

Tuesday, July 28, 2015  
POSTER SESSION: FORMATION OF CHONDRULES  
AND CHONDRITE PRECURSORS  
5:30 p.m. Hearst Memorial Mining Building (HMMB) Floor One

Wasson J. T. Baecker B. Rubin A. E.

[\*Many Chondrule Melting Events; Multiple Overgrowths in Chondrules and Recycled Grains; Lightning as Heat Source\*](#) [#5381]

Igneously-zoned overgrowths in high-FeO low-Ca pyroxenes in Semarkona record ca. 10 melting events. Melting events varied in intensity, even at distances as short as 20 micrometers. Radiant heating by lightning seems the most suitable heat source.

Baecker B. Rubin A. E. Wasson J. T.

[\*Overgrowth Layers on Pyroxene in an FeO-Rich Porphyritic Chondrule in CO3.0 Y-81020\*](#) [#5082]

A POP chondrule in CO3.0 Y-81020 contains pyroxene phenocrysts with BSE-dark to BSE-bright overgrowth layers. FeO and CaO gradually increase from the center to the edge of the grains, but exhibit "sawtooth" compositional zoning patterns.

Cervantes-de la Cruz K. E. Segura A. Ortega-Gutiérrez F.

[\*Bar Size Tendency of Barred Olivine Chondrules\*](#) [#5380]

We studied the characteristics of the barred olivine chondrules in the meteorite Nuevo Mercurio.

Hanna R. D. Ketcham R. A.

[\*3D Measurement of Fine-Grained Rims in CM Murchison Using XCT\*](#) [#5350]

We are measuring the 3D geometry and thickness of fine-grained rims (FGRs) around deformed, foliated chondrules to help elucidate the formation mechanism of FGRs and to compare their geometry to the impact-induced foliation in Murchison.

Shah J. Muxworthy A. R. Almeida T. P. Kovács A. Russell S. S. Genge M. J. Dunin-Borkowski R. E.

[\*Visualizing the Magnetic Behavior of Chondrule Dusty Olivine Using Electron Holography\*](#) [#5098]

We present the first off-axis electron holography study of natural dusty olivine in Bishunpur (LL3.1) to investigate its nanoscale rock magnetic properties. We find highly magnetic, multi-vortex domain structures within the dusty olivine kamacite.

Herbst W. Greenwood J. P.

[\*A New Mechanism for Chondrule Formation: Radiative Heating by Hot Planetesimals\*](#) [#5020]

We propose that chondrules are formed by radiative heating of pre-existing clumps of solids in the vicinity of planetesimals with incandescent lava at their surfaces.

Loesche C. Wurm G. Teiser J. Friedrich J. M. Bischoff A. Kelling T. Mac Low M.-M.

McNally C. P. Hubbard A. Ebel D. S.

[\*On the Photophoretic Force Exerted on mm- and Sub-mm-Sized Particles\*](#) [#5137]

Photophoresis exerted on chondrules was investigated in drop tower experiments and numerical studies were performed to model the force on realistic particles.

Alexander C. M. O'D.

[\*Where Did the Chondrites Form?\*](#) [#5367]

Chondrite formation distances from the Sun are constrained using N isotopes.