

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS — SOLAR DIVISION
 540 NORTH CENTRAL AVENUE
 RAMSEY, NEW JERSEY, U.S.A.



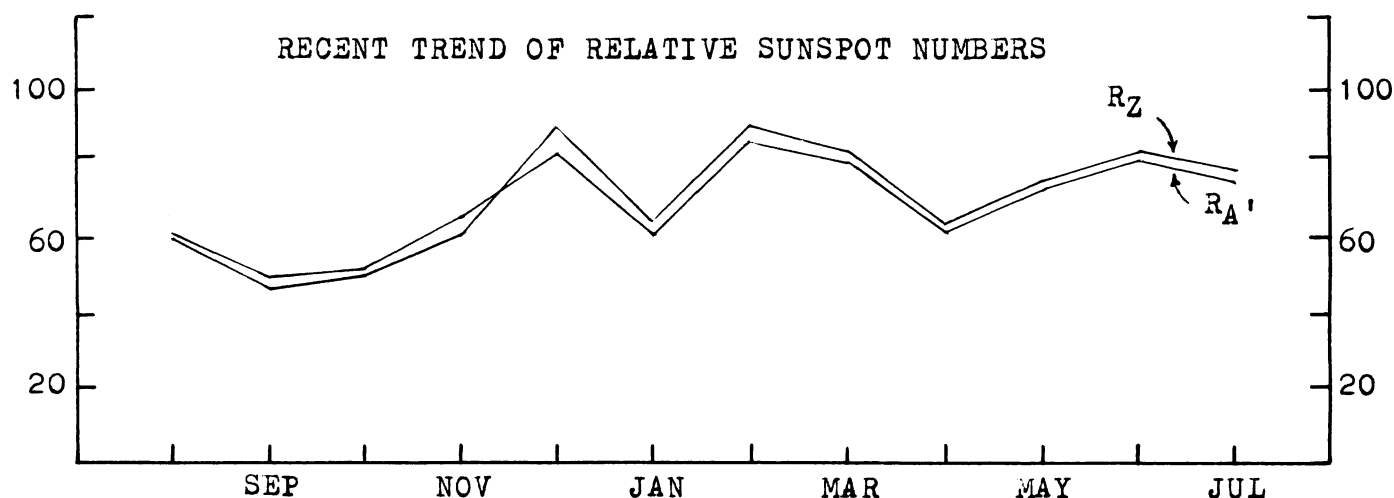
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Twelve ionospheric disturbances were recorded by the Division's Solar observers. This is a significant reduction in ionospheric events both in number and importance or size as compared to last month. This reduction in activity was not reflected in the mean of the American sunspot numbers which fell only slightly to 74.5. On page two, is reproduced a recording made by one of our newer observers, A35, Mr. Chris Faust, of Brooklyn Park, Minnesota, who was using the short path of about 500 km or 310 miles, SES (Sudden Enhancement of Signal) method.

The solar eclipse on 10 July produced definite ionospheric effects for two short path signals using SES. Minor indications showed on a few other SES recordings but none were noted on SEA recordings. The two charts showing definite effects are reproduced on page two. NAA, Cutler, Maine at 17.8 kHz was the signal source for both recordings. The rather strong response in signal amplitude was probably due to the signal path to both observers being in the path of minimum light, since the maximum coverage of the sun by the moon occurred at all three points at about the same time. The fact that the time line path of maximum darkness travels more or less perpendicular to the path of totality, rather than being parallel or along the path of totality during an eclipse is an important point when computing paths of maximum darkness for any particular signal path from the radio station used as a signal source to the observer.

During the eclipse, there was an increase in signal amplitude at Scituate, Massachusetts which normally has a very low night time amplitude. There was a decrease in amplitude at Valley Cottage, New York which has a very high night time amplitude. The observed data that the two recordings reacted opposite in amplitude to the eclipse and that neither seemed to tend to return to their respective normal night time amplitude with the decreased sunlight during the eclipse, presents some information that could be of interest to those studying wave propagation in the ionosphere.



