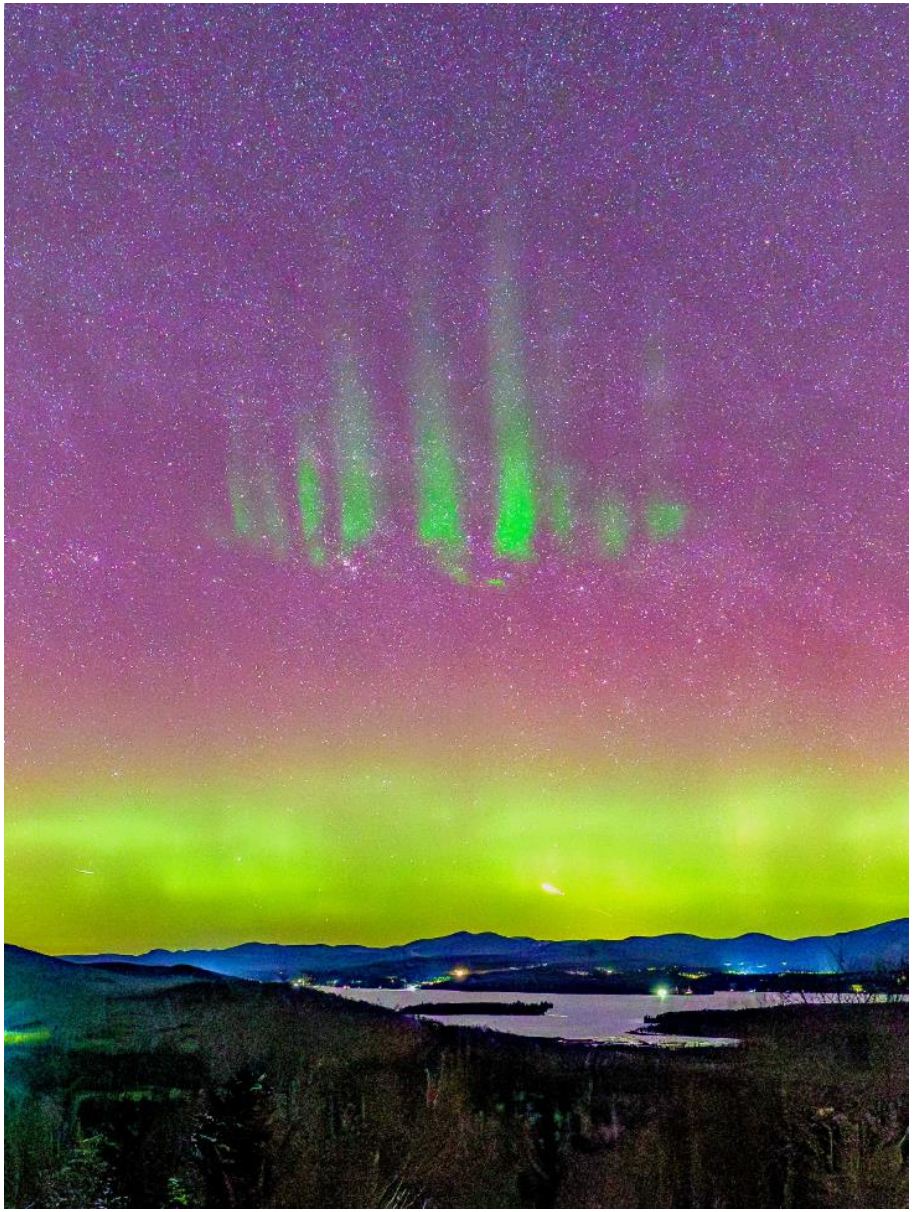


SOLAR WEATHER
1 APR 2025

Lewis Thompson
W5IFQ

Aurora and Steve

Taken by Erik Fraser on March 21, 2021 @ Rangeley Maine USA

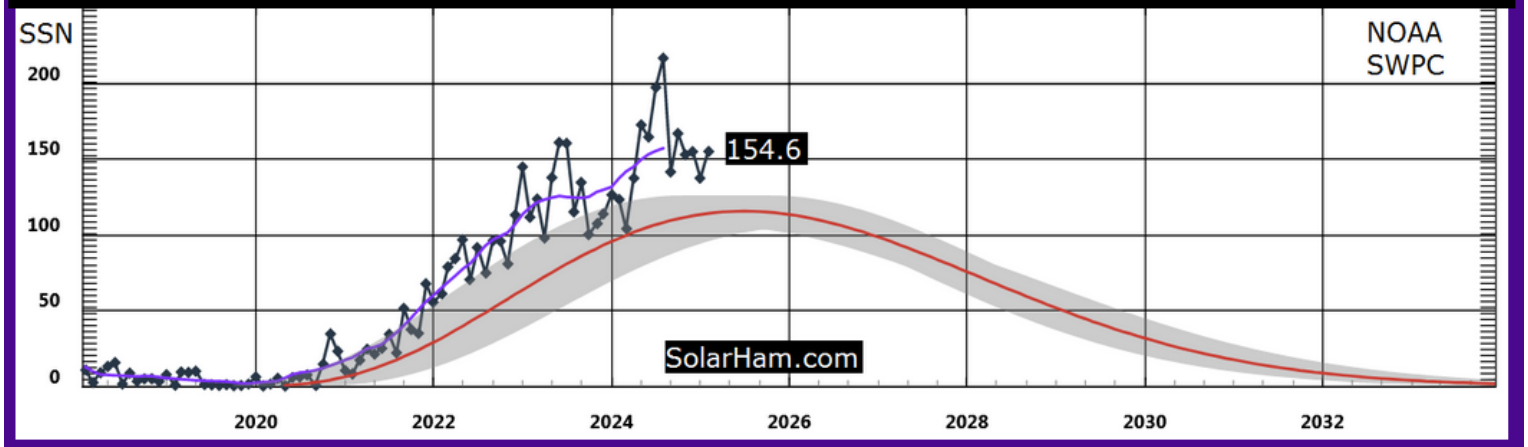
Steve – Strong Thermal Emission Velocity enhancement

Solar Cycle 25 Progression

(Updated March 8, 2025)

