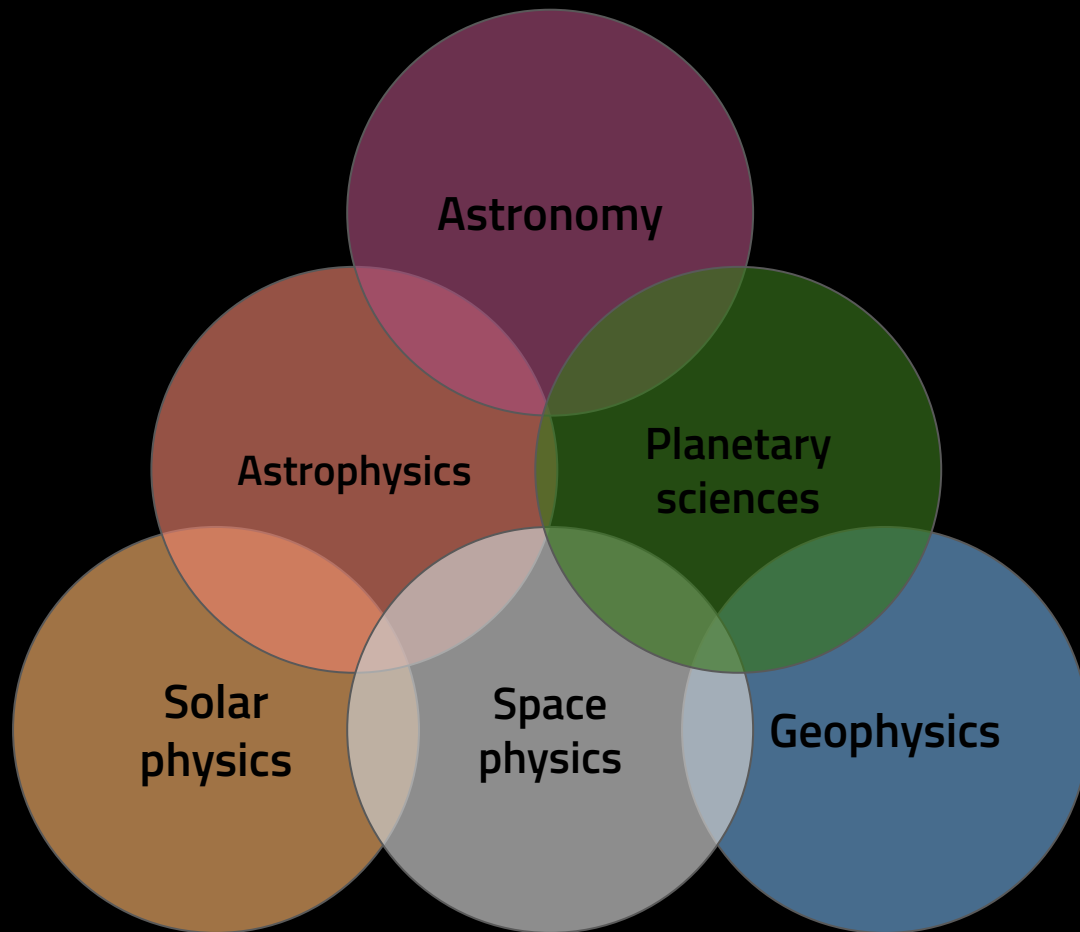




SPACE



Sun

Internal Structure:

inner core,
radiative zone,
convection zone.

