

## **PSS June 22 Teleconference**

### **Introductions and Agenda**

Dr. Ronald Greeley, Chair of the Planetary Science Subcommittee (PSS), opened the meeting with a roll call of the PSS membership. He then reviewed the agenda and changed the sequence in order to ensure that the most important topics were covered.

### **Opening Remarks**

Dr. James Green, Director of the Planetary Science Division (PSD), discussed recent activities of the U.S. House Appropriations Committee regarding the Department of Energy (DOE), which may affect NASA. DOE makes and manages the nation's Plutonium-238 (Pu-238) supplies. The House Appropriations Committee recently passed a bill for DOE for Fiscal Year 2012 (FY12), in which the appropriation for DOE was \$5.9 billion below the President's FY12 request. Dr. Green told PSS that they should take note of this. It indicates what is likely in store for other Federal agencies.

In the bill, which has not yet been sent to the full House or the Senate, there is a discussion of the Pu-238 restart. The Appropriations Committee provides no funds for this project, and "encourages the Administration to devise a plan for this project that more closely aligns the costs paid by Federal agencies with the benefits they receive." In other words, if this bill goes through the Senate unaltered, NASA cannot expect DOE to receive funds for the restart. It is important to note that the NASA authorization allows the Agency to provide funds to DOE as part of NASA's share of the restart of Pu-238.

In the recently passed FY11 budget, NASA is not allowed to initiate any new starts. However, NASA can begin the restart from a study perspective, which is being done. DOE has been very receptive to this. Nonetheless, the plan for the restart involved DOE obtaining its funds for this project.

Another element of the Appropriations Committee's bill for DOE focuses on the termination of underperforming projects. This does not involve NASA, but it is noteworthy, in that DOE must create a performance ranking of all ongoing, multi-year, research projects, and compare the current performance with the original project goals. DOE must terminate the lowest-ranking basic energy science research projects, which is analogous to NASA's research and analysis (R&A) program, to a total of \$25 million, and report back to the Appropriations Committee in 2012.

Dr. Green wanted to make two points with this update concerning DOE. First, NASA is moving forward on its own with the Pu-238 restart, to the extent possible. Second, the DOE bill indicates that the House wants to give agencies some direction, and therefore PSD will be relying even more on PSS to deal with some of these issues. The DOE grants in question are multi-year,

meaning that it was possible that the cuts would be spread out over multiple years. An amendment to restore DOE's Pu-238 funding was rejected on a voice vote.

### **Discussion of Technical Analysis Group (TAG) Request That PSS Consider Realignment of the Analysis Groups (AGs) to the Decadal Survey (DS) Structure**

Dr. Greeley explained that the initial charge of the TAG was to look at the AGs to see how they might be merged. It was subsequently suggested that perhaps all of the AGs could be aligned with the DS. This was received lukewarmly by some of the AG chairs and PSS members, as the AGs have evolved as community-based activities centered on specific objects and would not match well with the DS. However, Dr. Greeley was asked to raise the issue with PSS to determine if such a realignment would make sense.

Dr. James Bell asked if there had been a specific proposal put forward for realignment; there was not one. Dr. Green explained that the DS had committees and a steering committee, and the idea was to align in a similar manner. Dr. Sanjay Limaye noted that the DS included Venus and Mercury together, which would present a number of challenges to an AG and does not seem practical.

Dr. Will Grundy said that any configuration will be imperfect. His preference is to have the AG structure differ from that of the DS in order to benefit from having another perspective. It was noted that the next DS could have a very different configuration. However, the issue remains that Mercury does not have an AG. When asked, the PSS membership did not identify any other problems with the current AGs.

Regarding Mercury, the Mercury community should have a voice in determining which AG is most appropriate. It was noted that the European Space Agency (ESA) will be launching a project in 2 years that will include NASA instrumentation through the Italians for Bepi-Colombo and that will be observing Mercury. The Mercury community is likely to grow with this project.

Dr. Louise Proctor agreed to talk to scientists in the Mercury community and report back to PSS at the next meeting on their ideas about the most appropriate AG. Dr. Greeley will report to the TAG that PSS feels the existing structure of the AGs is appropriate and that there is a consensus *not* to overhaul the AGs to align with the DS.

