CRPL-F 241 PART B FOR OFFICIAL USE

PART B

SOLAR - GEOPHYSICAL DATA

ISSUED

SEPTEMBER 1964

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

CRPL-F 241
PART B

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Issued
30 Sept. 1964

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CONTENTS

The descriptive text was republished in November 1963 with an addendum in August 1964. New data given in this issue are described below.

SOLAR X-RAY RADIATION

Data from the NRL Solar Radiation Monitoring Satellite, now in orbit, are presented in Tables III j-1. Measurements of x-ray fluxes are made in the bands 0-8, 8-20, and 44-60 Angstroms. This program is under the direction of Robert W. Kreplin of the U. S. Naval Research Laboratory.

Explanations of the column entries follow.

1. Times of Observations

These are the intervals of time (UT) when the satellite was in range of a telemetry station. Intervals have not been included when x-ray flux could not be reduced from the records due to noise or other interference.

2. Average X-Ray Flux

a. 44-60 A

The average flux is calculated from the records reduced for the listed intervals. This reduction is made assuming that the solar x-ray spectrum can be approximated by a 0.5×10^6 ^oK "gray" body (ref. 1). This assumption is used only for convenience. Austin, Purcell, and Tousey (ref. 2) have photographed a line spectrum in the region 44-60 A. Calculation of the flux values using this spectrum does not yield a value greatly different from that calculated here. The probable limit of error in each flux value is approximately $\pm$ 10%.

b. 8-12 A

The 8-12 A flux is calculated on the assumption that this region of the spectrum may be approximated by a 2×10^6 ^oK "gray" body. Earlier published results have given the flux in the band 8-20 A. Measurement of the solar spectrum between 13 and 26 Angstroms by Blake (to be published) has revealed a number of emission lines. Therefore, it seems advisable to limit the calculation to the region of sensitivity of the photometer (ref. 3).

Normally the 8-12 A flux is below the threshold of the measurement system. The numbers listed in this column preceded by $<$ indicate the nominal threshold value for the day.

c. 0-8 A

The flux in this spectral range is calculated using a 2 x 10^6 ^{o}K "gray" body assumption. Here also the flux is normally below the threshold of the measurement system and the column entry represents the threshold value.

All flux values are in ergs cm^{-2} sec^{-1}. The probable limit of error for the 8-12 and 0-8 A measurements are $\pm$ 10% for purposes of comparison.

3. Outstanding Events

In this table are listed those intervals in which the x-ray flux was significantly greater than the average for the day.

* * * * *

REFERENCES

1. Kreplin, R. W., Solar X-rays, Ann. Geophys. 17, 151-161, 1961.

2. Austin, W. E., J. D. Purcell and R. Tousey, Astron. J. 69, 133, 1964.

3. Kreplin, R. W., NRL Solar Radiation Monitoring Satellite, Description of Instrumentation and Preliminary Results, Presented at the COSPAR Symposium (Working Group 2) at Florence, Italy, 11 May 1964, to be published in SPACE RESEARCH V.

DAILY SOLAR INDICES

July 1964	American Relative Sunspot Numbers $R_{A'}$
1	3
2	0
3	1
4	4
5	3
6	1
7	0
8	0
9	0
10	0
11	0
12	0
13	1
14	13
15	13
16	13
17	6
18	2
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	7
Mean:	2.2

Aug. 1964	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux S	S_A
1	9	66.9	68.9
2	20	67.7	69.7
3	17	68.0	70.1
4	8	67.9	69.8
5	8	69.0	71.0
6	7	68.2	70.2
7	7	67.7	69.6
8	0	67.5	69.4
9	0	67.9	69.8
10	7	68.8	70.7
11	8	68.1	69.9
12	21	69.8	70.6
13	21	74.0	75.9
14	36	76.1	78.0
15	30	75.4	77.3
16	30	73.0	74.8
17	12	71.5	73.3
18	8	69.6	71.3
19	7	70.6	72.2
20	7	69.7	71.4
21	7	69.2	70.8
22	0	69.0	70.6
23	0	68.8	70.3
24	0	68.4	69.9
25	0	67.7	69.1
26	0	67.5	68.9
27	0	68.2	69.6
28	0	67.2	68.6
29	0	67.1	68.5
30	0	68.6	69.9
31	7	68.9	70.2
Mean:	8.9	69.3	71.0

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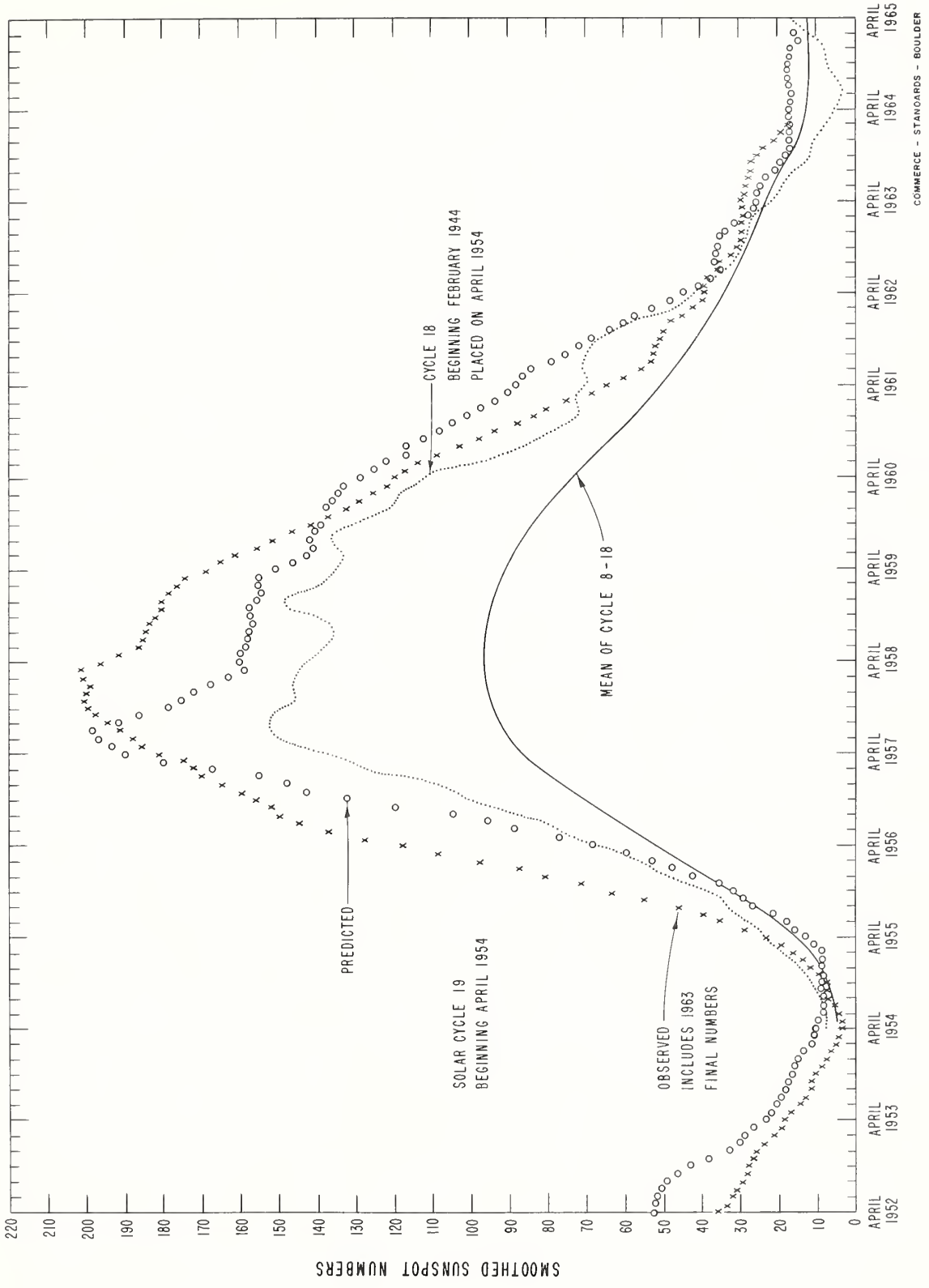

PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

AUGUST 1964

August 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	
2.2	S48	7427	New	200	1	b – d	1	Aug. 1	2			
2.9	N23	7423(2)	New	(200)	(1)	ℓ – d	1	July 28	1			
3.5	N09	7438(2)	New	(200)	(1.5)	b – ℓ	1	Aug. 9	1			
3.7	N09	7428	New	100	1	b – d	1	Aug. 1	3			
4.2	N01	7431(2)	New	(200)	(2)	b – d	1	Aug. 6	1			
5.6	S16	7429(2)	New	100	1.5	b – d	1	Aug. 3	1			
5.7	S03	7432(2)	New	100	1	b – d	1	Aug. 6	1			
6.6	N34	7433(4)	7384	300	1.5	b – d	3	Aug. 6	3			
6.5	S10	7435	New	100	2.5	b – d	1	Aug. 7	2			
7.3	S37	7440(2)	New	(100)	(2)	b – d	1	Aug. 10	1			
8.8	S27	7439(2)	New	200	2.5	b – d	1	Aug. 9	1			
9.3	S12	7436(2)	New	200	1.5	b – d	1	Aug. 7	1			
10.9	N25	7430(5)	New	500	2	ℓ / ℓ	1	Aug. 4	14	210	4	b / ℓ
11.6	S11	7434	New	(100)	(1)	ℓ – d	1	Aug. 6	5			
12.1	N07	7445(5)	New	(300)	(3)	b ⌐ ℓ	1	Aug. 16	3			
13.6	S12	7442(2)	New	(300)	(1.5)	b – d	1	Aug. 10	1			
13.9	S23	7447(2)	New	(200)	(1)	b – d	1	Aug. 18	1			
14.2	N29	7437	7404	600	1	ℓ ⌐ d	2	Aug. 7	11			
16.4	N08	7443	New	1200	3	ℓ ∧ ℓ	1	Aug. 10	13	218	6	b – ℓ
18.4	N10	7444	New	200	2	b – d	1	Aug. 15	3			
18.5	N05	7446(2)	New	200	2	b – d	1	Aug. 16	1			
20.0	N26	7453(2)	New	(200)	(2.5)	b – d	1	Aug. 24	1			
21.3	N04	7455(2)	New	(100)	(2)	b – d	1	Aug. 25	1			
23.6	N06	7452(2)	New	100	2	b – d	1	Aug. 23	1			
24.2	N04	7449	New	200	1.5	b – d	1	≤Aug. 22	≥ 2			
24.6	N23	7451	New	300	1.5	b – d	1	≤Aug. 22	≥ 4			
24.9	N14	7450	New	400	1.5	b – d	1	≤Aug. 22	≥ 3			
26.1	N27	7459(2)	New	(200)	(1.5)	b – d	1	Aug. 28	1			
26.2	N23	7456	New	200	2	b – d	1	Aug. 25	2			
26.3	N44	7466(2)	New	(100)	(2)	b – d	1	Aug. 30	1			
26.6	N07	7448	7426	900	1.5	ℓ ⌒ ℓ	2	Aug. 19	15			
27.3	N24	7467(2)	New	(100)	(2)	b – d	1	Aug. 30	1			
28.3	N30	7460(2)	New	200	1	b – d	1	Aug. 28	1			
29.3	N08	7462	New	100	1	b / d	1	Aug. 29	3			
29.5	N20	7457	New	200	1	b – d	1	Aug. 27	2			
29.9	N02	7454	New	400	1.5	ℓ / d	1	Aug. 24	7			
30.0	N32	7463(2)	New	100	1	b – d	1	Aug. 29	1			
30.7	S32	7461(2)	New	100	1	b – d	1	Aug. 29	1			
30.8	N34	7464(2)	New	100	1	b – d	1	Aug. 29	1			
31.6	N37	7465(2)	New	(100)	(1)	b – d	1	Aug. 29	1			
31.8	N05	7458(2)	New	(100)	(2)	b – d	1	Aug. 27	1			

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(1) No calcium plage observations were secured at the McMath-Hulbert Observatory on August 11, 20, 21, 1964.

(2) These very small and ephemeral plages last for only one day.

(3) Plage 7430 experiences a remarkable rejuvenation on the disk on and after August 11.

(4) Plage 7433 represents the weak remnants of plage 7384.

(5) Plage 7445 is in the same position as the short-lived plage 7403 of the preceding rotation.

AUGUST 1964

Aug. 1964	TIME MEAS. UT	LAT	MER DIST	TYPE
1	1910	N20 N07	W54 W24	βp* β
2	1800	N20 N07	W65 W35	βp* βf
3	1910	N07	W50	βf
4	1745	N06	W62	βf
5	1815	N07	W78	βp
6	No Spots			
7	1800	S11	W17	αp
8	No Spots			
9	No Spots			
10	2250	N08	E76	βp
11	2345	N10 N23	E58 W18	αp βp*
12	1610	N10 N23	E49 W28	αp βγ*
13	1615	N22	W42	βγ*
14	1930	N23 N08	W56 E23	βγ* βf
15	1645	N24 N07	W67 E13	βγ* βp
16	No Obs.			
17	1645	N08	W19	αp
18	2410	N09	W34	βp
19	No Obs.			
20	No Obs.			
21	No Obs.			
22	No Spots			
23	No Spots			
24	No Spots			
25	No Spots			
26	No Spots			
27	No Spots			
28	No Spots			
29	No Spots			
30	No Spots			
31	No Obs.			

