



Structure and evolution of the mantle beneath the Daldyn terrain the comparison of the Alakite and Daldyn kimberlite fields

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The Daldyn terrain include two large kimberlite fields Daldyn and Alakite which are to the East and west part of this area correspondingly and referred to the 367-355Ma. The concentrates and mantle xenoliths from the almost 50 kimberlite pipes allow reconstruct the PTXFO₂ sections and transects as well as 3D image for the each kimberlite field as well as the for the whole area. In General the common division to the 6 large layers for each parts of SCLM are close but the composition of the layer and rock sequences are different. The Daldyn SCLM is compiled from the alternation of very cold (33 mwm-2) and relatively heated (37-40 mwm-2) large layers while SCLM of Alakite is more uniform and colder in lower part. The Base of the SCLM is much highly heated in Daldyn terrain and in most studied sections are represented by the deformed or HT porphyroclastic peridotites which are rare in the Alakite field.

The pyroxenite layer is more thick and pronounced within the Daldyn SCLM. The amount of eclogites and their Mg' number is also higher in general higher in SCLM of Daldyn field

The composition of the peridotites are closer to the abyssal MORB peridotites while from Alakit are in general more depleted and closer to continental back arc environment. But the alkalinity of the pyroxenes and abundant metasomatic mineral such as phlogopites and richterites and pargasites are much higher in the Alakite SCKM. The trace elements of primary peridotite Cpx from Alakite SCLM reveal lower melting degrees in Alakite field. The boundary between the fields locate between Sytykanskaya and Zagadochnaya pipes is characterized by upwelling of SCLM Base. SCLM layering in eastern part of Daldyn field near the Zarnitsa and Dalnyaya pipe suggests inflexion and is more permeable allowing high scale melt fluid interaction and metasomatism.

NE part of the Alakit mantle SCLM from Sytykan to Molodost and further to Fainshteinovskaya pipe is more fertile and consist from the 4 evident units with the Fe# rising upward. In the central part of Alakite region lying on the line Yubileinyaya - Aykhal pipes and surrounding pipes in clusters represent the most depleted and relatively low metasomatized dunite core. The thermal structure of the Alakite field is in the base is relatively uniform and colder than in Daldyn SCLM. The thermal gradients are more steeper in Alakit mantle.

The metasomatic associations in the Daldyn field are marking mainly Archean history in the upper part (2.3-2.5 Ma) of the SCLM (Pokhilenko et al., 2012 and refer the influence of the protokimberlites to the in the lower part (Ashchepkov et al 2013; Pokhilenko, Alifirova, 2012) . But also the range of the more modern event refer to the Rodinia history (0.7 -1.2 By) (Pokhilenko et al., 2012)while or data for the Alakit SCLM mainly mark the modern event from the disseminated abundant metasomatism in the lower in middle part from (1.3 - 0.6 By).
RFBR 11-05-00060; 11-05-91060-PICS.