### **PSD Response to the Decadal Survey**

PSD drafted 41 individual responses to DS recommendations and sought PSS input. The 41 draft responses were divided among the PSS members without regard to their backgrounds or interests. PSS members were encouraged to look at all of the responses. The meeting reviewed the PSS comments for each response.

For Responses 1-6, Dr. Bell, Dr. Julie Castillo, and Dr. Thomas Cravens were the reviewers. Dr. Cravens was not present, but sent his comments to Dr. Greeley electronically in advance.

1. Dr. Cravens said in his remarks that for missions with higher technical risks, pre-mission investment in relevant technology and/or extended Phase A/B missions might help prevent cost overruns. Dr. Bell agreed, as this was the case with Juno. It was also agreed that an option to delay is appropriate.

2. Dr. Bell addressed the DS statement regarding maintaining a balanced mix of flagships and other projects. A widely held view is that the DS actually ranks priorities among the flagships, Discovery, and New Frontiers missions, which could conflict with the DS's stated intention of seeking a balanced mix. He asked PSD for clarification on that issue. The question arose as to what constitutes balance. Dr. Green said that balance is a mix of large, medium, and small missions, with recognized contributions from each. However, the enhanced cost cap can elevate the importance of New Frontiers and Discovery in the field. If there is a problem in the budget or a change that affects the flagships, this elevation becomes a reality. Dr. Limaye observed that some flagships can bring in international collaboration. Dr. Green agreed and said that the current administration strongly supports that. Strong ESA collaboration is enabling Mars research, for example.

3. Regarding the Discovery program, Dr. Bell had an issue of terminology. The DS refers to planetary science and space-based telescopes, but the PSD response only mentions remote observation of solar system bodies. Dr. Bell wanted to know whether extra-solar planetary missions would qualify as allowed projects. Dr. Green said explained the division of extra-solar research between PSD and the Astrophysics Division (APD). APD does extra-solar planet work, which affects PSD activities in this area. Dr. Green did not interpret the DS as saying that PSD should look at extra-solar planets in Discovery. Having related work in APD opens up new mission opportunities in the Explorer program for extra-solar planet research. The benefit for the community is new funding sources in two areas. Dr. Bell continued to see a disconnect. Dr. Greeley suggested that the PSD response outline the current structure of PSD and APD as a matter of clarification. Dr. Green agreed.

4. On the topic of extended missions, Dr. Bell said that it seemed like there is potential for the senior review process to be imposed upon the community without considering other concerns. He discussed the issues involved in, for example, making an active mission team to defend its activities at a critical time in the mission. He would like language acknowledging the need to accommodate active mission teams with time issues. Dr. Green agreed and said he would modify the statement.

5. Dr. Bell had no comment on this response, which dealt with Stand Alone Mission of Opportunities Notices (SALMON). Dr. Castillo asked if it would be possible to facilitate increased participation of U.S. scientists on SALMON calls by extending the calls. Dr. Green explained that SALMON has five parts to it, one of which is the participating scientist portion. To do a SALMON call, an investigator has to be able to be accepted based on expertise and background that enhances the science. Those proposals that have won in past have been endorsed

by international projects that want participation of scientists who have the right expertise. Their participation brings back leverage to other scientists.

6. There were no comments.

7. Dr. John Grant reacted to the relationship between key science questions and those in Chapter 3 of the DS. He fears that PSD may be limiting itself by aligning too closely to the Chapter 3 questions. Dr. Green said that he would reword the response to make the language broader.

8. This item addressed the New Frontiers program. Dr. Grundy said that the point about launch vehicle costs transfers risk from the proposer to NASA. He wanted to see language about how NASA plans to manage the risk. Dr. Green said that he would add that, noting that it is something they keep studying. PSD wants to lower costs and is working with providers to do that. However, PSD will not buy just anything, for the funds are precious.

9. Dr. Grant generally agreed with the response, which addressed New Frontiers candidates, but wondered about revisiting these candidates, as suggested. Dr. Green said that there is a Congressional requirement for a midterm review of what is expected versus what is in the plan. The Division looks to the Academy to provide community consensus, and therefore goes back to them.

