CRPL-F 249 PART B

FOR OFFICIAL DISTRIBUTION

PART B

SOLAR - GEOPHYSICAL DATA

ISSUED

MAY 1965

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

CRPL-F 249
PART B

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Issued
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CONTENTS

The descriptive text was republished in November 1964. Addenda have been given in the introduction to each of the CRPL-F Part B reports, December 1964 through April 1965.

There is an additional flare observatory now reporting, as follows:

Code No.	I.A.U. Abbrev.	Name, Place And Country	Former CRPL Designation
402	CULG	CULGOORA, AUSTRALIA	None

At the end of section III of this issue you will find Vela X-ray Measurements for October 17 through 31, 1963; and SR-3 and Injun 1 X-ray Measurements for the period June 29 through December 14, 1961.

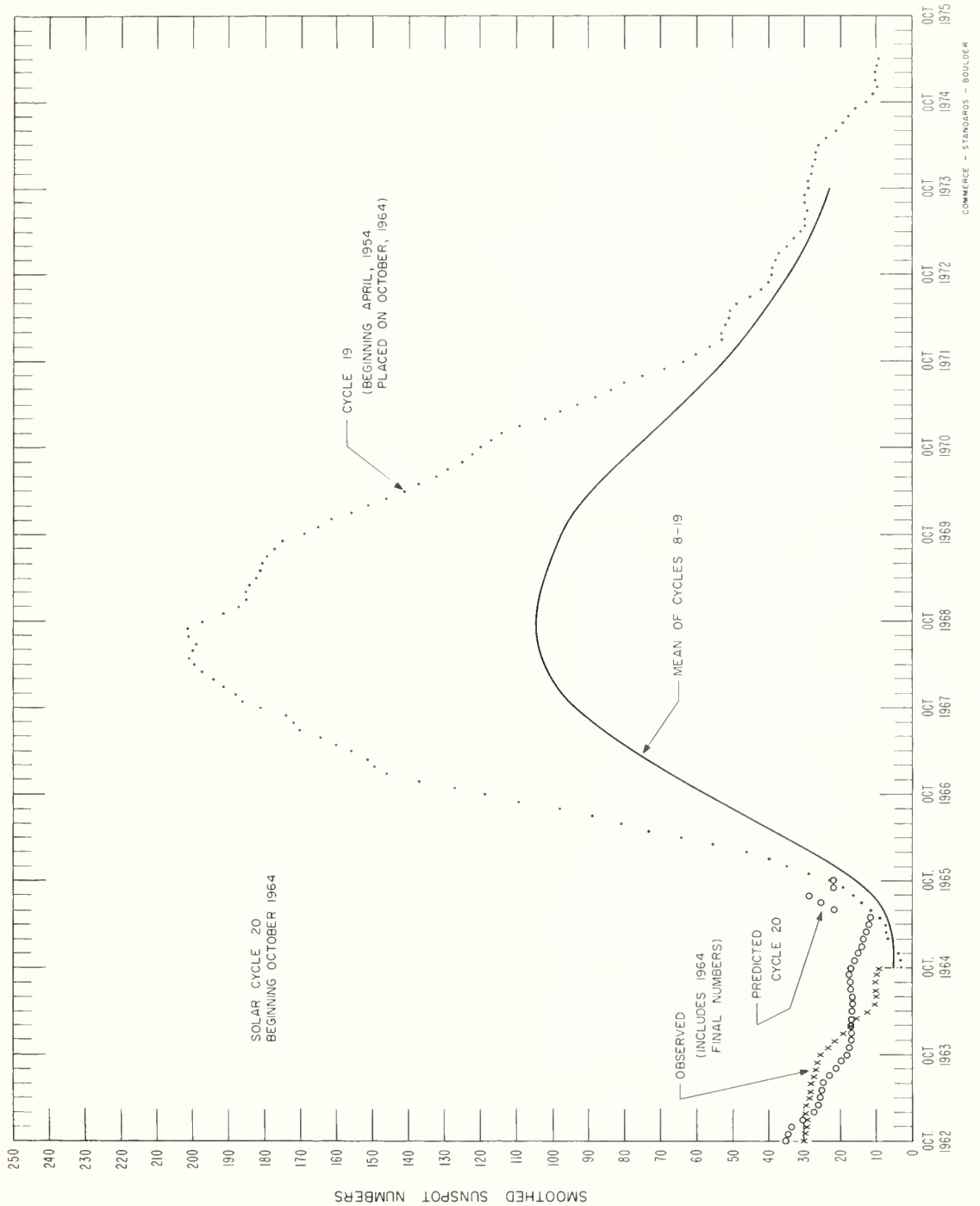
The McNish-Lincoln predicted sunspot numbers (Table Ib) for June, July and August 1965 were made on the basis that the minimum of Cycle 20 was June 1964. A new minimum was obtained for September 1964 and again in October 1964. Predicted sunspot numbers for September and October 1965 were adjusted accordingly to reflect the change in time of minimum.

DAILY SOLAR INDICES

Mar. 1965	American Relative Sunspot Numbers R_A'
1	6
2	1
3	1
4	5
5	6
6	5
7	8
8	0
9	1
10	12
11	10
12	20
13	20
14	20
15	21
16	16
17	19
18	23
19	23
20	14
21	2
22	0
23	0
24	3
25	13
26	11
27	12
28	8
29	1
30	0
31	0
Mean:	9.1

Apr. 1965	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux S	Flux S_A
1	0	71.2	71.1
2	0	71.6	71.5
3	0	71.3	71.3
4	0	71.0	71.1
5	0	70.7	70.8
6	0	70.9	71.0
7	0	70.7	70.8
8	0	70.5	70.7
9	0	71.7	71.9
10	0	73.1	73.4
11	7	73.7	74.1
12	9	73.3	73.7
13	9	73.6	74.0
14	9	75.3	75.8
15	27	75.0	75.5
16	18	74.6	75.1
17	17	73.2	73.8
18	8	73.0	73.7
19	7	74.1	74.8
20	7	72.4	73.1
21	9	73.0	73.7
22	15	72.7	73.5
23	17	73.2	74.0
24	10	70.8	71.6
25	7	69.6	70.4
26	11	69.1	70.0
27	10	69.2	70.2
28	8	69.5	70.5
29	0	70.2	71.2
30	0	69.9	70.9
Mean:	6.8	71.9	72.4

COMMERCE - STANDARDS - BOULDER



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

APRIL 1965

APRIL 1965	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTATIONS)	DATE FIRST SEEN (1)	DURATION (DAYS)(1)	CMP VALUES		HISTORY
				AREA	INT.					AREA	COUNT	
1.4	N16	7746	New	(100)	(2.5)	b ⌒ d	1	4/2	3			
1.9	S03	7755 (2)	New	(200)	(2)	b — d	1	4/6	1			
2.0	N15	7741 (2)	New	(200)	(1)	b — d	1	3/27	1			
2.2	N02	7752 (2)	New	(200)	(1)	b — d	1	4/4	1			
3.1	N07	7745 (2)	New	(400)	(1)	b — d	1	3/30	1			
3.5	N31	7747	New	100	1	b \ d	1	4/2	2			
3.7	S34	7756	New	(200)	(3)	b — ℓ	1	4/6	4			
4.0	S29	7753 (2)	New	(200)	(1)	b — d	1	4/5	1			
4.6	N12	7748 (2)	New	(100)	(1.5)	b — d	1	4/2	1			
5.0	S46	7749 (2)	New	(100)	(1.5)	b — d	1	4/2	1			
6.9	N18	7754 (2)	New	(100)	(1.5)	b — d	1	4/5	1			
7.2	S27	7760 (2)	New	100	1	b — d	1	4/7	1			
7.6	S14	7750	New	(200)	(1)	b — d	1	4/2	3			
7.6	N30	7751 (2)	New	(100)	(1.5)	b — d	1	4/3	1			
7.8	S06	7769 (2)	New	(100)	(1)	b — d	1	4/11	1			
9.4	S33	7764 (2)	New	(100)	(1.5)	b — d	1	4/8	1			
10.0	N09	7757 (2)	New	(200)	(1.5)	b — d	1	4/6	1			
10.0	N42	7761 (2)	New	(200)	(1.5)	b — d	1	4/7	1			
10.6	S20	7762 (2)	New	(200)	(1.5)	b — d	1	4/7	1			
10.8	S09	7770 (2)	New	(100)	(1)	b — d	1	4/11	1			
11.3	N26	7763 (3)	New	(500)	(2.5)	b — d	1	4/7	2			
11.4	N36	7766 (2)	New	(300)	(1.5)	b — d	1	4/9	1			
11.6	N30	7758 (2)	New	(100)	(1.5)	b — d	1	4/6	1			
12.5	S06	7765 (2)	New	(100)	(1.5)	b — d	1	4/8	1			
12.8	N29	7759 (4)	7718	700	2.5	ℓ ⌒ ℓ	2	4/6	13	(20)	(1)	b — d
13.0	N40	7777 (2)	New	(100)	(1.5)	b — d	1	4/14	~ 1			
14.2	N31	7767 (4)	7718	1100	2	b ⌒ ℓ	2	4/8	13			
14.4	S07	7772 (2)	New	(100)	(1)	b — d	1	4/13	1			
14.9	N27	7768	New	(200)	(1)	b ⌐ d	1	4/9	5			
14.9	N17	7773	New	100	2	b — d	1	4/13	≥ 2			
15.3	N07	7778 (2)	New	100	1	b — d	1	4/14	~ 1			
16.6	N06	7774 (2)	New	(100)	(2)	b — d	1	4/13	1			
17.8	S30	7775	New	400	2	b ⌒ d	1	4/13	8	10	1	b — d
18.2	N05	7771	7736	2700	3	ℓ — ℓ	2	4/11	13	20	8	ℓ ⌐ d
18.4	N23	7779 (5)	New	200	1	b ⌒ ℓ	1	4/18	6			
18.5	N37	7780 (2)	New	100	1	b — d	1	4/18	1			
18.7	N23	7776 (2)	New	(100)	(1)	b — d	1	4/13	1			
22.3	N19	7781	New	1400	3	? ⌒ ℓ	1	≤ 4/18	≥11	30	13	b — d
23.7	S03	7785	New	(1200)	(3)	b — ℓ	1	≤ 4/27	≥ 3	(30)	(8)	b ⌐ d
23.8	S23	7790	New	(400)	(3.5)	b — ℓ	1	4/29	1			
23.9	S21	7782	New	(200)	(1.5)	ℓ — d	1	≤ 4/18	≥ 4			
26.0	N10	7783	7735	(200)	(1.5)	b — d	4	4/20	9			
26.3	S38	7786 (2)	New	(200)	(1)	b — d	1	4/27	1			
27.6	N01	7784 (2)	New	(200)	(2)	b — d	1	4/24	~ 1			
30.1	S30	7788 (2)	New	(100)	(1.5)	b — d	1	4/28	1			
30.2	S08	7791 (2)	New	100	1	b — d	1	4/29	1			
30.3	N35	7789 (2)	New	(100)	(1)	b — d	1	4/28	1			
30.5	N21	7787	New	(200)	(1.5)	b — d	1	4/27	2			

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(1) Due to very poor weather conditions, no calcium spectroheliograms were secured at the McMath-Hulbert Observatory on April 1, 15, 16, 17, 25, and 26, 1965.
(2) These small and ephemeral plages were seen only for one day.
(3) Region 7763 is a new plage in the same position as the short-lived plage 7720 of the previous rotation.
(4) Regions 7759 and 7767 are parts of region 7718.
(5) Region 7779 is a new plage, near the position of the ephemeral plage 7776, but is not the same.

APRIL 1965

APRIL 1965	TIME MEAS. UT	LAT.	MER. DIST.	TYPE	No.
1-14	No. Obs.*				
15	2350	N05	E21	αp	15909
		N04	E30	βp**	15911
16	1755	N05	E11	αp	15909
		N03	E20	βp	15911
17	1920	N05	W03	αp	15909
18	1820	N05	W16	αp	15909
		N03	W02	αp	15912
19-20	No Spots				
21	No Obs.				
22	1745	N17	W06	βp***	15913
23	1750	N17	W18	βp***	15913
24-25	No Obs.				
26	2200	S04	W39	βp	15914
27	1810	S04	W52	βp	15914
28-30	No Spots				

COMMERCE - STANDARDS - BOULDER

* Series of storms leaving 70" of snow, total fall
** Follower not measured, below threshold
*** New Cycle

FINAL CORONAL LINE EMISSION INDICES

JANUARY 1965

CMP Jan 1965	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_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1 Jan	x	x	x	x	x	x	x	x	0	0	19	24	5	8	19	22
2	9	12	18	22	4	6	14	21	3	6	28	31	7	12	32	40
3	x	x	x	x	x	x	x	x	0	0	17	20	3	6	13	24
4	x	x	x	x	x	x	x	x	1	3	23	26	9	12	19	22
5	57	79	x	x	15	18	x	x	x	x	x	x	x	x	x	x
6	28	73	45	61	0	0	20	38	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	15	23	15	26	40	54	18	44
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	80	115	46	50	22	29	21	33	0	0	x	x	35	64	x	x
10	23	41	16	17	6	10	11	14	5	9	12	14	21	31	16	24
11	53	74	30	52	28	52	21	24	4	14	x	x	7	8	x	x
12	10	15	17	22	14	36	14	15	11	15	5	7	8	9	11	13
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	18	20	x	x	23	38	x	x	x	x	x	x	x	x	x	x
15	10	22	14	17	0	0	12	16	x	x	x	x	x	x	x	x
16	5	6	34	48	7	10	26	35	0	0	6	8	15	54	20	34
17	0	0	20	34	1	3	13	18	5	6	28	36	10	16	21	31
18	4	6	4	6	5	9	5	9	10	12	9	12	10	13	10	13
19	x	x	x	x	x	x	x	x	8	8	16	22	12	15	15	19
20	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21	31	41	10	22	24	37	7	11	2	5	0	0	10	15	0	0
22	x	x	x	x	x	x	x	x	5	6	28	35	13	29	28	35
23	20	34	x	x	0	0	x	x	10	21	1	5	18	26	4	11
24	17	65	12	16	0	0	12	16	2	4	x	x	7	11	x	x
25	0	0	x	x	0	0	x	x	x	x	x	x	x	x	x	x
26	9	11	16	22	5	9	11	14	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	0	0	11	16	26	76	19	27
29	x	x	x	x	x	x	x	x	12	14	19	21	37	66	22	35
30	2	4	16	20	0	0	13	17	x	x	x	x	x	x	x	x
31	9	11	19	25	3	5	16	24	15	16	24	35	23	25	28	36

x = no observations * = yellow line emission a = index computed from low weight data

FINAL CORONAL LINE EMISSION INDICES

FEBRUARY 1965

CMP Feb 1965	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_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1 Feb	13	19	10	15	9	10	11	14	17	19	x	x	26	31	x	x
2	8	16	12	15	7	8	12	16	14	16	x	x	36	45	x	x
3	x	x	x	x	x	x	x	x	22	25	x	x	59	73	x	x
4	29	45	11	16	5	8	16	28	x	x	x	x	x	x	x	x
5	27	59	20	27	6	7	24	33	4	4	6	11	20	36	11	20
6	41	61	16	32	12	13	20	38	1	3	22	32	18	28	22	32
7	22	33	x	x	4	5	x	x	3	5	10	14	9	13	7	9
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	x	x	x	x	x	x	x	x	1	4	10	16	9	11	15	17
11	16	36	16	25	1	3	9	17	3	5	13	16	10	18	9	16
12	47	74	14	24	17	20	12	16	0	0	8	9	19	59	10	16
13	x	x	x	x	x	x	x	x	0	0	12	15	15	31	14	21
14	52	91	15	18	15	18	17	20	0	0	19	21	11	28	15	20
15	48	71	x	x	25	29	x	x	x	x	x	x	x	x	x	x
16	36	65	x	x	13	15	x	x	x	x	x	x	x	x	x	x
17	31	37	x	x	21	24	x	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19	4	7	3	5	3	4	2	3	x	x	x	x	x	x	3	10
20	7	11	14	25	0	0	12	20	10	10	x	x	17	25	x	x
21	5	7	9	12	4	5	6	7	12	13	11	12	23	32	13	18
22	x	x	x	x	x	x	x	x	7	10	15	20	8	12	8	8
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	8	14	15	23	5	7	13	15	x	x	x	x	x	x	x	x
25	17	33	12	14	2	3	15	17	0	0	x	x	8	20	x	x
26	26	62	14	19	0	0	12	16	5	8	12	15	8	16	16	20
27	3	8	12	14	0	0	14	21	4	18	12	13	14	18	7	9
28	2	8	16	20	6	22	16	21	x	x	x	x	x	x	x	x

x = no observations * = yellow line emission a = index computed from low weight data

FINAL CORONAL LINE EMISSION INDICES

MARCH 1965

CMP Mar 1965	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_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1 Mar	x	x	x	x	x	x	x	x	14	32	15	24	32	46	11	19
2	x	x	x	x	x	x	x	x	16	32	x	x	42	54	x	x
3	x	x	x	x	x	x	x	x	10	16	x	x	35	43	x	x
4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	38	53	12	17	15	19	11	16	2	4	6	7	5	7	4	5
7	35	45	14	18	14	17	16	20	2	3	2	3	9	17	3	4
8	11	20	10	17	8	9	10	18	8	11	11	14	18	31	1	8
9	x	x	x	x	x	x	x	x	10	11	12	15	21	27	12	17
10	x	x	x	x	x	x	x	x	2	3	1	2	4	6	5	6
11	8	11	11	17	9	14	9	12	12	15	6	9	27	33	5	10
12	9	11	11	14	9	19	9	12	9	10	1	3	20	27	1	3
13	7	17	20	26	0	0	23	33	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	19	23	11	13	11	13	16	38	x	x	x	x	x	x	x	x
16	24	28	x	x	11	12	x	x	x	x	x	x	x	x	x	x
17	20	30	x	x	9	10	x	x	10	11	15	21	25	40	26	43
18	x	x	x	x	x	x	x	x	9	10	17	22	14	20	25	32
19	x	x	x	x	x	x	x	x	2	4	6	9	3	4	7	8
20	4	6	5	6	2	4	5	6	3	6	12	15	3	3	11	16
21	2	3	9	11	2	3	8	12	x	x	x	x	x	x	x	x
22	16	19	12	19	10	14	7	8	3	5	16	20	7	9	14	24
23	15	19	10	15	8	13	14	25	7	8	15	19	18	25	6	9
24	3	4	3	5	1	2	2	3	4	5	6	8	7	9	10	13
25	16	23	5	13	13	15	12	26	10	12	x	x	23	29	x	x
26	12	13	4	12	10	14	6	9	9	10	x	x	13	14	x	x
27	x	x	x	x	x	x	x	x	3	3	8	10	4	4	9	15
28	x	x	x	x	x	x	x	x	9	13	19	24	29	39	21	33
29	x	x	x	x	x	x	x	x	3	4	x	x	13	20	9	23
30	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
31	35	46	10	16	13	20	10	14	x	x	x	x	x	x	x	x

x = no observations * = yellow line emission a = index computed from low weight data

PROVISIONAL CORONAL LINE EMISSION INDICES

APRIL 1965

CMP Apr	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_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1 Apr	x	x	x	x	x	x	x	x	0	0	7	14	1	20	10	16
2	5	6	5	6	3	6	9	11	x	x	x	x	x	x	x	x
3	4	7	x	x	2	3	x	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	6	9	7	8	8	10	6	9
5	6	9	16	25	4	6	17	20	x	x	x	x	x	x	x	x
6	0	0	10	14	0	0	11	15	x	x	x	x	x	x	x	x
7	0	0	10	17	0	0	11	16	0	0	13	26	0	0	4	16
8	x	x	x	x	x	x	x	x	0	0	15	18	0	0	11	15
9	x	x	x	x	x	x	x	x	3	4	9	11	10	13	11	14
10	5	7	8	10	3	4	11	12	x	x	x	x	x	x	x	x
11	x	x	x	x	x	x	x	x	1	5	13	17	12	15	7	8
12	8	16	8	12	2	4	8	11	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	6	7	12	18	16	28	18	21
15	36	46	19	32	0	0	7	20	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
17	x	x	x	x	x	x	x	x	4	5	12	17	24	39	11	20
18	9*	21	8	12	22	84	11	24	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21	4	17	8	29	0	0	6	19	3	8	13	17	16	64	12	17
22	25	62	11	21	4	8	14	17	12	34	12	17	13	34	14	18
23	x	x	12	15	4	5	13	17	24	68	17	25	14	36	12	16
24	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
25	16	22	7	8	4	7	9	12	x	x	x	x	x	x	x	x
26	x	x	x	x	x	x	x	x	x	x	8	10	x	x	6	11
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	12	15	14	20	6	8	14	17	x	x	x	x	x	x	x	x
29	x	x	x	x	x	x	x	x	3	4	4	6	5	9	9	12
30	x	x	x	x	x	x	x	x	2	5	11	18	4	6	11	15

x - no observations * = yellow line emission a = index computed from low weight data

