

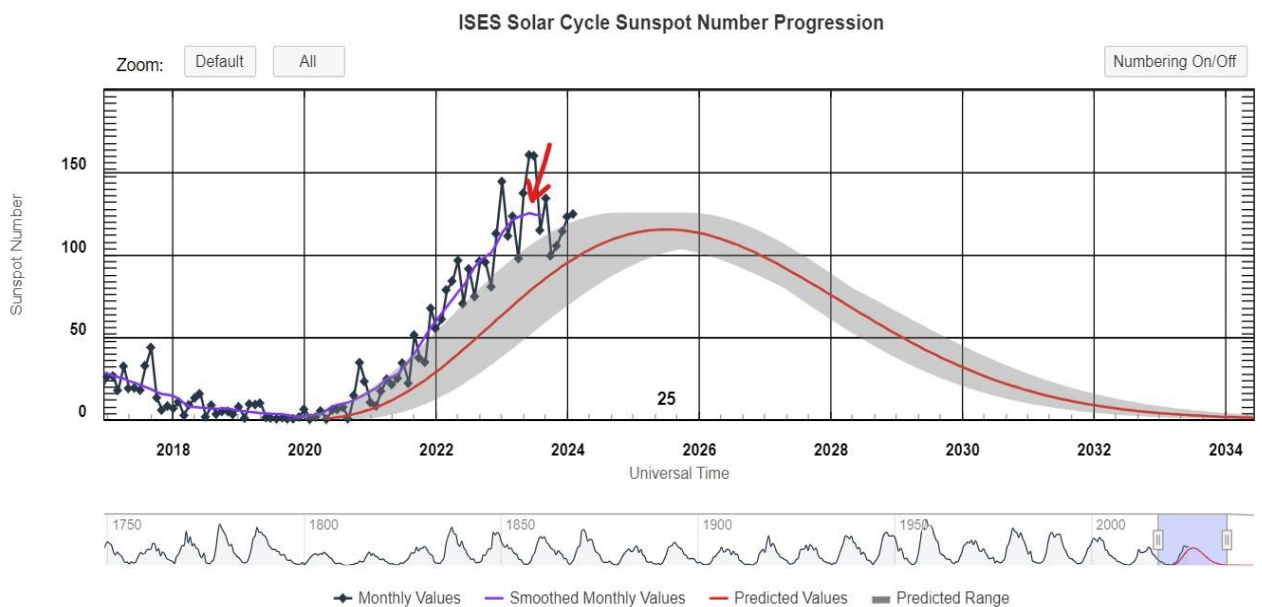


Month: February 2024

- **NEWS FROM THE SOLAR SECTION**



February 2024 solar news



Space Weather Prediction Center

The sunspot number in February increased from 123 to 124,7. The Sunspot number according to the graph shows a downward trend on the average line. As this is an indication that we are close to maximum, it can still increase again but will eventually flatten over the next couple of months whereafter we will see it moving down towards the minimum of cycle 25.

• SUNSPOT OBSERVATIONS

Feb 24	Day	Time	Groups	Spots	W no.	North Groups	South groups	North spots	South spots
Thu	1								
Fri	2	835	5	12	62	4	1	11	1
Sat	3	1415	5	14	64	3	2	9	5
Sun	4	1405	5	13	63	3	2	4	13
Mon	5				0				
Tue	6	1420	4	11	51	1	3	1	10
Wed	7				0				
Thu	8				0				
Fri	9	1325	5	14	64	1	4	2	12
Sat	10	1330	5	13	63	1	4	2	11
Sun	11				0				
Mon	12				0				
Tue	13	1340	6	37	97	3	3	22	15
Wed	14	1405	8	43	123	4	4	22	21
Thu	15				0				
Fri	16	1300	7	14	84	3	4	9	5
Sat	17	1255	5	10	60	2	3	8	8
Sun	18	1350	6	17	77	3	3	12	5
Mon	19	1255	5	12	62	3	2	10	2
Tue	20	1310	2	7	27	2	0	7	0
Wed	21				0				
Thu	22	1225	2	15	35	2	0	15	0
Fri	23	1450	4	15	55	2	2	12	3
Sat	24	1215	5	22	72	3	2	19	3
Sun	25	1315	5	26	76	3	2	21	5
Mon	26	1315	7	38	108	5	2	32	6
Tue	27				0				
Wed	28	1440	7	46	116	5	2	41	5
Thu	29	1305	7	36	106	5	2	33	3
		Observations	Groups	Spots	W no.	North Groups	South groups	North spots	South spots
		20	105	415	1465	58	47	292	133

