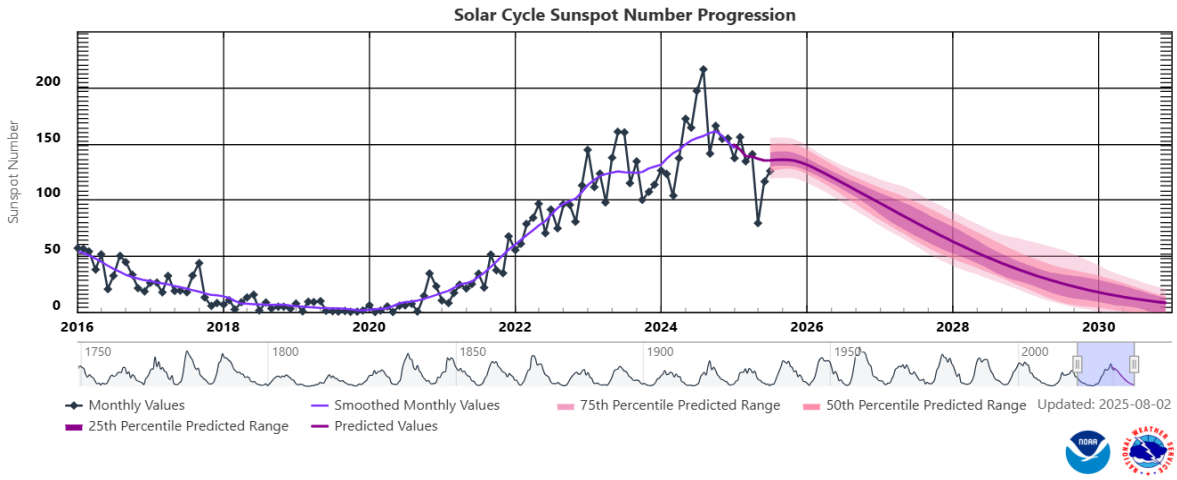
Month: JULY 25

- **NEWS FROM THE SOLAR SECTION**

July 2025 Solar News

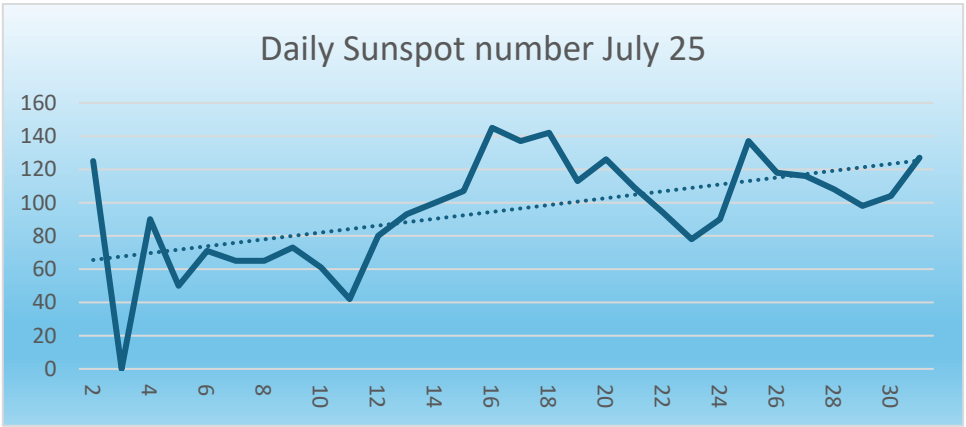
Sunspot activity during July 2025 remained robust**,** continuing the overall elevated trend of Solar Cycle 25. Although the monthly values showed some variability, the smoothed sunspot number remained high, indicating we are still within the broad peak phase of the cycle. While the overall trend is beginning to show the early signs of decline from the solar maximum reached in 2024, solar activity levels remain significantly higher than average, with multiple active regions observed throughout the month. This sustained activity suggests that the Sun is not yet in a rapid descent toward minimum, and further fluctuations in sunspot numbers can be expected in the coming months.



