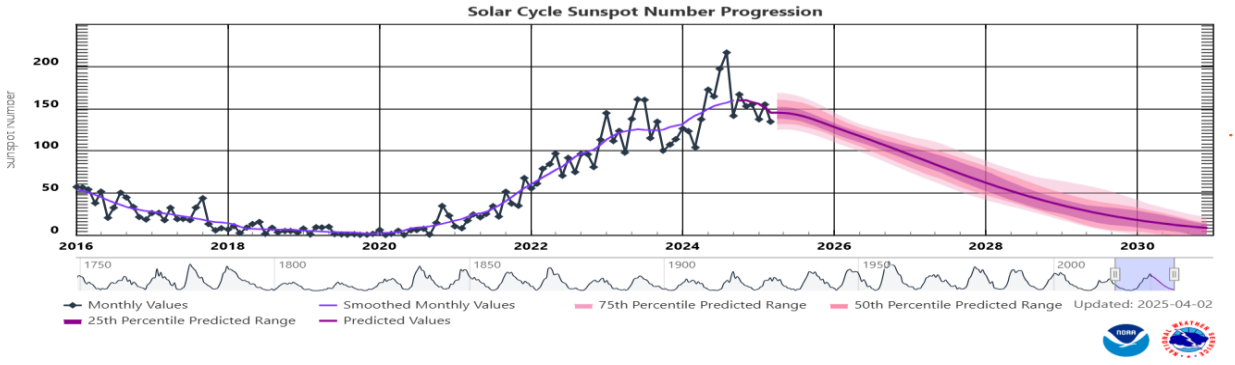
Month: March 25

- **NEWS FROM THE SOLAR SECTION**

March 2025 Solar News

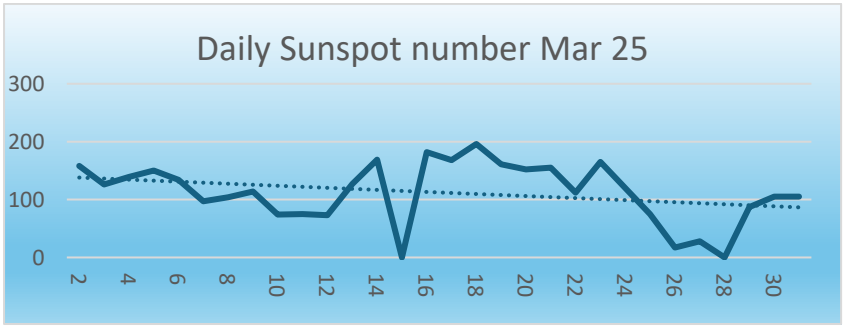
The average decline in sunspot numbers since October 2024 confirms that Solar Cycle 25 has likely passed its peak**,** entering a gradual descent**.** The decline from February to March (down 20.4 points) indicates that we may have passed the peak of Cycle 25. However, March's sunspot number is still elevated relative to long-term predictions. The elevated sunspot count in March 2025 suggests that the cycle remains robust and dynamic**,** with the potential for spikes in activity well into 2025**.** This aligns with previous cycles that showed double peaks or prolonged maxima**,** indicating that solar maximum is not a sharp peak, but often a plateau with fluctuations**.**



