



The British Astronomical Association

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BAA Solar Section Newsletter

Sunspot data 2025 July

Day	g	R
1	10	138
2	9	118
3	8	105
4	6	81
5	5	69
6	6	77
7	6	77
8	6	77
9	6	75
10	4	64
11	5	83
12	6	98
13	7	107
14	8	118
15	10	143
16	10	164
17	10	153
18	9	135
19	9	129
20	10	137
21	8	117
22	6	88
23	6	82
24	7	97
25	9	135
26	9	128
27	8	119
28	9	110
29	8	108
30	9	126
31	8	122

Monthly Means

MDFg:	7.51	(38 observers)
MDFNg	3.63	(33 observers)
MDFSg	3.91	(33 observers)
Mean R:	107.81	(39 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
J Arnold, Leeds	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	M Mattos, Spain
L Cambon, France	P Meadows, Essex
G Clarke, Australia	A Mengus, France
A Clitheroe, Fife	H Meyerdierks, Germany
E Colombo, Italy	M Nicholls, Sheffield
J Cook, Wolverhampton	G Palmer, Wales
P Curtin, USA	R Samworth, Leicestershire
S Dawes, London	J D Shanklin, Cambridge
A Devey, Spain	L Smith, Angus
R Dryden, Oxon	M Stephanou, Greece
F Dubois, Belgium	A Stone, Bristol
T Emmett, Cambs	T Tanti, Malta
G D Ewen, Beds	P Taylor, Coventry
E Fabrigat, France	D Teske, Mississippi, USA
M Giuntoli, Italy	C B Thielke, Denmark
D Glover, Essex	P Tosi, France
S Green, Lancs	Towarzystwo Milosnikow
K Hall, Warrington	Towarzystwo Obs Slonca
B Halls, W Sussex	B Tynan, Renfrewshire
K Hay, Canada	S Ove Thimm, Denmark
R Heard, Suffolk	P Urbanski, Poland
J Janssens, Belgium	G Vargas, Bolivia
S Jenner, Kent	S Viney, Cheshire

The Sun in White Light – July

After the decline in activity during May and June, July produced a return to the activity levels seen earlier in the year. Both hemispheres performed similarly however, the trend was for numerous small groups with a total of 45 sunspot groups receiving Boulder numbers. Several northern hemisphere groups were significant mid-month with the Quality number also returning to levels seen earlier in the year.

The largest/most active sunspot groups are reported below.

AR4122 N14°/219° survived on the disk from the previous month, now in the NW quadrant was type Cai with an area of 180 millionths. The group had an irregular leader containing several umbrae while the following part consisted of several pores. By the 3rd the leader had an almost circular umbra with a similar penumbra with a small light bridge forming. Thereafter the trailing pores faded leaving a single penumbral sunspot that was close to the NW limb on the 5th.

AR4135 S07°/048° was first reported close to the SE limb on the 7th type Hsx. The following day the group was C-class with a collection of smaller sunspots following the penumbral leader. Faculae was prominent within the group and the surrounding Photosphere. The smaller sunspot reduced over the coming days to a single pore and then faded altogether leaving a single Hsx type sunspot with an area of 140 millionths on the 10th. The group slowly reduced in size as it progressed across the SW quadrant being 90 millionths on the 16th. The group was last seen on the SW limb on the 19th.

AR4138 N28°/074° formed on the disk around the central meridian (CM) on the 11th as a minor Csi group. By the following day, this group had undergone substantial development and was now type Dao with a penumbral leader, being the largest sunspot and an asymmetrical follower containing several umbrae. The leader and follower began to drift apart as the group approached the NW limb and the following portion also began to break up. The leader was last seen close to the limb on the 16th with a string of faint pores following.

AR4136 N21°/020°/AR4139 N21°/035°/AR4143 N26°/007° AR4136 was the first to appear over the NE limb on the 8th/9th. On the 10th the group was fully on the disk and comprised of several penumbral sunspots with the largest being the follower. This was more pronounced the following day as the follower developed and all but one of the leaders disappeared. A few pores developed to the west of the group which strengthened on the 12th to type Cai being AR4139. AR4139 continued to strengthen and was type Eac by the 13th with an area of 240 millionths. The leader of the following AR4136 continued to fade but a few pores emerged further east of the main sunspot and was designated AR4143. AR4143 was type Bxo on the 15th but became a more complex Dac group with an area of 270 millionths. By the 16th all three groups made an impressive sight strung out across the NW quadrant. The leading region was AR4139 comprised two well developed penumbral sunspots with accompanying pores. AR4136 followed with its leading small sunspot appearing more to be associated with AR4136 than its own penumbral follower. AR4143 followed comprising of a lead penumbral sunspot with many smaller sunspots forming an oval shape behind. AR4143 continued to strengthen on the 17th and was estimated to be type Dac on the 18th with an area of 480 millionths and type Ekc on the 20th with an area of 620 millionths, the largest sunspot being the follower. AR4139 rotated over the NW limb on the 20th with AR4136 following on the 21st. AR4143 rotated over the limb on the 22nd.

