PART B

SOLAR - GEOPHYSICAL DATA

ISSUED

NOVEMBER 1964

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

CRPL-F 243
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
30 Nov. 1964

SOLAR - GEOPHYSICAL DATA

CONTENTS

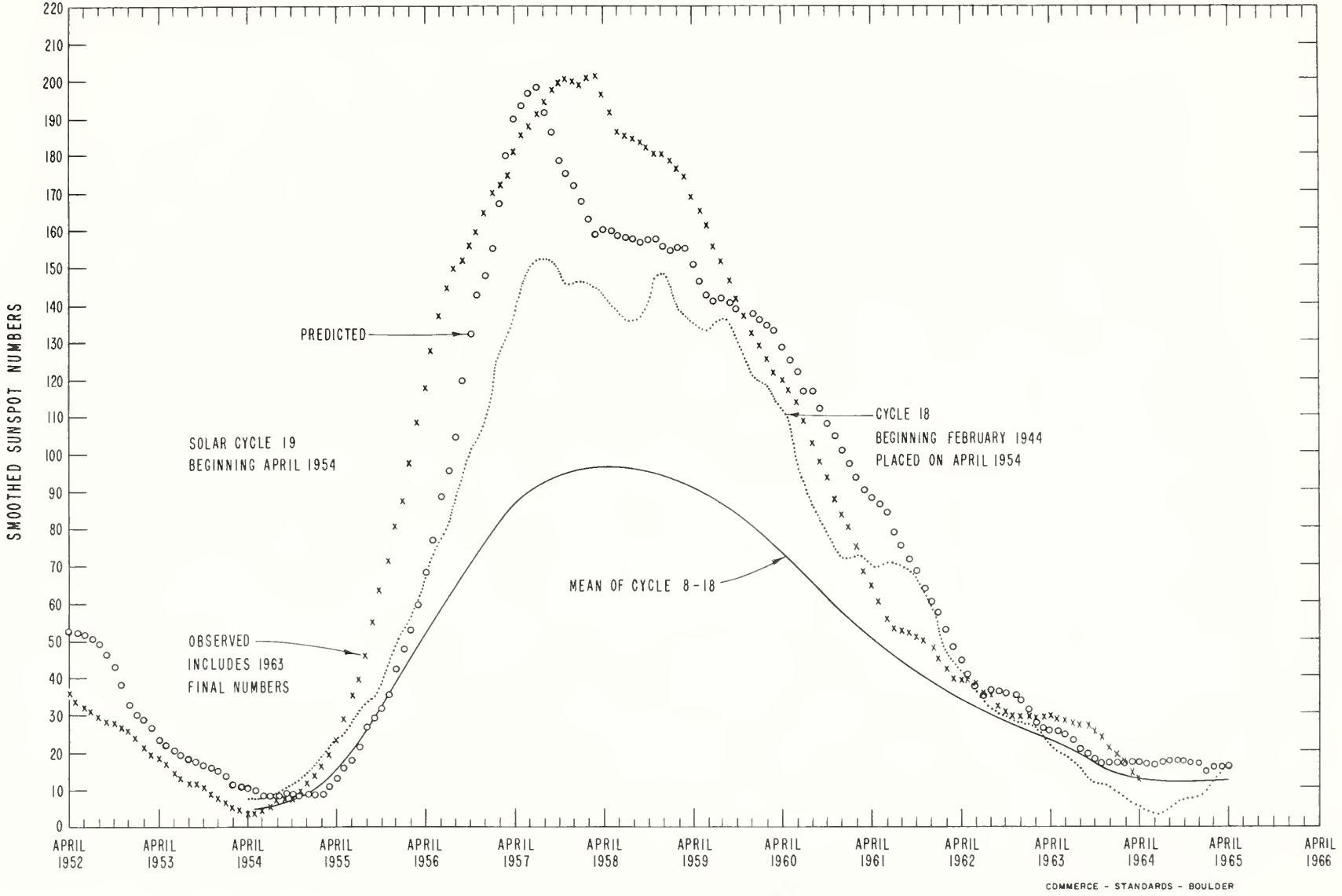
The descriptive text has been republished this month, November, 1964.

DAILY SOLAR INDICES

Sep. 1964	American Relative Sunspot Numbers R_A'
1	6
2	7
3	3
4	0
5	0
6	0
7	1
8	3
9	5
10	9
11	9
12	5
13	9
14	4
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	1
30	1
Mean:	2.1

Oct. 1964	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux S	Flux S_A
1	16	71.9	72.0
2	11	71.5	71.6
3	0	71.7	71.8
4	0	70.8	70.8
5	0	71.6	71.6
6	14	72.7	72.6
7	20	74.1	74.0
8	16	77.0	76.8
9	11	73.1	72.9
10	0	72.9	72.7
11	0	71.8	71.5
12	0	70.0	69.7
13	0	72.3	71.9
14	0	70.6	70.3
15	0	70.6	70.2
16	0	71.0	70.5
17	0	70.9	70.4
18	12	72.4	71.8
19	11	72.8	72.2
20	10	72.6	71.9
21	0	70.9	70.3
22	0	72.5	71.8
23	0	73.0	72.3
24	7	73.8	73.0
25	8	76.3	75.4
26	7	76.4	75.4
27	8	75.8	74.9
28	0	74.5	73.5
29	0	74.3	73.2
30	16	74.2	73.2
31	7	75.1	74.0
Mean:	5.6	72.9	72.4

COMMERCE - STANDARDS - BOULDER



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

OCTOBER 1964

Oct. 1964	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	
1.7	S05	7506 (2)	New	100	1	b — d	1	Sept.30	1			
2.1	N32	7510 (2)	New	200	1	b — d	1	Oct. 2	1			
3.8	N25	7512 (3)	New	300	2	b / ℓ	1	Oct. 4	>4	(180)	(3)	b — ℓ
4.3	S22	7507	New	(100)	(1.5)	b — d	1	Sept.30	2			
4.7	N38	7500 (4)	New	700	3	ℓ ∨ ℓ	1	Sept.27	14			
4.8	N27	7511 (2)	New	300	1.5	b — d	1	Oct. 2	1			
6.0	S12	7514	New	400	2.5	b — d	1	Oct. 7	4	(20)	(4)	b — d
6.0	N41	7503	7470	900	2.5	ℓ ⌒ ℓ	2	Sept.29	13			
6.8	N08	7513 (2)	New	(200)	(1)	b — d	1	Oct. 4	1			
7.4	S10	7509	New	600	2	ℓ \ ℓ	1	Oct. 1	≥11			
9.8	S01	7520 (2)	New	(100)	(2)	b — d	1	Oct. 13	1			
10.7	N02	7516 (2)	New	100	1	b — d	1	Oct. 10	1			
11.6	N02	7526	New	(200)	(2.5)	b — ℓ	1	Oct. 17	1			
12.6	N28	7515 (2)	New	(200)	(1)	b — d	1	Oct. 7	1			
12.8	N11	7527 (2)	New	(200)	(1.5)	b — d	1	Oct. 17	1			
13.6	N42	7522 (2)	New	(100)	(1)	b — d	1	Oct. 16	1			
14.5	S10	7517 (2)	New	(200)	(2)	b — d	1	Oct. 10	1			
14.9	S26	7523 (2)	New	(100)	(1)	b — d	1	Oct. 16	1			
15.0	N52	7518 (2)	New	(200)	(1.5)	ℓ — d	1	Oct. 10	1			
16.3	N09	7528 (2)	New	100	1.5	b — d	1	Oct. 17	1			
16.9	N29	7519	New	(100)	(2)	ℓ \ d	1	Oct. 11	4	122	4	b — d
18.0	S35	7524 (2)	New	100	1	b — d	1	Oct. 16	1			
18.3	N29	7531	New	400	3	b — ℓ	1	Oct. 18	7			
18.4	N36	7529	New	200	1.5	b — d	1	Oct. 17	3			
18.7	N08	7521 (5)	New	1000	2.5	ℓ — ℓ	1	≤Oct. 13	12			
19.8	N22	7525	New	(400)	(1)	b — d	1	Oct. 16	2			
21.0	N17	7534 (2)	New	(100)	(1.5)	b — d	1	Oct. 23	1			
21.9	S09	7536	New	(300)	(2)	b — d	1	Oct. 24	2			
22.6	N06	7542 (2)	New	(100)	(1.5)	b — d	1	Oct. 26	1			
22.8	N03	7530 (2)	New	(200)	(2)	ℓ — d	1	Oct. 17	1			
22.8	N56	7532 (2)	New	(100)	(1.5)	b — d	1	Oct. 18	1			
23.7	N08	7544	New	(300)	(1)	b \ ℓ	1	Oct. 27	2			
24.3	S07	7547 (2)	New	(100)	(1)	b — d	1	Oct. 28	1			
24.7	S10	7539 (2)	New	200	1.5	b — d	1	Oct. 25	1			
25.3	N23	7540 (2)	New	100	2	b — d	1	Oct. 25	1			
25.3	N28	7535 (2)	New	300	1	b — d	1	Oct. 23	1			
25.3	N13	7541 (2)	New	100	1	b — d	1	Oct. 25	1			
26.1	N15	7551	New	(200)	(2)	b — ℓ	1	Oct. 30	2			
26.4	S07	7533	7508	1300	2.5	ℓ — ℓ	2	<Oct. 21	>11	10	4	b — d
26.6	N02	7543 (2)	New	100	1	b — d	1	Oct. 26	1			
27.7	S17	7545 (2)	New	300	1.5	b — d	1	Oct. 27	1			
27.8	N21	7546	New	200	1	b ⌝\ d	1	Oct. 27	4			
27.8	S24	7555	New	(200)	(1.5)	b — d	1	Oct. 31	2			
28.9	S01	7537 (2)	New	(200)	(1)	b — d	1	Oct. 24	1			
29.4	N21	7552	New	300	2	b — ℓ	1	Oct. 30	5			
30.1	S12	7548	New	300	2	b ⌝\ d	1	Oct. 28	4	10	2	b — d
30.7	S28	7556 (2)	New	100	1.5	b — d	1	Oct. 31	1			
31.0	N26	7538	7512	2400	3	ℓ ⌝\ ℓ	1	Oct. 24	14	10	1	b — d
31.0	N33	7560	New	(200)	(3)	b — d	1	Nov. 3	2			
31.9	S20	7549 (2)	New	(100)	(1.5)	b — d	1	Oct. 28	1			

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(1) No calcium plage observations were secured at the McMath-Hulbert Observatory on October 8, 9, 12, 15, 20, 1964.
(2) These very small and ephemeral plages last for only one day.
(3) Plage 7512 is new, in the same position as ephemeral plage 7468.
(4) Plage 7500 is near the position of plage 7470 of the previous rotation.
(5) Plage 7521 is new, in the same position as ephemeral plage 7407.

OCTOBER 1964

Oct. 1964	TIME MEAS. UT	LAT.	MER DIST	TYPE	Oct. 1964	TIME MEAS. UT	LAT.	MER DIST	TYPE
1	2250	N23 S08	W68 W30	αf* βf	17	1710	N04	W76	αp
2	1810	S06	W43	βf	18	1630	N28	W04	β *
3	No Spots				19	1620	N29	W17	βp*
4	1935	N25	W14	β *	20	1740	N30	W28	αf*
5	1740	N24	W28	β	21	No Obs			
6	1730	N23	W43	βp*	22-23-24	No Spots			
7	2245	N24 S13	W59 W13	βγ* β *	25	1840	N24	E67	αp*
8	2340	N25	W71	βf*	26-27	No Spots			
9	No Obs				28-29	No Obs			
10-16	No Spots				30	No Spots			
					31	1915	N08	E17	βf

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* New Cycle.

Erratum: In CRPL-F 240 B for August 1964, the Mt. Wilson sunspot data published on page IIb, the longitude of the spot group for July 1 measured at 1450 U.T. should have been E37 instead of W37.

FINAL CORONAL LINE EMISSION INDICES

JULY 1964

CMP July 1964	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	6	8	19	26	14	16	12	18	19	22	x	x	25	26	x	x
2	26	29	x	x	16	18	x	x	x	x	12a	16a	x	x	13a	20a
3	14	18	9	11	10	11	10	12	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	x	x	13a	17a	x	x	13a	16a
5	x	x	9	14	x	x	7	11	6	8	5	10	17	20	2	10
6	26	29	x	x	14	15	x	x	2	11	14	16	9	17	12	14
7	29	39	12	17	12	13	10	16	4	7	15	20	16	19	18	27
8	23	50	12	26	4	9	13	19	12	14	9	12	22	27	10	15
9	27	58	20	39	11	13	9	12	14	22	11	17	8	11	11	15
10	43	60	23	32	13	19	19	23	22	26	19	26	64	78	15	16
11	x	x	x	x	x	x	x	x	11	13	14	17	14	20	11	12
12	x	x	6	9	x	x	6	8	x	x	13	14	x	x	13	18
13	20	25	0	0	6	8	0	0	16	19	x	x	29	37	x	x
14	14	16	8	11	13	15	7	8	6	8	12	15	6	8	16	20
15	30	34	x	x	18	20	x	x	14	15	8	13	15	16	8	10
16	x	x	10a	13a	x	x	8a	10a	10	12	2	5	11	13	4	7
17	x	x	x	x	x	x	x	x	14	17	2	5	23	43	6	16
18	2	6	19a	28a	5	6	14a	18a	3	6	15	20	7	8	23	25
19	13	16	11	16	11	14	10	13	13	19	15	18	13	17	19	28
20	5	8	15	26	8	9	13	14	12	13	2	8	15	17	0	0
21	13	17	14	17	6	7	11	14	15	17	6	10	15	22	0	0
22	19	26	6	11	15	16	9	12	5	6	15	22	6	8	13	17
23	7	14	8	10	1	6	14	17	12	14	15	19	14	17	10	14
24	31	40	9	10	19	23	9	10	x	x	x	x	x	x	x	x
25	12	31	11	14	3	6	9	12	7	8	8	11	12	14	8	10
26	x	x	13	15	x	x	17	24	12	14	13	16	3	3	9	12
27	29	33	x	x	11	13	x	x	6	8	4	10	9	13	5	9
28	8	10	15	28	5	7	19	20	7	10	4	7	14	20	16	35
29	16	17	6	8	15	17	8	10	11	16	17a	22a	6	8	17a	24a
30	17	20	3	4	12	14	2	3	9	27	12	16	31	65	20	30
31	24	43	5	8	17	19	0	0	11	12	11	18	30	65	16	25

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

FINAL CORONAL LINE EMISSION INDICES

AUGUST 1964

CMP Aug 1964	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	7	11	13	18	0	0	18	22	12	15	17	23	27	33	14	16
2	7	9	13	17	4	6	15	16	12	15	1	5	16	19	1	4
3	17	25	9	18	12	15	1	5	0	0	19	26	5	6	21	26
4	18	22	11	21	16	18	13	22	8	9	7	12	11	15	8	11
5	9	14	17	22	5	8	15	18	9	11	x	x	21	29	x	x
6	16	17	13	21	12	16	13	19	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	12	14	x	x	16	20	x	x
8	29	48	10	12	11	13	10	11	11	13	5	7	21	23	5	6
9	6	12	12	12	3	4	9	12	9	10	7	9	37	64	9	11
10	20	37	4	7	8	10	4	11	15	19	x	x	57	91	x	x
11	14	18	6	12	8	10	4	11	x	x	x	x	x	x	x	x
12	9	12	6a	12a	6	8	18a	26a	8	9	x	x	33	42	x	x
13	25	45	15	20	17	36	17	28	6	8	9	13	20	29	15	18
14	23	60	12	26	8	10	11	13	4	6	6	8	4	7	12	16
15	19	27	15	16	12	14	18	22	x	x	5	8	x	x	4	7
16	20	31	2	4	11	14	3	5	x	x	x	x	x	x	x	x
17	3	17	19	31	1	6	14	21	6	7	17	22	24	44	16	20
18	9	11	10	12	9	11	8	11	19	23	17	23	21	23	14	21
19	18	22	x	x	7	11	x	x	6	7	17	24	9	12	14	20
20	x	x	x	x	x	x	x	x	11	14	13	19	16	23	12	14
21	13	16	x	x	13	14	x	x	8	9	12	16	12	13	10	14
22	8	15	7	9	9	11	7	8	6	8	10	13	4	11	10	12
23	10	14	8	11	11	13	6	9	9	16	17	23	4	10	17	23
24	29	56	x	x	16	18	x	x	12	16	13	16	19	24	9	11
25	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
26	29	60	x	x	10	29	x	x	x	x	x	x	x	x	x	x
27	20	34	13	21	6	9	8	10	x	x	x	x	x	x	x	x
28	6	8	10	12	4	5	9	16	x	x	12	16	x	x	12	14
29	x	x	x	x	x	x	x	x	0	0	x	x	2	8	x	x
30	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
31	14	16	15	21	11	28	12	23	1	3	x	x	0	0	x	x

