

## MIRAI MR04-08 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

[ReadMe](#) [Observation Data](#) [Data Format](#)

Cruise ID: [MR04-08 Leg1](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN  
OCEANS > OCEAN TEMPERATURE > WATER TEMPERATURE  
OCEANS > SALINITY/DENSITY > SALINITY

Cruise Report

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR04-08\\_leg1\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR04-08_leg1_all.pdf)

### **i** For Using Data

#### Principal Investigator

Data Management Office

#### Use Constraints

See [Terms and Conditions](#) about constrain of use.

#### Data Citation

See [Terms and Conditions](#) about data citation.

### Instrument

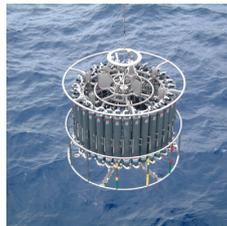
Instrument:

Water sampling system with CTD (30  
litters \* 24 bottles)



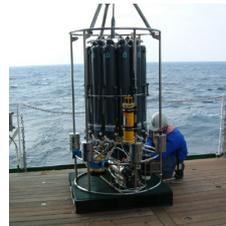
Instrument:

Water sampling system with CTD (12  
litters \* 36 bottles)



Instrument:

Water sampling system with CTD (12  
litters \* 12 bottles)



Instrument:

Conductivity temperature depth  
measurements (CTD)



### Overview

CTD(Conductivity-Temperature-Depth profiler) is used to observe the vertical profiles of temperature and conductivity.

Usually, this system is operated with multicylinder water sampler.

Observed signal is transmitted from sensor to the operation room on board using wire cable, and electric power is supplied from vessel to sensor.

Details of sensors attached to CTD system for MR04-08 Leg1 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR04-08 Leg1.

SEASAVE(ver 5.27b) for data acquisition

SEASOFT(ver 5.27b) for data processing

Data presented on this website is averaged over 1db.

### System

#### • Pressure sensor

Model : SBE9plus, Sea-Bird Electronics,Inc.

Serial number : 51190

Measurement range : up to 10500m

Accuracy : 0.015% F.S.

Resolution : 0.001% F.S.

#### • Temperature sensor

Model : SBE3, Sea-Bird Electronics,Inc.

Serial number : 032730

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

#### • Salinity sensor

Model : SBE4, Sea-Bird Electronics,Inc.

Serial number : 042435

Measurement range : 0.0 to 7 S/m

Accuracy : 0.0003 S/m

Resolution : 0.00004 S/m

• DO sensor

Model : SBE43, Sea-Bird Electronics, Inc.

Serial number : 430205

Measurement range : 120% of surface saturation

Accuracy : 2% of saturation

Sensors used in each cast is as follows.

Cast name	Serial number of sensor			
	Pressure	Temperature	Salinity	Dissolved Oxygen
08S003	51190	032730	042435	430205
08S004	51190	032730	042435	430205
08S005	51190	032730	042435	430205
08S006	51190	032730	042435	430205
08S007	51190	032730	042435	430205
08S008	51190	032730	042435	430205
08S009	51190	032730	042435	430205
08S010	51190	032730	042435	430205
08S011	51190	032730	042435	430205
08S012	51190	032730	042435	430205
08S013	51190	032730	042435	430205
08S014	51190	032730	042435	430205
08S015	51190	032730	042435	430205
08S016	51190	032730	042435	430205
08S017	51190	032730	042435	430205
08S018	51190	032730	042435	430205
08S019	51190	032730	042435	430205
08S020	51190	032730	042435	430205
08S021	51190	032730	042435	430205
08S022	51190	032730	042435	430205
08S023	51190	032730	042435	430205
08S024	51190	032730	042435	430205
08S025	51190	032730	042435	430205
08S026	51190	032730	042435	430205
08S027	51190	032730	042435	430205
08S028	51190	032730	042435	430205
08S029	51190	032730	042435	430205
08S030	51190	032730	042435	430205
08S031	51190	032730	042435	430205
08S032	51190	032730	042435	430205
08S033	51190	032730	042435	430205
08S034	51190	032730	042435	430205
08S035	51190	032730	042435	430205
08S036	51190	032730	042435	430205
08S037	51190	032730	042435	430205
08S038	51190	032730	042435	430205
08S039	51190	032730	042435	430205
08S040	51190	032730	042435	430205
08S041	51190	032730	042435	430205
08S042	51190	032730	042435	430205
08S043	51190	032730	042435	430205
08S044	51190	032730	042435	430205
08S045	51190	032730	042435	430205
08S046	51190	032730	042435	430205
08S047	51190	032730	042435	430205
08S048	51190	032730	042435	430205
08S049	51190	032730	042435	430205
08S050	51190	032730	042435	430205
08S051	51190	032730	042435	430205
08S052	51190	032730	042435	430205
08S053	51190	032730	042435	430205
08S054	51190	032730	042435	430205
08S055	51190	032730	042435	430205
08S056	51190	032730	042435	430205
08S057	51190	032730	042435	430205
08S058	51190	032730	042435	430205
08S059	51190	032730	042435	430205
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08S064	51190	032730	042435	430205
08S065	51190	032730	042435	430205
08S066	51190	032730	042435	430205
08S067	51190	032730	042435	430205
08S068	51190	032730	042435	430205
08S069	51190	032730	042435	430205
08S070	51190	032730	042435	430205

