Precambrian basement in Sirjan (southern Iran)

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The mylonitic granites of Gole Gohar, south east of Sirjan, are located in a key area which their study is important for understanding the history of Precambrian basement of Sanandaj- Sirjan zone and its metamorphic and magmatic evolution during the subduction of Neo- Tethys. Field studies show that the granites are located in the basement of the metamorphic rocks such as metapelite, mica schist and amphibolite. In this Study the granitic intrusions are classified in two types. Type I is biotite garnet bearing granite and type II is K-hastingsite bearing granite. Both of them show some evidence of mylonitic fabric. These plutons are per - aluminous and have high – medium K calc-alkaline nature. Based on U-Pb dating (Cameca ion-probe) of zircon the age of all granites is between 538.6–580.7 Ma (Late Precambrian- Early Cambrian). Based on the results of this study, despite the mineralogical and geochemical differences, all granitic intrusions formed in the Precambrian. The old age of the granites is similar to those introduced in other parts of Sanandaj-Sirjan zone that may indicate the presence of Precambrian basement in almost the entire Sanandaj-Sirjan zone.

[1] Hassanzadeh, J.,et al. (2008). *Tectonophysics*, **451**: 71–96.