National Aeronautics and Space Administration

Astronomy & Astrophysics Mid-Decade Review

Astrophysics

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Mid Decade Reviews

- The NASA Authorization Act of 2005 establishes a requirement for assessments of NASA's science programs that includes mid-decade reviews.

  The performance of each division in the Science directorate of NASA shall be reviewed and assessed by the National Academy of Sciences at 5-year intervals. (PL 109-155 Sec 301)

- The NRC has conducted four mid-decade reviews for NASA and partner agencies
  - The Review of Progress in Astronomy and Astrophysics toward the Decadal Vision (The Mid-Course Review) (2005)
  - Grading NASA's Solar System Exploration Program: A Midterm Review (2007)
  - A Performance Assessment of NASA's Heliophysics Program (2009)
  - Earth Science and Applications from Space: A Midterm Assessment of NASA's Implementation of the Decadal Survey (2012)
- There have been many lessons learned since the first astrophysics mid-decade review in 2005
  - The Space Studies Board will discuss this at November 2014 meeting.

Planning for the 2015-2016 Mid-Decade Review

- The Mid-Decade Review will be conducted during 2015-2016
  - Discussions of the Statement of Task are underway with the NRC.
  - Study will be co-sponsored by NASA, NSF, and DOE (the Agencies)
- Given the funding circumstances that are substantially below those assumed in NWNH, the committee's review will describe:
  - The most significant scientific discoveries, technical advances, and relevant programmatic changes in astronomy and astrophysics over the 5 years since the publication of the decadal survey;
  - How well the Agencies' programs address the strategies, goals, and priorities outlined in the 2010 decadal survey and other relevant NRC reports;
  - Progress toward realizing these strategies, goals and priorities; and
  - In the context of strategic advice provided for the Agencies' programs by other Federal Advisory Committees, and in the context of any mid-decade contingencies described in the decadal survey, any actions that could be taken to maximize the science return of the Agencies' programs.
- Is there anything we should do, other than continue implementing our plan, to prepare for mid-decade review?

Planning for the 2015-2016 Mid-Decade Review

Directions in *New Worlds, New Horizons* relevant to NASA (paraphrased)

- LISA: If LISA is not L1, or LISA Pathfinder is not successful, or equal partnership is not possible, then conduct review to reconsider LISA's prioritization. (p.9, p.213)
- IXO: If IXO is L1, conduct review then (maybe) invest immediately in technology. By mid-decade, invest aggressively in technology. (p. 9, p. 214, p. 215)
- New Worlds: If precursor science is favorable, conduct review then (maybe) downselect technology and invest to ready a mission for the 2020 decadal survey. (p.20, p.195, p.216)
- Inflation Probe: If B-mode detected, conduct review then (maybe) invest in technology for an all-sky mission. (p.198, p.217)
- DSIAC: Conduct review to see whether any contingencies have occurred and recommend action. (p.102, p.237)

To what extent should the mid-decade review committee address these specific decisions laid out in the Decadal Survey?