# SIDC Space Weather Briefing

05 June 2022-12 June 2022

Jesse ANDRIES
& the SIDC forecaster team

Royal Observatory
*of* Belgium

Solar Influences
Data analysis Centre
www.sidc.be

# Summary Report

## Solar activity from 2022-06-05 12:00 to 2022-06-12 23:59

| | |
|---|---|
| Active regions | All regions turned over the West limb or decayed, resulting in a brief spotless episode<br>Later NOAA 3030, rotating over the East limb, dominated |
| Flares | # C-class flare: 10 # M-class flare: 1 # X-class flare: 0 |
| Coronal Holes | Isolated small CH+ in the northern hemisphere. Large equatorial CH+ yesterday |
| CMEs | A number of filament eruptions but no resulting Earth directed CMEs |

| | |
|---|---|
| Proton flux | Background |
| Electron flux | Decreased to normal at the start of the week |

## Solar wind and geomagnetic conditions

| | |
|---|---|
| ICMEs | Arrival of the CME that left the Sun June 2 |
| Solar wind conditions | \|B\|: 0.99 - 15.12 nT //Bz: -11.69 nT to 13.63 nT //Speed: 259.8 - 517.1km/s |
| K-indices | max K-index (K_Bel): 4 max Kp-index (NOAA): 3 |

## All Quiet Alert: all quiet between 8 and 10 June

# Solar Activity

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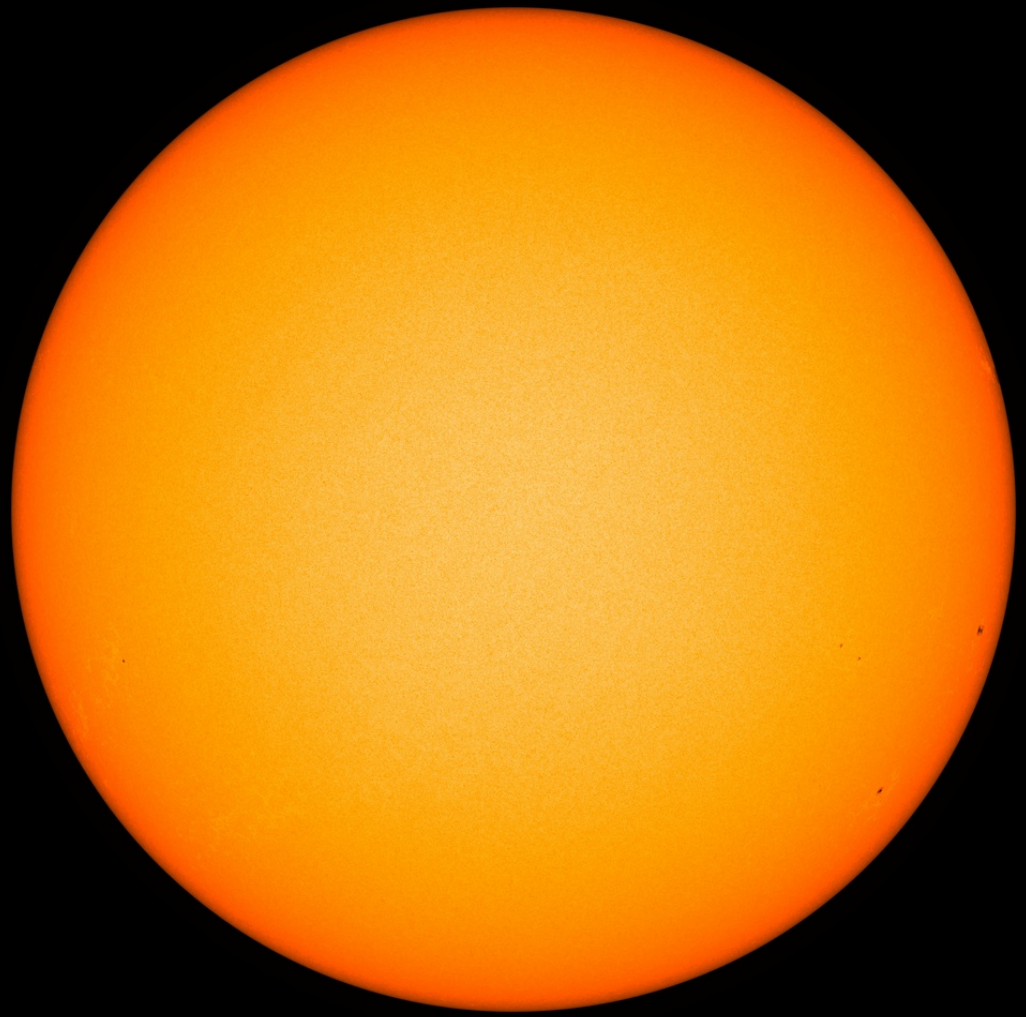
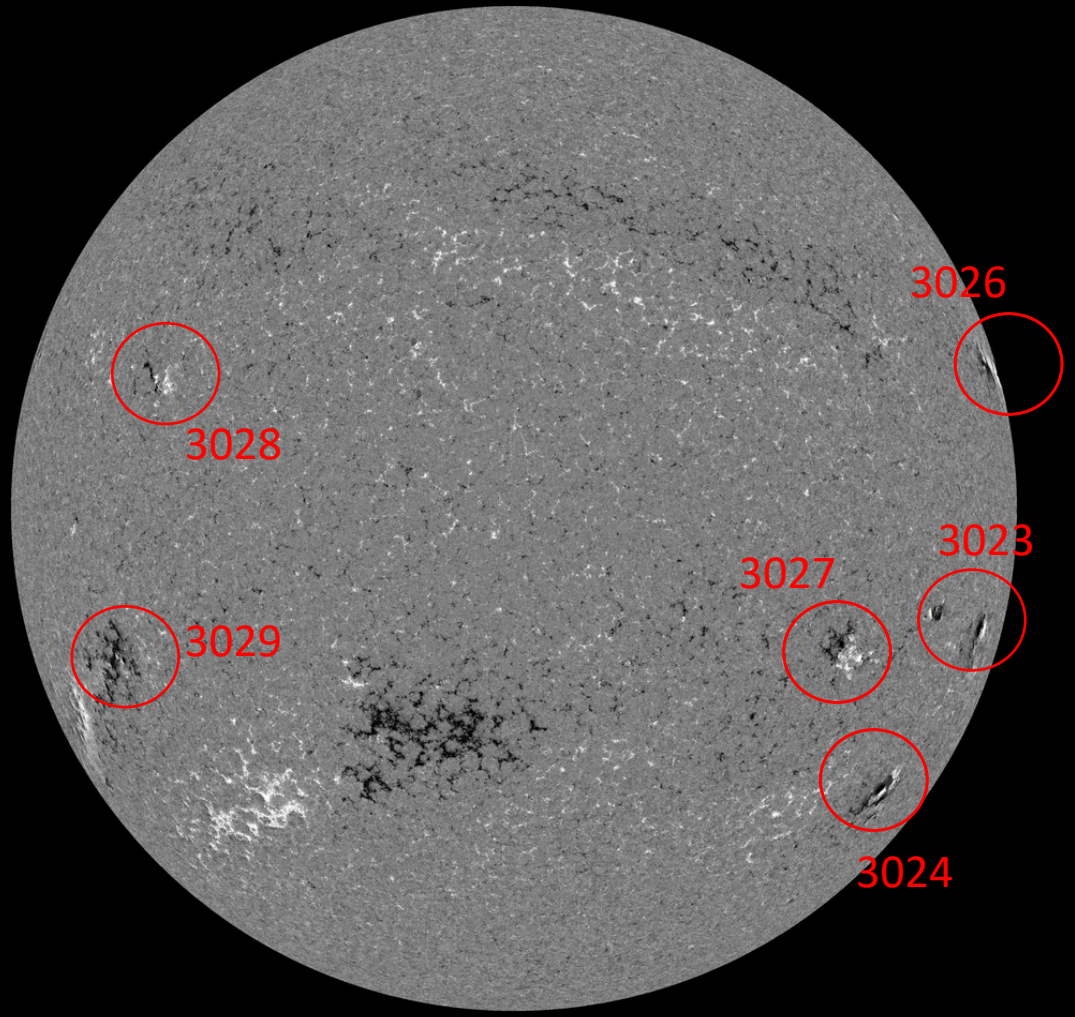
# Solar active regions