SUNSPOT OBSERVATIONS March 2025

2025	March	Jacques v Delft Time	Seeing	Jacques v Delft Groups	Jacques v Delft Spots	Jacques v Delft W no.	Jacques v Delft North Groups	Jacques v Delft South groups	Jacques v Delft North spots	Jacques v Delft South spots
	1	1355	G	6	27	87	5	1	21	6
Sun	2	1045	G	10	58	158	6	4	34	24
Mon	3	1155	G	6	66	126	3	3	28	38
Tue	4	1115	G	9	49	139	5	4	19	30
Wed	5	915	G	10	50	150	5	5	20	30
Thu	6	1215	G	8	54	134	4	4	23	31
Fri	7	1230	G	7	27	97	2	5	6	21
Sat	8	1145	G	8	24	104	3	5	5	19
Sun	9	1310	G	7	44	114	3	4	22	22
Mon	10	1135	G	6	14	74	3	3	5	9
Tue	11	1225	G	6	15	75	3	3	5	10
Wed	12	1240	G	6	13	73	3	3	7	6
Thu	13	1230	G	10	27	127	6	4	19	8
Fri	14	1230	G	12	49	169	8	4	38	11
Sat	15					0				
Sun	16	1000	G	14	42	182	9	5	26	16
Mon	17	1030	G	13	38	168	9	4	29	9
Tue	18	1105	G	12	76	196	8	4	56	20
Wed	19	1405	G	12	41	161	8	4	29	12
Thu	20	915	G	12	32	152	8	4	21	11
Fri	21	1005	G	12	35	155	8	4	19	16
Sat	22	905	G	9	22	112	5	4	10	12
Sun	23	1125	G	12	45	165	6	6	28	17
Mon	24	1305	G	9	30	120	5	4	24	6
Tue	25	1050	G	6	15	75	5	1	14	1
Wed	26	1325	F	1	7	17	1	0	7	0
Thu	27	1205	F	2	8	28	2	0	8	0
Fri	28					0				
Sat	29	1205	G	6	27	87	4	2	24	3
Sun	30	1025	G	8	25	105	4	4	16	9
Mon	31	1100	G	6	45	105	3	3	22	23

Observations	Groups	Spots	W no.	North Groups	South groups	North spots	South spots
29	245	1005	3455	144	101	585	420



Monthly Means

MDF	119,1	1 Observer
MDF g	8,4	1 Observer
MDF Ng	5,0	1 Observer
MDF Sg	3,5	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.

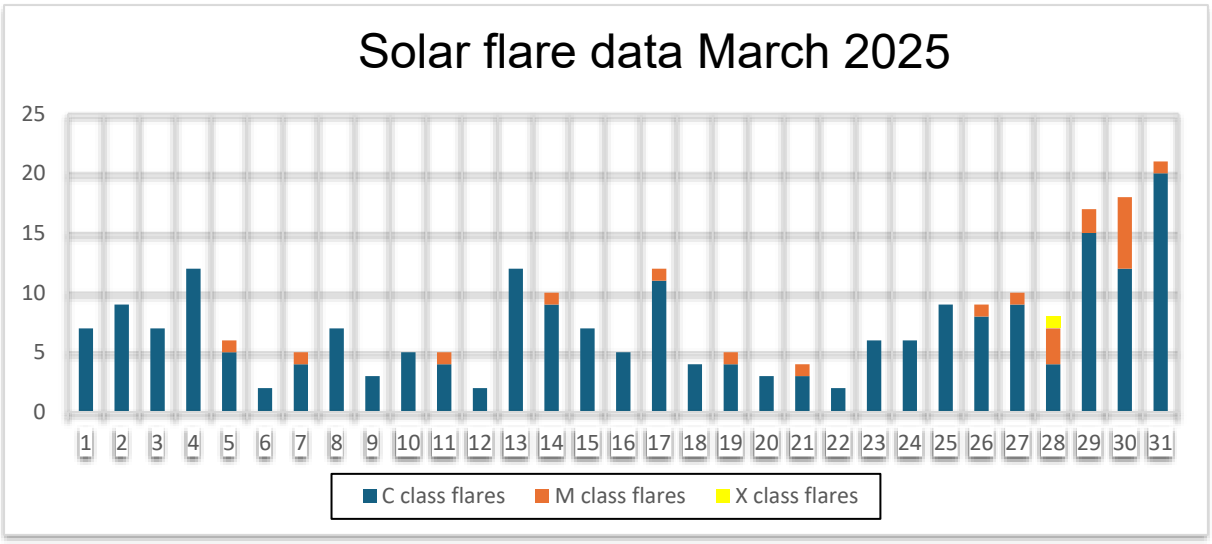
SOLAR FLARE ACTIVETY MARCH 2024

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 238 solar flares were observed: 216 C-class flares and 21 M-class flares and 1 X class flare.