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

APRIL 1965

OBSERVATORY	DATE APR 1965	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	APPROX MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq Deg	MAX WIDTH Ha	MAX INT %	REMARKS
CULG	06	0447 E	0514	0455	N07	W25			1-	P	0455	.40	.46			CGH
OTTA	06	1452	1456	1453	S10	W05			1-	C	1453	.11	.11			
SACP	06	1455 E	1501	1455	S10	W05			1-	P		.19	.19		17	
SACP	06	1520	1540	1527	N27	W59	7758		1-	C		.25	.43		17	
OTTA	06	1517	1538	1531	N27	W60	7758		1-	C	1531	.10	.17			
CULG	08	0148	0200	0151	S23	E19			1-	C	0151	.60	.66			CGL
CULG	08	0316	0336	0323	N19	W60			1-	C	0323	.60	1.41			GH
CULG	08	0448	0512	0457	S07	E56	7765		1-	C	0457	.40	.68			CGH
CATA	09	0855	0925		N70	W40		30	1		0855	.38	2.16		119	DG
CAPS	11	0829 E	0852		N03	E87	7771	23 D	2	3	0835	1.00	6.00		205	C
KANZ	11	0934 E	1100 D		N03	E90	7771		1-							
KANZ	11	1355 E	1504		N03	E90	7771	69 D	1							
SACP	11	1453	1526	1458	N05	E90	7771		1-	C		.85	.85		19	
CAPS	11	1502 E	1520 D		N03	E85	7771	18 D	1	3	1515	.80	3.20		180	C
SACP	11	2314	2328	2317	N05	E82	7771		1-	C		.21	.21		17	
MANI	12	0845 E	0850		N04	E80	7771		1-	2	0846	.10	.24			
CATA	12	1027 E	1125 D		N28	E31	7768		1-		1027	.38	.55		124	GH
SACP	12	1850 U	2010 U	1918	N32	E06	7759		1-	C		.85	.94		18	
CULG	12	2232	2302 D	2243	N06	E70	7771	30 D	1	P	2243	1.20	3.60			
CULG	13	0629	0644 D	0639	N05	E63	7771	15 D	1	P	0639	1.80	4.50			F
MANI	13	0631	0648	0636	N04	E69	7771		1-	2	0636	.20	.36			
CATA	13	0635 E	0715	0641	N04	E66	7771	40 D	1		0641	1.24	2.55		148	E
WROC	13	0725 E	0850 D		S05	E50	7771	85 D	1+							
HUAN	13	1503	1523		N06	E63	7771		1-	P	1516	.23	.47			E
CAPS	13	1504	1525 D		N04	E63	7771		1-	2	1518	.30	.70			EH
MCMA	13	1505	1534		N07	E62	7771		1-	2 P	1507	.50	1.00			DH
MANI	14	0542	0607	0550	N05	E52	7771	25	1	1	0550	2.00	2.60			
KODA	14	0544 E	0547 D		N06	E52	7771	3 D	1	P		2.60	4.30			
CATA	14	0730	0841	0745	N04	E50	7771	71	1		0745	2.78	4.47		170	E
MANI	14	0743 E	0806	0746	N05	E51	7771		1-	1	0746	.50	.65			
CATA	14	0820	0841	0823	S31	E45	7775		1-		0823	.44	.68		120	GH
WEND	15	1025 E	1038 D		N03	E29	7771		1-							
SACP	15	1556	1610	1602	N01	E29	7771		1-	C		.17	.17		17	
SACP	15	1948	2003	1954	N04	E27	7771		1-	C		.60	.62		17	
HUAN	15	1949	1956	1953	N03	E29	7771		1-	C	1953	.27	.31			E
HALE	15	2010	2045	2016	N03	E32	7771		1-	2	2016	.60	.60			F
SACP	15	2011	2047	2017	N03	E32	7771		1-	C		.34	.36		18	
HUAN	15	2012	2035	2016	N04	E33	7771		1-	C	2016	.21	.25			E
LOCK	15	2107	2147	2121	N05	E29	7771		1-	C	2121	1.20	1.20		20	
SACP	15	2109	2140	2115	N05	E30	7771	31	1	C		2.59	2.71		25	
HALE	15	2110	2216	2115	N04	E30	7771	66	1	2	2115	2.50	2.50			
HUAN	15	2111	2138	2116	N04	E31	7771		1-	C	2116	1.10	1.31			E
HALE	15	2113	2117	2114	N01	E25	7771		1-	2	2114	.10	.10			H
CULG	15	2114 E	2139	2116	N04	E31	7771	25 D	2	P	2116	4.60	5.29			FL

SOLAR FLARES

APRIL 1965

OBSERVATORY	DATE APR 1965	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq Deg	CORR. AREA Sq Deg.	MAX WIDTH Ha	MAX INT +,	REMARKS
LOCK	15	2214	2235	2224	N02	E29	7771		1-	C	2224	.60	.60		10	
LOCK	15	2310	2348	2325	N03	E29	7771		1-	C	2325	1.20	1.20		20	F
HALE	15	2317	2331	2323	N03	E28	7771	14	1	1	2323	2.10	2.10			F
SACP	15	2317 E	2335	2324	N05	E29	7771		1-	C		1.38	1.43		22	
LOCK	15	2328	2348	2340	N22	E90	7781		1-	C	2340	.30	1.50		10	
SACP	15	2333	2347	2337	N23	E88	7781		1-	C		.34			17	
HALE	15	2334	2349	2344	N03	E28	7771		1-	1	2344	2.00	2.00			FH
MANI	15	2351	0039	2357	N05	E29	7771		1-	2	2357	1.50	1.50			
MANI	15			0026												
LOCK	15	2352	0021	2358	N05	E29	7771		1-	C	2358	1.30	1.30		20	
LOCK	15			0008												
HALE	15	2353	0015	2356	N04	E29	7771	22	1	1	2356	2.60	2.60			F
SACP	15	2353	0018	2355	N05	E29	7771	25	1	C		2.85	2.97		30	
CULG	15	2353	2400 D		N04	E30	7771	7 D	2	P	2400	5.00	5.75			FL
HALE	16	0023	0045 D	0028	N03	E29	7771		1-	1	0028	2.00	2.00			
SACP	16	0024	0045	0029	N05	E29	7771	21	1	C		2.59	2.69		24	
CULG	16	0025	0044	0032	N04	E29	7771	19	1	C	0032	4.00	4.60			L
SACP	16	0044	0106	0049	N22	E88	7781		1-	C		.21			18	
SACP	16	0050 U	0123 U	0101	N05	E29	7771		1-	C		1.26	1.31		22	
HALE	16	0058 E	0143	0100	N05	E29	7771		1-	1	0100	1.00	1.00			F
CULG	16	0100	0120	0103	N05	E30	7771	20	1	C	0103	2.00	2.30			L
KODA	16	0408 E	□		N08	E24	7771		1	P		1.90	2.20			
CULG	16	0431	0518	0450	N04	E27	7771	47	1	C	0450	2.60	2.99			L
CATA	16	0915	1122	1011	N04	E21	7771	127	2		1011	8.66	9.48		166	I
CAPS	16	0942	1105		N03	E22	7771	83	2	3	1012	6.20	6.70		208	EF
LOCK	16	2211	2230	2219	N18	E71	7781		1-	C	2219	.40	.90		10	
HALE	16	2212	2225 D	2219	N18	E70	7781		1-	1	2219	.20	.40			
CULG	16	2212	2233	2218	N18	E73	7781		1-	C	2218	.40	1.60			CGJ
SACP	16	2214	2300 U	2222	N18	E70	7781		1-	C		.47	.98		19	
CULG	17	0139	0152	0143	N04	E16	7771		1-	C	0143	.20	.21			L
SACP	17	1332	1339	1332	N05	E02	7771		1-	C		.21	.21		18	
SACP	17	1423	1456	1430	N04	E01	7771		1-	C		.21	.21		19	
KANZ	17	1430 E	1450 D		N02	E05	7771		1-							
HALE	17	2132	2215	2135	N22	E59	7781		1-	1	2135	.20	.30			
LOCK	18	1905	2030	1941	N20	E49	7781	85	1	C	1941	1.80	2.70		20	
SACP	18	1910	1945	1926	N20	E49	7781		1-	C		1.46	1.96		20	
MCMA	18	1912	1940	1925	N22	E50	7781		1-	2 C	1925	.90	1.60			EJ
CULG	18	2353	2400	2357	N55	W28	7771		1-	C	2357	.20	.45			G
CULG	19	0340	0405	0350	N22	E43	7781		1-	C	0350	.80	1.24			G
HALE	19	1903	1958	1912	N04	W27	7771		1-	2	1912	.60	.60			L
LOCK	19	1905	1940	1915	N05	W24	7771		1-	C	1915	.80	.80		10	
MCMA	19	1909	1921	1913	N03	W23	7771		1-	1 C	1913	.30	.40			D
MANI	20	0233	0305	0242	N05	W28	7771		1-	2	0242	.17	.17			
LOCK	21	0031	0052	0039	N20	E17	7781		1-	C	0039	.30	.30		20	L
SACP	21	0049	0117 U	0059 U	N19	E17	7781		1-	C		1.34	.36		17	

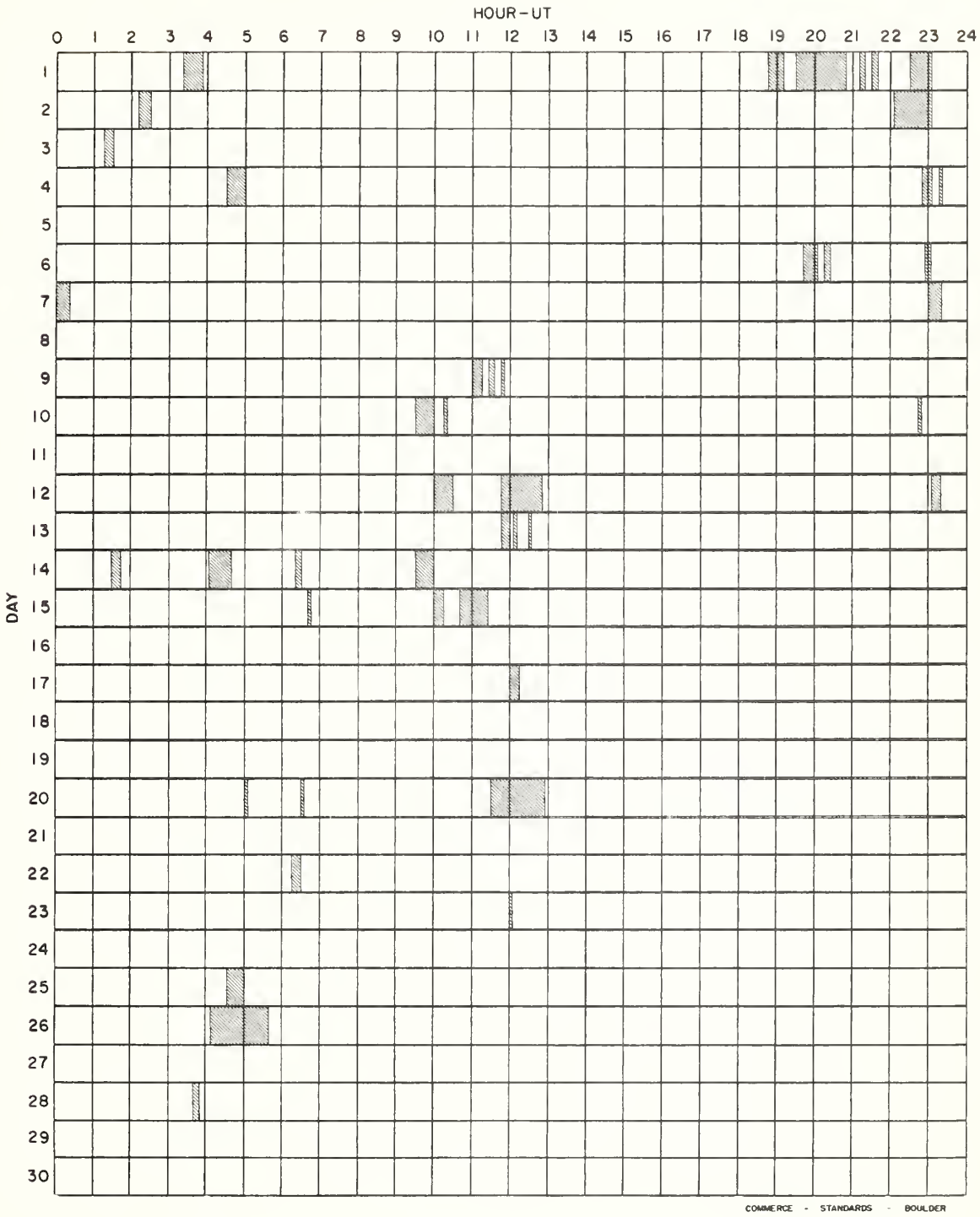
SOLAR FLARES

APRIL 1965

OBSERVATORY	DATE APR 1965	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR AREA Sq. Deg.	MAX WIDTH Ha	MAX. INT °°	REMARKS
CULG	21	0120	0145	0131	N02	E18			1-	C	0131	.40	.42			CGL
HALE	21	0126	0200	0131	N02	E18			1-	1	0131	.20	.20			
HALE	21	0134	0200	0141	N19	E18	7781		1-	1	0141	.30	.30			
HALE	21	0134	0233	0148	N18	E17	7781		1-	1	0148	.50	.50			
LOCK	21	0135	0153 D	0149	N20	E17	7781		1-	C	0149	.50	.50		20	L
HALE	21	0319	0415	0329	N21	E18	7781		1-	2	0329	1.00	1.00			F
CULG	21	0428	0453	0435	N18	E16	7781		1-	C	0435	.20	.22			GL
CATA	21	0635 E	0730	0640	N18	E14	7781		1-		0640	.94	1.06		132	EH
SACP	21	1336	1402	1344	N22	W40	7779		1-	C		.25	.31		19	
OTTA	21	1343 E	1349 D		N21	W40	7779		1-	P	1345	.8	.9			
CULG	22	0353	0403	0356	N17	W02	7781		1-	C	0356	.20	.21			H
CATA	23	0725	0800	0748	N23	W65	7779		1-		0748	.16	.39		129	G
CULG	23	2202	2215	2204	N30	W48			1-	C	2204	.20	.36			CH
OTTA	25	1456	1544 D		S05	W23	7785		1-	P	1533					
CAPS	25	1532	1558		S05	W22	7785	26	1-	3	1545	.60	.70		208	DGH
LOCK	25	1545 E	1600	1545 U	S06	W22	7785		1-	C	1545	.20	.20		10	L
WROC	26	0905 E	0920 D	0905	S03	W38	7785	15 D	1							
ARCE	26	0935 E	0957 D		S05	W34	7785		1-	2	0957	.90	1.10			
WROC	27	0850 E	0915 D	0850	S05	W48	7785	25 D	1							
HALE	27	1904	1925 D	1907	S06	W52	7785		1-	2	1907	.20	.30			
MCMA	27	1905	1915 D		S06	W53	7785		1-	1 C	1908	.30	.50			S
CULG	28	0628	0632 D		N27	W38			1-	P	0632	.20	.30			CG
KAND	29	0930	0948 D		S23	W73	7790		1-	D						
KAND	29	1150 E	1200		S23	W73	7790		1-	D						
MCMA	29	1748	1759	1751	S24	W85	7790		1-	2 C	1751	.20				D
HALE	29	1816 E	1829	1821	S03	W88	7785		1-	2	1821	.40				
SACP	29	1817	1826 D	1819	S04	W82	7785		1-	C		.34	1.01		18	
MCMA	29	1805	□		S24	W85	7790		1-	2 C	1819	.20				DK
MCMA	29	1817	1835		S24	W85	7790		1-	2						DK
HALE	29	1843	1906	1857	S03	W88	7785		1-	2	1857	.30				
HALE	29	1845	1850	1847	S25	W80	7790		1-	1	1847	.20				
MCMA	29	1851	1910		S24	W85	7790		1-	2 C	1855	.20				D

INTERVALS OF NO FLARE PATROL OBSERVATIONS
PROVISIONAL

APRIL 1965



Observatories included:

Arcetri	Culgoora	Istanboul	Lockheed	Ottawa	Wendelstein
Bucharest	Haleakala	Kandilli	Manila	Sacramento Peak	Wroclaw
Capri-S (Swedish)	Herstmonceux	Kanzelhöhe	McMath-Hulbert	Salonique	
Catania	Huancayo	Kodaikanal	Ondrejov	Tortosa	

SOLAR FLARES

JANUARY 1965

OBSERVATORY	DATE JAN 1965	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX PHASE	LOCATION APPROX LAT.	LOCATION APPROX MER DIST	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEASUREMENTS MEAS AREA Sq Deg	MEASUREMENTS CORR AREA Sq Deg	MEASUREMENTS MAX WIDTH Ha	MEASUREMENTS MAX INT	REMARKS
	01	0140	0340	NO FLARE	PATROL											
MANI	01	0322 E	0333	0327	N22	W13	7626		1-	2	0327	.20	.20			
	01	0345	0350	NO FLARE	PATROL											
	01	0400	0415	NO FLARE	PATROL											
	01	0420	0515	NO FLARE	PATROL											
	01	0635	0730	NO FLARE	PATROL											
BUCA	01	1011 E	1030 D		N20	W12	7626		1-	2			1.20			
BUCA	01	1013 E	1035 D	1017	N22	W15	7626		1-	2			1.80			
	01	1540	1545	NO FLARE	PATROL											
	01	1600	1605	NO FLARE	PATROL											
HUAN	01	1624	1637	1631	N22	W20	7626		1-	C	1633	.40	.47			D
LOCK	01	1827	1848	1834	N22	E90	7630	21	1	C	1834	.70	3.50		10	L
HUAN	01	1917	1932		N22	W22	7626		1-	C	1924	.31	.36			D
LOCK	01	1920	2020	1950	N21	W22	7626		1-	C	1950	.60	.60		10	HJ
HUAN	01	1947	1956		N20	W25	7626		1-	P	1952	.10	.10			D
LOCK	01	2210	2232	2215	N22	E90	7630	22	1	C	2215	.50	2.50		10	L
	02	0048 E	0052	0049	N22	W25	7626		1-	2	0049	.25	.25			
MANI	02	0057	0116	0105	N20	W27	7626	19	1	V	0057	1.97	2.38	1.54	146	
MITK	02	0121	0128	0120	N19	W24	7626	7	1	V	0120	2.95	3.48	1.02	93	
MITK	02	0204	0212	0206	N20	W90			1-	C						
KODA	02	0227 E	□		N23	W22	7626		1-	P	0227	.64	.78			
MITK	02	0353 E	0406		N21	E90	7630	13 D	1	V	0356	1.78		4.62		H
MITK	02	0415	0421	0417	N21	E90	7630	6	1	V	0414	3.93		3.25		H
	02	0645	0700	NO FLARE	PATROL											
MANI	02	0806 E	0812	0807	N23	W34	7626		1-	2	0807	.25	.28			
ISTA	02	0810	0825		N23	W26	7626	15								
CATA	02	1030 E	1110	1039	N21	W30	7626		1-	C	1039	.86	1.11		133	E
CATA	02	1040	1138 D	1047	N20	E90	7630		1-	C	1047	.30	1.71		118	D
HUAN	02	1144 E	1149 D		N22	W29	7626		1-	P	1146	.10	.10			D
HUAN	02	1156	1207	1200	N21	W30	7626		1-	C	1200	.19	.25			D
CAPE	02	1306	1342	1308 U	N23	W30	7626		1-	C	1308	1.40	1.80			J
HTPR	02	1310	1320	1315	N24	W27	7626		1-		1315	.70	.90			
CAPE	02	1357	1415	1358 U	N23	W30	7626		1-	C	1358	1.10	1.40			J
CLMX	02	1731	1824	1748	N22	W35	7626		1-	C	1748	.80	.90			EJ
LOCK	02	1735	1750	1742	N21	W32	7626		1-	C	1742	.50	.60		10	J
SACP	02	1741 E	1822 D	1744	N21	W34	7626		1-	C		1.11	1.25		18	
LOCK	02	2000 U	2100	2015	N24	E80	7630		1-	C	2015	.40	1.20		10	L
SACP	02	2029	2046	2034	N21	E80	7630		1-	C		.45	1.35		17	
LOCK	02	2225	2330	2255	N24	E80	7630		1-	C	2255	.60	1.80		10	L
CLMX	02	2229	2250 D		N21	E78	7630		1-	C	2231	.50	1.20			
SACP	02	2243	2300	2247	N21	E78	7630		1-	C		.12	.34		18	
	03	0010	0040	NO FLARE	PATROL											
CAPS	03	1125 E	1133		N19	W44	7626		1-	2	1132	.60	1.20			CD
UCCL	03	1133 E	1148 D		N28	W44	7626	15 D	1	2		1.20	2.00			E
CAPE	03	1137	1239	1205	N22	W46	7626		1-	C	1205	1.00	1.60			E
CAPS	03	1142 E	1233		N19	W44	7626		1-	2	1200	.60	1.20			D
HTPR	03	1201	1232	1215	N20	W48	7626		1-		1215	.60	1.00			E
HUAN	03	1216 E	1226 D		N22	W45	7626		1-	P	1219	.31	.48			E
HUAN	03	1233 E	1246 D		N22	W45	7626		1-	P	1235	.10	.16			D