SDO/HMI White Light 2022-06-05

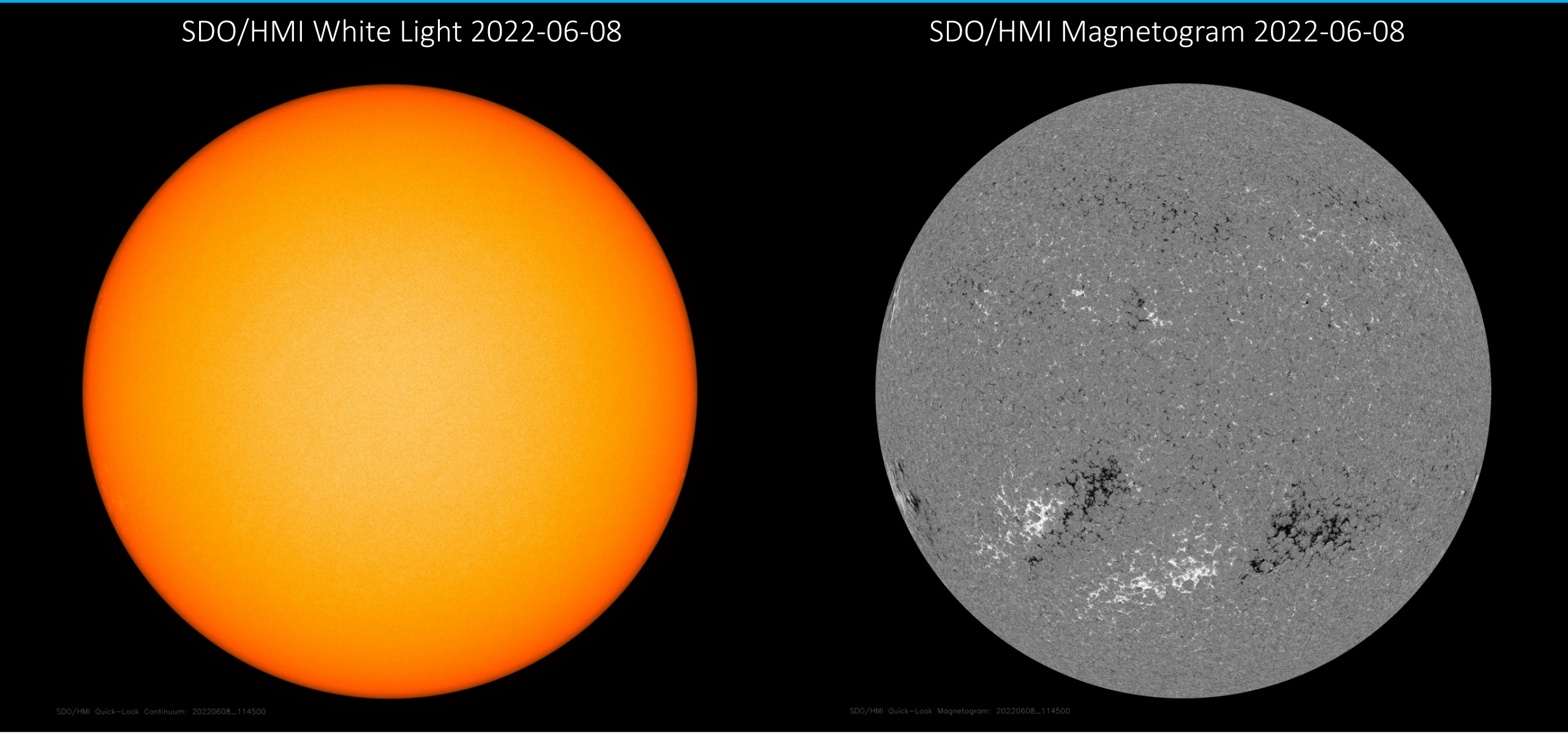



SDO/HMI Magnetogram 2022-06-05



# Solar active regions

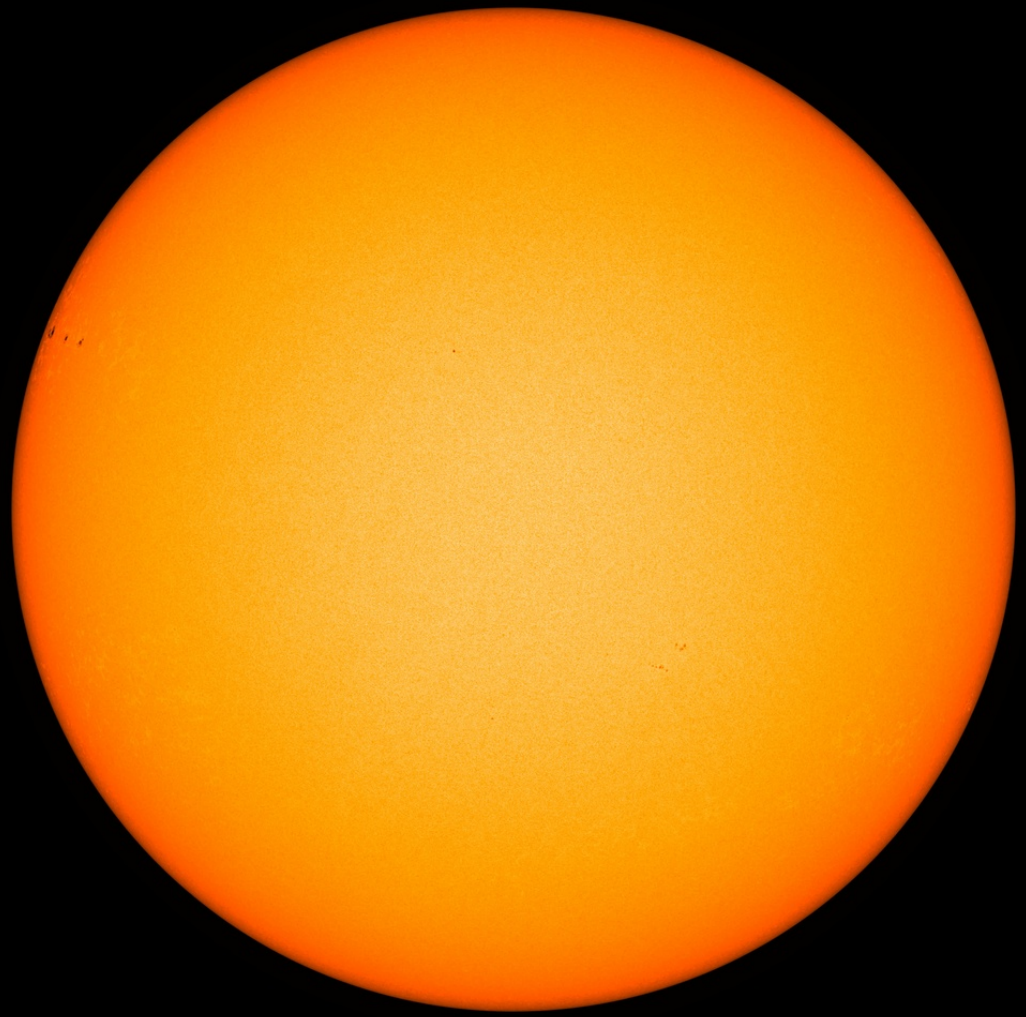
SDO/HMI White Light 2022-06-08



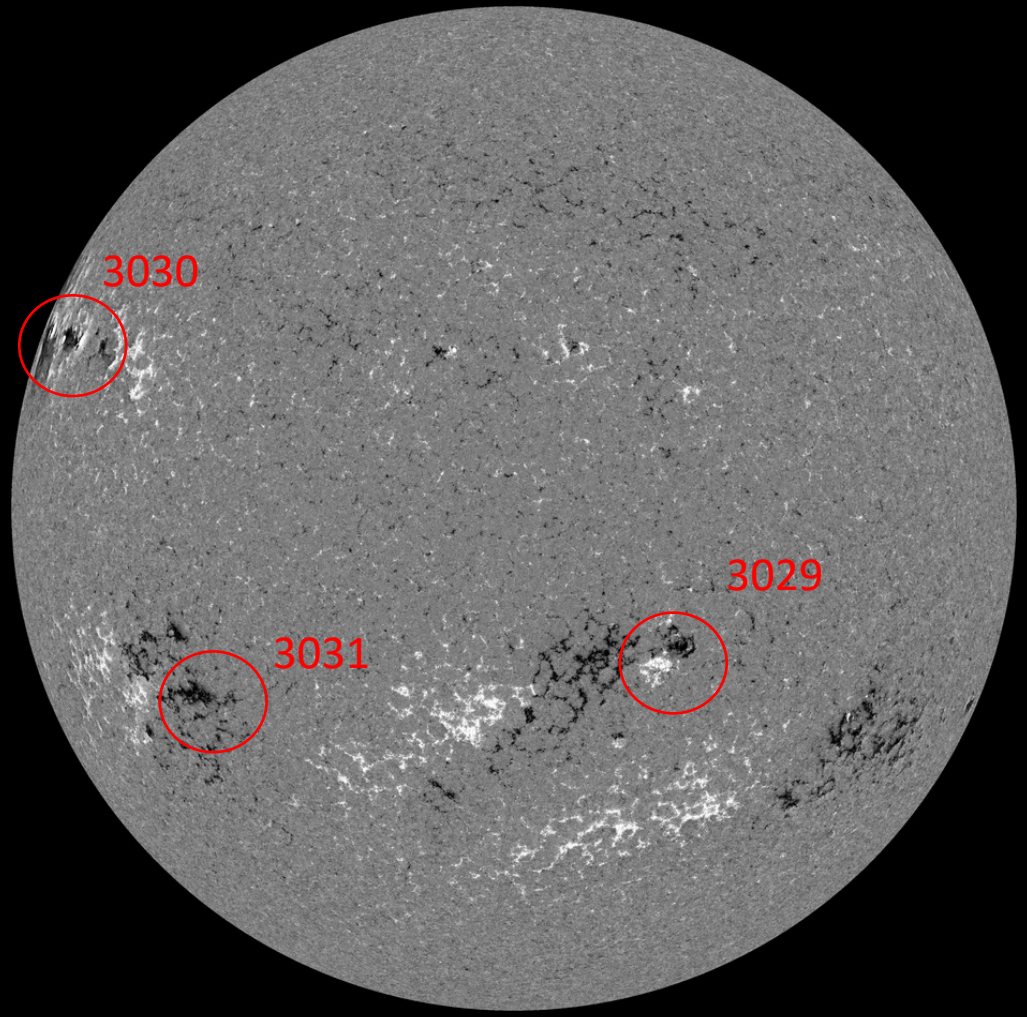

SDO/HMI Magnetogram 2022-06-08

# Solar active regions

SDO/HMI White Light 2022-06-10

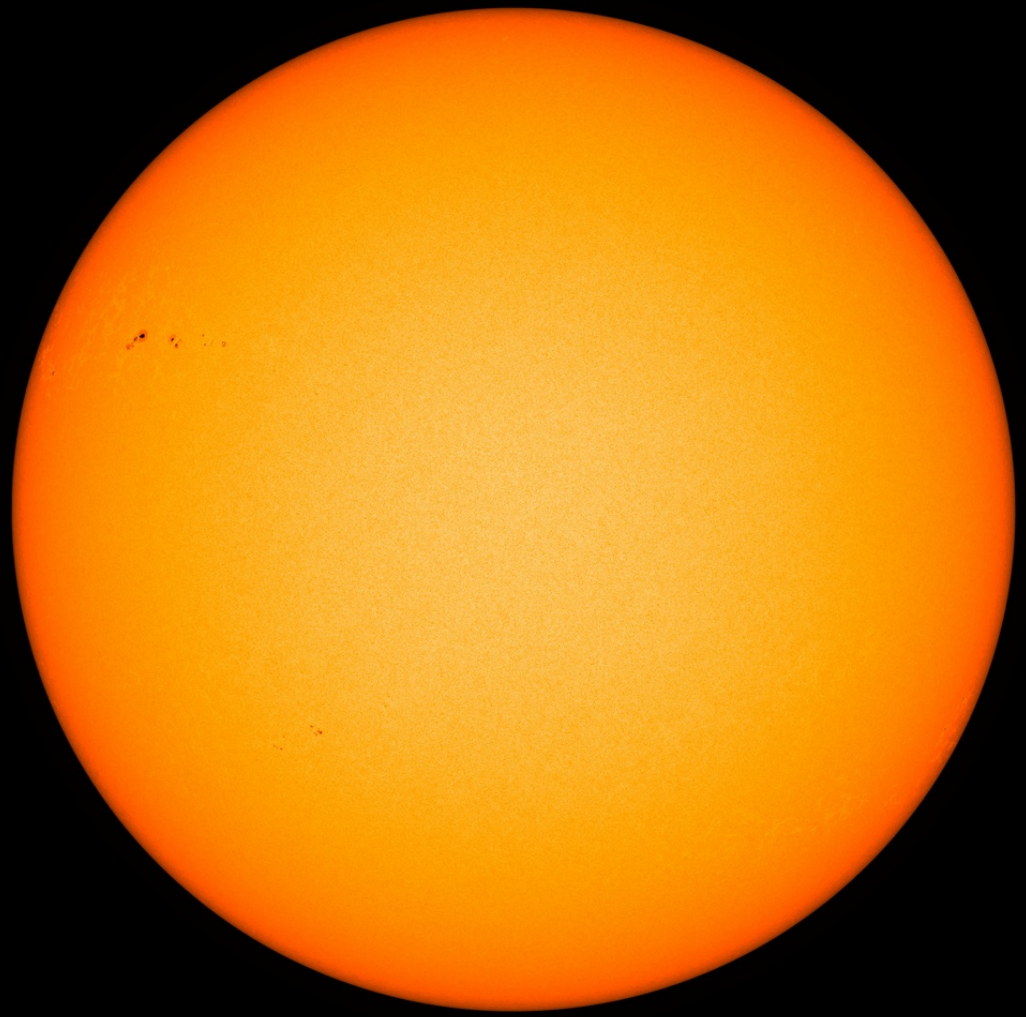



SDO/HMI Magnetogram 2022-06-10

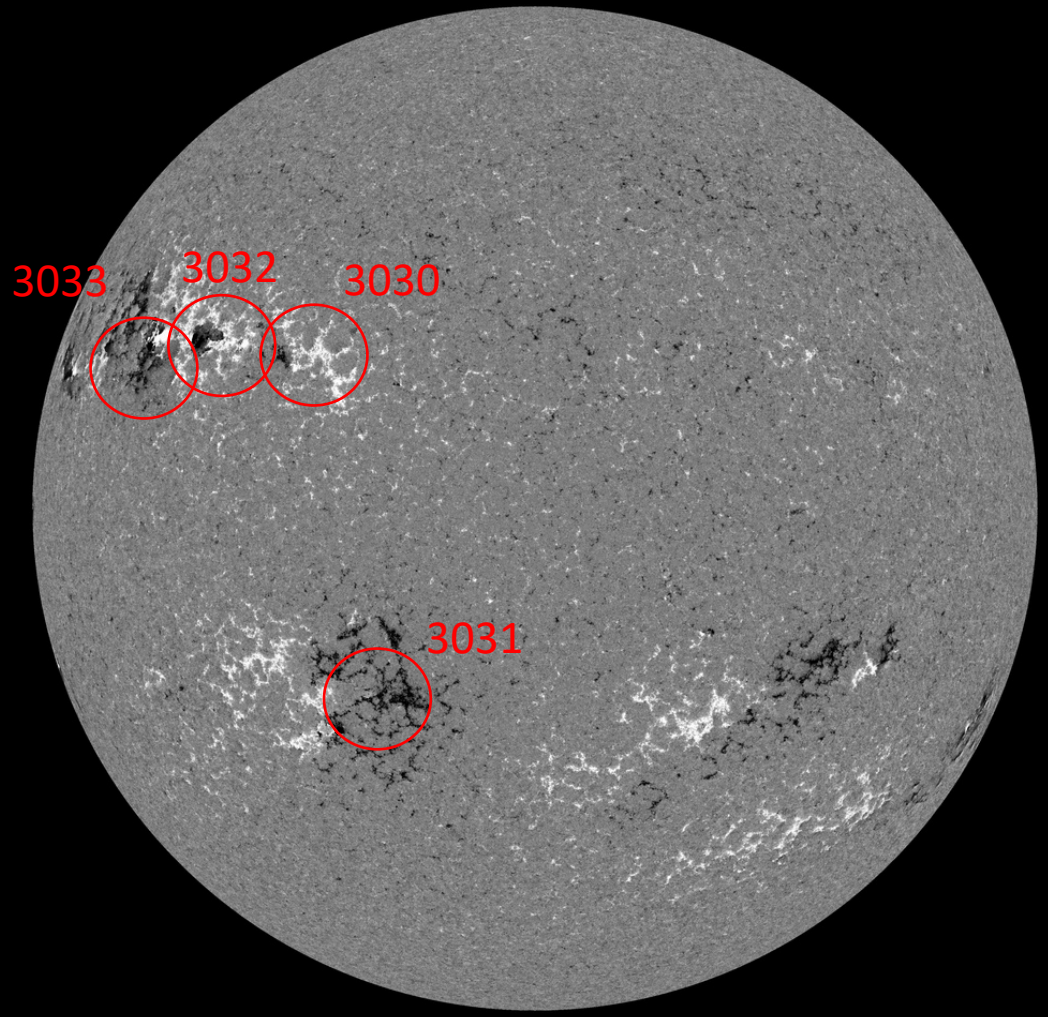


# Solar active regions

SDO/HMI White Light 2022-06-12