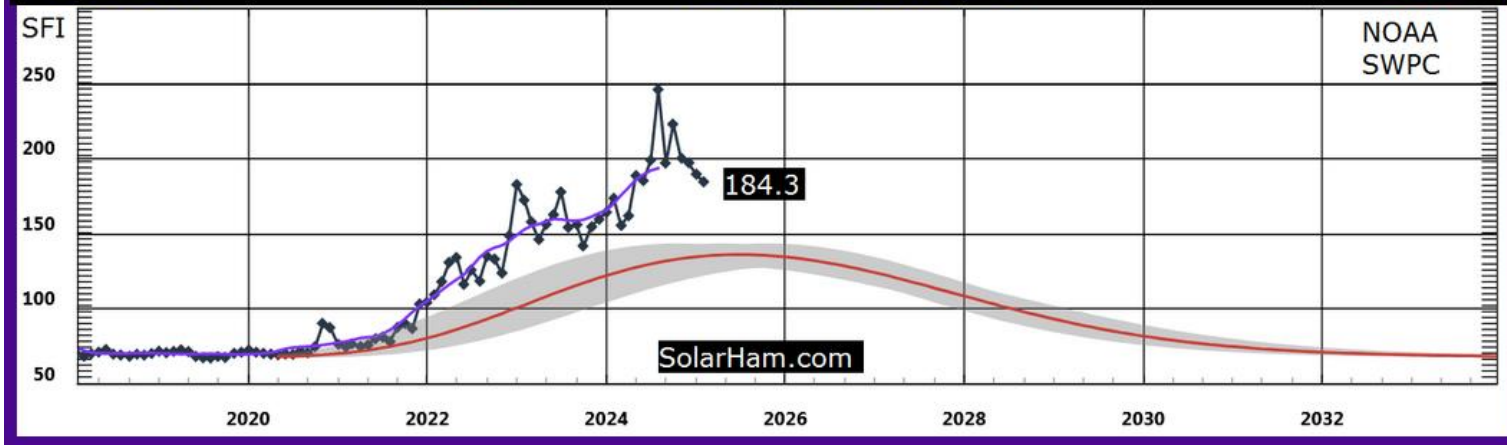
Sunspot Number Progression (February 2025)

Predicted SSN: **113.8** Actual: **154.6** Latest Smoothed Predicted SSN (8/2024): **107.8** Actual: **156.7**



10.7cm Solar Flux Progression (February 2025)

Predicted SFI: **134.8** Actual: **184.3** Latest Smoothed Predicted SFI (8/2024): **130.6** Actual: **193.3**



SolarHam

Indices: (4/1 @ 00:35 UTC) SFI 171 ▲14 SSN 151

3 Day Geomagnetic Forecast

Apr. 1	Apr. 2	Apr. 3
3 (G0)	2-3 (G0)	2 (G0)
Max Kp		
M-Lat 05% H-Lat 30%	M-Lat 05% H-Lat 30%	M-Lat 01% H-Lat 20%
Probabilities		

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

Detailed Forecast

Current Moon Phase:

14% Illumination

Waxing Crescent

Flare Events (M2+) Past 48 Hours

M5.6 AR 4046 4/1/25 @ 06:46 UTC

Event Report | Top Solar Flares

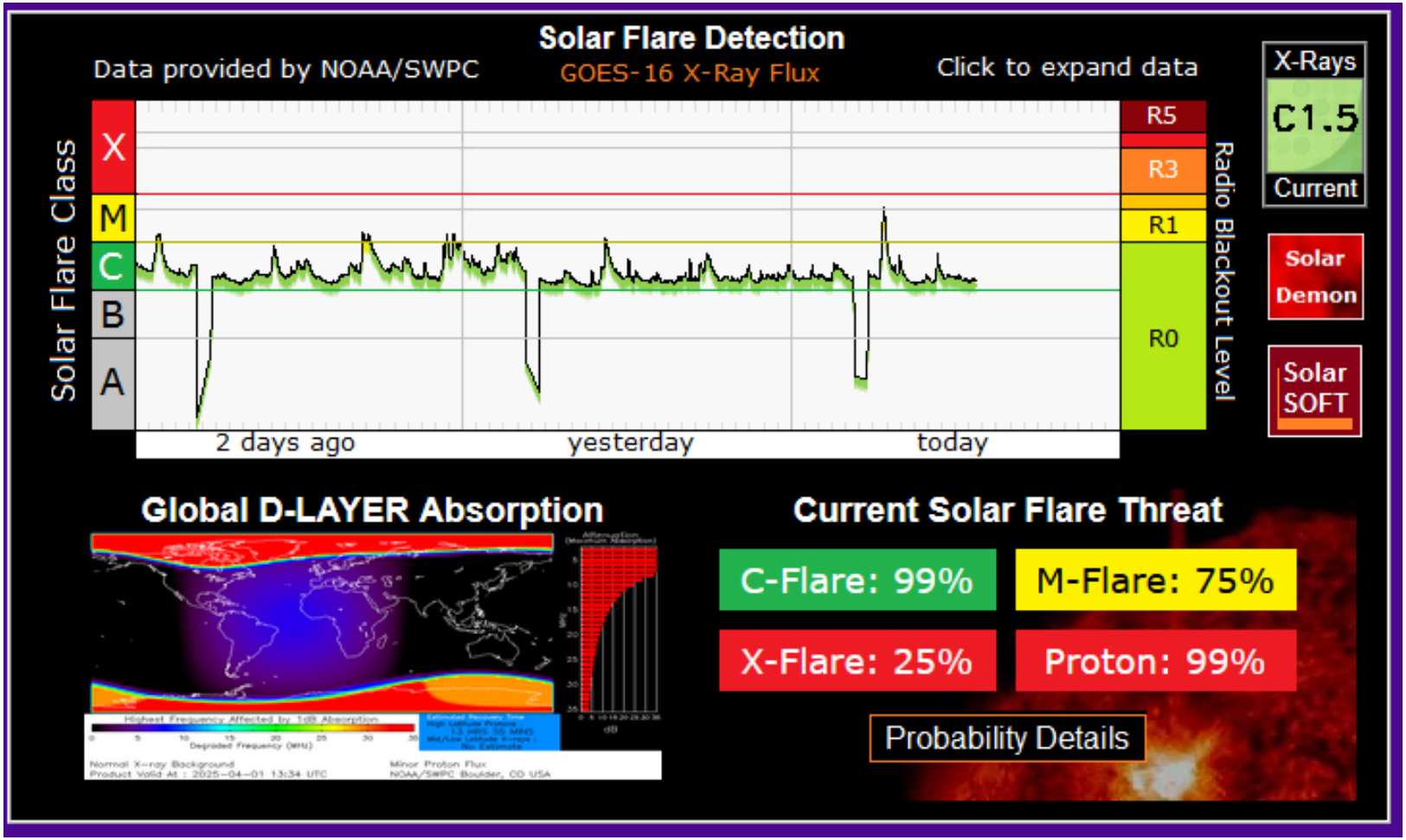
Visible Sunspot Regions

Sunspot Summary | SRS

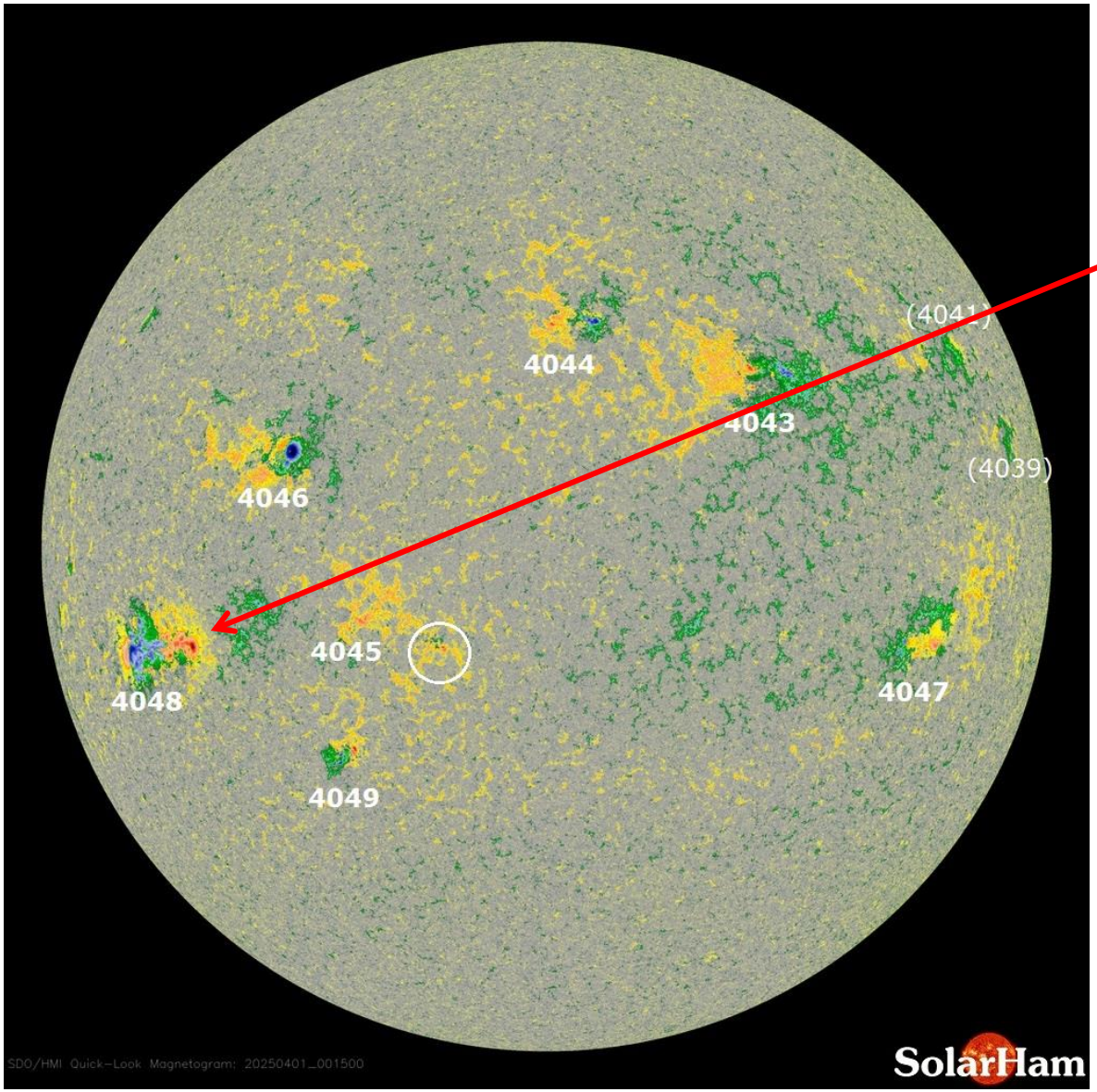
AR 4049	B	S31E27	-
AR 4048	BGD	S16E53	Growing
AR 4047	B	S16W50	Stable
AR 4046	BG	N05E31	Declining
AR 4045	A	S15E23	Declining
AR 4044	B	N20W04	Declining
AR 4043	B	N14W27	Growing

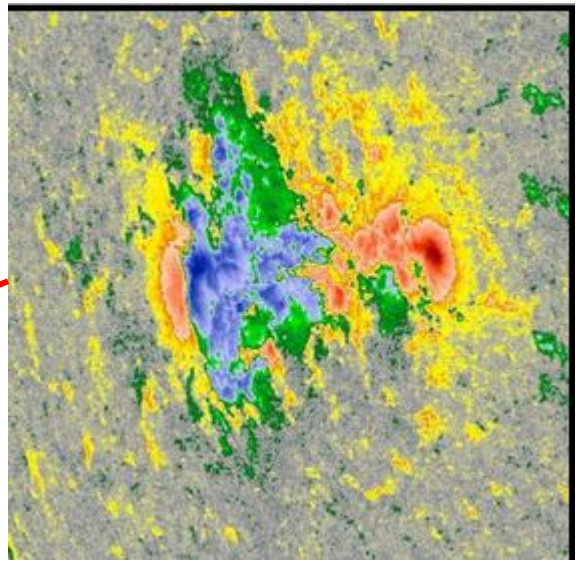
Updated @ 00:45 UTC (April 1)

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
2 days ago
yesterday
today
R5
R3
R1
R0
Radio Blackout Level
X-Rays
C1.5
Current
Solar Demon
Solar SOFT
Global D-LAYER Absorption
Current Solar Flare Threat
C-Flare: 99%
M-Flare: 75%
X-Flare: 25%
Proton: 99%
Probability Details

