

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS— SOLAR DIVISION

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



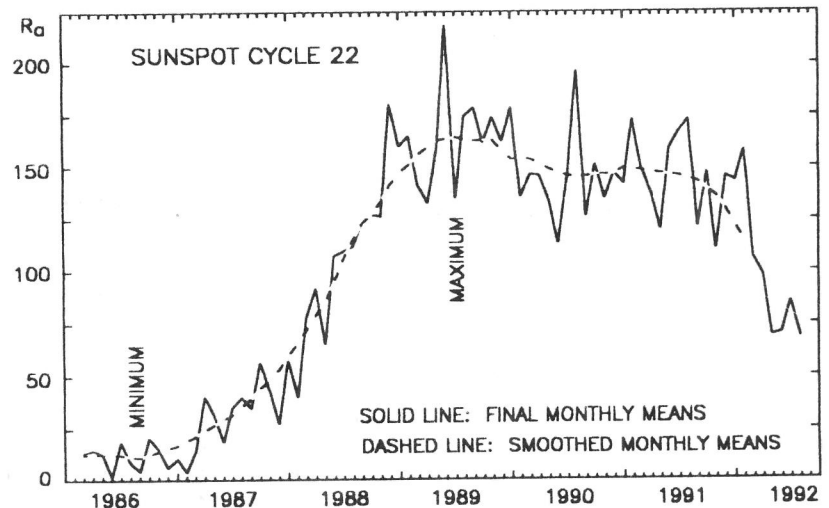
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August 1992

American Relative Sunspot Numbers for August

R _a Final		
1) 73	11) 60	21) 55
2) 97	12) 51	22) 48
3) 100	13) 66	23) 38
4) 103	14) 81	24) 32
5) 92	15) 89	25) 16
6) 90	16) 96	26) 30
7) 101	17) 89	27) 33
8) 109	18) 71	28) 33
9) 102	19) 70	29) 43
10) 82	20) 68	30) 33
		31) 44

Mean: 67.6
 Number of reports: 99



August Summary: Solar activity was low with one day in the moderate range during the first week of August. Class M flare production was limited to a single event late on the 2nd followed by two on the 3rd: all in NOAA/USAF Region 7248 (S12, L030, DKO). Region 7248 was the return appearance of old Region 7220, which was quite active during its transit of the disk. An eruptive prominence was spotted on the Sun's NE limb on the 3rd.

The geomagnetic field remained at quiet to unsettled levels until midday on the 4th when the first of several sudden impulses (SI) was recorded. This SI - possibly a result of a disappearing solar filament on the 1st - approximately coincided with the start of an enhanced proton level at satellite altitude. A second SI was recorded early on the 5th, followed by geomagnetic storm conditions at mid and high latitudes. Yet a third SI occurred on the 6th, and the proton enhancement gradually exceeded event level. A Forbush decrease (~7%) also occurred on the 6th. Numerous reports of aurorae were received from sites at latitude 45 degrees or higher on the 4/5th. However the polar cap absorption associated with these activities did not reach event threshold, and the proton level began to wane late on the 6th.

Activity was low and moderate between the 8th and 14th. Two class M flares were recorded: a M1.4 on the 11th without optical correlation, and a M1.0/1N on the 12th associated with Region 7248. The Sun's Northern Hemisphere was spotless on the 9th and 10th. The magnetic field was generally quiet or unsettled with minor storm conditions at the beginning of the period. The likely source of that disturbance is a coronal hole. The Sun returned to a low activity level until the 20th when Region 7260 (N17, L256, EK1) spawned four class M flares ranging in intensity from M1.9 to M4.0, and followed with three additional M-level events on the 21st. Although the principal leading spot of Region 7260 had characteristics which would indicate a high flare production - mixed magnetic polarities in close proximity, for example - the group remained relatively quiet until finally erupting on the 20th. This large spot group (a maximum area of ~1440 millionths solar hemisphere, or nearly 4400 million km²) dominated an otherwise unimpressive disk during the third week of August.

A large (30 degree) filament disappeared from the Sun's NW quadrant on the 18th, but the event apparently did not impact the terrestrial environment. The geomagnetic field was quiet or unsettled for most of the period, with storm conditions at mid and high-latitudes on the 20th.

Activity was low and very low during the remainder of August. No recorded flares reached the class M intensity threshold. Only two or three spot groups were visible on the Sun's disk on any one day, and the Sun's Southern Hemisphere was spotless on the 28th. Although Region 7260 appeared to be decaying as it rotated off the visible hemisphere it continued to produce class C events when well past west limb passage. Periods of geomagnetic storm conditions attributed to multiple class M flare activity on the 21st occurred on the 22/23rd, and again on the 26/27th possibly due to a coronal hole. A number of reports were received from mid-latitude and higher locations which described aurorae on the 22nd/23rd. The smoothed mean American Relative Sunspot Number for February, 1992, declined to 113.7.

