SOLAR WEATHER
5 NOV 2024

Lewis Thompson
W5IFQ

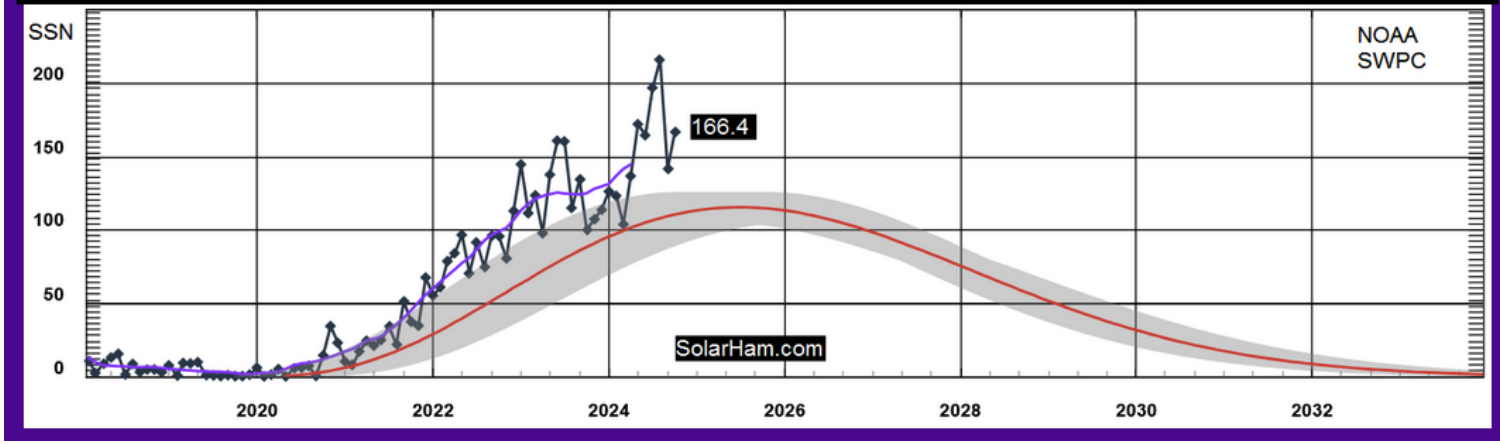
Taken by Bibi Chang on October 10, 2024 @ Anchorage, Alaska

Solar Cycle 25 Progression

(Updated November 3, 2024)

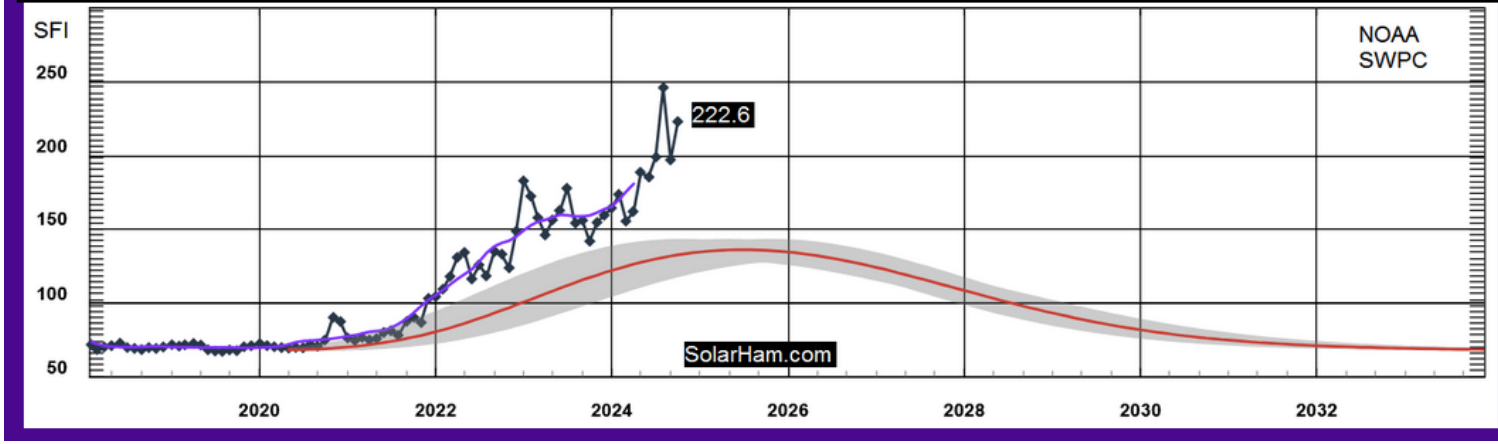
Sunspot Number Progression (October 2024)

Predicted SSN: **110.3** Actual: **166.4** Latest Smoothed Predicted SSN (4/2024): **101.4** Actual: **144.4**



10.7cm Solar Flux Progression (October 2024)

Predicted SFI: **132.4** Actual: **222.6** Latest Smoothed Predicted SFI (4/2024): **126.1** Actual: **180.4**



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Indices: (11/5 @ 00:35 UTC) SFI 242 ▲1 SSN 191 ▼29 AREA 1810 ▼290

3 Day Geomagnetic Forecast

Nov. 5	Nov. 6	Nov. 7
3-4 (G0)	3-4 (G0)	4-5 (G1)
Max Kp		
M-Lat 10% H-Lat 40%	M-Lat 10% H-Lat 40%	M-Lat 15% H-Lat 50%
Probabilities		

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

Detailed Forecast

Current Moon Phase:

15% Illumination

Waxing Crescent

Flare Events (M2+) Past 48 Hours

M2.6	E Limb	11/5/24 @ *06:54 UTC*
M5.5	AR 3883	11/4/24 @ *15:38 UTC*
M3.7	AR 3883	11/4/24 @ *15:32 UTC*
M3.8	AR 3883	11/4/24 @ *01:40 UTC*

