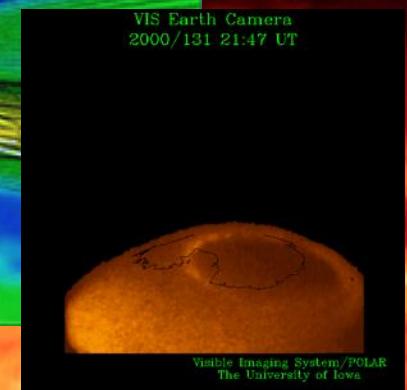
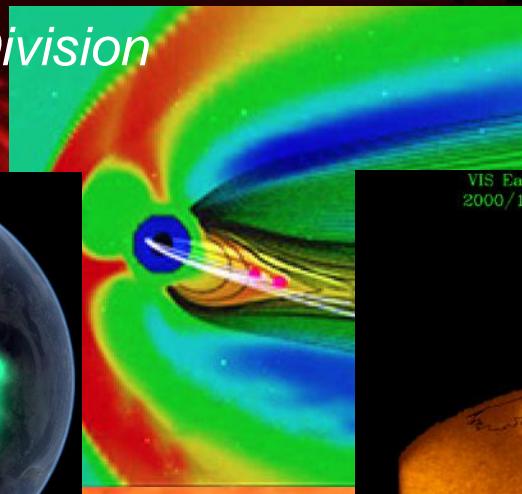
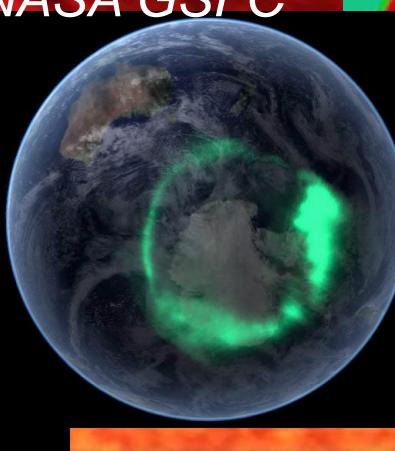
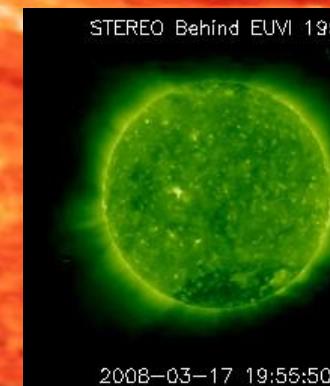


