Daily Space Weather Summary (SUPARCO)

Tuesday, October 29, 2024, 12:39 PST

SUPARCO

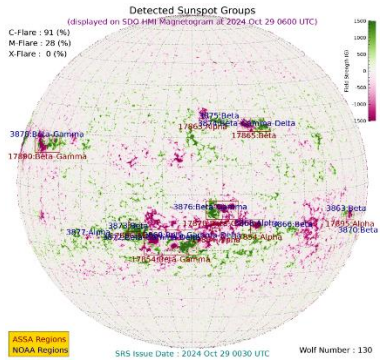
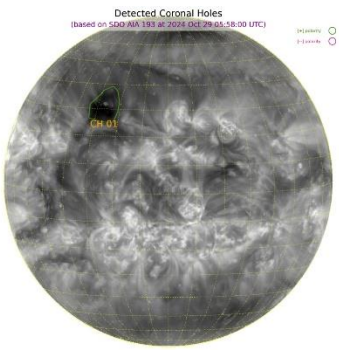
Radio Blackouts			Solar Radiation Storms			Geomagnetic Storms		
-24 Hr	Current	Predicted	-24 Hr	Current	Predicted	-24 Hr	Current	Predicted
R1	R0	R1 – R2	S2	S2	S2 / S1	G1	G0	G0

LOCAL CURRENT IONOSPHERIC CONDITIONS (SON)								
Critical Frequency of F2 layer (foF2)	13.8 MHz							
Virtual Height of F2 layer (h`F2)	330 km							
Total Electron Content (TEC)	70 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)	14.0	14.4	16.1	18.5	21.2	24.1	30.9	36.1
FOT (MHz)	11.9	12.3	13.6	15.7	18.0	20.5	26.2	30.7
Local HF conditions are enhanced as compared to the predicted monthly median MUF.								

LOCAL GEOMAGNETIC CONDITIONS	
K-index	1 (Quiet)
Total Field (F) (Son/Isb)	45705/50723 nT
The local geomagnetic field is quiet at the moment.	

LATEST SOLAR CONDITIONS	
Sunspot Number (SN)	288
Solar radio flux (F10.7)	255 sfu
Solar wind speed	518.7 km/s (varied in the past 24 hrs between 460 & 556 km/s)
Solar x-ray flares	C2.7 (max flare in the past 24 hrs (M4, 1628 UT)
Interplanetary Magnetic Field (IMF) **Total Field (Bt)** **Z Component of Field (Bz)**	+5.61 nT (varied in the past 12 hrs between +6.21 nT & +7.75 nT) +2.79 nT (varied in the past 12 hrs between -5.23 nT & +4.38 nT)
Solar conditions are at high levels with background X-ray flux at C-class level.	

Daily Sun: 29 October 2024

There are five active regions AR3869, AR3872, AR3874, AR3876 and AR3878 present on the Sun capable of producing strong C and M-class solar flares having chances of 91% and 28% respectively. 01 Coronal Hole (CH) is detected on the solar disk.		

DISCUSSION:

Solar activity is expected to be at high levels. Multiple M/X-class solar flares, have already occurred from the regions mentioned above. In case of more M/X-class solar flares, minor to moderate levels radio blackouts may be observed. Low to moderate solar wind speed is expected to prevail due to the impact of CME. Geomagnetic activity is expected to be quiet. HF conditions are enhanced.

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**