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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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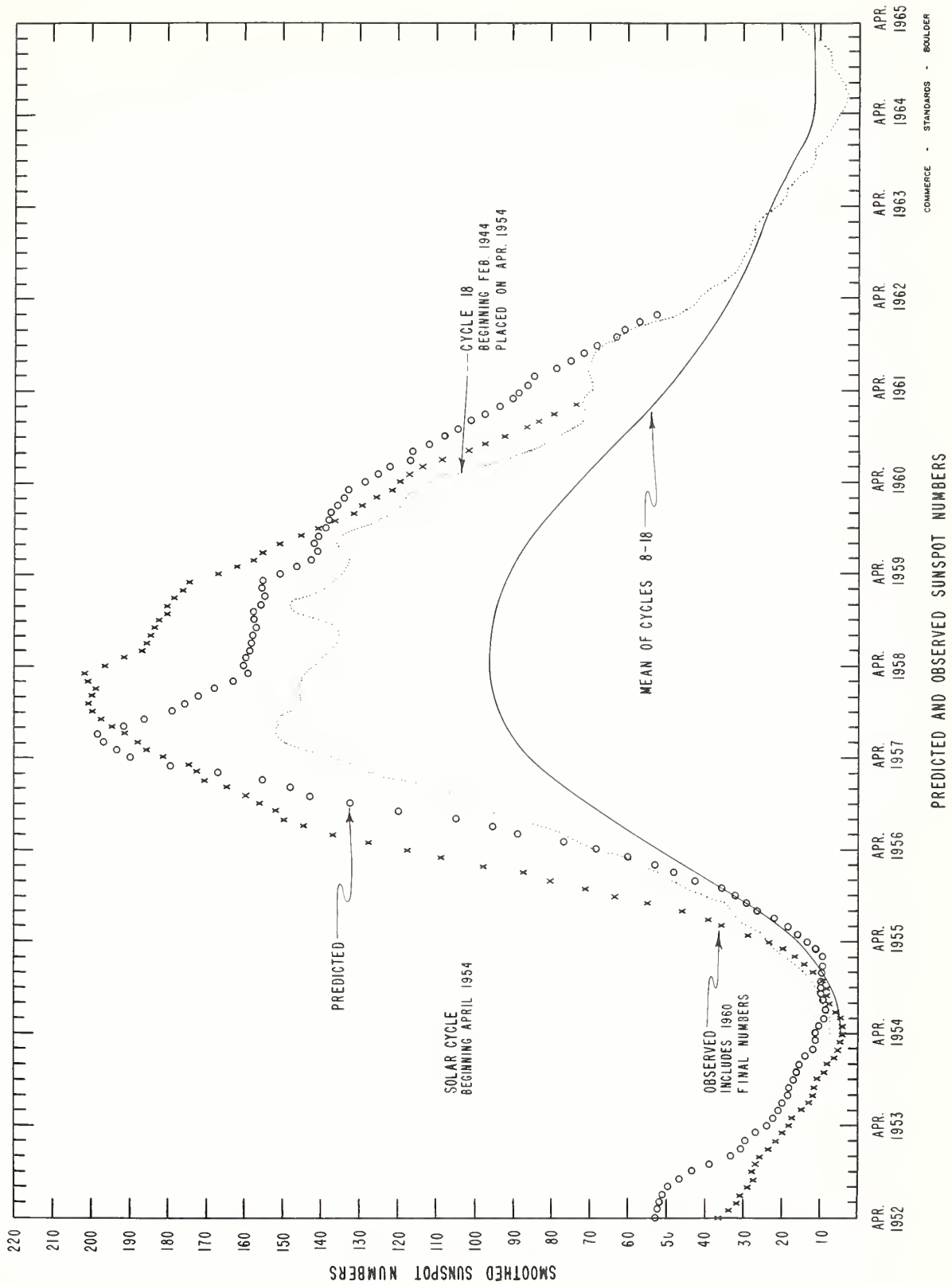
The descriptive text was published separately, November 1960.

## DAILY SOLAR INDICES

JULY 1961

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

CIR 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	13	27	99	146	46	94	54	98	13	29	46	54	5	14
2	68	90	10	49	120	213	44	56	24	119	22	35	35	46	11	13
3	46	70	6	6	57	70	11	4	x	x	x	x	x	x	x	x
4	44	57	7	14	29	58	7	15	x	x	x	7	x	x	x	x
5	42a	64a	17	25	25a	53a	22	30	13	20	6	7	39	64	15	30
6	21	22	x	x	11	13	x	x	10	14	6	7	34	42	11	28
7	40	52	9	11	30	42	11	16	13	15	0	0	26	31	10	32
8	32	65	7	9	15	41	6	14	17	21	13	19	24	24	8	12
9	24	32	12	15	27	71	14	22	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	34	44	x	x
12	17	24	30	61	17	14	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	x	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	40	x	x	x	x	x	x
18	x	x	x	x	x	49	x	x	x	40	x	11	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	92	120	12	25	56	87	15	23	56a	86a	13a	20a	67a	87a	14a	18a
23	58	81	10	16	54	126	12	25	27	32	x	x	35	49	x	x
24	58	90	9	17	32	44	9	16	10	25	x	x	28	41	x	x
25	41	50	x	x	29	32	x	x	x	x	y	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	40	48	8	16	40	63	0	0
28	x	x	x	x	x	x	x	x	105	108	x	x	2	x	x	x
29	50	73	x	x	98	162	x	x	x	x	15	20	52	134	9	24
30	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

a = index computed from low weight data.

+ = y low line observed

x = no observations

- = below threshold of visibility

COMMERCE - STANDARD - BOULDER

## 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>	F <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	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	41	52	13	14	x	88	13	18	34	42	x	x	35	67	x	x
3	x	x	x	x	x	x	x	x	27	30	x	x	46	63	x	x
4	40	47	x	x	x	22	x	x	18	21	1	3	34	53	3	6
5	17	19	x	x	x	17	x	x	15	18	5	8	24	33	5	7
6	32a	48a	10a	13a	22a	38a	12a	16a	32	42	0	0	32	35	0	0
7	16	17	x	x	17	22	x	x	14	22	6	10	17	20	8	12
8	29	45	x	x	17	25	x	x	7	12	5	10	15	17	12	18
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	21	28	2	6	43	65	8	17
11	66	104	15	44	25	72	0	0	18	24	3	10	60	86	9	17
12	12	x	x	x	x	x	x	x	19	27	x	x	81	116	x	x
13	107	162	25	78	41	53	19	56	37	51	x	x	87	108	x	x
14	x	x	x	x	x	x	x	x	28	39	8a	15a	67	80	7a	15a
15	x	x	x	x	x	x	x	x	23	31	x	x	27	39	x	x
16	41	45	x	x	32	48	x	x	39	47	x	x	55	74	x	x
17	59	71	x	x	63	73	x	x	x	x	x	x	x	x	x	x
18	43	52	2	5	62	78	3	7	x	x	x	x	x	x	x	x
19	37	50	5	9	52	63	10	18	x	x	x	x	x	x	x	x
20	53	56	3	10	64	91	4	10	x	x	x	x	x	x	x	x
21	34	42	6	10	30	55	7	8	x	x	x	x	x	x	x	x
22	32	40	3	5	20	24	9	14	20	35	14	25	35	55	11	12
23	x	x	x	x	33	53	x	x	34	57	2a	10a	54	84	x	8a
24	43	47	6	9	33	53	3	10	x	x	x	x	x	x	x	x
25	58	91	15	26	56	72	4	13	x	x	x	x	x	x	x	x
26	100	130	x	x	94	125	x	x	65	94	x	x	56	81	x	x
27	81	135	x	x	96	133	x	x	63	104	8	21	57	70	10	16
28	33	39	12a	23a	56	67	18a	30a	64	83	7	30	43	55	12	31
29	35	64	x	x	24	31	x	x	x	x	x	x	x	x	x	x
30	45	70	x	x	18	22	x	x	x	x	x	x	x	x	x	x
31	x	x	x	x	x	x	x	x	18	22	11	16	29	50	13	16

a = index computed from low weight data.

+ = yellow line observed

x = no observations

- = below threshold of visibility

COMPARISON - STANAGARD - 0014.001

# FINAL CORONAL LINE EMISSION INDICES

JUNE 1961

CfP June 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	x	x	x	x	x	x	20	31	5	12	27	56	5	12
2	30	34	x	x	52	60	x	x	58	50	0	0	26	34	0	0
3	x	x	x	x	x	x	x	x	42	87	15	27	21	28	7	20
4	x	x	x	x	x	x	x	x	44	53	x	x	47	51	x	x
5	17	21	12	20	9	20	11	17	64	106	x	x	71	114	x	x
6	x	x	x	x	x	x	x	x	59	68	10	16	52	68	6	15
7	50	61	13a	48a	26	72	12a	19a	18	28	x	x	57	98	x	x
8	39	53	x	x	25	42	x	x	15	20	x	x	41	48	x	x
9	53	75	3	11	38	74	1	4	48	59	0	0	81	134	13	25
10	58	89	0	0	41	67	2	6	23	25	6	10	39	50	2	3
11	44	60	7	19	37	49	0	0	47	87	13	16	45	59	9	12
12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	37	42	x	x	58	79	x	x
14	50	70	22	48	42	73	11	16	50	82	x	x	49	70	x	x
15	52	64	23	48	43	92	15	40	x	x	x	x	x	x	x	x
16	46	56	2	6	71	126	13	36	x	x	x	x	x	x	x	x
17	45	56	6	13	80	179	13	26	x	x	20a	36a	x	x	9a	16a
18	54	73	x	x	70	83	x	x	61	106	13	26	66	100	8	20
19	30	34	x	x	52	70	x	x	x	x	x	x	x	x	x	x
20	55	66	4	15	50	59	4	10	x	x	x	x	x	x	x	x
21	54	81	x	x	75	120	x	x	70	93	13	29	66	75	5	11
22	61	90	x	x	61	113	x	x	44	73	8	15	68	95	9	18
23	106	164	25	53	125	148	16	42	73	92	10	33	110	121	21	35
24	52	73	10	20	42	59	5	7	34	48	7a	12a	58	78	13a	24a
25	62	134	23	44	40	82	16	24	29	39	9	12	42	67	22	42
26	x	x	x	x	x	x	x	x	x	x	11a	24a	x	x	19a	20a
27	55	85	x	x	29	40	x	x	20	31	13	16	59	84	22	36
28	52	74	x	x	20	50	x	x	x	x	x	x	x	x	x	x
29	x	x	x	x	x	x	x	x	14	25	x	x	x	39	x	x
30	x	x	x	x	x	x	x	x	17	25	x	x	31	39	x	x

a = index computed from low weight data.

+ = yellow line observed

x = no observations

- = below threshold of visibility

COMPARISON - STANDARDS - BOLLINGER

PROVISIONAL CORONAL LINE EMISSION INDICES

JULY 1961

CLP 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	15a	28a		x	x	9a	24a		31	61	15	24		56	67	24	36	
2	33	62	23a	26a		37	92	10a	x		73	112	x	x		21	22	x	x	
3	x	x	x	x		x	x	x	x		27a	61a	6a	12a		47a	12a	17a	28a	
4	x	x	x	x		x	x	x	x		x	x	x	11		x	x	x	25	
5	x	x	x	x		x	x	x	x		15	22	12	24		72	132	11	20	
6	58	81	12	41		11	2	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	14a	40a		40	84	1a	x		x	x	x	x		x	x	x	x	
9	48	62	17	24		64	146	14	32		24a	39a	12a	24a		30a	36a	10a	12a	
10	x	x	16a	42a		x	x	4a	12a		44a	62a	11	17		28a	45a	13	16	
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	14	40		53	81	20	32		x	x	x	x		x	x	x	x	
16	58	73	11a	21a		39	64	13a	16a		10	12	5	6		12	18	7	10	
17	96a	120a	14a	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	34		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	14a	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		10	21	11	13		29	37	12	16	
28	x	x	x	x		x	x	x	x		24	47	7	11		26	57	8	15	
29	x	x	x	x		x	x	x	x		13	22	10	12		13	15	5	8	
30	18	31	7	11		6	13	8	13		x	x	x	x		x	x	x	x	
31	40	58	5	9		15	24	6	8		x	x	x	x		x	x	x	x	

COMMERCE - STANDARDS - BOULDER

a = index computed from low weight data.

