



2026 Space Weather Workshop Agenda

Embassy Suites by Hilton Boulder, 2601 Canyon Blvd, Boulder, CO 80302 and neighboring Hilton Garden Inn

Theme – *Space Weather & Society: Transforming Services & Science to Meet User Needs*

Times in MDT

Monday, April 27	Pre-Workshop Events
8:00 AM – 10:00 AM	I-ALiRT Ground Station (by invitation only) Location: “Royal Arch”
9:00 AM – 10:30 AM	SWORD External Advisory Committee Meeting (by invitation only) Location: “Enchanted Mesa”
9:00 AM – 5:00 PM	<u>Second Annual Space Weather R2O2R Meeting</u> (public, in-person only) Location: Pearl St. Ballroom LEFT “Walnut” and CENTER “Mall”
10:00 AM – 12:00 PM	<u>User Readiness for Space Weather Data from NOAA Satellite Programs</u> Location: Pearl St. Ballroom RIGHT “East-West”
12:00 PM – 2:00 PM	National Security Breakout Session (by invitation only) Location: “Royal Arch”
1:00 PM – 5:00 PM	<u>Mini-Workshop: DHS Space Weather Benchmarks Update for Critical Infrastructure</u> Location: Pearl St. Ballroom RIGHT “East-West”
1:00 PM – 2:10 PM	Coordination Group for Meteorological Satellites (CGMS) Improving Data Access: Steps to improve user access to space weather observation data Location: “Foothills”
2:00 PM – 4:00 PM	Forecaster Discussion on Methods and Standards (by invitation only) Location: “Enchanted Mesa”
2:15 PM – 3:40 PM	International: ISES Internal Meeting (by invitation only) Location: “Foothills”

3:45 PM – 4:45 PM **WMO-ISES-COSPAR Coordination Team (WICCT) / International Space Weather Coordination Forum (by invitation only)**
Location: “Foothills”

3:00 PM - 5:00 PM **Student Program (for students and invited participants)**
Location: “Royal Arch”

5:30 PM - 7:30 PM **Networking Session for Registered Space Weather Workshop Participants**
Location: [NCAR Mesa Lab](#) – Limited round-trip transportation between Embassy Suites and Mesa Lab will be provided on a first come/first serve basis

NOTE: **Selected Poster Lightning Talks are incorporated into sessions throughout the week**

Tuesday, April 28 Location: Pearl St Ballroom

8:15 AM - 8:30 AM **Welcome and Opening Remarks**
Howard Singer NOAA SWPC, Chair
Anne Johansen, NSF Geosciences Directorate
Joe Westlake, NASA Heliophysics
Clinton Wallace, NOAA Space Weather Prediction Center (SWPC)

8:30 AM - 10:00 AM **National Resilience in Space Weather: Government and Industry Perspectives (Part 1)**
Co-Chairs: Clinton Wallace, NOAA SWPC
Elsayed Talaat, Universities Space Research Association (USRA)

8:30 AM - 8:35 AM **Session Overview and Introductions**
Clinton Wallace, NOAA SWPC

8:35 AM - 8:45 AM **Space Weather and Critical Infrastructure Resilience**
James Platt, National Security Council (NSC), Executive Office of the President (EOP)

8:45 AM - 8:55 AM **White House Office of Science and Technology (OSTP) Policy**
Charlie Powell, OSTP

8:55 AM - 9:05 AM **Reengaging the Space Weather Advisory Group: Priorities for the Next Phase**
Tammy Dickinson, Science Matters Consulting

9:05 AM - 9:15 AM **NASA Heliophysics: Charting the Frontier and Serving Society**
Joe Westlake, NASA Heliophysics

9:15 AM - 9:25 AM **Space Weather at the National Weather Service: Operations, Priorities, and Partnerships**
Ken Graham, NOAA NWS