Goddard Heliophysics and Space Weather

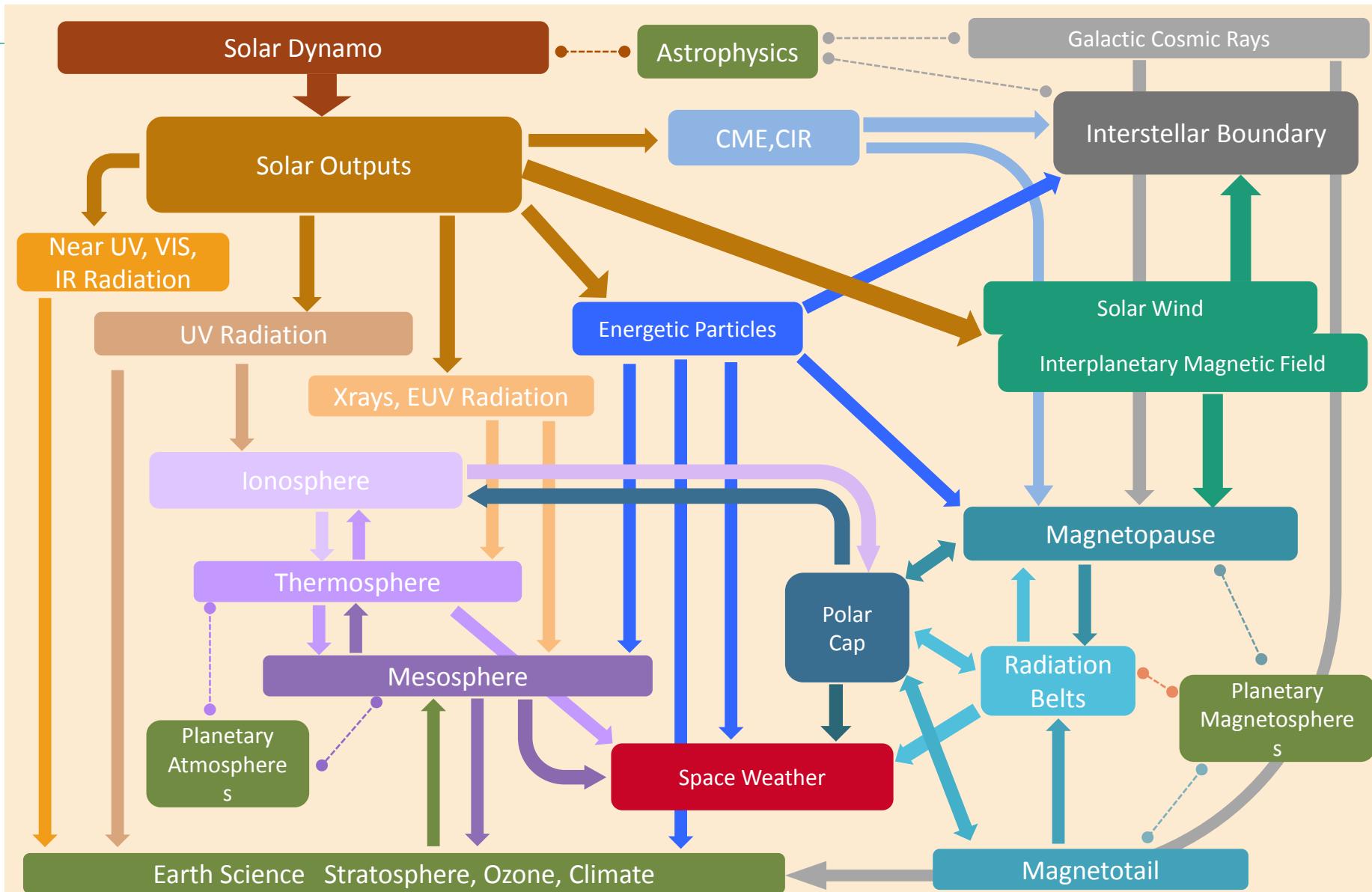
Holly Gilbert and Antti Pulkkinen

Heliophysics Science Division

NASA GSFC



The Heliophysics System (from Peg Luce, NASA HQ)



Goddard's Heliophysics Science Division



- Instrument development
- Mission development
- Mission Project Scientists
- Modelers
- CCMC
- Data Centers
- Data analysts
- Large EPO team

