

Tuesday, June 12, 2012
SCIENCE AND MISSION CONCEPTS:
USING MARS' MOONS
10:00 a.m. Berkner Room

Lisano M. E. * Britt D. Castillo-Rogez J. Kring D.

[*Mars Moon Sample Return for Science and Segue to Potential Human Presence at Mars*](#) [#4078]

Rationale and mission concept description of a Mars moon sample return mission, including a list of major trade studies, to address Decadal, MEPAG and SBAG science objectives and mitigate specific risks to human exploration of the Mars moons.

Colaprete A. * Bellerose J. Andrews D.

[*PCROSS — Phobos Close Rendezvous Observation Sensing Satellite*](#) [#4180]

PCROSS is a robotic mission to Phobos consisting of a rebuild of the ESPA-based LCROSS spacecraft, tailored to interplanetary destinations.

Muscatello A. C. * Mueller R. Sanders G. B. Larson W. E.

[*Phobos and Deimos Sample Collection and Prospecting Missions for Science and ISRU*](#) [#4296]

Mars missions, both MSR and human exploration, would benefit greatly from the use of *in situ* resource utilization (ISRU) using materials manufactured on Mars' moons Phobos and Deimos. Robotic resource prospector missions to these moons are required.

Lee P. * Hoftun C. Lorber K.

[*Phobos and Deimos: Robotic Exploration in Advance of Humans to Mars Orbit*](#) [#4363]

A robotic multiple landings/sample return mission to Phobos and Deimos will fill several key knowledge gaps in science and engineering in preparation for future human missions to Mars orbit and to the martian surface.

Mazanek D. D. * Abell P. A. Antol J. Barbee B. W. Beaty D. W. Bass D. S.

Castillo-Rogez J. C. Coan D. A. Colaprete A. Daugherty K. J. Drake B. G.

Earle K. D. Graham L. D. Hembree R. M. Hoffman S. J. Jefferies S. A. Lewis R. Lupisella M. L.

Reeves D. M.

[*Overview of a Preliminary Destination Mission Concept for a Human Orbital Mission to the Martian Moons*](#) [#4326]

NASA's Human Spaceflight Architecture Team has been developing a preliminary mission concept to assess how a human orbital mission to the martian moons might be conducted as a follow-on to an asteroid mission and possibly prior to landing on Mars.

Sweetser T. H. *

[*Phobos First! — The Right Focus for NASA's Vision*](#) [#4241]

We all agree that Mars is the goal, but telerobotic exploration from a base in Phobos first has significant advantages—scientifically, technically, politically, economically, organizationally, with respect to time, and for public involvement.

PANEL DISCUSSION