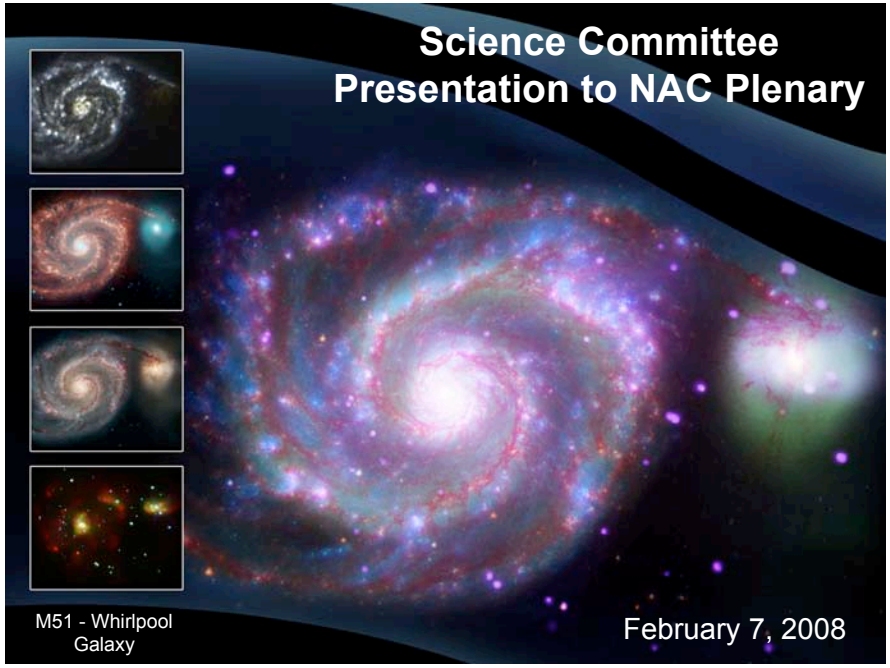


Science Committee Meeting Topics

- FY 2009 Budget Request for the Science Mission Directorate - A. Stern - SMD AA
- Lunar Architecture Status and Next Steps (w/ EC & SOC) - G. Yoder - ESMD
- Earth Science Decadal Survey Implementation and Recovery of NPOESS De-manifested Sensors - M. Freilich - SMD

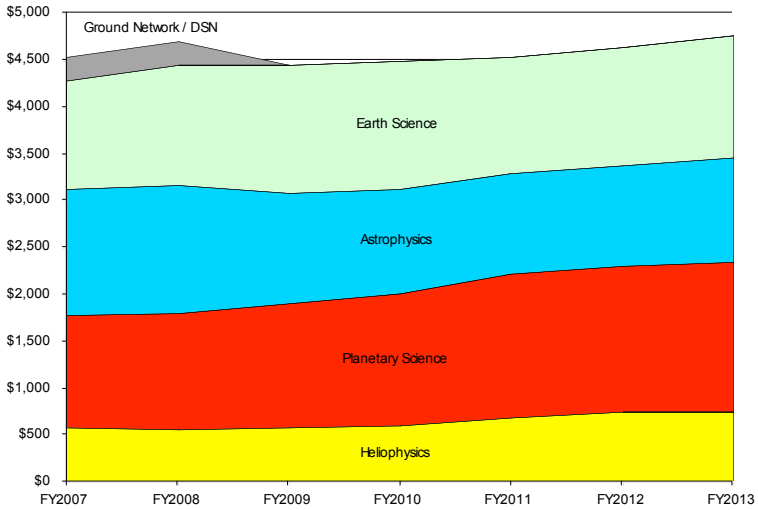
FY09 Budget Request

- The FY09 budget request for SMD has a number of positive elements:
  - Seven new mission starts
  - New lunar small mission program
  - Initial response to Earth Science decadal survey
  - Restores health to R&A budgets in space science
- Continued concern for future missions related to launch vehicle costs and uncertainties