SUNSPOT OBSERVATIONS JULY 2025

2025	July	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
Tue	1	1225	G	9	23	113	4	5	10	13
Wed	2	1305	F	10	25	125	5	5	12	13
Thu	3		G			0				
Fri	4	1420	G	7	20	90	3	4	7	13
Sat	5	1115	G	4	10	50	3	1	7	3
Sun	6	1015	G	6	11	71	3	3	4	7
Mon	7	1425	G	5	15	65	2	3	3	12
Tue	8	1015	G	5	15	65	2	3	3	12
Wed	9	1030	G	6	13	73	3	3	8	5
Thu	10	1400	G	5	11	61	3	2	7	4
Fri	11	1020	G	3	12	42	2	1	11	1
Sat	12	1220	G	6	20	80	4	2	16	4
Sun	13	1015	G	7	23	93	4	3	15	8
Mon	14	1310	G	7	30	100	4	3	22	8
Tue	15	1000	G	8	27	107	5	3	20	7
Wed	16	1030	G	10	45	145	6	4	34	11
Thu	17	1125	G	10	37	137	6	4	30	7
Fri	18	935	G	11	32	142	6	5	24	8
Sat	19	945	G	8	33	113	5	3	23	10
Sun	20	1030	G	10	26	126	6	4	21	5
Mon	21	1000	G	9	19	109	5	4	13	6
Tue	22	915	G	7	24	94	5	2	11	12
Wed	23	1220	G	6	18	78	3	3	8	10
Thu	24	1135	G	7	20	90	3	4	8	12
Fri	25	1200	G	9	47	137	3	6	17	30
Sat	26	1400	G	9	28	118	3	6	9	19
Sun	27	1500	G	9	26	116	2	7	4	22
Mon	28	1410	G	9	18	108	2	7	4	14
Tue	29	1425	G	8	18	98	1	7	2	16
Wed	30	1530	G	8	24	104	2	6	2	22
Thu	31	1435	G	10	27	127	4	6	9	18

Observations	Groups	Spots	W no.	North Groups	South groups	North spots	South spots
30	228	697	2977	109	119	364	332



Monthly Means		
MDF	99,2	1 Observer
MDF g	7,6	1 Observer
MDF Ng	3,6	1 Observer
MDF Sg	4,0	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 JULY 2024

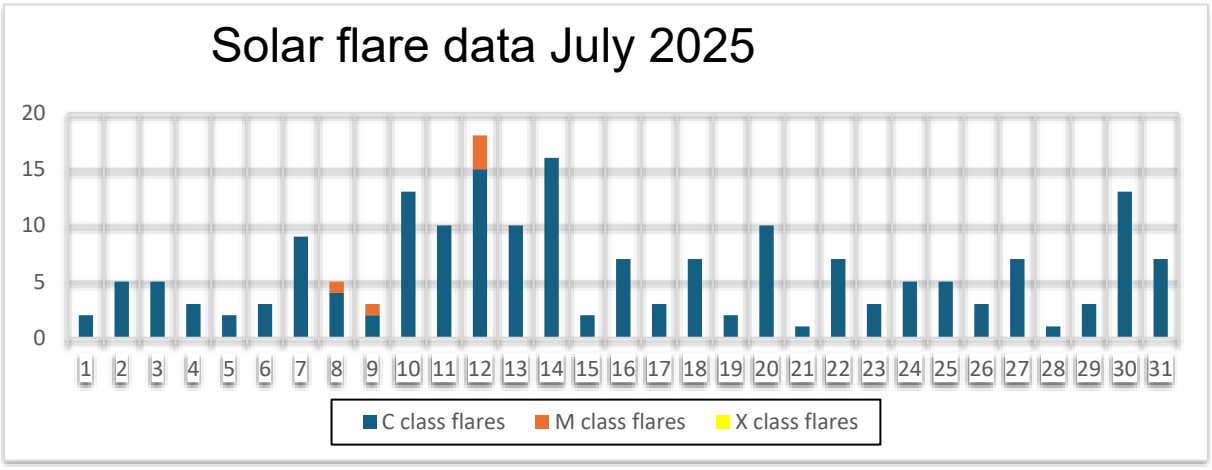
Solar flares are classified according to their x-ray brightness in the wavelength range 1 to 8 Angstrom. There are 3 categories: C class – minor, M class – medium and X class – big. Each category has 9 subdivisions.

