Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS — SOLAR DIVISION

R. B. AMMONS, EDITOR
UNIVERSITY OF MONTANA
411 KEITH AVENUE
MISSOULA, MONTANA 59801 USA

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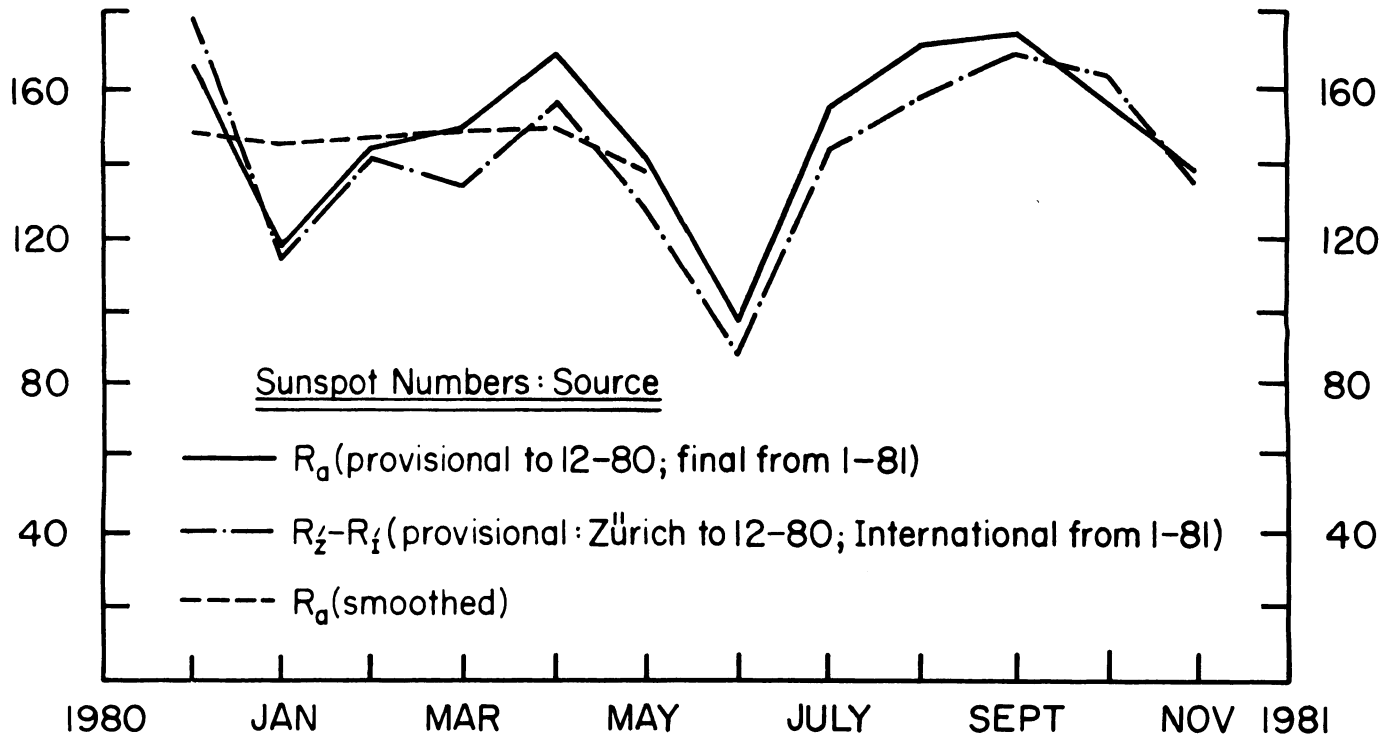
SOLAR ACTIVITY DURING NOVEMBER 1981

Sunspot numbers are given in the graph at the bottom of this page and the table of daily values on page 2. Overall activity continued to decrease during November 1981, with the monthly mean for final AAVSO sunspot numbers falling sharply to 138.8 from the 157.0 in October. The smoothed mean decreased slightly from 150.0 for April 1981 to 149.0 for May 1981. There was great variability in the daily sunspot numbers (R_a), with a high of 261 on the 4th and a low of 56 on the 25th. This range was due to concentration of most of the sunspot activity in one "longitudinal hemisphere" while the opposite "side" of the sun showed very few spot groups. Daily R_a numbers started high and continued increasing to the 4th, at which time 18 groups of the active "hemisphere" were visible across the disc, and the single large complex group present had developed over 90 individual spots. From the 4th, sunspot numbers decreased until the 25th, when only a few small scattered groups were visible. Numbers then began rising on the 26th, as the first groups of the active "hemisphere" appeared again around the limb.