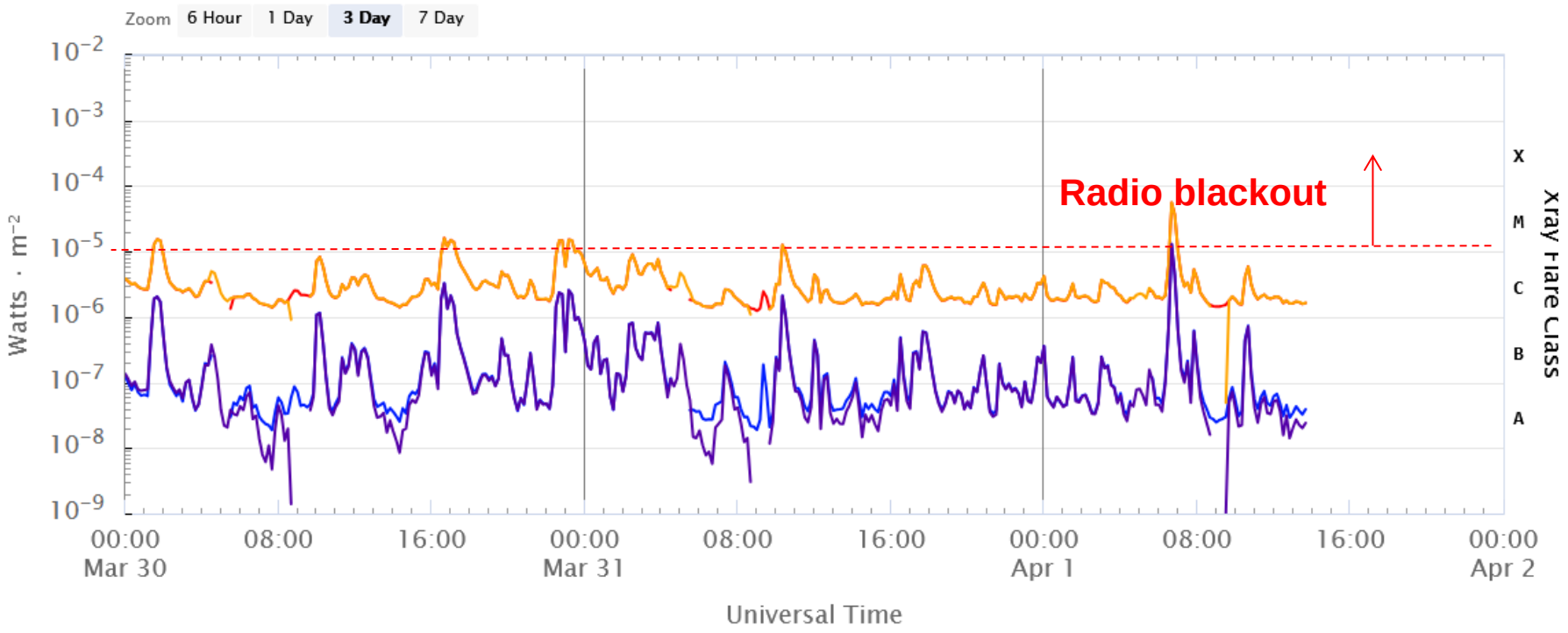
Sun Spots



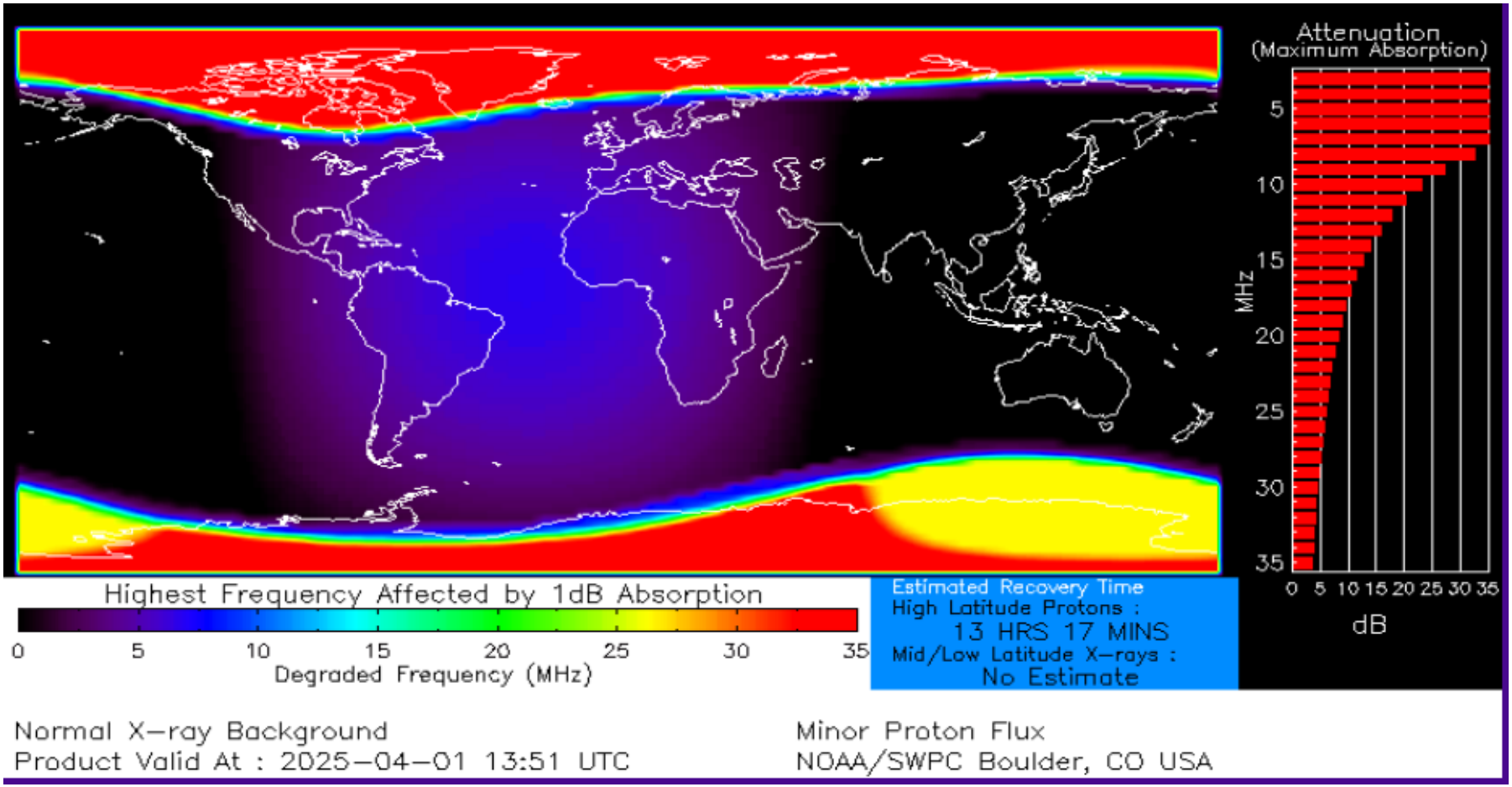


Beta-Gamma-Delta

Solar X-Ray Flux: 30 MAR – 1 APR 2025

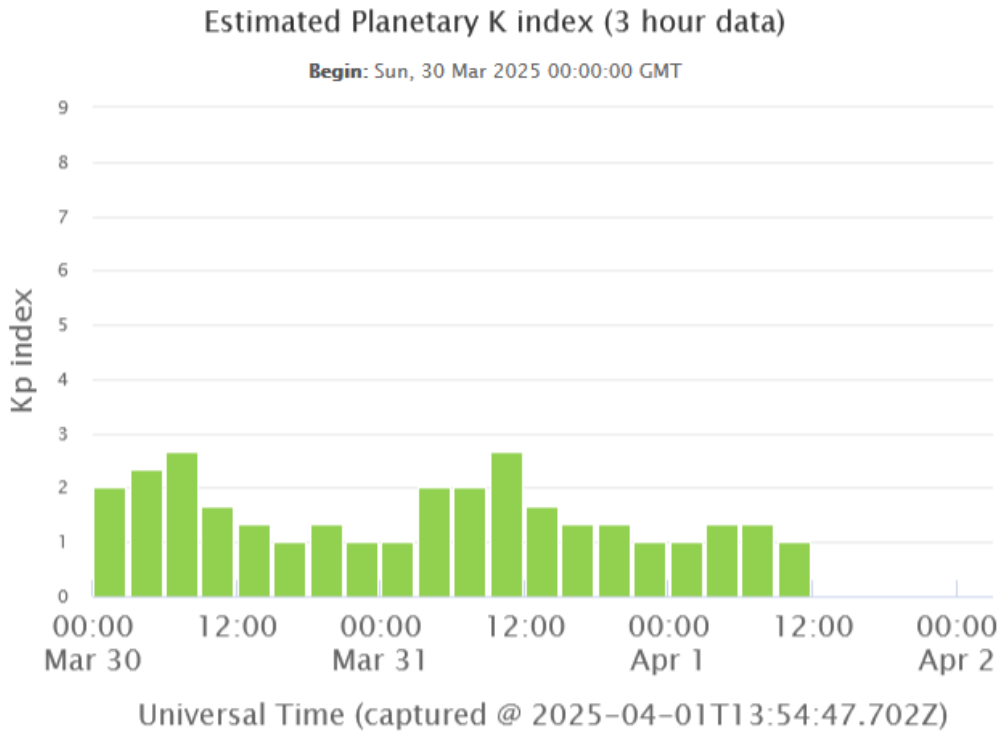


NOAA – D-Region Absorption Predictions



Earth’s Geomagnetic Activity

PLANETARY K INDEX



Generally, as planetary K-Index rises, critical frequency is suppressed.

K-Index	Effect
0-2	Inactive/Quiet, no impact on HF
