

Dear Colleague:

This is the first of what will be a regular series of newsletters to the astrobiology community regarding the 2009-2011 Planetary Science Decadal Survey. We all get too much email, so I'll try to keep these concise!

The key points in this newsletter are these:

- 1) The decadal survey will establish the priorities for planetary exploration in the U.S. for the coming decade.
- 2) Astrobiology is a major crosscutting theme of NASA's planetary science activities and a central facet of the survey's scientific scope.
- 3) The process is just getting started, and will continue for the next two years.
- 4) The goal is to formulate a plan for planetary exploration that truly represents the consensus view of the science community.
- 5) Community input to the decadal survey via participation in town hall meetings and generation of written white papers is strongly encouraged and in fact is necessary for the success of the survey.
- 6) More information is available at the URL given at the end of this letter

As most of you know, the Planetary Science Decadal Survey is organized by the National Research Council at the request of NASA and NSF. Its objective is to set clear priorities for solar system exploration for the coming decade. Congress and the Office of Management and Budget highly value the decadal survey process for establishing the science priorities in various NASA disciplines. The astronomy and astrophysics decadal survey is also now underway, and the political leadership—i.e., the people who control the funding—are familiar with this process and want it to be used for solar system exploration as well.

The distinguishing characteristic of the decadal survey process is that it is based on broad input from the science community. The goal is to establish a true community consensus regarding the key science questions for the next decade, and the suite of missions that should address them.

To describe NASA's view of the decadal survey, I've asked Jim Green, the Director of NASA's Planetary Science Division (the division within which the Astrobiology Program resides), Mary Voytek, the Interim Senior Scientist for Astrobiology at NASA Headquarters, and Carl Pilcher, Director of the NASA Astrobiology Institute to write a few words.

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From Jim:

We are at the beginning of the development of the Planetary Science Decadal Survey that will chart our course for the next 10 years. If you are asked to be on one of the survey panels, I encourage you to accept. If you are not on a panel, please check the schedule for when and where the panel you are interested in will meet and plan to attend and participate. What makes the decadal a powerful document is the strong science focus and commitment by the community to follow it. It is the guide we use at NASA Headquarters, the current Administration and Congress. It is that important!

From Mary:

The NRC Planetary Science Decadal Survey has begun and it is important for the Survey to hear from the many voices of the Astrobiology community. Astrobiology is a unifying, multidisciplinary endeavor that provides crucial insights into planetary habitability, which has become a driving concept in NASA's exploration of our Solar System. The Survey is a unique opportunity for the research community to participate in establishing science and mission priorities for the next decade. I and my colleagues with the NASA Astrobiology Program urge you to take full advantage of all opportunities to participate in the decadal survey process.

From Carl:

Astrobiology is central to solar system exploration, and provides some of the most compelling questions motivating planetary science missions. Articulating these connections for the Planetary Science Decadal Survey is a key responsibility of the astrobiology community. The NAI places very high priority on supporting the community and the Survey Committee in developing the astrobiology content of the survey.

As these comments make clear, the decadal survey is the process by which NASA's goals for exploring the solar system will be established for the coming decade.

The process will start from the science, summarizing the current state of knowledge in planetary science and identifying the key outstanding science questions. We will then address what mix of mission sizes (e.g., Discovery, New Frontiers, Flagship) would best address those questions, and generate a prioritized list of New Frontiers and Flagship missions for the coming decade. Missions to Mars and the Moon will be considered on an equal basis with all others. We will also consider a range of other topics, including NSF-funded infrastructure for planetary science, research and analysis activities, and technology development.

This decadal survey will differ from previous ones in that much greater emphasis will be placed on evaluating the technical maturity and probable costs of candidate missions. The goal is to produce a clearly prioritized list of missions that can be flown in the coming decade within the available budget. We will strive to avoid creating an oversubscribed plan!

The decadal survey will involve the entire U.S. planetary science community, and will be led by six groups. There will be a steering group, chaired by me. Larry Soderblom of the USGS is the vice-chair of the steering group. There will also be five panels, on the following topics:

- Inner planets—Mercury, Venus and the Moon;
- Mars;
- Outer planets—including magnetospheres and rings;
- Outer planet satellites, and
- Primitive bodies—including asteroids, comets and Kuiper belt objects.

Each panel will have a chair and a vice-chair; the panel vice-chairs will all serve on the steering group. Total membership of the steering group will be about 16, and total membership of each panel will be about 11.

This panel structure was arrived at after considerable thought, and consideration of a number of alternatives. Strong practical considerations regarding budget, schedule and logistics dictate that the number of panels be minimized. In the end, it was decided to use a panel structure that mimicked the one used for the last decadal survey. This has the considerable advantage of allowing each panel to use the work done by the equivalent panel from last time as a starting point. The primary difference from last time is that then, astrobiology was segregated from the rest of the survey in a sixth panel. This time, astrobiology will be fully integrated into the five-panel structure, with astrobiologists, as appropriate, on each panel and on the steering group.

Over the next couple of months, membership for the steering group and panels will be established. This is a careful process, conducted by the NRC and aimed at establishing a distinguished membership with the appropriate balance among scientific disciplines, institutional affiliations, gender, and so forth. The panels will do most of their work in the second half of 2009. 2010 will be devoted to studying and costing mission concepts, establishing priorities, and writing the report. The final report will be released in the first quarter of 2011.

The primary job of all the decadal survey groups will be to actively engage the entire US planetary science community in the process. We will do this via a variety of mechanisms.

We will hold a number of town hall meetings at major science conferences, at community gatherings like meetings of the standing Analysis Groups (LEAG, VEXAG, MEPAG, OPAG, SBAG), in conjunction with panel and steering committee meetings, and in other settings. Your participation in these sessions is strongly encouraged.

We will also solicit white papers from the community. These written inputs are a key part of the survey process, and white papers on any topic of relevance to the survey are strongly encouraged. A good white paper should be very concise, with strongly-reasoned arguments. Because the goal of the decadal survey is to build community consensus, it will be particularly effective for white papers to have many co-authors. We need to receive white papers no later than September of this year, so a good time to get started writing them is now.

Finally, we will try to make the activities of the steering committee and panels as transparent to the community as possible. For example, we hope to conduct live webcasts of the open sessions of all steering committee and panel meetings.

There's much more that I could write, but in the interest of brevity I'm going to save more details for future newsletters. If you'd like more information now, or if you'd like to volunteer to serve on one of the panels, go to:

<http://www7.nationalacademies.org/ssb/SSEdecadal2011.html>

This web site includes the formal statement of task for the decadal survey, a presentation about the survey that I recently gave at the Lunar and Planetary Science Conference, and instructions for how to volunteer. We will soon add a "Frequently Asked Questions" section and information about how to submit white papers to the site.

The Planetary Science Decadal Survey is the process by which the US program of solar system exploration for the coming decade will be established. Its effectiveness is

derived directly from the broad community participation that characterizes it. I look forward to working with all of you in the months ahead.

Best wishes,

Steve Squyres
2009-2011 Planetary Science Decadal Survey Chair