* New cycle

PROVISIONAL 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	x	x	17	23	x	x	14	16
2	7	9	13	17	4	6	15	16	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	0	0	19	26	5	6	21	26
4	x	x	x	x	x	x	x	x	x	x	17a	20a	x	x	16a	20a
5	9	14	17	22	5	8	15	18	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	6	12	12	12	3	4	9	12	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	9	12	6a	12a	6	8	18a	26a	x	x	x	x	x	x	x	x
13	x	x	15	20	x	x	17	28	x	x	x	x	x	x	x	x
14	23	60	x	x	8	10	x	x	4	6	6	8	4	7	12	16
15	x	x	15	16	x	x	18	22	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	3	17	19	31	1	6	14	21	x	x	x	x	x	x	x	x
18	x	x	13a	19a	x	x	16a	20a	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	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22	x	x	x	x	x	x	x	x	6	8	x	x	4	11	x	x
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	0a	0a	x	x	0a	0a	x	x
25	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
26	x	x	x	x	x	x	x	x	2a	6a	x	x	7a	25a	x	x
27	x	x	x	x	x	x	x	x	0a	0a	10a	15a	2a	14a	9a	10a
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	x	x	x	x	x	x	x	x	1	3	x	x	0	0	x	x

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

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SOLAR FLARES

AUGUST 1964

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION APPROX.		LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — UT	MEAS. AREA Sq Deg	CORR. AREA Sq Deg.	MAX WIDTH Ha	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
	AUG 1964	START	END	MAX. PHASE	LAT.	MER DIST.										
	01	1510	1530	NO FLARE	PATROL											
LOCKHEED	01	1843	1915	1850	N10	W55			1-	2	1850	.20	.30		10	
LOCKHEED	01	1854	1900	1857	N27	W80			1-	2	1857	.30	.90		10	
	02	0320	0325	NO FLARE	PATROL											
LOCKHEED	02	1704	1719	1709	N36	E58			1-	2	1709	.20	.30		10	
	03	0205	0225	NO FLARE	PATROL											
	03	0230	0235	NO FLARE	PATROL											
	03	0240	0330	NO FLARE	PATROL											
	03	0340	0530	NO FLARE	PATROL											
	03	1210	1230	NO FLARE	PATROL											
	04	0150	0450	NO FLARE	PATROL											
	04	0515	0545	NO FLARE	PATROL											
	04	0905	0915	NO FLARE	PATROL											
	04	0935	1000	NO FLARE	PATROL											
	04	1025	1230	NO FLARE	PATROL											
LOCKHEED	04	2208	2228	2215	N08	E03			1-	2	2215	.20	.20		10	
LOCKHEED	04	2353	2359	2355	N08	W67			1-	2	2355	.40	.60		10	
	05	0450	0600	NO FLARE	PATROL											
LOCARNO	05	1315 E	1330		N07	W74	7426	15 D	1	S						
HUANCAYO	05	1452 E	1512	1500	N07	W79	7426	20 D	1	S	1500	2.20		2.70		
WENDEL	05	1545 E	1722 D		N08	W77	7426	97 D	1+				5.00			
LOCKHEED	05	1610	1650	1620	N07	W75			1-	2	1620	.30	.80		10	
LOCKHEED	05	1930	2002	1937	N03	W72			1-	2	1955	.60	1.20		10	
LOCKHEED	05	1930	2002	1955	N03	W72			1-							
	07	0215	0335	NO FLARE	PATROL											
	07	0350	0450	NO FLARE	PATROL											
	07	0545	0550	NO FLARE	PATROL											
	07	1010	1015	NO FLARE	PATROL											
	07	1020	1100	NO FLARE	PATROL											
	07	1120	1130	NO FLARE	PATROL											
	07	1135	1230	NO FLARE	PATROL											
SAC PEAK	07	1351	1412	1400	S14	E22			1-	C		.57	.59		17	
LOCKHEED	07	2100	2300	2200	N30	W03			1-	2	2200	.20	.20		10	
	08	0240	0250	NO FLARE	PATROL											
	08	0315	0320	NO FLARE	PATROL											
	08	0330	0335	NO FLARE	PATROL											
	08	0900	0955	NO FLARE	PATROL											
	08	1000	1305	NO FLARE	PATROL											
	08	1455	1525	NO FLARE	PATROL											
	09	0410	0515	NO FLARE	PATROL											
SAC PEAK	09	1426	1446	1430	N29	E44			1-	C		.49	.59		17	
	09	2340	2400	NO FLARE	PATROL											
	10	0000	0015	NO FLARE	PATROL											

SOLAR FLARES

AUGUST 1964

OBSERVATORY	DATE AUG 1964	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST	McMATH PLAGE REGION	DURATION — MINUTES	IM PORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq Deg	CORR. AREA Sq Deg	MAX WIDTH Ha	MAX INT %	PROVISIONAL IONOSPHERIC EFFECT
	10	0045	0050	NO FLARE	PATROL											
	10	0405	0625	NO FLARE	PATROL											
LOCKHEED	11	0034	0047	0038	N07	E63			1-	2	0038	.30	.80		10	
	12	0225	0250	NO FLARE	PATROL											
	12	0310	0430	NO FLARE	PATROL											
	12	0900	1245	NO FLARE	PATROL											
	12	1710	1715	NO FLARE	PATROL											
MITAKA	13	0118	0148	0129	N25	W33			1-	C						
	13	0210	0310	NO FLARE	PATROL											
	13	0315	0405	NO FLARE	PATROL											
MITAKA	13	0430	0450		N25	W35			1-	C						
	13	0530	0555	NO FLARE	PATROL											
BUCHAREST	13	0638 E	0641 D		N21	W37			1-	2			.70			
BUCHAREST	13	0749 E	0757 D		N22	W39			1-	2			1.40			
BUCHAREST	13	0922 E	0936 D		N22	W40			1-	2			.70			
BUCHAREST	13	0957 E	1032 D		N22	W40			1-	2			2.10			
AROSA	13	1240 E	1255 D		N22	W40	7430	15 D	1	P						
	13	1605	1610	NO FLARE	PATROL											
	13	1705	1805	NO FLARE	PATROL											
LOCKHEED	13	1946	1954	1949	N29	E65			1-	2	1949	.10	.20		10	
LOCKHEED	13	2030	2100	2045	N08	E34			1-	2	2045	.30	.30		10	
LOCKHEED	13	2124	2215	2136	N09	E34			1-	2	2136	1.00	1.00		20	
SAC PEAK	13	2132 E	2152 D	2152 U	N10	E34			1-	C		.49	.53		18	
	14	0145	0200	NO FLARE	PATROL											
	14	0430	0435	NO FLARE	PATROL											
AROSA	14	0855	0924		N08	E29	7443	29	1	V						
HTE-PROVEN	14	0856	0902 D		N08	E29			1-	C	0859	.30	.30			
HTE-PROVEN	14	0910	0920 D		N08	E29			1-	C	0912	1.00	1.10			
	14	0925	1045	NO FLARE	PATROL											
	14	1055	1100	NO FLARE	PATROL											
	14	1155	1230	NO FLARE	PATROL											
LOCARNO	14	1510	1525	1512	N08	E26	7443	15	1	V	1512		1.00			
	14	1645	1705	NO FLARE	PATROL											
	14	1735	1740	NO FLARE	PATROL											
	14	1800	1910	NO FLARE	PATROL											
	14	2015	2035	NO FLARE	PATROL											
	14	2045	2100	NO FLARE	PATROL											
	14	2120	2140	NO FLARE	PATROL											
	15	0145	0155	NO FLARE	PATROL											
	15	0910	0920	NO FLARE	PATROL											
	15	1115	1140	NO FLARE	PATROL											
	15	1215	1240	NO FLARE	PATROL											
	15	1730	1800	NO FLARE	PATROL											
	15	1900	1930	NO FLARE	PATROL											
LOCKHEED	15	2018	2036	2022	N07	E12			1-	2	2022	.30	.30		10	
	16	1200	1205	NO FLARE	PATROL											

SOLAR FLARES

AUGUST 1964

OBSERVATORY	DATE AUG 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
LOCKHEED	16	1638	1655	1641	N29	W84			1-	2	1641	.50	1.50		10	
	16	2240	2245	NO FLARE	PATROL											
	17	0245	0255	NO FLARE	PATROL											
LOCKHEED	17	1800	1822	1806	N29	W85			1-	2	1806	.20	.60		10	
LOCKHEED	18	0017	0043	0024	S29	E80			1-	2	0024	.20	.60		10	
	18	0200	0250	NO FLARE	PATROL											
	18	1030	1040	NO FLARE	PATROL											
OTTAWA	18	1200	1211	1203	N05	W87			1-	C	1203	.24	.66			
	18	1220	1245	NO FLARE	PATROL											
	18	1405	1415	NO FLARE	PATROL											
	18	1420	1525	NO FLARE	PATROL											
LOCKHEED	18	2015	2105	2040	N08	W32			1-	2	2040	1.00	1.00		10	
	19	0340	0350	NO FLARE	PATROL											
	19	0400	0405	NO FLARE	PATROL											
	19	0410	0425	NO FLARE	PATROL											
	19	0430	0435	NO FLARE	PATROL											
	19	0445	0455	NO FLARE	PATROL											
	19	0520	0535	NO FLARE	PATROL											
BUCHAREST	19	0845 E	0900 D		N10	W34	7443	15 D	1	1			2.10			
HTE-PROVEN	19	0853	0901		N07	W35			1-	C	0855	.30	.40			
LOCARNO	19	0853	0905 D		N10	W33	7443	12 D	1	S						
	19	1050	1105	NO FLARE	PATROL											
	19	1200	1210	NO FLARE	PATROL											
OTTAWA	19	1343	1358 D		N07	W46			1-	C	1347	.18	.21			
SAC PEAK	19	1552	1600	1553	N08	W44			1-	C		.29	.33		18	
LOCKHEED	19	1613 E	1645	1613 U	N09	E90			1-	2	1613	.20	1.00		10	
LOCKHEED	19	1653	1713	1656	N07	W47			1-	2	1656	.70	.70		10	
SAC PEAK	19	1655	1710	1659	N08	W48			1-	C		.57	.70		18	
HTE-PROVEN	19	1656 E	1706 D		N12	W46			1-	C	1657	.40	.60			
LOCKHEED	19	1845	1942	1920	N10	E71			1-	2	1920	.40	.80		10	
LOCKHEED	19	2053	2120	2058	N07	W47			1-	2	2058	.50	.50		10	
	20	0135	0155	NO FLARE	PATROL											
	20	0215	0235	NO FLARE	PATROL											
	20	0400	0530	NO FLARE	PATROL											
	21	0200	0220	NO FLARE	PATROL											
	21	0505	0530	NO FLARE	PATROL											
	21	1035	1100	NO FLARE	PATROL											
	22	0155	0210	NO FLARE	PATROL											
	22	0515	0520	NO FLARE	PATROL											
	22	0900	0935	NO FLARE	PATROL											
LOCKHEED	22	1921	2030	1945	N08	E44			1-	2	1945	1.20	1.20		20	
SAC PEAK	22	1933	1944	1938	N10	E48			1-	C		.98	1.22		18	
LOCKHEED	23	0115	0150	0130	N31	W11			1-	2	0130	.10	.10		10	
	23	0210	0345	NO FLARE	PATROL											

SOLAR FLARES

AUGUST 1964

OBSERVATORY	DATE AUG 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
	23	0415	0630	NO FLARE	PATROL											
	23	1115	1145	NO FLARE	PATROL											
	23	1155	1245	NO FLARE	PATROL											
LOCKHEED	23	1930	2030	2010	N10	E32			1-	2	2010	.90	.90		10	
	24	0125	0145	NO FLARE	PATROL											
	24	0200	0235	NO FLARE	PATROL											
	24	0300	0355	NO FLARE	PATROL											
	24	0455	0505	NO FLARE	PATROL											
LOCKHEED	24	1835	1900	1844	S06	E45			1-	1	1844	.20	.20		10	
LOCKHEED	25	0030	0105	0045	N08	W20			1-	2	0045	.20	.20		10	
WENDEL	25	1021 E	1049 D		N01	E60	7454	28 D	1				4.00			
LOCKHEED	25	1554	1600	1556	N10	W02			1-	2	1556	.10	.10		10	
	26	0255	0400	NO FLARE	PATROL											
	26	0540	0555	NO FLARE	PATROL											
	26	0830	0855	NO FLARE	PATROL											
	26	0900	0950	NO FLARE	PATROL											
	26	1000	1035	NO FLARE	PATROL											
	26	1620	1625	NO FLARE	PATROL											
LOCKHEED	26	2300	0010	2325	N10	W11			1-	2	2325	.40	.40		10	
LOCKHEED	27	0010	0110	0023	N02	E39			1-	2	0023	.30	.30		10	
	27	0145	0205	NO FLARE	PATROL											
	27	0220	0330	NO FLARE	PATROL											
	27	1800	1910	NO FLARE	PATROL											
LOCKHEED	27	2350	0420	0006	N04	E70			1-	1	0006	.30	.60		10	
	28	0135	0155	NO FLARE	PATROL											
	28	0210	0300	NO FLARE	PATROL											
	28	0315	0420	NO FLARE	PATROL											
	28	0435	0455	NO FLARE	PATROL											
	28	0535	0545	NO FLARE	PATROL											
	28	1750	1755	NO FLARE	PATROL											
	28	1800	1815	NO FLARE	PATROL											
	28	2040	2140	NO FLARE	PATROL											
	29	1050	1245	NO FLARE	PATROL											
	29	1710	1720	NO FLARE	PATROL											
	30	0145	0200	NO FLARE	PATROL											
	30	0520	0540	NO FLARE	PATROL											
SAC PEAK	30	1342	1349	1344	N26	E90			1-	C		.29			17	
SAC PEAK	30	1411	1436	1415	N26	E90			1-	C		1.43			20	
LOCKHEED	30	2300	2330	2310	N24	E80			1-	2	2310	.30	.90		10	
LOCKHEED	30	2359	0025	0010	N24	E80			1-	2	0010	.30	.90		10	
MANILA	31	0001 E	0019 D		N25	E90			1-	2		.33	1.65			
	31	0225	0245	NO FLARE	PATROL											
	31	0255	0400	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

AUGUST 1964

OBSERVATORY	DATE AUG 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
	31	0500	0520	NO FLARE	PATROL											
	31	0920	0925	NO FLARE	PATROL											
	31	1750	2235	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

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		

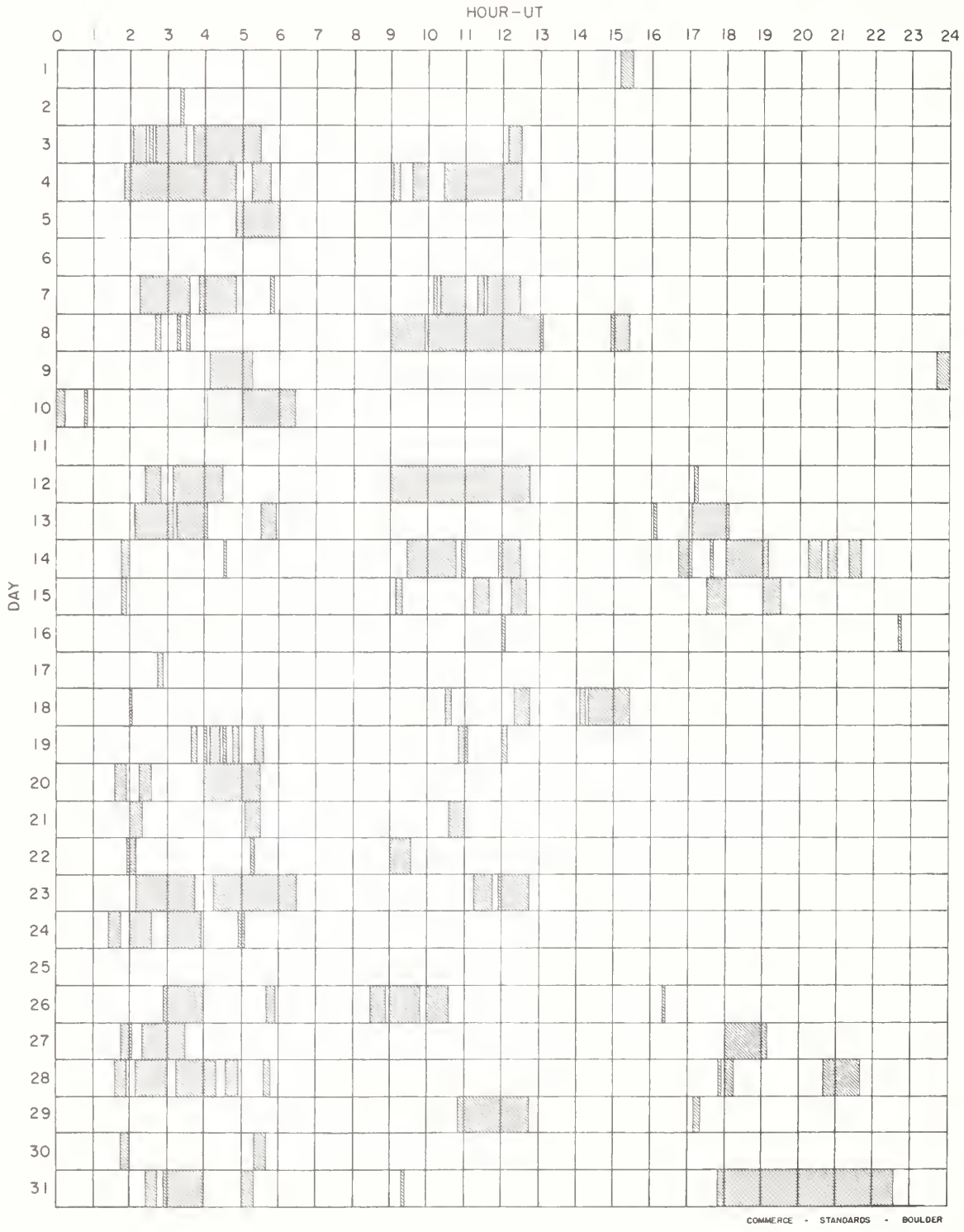
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

