

SIDC Space Weather Briefing

02 February 2025-09 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 2025-02-02 12:00 to 2025-02-09 23:59

Active regions	14 Active Regions NOAA AR 3974, 3976, 3978 – 3989
Flares	# C-class flare: 95 # M-class flare: 28 # X-class flare: 0
Coronal Holes	CH- HSS effecting Earth since Feb 08, CH- HSS expected to effect Earth from Feb 12-13
CMEs	Halo CME at 21:24 UTC on Feb 02, CMEs from Feb 02 and Feb 08

Proton flux	Nominal levels
Electron flux	Above 1000 pfu threshold between 03:25 UTC and 04:15 UTC on Feb 02

Solar wind and geomagnetic conditions

ICMEs	on 06:24 UTC on Feb 07
Solar wind conditions	B : 1.5 - 22.57 nT //Bz: -16.64 nT to 16.4 nT //Speed: 293.4 - 649.9km/s
Geomagnetic conditions	max KBel: 5.0, max Kp(NOAA): 4.67, Minor Storm conditions

All Quiet Alert: Not all quiet

Solar Activity

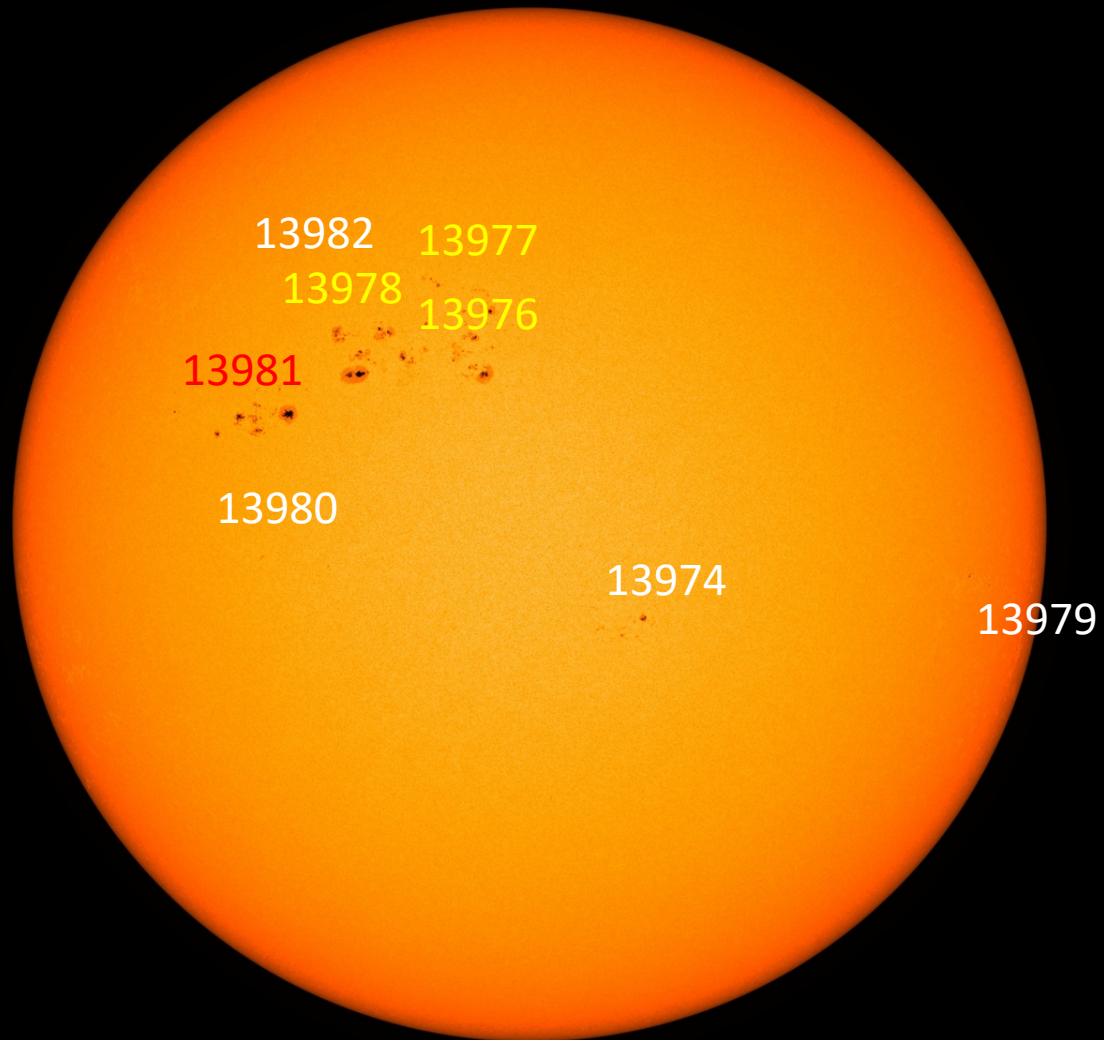


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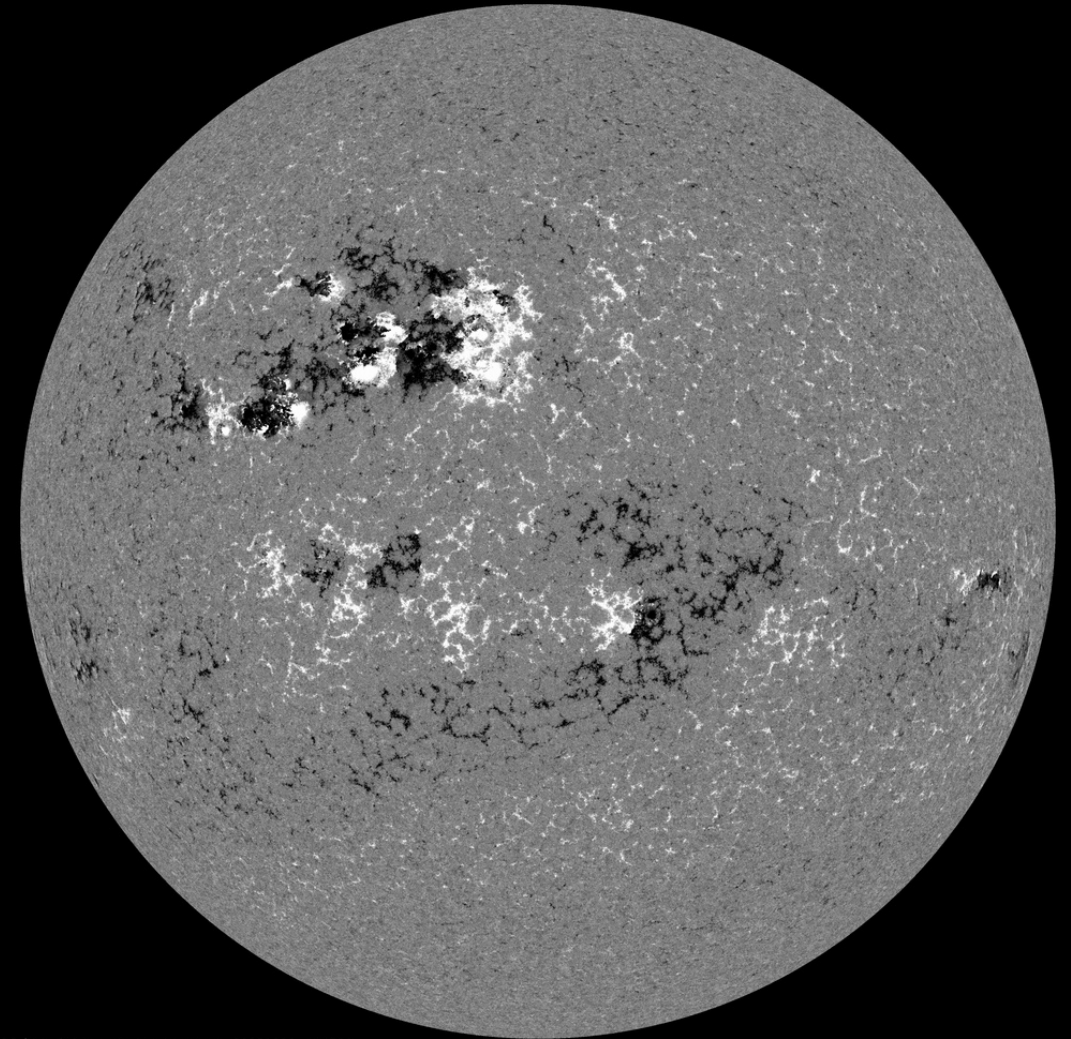
Solar active regions

