

By the time that you read this the August 11 eclipse will be history. I am writing these notes in early August whilst keeping a close eye on the medium range weather forecast for Cornwall! I look forward to receiving your eclipse observations next month and, as you may have seen in the last TA, I am one of the editors of a special BAA Eclipse Memoir. We hope to collect together all of your eclipse observations and stories in one place and get it printed fairly quickly after the event. I hope that TA readers can play a large part in providing material for this important publication.

**White light MDF, 1999 July**

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
G. Johnstone	-	-	7.6	16	-	-	-	-
K. Medway	3.4	2.8	6.9	25	-	-	-	-
D. Storey	4.1	4.0	8.1	13	-	-	-	-
P. Meadows	4.6	3.4	8.0	20	129.8	20	25.8	20
J. Shanklin	4.4	3.2	7.6	25	110.0	25	-	-
S. Beaumont	2.9	3.7	6.6	19	93.1	19	-	-
E. Strach	3.6	3.6	7.2	26	113.1	26	22.0	26
A. Ibrahim	-	-	6.1	16	52.4	16	-	-
M. Hendrie	5.0	4.7	9.7	12	139.0	12	-	-
MEANS	3.9	3.5	7.4	172	106.5	118	23.6	46

*MDF = Mean Daily Frequency of active areas, R = sunspot number, Q = mean quality estimate (JBAA 98,6,pp282-286)*

**White light activity, 1999 July**

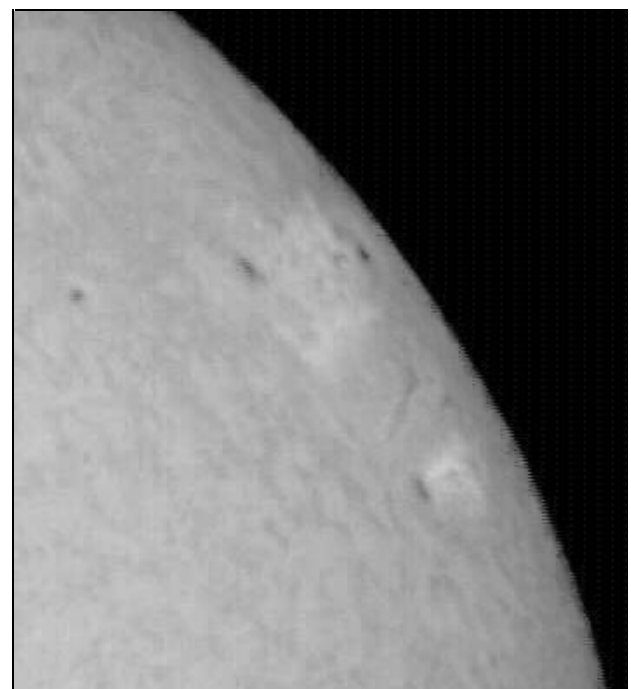
Thanks to everyone who submitted their observations before our earlier than normal deadline. This has made my job much easier and I can leave for the eclipse confident that the column has been delivered to Guy! Solar activity continued to increase this month and Eric Strach reported that his MDF was the highest since 1989 January.

On the 4th Dave Storey observed a white light flare in the group at S26/262. Meadows reported that the largest two of the seven groups seen on the 8th were an Eao group at N19/196 with an area of 220 millionths and an Hax spot at S27/186 with an area of 200 millionths. As the E type group progressed towards the W limb, it comprised symmetrical leading and following spots together with small spots in between. It was last seen on the 12th. A few small spots accompanied the Hax spot on the 9th through to the 12th. Only a small penumbral spot was seen on the 13th when the group was also close to the W limb.

Between the 9th and 12th Meadows observed either nine or 10 groups. This decreased to eight on the 13th and to six on the 14th. On this latter date, all the groups seen were small in size, the largest being an Eac group at N18/114 with an area of 130 millionths.

On the 17th Meadows comments that the number of groups was still low at five but the first of three moderately large groups appeared near the E limb. Initially this was a single Hsx spot which became type Dao on the 18th and then type Ehc on the 19th with an area of 370 millionths at N21/336. It then, on the 19th, comprised moderately sized symmetrical leading and following spots with a few small penumbral and other spots. When Meadows next saw it on the 23rd, the group was near the CM and was of type Fkc with an increased area of 430 millionths. Now the leading spot was quite asymmetric and irregular while the following

spot had also become asymmetric. Several small penumbral spots were seen between the leading and following penumbral spots while a few spots were seen to the east of the following spot. On the 24th, both of the leading and following spots had split into two and indeed by the 25th a further splitting of the leading spot had occurred. By the 26th, further activity around the leading spot meant that its area had increased appreciably such that the total area of the group was 780 millionths. On each of the following three days (27th to 29th), the appearance of the leading spot changed significantly. Only the following penumbral spot was seen on the 30th when it was close to the W limb.