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

FINAL CORONAL LINE EMISSION INDICES

SEPTEMBER 1964

CMP Sep 1964	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	20	28	15	22	8	9	18	32	9	13	15	28	14	20	24	38
2	20	26	11	14	6	8	14	18	6	8	16	20	5	8	18	30
3	20	24	8	11	12	16	15	18	5	6	13	19	4	5	12	21
4	25	32	11	12	9	11	11	15	4	17	14a	28a	3	17	17a	26a
5	14	32	9	19	3	6	13	18	0	0	16	26	26	53	19	43
6	34	71	11	18	6	11	14	19	0	0	11	15	50	102	26	46
7	57	91	16	23	11	12	15	29	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	6	7	15	28	14	18	14	33
9	15a	28a	x	x	0a	0a	x	x	1	6	12	20	10	17	19	26
10	1a	6a	11a	15a	0a	0a	10a	12a	0	0	20	24	17	45	16	20
11	x	x	13	22	x	x	11	13	4	6	20	28	10	13	16	24
12	12	34	x	x	0	0	x	x	0	0	11	23	9	14	6	10
13	x	x	x	x	x	x	x	x	3	17	x	x	8	8	x	x
14	6	25	12	18	0	0	13	18	9	12	19	21	21	26	15	23
15	11	24	15	35	8	13	20	24	10	11	7	12	22	25	5	8
16	6	9	15	17	4	5	13	18	7	10	9	10	12	16	11	18
17	4	4	17	20	4	4	14	15	11	17	17	18	8	13	13	14
18	0	0	15a	24a	0	0	11a	18a	14	21	5	9	13	18	8	16
19	0	0	13	20	0	0	16	24	x	x	x	x	x	x	x	x
20	0	0	17	22	0	0	12	16	3	4	x	x	4	4	x	x
21	x	x	x	x	x	x	x	x	3	3	13	16	2	5	9	12
22	10	12	13	20	13	18	13	18	7	9	12	16	8	10	13	19
23	0	0	21	30	3	6	8	16	10	15	x	x	10	17	x	x
24	1	3	17	21	1	3	10	14	x	x	x	x	x	x	x	x
25	6	7	16	24	3	6	16	25	2a	11a	18	22	0a	0a	15	22
26	16	36	8	9	0	0	6	9	8a	43a	15	24	0a	0a	16	24
27	6	8	x	x	0	0	x	x	2	8	12	14	0	0	16	20
28	13	16	14	20	12	16	17	25	x	x	x	x	x	x	x	x
29	19	42	6	9	13	16	6	9	20	64	19	26	4	8	22	28
30	13	15	10	13	10	12	10	12	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

OCTOBER 1964

CMP Oct 1964	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	x	x	11	15	x	x	11	14	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	5	6	13	18	13	26	13	20
3	31	55	x	x	5	6	x	x	9	11	19	31	17	52	17	28
4	35	66	x	x	3	4	x	x	x	x	x	x	x	x	x	x
5	16	27	17	23	2	3	8	12	5	8	x	x	48	84	x	x
6	28	36	10	14	9	12	16	25	8	9	15	20	25	51	16	36
7	x	x	x	x	x	x	x	x	3	11	26	29	24	45	x	x
8	x	x	18	25	x	x	17	22	0	0	10	12	0	0	9	12
9	5a	17a	10	12	0a	0a	10	12	0a	0a	x	x	7a	14a	x	x
10	7a	11a	11	13	0a	0a	11	15	4a	4a	13	20	7a	9a	12	14
11	4	11	x	x	1	8	x	x	x	x	x	x	x	x	x	x
12	x	x	15	22	x	x	17	26	2	6	14	18	11	15	18	28
13	0	3	x	x	0	1	x	x	0	0	21	25	5	8	22	27
14	x	x	x	x	x	x	x	x	4	6	15	20	9	12	14	18
15	x	x	x	x	x	x	x	x	2	11	18	20	0	0	19	22
16	4	6	11	14	4	5	13	21	6	12	16	20	9	15	14	16
17	10	12	19	28	9	10	15	20	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	8	31	30	44	5	22	16	20
19	25	45	x	x	5	17	x	x	8	14	19	24	12	18	25	44
20	12	18	27	44	8	10	17	22	2	4	13	17	5	8	12	16
21	7	14	20	26	2	6	30	38	x	x	x	x	x	x	x	x
22	0	0	16	19	0	0	12	15	x	x	x	x	x	x	x	x
23	0	0	x	x	0	0	x	x	7	8	11	16	6	7	8	10
24	6	8	19	27	4	7	19	26	x	x	x	x	x	x	x	x
25	x	x	x	x	x	x	x	x	18	48	x	x	10	42	x	x
26	13	18	22	32	23	60	23	32	14	31	13	19	7	10	14	22
27	0	0	19	25	21	34	23	30	x	x	x	x	x	x	x	x
28	9	12	17	20	7	9	14	16	x	x	x	x	x	x	x	x
29	28	73	24	40	4	11	19	20	x	x	x	x	x	x	x	x
30	31	63	29	64	6	7	16	20	x	x	18	22	x	x	20	37
31	x	x	x	x	x	x	x	x	3	8	19	21	19	36	18	30

COMMERCE - STANDARDS - BOULDER

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

SOLAR FLARES

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OBSERVATORY	DATE OCT 1964	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 %	PROVISIONAL IONOSPHERIC EFFECT
CATANIA	01	0800 E	0830 D	0805	S07	W21			1-							
ARCETRI	01	0815 E	0845 D		S07	W23			1-	3	0840	.72	.81			
	01	1200	1205	NO FLARE	PATROL											
	01	1215	1235	NO FLARE	PATROL											
	01	1245	1300	NO FLARE	PATROL											
	02	0340	0350	NO FLARE	PATROL											
	02	1215	1240	NO FLARE	PATROL											
	02	1255	1310	NO FLARE	PATROL											
	02	1355	1415	NO FLARE	PATROL											
	02	1425	1430	NO FLARE	PATROL											
	02	1445	1500	NO FLARE	PATROL											
	02	1515	1520	NO FLARE	PATROL											
	03	0130	0140	NO FLARE	PATROL											
	03	0255	0300	NO FLARE	PATROL											
	03	0315	0405	NO FLARE	PATROL											
	03	0415	0420	NO FLARE	PATROL											
	03	0445	0500	NO FLARE	PATROL											
	03	1200	1210	NO FLARE	PATROL											
	03	1220	1225	NO FLARE	PATROL											
LOCKHEED	03	1822	1830	1825	N06	E44			1-	C	1825	.20	.20		10	
	04	0140	0150	NO FLARE	PATROL											
	04	0345	0355	NO FLARE	PATROL											
	04	0450	0510	NO FLARE	PATROL											
CAPRI-S	04	0920 E	0930		S11	W62			1-	3	0926	.80	1.60			
	04	1035	1135	NO FLARE	PATROL											
	04	1140	1205	NO FLARE	PATROL											
	04	1245	1310	NO FLARE	PATROL											
CAPRI-S	04	1317 E	1327		S11	W62			1-	3	1319	.80	1.60			
CAPRI-S	04	1420 E	1433		S11	W63			1-	3	1422	.90	1.80			
HALEAKALA	04	1758 E	1813 D	1802	S09	W69			1-	2	1802	.10	.20			
MCMATH	04	1835	1855	1840	S08	W72	7508		1-	C	1840	.40				
HALEAKALA	04	1838 E	1848	1839	S08	W70			1-	2	1839	.50	1.00			
HUANCAYO	04	1843 E	1852		S08	W74			1-	P	1844	.20				
LOCKHEED	04	2012	2041	2030	N24	W58			1-	C	2030	.20	.30		10	
HALEAKALA	04	2206 E	2211	2207	S08	W70			1-	2	2207	.10	.20			
HALEAKALA	04	2351 E	0031	2358	S08	W71			1-	2	2358	.30	.60			
HALEAKALA	05	0147	0159	0152	S08	W80			1-	2	0152	.60	1.60			
	05	0305	0445	NO FLARE	PATROL											
	05	0500	0505	NO FLARE	PATROL											
	05	0525	0530	NO FLARE	PATROL											
	05	0540	0550	NO FLARE	PATROL											
ARCETRI	05	0940 E	1000 D		N23	W24			1-	3	0950	.49	.55			
	05	1200	1205	NO FLARE	PATROL											
	05	1215	1230	NO FLARE	PATROL											
CAPRI-S	05	1440 E	1453		S10	W85			1-	3	1445	.30				
CAPRI-S	05	1454	1510 D		S10	W85			1-	3	1500	.80				
HALEAKALA	05	1801 E	1805	1801	S10	W90			□	3	1801	.20				

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OBSERVATORY	DATE OCT 1964	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 Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
HALEAKALA	05	1849	1919 D	1853	S10	W90			□	3	1853	.20				
HALEAKALA	05	2010	2029	2014	S10	W90			□	4	2014	.20				
HALEAKALA	05	2105	2128	2116	S11	W90			□	2	2116	.40				
HALEAKALA	06	0102	0143	0125	N24	W33			1-	3	0125	.30	.30			
HALEAKALA	06	0119	0134	0125	N23	W35			1-	3	0125	.20	.20			
HALEAKALA	06	0119	0137 D	0121	N26	W31			1-	3	0121	.60	.70			
HALEAKALA	06	0200	0214	0202	S09	W90			□	4	0202	.20				
HALEAKALA	06	0210	0220	0213	N23	W33			1-	3	0213	.20	.20			
HALEAKALA	06	0228	0254	0231	N24	W33			1-	4	0231	.20	.20			
	06	0555	0630	NO FLARE	PATROL											
	06	0635	0700	NO FLARE	PATROL											
ARCETRI	06	0845 E	0915 D		N23	W39	7512	30 D	1	3	0900	1.51	2.00			
BUCHAREST	06	0910 E	0921 D		N25	W37			1-	3			.70			
ARCETRI	06	0945 E	□		N23	W39			1-	3	0945	.85	1.13			
	06	1005	1015	NO FLARE	PATROL											
	06	1025	1030	NO FLARE	PATROL											
	06	1045	1055	NO FLARE	PATROL											
HALEAKALA	06	1913	1934	1923	N23	W45			1-	3	1923	.20	.20			
HALEAKALA	06	1950	2035	2020	N23	W43			1-	4	2020	.30	.40			
HALEAKALA	06	2040	2115	2059	N24	W44			1-	4	2059	.70	.80			
LOCKHEED	06	2122	2140	2128	N26	W46			1-	C	2128	.30	.30		10	
HALEAKALA	06	2128	2134	2130	N21	W45			1-	3	2130	.20	.20			
LOCKHEED	06	2231	2252	2239	N26	W46			1-	C	2239	.50	.50		10	
SAC PEAK	06	2233	2253	2237	N23	W47			1-	C		1.67	2.04		17	
HALEAKALA	07	0038	0048	0039	N22	W47			1-	3	0039	.30	.40			
HALEAKALA	07	0119	0211	0138	N26	W45			1-	2	0138	.80	1.00			
MANILA	07	0130 E	0150		N24	W48			1-	2	0130	.25	.32			
	07	0330	0405	NO FLARE	PATROL											
BUCHAREST	07	0720 E	0726 D		N25	W50			1-	2			.90			
BUCHAREST	07	0833 E	0842 D		N25	W51			1-	2			.50			
BUCHAREST	07	0857 E	0905 D		N25	W51			1-	2			.90			
ARCETRI	07	0940 E	0950 D		N22	W52			1-	3	0940	.72	1.16			
	07	1210	1235	NO FLARE	PATROL											
CAPRI-S	07	1232 E	1338		N24	W51			1-	2	1312	.30	.60			
SAC PEAK	07	1317 E	1343	1330	N26	W51			1-	C		.26	.33		18	
CAPRI-S	07	1342 E	1404		S12	W23			1-	2	1400	.30	.30			
HUANCAYO	07	1350 E	1410		S11	W22			1-	P	1400	.20	.20			
CAPRI-S	07	1411 E	1416		S12	W23			1-	2	1414	.40	.40			
SAC PEAK	07	1411	1418	1412	S12	W22			1-	C		.56	.58		19	
MCMATH	07	1412	1418	1414	S12	W22	7514		1-	C	1414	.30	.30			
HUANCAYO	07	1450	1550	1510	N26	W53			1-	P	1510	1.00	1.70			
	07	1455	1505	NO FLARE	PATROL											
CAPRI-S	07	1457	1548 D		S12	W24			1-	3	1508	.40	.40			
SAC PEAK	07	1507 E	1600	1533	S12	W23			1-	C		.42	.43		21	
LOCKHEED	07	1515 E	1555	1530	S11	W24			1-	C	1530	.20	.20		10	
MCMATH	07	1523 E	1610	1526	S12	W24	7514		1-	C	1526	.20	.20			
LOCKHEED	07	1650	1720	1657	S11	W24			1-	C	1657	.40	.40		10	
LOCKHEED	07	1715	1755	1730	N25	W56			1-	C	1730	.30	.50		10	
LOCKHEED	07	1843	1910	1855	N25	W56			1-	C	1855	.40	.60		10	
HALEAKALA	07	1849	1905	1857	N24	W57			1-	4	1857	.20	.30			

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HALEAKALA	07	1949	2034		N19	W56			1-	4	1949	.20	.30			
LOCKHEED	07	2004	2019	2009	N07	W80			1-	C	2009	.20	.50		10	
HALEAKALA	07	2137	2142 D		N21	W63			1-	4	2142	.20	.30			
LOCKHEED	08	0011	0024	0016	N23	W47			1-	C	0016	.10	.10		10	
	08	0045	0215	NO FLARE	PATROL											
	08	0310	0605	NO FLARE	PATROL											
BUCHAREST	08	0845 E	0855 D		N26	W60			1-	2			1.10			
BUCHAREST	08	0928 E	0940 D		N26	W60			1-	2			1.60			
CATANIA	08	0930 E	0945 D	0935	N25	W65			1-							
	08	1200	1310	NO FLARE	PATROL											
HUANCAYO	08	1420 E	1510	1450	N25	W68			1-	P	1450	.50	1.30			
LOCKHEED	08	1717	1755	1722	N26	W63			1-	C	1722	.50	.90		10	
LOCKHEED	08			1736												
LOCKHEED	08	1835	1905	1848	N25	W70			1-	C	1848	.60	1.10		10	
LOCKHEED	08	1919	1940	1924	N25	W70			1-	C	1924	.60	1.10		10	
HUANCAYO	08	1940	2010		N25	W69			1-	P	1950	.30	.80			
LOCKHEED	08	1943	2025	1952	N25	W70			1-	C	1952	.60	1.10		10	
LOCKHEED	08	2057	2120	2107	N25	W72			1-	C	2107	.50	1.00		10	
LOCKHEED	08	2135	2155	2142	N25	W72			1-	C	2142	.40	.80		10	
LOCKHEED	08	2250	2317	2304	N25	W72			1-	C	2304	.60	1.20		10	
	09	0145	0230	NO FLARE	PATROL											
	09	0235	0245	NO FLARE	PATROL											
	09	0335	0340	NO FLARE	PATROL											
	09	0410	0415	NO FLARE	PATROL											
	09	0440	0535	NO FLARE	PATROL											
	09	0545	0555	NO FLARE	PATROL											
HTE-PROVEN	09	0924	0941 D		N25	W80			1-			.30				
	09	1215	1300	NO FLARE	PATROL											
LOCKHEED	09	1823	1843	1831	N25	W76			1-	C	1831	.30	.70		10	
LOCKHEED	09	1917	1931	1925	N25	W82			1-	C	1925	.30	.80		10	
LOCKHEED	09	2005	2012	2008	N25	W85			1-	C	2008	.30	.90		10	
LOCKHEED	09	2043	2107	2050	N30	W80			1-	C	2050	.20	.50		10	
	09	2330	2400	NO FLARE	PATROL											
	10	0000	0005	NO FLARE	PATROL											
	10	0030	0120	NO FLARE	PATROL											
	10	0210	0630	NO FLARE	PATROL											
BUCHAREST	10	0834 E	0910 D		N26	W87			1-	3						
	10	1200	1205	NO FLARE	PATROL											
	10	1210	1300	NO FLARE	PATROL											
LOCKHEED	10	1845	1920	1850	N25	W90			1-	C	1850	.30	1.50		10	
LOCKHEED	10	1852	1858	1856	N45	W72			1-	C	1856	.30	.70		10	
	11	0100	0105	NO FLARE	PATROL											
	11	0215	0240	NO FLARE	PATROL											
	11	0330	0345	NO FLARE	PATROL											
	11	0430	0700	NO FLARE	PATROL											
	11	1100	1200	NO FLARE	PATROL											
	11	1230	1305	NO FLARE	PATROL											

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LOCKHEED	11	1715	1738	1730	N09	E90			1-	C	1730	.30	1.50		10	
LOCKHEED	11	2119	2136	2126	N11	E08			1-	C	2126	.10	.10		10	
SAC PEAK	11	2120	2136	2125	N12	E08			1-	C		.35	.35		17	
SAC PEAK	11			2132												
	12	1000	1315	NO FLARE	PATROL											
LOCKHEED	12	2325	2355 D	2335	N00	E64			1-	C	2335	.30	.50		10	
	13	0000	0030	NO FLARE	PATROL											
	13	0530	0635	NO FLARE	PATROL											
	13	1130	1320	NO FLARE	PATROL											
MCMATH	13	1405	1416		N00	W50	7520		1-	C	1410	.30	.50			
	13	2030	2035	NO FLARE	PATROL											
	14	0535	0540	NO FLARE	PATROL											
	14	0600	0605	NO FLARE	PATROL											
	14	0610	0630	NO FLARE	PATROL											
	14	0640	0650	NO FLARE	PATROL											
	14	1155	1225	NO FLARE	PATROL											
	15	0225	0400	NO FLARE	PATROL											
	15	0600	0620	NO FLARE	PATROL											
	15	0630	0700	NO FLARE	PATROL											
	15	1200	1205	NO FLARE	PATROL											
	15	1210	1225	NO FLARE	PATROL											
	15	1235	1315	NO FLARE	PATROL											
SAC PEAK	15	1847	1908	1850	N08	E36			1-	C		.70	.74		17	
MCMATH	15	1848	1855	1850	N09	E35	7521		1-	C	1850	.40	.50			
	16	0000	0005	NO FLARE	PATROL											
	16	0305	0530	NO FLARE	PATROL											
	16	1210	1250	NO FLARE	PATROL											
	16	1305	1310	NO FLARE	PATROL											
	17	0330	0405	NO FLARE	PATROL											
	17	0500	0530	NO FLARE	PATROL											
	17	0535	0610	NO FLARE	PATROL											
	17	0630	0635	NO FLARE	PATROL											
	17	1150	1225	NO FLARE	PATROL											
	18	0650	0755	NO FLARE	PATROL											
ARCETRI	18	1000 E	□		N30	E00			1-	3	1000	.82	.90			
	18	1100	1300	NO FLARE	PATROL											
	18	1500	1555	NO FLARE	PATROL											
	19	0605	0620	NO FLARE	PATROL											
	19	0650	0655	NO FLARE	PATROL											
LOCKHEED	19	1715	1745	1727	S11	E52			1-	C	1727	.30	.40		10	
LOCKHEED	19	1800	1845	1816	S07	W60			1-	C	1816	.30	.50		10	
	20	1145	1300	NO FLARE	PATROL											