Solar flare data: LABORATORY OF X-RAY ASTRONOMY OF THE SUN

2024	March	C class	M class	X class	NOA No	
Sat	1	7	0	0		
Sun	2	9	0	0		
Mon	3	7	0	0		
Tue	4	12	0	0		
Wed	5	5	1	0	4016	M1,7
Thu	6	2	0	0		
Fri	7	4	1	0		
Sat	8	7	0	0		
Sun	9	3	0	0		
Mon	10	5	0	0		
Tue	11	4	1	0	4024	M1,1
Wed	12	2	0	0		
Thu	13	12	0	0		
Fri	14	9	1	0	4030	M1,1
Sat	15	7	0	0		
Sun	16	5	0	0		
Mon	17	11	1	0	4033	M1,0
Tue	18	4	0	0		
Wed	19	4	1	0	4031	M1,5
Thu	20	3	0	0		
Fri	21	3	1	0	4028	M1,2
Sat	22	2	0	0		
Sun	23	6	0	0		
Mon	24	6	0	0		
Tue	25	9	0	0		
Wed	26	8	1	0	4043	M1,0
Thu	27	9	1	0	4043	M20,
Fri	28	4	3	1	4046/?	M1,0/M1,1 X1,1
Sat	29	15	2	0	4043/4048	M1,4/M1,9
Sun	30	12	6	0	4048	M1,5 M1,6 M1,4 M1,4 M1,5 M1,0
Mon	31	20	1	0	4048	M1,2
	Totals	216	21	1		



- **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.

2025	March	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
Sat	1	2,33	4,00	4,00	4,00	3,67	2,00	3,33	3,00	19
Sun	2	2,00	1,67	2,33	1,63	1,67	0,67	1,00	0,67	6
Mon	3	1,67	1,00	1,00	1,67	0,67	1,00	1,33	1,33	5
Tue	4	1,67	2,33	1,67	1,33	2,00	2,00	3,00	4,33	11
Wed	5	3,67	3,33	2,67	2,67	2,00	3,00	2,00	2,33	13
Thu	6	2,33	1,67	2,67	2,00	0,33	1,33	2,33	1,67	7
Fri	7	1,00	2,67	2,67	3,33	2,33	2,67	2,67	1,33	11
Sat	8	2,33	3,00	3,67	3,33	2,33	3,33	4,67	4,67	21
Sun	9	4,67	5,67	4,00	5,67	4,33	3,00	2,67	3,33	35
Mon	10	3,00	2,00	2,33	2,67	2,33	2,67	1,00	2,33	10
Tue	11	2,33	2,33	2,33	2,67	3,00	1,67	1,67	2,67	10
Wed	12	3,67	3,67	3,33	4,00	4,33	4,67	5,00	5,00	32
Thu	13	5,00	5,00	5,00	4,67	5,00	3,67	5,00	4,33	42
Fri	14	5,67	3,33	3,67	3,00	3,00	3,67	3,00	3,67	25
Sat	15	4,00	3,67	3,33	3,67	3,67	3,33	1,67	1,33	18
Sun	16	2,00	2,33	2,67	2,67	3,33	1,33	2,33	2,67	11
Mon	17	3,33	3,33	3,00	2,00	3,33	2,67	3,67	3,00	16
Tue	18	3,33	3,33	2,33	2,00	3,33	2,67	1,67	3,33	12
Wed	19	2,33	4,33	4,33	3,00	3,00	3,67	4,67	3,33	23
Thu	20	2,00	2,00	2,00	1,67	1,67	0,67	1,33	2,00	6
Fri	21	3,33	3,00	2,33	2,33	2,67	4,00	5,33	5,33	25
Sat	22	5,67	5,00	3,00	3,00	4,00	4,33	3,33	4,67	33
Sun	23	4,00	2,00	3,33	1,67	2,00	1,33	2,00	1,33	10
Mon	24	4,33	4,33	2,67	3,67	4,00	3,00	2,00	1,67	19
Tue	25	3,33	2,33	3,00	3,00	2,33	2,67	4,00	3,33	15
Wed	26	4,67	4,33	2,33	3,33	5,67	5,67	6,33	4,67	46
Thu	27	4,00	4,67	4,67	4,00	4,67	5,00	3,67	3,67	33
Fri	28	2,67	3,33	3,33	2,33	3,00	3,33	2,67	3,67	16
Sat	29	3,33	3,67	1,67	2,00	1,67	1,33	0,67	1,00	9
Sun	30	2,00	2,33	2,67	1,67	1,33	1,00	1,33	1,00	7
Mon	31	1,00	2,00	2,00	2,67	1,67	1,33	1,33	1,00	6

