Daily Space Weather Summary (SUPARCO)

Thursday, December 04, 2025, 14:44 PST

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

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)	
Critical Frequency of F2 layer (foF2)	14.0 MHz
Virtual Height of F2 layer (h`F2)	285 km
Total Electron Content (TEC)	78 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.

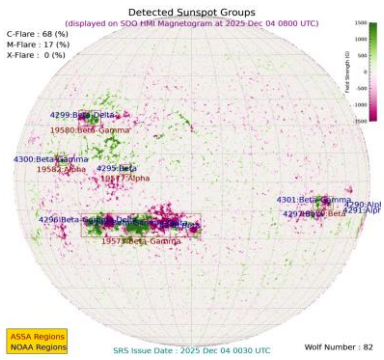
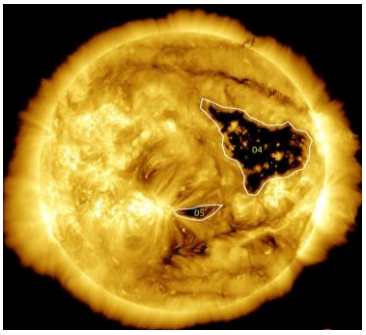
LOCAL GEOMAGNETIC CONDITIONS	
K-index	4 (Unsettled)
Total Field (F) (Son/Isb)	45770/50714 nT

The local geomagnetic field is unsettled at the moment.

LATEST SOLAR CONDITIONS	
Sunspot Number (SN)	227
Solar radio flux (F10.7)	209 sfu
Solar wind speed	671.3 km/s (varied in the past 24 hrs between 364 & 746 km/s)
Solar x-ray flares	C3.4 (max flare in the past 24 hrs (M6, 0250 UT)
Interplanetary Magnetic Field (IMF) **Total Field (Bt)** **Z Component of Field (Bz)**	+7.11 nT (varied in the past 12 hrs between +8.21 nT & +19.73 nT) -4.64 nT (varied in the past 12 hrs between -8.59 nT & +11.22 nT)

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

Daily Sun: 4 December 2025

There are five active regions AR4294, AR4296, AR4299, AR4300 and AR4301 present on the Sun capable of producing strong M/X-class solar flares having chances of 27% and 12% respectively. 02 Coronal Holes (CHs) are detected on the solar disk.		

DISCUSSION:

Solar activity is expected to be at moderate to high levels. Recently an M6-class solar flare occurred which caused shortwave HF radio blackouts and moderate level geomagnetic storm. In case of more M/X-class solar flares, minor to moderate level HF radio blackouts may be observed. A co-rotating interaction region (CIR) hit Earth which enhanced the solar wind speed. Elevated level of solar wind speed is expected to prevail due to the combined effect of coronal mass ejection (CME) and CIR. Disturbed to unsettled levels of 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

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**