9:25 AM - 10:00 AM **Panel & Audience Discussion**

10:00 AM - 10:45 AM **Break and Poster Session**

- 2:20 PM - 2:40 PM** **Sensing and Attribution**
Lt Col McQuone, SPACECOM
Tracy Copp, USSF
Aleida Higginson, NASA GSFC
- 2:40 PM - 3:00 PM** **Panel & Audience Discussion**
- 3:00 PM - 3:45 PM** **Break and Poster Session**
- 3:45 PM - 5:30 PM** **Operational Impacts and Mitigation of Space Weather on Aviation Operations**
Co-Chairs: Rondeau Flynn, Coalition of Airline Pilots Associations (CAPA)
Krista Hammond, UK MET Office
- 3:45 PM - 3:55 PM** **Session Overview and Introductions**
Rondeau Flynn, CAPA
- 3:55 PM - 4:05 PM** **Bridging Space Weather and Aviation: The UK Solar Aviation Radiation Monitoring Programme**
Krista Hammond, UK MET Office
- 4:05 PM - 4:15 PM** **NAIRAS Model: New Aviation Radiation Capabilities, Products, and Validation**
Christopher Mertens, NASA Langley Research Center
- 4:15 PM - 4:25 PM** **An Application for Specifying Space Weather Radiation Impacts to Aviation using Real-Time REACH data**
Janet Green, The Aerospace Corp
- 4:25 PM - 4:35 PM** **Delta Air Lines: Safety Risk Assessment and Procedural Updates for Space Weather Hazards**
Stephanie Klipfel, Delta Airlines (Met)
Chris Schwartz, Delta Airlines (Flight Control)
- 4:35 PM - 4:45 PM** **ARDOSE: A radiation information tool for air crews**
Ben Hogan, Space Environment Technologies
- 4:45 PM - 4:55 PM** **Poster Lightning Talks**
- [Toward Operational Readiness: A Conceptual Framework for Real-Time Space Weather Impact Reporting and Test Capability Within the FAA](#)
Michael Cook, MITRE Corporation
- [Data assimilation of Ground-based VLF Sensors for Spatially Resolved D-region HF Absorption Maps](#)
James Cannon, University of Colorado Boulder
- [Upgraded Neutron Monitor-Based Alert System for Ground-Level Enhancements](#)
Pierre-Simon Mangeard, University of Delaware
- 4:55 PM - 5:30 PM** **Panel & Audience Discussion**

Wednesday, April 29 Location: Pearl St Ballroom

8:15 AM - 8:30 AM **Today's Space Weather Forecast + O&A**
Liz Butler, NOAA SWPC

8:30 AM - 10:00 AM **Challenges in the LEO Satellite Environment (Part 1)**
Co-Chairs: Tzu-Wei Fang, NOAA SWPC
Linda Parker, USRA

8:30 AM - 8:35 AM **Session Overview and Introductions**
Tzu-Wei Fang, NOAA SWPC

8:35 AM - 8:50 AM **Solar Activity Forecasting at SWPC from Days to Decades**
Mark Miesch, CU CIRES and NOAA SWPC

8:50 AM - 9:05 AM **Thermospheric Density Nowcasting and Forecasting**
Ching-Chung Cheng, University of Colorado Boulder

9:05 AM - 9:20 AM **Physics and Data-Driven Probabilistic Drag Modeling for Resilient LEO Operations**
Piyush Mehta, West Virginia University

9:20 AM - 9:35 AM **Updates of OSC's Atmospheric Drag Validation Project**
David Vallado, COMSPOC

9:35 AM - 9:50 AM **NESDIS Commercial Data Program Overview and Status**
Marc Gasbarro, NOAA NESDIS

9:50 AM - 10:00 AM **Poster Lightning Talks**

[HASDM-Sol: a Machine-learned Model of Thermospheric Density Trained on Two Solar Cycles](#)
Alexander Lozinski, Space Environment Technologies

[Modeling SEP Transport and Geomagnetic Cutoffs in Geospace from Magnetopause to LEO](#)
Valeriy Tenishev, NASA Marshall Space Flight Center

[State uncertainty quantification of forecast errors and horizontal winds in VLEO](#)
Dhruv Jain, Kayhan Space

10:00 AM – 10:45 AM **Break and Poster Session**

10:45 AM - 12:00 PM **Challenges in the LEO Satellite Environment (Part 2)**
Co-Chairs: Tzu-Wei Fang, NOAA SWPC
Linda Parker, USRA

10:45 AM -11:00 AM **Operational Challenges from Space Weather**
Ryan Shepperd, Iridium

