SOLAR WEATHER
6 AUG 2024

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W5IFQ

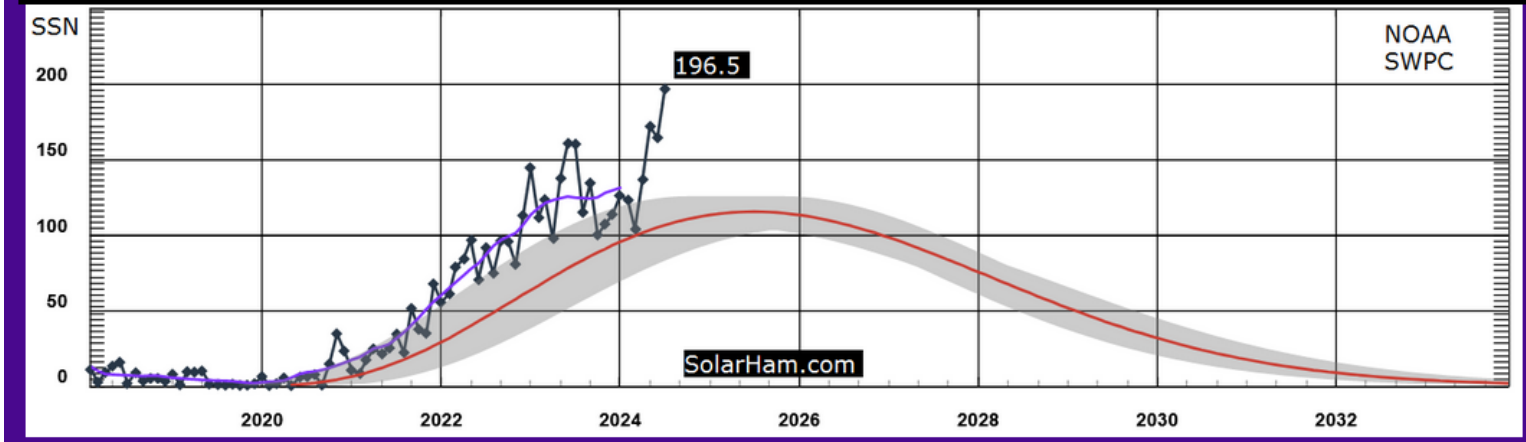
Taken by
Terrence Cook
on July 31, 2024
@ Billings MT

Solar Cycle 25 Progression

(Updated August 1, 2024)

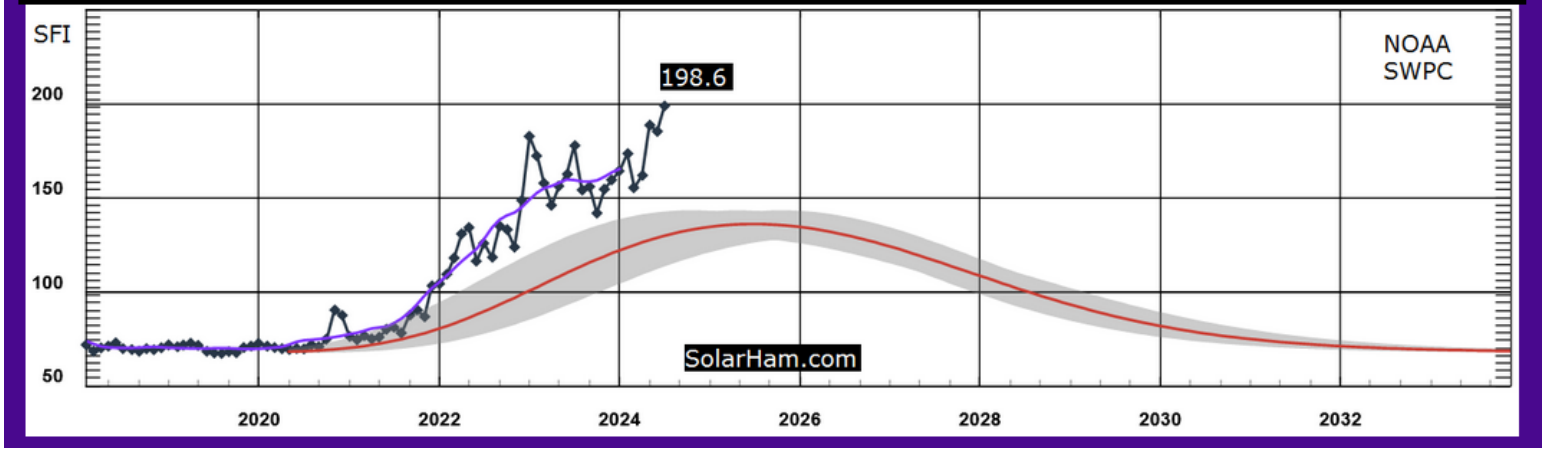
Sunspot Number Progression (July 2024)

Predicted SSN: **106.4** Actual: **196.5** Latest Smoothed Predicted SSN (1/2024): **95.3** Actual: **131.1**



10.7cm Solar Flux Progression (July 2024)

Predicted SFI: **129.6** Actual: **198.6** Latest Smoothed Predicted SFI (1/2024): **121.8** Actual: **165.1**



SolarHam

3 Day Geomagnetic Forecast

August 6	August 7	August 8
2-3 (G0)	2-3 (G0)	2 (G0)

Max Kp

August 6	August 7	August 8
M-Lat 05%	M-Lat 01%	M-Lat 01%
H-Lat 30%	H-Lat 20%	H-Lat 20%

Probabilities

Latest SWPC Forecast (@ 00:30 + 12:30 UTC)

Detailed Forecast

Current Moon Phase:
4% Illumination

Flare Events (M2+) Past 48 Hours

X1.1	AR 3780	8/5/24 @ *15:27 UTC*
X1.7	AR 3767	8/5/24 @ *13:40 UTC*
M6.1	AR 3780	8/5/24 @ *05:23 UTC*
M2.2	AR 3780	8/4/24 @ *15:15 UTC*