Geomagnetic Storm Index

G1	G2	G3	G4	G5

Credit: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

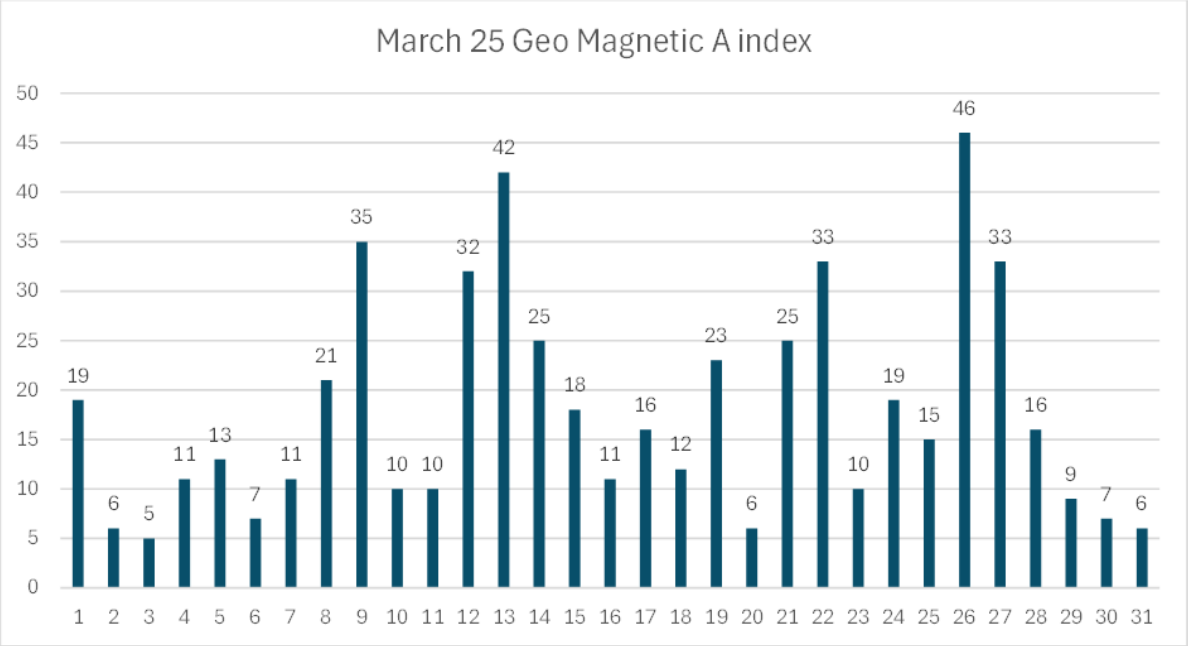
A INDEX

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.
- 08 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.



March 2025 was characterized by highly variable geomagnetic activity, with multiple peaks above A=30**,** signalling moderate to strong geomagnetic storms. The highest disturbance occurred on 26 March (A=46)**,** suggesting a significant solar-driven event, possibly from a coronal mass ejection or fast solar wind stream. This elevated geomagnetic response aligns with ongoing elevated solar activity seen during the Solar Cycle 25 maximum phase, reinforcing that while sunspot numbers began to decline slightly, solar and geomagnetic activity remain potent.