SDO/HMI White Light 2025-02-02



SDO/HMI Quick-Look Continuum: 20250202_114500

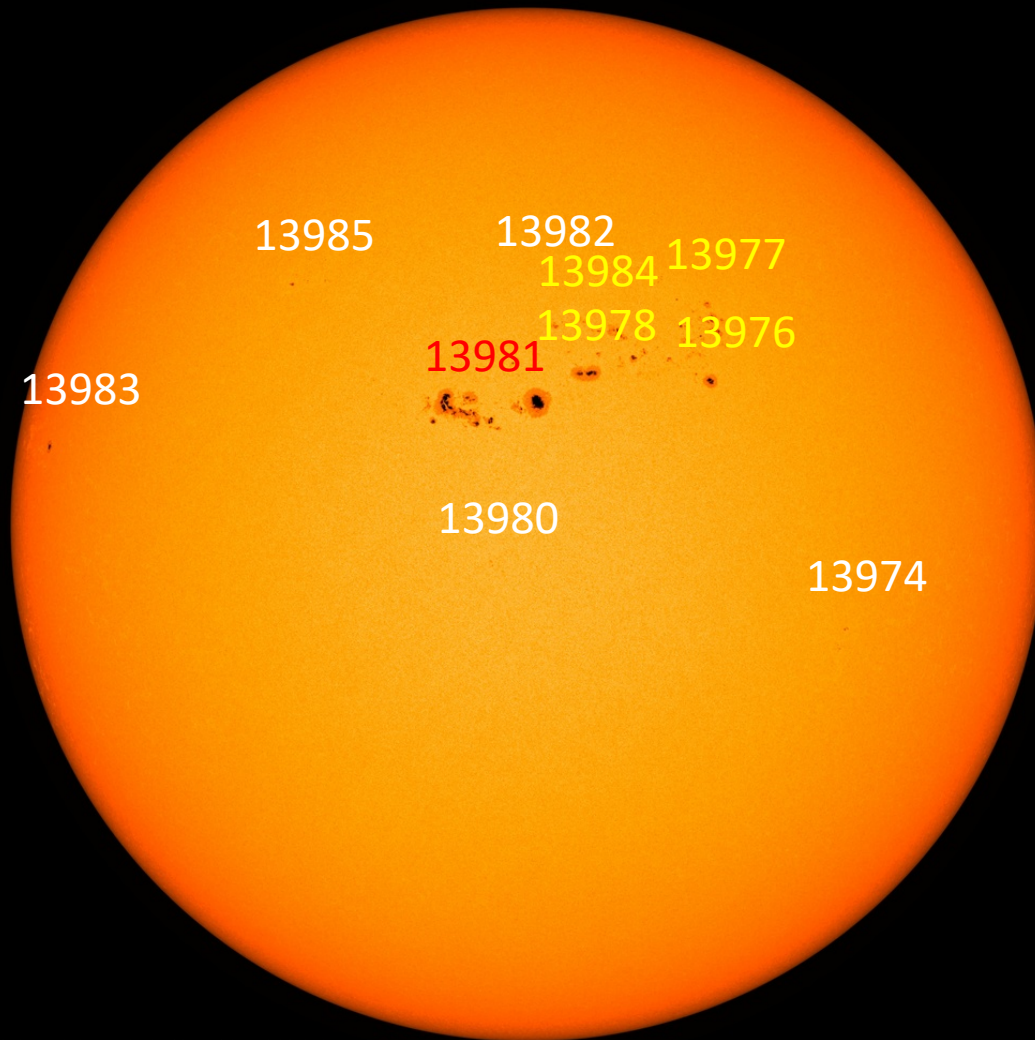
SDO/HMI Magnetogram 2025-02-02



SDO/HMI Quick-Look Magnetogram: 20250202_114500

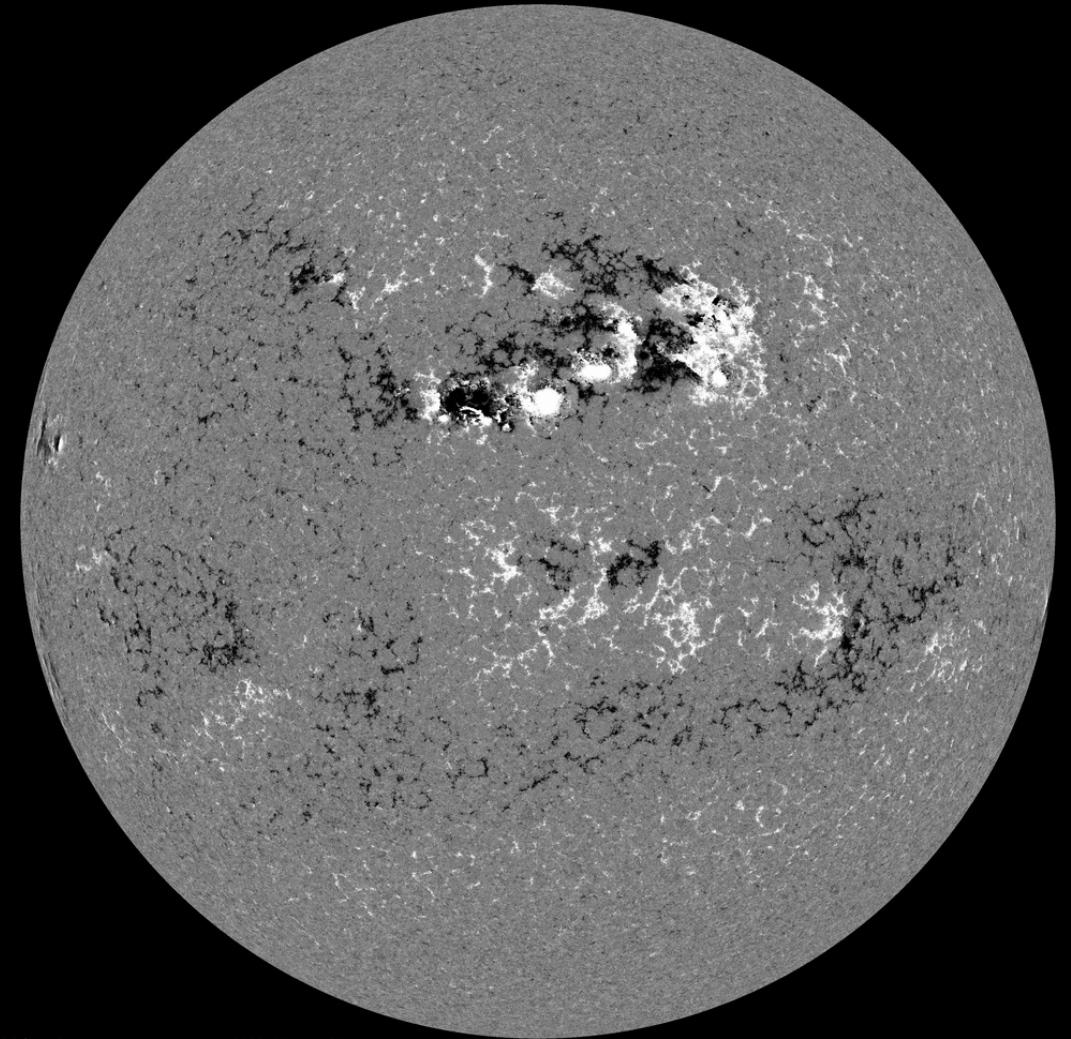
Solar active regions

SDO/HMI White Light 2025-02-04



SDO/HMI Quick-Look Continuum: 20250204_114500

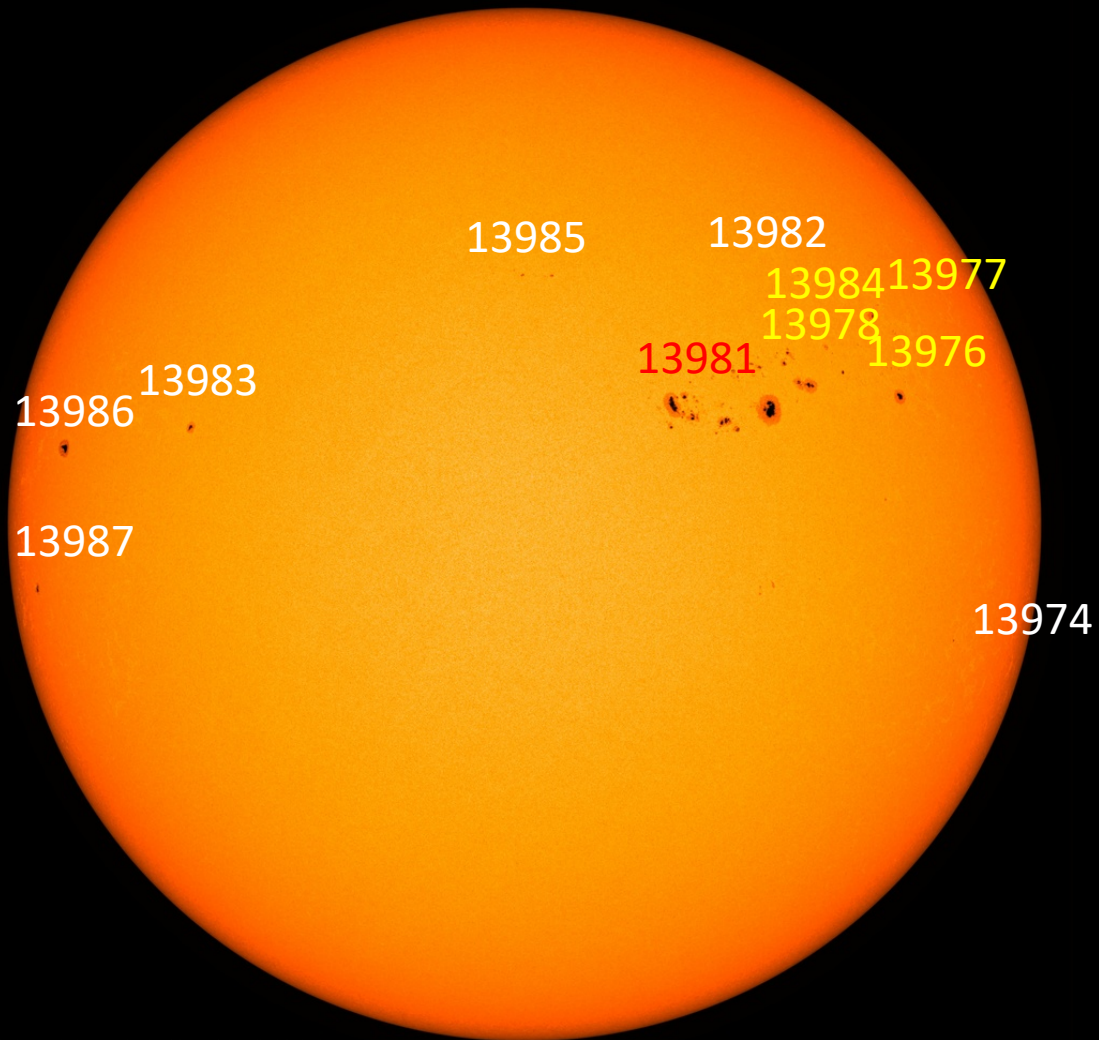
SDO/HMI Magnetogram 2025-02-04



SDO/HMI Quick-Look Magnetogram: 20250204_114500

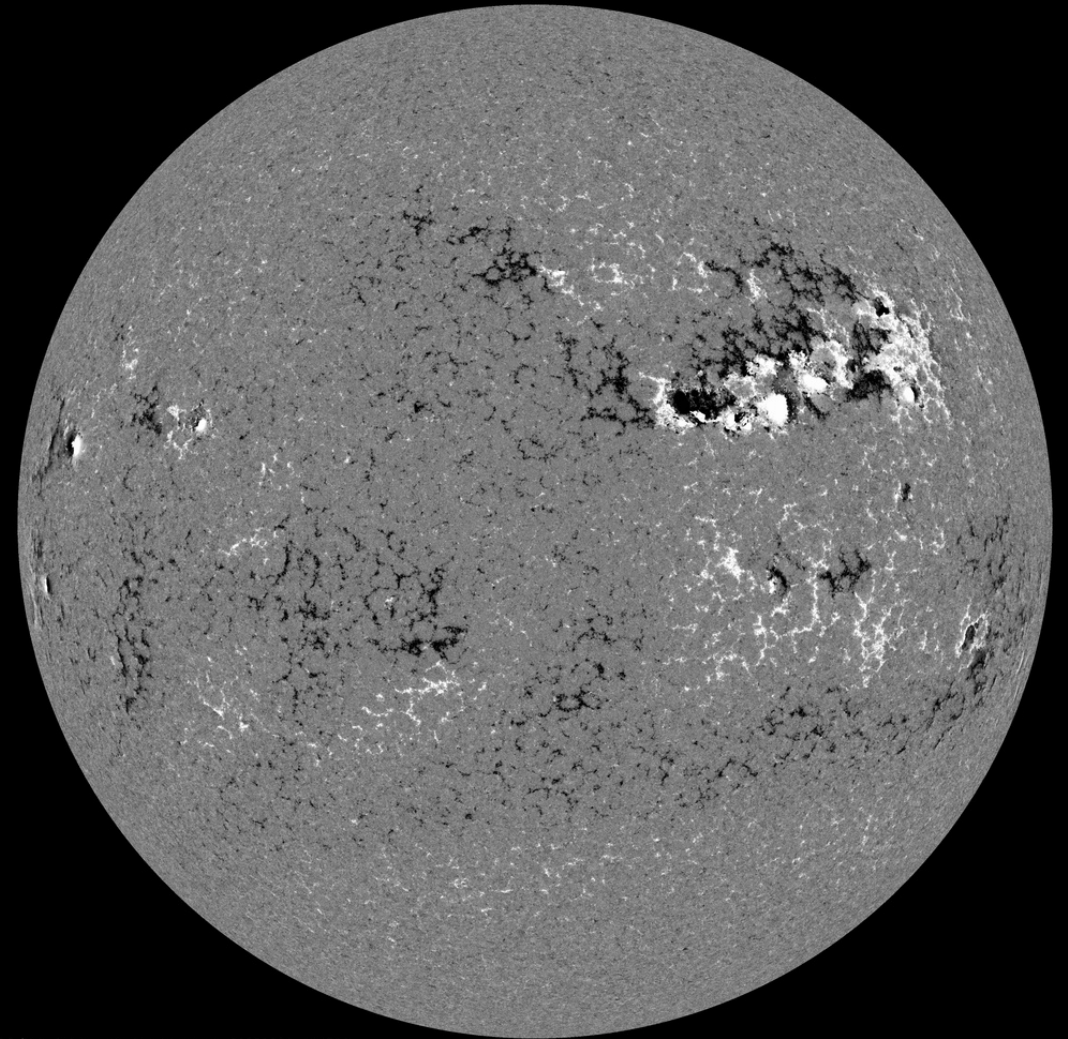
Solar active regions

SDO/HMI White Light 2025-02-06



SDO/HMI Quick-Look Continuum: 20250206_114500

