

Starlink Event

Schedule

In Synchronous Groups (5 minutes)

- Identify which member of your group will review which “expert” set of data
 - Solar, Solar Wind, Magnetosphere, Ionosphere

Expert Groups (45 minutes)

- Review “expert” data set and summary from TZ Groups

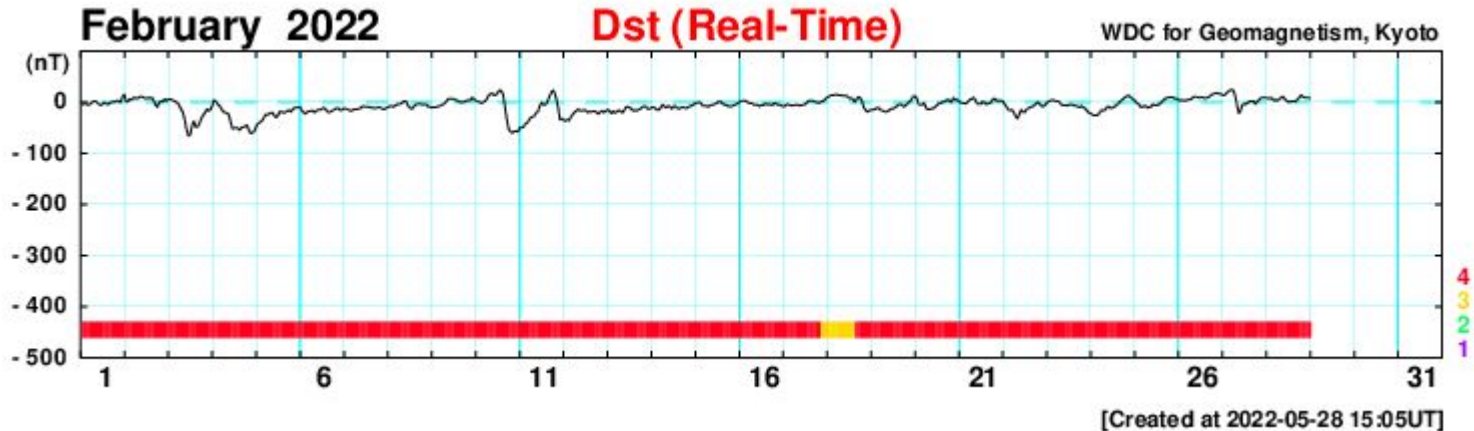
Synchronous Groups (Jigsaw) (90 Minutes)

- Construct a complete story for the event
- Create a shared document if you have time

To Start With: Was it Geo Effective?

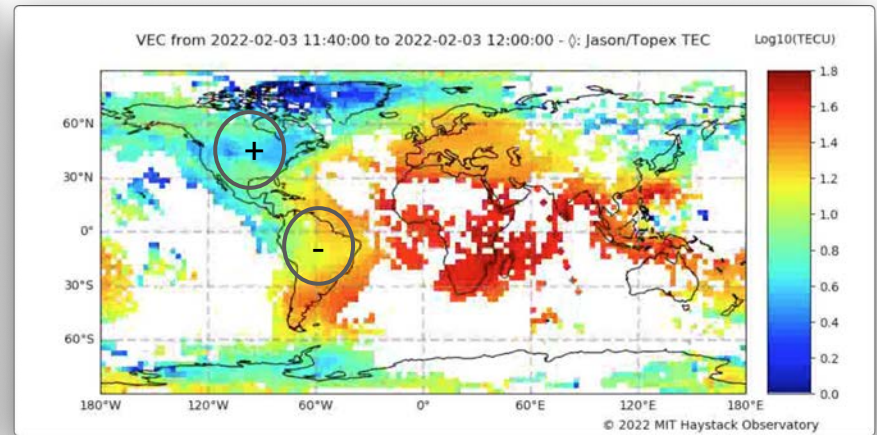
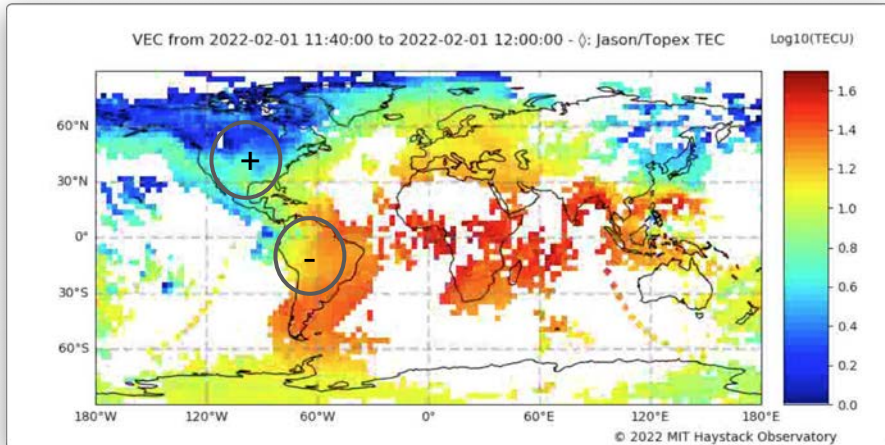
Check Kp or Dst