\* = yellow line observed.

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	25	34	x	x	17	22	x	x
7	x	x	x	x	x	x	x	x	7	8	x	x	49	83	17	24
8	x	x	x	x	x	x	x	x	55a	70a	x	x	43a	87a	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	x	x	x	x	42	70	8	12	62	104	11	24
13	63	104	20	31	34	72	11	32	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	13	21	16	20	38	60	18	38
24	x	x	x	x	21	31	6	16	32	52	9	13	37	70	9	15
25	40	59	9	12	x	x	x	x	x	x	x	x	x	x	x	x
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	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	19	24	12	15	24	30	8	10
29	65	98	3	4	25	31	9	12	35	42	16a	32a	35	56	8a	12a
30	63	118	x	x	27	52	x	x	20	34	13	16	37	48	8	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		LOCATION		DURA- TION — MINUTES	IM POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	MER DIST				TIME — UT	MEAS AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX WIDTH He		MAX INT f <sub>o</sub> F <sub>2</sub>
[ ONDREJOV WENDEL SAC PEAK	01	0707 E	0723	S10 W18	6187	16 D	1	2	0709		5.00	2.40	24	Slow S-SWF
	01	0708 E	0735	S11 W20	6187	17 D	1+							
	01	2020	2158	N12 W23	6180	78	1	2		1.88	2.11			
LOCKHEED	02	1806	1838	S04 E90	6191	32	1	1	1815	.50	4.00		10	
	03	0708 E	0755	S14 W40	6191	47 D	1	2		1.50				
BUCHAREST LOCKHEED	03	2227	2255	S10 E80	6191	29	1	1	2243	.70	3.10		20	
	04	0435	0450	N22 W72	6180	15	1	1	0435	.40	1.10	1.32		
KODAIKNU WENDEL	04	1116 E	1146 D	N12 W15	6184	20 D	1				3.00			
	05	0832 E	0912 D	S16 W57	6191	40 D	1				3.00			
WENDEL	06	0617 E	0633 D	S13 W85	6191	16 D	1				4.00			
	06	0651		S12 W30	6181	11 D	1	1		.50				
WENDEL	06	0748 E	0759 D	S13 W85	6181	11 D	1				3.00			
	06	0951 E	1016	S16 W85	6181	25 D	1	3	0959			3.70		
ONDREJOV	06	0951 E	1016	S16 W85	6181	25 D	1	3					10	
	06	1748	1812	N18 E88	6195	24	1	2		.17			15	
SAC PEAK	06	2028	2105	N18 E88	6195	38	1	1		.27				
	08	1026 E	1132 D	S14 E23	6191	45 D	1+				6.70			
WENDEL	09	0555 E	0625 D	N18 W03	6197	30 D	1				3.00			
	09	0714 E	0836	N16 W04	6197	32 D	1	2		1.30				
BUCHAREST	09	0752	0803	N12 E88	6195	11 D	1			3.80				
	09	1710	1714	N03 E90	6199	8	1	1	1714	.40	8.00		10	
LOCKHEED	09	1718	1828	N16 E62	6195	50	1	3		1.45	2.35		15	
	09	1728												
WENDEL	10	0520 E	0552 D	N14 W18	6197	32 D	1				1.00			
	10	0845 E	0856	N17 W19	6197	11 D	1							
ISTANBUL	10	0845 E	0900	N16 W22	6197	15 D	1+							
	10	1218	1225 D	N09 E75	6199	7 D	1				3.00			
ONDREJOV	10	1219	1234	N07 E76	6199	15	1	3	1222			3.60		
	10	1434	1456	N09 E72	6199	22	1+				6.00			
WENDEL	10	1436	1445	N10 E75	6199	9	1							
	10	1436	1448	N07 E70	6199	12	1+				4.25		20	
SAC PEAK	10	1440 E	1450	N10 E76	6199	13 D	1	2		2.60				
	10	1502	1510 D	S14 E45	6194	3 D	1	2				3.10		
LOCARNO	10	1502	1512	N12 E40	6195	5	1	3	1509	1.10	2.00		30	
	10	1506		N08 E68	6199	44	1		2220	1.44	1.48		22	
ONDREJOV	10	2309	2353	N07 E70	6199	13 U	1	1						
	10	2318 U	2328											
SAC PEAK	11	0101 E	0109 C	S03 E72	6200	9 D	1	1	0105	1.03	2.47	2.60	107	
	11	0125	0135 C	N07 E65	6199	10 D	1	1	0125	1.03		2.43	85	
WITAKA	11	0910	0920	N06 E63	6195	12 D	1	1		4.30				
	11	1851	1907	N01 E60	6201	16	1	2	1856	.40	2.00		10	
BUCHAREST	11	1851	1907	N01 E60	6201	16	1	2			1.00		10	
	11	1956	2036	S01 E90		40	1	2	2012	.40			10	Slow S-SWF
LOCKHEED	12	1105	1115	N05 E47	6199	19	1+		1112	1.50	3.00			
	12	1110 E	1115	N05 E47	6199	5 D	1	3			1.10			

# SOLAR FLARES

## AUGUST 1961

AUGUST 1961

OBSERVATORY	DATE AUG 1961	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	MER DIST.				M-MATH PLACE REGION	TIME — U.T.	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH He
[ MCMATH NEUDON LOCKHEED	12	1614	1635 D	N15 W50	6197	21 D	1	2	1618		2.50			S-SWF  S-SWF
	12	1615	1630 D	N18 W50	6197	15 D	1	1	1714	1.90	2.20		30	
	12	1705	1736	N05 E43	6199	31	1	2	1715		2.50			
	12	1707	1735	N05 E45	6199	28	1	2			2.80			
	12	1710	1732	N05 E43	6199	22	1+	2	2052					
[ MCMATH NEUDON LOCKHEED	12	2050	2115	N05 E43	6199	25	1	2						
[ KODAIKNL ISTANBUL LOCKHEED	13	0340	0348	N08 E42	6199	9	1	1		2.30	2.90			S-SWF  S-SWF
	13	1020 E	1025	N07 E34	6199	5 D	1	2	1911	2.10	2.10		30	
	13	1906	1931	N03 E27	6199	25	1	2	1947	2.00	2.10		20	
	13	1938	2053	S01 E29	6200	75	1	2						
	13			S01 E29	6200									
[ KYOTO WENDEL ISTANBUL	14	0127 E	0130 D	N15 W68	6197	3 D	1	3	0127	1.44	3.00		110	G-SWF
	14	0644	0700	N05 E26	6199	16	1							
	14	0750 E	0835	N17 E03	6195	45 D	1							
	14	0805 E	0820 D	S07 E03	6194	15 D	1							
	14	0805	0835	N08 E24	6199	30	1				5.00			
[ WENDEL ZURICH CAPRI S	14	0907	0934 D	S03 E60	6201	27 D	1+	3	0912		3.00			G-SWF
	14	0908 E	0921 D	S02 E59	6201	13 D	1	3	0923	2.00	4.00			
	14	0920	0925 D	N01 E59	6201	5 D	1				5.00			
	14	0937	1007	N15 E06	6195	30	1+				3.00			
	14	1400	1630	S05 W65	6191	150	2+				16.00			
[ WENDEL MCMATH CAPRI S	14	1415 E	1652 D	S05 W67	6191	153 D	2+	2	1458		9.00			G-SWF
	14	1420	1520 D	S07 W70	6191	120 D	2	3	1506	5.00	12.40			
	14	1425 E	1615 D	S08 W69	6191	110 D	2	2	1442					
	14	1437 E	1455 D	S17 W66	6191	18 D	1	2	1448		2.00			
	14	1448 E	1540	S07 W71	6191	52 D	2	2	1505	3.10	10.00		20	
[ ZURICH LOCKHEED WENDEL	14	1505 E	1645	S07 W70	6191	100 D	2	2			5.90			G-SWF
	14	1708 E	1723 D	N15 W82	6197	15 D	1				4.00			
	15	1640	1710	N12 W12	6195	30	1	2	1649	2.00	2.00		30	
	15	1642	1718	N12 W20	6195	36	1	2	1650		2.50			
	15	1645	1713	N12 W20	6195	28	1	2						
[ MITAKA KYOTO MITAKA	16	0032 E	0055	N11 W22	6195	23 D	1	1	0035	2.57	2.78		131	G-SWF
	16	0202 E	0206 D	N08 E01	6199	4 D	1	1	0202	4.13	.62		80	
	16	0300 E	0337 D	N11 W23	6195	37 D	1+	1	0304		3.33		217	
	16	0457	0524	N13 W26	6195	27	1	1	0457	3.08	3.33		112	
	16	0545	0611	S09 W23	6194	26	1	1	0604	.93	1.04		143	
[ MITAKA ISTANBUL LOCKHEED	16	1603	1730	S00 E25	6201	87	1	2	1610		2.30			S-SWF
	17	0225 E	0300	S08 W36	6194	35 D	1	1	0233	1.03	1.30		120	
	17	0835 E	0850 D	N09 W19	6199	15 D	1	2	2114	2.00	2.00		20	
	17	2102	2226	N07 W24	6199	34	1	2	2115		2.40			
	17	2105	2152	N10 W23	6199	47	1	2						
[ MITAKA KODAIKNL ZURICH	18	0356	0418 D	N08 W27	6199	22 D	1	1	0406	1.85	2.02		159	S-SWF
	18	0400 E	0430 D	N08 W28	6199	30 D	1	1		2.80	3.10			
	18	1225 E	1233 D	N09 W36	6199	8 D	1	2	1225		1.00			
	18	1257	1348	N10 W34	6199	51	1	2	1311		5.00			
	18	1305 E	1340	N10 W30	6199	35 D	1+	2						

SOLAR FLARES  
AUGUST 1961

OBSERVATORY	DATE JUL 1961	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX PHASE	APPROX. LAT.				MER DIST	MCWATH PLACE REGION	TIME U T	MEAS AREA Sq. Deg.		CORR AREA Sq. Deg.	MAX WIDTH H <sub>3000</sub>
[ CAPRI S WENDEL LOCKHEED MCWATH SAC PEAK	18	1310	1405		N11 W20	5199	1	3	1.11	1.50	1.0		S-SWF		
	18	1600	1615	1343	N18 E51	6035	1	3	2044	3.00	3.00		G-SWF		
	18	2038	2152	2030	N08 W37	6193	1	3	2050	3.00	3.00		G-SWF		
	18	2046	2206	2044	N07 W37	6193	1	1		7.00	7.00				
[ CAPRI S WENDEL ONDREJOV WENDEL LOCKHEED	19	0820	0923		N15 W66	6195	1	2	0908	1.40	3.00				
	19	0900	0922		N15 W71	6195	1	3		4.00	4.00				
	19	0901	0909		N15 W70	6195	1	3	0903	4.00	4.00	2.50			
	19	1102	1122		N15 W71	6195	1	2	2246	1.10	1.50		10		
[ BUCHAREST ZURICH	20	0735	0747	0737	N24 W90	6195	1	2	1037	1.00	1.00		G-SWF		
	20	1037	1051		N03 W59	6200	1	2							
	[ BUCHAREST LOCARNO MEUDON	22	0705	0734	0730	N07 W90	6199	1	3						
		22	1045	1115		N10 W14	6204	1	2						
22		1045	1415	1130	N08 W10	6204	1	2	1133	7.00	10.00				
22		1049	1345		N07 W11	6204	1	3	1130	7.00	7.00				
[ CAPRI S MCWATH ZURICH SAC PEAK	22	1117	1330	1120	N07 W12	6204	1	2	1130	6.00	6.00				
	22	1222	1239		N13 W12	6204	1	2	1222	12.00	12.00				
	22	1308	1652	1308	N07 W13	6204	1	2							
	24	1215	1320		N14 E95	6210	1	3	1314	3.50	3.50				
[ LOCARNO LOCARNO ZURICH ISTANBUL	24	1250	1335		N19 E34	6210	1+	2							
	25	0850	0920		S15 E14	6207	1+	2							
	25	0857	0912		S14 E18	6207	1	3	0857	2.00	2.00				
	25	0935	1020		S16 E13	6207	1	3							
[ LOCARNO ZURICH ZURICH WENDEL WITAKA	25	1002	1012		S15 E14	6207	1	2	1002	2.00	2.00				
	25	1002	1012		S14 E18	6207	1	2							
	25	1002	1015		S15 E15	6207	1	2							
	25	1402	1431		N16 E03	6206	1+	1	2359	1.39	1.32	1.50	1.49		
[ WENDEL ZURICH WENDEL KYOTO	25	2359	0018		N15 W03	6206	1	1							
	26	0617	0653	0638	N11 E11	6206	1+	3	0626	3.00	3.00				
	26	0621	0640		N12 E11	6203	1	3							
	26	0618	0634		S15 E04	6207	1	3	0624	3.00	3.00				
[ WENDEL ZURICH WENDEL KYOTO	26	0624	0631		S15 E03	6207	1	3							
	26	1008	1031		S16 E02	6207	1	3							
	26	2331	0010		N16 W01	6206	1	3	2400	3.71	4.00	100			
	27	1104	1115	1103	S10 W10	6207	1	3							
[ WENDEL WENDEL WENDEL KYOTO	27	1327	1351		N20 E42	6210	1	3							
	29	0700	0739	0720	N12 W90	6205	1	3							
	29	0700	0715	0705	N12 E83	6210	1	3							
	29	0720	0740		N15 E80	6212	1	3							
[ BUCHAREST WENDEL BUCHAREST STOCKHOLM MEUDON	29	0722	0735	0726	N12 W93	6212	1	3							
	29	1039	1115		N12 E25	6210	1+	3	1056	3.50	3.50				
	29	1039	1150		N13 E22	6210	1	3							
	29	1039	1150		N13 E22	6210	1	3							