10. This item addressed the Mars flagship mission. Dr. Grant generally agreed with the response, but noted that the DS states that the best way to maintain a partnership with ESA is to descope jointly and equitably. However, the DS is a NASA document and NASA cannot impose the descope on ESA, which has its own constraints and requirements. Dr. Green agreed. To move forward, there needs to be collaboration that focuses on a Mars sample return (MSR).

11. On the topic of the Europa orbiter flagship, Dr. Bill McKinnon said that the working group is looking at some strongly descoped options. He did not like the language about funding and priority. The DS is clear that this is the number two priority. The response leaves out the possibility of a descoped Europa mission. Dr. Green said that he will change the sentence to refer to “as funds allow. He anticipates that the budget situation will at some point become better, so he wants to frame the discussion in those terms.

12. This point addresses potential flagship missions. Dr. Grant suggested a wording change. The potential flagship missions are prioritized up to a point, then alphabetized; Dr. Green said he will state that they are unprioritized. Dr. Limaye suggested a mention of the Venus flagship mission, which Dr. Green will study. Dr. McKinnon recommended adding language such as “should funds become available.”

13. Dr. Limaye wanted to say that NASA will pursue partnerships to reduce costs and move forward. Dr. Green agreed, but noted that PSD does seek to align with others, and asked that PSS not take lack of that specific statement as meaning that this was not occurring.

14. There were no comments on this item.

15. Regarding priorities under reduced budgets, Dr. Limaye suggested specifying international collaboration. There were no other comments.

16. Regarding the Titan Saturn mission, Dr. McKinnon suggested removing the words “somewhat unique.” Dr. Proctor thought the response seemed vague. This is a deferred flagship mission, and she saw no indication of a commitment from NASA to do it. Dr. Green said he would adjust the wording.

17. This item discusses future flagship technology development. Dr. Johnson pointed out some dangling language. Dr. Limaye noted that there are some unique needs in this area.

18. The question here is moving ahead without DOE. There is clear Congressional support for NASA in this area but, as Dr. Green noted, it is not clear whether DOE will re-enter the picture at some point or whether NASA will go it alone. It was suggested that PSD specify the types of missions that benefit from having Pu-238. Dr. Green agreed.

19. Dr. Proctor agreed with the response on this item, which addressed R&A funding, though she wanted to know if there would be further discussion. Dr. McKinnon thought the recommendation should be stronger. He noted that the National Science Foundation has a triage system that has been proven effective. Dr. Green said that a similar system was to be discussed later in the meeting. The recommendation from PSD is to not do anything drastic. There is a need to know potential outcomes.

Regarding the recommended budget increases, Dr. AnnaLouise Reysenbach thought the response required wording changes to move some technology under technology development and reduce some of the strain. Dr. McKinnon suggested adding that if funds become available, PSD will seek to implement the DS recommendations. Dr. Green agreed. He was unable to take hard look at some of the specific funding transfers discussed previously, and will be seeking their advice. Dr. Green also agreed to change “cap” to “maintain.”

Regarding increasing the budget steadily, Dr. Proctor said that the DS did not make a case for the increase beyond suggesting that more is good. She noted that there were wording issues regarding the \$200 million current budget for R&A. Dr. McKinnon thought that keeping the budget steady or increasing it would be healthy, and he would like to see a statement that, should funds become available, PSD will seek to implement the DS recommendations. Dr. Green agreed. There was a question about the extent to which the \$200 million was meant to be stable, and whether there might be a spreadsheet approach. Dr. Green did not have time to do a spreadsheet, but said he would look at that.

20. The discussion of planetary data systems addressed each paragraph separately. Dr. Proctor thought the first paragraph was very good. It was not clear what the last sentence meant, however, and she asked for clarification. Dr. Green said that this sentence was meant to address archiving and grandfathering of old data. He agreed to make it clearer. Dr. McKinnon asked if PSD meant to imply that future projects would not have a contractual obligation to provide high-level data products. Dr. Green said that he would expect those products to be delineated and funded.

The second paragraph was fine. In the third paragraph, Dr. Proctor would like to see examples of continuations. Dr. Grundy said that there is value in the peer review papers being made available to the public. In response, it was pointed out that an open access experiment is planned but has not begun. There is not funding to permit all grantees access, however. An interagency group is looking at this. Another suggestion was to add a sentence about future missions being required to present data in archive format.

