

Monday, March 20, 2017

[M154]

PLANETARY CRYOSPHERES AND POLAR PROCESSES I: NOT MARS

2:30 p.m. Waterway Ballroom 6

Chairs: **Jamie Molaro**
Michael Sori

- 2:30 p.m. McCord T. B. * Castillo-Rogez J. C. Russell C. T. Raymond C. A.
[Ceres Evolution: The Picture Before and After Dawn](#) [#1098]
Ceres is shown by Dawn to be a highly physically and chemically evolved water-rich body probably active today, consistent with pre-Dawn findings.
- 2:45 p.m. Combe J.-Ph. * Raponi A. Tosi F. De Sanctis M.-C. Ammannito E. et al.
[Exposed H₂O-Rich Areas on Ceres Detected by Dawn](#) [#2568]
H₂O-rich materials exposed at the surface of Ceres have been detected by the Dawn mission at latitudes higher than 30°. H₂O ice is the most likely component.
- 3:00 p.m. Landis M. E. * Byrne S. Schorghofer N. Schmidt B. Hayne P. et al.
[Ceres Ice Sublimation as a Source of an Exosphere: Model Results](#) [#1647]
We model three possible sources of water vapor for Ceres' observed transient atmosphere and conclude that exposed surface ice is the best candidate.
- 3:15 p.m. Villarreal M. N. * Russell C. T. Luhmann J. G. Thompson W. T. Prettyman T. H. et al.
[Solar Energetic Proton Events as the Source of the Transient Exosphere of Ceres](#) [#1202]
The variable exosphere of Ceres seen by the IUE, HSO, VLT, and Dawn appears to be controlled by the solar energetic proton flux reaching Ceres.
- 3:30 p.m. Sori M. M. * Byrne S. Bland M. T. Bramson A. M. Ermakov A. I. et al.
[The Vanishing Cryovolcanoes of Ceres](#) [#1116]
Viscous relaxation modifies cryovolcanic domes on Ceres over 10–100 Myr timescales, explaining the observed distribution of cryovolcanic surface features.
- 3:45 p.m. Aharonson O. * Hayne P. O. Schorghofer N.
[Size and Solar Incidence Distribution of Shadows on the Moon](#) [#2245]
We compute the incidence angle dependence and size frequency distribution of shadows on the Moon and discover interesting trends.
- 4:00 p.m. Stubbs T. J. * Wang Y. Glenar D. A.
[Illumination Conditions on Phobos: Implications for Surface Processes, Volatiles, and Exploration](#) [#3006]
The present-day average illumination conditions on Phobos are used to evaluate the potential for water ice sequestration.
- 4:15 p.m. Molaro J. L. * Phillips C. B.
[Thermomechanical Behavior of Ice and Ice-Rock Mixtures at the Mineral Grain Scale](#) [#1729]
Thermal stresses in objects composed of rock and ice mixtures have important implications for fracture propagation and breakdown on comets and other icy bodies.
- 4:30 p.m. Zanetti M. * Neish C. D. Kukko A. Choe B.-H. Osinski G. R. et al.
[Surface Roughness and Radar Scattering Properties of Periglacial Terrain: Geologic Applications of Personal Mobile LiDAR Scanning](#) [#2775]
An ultra-high resolution backpack mobile LiDAR scanner is used to investigate surface roughness and C- and L- band radar scattering properties at Haughton Crater.