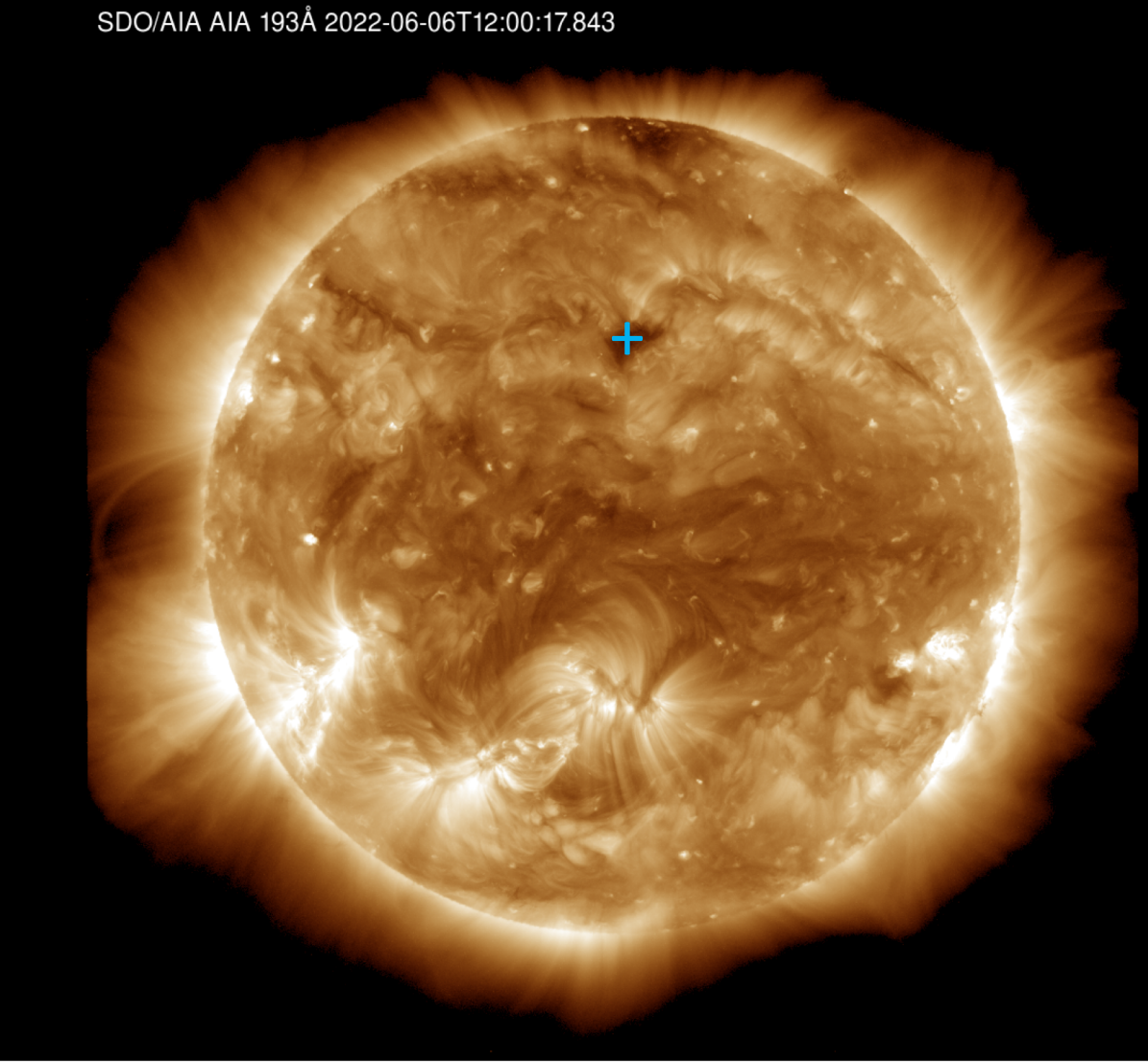



SDO/HMI Magnetogram 2022-06-12

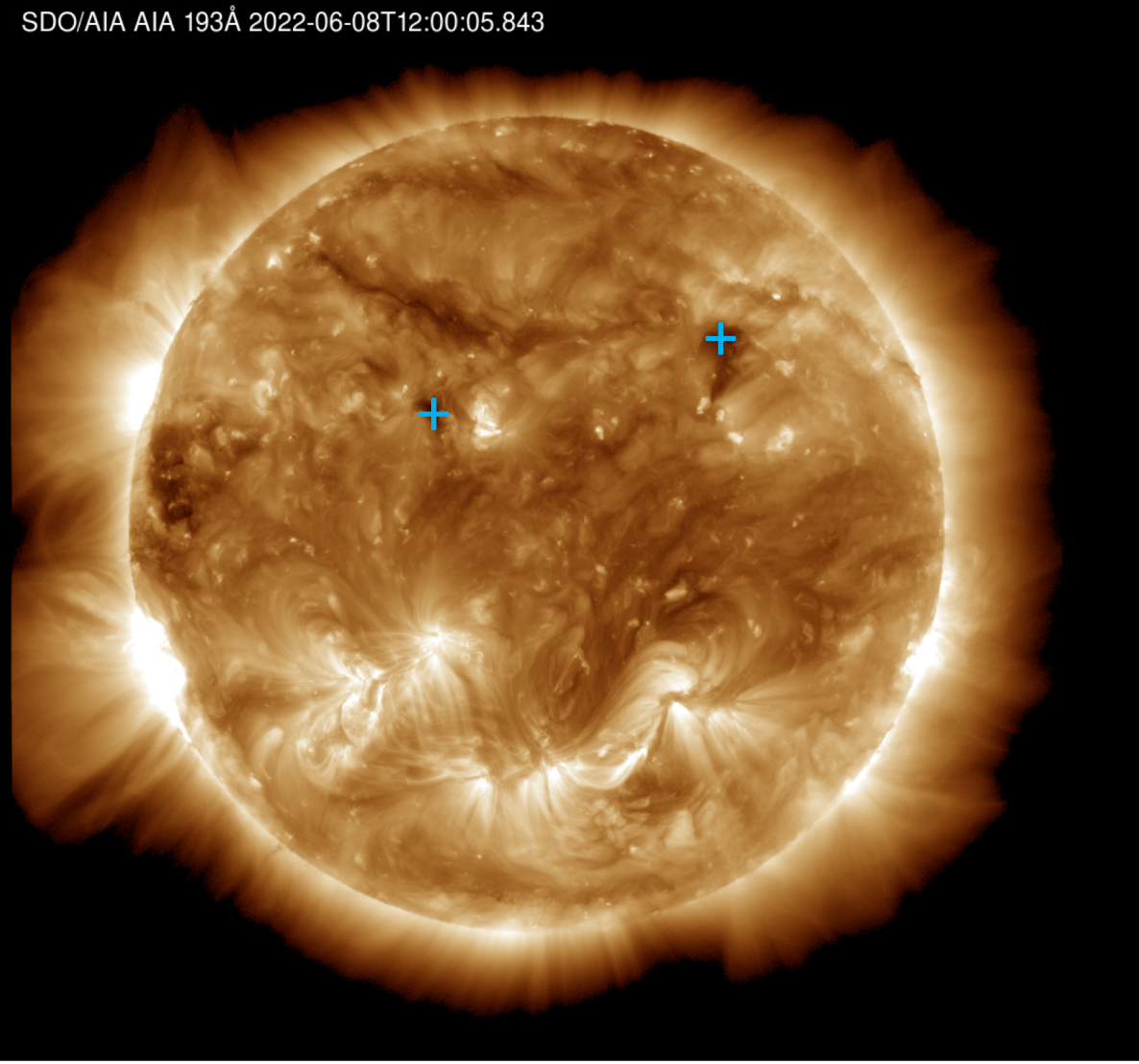


# Coronal holes

SDO/AIA 19.3 nm 2022-06-06

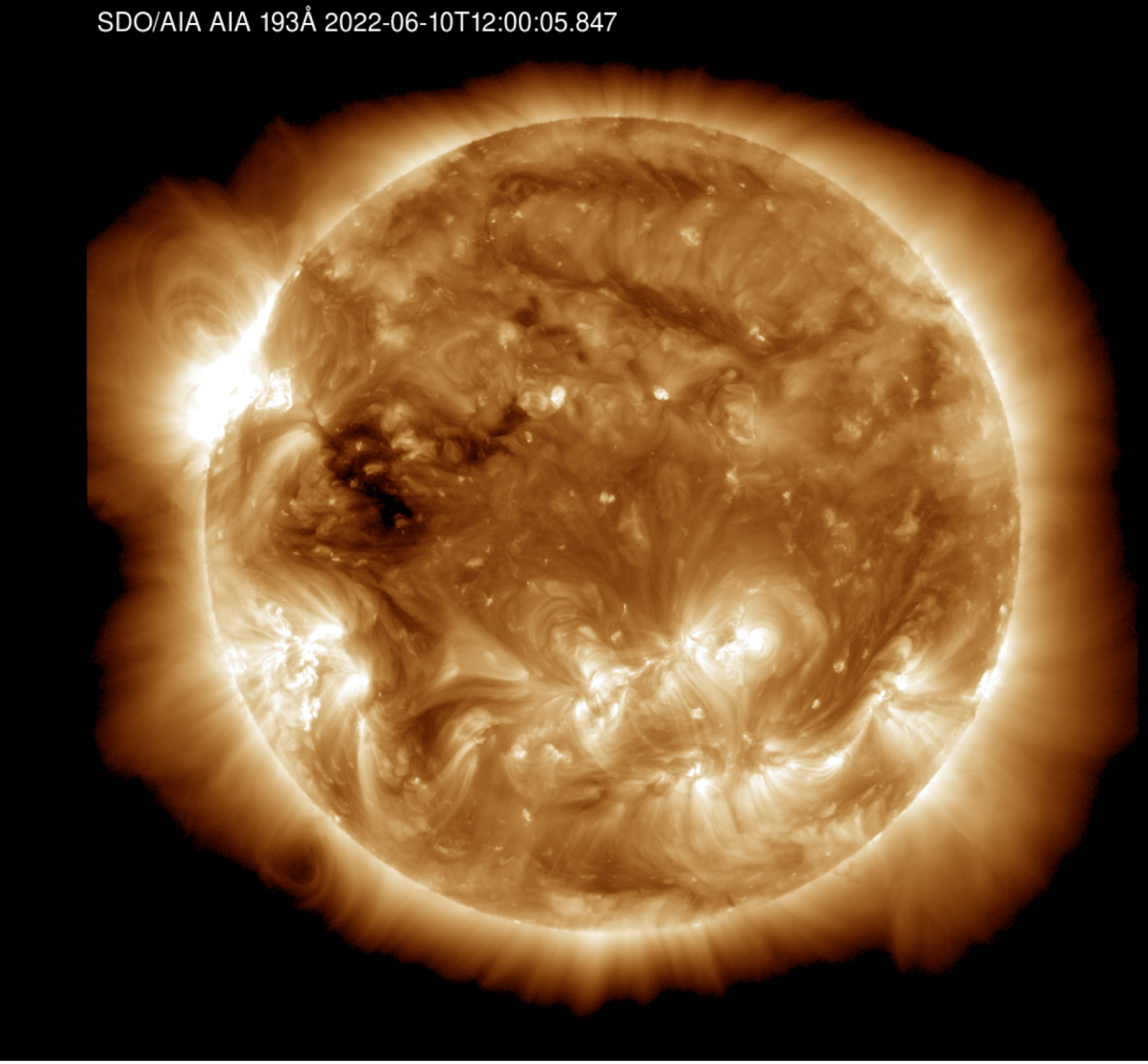



SDO/AIA 19.3 nm 2022-06-08

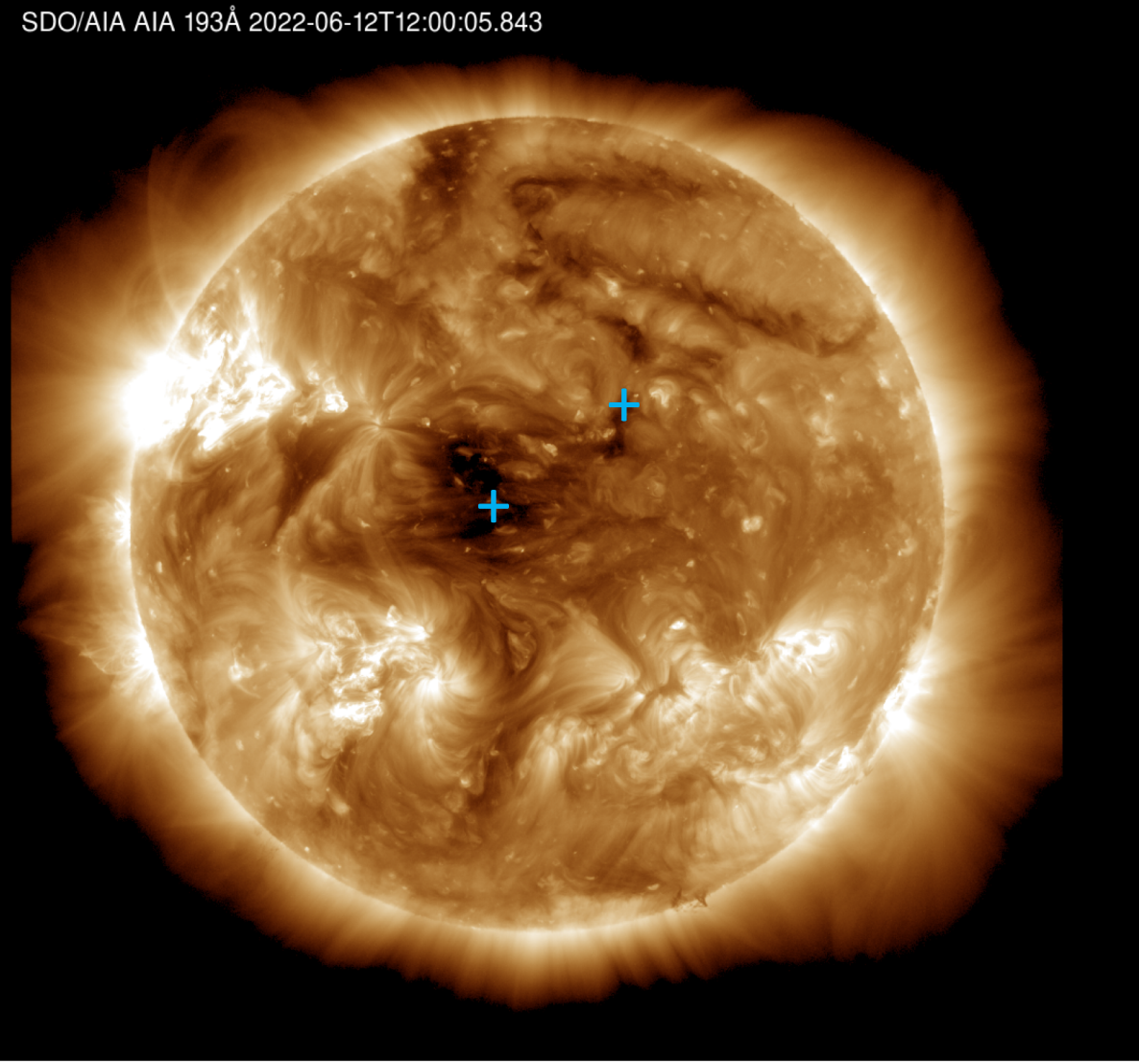


# Coronal holes

SDO/AIA 19.3 nm 2022-06-10

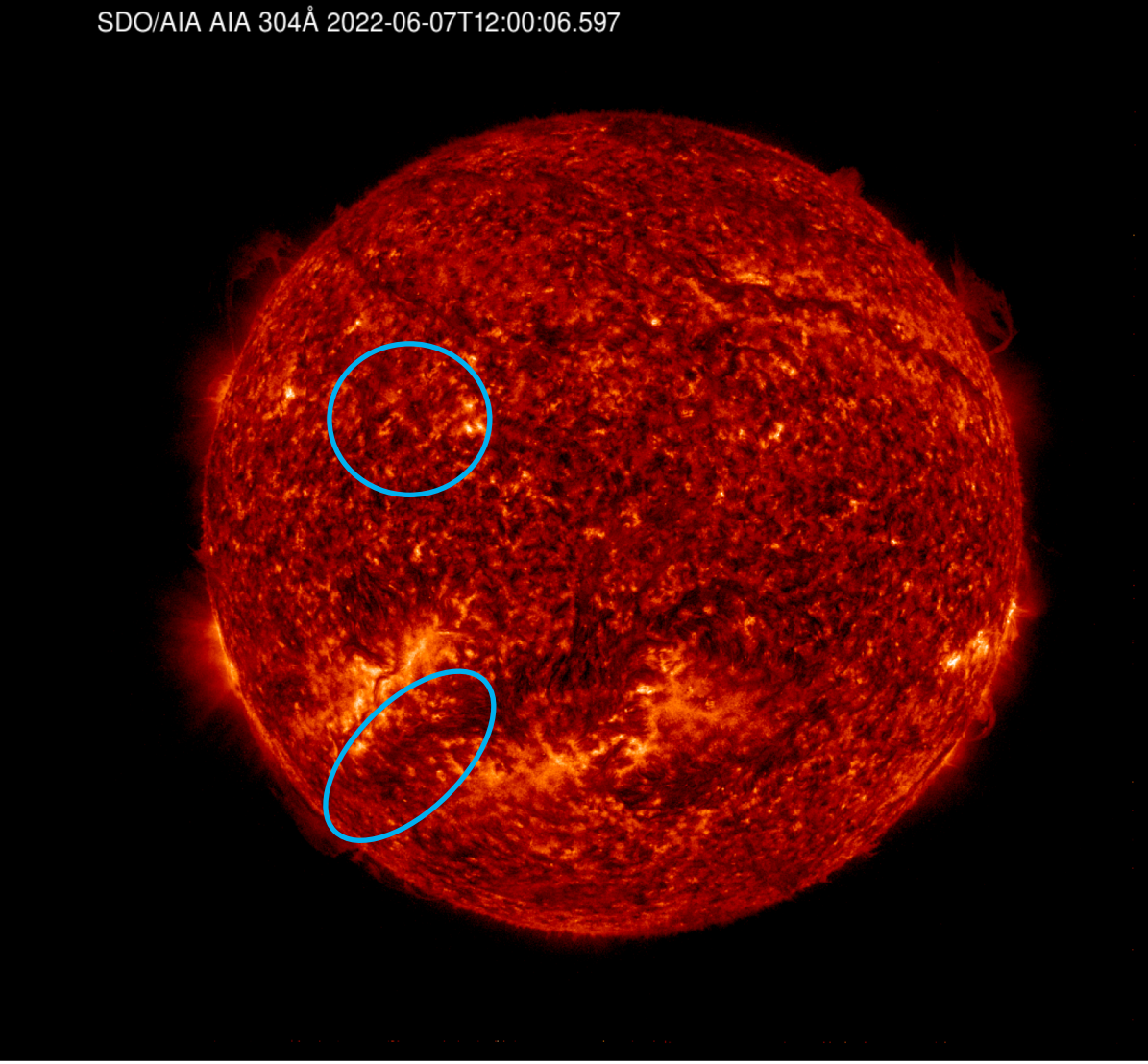



SDO/AIA 19.3 nm 2022-06-12

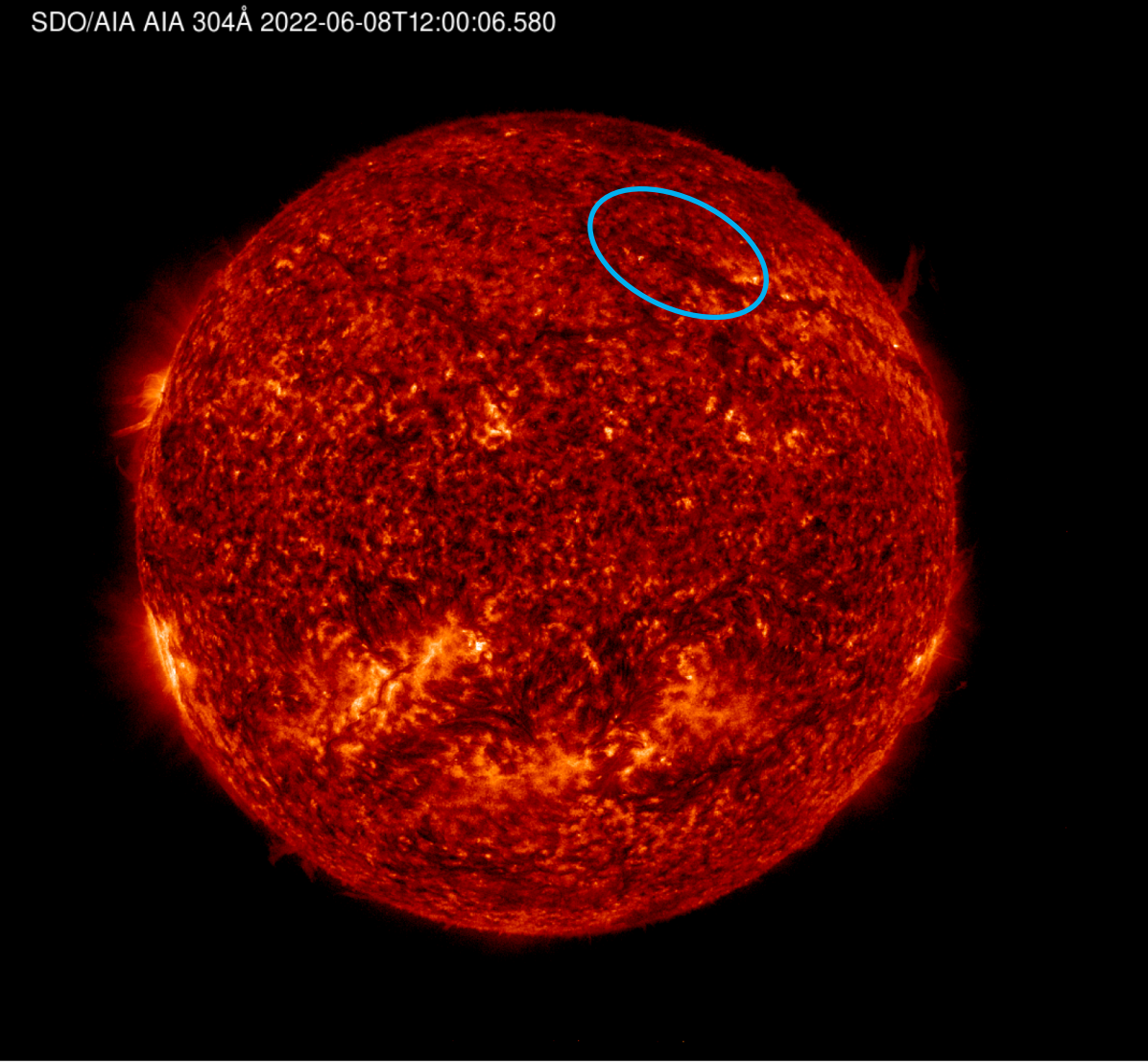


# Filaments

SDO/AIA 30.4 nm 2022-06-07

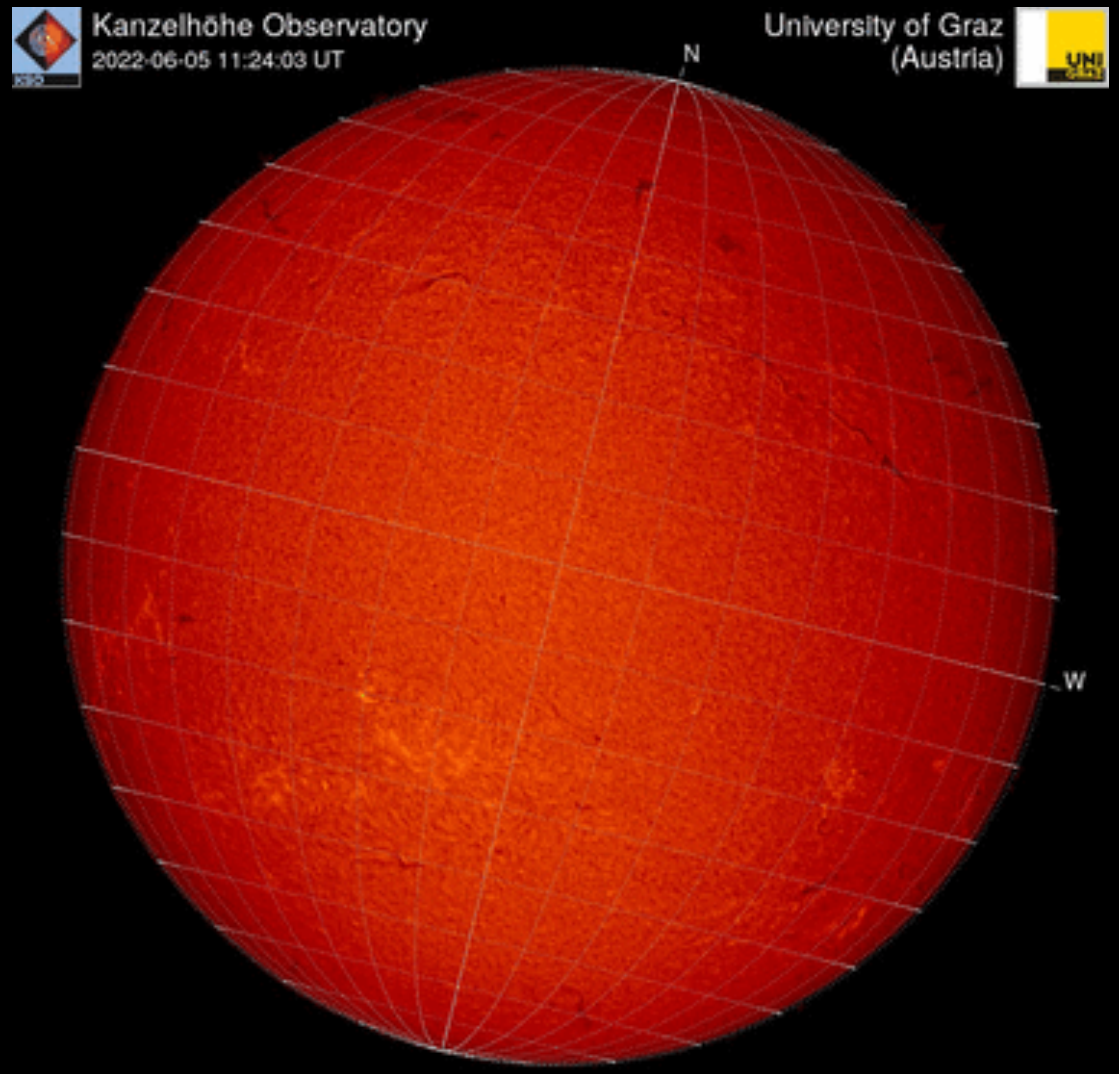



SDO/AIA 30.4 nm 2022-06-08

