

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS— SOLAR DIVISION

Peter O. Taylor, editor
 P O Box 5685
 Athens, GA 30604-5685 USA

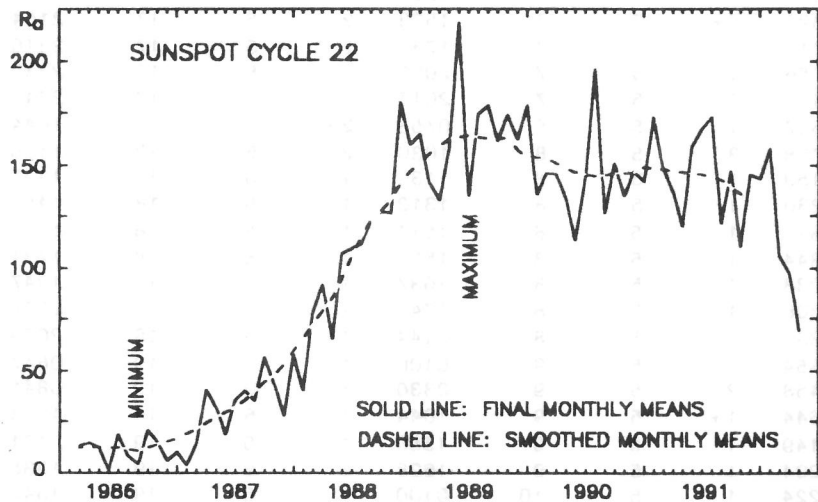


Volume 48 Number 5

May 1992

American Relative Sunspot Numbers for May

		R _a Final			
1)	84	11)	60	21)	97
2)	83	12)	77	22)	108
3)	79	13)	83	23)	106
4)	88	14)	68	24)	81
5)	83	15)	59	25)	63
6)	86	16)	41	26)	59
7)	69	17)	38	27)	65
8)	83	18)	51	28)	44
9)	77	19)	56	29)	32
10)	63	20)	80	30)	32
		31)	29		
Mean: 68.5					
Number of reports: 99					



May Summary: Solar activity was low and moderate during the first week of May. Four class M flares were recorded, including M1.0/1N and M1.3/SF events in NOAA/USAF Region 7150 (S06, L268, EAO) on the 3rd and 4th, and M1.1/1N and M1.4/1N events in Region 7154 (S25, L152, DAI) on the 4th and 5th. An eruptive prominence, extending to 0.36 solar radii was sighted on the SW limb on the 1st. The geomagnetic field ranged between quiet and minor storm levels, conditions which are attributed to coronal hole and/or flare effects. On the 6th of May, Space Environment Laboratory provided the following commentary regarding recent solar activity:

'Across the surface of the Sun, small, simple sunspot groups continue to appear for a few hours, then fade from sight. The implication of this phenomenon is unknown to ordinary forecasters and observers. The 10.7 cm radio flux has hovered in the range 130-140 for the past 9 days. Veteran solar observers have suggested that this lull - moving to lower flux at these solar longitudes for several rotations - marks the beginning of the first, steep decline from the high values that have held since 1989. The Northern Hemisphere of the current face of the Sun is marked by a very large area devoid of significant structures of any kind.'

Solar activity varied from very low to high during week two. Only one class M flare was recorded, but it was an impressive long-duration class M7.4/4B Tenflare which erupted on the 8th in Region 7154. This major event, the final class M flare to erupt during May, combined with an earlier flare on the 7th to cause a severe magnetic storm disturbance on the 10/11th.

A proton event at satellite altitude began at midday on the 9th, reached maximum shortly thereafter (4600 p.f.u.), and ended on the 11th along with the associated polar cap absorption (20.4 dB). A number of high-latitude sites reported bright aurorae during the storm interval, and K-indices as high as 8 occurred at some mid-latitude stations. Sudden impulses related to these events were recorded on the 10th (55 and 31 nT). Other interesting occurrences during the period included disappearing solar filaments on the 9th and 10th which caused some minor storming on the 13th, and eruptive prominences on the 10th and 11th which stretched outward to 0.80 and 0.18 solar radii.

Activity was low and very low during the remaining weeks of May. The Sun's Northern Hemisphere was spotless from the 14th through the 17th, as was the Southern Hemisphere on the 29th. A sudden impulse (26 nT) was recorded on the 18th, followed by active geomagnetic storm conditions. This activity is thought to be coronal hole related.

The geomagnetic field experienced active to minor storm conditions on the 22nd, probably associated with the disappearance of a 23-degree-long filament from the Sun's NE quadrant on the 18/19th. Other filaments exited the Sun on the 28/29th and 30/31st. An un-correlated, long-duration class C flare occurred on the 24th which is the probable source of an enhanced proton level later that day. Brief instances of minor storming were recorded at high-latitude stations on the 25th. Scattered storm conditions thereafter are attributed to coronal hole effects. The average monthly sunspot number for May is the lowest in four years. The smoothed monthly-mean for November, 1991 declined to 134.4.

The estimated mean American Relative Sunspot Number for 1-14 June is 75. Activity has continued to be low during this interval. Just two class M solar flares have been recorded, and neither was a major event. The last eruption of a class M flare prior to these events occurred nearly one month earlier (8 May).

