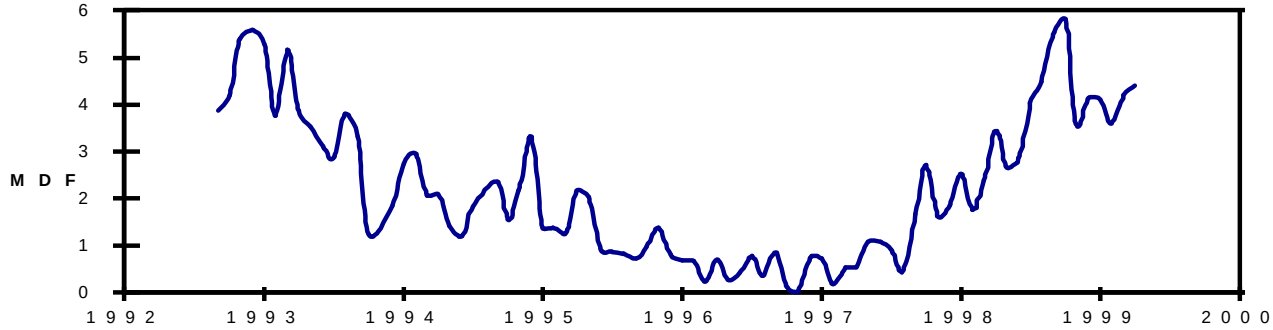
White light MDF, 1999 March

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
P. Meadows	2.4	2.6	5.0	16	79.9	16	13.6	16
J. Shanklin	2.4	2.3	4.7	21	65.0	21	-	-
M. Hendrie	3.2	2.2	5.4	10	86.5	10	-	-
G. North	2.1	1.6	3.7	9	55.8	9	-	-
K. Medway	2.3	1.4	3.7	21	-	-	-	-
E. Strach	2.3	2.1	4.4	24	71.8	24	13.0	24
W. Heyes	2.2	1.4	3.5	11	-	-	10.7	11
G. Johnstone	-	-	4.6	8	-	-	-	-
MEANS	2.4	2.0	4.4	120	71.7	80	12.7	51

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



White light activity, 1999 March

Solar activity has remained at the levels seen in previous months. Surprisingly for this stage in the solar cycle the various indices of white light activity indicate that activity has been fairly constant since 1998 October. The highest number of groups seen on any day during March was eight on the 19th/20th but all of these were small in area.

Strach reports that three groups were seen in the W half of the N hemisphere on the 3rd. The most northerly was a Dao group which had just cleared the CM. This maintained its area up to the 6th after which it faded and by the 7th it was no longer visible. The N hemisphere was then blank on the 8th.

By the 10th Meadows recorded four modestly sized groups. The only N group, at N22/275 and near the E limb, was of type Eac with the following spot being the largest. The total area of the group on this date was 140 millionths. By the 11th Strach reported that this group spread over 10° of longitude with the follower spot becoming the largest. Two small leading penumbral spots seen on the 12th then formed into a single asymmetrical penumbral spot on the 13th. Meadows noted that this spot contained several umbra and it was of similar size to the following spot. By the 14th the leading spot had grown further and this, together with the formation of several penumbral spots between the leading and following penumbral spots, gave the group a classification of Fkc and an area of 580 millionths. On subsequent days the intermediate penumbral spots grew in size and were quite asymmetrical. By the 18th Meadows classified the group as type Fhc and it passed over the W limb on the 22nd.

The second largest group of the month was first seen by Strach as an insignificant feature as it came around the E limb on the 11th at N16/238. By the 12th Meadows classified it as Cao. The group developed rapidly and by the 13th Medway reported that it was easily visible to the naked-eye. On the 14th it had become type Dsc and had an area of 200 millionths. Meadows reports that the leading spot was symmetrical and was followed by several smaller penumbral spots. On the 15th Strach classified it as Eai. The group had a slightly larger extent in longitude by the 16th and Meadows classified it as Esc with an area of 210 millionths. Subsequent observations showed the group decaying and by the 19th Strach noted that a single penumbral spot remained. Meadows classified it as Hax on the 20th and it passed around the W limb on the 22nd.

The only other group seen with an area greater than 100 millionths was in the S hemisphere at S26/229. On the 18th Meadows measured its area as 120 millionths. This group was first seen as type Bxo on the 14th. It became type Cso on the 16th, Hax on the 21st and an Axx group on the 22nd.

Hα activity, 1999 March

In contrast to the performance in white light solar activity in Hα was very high during the month. On the 27th Medway counted no fewer than 15 separate prominences.

Strach observed several interesting prominences during the month. On the 4th/5th a curiously shaped prominence was seen in the NW extending from N50 to N60. On the 10th an eruption was seen at 0940UT in the NW at N16. This was in the shape of a giant candle and it reached a maximum height of 160,000 km at

0951UT. It then faded until 1010UT and at 1020 there remained no trace of it. On the next day a spot appeared on the E limb in the same region. This spot was associated with flares and a further prominence eruption. During the same period a dense filament was seen along the N40 parallel approaching the W limb. On the 12th the first prominences appeared associated with this filament. During the next few days the prominences became more pronounced and they reached their greatest height on the 15th.

From the 18th onwards Strach reports that prominences were seen at N50 to N60 on the E limb, varying their shape from day to day. From the 24th onwards they appeared partly as a filaments on the disk.

On the 16th Medway reported a “fountain” prominence on the NE limb adjacent to a very long filament which extended from the limb to 5° E of the CM. Also on this date Medway observed a remarkable loop prominence on the NW limb. This limb was the site of much spicule/mound activity on the 20th.

On the 20th Hendrie photographed a spectacular prominence on the W limb (see cover). This prominence developed rapidly over a few hours and he captured it using a Daystar 0.7 Å Hα filter and exposures of 1/4s on Tech Pan 2415. He used a 10 cm energy rejection filter on his 15cm refractor with a x2 Barlow to give an EFR of 40.

Flares, 1999 March

Date	Time	Lat	CMD	Type	Obs.
4	1155	S24	E13	Sf	EHS
10	1230	N22	E48	Sf	EHS
11	0815	N17	E75	1n	EHS
12	1230	N20	E16	Sf	EHS
12	1245	N15	E55	Sf	EHS
12	1420	N15	E54	Sf	EHS
13	0820	N14	E43	Sf	EHS
13	0955	N14	E42	Sf	EHS
13	1055	N14	E40	1n	EHS
16	1340	N31	W32	Sn	KJM
16	1547-1554	N14	E8	Sn	KJM
16	1610	N33	W50	Sf	KJM
17	1445	N21	W45	Sn	EHS

Prominence MDF, 1999 March

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
E. Strach	6.2	3.8	10.0	21	3.1	2.0	5.1	3.1	1.8	4.9
K. Medway	8.3	3.8	12.1	7	4.3	2.7	7.0	4.0	1.1	5.1
M. Hendrie	5.7	3.3	9.0	3	4.0	2.7	6.7	1.7	0.7	2.3