

New age of Zr from ijolite-porphyry dikes associated with the University pluton (Kuznetsk Alatau ridge, SW Siberia)

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In the western part of the Central Asian Orogenic Belt, there is a large Altai-Sayan orogenic system [1] framing the SW part of the Siberian craton. This system includes the Kuznetsky Alatau (KA) terrane in the north [2]. The KA is a Caledonian terrane predominantly with accretionary complexes, which belong to the active margin of the Paleoasian Ocean [3], where Paleozoic alkaline-basic magmatism developed extensively.

The petrographic varieties of the University pluton (UNp) are represented mainly by subalkaline gabbroids. Their absolute age is estimated at 494 ± 36 Ma (subalkaline melanogabbro) and 491 ± 36 Ma (subalkaline leucogabbro) by the Sm-Nd isotope method, which corresponds to the C_3 [4]. Everywhere in the territory of the UNp and the sedimentary enclosing (Ust-Kundatskaya and Berikulsкая formations), the dikes of NW and NE stretch break through, which are represented by a variegated composition: ultrabasic, basic foidolites and nepheline syenites. Previously, the results of the absolute age of alkaline dikes were obtained by the Sm-Nd isotope method: 394 ± 16 Ma (plagioclase ijolite) and 389 ± 37 Ma (analcime syenite), which correspond to the boundary of the D_{1-2} [5].

For the first time, we selected zircons from the ijolite-porphyry dike, which were used for U-Pb isotopic studies. The probable time of intrusion of ijolite-porphyry dikes is estimated at 395.7 ± 9.4 Ma, which corresponds to the Early Devonian. Thus, in the aggregate of isotopic data by Sm-Nd and U-Pb methods, the formation of alkaline dikes breaking through the UNp and the sediments enclosing the pluton took place in the D_{1-2} .

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[1] Vorontsov *et al.*, (2020), *Gondw. Res.* 89, 193-219. [2] Wilhem C. *et al.*, (2012), *Earth Sci. Rev.* 113, 303-341. [3] Kuzmin & Yarmolyuk (2014), *Rus. Geol. Geophys.* 55, 120-143. [4] Mustafayev *et al.*, (2017), *Earth Envir. Sci.* 110, 0120165. [5] Mustafaev *et al.*, (2020), *Minerals.* 10, 1128.