H Alpha Observations

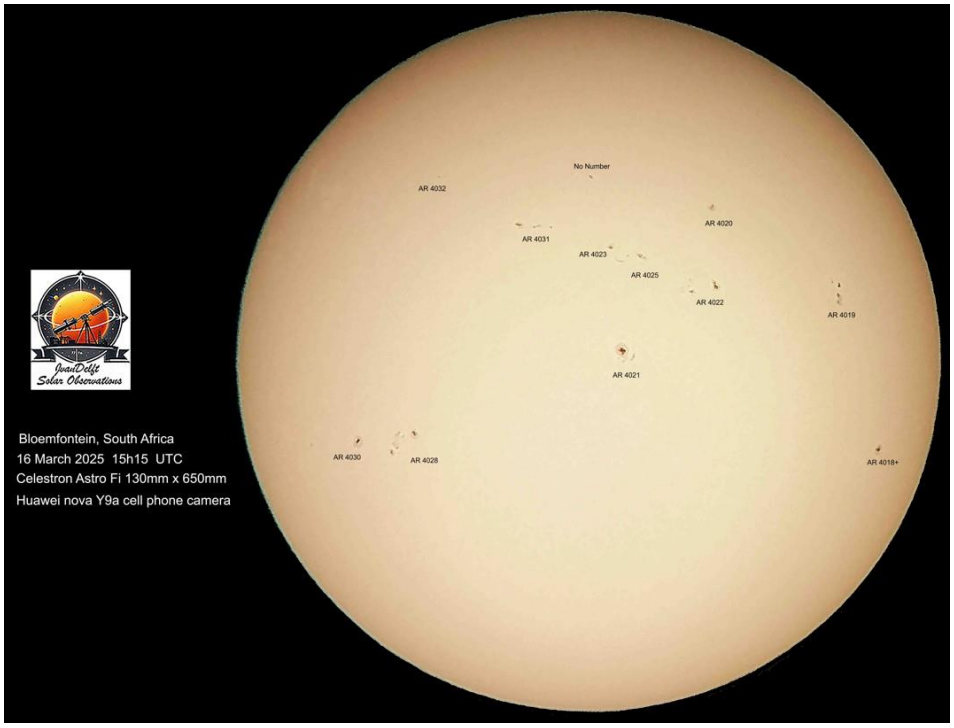
Two observers shared his H-Alpha data for March 2025. Andrew Devey from BAA & MSAS living in Spain and Mick Nicholls from BAA & MSAS living in the UK.

Mar-25	Prominance Active		Prominance Quit		Prominance Total		Plage Areas		Filaments		Flares	
	Andrew Devey	Mick Nicholls	Andrew Devey	Mick Nicholls	Andrew Devey	Mick Nicholls	Andrew Devey	Mick Nicholls	Andrew Devey	Mick Nicholls	Andrew Devey	Mick Nicholls
1												
2		0		5		5		3		6		0
3												
4												
5												
6												
7		0		4		4		3		5		0
8		0		5		5		4		5		0
9	1	0	5	6	6	6	4	3	7	5	0	0
10	1		4		5		4		7		0	
11		0		6		6		6		9		0
12	3		2		5		5		7		0	
13	3		2		5		5		8		0	
14	3	0	2	8	5	8	5	5	8	9	0	0
15	5		1		6		6		8		0	
16	5		0		5		5		8		1	
17												
18		0		5		5		5		9		0
19	5	0	0	6	5	6	7	5	7	8	0	0
20	3		2		5		6		9		0	
21												
22	2		1		3		6		7		1	
23	3		2		5		6		7		0	
24	5	0	0	6	5	6	5	5	8	7	0	0
25												
26	3	0	3	4	6	4	5	4	7	8	0	0
27	3		2		5		5		7		0	
28	2		2		4		6		6		0	
29	3		2		5		6		6		0	
30	2	0	1	3	3	3	6	5	9	9	0	0
31												
Total Nr	52	0	31	58	83	58	92	48	126	80	2	0

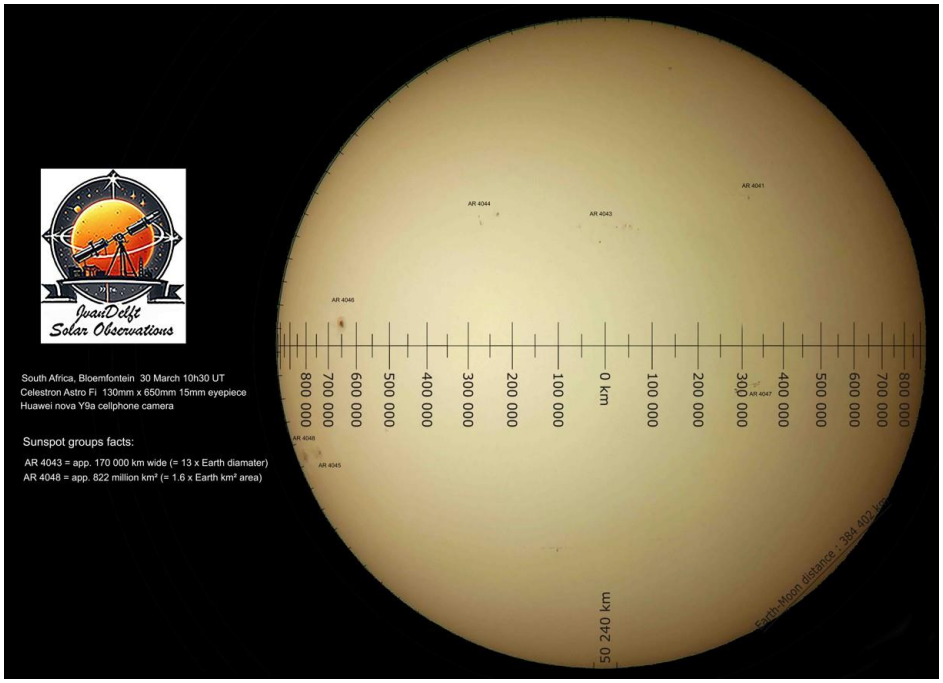
March 2025	Counts	Observations	MDF
Prominance	141	28	5,0
Plage Areas	140	28	5,0
Filaments	206	28	7,4
Flares	2	28	0,1