08S071	51190	032730	042435	430205
Cast name	Serial number of sensor	Pressure	Temperature	Dissolved Oxygen
08S072	51190	032730	042435	430205
08S073	51190	032730	042435	430205
08S074	51190	032730	042435	430205
08S075	51190	032730	042435	430205
08S076	51190	032730	042435	430205
08S077	51190	032730	042435	430205
08S078	51190	032730	042435	430205
08S079	51190	032730	042435	430205
08S080	51190	032730	042435	430205
08S081	51190	032730	042435	430205
08S082	51190	032730	042435	430205
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08S085	51190	032730	042435	430205
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08S092	51190	032730	042435	430205
08S093	51190	032730	042435	430205
08S094	51190	032730	042435	430205
08S095	51190	032730	042435	430205
08S096	51190	032730	042435	430205
08S097	51190	032730	042435	430205
08S098	51190	032730	042435	430205
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08S100	51190	032730	042435	430205
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08S106	51190	032730	042435	430205
08S107	51190	032730	042435	430205
08S108	51190	032730	042435	430205
08S109	51190	032730	042435	430205
08S110	51190	032730	042435	430205
08S111	51190	032730	042435	430205
08S112	51190	032730	042435	430205
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08S137	51190	032730	042435	430205
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08S140	51190	032730	042435	430205
08S141	51190	032730	042435	430205
08S142	51190	032730	042435	430205
08S143	51190	032730	042435	430205
08S144	51190	032730	042435	430205
08S145	51190	032730	042435	430205
08S146	51190	032730	042435	430205
08S147	51190	032730	042435	430205
08S148	51190	032730	042435	430205

## Calibration Information

Calibration Information is as follows.

### Calibration Information

## Data processing

(1) Data processing sequence for SEASOFT is as follows;

command	function
datcrv	Convert raw data to engineering units, and store converted data in file.
alignctd	Align data relative to pressure (typically used for conductivity, temperature, and oxygen).
wildedit	Mark a data value with badflag to eliminate wild points.
celltm	Perform conductivity thermal mass correction.
filter	Low-pass filter columns of data.
section	Extract rows of data from file.
loopedit	Mark a scan with badflag if scan fails pressure reversal or minimum velocity tests.
derive	Calculate oxygen. (with oxygen sensor)
binavg	Average data, basing bins on pressure, depth, scan number, or time range.
derive	Calculate salinity, density, etc..
split	Split data in file into upcast and downcast files.

(2) Quality control

QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure.

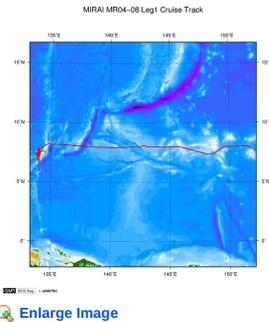
- 1) The gradient check of adjacent depth data
- 2) The density inversion check
- 3) The broad range check set up at given ocean space and depth

Please see the site of NODC for the following link for quality control procedure in detail.

