

White light Mean Daily Frequencies, 2001 July

| Observer | AA | | | | R | | Q | |
|---------------|-------|-------|-------|------|-------|------|-------|------|
| | North | South | Total | Days | Total | Days | Total | Days |
| R. Dryden | 3.9 | 3.0 | 6.9 | 19 | 96.6 | 19 | - | - |
| A. Gabriël | 3.4 | 3.0 | 6.4 | 25 | 88.2 | 25 | - | - |
| M. Hendrie | 3.7 | 3.9 | 7.6 | 8 | 101.5 | 8 | - | - |
| G. Johnstone | 3.2 | 2.8 | 6.0 | 15 | - | - | - | - |
| P. Meadows | 4.5 | 3.4 | 7.9 | 13 | 107.1 | 13 | 20.1 | 13 |
| K. Medway | 2.4 | 2.0 | 4.4 | 29 | - | - | - | - |
| G. North | 2.6 | 2.4 | 5.0 | 12 | 73.3 | 12 | - | - |
| E. Richardson | 3.7 | 3.4 | 7.1 | 20 | 97.3 | 20 | - | - |
| J. Shanklin | 3.1 | 3.1 | 6.2 | 22 | 81.0 | 22 | - | - |
| L. Smith | 3.0 | 2.7 | 5.7 | 3 | 85.7 | 3 | 13.7 | 3 |
| D. Storey | 2.4 | 2.4 | 4.8 | 7 | - | - | - | - |
| E. Strach | 3.3 | 2.9 | 6.2 | 26 | 91.3 | 24 | 17.7 | 26 |
| MEANS | 3.3 | 2.9 | 6.2 | 199 | 91.1 | 146 | 18.2 | 42 |

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

White light activity, 2001 July

Strach notes that there was a substantial reduction of sunspot activity compared to June (see charts below) and that no major sunspot group was observed. Gabriël also comments that there was a lack of significant groups during the month.

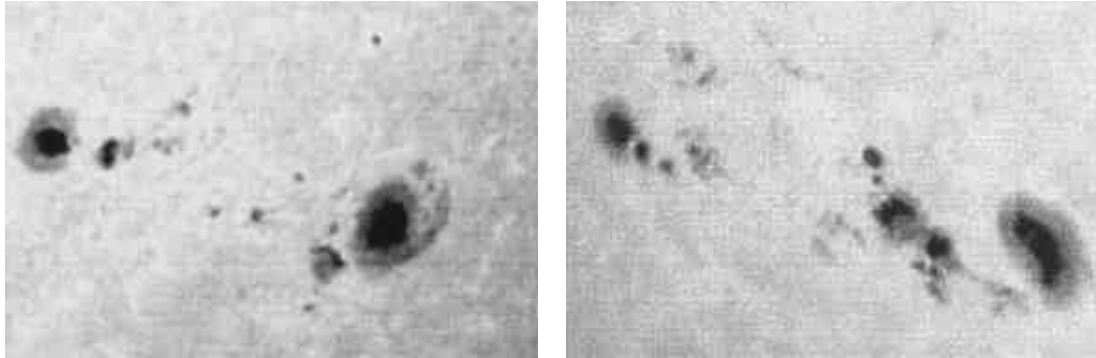
Several observers commented on the unusually high latitude sunspots seen at the beginning of the month. Strach reports that on the 2nd the two main spots positions were S46/329 and S48/327 whilst two satellite spots were at S51/327 and S51/326. Strach comments that he has only rarely seen spots at similar high latitudes but never so near to the maximum phase of the solar cycle. After crossing the CM the satellite spots were still clearly visible on the 3rd but during the next two days the group started to fade. When last seen by Strach on the 5th the position of the leader was S46/323 and of the follower was S50/317, thus demonstrating marked regression in longitude, due to differential rotation. Meanwhile, Meadows reports that the two high latitude groups seen at the end of June were still present on the 1st; an Axx spot at S44/342 and a Dsc group at S47/327. The latter group was seen by Meadows on each of the next 4 days - it was near the central meridian on the 3rd surrounded, unusually, by faculae and it was seen as an Axx spot on the 5th.

Meadows reports that the only other significant group from the start of the month was of type Hax, at S17/264, which was first seen on the 1st near the eastern limb; its area was estimated to be 170 millionths on the 3rd. After this date, the spot reduced in size to become type Hsx with an area of just 30 millionths on the 8th.