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	21	0020	0645	NO FLARE	PATROL											
	21	1245	1300	NO FLARE	PATROL											
	22	0115	0135	NO FLARE	PATROL											
	22	1200	1225	NO FLARE	PATROL											
	22	2355	2400	NO FLARE	PATROL											
	23	0010	0045	NO FLARE	PATROL											
	23	0140	0220	NO FLARE	PATROL											
	23	0320	0355	NO FLARE	PATROL											
	23	0415	0430	NO FLARE	PATROL											
	23	0530	0630	NO FLARE	PATROL											
	23	1200	1245	NO FLARE	PATROL											
	23	2320	2400	NO FLARE	PATROL											
	24	0005	0415	NO FLARE	PATROL											
	24	0440	0525	NO FLARE	PATROL											
	24	0610	0625	NO FLARE	PATROL											
	24	0700	0720	NO FLARE	PATROL											
	24	0730	0800	NO FLARE	PATROL											
	24	1245	1325	NO FLARE	PATROL											
	24	1345	1350	NO FLARE	PATROL											
LOCKHEED	24	2325	2350	2329	N06	W40			1-	C	2329	.20	.20		10	
	25	0225	0230	NO FLARE	PATROL											
	25	0245	0250	NO FLARE	PATROL											
	25	0355	0400	NO FLARE	PATROL											
	25	0405	0430	NO FLARE	PATROL											
	25	0535	0550	NO FLARE	PATROL											
	25	0615	0750	NO FLARE	PATROL											
	25	1325	1335	NO FLARE	PATROL											
	25	1345	1355	NO FLARE	PATROL											
	25	1405	1415	NO FLARE	PATROL											
	25	1640	1645	NO FLARE	PATROL											
	25	1650	1655	NO FLARE	PATROL											
	25	1705	1710	NO FLARE	PATROL											
	25	1715	1720	NO FLARE	PATROL											
	25	2005	2025	NO FLARE	PATROL											
SAC PEAK	25	2043	2059	2051	N28	E69			1-	C		.27	.52		16	
	26	0230	0235	NO FLARE	PATROL											
	26	0520	0625	NO FLARE	PATROL											
SAC PEAK	26	1527	1550	1535	S20	E17			1-	C		.97	1.00		17	
	26	2350	2400	NO FLARE	PATROL											
	27	0015	0035	NO FLARE	PATROL											
	27	0425	0430	NO FLARE	PATROL											
	27	0620	0930	NO FLARE	PATROL											
	27	1210	1305	NO FLARE	PATROL											
	27	1315	1320	NO FLARE	PATROL											
	28	0045	0100	NO FLARE	PATROL											

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	28	0240	0420	NO FLARE	PATROL											
SYDNEY	28	0635	0649	0639	N24	E47	7538	14	1	C	0639	3.00	4.50			
	28	0655	0715	NO FLARE	PATROL											
	28	1135	1155	NO FLARE	PATROL											
	28	1210	1240	NO FLARE	PATROL											
	28	1245	1340	NO FLARE	PATROL											
	28	2340	2345	NO FLARE	PATROL											
	29	0040	0105	NO FLARE	PATROL											
	29	0120	0130	NO FLARE	PATROL											
	29	0200	0220	NO FLARE	PATROL											
	29	0345	0430	NO FLARE	PATROL											
	29	0510	0635	NO FLARE	PATROL											
	29	0645	0730	NO FLARE	PATROL											
	29	0735	0800	NO FLARE	PATROL											
ARCETRI	29	0810 E	0825 D		S14	E06			1-	4	0820	.57	.61			
	29	0915	0920	NO FLARE	PATROL											
	29	1000	1020	NO FLARE	PATROL											
	29	1025	1030	NO FLARE	PATROL											
	29	1200	1250	NO FLARE	PATROL											
	29	1300	1355	NO FLARE	PATROL											
SAC PEAK	29	1446	1532	1450	S13	E04			1-	C		.27	.27		17	
CAPRI-S	29	1451	1512		S12	E05			1-	3	1456	.50	.50			
	29	2330	2400	NO FLARE	PATROL											
	30	0000	0045	NO FLARE	PATROL											
	30	0210	0235	NO FLARE	PATROL											
	30	0400	0420	NO FLARE	PATROL											
	30	0635	0700	NO FLARE	PATROL											
	30	1115	1245	NO FLARE	PATROL											
	30	2355	2400	NO FLARE	PATROL											
	31	0010	0045	NO FLARE	PATROL											
	31	0245	0335	NO FLARE	PATROL											
	31	0600	0615	NO FLARE	PATROL											
	31	0655	0745	NO FLARE	PATROL											
ARCETRI	31	0840 E	0850 D		S08	E23			1-	2	0848	.82	.90			
	31	1000	1025	NO FLARE	PATROL											
ONDREJOV	31	1038	1039		S07	E26			1-	3						
LOCKHEED	31	2330	2350	2340	S06	E10			1-	C	2340	.10	.10		10	

SOLAR FLARES

OCTOBER 1964

ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERGH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN	NIZMIR	KRASNAYA PAKHRA, USSR
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	KIEV KY	KIEV UNIVERSITY, USSR	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	LOCKHEED	LOS ANGELES, CALIF., USA	SCHAUINS	SCHAUINSLAND, GFR
CRIMÉE	SIMEIZ, USSR	MCMATH	MCMATH-HULBERT PONTIAC, MICH., USA	TACHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND	MOSCOU	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
HTE-PROVEN	HAUTE-PROVENCE	NEW SCHAUIN	FREIBURG, GFR		

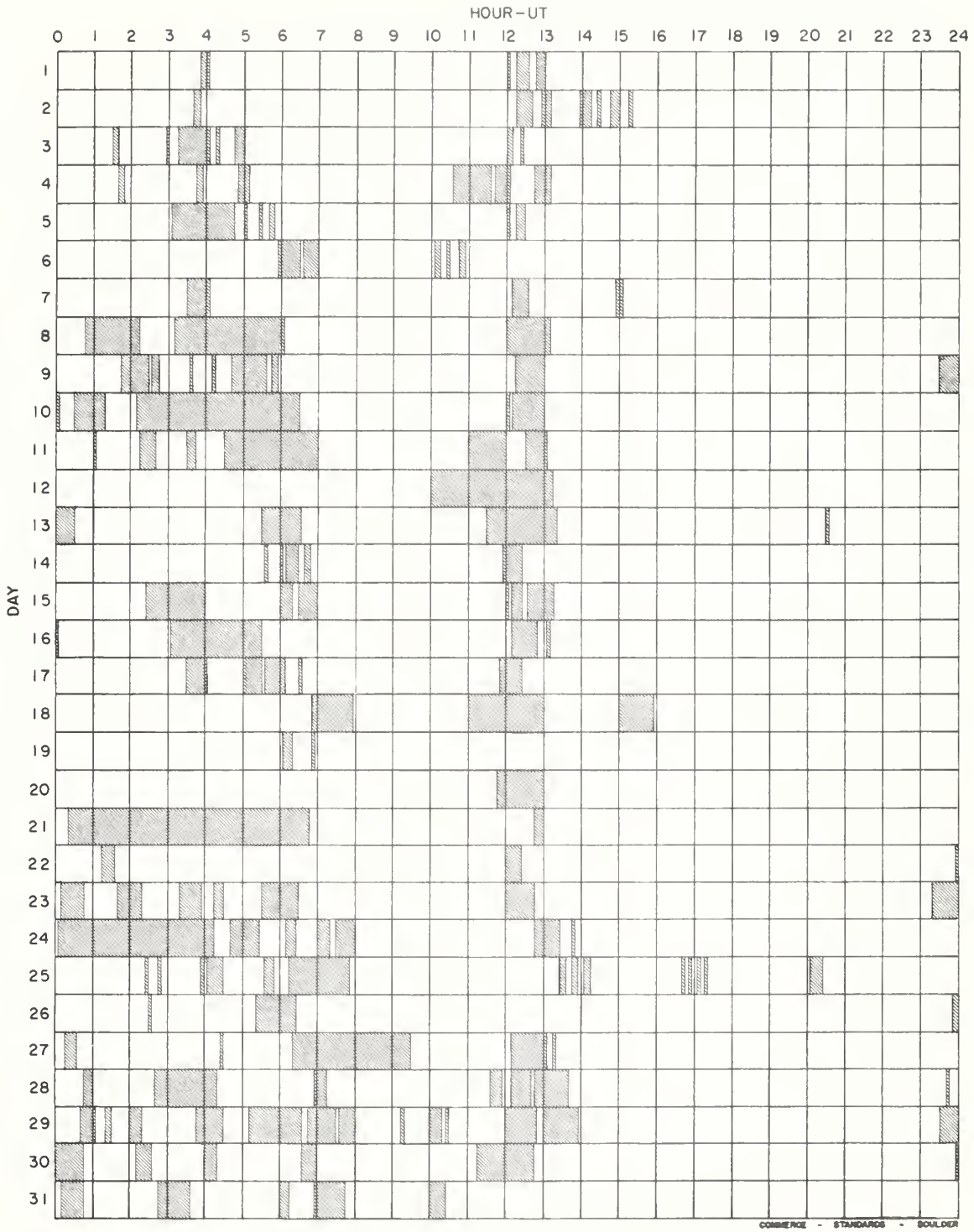
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

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

INTERVALS OF NO FLARE PATROL OBSERVATIONS
PROVISIONAL

OCTOBER 1964



Observatories Include:

Arcetri	Catania	Ikomasan	Lockheed	Ondrejov	Sydney
Arosa	Haleakala	Istanbul	Manila	Ottawa	Wroclaw
Bucharest	Haute-Provence	Locarno	McMath-Hulbert	Sacramento Peak	Zurich

SOLAR FLARES

JULY 1964

OBSERVATORY	DATE JULY 1964	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 Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SYDNEY	01	0006	0017	0011	S04	E51			1-	C	0011	.40	.60			
	01	0340	0350	NO FLARE	PATROL											
SYDNEY	02	0025	0037	0032	N08	W40			1-	C	0032	.50	.60			
UCCLE	04	0915	0924		N32	E62			1-							
	06	0220	0230	NO FLARE	PATROL											
	06	0245	0300	NO FLARE	PATROL											
UCCLE	06	1022	1025		N33	E36			1-							
UCCLE	06	1054	1056		N33	E36			1-							
UCCLE	06	1258	1312	1301	N32	E34			1-		1301	3.00	4.20			
UCCLE	07	0841	0848	0843	N33	E25			1-		0843	1.00	1.00			
CLIMAX	07	1232	1237	1233	N30	E24			1-	C	1233	.20	.20			
UCCLE	07	1336	1338		N32	E21			1-							
CLIMAX	07	1420	1440		N32	E22			1-	C	1427	.50	.60			
UCCLE	07	1424 E	1431 D		N34	E22			1-							
UCCLE	07	1547	1557		N32	E20			1-							
SYDNEY	09	0137	0147	0143	N34	E03			1-	C	0143	.60	.70			
HALEAKALA	09	0140	0146	0142	N33	E02			1-	C	0142	.20	.20			
IRKUTSK	09	0141 E	0151 D	0142	N33	E00			1-			.40	.41			
HALEAKALA	09	2117	2143	2124	N31	W14			1-	C	2124	.20	.20			
	11	0200	0250	NO FLARE	PATROL											
	11	0410	0425	NO FLARE	PATROL											
SYDNEY	14	0014	0109	0027	N27	E49			1-	C	0027	.60	1.00			
SYDNEY	14	0141	0221	0200	N27	E49			1-	C	0200	.60	1.00			
SYDNEY	14	0209	0228	0214	N27	E46			1-	C	0214	.40	.60			
SYDNEY	14	0252	0317	0259	N27	E46			1-	C	0259	.40	.60			
SYDNEY	14	0327	0347	0335	N27	E49			1-	C	0335	.40	.60			
SYDNEY	14	0357	0410 D	0407	N26	E44			1-	P	0407	.40	.60			
SYDNEY	14	0430	0535	0453	N27	E49			1-	C	0453	.60	1.00			
ATHENES	14	0716 E	0727		N28	E40			1-	2		.60	.80			
BUCHAREST	14	0805 E	0817 D		N28	E44			1-	2			1.50			
CAPETOWN	14	0805 E	0822	0813	N29	E45			1-	C	0813	.90	1.40			
UCCLE	14	0815 E	0819		N28	E45	7404	4 D	1			3.50	5.20			
UCCLE	14	0830 E	0833		N08	E05			1-							
UCCLE	14	0902	0905		N27	E42			1-							
UCCLE	14	0944	0954		N30	E43			1-							
UCCLE	14	1015	1019		N07	E06			1-							
UCCLE	14	1043	1050		N07	E06			1-							
UCCLE	14	1051	1057	1054	N30	E43			1-							
UCCLE	14	1128	1143	1132	N30	E43			1-							
UCCLE	14	1202	1213	1204	N30	E42			1-							
SYDNEY	15	0517	0525	0520	N26	E33			1-	C	0520	.80	1.00			
SYDNEY	16	2355	0025	0015	N15	W80			1-	C	0015	.40				

SOLAR FLARES

JULY 1964

OBSERVATORY	DATE JULY 1964	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. %	PROVISIONAL IONOSPHERIC EFFECT
SYDNEY	17	0455	0525 D	0511	N03	E03			1-	P	0511	1.00	1.00			
	19	0200	0210	NO FLARE	PATROL											
CLIMAX	27	2128	2133 D		N20	W51			1-	C	2132	.40	.40			
	29	2015	2020	NO FLARE	PATROL											
	29	2240	2245	NO FLARE	PATROL											
	29	2300	2305	NO FLARE	PATROL											
	29	2325	2400	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

These flares are addenda to the July 1964 flares published in CRPL-F 240 Part B for August 1964

ATHENES	ATHENS, GREECE
BAKOU	PIRCULI, USSR
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
CAPRI F	CAPRI, ITALY (GERMAN)
CAPRI S	CAPRI, ITALY (SWEDISH)
CRIMÉE	SIMEIZ, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND
HTE-PROVEN	HAUTE-PROVENCE
HONOLULU	HAWAII, USA
IKOMASAN	KYOTO, JAPAN
KIEV KO	KIEV GAO, USSR
KIEV KY	KIEV UNIVERSITY, USSR
LOCKHEED	LOS ANGELES, CALIF., USA
MCMATH	MCMATH-HULBERT PONTIAC, MICH., USA
MOSCOU	MOSCOW-GAISH, USSR
NEW SCHAUIN	FREIBURG, GFR
NERA	NEDERHORST den BERGH, NETHERLANDS
NIZMIR	KRASNAYA PAKHRA, USSR
SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
SALTSJÖBADEN	STOCKHOLM, SWEDEN
SCHAUINS	SCHAUINSLAND, GFR
TACHKENT	TASHKENT, USSR
WENDEL	WENDELSTEIN, GFR

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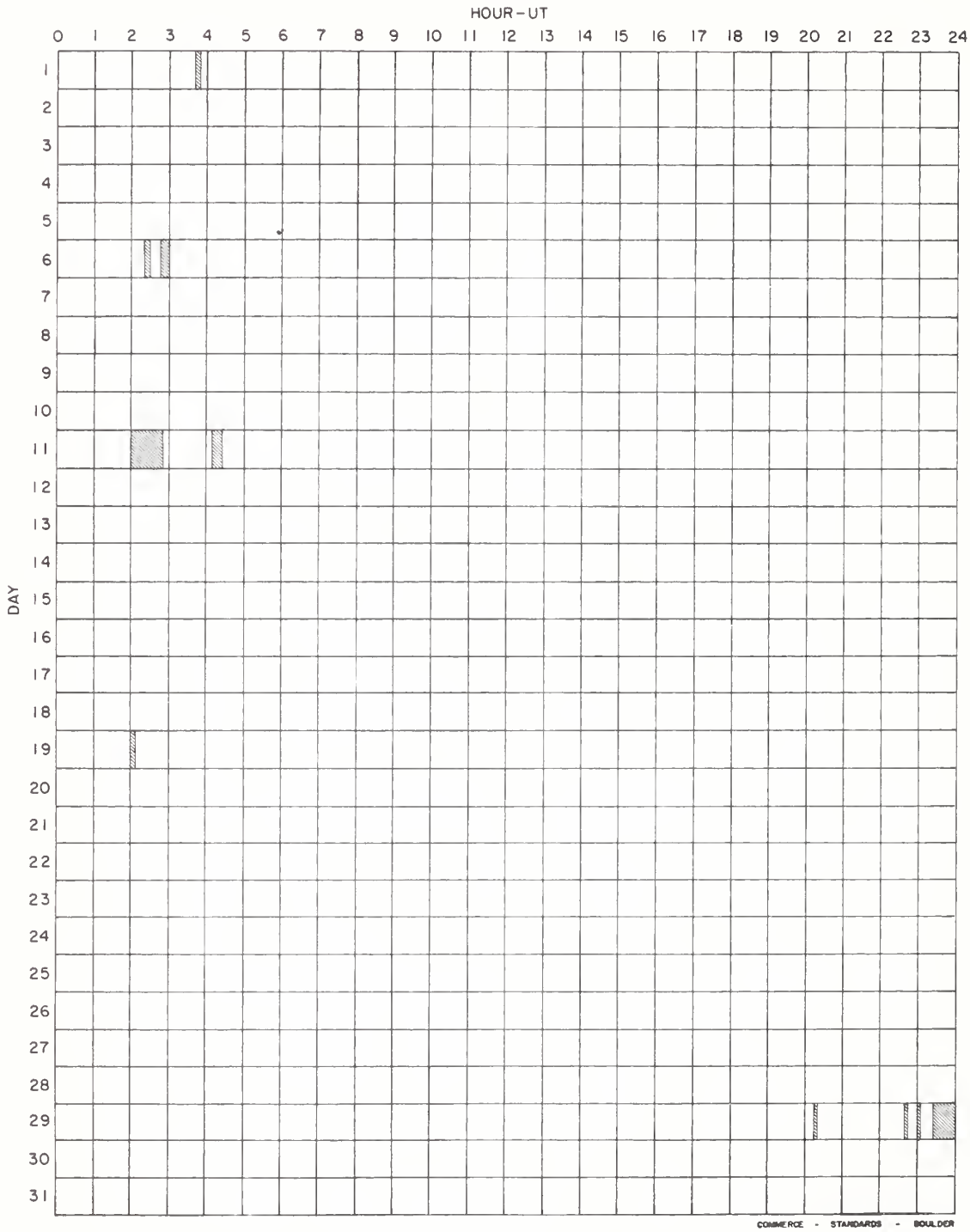
E = LESS THAN D = GREATER THAN U = APPROXIMATE □= NOT REPORTED.