[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

In addition, an abnormal value is identified by a visual check, and the data after visual QC is released.

## Related Information



### MR04-08 Leg1

Ship Name: MIRAI  
Period: 2004-12-11 - 2005-01-11  
Chief Scientist: Kunio Yoneyama (JAMSTEC)  
Project Name: [MJO Research]

## Update History

2017-06-22	An observation data was registered.
2014-07-25	An observation data was registered.
2014-02-06	An observation data was registered.
2013-03-27	An observation data was registered.
2012-11-25	An observation data was registered.

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### Information of the Ships

NATSUSHIMA  
KAIYO  
YOKOSUKA  
MIRAI  
KAIREI  
CHIKYU  
KAIMEI  
SHINSEI MARU  
HAKUHO MARU

### Information of the Submersibles

KAIKO  
SHINKAI 2000  
SHINKAI 6500  
DEEP TOW  
HYPER-DOLPHIN  
URASHIMA  
YOKOSUKA DEEP TOW  
6K Camera DEEP TOW  
6K Sonar DEEP TOW  
KM-ROV  
POWER GRAB SAMPLER (SHELL)  
POWER GRAB SAMPLER (CLOW)  
BMS

### Go to a Cruise Information

Cruise ID:

### Go to a Dive Information

Dive ID:



## MIRAI MR04-08 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

[ReadMe](#) [Observation Data](#) [Data Format](#)

Cruise ID: [MR04-08 Leg1](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

### CTD DMO

#### Format Description for the Corrected Data

Provided in the Exchange Format of CCHDO (CLIVAR and Carbon Hydrographic Data Office). Please see the following link for details of Exchange Format.

[CCHDO | CLIVAR & Carbon Hydrographic Data Office](#)

Data in following cruise is not expressed with Exchange Format. Please see the site of each cruise for format.

MR02-K05 Leg1

MR04-05

#### Format Description for the QCed Data

Each data file contains one line header (meta data) followed by data lines for each cast.

The number of data lines are recorded in the header.

Header part

No.	Column	Content	Format	Remarks
1	1	Header ID	a1	fixed as '#'
2	3 - 6	Data ID	a4	CTD
3	8 - 22	Cruise ID	a15	MYYY-(K)XX(_legx)
4	24 - 31	Cast name	a8	
5	33 - 40	Date	i8	YYYYMMDD (UTC)
6	42 - 45	Time	i4	hhmm (UTC)
7	47 - 55	Latitude	i2,a1,f5.2,a1	dd-mm.mmN(S)
8	57 - 66	Longitude	i3,a1,f5.2,a1	ddd-mm.mmE(W)
9	68 - 71	Number of data lines	i4	
10	72 - 73	Terminator	-	CR+LF

Data part

No.	Column	Content	Unit	Format	Remarks
1	1 - 11	Pressure	dbar	f11.3	
2	12 - 22	Temperature	deg-C	f11.4	ITS-90
3	23 - 33	Salinity	PSU	f11.4	PSS-78
4	34 - 44	Dissolved oxygen	umol/kg	f11.3	
5	45 - 55	Flag	-	i11	1 - 7 : space 8 : flag of pressure 9 : flag of temperature 10 : flag of salinity 11 : flag of dissolved oxygen * reference : <a href="#">'Definition of Quality Control Flags'</a>
6	56 - 57	Terminator	-	-	CR+LF

Each contents of the data part is stored in 11 bytes.

Missing value is presented by '-5', and error value is presented by '-9'.

Definition of Quality Control Flags

#### 1. Depth Flags

- 0 - accepted value
- 1 - error in recorded depth ( same or less than previous depth )
- 2 - density inversion

#### 2. Observed Level Flags

- N - missing value
- 0 - accepted value
- 1 - range outlier ( outside of broad range check )
- 2 - failed inversion check
- 3 - failed gradient check
- 4 - zero anomaly
- 5 - failed combined gradient and inversion checks
- 6 - failed range and inversion checks
- 7 - failed range and gradient checks
- 8 - failed range and zero anomaly checks
- 9 - failed range and combined gradient and inversion checks
- A - failed visual check

