Solar Bulletin

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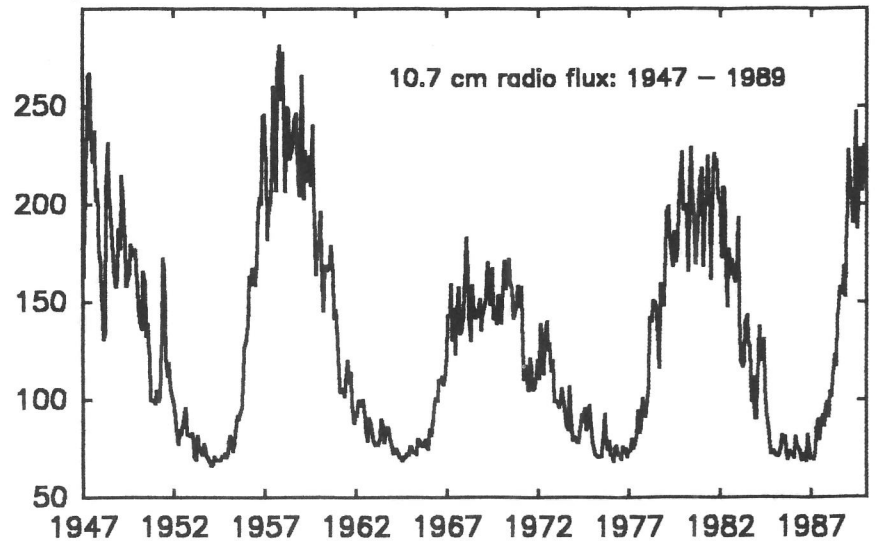
American Relative Sunspot Numbers for February

	R_a Final				
1)	177	11)	80	21)	158
2)	164	12)	82	22)	181
3)	140	13)	100	23)	220
4)	120	14)	91	24)	269
5)	90	15)	90	25)	236
6)	77	16)	65	26)	220
7)	91	17)	47	27)	217
8)	109	18)	88	28)	205
9)	110	19)	123		
10)	79	20)	139		

Mean = 134.6



The smoothed-mean American Relative Sunspot Number for August, 1989 is 162.7. Solar activity was generally low during the first three weeks of the month. The solar 10.7 centimeter radio flux declined to its lowest value (138) since December 1988 on the 11th, and the background x-radiation level fell to B4.0 on the 13th. Activity remained in the low range until the 22nd when SESC Region 5947 (S17, L316, DKI on 22 February) produced the third M-level x-ray flare of the month; the first such event in two weeks. Seven additional M-level events were recorded during the final week of the month, bringing the total for February to ten; the smallest number of M-class flares observed during any month since September 1988. Region 5947 was the largest group on the disk during the final days of February (740 millionths solar hemisphere on the 26th). Relative sunspot numbers increased considerably towards the end of the month, but the low values which were experienced earlier in February resulted in the first drop in the smoothed-mean sunspot number during cycle twenty-two (see page two).

The estimated mean American sunspot number for 1-11 March is 118. Flare production during this interval has been low; only five events have attained M-level intensity, and the x-ray background level has returned to the B-range after rising to C-level at the end of February.

Reference: **SESC** PRF, Numbers 753-57.

Sudden Ionospheric Disturbances Recorded During January 1990

Records were received from A1,19,46,50,52,59,61,62,63,64,65,66,67.

Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	Def	Day	Max	Imp	Def
1	0820	2	3	9	1456	2+	5	17	0857	1	2	23	0508	2	5
1	1015	2+	1	9	2046	2	5	18	0420	2+	5	23	1700	1-	5
1	1515	1-	5	10	0240	2+	4	18	1545	1	5	23	1830	1+	5
1	2128	2	5	10	2021	2	5	19	0425	2	4	23	1917	1+	5
2	1500	1-	5	10	2110	2	5	19	0844	1	3	24	0640	1	2
2	1914	2	5	12	0744	1	3	19	0915	2	3	24	0705	1	2
3	0626	2	4	12	0752	2+	5	19	1545	3	5	24	1720	1-	5
4	0355	2+	3	13	0620	2+	2	20	1329	2+	5	24	2015	2+	5
4	0525	2	3	14	1006	2+	4	20	1713	1+	5	25	0727	1	3
4	1615	2	5	14	1608	1	1	20	1714	2	5	26	0515	2+	2
5	1652	2	5	15	0650	2+	3	20	2118	2	5	26	1618	1-	5
5	2013	2+	5	15	1610	2	5	21	0436	2+	2	27	0856	2	1
8	1718	1+	5	16	0752	3+	3	21	1615	3	5	28	1618	1	1
9	0701	1+	3	17	0540	2+	4	21	1815	2+	5	31	1025	2	3
9	0734	2	3	17	0720	1+	4	21	1951	2	5				