21. In the item on funding for derived data products, Dr. Proctor thought the discussion of cost caps on derived data was unclear. NASA might want clarification for the DS on this topic, as it is not clear that what is suggested really serves NASA well in regard to products that might not be that useful. Dr. Reysenbach suggested changing the wording to “encourage” rather than “mandate.” Dr. Green did not believe the DS meant this to cover everything. Dr. Proctor suggested wording to identify the most important data products ahead of time. It was agreed that the response should be reworked.

22. There were no comments on this response, which addressed education and outreach funding.

23. Dr. Proctor thought that the response, dealing with ground-based observations, was fine, though the DS recommendation struck her as vague. Dr. McKinnon thought the response was good. There was discussion of where certain projects were funded between PSD and APD, which Dr. Green explained. The response will be adjusted to reflect that.

24. This item addressed suborbital platforms. Dr. Proctor noted that the DS says little about this, and is unclear, with no recommendation regarding instrument priorities. She wondered if this could be included in the technology discussion. Dr. McKinnon agreed. Dr. Limaye suggested that the response be reworded. This is an issue for the next decade for the Outer Planets Assessment Group (OPAG). Amateurs have done much of the monitoring. This should be done at a higher level, using balloon platforms, and merits discussion in PSD. Dr. Green said that a balloon format would be ideal, but the investment into that platform would require funds and a relook at other priorities. PSD hardly uses rockets compared to other divisions, which does warrant an examination by PSS in terms of the funding needed to make it viable. OPAG will continue addressing this.

25. Regarding the Deep Space Network (DSN), Dr. Charles Shearer said that the response seemed reasonable. Dr. Paul Steffes was concerned PSD did not identify the science role of DSN. He agreed to send Dr. Green an e-mail with suggested wording.

26. This item discussed the advisory group for returned samples. Dr. Shearer said that NASA already has an advisory group that provides much of this information, the Curation and Analysis Planning Team for Extra-Terrestrial Materials (CAPTEM). He suggested that the CAPTEM chair and others look at this. Dr. Green said that PSD did not get the inputs necessary to create the right response and had an update that it planned to send out.

27. The response on sample curation costs was well-stated. Dr. Shearer is also interested in long-term sample-receiving issues and costs, especially regarding Mars and whether the costs are built into the mission.

28. Regarding technology development for the Mars sample return facility, Dr. Shearer said that the input of CAPTEM is important. The response should emphasize the quickest pathway of releasing samples to the community. There will be a need to develop a more mature infrastructure to examine and analyze the returned samples. NASA should address the time when the potential use for the facility will wane and the samples may be advanced to other communities. He assumes the samples will be sent to the Johnson Space Center (JSC) eventually. He asked if this has been planned. Dr. Green said that the response is a bit dated. There is a draft of a plan, but PSD is in the midst of the process, and community input is vital. PSD will improve the answer and contact CAPTEM.

29-32. Dr. Shearer said that he concurred with the responses for items 29 through 32, dealing with technology development. However, programs like this need well-defined goals and milestones to make them efficient while encouraging innovation. The only other comment on these items was that the response should mention the Office of the Chief Technologist, to leverage other investments across the Agency.

33. In discussion of the Advanced Stirling Radioisotope Generator, Dr. Dawn Sumner thought that the response was good. However, it was noted that it lacks details regarding DOE/PSD cooperation. Dr. Green said that the cooperation is excellent.

34. Dr. Sumner did not think the response addressed the actual recommendation, which was to expand the investment program. She made wording suggestions requesting more investment.

35. Regarding system investments, Dr. Sumner had problems with the second sentence, which was unclear. Dr. Green said that the answer was probably too vague and planned to address the issue.

36. This response, on facilitating new technologies, was acceptable. There was a suggestion to remove the term “flagship” and add more specific language.

37. Dr. Sumner said that the response addressing MSR technology was fine on the surface, but there is not sufficient funding for it. Dr. Green replied that three technologies have been selected. There is a 30-year timeframe, and PSD is looking at this, as is ESA. There is a need to have a plan to identify the technologies for development.

