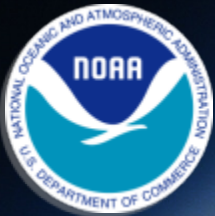


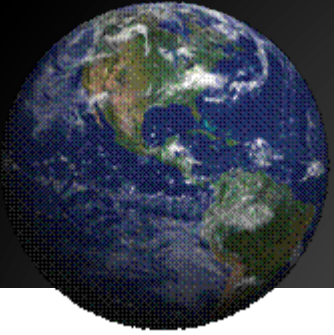
# Communication of Operational Space Weather Products and Services



**Dr. William Lapenta**

Director, National Centers for Environmental Prediction  
National Weather Service

**AMS Washington Forum**  
**April 2, 2014**



# NWS Strategic Outcome: Weather-Ready Nation Strategic Goals

## Weather-Ready Nation

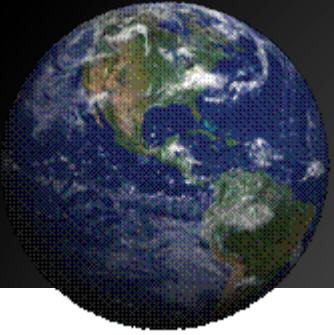
- Ready
- Responsive
- Resilient



## NWS Strategic Goals

- Improve **Weather** Decisions Services
- Improve **Water** Forecasting Services
- Enhance **climate** services and adapt to climate-related risks
- Improve sector-relevant information in support of economic productivity
- Enable environmental forecast services supporting healthy communities and ecosystems
- Sustain a highly skilled, professional workforce equipped with training, tools, and infrastructure to meet mission

*Prediction is what makes us unique!*



# NWS Strategic Outcome: A Weather-Ready Nation

Becoming a Weather-Ready Nation is about building community resiliency in the face of increasing vulnerability to extreme weather.



## Impact-based Decision Support Services (IDSS)

- Physical Sciences ==> Improve forecast skill
- Social Sciences ==> Improve communication of impacts and effects
- Making our information more relevant to decision makers

*Working to achieve far-reaching national preparedness for weather events*

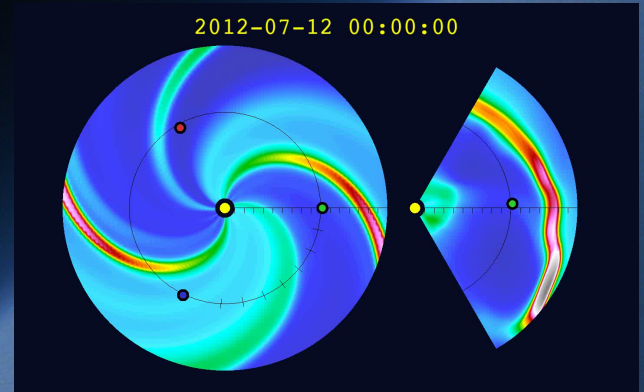


# Geomagnetic Storm Prediction – Current Forecast Processes

## GLOBAL Specification and Prediction

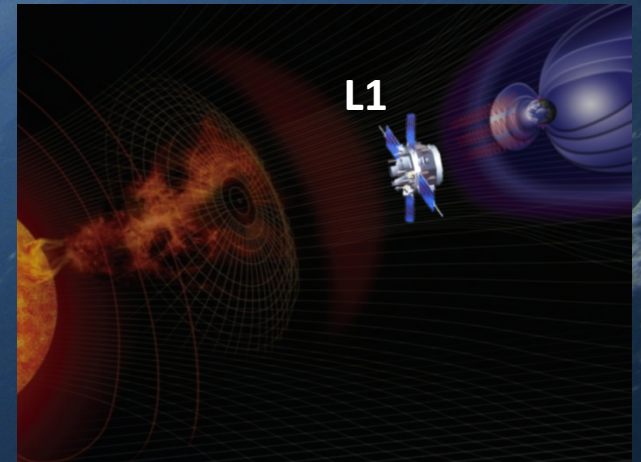
### 1. Geomagnetic Storm Watch

- Issued upon detection of Earth-directed CME (SOHO and STEREO ) and WSA-Enlil model run
  - **1-3 day forecast**



