

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS— SOLAR DIVISION

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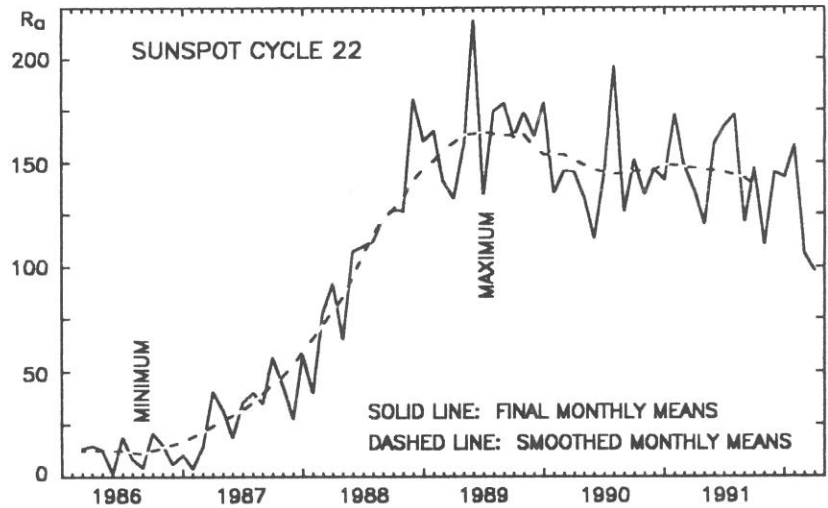
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April 1992

American Relative Sunspot Numbers for April

		R _a Final			
1)	102	11)	60	21)	176
2)	90	12)	60	22)	168
3)	77	13)	68	23)	155
4)	62	14)	77	24)	147
5)	60	15)	76	25)	138
6)	55	16)	93	26)	119
7)	58	17)	109	27)	93
8)	53	18)	118	28)	102
9)	52	19)	136	29)	102
10)	54	20)	174	30)	80

Mean: 97.1
 Number of reports: 99



April Summary: April began with a sharp increase in solar activity brought about by NOAA/USAF Region 7116 (S08, L341, DAI) as it generated two class M Tenflares on the 1st. The first was a major event, initially rated at M5.6/SF. However, Space Environment Laboratory stipulates that the flare undoubtedly carried a higher optical classification since the estimate was made under adverse conditions. An un-correlated class M2 flare also occurred on the 1st.

Activity then returned to the low levels which were common during March, and remained there until the 17th. The geomagnetic field was active with periods of storm conditions during much of this interval, largely due to coronal hole effects. Isolated major storm levels are attributed to one of two coronal mass ejections which occurred on the 4th. A short portion of filament disappeared on the 4th, followed by the eruption of a prominence in the NW hemisphere. The Sun's Northern Hemisphere was spotless on the 8th and 9th.

Other events of interest include additional disappearing filaments which left the Sun on the 10th, 11th, 14th and 15th; an eruptive prominence observed on the SW limb early on the 14th; and a second prominence near NE11 on the 16th. A sudden impulse (12 nT) was recorded at Boulder on the 14th.

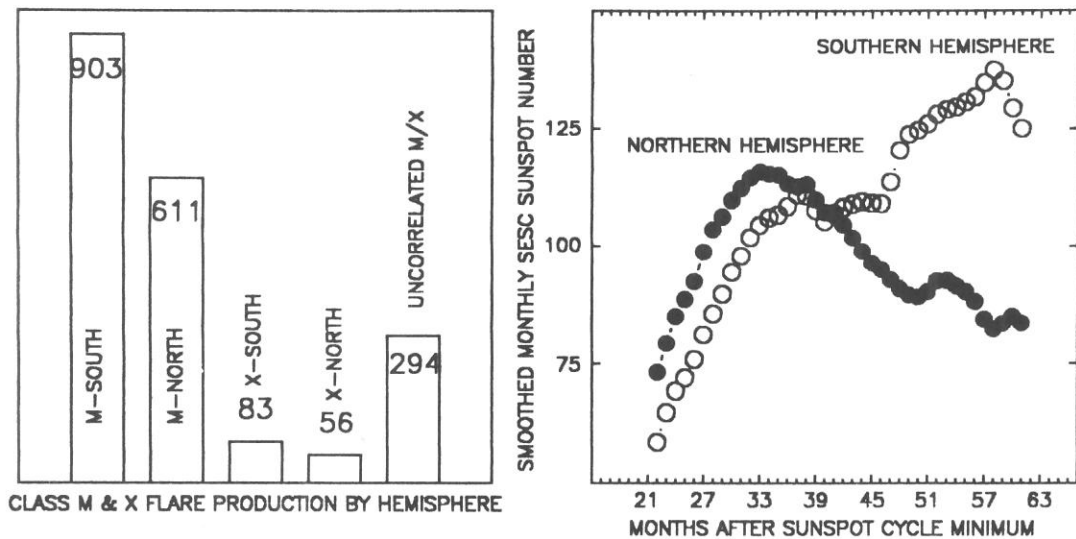
More active longitudes returned to the visible hemisphere during the third week of April, resulting in a slight increase in overall activity level. Three class M flares were recorded, including a M1.1/SF on the 17th and M1.0/SN on the 20th in the largest and most complex spot-group on the disk, Region 7135 (S16, L006, EKI). The third event was a M1.4/2B on the 22nd in Region 7139, a tiny B-type group twenty-five degrees to the east of Region 7135. Small filaments disappeared on the 17th, 18th and 23rd, and eruptive prominences were observed on the SW limb on the 21st and 23rd. The geomagnetic field generally ranged between quiet and active; a second sudden impulse (15 nT) was recorded on the 17th.