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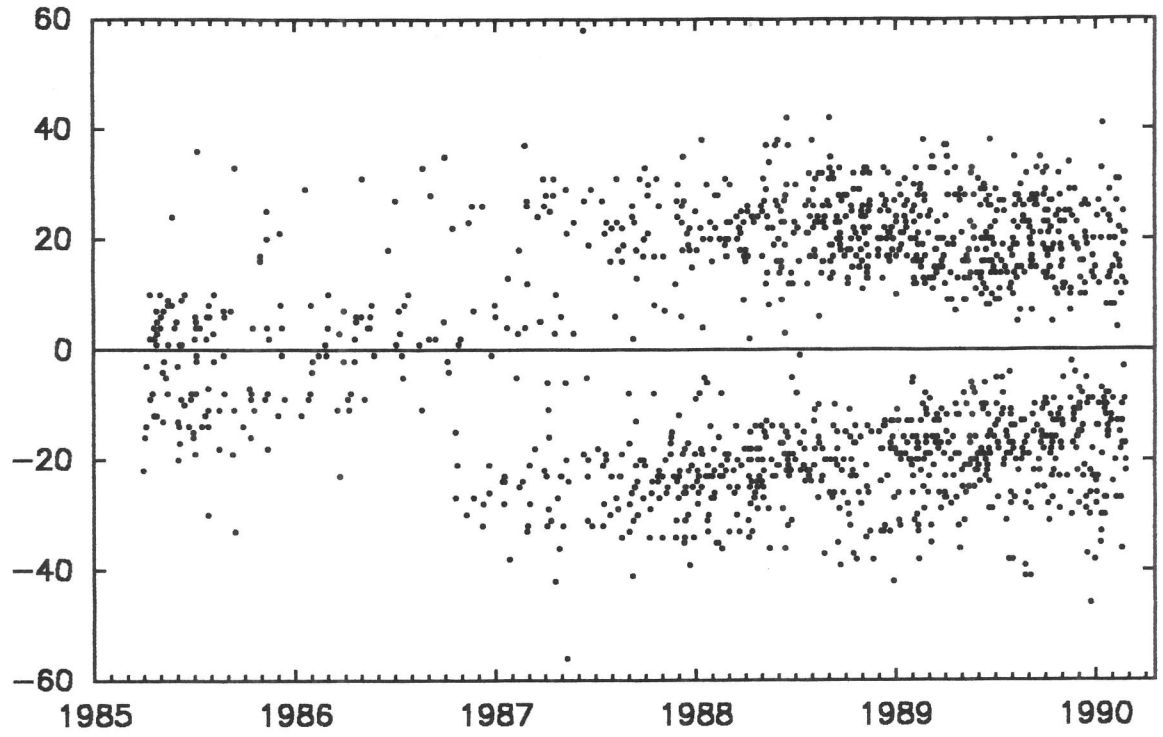
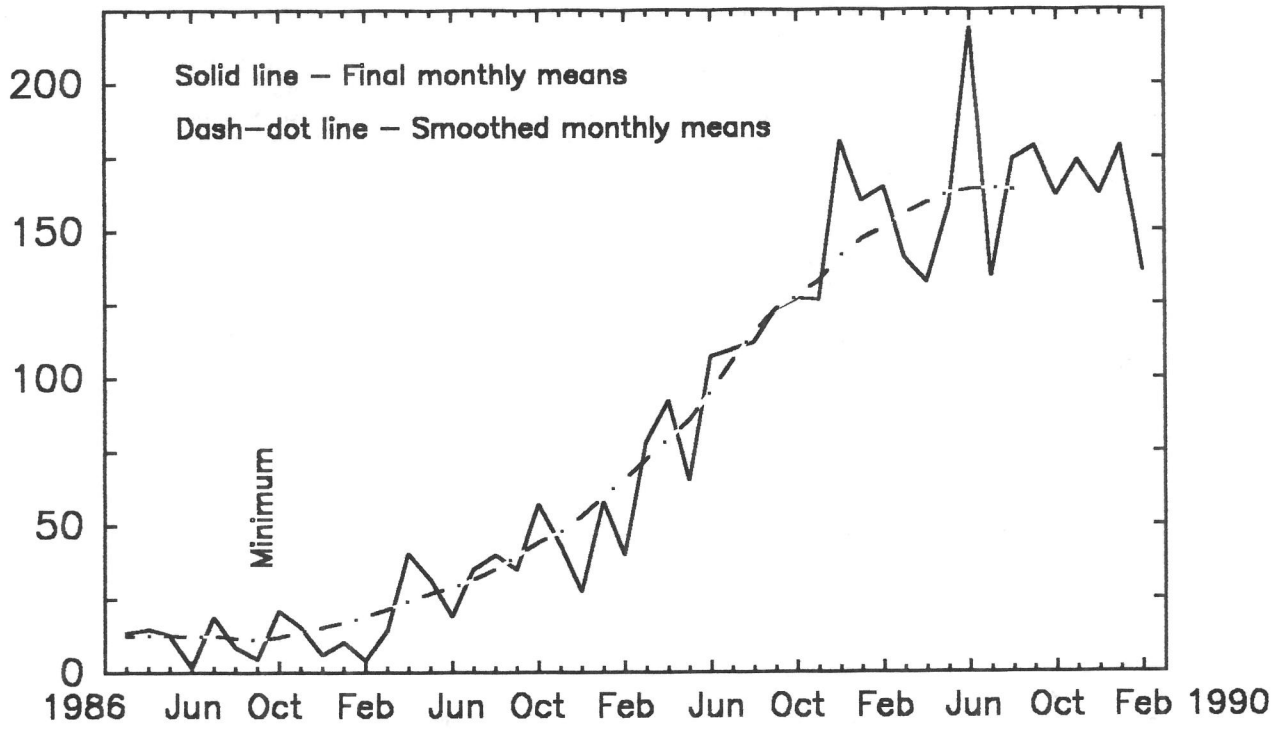


The figure above is a plot of the heliographic positions of emerging sunspot groups between April, 1985 and February, 1990. The sudden leap in latitude which occurred near the minimum of cycle twenty-one (September, 1986) can clearly be seen.



American Relative Sunspot Numbers between March, 1986 and February, 1990. For the first time since cycle twenty-two began, the smoothed-mean sunspot number for August, 1989 declined.