SOLAR FLARES

JANUARY 1965

OBSERVATORY	DATE JAN 1965	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS AREA Sq. Deg	CORR. AREA Sq. Deg	MAX. WIDTH Ho	MAX INT %	REMARKS
OTTA	03	1427	1457	1443	N23	E68	7630	30	1	C	1443	1.07	2.13			E
SACP	03	1427	1512 U	1440	N24	E72	7630	45 U	1	C		2.01	4.45		19	
MCMA	03	1428	1520	1435	N22	E70	7630	52	1+	2 C	1435	1.50	4.50			FLS
CAPE	03	1429	1510	1436	N23	E72	7630	41	1	C	1436	1.40				
	03	2300	2320	NO FLARE	PATROL											
CULG	04	0039	0052	0044	N22	W54	7626		1-	C	0044	.60	1.14			
CULG	04	0201	0210	0205	N23	W50	7626		1-	C	0205	.20	.34			
CULG	04	0318	0342	0327	N23	W55	7626		1-	C	0327	1.00	2.00			
UCCL	04	0953 E	1008		N27	W70	7626		1-	2		.25	.50			E
UCCL	04	1121	1140		N17	E65	7630		1-	2						D
CAPE	04	1123	1137	1126	N21	E60	7630	14	1	C	1126	1.00	2.10			
MCMA	04	1615	1620 D	1617	N26	E62	7630		1-	1 P	1617	.20	.60			LS
SACP	04	1810	1836	1822	N23	E62	7630		1-	C		.33	.56		18	
MCMA	04	1819	1828 D	1823	N26	E60	7630		1-	1 C	1823	.20	.60			D
SACP	04	1908	1922	1911	N23	E62	7630		1-	C		.74	1.27		18	
SACP	04	2242	2258 D	2244	N23	E59	7630		1-	C		.24	.39		17	
	04	2300	2315	NO FLARE	PATROL											
SACP	04	2343	2359 D	2349	N21	E51	7630		1-	C		.76	1.05		20	
CULG	04	2344	2356 D	2354	N23	E57	7630		1-	P	2354	.80	1.60			
MANI	05	0012 E	0110	0014	N20	E58	7630		1-	2	0014	.25	.35			
CULG	05	0518	0521	0519	N25	E50	7630		1-	C	0519	.40	.68			C
CULG	05	0536	0552	0542	N25	E48	7630		1-	C	0542	.60	1.02			C
CULG	05	0536	0555	0542	N20	E50	7630		1-	C	0542	.40	.68			
ARCE	05	0920 E			N23	E46	7630		1-	2	0920	.43	.67			O
SACP	05	1546	1556	1550	N22	W76	7626		1-	C		.37	.94		16	
IKOM	05	2350	0003 D		N22	W90	7626	13 D	1	V						A
IKOM	06	0410	0414 D		N22	W90	7626		1-	V						A
KAND	06	0713	0717		N21	E39	7630		1-	B						
KAND	06	0810	0840		N23	W90	7626	30	2	G						
ARCE	06	0820 E	0830 D		N16	W90	7626	10 D	1	2	0820	.43	2.44			O
ARCE	06	0845 E	0900 D		N16	W90	7626	15 D	1	2	0850	.56	3.18			O
KAND	06	0847	0937	0852	N23	W90	7626	50	1+	D						
LOCK	06	1910	1926	1912	N21	E29	7630		1-	C	1912	.50	.60		20	
LOCK	06	2045	2100	2047	N21	E29	7630		1-	C	2047	.70	.80		20	
IKOM	07	0106	0114 D		N22	E28	7630		1-	V	0106	1.20	1.50			D
	07	0515	0540	NO FLARE	PATROL											
ARCE	07	0850 E	0905 D		N29	E13	7630		1-	2	0900	.69	.96			O
ARCE	07	0930 E	1000 D		N29	E13	7630		1-	2	0945	.65	.90			O
	07	1740	1800	NO FLARE	PATROL											
	07	1810	2000	NO FLARE	PATROL											
	07	2015	2155	NO FLARE	PATROL											
	08	0155	0200	NO FLARE	PATROL											
CULG	08	0209	0220	0215	N30	E13	7629		1-	C	0215	.60	.75			C
	08	1945	1955	NO FLARE	PATROL											
	09	1310	1330	NO FLARE	PATROL											

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	09	1335	1340	NO FLARE	PATROL											
	10	0830	0835	NO FLARE	PATROL											
	10	1330	1340	NO FLARE	PATROL											
CULG	11	0045	0129	0100	N25	W17	7630		1-	C	0100	.60	.72			GJL
CULG	11	0046	0100	0048	N27	W21	7630		1-	C	0048	.60	.75			CGJL
CULG	11	0046	0158 D	0101	N23	W19	7630		1-	P	0101	.80	.96			EGJL
CULG	11	0046	0158 D	0103	N23	W26	7630	72 D	1	P	0103	1.60	2.00			FGL
CULG	11	0056	0150	0105	N28	W16	7630		1-	C	0105	.60	.75			GKL
MANI	11	0100	0125	0103	N22	W26	7630		1-	2	0103	.40	.40			
CULG	11	0102	0158 D	0117	N23	W18	7630		1-	P	0117	.40	.46			GL
MITK	11	0110 E	0117 D		N23	W26	7630		1-	C						G
CULG	11	0115	0123	0118	N23	W20	7630		1-	C	0118	.40	.56			CGL
CULG	11	0151	0158 D	0154	N30	W38	7629		1-	P	0154	.40	.60			CGL
CULG	13	0113	0244	0153	N24	W47	7630		1-	C	0153	.40	.68			G
SACP	13	2035	2050	2042	N17	W84			1-	C		.41	1.47		18	
UCCL	14	1156	1204 D	1200	N24	E33	7643		1-	3		1.00	1.20			E
SACP	14	1502	1524	1508	N23	E09	7638		1-	C		1.15	1.19		19	
SACP	14	2050	2126	2108	N31	W75	7630		1-	C		.49	1.30		17	
CULG	14	2153	2218	2204	N26	W37			1-	C	2204	.20	.26			CGH
CULG	15	2150	2201	2155	N22	W08	7638		1-	C	2155	.40	.44			GL
SACP	15	2151	2203	2155	N21	W08	7638		1-	C		.49	.50		17	
LOCK	16	1915	1923	1919	N35	E58	7646		1-	C	1919	.20	.40		10	
CULG	16	2348	2400 D	2356	N20	W07	7643		1-	P	2356	.40	.44			GH
CULG	17	0228	0254	0236	N20	W08	7643		1-	C	0236	.60	.66			GL
CULG	17	0512	0518	0515	N36	E55	7646		1-	C	0515	.40	.90			G
CULG	17	0544	0607	0554	N21	W10	7643		1-	C	0554	.60	.66			EG
	17	0705	0735	NO FLARE	PATROL											
SACP	17	1452	1459	1454	N37	E67	7650		1-	C		.8	.18		17	
LOCK	17	1830	1853	1842	N32	E54	7646		1-	C	1842	.20	.30		10	
CULG	17	2126	2138	2131	N21	W16	7643		1-	C	2131	.40	.46			G
LOCK	17	2148	2216	2200	N20	W35	7638		1-	C	2200	.30	.30		10	
CULG	17	2155	2206	2159	N19	W35	7638		1-	C	2159	.40	.54			G
	17	2355	2400	NO FLARE	PATROL											
	18	0000	0005	NO FLARE	PATROL											
	18	0015	0045	NO FLARE	PATROL											
KAND	18	0742	0825	0755	N20	W26	7643	43	1	B						
ISTA	18	0743 E	0810		N23	W20	7643	27 D	1-							
CATA	18	0840 E	0905	0849	N22	W27	7643		1-	C	0849	.40	.48		151	D
KAND	18	0845	0855	0850	N22	W25	7643	10	1	D						
HTPR	18	0846	0852	0848	N22	W19	7643		1-		0848	.40	.50			
KAND	18	0925	0930		N22	W27	7643		1-	D						
HALE	18	2236 E	2253 D	2239	N19	E55			1-	4	2239	.10	.15			C
	19	0910	0915	NO FLARE	PATROL											

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UCCL	19	1223	1238		N22	W44	7643		1-	3						DHJ
HUAN	19	1429	1444	1434	N21	W42	7643		1-	C	1434	.19	.29			D
HUAN	19	1527	1632	1533	N21	W42	7643		1-	C	1533	.25	.38			DK
HUAN	19			1553												
HUAN	19			1618												
HUAN	19	1638	1644	1641	N21	W43	7643		1-	C	1641	.25	.39			D
HUAN	19	1839 E	1916		N20	W45	7643		1-	P	1904	.38	.60			CE
HUAN	19	2045 E	2115 D	2102	N22	W45	7643		1-	C	2102	.50	.81			E
HALE	19	2057 E	2208 D	2100	N20	W44	7643		1-	4	2100	.50	.70			C
CULG	19	2106	2111	2108	N14	W27			1-	C	2108	.20	.24			GH
HALE	20	0155 E	0240 D	0158	N20	W46	7643		1-	4	0158	.40	.50			C
CULG	20	0617	0632	0623	N33	E23	7646		1-	C	0623	.20	.28			G
ARCE	20	0815 E	0835 D		N22	W55	7643		1-	3	0815	.88	1.59			O
ARCE	20	0855 E	0925 D		N22	W55	7643		1-	3	0905	.85	1.54			O
CAPS	20	0910 E	0940 D		N23	W47	7643	30 D	1	2	0915	2.20	3.50		160	J
ARCE	20	0945 E	1000 D		N22	W55	7643	15 D	1	3	0955	1.41	2.55			O
CATA	20	1130	1140	1137	N22	W49	7643		1-	C	1137	.66	1.20		138	E
HUAN	20	1222 E	1233		N22	W55	7643		1-	P	1225	.13	.24			D
HUAN	20	1233	1340		N26	E27	7646		1-	P	1257	.13	.17			D
CAPS	20	1300	1315		N29	E24	7646		1-	2	1305	.80	1.00		153	D
HUAN	20	1241	1259 D		N22	W55	7643		1-	P	1257	.13	.24			D
HUAN	20	1319 E	1336		N22	W55	7643		1-	P	1325	.25	.48			E
	20	1550	1600	NO FLARE	PATROL											
HUAN	20	1718	1744	1733	N26	E27	7646		1-	C	1733	.25	.33			D
LOCK	20	1900	1930	1914	N21	W56	7643		1-	C	1914	.20	.30		10	
LOCK	20	2023	2034	2026	N20	W59	7643		1-	C	2026	.40	.50		10	
LOCK	20	2236	2310	2242	N20	W61	7643		1-	C	2242	.30	.50		10	
CLMX	20	2238	2306	2254	N19	W64	7643		1-	C	2254	.60	1.00			
HALE	20	2324 E	2348 D	2330	N25	E90	7655		1-	4	2339	.50				CK
HALE	20			2339												
MITK	21	0005	0012	0008	N33	E15	7646		1-	C						
MITK	21	0028	0037	0032	N26	W70	7643		1-	C						
CULG	21	0028	0038	0031	N24	W70	7643		1-	C	0031	.60	1.80			C
CULG	21	0636	0644	0641	N24	W64	7643		1-	C	0641	1.60	4.00			
KAND	21	1306 E	1419 D	1359	N26	E90	7655	73 D	1+	B						
MCMA	21	1410	1418	1414	N26	E90	7655		1-	2 C	1414	.80				
MCMA	21	2000 E	2018 D		N19	W85	7643		1-	1 P	2000	.40				D
	21	2020	2025	NO FLARE	PATROL											
	21	2055	2100	NO FLARE	PATROL											
	21	2250	2345	NO FLARE	PATROL											
	22	0100	0115	NO FLARE	PATROL											
	22	0125	0140	NO FLARE	PATROL											
MITK	22	0318	0352	0332	N21	W85	7643		1-	C						
MITK	22	0520	0536	0524	N21	W90	7643		1-	C						
KAND	22	0659 E	0755 D	0729	N22	W90	7643	56 D	1	B						
CAPE	22	0749 E	0812	0755 U	N21	W86	7643		1-	C	0755	.40				DJ
KANZ	22	0819	0903		N21	W85	7643		1-							
CATA	22	0840 E	1200 D	1033	N10	W90	7643	200 D	1+	C	1033	.62	3.52		126	D

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ARCE	22	0915 E	0940 D		N19	W85	7643	25 D	1	3	0915	.49	2.00			O
KANZ	22	0930 E	0952 E		N21	W85	7643		1-							
CATA	22	0848 E	1200 D	1033	N23	E90	7655	192 D	1	C	1033	.72	2.94		141	D
KANZ	22	0959 E	1005 E		N21	W85	7643		1-							
ARCE	22	1000 E	1005 D		N20	W82	7643		1-	3	1003	.46	1.69			O
CAPE	22	1001 E	1006		N21	W86	7643		1-	C	1001	.30				DJ
HUAN	22	1452	1525	1501	N20	W90	7643		1-	C	1501	.20				DK
HUAN	22			1519												
LOCK	22	1607	1632	1617	N20	E90	7655		1-	C	1617	.30	1.50		10	H
HUAN	22	1720 E	1752	1721	N20	W90	7643		1-	P	1721	.10				DK
HUAN	22			1742												
LOCK	22	1920 E	1950	1923 U	N20	E90	7655		1-	C	1923	.30	1.50		10	
LOCK	22	2005	2027	2015	N20	E90	7655		1-	C	2015	.20	1.00		10	
LOCK	22	2052	2120 D	2102	N20	E90	7655		1-	C	2102	.20	1.00		10	
	22	2120	2130	NO FLARE	PATROL											
	22	2135	2305	NO FLARE	PATROL											
CAPE	23	1008	1047	1016 U	N26	E60	7655		1-	C	1016	.70	1.60			E
HTPR	23	1015	1047	1025	N25	E55	7655		1-		1025	.70				E
	23	1320	1330	NO FLARE	PATROL											
	23	1405	1415	NO FLARE	PATROL											
	24	0450	0500	NO FLARE	PATROL											
MANI	24	0621	0632	0624	N24	E60	7655		1-	2	0624	.50	.70			
HTPR	24	0954	1004	0959	N24	E44	7655		1-		0959	.40	.60			D
KANZ	24	1337	1430		N23	E57	7655		1-							
HTPR	24	1409 E	1432	1412	N21	E55	7655		1-		1412	.30				D
SACP	24	1412 E	1435 U	1419 U	N23	E56	7655		1-	C		.43	.66		18	
KANZ	24	1441	1452		N23	E57	7655		1-							
SACP	24	1526	1555	1536	N21	E41	7655		1-	C		.16	.20		19	
LOCK	24	1648	1710	1655	N28	E53	7655		1-	C	1655	.30	.50		10	
SACP	24	1650	1714 U	1655	N28	E54	7655		1-	C		.40	.63		17	
SACP	24	1919	1950 U	1934	N22	E52	7655		1-	C		.53	.75		18	
SACP	24	2012	2025 U	2017	N23	E51	7655		1-	C		.49	.69		18	
LOCK	24	2020 E	2035 D	2025 U	N23	E50	7655		1-	C	2025	.30	.50		10	H
LOCK	25	2103	2120	2110	N24	E32	7655		1-	C	2110	.30	.40		10	
LOCK	25	2218	2229	2222	N22	E36	7655		1-	C	2222	.40	.50		10	
CULG	25	2220	2230	2222	N24	E37	7655		1-	C	2222	.60	.84			
CAPE	26	1343	1353	1346	N26	E23	7655		1-	C	1346	1.00	1.30			
HTPR	26	1345	1354	1348	N25	E10	7655		1-		1348	.60	.80			E
LOCK	26	1729	1748	1732	N21	E11	7655		1-	C	1732	.30	.30		10	
LOCK	26	2227	2243	2235	N30	W46	7650		1-	C	2235	.20	.30		10	H
LOCK	26	2357	0016	0001	N30	W46	7650		1-	C	0001	.30	.50		10	H
	27	0415	0430	NO FLARE	PATROL											
	27	0630	0640	NO FLARE	PATROL											
UCCL	27	0936 E	1021		N28	W60	7650		1-	3						EK
UCCL	27	1003	1038	1016	N30	E65	7658	35	1	3		1.50	3.70			DK
UCCL	27	1012	1023		N32	E85	7659	11	1	3						D

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MCMA	27	1656	1700 D		N23	E00	7655		1-	1 P	1656	.30	.30			E
	27	2130	2210	NO FLARE	PATROL											
CULG	28	0058	0110 D	0106	N23	E08	7655		1-	P	0106	.60	.69			
MANI	28	0106 E	0112		N24	E03	7655		1-	2	0107	.50	.50			
VORO	28	0214 E	0234 D		N23	E04	7655	20 D	1-			1.89	2.28			E
CULG	28	0215	0226 D	0218	N23	E08	7655		1-	P	0218	.80	.92			
MITK	28	0217	0232	0217	N20	E10	7655	15	1	V	0219	1.97	2.22	1.64	115	E
IKOM	28	0225	0230 D		N21	E10	7655	5 D	1	V	0225	1.60	1.80			D
CULG	28	0346	0355	0348	N31	E53	7659		1-	C	0348	.60	1.20			G
MANI	28	0433 E	0445	0434	N26	E01	7655		1-	2	0434	.25	.25			
IKOM	28	0434 E	0446 D		N21	E10	7655	12 D	1	V	0436	2.40	2.70			E
MITK	28	0434	0449	0435	N20	E09	7655	15	1	V	0435	1.67	1.87	1.54	107	E
CULG	28	0434	0450	0437	N23	E07	7655		1-	C	0437	1.60	1.84			
CULG	28	0435	0451	0437	N21	E00	7655		1-	C	0437	.80	.85			
CULG	28	0600	0616	0607	N22	E09	7655		1-	C	0607	.40	.46			CH
SACP	28	1542	1545	1543	N22	E01	7655		1-	C		.74	.76		18	
LOCK	28	1701	1714	1706	N21	E01	7655		1-	C	1706	.10	.10		10	J
LOCK	28	1947	1956	1949	N08	E90	7661		1-	C	1949	.10	.50		10	
LOCK	28	2357	0020	0007	N07	E80	7661		1-	C	0007	.30	.70		10	
LOCK	28	2359	0015	0004	N28	W08	7655		1-	C	0004	.40	.40		20	
SACP	29	0002	0014	0004	N22	W06	7655		1-	C		.29	.30		18	
CULG	29	0111	0117	0112	N23	W05	7655		1-	C	0112	.60	.69			H
	29	1100	1345	NO FLARE	PATROL											
OTTA	29	1629	1641	1632	N12	E73	7661		1-	C	1632	.17	.37			H
SACP	29	1629	1645	1633	N12	E71	7661		1-	C		.24	.51		17	
LOCK	29	1629	1647	1635	N09	E71	7661		1-	C	1635	.60	1.20		10	H
MCMA	29	1630	1641	1636	N07	E76	7661		1-	2 C	1636	.50				SH
LOCK	29	1648	1710	1657	N12	E71	7661		1-	C	1657	.60	1.20		10	H
MCMA	29	1655	1703	1658	N09	E75	7661		1-	1 C	1658	.50				S
LOCK	29	1805	1828	1814	N12	E71	7661		1-	C	1814	.50	1.00		10	H
LOCK	29	2010	2055	2020	N12	E71	7661		1-	C	2020	.40	.80		10	
LOCK	29	2128	2135	2130	N08	E71	7661		1-	C	2130	.50	1.00		20	J
SACP	29	2128	2135	2131	N09	E70	7661		1-	C		.66	1.29		18	
LOCK	29	2334	2355	2343	N09	E71	7661		1-	C	2343	.10	.20		10	J
MITK	30	0142	0153	0142	N07	E66	7661	11	1	V	0142	.88	2.06	1.75	107	D
LOCK	30	1920	1945	1930	N07	E55	7661		1-	C	1930	.30	.50		10	H
MCMA	30	1922	1935	1928	N09	E58	7661		1-	1 C	1928	.80	1.60			E
SACP	30	1925	1945	1928	N07	E56	7661		1-	C		.49	.70		18	
LOCK	30	2025	2056	2031	N07	E55	7661		1-	C	2031	.30	.50		10	H
SACP	30	2026	2048	2030	N08	E56	7661		1-	C		.66	.93		18	
LOCK	30	2225	2247	2235	N07	E55	7661		1-	C	2235	.20	.40		10	H
LOCK	31	0020	0030 D	0025	N05	E55	7661		1-	C	0025	.20	.40		10	H
CULG	31	0025	0042	0032	N06	E54	7661		1-	C	0032	.80	1.28			H
MANI	31	0053	0118	0056	N09	E59	7661		1-	2	0056	.25	.35			
CULG	31	0055	0058 D	0057	N08	E57	7661		1-	P	0058	.40	.72			
	31	0235	0300	NO FLARE	PATROL											
	31	0325	0330	NO FLARE	PATROL											

