



MIRAI “Cruise Report”
MR25-03

Performance confirmation test

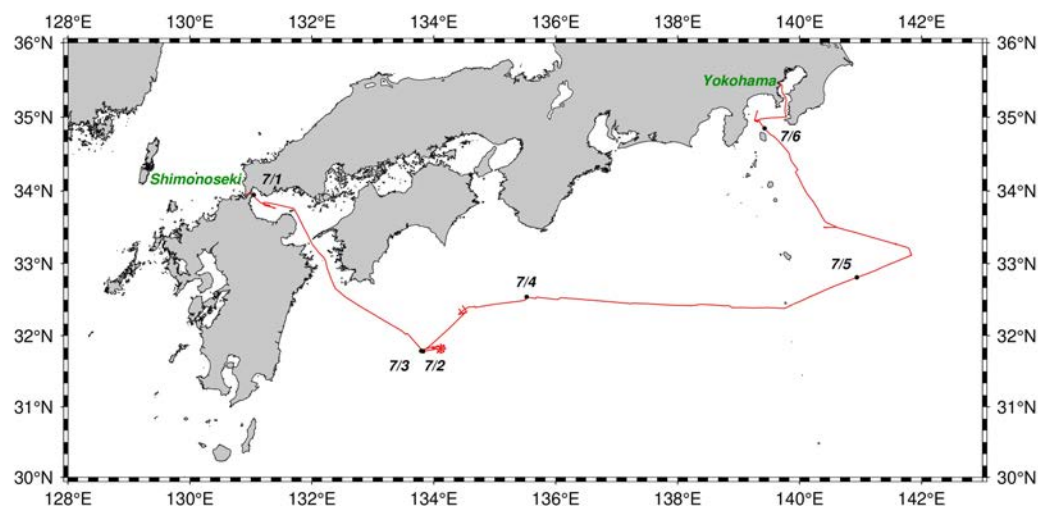
Off the cost of Shikoku, Kumano-nada, Off the east cost
of Aogashima, Izu-Ogasawara Trench, Around the Izu
Islands, Sagami Bay

July,1,2025-July,7,2025

Japan Agency for Marine-Earth Science and Technology
(JAMSTEC)

1. Cruise Information

- Cruise ID: MR25-03
- Name of vessel: MIRAI
- Title of cruise: Performance confirmation test.
- Chief Scientist [Affiliation]: Junya ISHIWATA[JAMSTEC]
- Cruise period: July 1, 2025 – July 7, 2025
- Ports of departure / call / arrival: Shimonoseki/ Yokohama
- Research area: Off the coast of Shikoku, Kumano-nada, Off the east coast of Aogashima, Izu-Ogasawara Trench, Around the Izu Islands, Sagami Bay
- Research map



2. Research Proposal and Science Party

- Title of proposal
 1. Performance confirmation test of “MIRAI”.
 2. In-situ observations to retrieve water vapor distribution in high spatiotemporal resolutions.
- Representative of Science Party [Affiliation]
 1. Performance confirmation test of “MIRAI”.
Junya ISHIWATA[JAMSTEC]
 2. In-situ observations to retrieve water vapor distribution in high spatiotemporal resolutions.
Masaki KATSUMATA [JAMSTEC]
- Science Party (List) [Affiliation, assignment etc.]
 - Junya ISHIWATA [JAMSTEC]
 - Lena MAEDA [JAMSTEC]
 - Masaki KATSUMATA [JAMSTEC]
 - Tetsu SAKAI [Meteorological Research Institute]
 - Kenya YANO [Mitsubishi Electric Corporation]
 - Takushi YOSHIDA [Nippon Marine Engineering]
 - Hiroaki KAWAHARA [Amariko Co.,Ltd.]
 - Masanobu YANAGITANI [JAMSTEC] (non-embarkation)
 - Satoshi YOSHIDA [Meteorological Research Institute] (non-embarkation)

3. Research/Development Activities

The following performance confirmation test and additional assignment test are conducted.
ADCP, XBT/XCTD, MBES, SBP, ANS, Gravity meter, Cesium magnetometer,
Shipboard three components magnetometer, Doppler RADAR, Radiosonde,

