

PART B  
SOLAR - GEOPHYSICAL DATA

ISSUED  
SEPTEMBER 1961

U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS  
CENTRAL RADIO PROPAGATION LABORATORY  
BOULDER, COLORADO

## SOLAR - GEOPHYSICAL DATA

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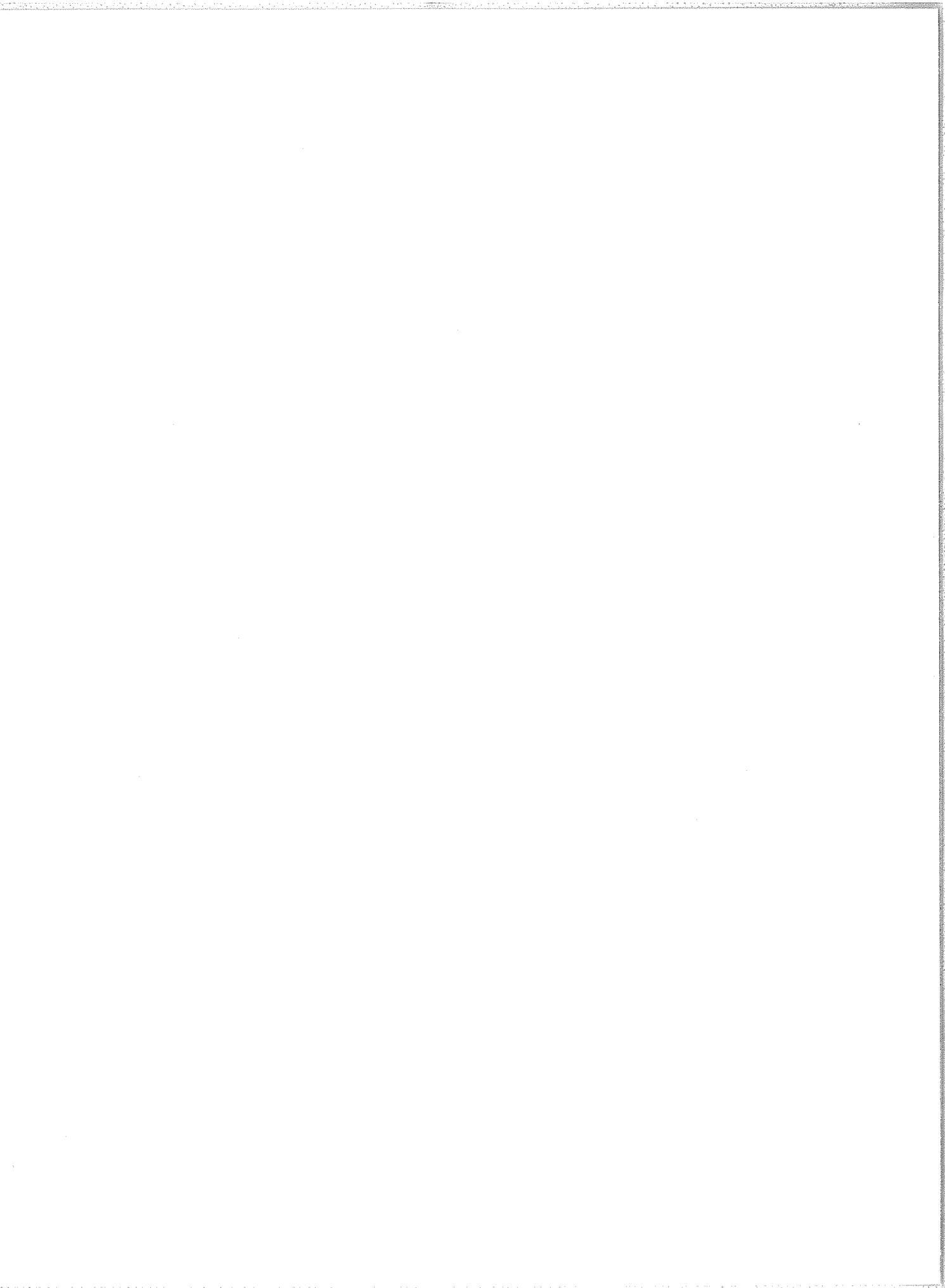
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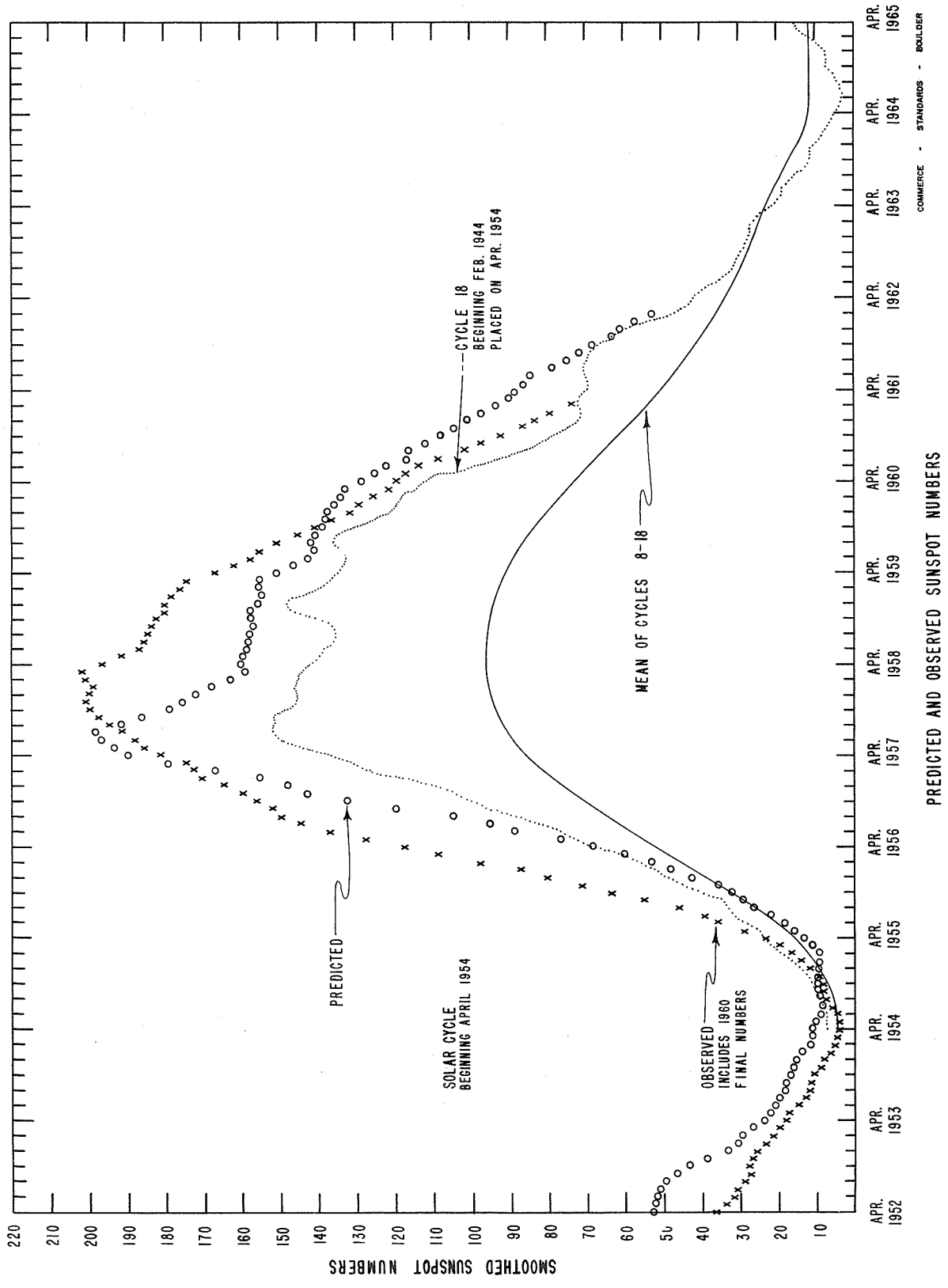
The descriptive text was published separately, November 1960.

## DAILY SOLAR INDICES

JULY 1961

July 1961	American Relative Sunspot Numbers R <sub>A</sub> '
1	50
2	57
3	65
4	50
5	37
6	56
7	54
8	45
9	60
10	70
11	78
12	78
13	74
14	95
15	99
16	88
17	83
18	74
19	78
20	66
21	63
22	50
23	65
24	55
25	58
26	52
27	33
28	33
29	30
30	26
31	33
Mean:	59.8

Aug. 1961	Zürich Provisional Relative Sunspot Numbers R <sub>Z</sub>	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	39	90
2	17	87
3	24	91
4	23	88
5	14	90
6	11	92
7	9	99
8	27	105
9	51	113
10	68	122
11	92	130
12	84	128
13	92	128
14	100	127
15	108	123
16	98	119
17	85	119
18	64	116
19	69	113
20	43	109
21	51	104
22	33	103
23	29	98
24	33	97
25	47	93
26	45	95
27	54	95
28	36	100
29	60	103
30	62	106
31	53	108
Mean:	52.3	106.2



## CALCIUM PLAGE AND SUNSPOT REGIONS

AUGUST 1961

CMP August 1961	Lat	McMath Plage Number	Return of Region	Calcium Plage Data			Sunspot Data		
				CMP Values Area	Int.	History, Age	CMP Values Area	Count	History
01.0	N11	6182	6163	1200	2	<i>l</i> — <i>l</i> 2			
02.8	S22	6187	New	1800	3	<i>l</i> \ <i>l</i> 1	50	1	<i>b</i> ^ <i>d</i>
03.3	N16	6184	6164	2800	3	<i>l</i> — <i>l</i> 3	60	5	<i>l</i> \ <i>d</i>
04.9	N12	6188	6164	1200	2.5	<i>l</i> — <i>l</i> 3			
08.2	S10	6196	New	(500)	(2)	<i>b</i> / <i>l</i> 1			
08.5	N04	6192	6168	400	2.5	<i>b</i> ^ <i>d</i> 6			
08.9	N17	6197	New	(300)	(3.5)	<i>b</i> / <i>l</i> 1	90	9	<i>b</i> / <i>l</i>
09.8	S08	6191	6171	2900	3	<i>l</i> — <i>l</i> 3			
11.7	S15	6198	6171	800	2	<i>b</i> ^ <i>d</i> 3			
12.4	N15	6193	6172	1200	2.5	<i>l</i> — <i>l</i> 3			
13.9	S07	6194	6173	2600	2.5	<i>l</i> — <i>l</i> 3	60	2	<i>l</i> \ <i>d</i>
14.3	N13	6195	New	5800	3	<i>l</i> — <i>l</i> 1	140	5	<i>l</i> \ <i>d</i>
16.4	S04	6200	New	2300	3	<i>l</i> — <i>l</i> 1	20	1	<i>l</i> \ <i>d</i>
16.8	N12	6199	*	6200	3	<i>l</i> — <i>l</i> 1	380	4	<i>l</i> — <i>l</i>
18.6	N17	6202	6183	400	1.5	<i>l</i> \ <i>d</i> 2			
18.9	N01	6201	6176	2200	3	<i>l</i> — <i>l</i> 2	180	4	<i>l</i> \ <i>d</i>
20.1	S15	6203	New	1600	3	<i>l</i> — <i>l</i> 1			
21.2	N09	6204	6178	2400	3	<i>l</i> — <i>l</i> 3	50	1	<i>l</i> \ <i>d</i>
23.2	N18	6205	6179	1400	3	<i>l</i> ^ <i>l</i> 3			
25.8	N20	6206	6180	1200	3	<i>l</i> / <i>l</i> 3	300	9	<i>b</i> / <i>l</i>
26.9	N10	6208	6180	900	3	<i>l</i> — <i>l</i> 3			
27.0	S14	6207	**	2100	3	<i>l</i> — <i>l</i> 2	20	2	<i>l</i> \ <i>d</i>
30.3	S16	6211	6187	1100	3	<i>l</i> \ <i>l</i> 2			
30.4	N19	6210	6184	2200	3	<i>l</i> — <i>l</i> 4			

COMMERCE - STANDARDS - BOULDER

\*Primarily new, in position of 6175

\*\*Return of a part of 6181. It formed on disk previous rotation (1 and 2).

FINAL CORONAL LINE EMISSION INDICES

APRIL 1961

C.F. Apr 1961	North East Quadrant (Observed 7 days earlier)				South East Quadrant (Observed 7 days earlier)				South West Quadrant (Observed 7 days later)				North West Quadrant (Observed 7 days later)			
	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>
1	72	83	18	27	99	146	46	94	54	98	18	29	46	54	5	14
2	68	50	19	49	120	213	44	56	84	119	22	35	35	46	11	18
3	46	70	6	24	57	70	11	24	x	x	x	x	x	x	x	x
4	44	57	7	14	29	58	7	15	x	x	x	x	x	x	x	x
5	42a	61a	17	35	25a	53a	22	30	13	20	6	7	39	64	15	30
6	21	22	x	x	11	18	x	x	10	14	6	7	34	52	11	28
7	40	52	9	11	30	41	11	16	13	15	0	0	26	31	10	32
8	32	65	7	9	15	21	6	14	17	21	13	19	24	26	8	12
9	24	32	12	15	27	71	14	28	20	23	9	17	23	25	10	14
10	20	31	8	11	30	80	9	20	16	21	11	19	22	29	7	17
11	16	20	9	13	28	53	9	22	26	50	x	x	35	44	x	x
12	17	24	30	61	14	26	13	15	15	21	6	9	25	32	5	11
13	45	52	7	14	36	46	4	16	x	x	x	x	x	x	x	x
14	43	52	7	20	45	58	1	8	x	x	x	x	x	x	x	x
15	48	81	4	8	33	36	0	0	41	64	x	x	84	123	x	x
16	56	90	11	22	29	52	6	8	x	x	x	x	x	x	x	x
17	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	49	69	x	x	41	69	3	10
19	37	47	6	7	39	49	5	6	x	x	x	x	x	x	x	x
20	47	60	4	5	60	70	5	8	56	91	x	x	50	61	x	x
21	51	63	5	7	69	97	5	10	56	104	x	x	39	48	x	x
22	93	120	12	25	56	87	15	23	56a	96a	13a	20a	67a	87a	14a	18a
23	53	81	10	16	59	126	12	25	27	32	x	x	35	49	x	x
24	58	90	9	17	32	44	9	16	19	25	x	x	28	41	x	x
25	41	50	x	x	29	32	x	x	x	x	x	x	x	x	x	x
26	32	36	3	10	26	31	10	20	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	60	88	8	16	43	63	0	0
28	x	x	x	x	x	x	x	x	105	128	15	29	82	134	9	24
29	50	73	x	x	98	162	x	x	x	x	x	x	x	x	x	x
30	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

a = index computed from low weight data. + = yellow line observed x = no observations - = below threshold of visibility



FINAL CORONAL LINE EMISSION INDICES

MAY 1961

CMP May 1961	North East Quadrant (Observed 7 days earlier)			South East Quadrant (Observed 7 days earlier)			South West Quadrant (Observed 7 days later)			North West Quadrant (Observed 7 days later)		
	G <sub>6</sub>	G <sub>1</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>1</sub>
1	x	x	x	x	x	x	x	x	x	x	x	x
2	41	52	14	39	88	13	34	42	x	35	67	x
3	x	x	x	x	x	x	27	30	x	46	63	x
4	40	47	x	17	22	x	18	21	x	34	53	x
5	17	19	x	13	17	x	15	18	x	24	33	7
6	32a	48a	13a	29a	38a	12a	32	42	0	32	35	0
7	16	17	x	17	22	x	14	22	6	17	20	8
8	29	45	x	17	25	x	7	12	5	15	17	12
9	x	x	x	x	x	x	x	x	x	x	x	18
10	x	x	x	x	x	x	21	28	2	43	65	17
11	66	104	15	35	72	0	18	24	3	60	86	9
12	x	x	x	x	x	x	19	27	x	81	116	x
13	107	162	78	41	63	19	37	51	x	87	108	x
14	x	x	x	x	x	x	28	39	8a	67	80	7a
15	x	x	x	x	x	x	23	31	x	27	39	x
16	41	45	x	32	48	x	39	47	x	55	74	x
17	59	71	x	63	73	x	x	x	x	x	x	x
18	43	52	5	62	78	3	x	x	x	x	x	x
19	37	50	9	52	63	10	x	x	x	x	x	x
20	53	56	10	64	91	4	x	x	x	x	x	x
21	34	42	6	30	55	7	x	x	x	x	x	x
22	32	40	3	20	24	9	20	35	14	35	55	11
23	x	x	x	x	x	x	x	x	x	x	x	x
24	43	47	6	33	53	3	34	57	2a	54	84	5a
25	58	91	15	56	72	4	x	x	x	x	x	x
26	100	130	x	94	125	x	65	94	x	56	81	x
27	81	135	x	96	133	x	63	104	8	57	70	16
28	33	39	23a	56	67	18a	64	83	7	43	55	12
29	35	64	x	24	31	x	x	x	x	x	x	x
30	45	70	x	18	22	x	x	x	x	x	x	x
31	x	x	x	x	x	x	18	22	11	29	50	13

a = index computed from low weight data. + = yellow line observed x = no observations - = below threshold of visibility

