As I mentioned last month Solar observations at this time of the year are difficult to make in the northern polar regions. My thanks go to all of you who have made a special effort and especially to those who manage to get in observations over the Christmas holiday.

WHITE LIGHT SOLAR ACTIVITY

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
E.H. Strach	1.30	0.80	2.10	20	52.50	20	6.05	20
J.G.Gissing	1.56	0.44	2.00	10	-	-	5.60	10
K.J. Medway	1.00	0.31	1.31	16	-	-	-	-
CUAS	1.30	0.70	2.00	10	36.00	10	-	-
B. Hardie	1.64	0.57	2.21	14	37.42	14	-	-
M. Götz	-	-	1.50	16	37.80	16	-	-
MEANS	1.34	0.58	1.84	86	42.31	60	5.90	30

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

Table 1: Solar activity, 1993 November

Observer	MDF				R		Q	
	North	South	Total	Days	Total	Days	Total	Days
J. Jahn	-	-	2.50	2	41.50	2	-	-
CUAS	1.30	2.20	3.50	14	52.00	14	-	-
MEANS	1.20	2.06	3.06	128	56.35	84	9.78	51

Table 2: Solar activity, 1993 October (additional reports)

BAA/TA Comparison, 1993 October

Month	Active areas		Spot numbers	
	BAA	TA	BAA	TA
1993 October	3.25	3.06	55.19	56.35

Sunspot Activity, 1993 November

Strach reports that the first eleven days of the month were dominated by a large bipolar group in the S hemisphere centred on S12/153. He states that this was of type Eko but notes that, on the 1st, the two main spots were separated by just over 10° so that it was on the borderline of being counted as two groups. The preceding spot of this group was always the larger one and on the 5th it showed a marked photospheric hole between the two main components of the umbra. This is illustrated in figure 1. Medway saw the spot with the *naked eye* on the 5th using a *Solar Skreen* filter. Strach reported that the follower spot diminished in size after the CM passage and the group finally crossed the W limb on the 11th.

During the first week of the month the large S group was the only one on the disk but, on the 8th, Strach recorded a small spot at N7/71 and a short-lived group at S13/83. This group was not visible on the following day. The quiet spell following the departure of the large S group ended with the appearance around the NE limb of a group which, by the 20th, had increased in area sufficiently for Medway to report a large, *naked eye*, unipolar spot at N7/W23.

Figure 1. Large S group. EHS.
1993 November 5, 1345.
Note the "hole" in the leader.

This large group was first seen by Strach on the 12th as it rounded the E limb centred on N7/337. This group then dominated the N hemisphere for the following ten days. Strach reported that it assumed a bipolar form of Eki and Eko type with many intervening penumbra. Its complex structure was constantly changing as recorded in Strach's sketches (figure 2). An interesting aspect of the group was the photospheric hole which emerged on the 19th and expanded so that by the 20th it had split the umbra in two. This group crossed the CM on the 18th and reached its maximum area on the 20th. It finally crossed the W limb on the 24th.

On the 20th Medway managed to obtain 18mins of Hα observations but, perhaps surprisingly, no flares were seen to be associated with this large group.

Strach saw a further spot group on the 19th at N4/267. This developed into a bipolar group on the 22nd and, when last seen on the 26th, the small follower was surrounded by many small spots. By the 29th Medway reports that only small spots were seen on the disk and at the very end of the month, on the 30th, Strach noted a small group which had appeared over the E limb at S20/105. He notes that this is a surprisingly high latitude for this time in the cycle.

Strach saw *polar faculae* on the 8th, 14th and 17th in the N. He notes that under good conditions he saw three N and two S polar faculae on the 20th and three N and *six* S on the 20th. Two were seen in the S on the 25th and three in the N with two in the S on the 30th.

MONOCHROMATIC SOLAR ACTIVITY

Observer	All Latitudes				0-40°			40-90°		
	North	South	Total	Days	North	South	Total	North	South	Total
E.H. Strach	1.75	2.08	3.83	12	1.08	1.83	2.91	0.67	0.25	0.92
K.J. Medway	3.20	3.40	6.60	5	2.80	3.40	6.20	0.40	0.00	0.40
B. Hardie	-	-	3.57	7	-	-	-	-	-	-

Hα Prominence Activity, 1993 November

Medway managed to observe on five days during the month and notes that most prominence activity was confined to latitudes less than 40°. Both he and Strach comment on the low level of prominence activity during the month.

Strach recorded a 110,000km high prominence on the E limb at S22 on the 1st.

Figure 2. Large N group. EHS.
Top: 1993 November 19, 1055
Bottom: 1993 November 20, 1040.

On the 20th he saw an arch prominence on the SE limb at S20 and on the 21st he noted a fine hedgerow prominence on the NW limb between N5 and N17. On this same date Strach observed his largest prominence of the month on the W limb between S24 and S29. The longitude to the W limb at this time was 31°. Strach speculates that this prominence had lasted two rotations since he first noted it on the E limb on October 6th when the longitude of this limb was 46°. As the prominence rotated on to the disk in October it was seen as a dark, curved filament and this feature was seen again this month. It had just passed the CM on the 14th.

By the 25th Medway observed a fine multi-arched prominence on the E limb between 0 and N23. Strach also noted this event. By the 27th, when Medway next observed in Hα this had disappeared.

Medway reports that filaments were seen on most days but that they were most prominent on the 14th when he counted five on the disk.

Flares, 1993 November

Date	Time	Lat	CMD	Type	Obs.
14	1150	N08	E59	SB	KJM
22	0955-1020	N04	E24	SF	EHS
30	1035	N04	W04	SF	EHS[1]
30	1145	N04	W06	SF	EHS

Notes

1. Associated with filamentous surge.

Magnetic Observations

John Fletcher in Gloucester has spent much time adjusting his "Twin Hall" magnetometer and has calibrated it against data from the Hartland observatory. He reports that a very good correlation has now been achieved.

On the early morning of the 4th Fletcher observed a strong deflection to the E. He notes that professional observations showed a large coronal hole ejection event a few days earlier. Other observers with similar magnetometers confirmed this event.