# **3-day Space Weather Conditions (SUPARCO)**

Friday, October 10, 2025, 12:43 PST



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

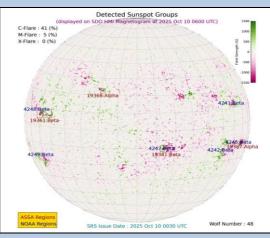
Stays (10 Oct - 12									
DATE   10-Oct-25 (noon)   11-Oct-25 (noon)   12-Oct-25 (noon)   13-Oct-25 (noon)   16F2   14.4 MHz   14.0 MHz   13.7 MHz   13.8 Mm   295 km   14.7 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   14.7 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   14.7 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances   15.0 Maximum			1	OCAL CURREN	IT IONOSPHERIC (	ONDITIONS (SON)			
h′F2         345 km         313 km         295 km           TEC         80 TECU         78 TECU         74 TECU           Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances           Distance (km)         100         200         400         600         800         1000         1500           MUF (MHz) for 3         14.7         15.4         17.6         20.4         23.2         25.4         27.7           days (10 Oct - 12         14.3         15.0         17.2         20.0         22.8         25.2         27.5           Oct)         14.0         14.8         16.9         19.6         22.3         24.7         26.9           FOT (MHz) for 3         12.5         13.1         15.0         17.3         19.7         21.6         23.5           days (10 Oct - 12         12.1         12.8         14.6         17.0         19.4         21.4         23.4           Oct)         11.9         12.6         14.4         16.7         19.0         21.0         22.9           LOCAL GEOMAGNETIC CONDITIONS           Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan="3">Colspan=	DATE					<u> </u>		12-Oct-2	25 (noon)
TEC	foF2		14.4 MHz			14.0 MHz		13.7	' MHz
Maximum Usable Frequency (MUF) and Optimum Traffic Frequency (FOT) for various distances	h'F2		345 km			313 km		295	km
Distance (km)   100   200   400   600   800   1000   1500     MUF (MHz) for 3   14.7   15.4   17.6   20.4   23.2   25.4   27.7     Lays (10 Oct - 12   14.3   15.0   17.2   20.0   22.8   25.2   27.5     Dict)	TEC		80 TECU			78 TECU		74 1	ΓECU
MUF (MHz) for 3		Maximum	<b>Usable Frequen</b>	cy (MUF) and	d Optimum Traf	fic Frequency (F	OT) for various	distances	
Adays (10 Oct - 12	nce (km)	100	200	400	600	800	100	0 150	3000
Stays (10 Oct - 12	MHz) for 3	14.7	15.4	17.6	5 20.4	23.2	25.4	1 27.	.7 30.0
Total   12.5   13.1   15.0   17.3   19.7   21.6   23.5		14.3	15.0	17.2	2 20.0	22.8	25.2	2 27.	.5 29.7
tays (10 Oct – 12 12.1 12.8 14.6 17.0 19.4 21.4 23.4 23.4 16.7 19.0 21.0 22.9 14.4 16.7 19.0 21.0 22.9 cocal ionospheric conditions are normal as compared to the predicted monthly median MUF.    LOCAL GEOMAGNETIC CONDITIONS   Quiet geomagnetic activity is expected.   Quiet to unsettled geomagnetic expected.   Property of the local geomagnetic field is quiet at the moment   45672±10 /50505±20 nT   45675±10/50510±20   Property of the local geomagnetic field is quiet at the moment   Property of the local geomagnetic field is quiet at the moment   Property of the local geomagnetic field is quiet at the moment   Property of the local geomagnetic field is quiet at the moment   Property of the local geomagnetic field is quiet at the moment   Property of the local geomagnetic field   Property of the local geomagnetic field		14.0	14.8	16.9	9 19.6	22.3	24.7	7 26.	.9 29.2
Dct)  11.9  12.6  14.4  16.7  19.0  21.0  22.9  LOCAL GEOMAGNETIC CONDITIONS  K-index  2 (Quiet)  Quiet geomagnetic activity is expected.  F (SON/ISB)  45670/50500 nT  45672±10 /50505±20 nT  Che local geomagnetic field is quiet at the moment	MHz) for 3	12.5	13.1	15.0	17.3	19.7	21.6	5 23.	.5 25.5
Cocal ionospheric conditions are normal as compared to the predicted monthly median MUF.  LOCAL GEOMAGNETIC CONDITIONS  K-index  2 (Quiet) Quiet geomagnetic activity is expected. Quiet to unsettled geomagnetic expected.  Expected.  45670/50500 nT  45672±10 /50505±20 nT  Che local geomagnetic field is quiet at the moment	(10 Oct - 12	12.1	12.8	14.6	5 17.0	19.4	21.4	23.	.4 25.2
LOCAL GEOMAGNETIC CONDITIONS  K-index  2 (Quiet)  Quiet geomagnetic activity is expected.  F (SON/ISB)  45670/50500 nT  45672±10 /50505±20 nT  Che local geomagnetic field is quiet at the moment		11.9	12.6	14.4	16.7	19.0	21.0	22.	.9 24.8
K-index 2 (Quiet) Quiet geomagnetic activity is expected. Quiet to unsettled geomagnetic expected.  F (SON/ISB) 45670/50500 nT 45672±10 /50505±20 nT 45675±10/50510±20 The local geomagnetic field is quiet at the moment	onospheric condi	itions are norm	nal as compared t	o the predicte	d monthly media	n MUF.			
### Expected.   expected.   expected.   expected.				LOCAL	GEOMAGNETIC CO	NDITIONS			
The local geomagnetic field is quiet at the moment	K-index		2 (Quiet)		Quiet geomag	netic activity is ex	pected. Quie		
The local geomagnetic field is quiet at the moment	SON/ISB)	,	45670/50500 n	Т	45672±	10 /50505±20 n	ıΤ	45675±10/5	50510±20 nT
	al geomagnetic fie	ld is quiet at the	e moment						
SOLAR CONDITIONS					SOLAR CONDITIO	NS			

