

Mantle columns beneath Kosomolskaya and Zarnitsa kimberlite pipes: xenolith study.

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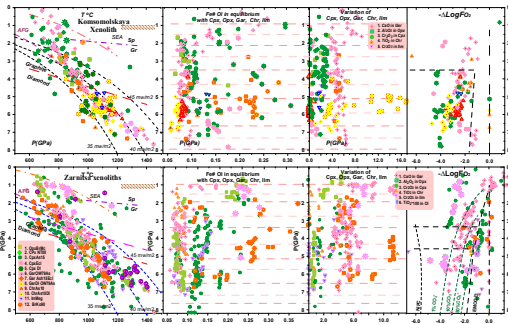
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Mantle xenolith from Komsomolskaya and Zarnitsa pipes were used for the reconstructions of mantle columns beneath these kimberlite pipes. Relatively fresh mantle xenolith from Zarnitsa and Komsomolskaya pipes we used for PTX reconstructions of mantle sections. In Zarnitsa dunites – harburgites with richterite, Phl-Ilm veins, sheared lherzolites, pyroxenites (with amphibole) and eclogites and deformed peridotites. Mg –rich Grt and Opx formed stepped P-Fe# trend, Fe- enriched Cpx with Ilm were created mostly by protkimberlites. Sub Ca garnets rarely show U spikes while Ti rich show Th, U, Ta, Nb, Zr and peaks. Many minerals demonstrate Th enrichment due to carbonitites. In mantle of Komsomolskaya pipe Phl is wide spread in peridotites from lherzolites to dunites and in eclogites. There are 6 intervals with sharp division at 5 GPa. Mg eclogites prevail in lower part while Fe- enriched in middle part. The Fe# rise is detected in lower and upper parts of mantle section. The TRE spiderdiagrams of garnets shows U -pb subduction peaks. But Cpx mainly show a Th- peak. The ages of eclogites give 500-600 Ma (one 1525 MA) which is much less than in Zarnitsa or Udachnaya having Proterozoic – Archean ages. Grant RBRF 19-05-00788. Government task of IGM SB RAS.