Thursday, March 24, 2016 **[R501]**
LUNAR PETROLOGY AND GEOCHEMISTRY
8:30 a.m. Waterway Ballroom 1

Chairs: **Dave Draper**
Barbara Cohen

8:30 a.m. Schmitt H. H. *
Symplectites in Dunite 72415 and Troctolite 76535 Indicate Mantle Overturn Beneath Lunar Near-Side **[#2339]**
Symplectites of Cr-spinel, Ca-cpx, and Mg-opx samples 72415 and 76535 provide mineralogical and textural evidence in that they originated in the lunar mantle.

8:45 a.m. Neal C. R. * Draper D. S.
Are Ferroan Anorthosites Direct Products of the Lunar Magma Ocean? **[#1165]**
Trace element data from ferroan anorthosite plagioclases are consistent with being crystallized from a cooling lunar magma ocean.

9:00 a.m. Rapp J. F. * Draper D. S.
Moonage Daydream: Reassessing the Simple Model for Lunar Magma Ocean Crystallization **[#2691]**
Moon magma ocean / Experiments show things are / Not so simple now…

9:15 a.m. Warren P. H. * Boehnke P.
Precise Igneous Crystallization Ages for Ferroan Anorthosites: Merely Difficult, or Impossible? **[#2997]**
The "pristinity" of ferroan anorthosites does not mean we can safely assume their isotopic systems closed, permanently, immediately, at igneous crystallization.

9:30 a.m. Hilton A. * Gross J. Korotev R. Calzada-Diaz A.
Classifying the Unknown — The Lunar Edition: North West Africa 10401 a New Type of the Mg-Suite Rock? **[#1168]**
The curious case of lunar meteorite NWA 10401; bearing characteristics of Mg-suite rocks, yet depleted in REE. A new type of FHT (non-KREEP) Mg-suite rock?

9:45 a.m. Kruijer T. S. * Kleine T.
High-Precision ^{182}W Measurements on Mare Basalts: Constraints on the Origin and Differentiation of the Moon **[#2132]**
Low-Ti and high-Ti mare basalts as well as KREEP share a common ^{182}W composition, showing that lunar magma ocean differentiation occurred after ^{182}Hf extinction.

10:00 a.m. Simon S. B. * Sutton S. R.
Valence of Ti, V, and Cr in the Reduced Apollo 14 Basalts 14053 and 14072 **[#1251]**
We report results of XANES measurements of Ti, V, and Cr valences, and Ti coordination environments, in olivine and pyroxene in two A-14 Al-rich basalts.

10:15 a.m. Richter F. M. * Chaussidon M. Mendybaev R. A. Taylor L. A.
Magnesium Isotopic Zoning of an Olivine Grain from Lunar Microgabbro 15555: Constraints on Crytallization and Cooling **[#1146]**
Magnesium isotopic fractionation of a zoned lunar olivine grain documents the extent to which diffusion affected the zoning and constrains the cooling rate.

10:30 a.m. Williams K. B. * Krawczynski M. J. Nie N. X. Dauphas N. Couvy H. et al.
The Role of Differentiation Processes in Mare Basalt Iron Isotope Signatures **[#2779]**
Two deltas diverge / In a molten Moon. Attempt / To recreate both.

10:45 a.m. Valencia S. N. * Jolliff B. L. Korotev R. L.
Petrography and Chemistry of the Mafic and REE-Rich Components in Apollo Sample 12013 **[#2361]**
Apollo Twelve / Rare earth element rich rock / Mafic gabbro too.

11:00 a.m. Nemchin A. A. Snape J. F. Whitehouse M. J. Norman M. * Bellucci J. J. et al.
Lunar Pb **[#1815]**
Pb-Pb systems in lunar rocks ranging from breccias to basalts can be successfully studied using SIMS, opening an opportunity to define Pb evolution of the Moon.

11:15 a.m. Grange M. L. * Norman M. D. Assis Fernandes V.
Clues to the Origin of Gabbroic Lunar Meteorite Northwest Africa 5000 **[#1784]**
We present new major, trace element and isotope compositions of mineral separates from NWA 5000 and discuss its possible origin on the Moon.

11:30 a.m. Zeigler R. A. * Korotev R. L.
Petrography and Geochemistry of Lunar Meteorite Miller Range 13317 **[#2554]**
The petrography and geochemistry of lunar meteorite Miller Range 13317 is reviewed. The meteorite is a new basaltic regloith breccia.

11:45 a.m. Nekvasil H. Lindsley D. H. DiFrancesco N. J.
Contemporaneous Formation of Diverse Lunar Magma Ocean Residual Liquids: The Role of Hercynitic Spinel **[#2354]**
Fractionation of hercynitic spinel in the lunar magma ocean may have played an important role in diversifying late-stage liquids and producing “sodic” magmas.