

SIDC Space Weather Briefing

09 February 2025-16 February 2025

Dimitrios Millas

& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2025-02-09 12:00 to 2025-02-16 23:59

Active regions	19 numbered
Flares	# C-class flare: 39 # M-class flare: 6 # X-class flare: 0
Coronal Holes	2 negative CH, 1 positive
CMEs	A few, not Earth-directed / low probability for glancing blow on 20/2

Proton flux	Nominal levels
Electron flux	Above the 1000 efu threshold

Solar wind and geomagnetic conditions

ICMEs	None
Solar wind conditions	B : 1.62 - 21.91 nT //Bz: -15 nT to 13 nT //Speed: 440 - 630km/s
Geomagnetic conditions	max KBel: 5.0, max Kp(NOAA): 5.0, Minor Storm conditions

Solar Activity

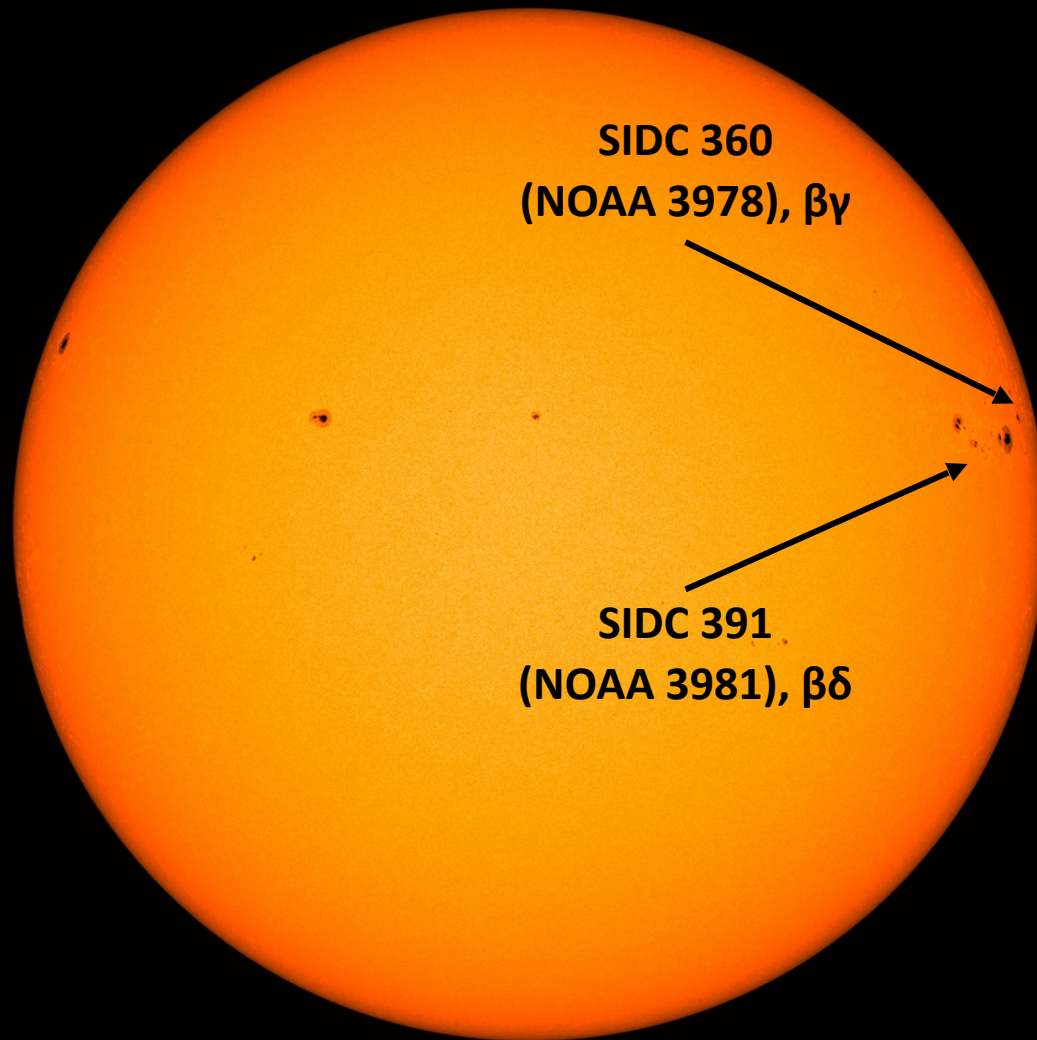


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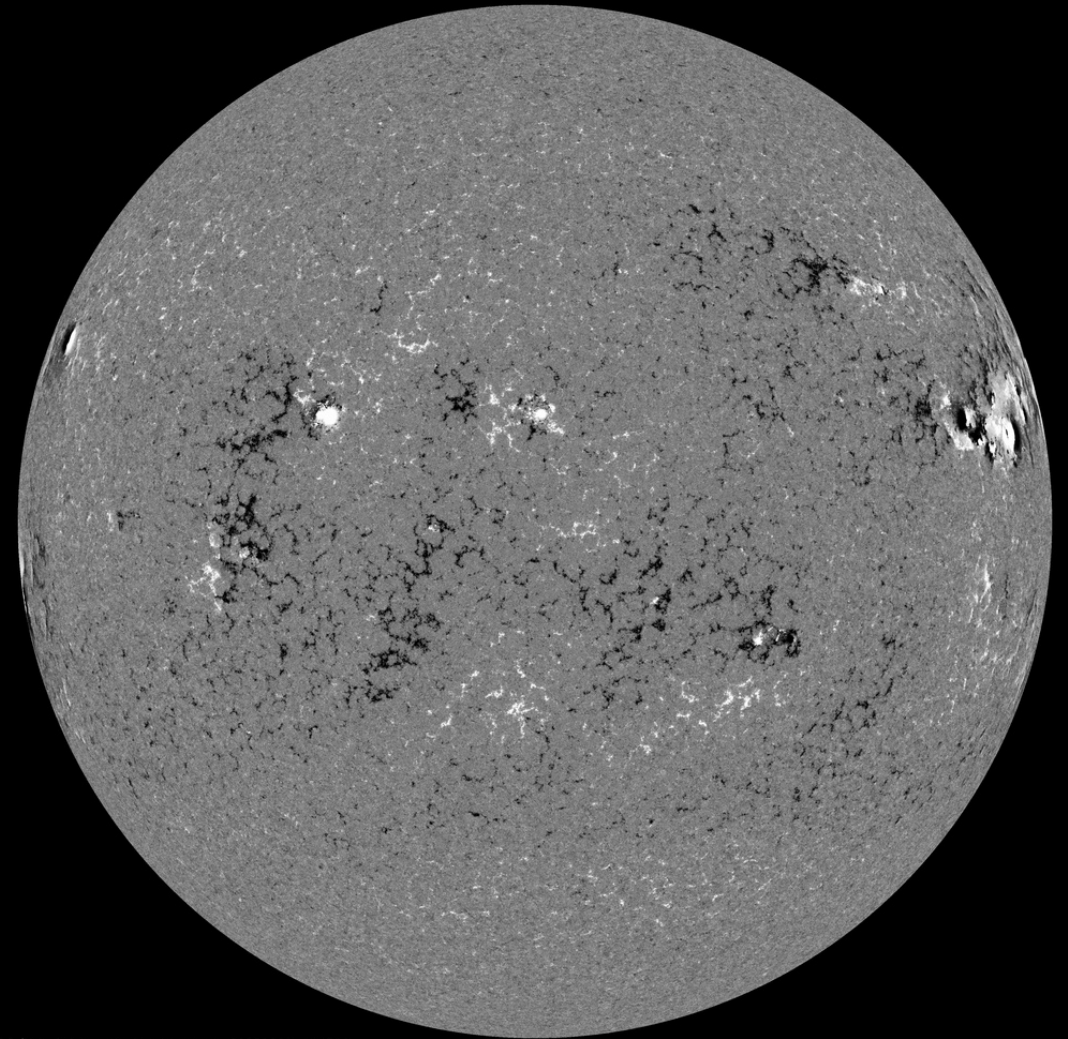
Solar active regions

