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New chondritic samples from the Almahata Sitta strewn field

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Many different chondritic and achondritic (ureilitic) lithologies were found among the Almahata Sitta meteorites [1]. Recently 30 new samples from the Almahata Sitta strewn field were studied: 21 ureilites and 9 chondrites. Among the seven enstatite chondrite samples are six EL and one EH chondrite. MS-179 is a very complex breccia (EL3-5) having different unequilibrated, olivine-bearing and equilibrated lithologies mainly weakly consolidated. The other E chondrites include MS-177 (EL3), MS-189 (EL3), MS-192 (EH4/5), MS-196 (EL5), MS-200 (EL3/4), and MS-201 (EL5). Furthermore, one LL4 ordinary chondrite was found (MS-197). MS-181 is the first carbonaceous chondrite discovered in the Almahata Sitta collection. It is a Bencubbin-like (CB) chondrite which consists of about 60 vol% metal.

The results support earlier conclusions (e.g., [1]) that asteroid 2008 TC₃ is a polymict breccia and that further specimens from the strewn field may allow to identify even more additional meteorite types.

[1] Bischoff, A. et al. (2010) Meteoritics & Planetary Science 45, 1638-1656.

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