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New insights from low-temperature thermochronology into the tectonic-thermal evolution of the Siberian Traps Large Igneous Province

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We present results of apatite fission-track (AFT) and other geochronological data (apatite U-Pb (LA-MC-ICPMS) and Rb-Sr dating) from several intrusions located within the Siberian Traps Large Igneous Province: (1) alkaline-ultramafic ring plutons of Odikhincha, Yessey and Magan, (2) intrusions of Norilsk-1 and Kontay, (3) Padunsky sill and (4) Kotuy dike. The studied intrusions were emplaced close to the age of the voluminous phase of the Siberian Traps LIP based on the new apatite U-Pb and Rb-Sr ages, as well as other results obtained earlier by other researchers. The obtained AFT ages are distributed between ca. 207 and ca. 173 Ma, and are much younger than the available latest Permian to earliest Triassic U-Pb and Ar/Ar data on the Siberian Traps. We interpret the AFT ages as a consequence of sedimentary burial of the studied magmatic complexes to below the closure temperature of the AFT system, which took place after the formation of intrusions ca. 252-250 Ma. Later cooling as a result of exhumation of the studied rocks to near surface temperatures and decreasing of thermal flow then took place in the Late Triassic-Early Jurassic.