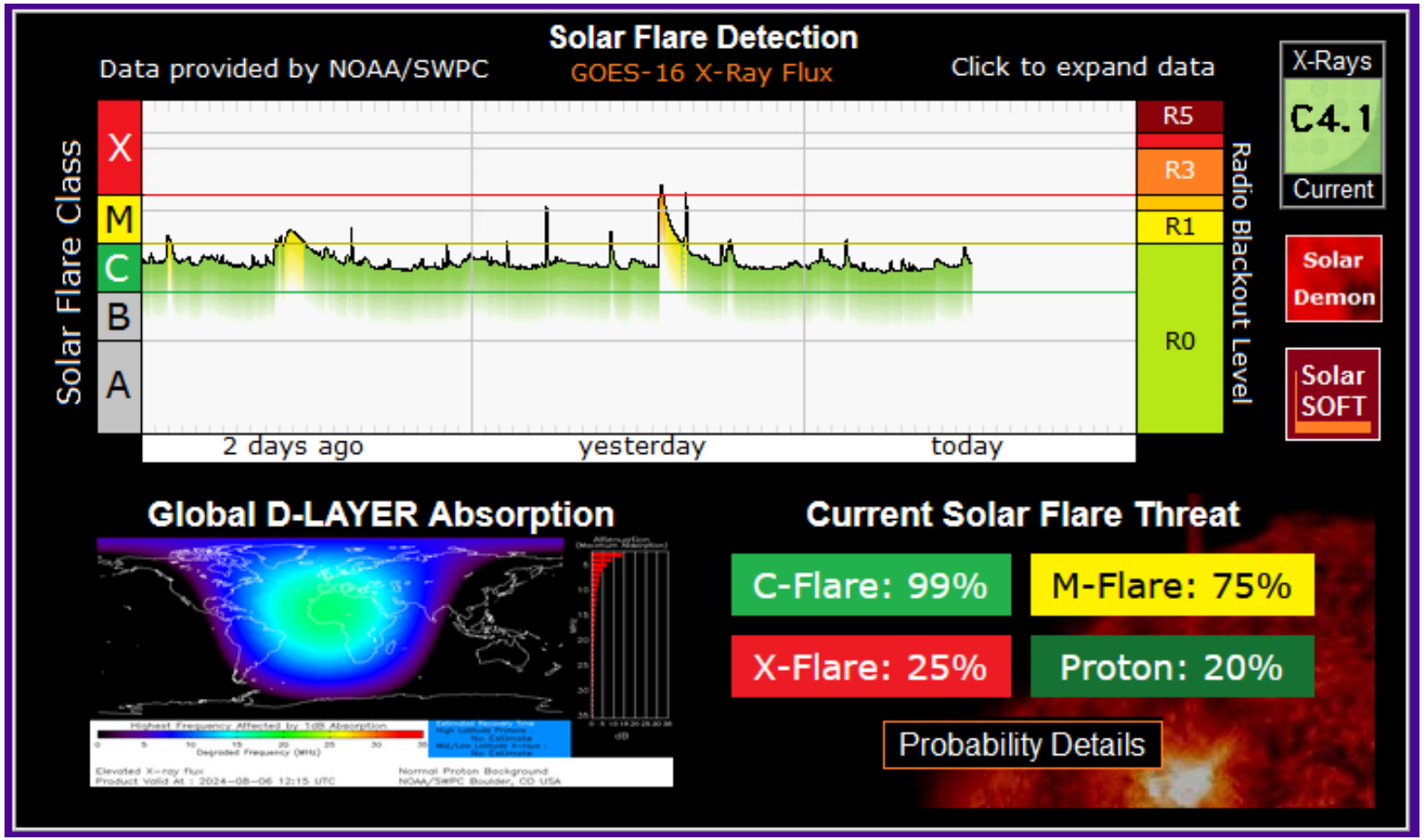
Event Report | Top Solar Flares

Visible Sunspot Regions

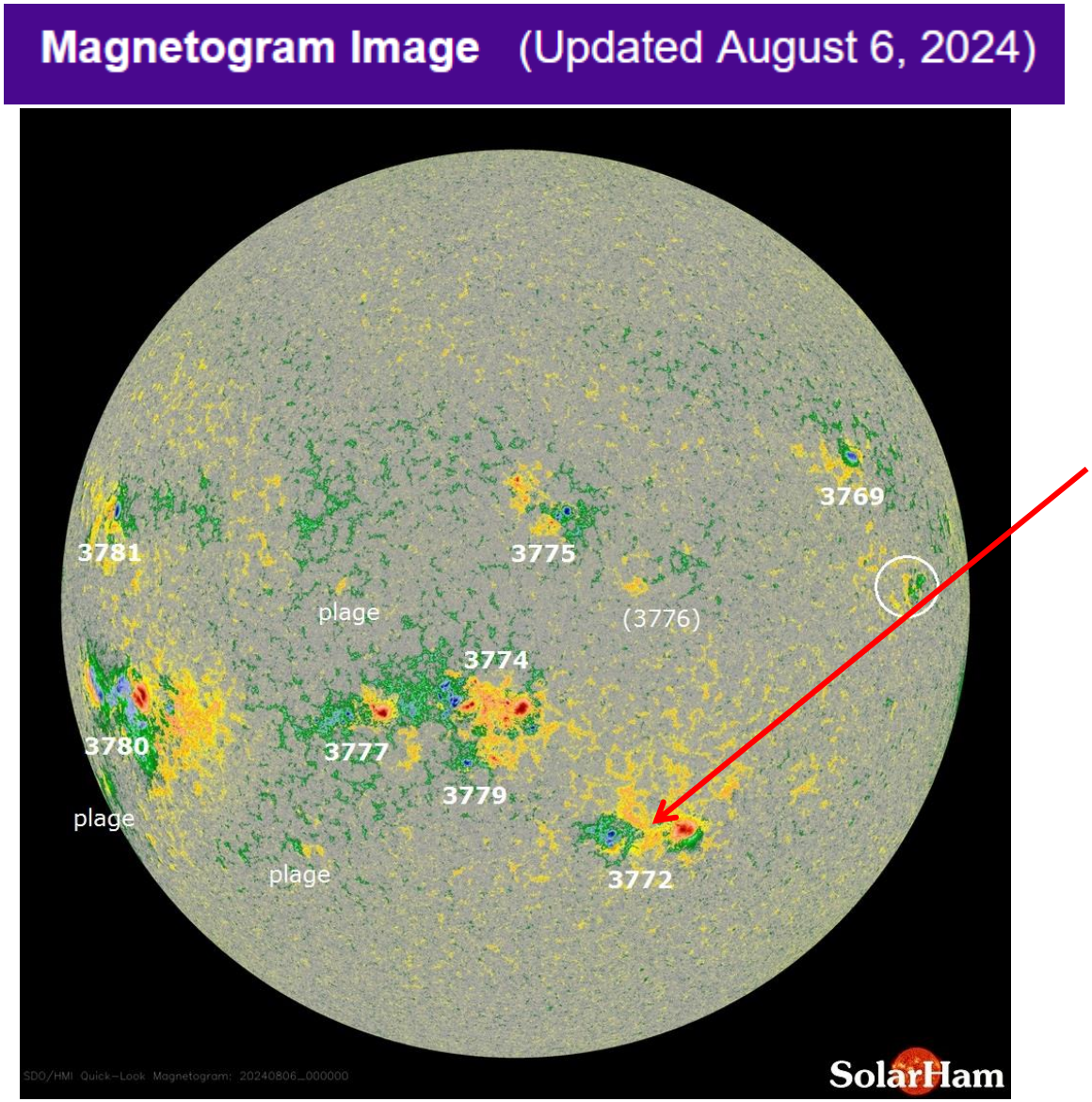
Sunspot Summary | SRS

AR 3781	B	N13E67	*Declining*
AR 3780	BGD	S13E58	*Growing*
AR 3779	B	S15E10	*Stable*
AR 3777	B	S09E21	*Growing*
AR 3775	BG	N18W07	*Declining*
AR 3774	BG	S07E03	*Growing*
AR 3772	BGD	S25W20	*Declining*
AR 3769	A	N23W55	*Growing*

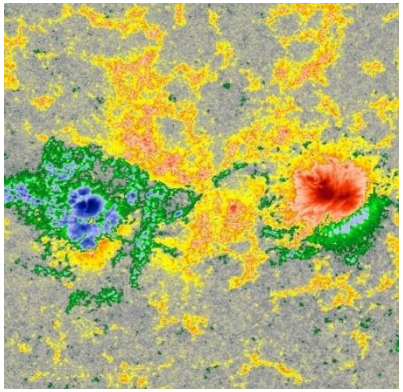
Updated @ 00:45 UTC (August 6)


SolarHam
Solar Flare Detection
Data provided by NOAA/SWPC
GOES-16 X-Ray Flux
Click to expand data
Solar Flare Class
X
M
C
B
A
R5
R3
R1
R0
Radio Blackout Level
2 days ago
yesterday
today
X-Rays
C4.1
Current
Solar Demon
Solar SOFT
Global D-LAYER Absorption
Current Solar Flare Threat
C-Flare: 99%
M-Flare: 75%
X-Flare: 25%
Proton: 20%
Probability Details

