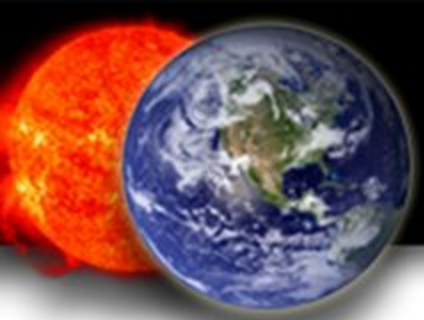




# **Space Weather Advisory Group Meeting 6**

**April 17, 2023**

This webinar is a SWAG public meeting and will be recorded and transcribed. If you have a public comment, you acknowledge you may be recorded and are aware you can opt out of the meeting.



# Welcome!

- In accordance with section 60601 of the PROSWIFT Act - NOAA established the SWAG to advise the White House SWORM Interagency Subcommittee
- All 15 non-governmental representatives of the SWAG, were appointed by the SWORM Subcommittee with 3-year terms beginning on October 1, 2021
- 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



# Roll Call

## 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

**Rebecca Bishop**  
Aerospace Corp.

## SWAG Commercial Sector Representatives

**Jennifer Gannon**  
Computational Physics, Inc.

**Conrad Lautenbacher**  
GeoOptics, Inc.

**Seth Jonas**  
Lockheed Martin

**Kent Tobiska**  
Space Environment Technologies

**Nicole Duncan**  
Ball Aerospace

## SWAG Academic Community Representatives

**Tamas Gombosi**  
University of Michigan, Ann Arbor

**Delores Knipp**  
University of Colorado, Boulder

**Scott McIntosh**  
National Center for Atmospheric Research

**Heather Elliott**  
Southwest Research Institute

**George Ho**  
Johns Hopkins University Applied Physics Laboratory



# Welcoming Remarks from the Chair

**Dr. Tamara Dickinson**

SWAG Chair

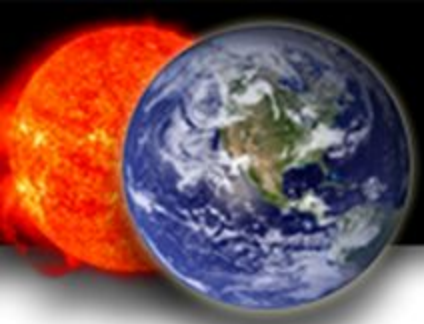
Nongovernmental End User Representative

President, Science Matters Consulting



# Recap of Meeting 5

- Brief out and discussion of our first report
- Approved the report



# Progress Since Meeting 5

- Report
  - Final editing of the report
  - Transmitted to Jinni, SWORM co-chairs
  - Posted on [weather.gov/SWAG](http://weather.gov/SWAG)
- Pivot to User Survey
  - Worked on User Survey with Val, Jinni
  - Focus groups
  - STPI support
  - Results (partial or complete) by AGU/AMS

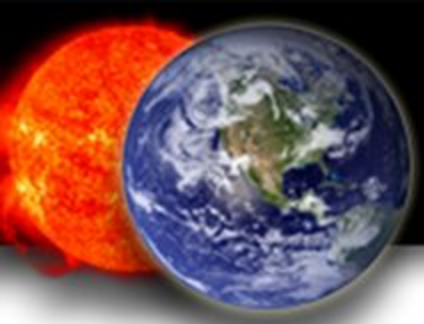






# Agenda

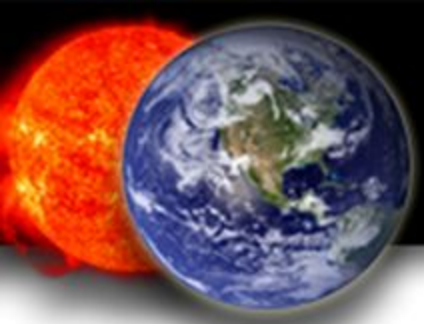
- Opening Remarks, Progress since and Recap of Meeting 5
- Overview of Today's Meeting
- Status of User-Need Survey
- Conducting Focus Groups 101
- Break
- Mock Focus Group
- Committee Discussion
- Public Comments
- Lunch



# Agenda

- Focus Group 1 - INVITE ONLY (separate link will be emailed directly to participants)
- Break
- Focus Group 2 - INVITE ONLY (separate link will be emailed directly to participants)
- Break
- Focus Group 3 - INVITE ONLY (separate link will be emailed directly to participants)
- Break
- Lessons Learned from Afternoon Focus Groups
- Next Steps and Closing Remarks
- Adjourn





# PROSWIFT Act - User Survey

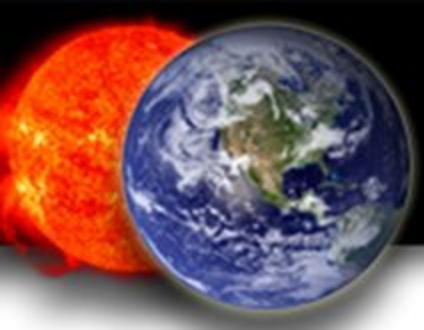
## User Survey Requirements:

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, in consultation with the academic and commercial space weather sectors, 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.



