

SIDC Space Weather Briefing

23 February 2020 - 01 March 2020

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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 2020-02-23 12:00 UT to 2020-03-01 12:00 UT

Active regions	None
Flaring	# B-class flare: 0 # C-class flare: 0 # M-class flare: 0 # X-class flare: 0
Filaments	Some small filaments at high latitudes
CMEs	1 potentially earth-directed CME
Proton Events	Proton flux was at background levels

Solar wind and geomagnetic conditions from 2020-02-23 12:00 UT to 2020-03-01 12:00 UT

Coronal Holes	Some small CHs, mostly patchy
ICME	None
SW Conditions	Some enhanced wind streams from patchy CHs; Vmax: 580 km/s
K-indices	max K-index (Dourbes): 4 max Kp-index (NOAA): 4

All Quiet Alert: ON since 20 February 2020

Solar Activity

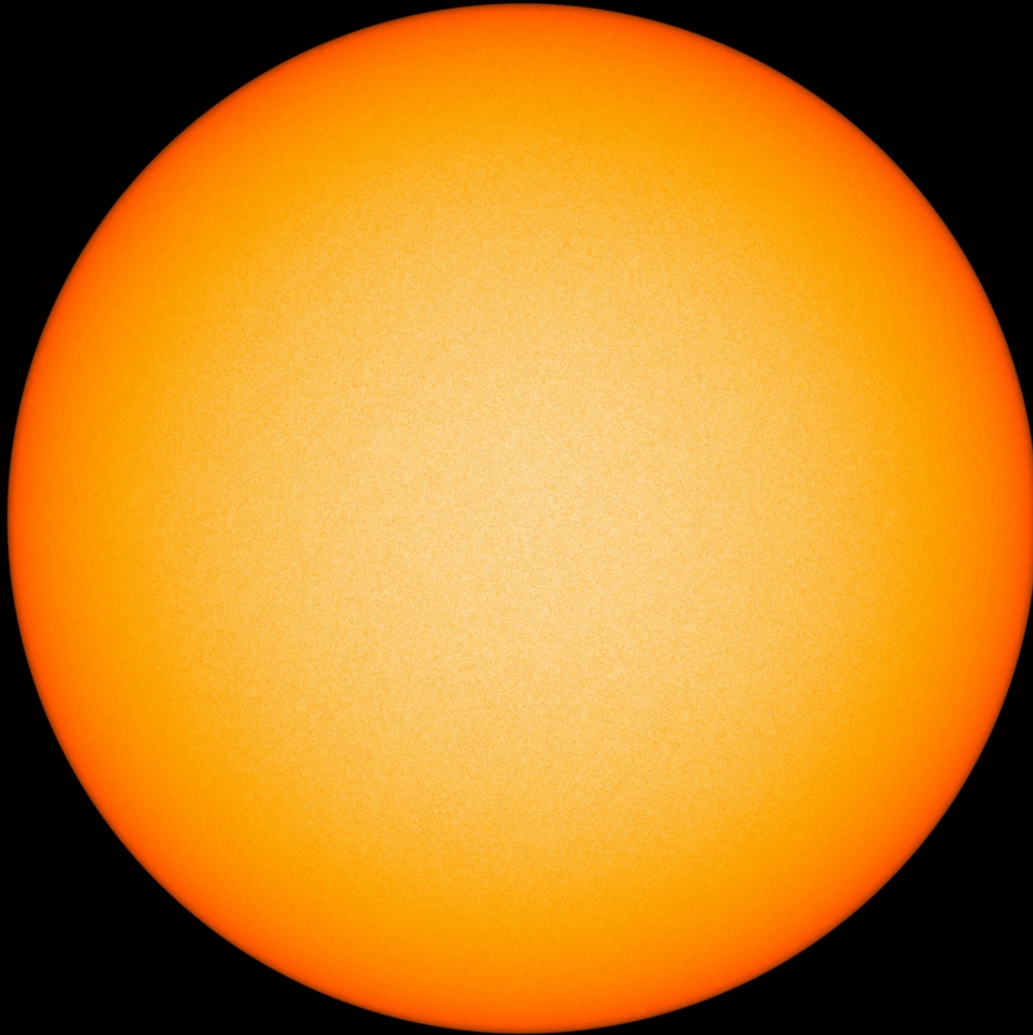


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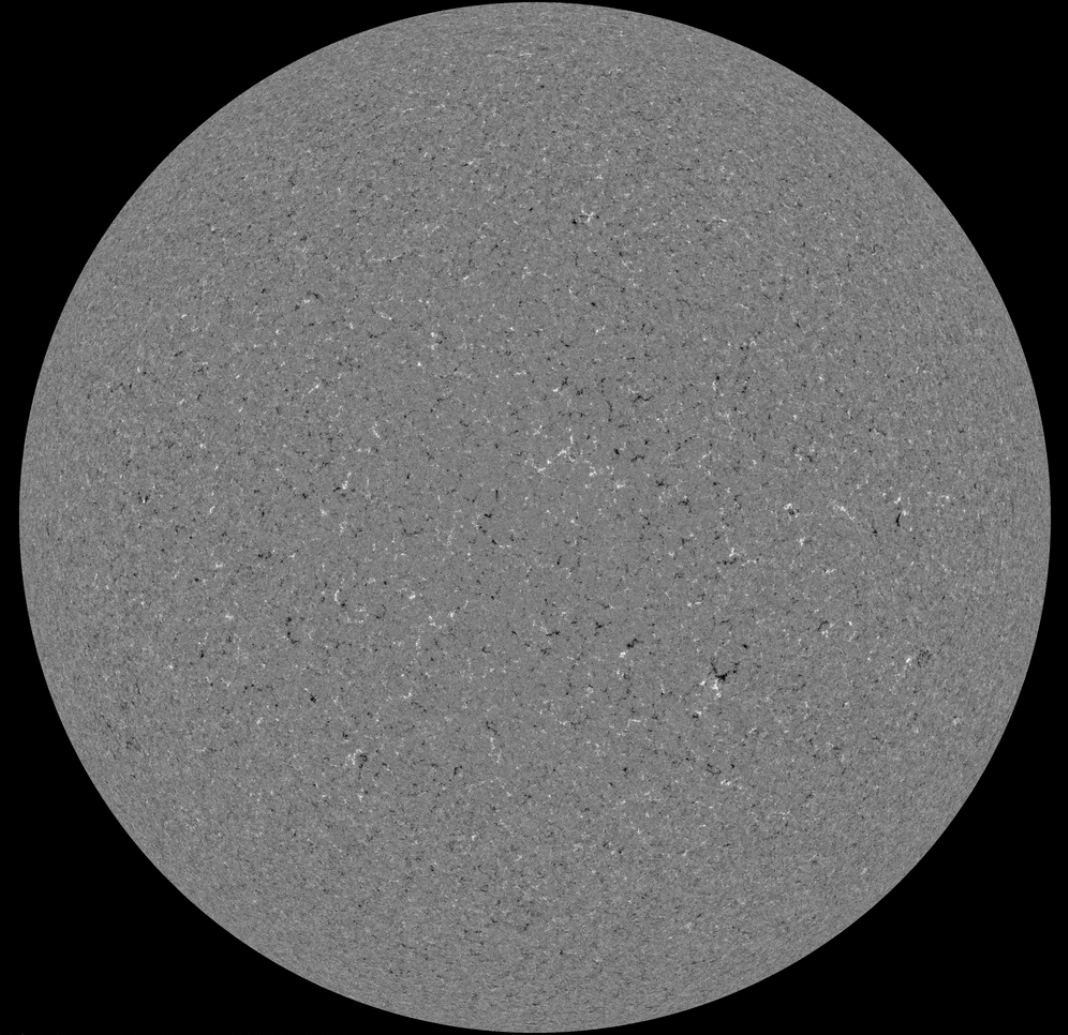
Solar active region - start of the week

