

# SIDC Space Weather Briefing

17 March 2024-24 March 2024

Katsiyannis Thanassis

& the SIDC forecaster team



Royal Observatory  
of Belgium

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

# Summary Report

Solar activity from 2024-03-17 12:00 to 2024-03-24 23:59

Active regions	NOAA Ar 3612, 3614, 3615
Flares	# C-class flare: 44 # M-class flare: 25 # X-class flare: 1
Coronal Holes	Crossing on 21 Mar
CMEs	21 and 23 Mar

Proton flux	Major Proton Event (> 10 MeV flux peaked at 920 pfu on 24 Mar 12:35 UTC)
Electron flux	Nominal levels

## Solar wind and geomagnetic conditions

ICMEs	Arrival on 24 Mar (yesterday)
Solar wind conditions	B : 0.14 - 33.74 nT //Bz: -26.54 nT to 29.31 nT //Speed: 264.2 - 887.2km/s
Geomagnetic conditions	max K <sub>Be</sub> : 7, max K <sub>p</sub> (NOAA): 8, Major Storm conditions

All Quiet Alert: Not quiet

# Solar Activity

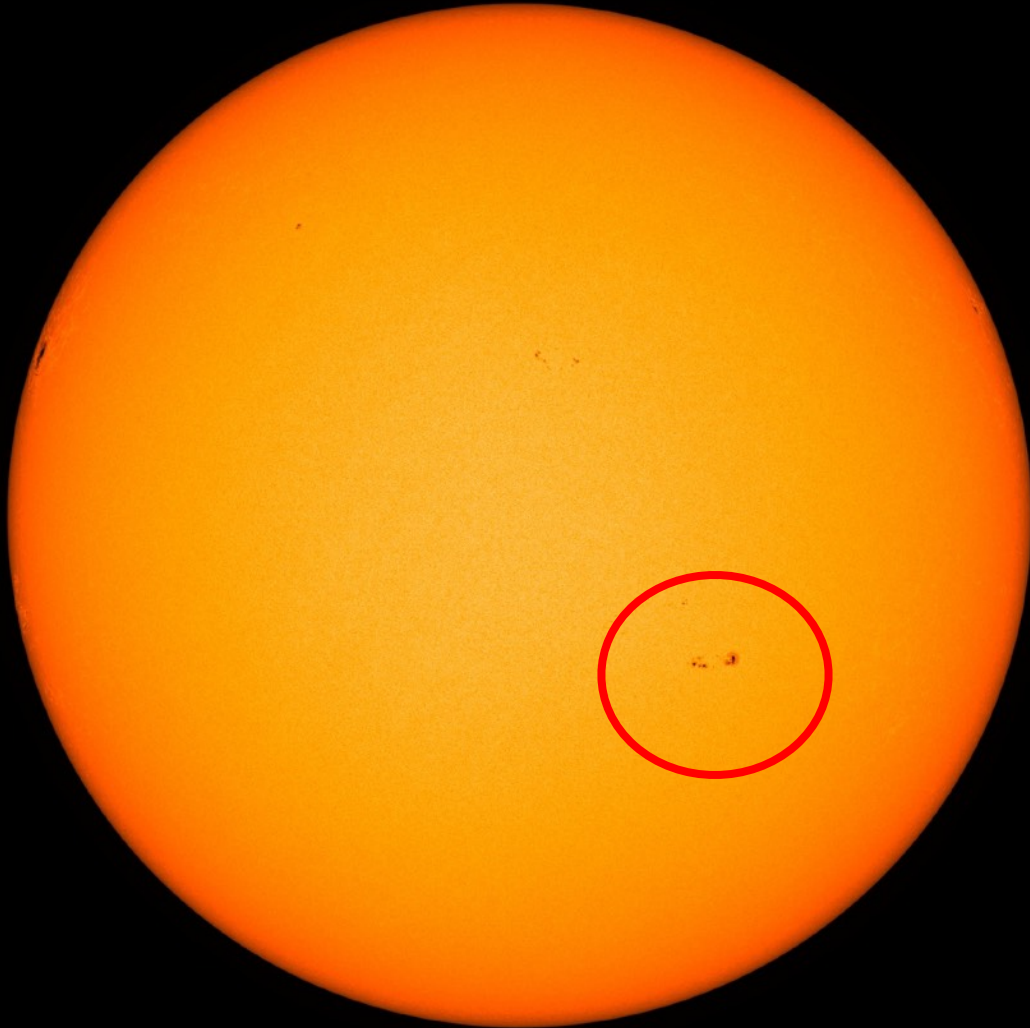


Royal Observatory  
of Belgium

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

# Solar active regions

SDO/HMI White Light 2024-03-17



SDO/HMI Quick-Look Continuum: 20240317\_114500

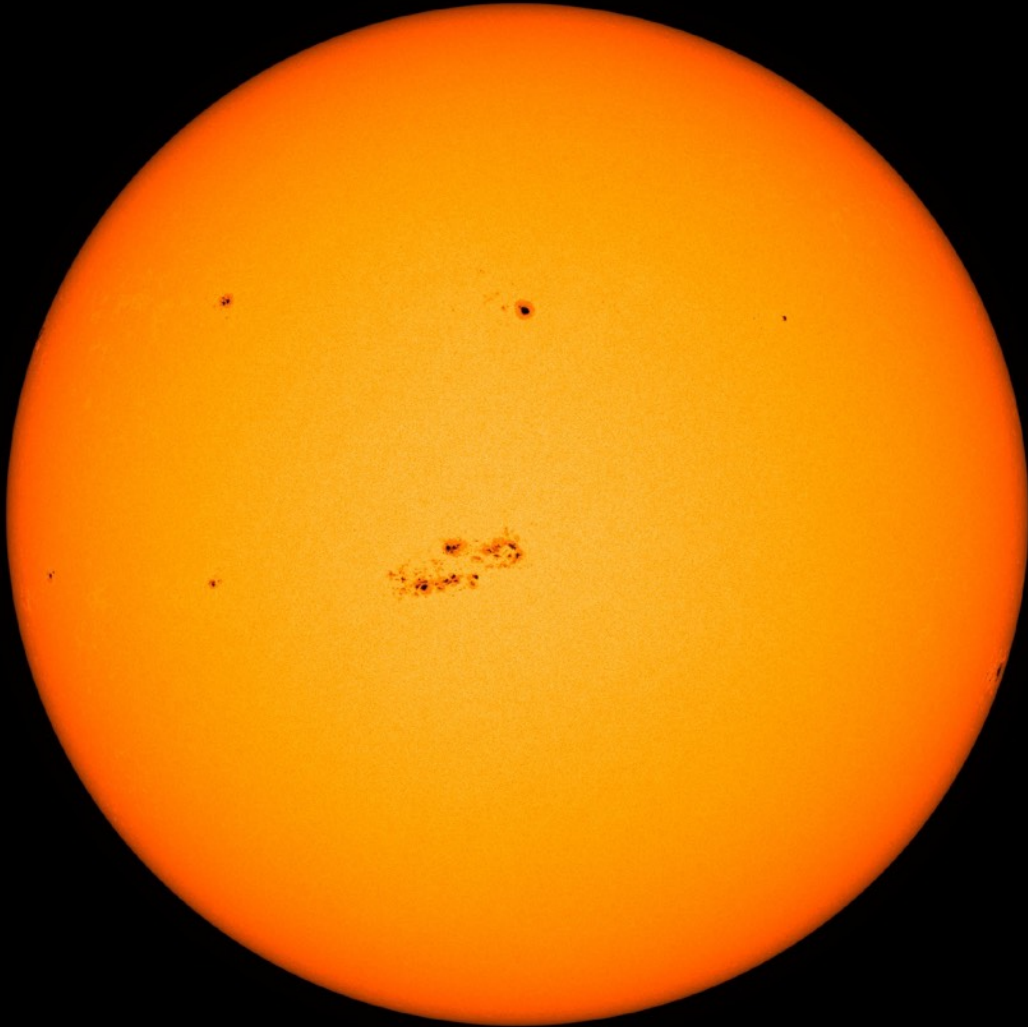
SDO/HMI Magnetogram 2024-03-17



SDO/HMI Quick-Look Magnetogram: 20240317\_114500

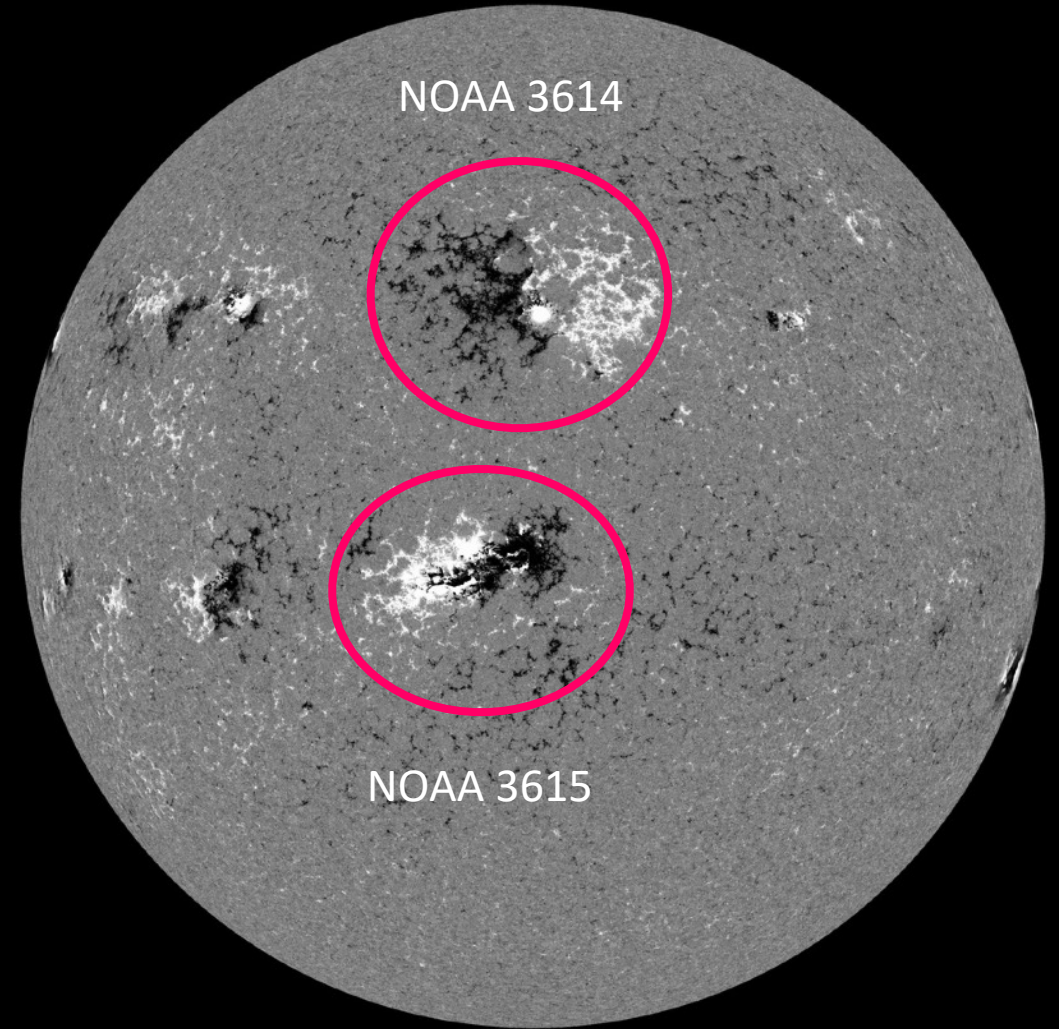
# Solar active regions

SDO/HMI White Light 2024-03-23



SDO/HMI Quick-Look Continuum: 20240323\_114500

SDO/HMI Magnetogram 2024-03-23

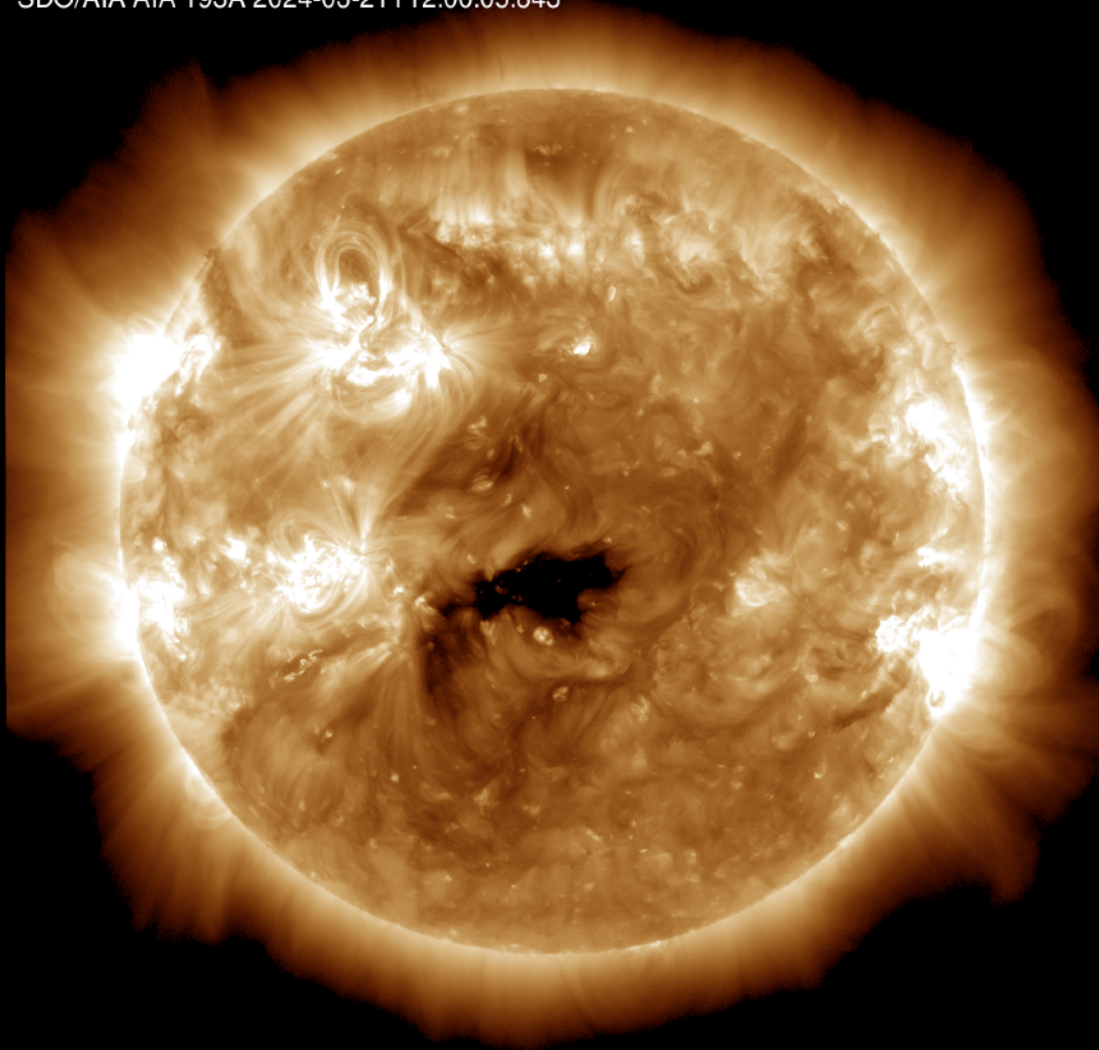


SDO/HMI Quick-Look Magnetogram: 20240323\_114500

# Coronal holes

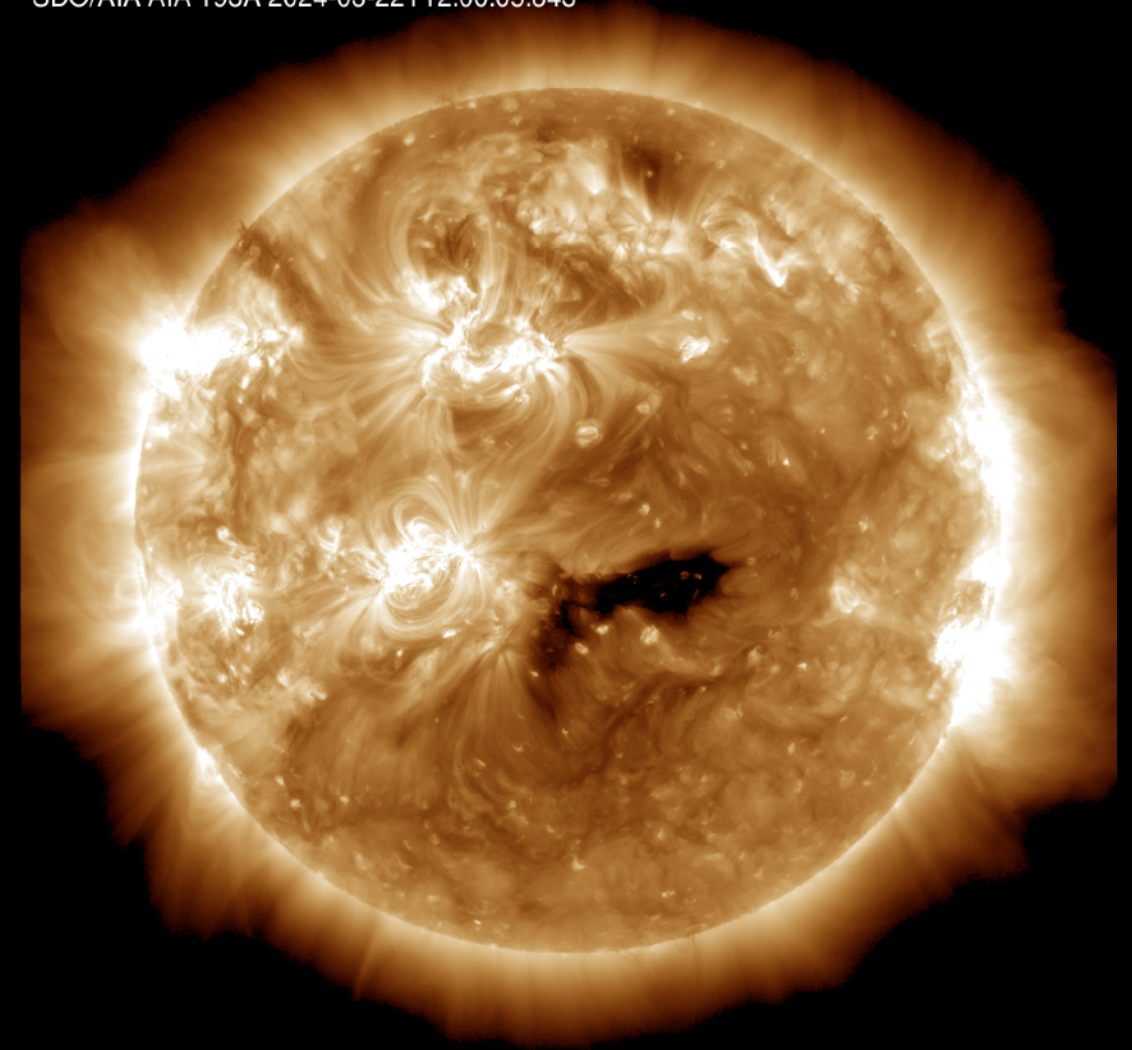
SDO/AIA 19.3 nm 2024-03-21

SDO/AIA AIA 193Å 2024-03-21T12:00:05.843



SDO/AIA 19.3 nm 2024-03-22

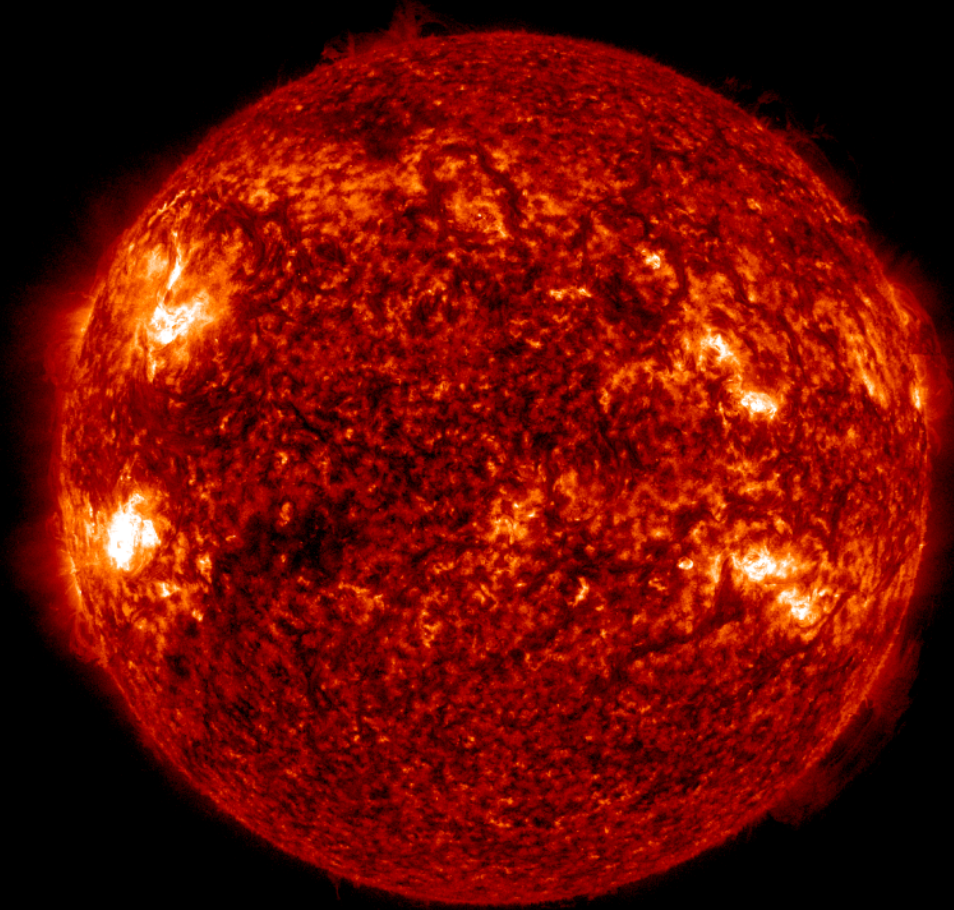
SDO/AIA AIA 193Å 2024-03-22T12:00:05.843