SDO/HMI White Light 2025-02-09



SDO/HMI Quick-Look Continuum: 20250209_114500

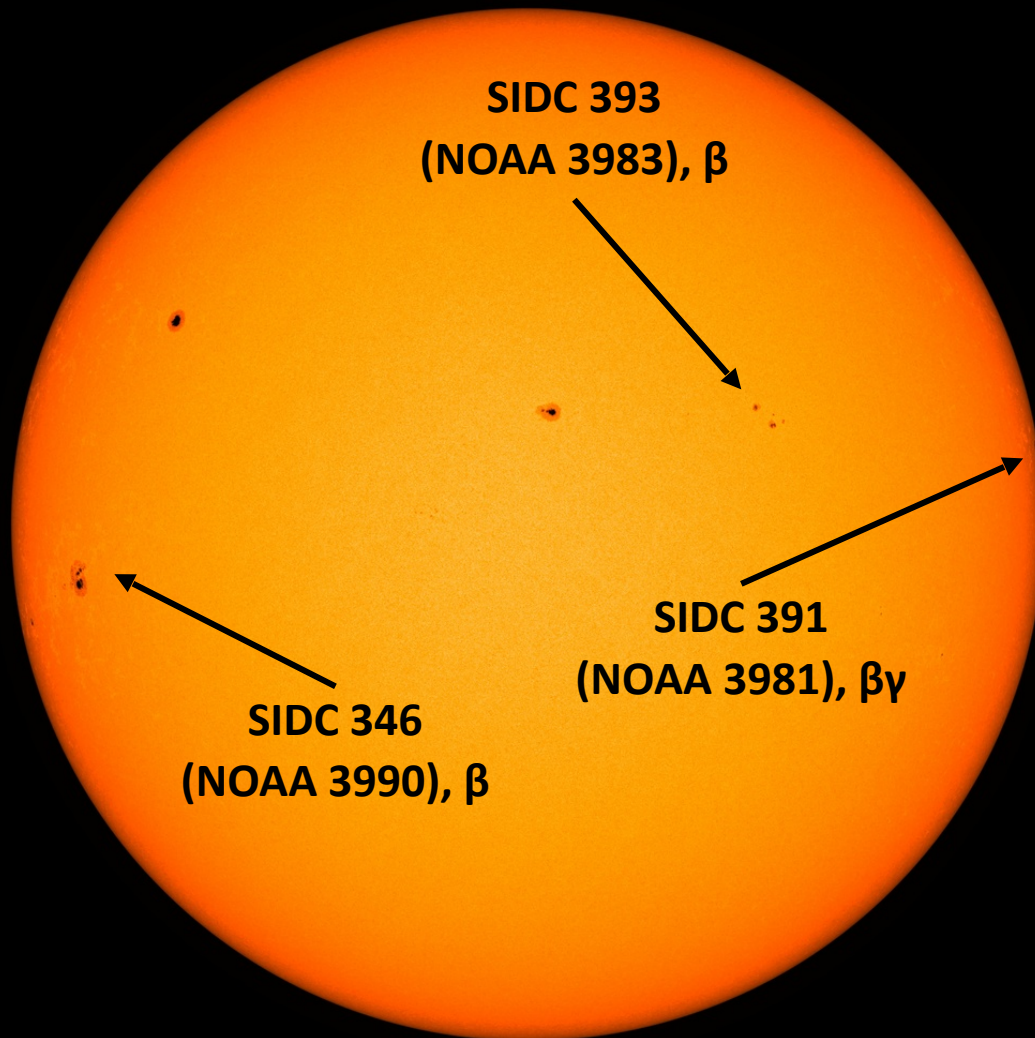
SDO/HMI Magnetogram 2025-02-09



SDO/HMI Quick-Look Magnetogram: 20250209_114500

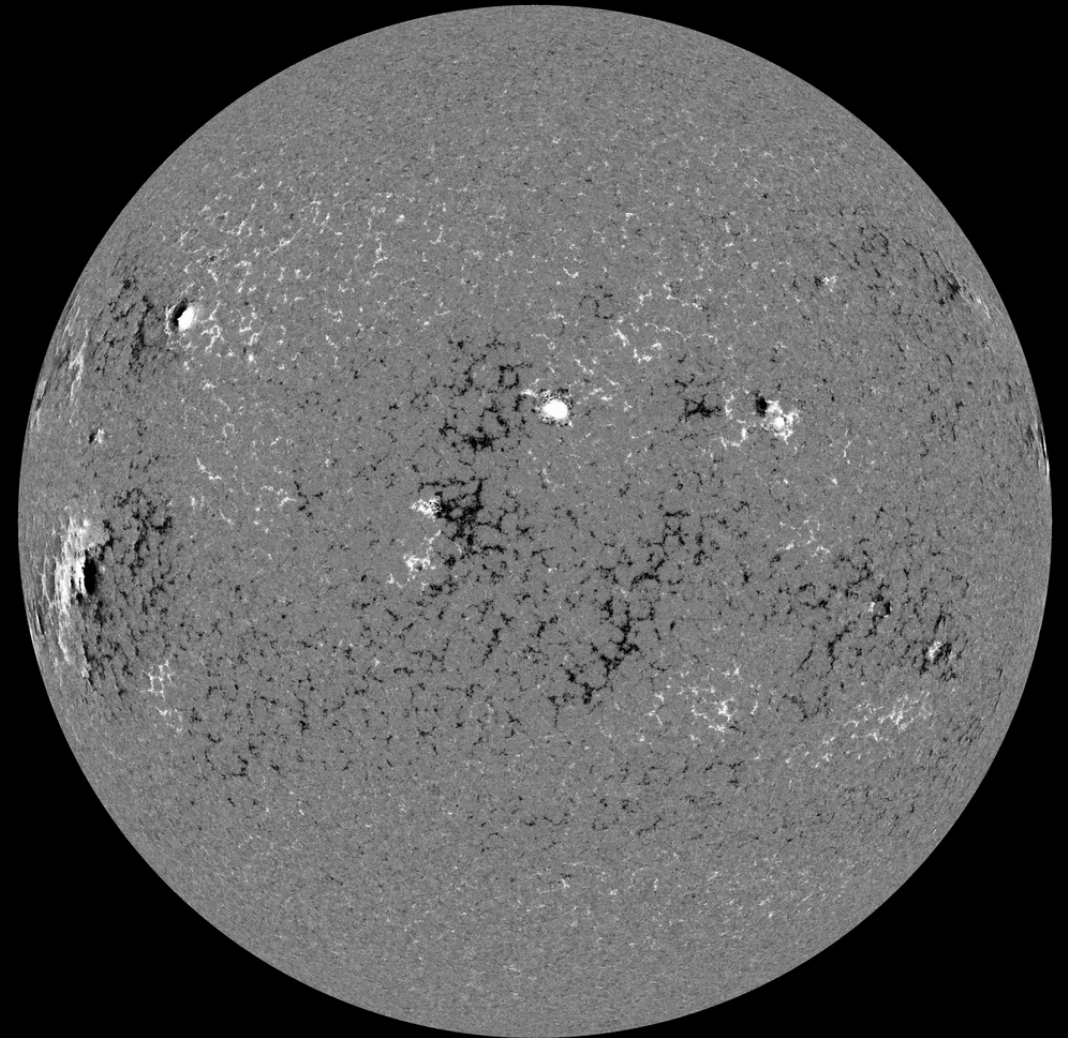
Solar active regions

SDO/HMI White Light 2025-02-11



SDO/HMI Quick-Look Continuum: 20250211_114500

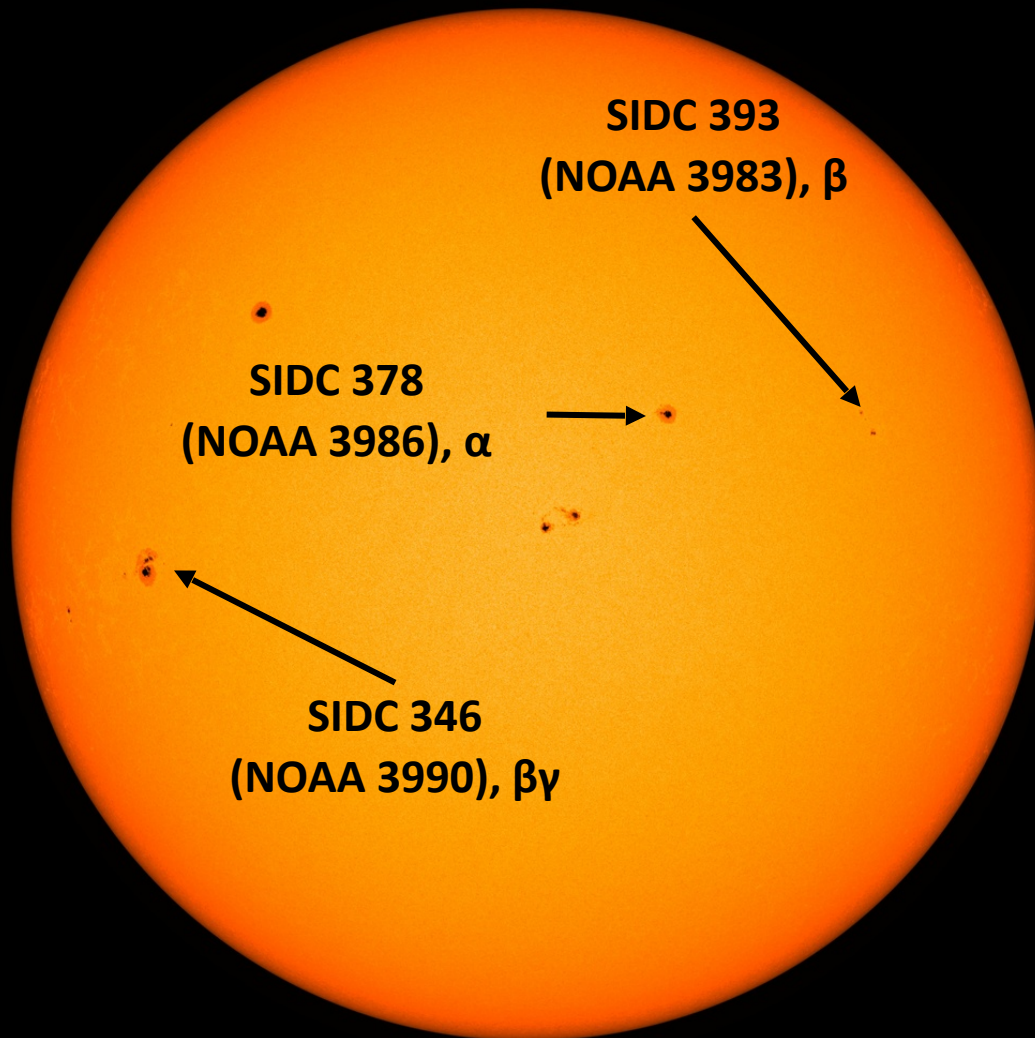
SDO/HMI Magnetogram 2025-02-11



SDO/HMI Quick-Look Magnetogram: 20250211_114500

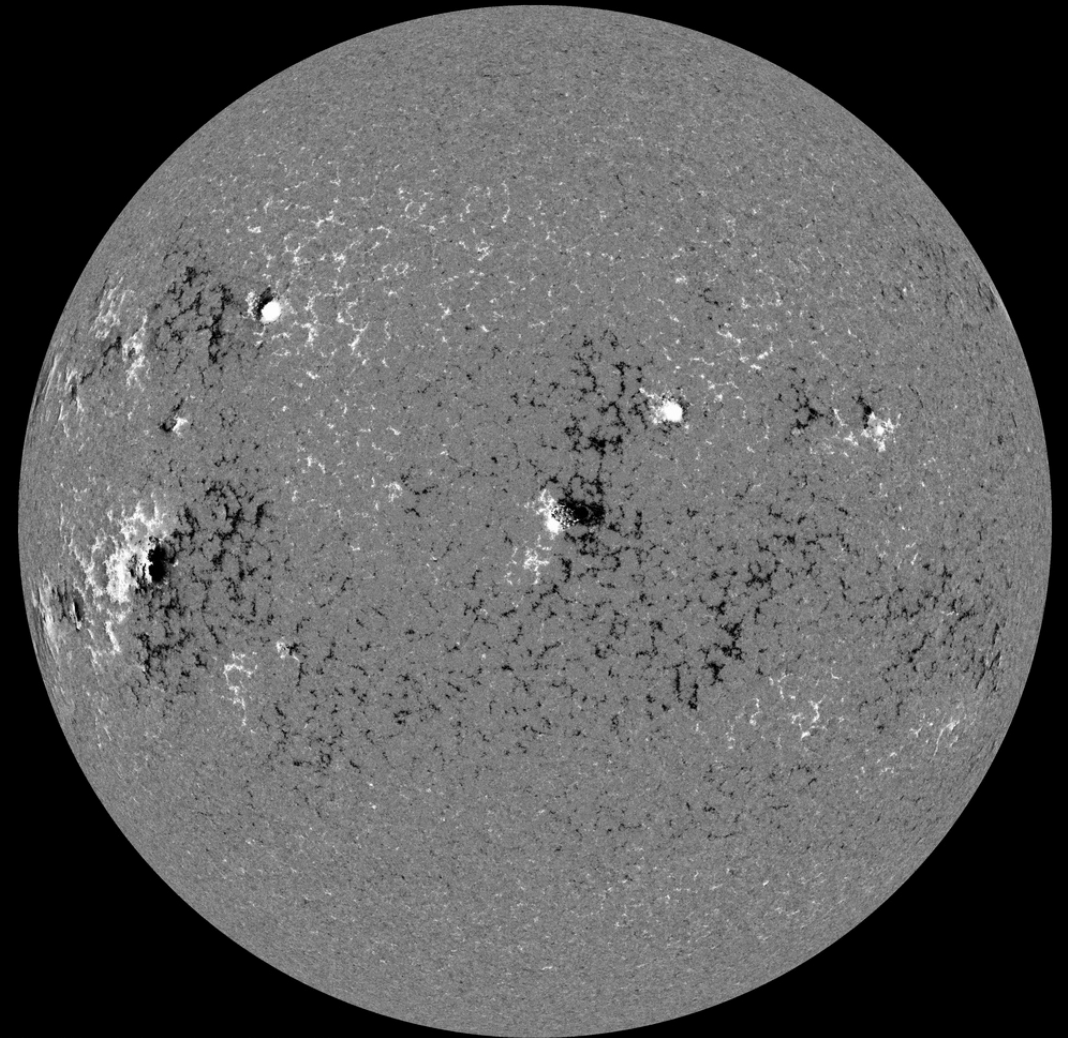
Solar active regions

SDO/HMI White Light 2025-02-12



SDO/HMI Quick-Look Continuum: 20250212_114500

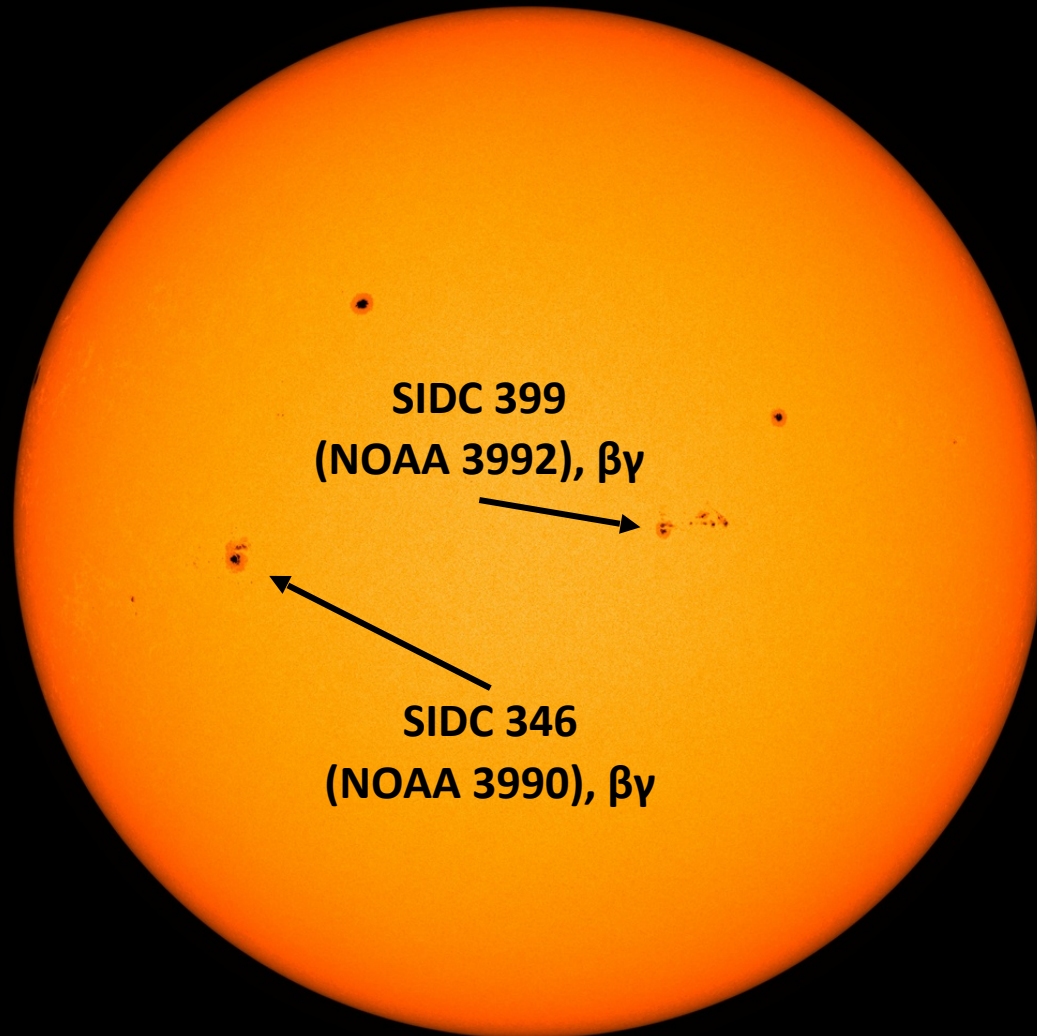
SDO/HMI Magnetogram 2025-02-12



SDO/HMI Quick-Look Magnetogram: 20250212_114500

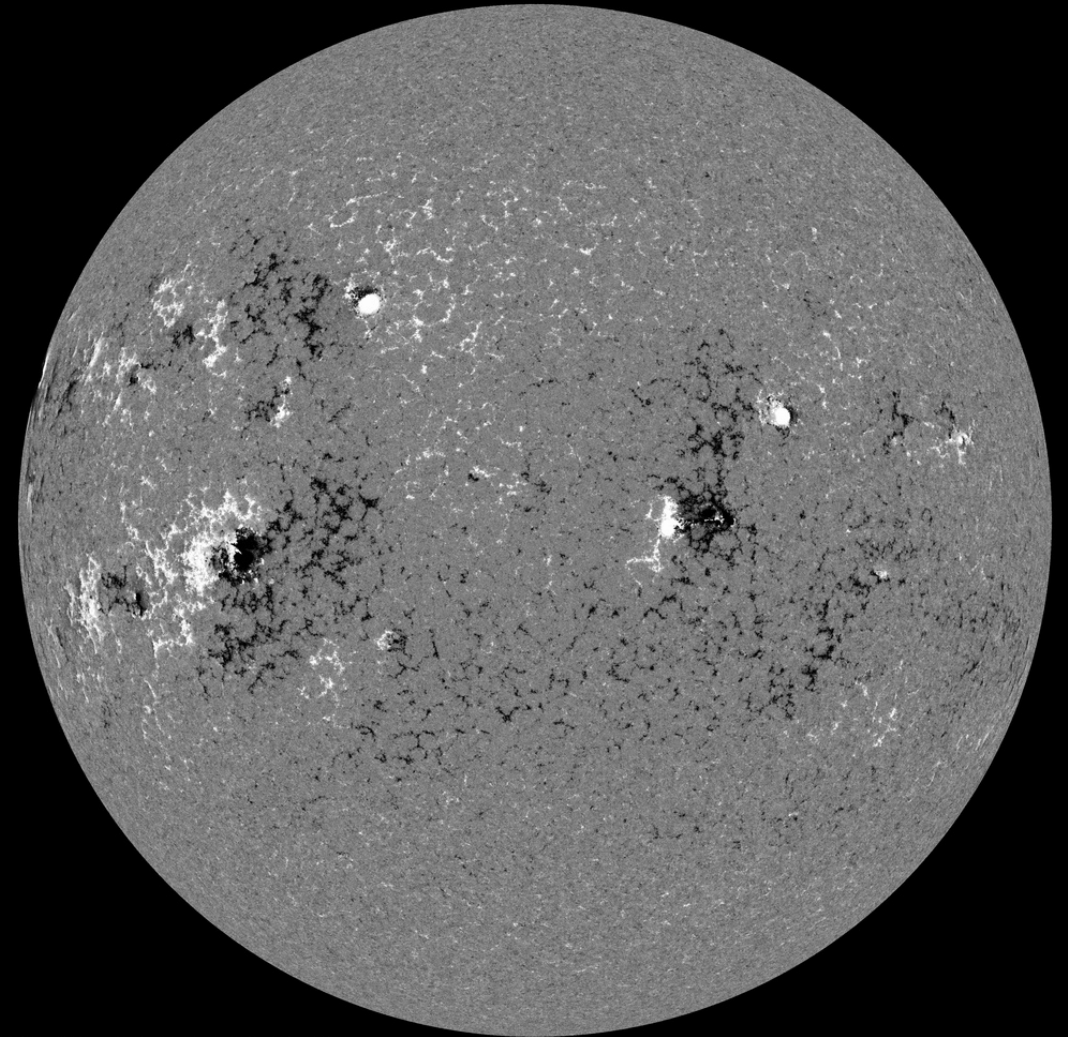
Solar active regions

SDO/HMI White Light 2025-02-13



SDO/HMI Quick-Look Continuum: 20250213_114500

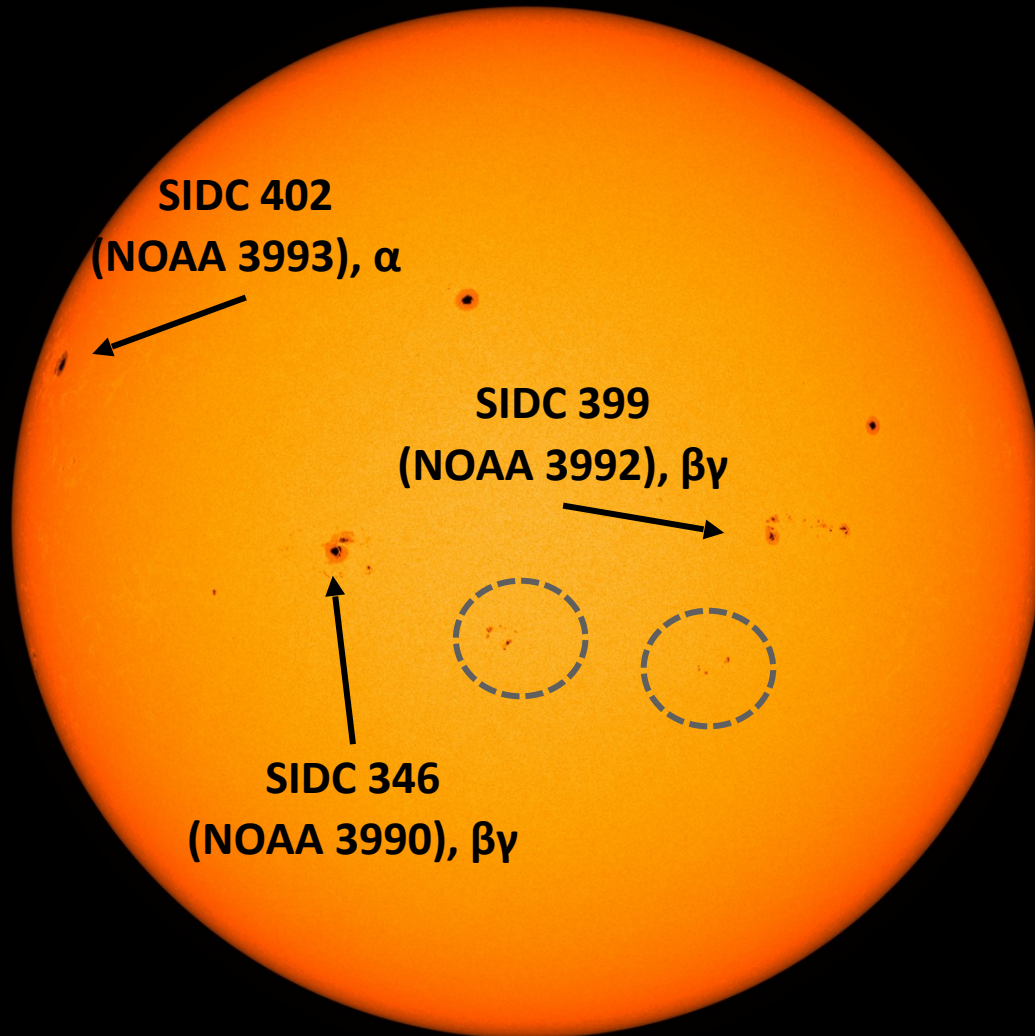
SDO/HMI Magnetogram 2025-02-13



SDO/HMI Quick-Look Magnetogram: 20250213_114500

