

White light MDF, 1997 October

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
K. Medway	0.91	0.35	1.26	23	-	-	-	-
J. Isles	1.50	0.67	2.17	6	26.17	6	-	-
T. Tanti	1.63	0.31	1.94	16	26.80	16	4.40	16
CUAS	1.11	0.61	1.72	18	22.72	18	-	-
E. Strach	1.32	0.44	1.76	25	23.24	25	4.08	25
G. North	0.53	0.63	1.58	19	22.68	19	-	-
P. Meadows	1.53	0.40	1.93	15	26.87	15	5.20	15
W. Heyes	0.91	0.18	1.09	11	-	-	3.27	11
G.F. Johnstone	1.20	0.40	1.60	9	-	-	-	-
J.G. Gissing	0.77	0.69	1.46	13	-	-	1.92	13
MEANS	1.12	0.46	1.63	155	24.34	99	3.89	80

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 September	2.66	2.71	52.0	48.79

Sunspot Activity, 1997 October

After the relatively high activity of September the MDF this month fell back to a level similar to that seen in August. Meadows recorded 11 and Strach 10 active areas during the month. Of Meadows' 11 groups, eight were in the N hemisphere and three were in the S. Strach comments that many of the N groups were short-lived.

The month opened with Meadows reporting two small groups at S25/348 (type Hrx) and at N24/331 (type Dro). On the 3rd the N group showed a distinct Wilson effect to Strach. He also points out that the S group was a re-appearance of the group seen during the previous rotation at S27/354. By the 6th the N group had decayed into type Axx and both groups had decayed on the disk by the 9th. Strach noted that the S group may have revived on the averted hemisphere since the large complex seen at the end of the month was in almost the same location.

On the 6th Meadows reported that two new groups had appeared in the E hemisphere at N25/273 (type Axx) and at N32/255 (type Cro). The first of these was seen on the 10th but not on the 12th while the second group developed into type Dso when seen on the 10th and 12th and then type Eso on the 18th when it was located near to the W limb. Also on the 10th a Bxo group was seen

just to the W of the CM (at N23/308). By the 12th this group comprised eight small spots and all were without penumbra. On the 12th only a small Bxo group was seen at N30/216.

On the 18th Meadows and Strach both reported an Hsx group (at N13/170) and a Cso group (at N17/140) to the E of the CM. The Hsx group decayed into a Bxo group by the 21st and was not seen on the following day. The Cro group lost its following spot by the 19th to become type Hax and then Hsx as its size decreased. It was last seen near the CM on the 22nd. Strach reports that it was replaced by a plage which lasted up to the 24th.

Many observers reported a spotless disk on the 23rd - the first since August. This did not last long since on the 25th Meadows reported a small Cso group at N20/24 close to the E limb and surrounded by a bright compact region of faculae. By the 28th this group had developed into a Dso group before becoming type Cso on the 29th and 31st. Also on the 28th a Dao type group was seen near the E limb at S19/352. This was possibly a re-appearance of the group seen earlier in the month. Strach classified it as Fki. When seen on the 29th the largest penumbral spot was quite asymmetric in shape and the whole group had a corrected area of 180 millionths. By the 31st the corrected area increased to 290 millionths to become the largest group of the month. The largest spot comprised several umbra and a light bridge within the penumbra. Ken Medway reports seeing the group with the naked-eye on November 1st.

On the 31st a small Axx group was seen within an area of faculae near the W limb (at S18/77).

Prominence MDF, 1997 October

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
E. Strach	2.24	2.38	4.62	21	1.38	1.33	2.71	0.86	1.05	1.91
K. Medway	2.40	2.20	4.60	5	1.00	1.40	2.40	1.40	0.80	2.20

Prominence activity, 1997 October

Strach reported a pyramidal shaped prominence on the 2nd in the SE spanning latitudes S45 to S52. On the following day it had rotated onto the disk and was visible as a broad filament with part of the prominence still remaining. By the 5th Strach observed a bright, C-shaped, prominence on the W limb at N25. He watched between 0730 and 0904 as it continuously changed shape.

Even though Medway managed to make observations on only five days during the month he comments that there were always many filaments on view. He reports that perhaps the most interesting prominence was seen on the NE limb on the 18th. This spanned 20° of latitude and it appeared to be connected to a small filament. Strach also observed this event. He comments that it contained bright, knot-like condensations and fine extensions towards a small prominence to the N.

Strach also comments on the number of interesting filaments seen during the month. He notes that one was present in the NW between the 2nd and the 4th and that this was a precursor to the eruptive prominence seen on the 5th.