- Disturbance Storm Time Index - equatorial magnetic field disturbance
- Show disturbance in equatorial ring current

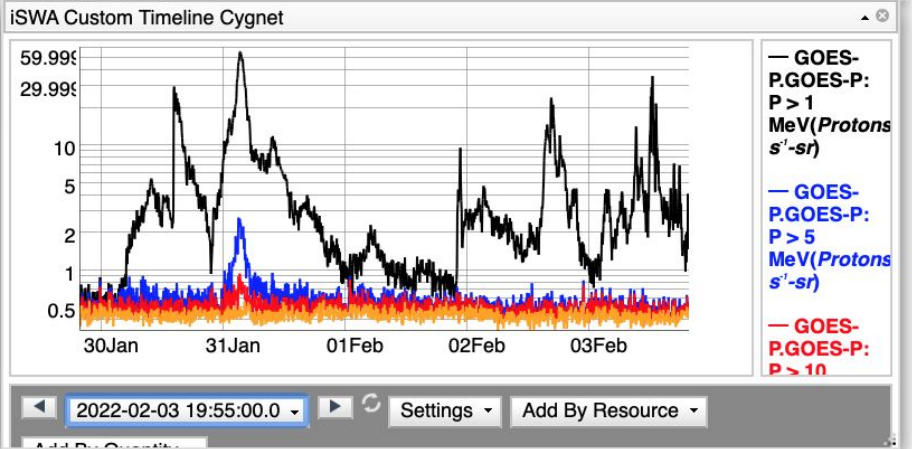
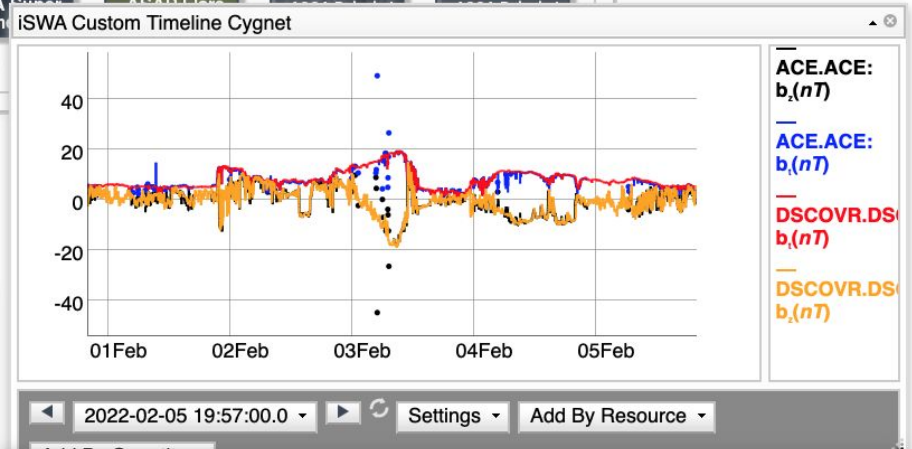
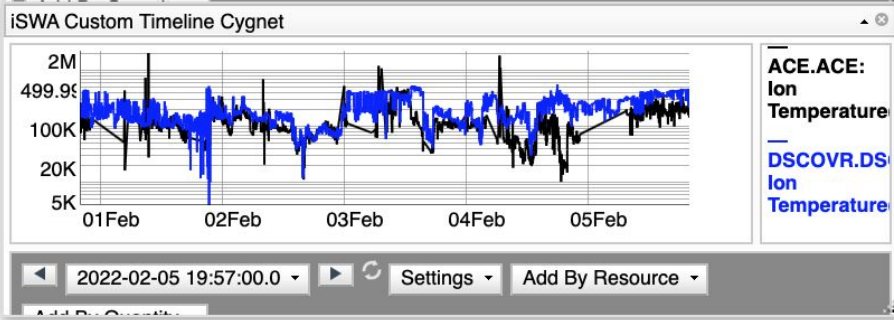
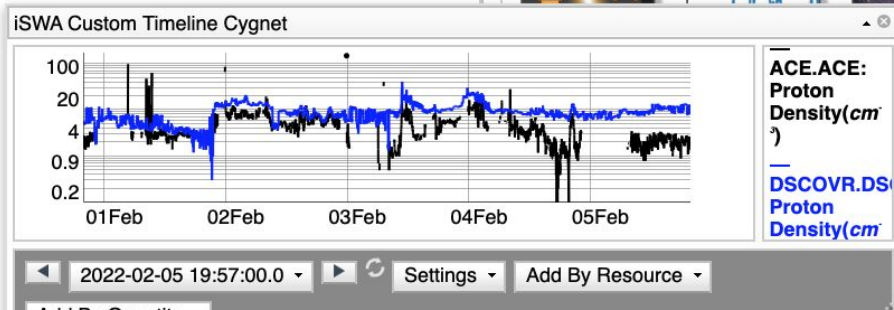


