NASA Exploration Science Forum 2020 Program

Wednesday, July 8, 2020

7:45  Schmidt  NESF Welcome and Announcements  
Plenary Session 1: Forward to the Moon (Chairs: Greg Schmidt & Ariel Deutsch)

8:00  NASA HQ Programs Panel

- Bussey  Exploration Science Strategy and Integration Office (ESSIO) Update
- Bleacher  Human Exploration and Operations Mission Directorate (HEOMD) Update
- Noble  Planetary Science Division (PSD) Update
- Klima  The Lunar Surface Innovation Consortium
- Petro  Planning for Communications and Navigation Services at the Moon

9:00  Bridenstine  NASA Artemis Program
9:30  Khalili  Inclusion in Exploration Science

9:45  NESF2020 Photo / Discussion / Break

Plenary Session 2: Exploration Missions (Chairs: Kelsey Young & Nandita Kumari)

10:15  Walsh  Treesiris-REx at Bennu - Time to Collect a Sample
10:27  Adams  The Double Asteroid Redirection Test (DART): NASA’s First Planetary Defense Mission
10:39  Sefton-Nash  The ESA PROSPECT Payload For Luna 27: Development Status
11:03  Watkins  New Insights Into the Lunar Surface From LROC NAC-Scale Photometric Investigations
11:15  Petro  The Gift that Keeps on Giving: LRO at 11

11:27  Discussion / Break

11:57  Student Lightning Round Talks (Chair: Kristina Gibbs)

Plenary Session 3: ISRU & VIPER Missions (Chairs: Parvathy Prem & Ashley Clendenen)

12:15  Andrews  VIPER: Pathfinding Lunar Resource Understanding
12:39  Zacny  TRIDENT (The Regolith and Ice Drill for Exploring New Terrain) for VIPER Rover
12:51  Neal  Regolith Materials for ISRU in Vacuum Conditions: Effects on Phase Evolution, Character, and Composition by X-ray Photoelectron Spectroscopy and In Situ Calorimetry
13:15  Neal  How is the Artemis Base Camp Sustainable?
13:27  Fujimoto  Hayabusa2 and MMX Mission Updates

13:40  Discussion
13:40-14:40  ePoster Session

Thursday, July 9, 2020

Plenary Session 4: Solar System History and Astrophysics (Chairs: Greg Schmidt & Zach Ulibarri)

7:30  Green  When the Moon had a Magnetosphere
7:45  Burns  Transformative Astrophysics from the Farside of the Moon
8:00  Shearer  Apollo Next Generation Sample Analysis (ANGSA). The Importance of Lunar Sample Return and Preparing for Artemis

8:15  SSERVI Awards (Chairs: Greg Schmidt, Kristina Gibbs, Brian Day)

9:15  Transition to Parallel Sessions

Parallel Session 1: Solar System History (Chairs: Kerri Donaldson Hanna & Jennifer Larson)

9:20  Galiano  Distribution of NIR3 Spectral Slope for the Characterization of the Ryugu Surface
9:32  Palomba  Spectral Properties of Bright and Dark Areas on Ryugu Surface
9:44  Delbo  Observing the Planetesimal Size Distribution Amongst Main Belt Asteroids
9:56  Schmerr  Geophysical Exploration of the Dynamics and Evolution of the Solar System (GEODES)
10:08  Hsieh  The Themis Asteroid Family: A Potential, Source of Ice-rich Near-Earth Asteroids

Parallel Session 2: Radioscopy on the Moon  (Chairs: Joseph Lazio & Neil Bassett)

9:20  Rapetti  Global Neutral Hydrogen Data Analysis Pipeline for a Lunar-Based Satellite
9:32  Hibbard  Modelling the Galactic Foreground and Beam Chromaticities for Lunar-Based Global 21-cm Experiments

All times listed as Pacific Time
Friday, July 10, 2020

7:30 - 8:30 ePoster Session
8:30 Glaze & Kirasich NASA HQ Leadership Q&A (Invited)
9:00 Transition to Parallel Sessions

9:00 - 10:00 Parallel Session 5: Health Issues and Public Engagement (Chairs: Andy Shaner & Aisha Khatib)
9:05 Nekvasil Do We Really Know How Toxic Lunar Dust Actually Is?
9:29 Shaner Scientists Should Engage Young Students: Why and How
9:41 Wasser Share your Field Work with NASA Expeditions, a Loanable NASA Social Media Account
9:53 Keller “FORWARD! Lunar Exploration and Beyond” Fiske Fulldome Film

9:05 - 10:05 Parallel Session 6: Lunar Geology and Landers (Chairs: Noah Petro & Sarah Valencia)
9:05 Sun Multispectral Imaging and Hyperspectral Profile of the First Dissection for Core 73002
9:17 Huang Diverse Rock Types Detected in the Lunar South Pole-Aitken Basin by the Chang’E-4 Lunar Mission
9:29 Qiao Mare Domes in Mare Tranquillitatis: Identification, Characteristics, and Implications for the Oldest Lunar Volcanism
9:41 Battler Autonomous Soil Assessment System: Contextualizing Rocks, Anomalies and Terrains in Exploratory Robotic Science (ASAS-CRATERS)

10:05 - 11:05 Plenary Session 6: Water and Ice (Chairs: Karl Hibbitts & Ariel Deutsch)
10:05 Honniball Molecular Water on the Sunlit Lunar Surface: Detection of the 6 µm H-O-H Fundamental with the SOFIA Airborne Observatory
10:47 Kring Potential Water and Dry Ice Distribution in the Lunar South Polar Region
10:59 Lucey Relative Magnitudes of Water Sources to the Lunar Poles

All times listed as Pacific Time
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<th>Time</th>
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<td>11:11</td>
<td>McLain</td>
<td>Solar Wind Proton Induced Hydroxylation on Lunar Soil 78421</td>
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<td>11:23</td>
<td>Huang</td>
<td>Molecular Dynamics Simulations of Water and Hydrogen Formation on Lunar Surface</td>
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<td>Gillis-Davis</td>
<td>Lunar Regolith Surface Features as Indicators of Volatile Release</td>
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<td>Costello</td>
<td>Impact Gardening of Ancient Ice on the Moon</td>
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<td>Schorghofer</td>
<td>What Ice on Ceres Might Tell Us About Ice on the Moon</td>
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<td>Horanyi</td>
<td>Exploration of Resources in Lunar Polar Regions</td>
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<td>12:23</td>
<td>Cannon</td>
<td>A Geologic Model for Lunar Ice Deposits at Mining Scales: Updates and Lessons for Prospecting Campaigns</td>
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<td>Lunar Volatiles Science at the Lander Scale</td>
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<td>Coronagraphic Observations of the Lunar Sodium Exosphere 2018-2019</td>
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<td><strong>Student Poster Award</strong></td>
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<td>Rethinking Lunar Mare Basalt Regolith Formation: New Concepts of Lava Flow Protolith and Evolution of Regolith Thickness and Internal Structure</td>
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<td>Lunar Swirls in the Maria and Highlands: Near-Ultraviolet and Near-Infrared Space-Weathering Trends</td>
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<td>Observational Evidence for Dielectric Breakdown Weathering on the Moon</td>
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<td>Triboelectric Charging of Lunar Dust by Rover Wheels</td>
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<td>Quantifying Engine Exhaust Ejecta from Landing Large Spacecraft on the Moon</td>
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<td>Pieters</td>
<td>The Importance of our Moon Beyond the Current Environment</td>
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