Organizational structure



Solar Physics Lab

Chief: Dr. Nick Arge

Space Weather Lab

Chief: Dr. Judy Karpen

Geospace Physics Lab

Chief: Dr. Eftyhia Zesta

Heliospheric Physics Lab

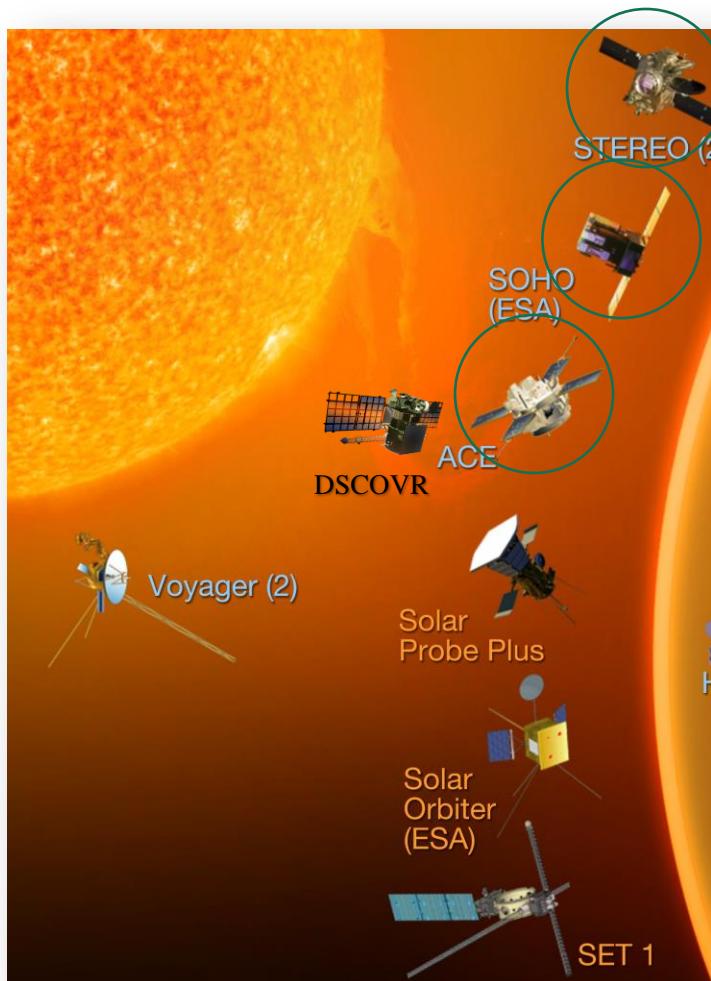
Chief: Dr. Adam Szabo

Ionospheric Thermospheric
Mesospheric Physics Lab

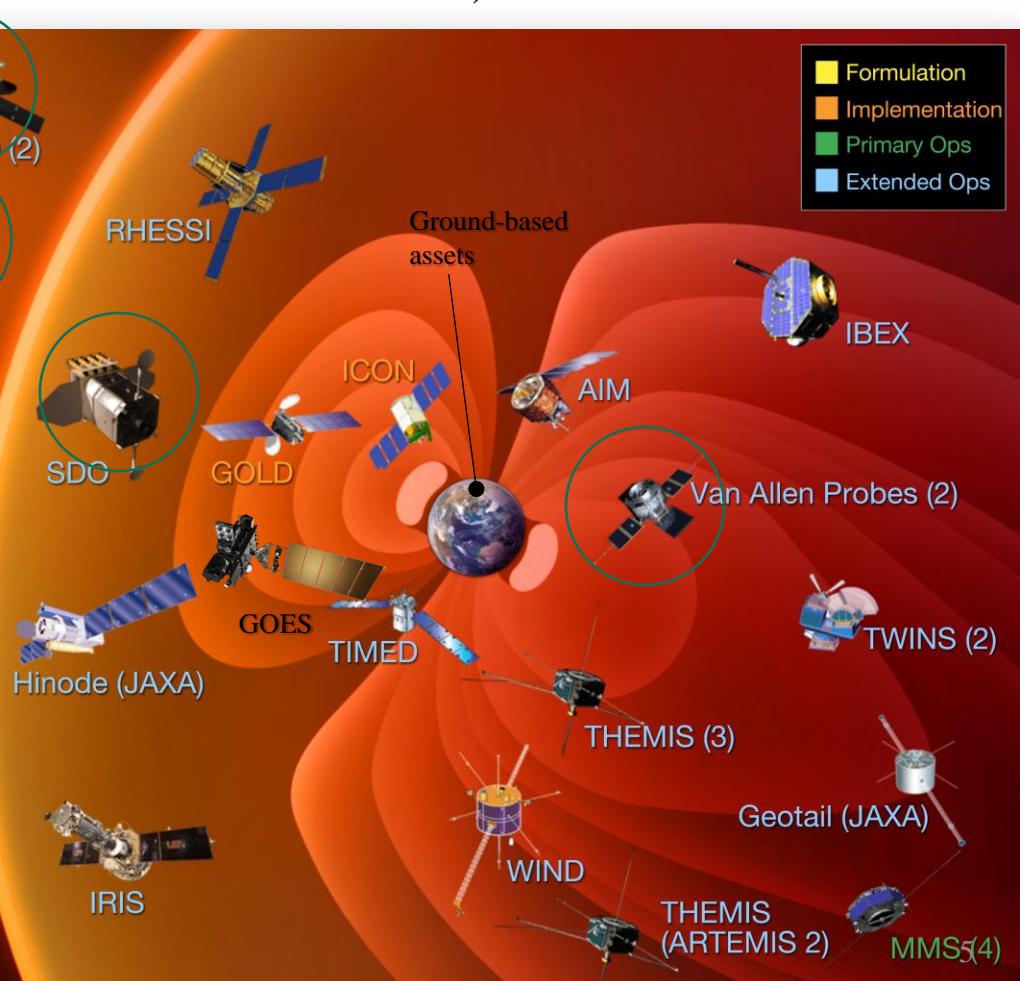
NEW

Heliophysics missions

Real-time (NASA – ESA)