SDO/HMI White Light 2020-02-23



SDO/HMI Quick-Look Continuum: 20200223_114500

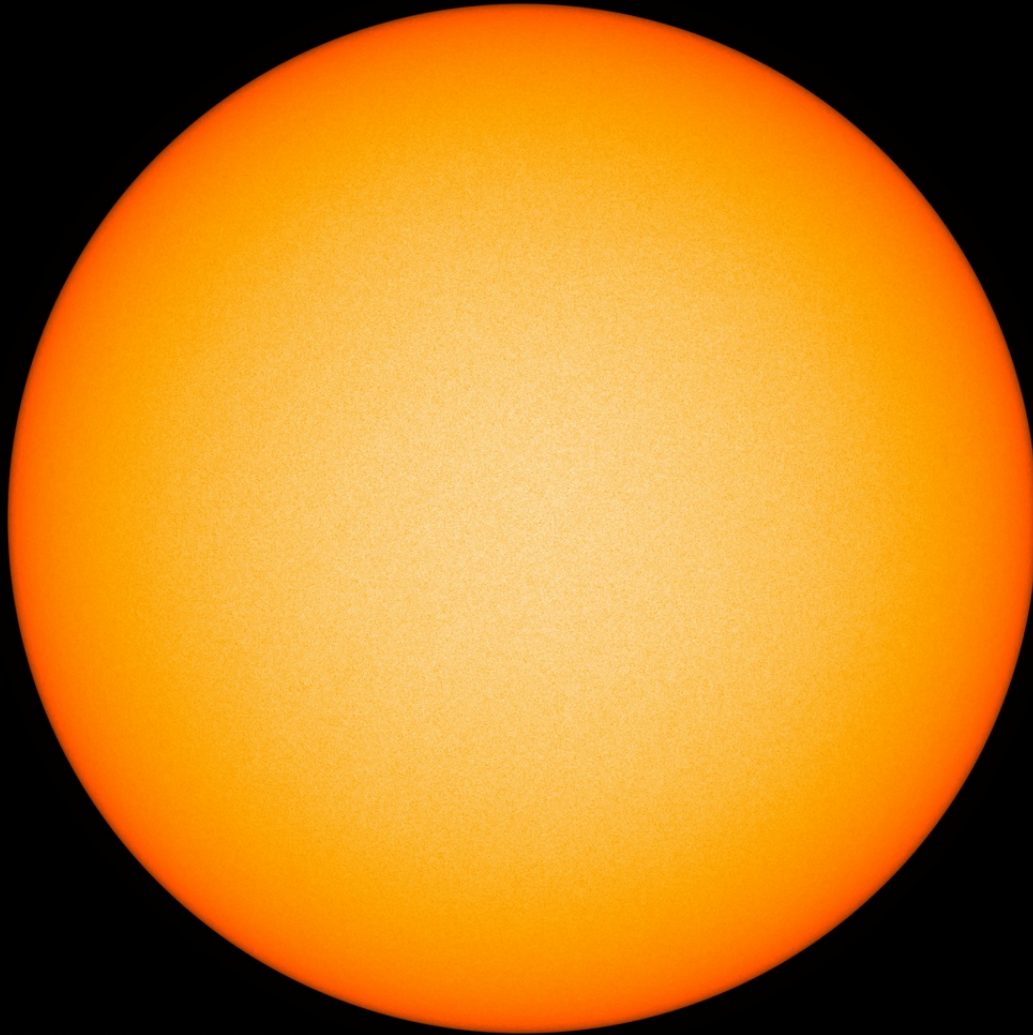
SDO/HMI Magnetogram 2020-02-23



SDO/HMI Quick-Look Magnetogram: 20200223_114500

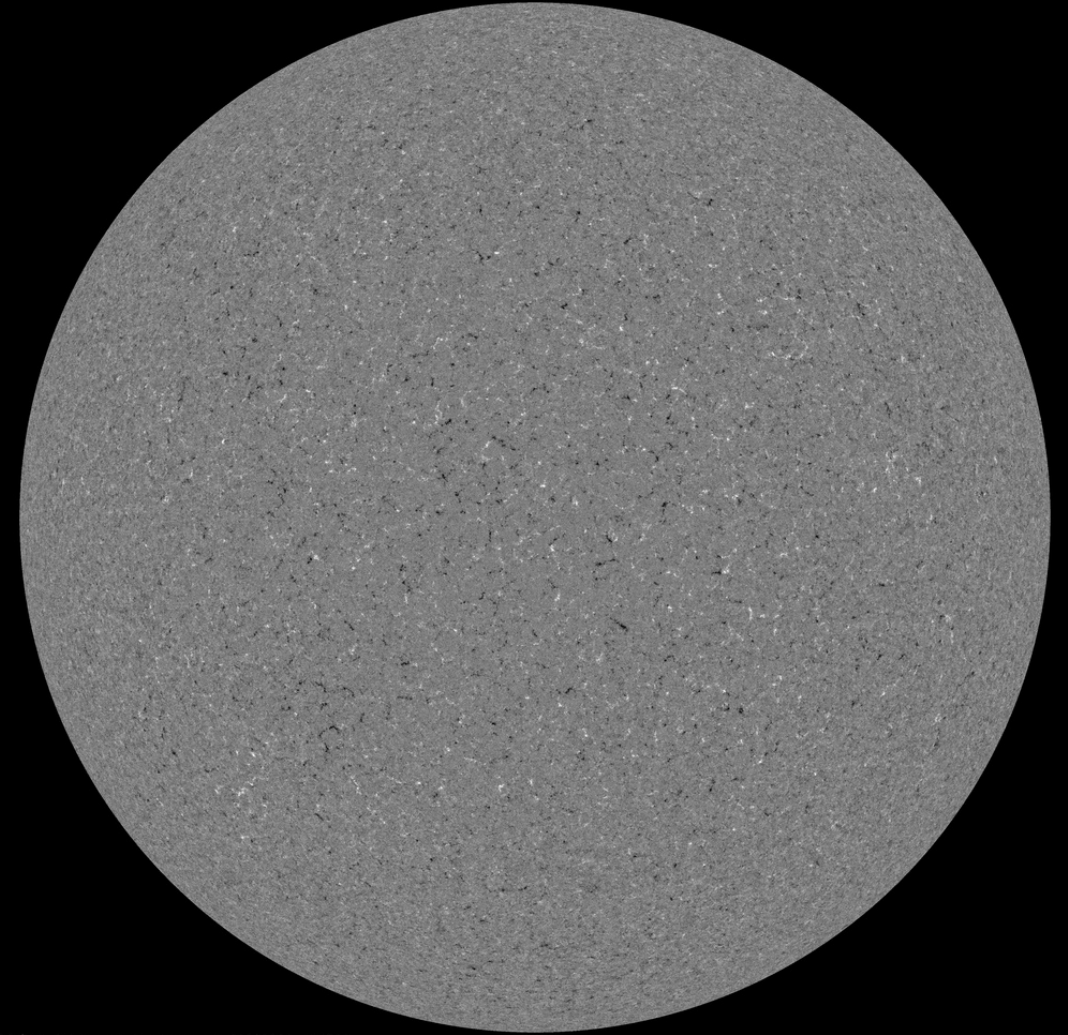
Solar active region - middle of the week

SDO/HMI White Light 2020-02-26



SDO/HMI Quick-Look Continuum: 20200226_114500

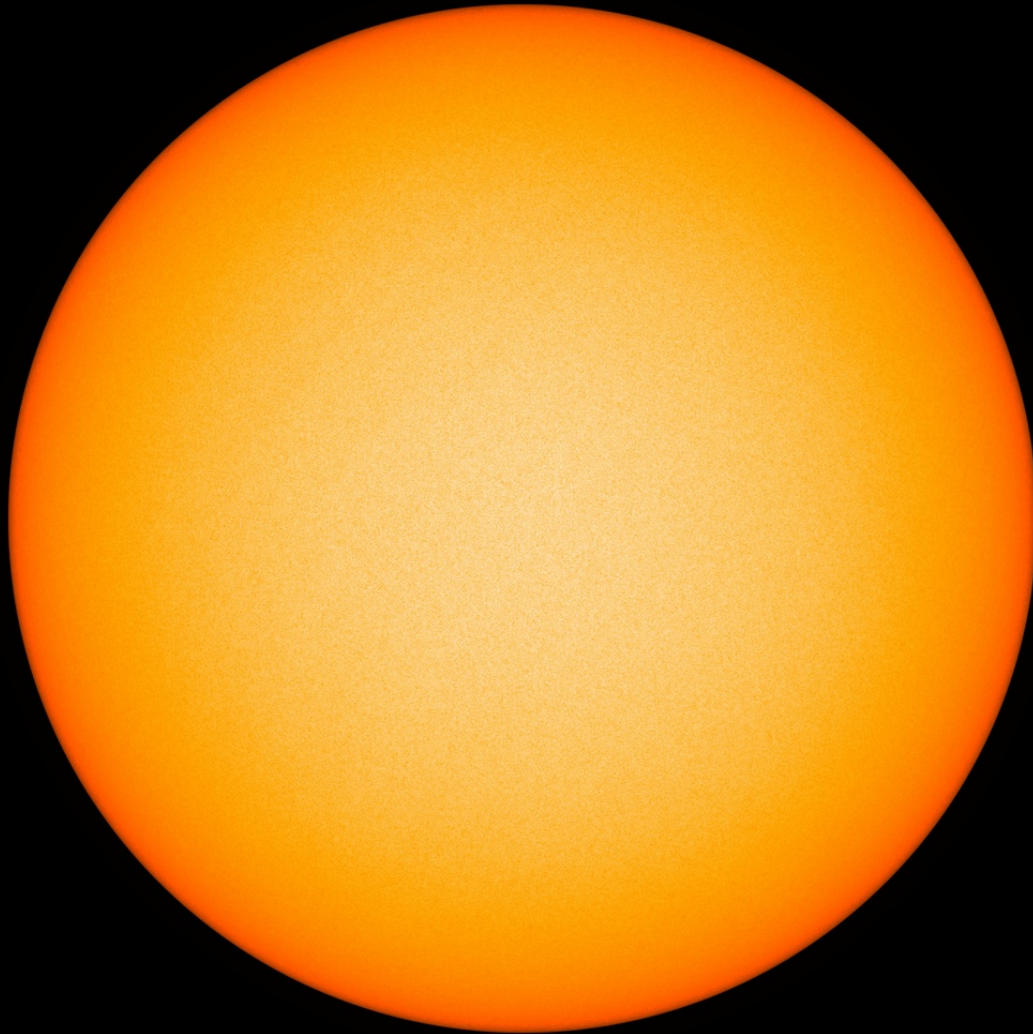
SDO/HMI Magnetogram 2020-02-26



SDO/HMI Quick-Look Magnetogram: 20200226_114500

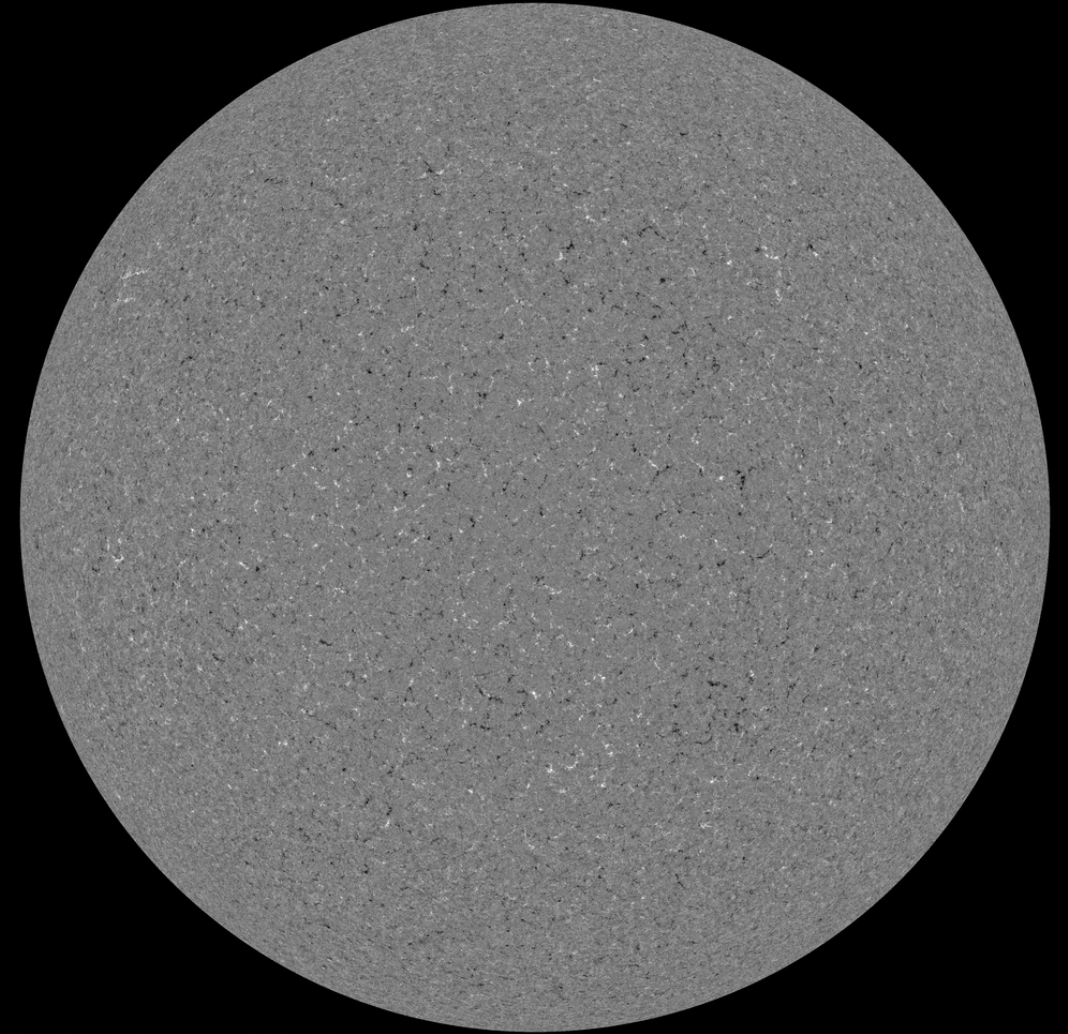
Solar active region - end of the week

SDO/HMI White Light 2020-03-01



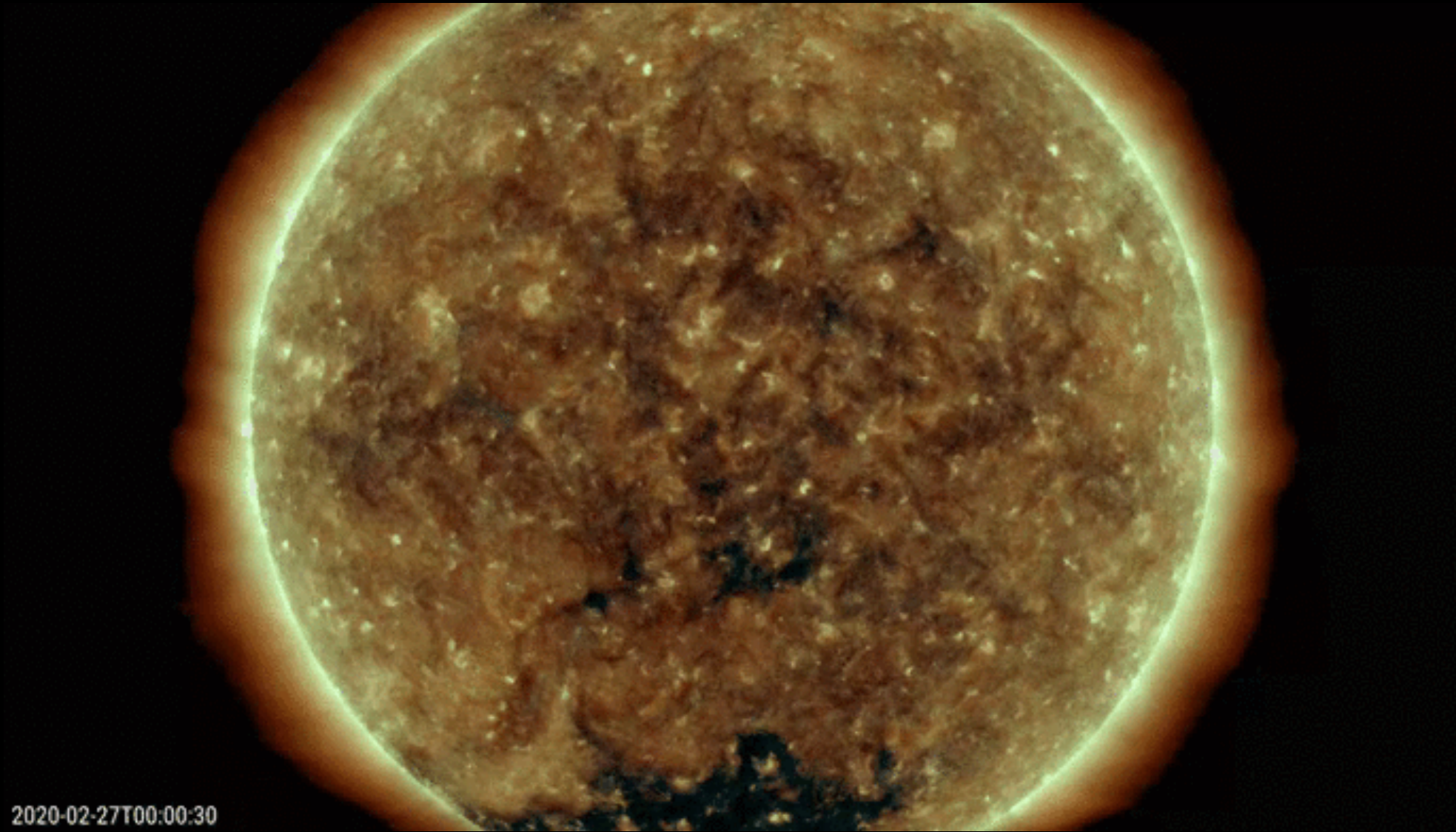
SDO/HMI Quick-Look Continuum: 20200301_114500