- 11:00 AM -11:15 AM** **Development of Rapid Analysis Orbit Decay Tools with Applications to the Hubble Space Telescope**
Abram Aguilar, NESC, a.i. Solutions, Inc.
- 11:15 AM - 11:30 AM** **AFRL Initiatives in Understanding and Utilizing the LEO Environment**
Shawn Young, Air Force Research Laboratory
- 11:30 AM -11:45 AM** **Scientific and Operational Applications of the REACH Constellation**
Alex Boyd, The Aerospace Corporation
- 11:45 AM -12:00 AM** **Space Weather Impacts on Launch Operations**
Joseph Minow, NASA Langley Research Center
- 12:00 PM - 1:30 PM** **Lunch and Other Activities:**
- **Student Program Lunch** (for students and invited participants)
Location: “Royal Arch”
Organizers: Vincent Ledvina, University of Alaska Fairbanks
Carina Alden, The Catholic University of America
- 1:30 PM - 3:00 PM** **Space Weather Dynamics at MEO and GEO: Impacts, Hazards, and Mitigation**
Co-Chairs: Janet Green, Aerospace
Nicole Duncan, BAE Systems Inc.
- 1:30 PM - 1:35 PM** **Session Overview and Introductions**
Nicole Duncan, BAE Systems Inc.
- 1:35 PM - 1:45 PM** **Observation System Simulation Experiment (OSSE) Approach for Assessing NOAA’s Space Weather Observations from GEO**
Irfan Azeem, NOAA Office of Space Weather Observations
- 1:45 PM - 1:55 PM** **Helio Today: Automated Space Weather Forecasting for Enhanced Orbital Resilience**
Larisa Krista, HelioPhysics
- 1:55 PM - 2:05 PM** **SIRE2 Capabilities to Support Natural Space Environment Anomaly Assessments and Operations: SIRE2-Archive and SIRE2-Now**
Jonathan Fisher, Fifth Gate Technologies
- 2:05 PM - 2:15 PM** **Industry-User Space Weather Needs for GEO and MEO Space Systems**
Neal Nickles, BAE
- 2:15 PM - 2:25 PM** **Japanese Current and Future Plan of Space Weather Monitoring From Satellites**
Mamoru Ishii, National Institute of Information and Communications Technology
- 2:25 PM - 2:35 PM** **Space Weather Needs for the Evolving Spacecraft Operations Domain**
Dave Pitchford, SES Satellites
- 2:35 PM - 2:50 PM** **Panel & Audience Discussion**
- 2:50 PM - 3:00 PM** **Poster Lightning Talks**

[Spacecraft Environment Discharges in the Geostationary Environment: Radio Signatures and Relationship to Plasma Population and Geomagnetic Indices](#)

Todd Anderson, Los Alamos National Laboratory

[C-SWIM: A Coupled Space Weather Impact Model for Satellite Fleet Vulnerability and Economic Loss Under a 1-in-100-Year Solar Energetic Particle Event](#)

Dennies Bor, George Mason University

3:00 PM - 3:45 PM

Break and Poster Session

3:45 PM - 5:15 PM

Integrating Space Weather into Emergency Planning

Co-Chairs: Shawn Dahl, NOAA SWPC

Tiana Farrant, Department of Interior (DOI) Emergency Management

3:45 PM - 3:50 PM

Session Overview and Introductions

Shawn Dahl, NOAA SWPC

3:50 PM - 4:02 PM

Helping Emergency Management be Space Weather Ready

Shawn Dahl, NOAA SWPC

4:02 PM - 4:14 PM

Space Weather Preparedness at DOI; Early Insights From a Recent TableTop Exercise

Tiana Farrant, DOI EM

4:14 PM - 4:26 PM

Space Weather an Integral Part of Mitigation Planning and Daily Preparedness in North Dakota

Eric Upton, North Dakota Emergency Management

4:26 PM - 4:38 PM

New York City EM Considerations and Planning

Marta Krawczynski, New York City Emergency Management

4:38 PM - 4:50 PM

The Storm Above: Communicating Space Weather's Earthly Impacts

Jen Carfagno, The Weather Channel

4:50 PM - 4:56 PM

Poster Lightning Talks

[Solar Shenanigans: Space Weather Event Preparedness and Practice in Aotearoa New Zealand](#)

