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CRPL-F 227 PART B

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PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
JULY 1963

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

CRPL-F 227
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
31 July 1963

SOLAR - GEOPHYSICAL DATA

CONTENTS

I DAILY SOLAR INDICES

(a) Relative Sunspot Numbers and 2800 Mc Solar Flux - May - June 1963
(b) Graph of Sunspot Cycle

II SOLAR CENTERS OF ACTIVITY

(a) Calcium Plage and Sunspot Regions - June 1963
(b) Magnetic Classifications of Sunspots (Mt. Wilson) - June 1963
(c) Provisional Coronal Line Emission Indices - June 1963

III SOLAR FLARES

(a-g) Optical Observations - June 1963
(h) Flare Patrol Observations - June 1963
(i-k) Optical Observations - March 1963
(l) Flare Patrol Observations - March 1963
(m) Ionospheric Effects (SWF-SEA-SCNA-SPA-Bursts) - May 1963

IV SOLAR RADIO WAVES

(a) 2800 Mc - Outstanding Occurrences (ARO-Ottawa) - June 1963
(b-d) 2800 Mc - Outstanding Occurrences (ARO-Ottawa) - Graphs - May 23, 24, 25 - June 9, 10, 12, 14, 1963
(e) 108 Mc - Outstanding Occurrences (Boulder) - June 1963 - Graph - June 7, 1963
(f) 108 Mc - Outstanding Occurrences (Boulder) - Nominal Times of Observations - June 1963
(g-h) 7.6 - 41 Mc - Spectral Observations (HAO-Boulder) - June 1963
(i-m) 9.1 cm - Spectroheliograms (Stanford) - June 1963
(n) 169 Mc - Interferometric Occurrences (Nançay) - June 1963

V COSMIC RAY INDICES

(a) Climax Neutron Monitor - May 1963
(b) Deep River Neutron Monitor - May 1963

VI GEOMAGNETIC ACTIVITY INDICES

(a) C, Kp, Ap and Selected Quiet and Disturbed Days - May 1963
(b) Chart of Kp by Solar Rotations - 1963

VII RADIO PROPAGATION QUALITY INDICES

(a) CRPL Quality Figures and Forecasts - North Atlantic and North Pacific - May 1963
(b) Graphs Comparing Forecasts and Observed Quality - North Atlantic and North Pacific - May 1963
(c-d) Graphs of Useful Frequency Ranges - May 1963

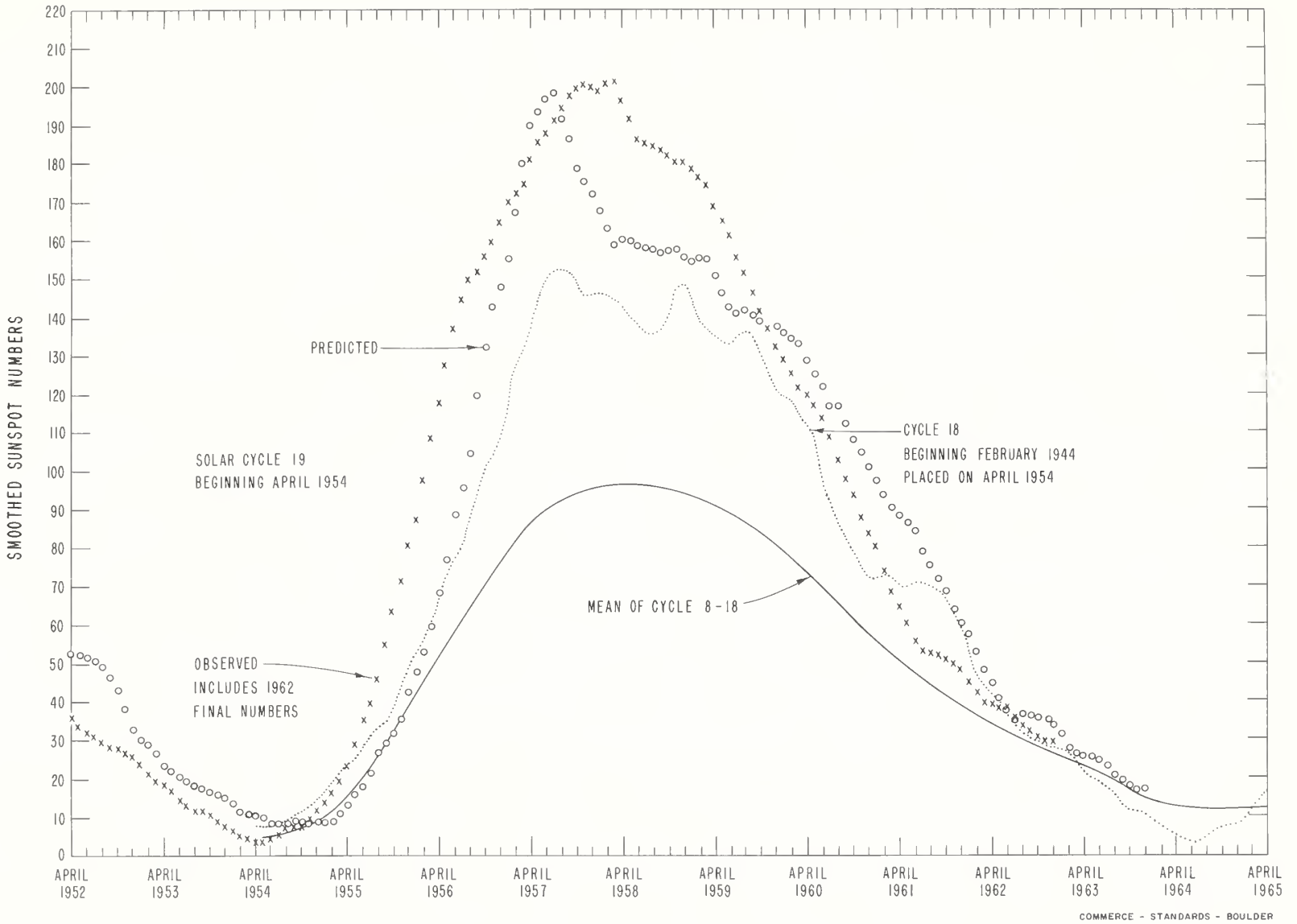
VIII ALERT PERIODS AND SPECIAL WORLD INTERVALS

(a) Alerts and SWI - June 1963

The text describing the contents of Part B was republished in November 1962. A revision was made December 1962, and an addenda January 1963.

May 1963	American Relative Sunspot Numbers R_A'
1	18
2	21
3	20
4	19
5	24
6	47
7	35
8	38
9	46
10	55
11	60
12	41
13	43
14	49
15	66
16	67
17	63
18	59
19	60
20	47
21	26
22	21
23	31
24	24
25	16
26	7
27	10
28	24
29	33
30	37
31	33
Mean:	36.8

June 1963	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	31	84
2	26	81
3	15	81
4	10	79
5	23	78
6	8	77
7	29	84
8	54	90
9	75	93
10	92	99
11	82	103
12	89	109
13	82	107
14	57	100
15	54	96
16	33	89
17	27	86
18	25	82
19	23	79
20	19	75
21	19	73
22	7	72
23	15	72
24	24	72
25	29	74
26	33	74
27	35	72
28	24	74
29	31	73
30	27	76
Mean:	36.6	83.5



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

JUNE 1963

JUNE 1963	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTATIONS)	DATE FIRST SEEN	DURATION (DAYS)	CMP VALUES		HISTORY
				AREA	INT					AREA	COUNT	
1.8	N06	6817	6798	500	2	ℓ ¬ d	2	5/27	9			
2.2	N10	6830	New	(400)	(2)	b ∧ d	1	6/5	3			
3.4	S30	6826	(1)	(200)	(2)	b ∧ d	1	6/4	1			
4.0	S15	6820	6796	800	2	ℓ ¬ d	2	5/29	10			
5.2	N09	6821	6794	1700	3	ℓ — ℓ	2	5/29	13			
5.7	N43	6831	(1)	100	2.5	b ∧ d	1	6/6	1			
7.8	S12	6824	6795	1800	2.5	ℓ — ℓ	3	6/1	13			
9.1	S14	6827	New	1900	3	ℓ — ℓ	1	6/4	11	130	13	b ∧ d
9.3	N36	6825	New	(200)	(2)	ℓ ¬ d	1	6/3	5			
10.4	N12	6828	6802	1200	2.5	ℓ — ℓ	2	6/4	13			
11.0	S11	6829	6801	800	2	ℓ — ℓ	3	6/4	12	10	1	ℓ ¬ d
12.0	N12	6832	6803	3000	3.5	ℓ / ℓ	2	6/5	14	1140	19	b / ℓ
12.3	S36	6837	(1)	(200)	(2)	b ∧ d	1	6/16	1			
14.2	N06	6833	6814	1400	2.5	ℓ — ℓ	2	6/7	13	20	1	ℓ ¬ d
14.1	S10	6835	(1)	(200)	(2)	b ∧ d	1	6/11	1			
15.7	N09	6834	6805	2700	3	ℓ — ℓ	2	6/9	13	150	1	ℓ — ℓ
17.0	S11	6838	New	200	2	b ⌐ ℓ	1	6/16	6			
17.6	S01	6836	New	(300)	(1)	ℓ ¬ d	1	6/11	5			
19.5	S36	6848	(1)	(200)	(2)	b ∧ d	1	6/21	1			
19.9	S13	6841	New	300	1.5	b ∧ d	1	6/18	3			
20.3	N08	6847	New	300	1.5	b ⌐ ℓ	1	6/24	3			
21.0	N07	6842	(2)	200	1	b ∧ d	1	6/19	2			
22.2	N13	6839	(1)	(100)	(1.5)	¬ d	1	6/17	1			
22.8	N21	6843	New	200	1	b ∧ d	1	6/19	4			
23.5	S01	6849	(1)	(200)	(2)	b ∧ d	1	6/21	1			
23.8	S01	6860	(1)	(200)	(1.5)	b ⌐ ℓ	1	6/28	1			
23.9	N02	6851	(2)	100	1	b ∧ d	1	6/22	2			
24.0	N15	6840	6812	2200	3	ℓ — ℓ	2	6/17	14	(50)	(1)	ℓ ¬ d
24.0	N07	6844	New	400	2	ℓ — ℓ	1	6/19	10			
24.5	S07	6845	New	200	1	ℓ ¬ d	1	6/19	5			
24.5	N10	6861	New	(300)	(3)	b ⌐ ℓ	1	6/28	3			
25.2	S08	6857	(2)	200	1.5	b ∧ d	1	6/25	2			
25.3	N02	6846	New	300	2.5	ℓ ¬ d	1	6/19	10			
26.5	S39	6855	(1)	(100)	(2)	b ∧ d	1	6/23	1			
27.1	N16	6850	6815	500	2	ℓ — ℓ	4	6/21	11			
27.5	N24	6853	(2)	300	1	ℓ ¬ d	1	6/22	2			
27.5	N40	6859	New	200	1.5	b ∧ d	1	6/27	3			
27.9	S05	6866	(2)	(100)	(1)	b ⌐ ℓ	1	7/1	2			
28.1	N24	6856	6816	400	1.5	ℓ ¬ d	4	6/24	7			
28.4	N02	6852	New	100	1	ℓ ¬ d	1	6/22	5			
28.4	N11	6854	6830	1400	3	ℓ — ℓ	2	6/22	13	170	8	b ⌐ ℓ
28.8	S13	6867	(1)	(100)	(1.5)	b ∧ d	1	7/1	1			

COMMERCE - STANDARDS - BOULDER

(1) New but small and ephemeral.
(2) New but ephemeral.

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

JUNE 1963

June 1963	Time Meas. UT	Lat.	Mer. Dist.	Type
1-15	No. Obs.			
16	2420	N11	W69	αp
		N07	W18	αp
17-24	No. Obs.			
25	2320	N10	E29	β
26-27	No. Obs.			
28	2410	N10	W60	αp
		N09	W11	βf
		N14	E32	αp
29	No Obs.			
30	2355	N10	W86	αp
		N07	W43	αp
		N13	E05	βp

COMMERCE - STANDARDS - BOULDER

Note: Renovation of the 150 foot solar tower continued through the month of May and the first week of June. No magnetic observations were made during these times.

PROVISIONAL CORONAL LINE EMISSION INDICES

JUNE 1963

CMP Jun 1963	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	x	x	x	x	x	x	8	11	34a	44a	19	31	9a	16a
2	17	25	8	10	13	15	10	14	10	12	13	16	14	20	12	16
3	24	56	28	40	25	50	30	40	7	12	12	16	25	45	12	28
4	21	46	29	56	16	22	26	40	18	25	16	24	31	73	13	20
5	x	x	x	x	x	x	x	x	23	42	24	30	18	36	17	20
6	27	67	x	x	27	48	x	x	38	67	20	30	11	22	27	36
7	5	6	7	10	13	20	6	12	x	x	x	x	x	x	x	x
8	4	4	x	x	3	5	x	x	39	73	12	28	16	22	12	16
9	15	26	5	6	12	15	7	8	16	24	11	20	16	29	8	12
10	19	35	17	28	14	19	28	36	40	62	27	36	45	87	15	48
11	53	98	36	70	21	28	31	40	x	x	x	x	x	x	x	x
12	13	18	7	10	7	9	12	16	8	31	20	28	57	101	21	36
13	48	67	28	44	6	8	28	32	9	25	23	32	68	104	25	36
14	62	112	9	16	6	11	7	20	12	28	18	24	81	154	15	28
15	71	120	31a	52a	9	14	20a	40a	11a	20a	23a	46a	33a	67a	26a	34a
16	21	35	20	30	6	12	16	20	8	11	21	24	17	28	19	24
17	18	24	21	34	9	21	18	28	5	9	19	36	7	8	26	32
18	11	20	24	27	6	11	11	16	11	14	20a	24a	7	20	29a	32a
19	7	11	19	24	5	8	14	16	x	x	5	6	x	x	4	5
20	6	11	22	28	8	14	21	24	7	11	17	20	15	48	30	44
21	x	x	x	x	x	x	x	x	3	7	9	12	7	12	9	11
22	6	14	13	25	2	8	6	12	9a	17a	12	12	18a	28a	12	16
23	8	21	13	30	3	3	8	12	12a	17a	16a	28a	11a	31a	28a	44a
24	25	59	13	48	7	8	11	28	5	6	8	11	17	30	10	16
25	x	x	x	x	x	x	x	x	14	20	14	22	24	42	19	30
26	31	49	13	16	10	17	11	13	6	11	x	x	18	34	x	x
27	35	50	8	11	5	6	21	28	9	20	x	x	41	95	x	x
28	30	50	13	16	8	11	18	20	x	x	27	40	x	x	27	52
29	x	x	20a	28a	x	x	18a	24a	5	8	29	36	22	25	36	44
30	22	28	13	16	6	8	21	40	6	8	13	20	17	36	12	20

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

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

JUNE 1963

OBSERVATORY	DATE JUNE 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX. LAT	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME UT	MEAS AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX WIDTH Hα	MAX. INT %	PROVISIONAL IONOSPHERIC EFFECT
MANILA	01	0320	0335	0324	N13	W13	6815	15	1							
HAUTE PROV	01	0848	0925	0853	N10	E50	6821	37	2		0853	6.10	9.30			
HAUTE PROV	01	1121	1149 D	1132	N13	W19	6815	28 D	1		1132	3.00	3.20			
OTTAWA	01	1123	1139	1133	N14	W18			1-	1	1133	.61	.61			
CAPRI S	01	1135 E	1144		N12	W12			1-	1	1135	1.00	1.00			
	01	1830	1840	NO FLARE	PATROL											
	01	2325	2400	NO FLARE	PATROL											
	02	0000	0510	NO FLARE	PATROL											
	02	0520	0535	NO FLARE	PATROL											
	02	0800	0850	NO FLARE	PATROL											
	02	0900	0955	NO FLARE	PATROL											
	02	1000	1030	NO FLARE	PATROL											
OTTAWA	02	1702	1715 D	1708	N11	W10			1-	3	1708	.70	.70			
SAC PEAK	02	2125	2141 D	2133	N09	E28			1-	3		1.73	1.79		17	
	02	2310	2400	NO FLARE	PATROL											
	03	0000	0600	NO FLARE	PATROL											
	03	0915	1020	NO FLARE	PATROL											
OTTAWA	03	1538	1546	1543	N12	W88			1-	3	1543	.41	1.74			
OTTAWA	03	1554	1615	1600	N12	W22			1-	3	1600	.64	.64			
SAC PEAK	03	1557	1617	1559	N13	W22			1-	3		.29	.29		16	
	03	2310	2400	NO FLARE	PATROL											
	04	0000	0605	NO FLARE	PATROL											
	04	0910	1115	NO FLARE	PATROL											
	04	2245	2255	NO FLARE	PATROL											
	04	2315	2400	NO FLARE	PATROL											
	05	0000	0450	NO FLARE	PATROL											
	05	0515	0525	NO FLARE	PATROL											
	05	0530	0540	NO FLARE	PATROL											
	05	0550	0600	NO FLARE	PATROL											
	05	0900	1105	NO FLARE	PATROL											
	05	2315	2400	NO FLARE	PATROL											
	06	0000	0600	NO FLARE	PATROL											
ATHENES	06	0647	0654		S07	W47			1-	1		.70	1.00			
	06	0900	1035	NO FLARE	PATROL											
	06	1040	1110	NO FLARE	PATROL											
	06	1140	1145	NO FLARE	PATROL											
	06	1150	1210	NO FLARE	PATROL											
	06	2105	2120	NO FLARE	PATROL											
	06	2135	2400	NO FLARE	PATROL											
	07	0000	0335	NO FLARE	PATROL											
	07	0400	0450	NO FLARE	PATROL											
	07	0905	0910	NO FLARE	PATROL											
	07	0935	0950	NO FLARE	PATROL											
	07	1000	1010	NO FLARE	PATROL											
SALTSJOBADN	07	1227 E	1238 D		S12	E04			1-	3		1.20	1.20			

