

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS — SOLAR DIVISION

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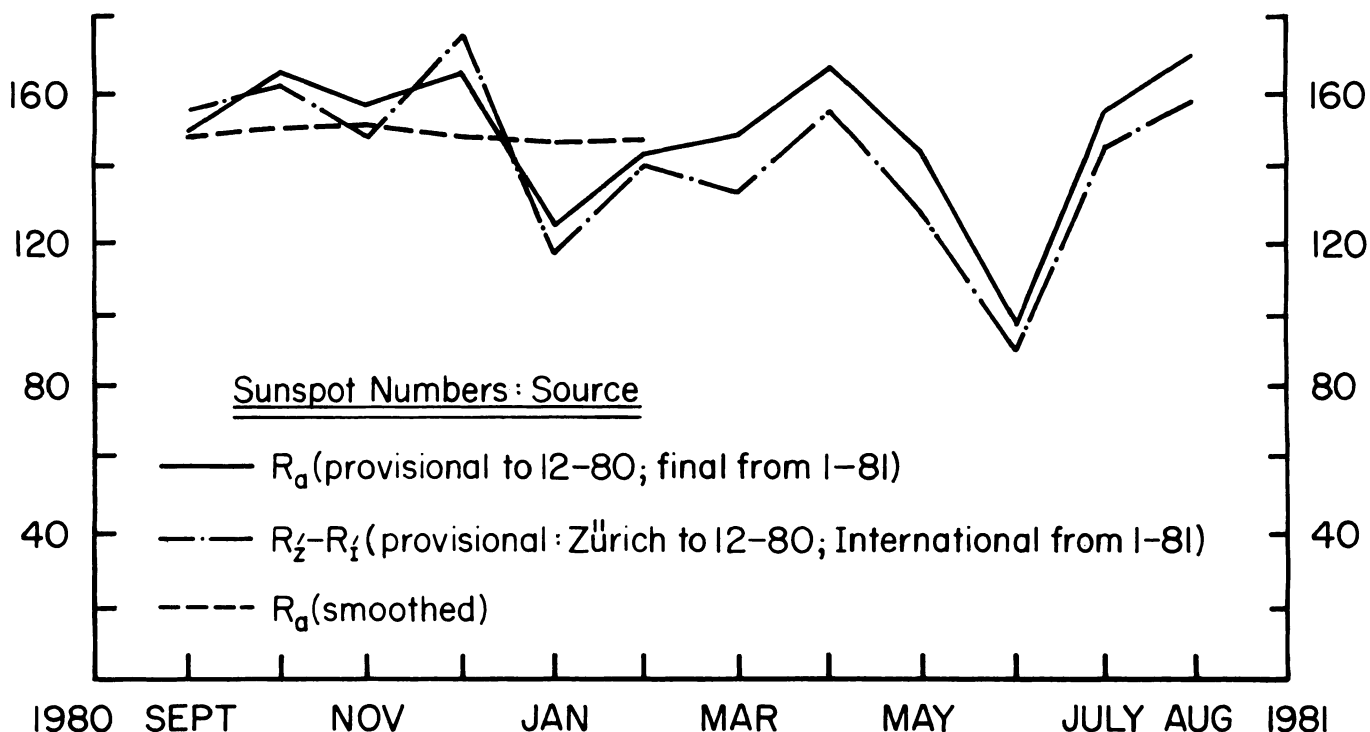
Number 8

August 1981

SOLAR ACTIVITY DURING AUGUST 1981

Sunspot data are given in the graph at the bottom of this page and the table of daily numbers on page 2. Activity increased sharply during August 1981, with the monthly mean of AAVSO sunspot numbers reaching 170.4, up from 154.3 in July, even exceeding the previous high for this year of 169.2 in April. This jump helped to pull up the smoothed mean of AAVSO sunspot numbers for February 1981 to 146.8, from the 144.9 for January. Final AAVSO daily numbers increased from a low of 114 on the 6th to a high of 258 on the 30th. Daily spot activity began modestly and decreased to the 6th. The general decrease during this period was somewhat offset by a very large group which appeared on the east limb on the 3rd. This group rapidly grew in size and complexity to 90+ individual spots on the 10th. By the 21st, an almost continuous chain of groups extended across the entire southern hemisphere. As the southern latitude activity continued, a similar chain of groups developed by the 25th in the northern hemisphere. This high level of complex activity continued through the end of the month.