The estimated mean American Relative Sunspot Number for 1-14 September is 58. As predicted, solar activity increased markedly: two class X, and twenty-nine class M solar flares have been recorded during the first two weeks of September.

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

Odd Colored Umbra

While observing the Sun (by projection - ed.) at 20:55 UT, 14 August 1992, one umbra in Region 7260 (see page one) displayed a light patch of non-descript color. This area appeared to have a brightness and shade about halfway between the remainder of the umbra (of usual darkness) and the surrounding penumbra (of usual brightness). The patch covered approximately one-third of the umbra and remained unchanged for the duration of the observation - circa fifteen minutes.

Howard Barnes, Georgi Dobrovolski Solar Observatory
(26b Michaels Avenue, Ellerslie, Auckland 1005, New Zealand)

(NOTE: The editor would be interested in receiving corroborative observations of this phenomenon, as well as reports of a similar nature.)

Sudden Ionospheric Disturbances (SES) Recorded During July 1992

Records were received from A3.9.40.50.59.61.62.63.65.66.67.68.69.70.71.72.73.74.75.

Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	De
1	1115	1-	5	6	0623	1	5	10	2203	2+	5	16	1444	1-	5
1	1155	1-	5	6	1609	2	5	10	2313	2	5	16	1605	1-	5
1	1215	1	5	6	1815	2+	4	10	2350	1-	5	16	1659	2	5
1	1310	1+	5	6	2253	1-	5	11	0837	1	5	17	1221	1-	5
1	1642	1-	5	6	2315	1	5	11	1148	1+	5	17	1528	1	5
1	1722	1	5	7	0505	1-	5	11	1525	2	5	17	1605	1-	5
1	2111	1-	5	7	0630	1-	5	11	1600	1	5	17	1717	2	5
1	2200	1	5	7	0814	1+	4	12	0645	1	5	17	1838	1-	5
1	2229	1+	5	7	1121	1-	4	12	0933	1+	5	17	1848	1	5
2	1422	1-	5	7	1135	2+	5	12	1250	1-	5	17	2112	1	5
2	1438	1-	5	7	1433	1	5	12	1409	1	5	17	2240	1	5
2	1632	1+	5	7	1518	1-	5	12	1722	1	5	17	2322	2	5
2	1723	1-	5	7	1606	2	5	12	1835	1-	5	18	1055	1	5
2	2008	1-	5	7	1715	1	5	12	1914	2	5	18	1117	1-	5
3	0958	3	5	7	1735	1-	5	12	2040	1-	5	18	1342	2+	5
3	1422	1+	5	7	1932	1	5	12	2116	2	5	18	1600	1	5
4	1235	1	5	7	2015	1-	5	13	0804	2+	5	18	1617	1-	5
4	1410	2+	5	7	2232	1-	5	13	0930	1+	5	18	2037	2	5
4	2220	1+	5	8	0948	2	5	13	1338	1-	5	18	2248	1-	5
4	2250	1+	5	8	1123	1-	5	13	1445	2	5	19	1900	2	5
5	0225	2+	5	8	1209	1-	5	13	1654	1-	5	22	1133	1-	5
5	0558	1-	5	8	1245	1-	5	13	1720	1	5	22	1253	1	5
5	0717	1	5	8	1420	1+	5	13	1815	2+	5	25	1205	1-	5
5	0847	1+	5	8	1500	1-	5	13	2013	2+	5	25	1738	1	5
5	0930	1	5	8	1632	1-	5	13	2122	1	5	26	1159	1-	5
5	1033	1-	5	9	0357	1	5	13	2200	1-	5	26	1215	1	5
5	1203	1	5	9	1029	1-	5	14	1016	1	5	27	0610	2	5
5	1237	1+	5	9	1612	1+	5	14	1040	1	5	27	1131	1-	5
5	1316	1-	5	9	1640	1+	5	14	1227	2+	5	27	1324	1	5
5	1414	2	5	9	1702	2+	5	14	1536	1+	5	27	1515	1-	5
5	1445	1+	5	10	0901	1-	5	14	1700	1	5	27	2216	1-	5
5	1529	1+	5	10	0954	1	4	14	1723	1	5	29	1209	1	5
5	1800	2+	5	10	1101	1-	5	14	1750	2	5	29	1504	1+	5
5	2000	2	5	10	1410	1	5	14	2227	2+	5	29	1801	2	5
5	2115	1-	5	10	1516	1-	5	14	2320	1-	5	30	1616	1	5
5	2135	1-	5	10	1624	1+	5	15	1114	1-	5	30	2136	1-	5
5	2212	2	5	10	1906	1-	5	15	1145	2	5	30	2236	1	5
5	2341	2	5	10	1953	1	5	15	1500	1	5	31	1335	1+	5
6	0153	1	5	10	2030	1-	5	15	1820	1-	5	31	1930	1	5

SID Analysts: J. Ellerbe; S. Hansen; J. Knight; A. Okorogu; A. Stokes; M. Taylor; P. Taylor; B. Wingate

DECnet: 34367::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.