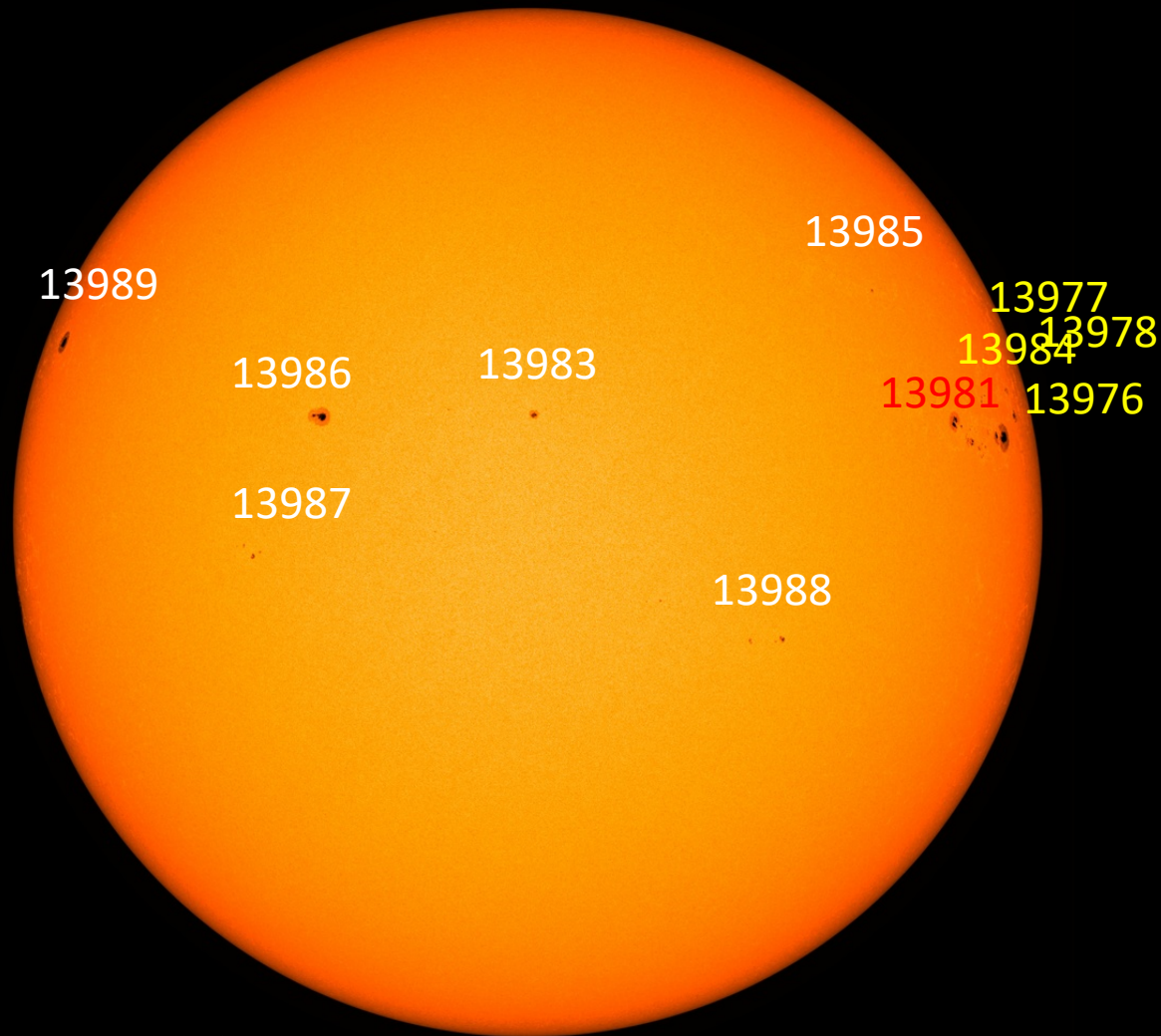
SDO/HMI Magnetogram 2025-02-06



SDO/HMI Quick-Look Magnetogram: 20250206_114500

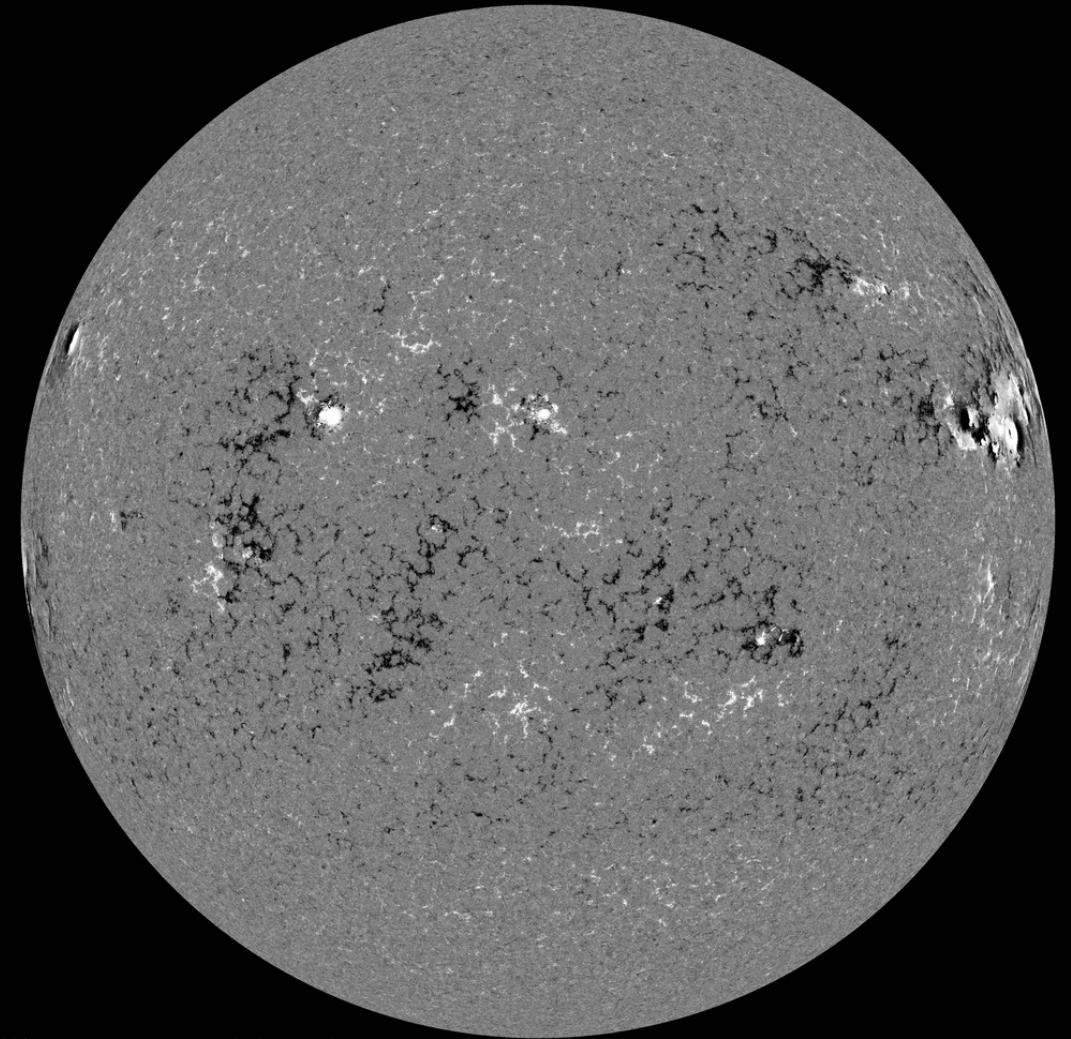
Solar active regions

SDO/HMI White Light 2025-02-09



SDO/HMI Quick-Look Continuum: 20250209_114500

SDO/HMI Magnetogram 2025-02-09

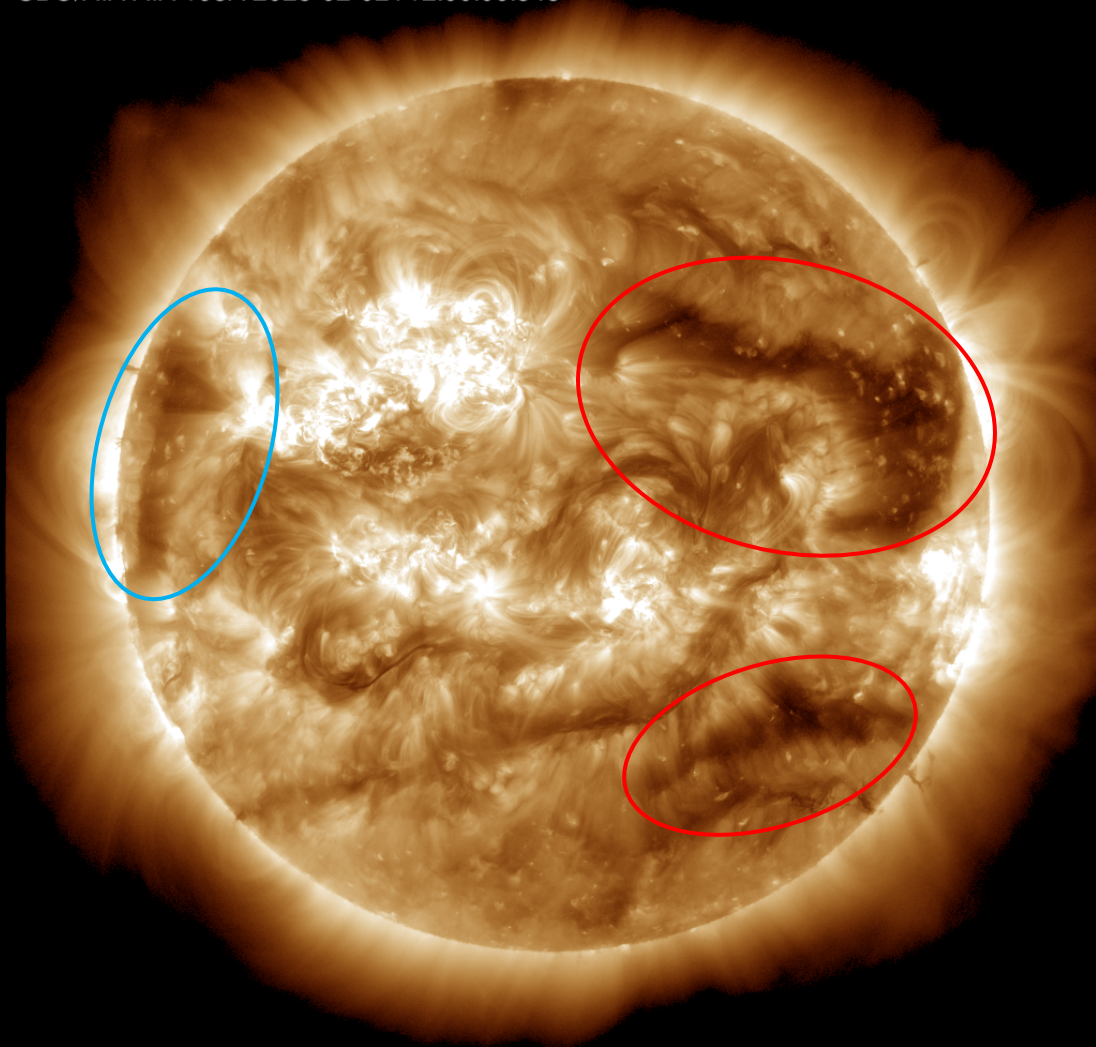


SDO/HMI Quick-Look Magnetogram: 20250209_114500

Coronal holes

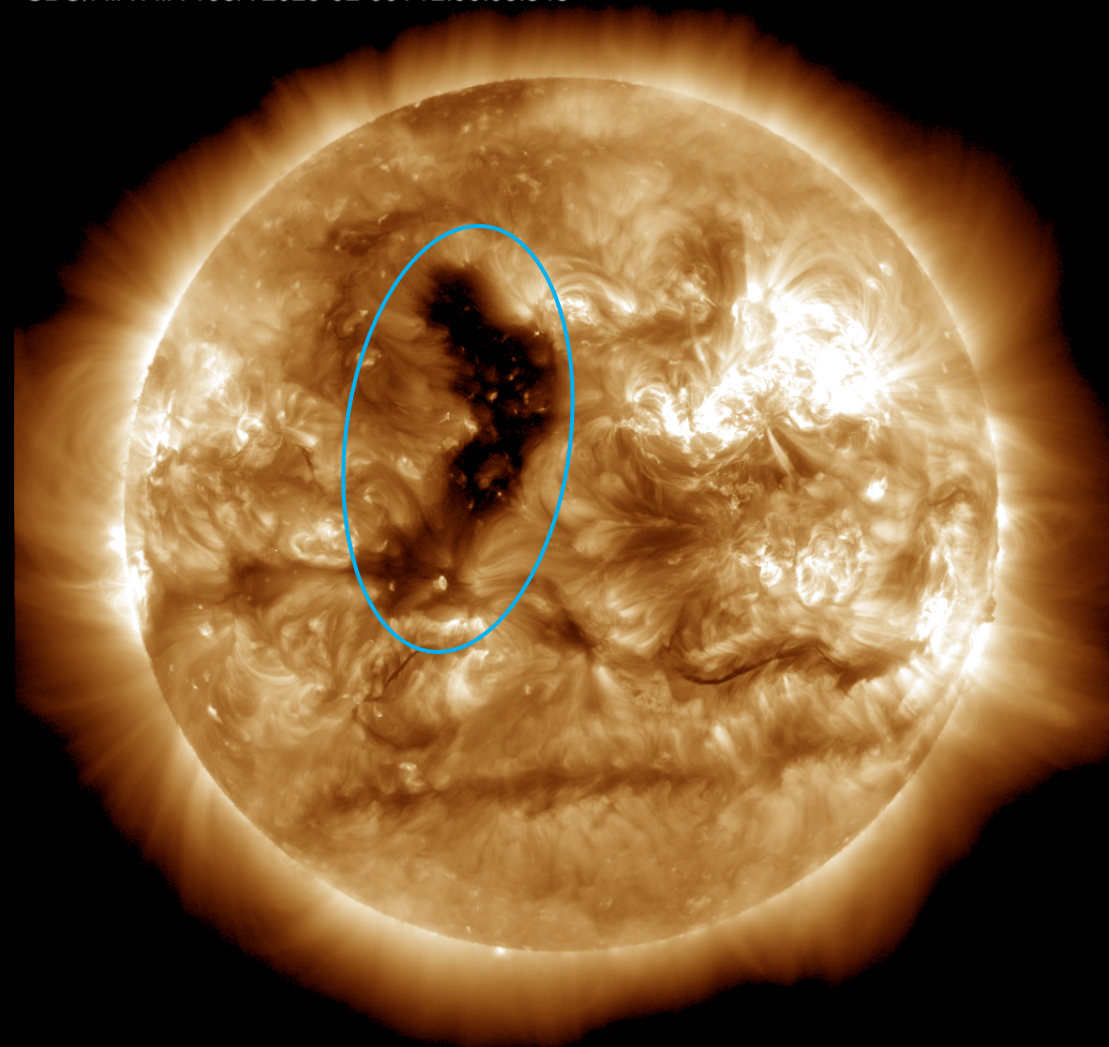
SDO/AIA 19.3 nm 2025-02-02

SDO/AIA AIA 193Å 2025-02-02T12:00:06.343



SDO/AIA 19.3 nm 2025-02-06

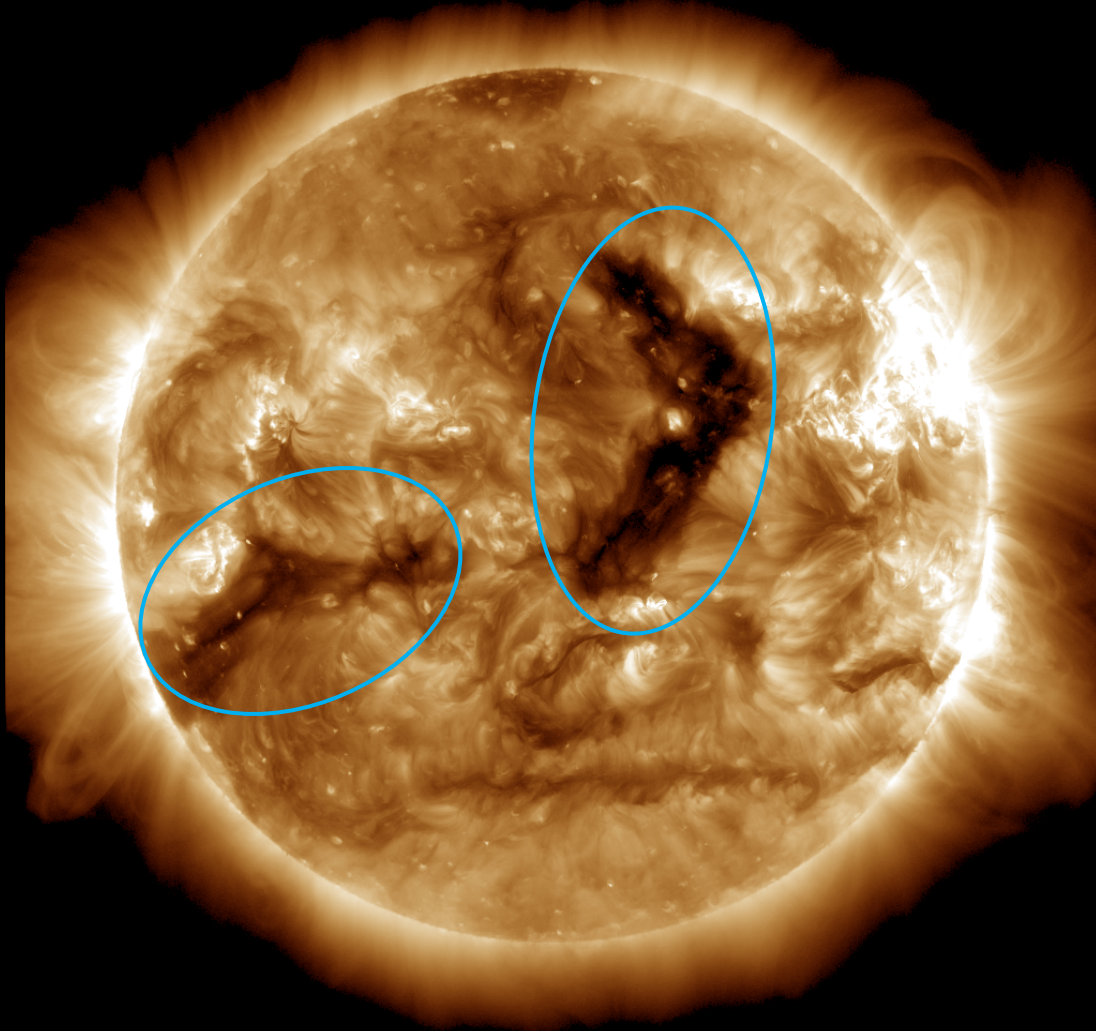
SDO/AIA AIA 193Å 2025-02-06T12:00:05.843