3-4	Unsettled/Active, minor HF fade in higher latitudes
5-6	HF fade at higher latitudes
7-8	HF sporadic
9	HF impossible above 40M

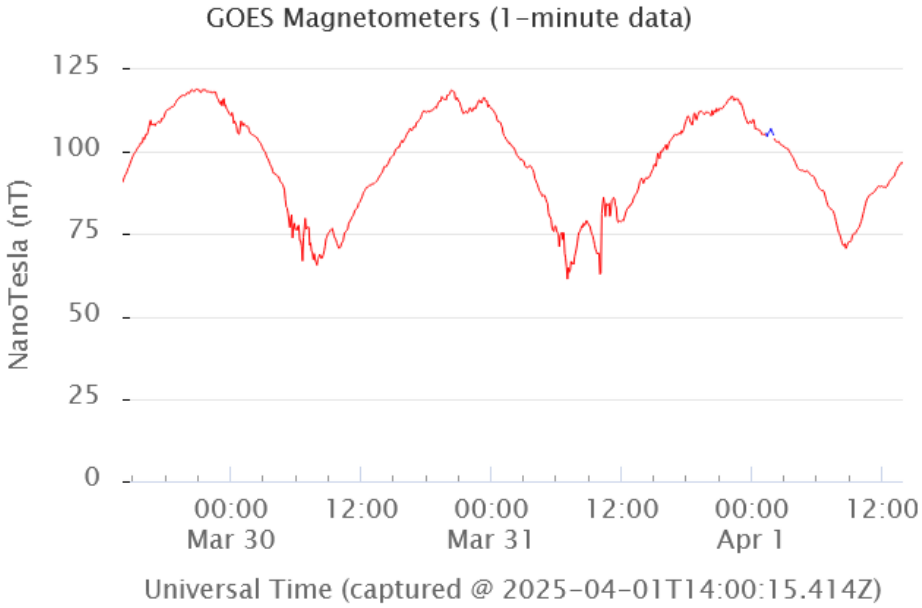
Geomagnetic Conditions: 1 APR 2025

Solar wind:
Bz = 2 nT
speed = 415 km/sec
density = 2.58 protons/cm^3

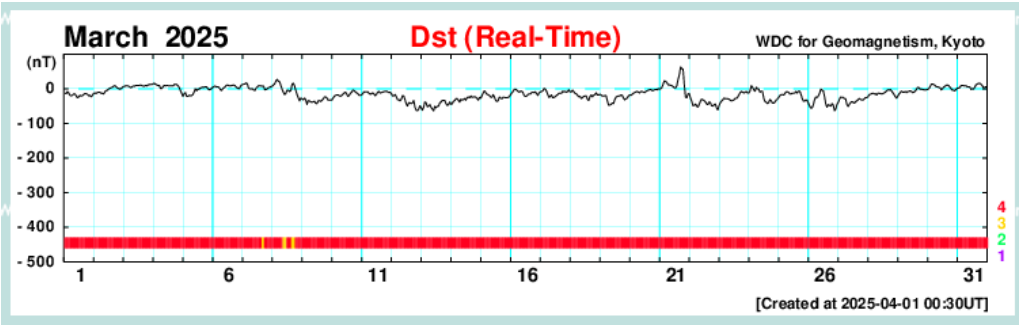
(From – NOAA DSCOVR
In L1, Lagrange Point)

Dst = 14 nT (Ring Field)