# Filaments

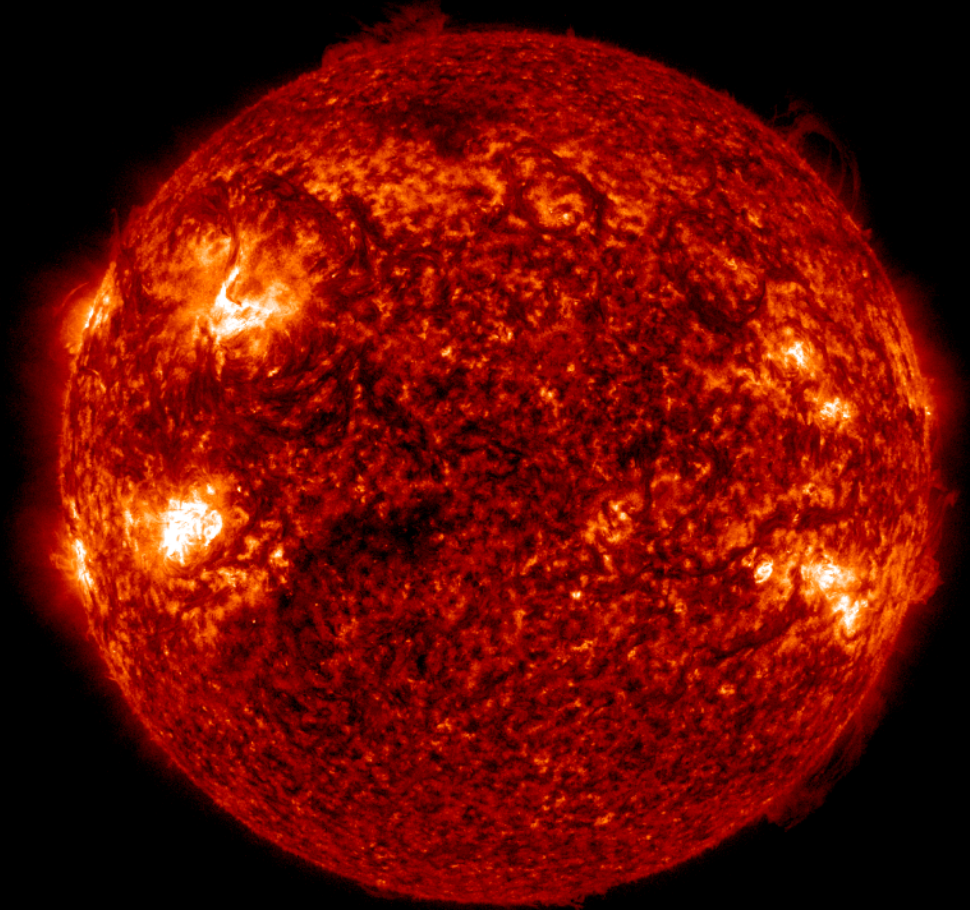
SDO/AIA 30.4 nm 2024-03-19

SDO/AIA AIA 304Å 2024-03-19T12:00:06.580



SDO/AIA 30.4 nm 2024-03-20

SDO/AIA AIA 304Å 2024-03-20T12:00:06.580



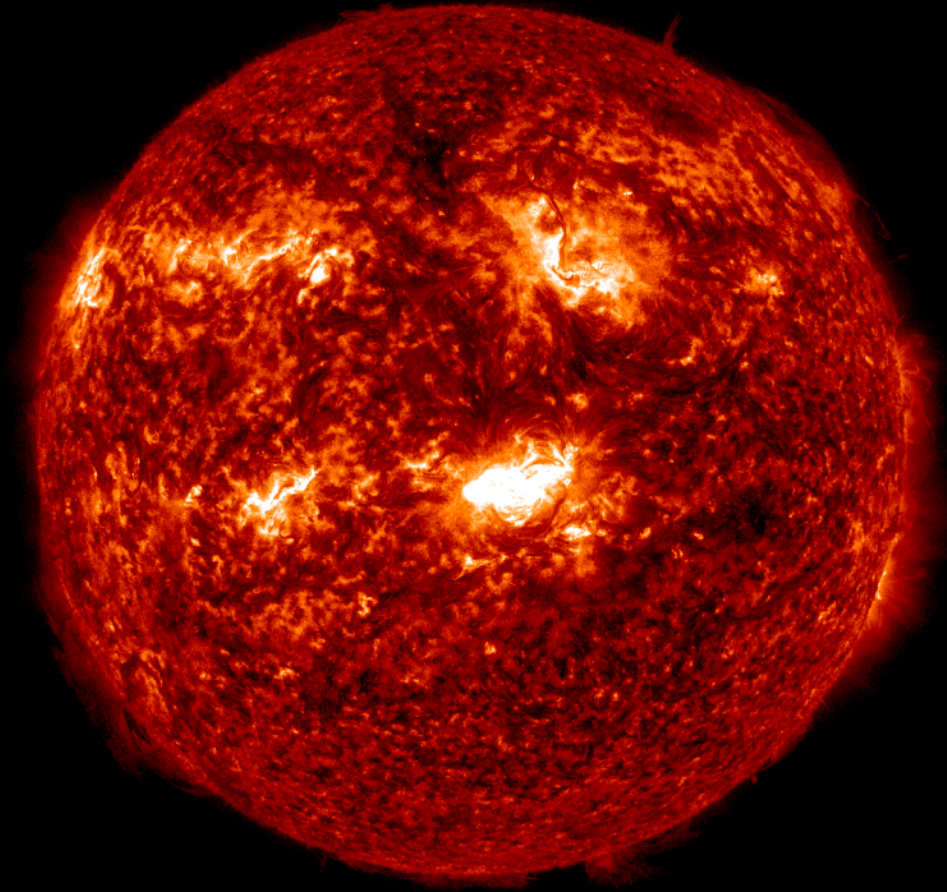
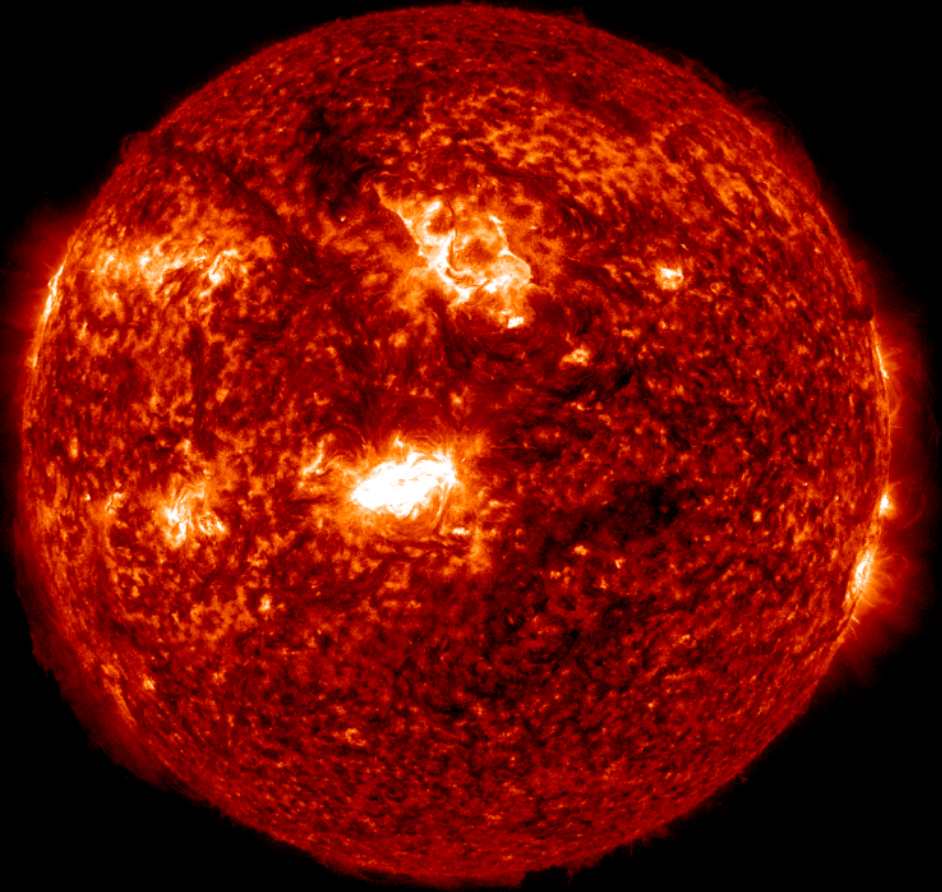
# Filaments

SDO/AIA 30.4 nm 2024-03-23

SDO/AIA AIA 304Å 2024-03-23T12:00:06.580

SDO/AIA 30.4 nm 2024-03-24

SDO/AIA AIA 304Å 2024-03-24T12:00:06.572





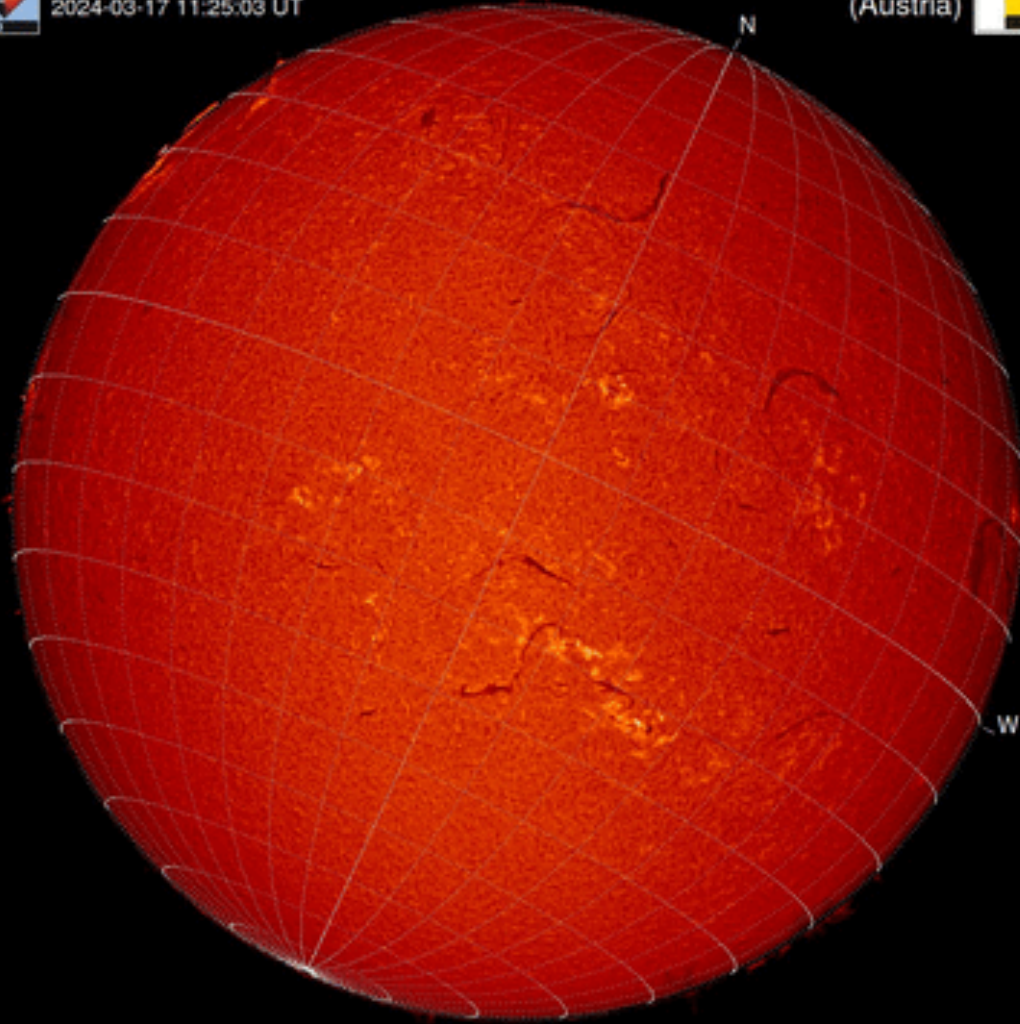
# Filaments & Filament eruptions

H-alpha 2024-03-17



Kanzelhöhe Observatory  
2024-03-17 11:25:03 UT

University of Graz  
(Austria)