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

AUGUST 1964



Observatories included:

Arosa	Huancayo	Lockheed	Ondrejov	Sydney
Bucharest	Istanbul	Manila	Ottawa	Wendelstein
Haute-Provence	Locarno	Mitaka	Sacramento Peak	Zurich

SOLAR FLARES

MAY 1961

OBSERVATORY	DATE MAY 1964	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX WIDTH Ha	MAX. INT %	
SYDNEY	01	0353	0451	0417	N33	E48			1-	C	0417	.60	1.10			
SYDNEY	01	0527	0600 D	0545	N11	W63			1-	P	0545	.50	1.10			
SYDNEY	01	0538	0600 D	0548	N33	E47			1-	P	0548	.60	1.10			
SYDNEY	04	0243	0312	0304	S02	E24			1-	C	0304	.80	.90			
SYDNEY	04	0314	0407	0344	S02	E24			1-	C	0344	.80	.90			
SYDNEY	04	0334	0401	0343	N07	E37			1-	C	0343	.40	.50			
	05	0200	0205	NO FLARE	PATROL											
THESSALONIK	05	1025 E	1045 D		S28	W22		20 D	1	G	0120	1.64	2.17			
CLIMAX	07	1430	1434 D		S24	W27			1-		1433	.40	.40			
	07	2205	2240	NO FLARE	PATROL											
	12	1805	1810	NO FLARE	PATROL											
	13	1620	1640	NO FLARE	PATROL											
	13	1730	1750	NO FLARE	PATROL											
HALEAKALA	15	0234	0242	0238	N13	E02			1-	3	0238	.40	.40			
TACHKENT	18	0422	0500	0428	N06	E22			1-	C	0428	1.40	1.50	2.00	55	
SYDNEY	18	0440	0458 D	0448	N08	E20			1-	P	0448	1.40	1.50			
AROSA	18	0643	0707		N06	E21	7286	24	1	C						
CAPETOWN	18	0704 E	0722		N07	E10			1-		0705	1.90	2.00			
CATANIA	18	0826 E	1158 D		N08	E20			1-							
CAPETOWN	18	1315	1348	1333	N08	E08			1-		1333	1.10	1.20			
CAPRI-F	18	1336 E	1347	1340	N05	E17	7286	11 D	1	2	1340	2.50	2.65			
SYDNEY	19	0115	0126 D	0120	N07	E08			1-	P	0120	.80	.80			
SYDNEY	19	0145	0157	0151	N07	E08			1-	C	0151	1.00	1.00			
VOROSHILOV	19	0154 E	0234		N07	E09			1-	C	0155	.63	.63		70	
KODAIKNL	19	0217 E	0245		N07	E10			1-	V	0217			1.32	88	
THESSALONIK	19	1100 E	1120 D		N02	W02	7286	20 D	1+	G	0140	4.00	4.00			
LOCARNO	19	1512	1545		N07	E04	7286	33	1	V						
ATHENES	20	0536 E	0550 D		N08	W05			1-	2	0537	.80	.80			
CLIMAX	20	1344	1425	1357	N14	W69			1-		1357	.70	1.30			
BUCHAREST	21	0815 E	0858 D	0823	N09	W19	7286	43 D	2	1		4.85				
ATHENES	21	0820 E	0853		N06	W26	7286	33 D	1+	2	0822	3.30	3.70			
CAPRI-F	21	0827 E	0852 D	0839	N06	W19	7286	25 D	1	2	0839	4.00	4.24			
HERSTMONCEU	21	0840 E	0940 D	0840 U	N13	W20			1-	P	0842	1.50	1.70			
CATANIA	21	0845 E	0945 D		N08	W20			1-							
CATANIA	22	0630 E	0940 D		N13	W03	7297	190 D	1							
KANZELHOHE	22	0713	0736		N12	W02	7297	23	1					1.40		
CAPETOWN	22	0740 E	0816	0745	N07	W36			1-		0745	1.40	1.80			
CATANIA	22	0740 E	0847 D		N08	W32	7286	67 D	2							
KANZELHOHE	22	0743 E	0812		N05	W35	7286	29 D	1+					1.60		
	23	0250	0255	NO FLARE	PATROL											

SOLAR FLARES

MAY 1964

OBSERVATORY	DATE MAY 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
	24	0155	0255	NO FLARE	PATROL											
CLIMAX	24	1814	1820	1817	N13	W35			1-		1817	.60	.70			
CLIMAX	24	1934 E	1945		N12	W35			1-		1934	.60	.70			
SYDNEY	25	0155	0216	0202	N10	W43	7297	21	1	C	0202	1.80	2.50			
KODAIKNL	25	0224 E	□		N12	W42			1-	S	0224	.64	.90	1.12		
SYDNEY	25	0440	0455	0449	N10	W43	7297	15	1	C	0449	1.50	2.10			
KANZELHOHE	25	0640	0704		N13	W44	7297	24	1+					1.60		
SYDNEY	28	0345	0401	0352	N14	E25			1-	C	0352	1.20	1.30			
ATHENES	30	1122 E	1130 D		N05	E29			1-	C	1123	.40	.50			
CLIMAX	30	1956	2009	2000	N03	E29			1-		2000	.20	.20			

JANUARY, FEBRUARY 1964

KANZELHOHE	JAN 26	1245 E	1500 D		N07	W09	7108	135 D	1+					2.70		
KANZELHOHE	FEB 1964 23	0721 E	0910 D		N08	E17	7161	109 D	1+					1.60		

COMMERCE - STANDARDS - BOULDER

The above flares are addenda to those published in CRPL-F 234, 235, 237, 238 and 240 Part B issued February, March, June and 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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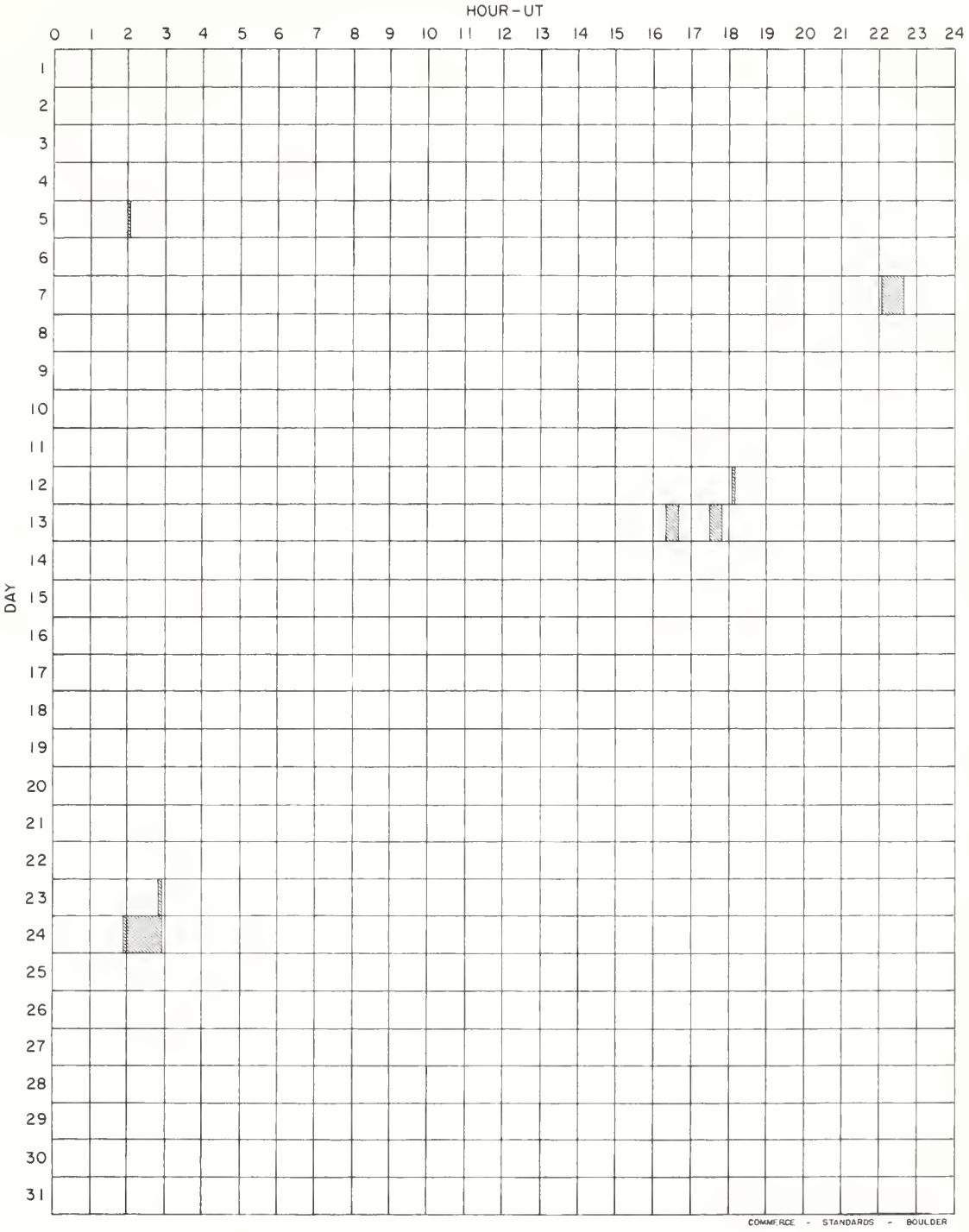
E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

Erratum: The flare labelled HONOLULU on April 11, 1964 in CRPL-F 240B, page III-e, should have been labelled HALEAKALA. The flare patrol formerly near Honolulu on the island of Oahu has been moved to Haleakala on the island of Maui as of April 1964.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1964



Observatories included:

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

SOLAR RADIATION MONITORING SATELLITE

AVERAGE X-RAY FLUX

NRL

APRIL, 1964

Date	Times of Observation	Average X-ray Flux 44-60 A	8-12 A	0-8 A	
April 4	1244 1257 1428 1443 2333 2348	3.3×10^{-2}	$<1.5 \times 10^{-3}$	$<8 \times 10^{-4}$	Flux for 4,5,6,April questionable because of large Aspect Angle corrections
April 5	0121 0131 1252 1307	3.2×10^{-2}	$<1.3 \times 10^{-3}$	$<6 \times 10^{-4}$	
April 6	1300 1316 1456 1501	3.6×10^{-2}	$<6 \times 10^{-4}$	$<3 \times 10^{-4}$	
April 7	1458 1510 2214 2230	2.4×10^{-2}	$<2.5 \times 10^{-4}$	$<2.0 \times 10^{-4}$	
April 8	0000 0015 1135 1148 1319 1334 1508 1519 2039 2050 2224 2239	2.6×10^{-2}	$<2.3 \times 10^{-4}$	$<1.7 \times 10^{-4}$	
April 9	0013 0023 1143 1157 1328 1343 1519 1528 2049 2100 2232 2249	2.8×10^{-2}	$<2.0 \times 10^{-4}$	$<1.5 \times 10^{-4}$	
April 10	0021 0030 1151 1206 1339 1353 2056 2111 2242 2258	3.3×10^{-2}	2.5×10^{-4}	$<1.4 \times 10^{-4}$	
April 11	1020 1027 1201 1216 1349 1354 1922 1929 2105 2121 2253 2306	3.8×10^{-2}	2.7×10^{-4}	$<1.2 \times 10^{-4}$	
April 12	1028 1038 1213 1225 1359 1410 1929 1939 2119 2130 2303 2309	3.6×10^{-2}	1.8×10^{-4}	$<1.2 \times 10^{-4}$	
April 13	1035 1048 2119 1234 1408 1419 1939 1950 2123 2140 2310 2323	3.5×10^{-2}	2.0×10^{-4}	$<1.1 \times 10^{-4}$	
April 14	1044 1057 1230 1243 1420 1428 1947 2001 2132 2149 2320 2331	3.3×10^{-2}	0.8×10^{-4}	$<1.1 \times 10^{-4}$	
April 15	1053 1107 1238 1252 1430 1436 1958 2011 2144 2151 2331 2338	3.2×10^{-2}	1.0×10^{-4}	$<1.0 \times 10^{-4}$	
April 16	1100 1116 1248 1301 2005 2021 2152 2206	3.2×10^{-2}	$<1.2 \times 10^{-4}$	$<1.0 \times 10^{-4}$	
April 17	1110 1125 1301 1311 1831 1840 2015 2029 2200 2215	3.1×10^{-2}	$<1.2 \times 10^{-4}$	$<1.0 \times 10^{-4}$	
April 18	0935 0948 1119 1135 1309 1320 1844 1850 2023 2039 2211 2223	3.2×10^{-2}	1.0×10^{-4}	$<1.0 \times 10^{-4}$	
April 19	0944 0957 1129 1144 1319 1327 1847 1900 2032 2049 2222 2231	2.9×10^{-2}	$<1.2 \times 10^{-4}$	$<1.0 \times 10^{-4}$	
April 20	0952 1007 1143 1153 1330 1337 1857 1910 2042 2058 2232 2236	3.1×10^{-2}	2.0×10^{-4}	$<1.0 \times 10^{-4}$	
April 21	0820 0828 1001 1016 1148 1202 1621 1628 1906 1920 2051 2107	3.2×10^{-2}	2.0×10^{-4}	$<1.1 \times 10^{-4}$	
April 22	1012 1025 1159 1210 1731 1739 1915 1930 2102 2115	2.9×10^{-2}	$<1.4 \times 10^{-4}$	$<1.1 \times 10^{-4}$	
April 23	0837 0848 1021 1035 1209 1219 1739 1751 1924 1940 2110 2123	2.9×10^{-2}	$<1.5 \times 10^{-4}$	$<1.2 \times 10^{-4}$	
April 24	0845 0858 1029 1044 1219 1228 1748 1801 1933 1949 2121 2130	3.0×10^{-2}	$<1.6 \times 10^{-4}$	$<1.2 \times 10^{-4}$	
April 25	0853 0907 1040 1053 1756 1811 1941 1958	2.8×10^{-2}	$<1.7 \times 10^{-4}$	$<1.3 \times 10^{-4}$	
April 26	0725 0729 0901 0917 1049 1101 1621 1630 1805 1818 1951 2007	2.5×10^{-2}	$<2.0 \times 10^{-4}$	$<1.5 \times 10^{-4}$	

