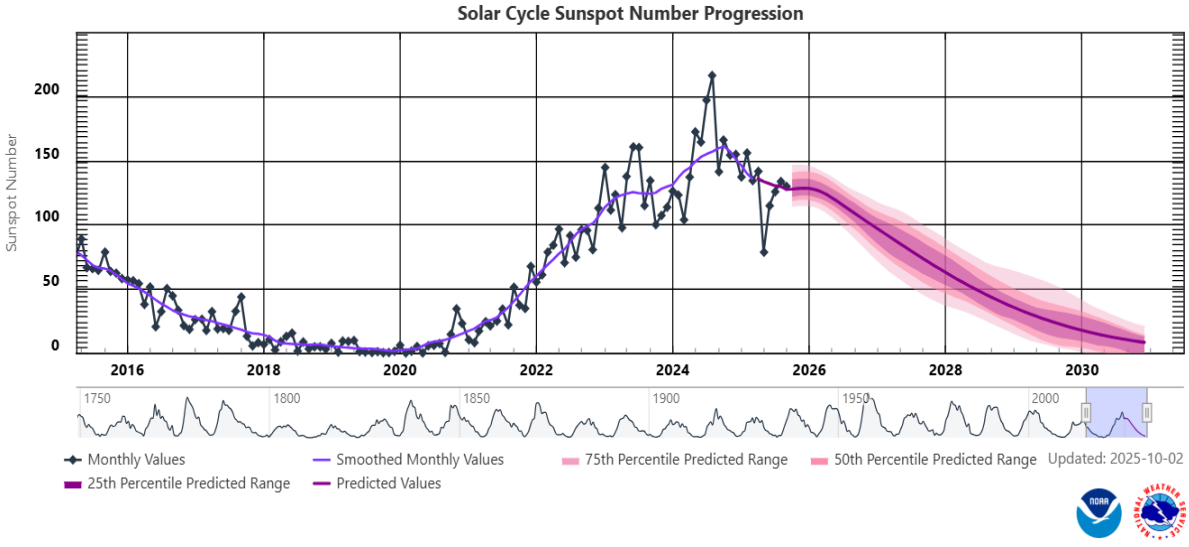
Month: September 25

- **NEWS FROM THE SOLAR SECTION**

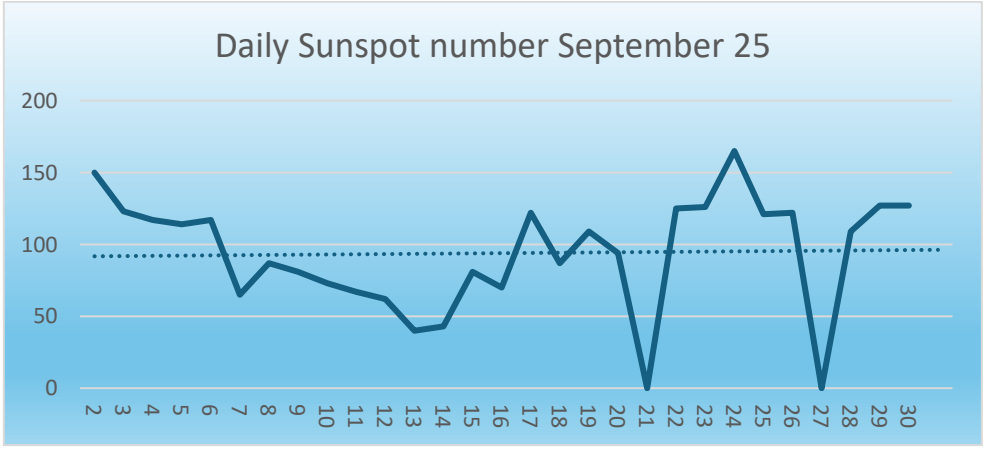
September 2025 Solar News

September 2025 data indicate that Solar Cycle 25 has likely passed its peak and is now on a gradual downward trend, though activity remains elevated. The cycle continues to outperform early predictions, maintaining sunspot numbers near the upper forecast range. This sustained maximum phase suggests that strong solar activity—including frequent active regions, flares, and CMEs—will likely persist into 2026, keeping the Sun in a highly dynamic state.



