SIDC Space Weather Briefing

16 February 2025-23 February 2025

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& the SIDC forecaster team

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2025-02-16 12:00 to 2025-02-23 23:59

Active regions	17 Ars were visible, ranging from SIDC 342 (NOAA 3989) to SIDC 413 (NOAA 4005)
Flares	# C-class flares: 47 # M-class flares: 7 # X-class flares: 1
Coronal Holes	Several at high latitudes
CMEs	Several per day, one with Earth directed component

Proton flux	Below threshold but with a warning
Electron flux	Above threshold at the beginning of the week

Solar wind and geomagnetic conditions

ICMEs	Two
Solar wind conditions	|B|: 0.9 - 12.69 nT //Bz: -9.6 nT to 12.05 nT //Speed: 276.8 - 634.3km/s
Geomagnetic conditions	max KBel: 4.0, max Kp(NOAA): 5.0, Minor Storm conditions

All Quiet Alert: Off

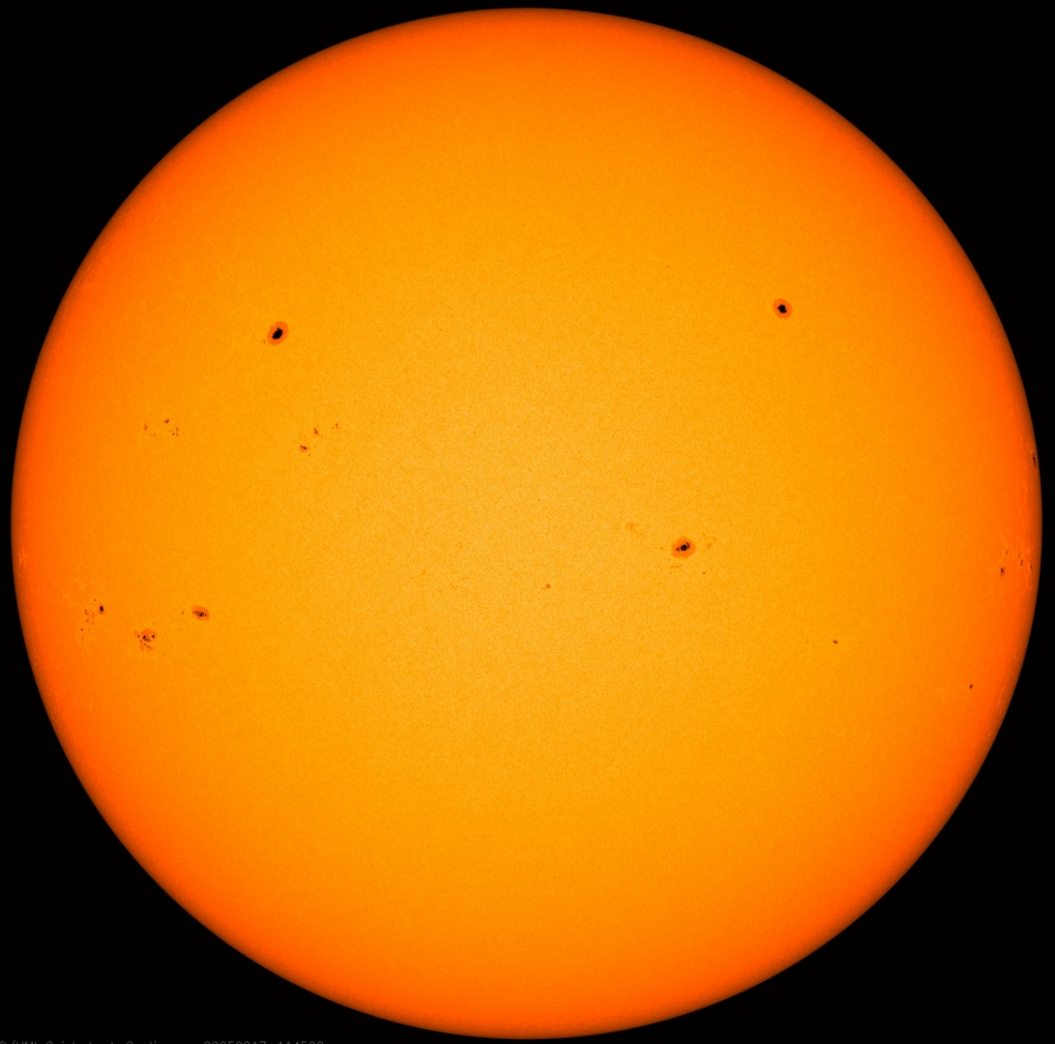
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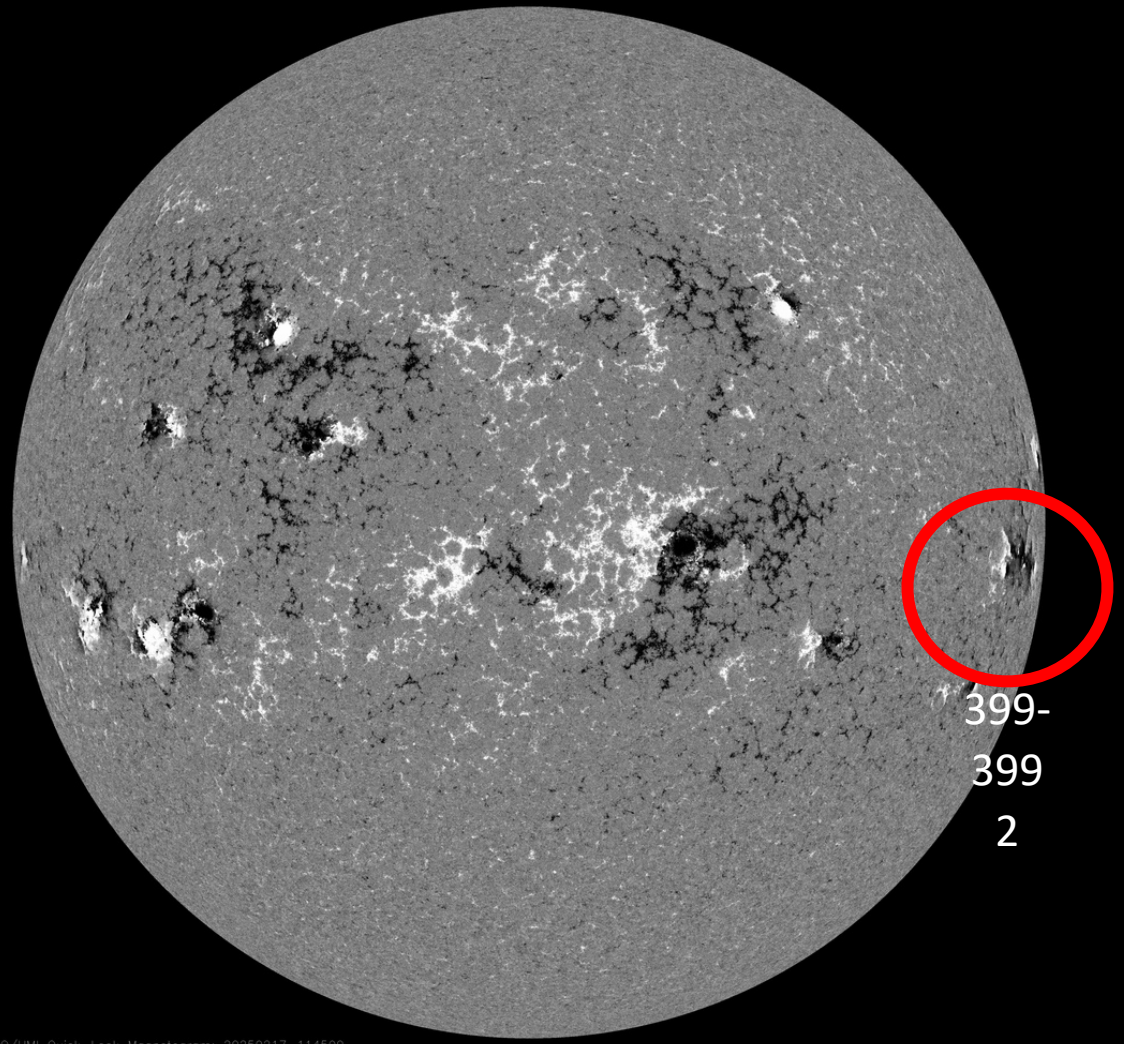
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Solar active regions