AVERAGE X-RAY FLUX

NRL APRIL-JUNE, 1964

Date	Times of Observation	Average X-ray Flux 44-60 A	8-12 A	0-8 A
April 27	0728 0739 0912 0926 1059 1111	2.6×10^{-2}	$<2.4 \times 10^{-4}$	$<1.7 \times 10^{-4}$
April 28	1109 1119 1640 1650 1824 1840 2011 2022	2.6×10^{-2}	$<3.5 \times 10^{-4}$	$<3.0 \times 10^{-4}$
April 29	1650 1700 1832 1849 2022 2030	2.6×10^{-2}	$<1.5 \times 10^{-3}$	$<6 \times 10^{-4}$
May 19	1248 1302 1433 1449	2.3×10^{-2}	$<8 \times 10^{-4}$	$<4 \times 10^{-4}$
May 20	0539 0553 1257 1311 1443 1458	2.2×10^{-2}	$<2.5 \times 10^{-4}$	$<2.0 \times 10^{-4}$
May 21	0220 0229 0545 0602	2.5×10^{-2}	$<1.5 \times 10^{-4}$	$<1.5 \times 10^{-4}$
May 22	0410 0426 0600 0610 1317 1330 1502 1514	2.6×10^{-2}	$<1.3 \times 10^{-4}$	$<1.1 \times 10^{-4}$
May 23	0420 0435 0610 0618 1139 1152 1513 1523	2.7×10^{-2}	$<1.2 \times 10^{-4}$	$<1.0 \times 10^{-4}$
May 24	0429 0440 0621 0628 1149 1202 1333 1349 1522 1530	2.6×10^{-2}	$<1.2 \times 10^{-4}$	$<1.1 \times 10^{-4}$
May 25	0639 0653 1158 1212 1343 1358	2.6×10^{-2}	$<1.4 \times 10^{-4}$	$<1.2 \times 10^{-4}$
May 26	0120 0129 0301 0317 0449 0501 1021 1031 1205 1219 1351 1407	2.5×10^{-2}	$<1.7 \times 10^{-4}$	$<1.4 \times 10^{-4}$
May 27	1031 1041 1215 1231 1402 1415	2.0×10^{-2}	$< 3 \times 10^{-4}$	$< 2 \times 10^{-4}$
May 29	0144 0158 0331 0344	2.4×10^{-2}	$<1.6 \times 10^{-3}$	$<7 \times 10^{-4}$
June 9	0139 0153 0713 0721 0900 0913 1044 1054 2218 2230	2.7×10^{-2}	$<5 \times 10^{-4}$	$<3.5 \times 10^{-4}$
June 10	0003 0017 0150 0159 0721 0732 0909 0922 1054 1106 2229 2242	2.8×10^{-2}	$<2.0 \times 10^{-4}$	$<1.5 \times 10^{-4}$
June 11	0011 0026 0200 0211 0730 0742 0916 0931 1105 1114 2235 2249	3.1×10^{-2}	$<1.5 \times 10^{-4}$	$<1.3 \times 10^{-4}$
June 12	0020 0035 0207 0219 0741 0753 0925 0940 1112 1122 2243 2259	3.2×10^{-2}	$<1.2 \times 10^{-4}$	$<1.1 \times 10^{-4}$
June 13	0030 0044 0605 0610 0750 0803 2112 2120 2253 2308	3.3×10^{-2}	$<1.1 \times 10^{-4}$	$<1.0 \times 10^{-4}$
June 14	0040 0047 0613 0621 0757 0812 0942 0958 2300 2317	3.7×10^{-2}	$<1.3 \times 10^{-4}$	$<1.1 \times 10^{-4}$
June 15	0050 0102 0806 0822 0954 1006 2121 2140 2310 2326	3.7×10^{-2}	$< 2 \times 10^{-4}$	$<1.4 \times 10^{-4}$
June 16	0101 0105 0815 0832 1002 1015 2135 2149 2321 2335	3.6×10^{-2}	$< 3 \times 10^{-4}$	$< 5 \times 10^{-4}$
June 26	1934 1950 2122 2135 2312 2320	2.1×10^{-2}	$<4 \times 10^{-4}$	$<3 \times 10^{-4}$
June 27	0439 0451 0626 0633 1944 1952 2131 2138	2.1×10^{-2}	$< 2 \times 10^{-4}$	$<1.6 \times 10^{-4}$
June 28	0449 0503 1953 2008 2141 2154	2.3×10^{-2}	$<1.4 \times 10^{-4}$	$<1.0 \times 10^{-4}$
June 29	0457 0512 0643 0657 2003 2017 2151 2202	2.5×10^{-2}	$<1.0 \times 10^{-4}$	$<1.0 \times 10^{-4}$
June 30	0322 0333 0507 0522 0657 0659 1828 1840 2011 2027 2200 2211	2.5×10^{-2}	$<1.0 \times 10^{-4}$	$<1.0 \times 10^{-4}$

SOLAR RADIATION MONITORING SATELLITE

OUTSTANDING X-RAY EVENTS

NRL

APRIL-JUNE, 1964

Date	Time of Observation	Outstanding Events 44-60 A	8-12 A	0-8 A	
April 18	1309 1320	4.0×10^{-2}	6.0×10^{-4}	2.2×10^{-4}	
24	1219 1228	4.3×10^{-2}	6.5×10^{-4}	3.5×10^{-4}	Increasing
June 13	2253 2308	$> 3.6 \times 10^{-2}$	8.7×10^{-4}	6.5×10^{-4}	Increasing
14	0040 0047	$> 3.9 \times 10^{-2}$	10.4×10^{-4}	7.5×10^{-4}	44-60 Saturated

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

JULY 1964

JULY 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)

JULY 1964

South Pole **26 Mc/s**

JULY 1964	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS	JULY 1964	START UT	END UT	MAX UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS
1	0721	1313	1120	4	4	19	1048	1256	1100	15	1
2	*					19	1702	1711	1704	5	1
3	2103	0258	2144	28	2	19	2308	0332	0035	42	2
4	*					21	0118	0456	0145	41	1
5	0100	0504	0236	18	1	21	1056	1734	1214	7	3
5	***	1703	1157	6	1	21	2025	2252	2233	7	3
6	0046	0604	0155	33	1	22	0246	0605	0251	14	1
6	1516	1624	1543	3	3	22	0916	1658	1443	8	5
7	0335	0548	0353	13	1	23	0013	0249	0159	34	2
7	1005	1121	1103	4	2	23	2030	0124	2252	5	7
7	1336	1631	1426	16	1	24	0640	1621	1124	11	2
7	2226	2302	2236	6	2	25	1024	1223	1118	4	2
8	0324	0443	0334	35	2	26	1556	1834	1710	6	1
8	0834	1805	1335	13	7	27	*				
8	2218	0836	2224	25	2	28	0107	0432	0114	26	1
9	1434	0800	2313	53	4	29	1011	1616	1535	10	1
10	1003	1722	1330	19	4	30	0051	0158	0107	32	2
12	0335	0418	0406	7	1	30	1248	1826	1316	6	2
12	1012	1844	1558	7	4	30	2332	0328	2350	55	3
12	2223	1612	2348	26	2	31	1018	1807	1043	10	2
14	1408	1702	1545	4	3						
15	*										
16	*										
17	**										
18	**										

COMMERCE - STANDARDS - BOULDER

* No event.
** No Data.
*** Uncertain.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1964

ARO - OTTAWA 2800 Mc/s

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

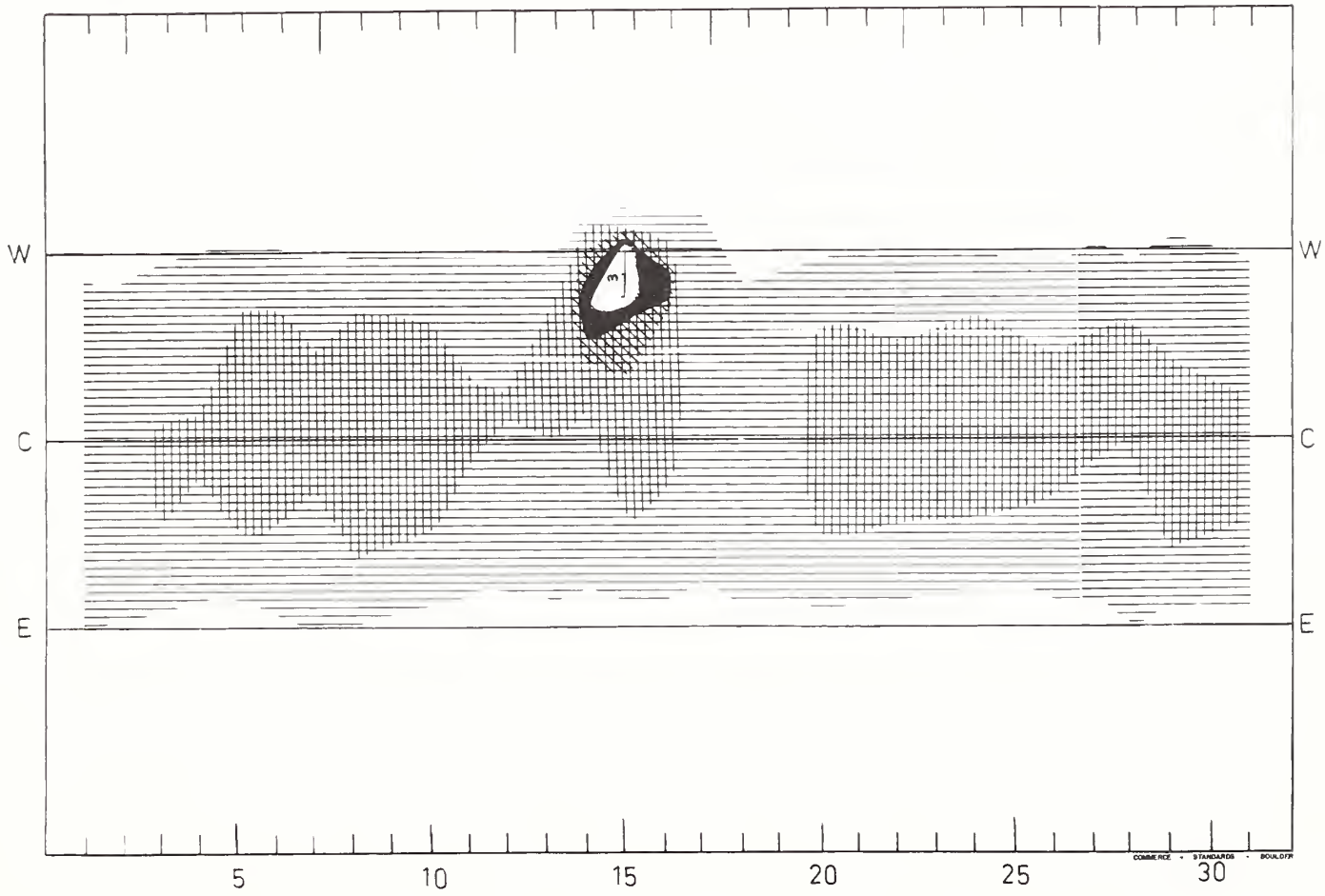
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

AUGUST 1964

NANÇAY

169 Mc/s



AUGUST 1964

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1964

NBS BOULDER 108 Mcs

AUG. 1964	TYPE	START UT	TIME OF MAXIMUM UT	DURATION MINUTES	INTENSITY
3	3	1419.9	1420.0	2.0	2
11	3	1328.0	1328.0	2.0	3
11	3	1356.9	1357.0	1.5	3
13	3	1306.0	1306.3	2.5	3
14	3	1330.0	1330.5	1.5	3

COMMERCE - STANDARDS - BOULDER

NOMINAL TIMES OF OBSERVATION

AUGUST 1964

NBS BOULDER 108 Mcs

AUG. 1964	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.	AUG. 1964	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.
1	1203-2301;	1203-1430	16	1217-0138	1805-2240
	2318-0155	2000-2215	17	1218-0137	
2	1204-0154	1246-1338	18	1219-0136	
		1845-1940	19	1220-0135	
3	1205-0153	2250-2305	20	1221-1300;	
4	1206-0152	1816-0152		1315-1330;	
5	1207-0151	2010-2350		1337-0133	
6	1644-0150	1706-2354	21	1222-0132	
7	1209-0148	1209-1235;	22	1223-0130	
		1620-2325;	23	1224-0129	
		0117-0130	24	1225-0127	1225-1310;
8	1210-0147	1905-2126			2320-0015
9	1210-0146	1242-1330	25	1226-0126	1835-2245
10	1211-0145	1211-1735	26	1227-0124	1910-2145;
11	1212-0143	1213-1935			2218-2233
12	1213-0142	1213-1900	27	1228-0123	1545-1840
13	1214-0142	1214-1430;	28	1229-1542	
		0011-0017;	29	2150-0120	
		0058-0100	30	1230-0118	
14	1215-0140	1215-2140	31	1231-0117	1703-1718;
15	1216-0139	1216-1400			2000-2140

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1964

High Altitude Observatory
Boulder

7.6-41 Mc/s

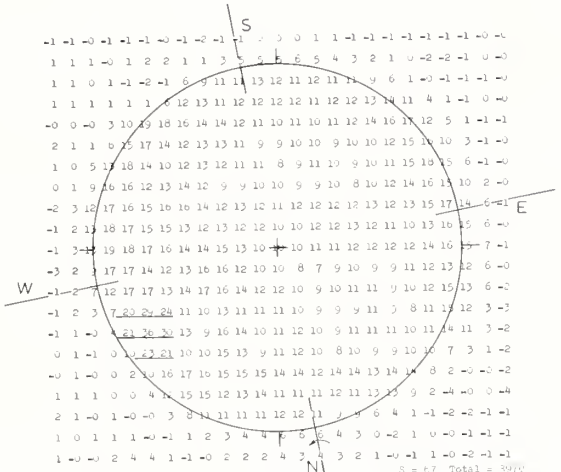
Date Aug 1964	Bursts			Frequency Range (Mc/s)	Date Aug 1964	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Intensity			Type	Time (U.T.)	Intensity	
2	III	1726:15-1727:30	1+	7-41	20	III	2246-2247	1	12-41
	III	2105-2105:30	1	12-41	22	III	1557:30-1558:15	1	20-41
	III	2105:45-2106:15	1	12-41		III	1603-1604:45	2	7-41
6	No Observ.	1703-2400				III	1626:30-1627	1-	24-41
7	No Observ.	1502-1607				III	1701:30-1702:15	1-	11-41
	No Observ.	2017-2157				III	1756:45-1757:15	1	15-41
8	No Observ.	1400-1800				III	1852:15-1852:30	1-	23-41
13	III	2257:30-2258	1-	24-41		III	2353-2353:15	1-	14-41
14	III	1827:45-1828	1-	18-41		III	2354:45-2355:15	1	13-41
	No Observ.	2036-2316			23	III	2046-2046:30	1-	21-41
16	No Observ.	0944-2333							
17	No Observ.	1611-1901							
18	No Observ.	2333-2205							
19	III	2334-2334:30	1	15-41					
20	III	2245:15-2245:45	1-	17-41					

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

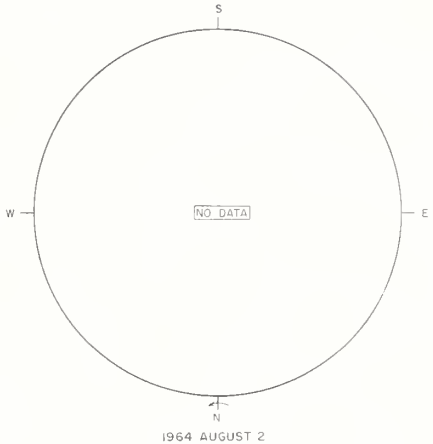
AUGUST 1964

STANFORD

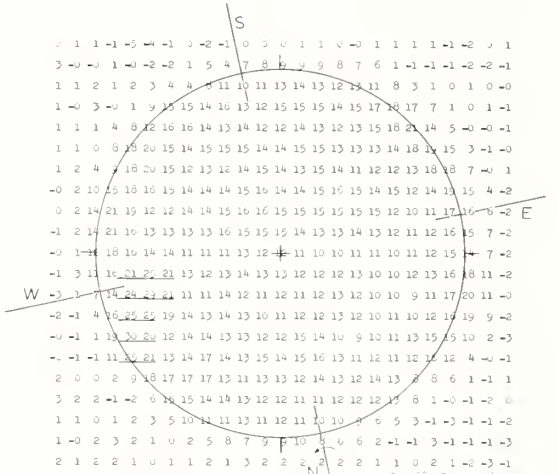
9.1 cm



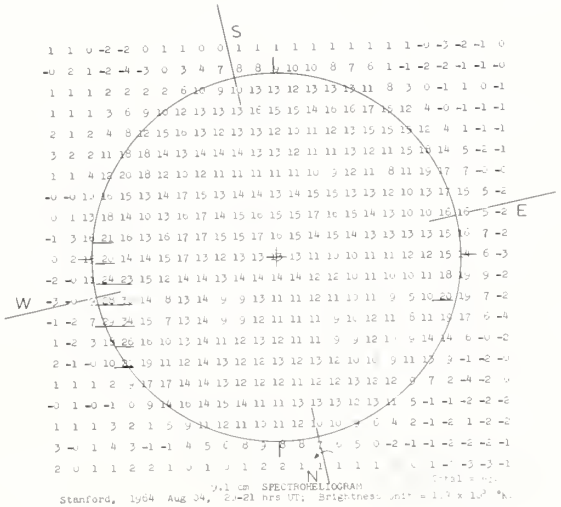
9.1 cm SPECTROHELIOGRAM
Stanford, 1964 Aug 01, 20-21 hrs UT, Brightness Unit = 2.1 x 10^3 °K.