SOLAR FLARES

JUNE 1963

OBSERVATORY	DATE JUNE 1963	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
OTTAWA	07	1334	1349	1338	S11	E21			1-	2	1338	.47	.47			
SAC PEAK	07	1337	1347	1344	S11	E21			1-	3		.27	.29		15	
SAC PEAK	07	1947	1954	1950	S12	E18			1-	3		.83	.85		16	
SAC PEAK	07	2046	2056	2048	S12	E18			1-	3		.27	.29		17	
	07	2305	2400	NO FLARE	PATROL											
	08	0000	0550	NO FLARE	PATROL											
MANILA	08	0010 E	0024		S10	E12	6827	14 D	1							
MANILA	08	0500	0515		N16	E48			1-							
MANILA	08	0500	0520		S10	E11			1-							
	08	0555	0600	NO FLARE	PATROL											
HAUTE PROV	08	0659 E	0710 D		S11	E12			1-		0700	.80	.80			
CAPRI S	08	0803	0813		N15	E50			1-	2	0805	1.00	1.70			
CAPRI S	08	0828 E	0849		N14	E50			1-	2	0832	1.20	2.00			
	08	0900	0910	NO FLARE	PATROL											
CAPRI S	08	0932 E	1016		N15	E50	6832	44 D	1	2	0932	2.00	3.40			
	08	0935	0945	NO FLARE	PATROL											
	08	1030	1040	NO FLARE	PATROL											
HAUTE PROV	08	1153	1203 D		N13	E48			1-		1154	.60	.90			
	08	1205	1210	NO FLARE	PATROL											
CAPRI S	08	1227	1243	1233	N16	E47			1-	2	1227	.80	1.40			
SAC PEAK	08	1423	1432	1426	S12	E07			1-	2		.54	.52		17	
CAPRI S	08	1424 E	1431		S11	E08			1-	2	1427	.90	.90			
OTTAWA	08	1448	1454	1450	N15	E47			1-	2	1450	.35	.42			
SAC PEAK	08	1448	1454	1451	N13	E47			1-	2		.91	1.11		16	
	08	1800	1805	NO FLARE	PATROL											
SAC PEAK	08	1836	1843	1838	S10	E02			1-	2		.27	.25		15	
	08	2120	2245	NO FLARE	PATROL											
	08	2315	2400	NO FLARE	PATROL											
	09	0000	0505	NO FLARE	PATROL											
HAUTE PROV	09	0850	0916		N11	E30			1-		0854	.40	.50			
CAPRI S	09	0856 E	0909		N10	E30			1-	2	0858	.80	1.00			
HAUTE PROV	09	1022	1048		N14	E33			1-		1033	.30	.40			
	09	1125	1130	NO FLARE	PATROL											
SAC PEAK	09	1556	1607	1558	N13	E36			1-	3		.50	.54		17	
SAC PEAK	09	1825	1836	1827	N10	E28	6832	11	1	3		2.00	2.04		22	
SAC PEAK	09	2203	2211	2205	N09	E26			1-	3		1.71	1.73		18	
	09	2315	2400	NO FLARE	PATROL											
	10	0000	0530	NO FLARE	PATROL											
ATHENES	10	0637	0655		N13	E23			1-	2		1.60	1.70			
CAPRI S	10	0651 E	0737		N13	E28			1-	3	0700	1.00	1.20			
MANILA	10	0840	0845	0842	N11	E23			1-							
MANILA	10	0858	0902		N11	E22			1-							
MANILA	10	0904	0909	0906	N11	E22			1-							
	10	1000	1020	NO FLARE	PATROL											
	10	1025	1105	NO FLARE	PATROL											
CAPRI S	10	1246	1252		N10	E20			1-	1	1246	.40	.40			
SAC PEAK	10	1312	1322	1314	N15	E24			1-	3		.58	.58		17	
SAC PEAK	10	1412	1422	1417	N10	E18			1-	3		.58	.58		18	
SAC PEAK	10	1700	1717	1702	N12	E19			1-	3		1.07	1.07		18	
SAC PEAK	10	1814	1820	1816	N06	E62			1-	3		.43	.66		17	
	10	2315	2400	NO FLARE	PATROL											

SOLAR FLARES

JUNE 1963

OBSERVATORY	DATE JUNE 1963	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
	11	0000	0600	NO FLARE	PATROL											
MANILA	11	0847	0854	0850	N04	E50			1-							
CAPRI S	11	0849	0855		N09	E35	6833	6	1	1	0850	1.80	2.90			
	11	0925	0935	NO FLARE	PATROL											
	11	0940	0945	NO FLARE	PATROL											
	11	0950	1000	NO FLARE	PATROL											
HAUTE PROV	11	1014 E	1019 D		N14	E10	6832	5 D	1		1017	2.10	2.20			
CAPRI S	11	1017	1027 D		N15	E09			1-	1	1017	2.00	2.00			
	11	1035	1040	NO FLARE	PATROL											
	11	1115	1120	NO FLARE	PATROL											
	11	1125	1130	NO FLARE	PATROL											
	11	1140	1145	NO FLARE	PATROL											
	11	1150	1200	NO FLARE	PATROL											
	11	1205	1215	NO FLARE	PATROL											
CAPRI S	11	1205	1225 D		N18	E12			1-	1	1216	1.00	1.10			
	11	1225	1230	NO FLARE	PATROL											
	11	1250	1255	NO FLARE	PATROL											
SAC PEAK	11	1722 E	1728	1723	N13	E04			1-	2		.43	.41		16	
SAC PEAK	11	1946 E	1948 D	1948	N13	W02			1-	2		.58	.56		16	
SAC PEAK	11	2032 E	2037 D	2032	N12	W01			1-	2		.87	.85		17	
SAC PEAK	11	2222 U	2235 D	∿2233	S11	W38			1-	2		.52	.50		17	
SAC PEAK	11	2257 E	2315	2312	N12	E00	6832	18 D	1	2		2.31	2.27		19	
	11	2315	2400	NO FLARE	PATROL											
	12	0000	0600	NO FLARE	PATROL											
MANILA	12	0309	0329		N12	W02			1-							
MANILA	12	0416	0421	0418	N12	W02			1-							
MANILA	12	0526	0534	0529	N13	W00			1-							
MANILA	12	0541	0553	0545	N05	E38			1-							
MANILA	12	0558	0621	0615	N12	W03	6832	23	1							
MANILA	12	0751 E	0756		N12	W03	6832	5 D	1							
	12	0900	0920	NO FLARE	PATROL											
	12	0950	1020	NO FLARE	PATROL											
	12	1030	1050	NO FLARE	PATROL											
CAPRI S	12	1055 E	1105		N12	W06			1-	1	1055	1.00	1.00			
	12	1055	1245	NO FLARE	PATROL											
CAPRI S	12	1121	1134		N13	W06	6832	13	1+	1	1127	2.50	2.50			
CAPRI S	12	1215	1221		N14	W03			1-	1	1215	1.50	1.50			
	12	1250	1255	NO FLARE	PATROL											
SAC PEAK	12	1357	1415	1359	N15	W06			1-	3		.43	.43		16	
SAC PEAK	12	1502 E	1510	1504	N12	W14			1-	3		.58	.58		17	
CAPRI S	12	1504	1507		N12	W08			1-	1	1504	1.30	1.30			
SAC PEAK	12	1553	1559 D	∿1554	N10	E42			1-	3		.43	.50		16	
	12	1605	1640	NO FLARE	PATROL											
CAPRI S	12	1615	1623		N08	E44	6834	8	1	2	1608	2.50	3.50			
	12	1800	1855	NO FLARE	PATROL											
	12	2015	2115	NO FLARE	PATROL											
	12	2230	2255	NO FLARE	PATROL											
	12	2305	2400	NO FLARE	PATROL											
	13	0000	0710	NO FLARE	PATROL											

SOLAR FLARES

JUNE 1963

OBSERVATORY	DATE JUNE 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX LAT	MER DIST	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
MANILA	13	0040	0047	0043	N08	E31			1-							
MANILA	13	0104	0118	0107	N08	E30			1-							
MANILA	13	0133	0147	0136	N08	E30			1-							
MANILA	13	0158	0204	0200	N14	W07			1-							
MANILA	13	0412	0433	0415	N12	W15	6832	21	1							
MANILA	13	0556	0605	0600	N12	W14			1-							
MANILA	13	0610	0635	0613	N12	W14	6832	25	1							
CAPRI S	13	0646	0651	0649	N17	W10			1-	2	0650	.60	.60			
MANILA	13	0646	0651	0648	N13	W08			1-							
	13	0900	1105	NO FLARE	PATROL											
OTTAWA	13	1414	1424	1418	N15	W25			1-	2	1418	1.75	1.77			
OTTAWA	13	1430	1441	1432	N15	W26			1-	2	1432	1.22	1.23			
SAC PEAK	13	1431	1437	1432	N15	W27			1-	2		.43	.45		17	
OTTAWA	13	1620	1659		S12	W63	6827	39	1	2	1635	1.69	2.67			
	13	1805	1945	NO FLARE	PATROL											
	13	1955	2005	NO FLARE	PATROL											
	13	2110	2400	NO FLARE	PATROL											
	14	0000	0700	NO FLARE	PATROL											
MANILA	14	0220	0247	0230	N12	W30	6832	27	1							S - SWF
MANILA	14	0326	0337	0330	N08	E30			1-							
MANILA	14	0619	0655	0629	N03	E01	6833	36	2							
CAPRI S	14	0620	0736		N03	E02	6833	76	2	1	0621	6.50	6.50			
HAUTE PROV	14	0700 E	0723 D		N03	W03	6833	23 D	1		0705	5.20	5.20			
	14	0725	0730	NO FLARE	PATROL											
HAUTE PROV	14	0929 F	0934		N08	E20			1-		0929	.70	.70			
SALTSJOBADN	14	1055 F	1155 D		S09	E68			1-	1						
HAUTE PROV	14	1245	1256		N14	W36			1-		1247	1.20	1.60			
HAUTE PROV	14	1518 E	1530		N12	W39			1-		1522	.70	.90			
	14	1940	1945	NO FLARE	PATROL											
	14	2040	2045	NO FLARE	PATROL											
	14	2100	2105	NO FLARE	PATROL											
	14	2110	2130	NO FLARE	PATROL											
SAC PEAK	14	2133 E	2205	2134	N10	W44			1-	2		1.01	1.16		17	
	14	2315	2400	NO FLARE	PATROL											
	15	0000	0520	NO FLARE	PATROL											
MANILA	15	0346 F	0355	0348	N14	W44	6832	9 D	1							
MANILA	15	0431	0450		N12	W45			1-							
MANILA	15	0510	0518	0513	N03	W13			1-							
	15	0530	0550	NO FLARE	PATROL											
	15	0930	0950	NO FLARE	PATROL											
	15	1010	1015	NO FLARE	PATROL											
	15	2315	2400	NO FLARE	PATROL											
	16	0000	0510	NO FLARE	PATROL											
	16	0930	0935	NO FLARE	PATROL											
HAUTE PROV	16	1100	1117 D		N12	W63			1-		1103	1.00				
CAPRI S	16	1101	1110		N15	W59	6832	9	1	2	1103	1.00	2.10			
OTTAWA	16	1157	1259		N09	W65	6832	62	1+	3	1239	3.03	5.03			
HAUTE PROV	16	1158	1310	1237	N12	W65	6832	72	1		1237	2.20				
CAPRI S	16	1207	1249		N16	W58	6832	42	2	1	1241	6.10	11.00			
OTTAWA	16	1445	1452	1447	N13	W70			1-	3	1447	.76	1.44			
OTTAWA	16	1711	1726	1720	N09	W66	6832	15	1	3	1720	1.34	2.28			

SOLAR FLARES

JUNE 1963

OBSERVATORY	DATE JUNE 1963	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
SAC PEAK	16	1715	1728	1719	N11	W66			1-	3		1.16	1.96		16	
SAC PEAK	16	1926	1935	1929	N11	W68			1-	3		.43	.83		16	
SAC PEAK	16	2004	2030	2008	N10	W67			1-	3		.29	.52		16	
SAC PEAK	16	2143	2157	2146	N08	W22			1-	3		.52	.52		17	
	16	2310	2400	NO FLARE	PATROL											
	17	0000	0530	NO FLARE	PATROL											
CAPRI S	17	0747	0812		N12	E90			1-	3	0758	.30				
SAC PEAK	17	1350	1404	1353	N11	W82			1-	2		.52	1.30		17	
OTTAWA	17	1350	1414	1352	N09	W78			1-	3	1352	.47	1.16			
CAPRI S	17	1532	1544 D		N34	E90			1-	2	1539	.20				
OTTAWA	17	1628	1643	1634	N18	W34			1-	3	1634	.64	.68			
HAUTE PROV	17	1629 E	1650		N09	W33			1-		1740	1.00	1.20			
	17	2305	2400	NO FLARE	PATROL											
	18	0000	0500	NO FLARE	PATROL											
ATHENES	18	0555	0601		N13	E43			1-	2		.50	.70			
OTTAWA	18	1149	1205	1156	N15	E71			1-	3	1156	.23	.45			
SAC PEAK	18	1918	1943	1925	N18	W90			1-	3		.58	.58		18	
	18	2315	2400	NO FLARE	PATROL											
	19	0000	0450	NO FLARE	PATROL											
	19	0900	0905	NO FLARE	PATROL											
	19	0940	1010	NO FLARE	PATROL											
	19	1535	1545	NO FLARE	PATROL											
	19	2300	2320	NO FLARE	PATROL											
	19	2350	2400	NO FLARE	PATROL											
	20	0000	0550	NO FLARE	PATROL											
HAUTE PROV	20	0807	0858	0812	N12	E49	6840	51	2		0812	5.90	9.60			
CAPRI S	20	0810 E	0827		N12	E43	6840	17 D	1	1	0810	1.70	2.40			
CAPRI S	20	1027	1033		N12	E42	6840	6	1	1	1028	1.90	2.60			
SAC PEAK	20	1722 F	1737	1726	N13	E44			1-	3		.45	.54		16	
	20	2315	2400	NO FLARE	PATROL											
	21	0000	0455	NO FLARE	PATROL											
	21	1045	1050	NO FLARE	PATROL											
SALTSJOBADN	21	1205	1216		N07	W24			1-	2		1.00	1.10			
SAC PEAK	21	2146	2205	2158	N16	E28			1-	3		.87	.89		16	
	21	2315	2400	NO FLARE	PATROL											
	22	0000	0035	NO FLARE	PATROL											
	22	0130	0505	NO FLARE	PATROL											
	22	2315	2400	NO FLARE	PATROL											
	23	0000	0030	NO FLARE	PATROL											
	23	0130	0430	NO FLARE	PATROL											
	23	0555	0600	NO FLARE	PATROL											
	23	0900	1000	NO FLARE	PATROL											
	23	1005	1110	NO FLARE	PATROL											
HAUTE PROV	23	1454	1511		N14	E08			1-		1458	.60	.60			