SOLAR FLARES

JANUARY 1965

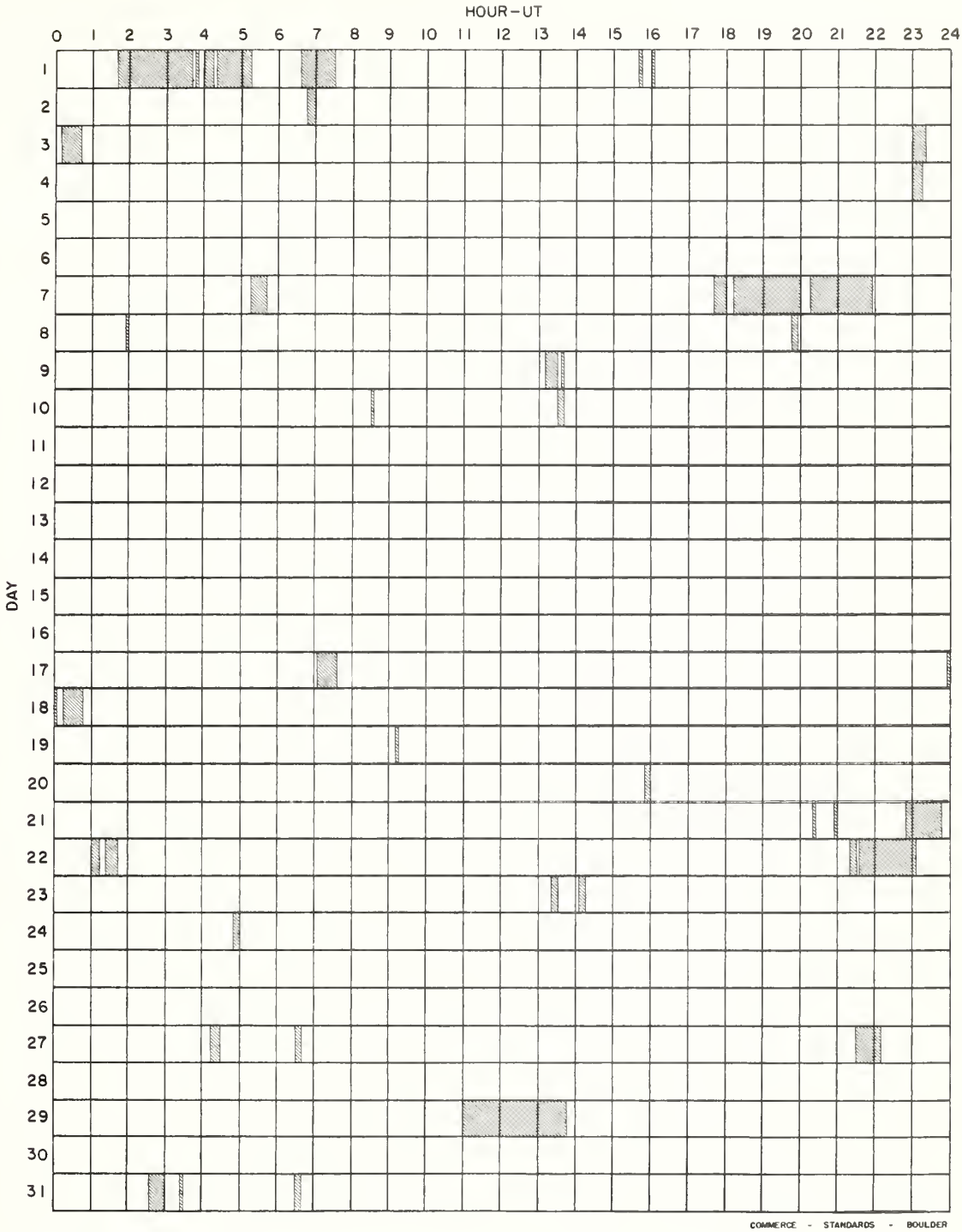
OBSERVATORY	DATE JAN 1965	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER DIST	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS COND.	MEASUREMENTS TIME U T	MEASUREMENTS MEAS AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg	MEASUREMENTS MAX WIDTH Ha	MEASUREMENTS MAX INT %	REMARKS
	31	0630	0640	NO FLARE	PATROL											
KAND	31	1314 E	1323		N05	E43	7661		1-	G						
SACP	31	1530	1553	1533	N07	E46	7661		1-	C		•41	•51		17	
LOCK	31	2010	2034	2017	N07	E45	7661		1-	C	2017	•50	•60		10	J
MCMA	31	2013	2024 D	2015	N09	E43	7661		1-	1 P	2015	•50	•70			E
SACP	31	2013	2040	2015	N09	E44	7661		1-	C		1•08	1•29		19	

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the January 1965 flares published in CRPL-F 246 Part B for February 1965.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JANUARY 1965



Observatories included:

Abastumani	Capri -F (German)	Herstmonceux	Kiev-Ko	Mitaka	Tachkent
Arcetri	Capri-S (Swedish)	Haute-Provence	Kodaikanal	Nizamiah	Tortosa
Arosa	Catania	Huancayo	Locarno	Ondrejov	Uccle
Athenes	Climax	Ikomasan	Lockheed	Ottawa	Voroshilov
Bakou	Crimee	Istanboul	Lvov	Sacramento Peak	Zürich
Bucharest	Culgoora	Izmiran	Manila	Salonique	
Capetown	Haleakala	Kanzelhöhe	McMath-Hulbert	Siberie	

SOLAR RADIATION MONITORING SATELLITE

NRL **APRIL 1964**

AVERAGE X-RAY FLUX			
Date	44-60A	8-12A	0-8A
Apr. 4	2.4×10^{-2}	$< 23 \times 10^{-4}$	$< 10 \times 10^{-4}$
5	2.5×10^{-2}	$< 12 \times 10^{-4}$	$< 6 \times 10^{-4}$
6	2.5×10^{-2}	$< 6 \times 10^{-4}$	$< 3.5 \times 10^{-4}$
7	2.8×10^{-2}	$< 3 \times 10^{-4}$	$< 2.5 \times 10^{-4}$
8	2.6×10^{-2}	$< 2.6 \times 10^{-4}$	$< 1.8 \times 10^{-4}$
9	3.0×10^{-2}	$< 2.5 \times 10^{-4}$	$< 1.6 \times 10^{-4}$
10	3.4×10^{-2}	5.7×10^{-4}	$< 1.5 \times 10^{-4}$
11	3.7×10^{-2}	5.1×10^{-4}	$< 1.4 \times 10^{-4}$
12	3.7×10^{-2}	4.1×10^{-4}	$< 1.1 \times 10^{-4}$
13	3.5×10^{-2}	4.1×10^{-4}	$< 1.1 \times 10^{-4}$
14	3.2×10^{-2}	$< 1.2 \times 10^{-4}$	$< 1.1 \times 10^{-4}$
15	3.0×10^{-2}	$< 1.2 \times 10^{-4}$	$< 1.1 \times 10^{-4}$
16	3.0×10^{-2}	$< 1.2 \times 10^{-4}$	$< 1.0 \times 10^{-4}$
17	3.0×10^{-2}	$< 1.2 \times 10^{-4}$	$< 1.0 \times 10^{-4}$
18	3.0×10^{-2}	$< 1.2 \times 10^{-4}$	$< 1.0 \times 10^{-4}$
19	2.8×10^{-2}	$< 1.2 \times 10^{-4}$	$< 1.1 \times 10^{-4}$
20	3.0×10^{-2}	$< 1.3 \times 10^{-4}$	$< 1.1 \times 10^{-4}$
21	3.0×10^{-2}	3.5×10^{-4}	$< 1.1 \times 10^{-4}$
22	2.8×10^{-2}	$< 1.4 \times 10^{-4}$	$< 1.1 \times 10^{-4}$
23	2.8×10^{-2}	$< 1.6 \times 10^{-4}$	$< 1.1 \times 10^{-4}$
24	3.0×10^{-2}	$< 1.7 \times 10^{-4}$	$< 1.2 \times 10^{-4}$
25	2.8×10^{-2}	$< 1.8 \times 10^{-4}$	$< 1.3 \times 10^{-4}$
26	2.6×10^{-2}	$< 2.2 \times 10^{-4}$	$< 1.5 \times 10^{-4}$
27	2.5×10^{-2}	$< 2.7 \times 10^{-4}$	$< 2.0 \times 10^{-4}$
28	2.4×10^{-2}	$< 4.5 \times 10^{-4}$	$< 3.0 \times 10^{-4}$

COMMERCE - STANDARDS - BOULDER

NRL APRIL 1964

OUTSTANDING EVENTS					
Date	Times of Observation	44-60A	8-12A	0-8A	
Apr. 7	0127 0140	$>12 \times 10^{-2}$	3.5×10^{-3}	2.3×10^{-3}	Class 1 Flare
	0134 0150	$>12 \times 10^{-2}$	3.5×10^{-3}	2.5×10^{-3}	
	0143 0151	$>12 \times 10^{-2}$	3.5×10^{-3}	2.6×10^{-3}	
11	1237 1253	4.8×10^{-2}	11×10^{-4}	6.4×10^{-4}	
	1533 1549	3.8×10^{-2}	6.2×10^{-4}	4.8×10^{-4}	
13	0758 0810	4.4×10^{-2}	5.9×10^{-4}	$< 1.1 \times 10^{-4}$	
18	1309 1320	4.0×10^{-2}	6.0×10^{-4}	2.1×10^{-4}	Class 1 Flare
	1323 1338	3.8×10^{-2}	8.0×10^{-4}	$< 1.2 \times 10^{-4}$	
	1449 1454	3.6×10^{-2}	5.4×10^{-4}	3.1×10^{-4}	
	1449 1502	3.4×10^{-2}	5.3×10^{-4}	$< 1.2 \times 10^{-4}$	
	1449 1509	3.5×10^{-2}	4.7×10^{-4}	2.8×10^{-4}	
	1509 1525	3.1×10^{-2}	5.5×10^{-4}	$< 1.2 \times 10^{-4}$	
24	1209 1228	3.6×10^{-2}	4.8×10^{-4}	$< 1.3 \times 10^{-4}$	Class 1-Flare
	1347 1403	3.7×10^{-2}	3.1×10^{-4}	4.8×10^{-4}	
	1401 1415	3.5×10^{-2}	6.3×10^{-4}	$< 1.3 \times 10^{-4}$	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIATION MONITORING SATELLITE

AVERAGE X-RAY FLUX

NRL **APRIL 1964**

TIMES OF OBSERVATION

4	1240	1257	9 (cont'd)	0911	0920	14	0043	0108	18 (cont'd) 2155 2223
	1424	1443		1141	1210		0239	0256	2342 0009
	1609	1625		1310	1359		0426	0441	
	1631	1648		1508	1528		0721	0737	19 0140 0150
	1746	1815		1646	1716		0908	0923	0214 0224
	1933	2016		1833	1847		0950	1006	0326 0341
	2058	2112		2046	2101		1028	1057	0436 0450
	2131	2201		2145	2159		1229	1259	0621 0637
	2318	0002		2232	2252		1420	1428	0706 0720
							1434	1448	0942 1010
5	0104	0147	10	0005	0031		1547	1634	1129 1159
	0251	0317		0157	0218		1734	1801	1309 1348
	0744	0800		0348	0405		1930	2001	1446 1533
	1014	1029		0505	0549		2045	2058	1637 1702
	1240	1307		1017	1032		2132	2149	1847 1911
	1435	1445		1059	1115		2304	2331	2032 2102
	1617	1634		1141	1206				2205 2247
	1755	1825		1227	1244	15	0050	0118	2351 0007
	1944	1955		1335	1353		0237	0305	
	2007	2124		1517	1534		0435	0449	20 0001 0018
	2151	2205		1542	1557		0541	0559	0337 0349
	2255	2307		1654	1742		0730	0746	0630 0645
	2336	2352		1844	1911		0815	0830	0714 0730
				2055	2111		1052	1119	0859 0916
6	0114	0141		2155	2206		1234	1309	0941 1007
	0311	0326		2242	2258		1418	1436	1133 1209
	0446	0500					1445	1454	1317 1358
	0755	0809	11	0014	0031		1556	1644	1455 1541
	1023	1038		0052	0056		1744	1755	1644 1656
	1248	1329		0200	0225		1940	2011	1855 1911
	1337	1352		0346	0414		2128	2211	2042 2058
	1456	1518		0545	0557		2314	2355	2215 2256
	1627	1639		0839	0854				
	1650	1706		1020	1027	16	0100	0127	21 0010 0025
	1806	1851		1150	1229		0247	0314	0157 0215
	1955	2004		1237	1253		0446	0457	0346 0357
	2200	2216		1349	1354		0554	0608	0722 0739
	2350	0006		1402	1419		0740	0755	0820 0828
				1522	1603		1010	1024	0911 0925
7	0003	0013		1704	1752		1047	1129	0950 1030
	0127	0151		1903	1929		1243	1312	1142 1219
	0321	0333		2105	2121		1423	1443	1322 1340
	0455	0523		2253	2306		1451	1505	1350 1407
	0948	1004					1605	1628	1505 1529
	1113	1127	12	0023	0050		1637	1652	1537 1551
	1259	1304		0209	0235		2005	2021	1621 1628
	1451	1510		0356	0423		2150	2206	1906 1922
	1629	1657		0702	0718		2323	0004	2051 2107
	1814	1839		1027	1038				2233 2251
	1940	1956		1200	1225	17	0110	0136	
	2136	2142		1359	1410		0306	0324	22 0009 0036
	2159	2230		1530	1556		0602	0617	0155 0224
	2357	0002		1715	1743		0832	0848	0503 0518
				1929	1939		0926	0939	0649 0704
8	0000	0015		2025	2041		1100	1140	0731 0749
	0114	0030		2113	2130		1251	1328	0811 0840
	0043	0158		2258	2327		1430	1452	0920 0933
	0318	0345					1500	1515	1000 1040
	0516	0532	13	0032	0049		1615	1700	1150 1210
	0628	0641		0231	0246		1740	1755	1329 1359
	0858	0910		0405	0432		1831	1840	1514 1600
	0958	1015		0531	0541		2014	2030	1731 1739
	1031	1044		0711	0728		2200	2230	1904 1930
	1135	1148		0758	0810		2333	0004	2046 2128
	1310	1350		0942	0957				2233 2249
	1508	1538		1021	1048	18	0118	0146	
	1638	1702		1210	1250		0316	0332	23 0019 0046
	1712	1725		1400	1438		0438	0441	0216 0232
	1824	1908		1547	1602		0608	0627	0512 0528
	1949	2005		1608	1624		0658	0710	0559 0610
	2022	2050		1723	1744		0920	0948	0658 0713
	2209	2239		1756	1808		1119	1149	0741 0758
				1849	1905		1309	1338	0830 0901
9	0013	0039		1939	1950		1449	1525	1010 1049
	0141	0158		2035	2048		1637	1709	1200 1239
	0340	0355		2123	2147		1844	1850	1339 1422
	0525	0541		2310	2336		1936	1950	1524 1609
							2009	2040	1723 1751

23 (cont'd)	1920	1940							
	2104	2123							
	2242	2310							
24	0027	0056							
	0226	0241							
	0521	0537							
	0610	0620							
	0842	0858							
	1027	1047							
	1208	1228							
	1347	1415							
	1535	1547							
	1747	1801							
	1828	1842							
	1933	1958							
	2116	2130							
	2251	2318							
25	0049	0105							
	0236	0249							
	0345	0430							
	0614	0620							
	0800	0815							
	0853	0907							
	1037	1109							
	1218	1259							
	1356	1440							
	1544	1611							
	1753	1811							
	1928	2012							
	2114	2156							
	2301	2327							
26	0057	0115							
	0247	0256							
	0354	0409							
	0540	0554							
	0623	0639							
	0725	0742							
	0810	0835							
	0857	0930							
	1042	1118							
	1221	1307							
	1405	1451							
	1604	1630							
	1750	1819							
	1946	2021							
	2135	2145							
	2310	2335							
27	0403	0417							
	0632	0648							
	0725	0739							
	0821	0833							
	0908	0926							
	1050	1111							
	1229	1259							
	1414	1500							
	1623	1640							
	1814	1830							
	1955	2030							
	2133	2201							
	2319	2347							
28	0116	0124							
	0228	0241							
	0411	0428							
	0458	0511							
	0735	0748							
	0919	0935							
	1059	1136							
	1238	1326							
	1424	1439							
	1456	1508							
	1638	1650							
	1824	1851							
	2007	2022							
	2142	2210							

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SOLAR X-RAY OBSERVATIONS DURING JUNE-DECEMBER 1961 FROM SOLAR RADIATION 3 AND INJUN 1

The following table gives a series of 239 random observations of the soft x-radiation of the sun which were obtained during the last half of 1961. These observations were made by the x-ray monitoring satellite, Solar Radiation 3, of the U. S. Naval Research Laboratory and the Injun 1 satellite of the State University of Iowa. The measurements were made with three different x-ray detectors: a beryllium window ionization chamber, an aluminum window ionization chamber and a mica window Geiger tube.

A portion of the data from Solar Radiation 3 has been discussed by Acton, Chubb, Kreplin and Meekins (1963). The observations from Injun are presented by Van Allen, Frank, Maehlum and Acton (1965). Acton (1964) discusses the experimental apparatus, and the reduction of the data from both satellites, in detail and the following table is abstracted from that work.

These data have been reduced under the assumption that the shape of the x-ray spectrum can be described by the Planck function with a temperature of 2.3 million ^{o}K. This value of the "color temperature" of the radiation is derived from these observations by Acton (1964). Those table entries not marked with a "c" have not been corrected for aspect angle (perfect aspect occurs when the radiation enters normal to the detector window) and so are lower limits to the flux. The overall uncertainty of these x-ray flux data is roughly a factor of two.

The tabulated quantity is the x-ray flux in the 0-20 Å band in units of 10^{-3} erg cm^{-2} sec^{-1}. To find the corresponding flux in a sub-interval of this spectral band simply multiply each table entry by a constant conversion factor. Some wavelength intervals of interest and their associated conversion factors are:

0 - 8 Å	Table entry x 0.07
8 - 14 Å	" " x 0.5
8 - 20 Å	" " x 0.9.

Acton, L. W., T. A. Chubb, R. W. Kreplin and J. F. Meekins, Observations of solar x-ray emission in the 8 to 20 A band, J. Geophys. Res., 68, 3335-3345, 1963.

Acton, L. W., X-Radiation of the Sun, Ph.D. thesis, University of Colorado, 1964.

Van Allen, J. A., L. A. Frank, B. Maehlum and L. W. Acton, Solar x-ray observations by Injun 1, J. Geophys. Res., 70, 1639-1645, 1965.

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SOLAR X-RAY DATA FROM SR-3 AND INJUN 1

X-Ray Flux in the 0-20 A Band [Units: 10^{-3} erg cm^{-2} sec^{-1}]

Date 1961	UT	Flux λ<20A	Date 1961	UT	Flux λ<20A	Date 1961	UT	Flux λ<20A	Date 1961	UT	Flux λ<20A	Date 1961	UT	Flux λ<20A	Date 1961	UT	Flux λ<20A
Jun. 29	0803	8	Jun. 30	1125	7	Jul. 1	1628	7	Jul. 4	0115	8cx	Jul. 21	1621	27cx	Sep. 1	1916	11x
	0945	8c	(Cont'd)	1250	7	(Cont'd)	1808	4		0118	6		1915	51		2103	8
	0947	4		1258	8c		1816	6		0159	5		2125	97c	Sep. 3	0911	8uc
	1231	10		1310	4		1822	6		0205	5u	Jul. 23	2202	4u	Sep. 4	1304	10u
	1237	8cx		1315	7		1828	4cx		1012	4	Jul. 24	2034	4u	Sep. 7	2009	8cx
	1244	8		1445	5		1954	7		1017	4						
	1417	4		1448	6		2020	5		1205	4	Jul. 26	0019	10	Sep. 9	0521	9c
	1420	2		1755	15		2153	4u		1359	8c		2250	12		0947	32x
	1612	4		1757	12		2208	7		1525	>7	Jul. 27	1355	19u		1037	39c
	1614	7		1758	14		2254	4		1540	4c	Jul. 28	1024	5u		2259	11x
	1730	4		1800	17x		2256	6c		1714	8x					2305	3
	1756	5		1813	14cx					1725	7x	Aug. 5	1806	5	Sep. 10	0348	<11c
	1800	7		1817	21cx	Jul. 2	0503	4		1856	5u		2138	4u			
	1930	8cx		1821	5		0504	8		2106	7cx	Aug. 9	0011	5x	Sep. 11	0551	20x
	1937	7		1940	5		1127	13					0153	4x		0835	18
	1940	10x		1959	7		1129	22	Jul. 5	0358	10u	Aug. 10	1010	16u	Sep. 12	0659	6u
	1942	8u		2009	6c		1155	7		2040	3u					0847	7
	1943	8		2127	7		1317	11				Aug. 11	1218	10c	Sep. 13	0621	10cx
	1946	6u		2138	4		1320	8	Jul. 6	1949	5cx	Aug. 12	0856	7u	Sep. 25	0451	4
	1953	5		2144	6cx		1326	11cx	Jul. 7	0433	6x		1618	16x		0634	5cx
	2114	26x		2151	5		1330	11		1239	3c		1749	6c		2228	4c
	2116	28x					1822	4	Jul. 8	1451	7c	Aug. 13	0733	6c	Sep. 26	0143	6
	2119	19x	Jul. 1	0034	4		1826	6	Jul. 9	1829	>6		1058	10c	Sep. 29	2146	<3uc
	2120	23x		0035	5		1844	2		2308	9cx						
	2123	17		0116	6		1850	3				Aug. 14	2351	4c	Oct. 4	0016	3cx
	2123	18x		0117	5		2023	5	Jul. 10	2008	23	Aug. 16	0003	5		2307	1c
	2127	25x		0217	6		2030	3		2326	6		0949	6u	Oct. 9	2234	3uc
	2130	19x		0223	1cx		2030	7u	Jul. 11	2033	>91	Aug. 17	1531	4cx	Oct. 17	2217	1
	2135	20x		0225	3cx		2045	2		2158	20u	Aug. 18	1752	<7c	Oct. 19	1044	1c
	2139	6u		0226	3					2338	10				Oct. 20	1947	1cx
	2323	6		0301	3	Jul. 3	0959	2				Aug. 19	1230	5			
	2326	6		0307	5		1000	5	Jul. 12	1735	130c	Aug. 20	0548	11c	Oct. 24	0333	4cx
				0420	5		1152	3c		2207	29cx		0902	6		1018	3c
Jun. 30	0021	9		0425	4		1329	2	Jul. 13	1413	14x	Aug. 21	0925	5x	Oct. 26	1555	1c
	0022	5		0447	5u		1333	13c		2305	26u	Aug. 22	0603	3		2108	<1c
	0040	6		0625	7		1335	13cx	Jul. 14	0050	13u		0614	3cx	Oct. 27	1753	<1c
	0201	8		1059	8		1341	13cx					1315	8x		1916	<1c
	0242	7		1101	7		1343	13c	Jul. 17	1837	47c						
	0254	30		1120	5		1527	4x	Jul. 18	1523	22u	Aug. 24	0456	4c	Oct. 28	2141	<1cx
	0349	6cx		1138	7		1755	4	Jul. 20	1220	28x	Aug. 26	1417	5x	Nov. 13	1119	<1cx
	0402	7		1330	8c		2022	6		1556	310x		1624	4u	Nov. 25	1748	5c
	0407	5		1426	8		2047	2		1905	≥400cx	Aug. 30	0616	8x	Nov. 26	1435	<1c
	0425	14		1625	7x		2206	14cx				Aug. 31	0302	<9uc			
	0430	8		1625	7										Dec. 14	1342	2u

NOTE —

c = aspect-corrected data
u = data with greater than average uncertainty
x = data with better than average reliability

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Descriptive Text For Launch 1 Results

During the first two weeks after the first launch of Vela satellites on October 17, 1963, many x-ray events were observed by the Vela x-ray detectors. Since that time there has been much less solar activity, and the satellites have been operated in a less favorable way for making measurements on x-rays. The final results of the first two weeks are presented in Figures IIIs through IIIv. These data are furnished by Jerry P. Conner of the Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

The energy flux plotted is that dissipated in the scintillator of the sensor. In order to convert to incident flux it would be necessary to assume the spectral distribution of incident radiation, which is not known. Reasonable assumptions of what the spectral distribution might be would give incident flux values for the more important events larger than the values plotted by a factor of from 2 to 10, depending on the hardness of radiation in the individual events.

