Key components of our global infrastructure and economy are at risk from space weather. Modern society depends on reliable access to advanced technologies such as GPS, satellite communications, and a stable energy distribution network. No other natural occurring phenomenon has the potential to be so far reaching in its impact to mankind. Consequently, space weather mitigation strategies are being addressed by many nations. Meeting the space weather needs is beyond the capability of any single agency or country, and we recognize that society is best served by the ability of all nations and all sectors - public, private, and academic to work together as partners to meet our common goals to plan, prepare and respond to space weather storms.

The 2014 Space Weather Workshop will bring together the diverse elements of the space weather community. Representatives from research centers, the commercial space weather services sector, international organizations, and several federal government agencies will participate in a variety of sessions relevant to space weather. Topics include:

- The economic effects of geomagnetic storms on electric utilities, commercial aviation services and satellite navigation systems such as GPS.
- The international coordination of space weather activities from space weather service organizations around the globe.
- Advances in space weather modeling, and the emerging needs of the operational and forecasting community.
- The development and implementation of spacecraft and instruments of value for both research and operations.
- Recent research regarding solar cycles past and present and long term trends in space weather.

In addition to the plenary sessions there will be poster sessions and a roundtable discussion about growing the space weather enterprise. The roundtable consists of a panel represented by distinguished members of the public and private sectors. The Wednesday evening banquet will be held at the University of Colorado, Folsom Field Stadium Club and feature Fran Bagenal, Professor of Astrophysical and Planetary Sciences, Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder, presenting “A Romp Through the Outer Solar System.”

Space Weather Workshop 2014 is co-sponsored by the NOAA Space Weather Prediction Center, the NSF Division of Atmospheric and Geospace Sciences, and the NASA Heliophysics Division.

http://www.spaceweather.gov/sww
2014 Space Weather Workshop Agenda
Millennium Hotel Ballroom

Tuesday, April 8

8:30  Conference Welcome
      William Murtagh, NOAA/SWPC

8:40  Space Weather Morning Forecast
      SWPC Space Weather Forecasting Office

8:50  State of the Space Weather Prediction Center
      Brent Gordon, NOAA/SWPC

9:10  Solar Max – It’s Here, Finally
      Doug Biesecker, NOAA/SWPC

9:30 – 10:30  Geomagnetic Disturbances and the Electric Power Grid
Chair: William Murtagh, NOAA/SWPC

9:30  The Major Solar Eruptive Event in July 2012: Defining Extreme Space Weather Scenarios
      Daniel Baker, University of Colorado, Boulder

9:50  North American Electric Reliability Corporation (NERC) Geomagnetic Storm (GMD) Standards
      Frank Koza, PJM Interconnection

10:10 Establishing the Geomagnetic Disturbance Benchmark Event for Evaluation of the Space Weather Hazard on Power Grids
      Antti Pulkkinen, NASA

10:30  Break

10:50 – 11:50  Geomagnetic Disturbances and the Electric Power Grid, Continued
Chair: William Murtagh, NOAA/SWPC

10:50  Defense Threat Reduction Agency (DTRA) Magnetohydrodynamic (MHD)-E3 Phase IVB: Measured Harmonic Response of Power Grid Transformers Subjected to Severe E3/GIC Currents
      Amber Walker, Scientific Applications & Research Associates (SARA)

11:10 Progress and Challenges in Specifying Geomagnetic Activity for the Electrical Power Grid
      Chris Balch, NOAA/SWPC

11:30  FEMA and Space Weather
      L.A. Lewis, FEMA

11:50 – 12:00  Aviation and Space Weather
Chair: Robert Rutledge, NOAA/SWPC

11:50  Space Weather Ballooning
      Tony Phillips, Spaceweather.com
12:00  Lunch

1:00 - 2:30  Poster Session – Operational Space Weather Services and Analysis Tools and Magnetosphere Research and Applications

2:30 - 5:20  Aviation and Space Weather
Chair: Robert Rutledge, NOAA/SWPC

2:30  An Epidemiologic View of Low Dose Ionizing Radiation and Cancer: Putting Risk into Perspective
Alice Sigurdson, National Cancer Institute

