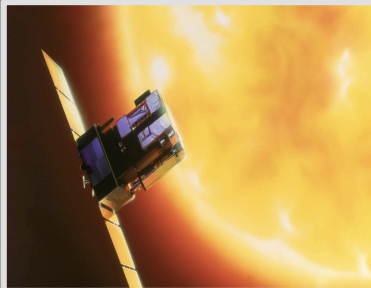
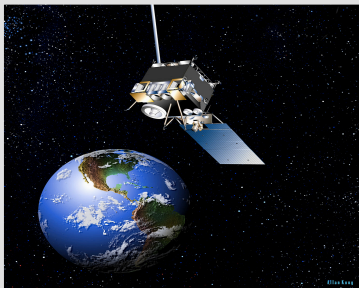
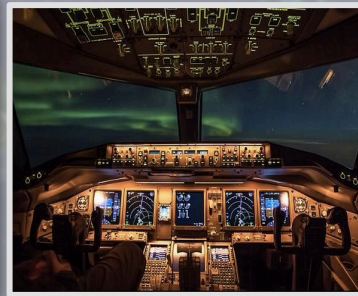
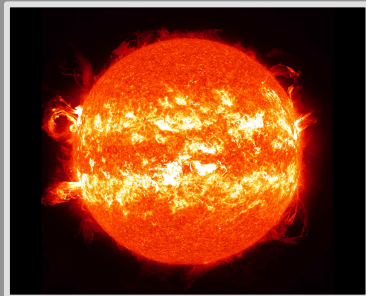


NOAA Space Weather Prediction Center

Current Activities Update

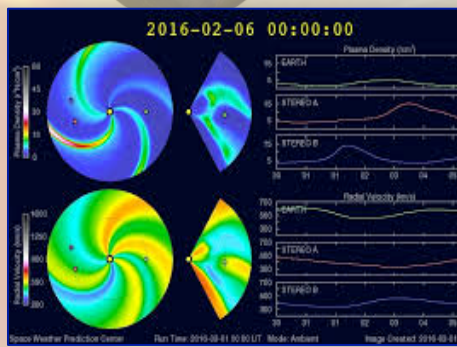


Dr. Thomas Berger
Director, NOAA/NWS/NCEP Space Weather Prediction Center



SWPC Operational Model Suite

Tracking solar storms from "Sun to Mud"



GMU/AFRL WSA/Enlil

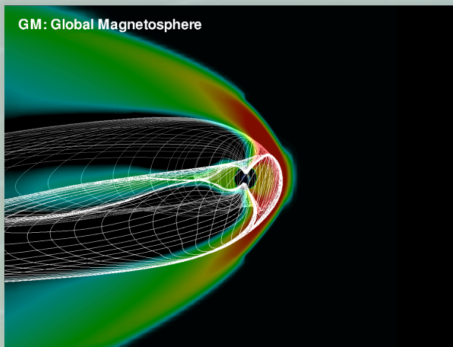
Inputs:

1. GONG solar magnetic field data
2. SOHO/LASCO coronagraph CME images from L1

Validation:

1. DSCOVR solar wind character at L1
2. GOES magnetometer shock arrival

Operational



U. Michigan Geospace

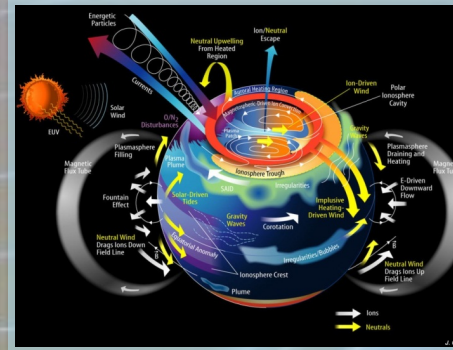
Inputs:

1. DSCOVR solar wind density, temp, speed, mag field at L1
2. Solar F10.7 radio flux measurements

Validation:

1. GOES vector magnetic field
2. USGS magnetometer network

Operational FY16



NOAA/CIRES WAM-IPE

Inputs:

1. GFS Tropospheric weather model inputs
2. GOES Solar EUV flux
3. COSMIC-2 RO electron density
4. Geomagnetic storm data from Geospace

Validation:

1. GPS receiver network TEC measurements

Operational FY17-19



USGS/NOAA E-field

Inputs:

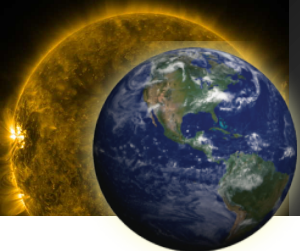
1. USGS lithospheric conductivity model
2. USGS magnetometer network

Validation:

1. USGS geoelectric field measurements.

Operational FY16-17





Geospace Model Highlights

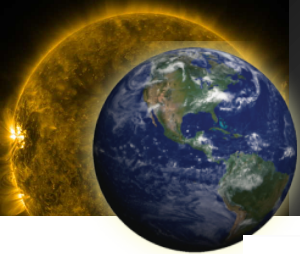
2016 St. Patrick's Day Storm Reforecast Analysis



DSCOV R Update

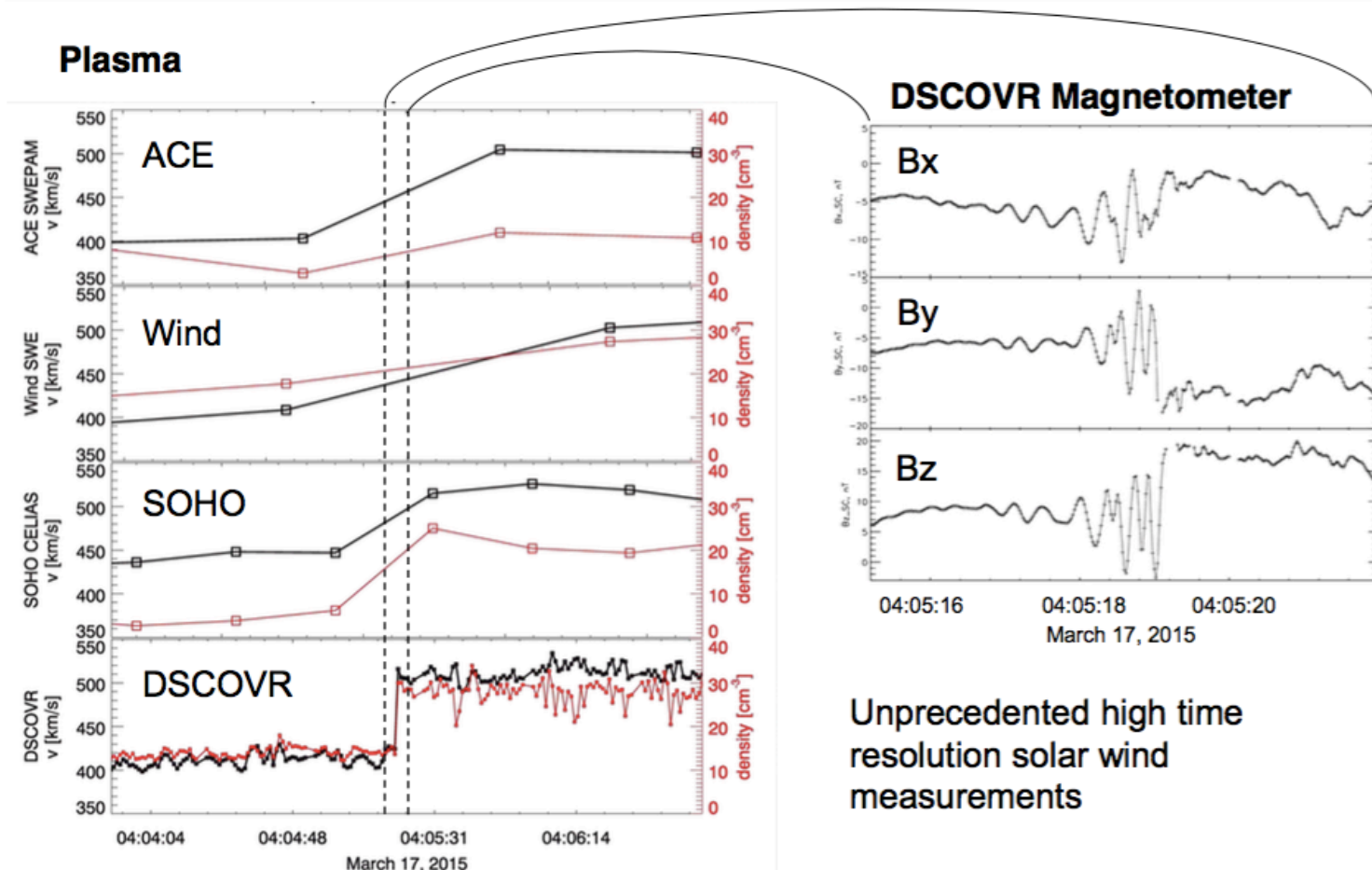
March 8, 2016 Solar Eclipse





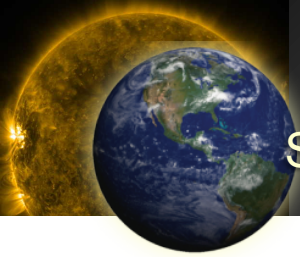
DSCOVR Update

Magnetometer Science Potential



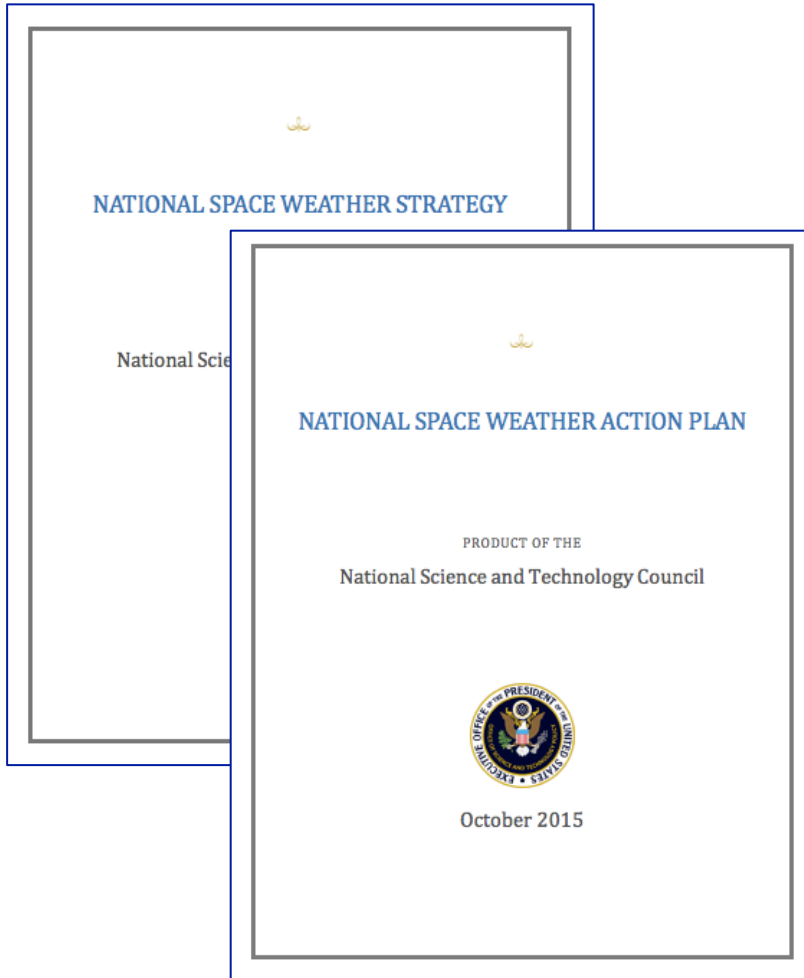
Real-time data available at www.swpc.noaa.gov/products/real-time-solar-wind