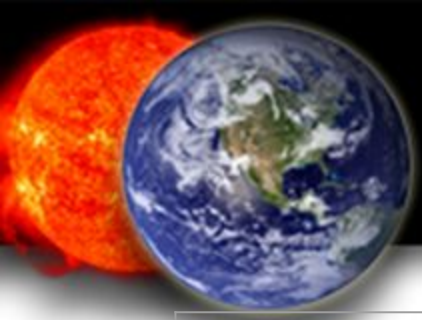
# Baseline Topics

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



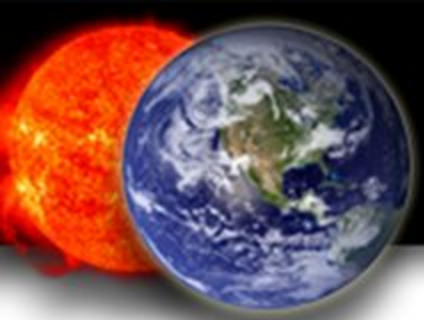
# User Survey Sectors

- Electric Power Grid
- Global Navigation Satellite System
- Aviation
- Emergency Management
- SSA/STM-C
- Human space flight
- Research
- *National Security*
- *Radio Frequency Application (comms and Radar)*
- *Satellite*



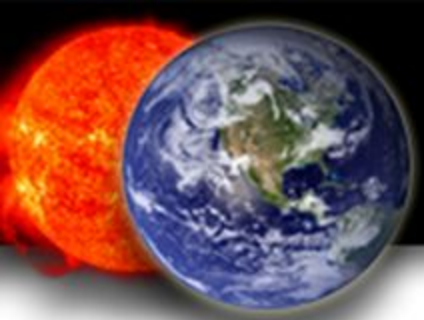
# Focus Group Interest

Sector	Number of Respondents	Invited to Participate
Electric Power Grid	14	0
Global Navigation Satellite System	0	0
Aviation	10	0
Emergency Management	0	0
SSA/STM-C	20	6
Human space flight	10	8
Research	27	7



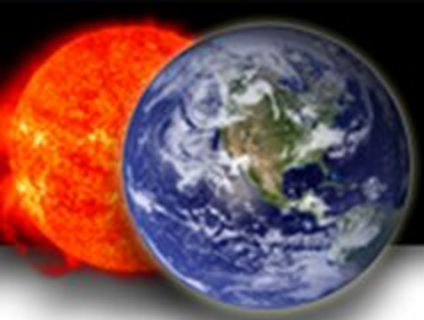
# Focus Groups Today

Sector	Invited to Participate	Facilitators	Time
Human space flight	8	Kent Tobiska Jenn Gannon	1:00-2:00 pm MT
Research	7	Scott McIntosh Heather Elliott	2:15-3:15 pm MT
SSA	6	Delores Knipp Jenn Gannon	3:30-4:30 pm MT



# Status of User Survey

- Paperwork Reduction Act Notice
- Protocols for focus groups
- Science and Technology Policy Institute (STPI) under contract to assist us
  - Chris Cannizzaro, PhD, Research Staff Member
  - Sarah Swiersz, Science Policy Fellow



# Conducting Focus Groups 101

## What is a Focus Group?

- Facilitated, group-based discussion to gather information
  - 5 to 10 participants per group
- Discussion is around a clearly defined topic
  - Information used to understand perspectives and experiences on the issue