Coronal holes

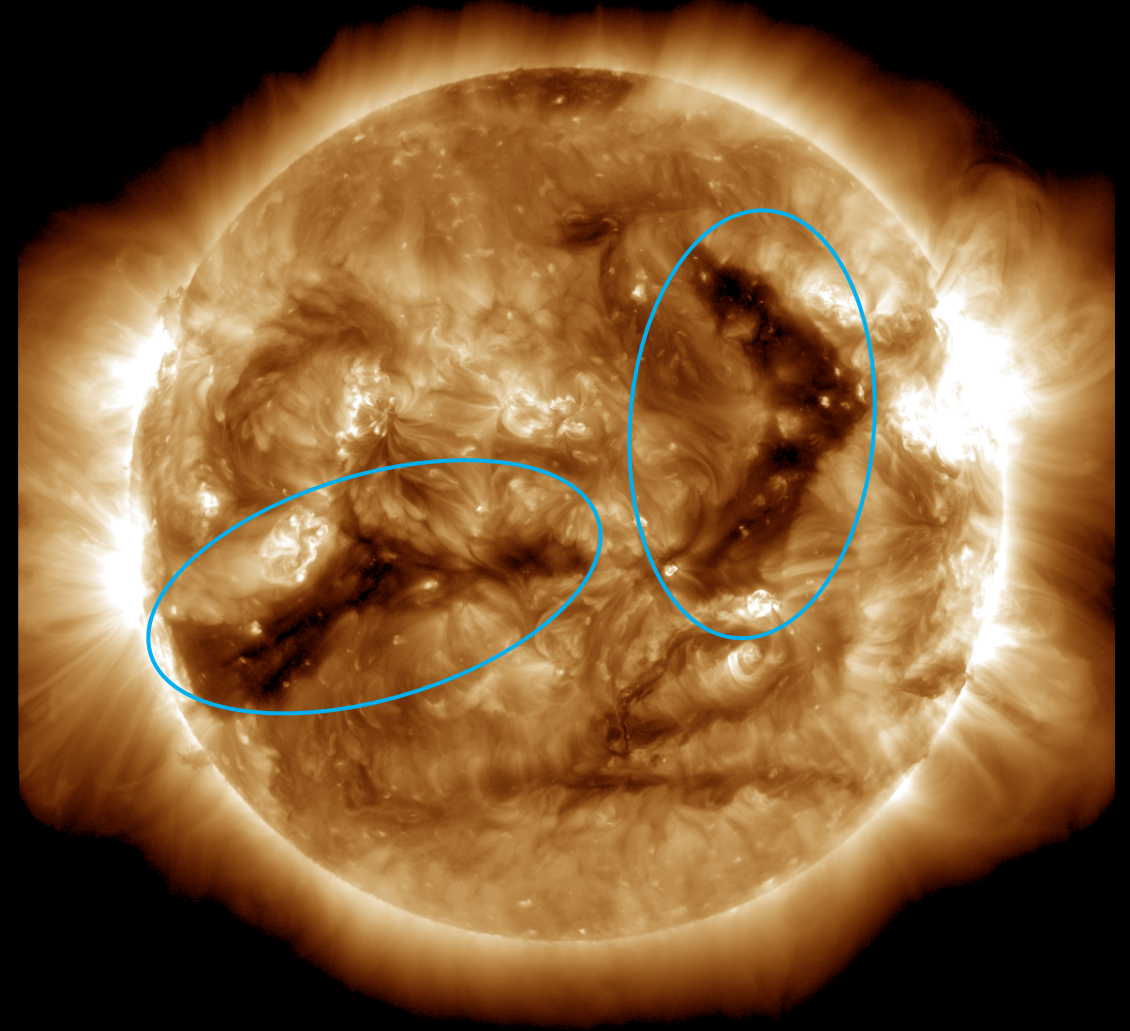
SDO/AIA 19.3 nm 2025-02-08

SDO/AIA AIA 193Å 2025-02-08T12:00:05.843



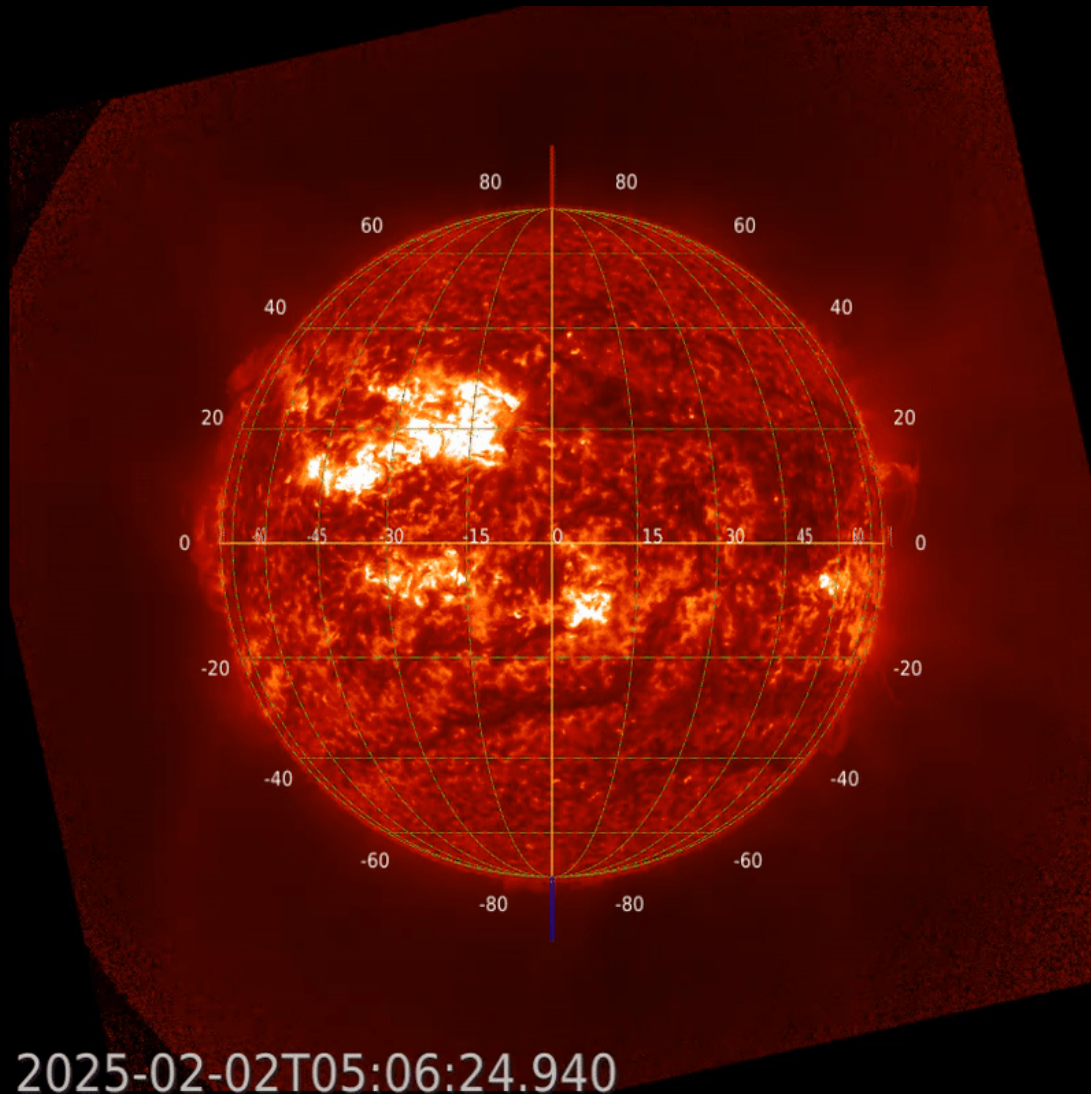
SDO/AIA 19.3 nm 2025-02-09

SDO/AIA AIA 193Å 2025-02-09T12:00:05.843

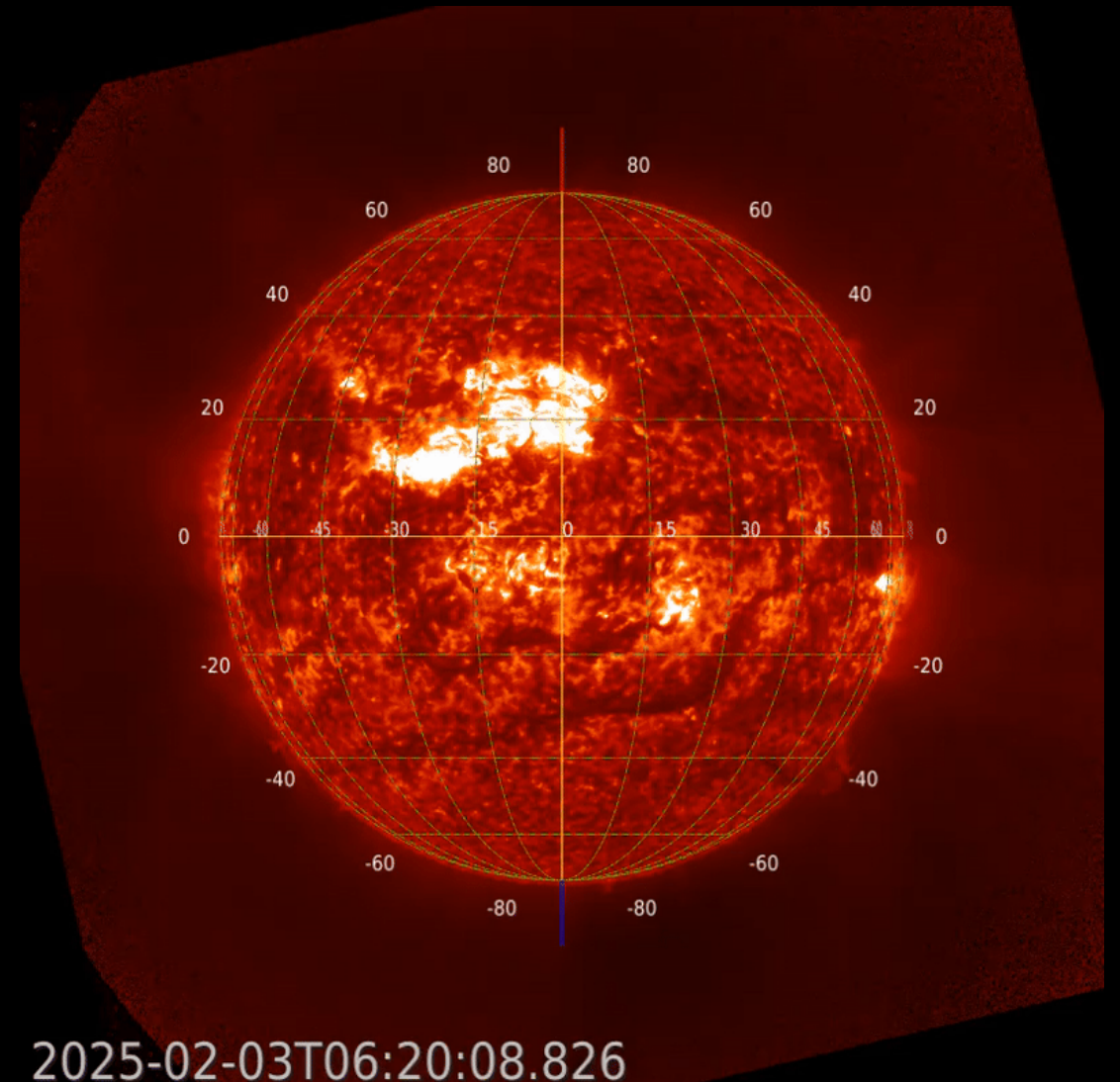


Filaments

GOES/SUVI 30.4 nm 2025-02-02

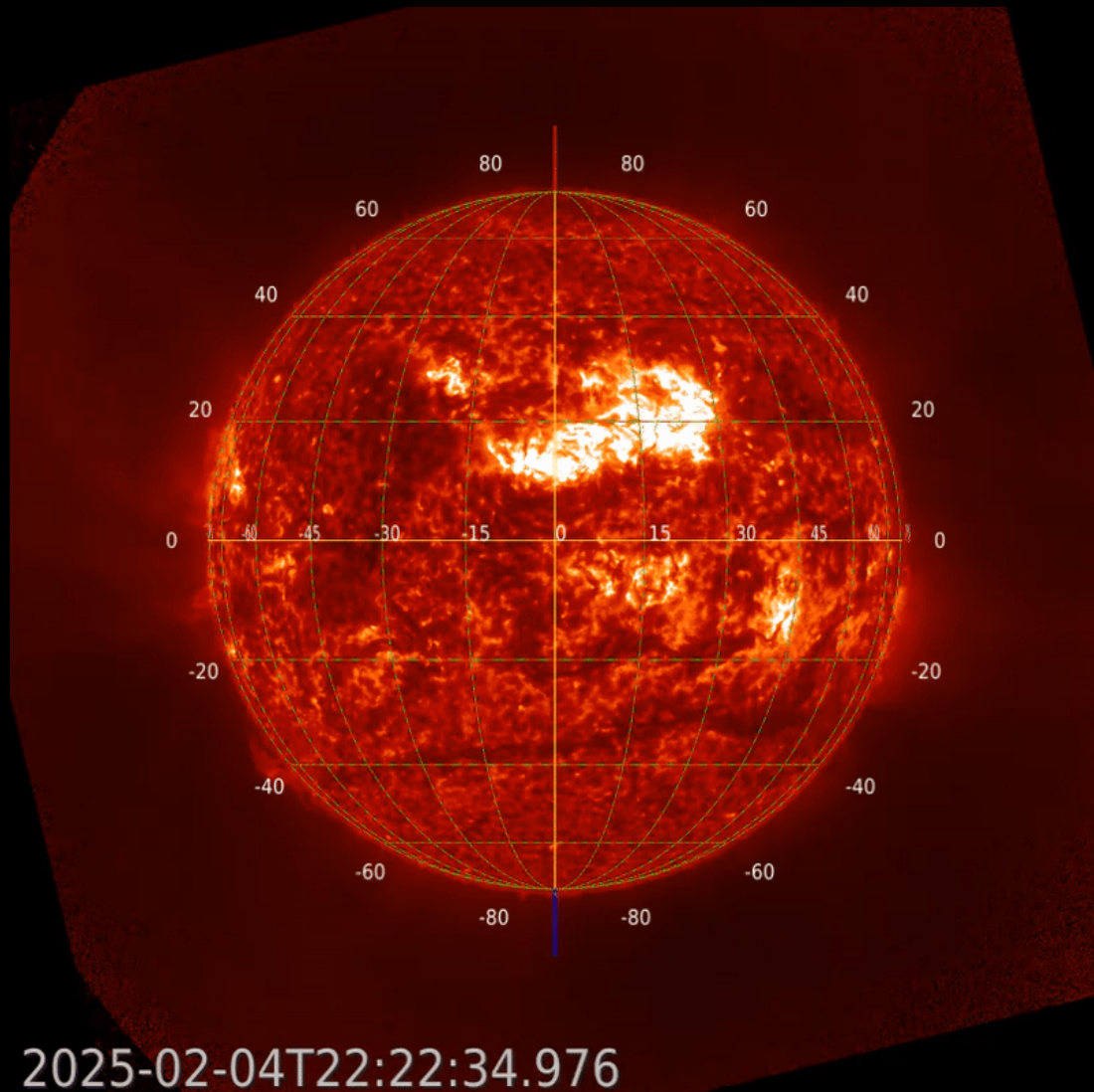


GOES/SUVI 30.4 nm 2025-02-03

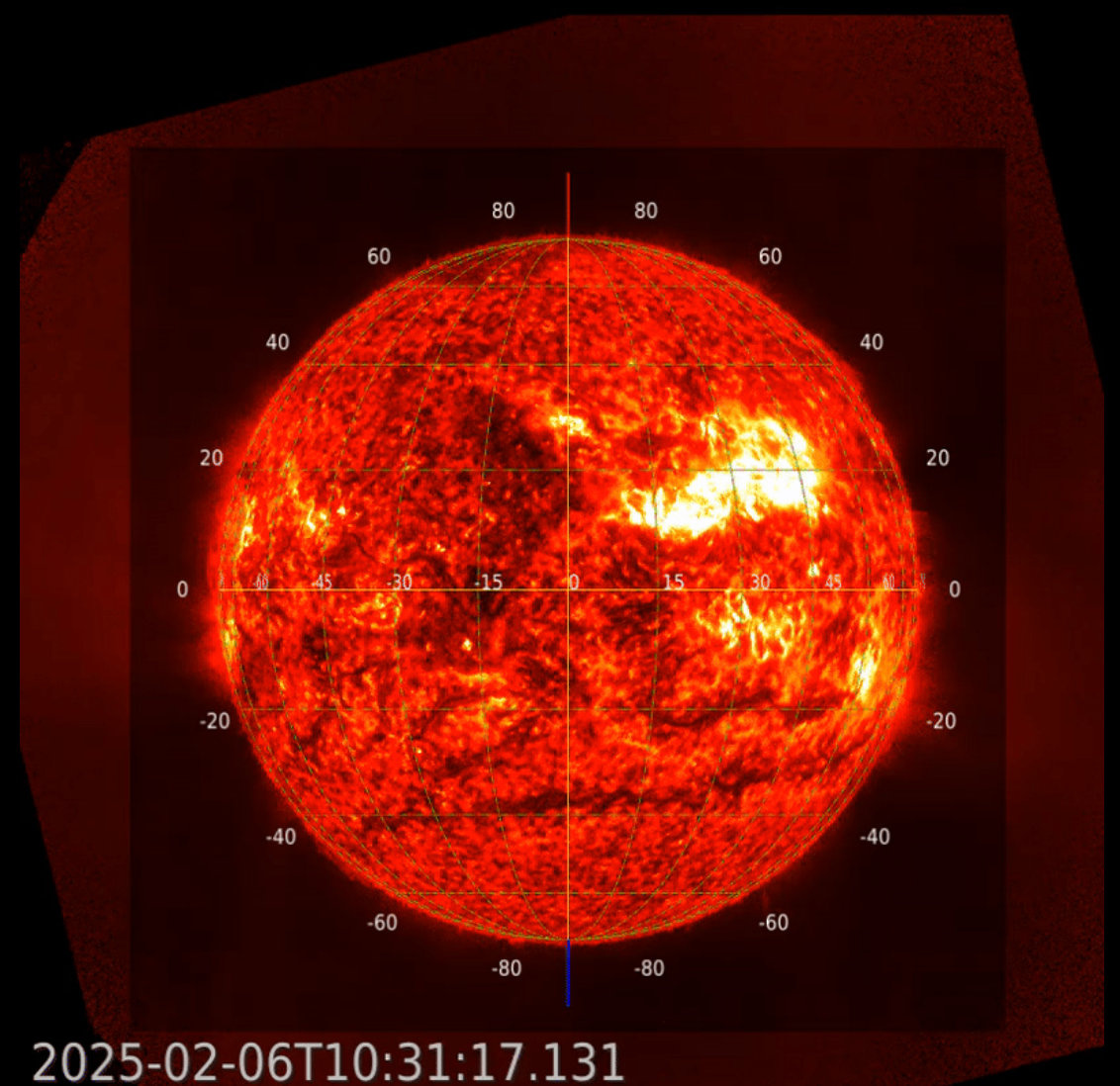


Filaments

GOES/SUVI 30.4 nm 2025-02-05

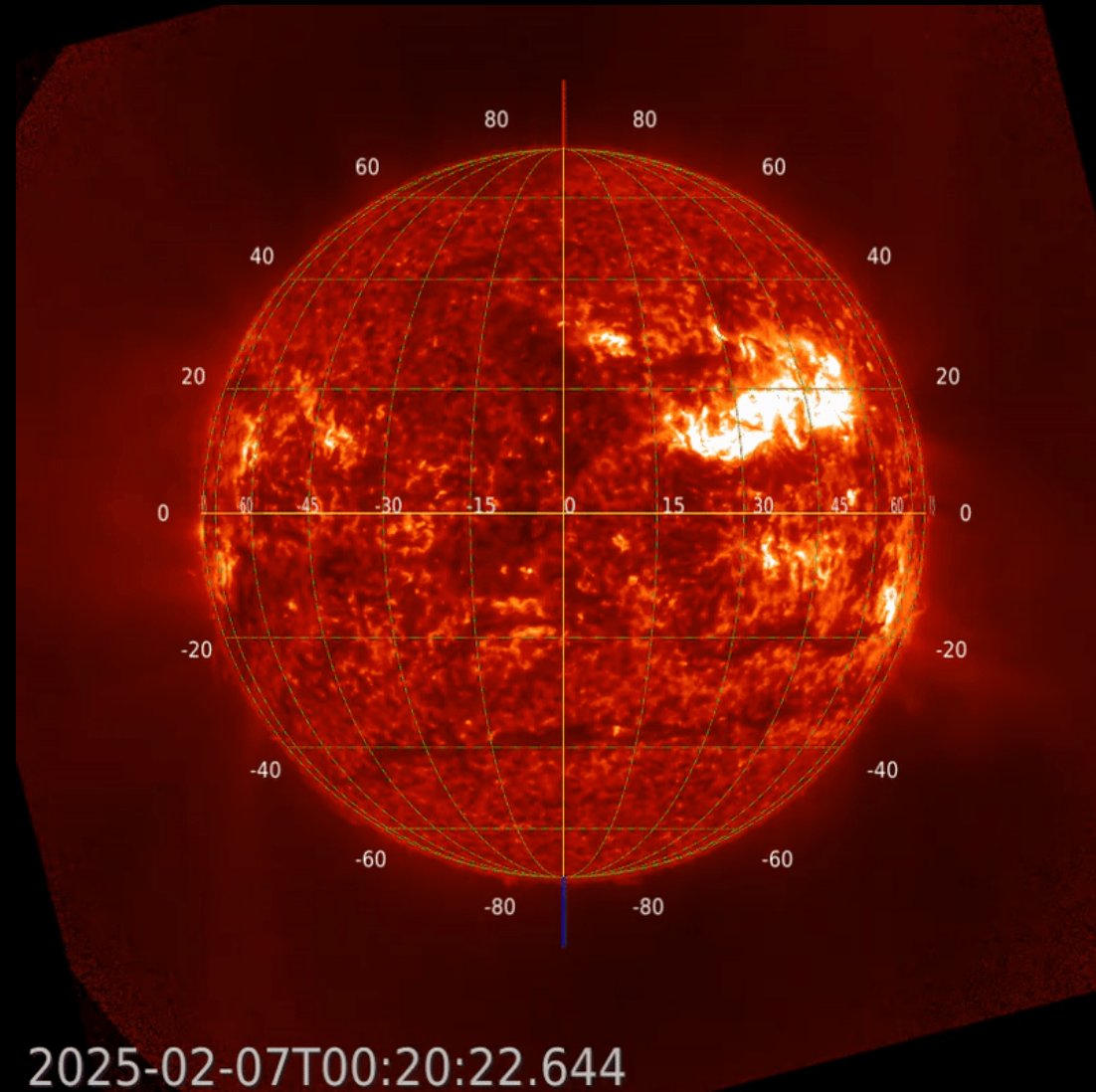


SDO/AIA + GOES/SUVI 30.4 nm 2025-02-06



Filaments

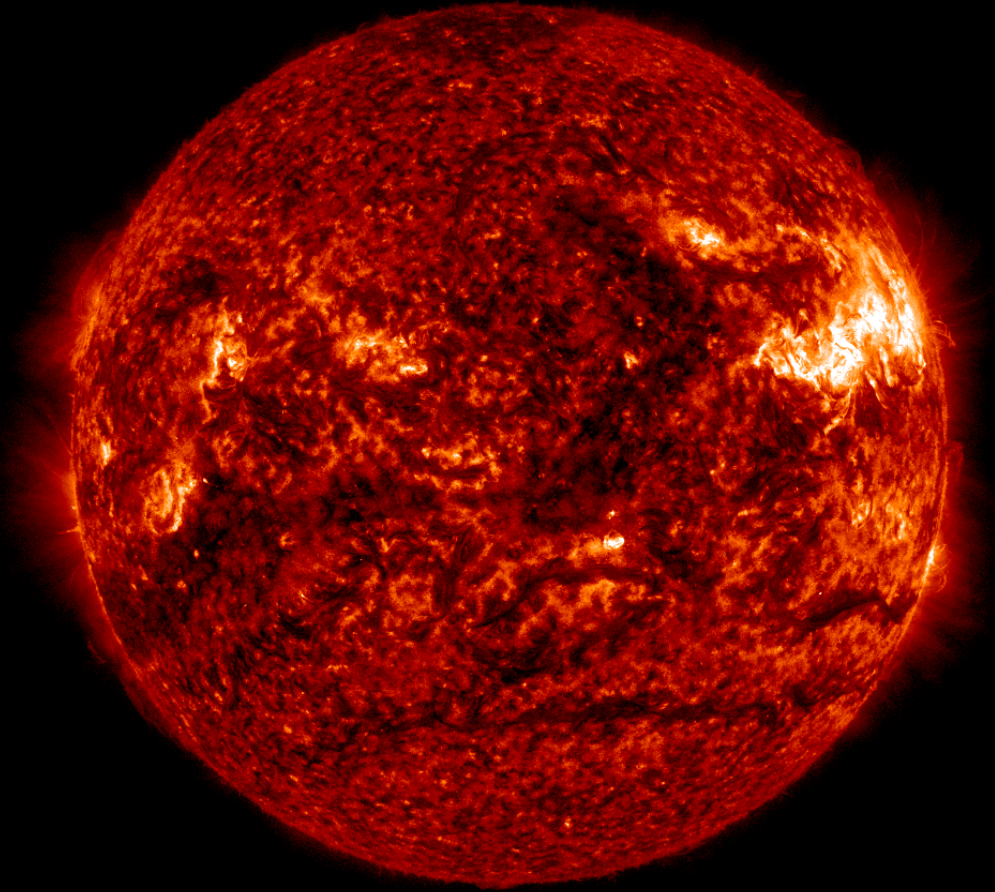
SDO/AIA 30.4 nm 2025-02-07



