



169th MEETING OF THE AERONAUTICS AND SPACE ENGINEERING BOARD

June 7, 2022

Hybrid Meeting

In Person at the NASEM Keck Center, 500 5th Street NW, Washington, DC 20001, Room 100

Online via Livestream

ALL TIMES IN US EASTERN DAYLIGHT TIME (UTC-4:00)

AGENDA

TUESDAY, JUNE 7, 2022

OPEN SESSION

Open to Public Viewing

Livestream Link: <https://livestream.com/accounts/7036396/events/10440911>

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| 11:30 AM | Welcome | <i>Dr. Ilan Kroo, ASEB Chair</i> |
| 11:35 AM | Update and Discussion with NASA Aeronautics Research Mission Directorate (ARMD)
<i>Introduced by Dr. Ilan Kroo, ASEB Chair</i>
(40 minute presentation & 20 minute discussion period) | <i>Mr. Robert Pearce, Associate Administrator, ARMD, NASA</i> |
| 12:35 PM | Break
<i>(60 minute break period)</i> | |
| 1:35 PM | Panel 1: Sustainable Aviation and Carbon Neutrality
(10 minute presentations & 40 minute discussion period)
Panel Description: The United States released the U.S. Aviation Climate Action Plan in 2021, setting out to achieve net-zero greenhouse gas emissions from the U.S. aviation sector by 2050. Under the Sustainable Flight National Partnership, NASA is leading federal agencies and industry to accelerate the development of sustainable technologies. This panel will discuss progress and advances in achieving a net-zero aviation sector, developments and innovations in sustainable aviation technology, and future avenues of research in aviation carbon neutrality.
<i>Panel Introduced by Dr. Darryll Pines, ASEB Member</i>
Panelists: <i>Dr. Zia Abdullah, Laboratory Program Manager, National Renewable Energy Laboratory, Office of Bioenergy Technologies, DOE</i>
<i>Dr. Tim Lieuwen, Professor, Aerospace Engineering, Georgia Tech</i>
<i>Dr. Peter Nowobilski, Senior Advisor, Hydrogen and eFuels, BP</i>
<i>Dr. Roger Martella, Chief Sustainability Officer, General Electric Company</i> | |
| 3:45 PM | <i>Open Meeting Adjourns</i> | |



JOINT SPRING MEETING

AERONAUTICS AND SPACE ENGINEERING BOARD (169th Meeting)
and SPACE STUDIES BOARD (184th Meeting)

WEDNESDAY, JUNE 8, 2022

Hybrid Meeting

In Person at the NASEM Keck Center, 500 5th Street NW, Washington, DC 20001, Room 100

Online via Livestream

ALL TIMES IN US EASTERN DAYLIGHT TIME (UTC-4:00)

AGENDA

WEDNESDAY, JUNE 8, 2022

OPEN SESSION

Open to Public Viewing

Livestream Link: <https://livestream.com/accounts/7036396/events/10440911>

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| 11:00 AM | Welcome and Opening Remarks | <i>Dr. Margy Kivelson, SSB Chair /
Dr. Ilan Kroo, ASEB Chair</i> |
| 11:05 AM | NASA's Moon to Mars Strategy
<i>Introduced by Dr. Margy Kivelson, SSB Chair</i>
(40 minute presentation & 20 minute discussion period) | <i>Dr. Kurt "Spuds" Vogel, Director of Space
Architectures, Office of the Administrator, NASA</i> |
| 12:05 PM | Update on Artemis Program
<i>Introduced by Dr. Ilan Kroo, ASEB Chair</i>
(20 minute presentation & 15 minute discussion period) | <i>Mr. Michael Sarafin, Artemis Mission Manager
ESDMD, NASA</i> |
| 12:40 PM | Break
(60 minute break period) | |
| 1:40 PM | Panel: Protecting the Electric Grid from Space Weather
(10 minute presentations & 40 minute discussion period)
Panel Description: The SSB is currently engaged in space weather workshops sponsored by NASA's Science Mission Directorate (SMD). This panel discussion will draw upon current understandings of space weather, the potential impact of adverse space weather on the electrical grid, opportunities to mitigate these impacts to existing and future infrastructure, and options for minimizing the time to recovery after an event.
Panel Introduced by Dr. Harlan Spence, SSB Member
Panelists: <i>Dr. Bill Radasky, Metatech Corporation</i>
<i>Dr. Anna Kelbert, Research Geophysicist, US Geological Survey</i>
<i>Mr. Bill Murtagh, Program Coordinator, Space Weather Prediction Center, NOAA</i>
<i>Dr. Jonathan Eastwood, Researcher, Imperial College London</i>
<i>Dr. David Boteler, Scientist, Canadian Hazards Information Service, National Resources Canada</i> | |



3:10 PM *Break*
(35 minute break period)

3:45 PM **James Webb Space Telescope: Engineering Challenges
and Solutions**
Introduced by Dr. Margy Kivelson, SSB Chair
(40 minute presentation & 20 minute discussion period)