Sun Spots

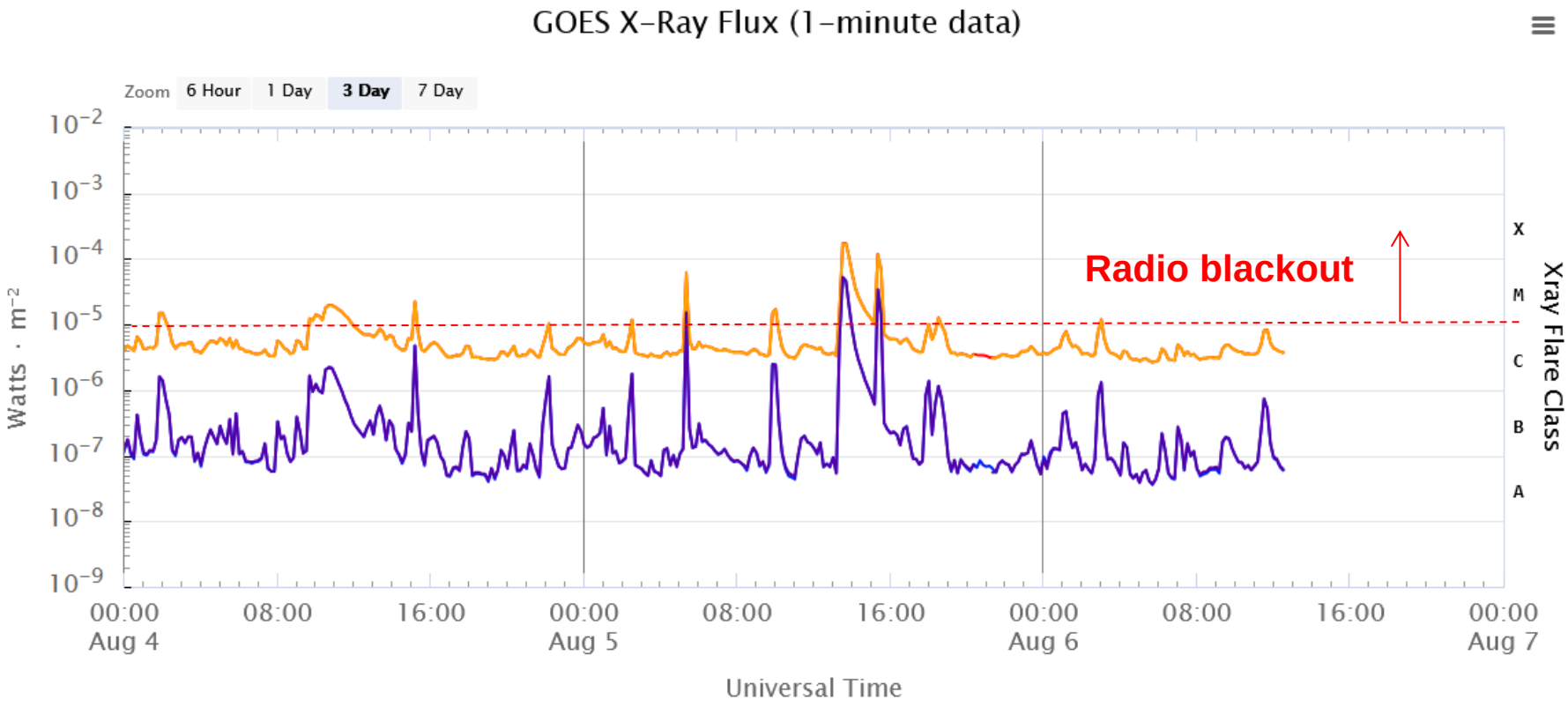


Uses Zeeman effect to measure polarity of magnetic fields

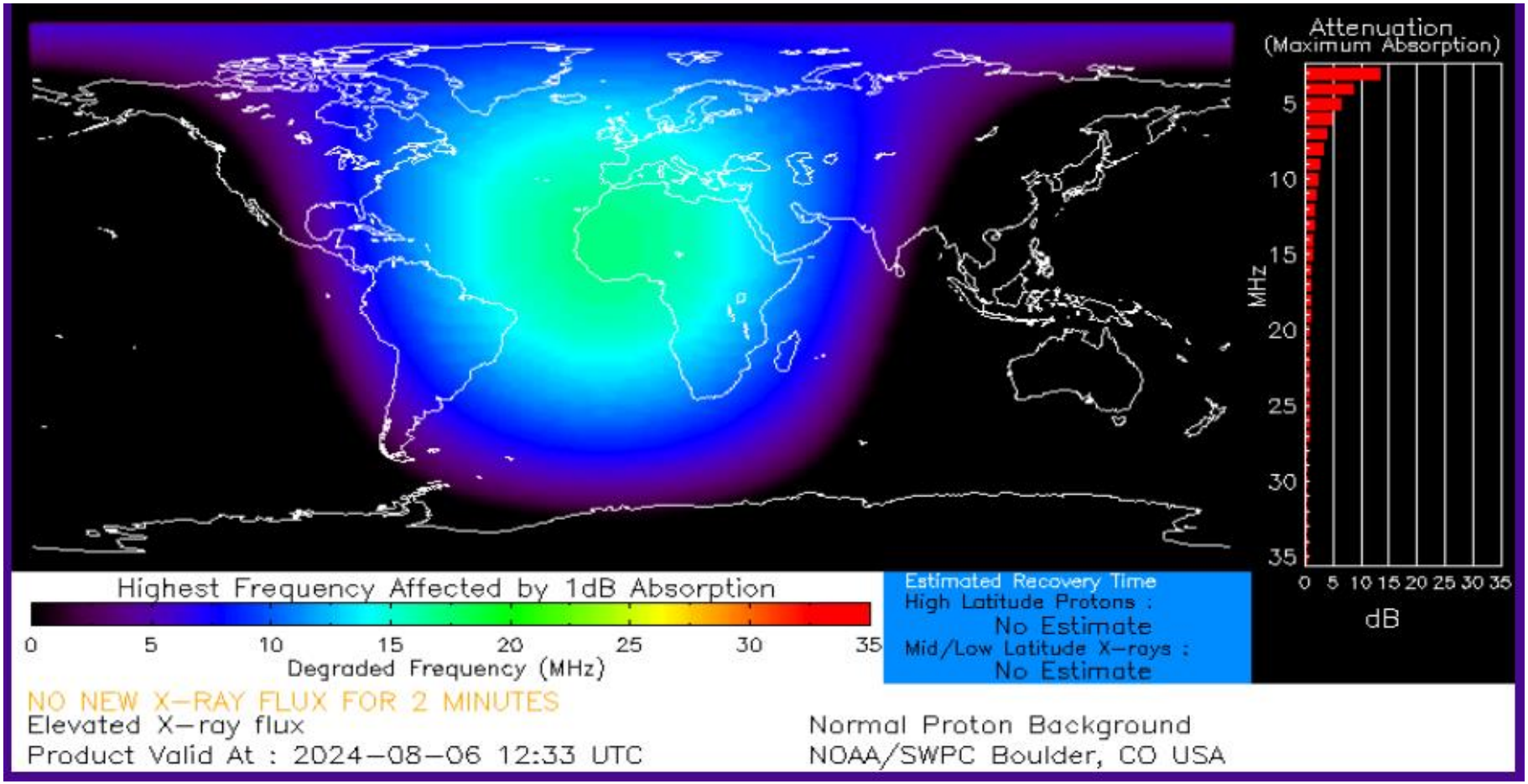


Beta-Gamma-Delta

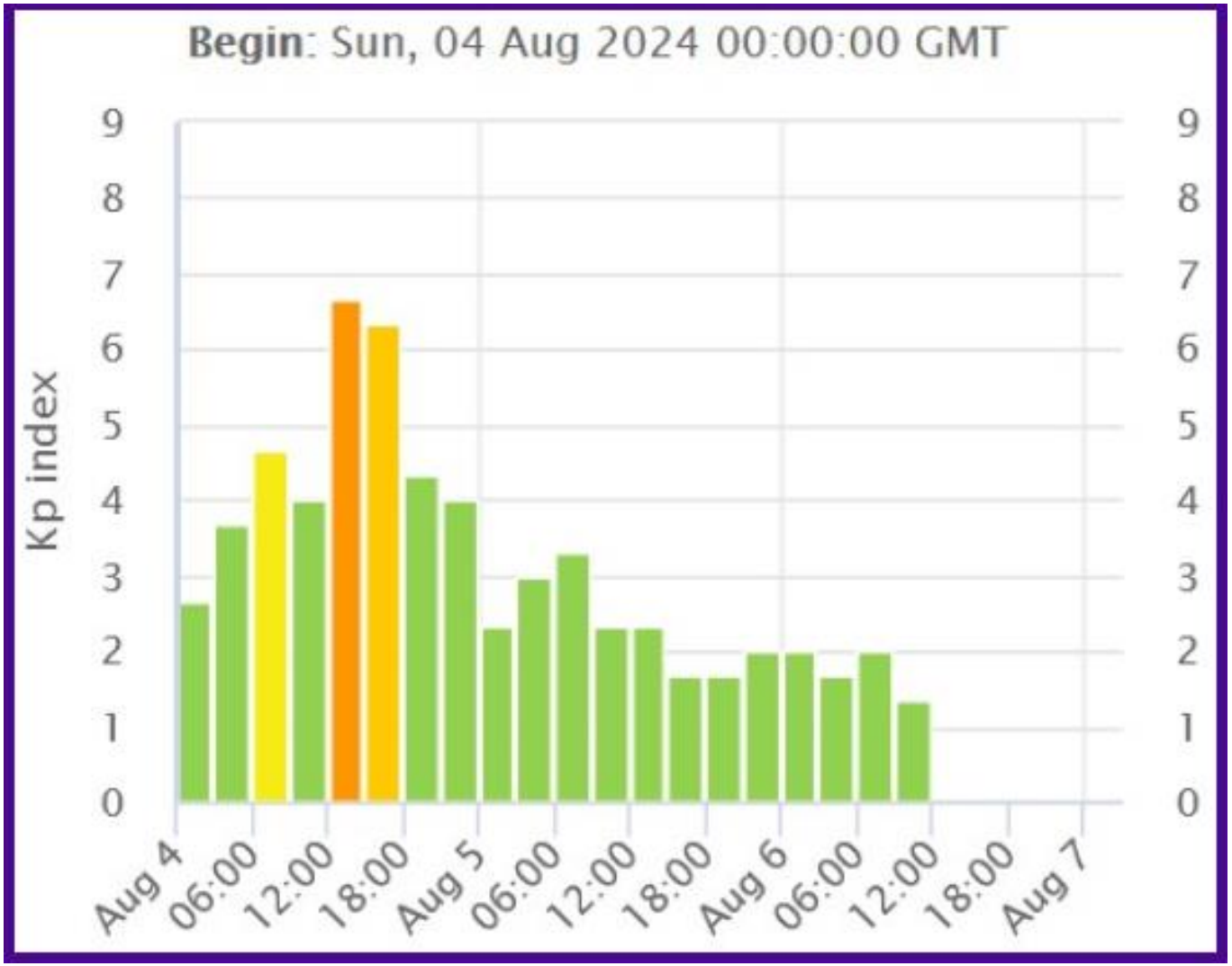
Solar X-Ray Flux: 4 – 6 AUG 2024



NOAA – D-Region Absorption Predictions



