

# SIDC Space Weather Briefing

05 May 2024-12 May 2024

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& the SIDC forecaster team



Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)

# Summary Report

Solar activity from 2024-05-05 12:00 to 2024-05-12 23:59

Active regions	16 Active Regions: NOAA AR 3660 – 3675
Flares	# C-class flare: 49 # M-class flare: 75 # X-class flare: 10
Coronal Holes	CH+ and CH-
CMEs	2 halo & 6 partial halo CMEs

Proton flux	>10 Mev & >50 Mev crossed 10 pfu threshold level on May 10-11
Electron flux	Below 1000 pfu threshold level

## Solar wind and geomagnetic conditions

ICMEs	7 ICME arrivals
Solar wind conditions	B : 0.43 - 73.76 nT //Bz: -50.06 nT to 63.14 nT //Speed: 308.6 - 1005.0km/s
Geomagnetic conditions	max K <sub>BeI</sub> : 9, max K <sub>p</sub> (NOAA): 9, Extreme storm conditions

All Quiet Alert: All quiet off

# Solar Activity

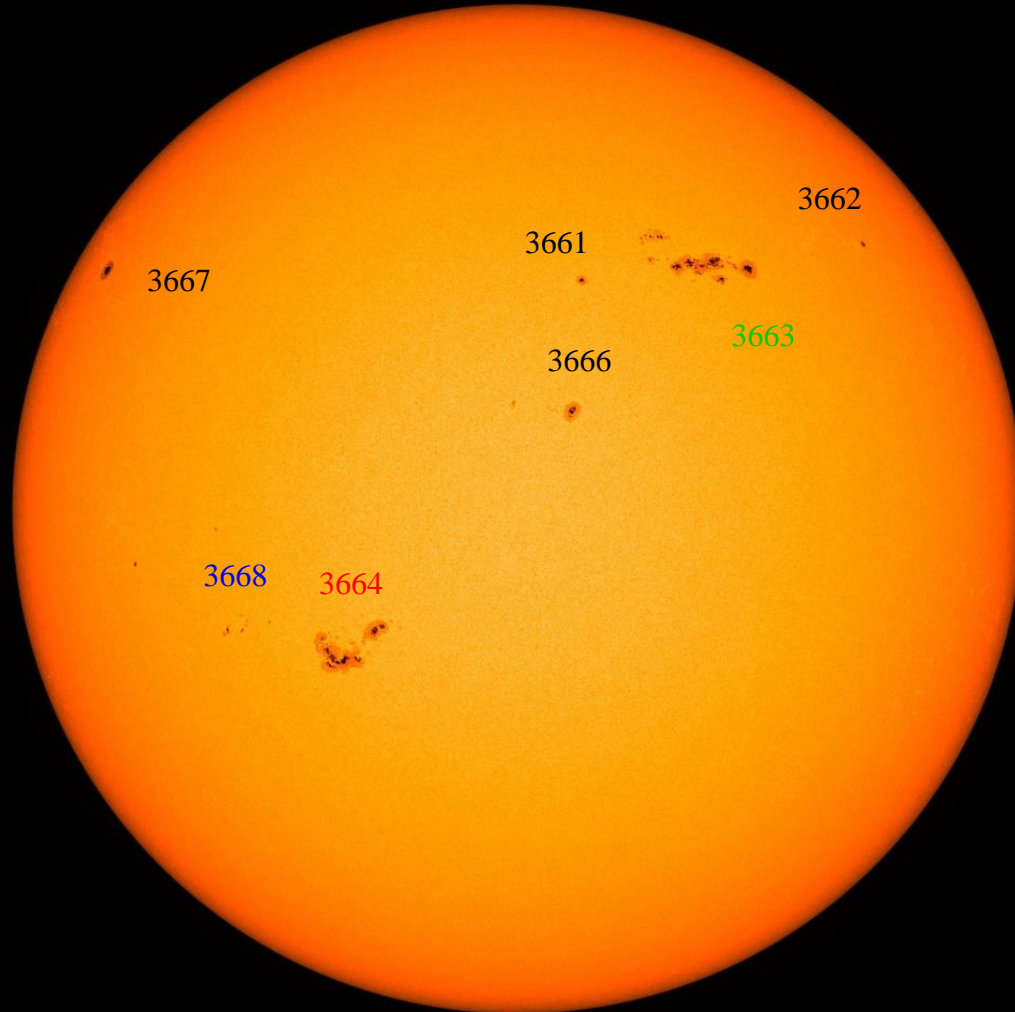


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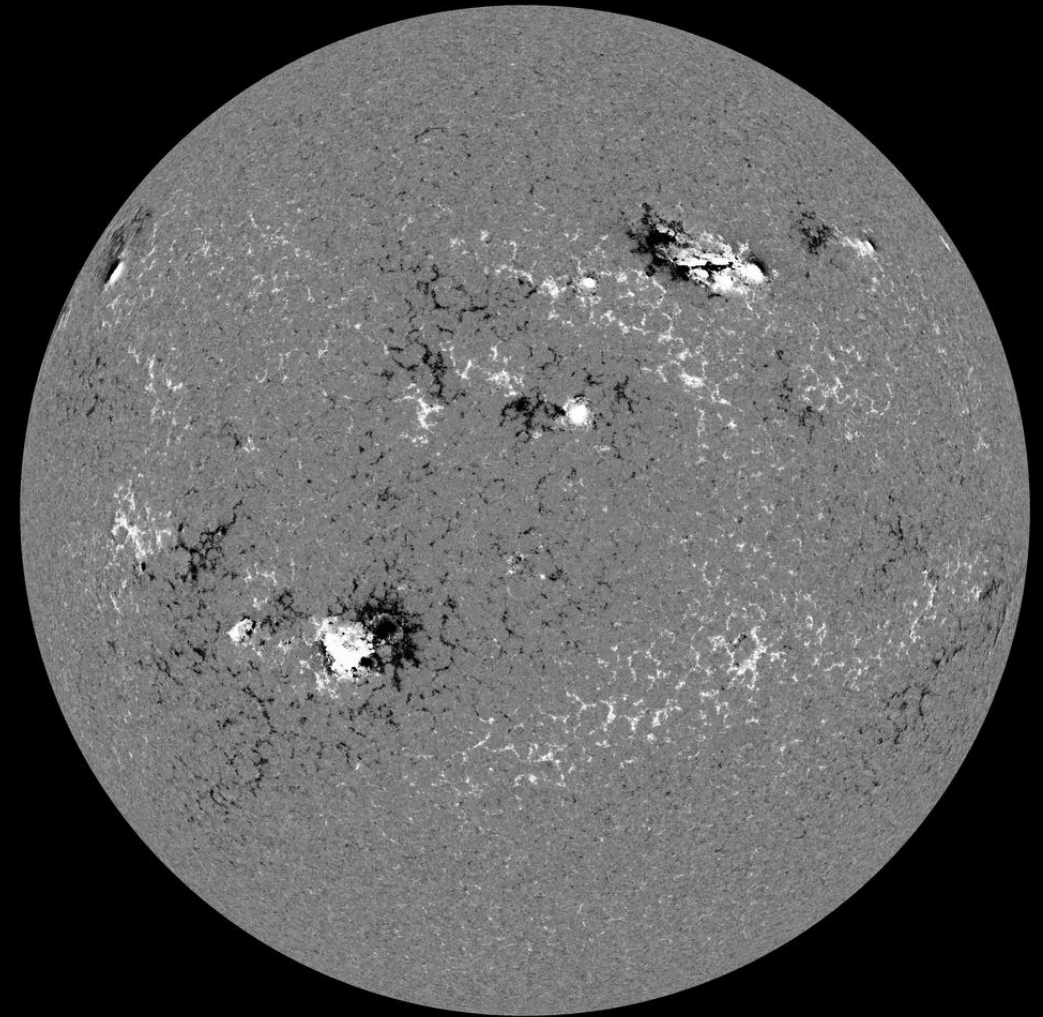
# Solar active regions