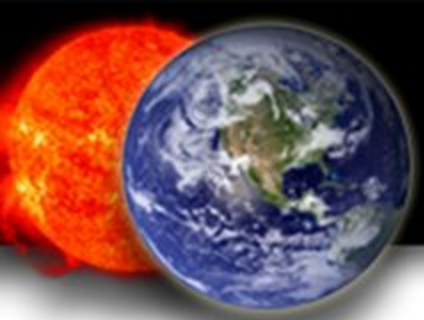


# Conducting Focus Groups 101

**Goal:** To learn about people's knowledge, attitudes, beliefs, and experiences

## **Key Moderator/Facilitator Concepts**

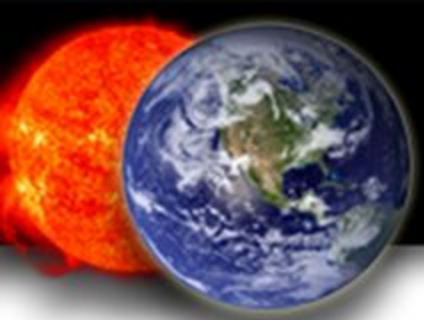
- Be a neutral party
- Guide the conversation
- Control the environment



# Conducting Focus Groups 101

## Advantages of a Focus Group

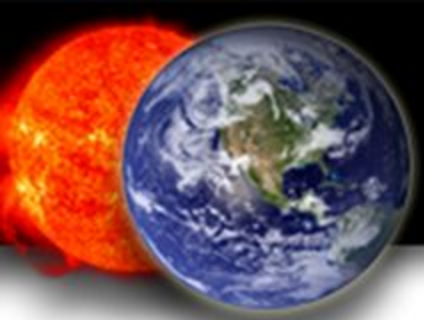
- Influence of the group context - answers and energy
- Variety of opinions - supporting or contrary
- Depth of responses
- Great for exploratory initiatives



# Conducting Focus Groups 101

## Disadvantages of a Focus Group

- Time and effort
- Complexity of analyzing qualitative data
- Management of group dynamics
- Dishonesty due to group influence



# Conducting Focus Groups 101

## Role of the Moderator/Facilitator

- Introduce others involved in the focus group
- Ask the questions
- Guide the conversation
- Listen!



# Conducting Focus Groups 101

## Role of the Notetaker

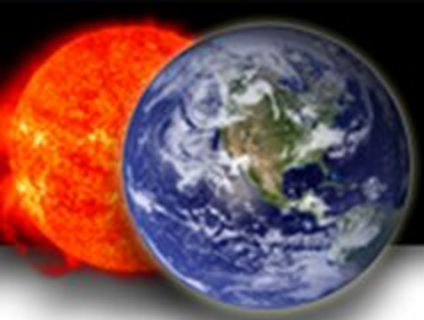
- Record
  - Key quotes
  - Common themes
  - Group dynamics



# Conducting Focus Groups 101

## Focus Group Agenda

- Welcome
- Introductions
- Purpose of the Focus Group - including consent to recording
- Ground Rules
- Questions

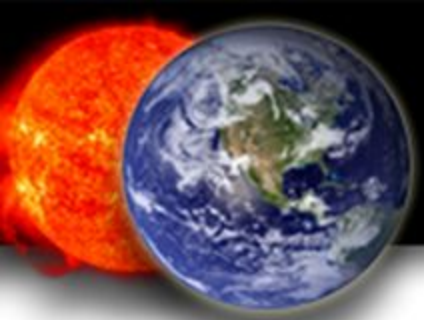


# Conducting Focus Groups 101

## Facilitator Tips

- Build rapport early on
- Never be judgemental or stifle opinion - watch body language
- Allow for conversation, but keep things moving
- Don't be afraid of silence
- Summarize the discussion at the end of each question

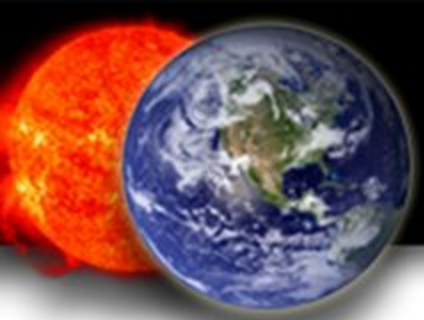




# Conducting Focus Groups 101

## Facilitator Tips continued...

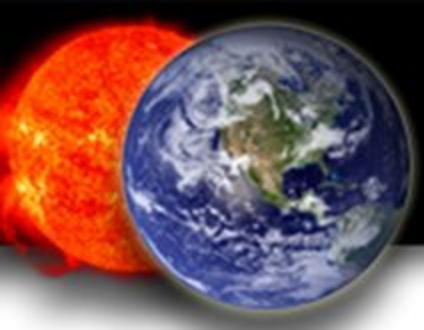
- Useful phrases to generate conversation
  - Tell me more about that idea
  - Can you give me an example? OR Can you elaborate?
  - Does anyone have anything to add to that?
  - Does anyone have a different opinion or experience?



