



The British Astronomical Association

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BAA Solar Section Newsletter

Sunspot data 2025 August

Day	g	R
1	8	109
2	8	121
3	6	102
4	5	90
5	5	97
6	8	123
7	9	139
8	12	162
9	10	142
10	10	158
11	11	153
12	9	141
13	10	143
14	11	139
15	9	116
16	8	97
17	5	62
18	3	36
19	2	30
20	4	49
21	5	57
22	4	50
23	5	61
24	6	83
25	9	118
26	10	151
27	11	169
28	9	170
29	10	169
30	9	156
31	10	163

Monthly Means

MDFg:	8.04	(41 observers)
MDFNg	4.96	(35 observers)
MDFSg	3.23	(35 observers)
Mean R:	119.18	(42 observers)

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Images for the web should be sent to
Peter Meadows: peter@petermeadows.com and
copied to me. All digital images must be in "JPEG"
format with the same orientation as naked eye
orientation. Include initials, date and time in the
file name. Keep each image file to less than 1Mb.

On-line Reporting:

<https://britastro.org/solarwl>
<https://britastro.org/solarha>

Observers:

R S Armas, Cuba	A Johnston, Denbighshire
C Bailey, Suffolk	R Johnson, Surrey
R Battaiola, Milan, Italy	S L Karl, Aberdeen
M Boschat, Canada	M Kinder, Cheshire
C F Bowron, South Yorks	C Longthorn, Rugby
A Bowyer, Epsom Downs	L Macdonald, Berkshire
P Brierley, Cheshire	R Mackenzie, Kent
S Brown, Leicestershire	K Man
M Buck, Bristol	P Meadows, Essex
D Buczynski, Tarbatness	A Mengus, France
L Cambon, France	H Meyerdierks, Germany
G Clarke, Australia	L Morrone, Italy
E Colombo, Italy	M Nicholls, Sheffield
J Cook, Wolverhampton	R Samworth, Leicestershire
P Curtin, USA	J D Shanklin, Cambridge
S Dawes, London	D Smith, Essex
A Devey, Spain	L Smith, Angus
R Dryden, Oxon	N Spencer, York
F Dubois, Belgium	M Stephanou, Greece
T Emmett, Cambs	G Steigmann, Hull
G D Ewen, Beds	A Stone, Bristol
E Fabrigat, France	D Strange, Devon
M Giuntoli, Italy	T Tanti, Malta
D Glover, Essex	P Taylor, Coventry
S Green, Lancs	D Teske, Mississippi, USA
K Hall, Warrington	C B Thielke, Denmark
B Halls, W Sussex	N Tonkin, Cornwall
K Hay, Canada	Towarzystwo Milosnikow
R Heard, Suffolk	Towarzystwo Obs Slonca
R Hill, Arizona, USA	S Ove Thimm, Denmark
N James, Chelmsford	P Urbanski, Poland
J Janssens, Belgium	G Vargas, Bolivia
M Jenkins, Cambridge	D Vidican, Romania
S Jenner, Kent	S Viney, Cheshire

The Sun in White Light – August

White light activity continued to rise during August with the northern hemisphere peaking for Cycle 25 so far. Activity levels were the highest recorded by the Section since 2025 February with the northern hemisphere dominant although the southern hemisphere was also active. The largest sunspot groups were seen early and late in the month with smaller groups appearing more towards the middle of August. The Quality factor was also high for the month. Forty-nine groups received Boulder numbers, the largest/most active are reported below.

AR4165 N12°/101° & AR4168 N05°/104° AR4165 had rounded the NE limb towards the end of the previous month. On the 1st the group consisted of a leading small penumbral sunspot with a smaller follower and was still not far from the NE limb. The group had an area of 320 millionths which reduced to 210 millionths by the 8th. However, during this period, a more complex group developed immediately to the south and west of AR4165, being AR4168. Initially AR4168 was a collection of pores on the 2nd but had developed into a stronger string of sunspots the following day. Substantial development took place on the 5th and 6th with the leading sunspot being well defined with a partially closed umbra. A smaller penumbral sunspot followed which was displayed a partial light bridge. Several smaller sunspots and pores lay in the intermediate area. By the 8th AR4168 was type Eac with an area of 580 millionths. The following day the leading sunspot had three distinctive umbrae formed by light bridges. The follower sunspot was seen to have three small umbral spots with a partial penumbra. Both sunspot groups were in a state of decay as they approached the NW limb, particularly AR4168. Both groups were visible up to and including the 11th when AR4165 was an Hsx sunspot and AR4168 had decayed to a single Axx sunspot close to the limb.

