

Planetary Science Decadal Survey Steering Committee

National Research Council, Space Studies Board

Washington, D.C.

Open Sessions: July 6-7, 2009

The Steering Committee of the National Research Council's Planetary Science Decadal Survey met on July 6-8, 2009 in Washington, D.C. The study is jointly sponsored by NASA and the National Science Foundation (NSF). The committee is chaired by Steve Squyres, perhaps best known as the "father" of the two rovers now on the surface of Mars -- Spirit and Opportunity. Portions of the meeting were closed. Open sessions were held on July 6 and 7 and are summarized here. The following are the Powerpoint presentations that were presented in open sessions.

- [Ed Weiler, NASA Associate Administrator for Science](#)
- Jim Green and Doug McCuiston, NASA Planetary Sciences Division
 - [NASA's Perspective on Charge to the Decadal Survey Committee](#)
 - [Overview of NASA Planetary Science Program](#)
 - [Overview of NASA's Mars Program](#)
- Nigel Sharp, NSF Division of Astronomical Sciences
 - [NSF's Planetary Science Activities](#)
- [APL Summary of Capabilities in Spacecraft and Mission Design](#)
- [Goddard Space Flight Center Support for Planetary Decadal Activities](#)
- JPL
 - [JPL re Concept Maturity Levels](#)
 - [JPL re Technical Support for the Decadal Survey](#)
 - [JPL re Rapid Mission Architectures](#)
 - [JPL re TeamX](#)
 - [JPL re In Depth Studies](#)

Day 1 (July 6)

During the open sessions on Monday, NASA and NSF officials briefed the committee about the status of their respective planetary science programs and the committee's task. Budget numbers figured prominently in the NASA presentations. The message from Ed Weiler, NASA Associate Administrator for Science, was crystal clear -- NASA's planetary science budget has been cut in half over the past 4-5 years and there is too much program for the budget. He is seeking the

committee's advice on the top priorities with the admonition that if the committee wants to add anything it must be prepared to also recommend what should be canceled to pay for it.

He also informed the committee that he had met with David Southwood, his counterpart at the European Space Agency (ESA), the previous week and the two agencies have agreed in principle to work together to craft a Mars exploration program. He stressed that the two agencies would craft a *program*, not just a single mission. A press release is expected shortly. He added that they were not ignoring cooperation on outer planets, that in fact the two agencies already were developing a plan to cooperate in exploration of Jupiter's moons Europa and Ganymede.

During the question and answer period, Dr. Weiler and other NASA officials assured the committee that they were not trying to preempt the committee's deliberations on Mars. He said the agencies are developing a joint Mars program for the committee to consider, and the committee could adjust it in response to community input.

Dr. Weiler also discussed two lunar programs that were placed into his budget under previous leadership and that have not been reviewed by the NRC: LADEE and International Lunar Network. He hopes the committee will advise him on where those should fit in terms of priorities.

Jim Green, director of NASA's Planetary Sciences Division, urged the committee to wait for the FY2011 budget submission for budget numbers to guide their deliberations. Dr. Green believes that the FY2011 budget will better reflect Obama Administration priorities for NASA funding than the FY2010 budget now under consideration.

Nigel Sharp from NSF reviewed NSF's activities related to planetary science. He urged the committee to coordinate closely with the NRC's astronomy and astrophysics Decadal Survey (Astro2010) which is looking at some of the same issues and it would be good to avoid conflicting advice. The question of whether this committee or Astro2010 should make recommendations on the future of the Arecibo radio telescope – a radio astronomy observatory in Puerto Rico funded by NSF that has, inter alia, a planetary radar – was discussed. The answer appeared to be that both Decadal Surveys might make recommendations about Arecibo.

Gregg Vane of JPL gave a presentation on a JPL-proposed nomenclature for "Concept Maturity Levels" (CMLs) that could be used in parallel with the widely used Technology Readiness Levels (TRLs) to designate where a particular planetary mission concept falls on a scale of maturity.

Day 2 (July 7)

While Day 1 of the meeting focused on briefings from the study's sponsors, NASA and NSF, Day 2 brought in viewpoints from the White House Office of Management and Budget (OMB) and Office of Science and Technology Policy (OSTP) as well Congress. All emphasized the importance the White House and Congress attach to recommendations in the NRC's Decadal

Surveys, calling the Surveys "touchstones" and "key reference points" for their own deliberations.

OMB's Amy Kaminski and OSTP's Damon Wells strongly advised the committee to keep its recommended program within the bounds of the FY2010 budget now under consideration by Congress and its "outyear" projections. They stressed they were not trying to forecast the future, but in light of country's economic situation, they view budget increases for NASA as unlikely.

Their message was in contrast to what the committee heard from NASA's Jim Green the previous day. Dr. Green urged the committee to wait for the FY2011 budget that will be released next February, which he believes will better reflect Obama Administration priorities. The OMB/OSTP message also was in contrast to remarks by Dick Obermann and Ed Feddeman of the House Science and Technology Committee staff who reminded the group that it is Congress that ultimately decides budgets. Representing the Democratic and Republican viewpoints respectively, both advised the committee to focus their deliberations on the top scientific priorities, not the budget. While acknowledging that there are no blank checks, they stressed that if the science is sufficiently compelling, Congress could make additional funds available.

Following those presentations, the committee heard from representatives of the Applied Physics Lab (APL), Goddard Space Flight Center, and the Jet Propulsion Laboratory on how those institutions believe they can support the work of the Decadal Survey committee. The committee is required by law (the 2008 NASA Authorization Act) to obtain independent cost estimates of projects they recommend. Cost uncertainty is directly related to the maturity of the mission concept and it is expected that the committee will receive proposals in a variety of stages of maturity. The committee is seeking help from APL, Goddard and JPL on how to normalize the proposals so they can undergo a useful independent cost estimate. The briefings made the committee aware of the expertise available at the three organizations and the conditions under which they may be able to assist the Decadal Survey committee.