

## Paleoceanographic changes during the last 12 m.y. in the Northwest Pacific based on analyses of radiolarian assemblages

# Shin-ichi Kamikuri[1], Isao Motoyama[2], Hiroshi Nishi[3], Saneatsu Saito[4]

[1] Earth Sci., Kyushu Univ., [2] Inst. Geosci., Univ. Tsukuba, [3] Dept. Earth Science, Kyushu Univ., [4] JAMSTEC

The diatomaceous sedimentary sequences were drilled at Sites 1150 and 1151 in the Northwest Pacific during Ocean Drilling Program Leg 186. Because the sediments include well-preserved siliceous fossils, we can reevaluate the middle to high latitude radiolarian biostratigraphy, and reconstruct paleoceanographic changes during the last 12m.y. based on analyses of radiolarian assemblages.

We recognized the 71 important bioevents from both sites, and divided the sedimentary sequences into 9 zones from the *Botryostrobus aquilonaris* Zone to the *Cycladophora cornutoides* Zone at Site 1150, and 11 zones from the *Axoprunum angelinum* Zone to the *Dendrospyrus sakaii* Zone at Site 1151. The age of the former site ranges from Pleistocene to Late Miocene, while that of the latter site from Pleistocene to Middle Miocene.

In the standard zonal scheme of the Northwest Pacific, the Pliocene/Pleistocene (P/P) boundary is defined in the lowermost part of the *Eucyrtidium matuyamai* Zone, the Miocene/Pliocene (M/P) boundary is located within the *Stylocyrtidium acqilonium* Zone, and the Middle/Late Miocene (M/L) boundary is placed between the FO of *Lychnocanoma magnacornuta* and the FO of *Cycladophora nakasekoi* within the *L. magnacornuta* Zone. The P/P boundary is located between 98.16 and 121.35 mbsf at Site 1150 and between 85.65 and 104.85 mbsf at Site 1151. The M/P boundary is recognized between 798.45 and 865.81 mbsf at Site 1150 and between 624.8 and 691.75 mbsf at Site 1151. The M/L boundary exists between 961.25 and 1018.91 mbsf at Site 1151.

Radiolarian assemblages were studied to reveal the history of the sea surface environments in the northwest Pacific during the last 12 m.y.. Relative frequency distribution of the major radiolarian species suggests that three major current systems had affected the depositional environment; Kuroshio water (Warm water), Mixed water (Temperate), and Oyashio water (Cool water). Kuroshio current flowed more northward position (about 39°N) from 12.0 to 7.0 Ma, and had shifted southward at 7.0 Ma. On the other hand, Oyashio water mass had changed to be nearly in modern condition at 2.0 Ma.