SIDC Space Weather Briefing

23 March 2025-30 March 2025

Senthamizh Pavai Valliappan

& the SIDC forecaster team

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2025-03-23 12:00 to 2025-03-30 23:59

Active regions	14 Active Regions: 4028, 4030, 4035, 4036, 4039, 4040, 4041, 4042, 4043, 4044, 4045, 4046, 4047, 4048
Flares	# C-class flare: >90 # M-class flare: 11 # X-class flare: 1
3 CH+	3 CH+
CMEs	1 partial halo CME, and several narrow CMEs

Proton flux	Below 10 pfu threshold
Electron flux	Exceeded 1000 pfu threshold

Solar wind and geomagnetic conditions

ICMEs	1 possible weak ICME
Solar wind conditions	|B|: 1.8 - 29.27 nT //Bz: -28.45 nT to 20.56 nT //Speed: 300 - 870 km/s
Geomagnetic conditions	max KBel: 5.0, max Kp(NOAA): 6.33, Moderate Storm conditions

All Quiet Alert: All quiet off.

Solar Activity

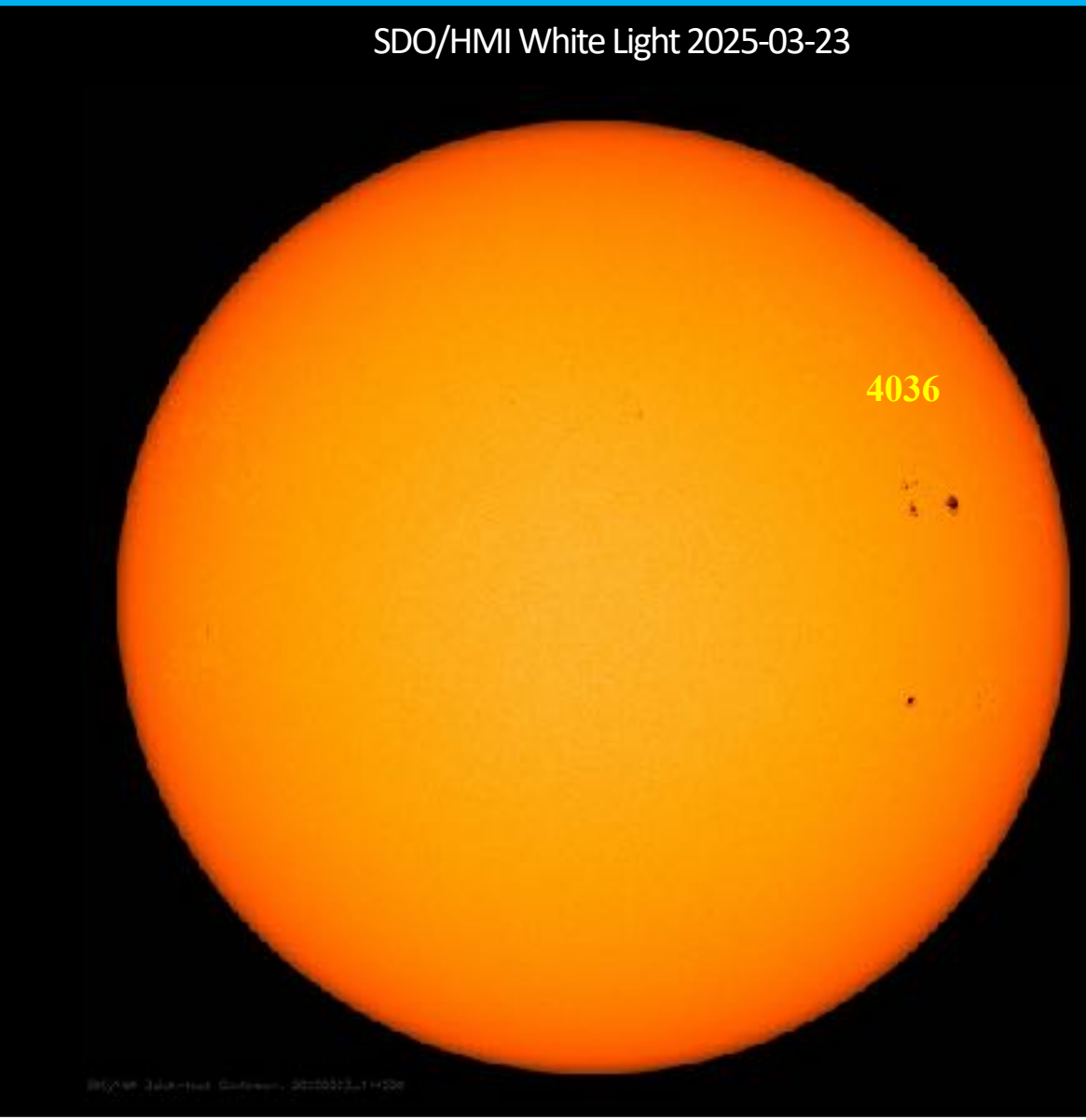


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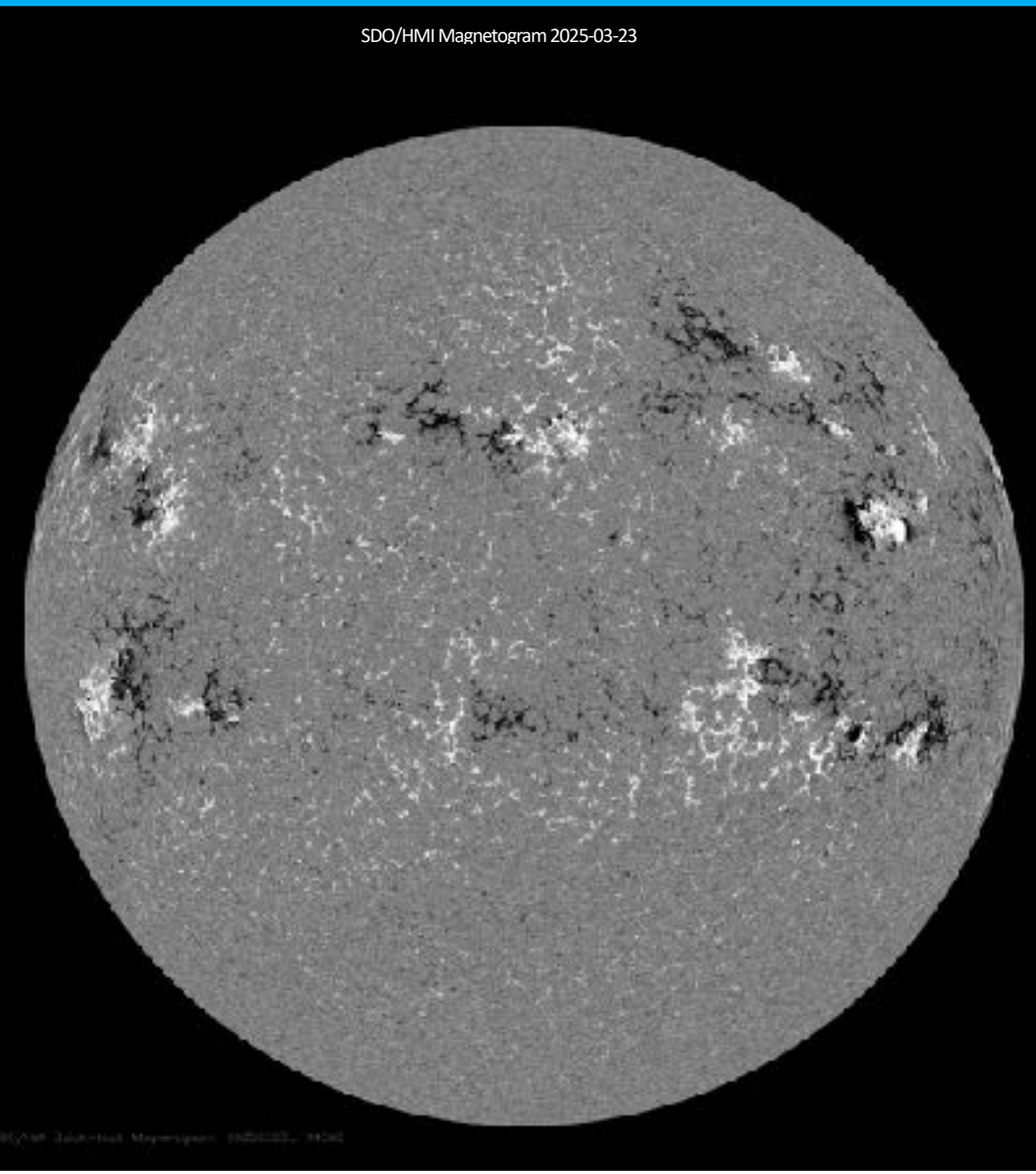
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Solar active regions