- **Solar images**

WHITE LIGHT



Jacques van Delft ASSA South Africa



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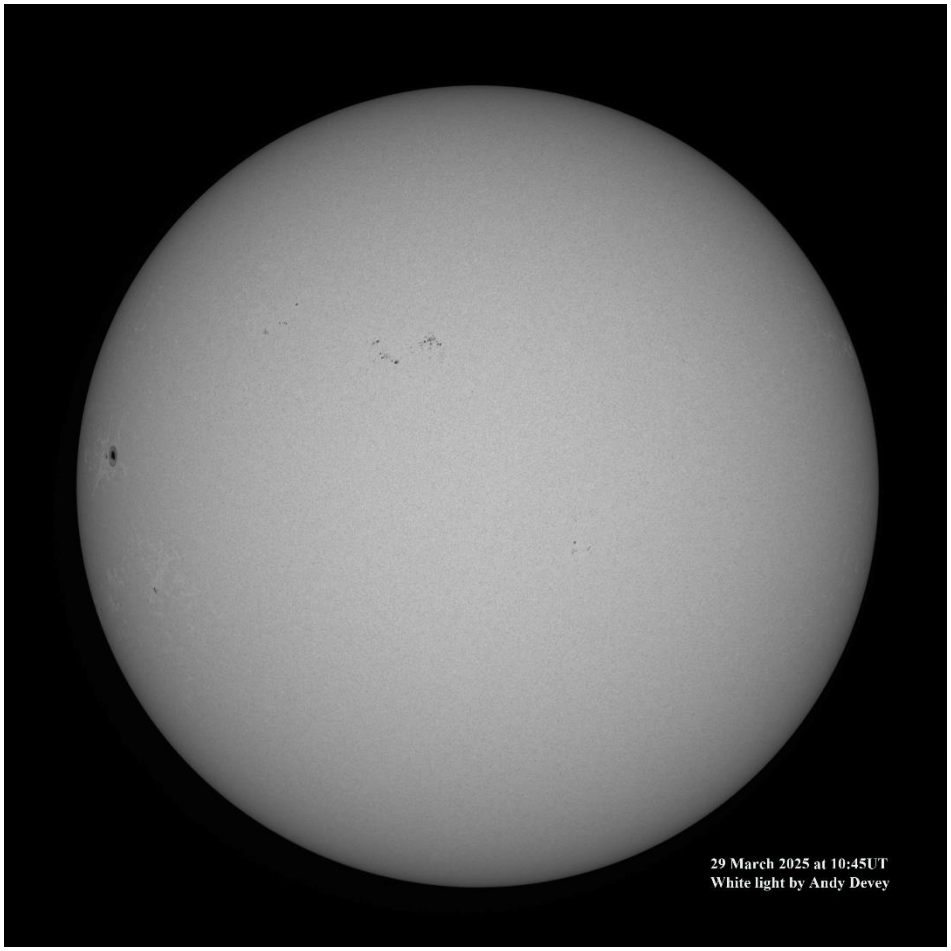
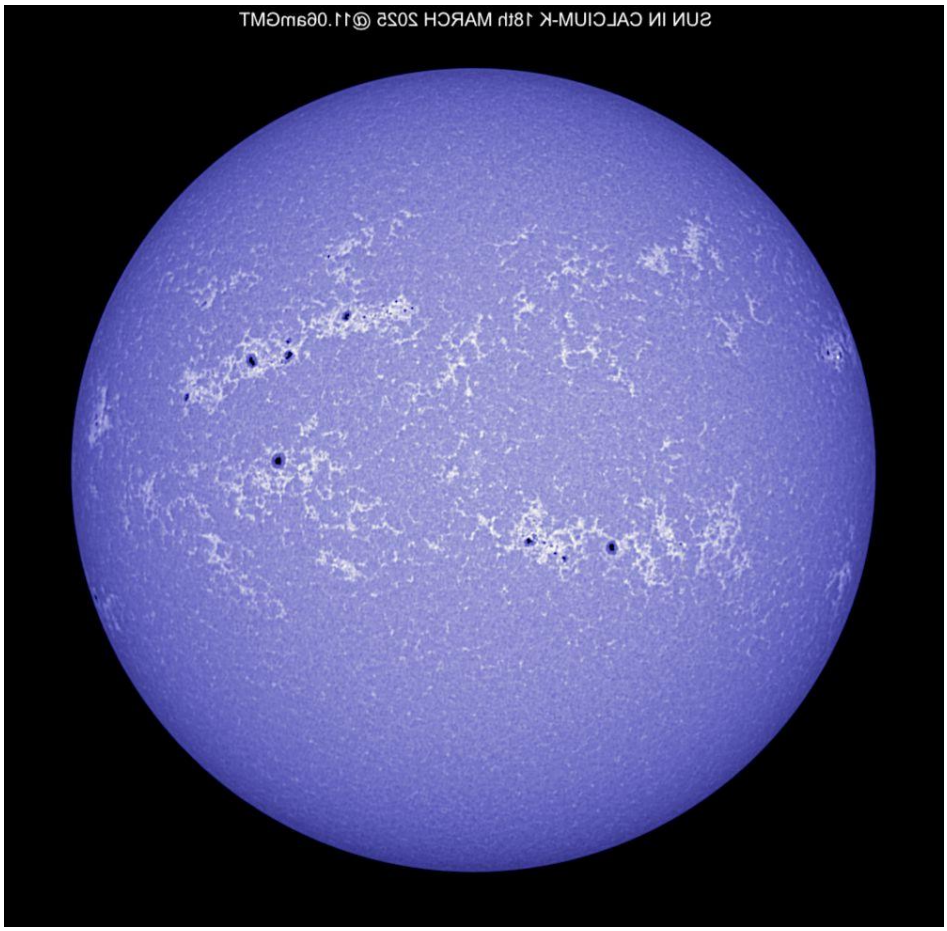


