-Dec-07	1200	0°27.4' S	132°31.2' W	0.016	
SS-048	15-Dec-07	1500	0°35.7' S	132°38.3' W	0.024	
SS-049	15-Dec-07	1800	0°39.6' S	132°44.1' W	0.029	
SS-050	15-Dec-07	2100	0°46.5' S	132°51.8' W	0.024	
SS-051	16-Dec-07	0000	0°54.4' S	132°58.4' W	0.054	
SS-052	16-Dec-07	0302	1°06.6' S	133°07.1' W	0.070	
SS-053	16-Dec-07	0600	1°18.0' S	133°15.1' W	0.059	
SS-054	16-Dec-07	1200	1°37.1' S	133°23.9' W	0.050	
SS-055	19-Dec-07	0000	5°36.2' S	135°48.7' W	0.041	
SS-056	19-Dec-07	0300	5°52.5' S	135°58.1' W	0.081	
SS-057	19-Dec-07	0600	6°09.7' S	136°08.2' W	0.066	
SS-058	19-Dec-07	0900	6°26.6' S	136°18.3' W	0.070	
SS-059	19-Dec-07	1200	6°34.0' S	136°25.4' W	0.084	
SS-060	19-Dec-07	1535	6°51.6' S	136°36.7' W	0.114	
SS-061	19-Dec-07	1800	7°02.1' S	136°43.7' W	0.091	
SS-062	19-Dec-07	2059	7°11.6' S	136°50.8' W	0.092	
SS-063	20-Dec-07	0000	7°24.3' S	136°53.5' W	0.114	
SS-064	20-Dec-07	0300	7°30.4' S	137°07.5' W	0.053	
SS-065	20-Dec-07	0559	7°51.8' S	137°16.7' W	0.101	
SS-066	20-Dec-07	0900	8°00.4' S	137°23.7' W	0.071	
SS-067	20-Dec-07	1200	8°02.4' S	137°27.2' W	0.078	
SS-068	20-Dec-07	1500	8°09.4' S	137°36.2' W	0.038	
SS-069	20-Dec-07	1802	8°16.7' S	137°47.9' W	0.053	
SS-070	20-Dec-07	2057	8°22.8' S	137°56.3' W	0.117	
SS-071	20-Dec-07	2358	8°30.5' S	138°05.8' W	0.077	
SS-072	21-Dec-07	0301	8°41.0' S	138°18.2' W	0.095	
SS-073	21-Dec-07	0604	8°50.3' S	138°30.5' W	0.081	
SS-074	21-Dec-07	0855	8°47.7' S	138°43.5' W	0.093	
SS-075	21-Dec-07	1158	8°45.4' S	138°57.8' W	0.138	
SS-076	21-Dec-07	1500	8°44.3' S	138°11.4' W	0.081	
SS-077	21-Dec-07	1810	8°42.4' S	139°24.2' W	0.090	
SS-078	21-Dec-07	2100	8°41.4' S	139°36.5' W	0.145	
SS-079	22-Dec-07	0000	8°41.3' S	139°47.1' W	0.129	

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^{*} Blank spaces indicate no data collected

Table 3: Neuston net (1-m width, 333 μm mesh) tow data.
See Table 1 for station information.

