Occurrence of young basaltic rocks on the oceanward slope of the Japan Trench, off Miyako, NE Japan: discovery by *KAIKO* 10K#56 dive

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Two blocks of alkali basaltic rocks were collected by remotely operated vehicle *KAIKO* (10K)#56 dive from the oceanward slope of the Japan Trench, off Miyako, NE Japan, during the cruise KR97-09 Leg 2 from 18 to 27 November 1997. Water depth of the dive site was 7500 to 7300 meters. The age of these rocks was ca. 6 Ma. Finding these rocks lead to the discovery of the “petit spot” in the NW Pacific by tracing back their original position according to the absolute motion of the Pacific plate (Hirano et al., 2001).

These basaltic rocks formed 2-4 meter high ridges on the slope. The ridges are composed of pillowed and fractured basaltic rocks. Angular basaltic gravels were deposited on the foot of the ridges, indicating collapse of the basaltic ridges. We suspect that the basaltic knolls with complicated shapes around the 10K#56 site (Fig. 1.B, red arrows) are resulted from the collapse of simply-shaped knolls originally formed at the petit spot site.

Reference

Hirano, N., Kawamura, K., Hattori, M., Saito, K. and Ogawa, Y., 2001, A new type of intra-plate volcanism; young alkali-basalts discovered from the subducting Pacific Plate, northern Japan Trench. *Geophys. Res. Lett.*, **28**, 14, 2719-2722.

Fig. 1. Location and topography around the 10K#56 site. A: The study area. Contour lines are 2000 m interval. B: Dive site of 10K#56 (short red line). Red arrows show basaltic knolls discovered during the cruise KR03-07. C: Route of 10K#56 (heavy line). Gray area shows the exposure of the basaltic rocks. Number denotes the location of the Figs, and “R-1” shows the sampling site of 10K#56 R-1. Contour lines in B and C are 50 m interval.

Fig. 2. Outcrops of the pillowed basaltic rocks. A: Radial cracks in the pillow basalt are indicated by red arrows. B: Basaltic gravels of ca. 20 cm in diameter are deposited on the foot of the slope.

Fig. 3. Mosaic photos of the outcrop of the curvilinear surface of pillow basalts. Outcrop in B is located at the foot of A.

Fig. 4. Sketch (above) and photo (below) of the 10K#56 R-1 specimens. The chilled margins were seen on the curvilinear surface as shown in Fig. 3 outcrops.