Welcome to SWEF 2015!

Hon. Bill Nelson
U.S. Senator
SWEF 2015 Congressional Sponsor

Dr. Bill Leith
Senior Science Advisor, USGS
SWEF 2015 Host

Photo by Graeme Whipps UKMO

USGS Geomagnetism Program

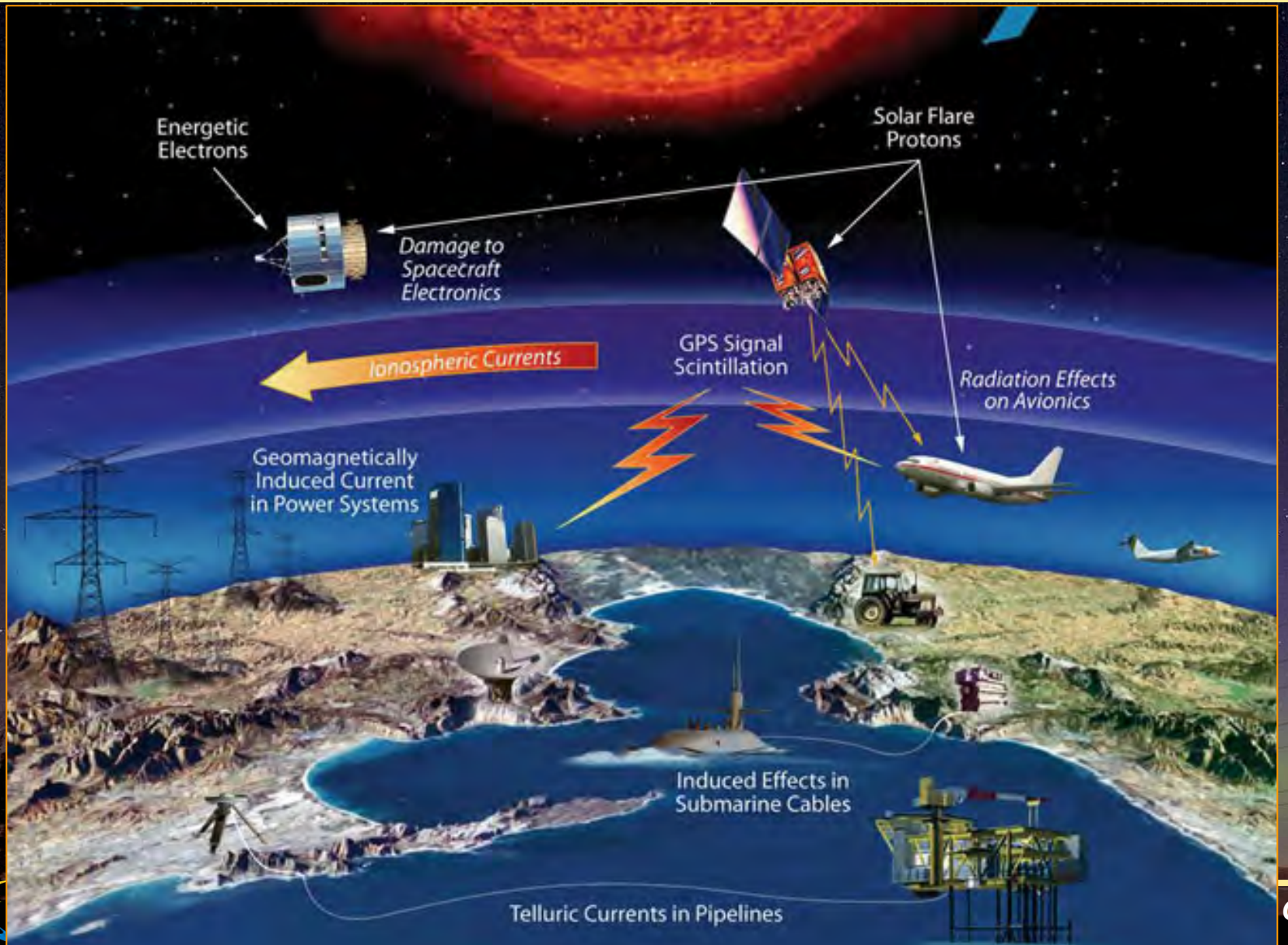
USGS science for a changing world

- Monitor Earth's magnetic field using ground-based magnetic observatories
- Collect continuous, high-temporal resolution, accurate records of magnetic field variations covering long timescales
- Provide magnetic data to various governmental, academic, and private institutions, including the NOAA Space Weather Prediction Center and USAF
- Conduct research for scientific understanding and hazard mitigation