└ Type II RE (307 km/s) IV DIM

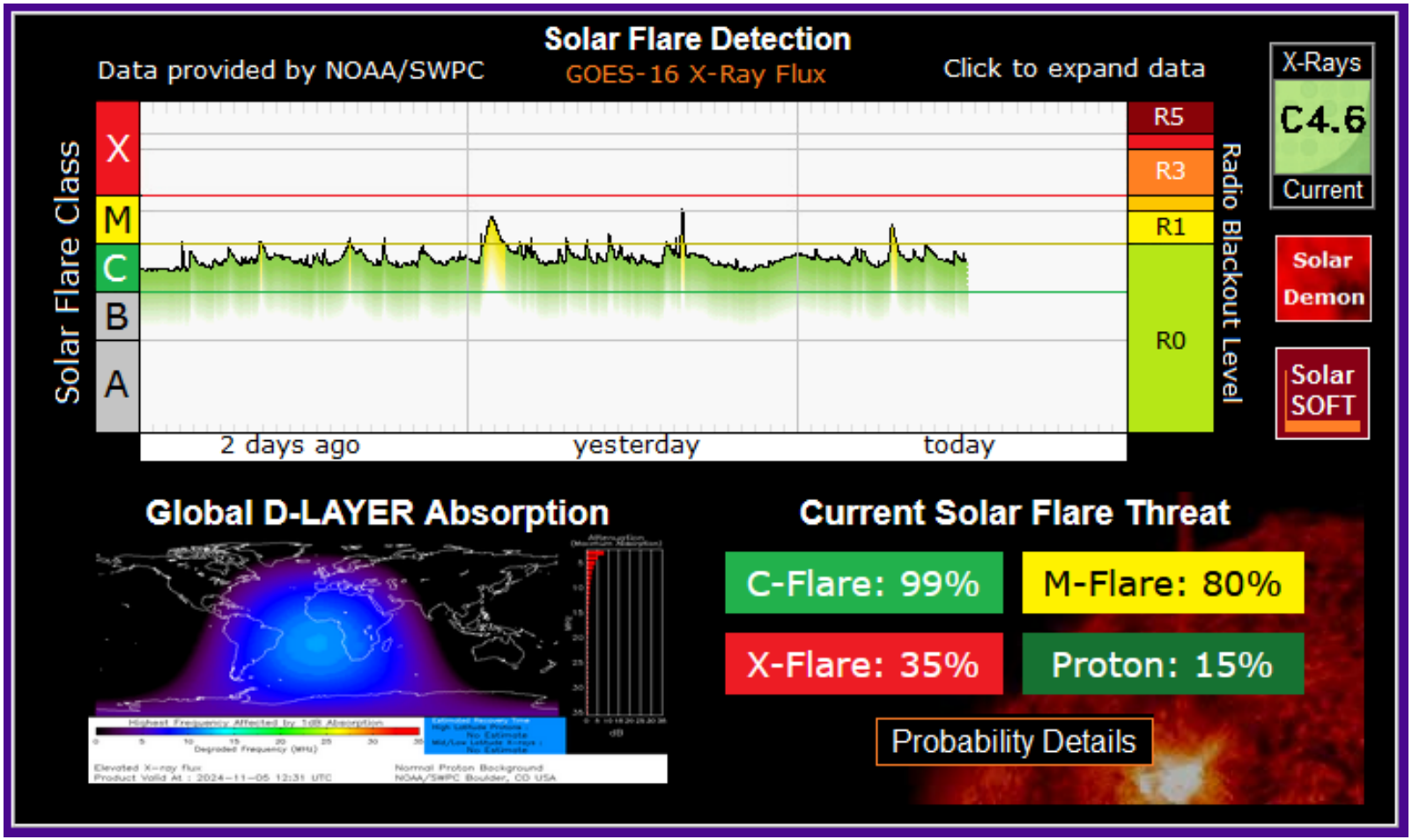
Event Report | Top Solar Flares

Visible Sunspot Regions

Sunspot Summary | SRS

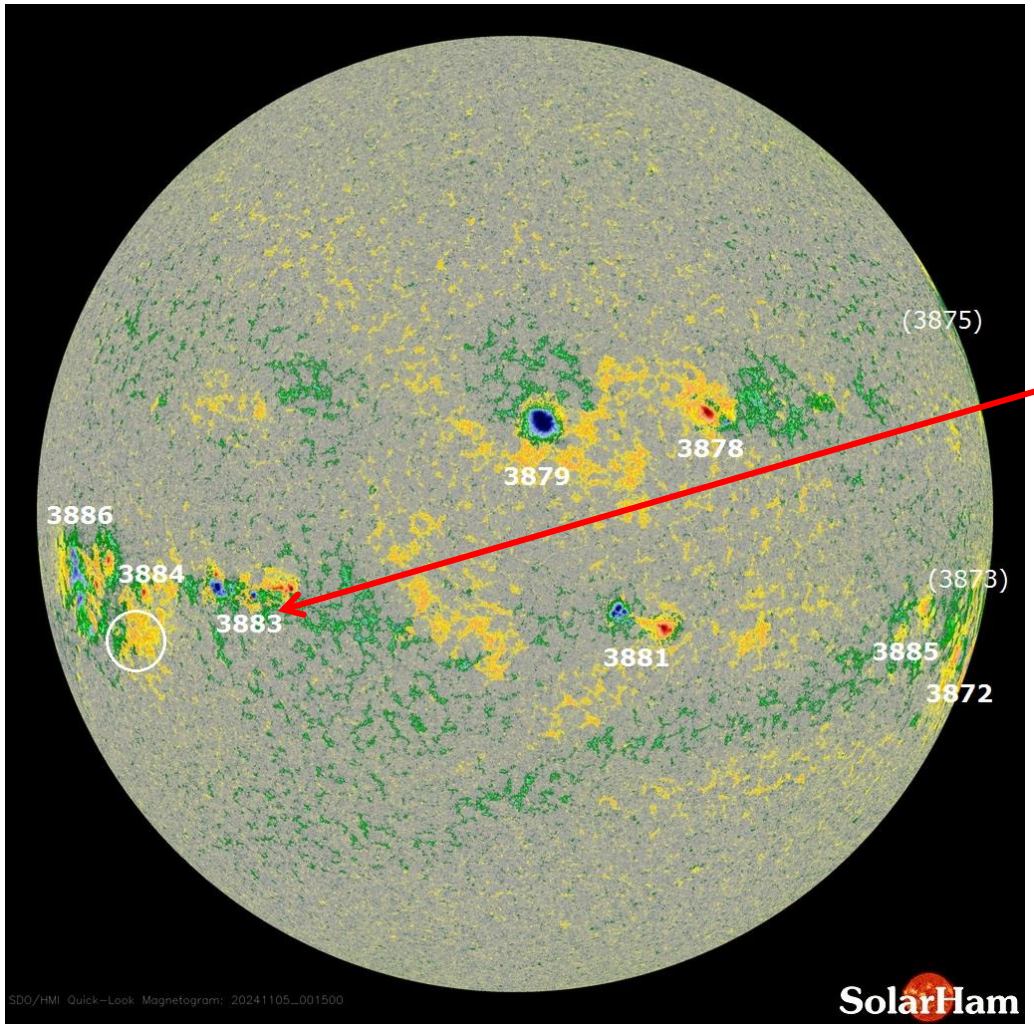
AR 3886	BG	S05E62	*Growing*
AR 3885	B	S10W58	*Declining*
AR 3884	B	S07E51	*Declining*
AR 3883	BGD	S06E37	*Growing*
AR 3881	BG	S09W15	*Stable*
AR 3879	A	N15W04	*Stable*
AR 3878	B	N16W30	*Declining*
AR 3873	A	S09W70	*Stable*
AR 3872	B	S16W76	*Declining*

Updated @ 00:45 UTC (November 5)

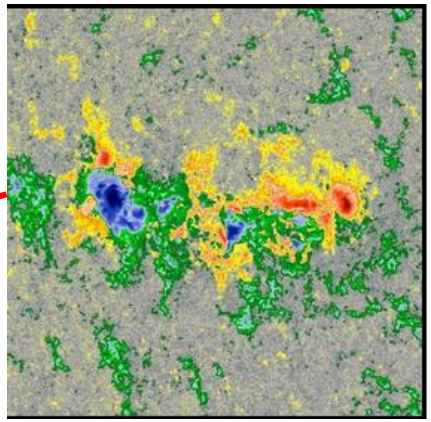

SolarHam
Solar Flare Detection
Data provided by NOAA/SWPC
GOES-16 X-Ray Flux
Click to expand data
Solar Flare Class
X
M
C
B
A
2 days ago
yesterday
today
R5
R3
R1
R0
Radio Blackout Level
X-Rays
C4.6
Current
Solar Demon
Solar SOFT
Global D-LAYER Absorption
Current Solar Flare Threat
C-Flare: 99%
M-Flare: 80%
X-Flare: 35%
Proton: 15%
Probability Details

Sun Spots

Magnetogram Image (Updated November 5, 2024)