SDO/HMI White Light 2024-05-05



SDO/HMI Quick-Look Continuum: 20240505\_114500

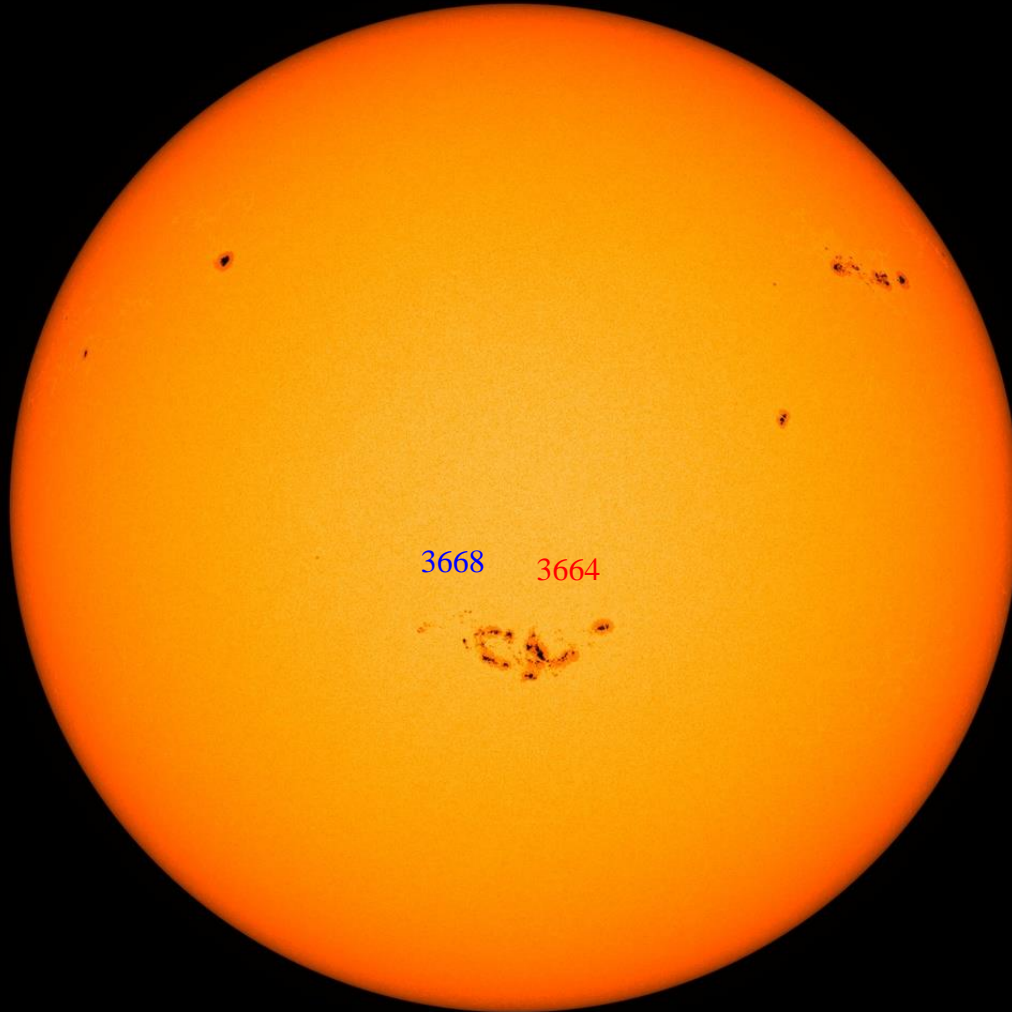
SDO/HMI Magnetogram 2024-05-05



SDO/HMI Quick-Look Magnetogram: 20240505\_114500

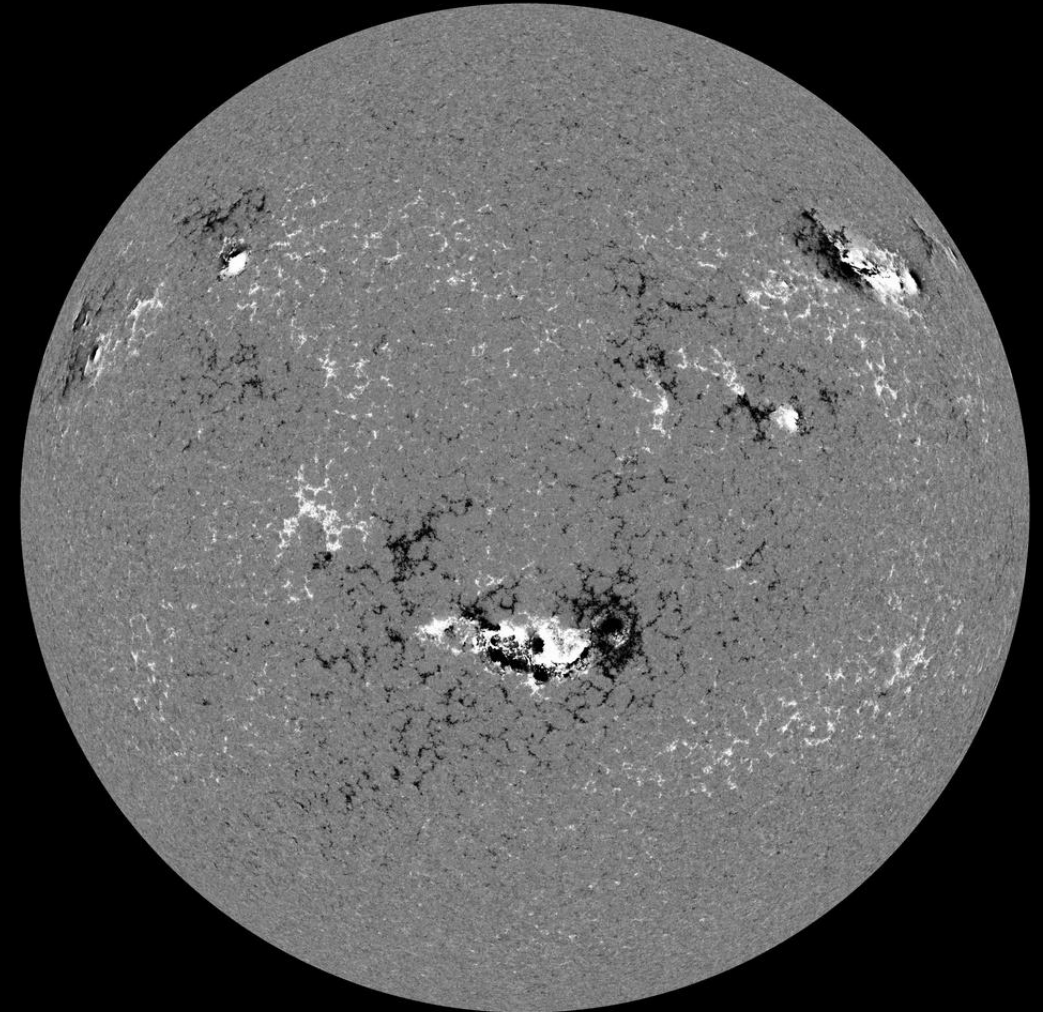
# Solar active regions

SDO/HMI White Light 2024-05-07



SDO/HMI Quick-Look Continuum: 20240507\_114500

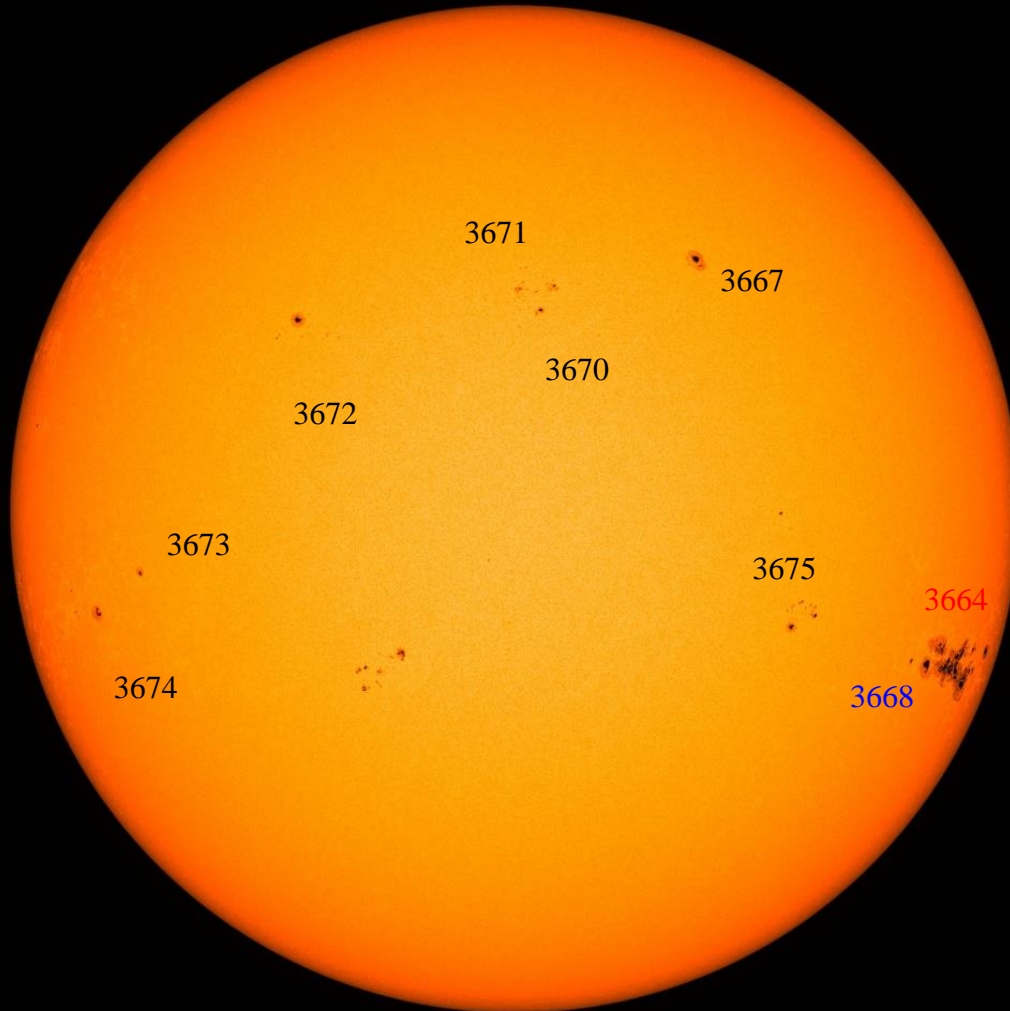
SDO/HMI Magnetogram 2024-05-07



SDO/HMI Quick-Look Magnetogram: 20240507\_114500

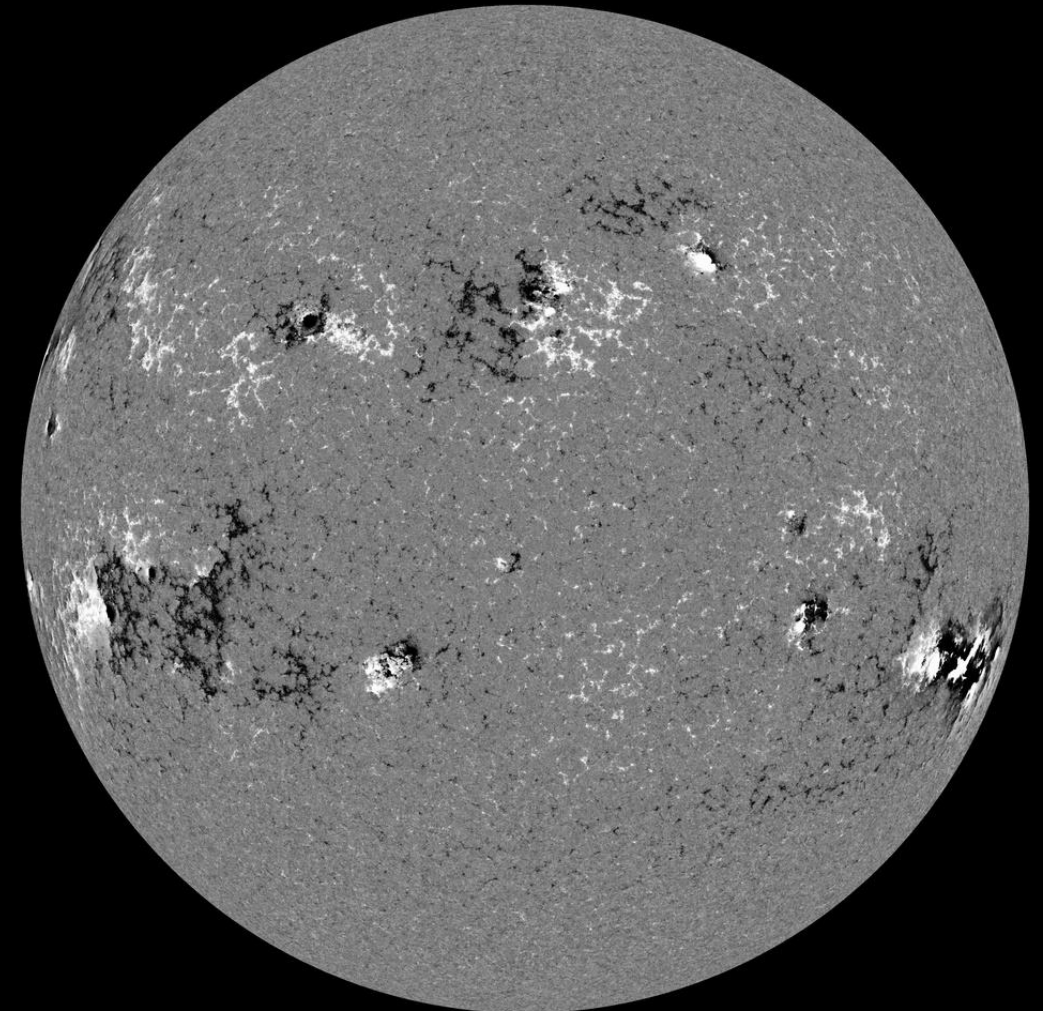
# Solar active regions

SDO/HMI White Light 2024-05-12



SDO/HMI Quick-Look Continuum: 20240512\_114500

SDO/HMI Magnetogram 2024-05-12

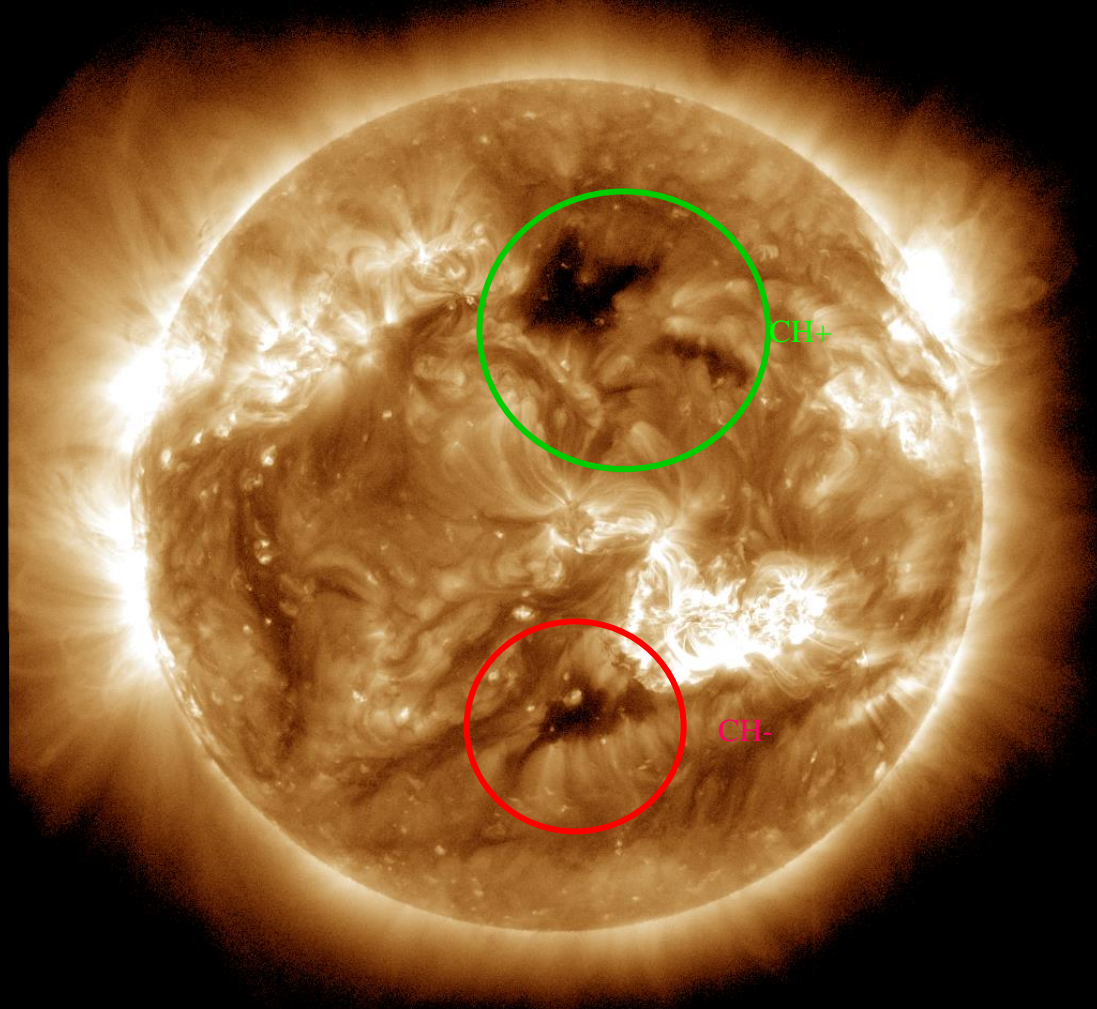


SDO/HMI Quick-Look Magnetogram: 20240512\_114500

# Coronal holes

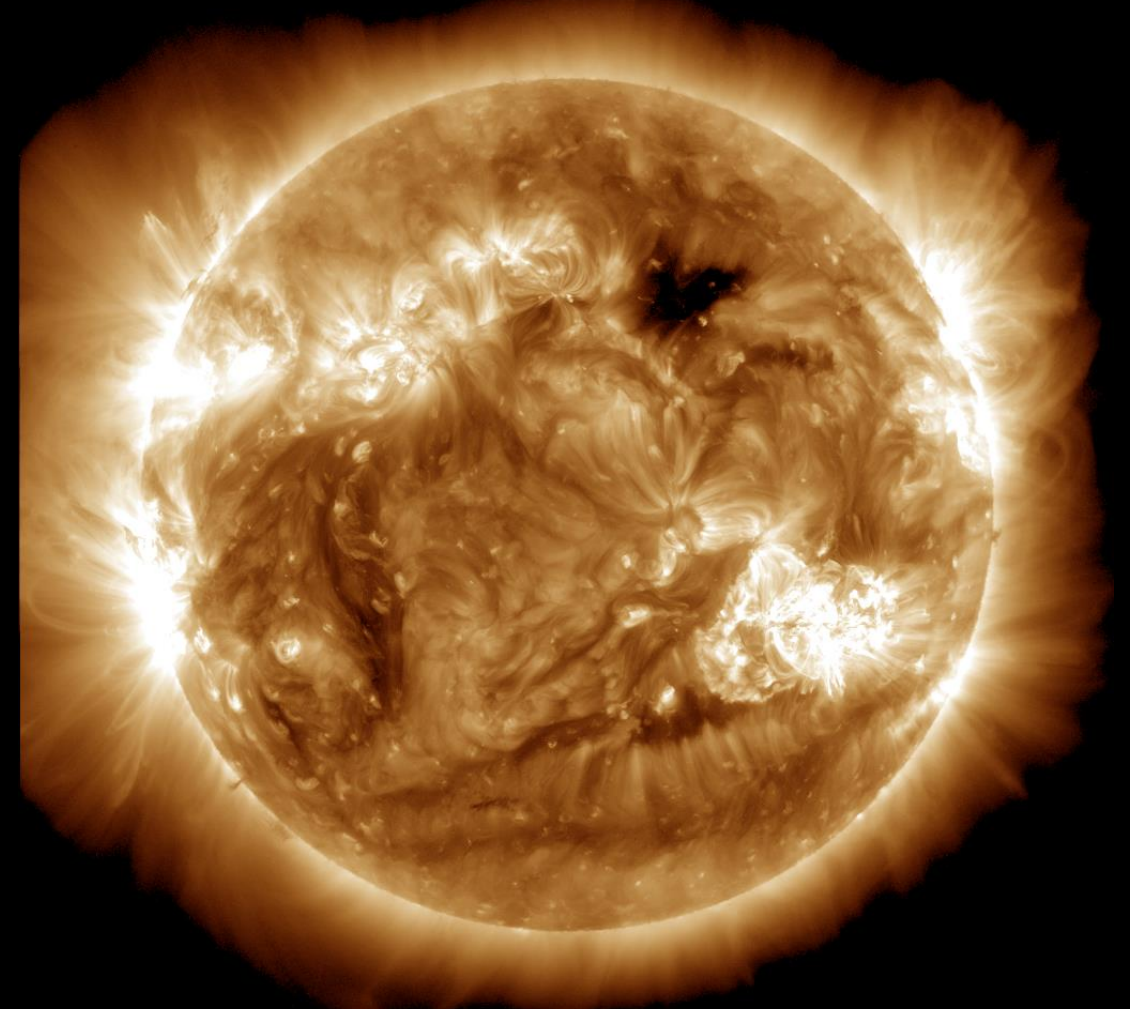