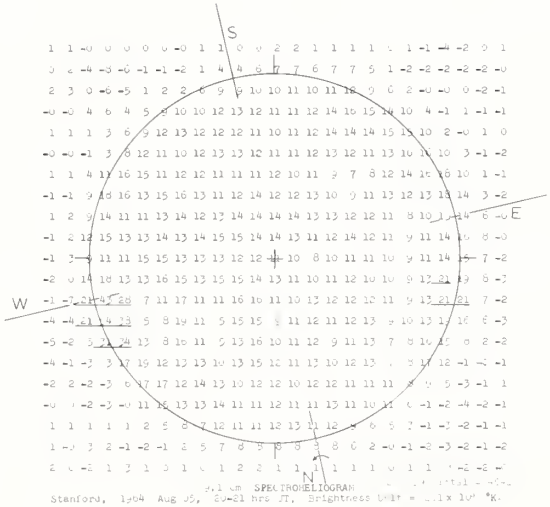
1964 AUGUST 2



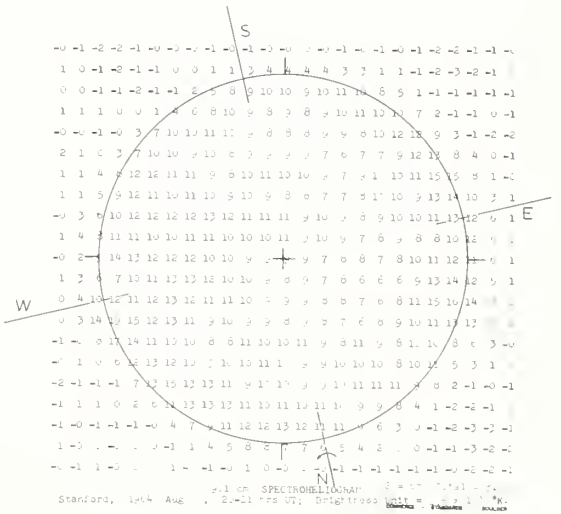
9.1 cm SPECTROHELIOGRAM
Stanford, 1964 Aug 03, 20-21 hrs UT, Brightness Unit = 1.1 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1964 Aug 04, 20-21 hrs UT, Brightness Unit = 1.1 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1964 Aug 05, 20-21 hrs UT, Brightness Unit = 1.1 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1964 Aug 06, 20-21 hrs UT, Brightness Unit = 1.1 x 10^3 °K.

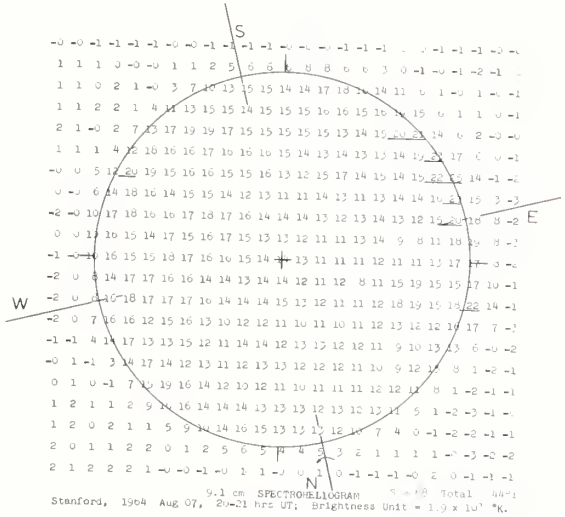
IV-c

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

AUGUST 1964

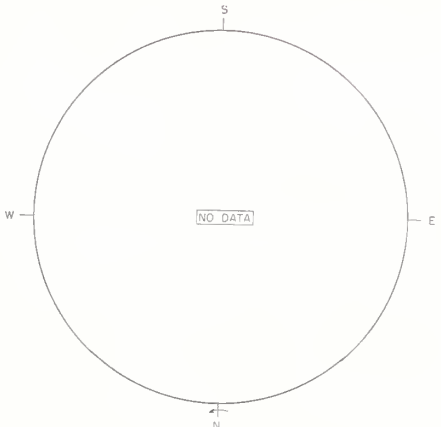
STANFORD

9.1 cm

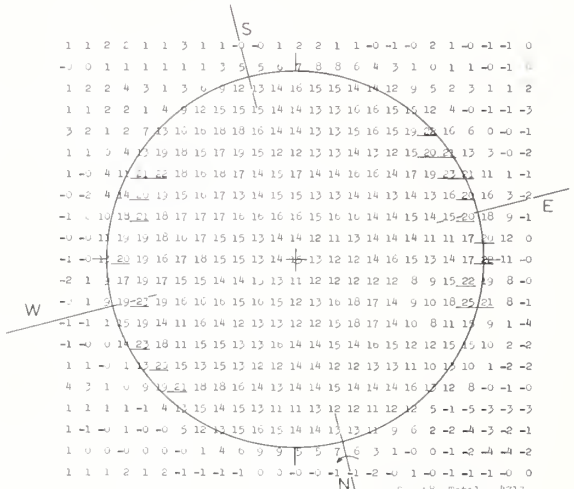


9.1 cm SPECTROHELIOGRAM S = 68 Total = 44?1

Stanford, 1964 Aug 07, 20-21 hrs UT; Brightness Unit = 1.9 x 10³ °K.

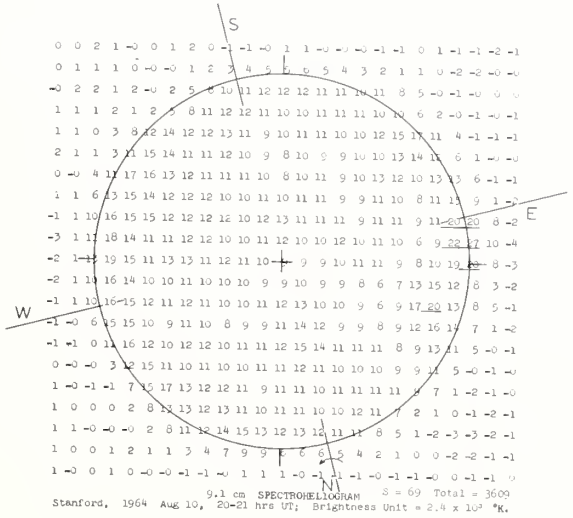


1964 AUGUST 8



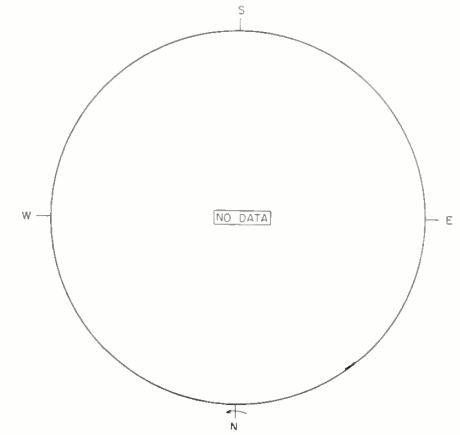
9.1 cm SPECTROHELIOGRAM S = 68 Total = 4717

Stanford, 1964 Aug 09, 20-21 hrs UT; Brightness Unit = 1.9 x 10³ °K.

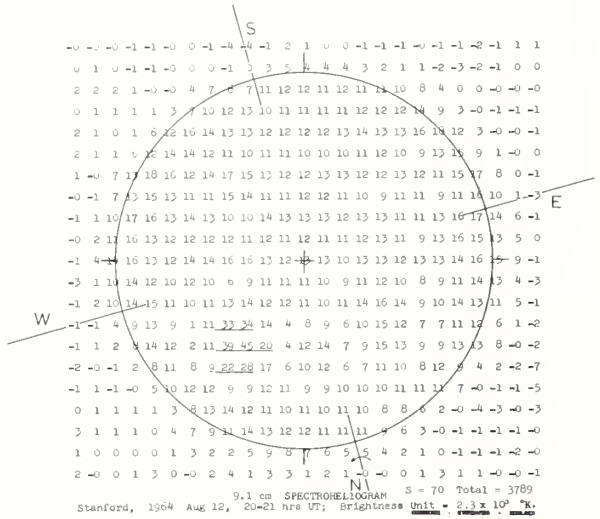


9.1 cm SPECTROHELIOGRAM S = 69 Total = 3609

Stanford, 1964 Aug 10, 20-21 hrs UT; Brightness Unit = 2.4 x 10³ °K.



1964 AUGUST 11



9.1 cm SPECTROHELIOGRAM S = 70 Total = 3789

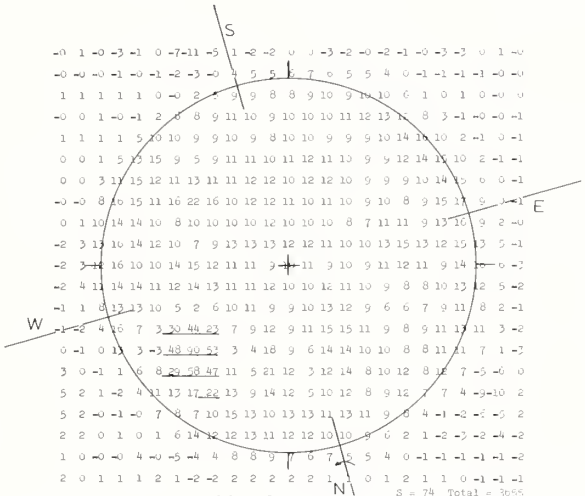
Stanford, 1964 Aug 12, 20-21 hrs UT; Brightness Unit = 2.3 x 10³ °K.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

AUGUST 1964

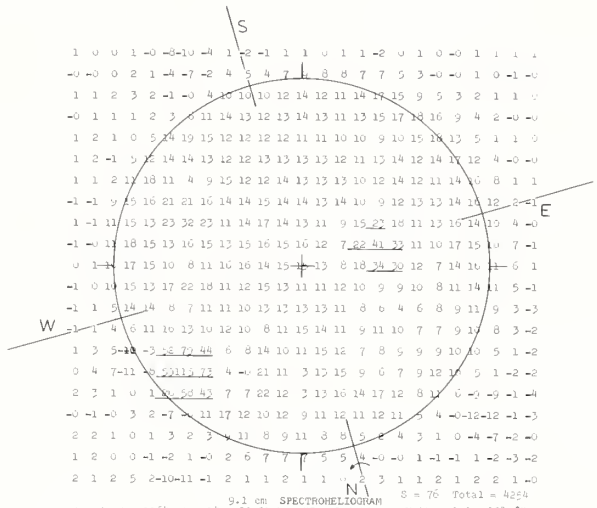
STANFORD

9.1 cm



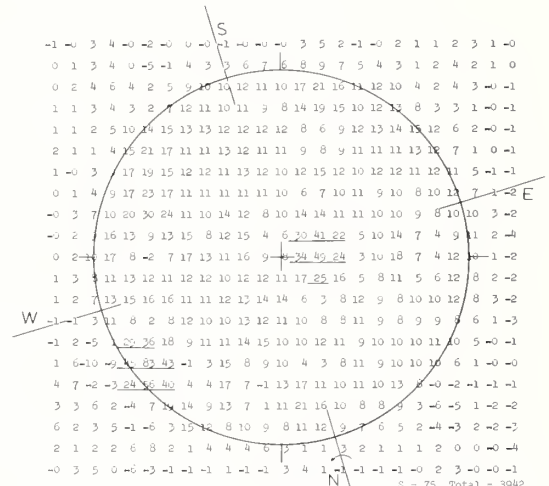
9.1 cm SPECTROHELIOGRAM S = 74 Total = 3655

Stanford, 1964 Aug 13, 20-21 hrs UT; Brightness Unit = 2.5 x 10^3 °K.



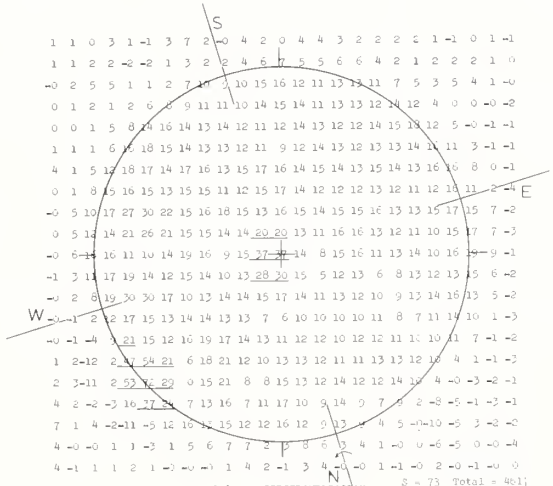
9.1 cm SPECTROHELIOGRAM S = 76 Total = 4264

Stanford, 1964 Aug 14, 20-21 hrs UT; Brightness Unit = 2.2 x 10^3 °K.



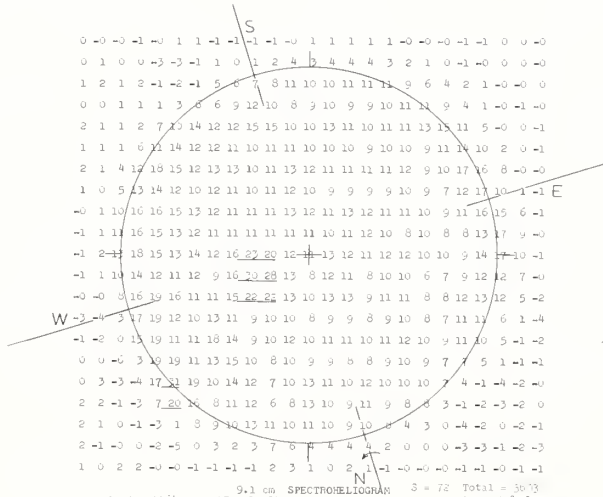
9.1 cm SPECTROHELIOGRAM S = 75 Total = 3942

Stanford, 1964 Aug 15, 20-21 hrs UT; Brightness Unit = 2.3 x 10^3 °K.