The instrumentation is described by J. P. Conner, W. D. Evans, M. D. Montgomery, S. Singer, and E. E. Stogsdill, "Solar Flare X-ray Emission Measurements" in Space Research V (ed. D. G. King-Hele, et al), North-Holland Publishing Co., Amsterdam, 1965, page 546. A brief summary of the x-detector system characteristics is given in Table I. The energy flux range is for energy dissipation in the scintillator.

TABLE I

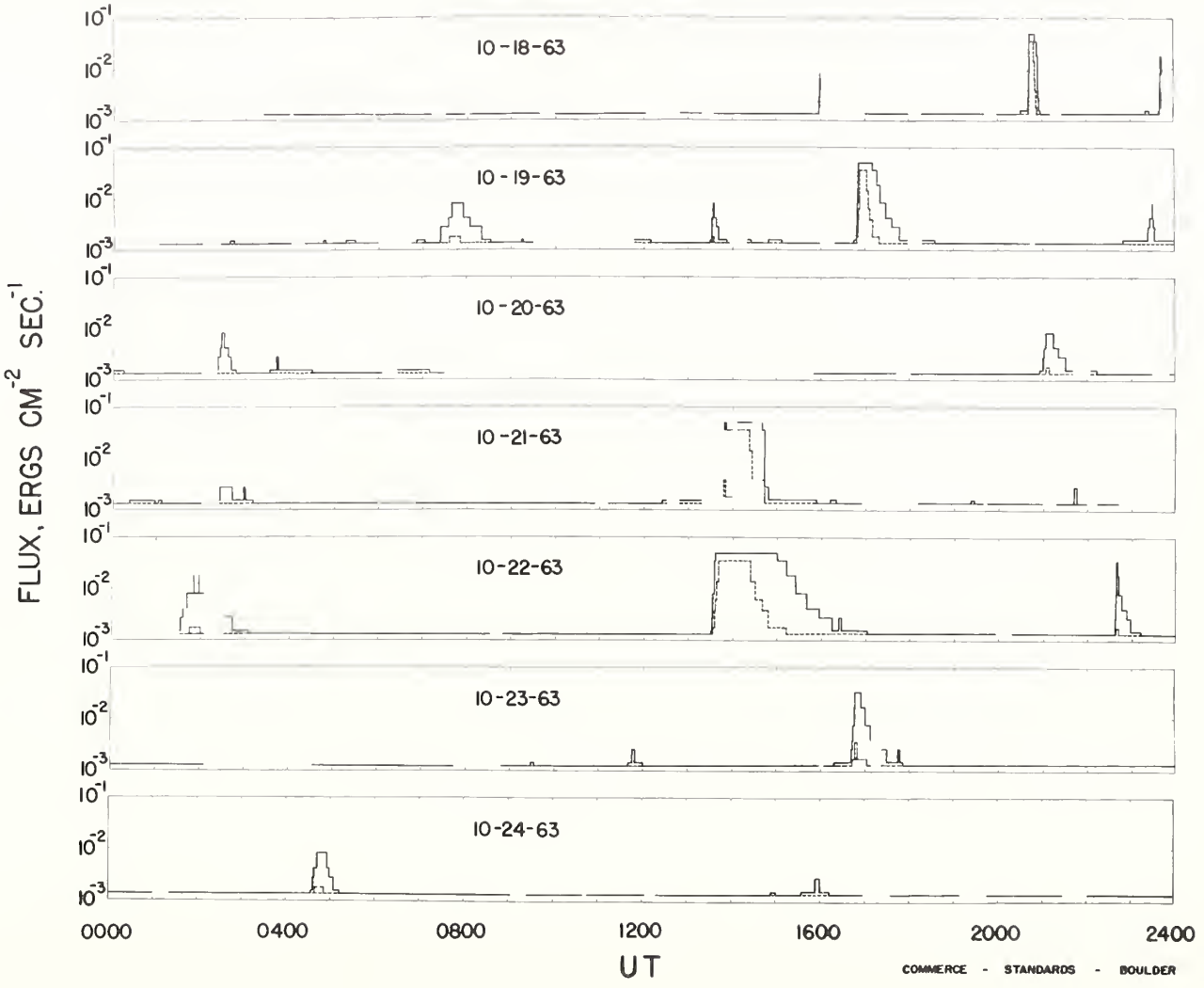
Sensor type	Scintillator and photomultiplier
Scintillator	5 mg/cm^2 of cesium iodide
Filter (2 sets)	(7 mg/cm^2 beryllium (117 mg/cm^2 beryllium
Spectral sensitivity bands	(1/2 to 10 Angstroms (1/2 to 4 Angstroms
Energy flux range (see text)	
Threshold:	$\sim 10^{-3}$ ergs cm^{-2} sec^{-1}
Saturation:	5×10^{-2} ergs cm^{-2} sec^{-1}
Time resolution	One to three minutes with real time telemetry (depends on details of operation).

In Figures IIIs and IIIt the heavy line just above the base of the graphs indicates that observations were being made but the flux was below threshold. Gaps in the heavy line indicate no observations of solar x-rays could be made. The solid line indicates flux in the 1/2 to 10 Angstrom detectors, and the dashed line indicates flux in the 1/2 to 4 Angstrom detectors. In Figures IIIu and IIIv a more detailed time history is plotted for some of the important events.

SOLAR X-RAY MEASUREMENTS

VELA

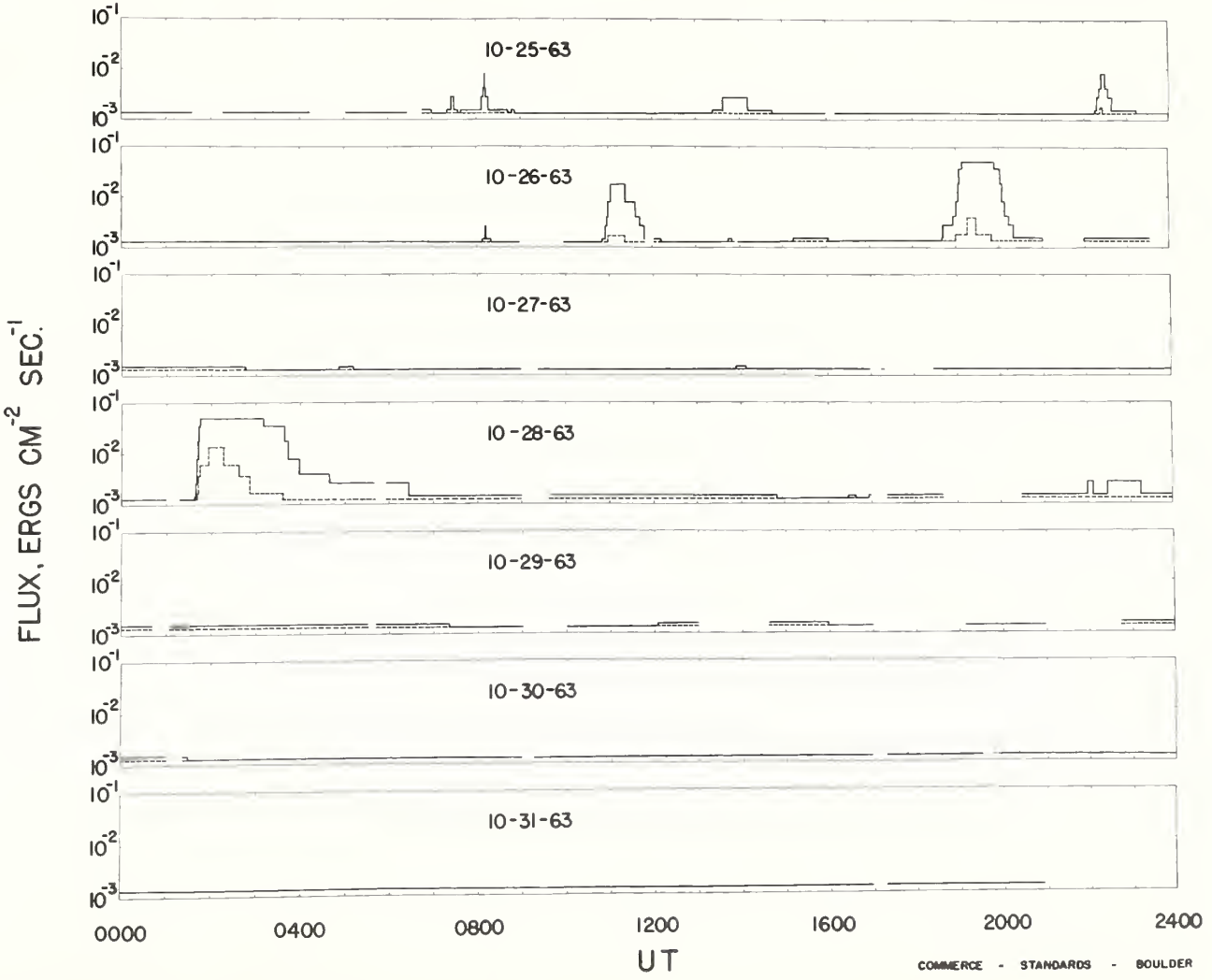
OCTOBER 1963



SOLAR X-RAY MEASUREMENTS

VELA

OCTOBER 1963



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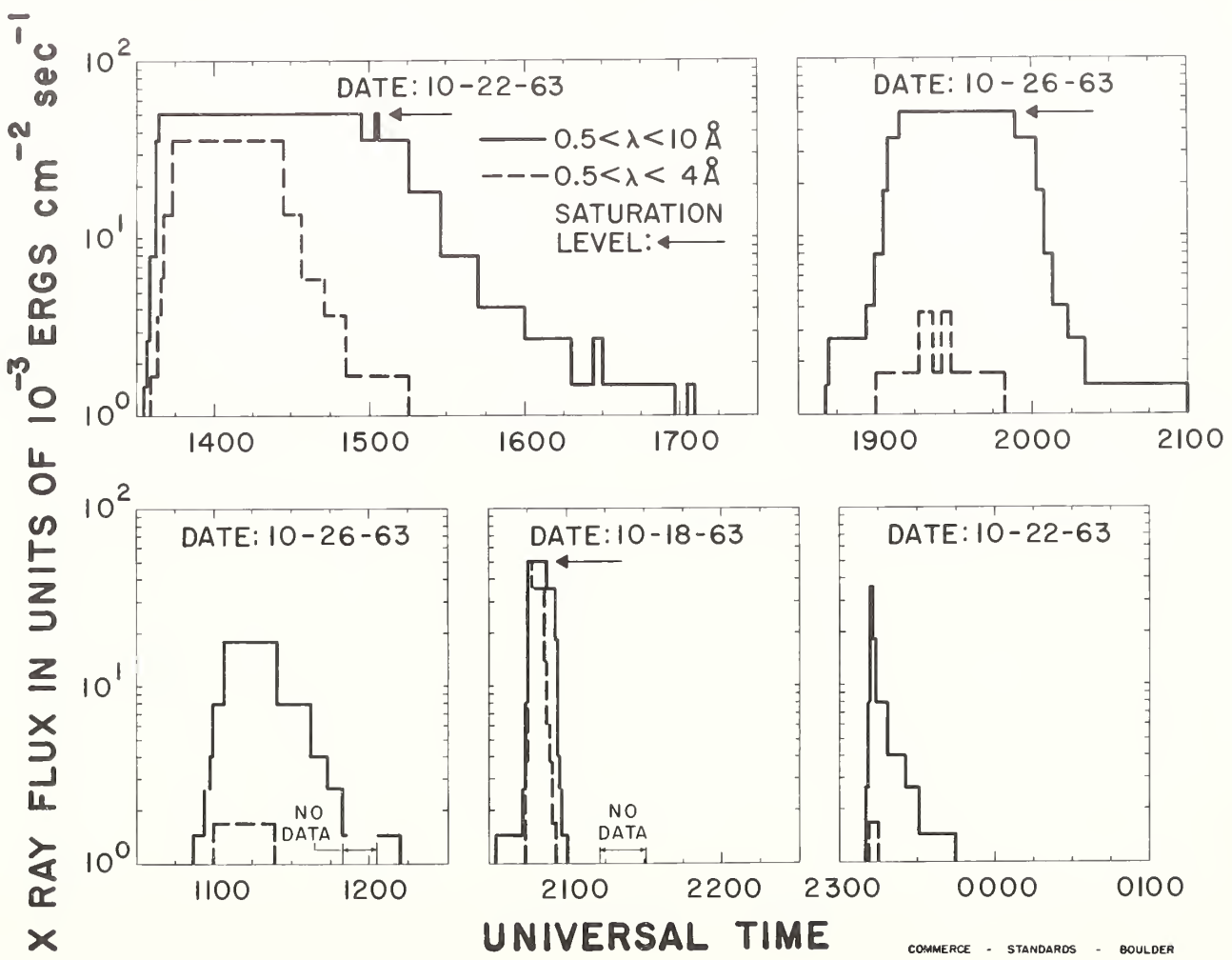
SOLAR X-RAY MEASUREMENTS
(IMPORTANT EVENTS)

VELA

OCTOBER 1963



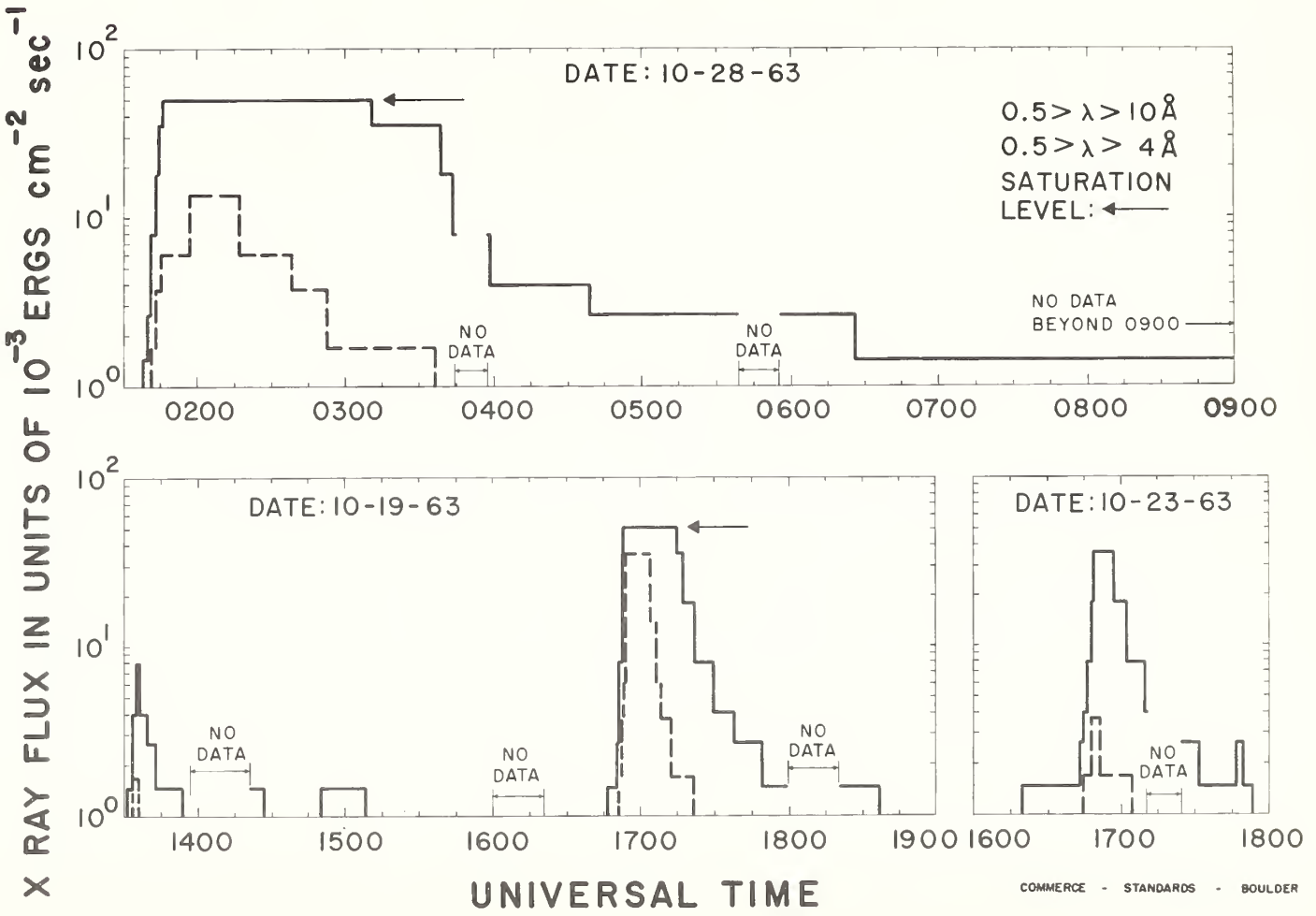
COMMERCE - STANDARDS - BOULDER

SOLAR X-RAY MEASUREMENTS

(IMPORTANT EVENTS)

VELA

OCTOBER 1963



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IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS — SUDDEN PHASE ANOMALIES
SUDDEN COSMIC NOISE ABSORPTION — SUDDEN ENHANCEMENTS OF SIGNAL
SUDDEN ENHANCEMENTS OF ATMOSPHERICS — SUDDEN FREQUENCY DEVIATIONS
SOLAR NOISE BURSTS AT 18 Mc/s

MARCH 1965

MAR 1965	UNIVERSAL TIME			TYPE SWF	IMPORTANCE						BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX	IMP	ABS	SCNA	SEA	SPA	SES	SFD				
06	1813	1832									1	4	BO•MC(SERIES)	1814
08	2152	2154									1	4	MC•BO	
09	2137	2139									1	4	MC•BO	
11	2313	2315									1	5	MA•BO	
12	1622	1625									1	4	MC•BO	1618
12	1715	1716									1	4	MC•BO	
12	2049	2052									1	4	MC•BO	2046
12	2114	2116									1	4	BO•MC	
12	2127	2128									1	4	MC•BO	
13	2051	2102	2051D							008		1	BO(WWV10-0.8•WWV15-0.4•KKE4-0.4•KKE5-0.3)	2050
26	0008	0042	0014					42				1	MA(NPG-42)	0003E
26	0010	0040	0030	G 1-								1	MA	
26	0020	0050					1					1	TA	
26	0458	0513	0502		52	1+						1	DE	0508E
26	0510	0525	0515						1+			1	DE	
26	0515	0535	0522		58	1+						1	DE	
26	1249	1252									1	5	MC•RO	
28	2138	2141									1+	4	BO•MC	
28	2205	2211									1+	4	BO•MC	
28	2219	2233									1+	4	BO•MC	
28	2233	2235									1	4	BO•MC	2232
31	2018	2020									1	4	BO•MC	
31	2023	2026									1+	4	BO•MC	
31	2027	2029									1+	4	BO•MC	

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No SCNA, SEA, Burst report received from Hawaii

RIOMETER EVENTS

MARCH 1965

FROBISHER BAY

30 Mc/s

MAR. 1965	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS	MAR. 1965	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS
3	0240	0350	0243	5	1	25	0906	1140	0925	7	2
13	1440	1744	1532	6	1	26	0208	0306	0227	8	3
15	0042	0126	0053	11	2	26	0936	1120	1011	3	1
15	0932	1112	1100	5	1	27	0212	0229	0219	3	1
16	0310	0422	0335	16	2	27	0606	0626	0615	5	1
20	1350	2140	1534	10	1	27	0850	1040	1013	5	1
21	0010	0208	0047	9	1	27	1510	1730	1549	7	3
23	0540	0642	0548	8	1	29	0256	0308	0303	4	1
23	0920	1410	1224	8	2	29	1344	1742	1612	5	5
24	1152	1438	1310	7	2						

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

APRIL 1965

ARO-OTTAWA 2800 Mc/s
DRAO-PENTICTON 2700 Mc/s

APR. 1965	URANE	DESCRIPTIVE TYPE	START UT	DURATION HRS MIN.	MEAN FLUX	MAXIMUM TIME	MAXIMUM FLUX	REMARKS
1	1	Simple 1	1928	2	1.0	1929	2.0	
11	3	Simple 3A	1446	1 34	2.5	1508	5.0	
	6	Complex f	1448	10	4.5	1453.5	10.0	
11	3	Simple 3	1722	1 23	0.8	Indet.	1.2	
12	3	Simple 3	1840	4 20	1.5	2125	3.0	
15	3	Simple 3	2105	38	1.0	2116	2.0	
15	3	Simple 3	2310	> 2 40	-	2320	4.0	
18	3	Simple 3	1914	2 26	0.9	Indet.	1.8	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

APRIL 1965

NBS BOULDER 108 Mcs

None observed

NOMINAL TIMES OF OBSERVATION

APRIL 1965

NBS BOULDER 108 Mcs

April 1965	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.	April 1965	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.
1	1250-0109		16	1226-0122	
2	1248-2125	2038-2055; 2103-2107	17	1225-0123	1405-1415
			18	1223-0124	
3	1327-0111		19	1222-0125	
4	1245-0112	2302-2311	20	1220-0126	
5	1243-0112				
			21	1219-0127	
6	1242-0113		22	1218-0128	1830-1950
7	1240-0114	1720-1758	23	1216-0129	2327-0129
8	1239-0115		24	1215-0130	
9	1237-0116		25	1213-0131	1337-1730; 2108-2118
10	1235-0117				
11	1234-0117		26	1212-0132	1212-1915
12	1232-0118		27	1211-0132	1211-2238
13	1231-0119	2333-2339	28	1209-0133	
14	1229-0120		29	1208-0134	1238-1327
15	1228-0121		30	1207-0135	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JANUARY 1965