AR4149 N17°/248° A small Dso type group appeared over the NE limb on the 19th. By the 21st it had developed into a more complex group, type Eac with an area of 460 millionths. On the 23rd the largest sunspot was the leader, an almost symmetrical penumbral sunspot with two small clusters of pores located between the leader and the follower sunspots. These clusters of pores faded as the group crossed into the NW quadrant, as did the follower. By the 28th the group had reduced to 170 millionths in area and was type Cao as it neared the NW limb.

AR4153 S29°/221° first appeared close to the SE limb on the 22nd. The following day the group was further developed with a leading sunspot and a cluster of smaller sunspots behind.

Faculae surrounded the group. The group continued to strengthen to type Dai. The leader and follower began to drift apart on the 25th with the group becoming type Eso as it entered the SW quadrant. The leader sported several small umbrae. The group was approaching the SW limb on the 31st and clearly in decline.

AR4161 S13°/136° was close to the SE limb on the 28th type Dao. A small penumbral sunspot led the group with several smaller sunspots following, accompanied by faculae. As the group emerged onto the disk, a small follower sunspot was at some distance from the leaders giving the group an Eso designation on the 29th. The group was similar on the 31st when the leader was mid-way across the SE quadrant.

23 observers reported a Quality number of **Q = 22.72** for July,

The Sun in H-alpha

Prominences

20 observers reported a prominence MDF of **7.49** for July.

On the 1st a flat arch prominence was reported on the NW limb with a height of 40,000 km and a length around the limb of about 140,000 km. The following day this feature lifted to form a spectacular arch prominence.

An eruptive prominence and detached plasma were associated with AR4126 as it approached the NW limb on the 3rd. Further surge-like prominences were noted at 0845UT, 0852UT and 0914UT.

A cloud of plasma was seen high above the NW limb on the 9th estimated at a height of 150,000 km. A platform arch prominence was also seen on the NE limb.

A fine hedgerow prominence was on the NE limb on the 10th. The following day this had evolved into a hearth of 5 or 6 tall tree prominences. A further shape change occurred on the 12th when the prominence took the form of a billowing cloud of plasma attached to the limb at its southern end. The prominence had once again settled on the limb by the 13th forming a large fan shape. Little was evident the following day as the feature rotated onto the disk.

Also on the 13th, a large but quite diffuse hedgerow type prominence was on the SW limb. The following day this prominence was mostly detached from the limb, secured at its northern end. The prominence took the form of large billowing cloud of plasma spreading about 100,000 km along the limb and reaching a height of 70,000 km. Also on the 14th, a bright but compact prominence was seen on the W limb at 0845UT. By 0905 UT the prominence had extended in height as a curved jet of hydrogen. Its shape changed and became fainter over the next 45 minutes.

A bright cloud type prominence was reported above the SW limb on the 20th at 1537 UT but was much fainter 5 minutes later.

All prominences from mid-month to the end of July were small and few reports were received.

Filaments & Plage

19 observers reported a filament MDF of **9.36** and 18 observers reported a plage MDF of **6.08** for July.

An extensive polar crown type string of filaments was seen mostly crossing the NE quadrant on the 3rd. The central elements faded over the next few days so that by the 7th the western and eastern elements were all that remained.

On the 8th, bright plage without an associated sunspot was noted near the W limb and a large area of plage and disturbed Chromosphere was seen in the SW quadrant approaching the limb.

A long stringy filament lay to the west and south of AR4135 on the 12th and 13th and persisted in the SW quadrant through the 14th and 15th.

Filaments were associated with AR4139 and AR4136 in the NW quadrant on the 16th and a north/south aligned filament was seen between AR4142 and the eastern limb, just south of a newly forming sunspot, AR4147. A large area of plage was also noted surrounding AR4140 and AR4145 in the SE quadrant between latitudes S24° – S15°.

On the 17th a broad north/south aligned filament was close to the E limb. The following day, the filament developed a long thin southern extension. The broad northern element was diminished by the 20th with the southern element developing into an inverted Y shape on the 21st. The filament was estimated at 300,000 km in total length.