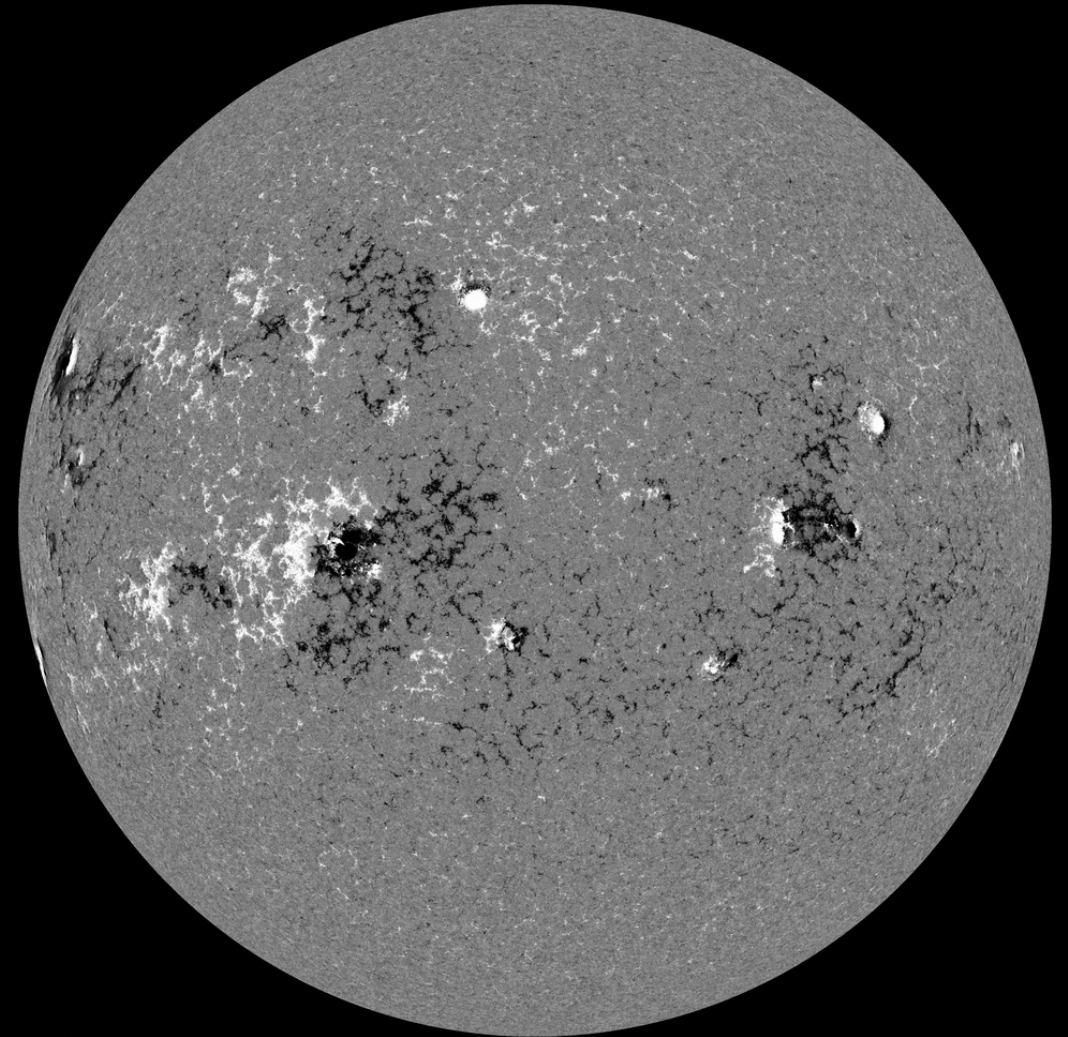
Solar active regions

SDO/HMI White Light 2025-02-14



SDO/HMI Quick-Look Continuum: 20250214_114500

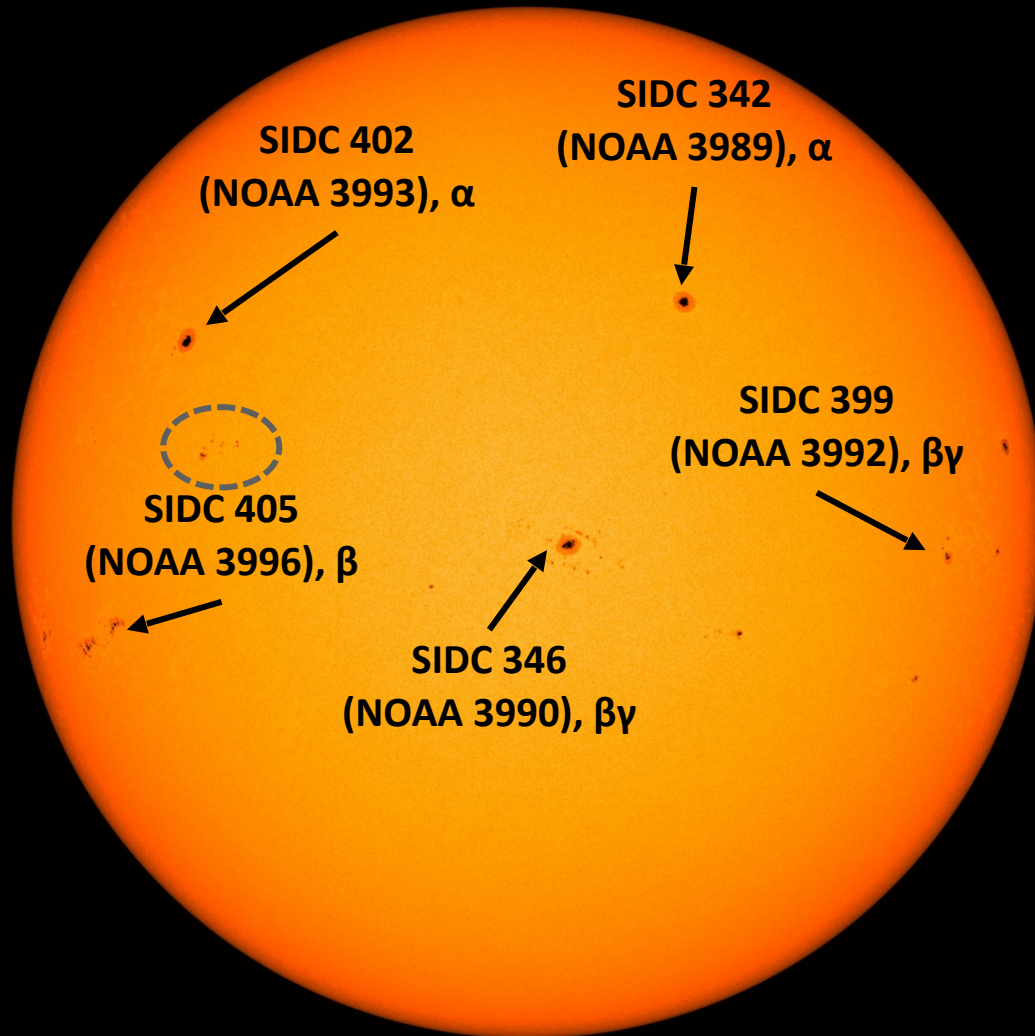
SDO/HMI Magnetogram 2025-02-14



SDO/HMI Quick-Look Magnetogram: 20250214_114500

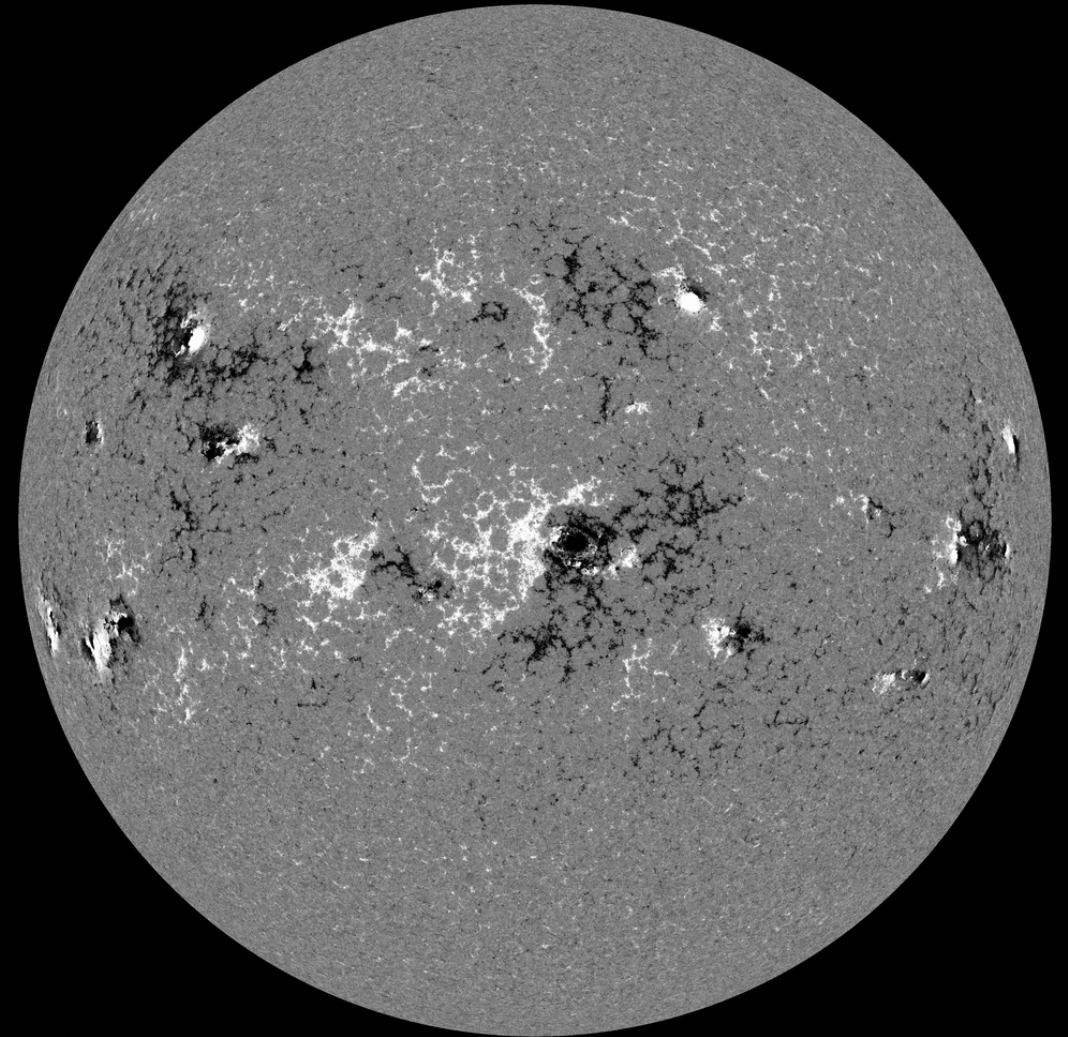
Solar active regions

SDO/HMI White Light 2025-02-16



SDO/HMI Quick-Look Continuum: 20250216_114500

SDO/HMI Magnetogram 2025-02-16

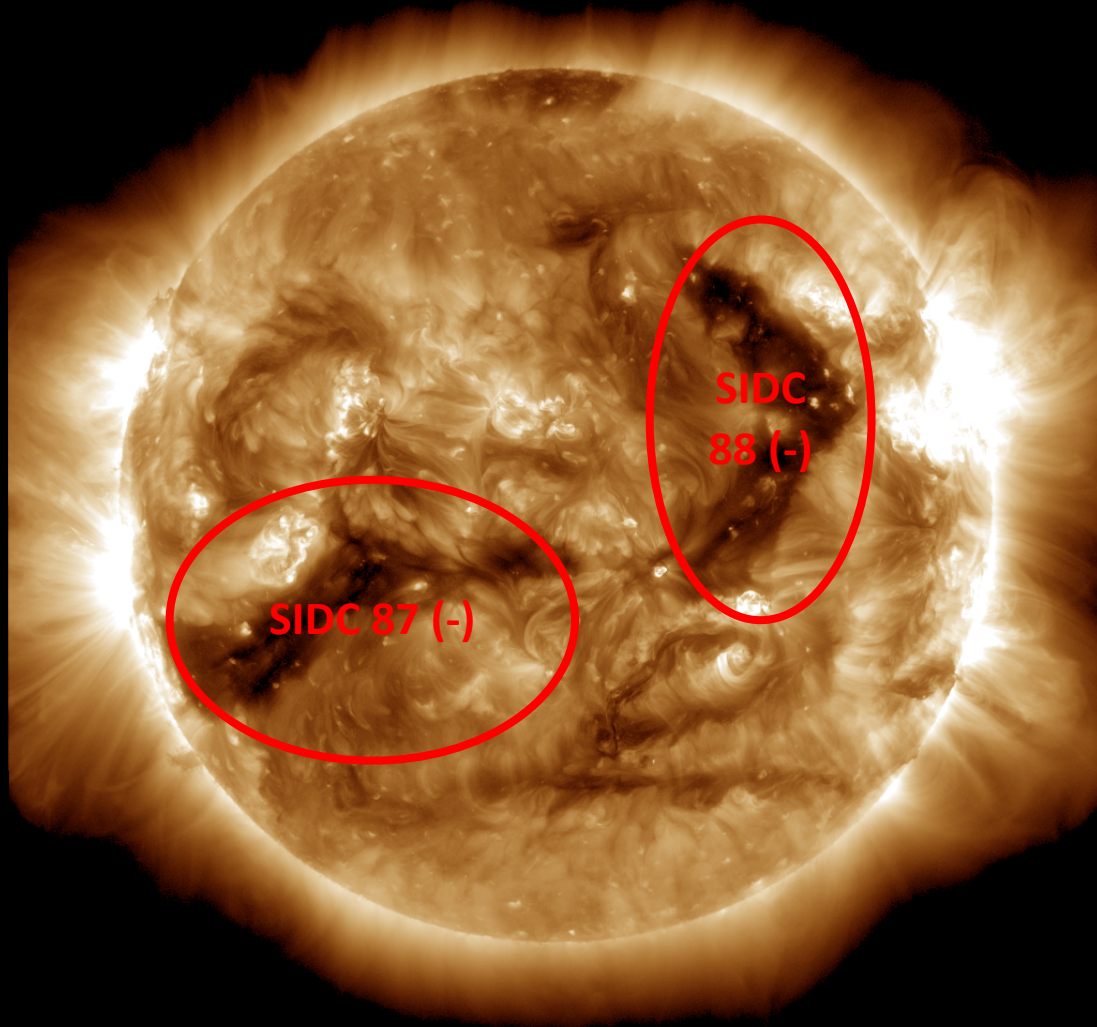


SDO/HMI Quick-Look Magnetogram: 20250216_114500

Coronal holes

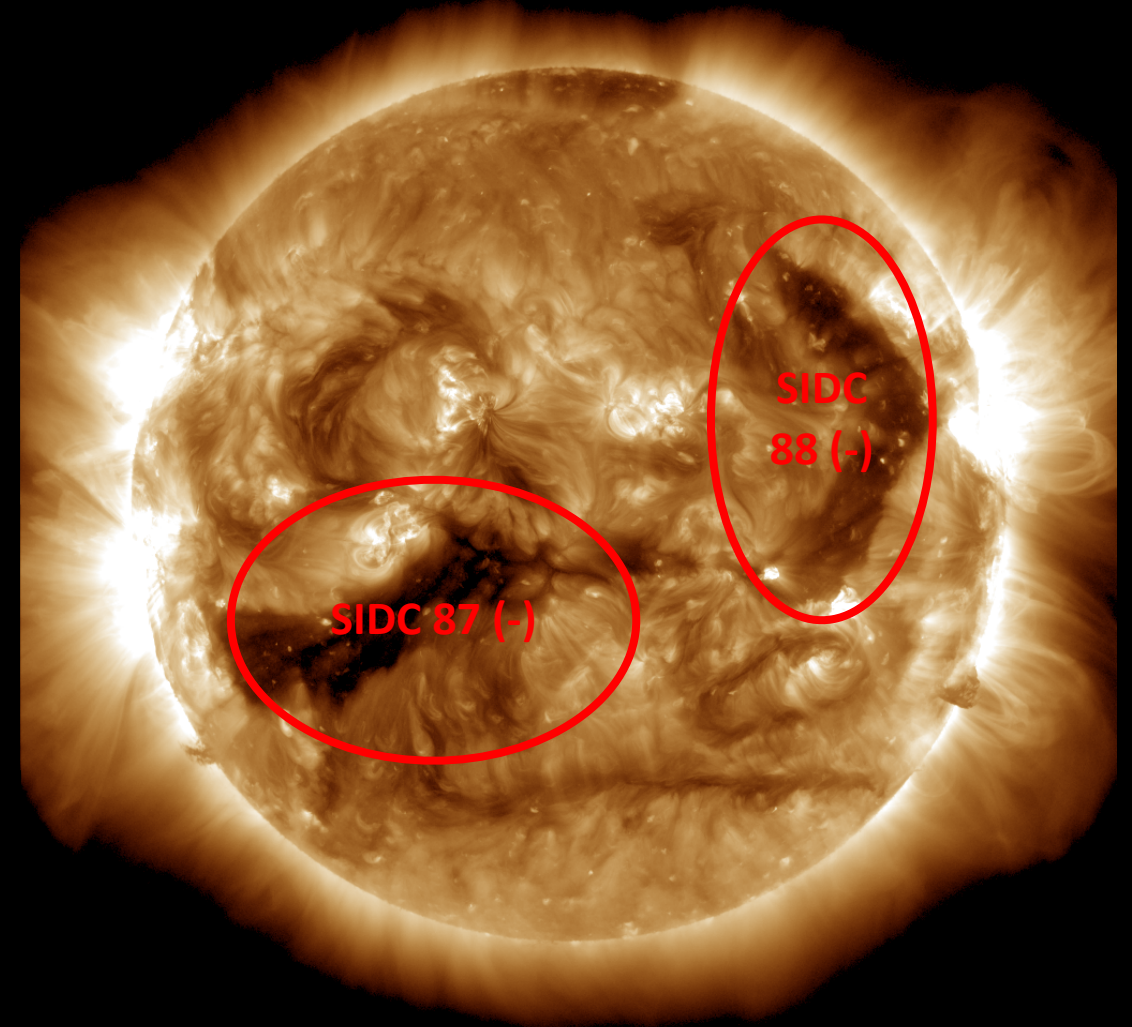
SDO/AIA 19.3 nm 2025-02-09

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



SDO/AIA 19.3 nm 2025-02-10

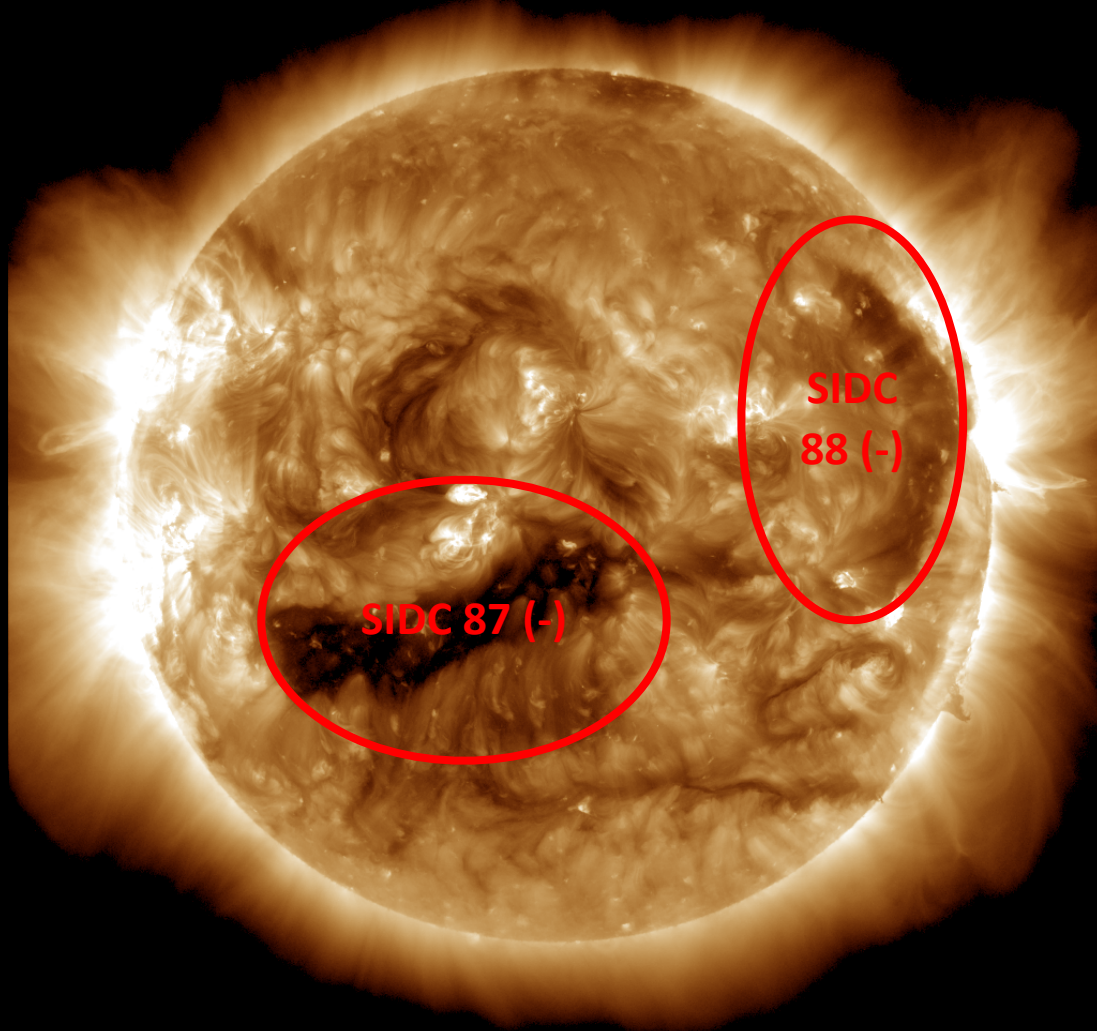
SDO/AIA AIA 193Å 2025-02-10T12:00:05.843



Coronal holes

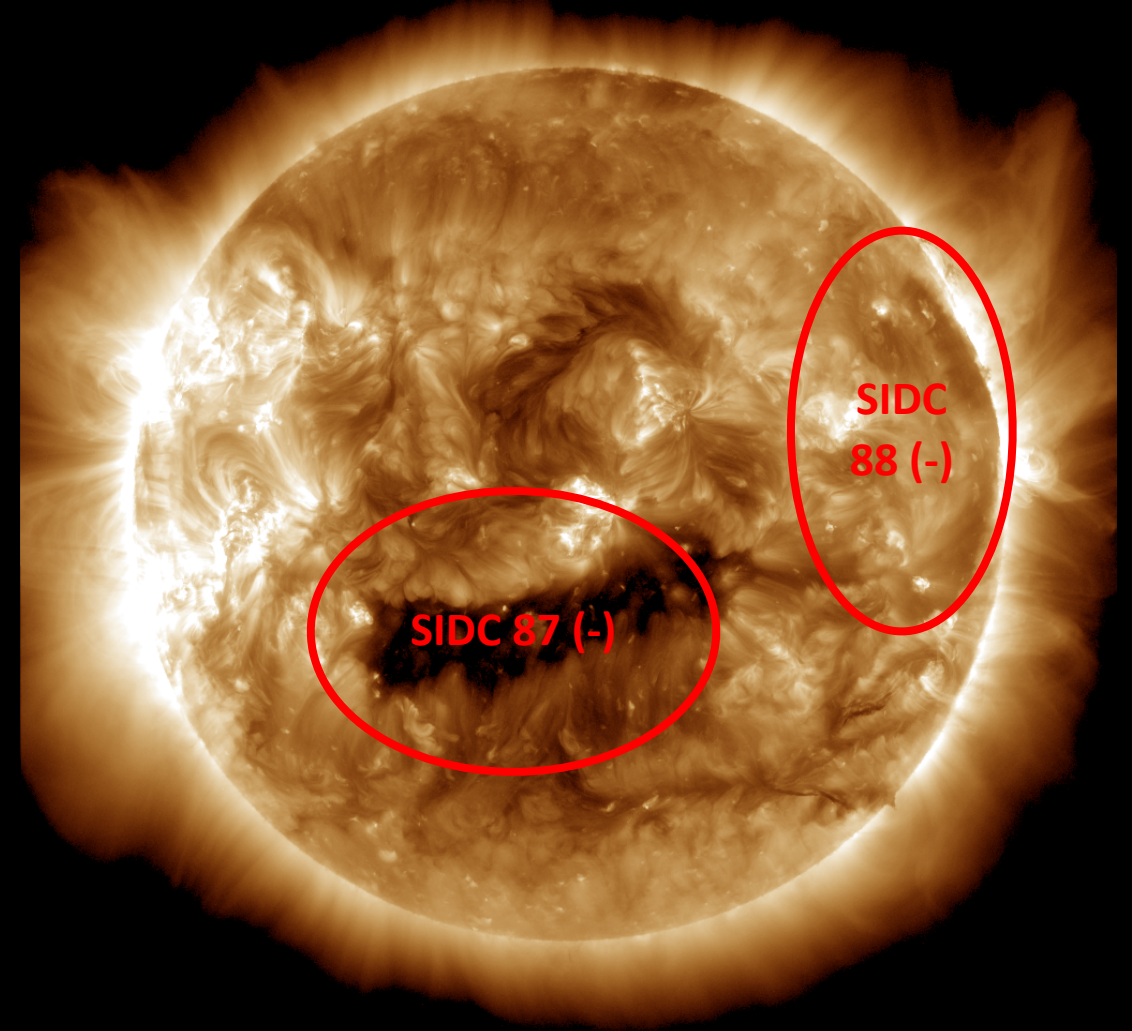
SDO/AIA 19.3 nm 2025-02-11

SDO/AIA AIA 193Å 2025-02-11T12:00:29.843



SDO/AIA 19.3 nm 2025-02-12

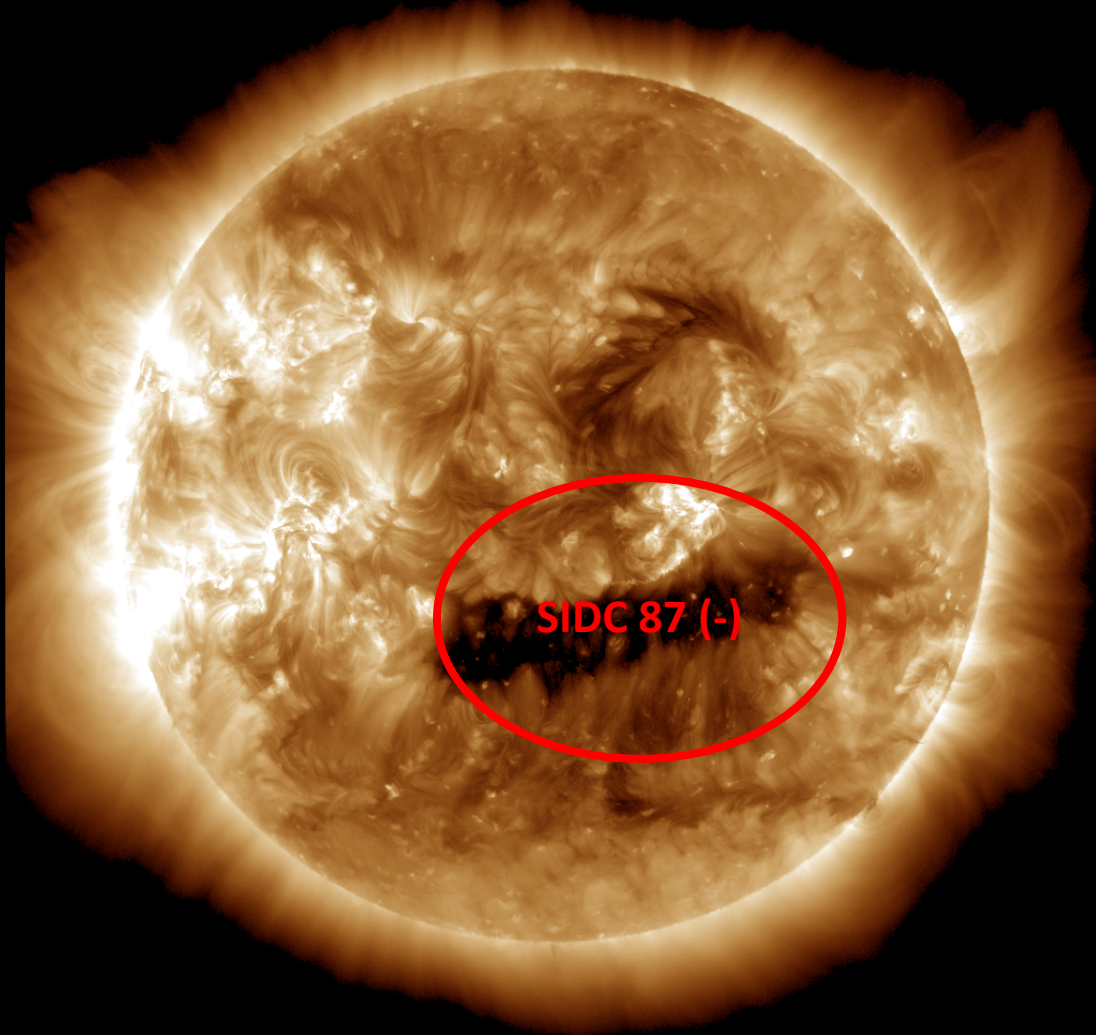
SDO/AIA AIA 193Å 2025-02-12T12:00:05.843



