

# Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS— SOLAR DIVISION

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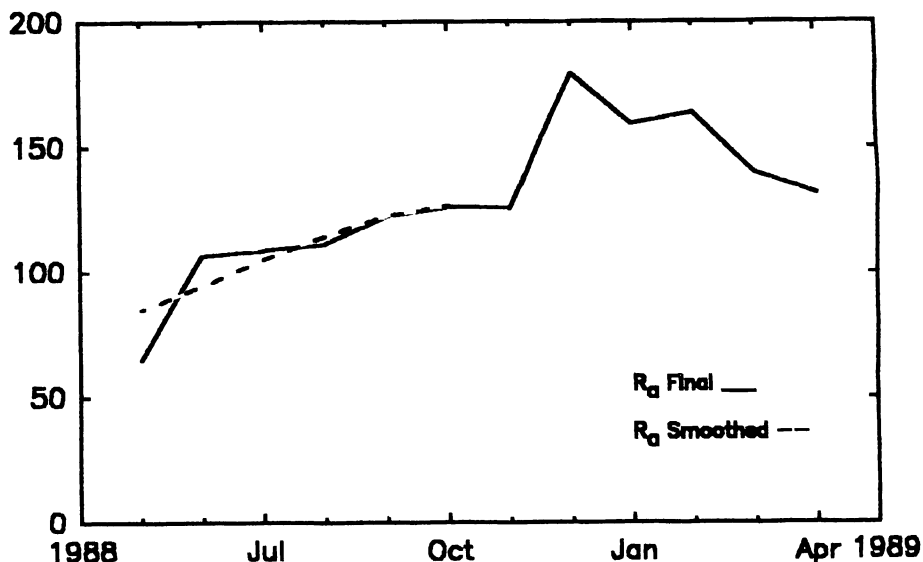
Volume 45 Number 4

April 1989

## American Relative Sunspot Numbers for April

R <sub>a</sub> Final		
1) 117	11) 107	21) 159
2) 131	12) 92	22) 163
3) 148	13) 85	23) 134
4) 132	14) 101	24) 130
5) 100	15) 120	25) 133
6) 145	16) 138	26) 134
7) 163	17) 151	27) 133
8) 175	18) 134	28) 118
9) 146	19) 159	29) 109
10) 118	20) 168	30) 105

Mean = 131.6



The smoothed mean American Relative Sunspot Number for October 1988 is 126.5. One-hundred-two members of the international network of **American Sunspot Program** contributors submitted reports for April. Northern Region 5441 (N36, L235, EKO on 9 April) produced the month's only X-class flare early on 9 April, an X3.5/4B event. This complex, *reverse polarity* region was composed of three abutted/stacked sunspot groups. Otherwise, solar activity was in the low or moderate range. Thirteen M-level flares were recorded. The most energetic of these was an M4.3 event which occurred on 5 April.

The *estimated* American Sunspot Number for 1-15 May is 137. Flare activity has increased during this period. SESC Region 5470 (N29, L261, EK1 on 4 May) produced two X-level events during its disk passage. These flares occurred on 3 and 5 May, and both were rated X2/3B. Minor geomagnetic storming followed both events. In addition, Region 5470 and Region 5464 (S18, L317, EKC on 5 May) produced twenty-one M-level events during their transits. The largest, rated M5/2N, was associated with Region 5464. Activity declined to *low* by the end of the period.