AR4167 N10°/173° formed on the disk near the Central Meridian (CM) at the end of the previous month. By the 1st the group was in the NW quadrant and developed to type Dai. The group consisted of a leading sunspot with a partial penumbra and a follower with a large umbra but with a rudimentary penumbra. Smaller sunspots were positioned north and south of the axis between the main sunspots giving the region an oval like appearance. The group was larger and more evolved by the following day and was type Dki by the 3rd. The follower started to break up and dissolve as the group approached the limb and rounded the limb on the 6th.

AR4172 N09°/030° was a collection of small sunspots close to the NE limb on the 6th aligned east/west with faculae snaking between. The group strengthened the following day and by the 8th was an extended E class group with the leading sunspots well clear of the slightly larger follower. Over the coming days, smaller sunspots developed between the two extremities so by the 11th the group was a string of sunspots with an area of 270 millionths near to the CM. The following day the group enlarged to 410 millionths before decaying to 340 millionths on the 13th and 14th. The group was last seen near to the western limb on the 15th.

AR4178 N09°/057° developed on the disk in the NW quadrant to the west of AR4172 on the 9th. The following day the group had developed to type Dai. On the 11th the group had a leading penumbral sunspot with two penumbral followers giving the group an arrow-head appearance. The southerly following sunspot had a large umbra with a rudimentary penumbra and small satellite pores. The northern follower had light bridges formed across its umbra with pores formed at the edge of the penumbra. The leader became the dominant component in the following days with the group rotating on the 14th.

AR4191 N12°/173° rounded the NE limb on the 20th as an Hsx sunspot on the limb. By the 22nd the group was fully onto the disk and type Cso with an area of 410 millionths. The following day a small following penumbral sunspot had appeared. The group developed slightly on subsequent days and by the 25th the group had an area of 500 millionths. The group had three areas of sunspot activity with the largest sunspot being the leader. The group was close to the CM on the 27th and shortened in length as it crossed the NW quadrant. At the close of the month, the group was type Dao with an area of 380 millionths.

AR4197 S16°/129° & AR4201 S21°/120° & AR4202 S14°/113° AR4197 first appeared around the SE limb on the 24th (preceded by a small Hsx sunspot AR4195 and with another to its north being AR4196). The following day, it could be seen that AR4197 was the major group which had developed to type Dao comprising of a leading penumbral sunspot and many more minor followers. By the 27th, development had continued with AR4197 now type Esc with an area of 450 millionths. Another Dso group had appeared to the east of the main group being AR4201 and an Hsx sunspot was northeast of the main group being AR4202.

AR4197 became a very large and complex group over the subsequent days being described on the 28th as a “very complex active area with a leading sunspot of four umbrae”. Light bridges divided the umbra of the leading and following sunspots with many more accompanying minor sunspots. AR4201 and AR4202 both continued to trail the main group adding to the visual extent and complexity of the region. AR4197 achieved an area of 1520 millionths on the 28th mainly through the expansion of its leading and following irregular penumbral sunspots. On the 29th the group was described as “most impressive” with an area of 1920 millionths and on the 30th 1720 millionths, when near the CM. When observed on the 31st, the following part of the main group in particular, had decayed, reducing its area to 1390 millionths. AR4202 remained of similar type and size throughout. AR4197 was visible to the protected naked eye on the 28th, 29th and 30th.

AR4207 N31°/044° appeared around the NE limb at relatively high latitude on the 30th as an Hsx type sunspot. By the following day, followers had appeared and the group was reclassified as type Esc.

24 observers reported a Quality number of **Q = 24.72** for August.

The Sun in H-alpha

Prominences

19 observers reported a prominence MDF of **8.65** for August.

A low but extensive hedgerow prominence was reported on the SW limb on the 5th only rising to about 35,000 km but extending around the limb for 100,000 km. The feature persisted for several days being at its most extensive on the 7th and reduced thereafter. A bright active prominence was observed on the 14th on the NW limb. Initially at 0835 UT it appeared bright, compact and dome-shaped but over the next 30 minutes, a curved prominence developed extending away from the limb but faded over the following 30 minutes. A cloud shaped prominence was also noted above the limb further to the south. On the 10th, a cloud of plasma was seen hovering above the Sun's SE limb at a height of 100,000 km. The cloud was still present the following day but at a reduced height of about 50,000 km.

