

The Results of Oceanographic Observations
in areas under national jurisdiction
of the United States of America
by the Cruise of R/V Ryofu Maru

October 2019

Japan Meteorological Agency

DATA EXPLANATION

Hydrographic Observation

<i>STA-NO</i>	:Station number given by the ship code ("KS" is Keifu maru, "RF" is Ryofu maru) suffixed with four digits consecutive number.
<i>LOCATION</i>	:Latitude and longitude in degrees, minutes and tenth of minutes (if given) with the hemisphere indicated by 'N'/'S' and 'E'/'W'.
<i>DATE/TIME</i>	:Month, day and time of beginning and end of a hydrographic cast in the Japan Standard Time (JST), which is nine hours ahead of the Coordinated Universal Time (UTC).
<i>DEPTH</i>	:Water depth to the bottom in meters measured using a single beam echo sounder.

Standard Depth (Standard)

<i>DEPTH</i>	:Standard depths in meters.
<i>TEMPERATURE</i>	:Temperature in "the International Temperature Scale of 1990 (ITS-90)".
<i>SALINITY</i>	:Salinity in "the Practical Salinity Scale, 1978 (PSS-78)".
<i>O₂</i>	:Dissolved oxygen in micro mole per kilogram measured using a dissolved oxygen sensor.

Standard Depth (Calculated)

<i>Δst</i>	:Thermosteric anomaly in $10^{-8} \text{ m}^3\text{kg}^{-1}$
<i>ΔD</i>	:Geopotential anomaly in $10 \text{ m}^2\text{sec}^{-2}$

Observed

<i>DEPTH</i>	:CTD depth of sampling in meters.
<i>TEMPERATURE</i>	:CTD temperature in ITS-90.
<i>SALINITY</i>	:CTD salinity in PSS-78.
<i>O₂</i>	:Dissolved oxygen in micro mole per kilogram as determined titrimetrically by means of the Winkler Method.
<i>PO₄-P</i>	:Inorganic phosphate-phosphorus in micro mole per kilogram as determined colorimetrically by means of the reduction method using ascorbic acid (Strickland and Parsons, 1965).
<i>NO₃-N</i>	:(Nitrate+nitrite)-nitrogen in micro mole per kilogram as determined colorimetrically by means of the Muellin-Riley method using copper-cadmium reduction column (Wood, Armstrong and Richard, 1967).
<i>NO₂-N</i>	:Nitrite-nitrogen in micro mole per kilogram as determined colorimetrically by means of the Bendschneider and Robinson method (Strickland and Parsons, 1965).
<i>SiO₂</i>	:Silicate-silicon in micro mole per kilogram as determined colorimetrically by means of the reduction method using ascorbic acid (Grasshoff et al, 1983).
<i>PH</i>	:Hydrogen-ion concentration at 25 degree-C as determined by means of the spectrophotometric technique using the indicator dye <i>m</i> -cresol purple (Clayton and Byrne, 1993).
<i>CHL</i>	:Chlorophyll-a in micrograms per liter as determined by means of the fluorometric technique.
<i>PHA</i>	:Phaeopigments in micrograms per liter as determined by means of the fluorometric technique.

Note: Missing value is indicated by a mark "—".

DATA EXPLANATION

Current Observation

<i>CRUISE NO</i>	:Cruise number identified with the year and consecutive number in the year.
<i>DATE</i>	:Date of beginning and end of the subsurface current observations.
<i>OCEAN AREA</i>	:Observation area.
<i>SHIP</i>	: “RF” and “KS” indicate Ryofu maru and Keifu maru, respectively.

Observed

<i>STA-NO</i>	:Station number given by the ship code ("AF" and "AS" indicate Ryofu maru and Keifu maru, respectively) suffixed with three digits consecutive number.
<i>DATE/TIME</i>	:Month, day and time of an observation in JST.
<i>LOCATION</i>	:North latitude and east longitude in degrees, minutes and tenth of minutes (if given) with the hemisphere. Negative latitude means the south latitude.
<i>WATER DEPTH</i>	:Water depth to the bottom in meters.
<i>DEPTH</i>	:Depth of the reference layer in meters.
<i>DIR/SPEED</i>	:True direction (in degrees) toward which current is flowing and speed given in tenths of knots of the subsurface current for the reference layer determined with Acoustic Doppler Current Profiler (ADCP). When the speed is given as zero, the direction is also given as zero.
<i>TEMPERATURE</i>	:Surface temperature in “the International Temperature Scale of 1990 (ITS-90)”.
<i>SALINITY</i>	:Surface salinity in “the Practical Salinity Scale, 1978 (PSS-78)”.
<i>CTD STN-NO</i>	:Corresponding station number of hydrographic data.
<i>BT STN-NO</i>	:Corresponding station number of subsurface temperature data.