Erratum: In CRPL-F 242 B page IIIb for October 1964 the flare reported by Lockheed for September 7, 1964 which began at 2055 and ended at 2119 U.T. at N21 and E39 should have been N31 and E39 instead.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JULY 1964



Observatories Included:

Abastumani	Capetown	Huancayo	Locarno	Ottawa	Wroclaw
Arcetri	Catania	Ikomasan	Lockheed	Sacramento Peak	Zurich
Arosa	Climax	Irkutsk	Lvov	Sydney	
Athenes	Dunsink	Istanbul	Manila	Tashkent	
Bucharest	Haleakala	Izmiran	McMath-Hulbert	Uccle	
Capri-F (German)	Haute-Provence	Kiev-KO	Mitaka	Voroshilov	
Capri-S (Swedish)	Herstmonceux	Kodaikanal	Ondrejov	Wendelstein	

SOLAR RADIATION MONITORING SATELLITE
AVERAGE X-RAY FLUX

NRL

JANUARY, 1964

Date	Times of Observation	Average X-Ray Flux 44-80A	44-55A	8-12A	8-20A	0-8A
January 11	2146 2207 2332 2347	2.0×10^{-3}	1.1×10^{-3}	2.3×10^{-4}	6.7×10^{-4}	$<1.0 \times 10^{-4}$
January 12	0227 0243 1438 1505 1639 1655 1823 1838 1958 2023 2155 2211 2342 2358	2.8×10^{-2}	1.2×10^{-2}	2.5×10^{-4}	6.9×10^{-4}	$<1.0 \times 10^{-4}$
January 13	1650 1714 1831 1845 2006 2022 2205 2220 2351 0004	2.8×10^{-3}	1.1×10^{-2}	3.3×10^{-4}	8.1×10^{-4}	$<1.0 \times 10^{-4}$
January 14	0856 1013 1310 1326 1700 1716 1845 1858 2213 2230	2.7×10^{-3}	1.2×10^{-2}	3.3×10^{-4}	8.0×10^{-4}	$<1.0 \times 10^{-4}$
January 15	0003 0012 1006 1022 1338 1345 1521 1538 1707 1724 1839 1855 2040 2052 2224 2233	2.8×10^{-2}	1.2×10^{-2}	2.9×10^{-4}	9.0×10^{-4}	$<1.0 \times 10^{-4}$
January 16	1328 1344 1347 1355 1530 1546 1716 1731 1858 1914 2034 2047	2.4×10^{-3}	1.0×10^{-2}	1.6×10^{-4}	6.2×10^{-4}	$<1.0 \times 10^{-4}$
January 17	1024 1038 1338 1408 1539 1554 1727 1738 1908 1925 2245 2253	2.5×10^{-2}	1.1×10^{-2}	1.7×10^{-4}	7.7×10^{-4}	$<1.1 \times 10^{-4}$
January 18	1201 1217 1405 1417 1548 1604 1736 1746	2.7×10^{-3}	1.4×10^{-2}	3.3×10^{-4}	10.4×10^{-4}	$<1.2 \times 10^{-4}$
January 18	1210 1226 1412 1427 1558 1613 1740 1756	2.7×10^{-3}	1.3×10^{-2}	2.3×10^{-4}	10.6×10^{-4}	$<1.2 \times 10^{-4}$
January 20	0807 0923 1219 1238 1424 1433 1553 1622 1942 1951 2127 2139	2.8×10^{-3}	1.7×10^{-2}	4.0×10^{-4}	15.5×10^{-4}	$<1.3 \times 10^{-4}$
January 21	0916 0931 1248 1258 1430 1448 1602 1630 1748 1805 1947 2000	2.3×10^{-3}	1.2×10^{-2}	$<2.0 \times 10^{-4}$	8.4×10^{-4}	$<1.4 \times 10^{-4}$
January 22	0925 0841 1257 1305 1439 1457 1758 1813 2003 2012	2.2×10^{-2}	1.0×10^{-2}	$<2.0 \times 10^{-4}$	6.8×10^{-4}	$<1.5 \times 10^{-4}$
January 23	0938 0950 1308 1316 1450 1504 1636 1644 2004 2021 2152 2204	2.0×10^{-2}	0.9×10^{-2}	$<2.1 \times 10^{-4}$	$<7.7 \times 10^{-4}$	$<1.5 \times 10^{-4}$
January 24	0757 0813 1110 1127 1457 1513 2019 2026	1.8×10^{-2}	0.8×10^{-2}	$<2.2 \times 10^{-4}$	4.3×10^{-4}	$<1.6 \times 10^{-4}$
January 25	1507 1521 1650 1704 1840 1852 2025 2040	1.7×10^{-2}	0.8×10^{-2}	$<2.2 \times 10^{-4}$	5.1×10^{-4}	$<1.6 \times 10^{-4}$
January 28	0818 0830 1331 1345 1803 1815 1848 1902 2034 2044	2.2×10^{-2}	1.5×10^{-2}	6.8×10^{-4}	9.5×10^{-4}	$<1.6 \times 10^{-4}$
January 27	0827 0836 1138 1206 1340 1355 1527 1538 1855 1912 2041 2057	1.8×10^{-2}	0.7×10^{-2}	$<2.0 \times 10^{-4}$	$<7.8 \times 10^{-4}$	$<1.5 \times 10^{-4}$
January 28	1207 1214 1349 1406 1521 1546 1905 1919	2.6×10^{-2}	1.6×10^{-2}	5.7×10^{-4}	10.6×10^{-4}	$<1.5 \times 10^{-4}$
January 29	1216 1227 1359 1417 1640 1657 1912 1929	2.6×10^{-2}	1.5×10^{-2}	5.2×10^{-4}	8.2×10^{-4}	$<1.4 \times 10^{-4}$
January 30	1222 1237 1408 1431 1745 1752 1923 1937	2.6×10^{-2}	1.3×10^{-2}	5.7×10^{-4}	7.2×10^{-4}	$<1.3 \times 10^{-4}$
January 31	1029 1046 1231 1248 1412 1428 1430 1446 1558 1615 1941 1848	2.9×10^{-2}	1.1×10^{-2}	5.4×10^{-4}	7.8×10^{-4}	$<1.2 \times 10^{-4}$

Outstanding Events

January 20	0907	0923	4.1×10^{-2}	3.5×10^{-2}	12×10^{-4}	33×10^{-4}	6.3×10^{-4}	1- Flare
January 26	1331	1345	7.6×10^{-2}	9.7×10^{-2}	4.9×10^{-3}	8.4×10^{-3}	3.3×10^{-3}	2 Flare
January 28	1353	1406	3.1×10^{-2}	2.1×10^{-2}	7.2×10^{-4}	15×10^{-4}	$<1.5 \times 10^{-4}$	1- Flare

COMMERCE - STANDARDS - BOULDER

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

SEPTEMBER 1964

SEPT 1964	UNIVERSAL TIME			TYPE SWF IMP	IMPORTANCE						BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX		ABS	SCNA	SEA	SPA	SES	SFD				
None observed.														

COMMERCE - STANDARDS - BOULDER

RIOMETER EVENTS

(Provisional)

SEPTEMBER 1964

South Pole **26 Mc/s**

SEPT. 1964	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS	SEPT. 1964	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS
1	1038	2014	1436	9	1	18	0304	0413	0308	3	3
2	0010	0314	0104	43	2	19	1347	1803	1531	10	1
2	1319	1705	1432	11	2	20	2152	2200	2152	6	1
3	0029	0537	0242	32	1	21	*				
3	1127	2048	1909	7	7	22	0309	0411	0312	9	1
4	0923	2202	1212	20	1	23	0143	0253	0158	17	1
5	0326	0532	0345	11	1	23	0802	0451	0400	19	2
5	1017	1748	1405	8	4	24	0852	2033	1550	17	3
6	0251	1810	1606	5	4	25	0132	0238	0154	8	1
6	2040	2054	2046	3	3	25	2305	0201	0126	28	1
7	0057	0204	0152	5	2	27	*				
7	1002	1805	1248	18	2	28	0000	0320	0257	11	1
7	2038	0209***	2243	79	3	28	0751	1910	0949	13	3
10	1354	1221	0018	30	3	29	0000	0025	0006	3	1
12	0141	0212	0149	13	2	29	1246	1843	1501	13	1
13	*					30	0452	**	0045	22	4
14	*										
15	*										
16	1238	**	1824	9	1						
17	1146	1829	1323	11	1						

COMMERCE - STANDARDS - BOULDER

* = No event.
** = Uncertain.
*** = Ending, September 9, 1964 at 0209 U.T.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

OCTOBER 1964

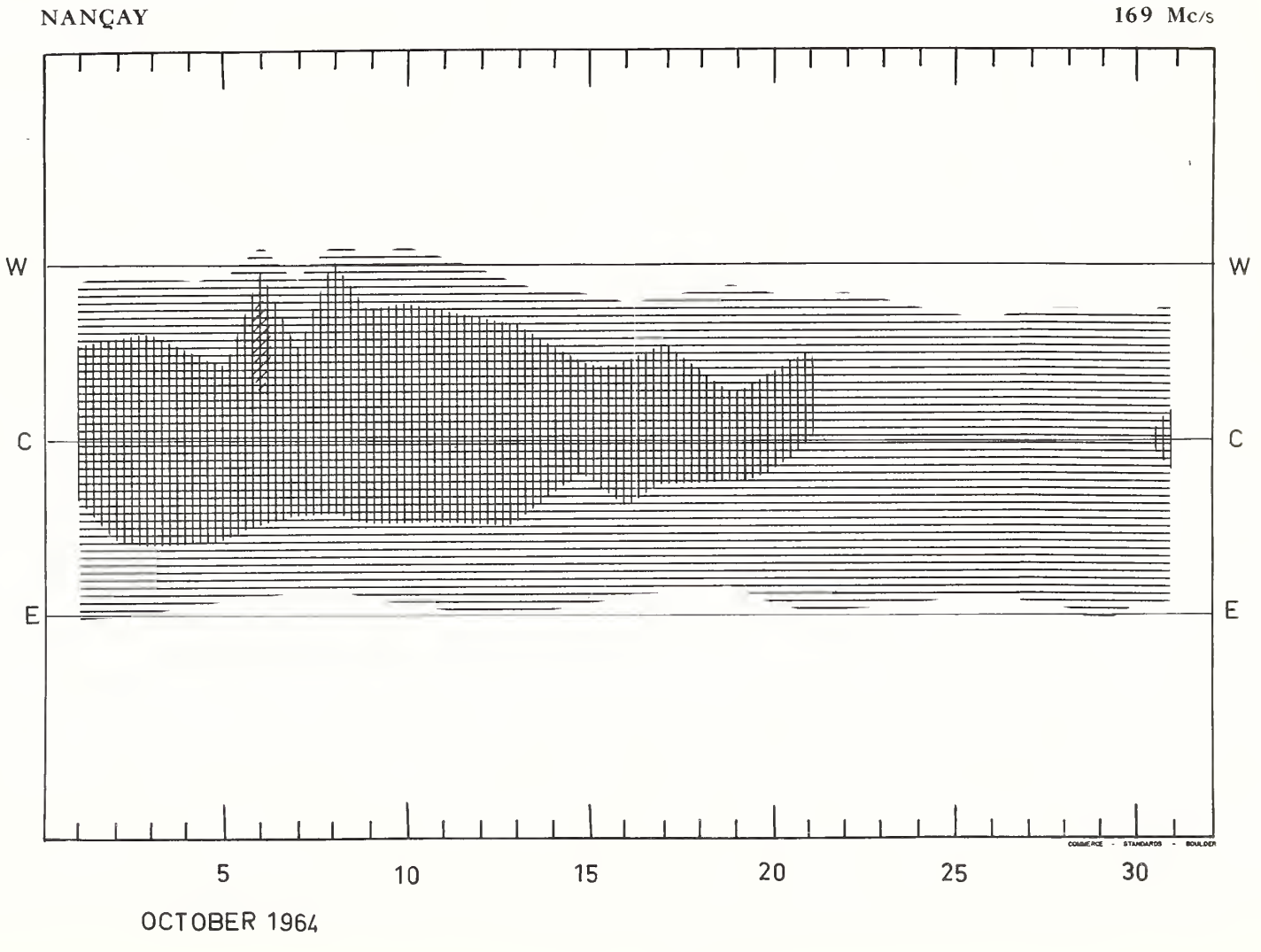
ARO-DRAO (OTTAWA) 2800;2700 Mc/s

OCT. 1964	URANE	DESCRIPTIVE TYPE	START UT	DURATION HRS. MIN.	MEAN FLUX	MAXIMUM		REMARKS
						TIME	FLUX	
None observed.								

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

OCTOBER 1964



SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

OCTOBER 1964

NBS BOULDER 108 Mc/s

None observed

NOMINAL TIMES OF OBSERVATION

OCTOBER 1964

NBS BOULDER 108 Mc/s

Oct. 1964	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.	Oct. 1964	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.
1	1301-0028		16	1316-0005	
2	1302-0026		17	1317-0003	
3	1303-0025		18	1318-0002	1526-1558;
4	1304-0023	1858-1945			1855-1925
5	1305-0021		19	1319-0000	
6	1306-0020		20	1320-2359	
7	1307-0018		21	1322-2357	
8	1945-0017		22	1323-1852;	
9	1309-2234;			1915-2356	
	2325-0015		23	1324-2355	
10	1310-2250	1705-2250	24	1325-2353	
11	1311-0012	1719-1725	25	1326-2352	
12	1312-1612;		26	1327-2351	
	1632-0011		27	1328-2349	
13	1313-1645;		28	1329-2348	
	1801-2218;		29	1330-2347	
	2227-0009		30	1331-2345	1938-1942;
14	1314-1546;				2216-2345
	1556-2052;		31	1333-2344	
	2102-0008				
15	1315-0006				

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1964

Fort Davis

50-320 Mc/s

1964	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T.	INT		
Jul. 1	1231-2230					
Jul. 2	1231-2230					
Jul. 3	1231-2230					
Jul. 4	1231-2230					
Jul. 5	1231-2230					
Jul. 6	1231-2230					
Jul. 7	1231-2230					
Jul. 8	1231-2230					
Jul. 9	1231-2230					
Jul. 10	1231-2230					
Jul. 11	1231-2230					
Jul. 12	1231-2230					
Jul. 13	1231-2230					
Jul. 14	1231-2230					
Jul. 15	1232-2230					
Jul. 16	1231-2230					
Jul. 17	1231-2230					
Jul. 18	1231-2230					
Jul. 19	1231-2230					
Jul. 20	1231-2230					
Jul. 21	1232-2230					
Jul. 22	1231-2230					
Jul. 23	1231-2230					
Jul. 24	1231-2230					
Jul. 25	1231-2230					
Jul. 26	1231-2230					
Jul. 27	1231-2230					
Jul. 28	1231-2230					
Jul. 29	1231-2230					
Jul. 30	1231-2230					
Jul. 31	1230-2230					

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1964

Fort Davis

50-320 Mc/s

1964	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Aug. 1	1302-2300					
Aug. 2	1302-2300					1929: U bursts
Aug. 3	1302-2300					
Aug. 4	1303-2300					
Aug. 5	1302-2300					
Aug. 6	1303-2300					
Aug. 7	1302-2300					
Aug. 8	1302-2300					
Aug. 9	1303-2300					
Aug. 10	1303-2300					
Aug. 11	1302-2300					
Aug. 12	1303-2300					
Aug. 13	1302-2300					
Aug. 14	1303-2300					Weak I throughout day
Aug. 15	1302-2300					Weak I throughout day
Aug. 16	1303-2300					Weak I during day
Aug. 17	1305-2300					
Aug. 18	1303-2300					
Aug. 19	1303-2300					
Aug. 20	1302-2300					
Aug. 21	1302-2300					
Aug. 22	1302-2300					
Aug. 23	1303-2300					
Aug. 24	1303-2300					
Aug. 25	1304-2034; 2107-2300					
Aug. 26	1303-2300					
Aug. 27	1303-2300					
Aug. 28	1303-2300					
Aug. 29	1303-2300					
Aug. 30	1303-2300					
Aug. 31	1305-2300					

