



The British Astronomical Association

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BAA Solar Section Newsletter

Sunspot data 2025 March

Day	g	R
1	6	91
2	8	121
3	6	98
4	7	118
5	7	114
6	6	96
7	6	87
8	5	78
9	6	82
10	6	81
11	8	109
12	9	124
13	9	141
14	9	139
15	10	143
16	12	180
17	12	178
18	10	149
19	9	136
20	9	128
21	9	128
22	11	149
23	6	92
24	5	63
25	4	60
26	3	39
27	4	56
28	4	63
29	5	74
30	6	110
31	6	128

Monthly Means

MDFg:	6.95	(43 observers)
MDFNg	3.80	(38 observers)
MDFSg	3.27	(38 observers)
Mean R:	107.16	(43 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:

P Abel, Leicester	A Johnston, Denbighshire
R S Armas, Cuba	R Johnson, Surrey
J Arnold, Leeds	M Kinder, Cheshire
C Bailey, Suffolk	P Lawrence, Leicestershire
R Battaiola, Milan, Italy	C Longthorn, Rugby
M Boschat, Canada	L Macdonald, Berkshire
C F Bowron, South Yorks	R Mackenzie, Kent
A Bowyer, Epsom Downs	M Mattos, Spain
S Brown, Leicestershire	P Meadows, Essex
E Bryant, North Devon	A Mengus, France
M Buck, Bristol	H Meyerdierks, Germany
L Cambon, France	B Mitchell, Norwich
I Chouinavas, Greece	C C Moraes, Brazil
G Clarke, Australia	M Nicholls, Sheffield
E Colombo, Italy	P Norman, Worcester
J Cook, Wolverhampton	G Palmer, Wales
A Coombs, Vic, Aust	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	A Stone, Bristol
T Emmett, Cambs	T Tanti, Malta
E Fabrigat, France	D Teske, Mississippi, USA
J Fletcher	C B Thielke, Denmark
M Giuntoli, Italy	N Tonkin, Cornwall
D Glover, Essex	P Tosi, France
S Green, Lancs	Towarzystwo Milosnikow
K Hall, Warrington	Towarzystwo Obs Slonca
B Halls, W Sussex	S Ove Thimm, Denmark
K Hay, Canada	P Urbanski, Poland
R Heard, Suffolk	G Vargas, Bolivia
J Janssens, Belgium	D Vidican, Romania
M Jenkins, Cambridge	A Vincent
S Jenner, Kent	

The Sun in White Light – March

Activity in March was very similar to that seen in January, which was a slight decrease on last month. Northern activity was down on that seen in February with a slight upsurge in southern activity giving an overall slight decrease in the Relative Sunspot number. The Quality number was also slightly down on last month. However, a total of 45 sunspot groups were allocated a Boulder number although most were unremarkable. The largest/most active sunspot groups are reported below.

AR4007 S09°/024° was the sole southern hemisphere group on the 1st of type Dac. Further sunspots appeared within the group the following day and by the 3rd a moderately sized follower was visible bringing the group's total area of 510 millionths. The follower appeared more detailed on the 4th comprising an umbra with an asymmetrical penumbra surround, the umbra being inclined to the south. As the group approached the SW limb it began to decay and was last reported on the 6th as a small Dao group near to the limb.

AR4009 N11°/357° was the largest group on the disk and was approaching the central meridian (CM) on the 1st. The group consisted of a penumbral leader with a tail of smaller sunspots. The umbra of the leader had a teardrop shape with the narrow portion cutting through the penumbra to the east. Bright photosphere material was seen in the penumbra. The group developed from a Cai type to Dai on the 3rd due to the development of small sunspots to the north, although the total area had reduced from 250 millionths to 150 millionths. The group was much reduced on the 4th and last reported on the 6th as a small Hax sunspot near the NW limb.

AR4012 S13°/292° was noted just over the SE limb on the 2nd as a small Dso group. The group underwent rapid development overnight and consisted of a large leading sunspot with a light bridge splitting its umbra on the 3rd, followed by two follower sunspots giving the group the appearance of a triangle. These two followers decayed the next day and several smaller sunspots with and without partial umbra evolved. As the group progressed towards the CM, it elongated and was type Eki on the 5th, 6th and 7th. Once into the SW quadrant on the 8th, there was clear evidence of decay particularly in the follower region. This decay continued and affected the leading sunspots which had hitherto remained strong. The group had reduced to type Cso on the 11th and was approaching the limb.

