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Textural and chemical studies of selected ureilitic fragments from the Almahata Sitta strewnfield

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A large number of fragments from the Almahata Sitta strewnfield have been collected including many different ureilitic lithologies as well as several fragments of various chondrite types (OC, EH, EL, CB, R chondrite-like; [1,2]). The ureilitic fragments can be subdivided into coarse-grained and fine-grained rocks, and samples with variable grain sizes. In this work we are comparing textural and mineral chemical features of nine ureilites covering the whole range of grain sizes in order to understand the textural and chemical changes upon re-processing/thermal processing of the rocks. The chemical compositions of olivines, pyroxenes, and metal grains of the nine fragments were obtained by SEM-EDS.

Preliminary results indicate that metal grains in the different samples show variable concentrations of Si and Ni, and that different metal populations were identified within individual samples. These data on the metals as well as those on the mafic silicates will be discussed at the meeting.

[1] Bischoff, A. et al. (2010), MAPS 45, 1638-1656.

[2] Horstmann, M. et al. (2012), MAPS 47, A193.

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