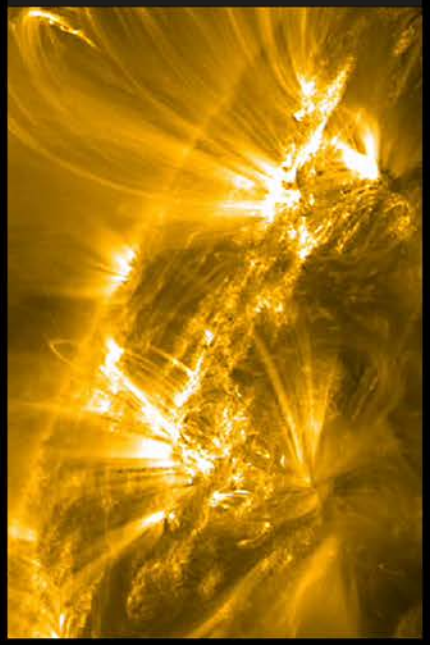
National Aeronautics and Space Administration

EARTH SCIENCE



HELIOPHYSICS

PLANETARY SCIENCE

ASTROPHYSICS

Crafting the 2014 SMD Science Plan

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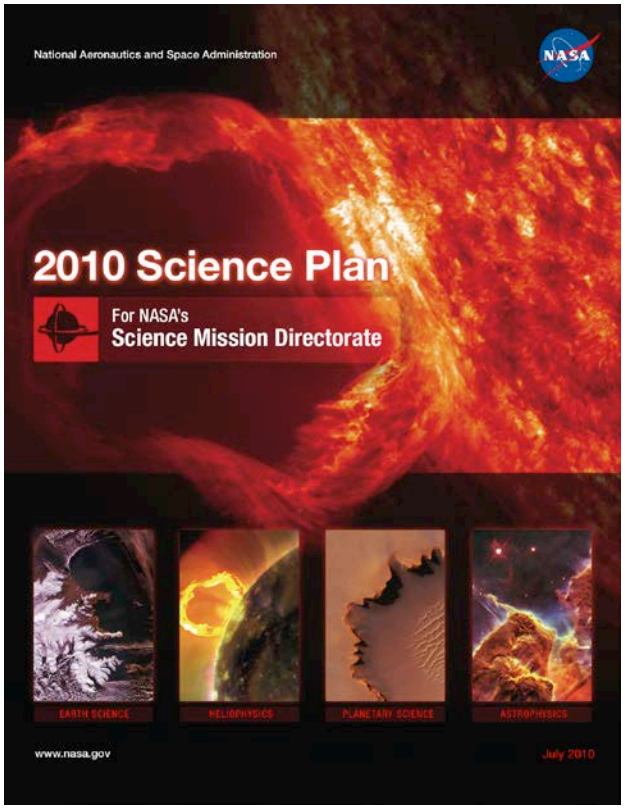
April 16, 2013

SMD Science Plan



- NASA's Strategic Plan is published every four years; a new plan is now under development
- SMD follows with a Science Plan on the same pace
- This Plan defines the science objectives SMD pursues via ROSES, Mission AOs and other activities.
- Link to 2010 Science Plan:

http://science.nasa.gov/media/medialibrary/2010/08/30/2010SciencePlan_TAGGED.pdf

Proposed 2014 SMD Science Plan Contents

1. Our Journey of Discovery (Intro)
2. The National Agenda for Science at NASA
   - 2.1 National Policy Direction
   - 2.2 Agency-level Goals
   - 2.3 Recommendations from the U.S. Science Community
3. A Plan for Science at the Frontiers
   - 3.1 Principles
   - 3.2 Strategies
   - 3.3 Challenges
4. Detailed Plans by Science Area

Appendices

Proposed SMD 2014 Principles

- *Strategic decisions for future missions and scientific pursuits are driven by priorities recommended in the NRC decadal surveys and informed by national needs.*
- Investment choices are based on scientific merit via peer review and open competition
- Active participation by the research community outside NASA is critical to success
- Effective international and interagency partnerships leverage NASA resources and extend the reach of our science results
- A balanced portfolio of space missions and mission-enabling programs sustains progress toward NASA's science goals
- The NASA mandate includes broad public communication
- Accountability, transparent processes, accessible results, and capture of lessons learned are essential features of this Federal science enterprise

Proposed SMD 2014 Strategies

- Pursue answers to big science questions for which the view from space makes a defining contribution
- *Design and successfully implement programs that accomplish breakthrough science and applications*
- Partner with other nations' space and science agencies to pursue common goals
- Mature technologies through focused efforts prior to committing to implement missions that need them
- Share the story, the science, and the adventure of NASA missions and research to engage the public in scientific exploration and to improve science, technology, engineering, and math (STEM) education worldwide

SMD Challenges

- Access to Space
- Availability of Pu-238
- Unrealized Expectations
- Mission Cost Estimation and Management
- Technology Development and Demonstration
- National Strategy for Earth Observation

Challenges in the 2010 Science Plan, which still need to be updated

Astrophysics Chapter Contents

Questions

- Will a document so structured serve the needs of NASA's stakeholders and partners for information on SMD's strategy and plans?
- Do sections 1-3 provide an adequate foundation for the Science Areas that follow?
- Does the standard Science chapter outline contain the elements needed to inform current and future participants?