AR4019 N07°/218° rounded the NE limb on the 7th type Hsx. Although still foreshortened on the 9th, the main sunspot appeared to have a slightly elongated umbra and matching penumbra with a few small sunspots now trailing it inside a network of faculae. By the 11th the group had developed into three penumbral sunspots aligned east/west, type Dac. The most easterly sunspot started to decay the next day and by the 13th the two leading sunspots had rotated to form a near north/south alignment. The most northerly of the leaders went into decay the following day and by the 15th the group was type Dai but the follower had just about dissolved. The group was type Cao on the 18th approaching the limb and was not seen the following day.

AR4021 S05°/178° rounded the SE limb on the 10th and remained fairly consistent as it crossed the SE quadrant, with the occasional accompanying pore. When near the CM on the 16th it was classified as type Hax with an area of 240 millionths. The following day the group developed to type Dac and 350 millionths in area, although the main penumbral sunspot still dominated the group. The next day the group reverted to its original configuration and progressed towards the limb as Hsx sunspot, rounding the limb on the 22nd.

AR4022 N08°/188° & AR4025 N10°/178° & AR4031 N17°/164° all three groups formed a line that progressed across the disk in the wake of AR4019. AR4022 was first seen on the 11th over the NE limb type Cro. AR4025 joined it the following day to the east type Bxi. Both groups started to develop on the 14th being type Dai and Cao respectively. AR4031 developed on the disk on the 16th to the east of AR4025 developing to type Dai on the 17th. The leading group AR4022 was in decline as the other two groups developed being type Cso on the 18th with AR4025 and AR4031 both being type Eai. By the 19th AR4022 was reduced to just a single Axx sunspot approaching the NW limb. Both following groups had also reduced being type Dso and Cao respectively. AR4025 had further reduced to an Hsx

sunspot on the 20th and AR4031 to an Hax type sunspot, rotating over the limb on the 21st and 22nd respectively.

AR4036 N07°/130° developed on the disk in the NW quadrant on the 21st as a small collection of minor sunspots. The group rapidly developed overnight to type Dac, the largest sunspot being an asymmetrical penumbral leader. The group elongated the following day forming a triangular shape with two smaller penumbral followers. The group was type Ekc nearing the NW limb on the 24th and was the largest group on the disk at that time.

AR4043 N13°/354° rounded the NE limb on the 25th as a small Dso group consisting of just two sunspots. The following day the group began to develop to type Dai and by the 27th was described as a group of small sunspots with a scattered appearance. It was of similar appearance on the 29th and crossed into the NW quadrant the following day type Dsi. The group appeared a little stronger and more distinct on the 31st being classified type Eai.

AR4046 N06°/299° was first seen close to the NE limb on the 28th type Hsx. The following day it was accompanied by a smaller follower penumbral sunspot and developed several small sunspots following close to the umbra of the leading sunspot on the 30th. The group was of similar appearance on the 31st.

AR4048 S17°/279° was reported on the 29th just visible on the SE limb. The following day the leading penumbral sunspot was followed by another, the leader having a highly asymmetrical penumbra with a Dko classification. On the 31st with the group clear of the limb, it appeared to be a complex bipolar group with several irregular penumbral sunspots. The group was type Ekc with an area of 1460 millionths.

22 observers reported a Quality number of **Q = 21.55** for March.

The Sun in H-alpha Prominences

18 observers reported a prominence MDF of **6.65** for March.

On the 4th, a blob of detached hydrogen was seen above the W limb and on the 5th a moderately sized irregularly shaped prominence was above the SW limb. In addition, a small almost circular prominence was above the NE limb.

A large hedgerow prominence was on the SW limb on the 7th extending about 100,000 km around the limb and rising to 20,000 km.

A double arch prominence was on the SE limb on the 9th, rising to about 40,000 km and extending for 150,000 km around the limb. Although reduced, this prominence was still present the following day and as a long leaning arc on the 11th.

On the 14th a banana shaped cloud of plasma was on the NE limb and a streak of plasma was noted high above the eastern limb on both the 14th and 15th, finally dispersing on the 16th. Also on the 15th, a low but extensive prominence hearth consisting of 5 or 6 elements was on the NW limb.

