

From: Fran Bagenal <bagenal@lasp.colorado.edu>
Subject: **OPAG update**
Date: November 4, 2006 4:37:15 PM MST
To: Curt Niebur <cniebur@hq.nasa.gov>
Cc: Fran Bagenal <bagenal@lasp.colorado.edu>

Outer Planets Assessment Group - OPAG - November 2006 Update
<http://www.lpi.usra.edu/opag/>

A brief monthly update - since we are meeting next week.

- 1 - Meeting next week
- 2 - On R&A from Jim Green
- 3 - Len Fisk on NASA & Science

..... lots to talk about next week.

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1 - OPAG Meeting
November 7-8, 2006
Sheraton Tucson Hotel & Suites
5151 East Grant Road Tucson, AZ

Tuesday, Nov. 7
8:45 Welcome & PSS report Fran Bagenal (OPAG Chair, Univ. of CO)
9:00 HQ Update Jim Green (Acting Div. Dir., NASA HQ)
BREAK
10:30 New Horizons Status Alan Stern (SWRI)
11:00 Juno Status Scott Bolton (SWRI)
11:30 Uranus at Equinox Mark Hofstadter (JPL)
LUNCH
1:00 Enceladus Focus Group report Carolyn Porco (SSI)
1:30 Atmospheric Probes Workshop Sushil Atreya (Univ. of Michigan)
2:00 Working Group Breakout Sessions

4:00 Plenary reports from working groups & draft OPAG findings

Wednesday, Nov. 8

8:30 Open Mike

9:30 Cassini Status Dennis Matson (JPL)

10:00 Radioisotope Power Systems Dr Harold McFarlane (Idaho National Lab)

10:30 RPS Discussion

BREAK

11:00 \$1B Mission Studies Kim Reh (JPL)

Titan Mission Hunter Waite (SWRI)

Enceladus Mission John Spencer (SWRI)

11:40 NASA Academy Enceladus Study R. Anderson, M. McMillian, D. Calvo

LUNCH

1:30 Outer Planets R&A Curt Niebur (NASA HQ)

2:00 Planetary Science MOWG Steve Larson (LPL)

BREAK

3:00 Plenary, OPAG Pathways Document and finalize findings to PSS

** Hope to squeeze in some science too!

2 - Message from Jim Green (Acting Director of Planetary Sciences Div., NASA)

Date: Sat, 4 Nov 2006 12:11:16 -0500

From: James Green <James.Green@nasa.gov>

Subject: Re: Refocusing NASA Planetary Funding; Stick to the decadal survey!

to all...

As we all know these are difficult times with the pressure on the R&A activities that are so important to us. I have some important comments about this situation that I will present at the upcoming OPAG meeting.

What we lack, to be able to make decisions, (this versus that) is better information on the actual health of the R&A program both past and current. I believe anecdotal information is the wrong type of information to act on.

I am going to pull the necessary statistical information together on the R&A program over the next two months and be ready to provide it to the PSS. In addition, I plan on stating what I believe are the metrics that define a healthy R&A program. Your comments on these baseline metrics (that I will present at OPAG) will be important and will then provide the yard stick I can use to determine the effects of the cuts and therefore should lead us to more fruitful discussions on our next steps. I have already discussed this with Sean.

See you at OPAG....

jim

3 - Len Fisk on NASA & Science

http://www7.nationalacademies.org/ssb/SSB_julsep06_bull.pdf

NAS Space Studies Board Quarterly Newsletter

July-September 2006

From the Chair

There is consternation these days between the National Aeronautics and Space Administration (NASA) and its external science community. In August, three senior science advisors were dismissed from the NASA Advisory Council (NAC). In the aftermath, the Administrator of NASA, Mike Griffin, through correspondence with the NAC and its science subcommittees and through a major speech at the Goddard Space Flight Center, clarified how NASA will manage its science program, and the role of the science community.

Quoting from the Goddard speech, "members of the external scientific community are suppliers to NASA, not customers." The role of the science community is defined in this way to avoid what is perceived as an inherent conflict of interest that results when the scientific community is a purveyor of products to the government, while at the same time being the primary source of advice as to which products the government should purchase. Accordingly, the formal internal advisory structure for science in NASA has been abolished, except for the NAC, whose function is to advise the NASA Administrator. The Associate Administrator for science, and her division directors, no longer have an independent, internal advisory structure.

During the near 50-year history of NASA, two very distinct management cultures have evolved. The human space flight management culture is a pure engineering culture in which NASA sets requirements. The only external community is aerospace industry, and they are not empowered to do anything other than supply NASA with services as requested. The science management culture is very different. Here there is a dedicated external-to-NASA community of scientists who

feel obligated to engage with NASA on the execution of the science program to ensure its success and quality.

In the current construct for managing science in NASA, the human space flight engineering culture is being imposed on the science program. The external science community is to have the same role in NASA as the aerospace industry. This is a radical departure from the past and, in fact, a departure from the way in which other quality science programs in the Federal government- with engaged, external communities-are managed.

