

Apatite-bearing provinces of the eastern part of the Siberian Platform

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The Udzhin Province is located on the eastern slope of the Anabar shield. Apatite ores and attendant rare earth-rare metal mineralization have been localized in post-Riphean (Vendian?) massifs of ultramafites, ijolites and carbonatites, and in pre-Permian crusts of their weathering.

The Aldan Province corresponds to the Early Archean core of the Aldan-Stanovoi shield. The following types of mineralization are widespread: metamorphic type, in the rocks of an Archean crystallo-schist formation; magmatic type, in the metagabbro-peridotite-pyroxenite formation; metasomatic type, in the Early Proterozoic Fe-Ca-Mg-CO₂-metasomatites; and hypergenic type, in pre-Vendian and Mesozoic crusts of weathering.

The Chara-Olyokma and Dzhugdzhur-Stanovoi Provinces are characterized by mineralization of magmatic type. The apatite-bearing formation in the former province is a Late Archean metagabbro-peridotite-pyroxenite formation of trough structures; in the latter province, an anorthosite and gabbro-amphibolite formation, associated with blocks of the Early Archean basement. In ores of the Dzhugdzhur-Stanovoi Province apatite is associated with Fe and Ti oxides, forming large deposits.

The position of the East Aldan Province is controlled by a system of rift zones of Early Proterozoic and Riphean age on the eastern slope of the Aldan-Stanovoi shield. Numerous different-age (Riphean-Middle Paleozoic) massifs of ultramafites, ijolites and carbonatites with P-rare metal mineralization are known there.

In general, the Siberian Platform is defined as a region with huge resources of apatite and accompanying other mineral resources, particularly widely manifest in Precambrian rocks.