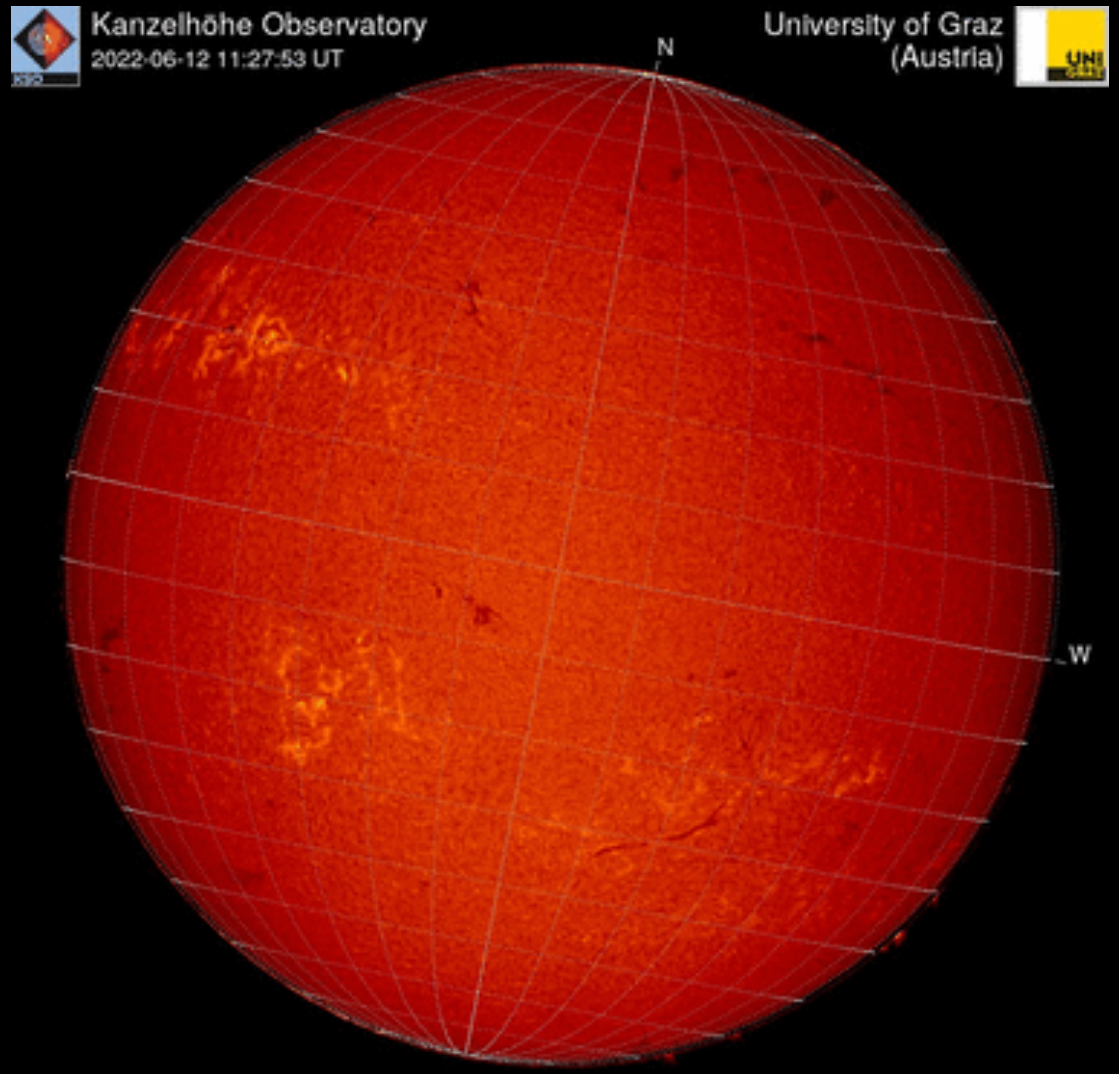


# Filaments & Filament eruptions

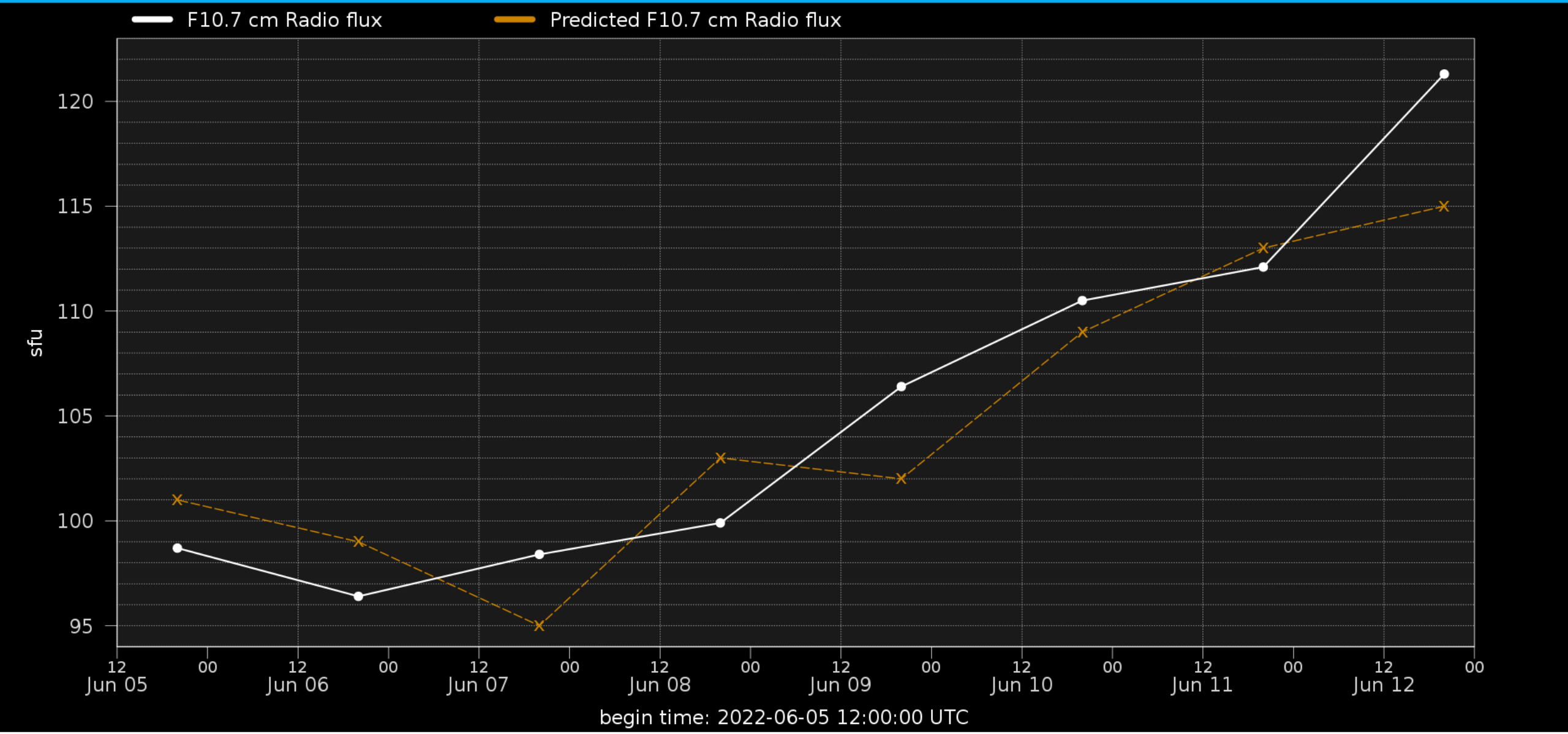
H-alpha 2022-06-05



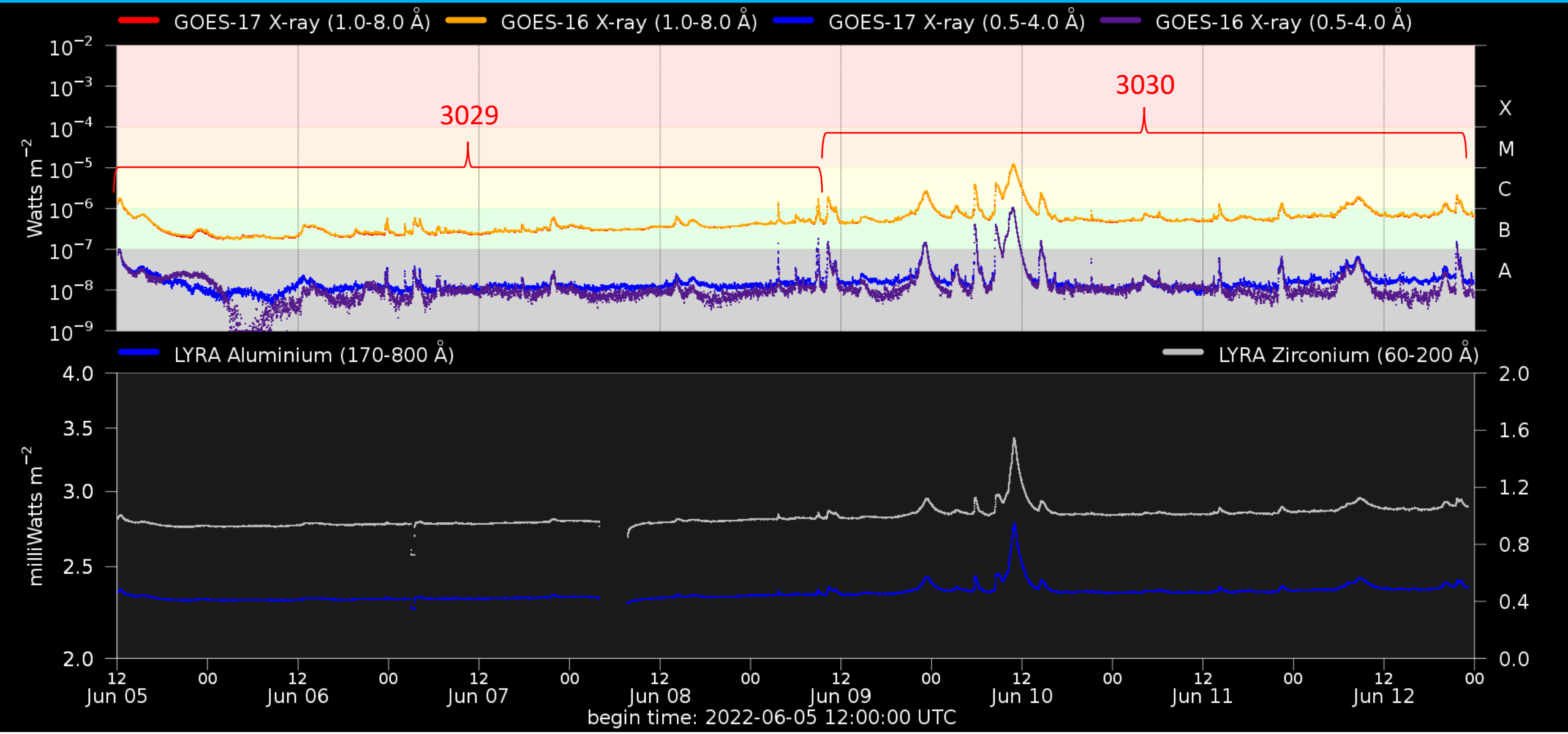

H-alpha 2022-06-12



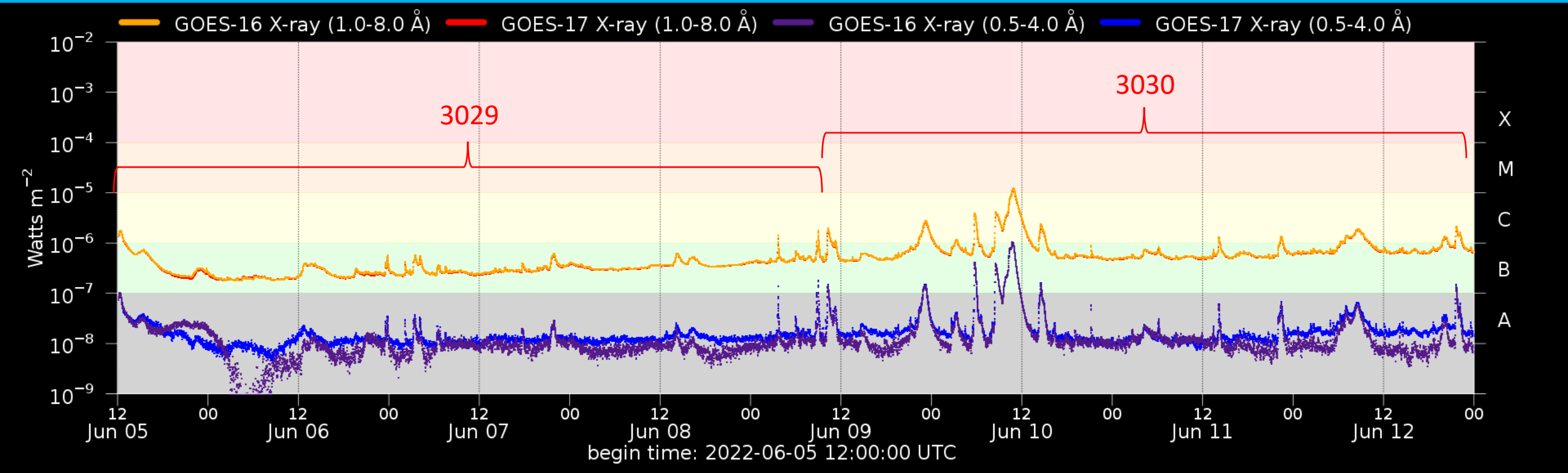
# Solar F10.7cm radio flux



# Solar X-Ray and UV flux



# Flaring activity

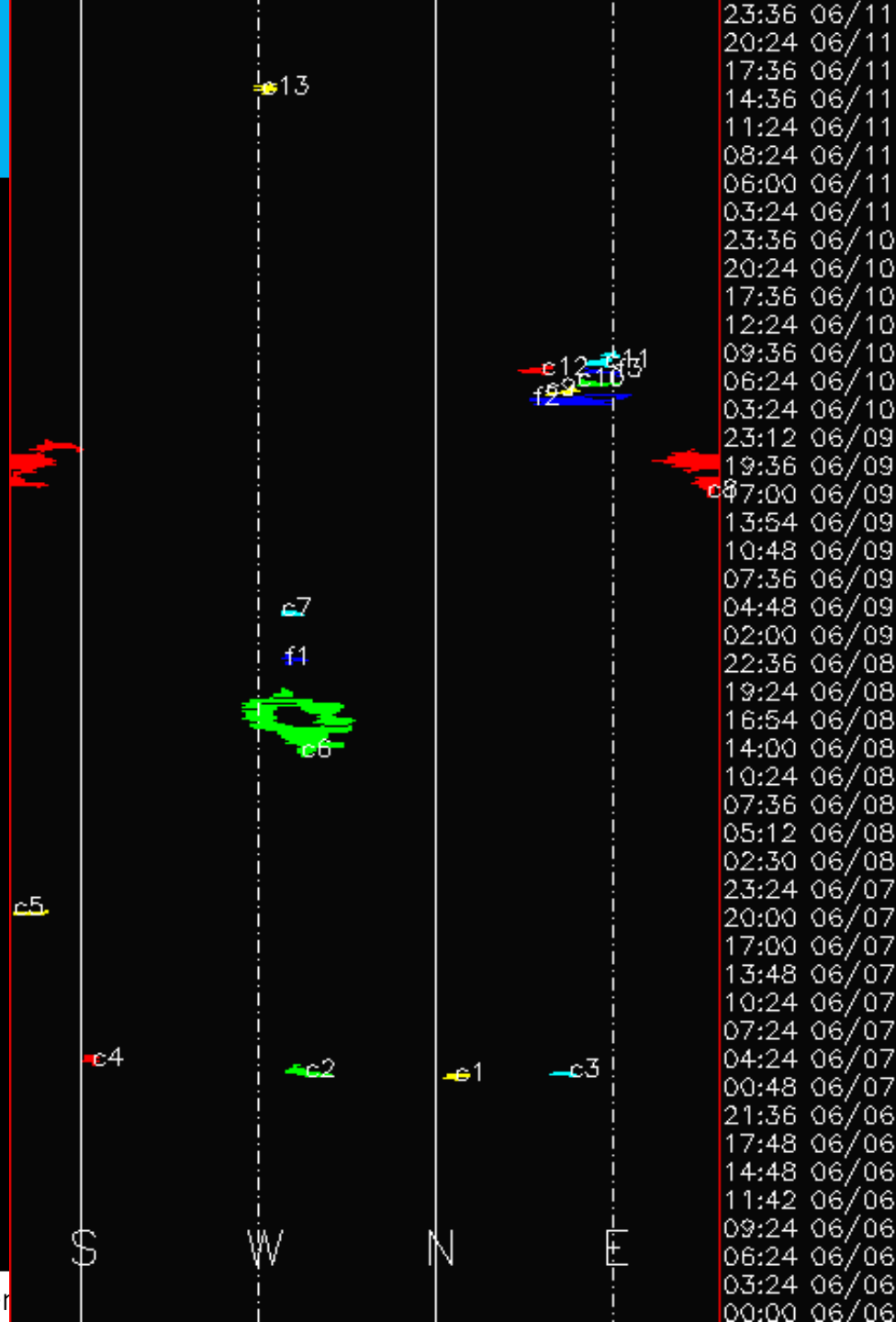



Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

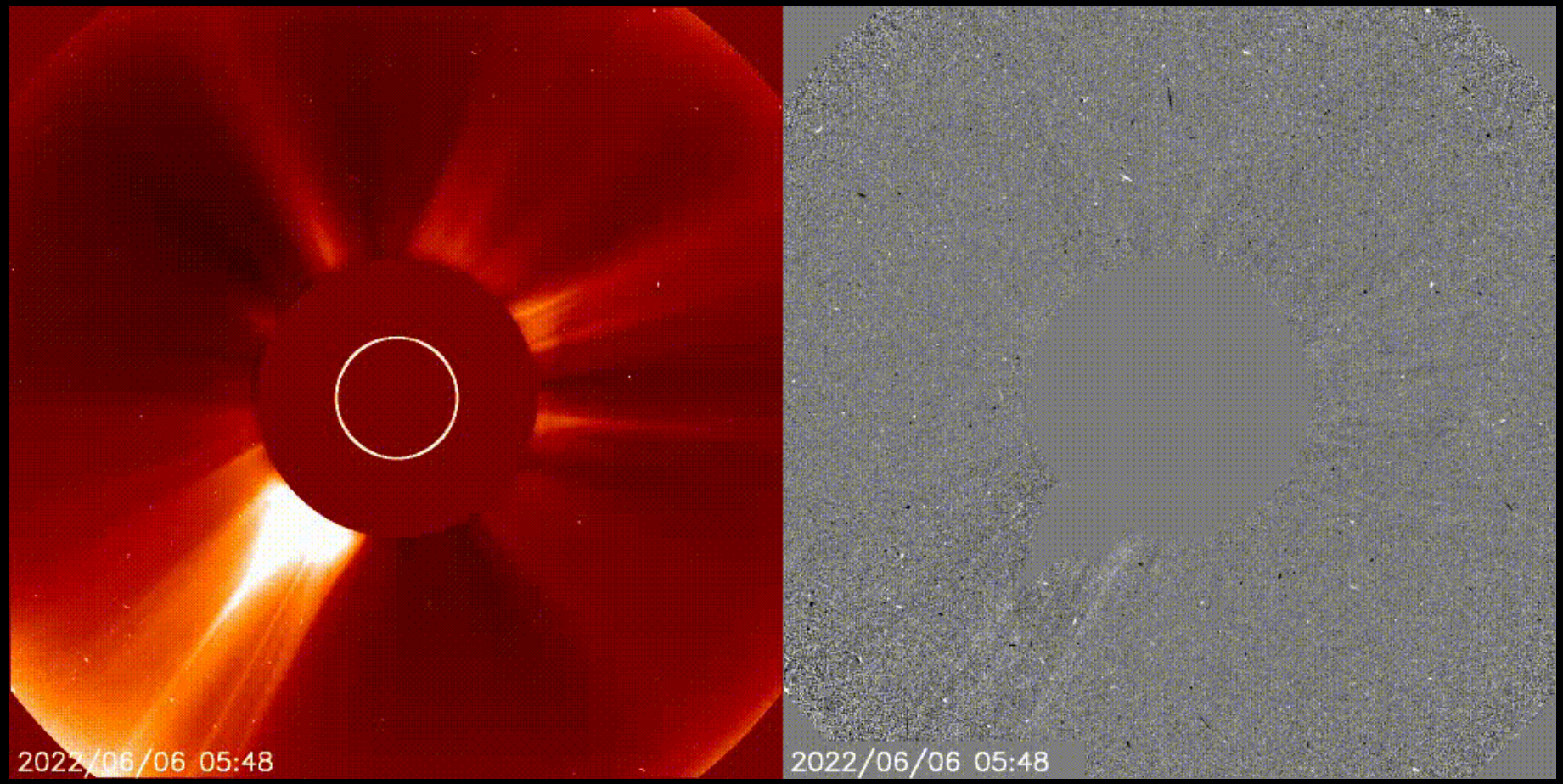
| Issue date | 2022-06-05 | 2022-06-06 | 2022-06-07 | 2022-06-08 | 2022-06-09 | 2022-06-10 | 2022-06-11 | 2022-06-12 |