Filaments

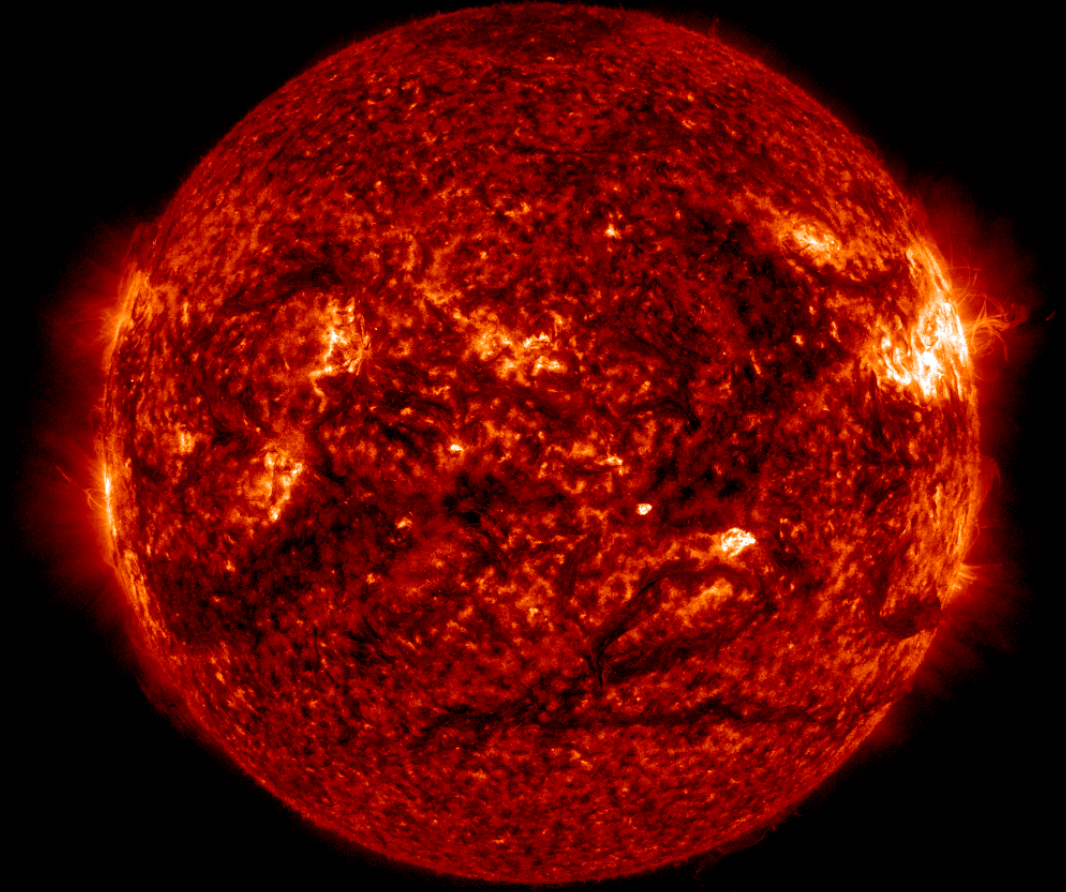
SDO/AIA 30.4 nm 2025-02-08

SDO/AIA AIA 304Å 2025-02-08T12:00:06.580



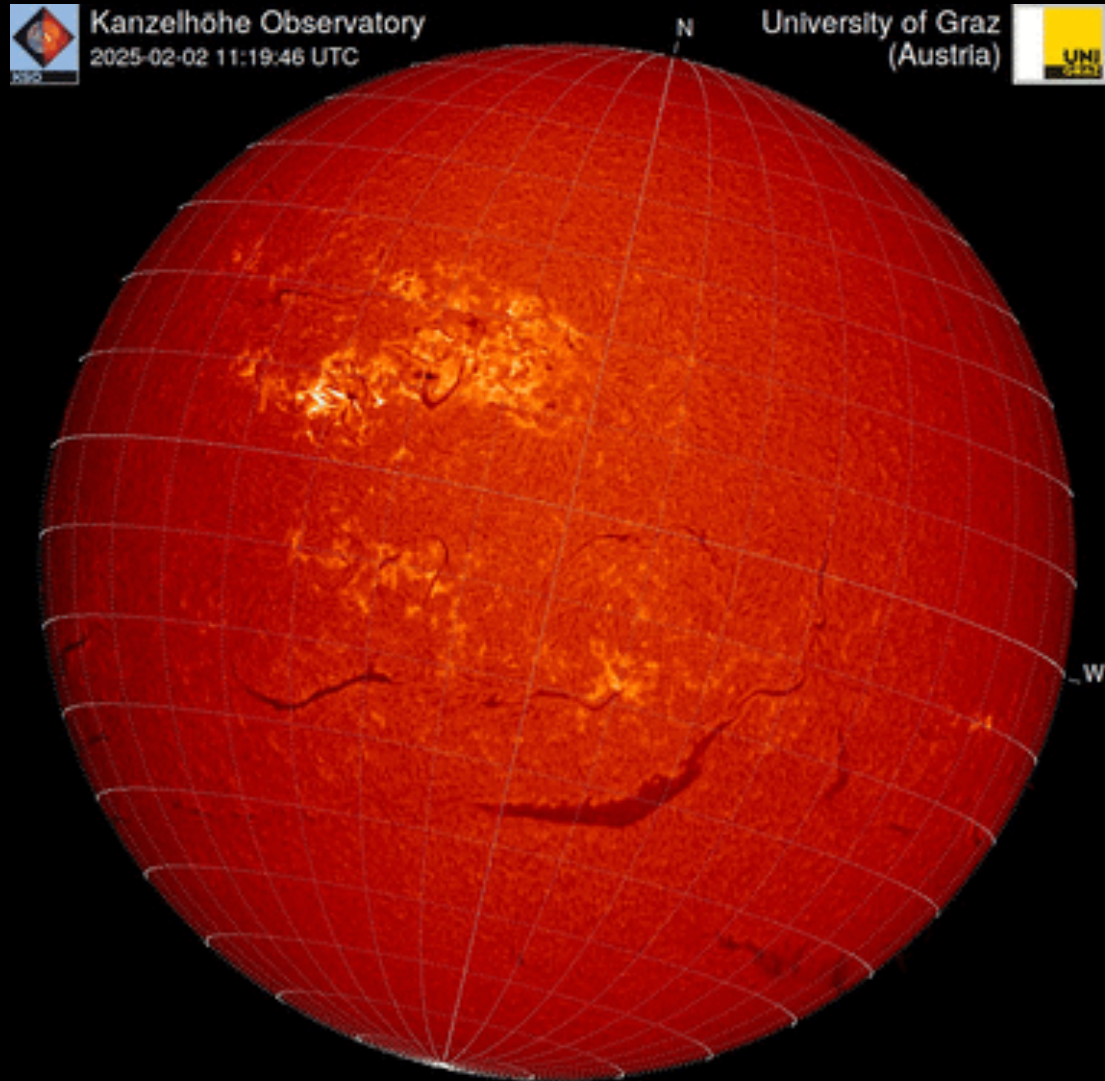
SDO/AIA 30.4 nm 2025-02-09

SDO/AIA AIA 304Å 2025-02-09T12:00:06.572

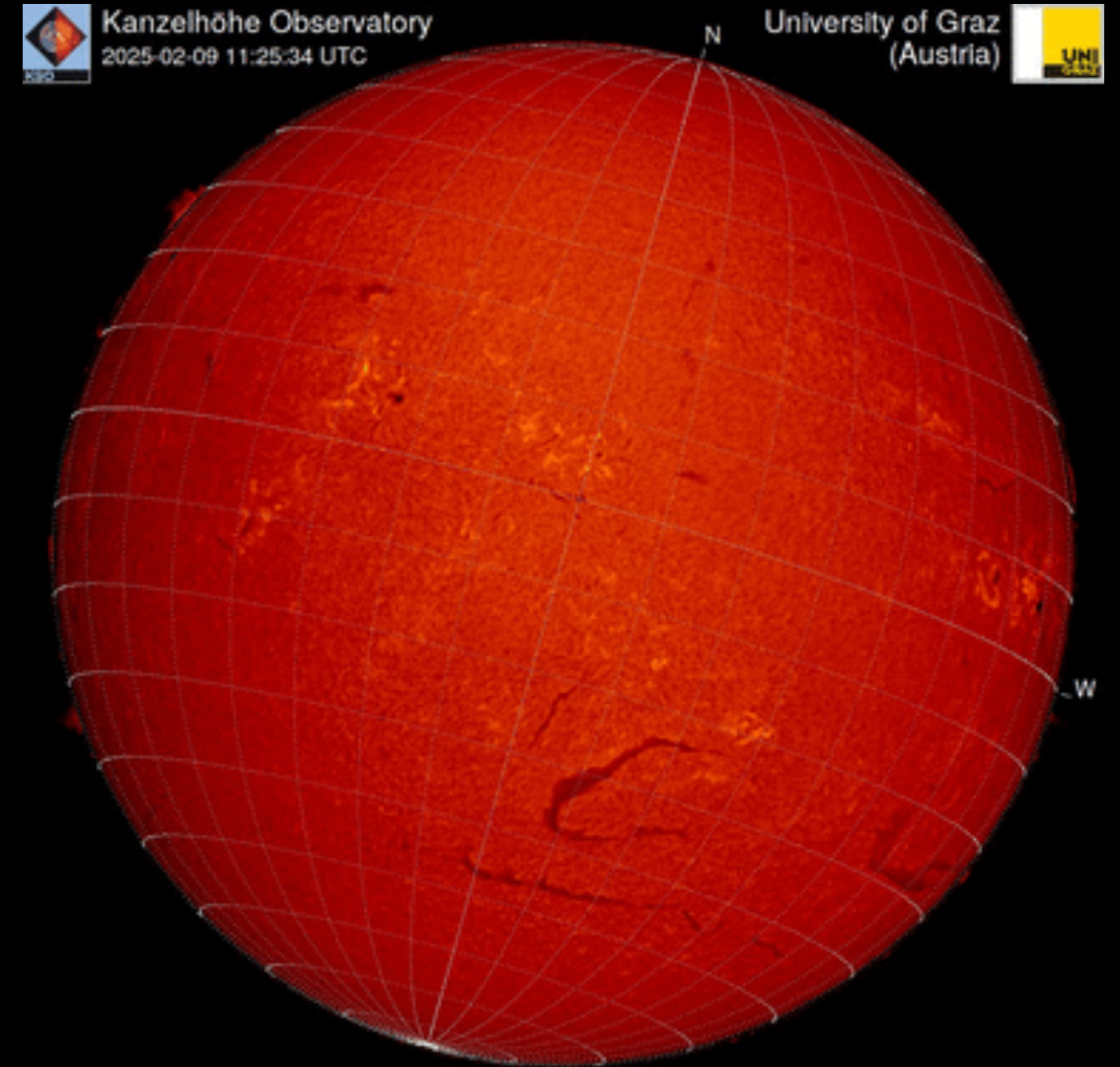


Filaments & Filament eruptions

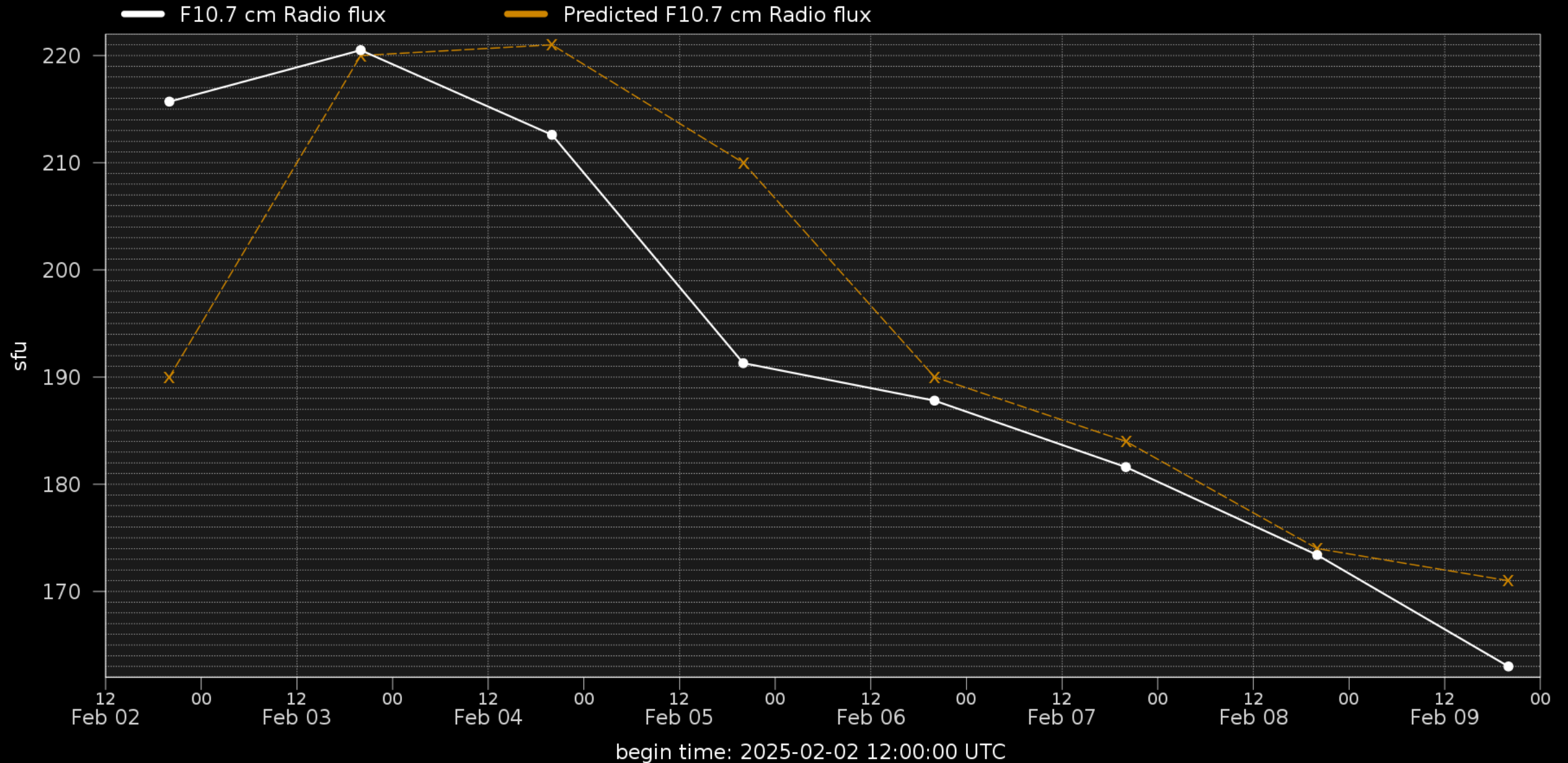
H-alpha 2025-02-02



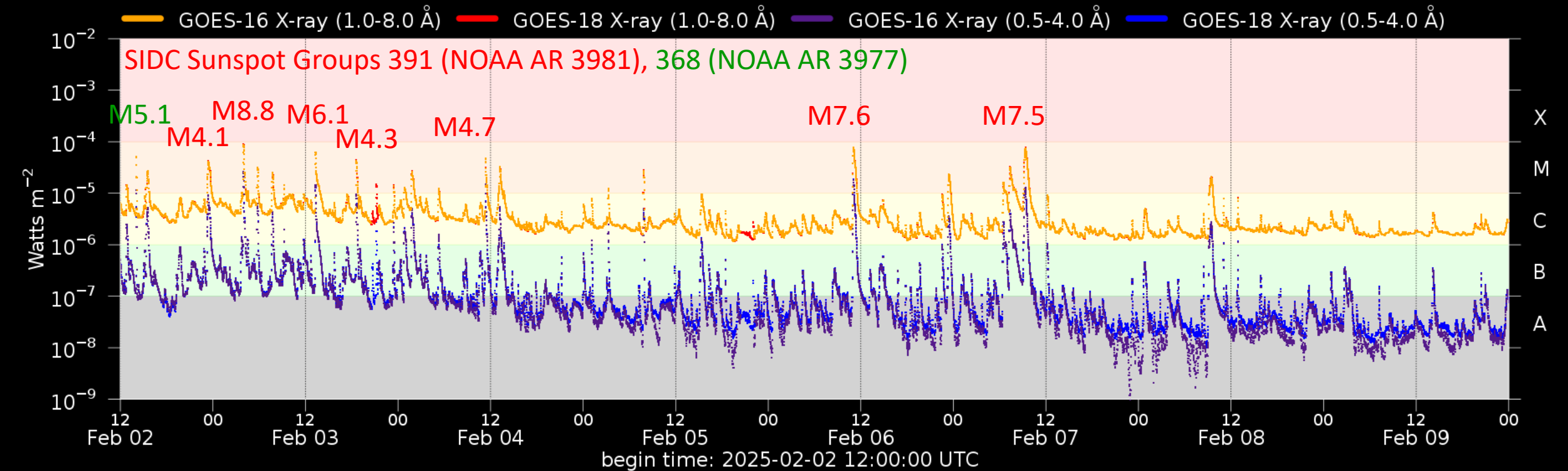
H-alpha 2025-02-09



Solar F10.7cm radio flux



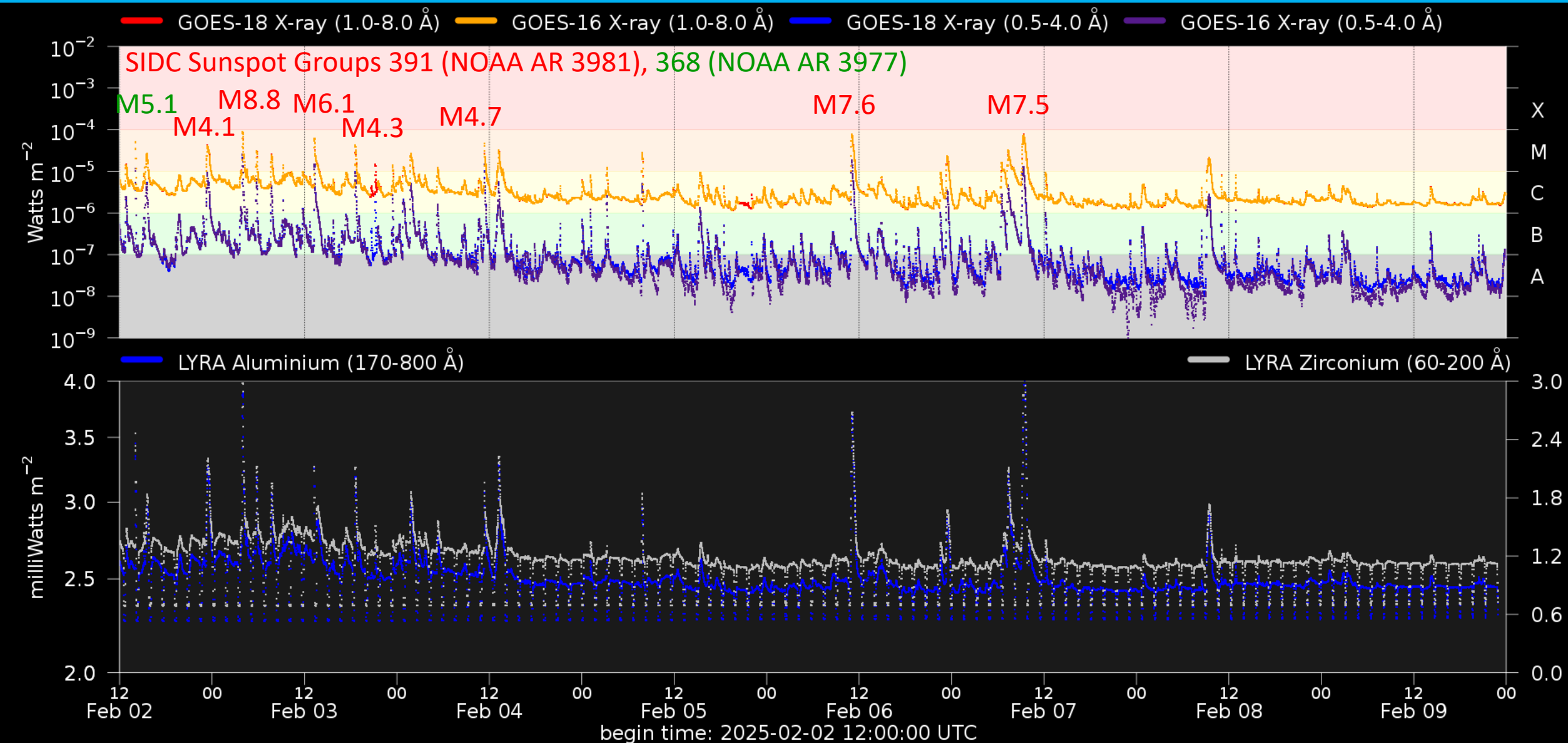
Flaring activity



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

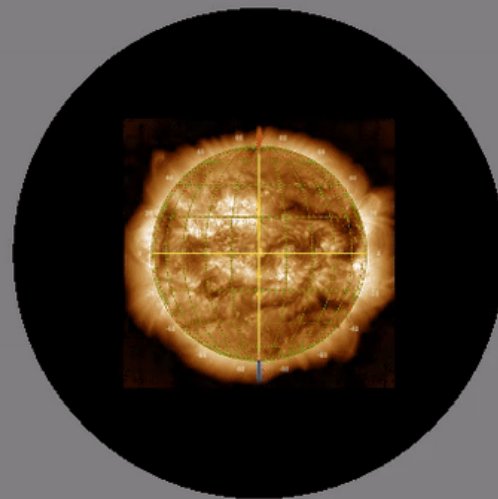