SDO/HMI White Light 2025-03-23

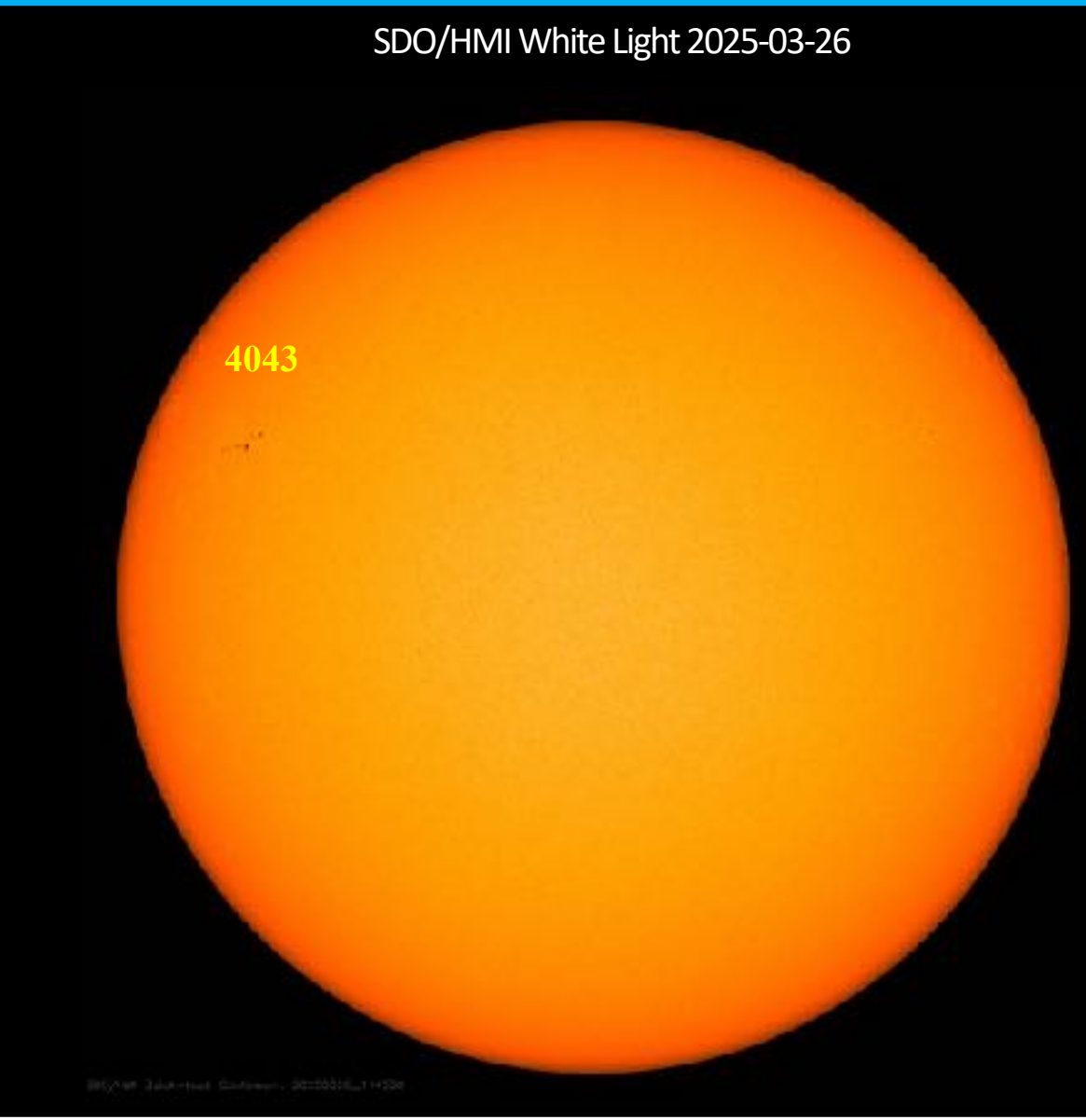


SDO/HMI Magnetogram 2025-03-23

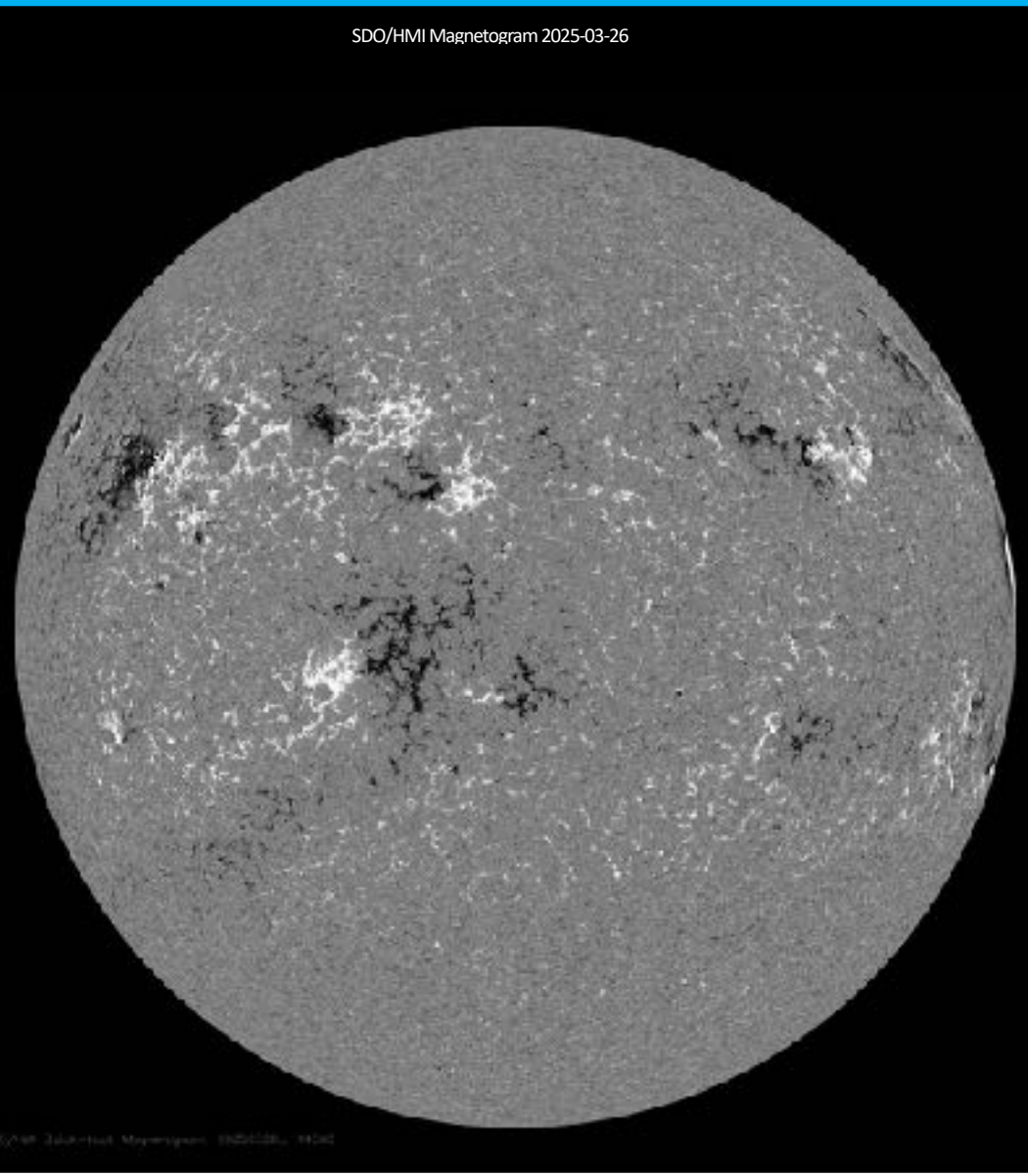


Solar active regions

SDO/HMI White Light 2025-03-26

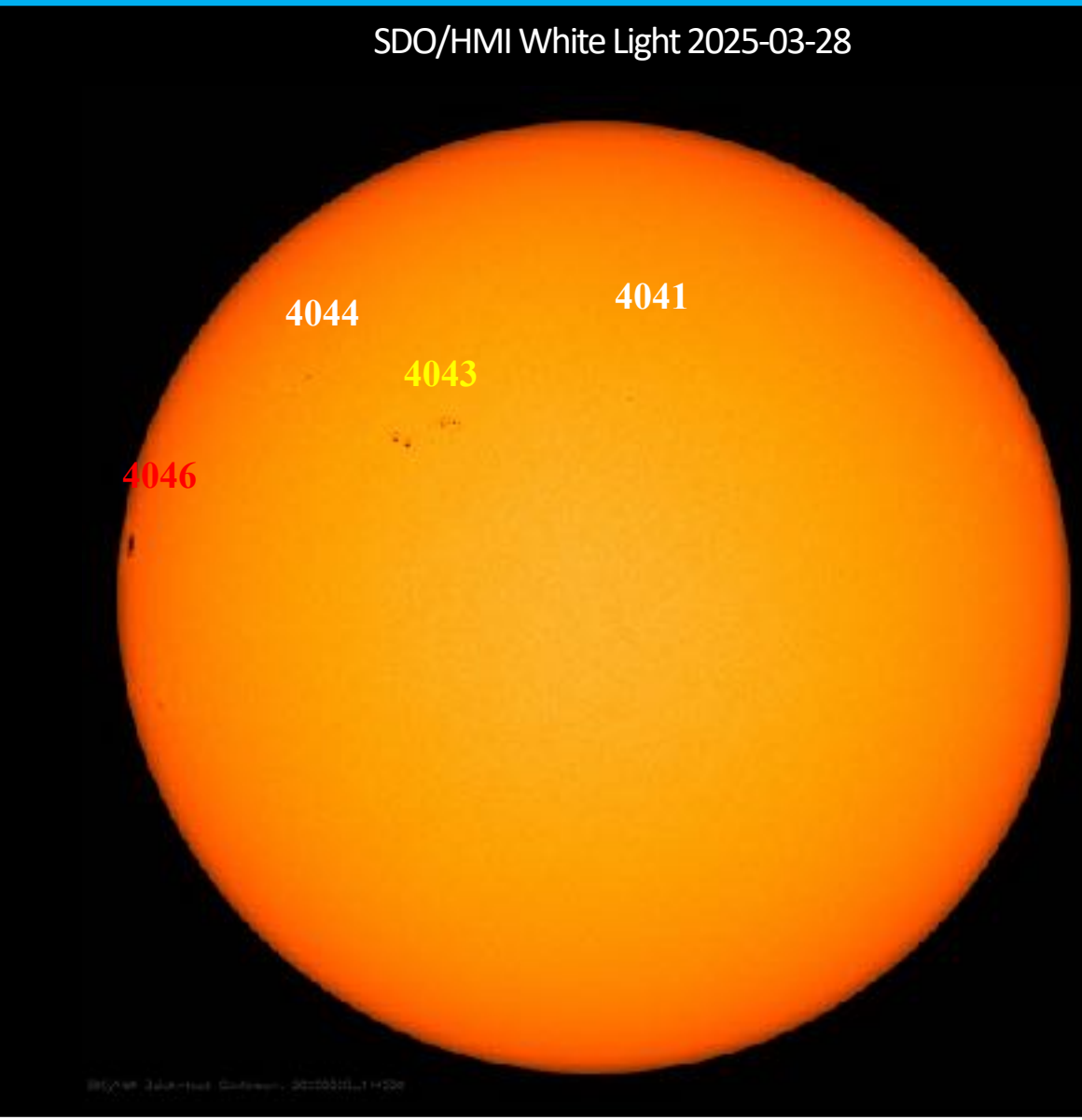


SDO/HMI Magnetogram 2025-03-26

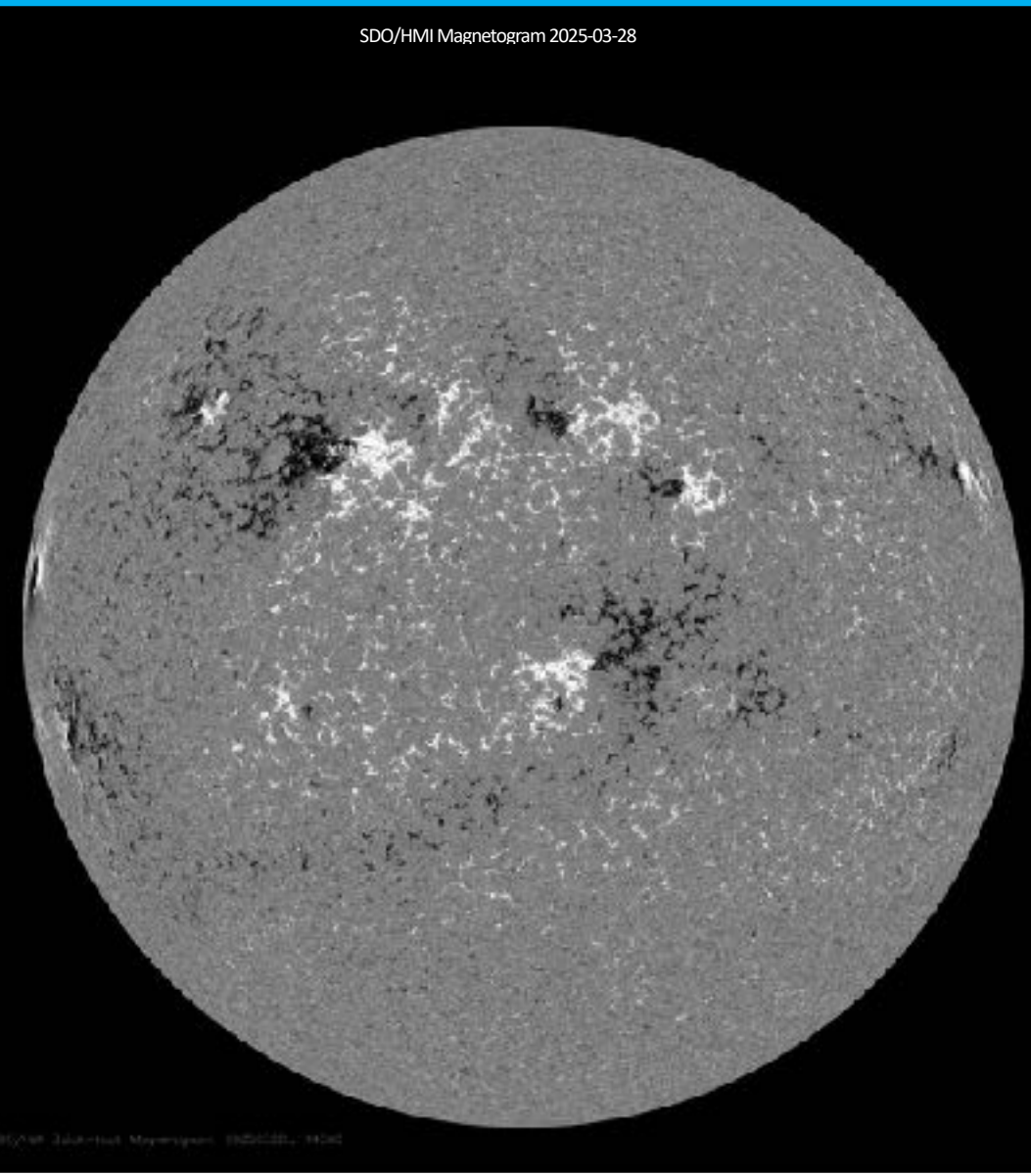


Solar active regions

SDO/HMI White Light 2025-03-28

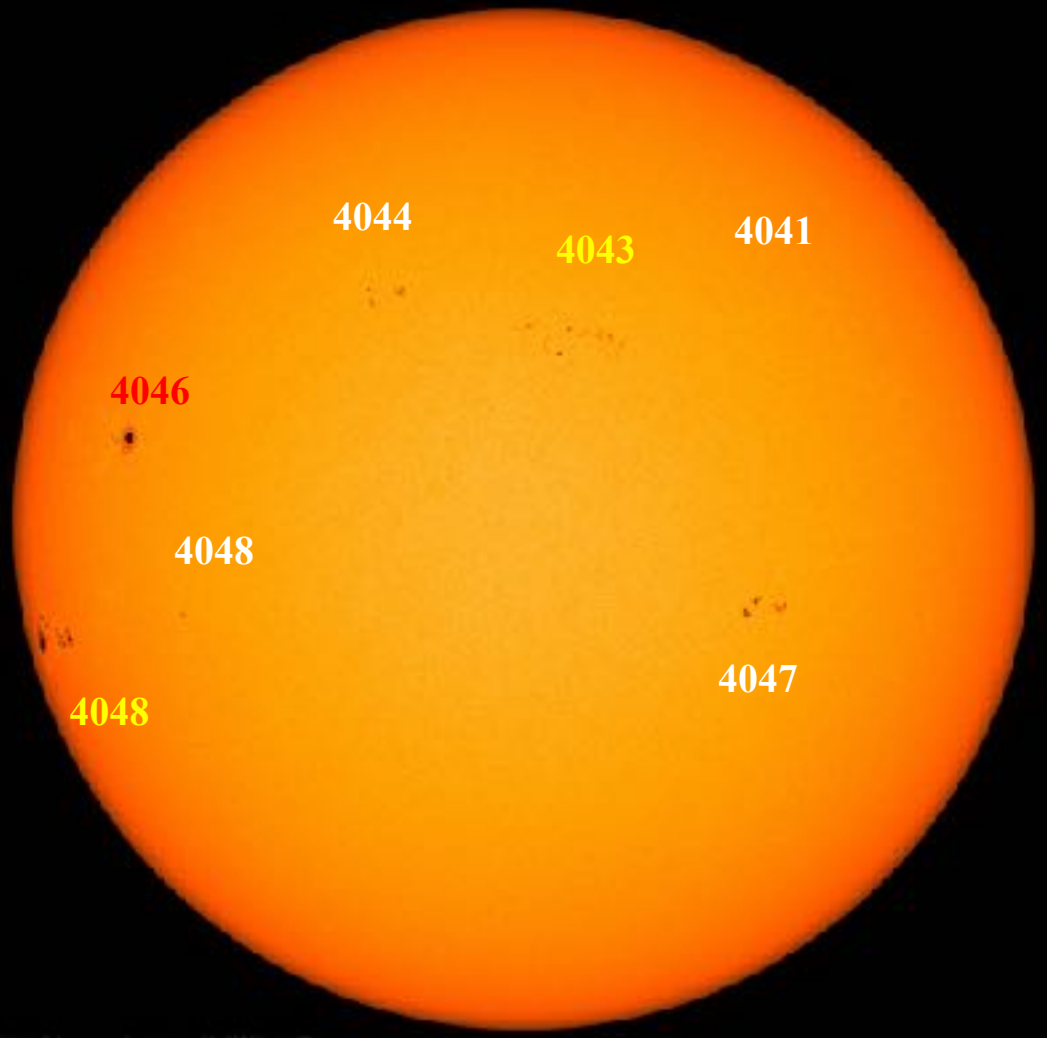


SDO/HMI Magnetogram 2025-03-28

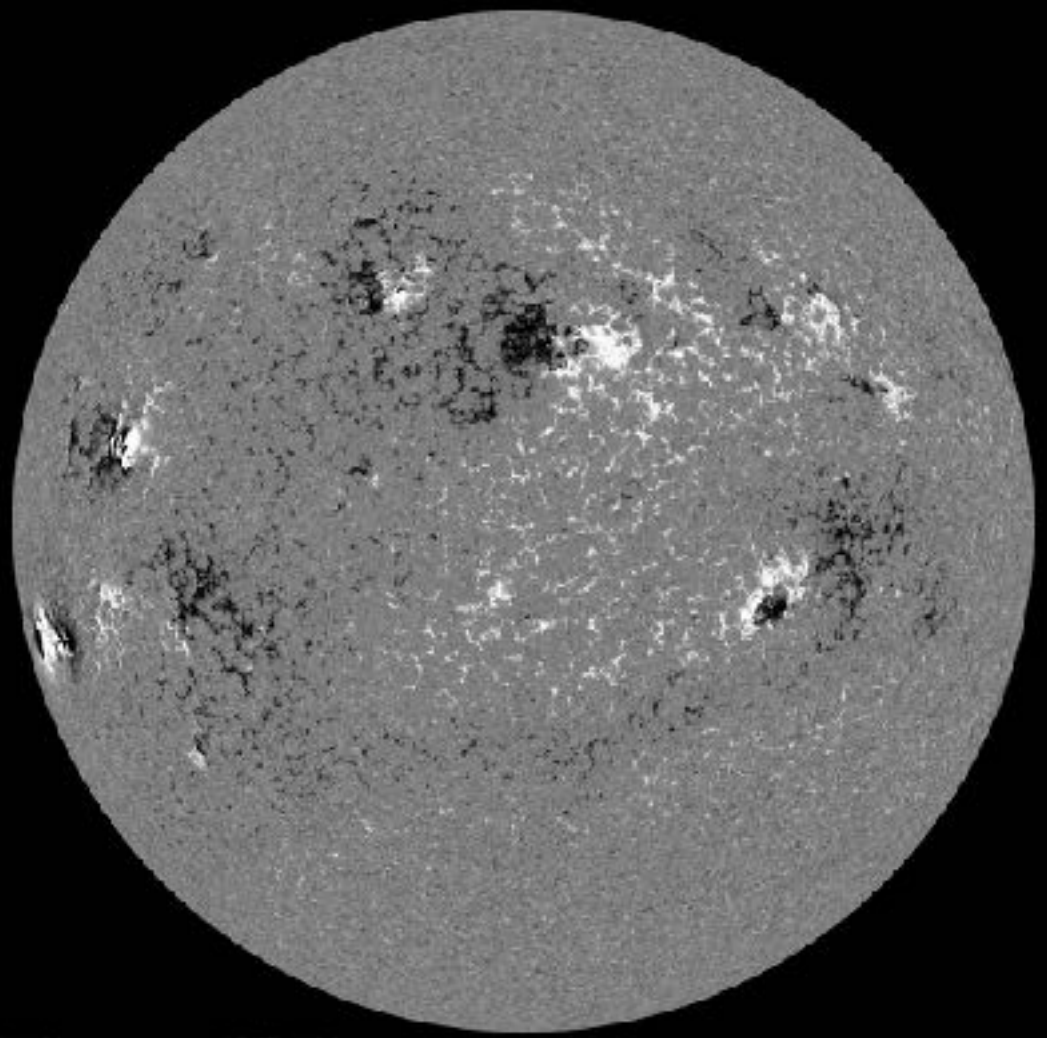


Solar active regions

SDO/HMI White Light 2025-03-30

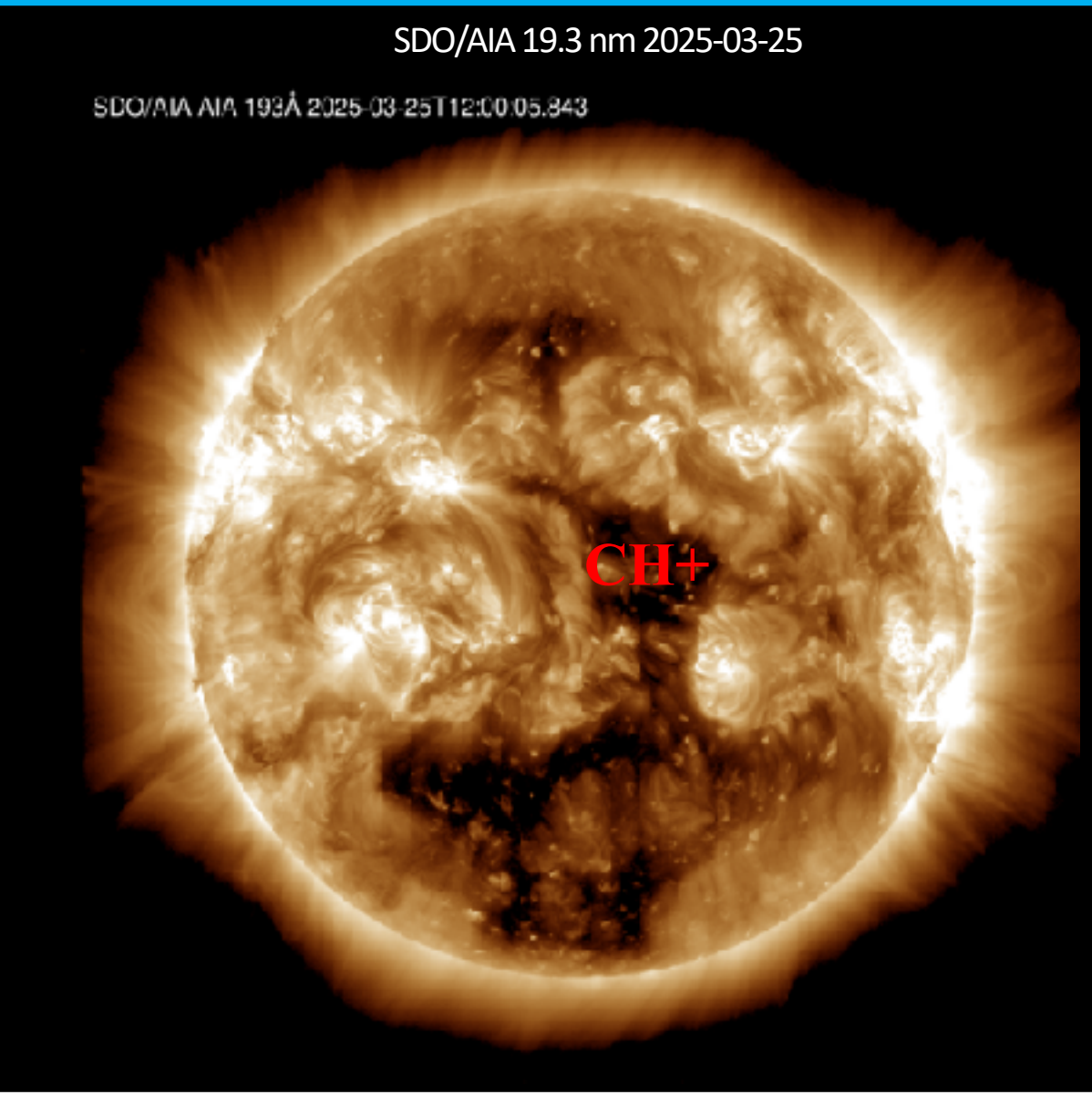


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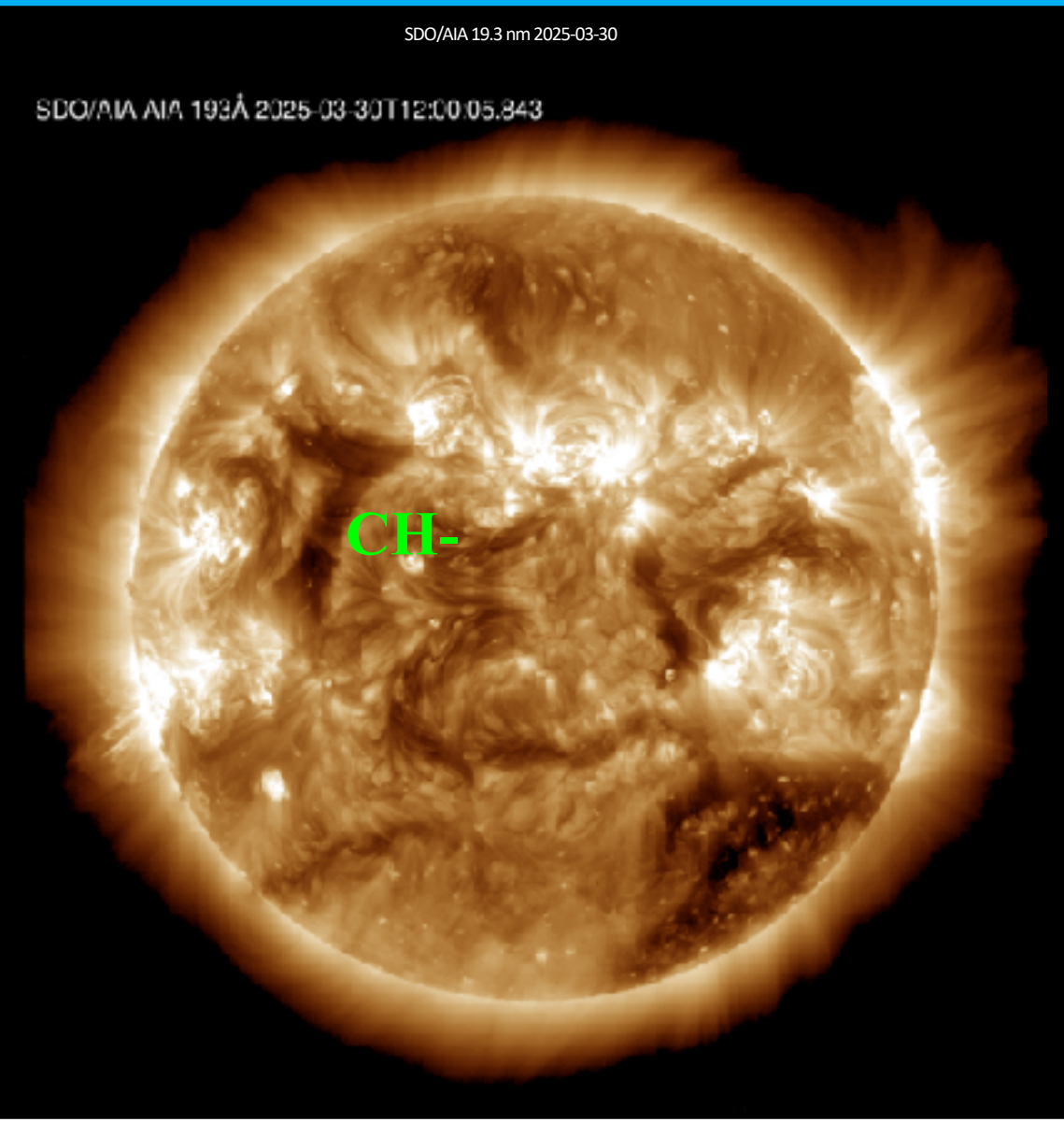


