

White light MDF, 1997 September

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
P. Meadows	1.65	1.35	3.00	17	58.88	17	10.88	17
W.F. Heyes	1.43	1.57	3.00	7	-	-	8.71	7
J.G. Gissing	1.17	1.67	2.83	12	-	-	8.40	12
E.H. Strach	1.38	1.38	2.76	21	51.81	21	9.10	21
K.J. Medway	1.25	1.36	2.61	28	-	-	-	-
G. North	1.05	1.16	2.21	19	39.37	19	-	-
G.F. Johnstone	1.50	1.33	2.83	12	-	-	-	-
T. Tanti	1.28	1.32	2.60	31	50.80	31	8.60	31
CUAS	1.60	1.35	2.95	20	42.90	20	-	-
MEANS	1.35	1.36	2.71	167	48.79	108	9.14	88

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

BAA/TA Comparison

Month	Active areas		Spot numbers	
	BAA	TA	BAA	TA
1997 August	2.09	1.66	29.74	25.41

Sunspot Activity, 1997 September

The Sun in September showed a further increase in activity with several respectable groups being visible during the month. Strach reports that he observed a total of nine groups during the month with latitudes ranging from 21° to 33°. He notes that, for the first time since 1995 February, he did not see any blank disks. The high latitude of all the groups indicates that cycle 23 is well underway.

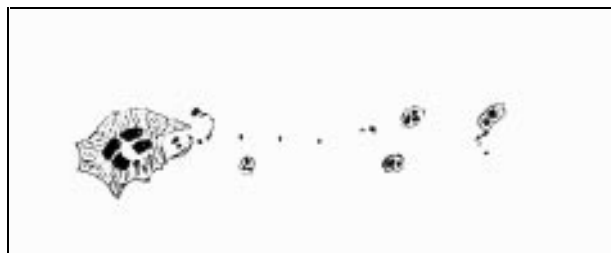
Meadows' first observation of the month on the 2nd showed three northern hemisphere groups - an Fsi group at N25/109, an Hsx spot at N35/18 and an Axx spot at 22N/10. The Fsi and Hsx groups were those seen at the end of August. The Fsi group consisted of a modest leading penumbral spot, four smaller following penumbral spots and a collection of 24 following spots. This group subsequently decayed into a Hsx group on the 4th and was last seen as an Axx spot close to the W limb on the 6th. The Axx and Hsx groups seen on the 2nd had decayed on the disk by the time of the next observation on the 4th.

On the 4th an Eao group had appeared on the disk at S27/358. Meadows reports that this had an area of 200 millionths. Subsequent observations showed this group developing into type Dki by the 10th with an area of 520 millionths. On this date, the group consisted of almost equal sized leading and following penumbral spots together with two small penumbral spots and 13 other spots in between. Johnstone and Medway report that this group was visible to the naked-eye on the 9th and 10th. This group had changed into type Eko when last seen on the 13th near the W limb.

Meadows reports that three new groups were seen on the 6th and all were in the N hemisphere. The first of