SUNSPOT OBSERVATIONS SEPTEMBER 2025

2025	September	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
Mon	1	1415	G	10	53	153	6	4	16	37
Tue	2	1330	G	11	40	150	8	3	22	18
Wed	3	1430	G	10	23	123	6	4	20	13
Thu	4	1035	G	9	27	117	5	4	20	7
Fri	5	925	G	9	24	114	5	4	17	7
Sat	6	1500	G	8	37	117	5	3	23	14
Sun	7	1315	G	5	15	65	3	2	11	4
Mon	8	1330	G	6	27	87	4	2	17	10
Tue	9	945	G	6	21	81	4	2	10	11
Wed	10	1000	G	5	23	73	3	2	13	10
Thu	11	1210	G	5	17	67	3	2	8	9
Fri	12	1445	G	5	12	62	3	2	6	6
Sat	13	1025	G	3	10	40	1	2	4	6
Sun	14	1005	G	3	13	43	2	1	8	5
Mon	15	1135	G	6	21	81	4	2	16	5
Tue	16	1510	G	5	20	70	3	2	10	10
Wed	17	1420	G	9	32	122	5	4	16	16
Thu	18	1210	G	6	27	87	3	3	13	14
Fri	19	1400	G	7	39	109	4	3	15	24
Sat	20	1420	G	7	24	94	4	3	10	14
Sun	21	nobs	G			0				
Mon	22	1255	G	9	35	125	4	5	7	28
Tue	23	1510	G	10	26	126	3	7	5	21
Wed	24	1500	G	11	55	165	4	7	6	49
Thu	25	1410	G	9	31	121	3	6	4	27
Fri	26	1450	G	9	32	122	3	6	5	27
Sat	27	nobs	G			0				
Sun	28	1355	G	9	19	109	3	6	3	16
Mon	29	1430	G	9	37	127	5	4	19	18
Tue	30	1000	G	8	47	127	4	4	27	20



Monthly Means		
MDF	102,8	1 Observer
MDF g	7,5	1 Observer
MDF Ng	3,9	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 AUGUST 2024

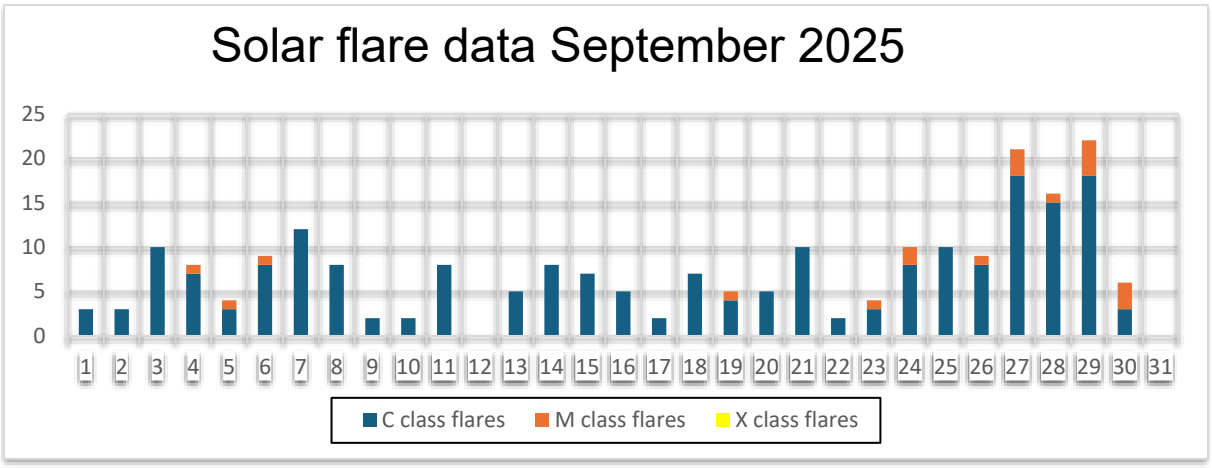
Solar flares are classified according to their x-ray brightness in the wavelength range 1 to 8 Angstrom. There are 3 categories: C class – minor, M class – medium and X class – big. Each category has 9 subdivisions.

A total of 223 solar flares were observed: 204 C-class flares and 19 M-class flares and 0 X class flare.

