

Monday, July 24, 2017
40 YEARS OF U.S. ANTARCTIC METEORITES
1:30 p.m. Sweeney A

This session will look at the U.S. Antarctic Meteorite program over 40 years, including new research on an array of Antarctic meteorites recovered by the program.

Chairs: Catherine Corrigan
James Karner

- 1:30 p.m. Harvey R. P. *
[*The Evolution of ANSMET: How Ideas About the Recovery, Concentration and Significance of Antarctic Meteorites Have Changed over Four Decades*](#) [#6118]
 I search for decades / Antarctic Meteorites / Still found wherever.
- 1:45 p.m. Corrigan C. M. * Welzenbach L. C. Righter K. McBride K. McCoy T. J. Harvey R. P. Satterwhite C. Hoskin C. J.
[*A Statistical Examination of 40 Years of U.S. Antarctic Meteorites*](#) [#6308]
 We examine the US Antarctic meteorite collection from a statistical perspective, comparing data from individual field sites, seasons, and other meteorites collected in terms of types of meteorites and the collection as a whole.
- 2:00 p.m. McCoy T. J. *
[*Making Misfits Fit*](#) [#6126]
 After 40 years of collecting meteorites in Antarctica, dozens of misfit meteorites — each poorly understood on its own — offer valuable but fuzzy clues to the roles of nebular processes, parent body alteration, impact and asteroid differentiation.
- 2:15 p.m. Righter K. * Satterwhite C. Funk R. Harrington R.
[*Historical Trends in US Antarctic Meteorite Allocations, with a Close Look at CR Chondrites*](#) [#6303]
 We look at historical trends in US Antarctic meteorite allocations over the 40 year history of the program.
- 2:30 p.m. Gross J. * Treiman A. H. Connolly H. C. Jr.
[*Water on Asteroids: The Curious Case of R-Chondrite Miller Range 11207*](#) [#6145]
 MIL 11207 is a R-6 chondrite and contains ~12 vol% OH-bearing minerals — amphibole, biotite, apatite. We report mineralogy/petrography/metamorphism and discuss the implications of the results for the geological history of the R-chondrite parent body.
- 2:45 p.m. Abreu N. M. * Crispin K. L.
[*Thermal Metamorphism in the CM Parent Body — Evidence from Weakly Altered CM Chondrites LaPaz \(LAP\) 04565 and 02333*](#) [#6365]
 LAP 04514, LAP 04527, LAP 04565 and LAP 02333 are weakly altered CMs. These meteorites resemble Paris and Y 791198 in terms of presence of Fe-Mg amorphous silicates and nano Fe-sulfides and mild thermal metamorphism comparable to petrologic type <3.1.
- 3:00 p.m. Vaccaro E. * Nakato A. Najorka J. Uesugi K. Takeuchi A. Matsuno J. Takayama A. Tsuchiyama A. Russell S. S.
[*“Exotic” Clast in Queen Alexandra Range 99177 Matrix: A Novel Investigative Approach Unfolding Accretionary Processes*](#) [#6094]
 High definition maps of QUE 99177 matrix show the presence of a clast, and CT investigations show a neat boundary in 3D of this. The clast is thought to have been produced by brecciation, and subsequently incorporated into the meteorite parent body.

- 3:15 p.m. Koch I. Floss C. *
[Microanalytical Investigation of Fine-Grained Matrix Material in Elephant Moraine 92042: Effects of Parent Body Processing on Primitive Components](#) [#6013]
Aqueous alteration has affected presolar silicate abundances in the CR chondrite EET 92042 and has resulted in elemental changes in its insoluble organic matter.
- 3:30 p.m. Armytage R. M. G. * Debaille V.
[Neodymium Isotopes in Enstatite Chondrites](#) [#6270]
Both equilibrated and unequilibrated enstatite chondrites have Nd isotopic compositions distinct from Earth. However, they also exhibit significant variability in their isotopic composition, which does not appear to be related to petrologic grade.
- 3:45 p.m. Warren P. H. *
[Miller Range 090687, a Distinctly Ferroan and Dacitic Eucrite](#) [#6162]
Miller Range 090687 is both dacitic and ferroan, unlike any previously known HED. Its silica/plag (by volume, 0.57) easily qualifies as dacite. The calculated bulk composition has mg = only 24 mol%, in part because the rock is 10 vol% Fo13 olivine.
- 4:00 p.m. Cohen B. A. *
[The Utility of Lunar Meteorites to Investigating Lunar Bombardment History](#) [#6409]
The stochastic nature of lunar meteorite launch events implies that lunar meteorites represent a more complete sample of the lunar surface than do the Apollo and Luna samples.
- 4:15 p.m. Bell M. S. *
[Experimental Shock DeComposition of Siderite and the Origin of Magnetite in Martian Meteorite Allan Hills 84001](#) [#6261]
ALH 84001 martian meteorite was collected by an ANSMET team in 1984 and in 1996 researchers reported that it contained magnetite that could be evidence of life on early Mars. An abiotic formation mechanism for the magnetites in ALH is presented.
- 4:30 p.m. Caffee M. W. * Herzog G. F. Jull A. J. T. Nishiizumi K. Welten K. C.
[Cosmogenic Nuclides in Antarctic Meteorites: Opportunities and Directions](#) [#6150]
Cosmogenic nuclide studies of Antarctic meteorites have allowed and will undoubtedly continue to contribute to a better understanding of the processes responsible for the delivery of planetary materials to Earth.
- 4:45 p.m. Karner J. M. * Harvey R. P. Schutt J.
[The Future of ANSMET: Support, Funding, and Fieldwork Sites, Structure, Logistics and Methods for the Coming Years](#) [#6352]
After 40 years of searching, ANSMET plans for the future.