



Lithospheric mantle transects through the fields of kimberlitic magmatism in Siberian Craton.

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The transect through the subcratonic lithospheric mantle (SCLM) in major kimberlitic fields of Siberian cratons using methods of the monomineral thermobarometry for: Upper Devonian, Early Triassic and Upper Jurassic. Most of the terranes of central part of Siberian craton in upper Devonian time reveal a sharp layering of 6 major units, which are fairly well better defined determined for mantle sequence for in the large pipes of like Udachnaya pipe and Mir pipe. The best transect was obtained in Daldyn field in Udachnaya - Zarnitsa line. Transects obtained using different minerals show a similar inclination to the east. The merged Fe# for all minerals produces smoother and complete transects. The mantle layering in Alakit field determined in Krasnopresnenskaya – Sytykanskaya transect show moderate inclination from the N to S. The inflection near the Yubileynaya – Aykhal was also supported by high peridotite depletion at this line and difference in the geochemical features of mantle minerals showing the Zr dips in southern part. This line probably served for the fluid enriched melt migration in Archean time and was responsible for the generation of the diamonds. This flexure as well as those in line Udachnaya – Zarnitsa probably were the melt transfer not only in Archean but also in Upper Devonian time and was responsible for high concentration of the kimberlite pipes.

The Upper Muna mantle section based on kimberlite concentrates and garnets from sands in Muna river tributaries show the flat mantle section. It can not be result of the garnets garnet transport by river. The presence of the depleted horizon near 30 km is typical features of Upper Muna SCLM

In the Malo Botuobinsky field sharply layered section starts from 55 kbar revealing stair-like P-Fe#O1 path. Deeper part was originally highly depleted but regenerated by protokimberlites. The mantle layering is similar beneath XXIII Siezda, Dachnaya and Mir pipes. The mantle peridotites beneath Internationalnaya were regenerated by the Ca, Al, Cr, Na- rich hybrid melt from base to 40 kbar.

In Upper Devonian the separate terranes show different history and geodynamic settings in the mantle level. The mantle layering in Daldyn, Alakite and Malo- Botuobinsky fields was mostly created by the merging of the highly inclined layers from the margins while Upper Muna seems to be produced by the low angle subduction.

The Lower Jurassic Kimberlite from the Kharamai – Kuoika field show the waved basement of the SCLM slightly inclined from the west to east which is . Known diamondiferous pipes locate at the peripheral parts of the Anabar shield. Ilm - Phl metasomatized dunites are common from 75 to 40 kbar in SCLM .

In Upper Jurassic SCLM sequences starts mainly from 130 km.. The garnet series demonstrate straight line trend due to interaction with superplume melts. The highly enriched upper part of mantle section starts from the pyroxenite lens at 40kbar.

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