

Lunar Surface Science Virtual Workshop
Virtual Sessions on Lunar Volatiles and Samples
July 29–30, 2020

Program and Abstracts

All times are Eastern Daylight Time (EDT) (UTC -4)

Wednesday, July 29, 2020

Lunar Volatiles

Times (EDT)	Presenter	Title
12:00 p.m.	Thom Orlando, Parvathy Prem	Welcome and Workshop Overview
Lunar Volatiles Overview		
12:05 p.m.	Parvathy Prem	Lunar Volatiles Science Questions for the Next Decade
12:10 p.m.	NASA EVA Suits Team (TBD)	Suit Capabilities and PSR Knowledge Gaps
12:20 p.m.	Amy McAdam	Initial Findings from the NASA Lunar Water Insitu Measurement Study (LWIMS)
12:30 p.m.	Danielle Simkus	Volatile Organic Analysis of Returned Lunar Samples
Upcoming Missions — I		
12:40 p.m.	Craig Hardgrove	LunaH-Map
12:45 p.m.	Tony Colaprete	VIPER
12:50 p.m.	PROSPECT Team (TBD)	PROSPECT
12:55 p.m.	Debra Needham	CLPS 19C Polar Delivery
1:00 p.m.		DISCUSSION
1:05 p.m.		BREAK
Reading the Polar Volatile Record		
1:15 p.m.	Paul Lucey	Composition and Origins of Lunar Polar Volatiles
1:20 p.m.	Margaret Landis	<i>Stability Locations for Lunar Polar Volatiles from Diviner Lunar Radiometer Data: Implications for Future Scientific Exploration</i>
1:25 p.m.	Tyler Powell	<i>Modeling Ice Stability in Small Permanently Shadowed Regions on the Moon</i>
1:30 p.m.		DISCUSSION
Techniques to Characterize Volatiles In Situ — I		
1:35 p.m.	Paul Hayne	<i>Polar Night Vision: Thermal Infrared Imaging at the Lunar Surface</i>
1:40 p.m.	Tim Livengood	<i>SNFLER: Surface Neutron Flux with Lunar Empirical Ratio</i>
1:45 p.m.	Karl Hibbitts	<i>Simple Camera Concept for Surface Volatile Characterization and Mapping</i>
1:50 p.m.	Dina Bower	<i>Compact Lunar Mineralogy Imager (CLuMI)</i>
1:55 p.m.		DISCUSSION
2:00 p.m.	Mustafa Aksoy	<i>Impact of Water Ice Presence in Lunar Regolith on Surface Brightness Temperatures from 1 to 10 GHz</i>
2:05 p.m.	Tim Livengood	<i>Submillimeter Solar Observation Lunar Volatiles Experiment at the South Pole (SSOLVE@SP)</i>
2:10 p.m.	John Keller	<i>Hydrogen Albedo Lunar Observations from the Surface (HALOS)</i>
2:15 p.m.	Gerardo Dominguez	<i>Cavity Ringdown Spectroscopy for the Complete Isotopic Characterization of Lunar Surface Volatiles</i>
2:20 p.m.		DISCUSSION
2:25 p.m.		BREAK

Upcoming Missions — II		
2:30 p.m.	Paul Hayne	Lunar Flashlight
2:35 p.m.	Pamela Clark	Lunar IceCube
2:40 p.m.	Bethany Ehlmann	Lunar Trailblazer
2:45 p.m.		DISCUSSION
Techniques to Characterize Volatiles In Situ — II		
2:50 p.m.	Scot Rafkin	<i>In Situ Determination of Surface Volatile Composition and Abundance with the Laser Absorption Spectrometer for Volatiles and Evolved Gas (LASVEGAS)</i>
2:55 p.m.	Brant Jones	<i>A Very Light Weight Low Cost Compact Mass Spectrometer for Measuring Lunar Volatiles</i>
3:00 p.m.	Mehdi Benna	<i>The Lunar Environment Monitoring Station (LEMS)</i>
3:05 p.m.	Stojan Madzunkov	<i>Lunar Cube Sat Mass Spectrometer with Linear Energy Transfer Spectrometer Radiation Sensor</i>
3:10 p.m.	Gordon Chin	<i>The CORGIE (Confirming Orbital Remote-Sensing with Ground Information Experiments) Consortium</i>
3:15 p.m.		DISCUSSION
3:20 p.m.		BREAK

Breakout discussions are limited to people who submitted an abstract, or their delegates, and selected invitees.