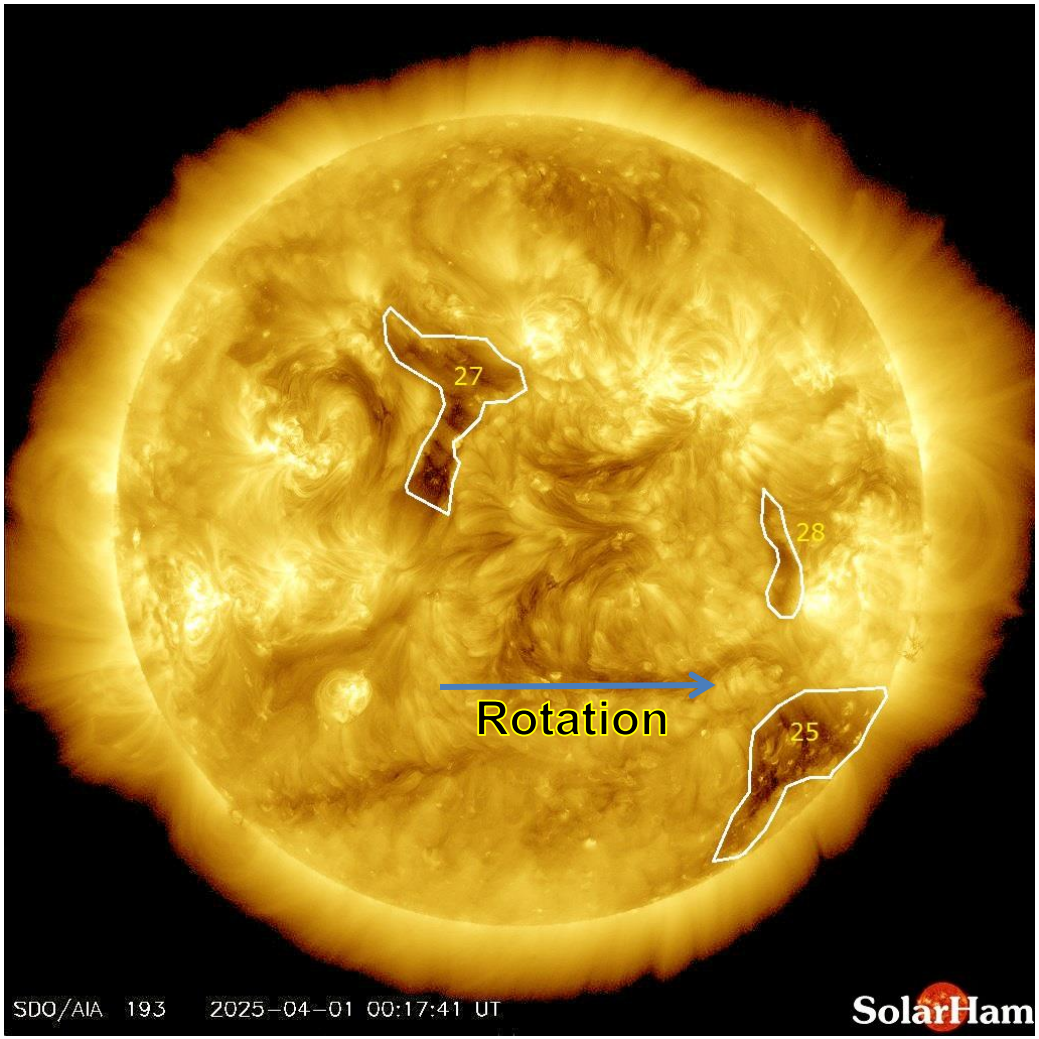
(From – Data Analysis Center
For Geomagnetics and Space
Magnetism – Kyoto University)



From – GOES 16
In geostationary orbit



Coronal Holes – 1 APR 2025

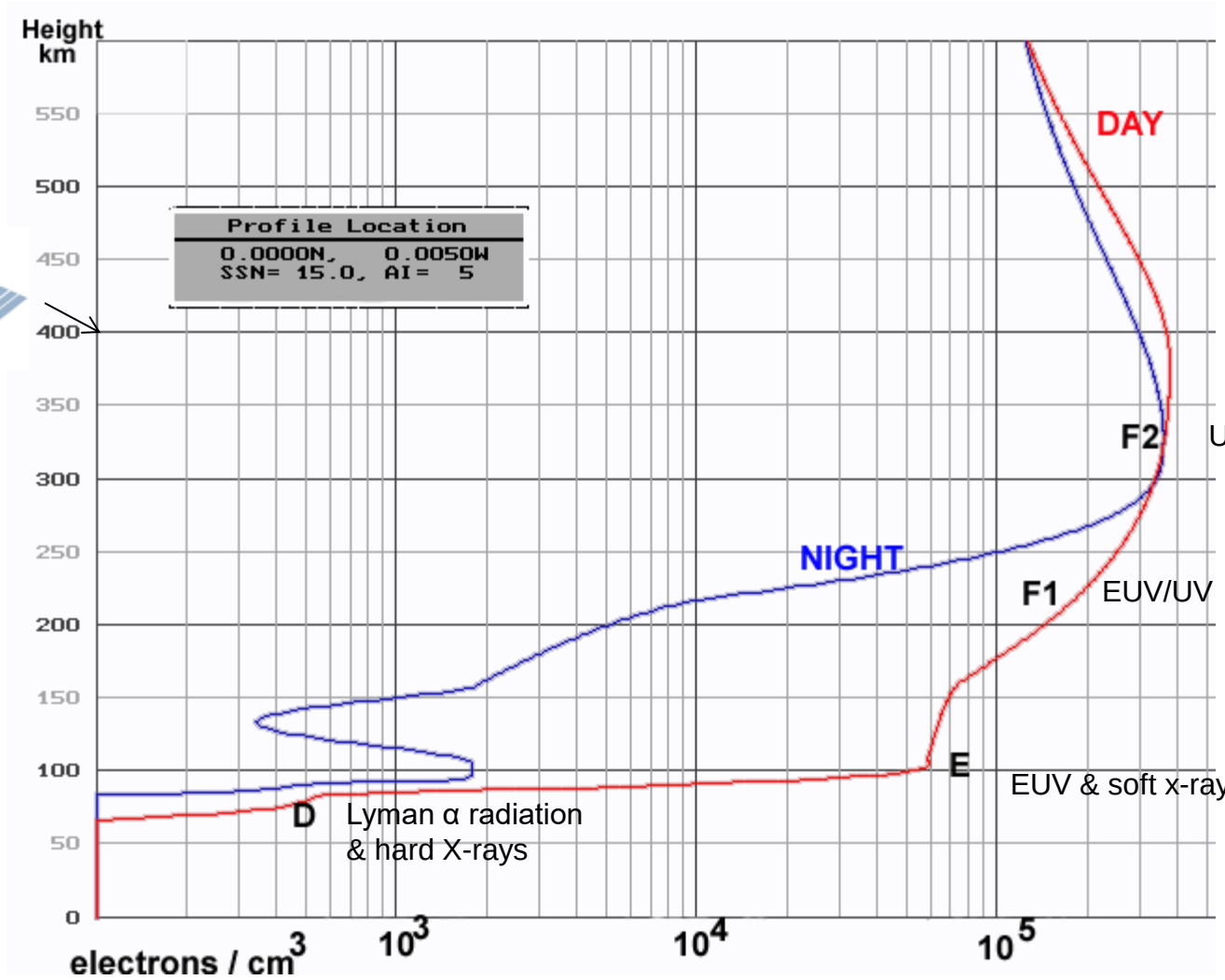


Analysis

There are currently no large coronal holes facing Earth.