A long stem of plasma with a fan shaped feature atop was obvious on the NE limb on the 17th

The prominence persisted for several days with structure changes and was a small cloud of plasma above the limb with a low hedgerow prominence below on the 20th. The area erupted again the following days with three inter-connected elements. A hooked prominence remained on the 22nd with a low pyramid being the remnants on the 23rd.

Also, on the 22nd, a surge prominence was observed at the SE limb which could have been related to a cluster of sunspot groups in that area.

A post-flare loop was seen at the SE limb on the 25th associated with AR4197 emerging over the limb.

On the 31st an inclined pillar prominence was seen on the SE limb rising to a height of about 100,000 km.

Filaments & Plage

18 observers reported a filament MDF of **10.63** and 16 observers reported a plage MDF of **6.80** for August.

The “U” shaped filament seen at the end of July was in the SW quadrant at the start of August. The filament progressed to the SW limb where it resulted in the hedgerow

prominence of the 5th, reported above. Also on the 5th, a very long broken filament was seen in the southern hemisphere at high latitude, measuring about 350,000 km in total length. An active filament observed at 0652UT on the E limb, rapidly evolved over a period of about 25 minutes and grew into a ‘bubble like’ formation before dissipating.

A long north/south aligned filament was near to the NE limb on the 9th. This was joined by a similar feature the following day giving rise to a roughly “V” shaped feature in the NE quadrant on the 10th and 11th. Thereafter, the most westerly of the two decayed and dissolved by the 14th. The remaining filament remained and progressed to the CM on the 15th developing a fan shape at its northern end. This fan was quite pronounced on the 16th, 17th and 18th but the filament shortened on the 19th becoming more east/west orientated as it approached the NW limb. A long chain of broken filaments was seen on the 20th across the northern hemisphere, the shortened filament forming the most westerly element. Elements of this long filament chain persisted through to the 27th and were estimated at 450,000 km in total length on the 24th.

Also, on the 24th, remnants of a south polar crown of filaments were seen starting to rotate off the disk from the SW. Faint plage was noted laying between AR4189 and AR4194 linking the two regions.

A long quiescent filament aligned east/west was noted underscoring the groups around AR4197 near the SE limb on the 27th to the 30th and seemed to be associated with a small prominence on the limb. On the 31st the filament was well clear of the SE limb and formed two distinct elements, both east/west aligned and broad in nature.

A long north/south aligned broken filament was seen near the CM in the northern hemisphere on the 30th and persisted into the NW quadrant the following day.

Polar Faculae & CaK

No MDF figure has been received for August however Brian Halls noted north polar faculae on the 6th and 9th of the month.

No written CaK reports were received.

Flares

Andy Devey reported an M3 flare associated with AR4168 on the 7th at 1120 UT; an M1 flare associated with AR4199 on the 27th at 1304 UT and an M1 flare associated with AR4197 on the 30th at 1618 UT.

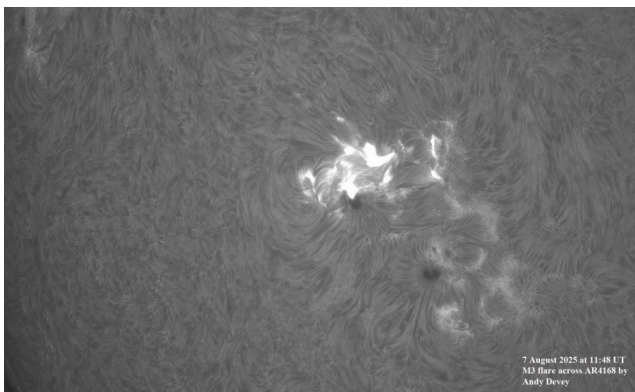
Peter Meadows reported a C8.9 flare within AR4178 on the 10th peaking at 0843 UT near to the NW limb and a C9.6 flare within AR4199 near the SE limb on the 25th peaking at 0845 UT but it had subsided by 0900 UT.

Other minor flares were reported by Michael Boschat, Laurent Cambon, Eric Fabrigat, Derek Glover, Stuart Green and Brian Halls.