Note: Missing value is indicated by a mark “-”.

No. 1

TIME JST	DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	PO ₄ -P μmol/kg	NO ₃ -N μmol/kg	NO ₂ -N μmol/kg	SiO ₂ μmol/kg	pH		CHL μg/l	PHA μg/l		DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	st 10 ⁻⁸ m ³ /kg	D 10 ¹⁰ m ² /sec ²
			0	29.890	34.872	193.5	613	0.000
			10	29.749	34.851	194.0	610	0.062
			20	29.606	34.817	194.3	608	0.123
			30	29.438	34.785	194.9	605	0.184
			50	28.566	34.945	204.9	565	0.303
			75	26.958	35.111	216.6	503	0.436
			100	25.306	35.180	214.6	449	0.556
			125	23.845	35.208	205.7	405	0.665
			150	22.135	35.145	193.3	362	0.762
			200	19.004	34.906	189.1	300	0.932
			250	16.529	34.679	195.2	259	1.076
			300	14.731	34.507	197.8	233	1.204
			400	11.656	34.267	178.0	192	1.424
			500	8.954	34.133	148.5	157	1.608
			600	6.568	34.123	90.4	125	1.758
			700	5.673	34.254	54.9	104	1.882
			800	4.806	34.302	46.4	91	1.989
			900	4.431	34.400	50.9	80	2.084
			1000	4.046	34.451	56.4	72	2.169
			1200	3.465	34.520	72.2	61	2.322
			1500	2.742	34.560	82.7	52	2.521
			2000	2.106	34.615	101.4	43	2.805
	
	
	

No. 2

5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
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TIME JST	DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	PO ₄ -P μmol/kg	NO ₃ -N μmol/kg	NO ₂ -N μmol/kg	SiO ₂ μmol/kg	pH		CHL μg/l	PHA μg/l		DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	st 10 ⁻⁸ m ³ /kg	D ₁₀ m ² /sec ²
			0	29.942	34.789	19.29	6.21	0.000
			10	29.898	34.791	19.28	6.19	0.062
			20	29.840	34.794	19.29	6.17	0.125
			30	29.534	34.824	19.54	6.05	0.186
			50	29.153	34.956	19.90	5.83	0.307
			75	26.673	35.166	21.68	4.91	0.441
			100	25.525	35.185	21.54	4.55	0.562
			125	24.464	35.192	21.28	4.24	0.672
			150	23.082	35.152	20.57	3.88	0.776
			200	20.027	34.987	19.65	3.19	0.957
			250	17.392	34.773	19.97	2.71	1.108
			300	14.933	34.550	20.24	2.34	1.240
			400	11.830	34.275	19.95	1.94	1.463
			500	9.138	34.131	15.86	1.60	1.653
			600	6.832	34.106	10.07	1.30	1.807
			700	5.474	34.195	5.78	1.07	1.933
			800	4.858	34.317	4.64	.91	2.042
			900	4.400	34.390	4.84	.80	2.137
			1000	4.018	34.444	5.33	.72	2.223
			1200	3.423	34.525	7.36	.61	2.375
			1500	2.764	34.566	8.40	.52	2.572
			2000	2.062	34.617	10.30	.42	2.855
	
	
	

Hydrographic Observation

No. 3 -1

STA-NO	LOCATION(Lat.)	LOCATION(Long.)	DATE/TIME(START) (JST)	DATE/TIME(END) (JST)	DEPTH				CRUISE.NO	SUB.NO
R F-6 5 9 1	2 0-0 1 N	1 6 4-5 9 E	8 m 2 1 d 1 6 h 4 5 m	8 m 2 1 d 2 0 h 5 1 m	5 3 5 2 m				1 9-0 6	-
Rem	CTD									