A pyramid shaped prominence was on the SW limb on the 18th rising to about 60,000 km which persisted the following day although a little reduced in height. To the north of it but also on the SW limb, was an arch prominence extending around the limb for 60,000 km and rising to about 25,000 km.

On the 20th a pyramid type prominence and a curtain prominence were both noted on the E limb. The following day, the most northern of the two erupted into a spectacular arch prominence, extending southward.

A curved cloud of plasma hovered above the NW limb on the 24th and nearby a broken arch prominence graced the limb rising to about 70,000 km. The following day the attached prominence had also lifted creating two detached arches of plasma above the limb and a low blob of plasma was also attached to the limb nearby. On the 26th, the activity continued with two parallel lines of plasma over the Sun's limb measuring around 120,000 km in length.

A hedgerow prominence graced the NE limb on the 27th which developed the following day to extend around the limb for about 100,000 km and rise to 40,000.

Filaments & Plage

17 observers reported a filament MDF of **9.83** and 15 observers reported a plage MDF of **6.21** for March.

A long east/west aligned filament in the SW quadrant south of AR4007, persisted from the 1st to the 7th when it was responsible for the hedgerow prominence on the SW limb reported above. The filament was estimated between 300,000 and 350,000 km in length.

Many minor filaments were present on the disk during the following period but nothing significant was reported.

On the 16th plage was noted across three sunspot groups in the northern hemisphere being AR4022, 4025 and 4031. Minor flaring was also seen from AR4021, 4025 and 4031.

A long-broken east/west aligned filament was seen extending from the SE limb across the SE quadrant on the 24th. This filament extended in length the following day and the most easterly element close to the limb became strong and broad. Although still prominent on the 27th, the strong broad element was not apparent on the 28th.

Plage was associated with most sunspot groups throughout the month and there were also numerous occurrences of minor flares.

Flares

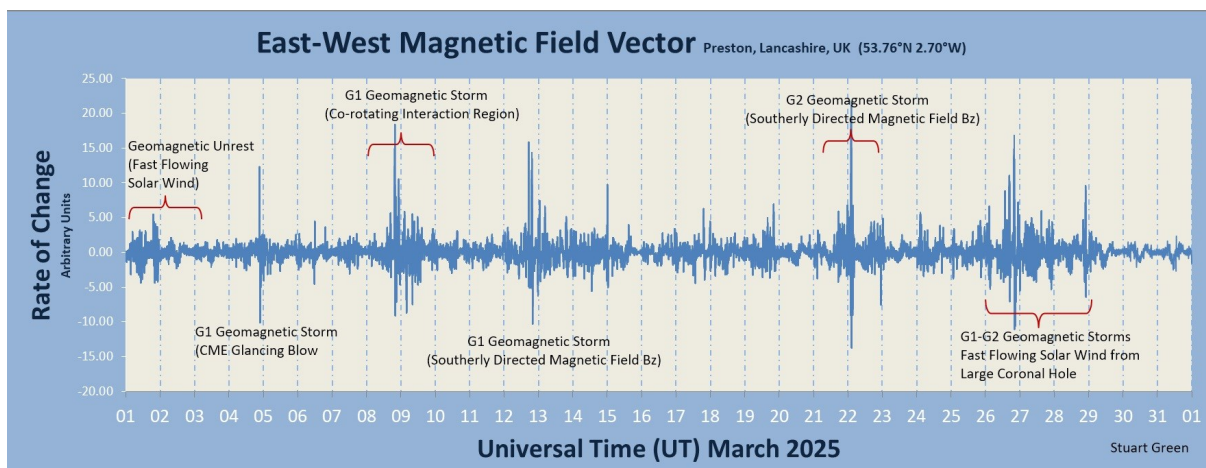
As reported above, there were numerous minor flares throughout the month. Both Andrew Johnston and Peter Meadows observed the M1.7 flare associated with AR4016 on the 5th between 11.50 and 1155 UT.

