



Update on PROSWIFT Act Space Weather Advisory Group

NASA Space Weather Council
August 24, 2022

Dr. Tamara Dickinson
President, Science Matters Consulting, LLC
Chair, Space Weather Advisory Group*
www.weather.gov/swag

*All opinions are my own and not those of the SWAG



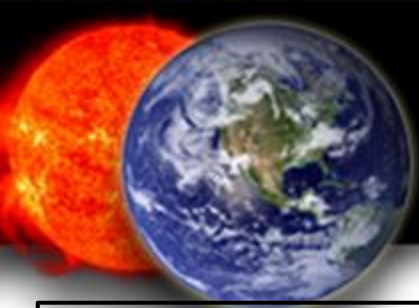
PROSWIFT Act - Space Weather Advisory Group (SWAG)

ESTABLISHED – In **2021** by **NOAA Administrator** ... informs the interests and work of **SWORM**

COMPOSITION - **appointed by SWORM**, *5 representatives of academic , commercial space weather, end user communities*

TERM LIMITS - 3 years terms, no more than 2 consecutive terms

CHAIR – chosen by NOAA Administrator, no more than 2 terms, regardless of whether the terms are consecutive



Committee Members

SWAG Nongovernmental End-User Representatives

Tamara Dickinson, SWAG Chair
Science Matters Consulting

Mark Olson
North American Electric Reliability Corporation

Michael Stills
United Airlines (retired)

Craig Fugate
One Concern (former FEMA Adm)

Rebecca Bishop
Aerospace Corp.

SWAG Commercial Sector Representatives

Jennifer Gannon
Computational Physics, Inc.

Conrad Lautenbacher
GeoOptics, Inc. (former NOAA Adm)

Seth Jonas
Lockheed Martin

Kent Tobiska
Space Environment Technologies

Nicole Duncan
Ball Aerospace

SWAG Academic Community Representatives

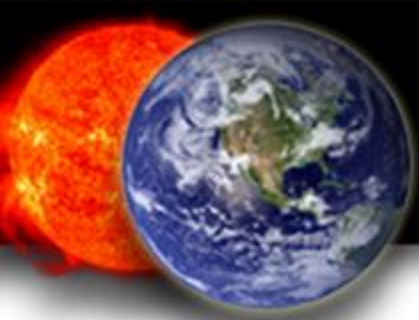
Tomas Gombosi
University of Michigan, Ann Arbor

Delores Knipp
University of Colorado, Boulder

Scott McIntosh
National Centers for Atmospheric Research

Heather Elliott
Southwest Research Institute

George Ho
Johns Hopkins University Applied Physics Laboratory

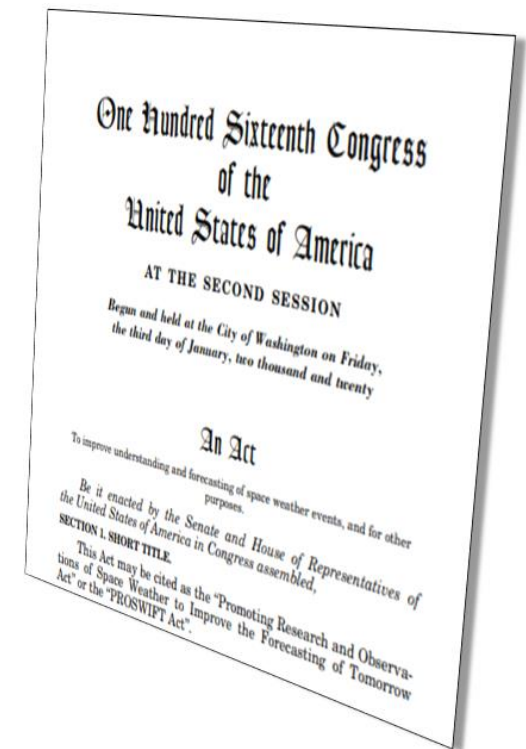


PROSWIFT Act - SWAG Duties

Advise White House SWORM Subcommittee on:

- Facilitating advances in the space weather enterprise of the US
- Improving the ability of the US to prepare for, mitigate, respond to, and recover from space weather phenomena
- Enabling the coordination and facilitation of R2O2R
- Developing and implementing the integrated strategy for coordinated observation

Conduct a comprehensive user needs survey of space weather products





SWAG Meetings

December 1, 2021 (virtual)

- Briefings by SWORM Co-Chairs (OSTP, NWS, DHS)
- PROSWIFT Act overview of SWAG duties
- Kicked off discussion of the user needs survey

March 17-18, 2022 (virtual)

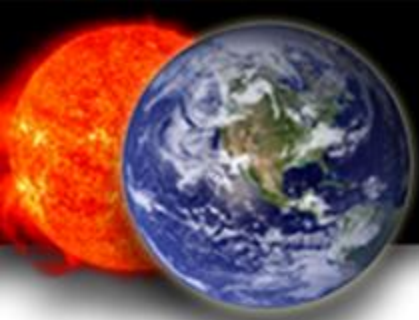
- Briefing by SWORM
- Defined user needs survey process and sectors
- Related activities - SW Roundtable and NASA SWC

Welcome!

- In accordance with section 60601 of the PROSWIFT Act - NOAA established the SWAG to advise the SWORM Interagency Working Group
- All 15 non-governmental representatives of the SWAG, were appointed by the SWORM Interagency Working Group with 3-year terms beginning on October 1
- Each SWAG member here today serves as a representative member to provide stakeholder advice reflecting the views of the entity or interest group they are representing. The PROSWIFT Act directs SWAG members to receive advice from the academic community, the commercial space weather sector, and space weather end users that will inform the interests and work of the SWORM





**For meeting information please visit:
www.weather.gov/swag**



SWAG Meetings

June 13-14, 2022 (virtual)

- Briefing by SWORM
- Briefing by user needs survey sector leads on process and survey questions
- Concurrence on user needs survey sectors survey process and questions
- Discussion on how to gather input to SWORM to update Space Weather Strategy



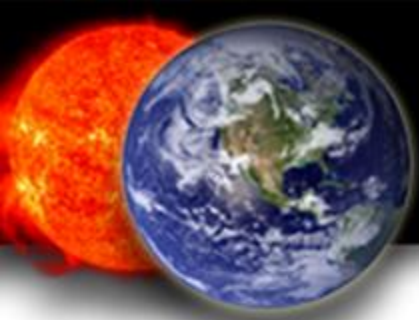
Welcome!

- In accordance with section 60601 of the PROSWIFT Act - NOAA established the SWAG to advise the SWORM Interagency Working Group
- All 15 non-governmental representatives of the SWAG, were appointed by the SWORM Interagency Working Group with 3-year terms beginning on October 1
- Each SWAG member here today serves as a representative member to provide stakeholder advice reflecting the views of the entity or interest group they are representing. The PROSWIFT Act directs SWAG members to receive advice from the academic community, the commercial space weather sector, and space weather end users that will inform the interests and work of the SWORM