MAGNETOMETER REPORT

2025 AUGUST

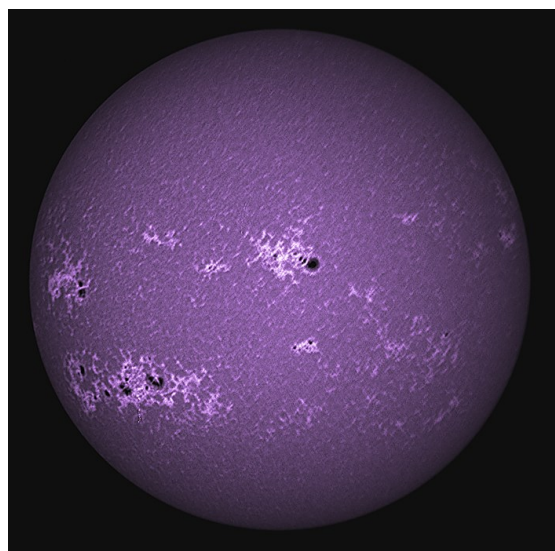
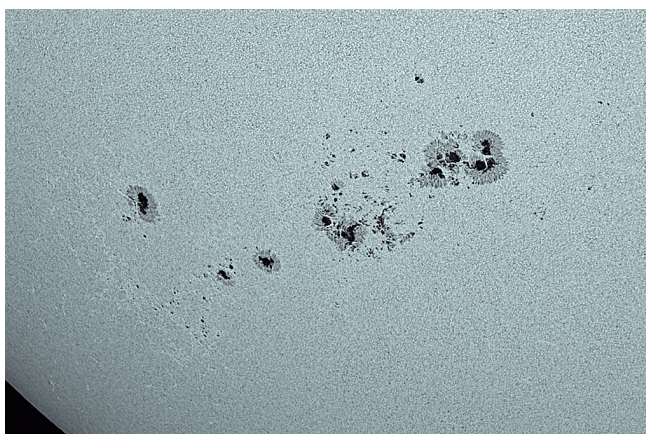
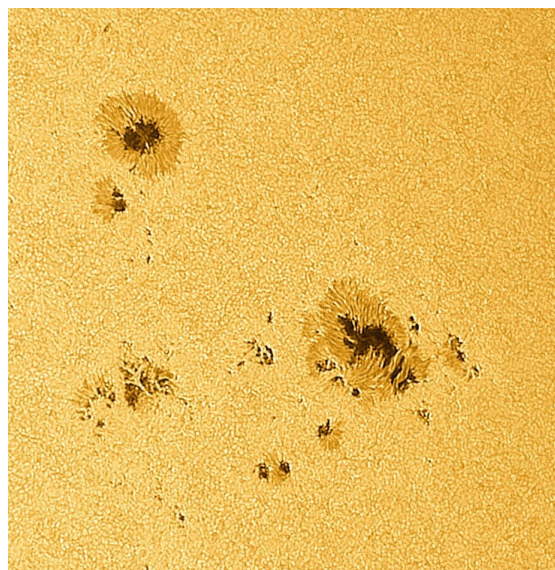
DATE	DURATION (UT)		ACTIVITY	Solid-state magnetometer, Uncalibrated. John Cook
1	21:00	22:00	Disturbed.	
2	01:30	06:15	Disturbed.	
2	21:45	22:45	Disturbed.	
4	06:30	18:00	Disturbed.	
4/5	23:00	02:00	Disturbed.	
8/9	14:00	22:00	Disturbed.	
9/10	23:45	01:00	Disturbed.	
10/11	06:00	12:00	Disturbed.	
11/12	21:00	05:00	Disturbed.	
13/14	21:30	10:00	Disturbed.	
19/20	22:45	09:00	Disturbed.	
20/21	21:00	03:30	Disturbed.	
30/31	23:00	01:30	Disturbed.	



Above: M3 flare within AR4168 imaged by Andy Devey on the 7th at 1148 UT

Right: White light image of AR4165 (top) and AR4168 by Carl Bowron, 8th at 0913

Below: AR's 4196, 4197, 4201 and 4202 imaged by Brian Halls on the 28th at 0655 UT in white light

