

Solar Bulletin

Publisher:

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



Volume 34

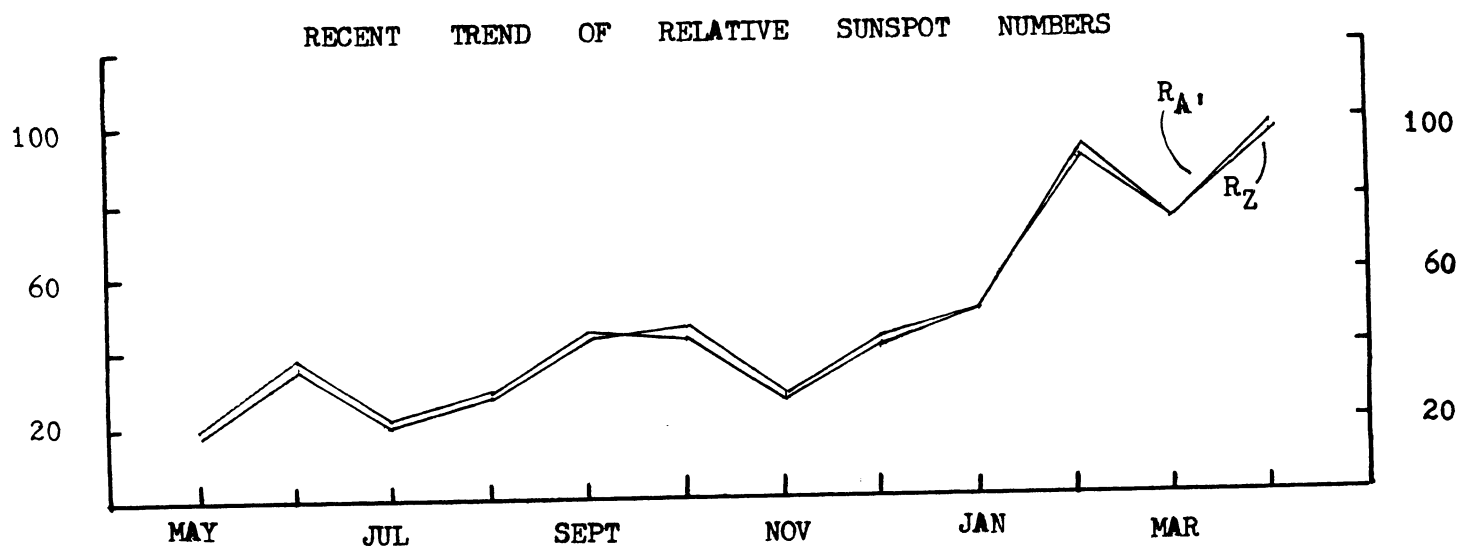
Number 4

APRIL 1978

SUNSPOT ACTIVITY FOR APRIL

Sunspot activity continued at a high level during April. The mean of the American sunspot numbers rose to 97.5. This high mean caused the twelve-month smooth means to continue their steep upward trend with the smooth mean for October 1977 at 43.6.

Flares associated with the high level sunspot activity produced a record number of ionospheric disturbances during April. Seventy-seven events were recorded by thirteen observers. Nine events on the tenth of April made it the most active day. The table listing these events is so long that it filled the space where charts are usually produced so an additional page was added for charts this month. Seven charts are reproduced in all including one by new observer Philip Conroy who has been assigned the designation, A-46.