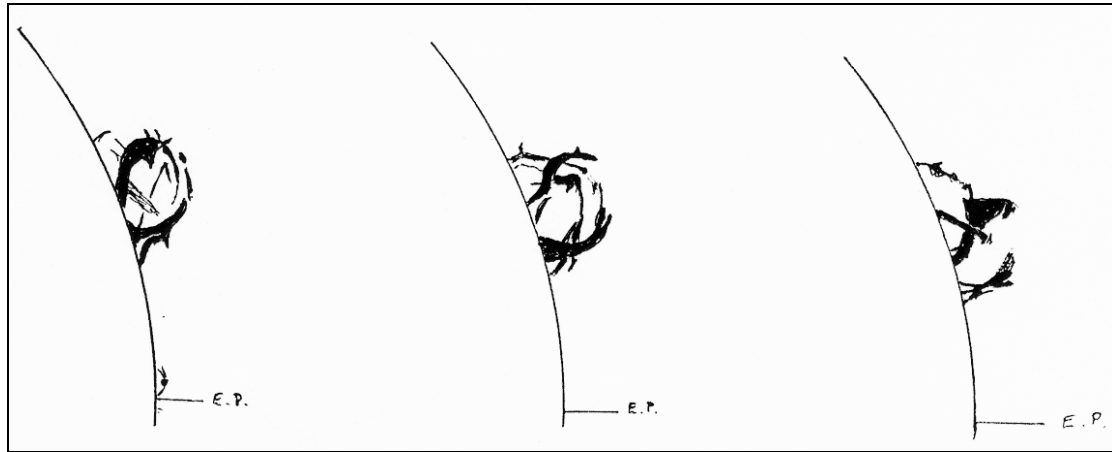
these was of type Axx (at N34/9) which had decayed by the following day. The second was a small Dso group at N21/5 which had an area of only 60 millionths before decaying on the disk on the 9th. The third group was initially seen as type Hrx with an accompanying area of faculae close to the eastern limb. This group slowly developed into type Dsi with an area of 90 millionths when near the central meridian on the 10th before the leading spot doubled in area by the 11th and the group becoming type Esi. This group's mean location was 22N/322.

The second F type group of the month appeared around the eastern limb on the 7th surrounded by an area of faculae. The leading penumbral spot of this group contributed to most of its area which was at a maximum on the 10th at 570 millionths. The group was drawn by Strach on the 11th. On the 13th, this group comprised of the leading penumbral spot and a string of following spots covering 17° of longitude with a mean location of S24/297. When seen on the 16th, all the following spots had decayed leaving an area of faculae visible. The remaining penumbral spot was last seen on the 18th close to the W limb.



1997 September 11, 0840. Eric Strach.

On the 12th an Axx group was seen near the eastern limb at N27/229. This developed into a small Dsi group by the 16th and an Eso group by the 18th before most of the following spots decayed to leave a Hax spot by the 22nd. From the 21st to 23rd an Hsx spot at S21/106 was seen near to the E limb. On the 22nd a Dso group had developed on the disk at S28/127 and on the 23rd a single Axx spot was seen at N21/111.



Changes in arc prominences. 1997 September 10 at (from left-to-right) 0920, 1110 and 1535. Eric Strach.

Prominence MDF, 1997 September

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
E. Strach	2.76	1.00	3.76	17	1.24	0.53	1.77	1.53	0.47	2.00
K. Medway	1.83	1.08	2.91	12	1.25	0.50	1.75	0.58	0.58	1.16

Prominence activity, 1997 September

Both Medway and Strach report that, in contrast to the white-light activity, the H α Sun was relatively quiet during the month.

Despite the low activity some remarkable prominences were seen. A hedgerow prominence in the NE seen by Strach on the 9th became a complicated arch formation on the next day. Medway noted that there were three arches stretching from N55 to N68. Strach noted that the prominence changed its configuration throughout the day (see drawing). Remnants of these prominences persisted until the 13th when they were replaced with filaments on the disk.

At 1310 on the 17th Strach noted a further prominence eruption just W of a sunspot near to the W limb at

N23/298. A further filamentous surge combined with a loop eruption was seen in the same region at 1450. A further filamentous surge was seen at 0840 on the 22nd.

Flares, 1997 September

Date	Time	Lat	CMD	Type	Obs.
9	0950-1015	S25	E45	1B	EHS
9	0930	S29	W15	Sf	EHS
10	1032	S24	E24	Sf	EHS
13	0840	N25	E58	Sf	EHS
17	1335	S21	W68	Sf	EHS
22	0820	S28	E44	Sf	EHS
22	1020-1032	S27	E43	Sf	EHS
24	1030-1033	S28	E20	Sf	EHS
24	1115	S27	E20	Sf	EHS