Jonathan Hanson, Earth Sciences New Zealand

[The Role of International Partners in Ground Support for Space Weather Missions at L1](#)

David Fritz, NESDIS/SWO

4:56 PM - 5:15 PM

Panel & Audience Discussion

7:00 PM - 9:00 PM

Banquet and After-Dinner Presentation

Capturing the Storm: Space Weather Data and Aurora Photography

MaryBeth Kiczenski, Millersville University, Space Weather and Environment (SWEN), and Aurorasaurus

Introduction: Jim Spann, NOAA NESDIS

Thursday, April 30

Location: Pearl St Ballroom

- 8:15 AM - 9:45 AM** **Space Exploration: Enabling Safe Human & Robotic Exploration of the Moon**
Co-Chairs: Jinni Meehan, Lockheed Martin
Sabrina Savage, NASA
- 8:15 AM - 8:25 AM** **Session Overview and Introductions**
Jinni Meehan, Lockheed Martin
Sabrina Savage, NASA
- 8:25 AM - 8:30 AM** **Orion Spacecraft**
Rob Chambers, Lockheed Martin
- 8:30 AM - 8:35 AM** **Space Radiation Analysis Group Artemis II Support**
Steve Johnson, NASA SRAG
- 8:35 AM - 8:40 AM** **Space Weather Prediction Center Artemis II Analyst Activities**
Monty Spencer, NOAA SWPC
- 8:40 AM - 8:45 AM** **Commercial Lunar Payload Services (CLPS) Program**
Don Kuettel, Intuitive Machines
- 8:45 AM - 8:50 AM** **Artemis Deployed Instrument: DUSTER**
David Malaspina, CU-LASP
- 8:50 AM - 8:55 AM** **Artemis Mission Science Objectives**
Noah Petro, NASA GSFC
- 8:55 AM - 9:35 AM** **Panel & Audience Discussion**
- 9:35AM - 9:45 AM** **Lightning Talks**
TBD
- 9:45 AM - 10:30 AM** **Break and Poster Session**
- 10:30 AM - 11:45 PM** **Space Exploration: Enabling Safe Human & Robotic Exploration of Mars and Beyond**
Co-Chairs: Gina DiBraccio, NASA
Yari Collado-Vega, NOAA NESDIS
- 10:30 AM - 10:37 AM** **Session Overview and Introductions**
Gina DiBraccio, NASA
Yari Collado-Vega, NOAA NESDIS
- 10:37 AM - 10:47 AM** **An Overview of the Mars Space Environment and Space Weather Effects**
Dave Brain, CU Boulder
- 10:47 AM - 10:54 AM** **WSA Modeling Support for the Safe Exploration of Cislunar, Mars, and Heliosphere**
Nick Arge, NASA GSFC

- 10:54 AM - 11:01 AM** **Preparing for Earth-Independent Operations with the Mars Space Weather Dashboard**
Phil Chamberlin, CU Boulder
- 11:01 AM - 11:08 AM** **Real-time support for NASA missions at Mars by NASA GSFC's Moon to Mars Space Weather Analysis Office**
Mary Aronne, NASA GSFC
- 11:08 AM - 11:15 AM** **ESCAPADEs as Sentinels at Mars: What they Will Do and Could Do to Support Space Weather Monitoring and Prediction**
Rob Lillis, University of California, Berkeley
- 11:15 AM - 11:35 AM** **Panel & Audience Discussion**
- 11:35 AM - 11:45 AM** **Poster Lightning Talks**
- [Solar Spectral Irradiance \(SSI\) from the CORONAL DENSITY and TEMPERATURE \(CODET\) model: applications for studying Earth and Mars atmospheres](#)
Jenny Rodríguez-Gómez, The Catholic University of America and NASA GSFC
- [Analyzing MSL/RAD Measurements to Understand the Space Weather at Mars](#)
Bent Ehresmann, Southwest Research Institute
- [Observations of E>13 MeV Solar Proton Events at Mars During Solar Cycles 24 & 25](#)
Christina Lee, University of California, Berkeley
- 11:45 AM - 1:15 PM** **Lunch and Other Activities:**
- **SWPC Tour #2** (for those pre-registered for the tour, bus located between the Embassy Suites and Garden Inn)
 - **Bulk Electric System Product Transformation Meeting** (by invitation only)
Location: "Foothills"
 - **Coordination Group for Meteorological Satellites (CGMS)/ISES Coordination Meeting** (by invitation only)
Location: "Enchanted Mesa"
 - **Student Networking** (for students and invited participants)
Location: "Royal Arch"
- 1:15 PM - 2:45 PM** **Managing Space Weather Risks to the Bulk Electric System (Part 1)**
Co-Chairs: Bob Arritt, Electric Power Research Institute (EPRI)
Josh Rigler, United States Geological Survey (USGS)
- 1:15 PM - 1:20 PM** **Session Overview and Introductions**
Bob Arritt, EPRI
- 1:20 PM - 1:30 PM** **GMD from the NERC Perspective, Regulation and Observations from Recent Storms**
Mark Olson, North American Electric Reliability Corporation (NERC)
- 1:30 PM - 1:40 PM** **Transmission Owner Experience with GIC Monitoring & Blocking**
Chris Colson, Western Area Power Administration (WAPA)