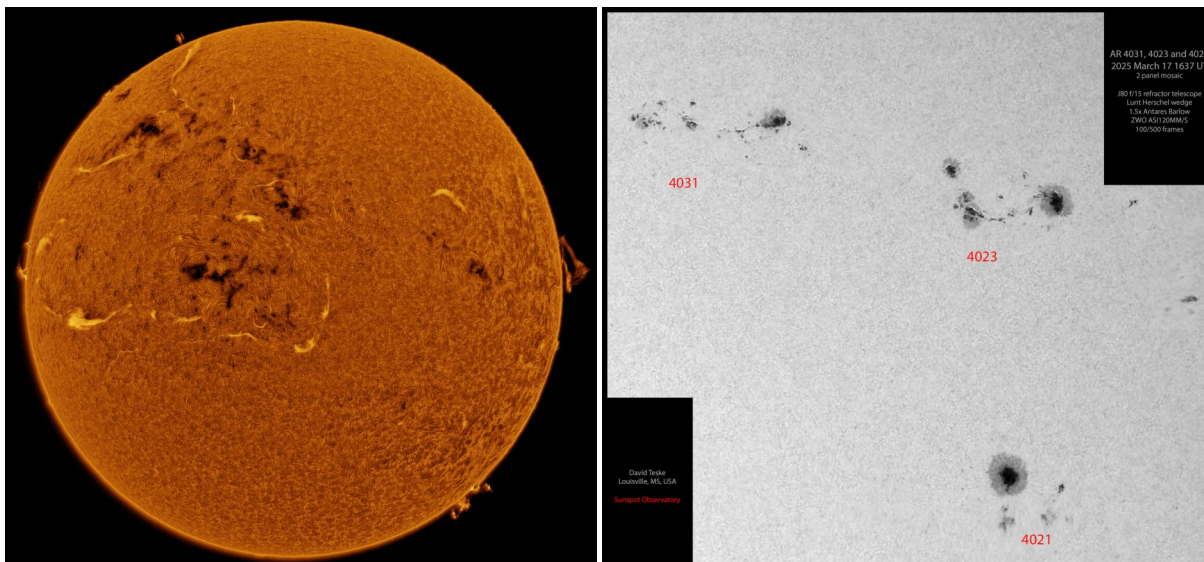
MAGNETOMETER REPORT

2025 MARCH

DATE	DURATION (UT)		ACTIVITY
1	19:00	23:30	Disturbed
4/5	21:00	05:00	Disturbed
8	13:30	19:45	Disturbed
8	19:45	23:45	Active
8/9	23:45	17:00	Disturbed
11-14	23:00	02:00	Disturbed
14/15	13:00	06:00	Disturbed
16/17	20:45	01:30	Disturbed
17/18	19:00	04:00	Disturbed
19	20:00	22:00	Disturbed
21/22	16:00	04:15	Disturbed
22/23	14:00	02:00	Disturbed
24	00:30	09:00	Disturbed
25	01:00	05:00	Disturbed
25-27	17:30	23:45	Disturbed
28/29	20:00	03:00	Disturbed

Solid State Magnetometer
Uncalibrated
John Cook



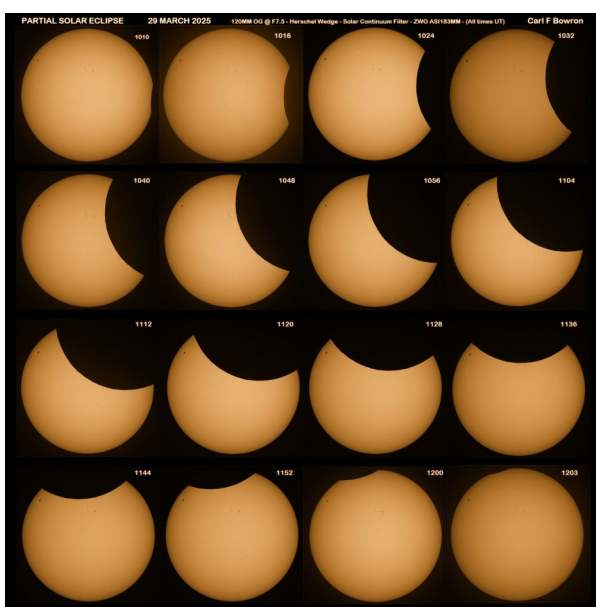
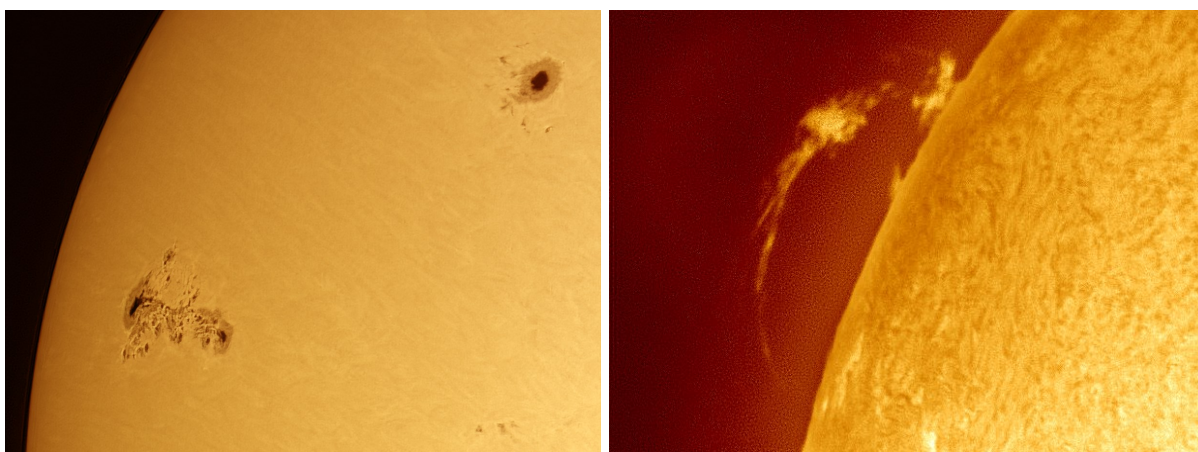


