

Month: August 2024

# • NEWS FROM THE SOLAR SECTION

# August 2024 solar news

Est. 1922

The sunspot number for August has once again risen from 196.5 to 215.5, reaching a record high not seen since solar cycle 23. With the solar maximum still ahead, could cycle 25 match or even surpass the peak of cycle 23? Only time will tell.



#### SUNSPOT OBSERVATIONS

		Jacques v Delft		Jacques v Delft						
August 24	Day	Time	Seeing	Groups	Spots	W no.	North Groups	South groups	North spots	South spots
Thu	1	1600	G	10	51	151	3	7	5	46
Fri	2	1125	G	11	70	180	5	6	12	58
Sat	3	1230	G	12	79	199	5	7	15	64
Sun	4	1105	G	11	61	171	5	6	14	47
Mon	5	1610	G	10	62	162	4	6	13	49
Гue	6	1110	G	9	58	148	4	9	11	47
Wed	7	1225	G	9	74	164	4	5	12	62
Thu	8	1345	G	8	75	155	4	4	26	49
Fri	9	1510	G	9	74	164	4	5	14	60
Sat	10	1055	G	10	140	240	4	6	23	117
Sun	11	1210	G	7	67	137	3	4	11	56
Mon	12	1225	G	11	41	151	4	7	8	33
Гue	13	1140	G	11	38	148	4	7	7	31
Wed	14	1320	G	8	24	104	3	5	10	14
Thu	15	1015	G	7	20	90	3,0	4	9	11
Fri	16	1135	G	8	20	100	4	4	9	11
Sat	17	1015	G	9	38	128	3	6	18	20
Sun	18					0				
Mon	19	1255	G	11	149	259	5	6	82	67
Tue	20	1350	G	11	38	148	5	6	16	22
Wed	21	730	G	11	34	144	5	6	12	22
Thu	22	1205	G	12	42	162	5	7	11	31
Fri	23	1310	G	10	40	140	5	5	12	28
Sat	24	1650	G	11	40	150	6	5	11	29
Sun	25	1025	G	11	38	148	6	5	9	29
Mon	26	1625	G	10	36	136	5	5	9	27
Tue	27	935	G	10	28	128	4	6	6	22
Wed	28	1600	G	9	24	114	3	6	6	18
Thu	29	835	G	9	27	117	4	5	13	14
Fri	30	1505	G	7	24	94	3	4	8	16
Sat	31	1525	G	9	27	117	3	6	5	22
		0 Observations		Groups	Spots	W no.	North Groups	South groups	North spots	South spots
		30		291	1539	4449	125	170	417	1122

	Monthly Means								
MDF	148,3	1 Observer							
MDF g	9,7	1 Observer							
MDF Ng	4,2	1 Observer							
MDF Sg	5,7	1 Observer							

Observers:

Jacques van Delft ASSA Bloemfontein South Africa

When more than 1 observer is submitting sunspots, the average per day is calculated and noted.

#### • SOLAR FLARE ACTIVETY August 2024

Solar flares are classified according to their x-ray brightness in the wavelength range 1 to 8 Angstrom. There are 3 categories: C class – minor, M class – medium and X class – big. Each category has 9 subdivisions.

A total of 343 solar flares were observed: 221 C-class flares and 118 M-class flares and 4 X class flares.