FINAL CORONAL LINE EMISSION INDICES

JUNE 1961

CIRP June 1961	North East Quadrant (Observed 7 days earlier)			South East Quadrant (Observed 7 days earlier)			North West Quadrant (Observed 7 days later)		
	G <sub>6</sub>	G <sub>1</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>1</sub>
1	x	x	x	x	x	x	20	31	12
2	30	34	x	52	60	x	58	50	0
3	x	x	x	x	x	x	42	87	27
4	x	x	x	x	x	x	44	53	x
5	17	21	20	9	20	17	64	106	x
6	x	x	x	x	x	x	59	68	16
7	50	61	48a	26	72	19a	18	28	x
8	39	53	x	25	42	x	15	20	x
9	53	75	11	38	74	4	48	59	0
10	58	89	0	41	67	6	23	25	10
11	44	60	19	37	49	0	47	87	16
12	x	x	x	x	x	x	37	42	x
13	x	x	x	x	x	x	50	82	x
14	50	70	48	42	73	16	50	82	x
15	52	64	48	48	92	40	x	x	x
16	46	56	6	71	126	36	x	x	x
17	45	56	13	80	179	26	x	x	36a
18	54	78	x	70	83	x	61	106	26
19	30	34	x	52	70	x	x	x	x
20	55	66	15	50	59	10	x	x	x
21	54	81	x	75	120	x	70	93	29
22	61	90	x	61	118	x	44	73	15
23	106	164	25	125	148	42	34	92	33
24	52	73	10	42	59	7	34	48	7a
25	62	134	23	40	82	24	29	39	9
26	x	x	x	x	x	x	x	x	11a
27	55	85	x	29	40	x	20	31	16
28	52	74	x	20	39	x	x	x	13
29	x	x	x	x	x	x	14	25	x
30	x	x	x	x	x	x	17	25	x
31	x	x	x	x	x	x	x	x	x
32	x	x	x	x	x	x	x	x	x
33	x	x	x	x	x	x	x	x	x
34	x	x	x	x	x	x	x	x	x
35	x	x	x	x	x	x	x	x	x
36	x	x	x	x	x	x	x	x	x
37	x	x	x	x	x	x	x	x	x
38	x	x	x	x	x	x	x	x	x
39	x	x	x	x	x	x	x	x	x
40	x	x	x	x	x	x	x	x	x
41	x	x	x	x	x	x	x	x	x
42	x	x	x	x	x	x	x	x	x
43	x	x	x	x	x	x	x	x	x
44	x	x	x	x	x	x	x	x	x
45	x	x	x	x	x	x	x	x	x
46	x	x	x	x	x	x	x	x	x
47	x	x	x	x	x	x	x	x	x
48	x	x	x	x	x	x	x	x	x
49	x	x	x	x	x	x	x	x	x
50	x	x	x	x	x	x	x	x	x
51	x	x	x	x	x	x	x	x	x
52	x	x	x	x	x	x	x	x	x
53	x	x	x	x	x	x	x	x	x
54	x	x	x	x	x	x	x	x	x
55	x	x	x	x	x	x	x	x	x
56	x	x	x	x	x	x	x	x	x
57	x	x	x	x	x	x	x	x	x
58	x	x	x	x	x	x	x	x	x
59	x	x	x	x	x	x	x	x	x
60	x	x	x	x	x	x	x	x	x
61	x	x	x	x	x	x	x	x	x
62	x	x	x	x	x	x	x	x	x
63	x	x	x	x	x	x	x	x	x
64	x	x	x	x	x	x	x	x	x
65	x	x	x	x	x	x	x	x	x
66	x	x	x	x	x	x	x	x	x
67	x	x	x	x	x	x	x	x	x
68	x	x	x	x	x	x	x	x	x
69	x	x	x	x	x	x	x	x	x
70	x	x	x	x	x	x	x	x	x
71	x	x	x	x	x	x	x	x	x
72	x	x	x	x	x	x	x	x	x
73	x	x	x	x	x	x	x	x	x
74	x	x	x	x	x	x	x	x	x
75	x	x	x	x	x	x	x	x	x
76	x	x	x	x	x	x	x	x	x
77	x	x	x	x	x	x	x	x	x
78	x	x	x	x	x	x	x	x	x
79	x	x	x	x	x	x	x	x	x
80	x	x	x	x	x	x	x	x	x
81	x	x	x	x	x	x	x	x	x
82	x	x	x	x	x	x	x	x	x
83	x	x	x	x	x	x	x	x	x
84	x	x	x	x	x	x	x	x	x
85	x	x	x	x	x	x	x	x	x
86	x	x	x	x	x	x	x	x	x
87	x	x	x	x	x	x	x	x	x
88	x	x	x	x	x	x	x	x	x
89	x	x	x	x	x	x	x	x	x
90	x	x	x	x	x	x	x	x	x
91	x	x	x	x	x	x	x	x	x
92	x	x	x	x	x	x	x	x	x
93	x	x	x	x	x	x	x	x	x
94	x	x	x	x	x	x	x	x	x
95	x	x	x	x	x	x	x	x	x
96	x	x	x	x	x	x	x	x	x
97	x	x	x	x	x	x	x	x	x
98	x	x	x	x	x	x	x	x	x
99	x	x	x	x	x	x	x	x	x
100	x	x	x	x	x	x	x	x	x

a = index computed from low weight data. + = yellow line observed x = no observations - = below threshold of visibility

PROVISIONAL CORONAL LINE EMISSION INDICES

JULY 1961

O&P Jul 1961	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>
1	x	x	18a	28a	x	x	9a	24a	31	64	15	24	56	87	24	36
2	33	62	23a	26a	37	x	11a	26a	73	112	x	x	21	22	x	x
3	x	x	x	x	x	x	x	x	27a	64a	8a	12a	47a	62a	17a	24a
4	x	x	x	x	x	x	x	x	x	x	8	11	x	x	x	25
5	x	x	x	x	x	x	x	x	15	22	18	24	72	132	11	20
6	58	81	12	41	11	26	7	12	23	28	0	0	60	84	3	8
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	74	106	18a	10a	40	84	1a	4a	26a	39a	x	x	x	x	x	12a
9	48	62	17	24	64	146	14	32	46a	62a	12a	16	28a	36a	10a	16
10	x	x	16a	42a	x	x	4a	12a	x	x	11	x	x	45a	13	x
11	52	70	23	40	27	42	15	16	42	70	x	x	38	64	x	x
12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	67	98	x	x	92	252	x	x	x	x	x	x	x	x	x	x
14	58	81	x	x	98	224	x	x	x	x	x	x	x	x	x	x
15	44	50	16	40	53	81	20	32	x	x	x	x	x	x	x	x
16	58	73	11a	24a	39	64	13a	16a	10	12	5	6	12	18	7	10
17	96a	120a	18a	28a	52a	76a	25a	44a	36	55	8	11	45	88	11	19
18	x	x	11	23	x	x	20	27	61	82	13	23	50	75	15	25
19	87	106	17	24	65	146	17	44	x	x	x	x	x	x	x	x
20	72	92	9	24	52	92	9	36	x	x	x	x	x	x	x	x
21	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22	57	104	x	x	57	115	x	x	52	70	14	29	26	44	11	20
23	77a	160a	19a	28a	53a	98a	11a	24a	x	x	x	x	x	x	x	x
24	51a	73a	25	48	36a	73a	19	32	x	x	x	x	x	x	x	x
25	68	107	x	x	34	53	x	x	x	x	x	x	x	x	x	x
26	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	10	21	11	13	29	37	12	16
29	x	x	x	x	x	x	x	x	24	47	7	11	26	57	8	15
30	18	31	x	x	6	13	8	13	13	22	10	12	13	15	5	8
31	40	58	5	9	15	24	6	8	x	x	x	x	x	x	x	x

COMMERCE - STANDARDS - BOULDER

\* = yellow line observed.

a = index computed from low weight data.

x = no observations.

PROVISIONAL CORONAL LINE EMISSION INDICES

AUGUST 1961

CMP Aug 1961	North East Quadrant (Observed 7 days earlier)				South East Quadrant (Observed 7 days earlier)				South West Quadrant (Observed 7 days later)				North West Quadrant (Observed 7 days later)			
	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>
1	61	96	7	9	14	19	6	9	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5	38	62	9	17	13	18	9	14	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10	33	47	13	21	44	85	16	18	x	x	x	x	x	x	x	x
11	30	45	20	37	45	87	13	31	50	62	6	8	34	42	13	20
12	x	x	x	x	34	72	11	32	42	70	8	12	62	104	11	24
13	63	104	20	31	34	x	x	x	57	95	x	x	87	146	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	150	358	10	16	132	246	25	64
16	x	x	x	x	x	x	x	x	75	154	x	x	103	174	x	x
17	x	x	x	x	x	x	x	x	44	91	x	x	46	60	x	x
18	x	x	x	x	x	x	x	x	46	82	14	25	38	69	8	18
19	x	x	x	x	x	x	x	x	54	76	16	24	42	62	13	24
20	52	84	x	x	36	64	x	x	31	53	17	44	64	90	16	24
21	17	22	6	20	43	53	17	36	29	39	15	24	58	92	18	20
22	50a	64a	x	x	19a	34a	x	x	x	x	x	x	x	x	x	x
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	13	21	16	20	38	60	18	38
25	40	59	9	12	21	31	6	16	32	52	9	13	37	70	9	15
26	62	116	11	20	53	120	10	16	x	x	x	x	x	x	x	x
27	43	81	x	x	54	123	x	x	19	24	12	15	x	30	x	10
28	x	x	x	x	25	31	9	12	35	42	16a	32a	35	56	8a	12a
29	65	98	3	4	27	52	x	x	20	34	13	16	37	48	8	12
30	63	118	x	x	27	52	x	x	19	20	11	20	36	48	5	12
31	57	82	x	x	37	56	x	x	19	20	11	20	36	48	5	12

a = index computed from low weight data. + = yellow line observed x = no observations - = below threshold of visibility

# SOLAR FLARES

AUGUST 1961

OBSERVATORY	DATE AUG 1961	OBSERVED UNIVERSAL TIME		MAX. PHASE	LOCATION		DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END		LAT.	MER. DIST.				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H <sub>g</sub>	MAX. INT. %		
[ ONDREJOV WENDEL SAC PEAK	01	0707 E	0723		S10 E18	6187	16 D	1	2	0709	1.88	5.00	2.20	24	SLOW S-SWF
	01	0708 E	0735	2029	S21 E20	6187	27 D	1	2		2.21				
	01	2020	2158		N22 W43	6180	98	1	2						
LOCKHEED	02	1806	1838	1815	S05 E90	6191	32	1	1	1815	.80	4.00		10	
BUCHAREST LOCKHEED	03	0708 E	0755	0720	S14 W40	6181	47 D	1	2		2.50	2.10		20	
	03	2227	2255	2241	S10 E80	6191	28	1	1	2241	.70				
KODAIKNI WENDEL	04	0435	0450	0445	N22 W72	6180	15	1	1	0435	.80	2.30	1.32		
	04	1116 E	1146 D		N12 W19	6184	30 D	1	1			3.00			
WENDEL	05	0832 E	0912 D		S16 W67	6181	40 D	1	1			3.00			
WENDEL	06	0617 E	0633 D		S13 W85	6181	16 D	1	1		.50	4.00			
KODAIKNI	06	0651			S12 W80	6181	11 D	1	1			2.90			
WENDEL	06	0748 E	0759 D		S13 W85	6181	11 D	1	1			3.00			
ONDREJOV	06	0951 E	1016	0959	S16 W85	6181	25 D	1	3	0959			3.70		
SAC PEAK	06	1748	1812	1758	N18 E88	6195	24	1	2		.87			13	
SAC PEAK	06	2028	2106	2036 U	N18 E88	6195	38	1	1		.87			15	
WENDEL	08	1026 E	1132 D		S14 E23	6191	66 D	1+	1			6.00			
WENDEL	09	0555 E	0625 D		N18 W03	6197	30 D	1	2		2.30	3.00			
BUCHAREST	09	0714 E	0836	0737	N16 W04	6197	82 D	1	2		3.80				
BUCHAREST	09	0752	0803	0753	N12 E68	6195	11 D	1	1	1714	.40	2.00		10	
LOCKHEED	09	1710	1718	1714	N05 E90	6199	8	1	1		1.46	2.25		19	
SAC PEAK	09	1728	1828	1746	N16 E62	6195	50	1	3						
WENDEL	10	0520 E	0552 D		N14 W18	6197	32 D	1	1			3.00			
I STAMBUL	10	0845 E	0856		N17 W19	6197	11 D	1	1						
I STAMBUL	10	0845 E	0900		N16 W52	6199	15 D	1+	1						
WENDEL	10	1218	1225 D		N09 E75	6199	7 D	1	3			3.00			
ONDREJOV	10	1219	1234	1440	N07 E76	6199	15	1	1	1222		6.00			
WENDEL	10	1434	1456	1440	N09 E72	6199	22	1	1						
MEUDON	10	1436	1445	1440	N10 E75	6199	9	1	2			4.25		20	
SAC PEAK	10	1436	1448	1440	N07 E70	6199	12	1+	2						
LOCARNO	10	1440 E	1450 D		N10 E76	6199	10 D	1	2		2.60				
LOCARNO	10	1502	1510 D		S14 E48	6194	8 D	1	2						
ONDREJOV	10	1506	1512		N12 E40	6195	6	1	2	1508	1.10	2.00		30	
LOCKHEED	10	2309	2353	2320	N08 E68	6199	44	1	2	2320	1.44	2.48		22	
SAC PEAK	10	2318 U	2328	2320	N07 E70	6199	10 U	1	1						
MITAKA	11	0101 E	0109 D		S03 E72	6200	8 D	1	1	0105	1.03	2.47	2.60	107	
MITAKA	11	0125	0135 D		N07 E66	6199	10 D	1	1	0125	1.03		2.93	85	
BUCHAREST	11	0810	0820	0812	N06 E63	6199	10 D	1	2		4.90				
LOCKHEED	11	1851	1907	1856	S01 E90	6201	16	1	2	1856	.40	2.00		10	
LOCKHEED	11	1956	2036	2012	S01 E90	6201	40	1	2	2012	.40	2.00		10	SLOW S-SWF
MEUDON	12	1105	1115	1108	N05 E47	6199	10	1+	3	1112	1.50	3.00			
CAPRI S	12	1110 E	1115		N05 E47	6199	5 D	1	1			2.50			

# SOLAR FLARES

AUGUST 1961

OBSERVATORY	DATE AUG 1961	OBSERVED UNIVERSAL TIME		LOCATION		DURA TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME UT	MEASUREMENTS		MAX WIDTH Ha	MAX INT. % <sup>28</sup>	PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	MER. DIST.					MCMATH PLACE REGION	MEAS. AREA Sq. Deg.			
[ MCMATH	12	1614	1635 D	N15 W50	6197	21 D	1	2	1618	2.50	2.50			
[ MEUDON	12	1615	1630 D	N18 W50	6197	15 D	1						30	S-SWF
[ LOCKHEED	12	1705	1736	N05 E43	6199	31	1	1	1714	2.20	2.20			
[ MCMATH	12	1707	1735	N05 E43	6199	23	1	2	1715	2.50	2.50			
[ MEUDON	12	1710	1732	N05 E43	6199	22	1+							
[ MCMATH	12	2050	2115	N05 E43	6199	25	1	2	2052	2.80	2.80			S-SWF
[ KODAIKNI	13	0340	0348	N08 E42	6199	8	1	1		2.30	2.30			
[ ISTANBUL	13	1020 E	1025	N07 E34	6199	5 D	1							
[ LOCKHEED	13	1906	1931	N03 E27	6199	25	1	2	1911	2.10	2.10		30	
[ LOCKHEED	13	1938	2053	S01 E29	6200	75	1	2	1947	2.00	2.10		20	
[ KYOTO	14	0127 E	0130 D	N16 W68	6197	3 D	1		0127	1.44	3.00	.90	110	
[ WENDEL	14	0644	0700	N05 E26	6199	16	1							
[ ISTANBUL	14	0750 E	0835	N17 E03	6195	45 D	1							
[ ISTANBUL	14	0805 E	0820 D	S07 E03	6194	15 D	1							
[ ISTANBUL	14	0805	0835	N08 E24	6199	30	1							
[ WENDEL	14	0907	0934 D	S03 E60	6201	27 D	1+							
[ ZURICH	14	0908 E	0921	S02 E59	6201	13 D	1	3	0912	5.00	3.00			
[ CAPRI S	14	0920	0925 D	N01 E59	6201	5 D	1	3	0923	2.00	2.00			
[ WENDEL	14	0937	1007	N15 E06	6195	30	1+							
[ MEUDON	14	1400	1630	S05 W65	6191	150	1							
[ WENDEL	14	1419 E	1652 D	S05 W67	6191	153 D	2+							
[ MCMATH	14	1420	1620 D	S07 W70	6191	120 D	2	2	1458	5.00	9.00	2.00		
[ CAPRI S	14	1425 E	1615 D	S08 W69	6191	110 D	2	2	1506	5.00	12.40	2.00		
[ ONDREJOV	14	1437 E	1455 D	S17 W66	6191	18 D	1	2	1442	5.00	16.00	2.00		
[ ZURICH	14	1448 E	1540	S07 W71	6191	52 D	2	2	1448	3.10	10.00	2.00	20	G-SWF
[ LOCKHEED	14	1505 E	1645	S07 W70	6191	100 D	2	2	1505	3.10	5.90			
[ WENDEL	14	1708 E	1723 D	N15 W82	6197	15 D	1	2	1505	4.00	4.00			
[ MEUDON	15	1640	1710	N12 W12	6195	30	1							
[ LOCKHEED	15	1642	1718	N12 W20	6195	36	1	2	1649	2.00	2.00		30	
[ MCMATH	15	1645	1713	N12 W20	6195	28	1	2	1650	2.50	2.50			
[ MITAKA	16	0032 E	0055	N11 W22	6195	23 D	1	1	0035	2.57	2.78	1.75	131	
[ KYOTO	16	0202 E	0206 D	N08 E01	6199	4 D	1	1	0202	4.13	4.13	.62	80	
[ MITAKA	16	0300 E	0337 D	N11 W23	6195	37 D	1+	1	0304	3.08	3.33	3.00	217	
[ MITAKA	16	0457	0524	N13 W26	6195	27	1	1	0457	3.08	3.33	1.85	113	
[ MITAKA	16	0545	0611	S09 W23	6194	26	1	1	0604	.93	1.04	1.85	143	
[ MCMATH	16	1603	1730	S00 E25	6201	87	1	2	1610	2.30	2.30			
[ MITAKA	17	0225 E	0300	S08 W36	6194	35 D	1	1	0233	1.03	1.30	2.02	120	
[ ISTANBUL	17	0835 E	0850 D	N09 W19	6199	15 D	1	1						
[ LOCKHEED	17	2102	2226	N07 W24	6199	84	1	2	2114	2.00	2.00		20	
[ MCMATH	17	2105	2152	N10 W23	6199	47	1	2	2115	2.40	2.40			
[ MITAKA	18	0356	0418 D	N08 W27	6199	22 D	1	1	0406	1.85	2.02	3.36	159	Slow S-SWF
[ KODAIKNI	18	0400 E	0430 D	N08 W28	6199	30 D	1	1		2.80	3.10			
[ ZURICH	18	1225 E	1233 D	N09 W36	6199	8 D	1	2	1225	1.00	1.00			
[ MCMATH	18	1257	1348	N10 W34	6199	51	2	2	1311	5.00	5.00			
[ MEUDON	18	1305 E	1340	N10 W30	6199	35 D	1+	2						

