

Limitations on space in the last edition of TA meant that part of the H α section had to be left out of the April report. It is included this month since I managed to get my page request into Guy in time this month! You will not need to be reminded that there are only around six weeks to go until *the* total eclipse. I am travelling to be under the cloudless skies of Cornwall early in August so I would like to have your July observations as soon as possible after the end of the month. A reminder will follow in the July TA!

White light MDF, 1999 May

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
T. Storey	3.3	2.5	5.8	11	-	-	-	-
J. Shanklin	3.4	2.9	6.3	25	84.0	25	-	-
E. Strach	3.2	2.9	6.1	23	95.6	23	18.9	23
M. Hendrie	4.9	2.3	7.3	12	98.7	12	-	-
G. North	3.1	2.0	5.1	7	80.9	7	-	-
W. Heyes	2.8	2.5	5.3	6	13.0	6	-	-
K. Medway	4.7	3.2	7.9	21	-	-	-	-
G.F. Johnstone	-	-	7.6	14	-	-	-	-
P. Meadows	4.4	3.2	7.6	17	117.3	17	23.5	17
MEANS	3.8	2.8	6.8	136	90.2	90	20.8	40

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

White light activity, 1999 May

White light activity showed a marked increase in May with the MDF increasing from 4.1 last month.

Meadows reports that the largest of the four groups seen on the 1st was of type Fsc at N18/301. By the 2nd it had an area of 310 millionths. The appearance of this group changed little over the next two days but it then lost most of the following spots by the 6th and all of them by the 8th. Medway reports seeing this group with the naked-eye on the 11th.

In the period up to the 8th all the S groups were either Axx or Bxo types. The number of groups than increased, especially in the E part of the disk such that by the 8th Meadows reported a total of 12 groups with R having a value of 181.

On the 6th a Hho spot was seen near the E limb at N20/217. As this group progressed across the disk it was of type Hkx with a main spot and a few accompanying small spots. Meadows comments that it reached a maximum area of 370 millionths on the 15th. The group was last seen near the W limb on the 17th. Some 25° following was, on the 8th, an Esc group at N20/193. By the 12th the number of penumbral spots had increased and on the 15th and 16th the group became type Fac. However, the maximum area seen was only 210 millionths on the 16th.

On the 14th Strach reported that a high-latitude spot came around the E limb at N36/106. Meadows classified this as of type H and he comments that the group became asymmetrical in shape as it progressed towards the CM. The main spot was accompanied by a few small spots and appeared to regress in longitude as the month progressed. Strach measured positions of N30/100 on the 20th decreasing to N35/95 as it approached the W limb. He estimated the area as 280 millionths on the 19th.

Medway reported a unipolar spot near the CM at N16/E16 on the 28th. This was visible to the naked-eye on that date.

Flares, 1999 May

Date	Time	Lat	CMD	Type	Obs.
2	0958-1007	N25	W50	SB	KJM
2	1025	N25	W50	Sf	KJM
3	0830	N20	E40	Sf	EHS
3	0931-0933	N14	E27	Sn	KJM
3	1007	N25	W55	Sn	KJM
10	0625	N24	E53	2N	EHS
11	0720	S16	limb	Sf	EHS
14	1605	S18	E73	Sf	EHS
15	0720	S20	E59	Sf	EHS
16	1723	S17	W69	SB	KJM
17	1817	N13	W47	Sn	KJM
20	1736-1740	N22	W54	Sf	KJM
22	0730	N28	limb	Sf	EHS
22	1002-1008	N55	limb	SB	KJM
24	1535	N19	E68	Sf	EHS
24	1738	S17	E18	SB	KJM
25	0700	N18	E75	Sf	EHS
26	1744	N21	E25	Sf	KJM
27	0910	N17	E28	Sf	EHS
27	1050	S20	E75	Sf	EHS

H α activity, 1999 May

Prominence activity continued at a high level during May and both Medway and Strach report that many fine prominences were seen.

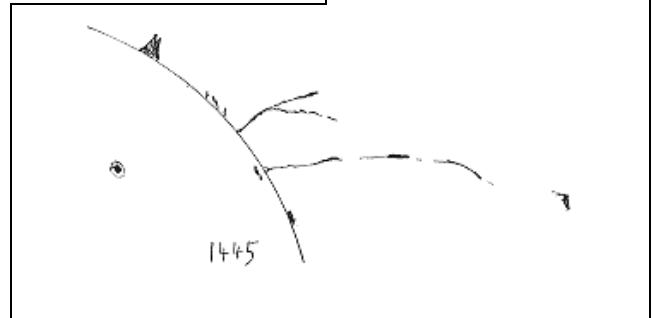
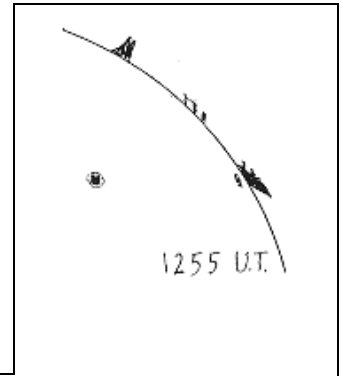
On May 16th at 1720 Medway reported a fine arch prominence on the SW limb. Fine strands appeared to be cascading down into the very bright southern base of the arch. By the 17th this system was seen in a very

much diminished state but further along the W limb at N27 an impressive hedgerow prominence was seen.

