

SIDC Space Weather Briefing

06 February 2022 - 13 February 2022

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& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2022-02-06 12:00 to 2022-02-13 23:59

Active regions	3 main regions 2939 (+2944), 2940, 2941 + additional less significant regions
Flares	# C-class flare: 27 # M-class flare: 1 # X-class flare: 0
Coronal Holes	A small negative polarity equatorial Coronal Hole
CMEs	1 Earth directed on Feb 6, 1 backside halo + a number Westward CMEs

Proton flux	background
Electron flux	Enhanced

Solar wind and geomagnetic conditions

HSS	Related to the negative polarity equatorial Coronal hole
ICMEs	ICME passage of the Feb 6 CME
SW Conditions	B : 1.18 - 21.32 nT // Bz: -16.18 nT to 18.72 nT // Speed: 367.6 - 600.8km/s
K-indices	max K-index (K_Bel): 5 max Kp-index (NOAA): 5

All Quiet Alert: off all week

Solar Activity

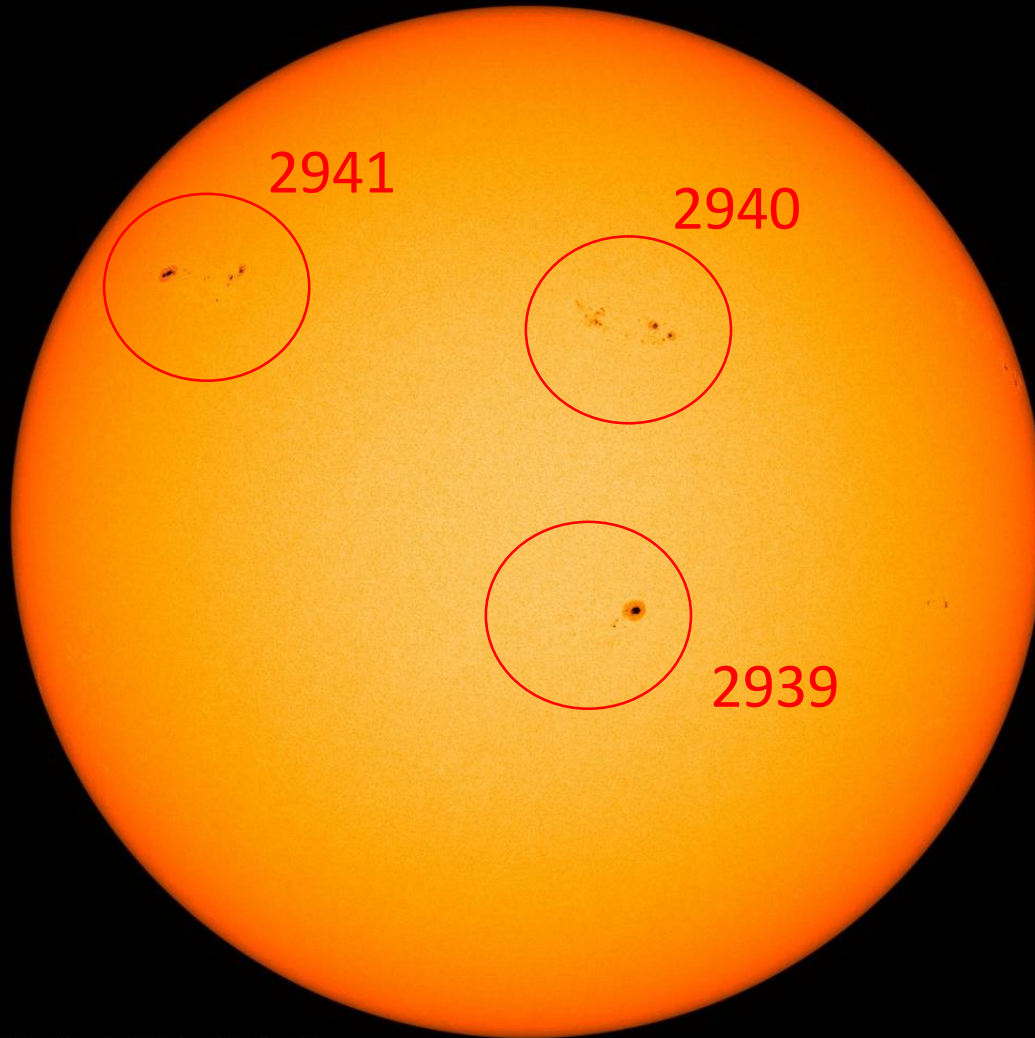


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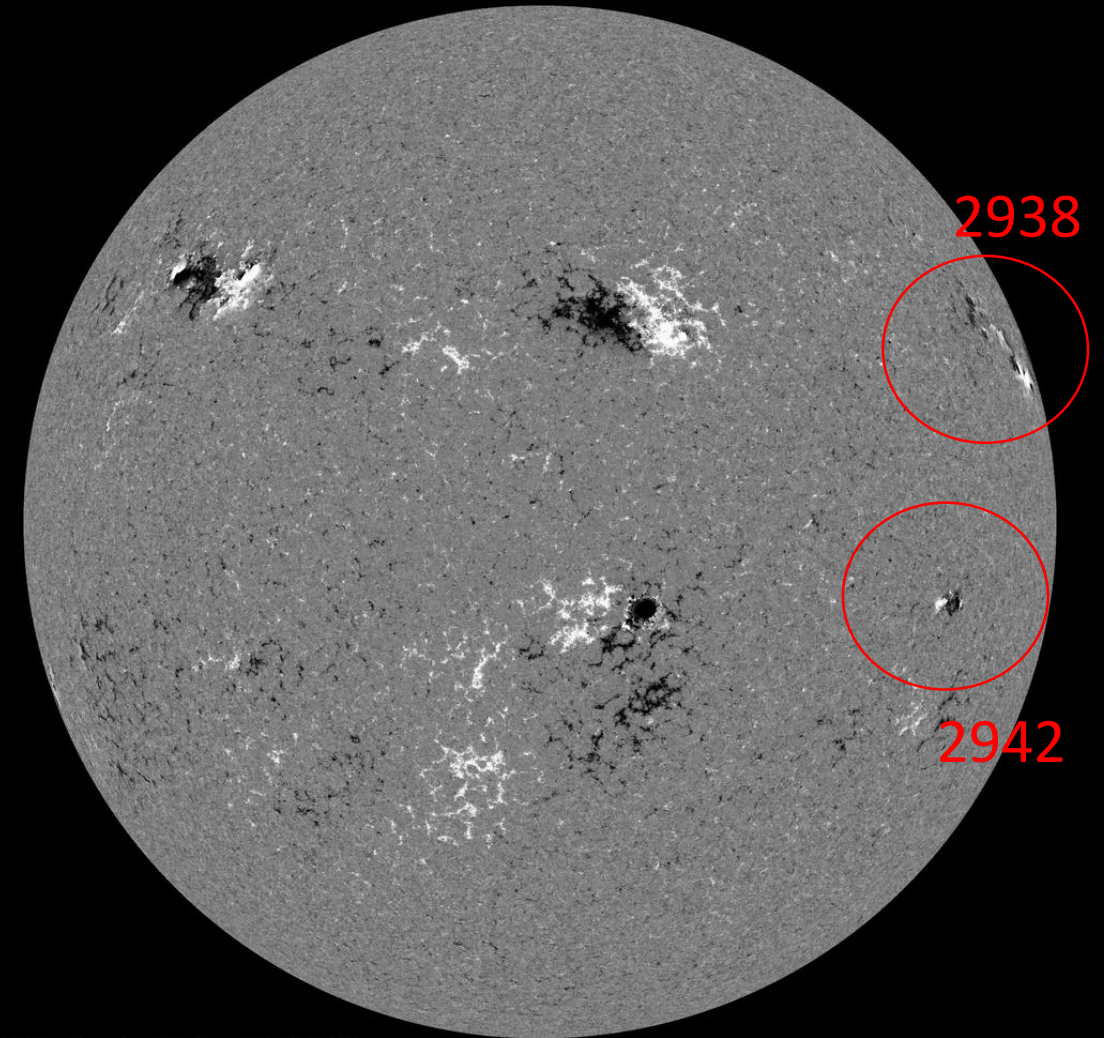
Solar active regions