A total of 190 solar flares were observed: 185 C-class flares and 5 M-class flares and 0 X class flare.

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

2024	July	C class	M class	X class	Sol Actindex	NOA No	
Tue	1	2	0	0	2,5		
Wed	2	5	0	0	3,2		
Thu	3	5	0	0	3,5		
Fri	4	3	0	0	2,6		
Sat	5	2	0	0	2,2		
Sun	6	3	0	0	2,3		
Mon	7	9	0	0	3,2		
Tue	8	4	1	0	5,2	??	M2,4
Wed	9	2	1	0	4,6	4136	M1,3
Thu	10	13	0	0	5,5		
Fri	11	10	0	0	5,6		
Sat	12	15	3	0	6,6	4140	M1,4 M2,3 M1,6
Sun	13	10	0	0	5,6		
Mon	14	16	0	0	5,7		
Tue	15	2	0	0	4,4		
Wed	16	7	0	0	4,1		
Thu	17	3	0	0	4,1		
Fri	18	7	0	0	4,3		
Sat	19	2	0	0	3,4		
Sun	20	10	0	0	5,1		
Mon	21	1	0	0	4,2		
Tue	22	7	0	0	4,2		
Wed	23	3	0	0	4,1		
Thu	24	5	0	0	4,4		
Fri	25	5	0	0	4,4		
Sat	26	3	0	0	3,3		
Sun	27	7	0	0	4,2		
Mon	28	1	0	0	3,3		
Tue	29	3	0	0	3		
Wed	30	13	0	0	4,9		
Thu	31	7	0	0	4,5		
	Totals	185	5	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	July	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
Tue	1	3,33	2,33	1,67	1,33	0,67	1,00	1,00	2,00	7
Wed	2	1,33	1,67	2,33	1,67	2,33	1,67	2,00	2,00	7
Thu	3	2,67	3,00	3,00	3,33	3,67	2,33	2,67	3,67	16
Fri	4	2,67	2,33	2,67	1,67	1,33	1,33	2,67	3,67	10
Sat	5	3,00	3,33	3,00	3,67	4,00	3,00	3,33	3,33	19
Sun	6	4,33	5,00	3,00	3,67	3,33	1,67	2,67	5,33	26
Mon	7	5,33	4,33	2,67	3,00	3,00	3,33	3,00	3,00	22
Tue	8	3,00	3,67	3,00	2,67	2,00	2,67	1,67	2,67	13
Wed	9	3,00	2,33	1,67	2,00	2,00	1,67	1,33	1,67	8
Thu	10	1,00	1,33	1,00	1,33	0,67	1,00	1,00	0,67	4
Fri	11	2,00	2,67	3,00	4,33	3,33	2,67	4,33	3,67	19
Sat	12	2,67	2,67	3,00	3,00	3,00	2,00	2,33	3,00	13
Sun	13	4,33	4,67	3,67	3,33	3,67	3,00	3,33	3,00	23
Mon	14	2,00	2,67	3,00	1,67	2,67	3,00	4,67	3,67	16
Tue	15	4,00	4,33	5,00	4,67	3,00	2,33	1,67	2,00	23
Wed	16	3,00	3,00	2,60	3,67	1,67	1,33	3,00	5,00	17
Thu	17	3,67	3,67	3,67	3,67	3,67	3,67	3,67	3,67	19
Fri	18	2,00	1,00	2,00	2,67	4,00	3,00	1,67	2,00	11
Sat	19	1,00	2,33	1,67	2,00	1,67	2,33	1,67	1,67	7
Sun	20	1,33	1,33	0,67	1,67	2,00	1,67	0,67	1,33	5
Mon	21	2,00	1,33	0,67	0,67	1,33	0,33	0,33	1,00	4
Tue	22	1,00	2,00	1,33	2,00	2,00	3,00	4,67	5,00	17
Wed	23	4,33	4,00	3,67	4,33	4,67	3,33	4,00	3,67	27
Thu	24	3,67	2,67	3,00	3,67	3,33	3,00	1,33	2,33	15
Fri	25	2,33	2,33	2,00	2,00	2,00	2,33	2,00	2,67	8
Sat	26	2,00	1,67	1,67	3,00	3,00	4,00	2,67	2,00	12
Sun	3	1,00	7,00	1,67	1,33	1,00	1,33	1,33	1,00	5
Mon	28	1,00	1,33	1,33	1,67	1,67	1,67	2,33	3,00	7
Tue	29	2,67	2,33	2,33	2,33	1,00	1,33	1,33	2,00	8
Wed	30	2,67	1,67	1,33	2,00	2,33	2,67	2,33	1,33	8
Thu	31	3,00	3,00	2,00	2,33	2,67	2,33	2,67	2,00	11