SDO/AIA 19.3 nm 2024-05-09

SDO/AIA AIA 193Å 2024-05-09T12:00:07.470



SDO/AIA 19.3 nm 2024-05-10

SDO/AIA AIA 193Å 2024-05-10T12:00:53.843



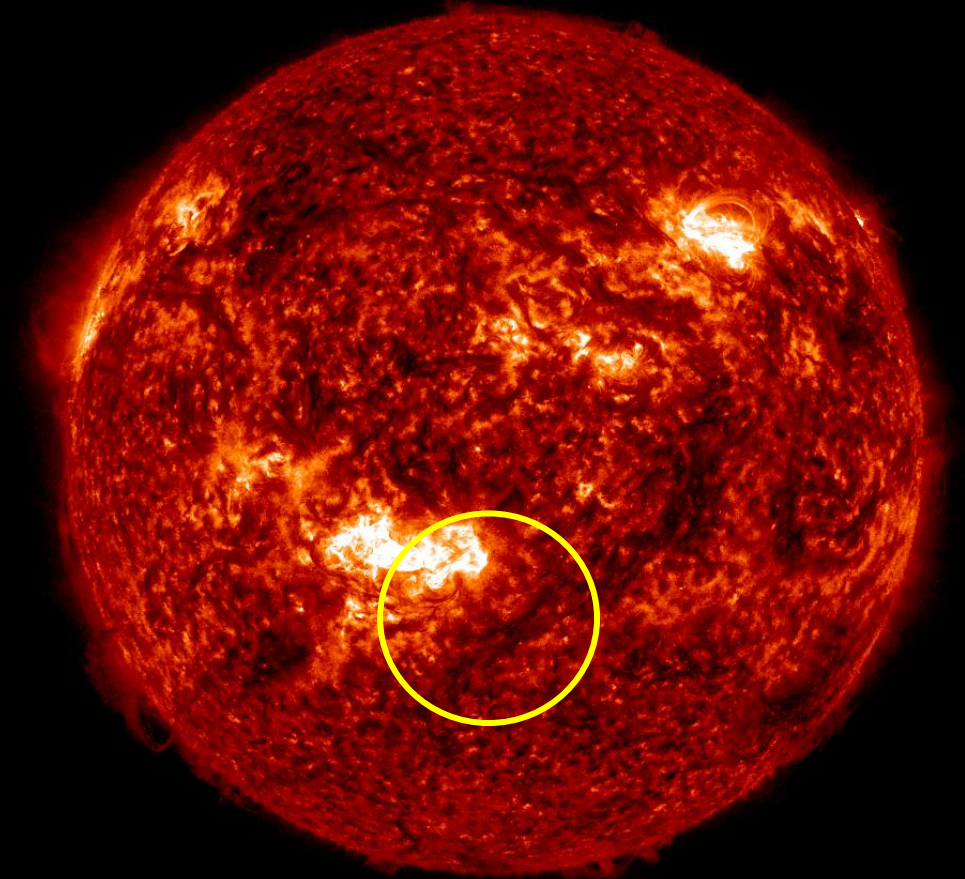
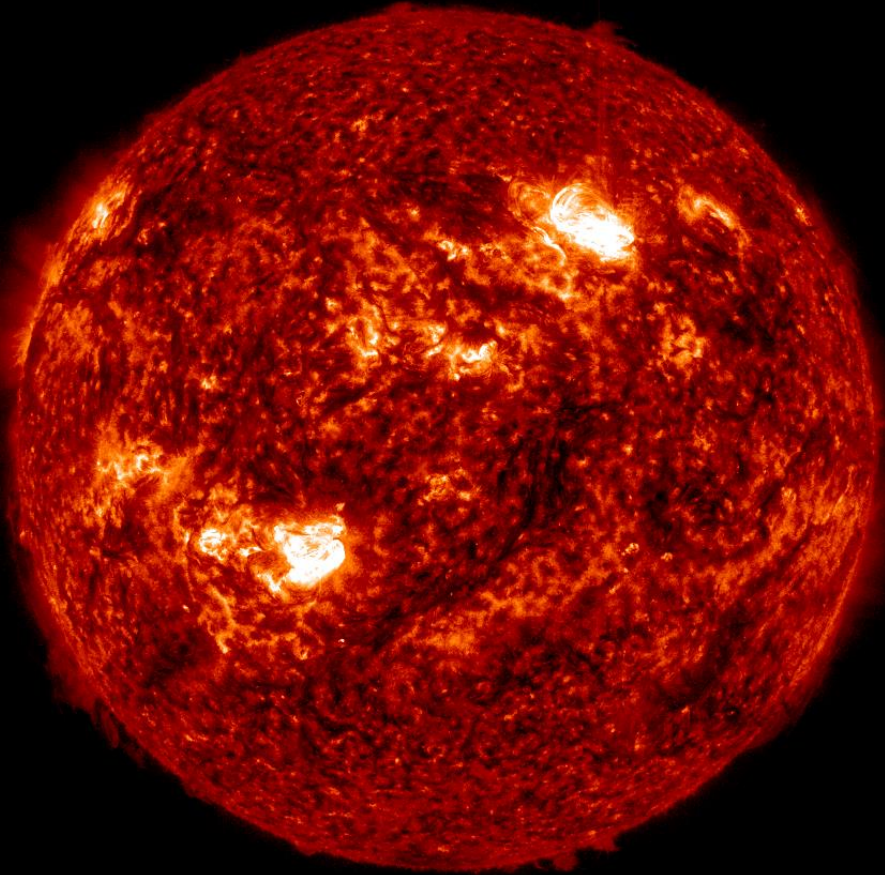
# Filaments

SDO/AIA 30.4 nm 2024-05-05

SDO/AIA AIA 304Å 2024-05-05T12:00:06.588

SDO/AIA 30.4 nm 2024-05-06

SDO/AIA AIA 304Å 2024-05-06T12:00:06.582

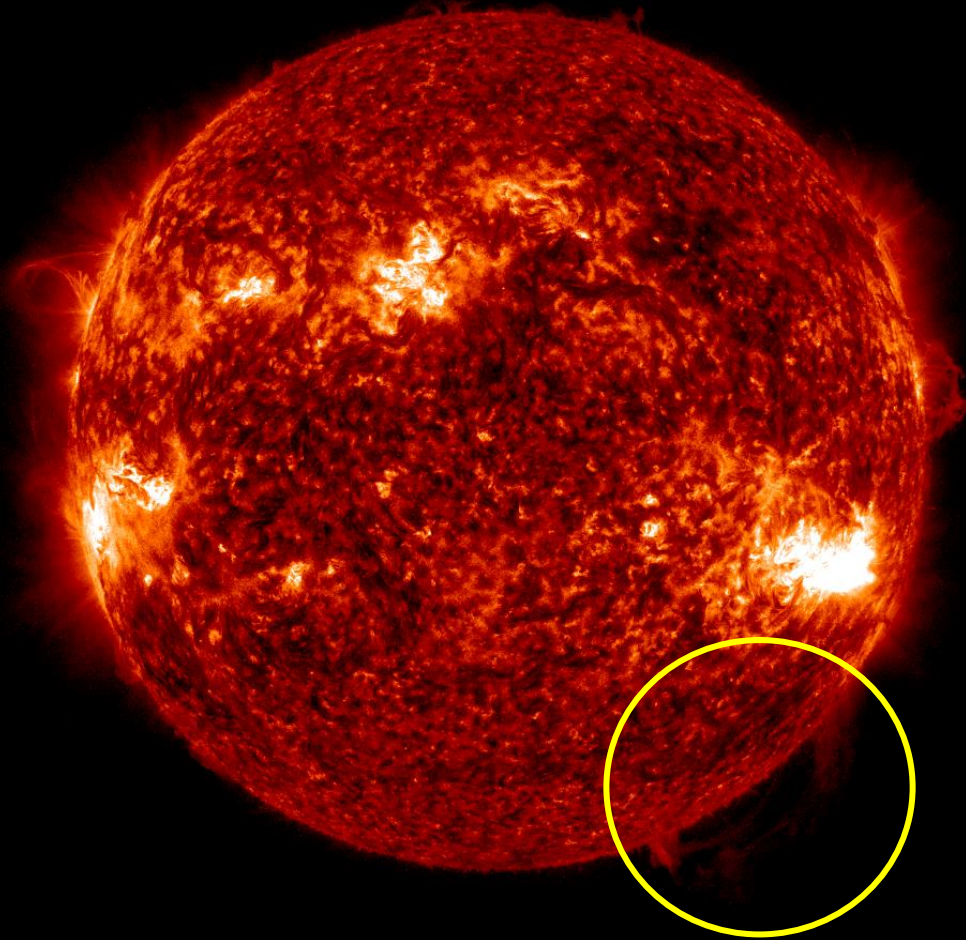




# Filaments

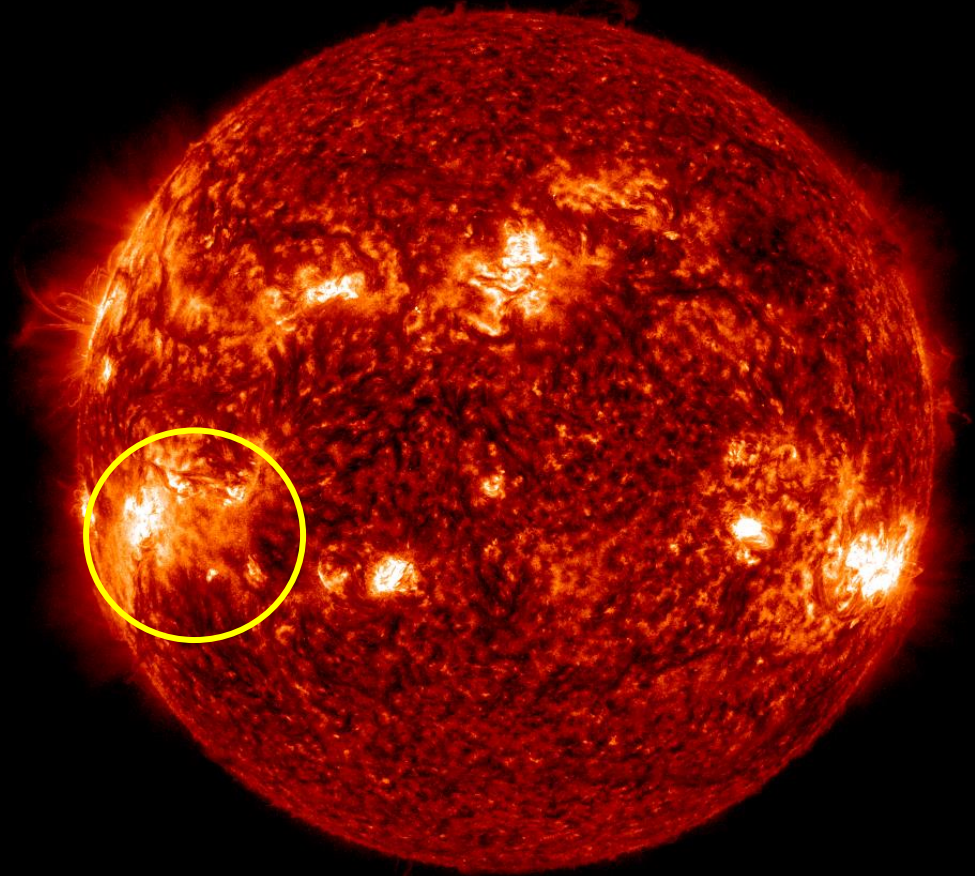
SDO/AIA 30.4 nm 2024-05-11

SDO/AIA AIA 304Å 2024-05-11T12:00:06.582



SDO/AIA 30.4 nm 2024-05-12

SDO/AIA AIA 304Å 2024-05-12T12:00:06.597



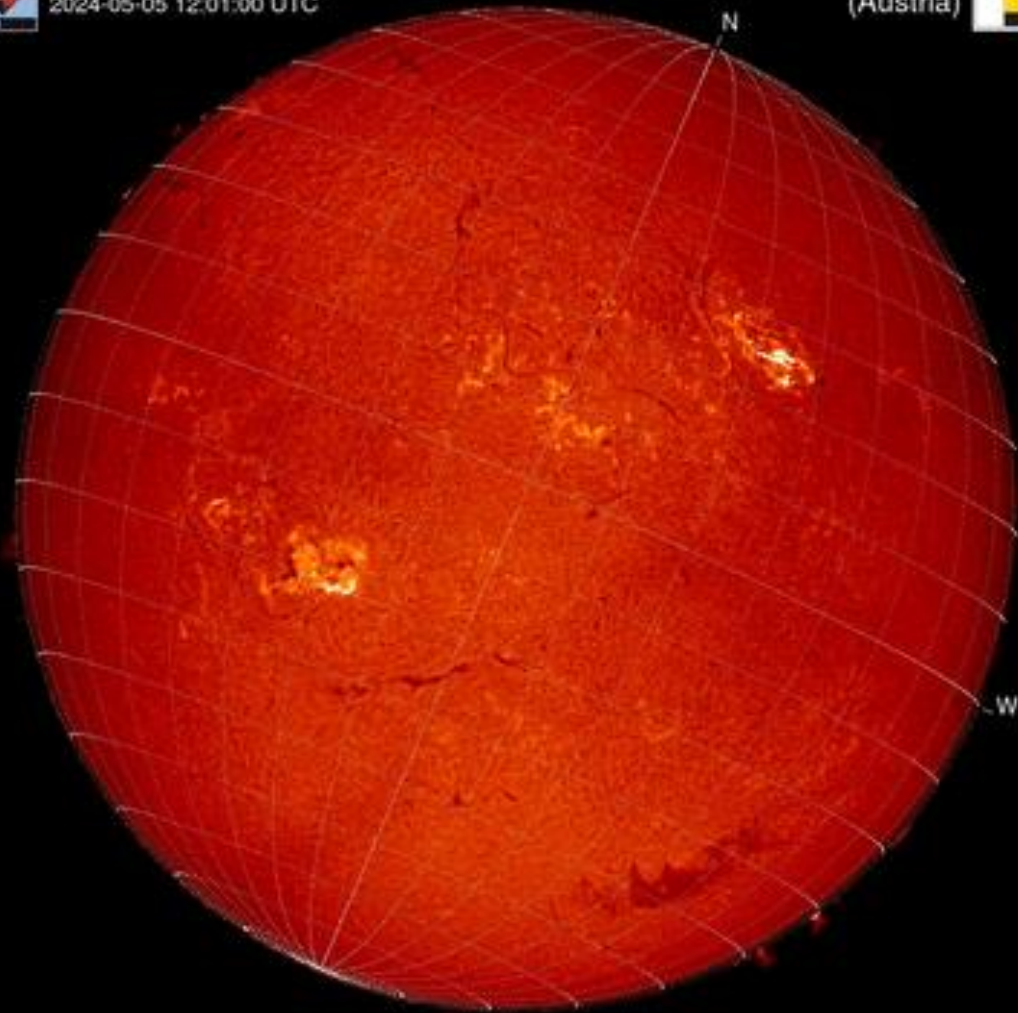
# Filaments & Filament eruptions

H-alpha 2024-05-05



Kanzelhöhe Observatory  
2024-05-05 12:01:00 UTC

University of Graz  
(Austria)