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

2025	September	C class	M class	X class	Sol ActIndex	NOA No	
Mon	1	3	0	0	4,5		
Tue	2	3	0	0	4,2		
Wed	3	10	0	0	4,9		
Thu	4	7	1	0	5,3	4207	M1,0
Fri	5	3	1	0	4,9	4207	M1,4
Sat	6	8	1	0	4,9	4207	M1,2
Sun	7	12	0	0	5,9		
Mon	8	8	0	0	4,8		
Tue	9	2	0	0	2,8		
Wed	10	2	0	0	1,8		
Thu	11	8	0	0	4,1		
Fri	12	0	0	0	3,3		
Sat	13	5	0	0	2,1		
Sun	14	8	0	0	4,1		
Mon	15	7	0	0	4,5		
Tue	16	5	0	0	4,2		
Wed	17	2	0	0	3,3		
Thu	18	7	0	0	4,3		
Fri	19	4	1	0	5,1	4216	M1,5
Sat	20	5	0	0	4,8		
Sun	21	10	0	0	4,9		
Mon	22	2	0	0	4,3		
Tue	23	3	1	0	4,2	4217	M1,0
Wed	24	8	2	0	5,9	4224	M1,0 M1,6
Thu	25	10	0	0	5,7		
Fri	26	8	1	0	5,7		
Sat	27	18	3	0	6,9	4226/4232	M1,0 M1,1/M1,1
Sun	28	15	1	0	7,4	4232	M6,4
Mon	29	18	4	0	7,6	4232/4233/4236	M3,6 M1,1/M1,0/M1,0
Tue	30	3	3	0	7	4226/4232/4238	M2,7/ M1,2/M1,8
	Totals	204	19	0			

Credit: https://xras.ru/en/sun_flares.html



- **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	September	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
Mon	1	2,00	1,33	1,33	1,33	1,33	2,00	2,67	6,00	16
Tue	2	5,33	4,33	4,33	3,67	3,00	4,33	5,00	4,33	34
Wed	3	4,67	3,33	2,33	2,00	1,67	1,00	2,33	1,00	12
Thu	4	2,00	1,33	2,33	3,00	2,00	2,67	2,33	2,67	10
Fri	5	1,67	0,67	1,33	2,67	0,33	1,67	2,67	3,33	8
Sat	6	4,00	3,67	4,00	3,33	4,00	5,00	4,33	1,33	26
Sun	7	1,00	1,00	0,67	0,67	1,00	0,33	1,33	2,67	5
Mon	8	3,33	3,67	2,67	2,67	2,33	2,33	2,67	1,67	13
Tue	9	3,33	2,33	2,67	2,67	2,67	1,67	2,67	5,67	19
Wed	10	4,33	4,33	1,33	2,00	2,00	2,00	1,33	1,67	13
Thu	11	4,00	2,67	2,67	2,00	2,00	1,67	1,00	1,67	10
Fri	12	1,00	2,67	2,67	3,00	2,00	2,00	2,00	1,00	9
Sat	13	1,67	2,67	2,67	2,00	1,00	1,00	0,33	1,00	6
Sun	14	2,00	2,00	2,67	2,33	2,00	2,00	3,00	5,00	14
Mon	15	6,67	5,33	5,00	4,67	5,33	3,67	3,67	4,33	48
Tue	16	5,00	3,67	3,67	3,67	3,67	2,33	2,33	3,00	21
Wed	17	2,33	2,67	3,33	3,33	2,33	1,33	2,33	2,67	12
Thu	18	2,00	2,00	2,00	2,00	2,00	2,00	1,00	1,33	6
Fri	19	0,67	0,67	0,67	0,67	1,67	0,33	0,67	0,67	3
Sat	20	1,67	2,00	2,00	1,33	0,67	0,33	0,33	1,33	5
Sun	21	1,67	1,33	1,67	1,00	1,67	2,00	1,33	1,33	6
Mon	22	2,67	2,33	2,00	3,00	3,00	3,33	2,67	3,33	13
Tue	23	3,33	2,67	2,67	2,67	3,67	3,00	3,00	1,67	14
Wed	24	2,00	1,67	1,33	2,33	2,33	2,00	1,67	2,67	8
Thu	25	1,33	1,00	2,00	2,67	3,00	1,67	1,33	1,67	8
Fri	26	2,33	2,33	1,00	2,33	1,67	1,00	2,33	1,67	7
Sat	27	1,67	2,00	1,33	1,00	1,33	1,00	2,67	2,33	7
Sun	28	3,00	3,00	1,33	2,00	1,67	3,00	2,67	2,00	10
Mon	29	2,67	2,67	3,67	4,67	4,00	5,00	4,67	3,33	27
Tue	30	5,33	7,33	6,00	5,33	5,67	5,67	5,33	5,67	75