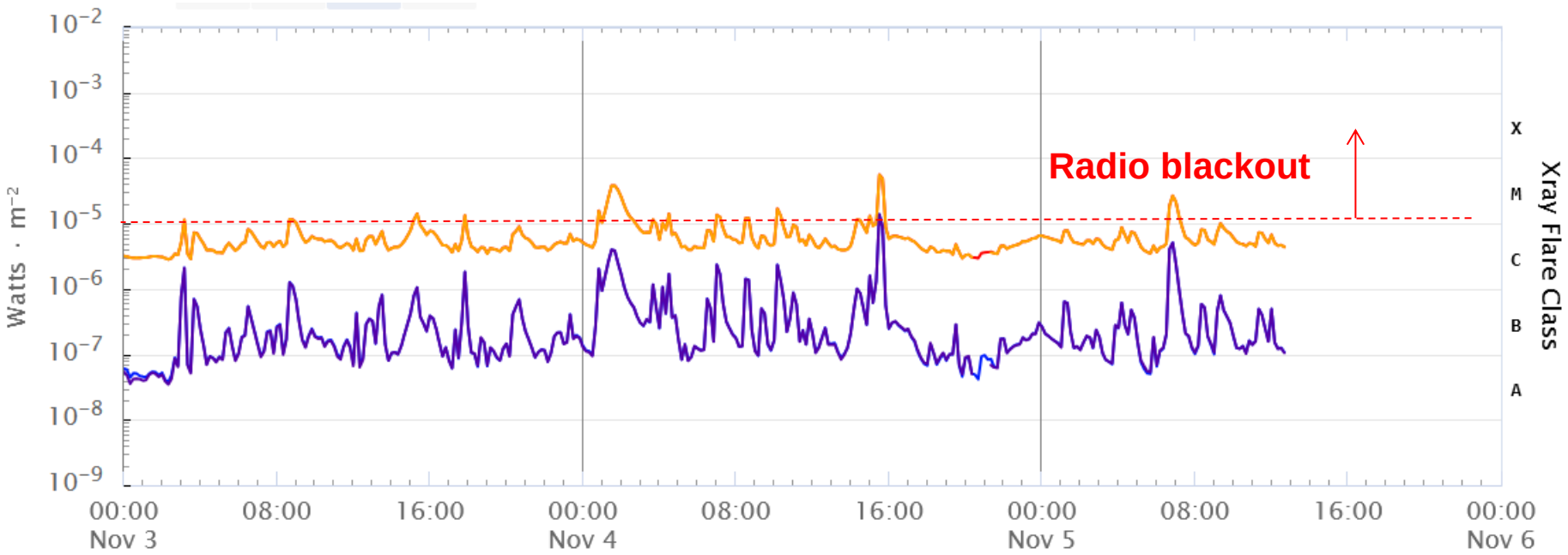


Uses Zeeman effect to measure polarity of magnetic fields

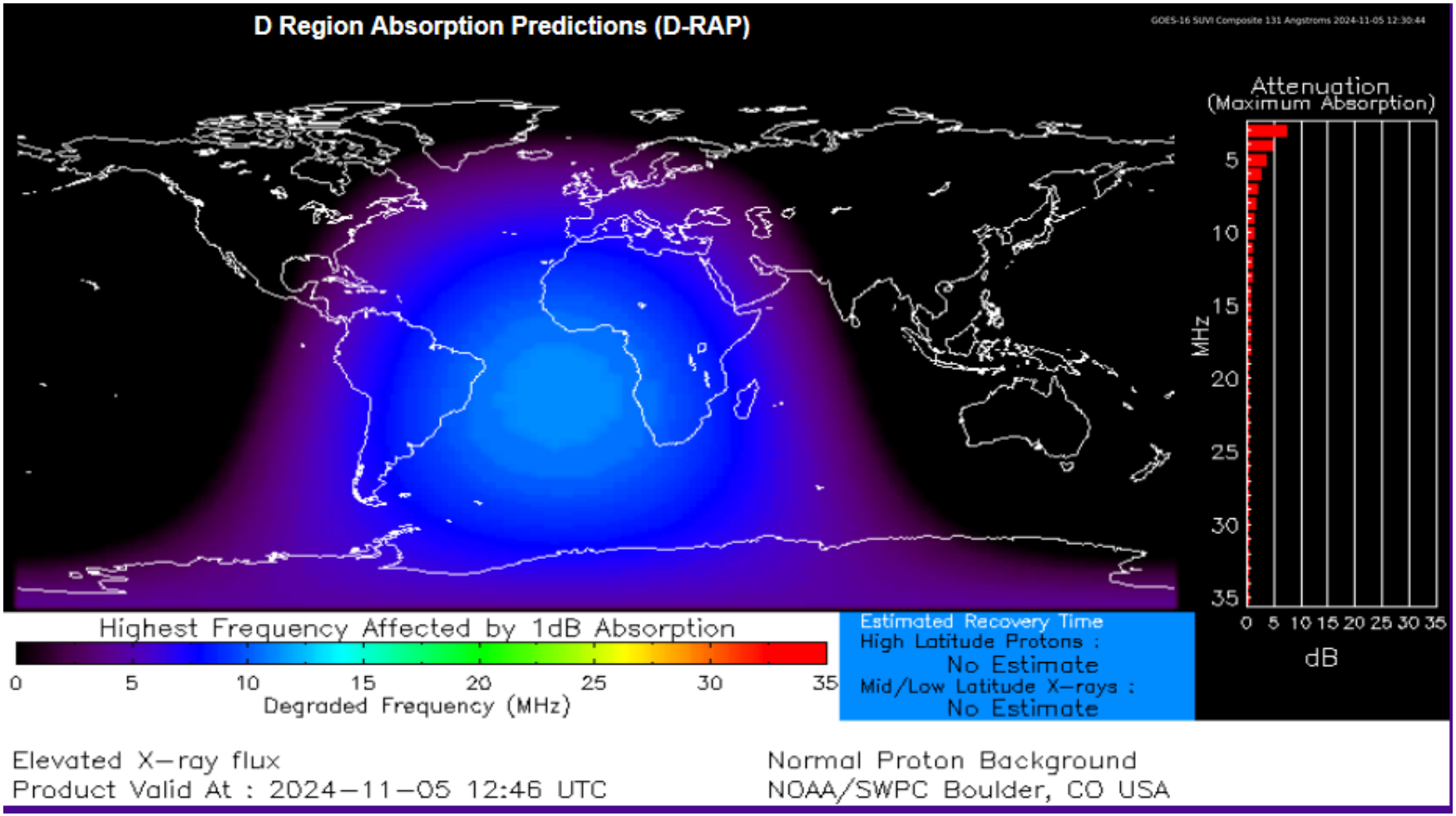


Beta-Gamma-Delta

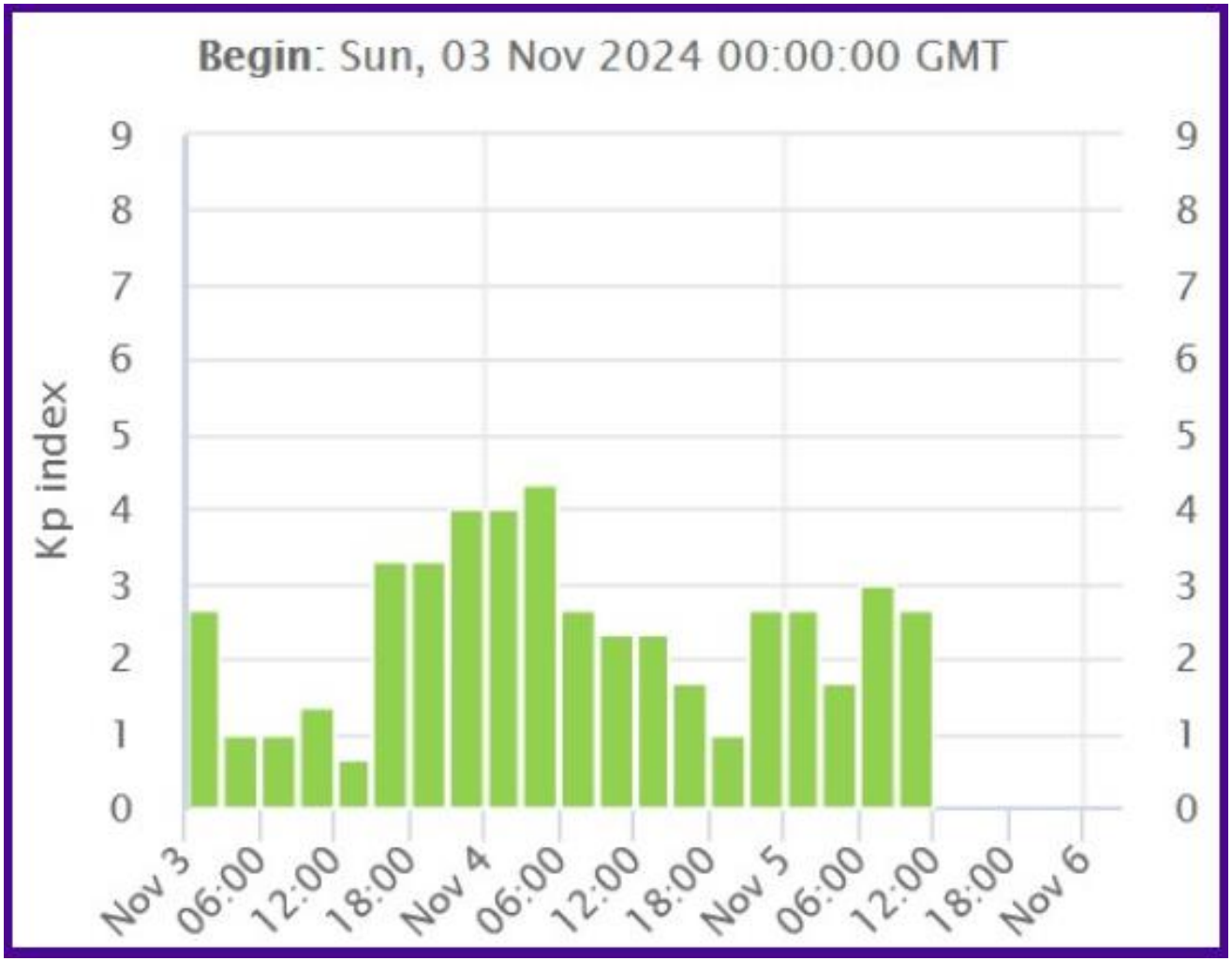
Solar X-Ray Flux: 3 – 5 NOV 2024



NOAA – D-Region Absorption Predictions



Earth's Geomagnetic Activity



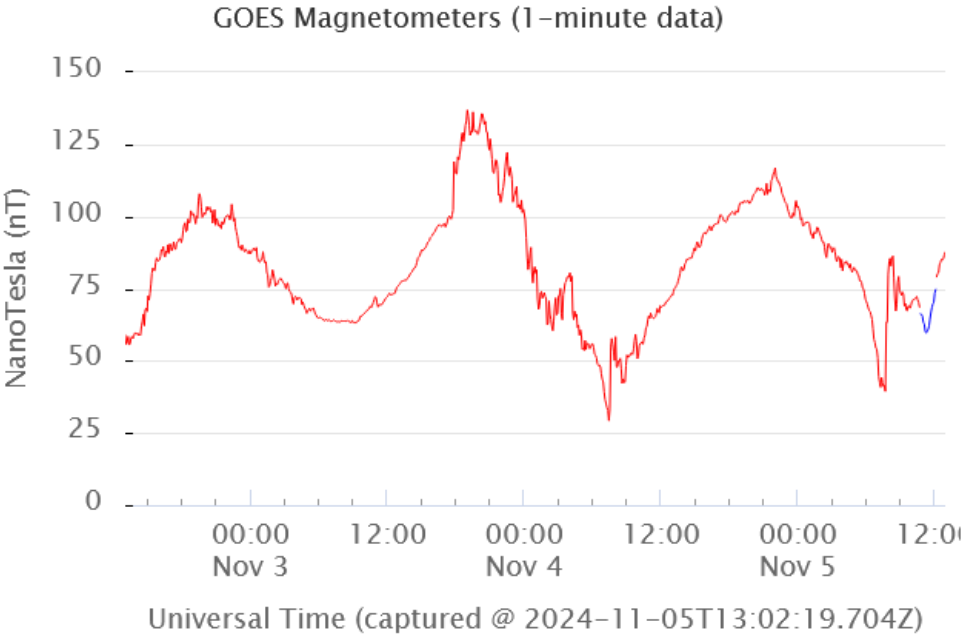
Geomagnetic Conditions: 5 NOV 2024

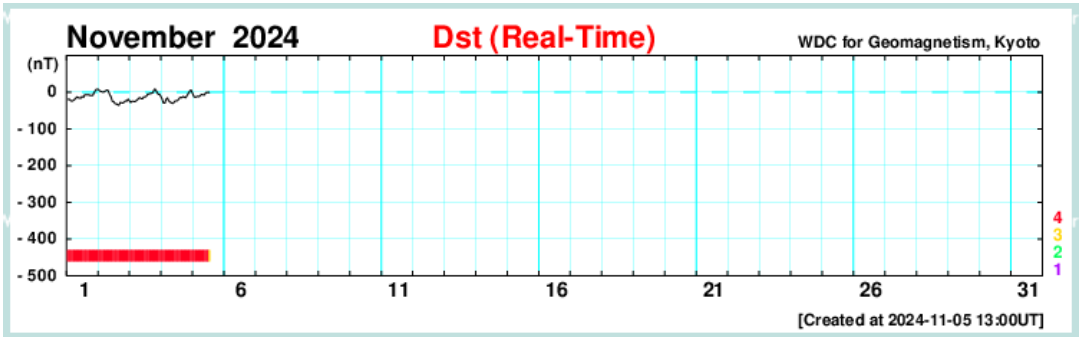
Solar wind:
Bz = -4 nT
speed = 425 km/sec
density = 4.93 protons/cm^3

