

Daily Space Weather Summary (SUPARCO)

Thursday, June 19, 2025, 14:37 PST



Radio Blackouts			Solar Radiation Storms			Geomagnetic Storms		
-24 Hr	Current	Predicted	-24 Hr	Current	Predicted	-24 Hr	Current	Predicted
R1 – R2	R0 / R1	R1 – R2	S0	S0	S0	G0	G0	G0 / G1

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)

Critical Frequency of F2 layer (foF2)	11.6 MHz
Virtual Height of F2 layer (h`F2)	328 km
Total Electron Content (TEC)	68 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	13.3	15.2	17.2	19.8	22.9	25.4	28.0
FOT (MHz)	10.0	11.3	13.2	14.9	16.9	19.6	22.1	24.4

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)	45775/50710 nT

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS

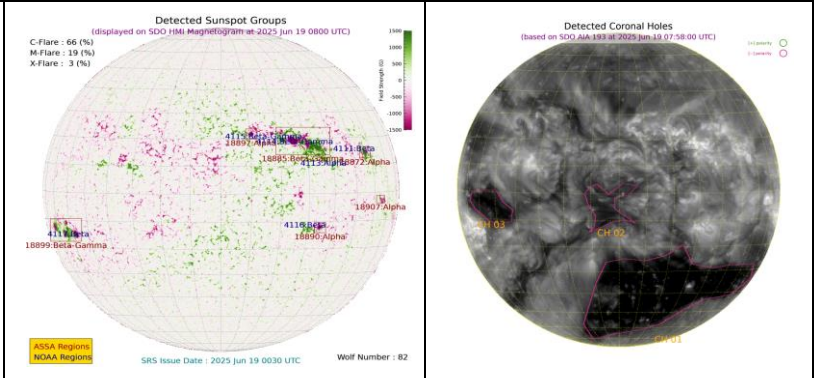
Sunspot Number (SN)	120
Solar radio flux (F10.7)	137 sfu
Solar wind speed	494.7 km/s (varied in the past 24 hrs between 412 & 618 km/s)
Solar x-ray flares	C2.6 (max flare in the past 24 hrs (C8, 0917 UT)
Interplanetary Magnetic Field (IMF) Total Field (Bt) Z Component of Field (Bz)	+8.43 nT (varied in the past 12 hrs between +4.42 nT & +8.42 nT) +3.12 nT (varied in the past 12 hrs between -4.85 nT & +4.18 nT)

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

Daily Sun: 19 June 2025

There are two active regions AR4114 and AR4115 present on the Sun capable of producing strong M and X-class solar flares having chances of 19% and 3% respectively.

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



DISCUSSION:

Solar activity is expected to be at low to moderate levels. Multiple M/X-class solar flares, have already occurred from the region mentioned above causing R1-R2 levels radio blackouts. In case of more M/X-class solar flares, minor to moderate levels radio blackouts may be observed. Low to moderate solar wind is expected to prevail due to the presence of coronal holes. Geomagnetic activity is expected to be at quiet to unsettled 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 R1	Moderate R2	Strong R3	Severe R4	Extreme R5
<u>Solar Radiation Storms</u>				
Minor S1	Moderate S2	Strong S3	Severe S4	Extreme S5
<u>Geomagnetic Storms</u>				
Minor G1	Moderate G2	Strong G3	Severe G4	Extreme G5