

Paleoinclinations of post-cruise samples from Canopus Guyot of the Louisville seamount trail (IODP Expedition 330)

Hiroyuki Hoshi^{1*}, Toshitsugu Yamazaki², Jeff Gee³, Nicola Pressling⁴

¹Aichi University of Education, ²AORI, University of Tokyo, ³Scripps Institution of Oceanography, UCSD, ⁴Royal Holloway, University of London

IODP Expedition 330 sampled volcanic basement rocks at five sites on four guyots along the northwestern part (late Cretaceous to early Eocene age) of the 4300-km-long Louisville seamount trail. Shipboard paleomagnetic data were used for the calculation of paleolatitudes of each guyot, and we (Exp. 330 shipboard scientists) concluded that the Louisville hotspot has remained within 3-5° of its present-day latitude of about 51°S between 70 and 50 Ma (Koppers *et al.*, 2012, *Nature Geoscience*, **5**, 911-917). In order to determine more reliable paleolatitude estimates, a number of discrete rock samples were collected for a post-cruise research. In this presentation, we will present the paleolatitude of Canopus Guyot (ca. 74 Ma) that was determined from analysis of post-cruise paleomagnetic data of Site U1372. In our post-cruise study, paleomagnetic measurements and stepwise demagnetizations (alternating-field and thermal methods) were conducted in magnetically shielded rooms, and characteristic remanent magnetization components were used to calculate lava unit-mean paleoinclinations. On the basis of inclination-only statistics of 20 lava unit-means, we obtained a paleolatitude of ca. 45°S for Canopus Guyot, which is statistically indistinguishable from the paleolatitude estimate (ca. 43°S) for this guyot determined from shipboard discrete sample data. The paleolatitude for Canopus is low compared to the present latitude of the hotspot, implying possible southward motion of the Louisville hotspot before 70 Ma.

Keywords: Louisville seamount trail, Louisville hotspot, Canopus Guyot, IODP Expedition 330, paleolatitude, paleomagnetic inclination