SDO/HMI White Light 2025-02-17

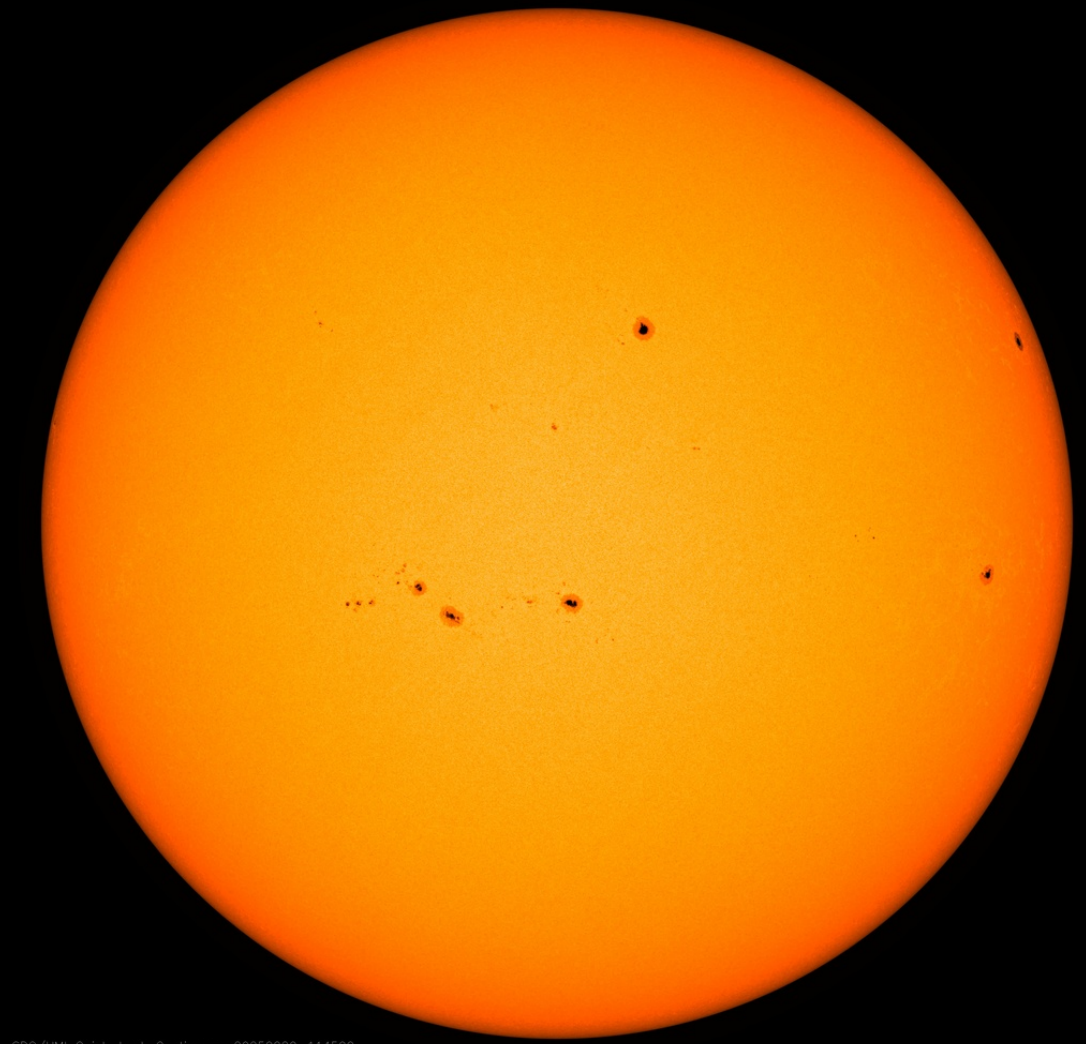


SDO/HMI Magnetogram 2025-02-17

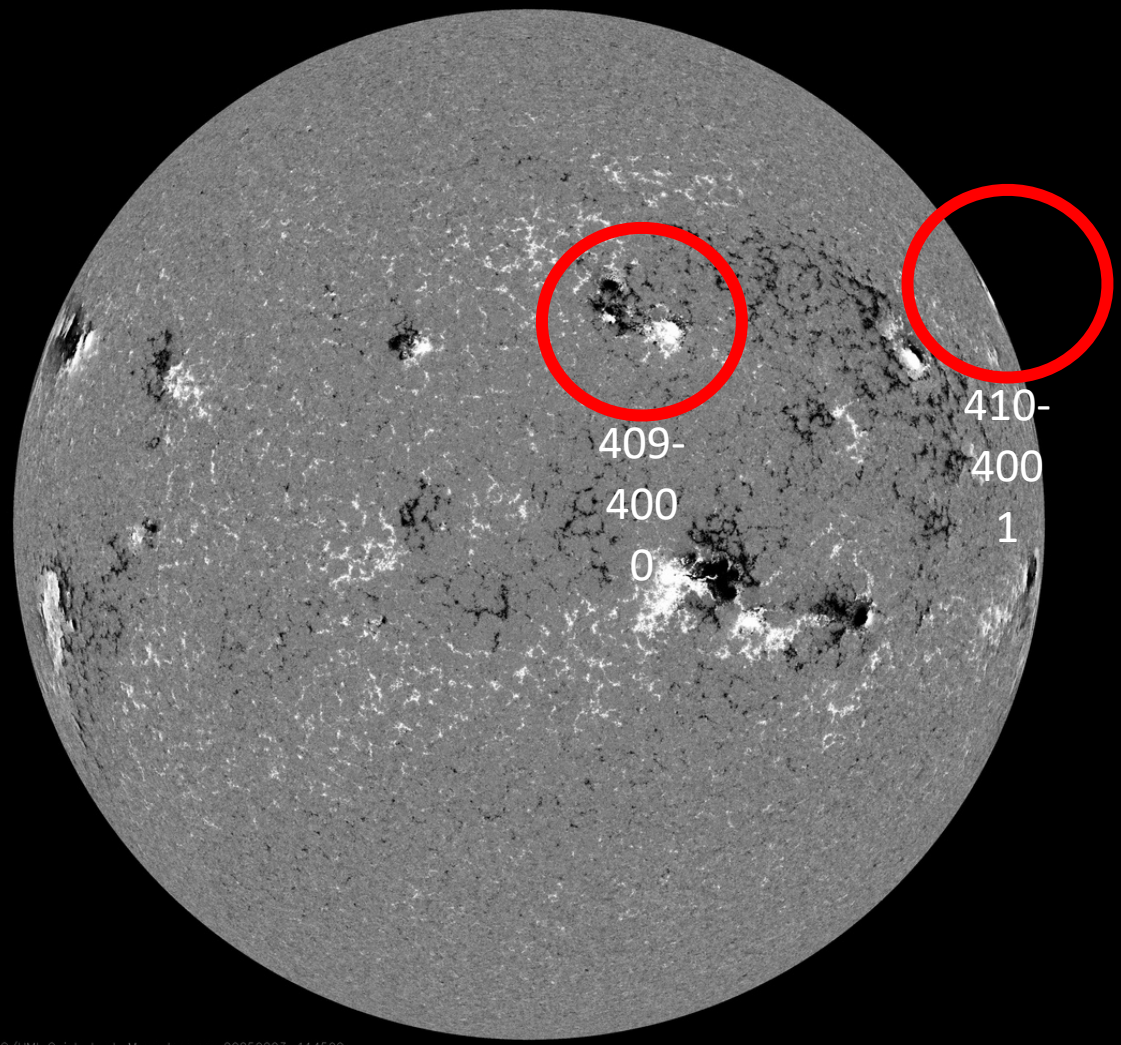


Solar active regions

SDO/HMI White Light 2025-02-20

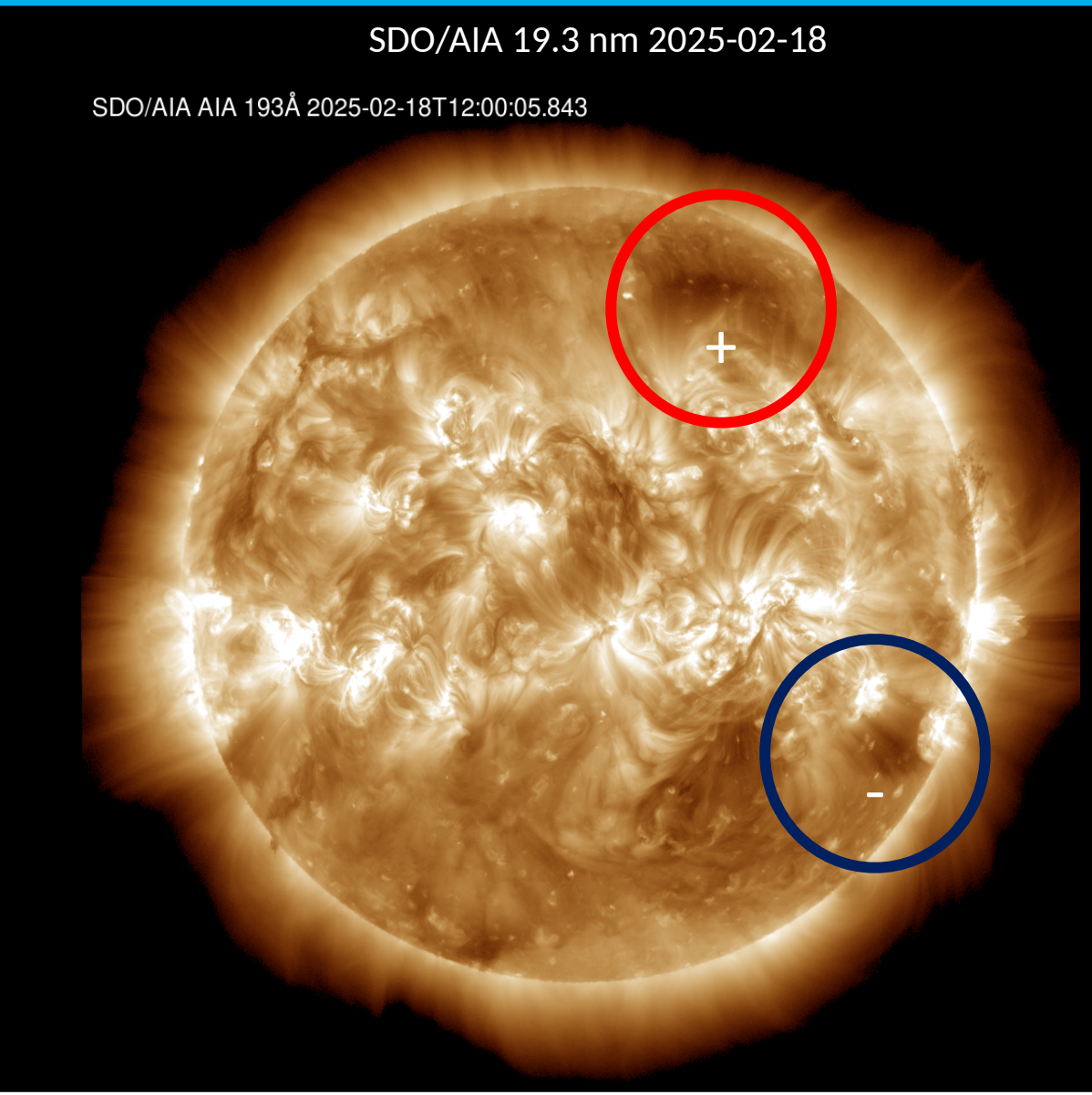


SDO/HMI Magnetogram 2025-02-23

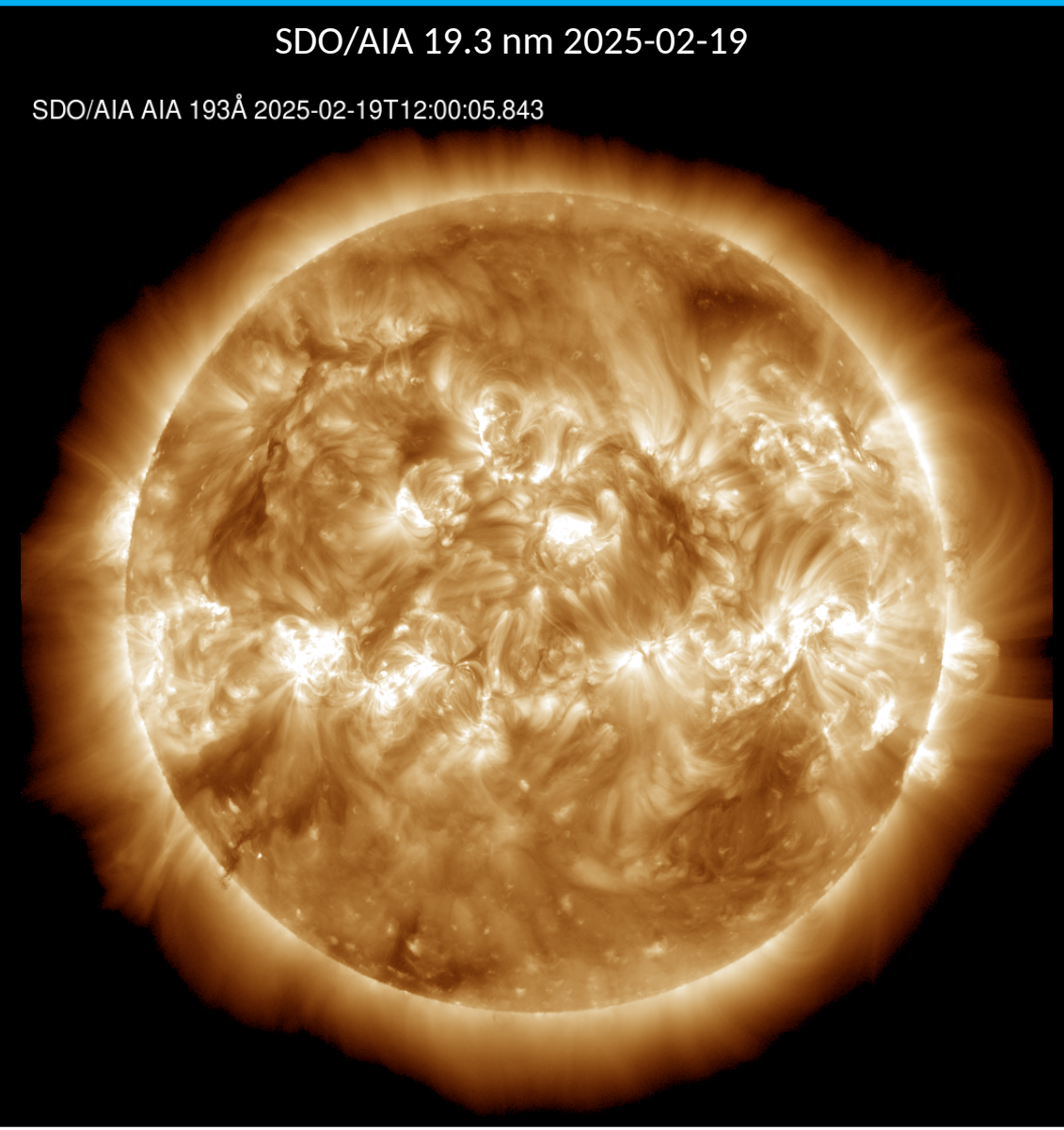


Coronal holes

SDO/AIA 19.3 nm 2025-02-18

