

**White light Mean Daily Frequencies, 2000 November**

Observer	AA				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
R. Dryden	3.7	3.4	7.1	9	124.8	9	-	-
A. Gabriël	4.5	2.7	7.2	21	117.1	21	-	-
M. Hendrie	5.2	3.7	8.8	6	120.0	6	-	-
A. Ibrahim	-	-	7.2	22	85.5	22	-	-
G. Johnstone	2.6	3.7	6.2	9	-	-	-	-
P. Meadows	4.9	3.6	8.5	12	125.2	12	24.8	12
K. Medway	2.5	3.1	5.6	14	-	-	-	-
J. Shanklin	4.0	3.1	7.1	19	96.0	19	-	-
L. Smith	3.7	3.3	7.0	7	105.9	7	20.6	7
E. Strach	3.7	3.4	7.1	14	117.7	7	21.4	14
D. Storey	3.4	3.4	6.8	5	-	-	-	-
MEANS	3.8	3.2	7.1	138	107.5	103	22.5	33

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

Many UK based observers commented on the particularly cloudy weather during the month. Two of these observers managed, however, to make observations from outside the UK. On the 5th, Ken Medway viewed the Sun through a 8in Meade with a full aperture Thousand Oaks filter from the Griffin Park Observatory near Los Angeles while Jonathan Shanklin made some of his observations from a ship in the southern hemisphere!

**White light activity, 2000 November**

Meadows notes that there was an almost even distribution of groups between the northern and southern hemispheres on the 1st and 2nd. Included amongst these was the low latitude Hkx spot at N3/273 seen during the latter part of October. On the 2nd it had an area of 210 millionths which reduced slightly to 180 millionths on the 4th. Strach referred to this group as a double penumbral spot when seen on the 3rd and 4th.

Another group noted by Meadows on the 1st was a Dac group at N21/250 with an area of 120 millionths. By the 2nd, it had almost doubled in size to 220 millionths due to the expansion of the leading and following penumbral spots. These spots continued to grow as did the longitudinal extent of the group to become type Eao with an area of 270 millionths on the 4th. When next seen on the 10th, only a single Hsx spot was visible near the eastern limb.

From the 10th to 13th, Meadows reports that the number of groups dropped from 11 to just 6. The largest of these was of type Eac at S11/145 with an area of 200 millionths on the 10th. By the 12th, the leading spot appeared larger while the following penumbral spot reduced in size. Indeed, when seen on the 13th, no

following penumbral spot was seen to make the group of type Cki; the leading spot had grown and had become asymmetrical with a total area of 240 millionths. By the next day, a small following penumbral spot could be seen once again. On the 15th, the number of following spot reduced while the leading spot was still quite asymmetric. This group was last seen on the 17th and 18th as an Hsx spot towards the western limb.

On the 13th, Meadows saw a Dao group was seen on the eastern limb at S22/62. When this had rotated further onto the disk on the 14th and 15th, many spots could be seen within the group. Strach noted that this group was of type E type group on the 16th stretching from S22/66 to S25/52. By the 17th, Meadows classified the group as being of type Fac with a total area of 330 millionths; the group was seen to comprise of 24 spots in all with many small penumbral spots in the leading and following portions of the group. On the 18th, the leading part of the group was on the central meridian and the longitudinal extent was some 18° with 30 spots seen. On the 24th, the group was close to the western limb with a much reduced spot count.

Meadows reports that a Dso group seen on the eastern limb on the 18th had developed into an Hkx group at N21/359 by the 24th with an area of 490 millionths. It was now near the central meridian and there were many umbra within the spot including three at the leading edge of the penumbra, a main central umbra with a string of umbra following it. Several spots were seen surrounding the main spot, especially towards the north. The appearance of this group had changed again by the 26th when it was of type Dko with a slightly larger area of 540 millionths. Now the main penumbral spot was quite

irregular and it had a different distribution of umbra within it. One of the now fewer accompanying spots had a small penumbra. Medway noted that this group, the largest he saw during the month, was enveloped in a bright hydrogen plage on the 26th.

