

Observations this month a rather thin on the ground mainly due to the fact that many of our observers were tempted away to the Caribbean for the February 26 eclipse. Many TA observers were succesful and their reports appear elsewhere in this issue. Of particular note is Eric Strach's success in video recording the shadow-bands.

White light MDF, 1998 February

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
E.H. Strach	0.70	2.00	2.70	10	39.80	10	6.20	10
G.F. Johnstone	0.14	2.00	2.14	7	-	-	-	-
W. Heyes	0.29	1.29	1.57	7	-	-	3.71	7
J.G. Gissing	0.23	0.92	1.15	13	-	-	2.30	13
M.J. Hendrie	0.64	2.21	2.85	14	42.24	14	-	-
G. North	0.58	1.75	2.33	12	35.25	12	-	-
CUAS	0.50	1.80	2.30	19	30.00	19	-	-
P. Meadows	0.93	2.64	3.57	14	49.50	14	8.57	14
MEANS	0.54	1.86	2.39	96	38.77	69	5.41	44

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

Sunspot Activity, 1998 February

The following report is taken almost verbatim from Peter Meadows notes. He stayed behind whilst many of us departed for the eclipse!

The high latitude Fso group seen at the end of January had decayed to a single Hsx spot by the 2nd (at S37 /285 and near the W limb). This was the only group visible on this date.

The next observation on the 7th showed a small Cso group approaching the W limb at S19/215. It was seen on the 8th but it had passed around the limb by the following day. The other group seen on the 7th was a single Hsx spot at S22/119. This had an area of 50 millionths and it was the remains of the Dai group last seen on the 14th January. Also on the 8th a high latitude Bxo group was seen at S38/90. It changed little for the next two days before becoming type Axx on the 11th. It decayed on the disk by the 13th. On the 9th and 10th only, a short lived Axx group was seen at S22/89 while on the 10th only a Bxo group was seen near the centre of the disk at S13/100.

The 11th saw the arrival near the E limb of what was to become the largest group of the month. When first seen it was of type Dso at S24/36. By the 13th it had developed into type Eai with an area of 380 millionths.

Prominence MDF, 1998 February

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
E. Strach	3.33	3.33	6.66	6	1.67	1.67	3.33	1.67	1.67	3.33
M. Hendrie	4.00	6.00	10.00	4	2.50	3.25	5.75	1.50	2.75	4.25

The 1998 February 26 eclipse

The solar editor was lucky enough to be in the Caribbean for this eclipse. Here is my report. More details and images are on the TA web page. I decided to

The group comprised a leading asymmetrical penumbral spot followed by several penumbral spots and other spots. The following penumbral spots had increased in size by the 15th and 17th before the size and number of following spots decreased by the 18th. Throughout this period the leading spots changed little while the group as a whole had a maximum area of 420 millionths.

On the 13th, the first two N groups of the month were seen. Both were of type Axx at N26/22 and N32/8. The first of these was only seen again on the 14th while the second developed into type Bxo on the 14th and 15th before decaying on the disk. The other new group seen on the 13th was a small Cso group at S20/14. Also on the 14th and 15th a Axx spot was seen at N23/2 which became type Dro by the 17th before decaying into type Bxo on the 18th.

On the 22nd one additional group was seen at S21/333 and type Axx. By the 24th it had become type Dso with an area of 70 millionths. The number of groups increased to five on the 24th with the arrival of a Dso group of area 90 millionths near the central meridian (at N16/278). By the 28th, the Dso group at N16/278 was unchanged in appearance while the S Bxo group had changed into type Cso (area 50 millionths). These were joined by groups at S20/285 (type Cso) and at S23/236 (type Dso).

video the event using a Sony TR-3100 camcorder and the pictures on this page are stills from that video.

