Geochemical aspects of volcanism in the southernmost Mariana Trough

Harue Masuda [1], Toshitaka Gamo [2], Masuda Harue KH-98-1-3 Shipboard Scientific Party

[1] Dept. Geosci., Osaka City Univ., [2] ORI, Univ. Tokyo

Submarine volcanic rocks dredged during KH-98-1-3 cruise were analyzed to characterize the volcanic activities in relation to the back arc opening in the southern end of Mariana Trough. The rocks were obtained from three seamounts located presumed two volcanic arc chains and one on a presumed spreading axis. The volcanic chains and spreading ridge allign parallely to the Mariana Arc. The volcanic rocks are in basalt to andesitic basalt composition. V/Ti and Mn/Ti ratios assure the 3 volcanoes are in arc compositon, while the other is similar to MORB. The chemical characteristics of the arc volcanism studied here would be less contribution of the subducting material, probably due to steep angle of the slab or lack of subducting material caused by tectonic erosion.