	<u>Monthly Means</u>	
MDF	73,3	1 Observer
MDF g	5,3	1 Observer
MDF Ng	2,9	1 Observer
MDF Sg	2,4	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 ACTIVITY OCTOBER 2023

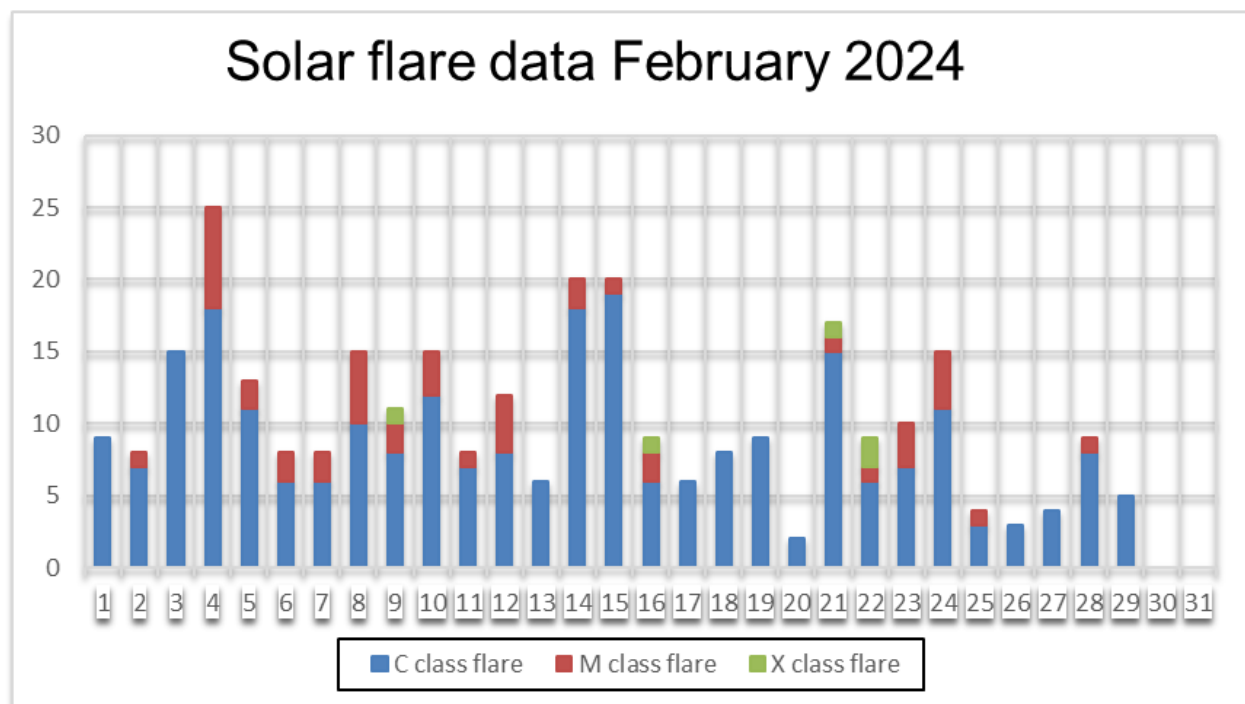
Solar flares are classified according to their x-ray brightness in the wavelength range 1 to 8 Angstrom. There are 3 categories: C class – minor, M class – medium and X class – big. Each category has 9 subdivisions.

