

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

DIVISION ON ENGINEERING AND PHYSICAL SCIENCES
SPACE STUDIES BOARD

Committee on Planetary Protection
Meeting: September 18, 2020
Virtual Meeting
ALL TIMES IN US EASTERN DAYLIGHT TIME (UTC-4:00)

This agenda is a draft, subject to change, and was last updated on 9/16/2020 9:43 AM

AGENDA

FRIDAY, SEPTEMBER 18, 2020

OPEN SESSION

Zoom Remote Access Information –Open Session

Link: <https://nasem.zoom.us/j/96224433065?pwd=Tm0xQVBRRGpSREhYTBJk8xVmVZUT09>

Password: 101740

Phone: +1-646-828-7666

Meeting ID: 962-2443-3065

- | | | |
|-----------------|--|--|
| 11:00 AM | Welcome and Introductions | Mr. Joseph K. Alexander, CoPP Chair |
| 11:15 PM | Overview of Ongoing Lunar Studies and their Impacts on Lunar Volatiles Research
(30 minute presentation & 15 minute discussion period) | Dr. Clive Neal, Professor, Planetary Geology, U. of Notre Dame |
| 12:00 PM | Planetary Protection Categorization of Lunar Missions
(30 minute presentation & 15 minute discussion period) | Dr. Carle Pieters, Professor, Earth, Environmental, and Planetary Sciences, Brown U. |
| 12:45 PM | Break
(30 minute break period) | |
| 1:15 PM | Cosmo-Chemist Perspective on Lunar Volatile Research
(30 minute presentation & 15 minute discussion period) | Dr. Noah Petro, Chief of the Planetary Geology, Geophysics, and Geochemistry Laboratory, NASA |
| 2:00 PM | Committee Adjourns to Closed Session | |

CLOSED SESSION

5:00 PM **Committee Adjourns Meeting**

The following information is provided for any members of the general public who may be in attendance:

This meeting is being held to gather information to help the committee in its charge. This committee will examine the information and material obtained during this, and other public meetings, in an effort to inform its work. Although opinions may be stated and lively discussion may ensue, no conclusions are being drawn nor will recommendations be made. Observers who draw conclusions about the committee's work based on this meeting's discussions will be doing so prematurely.

Furthermore, individual committee members often engage in discussion and questioning for the specific purpose of probing an issue and sharpening an argument. The comments of any given committee member may not necessarily reflect the position he or she may actually hold on the subject under discussion, to say nothing of that person's future position as it may evolve in the course of the project. Any inference about an individual's position are therefore also premature.

NOTES FOR PRESENTERS

If your presentation contains unpublished data, ITAR controlled and/or other sensitive information, please be aware that the open sessions at the meeting may be recorded and/or webcast. Presentation materials given to the committee may be posted on a publicly accessible website. Please edit your presentations accordingly.

Mac users should assume that their presentation will be displayed via one of the NASEM's PCs. If your presentation is graphics heavy and best displayed via your own laptop, you should also bring a plain-vanilla pdf version of your presentation with you. The audience in the meeting room will see your presentation via your laptop and we will webcast the pdf file.

At some point a staff member will be asking you to sign a consent form allowing us to use your presentation, specifically to post it on our website.

REMOTE CONNECTION DETAILS

Zoom Web Conference & Telecon Instructions

Join from a computer:

1. Click on the URL (below). A popup will appear that says "Open URL:Zoom Launcher;" Click the "Open" button and let Zoom load (may take a minute).
2. Once loaded, Zoom will automatically display another pop-up for the audio connection. Please click the "call me" tab and enter the phone number you would like to be called at (i.e. home, office, mobile). Click "Call me" and follow the prompts.

Join from a mobile device:

1. Download the Zoom app from your phone's app store (if you don't have it installed already).
2. Click on the URL (below), or open the Zoom app and enter the Meeting ID: (below), and press join. Enter your name if requested.
3. The Zoom app will automatically display a pop-up window for the audio connection. Select the "Call my Phone" option from the menu, enter your phone number, press call, and follow any prompts.

Join by phone only:

1. Connection quality is much better via Zoom's "Call me" feature from the webconference, so we strongly recommend that you connect this way.
2. If you are not able to do so, you can dial 1-877-853-5257 (Toll Free) and enter the Meeting ID: (below). International numbers are available at: https://nasem.zoom.us/join?m=dm0fun9LyXrhECcUWQt2Wwdh_9TUrhXG

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Date	Start Time	Type	Meeting ID	Join Link
September 18, 2020	11:00am EDT	Open Session	962-2443-3065	https://nasem.zoom.us/j/96224433065 Password: 101740

STATEMENT OF TASK

The layered ice deposits in the permanently shadowed areas in the Moon's polar regions are a potential archives of the history of volatile materials (e.g. water, carbon dioxide, and methane) in the Earth/Moon system over the history of the solar system. Organic and biological contamination associated with human and robotic activities on the Moon have the potential to compromise the utility of the polar volatiles for scientific studies. However, the sensitivity of polar volatiles to contamination associated with activities on the lunar surface is unknown.

In keeping with its charge "to serve as a source of information and advice on those measures undertaken by robotic spacecraft and human exploration missions to protect the biological and environmental integrity of extraterrestrial bodies for future scientific studies...." the Committee on Planetary Protection shall draft a short report on the impact of human activities on the polar volatiles and the scientific value of protecting the surface and subsurface regions of the Earth's Moon from organic and biological contamination. The short report should contain a clear exposition of the following:

1. An overview of the current scientific understanding, value, and potential threat of organic and biological contamination to:
 - a. Permanently shadowed regions that have scientific value in the study of the history of the solar system and its associated organic compounds,
 - b. Research on the Moon relevant to understanding the process of prebiotic chemical evolution and the origin of life.
 - c. Assess the likelihood that spacecraft reaching the lunar surface will transfer volatiles to polar cold traps.
2. An assessment, to the degree possible, of how much and which regions of the Moon's surface and subsurface are of sufficient scientific value to warrant protection from organic and biological contamination.

DRAFT SCHEDULE FOR COMPLETION OF THE REPORT

September	Committee virtual meetings to discuss the task, gather input from experts, discuss, deliberate, and draft report;
9 October	Report sent to reviewers;
16 October	Reviews due;
6 November	Response to review to DEPS report review officer;
25 November	Signoff;
30 November	Approved report to DEPS editor; and
11 December	Deliver report to NASA in prepublication format.

NOTES

Note to Observers: This meeting is being held to gather information to help the committee conduct its study. This committee will examine the information and material obtained during this, and other public meetings, in an effort to inform its work. Although opinions may be stated and lively discussion may ensue, no conclusions are being drawn at this time and no recommendations will be made. In fact, the committee will deliberate thoroughly before writing its draft report. Moreover, once the draft report is written, it must go through a rigorous review by experts who are anonymous to the committee, and the committee then must respond to this review with appropriate revisions that adequately satisfy the Academy's Report Review committee and the chair of the NRC before it is considered an NRC report. Therefore, observers who draw conclusions about the committee's work based on today's discussions will be doing so prematurely.

Furthermore, individual committee members often engage in discussion and questioning for the specific purpose of probing an issue and sharpening an argument. The comments of any given committee member may not necessarily reflect the position he or she may actually hold on the subject under discussion, to say nothing of that person's future position as it may evolve in the course of the project. Any inference about an individual's position regarding findings or recommendations in the final report are therefore also premature.

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