

# Solar Bulletin

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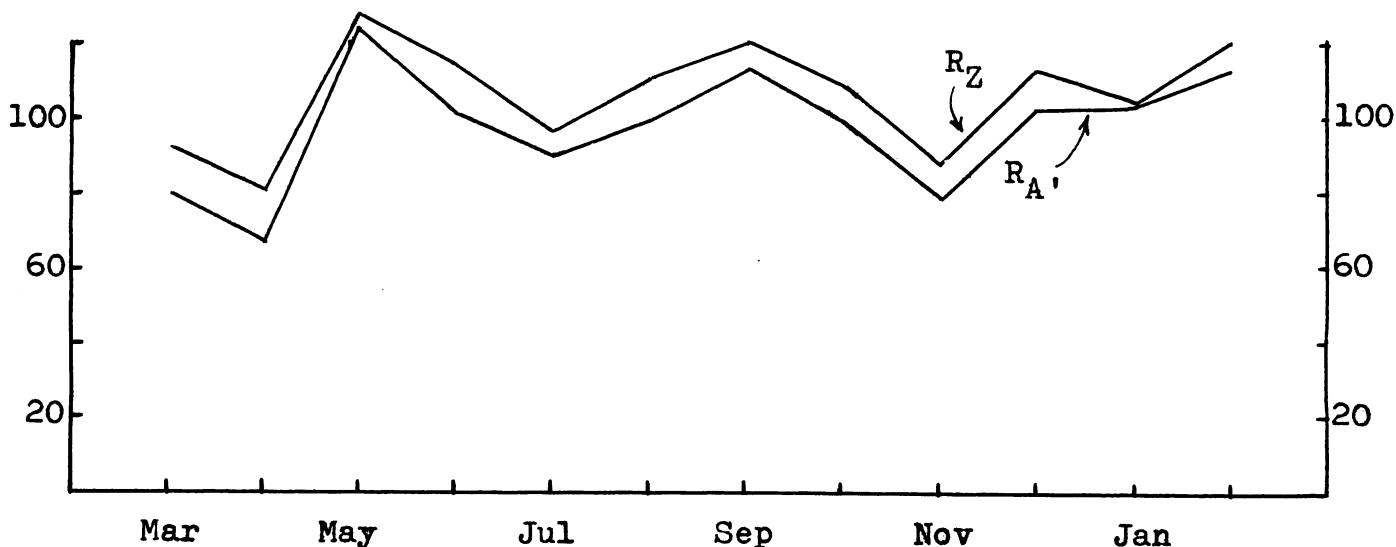
## SOLAR ACTIVITY DURING FEBRUARY

Ionospheric disturbances during February occurred mostly during the last week. Several of these were of above average intensity. Page two shows recordings of a very strong disturbance that started at 1400 UT on the 27th. The bottom left chart shows an atmospheric noise recording where the event is shown as an SEA. Immediately above is a recording of the signal strength of very-low-frequency station NPM in Hawaii made by observer A-21 at Littleton, Colorado. It shows an unusual interruption of the regular diurnal sunrise pattern at the time of the disturbance. A normal sunrise pattern is shown at the bottom left for the following day. The pattern interruption is unusual in that it shows a sudden decrease in signal strength unlike the normal enhancement that would take place following the sunrise pattern.

Sunspot activity was up somewhat from the previous month with the mean of the American sunspot numbers at 113.3 compared to 103.5 last month. The peak of sunspot activity also occurred during the last week when most observers saw ten or more groups.

An interesting low-latitude sunspot group formed barely north of the sun's equator on 1 February. By the time it reached full development, it straddled the equator but magnetic polarities confirmed that it was truly a northern group. The equator also passed through the large southern spotted visible the last few days of February. This was a grouping puzzle with most sunspot observers calling it three separate groups.

## RECENT TREND OF RELATIVE SUNSPOT NUMBERS



AMERICAN ( $R_A$ ) AND ZURICH ( $R_Z$ ) RELATIVE SUNSPOT NUMBERS, FEBRUARY 1969

day	$R_A$	$R_Z$	day	$R_A$	$R_Z$
1	88	92	16	75	87
2	98	96	17	96	104
3	87	98	18	96	101
4	91	86	19	124	126
5	104	94	20	148	142
6	110	101	21	171	169
7	128	122	22	171	213
8	104	101	23	191	208
9	96	108	24	175	201
10	89	85	25	179	198
11	72	74	26	166	196
12	39	64	27	158	182
13	50	55	28	161	159
14	47	54			
15	59	70			

February mean  $R_A$  = 113.3

February mean  $R_Z$  = 120.9

SUDDEN IONOSPHERIC DISTURBANCES RECORDED DURING FEBRUARY 1969

DAY	MAX.	SEA	SES	DEF.	OBSERVERS	DAY	MAX.	SEA	SES	DEF.	OBSERVERS
1	2142	3	2+	5	A-22,20,1	25	1708	3	1	5	A-19,1,20,22
8	1758		1	2	A-1	25	1952	3+	3+	5	A-19,6,1,20,22
20	0618	1		3	A-17	27	1255		2+	5	A-1
22	1929	2	1+	5	A-19,21,22	27	1403	3+	3+	5	A-19,1,20,4
24	1512	1+		3	A-19,22	28	1956	3	3	4	A-19,20