Ionosphere Creation

Gravity

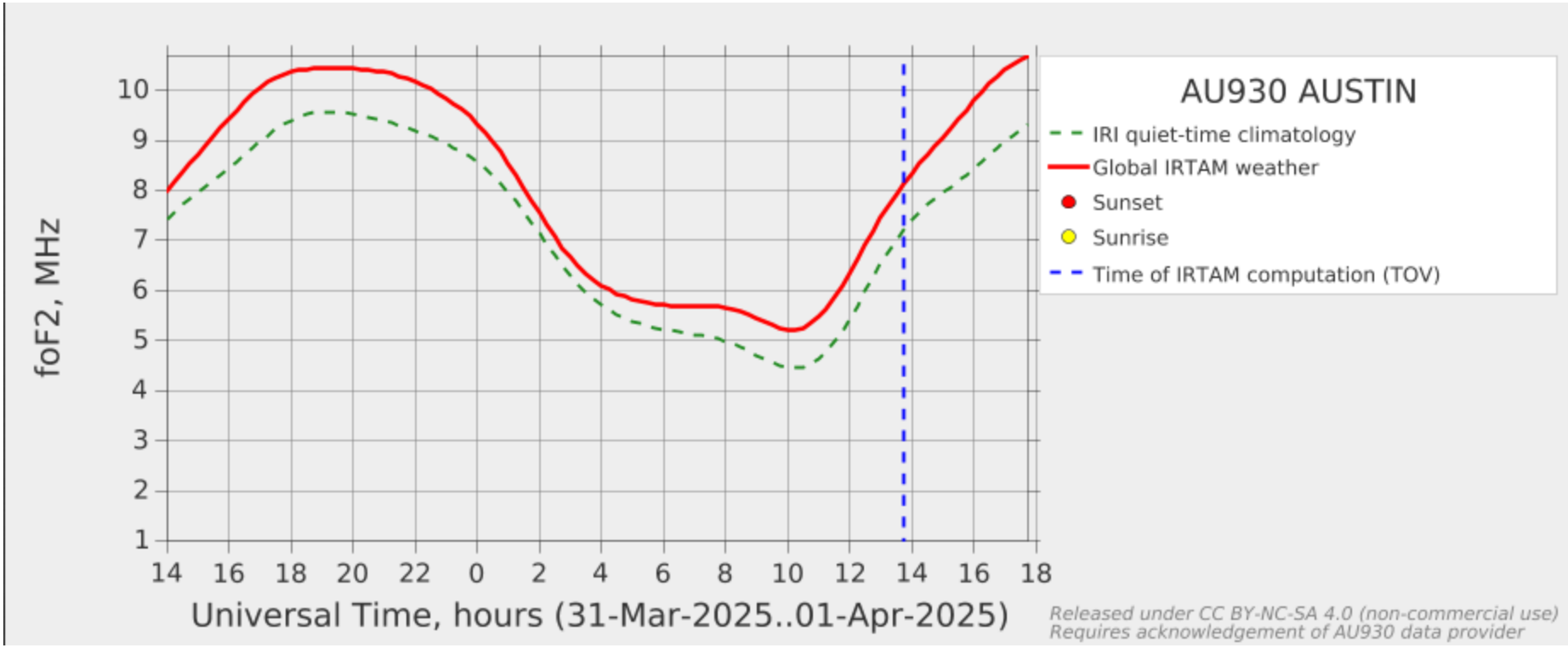


Solar Radiation

Austin Ionosonde Down

- The Austin Ionosonde is down due to a failed primary (C:) Hard Disk failure. ARL:UT is attempting repairs but has no funding.

GAMBIT – Trending Chart for Austin Ionosonde



Notable Recent Events

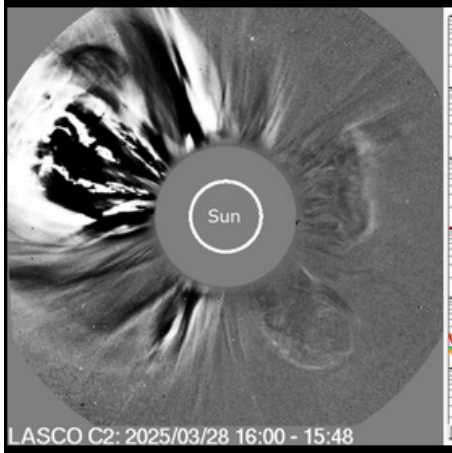
Moderate (S2) Radiation Storm

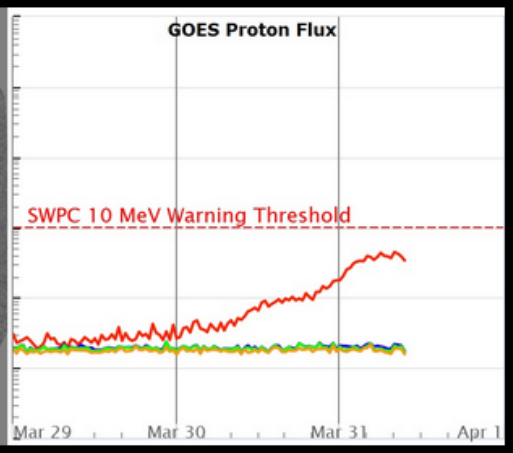
March 31, 2025 @ 10:15 UTC (UPDATED)

Proton levels streaming past Earth are at an elevated level, however remains below the minor (S1) radiation storm threshold for now. This is likely the result of particles finally finding their way past our planet following the large CME observed off the east limb on Friday. Had that eruption been Earth directed, we potentially would have seen geomagnetic storming that rivaled the May and October 2024 storms or perhaps even a tad stronger. For now we sit and wait patiently for the next big aurora show.