SDO/HMI White Light 2022-02-06



SDO/HMI Quick-Look Continuum: 20220206_114500

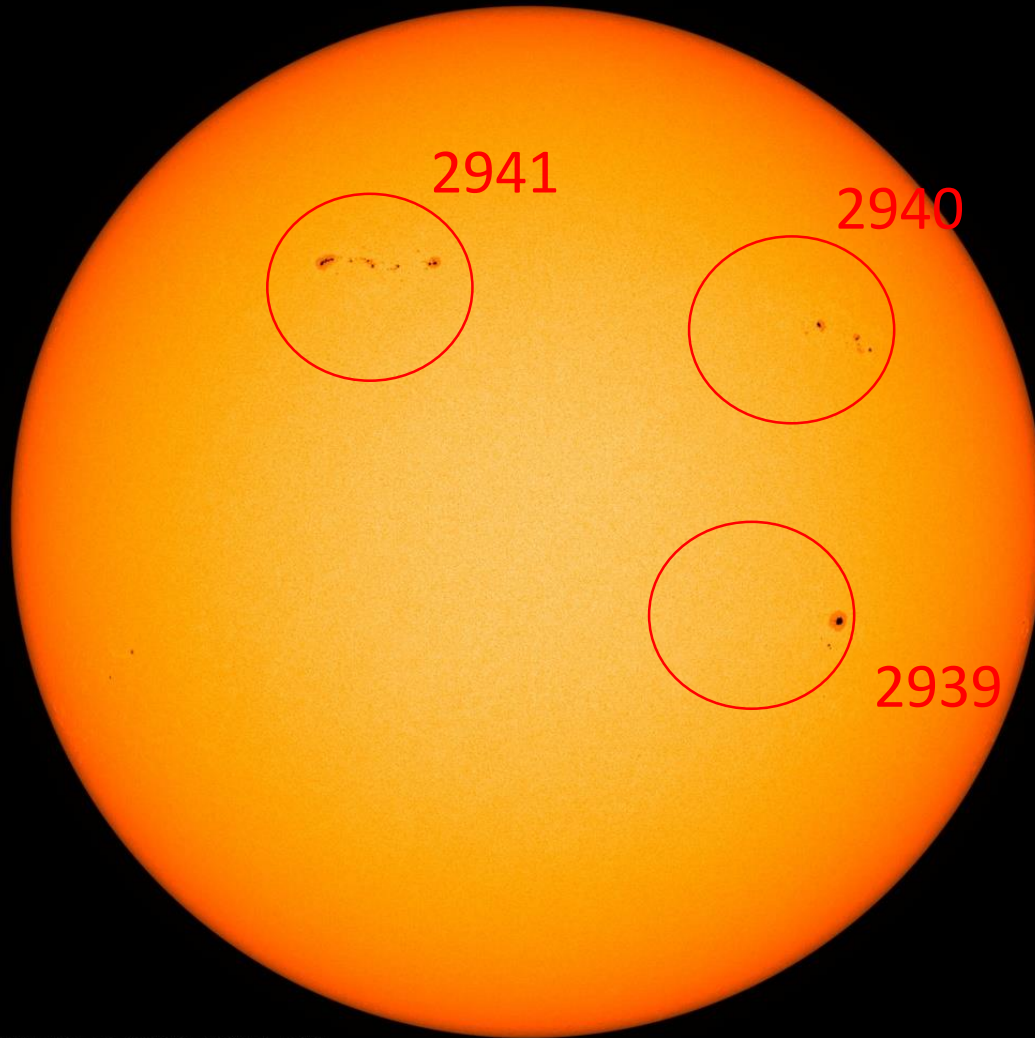
SDO/HMI Magnetogram 2022-02-06



SDO/HMI Quick-Look Magnetogram: 20220206_114500

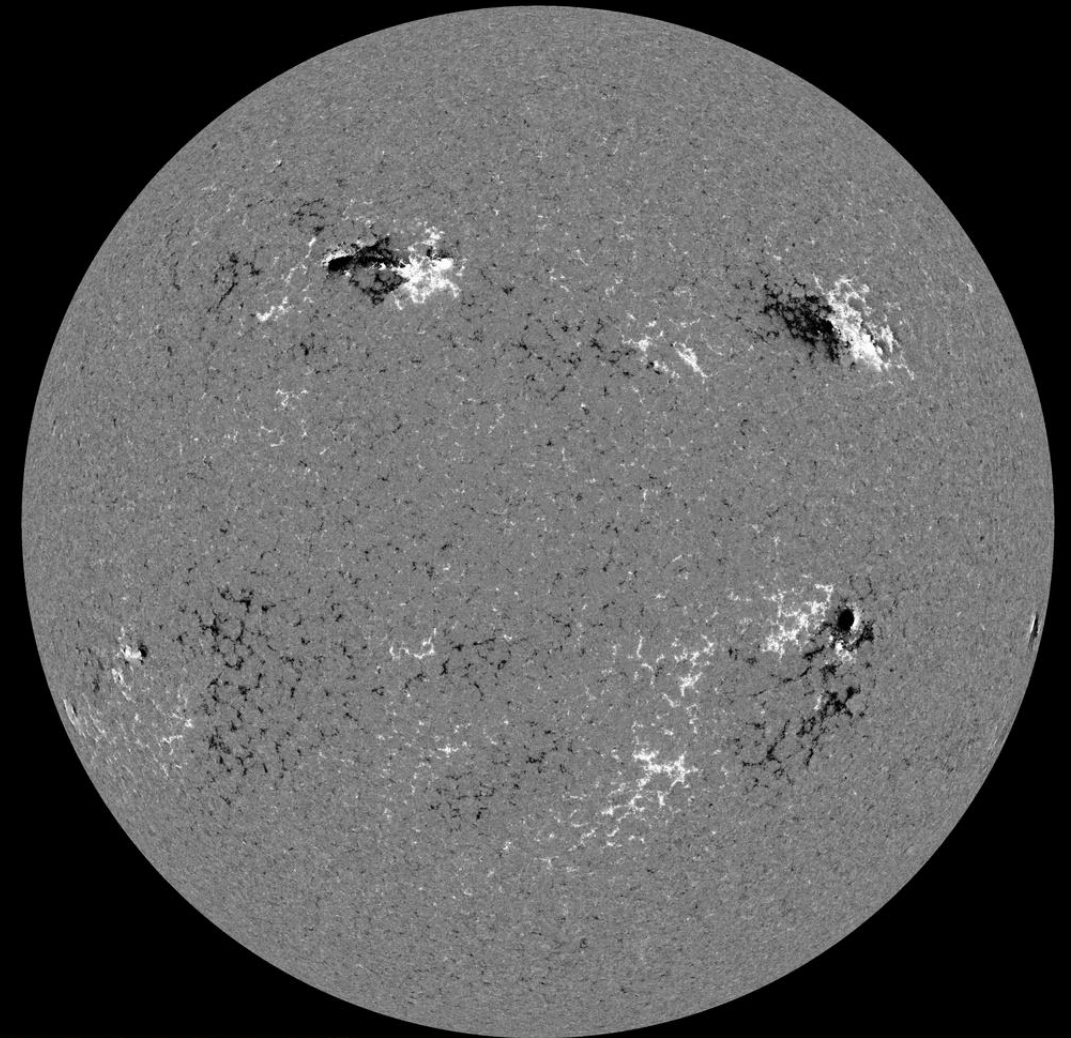
Solar active regions

SDO/HMI White Light 2022-02-08



SDO/HMI Quick-Look Continuum: 20220208_114500

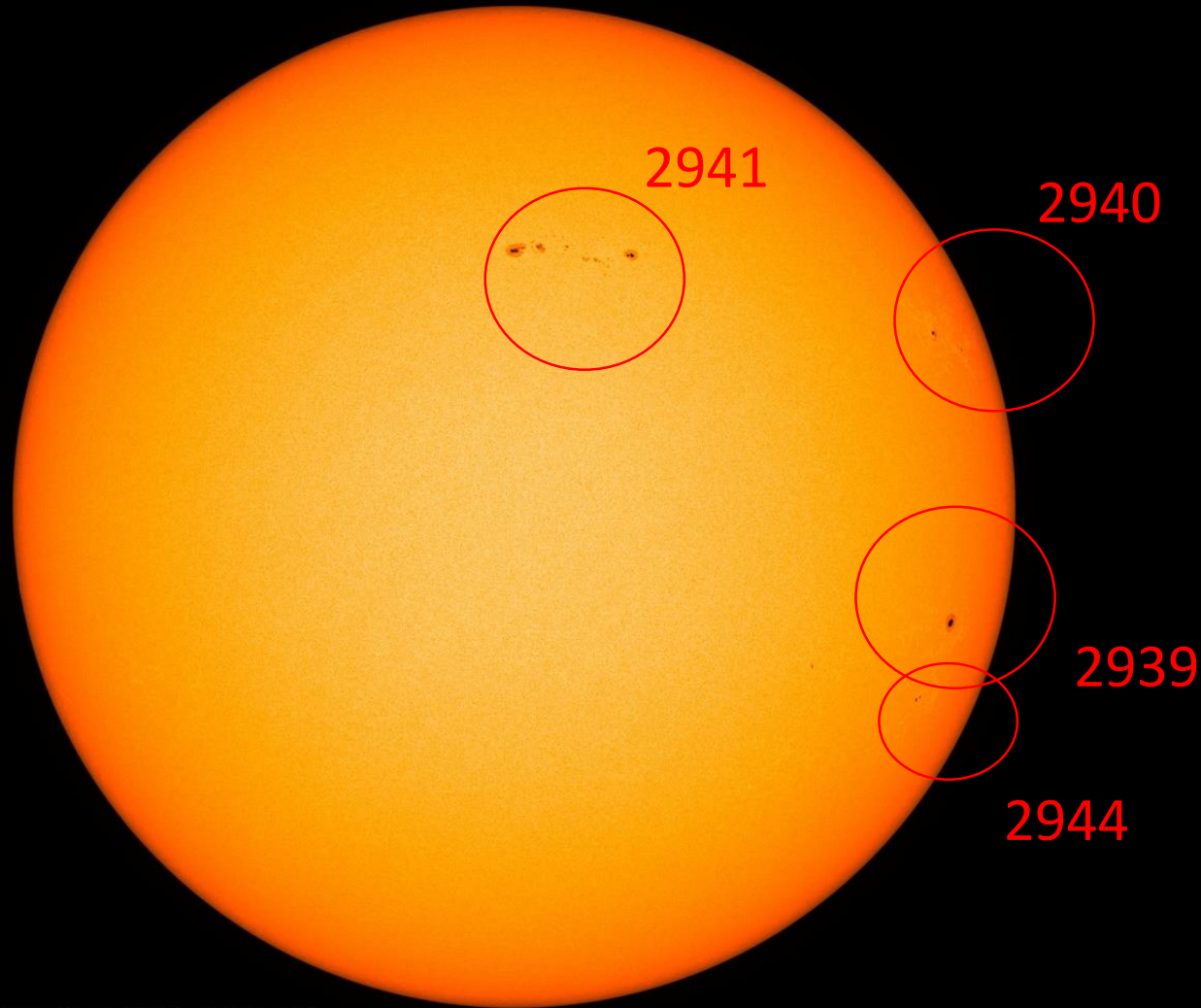
SDO/HMI Magnetogram 2022-02-08



SDO/HMI Quick-Look Magnetogram: 20220208_114500

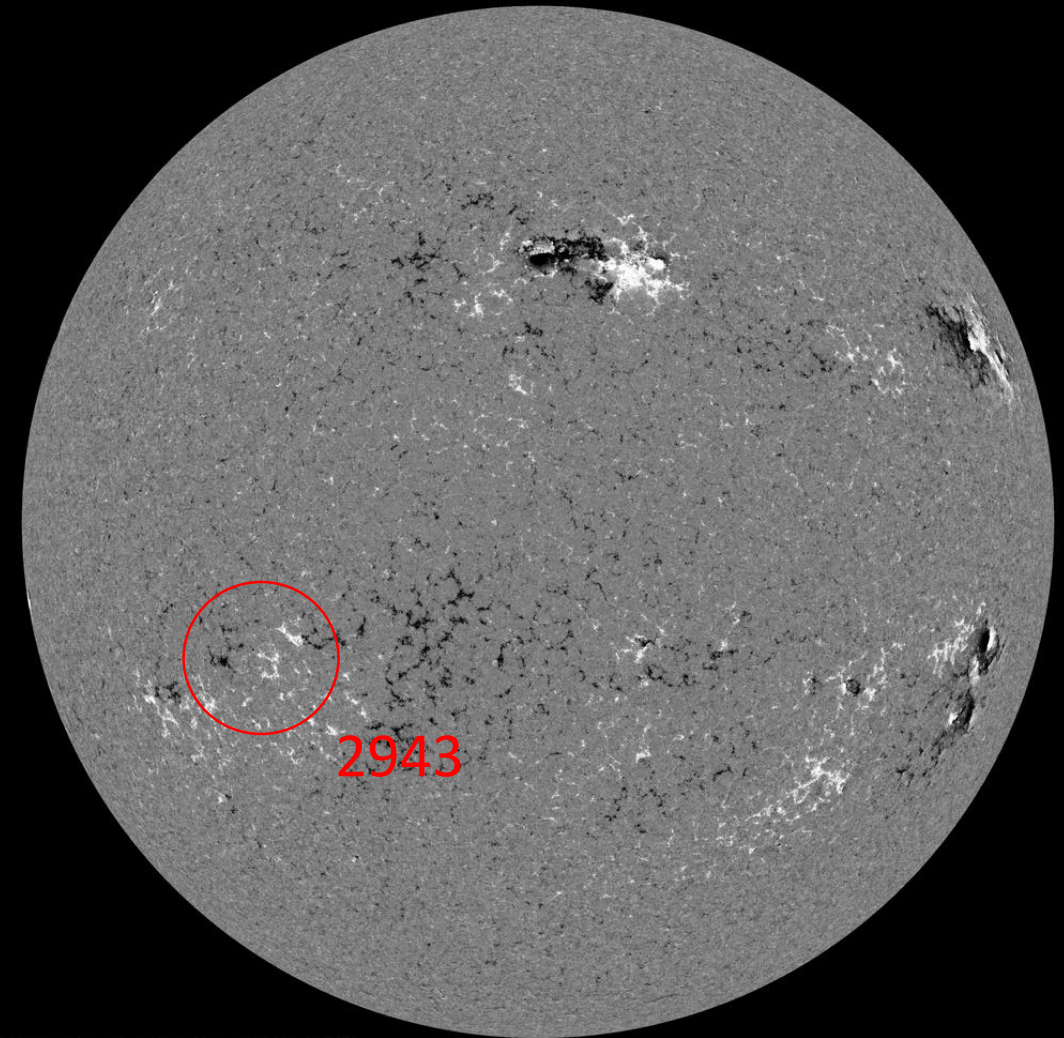
Solar active regions

SDO/HMI White Light 2022-02-10



SDO/HMI Quick-Look Continuum: 20220210_114500

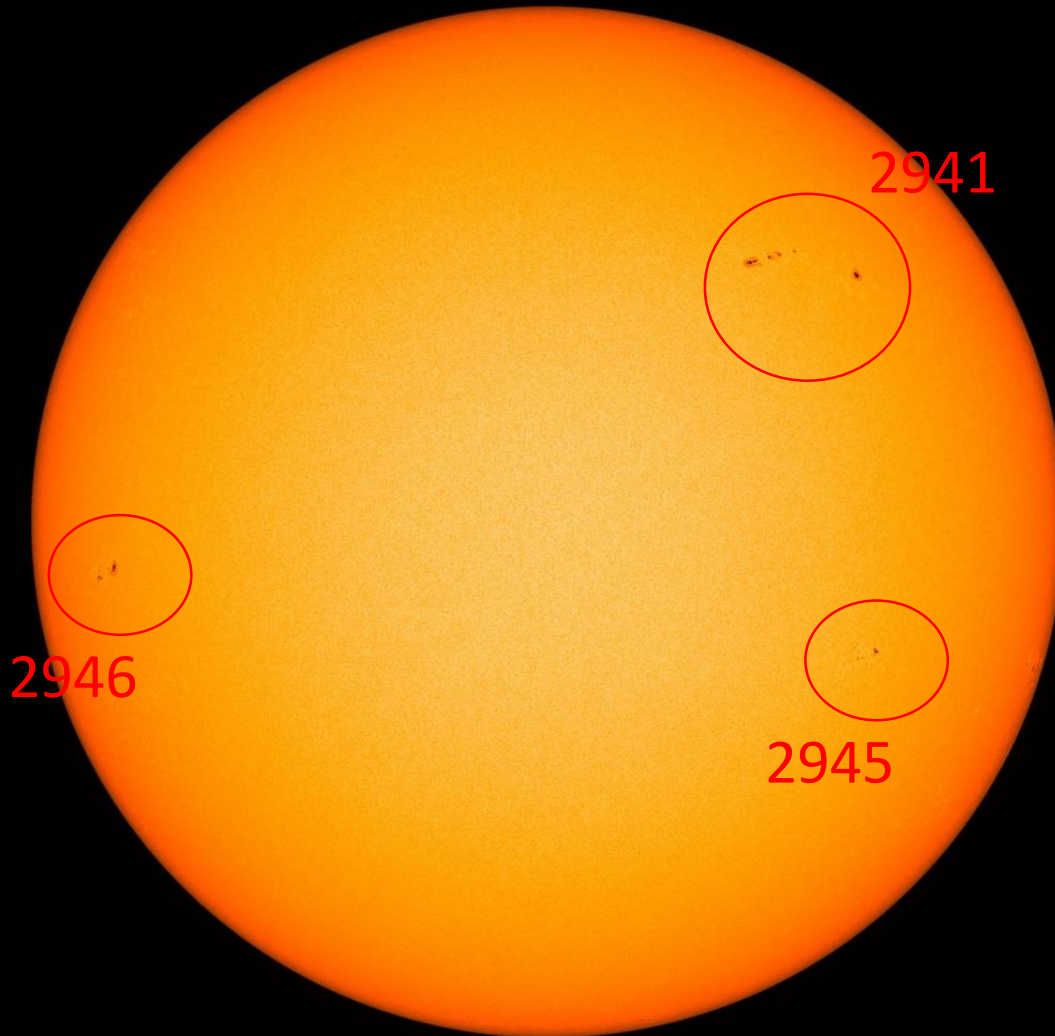
SDO/HMI Magnetogram 2022-02-10



SDO/HMI Quick-Look Magnetogram: 20220210_114500

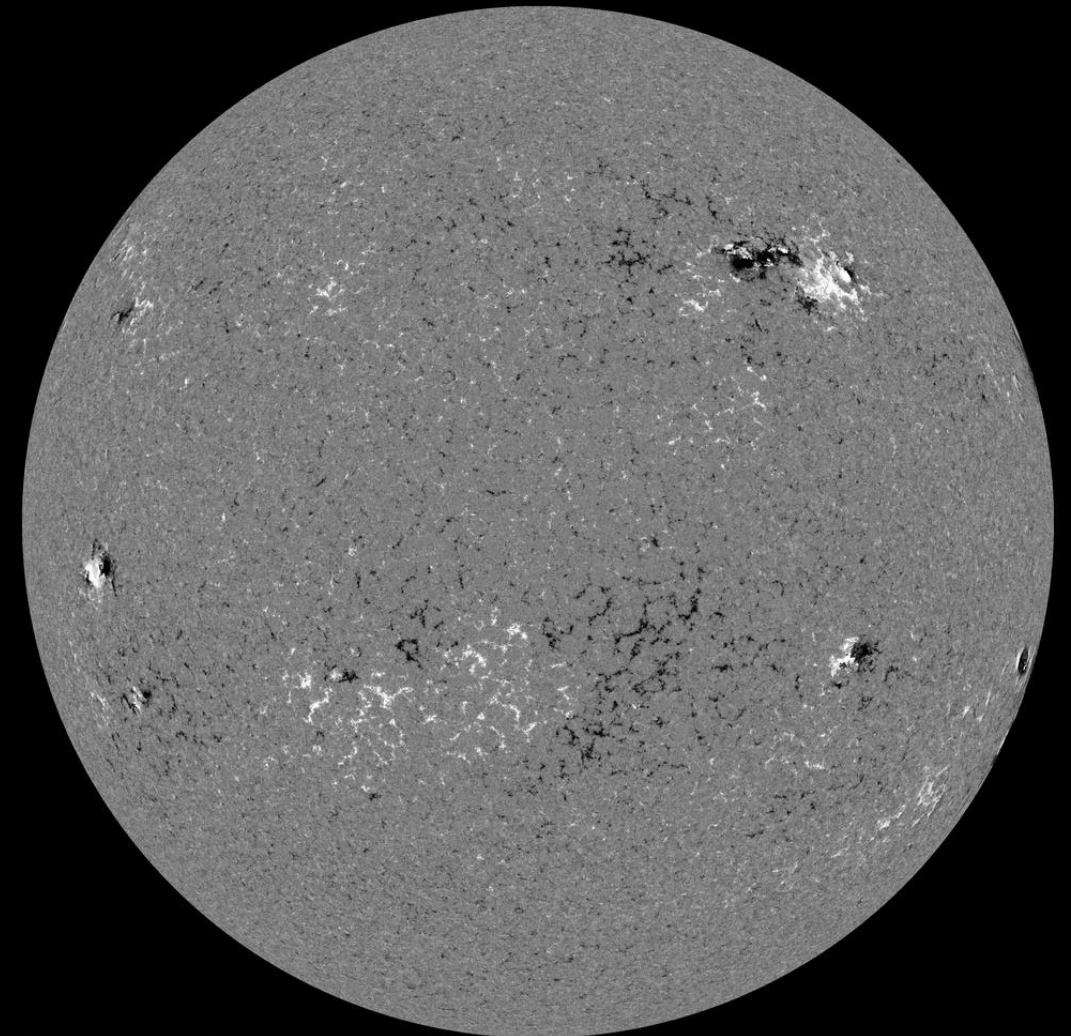
Solar active regions

SDO/HMI White Light 2022-02-12



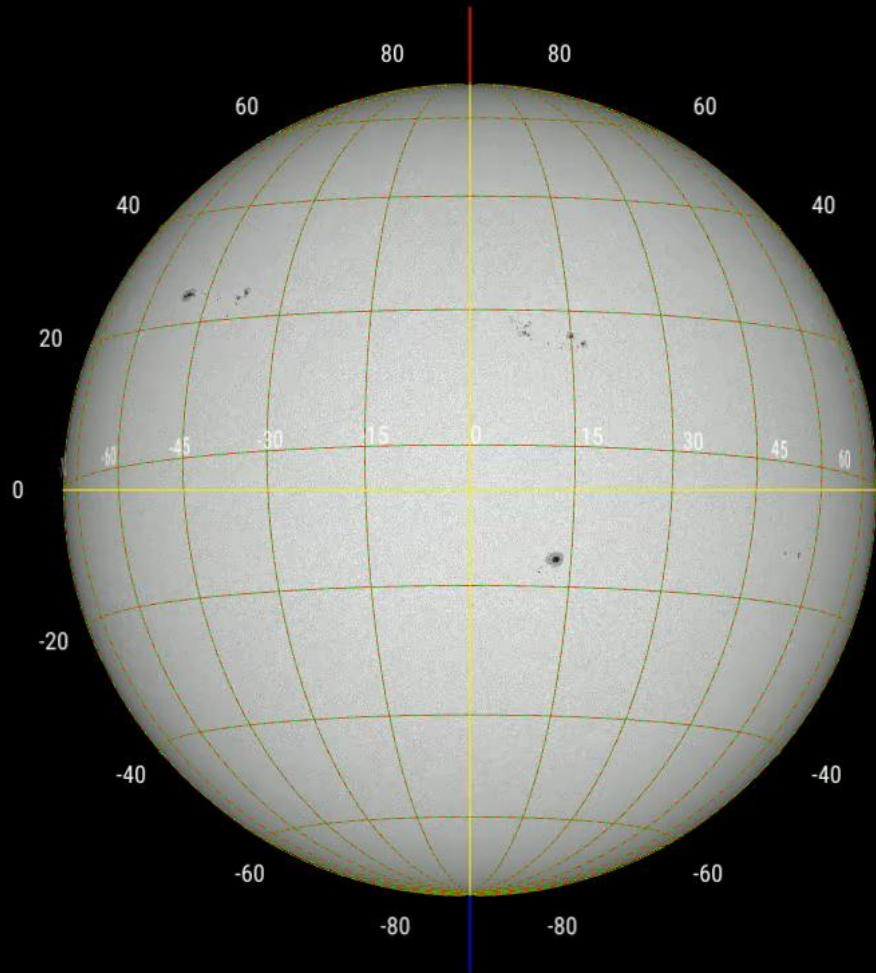
SDO/HMI Quick-Look Continuum: 20220212_114500