An extensive string of broad filaments forming a polar crown at high latitude were seen on the 25th and estimated to be about 400,000 km in total length.

A large U-shaped quiescent filament was visible in the SE quadrant narrowing down to a fine thin line to the east of the follower in 4154 on the 28th. The filament was estimated at 300,000 km in length and a small area of spotless plage was noted at the centre of the U-shape. This feature persisted to the end of the month when it was just into the SW quadrant.

Flares

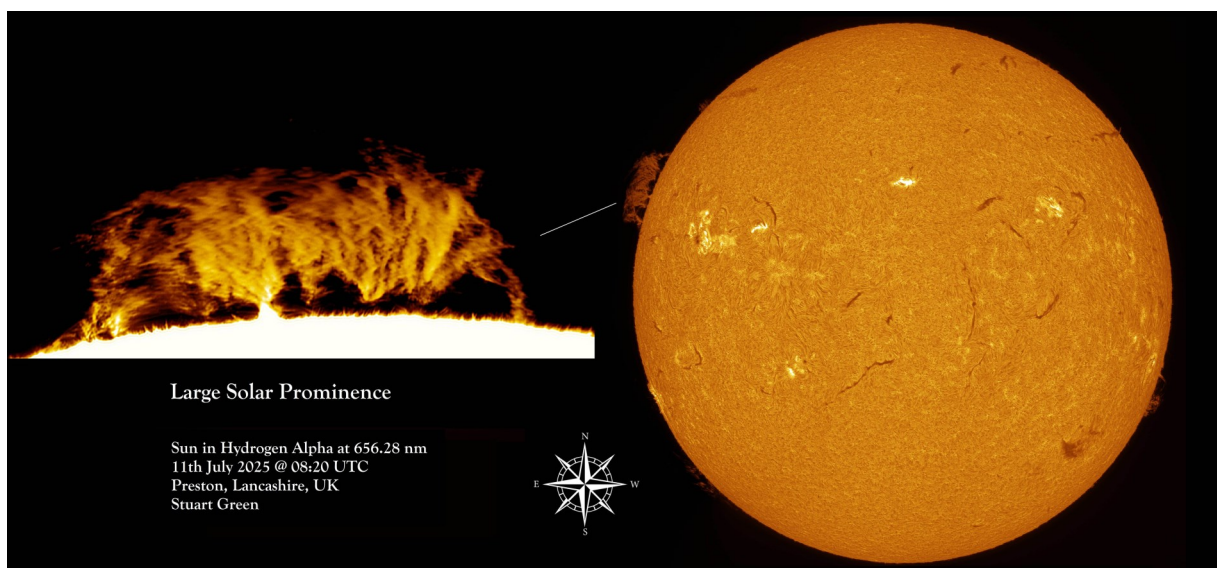
Numerous C class flares were reported during the month. The only M class flare reported was an M2.3 flare seen by Andrew Johnston on the 12th associated with AR4140 between 0840UT and 0850 UT.

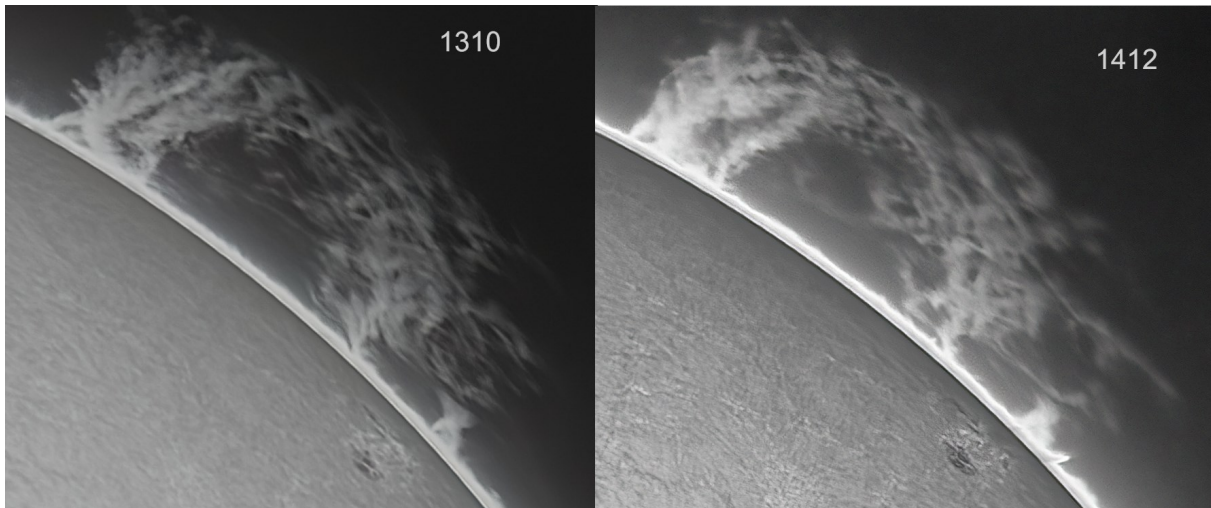
There were no CaK reports for July and no polar faculae were recorded.