Geomagnetic Storm Index

G1	G2	G3	G4	G5

Credit: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

A INDEX

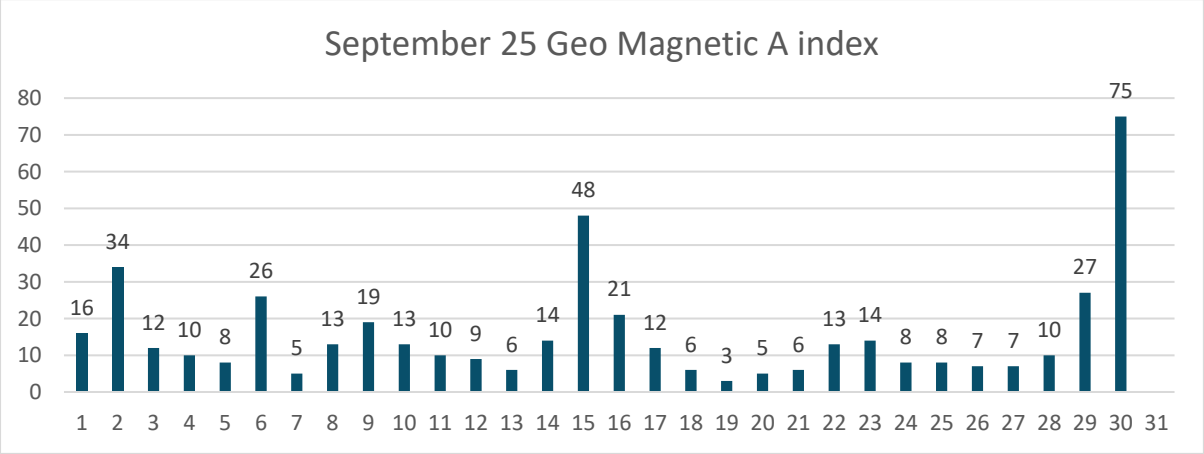
The solar A Index is a numerical scale that represents the geomagnetic activity in the Earth's ionosphere caused by solar flares and other solar phenomena. It measures the overall geomagnetic disturbance level on a scale from 0 to 400. The index is derived from the observed planetary A index, which quantifies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



September 2025 was characterized by predominantly quiet to unsettled geomagnetic conditions, punctuated by two periods of significant disturbances. The most intense geomagnetic activity occurred on 30 September, indicating a major storm event late in the month. This heightened activity suggests increased solar wind interactions with Earth's magnetosphere, consistent with rising solar activity levels as the solar cycle progresses. Such disturbances can have implications for radio propagation, satellite operations, and auroral visibility at mid-latitudes.

H Alpha Observations

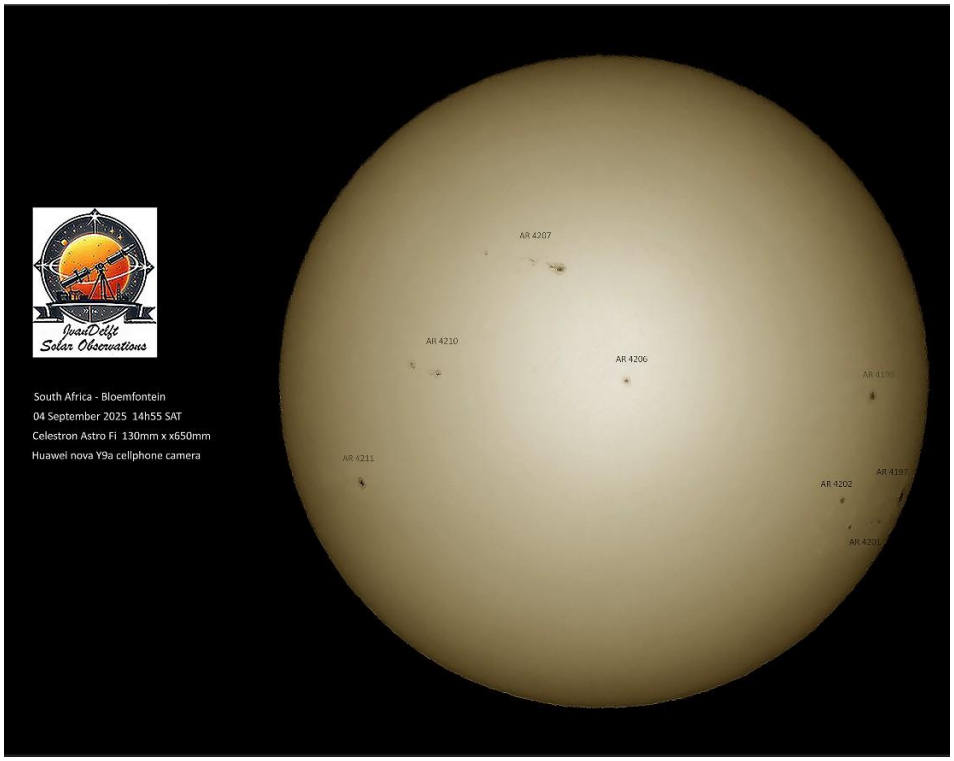
Two observers shared their H-Alpha data for August 2025. Andrew Devey from BAA & MSAS living in Spain and Mick Nicholls from BAA & MSAS living in the UK.