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

SEPTEMBER 1964

Fort Davis

50-320 Mc/s

1964	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC.	REMARKS
		TYPE	TIMES U.T	INT		
Sep. 1	1330-2330					
Sep. 2	1330-2330					
Sep. 3	1330-2330					
Sep. 4	1330-2330					
Sep. 5	1330-2330					
Sep. 6	1330-2300					
Sep. 7	1330-2330					
Sep. 8	1330-2330					
Sep. 9	1330-2330					
Sep. 10	1330-2330					
Sep. 11	1330-2330					
Sep. 12	1330-2330					
Sep. 13	1330-2330					
Sep. 14	1330-2330					
Sep. 15	1330-2330					
Sep. 16	1330-2330					
Sep. 17	1330-2330					
Sep. 18	1330-2330					
Sep. 19	1330-2330	IIIG	2219-2220	2	175-<100	
Sep. 20	1330-2330					
Sep. 21	1330-2330					
Sep. 22	1330-2330					
Sep. 23	1330-2330					
Sep. 24	1330-2330					
Sep. 25	1330-2330					
Sep. 26	1330-2330					
Sep. 27	1332-2330					
Sep. 28	1330-2330					
Sep. 29	1330-2330					
Sep. 30	1331-2330					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

OCTOBER 1964

High Altitude Observatory
Boulder

7.6-41 Mc/s

Date Oct 1964	Bursts			
	Type	Time (U.T.)	Intensity	Frequency Range (Mc/s)
5 Oct	III	1834:45-1835:30	1	7-35
	III	2053-2053:30	2	22-41
6	III	2153:30-2154	1	12-41
	III	2333:30-2334	1	19-41
7	III	2148-2148:30	1-	21-41
8	III	1543:45-1544:30	2	21-41
11	III	1539:30-1540	1-	26-41
13	III	1729:45-1730:15	1-	20-41
20	No Observ.	1400-1813		
21	No Observ.	1400-1655		
22	No Observ.	2229-2400		
23	No Observ.	0000-0100		
24	No Observ.	1400-1600		
25	No Observ.	1400-1600		
26	No Observ.	1400-1500		
27	No Observ.	0000-0100		
	No Observ.	1400-1500		
28	No Observ.	1400-1500		
29	No Observ.	1400-1500		
30	No Observ.	1400-1500		

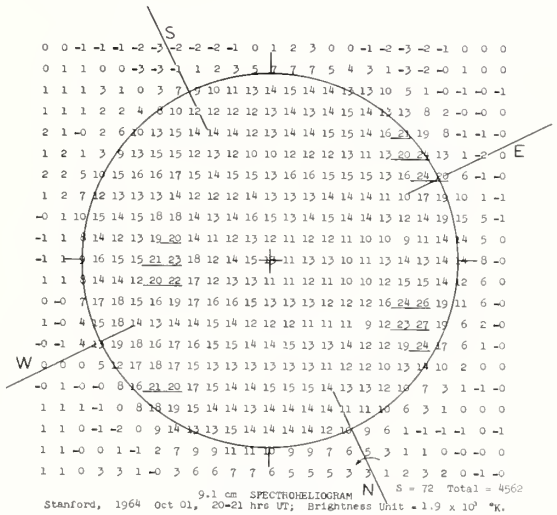
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

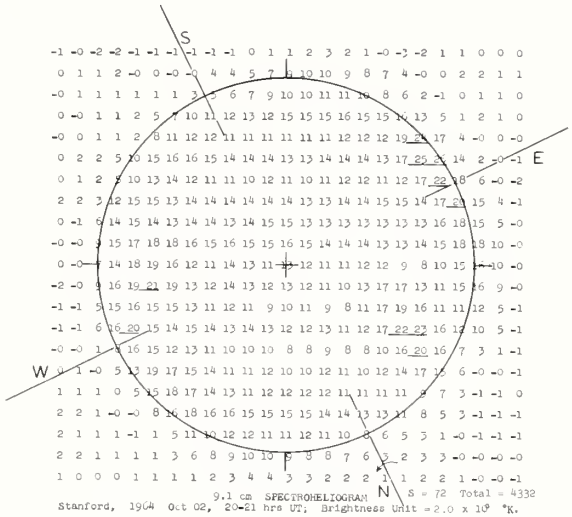
STANFORD

9.1 cm



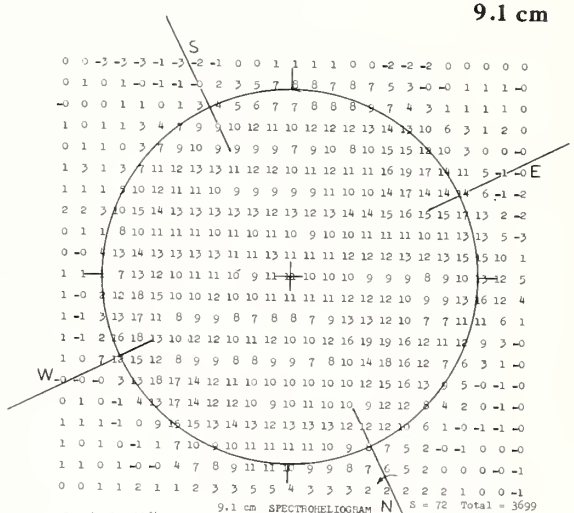
9.1 cm SPECTROHELIOGRAM S = 72 Total = 4562

Stanford, 1964 Oct 01, 20-21 hrs UT; Brightness Unit = 1.9 x 10^3 °K.



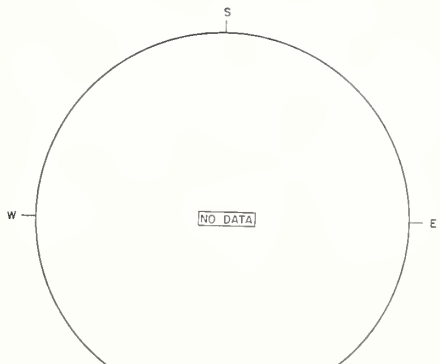
9.1 cm SPECTROHELIOGRAM S = 72 Total = 4332

Stanford, 1964 Oct 02, 20-21 hrs UT; Brightness Unit = 2.0 x 10^3 °K.

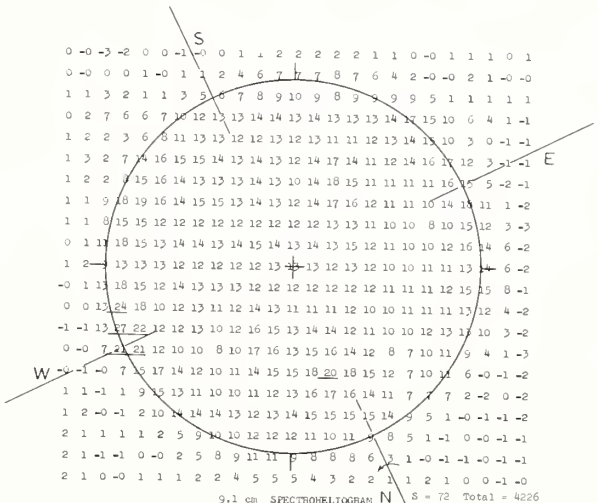


9.1 cm SPECTROHELIOGRAM S = 72 Total = 3699

Stanford, 1964 Oct 03, 20-21 hrs UT; Brightness Unit = 2.3 x 10^3 °K.

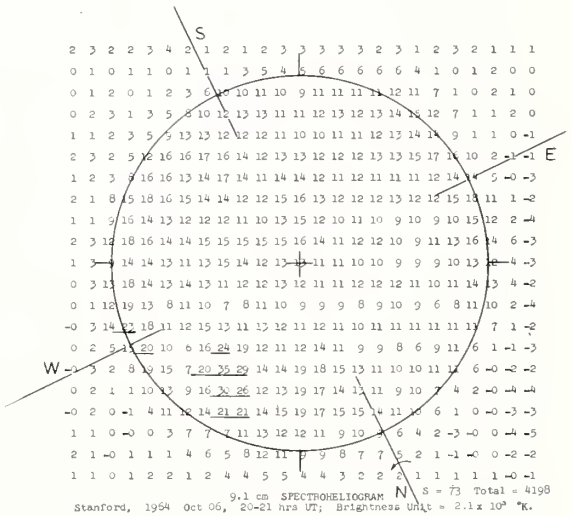


1964 OCTOBER 04



9.1 cm SPECTROHELIOGRAM S = 72 Total = 4226

Stanford, 1964 Oct 05, 20-21 hrs UT; Brightness Unit = 2.0 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 73 Total = 4198

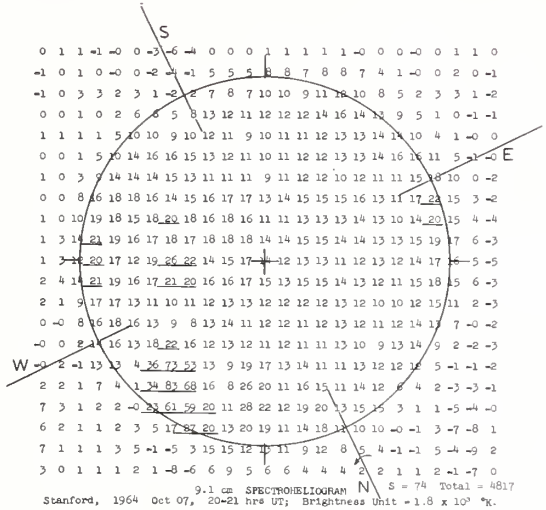
Stanford, 1964 Oct 06, 20-21 hrs UT; Brightness Unit = 2.1 x 10^3 °K.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

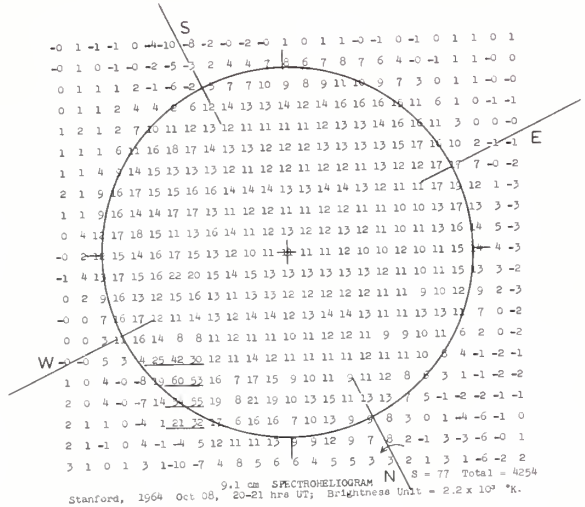
OCTOBER 1964

STANFORD

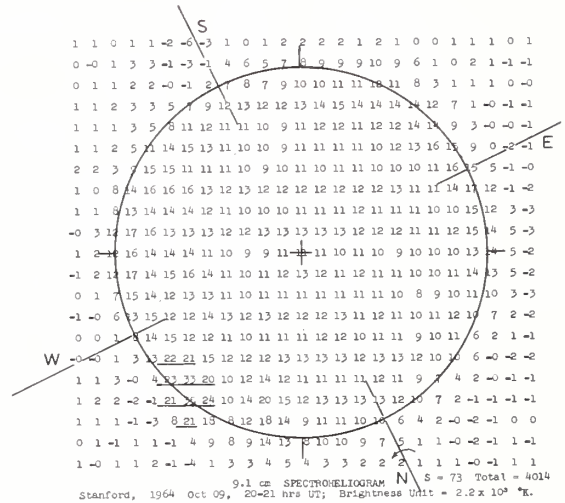
9.1 cm



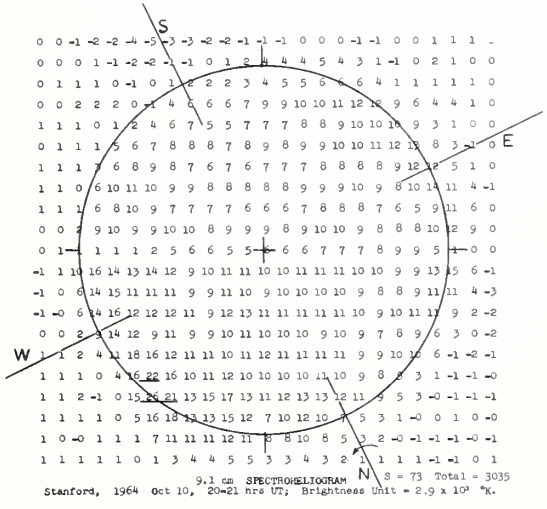
9.1 cm SPECTROHELIOGRAM S = 74 Total = 4817
Stanford, 1964 Oct 07, 20-21 hrs UT; Brightness Unit = 1.8 x 10^3 °K.



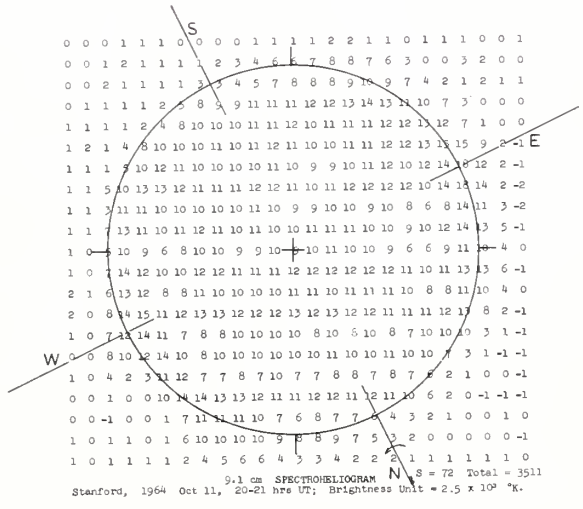
9.1 cm SPECTROHELIOGRAM S = 77 Total = 4254
Stanford, 1964 Oct 08, 20-21 hrs UT; Brightness Unit = 2.2 x 10^3 °K.



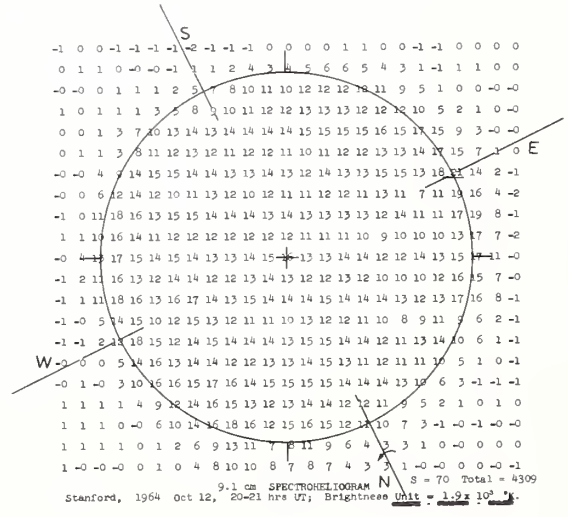
9.1 cm SPECTROHELIOGRAM S = 73 Total = 4014
Stanford, 1964 Oct 09, 20-21 hrs UT; Brightness Unit = 2.2 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 73 Total = 3035
Stanford, 1964 Oct 10, 20-21 hrs UT; Brightness Unit = 2.9 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 72 Total = 3511
Stanford, 1964 Oct 11, 20-21 hrs UT; Brightness Unit = 2.5 x 10^3 °K.

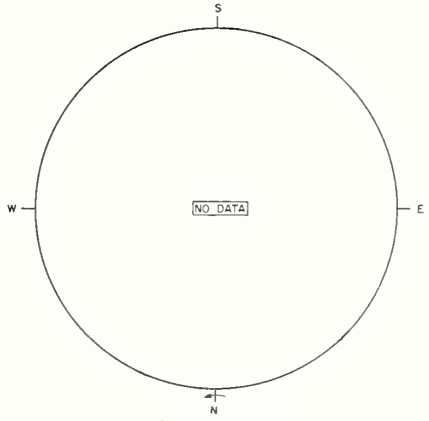


9.1 cm SPECTROHELIOGRAM S = 70 Total = 4309
Stanford, 1964 Oct 12, 20-21 hrs UT; Brightness Unit = 1.9 x 10^3 °K.

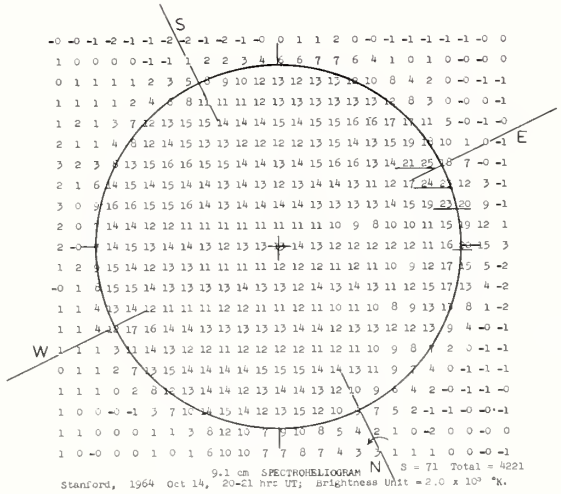
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

STANFORD **9.1 cm**

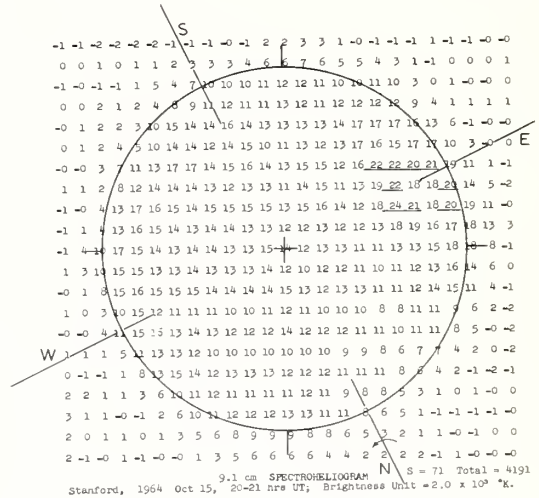


1964 OCTOBER 13



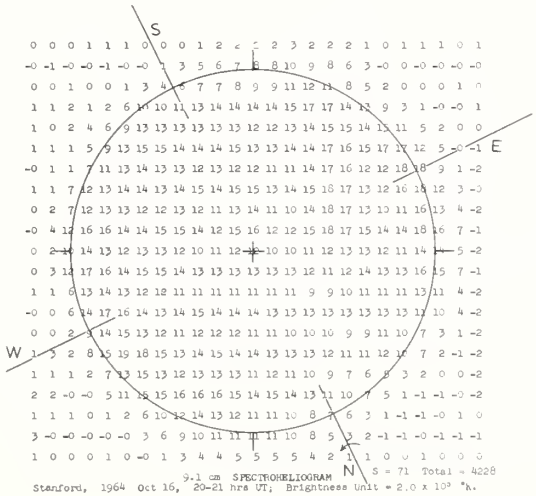
9.1 cm SPECTROHELIOGRAM S = 71 Total = 4221

Stanford, 1964 Oct 14, 20-21 hrs UT; Brightness Unit = 2.0 x 10^3 °K.