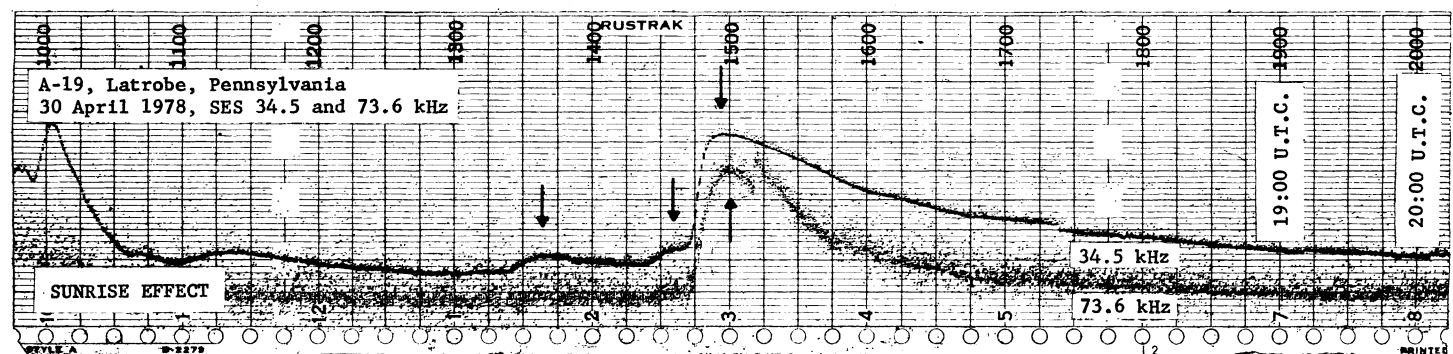
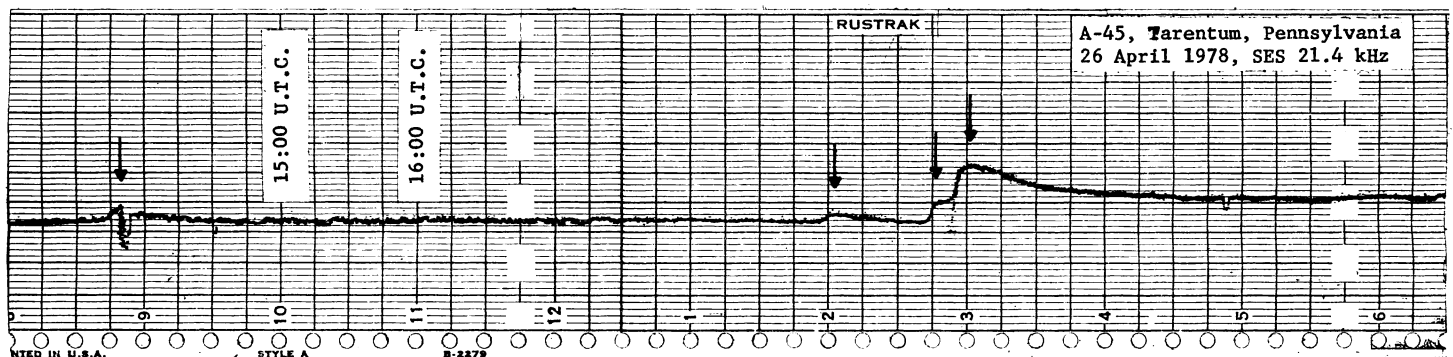
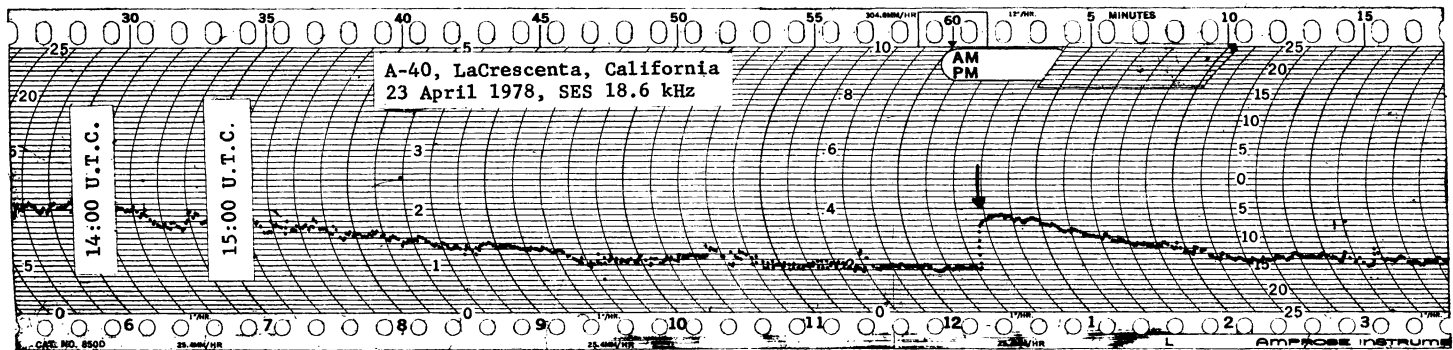