Check on Ionosphere Disturbance

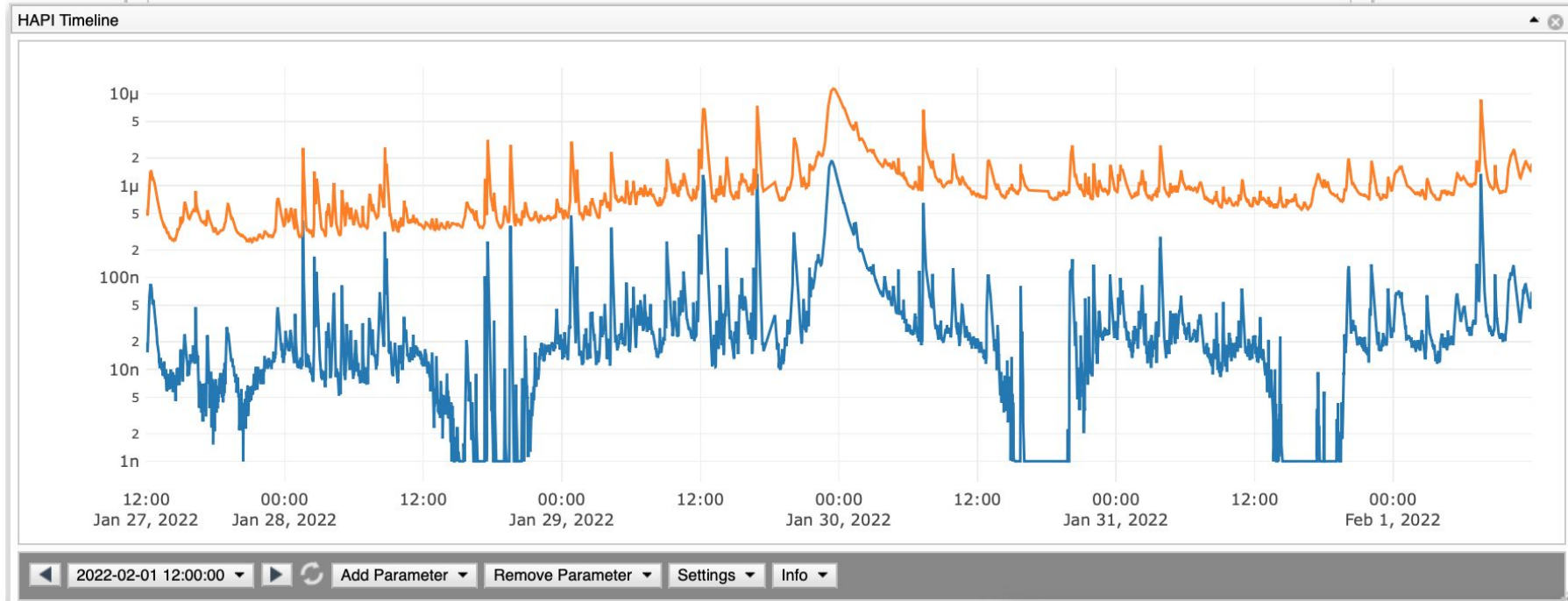
- Using Dual Frequency GNSS Errors to Estimate Ionosphere Disturbance (TEC)
- Source
- Look for Positive and Negative Effects at same Local Time