Geomagnetic Storm Index

G1	G2	G3	G4	G5

Credit: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

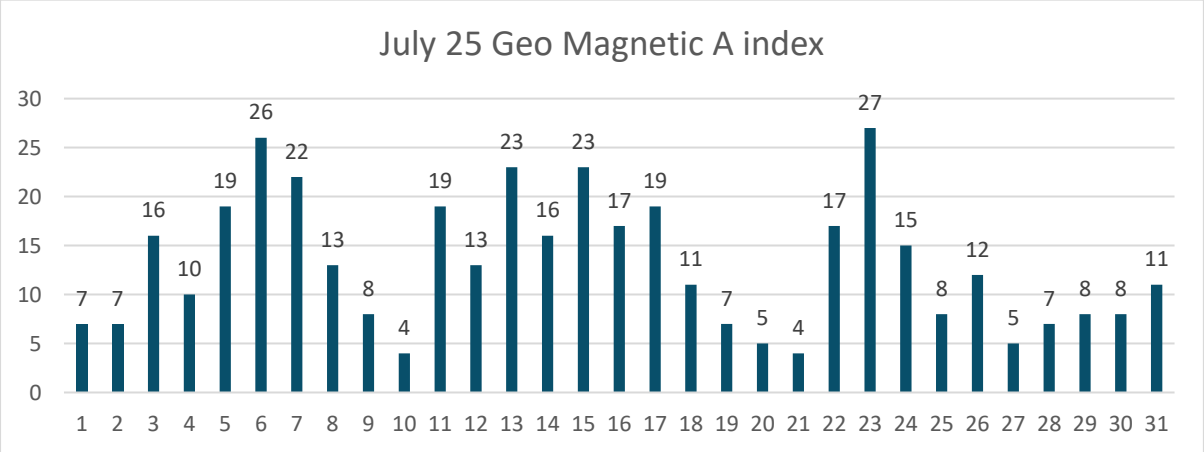
A INDEX

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.



July 2025 recorded moderate-to-strong geomagnetic variability**,** with multiple short-lived peaks rather than one sustained event. The A index reached its highest value of 27 on the 23rd, indicating the strongest geomagnetic storm of the month. Earlier peaks occurred on the 6th (26) and 14–15th (23 each), pointing to repeated solar wind disturbances and possible CME impacts. Lower values on the 10th and 21st (4) marked brief periods of calm before activity rebounded. The alternating quiet and active phases suggest several independent solar events influencing Earth’s magnetosphere. These patterns are consistent with the ongoing elevated activity of Solar Cycle 25, reinforcing the need for continuous monitoring to better understand the Sun–Earth connection.

