

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS— SOLAR DIVISION

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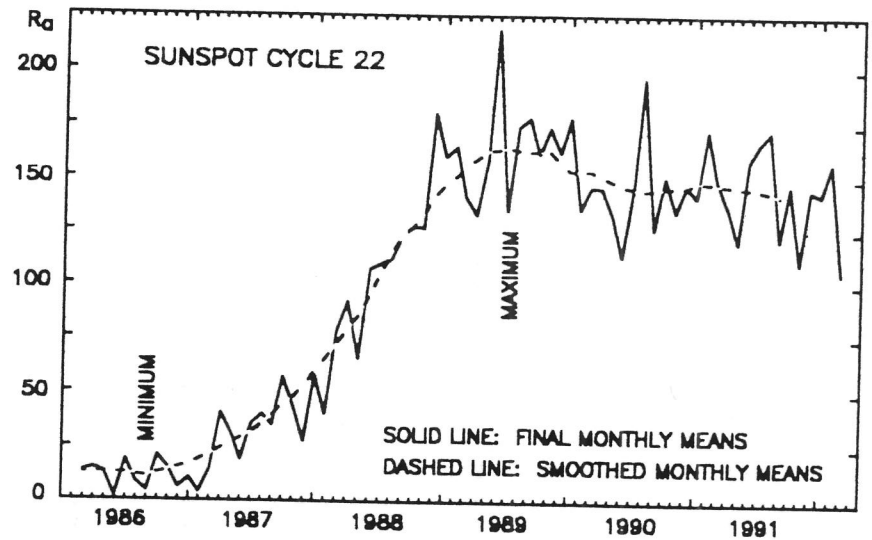
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March 1992

American Relative Sunspot Numbers for March

R _a Final	
1) 144	11) 125
2) 115	12) 126
3) 89	13) 140
4) 80	14) 128
5) 74	15) 112
6) 86	16) 99
7) 102	17) 81
8) 114	18) 69
9) 124	19) 74
10) 129	20) 90
	21) 91
	22) 76
	23) 95
	24) 101
	25) 103
	26) 116
	27) 112
	28) 110
	29) 122
	30) 120
	31) 110

Mean: 105.1
 Number of reports: 99



With one exception, solar activity was low from the 1st through 14th. The single instance to the contrary occurred on the 8th after NOAA/USAF Region 7091 (S09, L197, DAO) spawned a M4.9/2N flare, which, coupled with a second class M flare earlier that day in Region 7093 (S24, L187, DSO), brought activity into the moderate range. Filament disappearances were noted on the 4/5th, 9/10th, and 11th. The geomagnetic field ranged between quiet and minor storm levels during much of this interval, with occasional brief periods of more disturbed conditions at some high-latitude sites.

Activity increased to high on the 15th after Region 7100 (S16, L136, DK1) produced March's first (and only) major energetic event; a M7.8/3B Tenflare. An enhanced proton flux at satellite altitude followed, reached a maximum on the 16th at just above event level, and gradually declined thereafter. A sudden impulse (51 nT) and sporadic minor storming at some stations - likely linked to this flare - occurred on the 17th. Fourth and fifth filaments disappeared on the 18/19th and 21st, but otherwise both Sun and geomagnetic field were relatively quiet until the 31st. Only class C and B flare events were recorded.

On the 31st, Region 7116 (S09, L338, DAO) generated March's final class M flare (M3.5/1B), boosting the solar activity level into the moderate range for only the second time during the month. Isolated periods of active to minor storm conditions on scattered days during the second half of March were attributed to the influence of a favorably-positioned coronal hole. Nonetheless, generally unsettled conditions are to be expected at this time of Vernal Equinox.

The combined total of class M and X flares recorded during March (four class M, and no class X events), and monthly-mean sunspot number were the lowest recorded since the spring of 1988. Intervals of enhanced activity will almost certainly occur during the ensuing months, but the precipitous drop in March activity makes it obvious that cycle twenty-two's descent to a minimum sometime in 1996-97 has begun. The smoothed mean American Relative Sunspot Number for September 1991 fell to 141.5.

The estimated mean American Relative Sunspot Number for 1-14 April is 66. The Sun's Northern Hemisphere was spotless on the 8th and 9th, and daily sunspot numbers remained low throughout the period. After an initial spurt of flares on the 1st (three class M flares including one major event), activity again declined to the low levels common during March. No additional class M flares had occurred by the end of the second week, and solar activity continued to be in the low, or very low range. Observers should be especially alert for the presence of small, undeveloped sunspot groups as the current solar cycle declines.

