

Daily Space Weather Summary (SUPARCO)

Thursday, January 12, 2023, 12:07 PST



LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)

Critical Frequency of F2 layer (foF2)	9.8 MHz							
Virtual Height of F2 layer (h`F2)	323 km							
Total Electron Content (TEC)	48 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)	9.9	10.2	11.2	12.7	14.3	16.0	20.1	25.2
FOT (MHz)	8.4	8.7	9.5	10.8	12.2	13.6	17.1	21.4

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

LOCAL GEOMAGNETIC CONDITIONS

K-index	0 (Quiet)
Total Field (F) (Son/Isb)	45525/50035 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS

Sunspot Number (SN)	183
Solar radio flux (F10.7)	195 sfu
Solar wind speed	416.7 km/s (varied in the past 24 hrs between 326 & 534 km/s)
Solar x-ray flares	C9.1 (max flare in the past 24 hrs: (M3, 0833 UT)
Interplanetary Magnetic Field (IMF) Total Field (Bt) Z Component of Field (Bz)	+8.6 nT (varied in the past 12 hrs between +6.1 nT & +8.3 nT) -5.3 nT (varied in the past 12 hrs between -3.8 nT & +5.9 nT)

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

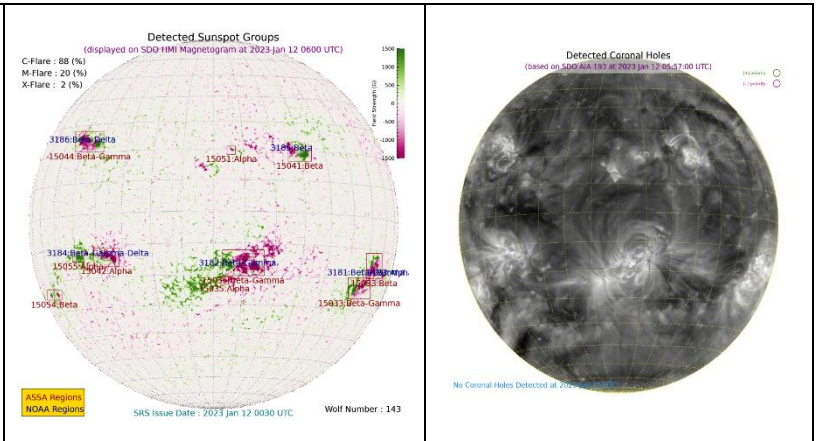
Sonmiani (SON): 25.2° N, 66.75° E, Islamabad (ISB): 33.7° N, 73.13° E

Notes: Credits: www.spaceweather.go.kr, www.sws.bom.gov.au, www.spaceweather.com, www.solen.info

Daily Sun: 12 January 2023

There are four active regions AR3181, AR3182, AR3184 and AR3186 present on the Sun capable of producing strong M and X-class solar flares having chances of 20% and 2% respectively.

No Coronal Hole (CH) is detected on the solar disk.



DISCUSSION:

Solar activity is expected to be at moderate to high levels. Multiple M/X flares have already occurred from the regions mentioned causing shortwave fadeouts. In case of more M/X flares, minor to moderate radio blackouts may be observed. Low solar wind speed and quiet geomagnetic activity is expected to prevail. HF conditions are slightly enhanced.