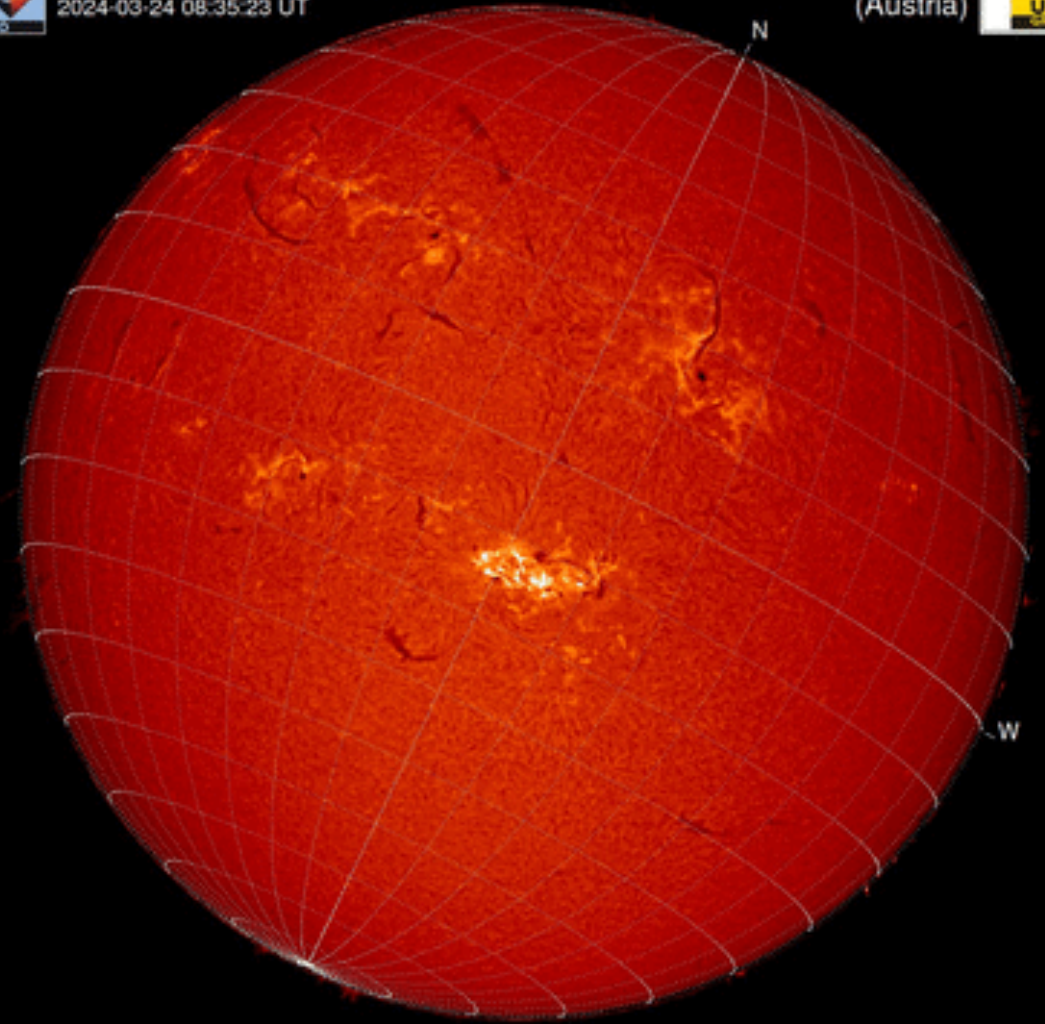


H-alpha 2024-03-24

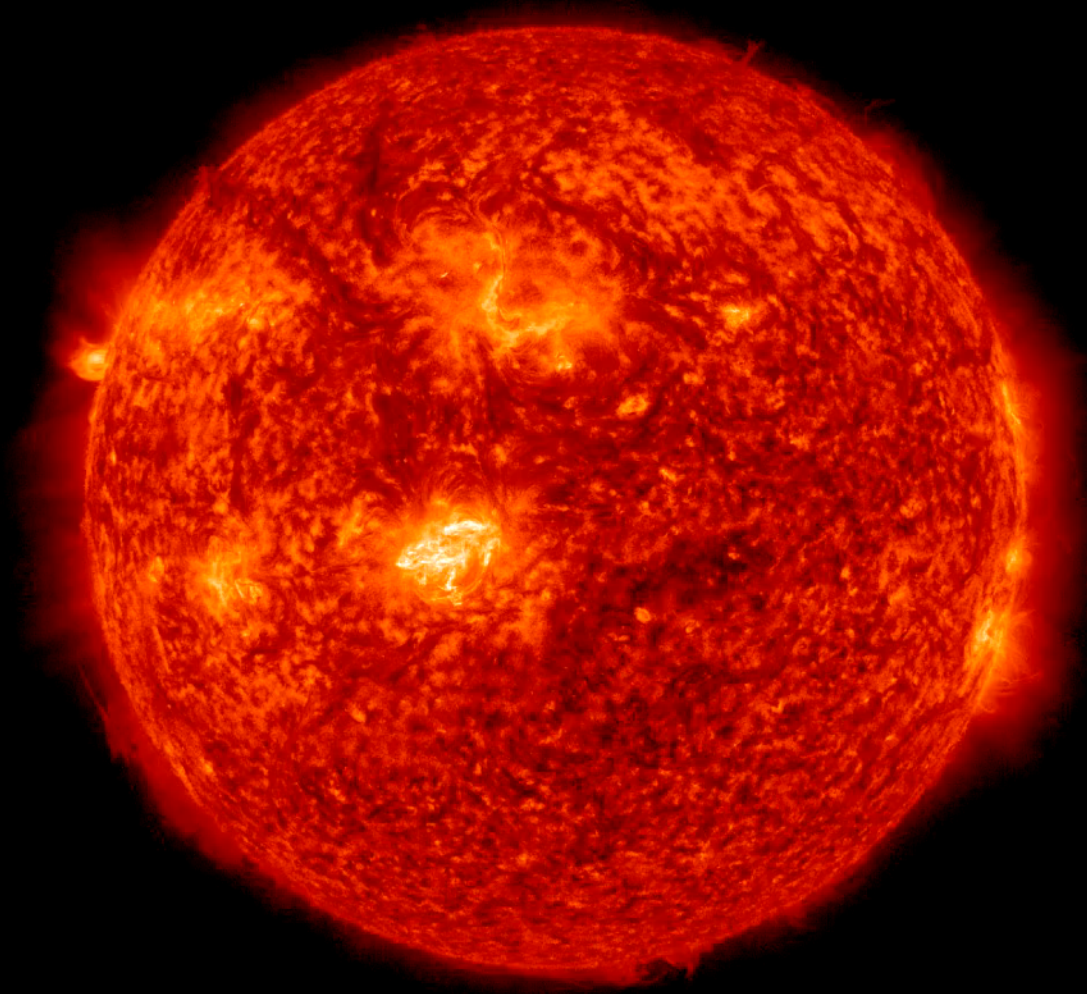


Kanzelhöhe Observatory  
2024-03-24 08:35:23 UT

University of Graz  
(Austria)