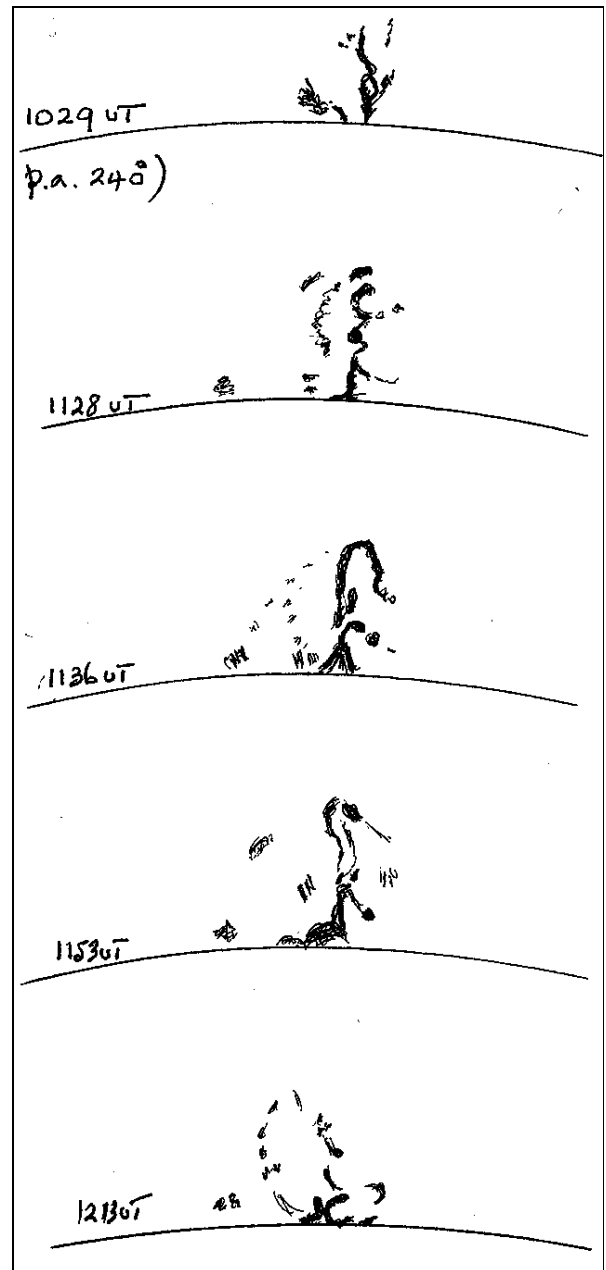
I was pleased to receive a letter from Mike Hendrie who is making solar observations again using a 15cm refractor and an 0.7Å H α filter. Some of his prominence drawings from the 31st are shown here.

Flares, 1997 October

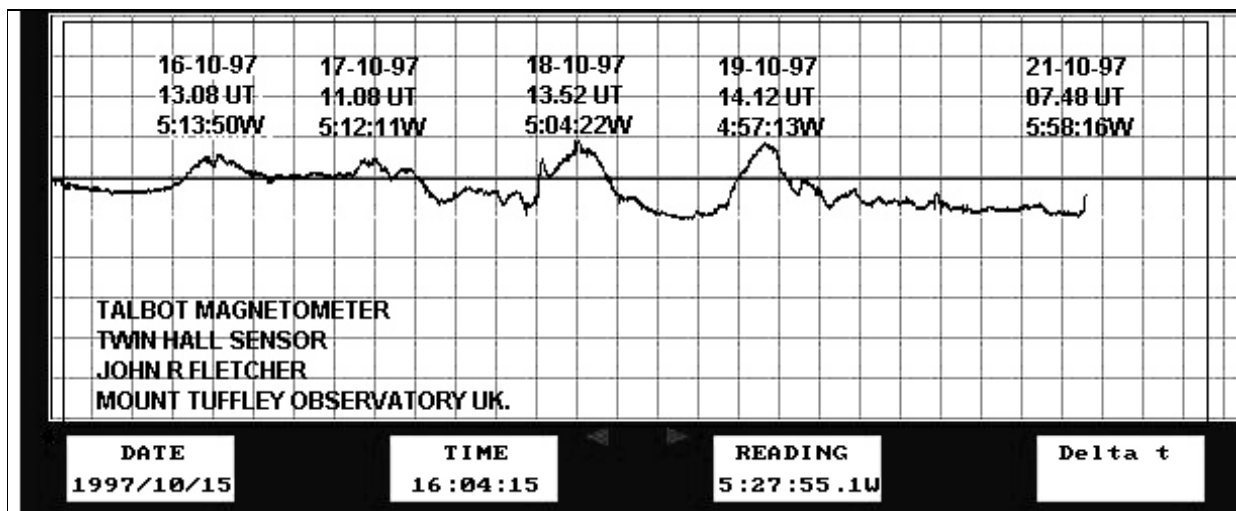
Date	Time	Lat	CMD	Type	Obs.
2	1305	N22	E33	Sf	EHS
30	1335	S22	E36	Sf	EHS

Magnetometry, 1997 October

As solar activity increases the effect of emissions from the sun on the earth's magnetic field becomes more interesting. John Fletcher has been monitoring these effects for many years and one of his magnetograms for late October is shown below.



Prominence activity at latitude S53 on 1997 October 31. 15cm OG, 0.7Å H α filter. Mike Hendrie.



An example of the trace obtained using John Fletcher's magnetometer. This is implemented using twin-Hall sensors linked to a computer and sampled at approximately 60s intervals. Clear peaks are seen on October 18 and 19.