Coronal holes

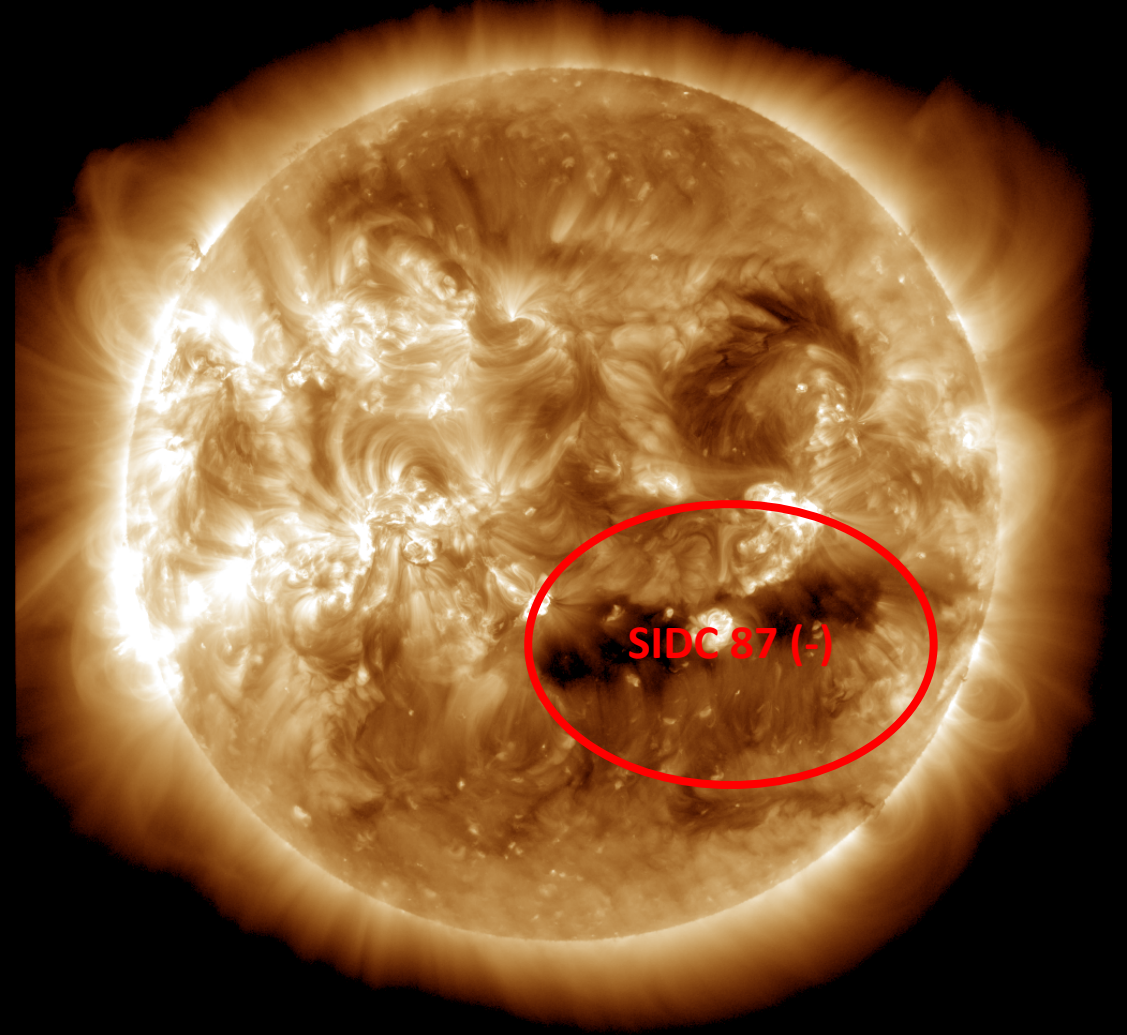
SDO/AIA 19.3 nm 2025-02-13

SDO/AIA AIA 193Å 2025-02-13T12:00:05.843



SDO/AIA 19.3 nm 2025-02-14

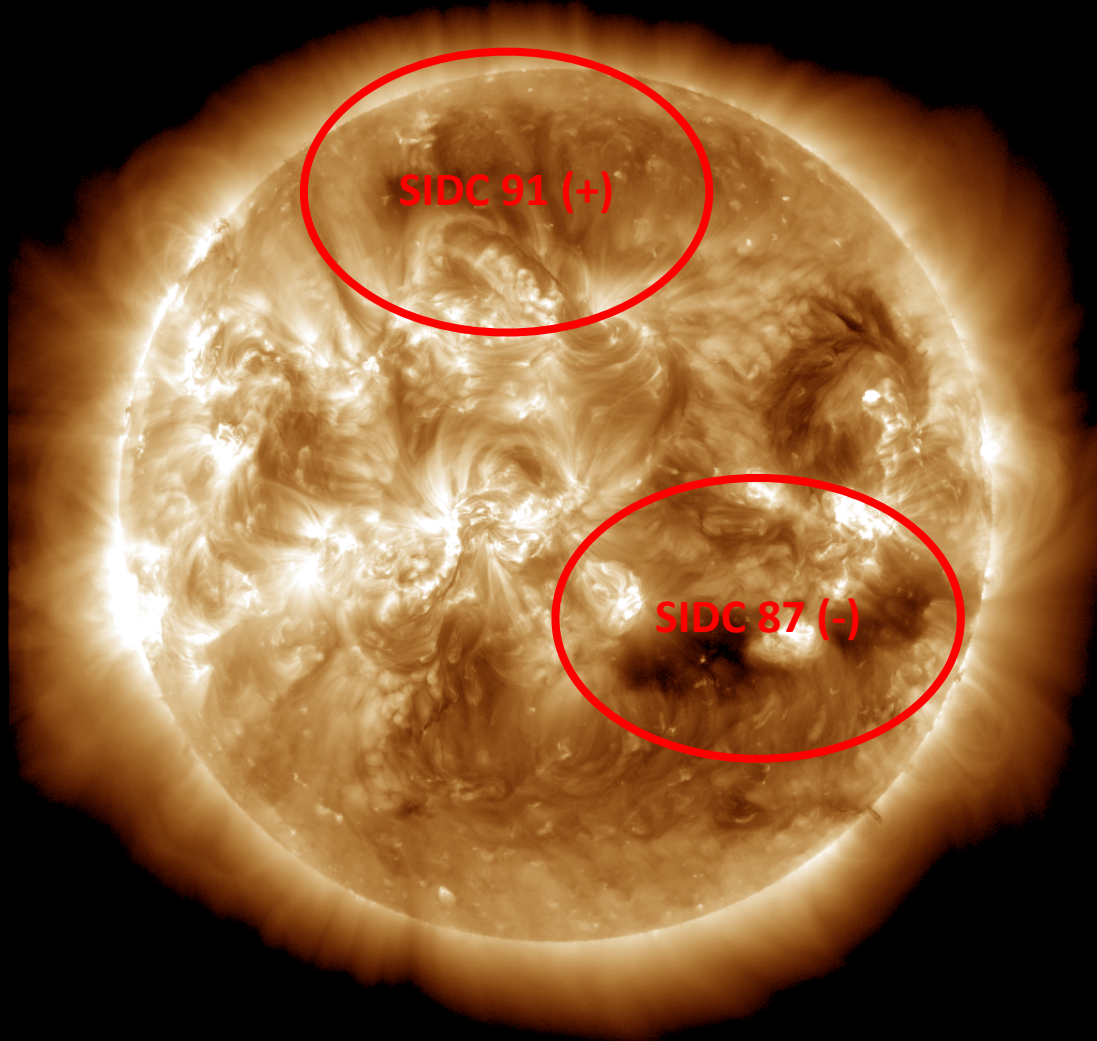
SDO/AIA AIA 193Å 2025-02-14T12:00:05.843



Coronal holes

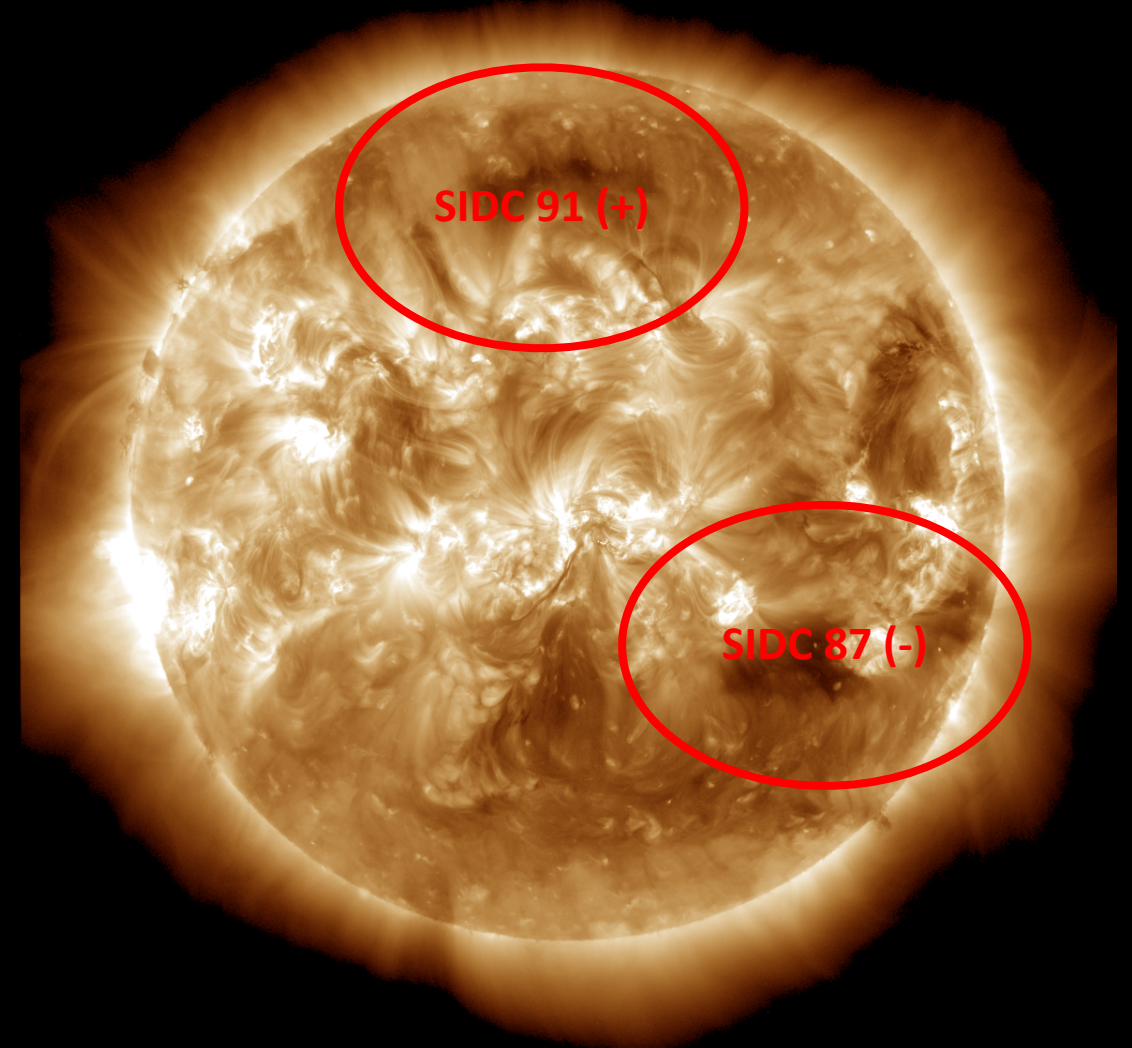
SDO/AIA 19.3 nm 2025-02-15

SDO/AIA AIA 193Å 2025-02-15T12:00:05.843



SDO/AIA 19.3 nm 2025-02-16

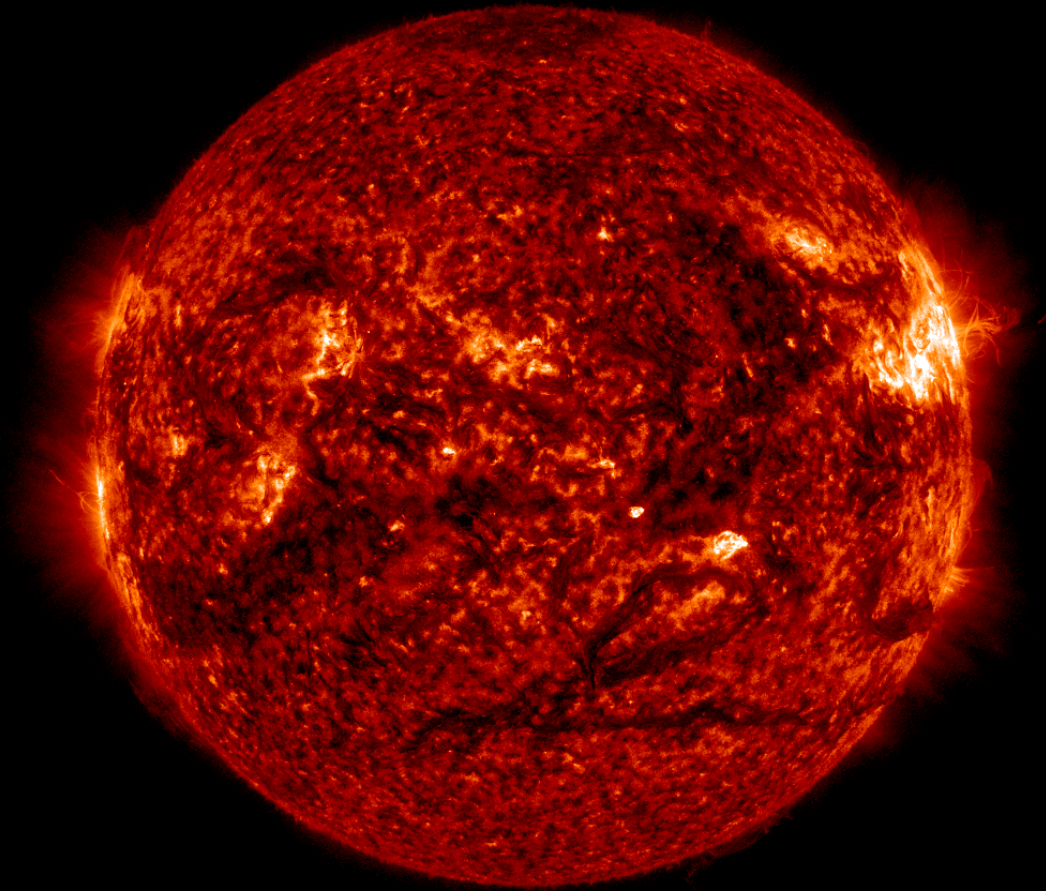
SDO/AIA AIA 193Å 2025-02-16T12:00:05.843



Filaments

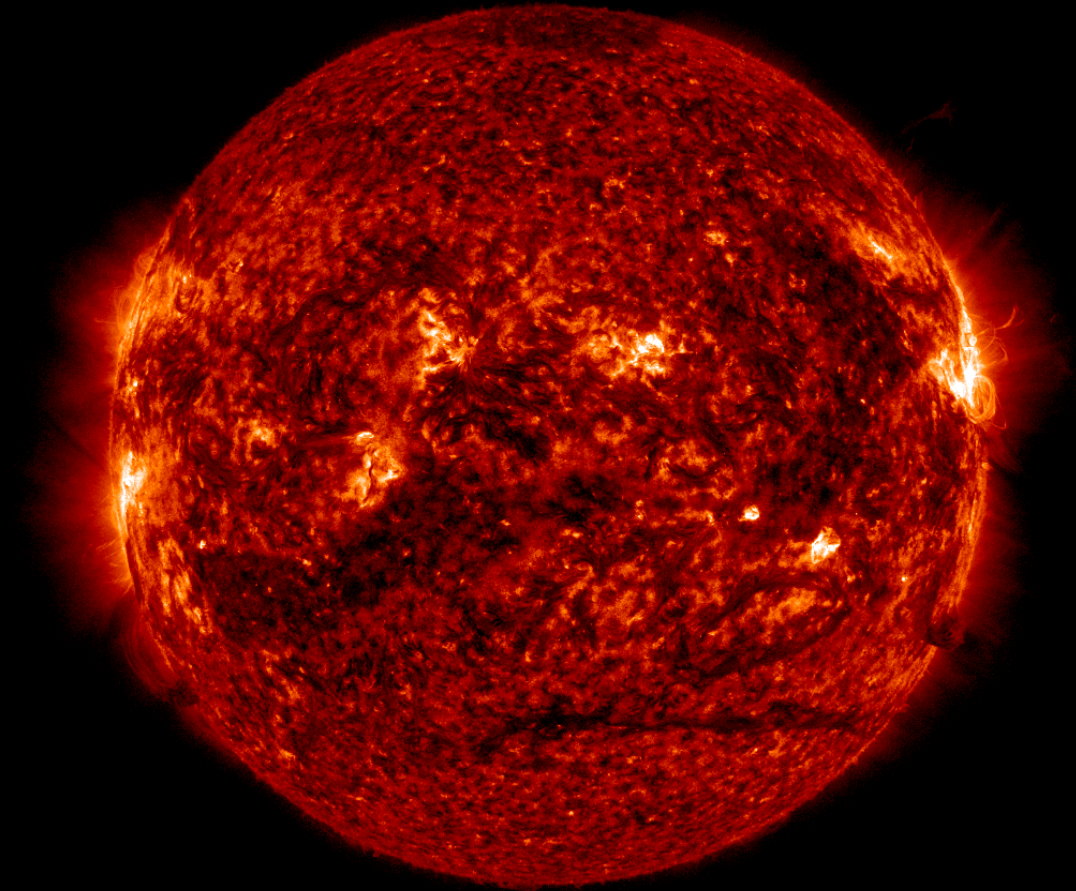
SDO/AIA 30.4 nm 2025-02-09

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



SDO/AIA 30.4 nm 2025-02-10

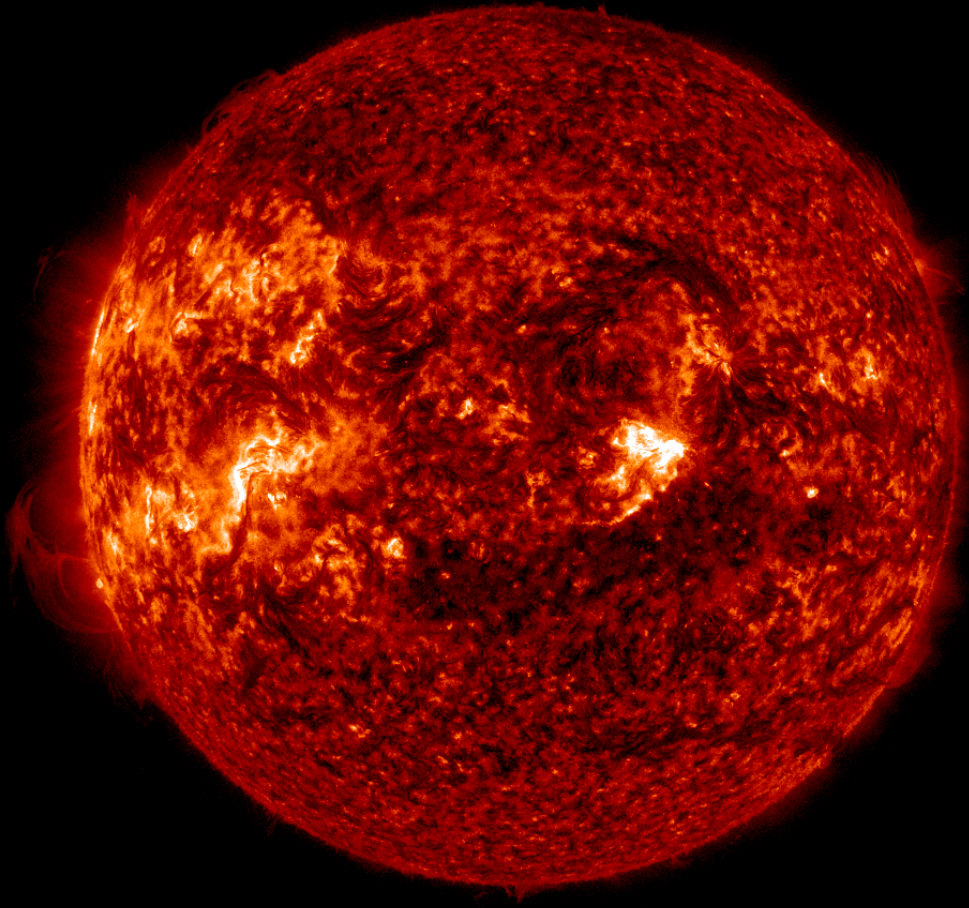
SDO/AIA AIA 304Å 2025-02-10T12:00:06.572