What caused this? Look at Solar Wind

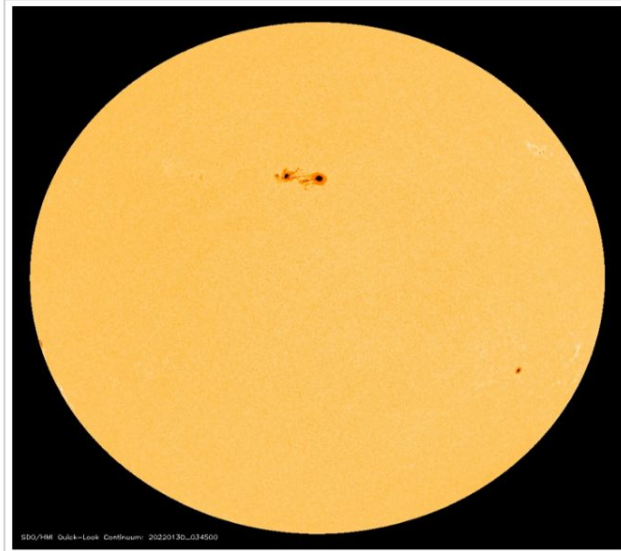


Solar Observations

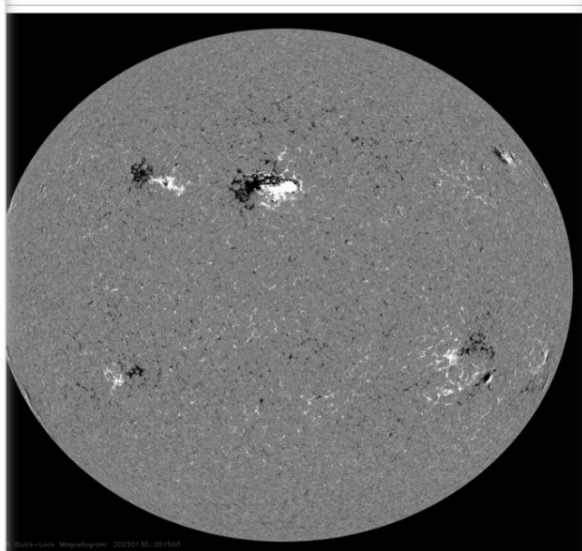


Solar Observations

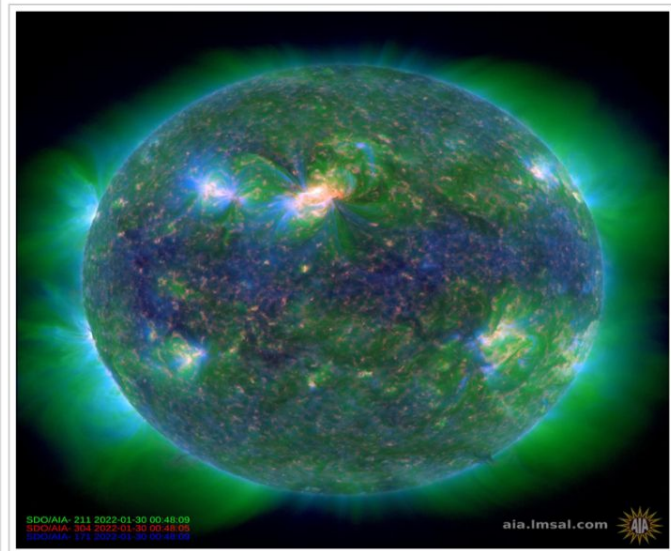
SDO/HMI Solar Continuum (Flattened Colorized Intensitygram)



HMI Magnetogram