Solar activity continued to be low with occasional escalations into the moderate range during the remainder of the month. Region 7138 (N10, L343, DAI) spawned two lower-level class M flares on the 24th and three relatively large (22-25 degree) filaments also disappeared, but these events did not significantly affect the geomagnetic field which remained at the quiet or unsettled level.

The smoothed mean American Relative Sunspot Number for October 1991 declined to 138.1, the lowest such value since November 1988. Sunspot activity in each hemisphere - as measured by their respective smoothed mean sunspot numbers - also decreased (see page 2). It now appears that the Sun's Southern Hemisphere reached its peak during July 1991, some twenty-five months after the Northern Hemisphere. The maximum of solar cycle twenty-two occurred in July 1989.

The estimated mean American Relative Sunspot Number for 1-14 May is 79. Activity increased slightly during this period. Five class M solar flares occurred. One was a major event which combined with other activity to cause some disruption of the terrestrial environment.

[A portion of this information was obtained from the SELDADS data-base.]



Sudden Ionospheric Disturbances (SES) Recorded During March 1992

Records were received from A3,9,40,50,52,59,61,62,63,64,65,66,67,68,69,70,71,72,73,74.

Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	Def
1	1631	1	5	11	0700	1+	5	17	1951	1-	5	25	1322	1-	5
1	1951	1	5	11	1500	1-	5	17	2310	1	5	25	1338	1	5
2	0252	1-	5	11	1807	1	5	18	1520	1-	5	25	1610	1	5
2	1755	1	5	11	2015	1-	5	18	1558	1-	5	25	1729	2	5
2	2136	1-	5	12	1428	1-	5	18	2015	1-	5	25	1849	1+	5
3	1600	1	5	12	1645	1-	5	18	2158	1-	5	25	2025	1	5
4	1620	2	4	12	1752	1	5	19	1128	1+	5	26	0102	1+	5
4	1653	1+	5	12	1818	1-	5	19	1517	1	5	26	1029	1	4
4	2139	1-	5	13	0030	1-	5	19	1530	1	5	26	1423	1-	5
5	1211	1-	5	13	0924	1-	5	19	1930	1	5	26	1534	1-	5
5	1630	1-	5	13	1534	1-	5	20	0007	1-	5	26	1858	1-	5
5	1645	1-	5	13	1621	1+	5	20	1006	1	5	26	2048	1-	5
5	1802	1-	5	13	1858	1-	5	20	1209	2	5	26	2106	1-	5
5	2246	2+	5	13	1902	1-	5	20	1241	1-	5	26	2317	1+	5
6	1510	1	5	13	1936	1-	5	20	1500	1	5	27	0817	1-	5
6	1545	1	5	13	1958	1-	5	20	1831	1-	5	27	1137	1-	5
6	2315	1-	5	13	2145	1-	5	20	1959	1-	5	27	1313	2	5
7	0206	1-	5	14	1429	1+	5	20	2116	1-	5	27	1837	1-	5
7	1459	1-	5	14	2228	1	5	20	2146	1-	5	27	2031	1-	5
7	2059	1-	5	15	0003	1-	5	21	0715	2	5	27	2100	1	5
8	0049	2+	5	15	0141	2	5	21	1153	2+	5	28	1811	2	5
8	1422	1+	5	15	0842	2	5	21	1321	1-	5	28	2258	1+	5
8	1515	1	5	15	1022	2	5	22	1716	1	5	28	2305	1-	5
8	1626	2	5	15	1558	1+	5	22	2029	1+	5	29	0057	1+	5
8	1729	3+	5	15	1800	1-	5	23	1202	1	5	29	0857	1-	5
8	2049	1	5	15	1900	1-	5	23	1321	1-	5	29	1228	1	5
8	2115	1	5	15	1951	1-	5	23	1651	1-	5	29	1406	2	5
9	0240	1+	5	16	0607	1	5	23	1722	2+	5	30	0054	1-	5
9	0903	1	5	16	1000	2+	5	23	1839	2+	5	30	1614	1	5
9	1157	2+	5	16	1129	1	5	23	2021	1-	5	30	1900	1	5
9	1215	1-	5	16	1325	1-	5	24	0017	1	5	30	2004	1-	5
9	1338	1-	5	16	1520	1-	5	24	1223	1	5	30	2030	1	5
9	1414	1-	5	16	1538	1+	5	24	1507	1-	5	30	2152	1-	5
9	2140	1	5	16	2015	2	5	24	2209	1-	5	31	0006	1-	5
10	0054	1	5	16	2131	1-	4	24	2303	1-	5	31	0737	2	5
10	1455	1	5	16	2143	1-	5	24	2321	2	5	31	1432	1+	5
10	1951	2+	5	16	2354	1-	5	25	0051	1-	5	31	1502	2	5
10	2306	1-	5	17	1553	1	5	25	0151	1-	5	31	1544	3	5
11	0014	1	5	17	1631	1+	5	25	0746	1	5	31	2036	2	5
11	0238	2	5	17	1835	2	5	25	1234	1-	5	31	2302	2	5

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