Operational (NOAA – Air Force)



Cubesats- CeREs

First fully NASA SMD funded CubeSat currently scheduled to launch in May 2018

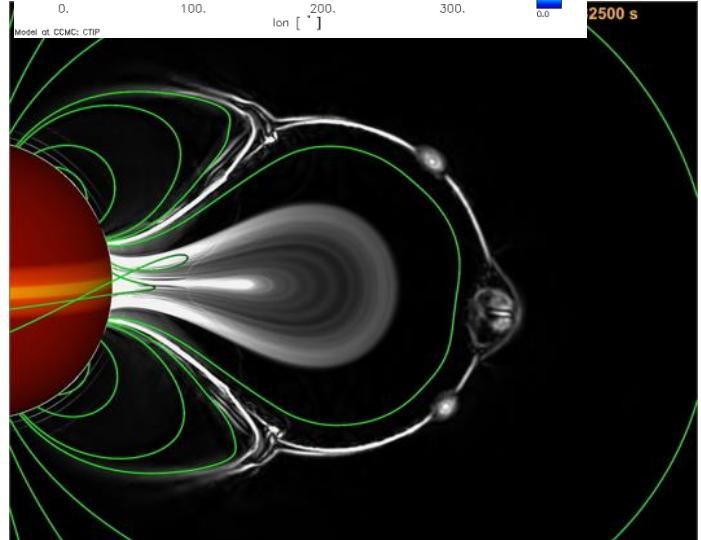
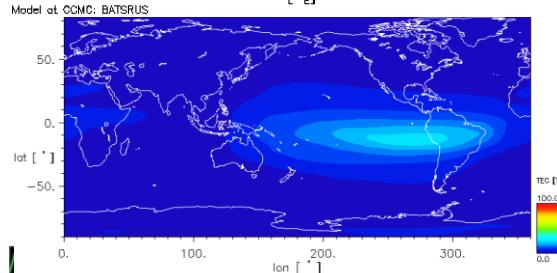
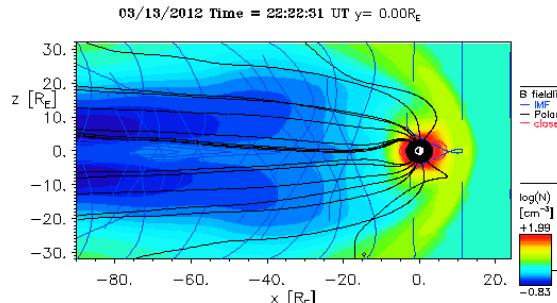
**Radiation belt energization and loss electron spectra and microbursts

Carries onboard an innovative instrument, **MERiT (Miniaturized Electron pRoton Telescope)**, which measures electrons with high time resolution of a few ms over a wide energy range from few keV to few MeV

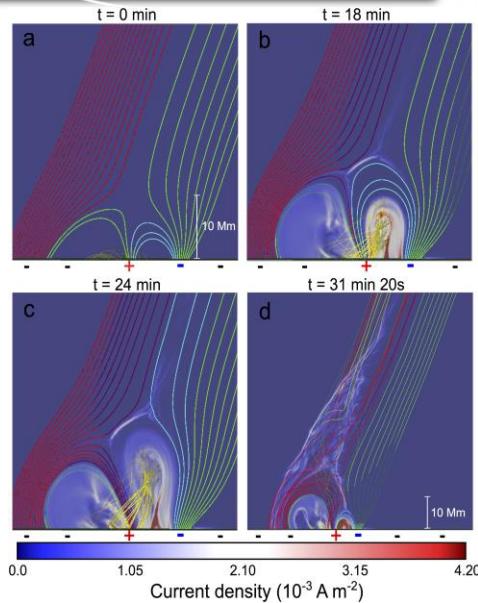
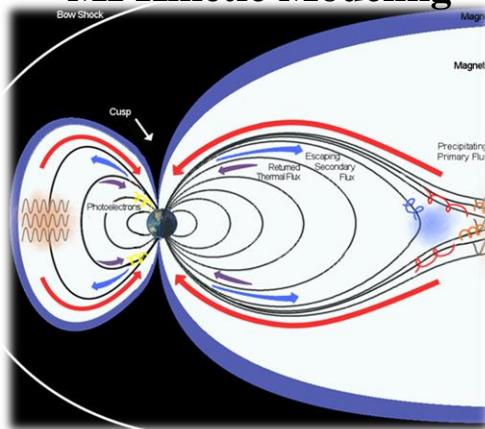
- Will characterize electron microbursts with unprecedented spectral and temporal resolution
- Will study solar electrons and protons