2



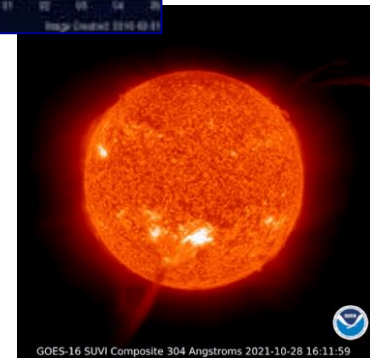
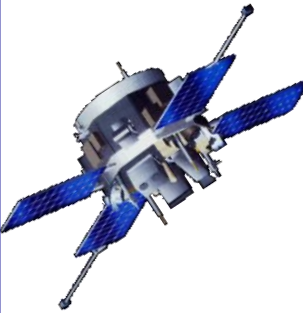
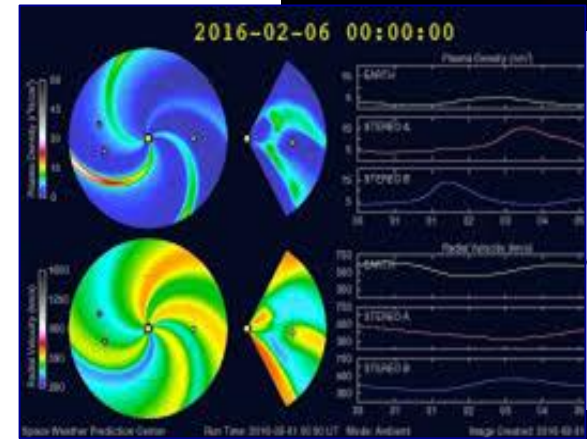
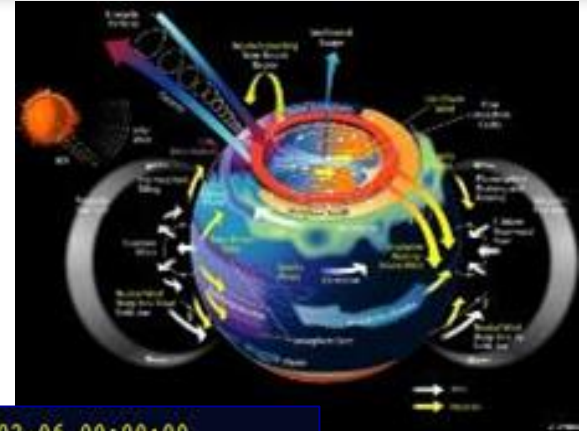
**For meeting information please visit:
www.weather.gov/swag**



PROSWIFT Act - User Survey

The comprehensive user needs survey of space weather products will identify:

- space weather research
- observations
- forecasting
- prediction
- modeling advances required to improve space weather products.

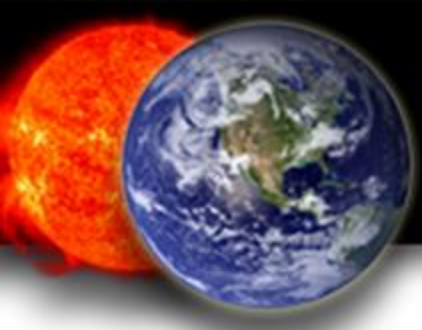




PROSWIFT Act - User Survey

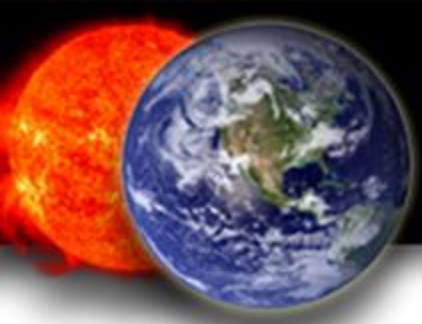
User Survey Requirements:

1. Assess the **adequacy of Federal Government goals** for lead time, accuracy, coverage, timeliness, data rate, and data quality for space weather observations and forecasting;
2. Identify options and methods to **advance the above goals**;
3. Identify **opportunities for collection of data** to address the needs of space weather users;
4. Identify methods to **increase coordination of space weather R2O2R**;
5. Identify opportunities for new technologies, research, and instrumentation to aid in understanding, monitoring, modeling, prediction, and warning of space weather; and
6. Identify methods and technologies to **improve preparedness** for space weather.



