

Thursday, March 22, 2018
VOLATILES ON AND AROUND THE MOON
8:30 a.m. Waterway Ballroom 1

[R501]

Chairs: William Farrell
 Georgiana Kramer

- 8:30 a.m. Li S. * Lucey P. G. Orlando T. M.
[*The Shielding Effect of Earth's Magnetotail on the Formation of Lunar Surface Water*](#) [#1575]
 We found evidence for the magnetotail shielding effects on the formation of lunar surface water.
- 8:45 a.m. Tucker O. J. * Farrell W. M. Killen R. M. Hurley D. M.
[*Solar Wind Implantation into Lunar Regolith II: Monte Carlo Simulations of Hydrogen Retention in a Surface with Defects and the Hydrogen \(H, H₂\) Exosphere*](#) [#2549]
 We present results from Monte Carlo simulations of the diffusion of implanted solar wind H atoms and the subsequently derived H and H₂ exospheres.
- 9:00 a.m. Honniball C. I. * Lucey P. G. Kaluna H. M. Li S. Sun L. et al.
[*Lunar Surface Water: Latitude, Longitude Systematics, and Detection and Abundances at Small Geologic Targets from Groundbased Telescopic Observations*](#) [#1726]
 Three micron groundbased observations of lunar surface water show latitude and time variations. Water abundances were derived for small geologic features.
- 9:15 a.m. Orlando T. M. * Jones B. Alexandrov A. Hibbitts C. A. Dyar M. D.
[*Diurnal Variation of the Solar Wind-Induced Optical Signature of Water on the Lunar Surface*](#) [#1660]
 The diurnal and latitude dependence of the 2.8 micron optical signature of water on the lunar surface is modeled utilizing OH formation and destruction rates.
- 9:30 a.m. Patterson G. W. * Prem P. Stickle A. M. Cahill J. T. S. Mini-RF Team
[*Mini-RF S- and X-Band Bistatic Observations of South Polar Craters on the Moon*](#) [#2007]
 We present S- and X-band bistatic radar observations for the floors of the craters Cabeus and Amundsen and discuss their potential for harboring water ice.
- 9:45 a.m. Prem P. * Patterson G. W.
[*Modeling the Potential Radar Scattering Characteristics of Water Ice at the Lunar Poles*](#) [#2134]
 Do Mini-RF observations of Cabeus Crater indicate subsurface water ice? We model radar scattering by regolith with intermixed or buried ice to investigate.
- 10:00 a.m. Flom A. J. * Kramer G. Y.
[*Water Retention in Mature and Immature Lunar Regolith*](#) [#2054]
 This study examines the retention of HOH/OH in lunar regolith over time by comparing the three micron absorption features of mature and immature regolith in M3 data.
- 10:15 a.m. Farrell W. M. * Hurley D. M. Poston M. J. Hayne P. O. McLain J. L.
[*Cold Trapping of Lunar Polar Crater Volatiles: A Model of Desorption from Frosty Grains*](#) [#2254]
 We examine the desorption of water from a complex grain surface having micro-regions of thin ice layers along with exposed regolith substrate.
- 10:30 a.m. Hurley D. M. * Benna M. Stubbs T. J. Mahaffy P. R. Elphic R. C.
[*LADEE NMS Observations of Exospheric Water Events at the Moon*](#) [#2052]
 We quantify the water released into the Moon's exosphere from meteoroid impacts on the Moon using data from LADEE NMS and models.

- 10:45 a.m. Grava C. * Hurley D. M. Retherford K. D. Gladstone G. R. Feldman P. D. et al.
[*Observations of Lunar Exospheric Helium with LRO/LAMP*](#) [#2837]
The LAMP UV spectrograph on board of LRO studies the dependence on lunar helium on latitude, altitude, local time, and longitude.
- 11:00 a.m. Kegerreis J. A. * Eke V. R. Massey R. J. Beaumont S. K. Elphic R. C. et al.
[*Evidence for a Localised Source of the Argon in the Lunar Exosphere*](#) [#1893]
We test hypotheses for the lunar argon exosphere's observed spatial and temporal variations. The mare 'bulge' in argon density requires a localised source.
- 11:15 a.m. McLain J. L. * Sarantos M. Johnson N. M. Keller J. W. Farrell W. M.
[*Laser Induced Thermal Desorption Measurements of Volatiles on Lunar Soils*](#) [#2651]
A LITD experiment has been designed to compare of desorption kinetics on various lunar soils to model residence times on the lunar surface and supply to PSRs.
- 11:30 a.m. Sefton-Nash E. * Greenhagen B. T. Williams J.-P. Paige D. A.
[*Differences in Far-IR Emissivity Between Permanently Shaded and Partially Illuminated Terrain at the Lunar South Pole*](#) [#2705]
PSR and non-PSR areas in Amundsen Crater show different emissive properties in the far-IR. Volatiles, low temperature processes, both?