



# Planetary Science Division Update

*Presentation at the  
Planetary Science Subcommittee*

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January 9, 2009



# Outline



- Planetary Decadal
- New Frontiers
- Recent Selections and Upcoming Events



# Planetary Related Academy Studies



- Congress: NASA will fund National Academy studies:
  - R&A - Role and Scope of Mission-Enabling Activities
    - 1st meeting Jan. 22-23, 2009 in Irvine, CA
  - Radioisotope Power System Requirements & availability of Plutonium
    - "Letter report" on the Pu-238 issue in advance of the full report
    - Draft report for internal review in late March
  - NEO - address issues in the detection and mitigation
    - Jointly requested by NASA and NSF
    - 2nd meeting January 28-30th
- NASA directed:
  - Science Opportunities Enabled by NASA's Constellation Sys
    - Study completed and released November 24, 2008
  - Planetary Protection for Mars Sample Return
    - With the external reviewers
- Charge to the Academy for next Planetary Decadal
  - Jointly requested by NASA & NSF
  - Academy held town hall meeting at DPS (Oct.) and AGU (Dec.)
  - Will begin pulling together their panel chairs & members



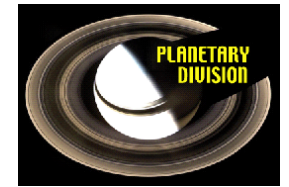
# New Frontiers



# New Frontier Program Status



- Open competition for PI class missions of strategic importance to Planetary Science in the < \$1B class
- Draft AO released November 17th
  - First use of the new standard AO for PI-led missions
- Workshop on Draft AO held December
  - Received over 70 comments/questions at the workshop
  - Comment period closed January 5, 2009
    - Received additional comments
- Revision of the AO is in progress based on the comments/questions received
- Final AO release has been delayed until budget for MSL launch slip has been finalized



# Outer Planets Flagship Status



# Outer Planets Flagship Studies



- NASA has completed a nine month long outer planet flagship mission study conducted jointly with ESA. Two missions were studied:
  - Europa Jupiter System Mission (EJSM) consisting of a Europa Orbiter and a Ganymede Orbiter
  - Titan Saturn System Mission (TSSM) consisting of a Titan Orbiter, Lake Lander, and Balloon
- Final reports were submitted Nov. 3, 2008
- Independent reviews by TMC and Science panels are complete
- Series of selection meetings between ESA and NASA is scheduled for late January
- NASA and ESA will jointly select a single Outer Planet Flagship mission in February 2009
  - NASA will continue technology risk reduction, mission implementation plan, and budget plan as part of ongoing pre-phase A activities
  - ESA will conduct industry studies as part of the ongoing Cosmic Vision competition among LISA, Xeus, and OPF



# Recent Selections and Upcoming Events



## NLSI Mission

- Carrying out and supporting **collaborative research** in lunar science, investigating the Moon itself and using the Moon as a unique platform for other investigations;
- Providing **scientific and technical perspectives** to NASA on its lunar research programs, including developing investigations for current and future space missions;
- Supporting and catalyzing the lunar science community and **training the next generation** of lunar science researchers; and
- Supporting **education and public outreach** by providing scientific content for K-14 education programs, and communicating directly with the public.



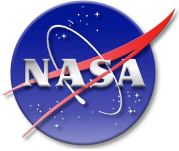
## Proposal Data

- 33 proposals received.
- ~575 team members were represented on the 33 proposals, from nearly 200 institutions.
- Selected proposals represent studies “**Of the Moon**”, “**On the Moon**”, and “**From the Moon**”.
- NLSI funding contributed by both ESMD and SMD



