

Friday, July 31, 2015  
**CHONDRITES: PARENT BODIES, COMPONENTS, ALTERATIONS,  
 AND IMPACT PROCESSES**  
 8:30 a.m. Sibley Auditorium

**Chairs: Catherine Corrigan  
 Mitsuru Ebihara**

- 8:30 a.m. Kuehner S. M. \* Irving A. J. Ziegler K. Sanborn M. E. Yin Q.  
[\*F3/4 Chondrite Northwest Africa 7135: Further Assessment of Its Relationship to Clasts in the Cumberland Falls Aubrite\*](#) [#5238]  
 There are now two discrete meteorite specimens belonging to the rare F chondrite class first recognized as clasts in Cumberland Falls.
- 8:45 a.m. Mittlefehldt D. W. \* Peng Z. X. Torrano Z. A.  
[\*Petrology and In Situ Trace Element Chemistry of a Suite of R Chondrites\*](#) [#5338]  
 Your eyes are not deceiving you: Duck has submitted an abstract to a chondrite session. We will present the results of our petrological and compositional studies of R chondrites of diverse petrological type.
- 9:00 a.m. Ebihara M. \* Shirai N. Takahashi H.  
[\*Chemical Characteristic of CK Chondrites in the Light of P, REEs, Th, and U\*](#) [#5269]  
 A total of 16 Antarctic CK chondrites were analyzed by ICP-AES for P and by ICP-MS for rare earth elements, Th and U. Based on the data for these elements, the formation process and the structure of CK chondrite parent body are discussed.
- 9:15 a.m. Dobrica E. \* Brearley A. J.  
[\*A New Lamellar Sulfide Morphology Associated with Glassy Silicate Materials in Unequilibrated Ordinary Chondrites\*](#) [#5132]  
 We identified a new intergrowth composed of lamellar sulfide and FeO-rich silica glass in several unequilibrated ordinary chondrites. The goal is to investigate the formation of these materials and to determine the processes that form them.
- 9:30 a.m. Bigolski J. N. \* Weisberg M. K.  
[\*A Comparative Study of Fine-Grained Materials in O and C Chondrites\*](#) [#5319]  
 Fine-grained materials are surveyed among primitive meteorites. The diversity of fine-grained rims provide clues to unraveling the accretion of chondrules onto parent bodies and offer insights into the alteration histories of chondrite groups.
- 9:45 a.m. Shah J. \* Muxworthy A. R. Russell S. S. Genge M. J.  
[\*Using Micro-CT to Map Meteoritic Magnetism\*](#) [#5100]  
 We present a method that uses micro-CT scans to re-orientate ex-situ chondrules to their in-situ position, allowing a full-vector paleomagnetic study of the chondrules in Bjurböle (L/LL4). We find that the magnetization is statistically random.
- 10:00 a.m. Lewis J. A. \* Jones R. H.  
[\*Microtextural Study of Feldspar in Petrologic Type 4 Ordinary Chondrites: Contrasting Records of Parent Body Metasomatism\*](#) [#5119]  
 We have carried out a detailed microtextural study of feldspar in petrologic type 4 H, L, and LL OCs in order to understand differences in the composition and/or timing of fluid reactions among the OC parent bodies during metamorphism.
- 10:15 a.m. Corrigan C. M. \* Lunning N. G. Friedrich J. M. McCoy T. J.  
[\*An H Chondrite Clast in an LL Chondrite: Impact Melt or Incipient Partial Melt?\*](#) [#5283]  
 We examine the possible provenance of a melt clast found in LL chondrite MET 01004 .

- 10:30 a.m. Choi B.-G. \* Kim H. Kim H. Lee J. I. Kim T. H. Ahn I. Yi K. Hong T. E.  
[\*Jinju H5 Chondrite: A New Fall in Korea Having Numerous Vugs Filled with Vapor-Phase Crystallized Minerals\*](#) [#5091]  
 The Jinju H5 chondrite is highly porous and has numerous vugs with euhedral crystals. We suspect these crystals condensed from impact produced vapor and that probably the meteorites was neither equilibrated nor compacted when the impact occurred.
- 10:45 a.m. Fudge C. \* Hu J. Sharp T. G.  
[\*Crystallization of Wadsleyite and Ringwoodite in Sahara 98222, 00293, and 00350: Constraints on Shock Conditions\*](#) [#5347]  
 We report on the coexistence of wadsleyite and ringwoodite in transformed clasts within three ordinary chondrites: Sahara 98222, 00293 and 00350. High-pressure mineralogy is used to constrain conditions of the impact event on the parent body.
- 11:00 a.m. Ruzicka A. M. \* Clay P. L. Hugo R. Joy K. H. Busemann H.  
[\*Contrasting Early and Late Shock Effects on the L Chondrite Parent Body: Evidence from Ar Ages and Olivine Microstructures for Two Meteorites\*](#) [#5177]  
 We discuss Ar age and olivine microstructure data for two L6 chondrites that provide a case study of contrasting shock effects in similar chondritic materials deformed in different epochs and under different conditions.
- 11:15 a.m. Korochantseva E. V. \* Buikin A. I. Hopp J. Lorenz C. A. Tieloff M.  
[\*The Chelyabinsk Meteorite: Variable Shock Effects Recorded by the  \$^{40}\text{Ar}\$ - \$^{39}\text{Ar}\$  System\*](#) [#5268]  
 Shocked lithologies of the Chelyabinsk LL chondrite have higher apparent  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  ages than the very young light lithology. We interpret previous impact events made shocked lithologies more retentive and resistant against thermal reset.
- 11:30 a.m. Muxworthy A. R. \* Bland P. A. Collins G. Moore J.  
[\*Magnetic Fabrics in Allende: Implications for Magnetic Remanence Acquisition\*](#) [#5045]  
 Mineral magnetic analysis of Allende meteorite matrix reveals a strong magnetic fabric. This is argued to have formed during impact-induced, heterogenic compaction.
- 11:45 a.m. Forman L. V. \* Bland P. A. Timms N. E. Daly L. Collins G. S. Davison T. M. Trimby P. W. Ringer S. P.  
[\*Recovering the Primordial Impact History of Chondrites in Unprecedented Detail Using Massive EBSD Datasets\*](#) [#5086]  
 EBSD analyses are used to identify relationships between a chondrule and surrounding matrix in Allende. Observations act as potential 'way-up' indicators for compaction-related impacts on the surface of the parent body.