SDO/HMI Magnetogram 2022-02-12

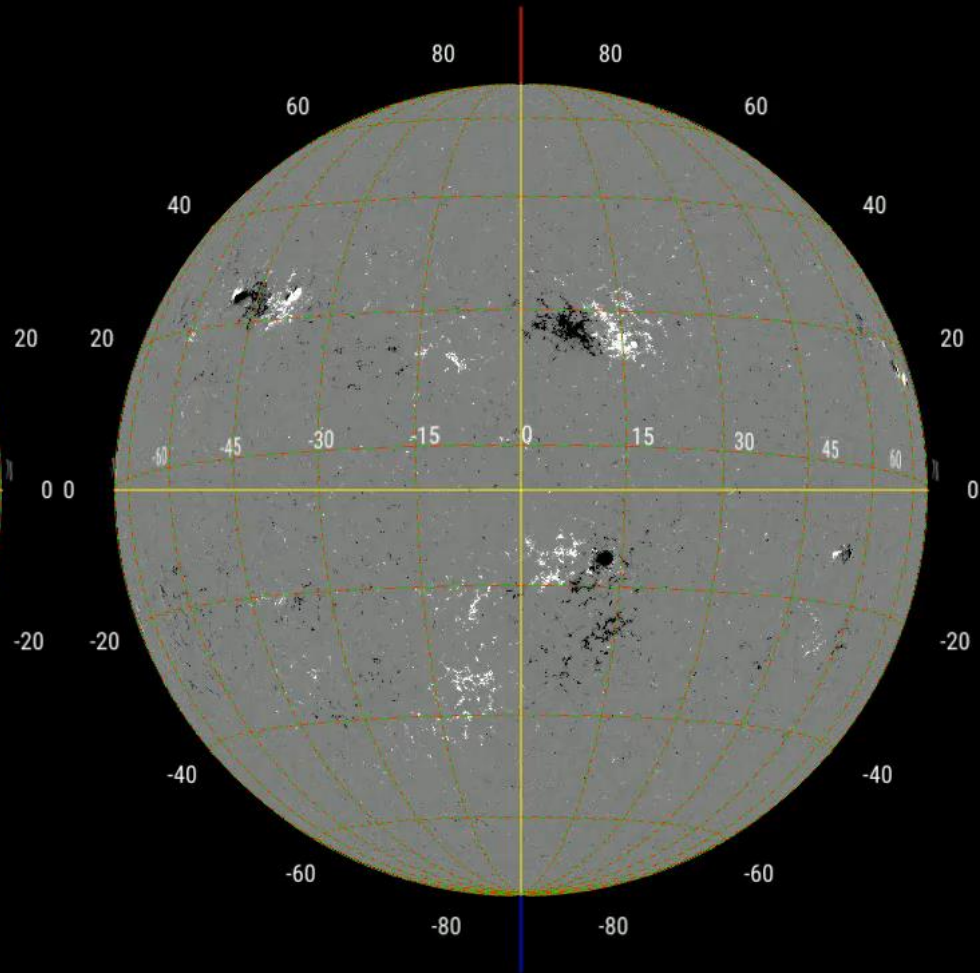


SDO/HMI Quick-Look Magnetogram: 20220212_114500

Solar active regions



HMI continuum 2022-02-06T12:00:23.6

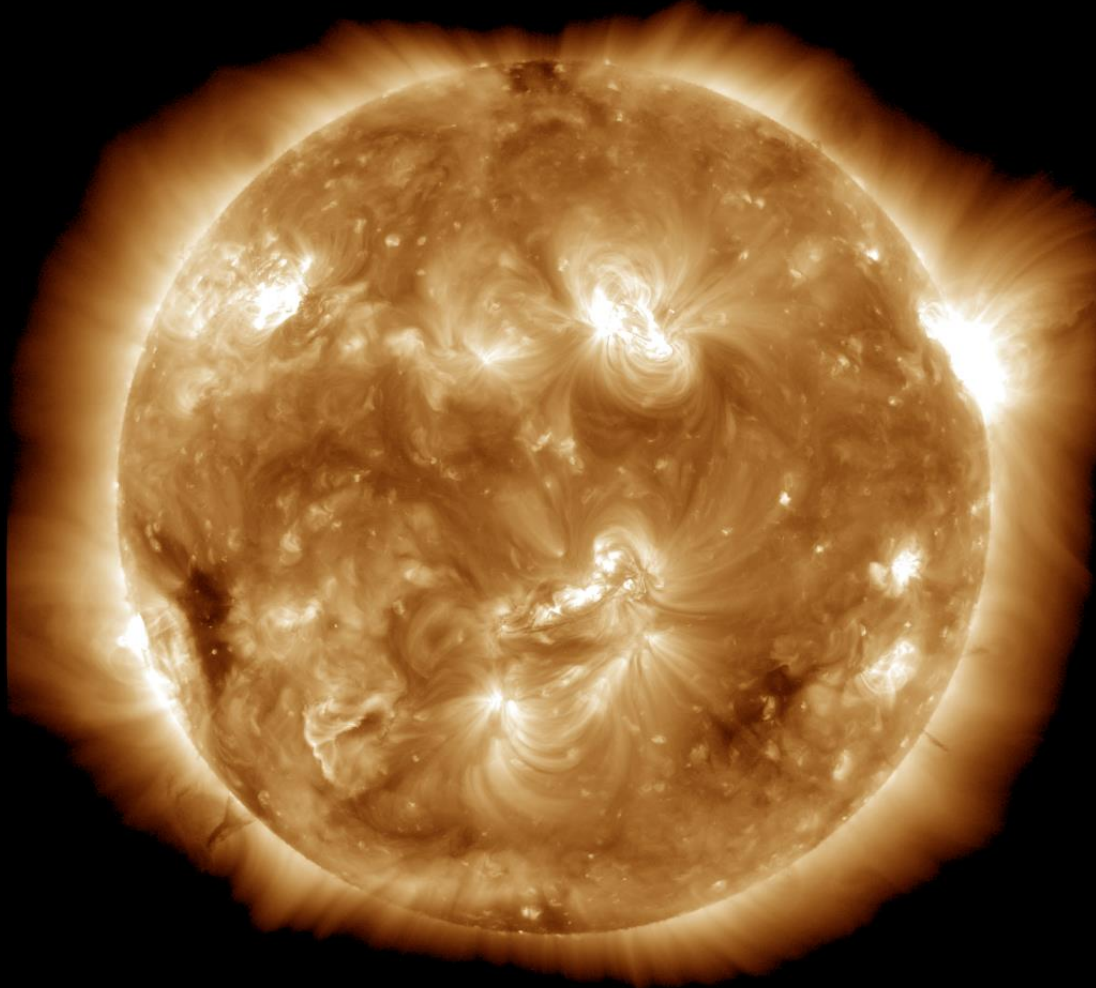


HMI magnetogram 2022-02-06T12:00:23.6

Coronal holes

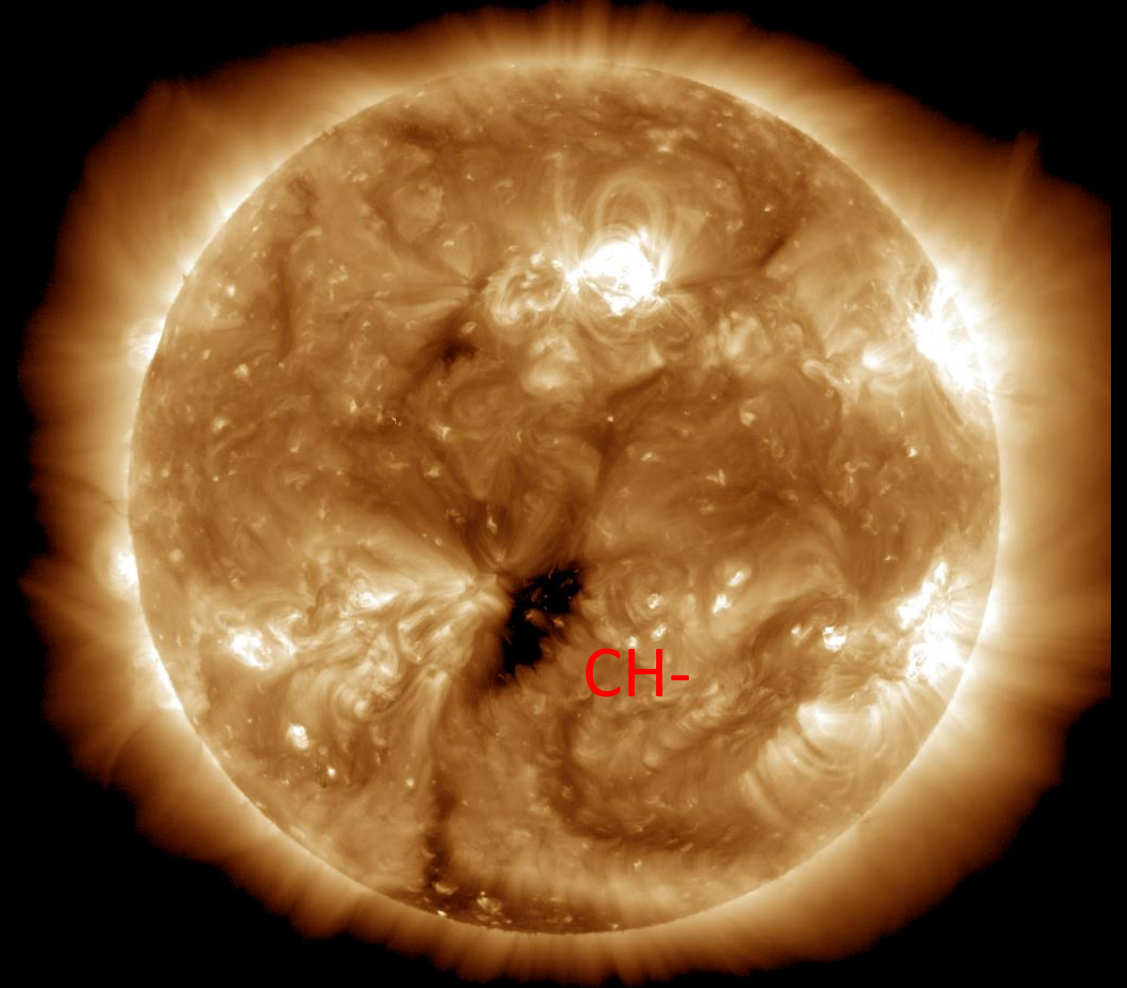
SDO/AIA 19.3 nm 2022-02-06

SDO/AIA AIA 193Å 2022-02-06T12:00:05.842



SDO/AIA 19.3 nm 2022-02-10