Survey Process Overview

1. Use one or more **space weather scenarios** to illustrate possible impacts
2. Use a set of **common questions** developed by SWAG in collaboration with NWS Social, Behavioral, and Economic Program
 - a. May have additional **sector specific questions**
 - b. Have questions reviewed by SWORM
3. **Space weather sectors to survey**
 - a. **Divide SWAG into sector specific subgroups**
 - b. Possibly do pilot on one or two sectors
4. **Develop sector specific plans to conduct user survey**
5. Assimilate results into **one or more products**



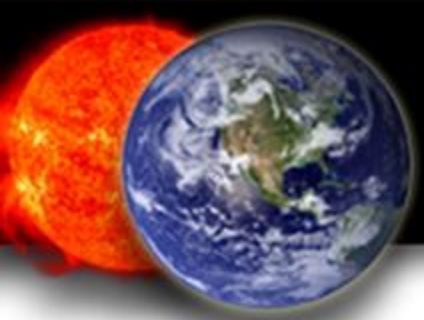
User Survey Sectors and Leads

- Electric Power Grid – Olson, Gannon, Jonas, Fugate
- *Satellite* – Duncan, Knipp, Lautenbacher, Ho
- Global Navigation Satellite System – Bishop, Gombosi, Stills, Jonas
- Aviation – Stills, Tobiska, Ho
- Emergency Management – Fugate, Jonas, Ho
- STM/SSA - Knipp, Bishop, Duncan, Tobiska, McIntosh
- *Radio Frequency Application (comms and Radar)* - Bishop, Fugate, Stills, Jonas
- Human space flight – Tobiska, Ho, Gannon
- *National Security* – Jonas, Ho, Gannon, Elliott
- Research – McIntosh, Knipp, Gombosi, Elliott , Jonas, Duncan



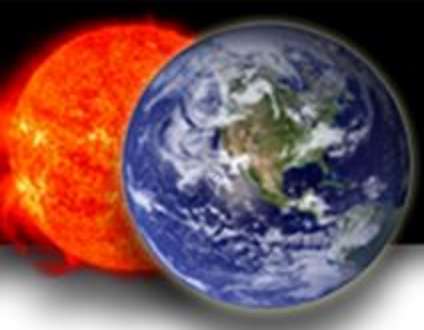
Baseline Topics

1. Current space weather observations, information, and forecasts utilized
2. Current technological systems or components affected by space weather
3. Current risk reduction and resilience activities
4. Future space weather information required (communication methods, observations, and forecast products (format, etc))
5. Future risk reduction and resilience activities
6. New or non-traditional sources of space weather data
7. Next generation technologies, research, instrument, and models to address space weather



User Needs Survey Open for Public Comment

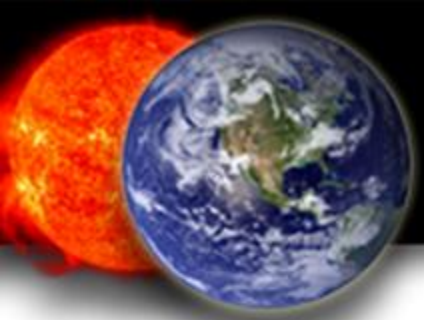
- Paperwork Reduction Act Notice
- General public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public's reporting burden.
- 60 day public comment period prior to submission to OMB. Closes Oct 17, 2022.
- There will be a second public comment period
- [Federal Register :: Agency Information Collection Activities; Submission to the Office of Management and Budget \(OMB\) for Review and Approval; Comment Request; User Needs Survey by the Space Weather Advisory Group](#)



User Needs Survey Open for Public Comment

Respondents will be asked questions about:

- their current use of space weather observations, information, and forecasts, technological systems, components or elements affected by space weather,
- current and future risk and resilience activities,
- future space weather requirements, and unused or new types of measurements or observations that would enhance space weather risk mitigation.



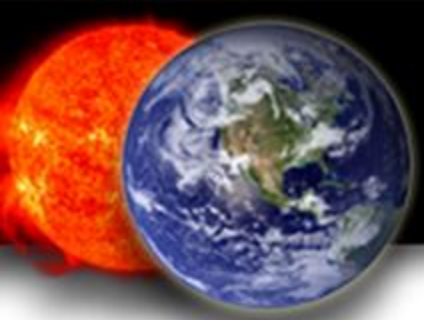
Input on Update to SWORM National Space Weather Strategy and Action Plan