110-year history
14 observatories

Photo by Graeme Whipps UKMO

Effects of Space Weather



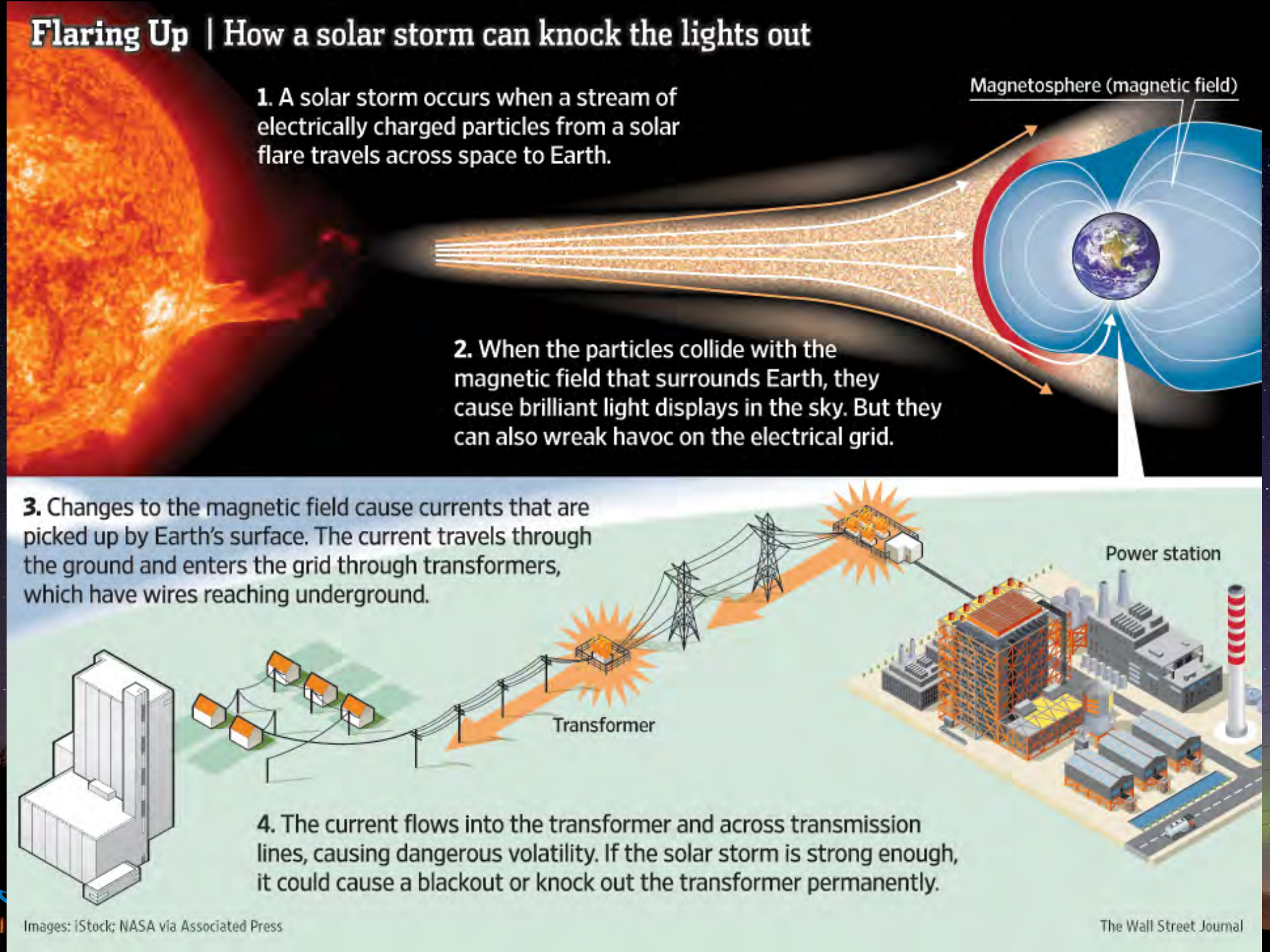
SWEF

OFCM

Federal Space Weather Partners

Photo by Graeme Whipps UKMO

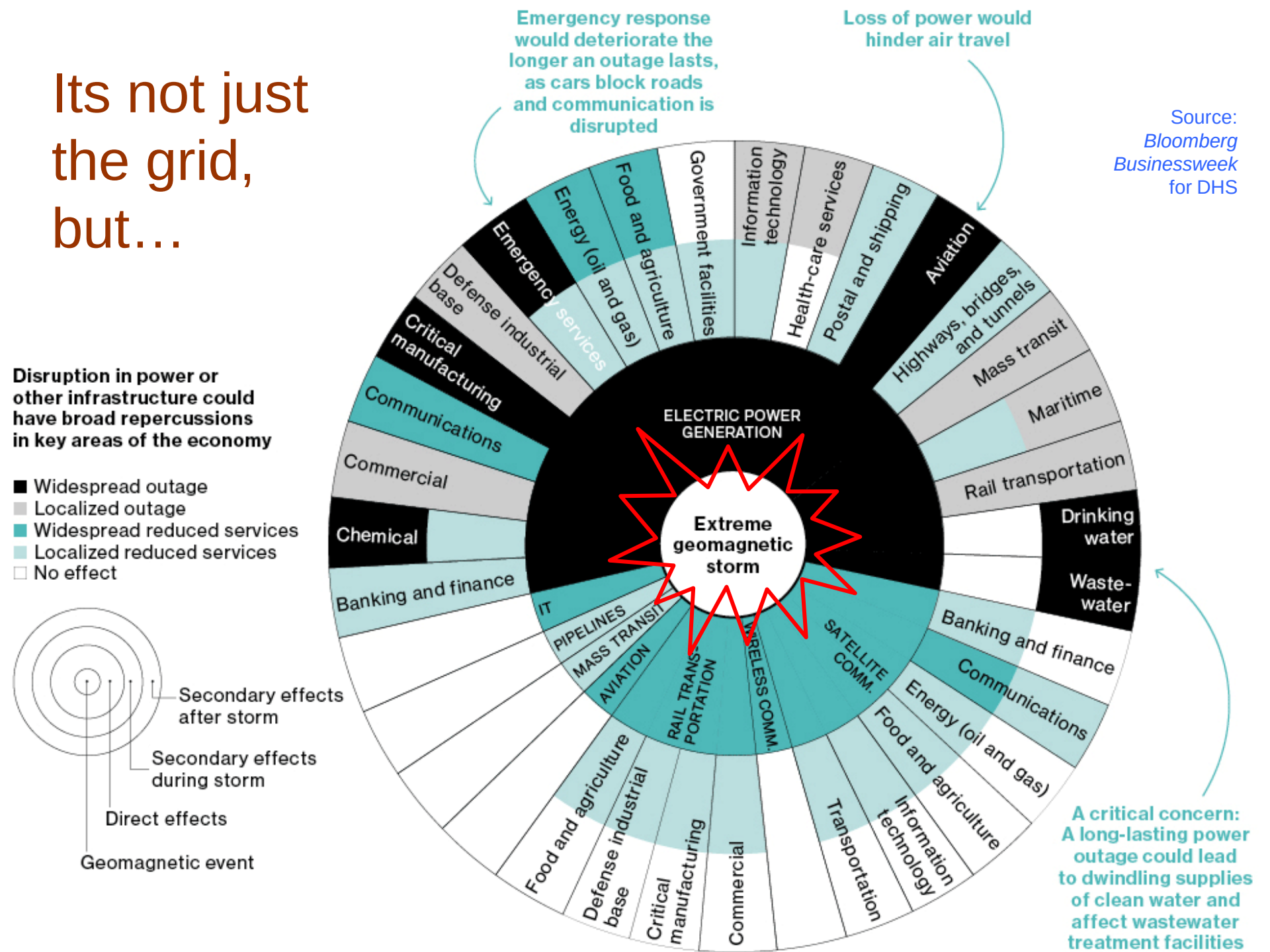
Flaring Up | How a solar storm can knock the lights out