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

Sudden Ionospheric Disturbances (SES) Recorded During April 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	0054	2	5	7	0656	1	5	17	2019	2	5	22	0109	2+	5
1	0823	2+	5	7	1533	2	5	17	2154	2	5	22	1324	1	5
1	1017	2	5	7	1731	2	5	17	2316	1-	5	22	1624	1	5
1	1056	1	5	7	2002	1-	5	17	2330	1-	5	23	0231	2	5
1	1412	1	5	7	2017	1-	5	17	2345	1-	5	23	0936	1-	5
1	1527	1-	5	8	0753	2+	5	18	1044	1-	5	23	1146	1-	5
1	1738	3	5	8	1030	2+	5	18	1156	2+	5	23	1346	1-	5
1	2159	1	5	8	1132	1-	5	18	1405	1+	5	23	1651	1-	5
1	2230	1	5	8	1312	1	5	18	1450	1-	5	23	1702	1	5
1	2323	1	5	8	1514	1-	5	18	1700	1-	4	23	1816	1-	5
2	0844	1-	5	8	1553	1	5	18	1731	2+	5	23	1921	1-	5
2	1033	1-	5	8	1637	1-	5	18	1947	1	5	23	1946	1+	5
2	2306	1	5	8	1743	1	5	18	2027	1-	5	23	2148	1+	5
2	2331	2	5	8	2144	1+	5	18	2059	1-	5	24	0044	1	5
2	2354	1	5	9	0100	1-	5	19	0647	1-	5	24	0214	1-	5
3	0458	2	5	9	0330	1	5	19	0841	1+	5	24	0615	1	5
3	0644	1+	5	9	1044	1-	5	19	1055	2	5	24	0708	1	5
3	1149	1-	5	9	1550	1-	5	19	1131	1	5	24	0915	1-	5
3	1204	1	5	9	1628	1	5	19	1335	1-	5	24	0920	1+	5
3	1224	1	5	10	0100	1	5	19	1347	1-	5	24	1248	2	5
3	1309	1-	5	10	0534	2	5	19	1405	1	5	24	1552	1-	5
3	1536	1-	5	10	1508	1	5	19	1539	1-	5	24	1832	1-	5
3	1741	2	5	10	2218	1	5	19	1623	2	5	24	1919	1+	5
4	0045	1+	5	11	0044	1-	5	19	1711	1-	4	24	1945	1-	5
4	1055	1	5	11	2048	1	5	19	1729	1+	5	24	2004	1-	5
4	1432	2	5	12	0029	1+	5	19	1805	1+	5	25	1328	1+	5
4	1811	1	5	12	1529	1	5	19	1944	2	5	25	1529	1-	5
4	1926	1+	5	13	0037	1	5	19	2315	2	5	25	1815	1	5
5	0115	2	5	13	1108	1-	5	20	0528	2	5	25	1842	1	5
5	0258	1	5	13	1324	1-	5	20	0632	1-	5	26	0356	1	5
5	1115	1-	5	14	0130	1-	5	20	0758	1-	5	26	1515	2+	5
5	1312	1	5	14	0620	1-	5	20	0824	1+	5	26	1714	1	5
5	1501	1-	5	14	1349	1-	5	20	0914	1-	5	26	1815	1-	5
5	1530	1-	5	14	1957	1	5	20	0931	1	5	26	1828	1	5
5	1652	1-	5	15	1143	1	5	20	1145	2+	5	27	0546	1-	5
5	1700	2	5	15	1249	1+	5	20	1223	1	5	27	1518	1	5
5	1834	1-	5	15	1714	1	5	20	1508	1-	5	27	2032	1-	5
5	2014	1-	5	15	1810	1-	5	20	1613	1	5	27	2151	1-	5
5	2036	1-	5	15	2111	1-	5	20	1701	1-	5	28	0816	1-	5
5	2324	2+	5	15	2145	2	5	20	1825	1-	5	28	1506	1	5
6	0744	2+	5	16	1721	1	5	20	1835	1	4	28	1746	1-	5
6	1050	1-	5	16	1752	1-	5	20	1900	2	5	29	0607	1	5
6	1418	2	5	16	1830	2	5	20	2048	2+	5	29	1029	1-	5
6	1815	1-	5	16	2007	2	5	20	2214	1	5	29	1318	1-	5
6	1826	1+	4	17	0001	1-	5	21	0535	1	5	29	1507	2	5
6	1900	1+	5	17	1022	1+	4	21	0731	1-	5	29	1722	1-	5
6	2103	1-	5	17	1156	1+	5	21	0929	2	5	29	1934	1	5
6	2205	3	5	17	1238	1-	5	21	1014	1-	5	30	0621	1-	5
7	0017	1	5	17	1317	1-	5	21	1116	1+	5	30	1346	1-	5
7	0330	2	5	17	1737	2	5	21	1323	1+	5	30	2305	1-	5
7	0622	1-	5	17	1826	2+	5	21	1647	2+	5				

SID Analysts: J. Ellerbe; S. Hansen; J. Knight; G. Miller; D. Overbeek; A. Stokes; M. Taylor; P. Taylor; A. Voorvelt; B. Wingate

DECnet: 9555::ptaylor INTERNET: ptaylor%SELVAX.dnet@east.gsfc.nasa.gov FAX: [USA] 706-353-2336
 NOTE: Network contributors are urged to submit their reports via these services whenever possible.