

SPACE STUDIES BOARD

Committee on Astrobiology and Planetary Science

CAPS Report to the Space Studies Board

*Spring Virtual Meeting
May. 26th, 2021*

*A personal view by
Christopher H. House
Chair*

Committee Membership

Chair

CHRISTOPHER H. HOUSE, Pennsylvania State University

Open

Members

ERIK ASPHAUG, University of Arizona

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KATHERINE H. FREEMAN, Pennsylvania State University

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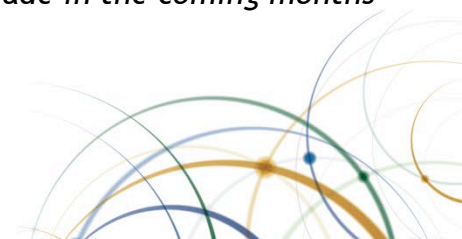
CLIVE R. NEAL, University of Notre Dame

NITA SAHAI, University of Akron

MARK P. SAUNDERS, Independent Consultant

DAVID J. STEVENSON, California Institute of Technology

Several appointments to be made in the coming months



Recap of 24 March CAPS meeting

- Update from the NASA Europa Clipper mission
- Continued a multi-meeting effort to look at Astrobiology after devoting much attention to planetary science programmatic issues in the last few years:
 - JPL's Life Detection Instrument developments by Dr. Ying Lin
 - Presentation by The Network on Ocean Worlds Research Coordination Network



Astrobiology/Planetary Science Update 1

- Decadal Survey is near its midpoint!
- NASA selects Eight ICAR teams—~\$5 million per team, solicitations every 3 years
- Mars 2020 (Perseverance) is in its prime mission in Jezero Crater
- Hope and Tianwen-1 in Mars orbit and Zhurong lander/rover on surface
- Discovery step-two selection scheduled for June-July 2021
- OSIRIS-REx on its way home—Due back in September 2023
- Lucy launch window opens in October 2021, first Trojan flyby in August 2027



Astrobiology/Planetary Science Update 2

- DART launch delayed to February 2022 and Psyche to launch in August 2022
- VIPER, lunar polar volatile rover, on track for launch in 2023
- Europa Clipper being readied for a commercial launch in 2024. The Clipper team has adopted a plan to limit phase E costs by pre-planning most orbits with limited changes during the prime mission
- New Frontiers (NF) 5 has been delayed from October 2022 to NLT Fall 2024
 - Delay is due to budget phasing constraints, including the one-year delay of the Dragonfly (NF 4) launch date
 - Community Announcement states that the NF 5 concept list will be reconsidered following the release of the Planetary Science Decadal Survey
 - Timing of the NF 5 AO verses the next Discovery AO is unclear



Recall our 2020 CAPS Report

“Options for the Fifth New Frontiers Announcement of Opportunity”

- Ocean Worlds (Enceladus) and Lunar Geophysical Network remain compelling mission themes with no developments suggesting that NASA reconsider their inclusion in the NF 5 opportunity.
- The selection of the *Io Volcano Observer* for Discovery 15/16 would be a programmatic development that would suggest NASA’s reconsideration of the Io Observer in NF 5.
- The development of the *Dragonfly* mission suggests that NASA reconsider the inclusion of Ocean Worlds (Titan) in NF 5 for programmatic balance.
- The development of the *Lucy* mission suggests that NASA reconsider the inclusion of the Trojan Tour and Rendezvous in NF 5.



Announcement from Planetary Science and Astrobiology Decadal Survey

“DELAY OF NEW FRONTIERS (NF) 5 AND RAMIFICATIONS FOR THE DECADAL SURVEY”

- PSADS was launched under the assumption that NF 5 did not fall under their charge
- Revisiting the New Frontier 5 list would significantly disrupt their work (for many reasons)
- PSADS needs to minimize disruption and maximize the value of their report
- **Therefore, PSADS intends to leave New Frontiers 5 list as recommended previously and announced in the NASA Community Announcement released in Fall 2020**



Summary

- Planetary Science is healthy with lots of great missions in progress or development
- The Decadal Survey of Planetary Science and Astrobiology is proceeding well, and is on-track to deliver a report by the end of March 2022
- Astrobiology Research Coordinate Networks are functioning as intended
- Next group of ICAR teams selected
- New Frontiers 5 is delayed by up to 2 years
- PSADS intends to not revisit the Frontiers 5 list, and they will rather focus their effort on the following New Frontiers calls



Backup