Station Number	Tow Length (m)	Temp. ($^{\circ}\text{C}$)	Salinity (psu)	Zoop. Biomass (ml)	Zoop. Density (ml/m^2)	Plastic Pieces (#)	Plastic Pellets (#)	Tar Pieces (#)
S214-002-NT	1137	27.0	34.51	45.3	0.0399	4	0	0
S214-004-NT	1694	27.3	34.43	40.0	0.0236	0	0	0
S214-007-NT	1223	27.9	34.05	58.2	0.0476	0	0	0
S214-009-NT	1495	27.4	34.26	67.7	0.0453	0	0	0
S214-011-NT	3704	28.1	34.02	78.5	0.0212	11	0	0
S214-013-NT	1849	27.5	34.20	29.5	0.0160	5	0	0
S214-015-NT	2778	27.2	34.10	70.0	0.0252	0	0	0
S214-018-NT	1111	27.3	33.82	44.7	0.0402	1	0	0
S214-020-NT	1453	27.0	34.03	8.5	0.0058	3	0	0
S214-027-NT	1723	27.0	33.96	7.4	0.0043	0	0	0
S214-029-NT	976	26.7	34.32	16.8	0.0172	0	0	0
S214-034-NT	2591	26.6	33.20	33.0	0.0127	0	0	0
S214-036-NT	717	26.7	33.30	94.0	0.1311	0	0	0
S214-041-NT	1930	26.3	33.60	34.4	0.0178	0	0	0
S214-045-NT	1576	27.0	34.23	9.5	0.0060	0	0	0
S214-046-NT	1852	27.2	34.44	37.7	0.0204	1	0	0
S214-048-NT	1186	27.2	34.47	10.0	0.0084	0	0	0
S214-055-NT	1184	26.2	34.60	11.5	0.0097	0	0	0
S214-057-NT	1852	24.9	34.43	146.0	0.0788	3	0	0
S214-059-NT	1268	25.8	34.77	28.0	0.0221	0	0	0
S214-063-NT	2210	25.6	34.75	11.1	0.0050	0	0	0
S214-065-NT	2225	25.4	34.74	37.0	0.0166	0	0	0
S214-067-NT	1963	25.1	34.70	23.0	0.0117	1	0	0
S214-071-NT	1852	23.4	34.75	12.4	0.0067	0	0	0
S214-075-NT	2772	23.2	34.89	9.0	0.0032	1	0	0
S214-077-NT	1852	23.2	34.92	35.0	0.0189	0	0	0
S214-082-NT	2441	23.8	34.95	15.5	0.0063	1	0	0
S214-086-NT	2355	24.8	35.06	20.0	0.0085	0	0	0
S214-090-NT	1852	25.1	34.98	23.0	0.0124	0	0	0
S214-095-NT	1852	23.7	35.67	26.0	0.0140	0	0	0
S214-099-NT	3287	28.5	36.04	12.0	0.0037	2	0	0

Table 4: Meter net (1-m diameter, 200 µm mesh) oblique tow data.
See Table 1 for station information.

Station Number	Tow Depth (m)	Tow Volume (m³)	Zoop. Biomass (ml)	Zoop. Density (ml/m³)	Gelatinous Biomass (ml)	Micronekton Biomass (ml)
S214-007-MN	181	550	110.0	0.1999	38.8	4.6
S214-011-MN	112	909	123.0	0.1353	38.2	6.7
S214-015-MN	120	952	94.8	0.0996	8.0	3.7
S214-022-MN	123	1197	143.0	0.1195	128.0	5.0
S214-025-MN	140	1005	115.0	0.1145	0.0	17.7
S214-032-MN	198	754	127.0	0.1685	0.7	10.5
S214-039-MN	133	686	109.0	0.1589	26.5	6.0
S214-043-MN	102	940	512.5	0.5454	150.8	55.4
S214-050-MN	147	865	131.0	0.1515	148.4	3.7
S214-053-MN	157	999	111.4	0.1116	4.0	2.8
S214-061-MN	136	1194	212.0	0.1776	54.0	15.0
S214-069-MN	82	845	136.0	0.1610	24.0	10.0
S214-073-MN	85	1399	269.5	0.1927	77.0	21.0
S214-080-MN	119	1534	454.5	0.2962	308.5	175.5
S214-084-MN	123	1495	148.0	0.0990	74.0	2.5
S214-088-MN	106	1049	364.5	0.3476	8.4	0.5
S214-092-MN	116	1206	185.5	0.1538	15.5	1.3
S214-103-2MN*	563	17370	129.0	0.0074	5.7	17.0

* 1.78-meter diameter, 500 µm mesh net, oblique tow

Table 5: Hydrocast bottle data. See Table 1 for station information.