TIME JST	DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	PO ₄ -P μmol/kg	NO ₃ -N μmol/kg	NO ₂ -N μmol/kg	SiO ₂ μmol/kg	pH		CHL μg/l	PHA μg/l		DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	st 10 ⁻⁸ m ³ /kg	D 10 ¹⁰ m ² /sec ²
2 0 1 7	0	2 9.9 1 4	3 4.7 0 3	1 9 4.4	0 0.4	0 0.0	0 0.0	1.1	8.1 1 0		0.0 4	0.0 1		0	3 0.1 7 0	3 4.7 5 1	1 9 3.0	6 3 1	0.0 0 0
2 0 5 0	1 0	2 9.8 1 9	3 4.7 4 4	1 9 4.7	0 0.2	0 0.0	0 0.0	1.1	8.1 0 9		0.0 4	0.0 1		1 0	2 9.7 9 2	3 4.7 4 4	1 9 3.7	6 1 9	0.0 6 3
2 0 4 8	2 5	2 9.3 5 5	3 4.7 1 8	1 9 8.1	0 0.3	0 0.0	0 0.0	1.1	8.1 0 5		0.0 5	0.0 1		2 0	2 9.6 3 5	3 4.7 3 1	1 9 4.7	6 1 5	0.1 2 5
2 0 4 4	4 9	2 8.1 8 0	3 4.9 2 4	2 0 8.6	0 0.2	0 0.0	0 0.0	1.1	8.1 1 0		0.0 6	0.0 2		3 0	2 9.2 1 0	3 4.7 1 2	1 9 7.5	6 0 2	0.1 8 7
2 0 4 2	7 5	2 6.4 8 5	3 4.9 2 5	2 1 1.9	0 0.4	0 0.0	0 0.0	1.1	8.0 9 2		0.0 6	0.0 2		5 0	2 8.2 4 4	3 4.9 0 0	2 0 7.9	5 5 8	0.3 0 5
2 0 4 1	1 0 0	2 5.8 2 8	3 5.1 6 1	2 1 1.6	0 0.2	0 0.0	0 0.0	1.2	8.0 9 2		0.1 1	0.0 5		7 5	2 6.1 9 1	3 4.9 4 8	2 1 0.6	4 9 2	0.4 3 7
2 0 3 9	1 2 5	2 4.6 8 3	3 5.1 9 1	2 1 1.7	0 0.2	0 0.0	0 0.0	1.3	8.0 8 0		0.1 6	0.1 2		1 0 0	2 4.9 4 4	3 5.1 9 1	2 1 2.3	4 3 8	0.5 5 4
2 0 3 8	1 5 0	2 3.1 8 0	3 5.1 4 3	1 9 3.9	0 0.9	0.1 9	0 0.8	1.6	-		0.1 7	0.4 1		1 2 5	2 3.4 9 1	3 5.1 4 9	2 0 0.3	3 9 9	0.6 6 1
2 0 3 6	2 0 3	1 8.9 2 2	3 4.9 0 7	1 9 5.2	0.2 2	2.6 0	0 0.1	3.0	7.9 5 1		0.0 3	0.0 8		1 5 0	2 1.9 8 3	3 5.0 9 4	2 0 1.9	3 6 2	0.7 5 8
2 0 3 4	2 5 0	1 7.0 4 0	3 4.7 6 0	2 0 1.8	0.3 5	5.0 1	0 0.1	4.6	7.9 3 2		.	.		2 0 0	1 8.9 2 2	3 4.9 1 1	1 9 6.2	2 9 7	0.9 2 5
2 0 3 2	3 0 0	1 5.7 7 6	3 4.6 3 9	2 0 1.7	0.4 8	6.8 4	0 0.0	6.5	7.9 0 0		.	.		2 5 0	1 7.0 9 8	3 4.7 6 1	2 0 1.8	2 6 6	1.0 7 0