SDO - AIA Composite (304, 211, 171)



2022-01-30 03:45:00.0

Screenshot info

Navigation controls: play, stop, seek, refresh

22-01-30 05:15:00.0

info

Navigation controls: play, stop, seek, refresh

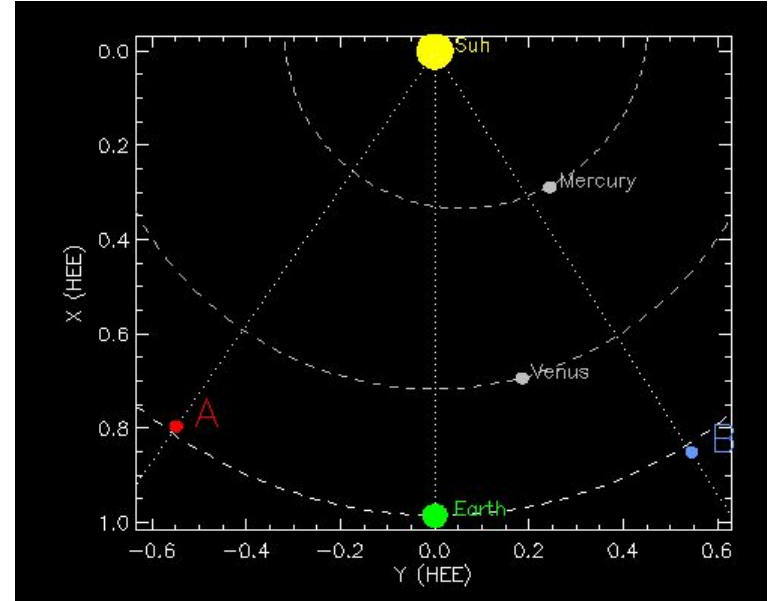
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info

