Planetary Science Subcommittee
Breakout Sessions
Preview of coming attractions

Chip Shearer
February 27, 2007
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

Planetary Science Themes

- Theme 1: Impact history of the inner solar system.
- Theme 2: Exosphere.
- 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.