A total of 303 solar flares were observed: 253 C-class flares and 45 M-class flares and 5 X class flares.

2024	February	C class	M class	X class	NOA No	
Thu	1	9				
Fri	2	7	1		3571	M1,1
Sat	3	15				
Sun	4	18	7		3575/3576	M1.1 / M2.7 M2.1 M1.2 M1.3
Mon	5	11	2		3576	M2,1 M1,4
Tue	6	6	2		3575	M2,2 M4,2
Wed	7	6	2		3575	M5,1 M1,3
Thu	8	10	5		3576/?	M3.4 M1.2 M1.8 M1.3 / M3.9
Fri	9	8	2	1	3576/3575	M3,1 M1,2 / X3,3
Sat	10	12	3		3576/?	M1,5 M9,0 / M3,4
Sun	11	7	1		?	M1,0
Mon	12	8	4		3576/?	M6,5 M1,1 M1,4/M2,6
Tue	13	6				
Wed	14	18	2		3582/3576	M1,0/M1,0
Thu	15	19	1		3576	M1,8
Fri	16	6	2	1	3576	M1.5 M3,0 X2,5

Sat	17	6				
Sun	18	8				
Mon	19	9				
Tue	20	2				
Wed	21	15	1	1	?/3590	M1.5 X1,8
Thu	22	6	1	2	3590	M4.8 X1,7 X6,3
Fri	23	7	3		3590	M1,0 M1,4 M2,6
Sat	24	11	4	0		M4,5 M2,2 M3,6 M1,0
Sun	25	3	1	0	3590	M2,0
Mon	26	3	0	0		
Tue	27	4	0	0		
Wed	28	8	1		3590	M1,5
Thu	29	5	0	0		
Totals	253	45	5			

Credit: NASA SDO



- **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.

Feb 24		0hrs to 03hrs	03hrs to 06hrs	06hrs to 09hrs	09hrs to 12hrs	12hrs to 15hrs	15hrs to 18hrs	18hrs to 21hrs	21hrs to 24hrs	A Index
1		1,00	1,33	2,00	2,00	1,00	1,67	1,67	0,67	5,00
2		0,67	0,33	1,33	1,33	0,67	0,67	0,33	0,00	3,00
3		0,33	1,33	1,00	0,67	0,00	0,67	0,67	0,67	3,00
4		0,67	1,33	1,00	1,67	0,67	1,67	2,00	3,00	6,00
5		0,67	0,67	2,33	1,67	2,00	2,33	2,00	2,67	7,00
6		3,00	2,33	1,67	2,00	2,00	1,67	2,00	1,00	8,00
7		0,33	0,67	1,33	1,33	67,00	1,00	1,00	1,33	4,00
8		1,00	1,00	1,33	1,67	2,00	1,67	2,00	0,67	5,00
9		1,00	0,33	1,33	1,67	1,67	0,67	1,00	3,00	6,00
10		1,00	1,33	1,33	2,00	1,67	1,00	1,00	1,67	5,00
11		4,33	3,33	3,67	3,00	2,00	2,33	1,67	2,00	15,00
12		1,67	1,33	2,00	0,33	0,33	0,67	0,67	0,67	4,00
13		1,67	2,33	1,67	2,33	2,00	3,67	2,00	3,00	10,00
14		3,33	3,00	1,33	1,33	0,67	0,67	0,67	1,67	7,00
15		1,33	0,67	1,00	1,00	1,00	0,67	1,67	1,00	4,00
16		1,33	0,67	0,67	1,67	2,00	1,00	0,33	1,33	4,00
17		1,00	0,67	0,00	1,33	1,67	1,00	1,33	2,00	4,00
18		3,33	2,00	1,00	1,67	1,00	0,00	1,00	0,33	6,00
19		1,67	0,33	0,67	1,67	0,33	0,00	0,00	0,67	3,00
20		1,00	0,33	2,00	1,67	1,67	1,33	1,67	3,00	6,00
21		1,00	0,33	0,67	1,00	0,67	1,67	1,67	1,00	4,00

