

Olivine basalts from South West Indian Ridge (Long. 65~68 degrees East): Olivines are phenocrysts?

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Fresh olivine basalts, which were dredged from 6 volcanoes (65 ~ 68 degrees east) near Rodriguez triple junction of the South West Indian Ridge (SWIR), contain strange olivine "phenocrysts". These olivines have a narrow range of composition (Fo86 ~Fo89) , which are significantly homogeneous compared to arc olivine basalts. Calculated equilibrium olivines for the basalts have Fo compositions similar to the real olivines. NiO contents of calculated olivines are, however, systematically 0.05~0.15 wt.percent higher than real olivines. We suggest that olivines from these SWIR basalts are not phenocrysts, but xenocrysts, which re-equilibrated with host basalts in terms of Fo compositions.