Indirect Solar Flare Patrol observers detected 147 Sudden Enhancements of VLF Signals (SESs) during November, as listed on page 2. Most of these (113) occurred in the first half of the month, with the greatest frequencies on the 1st (12), 12th (14), and 13th (14), and none on the 24th. There were 13 Importance 3 and no Importance 4 events, giving a total of 13 for the month, as compared to last month's total of 12. Overall, flare activity as indicated by SESs stayed at a relatively high level, comparable to that in October.



SUDDEN IONOSPHERIC DISTURBANCES (SESs) RECORDED DURING NOVEMBER 1981

Records were received from A1, 9, 19, 26, 28, 31, 37, 43, 48, 50, 51, 52, 54, 55, 56, 57

Day	Max	Imp	Def	Observers
1	04:48	1	5	A52,55
1	06:23	1	5	A52
1	06:38	1+	5	A52
1	09:33	1-	5	A52
1	14:11	1-	5	A54
1	15:29	1	5	A1,19,26,28,31,37, 48,50,51,56
1	15:42	1-	5	A19,26,31,50,51,54, 55,56
1	16:50	1	5	A1,26,28,31,37,50, 51,55,56
1	17:28	2	5	A1,19,26,28,31,37, 48,50,51,55,56
1	18:18	2+	5	A1,19,26,28,31,37, 48,50,51,54,55,56,57
1	21:11	1-	5	A1,31,37,50,56
1	23:01	1	5	A31,37,43,55,56,57
2	06:44	3	5	A43,52
2	15:10	1	5	A1,19,26,28,31,37,51
2	17:03	2	5	A19,26,31,37,51,56
2	17:32	1-	4	A19,31,37
2	17:53	1-	4	A19,31,37
2	20:04	1-	5	A26,28,37
2	21:33	1+	5	A31,37,50,56
3	15:03	1	4	A1,19
3	20:20	1-	5	A31,37,50,55,56
3	21:12	1-	4	A31,56
4	05:18	1-	5	A43,52,55
4	05:58	1-	5	A43,52
4	06:43	1-	5	A52
4	08:08	1-	5	A52
4	08:28	1-	5	A52
4	10:53	1-	5	A52
4	11:14	1-	5	A52
4	16:08	1	5	A19,26,28,31,37,48, 50,51,54,55,56
4	18:34	3	5	A1,19,26,28,31,37, 48,50,51,55,56
4	19:51	2	5	A1,19,26,28,31,37, 50,51,55,56
5	02:18	1	5	A43,55,56
5	02:45	1-	5	A43,55
5	08:40	1+	5	A31,43,52,55,56
5	12:47	2	5	A1,48,52
5	14:49	1	5	A1,19,28,48,50,51
6	02:53	2	5	A43
6	10:21	1	5	A52
6	17:36	1	5	A28,31,37,50,55,56
6	20:28	1	5	A31,37,50,55,56,57
7	04:02	2+	5	A31,43,52,55,56
7	07:26	1	5	A52
7	08:49	2	5	A52
7	18:32	1+	5	A1,19,31,37,50,55,56
8	03:24	2+	5	A31,43,52,55,56
8	04:03	1	5	A31,43,52,55,56
8	07:28	1-	5	A52
8	17:11	2+	5	A19,26,31,37,48,50, 51,55,56
8	19:25	3	5	A1,19,26,28,31,37, 50,51,55,56,57
8	22:42	1	5	A31,55,56,57
9	10:27	1	5	A52
9	17:11	1+	5	A1,26,31,37,48,50, 51,55,56
9	20:26	1+	5	A19,31,37,50,51,54, 55,56,57
10	05:15	1-	4	A43,52
10	05:58	1	5	A31,43,52,55,56
10	15:03	1	5	A1,19,37
10	16:50	1	5	A1,19,37,50
10	17:19	1-	5	A1,19,37,50
10	17:34	1	5	A1,19,37,50
10	19:10	2	5	A1,19,31,50,54,55, 56,57
10	20:23	1	5	A31,50,51,54,55,56, 57
11	00:39	1+	5	A43,55
11	04:55	2+	5	A43,52
11	09:00	2	5	A31,43,52,55,56
11	13:04	1+	5	A1,19,26,52
11	14:53	2	5	A1,19,26,28,31,48, 50.51,52
11	17:33	1	5	A1,31,55
11	19:18	2	5	A1,19,26,28,31,37, 48,50,51,55,56
11	22:08	2	5	A19,31,37,50,55
12	01:22	2+	5	A31,43,52,55,56