22		2,00	2,33	2,00	2,00	1,33	0,67	1,67	1,33	6,00
23		0,33	0,33	0,67	1,33	1,33	0,33	0,67	1,00	3,00
24		1,00	0,67	0,67	1,67	2,33	2,67	2,33	2,67	7,00
25		1,67	3,00	3,00	2,67	3,33	2,00	3,00	3,33	13,00
26		3,33	3,00	2,67	2,67	2,67	1,67	1,67	2,33	11,00
27		3,67	4,67	3,00	1,33	0,67	1,33	2,67	1,00	13,00
28		1,67	1,33	1,67	2,33	1,33	0,67	1,33	1,33	6,00
29		1,00	0,33	1,67	1,33	1,67	1,00	0,67	1,33	4,00

Geomagnetic Storm Index

G1	G2	G3	G4	G5
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Credit: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

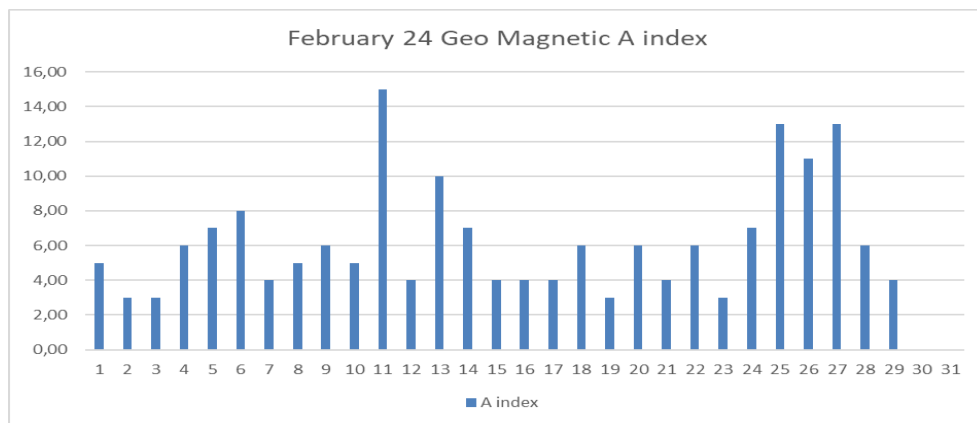
A INDEX

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.



Unsettled geomagnetic conditions were recorded on 11 March 24 and from 25 to 27 March 24.