- 1:40 PM - 1:50 PM** **GIC Impacts and Operational Mitigation in Alberta: Insights from the January 2026 Geomagnetic Storm**
Hannah Parry, University of Alberta
- 1:50 PM - 2:00 PM** **PowerWorld and the Integration of Harmonic Analysis**
Tom Overbye, Texas A&M (PowerWorld)
- 2:00 PM - 2:05 PM** **New GMD Modeling Software Tool**
Bob Arritt, Electric Power Research Institute (EPRI)
- 2:05 PM - 2:15 PM** **Integrating the GMD tools with the North American Energy Resilience Model (NAERM) modeling and analysis system**
Michael Brown, Pacific Northwest National Laboratory (PNNL)
- 2:15 PM - 2:25 PM** **Poster Lightning Talks**
- [Factors controlling large amplitude geomagnetically induced currents and voltages: US power grid and submarine cables](#)
Michael Hartinger, Space Science Institute
- [Climatological Survey of Geomagnetically Induced Current Waveforms near Virginia, USA](#)
Bhagyashree Waghule, University of Colorado Boulder
- 2:25 PM - 2:45 PM** **Panel & Audience Discussion**
- 2:45 PM - 3:30 PM** **Break and Poster Session**
- 3:30 PM - 4:30 PM** **Managing Space Weather Risks to the Bulk Electric System (Part 2)**
Co-Chairs: Bob Arritt, EPRI
Josh Rigler, USGS
- 3:30 PM - 3:35 PM** **Session Overview and Introductions**
Josh Rigler, USGS
- 3:35 PM - 3:45 PM** **Aotearoa New Zealand, Continuing R2O2R Space Weather Grid Impacts**
Chris Taylor, Transpower NZ
Daniel MacManus, University of Otago, NZ
- 3:45 PM - 3:55 PM** **Geomagnetic Hazard Investigations for Canadian Northern Power Networks**
David Boteler, Natural Resources Canada
- 3:55 PM - 4:05 PM** **The NOAA-USGS Geoelectric Model: Supporting Resilience in the Electric Power Sector against Space Weather**
Jordon Guerra, CU CIRES and NOAA SWPC
- 4:05 PM - 4:15 PM** **Data Density, Polarization, and Distortion: Magnetotelluric data collection in the Eastern U.S. to support more realistic Surface Electric Field Models**
Paul Bedrosian, U.S. Geological Survey (USGS)
- 4:15 PM - 4:30 PM** **Panel & Audience Discussion**