(From – NOAA DSCOVR
In L1, Lagrange Point)

Dst = -2 nT (Ring Field)

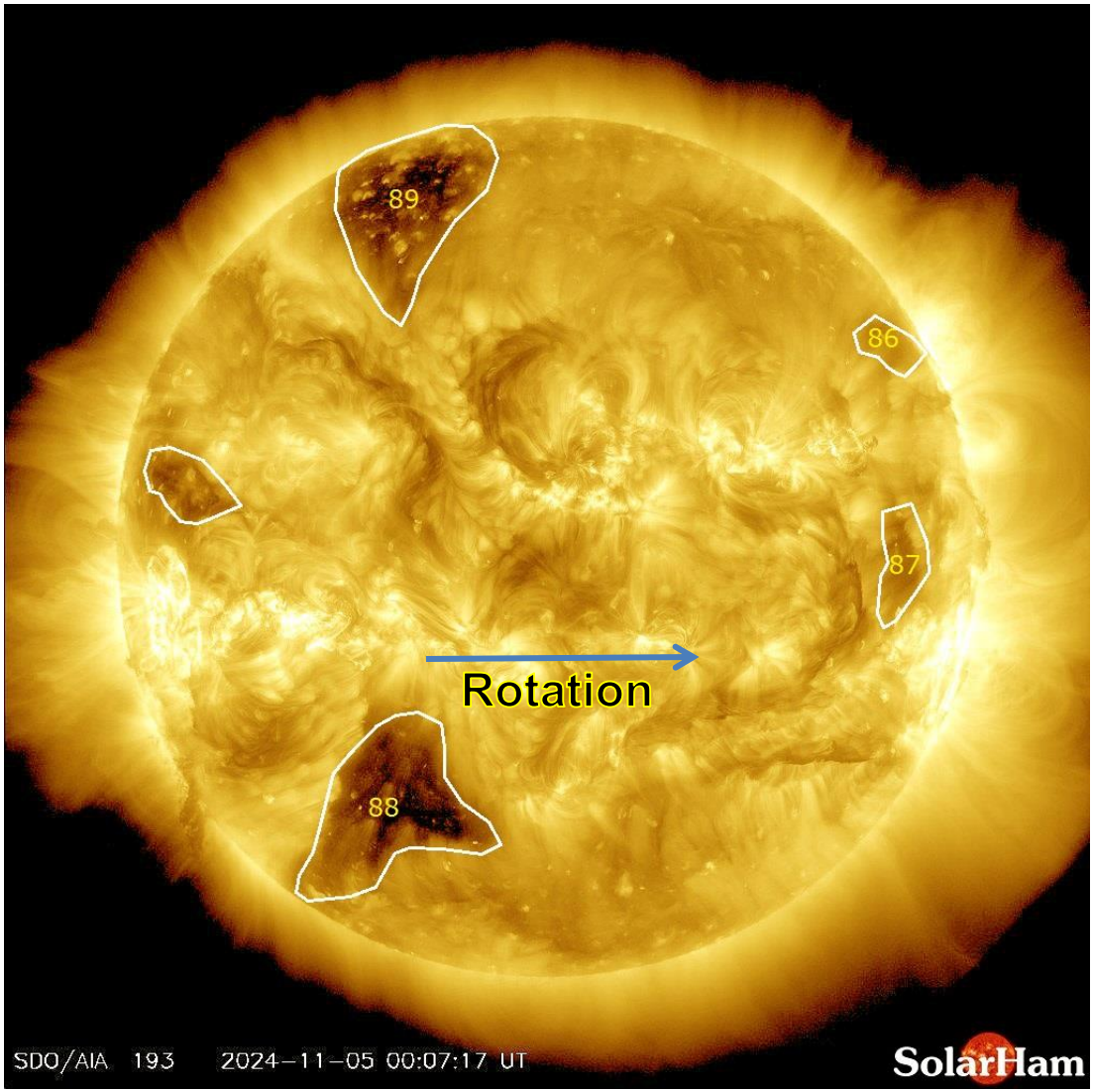
(From – Data Analysis Center
For Geomagnetics and Space
Magnetism – Kyoto University)





From – GOES 16
In geostationary orbit

Coronal Holes – 5 NOV 2024

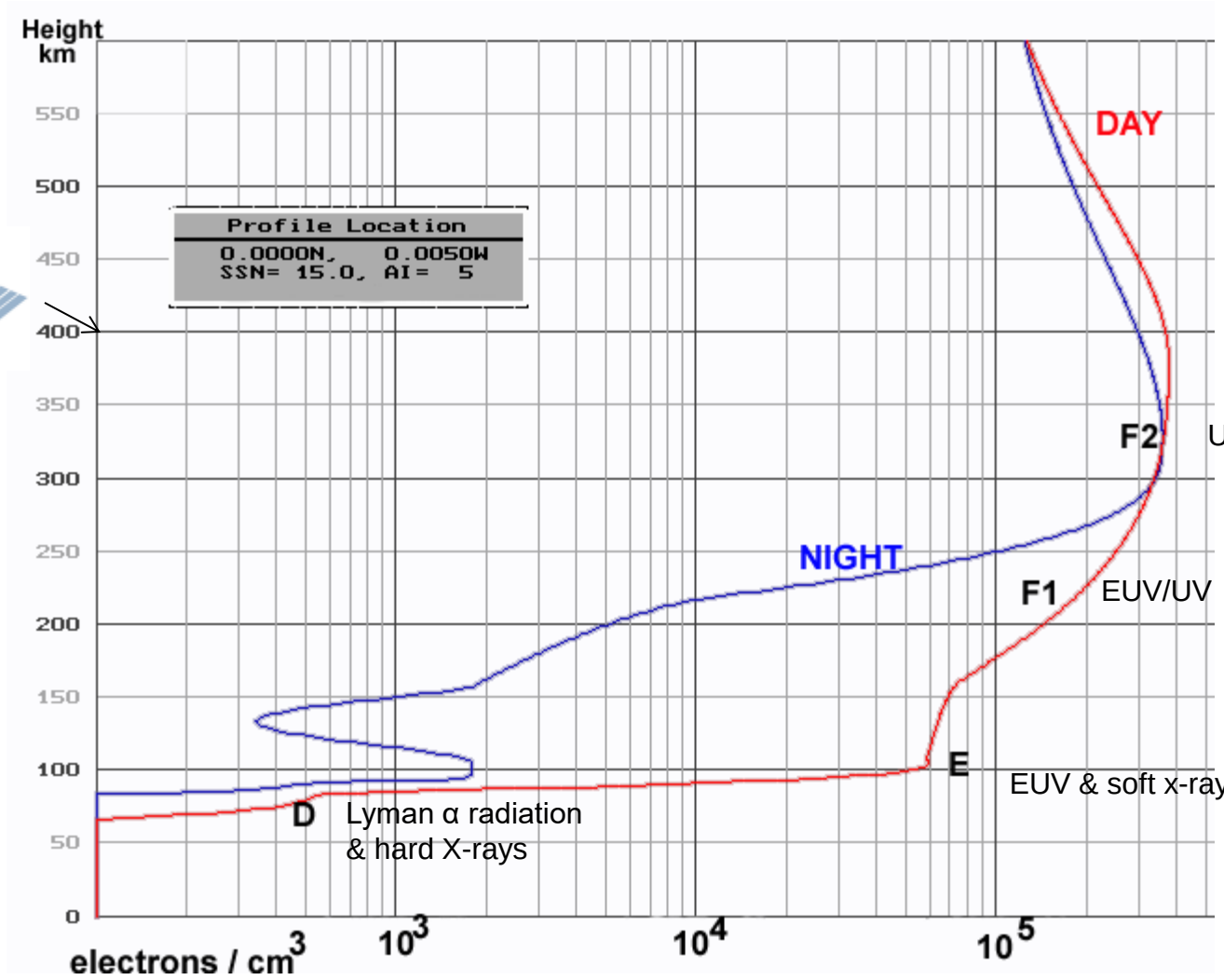


Analysis

Coronal hole #88 will begin to partially face Earth over the next several days.