Andrew Devey, BAA/MSAS Spain.

H-Alpha

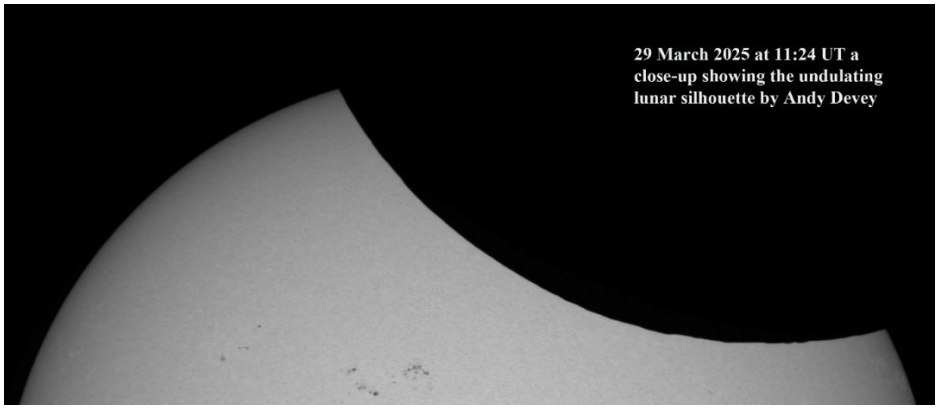
Andrew Devey, BAA/MSAS Spain.