SDO/HMI Magnetogram 2020-03-01



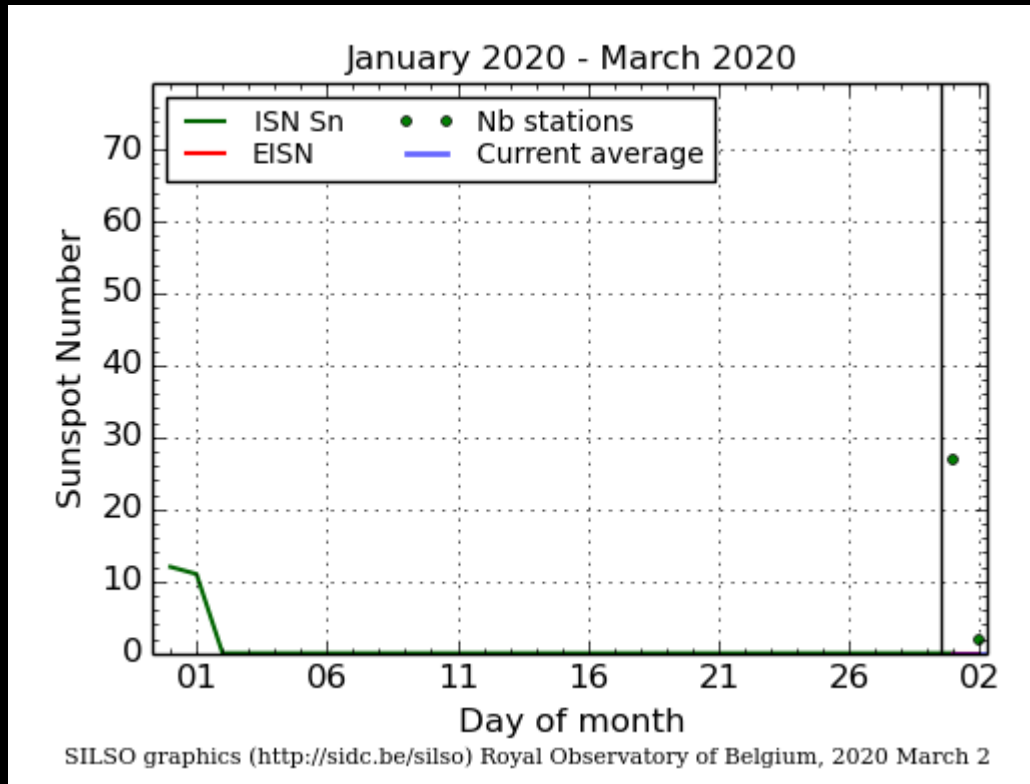
SDO/HMI Quick-Look Magnetogram: 20200301_114500

Solar active regions – Two spotless ARs at east limb

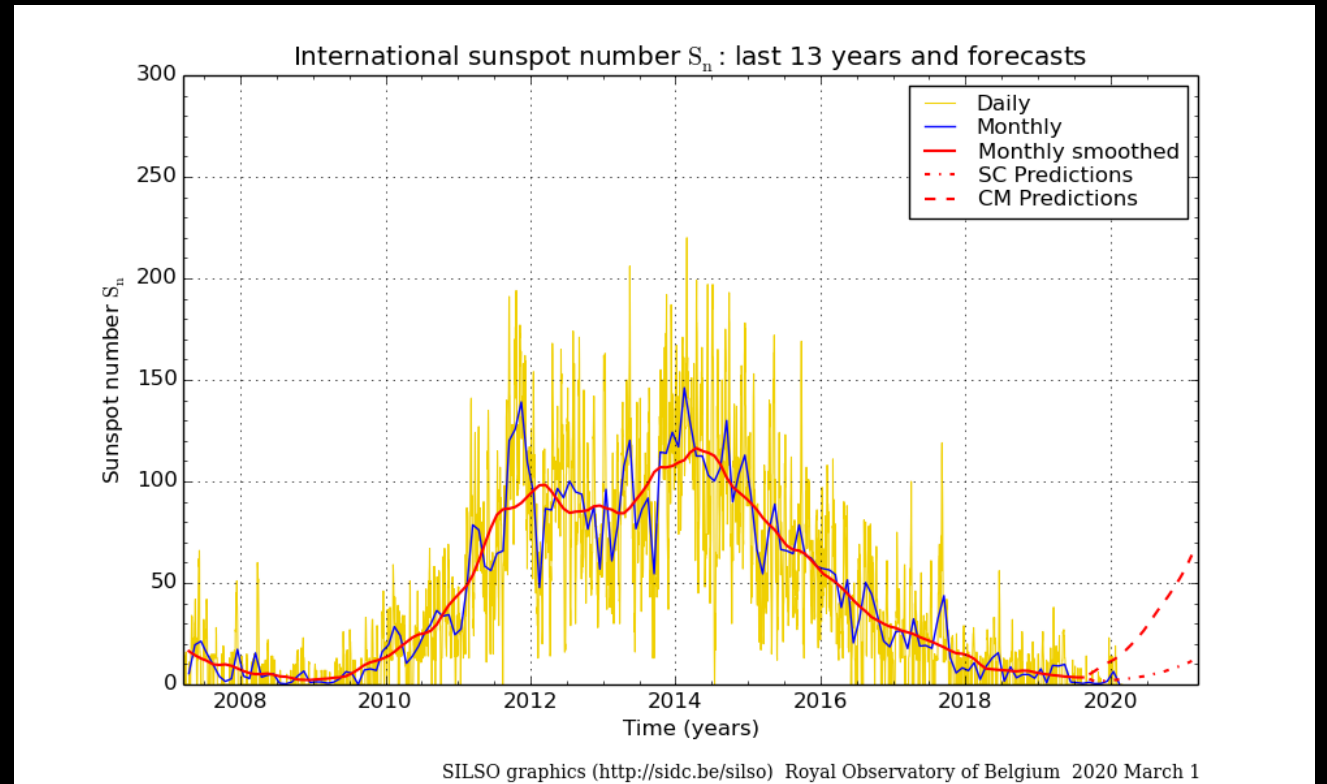


2020-02-27T00:00:30

Solar active regions – Spotless days and SC minimum



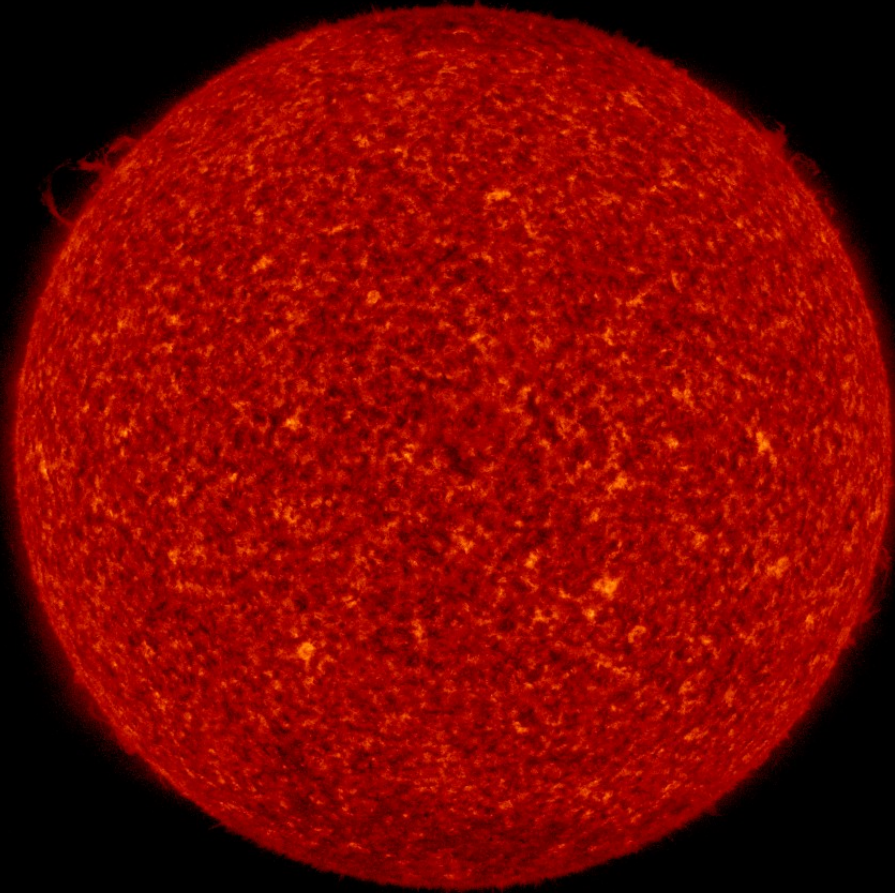
No sunspots since 02 February 2020...
Longest stretch so far: 14 November – 23 December 2019



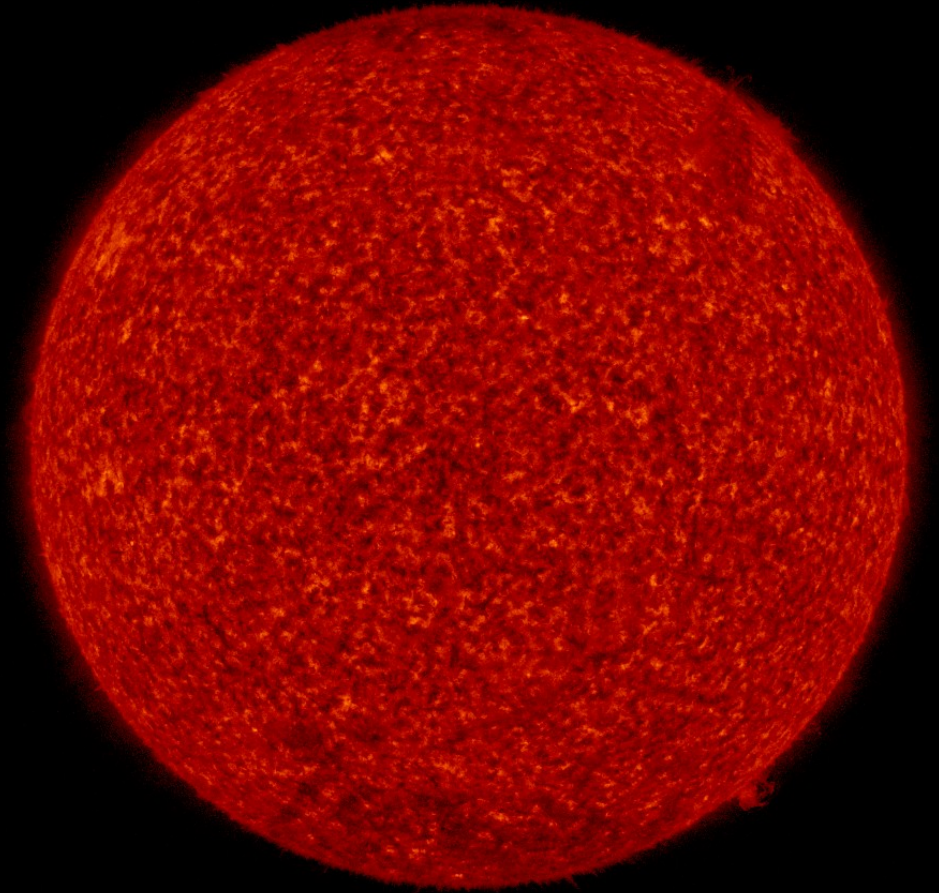
SC minimum possible between September 2019 & February 2020...

