

# Daily Space Weather Summary (SUPARCO)

Tuesday, October 14, 2025, 14:46 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        | G0                 | G0      | G0 / G1   |

## LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)

|                                       |          |
|---------------------------------------|----------|
| Critical Frequency of F2 layer (foF2) | 13.1 MHz |
| Virtual Height of F2 layer (h`F2)     | 315 km   |
| Total Electron Content (TEC)          | 80 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)     | 13.4 | 15.1 | 17.6 | 20.4 | 23.2 | 25.4 | 27.7 | 30.2 |
| FOT (MHz)     | 11.4 | 12.8 | 15.0 | 17.3 | 19.7 | 21.6 | 23.5 | 25.7 |

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) | 45704/50715 nT |

The local geomagnetic field is quiet at the moment.

## LATEST SOLAR CONDITIONS

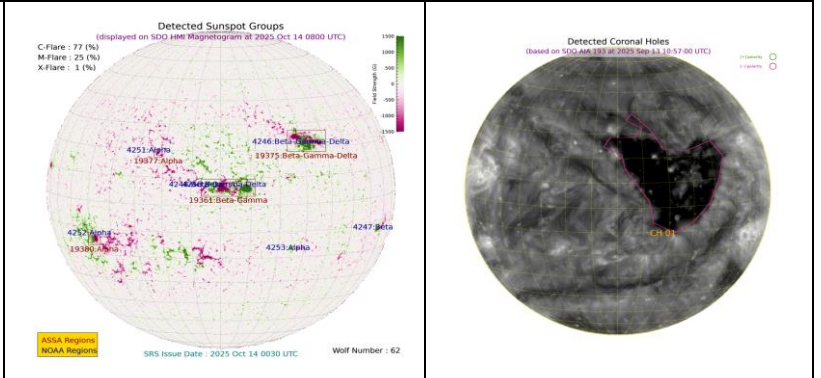
|                                                                                      |                                                                                                                                     |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Sunspot Number (SN)                                                                  | 122                                                                                                                                 |
| Solar radio flux (F10.7)                                                             | 141 sfu                                                                                                                             |
| Solar wind speed                                                                     | 603.5 km/s (varied in the past 24 hrs between 570 & 769 km/s)                                                                       |
| Solar x-ray flares                                                                   | C2.9 (max flare in the past 24 hrs (M2, 0041 UT)                                                                                    |
| Interplanetary Magnetic Field (IMF)<br>Total Field (Bt)<br>Z Component of Field (Bz) | +4.4 nT (varied in the past 12 hrs between +2.54 nT & +4.52 nT)<br>+2.46 nT (varied in the past 12 hrs between -1.23 nT & +3.44 nT) |

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

## Daily Sun: 14 October 2025

There are two active regions AR4246 and AR4248 present on the Sun capable of producing strong M and X-class solar flares having chances of 25% and 1% respectively.

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



### DISCUSSION:

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