38. This item discusses technology for a high radiation environment. Dr. Mark Sykes said the response was not clear. He asked that PSD state where NASA is in this area and where the Agency is likely to go, given likely investments.

39. On the topic of balanced programs, Dr. Sykes said that more clarification would be useful.

40. Regarding instrument technology development, Dr. Sue Smrekar suggested a wording change from “highest” to “high” in the last part of the sentence, as this has been problematic in the past.

41. For the final item, expanding the affordability of instruments, Dr. Sykes said it was not clear if this applies to defined missions or if it is broader. Dr. Green agreed, and said that PSD will still invest in the low Technology Readiness Levels (TRL) instruments, as well as the higher TRL instruments.

#### *General comments*

Dr. Castillo observed that the Discovery program takes a great deal of time and lots of resources. She asked how this program will impact the participating scientific community workforce. Dr. Green replied that PSD does not tell the centers or community to limit proposals or pace themselves on proposals. He is interested in ideas from PSS, but competition should tell the centers which direction to take. The evaluation process selects the best proposals and moves on. It was added that it is up to the community to decide how they invest their time and resources.

Dr. Bell asked if the \$200 million figure is not post-rephasing. Dr. Green said that it refers to what is full cost, including personnel costs. The idea of rephasing is to prevent a situation in which Congress could implement a rescission. PSD created a budget and wants to execute it. This is a pre-rephasing budget. PSD will provide clarification.

Regarding the response process, the goal is to get revised response through the Science Mission Directorate (SMD) by the end of July. To that end, PSD will send a revision to PSS within 2 weeks. PSS members were asked to respond quickly.

#### **Government Performance and Results Act (GPRA)**

Dr. Phil Crane of PSD explained that there were five GPRA science questions, in which PSS is asked to evaluate PSD’s performance. The members will be asked for a score on a color-coded scale. PSS members were sent materials delineating highlights suggested by the science group. PSS can suggest other examples.



This evaluation is done every year and the results go to high levels of the government. The suggestions are not meant to be exclusive or inclusive, and not all programs gave input. PSS is to vote on PSD's performance based on what they know of field and division results.

The color codes are: Green – expectations were fully met in context of resources invested; Yellow – notable or significant shortfall accompanied by good scientific results in some areas; Red – major disappointments or shortfalls in scientific outcomes, uncompensated by other, positive results.

The period officially covers FY11, from October 2010 to October 2011, but in fact it covers early summer of 2010 to early summer of 2011, due to the exigencies of obtaining scientific information for the report. The cut-off date is the end of July.

1. *The inventory of solar system objects and identify the processes in and among them.* The Near-Earth Objects Wide-field Infrared Survey Explorer (NEOWISE) results are suggested as an example of progress in this field. Dr. Greeley said that more information is needed, and he asked Dr. Crane to go to program managers for more examples, because this question addresses not just inventory but also processes. Dr. McKinnon noted that the outer solar system is missing from the entire document. Everything should be represented. He will send outer-planet suggestions to Dr. Crane.

PSS membership agreed to give this objective a Green.

2. *Understand how the sun's family of planets, satellites, and minor bodies originated and evolved.* Research from the Cosmo-chemistry Program has changed how scientists calculate the dates of the solar system and radically affects the way the nebulae evolved to their present state. Dr. Crane read a number of research findings and noted that there several pages of examples.

PSS membership agreed to give this objective a Green.

3. *Understand the processes that determine the history and future habitability of environments on Mars and other solar system bodies.* The Astrobiology Institute provides an example of how they can now link Mars climate cycles to gully geological deposits and dating. This research was done by a graduate student funded through the NASA Earth and Space Science Fellowship (NESSF) program.

Dr. Greeley suggested that the examples be expanded, as considerably more work had been done than was reported. Dr. Crane agreed to incorporate some of the suggestions. He added that it is helpful to receive pictures along with text, so that PSD can demonstrate to the lay public that the projects did occur and produced real results.

PSS membership agreed to give this objective a Green, with the additions discussed.

4. *Understand the origin and evolution of Earth's life and the biosphere to determine if there is or ever has been life elsewhere in the universe.* Seven examples were included.

PSS membership agreed to give this objective a Green.