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-003-HC	3.0		1.090				0.094		
S214-003-HC	20.5		0.744	0.693			0.120		
S214-003-HC	40.1						0.318		
S214-003-HC	49.5		1.613	5.666			0.259		
S214-003-HC	74.0						0.101		
S214-003-HC	99.4		3.105	15.858			0.018		
S214-003-HC	124.5						0.049		
S214-003-HC	148.5		2.063	14.163			0.025		
S214-003-HC	199.0						0.027		
S214-003-HC	248.6		2.095	18.082					
S214-003-HC	496.5		3.597	26.979					
S214-006-HC	19.0							8.098	
S214-006-HC	48.5							7.984	
S214-006-HC	97.7							7.541	
S214-006-HC	197.1							7.521	
S214-008-HC	3.0		0.676	1.003			0.113		
S214-008-HC	20.4						0.110		
S214-008-HC	39.6		1.184	0.501			0.322		
S214-008-HC	49.6						0.381		
S214-008-HC	59.6						0.292		
S214-008-HC	74.3	2.40	2.027	15.878			0.183		
S214-008-HC	98.9						0.055		
S214-008-HC	123.7		2.435	25.809			0.029		
S214-008-HC	148.6						0.012		
S214-008-HC	198.7						0.019		
S214-008-HC	298.2		3.283	21.864					
S214-008-HC	397.5	0.52							
S214-008-HC	496.8		3.367						
S214-010-HC	24.7							8.134	
S214-010-HC	43.5							8.055	
S214-010-HC	73.8							7.649	
S214-010-HC	124.5							7.528	
S214-010-HC	199.2							7.545	
S214-012-HC	3.0		0.635	0.471	0.595		0.138		
S214-012-HC	25.6		1.038	0.556	0.430		0.158		
S214-012-HC	40.3	4.35					0.199		
S214-012-HC	49.8		1.142	0.705	0.480		0.224		
S214-012-HC	74.5						0.130		
S214-012-HC	99.2		1.912	30.729	0.609		0.069		
S214-012-HC	124.1						0.030		
S214-012-HC	149.2		3.362	38.515	5.925		0.070		
S214-012-HC	198.8		3.466	30.167	3.980				
S214-012-HC	496.5	0.43	3.450	40.281	0.434				
S214-014-HC	3.0							8.152	

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-014-HC	49.7							8.000	
S214-014-HC	73.7							7.759	
S214-014-HC	98.2							7.596	
S214-014-HC	123.0							7.547	
S214-014-HC	197.2							7.510	
S214-016-HC	3.0		0.954	1.001			0.086		
S214-016-HC	20.5		1.137	0.762	0.613		0.152		
S214-016-HC	54.7		1.786	8.074	1.870		0.402		
S214-016-HC	74.6	2.10		13.452	0.457		0.094		
S214-016-HC	99.5		2.958	13.069	0.508		0.049		
S214-016-HC	124.1		3.325	12.796	0.842		0.077		
S214-016-HC	134.1		3.377	12.562	3.838				
S214-016-HC	149.4		3.477	12.305	3.347		0.068		
S214-016-HC	174.4		3.634	12.303	2.388				
S214-016-HC	223.4						0.049		
S214-016-HC	298.2	1.02	0.598	12.287	3.301				
S214-019-HC	3.0		0.938	0.581			0.213		
S214-019-HC	20.4		1.137	0.703			0.232		
S214-019-HC	38.3						0.301		
S214-019-HC	54.9	2.12	1.969	0.881			0.299		
S214-019-HC	73.8						0.248		
S214-019-HC	99.1	0.40					0.065		
S214-019-HC	129.3		2.477	30.556			0.117		
S214-019-HC	148.5						0.080		
S214-019-HC	248.4		3.314	37.368					
S214-019-HC	397.9		0.457	36.175					
S214-021-HC	3.0							8.121	
S214-021-HC	19.6							8.133	
S214-021-HC	43.7							7.710	
S214-021-HC	68.0							7.697	
S214-021-HC	93.2							7.519	
S214-021-HC	118.0							7.541	
S214-021-HC	197.5							7.517	
S214-023-HC	3.0		1.079	0.540			0.144		
S214-023-HC	20.0		0.676	0.888			0.166		
S214-023-HC	49.6		2.550	0.687	0.654		0.231		
S214-023-HC	84.4		3.398	13.067	0.650				
S214-023-HC	98.8		2.917	12.723	0.930		0.047		
S214-023-HC	114.4		2.953	12.700	0.732		0.072		
S214-023-HC	139.8		2.964	12.619	4.104		0.058		
S214-023-HC	149.1		3.335	12.470	4.971				
S214-023-HC	177.8		3.335	12.356	2.737				
S214-023-HC	248.3		3.330	12.365					
S214-023-HC	496.4		3.707	12.211					