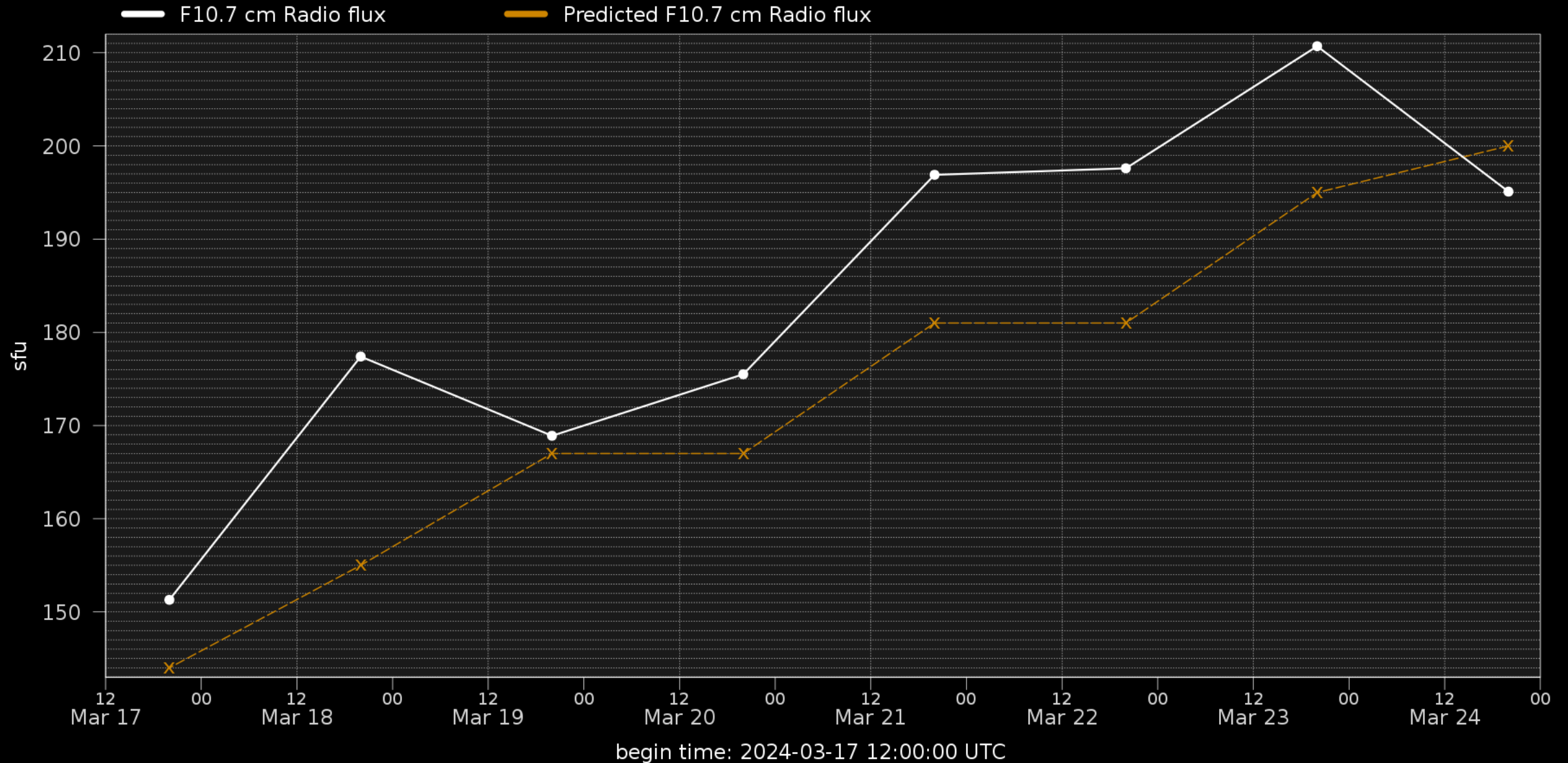


# X1.1 flare 23 Mar 01:33 UTC (SDO/AIA 304 A)

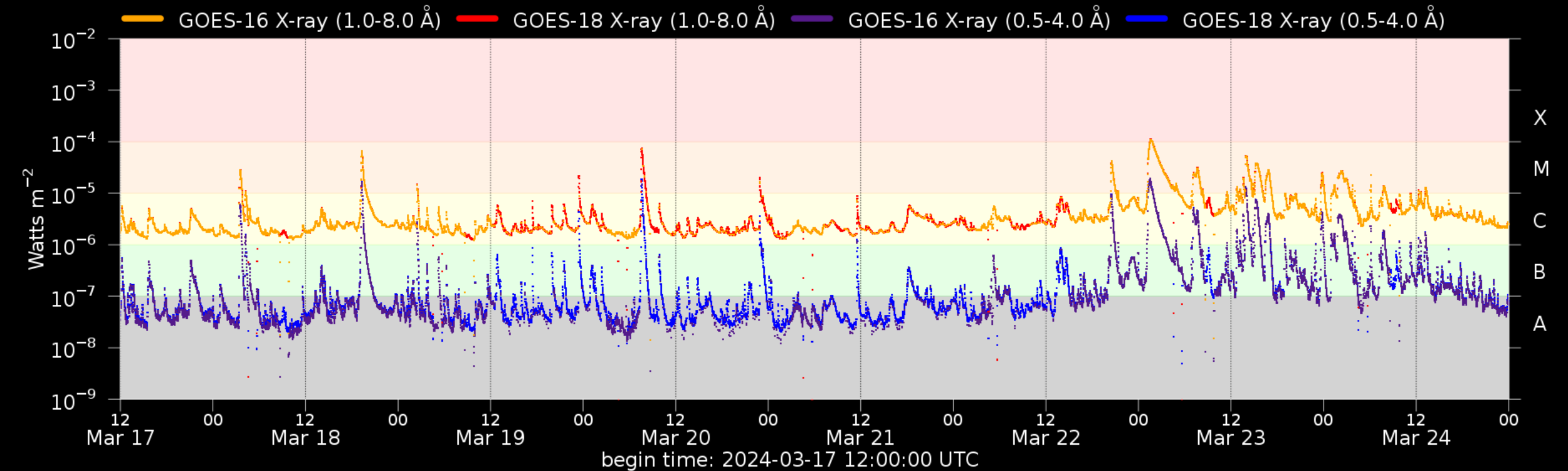


SDO/AIA 304 2024-03-23 00:08:18 UT

# Solar F10.7cm radio flux



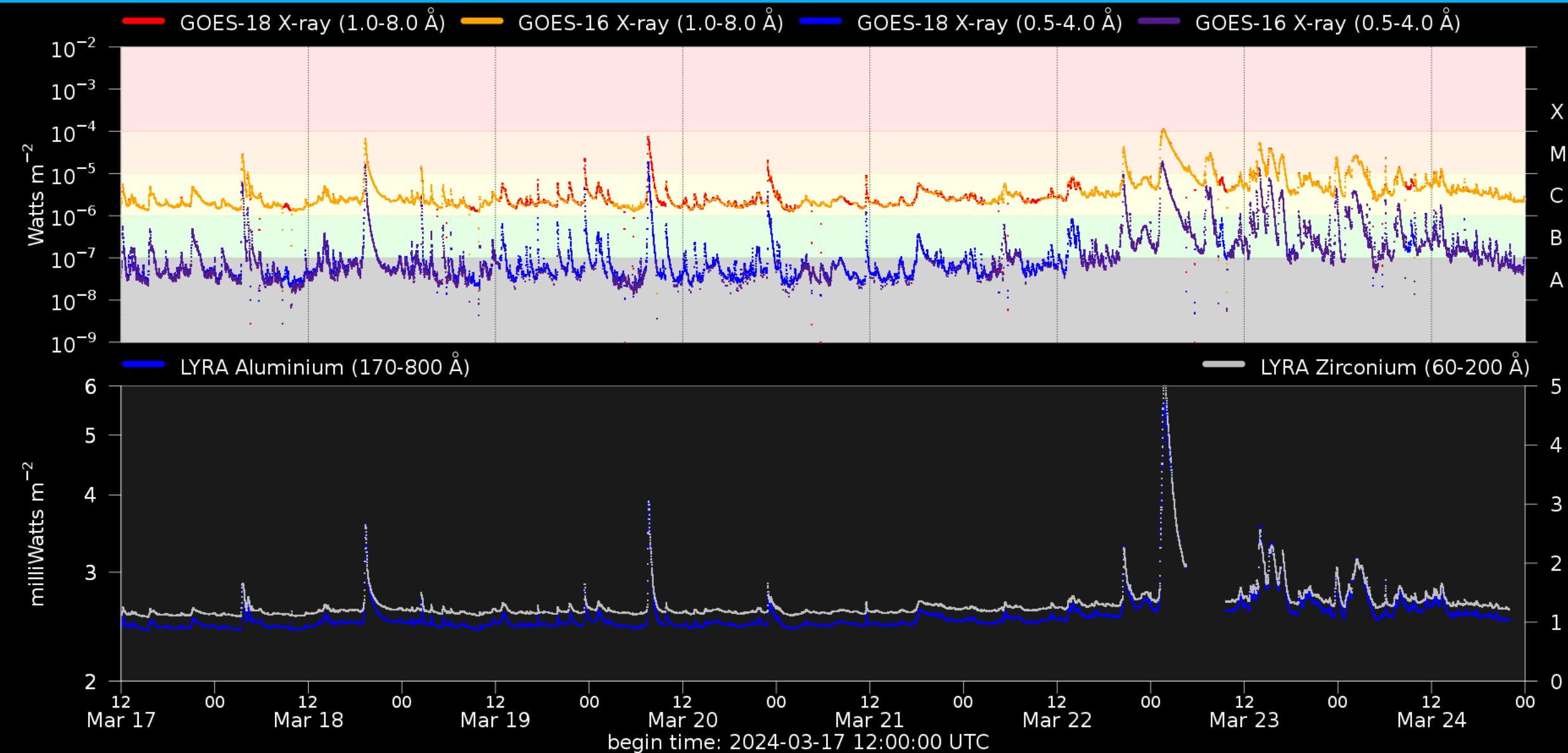
# Flaring activity



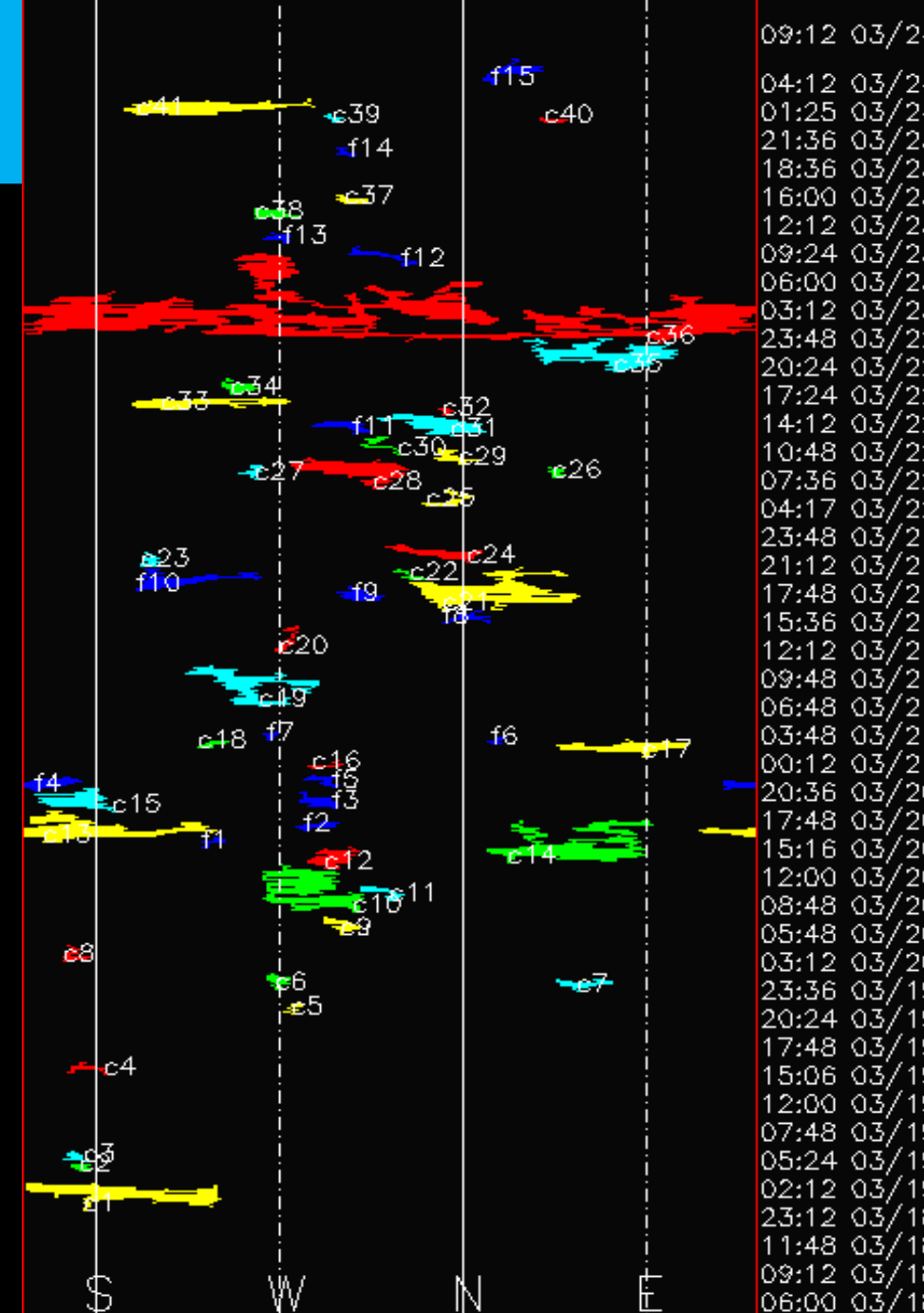
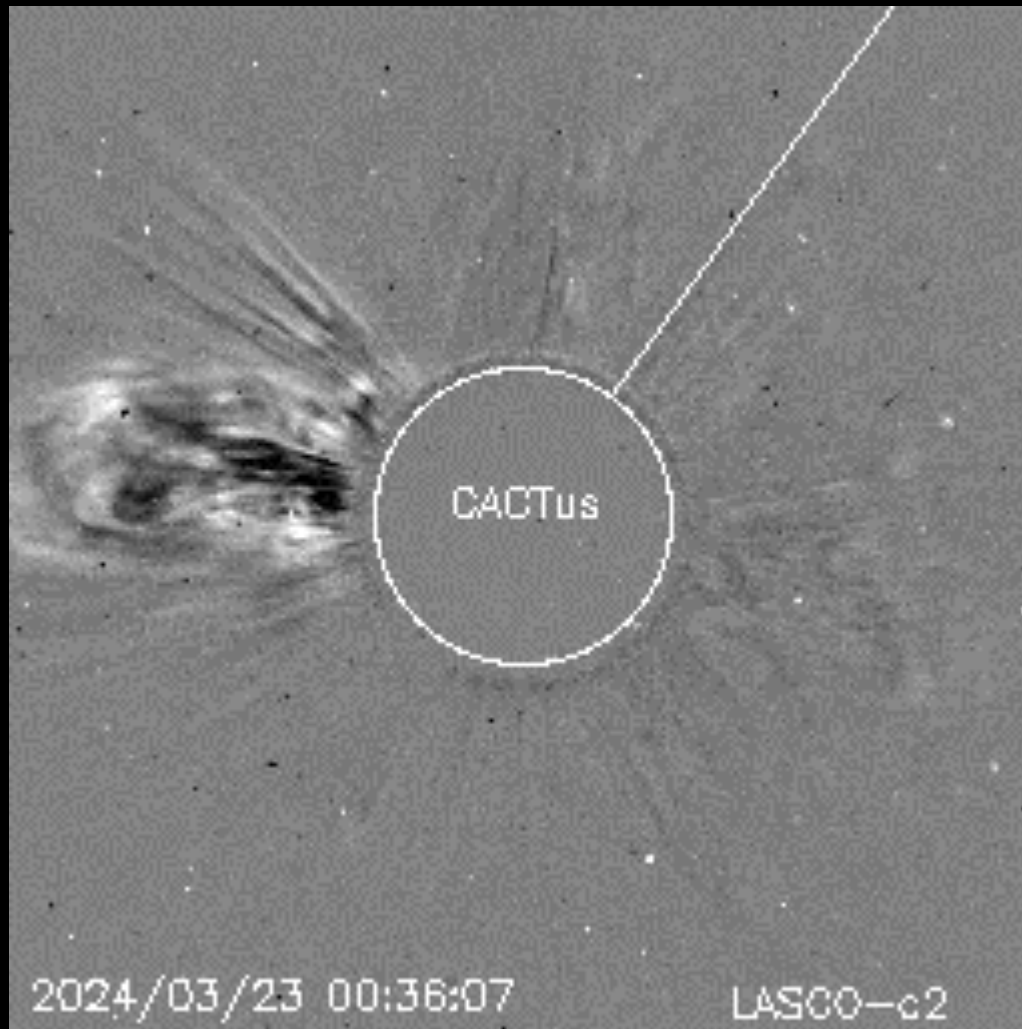
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2024-03-17	2024-03-18	2024-03-19	2024-03-20	2024-03-21	2024-03-22	2024-03-23	2024-03-24
Probability (%)	90 60 20	99 80 10	99 90 30	99 82 30	95 40 05	99 55 10	99 95 40	99 90 40
Observed (#)	06 02 00	08 02 00	08 02 00	08 01 00	03 00 00	02 05 01	07 11 00	02 02 00