Coronal holes

SDO/AIA 19.3 nm 2025-03-25

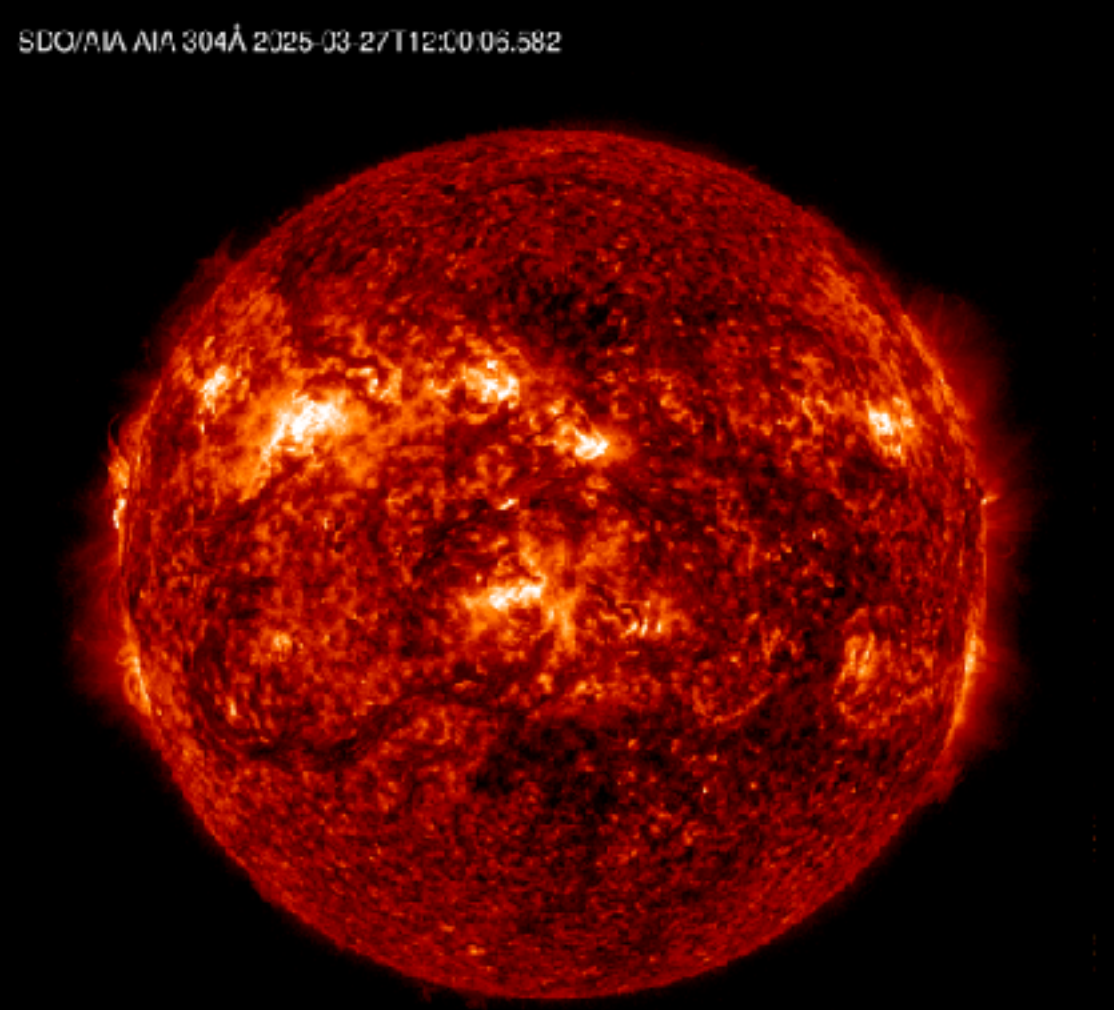


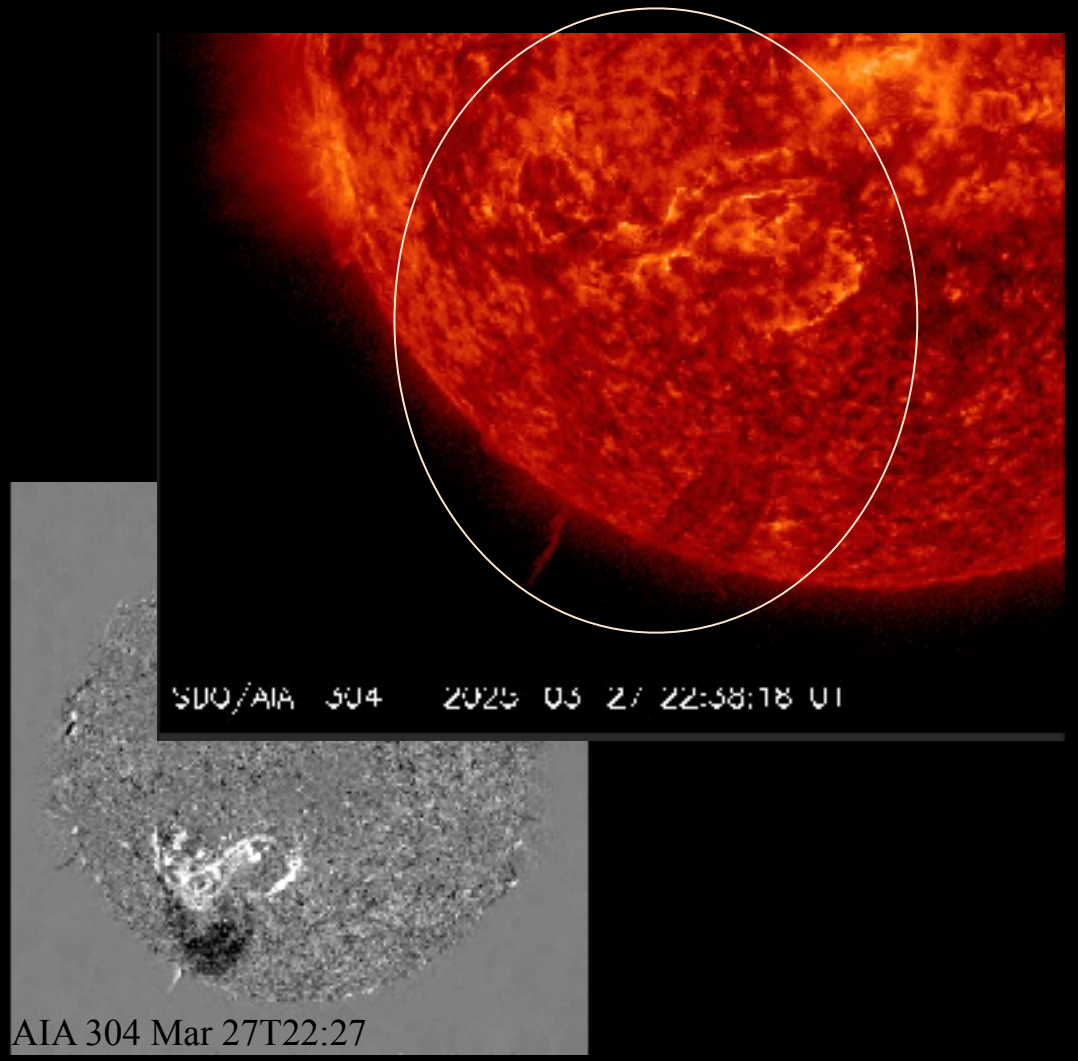
SDO/AIA 19.3 nm 2025-03-30



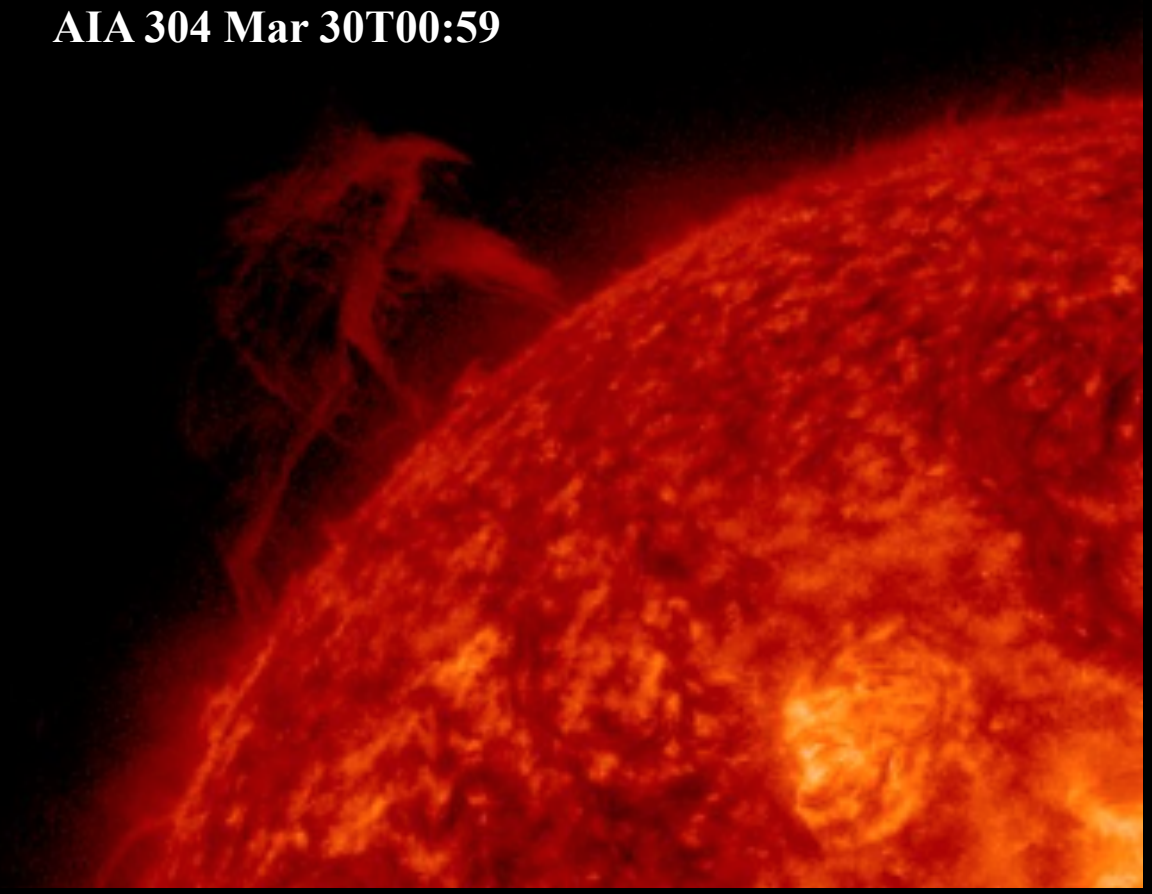
Filaments

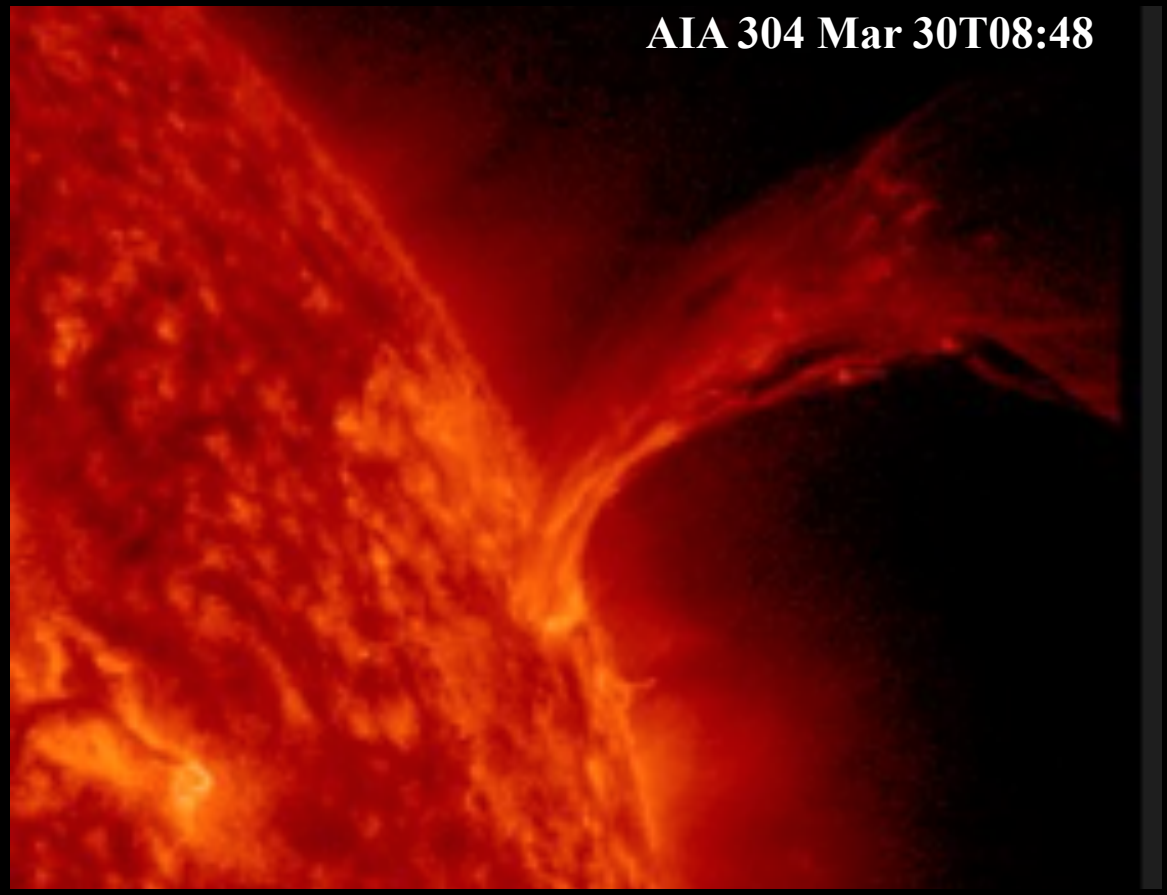
SDO/AIA 30.4 nm 2025-03-27





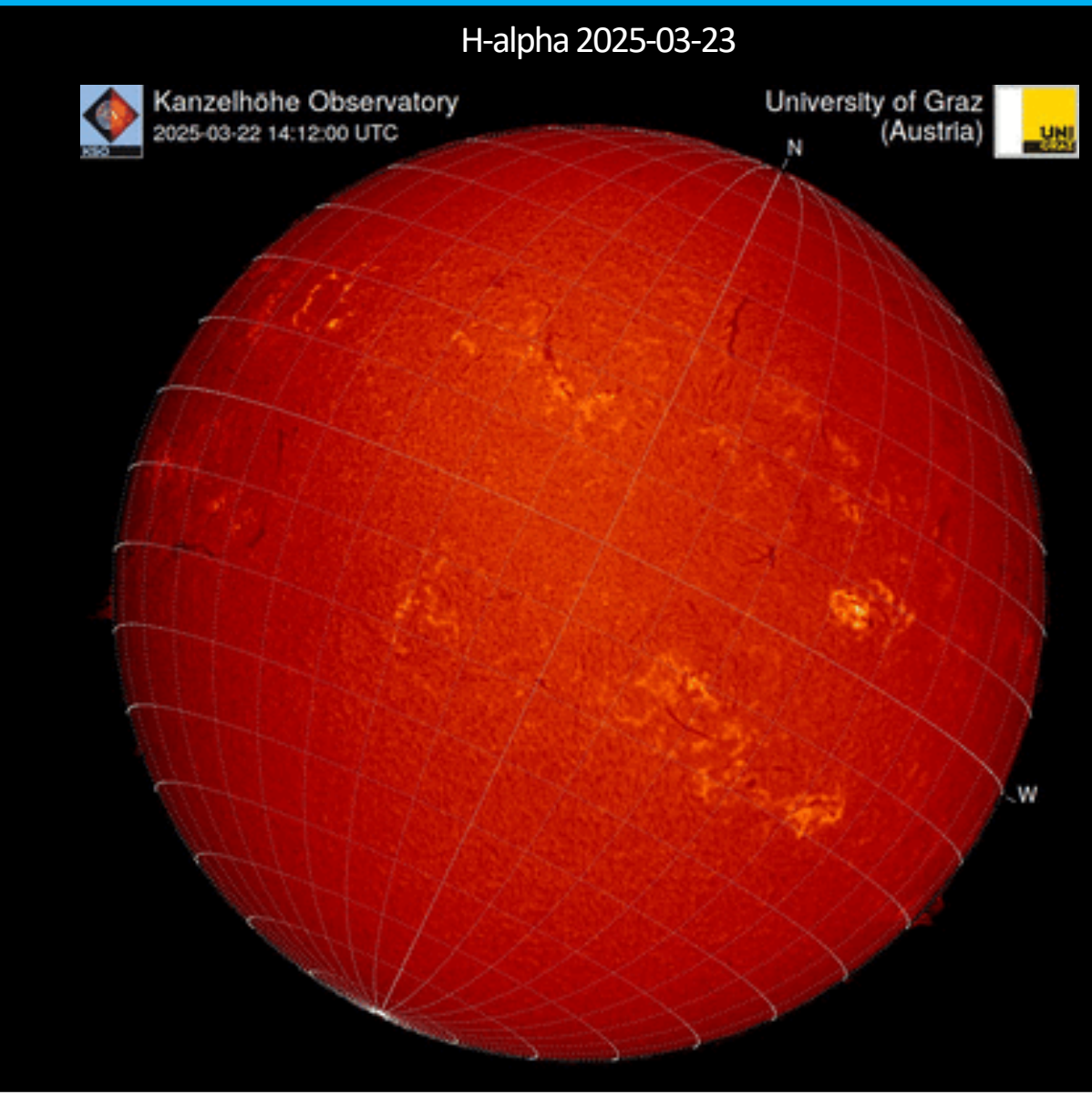
Filaments



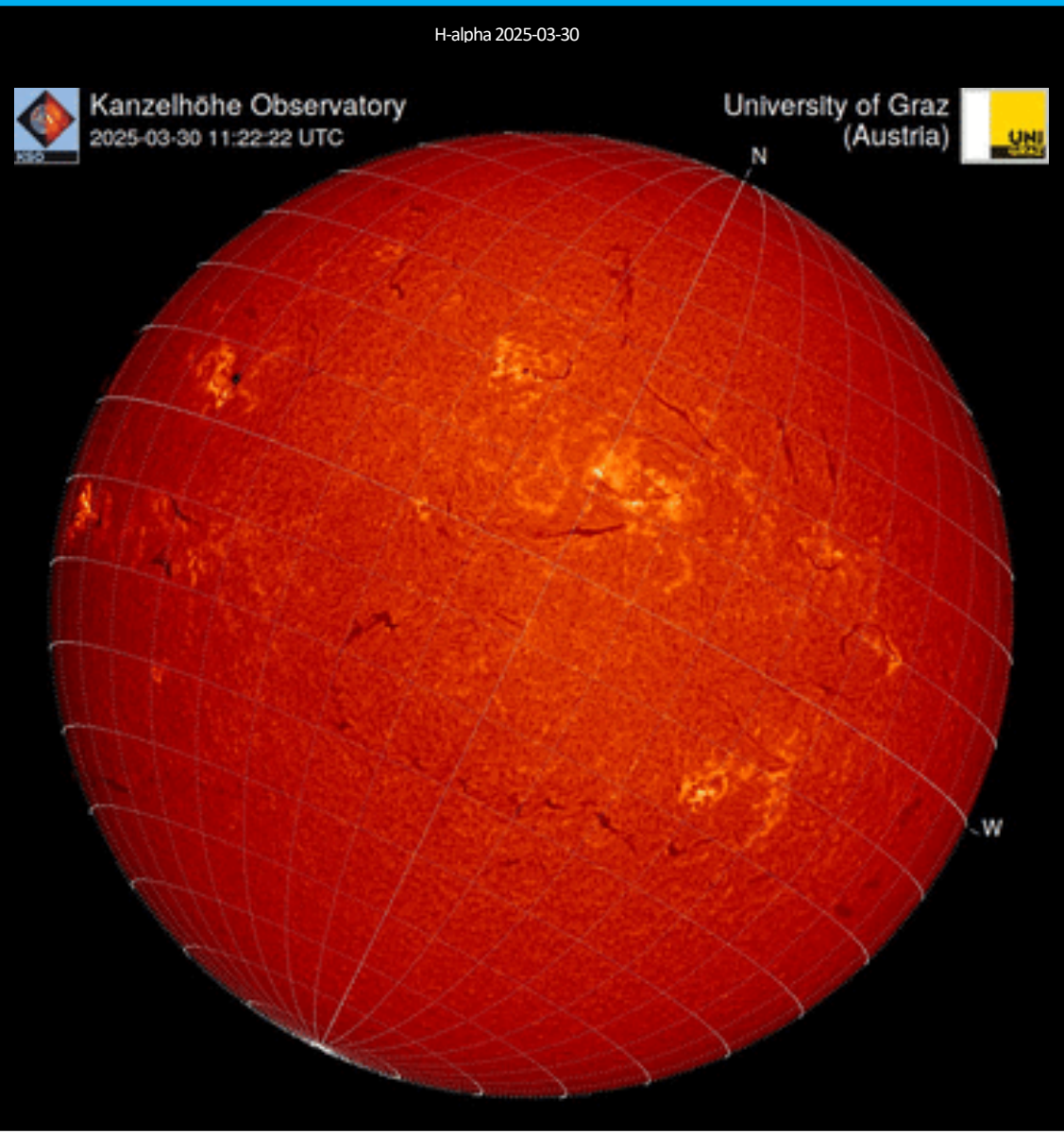


Filaments & Filament eruptions

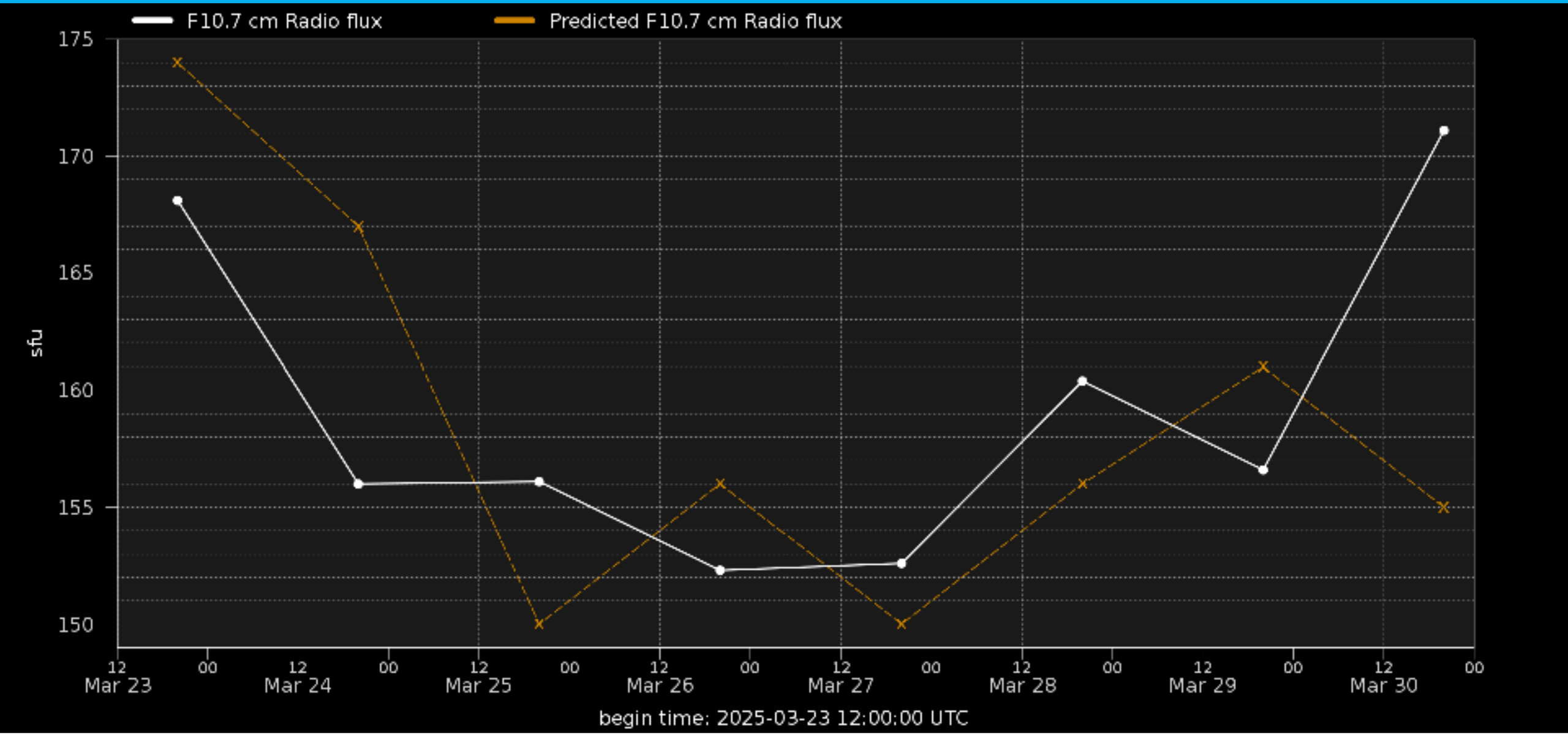
H-alpha 2025-03-23



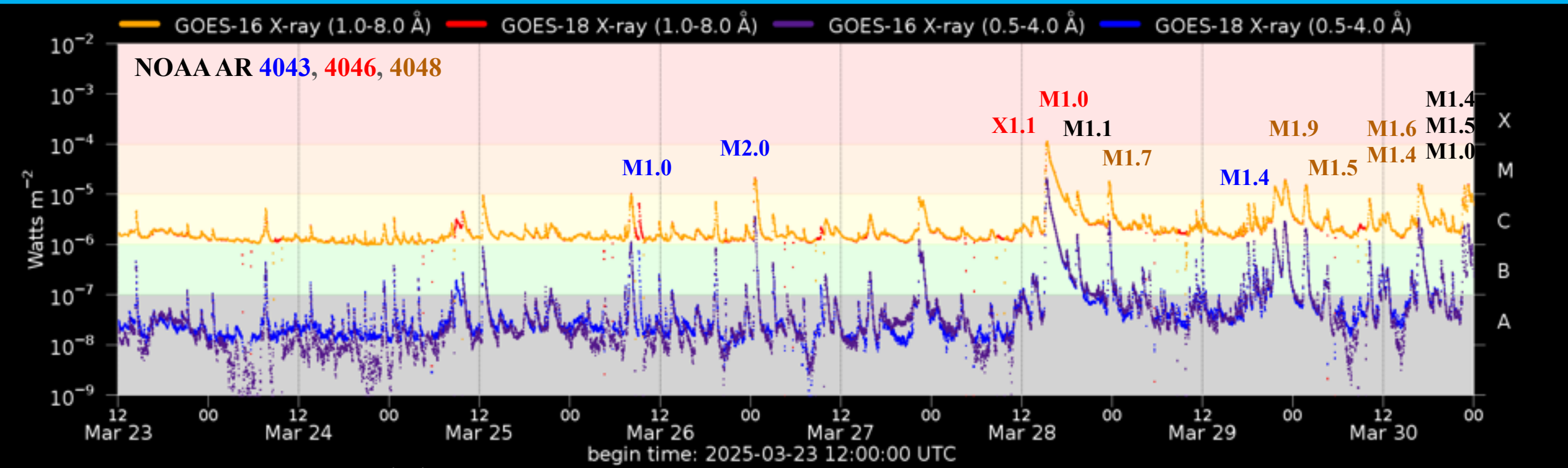
H-alpha 2025-03-30



Solar F10.7cm radio flux



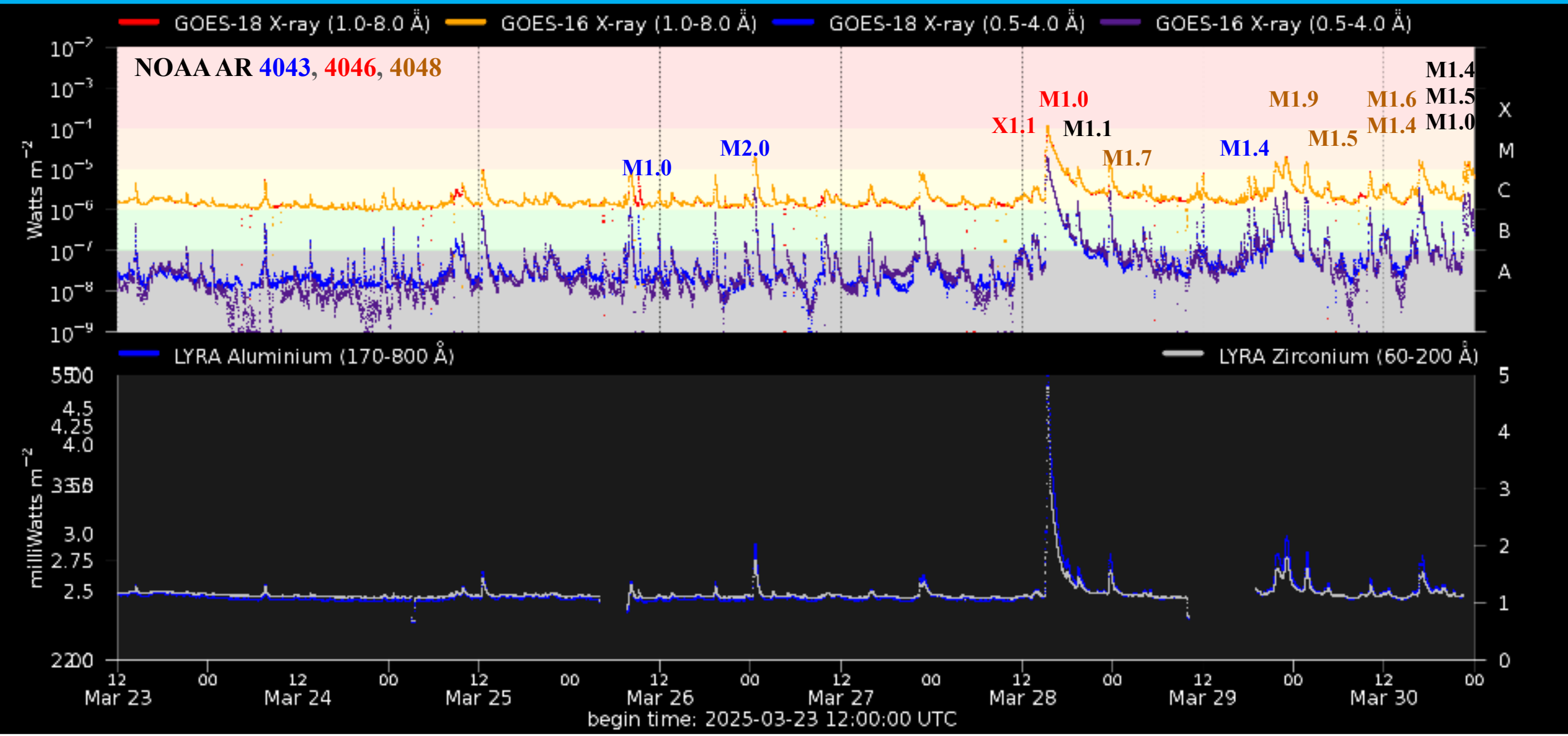
Flaring activity



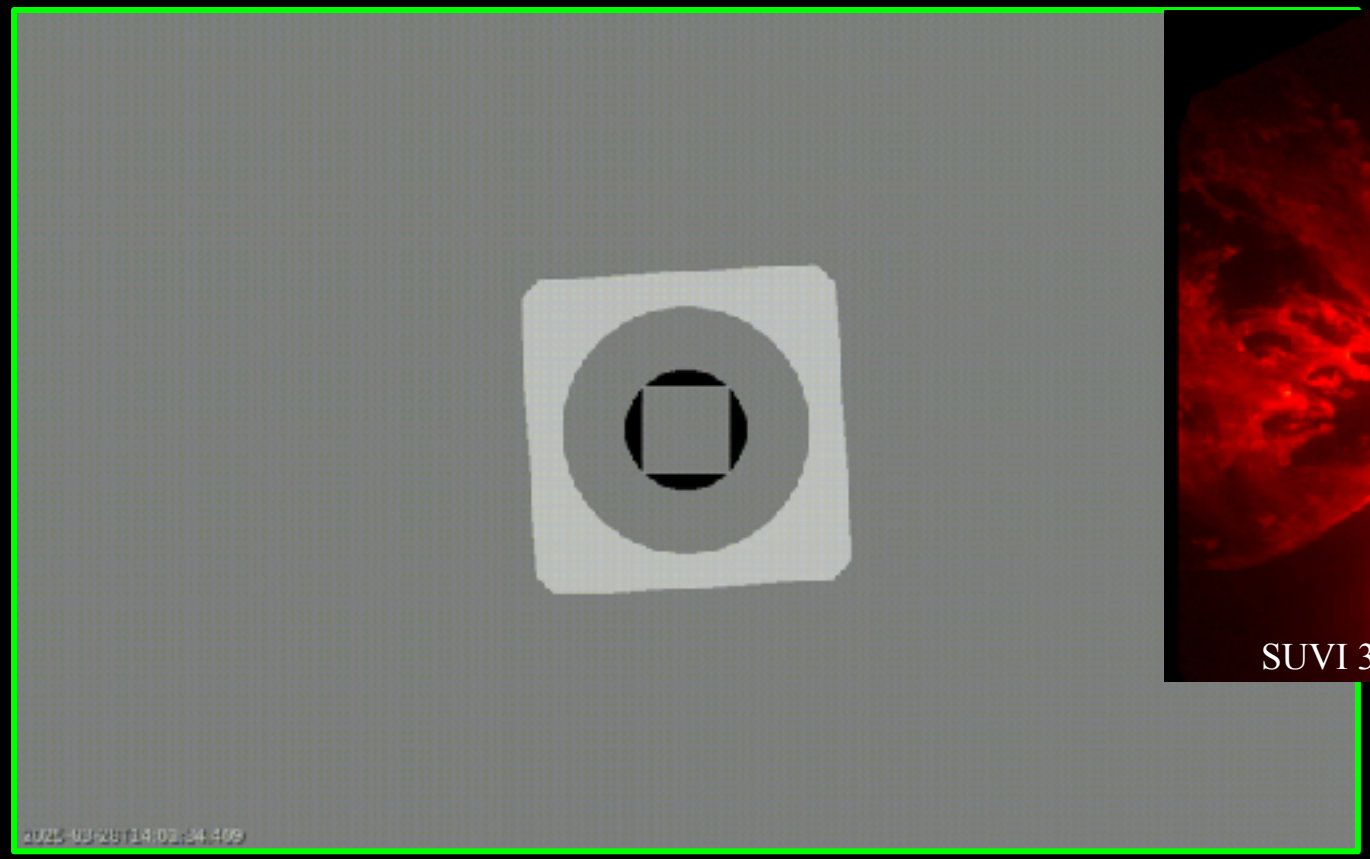
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

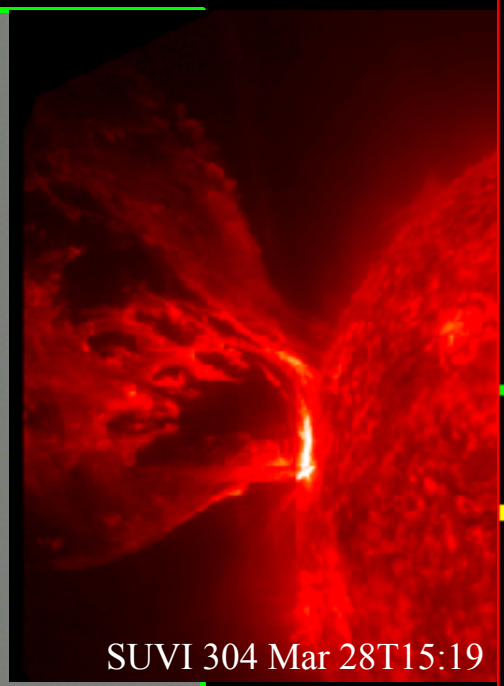
Issue date	2025-03-23	2025-03-24	2025-03-25	2025-03-26	2025-03-27	2025-03-28	2025-03-29	2025-03-30
Probability (%)	99|45|05	98|20|01	98|25|02	99|50|19	88|28|01	95|47|10	95|55|45	90|55|49
Observed (#)	04|00|00	08|00|00	06|01|00	09|01|00	02|00|00	06|02|01	12|04|00	02|03|00