# SOLAR FLARES

AUGUST 1961

OBSERVATORY	DATE AUG 1961	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX.				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H <sub>o</sub>		
					LAT.									MER. DIST.
[ ONDREJOV CAPRI S	29	1040 E	1112	N18 E23	6210	32 D	1	3	1055	1.80	2.20	2.20		
	29	1040	1121	N13 E23	6210	41	1	3	1047					
[ MITAKA MEUDON [ STOCKHOLM CAPRI S [ ONDREJOV ONDREJOV	30	0214 E	0221	N16 W57	6206	7 D	1	1	0215	1.23	2.09	2.59	134	
	30	0830	0840	N18 W63	6206	10					4.00			
	30	0930	0956 D	N20 W62	6206	26 D	1+				8.00			
	30	0932 E	0943 D	N17 W55	6206	11 D	1	3	0935	2.00	2.40			
	30	0932	1000 D	N20 W59	6206	28 D	1	3	0938	1.20	2.40			
[ ONDREJOV ONDREJOV [ WENDEL ZURICH WENDEL	30	0934 E	0953	N19 W61	6206	19 D	1	3	0935		2.30			
	30	1231	1238	N19 W63	6206	7	1	3	1233		2.50			
	30	1320 E	1412 D	N12 E60	6212	52 D	1			4.00				
	30	1400 E	1411	N12 E60	6212	11 D	1	3	1400		4.00			
	30	1529	1547 D	N18 W66	6206	18 D	1			4.00				
[ WENDEL [ WENDEL [ LOCARNO LOCARNO [ WENDEL	30	1531	1545 D	N11 E59	6212	14 D	1			3.00				
	30	1552 E	1630	N11 E59	6212	38 D	1			4.00				
	30	1603	1620	N11 E58	6212	17	1	2	1608	2.00				
	30	1617	1634	N20 W65	6206	17	1	2	1623	3.00				
	30	1623 E	1647 D	N14 W67	6206	24 D	1				4.00			
[ MCNATH KYOTO KYOTO [ KYOTO [ MITAKA BUCHAREST	30	1709 E	1745 D	N11 E64	6212	36 D	1	1	1719	1.86	2.00	1.22	100	
	30	2244 E	2303 D	N12 E56	6212	39 D	1		2253	2.06		1.64	120	
	30	2321	2326 D	N13 E56	6212	5 D	1		2321					
	31	0058 E	0117 D	N12 E55	6212	19 D	1+	1	0104	3.09	5.23	1.83	130	
	31	0102	0114	N10 E53	6212	12	1+	1	0102	3.08		2.51	113	
[ BUCHAREST WENDEL [ LOCARNO BUCHAREST [ WENDEL [ STOCKHOLM	31	0712 E	0847	N17 W78	6206	95 D	1	2		4.90				
	31	0823 E	0850 D	S12 W07	6211	27 D	1			5.00				
	31	0855	0910	N14 E51	6212	15	1	2						
	31	0859	0911 D	N12 E50	6212	12 D	1			3.50				
	31	0859	0917 D	N12 E48	6212	18 D	1				3.00			
[ ONDREJOV WENDEL [ LOCARNO ONDREJOV [ WENDEL [ MCNATH [ ZURICH [ CAPRI S [ MEUDON	31	0903 E	0908 D	N12 E48	6212	5 D	1	3	0906	1.50	4.00			
	31	1107	1125	N14 E49	6212	18	1				2.10			
	31	1235	1252	N14 E49	6212	17	1+	2				2.30		
	31	1237	1250	N13 E47	6212	13	1+	3	1244					
	31	1238	1253 D	N12 E47	6212	15 D	1+				6.00			
[ MCNATH ZURICH [ WENDEL [ CAPRI S [ MEUDON [ SAC PEAK WENDEL [ ONDREJOV WENDEL	31	1239	1251	N13 E48	6212	12	1	2	1242		2.50			
	31	1240	1250	N12 E49	6212	10	1				4.00			
	31	1240 E	1252	N13 E46	6212	12 D	1	3	1242	2.00	3.00			
	31	1247 E		N12 E48	6212	11	1						13	
	31	1247 E	1520	N13 E45	6212	22	1	2		2.17	2.52			
[ WENDEL [ ONDREJOV WENDEL	31	1502	1520	N12 E46	6212	18	1	1			4.00			
	31	1506	1516	N13 E45	6212	10	1	1	1509			1.80		
	31	1621	1640 D	N19 W64	6206	19 D	1				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 KRAVNAYA PAKHRA  
 LOCKHEED LOS ANGELES

MCNATH MCNATH-HULBERT  
 MOSCOW - GAISH MOSCOW - GAISH  
 ROYAL GREENWICH OBSERVATORY, ROYAL GREENWICH OBSERVATORY,  
 HERSTMONCEUX HERSTMONCEUX  
 SAC PEAK SACRAMENTO PEAK  
 SCHAUBINS SCHAUBINS  
 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.

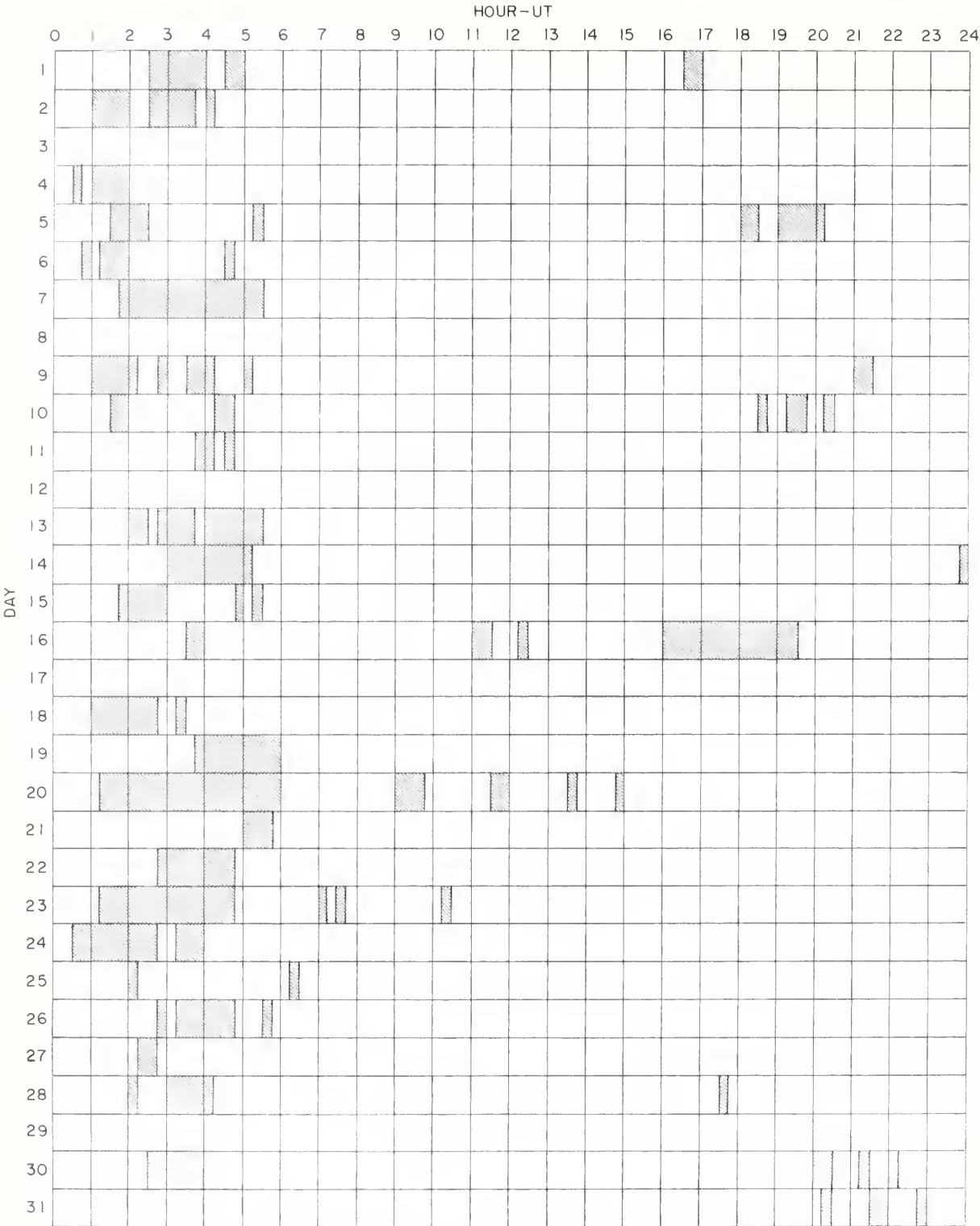
SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

## Erratum:

In ORPL-F 204 B issued August 1961, on page IIIf, the flare reported by Hawaii July 28, 1961 at 1754E at S22W33 should have been N05W44 instead. The McMath  
 Plage 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	