Issue date	2025-02-02	2025-02-03	2025-02-04	2025-02-05	2025-02-06	2025-02-07	2025-02-08	2025-02-09
Probability (%)	99 79 10	99 75 15	99 85 24	99 90 25	99 85 20	99 80 20	99 75 15	99 70 15
Observed (#)	10 11 00	16 08 00	10 03 00	19 01 00	13 04 00	15 01 00	08 00 00	04 00 00

Solar X-Ray and UV flux

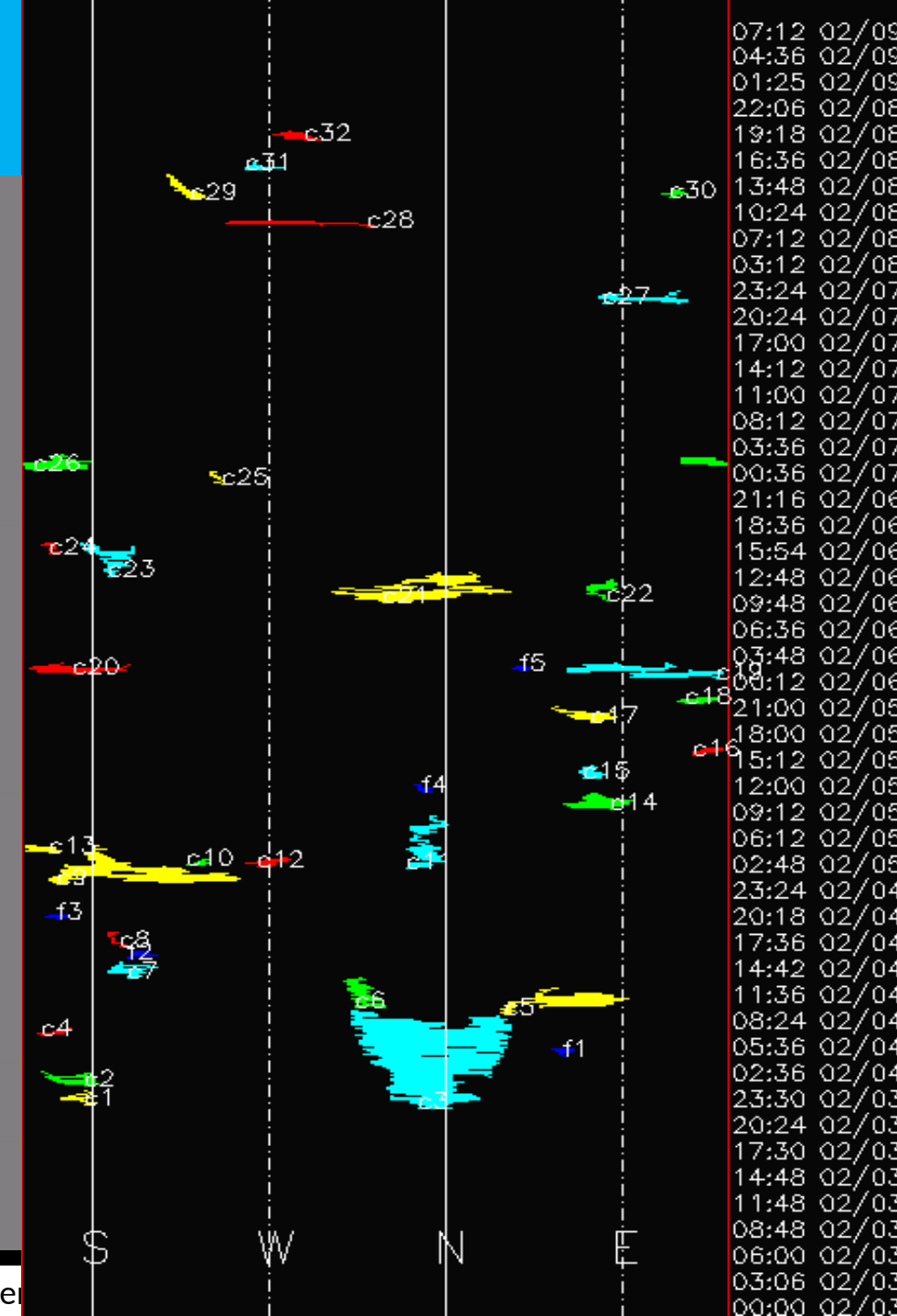


Coronal Mass Ejections

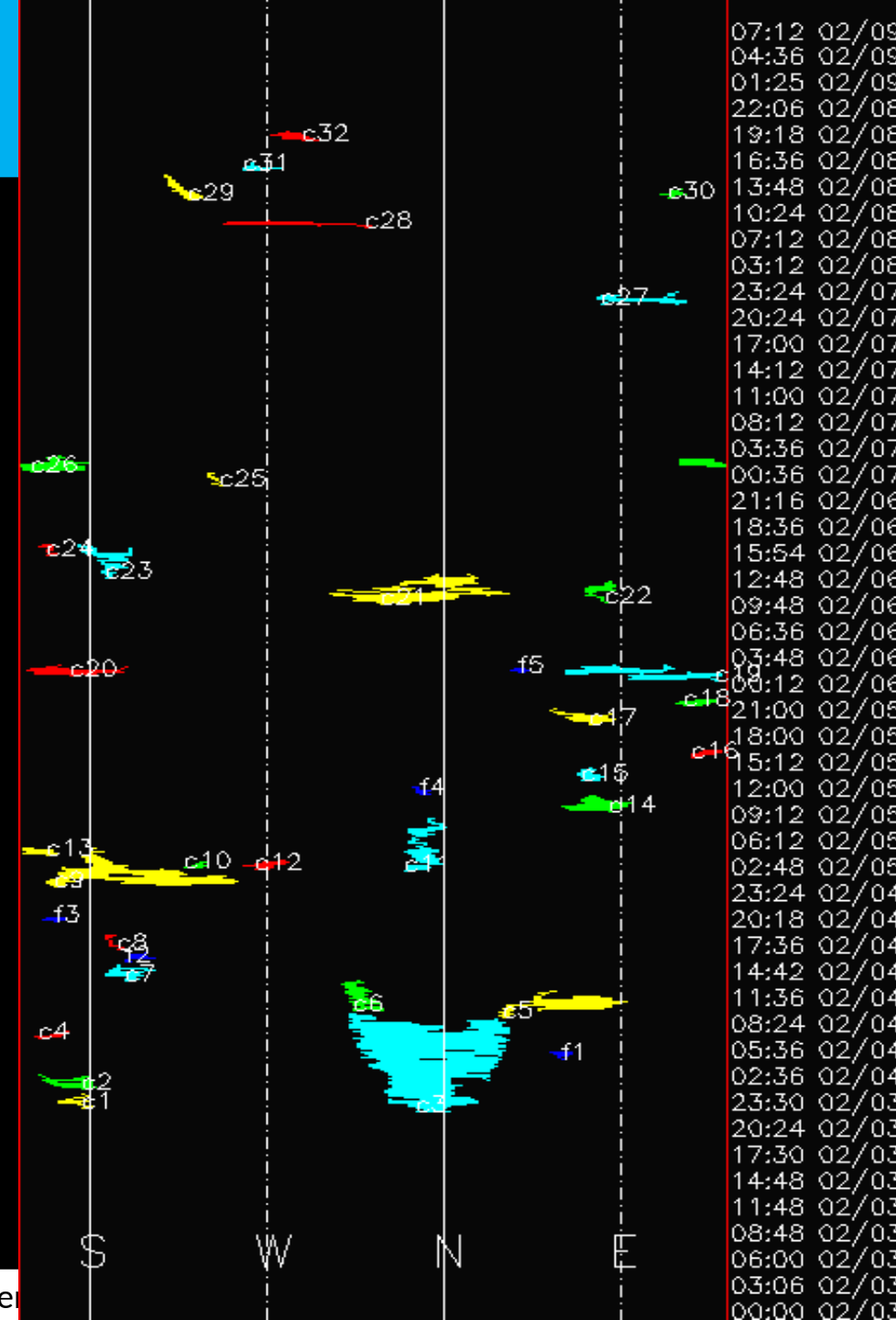
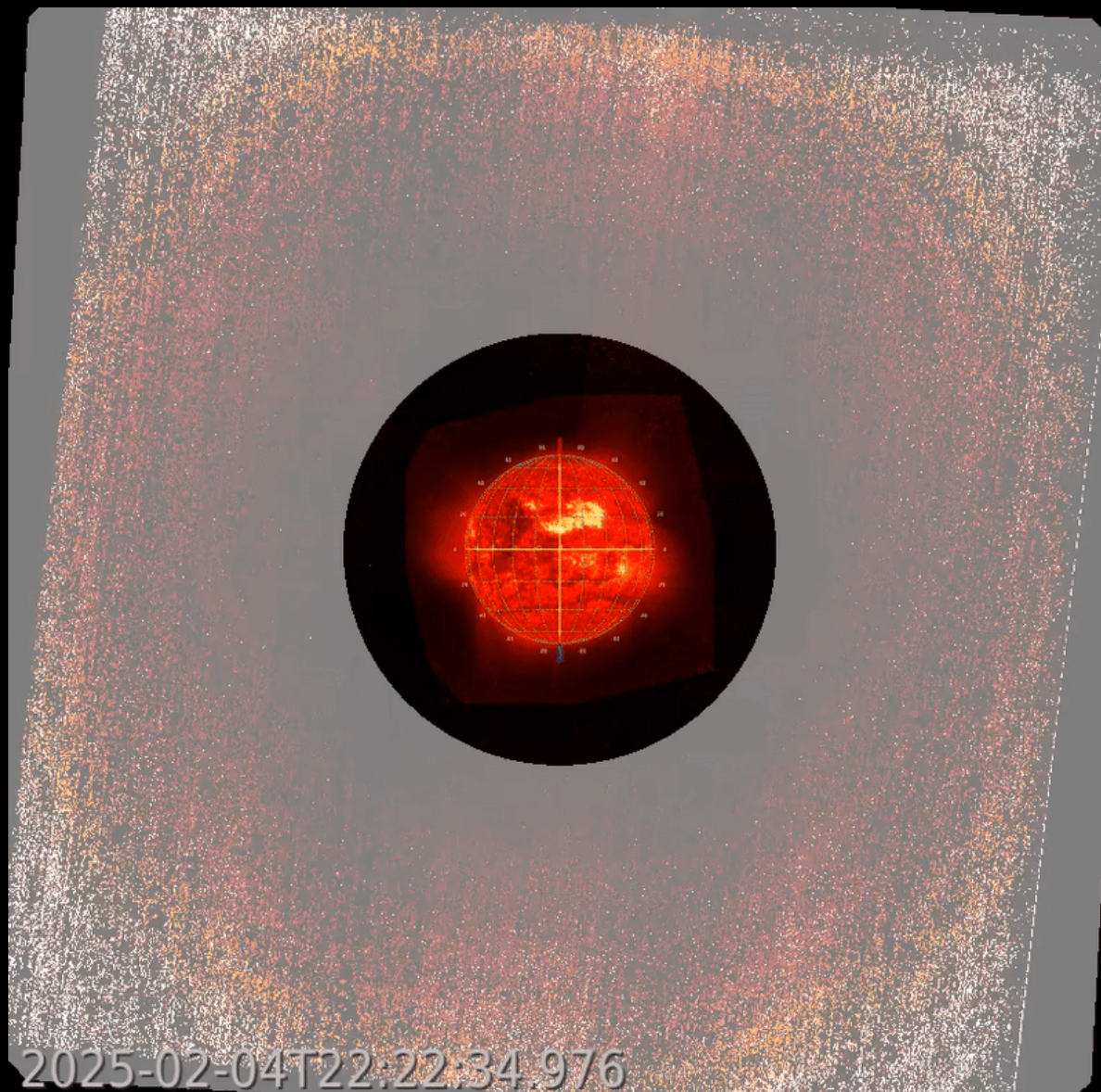
When: 23:24 UTC on Feb 02
Associated to a M4.1 flare
from SDC Sunspot Group 391 (NOAA
Active Region 3981)
Prediction: Predicted arrival at
Earth late on Feb 06
Actual arrival: 06:24 UTC on Feb 07