Ionosphere Creation

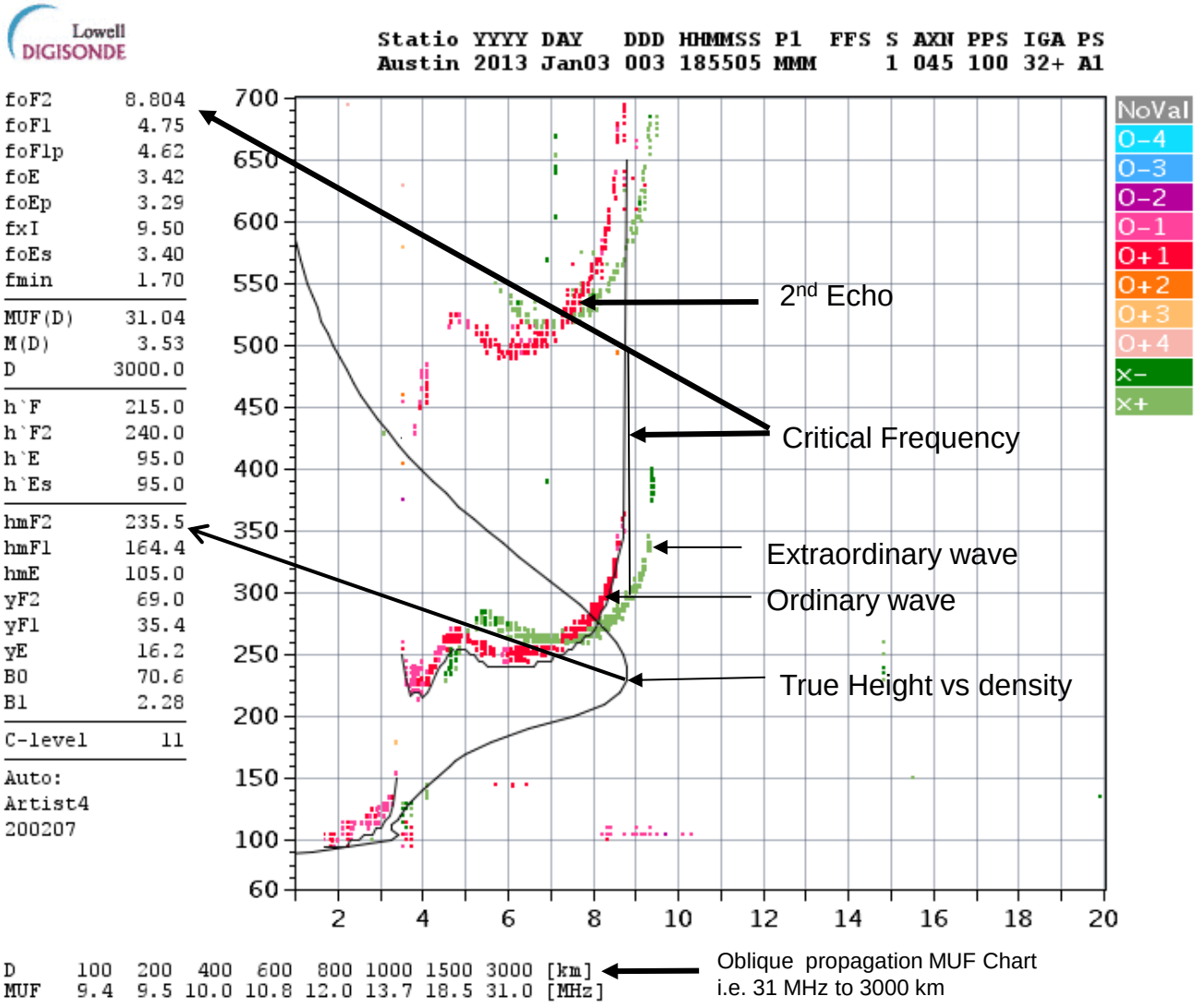
Gravity



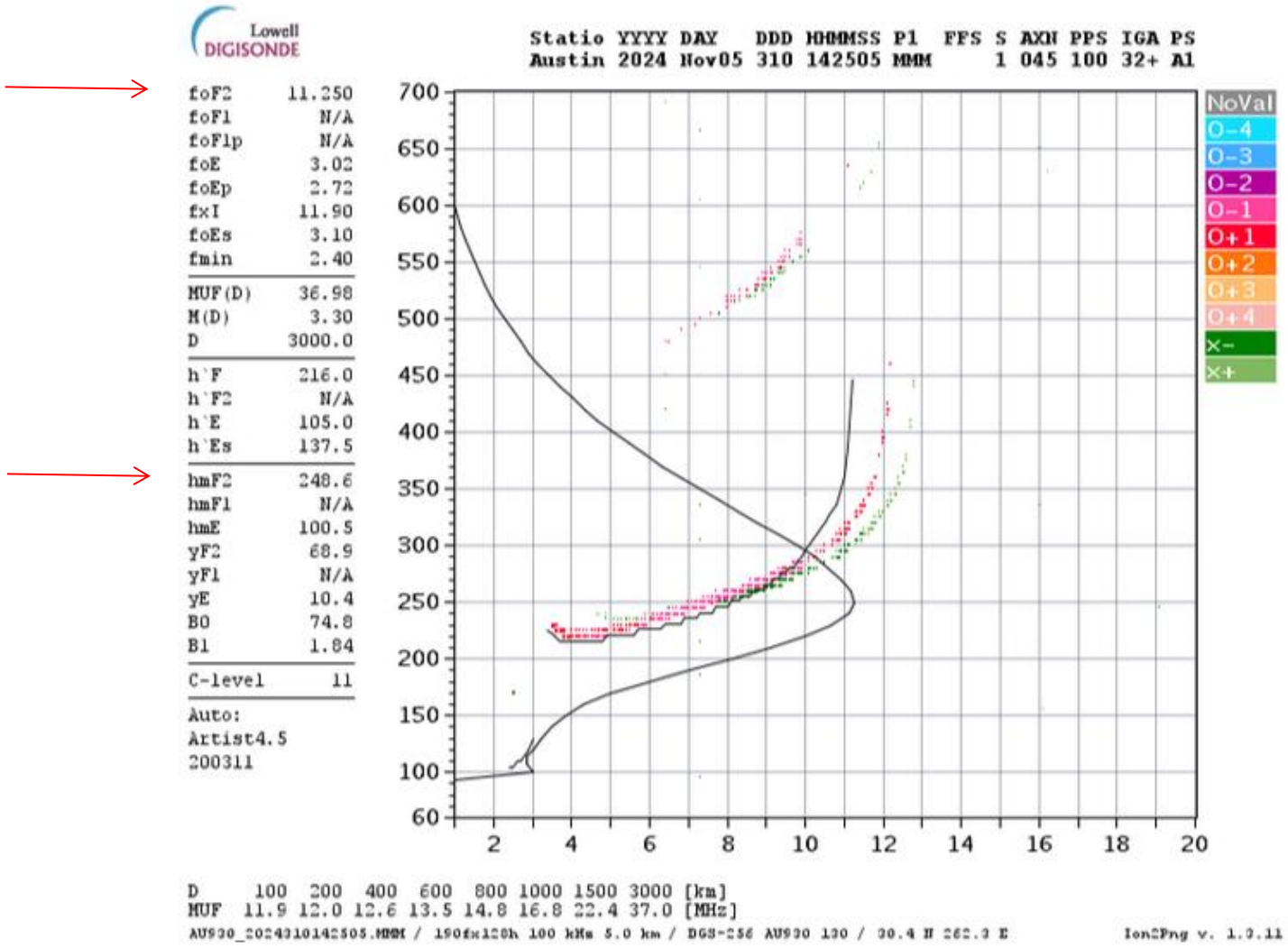
Solar Radiation

Monoatomic oxygen

Ionogram Interpretation



Austin Ionosonde – 5 NOV (08:25 CST)



Notable Recent Events

CME – 10 OCT 2024

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3 Day Geomagnetic Forecast

Oct. 11	Oct. 12	Oct. 13
9- (G4)	5 (G1)	3 (G0)
Max Kp		
M-Lat 65%	M-Lat 35%	M-Lat 05%
H-Lat 95%	H-Lat 75%	H-Lat 30%
Probabilities		

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

Detailed Forecast

Flare Events (M2+) Past 48 Hours

M3.0	W Limb	10/10/24 @ *22:28 UTC*
M7.7	AR 3842	10/9/24 @ *23:12 UTC*
X1.4	AR 3842	10/9/24 @ *15:47 UTC*
	10cm (2300 sfu)	
X1.8	AR 3848	10/9/24 @ *01:55 UTC*
	Type II RE (5176 km/s)	
	10cm (2700 sfu)	

Event Report | Top Solar Flares

Visible Sunspot Regions

Sunspot Summary | SRS

AR 3854	B	S--E--	-
AR 3853	A	N--E--	-
AR 3852	BG	S14E40	*Stable*
AR 3850	B	S10W06	*Declining*
AR 3849	BG	S07W02	*Declining*
AR 3848	BGD	N12W25	*Stable*

Updated @ 00:45 UTC (October 10)