- Tasked by the SWORM, SWAG members are currently compiling input
- Tentatively planning a Fall meeting to gather input more broadly
 - Speakers from the community
 - Public comment
- Also looking at other ways to get input more broadly
 - Annual conferences, workshops (AGU, AMS..)
- Decadal survey white papers



Collaboration and Coordination

- Space Weather Advisory Group
- NASEM Space Weather Roundtable
- NASEM Heliophysics Decadal Survey
- NASA Space Weather Council



SWAG and Roundtable

SWAG

Members: academic, commercial, nongovernment end users

Advise SWORM on:

- Facilitating advances in the space weather enterprise of the US
- Enabling the coordination and facilitation of R2O2R
- Improving the ability of the US to prepare for, mitigate, respond to, and recover from space weather phenomena
- Developing and implementing integrated strategy

Conduct user needs survey

Provide input National Space Weather Strategy

Roundtable

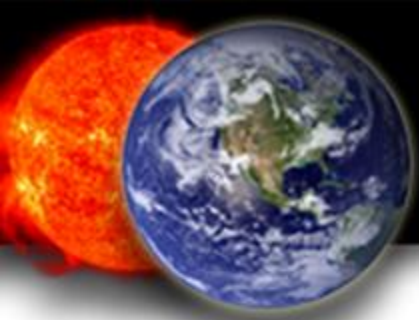
Members: academic, commercial, government (SWORM NSF, NOAA, and NASA ex-officio members - sponsors)

Two SWAG members

One Council member

Facilitate communication and knowledge transfer among government (SWORM), academic and commercial space weather communities to:

- Facilitate advances in space weather prediction and forecasting;
- Increase coordination of space weather R2O2R;
- Improve preparedness for potential space weather phenomena



SWAG and Council

SWAG

Members: academic, commercial, nongovernment end users

Advise SWORM on:

- Facilitating advances in the space weather enterprise of the US
- Enabling the coordination and facilitation of R2O2R
- Improving the ability of the US to prepare for, mitigate, respond to, and recover from space weather phenomena
- Developing and implementing integrated strategy

Conduct user needs survey

Provide input National Space Weather Strategy

NASA Space Weather Council

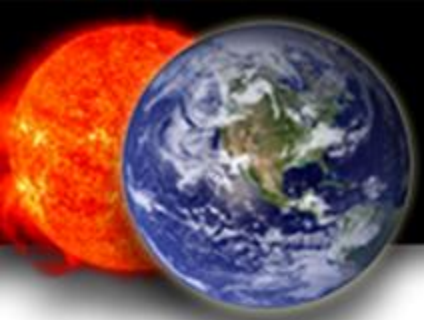
Members: academic, commercial, government

No overlap in membership with SWAG

One Roundtable member

Advise NASA via HPAC

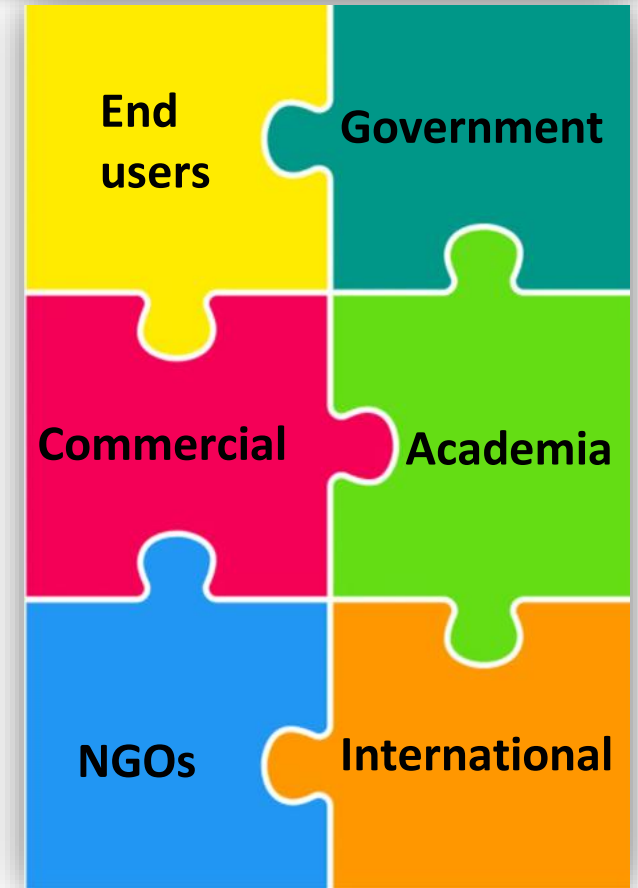
- Interdisciplinary forum for soliciting and coordinating community analysis and input and providing advice