Earth's Geomagnetic Activity



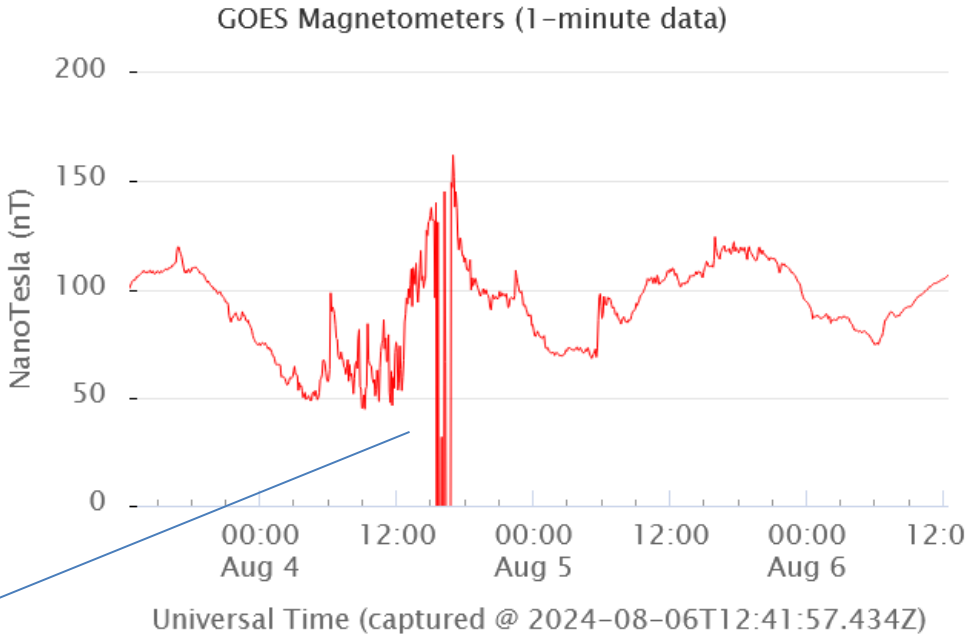
Geomagnetic Conditions: 6 AUG 2024

Solar wind:
Bz = 3 nT
speed = 425 km/sec
density = 0.8 protons/cm^3

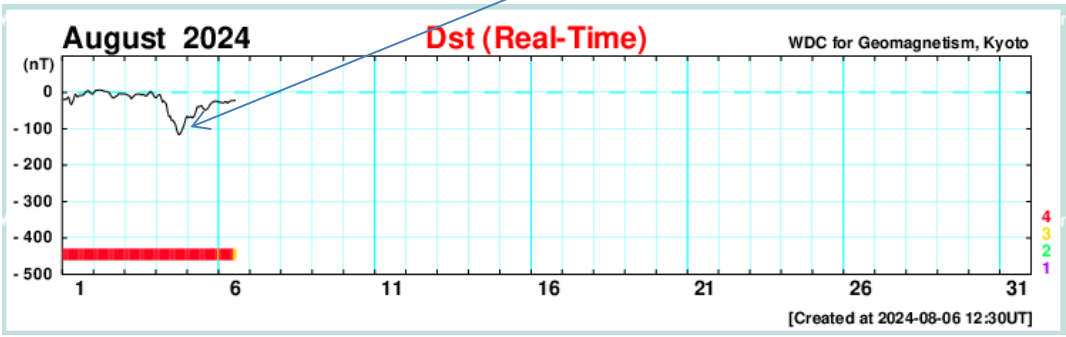
(From – NOAA DSCOVR
In L1, Lagrange Point)

Dst = -21 nT (Ring Field)

