

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS— SOLAR DIVISION

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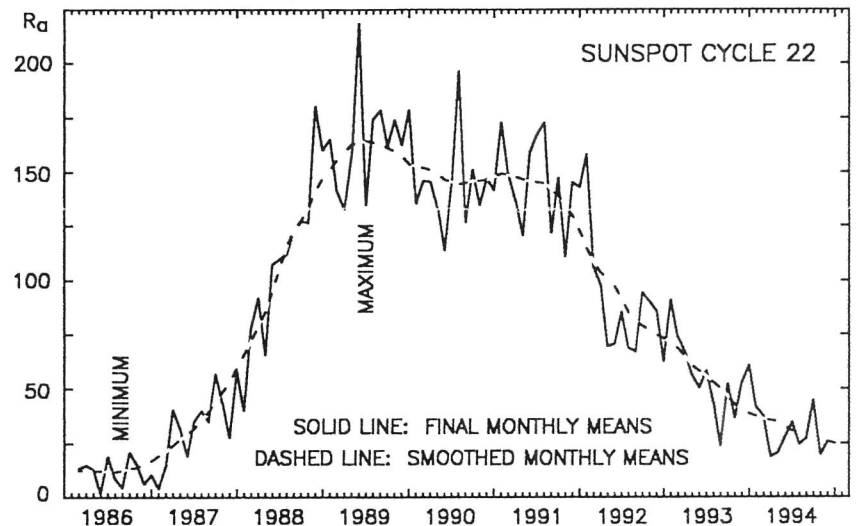
January 1995

American Relative Sunspot Numbers for January

		R _a Final			
1)	0	11)	10	21)	46
2)	6	12)	10	22)	56
3)	9	13)	9	23)	54
4)	16	14)	13	24)	56
5)	12	15)	13	25)	48
6)	12	16)	18	26)	29
7)	8	17)	27	27)	24
8)	10	18)	34	28)	27
9)	3	19)	42	29)	20
10)	8	20)	52	30)	34
				31)	36

Mean: 23.9

Number of reports: 95



January Summary: The new year began with activity at very low and low levels; only sporadic class C flare activity and below occurred. The geomagnetic field was mostly quiet to active, but experienced isolated storm conditions on the 3rd - possibly related to a Southern Hemisphere coronal hole. The >2 MeV electron fluence began to rise on the 3rd.

Solar activity declined to very low between the 5th and 11th. The Northern Hemisphere began a period of spotlessness on the 7th, and other than a 23-degree-long filament which disappeared from the Sun's NE quadrant late on the 5th, little significant activity was recorded. A brief interval of storm conditions due to a small coronal hole occurred on the 11th, but the geomagnetic field was mostly at a quiet to active level. The >2 MeV electron fluence was moderate and high ($E+08$), then began to decline late in the period.

A small filament disappeared from the SE quadrant on the 13/14th, but otherwise little of interest was recorded until the 18th, when a class C flare erupted in NOAA/USAF Region 7827 (S07, L112, DAI). The geomagnetic field continued to be relatively quiet until the 16th when high latitudes started to experience periods of minor to severe storm conditions. The >2 MeV electron fluence was normal ($E+06$) throughout the week.

Activity picked up a bit on the 19th when a new group - Region 7830 (N12, L040, DAI) - finally emerged in the Sun's Northern Hemisphere. Region 7830 grew rapidly, producing a number of class C and lesser-intensity solar flares in the process. Region 7829 (S12, L042, DAI) also spawned several class C events at this time, among them a C7/1N on the 24th. The geomagnetic field was quiet to unsettled, and the >2 MeV electron fluence continued to be normal.

