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Almahata Sitta magnetic signature

Hoffmann V.H.*, Mikouchi T., Torii M., Funaki M., Yamamoto Y., Kodama K., Horstmann M., Bischoff A., Gnoss E., Hofmann B., Kaliwoda M., Hochleitner R.;
*Geosciences, Univ. Tübingen, hoffmann.vh@web.de.

Almahata Sitta represents a complex breccia consisting of a series of different meteorite lithologies: achondrites (various ureilites), ordinary chondrites (eg H 5/6 and a unique "OC" with affinities to R), enstatite chondrites (eg E L/H 3-6, EL6 IMR) and recently also the first carbonaceous chondrite (C-B) could be identified [1,2]. The aim of our report is to summarize and compile the results on the magnetic signature, record and phase composition which we have obtained so far on our Almahata Sitta materials [3]. Presently our main focus is on comparing the AS magnetic data with results (a) from other ureilites (preferably falls) and (b) from E chondrite falls such as Neuschwanstein (EL6). In terms of (a), three different groups can be discriminated based on the chemical composition of the dominating metal(s), from Ni-poor / Si-poor kamacite to Si-rich metal phases such as suessite. All investigated AS samples belonging to ureilitic lithologies are characterized by intermediate to low contents on iron-silicides (such as suessite).

[1] Bischoff A. et al., 2010. MAPS 45, pp1638-1656.

[2] Horstmann M. et al., 2012. 75th Metsoc, #5052.

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[3] Hoffmann V.H. et al., 2012, ACM Niigata, #6346.

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