JULY 1961

111f

* WENDEL	01 0534 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	* DNOREJOV	12 0447 E	N05 W78	* UCCEL	20 1143	S07 E04
* UCCEL	01 0811	N09 W40	* BUCHAREST	12 0743	S08 E24	* WENDEL	20 1151 E	S07 E04
UCCEL	01 0902	N08 W40	* BUCHAREST	12 0743	S08 E22	* UCCEL	20 1153	S07 W06
* UCCEL	01 0939	S11 E08	* BUCHAREST	12 0752	S09 E27	* UCCEL	20 1155	S07 W04
* WENDEL	01 1000	N06 W35	* UCCEL	12 0915	S07 E24	WENDEL	20 1217 E	N07 E02
* 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	* ARCTRI	12 1610	S07 E20	UCCEL	20 1346	S07 W08
LOCKHEED	01 1935	N08 W45	HAWAII	12 1748 E	S07 E16	UCCEL	20 1350	N11 E06
LOCKHEED	01 1955	N08 W46	LOCKHEED	12 1940 E	S06 E17	WENDEL	20 1356 E	N08 E61
MC MATH	01 2050	N11 E70	LOCKHEED	12 1955	S08 E14	UCCEL	20 1446	N13 W53
LOCKHEED	01 2132	N08 W46	LOCKHEED	12 2135	N09 E46	LOCKHEED	20 1740	S07 E01
MC MATH	01 2133	N09 W48	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	N07 E01
			* LOCKHEED	12 2248	S04 E15	MC MATH	20 1830	S06 E01
			* HAWAII	12 2252 E	S06 E14	LOCKHEED	20 2110	S09 W00
			* LOCKHEED	12 2313	S09 E21	LOCKHEED	20 2116	N09 E59
			* LOCKHEED	12 2315	S05 E13	MC MATH	20 2116	S06 W02
						MC MATH	20 2116	N09 E59
						LOCKHEED	20 2233	N10 E01
			BUCHAREST	13 0706	S08 E05			
			* ARCTRI	13 0850	S05 E07	UCCEL	21 1025 E	N02 E26
			* MC MATH	13 1151	N09 E44			
			WENDEL	13 1241 E	S07 E09			
			WENDEL	13 1240 E	S11 E09	UCCEL	22 1056	N13 E35
			LOCKHEED	13 1279	S07 E10	SAC PEAK	22 1062	S08 W27
			LOCKHEED	13 1276	S06 E03	SAC PEAK	22 1350	N06 W29
			SAC PEAK	13 1930	S06 E04	SAC PEAK	22 1636	N04 E38
			HUANCAYO	13 1934	S05 E05	LOCKHEED	22 2003	N09 W25
			LOCKHEED	13 2045	N08 E80	LOCKHEED	22 2136	N03 W29
			LOCKHEED	13 2100	S07 E02	HAWAII	22 2216	N03 E07
			LOCKHEED	13 2136	S05 W01			
			LOCKHEED	13 2211	S05 E03	SAC PEAK	23 1254 U	N02 E90
			* SAC PEAK	13 2246	S04 E01	SAC PEAK	23 1542	N08 E30
			* HAWAII	13 2310 E	S04 W03	MC MATH	23 1620	N09 W36
						LOCKHEED	23 1835 E	N10 W36
			LOCKHEED	14 0018	N05 W21	MC MATH	23 1946	N10 W36
			LOCKHEED	14 0028	N11 E31	LOCKHEED	23 1945	N08 W36
			KODAIKINL	14 0110	S08 W03	LOCKHEED	23 2024	N09 W36
			KODAIKINL	14 0140	S08 W03	LOCKHEED	23 2130	N10 W36
			* KODAIKINL	14 0447	S09 W04	LOCKHEED	23 2227	N06 E15
			WENDEL	14 0703 E	S07 E00	* HAWAII	23 2342	S05 W50
			* WENDEL	14 0828 E	S07 E00			
			WENDEL	14 0848 E	S02 E02	LOCKHEED	24 0117	N05 E23
			CAPRI S	14 1020 E	S04 W04	WENDEL	24 0734 E	N06 E13
			CAPRI S	14 1041 E	S03 W07	WENDEL	24 0758 E	N09 E13
			UCCEL	14 1050 E	S03 W10	* UCCEL	24 0849	N11 E11
			CAPRI S	14 1100	S04 W07	* STDFHDM	24 0901	N08 E10
			UCCEL	14 1111	S06 W08	UCCEL	24 0902	N15 W90
			UCCEL	14 1227	S07 W06	* UCCEL	24 0906	N05 E13
			UCCEL	14 1314	S05 W08	* UCCEL	24 0931	N10 E15
			UCCEL	14 1318	S05 W07	* UCCEL	24 0939	N06 E09
			MC MATH	14 1335 E	N09 E28	STDFHDM	24 0953	N08 E10
			UCCEL	14 1410	S08 W06	STDFHDM	24 1436	S02 W16
			MC MATH	14 1410 E	S10 W05	MC MATH	24 1436	N02 W18
			LOCKHEED	14 1932	S07 E48	* MC MATH	24 1638	N02 W20
			LOCKHEED	14 2022	S03 W12	MC MATH	24 1723	N03 W21
			LOCKHEED	14 2047	S03 W11	LOCKHEED	24 1820	N08 W01
			LOCKHEED	14 2102	S11 W10	LOCKHEED	24 1838	N02 W20
			LOCKHEED	14 2251	S09 W11	LOCKHEED	24 2115	N08 W50
			LOCKHEED	14 2353	S05 W15	LOCKHEED	24 2240	N03 W22
						MC MATH	24 2241	N03 W24
			LOCKHEED	15 0047	S11 W04	LOCKHEED	24 2337	N07 E01
			HAWAII	15 0048	S10 W07			
			* PDDAIKINL	15 0425	S10 W16	LOCKHEED	25 0027	N07 E01
			BUCHAREST	15 0849	S10 W24	WENDEL	25 0517 E	N06 W01
			MC MATH	15 1336	S06 W21	WENDEL	25 0535 E	N07 E02
			MC MATH	15 1409	S06 W21	UCCEL	25 0859 E	N10 W54
			MC MATH	15 1447	S07 W22	UCCEL	25 1103	N07 W02
			CAPRI S	15 1445 E	S05 W20	UCCEL	25 1104	N10 W55
			* LOCKHEED	15 1613	S07 E55	UCCEL	25 1215	N09 W66
			CAPRI S	15 1613 E	N08 E52	MC MATH	25 1219	N07 W07
			* MC MATH	15 1616	S07 E56	UCCEL	25 1220	N06 W06
			LOCKHEED	15 1746	S11 W17	UCCEL	25 1221	N07 W05
			LOCKHEED	15 1758	S06 W23	MC MATH	25 1240 E	N08 W07
			LOCKHEED	15 1957	S07 W21	UCCEL	25 1241	N09 W05
			LOCKHEED	15 1918	S07 W18	UCCEL	25 1354	N08 W07
			LOCKHEED	15 2000	S09 W22	SAC PEAK	25 1354	N10 W08
			LOCKHEED	15 2100	S09 W22	* MC MATH	25 1355	N08 W08
			LOCKHEED	15 2232	S09 W22	UCCEL	25 1420	N10 W55
						* UCCEL	25 1441	N07 W05
			BUCHAREST	16 0704 E	S06 W30	* DNOREJOV	25 1445 E	N05 W05
			* CAPRI S	16 0801 E	S10 W29	UCCEL	25 1640	N05 E07
			* CAPRI S	16 0919 E	S03 W30	* LOCKHEED	25 1851	N07 W11
			MC MATH	16 1414 E	S09 W33	* HAWAII	25 1906	N08 W09
			SAC PEAK	16 1556	S05 W36	* LOCKHEED	25 2240 E	N08 W13
			LOCKHEED	16 1610	S04 W36			
			LOCKHEED	16 1624	N17 W27	UCCEL	26 0847	N09 W68
			LOCKHEED	16 1625	S09 W32	UCCEL	26 1122	N04 W17
			SAC PEAK	16 1626	S07 W32	WENDEL	26 1539 E	N07 W20
			LOCKHEED	16 1650	S07 W36	LOCKHEED	26 1703 E	S01 E47
			LOCKHEED	16 1816	S08 E40	LOCKHEED	26 1940	N07 W20
			HAWAII	16 1830	S14 W33	MC MATH	26 1941	N08 W21
			LOCKHEED	16 1830	S09 W35	MC MATH	26 1947	N09 W61
			MC MATH	16 1856 E	S09 W35	LOCKHEED	26 1947	N10 W79
			* MC MATH	16 1910	S09 W35	LOCKHEED	26 2050	N11 W74
			* LOCKHEED	16 1957	S08 W36	LOCKHEED	26 2129	N11 W74
			LOCKHEED	16 2220	S04 W39	MC MATH	26 2131	N10 W80
			SAC PEAK	16 2244	S10 W35	LOCKHEED	26 2155	N08 W22
			MC MATH	16 2245	S08 W38	LOCKHEED	26 2156	N06 W22
			LOCKHEED	16 2245	S10 W37	LOCKHEED	26 2310	N11 W78
			HAWAII	17 0028	S06 W41			
			LOCKHEED	17 0034	S07 W42	* CAPRI S	27 0628 E	N04 W25
			* PDDAIKINL	17 0334	S07 W42	CAPRI S	27 1040 E	N10 W90
			MC MATH	17 1528	S06 W50	LOCKHEED	27 1815	N09 W88
			* LOCKHEED	17 1625 E	N10 E39	LOCKHEED	27 1838	N15 W40
			MC MATH	17 1644	S05 E35	HAWAII	27 2010	S02 E37
			* MC MATH	17 1646	S07 E32	LOCKHEED	27 2013	S01 E33
			* HUANCAVO	17 1650	S06 W50	LOCKHEED	27 2310	N09 W36
			LOCKHEED	17 1655	S06 W51			
			LOCKHEED	17 1755	S06 E28	ARCTRI	28 0826	N10 W90
			LOCKHEED	17 1817	S06 W50	UCCEL	28 1206	N06 W44
			SAC PEAK	17 1818	S07 W52	UCCEL	28 1453	N06 W41
			* SAC PEAK	17 1930	S07 W52	LOCKHEED	28 1462	S19 E69
			LOCKHEED	17 1956	S10 W49	LOCKHEED	28 1855	S19 E69
			LOCKHEED	17 2033	S07 W53	LOCKHEED	28 1942	N08 W48
			HUANCAVO	17 2044	S09 W44	SAC PEAK	28 1948	N08 W48
			LOCKHEED	17 2255	S07 E25	HAWAII	28 1954	N09 W47
						LOCKHEED	28 2023	S19 E69
			CAPRI S	18 0910 E	S05 W57	LOCKHEED	28 2127	N08 W48
			MC MATH	18 1132	N08 E90	HAWAII	28 2222	N09 W99
			* MC MATH	18 1215	S05 W60	LOCKHEED	28 2224	N07 W50
			LOCKHEED	18 1304	S05 W64	LOCKHEED	28 2338	N07 W50
			ARCTRI	18 1436	S08 W62			
			* MC MATH	18 1616	S04 W62	UCCEL	29 0831	N09 W56
			LOCKHEED	18 1700	N08 E89	* MC MATH	29 1642 E	N06 W60
			HAWAII	18 1916	S04 W66	* LOCKHEED	29 1808	N07 W56
			MC MATH	18 1917	S05 W68	* MC MATH	29 1953	N10 W62
			HAWAII	18 2046	S07 W66	MC MATH	29 2042	N05 W62
			MC MATH	18 2102	S06 W67	HAWAII	29 2054 E	N09 W62
			LOCKHEED	18 2150 U	S06 W65	* HAWAII	29 2330	N12 W64
			LOCKHEED	18 2150	S08 W66			
			HAWAII	18 2200	S06 W67	KODAIKINL	30 0406	N06 W66
			HAWAII	18 2258	S04 W66	LOCKHEED	30 0458	N06 W66
			LOCKHEED	18 2258	S08 W65	LOCKHEED	30 1840	N22 W18
						LOCKHEED	30 1955	N04 W73
			HAWAII	19 0042	S08 W65	LOCKHEED	30 2208	N11 W75
			LOCKHEED	19 1625 E	S08 W74	LOCKHEED	30 2220	N22 W18
			LOCKHEED	19 1712 E	S07 W77			
			LOCKHEED	19 1801	S06 W76	WENDEL	31 0510 E	N15 E37
			* HAWAII	19 1908	S09 W78	WENDEL	31 0649 E	N24 W21
			LOCKHEED	19 2002	S10 W75	UCCEL	31 0844	N25 W22
			LOCKHEED	19 2041	N07 E74	UCCEL	31 1003	S22 E34
			* HAWAII	19 2052	S09 W75	UCCEL	31 1046	N23 W27
			LOCKHEED	19 2152	N08 E71	UCCEL	31 1116	S23 E34
			LOCKHEED	19 2246	S08 W80	UCCEL	31 1124	N21 W62
			LOCKHEED	19 2305	S08 E01	WENDEL	31 1130 E	N23 W24
			UCCEL	19 2313	S11 W78	UCCEL	31 1139	S22 E32
						* UCCEL	31 1226	N23 W27
			UCCEL	20 0014	S11 W78	UCCEL	31 1433	N24 W25
			UCCEL	20 1100	S05 E68	UCCEL	31 1544	N24 W25
						UCCEL	31 1557	N23 W24

\*Rated as flare of importance  $\geq 1$  by other observatories (See CRPI-F 206 Part B for August 1961)

