Daily Space Weather Summary (SUPARCO)

Monday, December 29, 2025, 13:45 PST

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

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)	68 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.

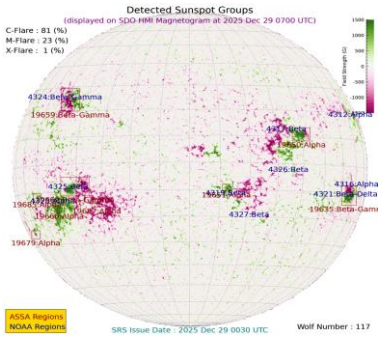
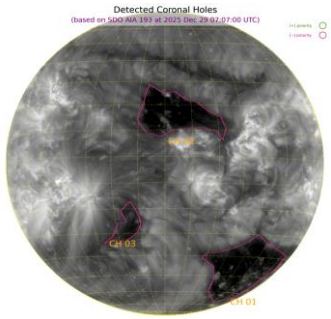
LOCAL GEOMAGNETIC CONDITIONS	
K-index	2 (Quiet)
Total Field (F) (Son/Isb)	45703/50718 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS	
Sunspot Number (SN)	143
Solar radio flux (F10.7)	188 sfu
Solar wind speed	430.2 km/s (varied in the past 24 hrs between 393 & 604 km/s)
Solar x-ray flares	C3.6 (max flare in the past 24 hrs (M4, 2239 UT)
Interplanetary Magnetic Field (IMF) **Total Field (Bt)** **Z Component of Field (Bz)**	+7.84 nT (varied in the past 12 hrs between +5.8 nT & +7.68 nT) -5.42 nT (varied in the past 12 hrs between -4.1 nT & +5.46 nT)

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

Daily Sun: 29 December 2025

There are two active regions AR4321 and AR4324 present on the Sun capable of producing strong M and X-class solar flares having chances of 27% and 3% respectively. 03 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, have occurred causing minor level HF radio blackouts. In case of more M/X-class solar flares, minor to moderate level HF radio blackouts may be observed. Low to moderate levels of solar wind speed quiet 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**