

+

#0185

+

Abundant Primitive Material in Fine-grained Chondrule Rims of CR Chondrites.

Leitner*, J., Vollmer, C., Hoppe, P., Zipfel, J. *Max Planck Institute for Chemistry, Hahn-Meitner-Weg 1, 55128 Mainz, Germany, jan.leitner@mpic.de.

The CR chondrites are among the most primitive solar system materials and contain considerable amounts of presolar silicate stardust and isotopically anomalous organics [e.g., 1]. Recent studies have shown that stardust grains are not only found in interchondrule matrix but also in fine-grained chondrule rims [2–5]. We report results from our study of the CR chondrites GRA 95229, Renazzo, EET 92161, and the ungrouped C3 LEW 85332. Areas of interest were identified from element X-ray maps. C-, N-, and O-isotopes were studied by NanoSIMS, and TEM analysis was conducted on fine-grained rim material. We identified 26 O-anomalous grains in 7 fine-grained rims. Organic material shows excesses in ¹⁵N characteristic for CR chondrites. TEM investigations revealed the material to be a complex and highly primitive assemblage. Our results suggest accretion in the solar nebula on chondrule surfaces prior to parent body formation.

[1] Floss C & Stadermann F. J. 2009. GCA 73:2415. [2] Leitner J. et al. 2012. LPSC 43:#1835. [3] Haenecour P. & Floss C. 2012. LPSC 43:#1107. [4] Davidson J. et al. 2012. Metsoc 75:5269 [5] Leitner et al. 2012. Metsoc 75:#5191.

+

+

Cite abstract as:

Leitner, J., Vollmer, C., Hoppe, P., Zipfel, J. (2012) Abundant Primitive Material in Fine-grained Chondrule Rims of CR Chondrites. Paneth Kolloquium, Nördlingen (Germany), abstract URL: <http://www.paneth.eu/PanethKolloquium/2012/0185.pdf> (abstract #0185).