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Geology and geochemistry of sub-volcanic and plutonic bodies of Kashmar (North of Lut Block)

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Abstract: Kashmar subvolcanic and plutonic bodies have compositional ranges from quartz gabbro to alkali granite. With exception of several small stock with alkaline Tholeiitic basalts characteristic (minimum amounts of SiO_2 and CaO; maximum amount of MgO; high amounts of Na_2O and K_2O and LOI and high meta-luminous to peraluminous (1.33-2.32)), all rocks have high-k calc-alkaline to shoshonitic, meta-luminous to weak peraluminous (mostly ASI<1.1 and maximum to 1.3) characteristic. Normalized REE patterns show enrichment in LILE (such as Ba,Th, Rb, U and K) and LREEs, depletion of Nb-Ta-Ti (arc-like indicators) and flat HREE patterns with negative Eu anomalies. Thus the rocks are essentially co-magmatic and I-type. On the discrimination diagrams, Granitoids plots in the arc-collision continental domain. K, Rb, Ba, Eu and Sr variations for granitoids show role of partial melting and AFC process in formation of Kashmar granitoids. The flat HREE patterns also indicate no residual or fractionating garnet. Base on Sr, Y, Al_2O_3, La and Yb, the all Kashmar rocks are no adakite-like and forms from about 50% partioal melting of amphiboliths.

Keywords: *subvolcanic and plutonic bodies; geochemistry; Eocene; Kashmar*

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