

MR10-05 Cruise Summary

- 1. Name of Vessel** R/V Mirai
L x B x D 128.58m x 19.0m x 13.2m, Gross Tonnage 8,672 tons
Call Sign JNSR
- 2. Cruise Code** MR10-05
- 3. Title of the Cruise** Arctic Climate Oceanography
- 4. Undertaking Institute** Japan Agency for Marine-Earth Science and Technology (JAMSTEC), 2-15 Natsushima-cho, Yokosuka 237-0061, Japan
- 5. Chief Scientists** Motoyo Itoh
Arctic Ocean Climate System Research,
Research Institute for Global Change,
Japan Agency for Marine-Earth Science and Technology
(RIGC/JAMSTEC)

6. Representatives of the Science Parties and Titles of the Proposals

Atsushi Yamaguchi (Hokkaido University)

”Spatial and vertical distribution of phyto- and zoo-plankton in the Arctic Ocean” (leg 2)

Toru Hirawake (Hokkaido University)

“Response of phytoplankton community to the western Arctic Ocean warming (leg 2)

Naomi Harada (JAMSTEC)

“Study on Biogeochemistry in the Arctic Ocean” (leg1-2)

Ippei Nagao (Nagoya University)

“Sea-air flux measurements of marine biogenic gas (dimethylsulfide) by eddy correlation method” (leg 1)

Fumiyoshi Kondo (The University of Tokyo)

”Behavior of Chemicals and Air-Sea Physical Flux in Sea Fog” (leg 1-2)

Masao Uchida (National Institute for Environmental Studies)

“Reconstruction of marine environment in the Arctic Ocean during the last deglaciation and early Holocene” (leg 2)

Motoo Utsumi (University of Tsukuba)

“Relationship between marine bacterial community structures, its growth characteristics and marine carbon cycling in the Arctic Ocean” (leg 1-2)

Kazuma Aoki (University of Toyama)

“Maritime aerosol optical properties from measurements of Ship-borne sky radiometer” (leg 1-2)

Michio Aoyama (Meteorological Research Institute / Japan Meteorological Agency)

“A study on long term behavior of nutrients in sea water” (leg 2)

Osamu Tsukamoto (Okayama University)

“On-board continuous air-sea eddy flux measurement” (leg 1-2)

Hisahiro Takashima (JAMSTEC)

“Tropospheric aerosol and gas profile observations by MAX-DOAS on a research vessel” (leg 1-2)

Naoyuki Kurita (JAMSTEC)

“Water sampling for building water isotopologue map over the Ocean” (leg 1-2)

Nobuo Sugimoto (National Institute for Environmental Studies)

“Lidar observations of optical characteristics and vertical distribution of aerosols and clouds” (leg 1-2)

Takeshi Matsumoto (University of the Ryukyus)

“Standardising the marine geophysics data and its application to the ocean floor geodynamics studies” (leg 1-2)

7. Cruise Periods and Ports of Call

Leg 1: August 24, 2010 – September 1, 2010
(Sekinehama – Hachinohe · Dutch Harbor)

Leg 2: September 2, 2010 – October 16, 2010
(Dutch Harbor – Dutch Harbor)

8. Research Areas Arctic Ocean, Bering Sea, and North Pacific Ocean

9. Overview of the observations

CTD/LADCP:	178 casts (at 177 points)
CTD/Water Samplings:	132 casts
XCTD:	168 casts
Radiosonde:	215 points
Mooring Deployment:	6 stations
Surface Drifting Buoy deployments:	3 stations
Turbulence Ocean Microstructures:	30 casts
Bio-optical measurements:	31 stations
Plankton Nets:	63 stations
Piston Cores:	5 casts (at 4 points)
Multiple Cores:	11 casts
Shipboard ADCP:	Continuous Observation
Sea Surface Water Monitoring System:	Continuous Observation
Meteorological Observation System:	Continuous Observation
Doppler Rador:	Continuous Observation
Aerosol sampling:	Continuous Observation
Sky Radiometer:	Continuous Observation
Multi-Axis Differential Optical Absorption Spectroscopy (MAX-DOAS):	Continuous Observation
Dual Polarization Lidar:	Continuous Observation
Eddy Flux Measurement System:	Continuous Observation
DMS Continuous Measurement:	Continuous Observation(Leg1)
Seabeam:	Continuous Observation
Geophysical Continuous Observation (Magnetometer, Gravity meter):	Continuous Observation

10. Data policy

All data obtained during this cruise will be under the control of the Data Integration and Analysis Group (DIAG) of JAMSTEC.

MR10-05 Cruise Track