Agency Strategic Goals

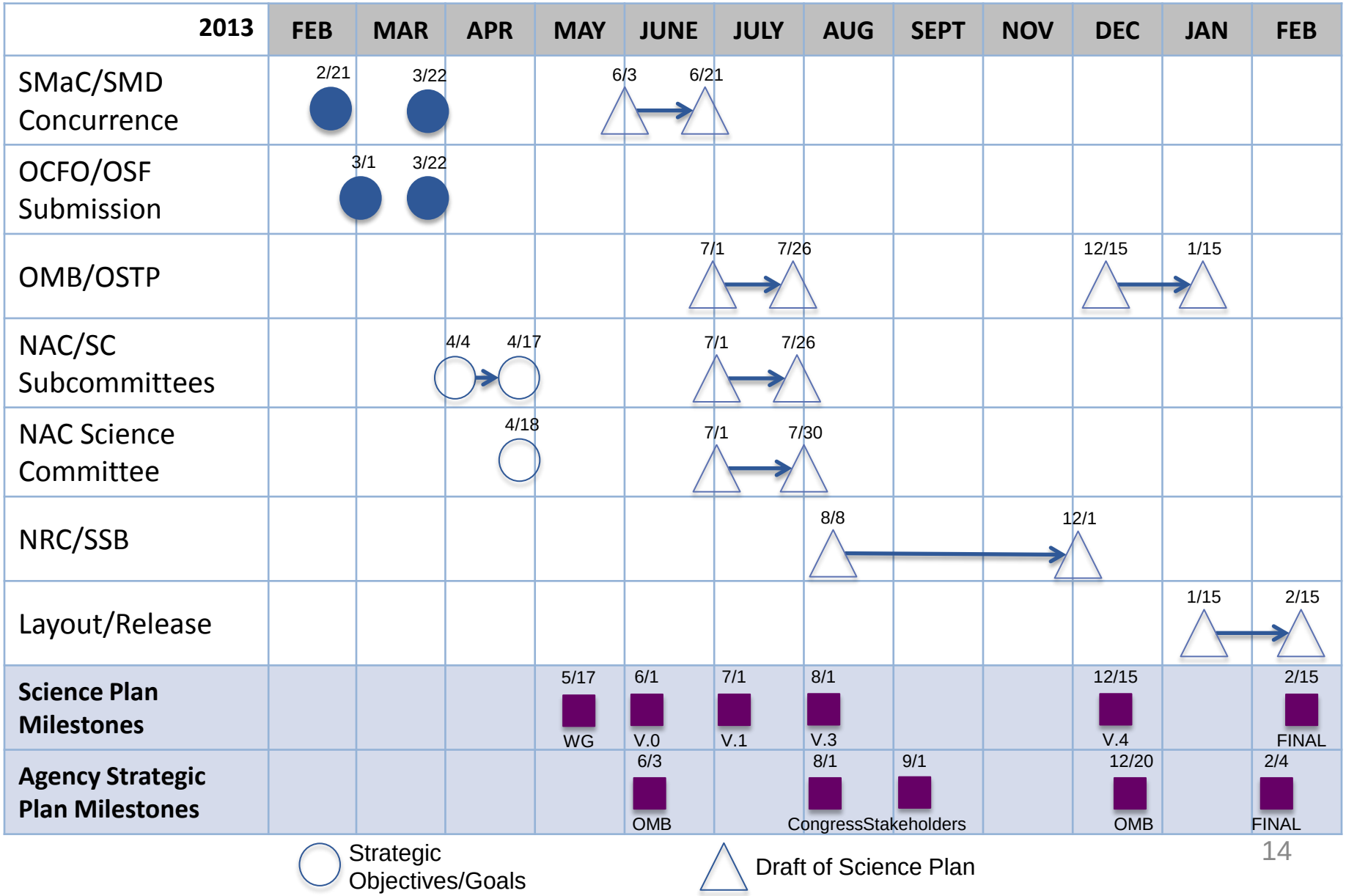
- **Space:** Expand the frontiers of knowledge, capability and opportunity in space
- **Earth:** Understand our home planet and improve life on it.
- **Agency Excellence:** Be a model organization, serve the American public and inspire people world-wide.

SMD Strategic Objectives

- **Earth Science:** Advance knowledge of Earth as a system to meet the challenges of environmental change and to improve life on our planet.
- **Heliophysics:** Understand the Sun and its interactions with Earth and the solar system.
- **Planetary Science:** Ascertain the content, origin, and evolution of the solar system and the potential for life elsewhere.
- **Astrophysics:** Unravel the mysteries of the universe, explore how it began and evolved, and search for life on planets around other stars.

SMD 2014 Science Plan Schedule

* SMD milestones proceed agency milestones



Astrophysics Division
Strategic Objectives and Science Goals

Astrophysics: Unravel the mysteries of the universe, explore how it began and evolved, and search for life on planets around other stars.

Science Goals

- Probe the origin and destiny of our universe, including the nature of black holes, dark energy, dark matter and gravity
- Explore the origin and evolution of the galaxies, stars and planets that make up our universe
- Discover and study planets around other stars, and explore whether they could harbor life

Next Steps

- Subcommittees and Science Committee concurrence on Strategic Objectives and Science Goals
  - Do they inform stakeholders (OMB/OSTP/public/scientific community) of objectives and goals?
  - Do they capture what will reported for GPRAMA?
- Draft 1.0 will be provided to the Subcommittees and Science Committee for review early July
  - Subcommittee will provide comments on draft v.1.0 to Science Committee prior to Science Committee meeting July 29, 2013