

Geochronology, geochemistry and petrology of Bashisuogong intrusions: Implications for magmatic evolution of Tarim LIP

ZOU, Siyuan^{1*} ; LI, Zilong¹ ; KAMEI, Atsushi²

¹Department of Earth Sciences, Zhejiang University, Hangzhou 310027, PR China, ²Department of Geoscience, Shimane University, Shimane 690-8504, Japan

The alkali granitic intrusions are exposed in the Bashisuogong region, which is located in the northwest margin of Tarim Block, NW China. Recent research suggested that the coeval basalt lavas, mafic-ultramafic intrusions, as well as the mafic dikes and syenitic and granitic intrusions in Tarim, composed an Early Permian Tarim large igneous province (Tarim LIP).

Zircon U-Pb dating, whole-rock major and trace element and isotopic data are presented for the granitic intrusions in Bashisuogong region. Compared to the previous study on the coeval mafic-ultramafic and granitic intrusions in Piqiang and Halajun area of Tarim Block, the new SHRIMP U-Pb age for Bashisuogong intrusion reveals that all the igneous rocks in the northwest region of Tarim Block are coeval (ca. 275 Ma). Geochemically, the granitic intrusions show high contents of SiO₂, K₂O, total alkalis, HFSE and Ga/Al, FeO_t/(FeO_t + MgO) and Nb/Y ratios, which favor an A-type affinity for the granitic intrusions.

These geochronology and geochemistry data of Bashisuogong intrusions will be integrated with published data for the other intrusive rocks within Tarim Block to provide a more complete interpretation of the magmatic source(s) and evolutionary history of this important intrusion of the Tarim LIP and with implications for the Tarim LIP as a whole.

Keywords: Tarim LIP, magmatic evolution, granitic intrusion, geochronology, geochemistry