Solar flare	data:	LABC	ORATO	DRY OF	X-RAY ASTRONOMY OF THE SUN	
		https	://xra	s.ru/e	n/sun_flares.html	
					0	
	ust	ass	las	ass	Ž	
2024	Aug	C C	ž	C S	ğ	
Thu	1	5	13	0	3764/3765/3668/3770/3772/3773/3774	M1.0/M4.0 M1.3/M1.5 M8.2 M4.1/M1.2/M1.4/M6.3/M1.2 M1.9 M1.3 M1.2
Fri	2	7	12	0	3765/3766/3768/3772/3773/3775/???	M1.0 M1.2/M1.6 M1.5/M1.1 M7.3 M7.4/M1.1M1.2/M1.2/M1.5/M1.3
Sat	3	7	9	0	3766/3770/3774/3775/3777/????	M1,9/M1,5 M1,5 M1,9 M2,8/M1,8/M7,3/M1,0/M5,4
Son	4	7	6	0	3766/3780/3781	M1,1 M1,4/M2,2 M1,0/M1,4 M1,9
Mon	5	2	5	2	??/3780/3767/3780	M1,0 M1.7/M1,1 M6,1 M1,2/X1,7/X1,1
Tue	6	8	1	0	3781	M1,1
Wed	7	5	4	0	3774/3777/3781	M1,8 M4,5/M5,0/M1,1
Thu	8	8	6	1	3777/3780/3781	M2,1 M1,3 M1,6 M1,5 X1,3/M1,2/M1,0
Fri	9	6	7	0	3774/3777/3779/3780/3781	M4,5/M1,2/M1,8/M1,4/M1,0 M1,1/M1,0
Sat	10	8	5	0	3780/3782	M1,3 / M5,3 M1,6 M1,3/M1,2
Sun	11	9	4	0	3777/3780	M1,6 M1,0 M1,6 M1,2
Mon	12	8	2	0	3777/3784	M1,0/M1,2
Tue	13	10	3	0	3777/3783	M1,3/M1,0
Wed	14	3	3	1	3774/3784/??	M4,4 /M1,0 X1,1/M5,3
Thu	15	7	1	0	3780	M1,1
Fri	16	8	1	0	3780	M1,3
Sat	17	1	3	0	3784/3785/3790	M1,6/M1,1/M1,1 M1,4
Sun	18	5	5	0	3784/3796	M2,4 M1,1 M1,2/ M1,3 M1,4
Mon	19	10	2	0	3785/3796	M1,3/M3,7
Tue	20	3	2	0	3785/3796	M1,3/M1,2
Wed	21	5	2	0	3796	M1,2 M5,1
Thu	22	15	1	0	3796	M1,5
Fri	23	11	8	0	3800/3801	M1,0 M1,7 M1,1 M3,4 M5,1/M3,4 M1,7 M1,1
Sat	24	11	5	0	3796/3801	M1,6 M1,0 M1,4/M1,3 M1,7
Sun	25	14	0	0		
Mon	26	8	1	0	3796	M1,4
Tue	27	7	1	0	3796	M1,1
Wed	28	5	0	0		
Thu	29	6	0	0		
Fri	30	6	2	0	3806	M1,2 M3,8
Sat	31	6	4	0	3806/??	M1,1 M1,2 M1,8/M1,2
	Totals	221	118	4		



## • Geomagnetic data

### **K INDEX**

Scientists monitor geomagnetic activity using various instruments, including magnetometers and satellites, to better understand the processes involved and predict potential impacts on technological systems such as power grids, communication networks, and navigation systems as well as changes in our climate. Severe geomagnetic storms have the potential to disrupt these systems, making the study of geomagnetic activity crucial for both scientific understanding and practical applications.

Increased geo-magnetic activities are caused by Coronal Mass Ejections (CME's) triggered by solar activities such as solar flares, filament eruptions and Coronal openings.

The K-index scale has a range from 0 to 9 and is directly related to the maximum amount of fluctuation (relative to a quiet day) in the geomagnetic field over a three-hour interval.

Aug 24	Ohrsto O3hrs	03hrs to 06hrs	06hrsto 09hrs	09hrsto 12hrs	12hrsto 15hrs	15hrsto 18hrs	18hrs to 21hrs	21hrsto 24hrs	A Index
1	5,00	4,67	3,67	3,00	3,33	3,00	2,67	2,00	22
2	2,67	3,00	1,67	1,67	2,00	1,67	1,67	3,00	9
3	1,67	2,67	0,00	2,33	2,67	2,33	2,33	3,00	10
4	2,67	3,67	4,67	4,00	6,67	6,33	4,33	4,00	46
5	2,33	3,00	3,33	2,33	2,33	1,67	1,67	2,00	10
6	2,00	1,67	2,00	1,33	1,33	1,67	1,33	1,67	6
7	1,33	2,00	1,33	2,33	2,33	1,33	1,33	2,33	7
8	3,00	2,00	2,00	2,33	1,33	1,00	1,67	1,67	7
9	2,33	2,33	1,33	2,00	2,00	1,67	1,33	1,67	7
10	1,67	2,00	1,33	1,33	2,33	2,33	1,33	1,67	7
11	2,33	2,33	4,67	4,00	4,67	4,33	4,00	4,67	28
12	6,33	7,00	7,00	6,67	8,00	7,33	5,67	6,00	122
13	4,67	3,00	2,00	1,67	1,67	1,33	3,33	4,33	17
14	4,33	3,00	2,00	1,67	1,33	1,33	1,33	1,33	17
15	2,33	1,00	0,67	1,00	2,00	0,67	1,67	2,67	6
16	2,67	2,00	2,00	2,33	3,00	1,67	0,67	1,33	8
17	1,33	1,00	1,33	1,67	3,33	6,67	4,67	5,33	31
18	2,33	3,00	2,33	3,67	3,67	2,00	2,00	2,33	13
19	1,33	1,67	1,00	2,00	3,33	2,33	3,00	3,33	10
20	1,33	2,00	2,33	2,00	2,33	2,00	2,00	1,67	7
21	3,33	1,67	2,33	2,00	2,33	2,00	1,67	1,33	8
22	3,33	2,67	2,33	2,00	2,33	2,33	1,67	2,67	10
23	2,33	1,67	2,67	1,67	2,00	1,00	1,67	1,67	7
24	1,67	2,00	3,00	3,33	2,00	1,00	1,67	1,67	10
25	2,33	2,33	2,67	1,67	1,33	0,67	1,00	1,67	7
26	2,00	1,00	1,00	1,67	1,67	1,33	0,33	0,67	5
27	1,00	1,00	2,67	2,00	2,67	2,67	2,67	3,67	11
28	5,67	4,00	5,33	2,67	2,67	3,00	2,33	2,67	26
29	2,00	1,33	1,33	0,67	2,00	0,67	0,33	1,33	5
30	1,67	1,33	3,67	3,33	4,33	4,33	4,33	4,67	23
31	4,33	4,00	4,67	2,00	3,00	4,67	4,00	3,33	26