# SOLAR FLARES

## AUGUST 1961

OBSERVATORY	DATE AUG 1961	OBSERVED UNIVERSAL TIME		MAX. PHASE	LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — UT	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END		APPROX. LAT.	MER. DIST.	MEMPHIS REGION					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Rc		MAX. INT. %
CAPRI S WENDEL	18	1310 E	1406 D		N11 W30	6199	56 D	1	3	1311	2.50	2.90		S-SWF		
	18	1600	1613 D		N18 E51	6205	10 D	1			3.00	3.00				
	18	2038	2203	2048	N08 W37	6199	85	1	2	2048	3.60	3.80				
	18	2040	2152	2050	N09 W37	6199	72	2	2	2050	5.00	5.00				
SAC PEAK	18	2046 E	2046 D	2046 U	N07 W37	6199	□	2	1		7.22	7.22		G-SWF		
	19	0820	0923		N15 W66	6195	63	1	3	0908	1.20	3.00				
WENDEL	19	0900	0922		N15 W71	6195	22	1			4.00	4.00		10		
	19	0901 E	0909		N15 W70	6195	8 D	1	2	0903	4.00	4.00				
ONDREJOV WENDEL	19	1102 E	1122 D		N15 W71	6195	20 D	1	2	2246	1.10	2.50		10		
	19	2243	2305	2246	S10 W76	6194	22	1	2		1.10	2.50				
BUCHAREST ZURICH	20	0735	0747	0737	N24 W90	6195	12	1	2	1037	1.00	1.00		G-SWF		
	20	1037	1051		N03 W59	6200	14	1	2		1.00	1.00				
BUCHAREST	22	0705	0734	0730	N07 W90	6199	29	1	3					10.00		
	22	1045	1115 D		N10 W14	6204	30 D	2-	2							
LOCARNO	22	1045	1415	1130	N08 W10	6204	210	2	2		7.00	7.00		7.00		
MEUDON	22	1049 E	1345		N07 W11	6204	176 D	2	3	1138	6.00	6.00				
CAPRI S	22	1117 E	1330 D	1130	N07 W12	6204	133 D	2	2	1130	12.00	12.00		17		
MCNATH	22	1222 E	1339 D		N13 W12	6204	17 D	2	2	1222						
ZURICH	22	1308 E	1652 U	1308 U	N07 W13	6204	224 D	□	2					17		
SAC PEAK	22	1308 E	1652 U													
CAPRI S LOCARNO	24	1215 E	1320 D		N14 E85	6210	65 D	1	3	1314	0.50	3.20		3.20		
	24	1250 E	1335		N19 E84	6210	45 D	1+	2							
LOCARNO	25	0850 E	0920		S15 E14	6207	30 D	1+	2					2.00		
	25	0857 E	0912		S14 E18	6207	15 D	1	3	0857						
ZURICH	25	0935 E	1020		S16 E13	6207	45 D	2	2					2.00		
ISTANBUL	25	1002	1012		S15 E14	6207	10	1	2							
LOCARNO	25	1002	1012 D		S14 E18	6207	10 D	1	2	1002				2.00		
ZURICH	25	1002	1015		S15 E15	6207	13	1	2							
WENDEL	25	1402 E	1431 D		N16 E03	6206	29 D	1+	1	2359	1.29	1.32		149		
MITAKA	25	2359	0018		N15 W03	6206	19	1	1							
WENDEL	26	0617 E	0653	0638	N11 E11	6208	36	1+	3	0626				5.00		
	26	0621 E	0640		N12 E11	6208	19 D	1	3							
WENDEL	26	0618	0634 D		S15 E04	6207	16 D	1	3					3.00		
ZURICH	26	0624	0631		S15 E03	6207	7	1	3	0624						
WENDEL	26	1008	1031		S16 E02	6207	23	1	3					4.00		
	26	2331 E	0010 D		N16 W01	6206	39 D	1	3	2400	3.71	4.00				
KYOTO	27	1104	1115	1108	S10 W10	6207	11	1	3					3.00		
	27	1327	1351 D		N20 E42	6210	24 D	1	3							
WENDEL	29	0700 E	0739	0720	N12 W90	6205	39 D	1	2					3.00		
	29	0700 E	0715	0705	N12 E83	6212	15 D	1	2							
BUCHAREST	29	0720 E	0740 D		N15 E80	6212	20 D	1	2					3.00		
WENDEL	29	0722	0735	0726	N12 W83	6212	13	1	2							
BUCHAREST	29	1039	1115		N12 E25	6210	36	1+	3	1056	3.50	3.90		3.90		
	29	1039	1150		N19 E22	6210	71	1	3							
STOCKHOLM	29	1039	1150		N19 E22	6210	71	1	3					5.00		
MEUDON	29	1039	1150						3							

# SOLAR FLARES

## AUGUST 1961

OBSERVATORY	DATE AUG 1961	OBSERVED UNIVERSAL TIME		MAX. PHASE	LOCATION		DURA- TION - MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS		MAX. WIDTH He	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
		START	END		APPROX. LAT.	MER. DIST.				MEAS. AREA Sq. Deg.	COOR. AREA Sq. Deg.			
[ ONDREJOV CAPRI S	29 29	1040 E 1040 E	1112 1121		N18 E23 N13 E23	6210 6210	32 D 41 1	1 1	3 3	1055 1047	1.80 2.20	2.20		
[ MITAKA MEUDON	30 30	0214 E 0850	0221 0840		N16 W57 N18 W63	6206 6206	7 D 10 1	1 1+	1 1	0215 0935	1.23 2.09	2.09 4.00	134	
[ WENDEL STOCKHOLM	30 30	0930 0932 E	0956 D 0943 D		N20 W62 N17 W55	6206 6206	26 D 11 D	1+ 1	3 3	0935 0938	2.00 1.20	4.00 2.40		
[ CAPRI S ONDREJOV	30 30	0932 E 0934 E	1000 D 0953		N20 W59 N19 W61	6206 6206	28 D 19 D	1 1	3 3	0935 0935	2.40 2.30	2.40 2.50		
[ ONDREJOV WENDEL	30 30	1231 E 1520 E	1238 1412 D	1233	N19 W63 N12 E60	6206 6212	7 1 52 D	1 1	3 3	1233 1400	4.00 4.00	4.00 4.00		
[ ZURICH WENDEL	30 30	1400 E 1529	1411 1547 D		N12 E60 N18 W66	6212 6206	11 D 18 D	1 1	3 3	1400 1400	4.00 3.00	4.00 4.00		
[ WENDEL WENDEL	30 30	1531 E 1552 E	1545 D 1630		N11 E59 N11 E59	6212 6212	14 D 38 D	1 1	3 2	1400 1623	3.00 3.00	3.00 4.00		
[ LOCARNO LOCARNO	30 30	1603 E 1617 E	1620 1634	1608 1623	N11 E58 N20 W65	6212 6206	17 1 17 1	1 1	2 2	1608 1623	2.00 3.00	4.00		
[ WENDEL MCWATH	30 30	1623 E 1709 E	1647 D 1745 D		N14 W67 N11 E64	6206 6212	24 D 36 D	1 1	1 1	1719 2253	4.00 1.86	2.00	1.22 1.64	100 120
[ KYOTO KYOTO	30 30	2244 E 2321	2303 D 2326 D	2253	N12 E56 N13 E56	6212 6212	19 D 5 D	1 1	1 1	2321 0104	2.06	2.06	1.83 2.51	130 113
[ KYOTO MITAKA	31 31	0058 E 0102	0117 D 0114	0104	N12 E55 N10 E53	6212 6212	19 D 12 1	1+ 1+	1 2	0104 0102	3.09 3.08	5.23		
[ BUCHAREST WENDEL	31 31	0712 E 0823 E	0847 0850 D	0828	N17 W78 S12 W07	6206 6211	95 D 27 D	1 1	2 2	0102 3.50	4.90	5.00		
[ LOCARNO BUCHAREST	31 31	0855 0859	0910 0911 D	0902	N14 E51 N12 E50	6212 6212	15 1 12 D	1 1	2 2	3.50 0906	3.00 2.10	3.00 4.00		
[ WENDEL STOCKHOLM	31 31	0859 E 0903 E	0917 D 0908 D		N12 E48 N12 E48	6212 6212	18 D 5 D	1 1	3 2	0906 1.50	1.50	2.10 4.00		
[ WENDEL LOCARNO	31 31	1107 1235	1125 1252		N14 E49 N14 E49	6212 6212	18 1 17 1	1 1+	2 3	0906 1.50	1.50	2.10 4.00		
[ ONDREJOV WENDEL	31 31	1237 1238	1250 1253 D	1244	N13 E47 N12 E47	6212 6212	13 1+ 15 D	1+ 1+	3 2	1244 1242	2.30 6.00	2.30 2.50		
[ MCWATH ZURICH	31 31	1239 1240	1251 1250	1242	N13 E48 N12 E49	6212 6212	12 1 10 1	1 1	2 3	1242 1240	2.50 4.00	2.50 3.00		
[ CAPRI S MEUDON	31 31	1240 E 1247 E	1252		N13 E46 N12 E48	6212 6212	12 D 11 1	1 1	3 2	1242 2.17	2.00 2.52	3.00 4.00	18	
[ SAC PEAK WENDEL	31 31	1458 1502	1520 1516	1506	N13 E45 N12 E46	6212 6212	22 1 18 1	1 1	2 1	2.17 1.509	2.52 4.00	2.52 4.00		
[ ONDREJOV WENDEL	31 31	1506 1621	1516 1640 D		N13 E45 N19 W64	6212 6206	10 1 19 D	1 1	1 1	1509 1.80	4.00 4.00	4.00		

E = LESS THAN  
D = GREATER THAN  
U = APPROXIMATE  
□ = NOT REPORTED

CAPRI G ANACAPRI - GERMAN  
CAPRI S ANACAPRI - SWEDISH  
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE  
KIEV KIEV UNIVERSITY  
KODAIKANAL KODAIKANAL  
KRASNAYA KRASNAYA PAKHRA  
LOCKHEED LOS ANGELES

MCWATH MCMATH-HULBERT  
MOSCOW - GAISH MOSCOW - GAISH  
R O HERST ROYAL GREENWICH OBSERVATORY,  
HERSTMONCEUX  
SAC PEAK SACRAMENTO PEAK  
SCHAUINSLAND SCHAUINSLAND  
WENDEL WENDELSTEIN

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40). NOT  
PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

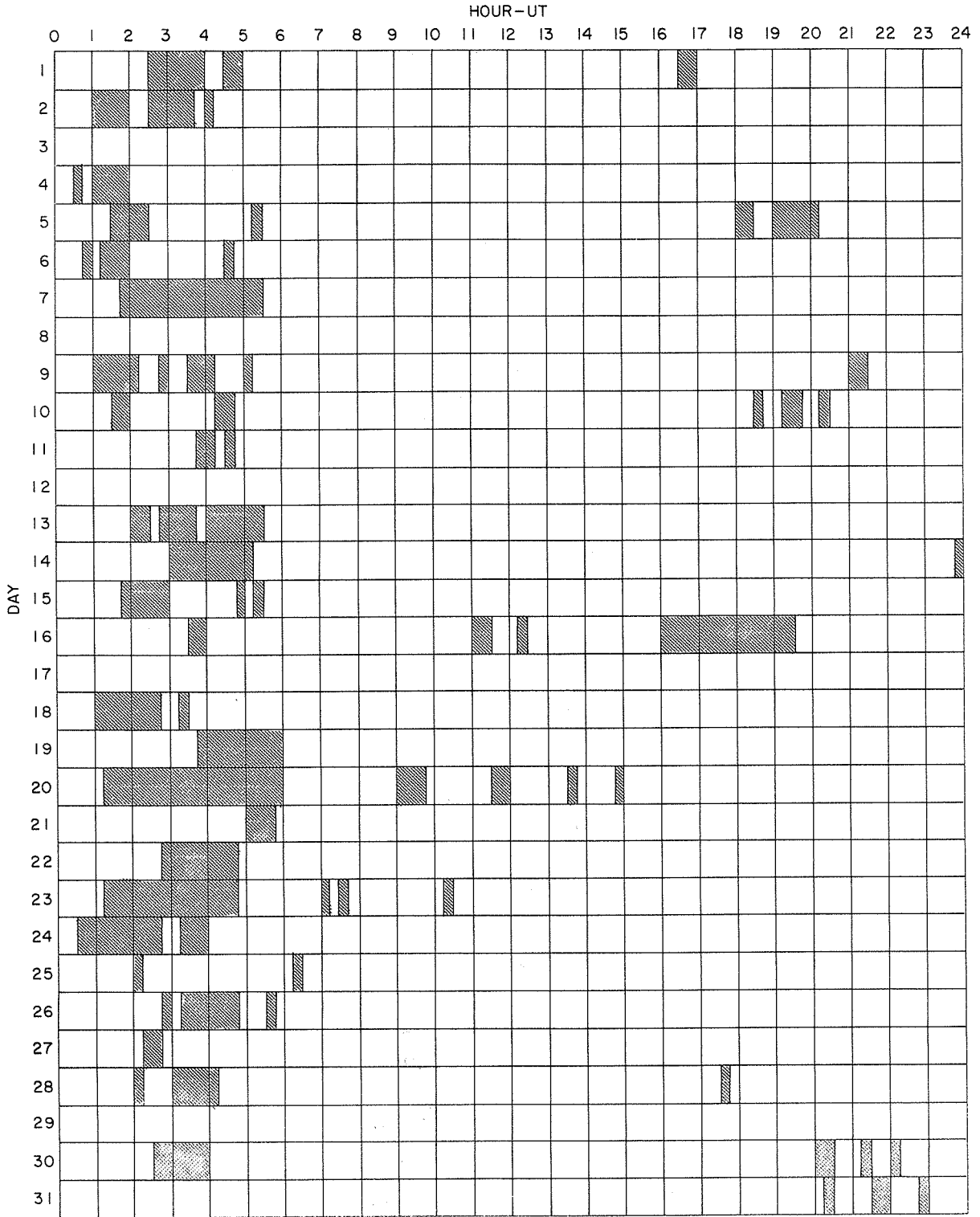
Erratum:

In CRPL-F 204 B issued August 1961, on page III f, the flare reported by Hawaii July 28, 1961 at 1754E at S22W33 should have been NO8W44 instead. The McMath  
Flare Region is 6178.



