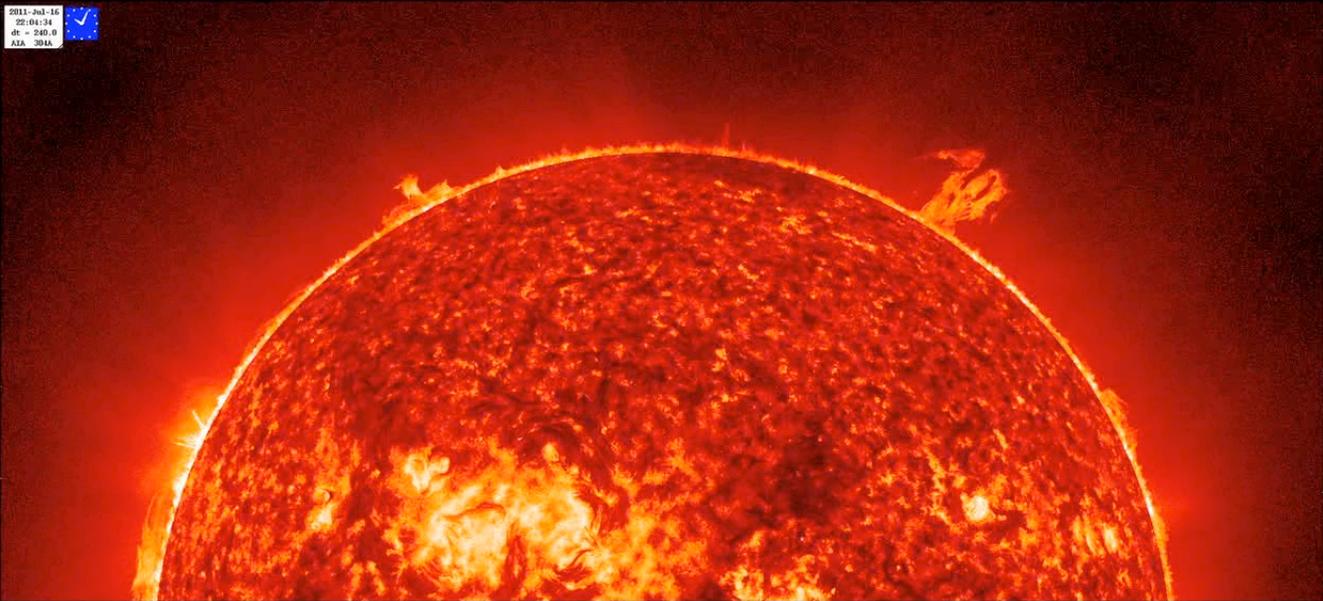


# Some Thoughts on the Societal Impacts of Space Weather

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# I am a Solar Physicist

- I am a member of the National Academies of Science and of Engineering, the International Academy of Astronautics, and the Silicon Valley Hall of Fame.
- I have served on the Space Studies Board and on the executive committees of the Decadal Surveys for both Astrophysics and Heliophysics.
- I have chaired the NASA Heliophysics Advisory Committee and served on the Science Committee of the NASA Advisory Committee.
- I have heard and read about concerns of the dangers of SWx for decades.

# I am not an Expert on the Effects of SWx

- I do NOT know the function that predicts the rate of violent solar events.
- I do NOT know how events on the Sun impact power distribution, communications, or GPS systems on the Earth.
- I DO know that billions of dollars worldwide are spent on studying the Sun, the magnetosphere, and our upper atmosphere.
- I BELIEVE that there are unknown risks with very serious consequences to society from a range of solar events.

# Is it now time to stop talking about the dangers of SWx?

- The International Space Science Institute (ISSI) has started a study to quantify the rate of violent solar events based on study of historical records, ice core data, and observations of thousands of solar type stars in the Kepler data base.
- We - mostly you - can form teams that can evaluate the impacts of solar events on the systems that YOU are familiar.
- We can set up a structure that manages the development of the information necessary to set policy and develop regulations tailored to limit the effects of SWx.

# What I hope will result from this meeting

- First a mutual agreement that there exists a risk to society from SWx.
- Second plans to quantify that risk by:
  - Using existing data to develop an improving estimate of the rate of violent solar events;
  - Forming teams of experts to investigate dangers of existing systems based on a set of sample solar events;
  - Forming an infrastructure that can provide communications between the scientific technical, economic, and political structure.

# Properties of an Infrastructure

- Acts as an interface between the Research Community, the Modelers, the Forecasters, and Society.
- Acts as an organization to advise business and government on appropriate responses to both SWx dangers and SWx forecasts.
- Acts as an independent assessor of the impacts on new technologies.
- Acts as a developer of training tools for managers of SWx responses.

# A Trial Balloon

This evening we will hand out a concept of how a *Society and Space Weather Institute* might be organized.