Planetary Science Midterm Study Progress Report

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MEPAG

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Crystal City, VA

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Statement of Task

- **Describe significant scientific discoveries, technical advances, and relevant programmatic changes in planetary sciences since Vision & Voyages (V&V)**
- **Assess degree to which NASA's current planetary science program addresses the strategies, goals, and priorities outlined in V&V and other NRC and Academies reports**
- **Assess NASA's progress and effectiveness towards realizing these matters and the effectiveness in maintaining program balance**
- **With respect to the Mars program, the committee's assessment will include:**
  - Planetary Science Division's (PSD) Mars exploration architecture and its responsiveness to the strategies, priorities, and guidelines put forward by the National Academies' V&V and other relevant National Academies Mars-related reports
  - Long-term goals of PSD's Mars Exploration Program; its ability to optimize the science return, given the current fiscal posture
  - Mars exploration architecture's relationship to Mars-related activities to be undertaken by foreign agencies and organizations
  - Extent to which the Mars exploration architecture represents a reasonably balanced mission portfolio
- **Recommend actions that optimize science value, how to take into account emergent discoveries**
- **Provide guidance for decadal's recommended mission portfolio and decision rules for the remaining years of current decadal survey**
- **Recommend actions that will prepare for the next decadal survey:**
  - Community discussion of science goals
  - Potential missions
  - Programmatic balance
  - NASA support of potential mission concept studies

Committee

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Committee on the Review of Progress toward Implementing the Decadal Survey

Meetings

Meeting # 1: May 4-5, 2017
Keck Center, Washington, D.C.

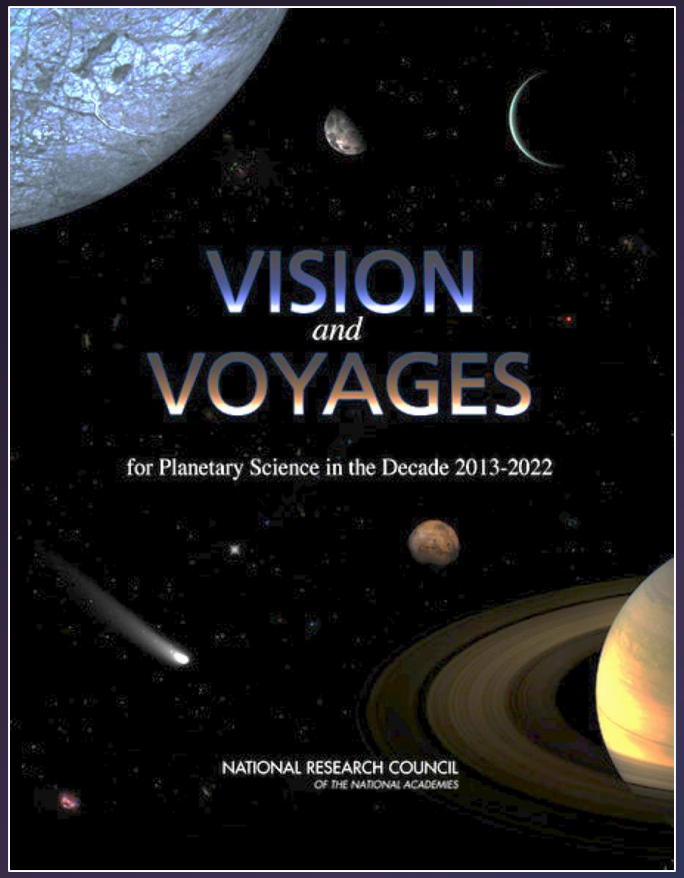
Meeting # 2: July 11-13, 2017
California Institute of Technology, Pasadena, CA

Meeting # 3: August 28-30, 2017
Woods Hole, MA

Meeting # 4: November 29-Dec 1, 2017
Beckman Center, Irvine, CA

Meeting # 5: February 26-28, 2018
Washington, DC

Delivery: June-July, 2018



Key Issues

- How has NASA succeeded at meeting the goals of the decadal survey?
  - Implemented Mars 2020 (i.e. MAX-C) and Europa Clipper (i.e. Europa Orbiter)
  - Lower cadence for Discovery
  - Lower cadence for New Frontiers?
  - Spending on technology development?
    - Technology specific to Mars sample return?
  - R&A intact
- What still needs to be done before this decade is over?

Key Issues

- Mars 2020 – does it meet the decadal guidance?
- Europa Clipper - does it meet the decadal guidance?
- Are the above programs on budget/schedule, or do they pose a risk to programmatic balance?
- Europa Lander
- Adding Ocean Worlds to New Frontiers
- Is the overall program still balanced?
- What is the status of the Mars Exploration Program?
  - Technology development
  - Mars relay capabilities (is a new orbiter needed?)
- The “lean Mars sample return” proposal

Key Issues

- Has NASA performed sufficient mission studies prior to the next decadal survey?
- What else needs to be done prior to the next decadal survey?
- What are the issues the next decadal should consider?

Questions?