Cruise Summary (YK10-04)

1. Cruise information

R/V YOKOSUKA　YK10-04　SHINKAI6500 & Deep Tow surveys

2. Cruise title

Crustal and magmatic evolution of the Northwestern Philippine Sea

3. Chief scientist & representative of science party

Kenichiro Tani
Research Scientist, Institute for Research on Earth Evolution (IFREE),
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

4. Ship board scientific party

Hiroshi Shukuno	(IFREE, JAMSTEC)
Osamu Ishizuka	(GSJ, AIST)
Hayato Ueda	(Hirosaki University)
Alexander Nichols	(IFREE, JAMSTEC)
Yuka Hirahara	(IFREE, JAMSTEC)
Toshiro Takahashi	(IFREE, JAMSTEC)
Tetsuya Sakuyama	(IFREE, JAMSTEC)
Ryunosuke Akizuki	(Yokohama National University)
Sho Kimura	(Hirosaki University)
Shinichi Hosoya	(Nippon Marine Enterprises, Ltd.)

5. Shore-based scientific party

Daniel J. Dunkley	(NIPR)
Satoshi Saito	(IFREE, JAMSTEC)
Jun-Ichi Kimura	(IFREE, JAMSTEC)
Yoshiyuki Tatsumi	(IFREE, JAMSTEC)

6. Cruise period

April 22, 2010 – May 10, 2010

7. Port call

JAMSTEC pier, Yokosuka – JAMSTEC pier, Yokosuka

8. Research area

Northwestern Philippine Sea
(Amami Plateau, Daito Ridge, and Oki-Daito Ridge)

9. Cruise summary

R/V YOKOSUKA and manned-submersible SHINKAI6500 cruise YK10-04 was held from April 22, 2010 to May 10, 2010, a round trip from JAMSTEC pier in Yokosuka. The chief targets of this cruise were to investigate the geology of the proto-Philippine Sea Plate which existed prior to the initiation of subduction at Izu-Bonin-Mariana arc. For these purposes, we have selected Amami Plateau, Daito Ridge, and Oki-Daito Ridge (ADO) area, located in the northwestern Philippine Sea (Figure 1).

The surveys during the cruise were very smooth and successful. We completed all the planned surveys, including 9 SHINKAI6500 dives and 3 Deep Tow dives, collected over 218 rocks and sediment samples. Collected samples range from ultramafic rocks, gabbro, granites, metamorphic rocks, sedimentary rocks, to volcanic rocks, indicating that these samples represent the full crustal section of the proto-Philippine Sea Plate. In addition, newly acquired SEABEAM bathymetry data and geomagnetic data will complement the preexisting geophysical data set.

This cruise was originally scheduled until May 11, but due to the accomplishment of the planned surveys and approach of low pressure, we returned to JAMSTEC pier 1 day earlier.

10. Acknowledgements

We are grateful to Captain Eiko Ukekura and the crew of the R/V YOKOSUKA, the SHINKAI 6500 operation team manager Toshiaki Sakurai and the operation team staff for their professional and outstanding efforts to make this scientific cruise successful. We also thank JAMSTEC ship operation division for their support of this project.

Figure 1. YK10-04 surveyed sites