Daily Space Weather Summary (SUPARCO)

Tuesday, January 10, 2023, 12:50 PST

SUPARCO

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)	
Critical Frequency of F2 layer (foF2)	11.0 MHz
Virtual Height of F2 layer (h`F2)	335 km
Total Electron Content (TEC)	50 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)	11.1	11.4	12.5	14.0	15.8	17.6	22.0	27.7
FOT (MHz)	9.4	9.7	10.6	11.9	13.4	15.0	18.7	23.6

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

LOCAL GEOMAGNETIC CONDITIONS	
K-index	0 (Quiet)
Total Field (F) (Son/Isb)	45535/50045 nT

The local geomagnetic field is quiet at the moment.

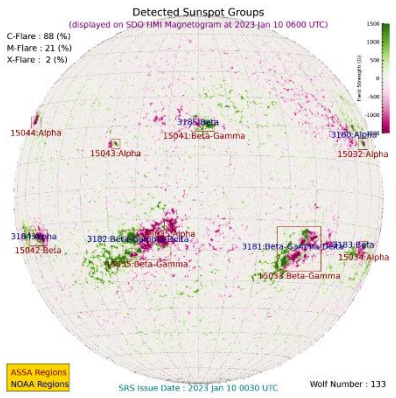
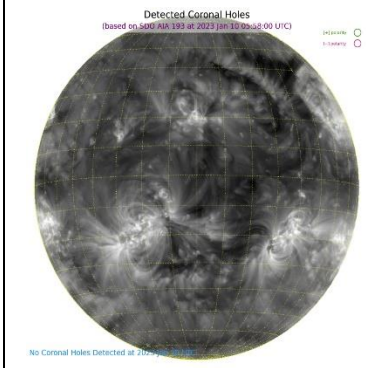
LATEST SOLAR CONDITIONS	
Sunspot Number (SN)	142
Solar radio flux (F10.7)	184 sfu
Solar wind speed	396.2 km/s (varied in the past 24 hrs between 323 & 533 km/s)
Solar x-ray flares	C2.7 (max flare in the past 24 hrs: (X1, 1850 UT)
Interplanetary Magnetic Field (IMF) **Total Field (Bt)** **Z Component of Field (Bz)**	+8.6 nT (varied in the past 12 hrs between +4.8 nT & +8.2 nT) +3.5 nT (varied in the past 12 hrs between -2.4 nT & +7.4 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: 10 January 2023

There are two active regions AR3181 and AR3182 present on the Sun capable of producing strong M and X-class solar flares having chances of 21% 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 X and M flares have already occurred from the regions mentioned. These caused short wave fadeouts and radio blackouts on the daylit side of the earth. So far, the American and Australian regions have suffered HF blackouts lasting between 30 and 90 minutes. In case of more X/M flares, minor to moderate radio blackouts may be observed which may last up to 90 minutes. Low solar wind speed and quiet to unsettled geomagnetic activity is expected. HF conditions are enhanced.