- 4:30 PM - 5:30 PM** **Special Presentations: Advancing Sun - Earth Science and Space Weather Prediction to Safeguard the Bulk Electric System and National Infrastructure**
Co-Chairs: Jim Spann, NOAA NESDIS
Michele Cash, NASA
- 4:30 PM - 4:35 PM** **Session Overview and Introductions**
Jim Spann, NOAA NESDIS
Michele Cash, NASA
- 4:35 PM - 4:45 PM** **Imaging Space Weather Across the Solar System with PUNCH**
Craig DeForest; Southwest Research Institute
- 4:45 PM - 4:55 PM** **Coronal images and solar wind measurements from the SOLAR-1 mission at L1**
Dimitrios Vassiliadis; NOAA Space Weather Observations
- 4:55 PM - 5:05 PM** **Space Weather Science to Enhance Forecasting with the IMAP Active Link for Real-Time (I-ALiRT) System**
Christina Lee; University of California, Berkeley
- 5:05 PM - 5:15 PM** **A New Perspective on Space Weather: Forecasting from Deep Space with Vigil**
Matthew West; European Space Agency
- 5:15 PM - 5:30 PM** **Panel & Audience Discussion**

Friday, May 1 Location: Pearl St Ballroom

- 8:30 AM - 10:00 AM** **Building the Space Weather Workforce of the Future**
Co-Chairs: Mike Wiltberger, NCAR
Rich Clark, Millersville University
Sepi Yalda, Millersville University
- 8:30 AM - 8:35 AM** **Session Overview and Introductions**
Rich Clark, Millersville University
- 8:35 AM - 8:45 AM** **Training the Next-Gen Space Weather Workforce for Public Engagement**
Tamitha Skov, Space Weather Woman
- 8:45 AM - 8:55 AM** **Training the Next Generation of Space Weather Modelers**
Dan Welling, University of Michigan
- 8:55 AM - 9:05 AM** **From Space Weather Forecasting to Decision Support - Preparing the Practitioners**
Robert Steenburgh, NOAA SWPC
- 9:05 AM - 9:15 AM** **Building an AI-Enabled Space Weather Workforce**
Barbara Thompson, NASA GSFC
- 9:15 AM - 9:25 AM** **Lessons from the SOARS REU Program**
Marrisa Vara, NCAR

- 9:25 AM - 9:35 AM** **Poster Lightning Talks**
- [Student internship opportunities at NOAA's Office of Space Weather Observations \(SWO\)](#)
 Nicholas Zaremba, NOAA Office of Space Weather Observations
[Measuring Space Weather Literacy: Development and Validation of a Space Weather Concept Inventory](#)
 Anthony Williams, Auburn University
- [Bridging Space Weather Operations and Local News](#)
 Tanya Melnik, Millersville University of Pennsylvania
- 9:35 AM - 10:00 AM** **Panel & Audience Discussion**
- 10:00 AM - 10:30 AM** **Break**
- 10:30 AM - 11:45 AM** **Monitoring and Predicting Space Weather Effects on Satellite Navigation**
 Co-Chairs: Jade Morton, CU
 Seebany Datta-Barua, Illinois Institute of Technology
- 10:30 AM - 10:35 AM** **Session Overview and Introductions**
 Jade Morton, CU
 Seebany Datta-Barua, Illinois Institute of Technology
- 10:35 AM - 10:45 AM** **Severe Mid-Latitude GPS Scintillation and Position Errors During the Recent Major Storms**
 Waqar Younas, Boston University
- 10:45 AM - 10:55 AM** **25 years of Ionospheric Modeling**
 Eric Altshuler, Sequoia Research Corp
- 10:55 AM - 11:05 AM** **Forecasting GNSS Scintillations at Low, Mid- and High Latitudes**
 Keith Groves, Boston College /Air Force Research Lab
- 11:05 AM - 11:15 AM** **WAAS Ionospheric Integrity Analysis**
 Rhiannon Griffin Sanchez, FAA
- 11:15 AM - 11:25 AM** **Poster Lightning Talks**
- [Longitudinal variation of ionospheric irregularities and response of the ionosphere during 10-13 May and 10-13 October 2024 geomagnetic storms](#)
 Valence Habyarimana, University of Michigan
- 11:25 AM - 11:45 AM** **Panel & Audience Discussion**
- 11:45 AM - 12:00 PM** **Closing Remarks**
 Howard Singer, NOAA SWPC
- Afternoon Side Meetings:**
- 1:00 PM - 4:00 PM** **International Space Weather Coordination Forum**
 Location: "Royal Arch"
 Note: see bottom of the linked page for remote participation

1:00 PM - 3:00 PM

ngGONG Discussion (by invitation only)
Location: "Enchanted Mesa"