photosphere

sunspot

plage

coronal mass ejection

corona

photons

solar wind

heliosphere

bow
shock

Earth

magnetosphere

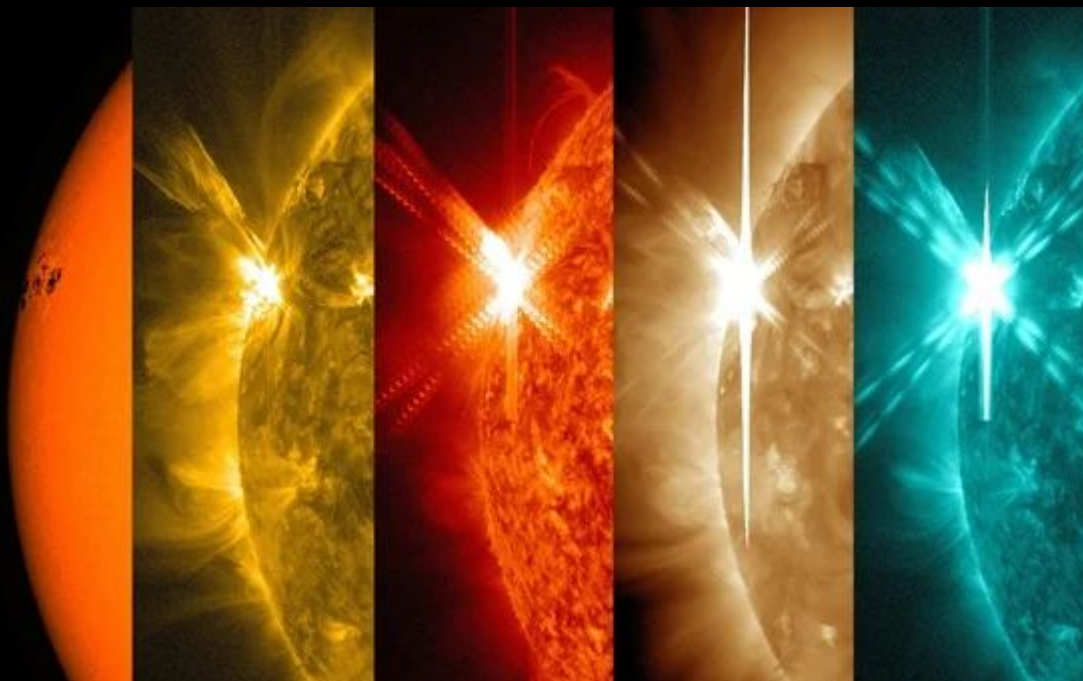
polar cusp

incoming
solar wind
particles

plasmasphere

atmosphere

magnetosheath



NASA / SDO: visible light,

17.1 nm,

30.4 nm,

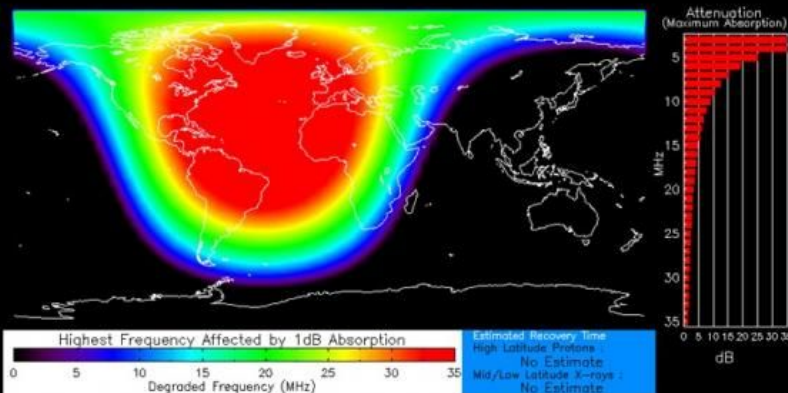
19.3 nm,

13.1 nm

R3

EVENT SUMMARY:

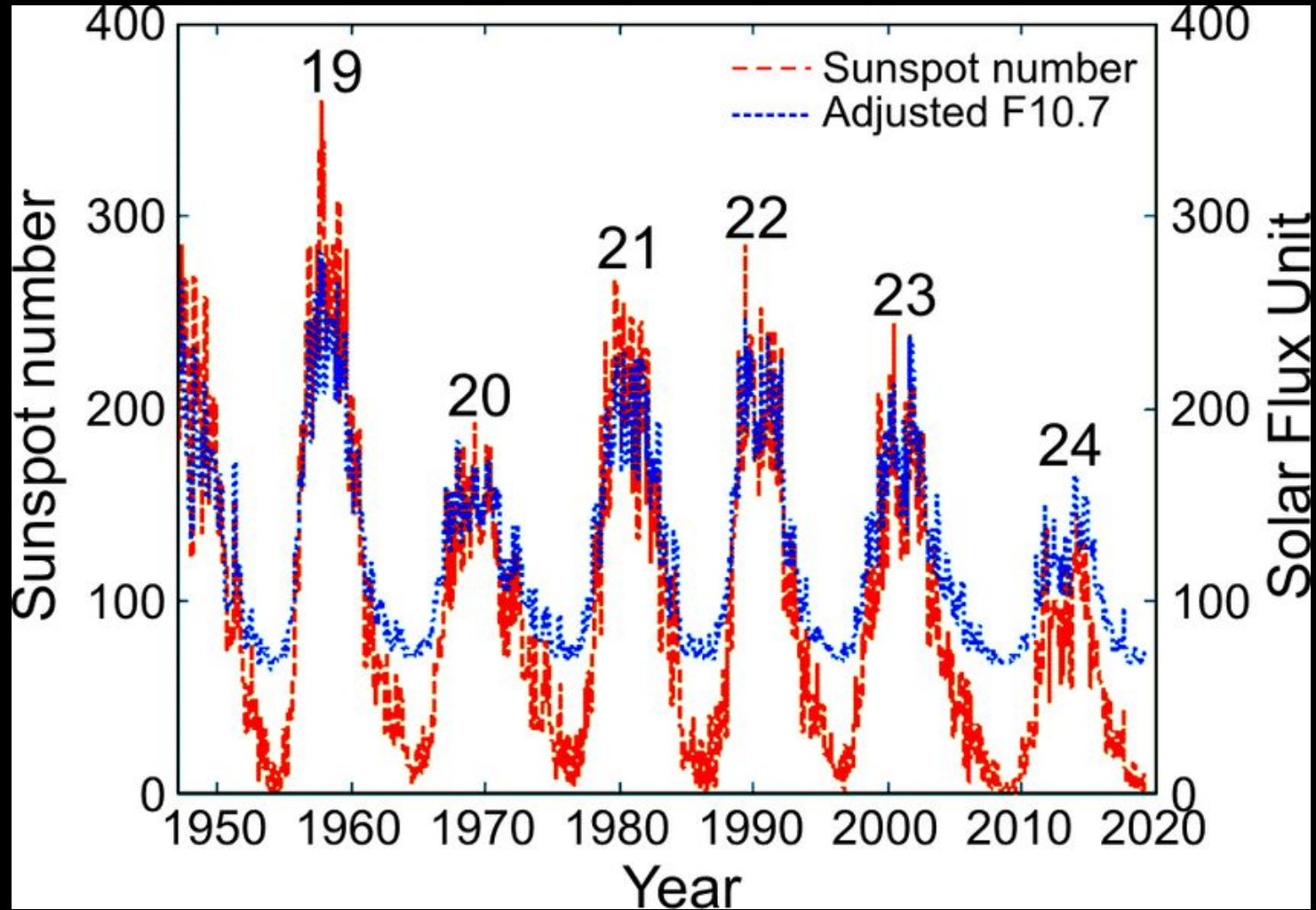
X1 Flare occurred:
1429 UTC on 03 July, 2021