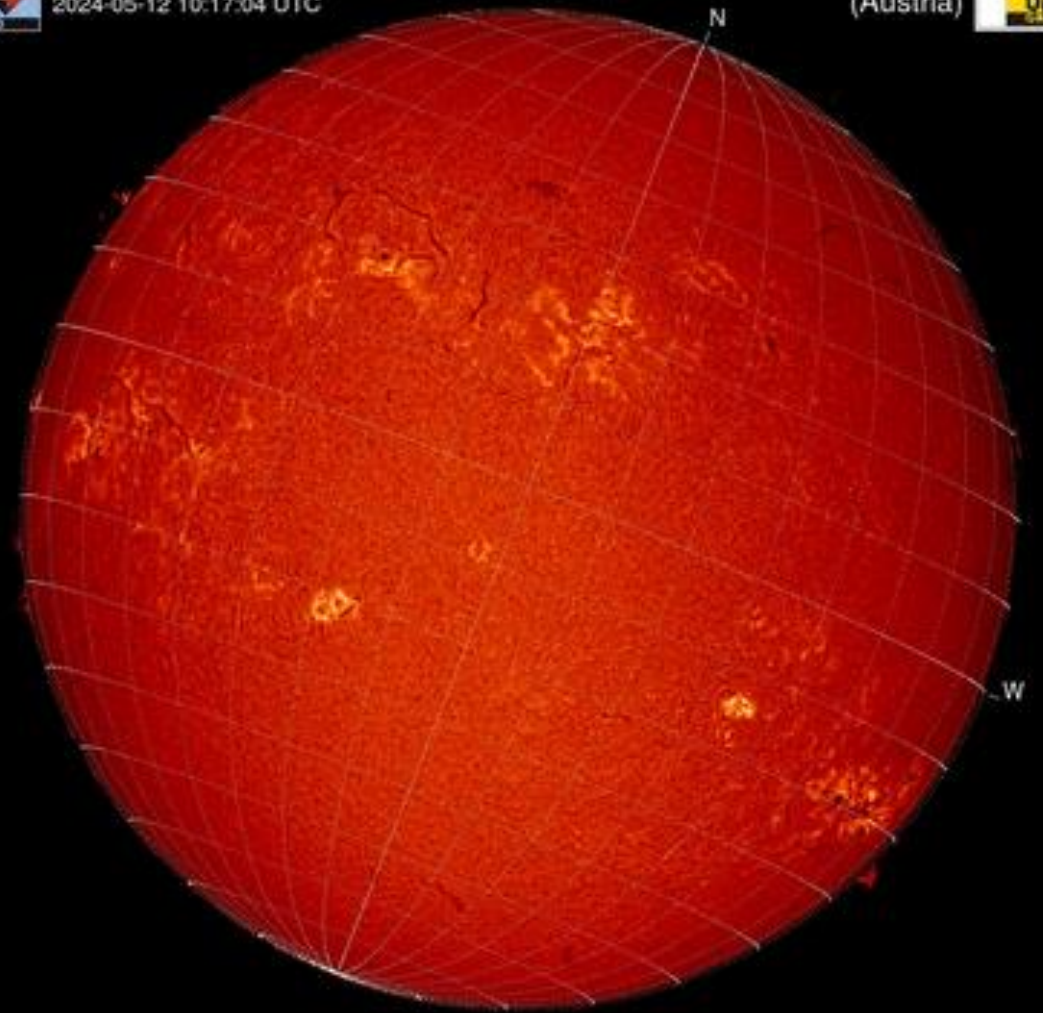


H-alpha 2024-05-12

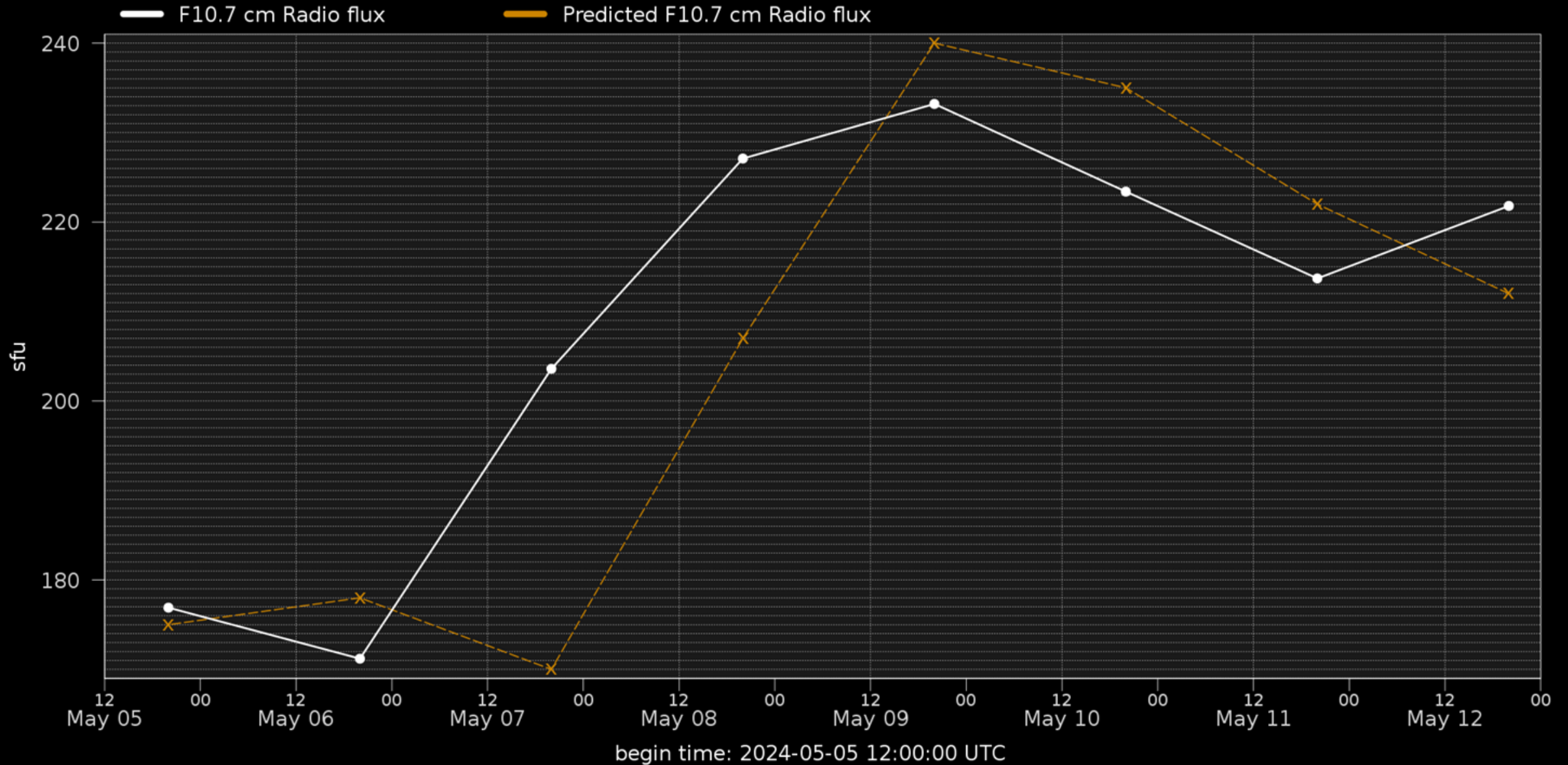


Kanzelhöhe Observatory  
2024-05-12 10:17:04 UTC

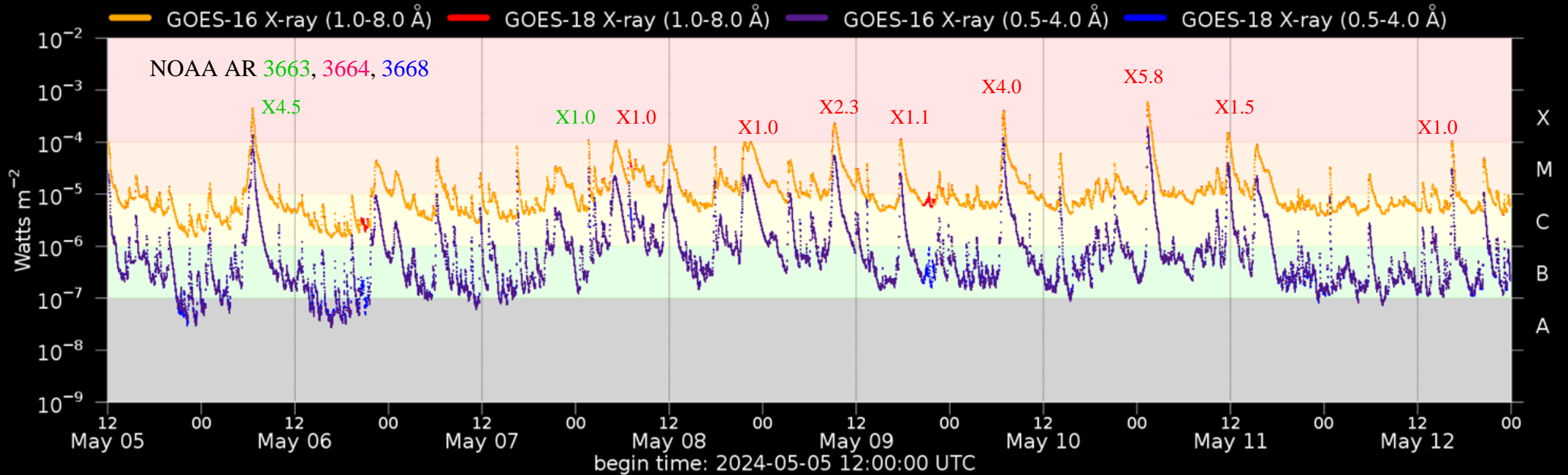
University of Graz  
(Austria)



# Solar F10.7cm radio flux



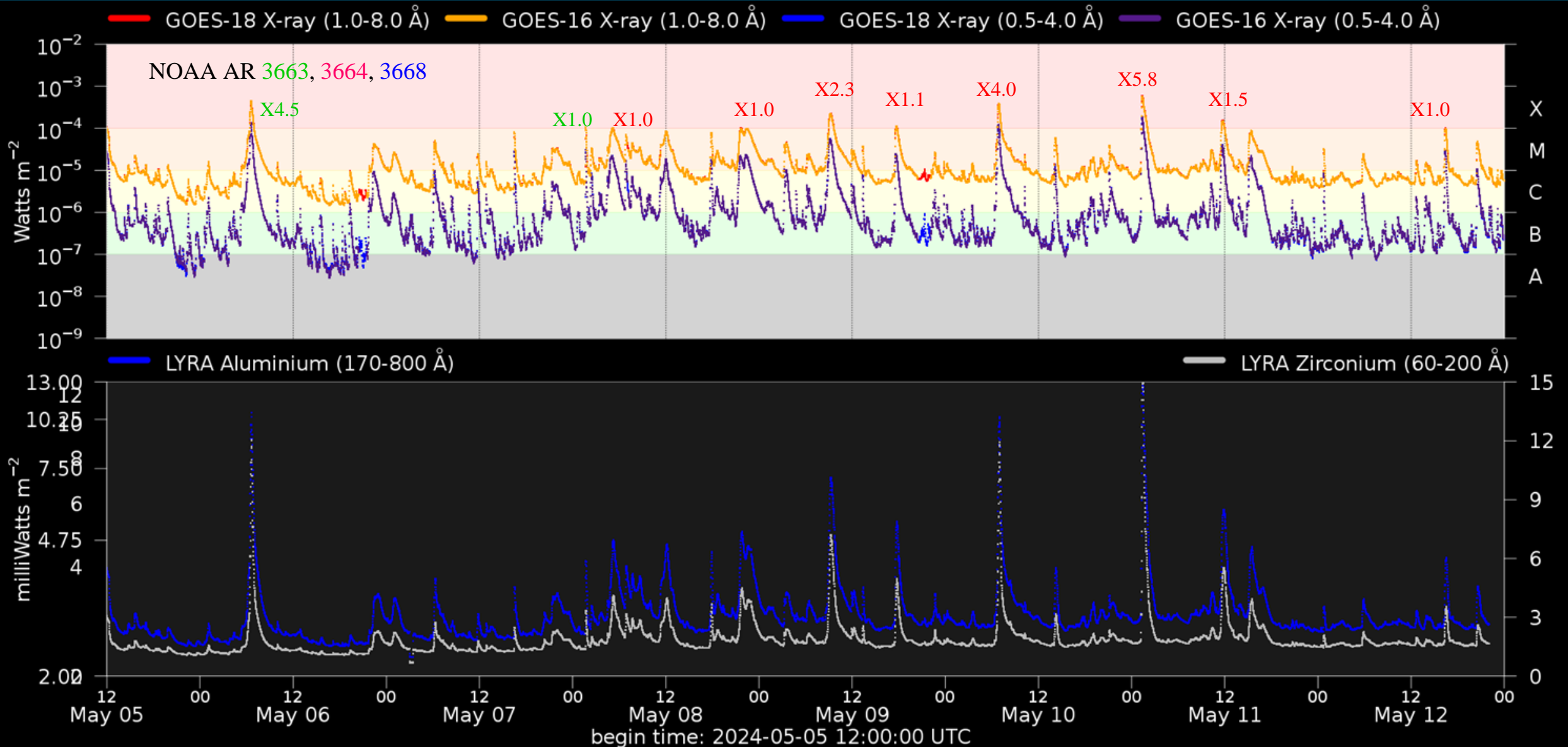
# Flaring activity



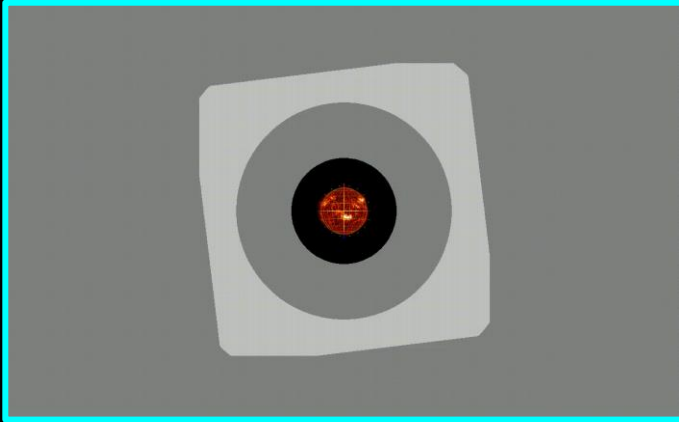
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2024-05-05	2024-05-06	2024-05-07	2024-05-08	2024-05-09	2024-05-10	2024-05-11	2024-05-12
Probability (%)	99 95 40	90 55 10	90 50 10	90 52 12	95 55 50	90 75 50	90 55 50	90 80 40
Observed (#)	05 07 01	08 05 00	03 09 01	00 06 01	01 08 02	00 05 02	03 05 00	04 05 01

