

**Planetary and Astrobiology Blank Papers:  
Science White Papers Cancelled or Downscaled Due to Direct Impact of COVID-19 and  
National-scale Civil Action**

A White Paper for the Planetary Science and Astrobiology Decadal Survey 2023-2032

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Key points:

- A significant number of community members who desired and intended to contribute white papers to the Decadal Survey are unable to do so due to effects of COVID-19 pandemic and disruptions due to recent national civil action.
- This list informs the Decadal Survey of some of those missing voices and provides a resource by which the Committees can fill the gaps caused by uncontrollable barriers to participation.
- **We encourage the Decadal Survey to call upon these underrepresented members of the scientific community during the survey process in order to ensure the broadest possible community input.**

The following is a non-comprehensive list of known science-focused white paper efforts for the Planetary and Astrobiology Decadal Survey that either were not written (listed as C for cancelled in Table 1), or were significantly altered in scope (listed as D for descoped) explicitly due to the disruption to work and practice within the planetary and astrobiology community due to the COVID-19 epidemic starting in February 2020 and ongoing as of July 2020, and the national-scale civil protests and disruption in the United States beginning late May 2020. While this table can list some of the cancelled or diminished papers based on primary author assessments, there is no way it can fully account for the lost contributions of co-authors who had to de-prioritize or drop their participation in numerous white papers. We do want to note that there were additional papers on this list that we were able to remove because the extended deadline allowed the lead authors sufficient time to complete the white paper. Thank you to the National Academy and the Decadal Chairs for extending this deadline.

All white papers in Table 1 are listed by title and primary (planned) author, who has given permission to list the paper, and confirmed that the white paper was cancelled or diminished as a result of COVID-19 and related challenges. The Confirmation column (Conf.) shows “C” for cancelled and “D” for downscaled or combined into a different white paper. **The panels and committees of the Decadal Survey are strongly encouraged to contact and consult the listed authors on the science topics they intended to represent.**

If any Decadal Survey panel wishes to contact any of the names listed for whom contact information is not in the table, please contact the authors of this paper and we will assist you:

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Table 1. Science white papers missing (C) or downscaled (D) for the Decadal Survey.

<b>Title</b>	<b>Primary Author, contact information.</b>	<b>Conf.</b>
Distinguishing biotic from abiotic signatures in ocean worlds	Morgan Cable, JPL, morgan.l.cable@jpl.nasa.gov	C
Planetary ice shells as a science destination	Samuel Howell, JPL, samuel.mhowell@jpl.nasa.gov	C
Venus Rovers	Jonathan Sauder, JPL, jonathan.sauder@jpl.nasa.gov	C
The effects of satellite mega-constellations on mapping Solar System populations	Michele Bannister, U. Canterbury, michele.bannister@canterbury.ac.nz	C
Future of exploring water in Solar System and beyond	Sona Hosseini, JPL/Caltech, sona.hosseini@jpl.nasa.gov	C
Polarimetric Exploration of the Solar System and Beyond	Padma A. Yanamandra-Fisher, Space Science Institute, padma@spacescience.org	C
A systems level approach to investigating solar wind - magnetosphere - exosphere - surface coupling at Mercury.	Gina A. DiBraccio, NASA GSFC, gina.a.dibraccio@nasa.gov	C
How Lunar Science Informs Our Understanding of the Hadean and Archean Earth and the Advent of Terrestrial Life	Rachel L. Klima, JHU Applied Physics Laboratory, Rachel.Klima@jhuapl.edu	C
Crustal Dichotomies across the Solar System	James T. Keane, Caltech/JPL, james.t.keane@jpl.nasa.gov	C
The important contributions that impact experiments can make in the coming decade	Terik Daly, JHU/APL, terik.daly@jhuapl.edu	C
The Importance of Understanding Solar System Chronology, and the Massive Gaps in Our Current Knowledge	Stuart J. Robbins, SwRI, stuart@bolder.swri.edu	C
Spacecraft Exploration of Phobos and Deimos after MMX	Carolyn Ernst, JHUAPL, carolyn.ernst@jhuapl.edu	C
Science Goals and Priorities for the Study of Centaurs	Noemi Pinilla-Alonso, Florida Space Institute, npinilla@ucf.edu	D
Experimentally Exploring Exoplanets (E3): Investigating the distribution of life-necessary elements via the exoplanets in our backyard	Karalee K. Brugman, Arizona State University; Carnegie Institution for Science, kara.brugman@gmail.com	D