Daily Space Weather Summary (SUPARCO)

Tuesday, December 09, 2025, 14:30 PST

Radio Blackouts			Solar Radiation Storms			Geomagnetic Storms		
-24 Hr	Current	Predicted	-24 Hr	Current	Predicted	-24 Hr	Current	Predicted
R0 – R1	R0 / R1	R1 – R2	S0	S0	S0	G0	G0	G1 – G2

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)	
Critical Frequency of F2 layer (foF2)	14.0 MHz
Virtual Height of F2 layer (h`F2)	340 km
Total Electron Content (TEC)	70 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)	14.2	14.8	17.0	20.1	23.4	26.9	34.8	39.6
FOT (MHz)	12.1	12.6	14.5	17.1	19.9	22.9	29.6	33.7

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

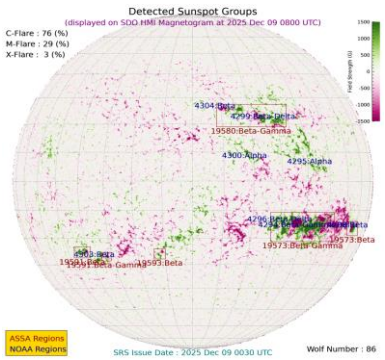
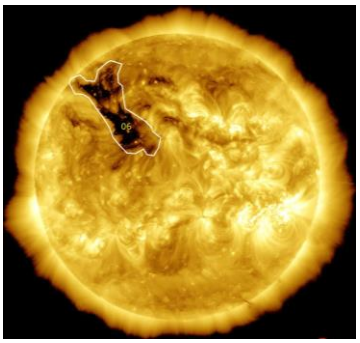
LOCAL GEOMAGNETIC CONDITIONS	
K-index	0 (Quiet)
Total Field (F) (Son/Isb)	45703/50718 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS	
Sunspot Number (SN)	146
Solar radio flux (F10.7)	186 sfu
Solar wind speed	450.3 km/s (varied in the past 24 hrs between 290 & 462 km/s)
Solar x-ray flares	C3.2 (max flare in the past 24 hrs (M3, 2117 UT)
Interplanetary Magnetic Field (IMF) **Total Field (Bt)** **Z Component of Field (Bz)**	+9.33 nT (varied in the past 12 hrs between +6.55 nT & +8.53 nT) -3.56 nT (varied in the past 12 hrs between -4.29 nT & -0.64 nT)

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

Daily Sun: 9 December 2025

There are three active regions AR4294, AR4296 and AR4299 present on the Sun capable of producing strong M and X-class solar flares having chances of 29% and 3% respectively. 01 Coronal Hole (CH) is detected on the solar disk.		

DISCUSSION:

Solar activity is expected to be at moderate to high levels. Multiple M-class solar flares, occurred from the regions present on the solar disk causing R1-R2 levels HF radio blackouts. A coronal mass ejection (CME) is expected to hit Earth which may cause G1-G2 level geomagnetic storm. In case of more M/X-class solar flares, minor to moderate level HF radio blackouts may be observed. Moderate to slightly elevated levels of solar wind speed is expected to prevail due to the arrival of coronal mass ejection (CME). 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**