SDO/AIA AIA 193Å 2022-02-10T12:00:41.843



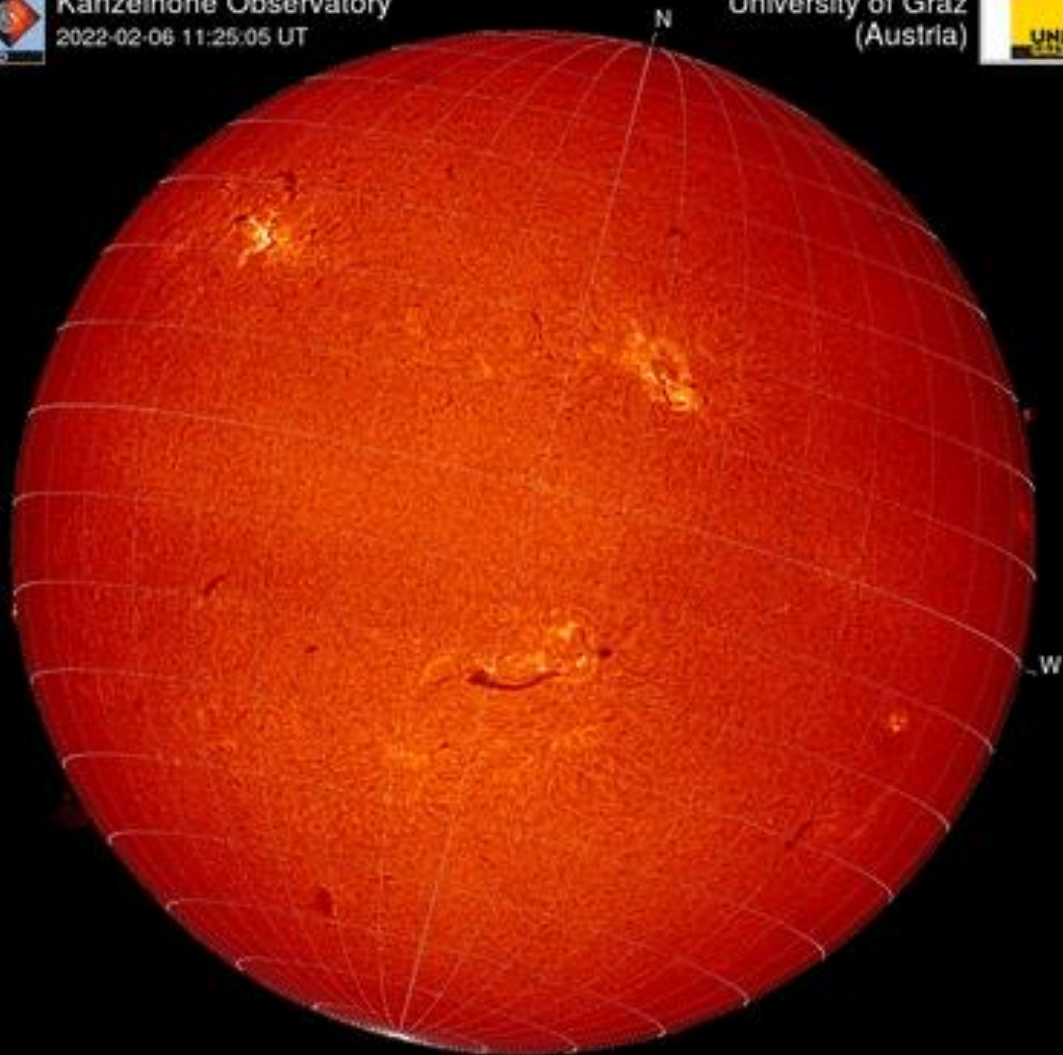
Filaments & Filament eruptions

H-alpha 2022-02-06



Kanzelhöhe Observatory
2022-02-06 11:25:05 UT

University of Graz
(Austria)

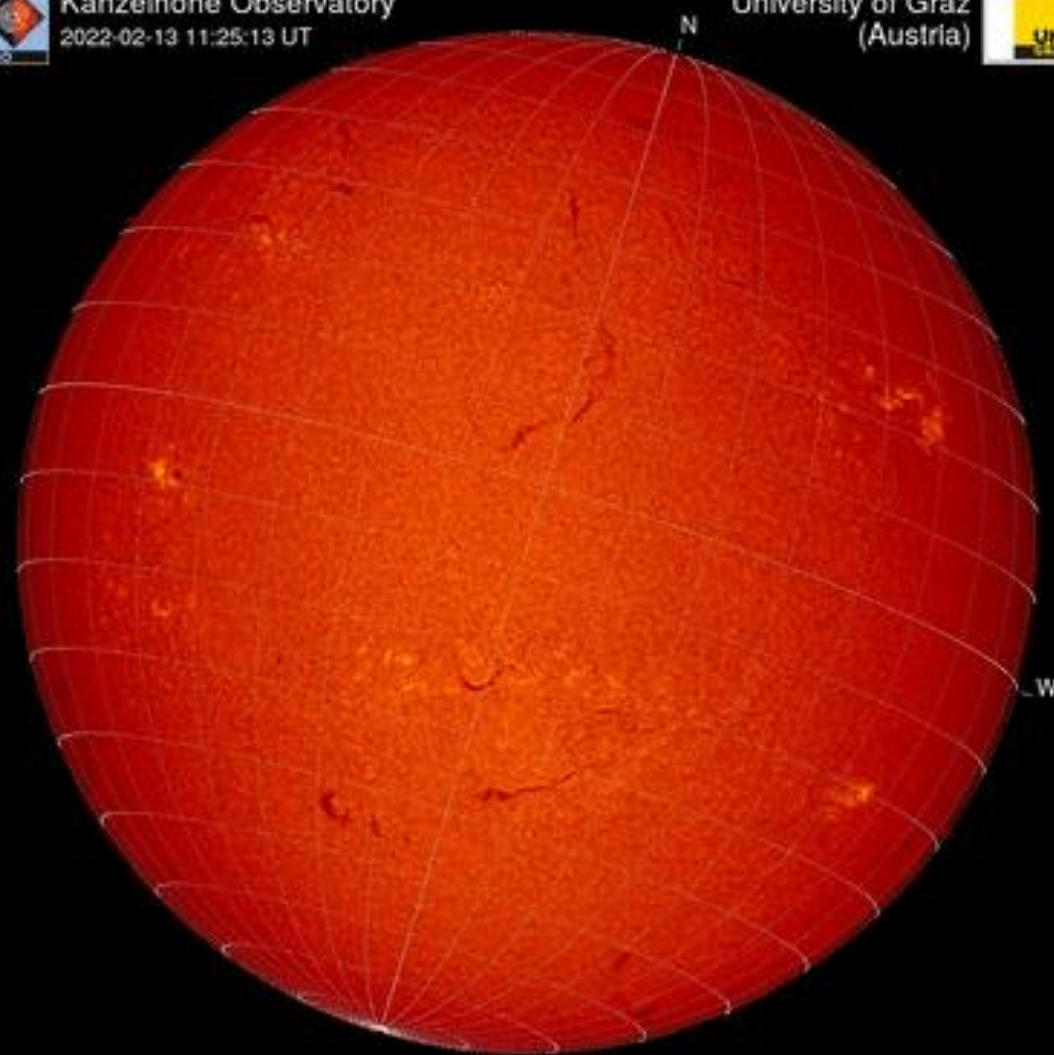


H-alpha 2022-02-13

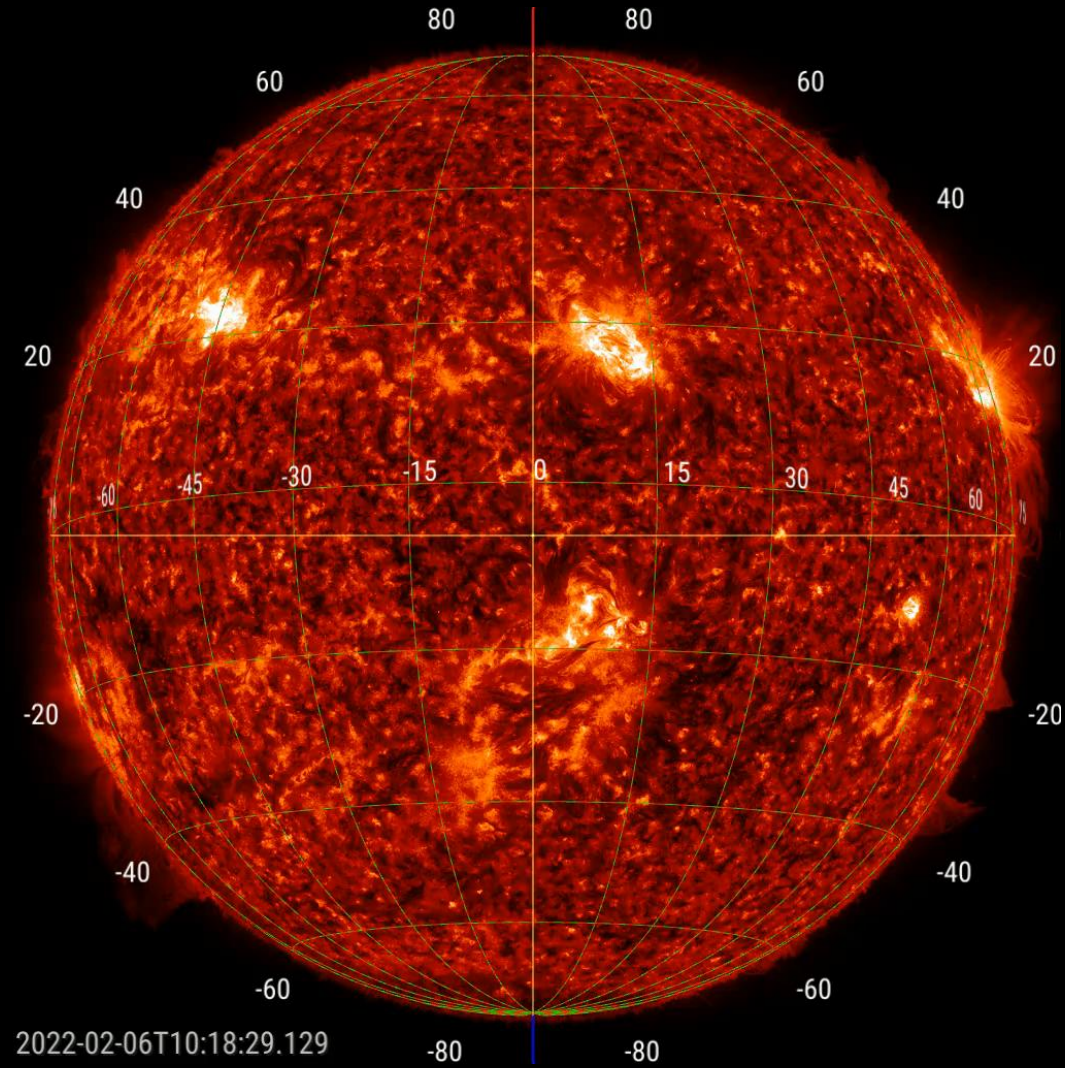


Kanzelhöhe Observatory
2022-02-13 11:25:13 UT

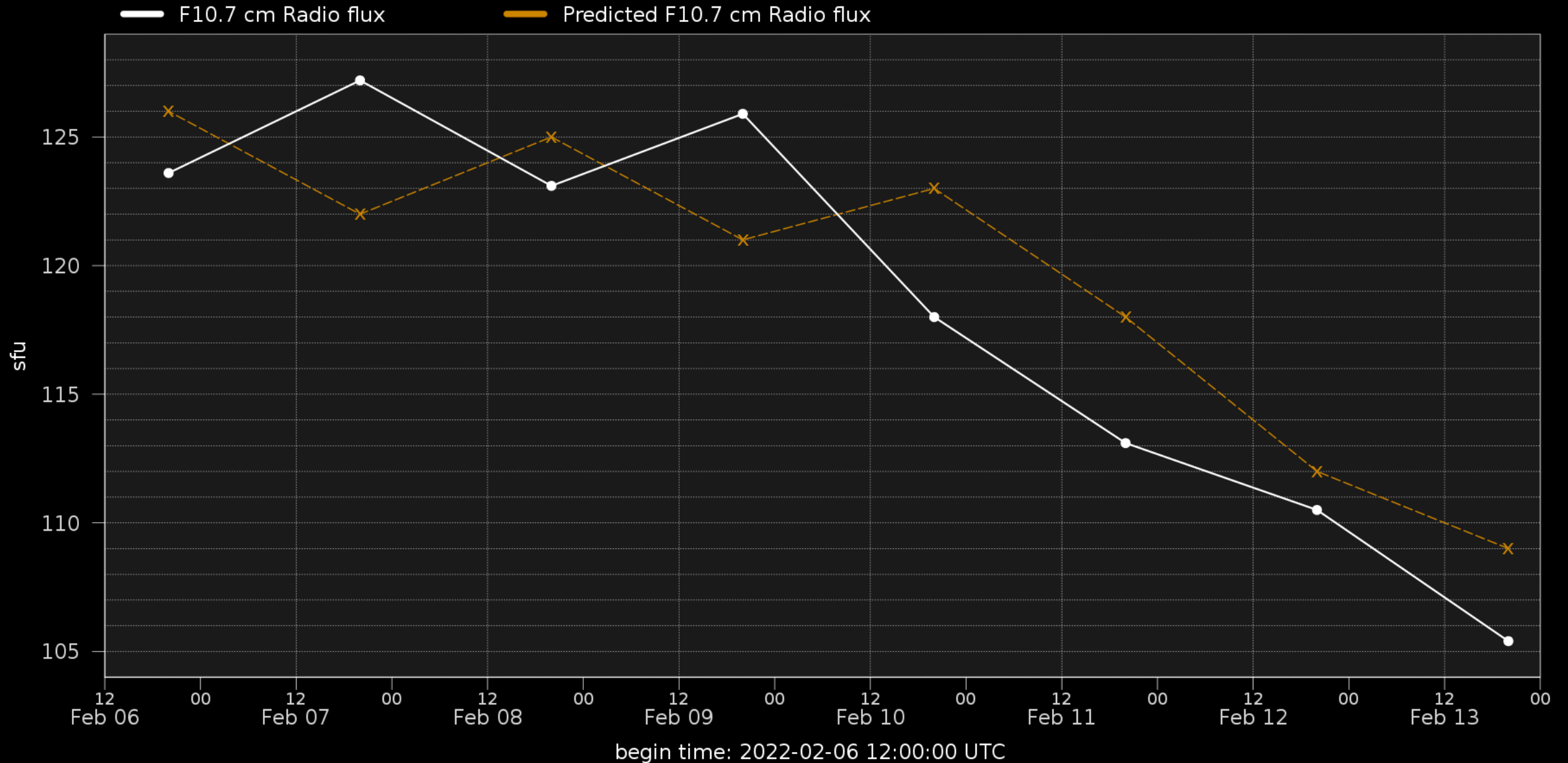
University of Graz
(Austria)