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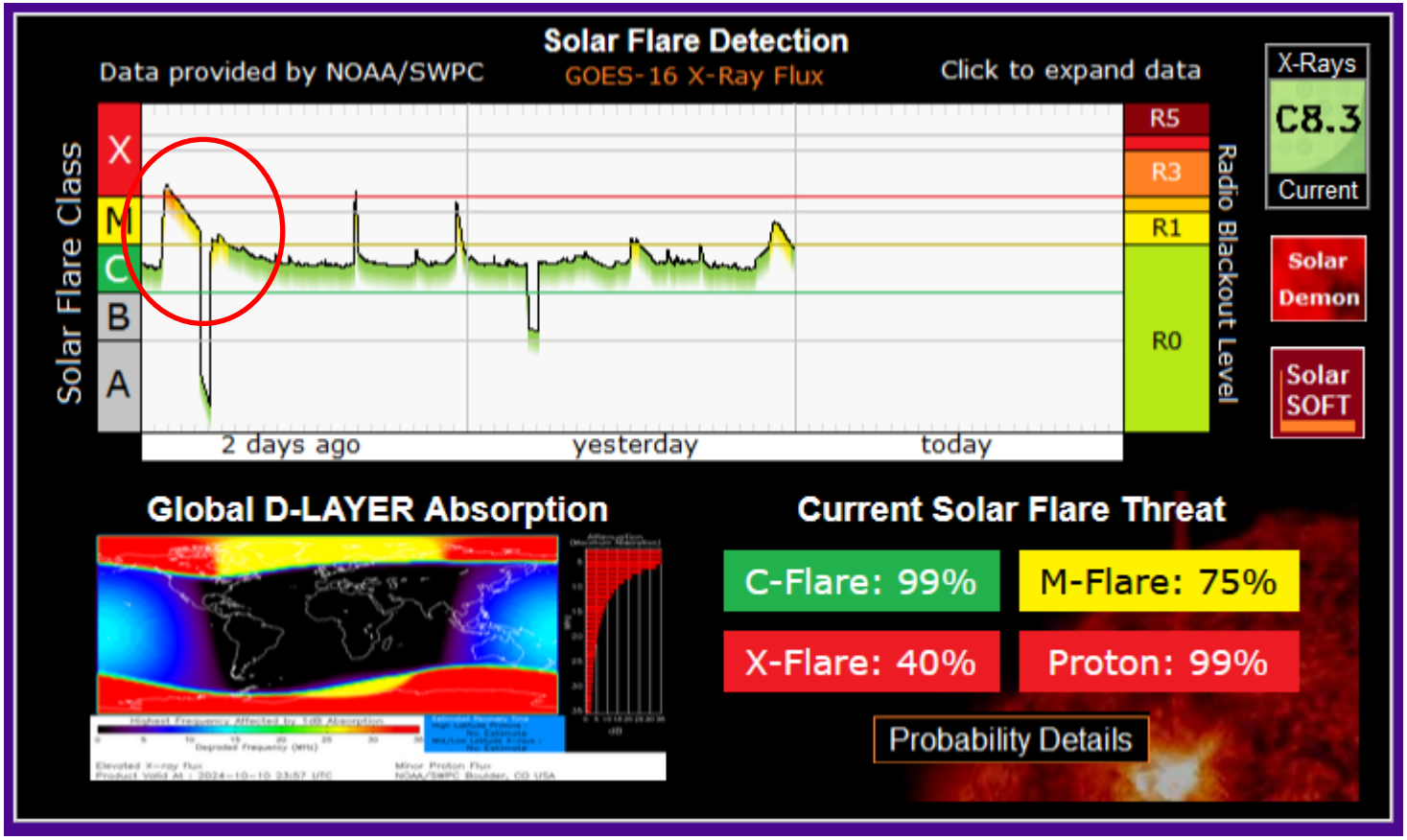
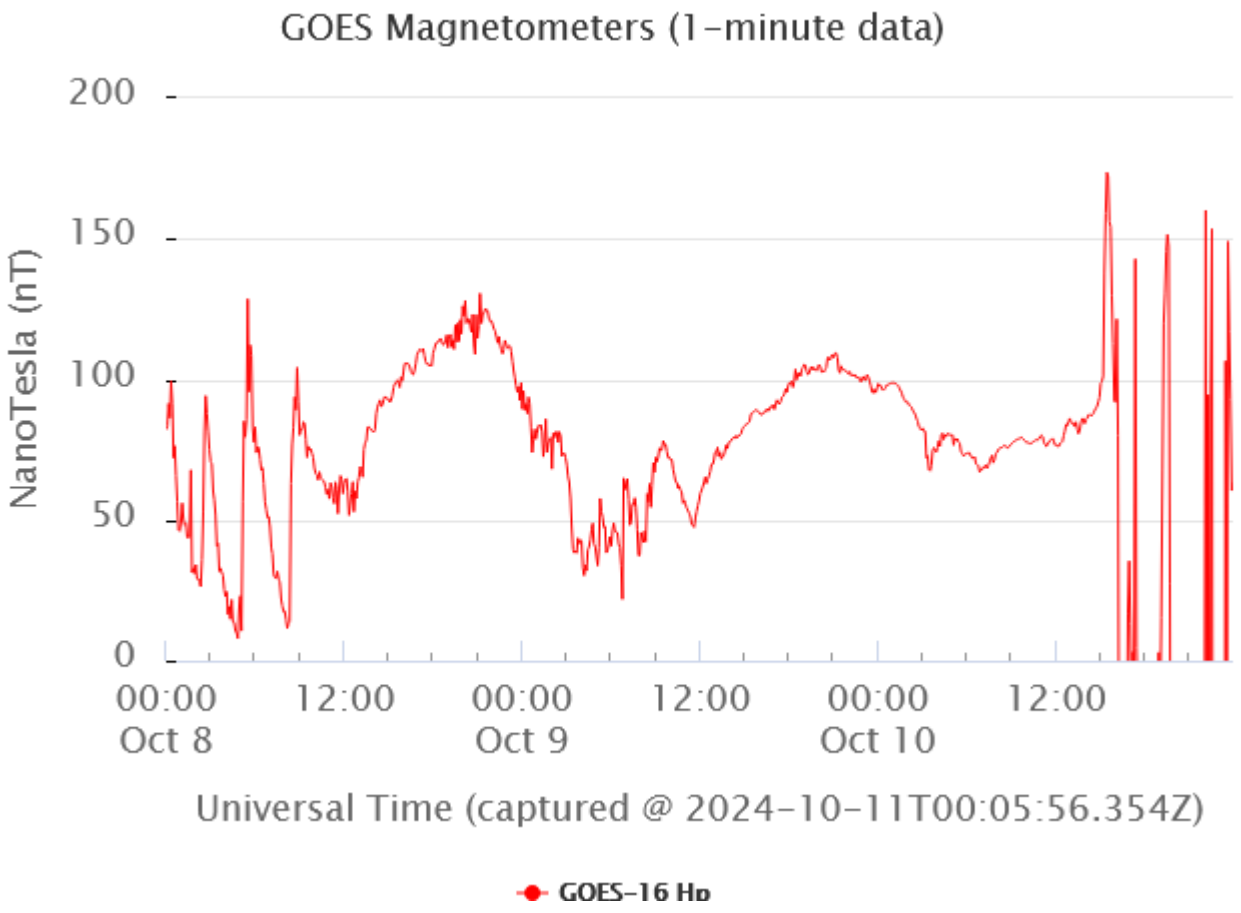

Solar Flare Detection
Data provided by NOAA/SWPC
GOES-16 X-Ray Flux
Click to expand data
Solar Flare Class
X
M
C
B
A
R5
R3
R1
R0
Radio Blackout Level
2 days ago
yesterday
today
X-Rays
C8.3
Current
Solar Demon
Solar SOFT
Global D-LAYER Absorption
Current Solar Flare Threat
C-Flare: 99%
M-Flare: 75%
X-Flare: 40%
Proton: 99%
Probability Details

GOES-16


GOES Magnetometers (1-minute data)
200
150
100
50
0
NanoTesla (nT)
00:00
Oct 8
12:00
00:00
Oct 9
12:00
00:00
Oct 10
12:00
Universal Time (captured @ 2024-10-11T00:05:56.354Z)
GOES-16 Hp

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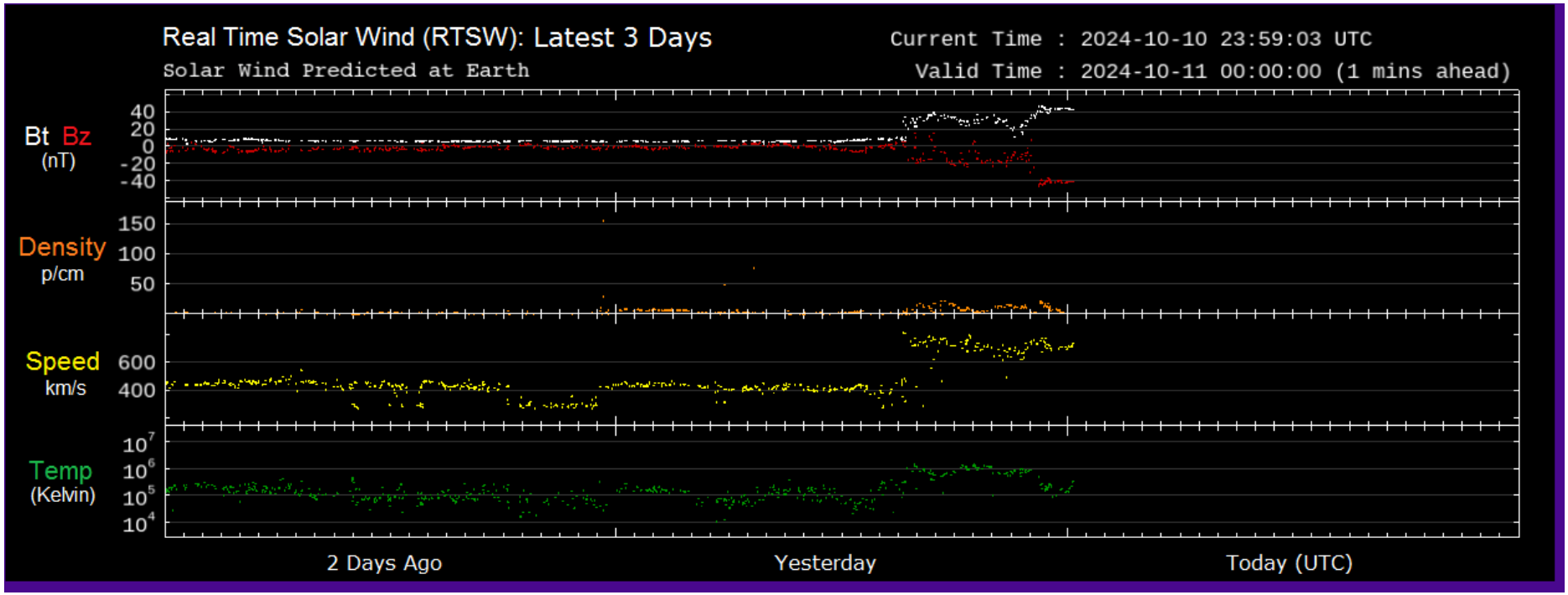
Real Time Solar Wind (RTSW): Latest 3 Days
Current Time : 2024-10-10 23:59:03 UTC
Solar Wind Predicted at Earth
Valid Time : 2024-10-11 00:00:00 (1 mins ahead)
Bt Bz
(nT)
40
20
0
-20
-40
Density
p/cm
150
100
50
Speed
km/s
600
400
Temp
(Kelvin)
10^7
10^6
10^5
10^4
2 Days Ago
Yesterday
Today (UTC)