2 0 3 0	3 5 2	1 4.0 9 6	3 4.4 7 3	2 0 0.0	0.6 6	9.2 9	0 0.0	9.5	7.8 5 2		.	.		3 0 0	1 5.4 3 6	3 4.5 9 9	2 0 2.8	2 4 1	1.2 0 1
2 0 2 8	4 0 0	1 2.0 1 3	3 4.3 0 1	1 9 5.0	0.9 4	1 3.2 8	0 0.0	1 5.5	7.7 9 0		.	.		4 0 0	1 2.2 8 2	3 4.3 1 0	1 9 9.8	2 0 0	1.4 3 4
2 0 2 6	4 5 0	1 0.4 1 7	3 4.1 9 0	1 7 9.5	1.2 6	1 7.6 2	0 0.0	2 2.6	7.7 2 1		.	.		5 0 0	8.4 9 4	3 4.1 0 2	1 5 6.2	1 5 3	1.6 1 8
2 0 2 4	5 0 0	9.1 6 3	3 4.1 3 6	1 5 6.3	1.5 9	2 2.1 4	0 0.0	3 1.7	7.6 5 1		.	.		6 0 0	6.4 6 1	3 4.0 9 2	1 0 1.6	1 2 6	1.7 6 7
2 0 2 1	6 0 0	6.7 8 7	3 4.1 1 4	9 7.5	2.3 2	3 1.9 2	0 0.0	5 7.9	7.4 9 4		.	.		7 0 0	5.3 0 8	3 4.2 2 5	5 3 8	1 0 2	1.8 9 0
2 0 1 7	7 0 3	5.3 9 2	3 4.2 1 5	5 5.6	2.7 7	3 8.1 1	0 0.0	8 2.3	7.4 0 5		.	.		8 0 0	4.6 4 1	3 4.3 4 3	4 7.5	8 6	1.9 9 3
2 0 1 4	8 0 1	4.6 7 8	3 4.3 3 4	4 7.3	2.9 1	4 0.1 5	0 0.0	9 7.2	7.3 9 9		.	.		9 0 0	4.3 3 8	3 4.4 3 7	5 8.0	7 6	2.0 8 3
2 0 1 1	9 0 1	4.4 0 9	3 4.4 3 0	5 7.9	2.8 8	3 9.9 0	0 0.0	1 0 2.5	7.4 2 9		.	.		1 0 0 0	4.0 5 0	3 4.4 6 8	6 1.2	7 1	2.1 6 7
2 0 0 8	1 0 0 1	4.0 1 8	3 4.4 6 5	6 0.9	2.8 9	4 0.1 3	0 0.0	1 1 0.7	7.4 3 4		.	.		1 2 0 0	3.4 2 3	3 4.5 3 5	7 5.8	6 0	2.3 1 7
2 0 0 3	1 2 0 2	3.4 0 0	3 4.5 3 7	7 5.6	2.8 4	3 9.6 5	0 0.0	1 2 1.8	7.4 6 5		.	.		1 5 0 0	2.7 2 0	3 4.5 6 7	8 4.7	5 1	2.5 1 3
1 9 5 8	1 4 0 2	2.9 0 3	3 4.5 6 2	8 2.0	2.8 3	3 9.6 4	0 0.0	1 3 2.0	7.4 7 1		.	.		2 0 0 0	2.0 3 6	3 4.6 2 2	1 0 4.9	4 2	2.7 9 1
1 9 5 2	1 6 0 2	2.5 3 8	3 4.5 8 2	8 9.3	2.7 9	3 9.2 0	0 0.0	1 3 7.9	7.4 8 6		.	.		2 5 0 0	1.7 1 5	3 4.6 5 3	1 2 2.3	3 7	3.0 3 7
1 9 4 8	1 8 0 1	2.2 6 0	3 4.6 0 2	9 5.8	2.7 8	3 9.2 0	0 0.0	1 4 4.6	7.4 9 4		.	.		3 0 0 0	1.5 8 8	3 4.6 6 8	1 3 4.1	3 5	3.2 6 9
1 9 4 3	1 9 9 9	2.0 3 4	3 4.6 2 4	1 0 5.0	2.7 4	3 8.7 3	0 0.0	1 4 8.2	7.5 0 9		.	.		3 5 0 0	1.5 0 7	3 4.6 7 8	1 4 4.9	3 4	3.4 9 8