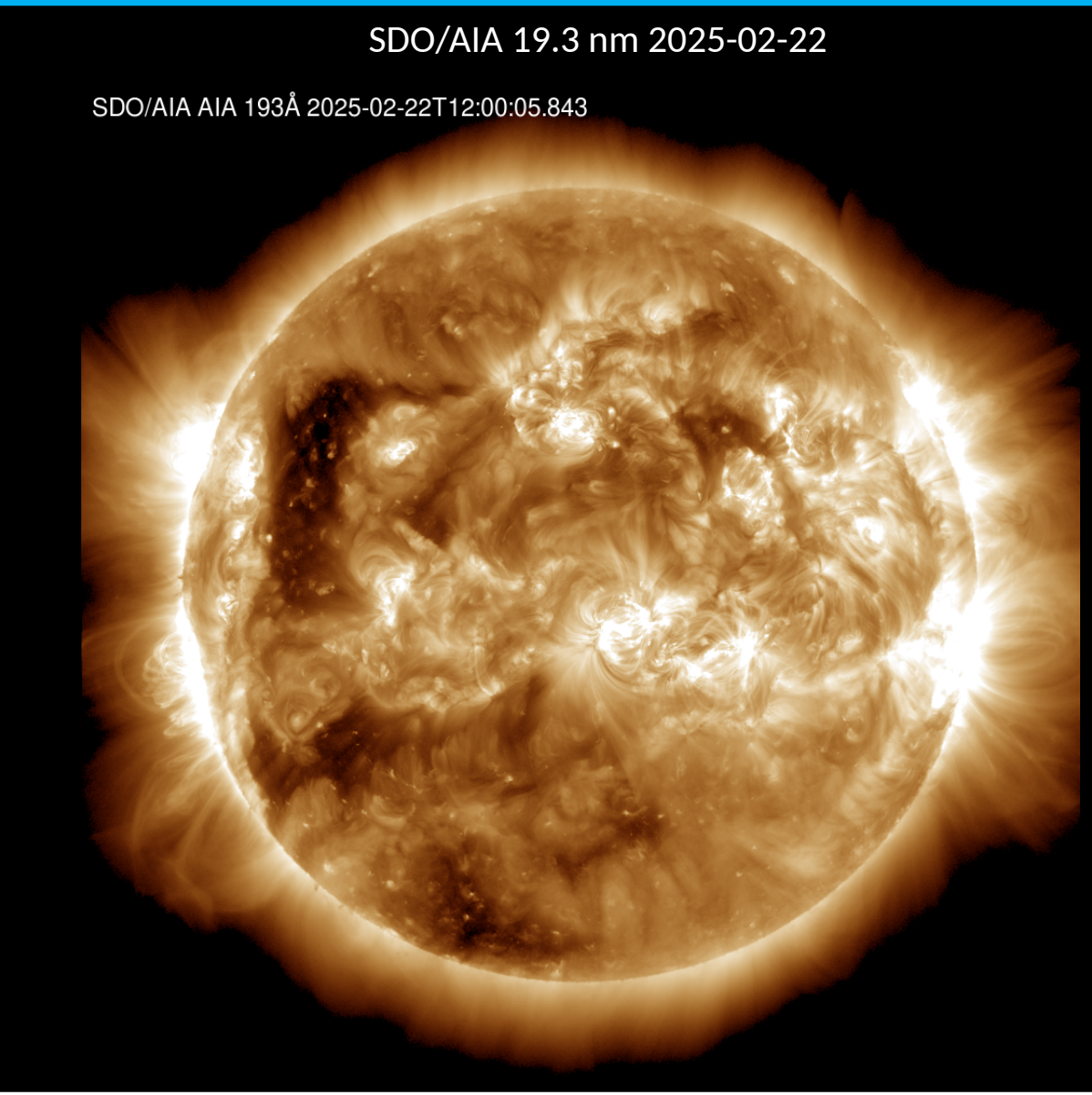


SDO/AIA 19.3 nm 2025-02-19

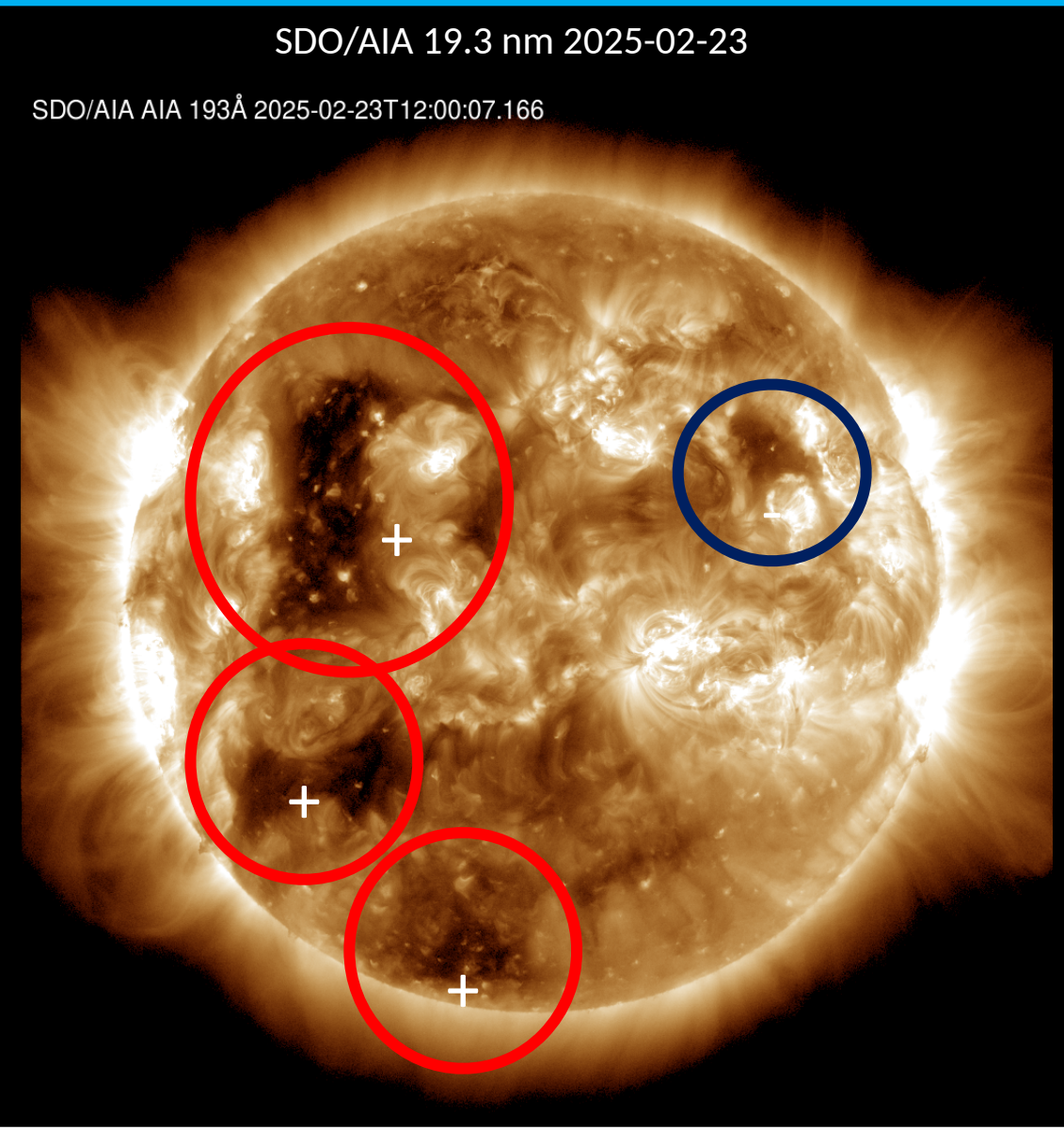


Coronal holes

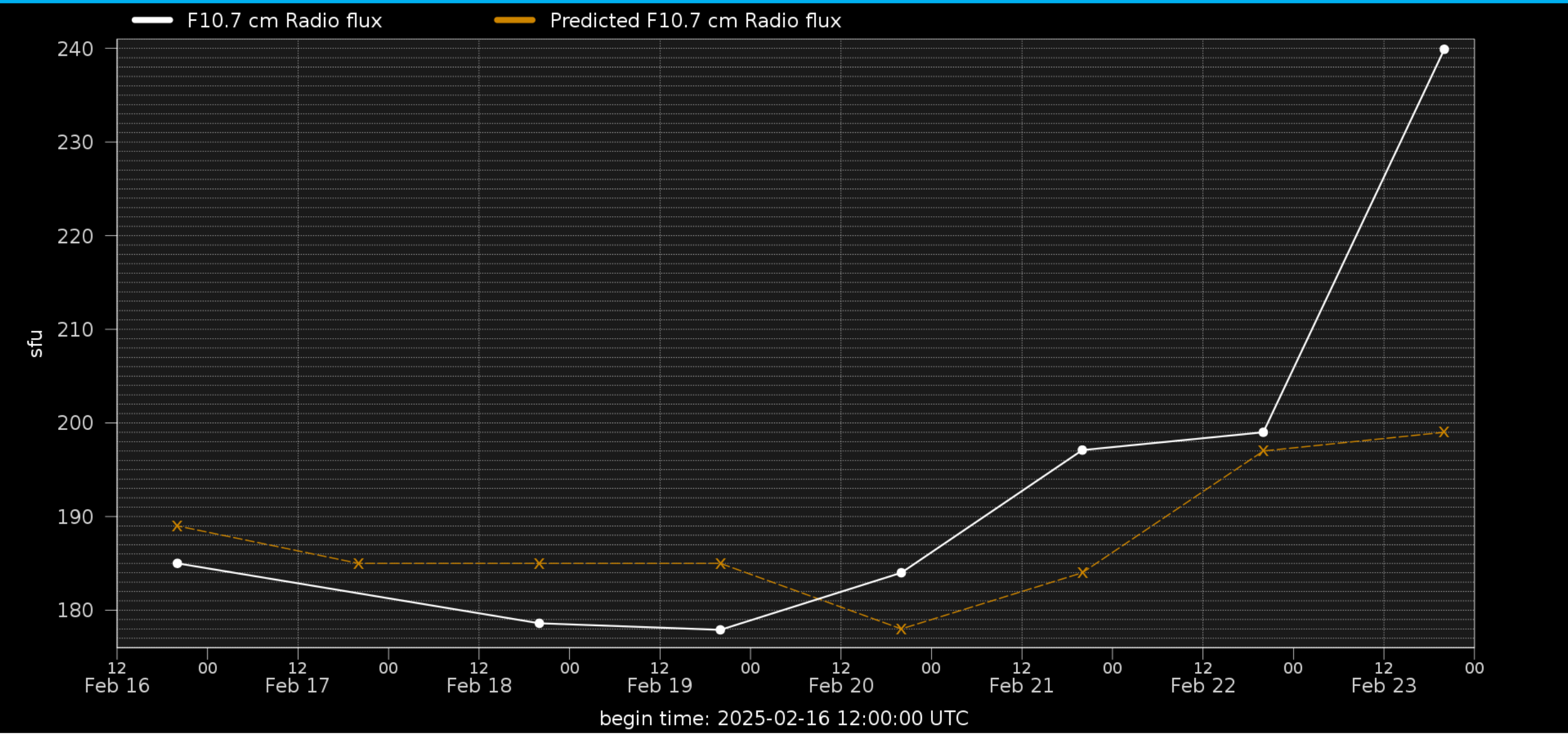
SDO/AIA 19.3 nm 2025-02-22



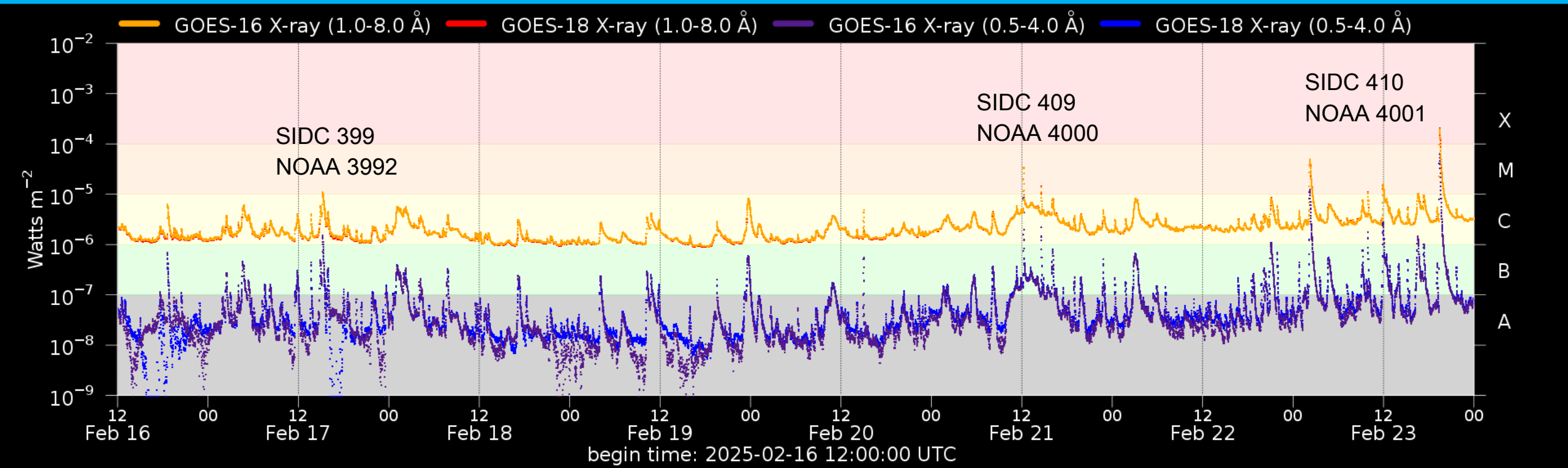
SDO/AIA 19.3 nm 2025-02-23



Solar F10.7cm radio flux



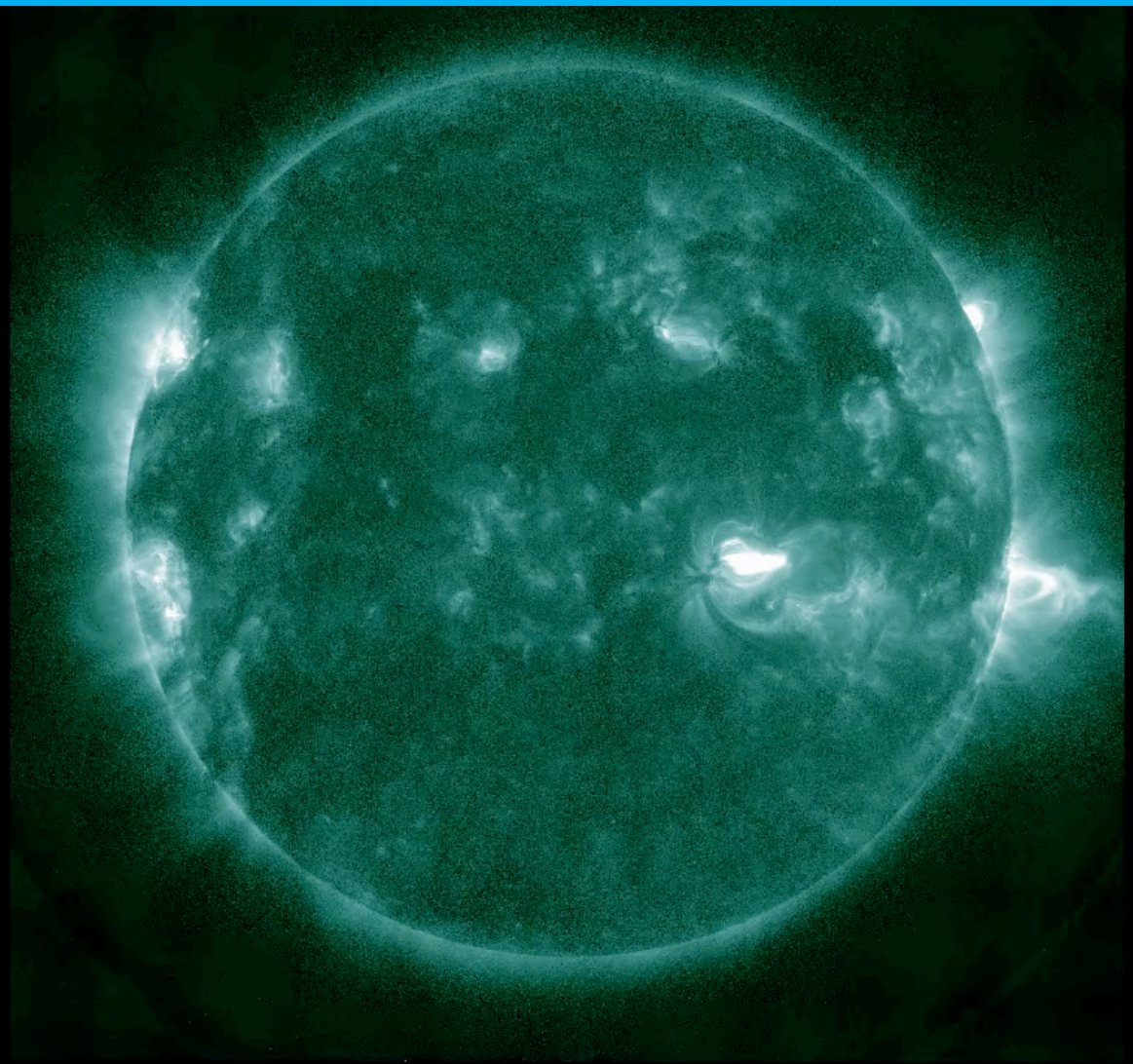
Flaring activity



