CONSIDERATIONS ON THE GENESIS OF THE DZHUGDZHUR ANORTOSITE MASSIF (ALDAN-STANOVIK SHIELD, RUSSIA)

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Dzhugdzhur massif-type anorthosite intrusion (5,000 km2) occures in the high grade Paleoproterozoic terrane of NE Aldan-Stanovik shield. Zircon from anorthosite have an intercept U-Pb age 1736+/-6 Ma. Rapakivi granites, bimodal volcanics, and mafic dikes are coeval with anorthosites and occure in close spatial association with them. Two groups of rocks can be distinguished within Dzhugdzhur massif: a massive anorthosite suite, which comprises most of the massif; and layered series of rocks (marginal suite), which includes gabbronorites, jotunites, oxide-rich ferrogabbros, monzonites.Initial isotopic rations for the magmatic rocks show a large variations, with eNd=-1.3 to -9.1, and ISr=0.70384 to 0.70586, but most of rocks have smaller range of values (eNd=-1.3 to -2.2, and ISr=0.70360 to 0.70393). High-Al ortopyroxen megacryst demonstrates more primitive isotopic composition, with eNd=-0.4, and ISr=0.70256, which is very close to bulk Earth. The host granulites show variations eNd(1.74) between -1.1 and 0.6, and 87Sr/86Sr(1.74) between 0.70198 and 0.70518. The isotope data show that parental magma of the Dzhugdzhur massif was probably derived from a mantle plume and have assimilated Archean melt-depleted lower crustal Rb-poor material at the deep level. These crustal rocks are not exposed at the surface among other rocks of the area. The upper-crustal contamination by the host granulites is observed only within the marginal suite rocks. It is suggested that these rocks were crystallized at the level of emplacement from liquid as distinct from anortosite suite. The latter was emplaced at the high crustal level as anorthositic mushes.