Meteorological oceanographic observational equipment, SOAR, Ceilometer, Satellite data receiving system, Radio navigation system, Shipboard data management system, CTD winch, Towing winch, Piston Corer winch. CTD water sampling system (36-hanger), total carbonic acid measuring device and total carbonic acid continuous measuring device for surface seawater, alkalinity measuring device, salinity measuring device, dissolved oxygen measuring device, nutrient analysis device, fluorescence photometer, spectrophotometer, System Biological Microscope, freezer, continuous measuring device for surface seawater, continuous measuring device for CO₂ in air seawater, Ultrapure water production equipment, Refrigerator, Low temperature freezer, Ultra-low temperature freezer, Hot air dryer, Vacuum constant temperature dryer, Air-flow constant temperature dryer, Constant temperature dryer, Dryer, Clean draft, Clean bench, Draft chamber, Clean room. An additional assignment (JS25-1458) was carried out.

4. Cruise Log

Date and time are represented in JST.

July 1.2025

10:50	Departure at Shimonoseki port for engine trial.
12:30	Start the engine trial.
16:40	Finish the engine trial.
17:24	Departed to the first test area, Shikoku-Oki1.

July 2.2025

06:52	Launch radiosonde for the additional assignment.
08:30	Evacuation drill.
09:00	Arrival at the area.
09:15	Meeting with crew.
10:10-13:54	CTD winch Free Fall (4,800m).
13:56	Deploy cesium magnetometer and start towing.
13:56-01:50	"Figure-8 and Cross letter turns" for measuring ship's magnetization, Cesium magnetometer and roll bias measurement of MBES. Cross line run for measuring ship's magnetization.

July 3.2025

03:19	Launch radiosonde for the additional assignment.
06:13	Recover cesium magnetometer.
08:35-12:22	CTD cast and water sampling between 4,800m depth and surface(1st).
12:37	Launch radiosonde for the additional assignment.
14:13-16:57	CTD cast and water sampling between 4,800m depth and surface(2nd).
17:00	Departure to the test area Shikoku-Oki2.
20:30	Arrival at the area.
20:48-02:45	Start of pitch and heading bias measurement of MBES.

July 4.2025

02:45	Depart to the next test area Kumano-nada.
03:21	Launch radiosonde for the additional assignment.
06:30	Arrival at the area.
08:51-09:52	Piston corer winch Free fall (3,000m). ANS test (Deployment of a transponder with terminal of Piston corer).
10:16-11:28	Towing winch Free fall (1,000m).
11:41-13:48	Depth sounding precision test of MBES.
13:48	Departure to the next test area Off the east cost of Aogashima.
14:32	Launch radiosonde for the additional assignment.
20:31	Launch radiosonde.

July 5.2025

07:06	Arrival at the area.
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07:06-07:20	MBES WCI test around the area.
07:24	Departure to the next test area Izu-Ogasawara Trench.
08:31	Launch radiosonde.
14:30	Launch radiosonde for the additional assignment.
16:00	Arrival at the area.
16:04-19:56	CTD winch free fall (6,500m).
19:59	Launch radiosonde for the additional assignment.
20:00	Start sailing to the next test area Around the Izu Islands.
20:00-22:35	Noise measurement of MBES and ADCP.

July 6,2025

02:06	Arrival at the area.
02:09-03:52	Confirmation of maximum depth of ADCP.
03:54	Departure to the last area Suruga Bay.
08:30	Launch radiosonde for the additional assignment.
13:30	Arrival at the area.
13:30-15:21	Run along the common observation line.
15:24	Departure to the anchorage area.

July 7,2025

09:25	Arrival at Yokohama port.
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5. Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.
This report is not necessarily corrected even if there is any inaccurate description (i.e. taxonomic classifications). This report is subject to be revised without notice. Some data on this report may be raw or unprocessed. If you are going to use or refer the data on this report, it is recommended to ask the Chief Scientist for latest status.
Users of information on this report are requested to submit Publication Report to JAMSTEC.

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