SOLAR FLARES

JUNE 1963

OBSERVATORY	DATE JUNE 1963	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
SAC PEAK	23	1456	1510	1500	N14	E09			1-	3		.52	.47		17	
OTTAWA	23	1456	1517	1501	N15	E09			1-	2	1501	.35	.35			
	23	2320	2400	NO FLARE	PATROL											
	24	0000	0555	NO FLARE	PATROL											
	24	2345	2400	NO FLARE	PATROL											
	25	0000	0600	NO FLARE	PATROL											
MANILA	25	0900 E	0910		N09	E38			1-							
	25	0900	1005	NO FLARE	PATROL											
HAUTE PROV	25	1038 E	1225		N09	E37	6854	107 D	1		1040	2.40	3.10			
OTTAWA	25	1404	1408	1406	N12	E38			1-	3	1406	.52	.57			
HAUTE PROV	25	1448	1454		N09	E37			1-		1449	.90	1.30			
HAUTE PROV	25	1547	1703		N09	E37			1-		1601	.60	.80			
OTTAWA	25	1654	1704	1656	N12	E35			1-	2	1656	.58	.62			
SAC PEAK	25	2033	2103	2037	N10	E37			1-	2		.29	.31		17	
	26	0010	0315	NO FLARE	PATROL											
MANILA	26	0252	0324	0305	N07	W67	6847	32	1+							
HAUTE PROV	26	0550	0610		N10	E28			1-		0559	.90	1.00			
CAPRI S	26	0601 E	0615		N08	E34			1-	2	0606	.70	.80			
HAUTE PROV	26	0650	0659		N10	E31			1-		0656	.50	.60			
CAPRI S	26	0655	0727		N08	E34			1-	2	0706	1.60	1.90			
ISTANBUL	26	0730 E	0740		N11	E30			1-							
HAUTE PROV	26	1210	1222		N10	E28			1-		1211	.90	1.00			
OTTAWA	26	1215	1220 D		N11	E28			1-	1	1217	1.11	1.13			
CAPRI S	26	1215 E	1225		N08	E31			1-	3	1222	.80	1.00			
SAC PEAK	26	2051 E	2051 D		N10	E20			1-			.29	.29		16	
	26	2205	2250	NO FLARE	PATROL											
	26	2310	2400	NO FLARE	PATROL											
	27	0000	0240	NO FLARE	PATROL											
	27	0300	0430	NO FLARE	PATROL											
CAPRI S	27	0752 E	0803		N03	W60			1-	2	0756	1.20	2.30			
SALTSJOBADN	27	1030	1047		N17	E47	6858	11	1	3		1.50	2.20			
CAPRI S	27	1140	1152		N03	W90	6847	12	1	2		.70				
SALTSJOBADN	27	1346	1350		N13	E46			1-	3						
	27	2140	2145	NO FLARE	PATROL											
	27	2205	2400	NO FLARE	PATROL											
	28	0000	0020	NO FLARE	PATROL											
	28	0115	0240	NO FLARE	PATROL											
	28	0300	0530	NO FLARE	PATROL											
HAUTE PROV	28	1010	1040	1014	N13	W68	6840	30	1		1014	3.00				
CAPRI S	28	1020	1047		N15	W70	6840	27	1	2	1023	1.00	2.80			
OTTAWA	28	1607	1621	1614	N17	E41			1-	2	1614	.93	1.02			
	28	2145	2155	NO FLARE	PATROL											
	28	2205	2215	NO FLARE	PATROL											
	28	2315	2345	NO FLARE	PATROL											
IKOMASAN	29	0030	0052 D	0034	N12	W60	6861	22 D	1	1	0034	1.00	1.90	1.42	100	
	29	0100	0420	NO FLARE	PATROL											
	29	0445	0455	NO FLARE	PATROL											
	29	0515	0535	NO FLARE	PATROL											

SOLAR FLARES

JUNE 1963

OBSERVATORY	DATE JUNE 1963	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 He	MAX INT °.	PROVISIONAL IONOSPHERIC EFFECT
CAPRI S	29	1405	1445		N08	W70	6861	40	1	1	1412	2.00	4.50			
SAC PEAK	29	1530	1601	1536	N13	E23			1-	3		.93	.93		17	
HAUTE PROV	29	1532	1558	1544	N14	E23	6858	26	2		1544	5.50	6.20			
CAPRI S	29	1540	1602 D		N15	E30			1-	2	1546	.50	.60			
	29	2225	2230	NO FLARE	PATROL											
	29	2300	2400	NO FLARE	PATROL											
	30	0000	0615	NO FLARE	PATROL											
CAPRI S	30	0615	0759		N02	W81	6861	104	1	2	0657	1.30	3.60			
	30	0900	1135	NO FLARE	PATROL											
	30	2250	2400	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

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

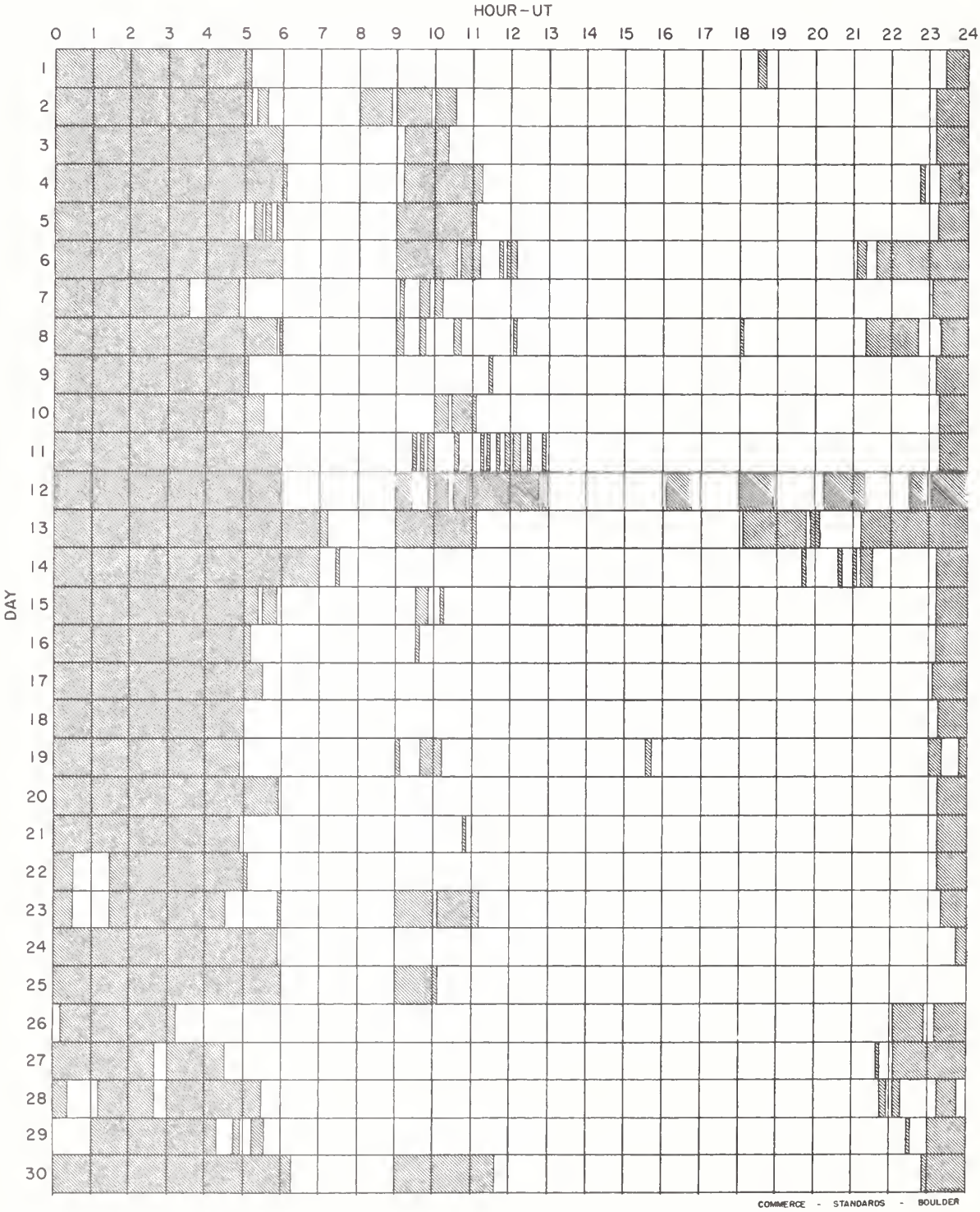
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

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

JUNE 1963



Stations Included:

Athenes	Huancayo	McMath-Hulbert
Haute-Provence	Ikomasan	Ottawa
Herstmonceux	Istanbul	Sacramento Peak

SOLAR FLARES

MARCH 1963

OBSERVATORY	DATE MAR 1963	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
	01	0320	0425	NO FLARE	PATROL											
	01	0440	0450	NO FLARE	PATROL											
	01	0605	0630	NO FLARE	PATROL											
UCCLE	01	1144 E	1148 D		N09	E18			1-	3						
UCCLE	01	1154 E	1208 D	1157	N09	E18			1-	3	1157					
	02	0600	0605	NO FLARE	PATROL											
	03	0600	0650	NO FLARE	PATROL											
	04	0205	0220	NO FLARE	PATROL											
	04	0230	0240	NO FLARE	PATROL											
	04	0305	0345	NO FLARE	PATROL											
	04	0530	0605	NO FLARE	PATROL											
UCCLE	04	0951	1004	1000	N12	E85			1-	3	1000					
UCCLE	04	1411	1424		N13	E87			1-	3						
UCCLE	04	1437	1451		N17	E85			1-	3						
	04	1700	1710	NO FLARE	PATROL											
	05	0300	0320	NO FLARE	PATROL											
	06	1620	1635	NO FLARE	PATROL											
CLIMAX	07	2159	2210	2201	N19	E21			1-			1.10	1.20			
IKOMASAN	07	2320 E	2348 D		N12	E20	6724	28 D	1	2	2323	1.20	1.40		90	
	08	0130	0220	NO FLARE	PATROL											
	08	0400	0410	NO FLARE	PATROL											
CAPETOWN	08	1220	1235	1224	N16	E14			1-		1224	1.20	1.30			
HTE-PROVEN	08	1225 E	1230 D		N15	E12			1-							
	09	0000	0010	NO FLARE	PATROL											
	09	0100	0105	NO FLARE	PATROL											
	09	0115	0120	NO FLARE	PATROL											
HTE-PROVEN	09	0857 E	0924 D		N15	E66			1-							
ATHENES	09	0930 E	0934 D		N13	E70			1-	3		.30	1.00			
	10	0220	0230	NO FLARE	PATROL											
	10	1345	1415	NO FLARE	PATROL											
	11	0215	0220	NO FLARE	PATROL											
CAPETOWN	11	1048	1142	1051	N14	W14	6724	54	1		1051	3.00	3.30			
KHARKOV	11	1052 E	1141		N14	W16	6724	49 D	1	2	1113	3.43	3.80	1.70		
	12	0215	0230	NO FLARE	PATROL											
	12	1355	1405	NO FLARE	PATROL											
	12	1540	1655	NO FLARE	PATROL											
	13	0200	0315	NO FLARE	PATROL											
	13	0335	0350	NO FLARE	PATROL											
	14	0625	0635	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

MARCH 1963

OBSERVATORY	DATE MAR 1963	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
	14	0645	0650	NO FLARE	PATROL											
UCCLE	14	1254	1308	1300	N15	W55			1-	3	1300					
	14	2215	2220	NO FLARE	PATROL											
	15	0225	0230	NO FLARE	PATROL											
HTE-PROVEN	15	0714	0730		N12	E90			1-							
HTE-PROVEN	15	0854	0928		N14	E90			1-							
HTE-PROVEN	15	0942	1000		N12	E90			1-							
UCCLE	15	0954 E	1020 D	1006	N15	E66			1-	3	1006					
UCCLE	15	0956	1020 D	1006	S08	E75			1-	3	1006					
HTE-PROVEN	15	1026	1105		N14	E90	6730	39	1							
HTE-PROVEN	15	1422	1432		N12	E90			1-							
ATHENES	15	1434 E	1436		N11	E90	6730	2 D	1	3		.20	2.30			
	16	0200	0205	NO FLARE	PATROL											
	16	0210	0215	NO FLARE	PATROL											
	16	0220	0230	NO FLARE	PATROL											
	17	0000	0155	NO FLARE	PATROL											
	17	0240	0250	NO FLARE	PATROL											
UCCLE	17	0917 E	0935		N14	E59			1-	3						
UCCLE	17	1005	1017	1010	N10	E58			1-	3	1010					
	18	1415	1430	NO FLARE	PATROL											
	19	0130	0210	NO FLARE	PATROL											
	19	0415	0445	NO FLARE	PATROL											
IKOMASAN	19	0500	0504		N12	E36			1-	3					70	
	20	0305	0400	NO FLARE	PATROL											
	20	0405	0420	NO FLARE	PATROL											
	20	1315	1320	NO FLARE	PATROL											
	22	2145	2230	NO FLARE	PATROL											
	22	2240	2255	NO FLARE	PATROL											
	23	0000	0150	NO FLARE	PATROL											
	23	0200	0220	NO FLARE	PATROL											
ATHENES	23	0908	0912		S10	W65			1-	3		.20	.50			
	25	0230	0245	NO FLARE	PATROL											
	26	0215	0255	NO FLARE	PATROL											
	26	1005	1015	NO FLARE	PATROL											
	26	1025	1035	NO FLARE	PATROL											
	26	1120	1130	NO FLARE	PATROL											
	26	1320	1330	NO FLARE	PATROL											
	26	1450	1500	NO FLARE	PATROL											
	26	2330	2345	NO FLARE	PATROL											
	26	2355	2400	NO FLARE	PATROL											
	27	0000	0015	NO FLARE	PATROL											

SOLAR FLARES

MARCH 1963

OBSERVATORY	DATE MAR 1963	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
	27	0200	0340	NO FLARE	PATROL											
CAPRI-F	27	0712 E	0717 D		N12	W75	6730	5 D	1	1	0713	.50	13.70			
CAPETOWN	27	0714 E	0724		N18	W78			1-		0714	.60				
CAPETOWN	27	0821	0903	0831	N18	W78	6730	42	1		0831	1.50				
UCCLE	27	0851 E	0856		N19	W65			1-	3						
UCCLE	27	0851 E	0939		N14	W80			1-	3						
	28	0010	0100	NO FLARE	PATROL											
	28	0110	0130	NO FLARE	PATROL											
	28	0210	0220	NO FLARE	PATROL											
	28	0225	0230	NO FLARE	PATROL											
	28	0245	0325	NO FLARE	PATROL											
	28	1015	1020	NO FLARE	PATROL											
	28	1105	1115	NO FLARE	PATROL											
	29	0205	0410	NO FLARE	PATROL											
	29	0455	0530	NO FLARE	PATROL											
	29	0545	0550	NO FLARE	PATROL											
	29	0605	0610	NO FLARE	PATROL											
	29	0625	0640	NO FLARE	PATROL											
CAPETOWN	29	1213	1227	1216	S06	E41			1-		1216	1.30	1.70			
CAPETOWN	29	1254	1317	1258	S06	E41			1-		1258	1.20	1.60			
	29	2045	2055	NO FLARE	PATROL											
	30	0205	0220	NO FLARE	PATROL											
CAPETOWN	30	0837	0848	0839	S07	E28			1-		0839	1.50	1.70			
	31	0210	0215	NO FLARE	PATROL											
	31	2300	2335	NO FLARE	PATROL											
IKOMASAN	31	2350 E	0010 D		S08	E07			1-	2	2353	1.20	1.20		70	

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the March 1963 flares published in CRPL-F 224 B April 1963.