Fort Davis

50 - 320 Mc/s

1965	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Jan. 1	1409 - 2345					Weak I throughout day
Jan. 2	1409 - 2345					Weak I during day
Jan. 3	1409 - 2345	IIIG	1829 - 1830	1	165-35	Weak I during day
		IIIG	2000 - 2004	3	240-<35	
Jan. 4	1409 - 2345					
Jan. 5	1409 - 2345					
Jan. 6	1409 - 2345					
Jan. 7	1410 - 2345					
Jan. 8	1409 - 2345					
Jan. 9	1409 - 2345					
Jan. 10	1410 - 2345					
Jan. 11	1409 - 2345					
Jan. 12	1410 - 2345					
Jan. 13	1410 - 2345					
Jan. 14	1409 - 2345					
Jan. 15	1409 - 2330					
Jan. 16	1410 - 2345					
Jan. 17	1410 - 2345					
Jan. 18	1410 - 2345					
Jan. 19	1409 - 2345					
Jan. 20	1409 - 2345					
Jan. 21	1409 - 2345					
Jan. 22	1410 - 2345					
Jan. 23	1409 - 2345					
Jan. 24	1412 - 2345					
Jan. 25	1410 - 2345					
Jan. 26	1410 - 2345					
Jan. 27	1403 - 2345					
Jan. 28	1403 - 2345					
Jan. 29	1404 - 2345	IIIG	1541 - 1542	1	180-125	
Jan. 30	1403 - 2345					
Jan. 31	1403 - 2345					Weak I during day

COMMERCE · STANDARDS · BOULDER

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1965

Fort Davis

50-320 Mc/s

1965	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Feb. 1	1402 - 2345					Weak I throughout day
Feb. 2	1403 - 2345	IIIG	1413 - 1414	1	190-125	Weak I during day
		IIIG	1510 - 1513	1	240-<50	
		IIIG	1614 - 1615	1	200-<50	
		IIIG	1707 - 1708	1	240-<50	
		IIIG	1859 - 1903	2-3	280-<50	
		IIIG	2031 - 2032	2	240-<50	
		IIIG	2051 - 2053	2-3	300-<50	
		IIIG	2210 - 2213	3	230-<50	
		IIIG	2248 - 2252	2	240-<50	
Feb. 3	1402 - 2345					
Feb. 4	1403 - 2345					
Feb. 5	1403 - 2345	IV	1800 - 1940	3	>320-100	1800-1802 Reverse slopes in III's.
		IIIG	1800 - 1803	2	150-<50	1800-1811 Unclassified burst with type II characteristics.
		Uncl.	1800-1811	3	150-<50	1918-1920 Structure in IV.
Feb. 6	1402 - 2345					
Feb. 7	1402 - 2345					
Feb. 8	1402 - 2345					Weak I during day
Feb. 9	1403 - 2345					
Feb. 10	1403 - 2345					
Feb. 11	1403 - 2345					
Feb. 12	1403 - 2345					
Feb. 13	1402 - 2345					
Feb. 14	1405 - 2345					
Feb. 15	1403 - 2345					
Feb. 16	1402 - 2345					
Feb. 17	1402 - 1530					
	1644 - 1718					
	1805 - 2345					
Feb. 18	1403 - 2345					
Feb. 19	1403 - 2345					
Feb. 20	1403 - 2345					
Feb. 21	1403 - 2345					
Feb. 22	1403 - 2345					
Feb. 23	1403 - 2345					
Feb. 24	1404 - 2345					
Feb. 25	1403 - 2345					
Feb. 26	1403 - 2345					
Feb. 27	1403 - 2345					
Feb. 28	1403 - 2345					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1965

Fort Davis

50-320 Mc/s

1965	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Mar. 1	1334 - 2330					
Mar. 2	1334 - 2330					
Mar. 3	1333 - 2330					
Mar. 4	1334 - 2330					
Mar. 5	1333 - 2330					
Mar. 6	1334 - 2330	IIIG	1829 - 1832	1	200-<50	
Mar. 7	1333 - 2330					
Mar. 8	1333 - 2330					
Mar. 9	1334 - 2256					
Mar. 10	1334 - 2330					
Mar. 11	1333 - 2330					
Mar. 12	1333 - 2330					
Mar. 13	1333 - 2234					
Mar. 14	1334 - 2330					
Mar. 15	1334 - 2330					
Mar. 16	1333 - 2330					
Mar. 17	1334 - 2330					
Mar. 18	1333 - 2330					
Mar. 19	1334 - 2330					
Mar. 20	1334 - 2330					
Mar. 21	1333 - 2330					
Mar. 22	1333 - 2330					
Mar. 23	1333 - 2330					
Mar. 24	1334 - 2330					
Mar. 25	1333 - 2330					
Mar. 26	1333 - 2330					
Mar. 27	1334 - 2330					
Mar. 28	1333 - 2330					
Mar. 29	1333 - 2330					
Mar. 30	1333 - 2330					
Mar. 31	1333 - 2330					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1965

High Altitude Observatory
Boulder

7.6 - 41 Mc/s

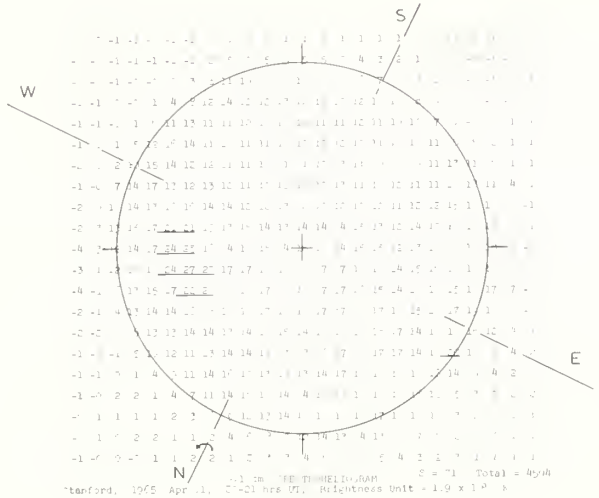
Date April 1965	Bursts			Frequency Range (Mc/s)	Date April 1965	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Intensity			Type	Time (U.T.)	Intensity	
1	no observ.	1644-2400			13	III	2234:45-2235:45	1+	21-41
5	no observ.	1950-2400			14	III	0051:15-0051:30	1	22-41
6	no observ.	1852-2400				no observ.	1400-2215		
9	III	2005-2006:15	2	29-41	15	no observ.	1400-1806		
	III	2304:15-2305:15	3	20-41	16	no observ.	1400-2400		
10	III	0013-0013:45	2	22-41	20	no observ.	1400-1652		
11	III	0001-0001:45	2	25-41	22	no observ.	1330-2352		
	III	1558-1558:30	2	22-41	26	no observ.	1406-1532,		
	III	1648:30-1649:30	2	23-41			1554-1740		
	III	1740:30-1741:30	2	20-41	27	no observ.	1556-1743		
	III	1741:45-1742	1	23-34		III	2023-2023:30	1	18-41
	III	1844:45-1845:30	2	22-41	28	no observ.	1300-2100		
	III	1846:15-1846:45	2	22-41	29	no observ.	1300-1543		
	III	1847-1847:30	2	22-41					
	III	2106:45-2107	1	21-35					
12	III	1428-1428:30	1-	24-34					
	III	1502:15-1502:30	1-	23-37					
	III	1924:45-1925:15	1-	23-41					
	III	2115:30-2115:45	1-	23-41					
13	no observ.	1615-1837							

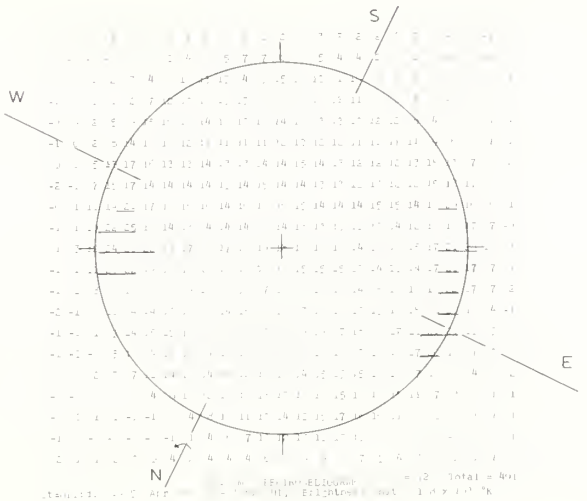
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

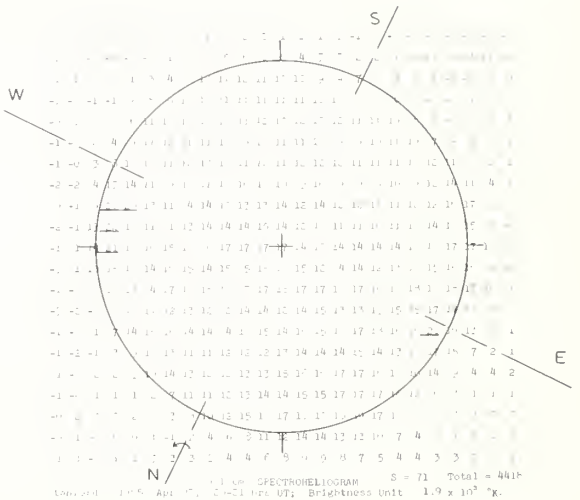
APRIL 1965

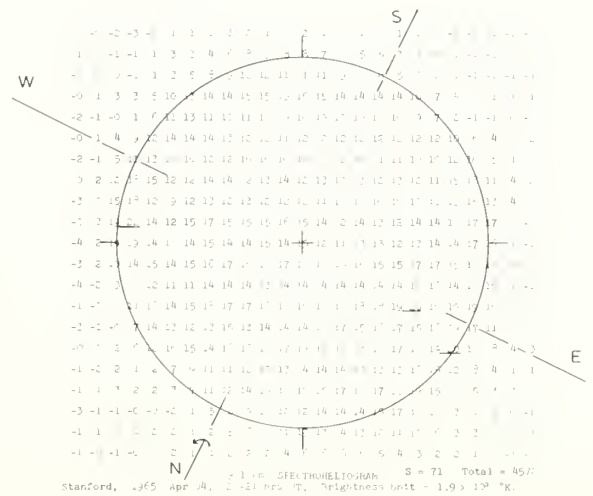
STANFORD

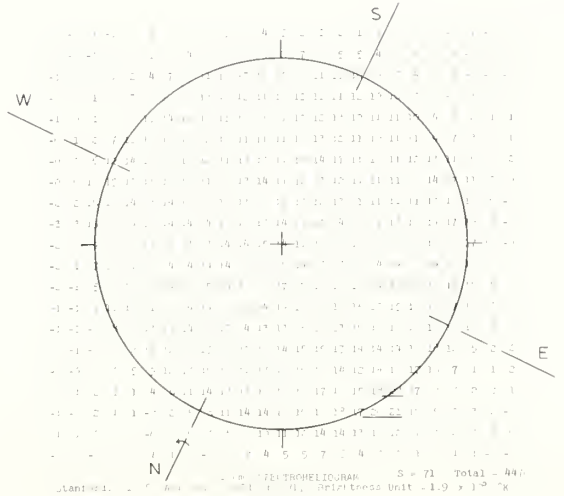
9.1 cm

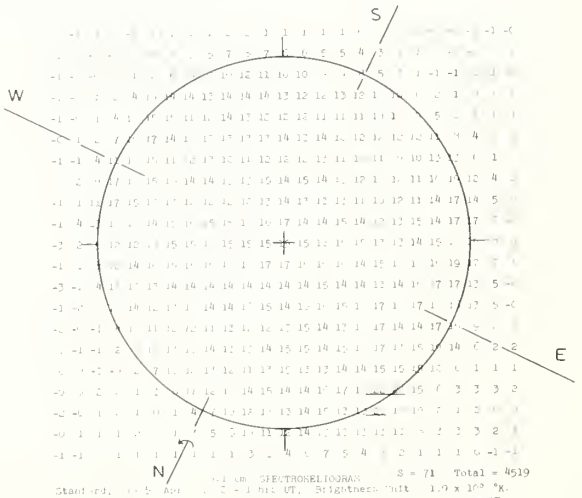






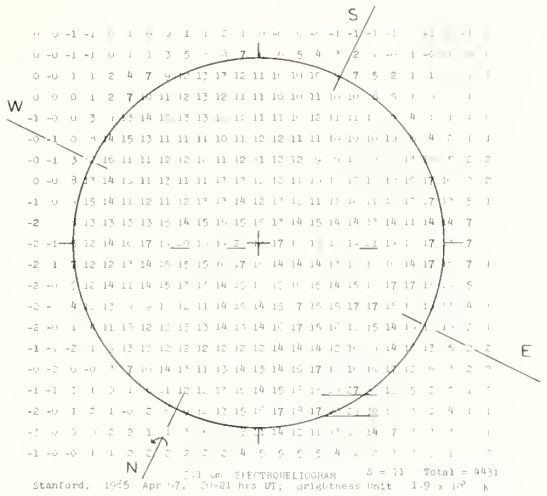


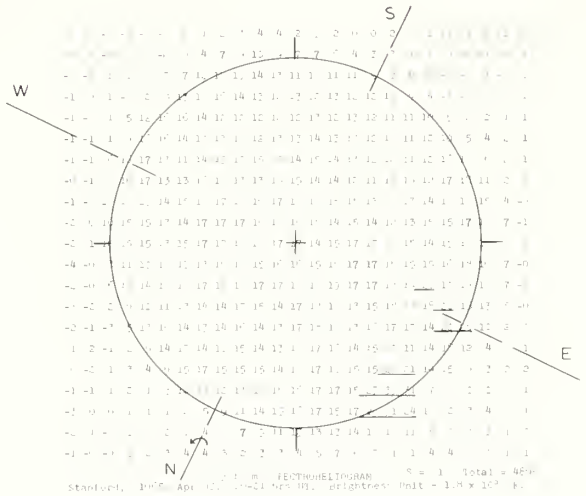


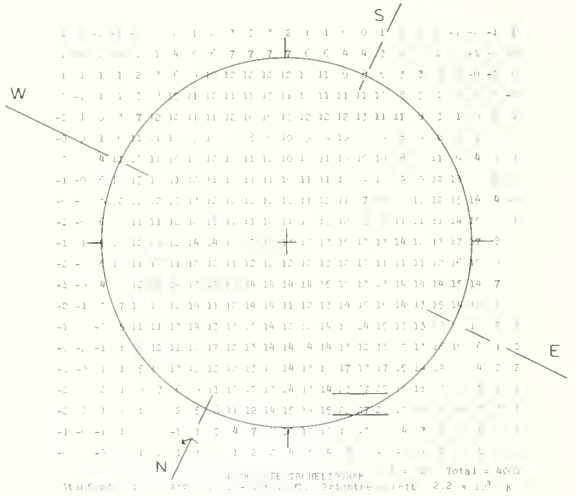


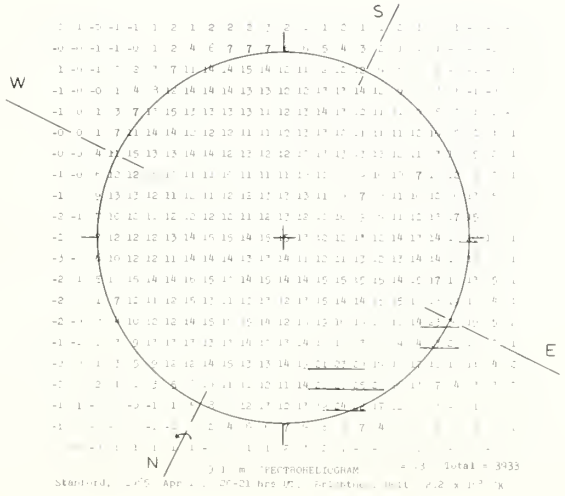
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

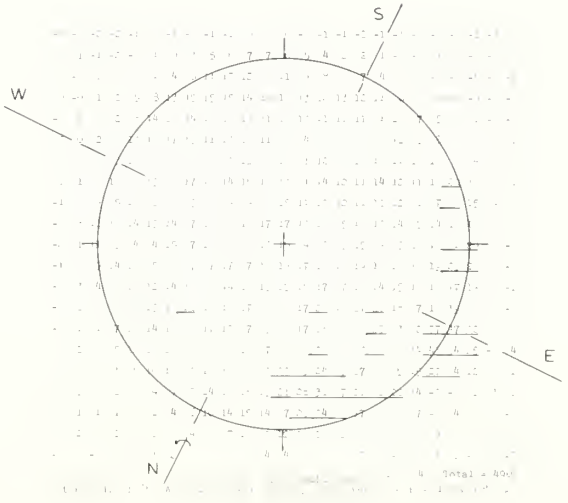
STANFORD APRIL 1965 **9.1 cm**

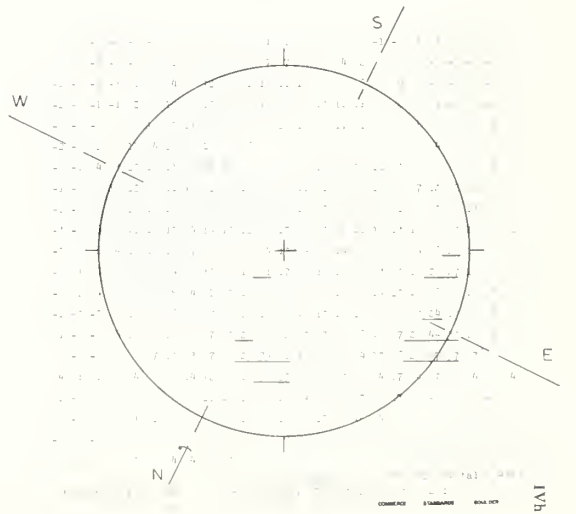










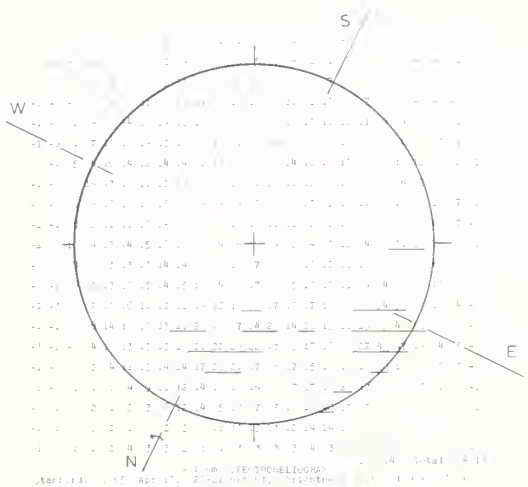


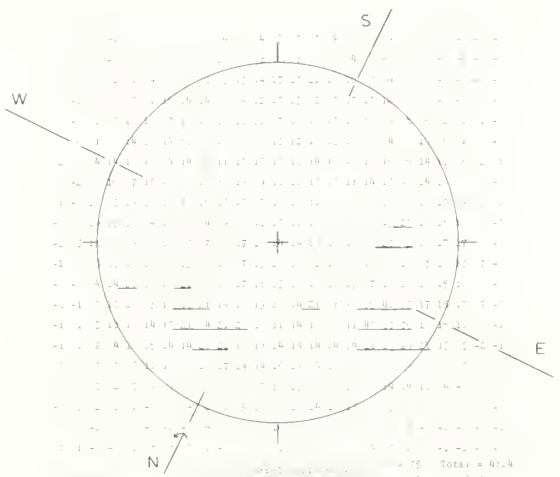
IVb

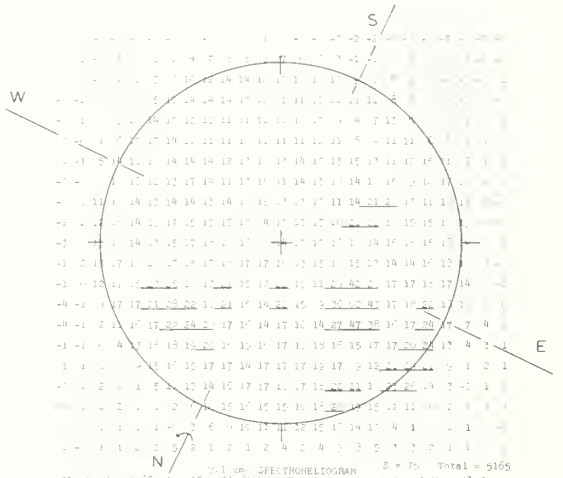
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

