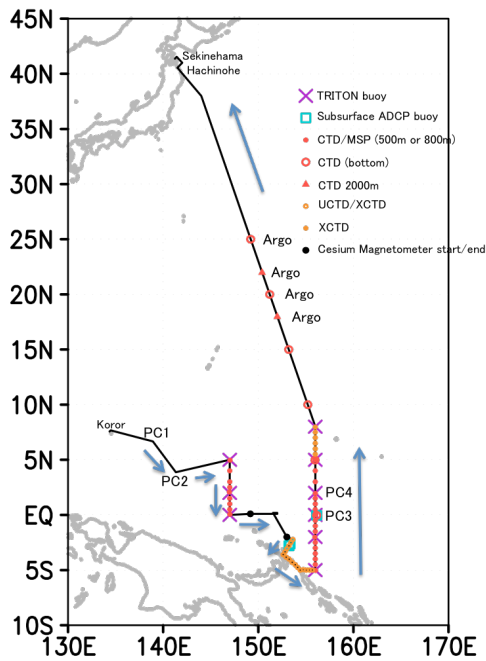


Cruise Summary

1. Cruise Information

- Cruise ID: MR14-02
- Name of vessel: R/V Mirai
- Title of the cruise: Tropical Ocean Climate Study (TOCS) /Operation of TRITON mooring buoys
- Chief scientist: Takuya Hasegawa [JAMSTEC]
- Representative of the Science Party: Kentaro Ando/Yasuhisa Ishihara [JAMSTEC]
- Cruise period: 15th Feb. 2014–23rd Mar. 2014
- Ports of call: Koror (Palau)–Sekinehama (Japan)
- Research area: Western Tropical Pacific
- Research map



2. Overview of the Observation

(I) Summary of the observations

Along 147E and 156E lines we deployed seven TRITON buoys and recovered nine TRITON buoys. We only recovered the buoys at two sites of 5N-156E and 8N-156E, and did not deploy at the two sites since the two sites are closed at this year. We also deployed one subsurface ADCP buoy at EQ-156E, and recovered three subsurface ADCP buoys including CLIVAR-SPICE-related two moorings off New Ireland Island.

Various CTD observations including UCTD were conducted during this cruise. Along 147E and 156E lines we measured vertical micro structure profile (MSP) and turbulent in upper ocean using CTD/LADCP and turbomap every 60 miles from 5S and 5N (and 30 miles between 2S and 2N). Unfortunately water leak and trouble of conductivity sensor of turbomap, we miss conductivity data at almost all stations of the MSP observation. The UCTD is one of the new oceanic observational tools. It can measure temperature, conductivity and pressure during the ship runs. JAMSTE conducted the first UCTD observation during MR13-03. In this cruise, first we did test observation of the UCTD at two sites in the 147E line, and then conducted UCTD with XCTD observations near New Ireland Island and across Solomon Strait with high spatial resolution from 10 miles to 30 miles. We also did UCTD and CTD comparison on the CTD stations south of EQ along 156E to confirm the performance of CTD sensor of UCTD.

In addition to the observations related to TOCS and CLIVAR-SPICE projects as mentioned above, piston coring and CTD deep casts were also conducted during this cruise. Other continuous measurements of surface oceanic and low-level atmospheric conditions were also conducted along the cruise track.

(II) List of the observations:

TRITON buoy deployment: 7 sites

TRITON buoy recovery: 9 sites

Subsurface ADCP buoy deployment: 1 site

Subsurface ADCP buoy recovery: 3 sites

CTD including water sampling: 37 sites (including 6 CTD deep casts)

XCTD: 31 sites (38 casts)

UCTD: 10 sites (including 2 test sites)

Ocean turbulence observation: 23 stations (31 casts including 5 test casts)

Argo float: 4 launches

Piston Coring: 4 sites

Surface meteorology: continuous

Shipboard ADCP measurement: continuous

Geophysics measurement: continuous

Surface temperature and salinity measurements by intake method pCO₂ measurements: continuous

*** Other specially designed observations have been carried out successfully.