|---|---|---|---|---|---|---|---|---|
| Probability (%) | 50\|01\|01 | 25\|01\|01 | 15\|01\|01 | 10\|01\|01 | 30\|01\|01 | 70\|30\|01 | 55\|10\|01 | 60\|10\|01 |
| Observed (#) | 00\|00\|00 | 00\|00\|00 | 00\|00\|00 | 04\|00\|00 | 01\|01\|00 | 01\|00\|00 | 03\|00\|00 | 01\|00\|00 |

# Coronal Mass Ejections

- June 7, 3:48UT: Partial halo. Primary direction North
  → backsided
- June 8: filament eruptions to North and South-east
  → too narrow
- June 8, filament eruption in the north around 18UT, LASCO C2 weak northward front from around 21:24UT to the northeast
  → not expected to impact Earth
- June 9, filament eruption to the south-east
  → too narrow



# Coronal Mass Ejections




Link to the movie

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# Solar Wind and Geomagnetic Activity

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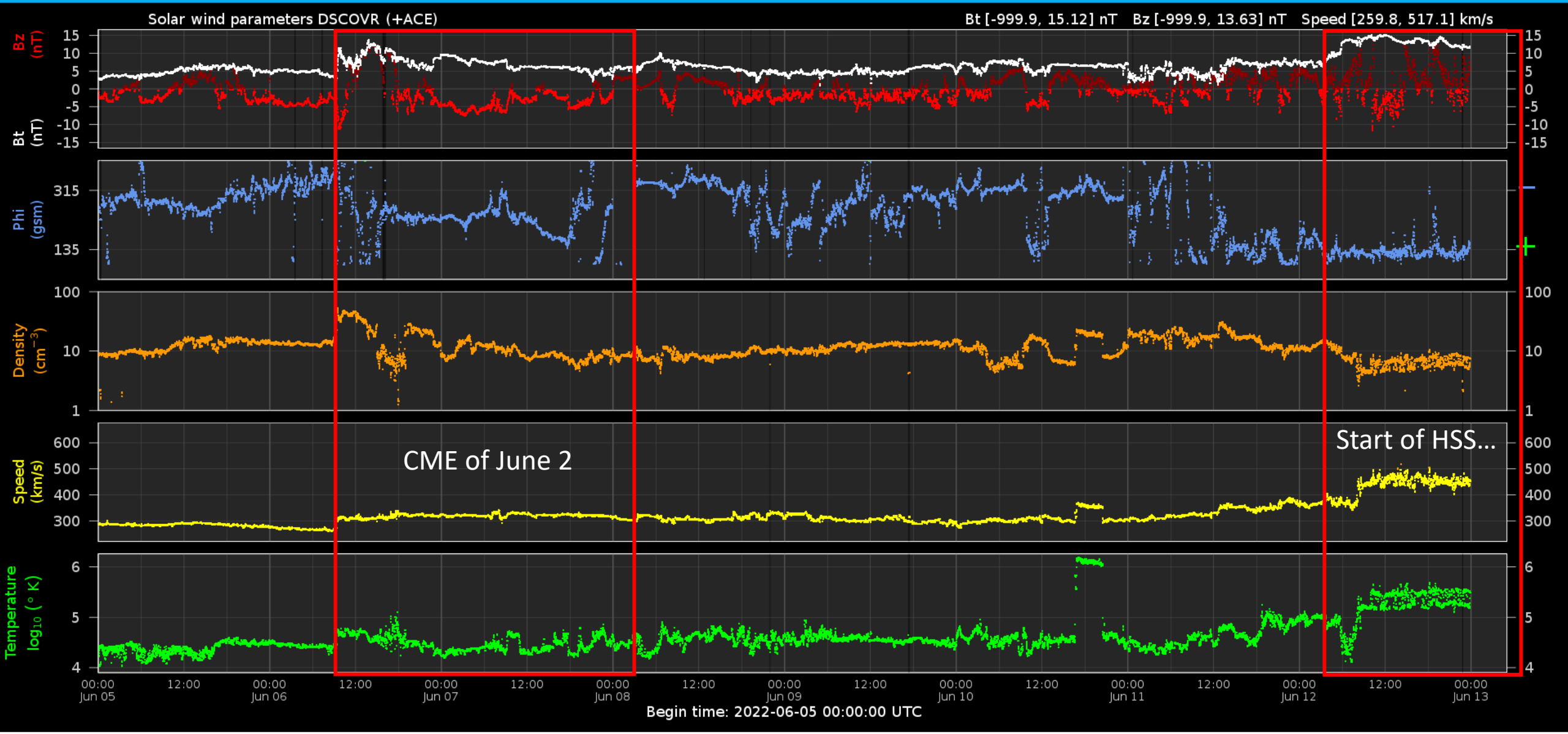
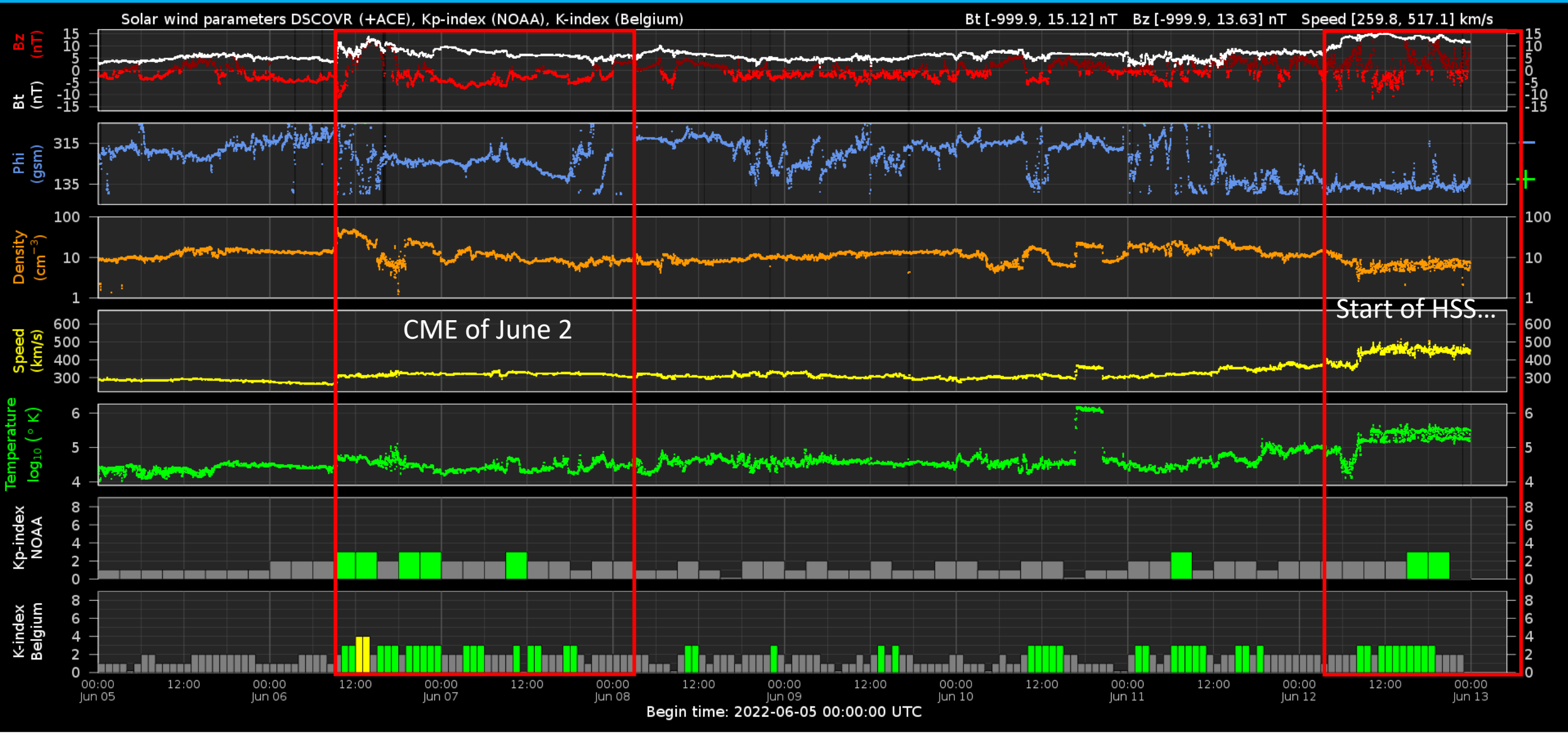
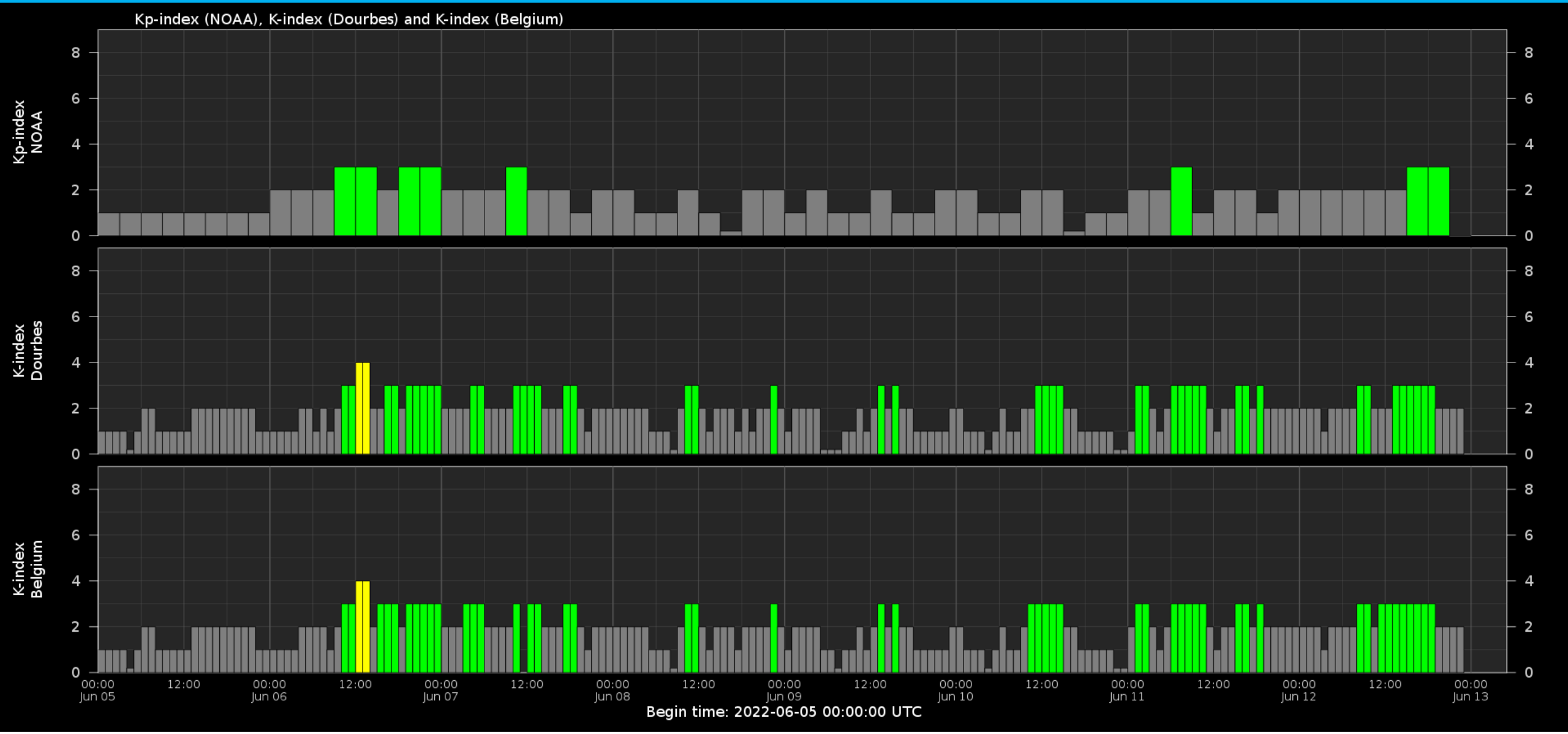
# Solar wind parameters



