

White light MDF, 1998 August

| Observer | MDF | | | | R | | Q | |
|----------------|-------|-------|-------|------|--------|------|-------|------|
| | North | South | Total | Days | Total | Days | Total | Days |
| T. Tanti | 3.55 | 2.26 | 5.81 | 31 | 87.80 | 31 | 15.60 | 31 |
| P. Meadows | 4.12 | 2.12 | 6.24 | 25 | 101.76 | 25 | 18.60 | 25 |
| E. Strach | 3.03 | 2.21 | 5.24 | 29 | 78.86 | 29 | 16.72 | 29 |
| G. North | 2.94 | 1.61 | 4.56 | 18 | 72.61 | 18 | - | - |
| W.F. Heyes | 2.46 | 2.00 | 4.46 | 13 | - | - | 13.00 | 13 |
| K. Medway | 2.18 | 3.60 | 5.78 | 28 | - | - | - | - |
| G.F. Johnstone | 2.85 | 1.72 | 4.57 | 14 | - | - | - | - |
| M.J. Hendrie | 3.70 | 2.85 | 6.55 | 20 | 90.90 | 20 | - | - |
| MEANS | 3.15 | 2.38 | 5.53 | 178 | 86.81 | 123 | 16.35 | 98 |

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

Sunspot Activity, 1998 August

White light activity recorded by TA observers during August was the highest so far this solar cycle. Observers reported that both the quantity and complexity of groups increased over previous months. Many small groups were seen but six large groups dominated activity during the month. Medway noted that three groups were visible with the naked-eye during the month.

Meadows notes that the first large group appeared on the 2nd as a small Cso group near the E limb. Two days later a following penumbral spot had appeared around the limb to form a Fao group. More spots between the leading and following penumbra had appeared by the 5th. One of these intermediate spots became the largest spot of the group on the 7th when the group had a classification of Fkc, it was at S22/265 and had a total area of 500 millionths.

The next significant group was first seen on the 6th as an Hhx spot on the E limb. By the 7th the spot was asymmetrical in shape and by the 9th the following spot had decayed to leave a Hkx spot at N31/209 with an area of 550 millionths. Several umbra were seen. By the 10th the spot had decayed into two spots with the follower being close by and smaller than the leader.

On the 7th, a N hemisphere Hsx spot was on the E limb. This group also had a dominant leading penumbral spot together with close by small spots. On the 10th, the group had its maximum area of 580 millionths when it had a classification of Dko and was at N16/165. The shape of the leading penumbral spot changed rapidly such that on the 12th it was elongated with two large and almost equally sized umbra. On the 13th, it became clear that the group was going to split and this occurred on the 15th. On that date two penumbral spots were seen and each included one of the large umbra seen on the 12th. The two penumbral spots remained close together as the group progressed across the disk.

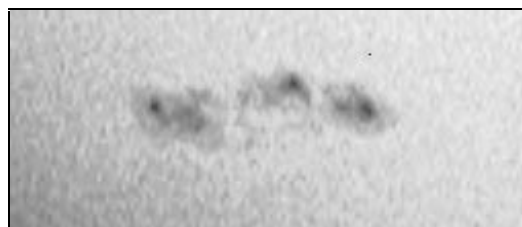
Another Hkx spot was seen on the 19th when it was near the E limb. By the 21st, the large asymmetrical spot included several umbra and a region of photosphere. It also had two small leading penumbral

spots. On this date, the group had a corrected area of 630 millionths, had a classification of Dko and was at N31/36.



The group at N20/I. 1998 August 31. 1344UT. NDJ.

The group that was to become the largest of the month was first seen on the disk as a single Axx spot on the 24th. By the 27th, a total of 31 spots had developed; the group was also near the CM. On the next day, some of the leading and following spot developed penumbra. The size of the leading penumbral spots had increased by the 29th. When seen on the 31st, an impressive single large leading penumbral spot was present; the group was now of type Fkc, at N20/1 and had a corrected area of 910 millionths. It had also merged with the penumbral spots of a following group to give a longitudinal extent of almost 25°.



The group at S23/276. 1998 August 31. 1335UT. NDJ.

The final dominant group of the month was the return of the S group seen earlier in the month. Now at S23/276 it was seen as a Dho group near the eastern limb on the 29th. When seen on the 31st it was of type Ekc and had a corrected area of 840 millionths. Its appearance was of three close irregularly shaped penumbral spots.

Prominence MDF, 1998 August

| Observer | All Latitudes | | | | 0-40° | | | 40-90° | | |
|-------------|---------------|-------|-------|------|-------|-------|-------|--------|-------|-------|
| | North | South | Total | Days | North | South | Total | North | South | Total |
| E.H. Strach | 3.82 | 4.50 | 8.32 | 22 | 1.91 | 2.18 | 4.09 | 1.91 | 2.32 | 4.23 |
| K.J. Medway | 2.18 | 3.60 | 5.78 | 28 | 1.57 | 2.35 | 3.92 | 0.64 | 1.25 | 1.89 |
| M. Hendrie | 3.75 | 5.25 | 9.00 | 4 | 2.75 | 2.50 | 5.25 | 1.00 | 2.75 | 3.75 |

Prominence activity, 1998 August

Medway reports that many varied prominences were seen during the month across all latitudes. He reports that a notable prominence was seen on the SE limb on the 10th and 11th. This had the form of an arch. Another remarkable arch was seen on the NE limb on the 27th.

Strach noted a hedgerow prominence on the NW limb between N42 and N53 on the 4th/5th, the N part of which was continuous with a dark filament.

Filaments continue to be very numerous and Medway saw them on every day that he observed. A total of nine were seen on the 14th including a 25° long example at S48, the preceding edge of which lay 5° W of the CM.

Flares, 1998 August

A very large number of flares were reported this month and I have restricted the table to the brightest events.

| Date | Time | Lat | CMD | Type | Obs. |
|------|-----------|-----|-----|------|------|
| 2 | 0900 | S20 | E80 | 1n | EHS |
| 9 | 1715-1725 | S22 | W18 | 1b | KJM |
| 19 | 1411 | N30 | NE | 1b | KJM |
| 22 | 1505-1512 | N29 | E48 | 1b | KJM |
| 22 | 1648-1745 | N25 | E40 | 2b | KJM |
| 29 | 1344 | S17 | SE | 1n | KJM |
| 30 | 0940-0955 | N20 | W30 | 2b | KJM |
| 30 | 1645 | S28 | E60 | 1b | KJM |
| 30 | 1725-1738 | S28 | E60 | 1b | KJM |