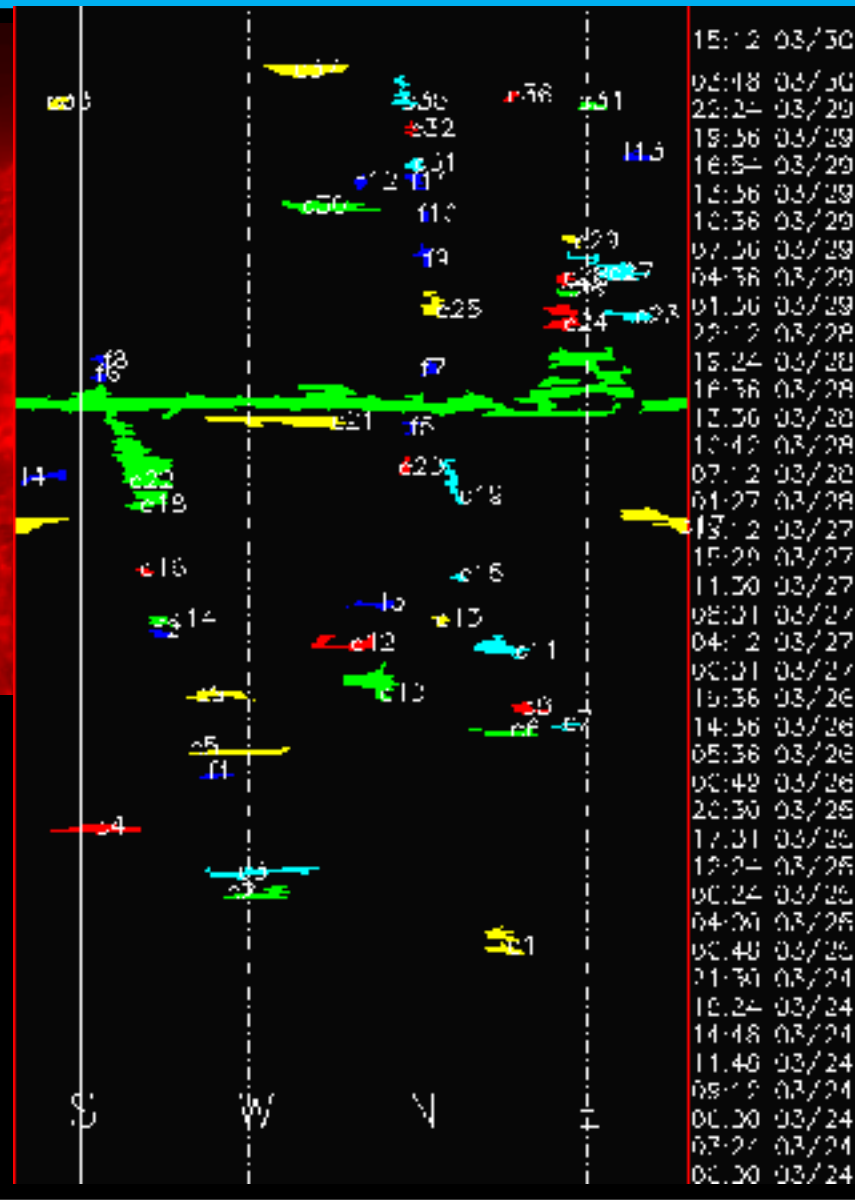
Solar X-Ray and UV flux



Coronal Mass Ejections





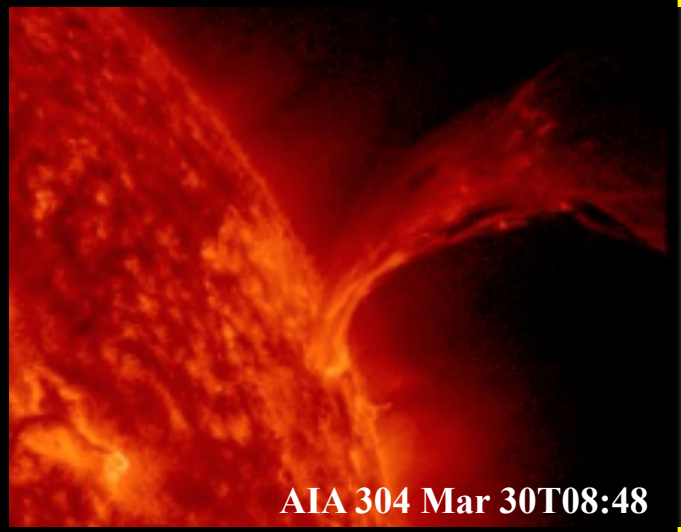


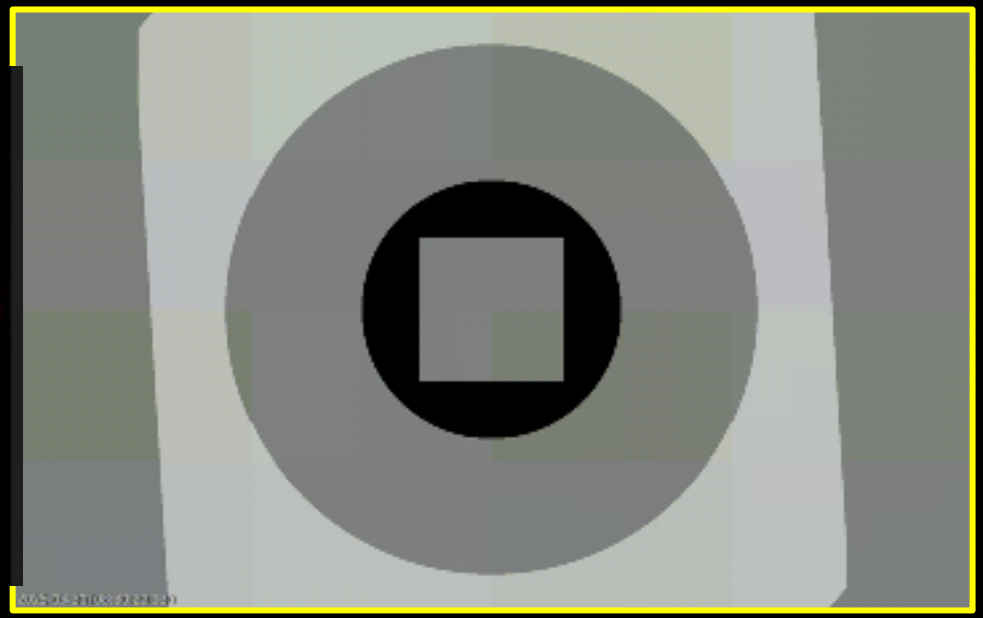
Observation: Partial Halo CME at 15:24 UTC on Mar 28.
Associated with X1.1 flare (peak: 15:21 UTC, AR 4046), N06 E83) and a nearby possible filament eruption.
Associated type IV radio emissions from 15:14 UTC.

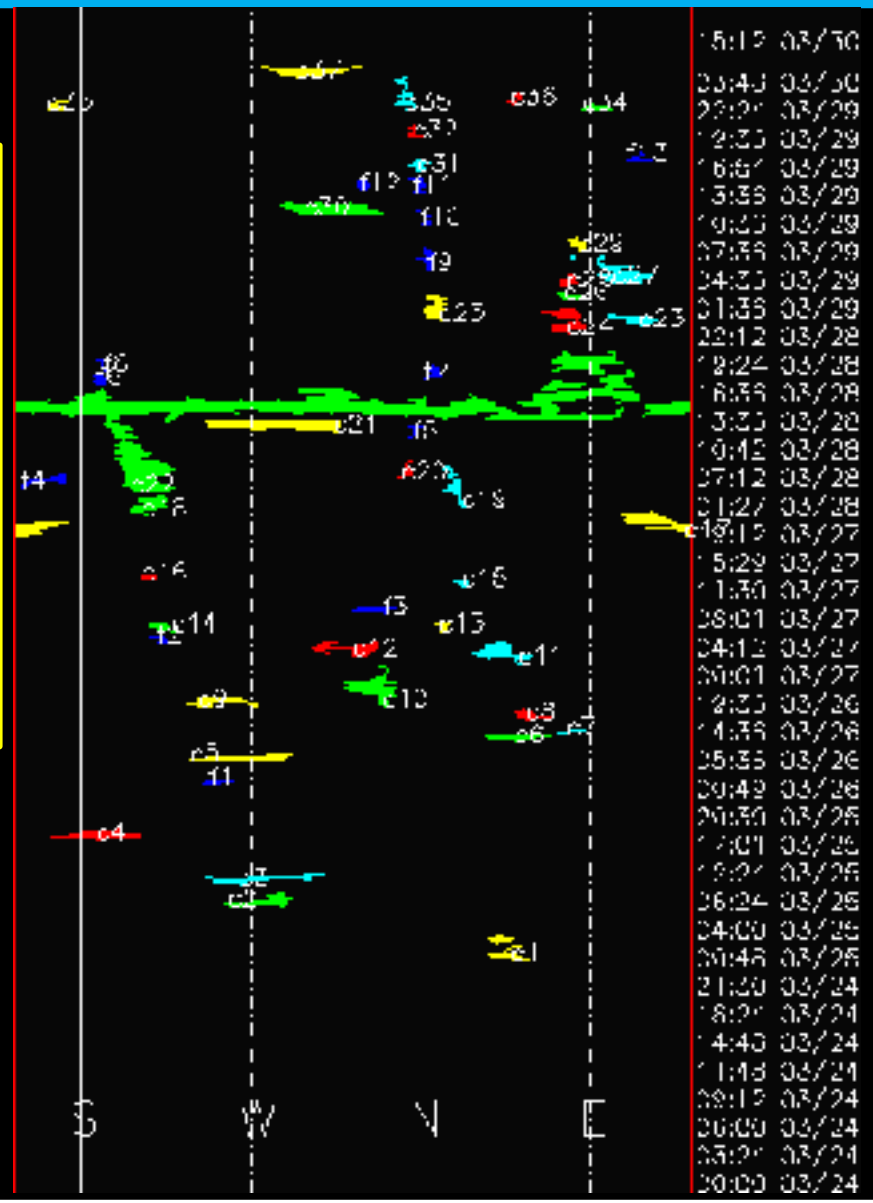
Prediction: Impact on Mar 31T00:00.

Impact not yet detected at Earth..

Coronal Mass Ejections







Observation: Narrow CME at 08:36 UTC on Mar 30. Associated to a filament eruption in the NW quadrant.

Prediction: Not expected at Earth

Solar Wind and

Geomagnetic Activity

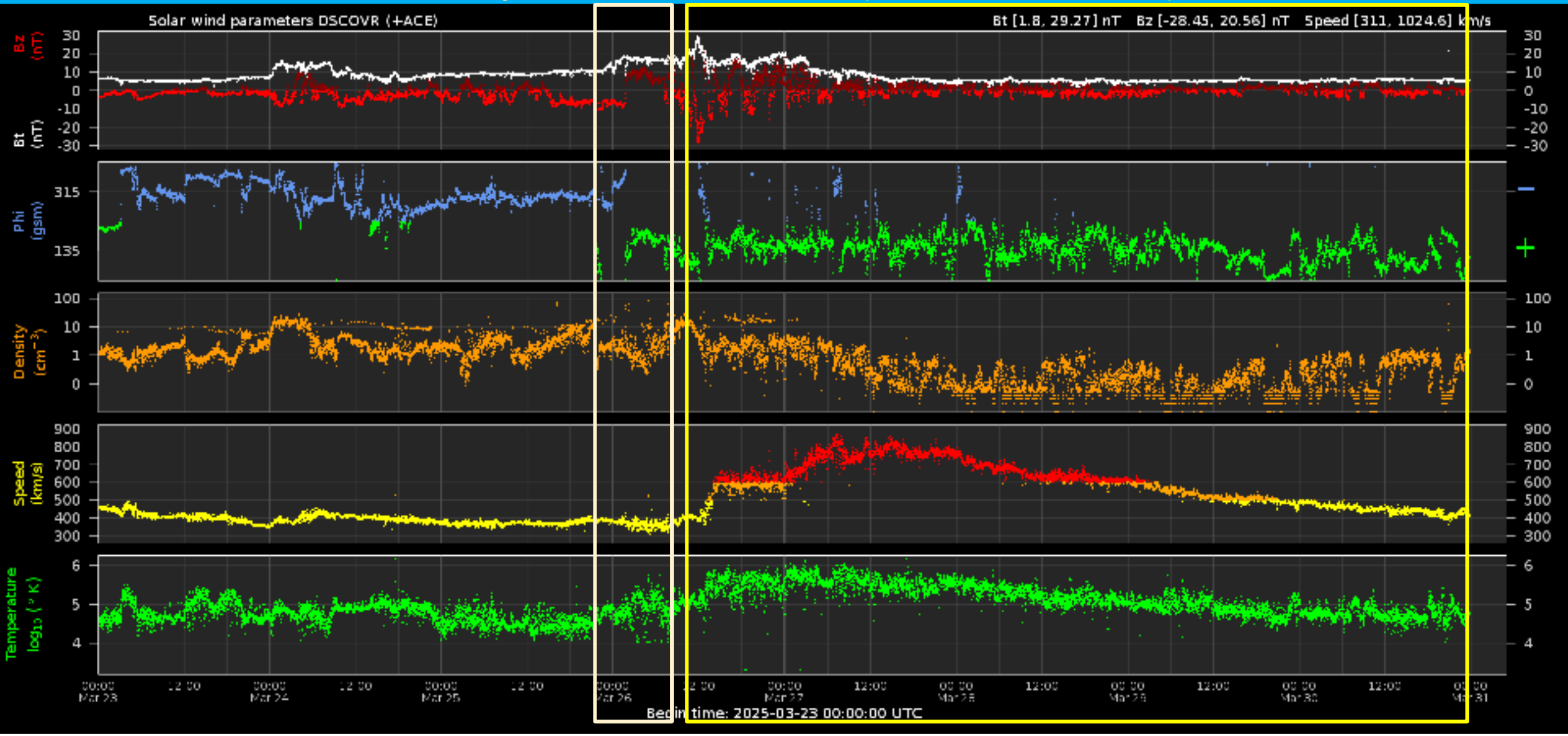
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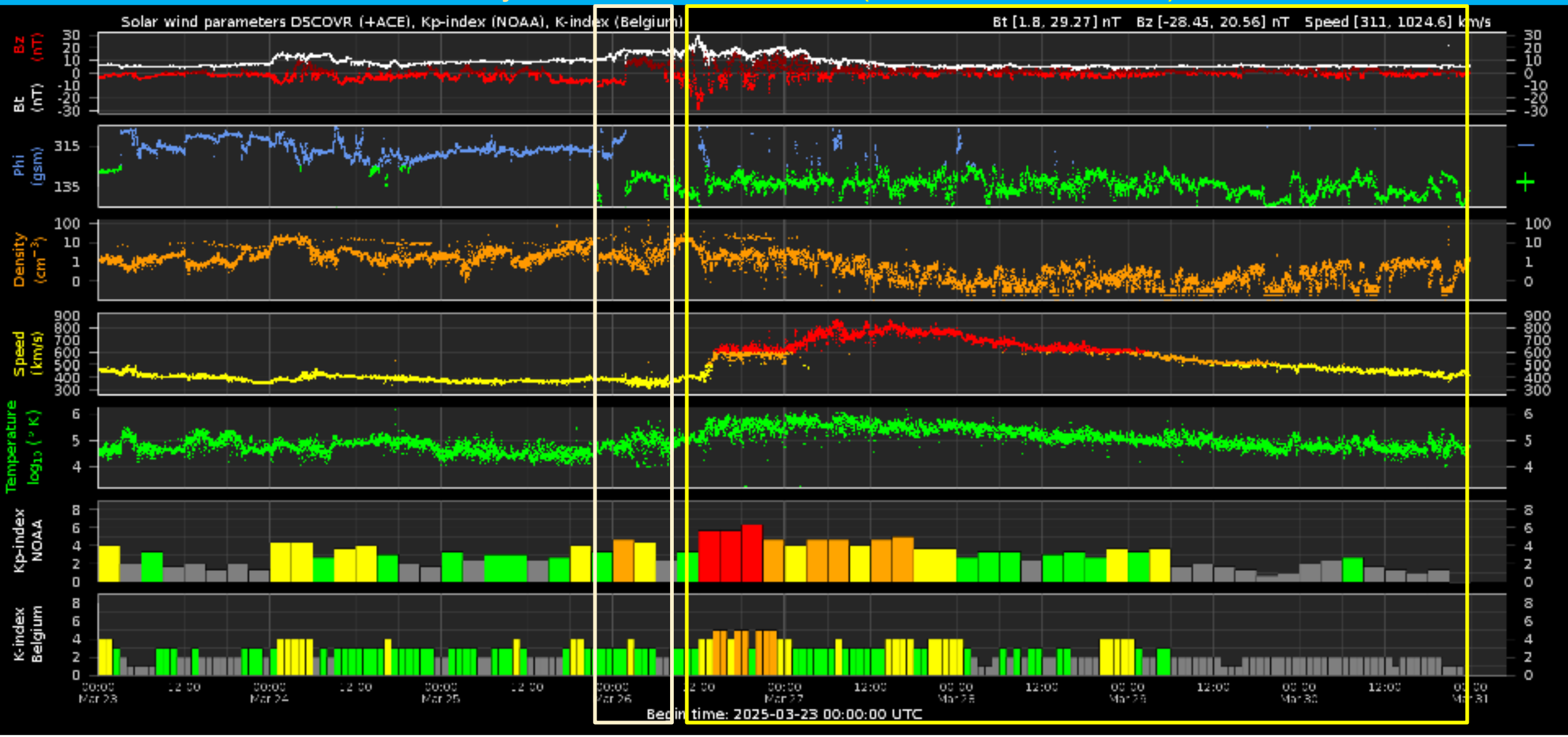
Solar wind parameters

Possibly a weak CME?

HSS - CH (crossed CM from Mar 22-28)



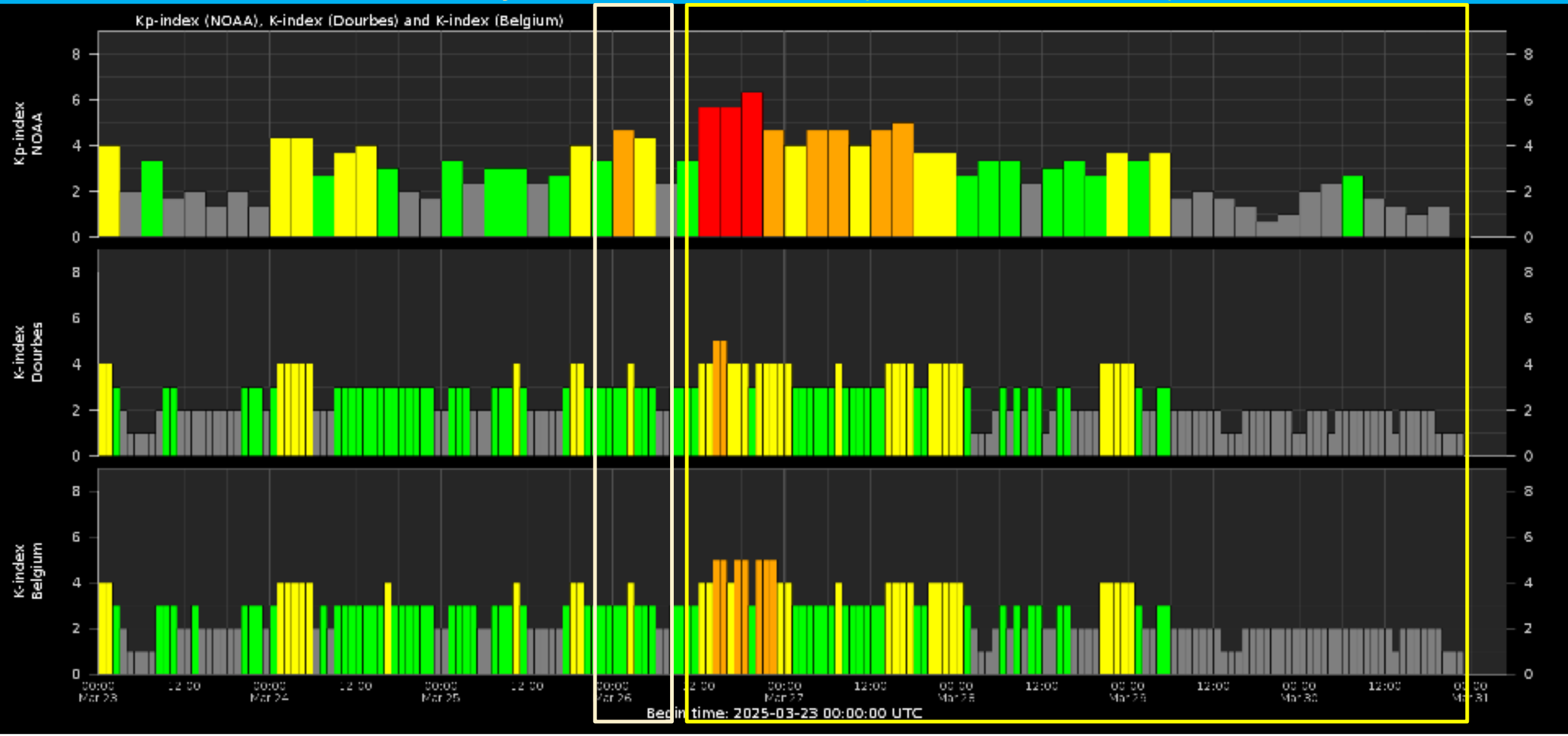
Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)

Possibly a weak CME?

HSS - CH (crossed CM from Mar 22-28)

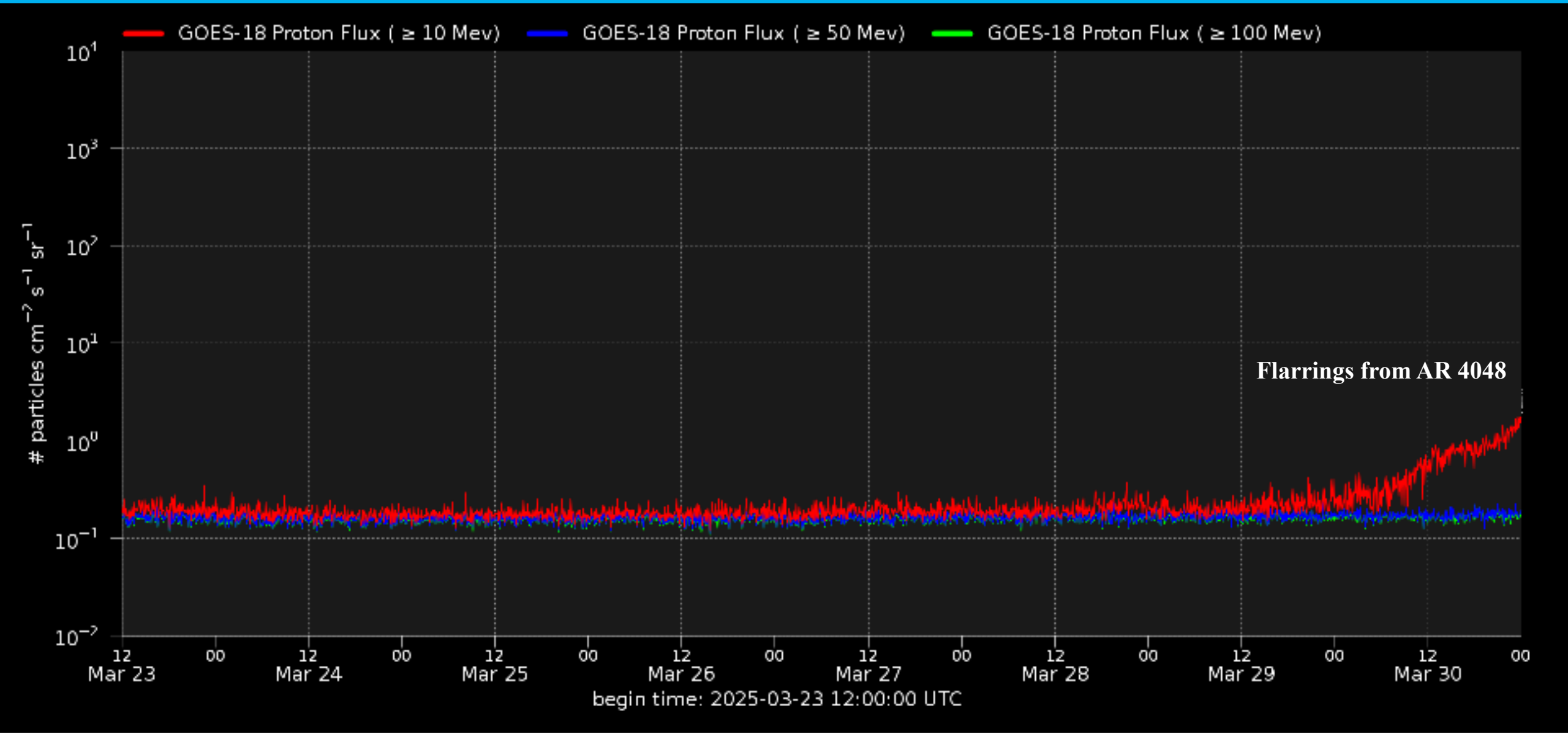


Energetic Particles

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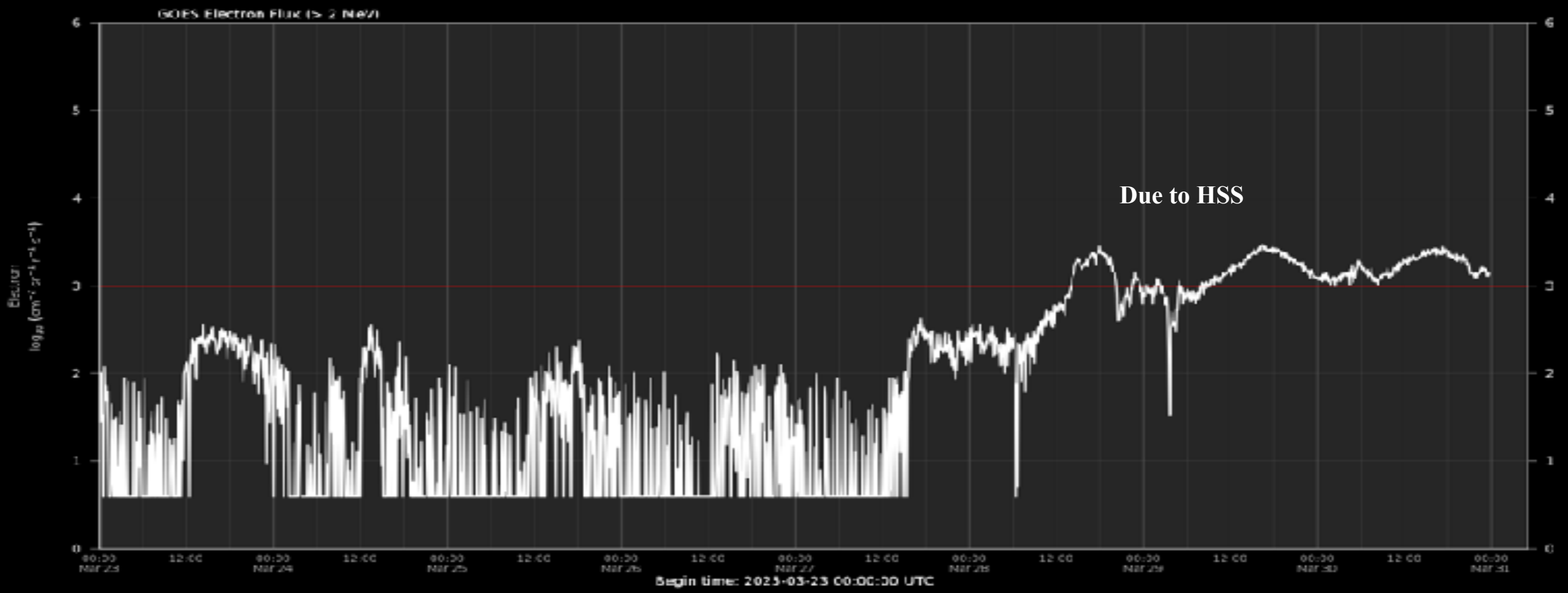
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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