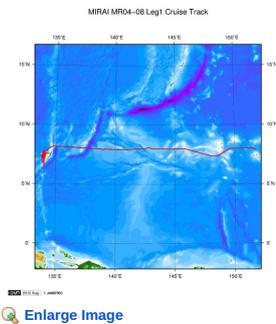
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

#### Sample Program

[ex\\_read2.f](#)

#### Related Information



**MR04-08 Leg1**  
 Ship Name: MIRAI  
 Period: 2004-12-11 - 2005-01-11  
 Chief Scientist: Kunio Yoneyama (JAMSTEC)  
 Project Name: [MJO Research]

**Update History**

2017-06-22	An observation data was registerd.
2014-07-25	An observation data was registerd.
2014-02-06	An observation data was registerd.
2013-03-27	An observation data was registerd.
2012-11-25	An observation data was registerd.

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**Information of the Ships**  
 NATSUSHIMA  
 KAIYO  
 YOKOSUKA  
 MIRAI  
 KAIREI  
 CHIKYU  
 KAIMEI  
 SHINSEI MARU  
 HAKUHO MARU

**Information of the Submersibles**  
 KAIKO  
 SHINKAI 2000  
 SHINKAI 6500  
 DEEP TOW  
 HYPER-DOLPHIN  
 URASHIMA  
 YOKOSUKA DEEP TOW  
 6K Camera DEEP TOW  
 6K Sonar DEEP TOW  
 KM-ROV  
 POWER GRAB SAMPLER (SHELL)  
 POWER GRAB SAMPLER (CLOW)  
 BMS

**Go to a Cruise Information**  
 Cruise ID:

**Go to a Dive Information**  
 Dive ID:

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**JAMSTEC**  
 国立研究開発法人  
 海洋研究開発機構  
 JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

**MIRAI MR04-08 Leg1 Conductivity-Temperature-Depth Profiler (CTD)**

Last Modified: 2017-06-22

ReadMe **Observation Data** Data Format

Cruise ID: [MR04-08 Leg1](#)  
Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

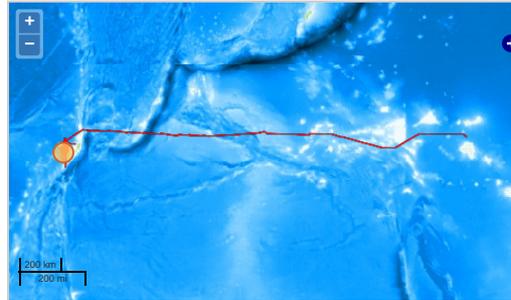
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

- OCEANS > OCEAN CHEMISTRY > OXYGEN
- OCEANS > OCEAN > WATER
- TEMPERATURE TEMPERATURE
- OCEANS > SALINITY/DENSITY > SALINITY

**Observation Map**

- Clicking the icon displays a balloon with observation information.
- Then click the observation name, figures will be displayed.



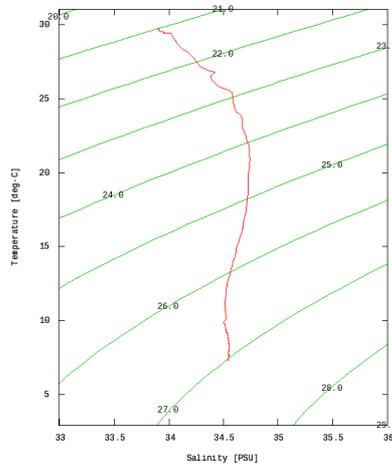
— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole Imagery reproduced from ...

**Figures**

08S003



MR04-08 Leg1: 08S003  
Conductivity-Temperature-Depth Profiler (CTD): Salinity



Only values evaluated as "good" : all flags are 0" are plotted in profiles.  
Please see Format Page for the definition of quality flags.

