

Daily Space Weather Summary (SUPARCO)

Tuesday, September 16, 2025, 12:36 PST



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

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)

| | |
|---------------------------------------|----------|
| Critical Frequency of F2 layer (foF2) | 11.4 MHz |
| Virtual Height of F2 layer (h`F2) | 273 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) | 11.7 | 12.3 | 13.4 | 17.6 | 20.4 | 23.2 | 25.4 | 27.7 |
| FOT (MHz) | 9.4 | 10.5 | 11.4 | 15.0 | 17.3 | 19.7 | 21.6 | 23.5 |

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

LOCAL GEOMAGNETIC CONDITIONS

| | |
|---------------------------|----------------|
| K-index | 3 (Quiet) |
| Total Field (F) (Son/Isb) | 45770/50714 nT |

The local geomagnetic field is quiet at the moment.

LATEST SOLAR CONDITIONS

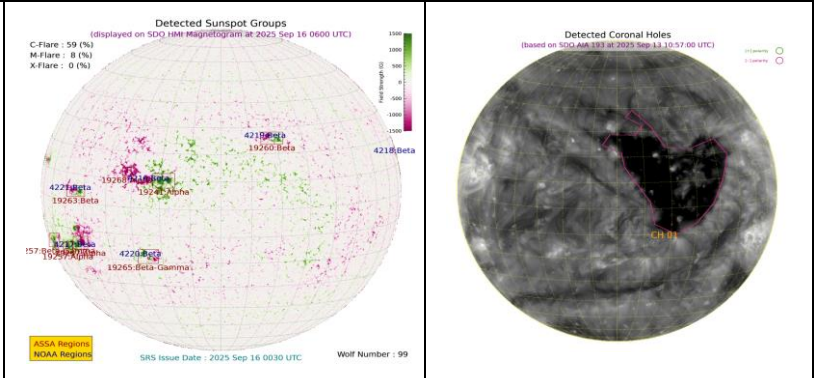
| | |
|--|--|
| Sunspot Number (SN) | 110 |
| Solar radio flux (F10.7) | 130 sfu |
| Solar wind speed | 715.5 km/s (varied in the past 24 hrs between 497 & 840 km/s) |
| Solar x-ray flares | C1.1 (max flare in the past 24 hrs (C3, 1831 UT) |
| Interplanetary Magnetic Field (IMF) Total Field (Bt) Z Component of Field (Bz) | +5.52 nT (varied in the past 12 hrs between +4.07 nT & +8.5 nT) -3.42 nT (varied in the past 12 hrs between -5.2 nT & +5.39 nT) |

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

Daily Sun: 16 September 2025

There is no active region present on the Sun capable of producing strong solar flares.

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



DISCUSSION:

Solar activity is expected to be at low to moderate levels. In case of M/X-class solar flares, minor to moderate level radio blackouts may be observed. Moderate to slightly elevated solar wind speed is expected 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 | Moderate | Strong | Severe | Extreme |
| R1 | R2 | R3 | R4 | R5 |
| <u>Solar Radiation Storms</u> | | | | |
| Minor | Moderate | Strong | Severe | Extreme |
| S1 | S2 | S3 | S4 | S5 |
| <u>Geomagnetic Storms</u> | | | | |
| Minor | Moderate | Strong | Severe | Extreme |
| G1 | G2 | G3 | G4 | G5 |