### Ha activity, 2000 November

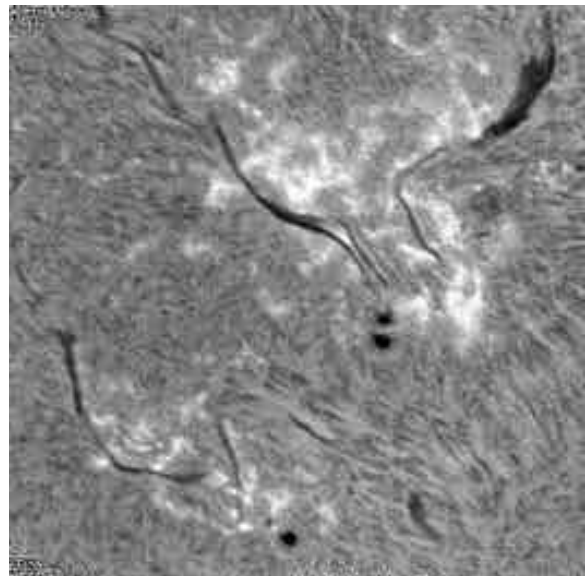
Strach noted that although no definite conclusion could be made on overall H $\alpha$  activity during the month due to the very small number observation, he was under the impression that the level of activity has remained unchanged. Medway noted that prominence activity was slightly down in October but this was based on just 3 observations.

Strach saw an impressive prominence on the W limb around S2 on the 3rd. It consisted of two bright stems which projected among an array of network, turning southwards as far as S12. It looked like an eruption but follow-up was not possible. A somewhat similar prominence was seen on the E limb on the 10th and 11th from N9 to N17 but veering northwards. This was not eruptive, although very active.

Strach had an interesting experience on the 19th: his H $\alpha$  filter usually takes 12 minutes heating before getting on band. During this time he was adjusting its position to get the correct orientation. After 5 minutes of heating time, at 1118, he was surprised to see two jets jutting from the western point of the disk. He quickly made a sketch and measured the height of the ejection (130,000km) when cloud stopped further observation for the rest of the day! Strach concluded that the jets must have been very bright to be seen whilst still off band; no other prominences had been seen at that time. Line of sight velocity may have made them visible whilst still off band. Coincidentally, Medway was observing on the same morning day and saw an impressive arch on the SW limb at 1049. Clouds then intervened until 1120 when nothing remained except for a few shafts/columns of bright hydrogen and, presumably, the same feature that Strach had observed.

Strach observed a high prominence on the E limb at S8 on the 29th which he had an estimated height of about 150,000 km high.

A filament was seen by Strach hugging the W limb at S3 on the 1st; on the 3rd it was seen as the prominence, described above. On the same day a broad filament connected with a small prominence on the W limb at S36. Strach expected an important prominence to be seen in this position on the following day but neither a prominence nor any remnant of the filament could be seen and he concludes that it must have been ejected. Such a disappearing filament is tantamount to a prominence eruption. Also on the 3rd Strach saw many finely structured filaments, some of them emanating from the double Hkx spot at N3/273 (see the image below).



2000 November 3, 1045 UT. Intricate filaments and fine chromospheric fibrils near the double Hkx spot at N3/273. Starlight Xpress CCD image. Eric Strach.

### Flares, 2000 November

Strach reports just one flare and remarks that he may have just caught the end of this event.

Date	Time UT	Lat	CMD	Type	Obs.
1	1040	N22	E47	SF	EHS

### Prominence Mean Daily Frequencies, 2000 November

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
K. Medway	5.0	4.0	9.0	3	3.0	3.0	6.0	2.0	1.0	3.0
E. Strach	5.0	6.4	11.4	8	3.4	4.5	7.9	1.6	1.9	3.5