ASTEROID 2008 TC3 BREAKUP AND METEORITE FRACTIONS

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Introduction: The recovery of meteorites from the impact of asteroid 2008 TC3 in the Nubian Desert of Sudan on October 7, 2008, marked the first time meteorites were collected from an asteroid observed in space by astronomical techniques before impacting [1,2]. Search teams from the University of Khartoum traced the location of the strewn field and collected about 660 meteorites in four expeditions to the fall region, all of which have known fall coordiantes. Upon further study, the Almahata Sitta meteorites proved to be a mixed bag [3] of mostly ureilites (course grained, fine grained, and sulfide-metal assemblages), enstatite chondrites (EL3-6, EH3, EH5, breccias) and ordinary chondrites (H5-6, L4-5). One bencubbinite-like carbonaceous chondrite was identified, as well as one unique Rumuruti-like chondrite and an Enstatite achondrite [4-6].

New analysis: The analysed meteorites so far suggest a high 30-40% fraction of non-ureilites among the recovered samples [4,6], but that high fraction does not appear to be in agreement with the meteorites in the University of Khartoum (UoK) collection. Ureilites dominate the meteorites that were recovered by the Sudanese teams.

To better understand the fraction of recovered materials that fell to Earth, a program has been initiated to type the meteorites in the UoK collection in defined search areas. At this meeting, we will present some preliminary results from that investigation.

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