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	FREIGURG, GFR		

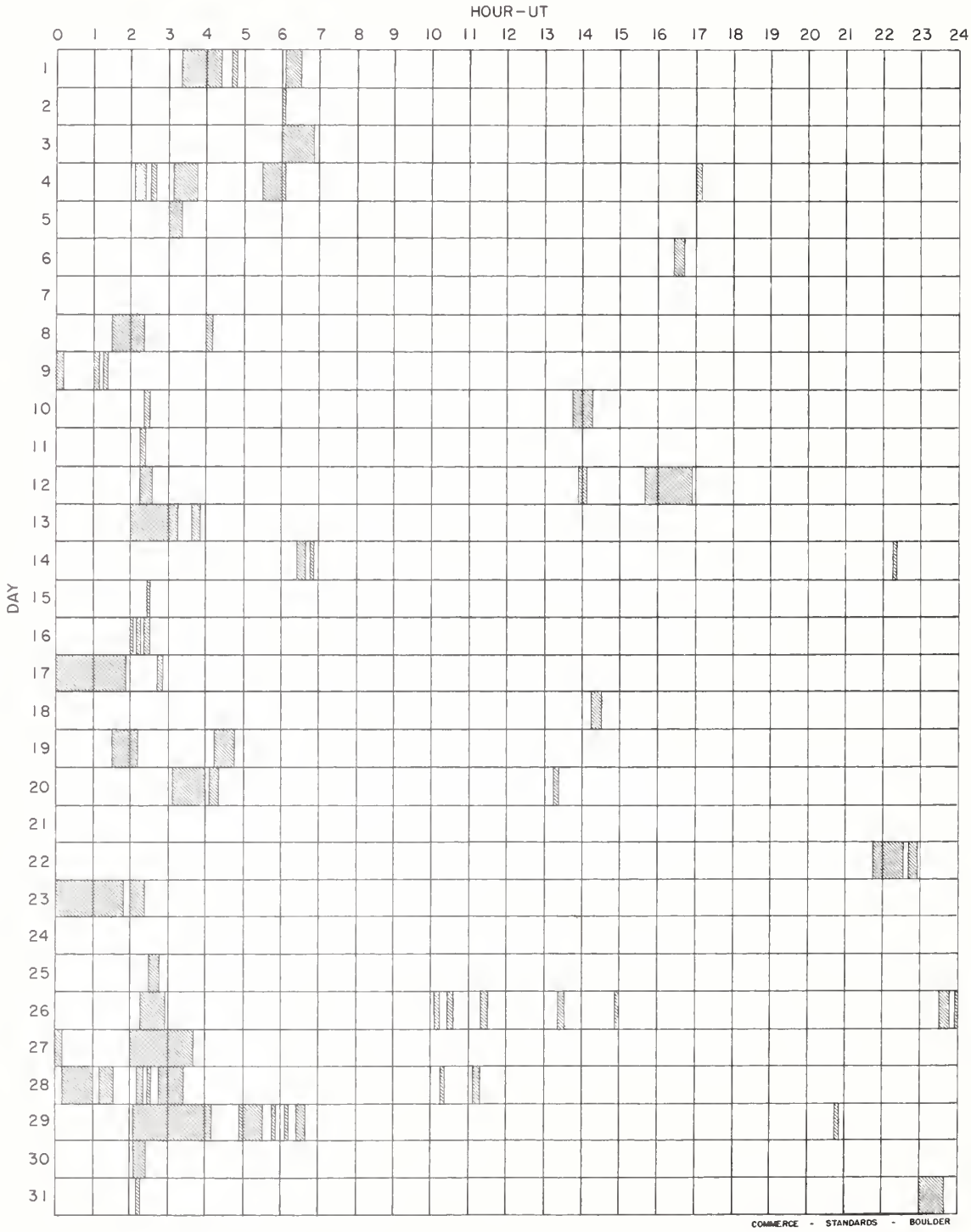
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

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

MARCH 1963



Stations Included:

Abastumani	Capri-F (German)	Herstmonceux	Kodaikanal	Nizmir	Tachkent
Arcetri	Capri-S (Swedish)	Honolulu	Lockheed	Ondrejov	Uccle
Athenes	Climax	Huancayo	McMath-Hulbert	Ottawa	Voroshilov
Bakou	Crimee	Kharkov	Mitaka	Sacramento Peak	
Capetown	Haute-Provence	Kiev KO	Nizamiah	Schauinsland	

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

MAY 1963

MAY 1963	UNIVERSAL TIME START	END	MAX	SWF TYPE	IMP	IMPORTANCE ABS	SCNA	SEA	SPA	BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
01	0530	0609		SL	2+						5	TO CA MA NE CW+ CW++	0548
01	0530	0700						1			5	RO MA	
01	0533					30	1				5	RO MA	
10	2015	2017								1	5	HA BO MC	
14	1344	1345								1	4	MC BO	
15	0705	0740		SL	1						5	DA MA	0702E
17	1832	1834								1	4	MC BO	
17	1945	1948								1	5	MC BO HA	1940
19	0702	0705								1	5	RO MA	708E
19	1302	1304								1	5	MC RO	
19	2139	2141								1	5	MC BO HA	*
21	0207	0210								2	5	MA HA	*
21	2156	2158								1	5	BO HA	2139
23	1230	1330	1236						26		1	BO	1229
23	1235	1259		S	2						5	PR BE BO DA FM HU MC NE NS RCA+	
+ 23	1235	1347						1+			5	RO A1 A5 A15 A16 LO MC PU	
23	1237	1251	1241			45	2				5	RO MC	
23	1251	1255								1	5	RO MC	
23	1522	1525								2	5	MC BO	1510
23	1542	1630	1545						42		4	BO	1547
23	1544	1607		S	1+						5	PR AN BE BO DA FM HU MC NE WS	
+ 23	1549	1553								2	4	MC BO	
23	1553	1605				35	2				5	MC BO RO	
23	1553	1643						2			5	MC A1 A3 A5 A6 A15 A16 BO RO	
24	0128	0130								2	5	MA HA	*
24	0131	0135								2	5	MA HA	
24	1512	1545	1515						18		1	BO	1459
24	1514	2130								1	5	BO HA MC	
24	1517	1530		SL	1+						5	BE HU MC PR WS	
25	1615	1730	1620						40		4	BO	1623
+ 25	1620	1645		S	2						5	MC AN BE BO FM HU JU LI NE PR WS	
25	1620	1715	1628					2			5	LO A1 A3 A5 A15 A16 JU	

RCA+ = Tangiers, Morocco
LO = Preston, England
\+ = Sudden Enhancement of Signals on VLF stations observed by A3 or A5

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JUNE 1963

ARO - OTTAWA **2800 Mc.**

JUNE 1963	TYPE	START UT	DURATION HRS. MIN	MAXIMUM TIME UT	MAXIMUM PEAK FLUX	MAXIMUM MEAN FLUX	REMARKS
7	3 Simple 3 A	2235	>1 20	Indet.	14	--	
	2 Simple 2 f	2335	15	2342	27	10	
9	2 Simple 2 f	1825	7.5	1826.5	38	6	
9	1 Simple 1	2202.8	0.3	2203	7	3.5	
10	2 Simple 2 f	1659.5	8.5	1702	25	6	
	5 Absorption	1708	1 37		-4	-2	
11	1 Simple 1	2123	1	2123.7	3	2	
11	3 Simple 3	2257	> 33	Indet.	3	--	
12	3 Simple 3 A	1103	9 42	Indet.	7	4	
	1 Simple 1	1108	7	1111	4	2.5	
	6 Complex f	1120	4	1121.3	30	10	
	2 Simple 2	1858.7	2.3	1859	11	4	
13	3 Simple 3 A	1108	7 00	Indet.	4	3.5	
	2 Simple 2 f	1111	5	1111.2	8	3.5	
	1 Simple 1 f	1312	2	1313	1.5	1	
	1 Simple 1 f	1257	1.5	1358	1.5	1	
	1 Simple 1 f	1430.5	3.5	1432.3	6	2.5	
13	3 Simple 3	1914	1 17	1916	2	1	
13	3 Simple 3	2300	> 30	2313	2	1	
14	1 Simple 1	1642	6	1647	2	1	
14	1 Simple 1	1834.7	1.3	1835	2	1	
14	3 Simple 3 A f	2052.5	> 2 37.5	2107	10	--	
	6 Complex f	2052.5	10	2053.5	60	18	
	6 Complex f	2141	14	2143.5	14	6	
	4 Post Increase		31		3	1.5	
16	3 Simple 3	1155	2 40	1215	7	3	
17	3 Simple 3	1350	2 05	Indet.	2	1.8	
25	3 Simple 3 f	2256	> 37	2259	2.5	--	

COMMERCE - STANDARDS - BOULDER

HOURS OF OBSERVATION: APRIL, MAY, JUNE, 1963

OBSERVING PERIOD:

April	11:10 UT - 23:10 UT (approx)
May	10:55 UT - 23:45 UT (approx)
June	10:50 UT - 23:45 UT (approx)

With the following exceptions:

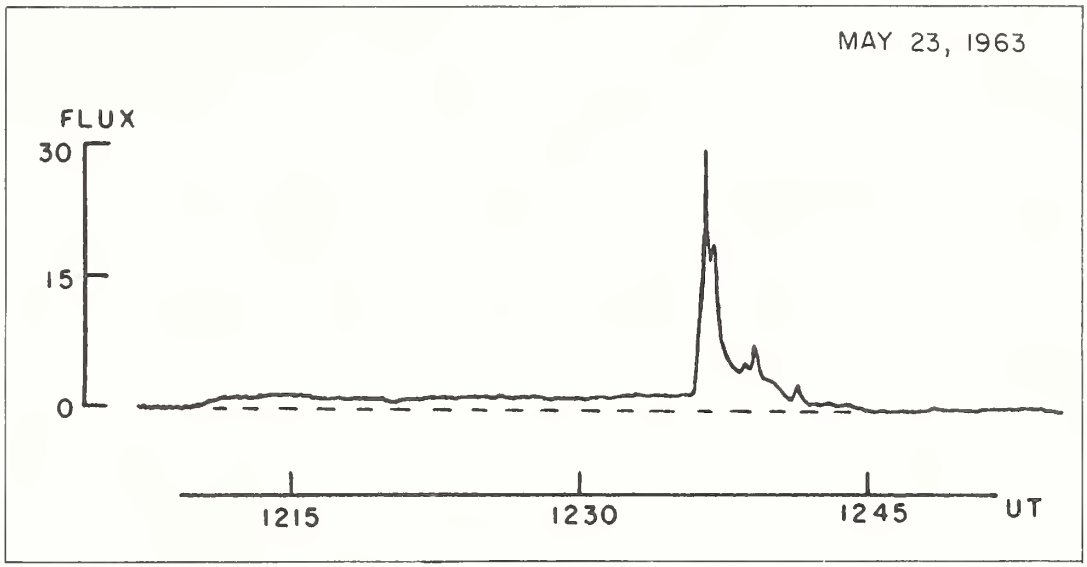
(1) No observations: April 28 19:30 - 20:40 UT

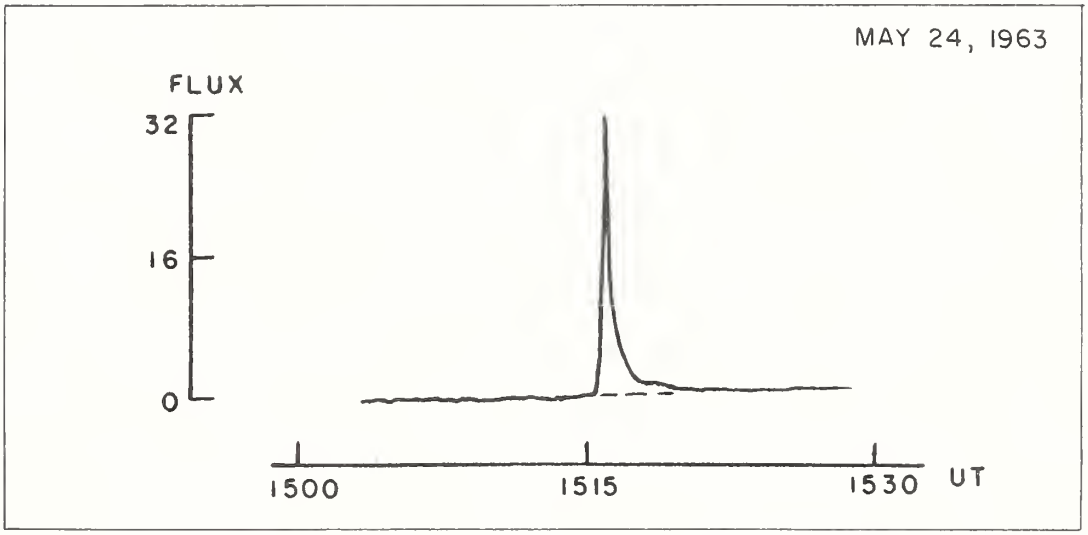
(2) Interruption of observations, approximately 20 minutes in duration, in the periods 15:00 - 16:00 UT and/or 20:00 - 21:00 UT, on the following days:

April 20, 21, 22, 28, 29
May 23
June 1, 2, 13, 14, 15, 16, 17, 18, 19, 21, 22, 29