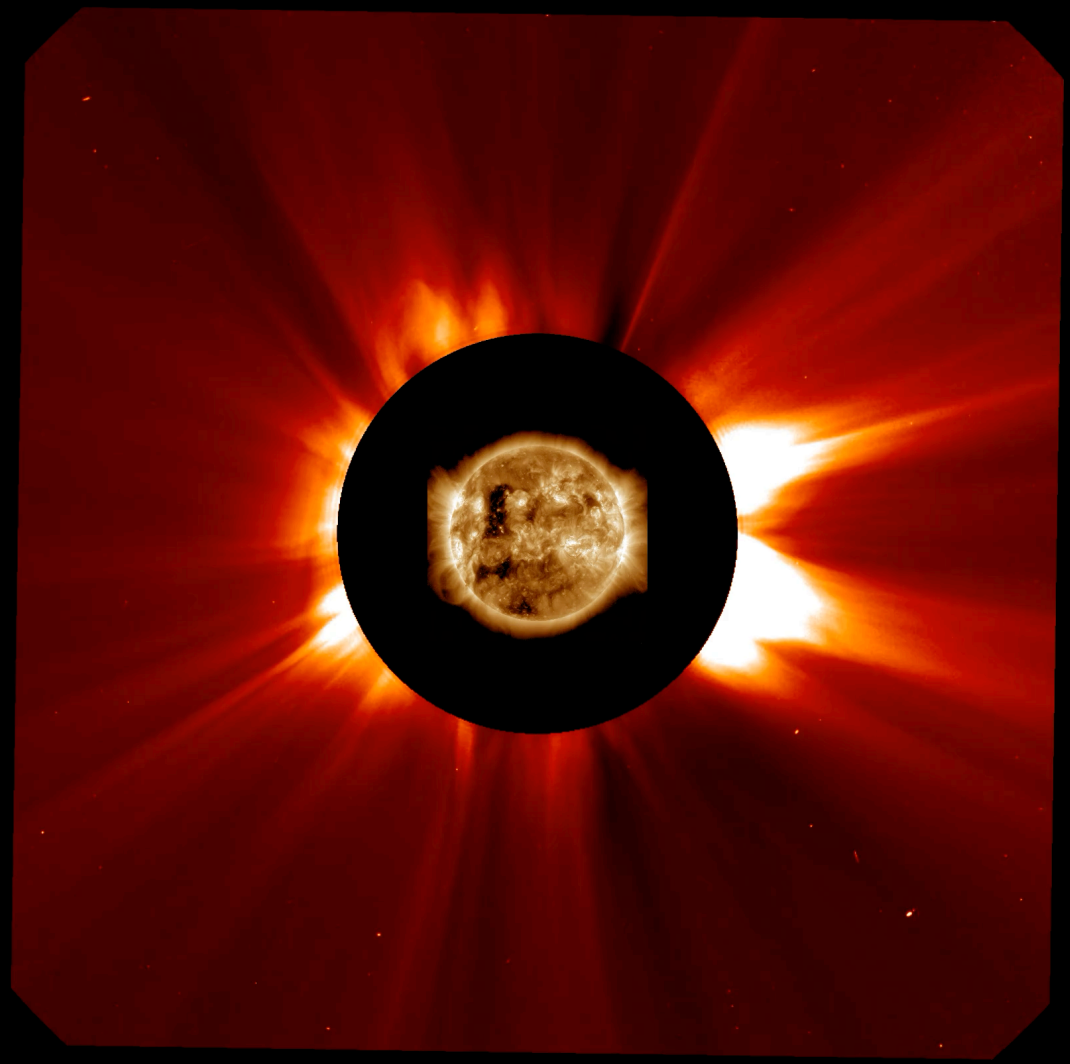
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2025-02-16	2025-02-17	2025-02-18	2025-02-19	2025-02-20	2025-02-21	2025-02-22	2025-02-23
Probability (%)	99|72|14	99|40|10	99|56|03	99|44|05	99|57|15	99|63|05	99|70|20	99|70|20
Observed (#)	10|00|00	06|01|00	05|00|00	02|00|00	04|00|00	06|02|00	09|03|00	05|01|01

