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A combined NanoSIMS and TEM study of presolar grains from the carbonaceous chondrites ALHA 77307 and NWA 852

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We investigated two presolar grains from the CR 2 chondrite Northwest Africa (NWA) 852 and one presolar grain from the Antarctic meteorite Allan Hills A (ALHA) 77307, grouped CO 3, by TEM. All grains were identified as presolar silicates by NanoSIMS measurements. Their isotopic fingerprint classifies them as Group I grains [1]. A thin foil for TEM investigation was obtained by ArIS [2] from the ALHA 77307 meteorite. Three grains were extracted from NWA 852 using the Focused Ion Beam (FIB) technique at the University of Saarland [3]. One of these grains could not be relocated in the TEM. All investigated grains are amorphous. EDX point measurements were carried out. We report on one calcium magnesium rich silicate, and two iron rich silicate grains containing magnesium, aluminum, calcium and sulfur.

[1] Leitner, J. et al. (2012) ApJ 745, 38 – 54. [2] Stojic, A., Brenker, F.E. (2010) Eur. J. Mineral 22, 17 – 21. [3] Holzapfel, C. et al. (2009) JMic 235 , 59 – 66.

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