SELECTED 2800 MC/S SOLAR NOISE BURSTS
OTTAWA, CANADA

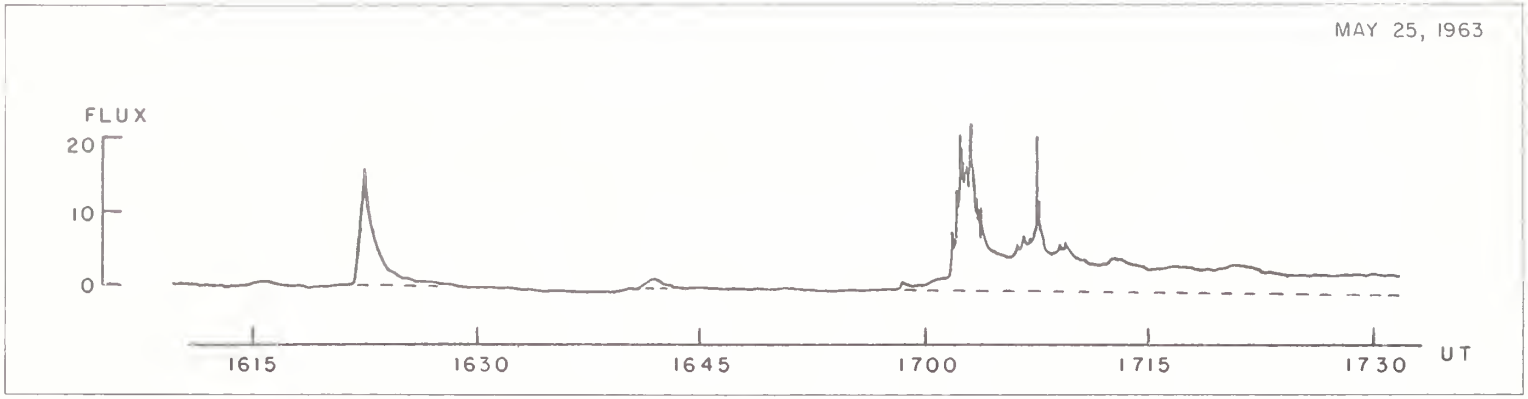
MAY 23, 24, 1963

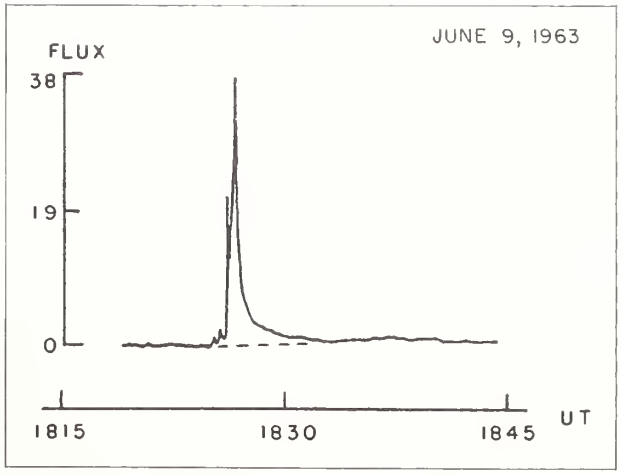


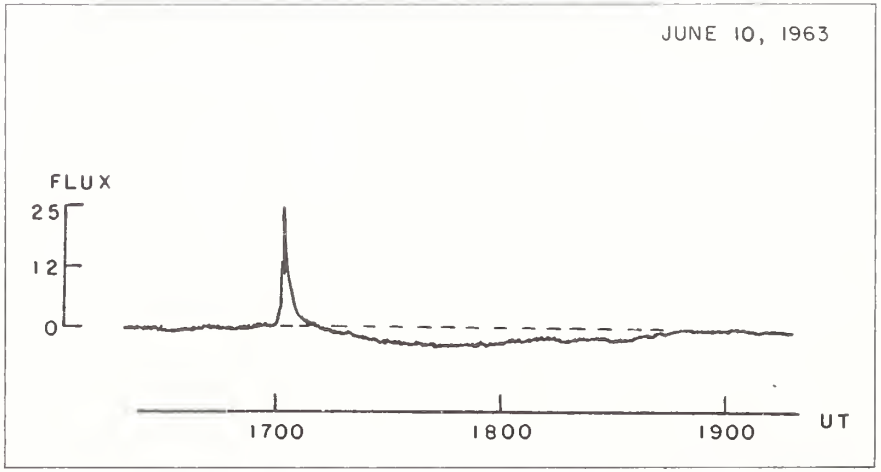


SELECTED 2800 MC/S SOLAR NOISE BURSTS
OTTAWA, CANADA

MAY 25, 1963 JUNE 9, 10, 1963

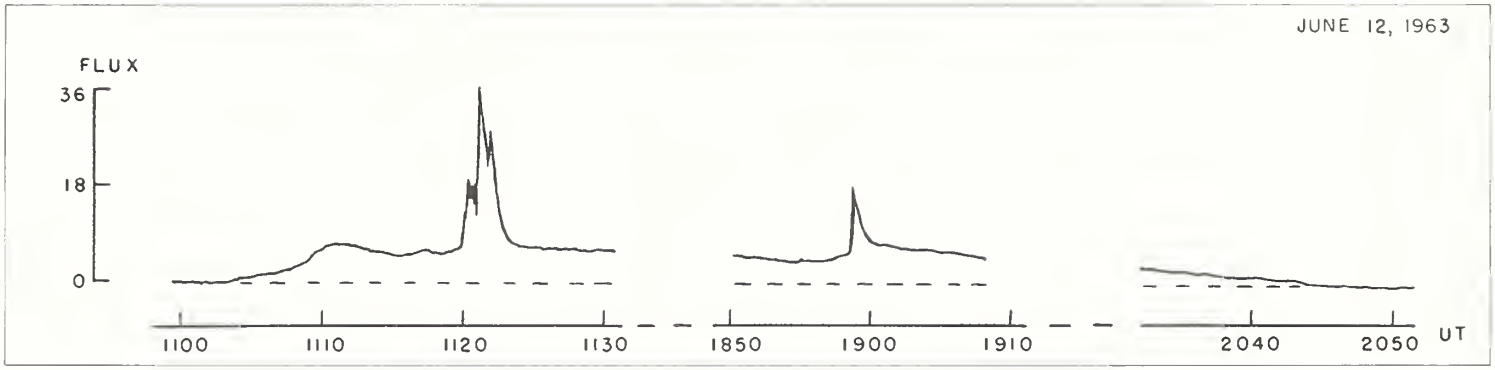


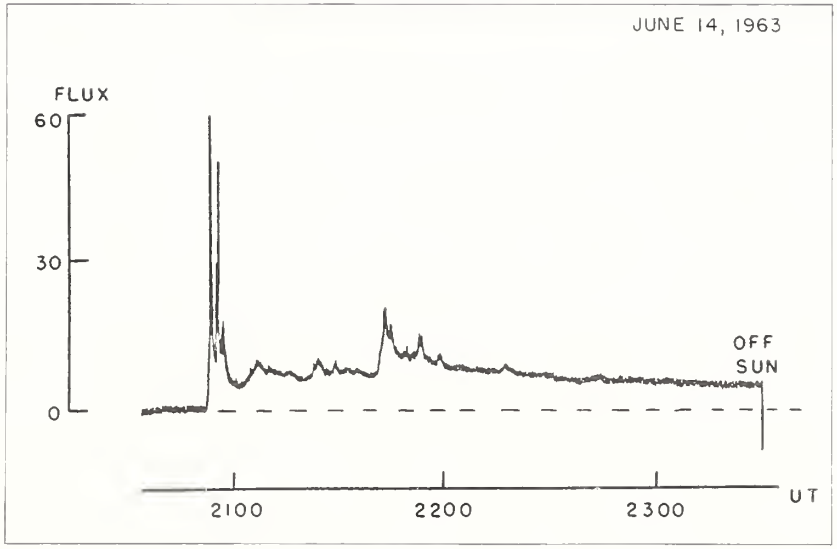


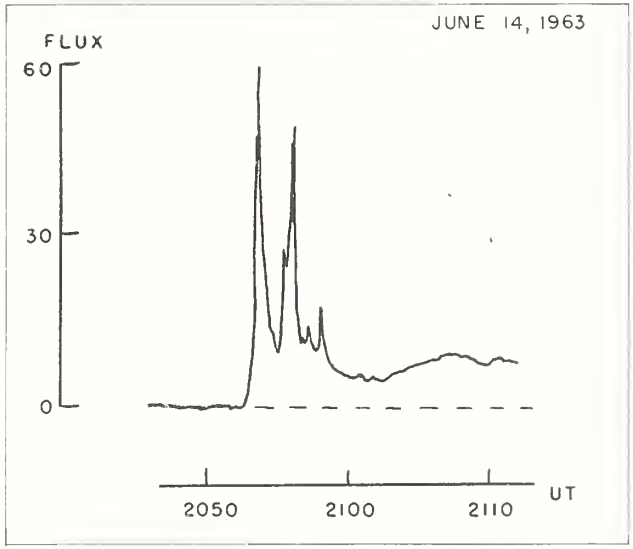


SELECTED 2800 MC/S SOLAR NOISE BURSTS
OTTAWA, CANADA

JUNE 12, 14, 1963







SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
JUNE 1963

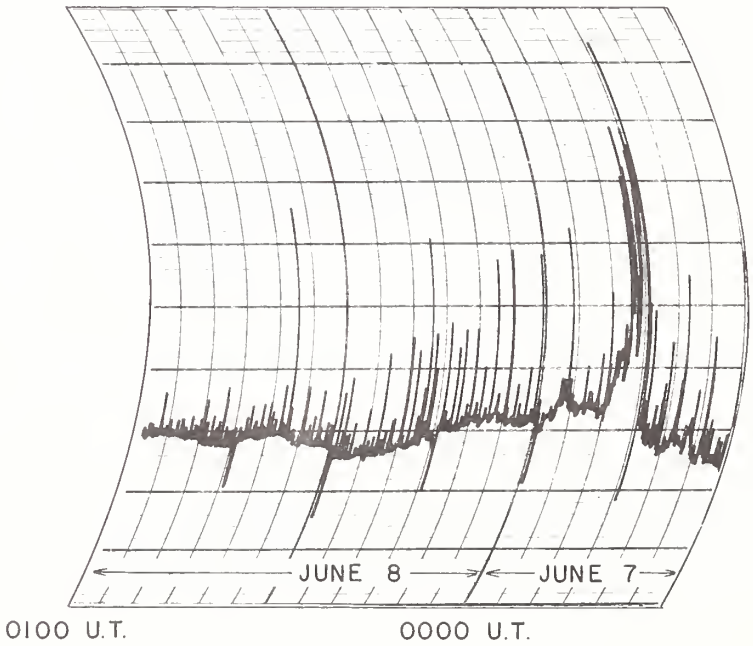
BOULDER **108 Mc.**

June 1963	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
7	3	1551.0	1552.2	2.1	2
7	8	2344	2344.3	5.0	2
8	3	1516.8	1517.9	1.4	3
11	7	2115	0130	391 D	1
12	6	1136E		870 D	1
13	6	1135E	∿ 2040	872 D	2
14	6	1135E	∿ 1225	90 D	1
14	7	2115U	2210	292 D	2
26	3	1211.2	1212.2	1.0	3
26	3	1213.2	∿ 1214.0	1.7	3
27	3	0126.5	0127.5	1.7	3
29	3	1326.1	1327.1	1.6	2

COMMERCE - STANDARDS - BOULDER

SOLAR NOISE BURSTS
JUNE 7, 1963

BOULDER **108 Mc.**



COMMERCE - STANDARDS - BOULDER

NOMINAL TIMES OF OBSERVATION
OUTSTANDING OCCURRENCES

JUNE 1963

BOULDER 108 Mc.

June 1963	U.T.			June 1963	U.T.		
1	1138-0200			16	1136-0208		
2	1138-0201	I	1415-1423	17	1136-0208		
3	1138-0201	I	1700-1735;	18	1136-0208	I	1936-2133
			1811-1935	19	1136-0209	I	2100-0038
4	1137-0202	I	2035-2320	20	1136-0209	I	2357-0209
5	1137-0202						
				21	1136-0209		
6	1137-0203			22	1136-0209		
7	1136-0204	I	2002-0030	23	1136-0210		
8	1136-0204	I	1700-2310	24	1137-0210		
9	1136-0205	I	2007-0113	25	1137-0210		
10	1136-0205	I	2026-2055;				
			0004-0205	26	1137-0210		
				27	1138-0210	I	2110-2230
11	1136-0206			28	1138-0210		
12	1136-0206			29	1139-0210		
13	1135-0207			30	1139-0210		
14	1135-0207	I	1653-0207				
15	1135-0207	I	1730-2300				

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

JUNE 1963

HAO BOULDER 7.6 - 41 Mc.

Date 1963	Bursts Type	Time (U.T.)	Intensity	Frequency Range (mc)
1 Jun	continuum	1835-1950	1-	22-41
	III	1904-1905.45	1	22-41
	III	2007.15-2007.30	1-	22-38
2	III	2023.45-2024.15	1-	21-41
	III	2025-2025.15	1-	21-41
4	III	2245.15-2245.30	1-	22-41
	III	2246.15-2246.30	1-	22-41
5	III	1423.45-1424	1-	20-41
7	III	1944.30-1944.45	1-	7-41
	III	2113.15-2113.30	1-	22-41
	III	2130-2130.15	1-	22-41
	III	2131.15-2131.45	1	7-41
	III	2238.30-2238.45	1-	21-41
	III	2340.30-2341.45	1-	21-41
	continuum	2344.30-2354.30	3	10-41
	II	2400.15-2415.30	3	12-41
8	III	1446-1446.15	1-	15-41
	III	1504.15-1504.30	1-	22-41
	III	1512.45-1513	1-	22-33
	III	1517.45-1518	1-	22-32
	III	1713-1713.30	1-	7-37
9	III	1743.30-1744.15	1-	22-41
	III	1744.30-1744.45	1-	22-41
	III	1745.15-1745.30	1-	22-41
	III	2022.30-2022.45	1-	19-41
10	III	1815-1817.15	2	7-41
	III	1905.15-1906.15	2	7-41
	III	2017.30-2019.15	1-	16-41
	III	2515-2516	1-	22-41
	III	2520.15-2521.30	1-	22-41
11 c	III	1420-1420.30	1-	24-41
	III	1433.15-1433.45	1-	20-38
	III	1607.45-1608	1-	22-35
	III	1625-1625.15	1-	24-40
	III	1741.45-1742	1-	28-41
	III	1800.30-1800.45	1	24-35
	III	1804-1804.45	1	21-41
	III	1828.30-1828.45	1	11-41
	III	1925.45-1926	1	12-38
	III	1933.45-1934	1-	22-41
	III	1955.45-1956.15	1-	22-41
	III	2009.30-2009.45	1-	22-35
	III	2011.30-2012.15	1-	21-35
	III	2014.30-2014.45	1-	22-35
	III	2020.30-2020.45	1-	16-41
	III	2026-2028.30	1-	21-39
	III	2035.15-2035.30	1-	25-36
	III	2040.15-2040.30	1-	21-34
	III	2055.15-2055.30	1	37-41
	continuum	2319-a2545	1	17-41

Date 1963	Bursts Type	Time (U.T.)	Intensity	Frequency Range (mc)
12	continuum	b1355-a2548	1-	16-41
	III	1610.30-1611.15	1	12-41
	III	1750.15-1752.30	3	21-41
	III	1758-1758.45	1	7-41
	III	1806.30-1809.30	3	7-41
	III	2050-2050.30	2	7-41
13	continuum	b1353-a2519	1	17-41
	III	1416-1418	1+	12-41
	III	1734.45-1735.30	2	22-41
	III	1810.45-1811.30	3	7-41
	III	2002-2004.15	2	7-41
	III	2025-2025.30	2	7-41
14	III	1248-1249.45	1-	24-41
	III	1251-1252	1-	35-41
	III	1402.15-1402.45	1-	20-41
	III	1406.15-1406.45	1-	21-41
	III	1412-1412.15	1-	25-38
	III	1418.15-1418.30	1-	35-41
	III	1446.45-1447	1-	16-41
	III	1503-1503.15	1-	25-35
14	III	1505-1505.15	1-	28-41
	III	1601-1601.30	1-	20-41
	III	1643.15-1643.30	2	25-37
	III	1653.30-1653.45	1	22-37
	III	1658.15-1658.45	1	22-41
	III	1701-1701.15	1	23-37
	III	1708.15-1708.30	1	22-35
	III	1719.45-1720.15	1	17-41
	III	d 1823.45-1824	1-	21-41
	III	1839.30-1843.30	1	20-41
	III	1935.15-1936.30	1	7-41
	III	1946.15-1947	1-	27-41
	continuum	2006.30-2015.30	1-	7-41
	III	2022-2024	1	7-41
	continuum	2046.30-2055	1-	27-41
	III	2131.45-2132.45	2	16-41
	III	2135.15-2137.15	2	18-41
	continuum	b2154-a2545	3	21-41
15	III	1536.15-1537	1-	21-35
	III	1611.45-1612.15	1-	22-41
	III	1646.15-1646.30	1-	22-41
	III	1705-1705.30	1-	21-41
	III	1746.15-1746.30	1-	20-36
	III	1805-1805.15	1-	21-37
	III	1841-1841.15	1-	24-36
	III	1947.30-1948	1-	23-38
	III	1950-1950.30	1	21-41
	III	2522.45-2523	1-	24-35
16	III	2219.15-2219.30	1-	22-32
17	III	1626.15-1627	1	23-41

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

JUNE 1963

HAO BOULDER

7.6 - 41 Mc.

Date 1963	Bursts Type	Time (U.T.)	Intensity	Frequency Range (mc)
	III	1628.15-1628.30	1	25-37
	III	1635.15-1635.45	1	24-29
	III	1715.45-1716	1	25-41
	III	1716.15-1716.45	1	22-41
	III	1717-1717.45	1-	25-41
	III	1938.45-1939.15	1-	16-38
	III	1950.45-1951	1-	27-34
	III	2128-2128.15	1-	23-35
	III	2148.30-2149	1-	20-41
18	III	1431.45-1432	1-	24-33
	III	1433-1433.15	1-	18-28
	III	1442.15-1442.30	1-	22-33
	III	1444.30-1444.45	1-	24-41
	III	1605.45-1609	2+	7-41
19	III	2432.15-2432.30	1-	21-36
	III	2433.15-2433.45	1	19-41
	III	2434.30-2434.45	1-	21-39
21	III	1911.15-1911.45	1+	7-41
	III	2400.30-2401	1-	19-38
22	III	1820.30-1821	1-	18-24
	III	2056.30-2057.15	1+	7-41
	III	2215.15-2215.30	1-	21-41
25	III	1405.30-1405.45	1+	38-41
	III	1406-1406.15	1-	32-41
	III	1743-1743.30	1-	19-41
	III	1846-1847	1+	7-41
	III	2008.45-2009	1	30-41
	III	2034.15-2035.45	1-	7-41
	III	2257-2258	1+	16-41
26	III	1214.15-1215.15	1-	15-41
	III	2527-2529	1+	16-41
28	III	1511.15-1511.30	1-	30-41
	III	1627.15-1627.30	1	25-41
	III	1947.15-1948.30	1	22-41
	III	2054.30-2054.45	1-	22-39
29	III	1614.30-1615	1-	19-38

COMMERCE - STANDARDS - BOULDER

c = many unreported Type III's - interference from terrestrial source 2104-2317.

d = harmonic structure

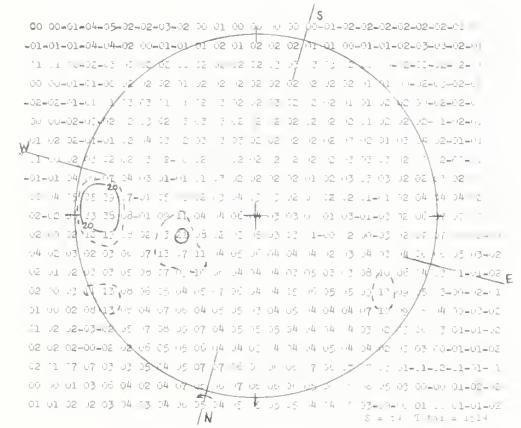
e = continuum begins in interference after 2130.

