

Quaternary radiolarians biostratigraphy in the Alaska margin (IODP Exp.341 Site U1417)

MATSUZAKI, Kenji M.^{1*} ; ASahi, Hirofumi² ; FUKUMURA, Akemi³ ; KONNO, Susumu⁴ ; SUTO, Itsuki⁵

¹Geological Survey of Japan, AIST, ²Korea Polar Research Institute, ³Hokkaido University Graduate School of Science, ⁴Kyushu University Graduate School of Science, ⁵Nagoya University Graduate School of Environmental Studies

The Gulf of Alaska is marked by the St. Elias orogen largely influenced by the ice-sheet expansion over the past 10 Myr. In this context, the Integrated Ocean Drilling Program (IODP) Expedition 341 drilled several sites in southern Gulf of Alaska in order to determine the linkage between the tectonic uplift, erosion by ice sheet and climate changes since Miocene. Concerning the paleontological aspect of the collected cores, siliceous microfossils were not abundant. Cores collected from Site U1417 present the highest abundance in siliceous microfossils. Indeed, in Site U1417, siliceous microfossils present moderate abundance for the upper 200 meters CCSF-B, which correspond to the Pleistocene. This interval is composed of dark gray mud with several interbeds of diatomaceous oozes. For deeper intervals, siliceous microfossils abundances were low, with numerous barren intervals.

Therefore, in this study, samples from the upper 200 m CCSF-B of Site U1417 were analyzed in order to establish the depth-age model based on shipboard diatom/radiolarian biostratigraphy and paleomagnetic polarity stratigraphy for enables further paleoceanographic studies. Indeed, several radiolarian datum events such as the last occurrences (LOs) of *Stylatractus universus*, *Lychnocanoma sakaii* and *Amphimelissa setosa* appear to be important for chronostratigraphic use. Particularly, temporal distribution of *Amphimelissa setosa* is highly interesting because the LO records at the MIS 4/5 boundary (77 ka) in the North Pacific, while this species is still extant in the Arctic Ocean, Norwegian Sea, or in the Labrador Sea. In this study, we could establish the LOs of *Sphaeropyle robusta* (1,500 ka, 161.9 m CCSFB at the median depth), *Eucyrtidium matuyamii* (1,250 ka, 143.3 m), *Stylatractus universus* (450 ka, 74.9 m), *Axoprunum acquilonium* (350 ka, 61.5 m) and *Amphimelissa setosa* (77 ka, 25.0 m), and acme of *Lychnocanoma sakaii* (61 ka, 18.81 m). On the other hand, the FO of *Amphimelissa setosa* could be established for the first time in the northeastern Pacific between the LO of *Eucyrtidium matuyamii* and the base of Jaramillo magnetic normal polarity epoch (1,072 ka).

Keywords: Quaternary, Radiolarians, Biostratigraphy