2025-02-02T18:19:04.846

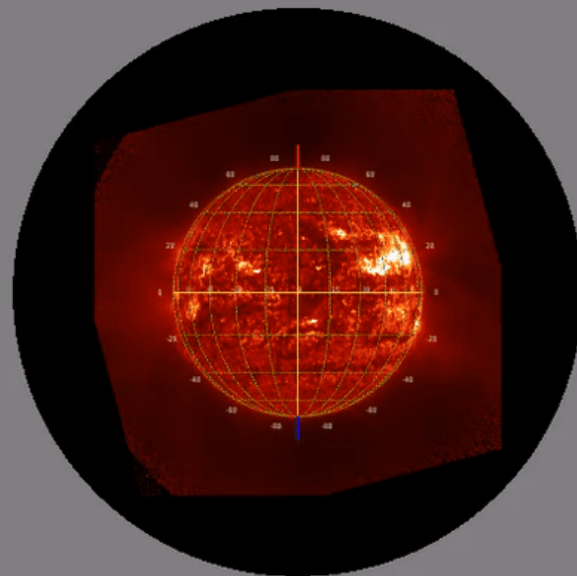


Coronal Mass Ejections

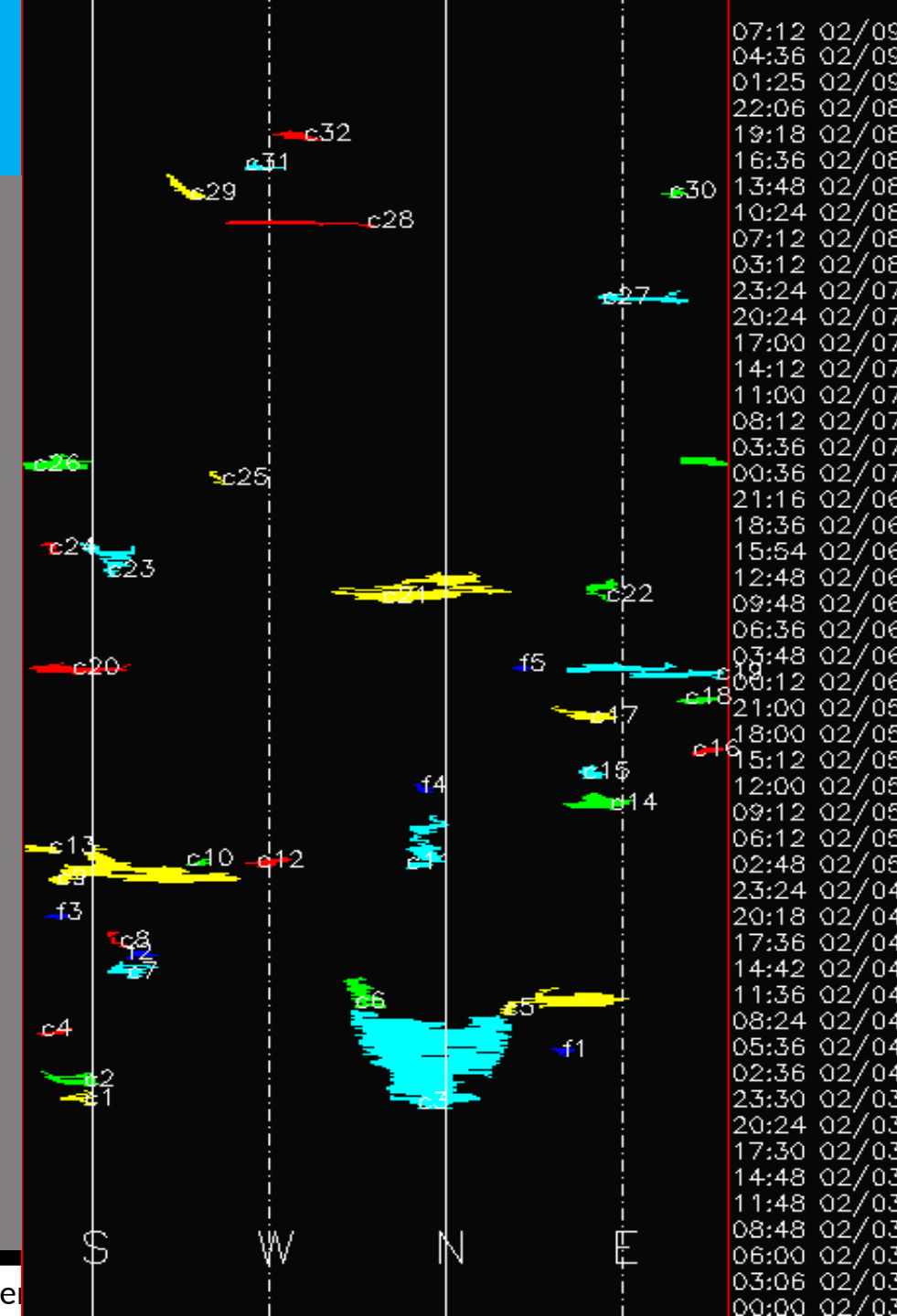


Coronal Mass Ejections

When: 10:12 UTC on Feb 08
Associated to a M2.0 flare
from SDC Sunspot Group 391 (NOAA
Active Region 3981)



2025-02-08T00:20:26.330



Solar Wind and

Geomagnetic Activity



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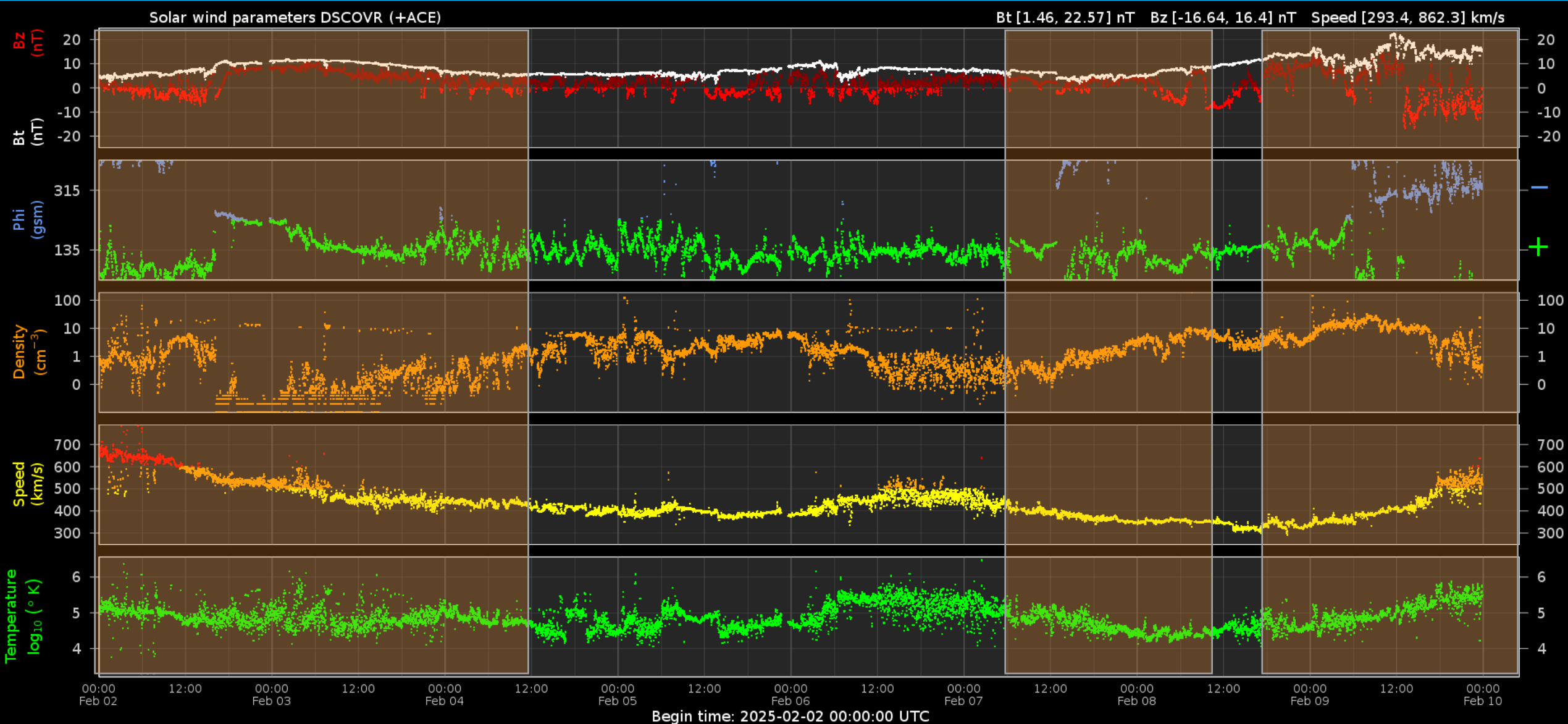
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Solar wind parameters

HSS

ICME?

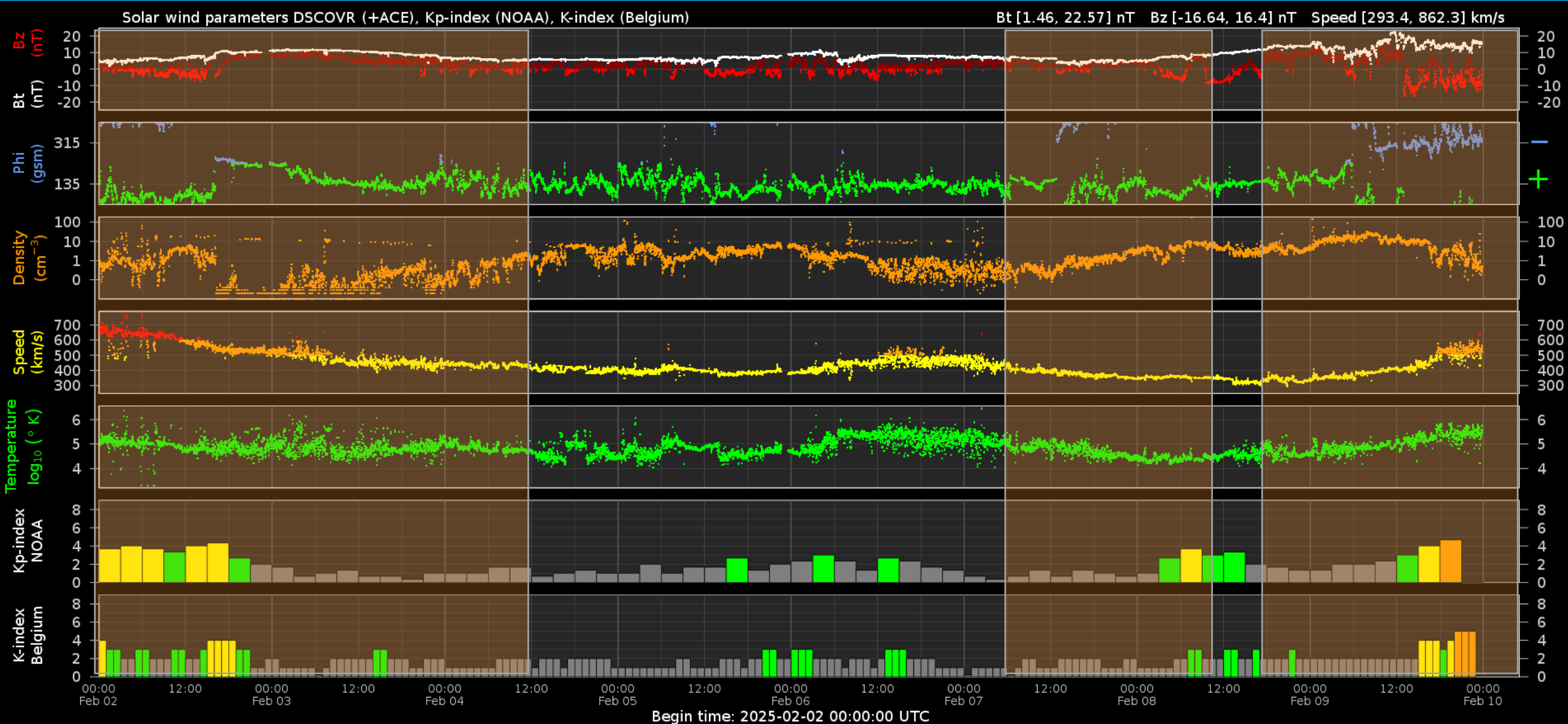
HSS



Solar wind parameters & K-indices

ICME?

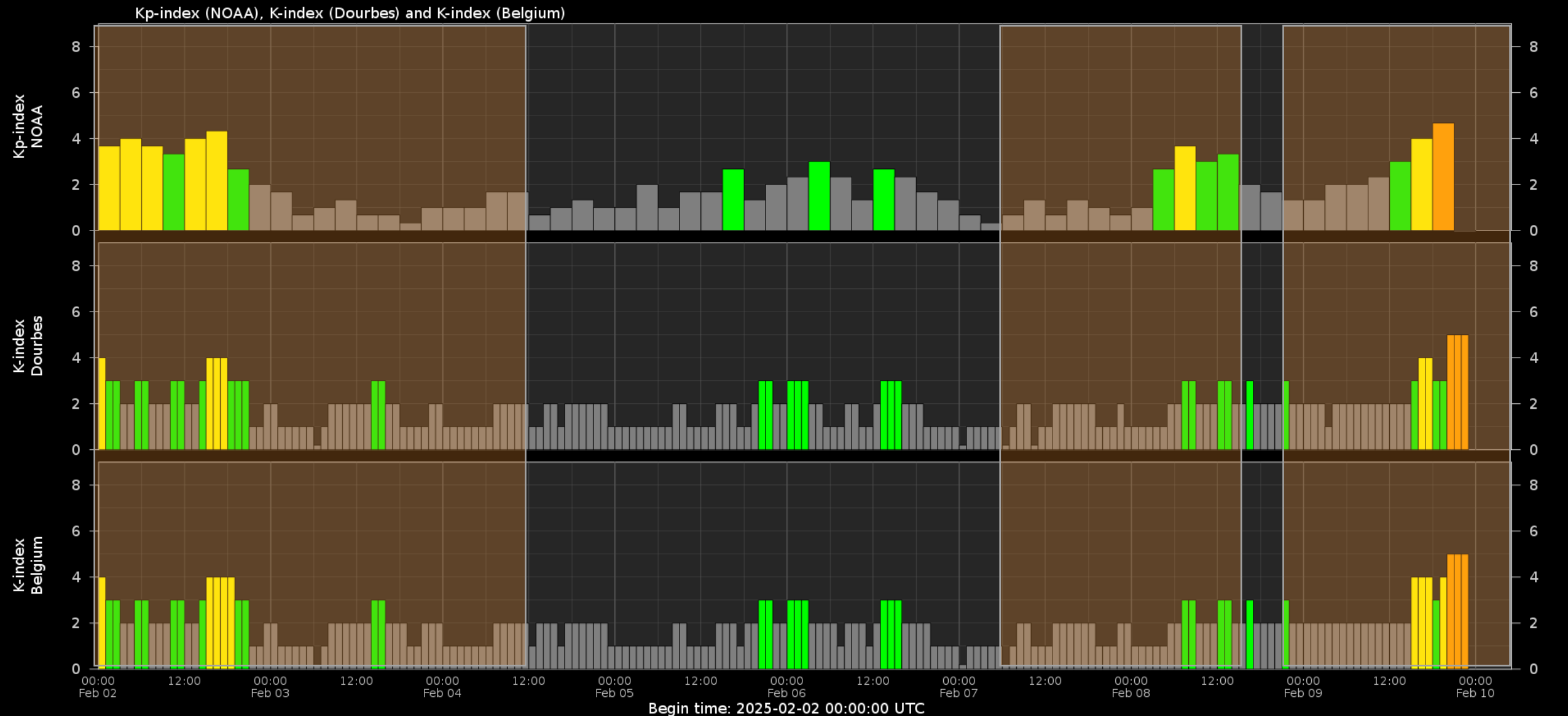
HSS



Geomagnetic activity (K-indexes)

ICME?