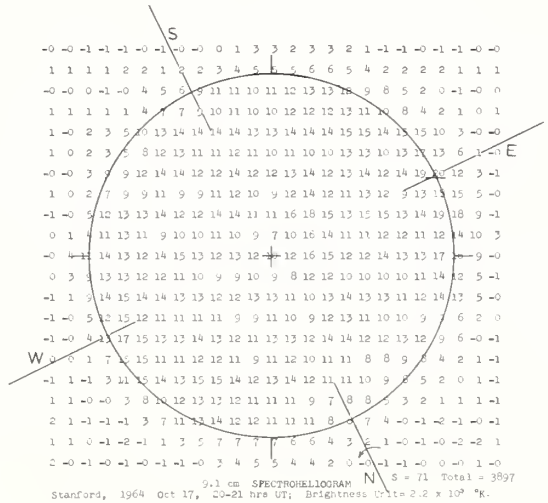
9.1 cm SPECTROHELIOGRAM S = 71 Total = 4191

Stanford, 1964 Oct 15, 20-21 hrs UT; Brightness Unit = 2.0 x 10^3 °K.



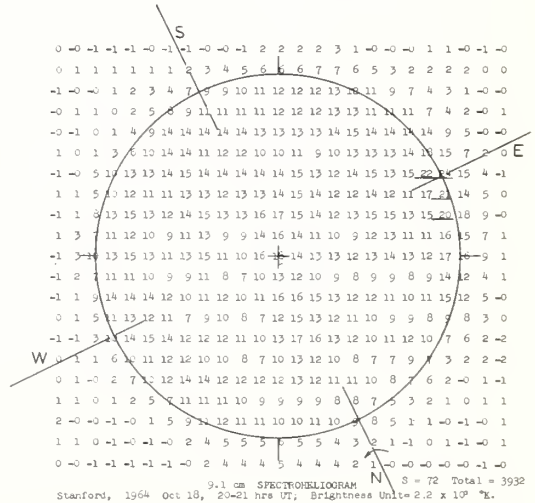
9.1 cm SPECTROHELIOGRAM S = 71 Total = 4228

Stanford, 1964 Oct 16, 20-21 hrs UT; Brightness Unit = 2.0 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 71 Total = 3897

Stanford, 1964 Oct 17, 20-21 hrs UT; Brightness Unit = 2.2 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 72 Total = 3932

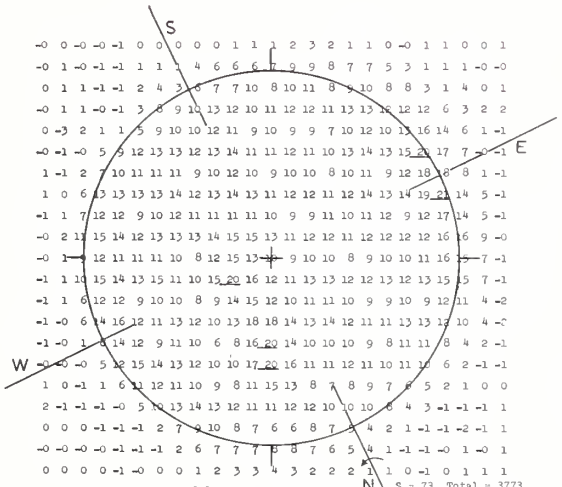
Stanford, 1964 Oct 18, 20-21 hrs UT; Brightness Unit = 2.2 x 10^3 °K.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

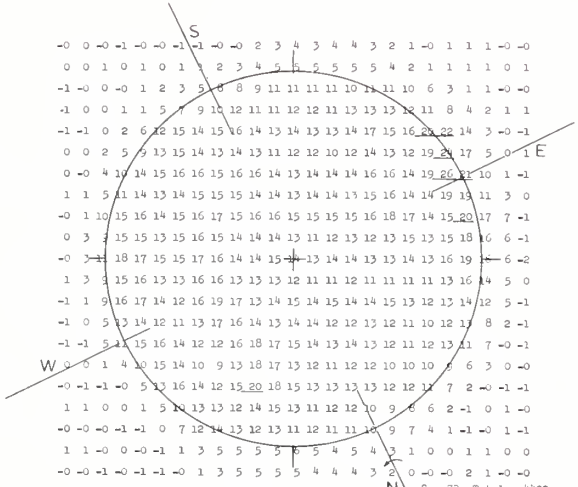
OCTOBER 1964

STANFORD

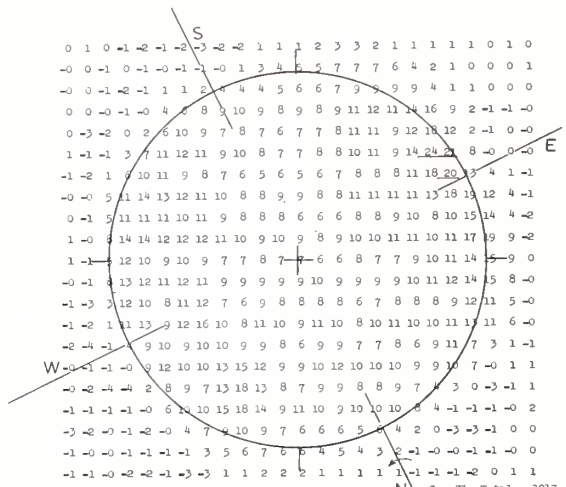
9.1 cm



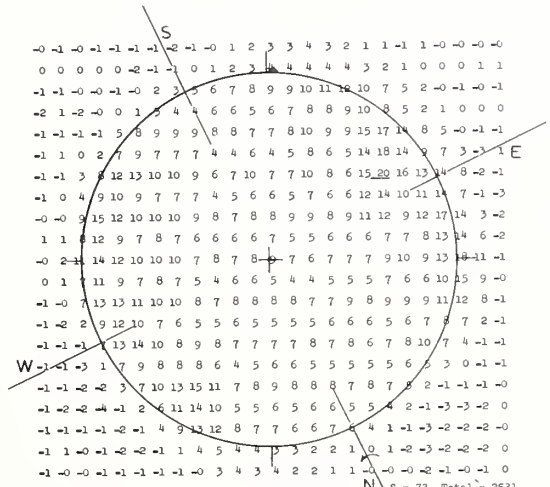
9.1 cm SPECTROHELIOGRAM S = 73 Total = 3773
Stanford, 1964 Oct 19, 20-21 hrs UT; Brightness Unit = 2.3 x 10^3 °K.



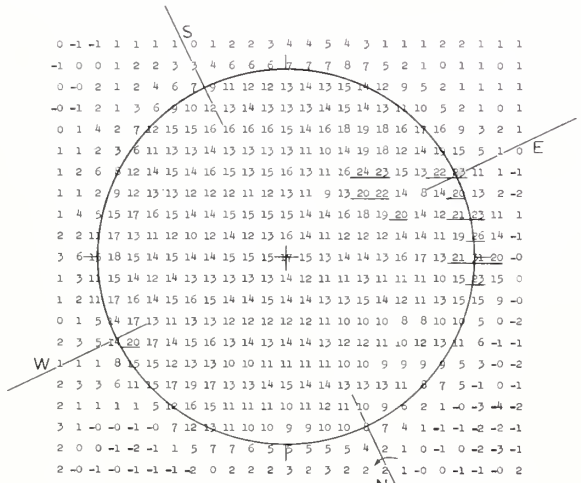
9.1 cm SPECTROHELIOGRAM S = 73 Total = 4432
Stanford, 1964 Oct 20, 20-21 hrs UT; Brightness Unit = 2.0 x 10^3 °K.



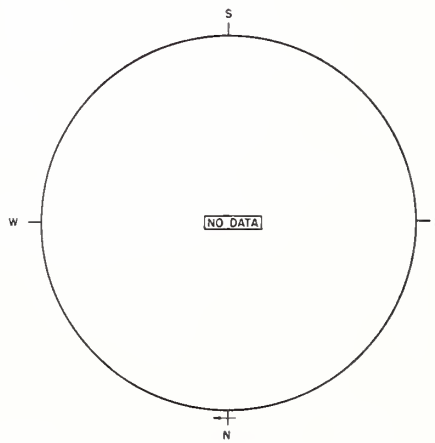
9.1 cm SPECTROHELIOGRAM S = 71 Total = 3017
Stanford, 1964 Oct 21, 20-21 hrs UT; Brightness Unit = 2.8 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 73 Total = 2531
Stanford, 1964 Oct 22, 20-21 hrs UT; Brightness Unit = 3.5 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 73 Total = 4494
Stanford, 1964 Oct 23, 20-21 hrs UT; Brightness Unit = 1.9 x 10^3 °K.



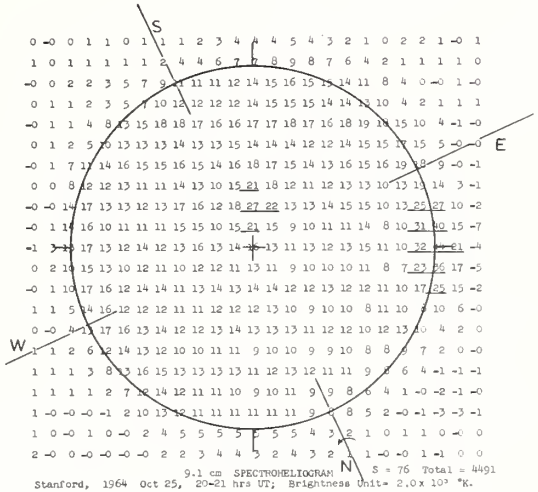
1964 OCTOBER 24

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

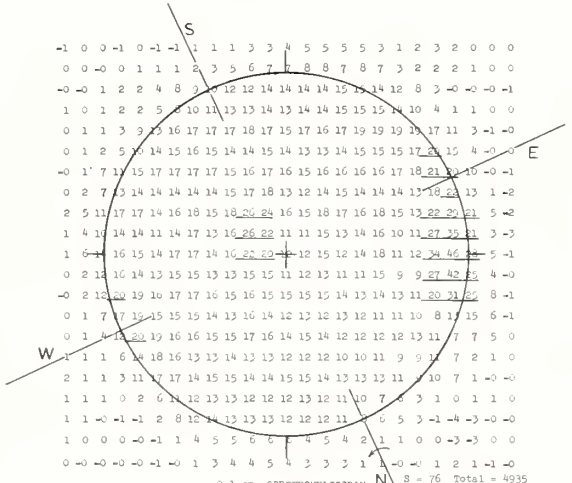
STANFORD

9.1 cm



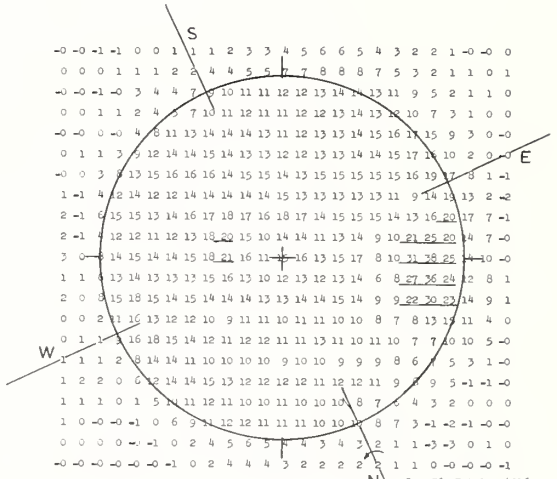
9.1 cm SPECTROHELIOGRAM S = 76 Total = 4491

Stanford, 1964 Oct 25, 20-21 hrs UT; Brightness Unit = 2.0 x 10^3 °K.



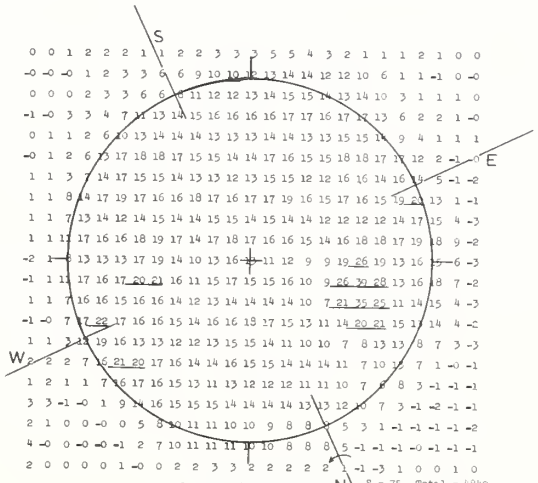
9.1 cm SPECTROHELIOGRAM S = 76 Total = 4935

Stanford, 1964 Oct 26, 20-21 hrs UT; Brightness Unit = 1.8 x 10^3 °K.



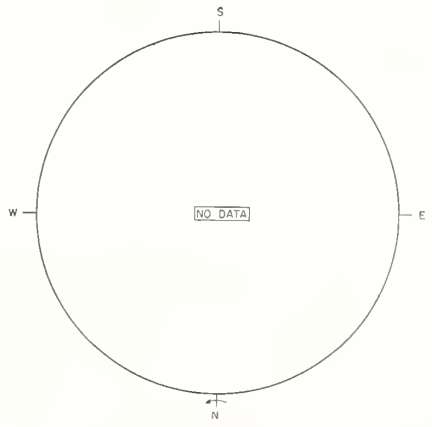
9.1 cm SPECTROHELIOGRAM S = 76 Total = 4316

Stanford, 1964 Oct 27, 20-21 hrs UT; Brightness Unit = 2.1 x 10^3 °K.

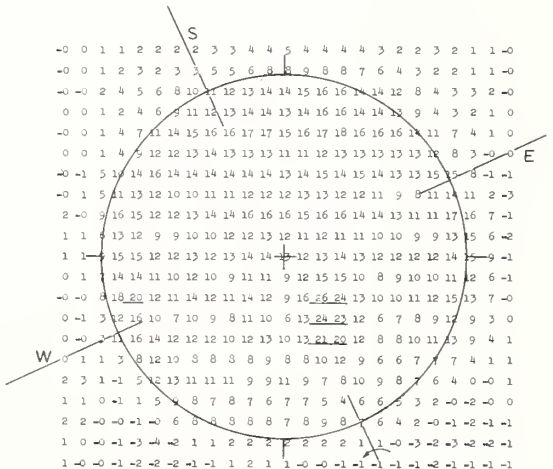


9.1 cm SPECTROHELIOGRAM S = 75 Total = 4849

Stanford, 1964 Oct 28, 20-21 hrs UT; Brightness Unit = 1.9 x 10^3 °K.



1964 OCTOBER 29



9.1 cm SPECTROHELIOGRAM S = 74 Total = 3906

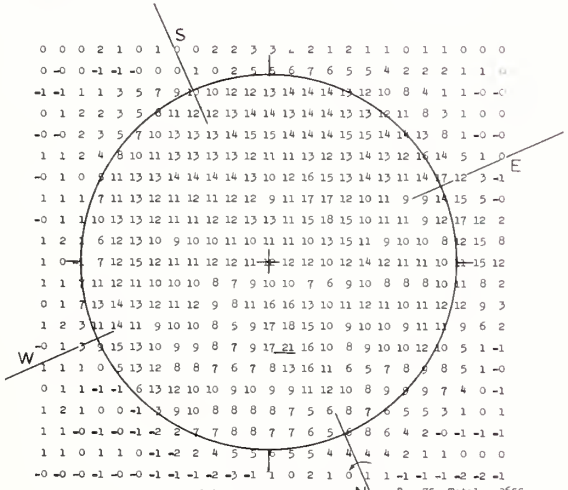
Stanford, 1964 Oct 30, 20-21 hrs UT; Brightness Unit = 2.3 x 10^3 °K.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

STANFORD

9.1 cm



9.1 cm SPECTROHELIOGRAM S = 75 Total = 3655

Stanford, 1964 Oct 31, 20-21 hrs UT; Brightness Unit = 2.5 x 10^4 °k.