COMMERCE - STANDARDS - BUREAU

# SOLAR FLARES

MAY 1961

OBSERVATORY	DATE MAY 1961	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT	McMATH PLAGE REGION					TIME — UT	MEAS AREA Sq_Deg	CORR. Sq_Deg	MAX WIDTH H <sub>30</sub>		
					MER DIST.	REGION									
CAPRI G	01	0838 E	0855 D	N04	W15	6097	17 D	1	2			4.00			S-SWF
CAPRI G	01	1204 E	1217	S11	W13	6098	13 D	1				6.00			
KIEV	01	1348 E	1359 D	N04	W17	6097	11 D	1	1	1359	3.09			73	
CLIMAX	01	1621	1645	N04	W18	6097	24	1			3.60				
CAPRI G	02	0905	0916	N03	W25	6097	11	1+	2			4.00			
UCCLE	02	0912 E		N04	W27	6097	□	1	3		3.00	3.50			
CAPRI G	02	1027	1055	N03	W28	6097	34	1				4.00			
GOOD HOPE	02	1038 E	1055	N04	W27	6097	17 D	1		1040	2.60	2.90			
UCCLE	02	1041 E	1050	N04	W27	6097	9 D	1	3		3.50	4.20			
VOROSHILOV	03	0149	0249 D	N04	W38	6097	60 D	1+	1		2.69	2.42		81	
NIZAMIAH	03	0525 E	0538 D	N05	W41	6097	13 D	2	1	0525	1.82	2.20	2.10		
UCCLE	03	0856	0907	N07	W44	6097	11	1	3	0857	1.50				
CAPRI G	03	1046	1058	N04	W42	6097	12	1	3		4.00				
KIEV	03	1048	1110 D	N06	W43	6097	22 D	1	2	1054	2.58			75	
CAPRI G	04	1028	1045	N04	W57	6097	17	1	2		4.00				
GOOD HOPE	04	1201 E	1210	S12	W70	6096	9 D	1		1201	.90				
KIEV	04	1311	1325	N05	W58	6097	14	1	3	1312	3.09			53	
CAPRI G	04	1619 E	1626	N04	W60	6097	7 D	1	2		4.00				
PIRCULI	05	0809	0821 D	N12	W32	6099	12 D	1	1	0815	1.83	2.34		65	
CAPRI G	05	0812 E	0826	N13	W34	6099	14 D	1+	2			5.00			
KRASNYA	05	0813	0830	N10	W33	6099	17	1			2.17			58	
UCCLE	05	0822 E	0828	N14	W34	6099	6 D	1	3		1.70	2.30			
UCCLE	05	1138	1142	N04	W82	6097	4	1	3		1.50	3.00			
KIEV	05	1156 E	1210 D	S13	W69	6098	14 D	1	2	1201	1.75			67	
GOOD HOPE	05	1219	1245	N09	E53	6104	26	1		1223	1.40	2.40			
CAPRI G	09	1308	1341	N10	E15	6104	33	1	2		4.00				
KIEV	09	1310 E	1330 D	N08	E10	6104	20 D	1	1	1310	1.75			52	
CAPRI G	09	1540	1602	N10	E12	6104	22	2	2		10.00				
CLIMAX	09	1542	1550 D	N09	E12	6104	8 D	2		1546	5.20	5.20			
VOROSHILOV	09	2356 E	0000 D	N08	E31	6106	4 D	1	1	2356	1.79			73	
MITAKA	10	0023	0050	N08	E29	6106	27	1	1	0033	1.75	2.08	2.06	120	
MITAKA	10	0026	0050	N07	E29	6106	24	1	1	0033	.82	.98	2.82	143	
CAPRI G	11	0835 E	0844	N02	E20	6106	9 D	1+	2		5.00				
GOOD HOPE	11	0838	0846	N05	E20	6106	8	1		0840	2.10	2.20			
CAPRI G	11	1125	1151	N09	E10	6105	26	1+	2		5.00				
GOOD HOPE	11	1127	1147	N11	E10	6105	20	1		1128	2.30	2.40			
CAPRI G	11	1315	1335 D	N05	E10	6106	20 D	1	2		4.00				
ABASTUNANI	12	0559	0724	N04	E04	6106	85	1+	3		5.85	6.10	8.00	80	Slow S-SWF
PIRCULI	12	0601 E	0636	N05	E05	6106	35 D	1+	1	0604	2.73	2.78		68	
PIRCULI	12	0702 E	0722	N03	E00	6106	20 D	1	1	0705	1.64	1.67		55	
CAPRI G	12	0704 E	0717	N04	W01	6106	13 D	1	2		4.00				
CAPRI G	12	0915	0917 D	N04	W02	6106	2 D	1	2		4.00				

# SOLAR FLARES

MAY 1961

OBSERVATORY	DATE MAY 1961	OBSERVED UNIVERSAL TIME		LOCATION		DURA — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	MC-MATH FLARE REGION				TIME — U.T.	MEAS Sq. Deg.	COBL. Sq. Deg.	MAX WIDTH H <sub>g</sub>	MAX INT F <sub>2</sub>
UCCLE	12	0943	0955	N03 W01	6106	12	1	3	0948	2.00	2.00	3.07	107
GOOD HOPE	12	1255	1333	N11 W04	6105	38	1	1	1305	2.10	2.10	1.96	107
UCCLE	12	1258	1302 D	N11 W05	6105	4	0	2	1302	3.50	3.50	1.51	120
UCCLE	12	1314	1346 D	N09 W05	6105	32	1	2	1314	4.00	4.00		66
MITAKA	13	0002	0006	N05 W10	6106	4	D	1	0002	.82	.84		100
MITAKA	13	0110	0114	N05 W10	6106	4	D	1	0110	.26	.27		56
MITAKA	13	0448	0503 D	N04 W10	6106	15	0	2	0450	2.48			
ALMA-ATA	13	0551	0609	N04 W15	6106	18	1	3	0560	2.17			
ABASTUMANI	13	0555	0618	N04 W15	6106	23	1	3	0605	1.98	2.10		
KYOTO	13	0558	0612 D	N03 W08	6106	14	D	1		1.44			
CAPRI G	13	0602	0613	N04 W14	6106	11	1	2	0610	1.00	1.06		
PIRCULI	13	0610	0617	N04 W15	6106	7	D	1		4.00			
CAPRI G	13	0943	0950 D	N12 W08	6105	7	D	2		2.00	4.00		
UCCLE	13	1003	1013	N09 E77	6114	10	1	2					
UCCLE	15	1642	E	N04 W43	6106	□	1	2		1.50	2.10		
KIEV	20	0616	E	N04 W34	6120	□	1	1	0616	3.09			60
CLIMAX	21	1551	1617	N19 E53	6122	26	1			1.80	2.50		
CLIMAX	21	1656	1711	N07 E70	6125	15	2			3.70	6.70		
CAPRI G	22	1347	1413	N19 E39	6122	26	1	2			4.00		
CAPRI G	22	1400	1415	S12 W40	6116	15	1	2			4.00		
UCCLE	23	0912	E	N06 W80	6120	□	1	2		3.00	6.00		
CAPRI G	23	0930	E	N16 E30	6122	18	D	2	1325	2.58			60
KIEV	23	1325	E	N17 E29	6122	□	1	1					
ALMA-ATA	24	0423	0517	N16 E20	6122	54	1+	2	0430	2.37			108
ALMA-ATA	24	0423	0526	N15 E17	6122	63	1+	2	0431	2.01			108
TASHKENT	24	0426	0542	N16 E18	6122	76	1+	1	0434	5.47			88
KIEV	24	0501	E	N15 E17	6122	29	D	2	0501	9.80	6.10	3.20	
CAPRI G	24	0755	0811	N15 E05	6122	16	1	2		4.00			
CAPRI G	24	1222	1235	N16 E14	6122	13	1	2		4.00			
CAPRI G	24	1439	E	N10 E35	6125	5	D	2		4.00			
CAPRI G	24	1507	1543	N04 E35	6125	36	1+	2		6.00			
MITAKA	25	0127	E	N06 E29	6125	15	D	1	0132	1.54	1.80	2.06	102
PIRCULI	25	0801	0811	N17 E05	6122	10	D	2	0805	3.65	3.94		56
MITAKA	27	0149	E	N06 E00	6125	9	D	1	0150	1.03	1.03	2.00	120
KYOTO	30	0015	0023	N03 W42	6125	8	D	1	0015	2.89			80
MITAKA	30	0340	0354	N03 W44	6125	14	1	1	0342	2.36			137
ALMA-ATA	30	0348	0422	N05 W44	6125	34	1+	2	0353	1.80	3.16	3.48	98
UCCLE	31	1154	1215	N19 W85	6122	21	□						
GOOD HOPE	31	1157	E	N19 W84	6122	2	D	1	1158	.80			

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

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  
KRASNYA PAKHRA KRASNYA PAKHRA  
LOCKHEED LOS ANGELES

MC-MATH - HILBERT  
MOSCOW - CAISH  
ROYAL GREENWICH OBSERVATORY.  
HERSTKONGEUX  
SAC PEAK SACRAMENTO PEAK  
SCHAULINS SCHAULINS  
WENDEL WENDEL

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.

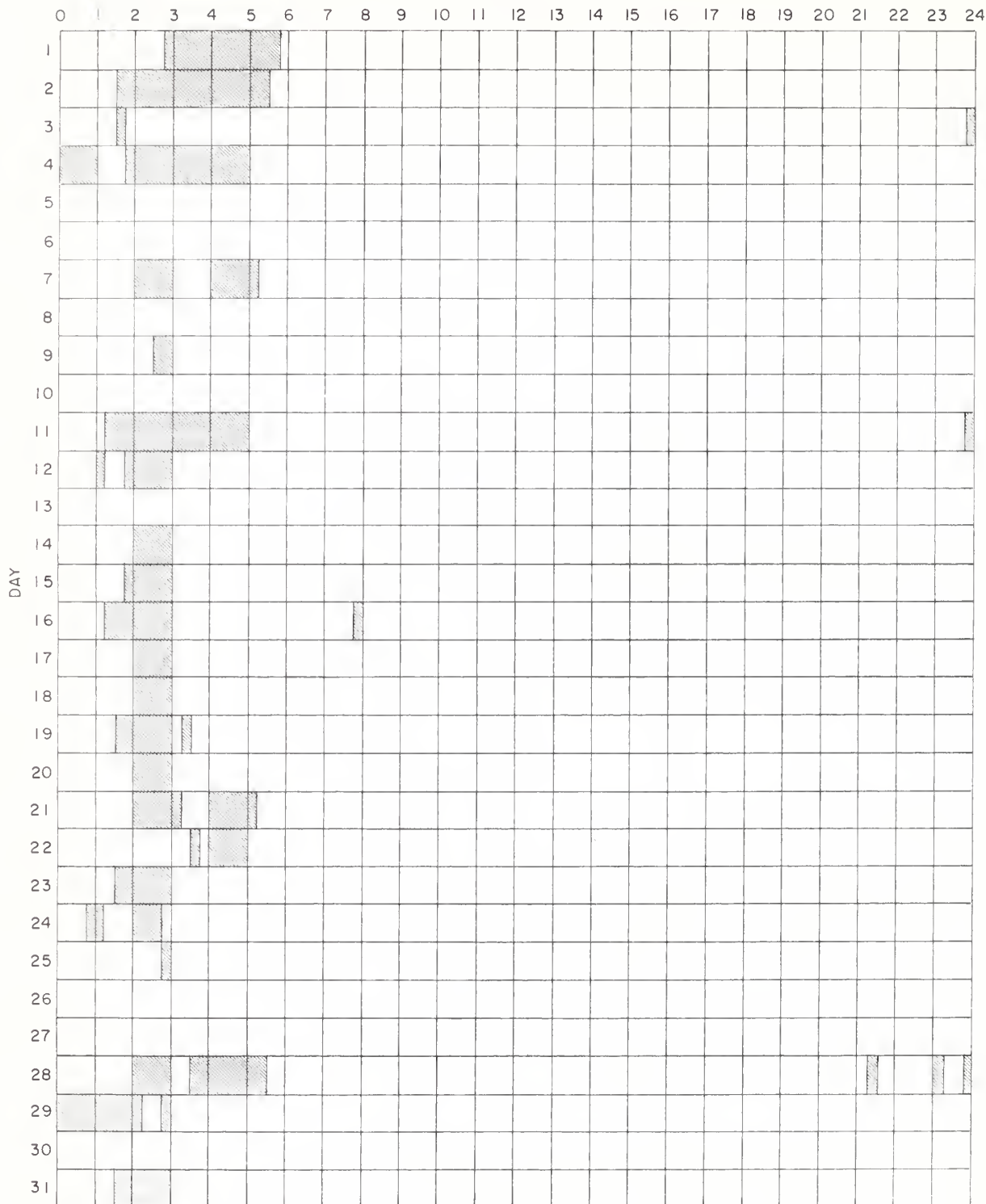
SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.



# INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1961

Hour-UT



Stations Include:

COMMERCE - STANDARDS - BOULDER

- |                    |                 |                |                 |             |
|--------------------|-----------------|----------------|-----------------|-------------|
| 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 - Caish | 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	NAX		IMP	ABS	SCNA	SEA	SPA	BUR		
01	1744	1800	1749						X		1 BO	1739
01	1801	1855		G 2							5 AD PR	
02	0600	0645U	0624					3			1 A11	0615E
02	1622	1647		SL 1-							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 A11	
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	
10	1313	1335		S 2							5 MC JU PR PU	1312
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	1332
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	1615
* 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								1 RE	
12	1023	1230		S 3+		43	1+				5 MC DA NE PR SW TN	
12	1024	1100	1038					2			5 A11 NE	
12	2130	2220	2140						X		BO	
12	2249	2303	2252			15	1				1 BO	2248
* 12	2250	2320	2259					1+			5 BO A11 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	
15	1434		1517						X		1 BO	1433
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	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		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		BO		1633E
20	1616									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 4						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							1	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 = Renssler; 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.

COMMERCE - STANDARDS - BOULDER



# 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	MEAN 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	

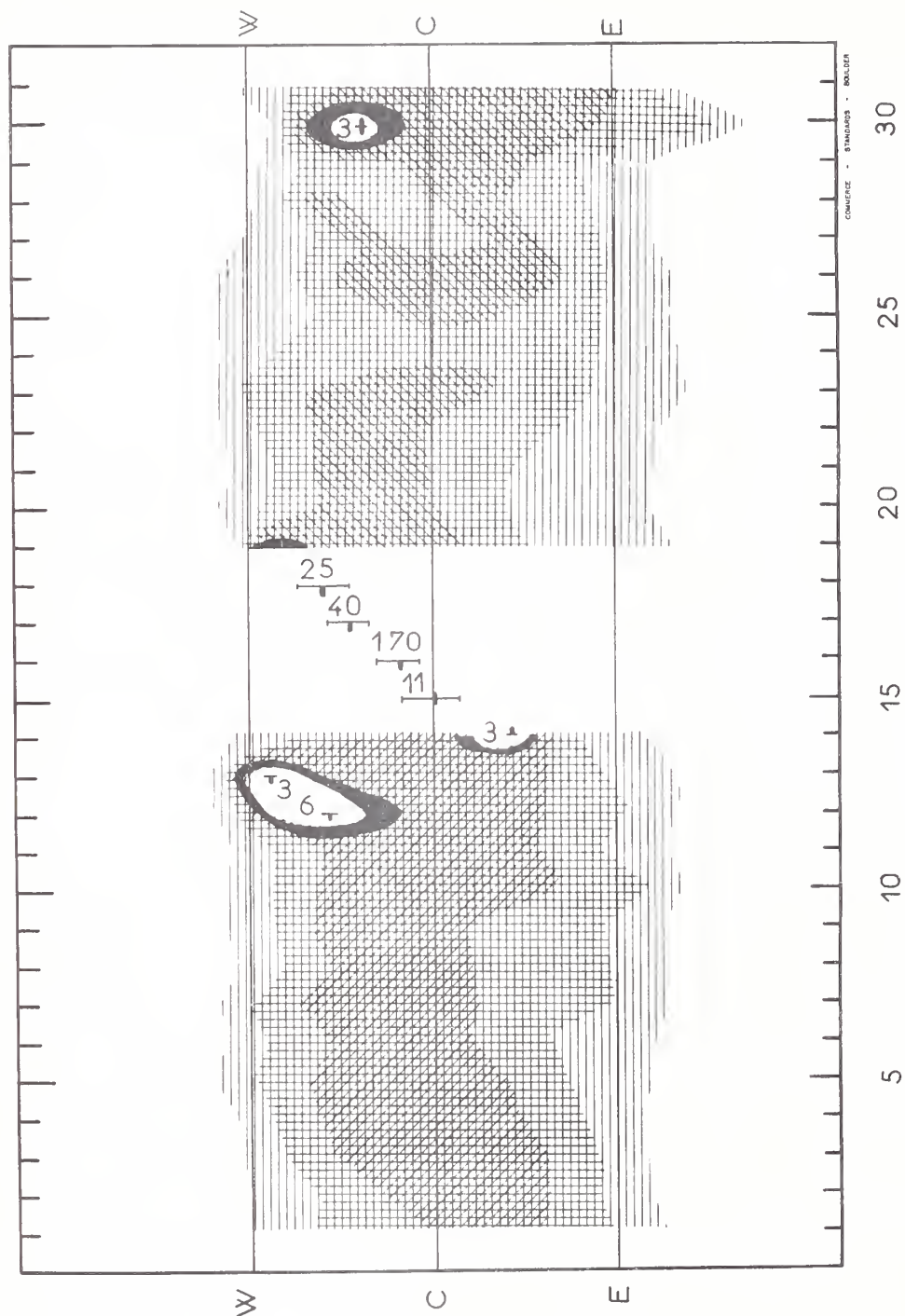
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION  
INTERFEROMETRIC OBSERVATIONS

Nancay

AUGUST 1961

169 Mc



# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

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

COMMERCE - STANDARDS - BOULDER

\*In dawn twilight.

## 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.

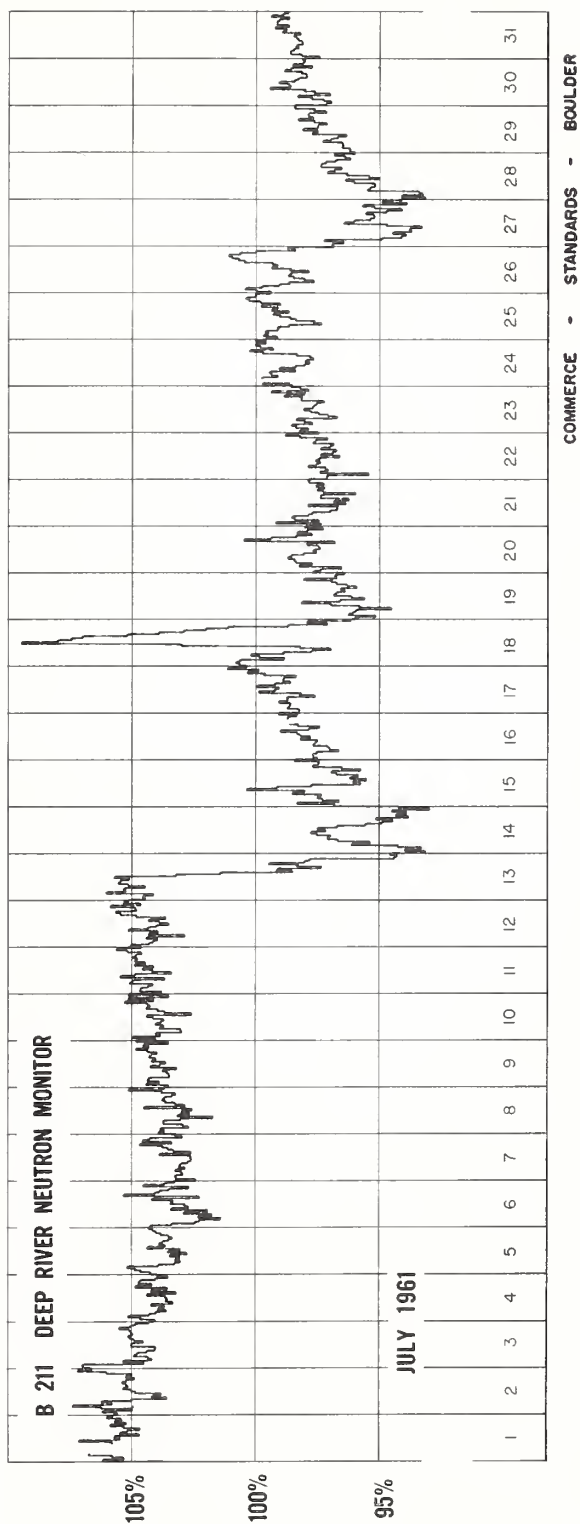
COSMIC RAY INDICES  
(Climax Neutron Monitor)

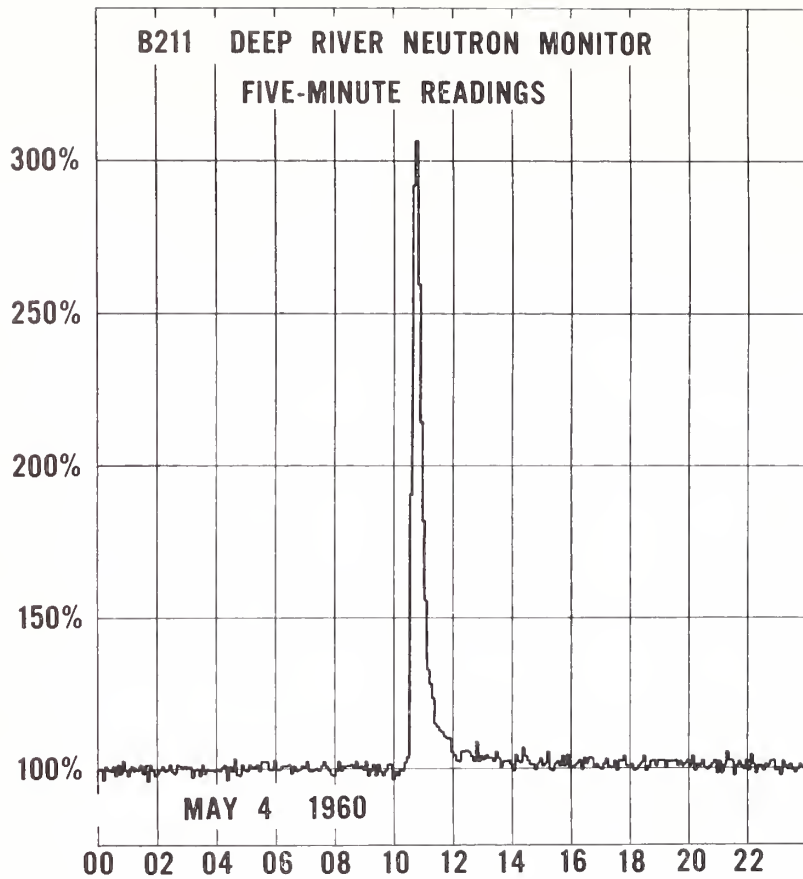
JULY 1961

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)