AMERICAN (R_A) AND ZURICH (R_Z) RELATIVE SUNSPOT NUMBERS, JULY 1972

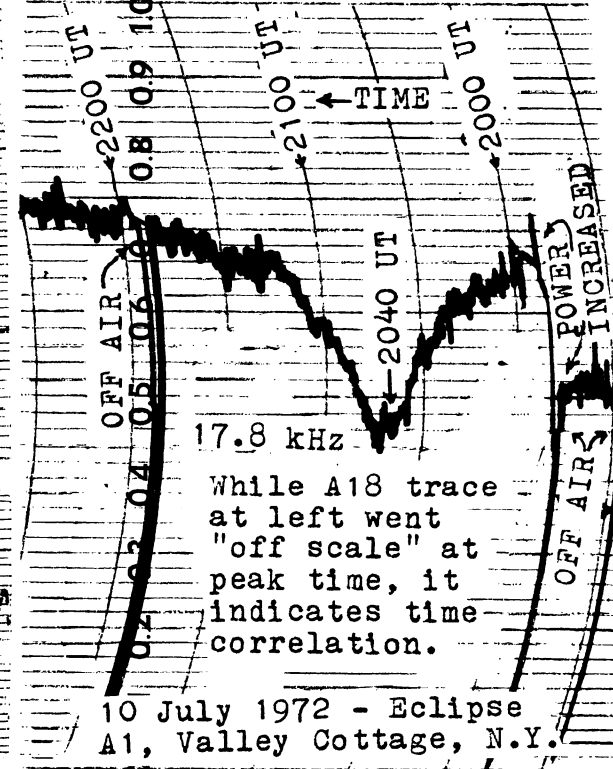
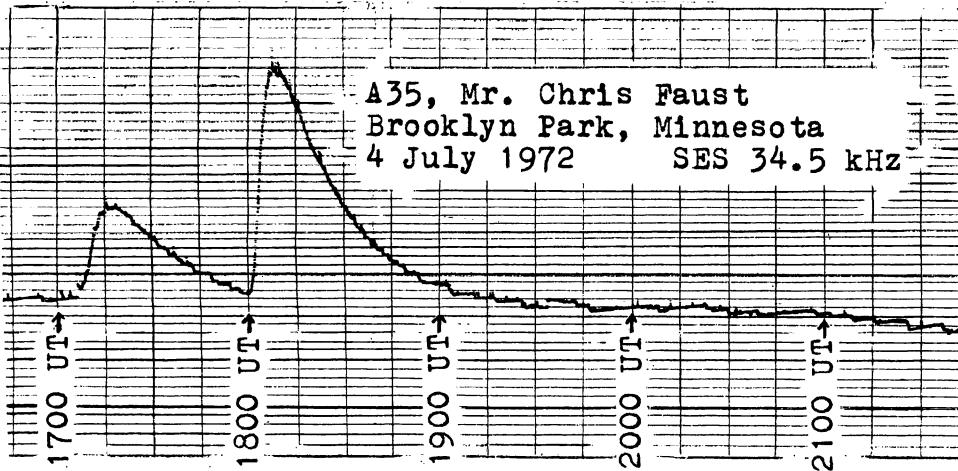
DAY	R _A '	R _Z	DAY	R _A '	R _Z
1	69	68	16	44	60
2	73	74	17	53	59
3	91	85	18	57	55
4	94	91	19	72	73
5	81	104	20	59	59
6	103	92	21	66	70
7	86	97	22	62	72
8	87	86	23	53	68
9	68	75	24	42	64
10	65	64	25	67	62
11	61	62	26	92	83
12	78	77	27	84	82
13	87	89	28	88	86
14	72	86	29	93	106
15	41	61	30	103	112
			31	117	115

Monthly Means
 R_A' = 74.5
 R_Z = 78.6

SUDDEN IONOSPHERIC DISTURBANCES RECORDED DURING JULY 1972

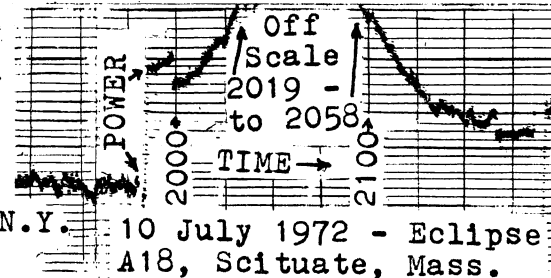
DAY	MAX	SEA	SES	DEF	OBSERVERS	DAY	MAX	SEA	SES	DEF	OBSERVERS
3	1750		1-	5	A19,21,30,31,33	15	0301		1	3	A31
4	1718	1	1	5	A1,19,21,26,30,31,33,35,*	21	2110		1	5	A19,21,30,31,33
4	1808	1+	2-	5	A1,19,21,26,30,31,33,35,*	23	1702	1-	1-	5	A1,19,21,26,30,31,33
11	1426		1-	5	A1,19,21,33	28	1329		1-	5	A1,19,21,33,*
13	1615		1-	5	A1,30,31	29	1848		1-	5	A1,18,19,21,30,31,33
14	2020	2-	2-	5	A1,18,19,21,30,31,33	30	1610		1-	5	A1,19,21,30,31,33

*In addition to events above reported by letter by Dr. V. Barocas, Preston, U.K. (England) were: 7th at 1125; 19th at 0905; and 31th at 1117.



LATITUDE & LONGITUDE COORDINATES

- NAA, Cutler, Maine
44°39'N, 67°17'W
- A18, Scituate, Mass.
42°13'N, 70°43½'W
- A1, Valley Cottage, N.Y.
41°7½'N, 73°55½'W



LOCATION STATION & OBSERVER	MAX. COVERAGE OF SUN	GREAT CIRCLE DISTANCE TO NAA	ECLIPSE AMPLITUDE	NIGHT AMPLITUDE
NAA, Cutler Maine	2039 UT	-	-	-
A18, Scituate, Mass.	2041 UT	390 km	Increased	Very Low
A1, Valley Cottage, N.Y.	2042 UT	665 km	Decreased	Very High