No. 3 -2

5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
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TIME JST	DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	PO ₄ -P μmol/kg	NO ₃ -N μmol/kg	NO ₂ -N μmol/kg	SiO ₂ μmol/kg	pH		CHL μg/l	PHA μg/l		DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	st 10 ⁻⁸ m ³ /kg	D 10 ¹⁰ m ³ /sec ²
1 9 3 8	2 2 4 8	1.8 6 6	3 4.6 3 9	1 1 3.5	2.6 9	3 8.2 7	0.0 0	1 5 1.1	7.5 2 4		.	.		4 0 0 0	1.4 6 7	3 4.6 8 5	1 5 5.1	3 3	3.7 2 6
1 9 3 2	2 5 0 0	1.7 3 2	3 4.6 5 2	1 2 1.4	2.6 5	3 7.8 2	0.0 0	1 5 2.4	7.5 3 7		.	.		4 5 0 0	1.4 4 2	3 4.6 9 1	1 6 5.5	3 2	3.9 5 7
1 9 2 6	2 7 4 9	1.6 5 0	3 4.6 6 0	1 2 7.6	2.6 2	3 7.4 9	0.0 0	1 5 3.0	7.5 4 8		.	.		5 0 0 0	1.4 3 6	3 4.6 9 6	1 7 4.6	3 2	4.1 9 2
1 9 2 1	2 9 9 8	1.5 8 6	3 4.6 6 7	1 3 3.4	2.5 9	3 7.0 6	0.0 0	1 5 2.3	7.5 5 7		.	.			.	.	.		.
1 9 1 6	3 2 4 9	1.5 4 0	3 4.6 7 3	1 3 9.5	2.5 6	3 6.6 7	0.0 0	1 5 1.6	7.5 6 8		.	.			.	.	.		.
1 9 1 0	3 4 9 9	1.5 0 9	3 4.6 7 8	1 4 4.8	2.5 3	3 6.2 9	0.0 0	1 4 9.9	7.5 7 3		.	.			.	.	.		.
1 9 0 5	3 7 5 0	1.4 8 4	3 4.6 8 2	1 4 9.8	2.5 0	3 5.9 6	0.0 0	1 4 8.3	7.5 8 1		.	.			.	.	.		.
1 8 5 9	4 0 0 4	1.4 6 6	3 4.6 8 5	-	2.4 8	3 5.6 7	0.0 0	1 4 5.9	7.5 8 7		.	.			.	.	.		.
1 8 4 9	4 5 0 0	1.4 4 4	3 4.6 9 1	1 6 5.1	2.4 2	3 4.8 3	0.0 0	1 4 0.6	7.6 0 3		.	.			.	.	.		.
1 8 3 9	5 0 0 0	1.4 3 6	3 4.6 9 6	1 7 4.7	2.3 7	3 4.1 7	0.0 0	1 3 4.8	7.6 1 1		.	.			.	.	.		.
1 8 3 3	5 2 5 0	1.4 4 1	3 4.6 9 8	1 7 8.1	2.3 5	3 3.9 0	0.0 0	1 3 2.7	7.6 1 3		.	.			.	.	.		.
1 8 3 0	5 3 5 7	1.4 5 2	3 4.6 9 8	-	2.3 5	3 3.9 5	0.0 0	1 3 2.9	7.6 1 2		.	.			.	.	.		.
	
	
	
	
	
	
	
	
	
	
	
	
	
	
	
5		10	15	20	25	30		35	40	45	50	55		60	65	70	75	80	

No. 4

5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
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Hydrographic Observation

No. 5 -1

STA-NO	LOCATION(Lat.)	LOCATION(Long.)	DATE/TIME(START) (JST)	DATE/TIME(END) (JST)	DEPTH				CRUISE.NO	SUB.NO
R F-6 5 9 3	1 8-0 0 N	1 6 4-5 9 E	8 m 2 2 d 1 0 h 0 3 m	8 m 2 2 d 1 2 h 1 3 m	5 4 2 8 m				1 9-0 6	-
Rem	CTD									

