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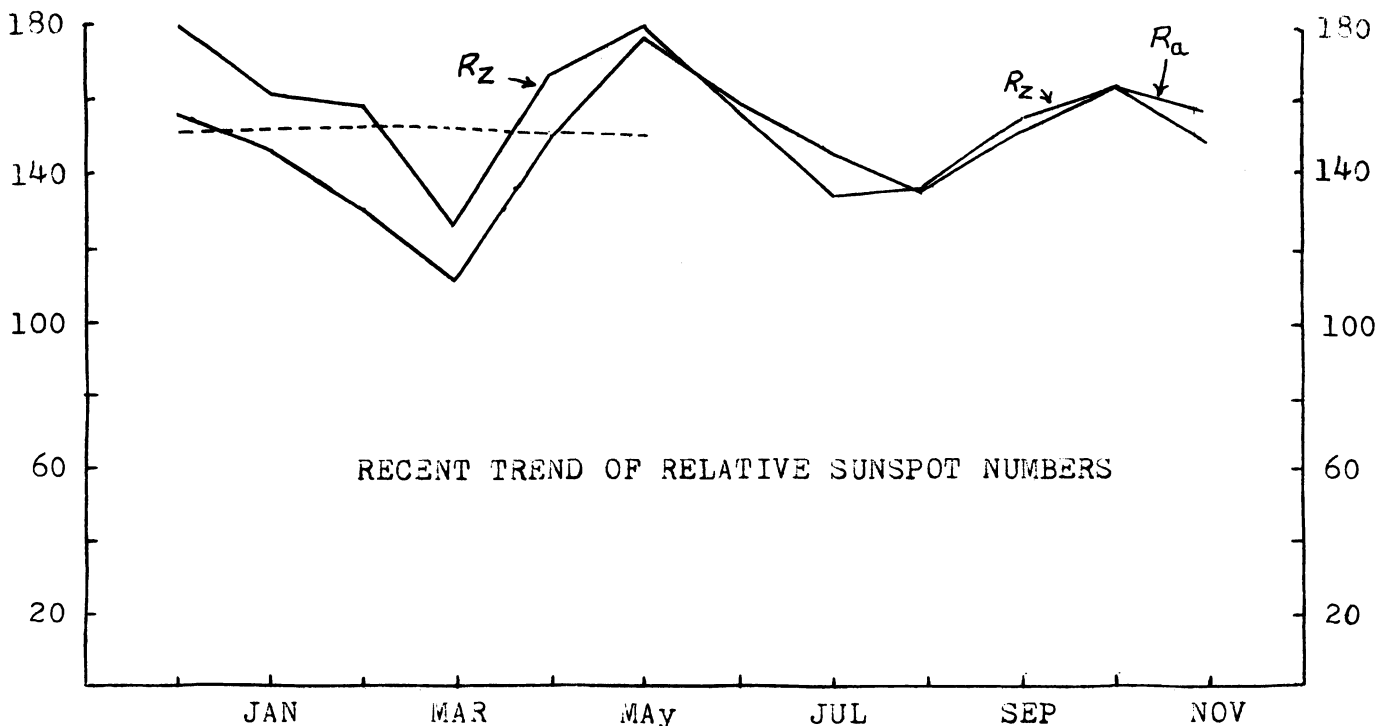
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SOLAR ACTIVITY DURING NOVEMBER

Sunspot numbers were high at the beginning of november but dropped after the first week. The monthly mean fell from 162.9 to 155.6 this month and the 12-month smoothed mean continued downward from its february peak to 149.2 in May

A record number of ionospheric disturbances were recorded during November. 116 events were recorded in all. Most were of low intensity. Several observers recorded sensitive propagation paths with interference-free equipment throughout the month so even very minor disturbances were confirmed by showing clearly on several chart recordings. This month the signal source in Nebraska on 29.5 kHz again provided the highest sensitivity. An additional recording of 29.5 kHz was available for November. This was provided by new observer Bill Waller from the Center for Astrophysics in Cambridge, Mass. His receiver is located at Agassiz Station about 60 kilometers north-west of Boston. A recording made at this new station is reproduced on page two for the 17th of November. The propagation path of 29.5 kHz to Massachusetts was equal in sensitivity to the A-19 path to Pennsylvania. The A-26 Maryland to Kentucky propagation path on 21.4 kHz remained almost as sensitive as 29.5. A chart made by A-26 on the 11th appears on page two also. It shows 12 of the 14 events listed for that day. A-31 data received late show additional events on the 11th which was probably the most eventful day in November. Short-path recordings of 21.4 kHz made by A-3 and A-48 were also quite sensitive as usual. A recording by A-3 in Paterson, New Jersey is also shown on page two for the 15th.