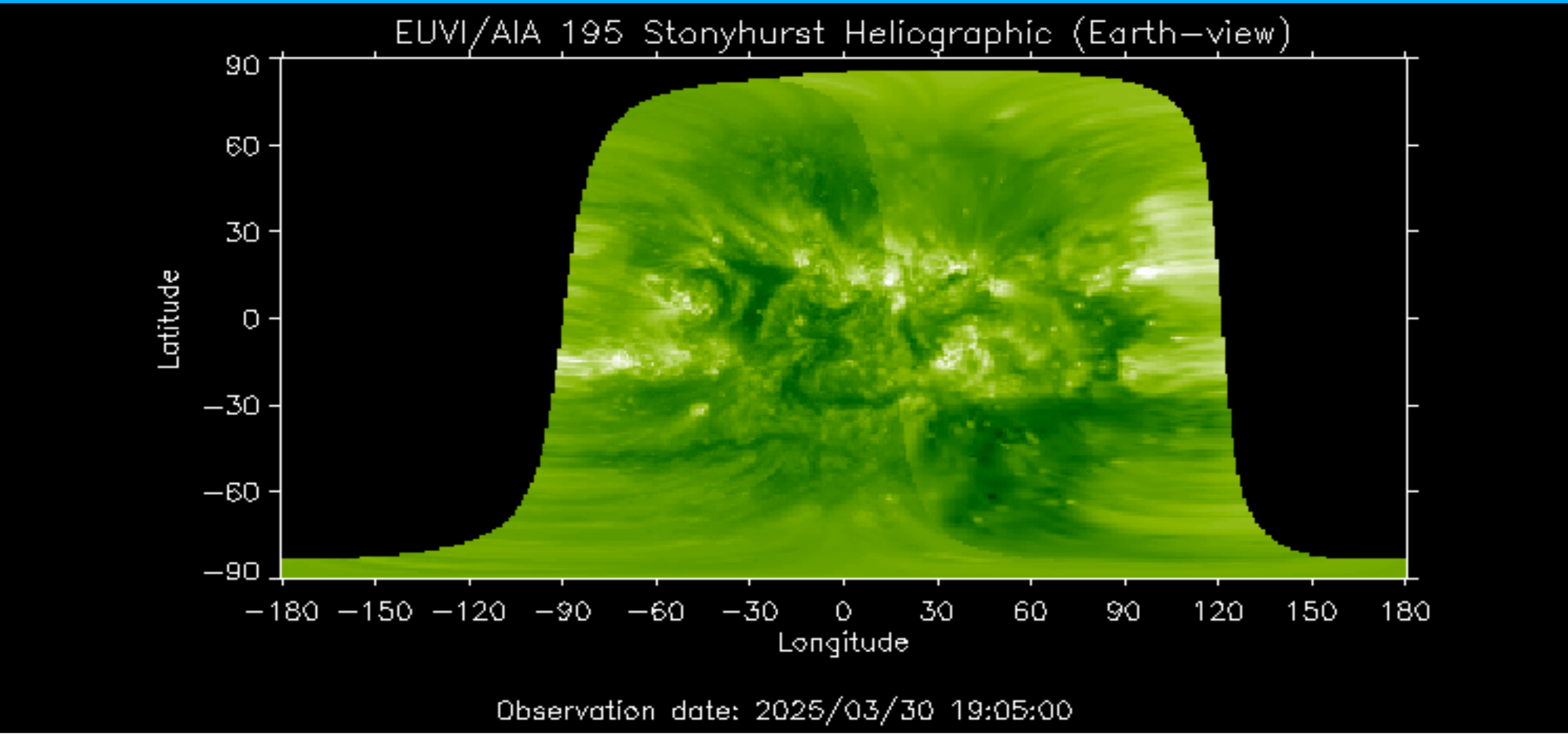


Outlook

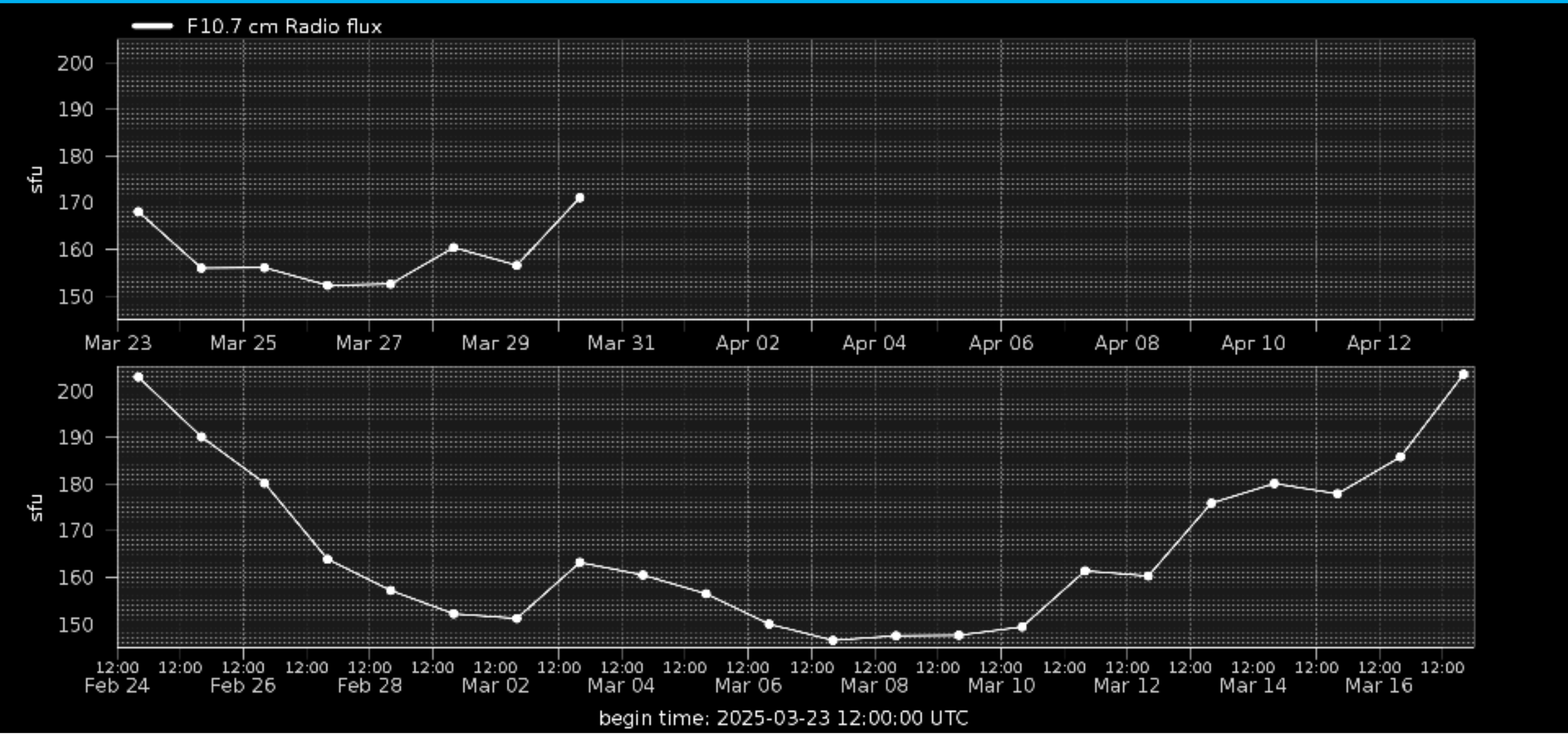
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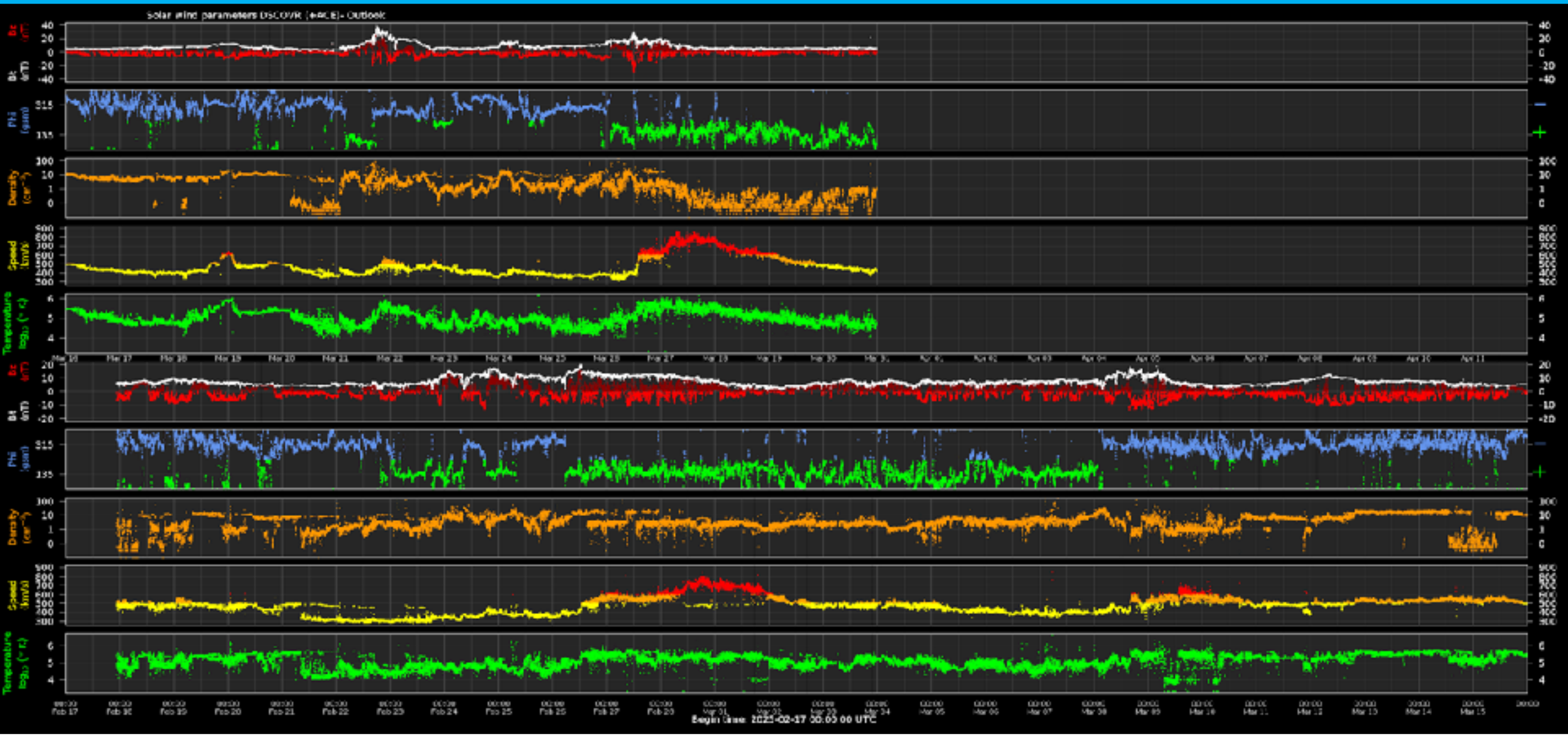
Outlook: Solar activity



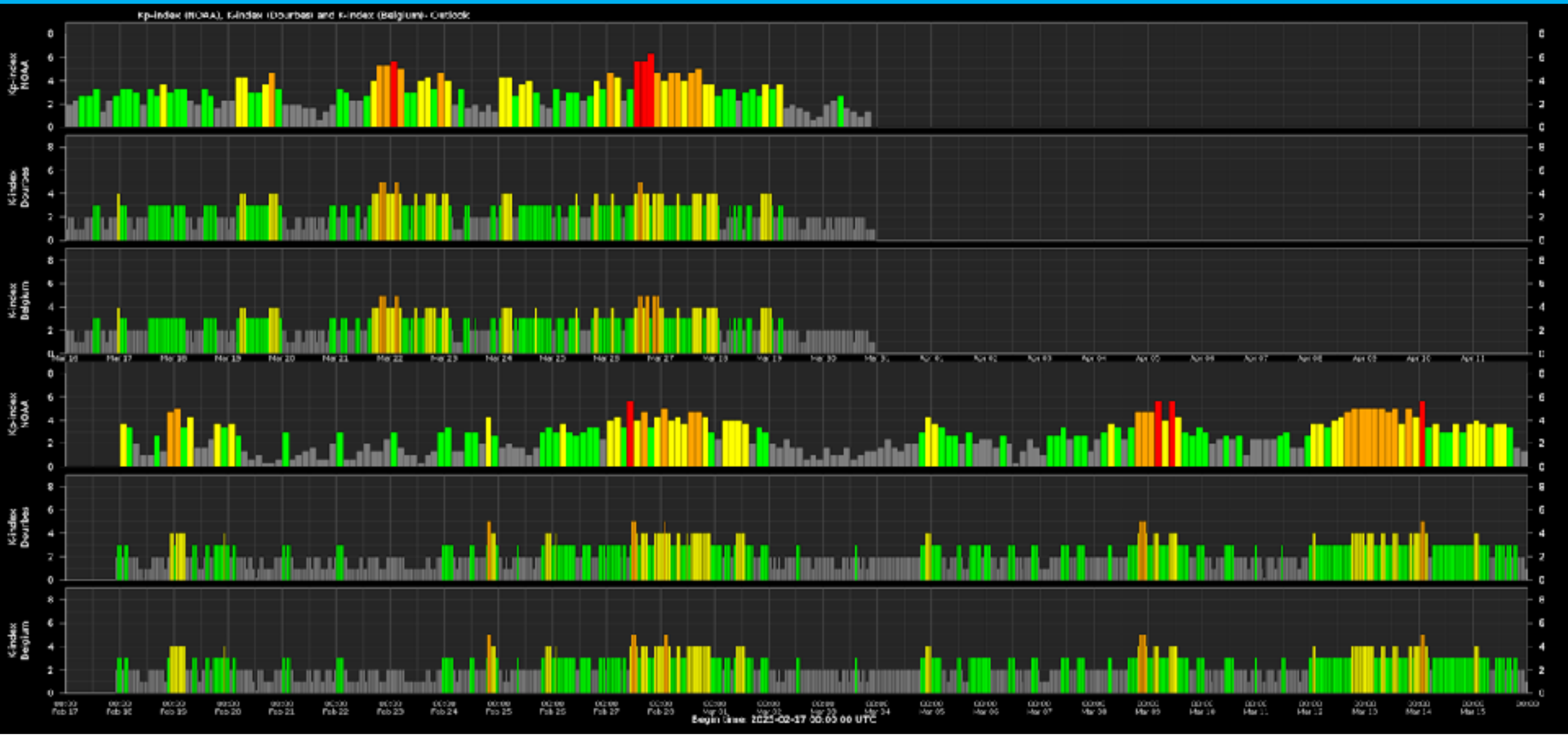
Outlook: Solar F10.7cm radio flux



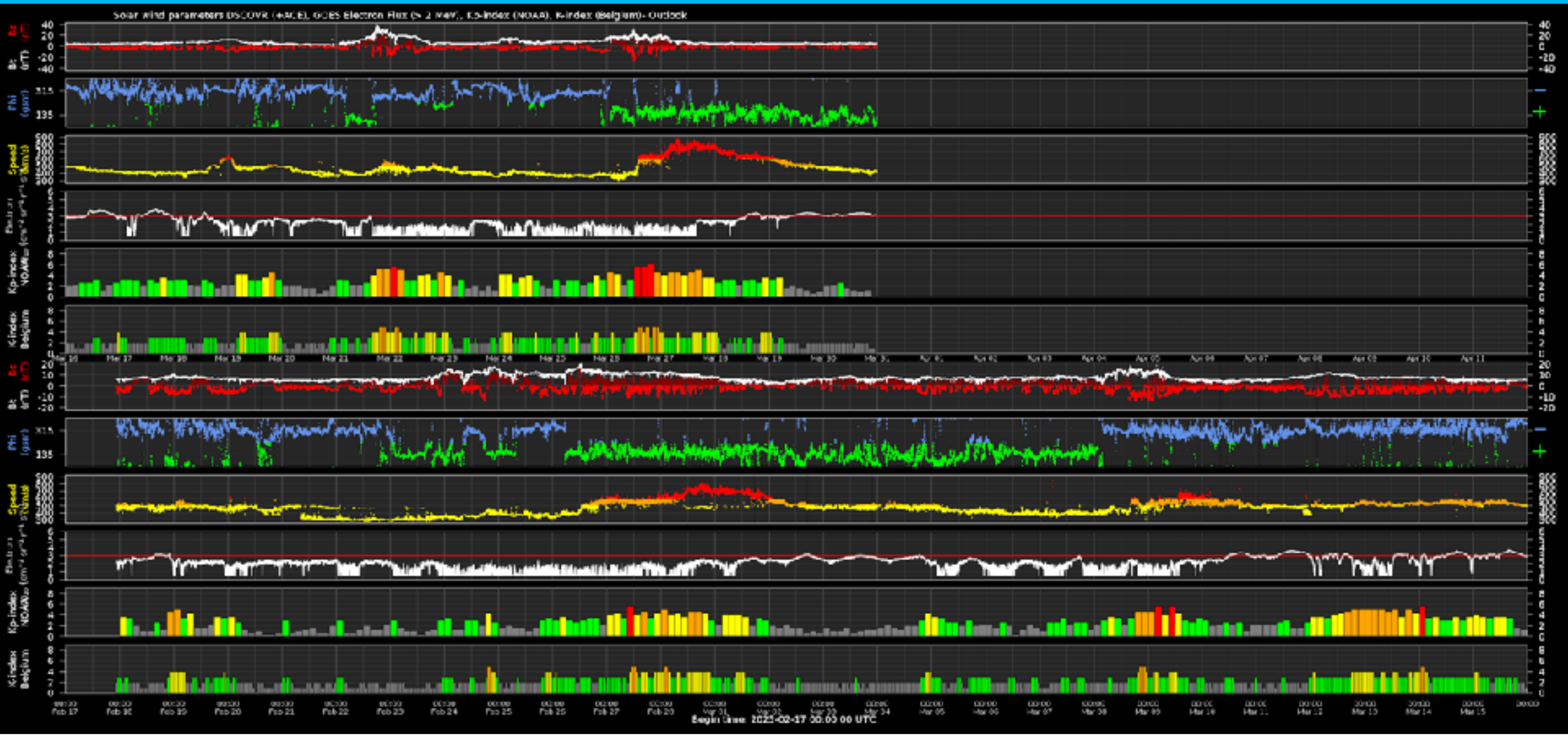
Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



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Pecasus related events

Several advisories for scintillation, VTEC, PSD, and SWF.

SIDC Space Weather Briefing

See you at our next briefing!

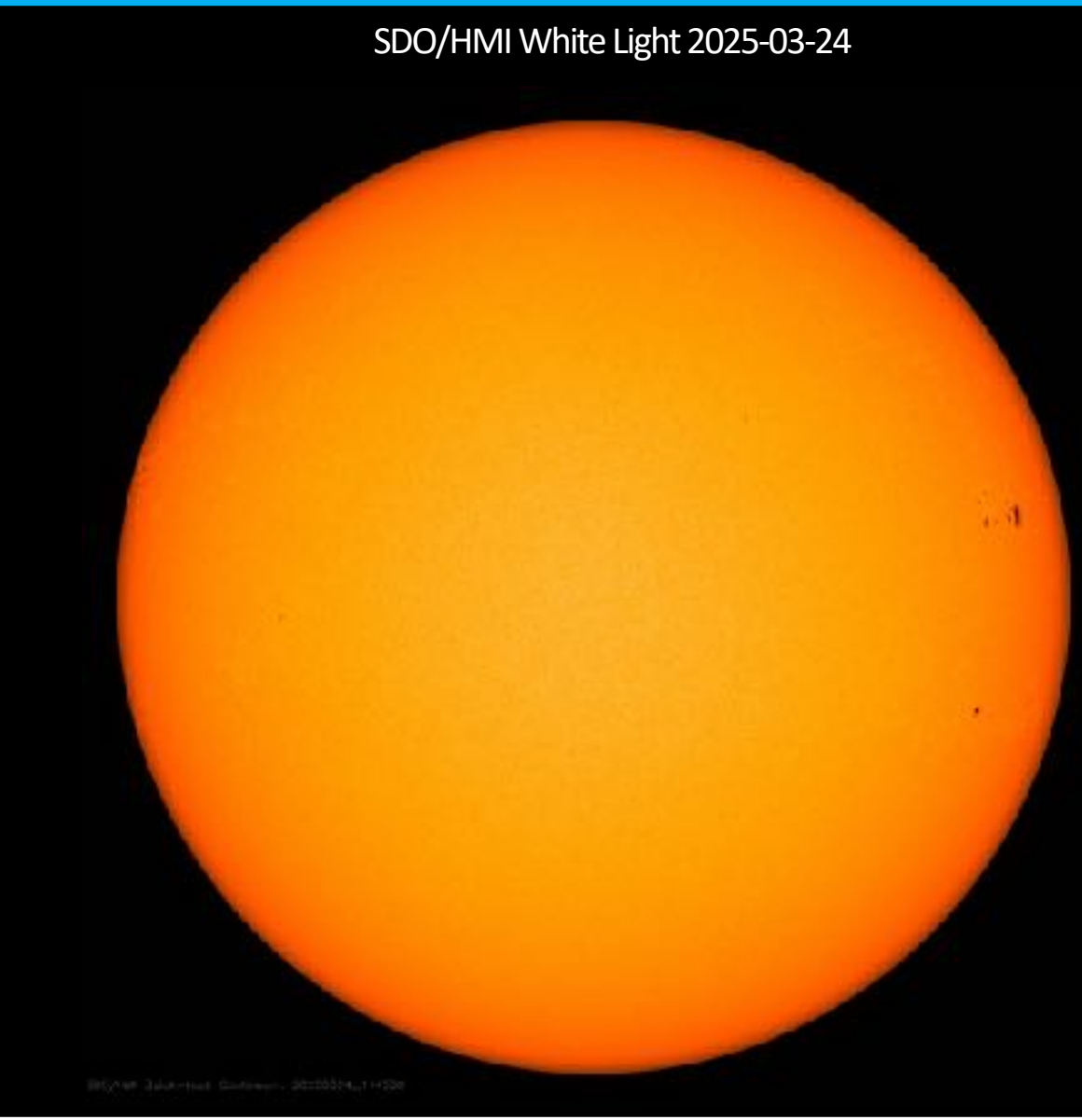
Or visit us at www.sidc.be

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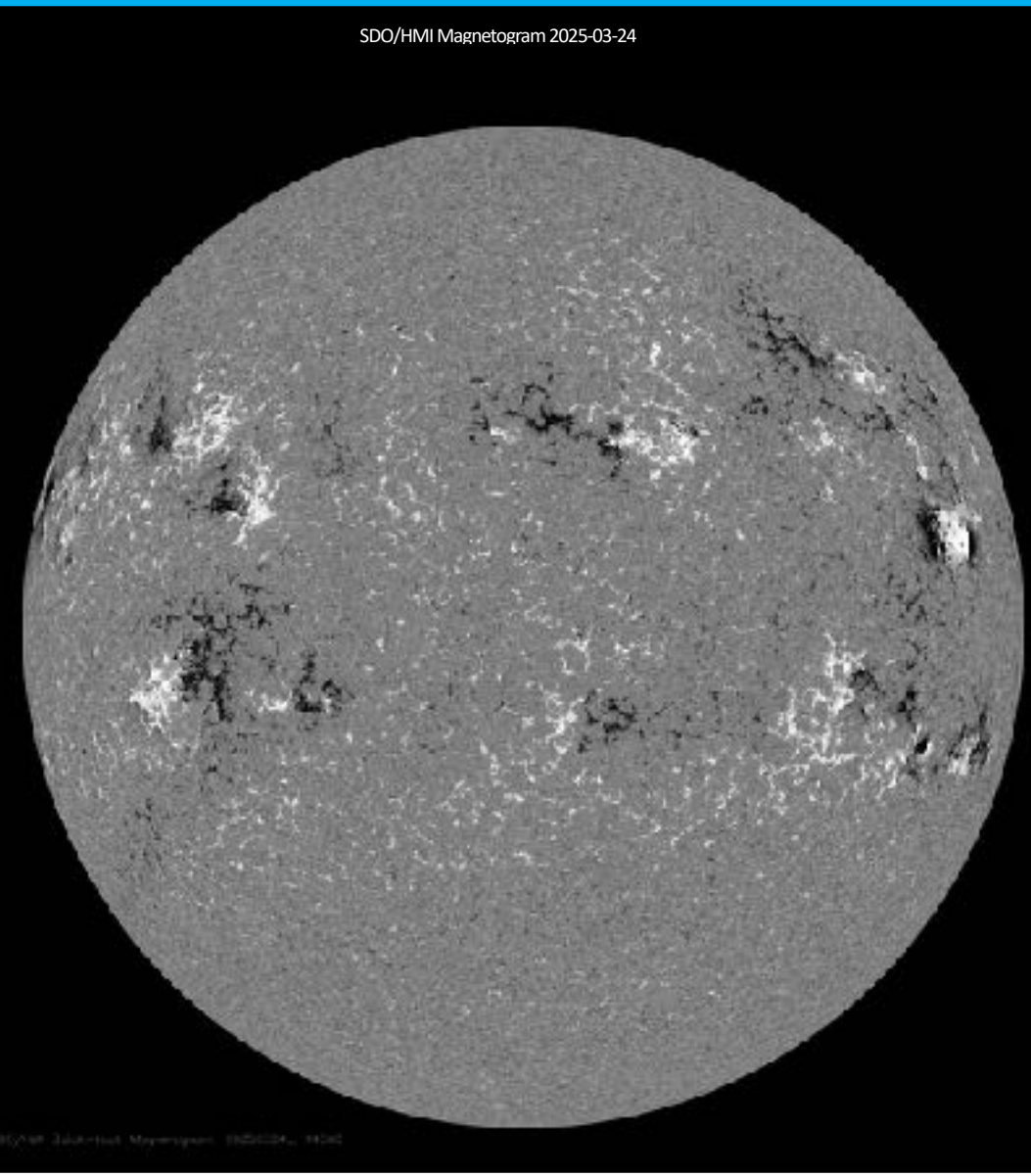
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Solar active regions