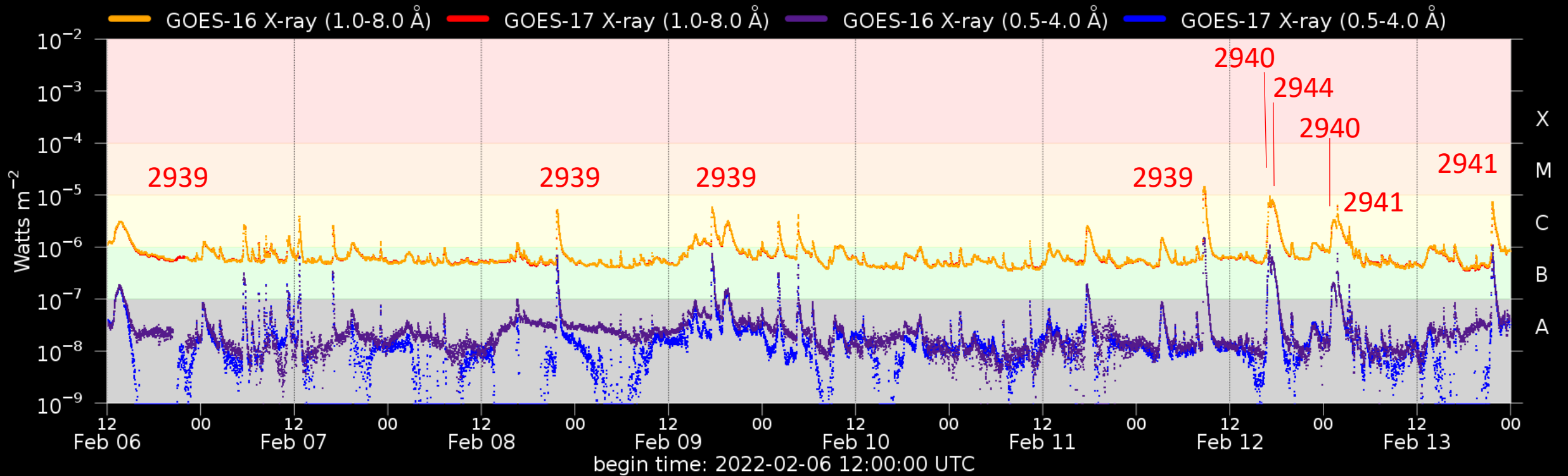
Filaments & Filament eruptions



Solar F10.7cm radio flux



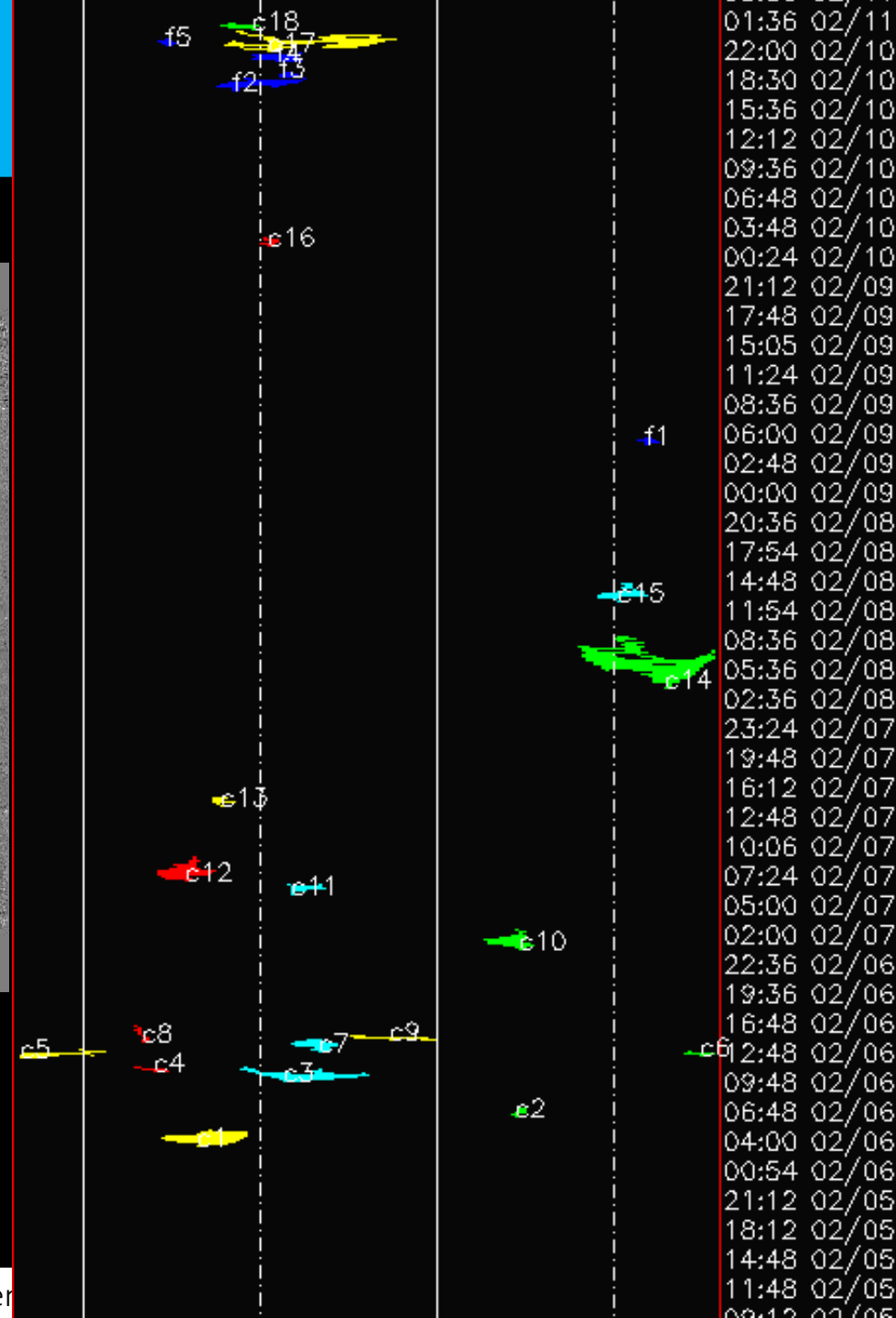
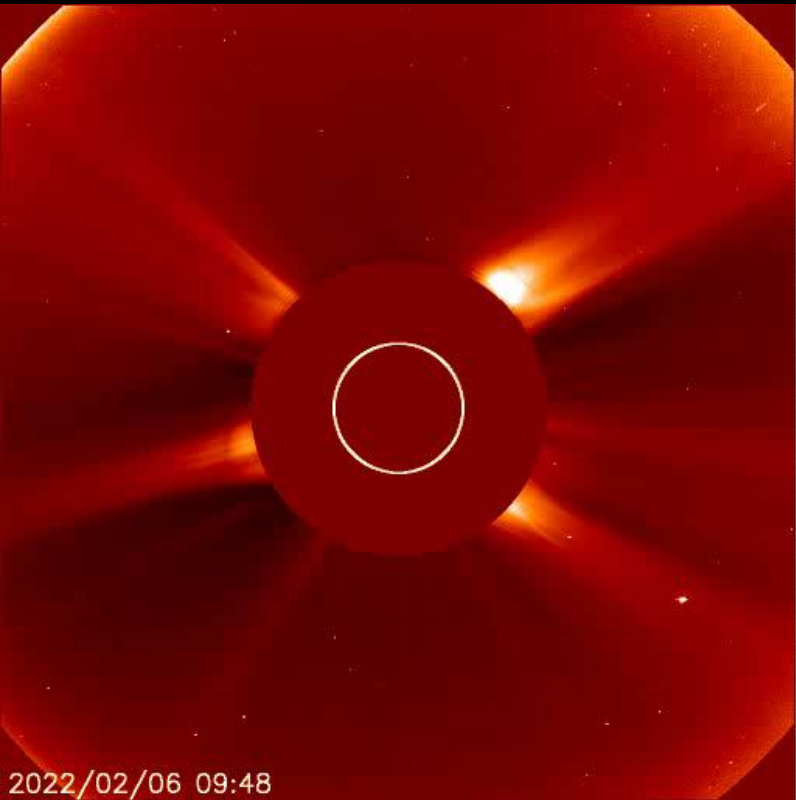
Flaring activity



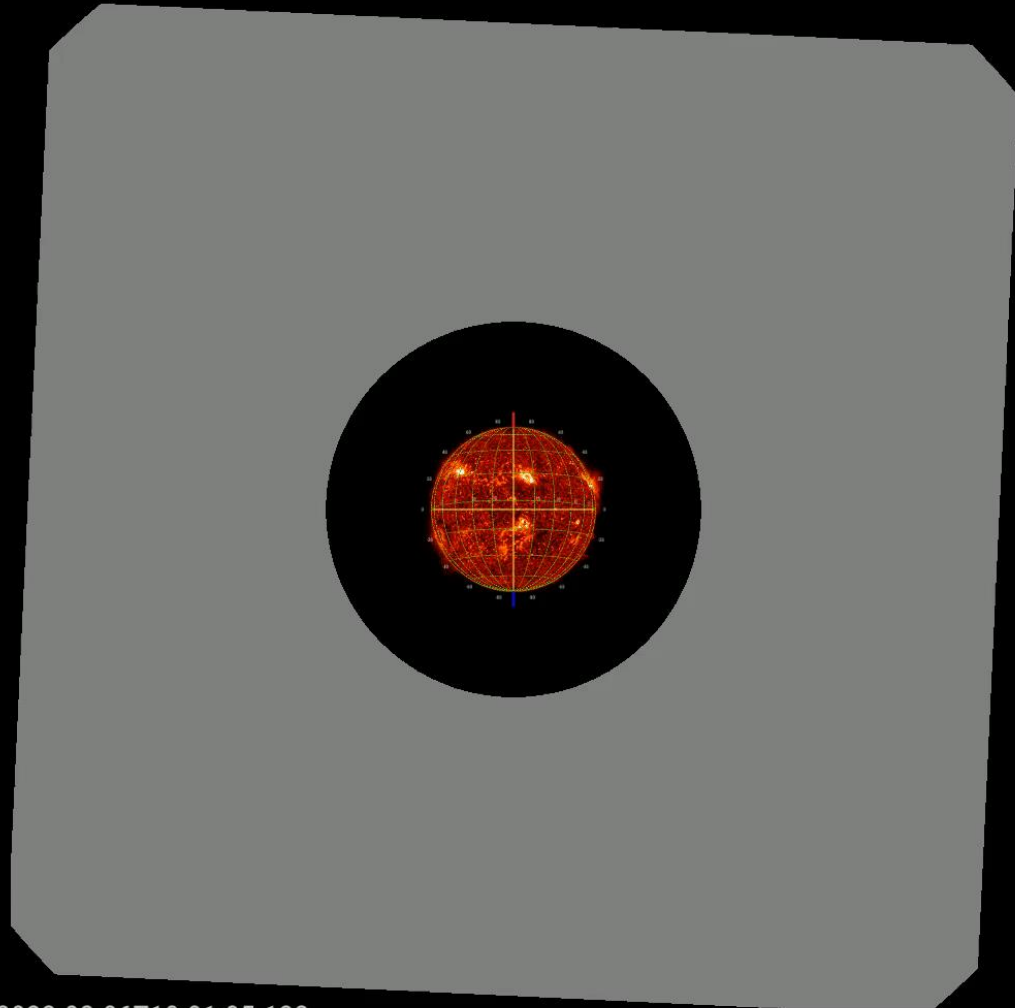
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2022-02-06	2022-02-07	2022-02-08	2022-02-09	2022-02-10	2022-02-11	2022-02-12	2022-02-13
Probability (%)	70 05 01	75 15 01	75 15 02	75 15 01	75 15 01	65 10 01	80 10 01	75 15 01
Observed (#)	05 00 00	03 00 00	02 00 00	06 00 00	01 00 00	04 01 00	03 00 00	03 00 00