Science is done by scientists, most of whom, in the case of space science, do not work directly for NASA. The scientists perform their tasks, as do other scientists, by devising observations and experiments, by analyzing and interpreting the resulting data, and through supporting theoretical studies and modeling. NASA provides the space hardware from which the observations and experimental measurements are made. This is an essential role, but by itself it is not science. To define it otherwise would be to conclude that the manufacturer of laboratory equipment is doing science, as opposed to the scientists who are making discoveries with the equipment.

Since it is NASA's role to provide the scientists with the equipment required to make their observations, in that real sense, the scientists are indeed the customers of NASA. It is thus quite reasonable for scientists to have a direct say in how they want NASA to perform on their behalf. It is backwards to argue that scientists are suppliers to NASA. It is NASA who is the supplier and the science community who is the customer.

In the current model for managing science in NASA, the external science community is to be involved directly only through the National Research Council (NRC), which has the responsibility to set long-range strategic plans. After that, NASA, and particularly senior NASA managers, take over. To carry the laboratory equipment analogy further, that is like a scientist deciding on a field of research to pursue and then turning further decisions over to the laboratory equipment manufacturer. In this model, quality science is unlikely.

NASA is, of course, also the supplier of funds to scientists to perform their science, which is where a conflict of interest can arise. It could be argued equally well that

NASA has a conflict of interest. The agency is both the supplier of funds to its customers-the scientists-and the supplier of the tools necessary for them to do their work. Thus, NASA could fund the science- or, in particular, the technical approach to science-that it, arguing only with itself, deems appropriate.

To manage the conflicts of interest, both for the science community and for NASA, a set of self-governance procedures has evolved over the decades. The NRC has set recommended science priorities; it has weighed the value of one mission candidate against another and one program against another, within general funding constraints provided by NASA. Then a series of internal advisory committees at all levels in the NASA science program provided advice on how best to implement various missions and programs. And then there of course has been the peer review process; research grants and space instruments are chosen with members of the external science community participating in the evaluation.

The participation of the science community in the management of NASA's programs and flight missions has been of great value. It has introduced a constructive tension that pushes the program to excel. This constructive tension was noted as a strength of the science program in the NRC Workshop on National Space Policy Science, held before the announcement of the Vision for Space Exploration in January 2004. In fact, it was recommended that the human space flight program, to the extent possible, emulate this strength of the science program.

Of course, NASA, acting for the President and with the consent or direction of Congress, has the final say in the initiation of a program or in any selection, as is required by law. The question, however, is to whom is NASA accountable. In the current model, science in NASA is accountable only to the Administrator and through him to the President and the Congress. In the previous, scientist-participation model, NASA also accepted accountability to the science community, to act on their behalf in a collective effort to ensure a science program of excellence.

Probably all, and certainly most, past NASA Associate Administrators for science were encouraged or permitted to manage the science program of NASA on behalf of the nation's science community defined in the broadest sense. They were required, on behalf of the President and Congress, to administer the funds correctly, and to ensure that the program was one of quality and substance that served the needs of the nation. The demonstrable success of NASA's science program is testimony to

the wisdom of this approach.

During the interval I was Associate Administrator (1987- 1993) the science budget of NASA initially increased dramatically, tracing the growth in the overall budget of NASA following the Challenger accident. However, in the early 1990s the rate of growth leveled off suddenly and somewhat unexpectedly. The situation then is similar to today, with the additional overlay that human spaceflight, with the Vision for Space Exploration, now has a clear claim on its fair share of the NASA budget. The change in funding expectation for science that occurred in the early 1990s was weathered with little difficulty in large part because the science program was a collective effort of NASA and its science community. The consternation that is prevalent in the science community today, over the changes imposed by NASA, is similarly the result of the science community's response to having been disenfranchised from participation in the management of space science.

By abolishing the comprehensive internal advisory structure for science, NASA apparently believes that the conflict of interest will be avoided. In fact, the opposite is more likely. Now scientists are free to act individually and use access to NASA managers to attempt to influence favorable decisions. When the advisory structure was in place, such attempts at influence occurred in the presence of other scientists, who may have articulated differing positions, with the result that the interests of the community as a whole were represented.

Supporters of the space program in Congress are complaining that members of the science community are lobbying them for their individual programs, at the expense of other agency programs or sometimes at the expense of other science programs. Such behavior is to be expected. NASA has indicated that it will take direction only from the President and Congress, and thus one of the main routes to influence the execution of the science program is through Congress. Indeed, with the internal science advisory structure eliminated, Congressional supporters should brace themselves for an onslaught of individual requests from scientists.

NASA is in the process of finding a successor for the current Associate Administrator for Science, Mary Cleave, who has announced her intention to retire from NASA in the spring. It is to be hoped that her replacement will be granted the tools and the authority required to succeed in managing one of the world's most successful science efforts. The current experiment in managing science in NASA

should be brought to a close as soon as possible. If not, the long-term quality and productivity of science in NASA is at serious risk.

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