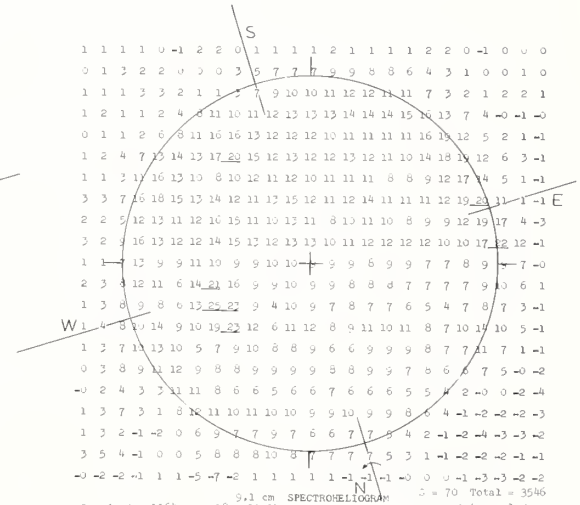
9.1 cm SPECTROHELIOGRAM S = 73 Total = 4613

Stanford, 1964 Aug 16, 20-21 hrs UT; Brightness Unit = 1.9 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 72 Total = 3633

Stanford, 1964 Aug 17, 20-21 hrs UT; Brightness Unit = 2.5 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 70 Total = 3546

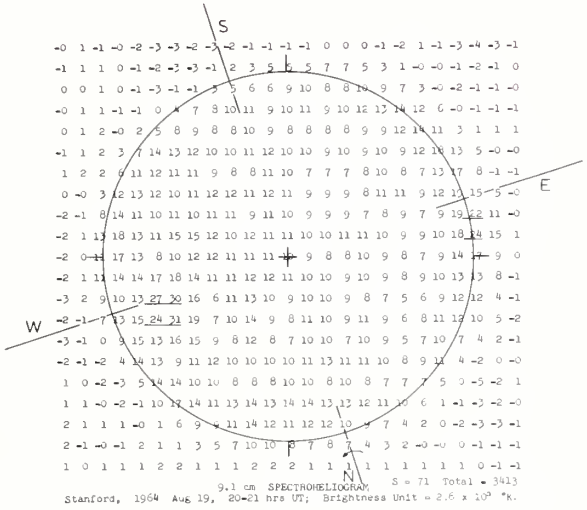
Stanford, 1964 Aug 18, 20-21 hrs UT; Brightness Unit = 2.4 x 10^3 °K.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

AUGUST 1964

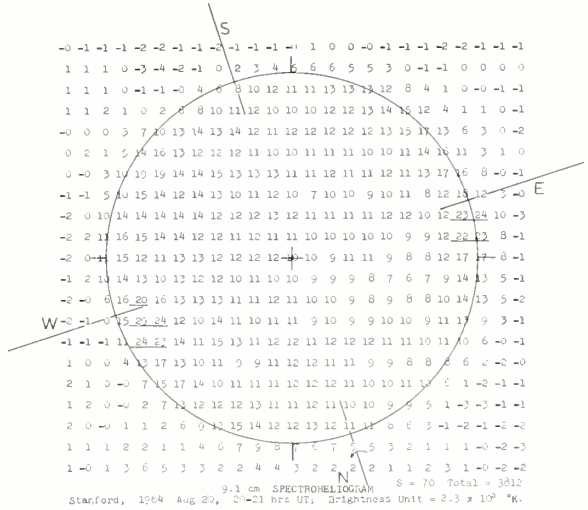
STANFORD

9.1 cm



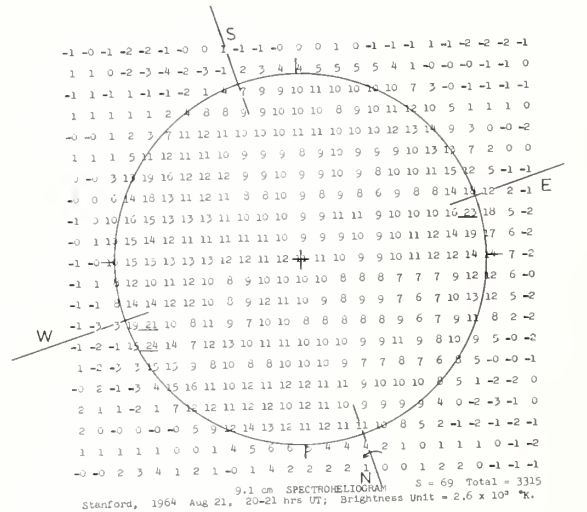
9.1 cm SPECTROHELIOGRAM S = 71 Total = 3413

Stanford, 1964 Aug 19, 20-21 hrs UT; Brightness Unit = 2.6 x 10^3 °K.



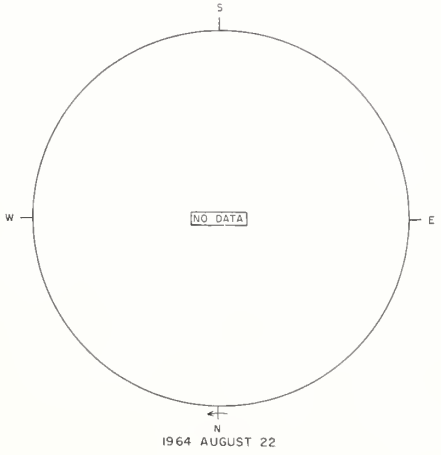
9.1 cm SPECTROHELIOGRAM S = 70 Total = 3812

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

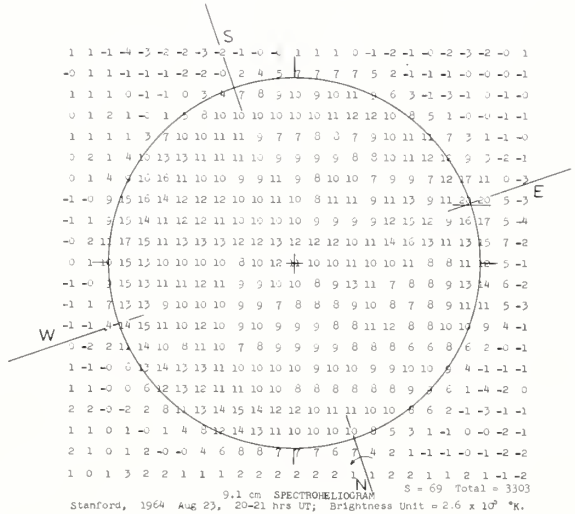


9.1 cm SPECTROHELIOGRAM S = 69 Total = 3315

Stanford, 1964 Aug 21, 20-21 hrs UT; Brightness Unit = 2.6 x 10^3 °K.

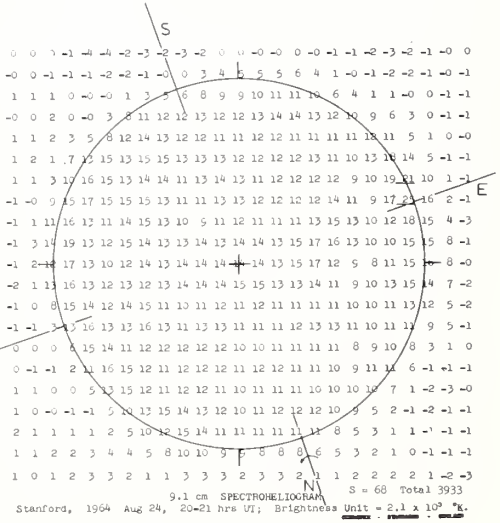


1964 AUGUST 22



9.1 cm SPECTROHELIOGRAM S = 69 Total = 3303

Stanford, 1964 Aug 23, 20-21 hrs UT; Brightness Unit = 2.6 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM S = 68 Total 3933

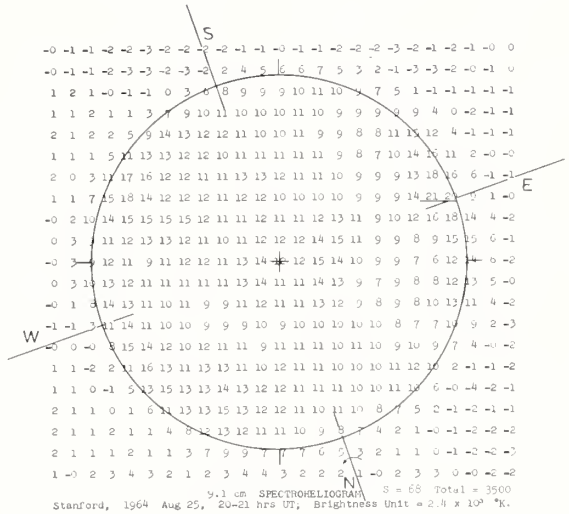
Stanford, 1964 Aug 24, 20-21 hrs UT; Brightness Unit = 2.1 x 10^3 °K.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

AUGUST 1964

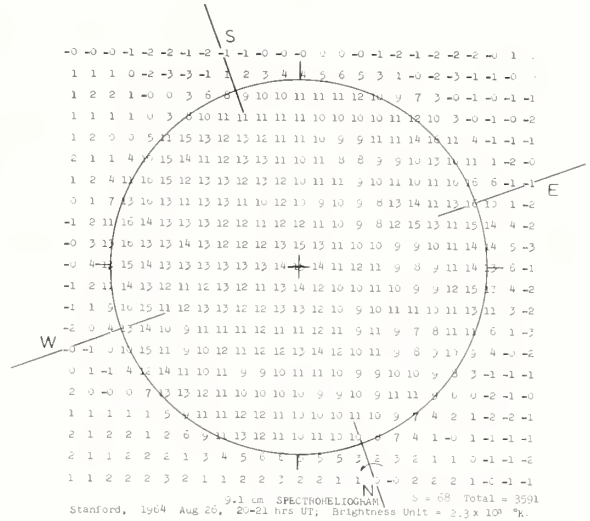
STANFORD

9.1 cm



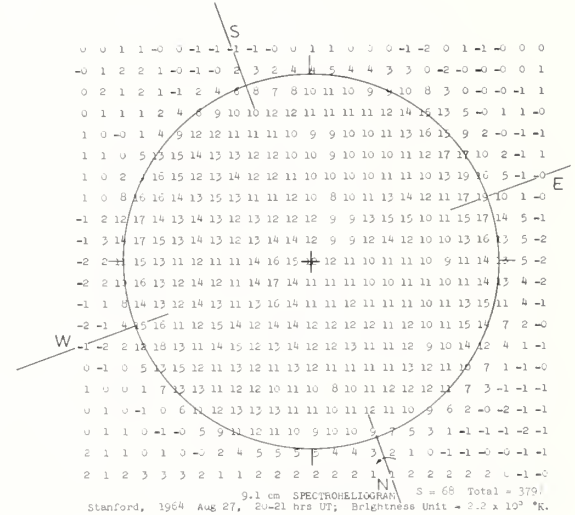
9.1 cm SPECTROHELIOGRAM S = 68 Total = 3500

Stanford, 1964 Aug 25, 20-21 hrs UT, Brightness Unit = 2.4 x 10^3 °K.



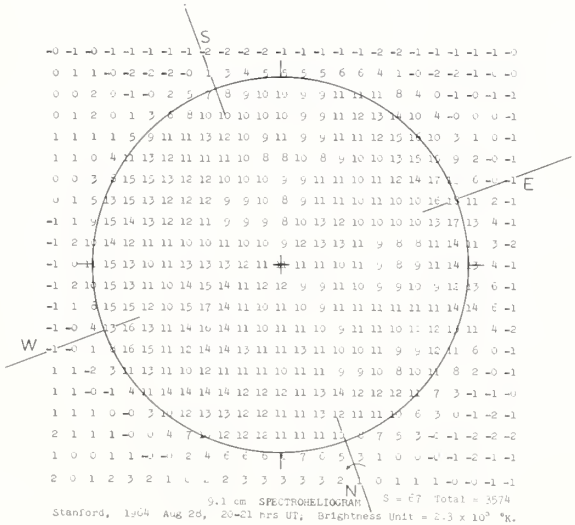
9.1 cm SPECTROHELIOGRAM S = 68 Total = 3591

Stanford, 1964 Aug 26, 20-21 hrs UT, Brightness Unit = 2.3 x 10^3 °K.



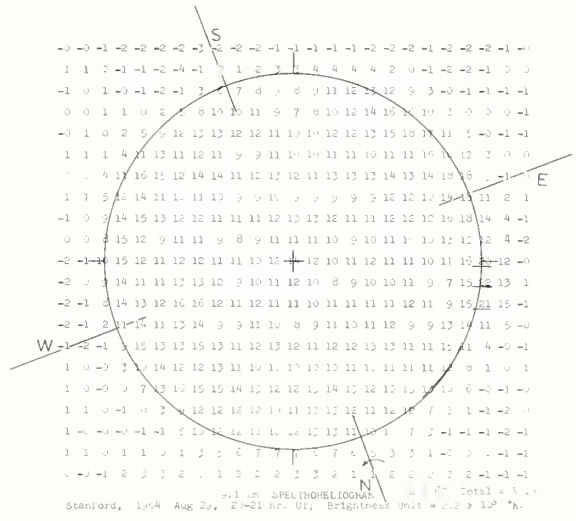
9.1 cm SPECTROHELIOGRAM S = 68 Total = 3791

Stanford, 1964 Aug 27, 20-21 hrs UT, Brightness Unit = 2.2 x 10^3 °K.



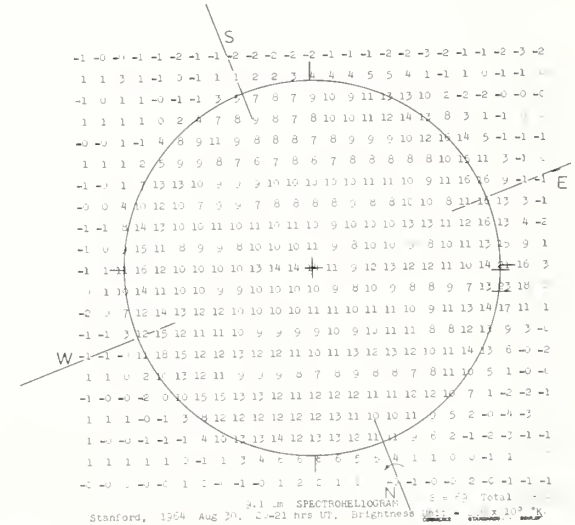
9.1 cm SPECTROHELIOGRAM S = 67 Total = 3574

Stanford, 1964 Aug 28, 20-21 hrs UT, Brightness Unit = 2.3 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM

Stanford, 1964 Aug 29, 20-21 hr. UT; Brightness Unit = 2.2 x 10^3 °K.



