

Thursday, March 24, 2016

[R647]

## POSTER SESSION II: INSTRUMENT CONCEPTS: DRILLING AND SAMPLING

6:00 p.m. Town Center Exhibit Area

Zacny K. Paulsen G. Wang A. Yaggi B. Quinn J. et al. *POSTER LOCATION #681*  
[Lunar Resource Prospector Drill](#) [#1076]

We are developing a one meter class drill for acquisition and delivery of volatile rich samples to instruments on the Lunar Resource Prospector Rover.

Paulsen G. Shara M. Zacny K. Mellerowicz B. Spring J. et al. *POSTER LOCATION #682*  
[Planetary Deep Drill for Mars, Europa, and Enceladus](#) [#1077]

We developed a planetary deep drill for penetrating 100s of meters to kilometers in ices of Mars, Europa, and Enceladus. The drill was tested to 13.5 m depth.

Glass B. Bergman D. Yaggi B. Dave A. Parro V. et al. *POSTER LOCATION #683*  
[Dirt-to-Data Integrated Drilling Tests at Rio Tinto](#) [#2656]

Mars lander drilling mockup / Spain site sampling / Life signs detected.

Furutani K. Kamiishi H. *POSTER LOCATION #684*  
[Rock Surface Crusher Driven with Solenoid by Planer Motion for Lunar Exploration](#) [#1232]

This report demonstrates the performance of two-dimensional feeding in percussive crushing to decrease the ridges on basalt samples for lunar exploration.

Davê A. Glass B. Bergman D. Modi H. Smith H. D. et al. *POSTER LOCATION #685*  
[Granular Flow in Low Gravity and Vacuum for Icebreaker Sample Processing Tests](#) [#3072]

The granular flow of icy sample in low gravity poses a challenge to Icebreaker's search for biomarkers and signs of extant life on Mars near the Phoenix site.

Nagihara S. Zacny K. Kim D. Hedlund M. Paulsen G. *POSTER LOCATION #686*  
[Options for Heat Flow Probe Deployment on Robotic Lunar Missions](#) [#1132]

We discuss pros and cons of two approaches for deploying a heat flow probe into lunar subsurface (percussive penetration and pneumatic excavation).

Hood A. D. Naidu A. J. Graff T. Abell P. *POSTER LOCATION #687*  
[A Geology Sampling System for Small Bodies](#) [#1249]

NASA JSC has been working to gain experience in how to safely obtain geological samples from Small Bodies.

Willson D. Stoker C. R. Lemke L. G. Duncan A. *POSTER LOCATION #688*  
[A Sample Delivery System for Planetary Missions, that Excavates, Filters and Dispenses Sample](#) [#3011]

A sample delivery system consisting of a Phoenix mission ISAD type scoop that can excavate, filter and dispense icy and dry sample at a definable rates.