

White light Mean Daily Frequencies, 2001 June

Observer	AA				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
R. Dryden	6.7	3.5	10.2	20	168.4	20	-	-
A. Gabriël	6.5	3.3	9.8	26	157.3	26	-	-
M. Hendrie	7.0	3.5	10.5	4	148.3	4	-	-
G. Johnstone	6.4	2.9	9.3	18	-	-	-	-
P. Meadows	6.3	3.7	10.0	24	151.3	24	29.7	24
K. Medway	4.9	2.2	7.1	22	-	-	-	-
E. Richardson	7.3	3.5	10.8	24	156.8	24	-	-
J. Shanklin	6.2	3.5	9.7	26	141.0	26	-	-
E. Strach	6.5	3.1	9.6	19	140.9	17	30.1	19
D. Storey	4.6	3.8	8.4	5	-	-	-	-
MEANS	6.3	3.3	9.6	188	152.3	141	29.9	43

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

White light activity, 2001 June

Strach notes that there was a marked up-surge of sunspot activity during the month and that it is likely that this represents a second peak of solar maximum, the first peak having occurred in 2000 June and July. Indeed, the TA AA, R and Q values for the month are the second highest this cycle so far - the highest being 2000 July. The increased activity this month occurred mainly in the northern hemisphere, although the southern hemisphere showed a similar but less abrupt change.

Meadows observed 9 groups on the 1st but all were small in size. On the 2nd Meadows saw that a Hhx spot had appeared around the eastern limb at N22/286; on the following day it became apparent that this spot was asymmetrical in shape. When seen on the 4th its size peaked at 330 millionths and subsequent observations showed its size slowly reduce such that on the 8th, when near the central meridian, the group became type Hax at 150 millionths. The group was last seen on the 14th as an Axx spot near the western limb. Strach observed a Cri group on the 2nd at S5/338 - it straddled the central meridian on the 4th as a Dao type, having developed several penumbral spots. On the 7th only the leader spot remained which eventually rotated round the western limb on the 10th.

Towards the middle of the month, the number of groups seen steadily increased, especially in the northern hemisphere. The highest number of groups seen by Meadows was on the 15th with 16 and a R value of 225. On this date, he noted that there was a concentration of 4 groups in the north east. These were at N16/142, type Esc; N9/138, type Hkx; N22/129 type Dso and N19/122, type Dac. The first of these groups contained many small penumbral spots spread throughout the group. When next seen by Meadows on the 18th, the leading and following spots had developed into larger spots with the following spot being the larger. With the group near the central meridian on the 19th, many spots continued to be seen within the group. Development continued such that on the 20th and 21st, the group had a peak area of 480 millionths as the leading spot grew to become the largest spot in the group. As the group neared the western limb, the number of spots reduced quite substantially. The second north east group from the 15th was an Hkx spot slightly to the south of the aforementioned group and larger than it on the 18th and 19th with an area of 520 millionths. This spot had several umbral spots and a few nearby spots. The shape of this group changed little over the next few days but on the 22nd, the northern part of the spot reduced in size while on the 23rd, the whole group had shrunk. When last seen by Meadows on the 25th, the spot had reduced to become an inconspicuous Hsx spot near the western limb. The third of the north east groups comprised two nearby penumbral spots; by the 21st the northern most spot had decayed while the other spot decayed by the 22nd. The fourth north east group was seen by Meadows as a much larger Fsc group on the 18th with an area of 370 millionths. This group comprised one leading penumbral spot and small spot spread over more than 20° of longitude. As this group progressed across the disk the leading spot reduced in size while the number of spots within the group severely reduced - on the 26th just an Hsx spot remained. Johnstone reports that on the 19th there was one definite naked eye spot plus two suspected, on the 20th two definite and one suspected while on the 21st three definite naked eye spots were observed.

During the last week of the month the number of groups reduced to a similar level as at the start of the month; also all of these groups were fairly small. Many observers noted very high latitude sunspots during the last few days of the month. Meadows saw a Bxo group on the 28th at S44/344 which he saw as an Axx spot at S46/336 on the 30th. A nearby Dac spot at S46/328 was also seen by Meadows on the 30th and asks are these sunspots from the new solar cycle?