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-024-HC	3.0							8.105	
S214-024-HC	19.6							8.139	
S214-024-HC	48.5							7.888	
S214-024-HC	73.5							7.672	
S214-024-HC	97.4							7.539	
S214-024-HC	147.6							7.519	
S214-024-HC	246.5							7.491	
S214-026-HC	19.9	4.28	0.902	0.716	0.375		0.073		
S214-026-HC	39.5	4.61					0.185		
S214-026-HC	84.3		2.718	21.323	0.549		0.117		
S214-026-HC	89.8		2.351	23.057	0.434				
S214-026-HC	92.2		2.629	27.277	0.622				
S214-026-HC	94.7		2.409	25.167	0.599				
S214-026-HC	97.4		2.519	27.185	0.558				
S214-026-HC	99.7		2.964	26.933	0.517				
S214-026-HC	101.3		2.697	26.199	0.572				
S214-026-HC	104.5		3.147	27.576	0.457		0.078		
S214-026-HC	109.3		2.911	20.488	0.540				
S214-026-HC	124.4		2.801	19.617	1.370		0.105		
S214-030-HC	3.0		0.844	0.175	0.072		0.055		
S214-030-HC	20.1		0.860	0.184	0.072		0.087		
S214-030-HC	44.3	5.02							
S214-030-HC	59.5						0.211		
S214-030-HC	79.4	1.53	2.775	13.528	0.159				
S214-030-HC	98.6						0.034		
S214-030-HC	123.9		2.864	14.975	4.365		0.053		
S214-030-HC	174.2						0.037		
S214-030-HC	247.8		3.021	15.887	3.549				
S214-030-HC	497.7		3.529	28.635	0.090				
S214-031-HC	3.0							8.126	
S214-031-HC	14.8							8.138	1.982
S214-031-HC	38.3							7.845	
S214-031-HC	78.8							7.559	
S214-031-HC	108.1							7.537	
S214-031-HC	145.5							7.539	
S214-031-HC	197.9							7.515	
S214-031-HC	198.8								2.112
S214-033-HC	3.0		0.514	0.657	0.052		0.099		
S214-033-HC	20.4		0.839	0.998	0.512		0.145		
S214-033-HC	45.0		2.241	14.064	1.971		0.139		
S214-033-HC	58.9						0.100		
S214-033-HC	98.9						0.036		
S214-033-HC	108.8		3.142	14.390	3.911		0.026		
S214-033-HC	134.2						0.041		

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-033-HC	148.1						0.047		
S214-033-HC	198.4		2.786	14.495	0.622				
S214-033-HC	347.8		3.435	14.505	1.031				
S214-037-HC	3.0		0.629	0.792	0.723		0.078		
S214-037-HC	20.4	4.27					0.068		
S214-037-HC	49.4		2.650	15.099	1.283		0.121		
S214-037-HC	64.1	0.56	3.006	14.956	1.297				
S214-037-HC	79.8		2.744	15.392	0.609		0.032		
S214-037-HC	94.8		2.754	15.943	0.696		0.038		
S214-037-HC	99.2		2.618	16.195	0.907		0.035		
S214-037-HC	108.3		3.262	15.842	0.495		0.015		
S214-037-HC	149.6		2.618	17.087	0.723				
S214-037-HC	248.8		3.032	17.011	2.641				
S214-038-HC	3.0							8.144	
S214-038-HC	19.0							8.134	1.968
S214-038-HC	44.0							7.679	
S214-038-HC	77.6							7.561	
S214-038-HC	97.1							7.540	
S214-038-HC	127.0							7.531	
S214-038-HC	197.9							7.499	2.155
S214-040-HC	3.0		0.713	0.654	0.540		0.077		
S214-040-HC	14.9						0.159		
S214-040-HC	30.1	2.78	1.880	11.940	1.342		0.077		
S214-040-HC	59.9			14.177	0.764		0.079		
S214-040-HC	84.8	0.68					0.039		
S214-040-HC	99.3		2.697	14.041	4.292		0.059		
S214-040-HC	124.0						0.040		
S214-040-HC	198.9	0.60	2.838	14.195	0.609				
S214-040-HC	421.0		3.074	14.319	0.476				
S214-042-HC	3.0							8.238	
S214-042-HC	14.8							8.109	1.594
S214-042-HC	19.6							8.175	
S214-042-HC	47.9							7.682	
S214-042-HC	88.2							7.559	
S214-042-HC	138.4							7.567	
S214-042-HC	197.7							7.525	2.112
S214-044-HC	3.0		1.623	0.829	0.448		0.067		
S214-044-HC	15.6	4.47					0.073		
S214-044-HC	29.8						0.080		
S214-044-HC	64.7	1.44	2.654	14.234	0.879				
S214-044-HC	68.7		2.422	14.154	1.310		0.071		
S214-044-HC	74.4		2.308	15.791	0.732				
S214-044-HC	79.7		2.392	16.504	0.719		0.078		
S214-044-HC	89.0		2.115	18.915	0.411				