Filaments

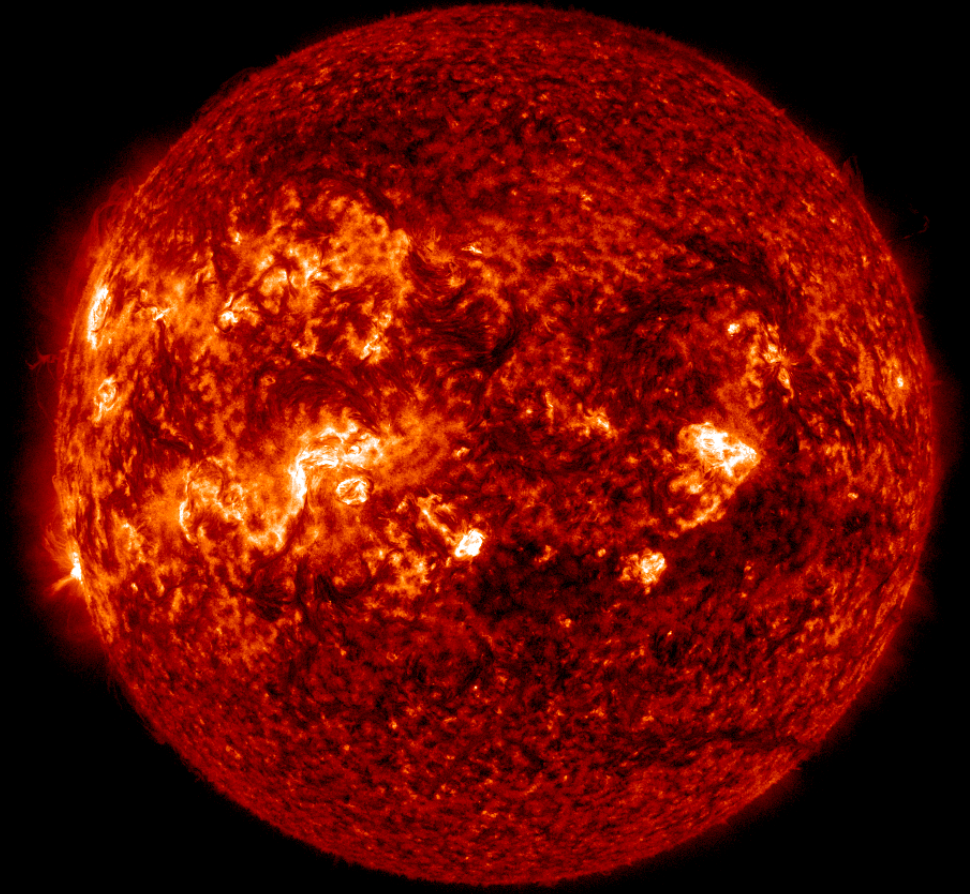
SDO/AIA 30.4 nm 2025-02-13

SDO/AIA AIA 304Å 2025-02-13T12:00:06.573



SDO/AIA 30.4 nm 2025-02-14

SDO/AIA AIA 304Å 2025-02-14T12:00:06.580



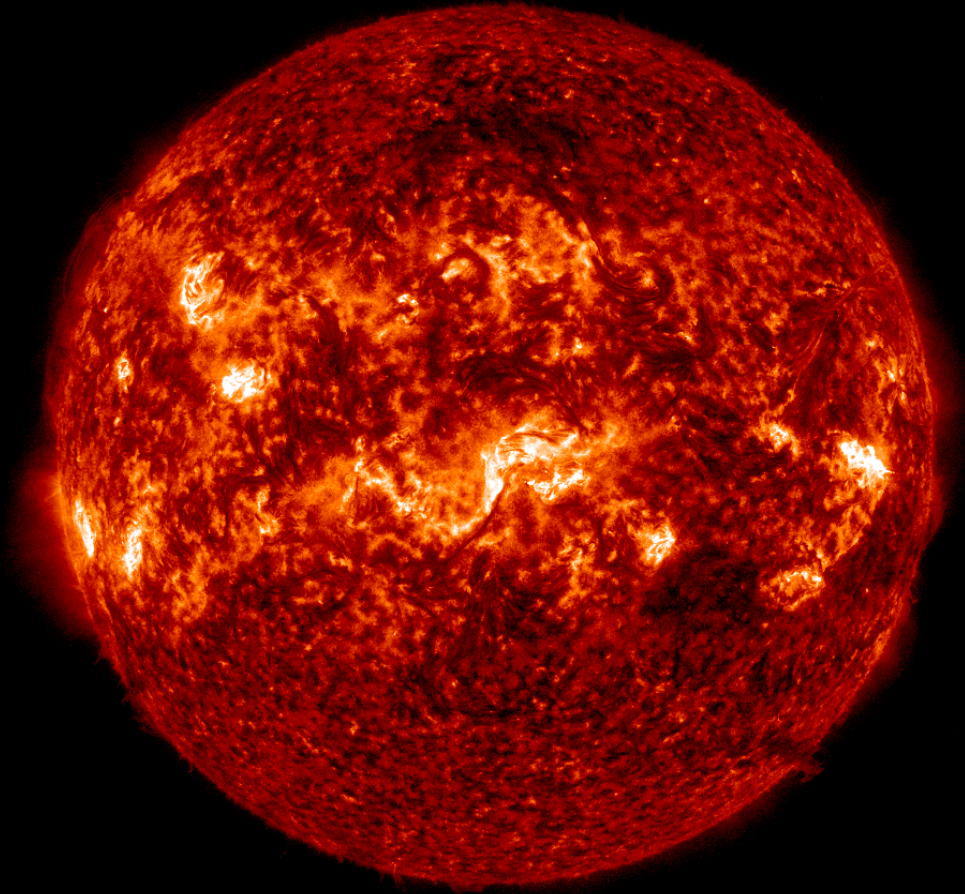
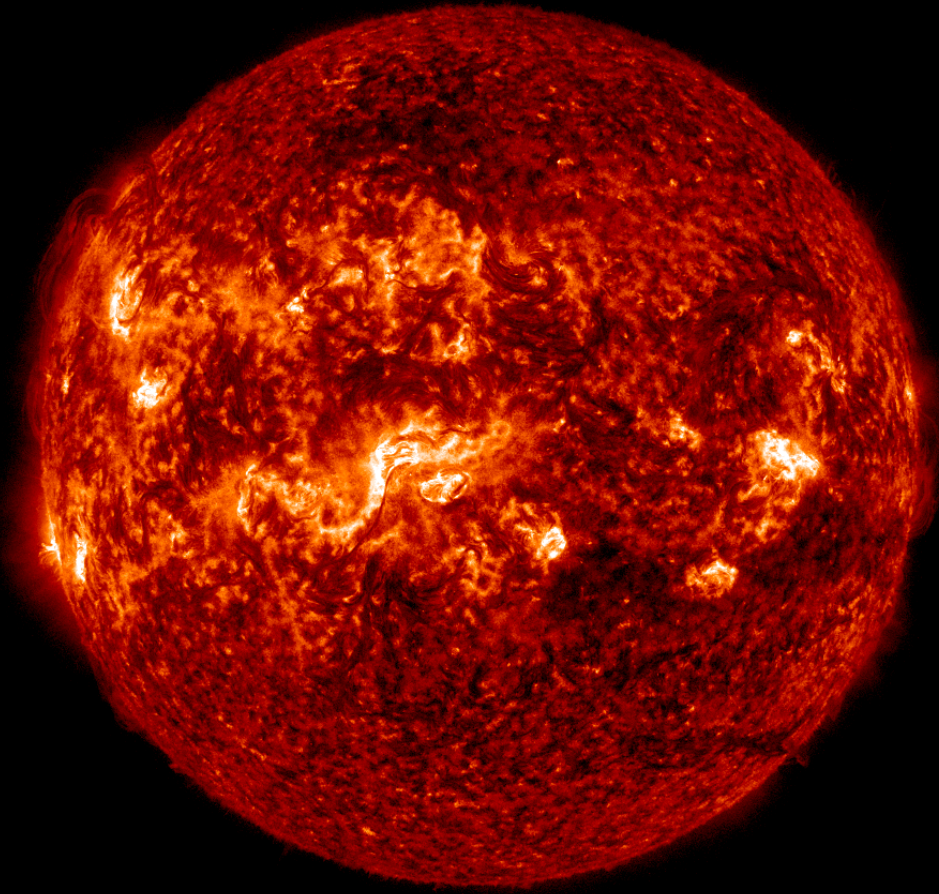
Filaments

SDO/AIA 30.4 nm 2025-02-15

SDO/AIA AIA 304Å 2025-02-15T12:00:06.580

SDO/AIA 30.4 nm 2025-02-16

SDO/AIA AIA 304Å 2025-02-16T12:00:06.580



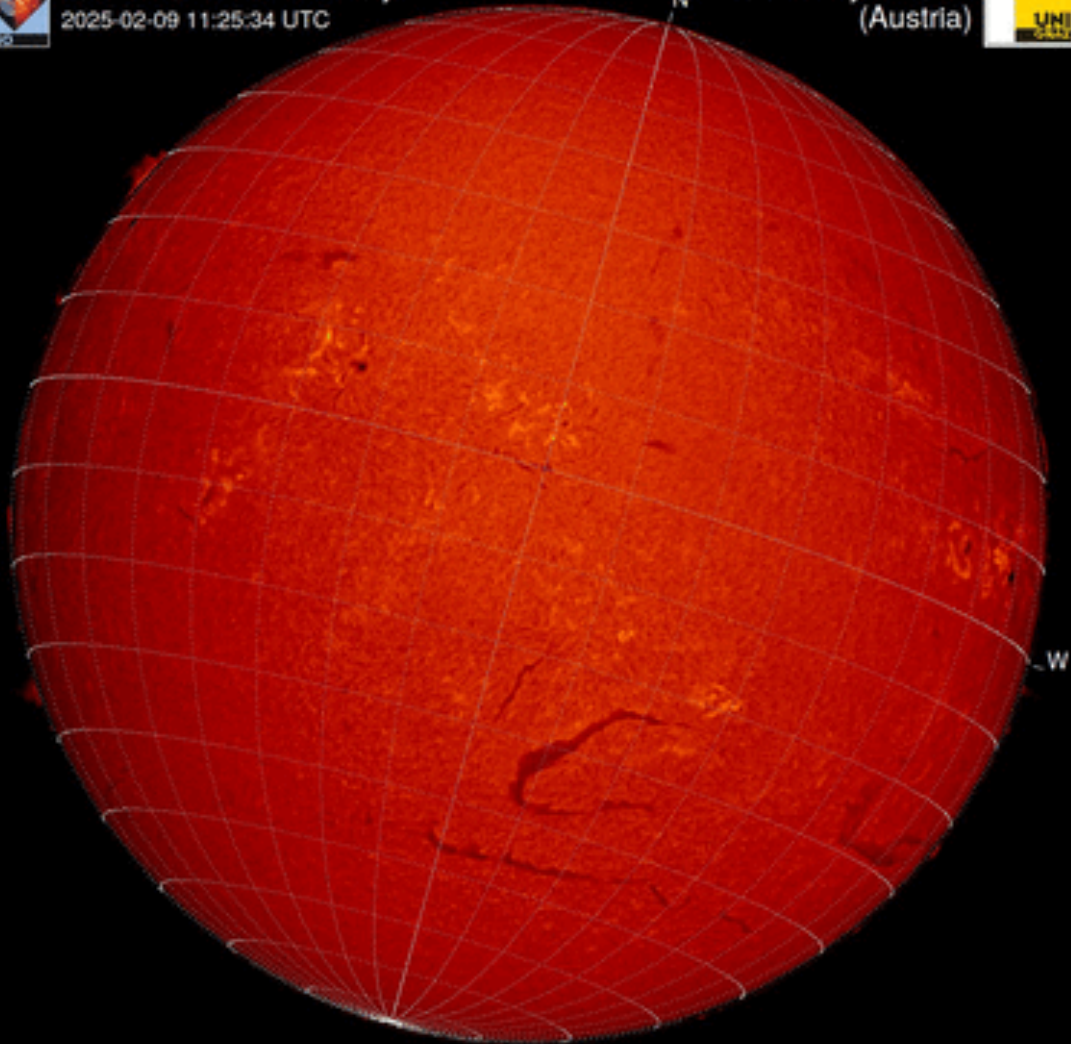
Filaments & Filament eruptions

H-alpha 2025-02-09



Kanzelhöhe Observatory
2025-02-09 11:25:34 UTC

University of Graz
(Austria)

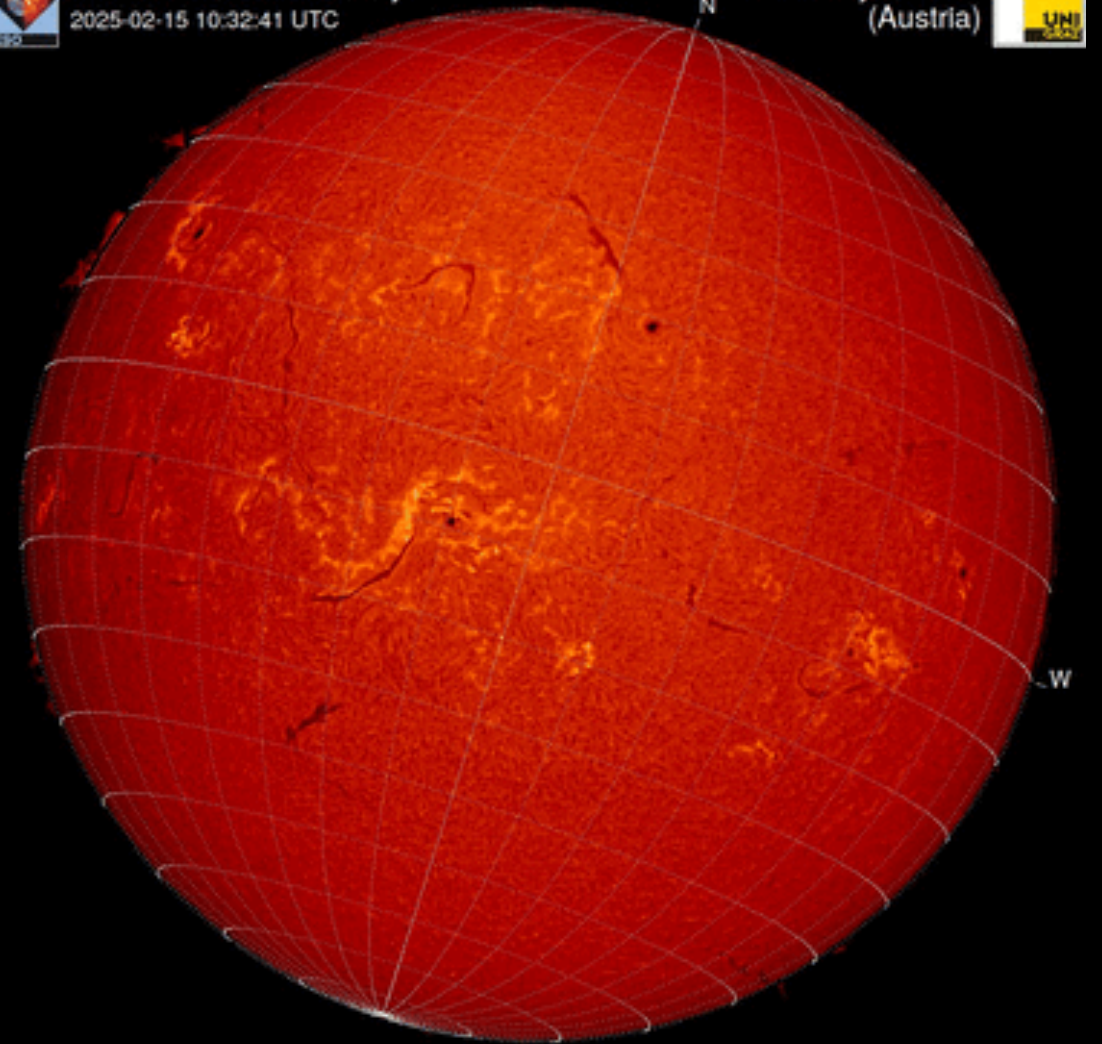


H-alpha 2025-02-16

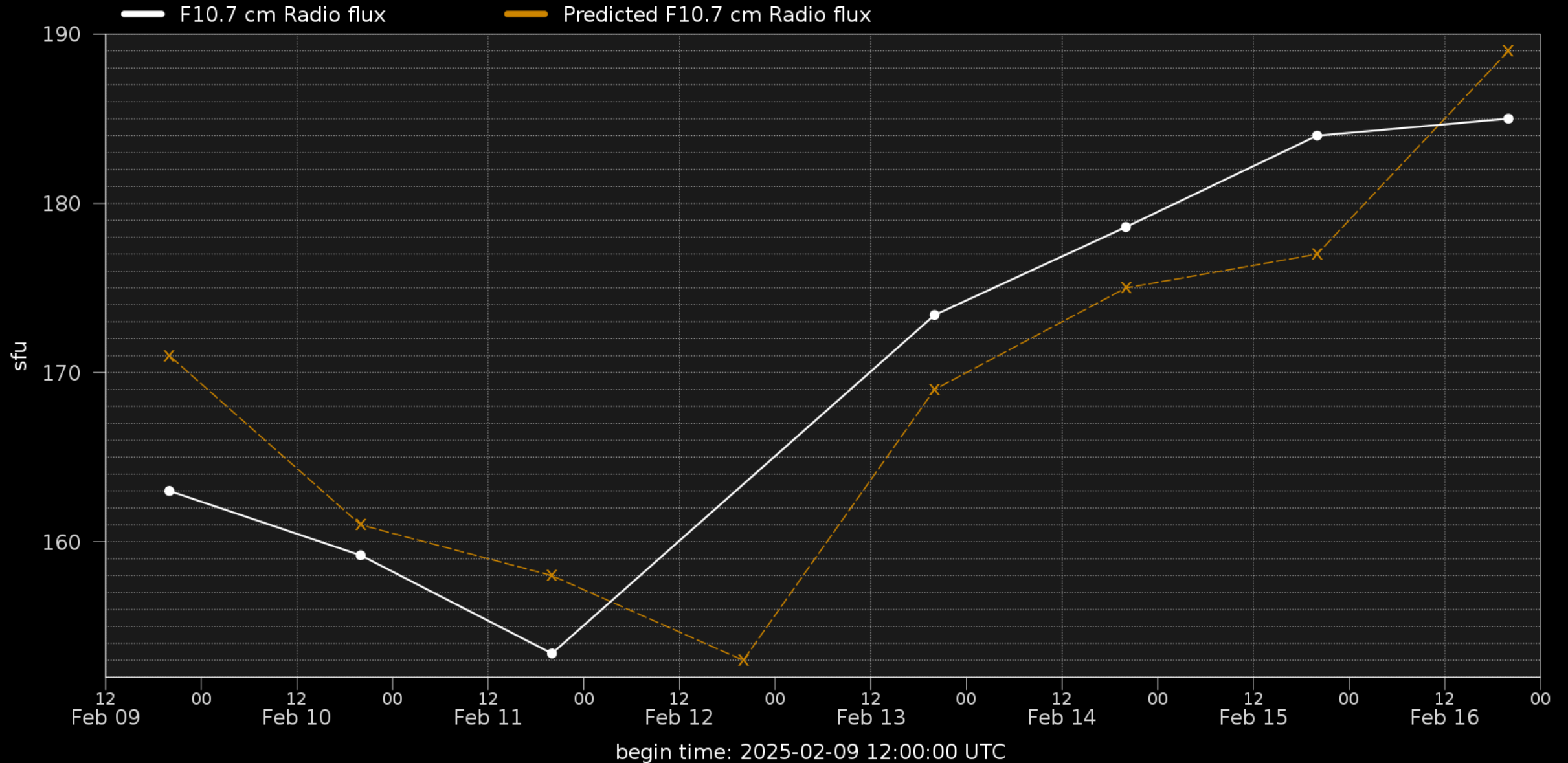


Kanzelhöhe Observatory
2025-02-15 10:32:41 UTC

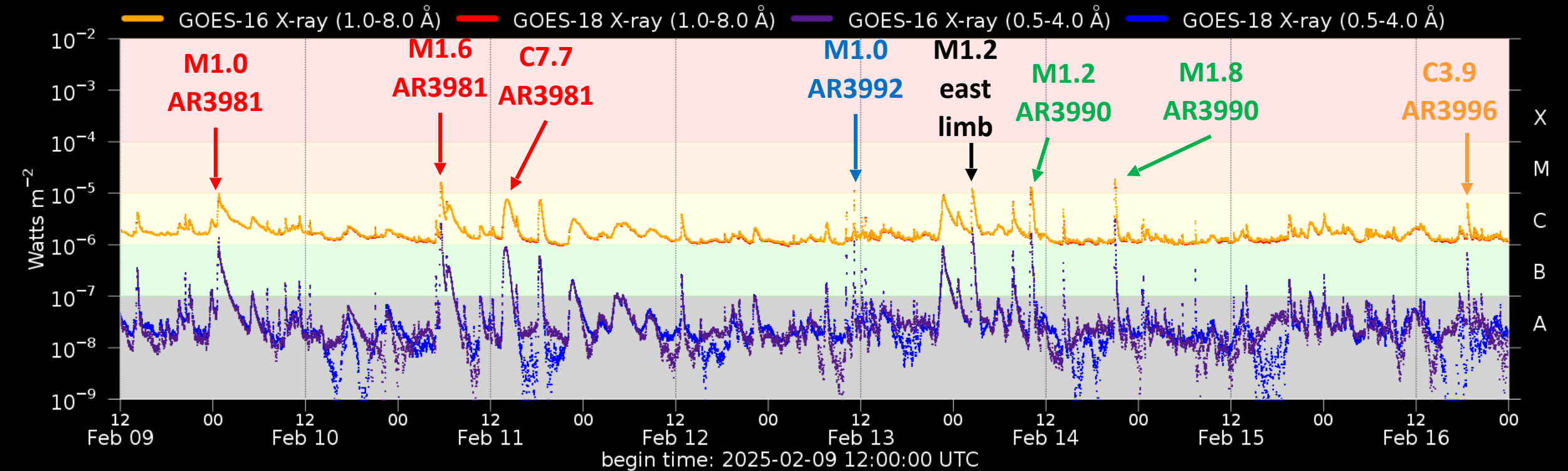
University of Graz
(Austria)