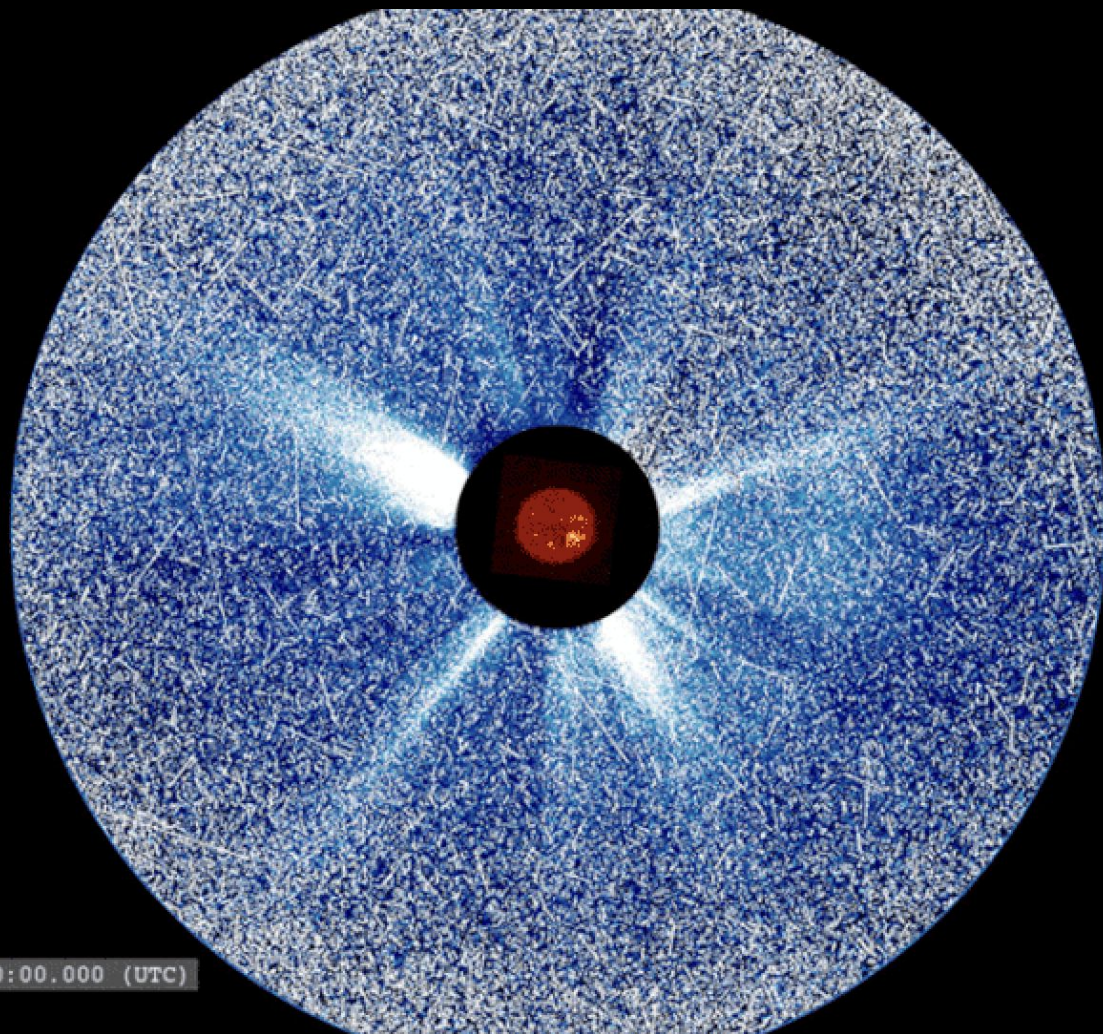


Strong X-ray flux
Product Valid At : 2021-07-03 14:30 UTC

Normal Proton Background
NOAA/SWPC Boulder, CO USA

GOES-16 SUVI Composite 094 Angstroms 2021-07-03 14:32:18