SDO/HMI White Light 2025-03-24

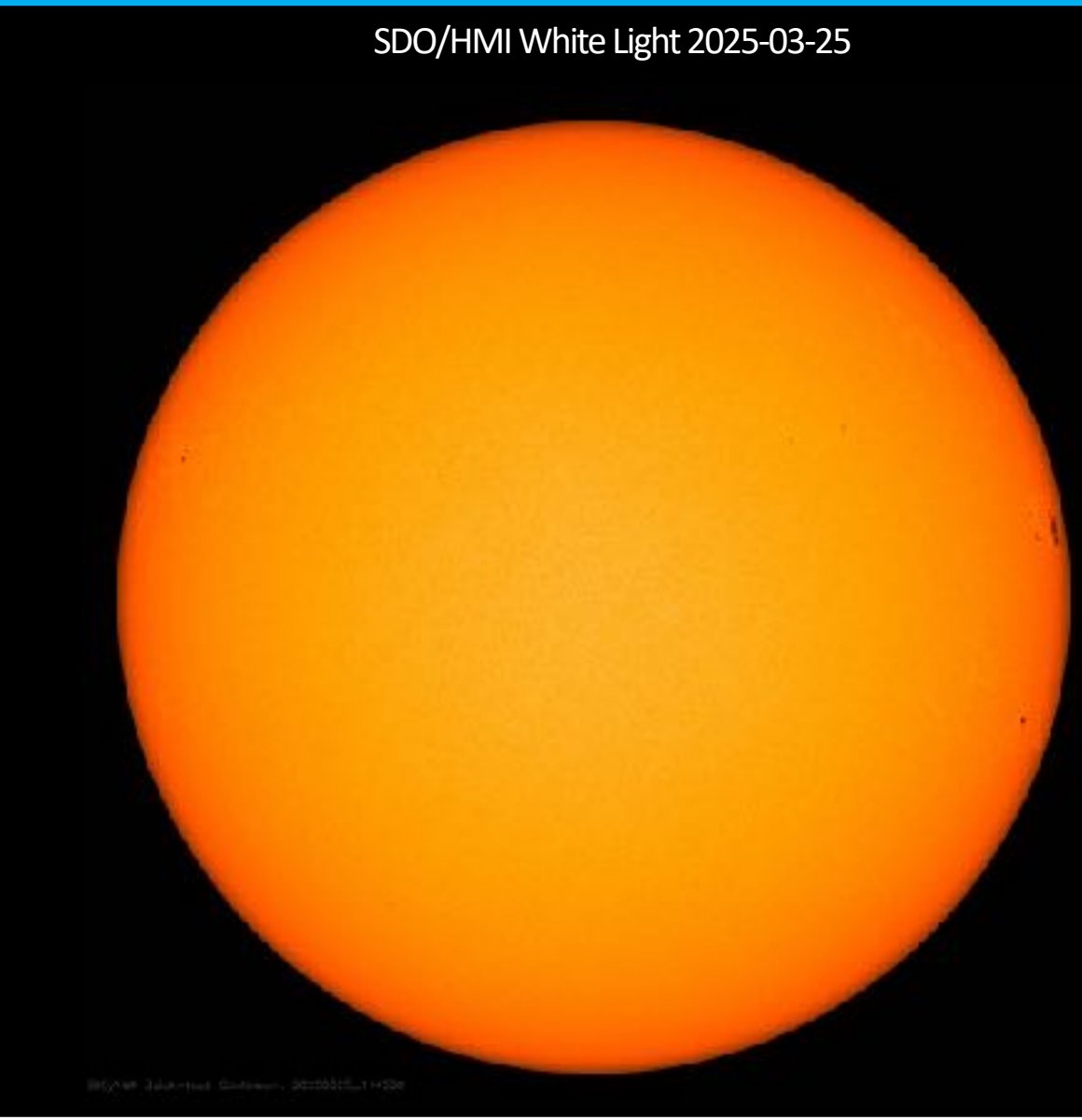


SDO/HMI Magnetogram 2025-03-24

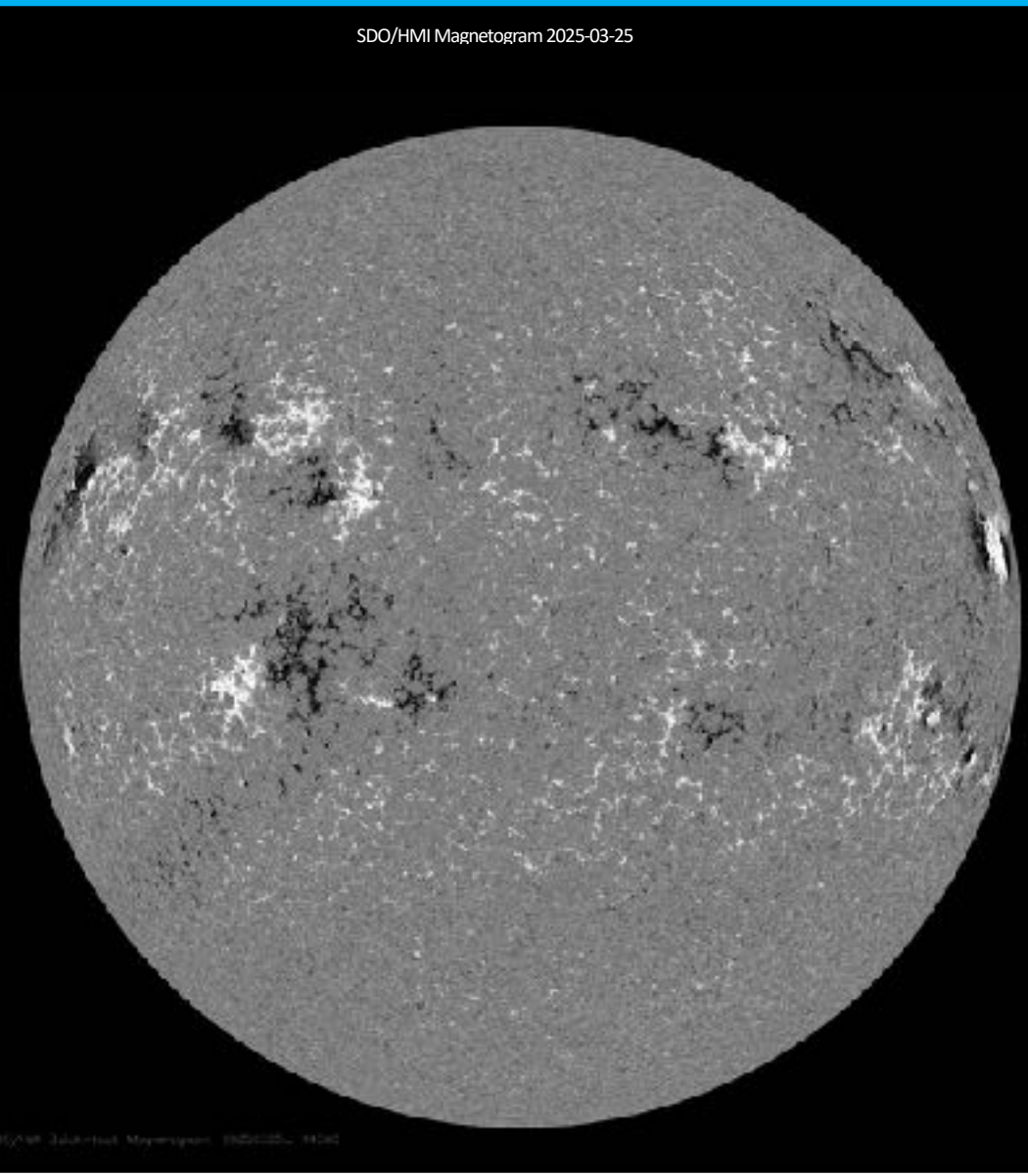


Solar active regions

SDO/HMI White Light 2025-03-25

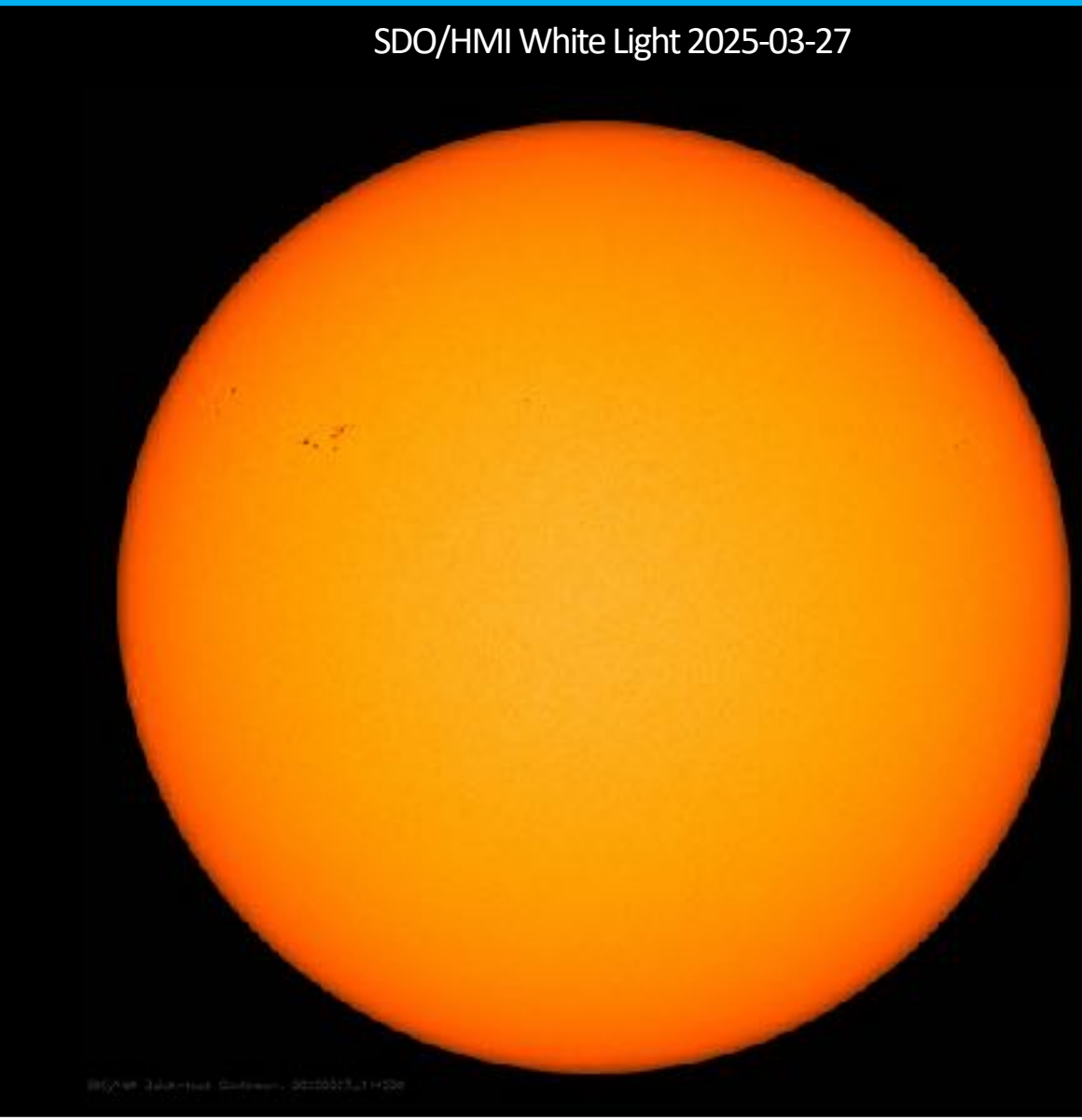


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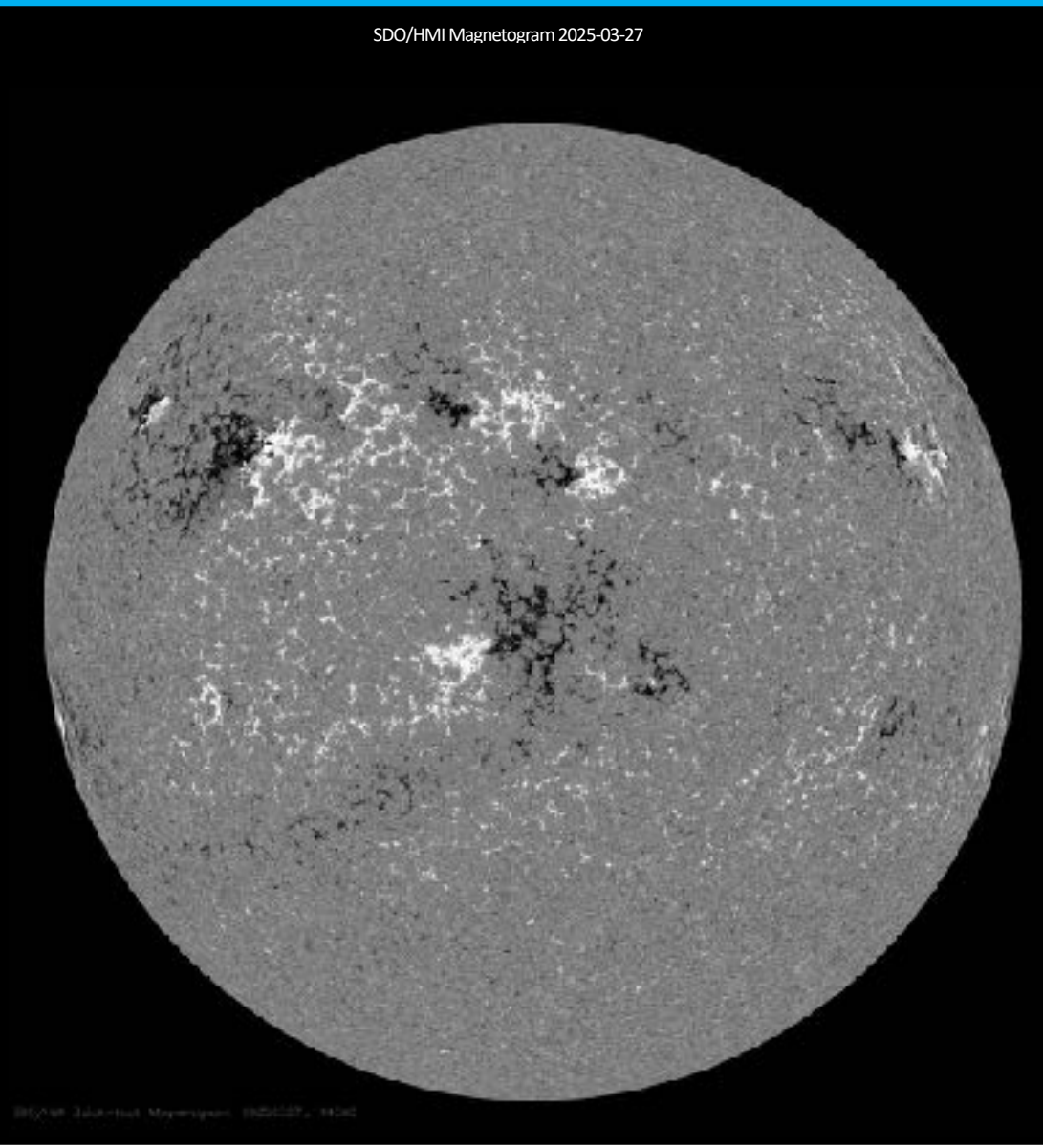


Solar active regions

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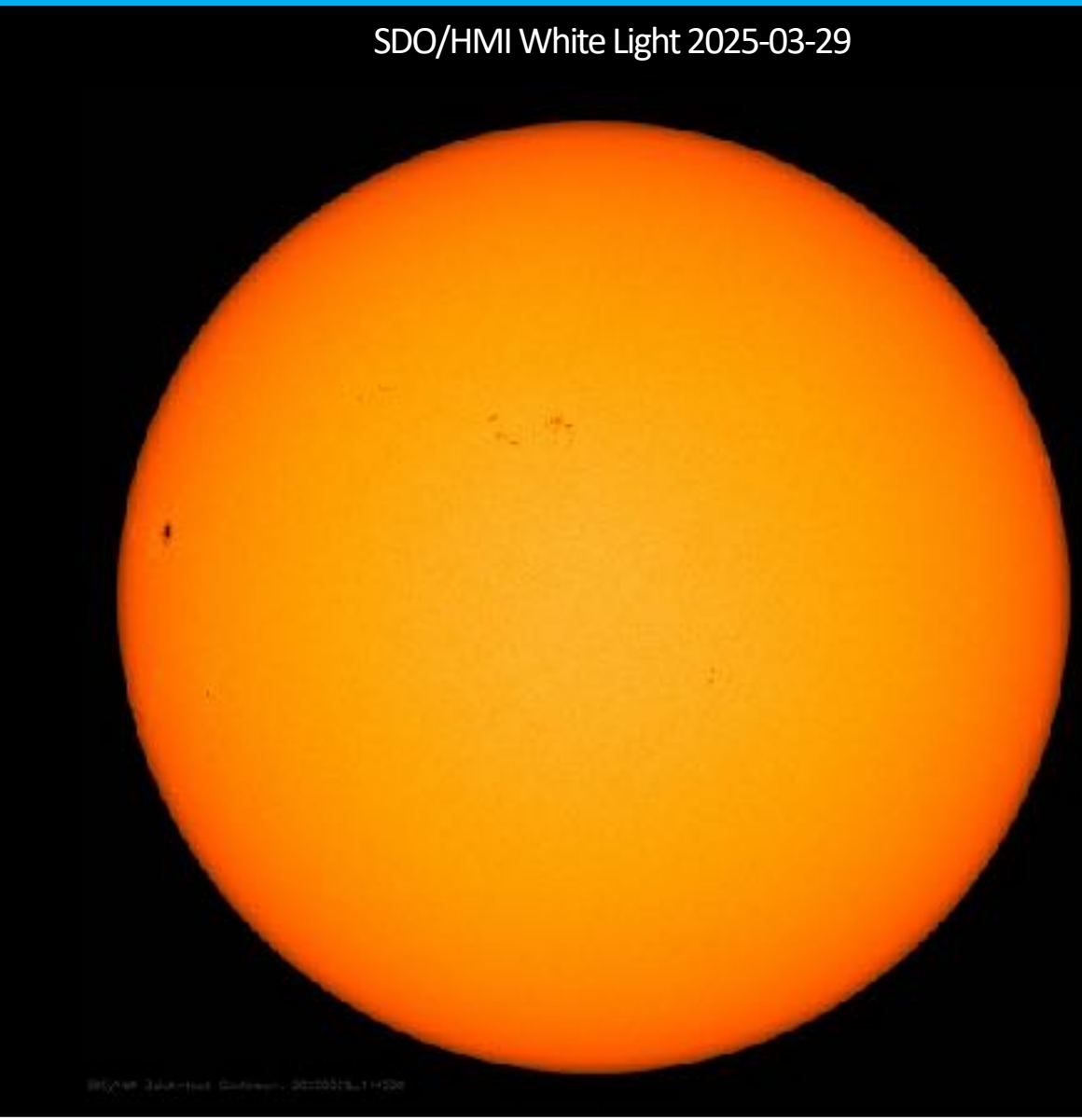


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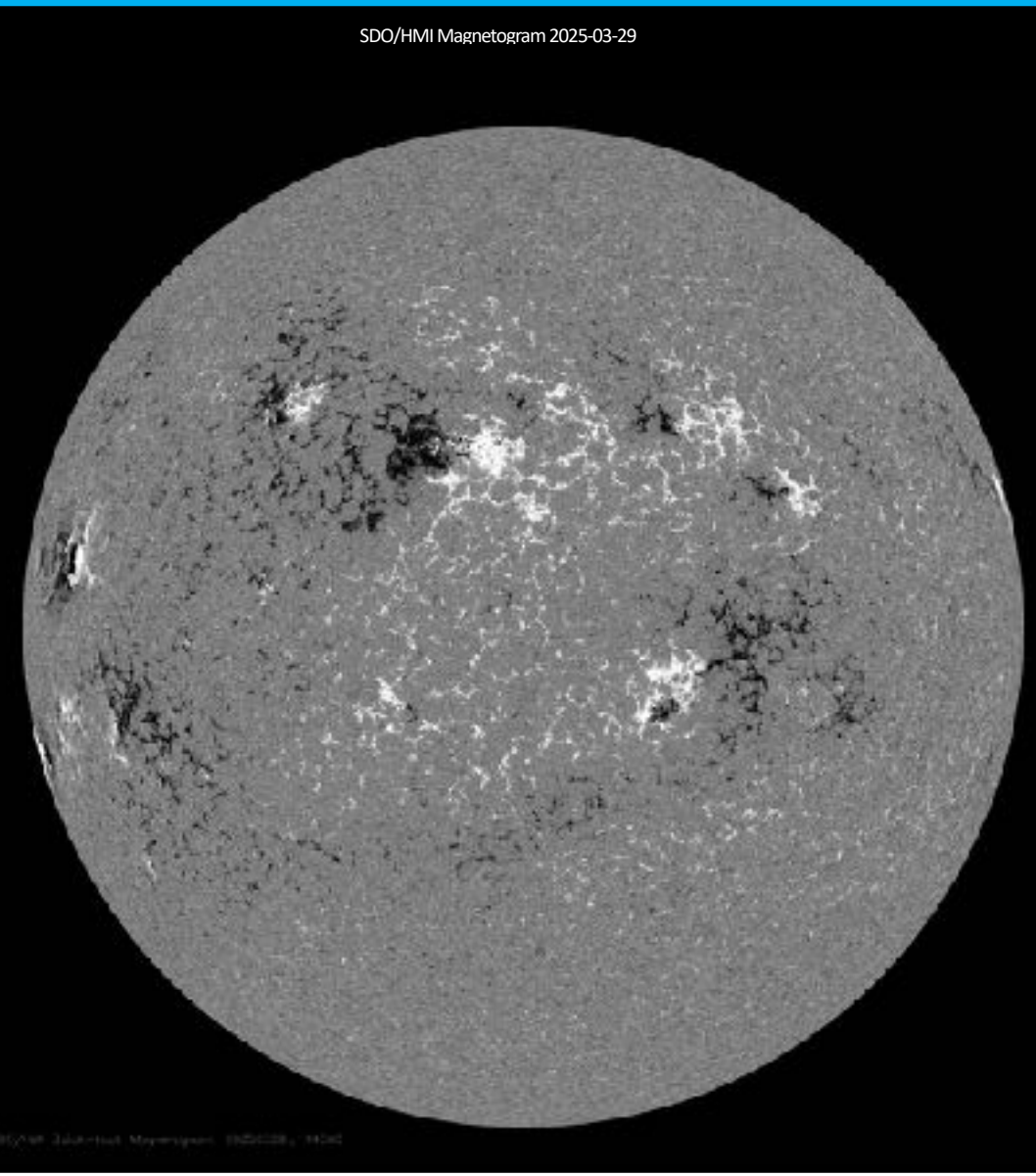