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-044-HC	98.7		2.352	14.732	0.347		0.052		
S214-044-HC	149.1						0.017		
S214-044-HC	347.7		3.489	15.548	0.526				
S214-047-HC	3.0		0.534	0.725	0.769		0.138		
S214-047-HC	20.1	4.63					0.132		
S214-047-HC	55.1		0.682	2.498	0.842		0.176		
S214-047-HC	93.3	2.84					0.109		
S214-047-HC	118.6		2.511	12.390	0.920		0.037		
S214-047-HC	143.6						0.016		
S214-047-HC	174.3			12.337	0.709				
S214-047-HC	208.7		2.441	12.353	0.599				
S214-047-HC	417.0		2.881	12.218	0.728				
S214-049-HC	3.0							8.156	
S214-049-HC	19.4							8.144	2.357
S214-049-HC	37.7							8.137	
S214-049-HC	82.3							7.958	
S214-049-HC	97.6							7.933	
S214-049-HC	142.3							7.634	
S214-049-HC	196.9							7.550	1.982
S214-051-HC	3.0		0.469	1.361	0.815		0.085		
S214-051-HC	19.9		0.558	1.494	0.622		0.105		
S214-051-HC	38.6	4.52	0.962	2.255	0.650		0.114		
S214-051-HC	69.3						0.131		
S214-051-HC	99.5	3.65	0.845	4.374	1.209				
S214-051-HC	134.3						0.056		
S214-051-HC	148.3		1.488	9.872	0.980		0.048		
S214-051-HC	248.3		2.264	1.336	0.677				
S214-051-HC	347.0		2.941	53.560	0.480				
S214-052-HC	3.0							8.244	
S214-052-HC	19.1							8.241	2.078
S214-052-HC	38.2							8.217	
S214-052-HC	59.2							8.208	
S214-052-HC	98.1							8.101	
S214-052-HC	117.8							8.053	
S214-052-HC	196.5							7.663	2.170
S214-054-HC	3.0		0.721	2.762	0.485		0.108		
S214-054-HC	20.6	4.68					0.111		
S214-054-HC	34.5		0.657	3.831	0.691		0.103		
S214-054-HC	59.3						0.129		
S214-054-HC	99.8		1.260	12.541	0.714		0.065		
S214-054-HC	138.9						0.062		
S214-054-HC	178.3		2.437	14.294	0.769		0.015		
S214-054-HC	248.3		2.773	14.151	0.567				
S214-054-HC	471.5		3.519	14.186	0.719				