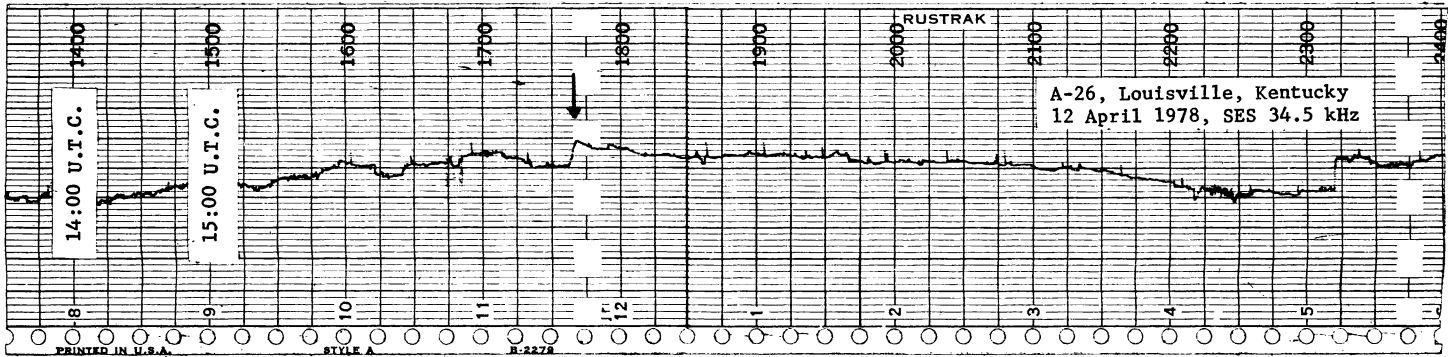
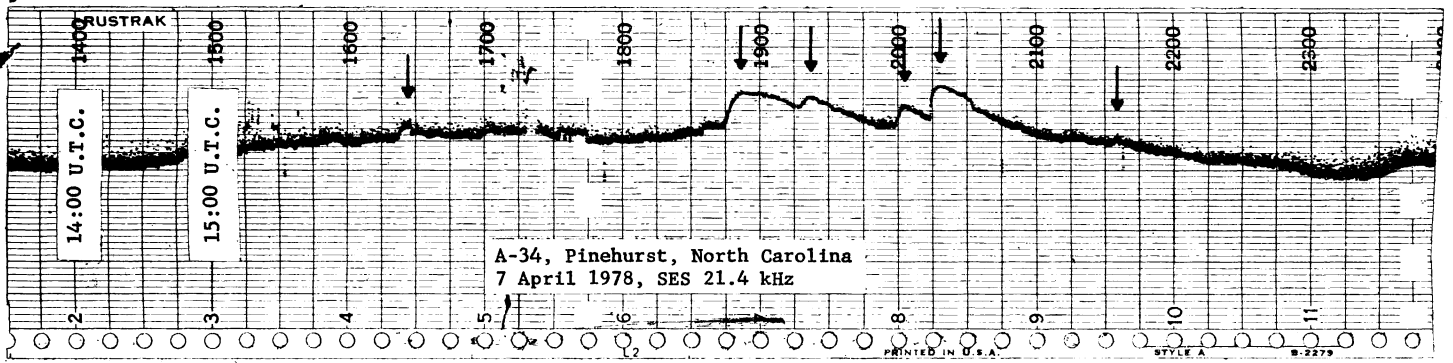


