

National Aeronautics and
Space Administration

Headquarters
Washington, DC 20546-0001



Reply to Attn of: SMD/DAAR

Dr. Margaret Kivelson
Chair, Space Studies Board
The National Academies of Sciences, Engineering and Medicine
500 5th Street, NW
Washington, DC 20001

Dear Dr. Kivelson:

I am writing to thank you and the Space Studies Board (SSB) for conducting the review of the NASA Planetary Protection Independent Review Board (PPIRB) report (“SSB Review”). We at the Science Mission Directorate (SMD) appreciate the SSB’s and review committee’s time and attention to this important topic.

I was glad to see the SSB Review found a majority of the PPIRB findings and recommendations are consistent, where they could be compared, with the previous 2018 *NASEM Review and Assessment of Planetary Protection Policy Development Processes* (“2018 Report”). As you say, fully 1/3 of the PPIRB findings and recommendations dealt with topics not covered in the 2018 Report. Many of those are the result of large changes in the aerospace landscape, just in the last few years, such as the rapid development and deployment of new kinds of spacecraft, as well as the increase in the number of private space companies planning missions that will need to take into account planetary protection. As the SSB Review notes, there are some areas of disagreement between the PPIRB and the 2018 Report, and NASA will continue to seek advice from a variety of stakeholders, including the SSB, as it addresses those topics.

The SSB Review helpfully laid out three key strategic areas on which it suggests NASA focus in the near-term. I agree these are important issues that will require NASA’s attention now. Activities within NASA that address these three areas are listed below.

Establishing a New Advisory Process for Planetary Protection: As you know, NASA has requested that SSB stand up a Committee on Planetary Protection (CPP) that can provide rapid assessments of NASA’s implementation of the PPIRB recommendations and respond to requests for information and analysis on planetary protection topics, as needed. NASA has requested the committee be a joint effort between the SSB, the Aerospace Science and Engineering Board and the Board on Life Sciences so as to hear from the appropriate breadth of expertise needed to evaluate the wide range of topics covered by planetary protection. The CPP will initially be chartered for two years, at which time we will revisit the question of how best to ensure NASA is receiving the necessary advice on matters of planetary protection.

Clarifying Legal and Regulatory Issues Concerning Planetary Protection: NASA agrees that this is a strategic issue, and the Agency has been working with our partners at the Departments of State, Commerce and Transportation to clarify roles and ensure our regulators know NASA technical expertise is available as part of the interagency consultation process necessary for the U.S. to fulfill its international obligations. While NASA is not a regulatory agency, it has provided technical assistance on planetary protection to commercial entities and other agencies, as requested, and has been working closely with the Department of Transportation as it streamlines its rulemaking for commercial launch and reentry licensing requirements. We will continue to work with our partner agencies in order to contribute our planetary protection expertise, as appropriate, as departments and agencies implement the Administration's policy guidance regarding regulatory requirements for commercial spaceflight.

Building the Science and Technology Foundation for Planetary Protection Policy on Human Missions to Mars: NASA's Office of Planetary Protection, Human Exploration and Operations Mission Directorate, the Space Technology Mission Directorate and SMD are working together to determine the highest priority knowledge and capability gaps to address in order to develop planetary protection requirements for human missions to Mars. This effort is drawing on research already funded by NASA, the efforts of COSPAR's series of workshops on planetary protection for Human Missions to Mars, and lessons learned from both the International Space Station and missions to the Moon. NASA also anticipates requesting assessment and analysis of these activities by the new CPP. Finally, the Agency expects to announce soon a NASA Interim Directive to address the control of forward biological contamination of Mars and backward biological contamination of the Earth-Moon system associated with human presence in space vehicles intended to land, orbit, flyby, and return from Mars.

I appreciate the SSB's thorough review of the PPIRB and look forward to continuing our collaboration with you as NASA works to modernize its planetary protection policies and to prepare for even greater exploration of the Solar System.

Sincerely,

Thomas H. Zurbuchen, Ph.D.
Associate Administrator,
Science Mission Directorate

cc:

Space Studies Board/Dr. C. Hartman
Alexander Space Policy Consultants/Mr. J. Alexander
NASA Science Mission Directorate/Dr. M. New

- Dr. L. Glaze

NASA Office of Safety and Mission Assurance/Dr. L. Pratt