Daily Space Weather Summary (SUPARCO)

Thursday, October 10, 2024, 14:40 PST

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)	
Critical Frequency of F2 layer (foF2)	14.4 MHz
Virtual Height of F2 layer (h`F2)	378 km
Total Electron Content (TEC)	75 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)	14.5	14.8	16.1	17.9	20.1	22.5	28.3	36.0
FOT (MHz)	12.3	12.6	13.7	15.2	17.1	19.1	24.1	30.6

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

LOCAL GEOMAGNETIC CONDITIONS	
K-index	2 (Quiet)
Total Field (F) (Son/Isb)	45656/50724 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS	
Sunspot Number (SN)	107
Solar radio flux (F10.7)	220 sfu
Solar wind speed	413.4 km/s (varied in the past 24 hrs between 257 & 566 km/s)
Solar x-ray flares	C5.5 (max flare in the past 24 hrs (X1, 1547 UT)
Interplanetary Magnetic Field (IMF) **Total Field (Bt)** **Z Component of Field (Bz)**	+5.56 nT (varied in the past 12 hrs between +4.45 nT & +6.32 nT) -4.1 nT (varied in the past 12 hrs between -5.49 nT & +1.48 nT)

Solar conditions are at 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 October 2024

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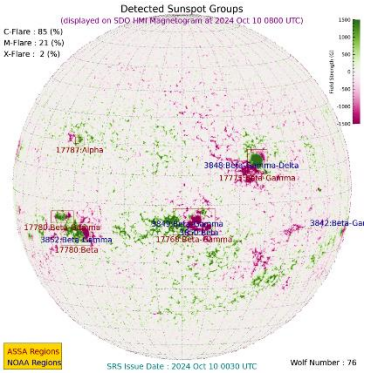
<td>There are four active regions AR3842, AR3848, AR3849, and AR3852 present on the Sun capable of producing strong M and X-class solar flares having chances of 21% and 2% respectively.

04 Coronal Holes (CHs) are detected on the solar disk.</td>
<td> 
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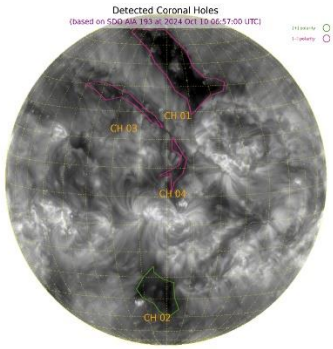
<td> 
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DISCUSSION:

Solar activity is expected to be at high levels. Multiple M/X-class solar flares, have already occurred from the regions mentioned above. In case of more M/X-class solar flares, R1-R3 levels radio blackouts may be observed. A coronal mass ejection (CME) is expected to impact Earth tonight, which may affect geomagnetic activity from unsettled to disturbed state. Solar radiation storm is currently at S2 (moderate) levels and is expected to be greater than S1 (low) levels. Solar windspeed is expected to be at moderate to elevated levels due to the CME impact. HF conditions are enhanced.