Solar active region & Filament

SDO/AIA 30.4 nm 2020-02-23



SDO/AIA 30.4 nm 2020-03-01



SDO/AIA 304 2020-02-23 12:14:18 UT

SDO/AIA 304 2020-03-01 12:14:06 UT

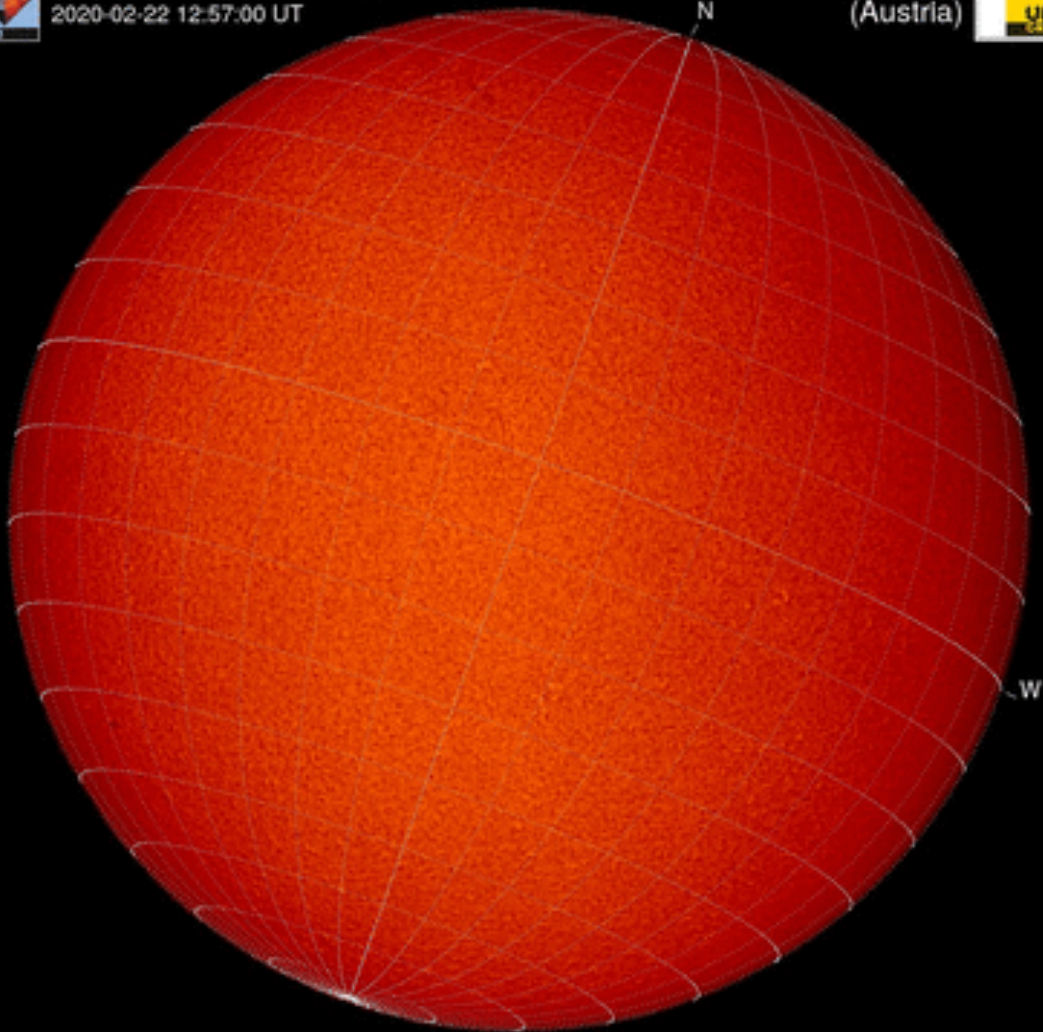
Filament & Filament eruption

H-alpha 2020-02-23



Kanzelhöhe Observatory
2020-02-22 12:57:00 UT

University of Graz
(Austria)