HSS



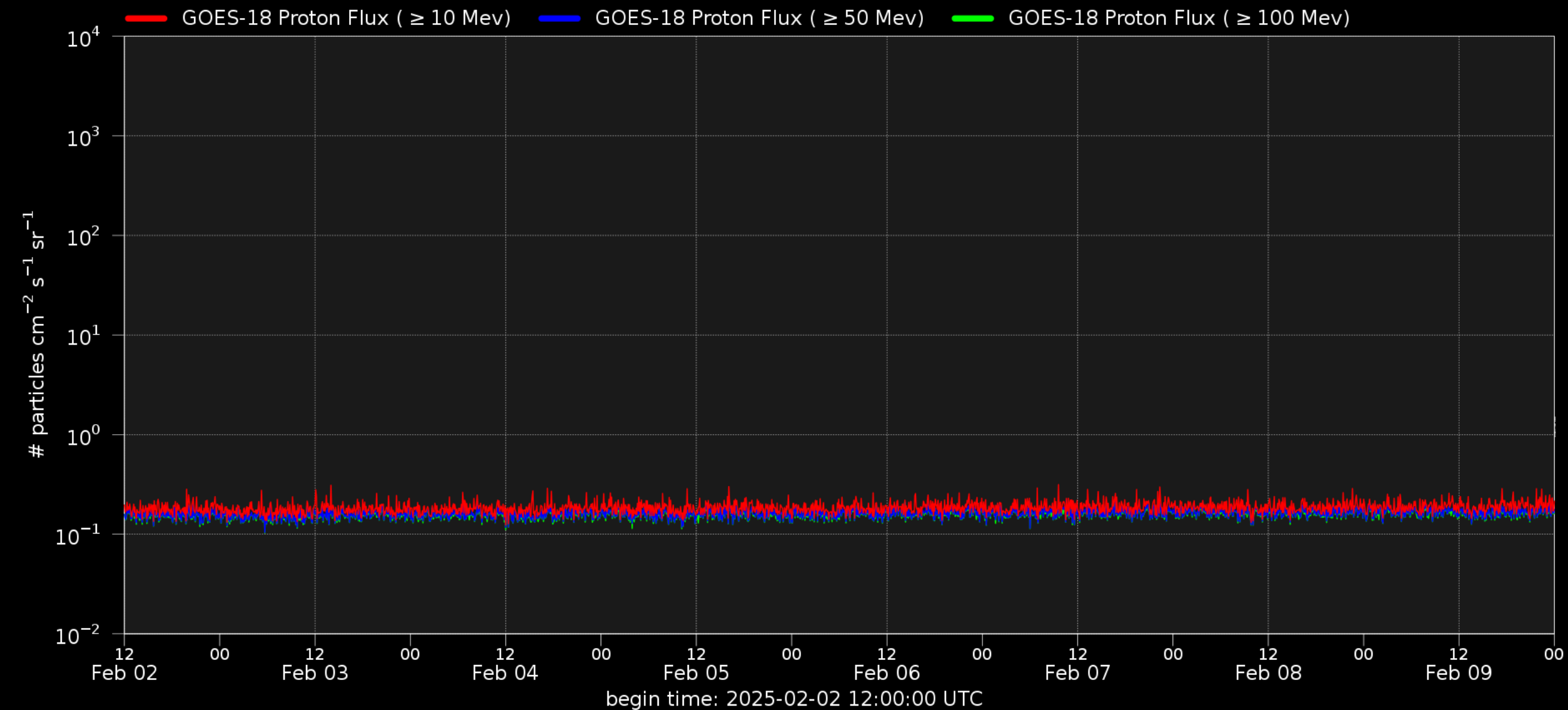
Energetic Particles



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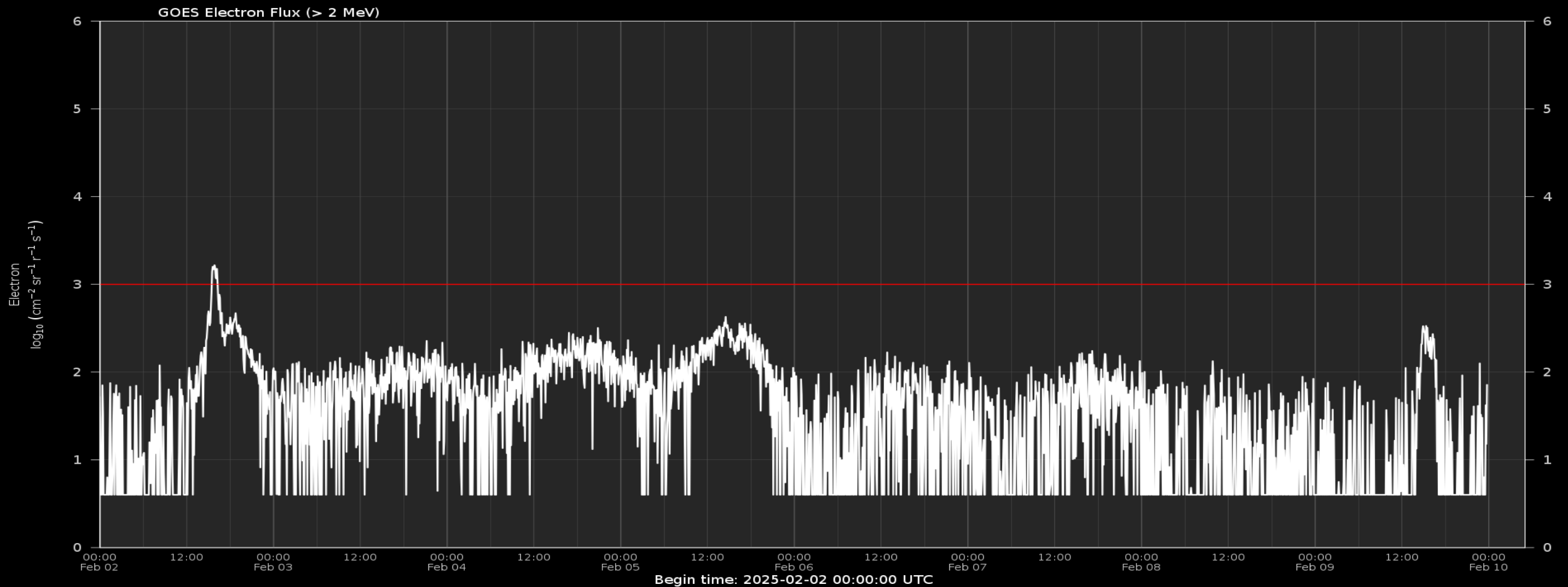
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



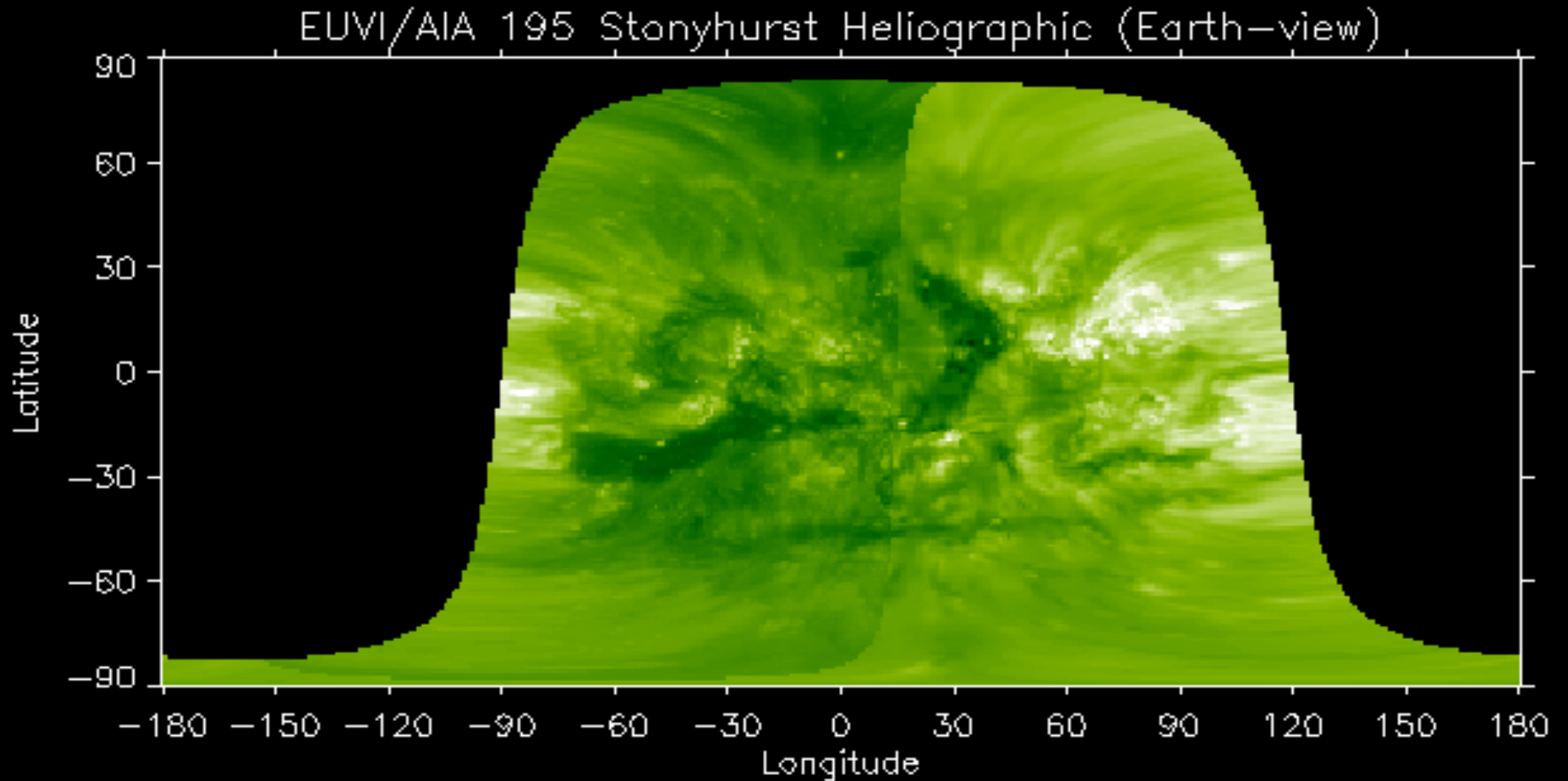
Outlook



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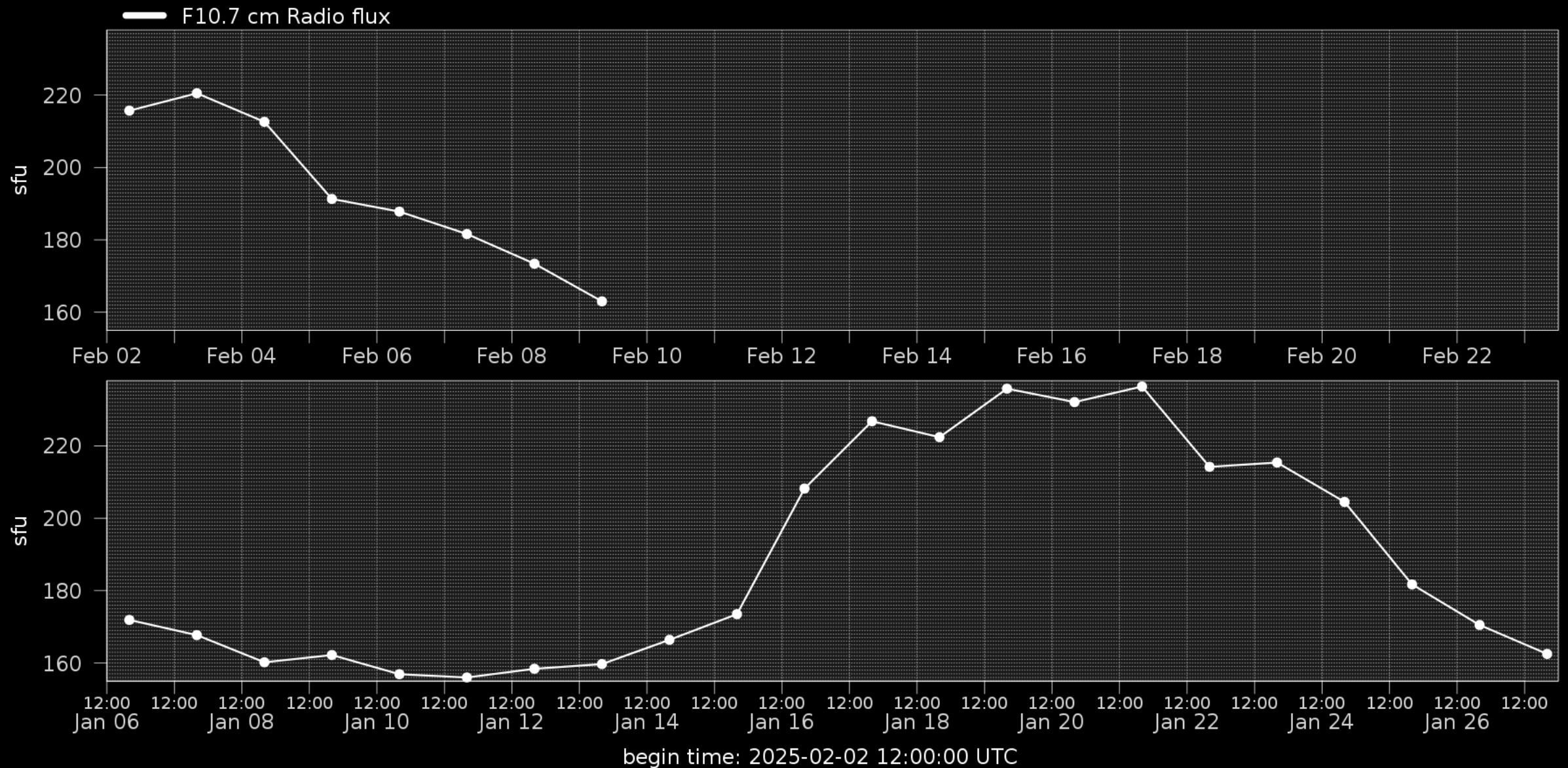
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Outlook: Solar activity

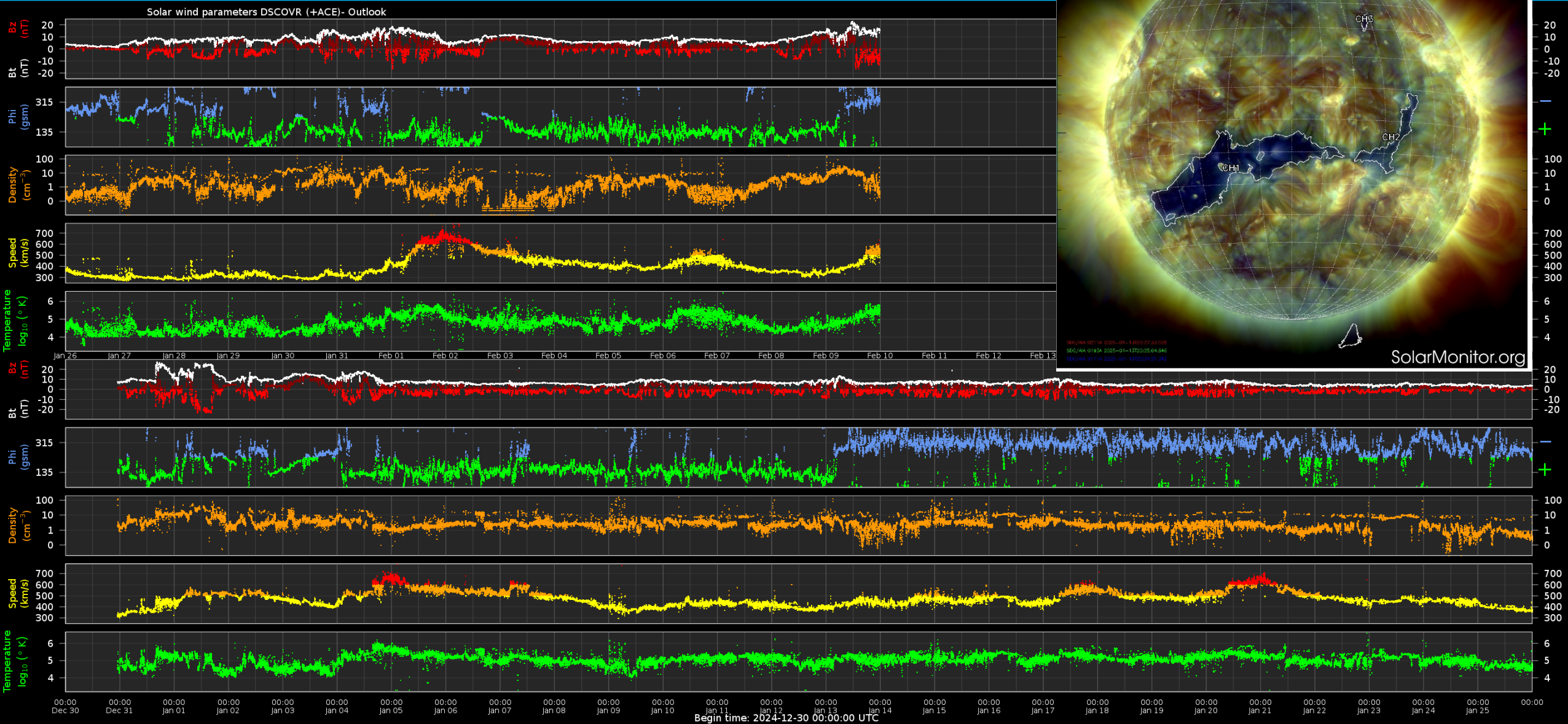


Observation date: 2025/02/09 16:05:00

Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



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