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

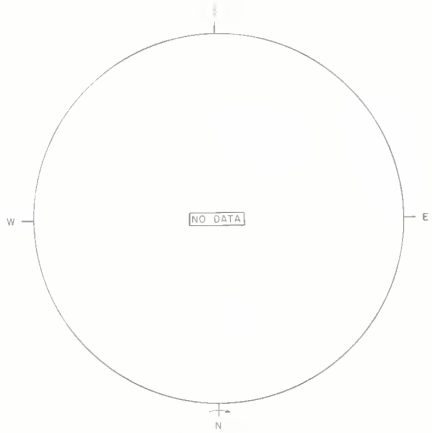
JUNE 1963

STANFORD

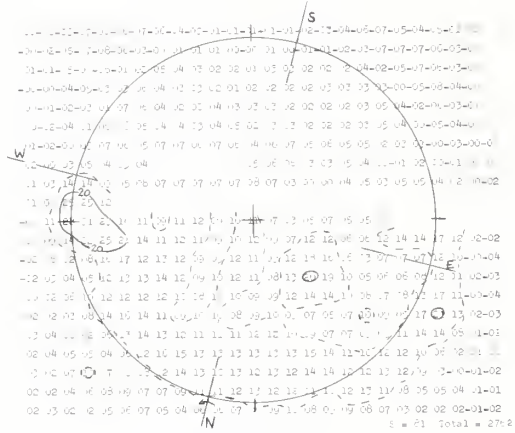
9.1 cm



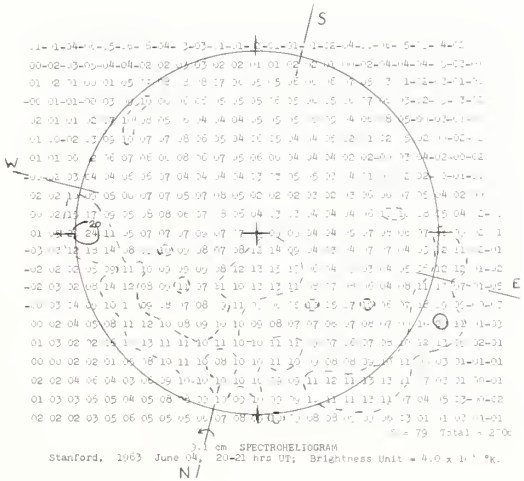
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 June 01, 20-21 hrs UT; Brightness Unit = [illegible] x 10[illegible] °K.



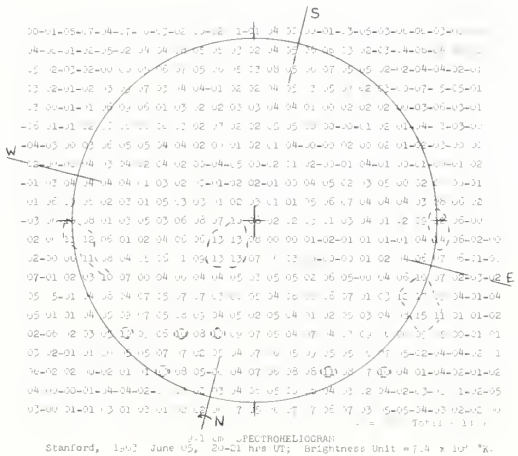
1963 JUNE 02



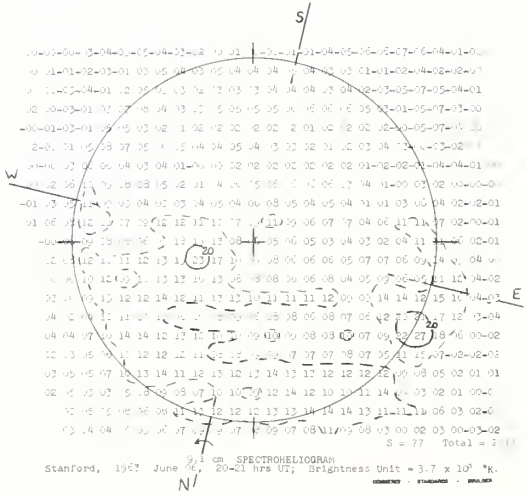
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 June 03, 20-21 hrs UT; Brightness Unit = 4.0 x 10[illegible] °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 June 04, 20-21 hrs UT; Brightness Unit = 4.0 x 10[illegible] °K.



9.1 cm SPECTROHELIOGRAM
Stanford, 1963 June 05, 20-21 hrs UT; Brightness Unit = 7.4 x 10[illegible] °K.



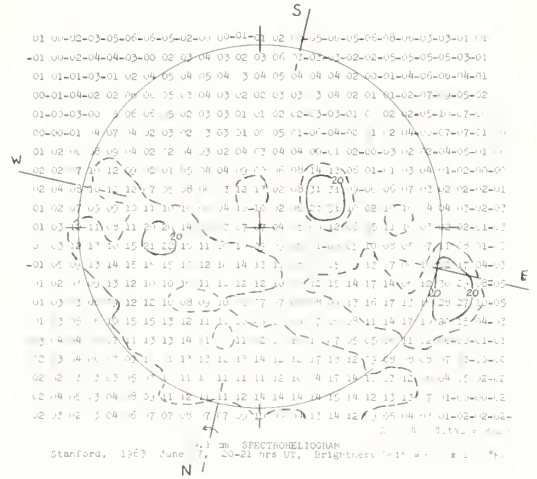
9.1 cm SPECTROHELIOGRAM
Stanford, 1963 June 06, 20-21 hrs UT; Brightness Unit = 3.7 x 10[illegible] °K.

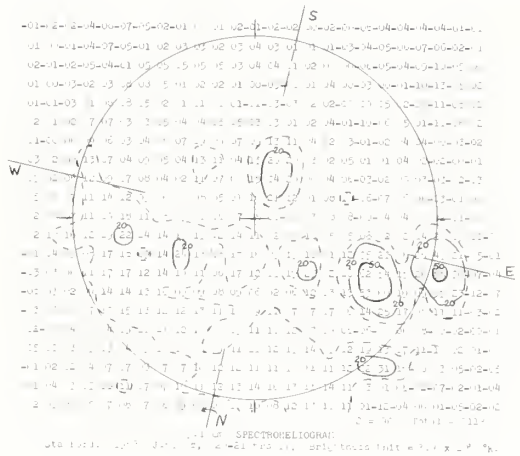
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

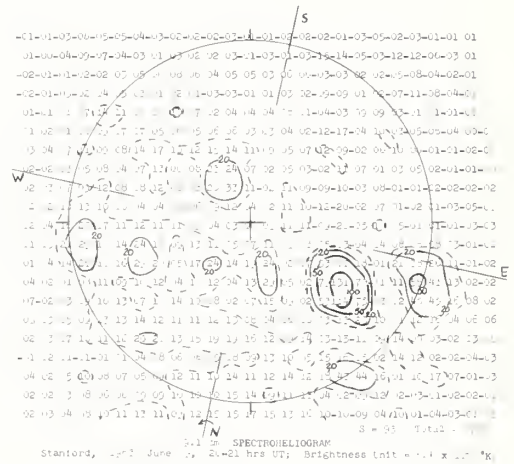
JUNE 1963

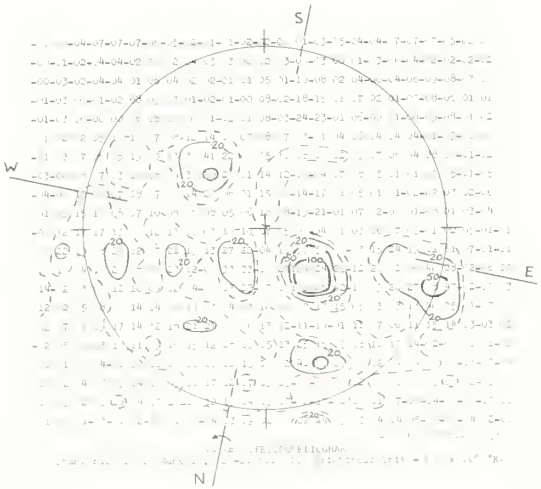
STANFORD

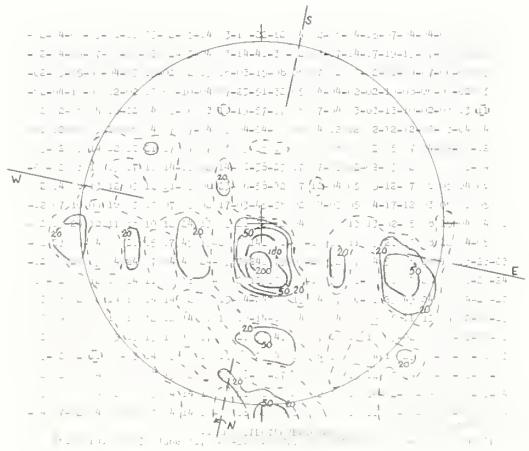
9.1 cm

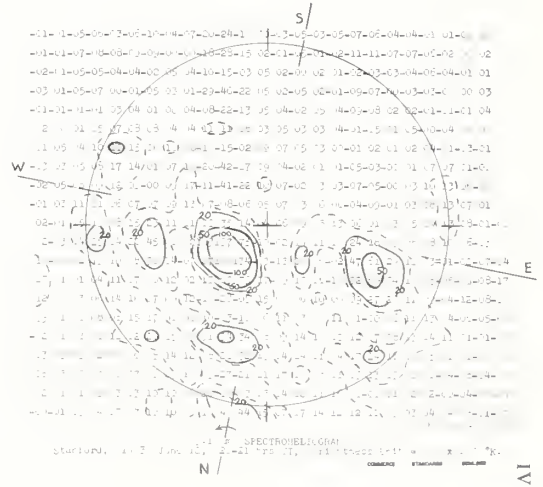










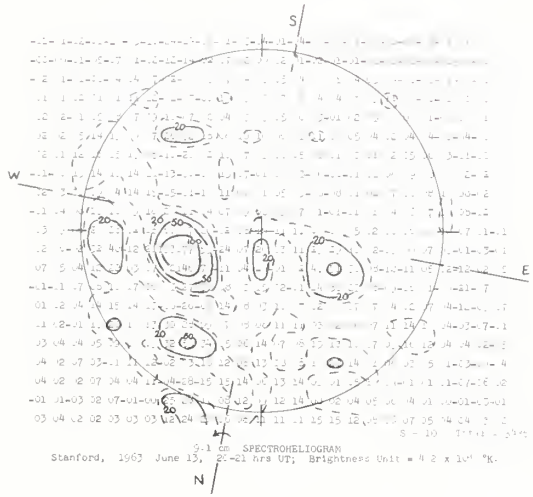


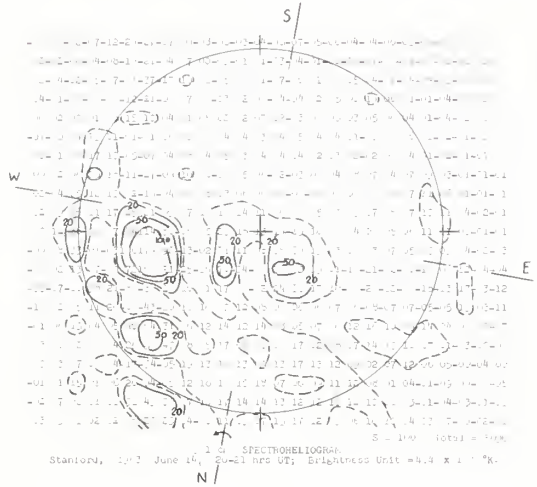
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

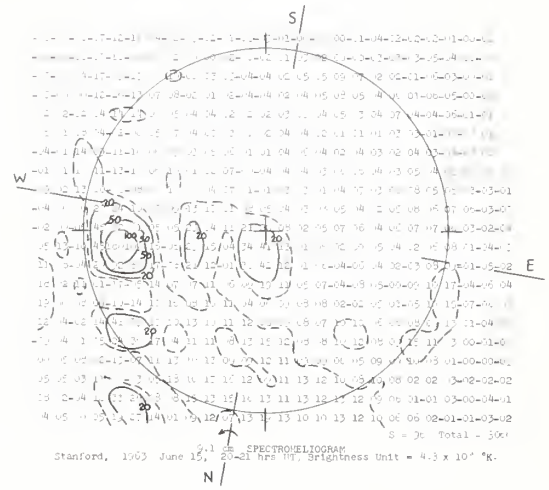
JUNE 1963

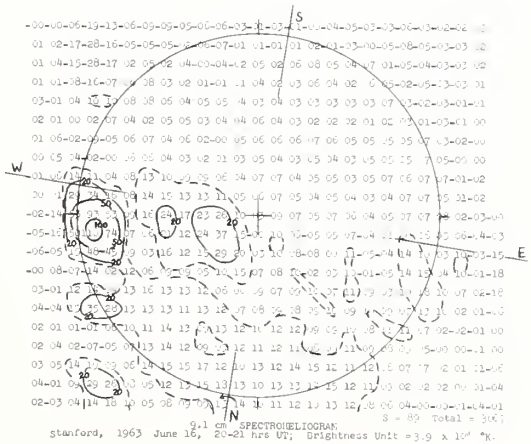
STANFORD

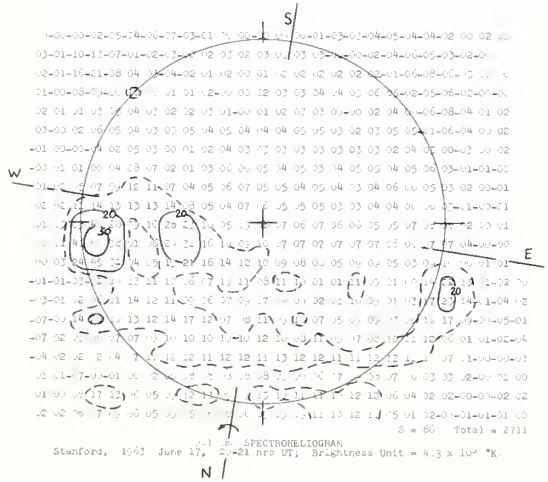
9.1 cm

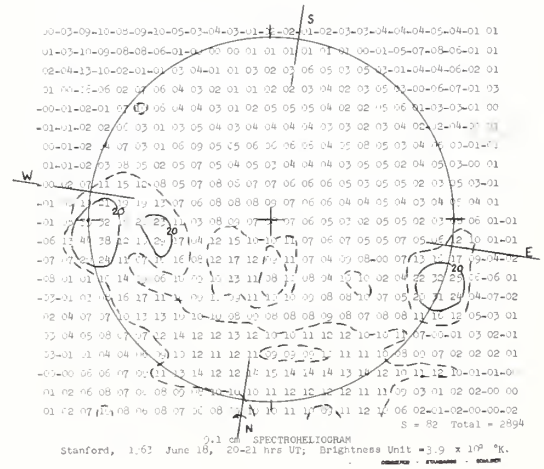










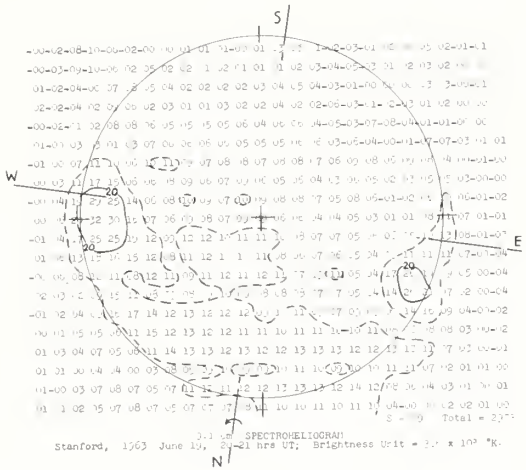


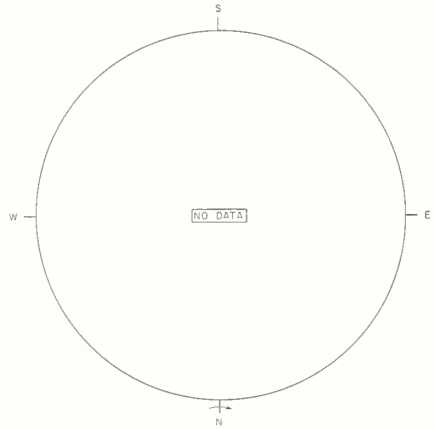
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