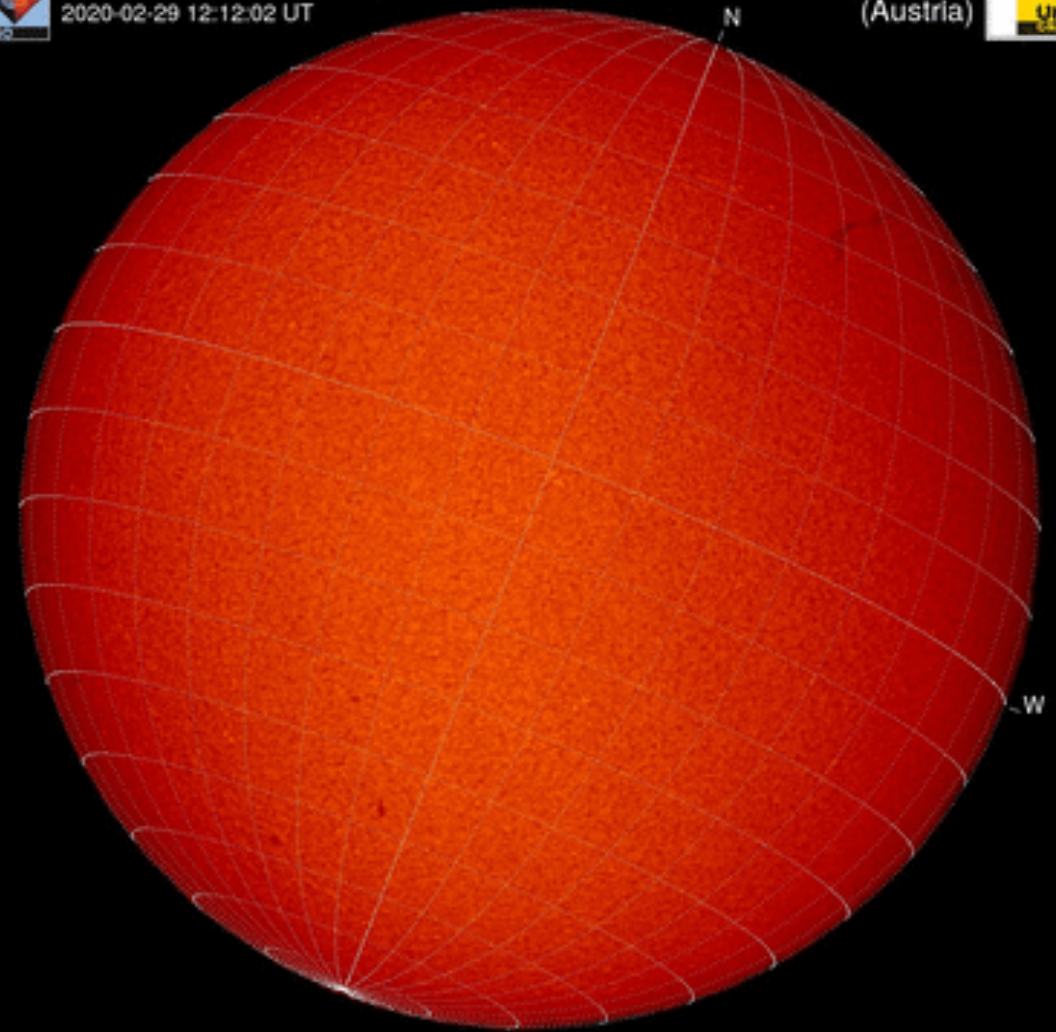


H-alpha 2020-03-01

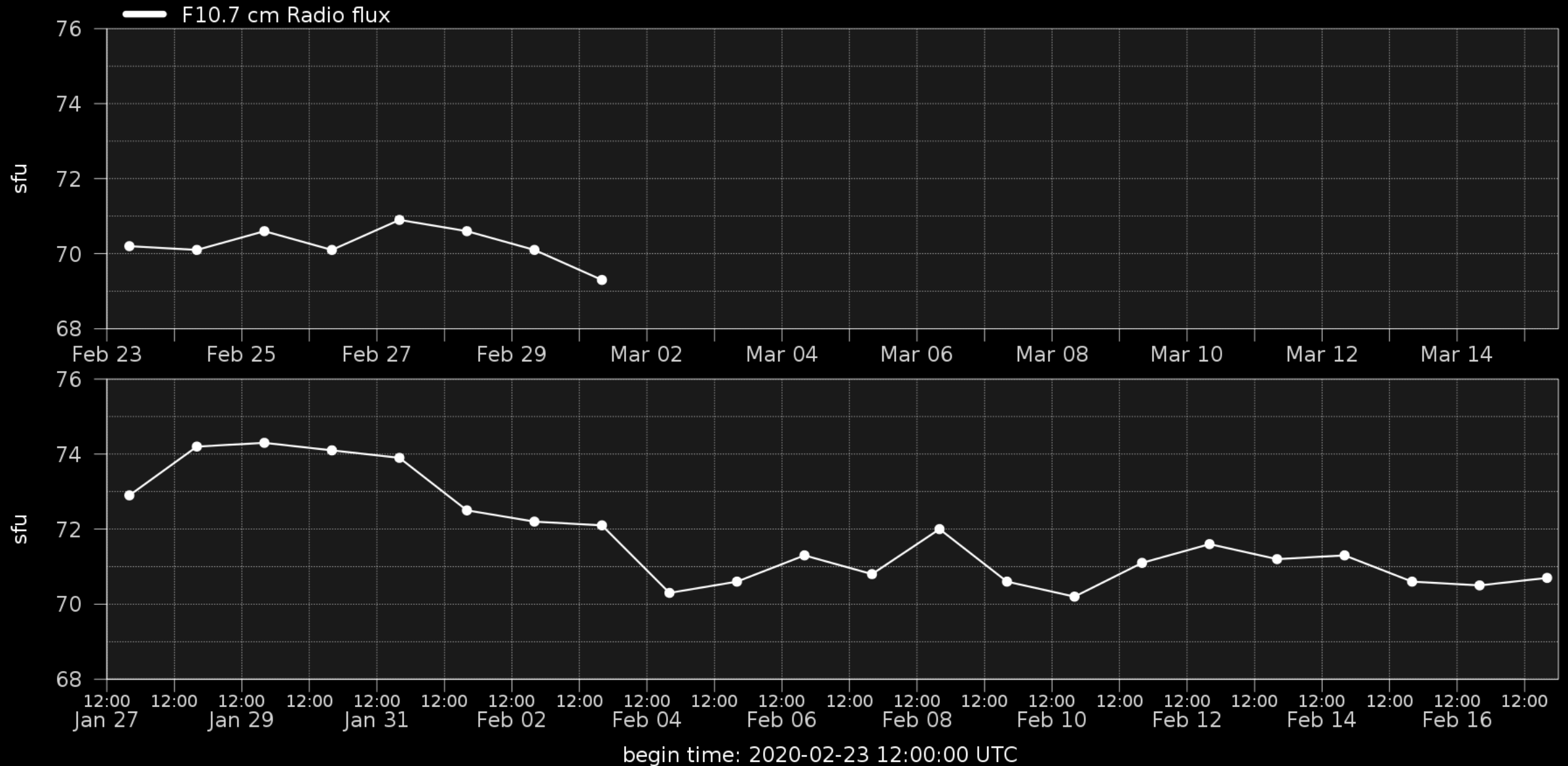


Kanzelhöhe Observatory
2020-02-29 12:12:02 UT

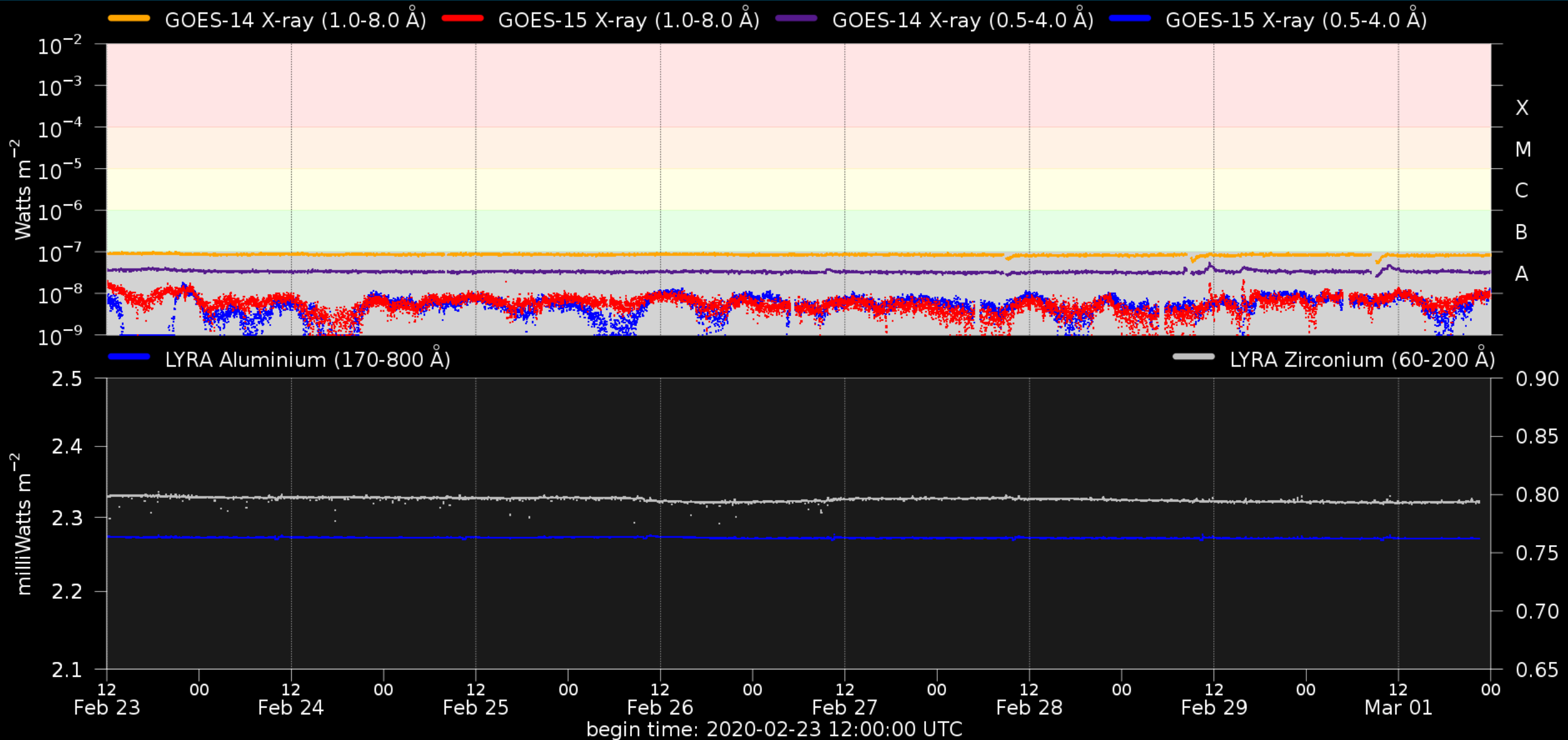
University of Graz
(Austria)



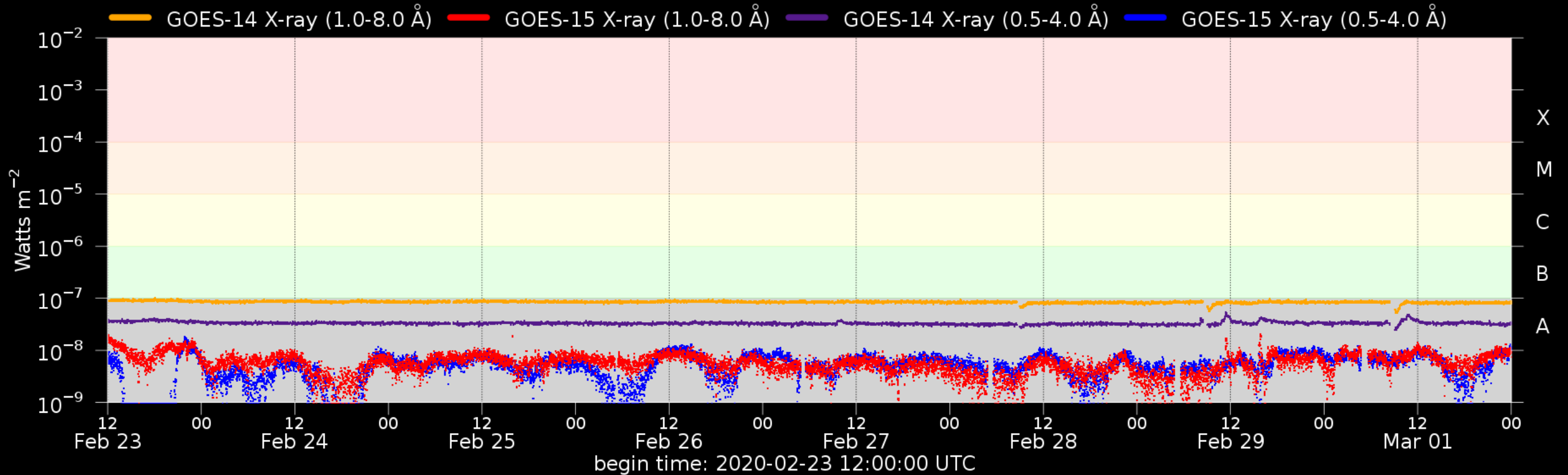
Solar F10.7cm radio flux



Solar X-Ray and UV flux



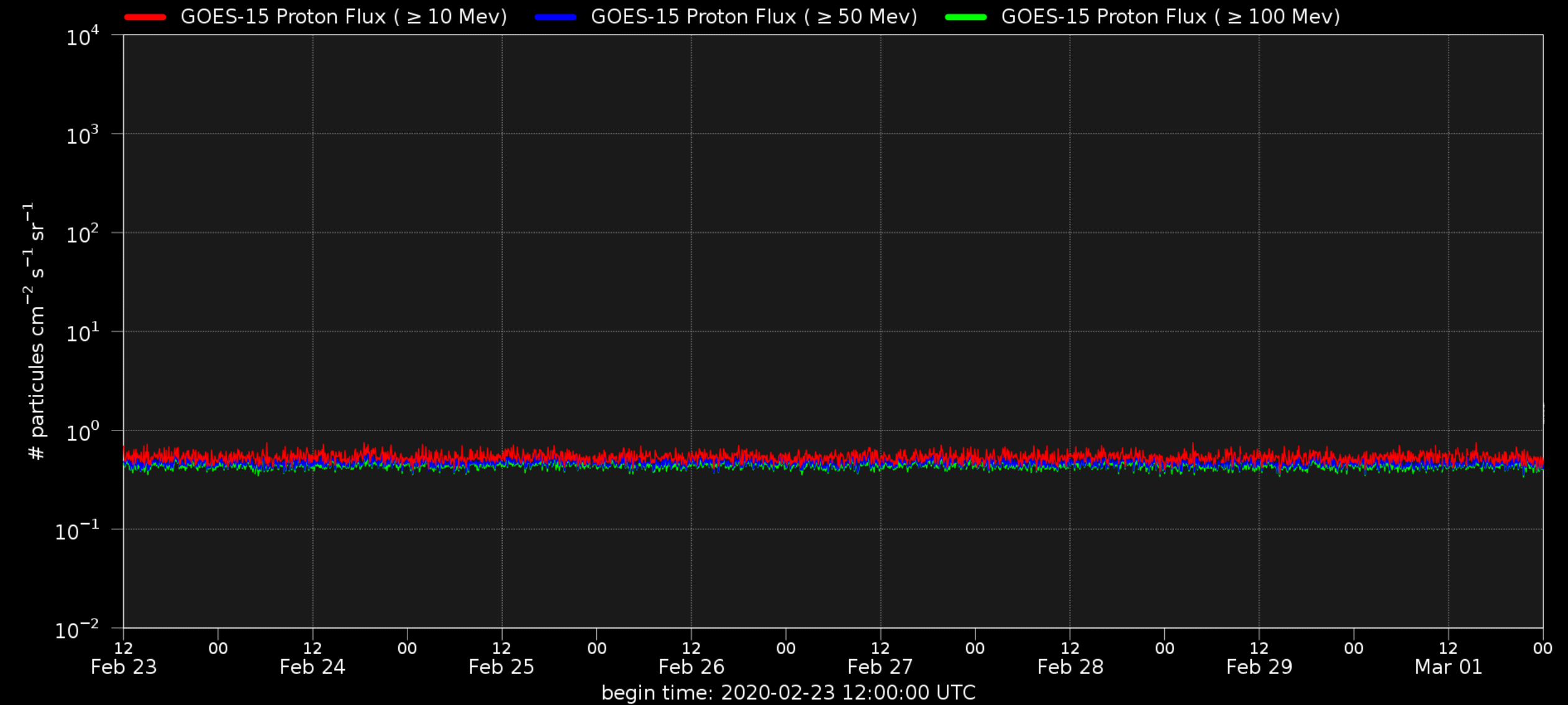
Flaring activity



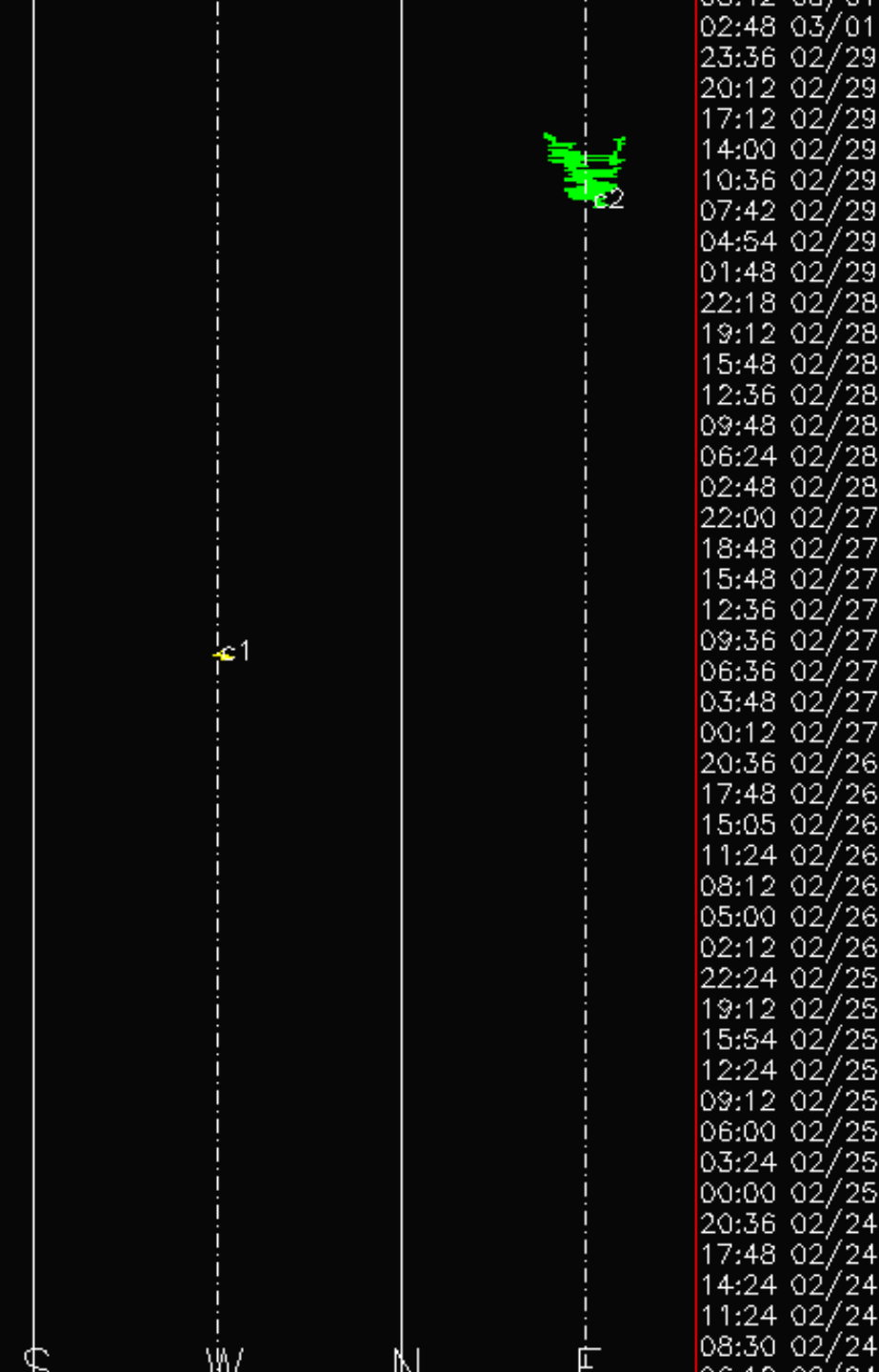
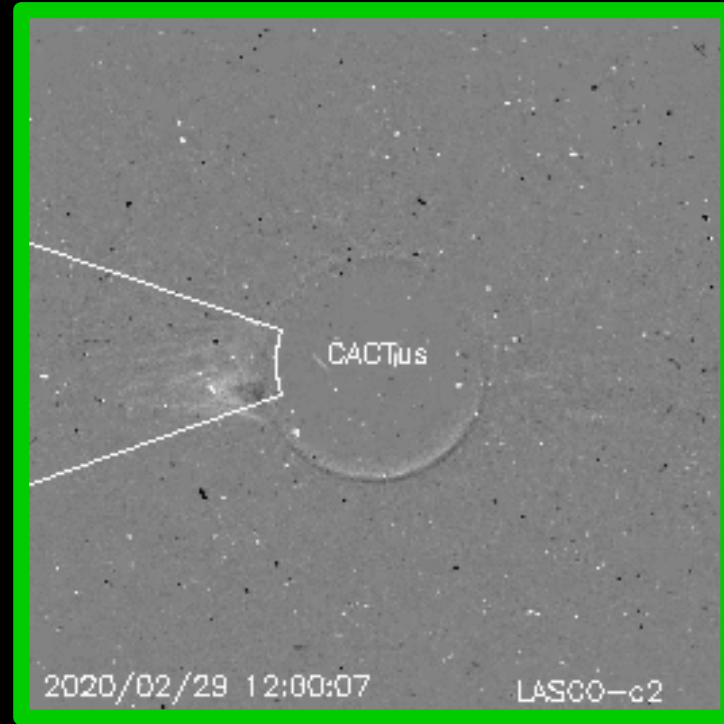
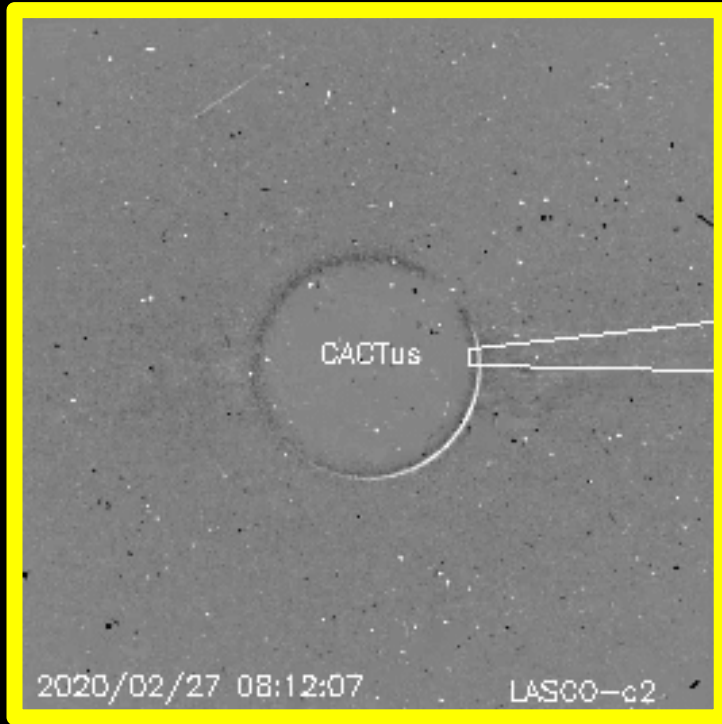
Probabilities (%) and occurrences (#) of B/C/M/X-flares issued at 12:30 and over the next 24h:

Issue date	2020-02-23	2020-02-24	2020-02-25	2020-02-26	2020-02-27	2020-02-28	2020-02-29	2020-03-01
Probability	--- 01 01 01	--- 01 01 01	--- 01 01 01	--- 01 01 01	--- 05 01 01	--- 05 01 01	--- 01 01 01	--- 01 01 01
Observed	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00

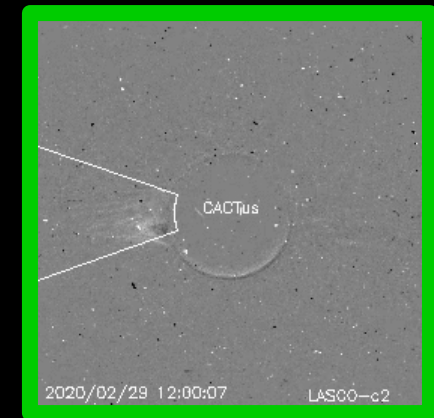
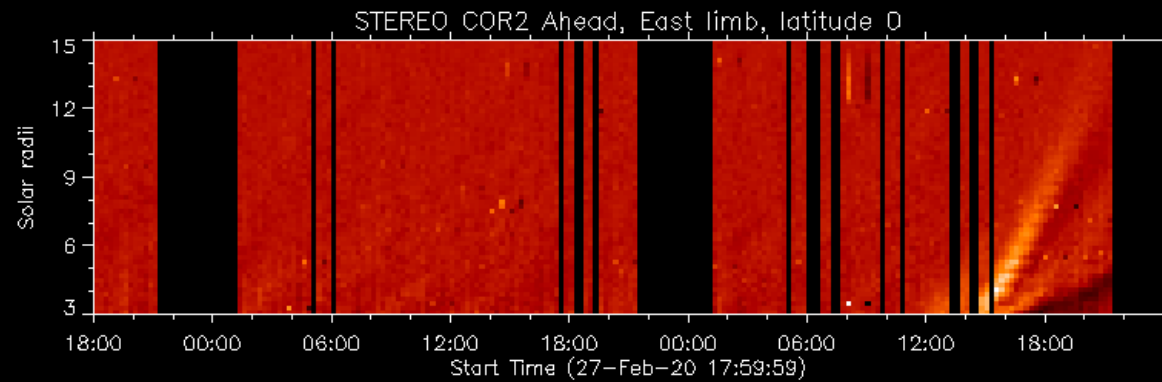
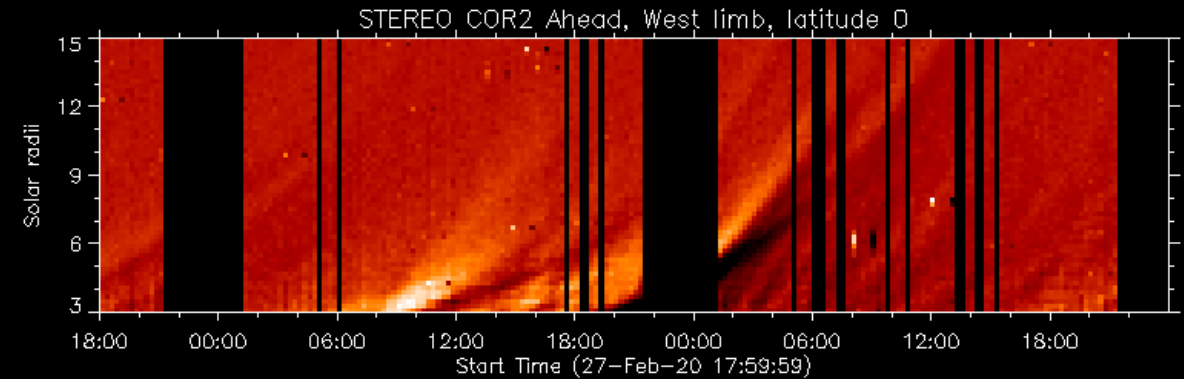
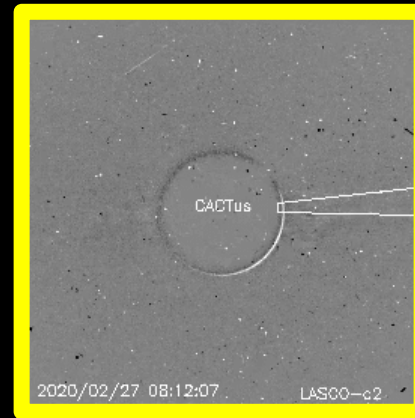
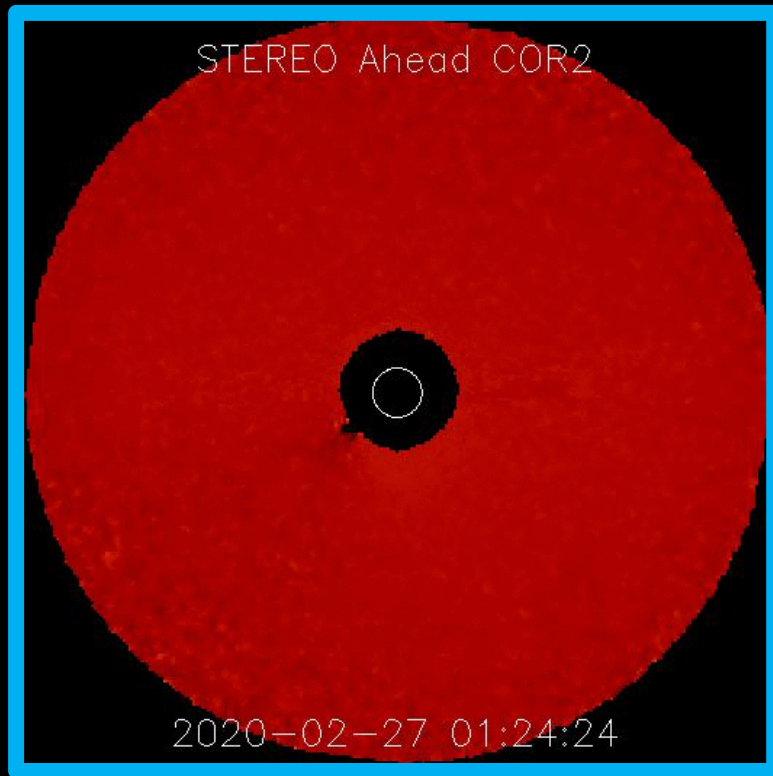
Solar proton flux



Coronal Mass Ejection



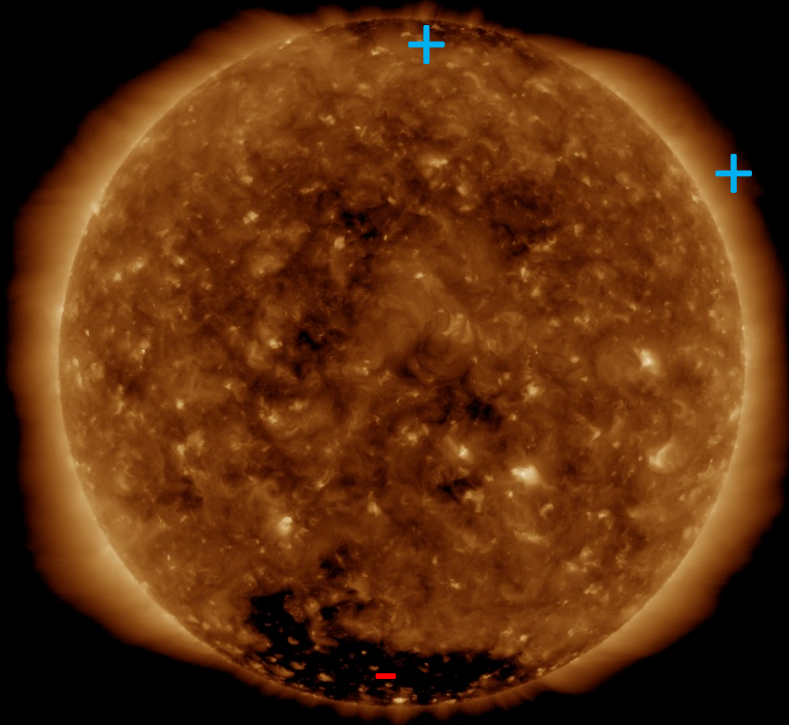
Coronal Mass Ejection – 28 February: earth-directed?



