

## Cosmic spherules in a core sample of red clay

# Takaaki Noguchi[1], Ken Akutsu[2], Takaharu Ehara[3], Makoto Okada[4]

[1] Ibaraki Univ, [2] Dept. Materials and Biological Sci., Ibaraki Univ., [3] Dept. Earth Sci., Ibaraki University, [4] Environmental Sci., Ibaraki Univ.

A piston core sample of red clay with 212 cm in length was divided into 87 pieces. Among these 87 pieces, 67 pieces were used for investigation of cosmic spherules. 41 cosmic spherules were found among them. SEM observation and EDS analysis of the cross sections of these spherules indicate that most of these spherules were severely altered in the red clay. However, texture of them and chemical composition of spinel in them are well preserved. Compositional profiles of partially altered spherules suggest that Mg was leached and that Ti and Al were added from the ambience around them. Average accretion rate of fine-grained extraterrestrial materials in these 2.3 Ma was estimated to be  $1.0 \times 10^{-5}$  t/yr.