JUNE 1963

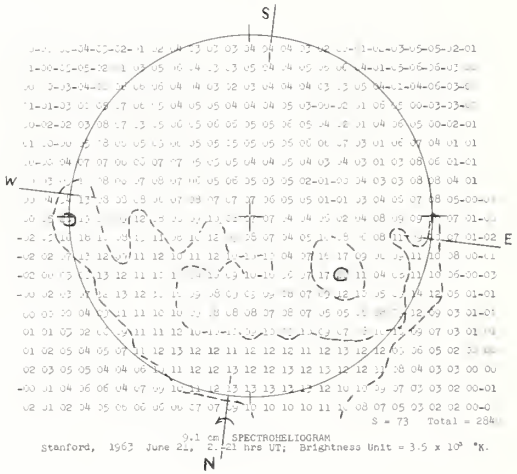
STANFORD

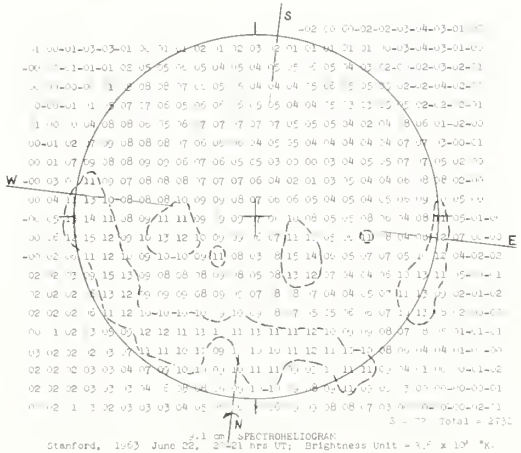
9.1 cm

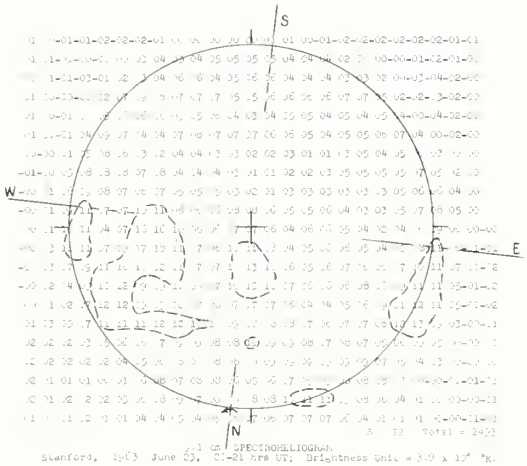


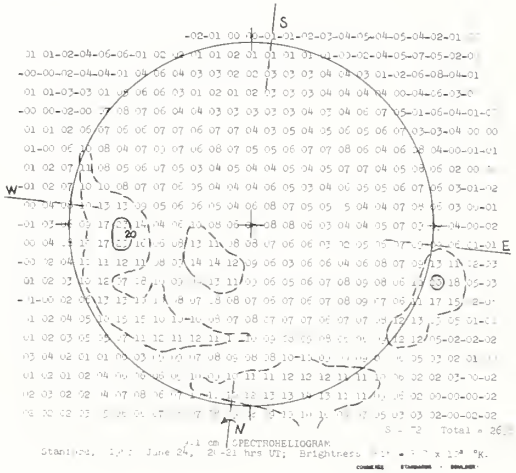


1963 JUNE 20







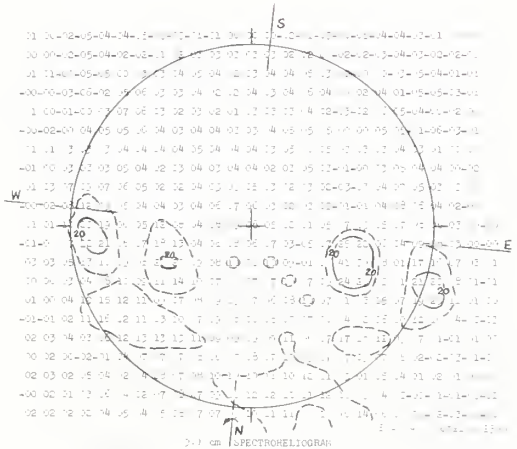


SOLAR RADIO EMISSION SPECTROHELIOGRAMS

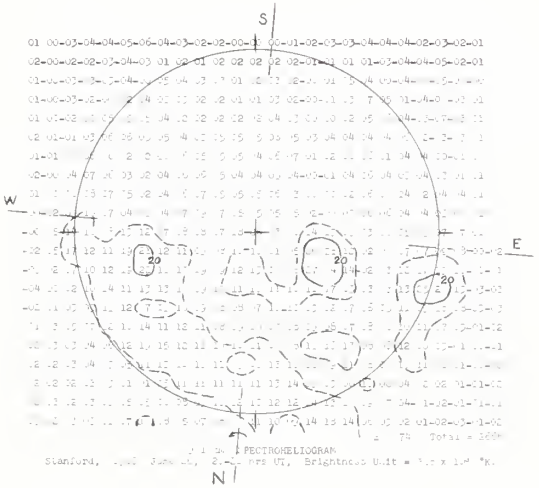
JUNE 1963

STANFORD

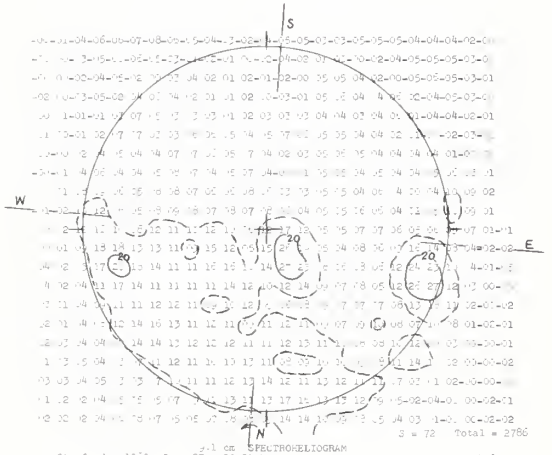
9.1 cm



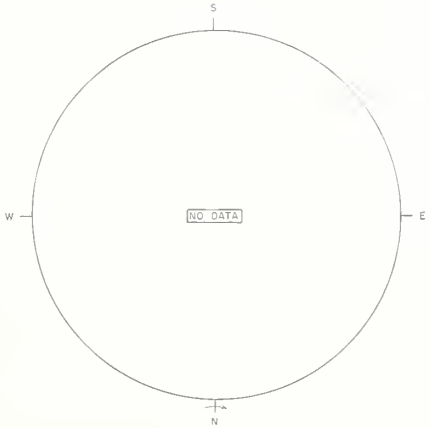
Stanford, 1963 June 27, 20-21 hrs UT; Brightness Unit = 3.5 x 10[illegible] °K.



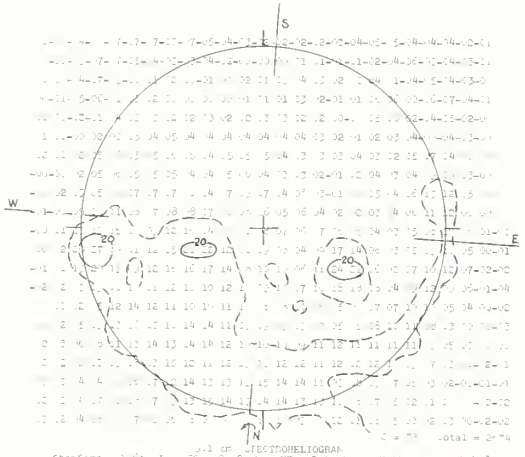
Stanford, 1963 June 28, 20-21 hrs UT; Brightness Unit = 3.7 x 10[illegible] °K.



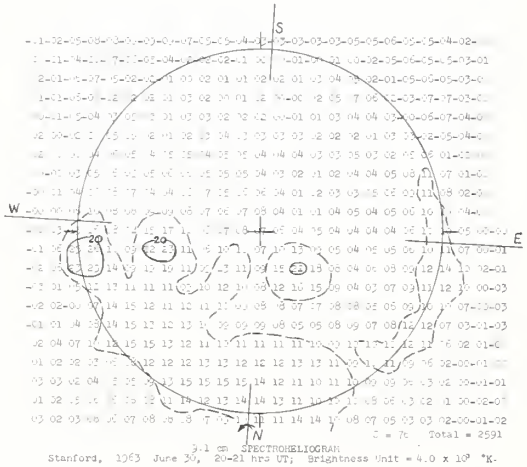
Stanford, 1963 June 27, 20-21 hrs UT; Brightness Unit = 3.5 x 10[illegible] °K.



1963 JUNE 28



Stanford, 1963 June 28, 20-21 hrs UT; Brightness Unit = 3.7 x 10[illegible] °K.

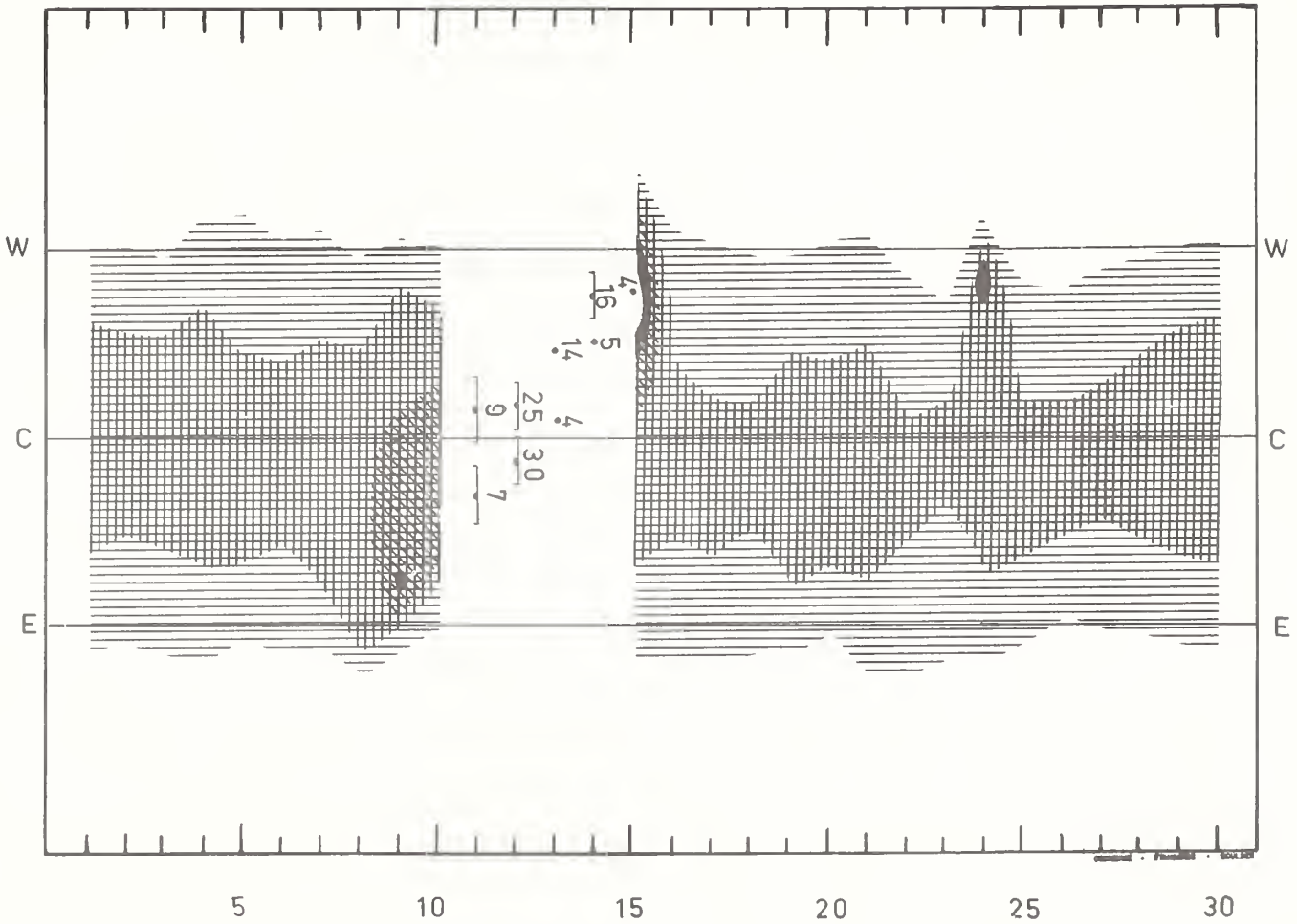


Stanford, 1963 June 30, 20-21 hrs UT; Brightness Unit = 4.0 x 10[illegible] °K.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

JUNE 1963

NANÇAY 169 Mc.



COSMIC RAY INDICES

(Climax Neutron Monitor)

IGC Station B 305

May 1963

May 1963	Daily average counts/hr*	May 1963	Daily average counts/hr*
1	3156.1 ** 29	16	3170.0
2	3145.9	17	3185.0
3	3049.1	18	3193.3
4	3050.5	19	3196.6
5	3020.2	20	3196.3
6	3031.8	21	3189.4
7	3080.2	22	3189.6
8	3127.3	23	3209.0
9	3135.5	24	3207.2
10	3125.9	25	3195.9
11	3145.2	26	3203.3
12	3155.4	27	3208.3
13	3166.1 ** 38	28	3183.8
14	3171.7	29	3149.8
15	3195.8 ** 26	30	3138.0
		31	3148.6