In August, 188 high-certainty Sudden Enhancements of VLF radio Signal (SESs) were detected by 15 observers in the AAVSO Indirect Solar Flare Patrol, as listed on page 2. This number represents a sizeable decrease from the 234 in July, but still ranks among the highest for the cycle. At least one SES was observed on each day of the month. Highest frequencies were noted on the 4th (13), 21st (13), 30th (16), and 31st (11). Some concentration of SESs was apparent in the last third of the month.



SUDDEN IONOSPHERIC DISTURBANCES (SESSs) RECORDED DURING AUGUST 1981

Records were received from Al, 9, 19, 26, 28, 31, 37, 40, 43, 46, 50, 51, 52, 55, 56

Day	Max	Imp	Def	Observers	Day	Max	Imp	Def	Observers	Day	Max	Imp	Def	Observers
1	12:40	1	4	A55,56	14	06:44	1	5	A43,52	28	19:28	1-	5	Al,9,19,26,31,46,51,54,55,56
1	14:41	2	5	A9,19,31,51,55,56	14	15:38	1	5	Al,19,26,28,31,37,50,51,54	28	20:17	1-	4	A9,31
1	16:42	2+	4	A31,40,55,56	14	18:31	2+	5	Al,19,26,28,31,37,46,50,51,54,55,56	29	00:48	1-	5	A43
1	17:21	1	4	A56	14	22:00	1	5	A19,26,31,55	29	05:00	1-	5	A43,52
1	19:44	1	4	A19,26,31,46	14	23:15	1	5	A31,40,46,55	29	05:31	2+	5	A43,52,55
2	19:36	1-	5	A31,46,56	15	01:31	1-	5	A43	29	06:50	3	5	A43,52
2	20:15	1-	5	A31,46,55,56	15	01:45	1+	5	A31,37,43,46,52,55	29	08:09	3	5	A52
2	22:11	1	5	Al,9,19,26,28,31,46,50,51,55,56	15	06:56	2	5	A43,52	29	13:41	1	5	Al,19,26,51,52,54
3	16:09	2+	5	Al,9,19,26,31,46,50,51,55,56	15	20:10	1	5	Al,9,19,26,28,31,46,51,54,55,56	29	19:04	1-	5	A9,19,31,46,55,56
3	16:53	3	5	Al,9,19,26,31,37,40,46,50,51,55,56	15	23:29	1	5	Al,31,37,50,55,56	29	20:26	4	5	Al,19,31,46,54,55,56
3	18:53	1-	5	Al,19,46,50	16	05:36	1	5	A43,52	30	00:42	1+	5	A31,37,43,46,55,56
3	19:31	1	5	Al,19,28,31,46,51,55,56	16	14:32	2+	5	Al,9,19,26,31,37,46,50,51,54,55,56	30	01:31	1+	5	A31,43,46,52,55,56
3	20:29	3	5	Al,9,19,26,31,37,40,46,50,51,55,56	16	16:36	1-	4	A19,26,31,55	30	02:25	2+	5	A31,43,46,52,55,56
3	23:48	1+	5	A31,37,43,46	16	17:35	2+	5	Al,9,19,26,31,37,46,50,51,54,55,56	30	03:39	1-	5	A43
4	00:44	1-	5	A31,43	16	19:47	1-	5	A9,31,46,55,56	30	06:05	1	5	A52
4	01:43	1	5	A31,43,46,55,56	17	02:57	1-	5	A31	30	09:18	3+	5	A52