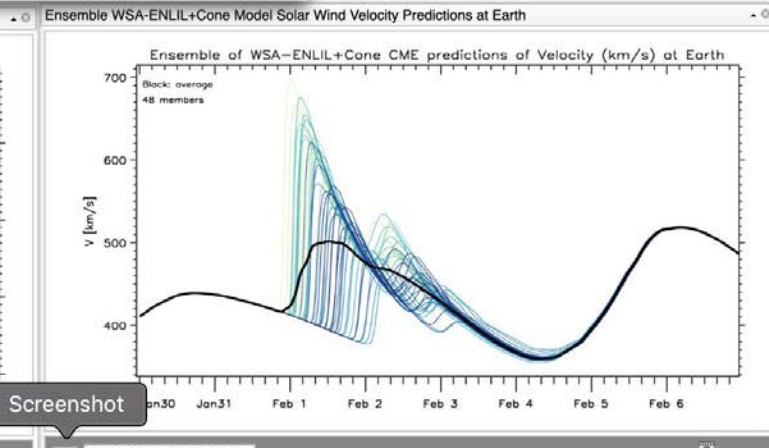
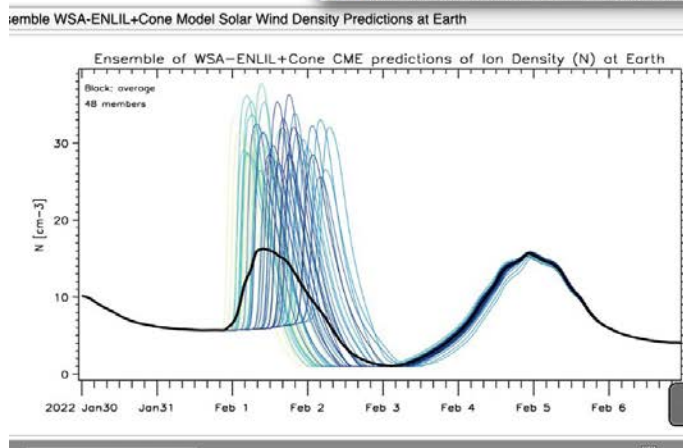
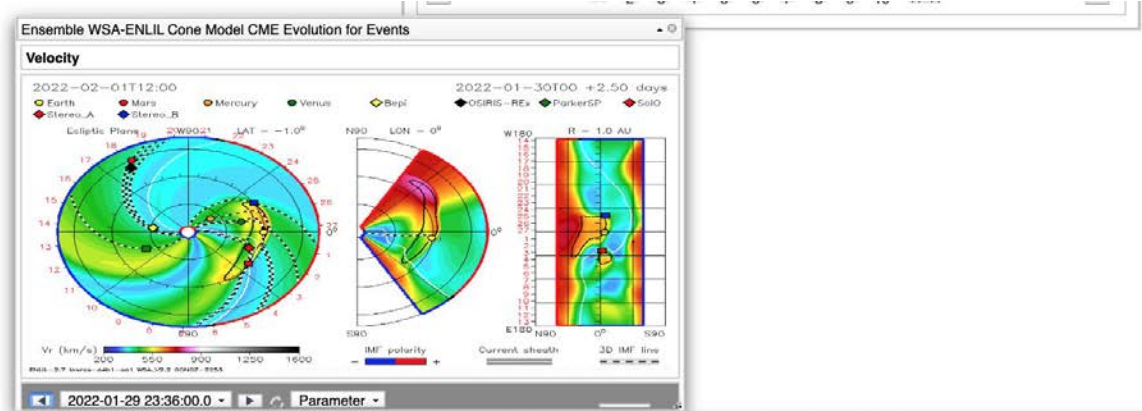
Navigation controls: play, stop, seek, refresh

Solar Observations

[Check Coronagraphs](#)