INTERVALS OF NO FLARE PATROL OBSERVATIONS

AUGUST 1961



COMMERCE - STANDARDS - BOULDER

Stations Include:

- |                    |          |            |                             |                 |
|--------------------|----------|------------|-----------------------------|-----------------|
| Anacapri (Swedish) | Hawaii   | Kodaikanal | Mitaka                      | Sacramento Peak |
| Arcetri            | Huancayo | Lockheed   | Ondrejov                    | Wendelstein     |
| Bucharest          | Istanbul | Meudon     | Royal Greenwich Observatory |                 |
|                    |          |            | Herstmonceux                |                 |

Noted as follows: Date-Universal Time-Coordinates

JULY 1961

IIIf

* WENDEL	01 0934 E	N06 W35	LOCKHEED	11 2313	S06 E28	UCCLE	20 1100	S06 E05
UCCLE	01 0737	N08 W41				UCCLE	20 1119	N11 E06
* UCCEL	01 0754	N07 W37	ONDREJOV	12 0447 E	N05 W78	* UCCEL	20 1143	S07 W04
* UCCEL	01 0811	N08 W40	* BUCHAREST	12 0743	S08 E24	WENDEL	20 1151 E	S07 E04
UCCEL	01 0902	N09 W40	* BUCHAREST	12 0743	S06 E22	* UCCEL	20 1153	S07 W06
* UCCEL	01 0939	S11 E08	* BUCHAREST	12 0752	S09 E27	* UCCEL	20 1155	S07 W04
* WENDEL	01 1009 E	N09 W40	* UCCEL	12 0915	S08 E24	WENDEL	20 1217 E	N07 E42
* UCCEL	01 1104	N09 W40	* WENDEL	12 0916 E	S06 E25	UCCEL	20 1253	N01 E40
* LOCKHEED	01 1609	N08 W43	UCCEL	12 0949	S09 E25	UCCEL	20 1258	S07 E03
* LOCKHEED	01 1743	N08 W45	* UCCEL	12 1001	S09 E25	UCCEL	20 1328	S07 W09
LOCKHEED	01 1852	N08 W45	* ARCETRI	12 1610	S07 E20	UCCEL	20 1330	N01 E06
LOCKHEED	01 1939	N08 W45	HAWAII	12 1748 E	S07 E16	UCCEL	20 1350	N01 W69
LOCKHEED	01 1955	N08 W46	LOCKHEED	12 1940 E	S06 E17	WENDEL	20 1356 E	N08 E11
MCMAH	01 2050	N11 E70	LOCKHEED	12 1955	S05 E14	UCCEL	20 1446	N13 W53
LOCKHEED	01 2132	N08 W46	LOCKHEED	12 2138	S09 E46	LOCKHEED	20 1744	S07 E01
MCMAH	01 2133	N09 W46	SAC PEAK	12 2136	N09 E47	LOCKHEED	20 1745	N07 E60
LOCKHEED	01 2208	N08 W46	HAWAII	12 2140 E	N08 E48	HAWAII	20 1748	S07 E01
			* LOCKHEED	12 2248	S06 E15	MCMAH	20 1830	S06 E01
			* HAWAII	12 2252 E	S06 E14	LOCKHEED	20 2110	S09 W00
* WENDEL	02 0639 E	N07 W52	* LOCKHEED	12 2313	S09 E21	LOCKHEED	20 2116	N09 E59
UCCEL	02 0737	N20 W45	* LOCKHEED	12 2315	S05 E13	MCMAH	20 2116	S06 W02
WENDEL	02 0859 E	N07 W52				LOCKHEED	20 2116	N09 E59
UCCEL	02 0901	N08 W53	BUCHAREST	13 0706	S08 E05	LOCKHEED	20 2233	N10 E01
WENDEL	02 0922 E	N09 W49	* ARCETRI	13 0850	S05 E07			
UCCEL	02 1017	N09 W53	MCMAH	13 1151	N09 E44	UCCEL	21 1025 E	N02 E26
UCCEL	02 1022	N06 W51	WENDEL	13 1243 E	S07 E09			
UCCEL	02 1055	N20 W47	WENDEL	13 1248 E	S11 E09	UCCEL	22 1096	N13 E35
* ONDREJOV	02 1120 E	N03 W47	LOCKHEED	13 1729	S09 E10	SAC PEAK	22 1342	S08 W27
WENDEL	02 1422 E	N08 W57	LOCKHEED	13 1926	S08 E03	SAC PEAK	22 1350	S07 W29
* WENDEL	02 1605	N05 W54	SAC PEAK	13 1930	S06 E04	SAC PEAK	22 1636	N04 E38
WENDEL	02 1658 E	S14 W68	HUANCAYO	13 1934	S05 E05	LOCKHEED	22 2003	N09 W28
LOCKHEED	02 1658	S14 W12	LOCKHEED	13 2045	N06 E80	LOCKHEED	22 2136	N03 W29
			LOCKHEED	13 2109	S07 E42	HAWAII	22 2216	N05 E07
WENDEL	03 0615 E	N06 W61	LOCKHEED	13 2136	S05 W01			
WENDEL	03 1150 E	N12 W52	LOCKHEED	13 2211	S05 E03	SAC PEAK	23 1254 U	N02 E90
SAC PEAK	03 1418	N14 W36	* SAC PEAK	13 2246	S04 E01	SAC PEAK	23 1542	N08 E30
WENDEL	03 1420 E	N11 W33	* HAWAII	13 2310 E	S04 W03	MCMAH	23 1620	N09 W34
MCMAH	03 1420 E	N15 W37				LOCKHEED	23 1835 E	N10 W36
			LOCKHEED	14 0018	N05 W21	MCMAH	23 1836	N10 W36
			LOCKHEED	14 0028	N11 E31	LOCKHEED	23 1918	N08 W36
			KODAIKNL	14 0210	S08 W03	LOCKHEED	23 2024	N09 W36
			KODAIKNL	14 0340	S08 W03	LOCKHEED	23 2130	N10 W36
UCCEL	05 0813 E	N15 E20	* KODAIKNL	14 0447	S08 W04	LOCKHEED	23 2227	N06 E15
UCCEL	05 1426	N16 E20	WENDEL	14 0703 E	S07 E00	* HAWAII	23 2342	S05 W50
MCMAH	05 1510	N03 E90	WENDEL	14 0828 E	S07 E00			
LOCKHEED	05 1745	N20 W45	WENDEL	14 0848 E	S02 E02	LOCKHEED	24 0117	N05 E23
LOCKHEED	05 1903	N19 W45	CAPRI S	14 1020 E	S04 W04	WENDEL	24 0734 E	N06 E13
LOCKHEED	05 1917	N11 W15	CAPRI S	14 1041	S07 W07	WENDEL	24 0758 E	N09 E13
LOCKHEED	05 1950	N20 W44	UCCEL	14 1050 E	S03 W10	* UCCEL	24 0849	N11 E11
LOCKHEED	05 2010	S03 E43	CAPRI S	14 1106 E	S04 W07	* STOCKHOLM	24 0901	N08 E10
MCMAH	05 2013	S05 E44	UCCEL	14 1111	S06 W08	UCCEL	24 0902	N15 W90
LOCKHEED	05 2202	N20 W47	UCCEL	14 1227	S07 W06	* UCCEL	24 0906	N05 E13
LOCKHEED	05 2245	N19 W47	UCCEL	14 1314	S05 W08	* UCCEL	24 0931	N10 E15
SAC PEAK	05 2248 E	N18 W45	UCCEL	14 1318	S05 W07	* UCCEL	24 0939	N06 E09
			MCMAH	14 1318 E	S08 E28	UCCEL	24 0939	N10 E10
CAPRI S	06 0639	N17 E10	UCCEL	14 1410	S08 W06	* STOCKHOLM	24 1436	S02 W16
UCCEL	06 1102 E	N12 W52	MCMAH	14 1410 E	S10 W05	* MCMAH	24 1436 E	N02 W18
MCMAH	06 1129	N15 E05	LOCKHEED	14 1932	S07 E68	* MCMAH	24 1638	N02 W20
CAPRI S	06 1133 E	N17 E07	LOCKHEED	14 2022	S07 W12	MCMAH	24 1723	N03 W21
UCCEL	06 1133	N10 E05	LOCKHEED	14 2047	S03 W11	LOCKHEED	24 1820	N08 W51
UCCEL	06 1254	N06 W55	LOCKHEED	14 2102	S11 W10	LOCKHEED	24 1838	N02 W20
WENDEL	06 1316 E	N19 W57	LOCKHEED	14 2251	S05 W11	LOCKHEED	24 2115	N08 W00
UCCEL	06 1320	N21 W55	LOCKHEED	14 2353	S05 W15	LOCKHEED	24 2240	N03 W22
UCCEL	06 1544	N15 E03				MCMAH	24 2241	N03 W24
			LOCKHEED	15 0047	S11 W04	LOCKHEED	24 2337	N07 E01
HAWAII	07 0004 E	N14 W09	HAWAII	15 0048	S10 W06			
* ARCETRI	07 0930	S03 E20	KODAIKNL	15 0425	S08 W17	LOCKHEED	25 0027	N07 E01
* UCCEL	07 1003	S05 E22	BUCHAREST	15 0849	S10 W24	WENDEL	25 0517 E	N06 W01
* CAPRI S	07 1342 E	N13 W06	MCMAH	15 1326	S06 W21	WENDEL	25 0595 E	N07 E02
MCMAH	07 1610	S05 E16	MCMAH	15 1409	S06 W21	UCCEL	25 0859 E	N10 W54
* SAC PEAK	07 1610	S05 E15	MCMAH	15 1443	S07 W22	UCCEL	25 1103	N07 W02
* MCMAH	07 1646	N15 E90	CAPRI S	15 1445 E	S05 W20	UCCEL	25 1104	N10 W55
* SAC PEAK	08 1312 E	N15 W27	* LOCKHEED	15 1613 E	S09 E55	UCCEL	25 1219	N07 W07
* MCMAH	08 1317 E	N15 W28	* CAPRI S	15 1616 E	S09 E56	MCMAH	25 1220	N07 W06
SAC PEAK	08 1446	N16 W28	LOCKHEED	15 1746	S11 W17	ONDREJOV	25 1221	N07 W05
MCMAH	08 1447	N15 W29	LOCKHEED	15 1778	S08 W23	MCMAH	25 1221	N08 W07
LOCKHEED	08 1600 F	N19 W27	LOCKHEED	15 1857	S09 W21	UCCEL	25 1241	N09 W06
MCMAH	08 1602 E	N12 W28	LOCKHEED	15 1918	S07 W18	UCCEL	25 1354	N08 W07
LOCKHEED	08 1642	N16 W28	LOCKHEED	15 2000	S09 W22	SAC PEAK	25 1354	N08 W08
LOCKHEED	08 1705	N18 W29	LOCKHEED	15 2148	S09 W22	* MCMAH	25 1355	N08 W08
LOCKHEED	08 1740	N18 W29	LOCKHEED	15 2232	S08 W22	UCCEL	25 1420	N10 W58
MCMAH	08 1746 E	N16 W30				* UCCEL	25 1441	N07 W05
LOCKHEED	08 1825	N18 W29	BUCHAREST	16 0704 E	S06 W30	* ONDREJOV	25 1442 E	N05 W05
MCMAH	08 1836	N16 W31	* CAPRI S	16 0805 E	S03 W29	UCCEL	25 1640	N06 E07
LOCKHEED	08 1858	N14 W50	CAPRI S	16 0919 E	S03 W30	* LOCKHEED	25 1851	N07 W11
SAC PEAK	08 1856	N14 W50	MCMAH	16 1414 E	S03 W33	HAWAII	25 1906	N08 W09
HAWAII	08 2016	N13 W53	SAC PEAK	16 1556	S05 W36	* LOCKHEED	25 2240 E	N08 W13
MCMAH	08 2018	N11 W54	LOCKHEED	16 1610	S04 W36			
LOCKHEED	08 2242 E	N11 W51	LOCKHEED	16 1624	N17 W27	UCCEL	26 0847	N09 W68
LOCKHEED	08 2247	N17 W30	LOCKHEED	16 1628	S09 W32	UCCEL	26 1122	N06 W17
			SAC PEAK	16 1626 E	S09 W32	UCCEL	26 1539 E	N06 W20
LOCKHEED	09 0014	N17 W34	LOCKHEED	16 1650	S07 W36	LOCKHEED	26 1903	S01 E47
LOCKHEED	09 0043	N11 W53	LOCKHEED	16 1816	S08 E40	LOCKHEED	26 1940	N07 W20
LOCKHEED	09 0051	N15 E74	HAWAII	16 1830	S14 W33	MCMAH	26 1941	N08 W21
LOCKHEED	09 0150	N08 W33	LOCKHEED	16 1830	S09 W35	MCMAH	26 1947	N09 W81
MCMAH	09 1444	N15 W40	MCMAH	16 1856 E	S09 W35	LOCKHEED	26 1947	N10 W79
SAC PEAK	09 1506	N10 W42	* MCMAH	16 1910	S08 W35	LOCKHEED	26 2050	N11 W74
MCMAH	09 1623	N11 W44	* LOCKHEED	16 2057	S08 W36	LOCKHEED	26 2129	N11 W74
MCMAH	09 1630 E	N12 W44	* LOCKHEED	16 2220	S04 W39	MCMAH	26 2131	N10 W80
LOCKHEED	09 1630 E	S08 E60	SAC PEAK	16 2244	S10 W35	LOCKHEED	26 2155	N08 W22
LOCKHEED	09 1701	N16 W38	MCMAH	16 2245	S08 W38	MCMAH	26 2156	N06 W22
SAC PEAK	09 1702	N13 W37	LOCKHEED	16 2245	S10 W37	LOCKHEED	26 2310	N11 W78
LOCKHEED	09 1703	S12 E38						
HAWAII	09 1826 E	S07 E57	HAWAII	17 0028	S06 W41	* CAPRI S	27 0628 E	N04 W25
LOCKHEED	09 1843	N17 W39	LOCKHEED	17 0028	S06 W41	* CAPRI S	27 1035 E	N12 W90
LOCKHEED	09 2008	N18 W39	KODAIKNL	17 0334	S07 W42	HAWAII	27 1740 E	N10 W90
LOCKHEED	09 2036	N17 W40	LOCKHEED	17 1528	S06 W50	LOCKHEED	27 1815	N09 W88
LOCKHEED	09 2100	N14 W58	* LOCKHEED	17 1625 E	N10 E39	LOCKHEED	27 1838	N12 W40
HAWAII	09 2306	S07 E36	MCMAH	17 1644	S05 E35	HAWAII	27 2010	S02 E33
SAC PEAK	09 2330 E	N15 E90	LOCKHEED	17 1646	S07 E32	LOCKHEED	27 2013	S01 E33
LOCKHEED	09 2357	S12 E33	* MCMAH	17 1650	S06 W50	LOCKHEED	27 2310	N09 W36
			* HUANCAYO	17 1659	S06 W51			
LOCKHEED	10 0010	N17 W45	LOCKHEED	17 1755	S06 E28	ARCETRI	28 0826	N10 W90
LOCKHEED	10 0022	S11 E49	LOCKHEED	17 1817	S06 W50	UCCEL	28 1206	N06 W44
KODAIKNL	10 0700	S09 E52	SAC PEAK	17 1818	S07 W52	UCCEL	28 1453	N06 W41
CAPRI S	10 1520	S08 E48	* SAC PEAK	17 1930	S07 W52	LOCKHEED	28 1642	S19 E69
SAC PEAK	10 1520	S08 E48	LOCKHEED	17 1956	S10 W49	LOCKHEED	28 1855	S19 E69
MCMAH	10 1523 E	S09 E47	LOCKHEED	17 2033	S07 W53	LOCKHEED	28 1942	N08 W48
HUANCAYO	10 1524 E	S09 W43	HUANCAYO	17 2044	S09 W44	SAC PEAK	28 1948 E	N08 W48
LOCKHEED	10 15							