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

Sudden Ionospheric Disturbances (SES) Recorded During February 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	0944	1-	5	6	1753	2+	5	14	0110	1	5	19	1021	1-	5
1	1549	1	5	6	1858	2+	5	14	1125	1-	5	19	1158	1	5
1	1857	1	5	6	2055	2+	5	14	1234	1-	5	19	1250	1-	5
1	2023	1	5	7	0236	1-	5	14	1401	1	5	19	1352	1+	5
1	2051	1+	5	7	0736	1-	5	14	1444	1	5	19	1430	1	5
2	0122	2	5	7	1155	2+	5	14	1529	1-	5	19	1452	2	5
2	0830	1	5	7	1327	1+	5	14	1606	1-	5	19	1537	2	5
2	0912	2+	5	7	1510	2	5	14	1716	1	5	19	1829	1	5
2	1135	1	5	7	1635	1	5	14	1804	1	5	19	1923	2	5
2	1156	1	5	7	1704	1+	5	14	1948	1+	5	19	2101	2+	5
2	1401	1+	5	7	1812	2	5	14	2033	1+	5	19	2233	2	5
2	1515	2	5	7	1931	1+	5	14	2149	1+	5	19	2329	1	5
2	1615	1	5	8	0724	1-	5	14	2309	2+	5	20	0751	1-	5
2	1702	1-	5	8	1117	1+	5	15	0838	1+	5	20	1243	1+	5
2	1730	1-	5	8	1144	1-	5	15	1004	2	5	20	1415	1-	5
2	1823	1	5	8	1215	1	5	15	1149	1+	5	20	1530	1-	5
2	1857	1	5	8	1530	1-	5	15	1252	1	5	20	1653	1+	5
2	1946	1	5	8	1601	1-	5	15	1328	1-	5	20	1755	2+	5
2	2056	1-	5	8	1731	1-	5	15	1459	1-	5	20	1955	2	5
2	2117	1	5	8	1744	1-	5	15	1821	1+	5	20	2030	1+	5
2	2246	1-	5	8	1846	1-	5	15	1858	2	5	21	1019	2	5
2	2320	1-	5	8	1946	1-	5	15	1925	2	5	21	1358	1-	5
3	0049	1	5	8	2016	1-	5	15	2137	2+	5	21	1430	1-	5
3	1012	1+	5	8	2100	1-	5	16	0900	2	5	21	1440	1-	5
3	1135	2	5	8	2125	1	5	16	1104	1	5	21	1831	1-	5
3	1233	1-	5	9	0130	1-	5	16	1235	2+	5	21	2202	2	5
3	1308	1-	5	9	0926	1-	5	16	1400	1-	5	22	1045	1	5
3	1326	1	5	9	1052	1	5	16	1435	1-	5	22	1410	1	5
3	1345	1	5	9	1244	1	5	16	1453	1-	5	22	1621	2+	5
3	1419	2	5	9	1606	1-	5	16	1545	2	5	22	1910	1	5
3	1549	1-	5	9	1842	1-	5	16	1759	1-	5	22	2117	2	5
3	1617	1+	5	9	2042	1	5	16	1840	1	5	23	0945	1-	5
3	1636	1-	5	9	2114	2	5	16	2045	1	5	23	2043	1	5
3	1652	1-	5	9	2212	2	5	16	2245	1+	5	23	2244	1	5
3	1823	2	5	10	0821	1	5	17	0122	1	5	24	1116	2	5
3	2015	1-	5	10	0937	1	5	17	0851	1-	5	24	1840	1+	5
3	2030	2+	5	10	1101	1	5	17	1000	1+	5	24	2221	2	5
4	0752	1	5	10	1236	1-	5	17	1128	1-	5	24	2330	3+	5
4	1602	1+	4	10	1548	1+	5	17	1310	1-	5	25	1030	1-	5
4	1936	2	5	10	1946	2	5	17	1544	2+	5	25	1818	1+	5
4	2035	1-	5	10	2215	2	5	17	1655	2	5	25	2358	1	5
4	2145	1-	5	11	0606	1+	5	17	1740	1-	5	26	1212	1	5
4	2325	2	5	11	0811	1-	5	17	1755	1	5	26	1259	1-	5
5	0644	1+	5	11	0945	1+	5	17	1842	1-	5	26	1809	1-	5
5	0948	1+	5	11	1006	1-	5	17	1952	1-	5	26	1825	1+	5
5	1318	1+	5	11	1300	2	5	17	2037	1	5	26	1901	1	5
5	1459	1-	5	11	1502	1	5	17	2212	1+	5	26	2006	2	5
5	1633	1	5	11	2123	2	5	18	0845	1-	5	26	2325	2+	5
5	1915	1	5	12	0015	1	5	18	1322	1-	5	27	0030	1	5
5	2023	2	5	12	0621	1-	5	18	1334	1	5	27	0955	2+	5
6	0019	1	5	12	1828	1+	5	18	1412	1	5	27	2030	1	5
6	0715	1-	5	12	1900	1+	5	18	1448	2	5	28	0717	1-	5
6	0759	1-	5	12	2120	1	5	18	1703	2	5	28	1609	1+	5
6	1016	2+	5	12	2222	1+	5	18	1734	1	5	28	2111	2	5
6	1118	1-	5	13	0043	1-	5	18	1821	1-	5	29	0741	1	5
6	1315	1	5	13	0739	1-	5	18	2001	1	5	29	1332	1+	5
6	1352	2	5	13	1850	1-	5	18	2040	2+	5	29	1645	1+	5
6	1631	1	5	13	2109	2	5	18	2200	1+	5	29	2039	2+	5

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