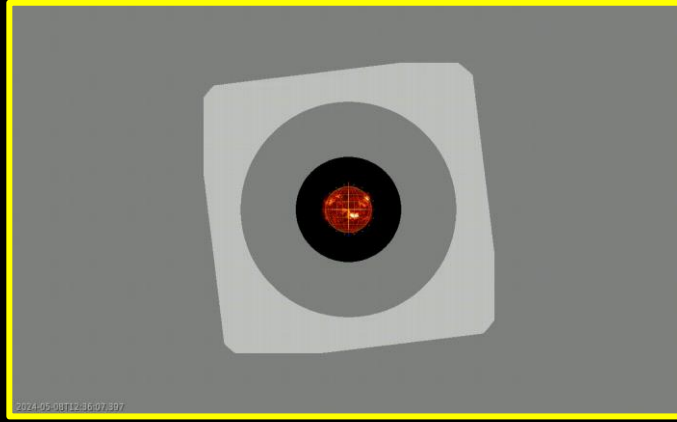
# Solar X-Ray and UV flux



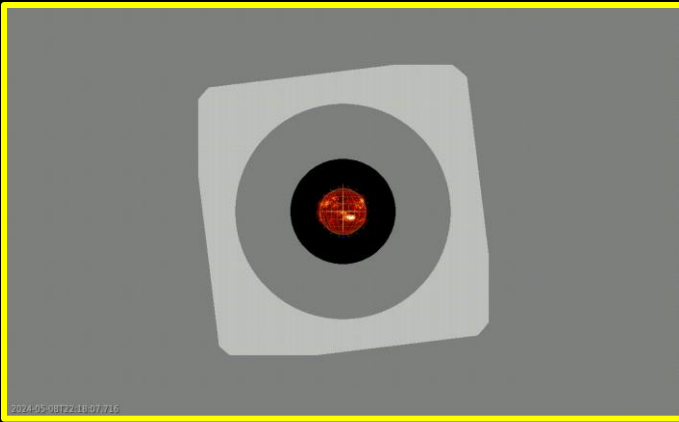
# Coronal Mass Ejections



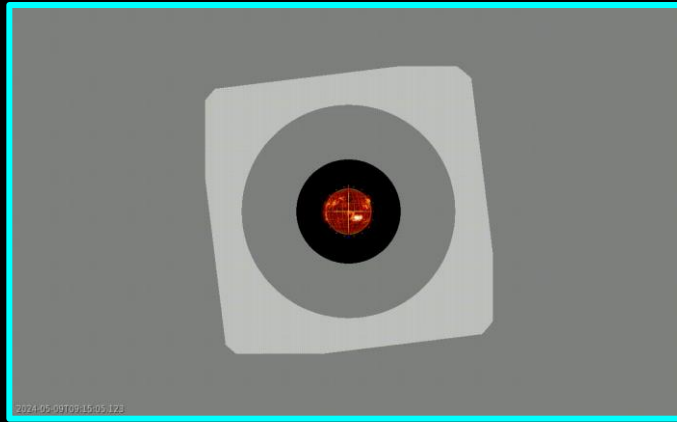
**Observation:** 05:30 UTC on May 08  
 Associated with X1.0 flare (peak: 05:09 UTC, AR 3664)  
**Prediction:** Impact on May 10T18:00



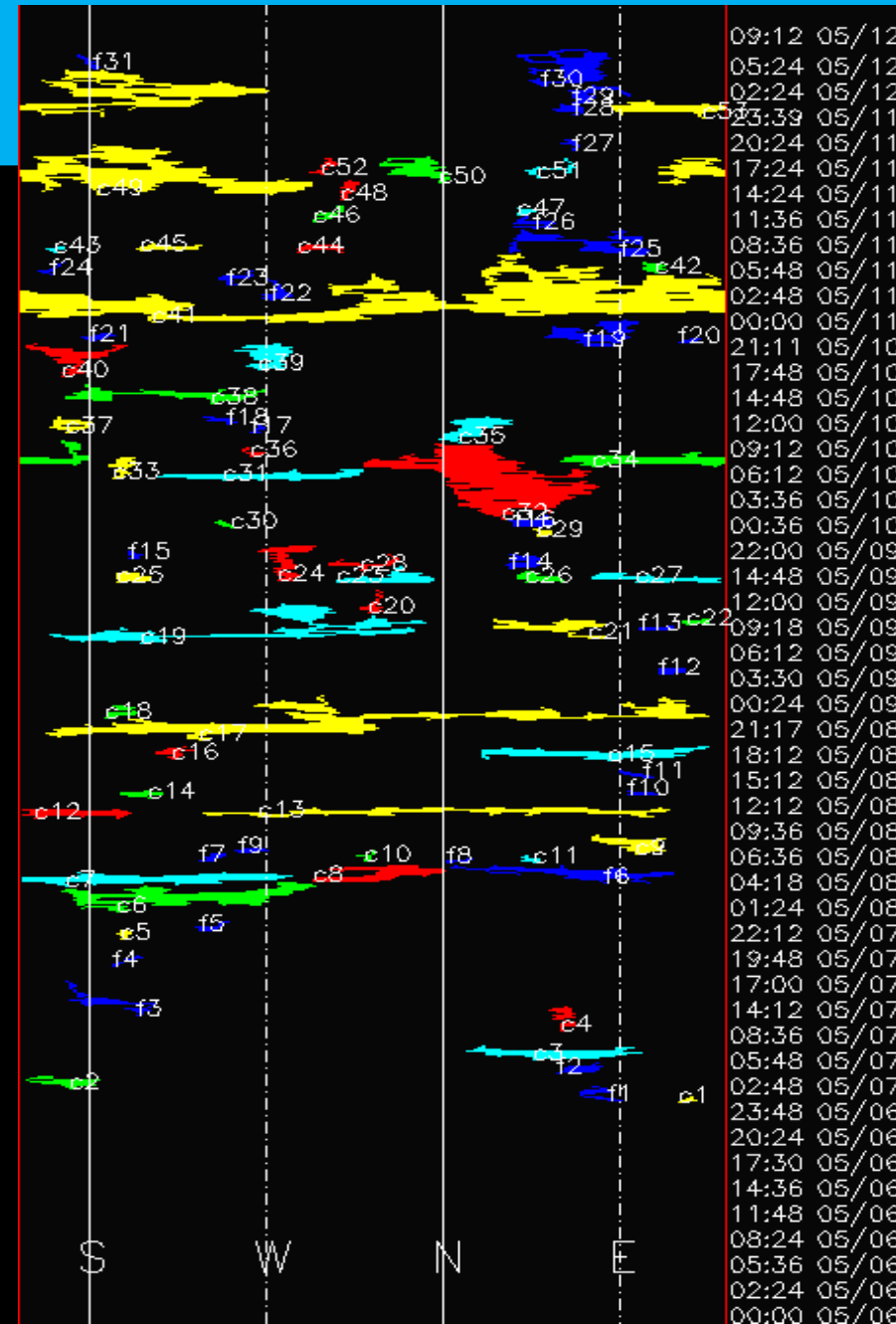
**Observation:** 12:48 UTC on May 08  
 Associated with M8.7 flare (peak: 12:04 UTC, AR 3664)  
**Prediction:** Impact on May 11T01:00



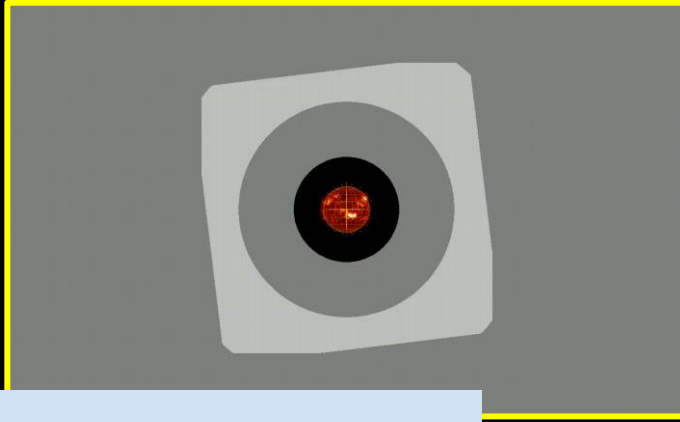
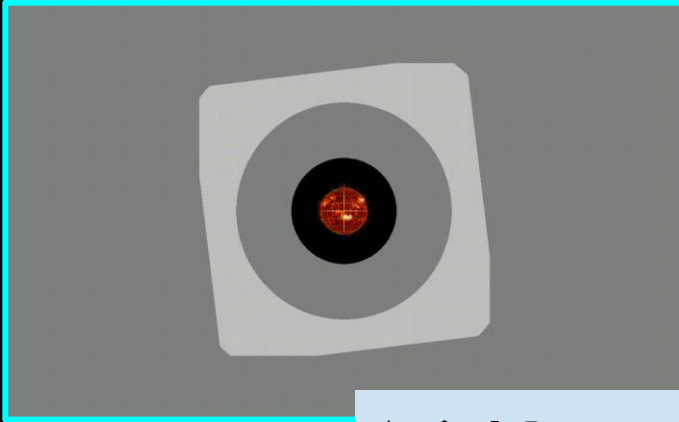
**Observation:** 22:36 UTC on May 08  
 Associated with X1.0 flare (peak: 21:40 UTC, AR 3664)  
**Prediction:** Impact on May 10T21:00



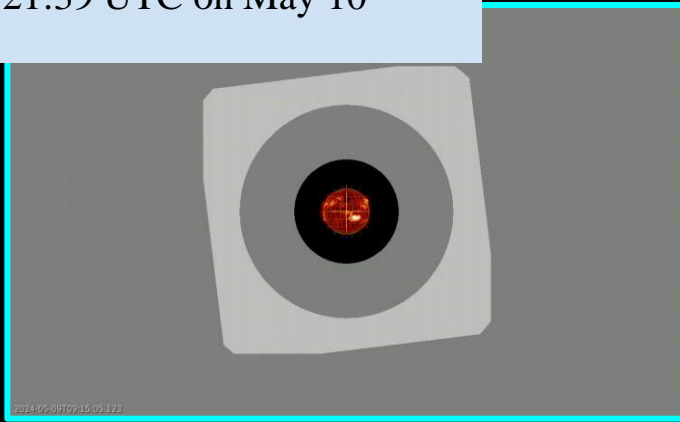
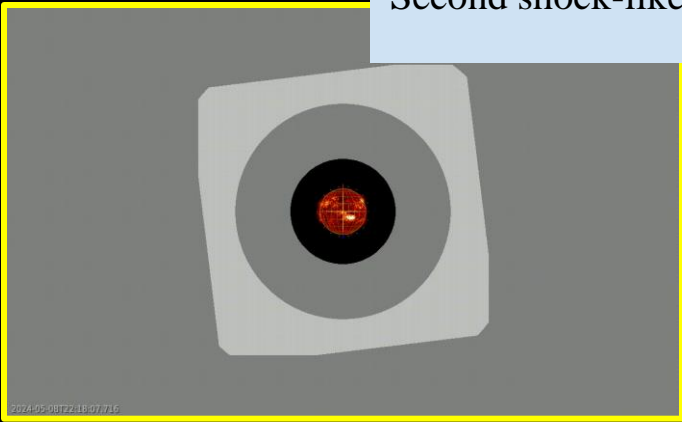
**Observation:** 09:24 UTC on May 09  
 Associated with X2.3 flare (peak: 09:13 UTC, AR 3664)  
**Prediction:** Impact on May 10T23:00