H α activity, 2001 May

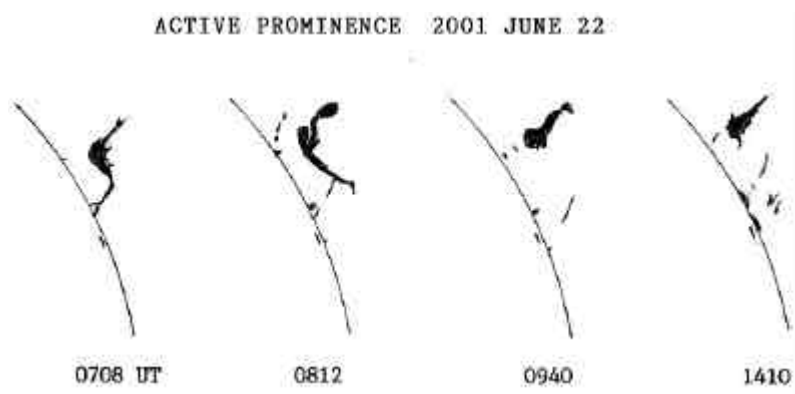
Strach notes that in contrast to the greatly increased sunspot activity, the prominence count remained low. He observed only a few remarkable prominences. A 'respectable' hedgerow prominence was seen on the eastern limb on the 2nd; it extended from N31 to N45. Only traces remained of it on the next day. Strach observed a minor prominence eruption on the 10th when bright spikes seemed to emanate from an area at N10E between 1258 and 1334. It was associated with a sunspot of the averted side of the Sun which became visible on the following day at N12/170. Strach next saw a low but bright arch was seen at N33 to N37 on the eastern limb on the 17th. An active prominence appeared on the eastern limb at N27 on the 22nd and its development was followed from 0705 until 1410 (see drawings below); it became detached at 0812 but was not ejected during the time observed. Medway thought that the most striking prominence he observed during the month was a row of small tree prominences on the 27th on the south east limb between S22 and S53 at 1625; in all 8 separate small tree prominences were seen. They had all disappeared by the following day.

Strach reports that filaments were present in moderate numbers in both hemispheres and that two long curved filaments seemed to have flanked a single but active spot at N9/72 on the 22nd. It developed into a Dso group on the following day, seemingly guarded by the two filaments until the 25th.

As mentioned above, high latitude sunspots were seen at the end of the month - Gabriël observed a small flare in this region, but he reports that this was of short duration and that it faded within a couple of minutes.



2001 June 21. Prominences and inner corona seen during totality. 127mm Meade ETX, f/15, Fuji Superia 400, 1/500th. Martin Mobberley.



2001 June 22. Active prominence. Drawings by Eric Strach.

Flares, 2001 June (excluding type SF)

Date	Time UT	Lat	CMD	Type	Obs.	Date	Time UT	Lat	CMD	Type	Obs.
8	1215	S08	W30	SN	AG	13	0747	S13	E49	SN	AG
8	1310	S01	W12	1B	KJM	15	1008	S25	E40	1B	EHS
9	0745	S20	W14	SN	KJM	16	0705	N24	W62	SN	AG
10	0855	S07	W52	1N	AG	23	0650	N10	E22	1N	AG
10	0926	S07	W47	1F	EHS	23	0835	N10	E21	1N	EHS
10	0931	N22	W12	1B	KJM	24	1055	S02	E41	SN	KJM
10	0940	S01	W50	SB	KJM	24	1314	N10	W70	SN	KJM
10	1510	S02	W47	SN	KJM	26	1603	N12	W20	SN	KJM
10	1739-1746	S02	W39	SB	KJM	30	0841	S48	E16	SN	AG

Prominence Mean Daily Frequencies, 2001 June

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
A. Gabriël	3.6	5.5	9.1	25	3.3	3.9	7.2	0.3	1.6	1.9
K. Medway	3.6	4.0	7.6	20	2.7	2.8	5.5	0.9	1.2	2.1
E. Strach	3.8	4.3	8.1	17	2.9	2.6	5.5	0.9	1.7	2.6