Images: iStock; NASA via Associated Press

The Wall Street Journal

Its not just the grid, but…



Industrial Applications

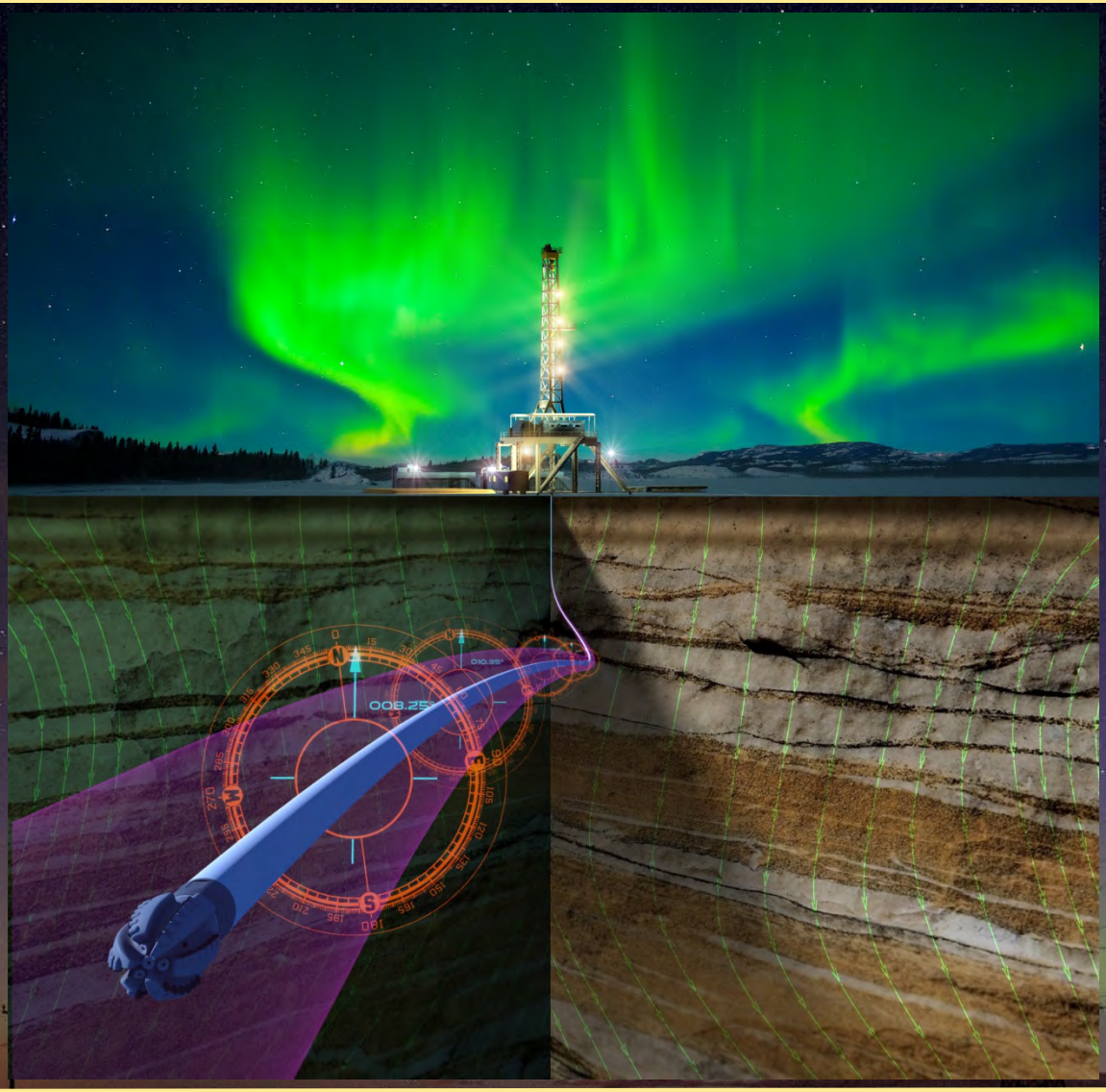


Photo by Graeme Whipps UKMO

Quantifying Hazard, Modeling, Forecasting, and Mitigating Risk

Large-scale geomagnetic storms are well-recognized as “low-probability, high-consequence” events.

However, neither modern observations nor the historical record are sufficient to confidently:

1. Determine probabilities
2. Forecast severity and duration
3. Model effects on systems and infrastructure
4. Calculate cost-benefit for mitigation solutions
5. Establish insurance parameters

Photo by Graeme Whipps UKMO

Overview of Technical Sessions

Tuesday:

Session 2: National Space Weather Strategy

Session 3: Future Directions of Industry

Wednesday:

Session 5: Understanding the Impacts of Space Weather

Session 6: Space Weather Observing Systems

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