

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS — SOLAR DIVISION
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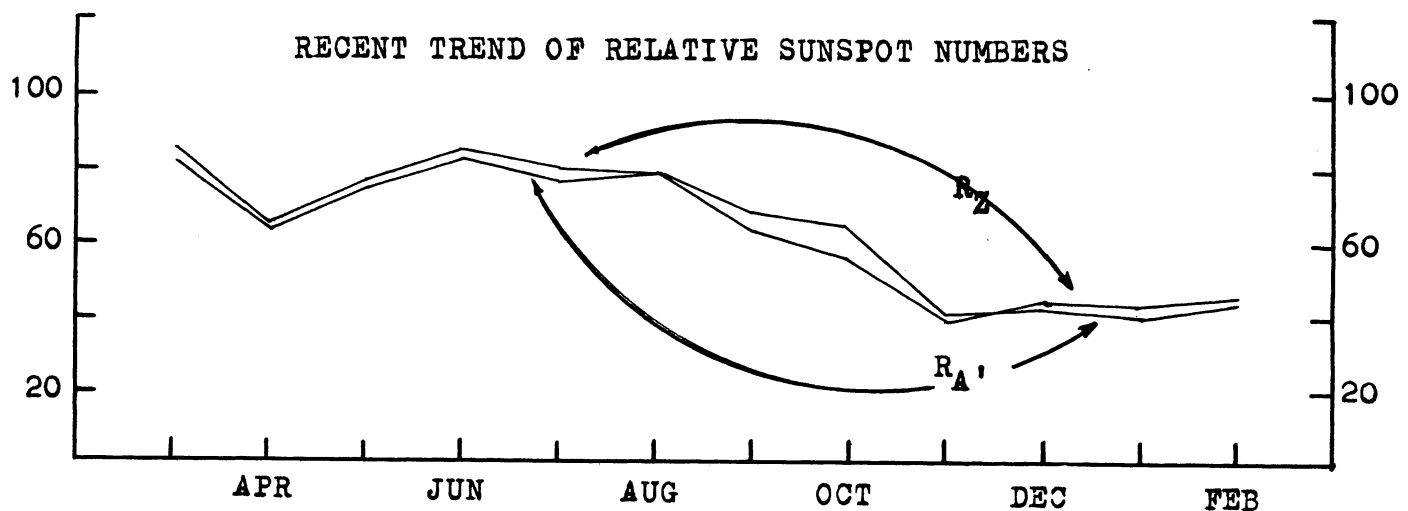
February 1973

Sixteen ionospheric disturbances were recorded by the Solar Division's observers during February. Approximately half of the events were classified as 1- or rather minor events.

Typical events, both small and large, are reproduced on page two. The charts were selected to illustrate the quality of traces that can be produced when the receiving equipment is well adjusted and free from local interference. The characteristics illustrate the typical fast "rise" time followed by a "concave" decay line that fits the ideal model to be expected when a solar flare emits a sudden burst of energy and then gradually dissipates. Not all solar flares emit energy in the "typical" way. Some begin with small bursts of energy that tend to give a slow "rise" time and some continue to give bursts of energy that give two or more peaks that modify the typical decay curve. The smaller event was recorded on the 23rd by observer A33, Glen Ellyn, Illinois. The fine details of the trace are illustrated by the break in the recorded trace from about 1631 to about 1633 when the amplitude drops to zero, showing that the radio station was off the air for about $1\frac{1}{2}$ to 2 minutes. The large event of the 28th was recorded by A37, Yakima, Washington. This was the largest and most widely recorded event of the month.

The mean of the American sunspot numbers rose very slightly to 40.5. The peak of sunspot activity occurred at the middle of the month on the 14th with numbers in the 80s. There were no spotless periods during February although there were periods when only small groups were present.

With the diminished activity most observers experienced little difficulty in dividing the spottedness into sunspot groups. What appeared to be two separate groups near the northeast limb on the 23rd was obviously a single group after it rotated further around into better view.



AMERICAN (R_A) AND ZURICH (R_Z) RELATIVE SUNSPOT NUMBERS, FEBRUARY 1973

| DAY | R_A | R_Z | | DAY | R_A | R_Z |
|-----|-------|-------|---------------|-----|-------|-------|
| 1 | 10 | 7 | | 16 | 50 | 54 |
| 2 | 16 | 17 | | 17 | 23 | 36 |
| 3 | 17 | 22 | | 18 | 23 | 28 |
| 4 | 16 | 21 | | 19 | 20 | 18 |
| 5 | 32 | 41 | | 20 | 29 | 30 |
| 6 | 31 | 32 | Monthly Means | 21 | 33 | 31 |
| 7 | 33 | 34 | | 22 | 32 | 25 |
| 8 | 44 | 53 | $R_A = 40.5$ | 23 | 42 | 33 |
| 9 | 50 | 60 | | 24 | 48 | 38 |
| 10 | 59 | 61 | $R_Z = 42.1$ | 25 | 39 | 48 |
| 11 | 47 | 59 | | 26 | 34 | 37 |
| 12 | 80 | 80 | | 27 | 34 | 36 |
| 13 | 85 | 83 | | 28 | 44 | 36 |
| 14 | 89 | 85 | | | | |
| 15 | 74 | 74 | | | | |

SUDDEN IONOSPHERIC DISTURBANCES RECORDED DURING FEBRUARY 1973

| DAY | MAX | SEA | SES | DEF | OBSERVERS | DAY | MAX | SEA | SES | DEF | OBSERVERS |
|-----|------|-----|-----|-----|---------------------------------|-----|------|-----|-----|-----|------------------------------------|
| 3 | 1807 | 1- | 1- | 5 | A19,26,33,36,38 | 22 | 1652 | 1 | 1 | 5 | A1,19,21,26,28,31,33,36,38 |
| 14 | 1659 | 1- | 1- | 5 | A1,8,21,31,33,36,37 | 22 | 1910 | 1- | 1 | 4 | A8,19,21,26,31,33,34,36,38 |
| 14 | 1909 | 1- | 1 | 5 | A1,8,19,21,30,31,33,36,37,38 | 22 | 2325 | | 1- | 3 | A31 |
| 14 | 2057 | 1- | 1 | 5 | A1,8,19,21,26,28,30,31,36,37,38 | 22 | 2351 | | 1 | 4 | A31 |
| 14 | 2311 | | 1- | 5 | A1,30,31,33,37 | 23 | 1737 | 1- | 1- | 5 | A8,19,21,26,30,31,33,34,36,38 |
| 16 | 1908 | 1 | 1+ | 5 | A1,19,21,26,30,31,33,36,38 | 28 | 2312 | | 1- | 5 | A30,31,33 |
| 22 | 0145 | | 2- | 4 | A31 | 28 | 1737 | 1- | 1- | 5 | A26,30,31 |
| 22 | 0807 | | 2- | 4 | A17,31 | 28 | 2206 | 2 | 2 | 5 | A1,8,19,21,23,26,30,31,33,34,37,38 |

Event reported by letter from Dr. Barocas, Preston, U.K. on 22nd at 1300 UT

