

Daily Space Weather Summary (SUPARCO)

Tuesday, December 30, 2025, 12:58 PST



Radio Blackouts			Solar Radiation Storms			Geomagnetic Storms		
-24 Hr	Current	Predicted	-24 Hr	Current	Predicted	-24 Hr	Current	Predicted
R0 / R1	R0	R0 / R1	S0	S0	S0	G0	G0	G1 – G2

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)

Critical Frequency of F2 layer (foF2)	11.3 MHz
Virtual Height of F2 layer (h`F2)	280 km
Total Electron Content (TEC)	60 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)	11.6	12.1	14.0	16.6	19.5	22.4	29.1	32.2
FOT (MHz)	9.9	10.3	11.9	14.1	16.6	19.0	24.7	27.4

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)	45703/50718 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS

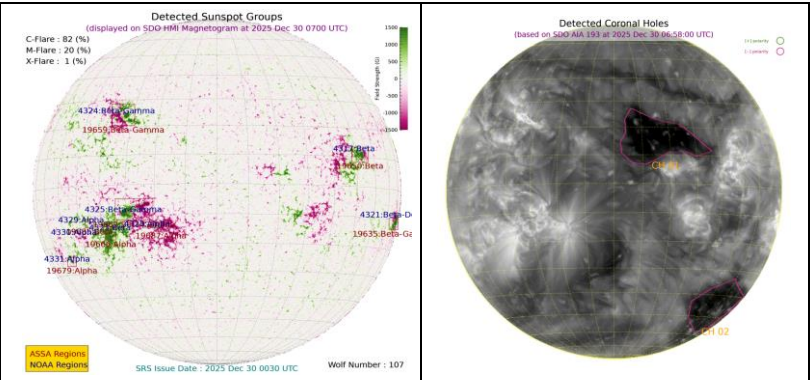
Sunspot Number (SN)	138
Solar radio flux (F10.7)	188 sfu
Solar wind speed	397.6 km/s (varied in the past 24 hrs between 382 & 491 km/s)
Solar x-ray flares	C3.5 (max flare in the past 24 hrs (C6, 2040 UT)
Interplanetary Magnetic Field (IMF) Total Field (Bt) Z Component of Field (Bz)	+5.29 nT (varied in the past 12 hrs between +4.74 nT & +6.67 nT) +0.07 nT (varied in the past 12 hrs between -2.68 nT & +5.32 nT)

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

Daily Sun: 30 December 2025

There are three active regions AR4321, AR4324 and Ar4325 present on the Sun capable of producing strong M and X-class solar flares having chances of 22% and 4% respectively.

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



DISCUSSION:

Solar activity is expected to be at moderate to high levels. Multiple M-class solar flares, occurred causing R1 level HF radio blackouts. In case of more M/X-class solar flares, minor level HF radio blackouts may be observed. A coronal mass ejection (CME) is expected to hit Earth in late hours of today, potentially causing G1-G2 level geomagnetic activity. Low to moderate levels of solar wind speed and unsettled to disturbed levels of geomagnetic activity is expected. HF conditions are expected to be 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

Radio Blackouts				
Minor	Moderate	Strong	Severe	Extreme
R1	R2	R3	R4	R5
Solar Radiation Storms				
Minor	Moderate	Strong	Severe	Extreme
S1	S2	S3	S4	S5
Geomagnetic Storms				
Minor	Moderate	Strong	Severe	Extreme
G1	G2	G3	G4	G5