The USGS Geomagnetism Program and the Unified Space Weather Capability

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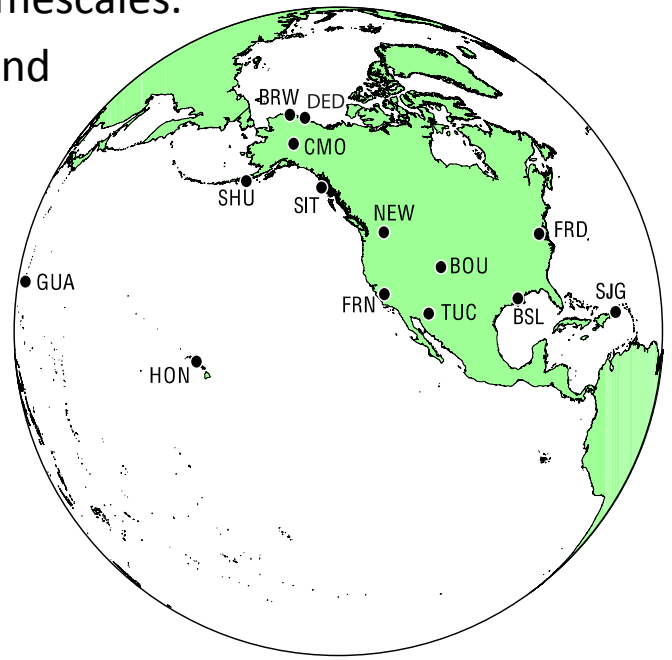
Geomagnetism Program Mission and Operations

USGS serves as the ground-based component of the NSWP:

- Monitor Earth's magnetic field using 14 ground-based magnetic observatories.
- Provide magnetic data in real-time and covering long timescales.
- Conduct research to improve scientific understanding and support hazard mitigation.



ICSU WORLD DATA SYSTEM

The USGS works with INTERMAGNET to support international observatory operations.

- workshops to build capacity abroad.
- new collaboration with Russian Academy.

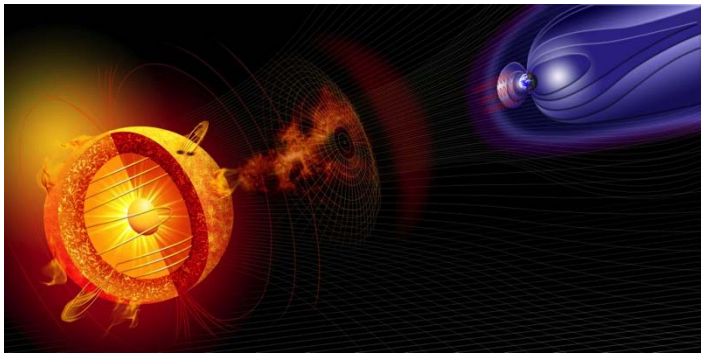
USGS observatory operations benefit from the cooperation with many agencies.

USGS Data Applications and Customers

Observatory data are used for a wide variety of applications.

For space weather, USGS magnetic observatory data are of critical importance for:

- Measuring the size of magnetic storms and monitoring storm evolution.
- Assessing induced electric currents of concern to the electric-power grid industry.
- Supporting directional drilling for oil and gas.



National, international, and private users of real-time USGS observatory data:

Air Force Weather Agency

Air Force Research Laboratory

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

NASA

NiCT 独立行政法人 情報通信研究機構 National Institute of Information and Communications Technology

GFZ Helmholtz Centre Potsdam

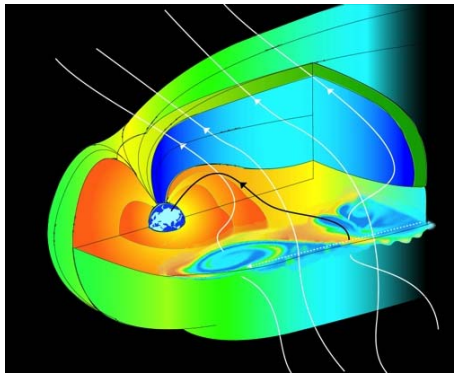
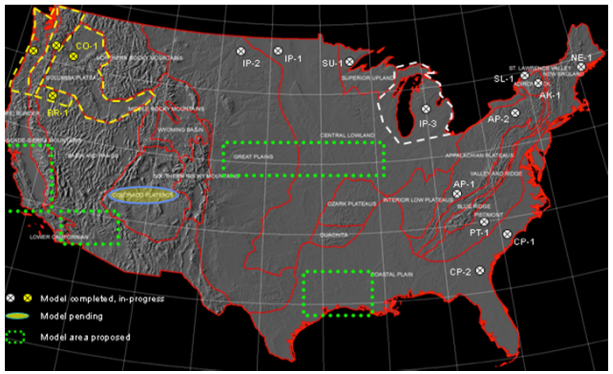
Schlumberger

Space Environment Technologies
Space Research Space Operations Space Standards

USGS Geomagnetic Collaborative Research

Solar-terrestrial interaction and space climatology.

Ground-based validation of global geospace models.



Global and regional induction and earth conductivity for electric-power grid hazards.