

*Planetary Science
Subcommittee
Breakout Sessions
Preview of coming attractions*

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Planetary Science on the Moon.

A multi-faceted approach.

- Planetary science of the Moon.
- The Moon offers a unique vantage point for certain aspects of Solar System exploration:
 - Cornerstone for Understanding Early Planetary Processes.
 - Understanding processes on airless planetary bodies (regolith, volatiles, atmosphere).
- Astrobiology.
- Feed forward to Mars and Beyond.
 - Technology and operations.
 - Broad planetary science perspectives.

PSS Breakout Sessions

- Science themes (2 sessions).
- Exploration science themes (1 session)
- Implementation of key science (2 sessions).
- Several PSS-PPS joint breakout sessions.

PSS Breakout Sessions

- Short overviews of a theme (10 minutes).
 - Summarize important problems.
 - Requirements to fulfill science.
 - How does the implementation of science fit within the current lunar architecture?
- Discussion
 - Focused discussion.
 - Freeform discussion.

Lunar planetary science themes

- **Lunar Exploration Science Working Group (LExSWG) 1992-1995).**
- **NRC Interim Report on the Scientific Context for the exploration of the Moon (2006-2007).**
- **Global Exploration Strategy wish list of death (2006).**
- **LEAG and MEPAG reviews of the Global Exploration Strategy document (2006).**

Planetary Science Themes

- Theme 1: Impact history of the inner solar system.
- Theme 2: Exosphere.
- Theme 3: Nature, Origin and evolution of volatile polar deposits.
- Theme 4: Indigenous lunar volatiles.
- Theme 5: Differentiation history of the terrestrial planets as recorded on the Moon.
- Theme 6: Structure and evolution of the lunar interior.
- Theme 7: Origin and Evolution of the Earth-Moon System.
- Theme 8: Evolution of the lunar crust.
- Theme 9: Science associated with resource identification and development.
- Theme 10: Surface processes on airless planetary bodies.

Implementation of key science into lunar exploration

- Theme 1: Important Scientific Sites on the Moon.
- Theme 2 Geophysical Networks.
- Theme 3: Importance of Sample Science and Sample Return.
- Theme 4: The Need for Integrating Planetary Protection Science and Technology into Lunar Exploration Planning.
- Theme 5: Human surface science.
- Theme 6: Human- robotic combined activities in accomplishing science.
- Theme 7: Linkages between the Moon and Mars.
- Theme 8: EVA suit competency for science: capabilities and contamination.
- Theme 9: The AMASE effort and planetary exploration.

Exploration Science

- Theme 1: ISRU Program Overview.
- Theme 2: Effects of ISRU on the Lunar Environment.
- Theme 3: Space Weather.
- Theme 4: Lunar planetary protection testbeds + life support for Mars exploration
- Theme 5: Astrobiology and Lunar Exploration.