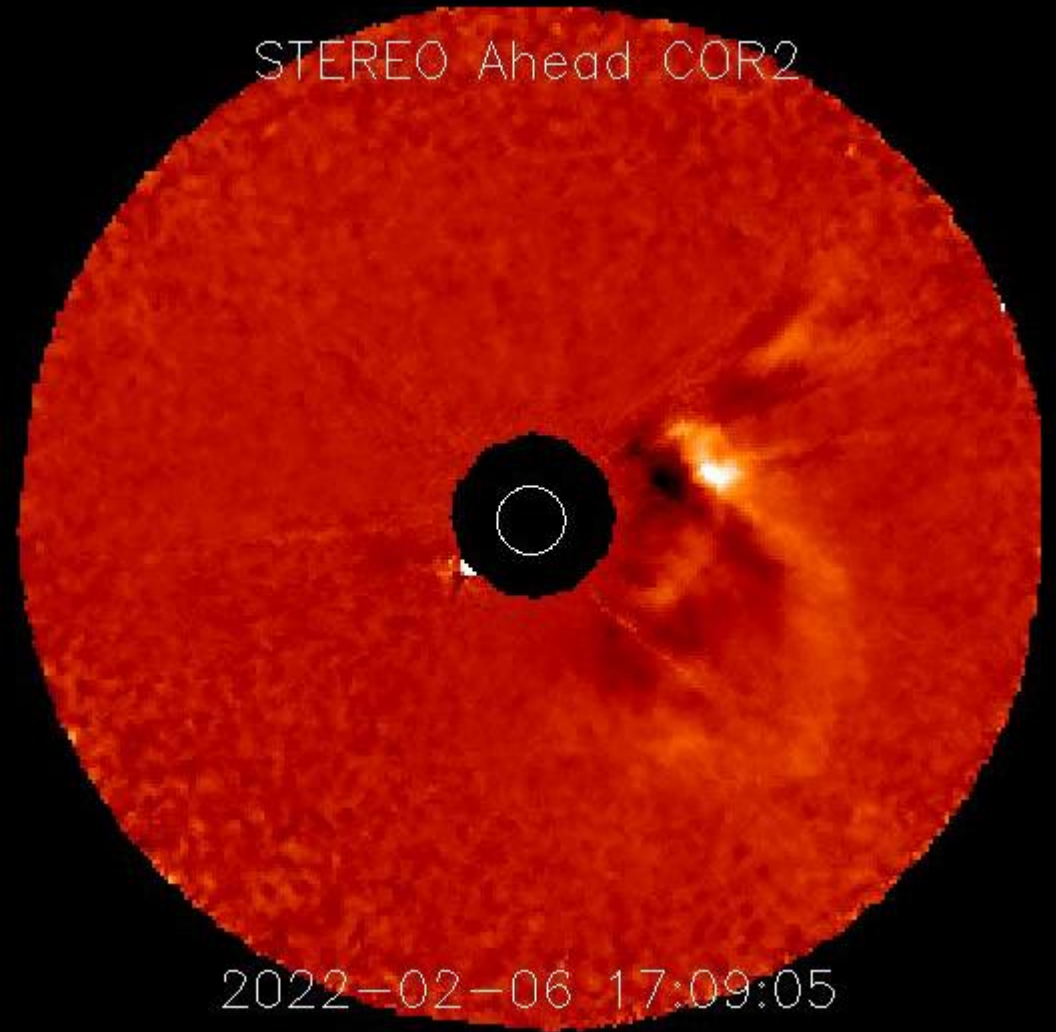
Coronal Mass Ejections



Coronal Mass Ejections



2022-02-06T10:01:05.132

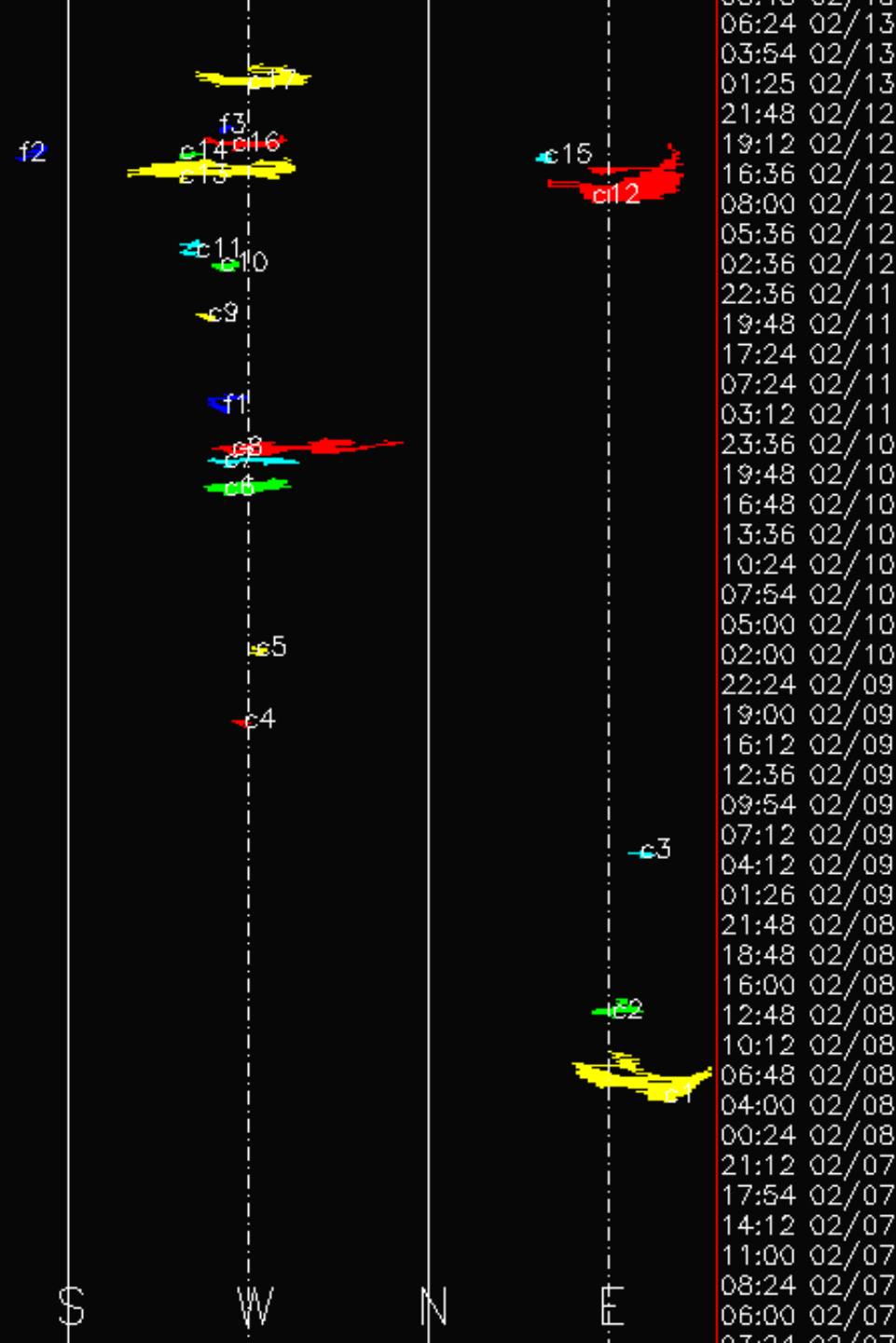
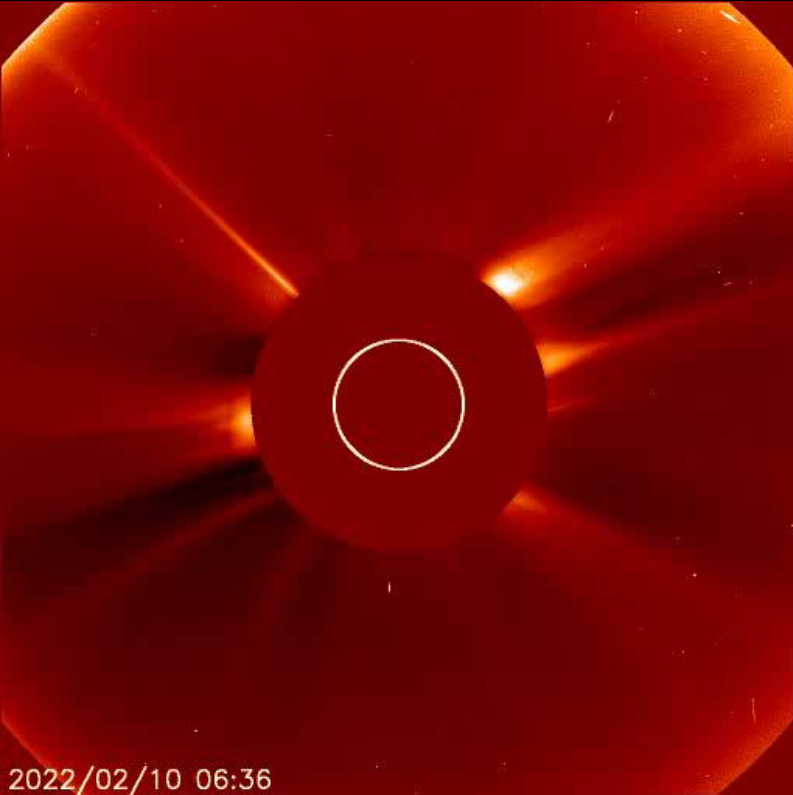


Coronal Mass Ejections

February 6: SoHO/LASCO C2 12:49UT

- Related to the C3.1 flare from region 2939 and the associated filament eruption from near center of the disc.
- From SoHO/LASCO perspective it is a (partial) halo with somewhat disconnected components to the North and South.
- A similar multipart view is visible from STEREO A from which it is seen to propagate Westward.
- The CME is obviously Earth directed. The speed is estimated to be around 900km/s with an expected arrival around noon February 9 (it arrived 8 hours after the forecasted arrival time).

Coronal Mass Ejections

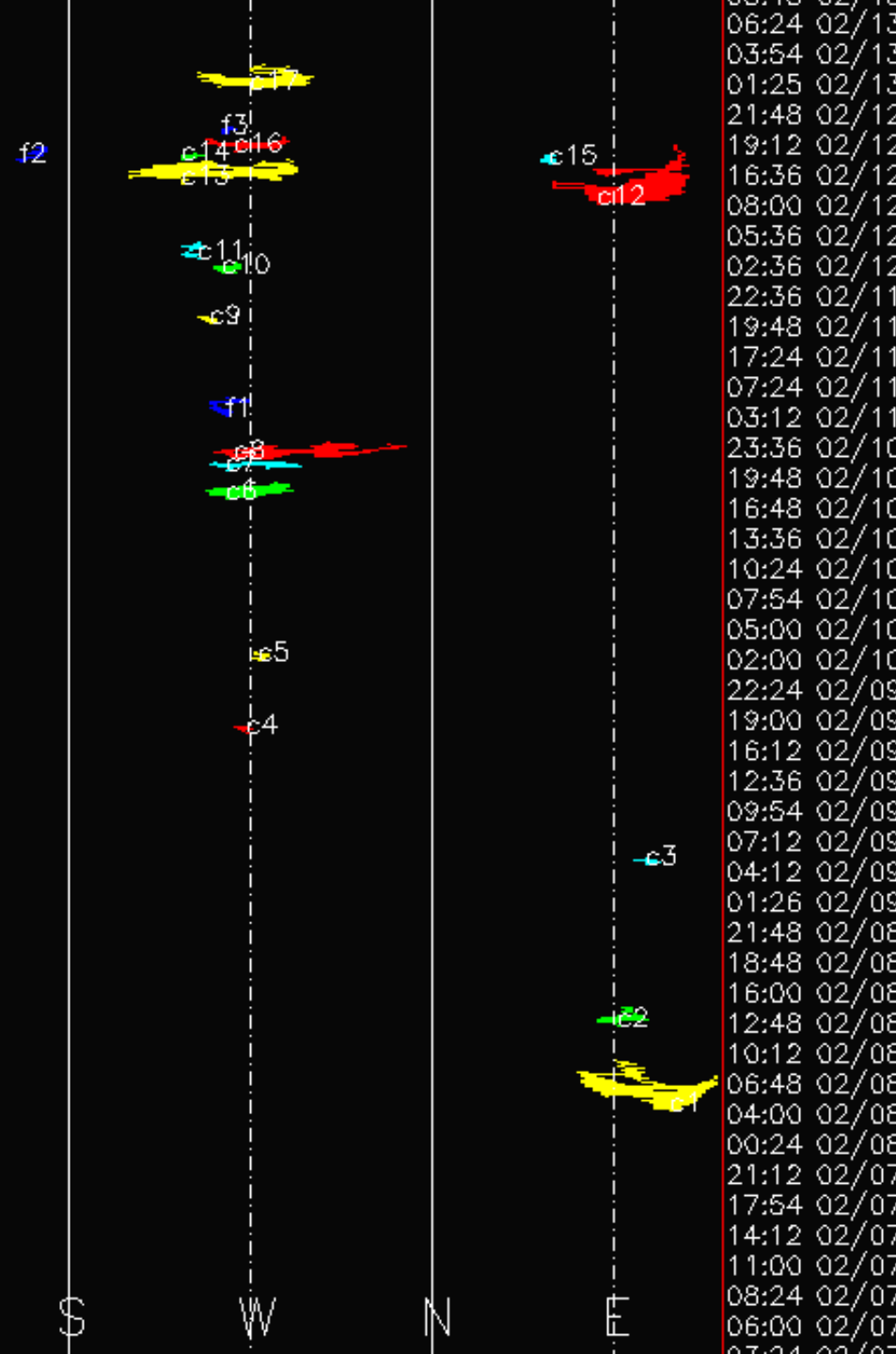


Coronal Mass Ejections

SoHO LASCO C2 coronagraph data show a partial halo CME from 00:48UT February 11 onwards. The CME is directed primarily to the North-West from Earth perspective with an angular width stretching to 270 degrees. Combined with STEREO A cor2 coronagraph data (where the CME is seen as full halo and primarily directed to the North-East from that perspective) the CME is analysed to be backward and will not influence Earth.

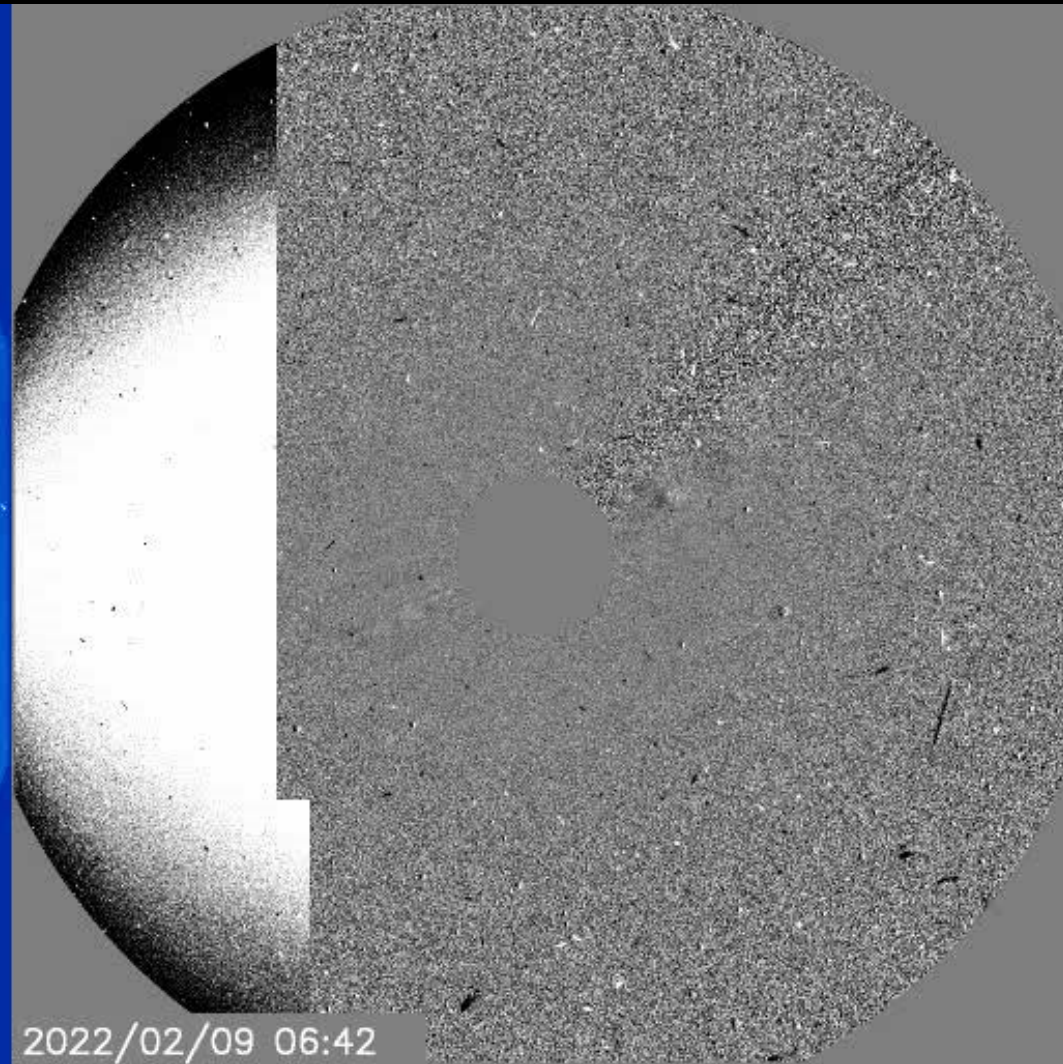
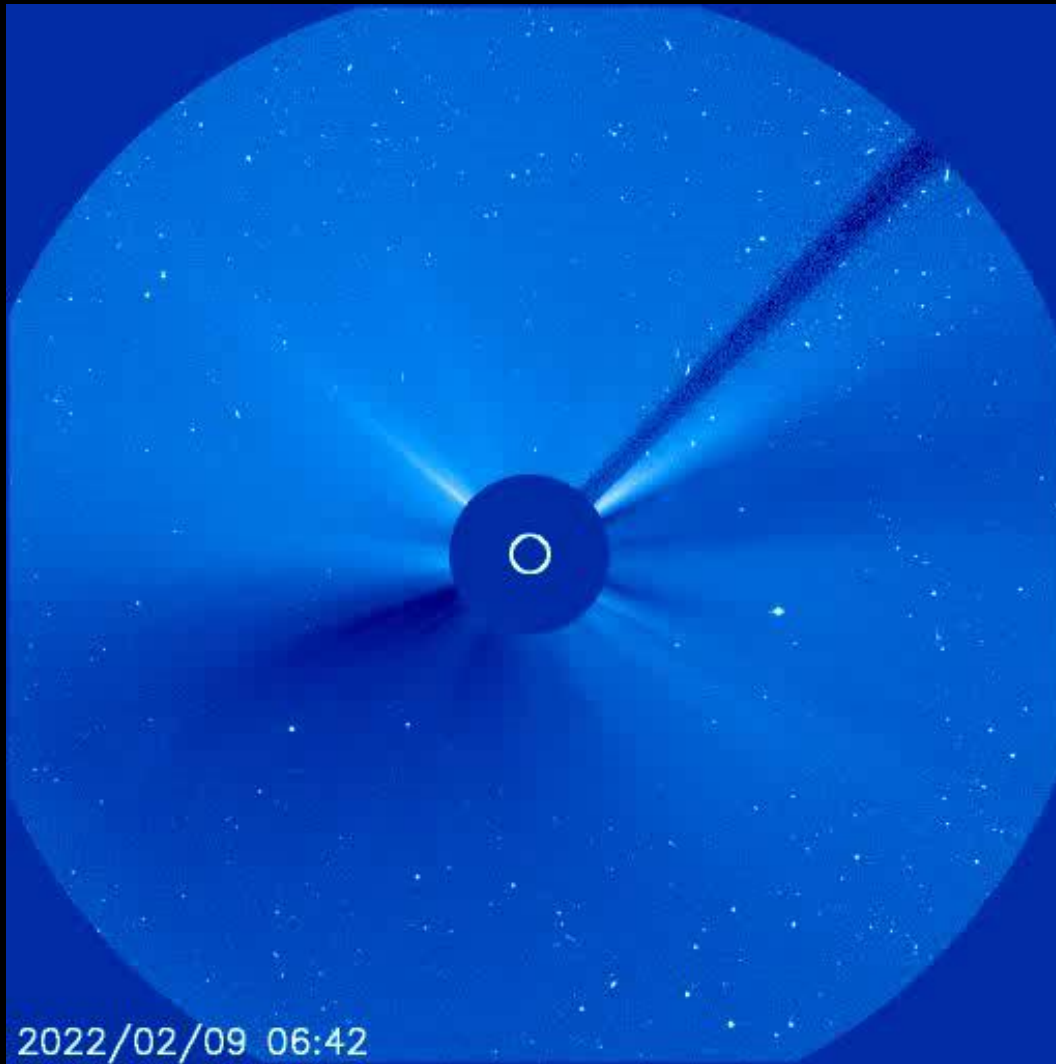
Data gap in SoHO/LASCO data around the period following the M1.4 flare (8:44UT February 12) . SoHO LASCO C3 data starting from 14:30UT after a seem to indicate though that the CME was sufficiently off to the West off the Sun-Earth line.