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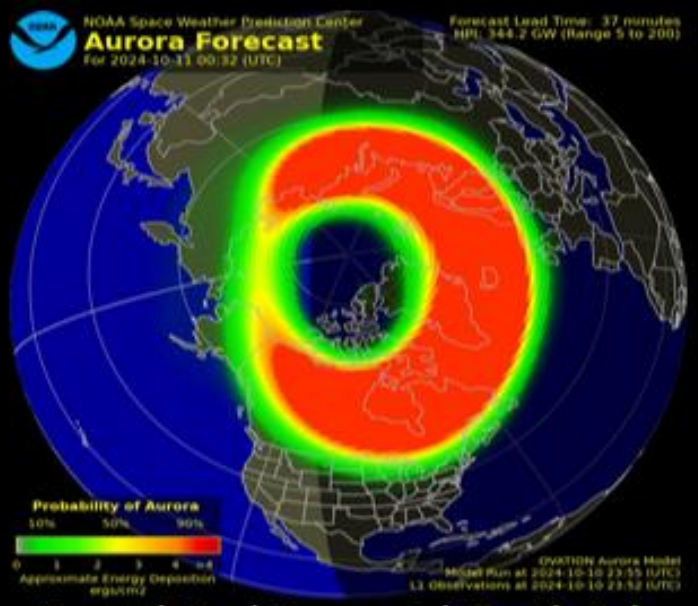
Geomagnetic Field and Aurora



Auroral Oval Forecast | South Pole

Past 24 Hours **Storm (G4)**

Kp-Index | A-Indices | Magnetometers

SolarHam

Latest Space Weather News

SolarHam News Archive

Severe Geomagnetic Storm in Progress

October 10, 2024 @ 14:45 UTC

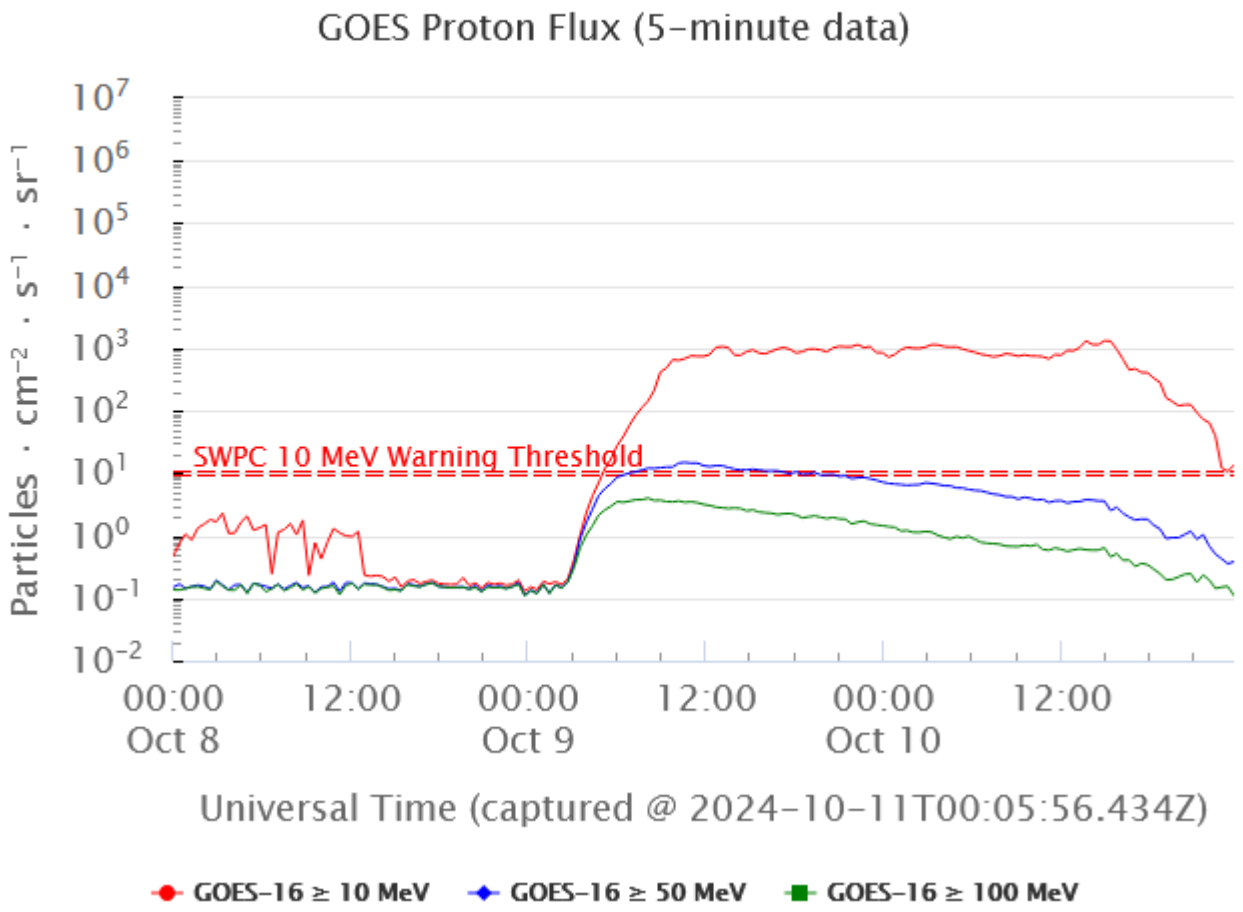
Severe (G4) geomagnetic storm conditions observed following the CME impact at 15:15 UTC (Oct 10). The solar wind speed is at or above 700 km/s. As of this update, the Bz/IMF component ranged from -30nT south to 12nT north. Fluctuations should continue. A prolonged period in negative (south) territory would help prolong and intensity storm conditions. Aurora sky watchers across Scandinavia, Europe/UK, New Zealand and southern Australia/Tasmania should all be alert for visual aurora. My friends here in North America stay tuned for more information as the day progresses.

ALERT: Geomagnetic K-index of 8, 9-
Threshold Reached: 2024 Oct 10 1657 UTC
Synoptic Period: 1500-1800 UTC
Active Warning: Yes
NOAA Scale: G4 - Severe

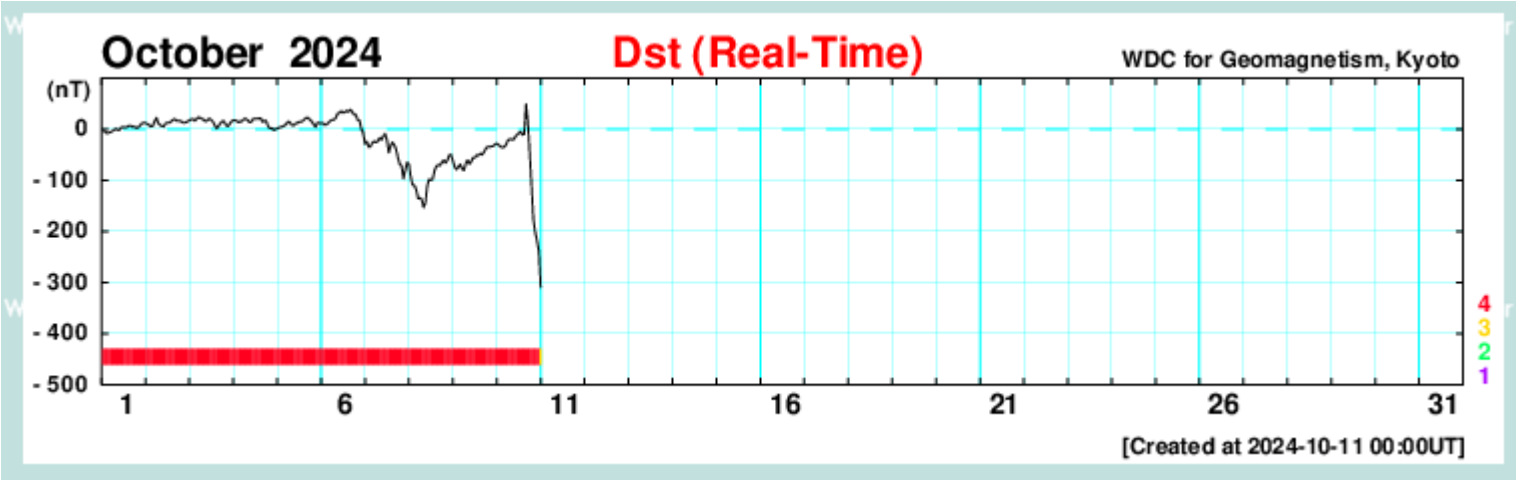
Taken by Brian Doty on October 10, 2024
@ Huntsville AL