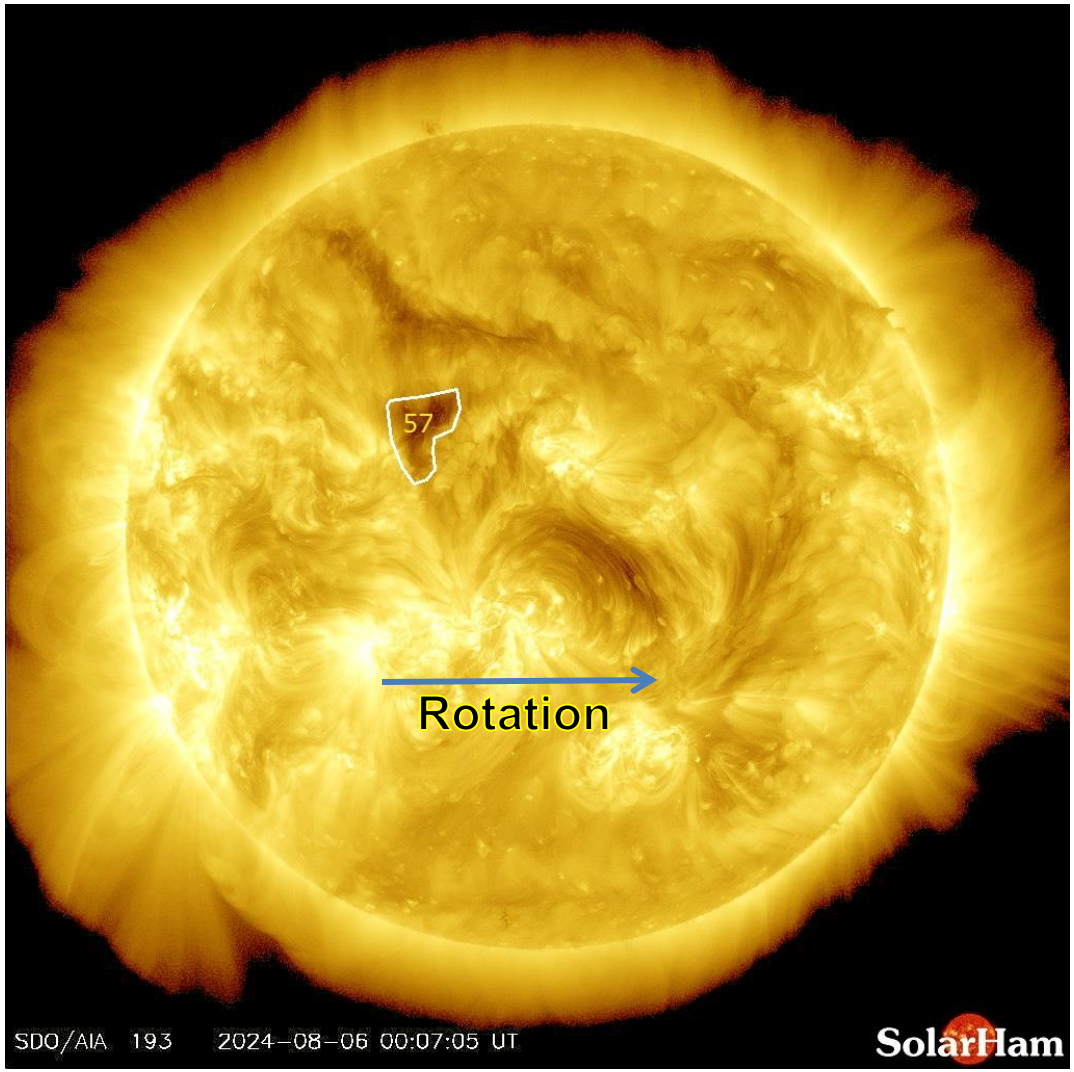
(From – Data Analysis Center
For Geomagnetics and Space
Magnetism – Kyoto University)



From – GOES 16
In geostationary orbit



Coronal Holes – 6 AUG 2024

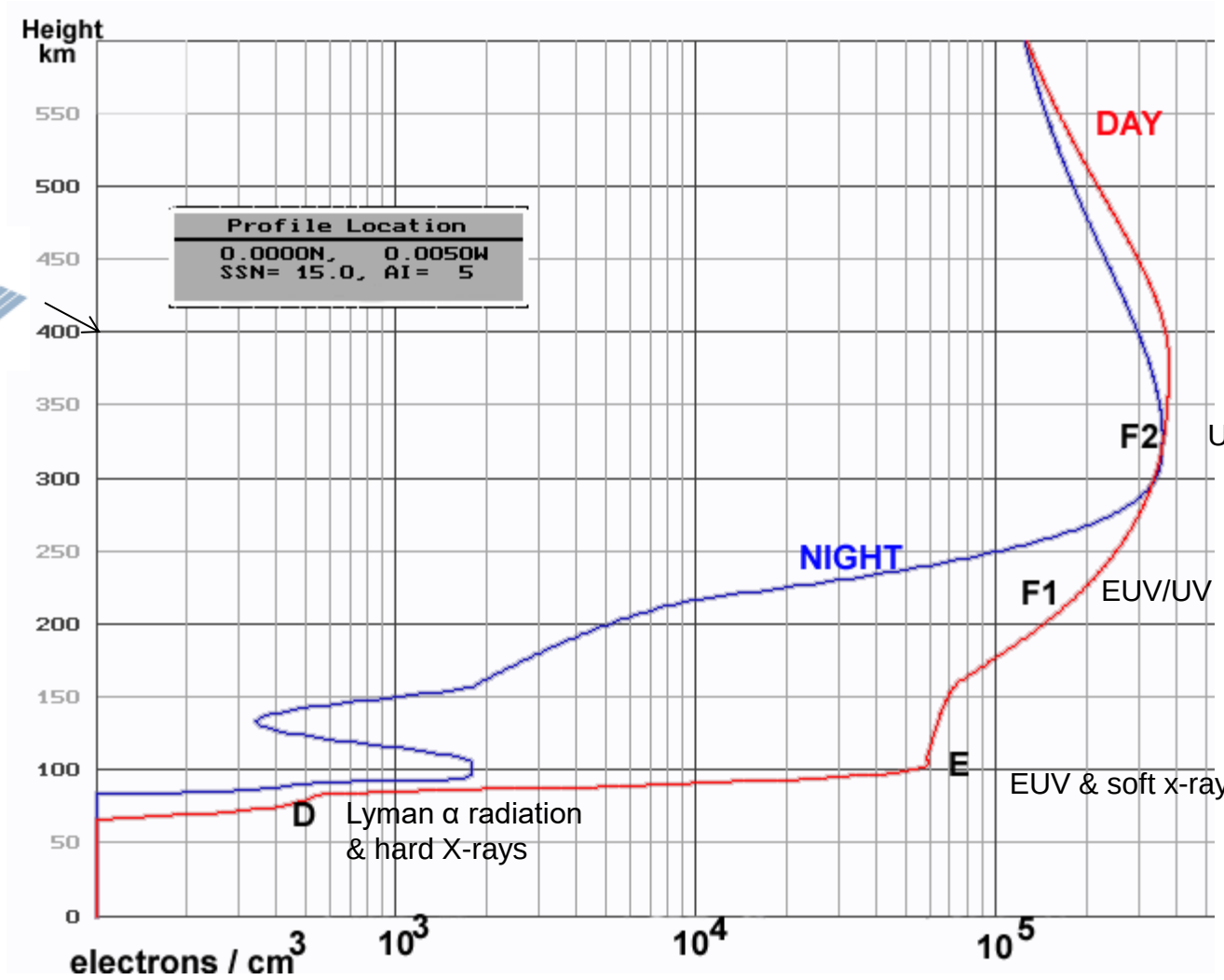


Analysis

Small coronal hole #57 will be facing Earth over the next several days.

