

ГРИБ, ЛЕОНОВ

KARYMSKY CALDERA: THE STRUCTURE AND COMPOSITION OF PYROCLASTIC FLOWS

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The authors studied deposits from pyroclastic flows associated with Karymsky Caldera, which is located in the central part of the Karymsky Volcanic Centre (KVC). The study distinguished 4 pyroclastic flows and revealed that deposits from each pyroclastic flow have stratification in composition distinctly observed in the initial phase of the eruption. The pumice debris and cores of plagioclase crystals in pumice give evidence for both upper rhyolite zone and lower dacite zone in the upper-crust magmatic chamber. The heterogeneous layers and non-equilibrium mineral association in pumice suggest that the initial phase of each eruption is caused by intrusion of basalt in the upper-crust magmatic chamber. The distribution of major and trace elements in pyroclastic rocks of Karymsky Caldera show that they have resulted from moderate calcareous-alkali differentiates of magnesia-basalt of KVC. Mineralogical and geochemical data show that the fractional crystallization and crustal contamination play significant role in origin of the rocks.

Keywords: caldera, pyroclastic flow, magmatic chamber, mineralogy, geochemistry.