Solar F10.7cm radio flux



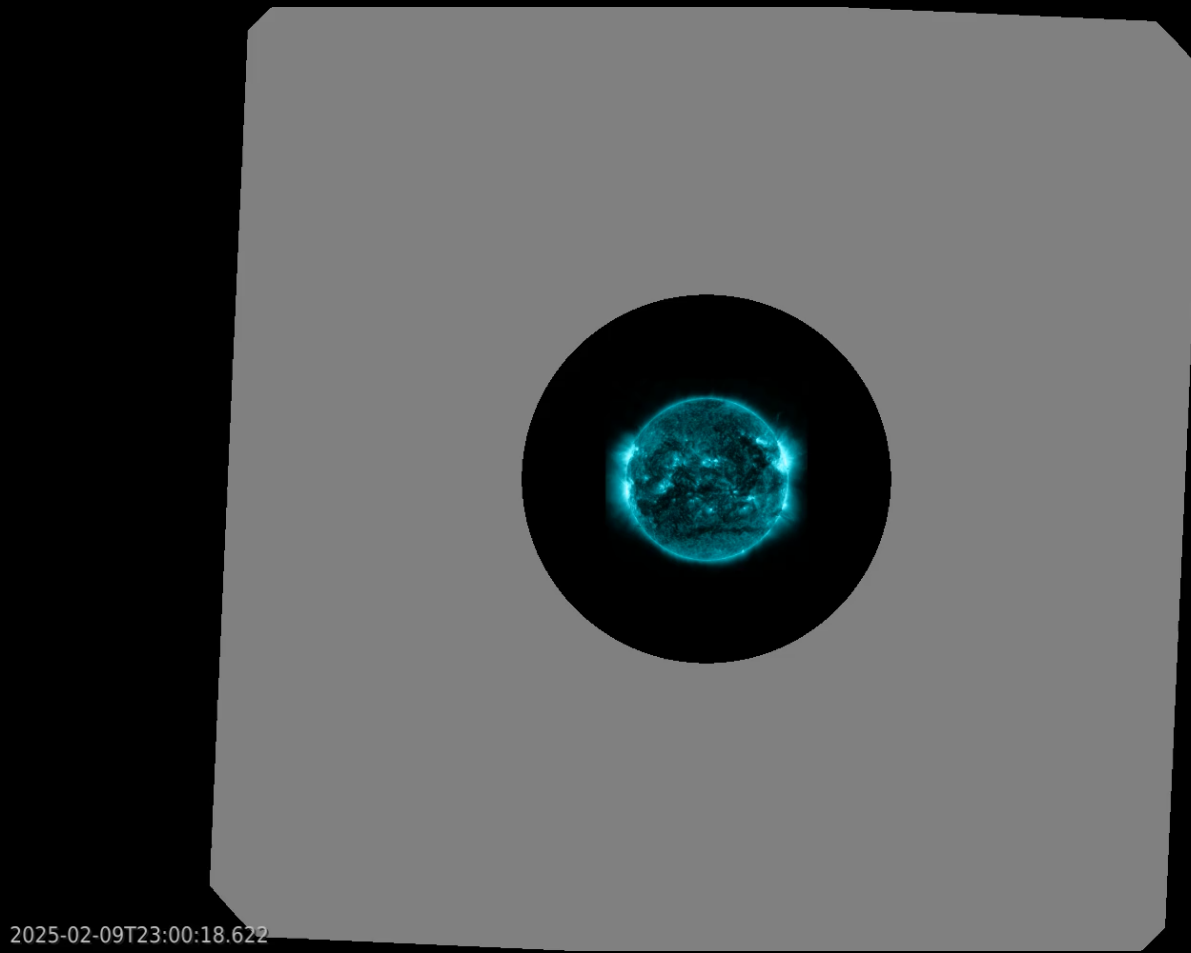
Flaring activity



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

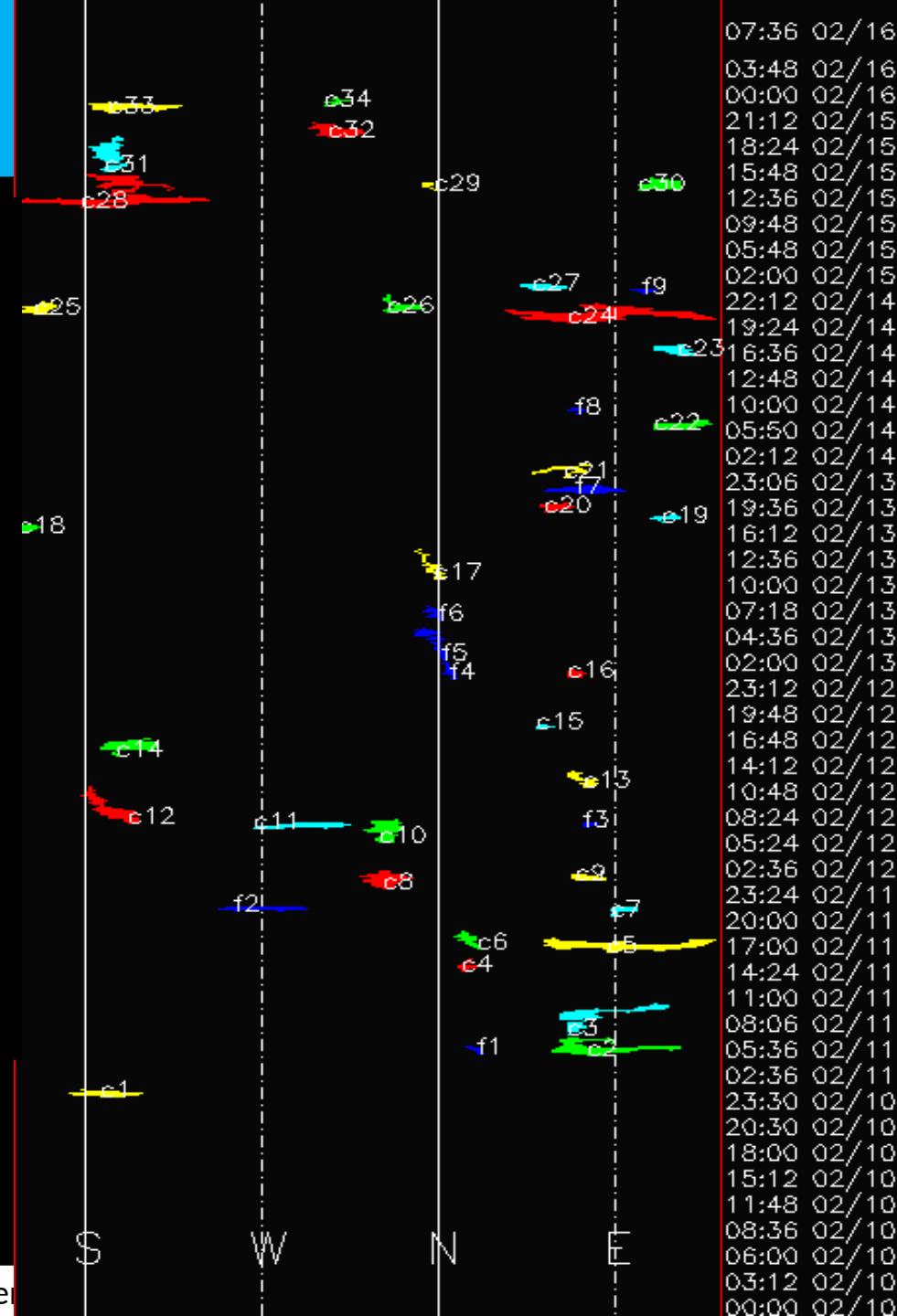
Issue date	2025-02-09	2025-02-10	2025-02-11	2025-02-12	2025-02-13	2025-02-14	2025-02-15	2025-02-16
Probability (%)	99 70 15	96 48 05	96 47 05	97 55 04	98 56 04	99 68 10	99 77 06	99 72 14
Observed (#)	06 01 00	05 01 00	02 00 00	04 01 00	07 02 00	06 01 00	06 00 00	03 00 00

Coronal Mass Ejections

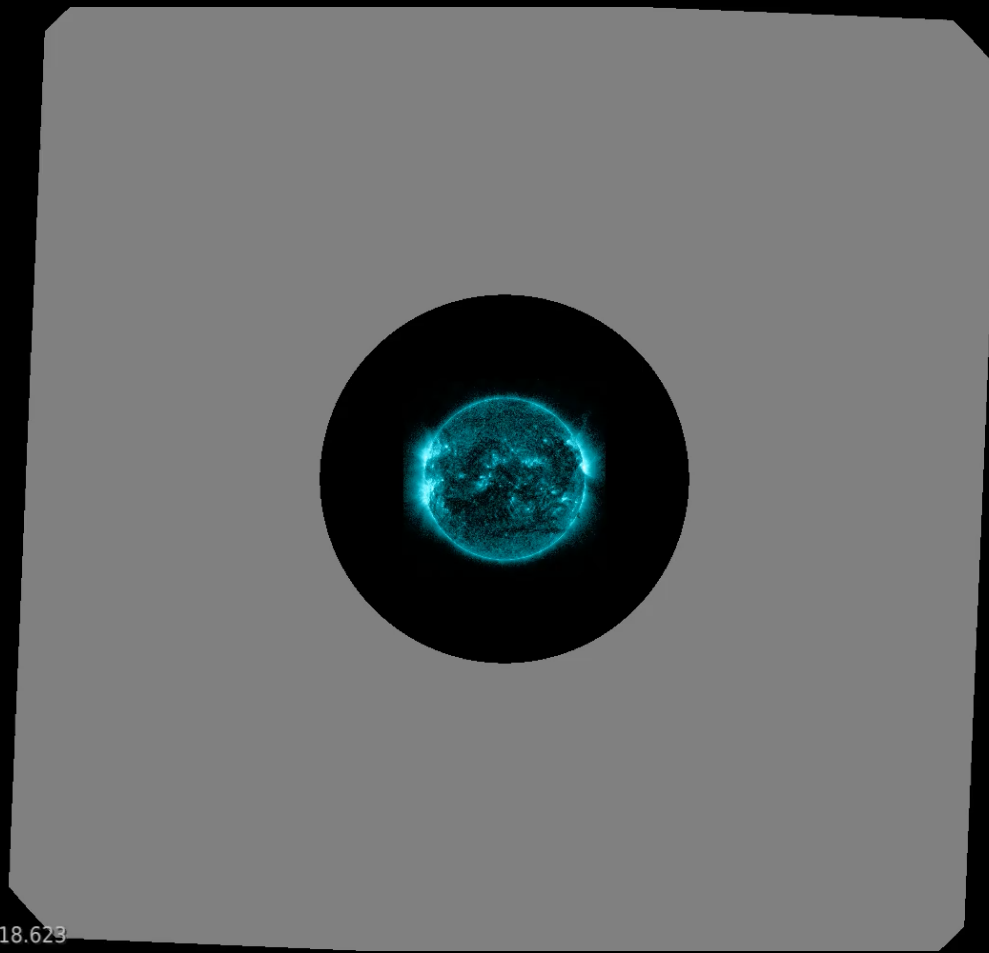


East: Prominence eruption

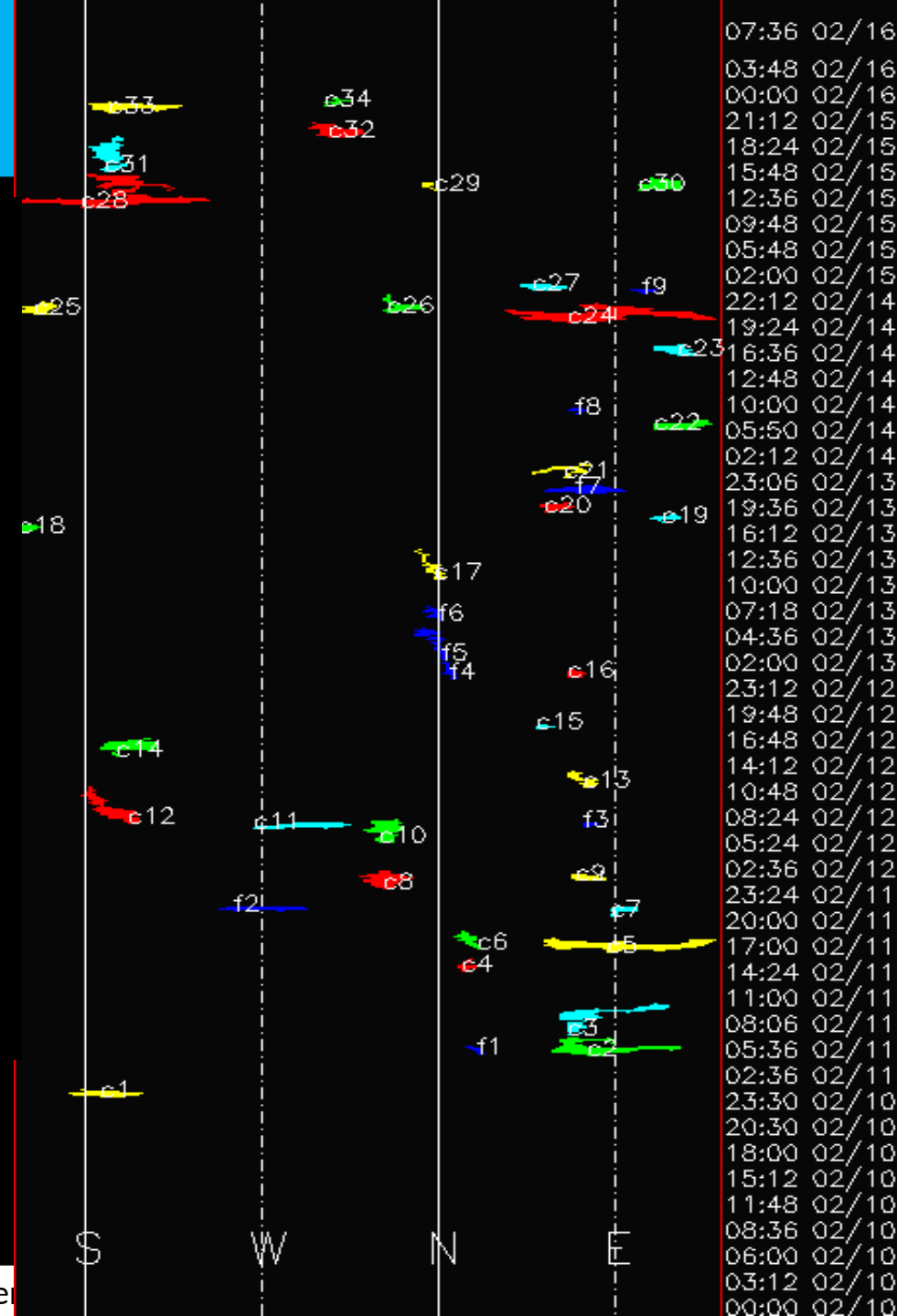
West: M1.0 flare + filament eruption (near AR3981)



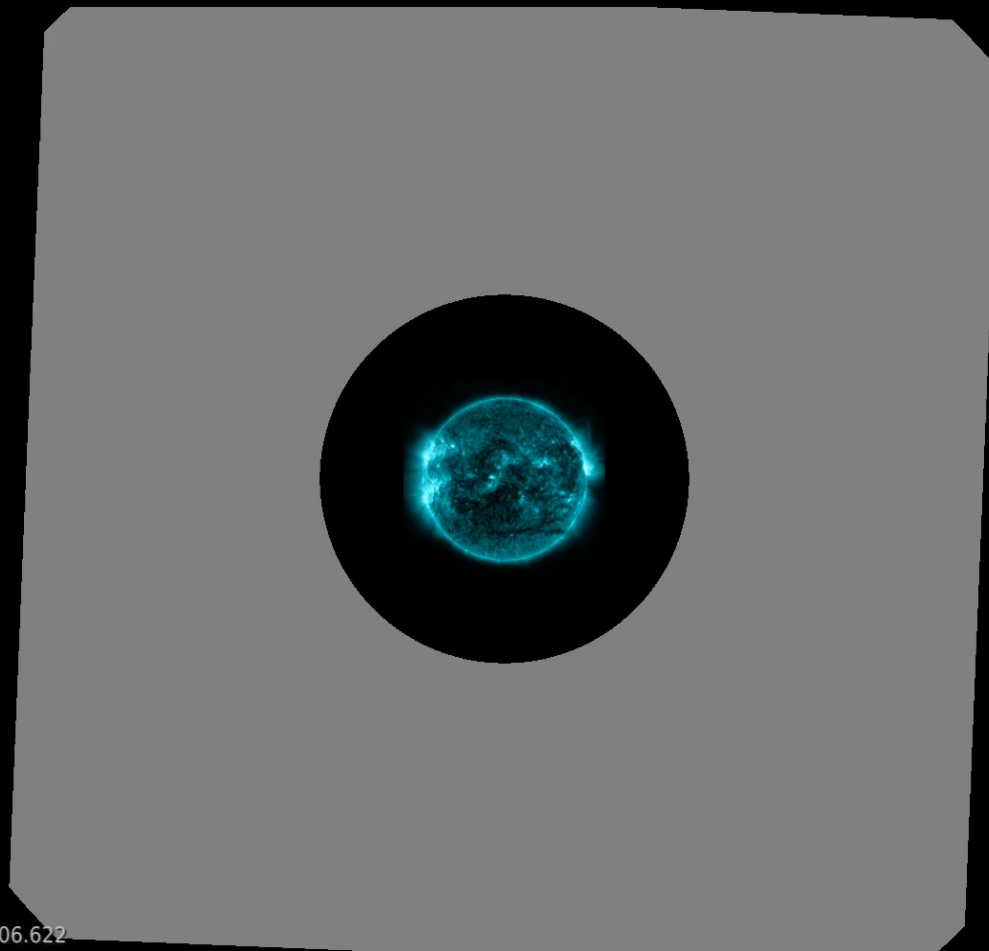
Coronal Mass Ejections



East: Filament eruption
West: M1.6 flare (AR3981)



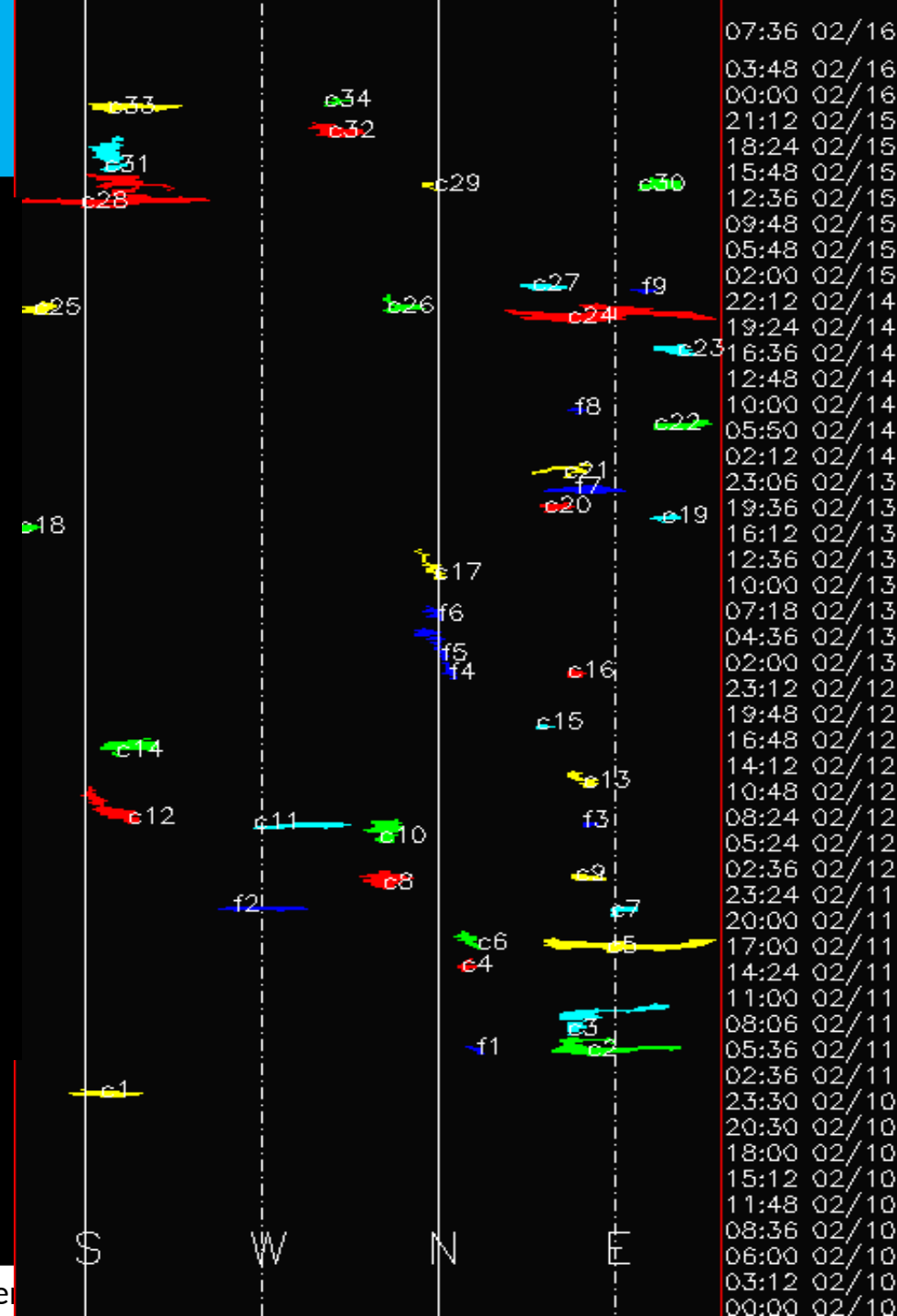
Coronal Mass Ejections



2025-02-11T16:30:06.622

East: C7.2 flare + filament eruption (near AR 3991)