SUDDEN IONOSPHERIC DISTURBANCES RECORDED DURING APRIL 1978

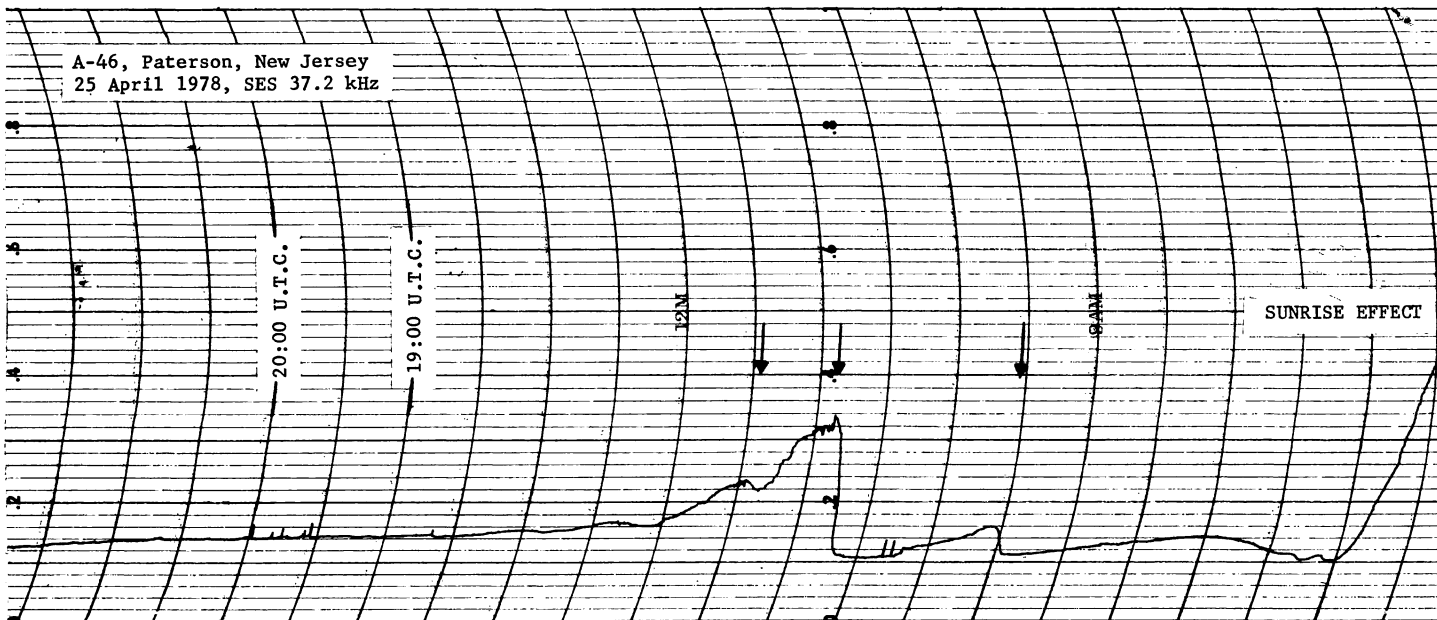
AMERICAN (R _A) And ZURICH (R _Z) RELATIVE SUNSPOT NUMBERS FOR APRIL 1978			Sudden Ionospheric Disturbances											
DAY	R _A	R _Z	Day	Max.	SEA	SES	Def.	Observers	Day	Max.	SEA	SES	Def.	Observers
1.	55	70	2	1210	2		5	A42	14	1716		1	5	A19,26,30,31,34,45,46
2.	59	68	2	1723		1	5	A1,19,26,28,30,31,34,37	14	1810	1	1	5	A1,19,26,28,30,31,34,37,45,46
3.	63	71	4	2048		1+	5	A1,19						
4.	72	75	4	2201		1+	5	A1,30,31,34,45	14	2251	1-	2	5	A1,19,26,28,30,31,34,37,45,46
5.	83	94	5	1735		1-	5	A19,26,28,30,31,34,45	18	0125	2	2	5	A31,43
6.	81	92	7	1628		1-	4	A1,19,30,31,34,45	18	1355	1	1	5	A1,19,26,34
7.	104	88	7	1852		1+	5	A1,19,26,31,34,37,45	18	1525		1	5	A1,19,26,34
8.	112	105	7	1924		1-	5	A1,19,26,31,34,37,45	21	1132	2		4	A42
9.	119	126	7	2003	1-	1	5	A1,19,26,31,34,37,45	21	2024	1	1	5	A1,19,26,28,30,31,34,37,45,46
10.	120	111	7	2021		1	5	A1,19,26,31,34,37,45	23	1028	2		4	A42
11.	123	109	7	2138		1-	4	A19,26,31,34	23	1043	2		4	A42
12.	116	107	8	0200		2	5	A31	23	2033	1+	2+	5	A1,19,26,28,31,34,37,40,45,46
13.	85	93	8	0228		1+	5	A31	25	1432	2	1	5	A1,19,26,28,30,31,34,46
14.	92	75	8	1423		1-	5	A1,34	25	1551	2	2	5	A1,19,26,28,30,31,34,37,42,46
15.	76	61	8	1445		1-	5	A1,19,26,28,31,34	25	1627	1	1	5	A1,19,26,31,34,37,46
16.	89	85	8	1830		1-	5	A26,31,34	26	1351	1	1	5	A1,19,26,28,31,34,45,46
17.	100	99	8	1907		1	5	A26,28,31,34	26	1903	1	1	5	A1,19,26,28,31,34,37,45,46
18.	103	100	8	2315		1-	5	A26,28,30,31,37,46	26	1950	1-	1+	5	A1,19,26,28,31,34,37,45,46
19.	110	107	9	0047	1	1+	5	A31,43	26	2001	1+	1	5	A1,19,26,28,31,34,37,45