*Group on the SE limb. Frame grabbed TV image using an H $\alpha$  filter. 1999 July 25. Steve Goldsmith.*

Medway reports that this large group. was visible to the naked eye on July 24 and 25th using an Orion Telescopes glass filter. He also videoed this group with a Samsung camcorder held to the 25 mm eyepiece on a 102 mm f/15 refractor with very good results.

On the 24th Meadows reported a small Dso group on the E limb. On the 25th, this group was classified as type Fsc with the following spot being the largest of the group. As the group, at S26/245, moved away from the limb, it could be seen, on the 27th and 28th, that the following spot contained a light bridge towards the group's centre (the group now had the classification of Fkc).

On the 29th, the following spot became more asymmetric while the leading spot increased in size. The longitudinal extent of the group was 18°. Several small penumbral spots and other spots were seen slightly to the north of the leading spot. On the 30th, the total group area was at its greatest and it reached 600 millionths. When the group was seen on the 31st, the following spot had become more symmetric while the number of spots within the group had reduced.

Meadows reports that the third moderately sized group of the month first appeared close the E limb as a small Hsx spot on the 27th. It was seen as a Cso group on the 28th. By the 29th, several penumbral spots had developed to make to group, at N25/206, of type Eac. The leading part of the group comprised of three penumbral spots while following were several smaller penumbral spots. By the 30th, these three spots had joined together to form one large asymmetric leading spot that had several umbra within it. The following part of the group was similar to that seen on the 29th; indeed the area of 360 millionths on the 30th was similar to that of the 29th. By the 31st, the total area almost trebled to 940 millionths and the group was of type Ekc. Both the leading and following spots had increased in size, especially the leading spot which was now quite irregular and had a longitudinal extent of 7° (the group itself was 13° in longitude). Four other penumbral spots were seen on the 31st together with a few other spots.

### H $\alpha$ activity, 1999 July

Ken Medway observed prominences on 16 days during the month and he reports that many tall arches were visible on the 27th and 28th. The most notable being on the NE limb on July 27th. On July 28th several clouds of hydrogen were seen suspended above the NW limb at 1730.

### Prominence MDF, 1999 July

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
K. Medway	3.8	3.1	6.9	16	2.4	1.9	4.3	1.4	1.2	2.6
M. Hendrie	8.0	5.7	13.7	4	5.0	3.7	8.7	3.0	2.0	5.0
E. Strach	4.1	5.4	9.5	25	2.2	2.4	4.6	1.9	2.9	4.8

Strach noted that whilst his prominence MDF was the lowest of the year there were a number of remarkable formations and eruptions. On the 7th he saw a short-lived high loop at S12 on the W limb. It was first seen at 0900 when it reached a height of 140,000 km. It gradually diminished in height over the next 20 minutes and at 0923 it had disappeared without leaving a trace. On the 12th at 0710 Strach noted a dense curved prominence at S40 on the E limb with an adjacent dark filament. As the prominence grew in size the filament disappeared.

According to Strach the most remarkable eruption occurred on the 13th. A towering pyramidal prominence adorned the NE limb from N54 to N64. At 0620 its most S portion was seen as a filament on the disk extending southwards. Strach was alerted at 1100 by Harold Hill and decided to observe again. By this time the prominence was a long streamer with a detached loop to the S of its base. At 1120 it gave the appearance of a huge bird with its beak 280,000 km from the limb.

Further eruptions were seen on the 24th, some forming loops on the E limb at N23. These were the forerunners of a large prominence which lasted until the 26th.

### Flares, 1999 July

Date	Time	Lat	CMD	Type	Obs.
5	0745	N16	E25	Sf	EHS
6	0816	N17	E20	Sf	EHS
10	1709	S24	W36	Sf	KJM
10	1750	N30	W75	Sf	KJM
12	0705	S15	E15	Sf	EHS
12	0708	N20	W75	Sf	EHS
16	0905	N36	W70	Sf	EHS
17	0910	S17	W55	Sf	EHS
17	1730	S40	W80	SN	KJM
19	0825	N20	E54	2B	EHS
21	1750	S14	E66	SB	KJM
24	1517	S27	E75	Sf	KJM
24	1755	S24	E70	SN	KJM
25	1737-1748	S20	E66	Sf	KJM
25	1807	S30	E58	Sf	KJM
27	1315	N22	W20	2B	EHS <sup>1</sup>
28	0830	S14	E02	Sf	EHS <sup>2</sup>
28	1746-1750	N20	W59	SB	KJM
28	1756-1830	S16	E29	2B	KJM
29	1725	N23	E38	SB	KJM

1. Scattered to the N of a spot group.
2. Two flare spots between E02 and 07W connected by a faint arc.