COSMIC RAY INDICES

(Climax Neutron Monitor)

IGC Station B 305

SEPTEMBER 1964

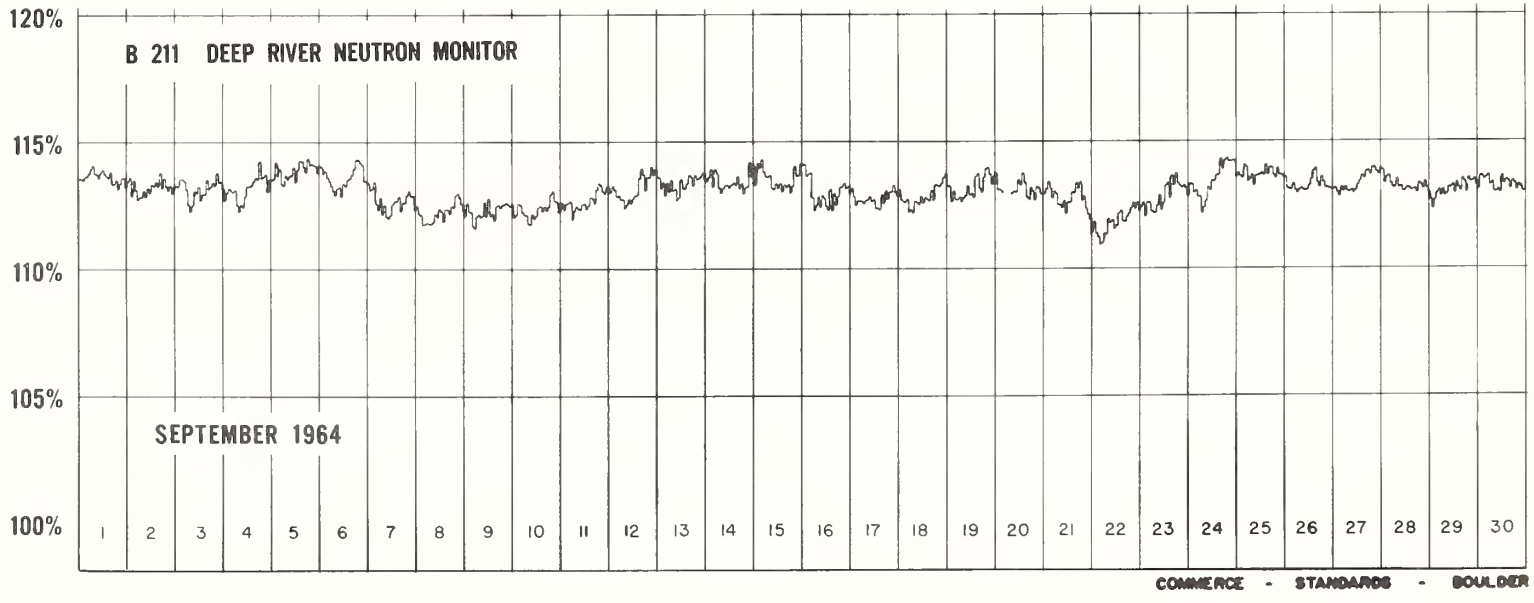
Sept. 1964	DAILY AVERAGE COUNTS / HOUR*	Sept. 1964	DAILY AVERAGE COUNTS / HOUR*
1	3306.4 **24	16	3306.9 **36
2	3314.4	17	3295.9 **36
3	3308.2	18	3301.1
4	3312.3	19	3311.5
5	3326.0	20	3309.6
6	3326.0	21	3302.5
7	3303.0	22	3296.5
8	3296.6	23	3298.0
9	3281.7	24	3301.2
10	3283.3	25	3312.1
11	3286.6	26	3321.4
12	3299.9	27	3307.3
13	3302.9	28	3322.2
14	3314.1	29	3314.5
15	3322.5 **34	30	3311.4

* Scaling Factor 128.

** No. of Section Hours Less Than 40 Hours.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)



Vc

COSMIC RAY INDICES

DALLAS SUPER NEUTRON MONITOR

DAILY AVERAGE COUNTS PER HOUR *

JANUARY – SEPTEMBER 1964

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		6408.5	6423.4	6481.3	6463.5	6473.1	6504.7	6496.2	6498.0-8
2		6419.7	6439.7	6470.6	6453.8	6482.3	6508.2	6487.0	6502.0
3		6420.5	6453.1	6469.5	6468.0	6477.3	6507.1	6509.1	6510.7
4		6425.0	6484.3	6474.8	6476.5	6486.0	6526.8	6508.5	6527.1
5		6430.8	6458.4	6467.3	6457.0	6495.9	6519.3	6498.1-22	6539.7
6		6437.5	6435.9	6458.9	6434.6	6493.4	6517.3	6500.4	6534.2
7		6451.5	6429.4	6468.7	6436.9	6491.6	6517.5	6490.2	6502.4
8		6449.5	6410.3	6464.0	6429.0	6476.3	6517.8	6481.8	6486.0
9		6457.7	6442.1	6478.0	6451.8	6442.7	6505.8	6484.9	6485.3
10		6475.3	6463.5	6481.9	6424.7	6434.2	6511.3	6502.1	6482.9
11		6478.6	6455.5-18	6462.4	6453.1	6445.2	6521.6	6493.7	6489.0
12		6447.4	6461.0	6447.9	6439.4	6442.6	6521.2	6475.7	6513.3
13		6441.7	6440.8	6473.8	6469.9	6441.4	6533.1	6462.8	6540.5
14		6417.3	6438.8	6462.5	6466.6	6458.2	6538.4	6451.3	6542.8
15		6386.1	6461.5	6472.8	6461.1	6449.5	6539.7	6453.4	6544.1
16		6363.8	6453.3	6466.0	6459.6	-	6531.3	6433.1	6498.0
17		6380.8	6429.8	6445.0	6449.7	-	6519.8	6445.8	6474.3
18		6402.5	6438.6	6446.3	6461.3	-	6505.7	6446.2	6485.7-21
19		6437.0-23	6429.2-22	6442.7	6457.3	6475.0	6489.3	6476.4	6491.2
20		6440.3	6420.0	6442.9	6478.1	6507.3	6503.7	6495.0	6468.2
21		6439.5-21	6432.2	6431.5	6472.0	6498.9	6520.1	6490.2	6453.7-19
22		6456.5	6431.5	6429.6-23	6467.8	6472.8	6521.3	6505.6	6447.5
23		6458.9	6440.7-23	6434.5	6480.0	6475.8	6530.1	6496.0	6476.0-23
24		6470.0	6461.5-21	6429.4	6486.7	6500.5	6535.6	6496.0	6489.8
25	6451.4	6448.3	6419.8	6428.5	6475.8	6514.9	6512.0	6482.4	6497.3
26	6453.7	6443.8	6447.8	6446.4	6485.0-22	6521.7	6519.8	6497.9-18	6484.3
27	6465.8	6461.2	6456.6	6479.6	6477.9-22	6531.0	6515.1	6492.3-22	6473.5
28	6475.2	6476.9	6451.5	6464.8	6480.0	6524.8	6517.6	6477.7	6502.6
29	6440.5	6439.1	6463.0	6471.8	6474.7	6517.9	6508.7	6488.6	6487.8
30	6406.2		6484.2	6473.3	6469.1	6494.9	6488.2-22	6499.2	6521.9
31	6396.1		6471.2		6470.6		6480.3-23	6508.7-23	

COMMERCE - STANDARDS - BOULDER

* Scaling factor 120

- (Number) Number of hours for which data are available if less than 24.

COSMIC RAY INDICES

CHURCHILL SUPER NEUTRON MONITOR

DAILY AVERAGE COUNTS PER HOUR *

MAY-SEPTEMBER 1964

	May	June	July	Aug.	Sept.
1	6357.1	6427.1	6458.9	6438.1	6467.5
2	6356.0	6436.3	6473.4	6421.9	6468.5
3	6372.1	6434.1	6447.0	6471.1	6475.6
4	6401.0	6445.0	6447.7	6408.5	6496.2
5	6398.3	6455.0	6448.3	6413.5	6507.4
6	6401.0	6473.3	6454.7	6433.1	6507.8
7	6408.8	6473.3	6439.8	6405.2-23	6444.9
8	6431.8	6445.1	6387.7	6421.3	6435.7
9	6455.5	6414.9	6386.9	6446.2	6429.3
10	6440.5	6372.7	6407.0	6460.3-21	6442.3
11	6376.1	6391.4	6400.6	6425.0-23	6460.4
12	6393.0	6380.1	6413.8	6418.0	6472.7
13	6393.5	6413.5	6417.6	6423.2-22	6490.2
14	6388.1	6432.7	6417.7	6415.5	6475.9
15	6406.8	6415.4	6433.0	6422.0	6472.6
16	6386.8	6410.0	6447.9	6423.9	6475.4
17	6373.8	6437.3	6445.7	6427.7	6456.6
18	6396.5	6448.2	6391.5	6432.3	6444.8
19	6392.7	6426.1	6383.0	6438.1	6480.8
20	6412.5	6444.9	6402.5	6457.5	6495.4
21	6416.1	6406.8	6416.6	6476.6	6485.3
22	6435.5	6392.5	6404.9	6474.2	6436.3
23	6444.8	6425.9	6415.5	6493.0	6470.8
24	6419.6	6429.3	6457.3-21	6510.6	6483.3
25	6420.0	6447.2	6439.2	6499.0	6495.7
26	6409.5	6447.9	6455.7	6492.3	6502.1
27	6408.7	6429.8	6454.8	6503.5	6518.1
28	6408.0	6428.0	6474.8	6487.0	6507.8
29	6404.7	6440.7	6474.2	6482.1	6506.8
30	6421.0	6454.9	6436.3	6480.8	6505.3
31	6409.5		6434.3	6482.6	

COMMERCE - STANDARDS - BOULDER

* Scaling factor 120.

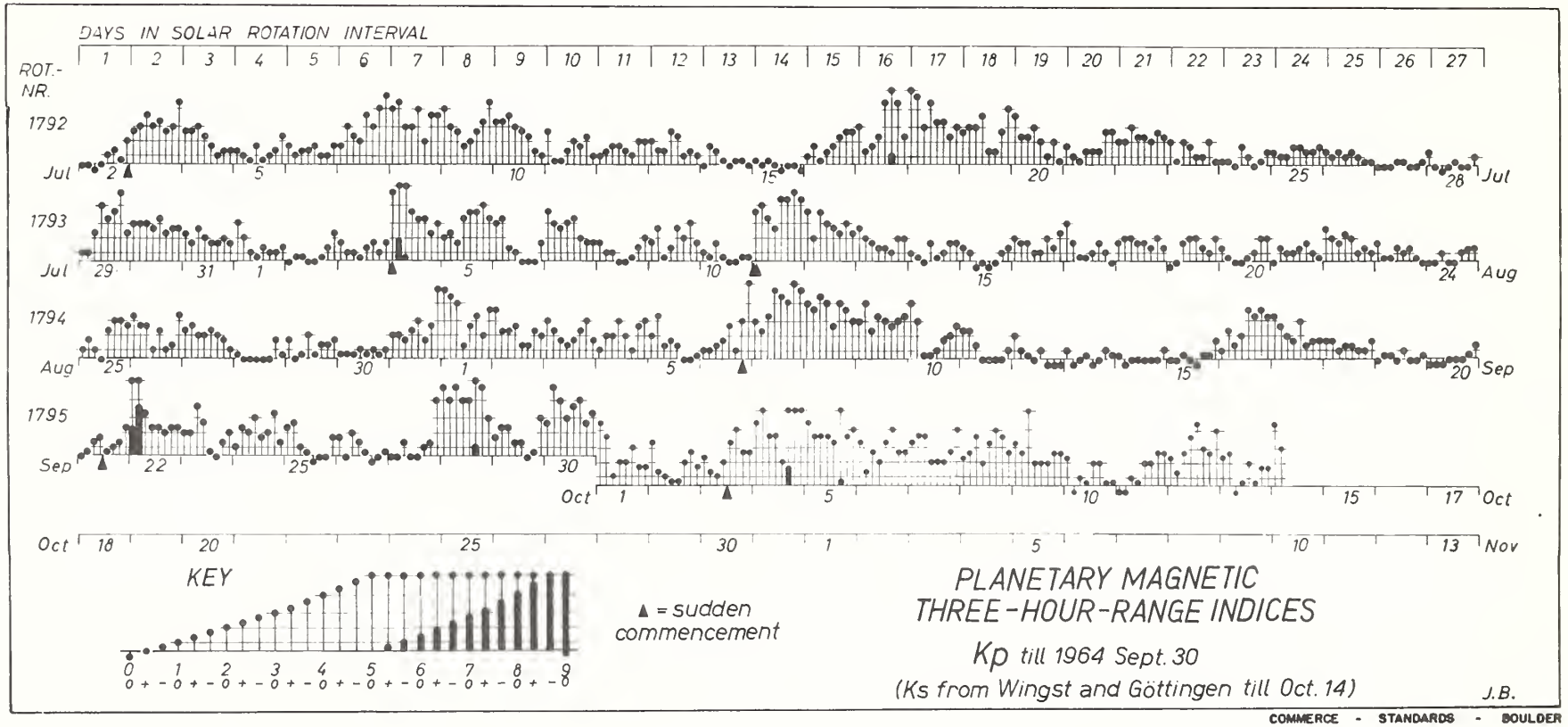
- (Number) Number of hours for which data are available if less than 24.

GEOMAGNETIC ACTIVITY INDICES

SEPTEMBER 1964

Sept. 1964	C	Values Kp — Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	1.0	5- 4+ 4o 1+	3- 3+ 2o 4-	26o	20	Five
2	0.6	4- 2+ 2+ 3-	1+ 1+ 2+ 2o	18o	10	Quiet
3	0.6	3o 2+ 2- 1+	2- 2+ 3o 2-	17o	9	
4	0.6	1o 2o 2o 3o	2o 1o 3- 3o	17-	9	13
5	0.3	2o 3+ 1+ 2-	1+ 0+ 0+ 1-	11o	6	14
						15
6	0.8	1o 1o 1+ 2-	3- 1o 3o 5o	17-	12	19
7	1.4	3o 2+ 3+ 5-	4+ 4o 5o 5-	31+	28	20
8	1.2	4o 4- 4+ 4o	3- 4o 4- 3o	29+	23	
9	0.9	3o 4o 2+ 3+	3o 3- 3o 3+	25-	16	
10	0.6	4o 3o 1- 1-	1o 2- 2o 3-	16-	10	
11	0.1	2+ 2+ 1+ 0+	0+ 0+ 0+ 1o	8+	4	Five
12	0.1	2o 1o 1- 0+	1o 0o 0o 0o	5o	2	Disturbed
13	0.1	1o 0o 0+ 1-	0o 0+ 1o 1-	4o	2	
14	0.1	1- 0o 0+ 0+	0+ 0+ 0+ 1o	3+	2	7
15	0.0	0+ 0+ 1- 0+	0o 1- 1- 2-	5-	3	8
						22
16	0.9	1o 2+ 1+ 2o	4- 3+ 4- 3+	21-	13	28
17	0.5	3+ 3- 2o 2-	3o 1+ 2- 2-	17+	9	30
18	0.2	2- 2- 1o 1+	1+ 1o 1o 2-	11-	5	
19	0.0	0+ 1- 1- 0+	1o 0+ 0+ 1-	4+	3	
20	0.1	0o 0o 0o 0+	0+ 0+ 1- 1+	3o	2	
21	0.3	0+ 1- 1+ 2-	1- 1o 1+ 2+	9+	5	Ten
22	1.4	7- 8- 3+ 2+	2+ 2o 2+ 2+	29o	44	Quiet
23	0.4	2o 2o 4- 3-	1- 0+ 1+ 2o	15-	8	
24	0.8	1o 2+ 2o 3o	2- 2o 3+ 1+	17-	9	11
25	0.1	2+ 3- 1o 1-	0o 0+ 0+ 2-	9o	5	12
						13
26	0.1	2- 0+ 2o 1+	1- 0o 0+ 1-	7o	4	14
27	0.4	0+ 0+ 1+ 0+	0+ 1o 1+ 4o	9o	6	15
28	1.4	5- 4o 5- 4o	4o 6- 5- 3o	35-	35	18
29	0.4	2- 2+ 2+ 1+	1+ 0+ 1- 3o	13o	7	19
30	1.0	3- 5- 4o 3o	4- 4o 3- 3+	28o	22	20
						21
						26
Mean:	0.55			Mean:	11	

COMMERCE - STANDARDS - BOULDER


DAYS IN SOLAR ROTATION INTERVAL
ROT.-NR.
1792
1793
1794
1795
Jul
Aug
Sep
Oct
Nov
KEY
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp till 1964 Sept. 30
(Ks from Wingst and Göttingen till Oct. 14)
J.B.
COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

SEPTEMBER 1964

NORTH ATLANTIC

SEPT. 1964	NORTH ATLANTIC 6-HOURLY DUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:				WHOLE DAY INDEX	ADVANCE FORECASTS (J-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY				GEOMAGNETIC K_{FR}	
	00 TO 06	06 TO 12	12 TO 18	18 TO 24	00	06	12	18		1-7 DAYS FINAL J_S	1-7 DAYS SDW	1-3 DAYS J	1-7 DAYS	HALF (1)	DAY (2)
01	6-	5-	7-	6+	6	5	6	6	6-	5		5		3	3
02	5+	6-	6+	6+	6	5	7	7	6o	6		6		3	1
03	6+	6o	7-	7-	6	5	7	7	6+	6		6		2	2
04	6+	6_o	7-	6+	6	5	7	7	6+	6		6		3	2
05	6-	6-	7-	6+	6	5	7	7	6o	7		7		3	0
06	6o	6o	7-	7-	6	6	7	7	6+	7		7		2	3
07	6+	5+	6+	7-	5	5	7	6	6_o	6		6		3	(4)
08	4o	3-	7-	7-	5	3	5	6	5o	6		6		(4)	3
09	5-	4+	6+	7-	5	4	6	7	6-	6		6		3	2
10	4+	4+	6+	7-	5	5	7	6	5+	5		5		1	2
11	6_o	5+	7-	6+	5	5	7	7	6_o	6		6		2	0
12	6_o	6-	6+	7-	6	5	7	7	6_o	6		6		1	1
13	5+	5o	6+	6+	6	5	7	7	6-	7		7		1	1
14	6-	5+	7-	7o	6	6	7	7	6+	7		7		0	0
15	6_o	5o	7-	7-	6	6	7	7	6+	7		7		1	1
16	5+	5+	7-	7_o	6	5	7	7	6o	6		6		2	3
17	6-	6-	7-	7-	6	5	7	7	6o	6		6		2	2
18	5_o	5o	7-	7-	6	5	7	7	6o	6		6		1	2
19	5+	5o	7-	7_o	6	5	7	7	6_o	6		6		0	1
20	6-	6-	7-	7-	6	5	7	7	6o	6		6		0	1
21	6+	6-	7-	7-	6	6	7	7	6+	6		6		1	2
22	4+	5o	6+	6+	5	2	6	6	6-	6		6		(5)	2
23	6-	4+	7-	7_o	5	5	6	7	6o	6		6		2	1
24	6-	5-	7-	6+	6	6	7	7	6-	6		6		2	2
25	5-	6-	7-	7-	6	5	7	7	6o	6		6		2	1
26	5-	6_o	7-	7-	6	5	7	7	6_o	6		6		2	1
27	5+	6o	7-	6+	5	5	7	7	6o	5		5		1	2
28	5+	5-	6+	6o	5	5	6	6	6-	5		5		(4)	(4)
29	4+	5o	7-	7-	5	5	6	7	6-	5		5		2	2
30	5+	5o	6+	7-	5	5	7	6	6_o	6		6		3	3
Score: Quiet Periods				P	16	12	20	19		20		20			
				S	10	13	9	11		10		10			
				U	0	1	1	0		0		0			
				F	0	0	0	0		0		0			
Disturbed Periods:				P	0	2	0	0		0		0			
				S	4	2	0	0		0		0			
				U	0	0	0	0		0		0			
				F	0	0	0	0		0		0			