**Data List**

**File names**

- 08S003.dat
- 08S004.dat
- 08S005.dat
- 08S006.dat
- 08S007.dat
- 08S008.dat
- 08S009.dat
- 08S010.dat
- 08S011.dat
- 08S012.dat
- 08S013.dat
- 08S014.dat
- 08S015.dat

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File Name
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<input type="checkbox"/> 08S115.dat
<input type="checkbox"/> 08S116.dat
<input type="checkbox"/> 08S117.dat
<input type="checkbox"/> 08S118.dat
<input type="checkbox"/> 08S119.dat
<input type="checkbox"/> 08S120.dat
<input type="checkbox"/> 08S121.dat
<input type="checkbox"/> 08S122.dat
<input type="checkbox"/> 08S123.dat
<input type="checkbox"/> 08S124.dat
<input type="checkbox"/> 08S125.dat
<input type="checkbox"/> 08S126.dat
<input type="checkbox"/> 08S127.dat
<input type="checkbox"/> 08S128.dat
<input type="checkbox"/> 08S129.dat
<input type="checkbox"/> 08S130.dat
<input type="checkbox"/> 08S131.dat
<input type="checkbox"/> 08S132.dat
<input type="checkbox"/> 08S133.dat
<input type="checkbox"/> 08S134.dat
<input type="checkbox"/> 08S135.dat
<input type="checkbox"/> 08S136.dat
<input type="checkbox"/> 08S137.dat
<input type="checkbox"/> 08S138.dat
<input type="checkbox"/> 08S139.dat
<input type="checkbox"/> 08S140.dat
<input type="checkbox"/> 08S141.dat
<input type="checkbox"/> 08S142.dat
<input type="checkbox"/> 08S143.dat
<input type="checkbox"/> 08S144.dat
<input type="checkbox"/> 08S145.dat
<input type="checkbox"/> 08S146.dat
<input type="checkbox"/> 08S147.dat
<input type="checkbox"/> 08S148.dat
<input type="checkbox"/> ex_read2.f (Sample Program)

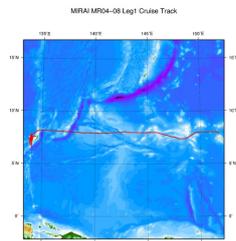
- Observation List  
The list of observation is shown as follows.

Observation	Time and Date	Lat. [°]	Lon. [°]
08S003	2004-12-15 08:25	7.3018	133.9008
08S004	2004-12-15 11:24	7.2988	133.9015
08S005	2004-12-15 14:26	7.2988	133.8980
08S006	2004-12-15 17:21	7.2938	133.9018
08S007	2004-12-15 20:25	7.2991	133.8995
08S008	2004-12-15 23:24	7.3000	133.8993
08S009	2004-12-16 02:22	7.2955	133.9013
08S010	2004-12-16 05:25	7.2963	133.9001
08S011	2004-12-16 08:26	7.2995	133.9000
08S012	2004-12-16 11:24	7.3006	134.0013
08S013	2004-12-16 14:25	7.3005	134.0000
08S014	2004-12-16 17:24	7.3001	134.0004
08S015	2004-12-16 20:24	7.3005	134.0001
08S016	2004-12-16 23:22	7.3010	133.9995
08S017	2004-12-17 02:21	7.3000	133.9991
08S018	2004-12-17 05:26	7.3026	134.0040
08S019	2004-12-17 08:25	7.3005	134.0015
08S020	2004-12-17 11:25	7.3006	134.0015
08S021	2004-12-17 14:25	7.2986	134.0001
08S022	2004-12-17 17:24	7.2975	133.9998
08S023	2004-12-17 20:20	7.2990	134.0003
08S024	2004-12-17 23:20	7.2985	133.9995
08S025	2004-12-18 02:20	7.2675	133.9379
08S026	2004-12-18 05:24	7.2635	134.0060
08S027	2004-12-18 08:25	7.2978	133.9998
08S028	2004-12-18 11:25	7.2996	133.9998
08S029	2004-12-18 14:25	7.2995	134.0000
08S030	2004-12-18 17:24	7.3003	134.0010