***Dr. Eric Smith, Program Scientist,
JWST, NASA-HQ***

4:45 PM **Closing Remarks**

***Dr. Margy Kivelson, SSB Chair /
Dr. Ilan Kroo, ASEB Chair /
Dr. Colleen Hartman, ASEB and SSB Director***

5:00 PM *Open Meeting Adjourns*



184th MEETING OF THE SPACE STUDIES BOARD

JUNE 9-10, 2022

Hybrid Meeting

In Person at the NASEM Keck Center, 500 5th Street NW, Washington, DC 20001, Room 100

Online via Livestream

ALL TIMES IN US EASTERN DAYLIGHT TIME (UTC-4:00)

AGENDA

THURSDAY, JUNE 9, 2022

OPEN SESSION

Open to Public Viewing

Livestream Link: <https://livestream.com/accounts/7036396/events/10440911>

10:30 AM	Welcome	Dr. Margy Kivelson, SSB Chair
10:35 AM	Update and Discussion with NASA Science Mission Directorate (SMD) <i>Introduced by Dr. Margy Kivelson, SSB Chair</i> (55 minute presentation & 30 minute discussion period)	Dr. Thomas Zurbuchen, Associate Administrator, SMD, NASA
12:00 PM	<i>Break / Meeting Adjourns to Executive Session (2 hour 55 minute break period)</i>	
2:55 PM	Update from the Committee on Astronomy and Astrophysics <i>Introduced by Dr. Daniela Calzetti, SSB Member</i> (10 minute presentation & 5 minute discussion period)	Dr. Thomas Greene / Dr. Chris McKee, CAA Co-Chairs
3:10 PM	Update from the Committee on Solar and Space Physics <i>Introduced by Dr. Endawoke Yizengaw, SSB Member</i> (10 minute presentation & 5 minute discussion period)	Dr. Tuija Pulkkinen, CSSP Co-Chair
3:25 PM	Update from the Committee on Earth Science and Applications from Space <i>Introduced by Dr. Gregory Asner, SSB Member</i> (10 minute presentation & 5 minute discussion period)	Dr. Everette Joseph / Dr. Steven Running CESAS Co-Chairs



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| 3:40 PM | Update from the Committee on Astrobiology and Planetary Science
<i>Introduced by Dr. Darby Dyar, SSB Member</i>
(10 minute presentation & 5 minute discussion period) | Dr. Martha Gilmore,
CAPS Co-Chair |
| 3:55 PM | Break
(30 minute break period) | |
| 4:25 PM | Update from the Committee on Biological and Physical Sciences in Space
<i>Introduced by Dr. Erika Wagner, SSB Member</i>
(10 minute presentation & 5 minute discussion period) | Dr. Dava Newman,
CBPSS Co-Chair |
| 4:40 PM | Update from the Committee on Planetary Protection
<i>Introduced by Dr. Barbara Sherwood-Lollar, SSB Member</i>
(10 minute presentation & 5 minute discussion period) | Dr. Joseph Alexander / Dr. Amanda Hendrix,
CoPP Co-Chair |
| 4:55 PM | Update from European Space Sciences Committee (ESSC)
<i>Introduced by Dr. Margy Kivelson, SSB Chair</i>
(10 minute presentation & 5 minute discussion period) | Dr. Chris Rapley, Chair, ESSC |
| 5:30 PM | Open Meeting Adjourns | |



FRIDAY, JUNE 10, 2022

OPEN SESSION

Open to Public Viewing

Livestream Link: <https://livestream.com/accounts/7036396/events/10440911>

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| 1:00 PM | Welcome | <i>Dr. Margy Kivelson, SSB Chair</i> |
| 1:05 PM | Update from United States Space Force (USSF)
<i>Introduced by Dr. Margy Kivelson, SSB Chair</i>
(25 minute presentation & 15 minute discussion period) | <i>Mr. Nick Kamin, Manager, Science & Technology Programs, USSF</i> |
| 1:45 PM | Climate and Science Integration at NASA
<i>Introduced by Dr. Howard Singer, SSB Member</i>
(25 minute presentations & 15 minute discussion period) | <i>Dr. Katherine Calvin, Chief Scientist, NASA</i> |
| 2:25 PM | Break
<i>(35 minute break period)</i> | |
| 3:00 PM | Update from White House Office of Science and Technology Policy (OSTP)
<i>Introduced by Dr. Antonio Elias, SSB Member</i>
(20 minute presentation & 15 minute discussion period) | <i>Dr. Ezinne Uzo-Okoro, Assistant Director for Space Policy, OSTP</i> |
| 3:35 PM | Briefing on the Planetary Science and Astrobiology Decadal Survey 2022-2032
<i>Introduced by Mr. James Crocker, SSB Vice-Chair</i>
(50 minute presentation & 20 minute discussion period) | <i>Dr. Robin Canup / Dr. Phil Christensen, Decadal Co-Chairs</i> |
| 4:45 PM | Open Meeting Adjourns | |