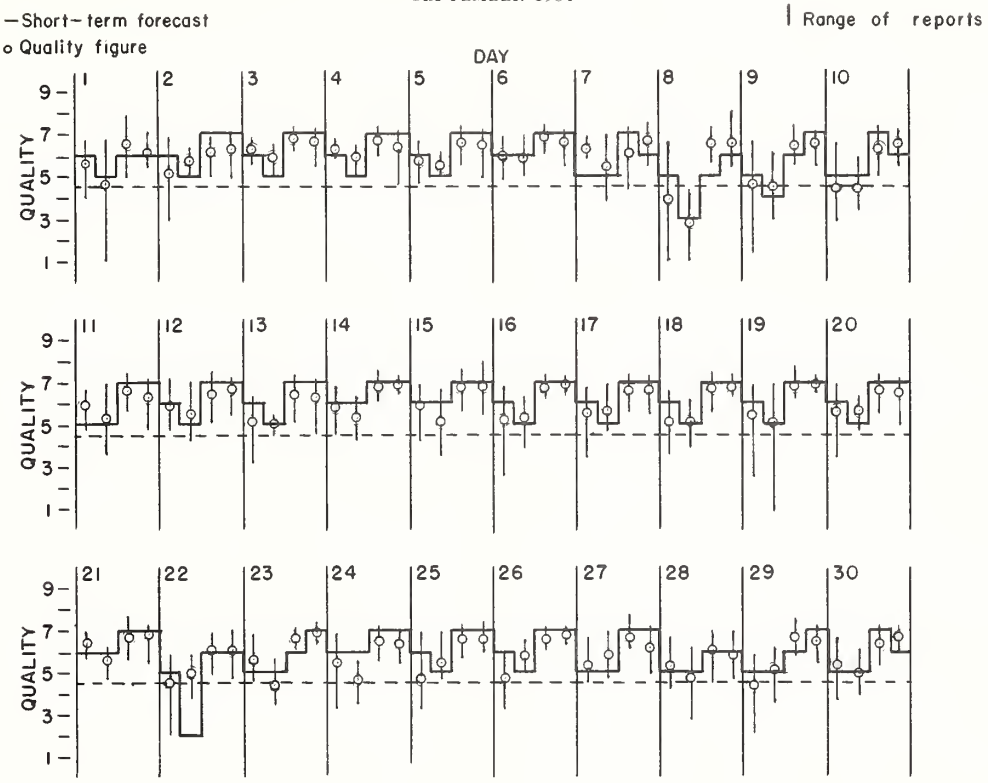
NORTH PACIFIC

NORTH PACIFIC 8-HOURLY DUALITY FIGURES				SHORT-TERM FORECASTS ISSUED AT.			WHOLE DAY INDEX	ADVANCE FORECASTS (J_P REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY				GEOMAGNETIC K_{ST}	
03 TO 11	11 TO 19	19 TO 03		02	09	18		1-7 DAYS FINAL J_{PS}	1-7 DAYS SDW	1-3 DAYS J_P	1-7 DAYS	HALF (1)	DAY (2)
5	5	7		6	5	6	5	4		4		3	2
6	6	7		6	6	7	6	4		4		2	1
6	5	7		6	6	6	6	6		6		2	1
6	5	7		7	6	7	6	6		6		2	2
5	5	7		6	5	6	5	7		7		2	1
6	5	7		6	6	6	6	7		7		1	2
5	4	6		6	4	5	5	6		6		3	3
5	5	6		6	4	6	5	5		5		(4)	2
4	4	6		6	5	6	(4)	5		5		3	2
4	4	6		5	5	6	(4)	5		5		2	1
6	5	6		5	6	6	5	6		6		2	0
6	6	6		6	5	6	6	6		6		1	0
5	6	6		6	6	6	6	6		6		0	0
6	5	6		6	6	6	6	7		7		0	0
5	5	7		6	6	6	6	7		7		0	1
6	5	7		6	6	6	6	6		6		2	3
5	6	7		6	5	7	6	6		6		2	2
5	6	6		6	5	7	5	6		6		1	0
4	5	6		6	5	6	5	6		6		0	0
6	6	6		6	6	6	6	6		6		0	0
5	6	6		6	5	6	5	6		6		1	0
5	5	6		6	5	6	5	6		6		(5)	1
5	5	7		6	5	6	5	6		6		2	1
5	4	7		6	6	6	5	5		5		2	1
5	5	7		6	5	6	6	6		6		2	0
5	5	7		6	5	6	6	6		6		2	1
5	5	7		6	5	7	6	5		5		1	1
5	4	6		6	6	4	5	5		5		(4)	(4)
4	5	7		4	4	6	5	5		5		2	2
5	4	7		5	4	6	(4)	6		6		3	2
			P	9	10	15		13					
			S	17	14	14		12					
			U	0	0	0		1					
			F	0	0	1		1					
			P	1	2	0		0					
			S	1	2	0		2					
			U	0	0	0		0					
			F	2	2	0		1					

COMMERCE - STANDARDS - BOULDER

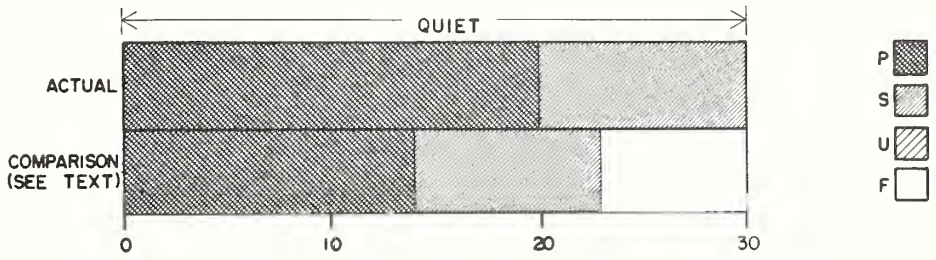
NORTH ATLANTIC

SEPTEMBER 1964

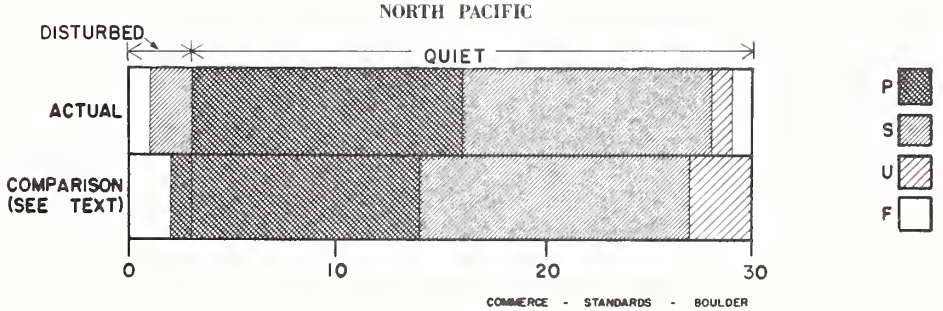


OUTCOME OF ADVANCE FORECASTS--FINAL ESTIMATES (1 TO 7 DAYS AHEAD)

NORTH ATLANTIC

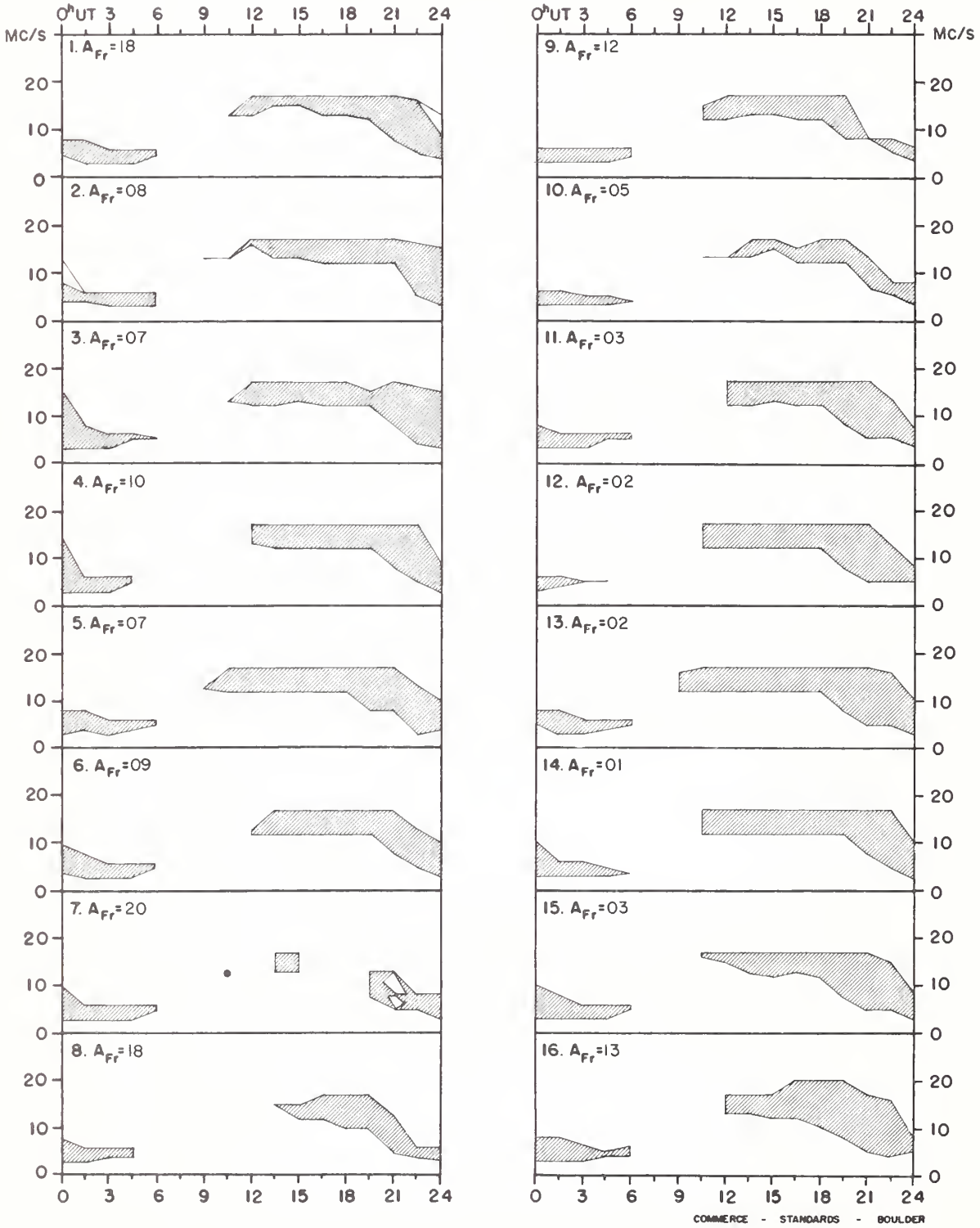


NORTH PACIFIC



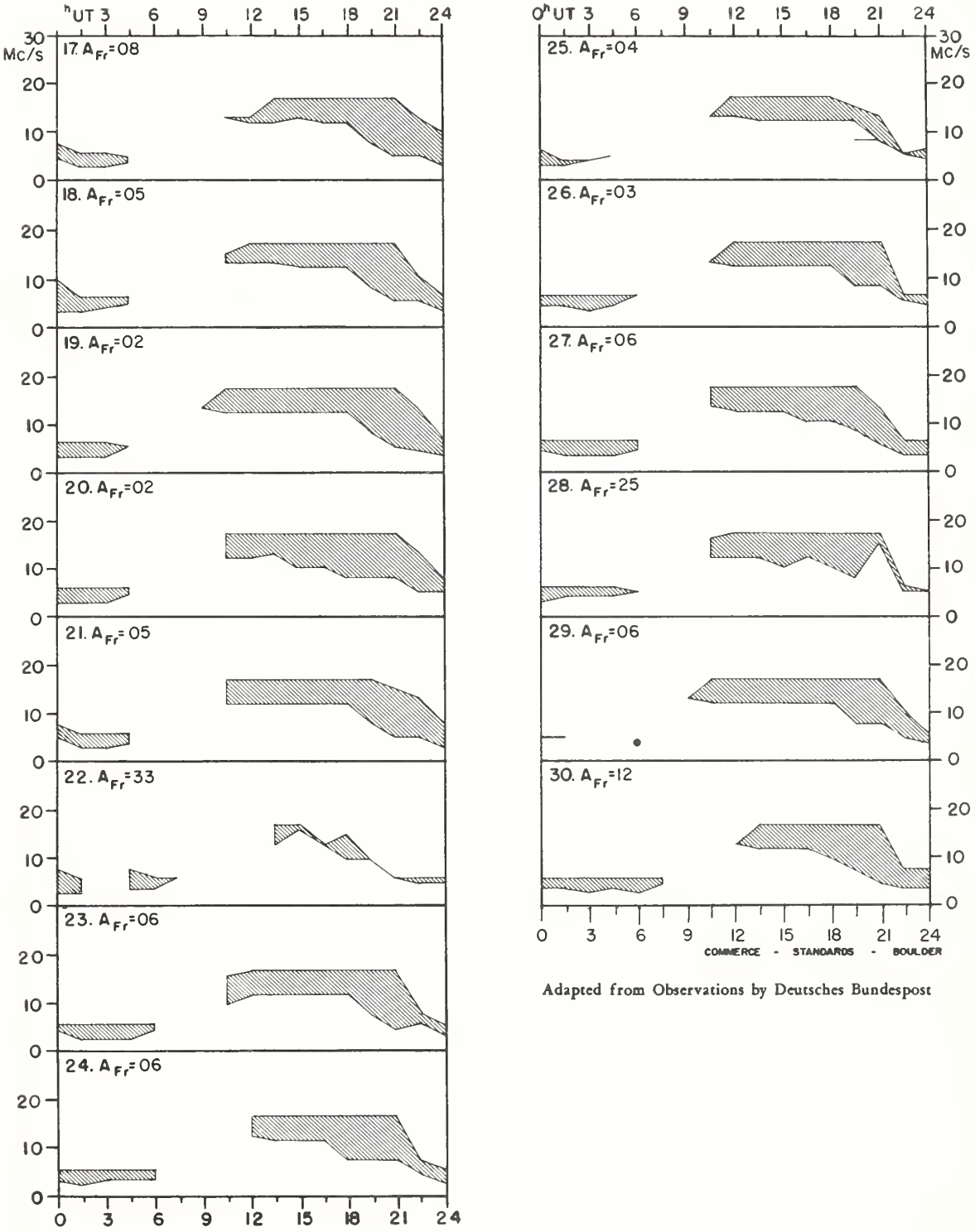
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

SEPTEMBER 1964



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

SEPTEMBER 1964



Adapted from Observations by Deutsches Bundespost

IQSY ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

OCTOBER 1964

OCT. 1964	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
1	0400		116	Stratospheric Warming	Ends	Advance stage of 10 MB stratospheric warming reached
4	0400		117	Magnetic Storm	Expected	
5	0400		118	Magnetic Storm	Expected	
7	0400		119	Solar Activity Stratospheric Warming	Exists Exists	Reestablished over Mirny Davis region
7	1715	Climax, Solar Flare 07/1500Z				
8	0400		120	Solar Activity Stratospheric Warming	Exists Exists	From Davis-Mirny to McMurdo-Pole area
9	0400		121	Solar Activity Stratospheric Warming	Exists Exists	Over McMurdo-Vostok-Pole region
10	0400		122	Stratospheric Warming	Exists	Over eastern Antarctica moving Byrd
11	0400		123	Stratospheric Warming	Exists	Near Durville region
12	0400		124	Stratospheric Warming	Exists	Near Durville-McMurdo region
13	0400		125	Stratospheric Warming	Exists	Durville-McMurdo-Pole region
14	0400		126	Stratospheric Warming	Exists	Mirny-Pole-Byrd region
16	0400		127	Stratospheric Warming	Exists	Antarctica
17	0400		128	Stratospheric Warming	Exists	Antarctica
18	0400		129	Stratospheric Warming	Exists	Antarctica
19	0400		130	Stratospheric Warming	Exists	Antarctica
20	0400		131	Stratospheric Warming	Exists	Antarctica
21	0400		132	Stratospheric Warming	Exists	Antarctica
22	0400		133	Stratospheric Warming	Exists	Antarctica
23	0400		134	Stratospheric Warming	Exists	Antarctica 20 millibar temperature minus eight degrees centigrade Pole-Vostok region
24	0400		135	Stratospheric Warming	Exists	Antarctica
25	0400		136	Stratospheric Warming	Exists	Antarctica
26	0400		137	Stratospheric Warming	Exists	Antarctica
27	0400		138	Stratospheric Warming	Exists	Antarctica
28	0400		139	Stratospheric Warming	Ends	Antarctica Stratospheric Warm entire continent