Observation	Time and Date	Lat (°)	Lon (°)
08S031	2004-12-18 20:23	7.2991	133.9991
08S032	2004-12-18 23:23	7.2985	133.9966
08S033	2004-12-19 02:25	7.2440	134.0170
08S034	2004-12-19 05:25	7.2718	133.8348
08S035	2004-12-19 08:26	7.2115	134.0065
08S036	2004-12-19 11:25	7.3241	133.9940
08S037	2004-12-19 14:25	7.2991	133.9995
08S038	2004-12-19 17:26	7.3008	134.0001
08S039	2004-12-19 20:18	7.3043	134.0004
08S040	2004-12-19 23:23	7.3001	133.9998
08S041	2004-12-20 02:22	7.3010	133.9996
08S042	2004-12-20 05:25	7.2983	134.0000
08S043	2004-12-20 08:25	7.2975	134.0004
08S044	2004-12-20 11:25	7.2991	134.0000
08S045	2004-12-20 14:25	7.2988	133.9988
08S046	2004-12-20 17:21	7.2998	133.9993
08S047	2004-12-20 20:24	7.2991	133.9996
08S048	2004-12-20 23:16	7.3061	133.9928
08S049	2004-12-21 02:24	7.3033	134.0000
08S050	2004-12-21 05:25	7.3001	133.9993
08S051	2004-12-21 08:25	7.3005	134.0018
08S052	2004-12-21 11:25	7.2988	134.0003
08S053	2004-12-21 14:26	7.3005	134.0000
08S054	2004-12-21 17:22	7.3015	133.9988
08S055	2004-12-21 20:23	7.3005	134.0016
08S056	2004-12-21 23:17	7.3060	133.9990
08S057	2004-12-22 02:24	7.3043	134.0101
08S058	2004-12-22 05:27	7.3020	133.9976
08S059	2004-12-22 08:25	7.3010	133.9993
08S060	2004-12-22 11:25	7.2993	133.9998
08S061	2004-12-22 14:25	7.3005	134.0000
08S062	2004-12-22 17:21	7.3005	133.9998
08S063	2004-12-22 20:23	7.3003	134.0000
08S064	2004-12-22 23:23	7.3006	134.0013
08S065	2004-12-23 02:24	7.3001	134.0006
08S066	2004-12-23 05:21	7.4553	134.0000
08S067	2004-12-23 08:25	7.6375	133.8959
08S068	2004-12-23 11:25	7.5000	134.0011
08S069	2004-12-23 14:25	7.5008	134.0004
08S070	2004-12-23 17:23	7.5015	133.9995
08S071	2004-12-23 20:23	7.5003	134.0013
08S072	2004-12-23 23:23	7.5006	134.0026
08S073	2004-12-24 02:24	7.4998	134.0021
08S074	2004-12-24 05:25	7.4631	134.0410
08S075	2004-12-24 08:25	7.4976	133.9988
08S076	2004-12-24 11:25	7.4983	133.9991
08S077	2004-12-24 14:25	7.5005	133.9996
08S078	2004-12-24 17:23	7.4998	134.0000
08S079	2004-12-24 20:24	7.4995	133.9993
08S080	2004-12-24 23:23	7.3838	134.0501
08S081	2004-12-25 02:26	7.3003	134.0025
08S082	2004-12-25 05:25	7.2428	134.0813
08S083	2004-12-25 08:25	7.4490	134.0873
08S084	2004-12-25 11:25	7.2211	134.0901
08S085	2004-12-25 14:25	7.3010	133.9993
08S087	2004-12-25 20:23	7.3001	134.0000
08S088	2004-12-25 23:23	7.3016	134.0020
08S089	2004-12-26 02:23	7.3005	134.0011
08S090	2004-12-26 05:26	7.3033	134.0006
08S091	2004-12-26 08:25	7.4993	133.9995
08S092	2004-12-26 11:27	7.4998	134.0004
08S093	2004-12-26 14:25	7.5001	134.0016
08S094	2004-12-26 17:24	7.3346	134.0133
08S095	2004-12-26 20:23	7.5001	133.9998
08S096	2004-12-27 00:15	7.5535	133.8998
08S097	2004-12-27 02:26	7.5000	133.9980
08S098	2004-12-27 05:25	7.5005	133.9998
08S099	2004-12-27 08:25	7.5005	133.9996
08S100	2004-12-27 11:25	7.5008	134.0013
08S101	2004-12-27 14:28	7.3151	134.0165
08S102	2004-12-27 17:24	7.0783	134.0106
08S103	2004-12-27 20:24	7.5120	134.0008
08S104	2004-12-27 23:25	7.3518	134.0395
08S105	2004-12-28 02:10	7.3685	134.0751
08S106	2004-12-28 05:25	7.5006	134.0611
08S107	2004-12-28 08:25	7.4986	134.0000
08S108	2004-12-28 11:25	7.4996	133.9995
08S109	2004-12-28 14:25	7.4986	134.0011
08S110	2004-12-28 17:23	7.4983	134.0003
08S111	2004-12-28 20:23	7.4995	134.0006
08S112	2004-12-28 23:36	7.4983	133.9981
08S113	2004-12-29 05:25	7.4988	133.9988