# Coronal Mass Ejections

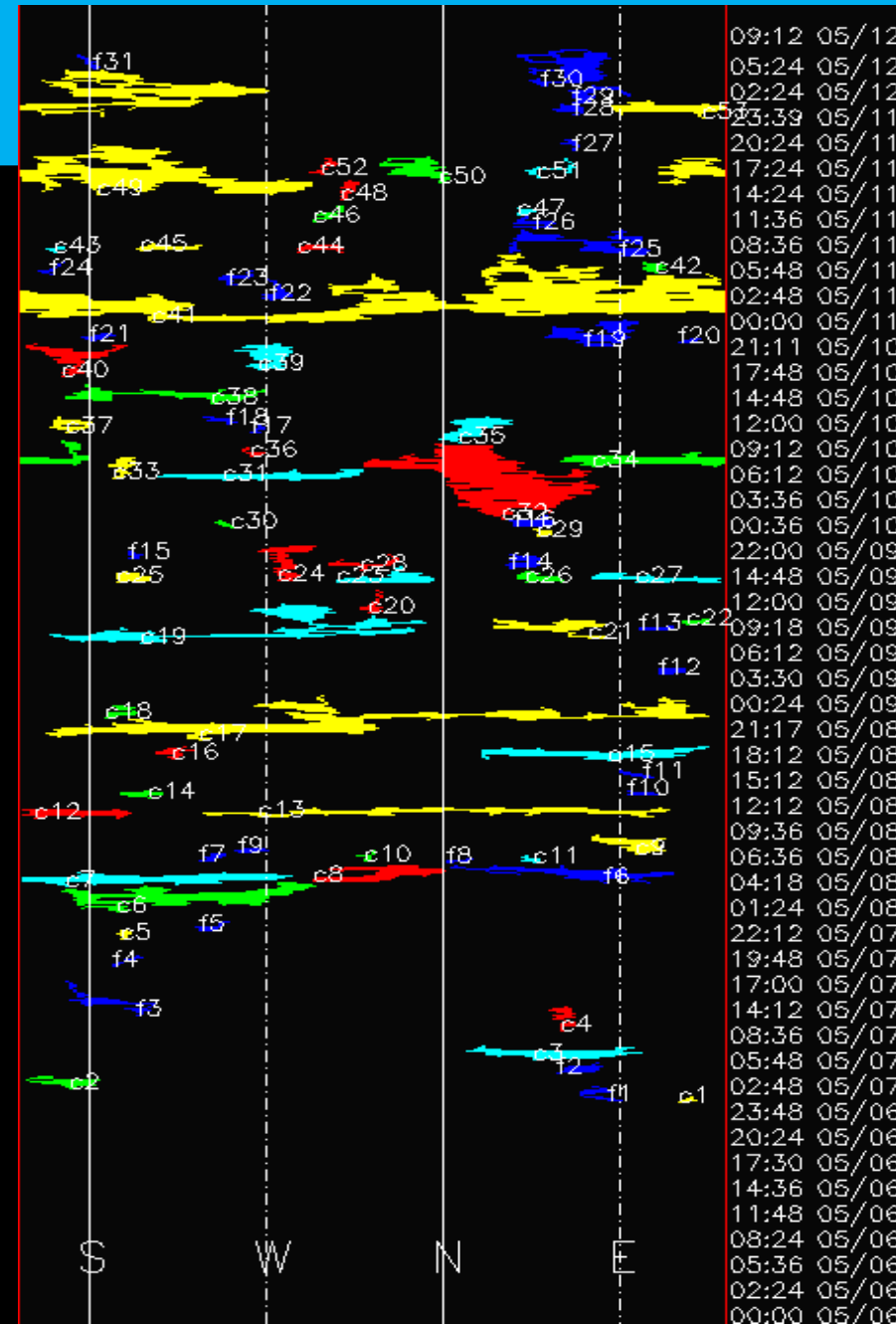


**Arrival: Impact on May 10**  
 First shock: 16:42 UTC on May 10.  
 Second shock-like structure: 21:39 UTC on May 10

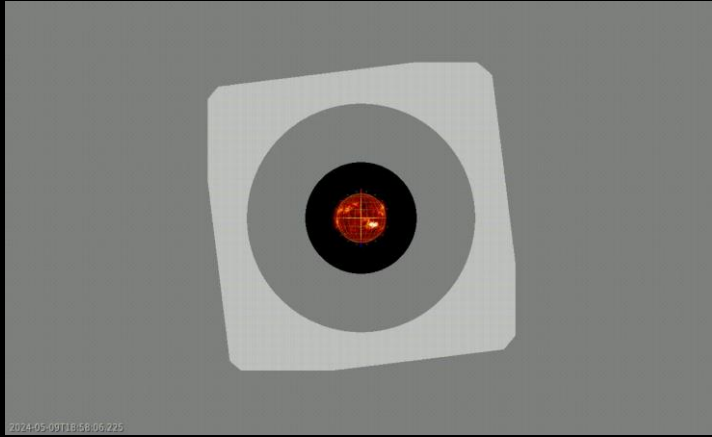


Observation: 22:36 UTC on May 08  
 Associated with X1.0 flare (peak: 21:40 UTC, AR 3664)  
 Prediction: Impact on May 10T21:00

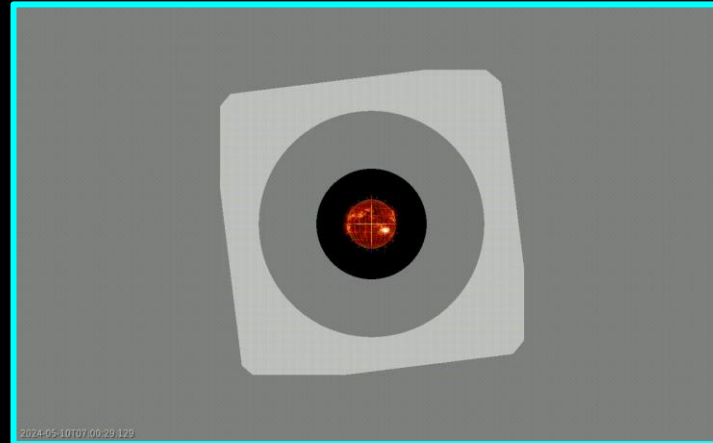
Observation: 09:24 UTC on May 09  
 Associated with X2.3 flare (peak: 09:13 UTC, AR 3664)  
 Prediction: Impact on May 10T23:00



# Coronal Mass Ejections



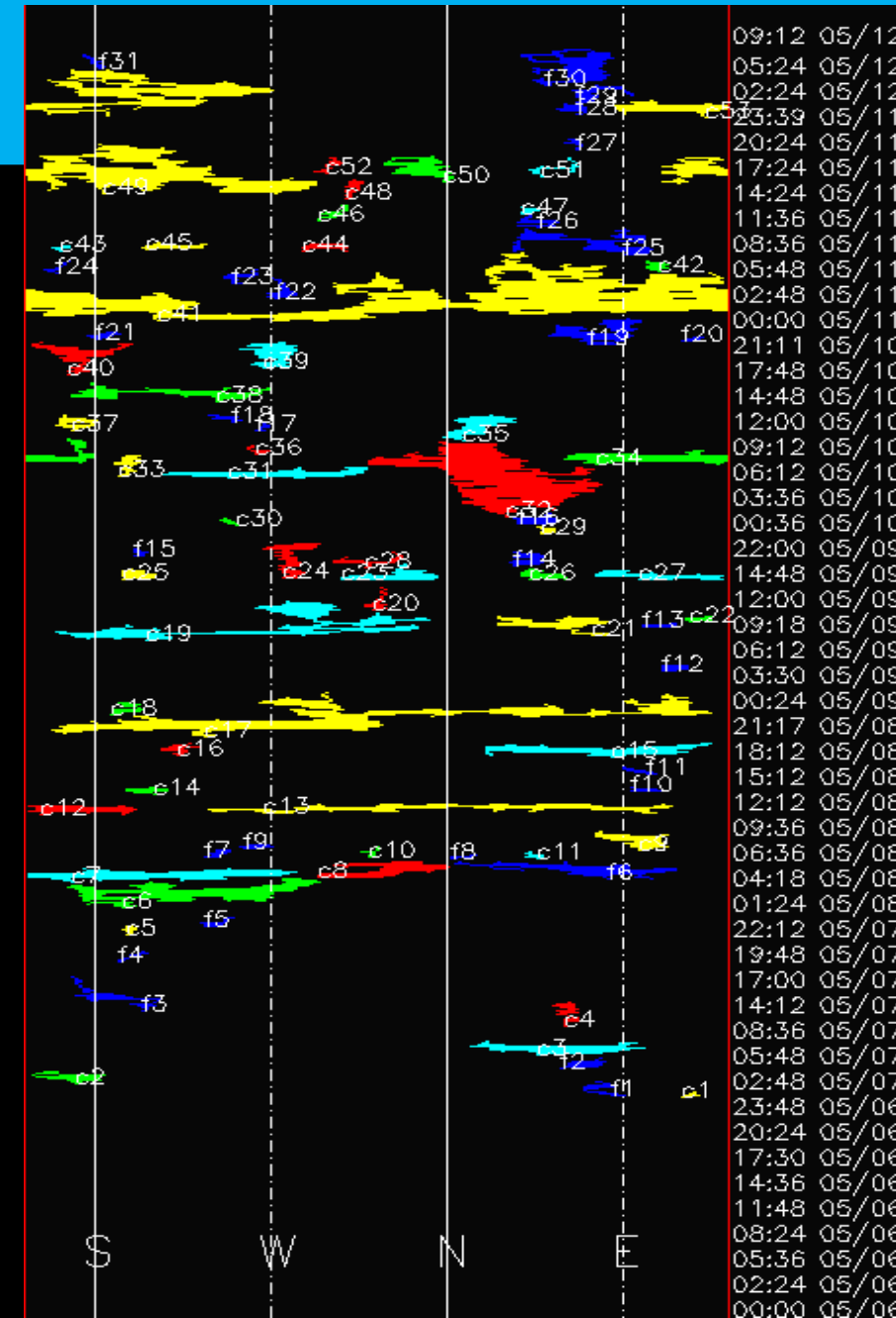
**Observation:** 18:54 UTC on May 09  
 Associated with X1.1 flare (peak: 17:44 UTC, AR 3664)  
**Prediction:** Impact on May 11T19:00



**Observation:** 07:12 UTC on May 10  
 Associated with X4.0 flare (peak: 06:54 UTC, AR 3664)  
**Prediction:** Impact on May 12T02:00

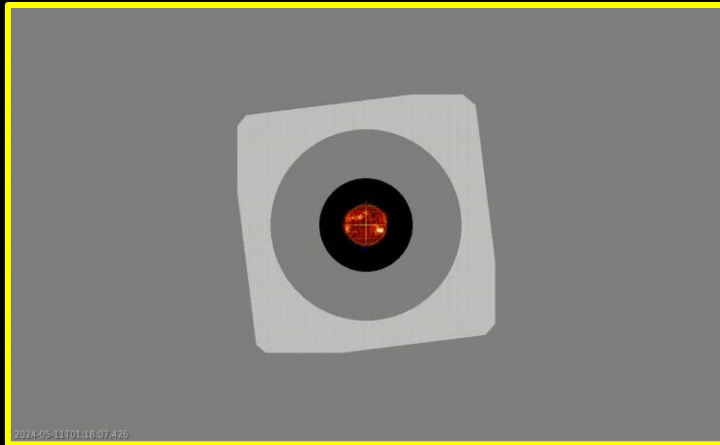
**Arrival:** Impact on May 11-12

First shock-like structure: 17:55 UTC on May 11.  
 Second shock-like structure: 08:59 UTC on May 12.





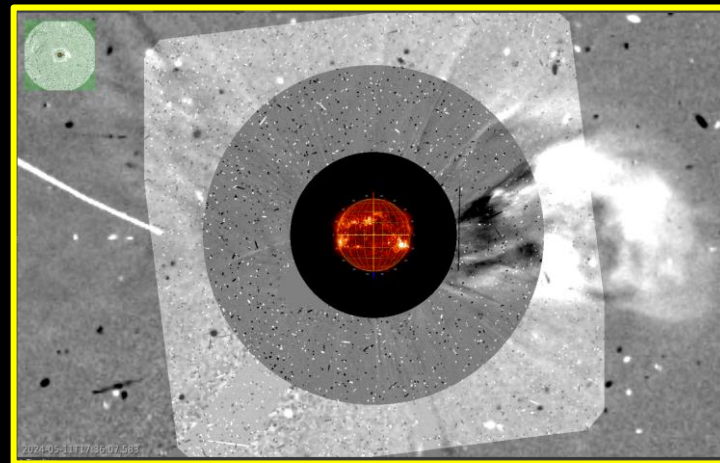
# Coronal Mass Ejections



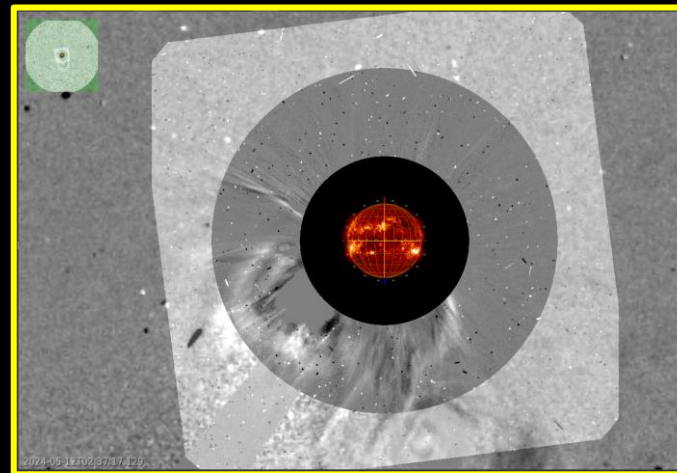
**Observation:** 01:36 UTC on May 11  
 Associated with X5.8 flare (peak: 01:23 UTC, AR 3664)  
**Prediction:** Impact on May 12T19:00