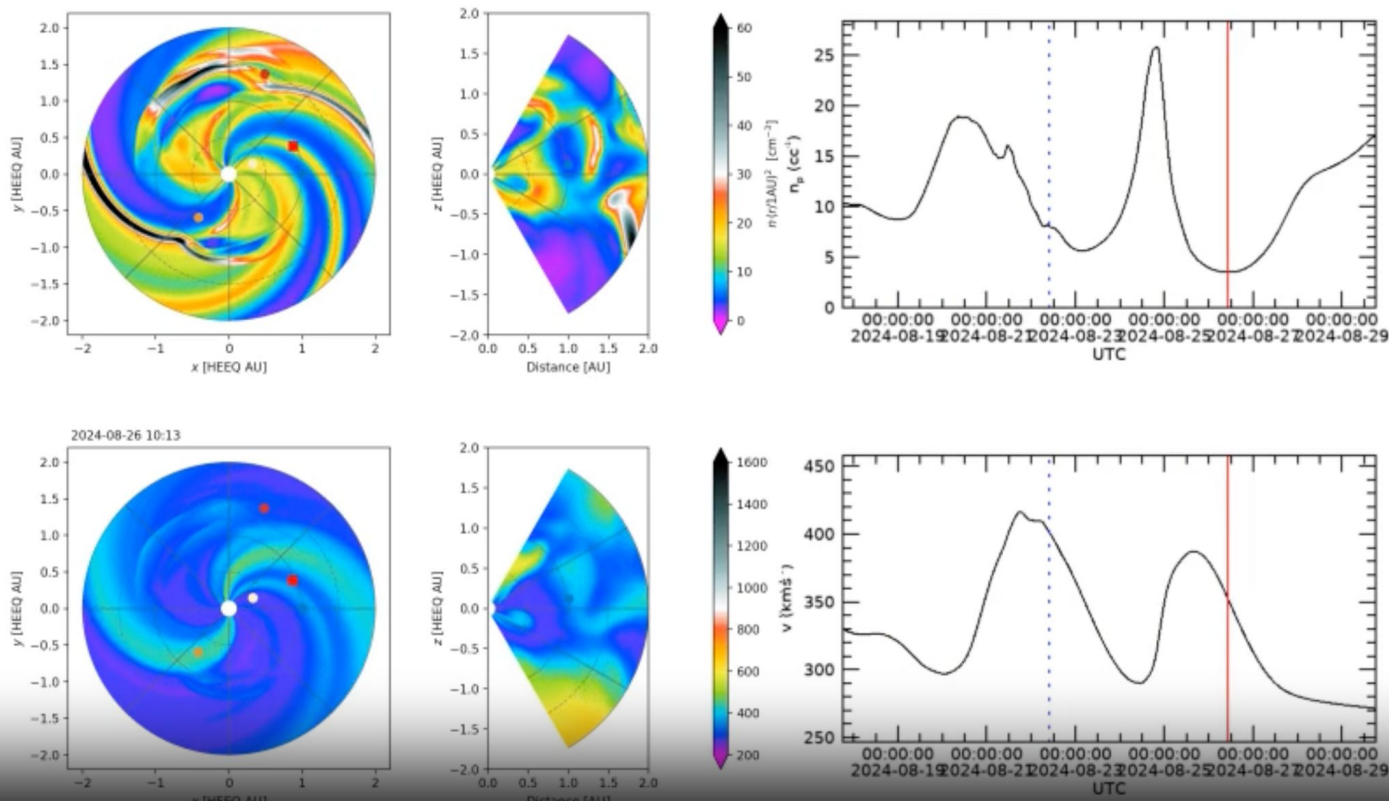


2012 Jul 23 19:30:00.000 (UTC)

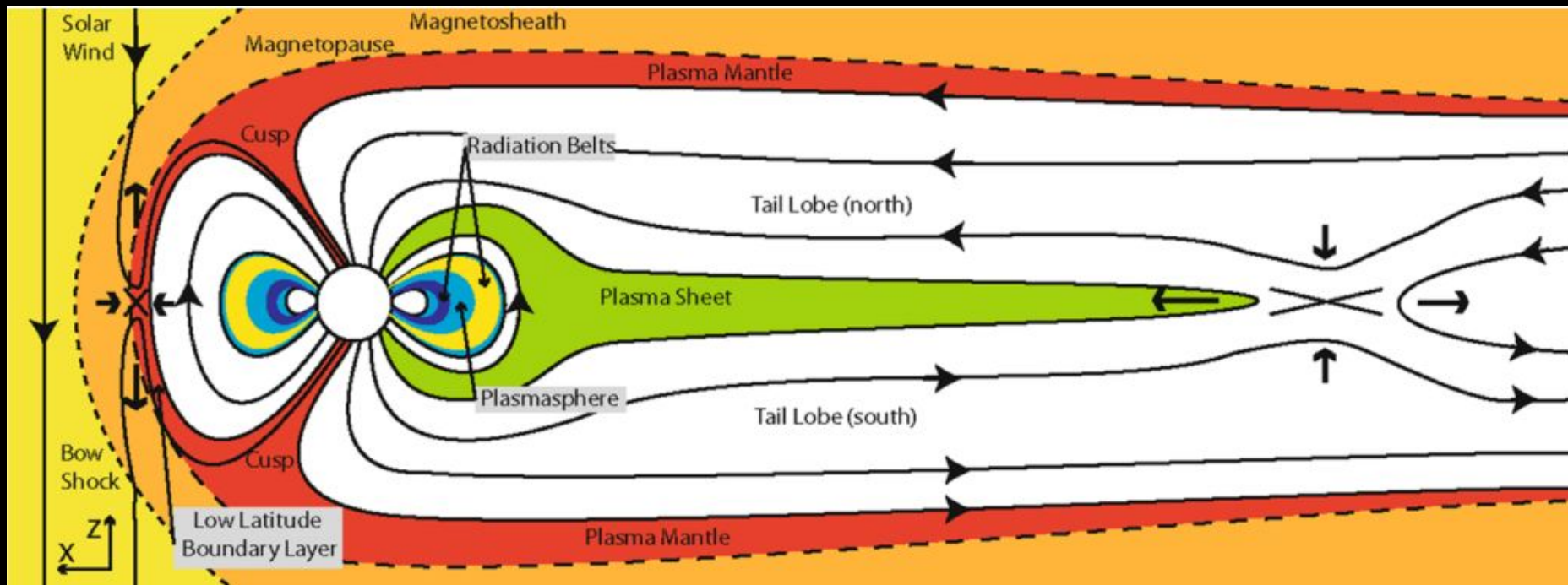


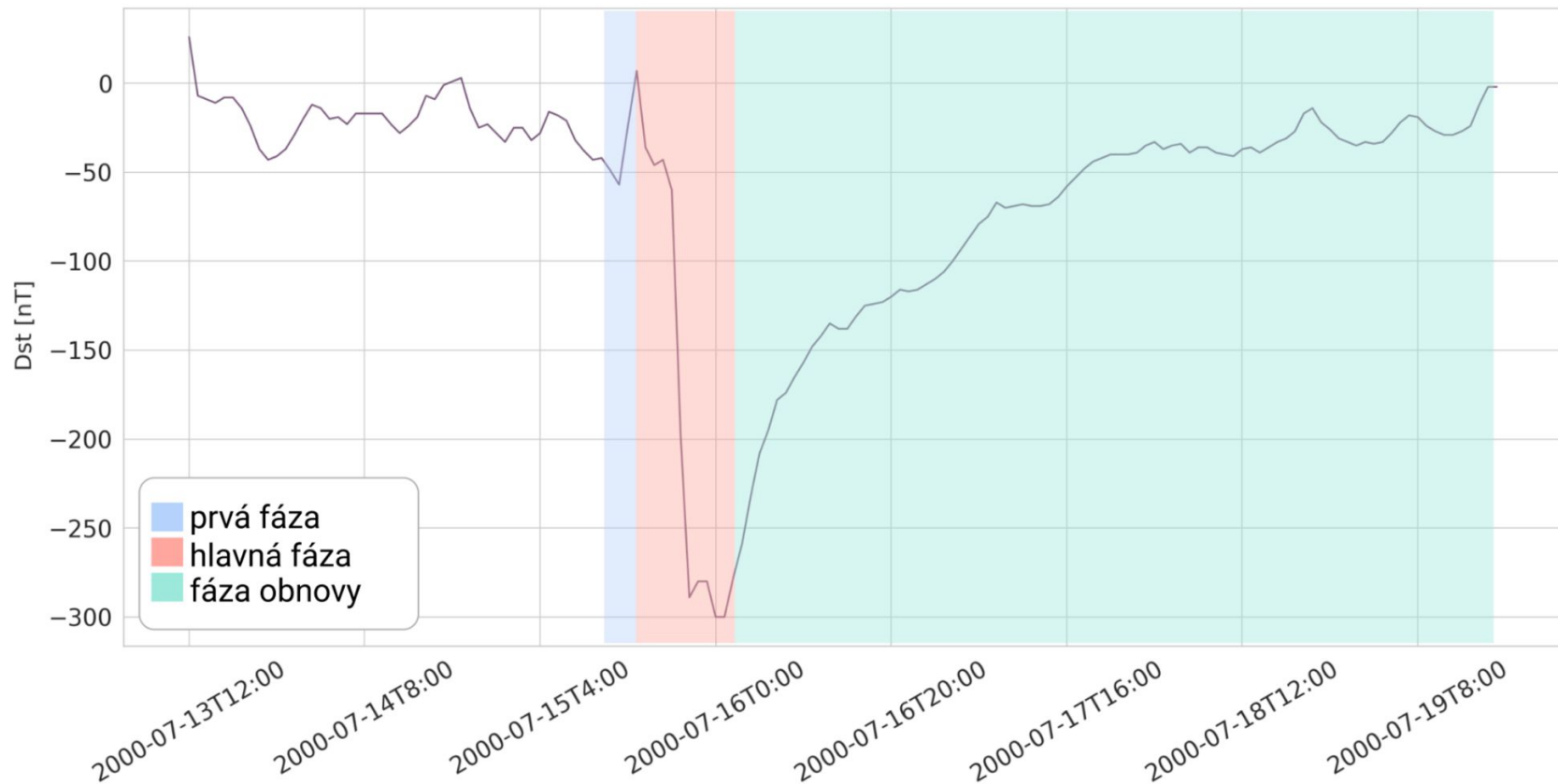
https://youtu.be/HJfy8acFaOg?si=K_Y3QlgL3VrR3_81