Ionosphere Creation

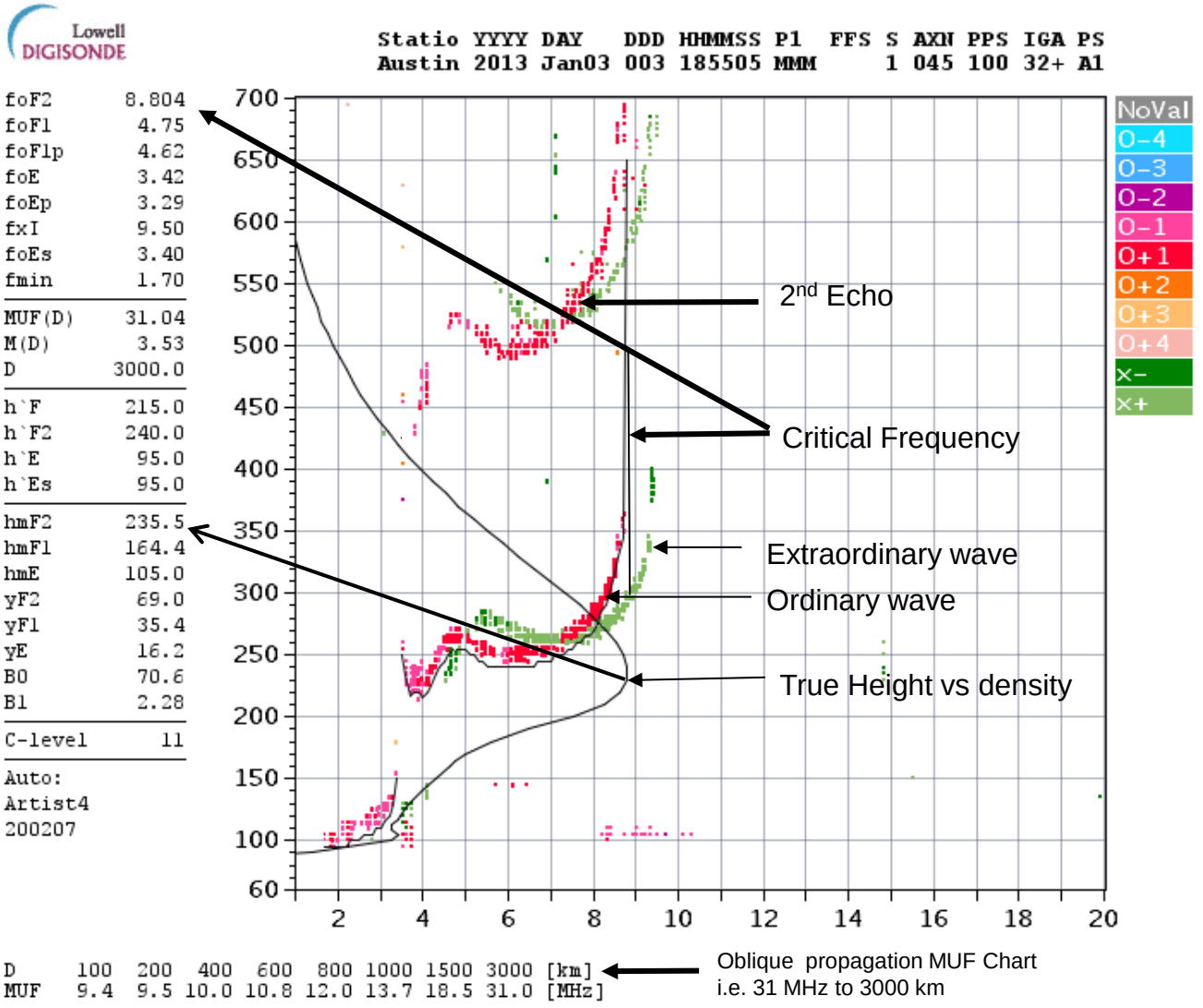
Gravity



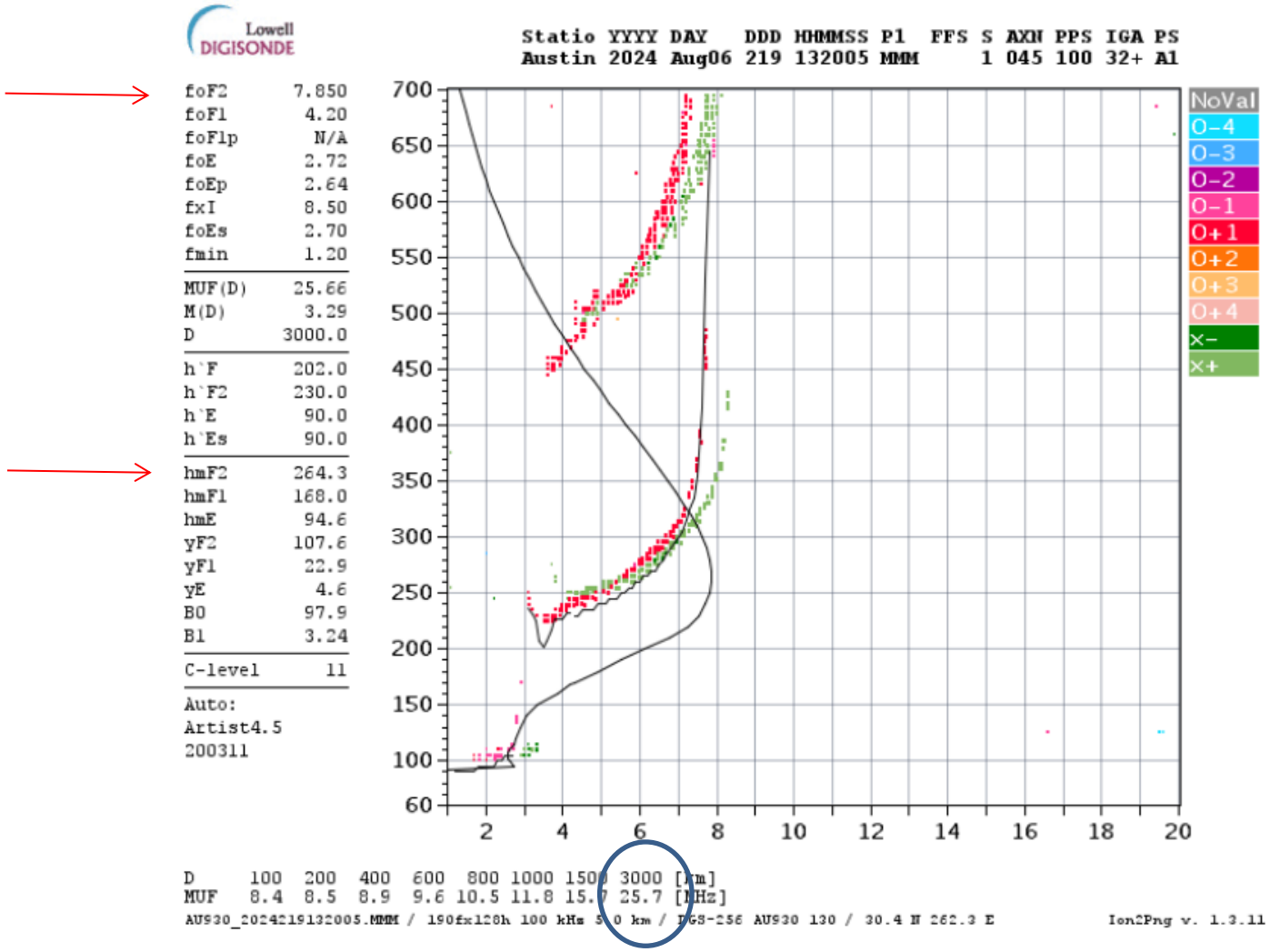
Solar Radiation

Monoatomic oxygen

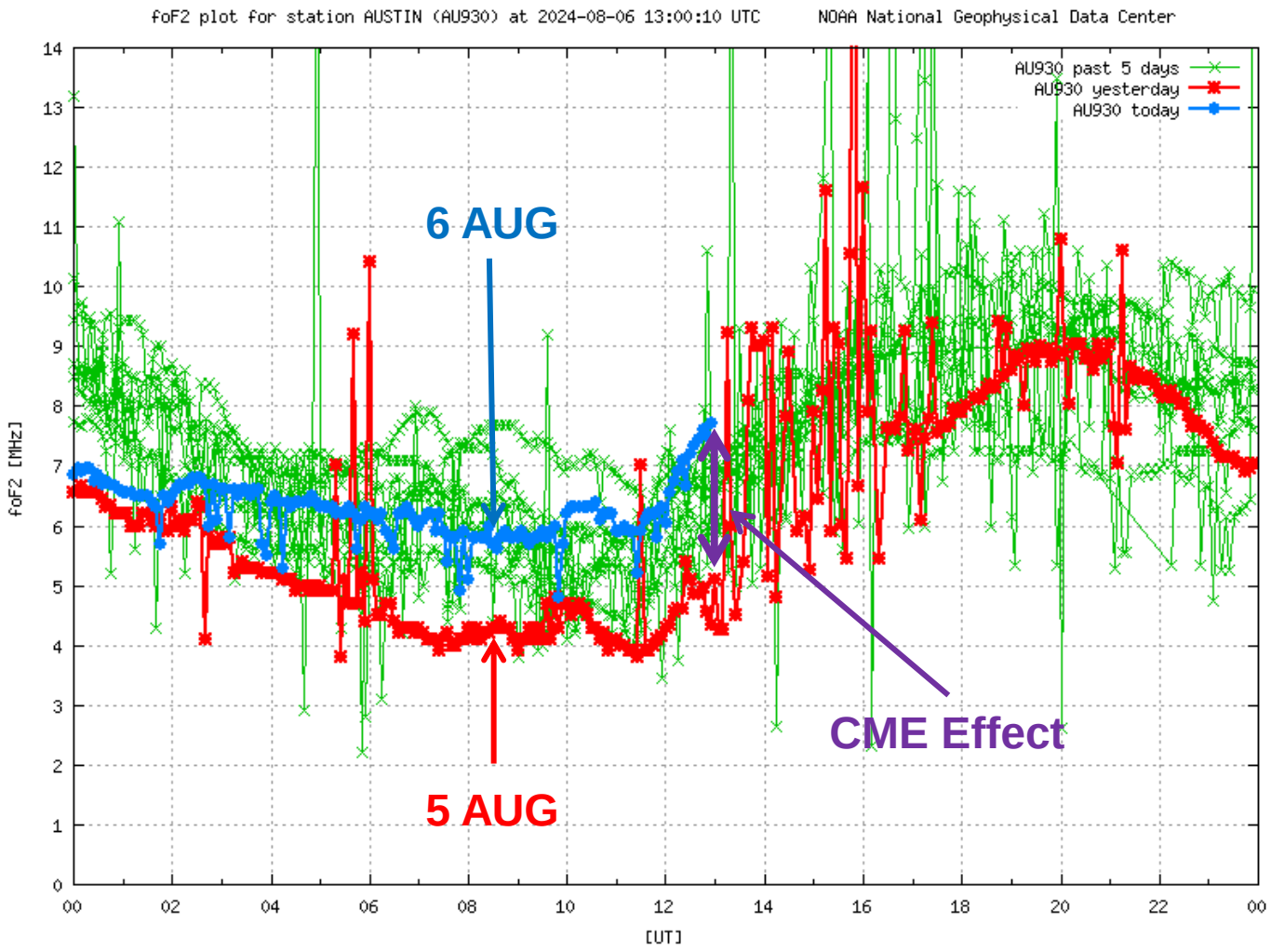
Ionogram Interpretation



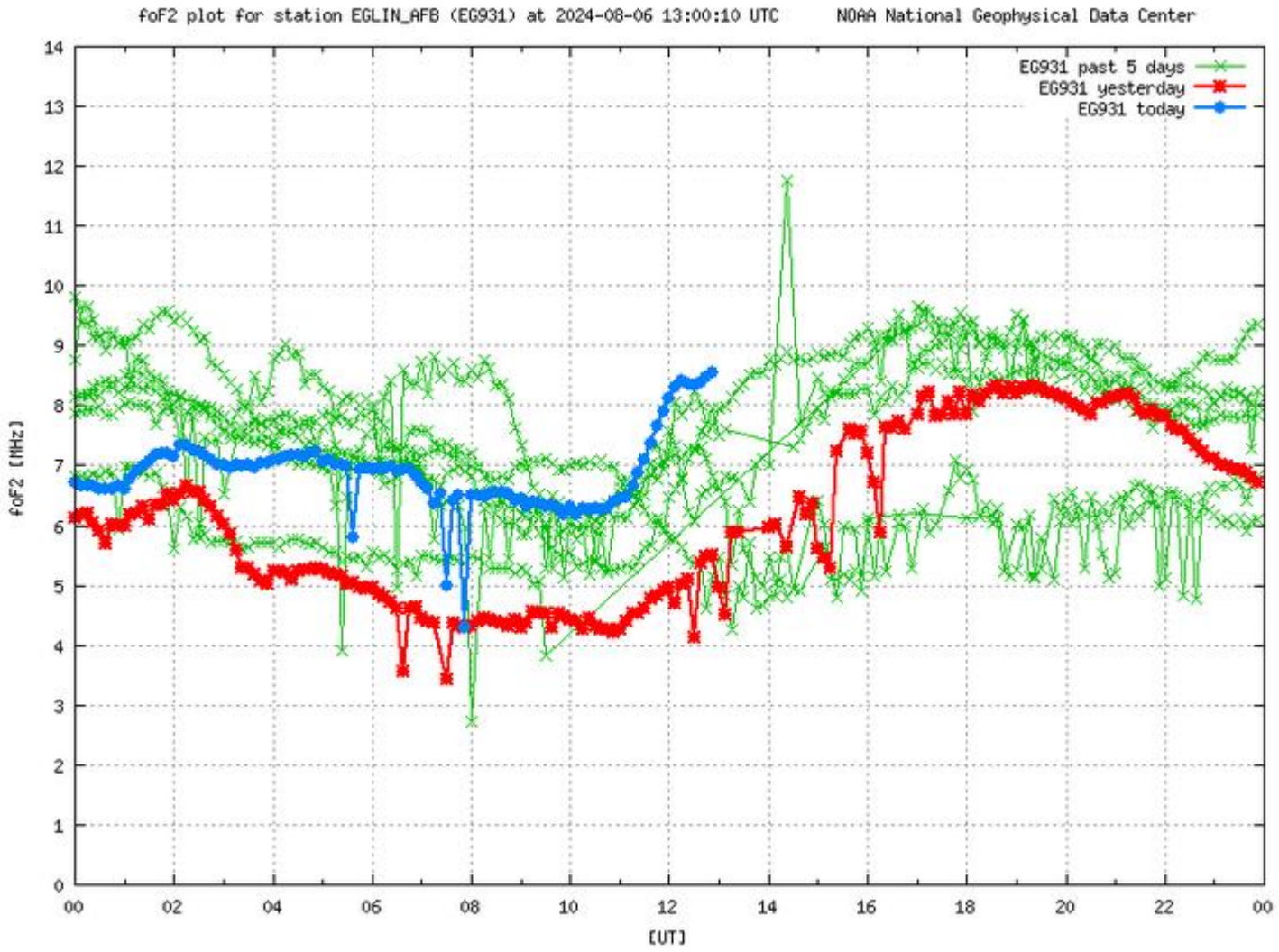
Austin Ionosonde – 6 AUG (0820 CDT)



foF2 Trend – Austin Ionosonde



foF2 Trend – Eglin Ionosonde



Notable Recent Events

SFI and SSN Reach New Highs

August 2, 2024 @ 09:00 UTC

The monthly solar flux and sunspot number averages for the month of July is now official. Both the SFI and SSN reached new highs for solar cycle 25 and highest values in over 22 years.

The solar flux average average was 198.6 and this is the highest it has been since February 2002 during solar cycle 23 when it was 205.6. The sunspot number average for last month was 196.5. This is the highest SSN value since December 2001 when the count was 213.4.

Not too bad for a solar cycle that many had destined to be one of the worst on record. Where do we go from here? We will find out over the next year during the expected solar maximum. Many more solar flares and geomagnetic storms still to come.