H Alpha Observations

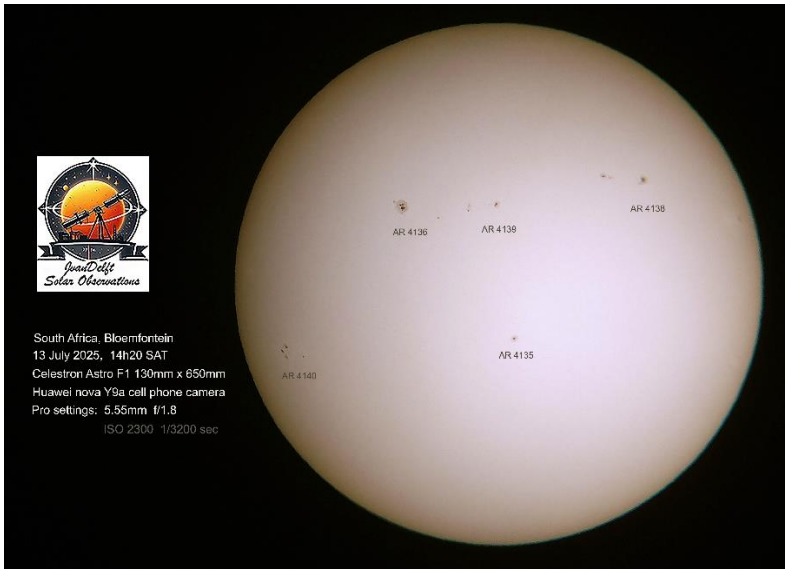
Two observers shared his H-Alpha data for March 2025. Andrew Devey from BAA & MSAS living in Spain and Mick Nicholls from BAA & MSAS living in the UK.

Jul-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	4		1		5		6		7		0	
2	5	0	0	5	5	5	6	6	7	8	0	0
3												
4												
5	4		2		6		5		7		0	
6	4		1		5		4		8		0	
7	2	0	1	4	3	4	4	3	6	7	0	0
8	4		0		4		3		7		0	
9	3	0	0	6	3	6	4	4	5	5	0	0
10	2	0	3	6	5	6	4	4	5	7	0	0
11	1	0	2	3	3	3	4	3	6	8	0	0
12	1	0	2	4	3	4	4	5	6	9	0	0
13												
14	3		3		6		5		6		0	
15												
16	1		2		3		4		6		0	
17												
18	2	0	2	4	4	4	3	3	6	5	0	0
19	2		1		3		4		5		0	
20	3		0		3		7		6		0	
21	3	0	2	4	5	4	6	5	5	7	0	0
22	1		2		3		3		6		0	
23												
24												
25	2	0	1	6	3	6	4	4	5	6	0	0
26	0		4		4		5		6		0	
27	4		1		5		5		7		0	
28												
29												
30	2	0	1	4	3	4	4	4	6	6	0	0
31		0		2		2		5		5		0
Total Nr	53		31	48	84	48	94	46	128	73	0	0