Flaring



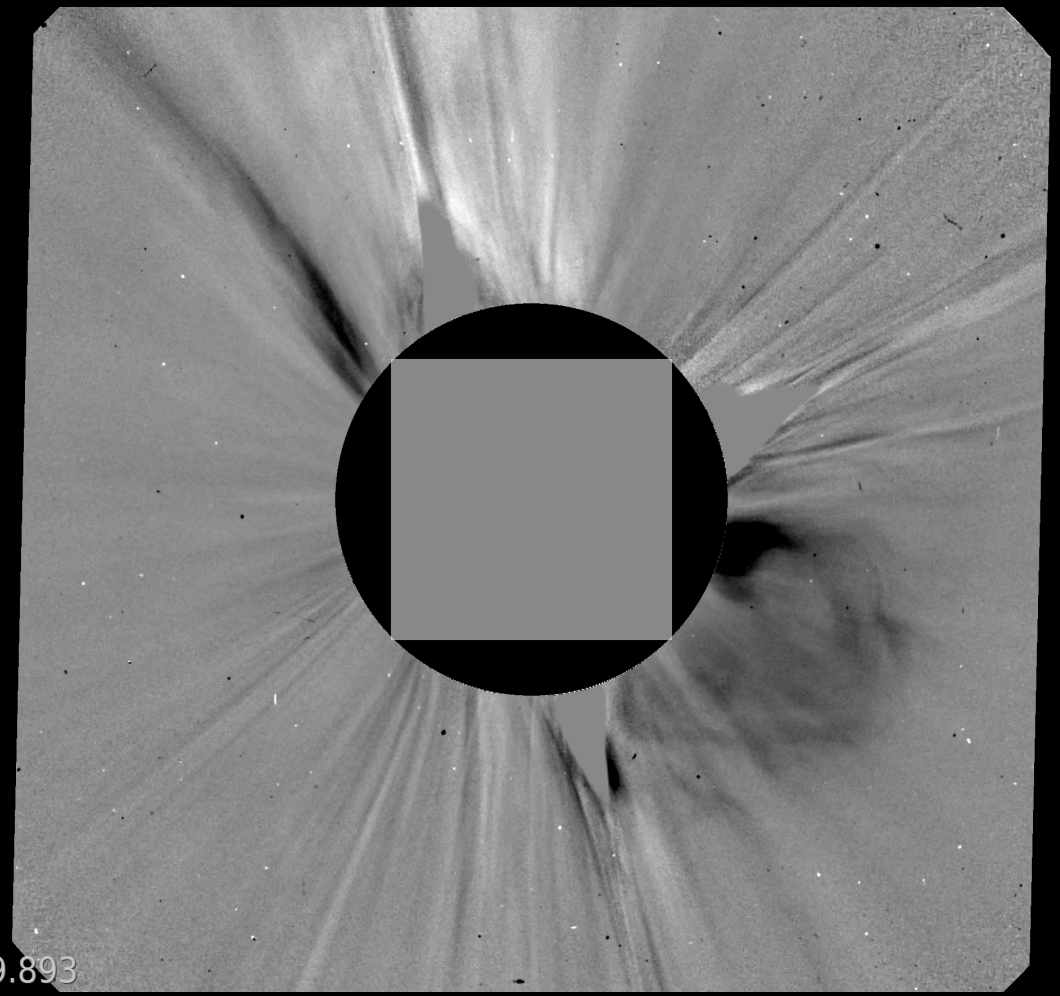
Flaring activity



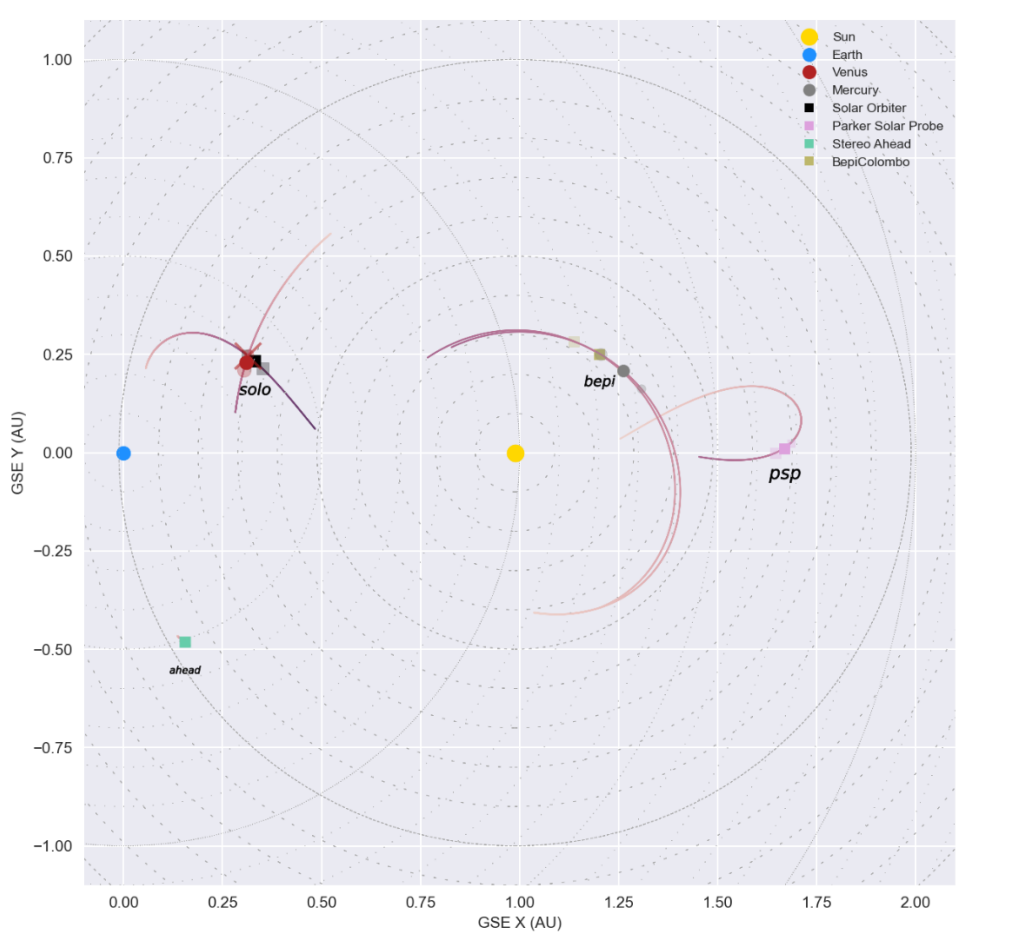
2025-02-23T17:24:07.559

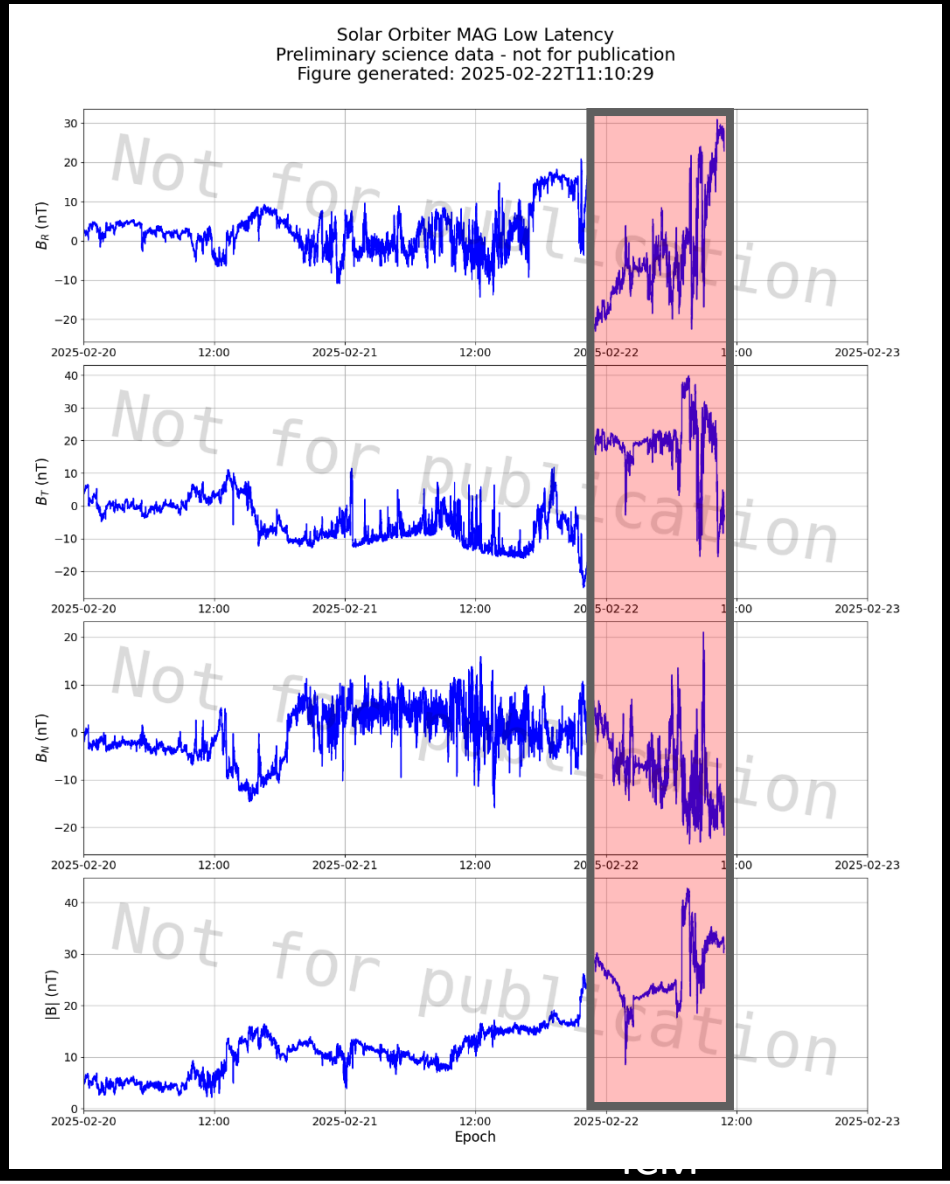
Coronal Mass Ejections

A wide CME erupting towards the west was seen on 20 February at 00:24 UTC (first seen by LASCO C2), related to a C8.1 flare and a type-II radio burst. The CME speed is estimated to be around 400 km/s, a glancing blow from this CME may be observed at Earth on 24 February.