# Conducting Focus Groups 101

## Focus Group Data Analysis

- Develop transcripts from recording
- Identify major themes and subthemes within groups and among groups
- List key words and phrases
- Summarize insights



# Conducting Focus Groups 101

## Space Weather Focus Group Protocol Review



**BREAK**  
**10:00 – 10:15 AM MT**



# Mock Focus Group



# Committee Discussion



# **Public Comments**

## **10:52 – 11:05 AM MT**



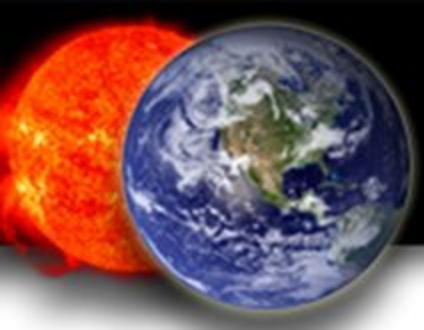


**Lunch on your own**  
**11:35 – 1:00 PM MT**



# Focus Group 1 - Human Space Flight

Facilitators - Kent Tobiska and Jenn Gannon



**BREAK**  
**2:00 – 2:15 PM MT**



# Focus Group 2 - Research

Facilitators - Scott McIntosh and Heather Elliott

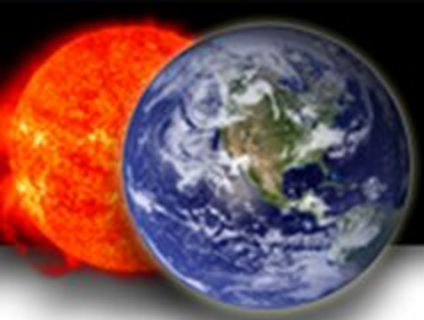


**BREAK**  
**3:15 - 3:30 PM MT**



# Focus Group 3 - SSA

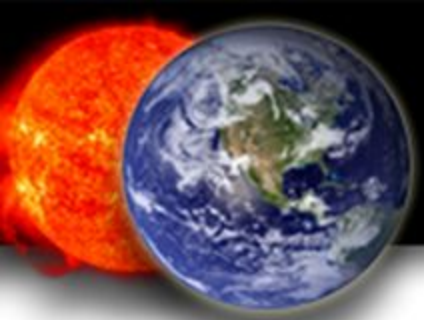
Facilitators - Delores Knipp and



# Lessons Learned from Focus Groups

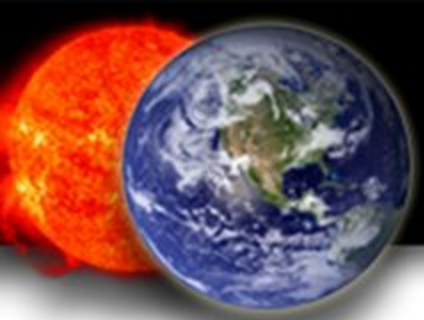
- SWAG members are natural facilitators
- Time constraints - hard to get through all the questions
  - Can one focus group go longer than others?
  - Do they all need to be the same length
- Should include in the invite what the expectation is - we ask them questions, no slides needed, no prep needed, topic area
- If all virtual, can we see raised hands on gotomeeting?
- Which questions are critical and must be answered?





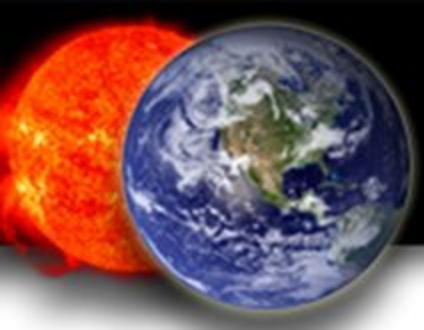
# Lessons Learned from Focus Groups

- Good job pivoting people and making sure folks were included
- Good on your feet
- Clearly define what the topic is
- Participants confused about the goal
- Thought they were just going to listen
- Conversation is very dependent on who is in room. Be careful how you build the focus group. Concern about who else was in the room
- Raise hands on gotowebinar
- everyone wants to introduce themselves
-



# Next Steps

- Use your networks to get the word out about our report
- Each sector should be compiling the names/contacts for future focus groups
- If your focus groups will be in conjunction with a workshop or meeting, please provide me with the dates and locations ASAP
- Need to get SWAG members engaged with STPI
  - I will work with Chris to see how to best do that
- THANKS!!! for the big lift over the past few months



# Closing Remarks



# Adjourn