Modeling

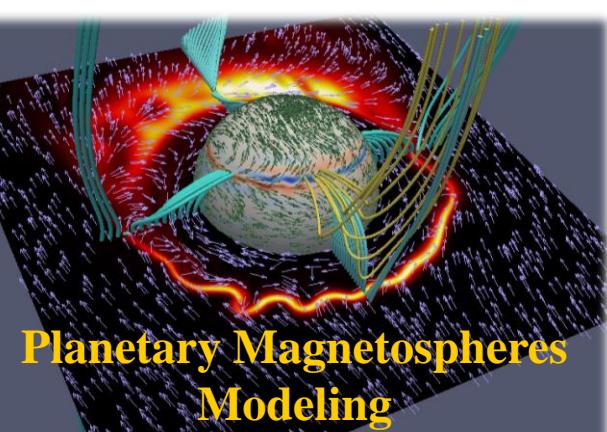
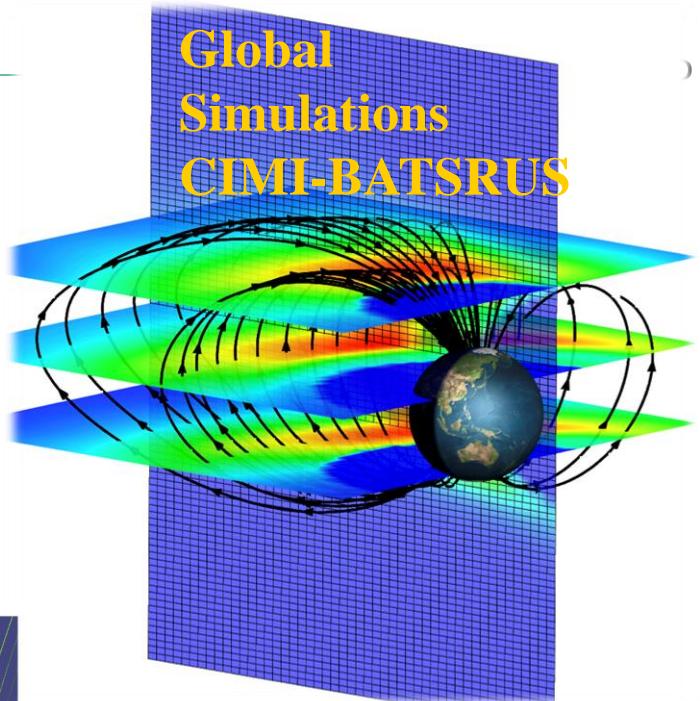