Sept-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		1		3		4		7		0	
2	2	0	2	5	4	5	5	4	8	9	0	0
3	3		1		4		5		8		0	
4	4		1		5		5		8		0	
5												
6												
7												
8	2	0	2	6	4	6	3	3	7	7	0	0
9												
10	5		1		6		2		6		0	
11												
12		0		6		6		2		6		0
13												
14	3		1		4		2		7		0	
15	3		2		5		2		8		0	
16	2	0	2	3	4	3	3	3	8	6	0	0
17												
18	3		2		5		3		7		0	
19												
20	4		1		5		4		7		0	
21												
22	3	0	2	6	5	6	3	4	6	6	0	0
23	0	0	3	4	3	4	3	3	6	6	0	0
24												
25												
26												
27	2		2		4		5		8		0	
28	2	0	1	5	3	5	5	4	5	6	0	0
29	2		1		3		5		6		0	
30		0		4		4		3		4	0	
Total Nr	42		25	39	67	39	59	26	112	50	0	0

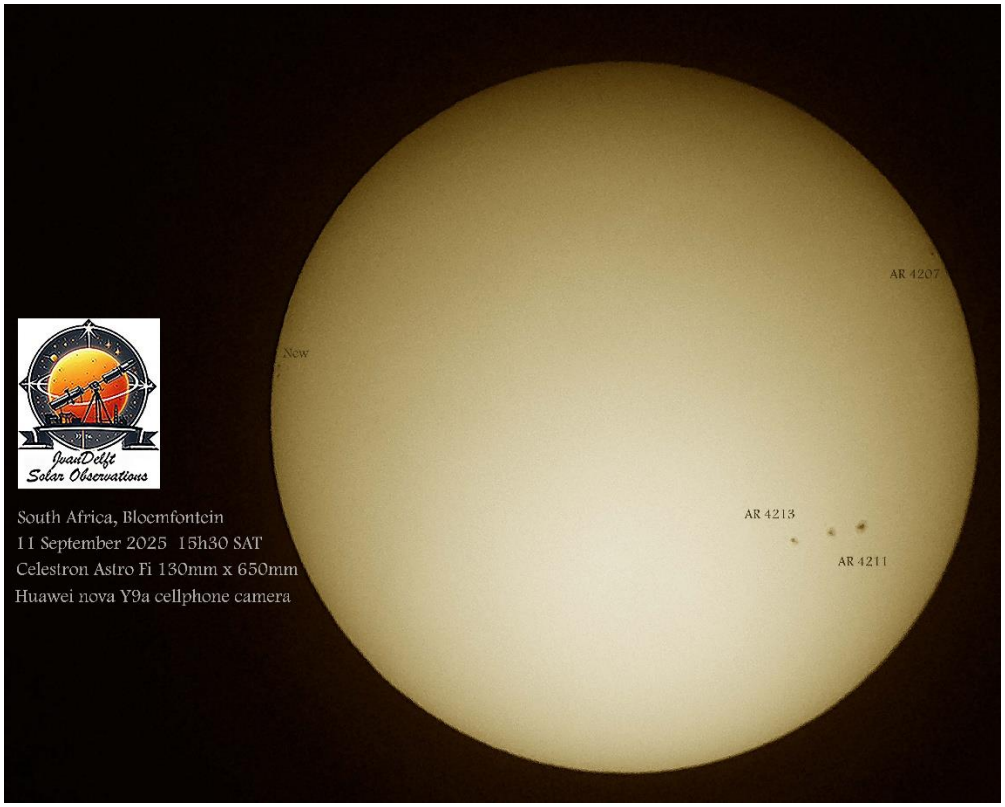
September 2025	Counts	Observations	MDF
Prominance	106	24	4,4
Plage Areas	85	24	3,5
Filaments	162	24	6,8
Flares	0	24	0,0