### 2. Geomagnetic Storm Warning

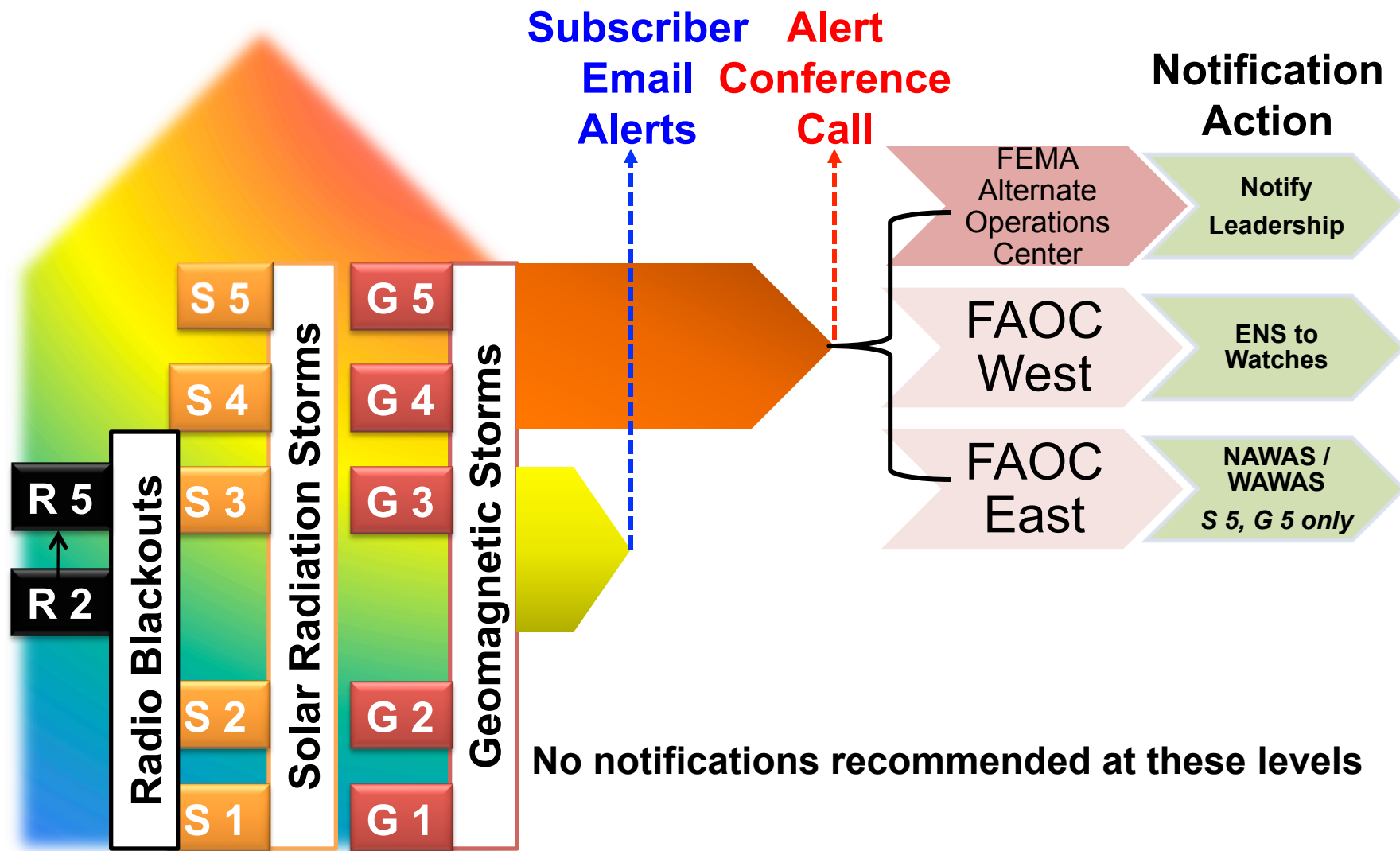
- Issued upon detection at the ACE spacecraft at the L1 Lagrange point
  - **15-50 minutes before impacting Earth**