MI Kinetic Modeling



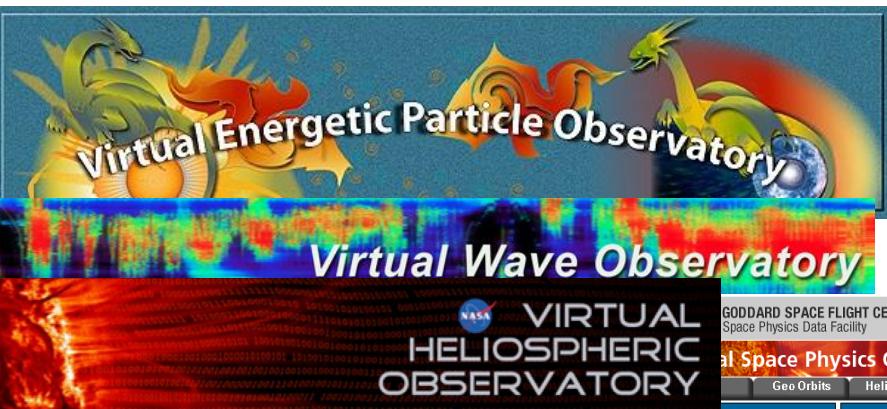
Global Simulations

CIMI-BATSRUS



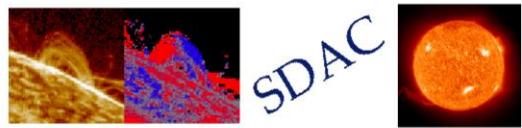


Data and modeling centers



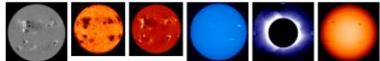
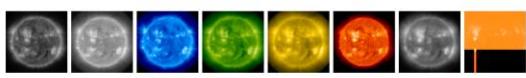
VIRTUAL MAGNETOSPHERIC OBSERVATORY

SPASE inside



Welcome to the Solar Data Analysis Center at [NASA Goddard Space Flight Center](#) in Greenbelt, Maryland

Current Solar Images



Click for [the latest ground- and space-based solar images in the SDAC archives](#).

GODDARD SPACE FLIGHT CENTER
Space Physics Data Facility

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Space Physics Data Facility

[+ ABOUT](#) [+ DATA & ORBITS](#) [+ ModelWeb at CCMC](#) [+ SCIENCE ENABLED](#) [+ AND MORE](#)

SPDF is a project of the Heliophysics Science Division (HSD) at NASA's Goddard Space Flight Center. SPDF consists of web-based services for survey and high resolution data and trajectories. The Facility supports data from most NASA Heliophysics missions to promote correlative and collaborative research across discipline and mission boundaries. [Read More here.](#)

Access Data & Orbit Services

- + VSPo - Virtual Space Physics Observatory
- + Gateway to Services
- + CDAWWeb Plus
- + CDAWWeb
- + CDAWWeb via OPeNDAP
- + OMNIWeb Plus
- + COHOWeb
- + ATMOWeb
- + FTWeb
- + Anonymous FTP
- + SSCWeb
- + 4D Orbit Viewer
- + GifWalk data and orbit plots
- + HelloWeb

Access Models

- + Community Coordinated Modeling Ctr (CCMC) [+ 60](#)
- + SPDF coordinates at CCMC
- + CDAWWeb
- + OMNIWeb
- + HelloWeb

News & Announcements

September 28, 2011: The SSCWeb systems and associated Web Services have been ported to a new and faster server. As always, please contact us if you experience any problems.

New Missions Supported in CDAWeb and SSCWeb

Data from all THEMIS instruments and the SWAVES experiments on STEREO A/B are now available via CDAWeb. THEMIS orbit data (including long range predicts) are now supported in both SSCWeb, STEREO orbits are supported in both SSCWeb and HelloWeb.

Trapped Radiation Data from NOAA MEPEP Now Available

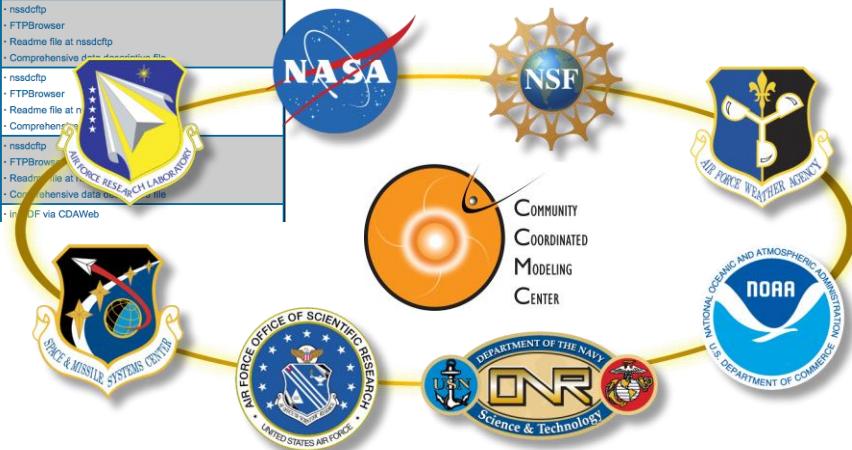
Electron and proton measurements are now available on CDAWeb from the Medium Energy Proton and Electron Detectors (MEPEPs) on NOAA 5, 6, 7, 8, 10, 12, and 14 at one minute resolution. Data include count rates, pitch angles, perpendicular-to-magnetic field fluxes, omnidirectional fluxes and drift shell parameters for four pre-selected magnetic field models.