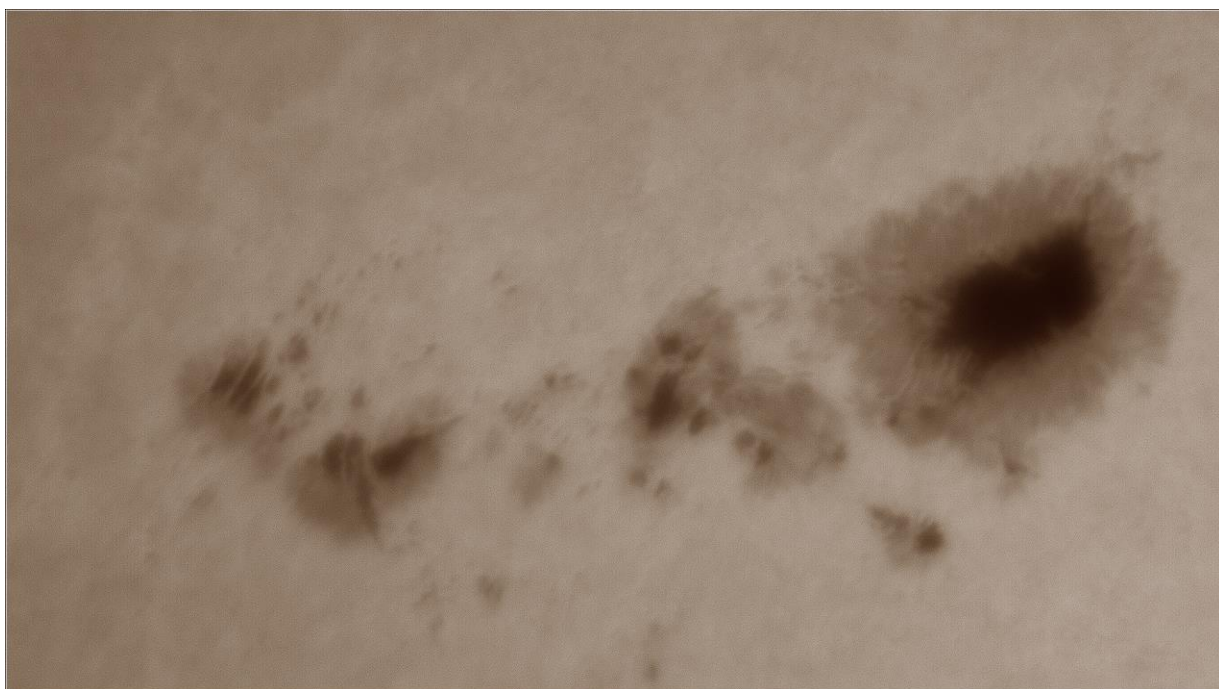
- **H Alpha Observations**

Two observer shared their H-Alpha data for February 2024. Andrew Devey from BAA & MSAS living in Spain using a PST double stack H Alpha telescope and Mick Nicholls from BAA & MSAS living in the UK.

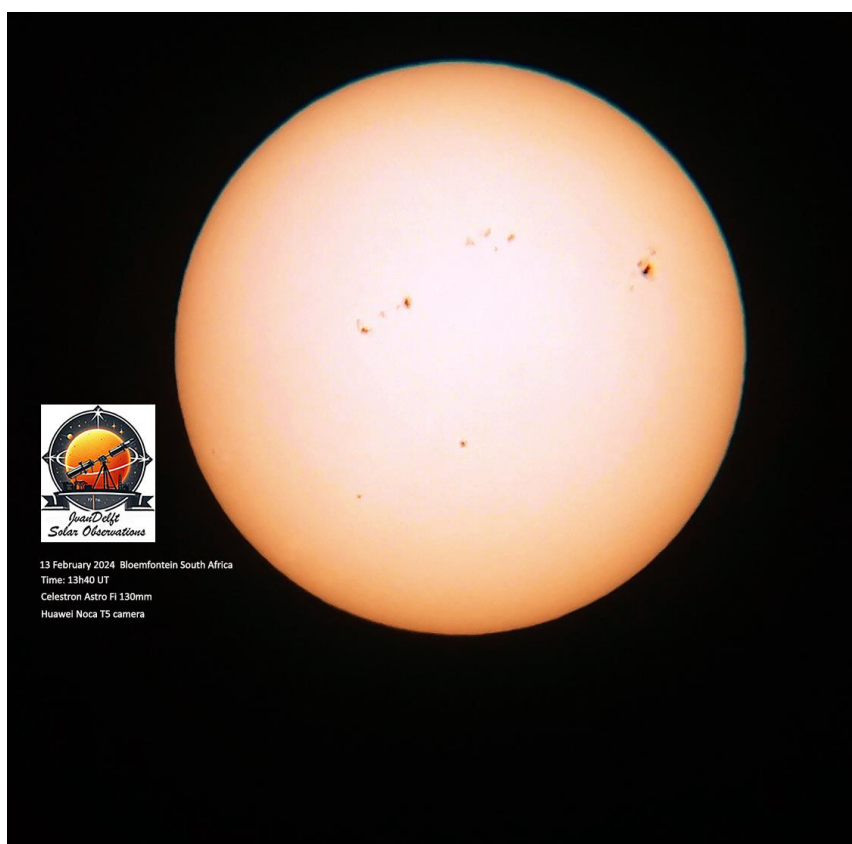
February. 2024	Counts	Observations	MDF
Prominence	93	22	4,2
Plage Areas	97	22	4,4
Filaments	113	22	5,1
Flares	4	22	0,2

