Tuesday, July 24, 2018
ACTIVITY OF WATER IN CARBONACEOUS CHONDRITES
1:30 p.m.   Blue Room

Chairs: Martin Lee
        Epifanio Vaccaro

1:30 p.m. Tsuchiyama A. * Miyake A. Kawano J.
Nano-Sized CO₂-H₂O Fluid Inclusions in Calcite Grains of the Sutter’s Mill CM Meteorite [#6187]
Early solar system fluid, which contains CO₂ as well as H₂O, was found in nano-sized inclusions in
calcite grains of a CM chondrite using (S)TEM/EDS with a cryogenic holder.

1:45 p.m. Vaccaro E. * Matsumoto M. Nakato A. Uesugi K. Takeuchi A. NakanO4 T.
J. Matsuno J. Takayama A. Tsuchiyama A. Russell S. S.
Evidence of Heavily Aqueously-Altered Clast in Queen Alexandra Range 99177 Matrix Revealing
Insights into Accretionary Processes [#6057]
QUE 99177 is a very pristine CR2 chondrite. However, a metamorphosed clast in the matrix of this
meteorite has been previously reported. The clast described here shows clear evidence of heavy aqueous
alteration, confirmed by TEM analyses.

2:00 p.m. Lee M. R. * King A. J. Cohen B. E. Mark D. F. Boyce A.
Distinguishing Mild Aqueous Alteration from Thermal Metamorphism in the Lewis Cliff (LEW) 85311
CM Carbonaceous Chondrite [#6122]
The CM carbonaceous chondrite LEW 85311 is one of the least aqueously and thermally altered yet
described, and so can provide a unique window into materials that were accreted to form its parent body.

2:15 p.m. Daly L. * Lee M. R. Cairney J. Eder K. McCarroll I. Yang L.
Atom Probe Tomography of Nanoscale Structures in Carbonates from the Queen Elizabeth Range
(QUE) 93005 CM2 Carbonaceous Chondrite: Implications for the Evolution of Parent
Body Fluids [#6239]
Through atom probe tomography of secondary carbonate assemblages in a CM2 meteorite we observed
nanoscale structures that inform our understanding of the evolution of aqueous fluids on the CM
parent body.

2:30 p.m. Panda D. K. * Ray D. Shukla A. D.
Aqueous Alteration Characteristics of Mukundpura (CM2) Chondrite [#6270]
Hydrated minerals are commonly found in the carbonaceous chondrite due to high content of H₂O (upto
10 wt%). Present study focused on alteration characteristics of Mukundpura (CM2) meteorite to
understand the aqueous histories of this new fall.

2:45 p.m. Zolotov M. Yu. * Zolotova N. B. Romaniello S. J.
Water Extracts from Murchison CM2 Chondrite: Trace Metals and Major Ions [#6340]
The composition of water extracts informs about sulfate-carbonate-Na-Mg-Ca solutions and
respecting salts on the parent body CM2 carbonaceous chondrites. Abundant Mo and Re in leachates
constrain redox conditions of the parent body solutions.