

PRECAMBRIAN RARE METAL-BEARING GRANITES OF THE ALDAN-STANOVIK SHIELD (SIBERIAN PLATFORM, RUSSIA)

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Four groups of the Precambrian rare metal-bearing granites have been recognized in the Aldan-Stanovik shield. The granites are distinguished by their age, tectonic setting, geochemistry, and metallogeny. The first group includes 2675 \pm 15 Ma Dzhaltuk subalkaline A-type granite and 2623 \pm 20 Ma charnockite connected with coeval massif-type Kalar anorthosite. Dzhaltuk granite completed evolution of the late Archean Olekma granite-greenstone terrane. Kalar charnockite-anorthosite assemblage is in the high pressure granulite belt which divided the Aldan and Stanovik domains. The second group is represented by the 2014 \pm 20 Ma Katugin peralkaline granite which was formed in extensional regime in the Paleoproterozoic passive continental margin. The third group includes 1876 \pm 4-1873 \pm 2 Ma Kodar subalkaline granite. Layered mafic, alkalic intrusions, and lamproite dikes are coeval with the granite and occur in close spatial association with it. This assemblage was emplaced in extensional regime shortly after collision of the Aldan and Stanovik microplates. The fourth group is represented by Ulkan rapakivi granite. The granite together with massif-type anorthosite and bimodal volcanics form 1736 \pm 6-1716 \pm 2.5 Ma Ulkan-Dzhugdzhur orogenic volcanoplutonic belt. Granites are subalkaline and peralkaline and show A-type granite features. Economic rare metal deposits are related only with two peralkaline granites of the second and fourth groups. Sm-Nd isotope study of granites provide evidence that parental magmas of peralkaline granites were formed during thermal interaction of an uprising upper mantle material with lower crust, which was accompanied by chemical interaction between a mantle derived fluid, with crustal rocks. This work was supported by the RFFI grant 97-05-65454.