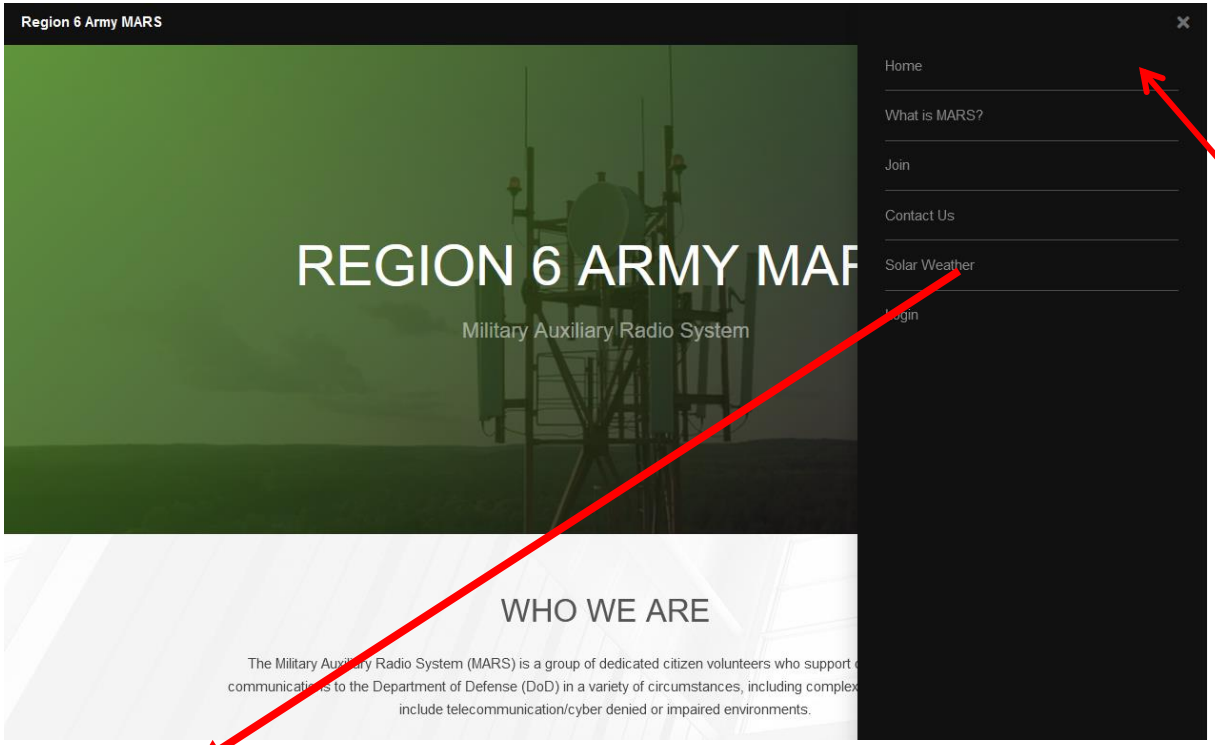
UPDATE: A minor (S1) radiation storm is currently in progress. The main impact with a minor (S1) storm is small effects on High Frequency (HF) radio signals through the polar regions.

UPDATE #2: The moderate (S2) radiation storm threshold was reached at 02:05 UTC (April 1).





Solar Weather Data



Menu

Solar Weather

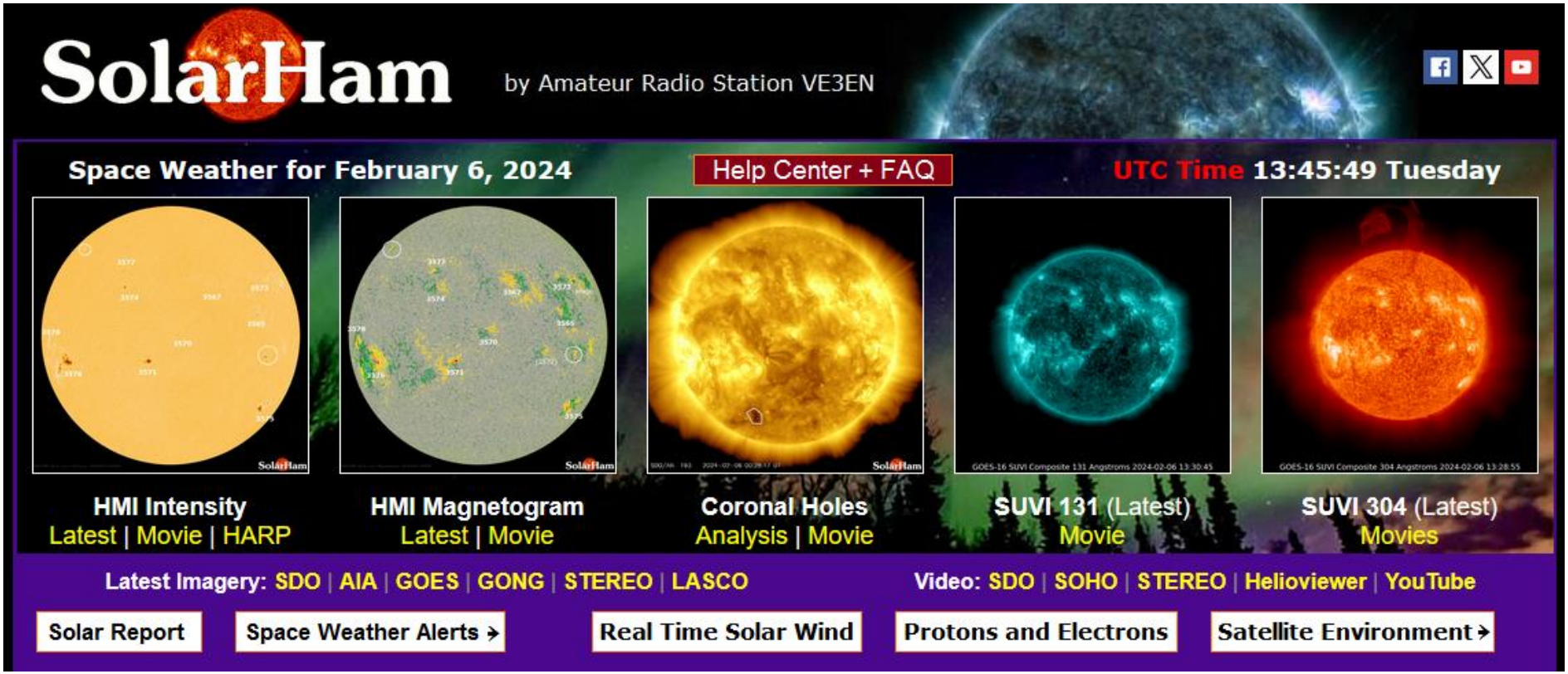
All Ionosondes

GAMBIT URL

Austin Ionosonde

- GAMBIT - Global Assimilative Model of Bottomside Ionosphere Timeline
- Austin
- Boulder
- Eglin

- 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.


SolarHam
by Amateur Radio Station VE3EN
Space Weather for February 6, 2024
Help Center + FAQ
UTC Time 13:45:49 Tuesday
HMI Intensity
Latest | Movie | HARP
HMI Magnetogram
Latest | Movie
Coronal Holes
Analysis | Movie
SUVI 131 (Latest)
Movie
SUVI 304 (Latest)
Movies
Latest Imagery: SDO | AIA | GOES | GONG | STEREO | LASCO
Video: SDO | SOHO | STEREO | Helioviewer | YouTube
Solar Report
Space Weather Alerts
Real Time Solar Wind
Protons and Electrons
Satellite Environment

spaceweather.com

News and information about the Sun-Earth environment

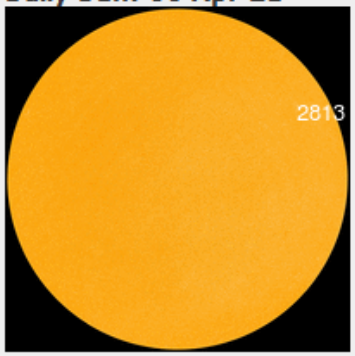
https://www.spaceweather.com/

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?

Lewis Thompson

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512-587-9944