MAGNETOMETER REPORT

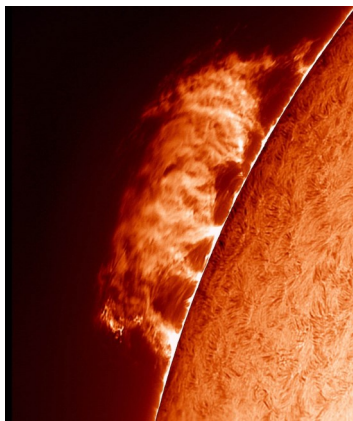
2025 JULY

DATE	DURATION(UT)		ACTIVITY	
3	04:00	18:00	Disturbed	Solid-state magnetometer, Uncalibrated. John Cook
6	00:00	10:00	Disturbed	
6/7	21:00	07:00	Disturbed	
7/8	23:00	03:00	Disturbed	
11/12	22:00	09:00	Disturbed	
12/13	23:30	10:00	Disturbed	
15	00:15	09:45	Disturbed	
16/17	21:00	02:00	Disturbed	
22/23	19:45	09:00	Disturbed	
23/24	11:00	09:00	Disturbed	
26	17:00	21:30	Disturbed	



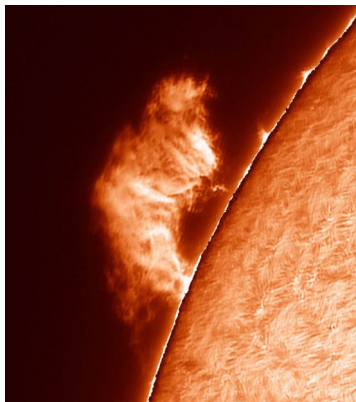
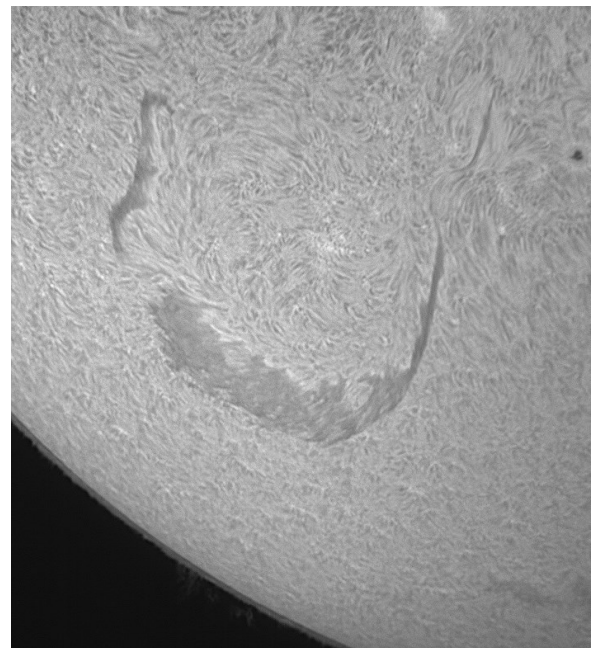


Above: Large arch prominence on the NW limb imaged by John Arnold on the 2nd at 1310 UT and 1412 UT