MAJOR FY09 BUDGET CHANGES

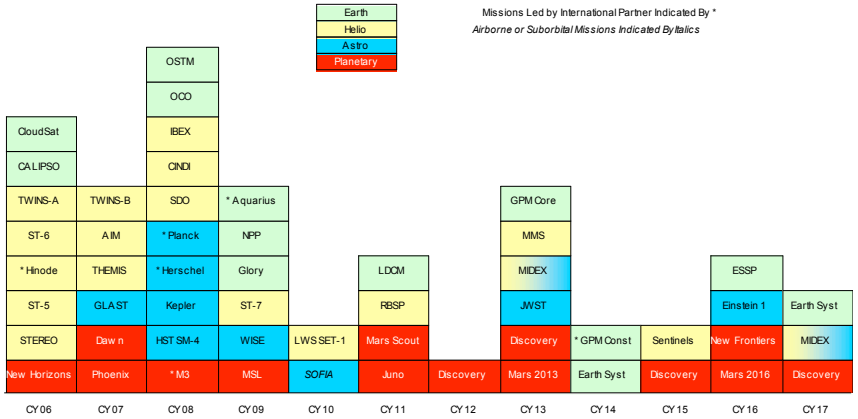
- **Increased commitment to Earth Science over 5 years.**
- **Initiated seven new FY09 mission starts: more than in the past four budgets combined; at least one per SMD science area:**
  - **Earth Science: SMAP and IceSat II (2012, 2015 launches)**
  - **Astrophysics: JDEM (launch in 2014/2015)**
  - **Heliophysics: Solar Probe Plus (launch in 2015)**
  - **Planetary: Outer Planets Flagship (launch by 2017) small lunar science orbiter (launch by 2011), and lunar mini-landers (launch by 2014).**
- **Substantial increases in astrophysics, heliophysics, and planetary science R&A/MO&DA.**
- **Increased budgets for suborbital rockets and balloons.**
- **Funding for new starts and R&A increases came from internal transfers, efficiencies, out-year mission ops savings, and re-phasings for MMS and Scout.**

SMD BUDGET BY SCIENCE THEME



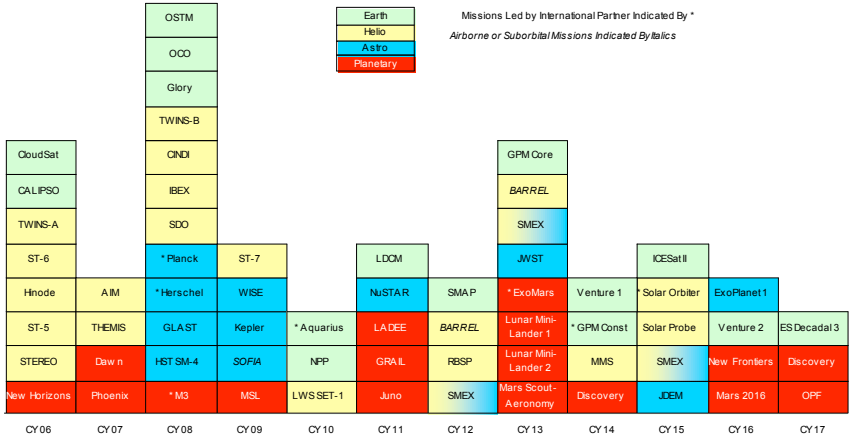
SMD'S FLIGHT PROGRAM: JANUARY 2007

Launches by Calendar Year



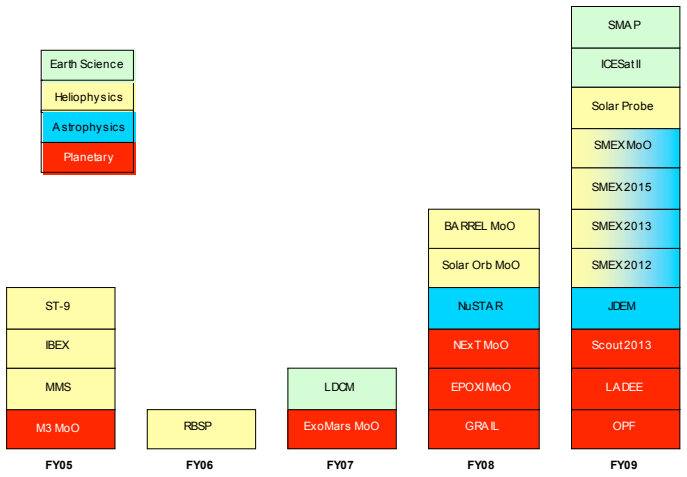
SMD'S FLIGHT PROGRAM: JANUARY 2008

Launches by Calendar Year



NEWLY STARTED MISSIONS

New Starts Defined as a Phase A Start Year or Final Downselect Year, Whichever is Later.



Statement on NASA's International Exploration Strategy

Given the current international focus on lunar exploration, leading to an 'International Lunar Decade,' and given U.S. leadership in plans to return to the Moon with humans as part of the U.S. Space Exploration Policy, the Council recognizes and applauds NASA's efforts to engage the international community by means of the Global Exploration Strategy.

Council urges NASA to continue to (1) carefully consider and coordinate plans with partner agencies to further develop the lunar exploration architecture, and (2) ensure coordination of key elements such as orbital communication assets and data relays, and the geodetic coordinate control system, during the precursor robotic phase as well as the outpost/human exploration phase. Leadership in these areas is needed to develop a robust and integrated robotic and human lunar exploration program.