9.1 cm SPECTROHELIOGRAM

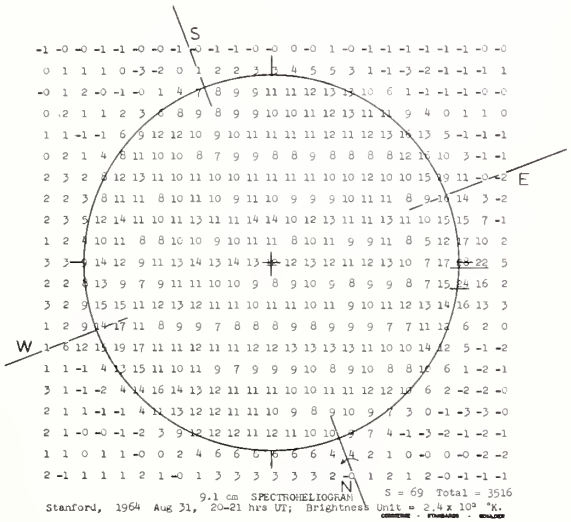
Stanford, 1964 Aug 30, 20-21 hrs UT, Brightness Unit = x 10^3 °K

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

AUGUST 1964

STANFORD

9.1 cm



9.1 cm SPECTROHELIOGRAM S = 69 Total = 3516

Stanford, 1964 Aug 31, 20-21 hrs UT; Brightness Unit = 2.4×10^3 °K.

COSMIC RAY INDICES

(Climax Neutron Monitor)

IGC Station B 305

JULY 1964

July 1964	DAILY AVERAGE COUNTS / HOUR*		July 1964	DAILY AVERAGE COUNTS / HOUR*	
1	3286.3	**28	17	3279.0	
2	3282.6	**10	18	3264.3	
3	3277.4	**10	19	3256.2	
4	3285.8	**32	20	3273.9	
5			21	3281.4	
6	3294.4	**10	22	3275.3	
7	3289.4		23	3281.7	
8	3274.1	**30	24	3285.5	
9	3279.9		25	3287.8	**36
10	3278.2		26	3299.5	** 4
11	3279.9		27	3305.7	** 8
12	3289.6		28	3298.7	
13	3284.3	**16	29	3297.0	**38
14	3288.6		30	3300.0	** 8
15	3284.2		31	3291.4	
16	3284.6				

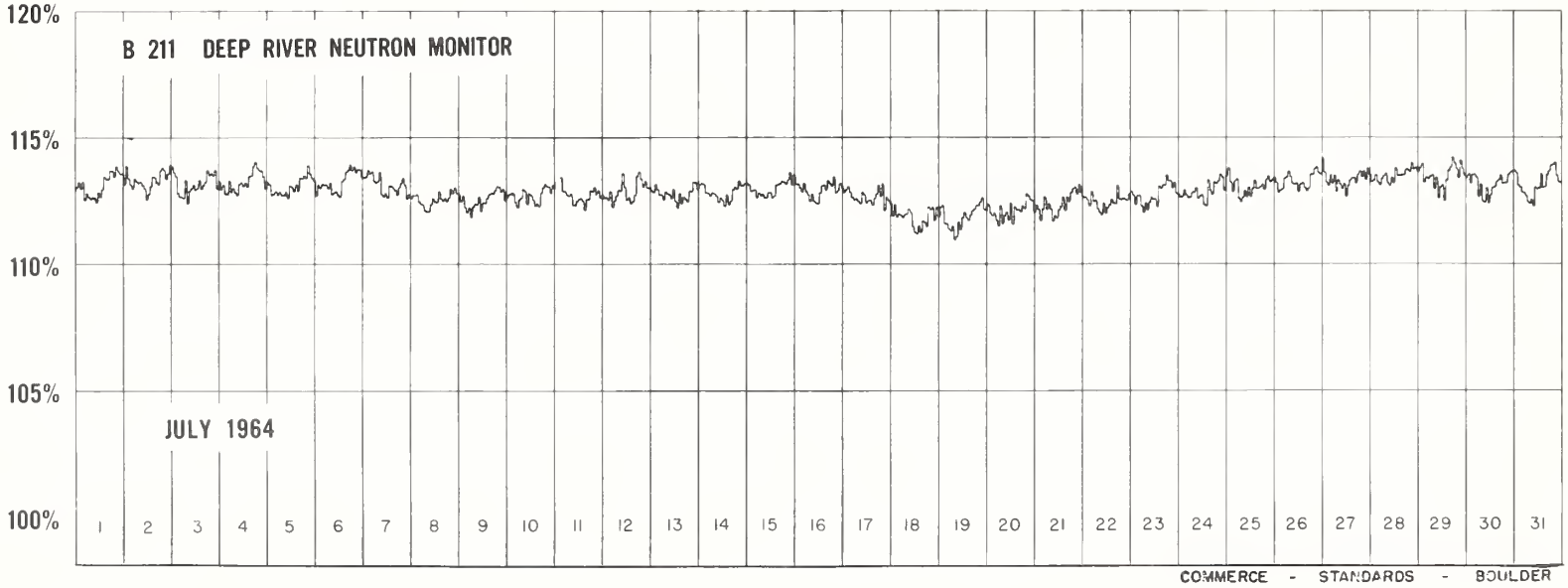
COMMERCE - STANDARDS - BOULDER

* Scaling Factor 128.

** No. of Section Hours Less Than 40.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

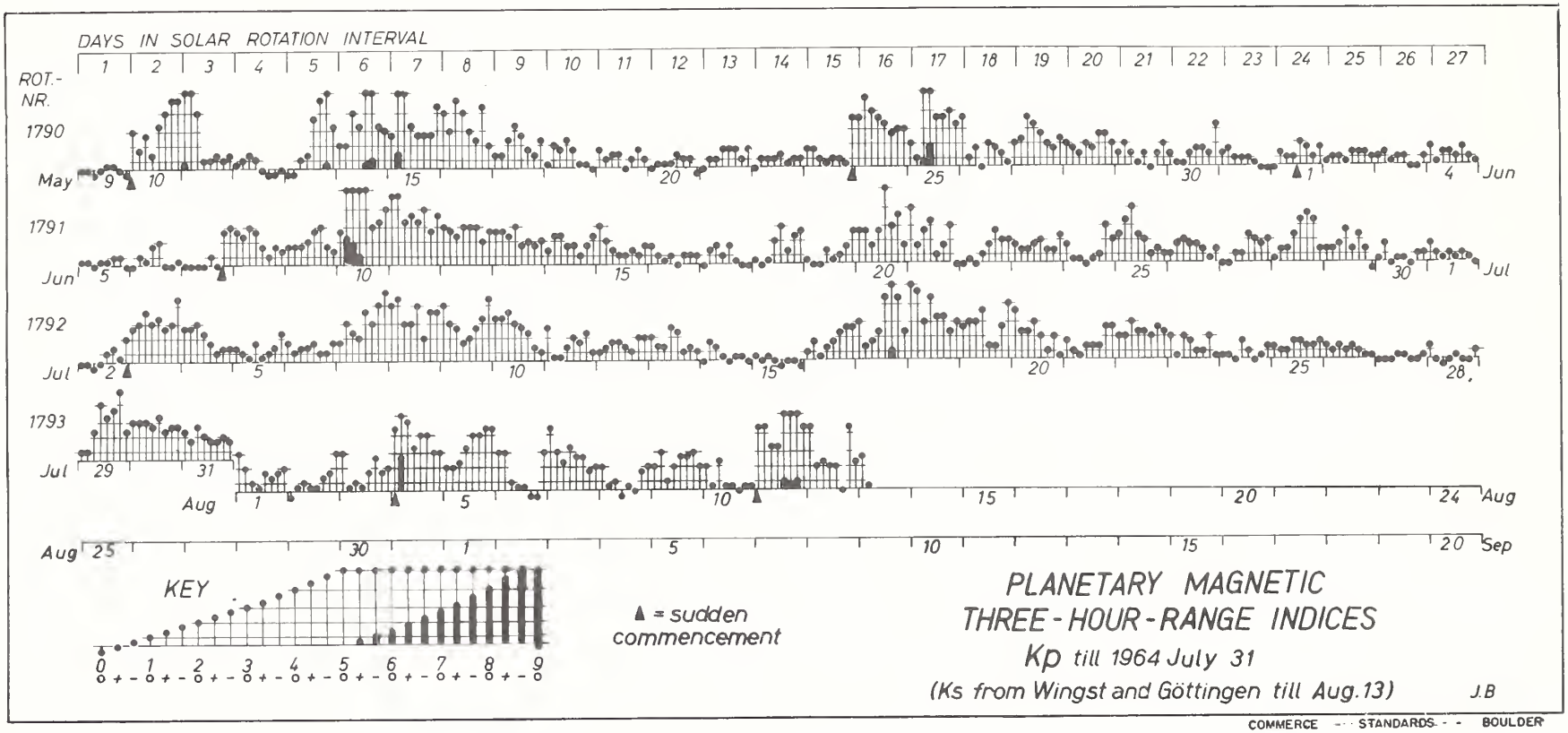


GEOMAGNETIC ACTIVITY INDICES

JULY 1964

July 1964	C	Values Kp — Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.2	2- 1o 1- 1o	1- 1o 1- 0+	7o	4	Five
2	0.2	0+ 0+ 0o 0+	1o 1+ 1- 2o	6o	3	Quiet
3	1.0	3- 3o 4- 3o	3+ 3- 3o 4+	26-	18	
4	0.4	3- 3- 3o 2+	2- 1o 1+ 1+	16o	8	14
5	0.2	1+ 1o 1- 2-	1- 1o 1+ 2+	10o	5	15
						24
6	0.2	2- 1o 1+ 1+	2- 1o 1o 2-	11-	5	27
7	1.2	2- 3o 2+ 2o	4- 3o 4o 5-	24+	18	28
8	1.2	4o 4+ 3o 3o	4o 2o 4- 4-	28-	21	
9	0.9	4o 3o 3- 2-	2o 3- 3+ 4+	24-	16	
10	0.8	3+ 3+ 4- 3o	3- 2+ 1+ 1o	21-	13	
11	0.4	3- 1- 1- 1+	2o 2- 2+ 1o	12+	6	Five
12	0.3	1o 1+ 2- 2-	1+ 1o 2o 2o	12o	6	Disturbed
13	0.4	2o 1+ 1+ 3-	2+ 1o 1+ 1o	13o	6	
14	0.1	0+ 2- 1+ 1-	0+ 1- 1- 0+	6o	3	3
15	0.0	1- 0+ 1- 0+	0o 0+ 0+ 0o	3-	2	7
						8
16	0.4	1o 2- 1- 1+	2- 2+ 3- 3-	14o	7	17
17	1.1	3o 1+ 2- 2+	4+ 6- 4+ 2+	25o	22	18
18	1.2	5o 5- 3o 4+	3+ 3+ 2+ 3o	29o	24	
19	0.9	3- 3o 3o 4-	1+ 1+ 3- 4o	22-	14	
20	0.7	4- 2+ 2+ 3o	2o 1o 2o 1-	17o	10	
21	0.4	2- 1o 1- 1+	1+ 1+ 3- 3-	13-	6	Ten
22	0.7	2o 2o 3o 2+	2+ 2o 3- 2+	19-	9	Quiet
23	0.3	2o 1- 2o 2-	1o 1o 2o 1-	11o	5	
24	0.1	1- 1- 0+ 2-	1o 0+ 1- 1+	7-	4	1
25	0.3	1+ 1o 1o 2-	2- 1+ 1+ 2-	11o	5	2
						5
26	0.2	1+ 1o 1+ 1o	1+ 1o 1- 1-	8+	4	6
27	0.1	0+ 0+ 0+ 1-	1- 0+ 0+ 1-	4-	2	14
28	0.1	1+ 0+ 0o 0+	1- 0+ 0+ 1o	4+	2	15
29	1.0	1o 1o 2+ 4o	3+ 4- 5- 2+	22+	16	24
30	1.0	3o 3o 3o 3-	3+ 2+ 3- 3-	23-	14	26
31	0.6	2+ 2- 3- 2o	2- 2- 2o 2-	16-	7	27
						28
Mean:	0.54			Mean:	9	

COMMERCE - STANDARDS - BOULDER


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.
1790
May 9 10 15 20 25 30 1 4 Jun
1791
Jun 5 10 15 20 25 30 1 Jul
1792
Jul 2 5 10 15 20 25 28
1793
Jul 29 31
Aug 1 5 10 15 20 24 Aug
Aug 25 30 1 5 10 15 20 Sep
KEY
0 1 2 3 4 5 6 7 8 9
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp till 1964 July 31
(Ks from Wingst and Göttingen till Aug. 13)
J.B
COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JULY 1964

NORTH ATLANTIC

JULY 1964	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:				WHOLE DAY	ADVANCE FORECASTS (I_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	INDEX	1-7 DAYS FINAL J_S	1-7 DAYS SDW J	1-3 DAYS 1-7 DAYS	
												HALF (1)	DAY (2)
01	7-	6+	7-	7-	7	6	7	7	7-	7	7	1	1
02	6+	7-	7-	7-	7	6	7	7	7-	7	7	0	2
03	7-	6o	6+	6+	7	6	7	7	6+	7	7	3	3
04	6o	4+	6-	7-	6	5	6	6	6-	7	7	3	2
05	7-	7-	6+	7-	6	6	7	7	7-	6	6	2	2
06	7-	6-	7-	7-	7	6	7	7	6+	6	6	2	1
07	6+	6o	7-	6+	6	4	6	6	6+	5	5	3	(4)
08	6-	5o	7-	7-	5	3	6	6	6o	5	5	(4)	3
09	6-	4+	6o	6+	6	5	7	7	6-	5	5	3	3
10	6-	6-	6+	7-	6	4	6	7	6o	5	5	(4)	2
11	6+	6+	7-	7-	6	6	7	7	6+	6	6	2	2
12	6+	5+	6+	6+	6	6	7	7	6o	6	6	2	2
13	6+	6o	6+	6+	6	6	7	7	6+	6	6	3	2
14	6+	6+	7-	6+	7	6	7	7	6+	7	7	2	1
15	6+	6o	6+	6+	6	6	7	7	6+	7	7	1	0
16	7-	6+	7-	7-	7	6	7	6	7-	7	7	2	3
17	6+	6-	7-	7o	6	6	7	6	6+	6	6	2	3
18	6o	5+	6+	7-	6	4	6	6	6o	6	6	(4)	3
19	6o	6-	7-	7-	6	4	6	7	6+	7	7	(4)	3
20	6o	6-	7o	7-	6	5	7	7	6+	7	7	3	2
21	7-	6+	7o	7-	6	6	7	7	7-	7	7	1	2
22	6+	6-	7-	7-	6	6	6	7	6+	6	6	3	2
23	6o	6-	7-	7-	6	6	7	7	6+	6	6	2	1
24	6o	6o	7-	7-	7	6	7	7	6+	6	6	2	1
25	6o	6+	7o	7-	6	6	7	7	7-	6	6	2	2
26	6o	6-	7-	7o	6	6	7	7	6+	7	7	1	1
27	7-	6+	7-	6+	6	6	7	7	7-	7	7	1	1
28	6o	6o	7-	7-	7	6	7	7	6+	7	7	1	1
29	6+	6-	6+	6+	7	6	7	6	6o	7	7	2	3
30	6o	6+	7-	7-	6	5	6	6	6+	6	6	3	3
31	7-	6o	7-	7-	6	6	7	7	6+	6	6	3	2
Score: Quiet Periods				P	21	19	19	18		16	16		
				S	10	6	12	13		15	15		
				U	0	1	0	0		0	0		
				F	0	3	0	0		0	0		
Disturbed Periods:				P	0	0	0	0		0	0		
				S	0	2	0	0		0	0		
				U	0	0	0	0		0	0		
				F	0	0	0	0		0	0		