EUHFORIA (Earth) - 2024-08-26T10:13:23



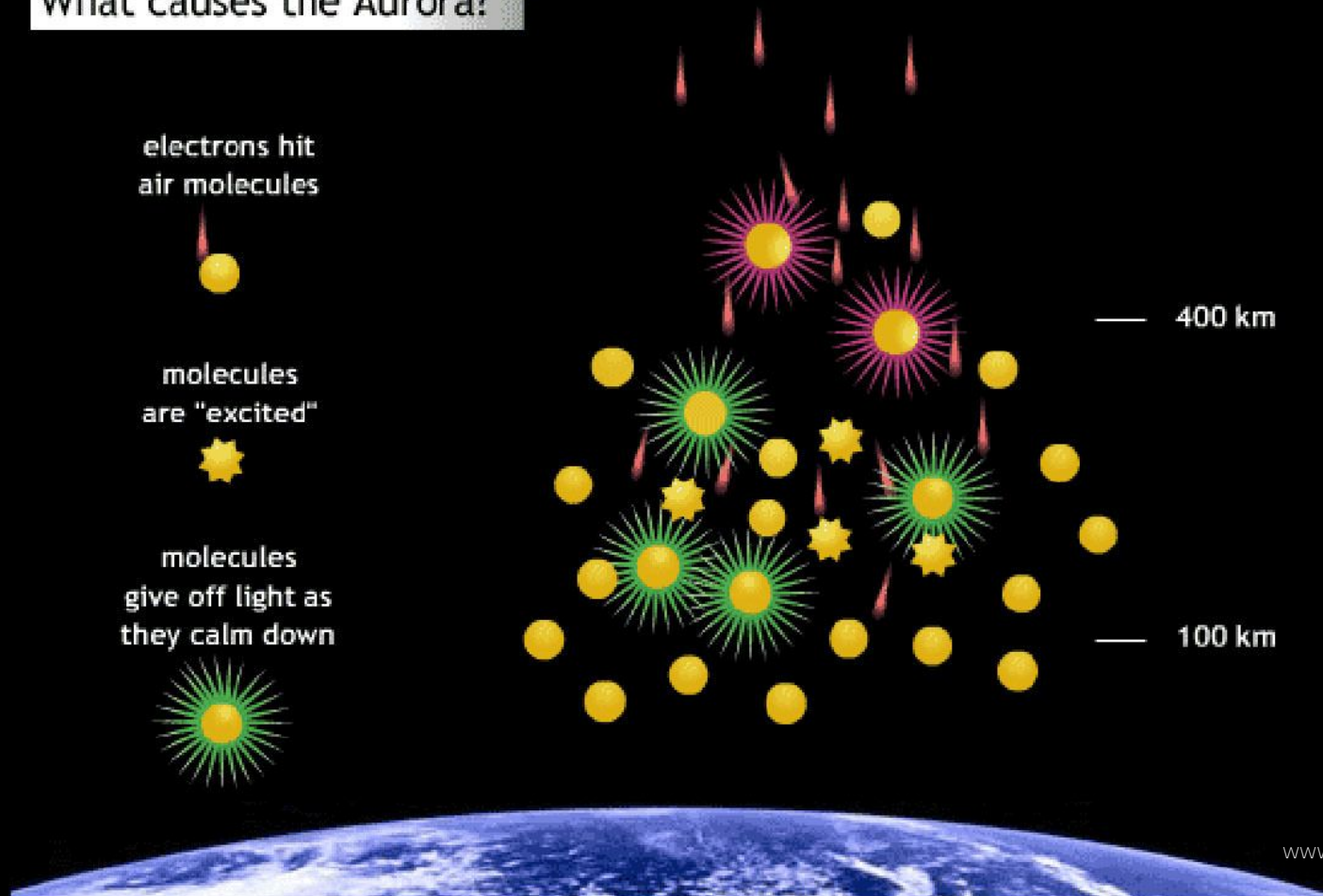
<https://swe.ssa.esa.int/current-space-weather>