# Solar X-Ray and UV flux



# Coronal Mass Ejections



Solar Wind and

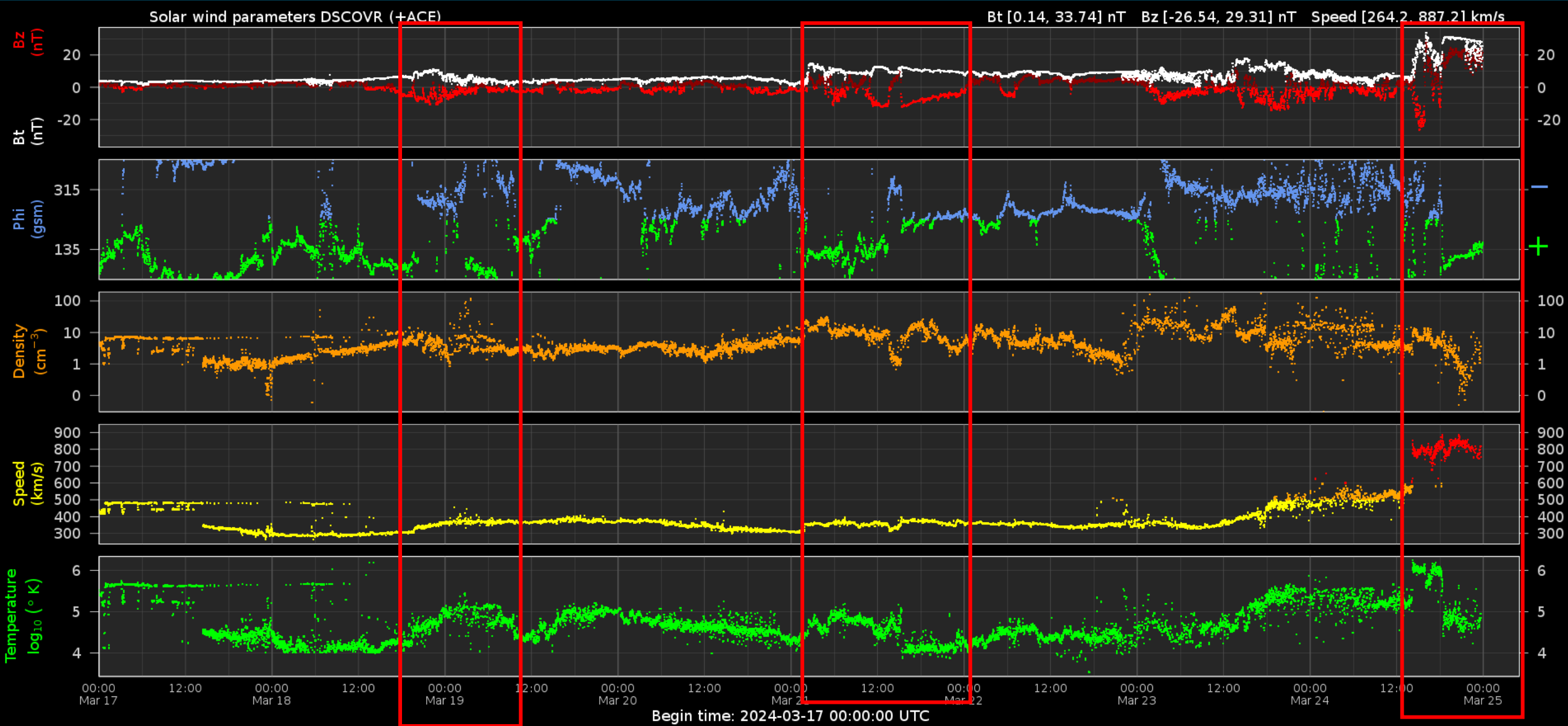
# Geomagnetic Activity



Royal Observatory  
of Belgium

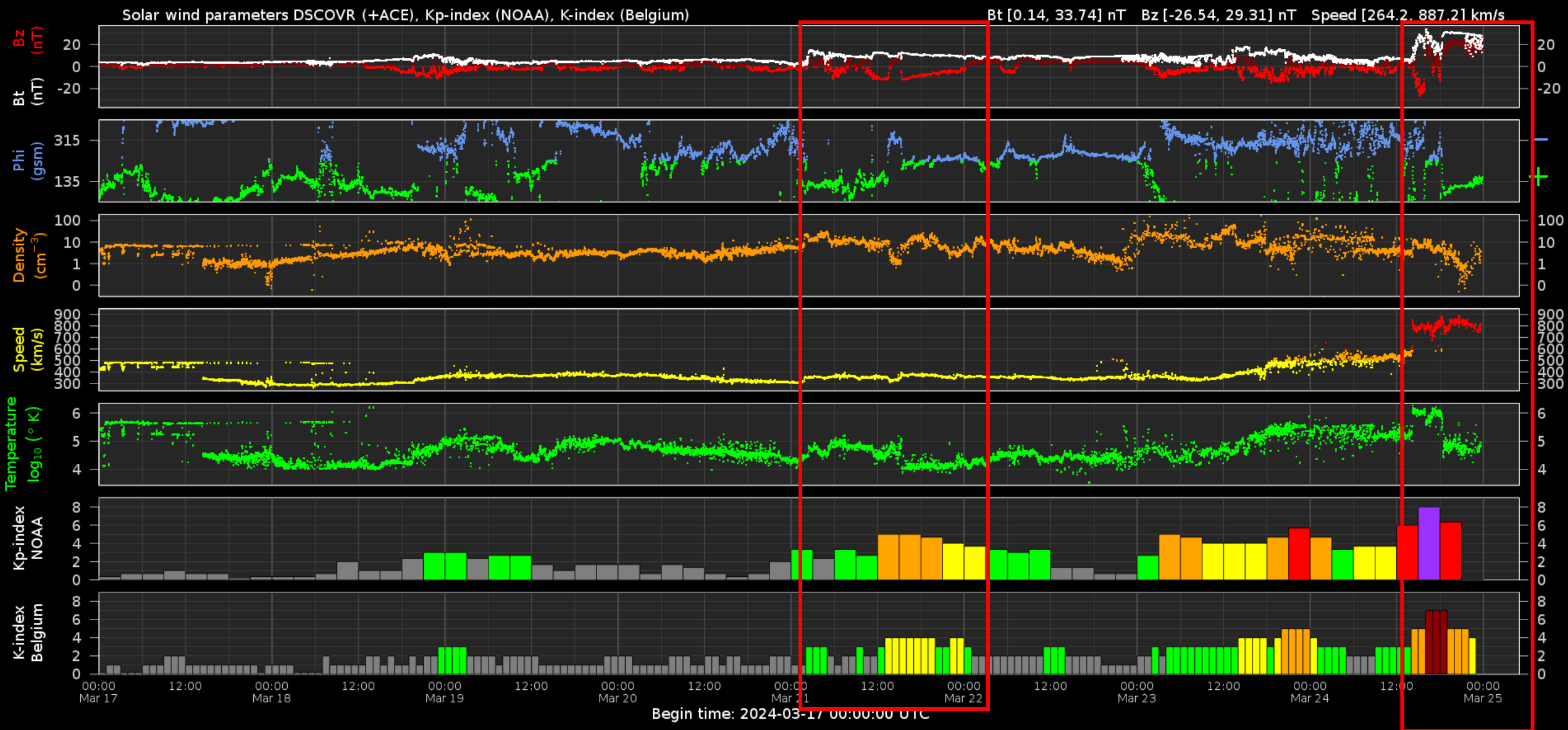
Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)