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-058-HC	3.0		0.771	3.115	0.682		0.083		
S214-058-HC	21.1			3.095	0.489		0.126		
S214-058-HC	39.5	4.69					0.075		
S214-058-HC	64.6		0.919	7.257	1.489		0.107		
S214-058-HC	84.7	4.59					0.121		
S214-058-HC	108.9		1.122	11.801	2.127		0.112		
S214-058-HC	139.2						0.025		
S214-058-HC	198.8		2.698	32.024	0.925		0.005		
S214-058-HC	297.8		2.555	37.712	0.723				
S214-058-HC	496.3		3.425						
S214-060-HC	3.0							8.200	
S214-060-HC	19.7							8.213	1.858
S214-060-HC	48.4							8.183	
S214-060-HC	83.9							8.156	
S214-060-HC	97.8							8.075	
S214-060-HC	117.2							8.036	
S214-060-HC	198.0							7.664	2.083
S214-062-HC	3.0		0.736	3.496	0.526				
S214-062-HC	40.5	4.54							
S214-062-HC	64.4		0.801	4.012	0.512				
S214-062-HC	84.5	3.55	1.112	7.727	1.719				
S214-062-HC	114.0		1.315	12.161	2.604				
S214-062-HC	234.2		2.466	32.223	0.232				
S214-062-HC	397.9		3.049	38.308	0.884				
S214-062-HC	496.3			37.345	0.209				
S214-066-HC	3.0		0.860	6.870	1.544		0.081		
S214-066-HC	19.9	4.17							
S214-066-HC	54.1		0.949	9.367	0.673		0.107		
S214-066-HC	89.4		1.651				0.015		
S214-066-HC	110.0		2.437	16.176	2.163		0.010		
S214-066-HC	129.3		2.911						
S214-066-HC	149.7	0.91	2.569	15.642	1.306		0.006		
S214-066-HC	198.8		2.733						
S214-066-HC	249.0		2.629	16.103	0.742				
S214-066-HC	298.1		2.575						
S214-066-HC	357.8		2.901						
S214-066-HC	371.8		3.104						
S214-066-HC	496.6		3.054	16.399	0.636				
S214-068-HC	3.0							8.137	
S214-068-HC	20.7							8.132	2.030
S214-068-HC	53.9							8.021	
S214-068-HC	83.4							7.796	
S214-068-HC	119.4							7.732	
S214-068-HC	169.2							7.714	

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-068-HC	198.7							7.614	1.718
S214-070-HC	3.0		1.081	9.865	2.951		0.115		2.208
S214-070-HC	20.4		1.211	9.934	4.330				
S214-070-HC	40.4	3.91					0.155		
S214-070-HC	50.4		1.532	13.773	7.260		0.152		
S214-070-HC	64.9						0.120		
S214-070-HC	94.9		1.705	14.245	4.625		0.061		
S214-070-HC	110.1		2.041						
S214-070-HC	149.9		2.525	14.287	5.605		0.009		
S214-070-HC	199.2		2.288						
S214-070-HC	248.6		2.303	14.124	6.122				
S214-070-HC	298.3	1.04	1.448						
S214-070-HC	323.3		2.525						
S214-070-HC	348.1		2.955	14.241	6.887				
S214-072-HC	3.0							8.039	
S214-074-HC	3.0		1.132	9.528	1.232		0.108	8.097	
S214-074-HC	20.4		1.468				0.028	8.091	2.021
S214-074-HC	45.2		1.082				0.114		
S214-074-HC	70.0	3.10	1.507	10.966	1.040		0.263	8.043	
S214-074-HC	90.6		1.334				0.143		
S214-074-HC	109.6		1.572	12.117	0.971			7.950	
S214-074-HC	120.3		1.606				0.053	7.927	
S214-074-HC	139.7		1.344					7.917	
S214-074-HC	159.6	3.10	1.745	12.087	0.586				
S214-074-HC	199.0			12.023	0.627			7.786	2.006
S214-074-HC	249.0		2.095						
S214-074-HC	347.7		2.768	12.062	0.476				
S214-076-HC	3.0		1.043					8.068	
S214-076-HC	20.5		1.067					8.089	2.131
S214-076-HC	69.8		1.631					8.012	
S214-076-HC	90.3		1.601					8.022	
S214-076-HC	120.0		1.913					7.896	
S214-076-HC	135.1		1.794						
S214-076-HC	149.7		1.502					7.886	
S214-076-HC	174.5		1.927						
S214-076-HC	199.3		1.636					7.833	1.349
S214-076-HC	224.1		1.908						
S214-076-HC	248.6		1.492						
S214-076-HC	298.3		2.086						
S214-076-HC	347.9		2.629						
S214-078-HC	3.0		0.954	8.700	1.264		0.105		
S214-078-HC	21.0		1.003	9.062	1.604		0.175		
S214-078-HC	40.1	3.90							
S214-078-HC	49.5		1.147	9.548	1.806		0.262		