Obr. 1.2: Zmena hodnoty indexu Dst počas geomagnetickej búrky

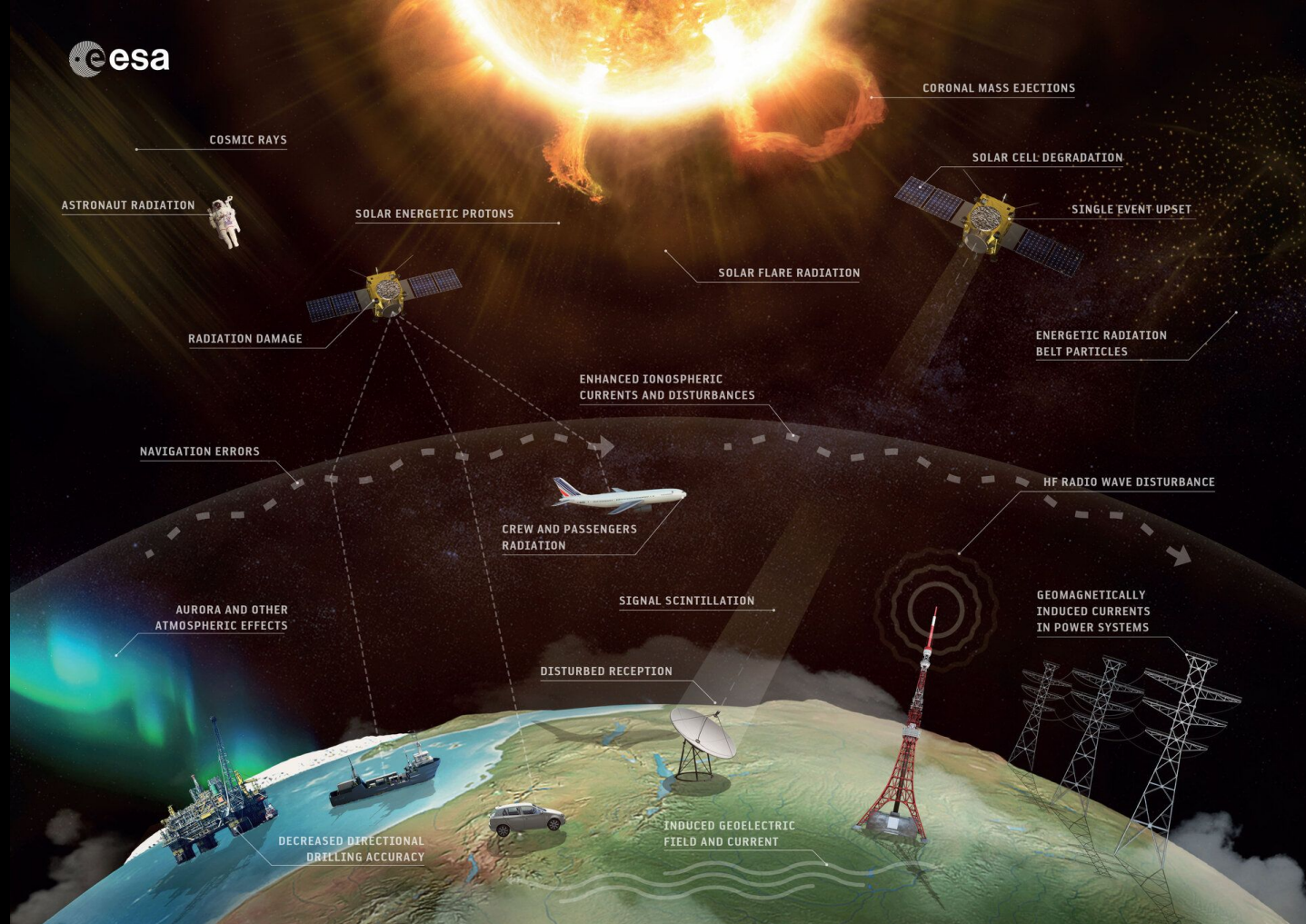
What causes the Aurora?