12	02:16	1+	4	A43,52
12	03:47	1+	5	A31,43,52,55,56
12	05:05	1	5	A43,52
12	06:37	3+	5	A31,43,52,55,56
12	07:39	1-	5	A43,52
12	08:08	1-	5	A52
12	14:11	1+	5	A1,19,28,50,51
12	15:53	3	5	A1,19,26,28,31,37, 48,50,51,52,54,55, 56,57
12	16:09	3+	5	A1,19,26,28,31,37, 50,51,52,54,55,56
12	18:17	1+	5	A1,19,26,28,31,48, 51,52,54,55,56,57
12	19:04	1	5	A26,28,31,51,55,56, 57
12	19:29	1-	5	A1,26,28,31,51,55, 56,57
12	21:08	1	5	A31,51,55,56,57
13	01:02	2	5	A31,43,52,55,56
13	02:04	1	5	A31,43,55,56
13	02:45	1	5	A43
13	03:05	1+	5	A31,43,52,55,56
13	03:40	2	5	A31,43,52,55,56
13	08:15	2+	5	A31,43,52,56
13	11:03	3	5	A52
13	14:09	1-	5	A1,19,26,28,48,50,51
13	15:07	1	5	A1,19,26,28,51
13	15:50	1-	5	A1,26,28
13	16:54	3	5	A1,19,26,28,31,37, 48,50,51,52,54,55, 56,57
13	18:30	2+	5	A1,19,26,28,31,37, 48,50,51,54,55,56,57
13	19:26	1+	5	A1,19,26,28,31,37, 48,51,55,56,57
13	23:48	1-	5	A31,37,43
14	01:12	1+	5	A31,43,52,55,56
14	04:26	1	5	A43,52
14	05:44	2+	5	A31,43,52,55,56
14	07:33	1+	5	A43,52
14	14:28	1+	5	A26,28,48,51
14	19:33	1-	4	A31,55,56
14	22:17	3+	5	A19,31,43,50,54,55, 56,57
15	01:45	1-	5	A31,43,55,56
15	02:14	2	5	A43
15	03:18	1+	5	A43
15	07:57	1-	5	A52
15	10:23	1-	5	A52
15	14:28	2+	5	A1,19,26,28,31,48, 50,51,52,54,55
15	15:33	1-	5	A26,28,51,52
15	17:38	2+	5	A31,55,56
16	12:52	1-	5	A1,19,48,52
16	23:01	3+	5	A31,51,54,55
17	16:11	1	5	A19,31,56
17	22:00	1	5	A31,50,55,56,57
18	01:29	1	5	A31,43,52,55,56
18	04:20	2	5	A31,43,52,55,56
18	09:07	1-	5	A52
18	14:23	2	5	A1,51
18	15:17	1-	5	A1,26,28,37,48,50, 51,52
19	02:45	3	5	A31,43,52,55
20	15:30	1+	5	A1,19,26,28,48,51,52
21	16:00	1	5	A1,19,26,28,37,48, 50,51
21	20:23	2+	5	A31,51,55,56
22	03:30	1+	5	A31,43,52,55,56
22	07:05	2+	5	A31,43,52,56
22	17:48	1	4	A31,50,51,55,56
23	19:15	1+	5	A1,31,51,55,56
25	03:17	1	5	A43,52
25	05:30	1	5	A43,52
25	07:53	1-	5	A43,52
25	18:20	1	5	A1,19,26,28,31,48, 51,55,56
25	23:32	1+	5	A43,55,56
26	14:32	1+	5	A1,31,51,54,56
26	16:29	3+	5	A1,19,26,28,31,37, 48,50,51,54,55,56
26	19:48	2+	5	A1,19,26,28,31,37, 48,50,51,54,55,56,57
27	17:30	1-	5	A1,31,50,55,56
27	20:05	1	5	A19,31,48,54,55,56,57
28	07:38	1	5	A43,52
28	09:51	2	5	A52
28	14:20	1-	4	A31,54
29	02:15	1+	5	A43
29	16:43	3+	5	A1,19,31,48,50,51, 54,55,56
29	19:33	1-	5	A1,19,31,37,48,50, 51,55,57
30	18:07	1-	4	A55

November 1981
RELATIVE SUNSPOT NUMBERS (R):
AAVSO (a), INTERNATIONAL (I)

Day	R_a (final)	R_I' (prov)
1	171	165
2	223	222
3	225	218
4	261	231
5	205	207
6	196	199
7	191	192
8	165	166
9	153	134
10	158	147
11	159	146
12	161	150
13	161	158
14	179	178
15	154	148
16	125	126
17	107	103
18	104	102
19	90	90
20	80	82
21	71	78
22	71	79
23	61	65
24	60	59
25	56	60
26	64	74
27	96	87
28	123	110
29	141	134
30	153	155
Mean	138.8	135.6