- **Solar images**

WHITE LIGHT



Andrew Devey, BAA/MSAS Spain. AR3590 10h57UT 22.02.2024



J van Delft ASSA, South Africa



BLOEMFONTEIN
SOUTH AFRICA

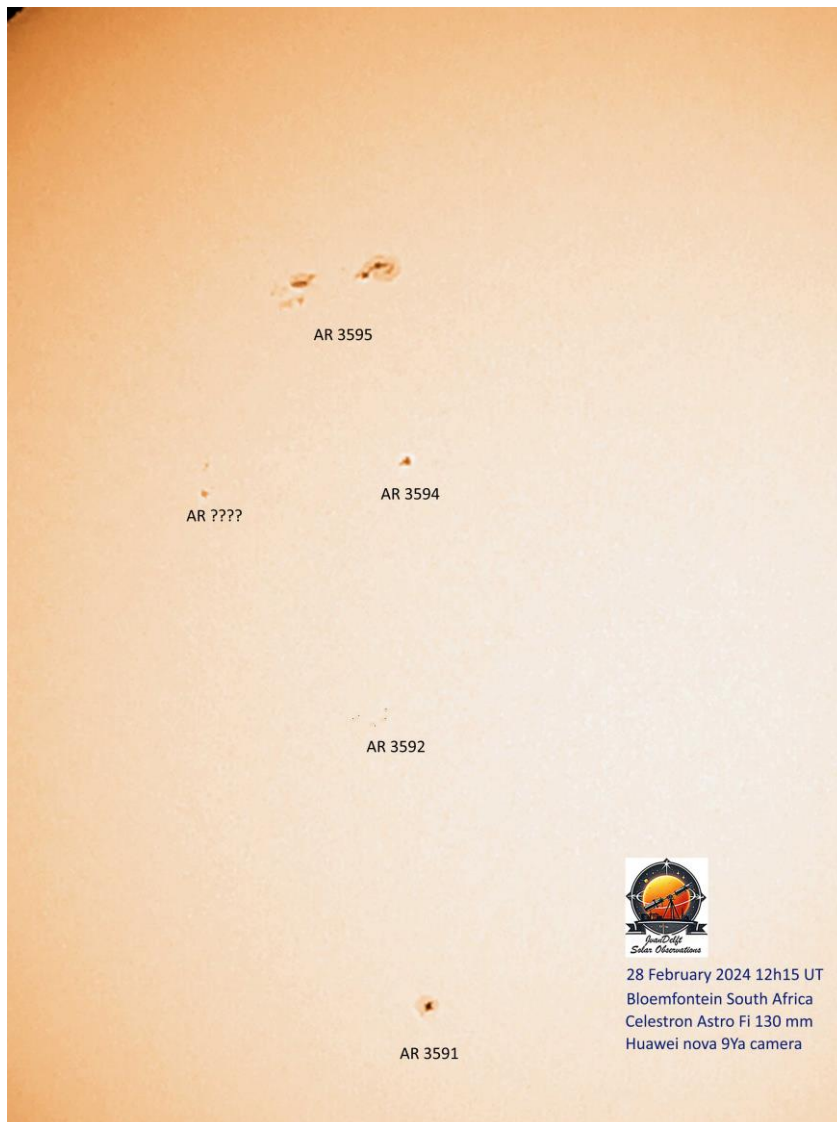
AR 3590

24 February 2024 12h15 UT

Celestron Astro Fi 130 mm

HUAWEI nova Y9a camera