# Geomagnetic Storm Index

 G1
 G2
 G3
 G4
 G5

 Credit: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

# A INDEX

The solar A Index is a numerical scale that represents the geomagnetic activity in the Earth's ionosphere caused by solar flares and other solar phenomena. It measures the overall geomagnetic disturbance level on a scale from 0 to 400. The index is derived from the observed planetary A index, which quantifies the magnetic activity over a 24-hour period.

Here's a breakdown of the solar A Index scale:

- 0 to 7: Quiet geomagnetic conditions.
- 8 to 15: Unsettled geomagnetic conditions.
- 16 to 29: Active geomagnetic conditions.
- · 30 to 49: Minor storm levels.
- · 50 to 99: Major storm levels.
- 100 and above: Severe storm levels.

A higher A Index generally indicates more disturbed geomagnetic conditions. This index is valuable for radio operators, especially those involved in high-frequency (HF) radio communication, as it helps predict the likelihood of signal disruptions due to solar activity. The solar A Index is typically updated regularly and is an important tool for space weather monitoring and forecasting.



Geo-magnetic activities saw 17 days with an A index higher than 10. On the 12<sup>th</sup> the KP index rose to a G4 storm level with an A index of 122.

# • H Alpha Observations

Two observer shared their H-Alpha data for July 2024. Andrew Devey from BAA & MSAS living in Spain and Mick Nicholls from BAA & MSAS living in the UK.

August 2024	Counts	Observations	MDF
Prominance	214	40	5,4
Plage Areas	224	40	5,6
Filaments	272	40	6,8
Flares	9	40	0,2

#### • Solar images

#### WHITE LIGHT



Mick Nicholls BAA/MSAS, United Kingdom



Mick Nicholls BAA/MSAS, United Kingdom



Mick Nicholls BAA/MSAS, United Kingdom

H-Alpha



Mick Nicholls BAA/MSAS, United Kingdom



AR3806 IN H-ALPHA PRODUCING A M1.8 CLASS FLARE 31st AUGUST 2024 @13.13pmGMT 40mm SINGLE STACK PST ZWO ASI174MM CAMERA

Mick Nicholls BAA/MSAS, United Kingdom

AR3790 & AR3792 IN H-ALPHA 20th AUGUST 2024 @12.17pmGMT 40mm SINGLE STACK PST H-ALPHA SCOPE ZWO ASI174MM CAMERA



Mick Nicholls BAA/MSAS, United Kingdom



Mick Nicholls BAA/MSAS, United Kingdom



Mick Nicholls BAA/MSAS, United Kingdom



Mick Nicholls BAA/MSAS, United Kingdom



Andrew Devey, BAA/MSAS Spain.



Andrew Devey, BAA/MSAS Spain.



Andrew Devey, BAA/MSAS Spain.



Mick Nicholls BAA/MSAS, United Kingdom



Mick Nicholls BAA/MSAS, United Kingdom

Clear skies and regards

Jacques van Delft

ASSA Solar Section