5. *For near objects, identify and characterize small bodies and the properties of planetary environments that pose a threat to terrestrial life or provide exploitable resources.* The exploitable resources clause is new this year and can be on other than small bodies. The Near-Earth Objects (NEO) Program results provide the examples for this objective. It was suggested that Dr. Crane include results from the Lunar Reconnaissance Orbiter (LRO) and Wide-field Infrared Survey Explorer (WISE).

PSS membership agreed to give this objective a Green, with revisions as suggested.

Jennifer Kearns of NASA noted that the final writing team is more likely to include examples if there are good images to go with them.

### **Two-Step Proposal/Review Process**

Dr. Bernstein began by observing that there has been considerable discussion about the science community being overtaxed in terms of both writing and reviewing proposals. There was also discussion earlier in the meeting about adapting NSF's proposal triage system. At NASA, the Earth Science Division has a two-step proposal process, starting with a required Notice of Intent of several pages in which proposers explain what they want to do. A panel conducts a rapid review of these short proposals, and determines which rank lowest, in the bottom 20-25 percent, and have no chance of being selected for funding. Those proposers are discouraged from writing a full proposal. Dr. Bernstein would like to pilot-test this process in PSD.

There are two ways to do this. One is to make it binding, so that those with the lowest scores in Step 1 cannot submit full proposals (Step 2). But rather than preventing them from proposing, Dr. Bernstein preferred the option of strongly discouraging those who were unanimously determined to be at the bottom in Step 1. They could still submit in Step 2, which would be a review of the full proposals, as is currently done, only with fewer proposals as a result of Step 1.

The idea is to discourage the bottom 20-25 percent, saving them from writing full proposals and saving reviewers the task of looking at proposals that will never receive funds. The downside is that those proposers would not get much of an evaluation, with less information than they currently receive. Those submitting full proposals would receive a full evaluation. This will only work for those programs with a low selection rate, and it assumes that a significant portion of those with a low ranking will not submit full proposals. Budgets are impacting selection rates, making them even lower, so this might be a good time to try this.

Dr. Castillo praised the idea, which came up previously in a survey of the community. It was noted that the bad proposals are the easiest to eliminate and go quickly at a review panel. Dr. Bernstein agreed, but noted that at that point, most of the work has been done. The proposer has put in the effort to write the full proposal, and five reviewers have read and commented on it. The concern was raised that reviewers will spend considerable time on borderline three-page proposals in Step 1. Dr. Bernstein said they will only eliminate the obvious ones. If there is any hesitation, those proposers should submit.

One idea is to take the NOIs already in for this year to use for the pilot. Dr. Bernstein proposed grading them to see how many have the lowest grade. He would later compare the prediction against the results of a real review. His idea is that if a program receives over 100 proposals and only selects 6, removing 20-25 would not even approach the top tier.

Dr. Sykes thought this was a good idea and suggested trying it for one or two programs in order to obtain data. Dr. Greeley asked about the timetable for the pilot. Dr. Bernstein wanted to try it in FY12. He has talked to program officers and is looking for volunteers. Those under budget pressure with low selection rates are strong candidates. The Astrobiology Program officer is interested. In terms of assessment criteria for the end of the pilot, Dr. Bernstein will want to report back the number of Step 1 proposals, the number of Step 2 proposals, and reports from the panel as to whether they felt the system was less work. If the discussion in the panels is just as full, that is a data point.

Many things could go wrong. For example, there could be a glut of Step 1 proposals. If they go from 100 to 130 proposals, that might be a failure. On the other hand, the system could be beneficial in that there might be more creative Step 1 proposals. He will write to the proposers for their feedback and determine the impact of the Step 1 feedback.

The pilot has to be nonbinding. Dr. Grant suggested a blind test in which Step 1 evaluations would be compared against full evaluations to see if there is validity in evaluating the short proposals. This would provide additional metrics, and Dr. Bernstein could see if the lowest ranking 25 percent of the proposals would be the same in both groups. Although it could create a short-term increase in work, it would only be for two programs. Dr. Greeley suggested announcing it at scientific meetings, and recommended that the Step 1 evaluators for the pilot be the previous panel group chiefs.

