MORB PARENT MAGMAS: THE ROLE OF PLAGIOCLASE-BEARING LAVAS

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The assumption that the majority of primitive MORB lavas are mostly saturated with olivine and chromite at low pressure ignores a class of primitive liquids, which appear to have crystallized plagioclase very early in the history of these magmas. Despite the refractory nature of some primitive MORB glasses, the widespread occurrence and origin of high-An plagioclase from MORB lavas seems to remain controversial.During the R/V Atlantis cruise 3-31 (STOWA) on the East Pacific Rise, 17-19°S several volcanic eruptions were mapped and samples were recovered through Alvin dives, rock dredges and wax cores.Here I present an experimental and analytical investigation of a plagioclase-bearing MORB lava from a Superfast Spreading Ridge. Through different techniques (Crystal size distribution, Normarski interference imaging, melt inclusion analysis), an evaluation will be made of what the observed compositional range can tell us about melting processes, magma transport, fractionation and mixing in the mantle and crust.