J van Delft ASSA, South Africa



J van Delft ASSA, South Africa

SUN IN WHITE-LIGHT 24th FEBRUARY 2024 @09.34amGMT
80mm STARWAVE ED-R REFRACTOR HERSCHEL WEDGE ZWO ASI174MM CAMERA

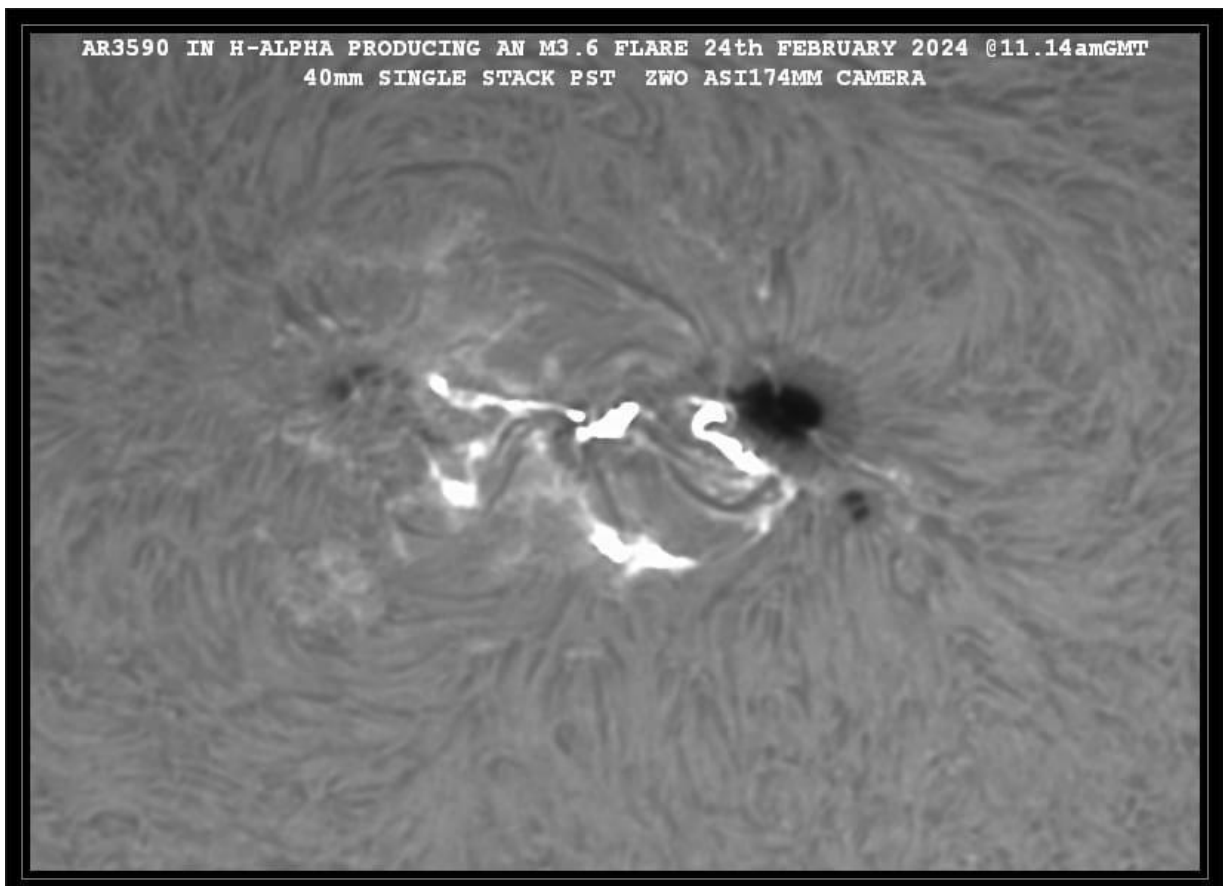


Mick Nicholls BAA/MSAS, United Kingdom

H-Alpha

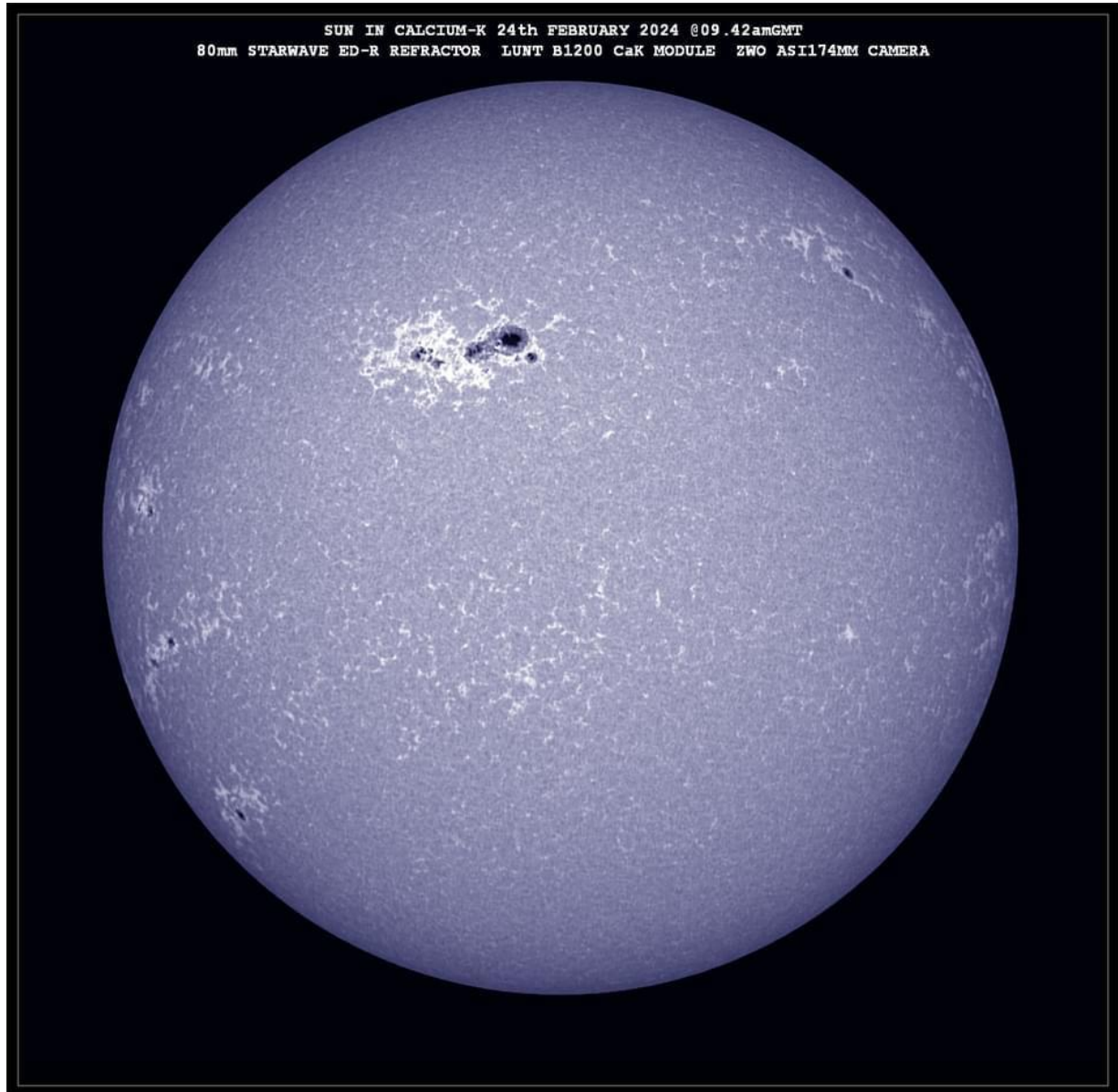


Andrew Devey, BAA/MSAS Spain. AR3590, 2023-02-02 at 11h41UT



Mick Nicholls BAA/MSAS, United Kingdom

Ca-K



Mick Nicholls BAA/MSAS, United Kingdom

I would like to thank the contributors for their valuable inputs.

Clear Skies

Jacques van Delft

Solar Section ASSA