Meadows notes that one of the F type groups from June reappeared around the eastern limb as an Hsx spot on the 12th. By the 14th, following spots had rotated onto the disk to make to group, at N17/117, type Fsc with an area of 320 millionths. No spots were seen between the leading and following parts of the group and there was little change in its appearance as it rotated across the disk. When it reached the western limb, the following part of the group had decayed into a single spot when seen on the 23rd. Another group from the previous rotation was seen by Meadows as an Hsx spot on the 15th near the eastern limb which was then seen as type Esc at S21/77 on the 16th. The group had many spots between the leader and the slightly larger follower spot. The composition of the group was similar when seen on the 20th, 21st and 23rd as it traversed the central meridian, although its area steadily increased from 200 to 310 millionth.

Medway reports that the northern hemisphere was observed spotless on the 29th and 30th.





CCD images of the group at S21/77 on 2001 July 18 (left) and July 24 (right). Nigel Bryant.

Ha activity, 2001 July

Strach notes that in contrast to the reduction of sunspot activity, the prominence count for the month had risen to the highest figure since 2000 September while Medway comments that his observed level of prominence activity was close to that of most months of this year (also see the TA prominence MDF chart above).

Medway saw a very active limb on the 3rd with very large arch prominences and pillars seen down the W limb. Strach also reports that on 3rd and 4th the NW limb was littered with hedgerow types of prominences. He also saw a large arc prominence on the eastern limb on the 13th, extending from S7 to S27. Its configuration changed constantly throughout the day. The majority of the changes occurred at its southern portion and at an observation of 1410 it seemed that some faint streamers extended to a small prominence at S35. It is strange that no filament was visible on the disk as the area of the structure rotated on to the visible hemisphere. Strach observed pyramidal shaped prominences on the SE limb from the 19th to the 23rd at average position of S51 to S60. Gabriël observed some large prominences during the month - a good example was a large filament that passed around the W limb on the 25th, as a very large quiet prominence. It was also seen on the 26th and 27th as a large prominence; on the 28th, only a low part of the prominence was seen, as by then the filament had passed around the limb and disappeared. Strach also saw this western prominence on the 25th extending from S3 to S39. He notes that it was clearly visible for three days and throughout this period its structure changed, particularly at its southern portion. Strach notes that there was no sign of a filament in similar position on the disk during the previous few days and that it was likely that the arc of the 13th was the same structure as the arc of the 25th to 27th but, he comments, it was strange that no filament was seen in the position at any time. Medway also saw this very impressive giant arch prominence on the 26th but he reports that very little of it remained by the 27th. Strach observed a much smaller arc in the NW on 25th and 26th, spanning from N23 to N31.

Strach notes that plages and filaments on the 4th flanked the very high latitude sunspots, described above. On the 5th a filament curved towards the SW and connected with a similarly curved prominence at S54 south-westwards. On the 6th and 7th bright faculae were in the position of the group although the spots were no longer visible. Strach also notes there were many filaments throughout the month but a long curved filament followed a spot group of average position of N15/63 at a distance. This persisted from 19th to 28th throughout the passage of the group across the visible hemisphere. On the 29th the W limb was reached and an extensive hedgerow prominence was seen.

Flares, 2001 July (excluding type SF)

| Date | Time UT | Lat | CMD | Type | Obs. | Date | Time UT | Lat | CMD | Type | Obs. |
|------|---------|-----|-----|------|------|------|-----------|-----|-----|------|------|
| 3 | 0743 | N17 | E48 | 1N | AG | 16 | 0633-0655 | S19 | W15 | 1N | EHS |
| 9 | 0828 | S09 | E37 | SN | AG | 24 | 0805 | N07 | W77 | SN | AG |
| 9 | 0902 | S06 | E16 | 1N | AG | 25 | 0711 | N13 | E16 | 1F | AG |
| 15 | 0908 | S18 | E12 | 1N | AG | 28 | 0707 | S20 | E58 | SN | AG |
| 15 | 1135 | N15 | E27 | 1N | KJM | | | | | | |

Prominence Mean Daily Frequencies, 2001 July

| Observer | All Latitudes | | | | 0-40° | | | 40-90° | | |
|------------|---------------|-------|-------|------|-------|-------|-------|--------|-------|-------|
| | North | South | Total | Days | North | South | Total | North | South | Total |
| A. Gabriël | 4.2 | 5.6 | 9.8 | 25 | 3.8 | 4.0 | 7.8 | 0.4 | 1.6 | 2.0 |
| K. Medway | 4.1 | 4.5 | 8.6 | 24 | 2.7 | 2.8 | 5.5 | 1.4 | 1.7 | 3.1 |
| E. Strach | 5.5 | 6.5 | 12.0 | 22 | 4.4 | 3.5 | 7.9 | 1.1 | 3.0 | 4.1 |