

I was wondering whether it would be appropriate to add a black border to this month's Solar Notes column. As many of you will know the BAA Truro School site was clouded out on August 11 and I missed totality. Those of you who travelled abroad were more successful and I have received spectacular images taken from Eastern Europe and Turkey. The most notable aspects of the eclipsed sun were the spectacular prominences and the symmetrical, solar maximum corona. As a consequence of the eclipse many of our normal observers were abroad and so the record is not as complete as usual.

White light MDF, 1999 August

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
P. Meadows	3.3	2.4	5.7	23	100.3	23	17.9	23
CUAS	2.2	2.5	4.7	21	71.0	21	-	-
Aymen Ibrahim	-	-	3.6	20	33.8	20	-	-
D. Storey	1.6	1.7	3.3	13	-	-	-	-
E. Strach	2.2	1.9	4.1	15	71.3	15	-	-
W. Heyes	1.8	1.9	3.7	11	-	-	10.3	11
M. Hendrie	3.2	3.1	6.3	15	98.8	15	-	-
K. Medway	2.4	2.3	4.8	26	-	-	-	-
MEANS	2.5	2.3	4.6	144	74.7	94	15.4	34

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

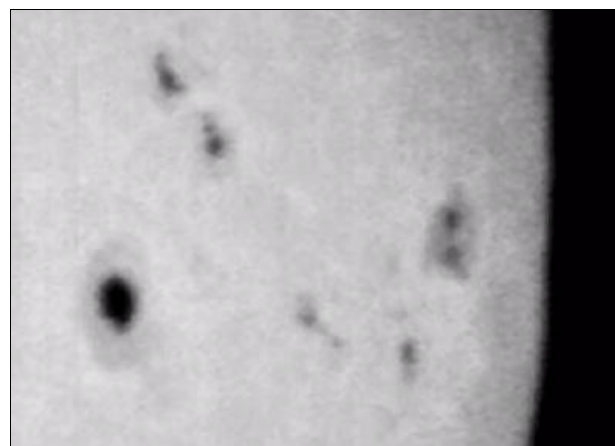
White light activity, 1999 August

August showed something of a reduction in sunspot activity over previous months but there was still plenty to observe.

Meadows reports that the rapidly developing N hemisphere group seen at the end of July (at N25/206) continued to grow during the first few days of August. On the 1st, it was still of type Ekc with the largest spot being the leading one - this was quite elongated and it contained many umbra. The following spot was also asymmetrical but not to such an extent as the leading one. Medway reported that the group was visible with the naked eye on the 1st. When seen on the 2nd, the leading spot had increased in size while the following part of the group consisted of three adjacent asymmetrical spots spread out in latitude. The group was now near the central meridian and Meadows estimated its area to be 1030 millionths. By the 4th, the longitudinal extent of the group had increased such that Meadows classified the group as type Fkc. The leading spot had split into two and had reduced in size while there was still three following spots. The overall structure of the group changed little on the 5th and 6th. By the 7th, the group was nearing the W limb and thus its size appeared to reduce. It was last seen near the limb on the 8th.

The other moderately sized group from the end of July, at S26/245 and type Fkc, was of similar appearance on the 1st although the following spot, the largest of the group, had become more asymmetrical. On the 2nd, the leading part of the group had developed many small penumbral spots while the following spot had become even more asymmetrical. On this date, the total area was 680 millionths. When seen on the 4th, the number of spots within the group had reduced as it was close to the W limb. On the 5th, only four penumbral spots were seen and on the 6th only the following spot was seen close to the limb.

By the 10th Meadows reports that the number of groups on the disk had reduced to only three. These were of type Axx at N14/180, type Cso at S29/130 with area 50 millionths and type Eac at S14/89 with area 180 millionths. On eclipse day Strach reported that the group at S14/89 was particularly prominent. By the 12th Meadows reported three groups: now the groups were of type Hsx at S30/125 with area 60 millionths, type Esc at S15/87 with area 190 millionths and type Cso at N23/359.



Large spot group on the E limb. 1999 August 22, 0900. Video frame grab, 60mm refr. Nick James

On the 14th Meadows reports that the number of groups increased again to six. One of these was a Hax spot near the E limb at N22/335. When seen on the 15th and 16th the appearance of the group was of a slightly elongated penumbral spot surrounded by a few small spots. By the 18th, a penumbral spot had appeared following close behind the main spot to give a total area of 420 millionths. The group was near the central meridian on the 20th. Subsequent observations showed the group slowly reducing in size such that only a single Hsx spot was seen on the 26th very close to the W limb.

