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SOLAR ACTIVITY DURING OCTOBER

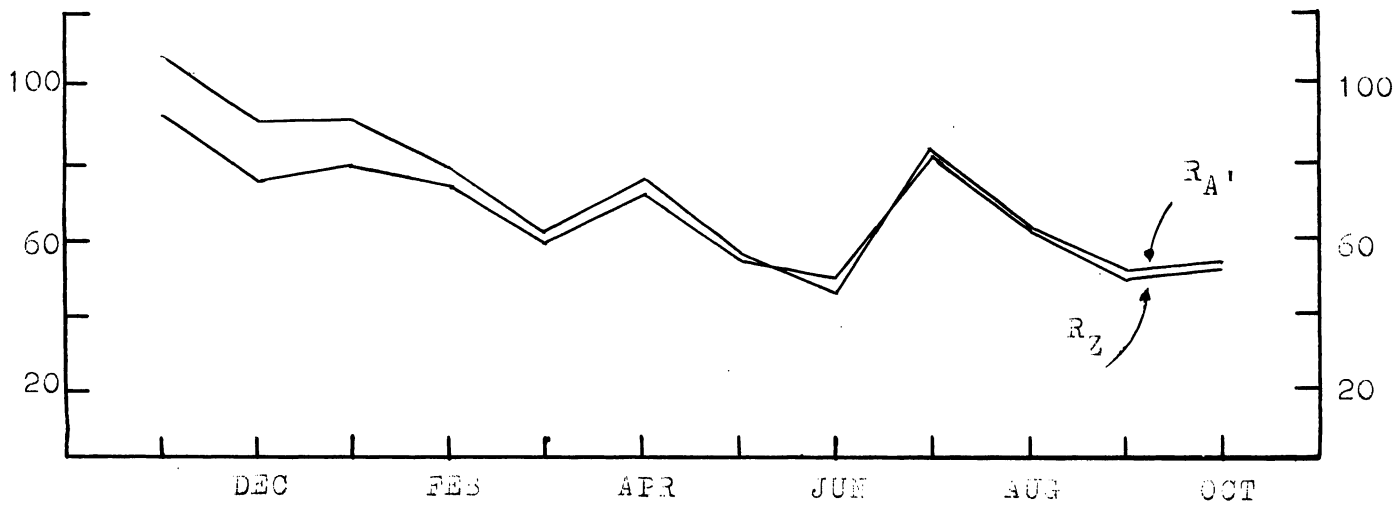
Eleven ionospheric disturbances were recorded by the Solar Division observers. Of the eleven, only the events on the 3rd and 19th were considered major.

The two major events did appear to be larger than any of the events recorded for several months. A reproduction of the event of the 19th as recorded by SEA (Sudden Enhancement of Atmospherics) by A17, Durban, South Africa is shown on page two.

Several observers noted a general change in ionospheric response in recordings made by the SES (Sudden Enhancement of Signal) method when used with short signal paths, during the last eleven days of the month. A review of a few of the recordings made in the previous year, indicates a similar response started about the same time of the year in 1970. This correlation suggests seasonal change, however, other variations such as: PCA (Polar Cap Absorption); Geomagnetic disturbances; Magnetosphere changes; etc., are possible contributors that require more study before a more firm conclusion can be reached. This phenomenon possibly can be used as an aid toward improvement of the techniques of recording SID (Sudden Ionospheric Disturbances), when it is better understood.

While the mean of the American sunspot numbers rose to 52.3 from a monthly mean of 50.3 for last month, this is a very slight increase that tends to confirm that the general overall solar activity is on the decline as the end of cycle 20 and the solar minimum is approaching.

RECENT TREND OF RELATIVE SUNSPOT NUMBERS



AMERICAN (R_A') AND ZURICH (R_Z) RELATIVE SUNSPOT NUMBERS, OCTOBER 1971

DAY	R_A'	R_Z	DAY	R_A'	R_Z
1	61	74	16	23	24
2	63	58	17	37	24
3	50	48	18	44	39
4	40	33	19	56	40
5	49	53	20	73	64
6	45	40	21	70	73
7	30	43	22	66	72
8	45	45	23	72	78
9	36	38	24	74	77
10	34	40	25	83	87
11	35	23	26	86	80
12	34	39	27	85	79
13	35	32	28	73	63
14	25	25	29	63	57
15	16	17	30	55	50
			31	62	59

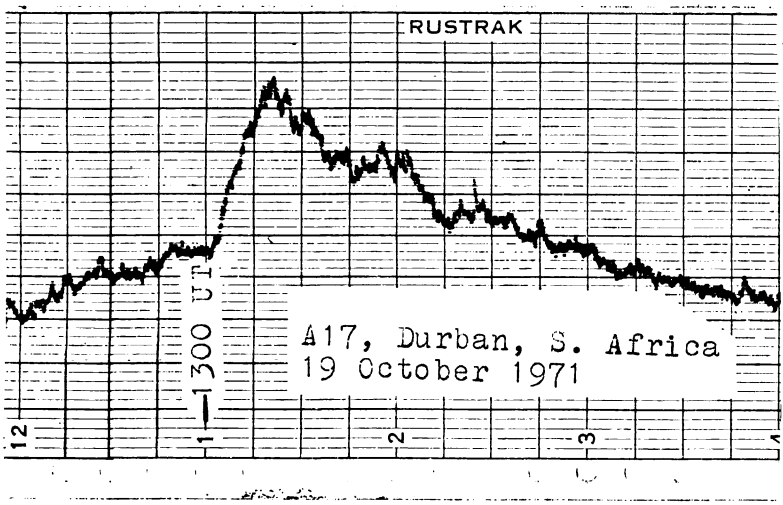
Monthly Means

R_A' = 52.3

R_Z = 50.8

SUDDEN IONOSPHERIC DISTURBANCES RECORDED DURING OCTOBER 1971

DAY	MAX	SEA	SES	DEF	OBSERVERS
3	1355	2+	2+	5	A1,19,26,27,31
10	0041		1-	4	A21,30,31
11	1451	1-	1-	4	A1,17,19,23,27
16	1811		1-	4	A1,21,30,31
17	1820		1-	5	A1,19,30,31
19	1321	2+	2	5	A1,17,19,27,31
19	2011		1-	5	A1,21,30,31
27	1720		1-	4	A1,19,31
28	2134		1-	4	A19,21,31
30	1514	1-	1-	5	A1,19,21,27,31
30	1916	1-	1-	5	A1,19,21,23,27, 30,31



To the left is a SEA recording of the major event of the 19th October 1971, as recorded in the southern hemisphere.

Below are the two minor events recorded 30th October by A19, Latrobe, Pennsylvania by SES, 34.5 kHz. Above the SES at 1514 UT is a recording of the same event but "inverted" as recorded by A21, Littleton, Colorado using 37.2 kHz as signal source. Above the second SES is a recording of 18.6 kHz, Jim Creek, Washington by A31, Missoula, Montana. All four recordings show unusual characteristics in their response to SID's and abnormal "humps" after sunrise and before sunset.