



## **Neoproterozoic - Early Paleozoic granitoid magmatism of the Yenisey Ridge, Siberia**

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In this study, several stages of the Yenisey Ridge's Neoproterozoic continental crust evolution were determined, basing on the differences in ages of the granites that form the crust, in the geochemical characteristics of their sources and of the associated magmatic rocks. On the early stages of the crust's evolution syn-collisional S-I-type granites were formed, including "ancient terranes" granites that have continental crustal magmatic sources (the Teya, and Ayakhta complexes - 880-865 and about 750 Ma respectively). Their K, Rb, U, Nb, Y and Yb concentrations are close to the values of contents of these elements in the upper crust. The following stages are marked by the influx of mantle melts, and that is the reason for the forming of mantle-crustal A-type granites and thus, the appearance of new continental crust in syn-collisional, post-collisional (Ayakhta and Glushikha complexes - 760-720 Ma), anorogenic (Tatarka complex - about 630 Ma) settings. On the late stages of the collisional events the A-type granites reveal significantly higher K, Rb, U and Th concentrations, and on the anorogenic period - higher contents of Ta and Nb. On the final stage of the crust's forming, the island arc I-type granites of the Priyenisey complex (700-630 Ma) are formed, that have mainly a mantle (depleted) source and are marked by low K, Rb, La, Ce, Ta, Nb, U and Th concentrations. The obtained new data allowed to reconsider also the geological history of the South part of the Yenisey Ridge, where for the first time an Early Paleozoic collisional granitoid complex was determined (510-455 Ma), along with the Neoproterozoic island arc complex. This granitoid complex includes I-, and A-type granites, that were formed from crustal and mantle-crustal magmatic

sources. Thus, on the basis of the conducted analysis, the growth of the mantle input in the Yenisey Ridge's crust forming process was determined in the Neoproterozoic - Early Paleozoic period of it's history.