

## PLUME-RIDGE INTERACTION ON THE SOUTHEAST INDIAN RIDGE

1JOHNSON, K.T.M., 1VONDERHAAR, D.L., 2NICOLAYSEN, K.,3GRAHAM, D.W., 4NAUMANN, T., 2DOUGLAS-PRIEBE, L.M.1Bishop Museum, Honolulu, USA, 2MIT, Cambridge, USA, 3Oregon State University, Corvallis, USA, 4University of Alaska-Anchorage, Anchorage, USA

We report major element, trace element and isotopic compositions of basalt glasses collected on Leg 6 of the Boomerang Expedition to the Southeast Indian Ridge between 88°E and 77°E. In this region, the Southeast Indian Ridge traverses the hotspot-formed Amsterdam-St. Paul platform at 35°-40°N, 77°-80°E, and is some 900 km from the Kerguelen Islands and plateau. Electron microprobe major element analyses of 312 glasses, trace element analyses of 70 glasses by inductively-coupled mass spectrometry and ion microprobe, and Sr, Nd, and Pb isotopic analyses of 44 glasses show enrichment of Southeast Indian Ridge lavas on the Amsterdam-St. Paul platform. Incompatible element ratios increase toward the platform from both the east and the west, but the chemical transition is noisy on the western boundary and gradual on the eastern boundary.

The ridge segment immediately northwest of the Amsterdam-St. Paul platform is characterized by lava compositions that span the entire range of compositions found on the cruise. Lavas from four stations near the center of this segment are among the most isotopically- and light rare earth element-enriched lavas recovered on the cruise. Samples from one dredge alone in this segment show (La/Sm)<sub>n</sub> ranging from 0.4 to 2.0.