DRG30-128

Highly Fractionated I-type of Maras-Jong Pluton, Eastern Belt Granitoids – Geochemical Constraints

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The Eastern Belt granitoids of Peninsular Malaysia consist mainly of I-type granites with anomalous S-type granites. The monzo- to syenogranite Maras-Jong pluton in the Eastern Belt granite shows many S-type characteristics such as presence of tourmaline and garnet, and similar texture to the Main Range granitoids (both granites are coarse grained primary textured sometimes dominated by K-feldspar phenocrysts) and high SiO_2 contents. This may lead to conclusions that the Maras-Jong granite is S-type rather than I-type. However, detailed geochemical analyses indicate that these granite display typical affinities of highly fractionated I-type granites. They are weakly peraluminous (A/CNK = 1.04-1.14), high K_2O contents, depleted in high field strength elements (HFSEs), enriched in light rare earth elements (LREEs) and large ion lithophile elements (LILEs), as well as negative Sr, Ba and Eu anomalies in the spidergram. These observations indicate that the Maras-Jong pluton should not be considered as S-type granite, but instead it may be highly fractionated I-type granite.

Warta Geologi (Newsletter of the Geological Society of Malaysia), Vol. 43, No. 3, July-September 2017