# Daily Space Weather Summary (SUPARCO)

**Wednesday, January 08, 2025, 14:32 PST**

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

| LOCAL CURRENT IONOSPHERIC CONDITIONS (SON) | |
|---|---|
| **Critical Frequency of F2 layer (foF2)** | 11.2 MHz |
| **Virtual Height of F2 layer (h`F2)** | 298 km |
| **Total Electron Content (TEC)** | 40 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) | 11.4 | 13.2 | 15.2 | 17.9 | 21.0 | 23.4 | 27.3 | 30.5 |
| FOT (MHz) | 9.7 | 11.2 | 12.9 | 15.2 | 17.8 | 20.0 | 23.2 | 26.0 |

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

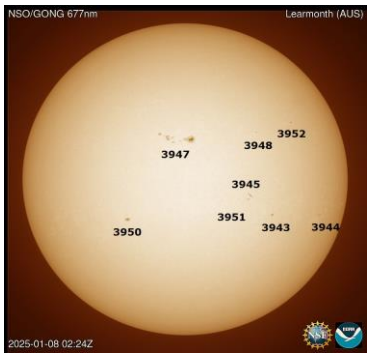
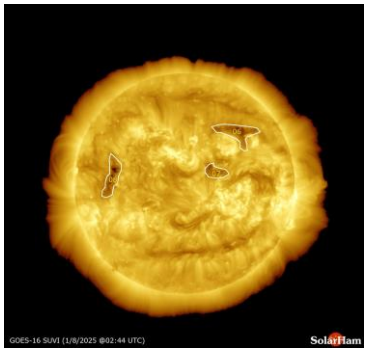
| LOCAL GEOMAGNETIC CONDITIONS | |
|---|---|
| **K-index** | 2 (Quiet) |
| **Total Field (F) (Son/Isb)** | 45770/50714 nT |

**The local geomagnetic field is quiet at the moment.**

| LATEST SOLAR CONDITIONS | |
|---|---|
| **Sunspot Number (SN)** | 113 |
| **Solar radio flux (F10.7)** | 168 sfu |
| **Solar wind speed** | 464.2 km/s (varied in the past 24 hrs between 450 & 617 km/s) |
| **Solar x-ray flares** | C21 (max flare in the past 24 hrs (M1, 2305 UT) |
| **Interplanetary Magnetic Field (IMF)**<br>**Total Field (Bt)**<br>**Z Component of Field (Bz)** | +6.08 nT (varied in the past 12 hrs between +5.23 nT & +6.34 nT)<br>-0.83 nT (varied in the past 12 hrs between -5.01 nT & +3.56 nT) |

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

**Daily Sun: 8 January 2025**

| | | |
|---|---|---|
| There is one active region AR3947 present on the Sun capable of producing strong solar flares.<br><br>03 Coronal Holes (CHs) are detected on the solar disk. |  |  |

**DISCUSSION:**

Solar activity is expected to be at moderate to high levels. Multiple M-class solar flares, have already occurred from the regions present on the solar disk causing minor level radio blackouts. In case of M/X-class solar flares, minor level radio blackouts may be observed. Low to moderate solar wind speed and quiet 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*

| ***Radio Blackouts*** | | | | |
|---|---|---|---|---|
| **Minor** | **Moderate** | **Strong** | **Severe** | **Extreme** |
| **R1** | **R2** | **R3** | **R4** | **R5** |

| ***Solar Radiation Storms*** | | | | |
|---|---|---|---|---|
| **Minor** | **Moderate** | **Strong** | **Severe** | **Extreme** |
| **S1** | **S2** | **S3** | **S4** | **S5** |

| ***Geomagnetic Storms*** | | | | |
|---|---|---|---|---|
| **Minor** | **Moderate** | **Strong** | **Severe** | **Extreme** |
| **G1** | **G2** | **G3** | **G4** | **G5** |