Observation	Time and Date	Lat. [°]	Lon. [°]
08S114	2004-12-29 11:53	7.4928	134.0078
08S115	2004-12-29 17:23	7.4981	133.9968
08S116	2004-12-29 23:23	7.5021	134.0031
08S117	2004-12-30 05:26	7.5068	134.0075
08S118	2004-12-30 11:25	7.5051	134.0048
08S119	2004-12-30 17:43	7.4845	133.9996
08S120	2004-12-30 23:24	7.7833	133.9935
08S121	2004-12-31 05:27	7.7851	133.9576
08S122	2004-12-31 11:25	7.6801	134.0521
08S123	2004-12-31 17:24	7.3001	133.9986
08S124	2004-12-31 23:25	7.2981	134.0010
08S125	2005-01-01 05:25	7.3020	134.0013
08S126	2005-01-01 11:22	7.3008	133.9998
08S127	2005-01-01 17:24	7.3001	133.9998
08S128	2005-01-01 23:24	7.2990	133.9998
08S129	2005-01-02 05:25	7.2990	134.0006
08S130	2005-01-02 11:23	7.2978	134.0013
08S131	2005-01-02 17:24	7.2996	133.9990
08S132	2005-01-02 23:23	7.2991	134.0010
08S133	2005-01-03 05:25	7.2963	134.0013
08S134	2005-01-03 11:22	7.3008	133.9993
08S135	2005-01-03 17:24	7.3018	133.9996
08S136	2005-01-03 23:26	7.3000	133.9991
08S137	2005-01-04 05:25	7.3013	134.0003
08S138	2005-01-04 11:23	7.3001	134.0018
08S139	2005-01-04 17:24	7.3008	133.9995
08S140	2005-01-04 23:26	7.2998	134.0011
08S141	2005-01-05 05:27	7.2991	134.0016
08S142	2005-01-05 11:25	7.4910	133.9935
08S143	2005-01-05 17:26	7.5013	134.0015
08S144	2005-01-05 23:24	7.5001	134.0010
08S145	2005-01-06 05:26	7.5071	134.0043
08S146	2005-01-06 11:23	7.5008	134.0016
08S147	2005-01-06 17:27	7.4935	134.0000
08S148	2005-01-06 23:25	7.5010	133.9996

#### Related Information



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#### MR04-08 Leg1

Ship Name: MIRAI  
 Period: 2004-12-11 - 2005-01-11  
 Chief Scientist: Kunio Yoneyama (JAMSTEC)  
 Project Name: [MJO Research]

#### Update History

2017-06-22	An observation data was registered.
2014-07-25	An observation data was registered.
2014-02-06	An observation data was registered.
2013-03-27	An observation data was registered.
2012-11-25	An observation data was registered.

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 YOKOSUKA  
 MIRAI  
 KAIREI  
 CHIKYU  
 KAIMEI  
 SHINSEI MARU  
 HAKUHO MARU

#### Information of the Submersibles

KAIKO  
 SHINKAI 2000  
 SHINKAI 6500  
 DEEP TOW  
 HYPER-DOLPHIN  
 URASHIMA  
 YOKOSUKA DEEP TOW  
 6K Camera DEEP TOW  
 6K Sonar DEEP TOW  
 KM-ROV  
 POWER GRAB SAMPLER (SHELL)  
 POWER GRAB SAMPLER (CLOW)  
 BMS

#### Go to a Cruise Information

Cruise ID:

#### Go to a Dive Information

Dive ID:

