

Creating platforms for visualizing and interacting with data

CEDAR 2020

Visualizing and interacting with data

Current examples

- Line plots
- movies

Some newer ideas

- User generated specific data
- User contributed data

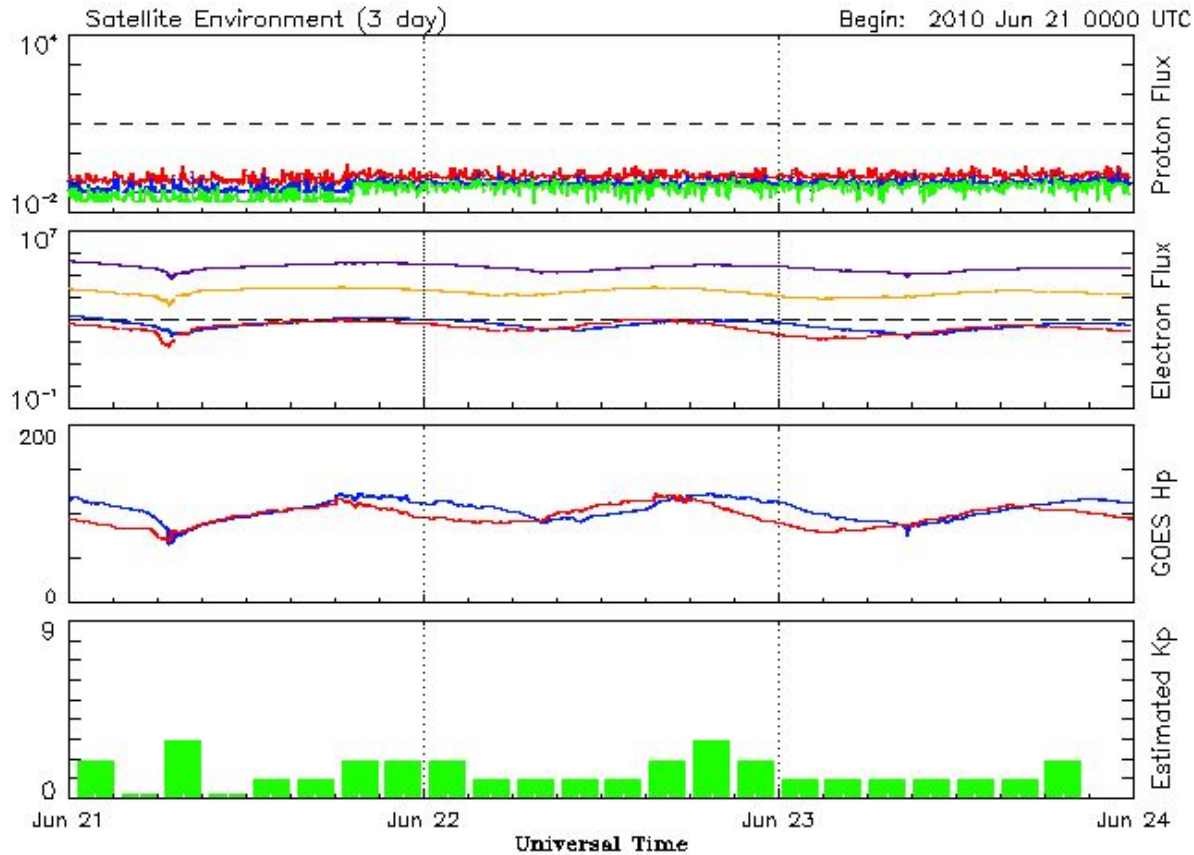
What's next?

- Lots of room for improvement

Examples

10 Years ago

...



Updated 2010 Jun 23 23:56:20 UTC

NOAA/SWPC Boulder, CO USA

- Completely static line plots

Examples

Today



Improvements:

- Interactive: Cursor movement gives the data values
- Some allow time window changes, i.e. 3 days, 7 days etc.