TIME JST	DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	PO ₄ -P μmol/kg	NO ₃ -N μmol/kg	NO ₂ -N μmol/kg	SiO ₂ μmol/kg	pH		CHL μg/l	PHA μg/l		DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	st 10 ⁻⁸ m ³ /kg	D 10 ¹⁰ m ² /sec ²
1 1 3 5	0	2 9.9 5 6	3 4.7 7 5	1 9 4.5	0 0 4	0 0 0	0 0 0	1 0	.		0 0 6	0 0 1		0	2 9.7 7 2	3 4.7 6 3	1 9 3.7	6 1 7	0 0 0 0
1 2 1 1	1 1	2 9.7 6 7	3 4.8 0 2	1 9 4.5	0 0 1	0 0 0	0 0 0	1 0	.		0 0 5	0 0 1		1 0	2 9.7 3 9	3 4.8 0 7	1 9 3.5	6 1 3	0 0 6 2
1 2 1 0	2 5	2 9.6 3 8	3 4.8 0 3	1 9 4.9	0 0 1	0 0 0	0 0 0	1 0	.		0 0 6	0 0 1		2 0	2 9.6 6 7	3 4.8 1 3	1 9 3.9	6 1 0	0 1 2 3
1 2 0 5	5 0	2 8.7 4 6	3 4.8 8 5	2 0 4.3	0 0 2	0 0 0	0 0 0	1 0	.		0 0 7	0 0 2		3 0	2 9.4 7 9	3 4.7 7 6	1 9 5.6	6 0 7	0 1 8 5
1 2 0 4	7 5	2 7.0 2 3	3 5.0 8 0	2 1 4.5	0 0 1	0 0 0	0 0 0	1 0	.		0 1 0	0 0 3		5 0	2 8.8 0 1	3 4.8 4 4	2 0 3.5	5 8 0	0 3 0 5
1 2 0 2	9 9	2 5.6 0 9	3 5.1 5 2	2 1 4.3	0 0 2	0 0 0	0 0 0	1 0	.		0 1 3	0 0 7		7 5	2 6.5 7 1	3 5.1 1 9	2 1 5.6	4 9 1	0 4 3 8
1 2 0 0	1 2 5	2 4.4 6 6	3 5.2 0 2	2 0 9.5	0 0 2	0 0 0	0 0 0	1 2	.		0 2 1	0 2 3		1 0 0	2 5.3 6 1	3 5.1 4 9	2 1 4.6	4 5 3	0 5 5 8
1 2 0 0	1 2 5	2 4.4 6 3	3 5.2 0 2	2 0 9.8	0 0 2	0 0 0	0 0 0	1 2	.		.	.		1 2 5	2 4.3 2 9	3 5.2 0 7	2 0 9.3	4 1 9	0 6 6 8
1 1 5 8	1 4 9	2 3.2 1 5	3 5.1 6 1	1 9 6.3	0 0 8	0 1 8	0 1 3	1 5	.		0 1 5	0 3 6		1 5 0	2 3.0 0 0	3 5.1 5 5	1 9 4.2	3 8 5	0 7 7 0
1 1 5 5	1 9 9	1 9.7 2 7	3 4.9 7 3	1 8 9.3	0 2 4	2 5 0	0 0 2	2 9	.		0 0 2	0 0 6		2 0 0	1 9.3 7 4	3 4.9 4 6	1 9 1.0	3 0 6	0 9 4 3
1 1 5 3	2 5 1	1 6.8 9 4	3 4.7 2 6	1 9 6.8	0 4 0	5 4 1	0 0 1	4 9	.		.	.		2 5 0	1 6.4 6 5	3 4.6 9 8	2 0 0.9	2 5 6	1 0 8 7
1 1 5 1	3 0 1	1 5.0 9 4	3 4.5 6 7	1 9 9.3	0 5 6	7 8 8	0 0 0	7 7	.		.	.		3 0 0	1 4.6 7 9	3 4.5 1 6	1 9 5.8	2 3 1	1 2 1 4
1 1 4 8	3 5 0	1 1.9 1 2	3 4.2 7 7	1 5 8.0	1 2 5	1 6.3 7	0 0 0	1 7.7	.		.	.		4 0 0	1 0.1 9 0	3 4.1 8 2	1 8 3.8	1 7 3	1 4 2 1
1 1 4 5	3 9 9	9.8 4 9	3 4.1 6 1	1 7 4.5	1 3 7	1 9.3 4	0 0 0	2 6.1	.		.	.		5 0 0	7.7 2 4	3 4.2 0 5	9 0.4	1 3 4	1 5 8 3
1 1 4 1	4 5 0	8.3 7 3	3 4.1 2 2	1 3 4.7	1 8 6	2 5.6 7	0 0 0	3 9.4	.		.	.		6 0 0	6.3 4 8	3 4.3 0 3	5 5.1	1 0 9	1 7 1 4
1 1 3 9	5 0 1	7.5 5 6	3 4.2 1 8	8 0.5	2.3 6	3 1.9 5	0 0 0	5 1.6	.		.	.		7 0 0	5.7 1 2	3 4.4 0 0	6 0.8	9 4	1 8 2 5
1 1 3 5	6 0 2	6.4 2 2	3 4.2 9 0	5 5.1	2.6 9	3 6.6 2	0 0 0	6 7.4	.		.	.		8 0 0	5.1 6 4	3 4.4 6 0	7 1.3	8 3	1 9 2 3
1 1 3 2	7 0 1	5.7 9 7	3 4.4 0 7	5 9.1	2.7 6	3 7.8 9	0 0 0	7 6.6	.		.	.		9 0 0	4.7 8 5	3 4.4 9 0	7 4.7	7 7	2 0 1 3
1 1 2 9	8 0 0	5.2 0 1	3 4.4 5 8	6 9.8	2.7 6	3 8.0 6	0 0 0	8 6.4	.		.	.		1 0 0 0	4.3 8 7	3 4.5 0 9	7 7.7	7 1	2 0 9 8
1 1 2 6	8 9 9	4.7 7 3	3 4.4 9 1	7 4.5	2.7 7	3 8.3 8	0 0 0	9 3.6	.		.	.		1 2 0 0	3.5 8 9	3 4.5 4 0	8 0.4	6 1	2 2 5 2
1 1 2 0	9 9 9	4.3 9 9	3 4.5 0 9	7 7.1	2.7 8	3 8.6 5	0 0 0	1 0 0.6	.		.	.		1 5 0 0	2.8 8 6	3 4.5 7 5	8 9.1	5 2	2 4 5 3
1 1 2 0	1 0 0 0	4.3 9 8	3 4.5 0 9	7 7.0	2.7 8	3 8.6 5	0 0 0	1 0 0.7	.		.	.		2 0 0 0	2.1 5 0	3 4.6 2 1	1 0 2.3	4 3	2 7 3 8
1 1 0 9	1 2 0 0	3.5 3 4	3 4.5 3 9	7 8.6	2.8 4	3 9.4 4	0 0 0	1 1 8.7	.		.	.							
1 1 0 4	1 4 0 0	3.0 6 2	3 4.5 6 8	8 6.6	2.8 2	3 9.3 0	0 0 0	1 2 7.5	.		.	.							
1 0 5 9	1 6 0 0	2.6 7 5	3 4.5 8 8	9 0.4	2.8 1	3 9.4 8	0 0 0	1 3 5.7	.		.	.							

