

White light Mean Daily Frequencies, 2001 May

Observer	AA				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
R. Dryden	4.7	2.6	7.3	15	111.9	15	-	-
A. Gabriël	4.1	2.6	6.7	27	103.9	27	-	-
M. Hendrie	5.6	3.5	9.1	17	121.2	17	-	-
G. Johnstone	4.5	2.3	6.8	16	-	-	-	-
P. Meadows	4.5	3.2	7.8	25	113.6	25	21.2	25
K. Medway	3.9	1.9	5.8	31	-	-	-	-
G. North	3.7	2.1	5.8	14	87.4	14	-	-
J. Shanklin	4.3	2.8	7.1	27	102.0	27	-	-
L. Smith	4.0	2.8	6.8	16	101.7	16	19.2	15
E. Strach	4.1	2.1	6.2	28	101.5	24	18.8	28
D. Storey	4.6	2.3	6.9	8	-	-	-	-
MEANS	4.3	2.5	6.9	224	105.6	165	19.7	68

AA = active areas, R = sunspot number, Q = mean quality estimate (JBAA 98,6,pp282-286)

White light activity, 2001 May

Strach noted that the large sunspot group of March and April was still in evidence during the first 2 days of the month; on the 1st, the leader had already cleared the western limb and on the 2nd, the follower rotated around the western limb at N20/140. Meadows reports that the largest area group on the 2nd, at 290 millionths, was a Fac type group at N25/26 which consisted of a string of many small penumbral and other spots spread over almost 20° of longitude. By the 3rd, some of the penumbral spots had merged but the total area remained similar. With the group traversing the central meridian on the 4th, the total number of spots and total area peaked at 34 and 350 millionths respectively. Subsequent daily observations by Meadows showed the group decaying such that on the 8th only 4 spots were seen and the group was not seen on the 10th when it would be been near the western limb. Another moderately sized group from the early part of the month reported by Meadows was initially seen as a Dao group at 13N/62 on the 2nd. On the following day, it had developed into an Eac group with a total area of 120 millionths. On the 4th, the leading spot had increased in size further such that the group was now of type Ekc with an area of 300 millionths. This group appeared to have decayed by the 5th when it has a smaller leading spot and fewer spots within the group. The group was last seen on the 7th as just two spots when it was close to the western limb.

On the 10th, 11th and 12th only North reports seeing south polar faculae and on the 10th only north polar faculae. Meadows observed that an Hsx spot was seen near the eastern limb on the 10th; by the 11th several following penumbral spots had appeared around the limb. On the 12th, this Eac group, at N13N/233 had an area of 390 millionths and by the 13th, the group appeared to decay slightly with fewer spots being seen. This decay continued such that when next seen on the 15th, the area had dropped to 250 millionths. On the 19th, the group had become type Cao.

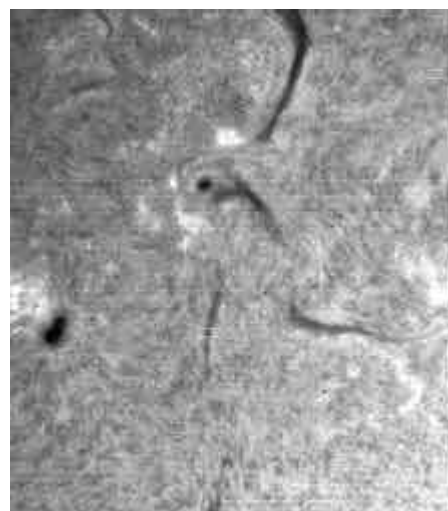
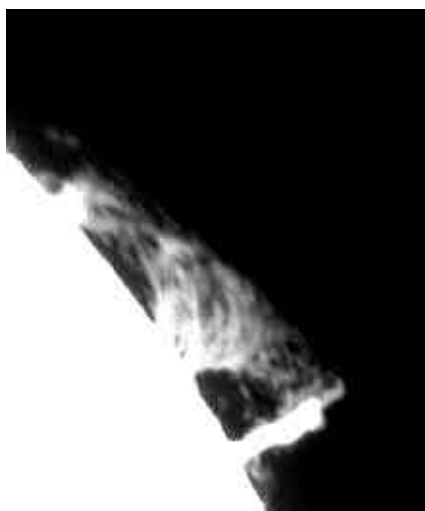
The largest group of the month was first seen by Strach on the 18th as a low latitude spot having just been rotated onto the disk at N7/127. Meadows first saw the group on the 19th as type Dac group near the eastern limb. On the 20th, the group had rotated further onto the disk and Meadows thought it was now of type Ekc at 7N/129 with an area of 390 millionths and Strach noted that it had a marked penumbral spot as the leader. The groups overall appearance was described by Meadows as comprising an irregularly shaped leading penumbral spot, a smaller symmetrical following spot and a small number of other spots between the leader and follower. Smith first observed this group on the 20th through heavy cloud. Meadows observed that the number of spots within the group had increased during the next 2 days while on the 23rd, additional penumbral spots developed within the group including one just following the leading spot. On this date Strach classified the group as type Eai. When seen on the 24th, Meadows reports that the leading spot had merged with the newly developed nearby penumbral spot - this spot contained several umbra and a small region of photosphere. There was also a collection of spots towards the following part of the group. Meadows estimated that the total area of the group was now 690 millionths and the group was near the central meridian. Strach determined that it had a longitudinal extent of 13° on the 24th. Johnstone saw this group with the protected naked eye on the 22nd, 23rd and 24th. Smith notes that by the 25th the group was starting to decline; in particular Meadows noted that the leading spot had reduced in size to become more symmetric while slightly fewer spots were seen within the group. The trend in the leading spot becoming more symmetric and the number of spots reducing continued as the group progressed towards the western limb. On the