West: (2 CMEs) eruptions near AR3981

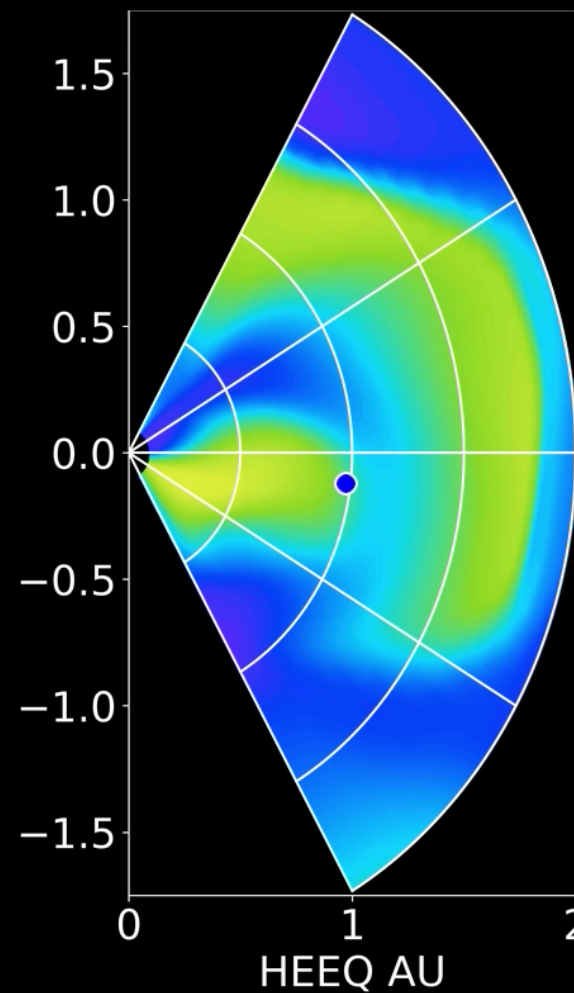
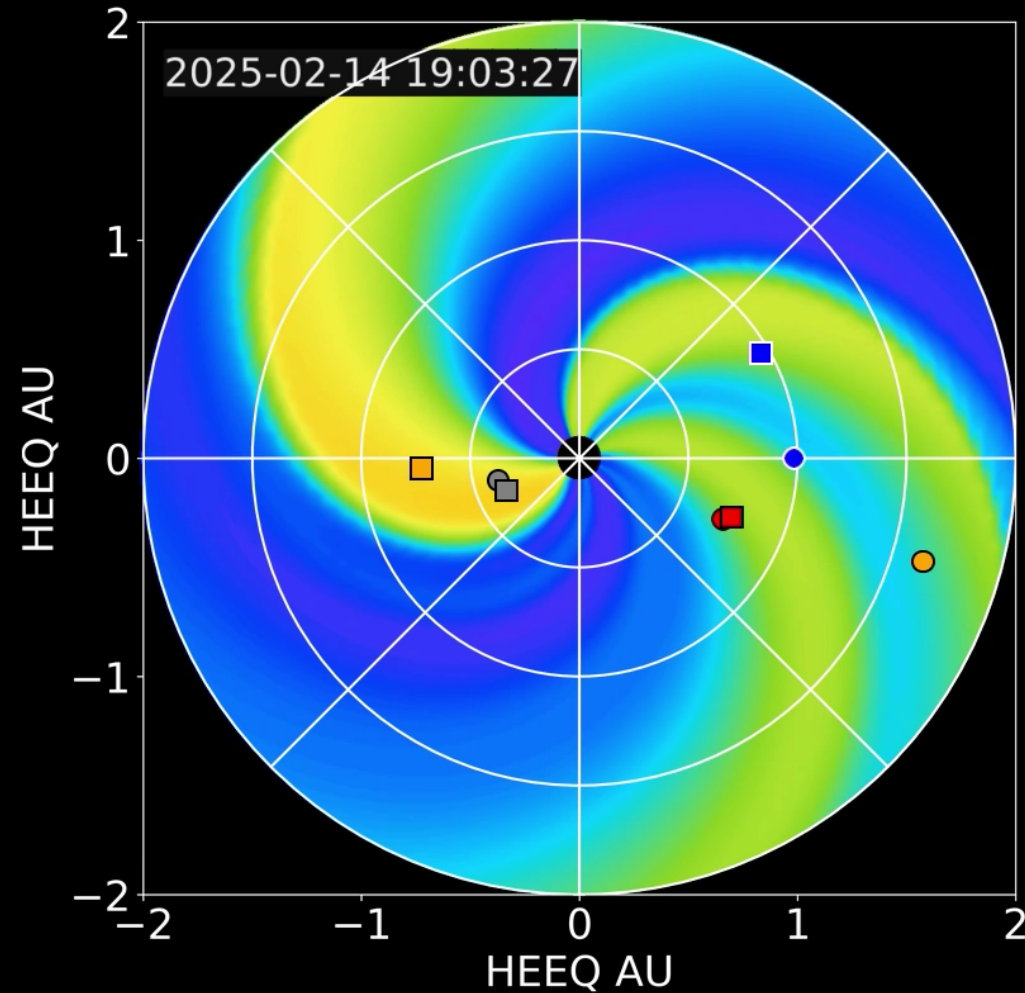


Coronal Mass Ejections

Collection : CME - 2025-02-15 01:01:00

Start date : 2025-02-10T01:01:24

End date : 2025-02-22T01:03:16



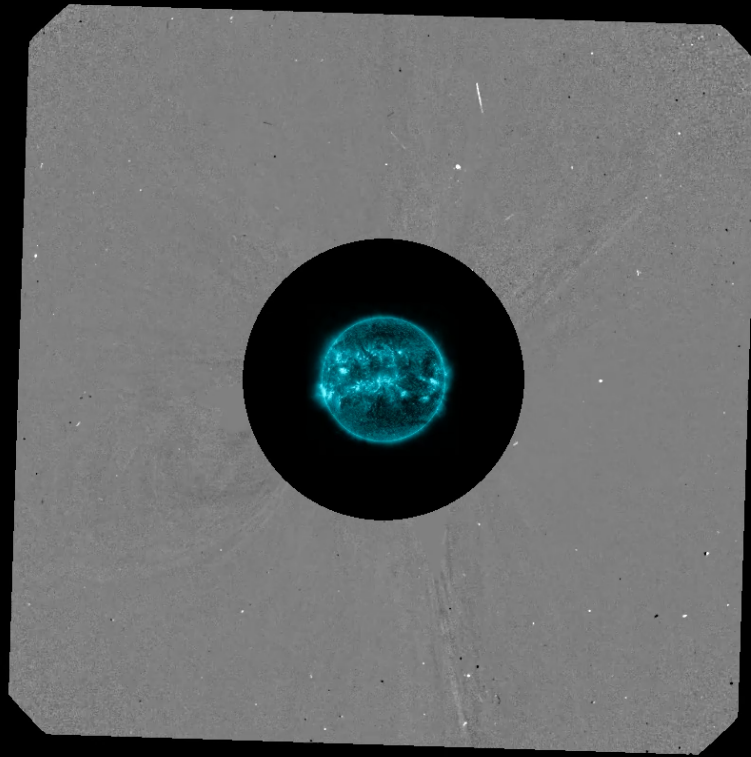
Velocity [$\text{km} \cdot \text{s}^{-1}$]

1600
1320
1040
760
480
200

Mercury ●
Venus ●
Earth ○
Mars ●
STA ■
PSP ■
SOLO ■
JUNO ■
MPO ■

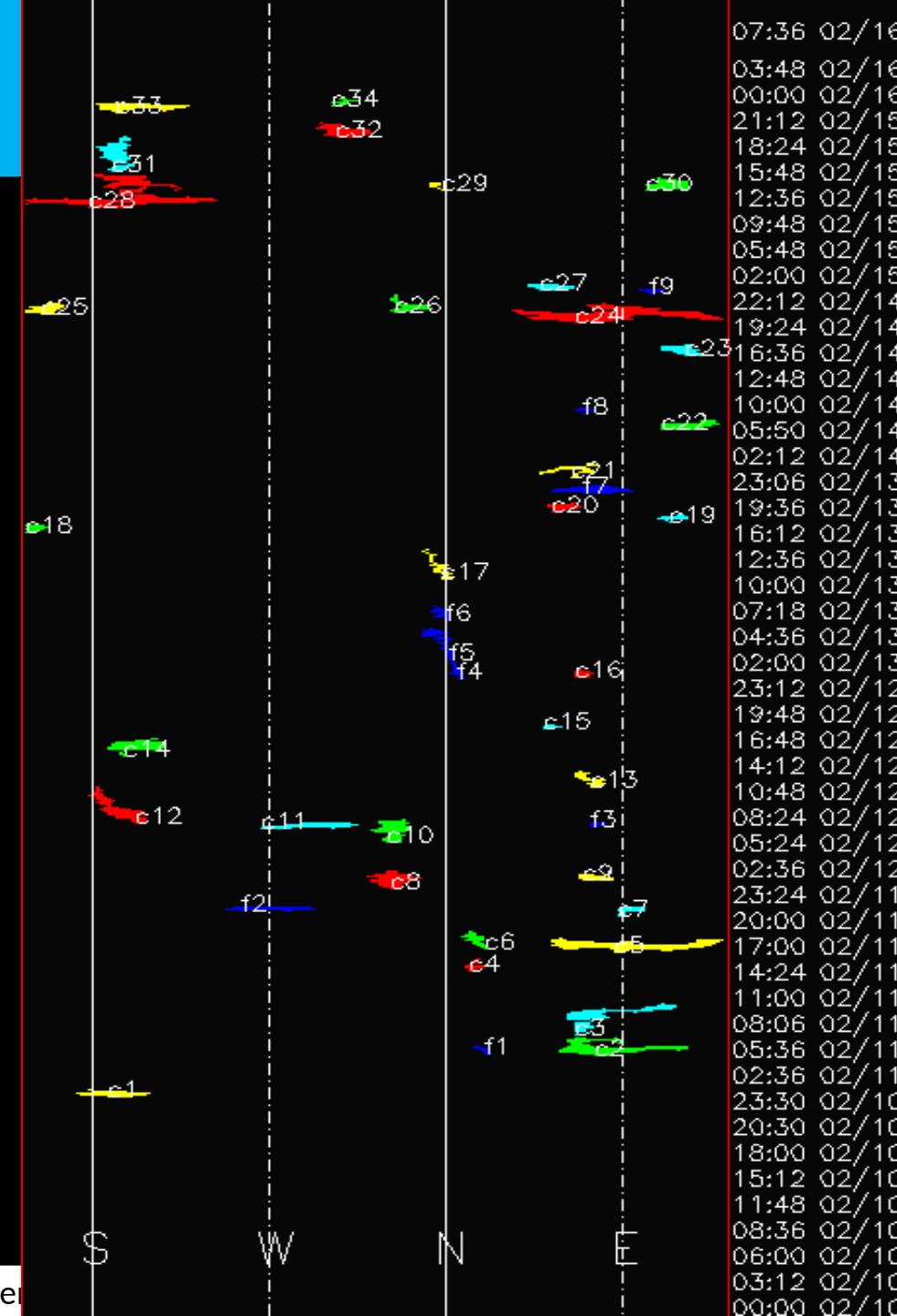


Coronal Mass Ejections



2025-02-16T05:48:07.684

NW: Low probability for a
glancing blow early on 20/2



Solar Wind and

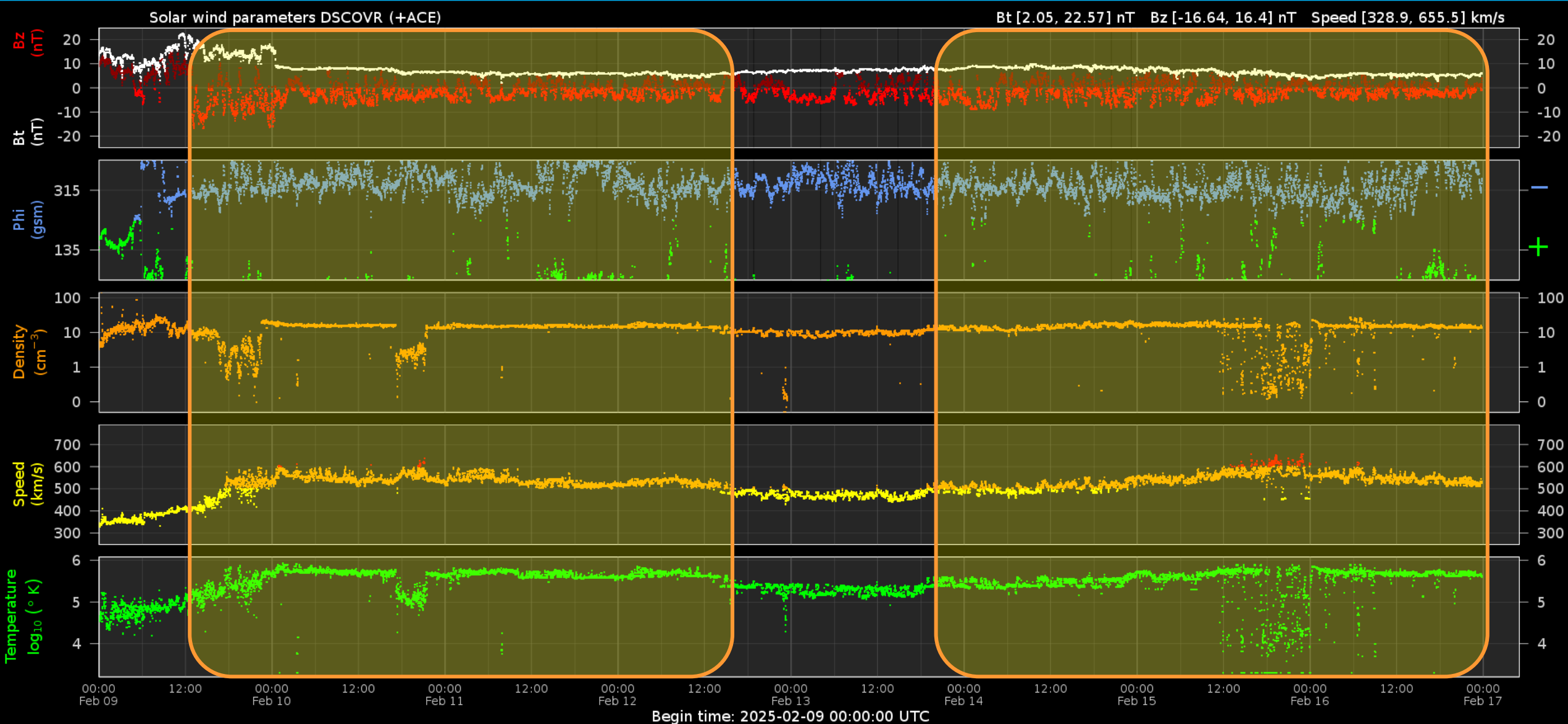
Geomagnetic Activity



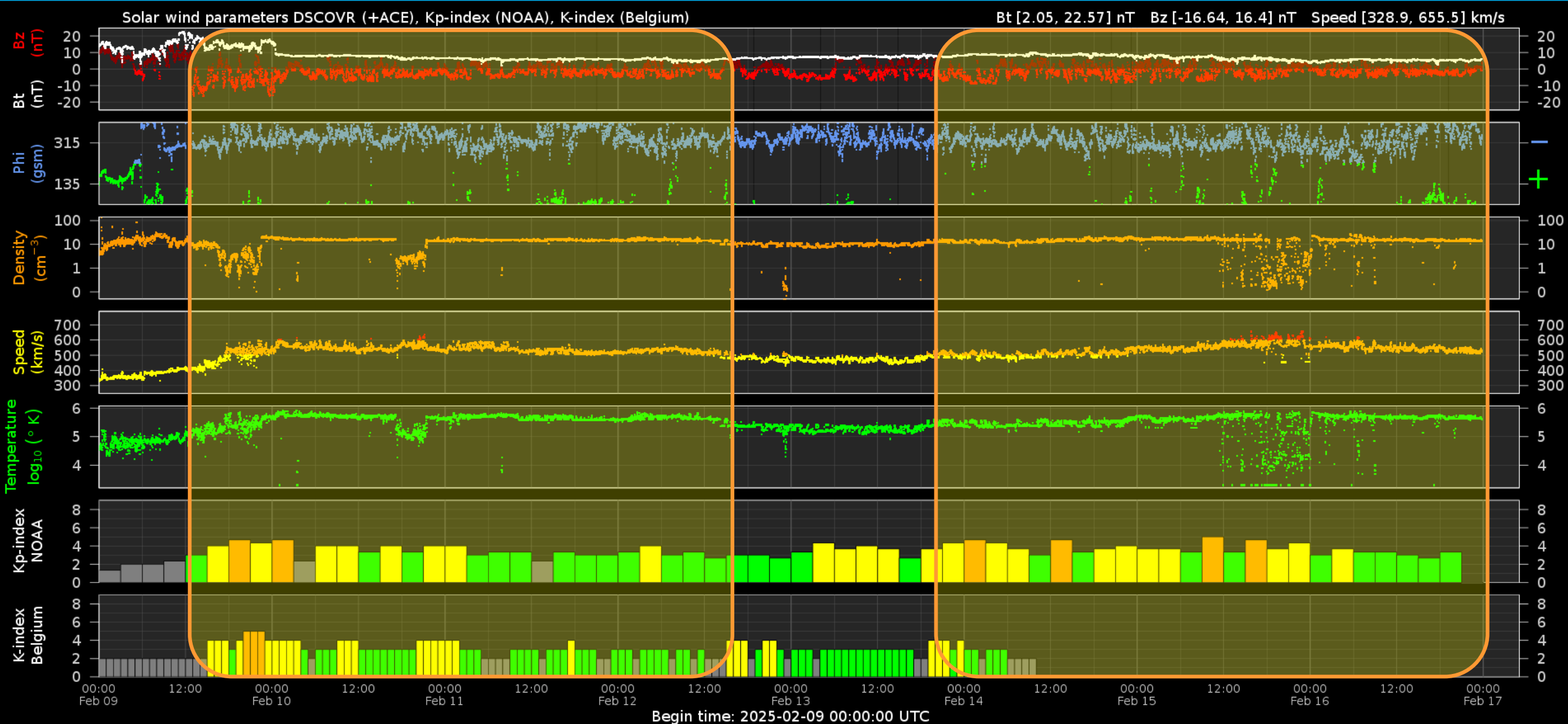
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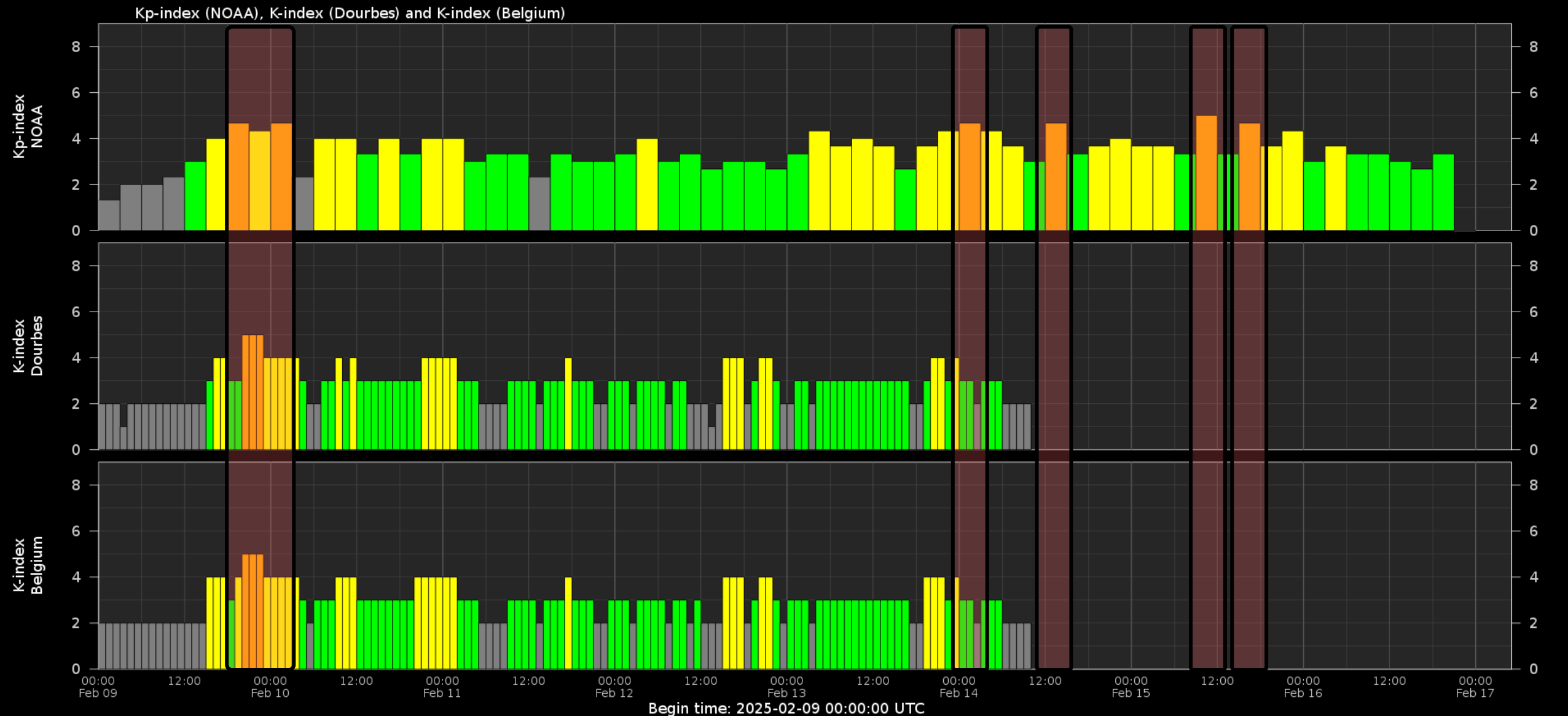
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