Archived data (>1 day) available at <http://www.ngdc.noaa.gov/dscovr/>



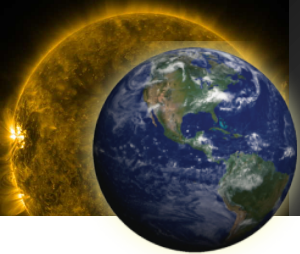
National Space Weather Action Plan

Space Weather Operations Mitigation and Research (SWORM) Task Force



- Chartered under White House Office of Science & Technology Policy (OSTP)
- Chaired by OSTP, National Weather Service, and Dept. of Homeland Security.
 - OSTP: policy lead
 - NWS: operational forecasting
 - DHS: mitigation and response
- Released 29-October-2015
- Outlines goals for operations, research, mitigation, and response in preparation for extreme events.
- Chapter 5 of Space Weather Action Plan (SWAP) addresses **observations and research** to sustain and improve prediction of space weather events.

For copies, google “OSTP space weather”



SWAP Actions 5.6.1 and 5.6.2

Formalize/Define R2O and O2R processes in SWx

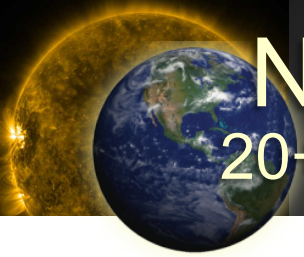
5.6 Improve the effectiveness and timeliness of the process that transitions research to operations

5.6.1 NASA and NSF lead: signed memorandum of understanding between modeling and forecasting centers (R2O).

5.6.2 DOC and DOD lead: complete plan for improving, testing, and maintaining operational forecast models and enabling operations to research feedback (O2R).

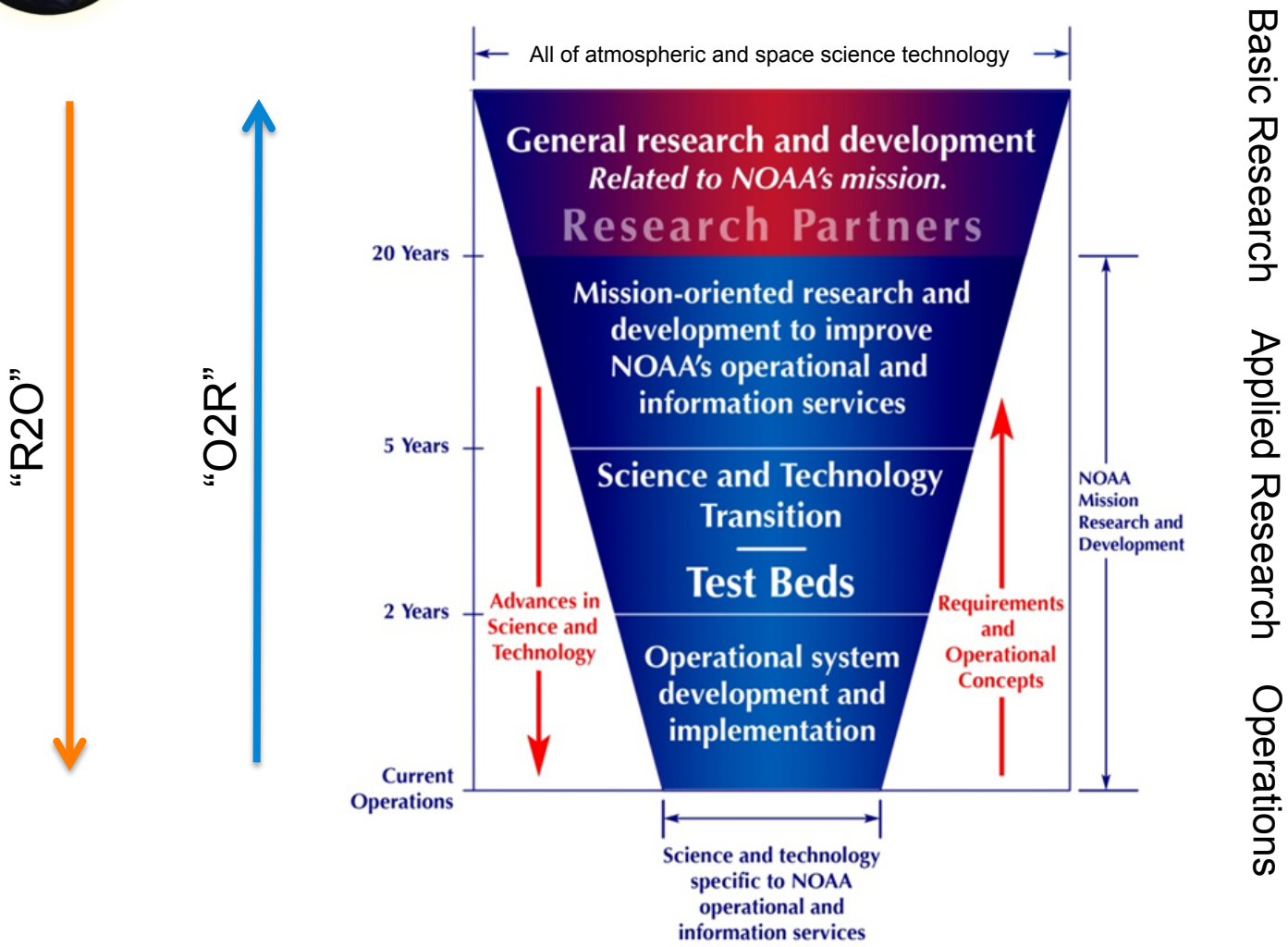
Progress to date:

- MOU drafted between NASA and NOAA/NWS/SWPC.
- OMB briefed on R2O and O2R concepts by NASA, NSF, NOAA, DOD on 2/29/16.
- Draft white paper on O2R requirements completed and in review.

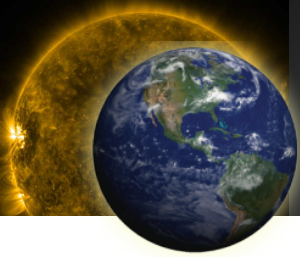


NOAA Research to Operations Funnel

20+ year process to transition basic research to operations



NOAA FY17 Request: \$10M Research Transition Acceleration Program (RTAP)

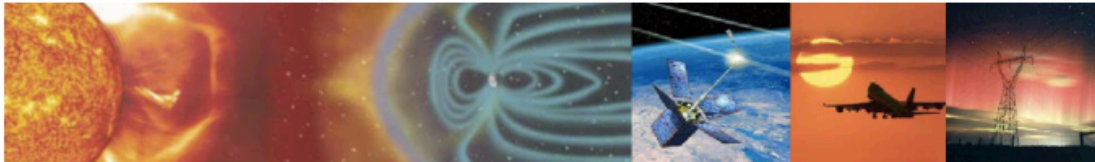


O2R Workshop at SWPC

August 16-17, 2016

Goal: to gather community input on O2R plans for SWAP Action 5.6.2

O2R WORKSHOP



Space Weather: Operations to Research (O2R) Workshop

Register Now! (deadline July 31, 2016)

What: A community workshop to discuss a plan for a national space weather Operations to Research capability.

When: August 16 – 17, 2016

Where: NOAA David Skaggs Research Center, 325 Broadway, Boulder, CO 80305 ([link provides map and directions](#))

Background: In October 2015, the Office of the President, National Science and Technology Council, released the National Space Weather Strategy and Action Plan to enhance the nation's preparedness for severe space weather. One action in that plan (5.6.2) is: "DOC and DOD, in collaboration with NASA and NSF, will develop a plan (which may include a center) that will ensure the improvement, testing, and maintenance of operational forecasting models. This action will leverage existing capabilities in academia and the private sector and enable feedback from operations to research to improve operational space-weather forecasting."

www.swpc.noaa.gov/content/o2r-workshop