28th just two small spots were seen by Meadows following the leading spot while on the 29th just a Hsx spot was seen close to the western limb; the group was not seen by Meadows on the 30th.

Ha activity, 2001 May

Strach observed a large arch prominence in the NW on 1st at 1106. Its southern limb was associated with the follower spots of an extensive sunspot group which was close to the western limb. At 1456 the arch had broken up leaving two isolated pillars at N22 and N36. On the 3rd May a very bright stump was seen by Strach on the north east limb at N24 sending a low arc northwards to N32 and a similar arc southwards to N15. On the 7th, Medway reports that much spicular activity was seen on the SW limb at S10 and that it had disappeared by the 8th. Another very active solar limb was observed by Medway on the 16th when 13 separate prominences were seen and on the 23rd when there were many tall spikes and pillar prominences. Strach and Medway saw a most remarkable dense prominence on the eastern limb on the 24th and 25th extending from S5 to S21. Strach reports that it constantly changed its configuration and that its most southerly part consisted of a very dense double pillar, the components of which at times seemed to merge. The pillar connected with the main structure by a well rounded arc. The main body of the prominence had a striated structure which changed from hour to hour. The striation veered most of the time to the north towards a small pillar. The intricate structure and changes are shown below. A further dense prominence was seen by Strach on the E limb on the 30th extending from S17 to S37; its southern half was a narrow strip along the limb, resembling the long tail of a mouse. On this day, Medway reports that many tall pillars were seen on the NW, SW and SW limbs.

Many filaments have been recorded throughout the month by Strach, yet, he reports, there was a dearth of filaments in the northern hemisphere between the 9th and 13th in spite of good seeing conditions. On the 13th Medway observed a dense dark filament at 1412 to the south of a small sunspot group at S19 lying across the CM. A remarkable array of filaments was observed on 21st by Strach. It seemed to surround the spot at N20/140 and dark filaments seemed to radiate to the N, the W and S (see below).



2001 May 24 1255UT (left) and May 25 1408UT (right). Dense prominence on the eastern limb. Eric Strach. CCD image.

2001 May 21 1319UT. A remarkable array of filaments. Eric Strach. CCD image.

Flares, 2001 May (excluding type SF)

Date	Time UT	Lat	CMD	Type	Obs.	Date	Time UT	Lat	CMD	Type	Obs.
1	1728	N4	W17	SB	KJM	12	1720	S19	E11	SB	KJM
4	1715-1718	N20	W37	SN	KJM	12	1740	S14	E13	SN	KJM
5	0856 - 0917	N23	W05	SB	KJM	13	1412-1425	S19	W19	1B	KJM
11	1010	S19	E25	1N	EHS	17	0652	N13	W14	SN	AG
12	1158-1218	N14	E55	SB*	KJM	18	1720	N06	E41	SB	KJM
12	1420	S16	E13	1B	KJM	21	1715	S11	W75	SB	KJM
12	1448	S18	E18	SB	KJM	*Type 1B at 1210.					

Prominence Mean Daily Frequencies, 2001 May

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total

A. Gabriël	4.8	5.3	10.1	26	4.6	3.4	8.0	0.2	1.9	2.1
K. Medway	4.1	5.0	9.1	28	3.3	3.6	6.9	0.8	1.4	2.2
E. Strach	3.7	5.6	9.3	27	3.0	3.9	6.9	0.7	1.7	2.4