

# Space Weather Operations and Research Infrastructure: Workshop Part I\*

*The National Academies of*  
SCIENCES • ENGINEERING • MEDICINE

Space Studies Board

WebEx Event address for attendees who are not presenters or members of the organizing committee:  
<https://nasem.webex.com/nasem/onstage/g.php?MTID=e56262bedbbae52f118247fddfa3c9efb>

\*Part II is scheduled for Sept. 10-11, 2020, in-person in Washington DC if possible; virtual if not.

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## Part I: Virtual Workshop: June 16-17, 2020

*All Sessions Shown in Mountain Daylight Time (-1 PDT; +2 EDT)*

### June 16, 2020

08:15 **MDT** (07:15 PDT; 10:15 EDT)

**Welcome and Introductory Remarks from the Co-Chairs**

Janet Luhmann, UC Berkeley

Mary Hudson, NCAR/HAO and Dartmouth College

08:30 **Workshop Objectives and Review of U.S. and European SpaceWx Plans**

Tammy Dickinson, Science Matters Consulting, Session Chair

08:40 Discussions with Agency Sponsors (~ 15 min each)

- NOAA (Elsayed Talaat, NESDIS)
- NASA (Jim Spann, HPD)
- NSF (Mike Wiltberger, GEO/AGS-Geospace)
- Q&A

09:40 U.S. National Plans (10-15 min per speaker)

- Space Weather Operations, Research, and Mitigation (SWORM) -- Mike Bonadonna, OFCM
- National Space Weather Strategy and Action Plan (NSWSAP) -- Bill Murtagh, NOAA SWPC
- EMP R&D Priorities -- Adam Balkcum, Office of Science and Technology Policy (OSTP)
- Q&A

10:30 **Break**—30 min

11:00 ESA's Space Weather Network Plans (inc. L5)

- Juha-Pekka Luntama, Head of Space Weather, Space Situational Programme Office, ESA ESOC
- Q&A

11:25 DoD Perspectives

- Rachel Hock-Mysliwiec, Air Force Research Laboratory
- Q&A

11:50 **Brunch/Lunch**—40 min

12:30 **National Priorities**

Bill Murtagh, NOAA SWPC, Session Chair

12:40 Human spaceflight/Human exploration (Moon/Mars)

John Allen, Program Executive for Crew Health and Safety, NASA

01:00 Power grid, Reliability Standards

Joe McClelland, Director, Office of Energy, Federal Energy Regulatory Commission (FERC)

01:20 Space Traffic Management and Space Situational Awareness

Kevin O'Connell, Director, Office of Space Commerce, DOC

01:40 Roundtable Discussions with Session Presenters

02:00 **Current and planned operational requirements**

- Doug Biesecker, NOAA SWPC
- Q&A

02:25 **Break**—15 min

### **Sectors and Applications-I**

VADM Conrad Lautenbacher, CEO, GeoOptics, Session Chair

02:40 Electric power

Mark Olson, Senior Engineer and Manager, Reliability Assessments at North American Electric Reliability Corporation (NERC)

03:00 Satellite operations

Steve Jolly, Director & Chief Engineer, Commercial Civil Space Lockheed Martin Space Systems Company

03:20 Commercial aviation

Mike Stills, Aviation Subject Expert; Director, Flight Dispatch (Network Operations)

03:40 Roundtable Discussions with Session Presenters

04:00 **Japan's SpaceWx Plans** (7:00 am on June 17 in Tokyo) 30 min total

- Mamoru Ishii, Director, National Institute of Information and Communications Technology (NICT), Space Weather Forecast Center, Japan.
- Q&A

04:30 **Adjourn for the Day**

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## **June 17, 2020**

08:00 **MDT (07:00 PDT; 10:00 EDT)**

### **Plans for the Day**

Janet Luhmann and Mary Hudson, cmtee co-chairs

08:15 **Sectors and Applications-II**

VADM Conrad Lautenbacher, CEO, GeoOptics, Session Chair

08:20 Human exploration and radiation

Eddie Semones, Space Radiation Analysis Group, NASA JSC

08:40 Space Weather Effects on Communications

Mark MacAlester, HQ DHS

09:00 PNT-reliant industries  
Susan Skone, University of Calgary, Canada

0920 Arctic  
Bob McCoy, Director, Geophysical Institute, University of Alaska

09:40 Roundtable Discussions with Sectors and Applications Presenters

10:00 **Break/Breakfast/Bruch/Lunch**

11:00 **Sessions on Strategic Knowledge and Observation Gaps**

**Solar and Heliospheric Physics**

Janet Luhmann, UC Berkeley, Session Chair

11:10 Solar polar and far side measurements  
Todd Hoeksema, Stanford Univ.

11:30 IMF Bz at L1  
Pete Riley, PSI Inc.

11:50 L5 measurements  
Mark Gibbs, UK Met Office

12:10 L4 measurements  
Nat Gopalswamy, NASA GSFC

12:30 Solar cycle  
Lisa Upton, NCAR/HAO

12:50 Roundtable Discussions with Session Presenters

01:10 **Break**

01:30 **Geospace**

Mary Hudson, NCAR/HAO and Dartmouth College, Session Chair

01:40 Inner magnetosphere measurements  
Drew Turner, JHUAPL

02:00 Low altitude measurements gaps--Particles (POES/DMSP)  
Delores Knipp, CU

02:20 Low altitude measurements gaps—Fields

Brian Anderson, JHUAPL

02:40 Ionosphere measurement gaps

Tim Fuller-Rowell, CIRES

03:00 Thermosphere measurement gaps, satellite drag

Eric Sutton, CU

03:20 Roundtable Discussions with Presenters

03:40 Committee and invitees review workshop and discuss interim activities,  
and plans for the September 10-11, 2020 workshop (likely virtual)