

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS— SOLAR DIVISION

Peter O. Taylor, editor
4523 Thurston Lane, #5
Madison, WI 53711-4738 USA

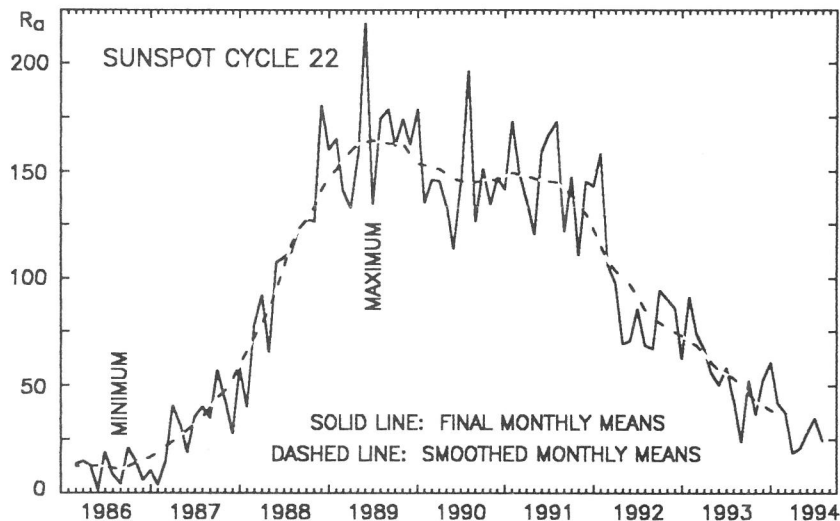


Volume 50 Number 8

August 1994

American Relative Sunspot Numbers for August

| | R _a Final | | | |
|-----------------------|----------------------|-----|-----|--------|
| 1) | 12 | 11) | 22 | 21) 16 |
| 2) | 12 | 12) | 39 | 22) 11 |
| 3) | 14 | 13) | 47 | 23) 19 |
| 4) | 15 | 14) | 42 | 24) 18 |
| 5) | 17 | 15) | 42 | 25) 13 |
| | | | | |
| 6) | 17 | 16) | 45 | 26) 13 |
| 7) | 13 | 17) | 42 | 27) 11 |
| 8) | 14 | 18) | 38 | 28) 13 |
| 9) | 14 | 19) | 44 | 29) 17 |
| 10) | 17 | 20) | 29 | 30) 26 |
| | | | 31) | 38 |
| | | | | |
| Mean: 23.5 | | | | |
| Number of reports: 97 | | | | |



August Summary: Solar activity was very low during the first twelve days of August. Little of interest occurred during this interval other than a filament which departed the Sun's NE quadrant on the 2nd. The geomagnetic field was mostly quiet, with intervals of minor storm conditions at high latitudes after the 9th. The latter disturbance was related to a recurrent coronal hole. The >2 MeV electron fluence was normal for most of this interval.

Beginning on the 13th, activity increased to low and moderate for several days. Six class M solar flares were recorded; a M3.9/1N Tenflare on the 14th, a M1.2/2N on the 15th, a M1.5/1N early on the 17th, a M1.1/1F on the 18th, and a M1.6/SF on the 19th - all in NOAA/USAF Region 7765 (S12, L034, EAO). An optically-uncorrelated M1.1 event also occurred on the 18th, probably in Region 7765. The M3 flare was the strongest to occur since February (a M4.0/3B on the 20th), and this number of class M flares (six) is by far the largest to be recorded for any single month since January. Region 7765 grew at an explosive rate, at one point attaining a beta-gamma-delta magnetic complexity. The geomagnetic field ranged between quiet and minor storm. The >2 MeV electron fluence increased to moderate and high on the 14th, and remained at that level until it declined to normal on the 21st.

Activity returned to very low until the 29th when it began to rise, becoming moderate on the 30th. The increase in activity level was due to the east-limb appearance of Region 7773 (S07, L105) a moderately-large class F group. This region spawned a number of class C flares along with August's seventh and eighth class M flares - M1.1/SF and M1.4/SF events on the 30th. The geomagnetic field was quiet during the remainder of August, and the >2 MeV electron fluence was normal. The smoothed monthly-mean American Relative Sunspot Number for February 1994 decreased to 35.8.

