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**Tracing the origin of light rare earth element enriched melt in a new monomict ureilite.**

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RaS 517 is an unusual monomict, augite-bearing ureilite recently found in Oman. We investigated melt-related textures observed in the sample using various analytical methods. Al- and Na-rich glass veinlets extend along grain boundaries of all major primary phases and exhibit heterogeneous silica enrichment. Secondary pyroxene, texturally associated with reduced olivine rims has crystallised together with metal and sulphide globules in veinlets and on adjacent mineral grains. Lithophile trace elements, measured with laser ablation ICP-MS, are enriched in glass and appear complementary to the primary pyroxene assemblage which shows typical ureilite LREE-depleted patterns along with negative Eu anomalies. Similar to a recent study on trace elements in bulk ureilites [1] we find that REE patterns measured in RaS 517 can be explained by fractionation of chondritic parent material although, differences in LREE depletion among ureilite samples could partly be due to unrepresentative sampling of low-Ca pyroxene vs clinopyroxene. This project is supported by the SNF grant 152941.

[1] Barrat, J. A. et al. (2016) GCA 194, 163-178.

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