www.universetoday.com

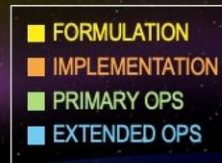


SCDSsk, Nové Zámky
2024-05-10

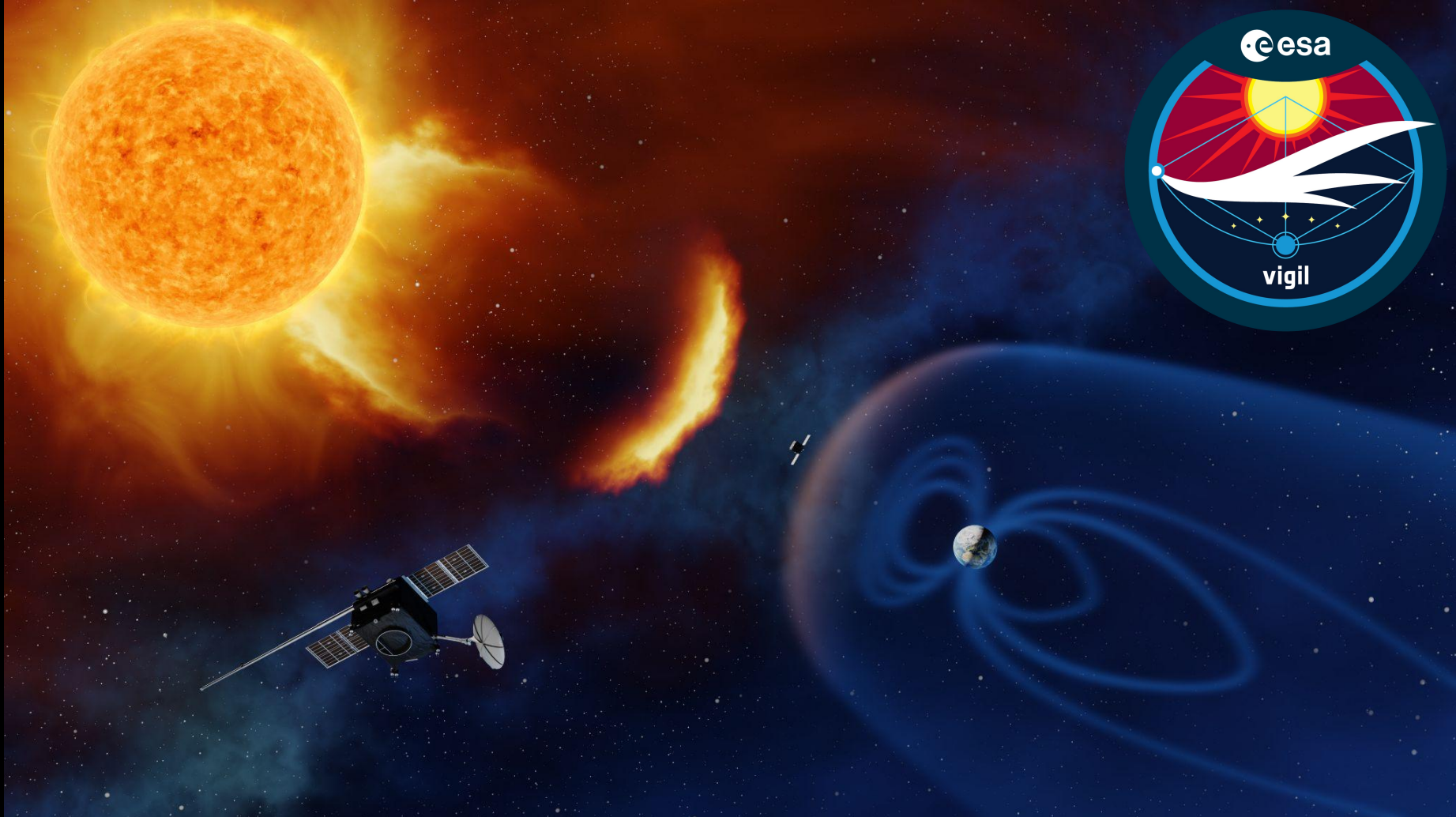


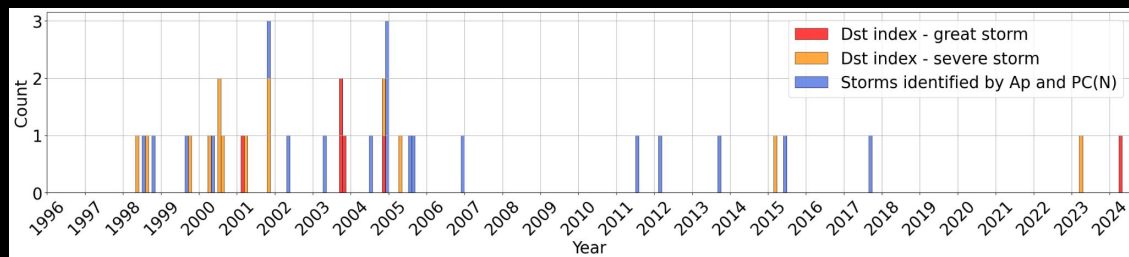
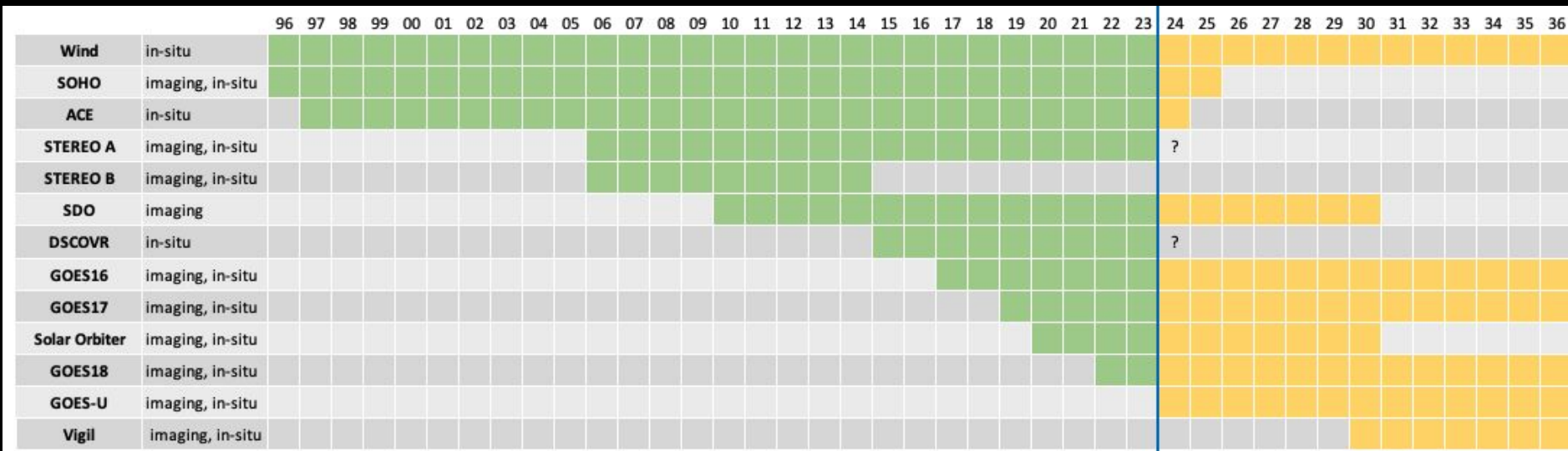
HELIOPHYSICS SYSTEM OBSERVATORY