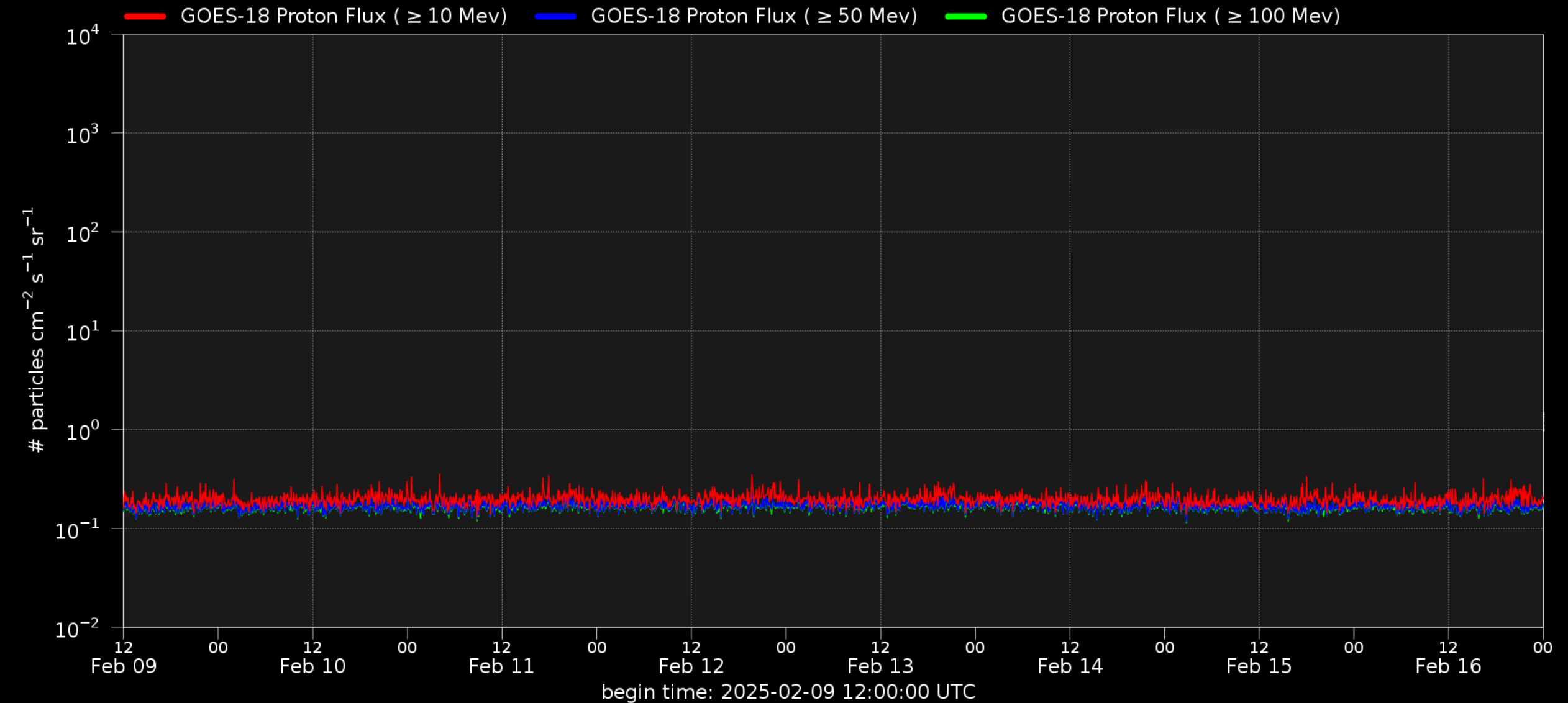
Energetic Particles



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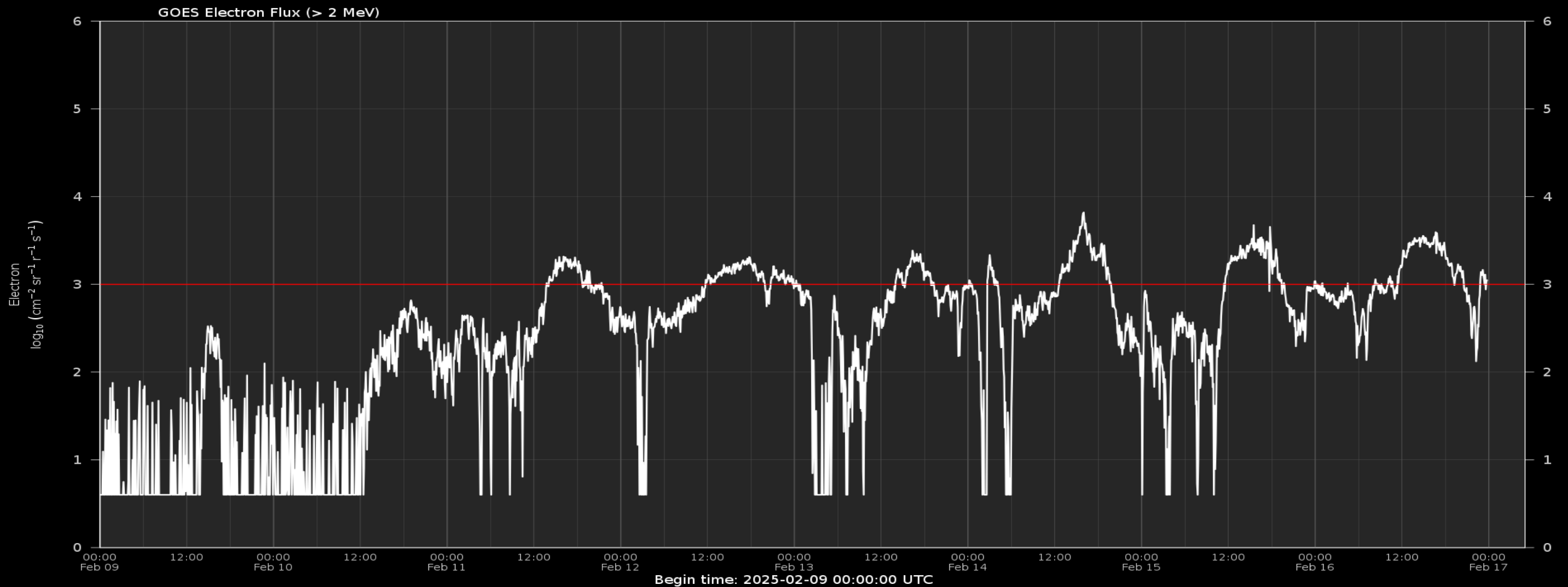
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



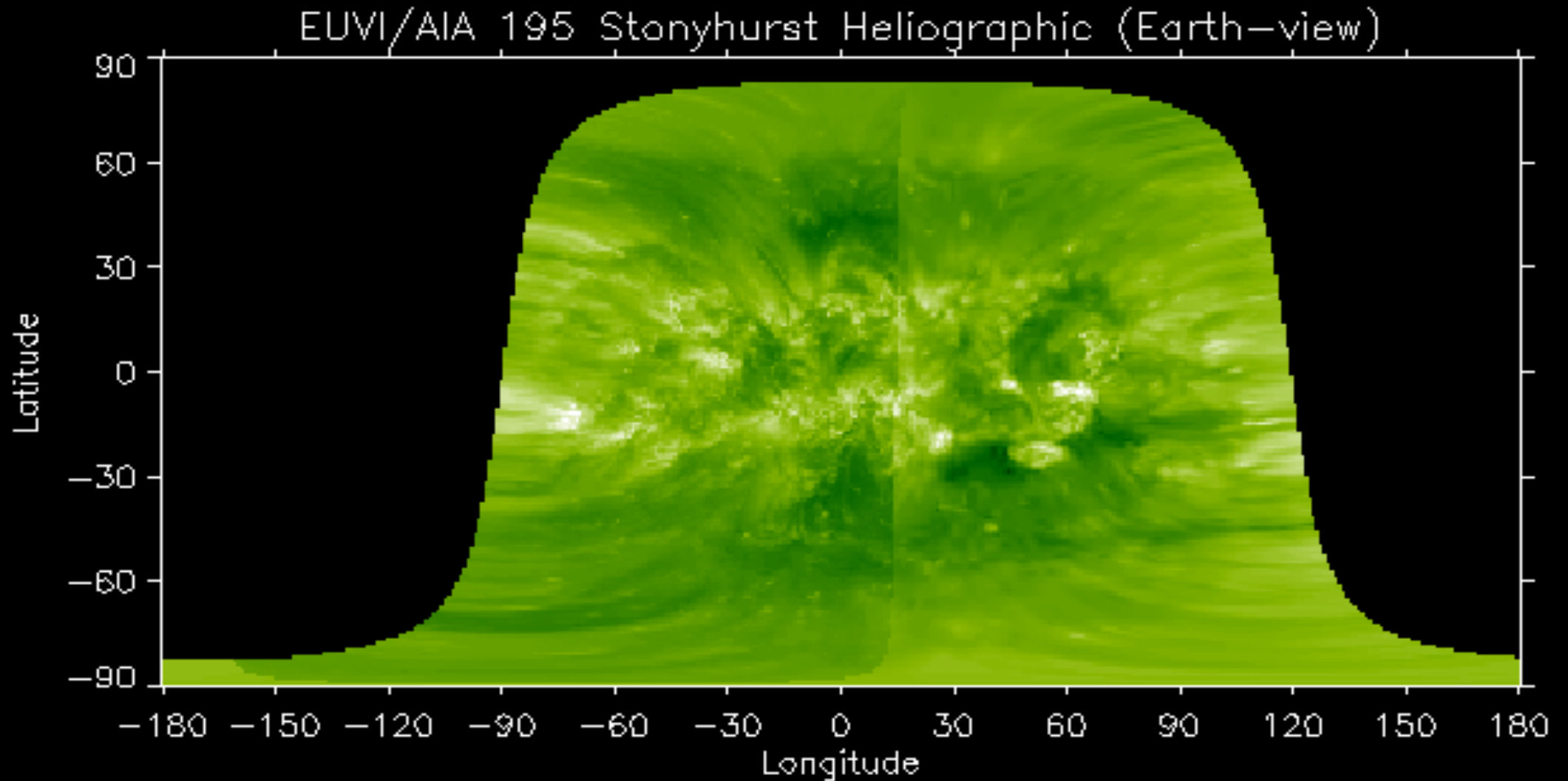
Outlook



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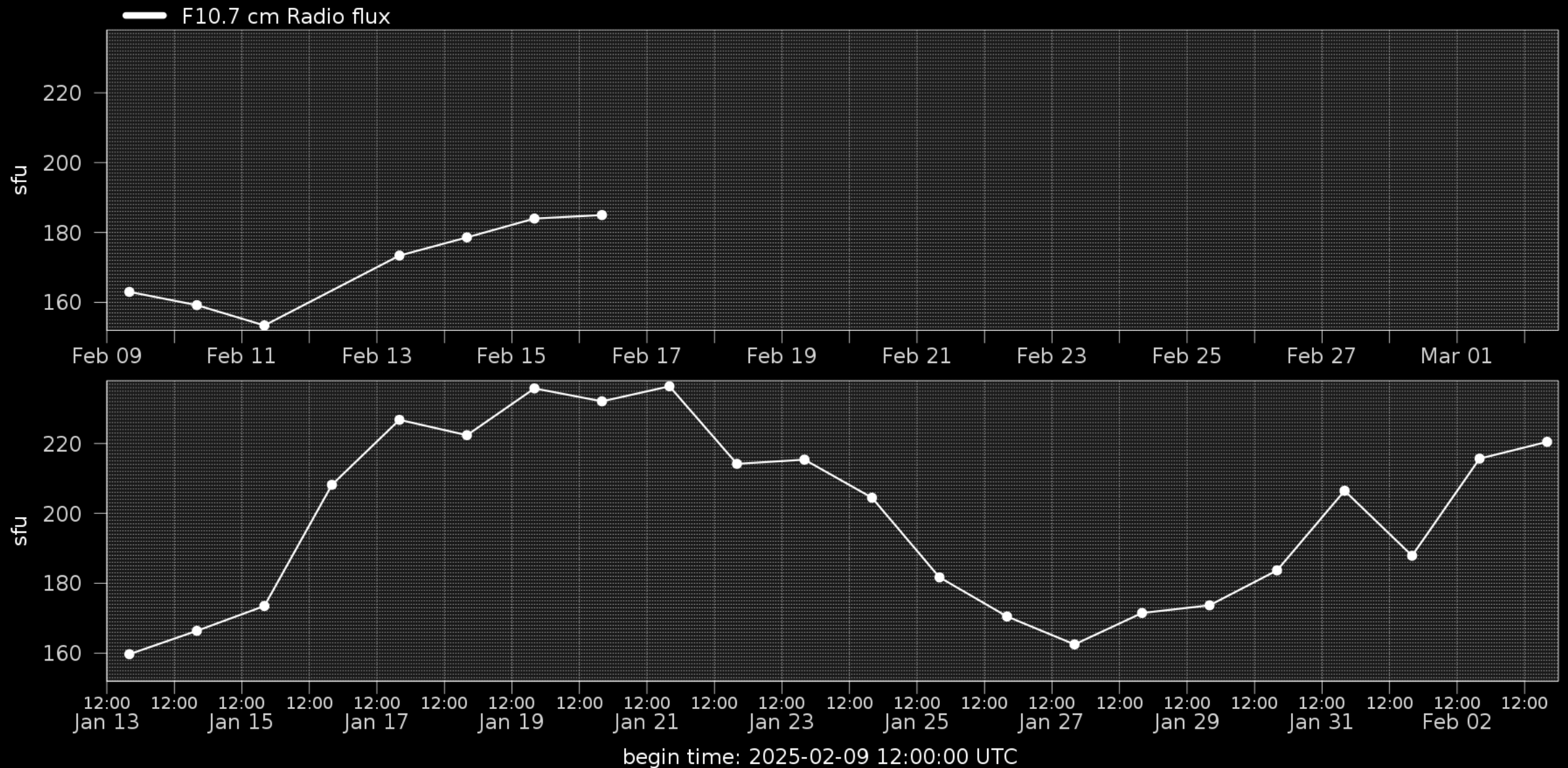
Solar Influences
Data analysis Centre
www.sidc.be

Outlook: Solar activity

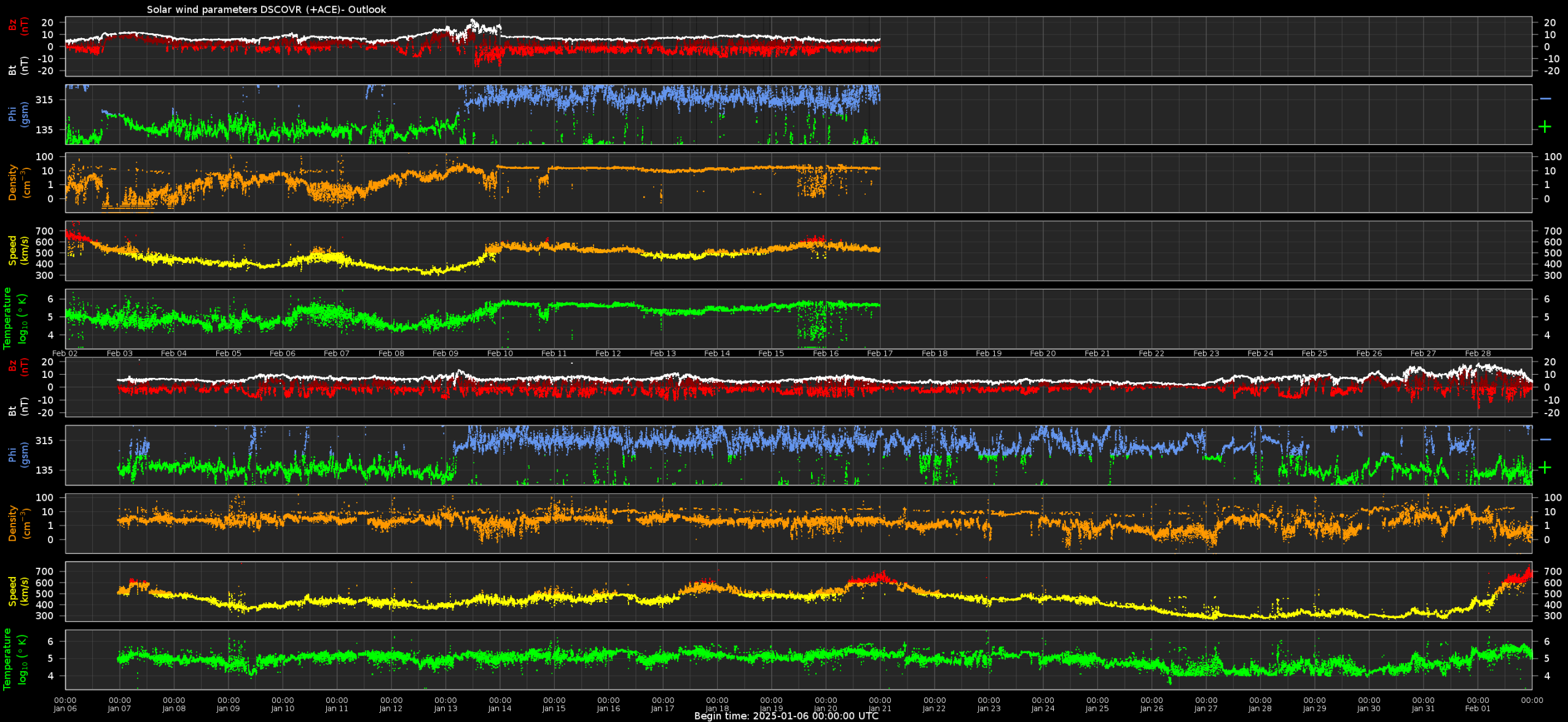


Observation date: 2025/02/16 18:35:00

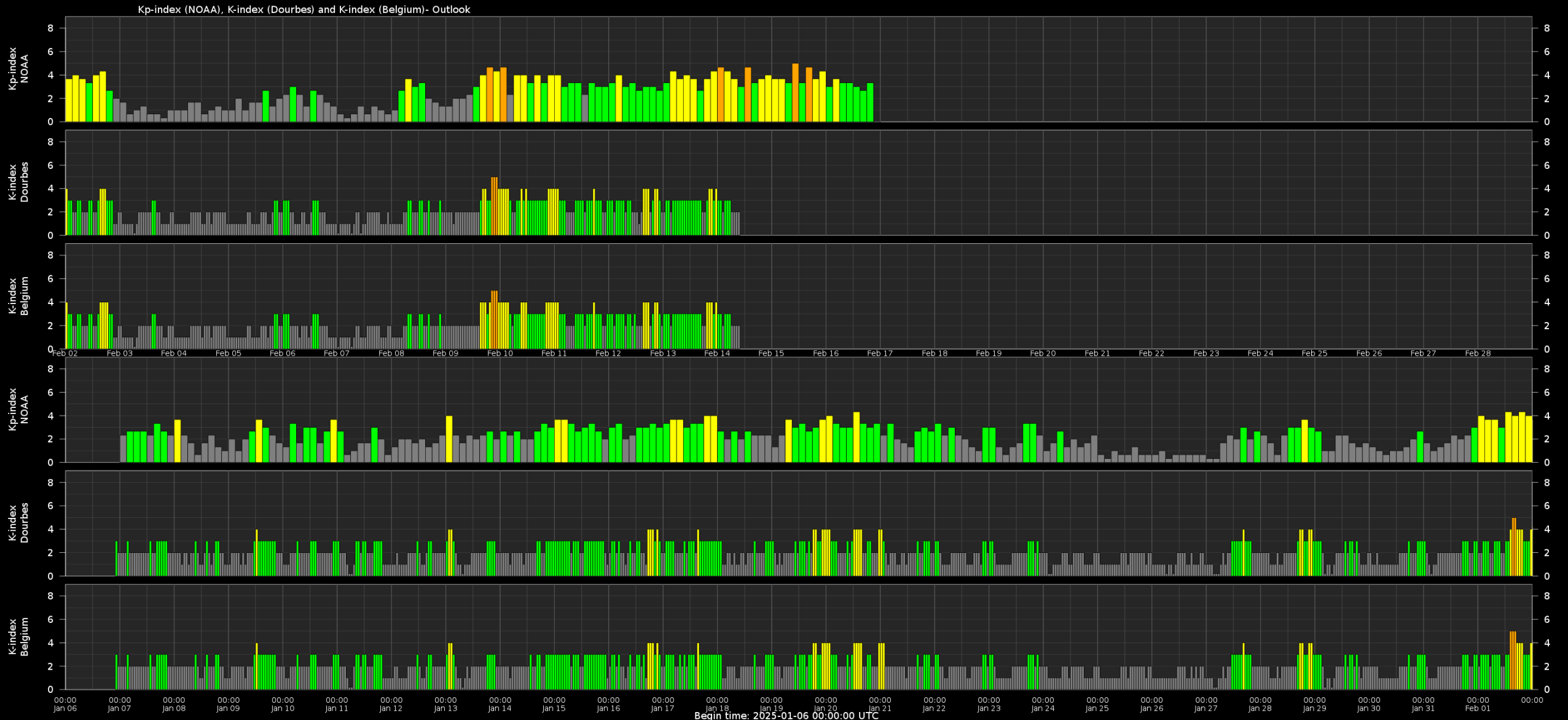
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



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Pegasus related events

GNSS advisories

- Scintillations
- VTEC

ODC period starting tomorrow

SIDC Space Weather Briefing

See you at our next briefing!

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