R <sub>i</sub> Provisional		
1) 104	11) 106	21) 161
2) 122	12) 96	22) 167
3) 140	13) 92	23) 128
4) 126	14) 98	24) 135
5) 94	15) 120	25) 132
6) 139	16) 130	26) 116
7) 170	17) 144	27) 126
8) 185	18) 137	28) 109
9) 153	19) 151	29) 107
10) 122	20) 155	30) 114

Mean = 129.3

### Predicted Smoothed American Sunspot Numbers

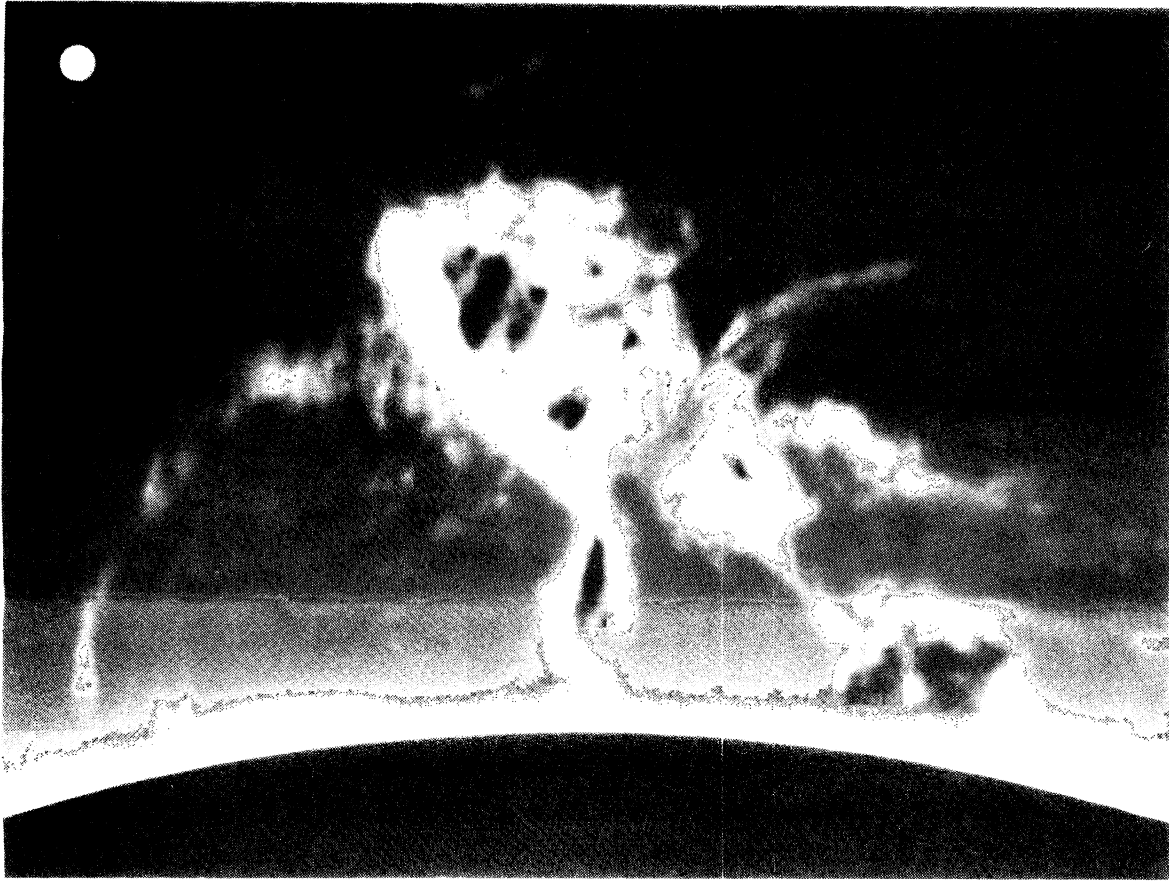
McNish - Lincoln Method:

November 136; December 141; January 144;  
February 148; March 156; April 163.

Solar-Geophysical Data, 535, I, 14.

Sunspot Bulletin, 1989, No. 4.