Solar active regions

SDO/HMI White Light 2025-03-29

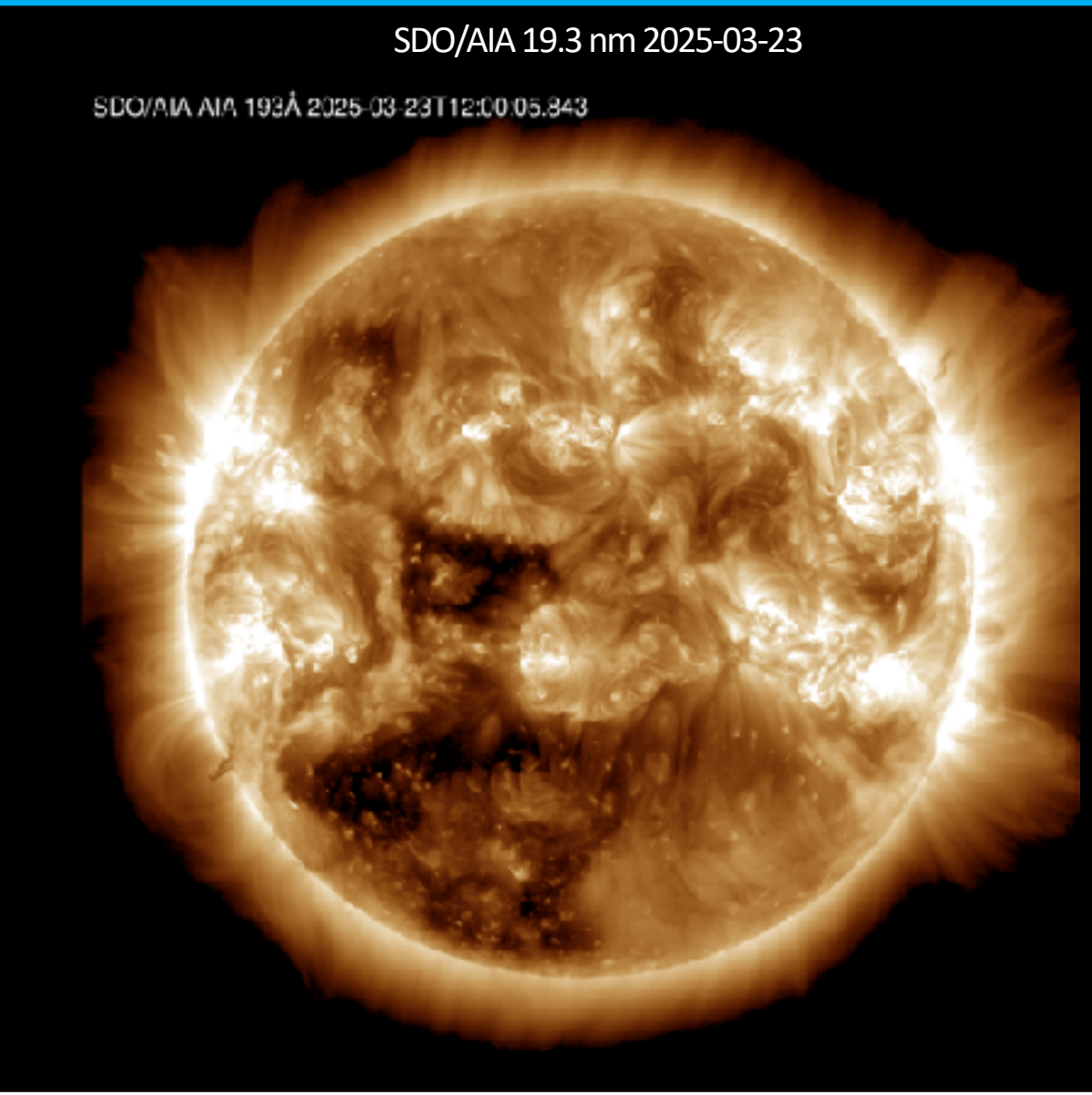


SDO/HMI Magnetogram 2025-03-29

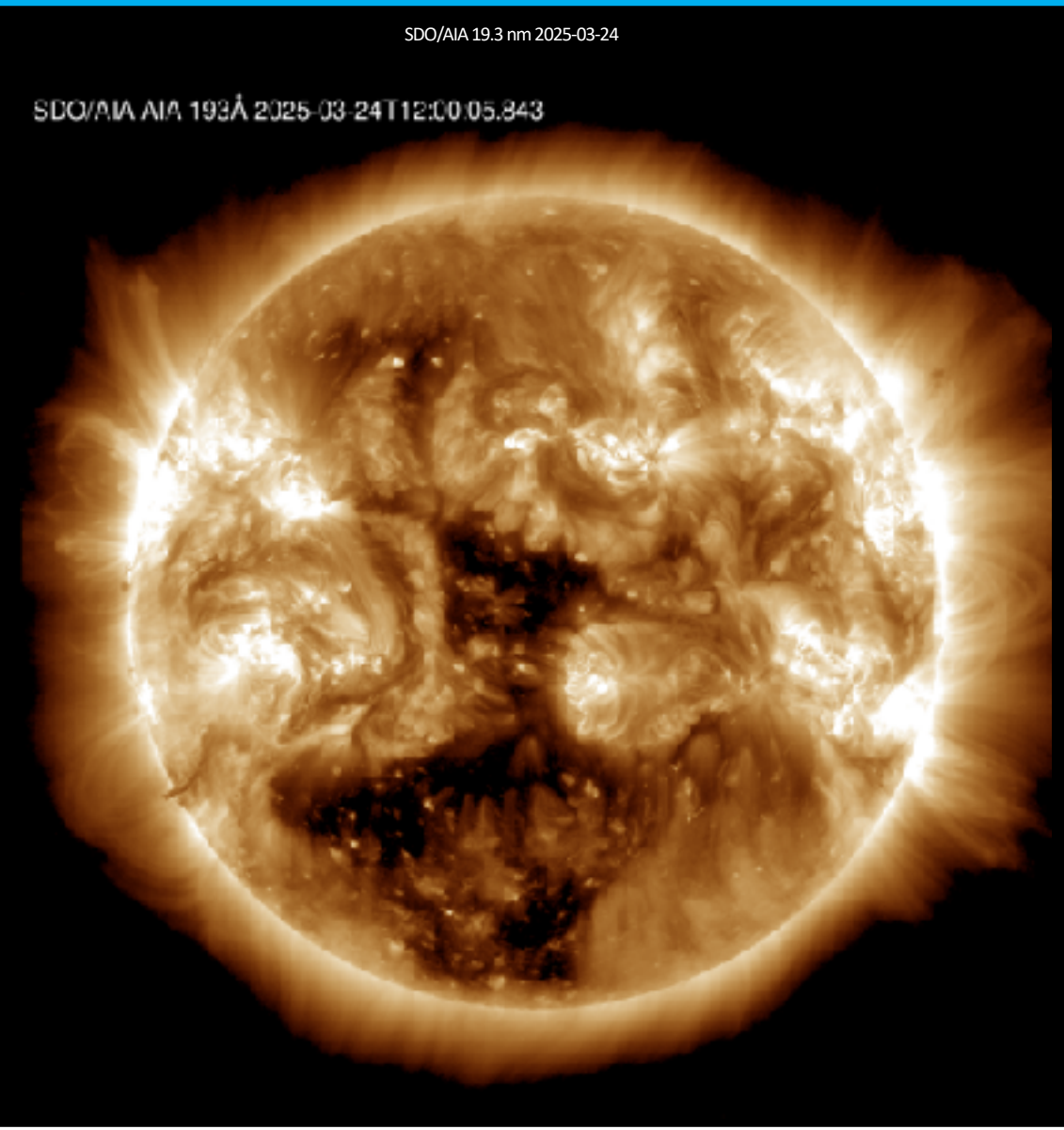


Coronal holes

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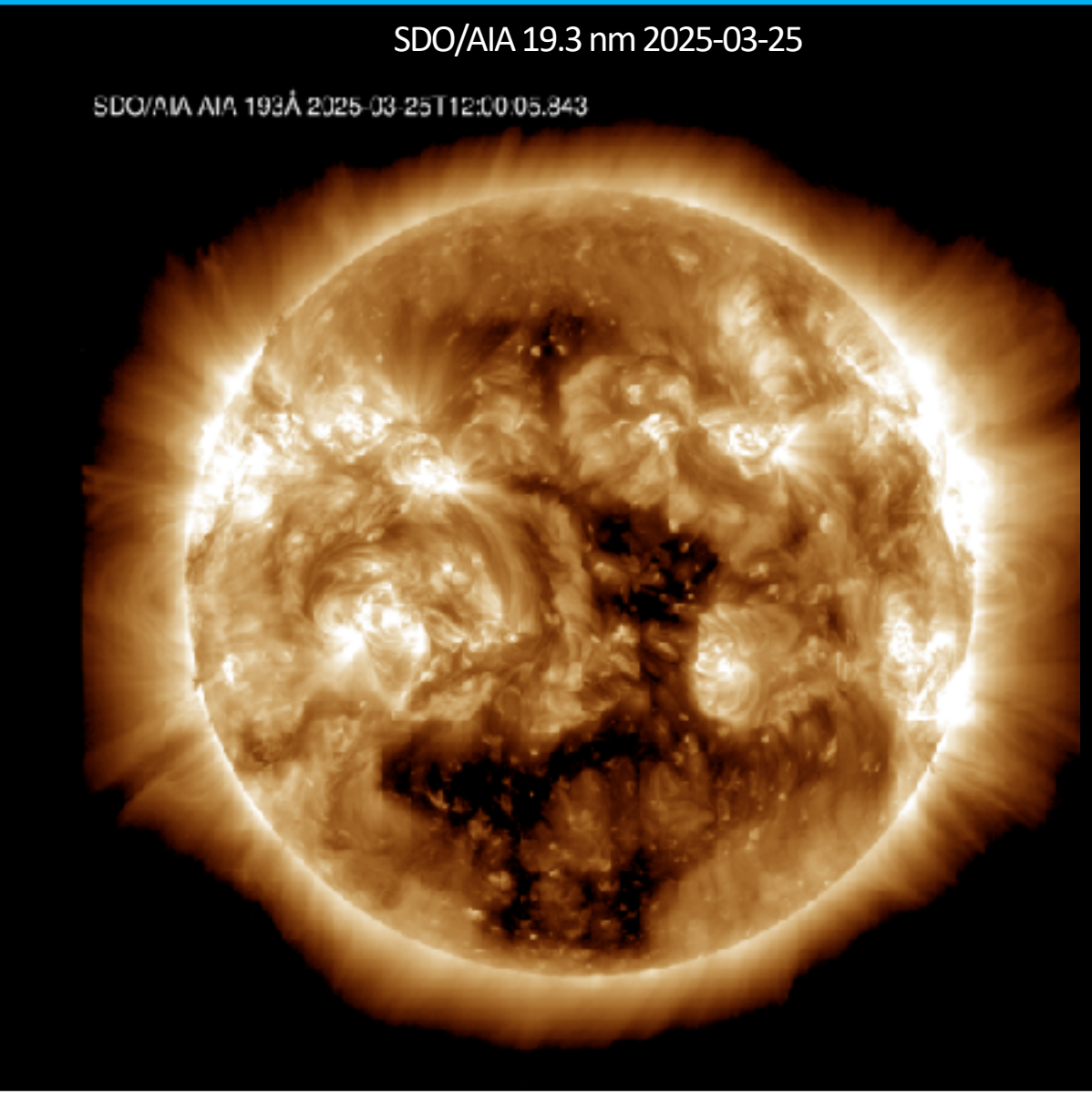


SDO/AIA 19.3 nm 2025-03-24

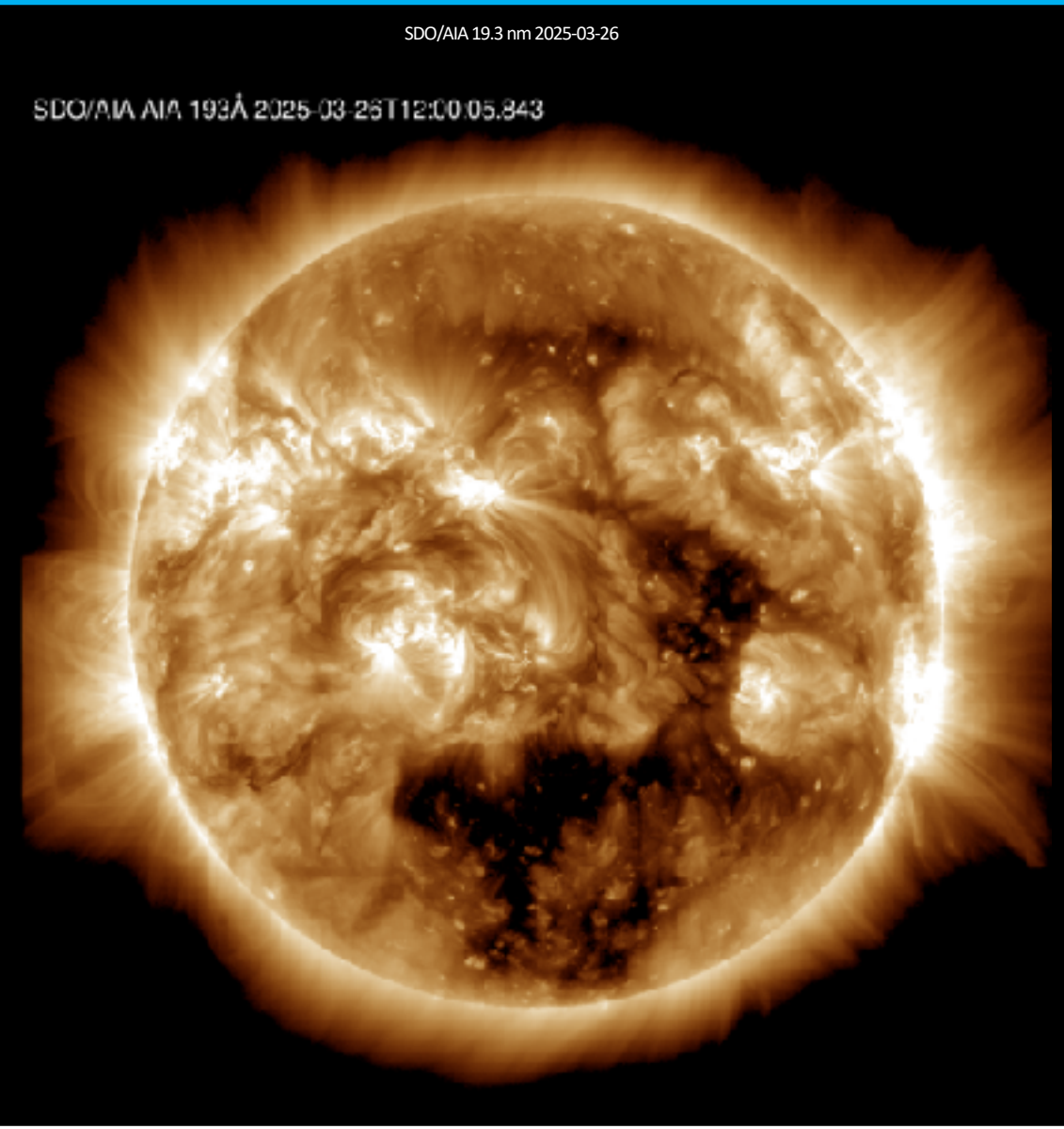


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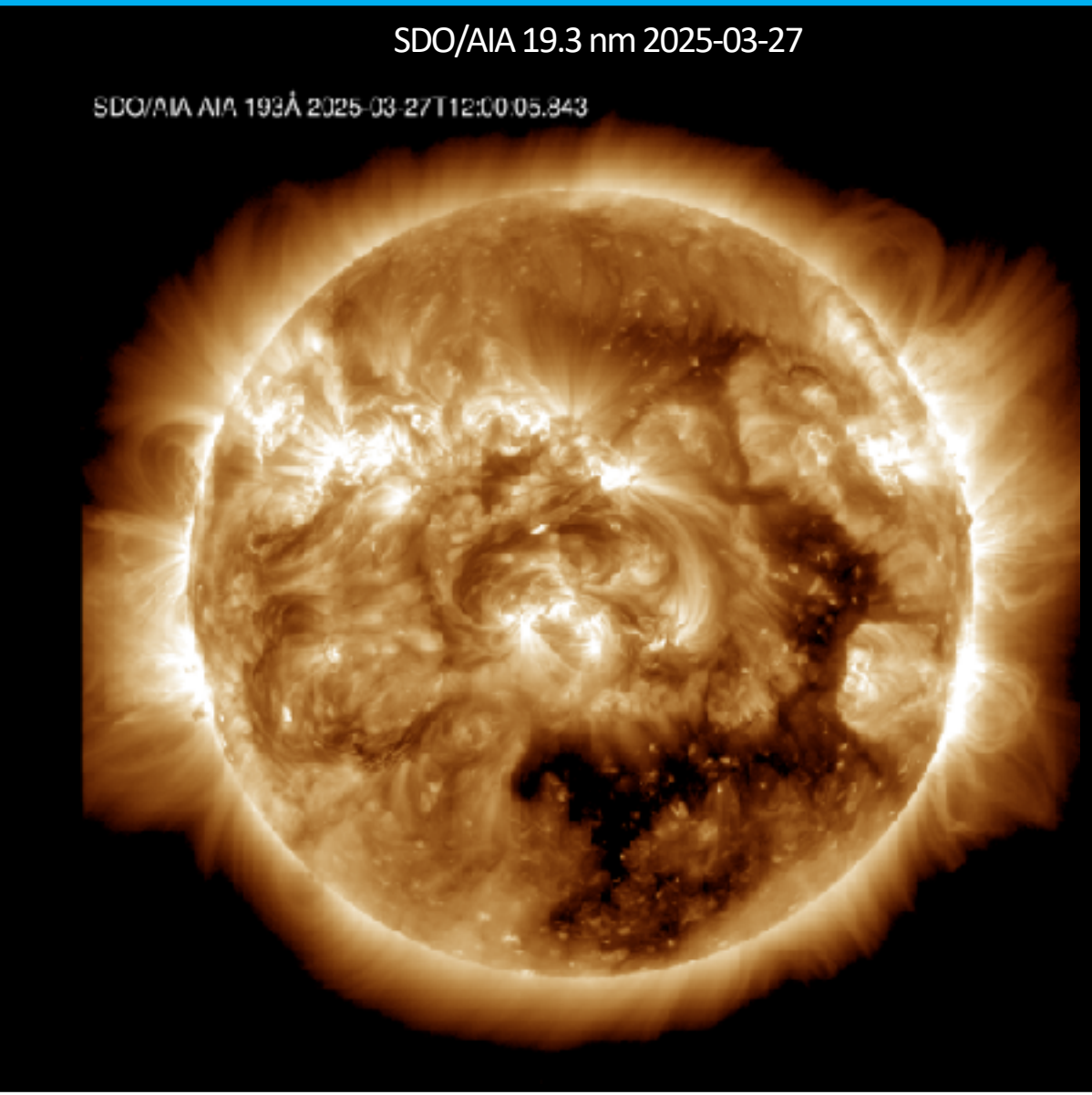


SDO/AIA 19.3 nm 2025-03-26

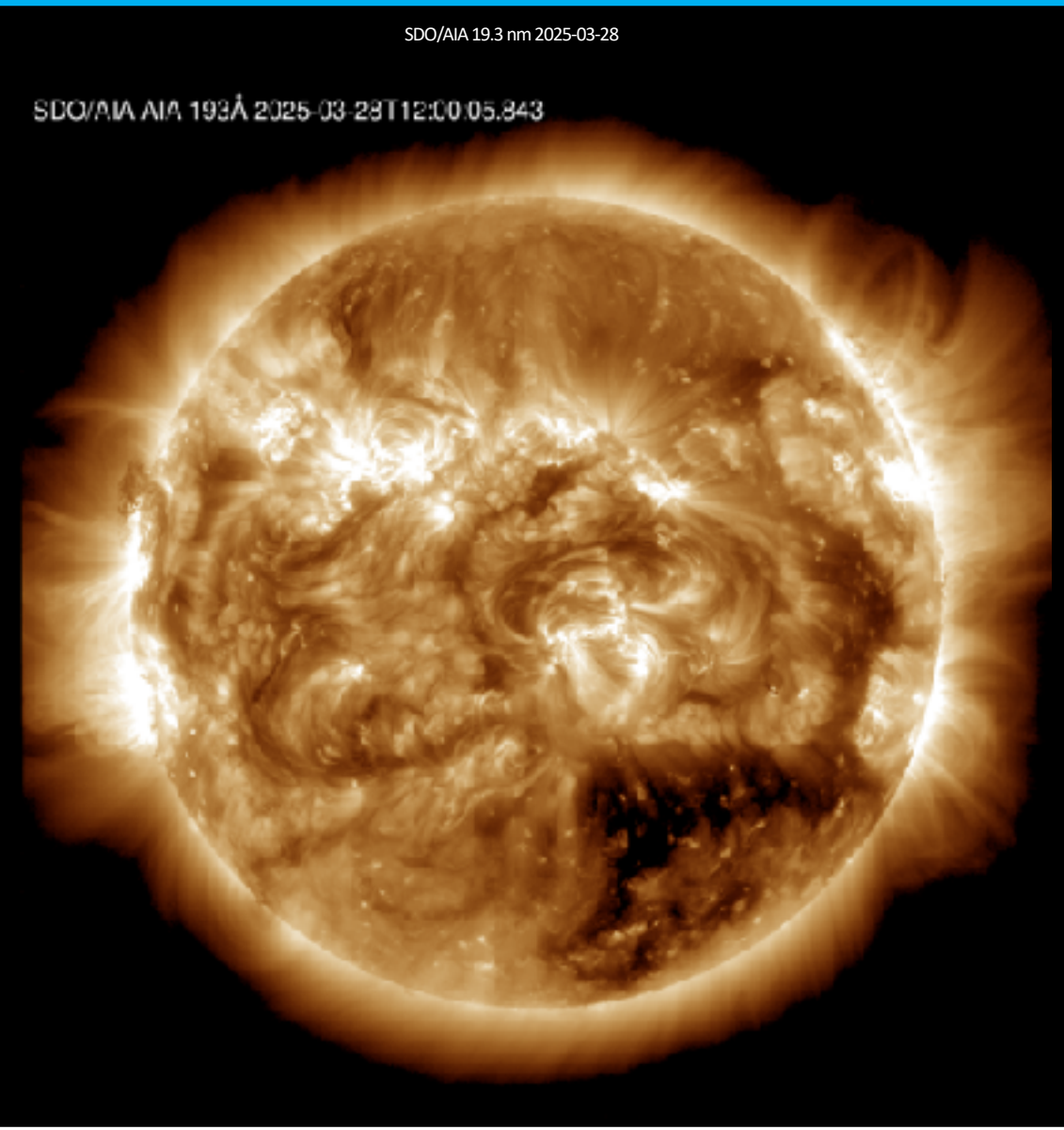


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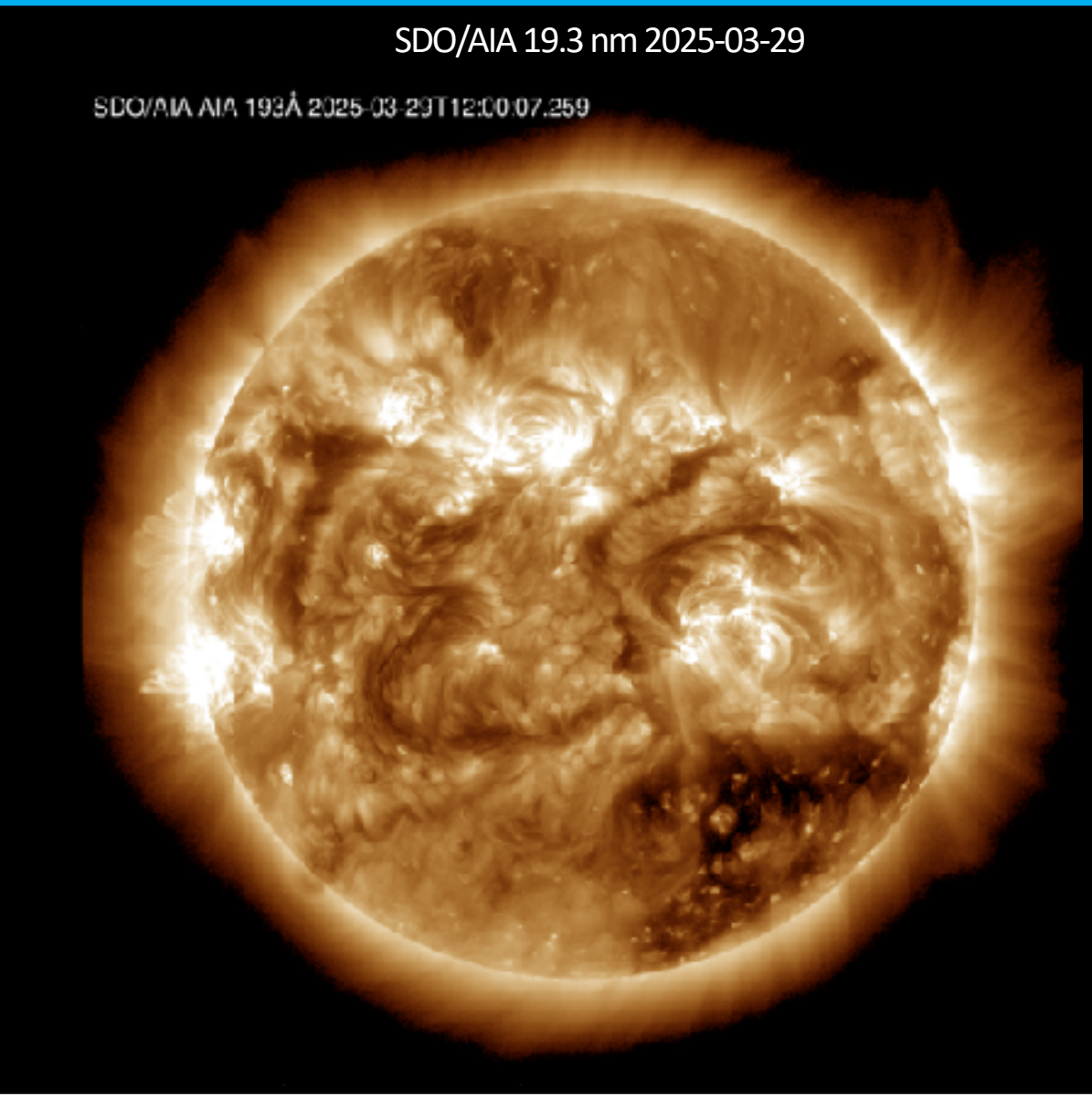