No. 5 -2

5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
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No. 6

TIME JST	DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	PO ₄ -P μmol/kg	NO ₃ -N μmol/kg	NO ₂ -N μmol/kg	SiO ₂ μmol/kg	pH		CHL μg/l	PHA μg/l		DEPTH m	TEMPERATURE	SALINITY (psu)	O ₂ μmol/kg	st _{10⁻⁸} m ³ /kg	D ₁₀ m ² /sec ²
			0	29.798	34.585	193.1	63.1	0.000
			10	29.817	34.606	193.1	63.0	0.063
			20	29.709	34.598	193.4	62.7	0.127
			30	29.618	34.748	195.6	61.3	0.190
			50	29.294	34.709	196.9	60.5	0.313
			75	27.297	35.072	215.2	51.6	0.454
			100	25.299	35.192	210.5	44.8	0.575
			125	23.310	35.158	196.9	39.4	0.682
			150	21.108	35.045	198.3	34.2	0.775
			200	18.172	34.849	201.5	28.4	0.935
			250	16.364	34.690	202.3	25.4	1.074
			300	13.496	34.358	163.2	21.9	1.198
			400	9.208	34.168	143.3	15.9	1.395
			500	7.208	34.225	75.4	12.6	1.544
			600	6.228	34.338	50.4	10.5	1.668
			700	5.640	34.431	54.9	9.1	1.775
			800	5.188	34.469	64.1	8.3	1.871
			900	4.696	34.504	64.5	7.5	1.960
			1000	4.323	34.522	66.7	7.0	2.042
			1200	3.676	34.547	72.6	6.1	2.195
			1500	2.911	34.577	82.9	5.2	2.396
			2000	2.122	34.625	102.6	4.2	2.681
	
	
	

Current Observation

No. 1

CRUISE NO	DATE (START)	DATE (END)	OCEAN AREA	SHIP
1 9 0 6	8 2 1	8 2 2	WESTERN P A C I F I C	R F

[illegible]