

**Monday, July 24, 2017**  
**CARBONACEOUS CHONDRITES AND THEIR PARENT BODY EVOLUTION I**  
**9:15 a.m. Sweeney B**

*The session discusses carbonaceous chondrites and what they reveal about parent body processing.*

**Chairs: Dennis Harries**  
**Tomoki Nakamura**

- 9:15 a.m. Weimer D. \* Busemann H. Alexander C. M. O'D. Maden C.  
[\*The Effect of Aqueous Alteration on Primordial Noble Gases in CM Chondrites\*](#) [#6300]  
 We have analyzed 32 CM chondrites for their noble gas contents and isotopic compositions and calculated CRE ages. Correlated effects of parent body aqueous alteration with primordial noble gas contents were detected.
- 9:30 a.m. Singerling S. A. \* Corrigan C. M. Brearley A. J.  
[\*CM2 to CM1 Iron Sulfides, from Primary Nebular to Altered Asteroidal\*](#) [#6167]  
 This study synthesizes our observations of CM chondrite iron sulfides, from primary characteristics in the least-altered CM2s to remnants and alteration products in the heavily-altered CM1s, providing a link between nebular and parent body processes.
- 9:45 a.m. Hamilton V. E. \* Abreu N. M. Connolly H. C. Jr.  
[\*Insights into Parent Body Alteration from the Distribution of Water and Hydroxyl in Carbonaceous Chondrites\*](#) [#6263]  
 We are using  $\mu$ -FTIR to characterize the spatial distribution of water and hydroxyl in carbonaceous chondrites, which may provide evidence for or against *in situ* (parent body) alteration.
- 10:00 a.m. Patzek M. \* Hoppe P. Bischoff A. Visser R. John T.  
[\*Water-Bearing, Volatile-Rich Clasts in Howardites and Polymict Ureilites — Carriers of Deuterium-Enriched Waters not Sampled by Individual Meteorites\*](#) [#6183]  
 D/H ratios of volatile-rich clasts from howardites and polymict ureilites are distinct from each other. The first may be linked to CI chondrites but the latter is distinct from CI as well as from ungrouped C2 chondrites Bells, Essebi and Tagish Lake.
- 10:15 a.m. King A. J. \* Maturilli A. Schofield P. F. Helbert J. Russell S. S.  
[\*The Thermal History of CI and CM Chondrites and Their Relationship to Primitive Asteroid Surfaces\*](#) [#6220]  
 Heated CI and CM chondrites are likely to be excellent analogues for materials on the surface of C-type asteroids. We present reflectance spectra for well characterized heated CI and CM chondrites and examine their relationship with parent bodies.
- 10:30 a.m. Nakamura T. \* Golabek G. Ohtsuka K. Matsuoka M.  
[\*Solar-Radiation Heating as a Possible Heat Source for Dehydration of Hydrous Carbonaceous Chondrites\*](#) [#6233]  
 We have calculated time-dependent temperature profiles of near surface layers of primitive Near Sun Asteroid (3200) Phaethon and found that solar radiation heating is a possible heat source for dehydration of carbonaceous chondrites.
- 10:45 a.m. Harvey R. P. \* Zeszut Z. Gaier J. Kleinhenz J. M. Waters D. Shober P.  
[\*Measurements of Adhesion in CM2 Carbonaceous Chondrites and Associated Minerals for Application to Small C-Type Asteroids\*](#) [#6117]  
 Measure the sticky / To see whether asteroids / Will stay in one piece.

- 11:00 a.m. Marrocchi Y. \*  
[Oxygen Isotopic Compositions of Fayalite in the CV Chondrite Kaba](#) [#6179]  
The oxygen isotopic compositions of fayalite grains in the CV3 carbonaceous chondrites Kaba bring information on the origin of water accreted by the CV parent body and its isotopic evolution during secondary alteration processes.
- 11:15 a.m. Harries D. \* Wild P.  
[Olivine Extracted from the Jbilet Winselwan CM2 Chondrite — A Reference for the Regolith of C-Group Asteroids?](#) [#6198]  
We have investigated olivine grains of an unbrecciated specimen of Jbilet Winselwan (CM2) for surface morphology and particle tracks. The olivine may serve as a reference for returned samples, but thermal annealing might be present.
- 11:30 p.m. Lee P. \*  
[Phobos and Deimos: A Potential Comet Connection](#) [#6393]  
Phobos and Deimos are similar in size and spectrum to an exceptionally large and spectrally uncommon asteroid among near-Earth objects: 3552 Don Quixote, a D-type NEO that's a comet. The martian moons' potential link to comets is discussed.