Dr. Greeley told Dr. Bernstein to put together a formal plan that addresses these issues. Dr. Bernstein asked for more guidance on sending out the letters. Dr. Proctor recommended doing this in FY12, so that a successful pilot could be taken further in FY13 when Dr. Bernstein has supporting data. She was concerned with a situation in which prolonged testing would delay implementation.

Dr. Grant noted that these budgets are not stable from year to year. Some years, program officers may have less funding than normal and can anticipate a lower selection rate. Dr. Bernstein

proposed creating a table of funds that carry over, to use as a data selection activity. He will bring that back to PSS with an estimated selection rate.

### **Additional Discussion**

Dr. Greeley asked Dr. Green for an update on the Astrobiology program. Dr. Green explained that Dr. Michael New, a Discovery program scientist who worked hard and very successfully on that program, had been putting in very long hours. While under the burden of this heavy workload, Dr. New sent out a rather blunt e-mail that was subsequently posted online and attracted much publicity. Dr. Green reviewed some of the related facts. He explained that the Exobiology program took a 50 percent budget cut several years ago, and has slowly been building up again. As of June 21, the program had dispersed only 49 percent of its R&A funds. This lagged FY10 by 6 weeks. There is a need to get these funds out. Regarding the Outer Planets Research selection rate, PSD was holding back and doing a conservative selection. There was a plan for 8 percent, but it is now 20 percent with the FY11 budget approved and those funds released. The Exobiology program is therefore behind, and Dr. Green asked for some understanding of Dr. News' situation. Nonetheless, the funds are not being obligated fast enough, and PSD does not want to face possible rescission by Congress. This will require a lot of work.

Dr. Greeley said that another item is that PSS previously sought a table of review panel dates. This is generally not released in advance, but PSS would like to know the months in which review panels will occur. Dr. Bernstein will get that to PSS in the next week.

Dr. Greeley thanked PSS for their responses to the DS, and asked those who had not yet provided electronic input to send it to him and Dr. Green. Similarly, on the GBRA, he asked that they send that information by the end of the week.

PSS has no activities scheduled until the November 2-3 meeting at Headquarters. This is after the NASA Advisory Council (NAC) Science Committee meets; PSS meetings normally precede NAC meetings. Dr. Green said that PSD may need PSS guidance as the budget picture shifts.

Dr. Castillo asked for an update on the 2018 Mars program. Dr. Green said that there has been much technology progress, and roles and responsibilities have been delineated. The Mars Exploration Program Analysis Group (MEPAG) recently had a very successful meeting in Europe, and the process going forward is now clear. ESA will make some decisions on NASA's commitment. The Industrial Policy Committee (IPC) agrees on the 2016 and 2018 missions from a financial perspective.

In the absence of closing remarks, the meeting was adjourned.

### **Webex attendees**

James

Bell

ASU

Max	Bernstein	NASA
Julie	Castillo	JPL
Barbara	Cohen	Marshall
Dominick	Conte	Orbital Sciences
Philip	Crane	NASA HQ
John	Grant	Smithsonian
Ronald	Greeley	AZ State University
Jim	Green	NASA HQ
Will	Grundy	Lowell Observatory
Eric	Hand	Nature
Gregory	Herzog	Rutgers University
Jeff	Johnson	APL
Jennifer	Kearns	NASA
Sanjay	Limaye	University of Wisconsin Madison
Eric	Mahr	Aerospace Corporation
William	McKinnon	Washington University
Michael	New	NASA HQ
Sarah	Noble	NASA
Adriana	Oscamo	NASA HQ
Louise	Proctor	APL
Miriam	Quintal	Cal Tech
Mike	Reddy	NASA HQ
Kim	Reh	JPL
AnnaLouise	Reysenbach	Portland State University
Samuel	Rodarte	MIT
Amy	Scott	AAU
Charles	Shearer	University of New Mexico
Elizabeth	Sheley	ZanTech
Amy	Simon	Goddard
Sue	Smrekar	JPL
Paul	Steffes	GA Institute of Technology
Dawn	Sumner	UC Davis
Amy	Svitak	Aviation Week
Mark	Sykes	Planetary Science Institute
George	Tahu	NASA
Gregg	Vane	JPL
Richard	Vondrak	Goddard
George	Xenofos	NASA Johnson