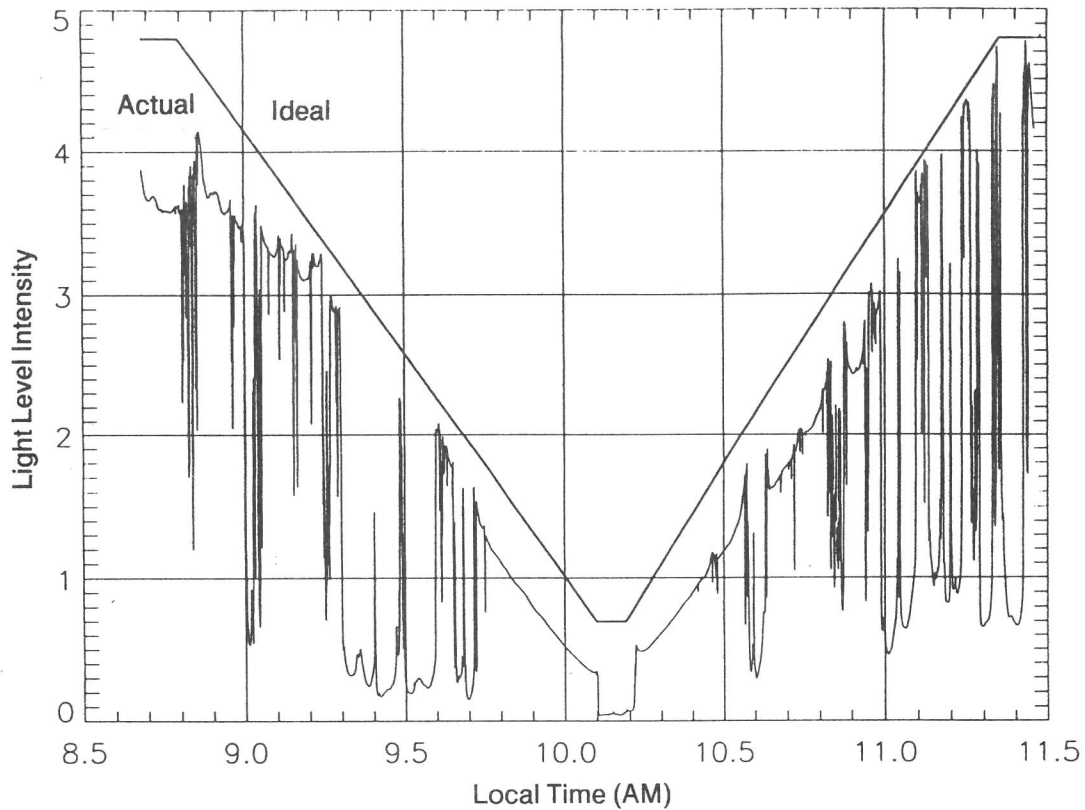
The mean estimated American Relative Sunspot Number for 1-14 September is 37. Solar activity was low and very low during the first fourteen days of September. On the 11th, Region 7773 was the site of a long-duration class C8.7 flare followed by a short >10 MeV proton enhancement at satellite altitude. The geomagnetic field experienced intervals of minor to severe storming on the 7th-10th related to a recurrent coronal hole. Thereafter the field returned to quiet or active levels. The >2 MeV electron fluence was high and very high throughout the second week of September.

[A portion of the above information was obtained from SELDADS]

DECnet: 34367::ptaylor INTERNET: ptaylor@selvax.sel.bldrdoc.gov FAX: [USA] 608-231-2385
TELEX: [3762848] TO: EASYPLEX:74270,1516; COMPUSEVE: 74270,1516

Note: Network contributors are urged to submit their reports via these media whenever possible.

Light Level Measurements at National Solar Observatory/Sacramento Peak During the 10 May 1994 Eclipse



Weather conditions at the summit of Sacramento Peak at Sunspot, New Mexico, were not favorable on the day of the eclipse. The skies were partly cloudy, and certain parts of the eclipse were blocked out. In the above figure we can see the light level expected during an annular eclipse with completely clear skies, represented by the dark line. The moon gradually blocks out the Sun, and the light level falls. During the central part of the eclipse - annularity - the light level is constant. Finally, at the end of the eclipse, the light level increases as more and more of the Sun is uncovered by the moon. The bottom line in the figure shows the actual light level measured in one experiment at NSO/Sac Peak. The sharp drops in the light level are caused by clouds obscuring the eclipse.

(Information and graphics obtained from Dr. Matthew Penn, Sacramento Peak Observatory)

Sudden Ionospheric Disturbances (SES) Recorded During July 1994

Records were received from A9,40,50,59,61,62,63,65,67,68,69,70,71,72,73,74,75,76,77,78,80,81,82,83,84

| Day | Max | Imp | Def | Day | Max | Imp | Def | Day | Max | Imp | Def | Day | Max | Imp | De |
|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|----|
| 1 | 1015 | 1- | 5 | 6 | 1647 | 1 | 5 | 10 | 1753 | 1- | 5 | 15 | 1631 | 1- | 5 |
| 1 | 1628 | 1 | 5 | 6 | 1757 | 1- | 5 | 11 | 1002 | 1- | 5 | 15 | 1720 | 1 | 5 |
| 1 | 1647 | 2 | 5 | 7 | 1001 | 2 | 5 | 12 | 0918 | 2 | 5 | 16 | 0916 | 1- | 5 |
| 1 | 2101 | 1- | 5 | 7 | 1109 | 1- | 5 | 12 | 1340 | 1- | 5 | 16 | 1247 | 1- | 5 |
| 2 | 1447 | 1- | 5 | 7 | 1130 | 1 | 5 | 13 | 1603 | 1- | 5 | 16 | 1959 | 1+ | 5 |
| 3 | 1500 | 2 | 5 | 7 | 1515 | 1- | 5 | 14 | 1903 | 1- | 4 | 18 | 1331 | 2 | 5 |
| 3 | 1625 | 1 | 5 | 7 | 1528 | 1 | 5 | 14 | 2000 | 1- | 5 | 19 | 1125 | 2 | 4 |
| 4 | 1814 | 1+ | 5 | 7 | 1932 | 1- | 5 | 14 | 2355 | 1- | 5 | 21 | 2018 | 1- | 4 |
| 5 | 1648 | 1 | 5 | 7 | 2117 | 1- | 5 | 15 | 0924 | 1- | 5 | 23 | 1016 | 1- | 5 |
| 5 | 2109 | 1+ | 5 | 9 | 1851 | 1 | 5 | 15 | 1301 | 1+ | 5 | 25 | 1418 | 1- | 4 |
| | | | | | | | | | | | | 29 | 1400 | 1+ | 5 |

Analysts: J. Ellerbe; S. Hansen; M. Hayden; J. Knight; A. Landry; R. Papp; C. Ranft; A. Stokes; M. Taylor; P. Taylor; L. Witkowski

Frequencies recorded (kHz): 16.8; 18.3; 19.6; 21.4; 23.4; 24.0; 24.8; 28.5; 30.6; 48.5; 51.6; 73.6; 77.15