# SOLAR FLARES

MAY 1961

OBSERVATORY	DATE MAY 1961	OBSERVED UNIVERSAL TIME		MAX. PHASE	LOCATION			DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END		APPROX. LAT.	MER. DIST.	MAGNITH PHASE REGION				TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Rg	
[ CAPRI G	01	0838 E	0855 D		N04 W15	6097	17 D	1	2		4.00	4.00			
[ CAPRI G	01	1204 E	1217 D		S11 W13	6098	13 D	1			6.00				
[ KIEV	01	1348 E	1359 D	1359 U	N04 W17	6097	11 D	1	1	1359	3.09				73
[ CLIMAX	01	1621 E	1645 D	1625	N04 W18	6097	24	1			3.60	3.60			
[ CAPRI G	02	0905 E	0916 D		N03 W25	6097	11	1+	2		4.00	4.00			
[ UCCE	02	0912 E			N04 W27	6097	□	1	2		3.00	3.50			
[ CAPRI G	02	1027 E	1055 D		N03 W28	6097	34	1	3		4.00	4.00			
[ GOOD HOPE	02	1038 E	1055 D		N04 W27	6097	17 D	1		1040	2.60	2.90			
[ UCCE	02	1041 E	1050 D		N04 W27	6097	9 D	1	3		3.50	4.20			
[ VOROSHILOV	03	0149 E	0249 D	0210	N04 W38	6097	60 D	1+	1	0525	2.69	2.42			81
[ NIZAMIAH	03	0525 E	0538 D		N05 W41	6097	13 D	2	1	0857	1.82	2.20			
[ UCCE	03	0856 E	0907 D	0857	N07 W44	6097	11	1	3		1.50	4.00			
[ CAPRI G	03	1046 E	1058 D		N04 W42	6097	12	1	3		2.58	4.00			75
[ KIEV	03	1048 E	1110 D		N06 W43	6097	22 D	1	2	1054					
[ CAPRI G	04	1028 E	1045 D		N04 W57	6097	17	1	2		4.00	4.00			
[ GOOD HOPE	04	1201 E	1210 D		S12 W70	6096	9 D	1	1	1201	.90				
[ KIEV	04	1311 E	1325 D	1312	N05 W58	6097	14	1	3	1312	3.09	4.00			53
[ CAPRI G	04	1619 E	1626 D		N04 W60	6097	7 D	1	2						
[ PIRCULI	05	0809 E	0821 D	0815 U	N12 W32	6099	12 D	1	1	0815	1.83	2.34			65
[ CAPRI G	05	0812 E	0826 D		N13 W34	6099	14 D	1+	2		2.17	5.00			58
[ KRASNAYA	05	0813 E	0830 D	0815	N10 W33	6099	17	1	3		2.30	3.00			67
[ UCCE	05	0822 E	0828 D		N14 W34	6099	6 D	1	3		1.50	3.00			
[ UCCE	05	1138 E	1142 D		N04 W62	6097	4	1	2	1201	1.75	2.40			
[ KIEV	05	1156 E	1210 D	1201	S13 W69	6098	14 D	1	2		1.40	2.40			
[ GOOD HOPE	06	1219 E	1245 D	1223	N09 E53	6104	26	1		1223					
[ CAPRI G	09	1308 E	1341 D		N10 E15	6104	33	1	2		4.00	4.00			
[ KIEV	09	1310 E	1330 D	1310 U	N08 E10	6104	20 D	1	1	1310	1.75	10.00			52
[ CAPRI G	09	1540 E	1602 D		N10 E12	6104	22	2	2		5.20	5.20			
[ CLIMAX	09	1942 E	1950 D		N09 E12	6104	8 D	2	1	1546	1.79	2.08			73
[ VOROSHILOV	09	2356 E	0000 D		N08 E31	6106	4 D	1	1	2356					
[ MITAKA	10	0023 E	0050 D	0028	N08 E29	6106	27	1	1	0033	1.75	2.08			120
[ MITAKA	10	0026 E	0050 D	0034	N07 E29	6106	24	1	1	0033	.82	.98			143
[ CAPRI G	11	0835 E	0844 D		N02 E20	6106	9 D	1+	2		5.00	5.00			
[ GOOD HOPE	11	0838 E	0846 D	0840	N05 E20	6106	8	1	2	0840	2.10	2.20			
[ CAPRI G	11	1125 E	1151 D		N09 E10	6105	26	1+	2		5.00	5.00			
[ GOOD HOPE	11	1127 E	1147 D	1128	N11 E10	6105	20	1	2	1128	2.30	2.40			
[ CAPRI G	11	1315 E	1335 D		N05 E10	6106	20 D	1	2		4.00	4.00			
[ ABASTUNANI	12	0559 E	0724 D	0604	N04 E04	6106	85	1+	3	0604	5.85	6.10			80
[ PIRCULI	12	0601 E	0636 D	0604	N05 E05	6106	35 D	1+	1	0604	2.73	2.78			68
[ PIRCULI	12	0702 E	0722 D	0705 U	N03 E00	6106	20 D	1	1	0705	1.64	1.67			55
[ CAPRI G	12	0704 E	0717 D		N04 W01	6106	13 D	1	2		4.00	4.00			
[ CAPRI G	12	0915 E	0917 D		N04 W02	6106	2 D	1	2		4.00	4.00			

# SOLAR FLARES

MAY 1961

OBSERVATORY	DATE MAY 1961	OBSERVED UNIVERSAL TIME		LOCATION		DUR- TION MINUTES	IN- FOR- TANCE	OBS COND.	MEASUREMENTS			MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. NEW DIST.				NAME BLADE REGION	TIME UT	AREA Sq. Deg.		
UCCLE HOPE	12 0943	0955	0948	N03 W01	6106	12	1	3	0948	2.00	2.00	2.00	
GOOD HOPE	12 1255	1305	1305	N11 W04	6105	38	1		1305	2.10	2.10	1.96	
UCCLE	12 1258	1302	1302	N11 W05	6105	4 D	1	2	1302	3.50	3.50	1.96	
	12 1314	1346	1314	N09 W05	6105	32 D	1	2	1314	4.00	4.00	1.51	
MITAKA	13 0002	0006	0006	N05 W10	6106	4 D	1	1	0002	.84	.84	3.07	107
MITAKA	13 0110	0114	0114	N05 W10	6106	4 D	1	2	0110	.26	.26	1.96	107
KYOTO	13 0448	0503	0503	N04 W10	6106	15 D	1	2	0450	2.48	2.48	1.20	120
ALMA-ATA	13 0551	0609	0600	N04 W16	6106	18	1	3	0600	2.17	2.17	1.51	75
ABASTUMANI	13 0555	0618	0602	N04 W15	6106	23	1	2	0605	1.98	1.98	1.00	66
KYOTO	13 0558	0612	0612	N03 W08	6106	14 D	1	2	0605	1.44	1.44	1.00	100
CAPRI G	13 0602	0613	0610 U	N04 W14	6106	11	1	2	0610	1.00	1.00	1.00	56
PIRCULI	13 0610	0617	0610 U	N04 W15	6106	7 D	1	2	0610	1.00	1.00	1.00	56
CAPRI G	13 0943	0950	0950 D	N12 W08	6105	7 D	1	2	0943	2.00	2.00	4.00	
UCCLE	19 1003	1013	1013	N09 E77	6114	10	1	2	1003	2.00	2.00	4.00	
UCCLE	15 1642	E		N04 W43	6106	□	1	2	1642	1.50	2.10	2.10	
KIEV	20 0616	E		N04 W34	6120	□	1	1	0616	3.09	3.09	60	
CLIMAX	21 1551	1617	1557	N19 E53	6122	26	1		1557	1.80	2.50	2.50	
CLIMAX	21 1656	1711	1703	N07 E70	6123	15	2		1703	3.70	6.70	6.70	
CAPRI G	22 1347	1413	1413	N19 E39	6122	26	1	2	1347	4.00	4.00	4.00	
CAPRI G	22 1400	1415	1415	S12 W40	6116	15	1	2	1400	4.00	4.00	4.00	
UCCLE	23 0912	E	0948 D	N06 W80	6120	□	1	2	0912	3.00	6.00	6.00	
CAPRI G	23 0930	E		N16 E90	6122	18 D	1	2	0930	4.00	4.00	4.00	
KIEV	23 1325	E		N17 E29	6122	□	1	1	1325	2.58	2.58	60	
ALMA-ATA	24 0423	0517	0430	N16 E20	6122	54	1+	2	0430	2.37	2.37	108	
ALMA-ATA	24 0423	0526	0431	N15 E17	6122	63	1+	2	0431	2.01	2.01	108	
TASHKENT	24 0426	0542	0434	N16 E18	6122	76	1+	1	0434	5.47	5.47	88	
KIEV	24 0501	E	0530 D	N15 E17	6122	29 D	2	1	0501	9.80	6.10	3.20	
CAPRI G	24 0755	0811	0811	N15 E05	6122	16	1	2	0755	4.00	4.00	4.00	
CAPRI G	24 1222	1235	1235	N16 E14	6122	13	1	2	1222	4.00	4.00	4.00	
CAPRI G	24 1439	E	1444	N10 E35	6125	5 D	1	2	1439	6.00	6.00	6.00	
CAPRI G	24 1507	1543	1543	N04 E35	6125	36	1+	2	1507	1.54	1.54	102	
MITAKA	25 0127	E	0142	N06 E29	6125	15 D	1	1	0132	3.65	3.94	2.06	102
PIRCULI	25 0801	0811	0805 U	N17 E05	6122	10 D	1	2	0805	1.03	1.03	120	
MITAKA	27 0149	E	0158	N06 E00	6125	9 D	1	1	0150	2.89	2.89	80	
KYOTO	30 0015	0023	0023 D	N03 W42	6125	8 D	1	1	0015	2.36	2.36	137	
MITAKA	30 0340	0354	0344	N03 W44	6125	14	1	1	0342	1.80	3.16	3.48	98
ALMA-ATA	30 0348	0422	0353	N05 W44	6125	34	1+	2	0353	1.80	1.80	98	
UCCLE	31 1154	1215	1215	N19 W85	6122	21	□		1158	.80	.80		
GOOD HOPE	31 1157	E	1159 D	N19 W84	6122	2 D	1						

COMMERCIAL - STANDARDS - BOLLEA

These flare reports are addenda to the May 1961 flares published in CRPL-F 202 Part B, June 1961.

- |                  |            |                                      |           |                              |
|------------------|------------|--------------------------------------|-----------|------------------------------|
| E = LESS THAN    | CAPRI G    | ANAGAPRI - GERMAN                    | MCNATH    | MCNATH-HULBERT               |
| D = GREATER THAN | CAPRI S    | ANAGAPRI - SWEDISH                   | MOSCOW-G  | MOSCOW - GAISH               |
| U = APPROXIMATE  | GOOD HOPE  | ROYAL OBSERVATORY, CAPE OF GOOD HOPE | R O HERST | ROYAL GREENWICH OBSERVATORY, |
| □ = NOT REPORTED | KIEV       | KIEV UNIVERSITY                      |           | HERSTMONCEUX                 |
|                  | KODAIKANAL | KODAIKANAL                           |           | SACRAMENTO PEAK              |
|                  | KRASNYA    | KRASNYA PAKHRA                       |           | SCHAUNSLAND                  |
|                  | LOCKHEED   | LOS ANGELES                          |           | WENDELSTEIN                  |

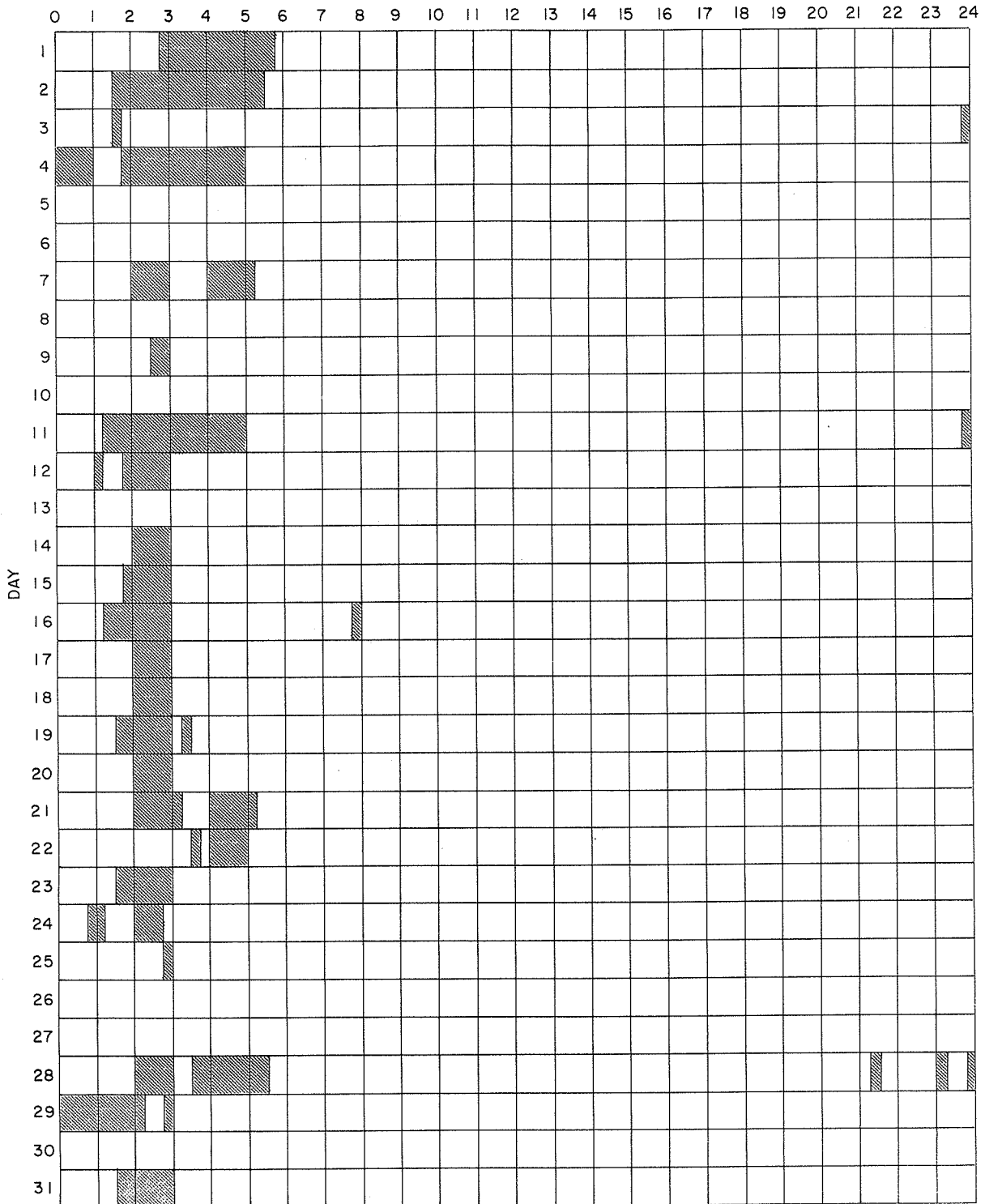
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (9-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1961

HOUR-UT



COMMERCE - STANDARDS - BOULDER

Stations Include:

- |                    |                 |                |                 |             |
|--------------------|-----------------|----------------|-----------------|-------------|
| Abastumani         | Good Hope       | Kyoto          | Ondrejov        | Simeiz      |
| Alma Ata           | Hawaii          | Lockheed       | Ottawa          | Tashkent    |
| Anacapri (Swedish) | Huancayo        | McMath-Hulbert | Pirculi         | Uccle       |
| Arcetri            | Kharkov         | Meudon         | Royal Greenwich | Voroshilov  |
| Bucharest          | Kiev GAO        | Mitaka         | Herstmonceux    | Wendelstein |
| Climax             | Krasnaya Pakhra | Moscow - Gaish | Sacramento Peak |             |

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIj

SHORT WAVE RADIO FADEOUTS  
 SUDDEN COSMIC NOISE ABSORPTION  
 SUDDEN ENHANCEMENTS OF ATMOSPHERICS  
 SUDDEN PHASE ANOMALIES  
 SOLAR NOISE BURSTS AT 18 Mc

JULY 1961

JULY 1961	UNIVERSAL TIME			SWF TYPE	IMPORTANCE					WIDE SPREAD INDEX	STATIONS	KNOWN FLARE	
	START	END	MAX		IMP	ABS	SCNA	SEA	SPA				BUR
01	1744	1800	1749	G 2				X		1	BO	1739	
01	1801	1855								5	AD PR		
02	0600	0645U	0624	SL 1-			3			1	All	0615E	
02	1622	1647								1	AN		
03	1508	1520	1515	[				X		1	BO		
03	1520	1620	1540						X				BO
03	1618	1640	1622						X				BO
03	2147	2148								1	5		BO HA
04	0730		0745					1+			1		All
04	1708	1713	1711	[						1	4	RE BO	
04	1830	1837	1834							1	5	RE BO HA (GROUP)	
04	1849	1853								1	5	BO HA	
04	1919	1920								1	5	BO HA	
04	1930	1950	1940						X		1	BO	
04	1940	1942								1	5	BO HA	
05	1514	1540			SL 1						5	MC HU PR	
06	1856	1859								1	5	BO HA RE	
07	1611	1645	1622	[				X		1	BO	1644	
07	1859	1912	1903						X				BO
07	1950	2040	2015						X				BO
07	2321	2324								1	5		BO HA
08	1535	1645	1600					X		1	BO		
09	1645		1730					X		1	BO		
09	1738	1900	1750					X			BO		
09	2037	2041							1	5	BO HA RE		
10	0722	0752		SL 2						5	PU JU OK	1312	
10	1313	1335		S 2						5	MC JU PR PU		
10	1522	1605		S 2						5	MC BE FM JU PR PU		
10	1642		1655					X		1	BO		
10	1852	2100	1900					X			BO		
11	1125	1155	1130	[				X		1	BO	1100	
11	1333	1358			S 2					4	BE BO MC PR		
11	1333	1500	1345						X		1		BO
11	1335	1400	1341			36	1			4	RE MC BO		
11	1338	1417	1350					1		5	BO DU A1 MC		
11	1600	1930	1710						X				BO
* 11	1644	1838	1815					2		5	BO A5 NE DU		
11	1648	2053			S 3+					5	PR AN BE BO FM HU MC		
11	1650	1750	1704			76	3			4	RE BO MC		
11	1652	1935	1712						X				BO
11	1907	2200		S 3+					5	MC AN			
12	1000	1300	1040	[				X		1	BO	1000	
12	1020	1133	1035			43	1+			1	RE		
12	1023	1230			S 3+					5	MC DA NE PR SW TN		
12	1024	1100	1038					2		5	All NE		
12	2130	2220	2140						X				BO
12	2249	2303	2252			15	1			1	BO		
* 12	2250	2320	2259				1+		5	BO All A9 A5 TY			
13	1335	1412		SL 1-					4	HU PR			
* 13	2214	2234	2219				1+		5	A5 TY A6 A9			
14	1650	1718	1702					X		1	BO		
15	1428	1455	1445	[			1			2	A3 A1	1433	
15	1434		1517						X		1		BO
15	1436	1443	1440							1	RE (NOISE STORM)		
15	1512	1530	1517			21	1			1	RE		
15	1514	1730			S 3					5	HU FM JU MC PR		
15	1550	1800	1605					X			BO	1520	

IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS  
 SUDDEN COSMIC NOISE ABSORPTION  
 SUDDEN ENHANCEMENTS OF ATMOSPHERICS  
 SUDDEN PHASE ANOMALIES  
 SOLAR NOISE BURSTS AT 18 Mc

JULY 1961

	UNIVERSAL TIME			SWF TYPE IMP	IMPORTANCE					WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX		ABS	SCNA	SEA	SPA	BUR			
16	1700	1846		SL 3-						5	HU AN	
16	1942	2040	2008					X		1	BO	1938
17	0217	0228	0220		10	1				5	BO HA	
17	1310	1400	1321					X		1	BO	1300
[ 17	1320	1350		S 1+						5	MC HU PR	
[ 17	2140	2220	2147		35	2				5	BO HA RE	
[ 17	2140	2230		S 2+						5	MC HU OK PR TO	
[ 17	2140	2300	2144					X		5	BO	2125
* [ 17	2141	2230	2152				2			5	BO A3 A2 A5 A9 HA A6	
18	0504	0528	0515				1			5	TY TA A11	
18	0807	0912	0816				2			5	TY A11 DU	0754
[ 18	0943	1051	1030				3			5	TY NE A11	
[ 18	0953	1036	1008					X		1	BO	0921
[ 18	1000	1153		S 3						5	PR NE PM	
19	1832	1848	1838					X		1	BO	
19	1939	2000	1948					X			BO	1903
[ 19	2055	2200	2110					X		1	BO	2051
[ 19	2100	2125		SL 1+						5	MC HU PR	
20	0316	0407		SL 2						5	OK CA TO	
[ 20	0721	0736	0727				1			5	TY NE	
[ 20	0722	0752		S 1						5	DA NE OK TO	
[ 20	1549		1557					X		1	BO	1525E
[ 20	1550	2200		S 3+						5	MC BE BR HU NE PR TO	
[ 20	1551		1600					X		1	BO	
[ 20	1552	1645	1603				2			5	A3 A2 NE	
[ 20	1552	2140			88	3				5	RE CO (NOISE STORM)	
[ 20	1615	1830	1624					X		5	BO	1633E
[ 20	1616									1	BO	
21	0407	0442		S 2-						4	AD OK TO	
[ 21	1702	1815		S 2+						5	MC FM HU PR PU	
[ 21	1702	1900	1710					X		1	BO	1714
[ 21	1703		1708		20	1				5	BO HA MC	
[ 21	1703		1710				2			5	BO HA	
[ 21	1818	1930		SL 2						5	MC HU	
[ 21	1902	1905							1	5	BO HA	
22	1457	1605		G 2						5	AN BE HU MC PR	
23	1550	1700	1625					X		1	BO	
23	2159	2201								5	BO HA	
23	2227	2231							2	5	BO HA RE	
24	1114	2215	1122					X		1	BO	1410U
[ 24	1737	1745							1	5	BO HA	
[ 24	1748	1900	1810					X		1	BO	1722
[ 24	1755	1930		SL 2						5	MC HU PR	
[ 24	2000	0124							2	5	BO HA	
26	1948	2030	1955					X		1	BO	
27	2055	2240	2120					X		1	BO	
[ 28	0227	0357		SL 3						5	AD AN CA NZ OK SY TO	
[ 28	0229	0347	0243		30	2				1	HA	

Notes:

1. The times of observation of the events are those of the first station listed in the "STATIONS" column.
2. Under SWF type: S = S-SWF; SL = Slow S-SWF.
3. Column headed "ABS" is the percent absorption of the SCNA.
4. Column headed "BUR" is for solar noise bursts at 18 Mc.
5. Column headed "SPA" is sudden phase anomalies as observed at Boulder, Colorado on GBR-England.
6. BR = Breisach; CA = Canberra; CO = College, Alaska; DA = Darmstadt; DU = Dunsink; JU = Juhlesruh; PM = Paramaribo; RE = Rensslaer; SY = Sydney; TA = Tasmania; TN = Gangiers.
7. Asterisk \* indicates Sudden Enhancement of Signal from 18 kc (NBA Panama Canal Zone) observed by A5.

Erratum: In CRPL-F 204B issued August 1961, Note 5 date should have been June 29 instead of July 29.

**SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES**

IVa

AUGUST 1961

OTTAWA

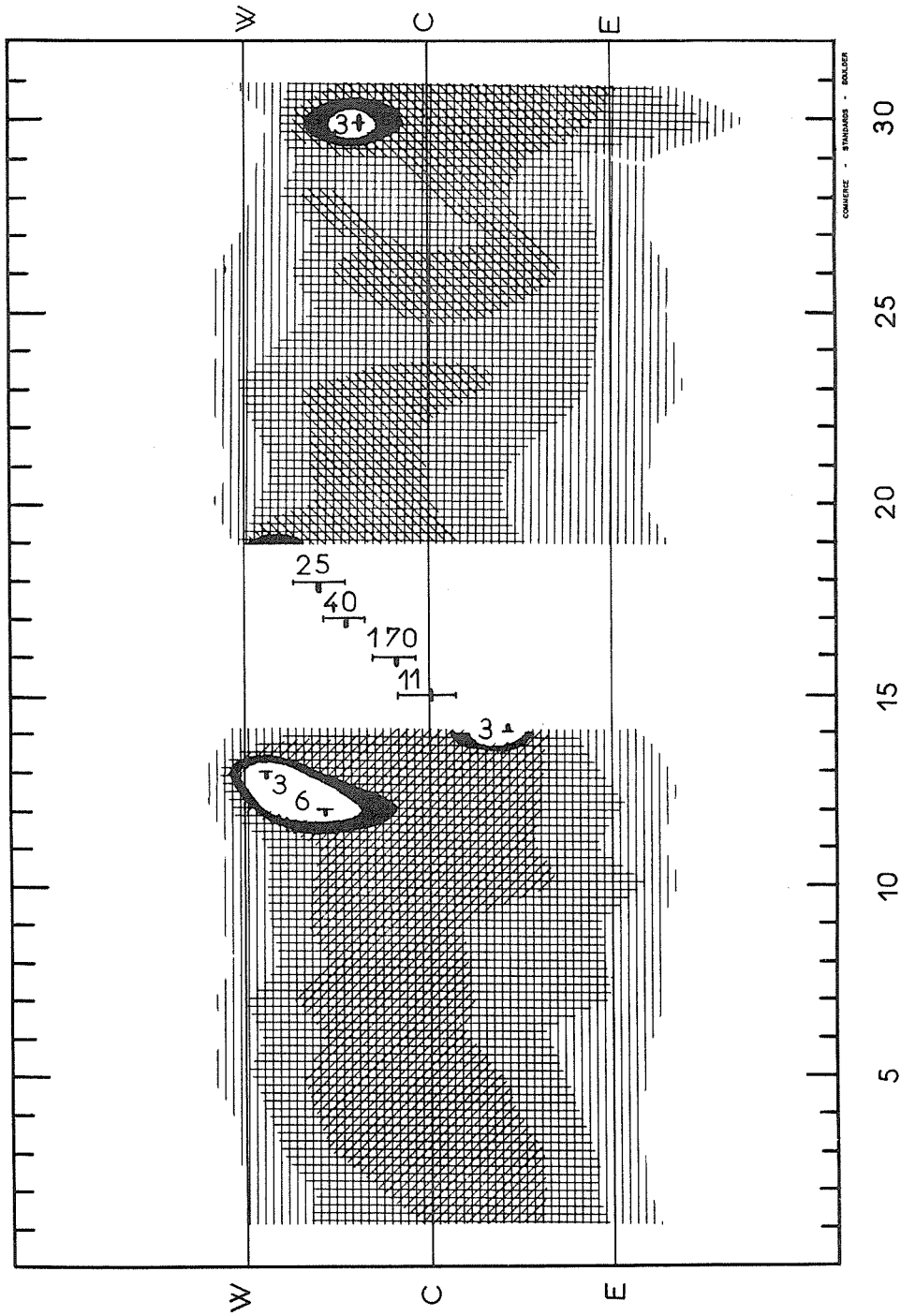
2800 MC

AUGUST 1961	TYPE	START UT	DURATION HRS: MINS	MAXIMUM			REMARKS
				TIME UT	PEAK FLUX	NEAR FLUX	
1	1 Simple 1	2025	4	2026.5	3	1.5	
10	1 Simple 1	1438.3	3.5	1439.2	3.5	1.2	
10	1 Simple 1	1505.2	0.8	1505.5	6	2	
10	2 Simple 2	2315.5	2.5	2316.8	22	10	
12	3 Simple 3 A	1611	45	Indet.	2	1	
	1 Simple 1	1613.5	4.5	1616	7	3	
	2 Simple 2 f	1629	4	1630.3	12	5	
12	1 Simple 1	1712.5	1	1713.2	3	1.5	
12	1 Simple 1	1720.5	4	1721	2.5	1.2	
12	6 Complex f	2048.5	4	2051.3	60	20	
	4 Post Increase		10		4	2	
13	3 Simple 3 A	1353	2 40	Indet.	2.5	2.0	
	1 Simple 1	1517	5	1519.7	4	2	
13	2 Simple 2	1907.5	12	1909	10	3.5	
13	3 Simple 3	1930	1 10	1948	4	2	
14	3 Simple 3 A	1425	3 45	1507	10	5	
	1 Simple 1	1731.2	1.3	1731.7	2.5	1.3	
15	3 Simple 3 A	1645	50	1705	3	1.5	
	6 Complex f	1646.5	5	1648.3	13	5	
16	1 Simple 1 f	1604.8	4	1606	6	2	
17	3 Simple 3 A	2104	45	2113	5.5	2.0	
	1 Simple 1 f	2108	4	2109.5	4	2.5	
18	3 Simple 3	1300	2 05	1310	8	3.5	
18	3 Simple 3 A	2036	1 39	2052	12	5	
	2 Simple 2 f	2039	11	2044	43	16	
	6 Complex	2054.2	3.8	2056.3	28	10	
31	3 Simple 3 A	1747	38	Indet.	2	1.5	
	1 Simple 1	1758.3	4.7	1800.5	6	3	



SOLAR RADIO EMISSION  
INTERFEROMETRIC OBSERVATIONS

Nançay AUGUST 1961 169 Mc



# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

IVc

AUGUST 1961

BOULDER

108 Mc.

Aug. 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
3	3	1639.0	1639.5	1.0	2
4	3	1855.6	1856.2	0.7	2
5	3	1830.5	1831.1	1.5	2
6	3	1442.5	1443.8	1.3	2
6	3	1719.5	1720.2	1.2	2
8	3	1236.5	1237.5	1.2	2
8	3	1401.5	1402.2	1.0	2
8	3	1643.5	1644.4	1.0	2
* 9	3	1151.8	1152.5	2.2	3
9	3	1206.4	1207.2	2.0	3
9	3	1241.0	1242.5	2.0	3
10	1	1211		190 D	1
11	1	1212	1303	165 D	2
12	7	1245		380 D	2
12	8	1620.5	1622.5	4.5	3
12	8	1711.2	1714.0	5.5	3
12	8	2048.9	2049.0	5.0	3
13	2	0030.0	0030.7	3.0	3
13	3	0117.0	0117.9	1.4	2
13	3	0129.0	0129.5	2.0	2

Aug. 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
13	3	1256.2	1257.4	1.6	3
13	2	1907.0	1907.5	6.0	2
14	1	1215		180 D	1
15	6	1216		803 D	2
16	9	1217	1257	118	3
17	7	2120	2150	250	2
18	3	1223.5	1225.0	2.0	3
18	1	1549		570	1
18	8	2047.5	2049.3	7	3
20	3	1515.0	1516.2	1.5	2
20	3	1754.8	1756.4	2.0	2
22	3	1307.0	1307.5	1.1	2
22	3	1628.0	1628.4	2.0	2
25	3	1336.1	1337.2	1.6	2
26	1	1356.0	1403	35	1
29	3	1706.0	1707.8	2.1	2
29	2	2020.0	2023.0	3.8	3
30	3	1400.8	1401.4	1.1	3
30	3	1559.3	1600.0	0.7	3
31	3	1242.5	1243.0	1.1	2

\*In dawn twilight.

COMMERCE - STANDARDS - BOULDER

## NOMINAL TIMES OF OBSERVATION

AUGUST 1961

BOULDER

108 MC

August 1961	U.T.		August 1961	U.T.	
1	1845-0155	I 1845-0155	17	1218-0137	I 2045-0030
2	1204-0154	I 0030-0154	18	1219-0136	
3	1205-0153		19	1220-0135	
4	1206-0152		20	1221-0133	I 1930-2220
5	1207-0151		21	1222-0132	I 2235-0025
6	1208-0150	I 2000-0150	22	1223-0130	
7	1209-0148	I 1920-0148	23	1224-0129	
8	1210-0147	I 1730-0147	24	1225-0127	
9	1210-0146	I 2025-2105	25	1226-0126	I 2120-0115
10	1211-0145	I 1915-2345	26	1227-0124	I 2155-2345
11	1212-0144		27	1228-0124	I 2010-0124
12	1213-0143	I 1900-2400	28	1229-0122	I 1945-2340
13	1214-0142	I 1930-0142	29	1229-0121	I 2145-0015
14	1215-0140	I 1830-2315	30	1230-0119	I 1930-0119
15	1216-0139		31	1231-0118	I 2030-0118
16	1217-0138	I 2130-2215; 2330-0138			

COMMERCE - STANDARDS - BOULDER

I = interference; thunderstorm activity has continued to be heavy.

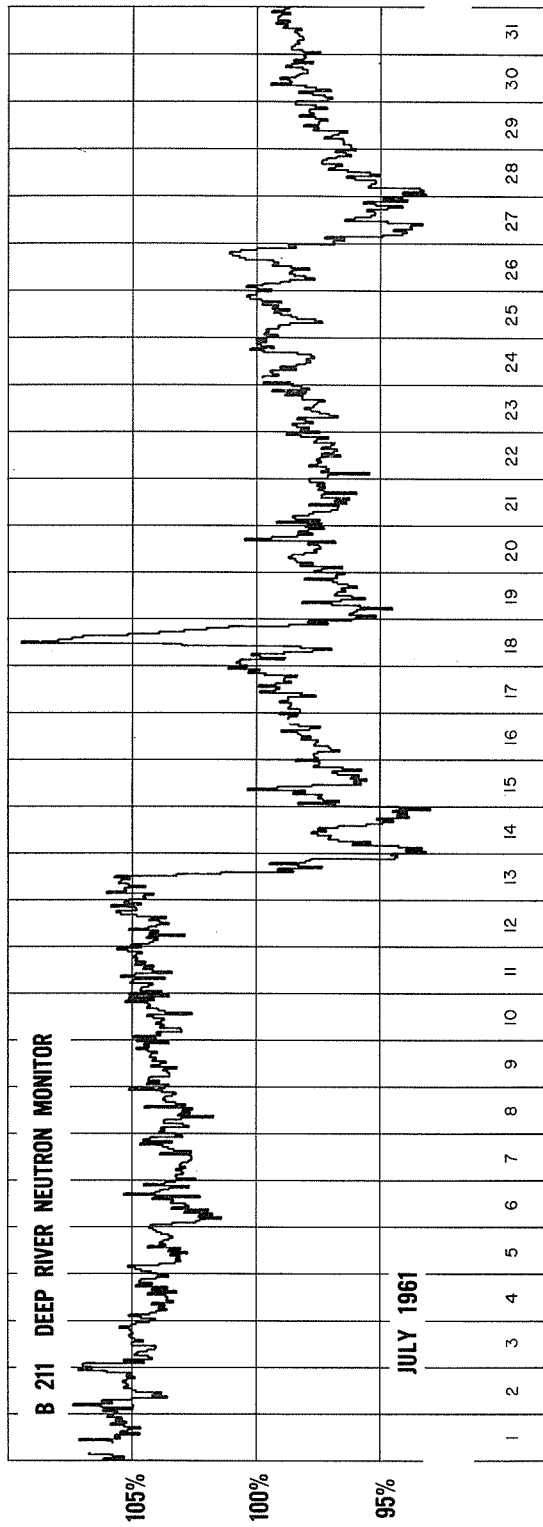
COSMIC RAY INDICES  
(Climax Neutron Monitor)