Above Left: Full disk in H-alpha, inverted image by Dave Smith showing the parallel lines of plasma on the NW limb on the 26th imaged at 1112 UT.

Above Right: David Teske has imaged AR4021, 4023 and 4031 on the 17th at 1137 UT.

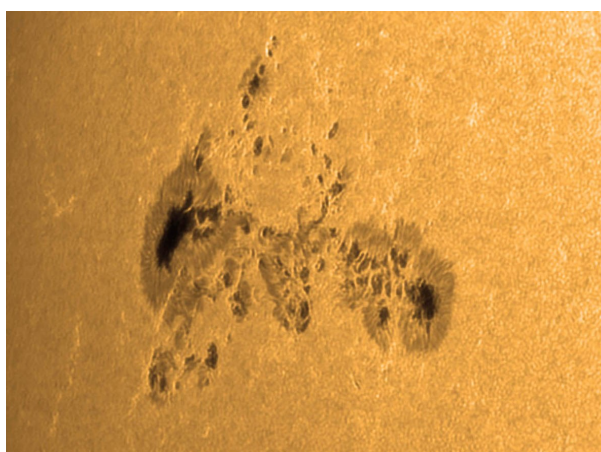
Below Left: A white light image from Chris Longthorn on the 31st imaged at 1107 UT (AR4048 nearest the limb, AR4046 top right and AR4045 below).

Below Right: The arching prominence on the E limb on the 21st captured by Arthur Coombs.



Left: A fine sequence of the partial solar eclipse of the 29th by Carl Bowron

Below: A white light image of AR4048 by Simon Dawes on the 31st at 0826 UT



Section News

Roger Heard has found a useful gadget for solar observing which might speed up the process of finding the Sun in the telescope. Details at the bottom of this page.
Many thanks also to all those that sent in superb images of the partial eclipse of the 29th March.

Our next Section meeting will be held on the Zoom platform on Friday 25th April 2025 at 19.30 hrs BST (18.30 hrs UT). Details below:

Lyn Smith is inviting you to a scheduled Zoom meeting.

Topic: SOLAR Section Workshop

Time: Apr 25, 2025 19:30 London (BST)

Join Zoom Meeting

<https://us02web.zoom.us/j/81044578393?pwd=fwkBPciyji6hWcZHee4TLkGTOOFqAB.1>

Meeting ID: 810 4457 8393

Passcode: 165683

One tap mobile

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- +44 208 080 6591 United Kingdom

Pinhole Camera

I use an Alt-Az mount with my 102 mm refractor attached and though it's not difficult to find the Sun prior to observation it can be annoying to get the shadow of the refractor in the correct position, especially if the Sun is at a low altitude. I spotted this little device, a small 'pinhole' camera, on the internet for about £10. When attached to the telescope it is very simple to centralise the Sun's image on the screen and start observation. I've seen home-made versions of this tool which would appear to be equally as good however my Blue Peter badge skills expired a long time ago!

Roger Heard