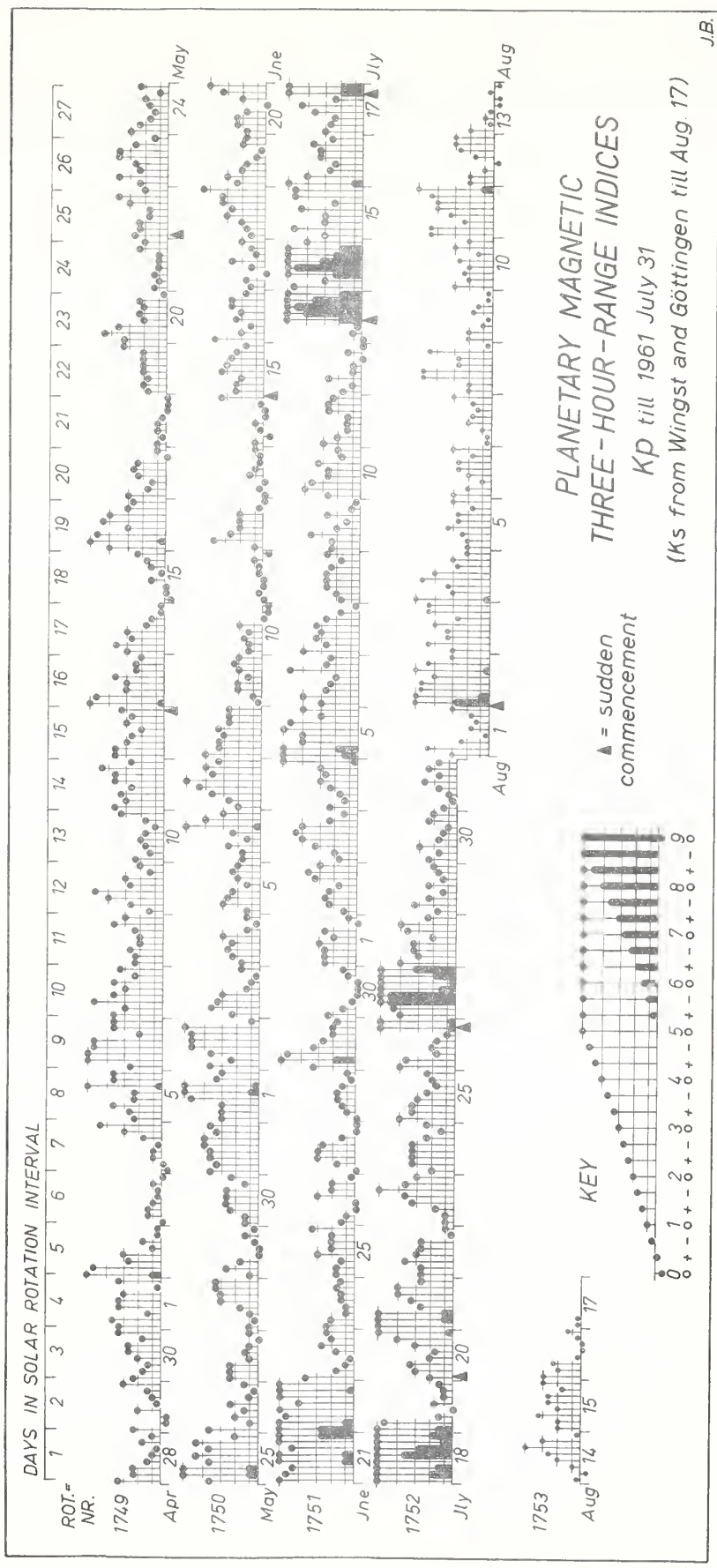
## GEOMAGNETIC ACTIVITY INDICES

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





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				ADVANCE FORECASTS: 1-7 REPORTS FOR WHOLE DAY ISSUED IN ADVANCE OF				GEOMAGNETIC P <sub>3000</sub>		NORTH PACIFIC 12-HOURLY QUALITY FIGURES		SHORT-TERM FORECASTS ISSUED AT		WHOLE DAY		ADVANCE FORECASTS 1-7 REPORTS FOR WHOLE DAY ISSUED IN ADVANCE OF				GEOMAGNETIC P <sub>3000</sub>			
	00 06 12 18				00 06 12 18				1-7 1-7 1-7 1-7				1-7 1-7 1-7 1-7		0700 1900		0600 1800		1-7 1-7 1-7 1-7		1-7 1-7 1-7 1-7							
	TO	TO	TO	TO	TO	TO	TO	TO	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	
JULY 1961																												
01	7-	60	6+	7-	7	6	6	6	6+	7	7	7	7	3	1	6	7	5	5	7	4	4	3	2	2	2	2	
02	70	60	6+	6+	7	6	6	6	6+	7	7	7	7	2	3	6	6	5	6	6	5	4	2	2	2	2	2	
03	7-	60	60	60	6	6	6	5	60	7	7	7	7	2	(4)	6	7	6	6	7	6	6	3	2	2	2	2	
04	7-	60	7-	6+	6	5	6	7	6+	7	7	7	7	(4)	(4)	7	5	5	4	5	6	6	(6)	2	2	2	2	
05	4+	3+	5-	5+	6	4	5	5	(4+)	7	7	7	7			7	5	5	4	5	6	6	(6)	2	2	2	(4)	
06	5+	5-	60	60	5	4	5	6	6-	5	5	5	5	3	3	5	6	6	5	5	5	6	3	3	2	2	3	
07	60	5-	60	60	6	5	6	6	6+	6	6	6	6	3	2	6	6	6	5	5	6	6	(4)	2	2	2	2	
08	7-	60	6+	6+	6	6	6	6	6+	6	6	6	6	3	3	6	6	6	5	5	6	6	3	2	2	2	2	
09	7-	5+	60	60	7	6	6	6	60	6	6	6	6	3	1	6	6	6	5	5	6	6	2	2	2	2	2	
10	6+	4+	60	60	7	5	6	6	5+	7	7	7	7	3	2	7	6	6	5	5	6	6	(4)	3	2	2	3	
11	7-	5+	6-	6-	7	6	6	6	6-	7	7	7	7	2	2	6	6	6	6	6	6	6	2	2	2	2	2	
12	7-	4+	5-	6+	7	5	5	4	5+	5	5	5	5	3	1	5	7	6	6	6	5	6	3	0	0	0	0	
13	60	60	6-	5-	4	4	3	3	6-	3	3	3	3	2	(6)	3	5	4	3	3	3	3	2	2	2	2	(6)	
14	4-	2+	3-	3+	2	2	2	3	(30)	3	3	3	3	(4)	(5)	(3)	2	4	4	3	3	3	(6)	2	2	2	(6)	
15	4-	20	4+	4+	3	2	3	3	(4-)	5	5	5	5	(4)	3	(4)	4	4	3	5	5	5	(4)	2	2	2	(4)	
16	3+	3+	5-	6-	4	3	4	5	(40)	5	5	5	5	3	3	3	5	5	3	4	5	6	(4)	3	2	2	(4)	
17	60	50	5+	50	5	5	3	6	5+	4	4	4	4	3	(5)	(4)	6	4	4	5	5	6	3	(4)	2	2	(4)	
18	4-	2-	2+	2+	4	3	4	3	(3-)	4	4	4	4	(5)	(4)	(5)	5	4	2	2	3	5	(6)	2	2	2	(6)	
19	2+	3-	40	6-	2	1	2	4	(3+)	5	5	5	5	3	1	(3)	5	5	2	4	4	4	(4)	2	2	2	(4)	
20	6+	5-	4+	50	4	4	6	5	50	3	3	3	3	3	(4)	(4)	5	5	4	5	2	2	3	3	2	2	3	
21	5-	30	4+	5+	3	3	5	5	(40)	3	3	3	3	(5)	3	(5)	4	5	3	3	2	2	(6)	2	2	2	(4)	
22	6+	5-	5+	60	4	4	5	6	6-	5	5	5	5	3	2	6	6	6	5	3	3	3	3	2	2	2	3	
23	70	60	6+	60	7	6	6	6	6+	5	5	5	5	2	3	6	6	6	5	4	5	5	2	2	2	2	3	
24	6+	5-	6-	60	6	5	6	6	6+	6	6	6	6	(4)	2	(4)	6	7	5	6	6	6	(4)	3	2	2	3	
25	6-	4+	6-	6+	6	4	5	6	5+	6	6	6	6	(4)	2	(4)	6	7	5	5	6	6	(4)	2	2	2	3	
26	6+	5-	6-	6-	6	5	6	6	6-	5	5	5	5	3	3	3	6	7	6	6	6	6	2	2	2	2	3	
27	5-	2+	4+	4+	5	3	2	4	(4-)	4	4	4	4	(6)	(6)	(6)	4	5	4	4	2	2	(6)	3	2	2	3	
28	4-	3+	5+	5+	2	2	4	6	(4+)	5	5	5	5	(4)	3	(4)	6	6	6	5	3	3	3	2	2	2	3	
29	6+	5+	6-	6+	5	5	6	6	6-	6	6	6	6	2	2	2	6	7	5	5	4	4	3	2	2	2	3	
30	7-	50	60	6+	6	5	6	6	60	6	6	6	6	2	2	2	7	6	6	6	5	5	3	1	1	1	3	
31	6+	5-	6-	6+	5	5	6	5	6-	4	4	4	4	1	2	7	7	7	6	6	5	5	2	2	2	2	3	
Score: Quiet Periods																												
P 12 12 16 17																												
S 8 6 6 7																												
U 1 0 1 1																												
F 3 1 1 2																												
Disturbed Periods																												
P 2 5 0 2																												
S 2 6 3 2																												
U 2 1 3 0																												
F 1 0 1 0																												

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

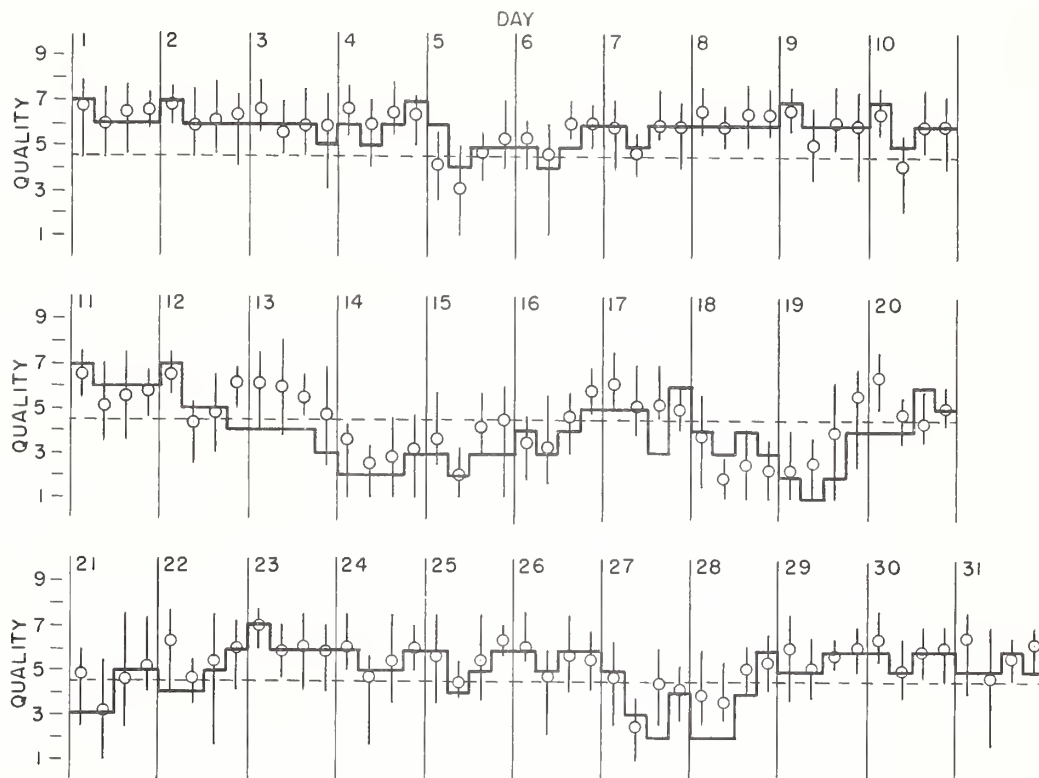
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JULY 1961

— Short-term forecast

○ Quality figure

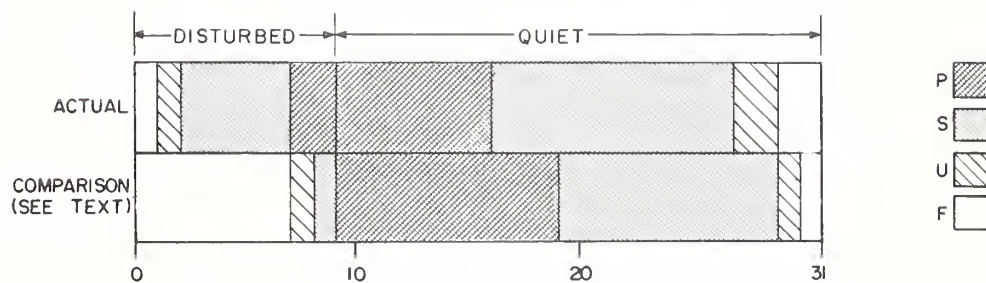
| Range of reports



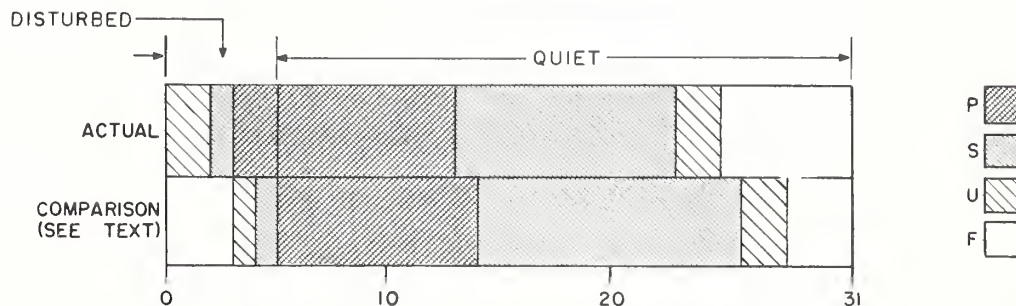
OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE

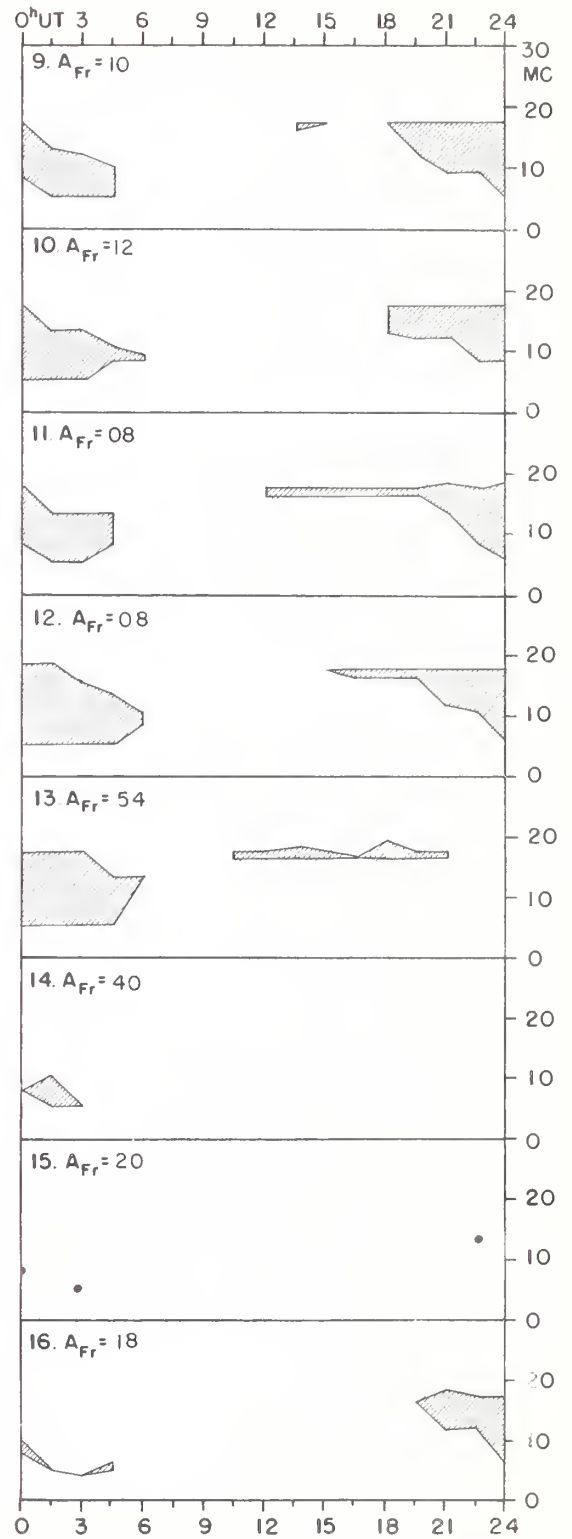
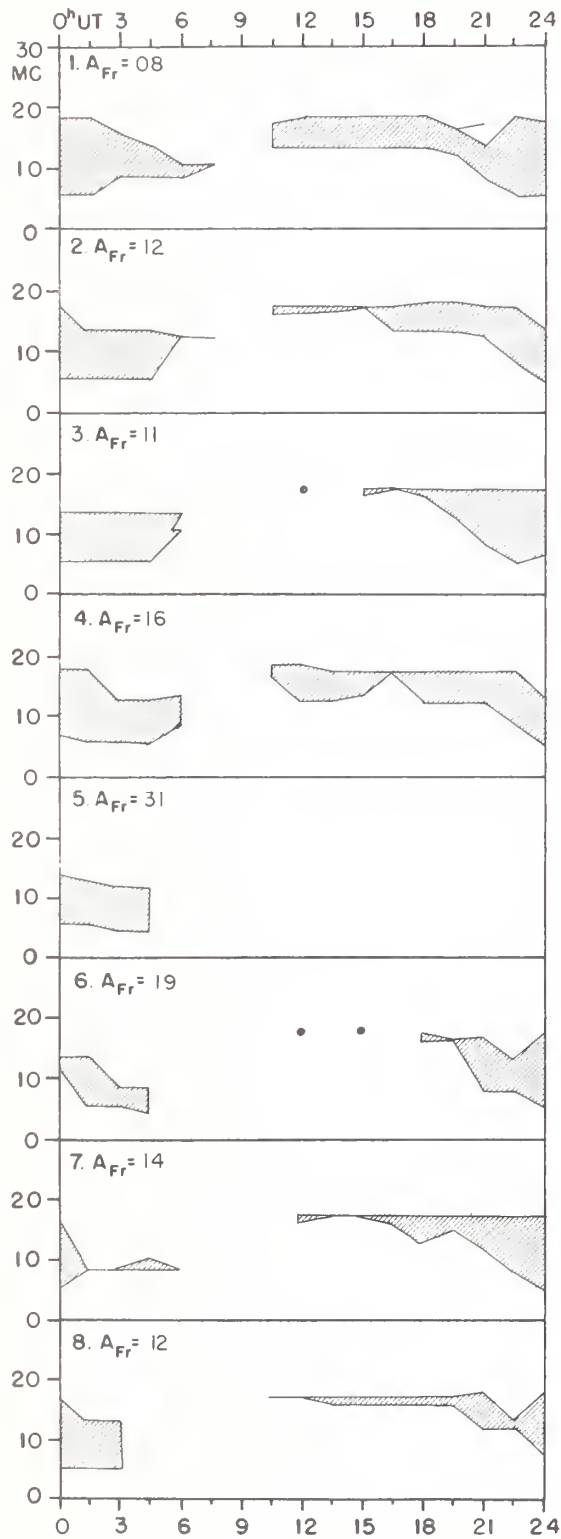
NORTH ATLANTIC



NORTH PACIFIC

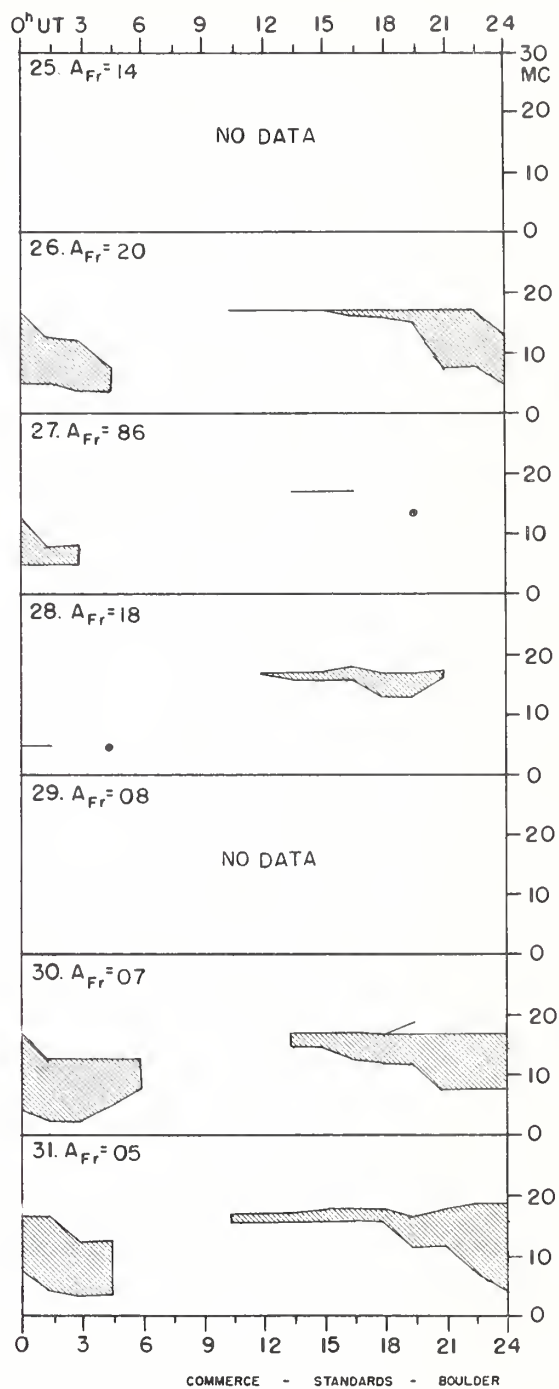
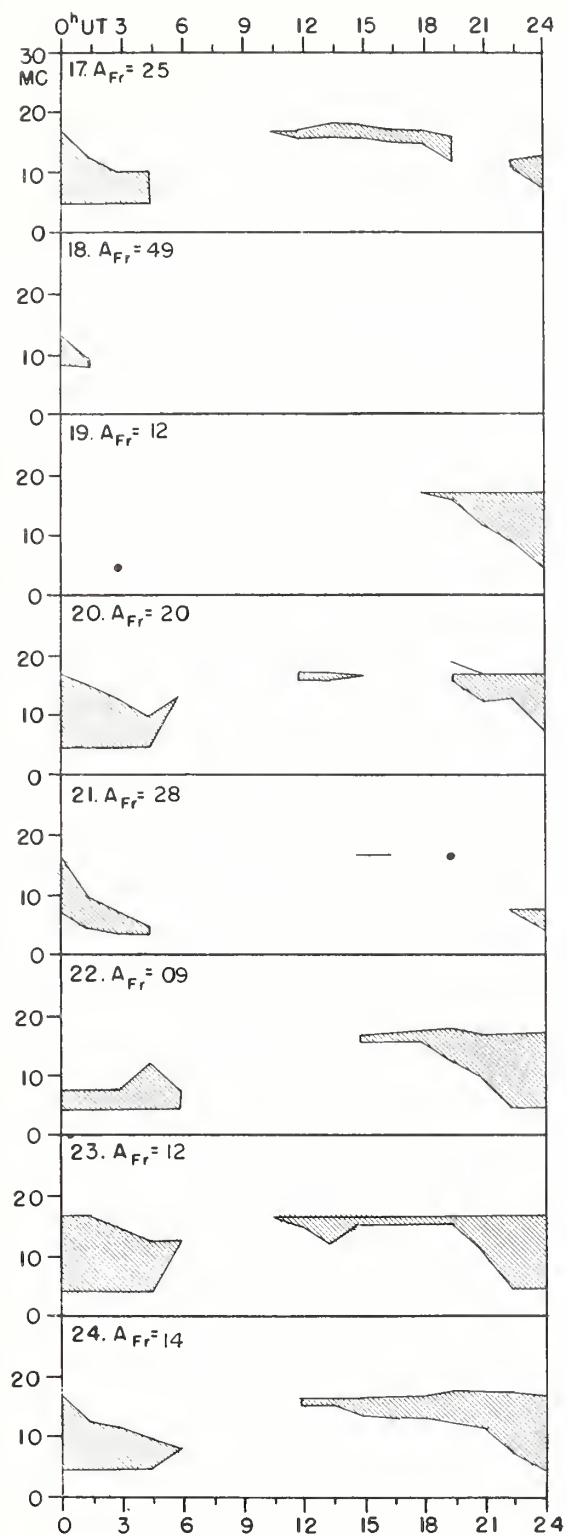


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## ALERT PERIODS AND SPECIAL WORLD INTERVALS

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			
02/1600		137	Magnetic Storm 01/23XXZ	
30/1250	Ft. Belvoir, Magnetic Storm 29/17XXZ			
30/1600		138	Magnetic Storm 29/17XXZ	Start
31/1600		139		Finish

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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.