JULY 1961

July 1961	Daily average counts/hr.	July 1961	Daily average counts/hr.
1	3027.8	16	2788.4
2	3023.7	17	2823.7
3	3002.4	18	2835.9
4	2984.0	19	2740.2
5	2986.6	20	2775.6
6	2954.1	21	2792.4
7	2953.7	22	2786.3
8	2961.4	23	2796.4
9	2969.9	24	2834.7
10	2984.6	25	2842.3
11	2996.6	26	2849.8
12	3012.5	27	2738.4
13	2905.6	28	2759.1
14	2711.9	29	2791.1
15	2764.1	30	2814.9
		31	2831.4

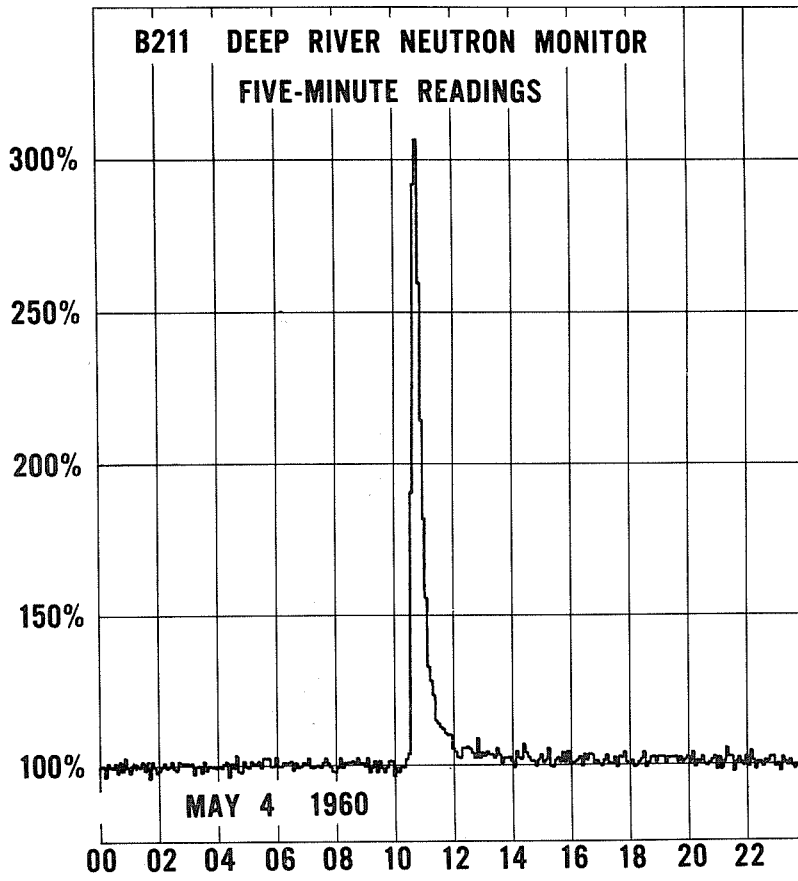
COMMERCE - STANDARDS - BOULDER

**COSMIC RAY INDICES**  
(Pressure Corrected Hourly Totals)

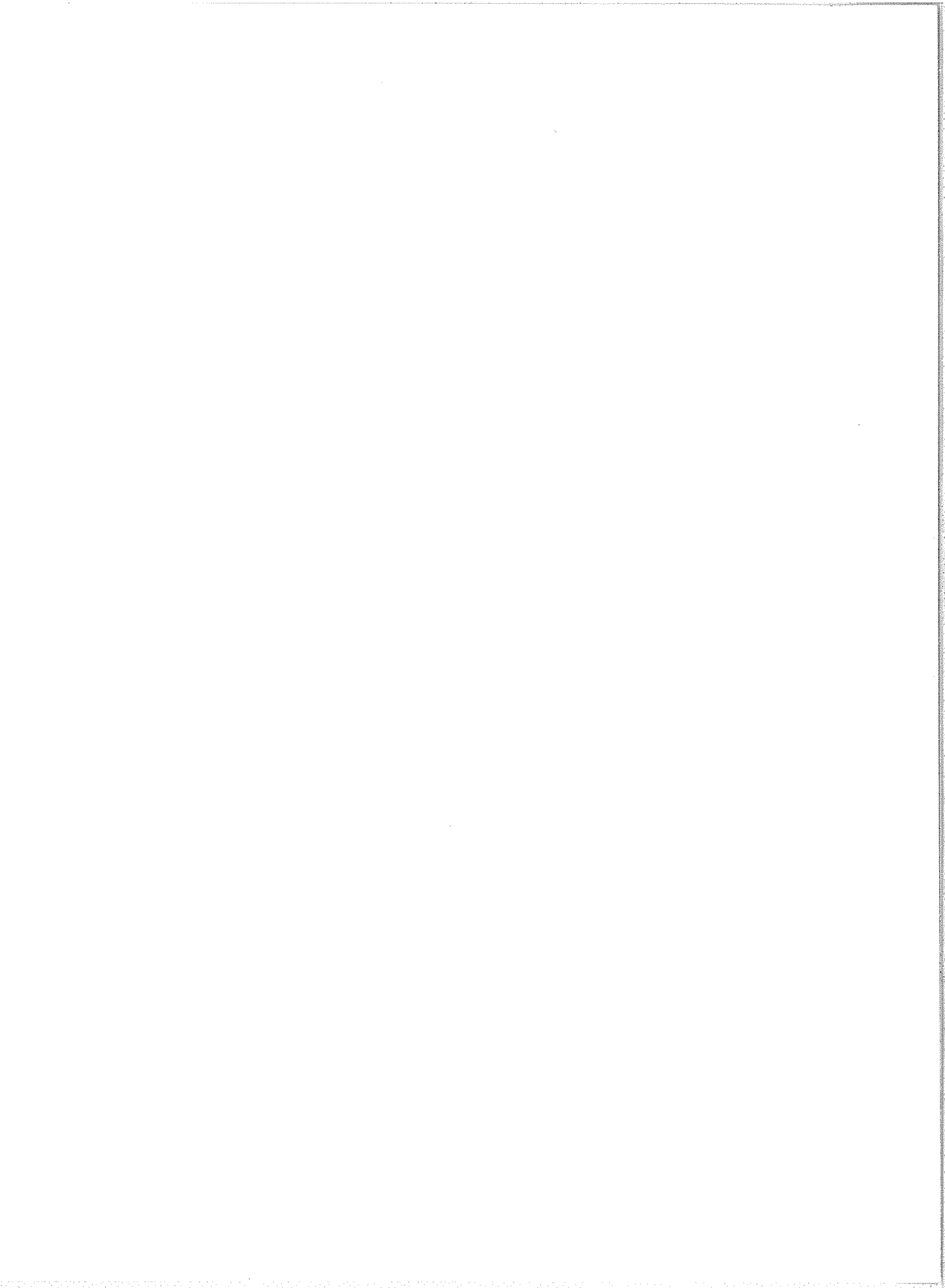


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Vc



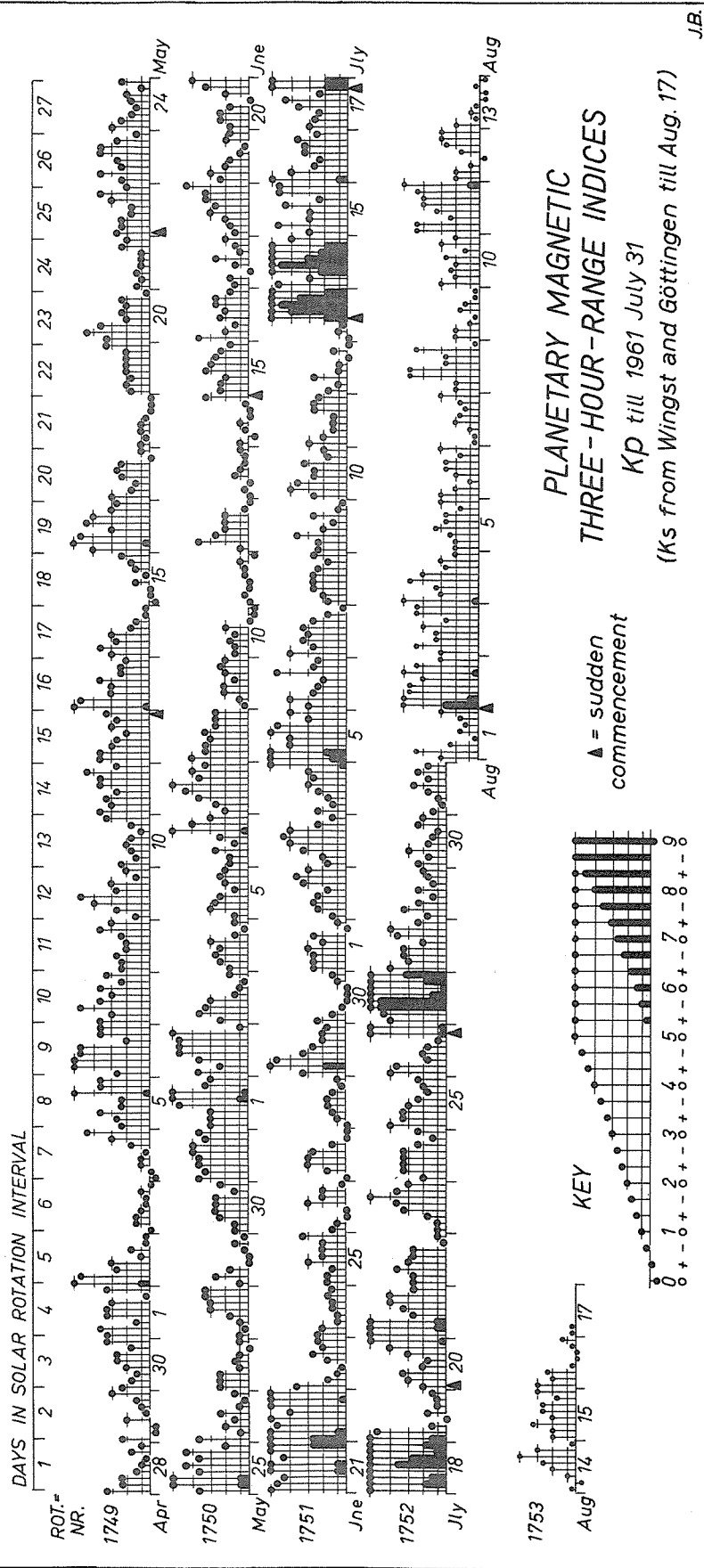
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GEOMAGNETIC ACTIVITY INDICES

JULY 1961

July 1961	C	Values Kp								Sum	Ap	Final Selected Days	
		Three hour Gr. interval											
		1	2	3	4	5	6	7	8				
1	0.4	3-	3-	3-	3o	2o	3-	0+	1o	17o	10	Five Quiet	
2	0.7	1+	2+	3-	2+	2-	3+	4-	3o	20+	12		
3	0.9	2-	2o	3+	4o	4+	4o	2+	1+	23o	16		
4	1.0	2+	1+	2-	2+	3o	3-	3o	5+	22-	16		11
5	1.4	6o	6+	4o	4o	5o	5-	3o	4o	37o	45		12
6	0.9	3o	4o	3-	2+	2o	5-	3-	2+	24-	16	29	
7	0.8	4o	3-	3+	3o	3+	3-	2-	1-	21+	14	30	
8	0.5	2-	2o	3-	3-	3-	2+	2-	3-	18+	10	31	
9	0.5	2+	2+	4-	2o	1+	3-	1o	1-	16o	9		
10	0.8	3-	4o	4-	3-	3-	3+	2-	2o	23-	14		
11	0.4	3o	2o	1+	1+	1+	3-	3-	2+	17-	9	Five Disturbed	
12	0.4	2-	1o	3-	1o	1o	0+	1+	0+	9+	5		
13	1.8	0+	1o	1-	6+	8o	8+	8-	6+	39-	102		
14	1.8	5-	3o	7-	8+	7+	7-	6+	4o	47o	98		5
15	1.2	3o	5-	3o	3o	4+	2+	5-	5-	30-	25		13
16	1.1	6-	4o	3-	2+	3+	3+	4-	3-	28-	23	14	
17	1.4	3o	3-	2+	4-	4+	2+	6+	6+	31o	36	18	
18	1.8	5o	6+	6o	5o	8-	7o	6-	6+	49o	93	27	
19	0.8	6o	5-	1+	0+	2-	1o	1o	1+	17+	18		
20	1.1	2o	3o	3+	2o	2-	3o	4o	5+	24+	19		
21	1.3	5o	6-	6-	3-	3+	4o	4o	3-	33o	35	Ten Quiet	
22	0.6	3-	3-	4-	3o	3-	3-	1-	1o	19o	12		
23	0.9	1o	1o	2-	3+	4-	5o	4-	3o	22+	17		
24	0.7	2o	3+	3+	3+	3+	2+	1+	2+	21+	13		1
25	0.7	4o	3+	3+	3o	2+	2-	2o	2+	22o	14		2
26	1.1	4o	4-	2-	2o	2-	1o	5+	5+	25-	23	8	
27	1.9	4o	4+	8+	8+	6o	5+	6+	7+	50o	114	9	
28	1.0	4o	3o	3+	3+	2o	4-	4o	2+	26-	18	11	
29	0.5	2-	3+	2+	1+	2+	1+	2-	2o	16o	8	12	
30	0.6	2+	2-	3o	2-	1+	1o	2+	2o	15+	8	22	
31	0.3	1+	1-	1o	2-	3-	2-	2+	2-	13o	6	29	
												30	
												31	
Mean:	0.945									Mean:	28		



COMMERCE - STANDARDS - BOULDER



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JULY 1961

NORTH ATLANTIC

NORTH PACIFIC

DATE	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:		WHOLE DAY INDEX	ADVANCE FORECASTS (J-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY:		GEOMAGNETIC $K_{pR}$	NORTH PACIFIC 12-HOURLY QUALITY FIGURES		SHORT-TERM FORECASTS ISSUED AT:	WHOLE DAY INDEX	ADVANCE FORECASTS (J-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY:		GEOMAGNETIC $K_{pS}$	
	00 TO 06	06 TO 12	12 TO 18	18 TO 24	00	06		12	18		1-7	1-3			1-7	0700 TO 1900		1800 TO 0700
01	7-	60	6+	7-	7	6	6	6	6+	7	7	6	6	7	4	5	3	2
02	70	60	6+	6+	7	6	6	6	6+	7	7	6	6	6	5	5	3	2
03	7-	6-	60	60	6	6	6	5	60	7	7	6	5	6	6	3	2	2
04	7-	60	7-	6+	6	6	6	6	6+	7	7	6	6	6	6	6	2	2
05	4+	3+	5-	5+	6	4	5	5	(4+)	7	7	5	5	6	6	6	(6)	(4)
06	5+	5-	60	60	5	4	5	6	6-	5	5	6	5	5	5	3	3	3
07	60	5-	60	60	6	5	6	6	6-	6	6	6	5	6	6	(4)	2	2
08	7-	60	6+	6+	6	6	6	6	6+	6	6	6	6	6	6	3	2	2
09	7-	5+	60	60	7	6	6	6	60	6	6	6	5	6	6	2	2	2
10	6+	4+	60	60	7	5	6	6	5+	7	7	6	5	6	6	(4)	3	3
11	7-	5+	6-	6-	7	6	6	6	6-	7	7	6	6	6	6	2	2	2
12	7-	4+	5-	6+	7	5	5	4	5+	5	5	6	5	5	5	3	0	0
13	60	60	6-	5-	2	4	4	3	6-	3	3	3	4	3	3	3	(6)	(6)
14	4-	2+	3-	3+	2	2	3	3	(30)	3	3	4	4	3	3	(6)	(6)	(6)
15	4-	20	4+	4+	3	2	3	3	(4-)	5	5	4	4	3	5	(4)	(4)	(4)
16	3+	3+	5-	6-	4	3	4	5	(40)	5	5	5	3	4	6	(4)	3	3
17	60	50	5+	50	5	5	3	6	5+	4	4	6	3	4	5	3	(4)	(4)
18	4-	2-	2+	2+	4	3	4	3	(3-)	4	4	5	2	3	3	(6)	(6)	(6)
19	2+	3-	40	6-	2	1	2	4	(3+)	5	5	4	2	4	4	(4)	2	2
20	6+	5-	4+	50	4	4	6	5	50	3	3	5	4	5	2	3	3	3
21	5-	30	4+	5+	3	3	5	5	(40)	3	3	3	3	3	2	(6)	(4)	(4)
22	6+	5-	5+	60	4	4	5	6	6-	5	5	5	5	3	3	3	2	2
23	70	60	6+	60	7	6	6	6	6+	5	5	6	5	4	5	5	2	3
24	6+	5-	6-	60	6	5	5	6	6-	6	6	6	6	6	5	5	(4)	3
25	6-	4+	6-	6+	6	4	5	6	5+	6	6	6	5	5	6	(4)	2	2
26	6+	5-	6-	6-	6	5	6	6	6-	5	5	6	6	6	6	2	3	3
27	5-	2+	4+	4+	5	3	2	4	(4-)	4	4	4	4	5	2	(6)	(5)	(5)
28	4-	3+	5+	5+	2	2	4	6	(4+)	5	5	5	3	3	3	3	2	2
29	6+	5+	6-	6+	5	5	6	6	6-	6	6	6	6	6	4	4	3	2
30	7-	50	60	6+	6	5	6	6	60	6	6	6	6	6	5	5	3	1
31	6+	5-	6-	6+	5	5	6	5	6-	4	4	6	6	7	5	5	2	2
Score: Quiet Periods	P	12	12	16	17					7	6			4	8			
	S	8	6	6	7					11	11			18	11			
	U	1	0	1	1					2	3			1	5			
	F	3	1	1	2					2	2			3	1			
Disturbed Periods	P	2	5	0	2					2	2			1	1			
	S	2	6	3	2					5	3			3	5			
	U	2	1	3	0					1	2			1	0			
	F	1	0	1	0					1	2			0	0			

( ) Represent disturbed values  
All times are Universal Time (U.T.)

