NATIONAL ACADEMIES Sciences Engineering Medicine

SPACE STUDIES BOARD
BOARD ON PHYSICS AND ASTRONOMY
AERONAUTICS AND SPACE ENGINEERING BOARD

Panel on Lunar and Planetary Sciences
Key Non-Polar Destinations Across the Moon to Address Decadal-level Science Objectives with Human Explorers
Meeting No. 5

August 7-8, 2025

Hybrid Meeting

National Academy of Sciences Building, 2101 Constitution Avenue, NW, Washington, DC

ALL TIMES IN US EASTERN DAYLIGHT TIME (UTC-4:00)

THURSDAY, AUGUST 7, 2025

OPEN SESSION
Livestream: https://vimeo.com/event/5287922

9:00 AM	**Welcome**	**Dr. Alex Evans, Panel Chair**
9:05 AM	**Report from the Tempe Workshop on Science Associated with the (Lunar) Exploration Architecture** (25-minute presentation and 20-minute discussion)	**Dr. Brad Joliff, Professor Emeritus, Earth, Environmental, and Planetary Sciences, Washington U.in St. Louis**
9:50 AM	**Lunar Sites to Advance Knowledge of Planetary Sciences*** (25-minute presentation and 20-minute discussion)	**Dr. James Head, Professor (Research), Geological Sciences, Brown U.**
10:35 AM	*Break*	
10:45 AM	**Overview of Science Enabled by Humans at South Pole Aitken Basin*** (25-minute presentation and 20-minute discussion)	**Dr. Daniel Moriarty, Asst. Research Scientist, NASA-GSFC**
11:30 AM	**Site Recommendations for Temperature Related Geophysical Investigations on the Moon*** (25-minute presentation and 20-minute discussion)	**Dr. Matt Siegler, Senior Scientist, Planetary Science Institute**
12:15 PM	*Working Lunch for Members, Speakers, and Invited Guests*	

*Placeholder Title

1:15 PM	**Advancing Solar System Knowledge through Human Explorers on the Moon*** (25-minute presentation and 20-minute discussion)	**Dr. Bill Bottke, Senior Research Scientist, Southwest Research Institute**
2:00 PM	*Break into Closed Session*	

FRIDAY, AUGUST 8, 2025

Panel meets entirely in closed session.

*Placeholder Title

Panel on Lunar and Planetary Sciences: Key Non-Polar Destinations Across the Moon to Address Decadal-level Science Objectives with Human Explorers
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IMPORTANT NOTES

Members of the General Public:

- Remote access will be provided through a live stream on Vimeo. This will also be publicly available and posted on the Board website. You do not need to register.

Thank you all for your cooperation, and we look forward to a successful meeting.

STATEMENT OF TASK

Task Initiated on April 8, 2025

The Panel on Lunar and Planetary Sciences will gather information and identify and articulate the science objectives related to planetary sciences and lunar geology and geophysics that would be most enabled by human explorers on the moon. Using NASA's 2022 *Moon to Mars Objectives*, the National Academies report *Origins, Worlds, and Life: A Decadal Strategy for Planetary Science and Astrobiology 2023-2032*, and other gathered information, the panel will:

- Identify key science objectives within planetary sciences and lunar geology and geophysics that can or must be done by human explorers on the lunar surface;
- Specify the key measurements, either in situ or via returned samples, needed to achieve these key science objectives and why human explorers would enable those measurements (as opposed to robotic assets)
- Detail any pre-placed assets (e.g., tools, mobility devices, robotic hardware, and equipment delivered to the lunar surface prior to human landing) that would be either necessary or enabling of these key measurements
- Prioritize potential non-polar landing sites or characteristics of landing sites that would be most enabling of these key science objectives and measurements

This panel is one of four operating under the aegis of "Key Non-Polar Destinations Across the Moon to Address Decadal-level Science Objectives with Human Explorers" and its steering committee. The panel will provide the steering committee with its findings and a science traceability matrix outlining each potential non-polar landing site (or characteristics of landing sites) and the science objectives it would enable. The panel will not produce recommendations as part of its input to the project's Steering Committee.