## NLSI Selections

PI	Institution	Title
William Bottke	Southwest Research Institute (SwRI)	Understanding the Formation and Bombardment History of the Moon
Jack Burns	University of Colorado	Lunar University Node for Astrophysics Research (LUNAR): Exploring the Cosmos From the Moon
Ben Bussey	John Hopkins University Applied Physics Lab	Scientific and Exploration Potential of the Lunar Poles
William Farrell	Goddard Space Flight Center	Dynamic Response of the Environment At the Moon (DREAM)
Mihaly Horanyi	University of Colorado	NASA Lunar Science Institute: Colorado Center for Lunar Dust and Atmospheric Studies
David Kring	Lunar and Planetary Institute	Impact Processes in the Origin and Evolution of the Moon: New Sample-driven Perspectives
Carle Pieters	Brown University	The Moon as Cornerstone to the Terrestrial Planets: The Formative Years



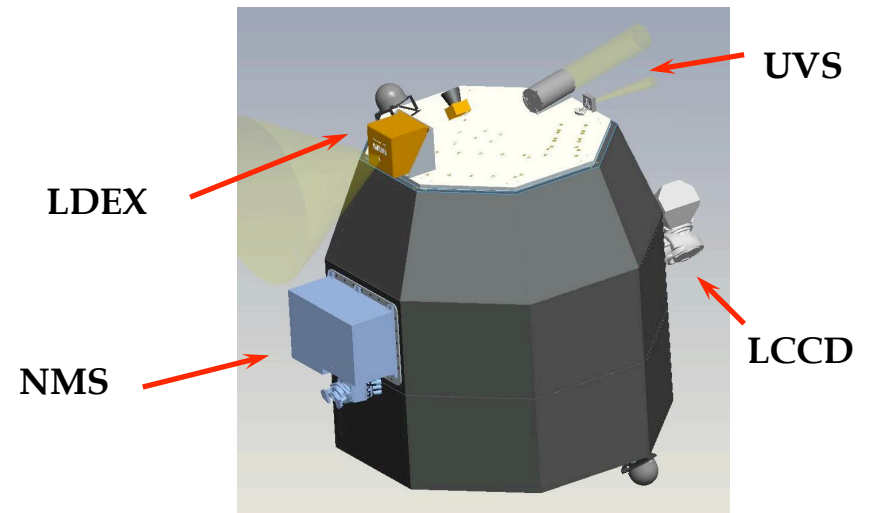
## LDEX: Lunar Dust EXperiment

LDEX EM

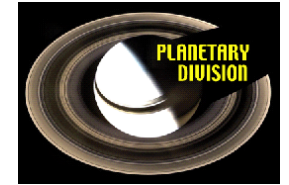


- The Instrument is an in impact ionization dust detector
- The investigation will map the size and spatial distribution of dust grains in the lunar environment.
- Directly addresses LADEE Objective 2: “Characterize the lunar exospheric dust environment and measure any spatial and temporal variability and impacts on the lunar atmosphere.”

LADEE S/C



**PI: Mihaly Horanyi**  
**Institution: Univ. of Col. (LASP)**  
**Mass: 2 Kg**  
**Power 4 W**  
**High TRL High Heritage**



# Upcoming Events

- Other selections from the Stand-Alone Mission of Opportunity Notification (SALMON)
  - U.S. Participating investigator program
  - Instrument Mission of Opportunity
- These selections will not be effected by the MSL delay




# Conflicts of Interest in the PSS



- Some members of the PSS are involved with programs that will be affected by the MSL slip
    - PSS members should not comment on any activity they are in conflict with
  - Procedure:
    - JLG will complete this whole presentation
    - Clarification questions only are acceptable
    - Q&A period to follow presentation
      - Strictly controlled by Executive Secretary & PSS Chair
  - MSL agenda:

– Mission overview	10 Min.	McCuistion
– The MSL Science Story	15 Min.	Meyer
– Technical Status	30 Min.	Cook
– Replan Status	20 Min.	Cook
– Budget Status and Approval Path McCuistion	10 Min.	
– Options to Accommodate MSL Launch Slip	30 Min.	Green
- Launch Slip



# **NASA's Planetary Science**

**Advance scientific knowledge of the origin and history of the solar system, the potential for life elsewhere, and the hazards and resources present as humans explore space**

**“Flyby, Orbit, Land, Rove, and Return Samples”**