## Figure captions

Fig. 1. Map of Yakutian kimberlite province.
Fig. 2. The photos of thin sections of samples: a - 7-392. Pyroclastic kimberlite with essentially serpentine groundmass. Rounded Ol porphyroclasts partly substituted by serpophite, with some preserved relict fresh Ol; b - 7-269. Pyroclastic kimberlite with inclusion of coherent kimberlite containing calcite microcrysts (below). c - 7-384. Coherent kimberlite with groundmass of essentially carbonate composition; d - 7-387. Coherent kimberlite with groundmass of calcite-serpentine composition. Fluidal texture produced by aligned olivine phenocrysts; e - 7-386. Fine-grain coherent kimberlite with phlogopite microlites in groundmass; f - 7-388. Coherent kimberlite, enriched by Phl macrocrysts.
Fig. 3. The photos of thin sections of samples from Velikan dyke: a -
Fig. 4. Correlation diagrams of $SiO_2$ vs. MgO, CaO, FeO, $TiO_2$ for Obnazhennaya kimberlite.
1 – pyroclastic kimberlite; 2 – coherent kimberlite; 3 – inclusions of micaceous kimberlite.
Fig. 5. Correlation diagrams of carbonate component vs. major oxides and trace elements for Obnazhennaya kimberlite. See legend from Fig.3.
Fig. 6. Correlation diagrams of MgO vs. Ni, Co, Cr, V for Obnazhennaya kimberlite. See legend from
Fig. 7. Obnazhennaya kimberlites in trace-element spider diagram. The gray-colored field corresponds to the compositions of kimberlites from diamond-bearing pipes (Kostrovitsky et al., 2007).
Fig. 8. a - $(^{87}Sr/^{86}Sr)_0$ - εNd diagram for kimberlites from: 1 - diamond deposits, 2 - Obnazhennaya pipe, 3 - other pipes of Kuoika field. Arroëw points to $^{87}Sr/^{86}Sr$ evolution trend. Composition fields for kimberlites I and kimberlites II are after (Mitchell, 1986; Smith, 1983; Tainton and McKenzie, 1994). PREMA field is after (Zindler and Hart, 1986); b - εNd-εHf diagram for kimberlites from: 1 - diamond deposits, 2 - Obnazhennaya pipe, 3 - other pipes of Kuoika field, 4 - South Africa (Nowell et al, 2004). Composition fields of group I and group II kimberlites are after (Nowell et al, 2004).
Fig. 9. Correlation diagrams of MgO vs. NiO for macrocryst and microcryst zonal olivines from Obnazhennaya pipe. Olivines from kimberlites: 7-237 – pyroclastic kimberlite; 7-386 and 7-387 - coherent kimberlite.
Fig. 10. *P-T* diagram for clinopyroxenes from Obnazhennaya kimberlite (P-T estimates according Nimis and Taylor, 2000). 1-macrocrysts, 2-mantle xenoliths.

**Supplementary Figures captions**

Fig. s1.A. The photo of outcrops of Obnazhennaya pipe.
Fig. s1.B. The photo of outcrops of Velikan dyke.
Fig. s2. The photo of thin section of sample 7-234. Obnazhennaya pipe (plane polarized light, PPL). Pyroclastic kimberlite with Cal-Srp groundmass, with relicts of fresh Ol.
Fig. s2-1. The photo of thin section of sample 7-243 (PPL). Obnazhennaya pipe. Pyroclastic kimberlite with inclusion of coherent kimberlite containing calcite microcrysts.
Fig. s2-2. The photo of thin section of sample 7-257 (PPL). Obnazhennaya pipe. Pyroclastic kimberlite with inclusion of coherent kimberlite containing calcite microcrysts.
Fig. s2-3. The photo of thin section of sample 7-325 (PPL). Obnazhennaya pipe. Coherent kimberlite with groundmass of essentially carbonate composition.
Fig. s3. CaO vs. $Cr_2O_3$ for garnet macrocrysts from Obnazhennaya pipe.
Fig. s4. Plots for spinel from Obnazhennaya pipe: A - of $Cr_2O_3$ vs. $Al_2O_3$, and B – of Mg/( Mg+Fe)x100 vs. 1 - kimberlite heavy fraction, 2 – glimmerite, 3 - peridotitic xenoliths.
Fig. s5. Plots: A - of Mg/( Mg+Fe)x100 vs. $Cr_2O_3$; and B – Ca/(Ca+Mg)x100 vs. $Cr_2O_3$ for clinopyroxenes from Obnazhennaya kimberlite. Clinopyroxenes are from: 1 - kimberlite heavy fraction, 2 - mantle xenoliths, 3 - glimmerite.
Fig. s6. Plots $TiO_2$-BaO & FeO-$Al_2O_3$ for groundmass phlogopite from Obnazhennaya kimberlite. Samples: 1 - 7-293 (pyroclastic kimberlite), 2 - 7-384 (coherent kimberlite), 3 - 7-386 (Phl coherent kimberlite).
Fig. s7-1, 2, 3. The photo of thin sections of coherent kimberlite samples from Velikan dyke.
Fig. s8. The photo of thin section of sample 90-20 from Rudniy dvor dyke (Ary-Mastakh field). Almost all olivine microcrysts are idiomorphic.