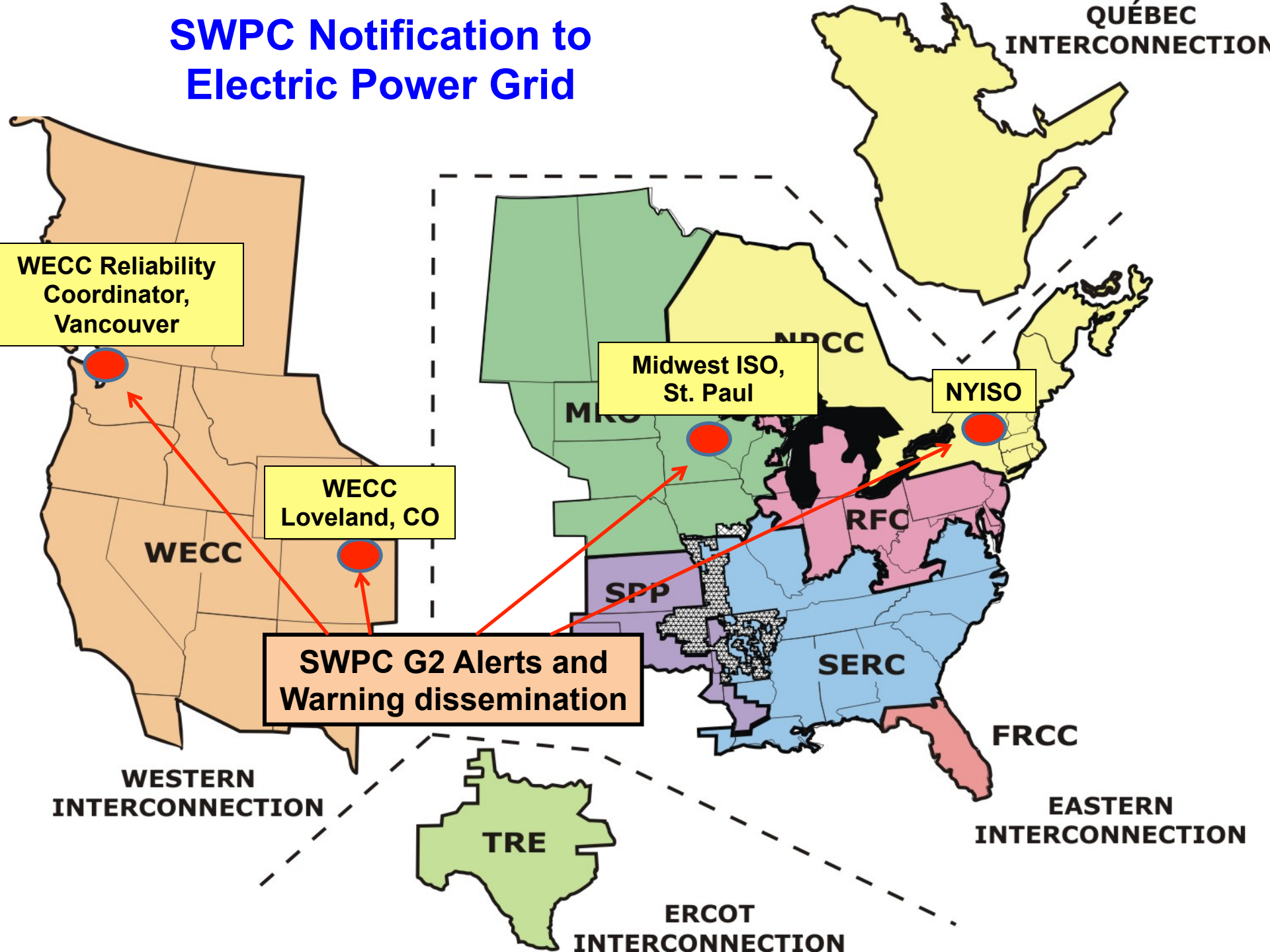
### 3. Geomagnetic Storm Alert

- Issued when geomagnetic storm is detected on USGS magnetometers
  - **Current condition**

# FEMA Alerts and Notifications



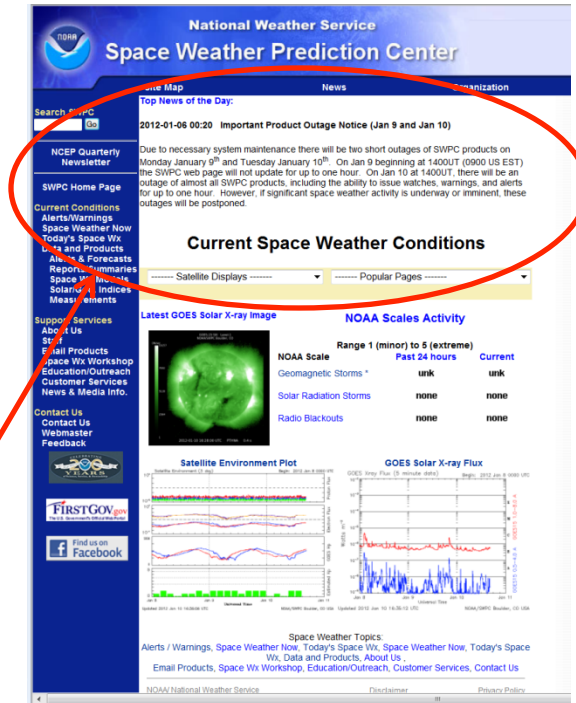
# SWPC Notification to Electric Power Grid





# Information Dissemination

- **Phone Contact** for Critical Stakeholders: FEMA, NASA, Airlines, Power Generation and Distribution, etc.
- **Product Subscription Service:** Email-based, no cost subscription service available to all
- **Website:** Data, products, and models all available, Top News heading
- **Facebook:** Active updates and education
- **Active Media Support** during significant events
- **NOAA Education Collection** resources
- **WMO Space Wx Product Portal**



Large geomagnetic storms can occur with smaller cycles

The largest geomagnetic storms on record occurred during smaller than average cycles (no causality implied)

