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EDITOR: C. H. HOSSFELD

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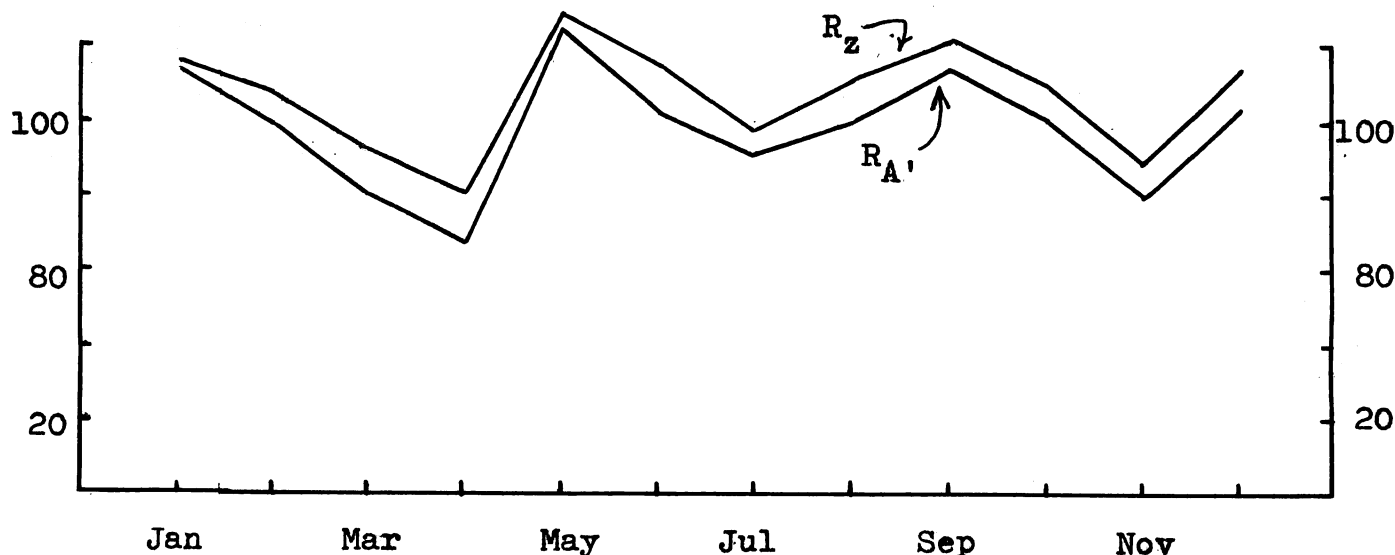
December 1968

SUNSPOT ACTIVITY DURING DECEMBER

Solar activity reached a high level during December, considerably above the level of November. A total of thirteen separate ionospheric disturbances were recorded by Solar Division observers. These events are listed on page two along with the date, the time they reached maximum, type of observation (SEA or SES), the definiteness on a scale of 0 to 5 and the designation numbers of observers who recorded them. The most intense disturbance occurred on the 26th at 2026 UT. This event was widely observed and was the most intense event of recent months. A recording which also shows a lesser event at 1839 UT is reproduced on page two. This was made by Val Isham, A-4, of Columbus, Ohio who recently resumed SEA observations after a long period of inactivity.

Sunspot activity was also up considerably from the previous month. The monthly mean of the American sunspot numbers rose to 102.4 from November's 79.0. Sunspot numbers rose to their highest level on the 26th and 27th at the time of the meridian passage of a great beta-gamma type sunspot group. The leading penumbra of this group contained umbra of mixed magnetic polarity separated by very high magnetic gradients measured in thousands of Gauss. As it rotated toward the west limb it showed remarkable growth in longitude and by west limb passage the group's length exceeded 20 degrees.

RECENT TREND OF RELATIVE SUNSPOT NUMBERS



AMERICAN (R_A) AND ZURICH (R_Z) RELATIVE SUNSPOT NUMBERS, DECEMBER 1968

| day | R _A | R _Z | day | R _A | R _Z |
|-----|----------------|----------------|-----|----------------|----------------|
| 1 | 74 | 113 | 16 | 67 | 64 |
| 2 | 89 | 115 | 17 | 84 | 77 |
| 3 | 96 | 122 | 18 | 87 | 98 |
| 4 | 105 | 128 | 19 | 101 | 101 |
| 5 | 101 | 134 | 20 | 89 | 106 |
| 6 | 90 | 133 | 21 | 102 | 101 |
| 7 | 113 | 126 | 22 | 104 | 119 |
| 8 | 97 | 132 | 23 | 92 | 122 |
| 9 | 124 | 140 | 24 | 100 | 125 |
| 10 | 123 | 110 | 25 | 141 | 132 |
| 11 | 77 | 83 | 26 | 185 | 140 |
| 12 | 73 | 58 | 27 | 183 | 154 |
| 13 | 65 | 84 | 28 | 159 | 133 |
| 14 | 56 | 86 | 29 | 136 | 139 |
| 15 | 67 | 88 | 30 | 102 | 117 |
| | | | 31 | 91 | 119 |

December mean = 102.4

December mean R_Z = 112.9

SUDDEN IONOSPHERIC DISTURBANCES RECORDED DURING DECEMBER

| DAY | MAX. | SEA | SES | DEF. | OBSERVERS | DAY | MAX. | SEA | SES | DEF. | OBSERVERS |
|-----|------|-----|-----|------|-------------|-----|------|-----|-----|------|-----------------|
| 2 | 1732 | 1 | | 2 | A-8 | 25 | 0635 | 1+ | | 5 | A-17 |
| 4 | 1547 | 1- | | 1 | A-8 | 25 | 1945 | 2 | 2 | 5 | A-8,22,20,19 |
| 8 | 1528 | 1+ | 1 | 5 | A-8,1,19 | 26 | 1839 | 2- | 2 | 5 | A-8,1,22,4,19 |
| 12 | 1506 | 1+ | 1- | 5 | A-20,1,19 | 26 | 2026 | 3+ | 2+ | 5 | A-4,8,1,22,19,6 |
| 17 | 1907 | 1- | | 2 | A-8 | 28 | 0528 | 1 | | 3 | A-17 |
| 20 | 1951 | 2+ | 2 | 5 | A-8,22,19,1 | 29 | 1931 | 2+ | 3+ | 5 | A-1,20,22,8 |
| 21 | 1405 | 2+ | 1+ | 5 | A-22,8,20,1 | | | | | | |