Important Patches for IDL 6.1 and above users of CDF issued

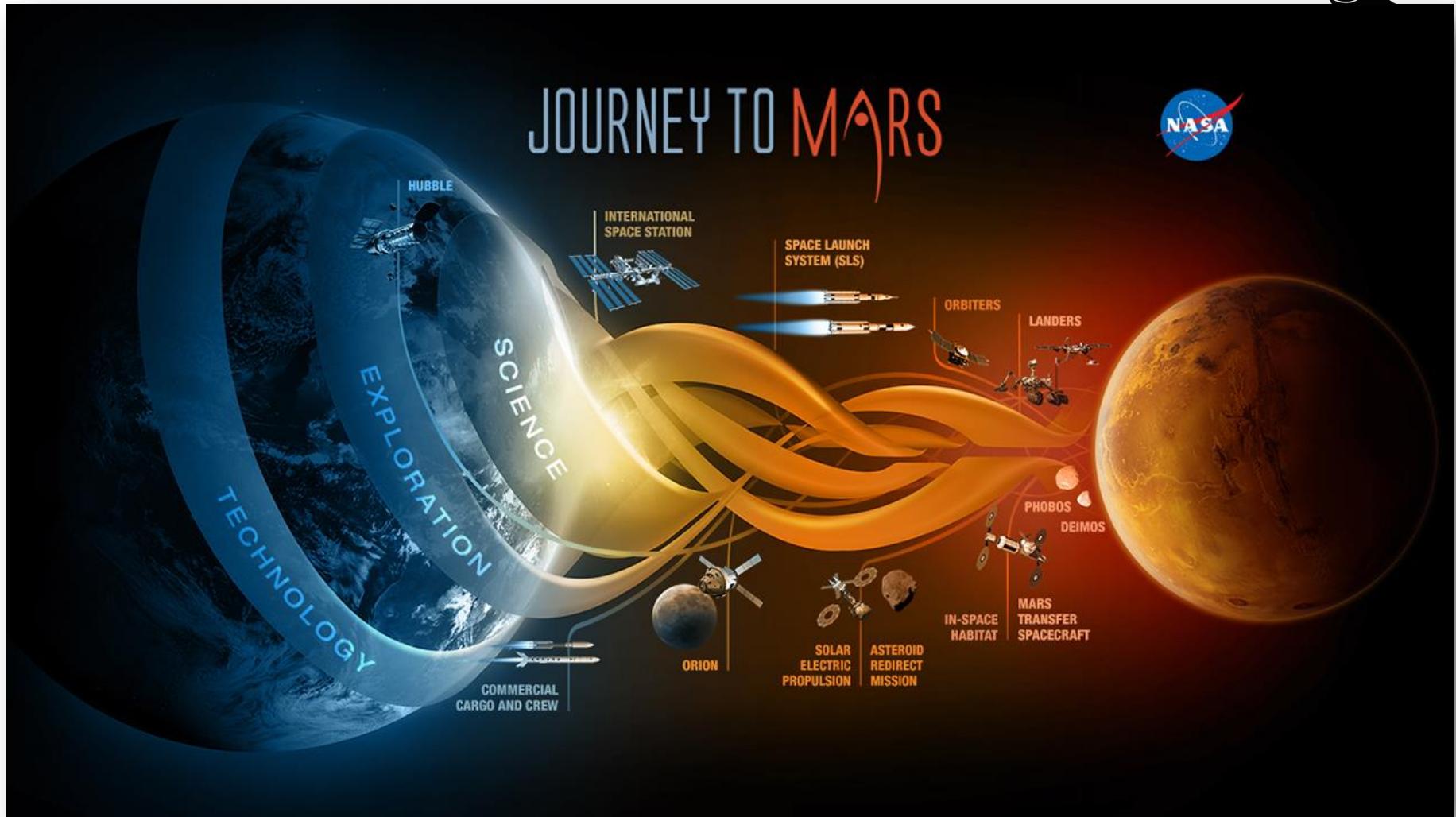
Please see the [CDF page](#) for details and installation instructions