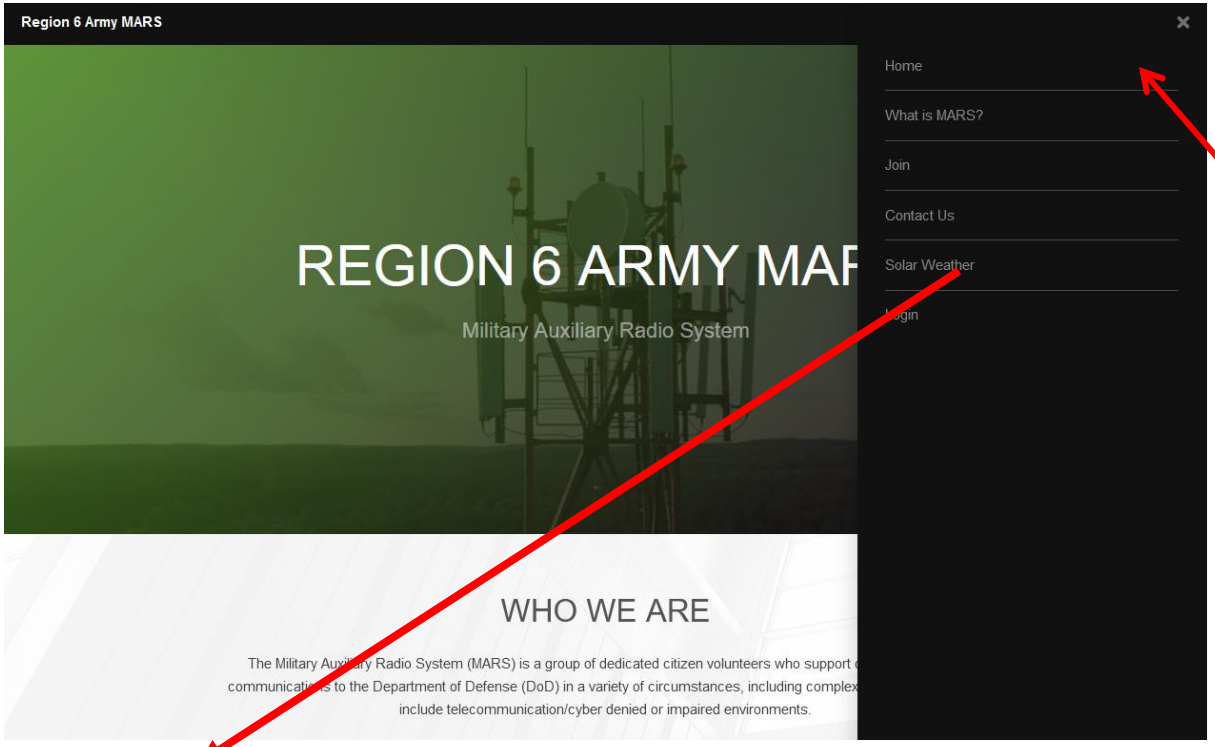
Bz South / Strong (G3) Geomagnetic Storm

August 4, 2024 @ 15:00 UTC (UPDATED)

The Bz component of the interplantary magnetic field (IMF) has been pointing south for the past several hours. Strong (G3) geomagnetic storming is being observed. This is likely the result of an expected CME passing just upstream of Earth. Not the best timing for aurora watchers in North America, but viewers in Europe should be alert later once it is dark outside.

ALERT: Geomagnetic K-index of 7
Threshold Reached: 2024 Aug 04 1459 UTC
Synoptic Period: 1200-1500 UTC
Active Warning: Yes
NOAA Scale: G3 - Strong

Solar Weather Data



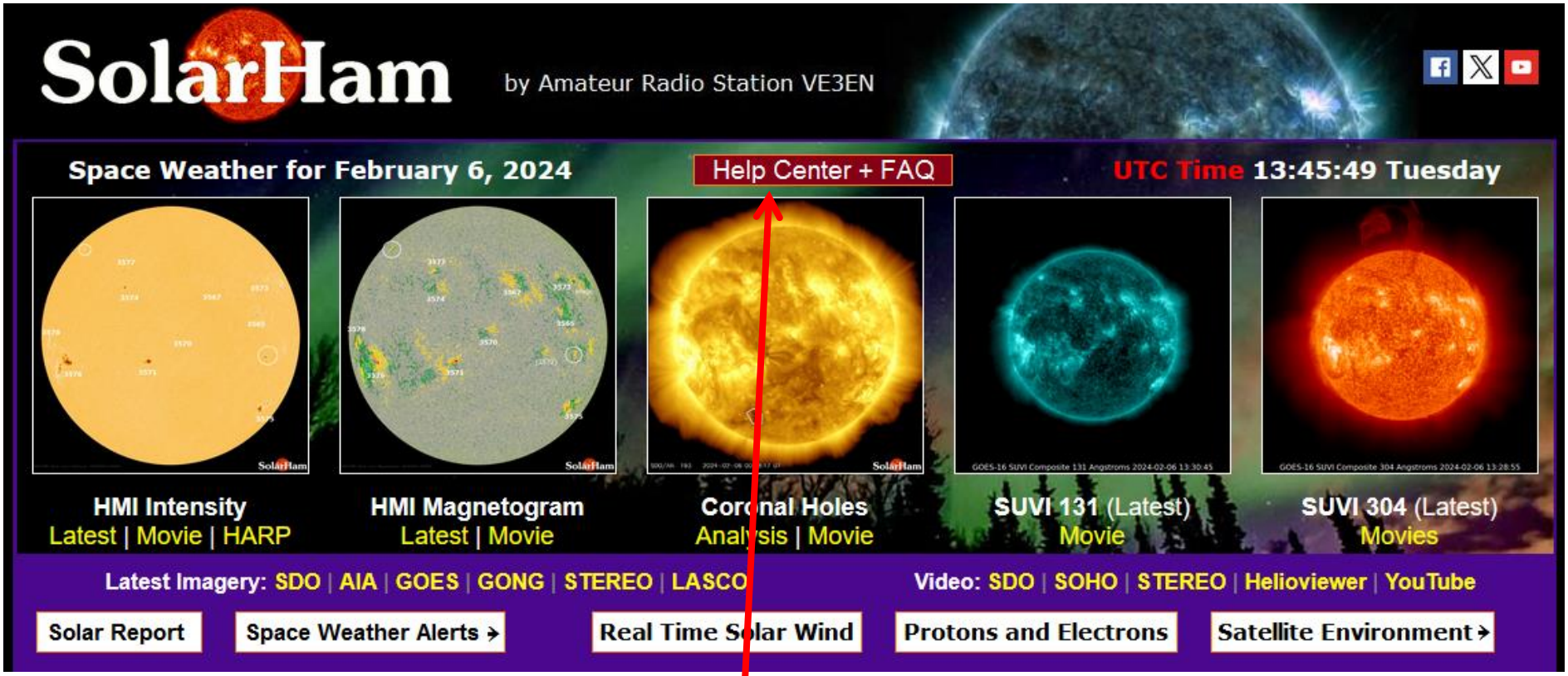
Menu

Solar Weather

Other Solar Weather Links of Interest

All Ionosondes

- DIDBase - Select Station List then EGLIN then year/month/day/time for Ionosonde plot.
- NOAA Solar Weather - Solar Weather plots of Kp and X-Ray and other solar emissions.
- Solen Solar Weather - Good general solar forecast from an individual.
- Solar Ham - SolarHam provides real time solar news, as well as consolidated data from various sources.



Note: URL is now https://solarham.com/

See New Addition

Welcome to the SolarHam Help Center

Below you will find an explanation of frequency used terms regarding space weather used on the SolarHam website.
Please note that this section is currently being built and will contain more information and answers to frequently asked questions soon.

spaceweather.com

News and information about the Sun-Earth environment

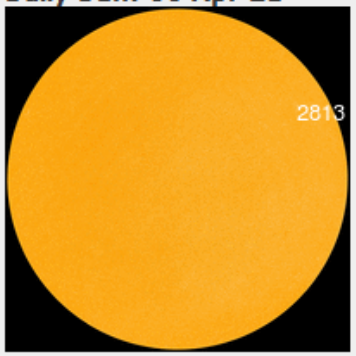
https://www.spaceweather.com/

Current Conditions

Solar wind
speed: **314.8** km/sec
density: **9.9** protons/cm^3
more data: ACE, DSCOVR
Updated: Today at 1225 UT

X-ray Solar Flares
6-hr max: **A1** 1027 UT Apr06
24-hr: **A1** 1515 UT Apr05
explanation | more data
Updated: Today at: 1230 UT

Daily Sun: 06 Apr 21



Sunspot AR2813 is decaying, and poses no threat for strong flares.
Credit: SDO/HMI

FLYING TO THE VOLCANO: Iceland's Geldingadalur volcano has turned into an popular tourist attraction---especially since auroras were sighted above the glowing lava. Early this morning, Tuesday, April 6th, Brian Emfinger saw auroras before he even reached the Reykjanes peninsula:

QUESTIONS?

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