



- 3:15 p.m. Garvie L. A. J. \* Burt D. M. Buseck P. R.  
[\*A Microscopists View of Desert Varnish from the Sonoran Desert\*](#) [#1344]  
Nanometer-scale element mapping and spectroscopy of desert varnish reveals a dynamic disequilibrium system characterized by post-depositional mineralogical, chemical, and structural changes, activated by liquid water.
- 3:30 p.m. Chemtob S. M. \* Rossman G. R. Eiler J. M. Jolliff B. L.  
[\*Silica Coatings on the 1974 Kilauea Flow: New SEM and SIMS Results and Implications for Mars\*](#) [#2156]  
Silica and Fe-Ti oxide coatings occur on young flows in the Ka'u Desert, Hawaii, a Mars analog terrain. We present new textural, spectral and isotopic observations to determine the coating formation mechanism and apply the results to silica on Mars.
- 3:45 p.m. McDowell M. L. \* Hamilton V. E. Cady S. L. Knauth P.  
[\*Thermal Infrared and Visible to Near-Infrared Spectral Analysis of Chert and Amorphous Silica\*](#) [#1419]  
We look in detail at the thermal infrared and visible to near-infrared spectra of various forms of chert and amorphous silica and compare the spectral variations between samples with variations in physical and chemical characteristics.
- 4:00 p.m. Rampe E. B. \* Kraft M. D. Sharp T. G.  
[\*Chemical Weathering Trends from TIR Spectral Models: Implications for Deriving Weathering Trends from Martian Spectral Data\*](#) [#2132]  
We compare measured chemical compositions and weathering trends of terrestrial basalts to those derived from TIR spectral models. Deriving true chemistry and weathering trends from TIR models of weathered surfaces on Mars may be impractical.
- 4:15 p.m. Hardgrove C. J. \* Moersch J. E. Whisner S. C.  
[\*Identification of Sedimentary Processes on Alluvial Fans Using Thermal Images and Ground Truth\*](#) [#1211]  
Aerial thermal images and ground based observations are used to study sedimentary processes on a wide assortment of alluvial fans in desert southwest. Thermal images reveal evidence of channelized flow, debris flows, levees and weathering processes.
- 4:30 p.m. Murphy N. W. \* Jakosky B. M. Mellon M. T. Budd D. A.  
[\*Thermophysical Properties of Martian Duricrust Analogs\*](#) [#1420]  
We measured thermophysical properties of samples of terrestrial duricrust from a gypsum deposit in New Mexico and Lunar Lake Playa. Our results suggest that well-indurated materials may cover a significant portion of the Mars surface.