

Summary of the R/V Mirai Arctic Ocean cruise in 2017

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We conducted meteorological and hydrographic surveys including marine biogeochemical samplings in the northern Bering Sea and the Arctic Ocean on board the R/V Mirai from 23 August to 1 October 2017 under a Japanese research project, the Arctic Challenge for Sustainability (ArCS). The research areas included the EEZ and the territorial sea of the USA. The observational activities consisted of CTD/LADCP/water samplings, XCTD, ocean microstructure measurements by Turbulence Ocean Microstructure Acquisition Profiler (TurboMAP), drifting buoy deployments, bio-optics measurements, plankton net (NORPAC, closing, and BONGO net) samplings, sediment samplings, incubation experiments, visual observations of marine animals by binoculars, ship-board ocean current and surface water monitorings, meteorological measurements and samplings, aerosol observations, satellite observations, radiosondes, Doppler radar, sea ice radar, sea bottom topography, gravity, and magnetic field measurements, and mooring and sediment trap recoveries and deployments. At an ice-edge area, we approached to the sea ice by a small working boat (Zodiac) and conducted unique surveys using a UCTD sensor, fluorometer, water sampler, and plankton net.

Keywords: Arctic Ocean, R/V Mirai, ArCS