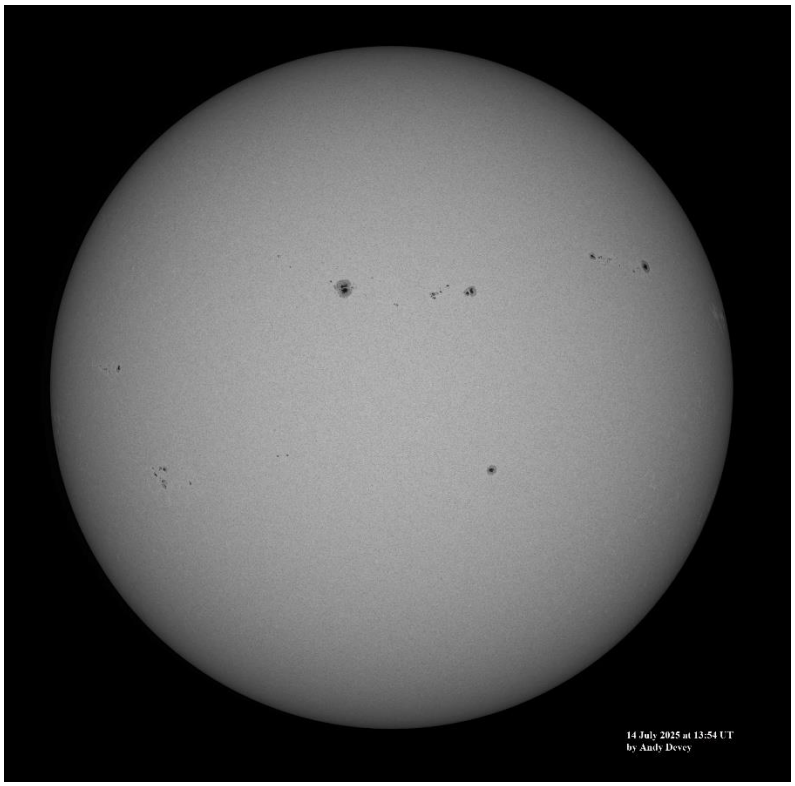
July 2025	Counts	Observations	MDF
Prominance	132	32	4,1
Plage Areas	140	32	4,4
Filaments	201	32	6,3
Flares	0	32	0,0

- **Solar images**

WHITE LIGHT



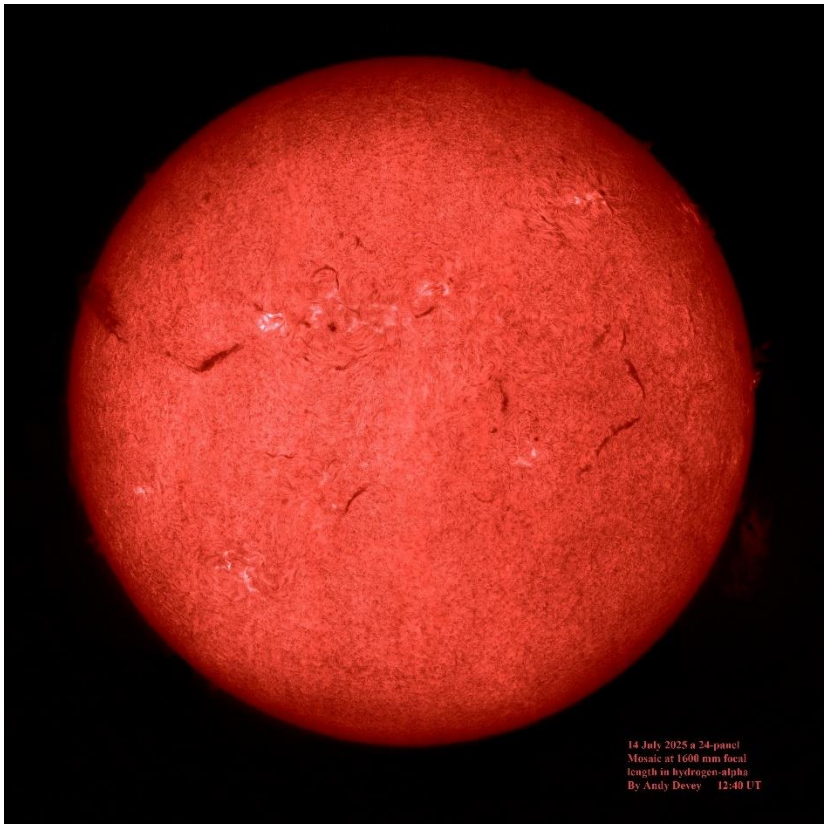
Jacques van Delft ASSA South Africa



Andrew Devey, BAA/MSAS Spain.

H-Alpha

Mick Nicholls, BAA/MSAS UK



Andrew Devey, BAA/MSAS Spain.

Thanks to the contributors of data and images,

Clear skies and regards
Jacques van Delft

ASSA Solar Section