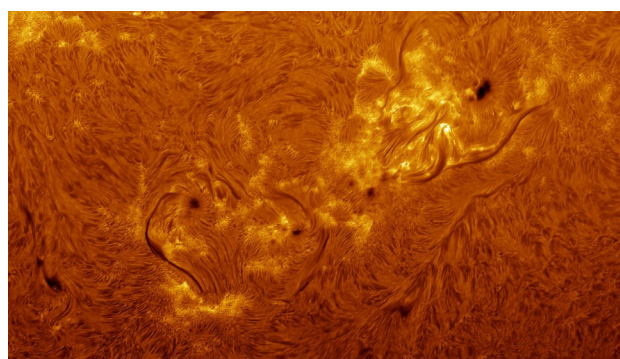
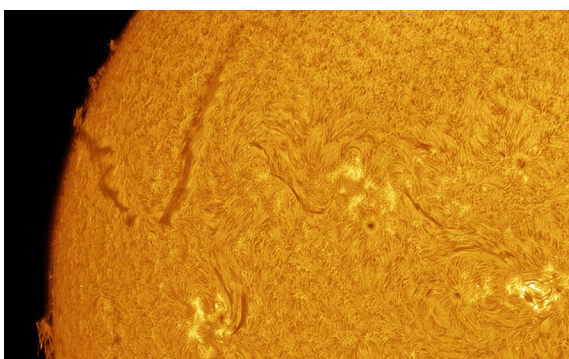
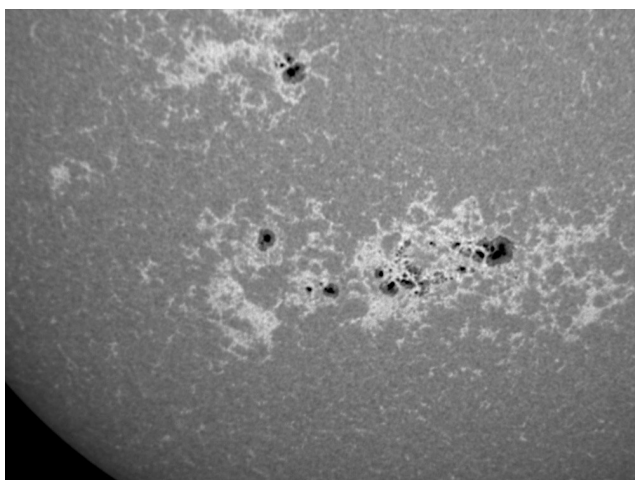


Above: Solar disk imaged in CaK by Sheri Lynn Carl on the 27th at 1029 UT showing the major sunspot groups

Left: CaK image (not coloured) by Mick Nicholls on 30th at 0921 UT showing AR4197 and accompany groups with AR4199 top.

Below Left: Two filaments near NE limb creating a "V" effect imaged by Dave Smith on the 10th at 0952 UT

Below Right: AR4197 and accompanying groups in H-alpha imaged by Stuart Green on the 31st at 0810 UT



Section News

We are having a joint on-line Zoom meeting with the BAA Radio Section on Friday, 3rd October 2025 at 1930 hrs BST (1830 UT). The topic is “Solar Eruptions & Space Weather” by Dr Timo Laitinen who will talk about what is known about solar eruptions and their main counterparts, solar flares and Coronal Mass Ejections. Apart from the effects on Earth and its vicinity, Dr Laitinen will also talk about Solar Energetic Particles that are accelerated in processes related to flares and CME’s.

To get a link to join this meeting, please email the Director of the Radio Astronomy Section, Paul Hearn at paul@hearn.org.uk the day **before** the meeting date. No other reminder will be given of this event so please make a diary note.

Gordon Ewen has kindly written a short article about his observatory and equipment. Due to space restrictions, I have reproduced the first part below and will conclude the article next month.

The Moggerhanger Starshed – by Gordon Ewen

That’s what I call my observatory, named after the village in which I live. It wasn’t always like this, though. I bought my first H-alpha telescope in November 2010, a Solarscope 50. It was a tilt tuned etalon and achieving an even tuning across the fov wasn’t easy. However, seeing the Sun in H-alpha was something of a revelation. Here was an object which changed by the hour, unlike just about anything else in the sky. Then I got aperture fever and decided I wanted a bigger solar telescope.

Lunt had recently launched their pressure tuned H-alpha telescopes which appealed to me as there was no tilting etalon. I’d recently been made redundant and had some cash burning a hole in my pocket so I went for the Lunt 152. Within weeks of receiving it, the pressure tuner was playing up and it went back to Lunt. Once returned, I set to using it at every opportunity.

Of course, we now have a lot more choice of cameras and image quality has improved markedly. I later added the Lunt double stack module in 2016. This was after I had experimented with double stacking using the Quark Daystar, but I wasn’t that convinced by that combination.



In 2013 I moved to my current location and built an observatory. Then I could go out and be up and running in a couple of minutes. Currently it has the following scopes installed: Lunt 152 DSII, Skywatcher Heliostar, Askar 103 with Brewster wedge or MLAstro SHG700 Intes MN106 with ND 3.8 solar film and Baader 7.5nm continuum and Altair 2nm G-band filters, Stellalyra RC300 with ND 3.8 solar film (just made the filter in July, awaiting a proper test).

