

Daily Space Weather Summary (SUPARCO)

Monday, December 23, 2024, 13:17 PST



Radio Blackouts			Solar Radiation Storms			Geomagnetic Storms		
-24 Hr	Current	Predicted	-24 Hr	Current	Predicted	-24 Hr	Current	Predicted
R1	R0	R0 – R1	S0	S0	S1	G0	G0	G0

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)

Critical Frequency of F2 layer (foF2)				11.5 MHz				
Virtual Height of F2 layer (h`F2)				255 km				
Total Electron Content (TEC)				35 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)	11.8	12.9	14.5	17.4	20.5	23.1	27.2	31.5
FOT (MHz)	10.0	10.9	12.3	14.7	17.4	19.6	23.1	26.7

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)	45675/5071 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS

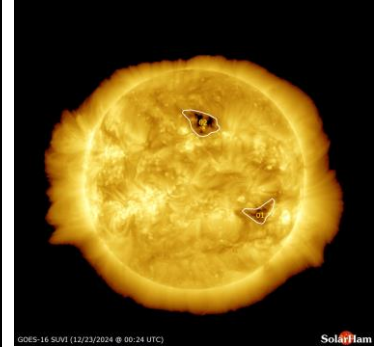
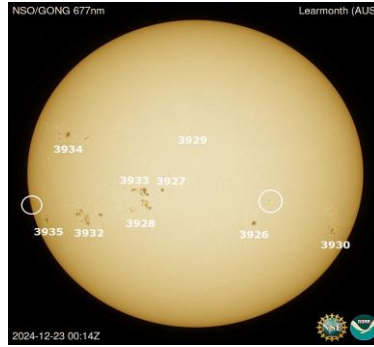
Sunspot Number (SN)	176
Solar radio flux (F10.7)	223 sfu
Solar wind speed	530.9 km/s (varied in the past 24 hrs between 503 & 794 km/s)
Solar x-ray flares	C2.6 (max flare in the past 24 hrs (M1, 2049 UT)
Interplanetary Magnetic Field (IMF) Total Field (Bt) Z Component of Field (Bz)	+6.63 nT (varied in the past 12 hrs between +6.78 nT & +7.24 nT) +2.78 nT (varied in the past 12 hrs between -6.06 nT & +5.53 nT)

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

Daily Sun: 23 December 2024

There are two active regions AR3928 and AR3932 present on the Sun capable of producing strong solar flares.

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



DISCUSSION:

Solar activity is expected to be at low to moderate levels. Multiple M-class solar flares, have occurred from the regions present on the sun. In case of more M/X flares, minor level radio blackouts may be observed. Moderate to slightly elevated solar wind speed is expected due to the combined effect of CME and coronal holes. Geomagnetic activity is expected to be at quiet 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

<u>Radio Blackouts</u>				
Minor	Moderate	Strong	Severe	Extreme
R1	R2	R3	R4	R5

<u>Solar Radiation Storms</u>				
Minor	Moderate	Strong	Severe	Extreme
S1	S2	S3	S4	S5

<u>Geomagnetic Storms</u>				
Minor	Moderate	Strong	Severe	Extreme
G1	G2	G3	G4	G5