Possible arrival at Earth around 4 March

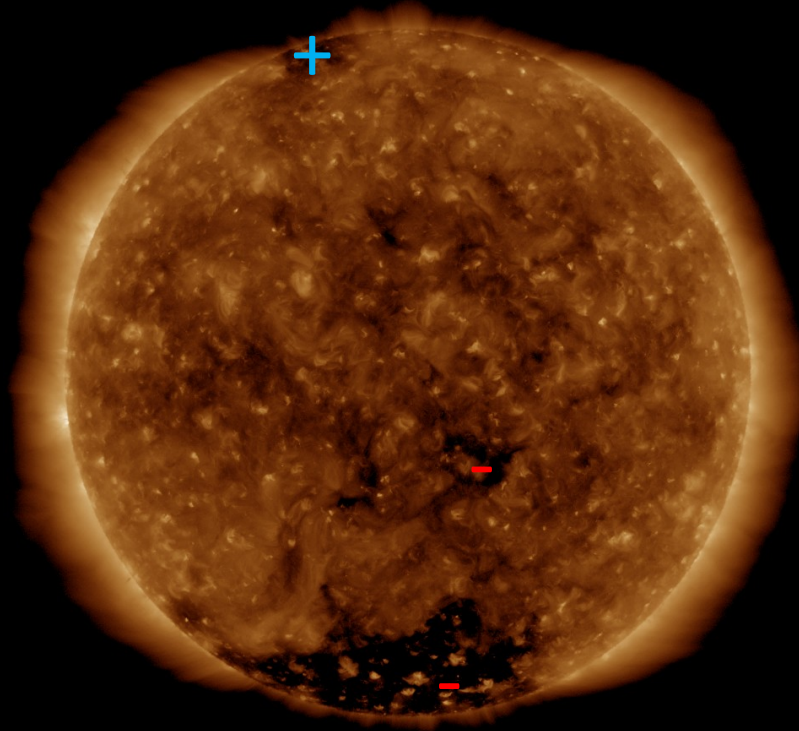
Solar active region & Coronal hole

SDO/AIA 19.3 nm 2020-02-23



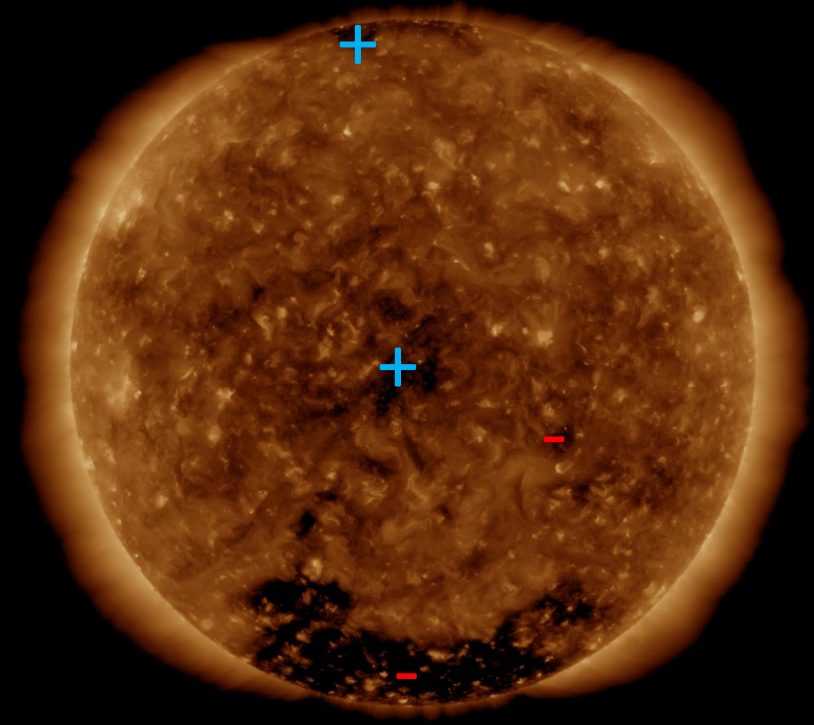
SDO/AIA 193 2020-02-23 12:11:05 UT

SDO/AIA 19.3 nm 2020-02-27



SDO/AIA 193 2020-02-27 12:10:29 UT

SDO/AIA 19.3 nm 2020-03-01



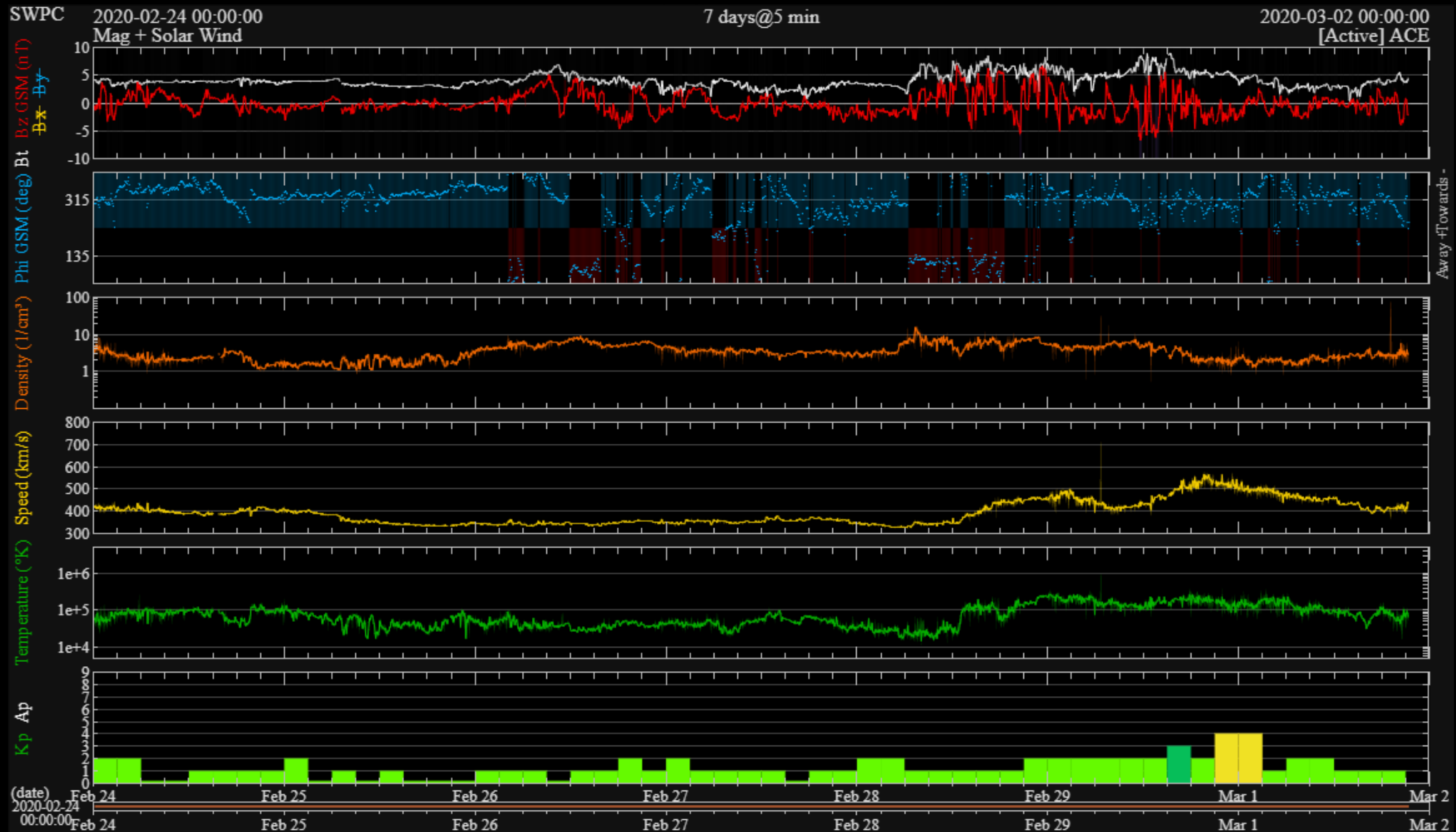
SDO/AIA 193 2020-03-01 12:10:41 UT

Solar Wind and Geomagnetic Activity

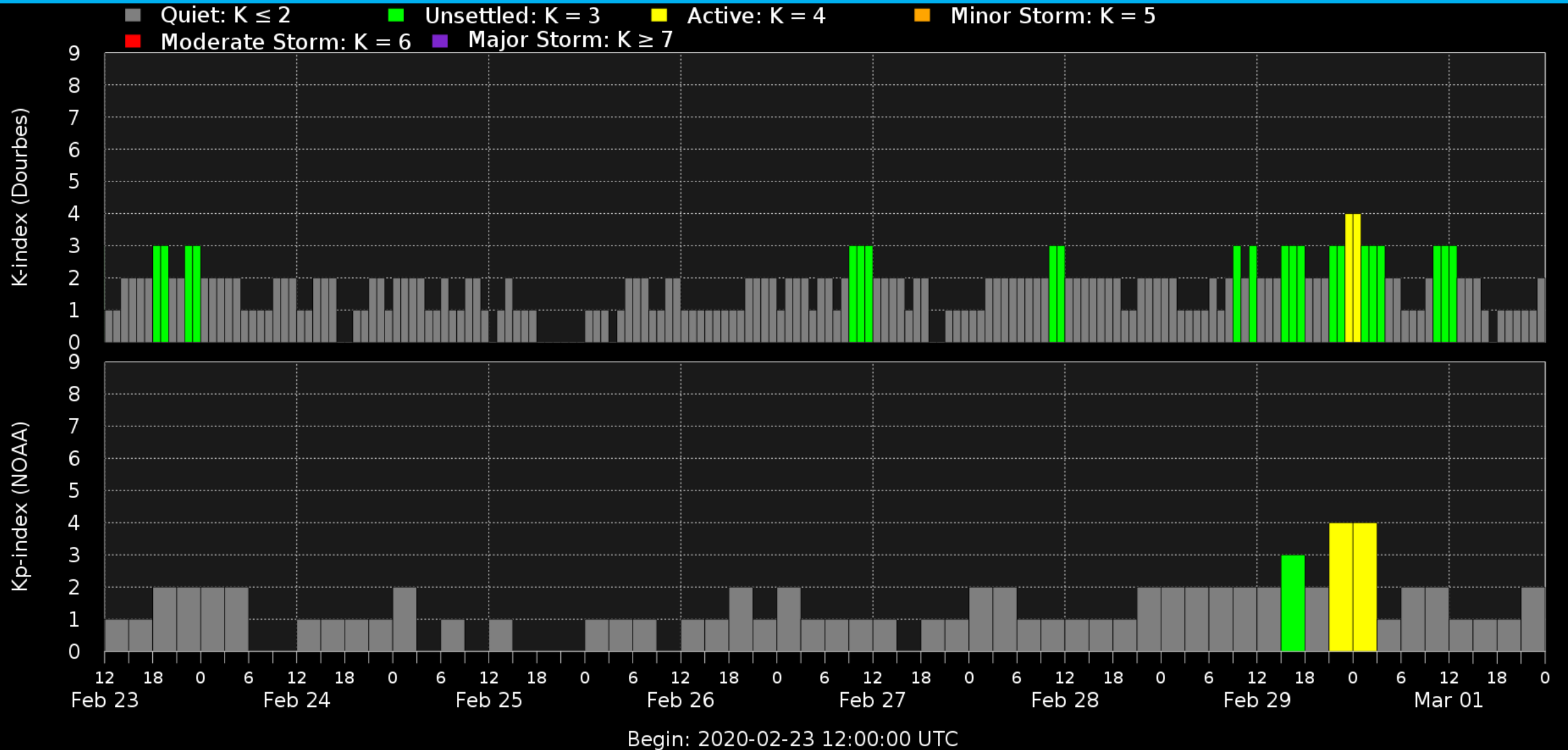


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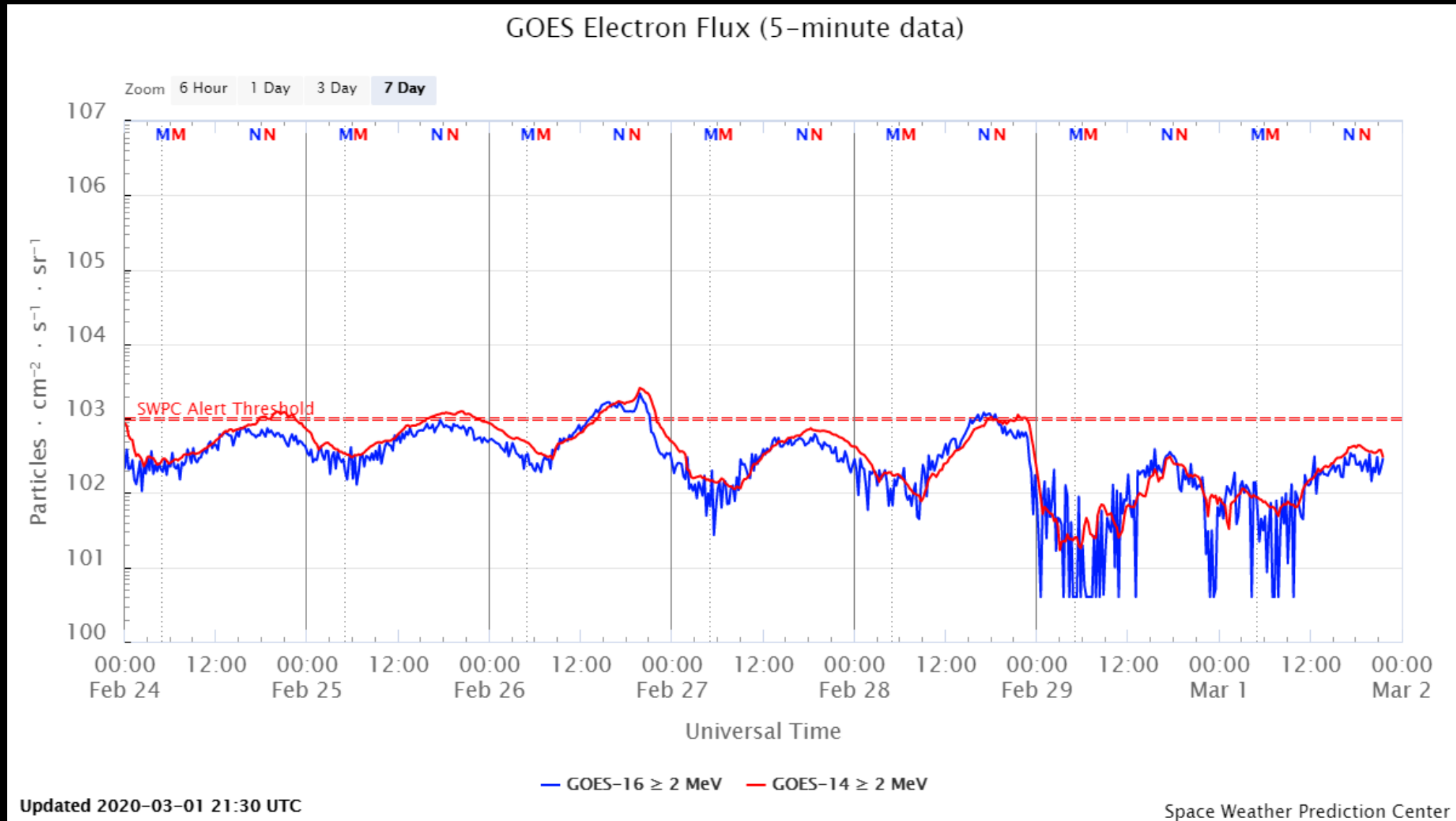