Coronal Mass Ejections





Due to ICME arrival at Solar Orbiter: Earth arrival time advanced to 23 February

Solar Wind and

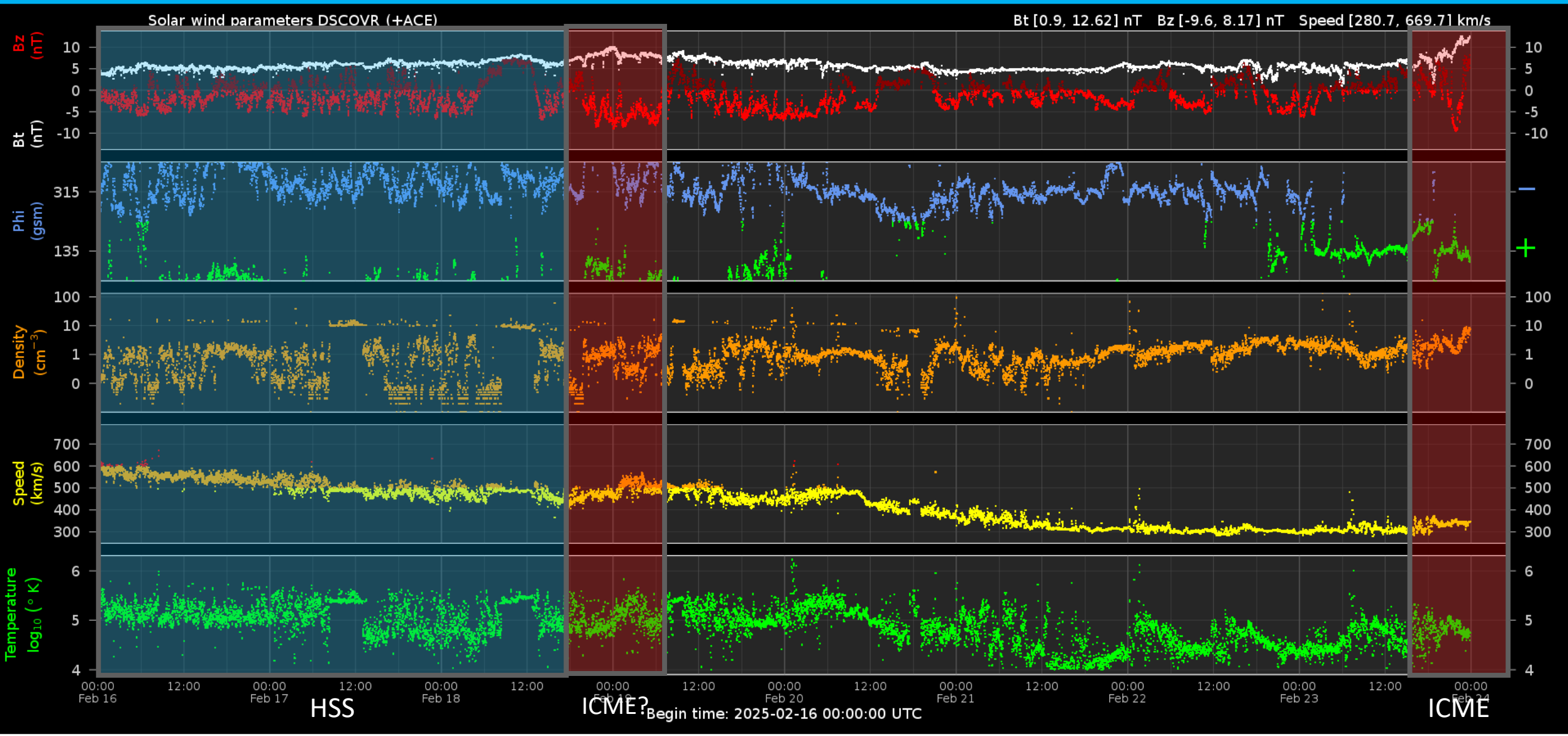
Geomagnetic Activity



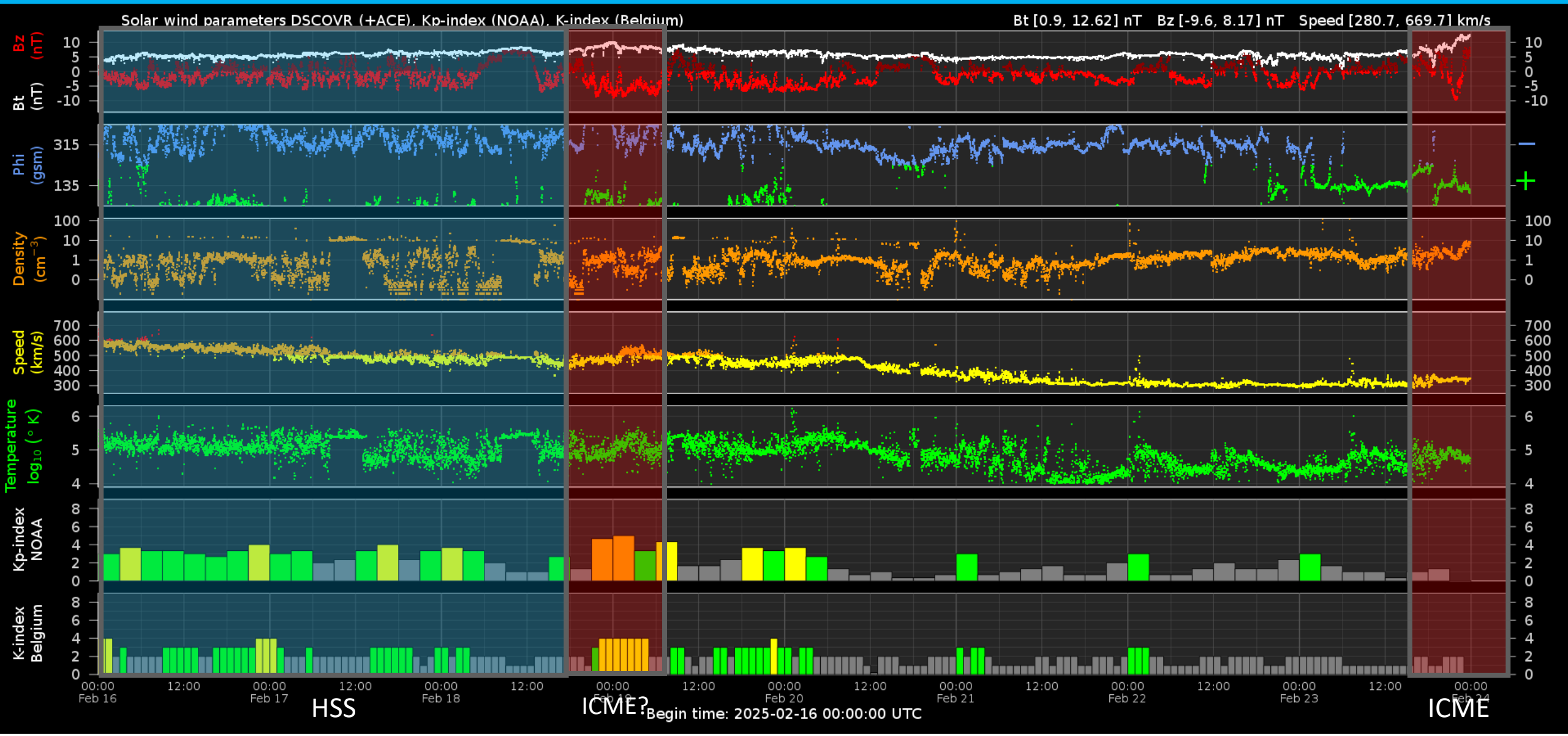
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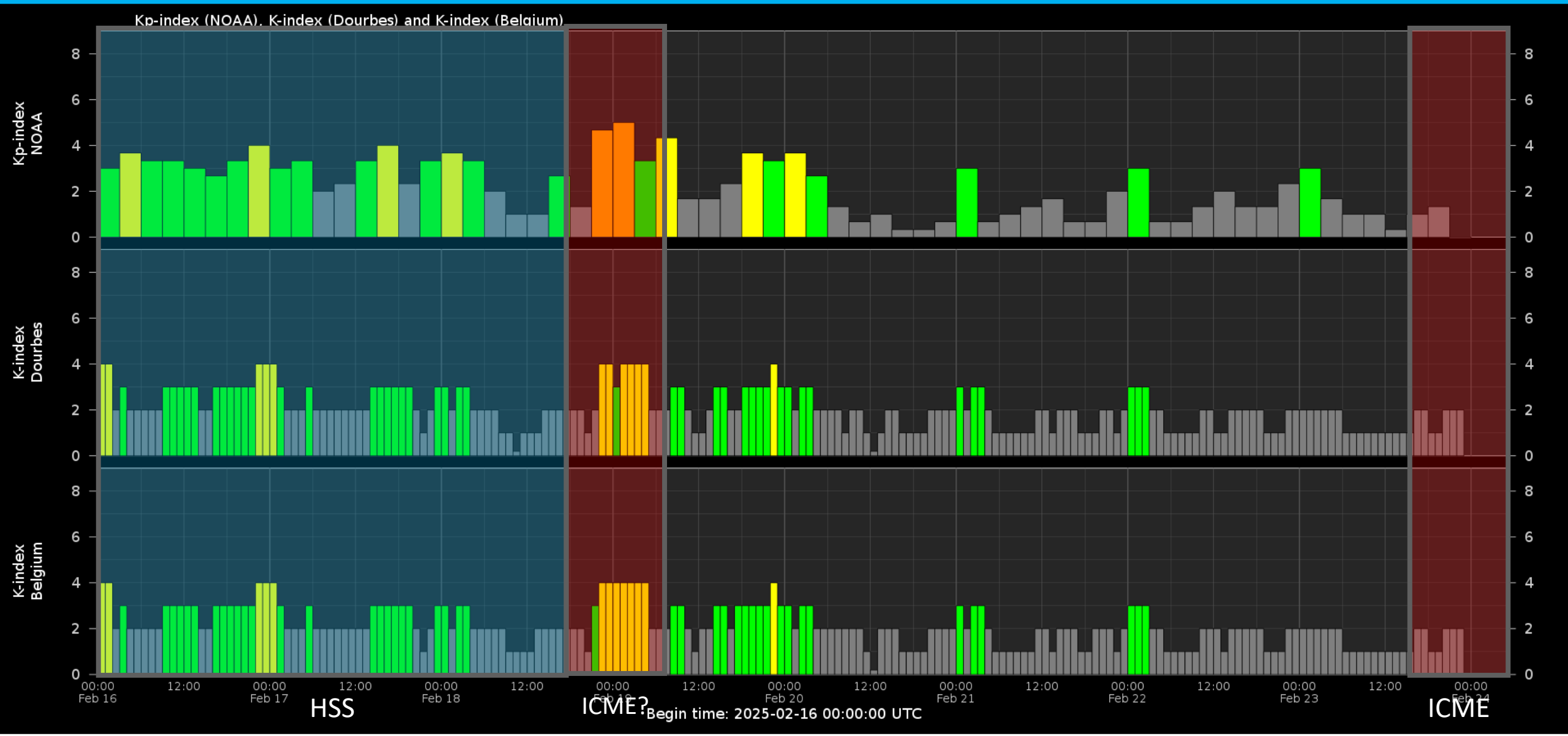
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



