

# Solar Bulletin

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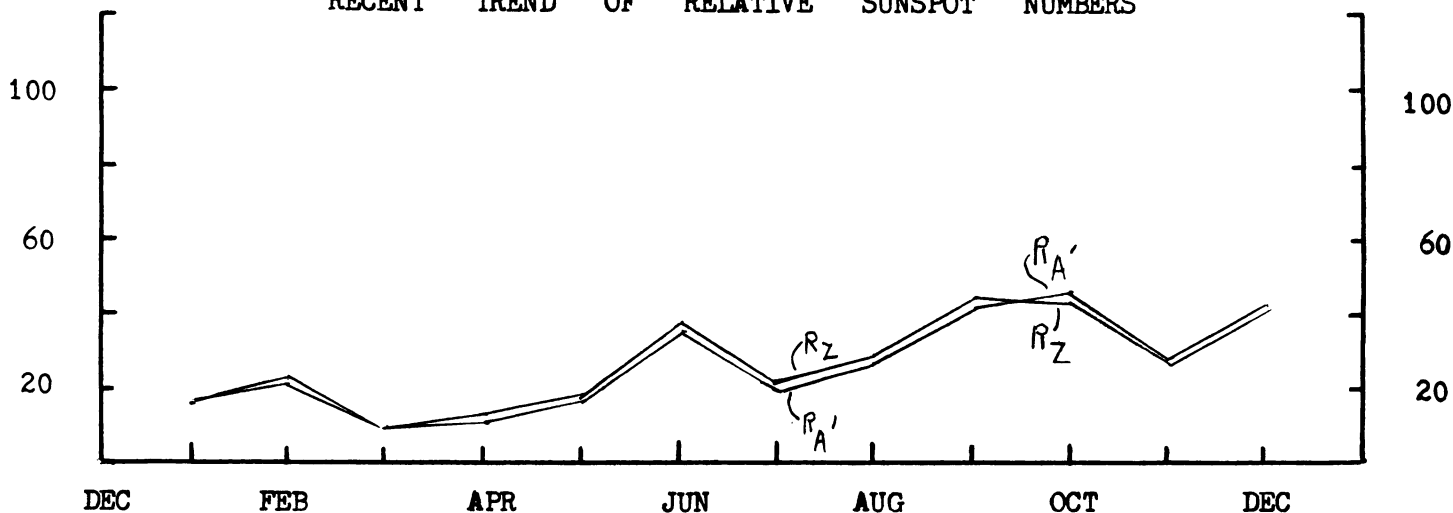
DECEMBER 1977

## SUNSPOT ACTIVITY FOR DECEMBER

The level of sunspot activity increased during December. The Mean of the American Sunspot numbers rose to 42.8 from 28.4 in November. A large bipolar sunspot group which reached the central meridian on the sixth of December was visible to the unaided eye on the third and the fourth.

Twenty-four ionospheric disturbances were recorded by eleven A.A.V.S.O. observers during December. Several chart recordings are reproduced on page-two showing events that occurred on the sixth, seventh, and twenty-sixth.

RECENT TREND OF RELATIVE SUNSPOT NUMBERS



(R<sub>Z</sub>) RELATIVE SUNSPOT NUMBERS

FOR DECEMBER 1977

DAY	R <sub>A1</sub>	R <sub>Z</sub>
1	18	20
2	21	15
3	29	31
4	46	47
5	56	62
6	55	58
7	57	55
8	45	36
9	58	55
10	83	75
11	73	71
12	65	53
13	50	34
14	39	32
15	38	44
16	33	46
17	22	26
18	34	28
19	40	39
20	18	23
21	22	23
22	21	17
23	20	23
24	31	25
25	32	30
26	43	36
27	49	50
28	41	38
29	62	58
30	58	70
31	69	61
M	42.8	41.3

Day	Max.	SEA	SES	Def.	Observers	Day	Max.	SEA	SES	Def.	Observers
6	16:01		1	5	A1,19,28,44	12	02:36	1	2	5	A31,43
6	19:40		1+	5	A19,28,30,31,37,40	12	05:20	1		5	A43
7	15:43		1+	5	A1,19,30,34,44	13	00:42		1-	4	A31
7	15:53		1+	5	A1,19,28,31,34,44	13	16:35		1	5	A1,31,44
7	17:57			5	A1,19,30,31,34,37,44	24	20:22		1-	5	A1,28,31,34
7	20:00	1	1	5	A1,28,30,31,34,37,44	26	02:09		2	5	A31
10	03:20		2+	5	A31	26	19:05		1+	5	A1,31,44
10	17:11		1-	5	A1,44	26	23:35		2	5	A31
11	00:43		1	5	A31	28	21:55		1	5	A30,31
11	22:05	1+	1+	5	A30,31,37,40,43	29	00:54		1+	5	A31
						29	09:10		1	5	A31
						30	04:14		1+	5	A31
						31	19:29		1	5	A1,31
						31	23:39		1+	5	A31

Charts from the following observers were received and analyzed:

A-1, 19, 26, 28, 30, 31, 34, 37, 40, 43, 44