4	02:45	1	5	A43	17	14:17	2	5	A19,26,51,54	30	11:58	2+	5	A52
4	05:09	2	5	A31,43,52,55,56	17	17:46	1+	5	Al,9,19,26,31,37,40,46,50,51,54,55,56	30	13:47	1+	5	Al,19,26,31,51,52,54,56
4	07:00	2	5	A52	18	00:59	1-	5	A31,56	30	14:57	1	5	A9,19,26,54
4	08:29	1	5	A52	18	05:20	1-	5	A52	30	15:47	1-	5	A9,19,37,54
4	09:56	1	5	A52	18	06:44	1+	5	A52	30	17:04	1+	5	Al,19,31,37,46,54,55
4	10:27	1	5	A52	18	21:11	1-	5	A31,56	30	18:38	1+	5	Al,9,19,26,31,46,54,55,56
4	13:04	1	5	A52	18	11:16	3	5	A19,26,51	30	18:57	3	5	Al,9,19,26,31,37,46,51,54,55,56
4	14:00	1-	5	A31	19	13:16	3	5	A31,54	30	19:58	2	5	Al,9,19,26,31,37,46,51,54,55,56
4	17:08	1-	5	Al,31,46,55,56	20	15:57	1-	5	A31,55	30	23:44	1-	4	A43
4	18:04	1+	5	Al,31,37,46,55,56	20	16:44	1-	4	A31,55	30	23:58	1+	5	A43
4	21:27	1-	5	A31	20	18:54	1-	5	A26,31,46,51,54,55,56	31	01:12	2	5	A43
5	05:34	1	4	A55,56	20	21:58	1	5	A31,56	31	03:30	1-	5	A31,43,55
5	07:45	1-	5	A52	21	02:21	1-	5	A43,46	31	04:28	1+	5	A43
5	14:36	1-	4	A31	21	04:17	1-	5	A52	31	06:15	1	4	A43
5	15:50	1+	5	Al,9,19,31,37,46,50,51,55,56	21	04:38	1+	5	A31,43,52,56	31	07:48	2+	4	A52
5	18:37	1-	4	A31,55	21	04:50	1+	5	A52	31	08:44	2	4	A52
6	02:02	2	5	A31,46,55	21	05:34	1-	5	A43,52	31	09:57	3+	5	A52
6	08:32	3+	5	A31,52,56	21	06:35	2	5	A43,52	31	14:03	2+	5	Al,9,19,26,28,31,51,54,55,56
6	19:20	1-	5	A31	21	08:32	4	5	A31,52,55,56	31	17:56	1-	5	Al,19,26,28,31,46,54,55,56
7	14:08	1-	5	A19,55,56	21	15:00	1-	5	A19,26,50,51,54	31	18:17	3	5	Al,9,19,26,31,40,46,51,54,55,56
7	19:17	4	5	Al,9,19,26,28,31,37,40,46,50,51,55,56	21	17:07	1	5	Al,19,31,51,54,55,56	31	19:56	1-	5	Al,26,31,46,54,55,56
8	16:53	1	4	A31	21	17:18	1-	5	A19,31,46,55,56					
8	17:16	1-	5	A19,46	21	17:30	1+	5	Al,9,19,26,31,46,51,54,55,56					
8	20:32	1+	5	Al,9,19,26,31,37,46,50,51,55,56	21	20:31	1-	5	A19,26,31,46,55,56					
8	21:42	2	5	Al,9,19,26,28,31,37,40,46,50,51,55,56	21	21:30	1	5	Al,19,26,31,46,55,56					
9	04:25	1+	5	A31	22	14:46	1-	5	Al,19,26,31,37,50,51,54					
9	07:09	1	5	A52	22	15:02	1	5	Al,19,26,37,50,51,54					
9	15:08	1	5	Al,9,19,26,31,37,50,51	22	17:57	1-	5	A19,31					
9	17:50	1+	5	Al,9,19,26,31,46,51,55,56	23	17:57	1+	5	Al,9,19,28,31,46,50,51,54,55					
10	07:54	2+	5	A31,52,56	23	21:25	1	5	A19,31,55					