Times (EDT)	Presenter	Title
Breakout Discussions		
3:35 p.m.	Thom Orlando, Parvathy Prem	Breakouts Overview
3:40 p.m.	Thom Orlando, Ariel Deutsch	Breakout #1
3:40 p.m.	Parvathy Prem, Donald Hendrix	Breakout #2
4:45 p.m.	Thom Orlando, Parvathy Prem	Breakouts Report-Out and Workshop Wrap-Up
5:00 p.m.		ADJOURN

Samples

Thursday, July 30, 2020

Times (EDT)	Presenter	Title
11:00 a.m.	Brad Jolliff, Julie Mitchell	Introduction to the Session
11:05 a.m.	Parvathy Prem, Thomas Orlando	Outbrief from Day #1
11:15 a.m.	Julie Mitchell	<i>Planning for the Preservation and Curation of Artemis Returned Samples</i>
11:25 a.m.	Jamie Elsila	Organic Analysis in Lunar Samples: Sample and Curation Considerations
11:35 a.m.	Adam Naidu	<i>Developing Initial Geology Sampling Tools for the Artemis Program</i>
11:45 a.m.	Clive Neal	Targeted Sample Return Using Global Datasets
11:55 a.m.		BREAK
12:05 p.m.	Michael Johansen	Dust - Characterization and Implications on Sampling and Curation
12:15 p.m.	Juliane Gross	Priorities for Lunar Sampling Based on Apollo
12:25 p.m.	Jack Schmitt	Lessons Learned from Sampling on the Moon
12:35 p.m.	Judy Allton	Lessons Learned from Apollo and Lunar Sample Curation
12:45 p.m.	Chip Shearer	ANGSA Lessons Learned
12:55 p.m.	Co-Chairs	DISCUSSION
1:05 p.m.		BREAK
1:25 p.m.	David Kring	<i>Producing Transformative Lunar Science with Geologic Sample Return: A Note About Sample Mass</i>
1:30 p.m.	Kelsey Young	Real-time selection of lunar samples for return to Earth
1:35 p.m.	Marcella Yant Roth	Using In-situ Analyses to Prioritize Samples Selected for Return, LIBS Experiences

1:40 p.m.	Brett Denevi	<u>Key Science Investigations of the Moon's Polar Regolith — A Nonvolatile Perspective</u>
1:45 p.m.	Carle Pieters	<u>Extensive Feldspathic Terrain Across the Lunar South Pole Presents a Challenge for Diverse Sample Collection</u>
1:50 p.m.		BREAK
2:00 p.m.	Mike Seibert	<u>Robotic Regolith Sample Collection During Crewed Rover Traverses</u>
2:05 p.m.	Laz Keszthelyi	How Sample Return Supports ISRU
2:10 p.m.	James Carpenter, Francesca McDonald	ESA Community Sample Needs
2:15 p.m.	Co-Chairs	DISCUSSION
2:25 p.m.		BREAK
2:35 p.m.	Caleb Fassett (for Cohen)	<u>Dating Key Lunar Events with Artemis</u>
2:40 p.m.	Lars Borg	<u>Evaluating the Significance of Lunar Chronology with New Samples</u>
2:45 p.m.	Brad Jolliff	<u>Sampling South Pole-Aitken Basin to Determine the Age of the Impact Event and Test the Cataclysm Hypothesis</u>
2:50 p.m.	Dan Moriarty	<u>AEGIS: Aerogel Experiment Gathering Impactor Samples</u>
2:55 p.m.	Penelope Boston	<u>Seeking Earth-Derived Biosignatures on the Moon: Science Case and Operational Considerations</u>
3:00 p.m.	Co-Chairs	DISCUSSION
3:10 p.m.		BREAK

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Times (EDT)	Presenter	Title
Breakout Discussions		
3:30 p.m.	Julie Mitchell, Brad Jolliff	Introduction to Breakouts
3:40 p.m.	Brad Jolliff	Breakout #1 — Sampling
3:40 p.m.	Julie Mitchell	Breakout #2 — Curation
4:40 p.m.	Julie Mitchell, Brad Jolliff	Breakouts Reporting and Wrap-Up Discussion
4:55 p.m.		ADJOURN