All other CMEs of the East and West limb are analysed to be sufficiently off the Sun-Earth line.



Coronal Mass Ejections

Data gap in SoHO/LASCO data around the period following the M1.4 flare (8:44UT February 12) . SoHO LASCO C3 data starting from 14:30UT after a seem to indicate though that the CME was sufficiently off to the West off the Sun-Earth line.



Solar Wind and

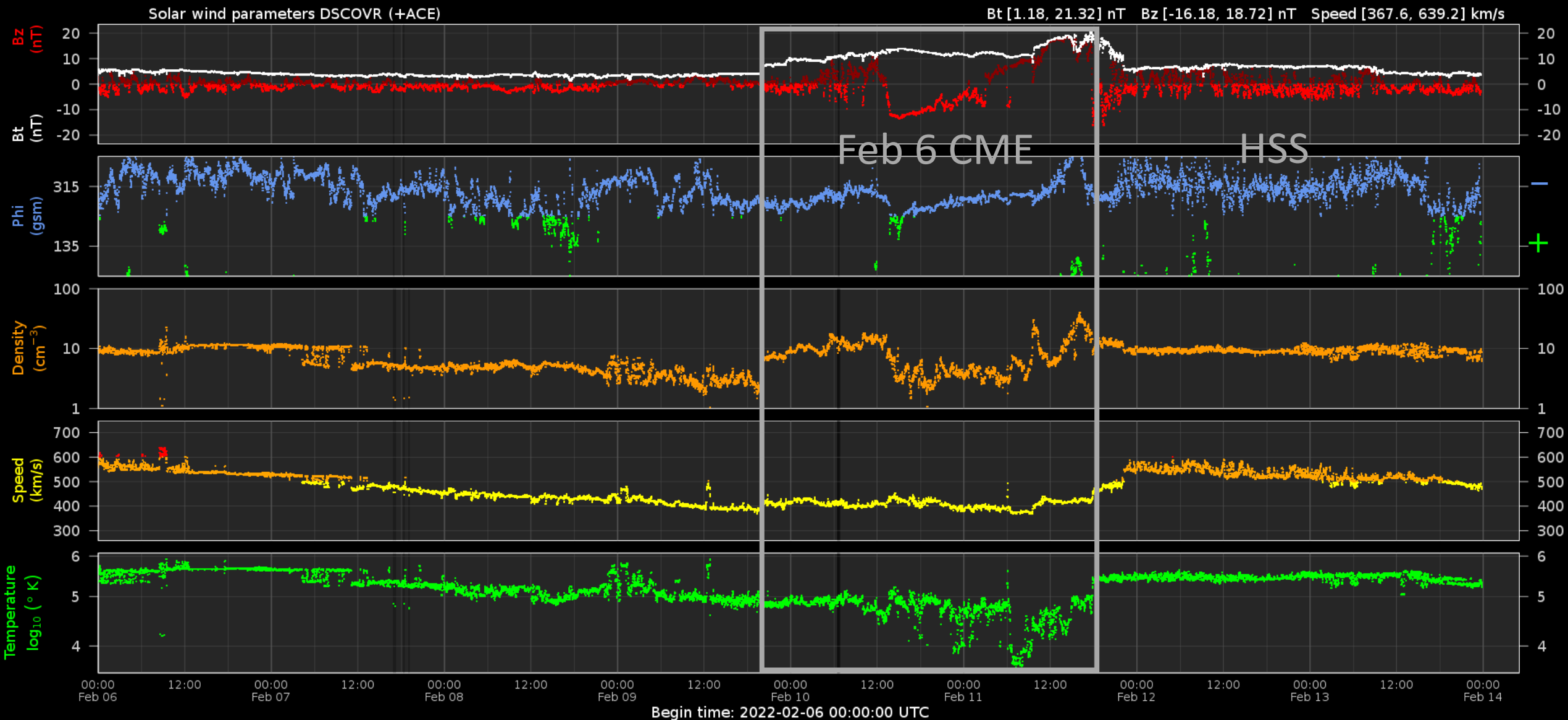
Geomagnetic Activity



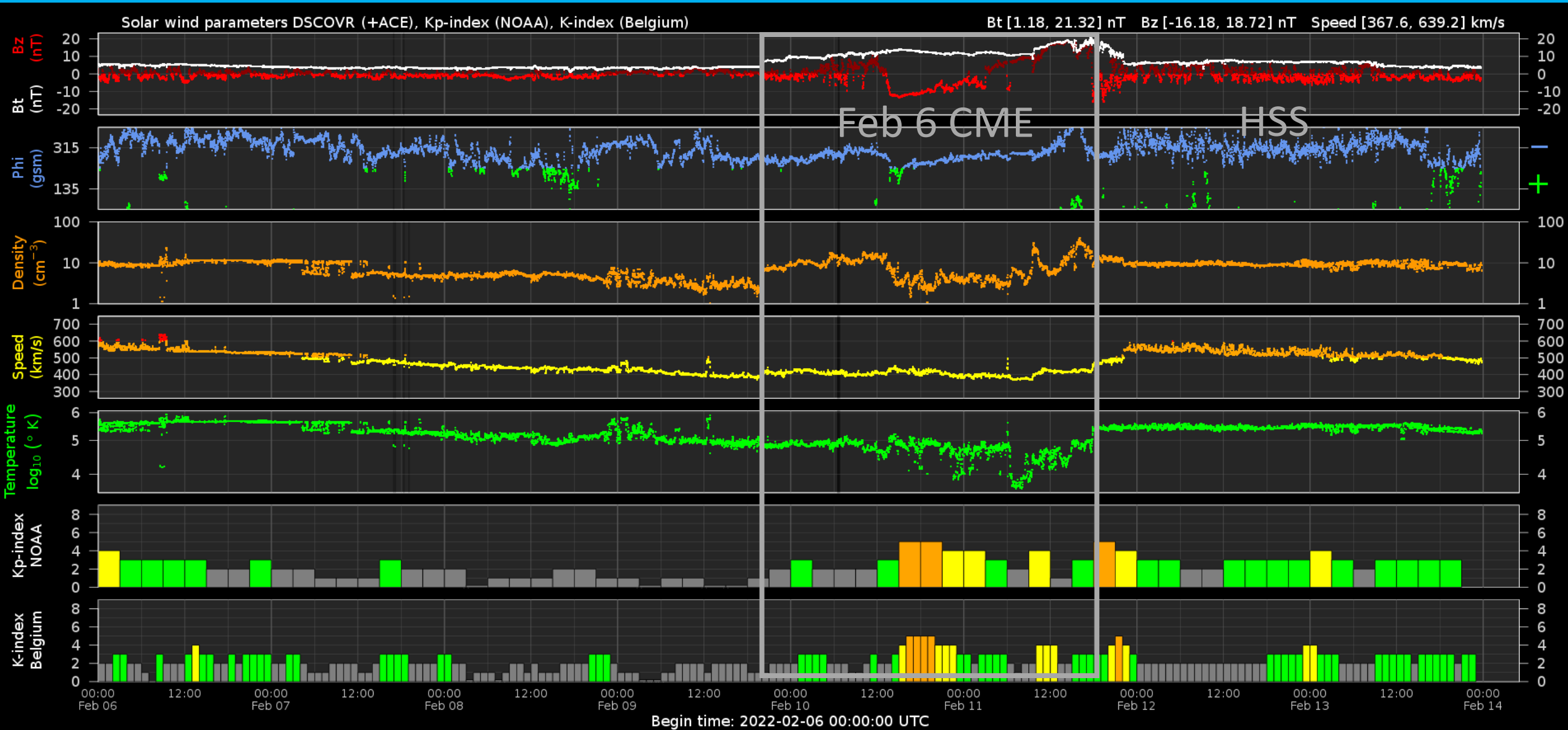
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Solar wind parameters



