

# Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS — SOLAR DIVISION

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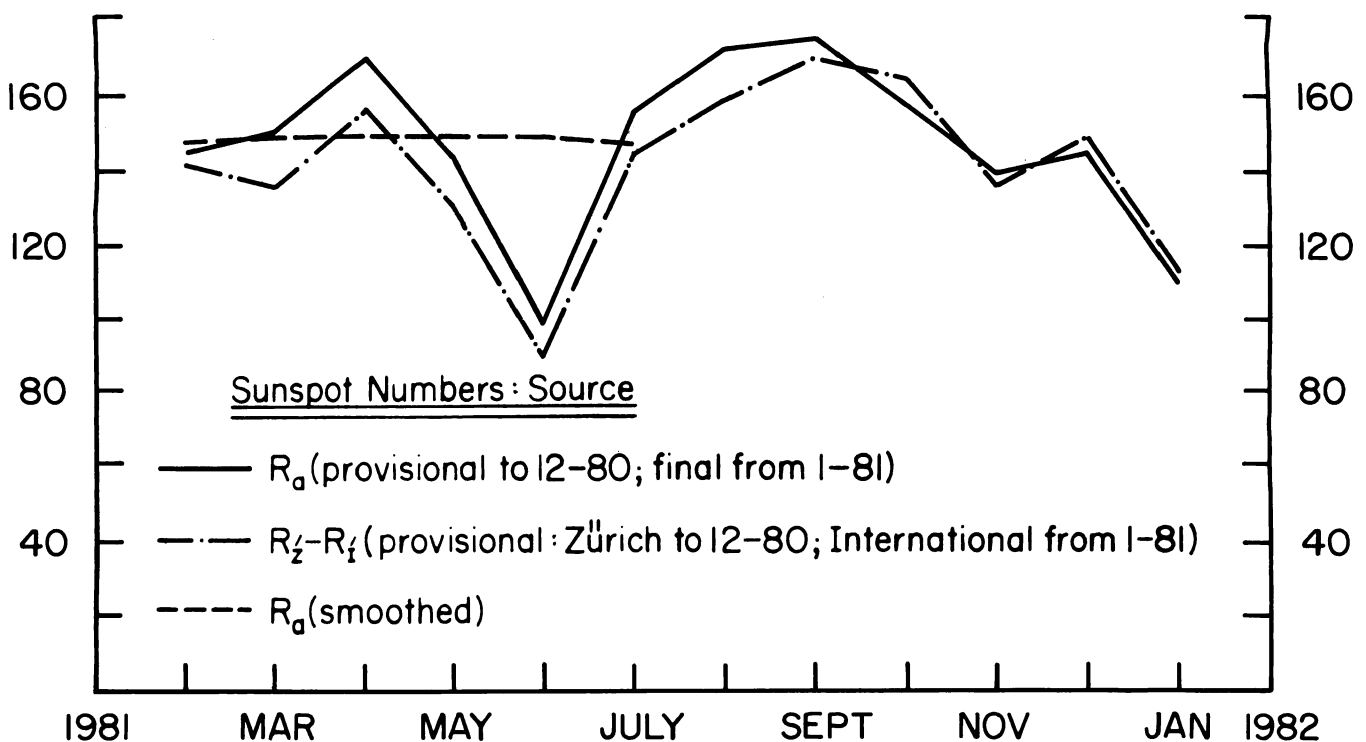
Number 1

January 1982

## SOLAR ACTIVITY DURING JANUARY 1982

Sunspot data are given in the graph at the bottom of this page and the table of sunspot numbers ( $R_a$  and  $R_I$ ) on page 2. Sunspot activity plummeted during January, with the monthly mean for AAVSO sunspot numbers falling from 145.0 in December to 110.4 in January. The smoothed mean continued its decrease, falling from 147.4 for June 1981 to 146.3 for July 1981. Daily sunspot numbers varied from a high of 256 on the 31st to a low of 45 on the 11th (the lowest daily number for nearly three years). The "longitudinal hemisphere" of active regions, which has been influencing the variability of daily numbers during the past three months, fell quiet. On the 6th, its expected central meridian date, there were only one group of 20+ spots and 6 other small groups visible, and the low for the month was reached on the 11th as this larger group rotated off the disc. Activity remained fairly low from the 11th to the 24th, then increased rapidly. By the 31st, 17 groups were visible, 2 with 50+ spots.

Observers in the AAVSO Indirect Solar Flare Patrol detected 106 Sudden Enhancements of VLF Signals (SESs) during January, as listed on page 2. SESs were concentrated in the last third of the month, with most on the 29th (12), 30th (10), and 31st (9), and least in the period of the 11th through the 14th. Only 4 events of Importance 3 were recorded, and none of Importance 4. Records are reproduced on page 2 with the "same" SES on two very different and long paths, Japan to Montana (17.4 kHz, A55), and Nova Scotia to Montana (73.6 kHz, A56). Note: in the December Solar Bulletin "inference-wave sequence" should read "interference-wave sequence."



