Daily Space Weather Summary (SUPARCO)

Thursday, December 26, 2024, 14:50 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 / S1	G0	G0	G0 / G1

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)	
Critical Frequency of F2 layer (foF2)	11.2 MHz
Virtual Height of F2 layer (h`F2)	298 km
Total Electron Content (TEC)	40 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)	11.4	13.2	15.2	17.9	21.0	23.4	27.3	30.5
FOT (MHz)	9.7	11.2	12.9	15.2	17.8	20.0	23.2	26.0

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

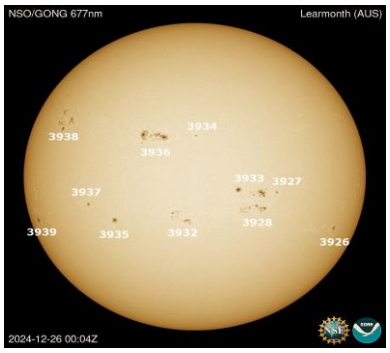
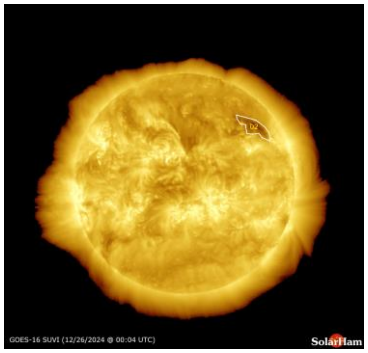
LOCAL GEOMAGNETIC CONDITIONS	
K-index	2 (Quiet)
Total Field (F) (Son/Isb)	45770/50714 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS	
Sunspot Number (SN)	218
Solar radio flux (F10.7)	253 sfu
Solar wind speed	390.6 km/s (varied in the past 24 hrs between 388 & 631 km/s)
Solar x-ray flares	C2.2 (max flare in the past 24 hrs (M7, 0315 UT)
Interplanetary Magnetic Field (IMF) **Total Field (Bt)** **Z Component of Field (Bz)**	+2.45 nT (varied in the past 12 hrs between +2.33 nT & +3.68 nT) +1.37 nT (varied in the past 12 hrs between -0.26 nT & +1.66 nT)

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

Daily Sun: 26 December 2024

There are four active regions AR3928, AR3932, AR3933 and AR3938 present on the Sun capable of producing strong solar flares. 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, have already occurred from the regions mentioned above causing R1–R2 levels radio blackouts. In case of M/X-class solar flares, minor level radio blackouts may be observed. Low to moderate solar wind speed is expected to prevail due to the CME impact. Geomagnetic activity is expected to be at quiet to unsettled levels. 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**