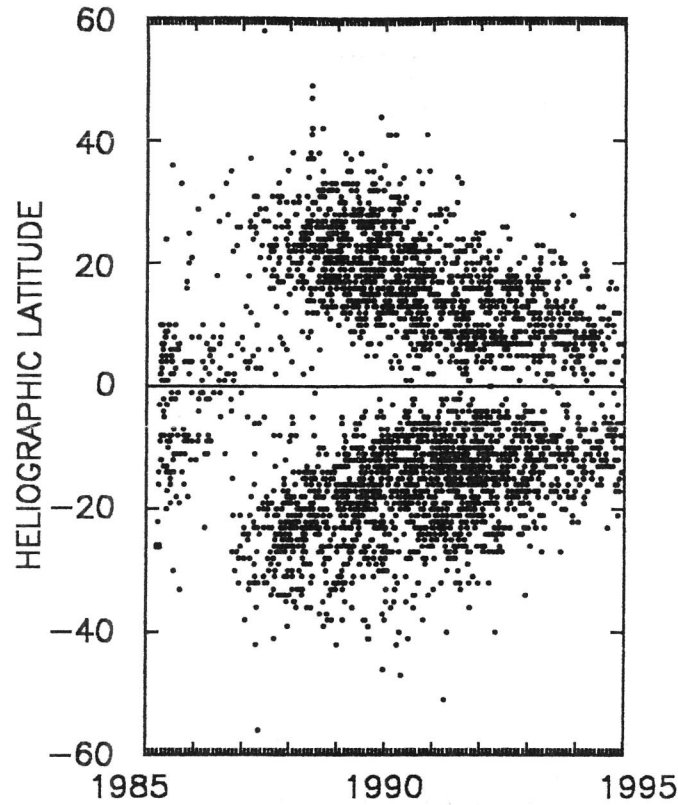
Numerous class B and C flares - some without optical correlation - were recorded during the remainder of January. One of the more interesting was a parallel ribbon flare in Region 7829 on the 27th, wherein solar material could be seen flowing down the NE-SW inversion line. The geomagnetic field continued to be quiet to active or unsettled until the 30th, when a recurrent coronal hole again became geoeffective and storm levels ensued. The >2 MeV electron fluence also rose to moderate and high on the 30th/31st.

Activity in the Sun's Northern Hemisphere continues to decline rapidly. Just three sunspot groups appeared north of the equator during January: two small, short-lived type BXO clusters early in the month, and Region 7830 which is described above. The final smoothed-mean American Relative Sunspot Number for July 1994 decreased to 29.5.

The mean estimated American Relative Sunspot Number for 1-14 February is 27. The first class M flares of 1995 erupted on February 1st (M1.0/SB, M1.1/SF) in Region 7832 (S21, L011, CAO), and on the 3rd (M4.3/2b with possible coronal mass ejection) and 4th (M2.6/2B) in Region 7834 (S13, L100, CSI).

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

Cycle 22 Butterfly Diagram; April 1985 - December 1994



The locations of emerging sunspot groups, as issued by the *Space Environment Services Center*, during solar cycle 22. The first group to appear during this cycle surfaced in the spring of 1985, as cycle 21 declined towards a September 1986 minimum; it is represented by the small filled-square in the Southern Hemisphere at the extreme left. New cycle sunspots typically emerge 12-18 months before the old cycle ends. Thus far, no cycle 23 spot-groups have appeared during the current cycle.

Sudden Ionospheric Disturbances (SES) Recorded During December 1994

Records were received from A9,40,50,59,61,62,63,65,68,69,70,71,72,73,74,75,76,77,78,80,81,82,83,84,85

Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	De
1	1836	1-	5	7	1810	1-	5	12	1017	2	5	16	1334	1	5
2	1415	1-	5	8	1710	2+	5	12	1247	1-	4	16	1505	1-	5
3	1244	1	5	8	1930	2	5	12	1257	1	5	17	1115	1-	5
3	2044	1	5	9	1426	1-	5	12	1415	1-	5	18	1453	1	5
4	0620	2	5	9	1800	2	5	12	1436	1-	5	18	1608	2	5
4	1300	1	5	10	1423	1-	5	13	1457	1-	5	20	1718	1-	5
4	1723	1	5	10	1607	2	5	13	2100	1+	5	21	2101	1-	5
4	2247	1	5	12	0944	1+	5	14	1525	1	5	26	1345	1-	5
5	1529	1+	5												

Analysts: J. Ellerbe; S. Hansen; M. Hayden; P. King; A. Landry; R. Papp; G. Rosenberg; 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

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