- **Solar images**

WHITE LIGHT



Jacques van Delft ASSA South Africa



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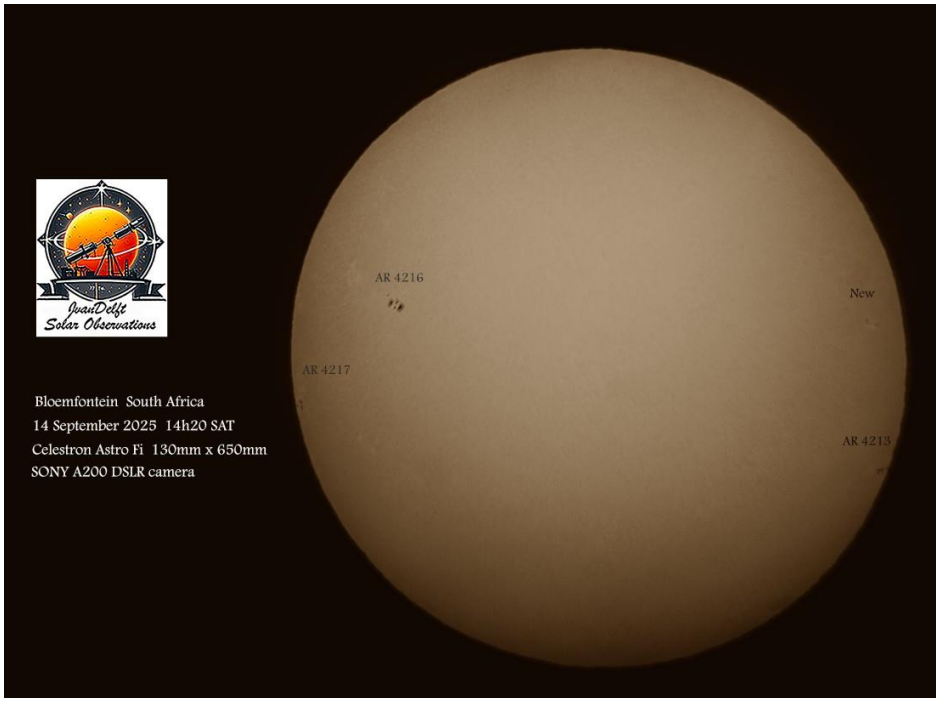