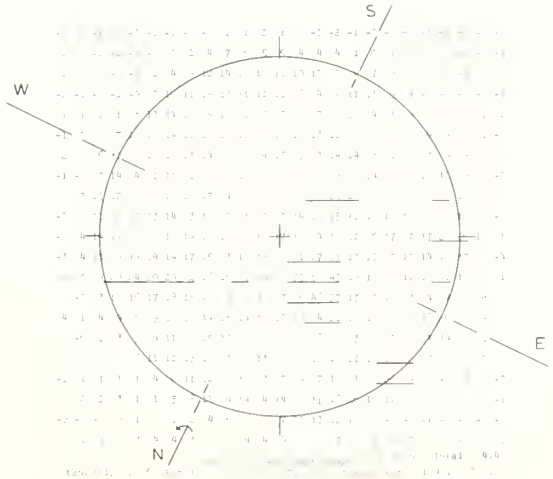
APRIL 1965

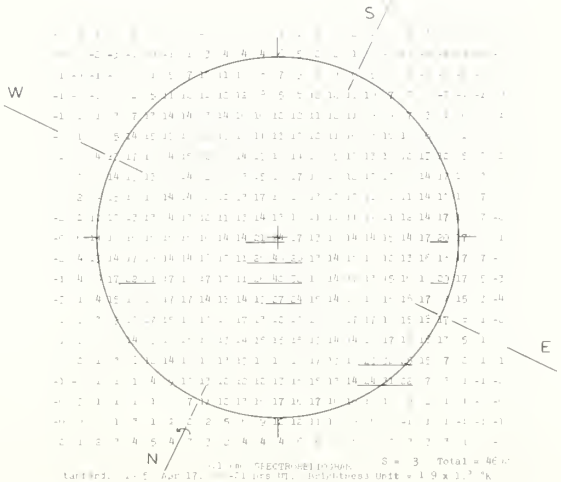
STANFORD **9.1 cm**

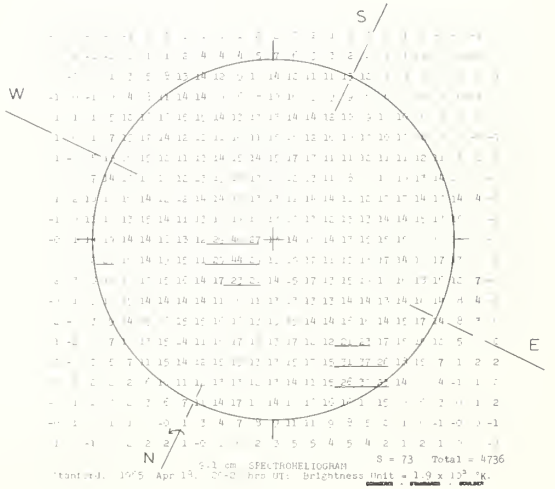








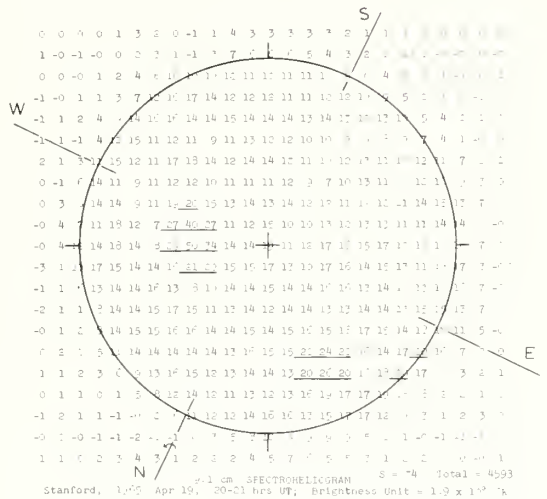


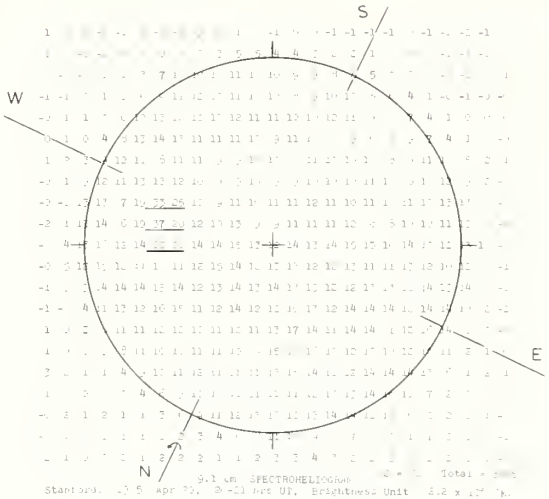


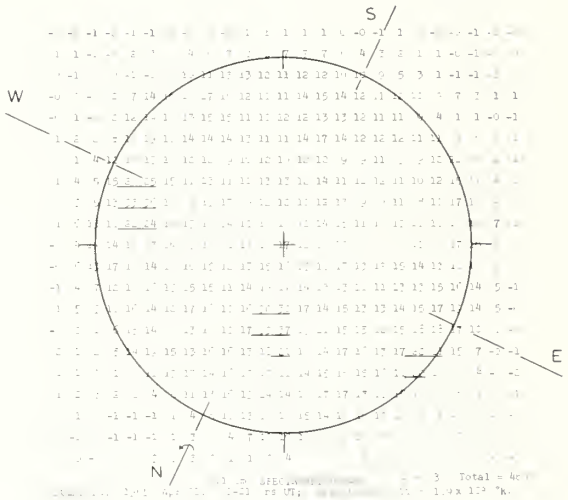
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

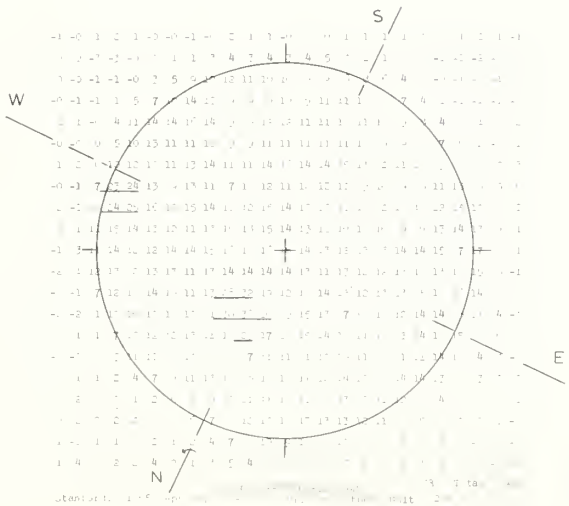
APRIL 1965

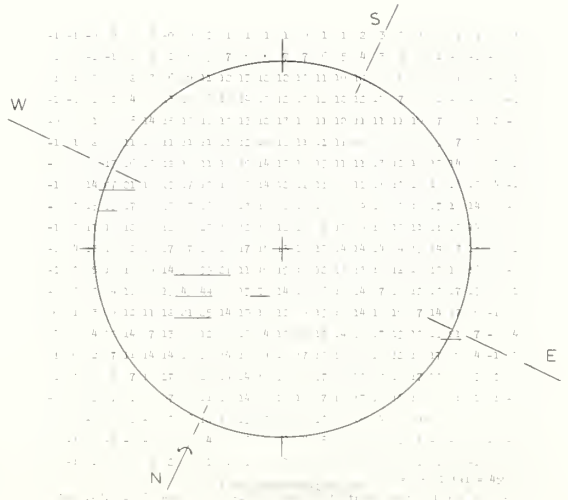
STANFORD **9.1 cm**

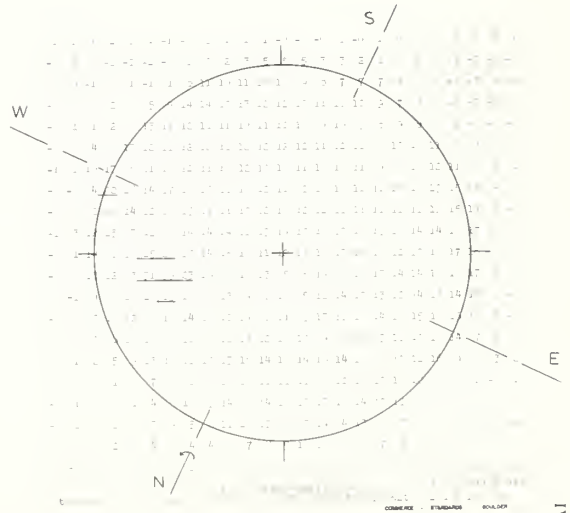










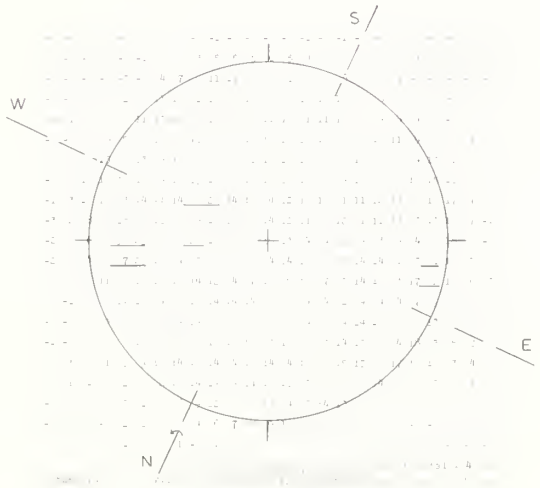


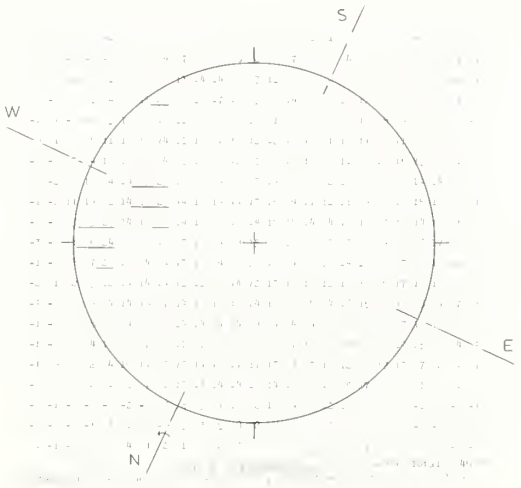
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

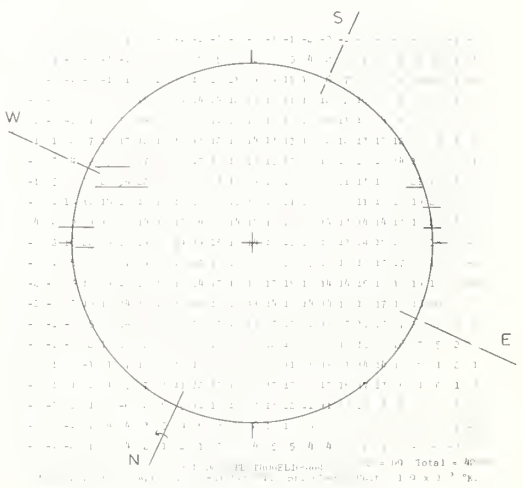
APRIL 1965

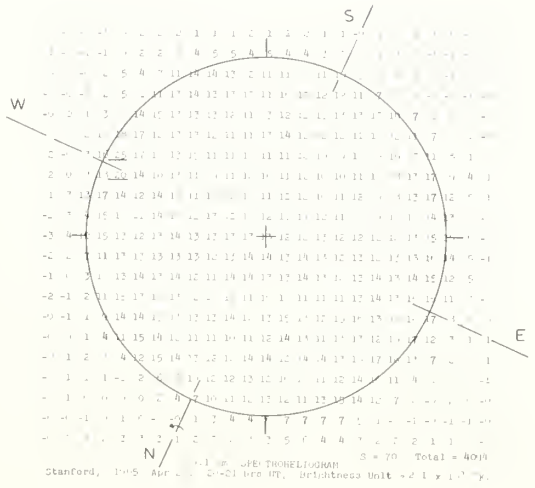
STANFORD

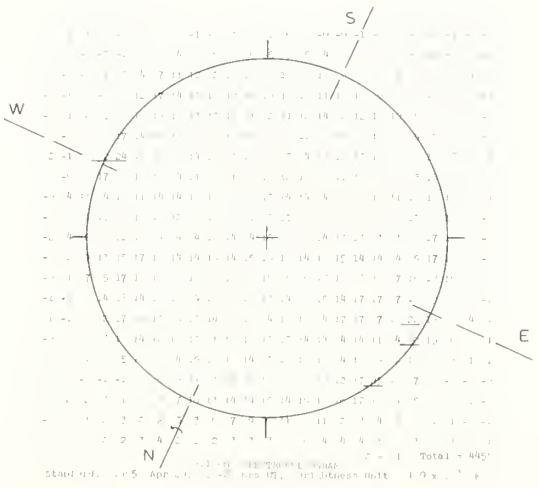
9.1 cm

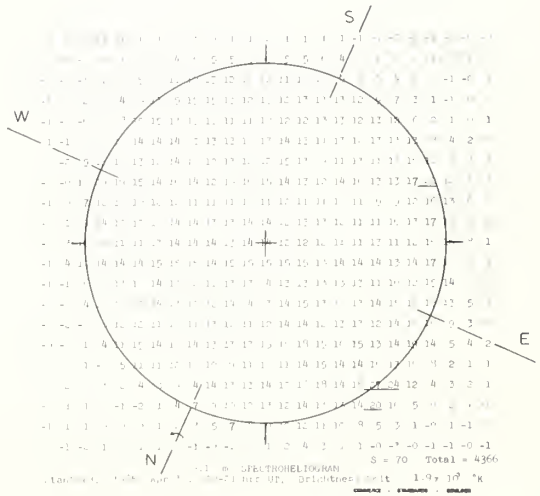












COSMIC RAY INDICES

(Neutron Monitors)

MARCH 1965

Mar. 1965	CHURCHILL DAILY AVERAGE COUNTS PER HOUR	CLIMAX DAILY AVERAGE COUNTS PER HOUR	DALLAS DAILY AVERAGE COUNTS PER HOUR
1	6536.5	3373.4	6639.6
2	6546.8	3382.1	6656.5
3	6507.4	3358.5	6620.9(21)
4	6476.4	3358.0	6642.3(22)
5	6504.5	3343.2	6615.8
6	6514.1	3343.3	6623.7
7	6540.2	3361.5	6636.5
8	6545.9	3358.7	6631.2(23)
9	6538.5	3350.2	6604.0
10	6555.5	3347.5 (12)	6602.9
11	6560.0	3358.2	6612.9
12	6567.6	3369.4	6614.8
13	6549.7	3362.0	6618.2
14	6563.6	3357.5	6609.9
15	6584.6	3363.8	6626.8
16	6607.3	3373.9	6618.2
17	6609.4	3382.5	6650.8
18	6622.9	3387.7	6667.2
19	6629.4	3389.9	6669.1
20	6640.0	3387.0	6667.9
21	6634.2	3374.7	6657.8
22	6635.5	3379.8	6646.8
23	6623.0	3393.4	6648.1
24	6608.7	3393.6	6659.4
25	6582.6	3393.4	6642.0
26	6593.1	3384.4	6642.3
27	6602.7(11)	3371.7	6637.8
28	6591.9(12)	3372.8	6631.5
29	6607.2 (5)	3373.6	6631.5
30	6598.8	3371.8	6638.8
31	6601.0	3379.1	6648.6

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( ) Number of hours for which data are available if less than 24 (or number of section hours if less than 40 for Climax).

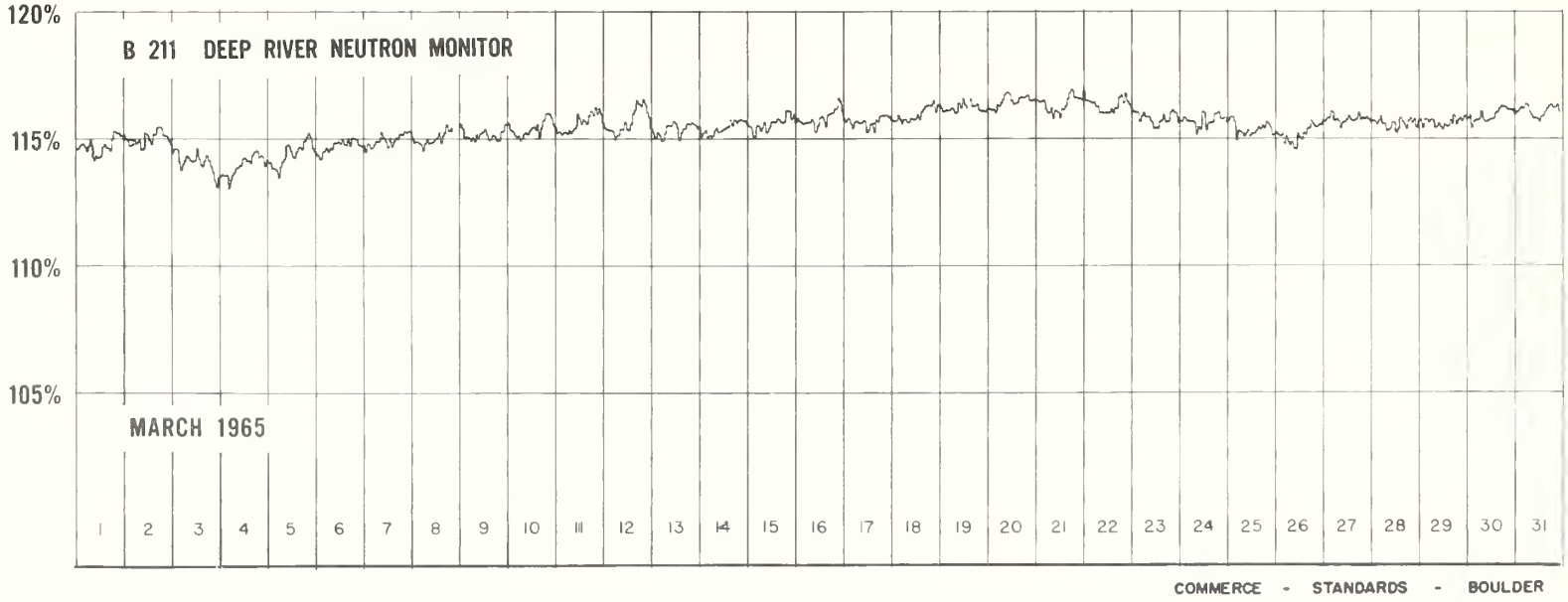
Churchill Super Neutron Monitor, Scaling Factor 120.

Climax IGC Station B305, Scaling Factor 128.

Dallas Super Neutron Monitor, Scaling Factor 120.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)



GEOMAGNETIC ACTIVITY INDICES

MARCH 1965

Mar. 1965	C	Values Kp — Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.6	1o 1+ 0+ 1+	2+ 3+ 2- 1+	13-	7	Five
2	0.6	0o 1+ 1+ 1+	2o 3+ 3+ 2o	15-	8	Quiet
3	1.4	3+ 4- 4o 3o	3+ 5- 5- 4o	31-	26	
4	0.8	4o 6o 4o 3+	2o 1+ 1o 1-	22+	21	8
5	0.5	0o 1- 2o 3+	2o 2- 2o 2-	13+	7	10
						11
6	0.3	1o 1o 0+ 1-	0+ 1o 2o 2+	9-	4	18
7	0.4	3o 2- 2- 2-	2+ 2o 1o 0+	14-	7	30
8	0.0	0+ 0+ 1- 1o	1- 0+ 0+ 0o	4-	2	
9	0.0	1o 1- 2- 1-	2- 1- 0+ 1+	8o	4	
10	0.0	1+ 0o 0o 0+	1o 0o 0+ 0o	3o	2	
11	0.1	2- 1+ 1o 1-	0+ 1- 1o 0+	7o	4	Five
12	0.4	0o 0+ 0+ 0o	2+ 1+ 2+ 2o	9-	4	Disturbed
13	0.7	2- 2o 2+ 3+	3+ 3- 1+ 0+	17o	10	
14	0.5	0+ 2o 1o 1o	2+ 2- 2o 3-	13o	6	3
15	0.7	3+ 2o 3+ 3-	1+ 3- 3+ 1o	20-	12	4
						23
16	0.3	1+ 2o 0+ 1o	0+ 0+ 0+ 2+	8o	4	25
17	0.3	1- 1o 1+ 1o	2- 2+ 2o 0+	10+	5	26
18	0.0	0+ 0+ 1- 0o	1- 0+ 0o 0o	2+	2	
19	0.2	0o 0+ 2- 2-	1+ 0+ 1- 2-	8-	4	
20	0.3	2o 0o 0+ 2o	2+ 1- 2- 1+	10+	5	
21	0.6	3- 1o 1o 2-	3- 2- 1+ 3+	15+	8	Ten
22	0.6	1- 0+ 1- 0+	1- 1+ 3o 4o	11o	8	Quiet
23	1.3	2o 4- 4+ 3o	3o 4+ 5o 4+	30-	25	
24	0.7	1+ 2- 3o 4o	4- 2o 2o 2+	20o	12	6
25	1.1	2o 3+ 5o 4+	2+ 2- 4o 2+	25o	20	8
						9
26	0.7	4+ 3o 4- 2+	2- 2- 2o 2+	21o	13	10
27	0.6	3- 2+ 3- 2-	1+ 2o 3o 1+	17o	9	11
28	0.2	1- 2o 3- 1+	1- 1+ 0+ 0+	9+	5	16
29	0.3	2o 2- 1+ 1-	2o 2- 2o 1o	12+	6	18
30	0.0	0o 0o 0+ 1-	1o 1o 1o 0+	4+	2	19
31	0.1	1+ 2o 1+ 2-	0+ 0+ 0+ 1o	8+	4	30
						31
Mean:	0.46			Mean:	8	