3:00  Aircrew Dosimetry: Monitoring and Operational Services in France
Nicole Vilmer, Observatoire de Paris

3:20  WASAVIES: Warning System for Aviation Exposure to Solar Energetic Particles
Yuki Kubo, National Institute of Information and Communications Technology (NICT)

3:40  Progress Towards Maps of Ionizing Radiation at Altitude (MIRA): The new Civil Aeromedical Research Institute (CARI)-7 and Enhanced Solar Radiation Alert (ESRA)
Kyle Copeland, FAA

4:00  Break

4:20  A New Space Weather Index for Aviation
Matthias Meier, German Aerospace Center (DLR)

4:40  Health Standards for Long Duration and Exploration Spaceflight: Ethics Principles, Responsibilities, and Decision Framework
Ron Turner, Analytic Services Inc (ANSER)

5:00  Increasing Biological Hazards from Solar Energetic Particles and Galactic Cosmic Rays
Nathan Schwadron, University of New Hampshire

5:20  End of Session

5:45 - 7:45 pm  8th Annual SWPC - Commercial Space Weather Interest Group (CSWIG) / American Commercial Space Weather Association (ACSWA) Summit Meeting  (Invitation only)
Wednesday, April 9

8:30-8:40  Space Weather Morning Forecast
SWPC Space Weather Forecasting Office

8:40-10:10  Commercial Space Weather Interest Group (CSWIG)/
American Commercial Space Weather Association (ACSWA) Roundtable Session:
Growing the Space Weather Enterprise

Keynote Speaker:
Dr. Conrad C. Lautenbacher, Jr., Chief Executive Officer, GeoOptics, Inc.

Growing the Space Weather Enterprise: Roles and Contributions

Features Speakers:

Mr. William Murtagh, Program Coordinator, NOAA Space Weather Prediction Center (SWPC)
The View from SWPC: Utilizing the Diversity of the Commercial Space Weather Industry

Dr. Tamara L. Dickinson, Principal Assistant Director for Environment and Energy, Assistant
Director for Disaster Resilience and Space Science, Office of Science and Technology Policy (OSTP),
Executive Office of the President

The View from OSTP: Building and Coordinating the National Space Weather Strategy

Moderator and Organizer:  Dr. Devrie Intriligato, Director, Space Plasma Laboratory,
Carmel Research Center, Inc.

10:10  Break

10:30 - 12:10  Agency Activities
Chair:  Brent Gordon, NOAA/SWPC

10:30  Space Weather Research at the National Science Foundation
Richard Behnke, National Science Foundation

10:50  NASA Heliophysics Division
David Chenette, NASA

11:10  United States Air Force Weather Agency
Colonel David Bacot, USAF

11:30  National Weather Service
William Lapenta, NOAA/NWS/NCEP

11:50  National Environmental Satellite, Data, and Information Service (NESDIS)
Patricia Mulligan, NOAA/NESDIS

12:10  Lunch
1:00 - 3:00  Poster Session - Solar and Interplanetary Research and Applications

3:00–3:20  Special Presentation

3:00  Solar Terrestrial Relations Observatory (STEREO) as a “Planetary Hazards” Mission
Madhulika Guhathakurta, NASA

3:20 - 5:00  Space Weather Impacts: An Insurance Industry Perspective
Chair: Jason Reeves, Zelle Hofmann

Panelist
David Wade, Atrium
Reto Schneider, Swissre
Emma Rio, Swissre
Jason Reeves, Zelle Hofmann

5:00  End of Session

6:00 - 9:00  Reception Dinner at University of Colorado, Boulder – Folsom Field Stadium Club

   Special Guest Speaker:
   Fran Bagenal,
   Professor of Astrophysical and Planetary Sciences, Laboratory for Atmospheric and Space Physics,

   “A Romp Through the Outer Solar System”

   Folsom Field Stadium Club
   2400 Colorado Ave
   Boulder, CO 80302
Thursday, April 10

8:30 - 8:40  Space Weather Morning Forecast
SWPC Space Weather Forecasting Office

8:40 - 10:40  International Coordination of Space Weather Activities
Chair: Terry Onsager, NOAA/SWPC