SUDDEN IONOSPHERIC DISTURBANCES RECORDED DURING NOVEMBER 1980

AAVSO (R_n) and Zurich (R_z) relative sunspot numbers for November 1980

Day	R_n	R_z
1	213	183
2	212	218
3	221	204
4	202	211
5	200	201
6	198	172
7	216	175
8	204	201
9	177	179
10	165	158
11	155	144
12	124	120
13	111	103
14	123	108
15	99	92
16	123	112
17	126	109
18	125	113
19	131	125
20	124	112
21	116	107
22	116	119
23	125	112
24	131	128
25	108	127
26	138	140
27	187	154
28	114	167
29	182	148
30	201	153
Mean	155.6	146.5

DAY	MAX.	SES	DEF.	FRE.	OBSERVERS	DAY	MAX.	SES	DEF.	FRE.	OBSERVERS
1	1922	2	5	4	A-19,32,48,26,28,5,31	11	2048	1-	5	2	A-26,5,41,50,31
2	1417	1-	4	4	A-19,32,26,5	11	2058	1+	5	2	A-26,28,5,41,50,31
2	1610	1-	4	4	A-19,32,48,26,5,31	12	1448	1-	3	2	A-53,19,32
2	1658	1+	5	4	A-19,32,48,51,26,5	12	1702	1+	5	2	A-19,32,53,31
2	1912	1+	5	3	A-19,32,26,31	12	1739	1-	5	2	A-19,53,32,41,31
3	1400	1+	5	2	A-19,48,51,26,28,41	12	1753	1-	3	2	A-19,32,53,31
3	1952	1+	5	4	A-19,50,51,26,5,41,31	12	1840	1+	5	3	A-19,32,53,5,41,31
4	1512	2	5	4	A-19,32,50,5,41,31	12	1919	1-	4	2	A-19,32,53,31
5	1346	3	5	5	A-19,32,48,50,51,26,1,28,31	12	2045	1-	3	1	A-19,53,31
5	1611	1-	5	4	A-19,32,48,26,31	12	2058	1-	2	1	A-19,53,31
5	1644	2	5	3	A-19,32,48,51,26,1,28,31	12	2156	1+	5	2	A-41,50,31
5	1712	1-	5	3	A-19,32,48,51,26,31	12	2250	2	5	2	A-41,50,31
5	1759	1+	5	3	A-19,32,48,31	13	1513	1+	4	2	A-26,53,28
5	1822	1-	3	1	A-19	13	1716	1-	5	2	A-26,32,28,31
5	1851	1-	4	2	A-19,32,31	13	1743	1+	5	3	A-19,32,48,51,26,53,28,31
5	1907	1-	4	2	A-19,32,31	13	1900	1-	4	3	A-26,19,32,28,31
5	1945	2	5	3	A-19,32,48,51,26,28,31	13	1929	2+	5	3	A-19,32,48,51,26,53,28,31
6	1348	1-	5	2	A-19,48,51,26,28,31	14	1545	3	5	6	A-19,32,48,50,51,26,28,5,41,31
6	1418	2	5	4	A-19,32,48,50,51,26,1,28,41,31	14	1841	2+	5	4	A-32,48,50,51,26,28,5,41,31
6	1506	3+	5	5	A-19,32,48,50,51,26,1,28,41,31	14	2208	1-	5	2	A-50,41,31
6	1729	2	5	4	A-19,32,48,50,51,26,1,28,41,31	15	1315	1-	4	5	A-19,32,48,5
6	1820	2	5	4	A-19,32,48,50,51,26,1,28,41,31	15	1341	1-	5	4	A-19,32,48,5,41
6	1922	1-	5	4	A-19,32,48,50,51,26,41,31	15	1425	2	5	6	A-19,32,48,3,26,28,5,41,31
6	1945	2	5	4	A-19,32,48,50,51,26,1,28,41,31	15	1500	1+	5	6	A-3,19,32,48,50,51,28,5,31
6	2039	1-	4	2	A-19,32,41,31	15	1545	3	5	6	A-3,19,32,48,50,51,26,1,28,5,31