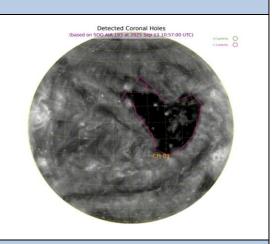
SOLAR CONDITIONS							
<b>SN</b> 87		84 (SSN-predicted)	78 (SSN-predicted)				
<b>F 10.7</b> 122 sfu		114 sfu	103 sfu				
Vsw	311.2 km/s (Varied in the past 12 hrs between 270 & 516 km/s)	Low to moderate levels of solar wind speed may prevail.	Low to moderate levels of solar wind speed may prevail.				
Solar flares	B8.2 (max. flare in the past (M2, 1231 UT)	Low to moderate levels of solar activity is expected.	Moderate to slightly elevated levels of solar activity is expected.				
IMF +8.76 nT (varied in the past 12 hrs between +6.41 nT & +9.61 nT)							
Bz	+3.9 nT (varied in the past 12 hrs between -1.71 nT & -5.61 nT)	Expected to vary between positive and negative sectors.	Expected to vary between positive and negative sectors.				
Solar conditions are at low to moderate levels with background X-ray flux at B-class levels.							

## Daily Sun: 10 October 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.





### 2-Day Conditions

- Solar activity is expected to be at low to moderate levels.
- In case of M/X-class solar flares, minor to moderate level HF radio blackouts are expected.
- Moderate to slightly elevated levels of solar wind speed is expected to prevail due to the presence of coronal hole high speed stream (CH HSS).
- Quiet to unsettled levels of geomagnetic activity is expected.
- Normal ionospheric conditions are expected for the next 2 days. It is advised to use the frequency ranges mentioned in the ionospheric section.

# **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

#### **ANNEXURE**

	DEFINITIONS OF TERMINOLOGIES USED IN THIS SUMMARY
foF2	Maximum frequency of F2-layer of the ionosphere
h′F2	Virtual height of the F2-layer
MUF	Maximum usable frequency for 3000 km
K-index	Local index defining geomagnetic conditions
Declination	Planetary A index defining geomagnetic conditions, predicted value during geomagnetic unsettled Conditions
F	Magnitude of the total geomagnetic field vector (unit in nano Teslas)
SON, difference	Sonmiani Geomagnetic Observatory mean value, <u>difference limit</u> from night time value of quiet conditions: 25-30 nT, max: 260 nT
ISB	Islamabad Geomagnetic Observatory mean value
SN	Relative sunspot numbers
Vsw	Solar Wind Speed (km/s)
F10.7	Solar radio flux at 2.8 GHz (10.7 cm wavelength)
sfu	Solar flux unit (defines the solar radio 10.7 cm flux)
Solar Flare	Could be B, C, M and X depending upon the intensity of x-rays being emitted (each type has further 10 classes based on amount of energy released by the flare)
IMF	Interplanetary magnetic field (the source of which is the Sun)
Bt	Total IMF (unit in Nano Teslas)
Bz	Vertical component of IMF (could be north/upward/positive or south/downward/negative) (unit in nano Teslas)
AR	Active Regions on the sun currently in view
CME	Coronal Mass Ejection
СН	Coronal Hole
KASI	Korean Astronomy & Space Science Institute
SWFs	Short-wave fadeouts, caused by M/X class flares on the day lit side of the hemisphere absorbing lower Frequencies and hampering HF communication.
SSN-predicted	Smooth Sunspot Number-it is an estimated value using a mathematical relation to forecast it.

# **RSG SCALES**

Radio Blackouts							
Minor Moderate Strong Severe Extreme							
<b>R</b> 1	R2	R3	R4	R5			

Solar Radiation Storms						
Minor	Moderate	Strong	Severe	Extreme		
<b>S1</b>	<b>S2</b>	<b>S3</b>	<b>S4</b>	<b>S5</b>		

Geomegnatic Storms							
Minor Moderate Strong Severe Extreme							
<b>G1</b>	G2	<b>G3</b>	G4	<b>G5</b>			