SOLAR NOTES

Edited by Nick James

Could you all let me have your annual statistics as soon as possible since I hope to have a summary of 1993 in the February or March edition.

WHITE LIGHT SOLAR ACTIVITY

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
E.H. Strach	1.41	1.11	2.52	19	59.00	14	8.37	19
K.J. Medway	1.30	1.10	2.40	20	-	-	-	-
T. Tanti	1.50	1.25	2.75	12	55.30	12	7.80	12
J.G. Gissing	1.33	1.22	2.55	9	-	-	8.67	9
B. Hardie	1.26	1.36	2.63	19	42.47	19	-	-
CUAS	1.83	2.50	4.33	6	61.83	6	-	-
M. Gotz	-	-	3.15	13	75.19	13	-	-
MEANS	1.38	1.29	2.74	98	56.95	64	8.27	40

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

Table 1: Solar activity, 1993 December

BAA/TA Comparison

Month	Active areas		Spot numbers	
	BAA	TA	BAA	TA
1993 November	2.26	1.84	39.90	42.31

Sunspot Activity, 1993 December

Sunspot activity increased slightly in December with the N hemisphere being slightly more active than the S. The S hemisphere was spotless from the 16th to the 19th and again from the 24th to the 28th. The N hemisphere was blank between the 7th and the 9th.

On the 4th Strach reported an insignificant bi-polar group at S10.5/81. This developed into a complex open group of type DRO as it crossed the CM on the 7th.

Strach notes that, between the 15th and the 24th, he observed his first near-equatorial spot of the declining phase of this cycle. Just after its meridian passage its position was N0.25/275. In contrast he observed two high latitude groups in the S hemisphere at S19.5/107 and S22/80. The first of these was a bipolar group which declined after its meridian passage and died on the disk after the 9th. The second was an open, asymmetric group of DAO type which contained a component at S24.

On the 21st.a large group appeared around the E limb and it was to dominate the last ten days of the month. Strach reports it as a type FAO which straddled over 20 ° in longitude at an average position of N6/199. On the 26th, as it passed over the CM, Strach reported that it contained no less than 47 spots. Medway reports seeing the group with the naked eye on the 26th when it was at N7/W12. The group finally cleared the W limb on January 2nd.

On the 29th Strach observed two groups rounding the E limb. One was, surprisingly, the DRO group at S10.5/81 which was first seen on the 4th. Evidently this had survived its passage on the averted hemisphere but it was now a more complex group of type EAO. The second group was centred on N10/83.

According to Strach the spot *latitude distribution* was markedly different in the two hemispheres. In the N the average latitude was 6.6° whilst in the S it was 15°.

Strach observed *polar faculae* on the 4th in the N; 7th, 10th, 15th and 19th in both the N and S; and on the 29th in the S.

MONOCHROMATIC SOLAR ACTIVITY

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
K. J. Medway	2.40	3.40	5.80	5	0.80	2.60	3.40	1.60	0.80	2.40
E.H. Strach	2.21	1.79	4.00	14	1.64	1.57	3.21	0.57	0.21	0.78
B. Hardie			4.33	3						

Hα Prominence Activity, 1993 December

Medway notes that he saw a number of interesting prominences this month despite having only observed on five days. On the 6th a low arch and a tall loop were seen on the SE limb. Both of these had gone by the 7th when a series of loops was seen between N50 and N57 on the NE limb. On the 26th/27th he noted that prominence activity was generally subdued although a tall pillar was seen on the SE limb between S50 to S55 at 1110 on the 27th.

Strach reports that his prominence count remained at a low level this month. He notes that most prominences seen in December were small. On the 7th he saw a prominence that he describes as "four tree trunks in a row" on the E limb between N33 and N41. The only other notable events were an arch on the W limb between N30 and N39 on the 16th and a hedge-row type on the E limb between S7 and S19 on the 19th.

Flares, 1993 December

Date	Time	Lat	CMD	Type	Obs.
4	1050	S23	E80	Sf	EHS
4	1059	S23	E51	Sf	BH
5	1029-1032	S22	E34	2B	BH
6	1128	S26	E21	Sn	KJM
7	1128	S3	W62	Sf	KJM
22	1115	N07	E48	Sf	EHS
26	1123	N10	W03	1B	KJM[1]
26	1130	N08	W07	Sf	EHS
27	1117	N15	W20	1B	KJM[1]
29	1130	S08	E79	1n	EHS

Notes

1. These flares were associated with the large group at N6/199.