

Petrogenesis and zircon U-Pb radiometric dating in Heris granite (NW Shabestar) East Azarbaijan Province

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Abstract: Heris intrusive body has cut Kahar Formation and has been covered by Permian basal sediments, non-conformably. The composition of this body is granite- alkali granite with metaluminous to weak peraluminous nature. The strong negative anomaly of Eu in REE diagram indicates the presence of plagioclase in the source area or differentiation of it during evolution of the magma. Negative anomaly of Ba and enrichment of Rb and Th relative to Ta and Nb is an indicator of crustal origin. These granites are within-plate and A-type granites, which have been formed by partial melting of tonalitic- granodioritic source in extensional setting. Zircon U-Pb dating yields 306 ± 34 Ma for crystallization of these rocks. This age is consistent with primary extensions of rifting in Arabian- Iranian platform.

Keywords: *Shabestar, granite, geochemistry, radiometric dating, zircon, U-Pb, SHRIMP*

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