C-Kal

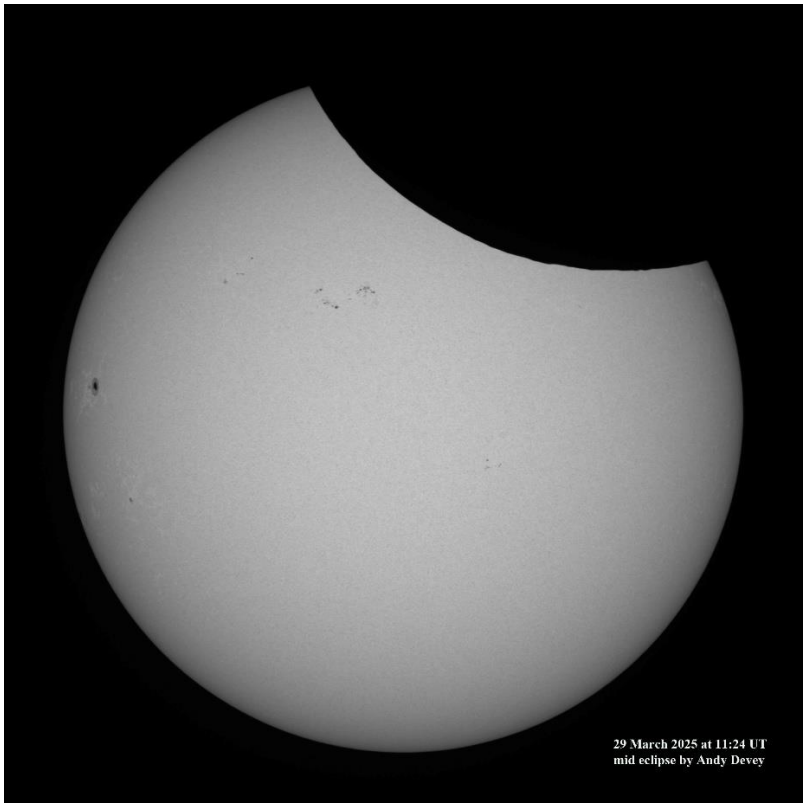


Mick Nicholls, BAA/MSAS, United Kingdom.

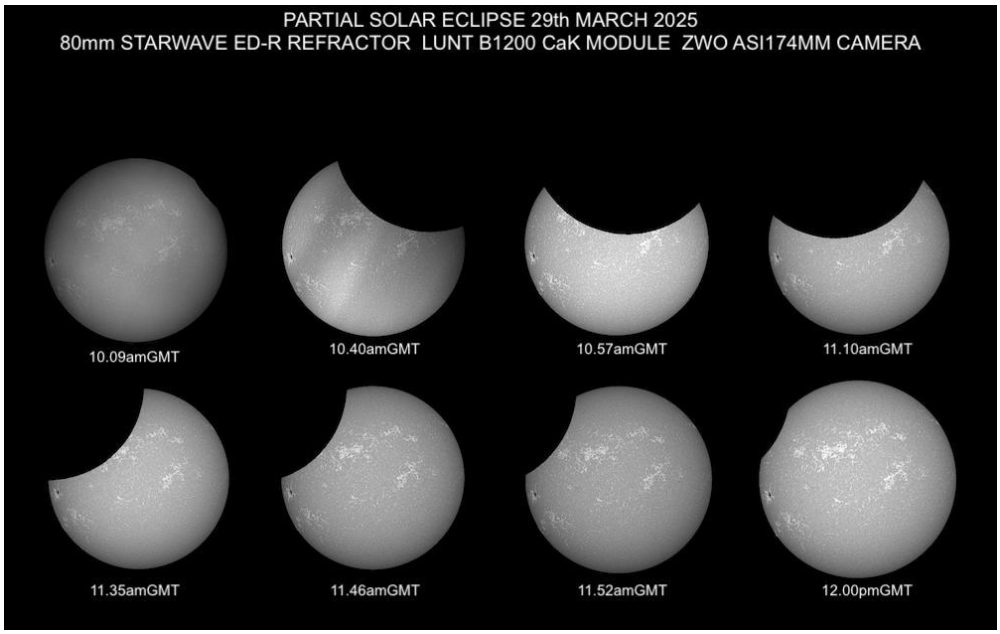
A partial Solar, Northern hemisphere. Below images of the Solar eclipse



Mick Nicholls, BAA/MSAS, United Kingdom.



Andrew Devey, BAA/MSAS Spain.



Mick Nicholls, BAA/MSAS, United Kingdom.

Thanks to the contributors of data and images,

Clear skies and regards
Jacques van Delft

ASSA Solar Section