20.	121	115	9	0218	1	1	5	A31,43	26	2215		1	4	A31,34
21.	118	112	9	0319	1	1	5	A31,43	26	2312		1-	4	A31,34
22.	123	109	9	2159		2	5	A1,19,26,28,31,34,37,45	27	1015	1		4	A42
23.	116	105	10	0230		1+	5	A31	27	1932	1+	1	5	A1,19,31,34,37,45
24.	121	102	10	1055	2+		5	A42	27	2029	1	1-	5	A1,19,31,34,37,45
25.	128	139	10	1213	2		5	A42	27	2050		1-	5	A1,19,26,31,34,37,45
26.	111	115	10	1507		1	5	A1,26,28,31,34,37,45,46	27	2157		1-	5	A1,19,26,31,34,37,45
27.	100	90	10	1527		1-	5	A1,26,31,34,37,45,46	27	2324		1-	5	A31,46
28.	82	75	10	1614	2	1+	5	A1,26,28,30,31,34,37,42,45,46	28	0018		1	5	A31,46
29.	69	72	10	1714		1+	5	A1,26,28,30,31,34,37,45,46	28	1335	2+	3+	5	A1,19,26,28,31,34,37,42,45,46
30.	73	70	10	1928		1-	5	A1,26,31,34,46	29	1640	1	1	5	A1,19,31,34,37,45,46
Mean	97.5	94.7	11	0422		1+	5	A31	29	1829		1+	5	A1,19,26,28,31,34,37,45,46
			11	1354	2+	3	5	A1,19,26,28,31,34,37,42,45,46	29	1910	2	3+	5	A1,19,26,28,30,31,37,46
			11	1421	2+	2+	5	A1,19,26,28,30,31,37,46	29	2133	1	1	5	A1,19,26,28,31,34,37,45,46
			11	2123		1	5	A1,31,46	30	1339		1+	5	A1,19,26,28,34,45,46
			12	1740	1	1	5	A1,19,26,28,31,34,37,45,46	30	1435	3	1	5	A1,19,26,28,31,34,37,42,45,46
			13	0500		1+	5	A31	30	1502	2+	3	5	A1,19,26,28,31,34,37,40,45,46
			13	1452	3+	2	5	A1,19,26,28,31,34,37,42,45,46						
			13	1728		1-	5	A1,19,26,31,34						
			13	2100		1-	5	A1,19,28,31,34						
			13	2345		1	4	A30,31,46						
			14	0504	1		5	A43						

Charts from the following observers were received and analyzed:

A-1,19,26,28,30,31,34,37,40,42,43,45,46



A-46, Paterson, New Jersey
25 April 1978, SES 37.2 kHz



A-1, Valley Cottage, New York
25 April 1978, SEA 27.0 kHz
SES 17.8, 18.6, and 73.6 kHz