# Solar wind parameters & K-indices



# Geomagnetic activity (K-indexes)



# Energetic Particles

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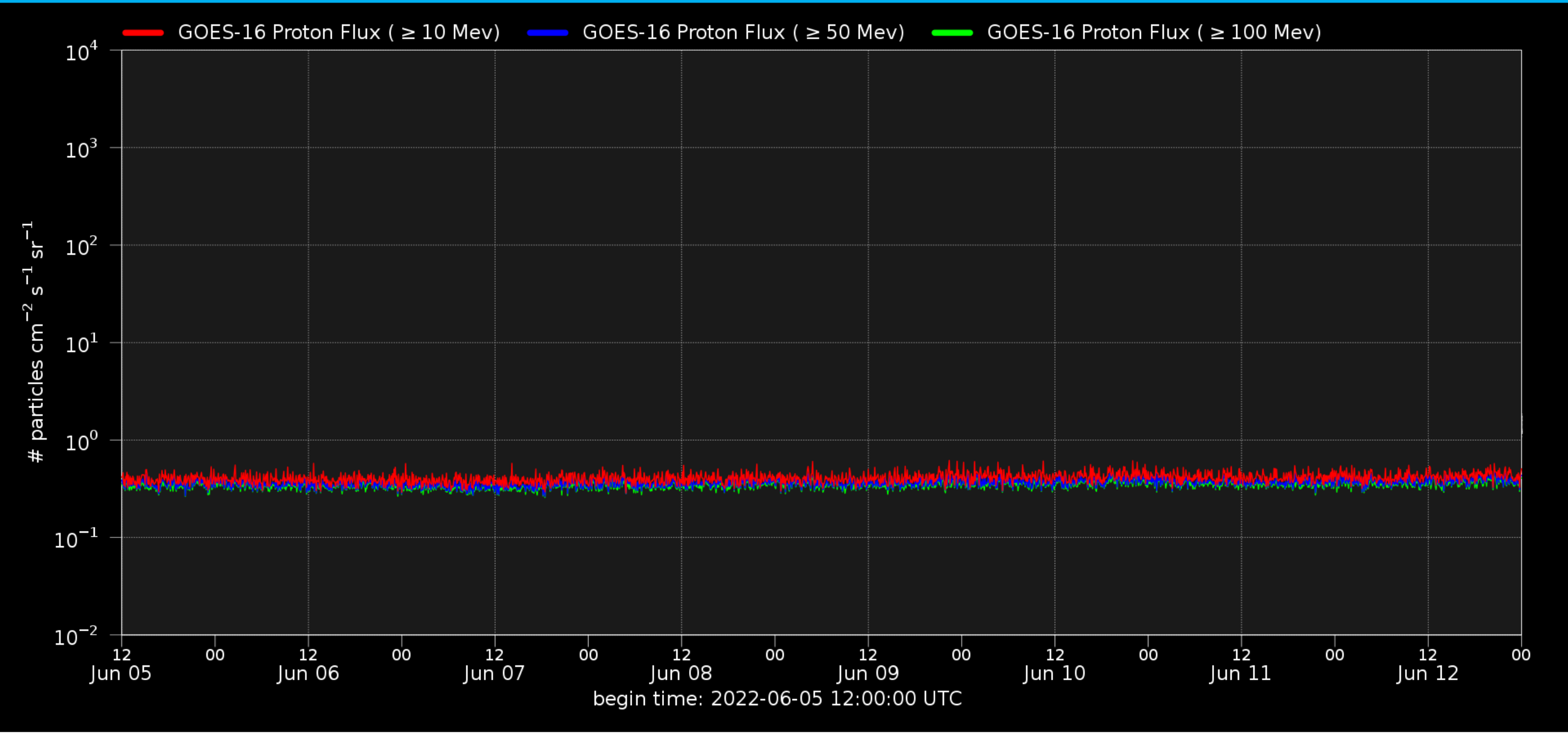
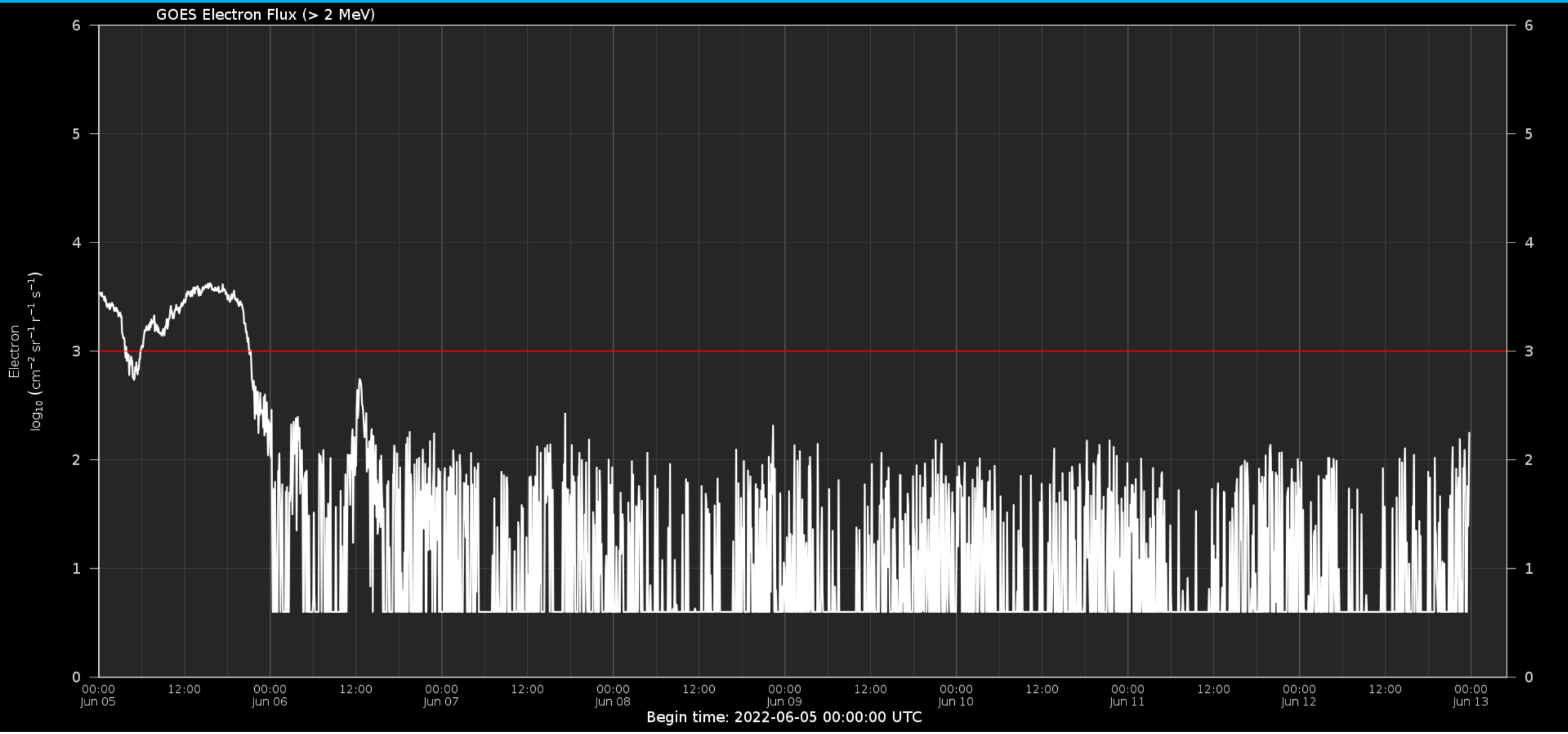
# Solar proton flux