**Arrival:** Impact on **May 12**

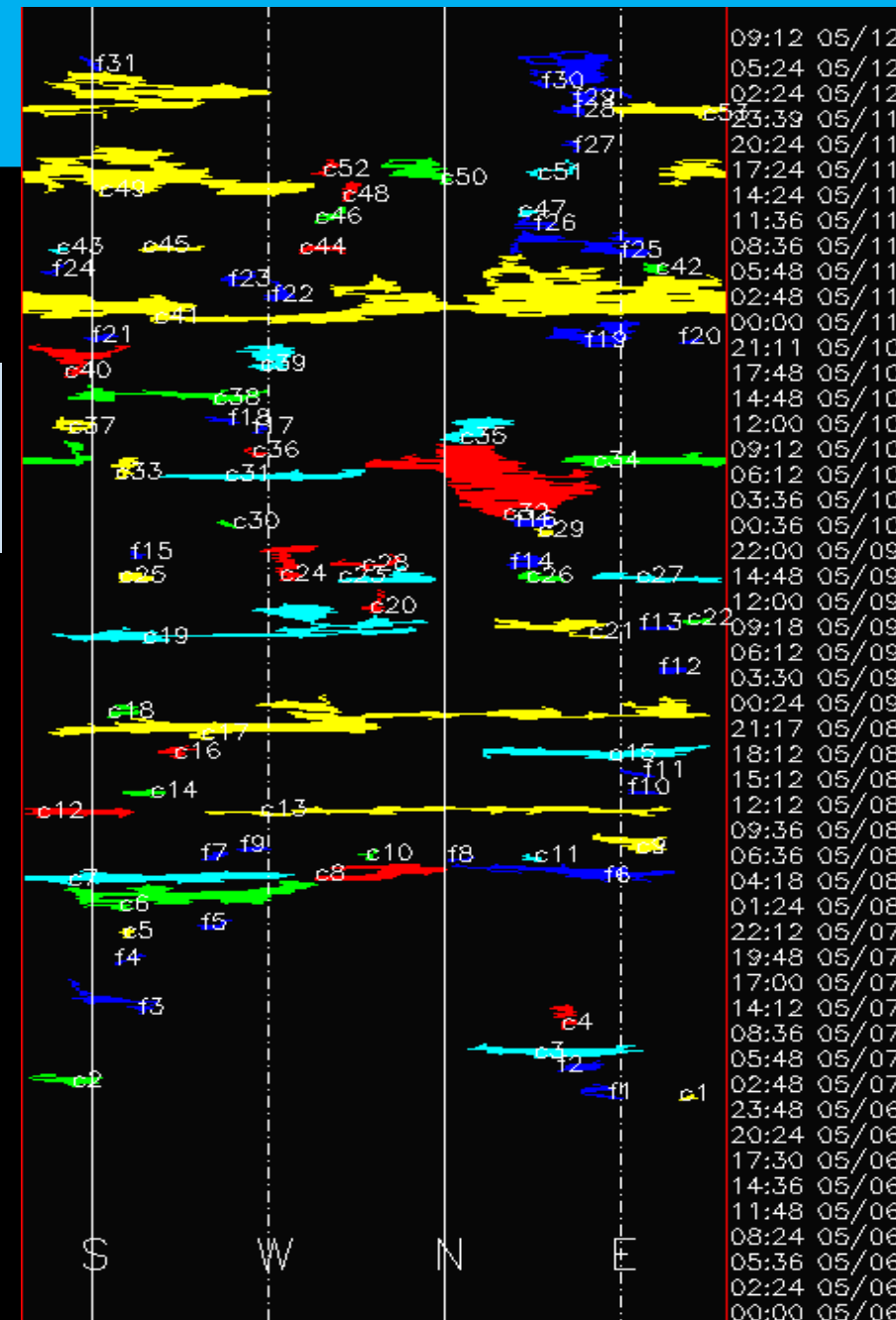
Shock-like structure: 08:58 UTC on May 12.



**Observation:** 16:24 UTC on May 11  
 Associated with M8.9 flare (peak: 15:25 UTC, AR 3664)  
**Prediction:** Glancing blow on May 13



**Observation:** 02:00 UTC on May 12  
 Associated with filament eruption on SE quadrant  
**Prediction:** Glancing blow on May 14-15



Solar Wind and

# Geomagnetic Activity



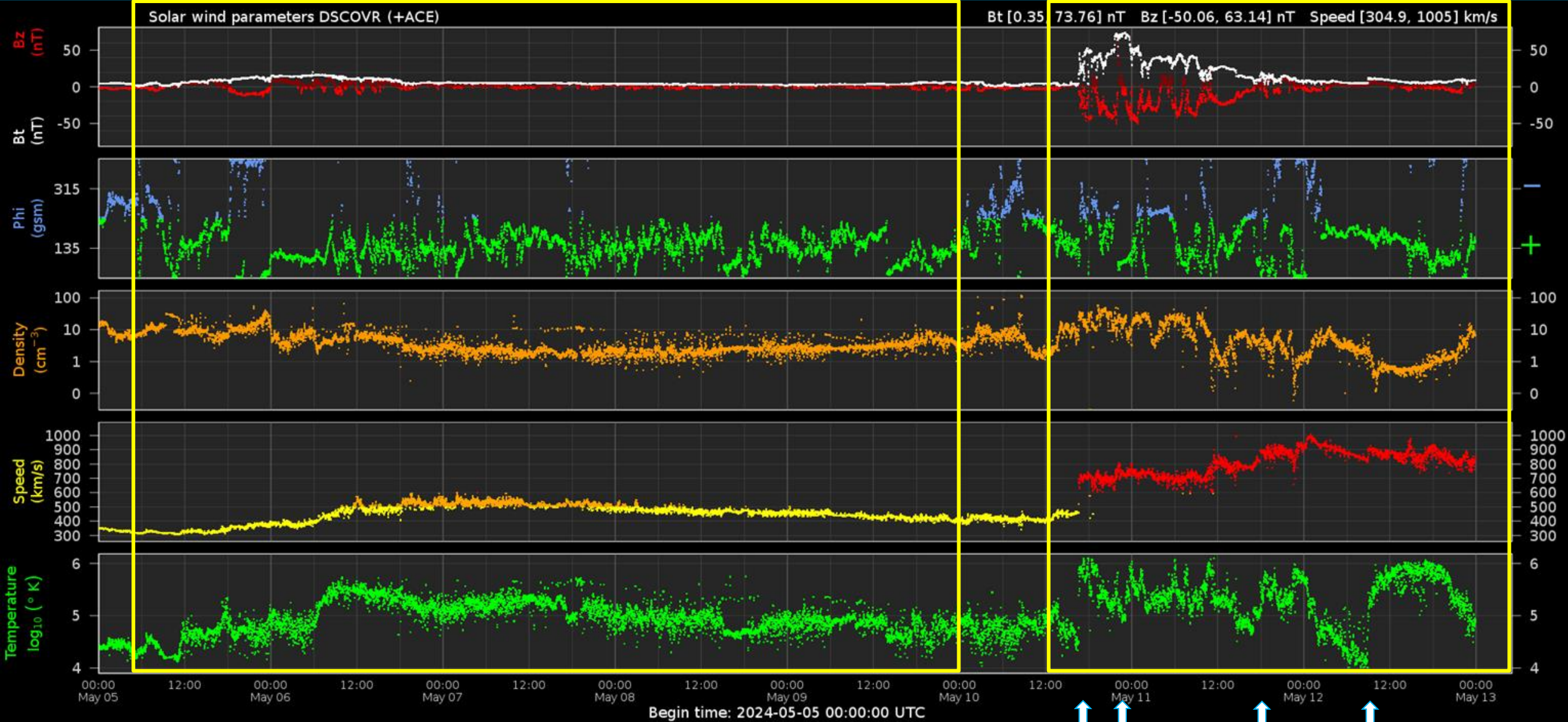
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# Solar wind parameters