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

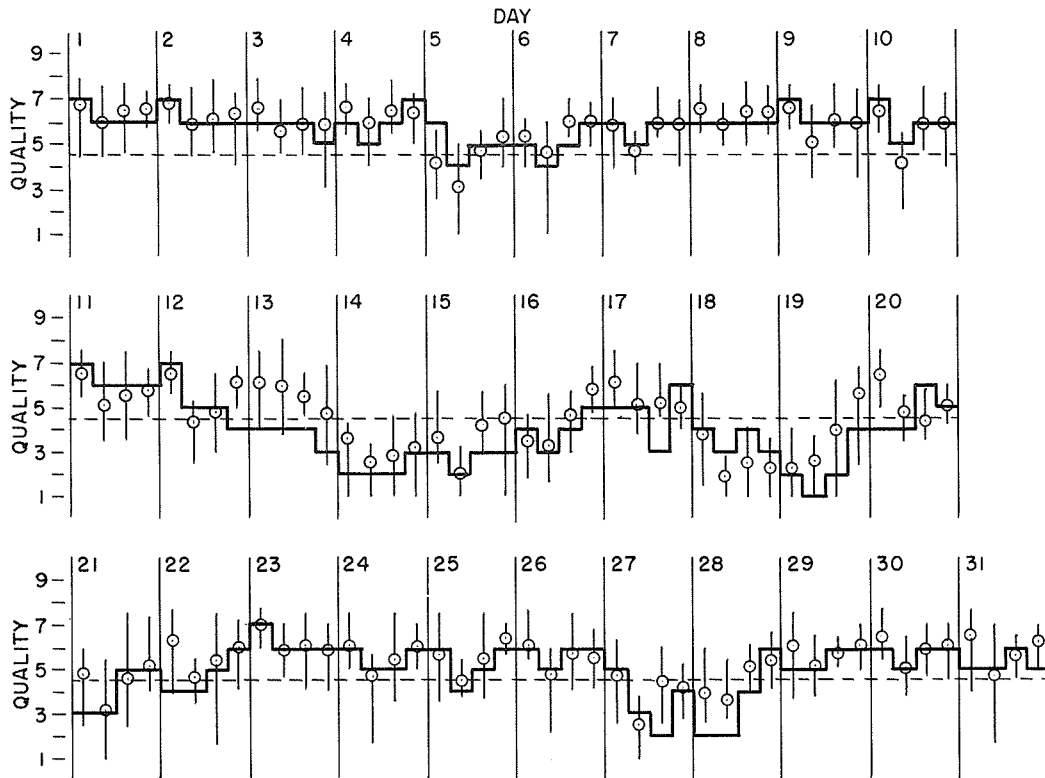
NORTH ATLANTIC

JULY 1961

— Short-term forecast

| Range of reports

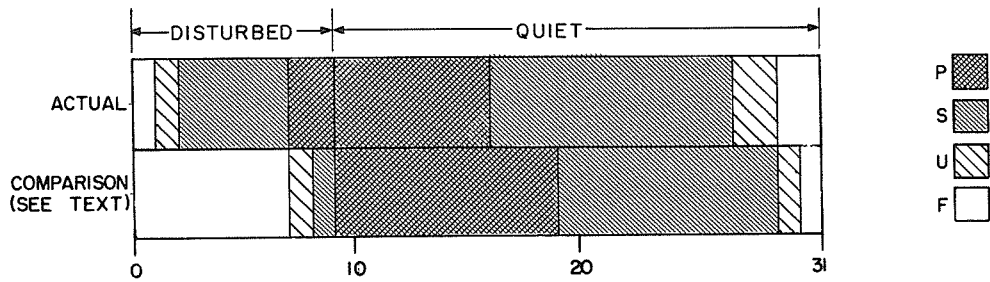
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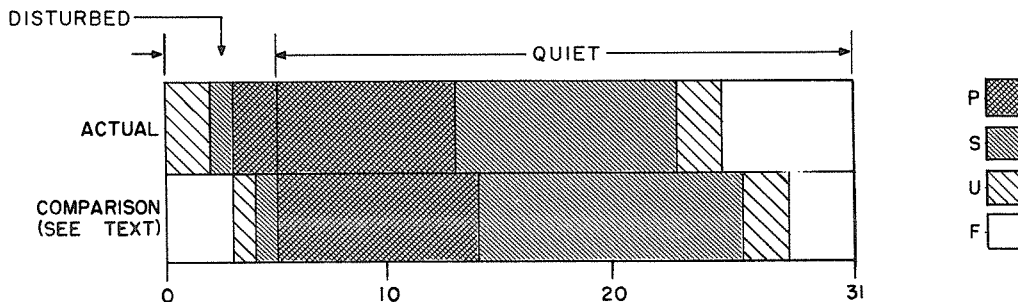
OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE

NORTH ATLANTIC

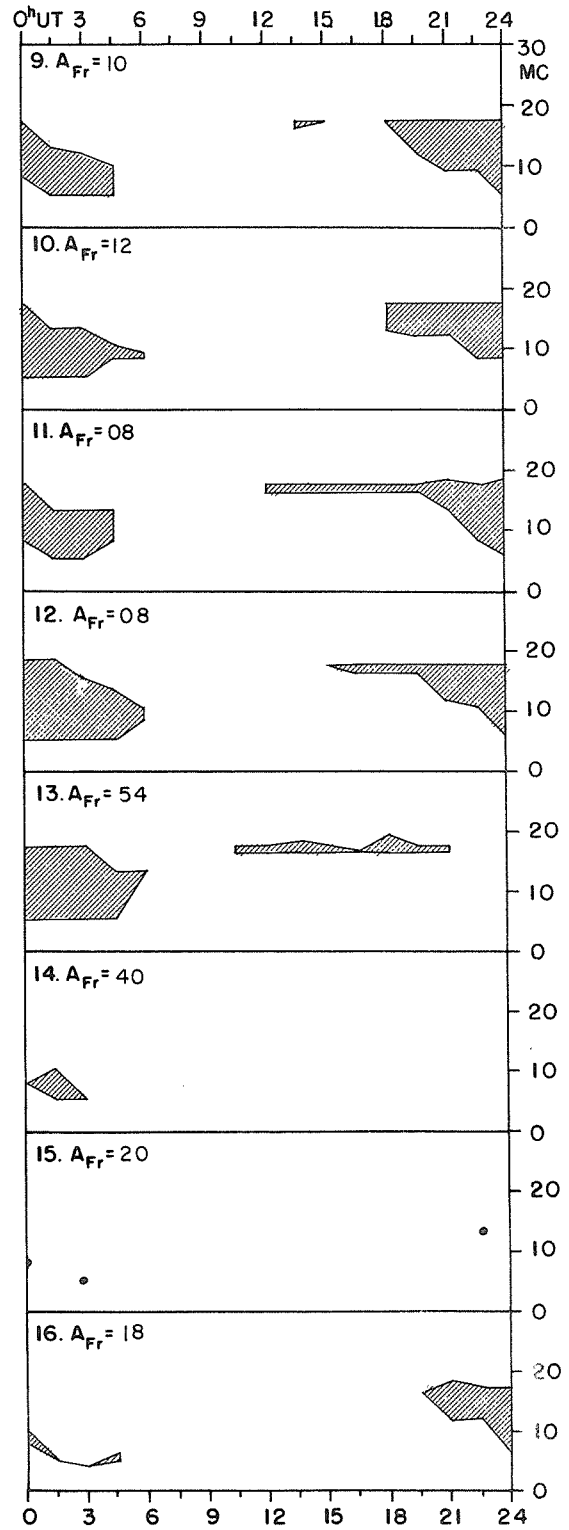
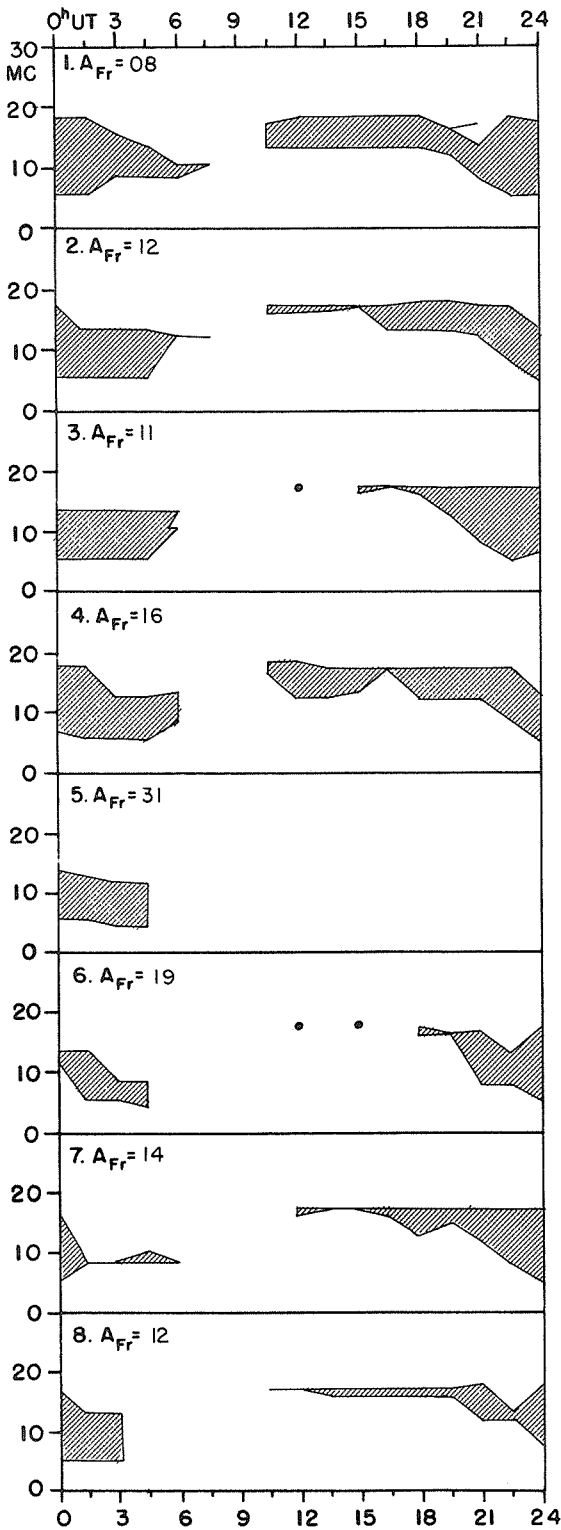


NORTH PACIFIC



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

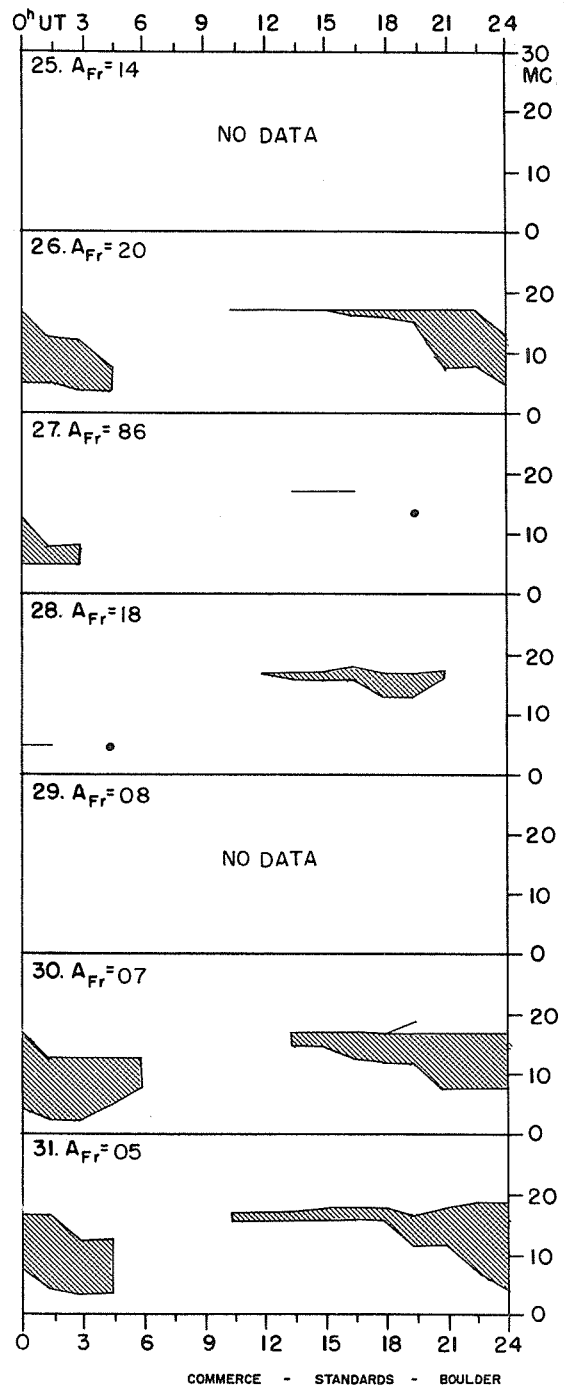
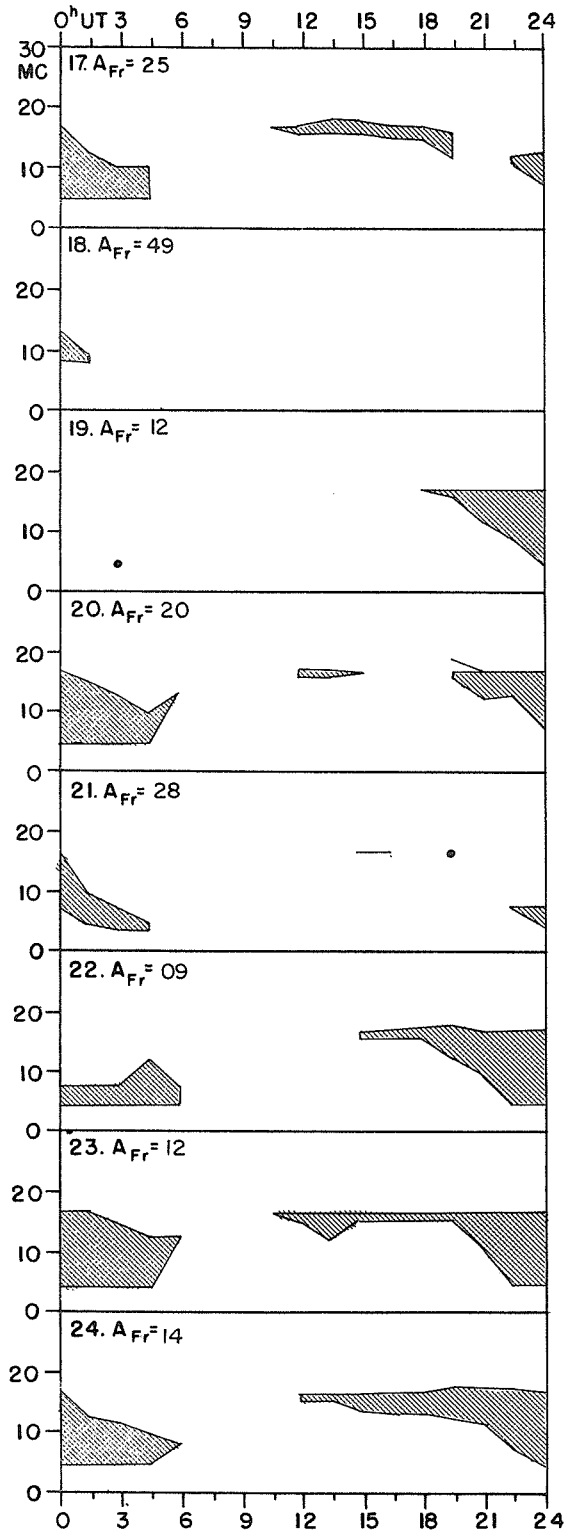
JULY 1961



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

VIII d

JULY 1961



Adapted from Observations by Deutsches Bundespost

## ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

AUGUST 1961

Issued August 1961 Day/Time UT	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
02/0510	Ft. Belvoir, Magnetic Storm 01/23XXZ	137	Magnetic Storm 01/23XXZ	
02/1600				
30/1250	Ft. Belvoir, Magnetic Storm 29/17XXZ	138	Magnetic Storm 29/17XXZ	Start
30/1600				
31/1600				

COMMERCE - STANDARDS - BOULDER

Erratum:

In CRPL-F 204B issued August 1961 on page VIIIa, the advance geophysical alert issued July 13, 1961 at 1605 should have read Chicago, Cosmic Ray decrease 13/11XX instead of increase.