

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

DIVISION ON ENGINEERING AND PHYSICAL SCIENCES
SPACE STUDIES BOARD

Committee on NASA Science Mission Extensions
Meeting #2: March 2-4, 2016

NAS Beckman Center
100 Academy Way
Irvine, CA 92617
Newport Room

Wednesday, March 2, 2016

OPEN SESSION

8:00 am	<i>Room opens (breakfast available in the dining room)</i>	
8:30 am	Meeting convenes; opening remarks	Victoria Hamilton and Harvey Tananbaum, Co-Chairs
9:00 am	The Planetary Science Senior Review	Clive Neal, University of Notre Dame
10:00 am	The Astrophysics Senior Review	Andy Boden, Caltech, and Rebecca Oppenheimer (via WebEx), American Museum of Natural History
11:00 am	<i>Break (15 minutes)</i>	
11:15 am	The Earth Sciences Senior Review	Guosheng Liu, Florida State University
12:15 pm	<i>Working lunch in dining room; discussion continues</i>	
1:00 pm	IBEX Extended Mission	Nathan Schwadron, University of New Hampshire
2:00 pm	GALEX Extended Mission	Christopher Martin, Caltech
3:00 pm	<i>Break (15 minutes)</i>	
3:15 pm	DSN Missions Services	Chuck Scott, JPL
4:15 pm	Voyager's Extended Mission	Ed Stone, Caltech
5:15 pm	Final Remarks	

5:30 pm *Meeting suspends*

6:30 pm Working dinner at **Roy's Newport Beach**

453 Newport Center Drive
Newport Beach, CA 92660
Phone: (949) 640-7697

8:30 pm *Meeting adjourns for the day*

Thursday, March 3, 2016

OPEN SESSION

8:00 am *Rooms opens (breakfast available in the dining room)*

8:45 am Meeting convenes; opening remarks

9:00 am **Terra Extended Mission**

Kurt Thome,
NASA Goddard Space Flight Center

10:00 am **GRACE Extended Mission**

Byron Tapley,
University of Texas

11:00 am *Break (15 minutes)*

11:15 am **Earth Science/Heliophysics Extended Mission Proposals**

Tom Woods,
(via WebEx), LASP

12:15 pm *Working lunch in dining room; discussion continues*

1:00 pm **Cassini Extended Mission**

Linda Spilker, JPL
(Or Scott Edgington)

2:00 pm **Spitzer Extended Mission**

Tom Soifer,
Caltech

3:00 pm *Break (15 minutes)*

3:15 pm TBD

TBD

COMMITTEE WILL GO INTO CLOSED SESSION

5:30 pm *Meeting adjourns for the day*

Friday, March 4, 2016

OPEN SESSION

**Note committee will probably be in closed session the entire day*

8:00 am	<i>Rooms opens (breakfast available in the dining room)</i>	
8:30 am	Meeting convenes; opening remarks	
9:00 am	TBD	TBD
10:00 am	TBD	TBD
11:00 am	<i>Break (15 minutes)</i>	
11:15 am	Discussion continues	TBD
12:15 pm	<i>Working lunch; discussion continues</i>	
12:30 pm	<i>Meeting adjourns</i>	

Statement of Task

The NRC will appoint an ad hoc committee to conduct an assessment of the scientific value of extended missions in the overall program of NASA's Science Mission Directorate (SMD). The committee's report will provide recommended guidelines for future NASA decision-making about such mission extensions. In conducting this study, the committee could address the following questions:

1. Historically, what have been the scientific benefits of mission extensions? How important are these benefits (for example, benefits that might only accrue during the extended mission phase but not earlier)?
2. What is the current SMD Senior Review process for extending missions--for example, how are reviews chartered and conducted, by whom, and using what criteria? What should be division dependent and what should be uniform across the Directorate?
3. The NASA Authorization Act of 2005 requires biennial Senior Reviews for each mission extension. Is this biennial time period optimal for all divisions? Would a longer or shorter time period between reviews be advantageous in some cases?
4. Does the balance currently struck between starting new missions and extending operating missions provide the best science return within NASA's budget? That is, how much of an acceleration of new mission initiation could realistically be achieved by reallocating resources from mission extensions to new programs, compared to the corresponding scientific loss from terminated or diminished mission extensions?

5. Are there innovative cost reduction approaches that could increase the science cost-effectiveness of extended missions? Are there any general principles that might be applied across the board or to all of the missions for an individual science theme or a particular class? Are there alternative mission management approaches (e.g., transfer to an outside technical or educational institution for training or other purposes) that could reduce mission costs during extended operations and continue to serve SMD's science objectives?

The following information is provided for any members of the general public who may be in attendance:

This meeting is being held to gather information to help the committee conduct its study. This committee will examine the information and material obtained during this, and other public meetings, in an effort to inform its work. Although opinions may be stated and lively discussion may ensue, no conclusions are being drawn at this time and no recommendations will be made. In fact, the committee will deliberate thoroughly before writing its draft report. Moreover, once the draft report is written, it must go through a rigorous review by experts who are anonymous to the committee, and the committee then must respond to this review with appropriate revisions that adequately satisfy the Academy's Report Review committee and the chair of the NRC before it is considered an NRC report. Therefore, observers who draw conclusions about the committee's work based on today's discussions will be doing so prematurely.

Furthermore, individual committee members often engage in discussion and questioning for the specific purpose of probing an issue and sharpening an argument. The comments of any given committee member may not necessarily reflect the position he or she may actually hold on the subject under discussion, to say nothing of that person's future position as it may evolve in the course of the project. Any inference about an individual's position regarding findings or recommendations in the final report are therefore also premature.

Last updated: February 18, 3:00 PM