TIMED Data in CDAWeb

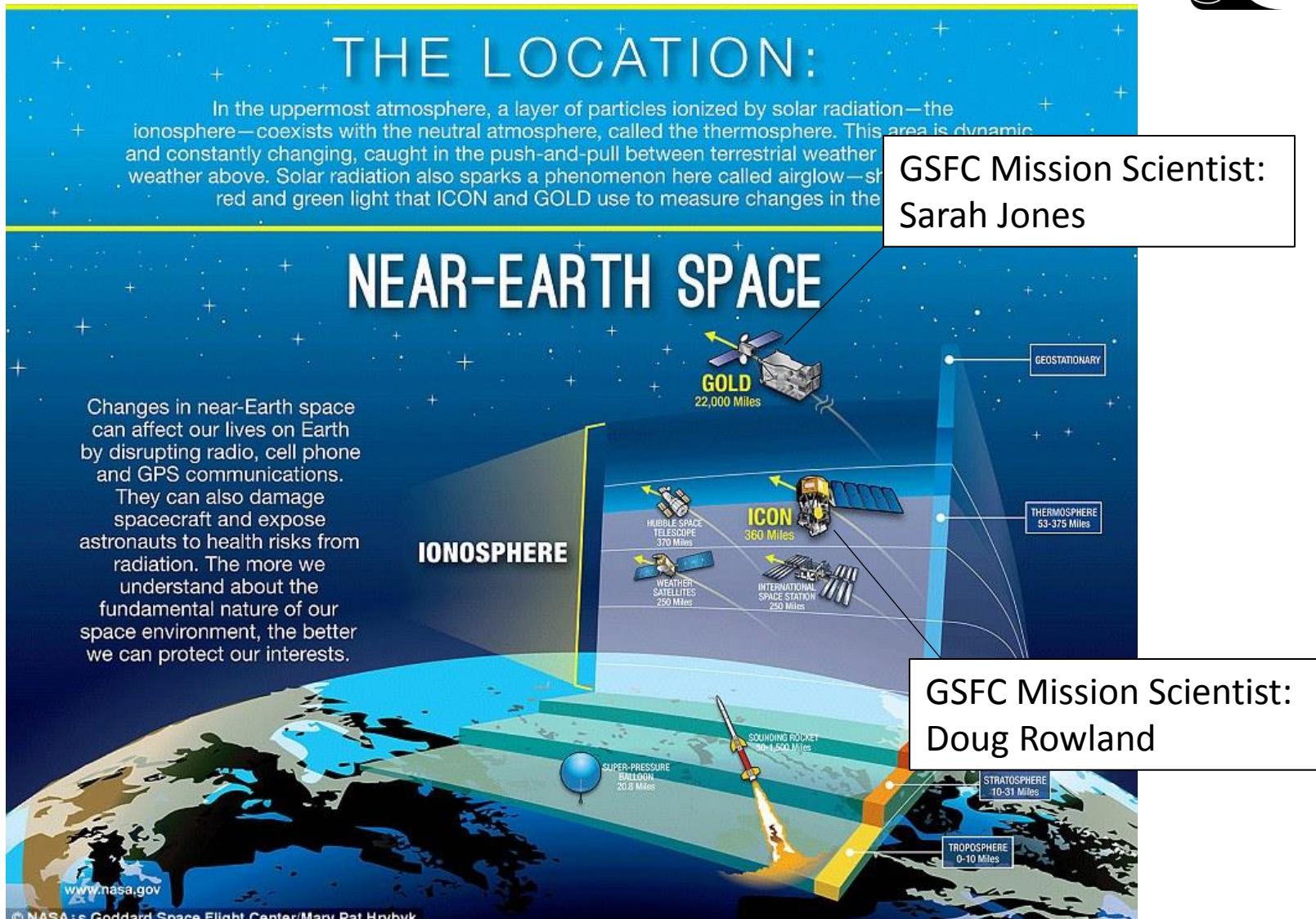
CDAWeb now supports GUVI Level-1C DISK (Airlow Fluxes) and EDP (Electron Density Profiles) data, SABER



Deep Space



Back to Earth: ICON and GOLD





Closing thoughts

- Space weather has grown in importance over the past several years, and we expect the trend to continue
- **Addressing the challenge requires not only Agency-level coordination but also close collaboration between government, academic and commercial entities**
- NASA GSFC Heliophysics Science Division looks forward to continue contributing to these collaborations!