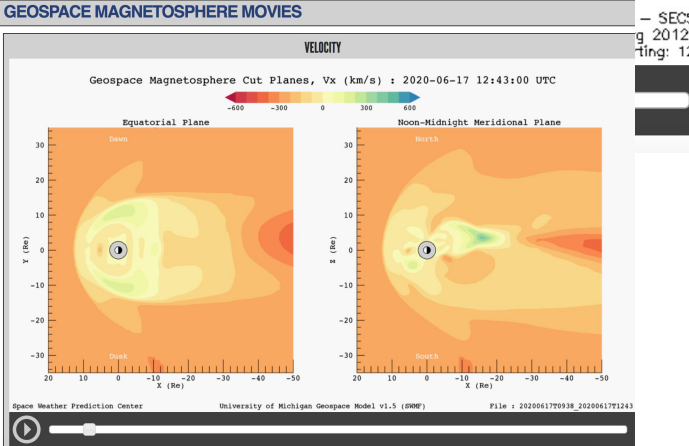
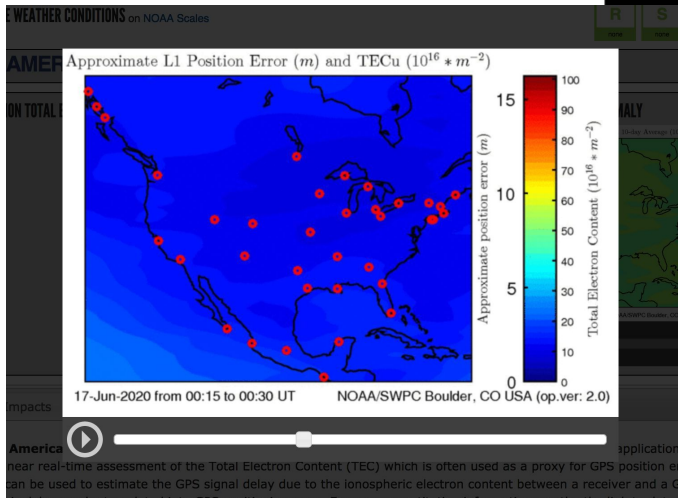
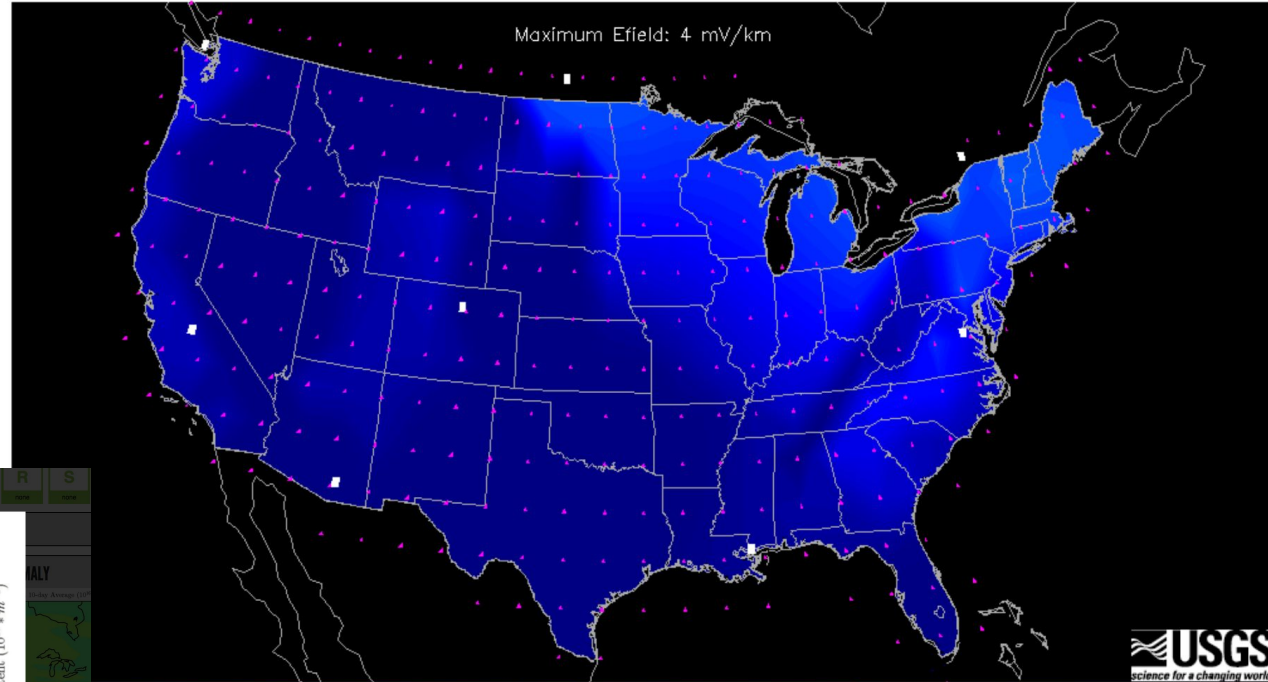
Challenges:

- Not user specific
- No impacts

Examples Today

Geoelectric Field Map Version 1

2020/06/17 13:23:30UTC



- Challenges:
- Not user specific

User generated data

- Specific effects for each user updated in real time

New Collection Parameters

Create a new dataset by setting the parameters and clicking 'Create Dataset'. Choose a satellite trajectory from the drop down list or add a new one with the [+]. An email will be sent when generation is complete and data is ready for viewing. (It may take several hours to generate a year of data)

Collection:

Sat ID: +

Hazard Type:

Shielding:

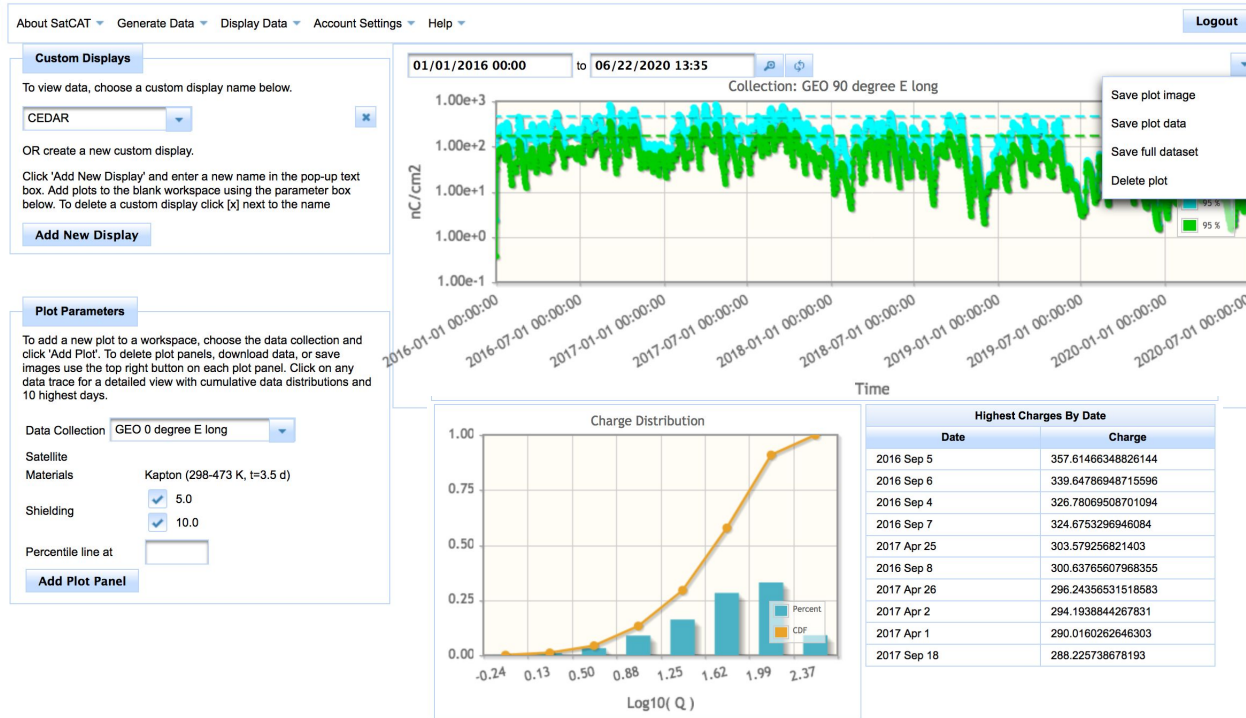
Thicknesses:

Materials:

Start time:

Real-time:

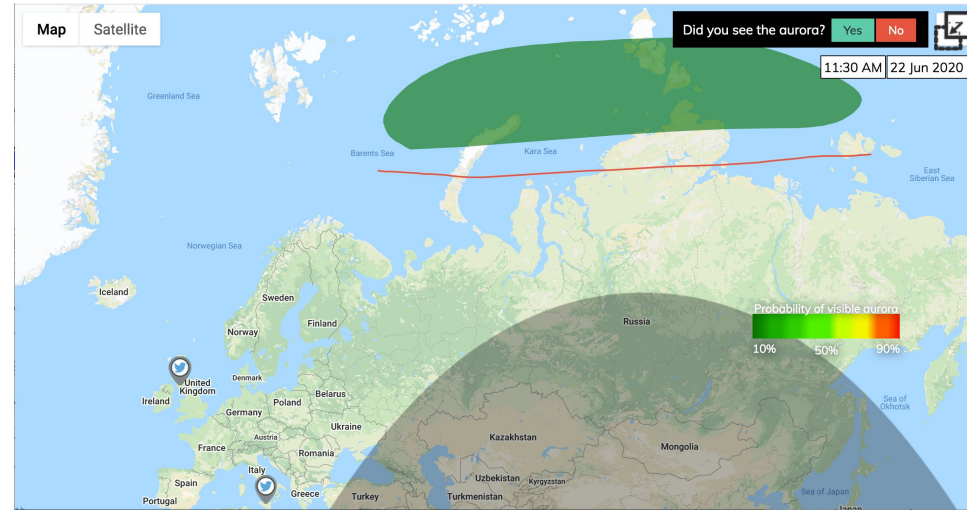
Create Dataset



User contributed data

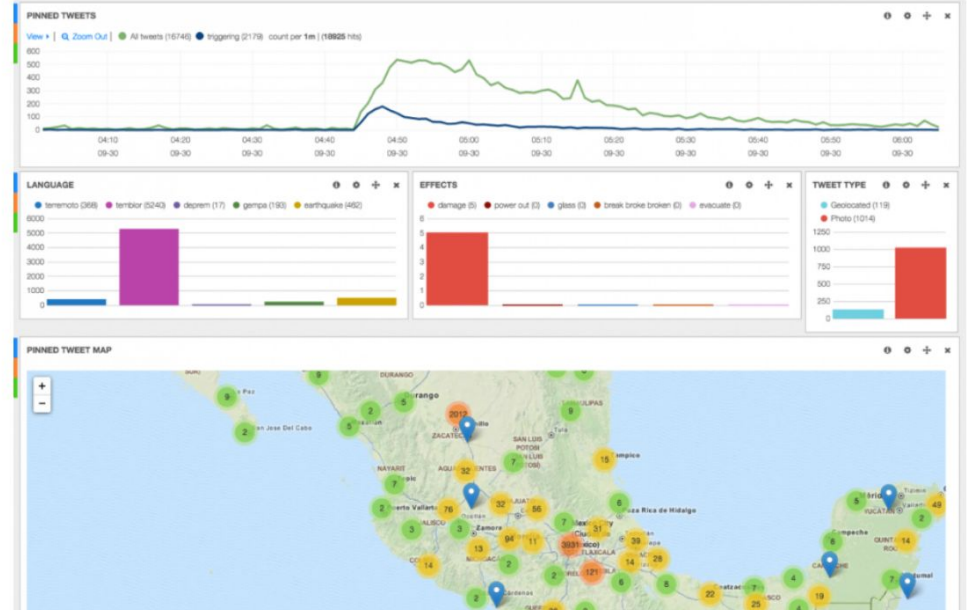
- Aurorasaurus

- Combines auroral model with tweets of aurora



- USGS Earthquake monitoring

- Uses tweets to locate earthquakes
- Sometimes faster than seismic networks especially in poorly instrumented regions



User contributed data

- Satellite anomaly database
 - Was initially part of the SWAP
 - Vision for combining models of the radiation environment with AI/statistical models of expected satellite anomalies, and locations of actually observed anomalies
 - Sometimes difficult to get users to contribute
- Satellite conjunction analysis
 - Space Data Association and AGI have come together to create the Space Data Center
 - Ingests flight dynamics information from member companies and other sources to provide conjunction assessment and warning services

Data ↔ Users



What's next?