Proton Flux

PROTON FLUX

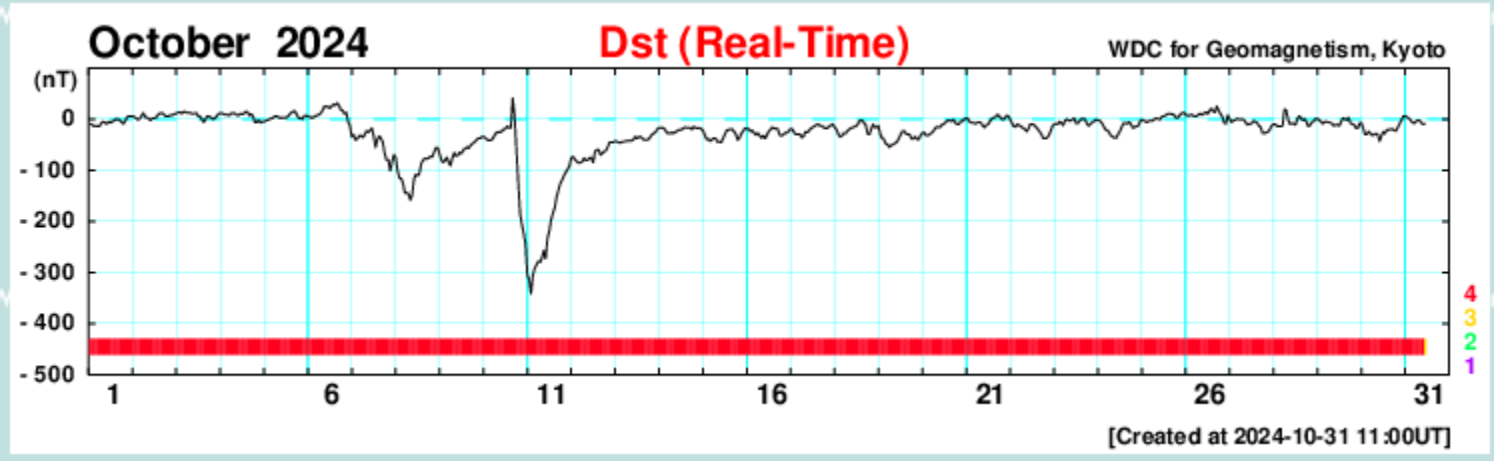


DST

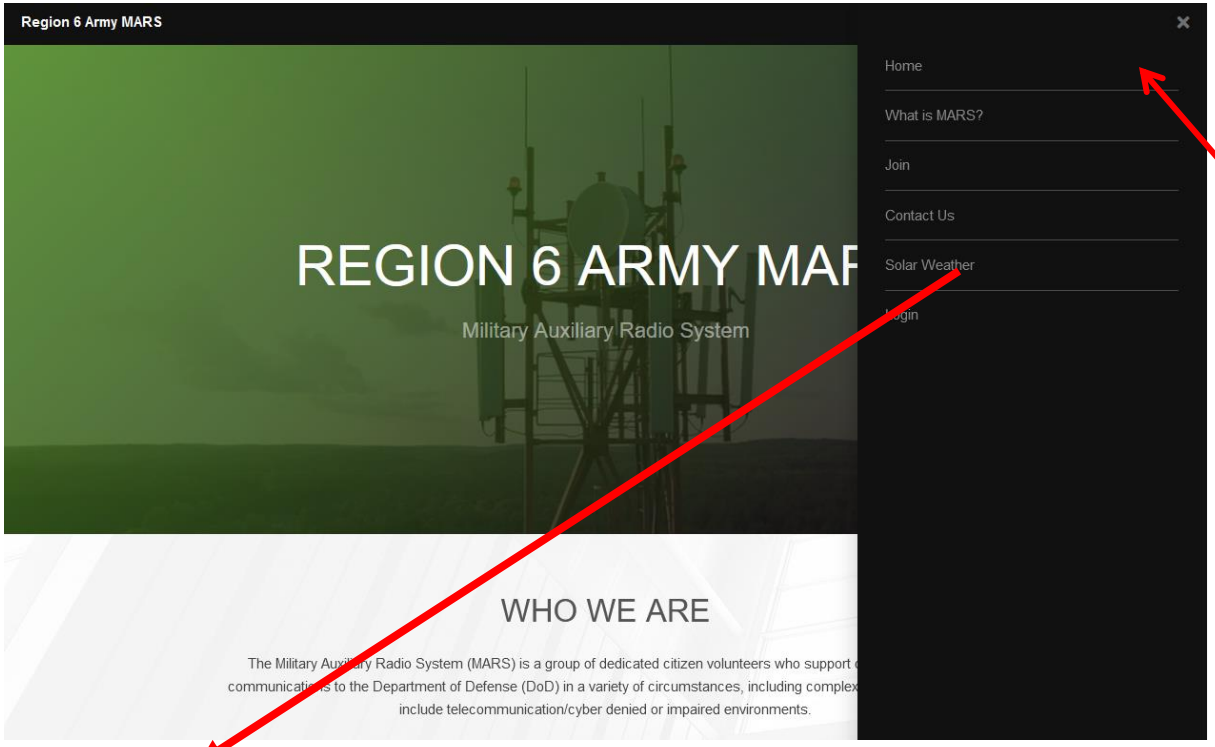


6	12	8	9	12	16	18	18	22	30	32	35	32	33	36	34	38	34	28	28	18	17	0	-7	-29
7	-24	-35	-34	-27	-24	-26	-23	-17	-21	-14	-9	-22	-46	-33	-26	-31	-40	-56	-69	-72	-97	-80	-65	-69
8	-94	-109	-110	-119	-136	-134	-138	-153	-144	-111	-98	-100	-98	-81	-73	-70	-71	-65	-61	-66	-61	-51	-50	-62
9	-74	-79	-74	-69	-77	-81	-68	-61	-68	-64	-56	-56	-51	-51	-48	-50	-45	-38	-34	-35	-34	-33	-30	-28
10	-31	-34	-36	-35	-31	-22	-20	-20	-21	-16	-11	-8	-5	-11	-10	49	13	-48	-111	-176	-202	-218	-239	-310

DST


October 2024
Dst (Real-Time)
WDC for Geomagnetism, Kyoto
(nT)
0
- 100
- 200
- 300
- 400
- 500
1
6
11
16
21
26
31
4
3
2
1
[Created at 2024-10-31 11:00UT]

Solar Weather Data



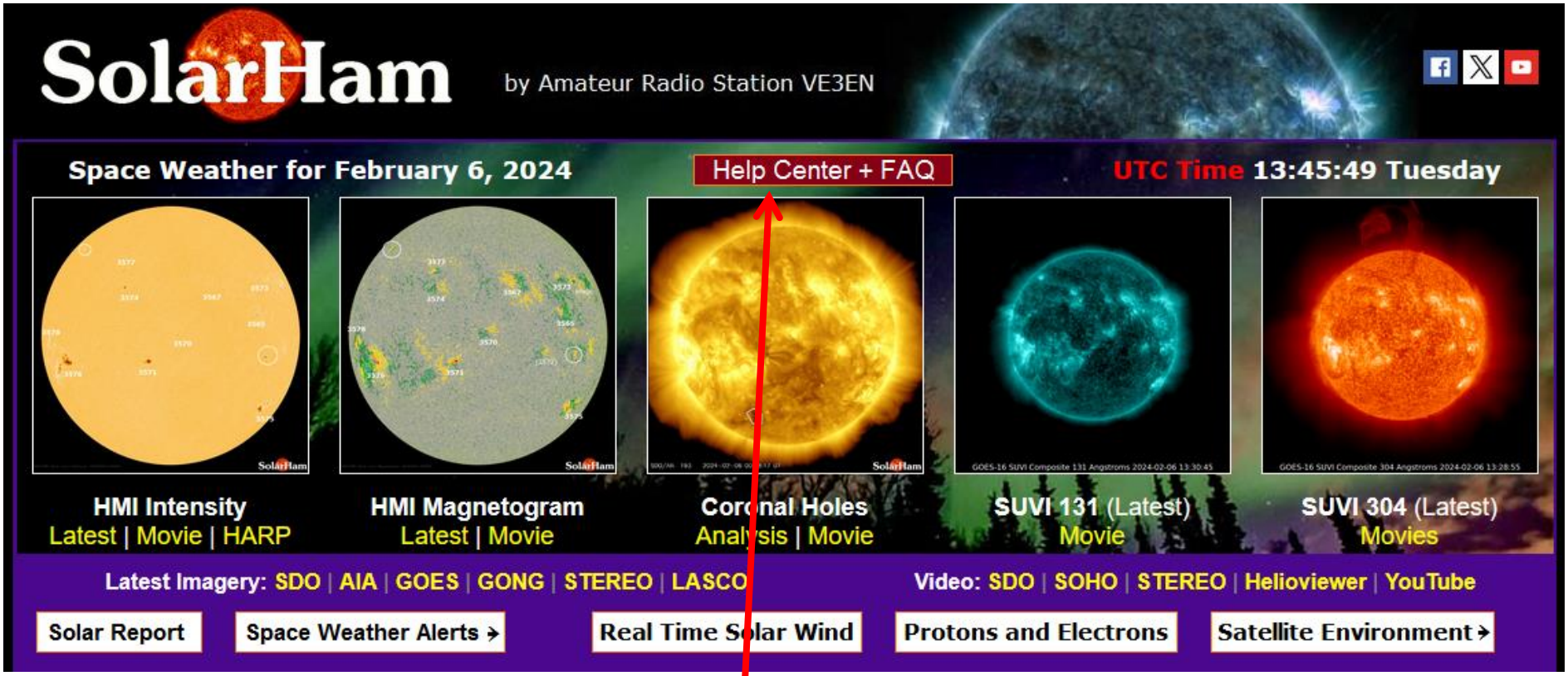
Menu

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

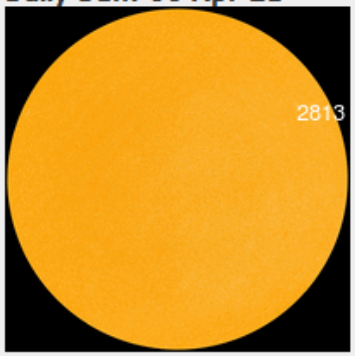
https://www.spaceweather.com/

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?

Lewis Thompson

W5IFQ@att.net

512-587-9944