

# Daily Space Weather Summary (SUPARCO) On Emergency Basis (Storm Condition)



Saturday, May 11, 2024, 20:28 PST

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)								
<b>Critical Frequency of F2 layer (foF2)</b>	10.1 MHz							
<b>Virtual Height of F2 layer (h`F2)</b>	425 km							
<b>Total Electron Content (TEC)</b>	80 TECU							
Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances								
Distance (Km)	100	200	400	600	800	1000	1500	3000
<b>MUF (MHz)</b>	10.2	10.4	11.3	12.7	14.8	17.9	22.8	24.2
<b>FOT (MHz)</b>	8.7	8.8	9.6	10.8	12.6	15.2	21.1	23.4
Local HF conditions are slightly depressed as compared to the predicted monthly median MUF. Satellites are advised to monitor the health of sensors on board.								
LOCAL GEOMAGNETIC CONDITIONS								
<b>K-index</b>	8 (storm)							
<b>Total Field (F) (SON/ISB)</b>	46098/50198 nT (Extremely High)							
The local geomagnetic field is unsettled (extreme storm condition) at the moment. The conditions may prevail for the next 48 to 72 hours.								
LATEST SOLAR CONDITIONS								
<b>Sunspot Number (SN)</b>	156							
<b>Solar radio flux (F10.7)</b>	223 sfu							
<b>Solar wind speed</b>	779.2 km/s (varied in the past 24 hrs between 424 & 900 km/s) (Extremely High, Average value is 400 KM/second)							
<b>Solar x-ray flares</b>	M1.3 (max flare in the past 24 hrs: X4.5, 0123 UT)							
<b>Interplanetary Magnetic Field (IMF) Total Field (Bt) Z Component of Field (Bz)</b>	+24.6 nT (varied in the past 12 hrs between +18.9 nT & +39.5 nT) -21.6 nT (varied in the past 12 hrs between -35.7 nT & +23.9 nT)							
Solar conditions are at high levels with background X-ray flux at M-class level. More Coronal Mass Ejections (CMEs) are expected to it in the next 48 to 72 hours.								

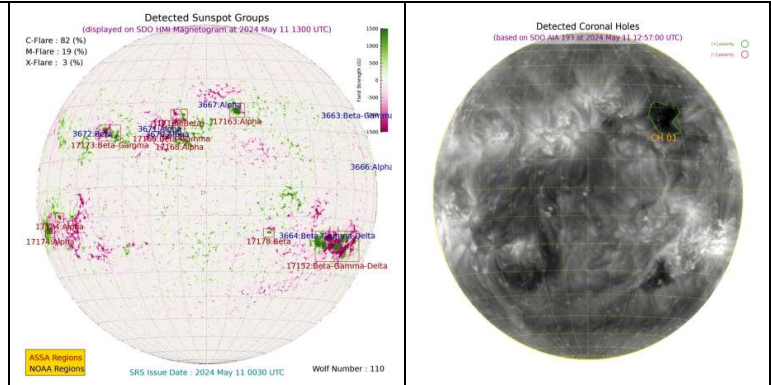
Sonmiani (SON): 25.2° N, 66.75° E, Islamabad (ISB): 33.7° N, 73.13° E

Notes: Credits: [www.spaceweather.go.kr](http://www.spaceweather.go.kr), [www.sws.bom.gov.au](http://www.sws.bom.gov.au), [www.spaceweather.com](http://www.spaceweather.com), [www.solen.info](http://www.solen.info)

## Daily Sun: 11 May 2024

There are two active regions AR3663 and AR3664 present on the Sun capable of producing strong M and X-class solar flares having chances of 19% and 3% respectively.

01 Coronal Hole (CH) is detected on the solar disk.



### DISCUSSION:

Solar activity is expected to remain at high levels. Multiple M and X-class solar flares, have already occurred from the regions mentioned above causing **extreme (G5) geomagnetic storms** and **minor to moderate radio blackouts**. Currently G4 geomagnetic storm is undergoing **causing severe geomagnetic disturbance**. In case of More M and X-class solar flares, **minor to moderate radio blackouts and disturbed geomagnetic conditions are expected**. High solar wind speed is expected due to the effect of CME. Some more CMEs are expected to sideswipe Earth's magnetic field on 12<sup>th</sup> May 2024 which may cause G1-G2 geomagnetic storms. Satellite operators may face some minor changes to the orbits of LEOs and communication disruption. Slightly depressed HF conditions are expected.