TELEMAIL: P.TAYLOR/ASP TELEEX: 3762848 TO: EASYPLEX:74270,1516 FAX: [USA] 904-373-2506 [Attn: P. Taylor]  
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This superb prominence photograph was taken 14 February (11:05 UT) by **American Sunspot Program** collaborator, Jean Dragesco. Professor Dragesco took the photograph from the south of France using a narrow passband (0.6Å) H $\alpha$  filter and fourteen-inch catadioptric telescope. The small filled-circle in the upper left-hand corner indicates the approximate size of the Earth relative to the Sun's disk.

### Sudden Ionospheric Disturbances Recorded During March

Records were received from A1,3,9,19,26,40,46,49,50,52,59,60,61,62.

Day	Max	Imp	Day	Max	Imp	Day	Max	Imp	Day	Max	Imp	Day	Max	Imp
1	06:18	1+	7	20:03	1-	11	06:47	2+	14	14:30	1+	19	13:19	1-
1	10:26	2	7	21:22	1+	11	09:02	1+	14	17:00	2+	19	15:10	2
1	17:42	2	7	22:32	2	11	12:25	1+	14	19:45	2	19	17:57	1-
1	21:19	1-	8	08:31	2+	11	14:03	2	14	20:31	2+	19	21:15	2+
1	22:30	1+	8	12:47	1-	11	15:21	1-	15	13:34	1+	20	14:28	1
2	04:18	1+	8	14:32	1-	11	15:36	2	15	16:55	2	20	15:50	2+
2	06:19	1+	8	14:47	2	11	16:43	1	16	06:15	1+	20	20:54	2+
2	09:00	2	8	17:31	1	11	17:30	1-	16	15:28	2	21	06:32	1-
2	18:37	2	8	18:09	1+	11	18:30	1	16	17:55	1+	21	09:41	1
2	21:49	1	8	18:55	2	11	19:34	2	16	19:17	2	22	19:54	1+
3	09:20	1+	8	21:17	2	11	23:17	1+	16	20:42	1+	22	21:07	2
3	18:05	2+	9	05:00	1+	12	05:29	2	16	22:10	2+	22	22:59	2
4	16:32	1+	9	08:06	1+	12	05:52	1-	16	23:15	1	23	14:03	1
4	22:15	1+	9	08:33	1+	12	06:10	1-	17	06:00	1+	23	17:50	3
5	08:32	1+	9	10:07	2+	12	06:18	1	17	07:18	1+	23	19:40	2+
5	09:12	1+	9	13:03	1+	12	07:40	2	17	11:08	1	23*	21:23	1
5	15:42	1-	9	15:32	2	12	08:21	1+	17	15:49	1-	23*	22:21	2
5	18:32	1+	9	17:01	1	12	08:50	2	17	16:15	1+	24	20:32	2+
5	19:19	1+	9*	18:01	2+	12	12:28	1-	17	17:38	2+	25	15:39	1+
5	19:50	2+	9	19:27	2+	12	13:19	1+	17	20:15	1+	26	13:11	1+
5	20:46	1	10	13:13	1	12	15:02	2	17	23:15	2	26	22:51	1-
5	21:34	1+	10	13:33	1+	12	15:41	1	18	12:48	1+	27	14:47	2
6	14:00	3+	10	14:40	1+	12	16:06	1-	18	15:58	2	27	20:38	2+
6	20:50	1	10	15:30	1	12	16:20	1-	18	17:33	2	28	10:33	2
6	22:22	1+	10	16:58	2	12	18:17	1-	18	19:25	1+	28	19:45	2+
7	13:22	1	10	17:34	1+	12	19:03	2	18	20:33	2	29	17:47	1
7	13:45	1+	10	17:37	2+	12	20:36	2+	18	22:00	2+	30	13:02	1
7	14:55	1+	10	19:03	2+	13	13:15	2	19	06:30	2	30	18:27	1+
7	16:55	2	11	03:45	2	13	17:35	2	19	07:03	2	31	16:16	1
7	18:17	2	11	05:21	2+	14	09:30	1-						

\*(Def = 4. Def = 5 for all other events)

SID Analyst: Bruce R. Wingate