On eclipse morning we left Caracas at 2 a.m. in order to catch a charter flight to Punto Fijo. From there we drove to Coro for breakfast and then back on to the Peninsula

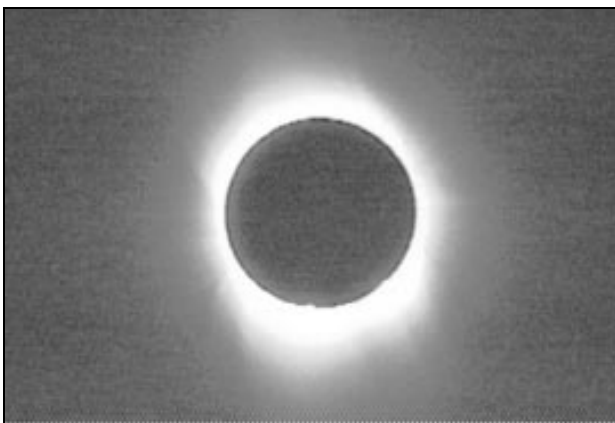
de Paraguana. We arrived at the observing site at about 11 a.m. and had plenty of time to set up and check our equipment. Our location was approximately 12° 10'.48 N, 69° 57'.31 W. When we arrived the sky had clouded over completely. This was not good news! As the partial phase started the sky began to clear and a few minutes later it was cloud-free. The Sun displayed two small spot groups each consisting of a pair of spots.

John Mason had brought along a light meter calibrated in lux (lumens m⁻²) which was more used to measuring the output of streetlights in Basingstoke. He would use this to determine the light levels during the eclipse. This data should help him predict when streetlights will come on in Cornwall during the next eclipse!



18:09:12

After a long partial phase the last glimmers of the sun began to die away and the light level fell below 100 lux. At this time dramatic shadow-bands appeared on the beach. The shadow-bands were an extraordinary sight since they were very dynamic and very distinct. John Mason was the first to yell "shadow bands" since he was looking down at his light meter. This alerted us all the marvellous show.



18:12:36

With the Sun now completely covered the corona was clearly visible. Light levels had dropped to 3 lux but the shouts and screams from the assembled group of observers would not diminish for many minutes. The corona showed a characteristically boxy form and an amazing amount of detail was visible in binoculars. A large red prominence was visible at about 12 o'clock and this added to the awesome beauty of the event. One of the advantages of the TR-3100 is that I had full

control of the exposure and aperture settings and this allowed me to reduce the exposure to show detail in the inner corona and the prominences.

Three planets were easily visible during the eclipse. Jupiter and Mercury were near to the Sun and were visible on the video when the camera was set to a long exposure (1/3 sec) and zoomed out. Much further from the Sun was Venus and this planet was visible for a full five minutes before the start of totality. I didn't see any other objects during the eclipse but I must admit that I wasn't looking too hard!

At about 40 seconds before the end of the eclipse an impressive prominence appeared at the 6 o'clock position and the light level rose to 9 lux. Another prominence-like feature was seen at 4 o'clock. With a few seconds to go the bright red Chromosphere appeared at the 5 o'clock position to be followed by a spectacular diamond ring. Various people had predicted a long exit and we weren't disappointed. The diamond ring lasted for several seconds before it broke into multiple beads. Totality was over and the light level began to climb. Shadow bands were seen again and they were as spectacular as the entry bands but did not seem to last as long.



18:13:02

The following table of event times at our location has been extracted from my videotape. The times given are indicated times and I estimate that the clock in the camera was about one second fast on UTC. The light level readings were made by John Mason and a full report on his experiment will appear in the June issue of the BAA Journal. For reference the illuminance due to a normal Sun at the zenith is 100,000 lux.

18:02:55	Passed through 5000 lux on the way down.
18:08:28	300 lux.
18:08:48	First yell of "shadow bands", 150 lux.
18:09:17	End of entry diamond ring, light level drops to 5 lux.
18:11:00	Illuminance drops to 3 lux.
18:12:14	Level up to 9 lux + v. bright prominence at 6 o'clock.
18:12:45	First sign of Chromosphere.
18:12:56	First sign of exit diamond ring.
18:13:04	Now multiple beads.
18:13:10	Illuminance up to 25 lux and yell of "shadow bands".