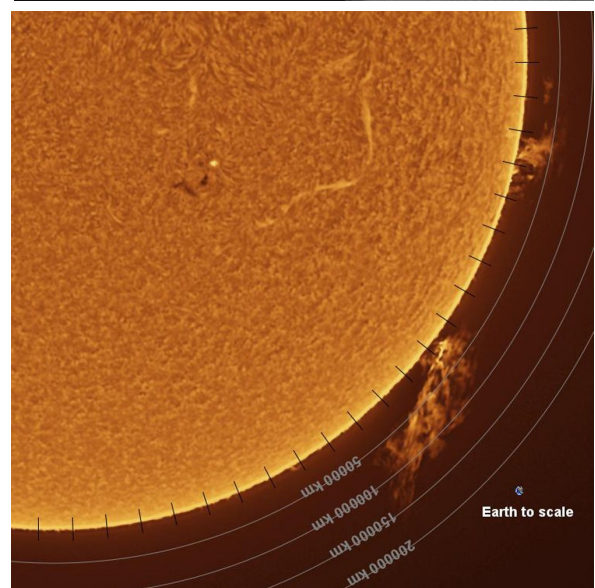
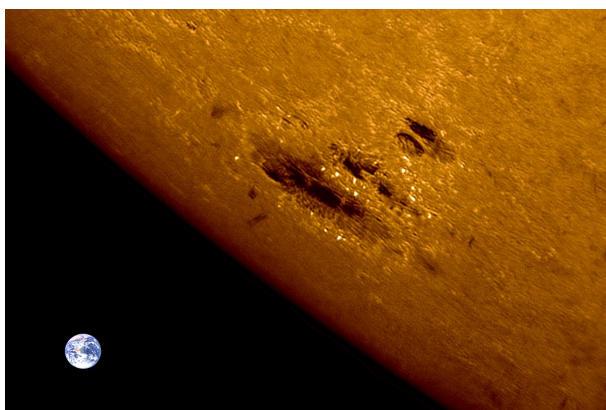
Left: Prominence hearth NE limb on the 11th and 12th imaged by Carl Bowron

Right: U-shaped filament imaged by Brian Halls on the 28th at 0720 UT



Below Left: AR4136 and associated Ellerman bombs, imaged by Philippe Tosi on the 10th

Below Right: Large Prominence of the 14th on the SW limb, estimated height by Brendan Tynan at 1553 UT



Section News

The next Section Zoom meeting is Friday 22nd August at 1930 hrs BST (1830 hrs UT)

Lyn Smith is inviting you to a scheduled Zoom meeting.

Topic: Solar Section Workshop

Time: Aug 22, 2025 19:30 London

Join Zoom Meeting

<https://us02web.zoom.us/j/84160688490?pwd=n4ZXaGZsbhtZ2Fk8La3rDa212QlOOt.1>

Meeting ID: 841 6068 8490

Passcode: 799777

Solar Astronomy Event (JASON2025) in Northern France

Authors: Michael O'Connell, Kildare, Ireland and Nic Spencer, Yorkshire

The Journées de l'Astronomie Solaire de l'Oise et du Nord (JASON2025)¹ took place in northern France on the weekend of 2025 July 21/22. This is a solar astronomy event located in the village of Baron, c. 30 km north-east of Paris-Charles de Gaulle airport.

Organised by Mars 60¹, it is a 2-day weekend event, now in its second year of running, the first of which was held in 2023. The event alternates each year with the Rassemblement des Observateurs Solaires (ROS)² solar astronomy event, held further south in France in the village of Serbennes, Vichy, c. 2.5 hrs drive west of Lyon.

The event in Baron was held in the village's sports centre, which were converted into a lecture hall, dining room, and an observing field with car parking. Attendees were able to purchase tickets for lunch in advance for one or both days on site. Approximately 60 people attended over the course of the weekend.

Given the favourable climate in France and beautiful weather conditions over the weekend, the event placed a strong focus on solar observing and imaging. The attendees brought along a vast array of solar observing equipment, ranging from double-stacked 100mm h-alpha telescopes to handmade 400mm diameter solar Newtonians, and everything in between.

The first day featured glorious sunshine with wonderful clear skies, temperatures of up to 35C and excellent seeing conditions. To escape the midday heat, lectures were presented indoors by Olivier Aguerre, Sacha Brun, and Christian Viladrich with Thierry Legault. The talks covered imaging the solar magnetic field and corona, the latest solar activity status, and high-resolution solar imaging from Saint-Véran Observatory³, respectively.

On the second day, temperatures cooled a few degrees due to intermittent cloud. 2 lectures were presented on this day: the first by Valérie Desnoux with Christian Buil about the Sunscan⁴ smart spectrohelioscope instrument, and Guillaume Aulanier wrapped up proceedings with a lecture on solar flares and extreme events. All talks featured live English subtitles, which was particularly welcome given the limited linguistic skills of the authors!

This is only the second year of the JASON solar astronomy event. If this year is anything to go by, we're certain this event will grow in popularity over the coming years.

The authors would like to thank the organisers and all the attendees for their wonderfully warm hospitality throughout the weekend.

1 Senlis Astronomy Club <https://www.mars60.fr/>

2 ROS https://www.soleilactivites.fr/en/home_en.html

3 Saint-Véran Observatory <https://www.saintveran-maisondusoleil.com/>

4 Sunscan <https://www.sunscan.net/>

Nic Spencer (centre) with Valérie Desnoux and Christian Buil photo by Michael O'Connell