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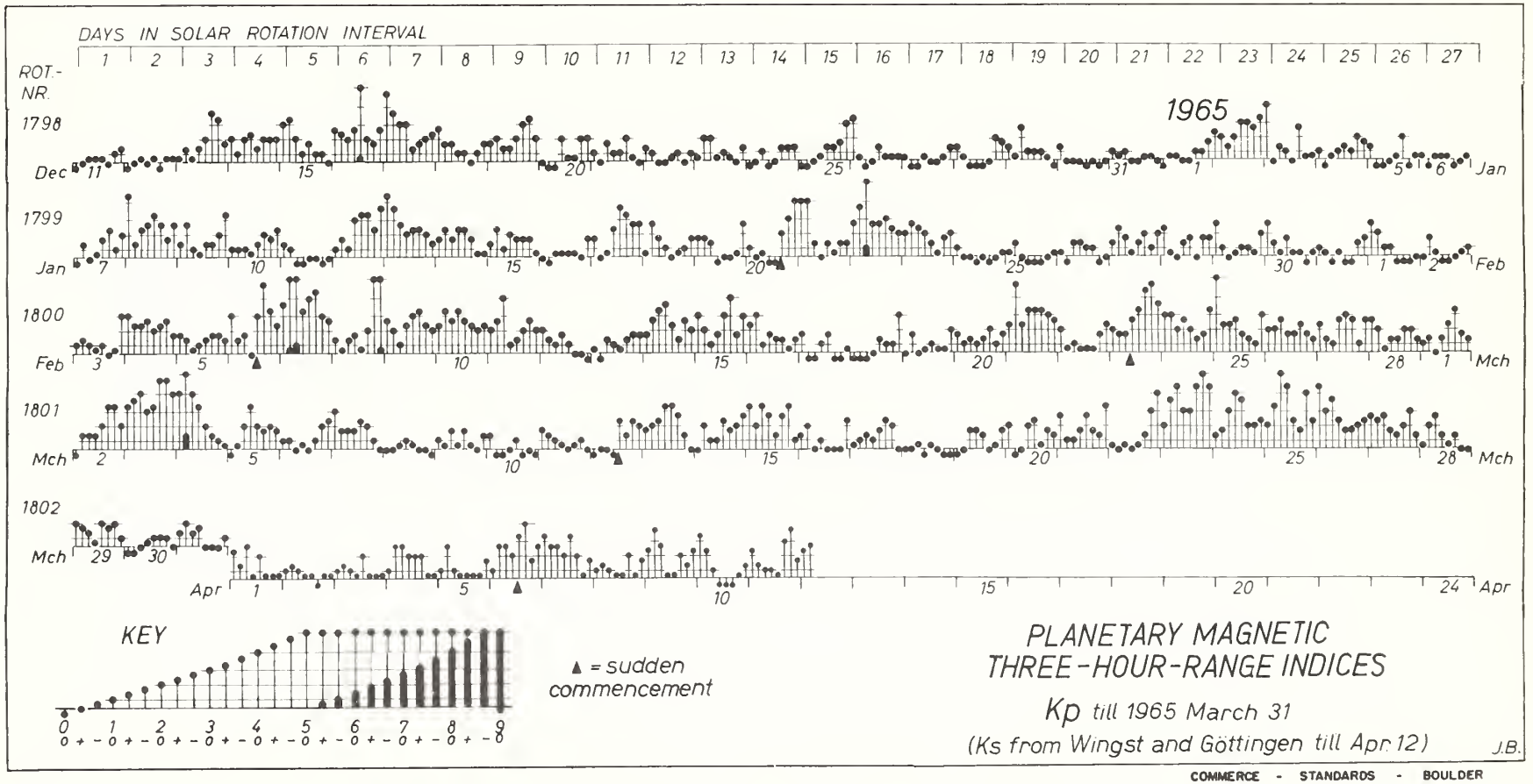

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NR.
1798
1965
Dec 11 15 20 25 31 1 5 6 Jan
1799
Jan 7 10 15 20 25 30 1 2 Feb
1800
Feb 3 5 10 15 20 25 28 1 Mch
1801
Mch 2 5 10 15 20 25 28 Mch
1802
Mch 29 30
Apr 1 5 10 15 20 24 Apr
KEY
0 1 2 3 4 5 6 7 8 9
0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + -
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp till 1965 March 31
(Ks from Wingst and Göttingen till Apr 12)
J.B.
COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC, NORTH PACIFIC — MARCH 1965

MAR 1965	WHOLE DAY INDICES			ADVANCE FORECASTS (Jc-REPORTS) FOR WHOLE DAY	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				NORTH ATLANTIC SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:				NORTH PACIFIC 8-HOURLY QUALITY FIGURES			GEOMAGNETIC INDICES A_{FR}		A_{FR}		A_{SI}		A_{SI}
	NORTH ATLANTIC	NORTH PACIFIC	AVERAGE HIGH LATITUDE		00 TO 06	06 TO 12	12 TO 18	18 TO 24	00	06	12	18	03 TO 11	11 TO 19	19 TO 03	HALF (1)	DAY (2)	OBSERVED	PREDICTED	HALF (1)	DAY (2)	
1	6+	6	6	7	6o	6-	7o	7o	6	6	7	7	6	6	7	1	1	3	3	1	1	4
2	6o	6	6	6	6o	5+	7-	7-	6	6	7	7	6	5	6	1	2	6	5	1	2	6
3	6o	6	6	6	6o	5o	7-	6+	5	4	7	7	6	5	6	3	3	16	7	3	3	13
4	6-	6	6	6	5o	4o	7-	6+	6	5	7	7	6	5	6	(4)	1	13	8	(5)	1	27
5	5+	5	5	5	5-	4o	7-	6+	6	5	7	7	5	5	6	2	1	5	11	2	1	6
6	6o	5	6	5	6-	5o	7-	7-	6	6	7	7	5	5	5	1	1	2	13	0	1	1
7	6+	6	6	5	6+	5o	7-	6+	6	5	7	6	6	6	6	2	2	7	11	2	2	6
8	6o	6	6	6	6-	5o	7-	7-	6	5	7	7	6	5	6	0	1	1	9	0	0	1
9	6+	6	6	6	6-	5+	7o	7-	6	5	7	7	6	5	6	1	1	3	7	1	1	3
10	7-	6	6	6	6+	6-	7o	7o	6	5	7	7	6	5	5	0	0	1	6	0	0	0
11	6+	6	6	6	6+	6-	7-	7-	6	6	7	7	6	5	6	1	0	3	5	2	0	3
12	6+	6	6	6	6+	6-	7-	7-	6	6	7	7	6	5	6	0	2	3	7	0	1	2
13	6+	7	7	5	6o	6-	7-	7-	6	5	7	6	7	5	7	2	2	8	11	2	2	8
14	6+	7	7	5	6+	6-	7-	7-	6	5	7	7	7	6	6	1	2	5	9	1	2	5
15	6+	6	6	6	6+	6-	7-	7-	6	6	7	7	6	6	6	3	2	13	5	3	2	11
16	6o	6	6	6	6-	5+	7-	7-	6	5	7	7	6	6	6	1	1	3	3	1	0	2
17	6o	6	6	7	6-	5o	7-	7-	6	5	7	7	6	5	6	1	1	4	3	1	1	4
18	6+	6	6	6	7-	5+	7-	7-	6	6	7	7	6	6	6	1	0	1	7	0	0	1
19	6+	6	6	5	6+	5+	7-	7-	6	6	7	7	6	6	6	1	1	3	9	1	1	2
20	6+	7	7	5	6+	6-	7-	7o	6	6	7	7	7	6	6	1	2	4	12	1	2	4
21	6+	7	7	5	7-	6-	7-	7-	6	6	7	7	7	6	7	1	2	6	10	1	2	7
22	7-	7	7	6	7-	6o	7-	7o	6	6	7	7	7	6	6	1	2	6	9	1	2	4
23	6+	6	6	6	7-	6-	7-	6+	6	5	7	6	7	5	6	(4)	3	23	7	(4)	3	23
24	6o	7	7	6	6o	5-	6+	7-	5	5	6	6	7	6	6	3	2	10	7	3	3	14
25	6o	6	6	6	6-	5+	7-	7-	6	5	6	7	6	6	6	3	2	14	9	(4)	2	23
26	6o	6	6	6	5+	5+	7-	7-	6	5	7	7	6	6	6	3	2	12	7	(4)	1	13
27	6+	6	6	6	6+	5+	7-	7o	6	5	7	7	6	5	6	3	2	8	5	2	2	7
28	6+	7	7	6	6+	6+	7-	7-	6	6	7	7	7	6	6	2	1	4	3	2	0	5
29	6+	7	7	6	6o	6o	7-	7-	6	6	7	7	8	6	6	2	1	5	7	1	1	3
30	6+	7	7	5	7-	6o	7-	7-	6	6	7	7	8	6	6	0	1	2	15	0	1	1
31	7-	7	7	5	7-	6-	7-	7-	6	6	7	7	7	6	6	2	0	3	15	2	0	5

SCORES					
QUIET PERIODS:	P	16	20	20	30	26
	S	9	11	9	1	5
	U	6	0	0	0	0
	F	0	0	0	0	0
DISTURBED PERIODS:	P	0	0	0	0	0
	S	0	0	2	0	0
	U	0	0	0	0	0
	F	0	0	0	0	0

COMMERCE - STANDARDS - BOULDER

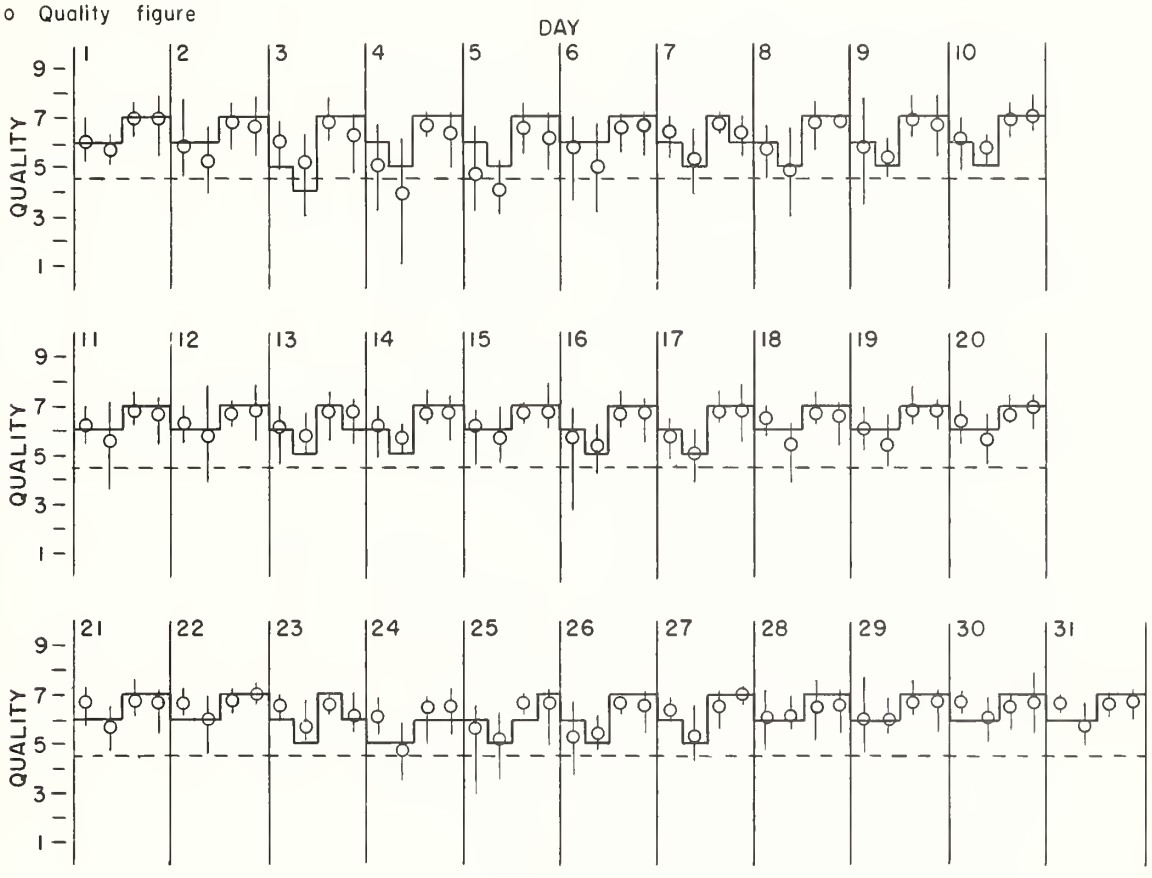
NOTES:

1. The advance Jc-forecasts are scored against the average high latitude whole day indices.
2. The observed indices for the North Pacific are low weight because of insufficient data available for their preparation.
3. The predicted A_{Fr} indices are issued each Wednesday for the coming seven days. The value for the first day of each prediction period is underscored.

NORTH ATLANTIC

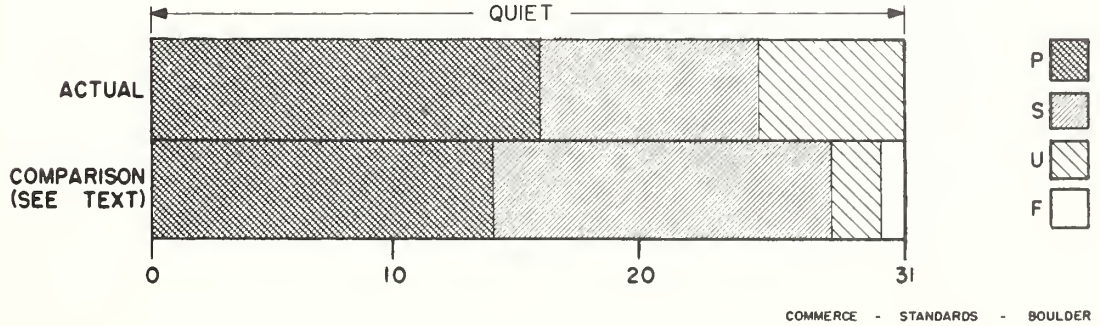
MARCH 1965

— Short-term forecast
o Quality figure
I Range of reports



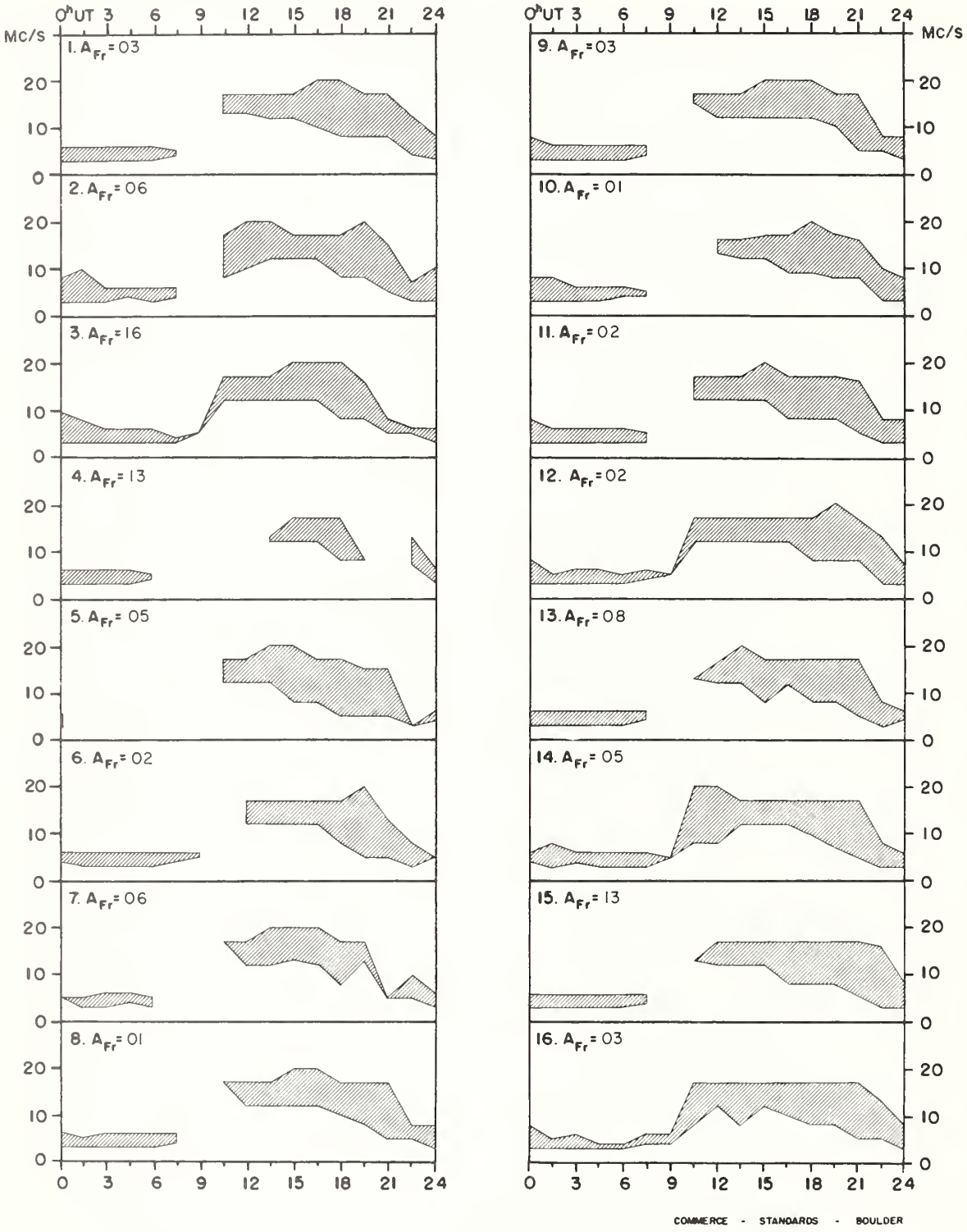
OUTCOME OF ADVANCE FORECASTS -- FINAL ESTIMATES (1 TO 7 DAYS AHEAD)

HIGH LATITUDE



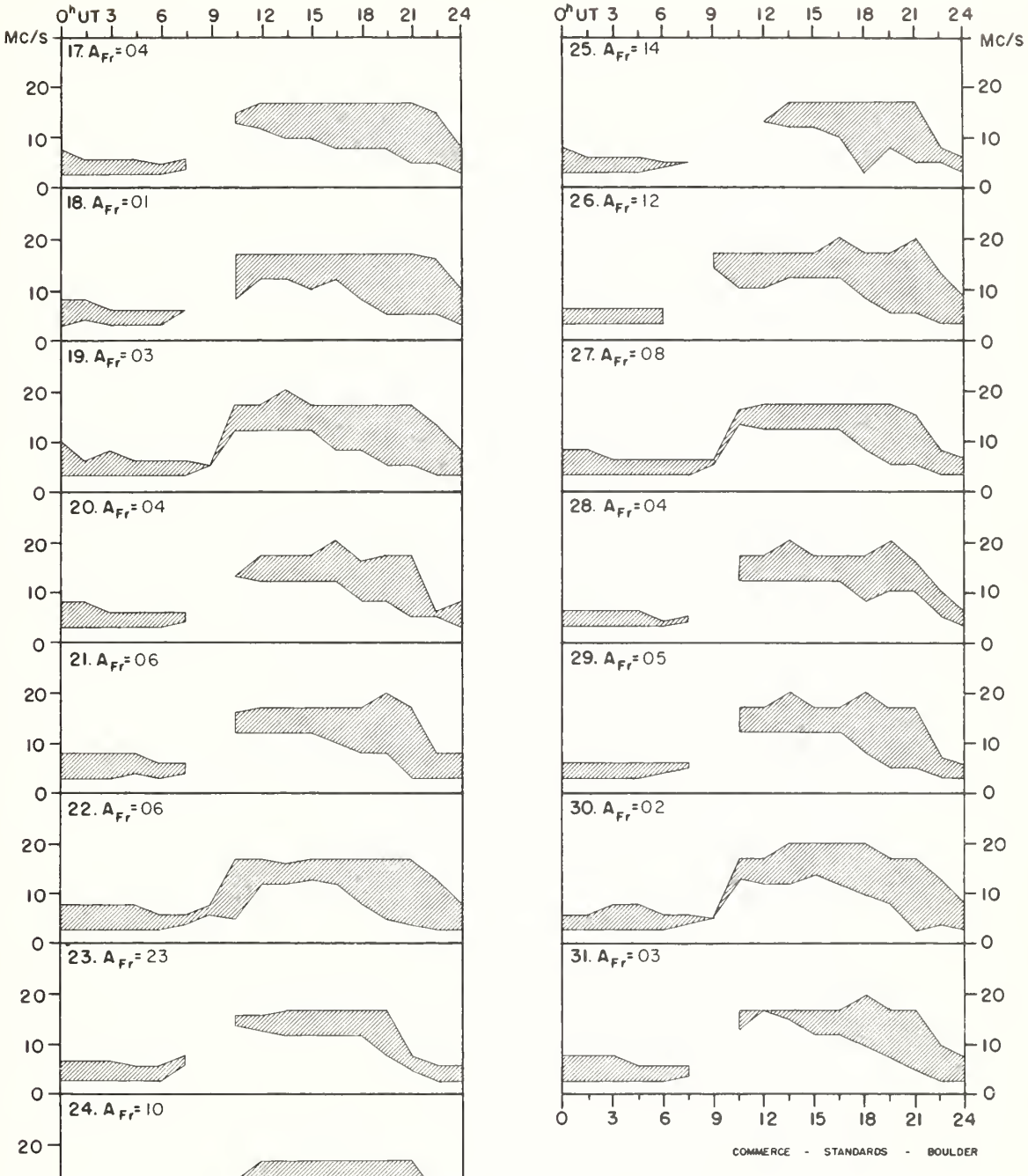
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

MARCH 1965



COMMERCE - STANDARDS - BOULDER

MARCH 1965



Adapted from Observations by Deutsches Bundespost

IQSY ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

APRIL 1965

Apr. 1965	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
1			185	Strat Warming *	Exists	North of Spitzbergen moderate
2			186	Strat Warming	Exists	North Pole
3			187	Strat Warming	Ends	Spring Circulation change in progress
6			188	Solar Calme	Exists	
11	1800	McMath, Solar Activity East Limb				
12			189	Solar Activity	Exists	East Limb Flares
13			190	Solar Activity	Exists	East Limb
14			191	Solar Activity	Exists	
16	0325	Sac Peak, Solar Flare 15/2325Z	192	Solar Activity	Exists	Flares
17			193	Solar Activity	Exists	Flares
18			194	Solar Activity	Exists	
19			195	Solar Activity Magnetic Storm	Exists Exists	
25	0224	Lockheed, Solar Flare 25/0031Z				

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* Strat = Stratospheric

Erratum: In CRPL-F 248 B, VIIIa, GEOALERT 182 on March 28, 1965 should have also listed "Strat Warming Exists". The printed elaboration explains the stratospheric warming.