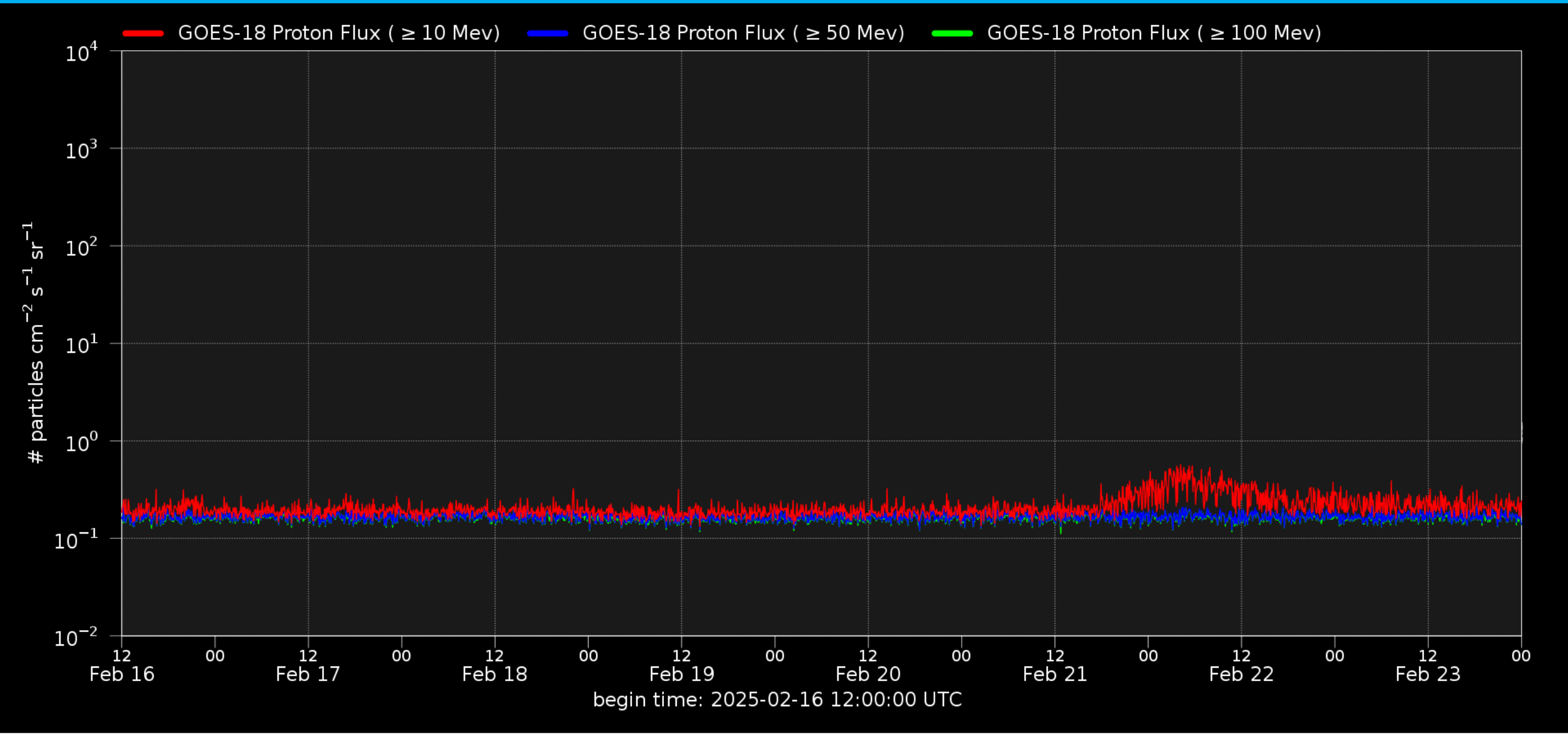
Energetic Particles



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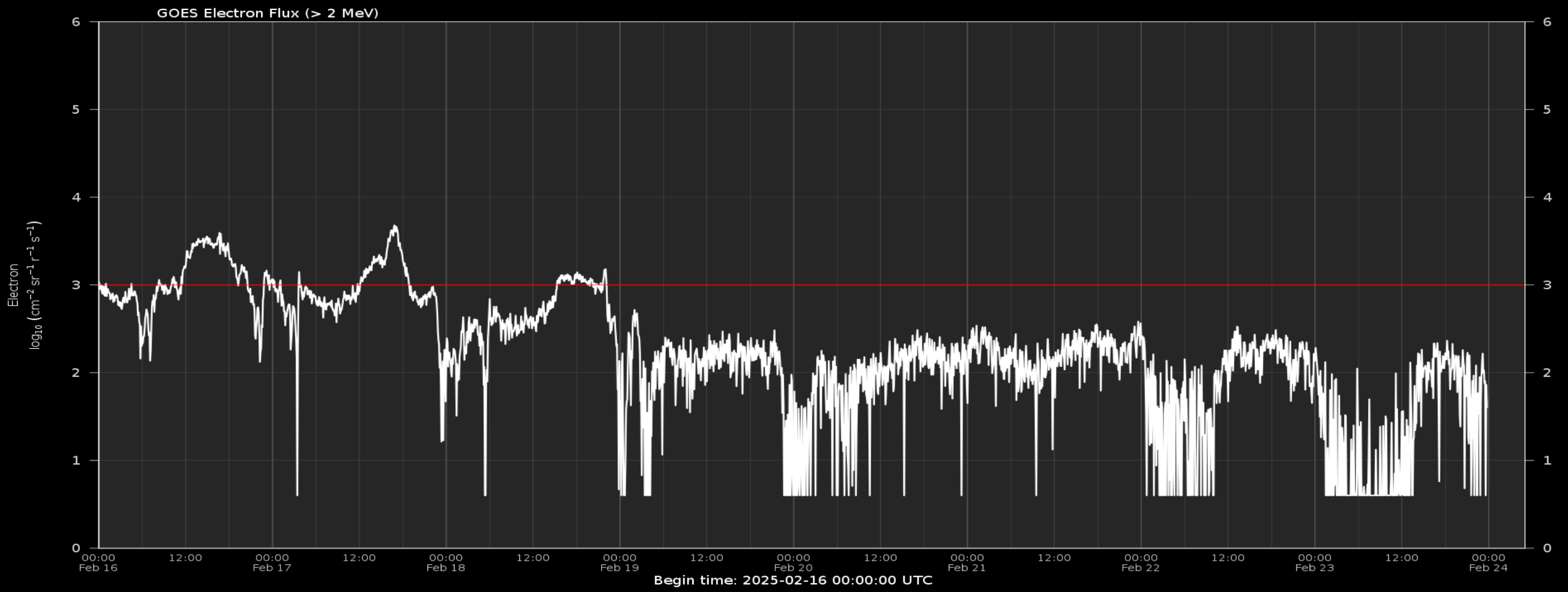
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php