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-078-HC	65.1						0.236		
S214-078-HC	99.9		1.843	13.959	4.751		0.112		
S214-078-HC	110.0		2.021						
S214-078-HC	149.6		1.779	14.622	1.145		0.010		
S214-078-HC	199.0	1.89	2.496						
S214-078-HC	248.5		2.333	15.539	0.847				
S214-078-HC	298.7		2.095						
S214-078-HC	323.2		2.268						
S214-078-HC	347.7		2.288	14.433	0.815				
S214-079-HC	3.0		0.914					8.077	
S214-079-HC	20.2							8.079	2.122
S214-079-HC	50.0		1.186					8.070	
S214-079-HC	84.2							8.052	
S214-079-HC	99.6		1.082					8.051	
S214-079-HC	120.2		1.428					7.951	
S214-079-HC	139.5		1.843					7.718	
S214-079-HC	159.9		2.036					7.687	
S214-079-HC	179.4		2.130					7.687	
S214-079-HC	199.3		2.076					7.664	2.006
S214-079-HC	248.8		2.432						
S214-079-HC	298.8		2.466						
S214-079-HC	348.4		2.417						
S214-081-HC	3.0		1.438	8.152	1.347		0.098		
S214-081-HC	20.1	4.55					0.118		
S214-081-HC	50.5		1.329	8.324	1.402		0.176		
S214-081-HC	89.3		1.166	9.443	1.682		0.161		
S214-081-HC	108.9		1.260	9.039	2.365				
S214-081-HC	134.3						0.093		
S214-081-HC	169.0	1.03					0.026		
S214-081-HC	199.0						0.008		
S214-081-HC	248.6		2.184	15.539	0.411				
S214-081-HC	496.9		3.123	16.069	0.673				
S214-083-HC	3.0							8.093	
S214-083-HC	20.1							8.095	2.496
S214-083-HC	59.4							8.086	
S214-083-HC	99.4							8.045	
S214-083-HC	114.3							7.930	
S214-083-HC	129.6							7.760	
S214-083-HC	138.7							7.749	
S214-083-HC	149.2							7.702	
S214-083-HC	163.4							7.692	
S214-083-HC	199.4							7.625	2.021
S214-085-HC	3.0		1.102	8.156	1.063		0.071		
S214-085-HC	20.4		0.944	9.042	0.948		0.098		

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-085-HC	35.0	4.04							
S214-085-HC	48.9		1.003	9.000	1.012		0.138		
S214-085-HC	69.5						0.175		
S214-085-HC	99.2			7.484	3.544		0.133		
S214-085-HC	124.4	3.05							
S214-085-HC	149.4		2.264	13.702	0.815		0.023		
S214-085-HC	223.5						0.005		
S214-085-HC	248.3		2.696	13.181	0.742				
S214-085-HC	347.9			13.206	0.503				
S214-087-HC	3.0							8.119	2.602
S214-087-HC	19.7							8.116	2.059
S214-087-HC	39.9							8.096	2.050
S214-087-HC	60.3							8.089	
S214-087-HC	79.9							8.079	2.040
S214-087-HC	99.6							8.111	
S214-087-HC	119.7							8.015	2.170
S214-087-HC	139.3							7.920	
S214-087-HC	158.9							7.807	2.054
S214-087-HC	179.5							7.735	
S214-087-HC	197.3							7.695	2.347
S214-089-HC	3.0		1.087	7.585	1.063		0.087		
S214-089-HC	20.2						0.116		
S214-089-HC	39.9	4.27	1.443	7.656	1.031		0.100		
S214-089-HC	64.6		1.329	8.065	1.489		0.117		
S214-089-HC	99.5		1.186	7.237	1.622		0.099		
S214-089-HC	124.1						0.107		
S214-089-HC	159.7	2.22							
S214-089-HC	198.8		2.496	13.917	0.806		0.008		
S214-089-HC	397.8		3.148	13.890	0.797				
S214-091-HC	3.0							8.158	
S214-091-HC	20.5							8.167	2.573
S214-091-HC	40.1							8.146	
S214-091-HC	79.4							8.149	
S214-091-HC	119.6							8.144	
S214-091-HC	159.7							7.877	
S214-091-HC	197.1							7.666	2.117
S214-093-HC	3.0		1.107	6.624	0.893		0.131		
S214-093-HC	19.8		0.835	6.686	0.700		0.063		
S214-093-HC	33.6						0.102		
S214-093-HC	48.8		0.746	4.769	0.563		0.164		
S214-093-HC	65.2						0.131		
S214-093-HC	99.2		0.835	3.267	1.021		0.154		
S214-093-HC	124.8						0.179		
S214-093-HC	149.0		1.142	9.970	3.361		0.061		

