

## Dating of rutile in diamondiferous eclogites from the Mir pipe, Yakutia: evidence for late metasomatic origin

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We have analyzed rutile in polished thin section of three diamondiferous eclogites from the Mir kimberlite pipe with reliable results obtained for two samples. Primary xenoliths were presented by bimineralic eclogites of oval form and contain from 2 to 5 octahedral diamond crystals approximately of 1-4 mm in size. Rutiles contain 98.5-99.4 wt% TiO<sub>2</sub>, 0.2-0.9 FeO, 0.1-0.3 Al<sub>2</sub>O<sub>3</sub> and < 0.2 wt% MnO.

LAM-ICPMS analyses were performed using Agilent 7700 quadrupole ICP-MS instruments, attached to a Photon Machines Excimer 193 nm laser system at MQ Geoanalytical, Macquarie University (Sydney). ICPMS operating conditions and data acquisition parameters are given in [1]. Ablation pit diameter was generally about 80 µm. Petrographic evidence and results of U-Pb dating of rutiles in diamondiferous eclogites from the Mir kimberlite pipe suggest that rutile in eclogites was formed at ca 380-390 Ma (Fig. 1). They were most likely formed as a result of a late metasomatic event that occurred about 30-40 Ma before the eruption of kimberlites that entrapped xenoliths and brought up to shallow levels.

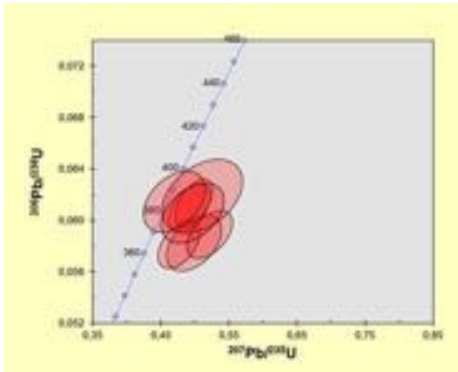


Figure1: U-Pb Concordia plot for analyses of Rutiles.

[1]Belousova et al. (2001) Aust. Jour. Earth Sci. 48, 757-766.