On the 19th Strach reported that a single spot had appeared on the E limb at S24/258. By the next day two

groups were visible. Meadows classified one as an Hkx spot at S18/259 and the other as a Dao group slightly further south at S24/256. Dave Storey also reported these groups and noted that faculae were extensive in the area. As the groups moved away from the limb, more penumbral spots in the S group appeared to make it of type Fac with a mean location of S25/248 - this being the same location as the Fkc group seen at the start of the month. As the Hkx spot progressed across the disk, it obtained a maximum area of 340 millionths on the 23rd. By the 27th, it had become more symmetrical and then it reduced in size to become type Hsx close to the W limb on the 31st. The number of spots within the Fac group increased in both number and size such that the group became type Fkc on the 27th. On the 28th it had a total area of 690 millionths. The latitudinal extent of the group was quite large at almost 10° - the N limit being at the latitude of the Hkx spot.

H α activity, 1999 August

Both Medway and Strach reported that prominence activity was varied and interesting during the month.

On the 15th Strach noted multiple arch formations in the SW between S50 and S67. This area showed prominence activity to a greater or lesser extent for every day up to the 27th. Also, on the SE limb, Medway reported a giant, spear-shaped prominence on the 16th at

S23. Further activity was seen on the W limb on the 18th between S23 and S34.

Many filaments and flares were seen during the month but limited space precludes their inclusion here. Of particular note were the three 1n ribbon flares seen by Medway and Strach on the 28th.

Eclipse Notes

Ken Medway travelled to Penzance but was clouded out. He notes that, although disappointed at not seeing totality, the local effects were still spectacular under the cloud. Eric Strach had much better conditions from Bulgaria and comments on the spectacular prominences. He did not see or record any shadow bands. The prominences were a particularly notable aspect of this eclipse and Mike Hendrie photographed them from his observatory in Colchester (see figures). The detached prominence which was a prominent feature on many eclipse photos is visible in his partial eclipse frame taken at 1048. By the time of the afternoon photograph (1441) it would seem to have disappeared.

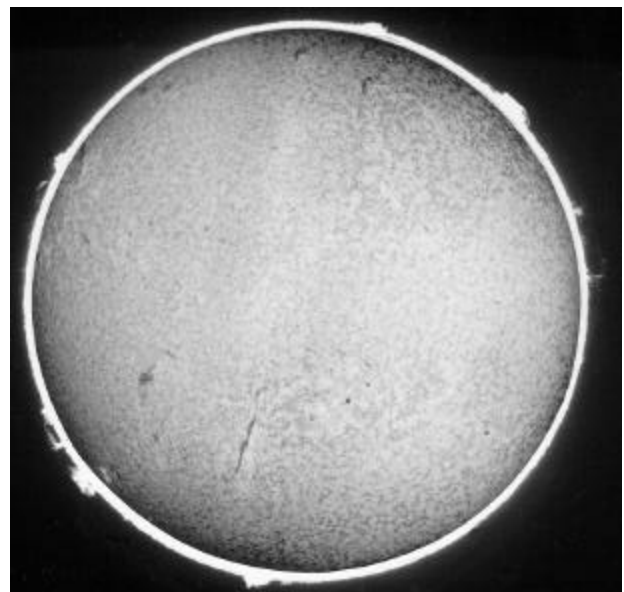
There is not enough space here to include many reports and you will find much more on the BAA archive website at <http://www.baahq.demon.co.uk/archive>. If you haven't sent me your reports for the BAA *Memoir* please do so as soon as possible.

Prominence MDF, 1999 July

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
Eric Strach	5.1	7.1	12.2	14	2.5	3.9	6.4	2.6	3.3	5.9
Ken Medway	3.2	5.1	8.3	22	1.7	2.8	4.5	1.6	2.2	3.8
Mike Hendrie	9.5	12.5	22.0	2	6.5	6.5	13.0	3.0	6.0	9.0



1999 August 11, 1048UT. 1/2 second exposure, H α filter. The detached prominence is clearly visible. 15 cm Cooke.



1999 August 11, 1441UT. Composite of two images, 1/15sec prominences, 1/125sec surface. The detached prominence is now absent.