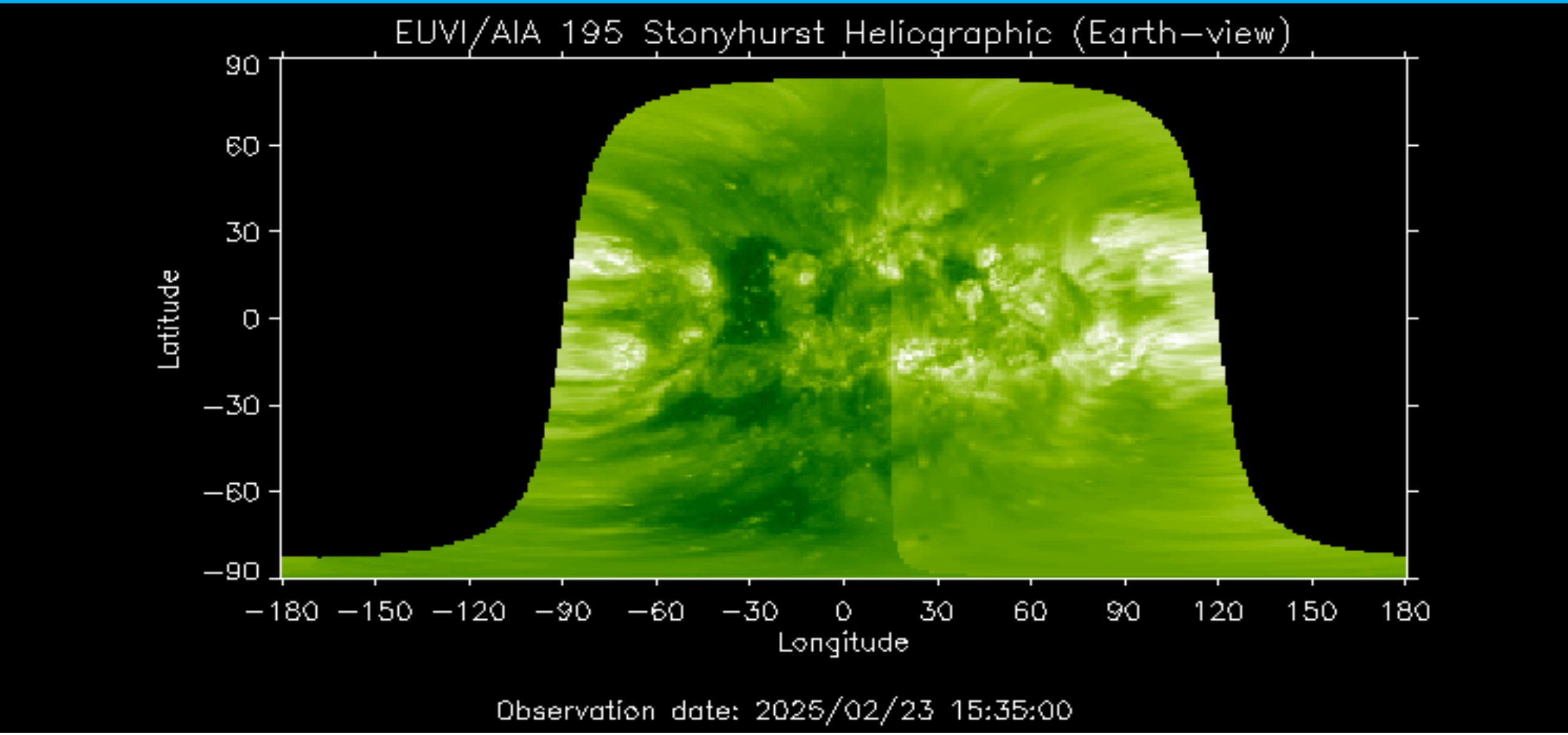


Outlook

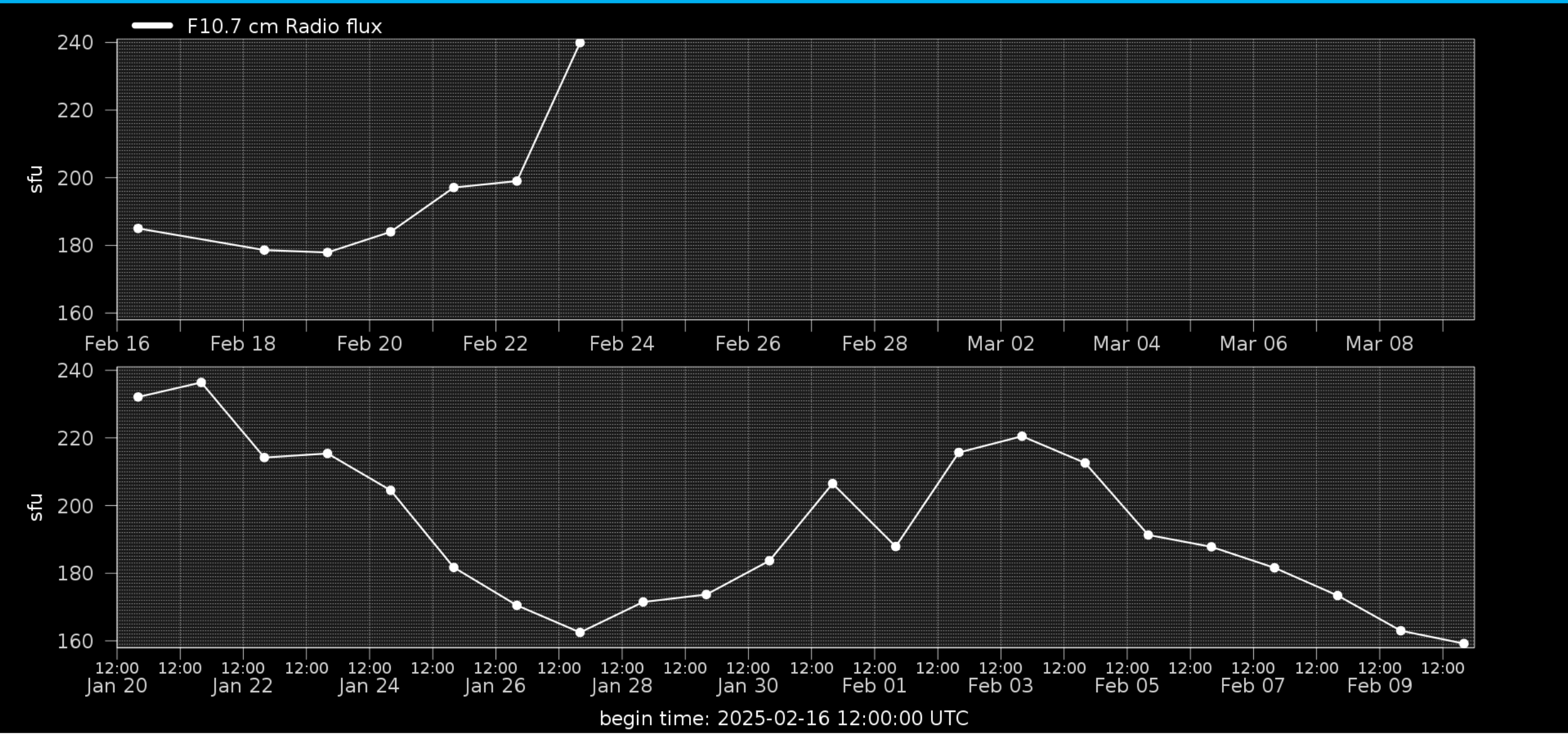
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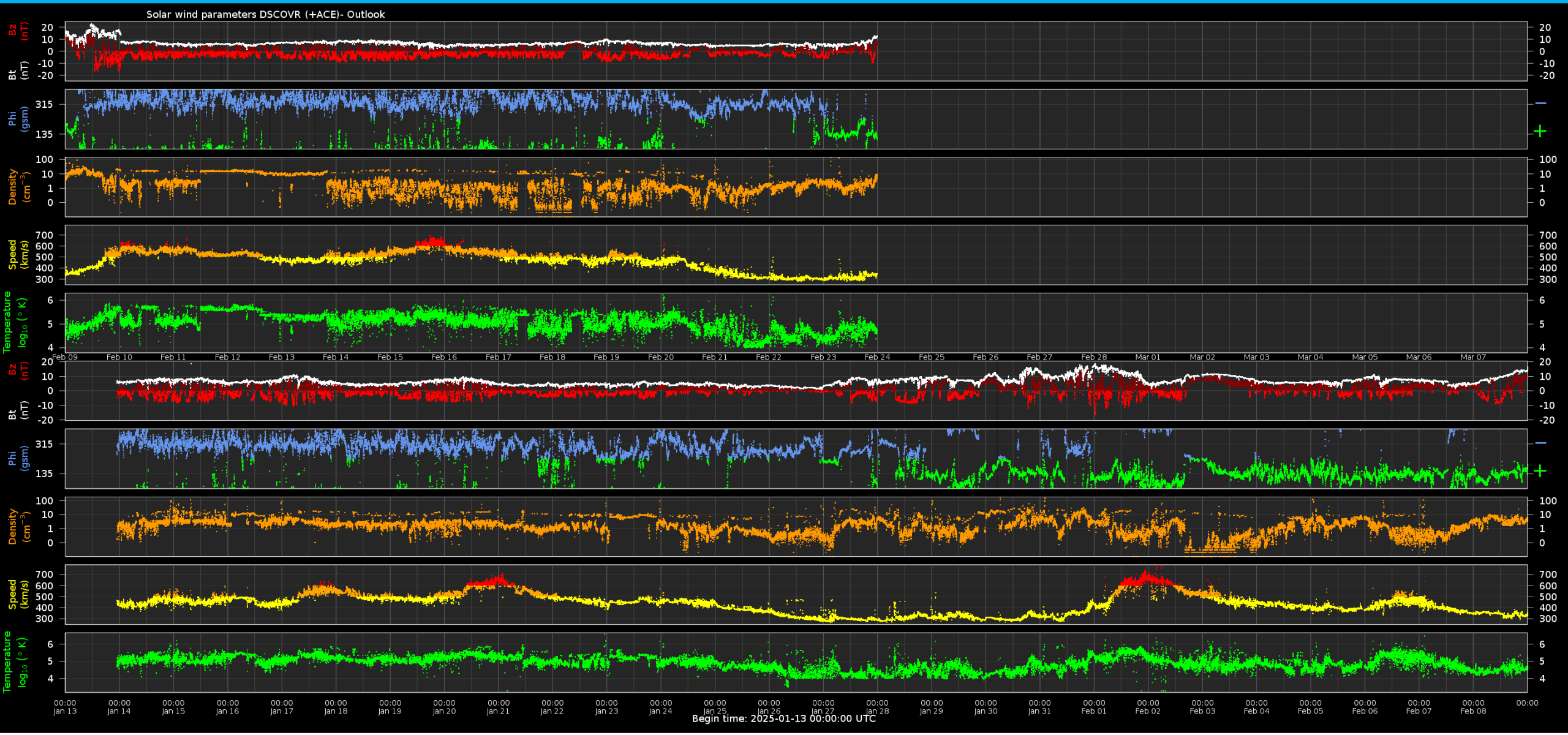
Outlook: Solar activity



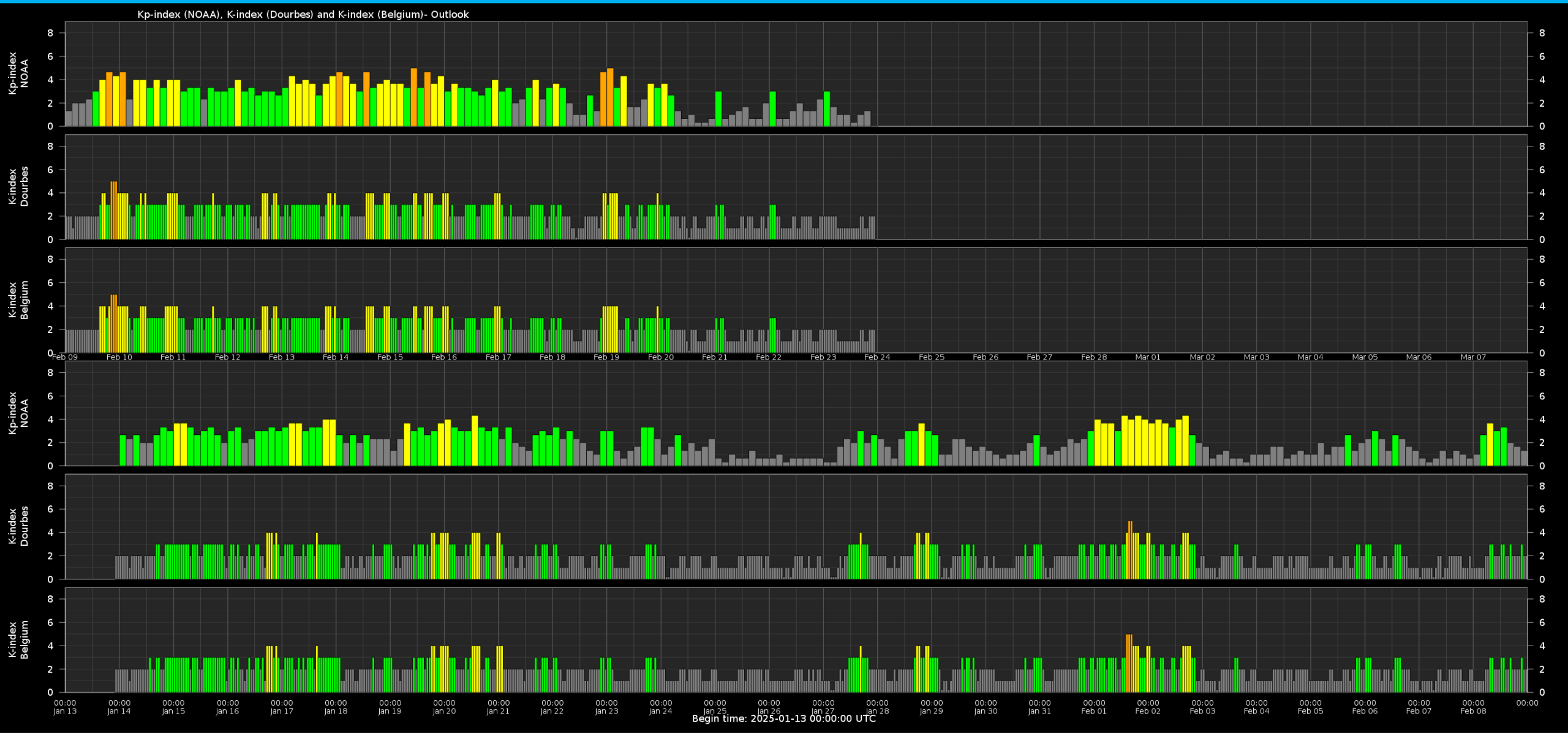
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



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Pecasus related events

- GNSS Scintillation events occurring daily
- HF Advisory sent due to the X2 flare

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