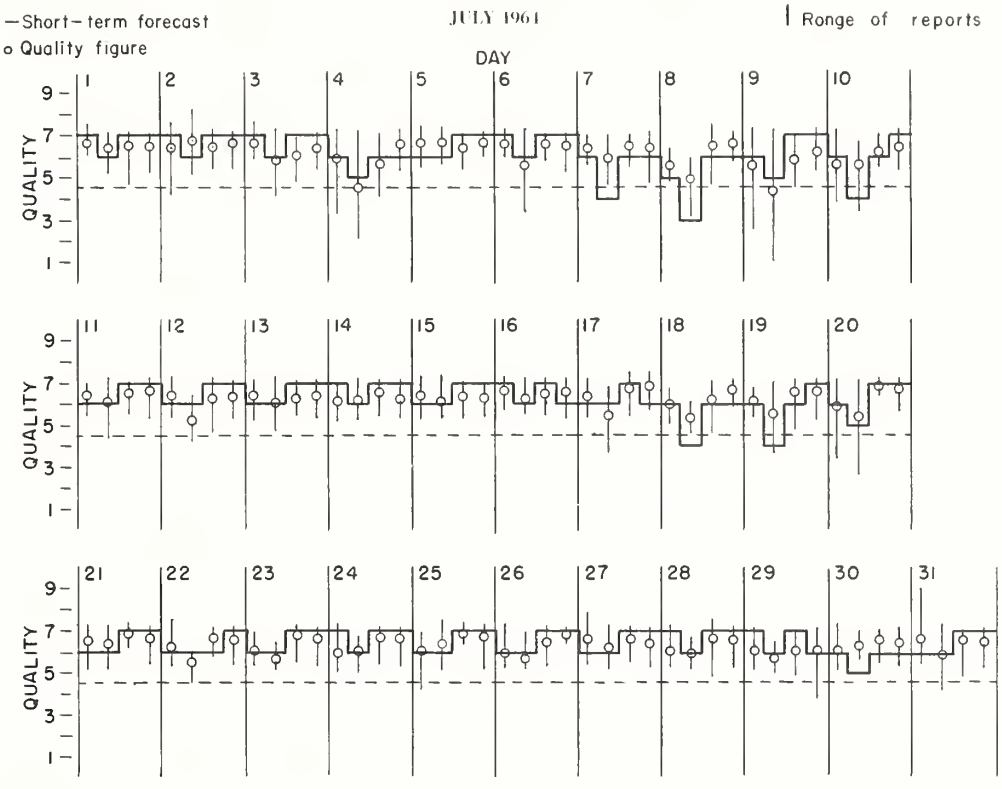
NORTH PACIFIC

JULY 1964	NORTH PACIFIC 8-HOURLY QUALITY FIGURES			SHORT-TERM FORECASTS ISSUED AT			WHOLE DAY	ADVANCE FORECASTS (J_P-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY		GEOMAGNETIC K_{SI}	
	03 TO 11	11 TO 19	19 TO 03	02	09	18	INDEX	1-7 DAYS FINAL J_{PS}	1-7 DAYS SDW J_P	1-3 DAYS 1-7 DAYS	
										HALF (1)	DAY (2)
01	6	6	6	7	6	7	7	7	7	1	0
02	7	6	6	7	6	6	7	6	6	0	1
03	6	6	6	7	6	7	6	6	6	3	3
04	6	7	6	6	6	7	6	6	6	3	1
05	7	6	7	7	7	7	7	6	6	1	1
06	7	6	6	7	7	7	7	6	6	1	1
07	7	6	6	7	7	7	6	5	5	3	(4)
08	6	6	6	7	6	7	6	5	5	(4)	3
09	6	6	6	6	6	6	6	6	6	3	2
10	6	5	6	7	5	6	6	6	6	(4)	2
11	6	6	6	6	6	6	6	7	7	1	1
12	6	6	6	6	6	6	7	7	7	2	1
13	6	5	6	7	6	6	5	7	7	2	2
14	6	6	6	7	6	6	6	7	7	1	0
15	6	6	7	7	6	7	7	7	7	0	0
16	6	6	7	7	6	7	6	7	7	1	2
17	6	6	6	7	6	6	6	6	6	2	3
18	5	5	5	6	5	6	5	6	6	(5)	3
19	5	5	6	5	4	6	5	7	7	(4)	2
20	5	6	6	6	6	7	6	7	7	3	1
21	6	6	6	6	6	6	6	7	7	1	1
22	6	5	6	7	5	6	6	7	7	3	2
23	6	6	6	6	6	7	6	6	6	2	0
24	6	6	7	6	6	6	6	6	6	1	0
25	6	6	7	7	6	7	7	6	6	2	1
26	6	5	6	7	6	6	6	6	6	1	1
27	6	6	7	7	6	7	6	6	6	0	0
28	6	6	7	7	6	7	6	6	6	0	0
29	6	6	7	7	6	6	7	7	7	2	3
30	6	5	6	6	6	6	6	5	5	3	2
31	6	6	7	6	6	7	6	6	6	2	1
				14	23	20	15				
				17	8	11	14				
				0	0	0	2				
				0	0	0	0				
				0	0	0	0				
				0	0	0	0				
				0	0	0	0				
				0	0	0	0				

COMMERCE - STANDARDS - BOULDER

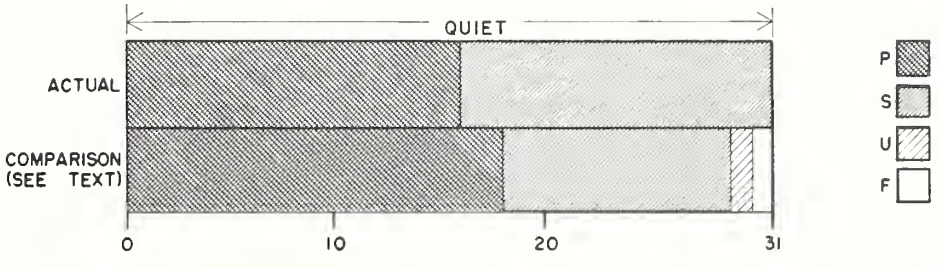
Errata: In CRPL-F 240B, issued August 1964, on page VII-a the values in the last two columns for "Geomagnetic K_{si}" are incorrect. Please change the June 1 values to 1 and 2. The printed values refer in each case to the next day, i.e. the correct values for June 2 are 1 and 1 (from June 1 line) and so forth through correct values for June 30 of 0 and 0 (from June 29 line).

NORTH ATLANTIC

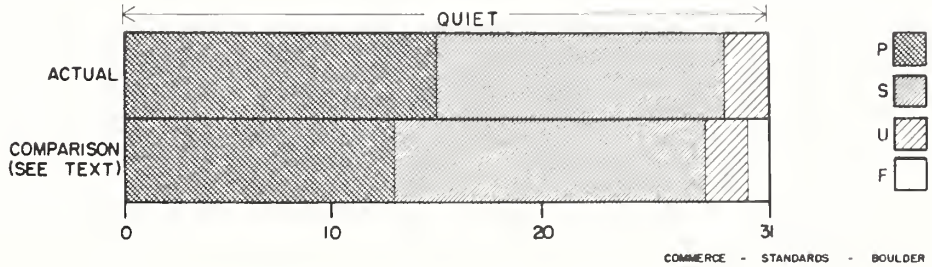


OUTCOME OF ADVANCE FORECASTS--FINAL ESTIMATES (1 TO 7 DAYS AHEAD)

NORTH ATLANTIC

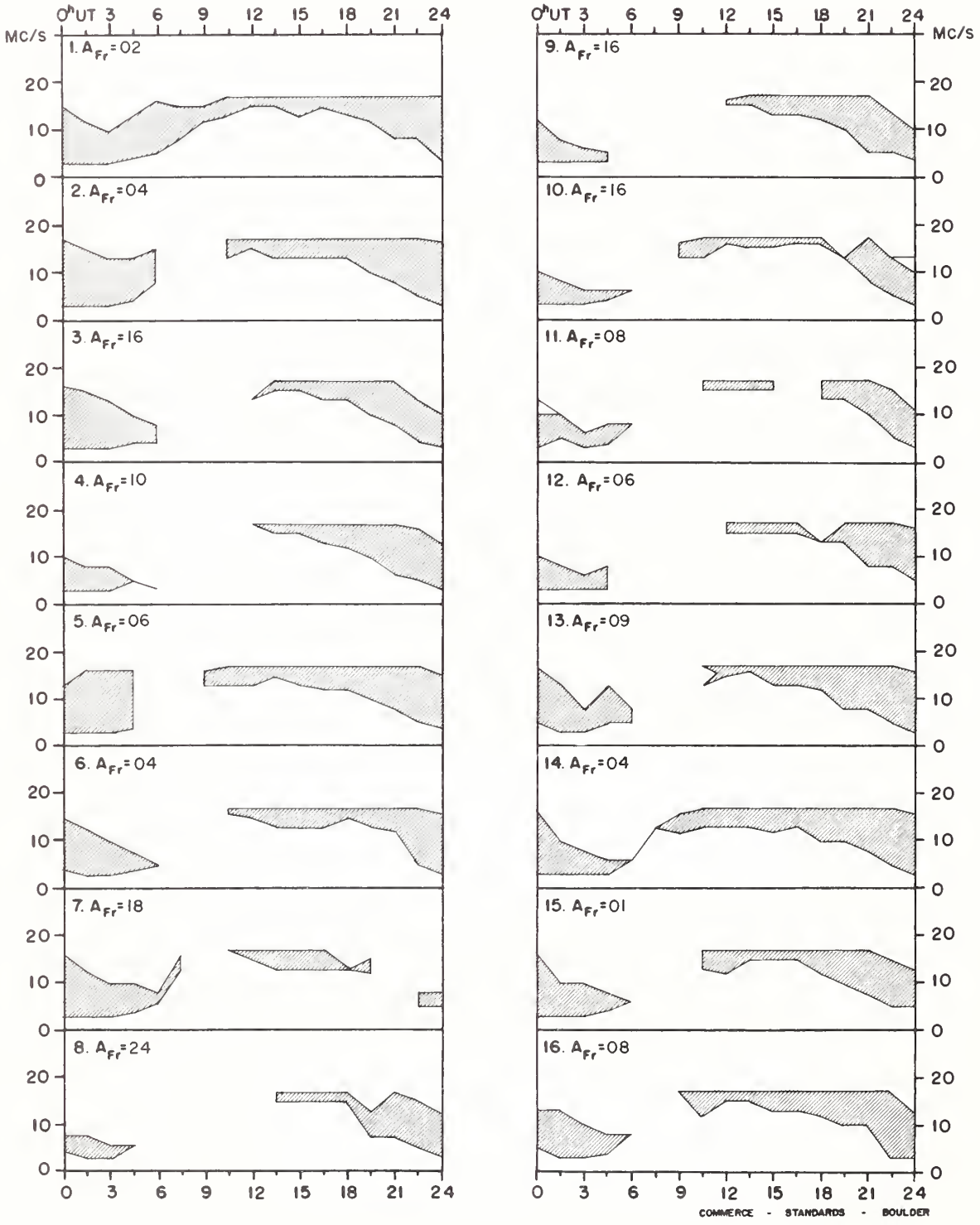


NORTH PACIFIC



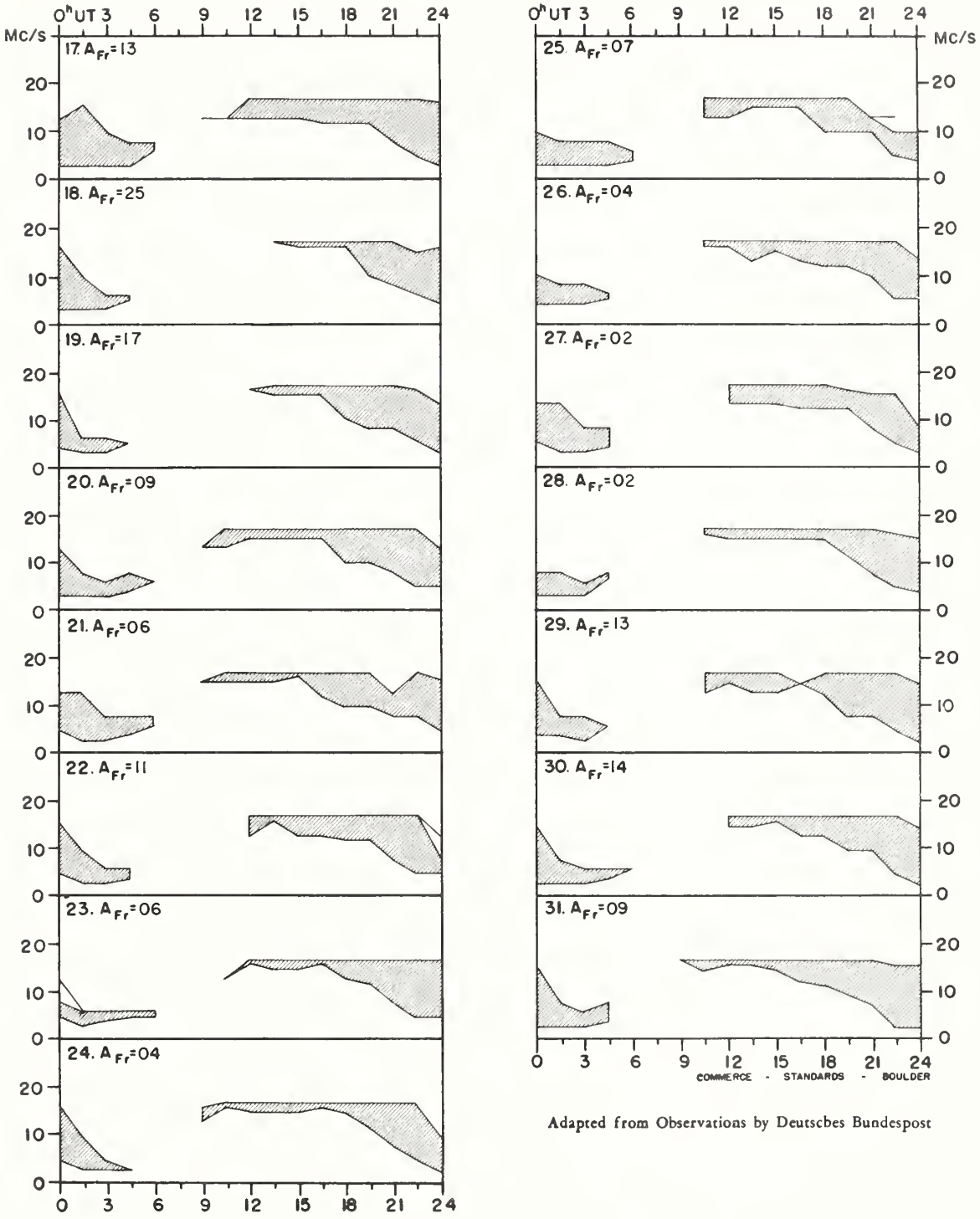
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1964



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1964



Adapted from Observations by Deutsches Bundespost

IQSY ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

AUGUST 1964

AUG 1964	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
4	0400		94	Magnetic Storm 04/0133Z		
5	0400		95	Magnetic Storm	Exists	
15	0400		96	Solar Activity	Exists	
16	0400		97	Solar Activity	Exists	
17	0400		98	Solar Activity	Exists	
19	1755	McMath,*Solar Activity, Exists				
20	0400		99	Solar Activity	Exists	

COMMERCE - STANDARDS - BOULDER

* Name of reporting station was omitted from text of message.