

Wednesday, March 21, 2018
TAURUS-LITTROW VALLEY II: 45 YEARS AFTER APOLLO 17
 1:30 p.m. Waterway Ballroom 6

[W455]

Chairs: Barbara Cohen
 Nicole Zellner

- 1:30 p.m. Neal C. R. *
[A New Look at Apollo 17 Basaltic Samples 45 Years On](#) [#1807]
 All whole-rock data for Apollo 17 basalts and glasses has been gathered and collated to give a new look at Apollo 17 basaltic magma petrogenesis.
- 1:45 p.m. Elardo S. M. * Shearer C. K.
[The Mg-Suite Rocks from the Taurus-Littrow Valley: A Linchpin of Lunar Science](#) [#2656]
 The Mg-suite samples collected by Apollo 17 provide the basis for much of what we know about the early post-LMO Moon, making them incredibly valuable samples.
- 2:00 p.m. Simon S. B. * Sutton S. R.
[Valences of Ti, V, and Cr in Apollo 17 Basalt Pyroxene: Comparison of High-Ti and Very Low-Ti Basalts](#) [#1236]
 We report new valence measurements for A-17 VLT basalts and compare with results for A-17 high-Ti basalts and other lunar basalts we have analyzed.
- 2:15 p.m. Warren P. H. * Tang C. P.
[A VLT Mare Basalt Clast Within Highland Breccia Northwest Africa 10626](#) [#2060]
 In the unlikely context of a low-Th highland breccia, we found a 3-mm (but ultrafine-grained) clast of VLT, 1.2 wt% TiO₂, mare basalt, much like Apollo 17 VLTs.
- 2:30 p.m. Nemchin A. A. * Whitehouse M. J. Snape J. F. Thiessen F. Pidgeon R. T.
[U-Pb Chronology of Apollo 17 Samples](#) [#1936]
 Application of U-Pb system for lunar chronology and its limitations are illustrated using Apollo 17 samples ranging from impact melt breccias to mare basalts.
- 2:45 p.m. Shearer C. K. * Neal C. R. Zeigler R. A.
[Unopened Treasures in the Apollo 17 Sample Collection. A Perspective for Future Research and Missions](#) [#1253]
 We reveal hidden treasures within the Apollo sample collection and outline their value for future missions.
- 3:00 p.m. Getzin B. L. * Weiss B. P. Wells R. A. Schmitt H. H.
[Paleodirection of the Ancient Lunar Magnetic Field from Camelot Crater Basalts: Evidence for a Selenocentric Axial Dipole](#) [#1145]
 The magnetization direction of an Apollo basalt indicates that the ancient Moon generated a selenocentric axial dipole magnetic field.
- 3:15 p.m. Garrick-Bethell I. * Miljković K.
[Age of the Lunar South Pole-Aitken Basin](#) [#2633]
 Based on iSALE hydrocode modeling, we demonstrate that the South Pole-Aitken Basin is the only viable basin that could have excavated Apollo sample 76535.
- 3:30 p.m. Weber R. C. * Dimech J.-L. Phillips D. Molaro J. Schmerr N. C. et al.
[Thermal Moonquakes: Implications for Surface Properties](#) [#1497]
 Sunrise and sunset / Cracking, creaking, and rumbling / The Moon never rests.

- 3:45 p.m. Grimm R. E. *
[*The Apollo 17 Surface Electrical Properties Experiment Revisited*](#) [#1096]
The Surface Electrical Properties experiment was largely uninterpreted due to the modeling and inversion complexity. Modern analysis constrains the subsurface dielectric structure and loss.
- 4:00 p.m. Nagihara S. * Kiefer W. S. Taylor P. T. Williams D. R. Nakamura Y.
[*Apollo Heat Flow Experiments: Lessons Learned for the Future Lunar-Landing Missions*](#) [#1470]
We discuss lessons learned from the Apollo 15 and 17 heat flow experiments and make recommendations for additional measurements on future missions.
- 4:15 p.m. Siegler M. A. * Williams J. P. Molaro J. L. Paige D. A.
[*Temperatures at the Taurus-Littrow Valley: Legacy of the Apollo 17 Heat Flow Experiment and LRO Diviner*](#) [#2491]
The Apollo heat flow data from the Taurus-Littrow Valley represents our best geothermal measurement of another solar system body. Here's what it has taught us.
- 4:30 p.m. Feist B. * Petro N. E. Bleacher J. E. Niles P.
[*Documentation of Geologic Field Activities in Real-Time in Four Dimensions: Apollo 17 as a Case Study for Terrestrial Analogues and Future Exploration*](#) [#2681]
Apollo 17 represents a milestone of human exploration and presents an opportunity to demonstrate how to coordinate data documentation for future exploration.
- 4:45 p.m. Mathew M. T. * Slocum S. Sharp J. Garry W. B.
[*Creating Planetary Terrains in Virtual Reality for Science and Exploration: A Return to the Apollo 17 Landing Site*](#) [#2192]
Apollo 17 landed in the Taurus-Littrow Valley 45 years ago and was the last crewed mission to the lunar surface, but we can now return using virtual reality.