10	18:22	2	5	Al,9,19,26,31,37,46,50,51,55,56	23	20:37	1-	5	A31					
10	22:42	1-	4	A31	24	17:49	1-	4	A19,31,51,55,56					
11	01:51	2+	5	A31,37,43,46,55,56	25	05:29	1+	5	A52,55,56					
11	07:32	1	5	A52	25	05:57	1	4	A52					
11	07:53	1+	5	A31,43,52,55,56	25	07:35	3	5	A52					
11	14:40	1	5	Al,37,50	25	18:44	1	5	A31,55					
11	14:55	2+	5	Al,31,37,40,50,55,56	26	02:08	1	5	A43					
11	18:50	1	5	Al,31,46,55,56	26	03:45	2+	5	A43					
12	02:39	1	5	A46	26	04:22	1+	5	A43					
12	10:32	1-	5	A52	26	10:34	1	5	A52					
12	14:58	1-	5	A19,50	26	17:58	1-	5	Al,31,55,56					
12	20:10	1	5	A31,56	26	19:32	1-	5	A19,31,54,55					
12	21:15	3	5	Al,9,19,26,31,37,40,51,55,56	26	21:26	2	5	Al,9,19,26,31,54,55,56					
12	22:27	1-	5	Al,9,19,26,31,50,51,55,56	26	23:13	1-	4	A31					
12	22:30	1-	5	A31,51,55,56	26	23:28	1-	4	A31					
12	23:33	1-	5	A31,55	27	01:41	1-	4	A31,55					
13	00:45	2	5	A31,43,55	27	03:03	1-	5	A43					
13	03:00	1+	5	A31,46,52,55,56	27	04:27	4	5	A31,52,55,56					
13	17:30	1+	5	A31,43,52,55,56	27	05:56	2	5	A31,43,52,55,56					
13	08:10	3+	5	A31,43,52,55,56	27	07:50	2	4	A52					
13	12:15	2	5	Al,54	27	14:02	1-	5	A19,26,54					
13	13:48	3	5	Al,19,26,50,51,52,54	27	15:20	1	5	A9,19,54					
13	14:41	1	5	Al,19,26,37,40,50,51,54	27	17:03	1	5	A9,19,31,55					
13	19:41	1-	4	A31	27	18:35	2+	5	Al,9,19,28,31,46,51,54,55,56					
13	21:42	1+	5	Al,19,26,31,46,51,54,55,56	27	19:06	1-	5	A9,19,31,46,55,56					
14	00:55	1+	5	A31,43,46,55	27	20:11	1-	5	Al,9,19,26,31,46,55,56					
14	03:14	1+	5	A31	27	23:41	1	4	A31					
14	05:30	1+	5	A43,52,55	28	03:38	2	4	A43,52					
					28	09:15	1	5	A31,43,52,55					
					28	15:15	1+	5	Al,9,19,26,31,51,54,55,56					
					28	18:48	3+	5	Al,9,19,26,31,46,51,54,55,56					

August 1981		
RELATIVE SUNSPOT NUMBERS (R):		
AAVSO(a), INTERNATIONAL (I)		
Day	R _a (final)	R _I (prov)
1	131	121
2	120	105
3	134	112
4	123	109
5	119	113
6	114	102
7	120	107
8	134	115
9	138	121
10	144	138
11	134	136
12	134	140
13	151	134
14	140	140
15	149	153
16	119	134
17	125	125
18	152	148
19	185	175
20	208	188
21	235	222
22	229	220
23	217	200
24	224	178
25	203	189
26	241	215
27	248	222
28	222	214
29	219	194
30	258	233
31	213	201
Mean	170.4	158.2