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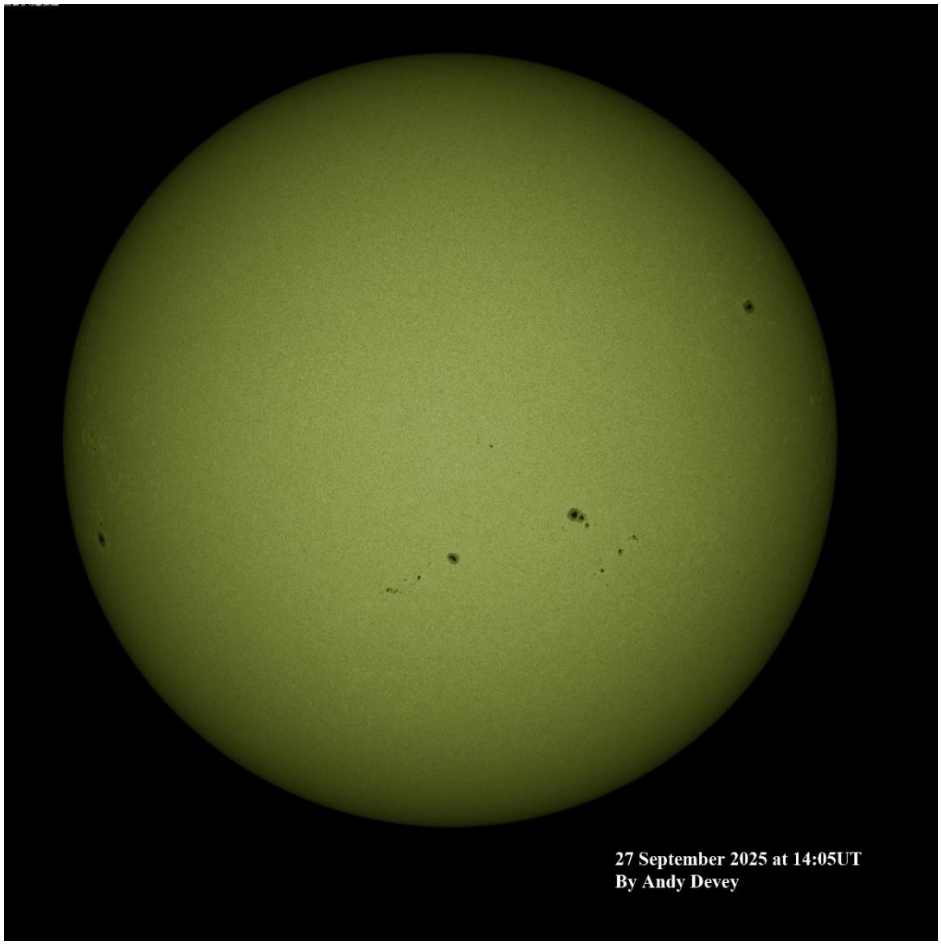
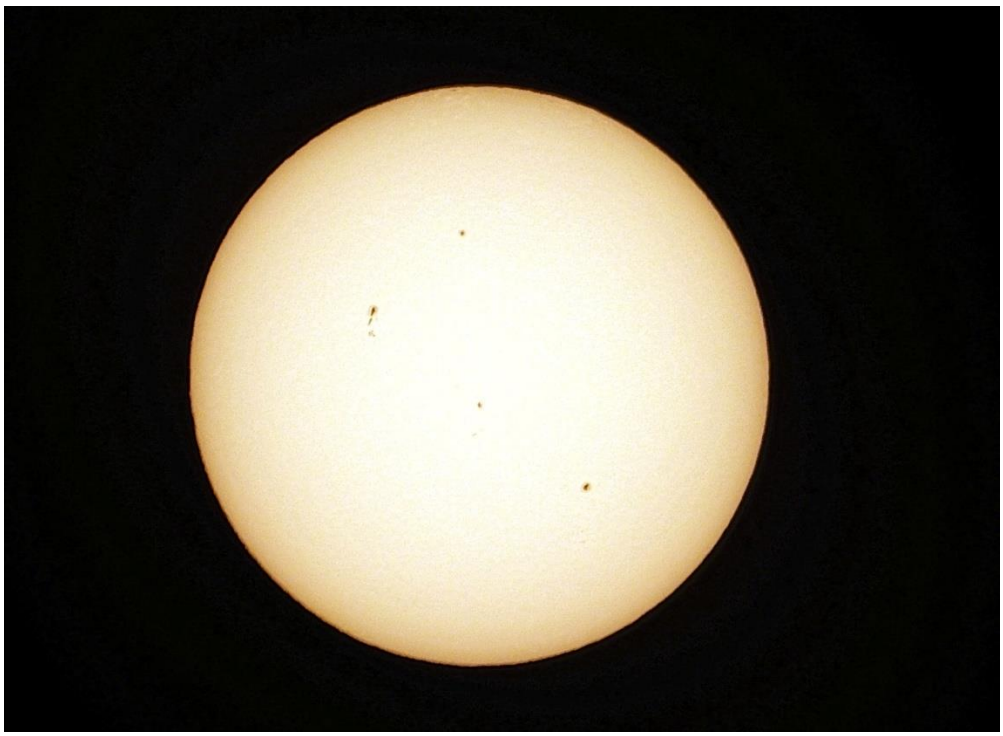


Andrew Devey, BAA/MSAS Spain.

Kos Coronaios ASSA South Africa



Kos Coronaios ASSA South Africa

H-Alpha

Andrew Devey, BAA/MSAS Spain.

Thanks to the contributors of data and images. Special thanks to Kos Coronaios from ASSA South Africa for his contribution. He will be a new member to the Solar section contributing to the Solar Bulletin.

Clear skies and regards
Jacques van Delft

ASSA Solar Section