* Blank spaces indicate no data collected

Table 5: Hydrocast bottle data continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	NO ₃ * (µM)	NO ₂ * (µM)	NH ₃ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
S214-093-HC	223.4						0.004		
S214-093-HC	248.0		2.432	11.801	0.650				
S214-093-HC	347.3		2.886	14.050	0.292				
S214-096-HC	3.0							8.206	
S214-096-HC	19.8							8.189	
S214-096-HC	38.5							8.192	
S214-096-HC	77.6							8.191	
S214-096-HC	97.1							8.140	
S214-096-HC	148.3							8.115	
S214-096-HC	197.9							7.958	
S214-098-HC	3.0							8.206	
S214-098-HC	20.9							8.189	
S214-098-HC	49.7							8.192	
S214-098-HC	72.7							8.191	
S214-098-HC	98.0							8.140	
S214-098-HC	153.5							8.115	
S214-098-HC	198.6							7.958	
S214-100-HC	3.0							8.256	
S214-100-HC	20.1							8.251	
S214-100-HC	44.5							8.248	
S214-100-HC	78.7							8.222	
S214-100-HC	123.6							8.216	
S214-100-HC	164.1							8.154	
S214-100-HC	198.5							8.092	
S214-102-HC	3.0							8.263	
S214-102-HC	20.5							8.267	
S214-102-HC	49.5							7.091	
S214-102-HC	75.2							8.218	
S214-102-HC	99.7							8.221	
S214-102-HC	149.3							8.181	
S214-102-HC	199.3							8.127	

* Blank spaces indicate no data collected

Table 6: Student research projects, Cruise S-214.

Title	Student Investigators
Interannual Variations in Density and Diversity of Zooplankton Communities in the Eastern Tropical Pacific	Julia Beaty
Spatial Inventory of Chlorophyll-a during a La Niña Cycle in the Eastern Tropical Pacific	Sierra Blakely
An Exploration of the Physical Parameters Influencing ENSO Variability	Tyson Bottenus Trent Hodges
Chlorophyll-a Concentrations and Mixed Layer Temperature in the Eastern Equatorial Pacific	Annie Brett
Virus to Bacteria Ratio in Changing Nutrient Environments of the Eastern Tropical Pacific	Julia Brown
Changes In Heat Content	Amy Comer
Distribution of Tuna Based on Essential Habitat Parameters in the Tropical Pacific	Kelly Crawford James O'Hare
Diel Variations of Phytoplankton Fluorescence in the Equatorial Pacific: Parsing Physiological and Physical Parameters	Bart DiFiore
<i>Prochlorococcus</i> and <i>Synechococcus</i> Distribution and Abundance in the Eastern Equatorial Pacific	Bethanie Edwards
Barrier Layers in the Eastern Equatorial Pacific	Luke Erickson
Spatial Variation in Test Size of the Pteropods <i>Limacina inflata</i> and <i>Limacina trochiformis</i> in relation to pH across the Eastern Equatorial Pacific	Michael Gil
Primary Production and the Oxygen Minimum Zone	Jenan Kharbush Robin Abbey-Lee
Interannual Variability in the Equatorial Undercurrent	Wendy Kordesch
Bioluminescence Potential in Vertical Fronts of the Epipelagic Zone of the Eastern Tropical Pacific Ocean	Ben Kraemer
The Relationship between Heterotrophic Bacterial Concentrations and Colored Dissolved Organic Matter in the Eastern Pacific	Tsveta Volen Krumova
Denitrification and Ammonium Concentrations as Potential Indicators of Anammox Bacteria in the Eastern Tropical North Pacific	James Onstad
Seawater pH in relation to Planktonic Foraminiferal Shell Size within the Eastern Tropical Pacific	Sally Powell
pH and Marine Phytoplankton Distribution	Cat Schrankel
The Distribution of the Foraminifera <i>Globigerinoides ruber</i> in relation to Modern and Holocene Sea Surface Temperature	Anna Simeon
Carbonate Concentration and its Effects on Calcifying Organisms	Jonathan Tucker
The Comparative Distribution and Abundance of Salps across the Eastern Equatorial Pacific	Jessica Wemer