# Solar wind parameters

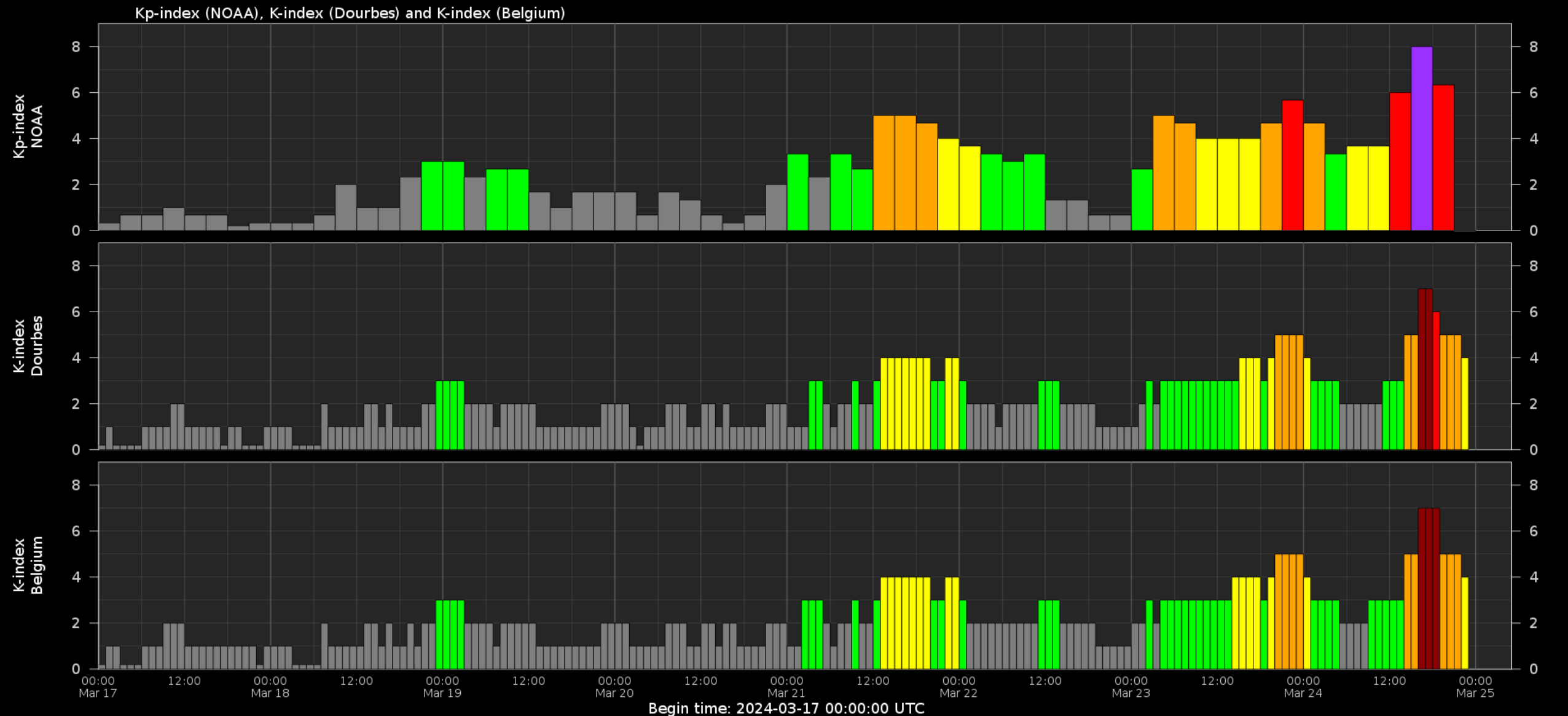




# Solar wind parameters & K-indices



# Geomagnetic activity (K-indexes)



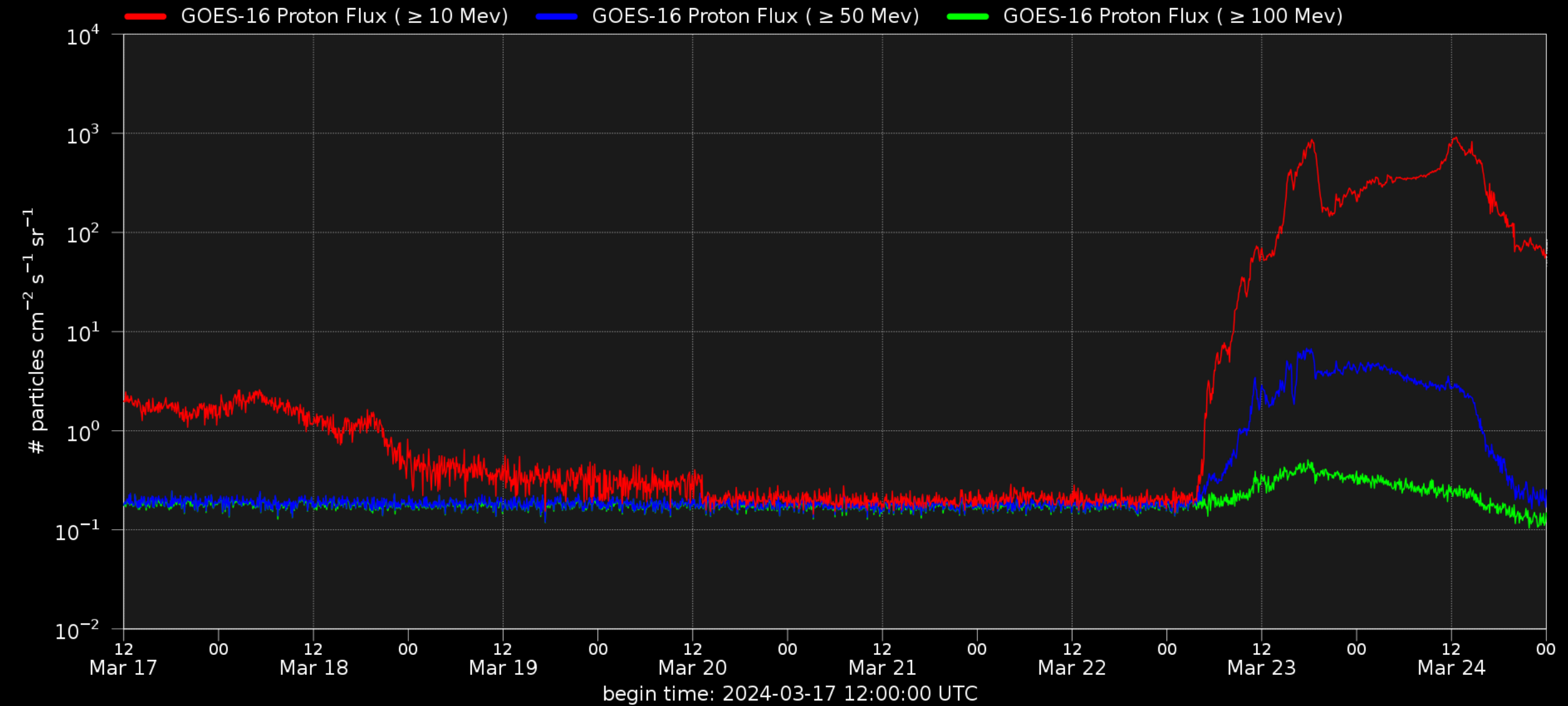
# Energetic Particles



Royal Observatory  
of Belgium

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

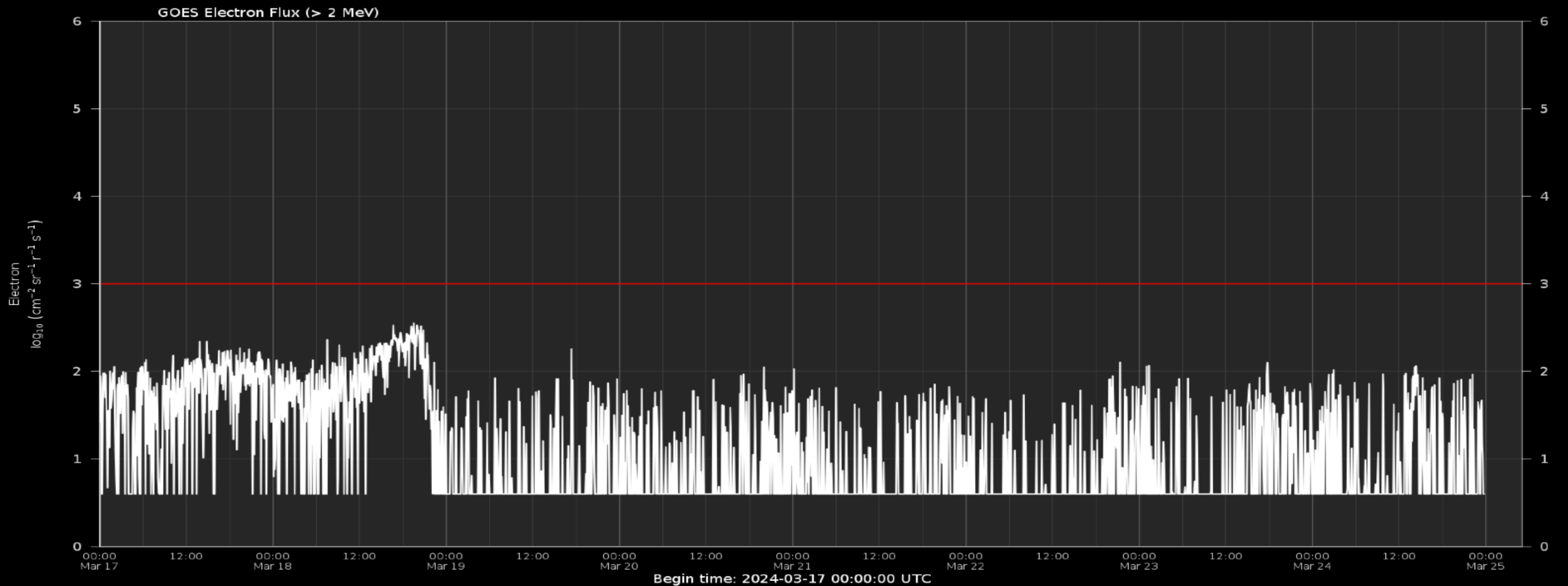
# Solar proton flux



# 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)



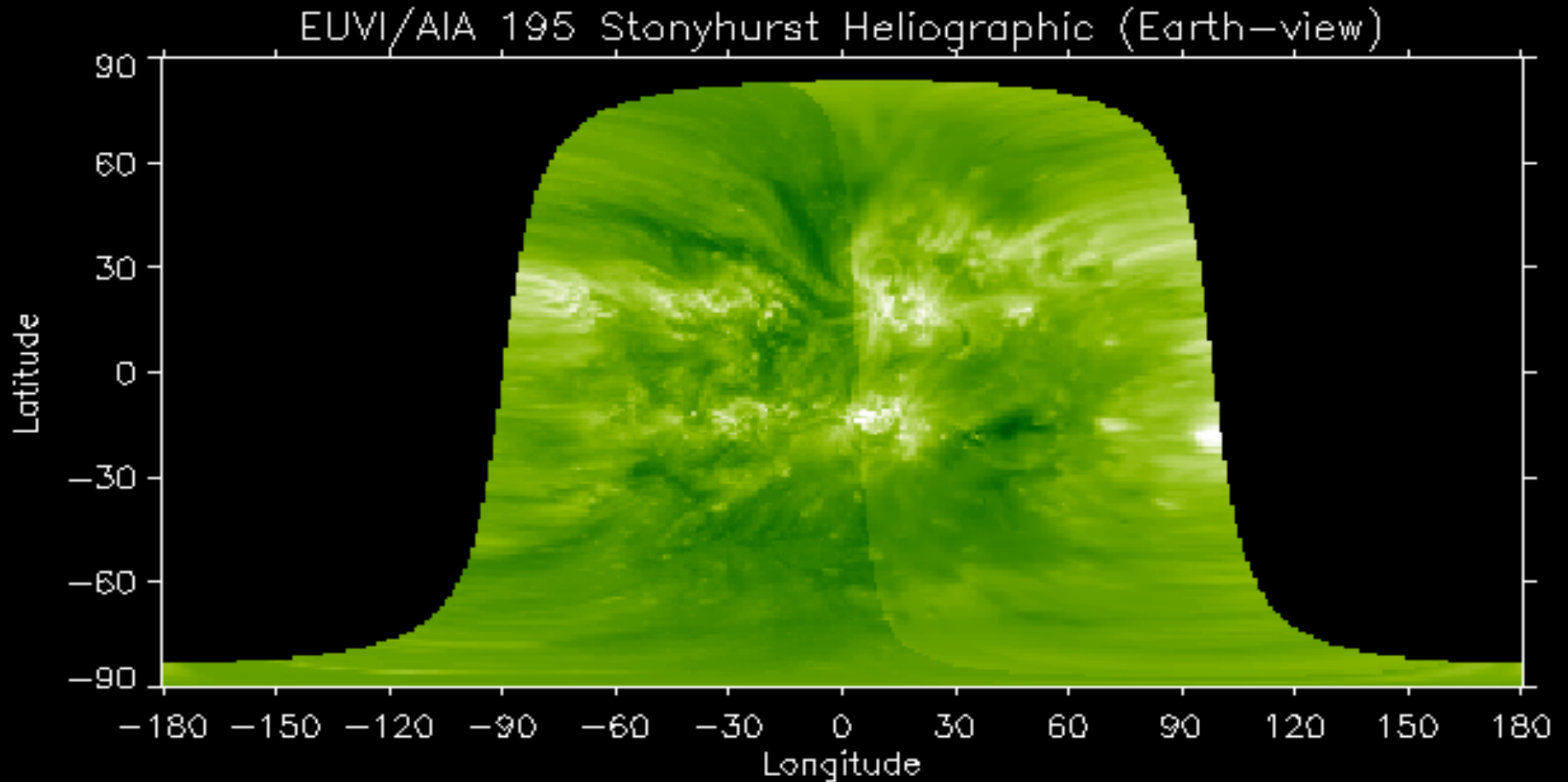
# Outlook



Royal Observatory  
of Belgium

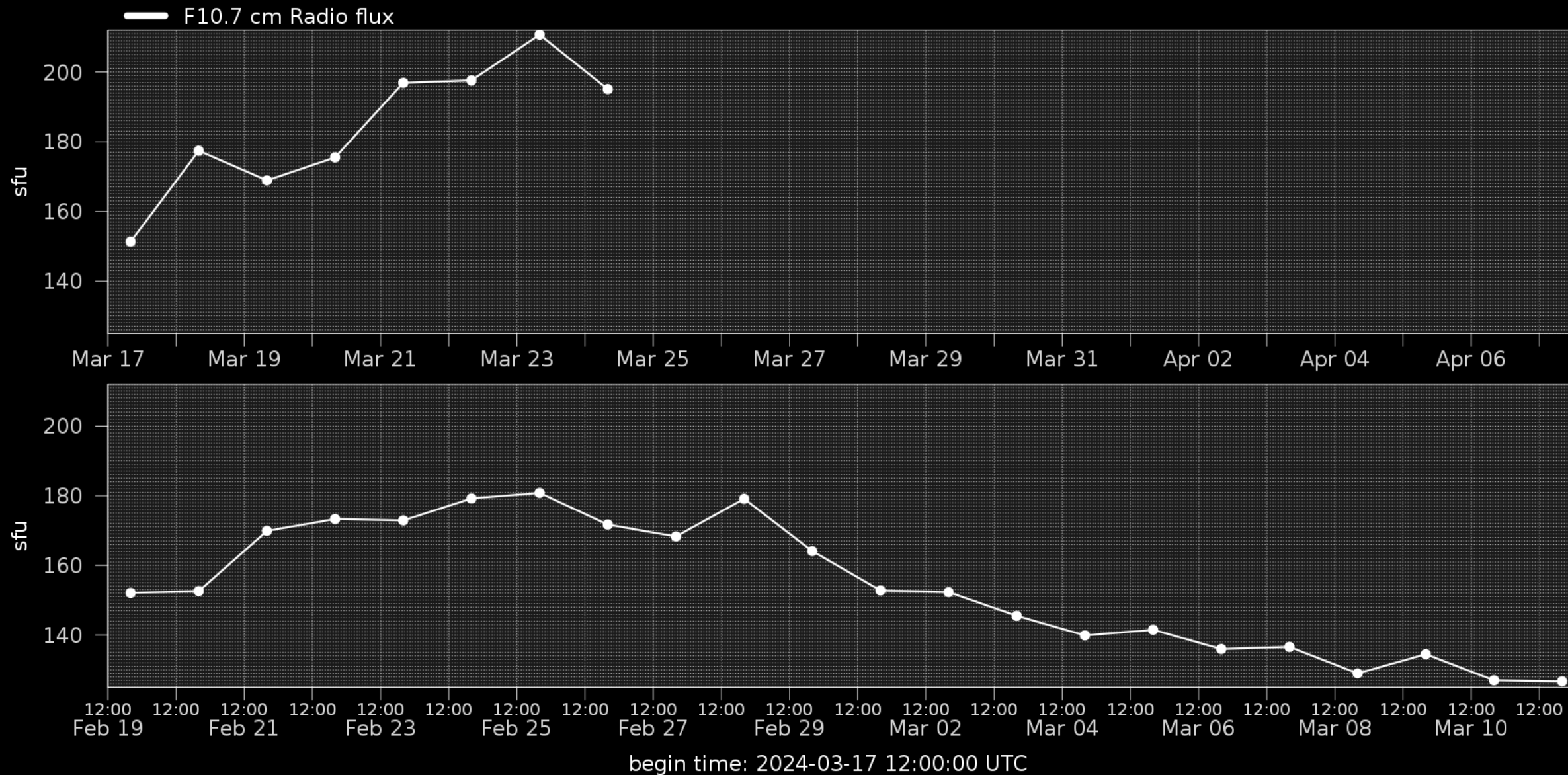
Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)

# Outlook: Solar activity



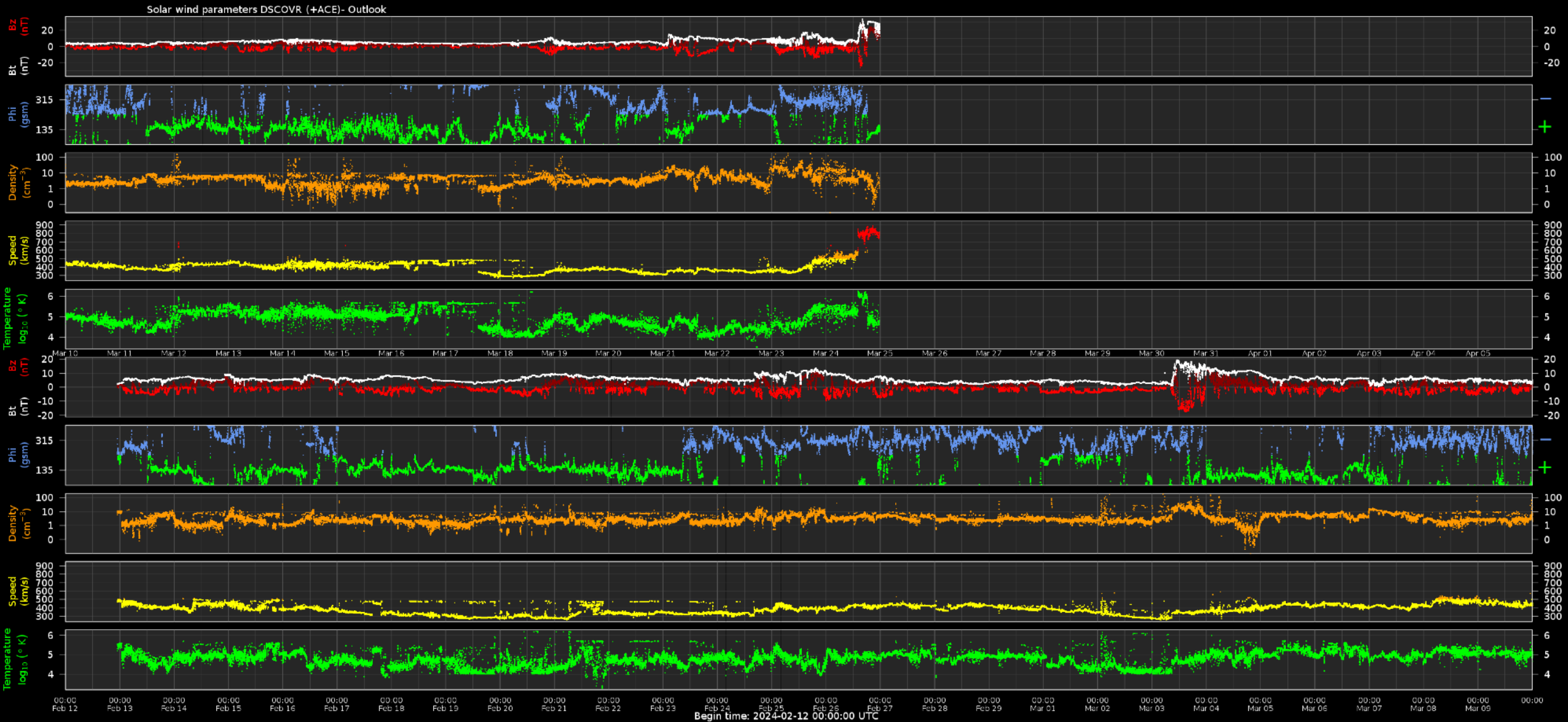
Observation date: 2024/03/24 15:35:00

# Outlook: Solar F10.7cm radio flux





# Outlook: Solar wind parameters



# Outlook: Electron Flux at GEO Outlook



PECASUS



Royal Observatory  
of Belgium

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

# Pegasus related events

Operational Data Centre since Tuesday 19/3

Tens of GNSS advisories sent

More than ten HF advisories sent (both for low and high frequency impact)

Four radiation advisories sent

SIDC Space Weather Briefing

See you at our next briefing!

Or visit us at [www.sidc.be](http://www.sidc.be)



Royal Observatory  
of Belgium

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