Almahata Sitta meteorite – the space "Rosetta Stone"

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The fall and discovery of numerous fragments of the Almahata Sitta meteorite in the desert of N Sudan has significantly deepened our knowledge concerning the formation, structure and life cycle of asteroids [1]. In contrast to earlier findings, Almahata Sitta - classified as a polymict ureilite - does not only contain small clasts of different meteorite lithologies but consists of individuals of a further growing number of different meteorite lithologies [1]. Recently, investigations on a new set of Almahata Sitta samples, MS MU 001–020, have been started. Amongst various ureilites and chondrites, more fascinating new unique meteorite individuals could be identified such as an enstatite achondrite or a trachyandesite [2,3]. It becomes obvious that the Almahata Sitta meteorite is unlike anything seen before. In our contribution we will report first results on our investigations by magnetic, Raman Spectroscopical and mineralogical means.

References: [1] Horstmann M., Bischoff A., 2014. Chemie der Erde, 74/2, 149-183. [2] Bischoff A., et al., 2014. PNAS 111/35, 12689-12692. [3] Bischoff A., et al., Abstract Metsoc 2015.