Medway also reports that the solar disk was again well covered with filaments. A number were seen surrounding four small spots in the S hemisphere. These were separated by about 10°. He comments that the most impressive filament was seen on the 28th. This had the shape of a scimitar and its N-S axis was measured to be slightly W of the CM at S39. It ended at a point 30°W of the CM.

Strach comments that the highlight of the month, and that of cycle 23 so far, occurred on the 27th. The day started with uninterrupted sunshine and excellent seeing. At 0900 he noted a small prominence not far from a spot at S30/293. By 1030 two pillar-like prominences had appeared on the limb adjacent to the spot but by 1048 all of these prominences had disappeared and clouds started to roll in. The weather cleared by 1435 and by this time an extensive eruption was in progress.

Very rapid changes occurred in the short period from 1435-1455. Strach calculated that ejecta was visible as far as 945 arcsec from the limb. This corresponds to a distance of about 640,000 km. By 1510 most of the activity was over.

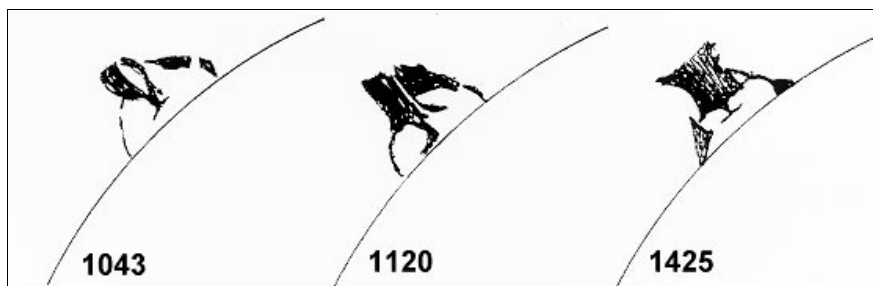
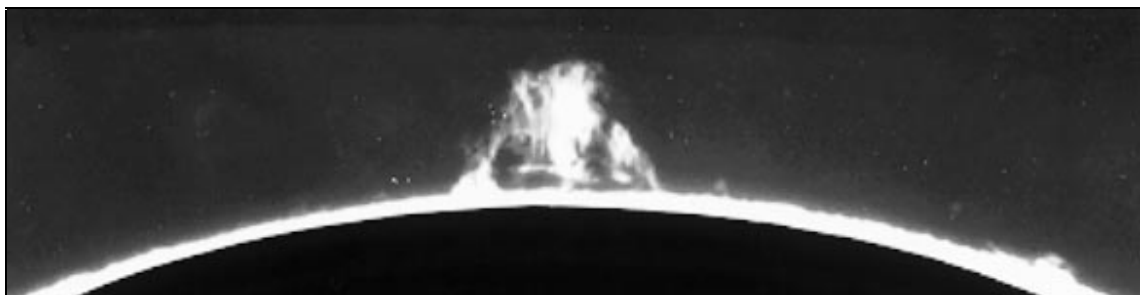


Prominence MDF, 1999 April

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
K.J. Medway	4.5	4.0	8.5	19	2.3	1.7	4.0	2.3	2.3	4.5
M. Hendrie	6.0	5.5	10.5	2	3.5	2.5	6.0	2.5	3.0	5.5
E.H. Strach	6.0	5.4	11.4	22	2.8	2.7	5.5	3.2	2.6	5.9

Prominence MDF, 1999 May

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
K.J. Medway	4.7	3.2	7.9	21	2.3	1.6	3.9	2.4	1.6	4.0
M. Hendrie	5.0	7.5	12.5	2	1.5	3.5	5.0	3.5	4.0	7.5
E.H. Strach	5.9	4.3	10.2	20	2.5	1.3	3.8	3.3	3.0	6.3



The prominence Eric Strach christened "Medusa" was visible on the NW limb on 1999 April 29. The top image is a photograph by Mike Hendrie taken at 1544 using a 0.7 Å H α filter, a 10 cm Energy Rejection Filter and a 15 cm Cooke OG. The exposure was 1/8th sec on Kodak TP2415 with an EFL of 4.5 m. The lower image is a series of drawings by Eric Strach showing the development of the prominence over several hours.