Collaboration

Collaboration and coordination will be key

- Spoke at CSSP, NASEM space weather workshop, speaking here today, and will be speaking at AGU and AMS
- Creating invite list for SWAG meetings to include Roundtable and SWC chair/members
- Administrative meetings between SWAG, Roundtable, and SWC chairs and staff



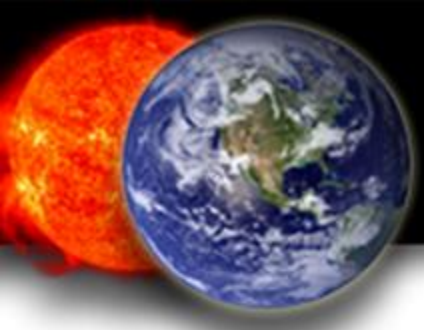
We are all working towards one common goal: to prepare and protect against the social and economic impacts of space weather phenomena.



THANKS!

dickinson.tamara@yahoo.com

www.weather.gov/SWAG



BACKUP SLIDES



PROSWIFT Act - Roundtable

§ 60606. Space weather knowledge transfer and information exchange

NOAA, NASA, and NSF, shall enter into an arrangement with the NAESM to establish a Space Weather **Government-Academic-Commercial** Roundtable to facilitate **communication** and **knowledge transfer** among Government participants in the SWORM, the academic community, and the commercial space weather sector to:

- facilitate **advances** in space weather prediction and forecasting
- increase **coordination** of space weather R2O2R
- improve **preparedness** for potential space weather phenomena



PROSWIFT Act - Roundtable

Statement of Task

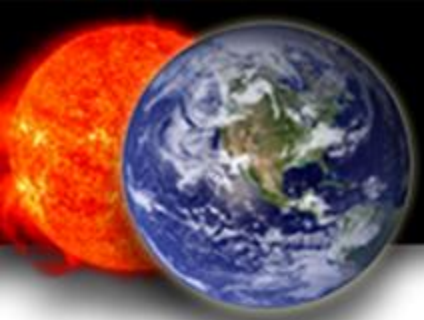
- Space Weather Roundtable meetings will engage experts and stakeholders across disciplines and sectors, with a focus initially on those issues identified in the National Space Weather Strategy and Action Plan and the PPROSWIFT Act that would benefit from greater engagement.
- Examples include space weather **benchmarks and scales**, **communication of risk**, steps to improve **R2O2R pathways**, commercial space weather **data buys**, and **resilience** to severe space weather events.



PROSWIFT Act - Roundtable

Committee Composition

- About 15 members drawn from the government, public, and private sectors
- Membership may include subject matter experts; representatives from industries affected by space weather; government and other entities charged with forecasting space weather; representatives from the emergency response community; and experts on the social and economic impacts of space weather.
- NOAA, NASA, and NSF ex-officio members



NASA Space Weather Council

Established as a means to secure the counsel of community experts across diverse areas on matters relevant to space weather in support of the HPD.

- The SWC serves as a community-based, interdisciplinary forum for soliciting and coordinating community analysis and input and providing advice.
- It provides advice to the Heliophysics Advisory Committee (HPAC).

The SWC is a standing subcommittee of the HPAC. As such, the SWC reports to and is responsive to actions levied by the HPAC.

- SWC may seek scientific and programmatic input from the heliophysics and space weather communities at large on matters relevant to their actions.