SUDDEN IONOSPHERIC DISTURBANCES (SESS) RECORDED DURING JANUARY 1982

Records were received from A1, 19, 26, 28, 31, 37, 43, 46, 48, 50, 51, 52, 54, 55, 56, 57

Day	Max	Imp	Def	Observers	Day	Max	Imp	Def	Observers
1	01:02	1+	5	A31,43,55,56	23	18:23	1+	5	A1,19,26,31,48,50,51,55,56
1	21:23	2+	5	A31,37,46,50,55,56	24	00:49	1	5	A43
1	22:15	1	5	A31,37,46,50,55,56	24	02:01	1	5	A43,52,56
2	00:59	1+	5	A31,43,55,56	24	15:00	2	4	A1,48
2	06:19	2	5	A31,55,56	24	20:03	3+	5	A1,19,26,31,48,50,51,54,55,56
2	18:15	1-	4	A43,55,56	25	16:00	1-	5	A1,26
2	22:17	1-	5	A31,37,43,46,50,55,56	25	20:56	1-	5	A1,31,48,50,55,56
3	00:27	2+	5	A31,43,46,55,56	25	21:45	1-	4	A56
3	06:29	1-	4	A55	26	08:05	1-	5	A52
3	07:52	1-	4	A55	26	23:15	1-	5	A56
3	14:08	2	5	A1,48	27	05:27	1	5	A43,52
3	16:43	1	5	A31	27	17:50	1	5	A19,31
3	18:08	1-	4	A31,56	27	21:17	1	5	A1,19,31,48,54,55,56
3	20:08	1	5	A1,31,46	27	22:11	1-	5	A31,55,56
5	04:15	1-	5	A31,56	27	22:58	1	5	A31,43,50,55,56
6	06:06	1-	5	A31	28	05:39	1	5	A43,52
6	15:07	1-	4	A26	28	06:48	1+	5	A31,43,52,56
6	19:55	1+	5	A19,31,51,56	28	07:24	3	5	A43,52,55
7	02:45	1-	5	A43	28	15:26	1-	5	A1,26,48,51
7	17:03	1-	5	A26,28,31,48,50,51,55,56	28	18:57	1-	5	A1,26,31,48,56
7	18:32	1-	4	A1,31,56	28	19:44	1-	5	A31
7	19:44	1+	5	A1,19,26,28,31,48,51,54,55,56	29	02:37	2	5	A31,43
7	22:18	1-	4	A56	29	05:47	1-	5	A43,52
8	02:14	1	5	A43,56	29	06:22	1-	5	A43
8	04:45	2	4	A56	29	08:03	1-	5	A31,43,52
8	14:33	2+	5	A1,19,26,28,48,50,51,54	29	08:56	1-	5	A43
9	05:36	1	5	A43	29	10:22	1	5	A52
9	07:08	1-	5	A43	29	10:51	1-	5	A52
9	07:45	2	5	A43,55,56	29	16:34	1-	5	A1,19,31,50,55,56
9	08:31	1	5	A31,56	29	17:48	2	5	A1,19,31,55,56
9	14:14	1-	5	A1,54	29	18:01	1-	5	A1,19,31,55,56
9	17:37	1-	5	A1,26,50,51	29	19:17	2	4	A31,56
10	02:30	1	4	A55,56	29	21:55	1	5	A31,50,51
10	04:45	1	5	A43,52,55,56	30	00:35	1	5	A31,43,55
10	20:14	1	5	A1,31,37,55,56	30	00:49	2	5	A31,43,55
10	20:43	1+	5	A1,19,31,51,55,56	30	02:52	1-	5	A31,43
13	01:44	1+	5	A31,43,55,56	30	04:47	1	5	A31,43,52
15	14:52	1	5	A1,28,48	30	07:31	2	5	A43,52
15	18:35	1	5	A1,31,37,50,55,56	30	17:18	1-	5	A1,19,26,31,48,51,55
16	05:03	1-	5	A43,52	30	18:05	2+	5	A1,19,26,31,48,50,51,55,56
16	16:48	1-	5	A1,31,48,50	30	18:36	1+	5	A1,19,26,31,48,50,51,55
16	20:30	1-	5	A31,37,50,51	30	20:13	1-	4	A31
17	23:15	1	5	A31,56	30	23:56	3+	5	A31,43,50,55,56
18	14:36	1-	5	A26,28,48,51	31	05:26	1+	5	A31,55,56
19	15:34	1+	5	A1,26,28,51	31	06:33	1+	5	A43,52
19	16:58	1-	5	A1,26,31,55	31	07:08	1-	5	A43,52
19	19:54	1-	5	A1,31,50,55	31	13:31	1	5	A1,19,26,28,51,52
19	20:37	1+	5	A19,26,31,50,51,55,56	31	18:16	1	4	A31
19	22:01	1+	5	A31,37,50,55,56	31	18:43	2	5	A1,19,26,28,31,48,50,51,54,55,56
20	03:29	1	5	A31,43,52,55,56	31	19:58	1-	4	A31
20	06:00	1-	5	A43,52	31	20:30	1-	4	A31
22	04:54	2	5	A31,43,52,55,56	31	22:23	3+	5	A31,50,54,55,56
22	17:15	1	5	A1,26,28,48,50,51					
23	05:11	1-	5	A43,52					

January 1982  
RELATIVE SUNSPOT NUMBERS (R):  
AAVSO (a), INTERNATIONAL (I)

Day	R <sub>a</sub>	R <sub>I</sub>
1	94	92
2	95	94
3	118	112
4	107	109
5	85	99
6	84	86
7	91	94
8	92	97
9	95	98
10	76	85
11	45	46
12	51	52
13	55	51
14	57	58
15	76	81
16	80	76
17	114	111
18	132	139
19	129	143
20	134	134
21	133	134
22	124	121
23	89	93
24	63	70
25	87	82
26	107	119
27	125	125
28	171	168
29	215	216
30	242	211
31	256	237
Mean	110.4	110.7