2 ICME May 01 & 03 + HSS

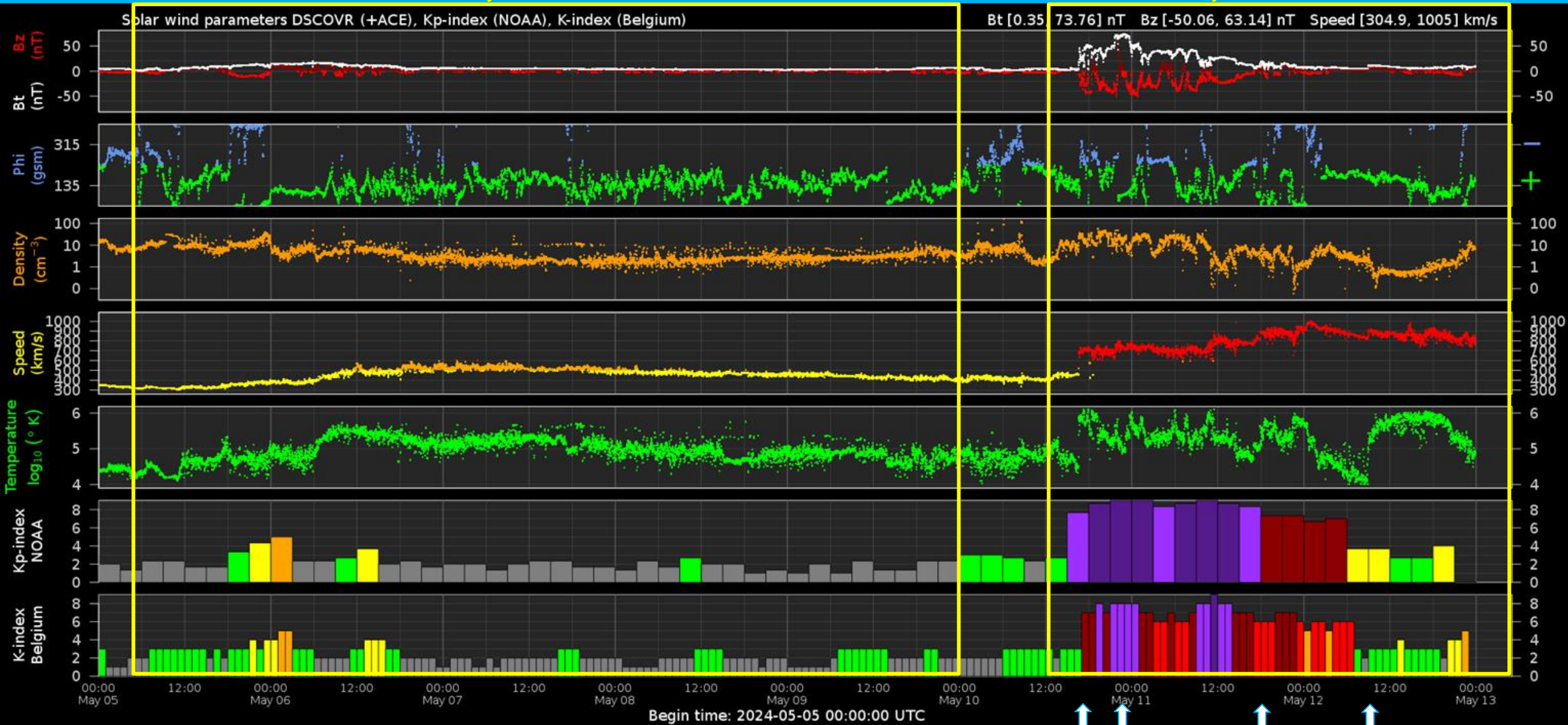
7 ICME May 08-11 + HSS



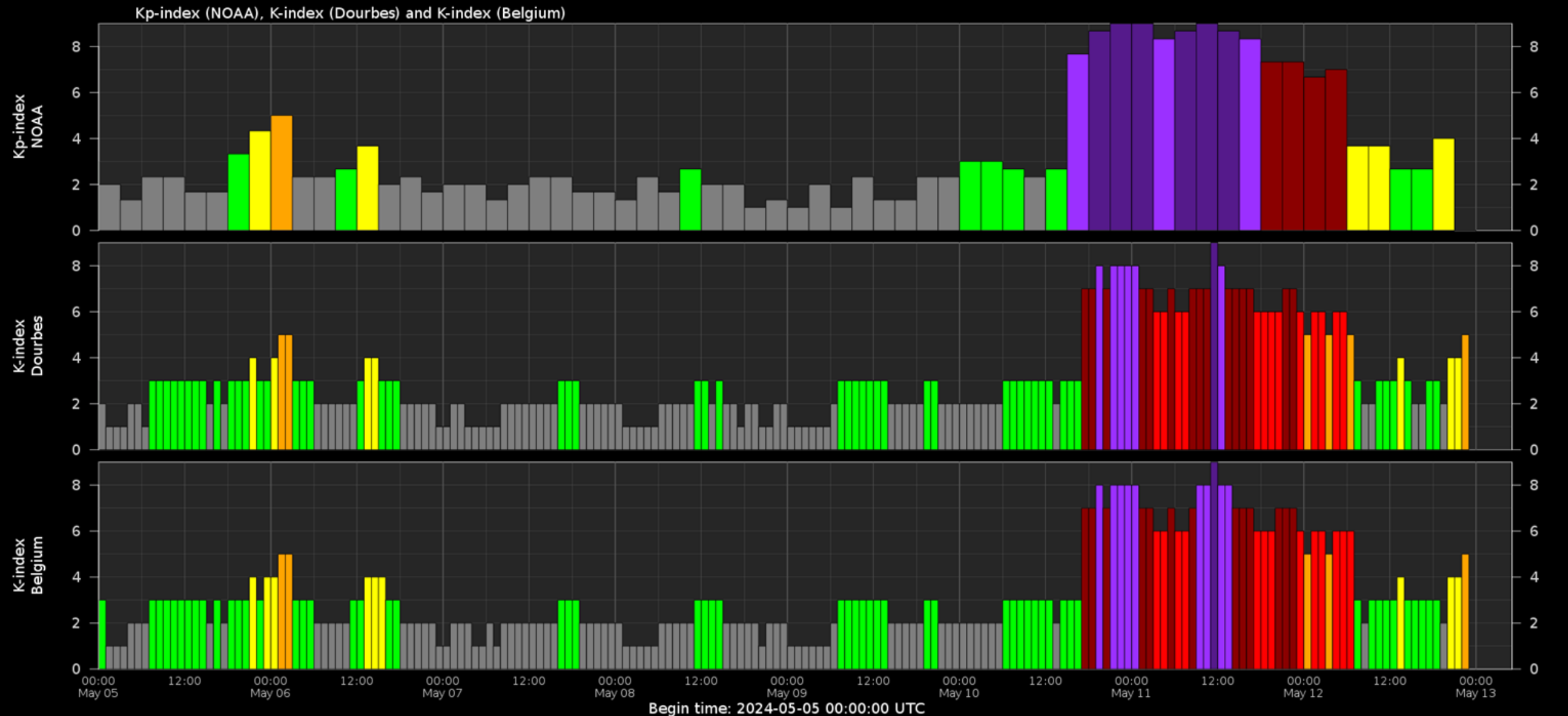
# Solar wind parameters & K-indices

2 ICME May 01 & 03 + HSS

7 ICME May 08-11 + HSS



# Geomagnetic activity (K-indexes)



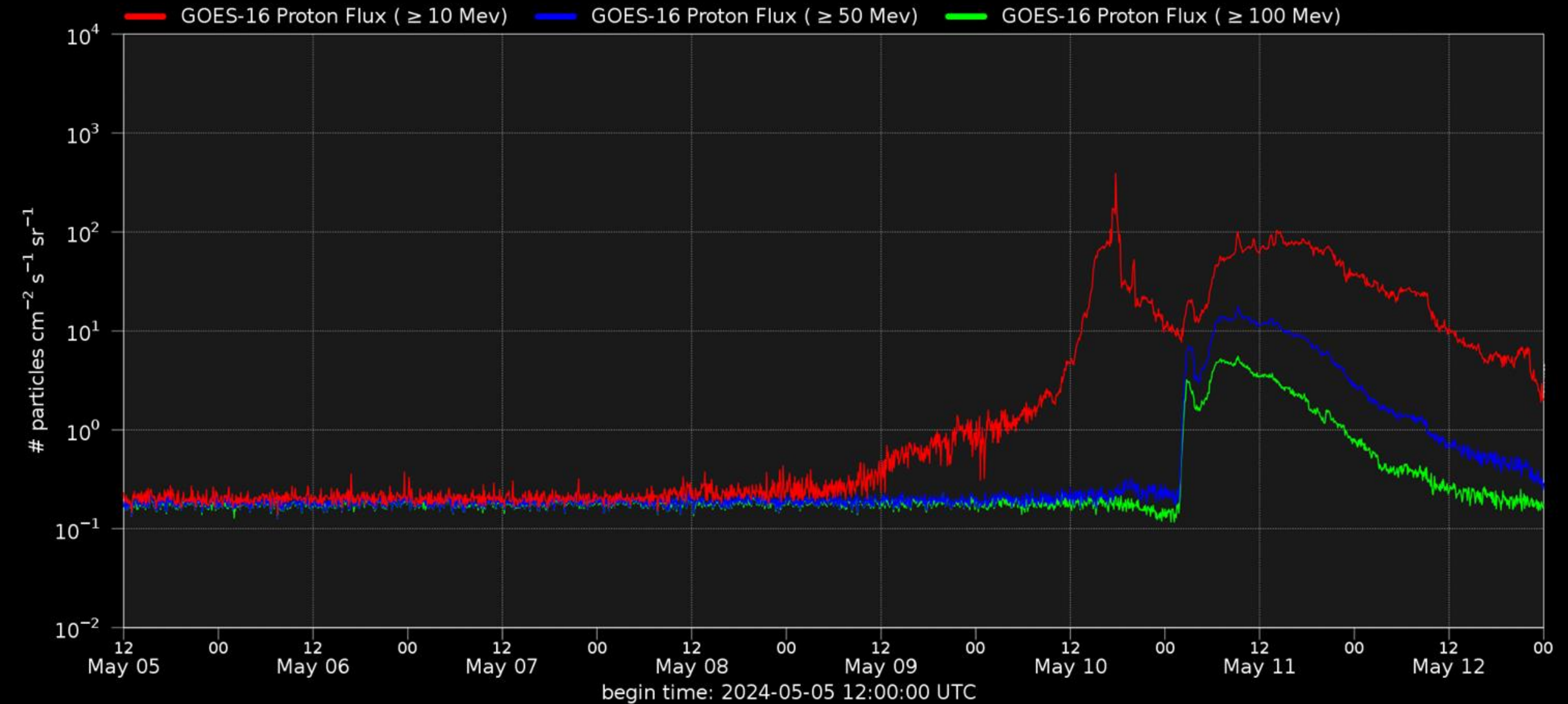
# Energetic Particles



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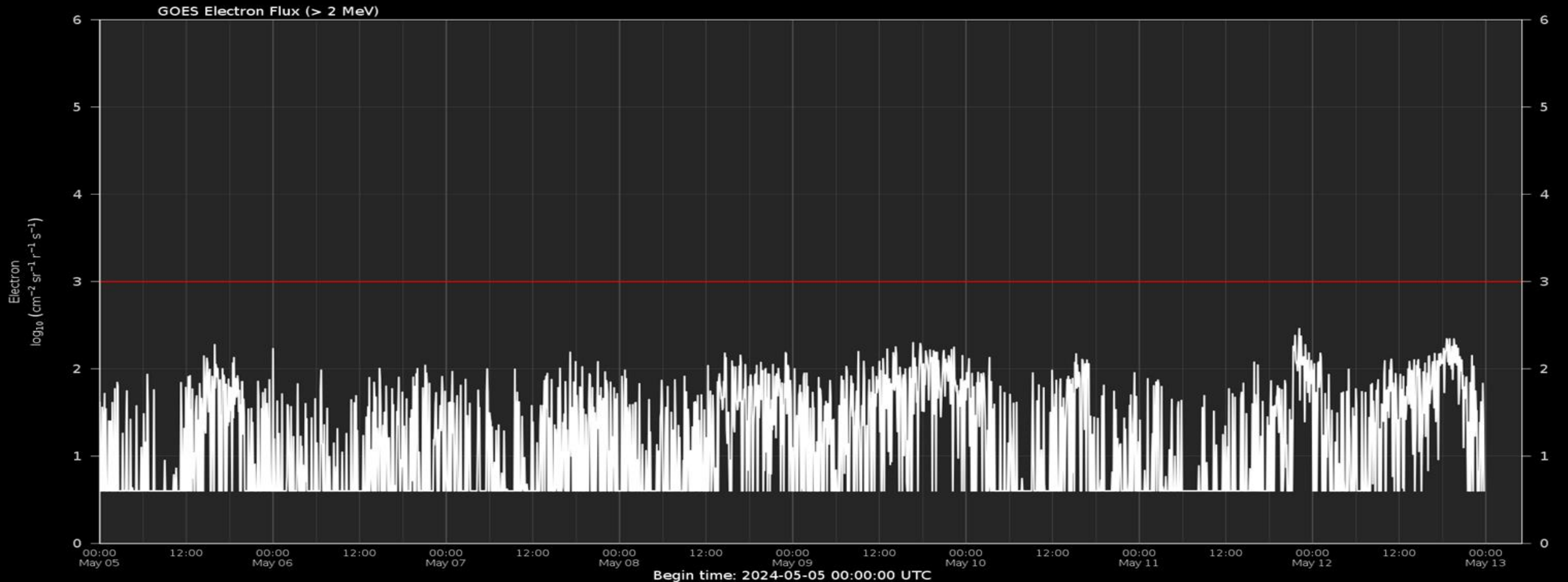
# Solar proton flux



# Electron flux at GEO

[www.stce.be/educational/classification#electrons](http://www.stce.be/educational/classification#electrons)

[www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php](http://www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php)





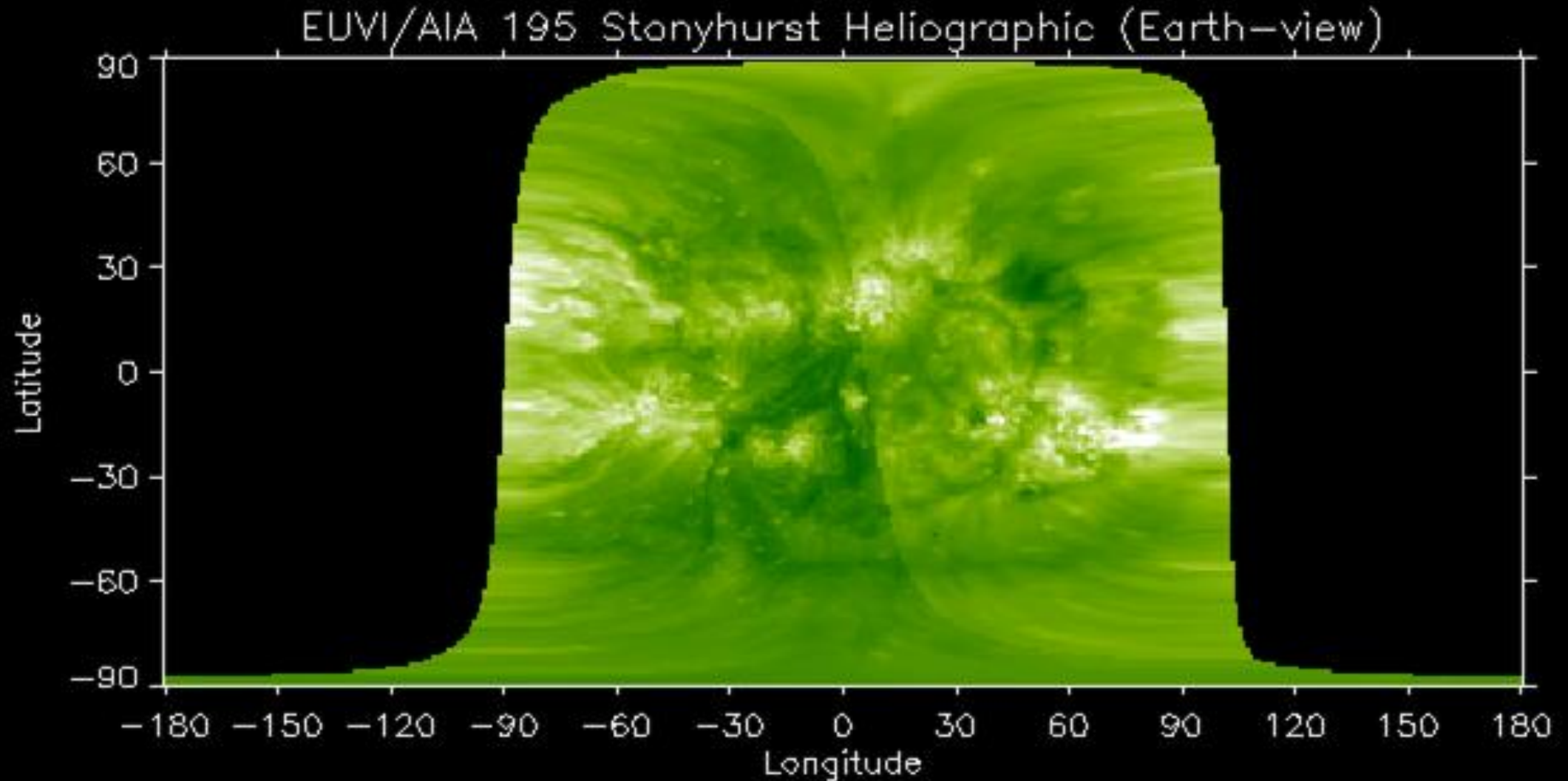
# Outlook



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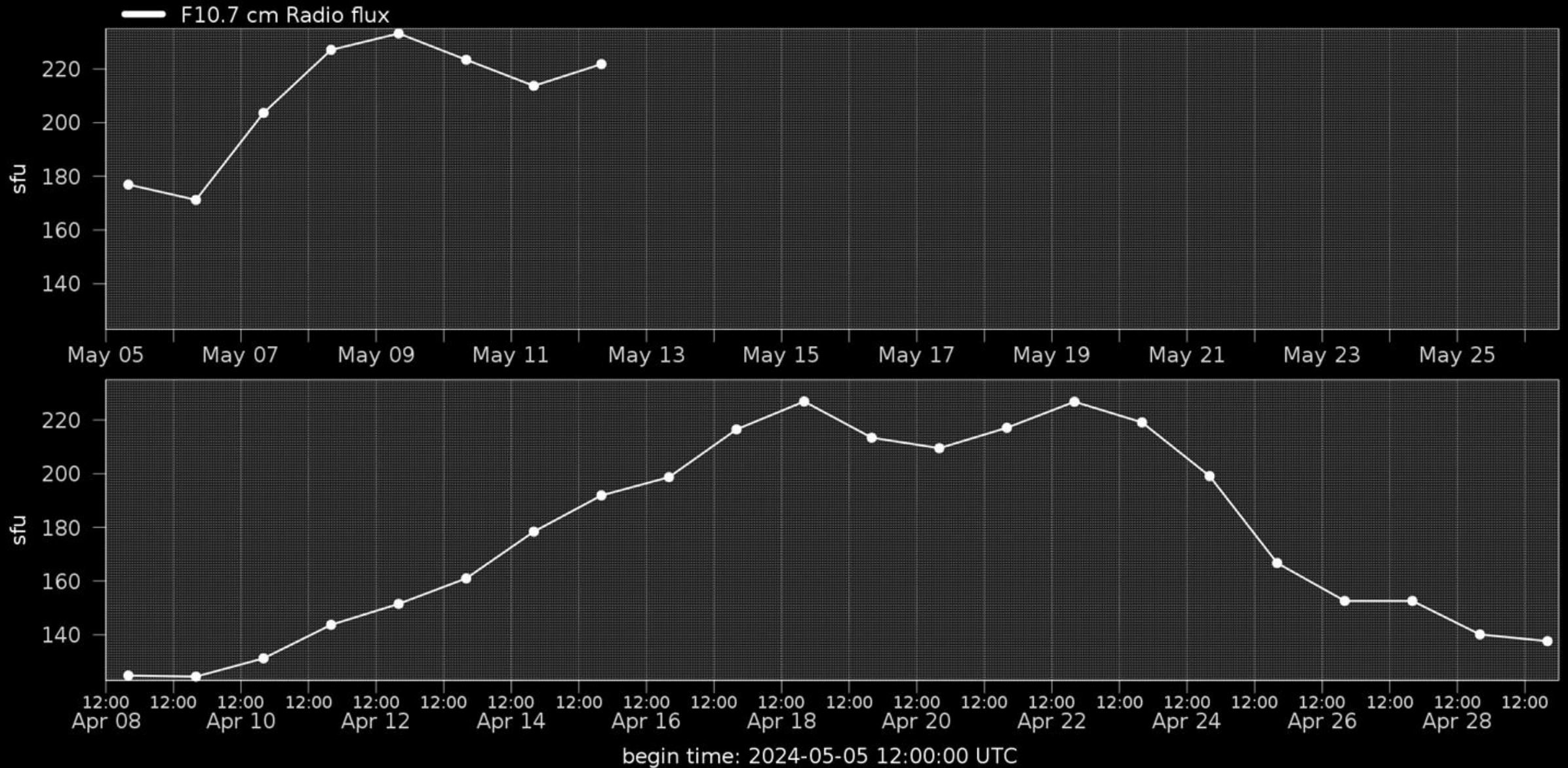
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# Outlook: Solar activity



Observation date: 2024/05/12 20:55:00

# Outlook: Solar F10.7cm radio flux



# Outlook: Solar wind parameters



# Outlook: Geomagnetic activity



# Outlook: Electron Flux at GEO Outlook



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# Pegasus related events

Anything notable that is Pegasus related?

Several advisories

Amplitude and Phase Scintillations, Vertical TEC

Auroral absorption, Polar cap absorption, Shortwave fadeout, and Post-storm depression



SIDC Space Weather Briefing

See you at our next briefing!

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