8:40  A COSPAR/International Living With a Star (ILWS) Roadmap Towards Advanced Space Weather Science to Protect Society's Technological Infrastructure
Karel Schrijver, Lockheed Martin

9:00  WMO's Role in the Development of Space Weather Service Delivery Requirements for International Aviation
Ian Lisk, UK Met Office

9:20  WMO and Coordination Group for Meteorological Satellites (CGMS) Involvement in Space Weather
Jerome Lafeuille, WMO Space Programme

9:40  Space Weather Initiatives at the UN Committee on the Peaceful Uses of Outer Space
Mangala Sharma, U.S. Department of State

10:00  New International Space Environment Service (ISES) Website and Forecaster Discussion Tools
Sunhak Hong, Korean Space Weather Center

10:20  Advanced Forecast For Ensuring Communications Through Space (AFFECTS)- A Multi-Institution Research Project to Mitigate Space Weather Hazards
Jens Berdermann, German Aerospace Center (DLR)

10:40  Break

11:00 - 12:00  International Coordination of Space Weather Activities, Continued
Chair: Terry Onsager, NOAA/SWPC

11:00  Activities Related to Space-Weather Impact on Critical Infrastructures at the EC’s Joint Research Centre
Elisabeth Krausmann, European Commission

11:20  European Space Agency (ESA) Space Situational Awareness (SSA) Space Weather Services – Federated Service Concept
Juha-Pekka Luntama, European Space Agency

11:40  UK Government Progress to Build Resilience to Severe Space Weather
Mark Gibbs, UK Met Office

12:00  Lunch

1:00 - 2:30  Poster Session – Ionosphere/Thermosphere Research and Applications
3:00 - 5:00  Space Weather Modeling
Chair: Howard Singer, NOAA/SWPC

3:00  Whole-Atmosphere/Ionosphere Modeling at NOAA: Recent Progress and Plans
Rashid Akmaev, NOAA/SWPC

3:20  Forecasting Solar Flares: Status and Recent Developments
KD Leka, Northwest Research Associates

3:40  The Space Weather Modeling Framework (SWMF)-Geospace Capabilities for Transition to Operations
Tamas I. Gombosi, University of Michigan

4:00  Rapid, Low-Cost Prediction of Geomagnetic Perturbations from Real-Time Solar Wind Measurements
Daniel Weimer, Virginia Tech

4:20  Community Coordinated Modeling Center: Prototyping and Accelerating Implementation of Advanced Space Weather Models and Forecasting Systems
Masha Kuznetsova, NASA

4:40  Transitioning Research Models into Operations
George Millward, SWPC/NOAA

5:00  End of Session
Friday, April 11

8:30 - 8:40  Space Weather Morning Forecast
SWPC Space Weather Forecasting Office

8:40 - 10:20  Space Based Observations and Advances
Chair: Rodney Viereck, NOAA/SWPC

8:40  National Geophysical Data Center (NGDC)
Eric Kihn, NOAA/NGDC

9:00  Solar Energetic Particle Measurements Intercalibration Workshop: Today's Topics and Long-Term Goals
Juan Rodriguez, NOAA/NGDC

9:20  Solar Proton Events of Solar Cycle 24
Richard Mewaldt, Caltech

9:40  The Van Allen Probes and New Results Relevant to Space Weather
Harlan Spence, University of New Hampshire

10:00  Responsive Environmental Assessment Commercial Hosting (REACH) Demonstration
Dan Kimmich, USAF/ SMC/XR

10:20  Break

10:40 - 12:00  Space Based Observations and Advances, Continued
Chair: Doug Biesecker, NOAA/SWPC

10:40  Forecasting Daily EUV Solar Irradiance for Atmospheric Models
Rachel Hock, USAF AFRL

11:00  IMPACT: Integrated Modeling of Perturbations in Atmospheres for Conjunction Tracking
David Thompson, Los Alamos National Laboratory

11:20  Space Weather Observations from the GOLD Mission
Richard Eastes, University of Central Florida

11:40  COSMIC-2: A Platform for Advanced Ionospheric Observations
Paul Straus, Aerospace Corp.

12:00  Workshop Closing
Brent Gordon, NOAA/SWPC

12:10  End of Conference