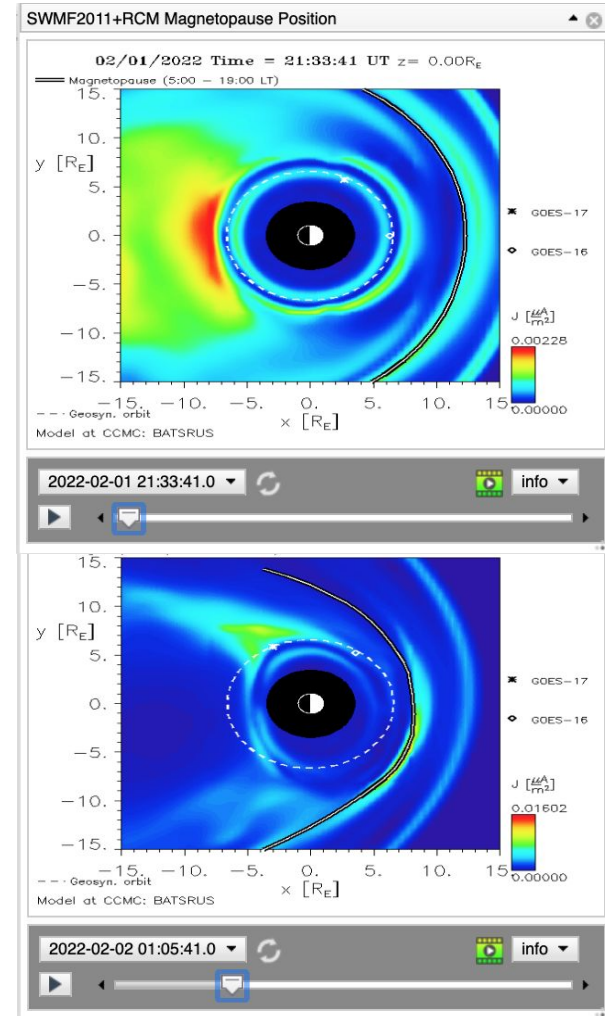
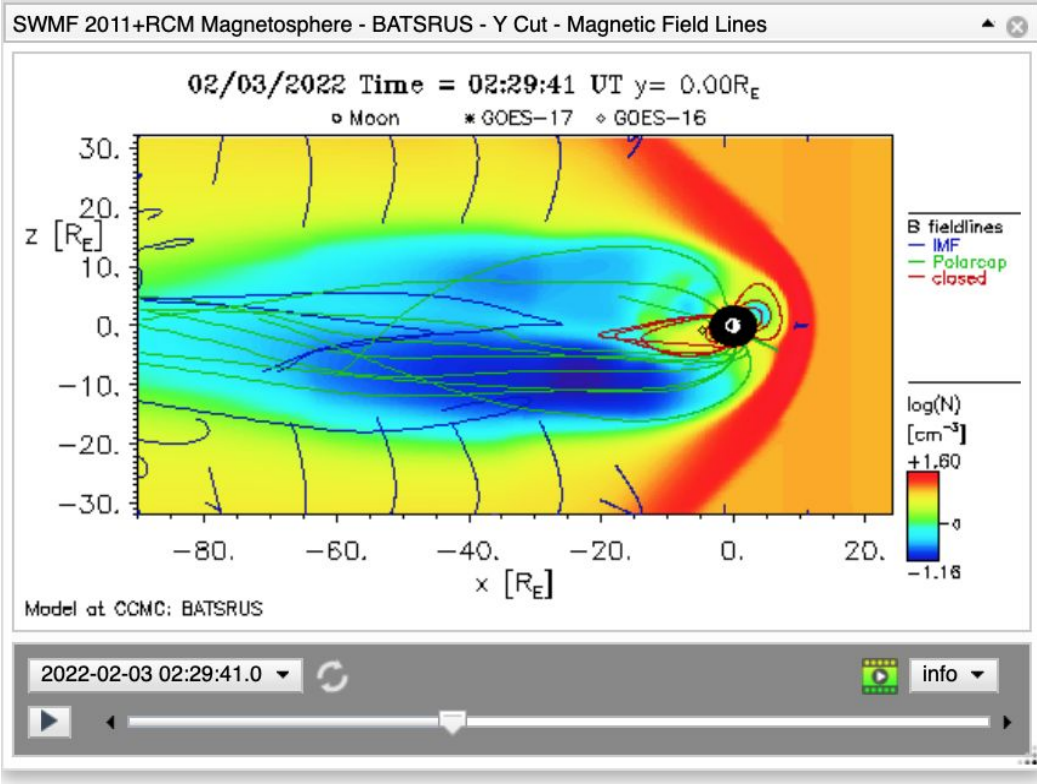


Enlil Models



Screenshot

Magnetosphere Models



What else happens to the Ionosphere/Thermosphere

Thermospheric Heating

- What happens to the density at a given altitude when the thermosphere temperature increases?
 - density increases
 -
 - density decreases
 -
 - density stays the same

What else happens to the Ionosphere/Thermosphere

Thermospheric Heating

- Tzu-Wei Fang (SWPC) et. al. to be published in “Space Weather”
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Conclusion

We're having some (Space) Weather.

- Space Environment is Variable
- Even Moderate Storms Can Cause Impacts
- Especially When Operating on the Margins