

Daily Space Weather Summary (SUPARCO)

Monday, February 24, 2025, 14:54 PST



Radio Blackouts			Solar Radiation Storms			Geomagnetic Storms		
-24 Hr	Current	Predicted	-24 Hr	Current	Predicted	-24 Hr	Current	Predicted
R1 – R2	R1	R1 – R2	S0	S0	S0 – S1	G0	G0	G0

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)

Critical Frequency of F2 layer (foF2)	14.1 MHz							
Virtual Height of F2 layer (h`F2)	313 km							
Total Electron Content (TEC)	32 TECU							
Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances								
Distance (Km)	100	200	400	600	800	1000	1500	3000
MUF (MHz)	14.3	15.5	17.2	20.0	22.7	24.8	27.3	30.5
FOT (MHz)	12.2	13.5	15.5	17.4	20.8	22.0	24.0	26.0

Local HF conditions are normal as compared to the predicted monthly median MUF.

LOCAL GEOMAGNETIC CONDITIONS

K-index	2 (Quiet)
Total Field (F) (Son/Isb)	45765/50675 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS

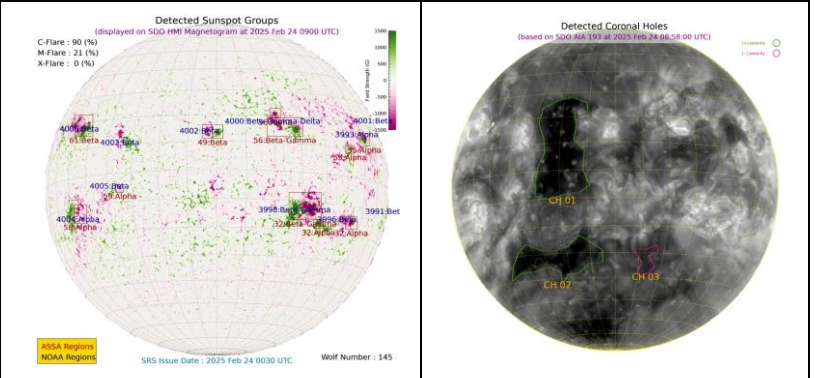
Sunspot Number (SN)	186
Solar radio flux (F10.7)	210 sfu
Solar wind speed	361.8 km/s (varied in the past 24 hrs between 288 & 700 km/s)
Solar x-ray flares	C2.5 (max flare in the past 24 hrs (X1, 1927 UT))
Interplanetary Magnetic Field (IMF) Total Field (Bt) Z Component of Field (Bz)	+8.43 nT (varied in the past 12 hrs between +3.64 nT & +15.32 nT) +1.1 nT (varied in the past 12 hrs between -7.74 nT & +10.57 nT)

Solar conditions are at low to moderate levels with background X-ray flux at C-class level.

Daily Sun: 24 February 2025

There are two active regions AR3998 and AR4000, present on the Sun capable of producing strong C and M-class solar flares having chances of 90% and 21% respectively.

03 Coronal Holes (CHs) are detected on the solar disk.



DISCUSSION:

Solar activity is expected to be at low to moderate levels. Multiple M/X-class solar flares, have already occurred from the regions mentioned above causing minor to moderate levels radio blackouts. In case of more M/X-class solar flares, minor to moderate level radio blackouts may be observed. Low solar wind speed and quiet geomagnetic activity is expected. HF conditions are normal.

Credits:

*Solar conditions courtesy to SOHO, DSCOVR and GOES-16 missions.
NOAA SWPC is acknowledged for solar radio flux conditions.
Korean Space Weather Centre is acknowledged for solar disk and coronal hole images.*

Sonmiani (SON): 25.2° N, 66.75° E
Islamabad (ISB): 33.7° N, 73.13° E

RSG SCALES

<u>Radio Blackouts</u>				
Minor	Moderate	Strong	Severe	Extreme
R1	R2	R3	R4	R5

<u>Solar Radiation Storms</u>				
Minor	Moderate	Strong	Severe	Extreme
S1	S2	S3	S4	S5

<u>Geomagnetic Storms</u>				
Minor	Moderate	Strong	Severe	Extreme
G1	G2	G3	G4	G5