SDO/AIA 19.3 nm 2025-03-28

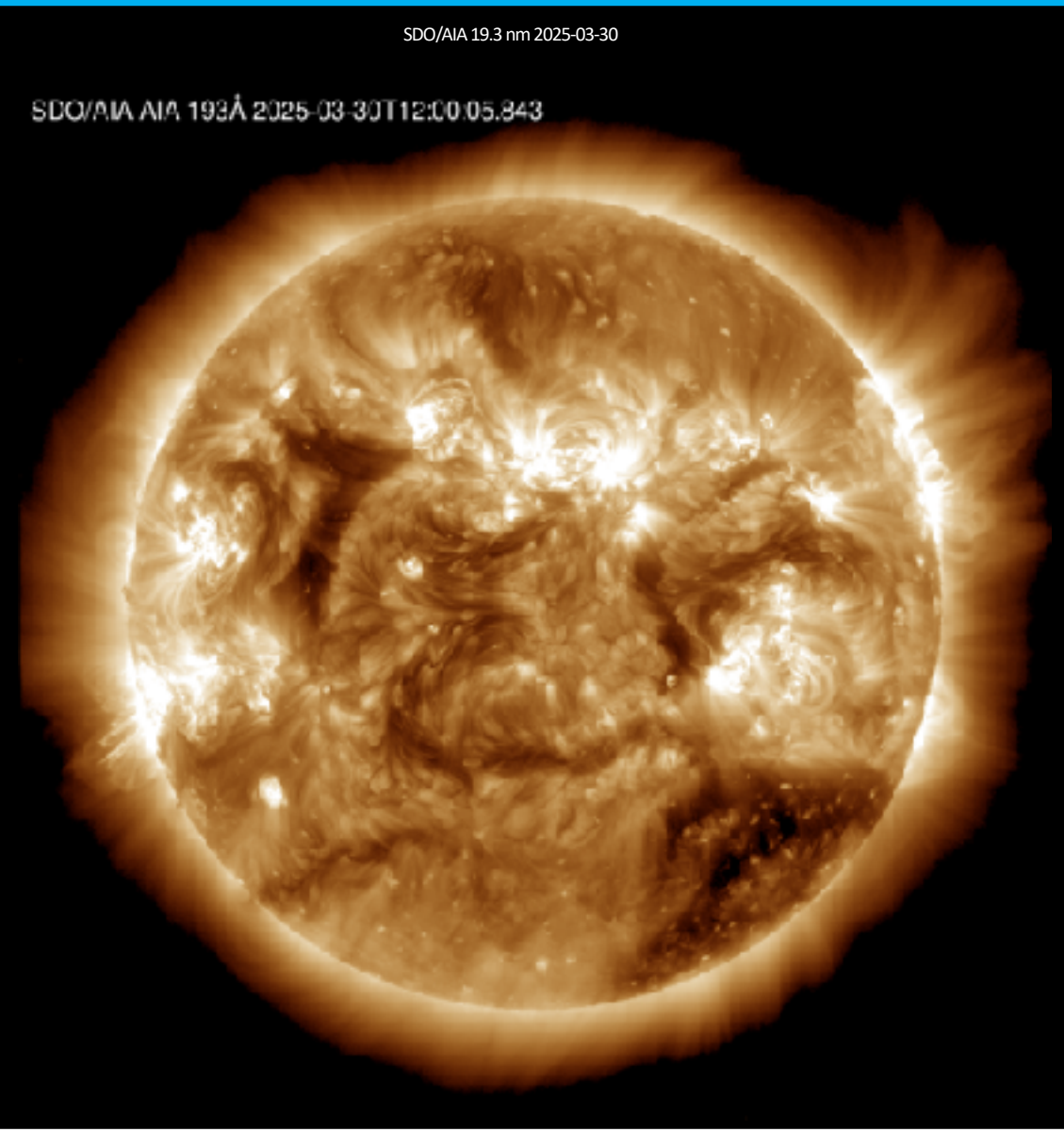


Coronal holes

SDO/AIA 19.3 nm 2025-03-29

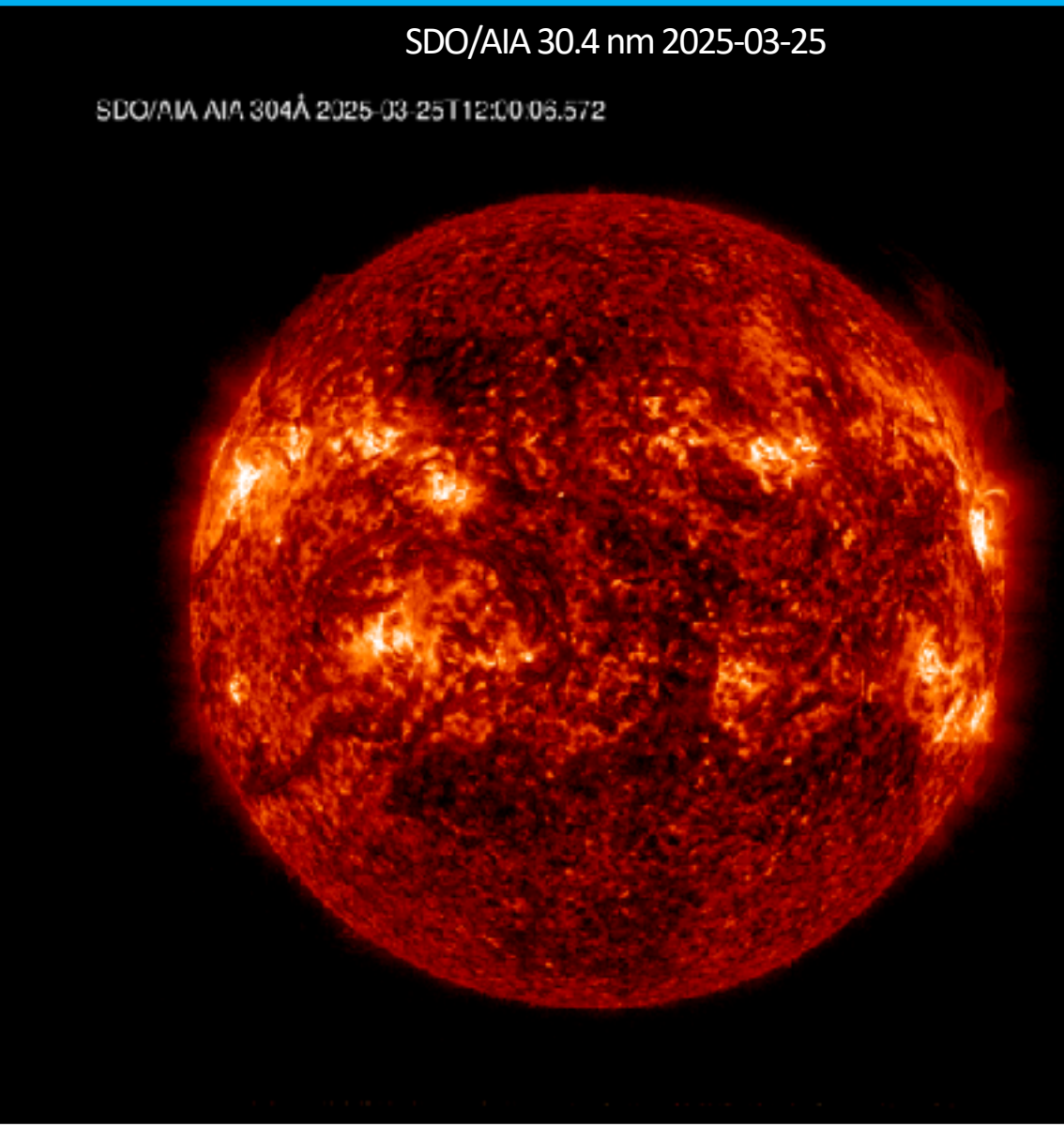


SDO/AIA 19.3 nm 2025-03-30

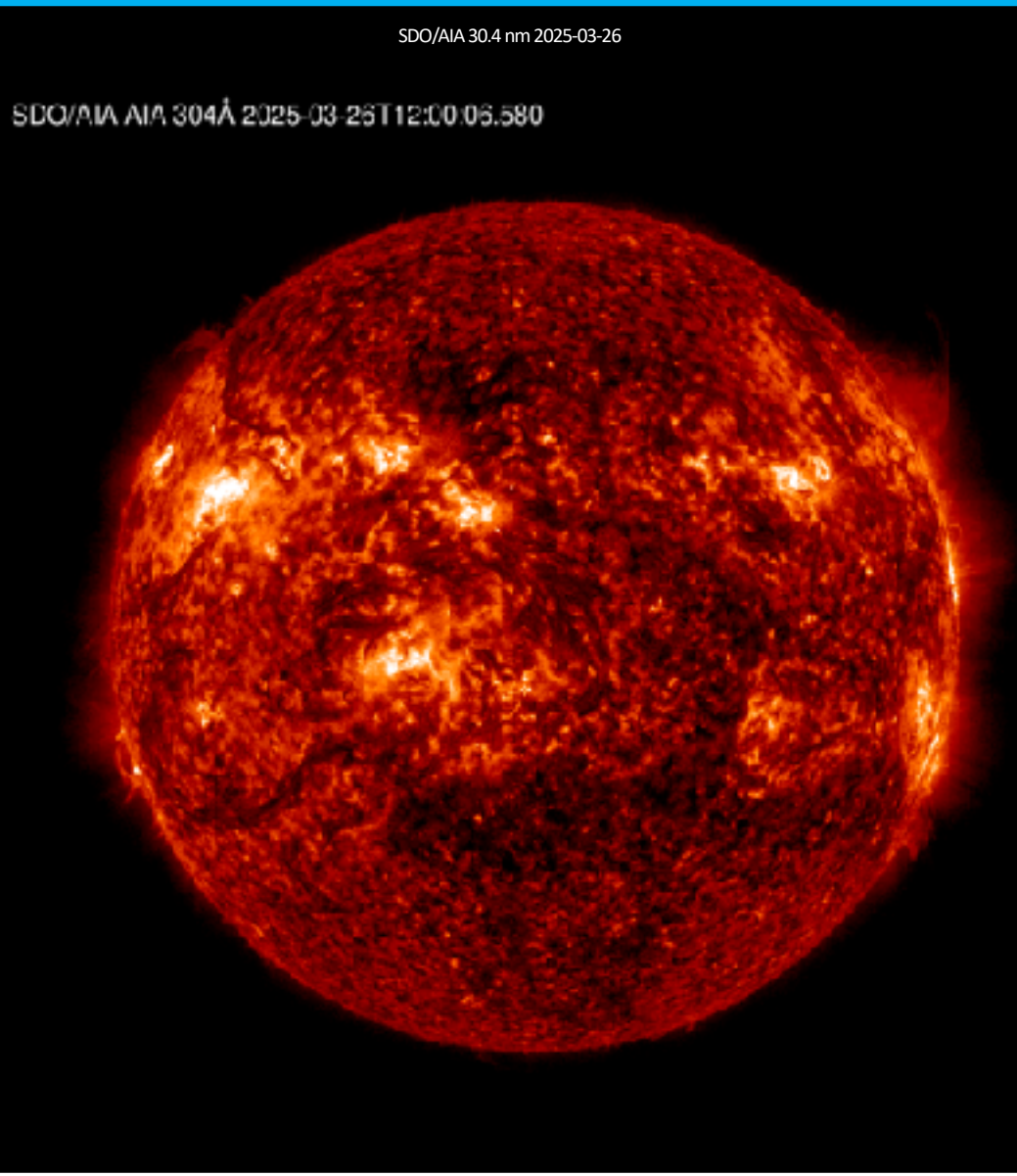


Filaments

SDO/AIA 30.4 nm 2025-03-25

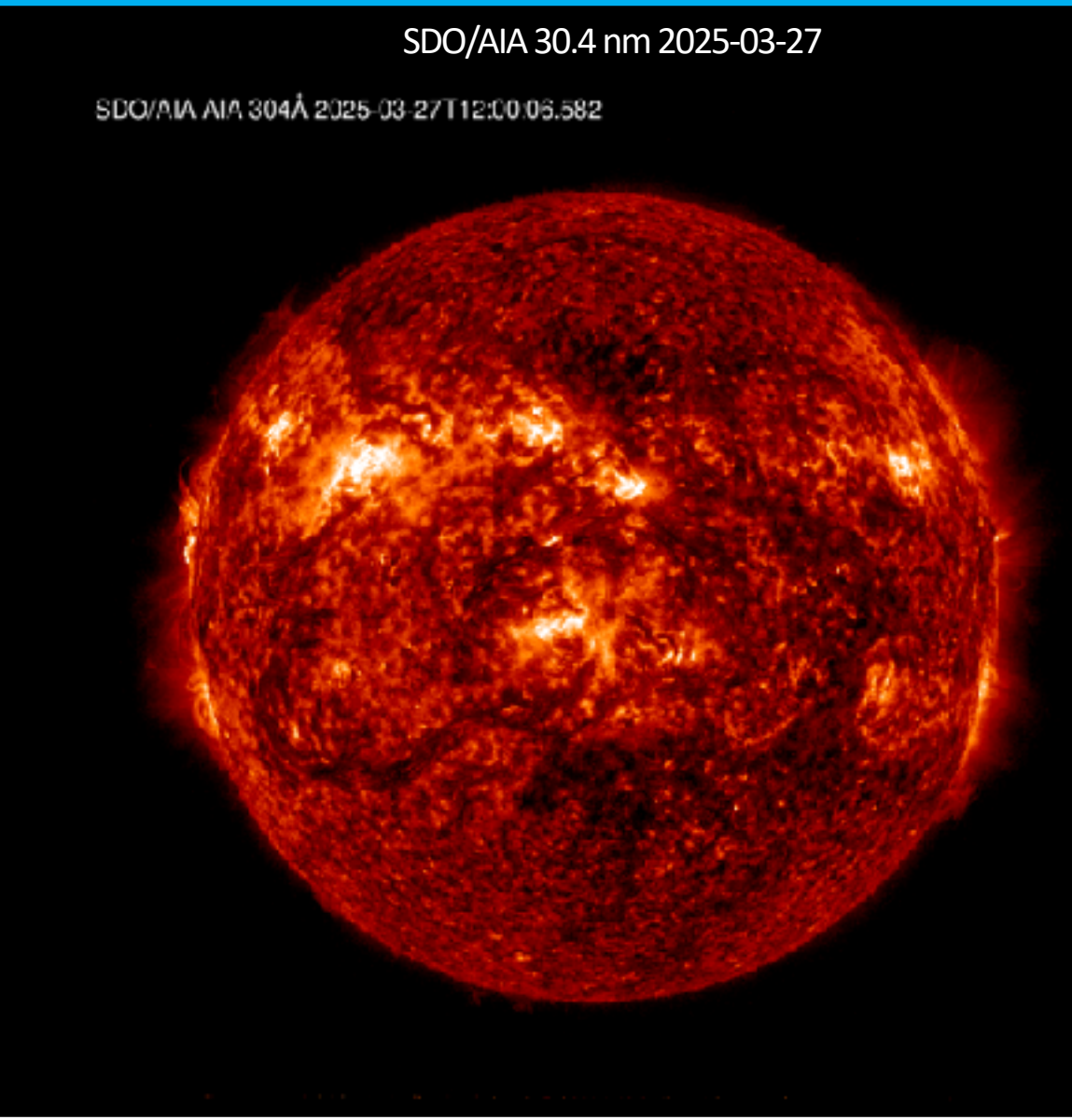


SDO/AIA 30.4 nm 2025-03-26

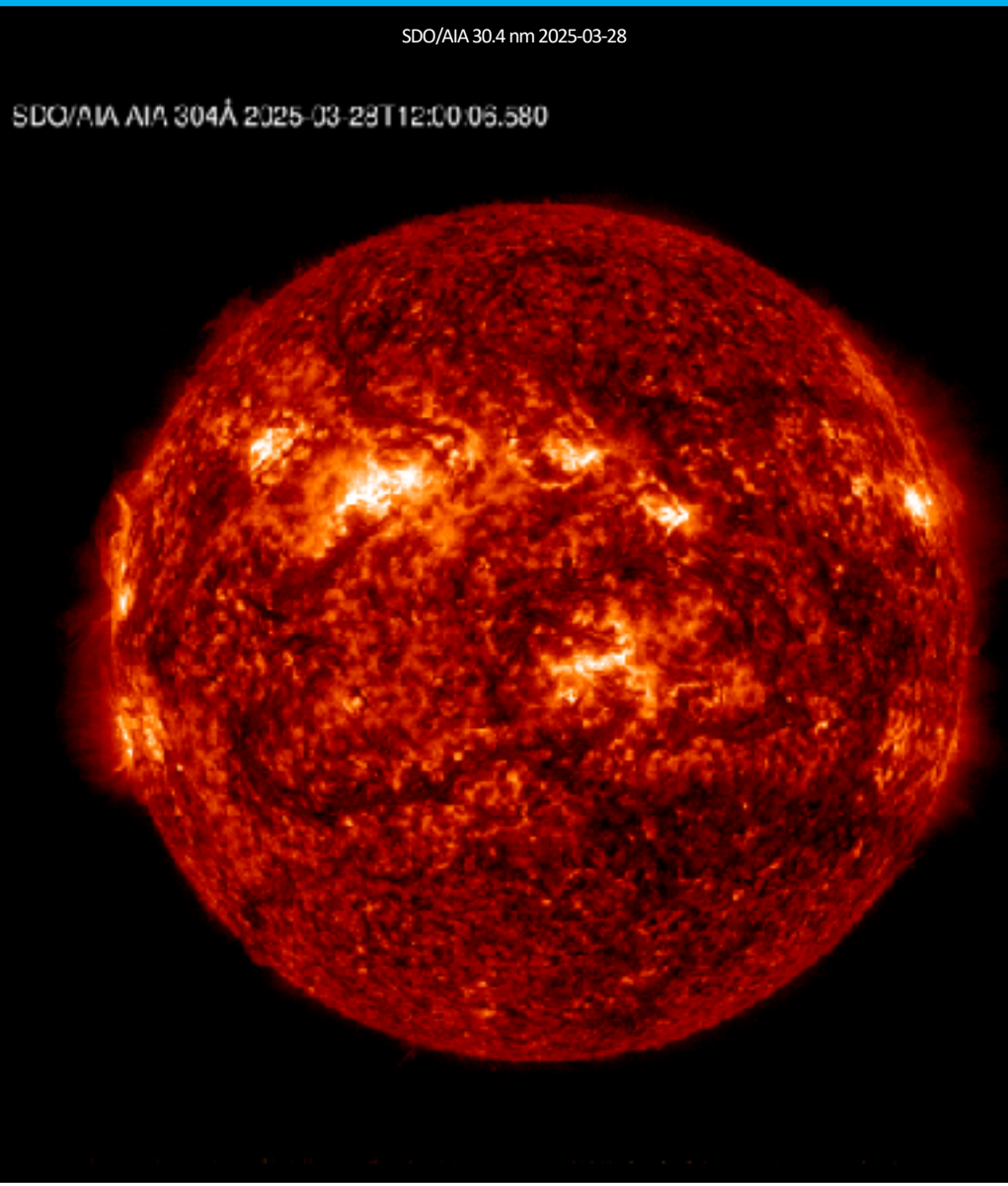


Filaments

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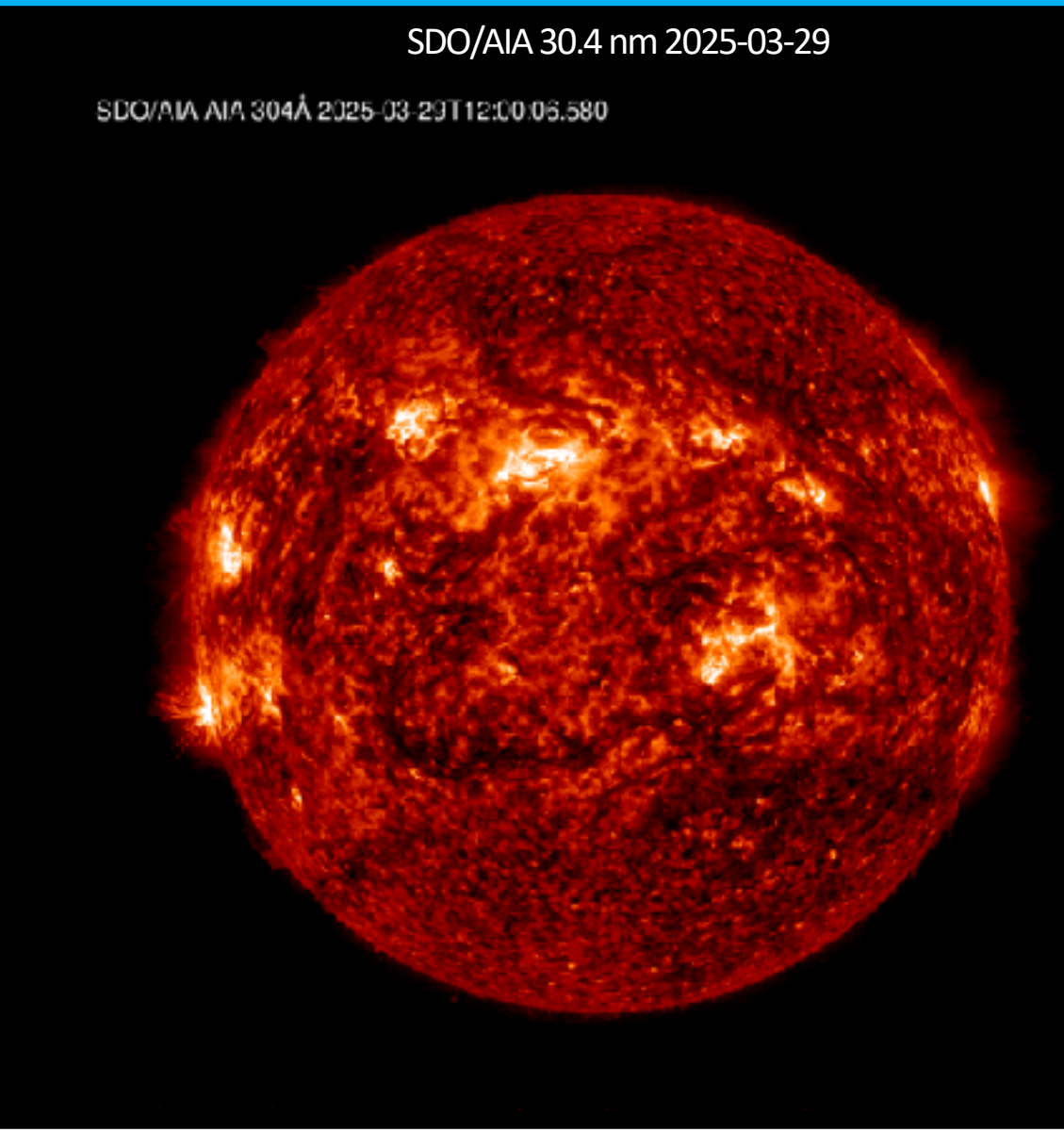


SDO/AIA 30.4 nm 2025-03-28

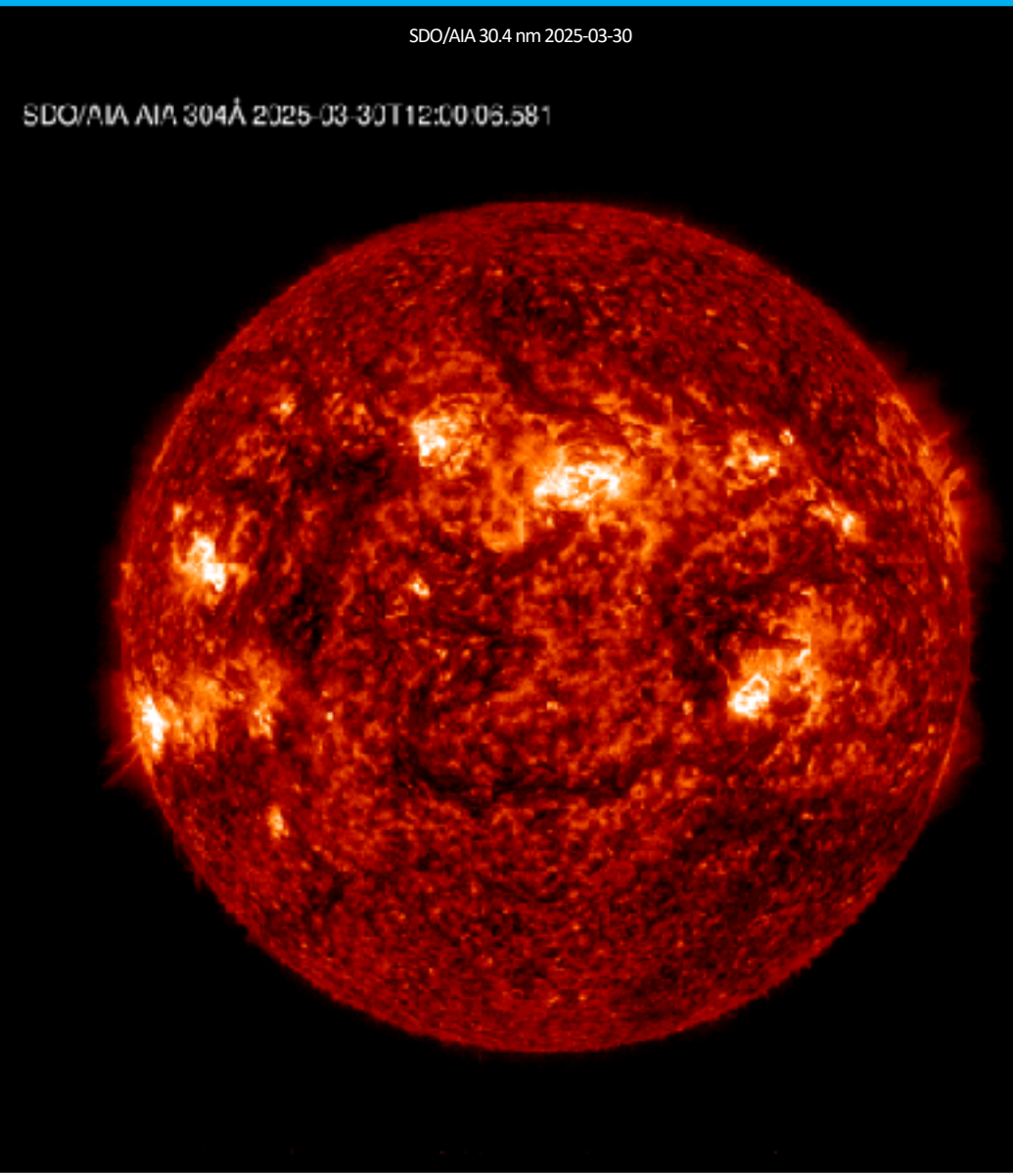


Filaments

SDO/AIA 30.4 nm 2025-03-29



SDO/AIA 30.4 nm 2025-03-30



Some tips. Erase this slide

For Color suggestion of next slide: https://www.sidc.be/spaceweatherservices-private/data/PrefabBriefing/SWbriefing_ColorCodeSuggestion.pdf

If you need more help with the briefing: https://www.sidc.be/spaceweatherservices-private/data/PrefabBriefing/Help.txt