6	2227	1+	5	1	A-41,50,31	15	1804	2	5	7	A-3,26,19,32,48,50,51,28,5,41,31
7	1305	1+	5	4	A-19,32,48,51,26,28,5	15	2005	2+	5	7	A-3,26,19,32,48,50,51,1,28,5,41,31
7	1424	1-	5	3	A-19,32,48,51,26,28,41	15	2114	1-	4	4	A-3,32,19,50,5,31
7	1440	2	5	4	A-19,32,48,51,26,1,28,5,41,31	15	2146	1+	3	5	A-3,32,19,50,26,41,31
7	1541	1+	5	4	A-19,32,48,51,26,28,5,41,31	16	1435	2	5	5	A-19,48,50,51,26,1,28,5,41,31
7	1612	1-	5	3	A-19,32,48,26,41	16	1644	2	5	3	A-19,32,48,51,26,28,31
7	1733	2+	5	5	A-19,32,48,51,26,1,28,5,41,31	16	1742	1-	5	3	A-26,19,32,28,31
7	2120	2	5	1	A-41,31	16	1821	1+	5	3	A-26,19,32,51,28,41,31
8	1336	2+	5	4	A-19,48,51,26,1,28,5,31	16	2003	1-	3	4	A-19,26,28,5,41,31
8	1451	2	5	5	A-19,32,48,51,26,1,28,5,31	16	2009	1-	3	4	A-19,26,28,5,41,31
8	1620	1-	5	6	A-19,32,48,50,51,26,28,5,31	16	2028	2+	5	6	A-19,32,48,50,51,26,28,5,41,31
8	1651	1-	2	1	A-19	17	1345	2+	5	3	A-53,26,19,51,28,5,41
8	1729	1-	5	4	A-19,32,48,51,26,28,31	17	1436	1+	5	2	A-53,26,19,51,28
8	2009	2	4	4	A-19,32,51,26,28,5,41,31	17	1546	1-	5	2	A-53,26,19,51,28,41,31
8	2053	1-	3	1	A-19,41,31	17	1748	1-	3	2	A-53,26,19,28,31
8	2111	1-	3	1	A-19,31	17	1801	2	5	2	A-53,26,19,51,28,31
9	1721	2	5	4	A-19,32,48,51,26,1,5,31	17	1919	1-	4	2	A-53,26,19,31
9	1815	1-	4	2	A-19,51,31	17	1947	1-	3	4	A-53,26,19
9	1927	2	4	3	A-19,32,26,41,31	17	2023	1-	5	4	A-53,19,32,50,28,41,31
10	1612	2	5	4	A-19,48,50,51,1,28,5,26,41,31	17	2034	1-	2	2	A-53,19,28,41
10	1657	2	4	1	A-48,51,26,31	18	1450	1+	5	4	A-50,32,19,5,41
11	1418	1+	4	2	A-26,5,41	19	2150	1-	4	1	A-41,50,31
11	1446	2	4	3	A-48,50,51,1,28,5,26,41,31	22	1715	1-	2	2	A-26,19
11	1518	1+	4	3	A-48,50,51,28,5,26,41,31	23	1753	1+	5	4	A-26,19,48,50,51,28,5,41,31
11	1546	2	4	3	A-48,50,51,1,28,5,26,41,31	23	1810	1-	3	3	A-26,19,5,41,31
11	1645	1-	4	2	A-48,51,28,5,26	23	1902	2	5	4	A-19,48,50,51,26,1,28,5,41,31
11	1715	1-	4	2	A-48,51,28,5,26,41,31	24	1340	1-	4	2	A-19,48,51
11	1727	1-	4	3	A-48,50,51,28,5,26,41,31	24	1705	1-	3	2	A-26,19,28,41
11	1746	2	5	4	A-32,48,50,51,1,28,5,26,41,31	26	1612	1-	2	2	A-26,19
11	1914	1-	4	3	A-32,51,28,5,26,41,31	26	1857	1-	3	2	A-26,19,31
11	1947	1-	4	1	A-48,51	28	1442	2	5	4	A-26,19,48,50,51,1,28,5,41
11	1958	2	4	1	A-48,51,31	29	1632	1-	4	2	A-19,26,31
11	2035	1-	3	1	A-26,31	30	2019	1-	4	3	A-19,48,50,31