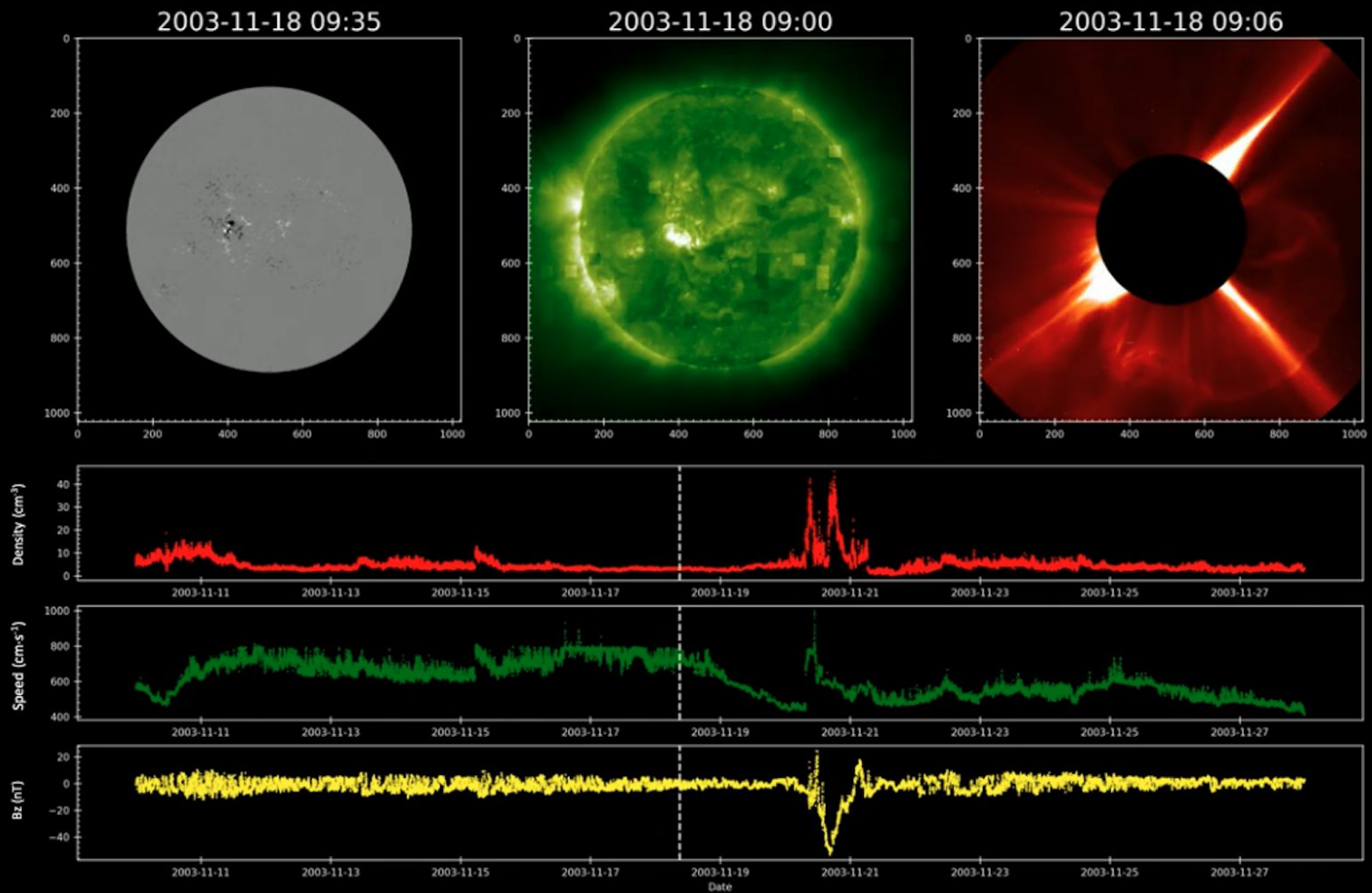
- 20 Operating Missions with 27 Spacecraft
- 6 Missions in Formulation



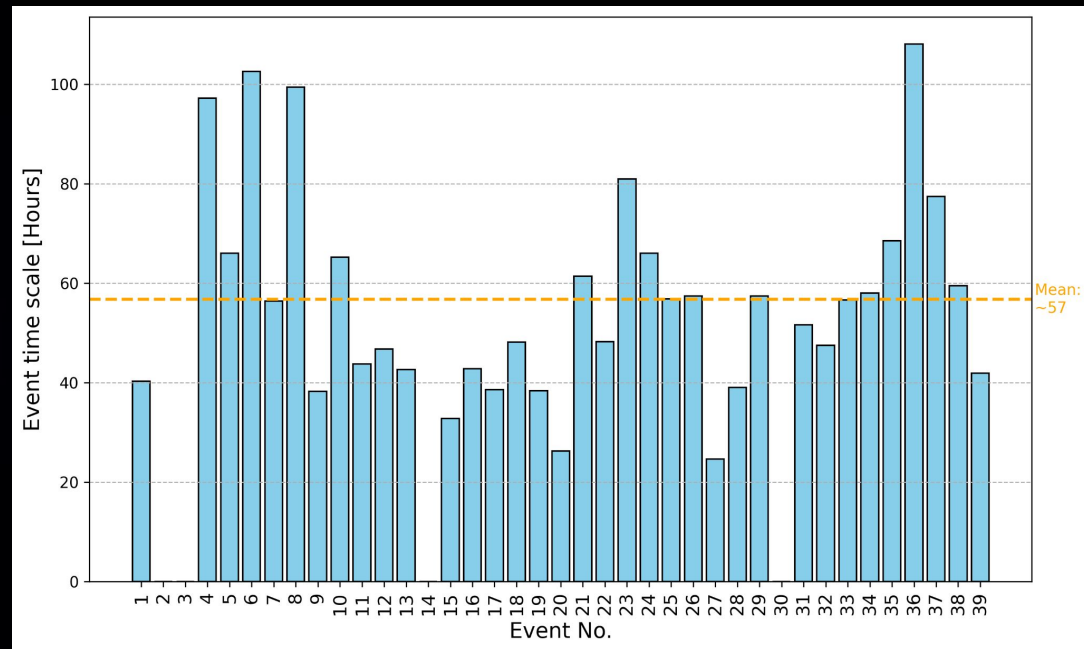
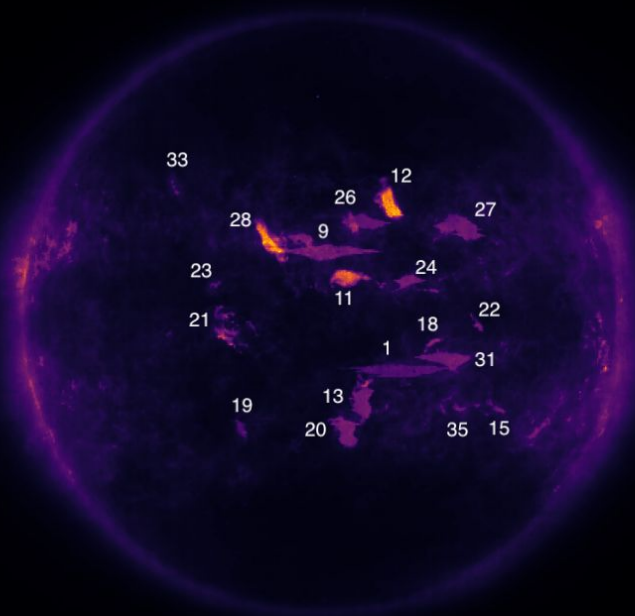
OPERATING & FUTURE







[YouTube](#)



<https://github.com/space-lab-sk/vigil-like-data>

Majirský et al. (2024, submitted)

What we have learned:

- space for Space Physics
- 3 drivers: photons, particles, plasma
- Dst – main indicator of geomagnetic storms
- Amount of space data is enormous
- ESA Vigil – space data in real-time

Take home message

Space is full of remarkable phenomena

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