Solar wind parameters (ACE data)



Geomagnetic activity (K-indexes)



≥ 2 MeV Electron flux (GOES)



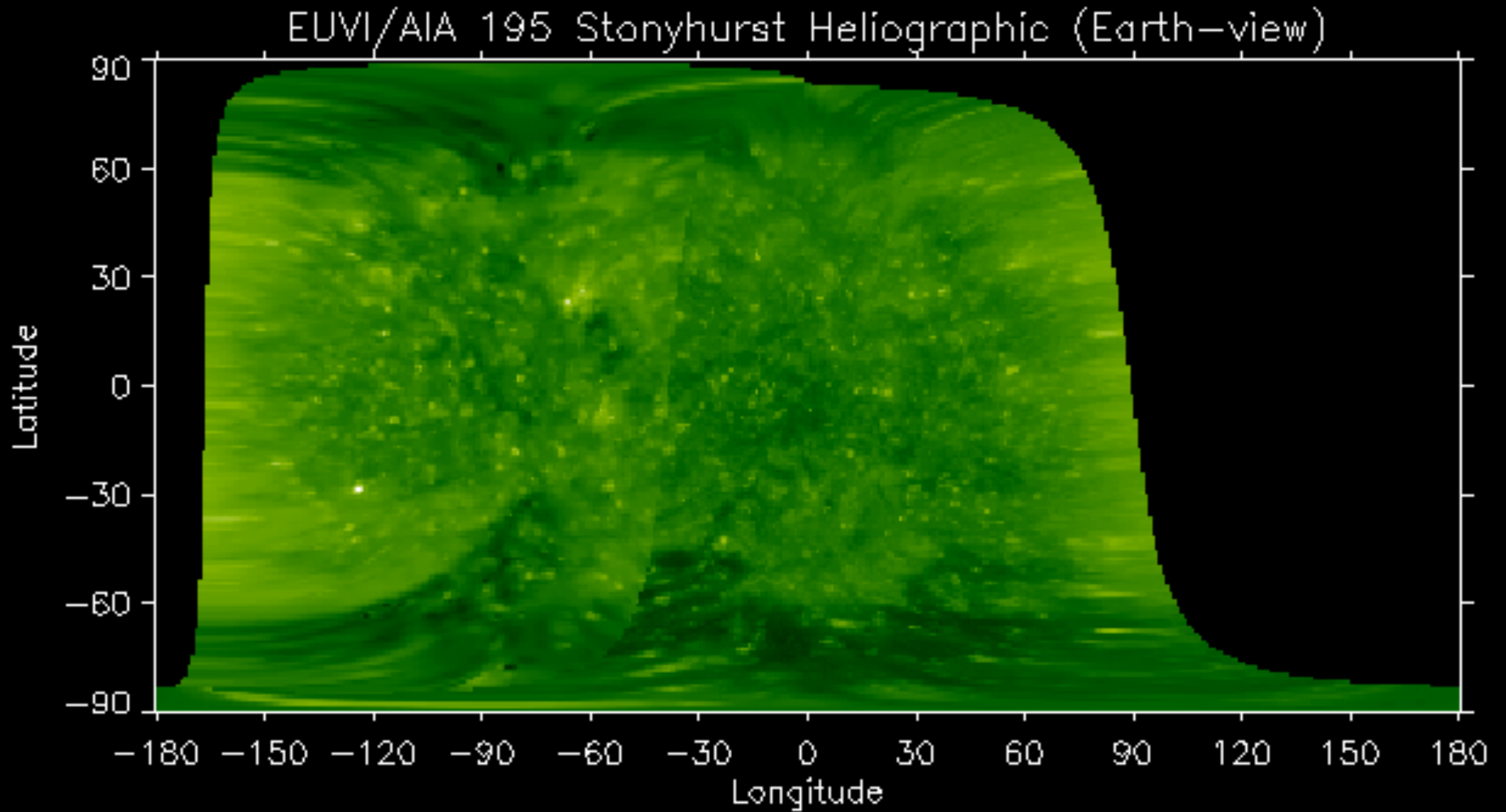
Outlook



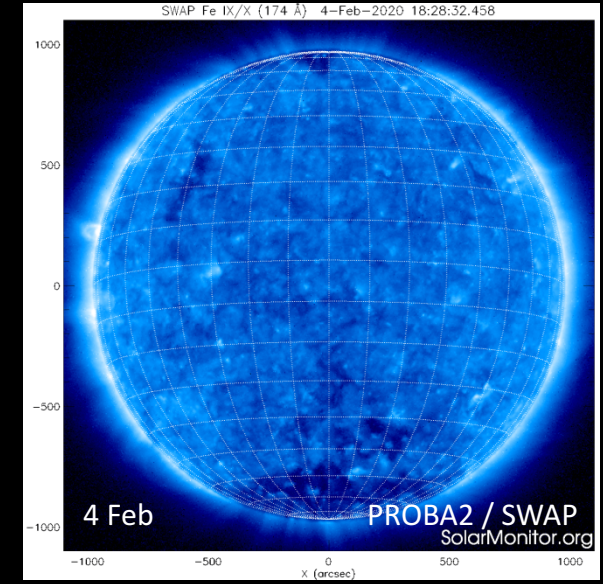
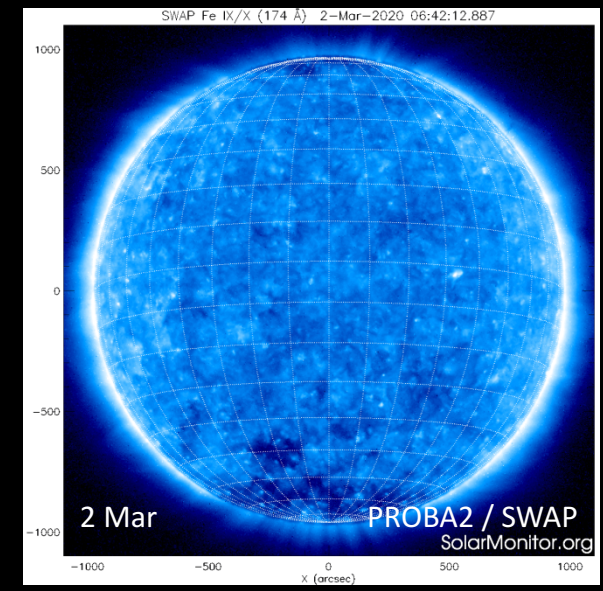
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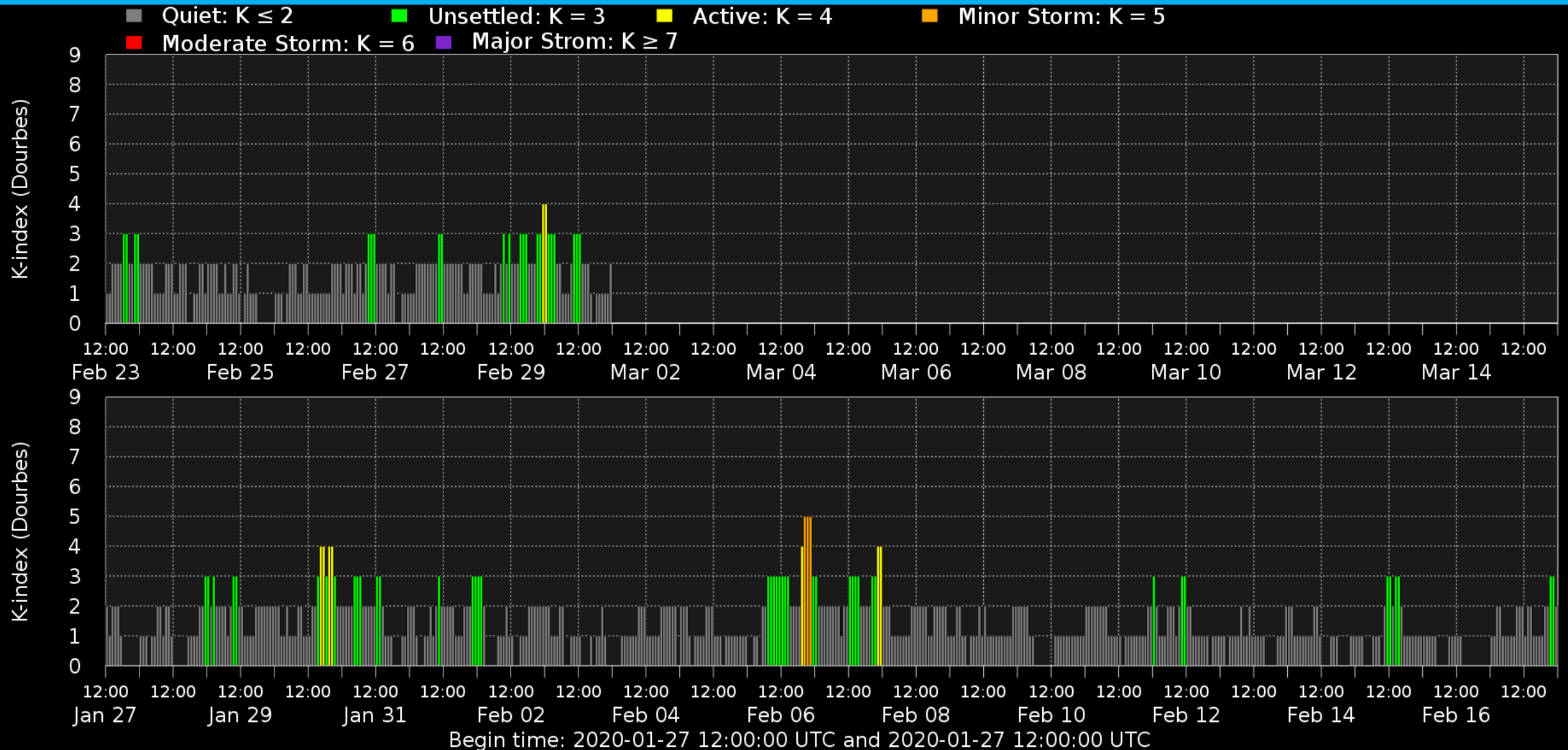
Outlook: Solar activity



Outlook: Solar wind



Outlook: Geomagnetic activity



SIDC Space Weather Briefing

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