Solar wind parameters & K-indices



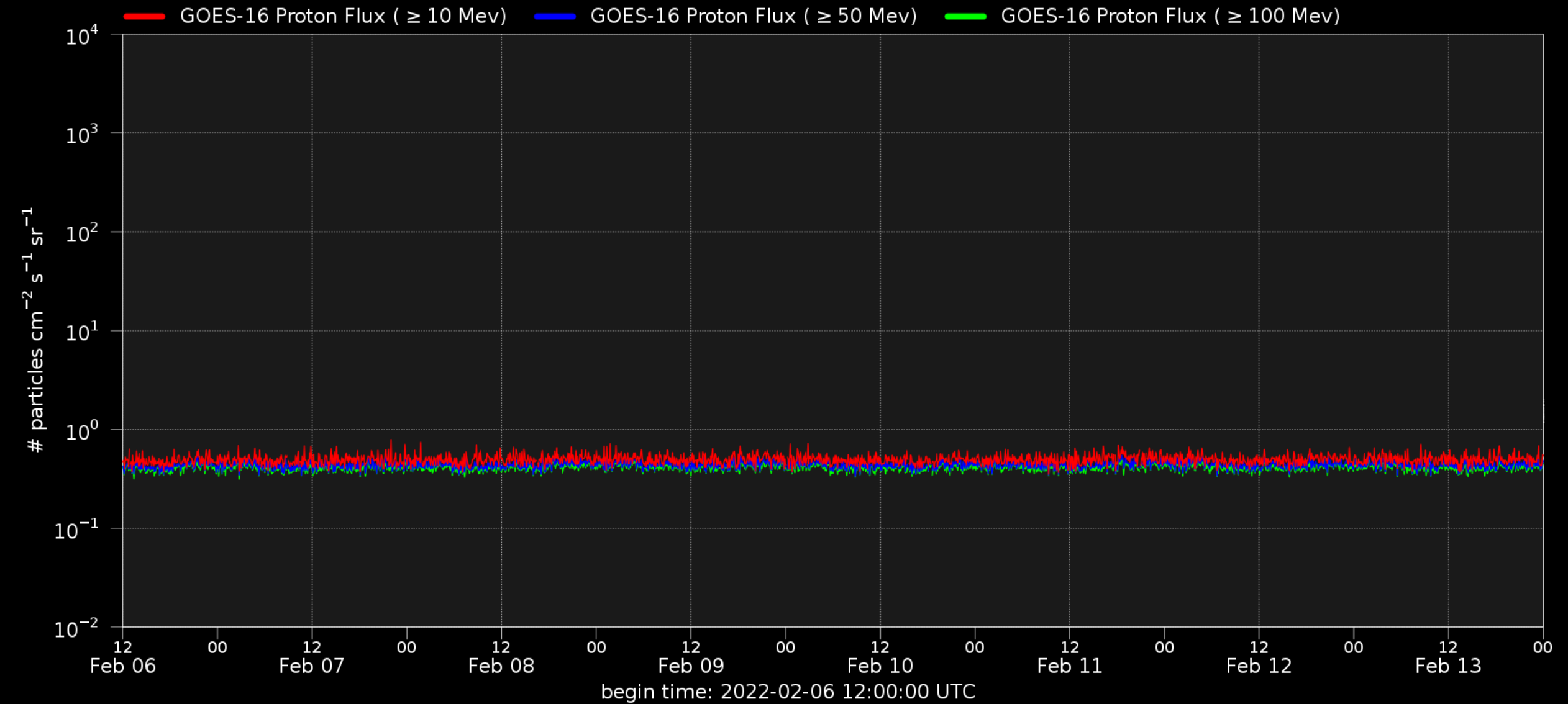
Energetic Particles



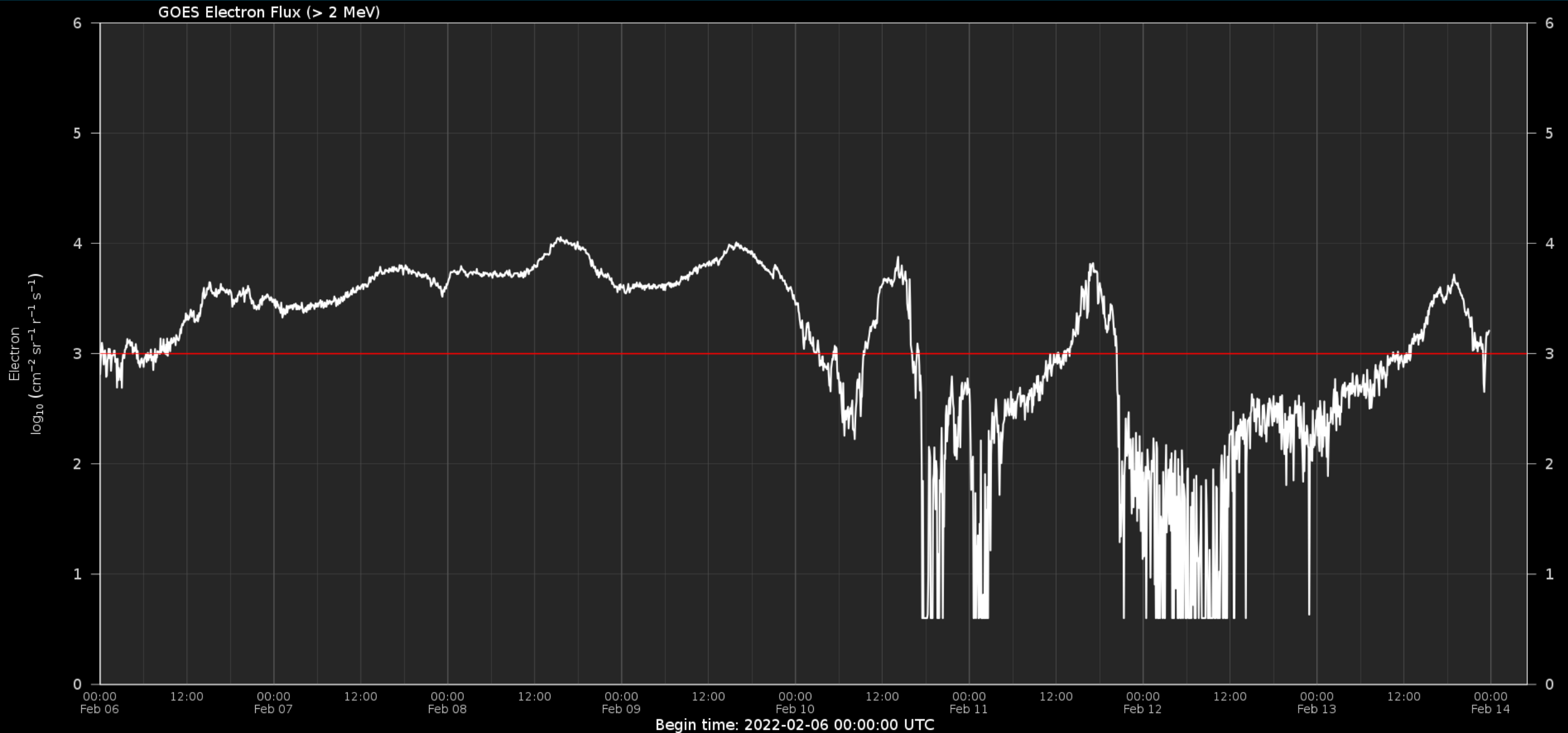
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Solar proton flux



Electron flux at GEO



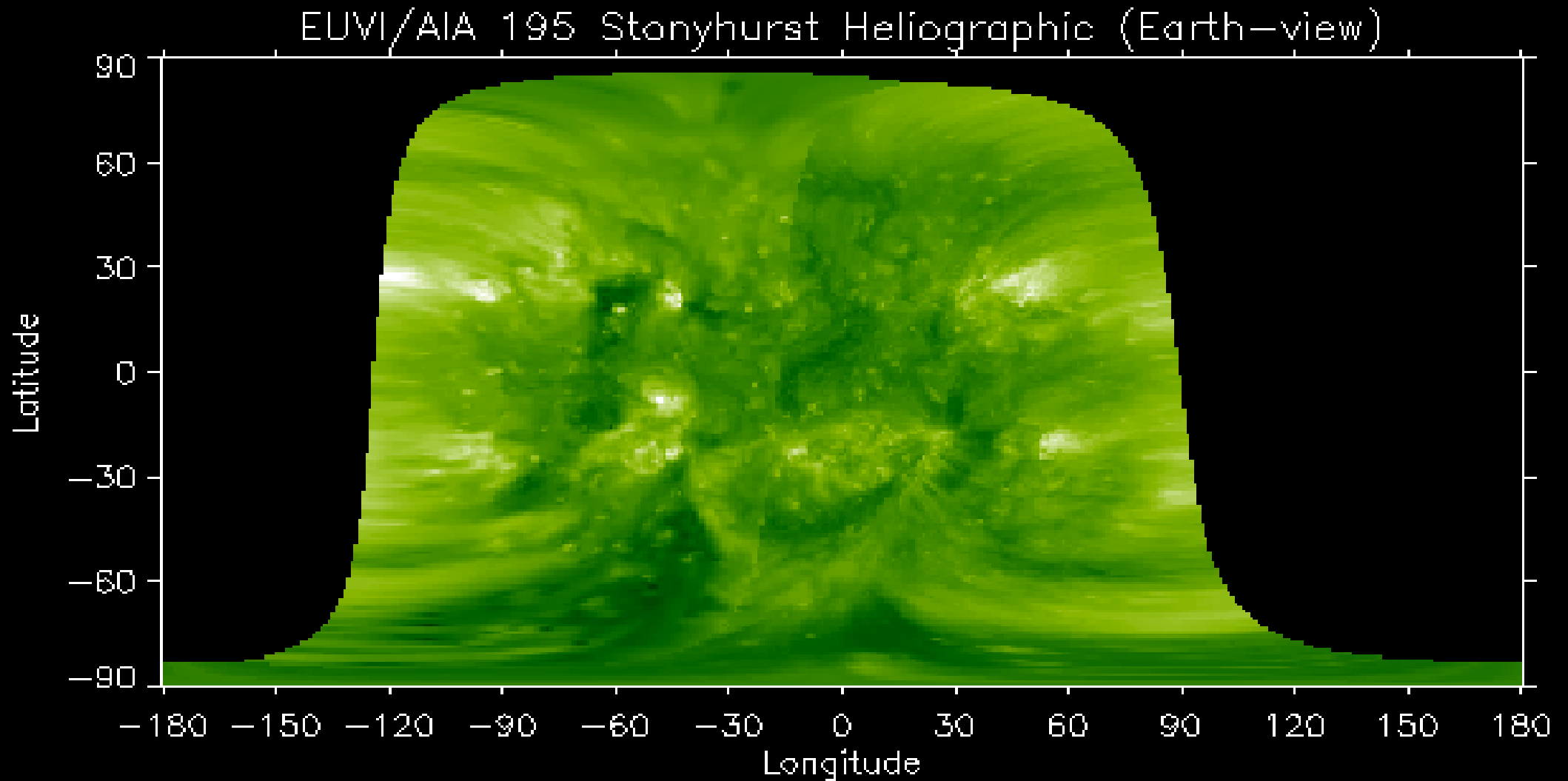
Outlook



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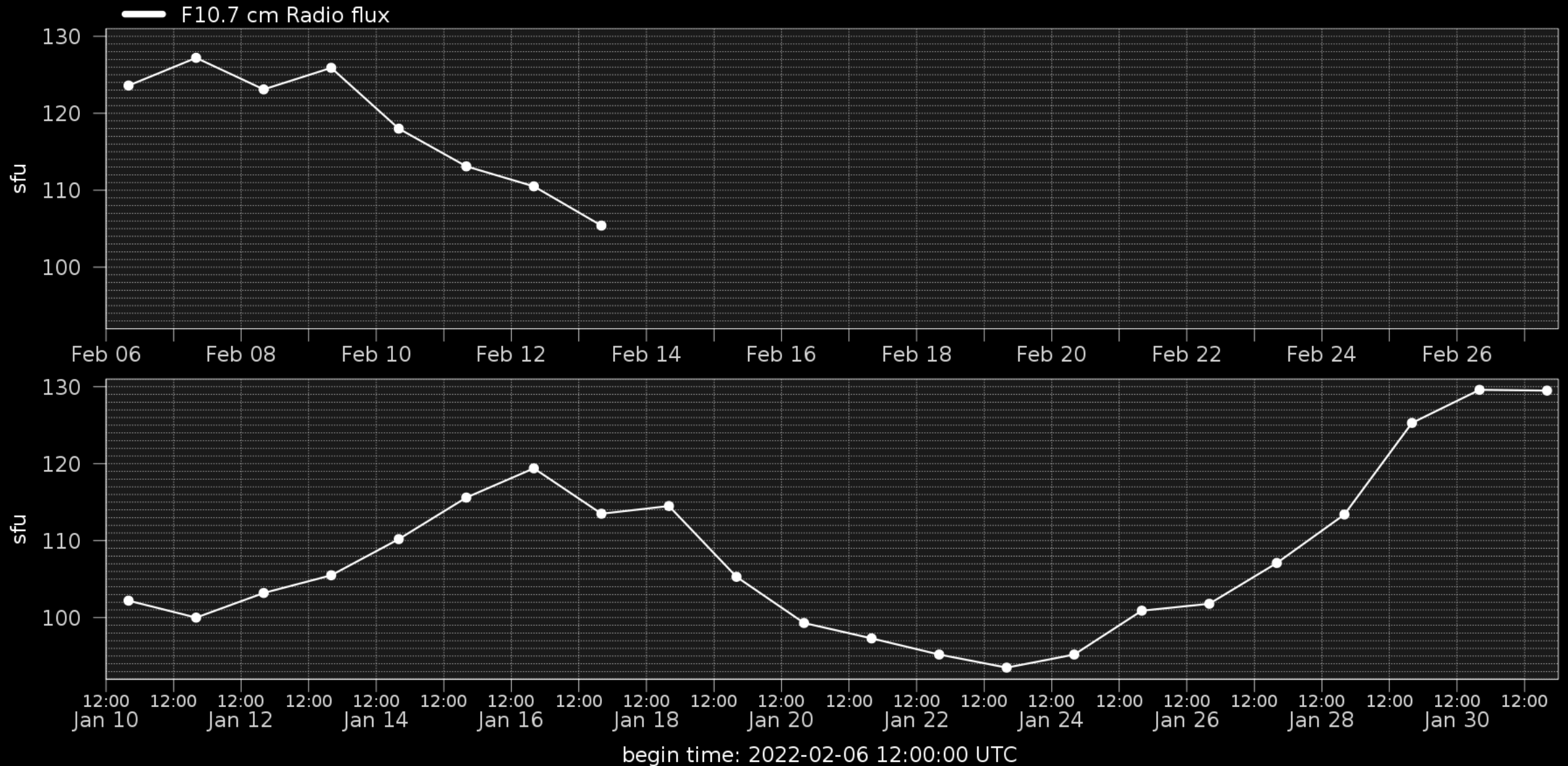
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Outlook: Solar activity

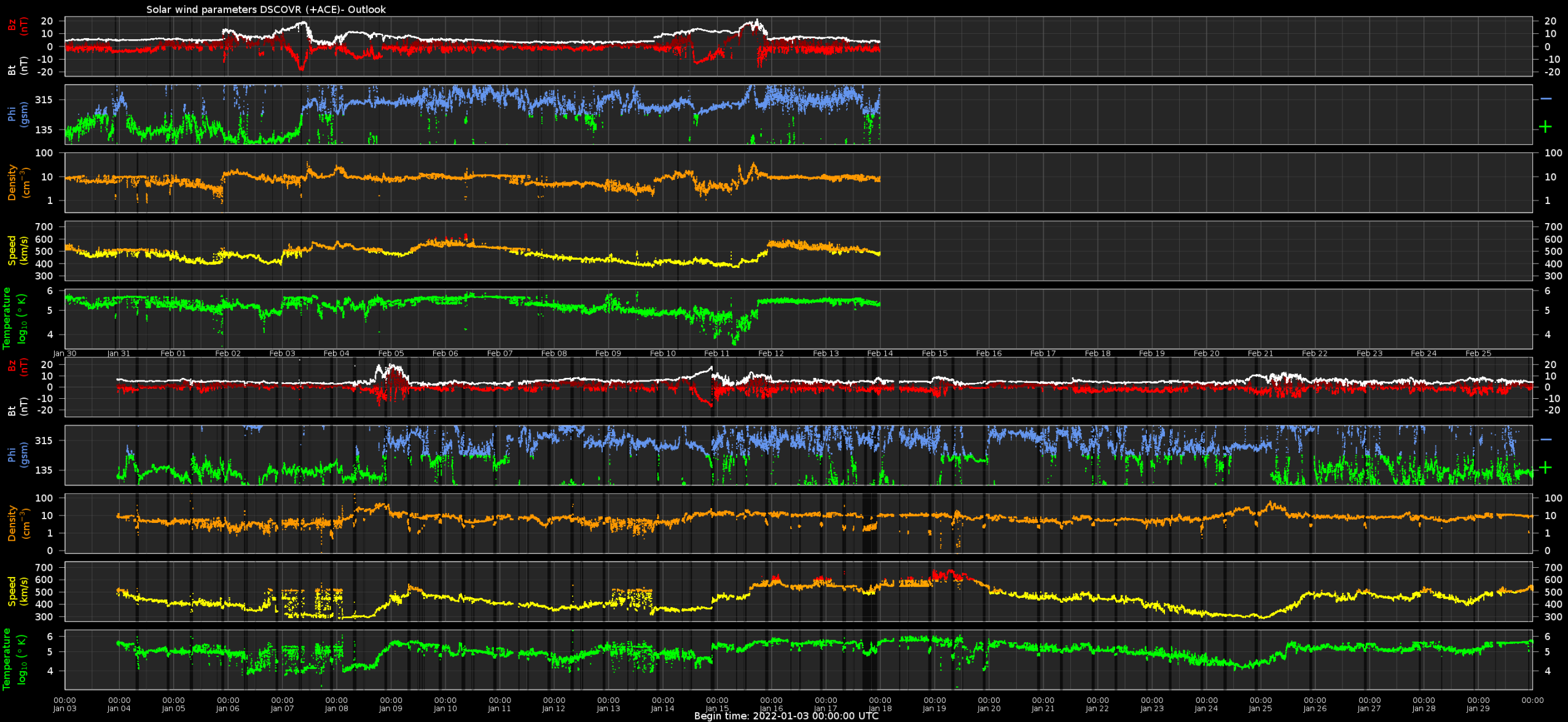


Observation date: 2022/02/13 12:05:00

Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Electron Flux at GEO Outlook



SIDC Space Weather Briefing

See you at our next briefing!

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