Lunar exploration plans, including sustained human outpost activities and scientific investigations, and US efforts to engage international exploration partnerships, will lead to development of capabilities and strategies to extend human exploration from the Earth-Moon system to Mars and beyond.

Lunar Architecture Concepts

Short title of the proposed Recommendation

- NAC review of LAT-2 Concept Developments

Short description of the proposed Recommendation

- Further Lunar Exploration Architecture concept developments should be reviewed by the Lunar Exploration Analysis Group, which represents a variety of lunar exploration stake holders and partners, including the science community, to assess how well continued developments align with the recommendations of the NAC from the 2007 Tempe workshop.

Lunar Architecture Concepts (2)

Major reasons for proposing the Recommendation

- In keeping with NAC recommendations S-07-C-3 and S-07-C-4*, dated May 18, 2007, the NAC should continue to assess further LAT concept developments. The Lunar Exploration Analysis Group (LEAG) has been tasked to develop a science roadmap that is integrated with the exploration architecture and science program plans. The LEAG is thus well positioned to provide ongoing evaluation to the NAC as part of its assessment. The LAT-2 has done an extensive job of exploring concepts to provide capabilities recommended by the NAC as important to scientific exploration, such as surface mobility to extend operations at a lunar outpost or to access parts of the Moon far-distant from an outpost. It is important, however, to evaluate associated or potential costs to support the concept studies in a manner that will be useful for decision making and that will engender a sense that the concept development will represent fiscal responsibility and reality.

Lunar Architecture Concepts (3)

Consequences of no action on the proposed Recommendation

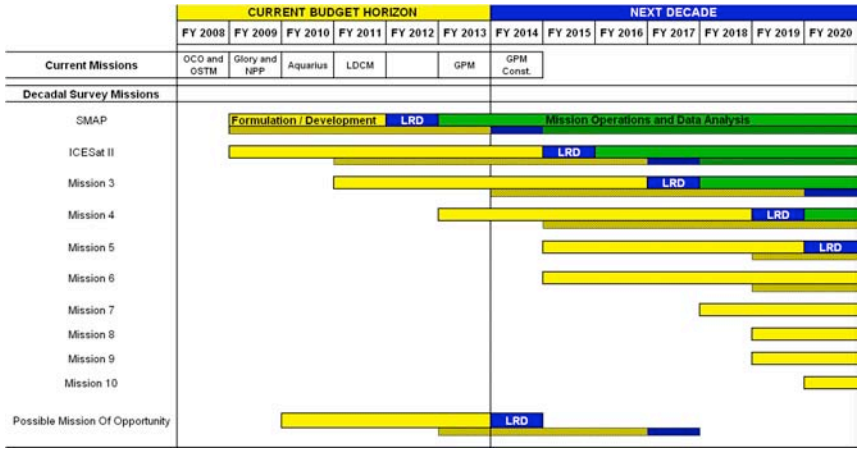
- The development of concepts that might achieve stated objectives but that are also likely to be far beyond affordable alternatives conveys a message that there are no fiscal limits to what may be considered as acceptable solution space. NASA's science community and other constituencies, including the public, must be assured that the lunar exploration architecture will represent fiscally responsible, as well as capable, approaches to science and other exploration objectives.

Earth Science Missions

- Decadal Survey implementation initiated in the FY09 budget with new starts for two missions (SMAP & ICESat-II)
- Funds came from other SMD science areas
  - Rebalancing done smartly by taking advantage of events in those Divisions (e.g., Mars Scout delayed for other reasons)
  - While the future ES mission plan lacks robustness and is limited vis-à-vis the decadal survey, this is positive action given the current growth rate in the top line SMD (1%) and NASA budgets (2.4%)
- Plan to recover highest-priority sensors dropped from NPOESS is solid, and mostly funded by NOAA

Earth Science New Initiative

NEW vs. PREVIOUS (hatched) MISSION PROFILE



Comparison of Earth and Space Science Mission Costs

Short title of the proposed Recommendation

- Compare the cost drivers of Earth and Space Science Missions

Short description of the proposed Recommendation

- The cost of Earth Science missions appear systemically higher than Space Science missions that measure similar parameters. A cost analysis study should be conducted to document the comparative costs, and to identify cost drivers for Earth science, Space science and Planetary missions and their sources in requirements, vendor and partner types, and ways of doing business.

Education & Public Outreach

- Applaud improvements to NASA webpage
- The Committee is concerned with Agency and SMD-level approaches to E/PO
  - Noted in Astrophysics Subcommittee report
  - For example, heavy bureaucracy and jargon-laden requirements for E/PO grant supplements
- We understand that SMD is developing new approaches to E/PO with the help of science education leaders
- E/PO be on the SC agenda for April
- Will invite Human Capital Committee participation