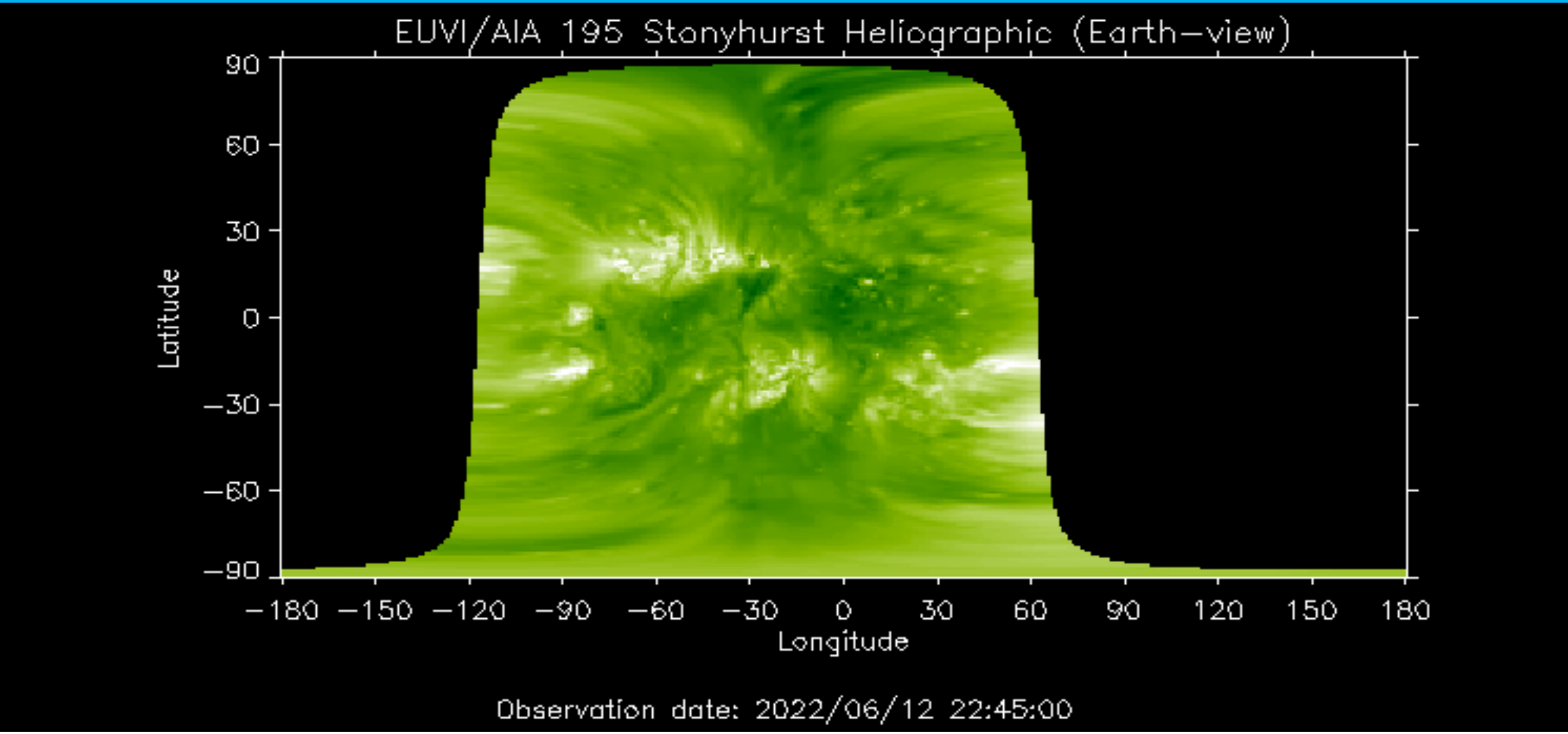


# Electron flux at GEO

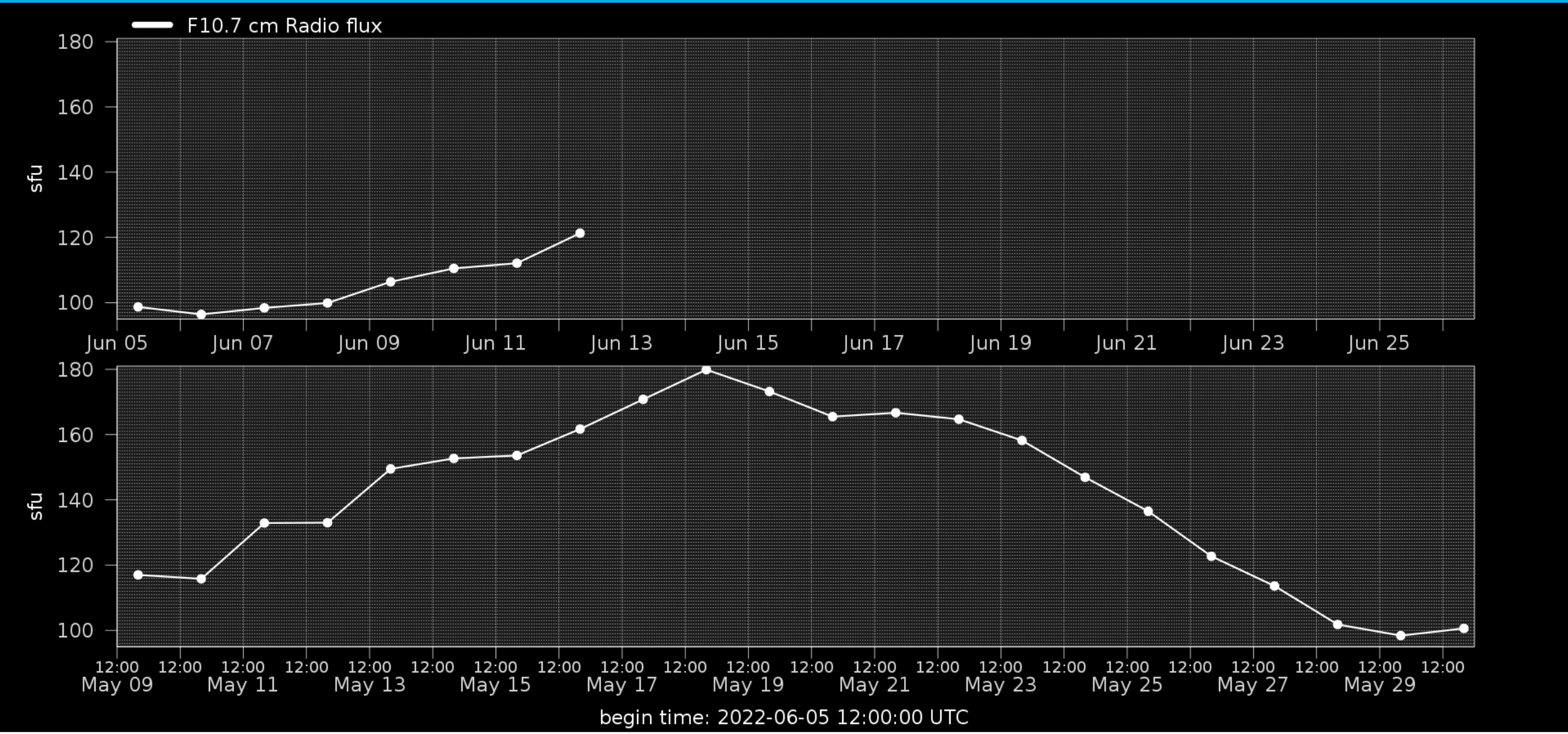


# Outlook

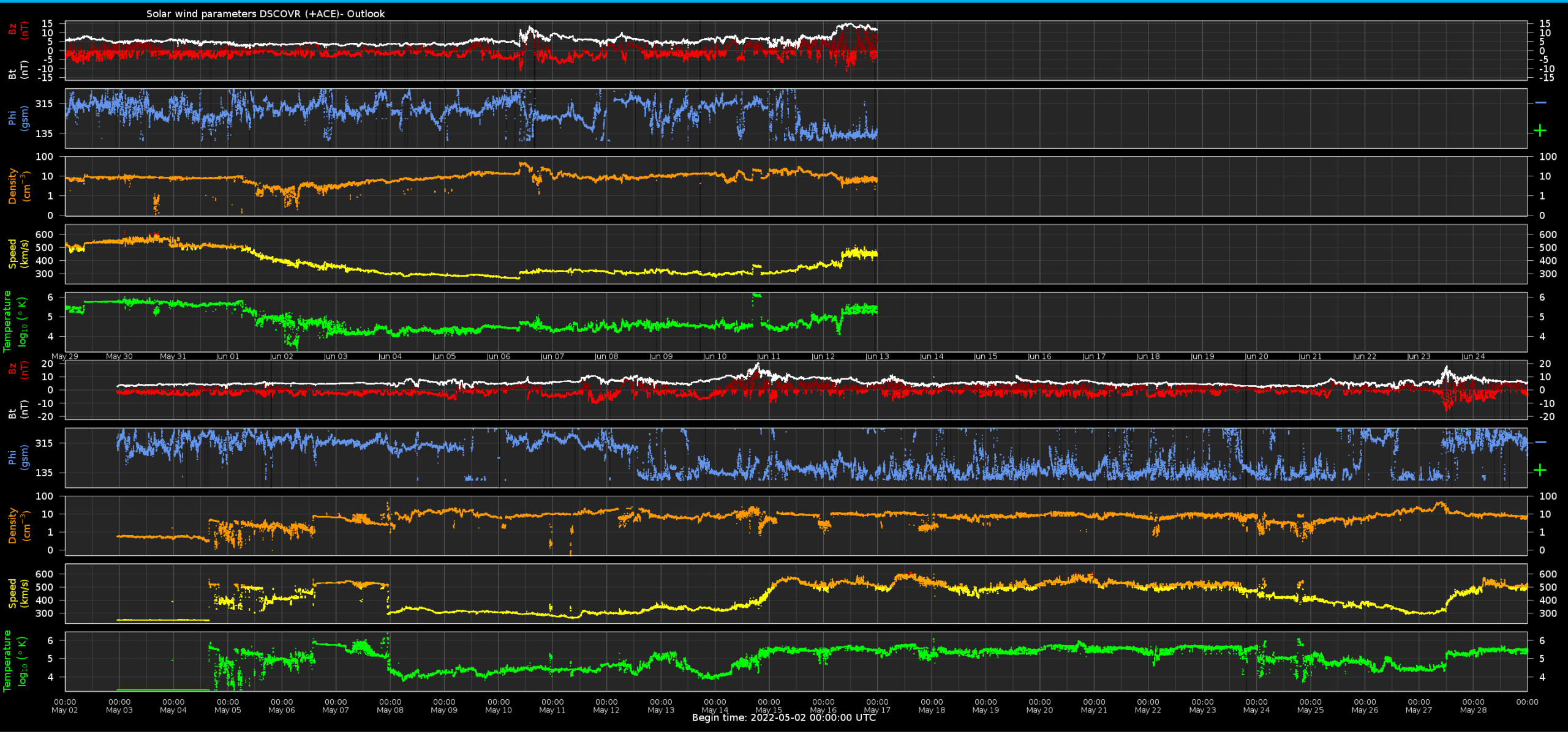
# Outlook: Solar activity



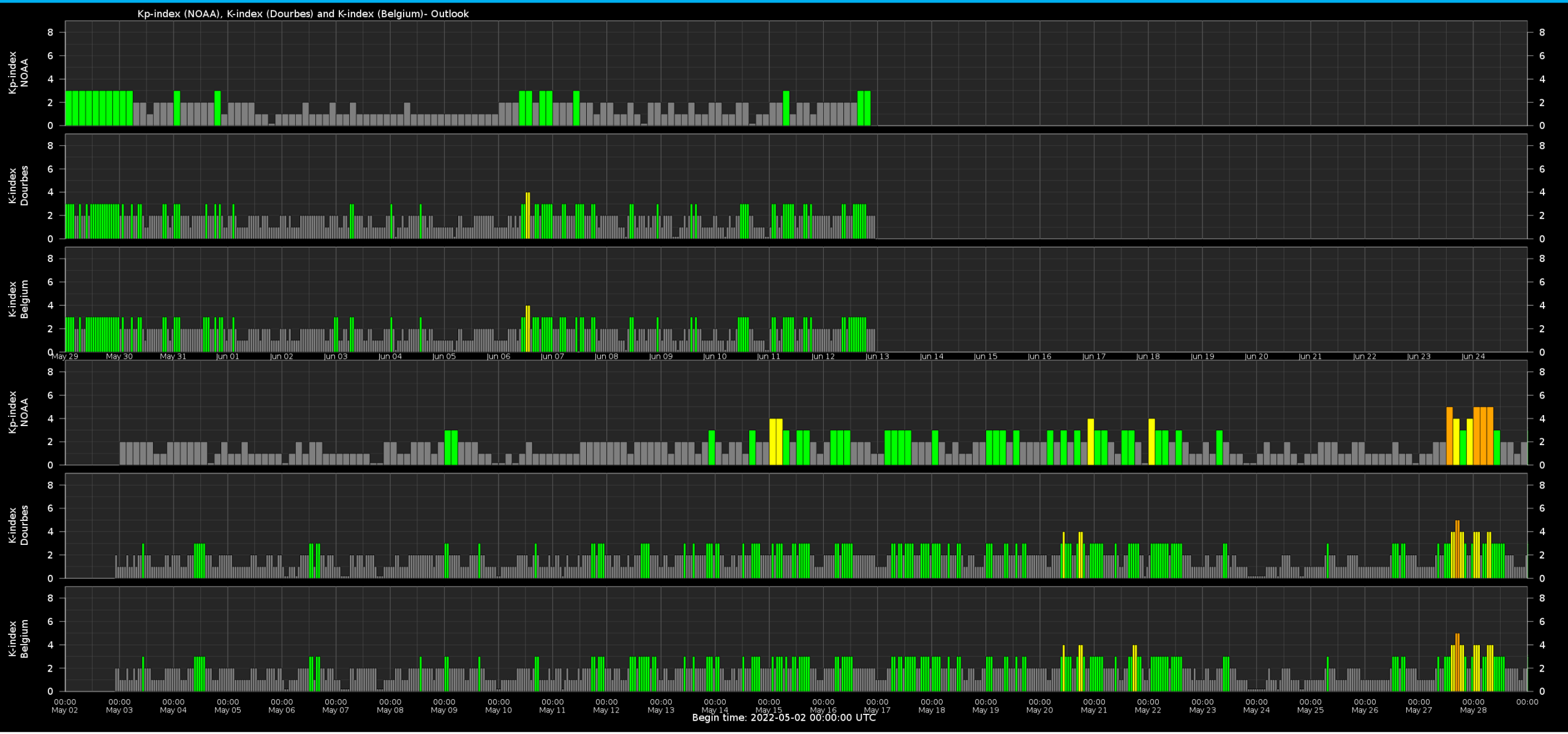
# Outlook: Solar F10.7cm radio flux



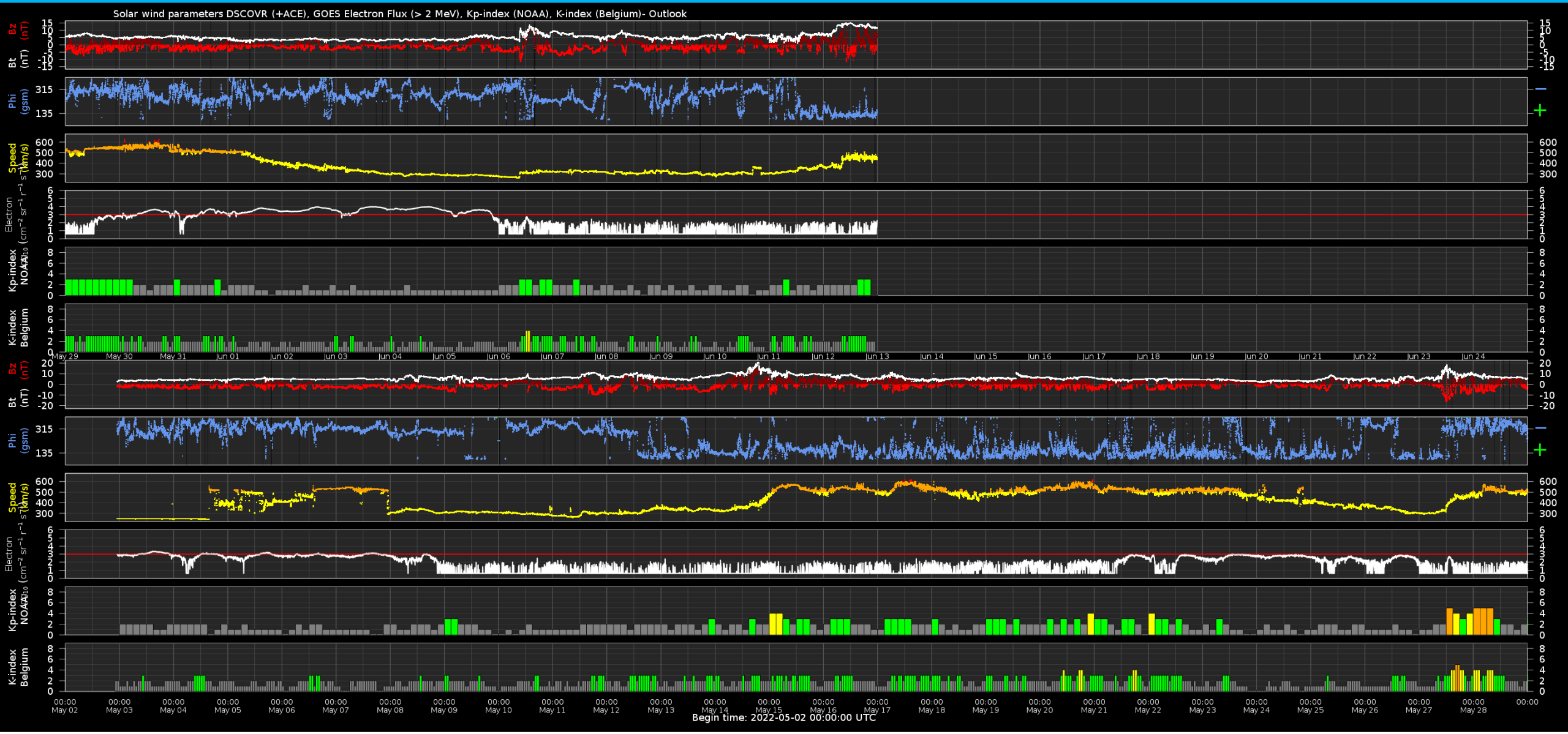
# Outlook: Solar wind parameters



# Outlook: Geomagnetic activity



# Outlook: Electron Flux at GEO Outlook



# SIDC Space Weather Briefing

See you at our next briefing!

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