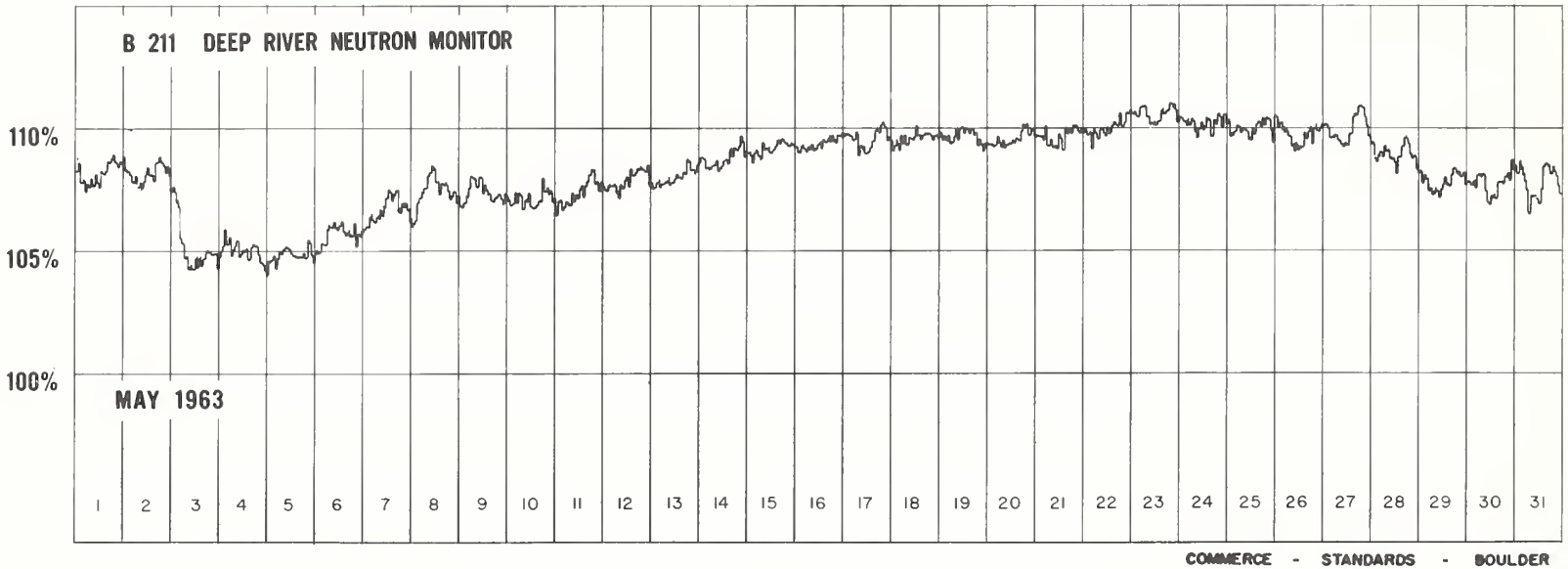
COMMERCE - STANDARDS - BOULDER

* Scaling Factor 128

** Number of Section Hours

COSMIC RAY INDICES

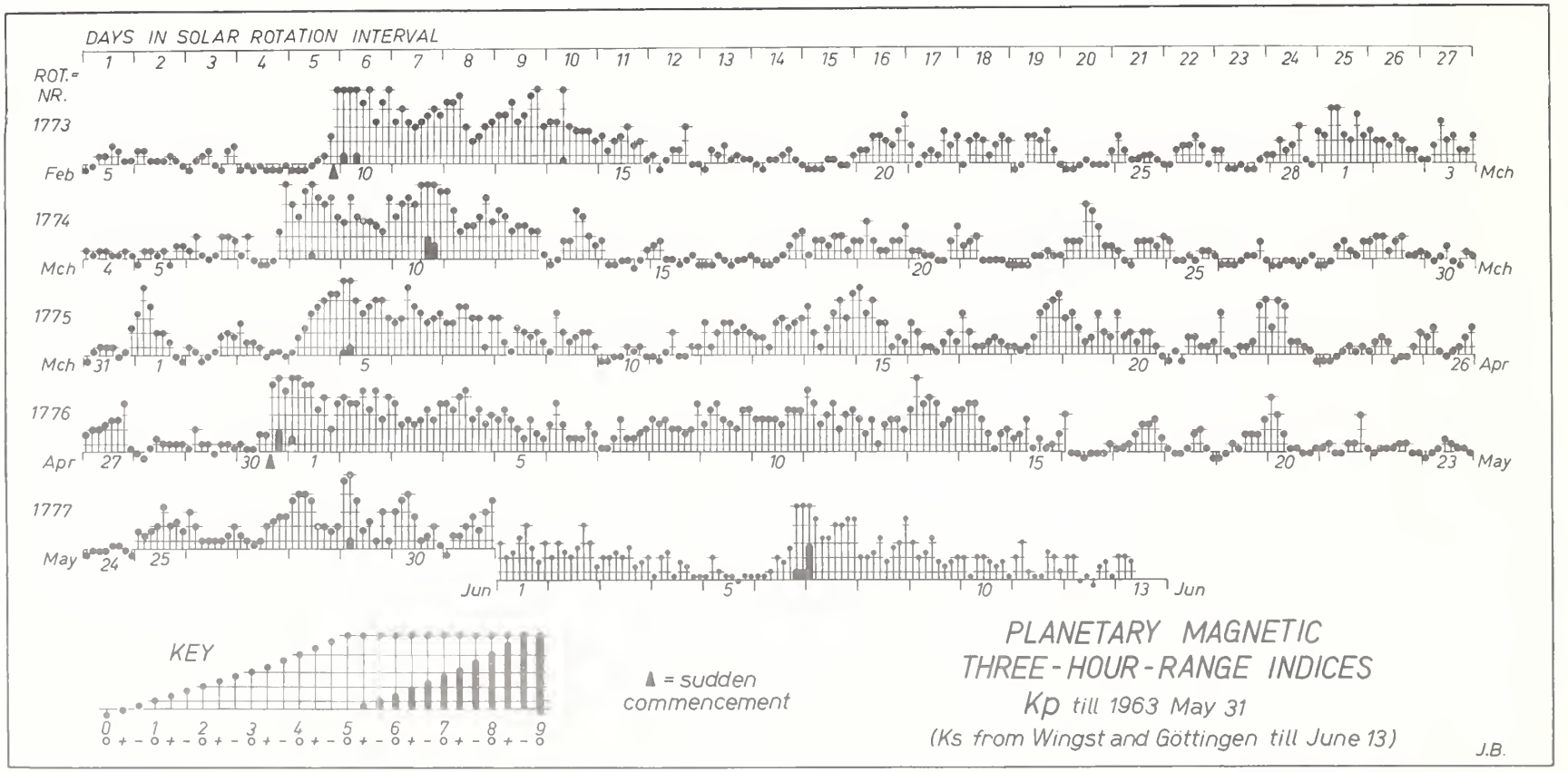
(Pressure Corrected Hourly Totals)



GEOMAGNETIC ACTIVITY INDICES

MAY 1963

May 1963	C	Values Kp Three hour Gr. interval 1	2	3	4	5	6	7	8	Sum	Ap	Final Selected Days
1	1.5	6o	5o	5-	5-	3+	4o	2o	4-	33+	35	Five
2	1.3	4o	4-	4-	4+	3+	4+	3-	4o	30o	24	Quiet
3	1.0	4-	2+	3-	2+	3-	3+	3-	4-	23+	14	
4	1.2	4-	3+	4o	4+	3-	3+	2+	3o	27-	19	16
5	0.6	3-	3+	3-	2o	1+	3-	2-	1+	18-	10	18
												22
6	0.6	2+	4-	2+	1+	1+	1+	2+	2-	16+	9	23
7	0.4	1-	1-	1+	3-	1+	1+	2-	2o	12-	6	24
8	0.9	3-	2+	3-	2o	2o	2-	2o	4-	19o	10	
9	1.0	2+	3+	4-	3-	2+	2o	3+	3+	23o	14	
10	1.0	3-	3-	3-	3-	2+	3+	3+	3+	23o	14	
11	1.1	4+	4-	2+	3o	4-	2o	3o	3+	25+	18	Five
12	0.8	3-	2-	3-	1o	2+	3-	3-	2o	18-	9	Disturbed
13	1.3	3+	5o	4-	4o	4-	2+	3-	3+	28o	22	
14	0.9	3+	4-	4-	3-	2-	1-	2-	2o	19+	12	1
15	0.3	1+	2-	3-	1-	1+	1-	1o	2-	11o	6	2
												4
16	0.2	3o	0+	0+	0o	0+	0+	0+	1o	6-	8	13
17	0.5	1-	1-	1o	2-	2+	2+	3-	1+	13-	6	29
18	0.3	1-	0+	0+	1-	2-	2o	1-	0o	6+	3	
19	0.4	0o	0+	1o	1-	2-	2-	2-	3-	10-	5	
20	0.4	4o	3o	2-	1-	1-	0+	0+	1-	11+	8	
21	0.4	1-	1o	0+	0+	1o	1o	3o	1-	8o	5	Ten
22	0.1	0+	1-	1-	1-	1o	1o	0+	0+	5o	3	Quiet
23	0.1	0o	0+	1-	1+	1o	1-	1-	0+	5o	3	
24	0.0	0o	0+	0+	0+	1-	1-	0+	0o	3-	2	7
25	0.7	2-	1+	2-	2o	3+	2o	2+	2-	16o	8	15
												16
26	0.4	3o	2o	1o	1o	1o	1o	1+	2o	12+	6	18
27	0.5	1+	1o	1-	1o	2o	2+	3-	3-	14-	7	19
28	1.0	4-	4o	4o	4-	2o	2o	2-	2o	23o	16	21
29	1.0	5-	6-	4-	2-	2+	1o	3o	1o	23o	21	22
30	0.7	3o	4-	4o	3-	1o	1+	2o	1-	18+	12	23
31	0.8	0o	1+	1+	2o	3-	2-	3o	4-	16-	9	24
												26
Mean:	0.69									Mean:	11	


DAYS IN SOLAR ROTATION INTERVAL
ROT.= NR.
1773
1774
1775
1776
1777
Feb
Mch
Apr
May
Jun
KEY
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp till 1963 May 31
(Ks from Wingst and Göttingen till June 13)
J.B.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

MAY 1963

NORTH ATLANTIC

MAY 1963	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES 00 TO 06	06 TO 12	12 TO 18	18 TO 24	SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF 00	06	12	18	WHOLE DAY INDEX	ADVANCE FORECASTS (J_s-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY 1-7 DAYS FINAL J_s	1-7 DAYS SDW J	1-3 DAYS	1-7 DAYS	GEOMAGNETIC K_{FR} HALF DAY (1)	(2)
01	4+	2+	5+	5+	5	3	5	5	(4)	5	5			(4)	3
02	5−	3	6−	6	4	3	6	5	(4+)	4	4			(4)	3
03	6−	5	6−	5+	4	4	6	6	5+	4	4			3	3
04	6−	4	6	7−	5	5	6	6	6−	4	4			(4)	2
05	5+	4−	6−	6+	6	4	6	6	5	5	5			3	2
06	6−	5−	6+	6+	6	4	7	6	6−	5	5			3	2
07	6+	5+	6+	6+	6	5	6	6	6	6	6			2	2
08	6	5	6+	6+	6	5	7	6	6	6	6			3	3
09	6+	5−	7−	6+	6	5	6	6	6	6	6			3	3
10	6−	5+	6	6	6	5	7	6	6−	5	5			3	3
11	5	5−	6	6	5	4	6	6	5+	5	5			(4)	2
12	6	5+	6+	7−	6	5	7	6	6	5	5			2	2
13	6	5	6	6+	6	5	7	6	6−	6	6			(4)	3
14	6−	5	6+	6−	6	5	7	7	6−	6	6			3	2
15	6+	5+	6+	6+	6	5	7	7	6	6	6			2	1
16	6+	6−	6+	6+	6	6	7	6	6+	6	6			1	1
17	6+	6−	7−	7−	6	6	7	7	6+	6	6			1	2
18	7−	6+	7−	6+	6	6	7	6	7−	6	6			1	1
19	6+	6	7−	7−	6	6	6	7	7−	6	6			1	2
20	6+	5+	7−	6+	7	6	7	6	6+	6	6			2	1
21	6+	6+	7	7−	6	6	7	7	7−	6	6			1	2
22	6+	6−	7	7	6	6	7	7	7−	6	6			1	1
23	6+	6+	7−	6+	6	6	7	6	6+	7	7			1	1
24	6	6	7	6+	6	6	7	7	7−	6	6			1	1
25	6+	6	7−	7−	6	6	7	6	7−	6	6			2	2
26	6+	6−	7−	6+	6	6	7	7	6+	6	6			2	2
27	7−	6+	6+	6+	6	6	7	7	6+	5	5			1	2
28	6+	6−	6	6	6	6	6	6	6	4	4			(4)	2
29	6	5+	6	6+	6	6	6	7	6	4	4			(4)	2
30	6	5+	6−	6+	6	6	6	7	6−	6	6			3	2
31	6	6+	7−	7−	7	6	7	7	7−	6	6			2	2
Score:				P	22	21	20	19		13	13				
				S	7	6	11	12		13	13				
				U	0	0	0	0		0	0				
				F	1	0	0	0		3	3				
Disturbed Periods:				P	0	2	0	0		1	1				
				S	1	2	0	0		1	1				
				U	0	0	0	0		0	0				
				F	0	0	0	0		0	0				

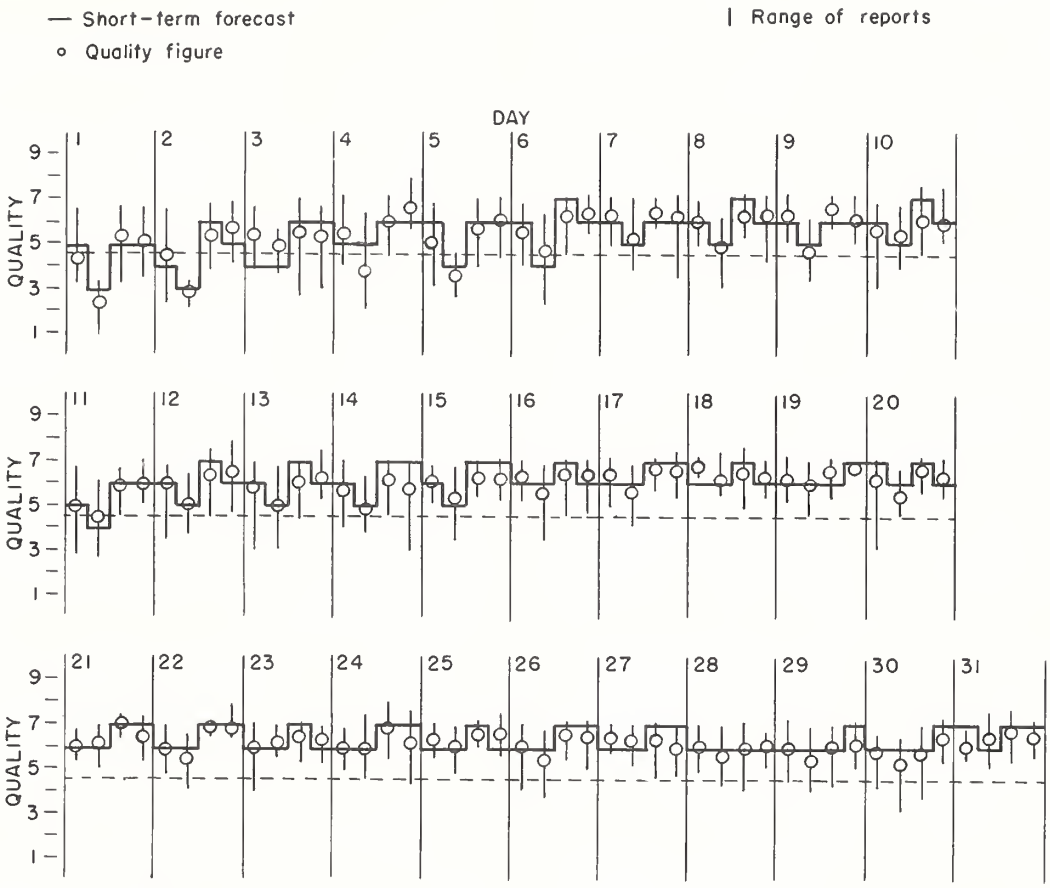
NORTH PACIFIC

MAY 1963	NORTH PACIFIC 12-HOURLY QUALITY FIGURES 0700 TO 1900	1900 TO 0700	SHORT-TERM FORECASTS ISSUED AT 0600	1800	WHOLE DAY INDEX	ADVANCE FORECASTS (J_p-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY 1-7 DAYS FINAL J_{PS}	1-7 DAYS SDW J_p	1-3 DAYS	1-7 DAYS	GEOMAGNETIC K_{SI} HALF DAY (1)	(2)
01	5	6	4	6	5	5	5			(4)	3
02	5	6	5	6	5	4	4			(4)	3
03	6	6	5	7	5	5	5			2	2
04	6	6	4	6	6	5	5			(4)	2
05	6	7	6	6	6	5	5			3	2
06	6	7	7	7	7	6	6			2	1
07	6	7	8	7	6	7	7			2	2
08	7	7	8	7	7	7	7			3	2
09	6	6	8	7	6	7	7			3	2
10	6	6	7	7	7	7	7			2	2
11	6	6	7	6	6	6	6			3	2
12	6	6	7	7	6	6	6			2	2
13	6	6	7	6	5	6	6			(4)	3
14	6	6	7	6	6	7	7			3	1
15	6	6	7	6	6	7	7			3	1
16	6	6	6	6	6	6	6			1	0
17	6	7	7	6	7	6	6			1	2
18	6	6	7	7	7	6	6			1	1
19	7	6	7	7	7	6	6			0	2
20	6	7	7	6	6	6	6			2	0
21	7	7	7	6	7	6	6			0	2
22	6	7	7	6	7	6	6			1	1
23	6	6	7	6	7	7	7			1	0
24	6	7	7	6	7	7	7			0	0
25	7	7	7	6	7	7	7			2	2
26	7	7	7	6	7	7	7			2	1
27	7	7	7	6	7	6	6			1	2
28	7	6	5	6	7	5	5			(4)	2
29	6	6	7	6	6	4	4			3	2
30	6	6	7	6	6	6	6			3	1
31	7	7	7	6	7	6	6			2	2
Score: P			9	15		13					
S			18	16		16					
U			3	0		1					
F			1	0		1					
Disturbed Periods: P			0	0		0					
S			0	0		0					
U			0	0		0					
F			0	0		0					

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

MAY 1963



Outcome of advance forecasts--final estimates (1 to 7 days ahead).

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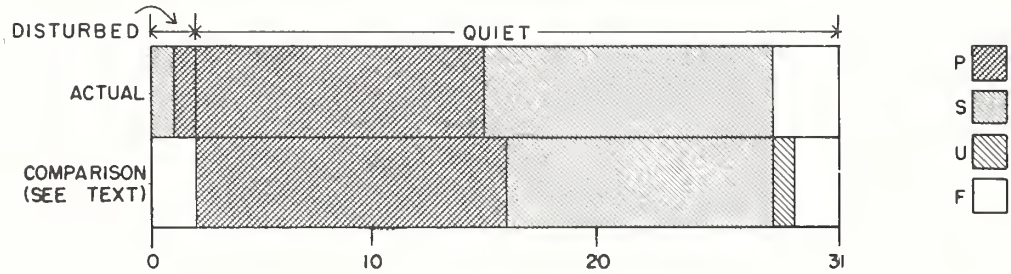
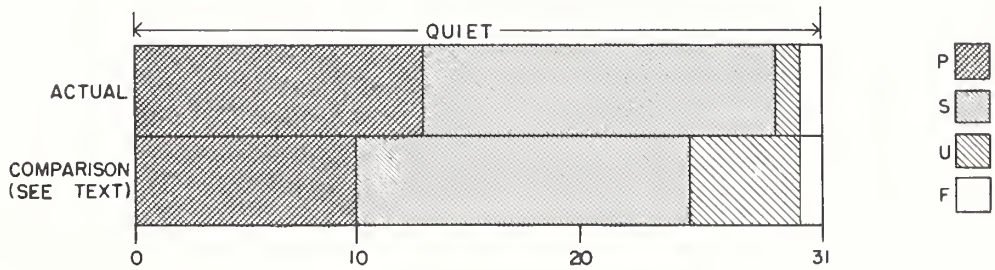
NORTH ATLANTIC

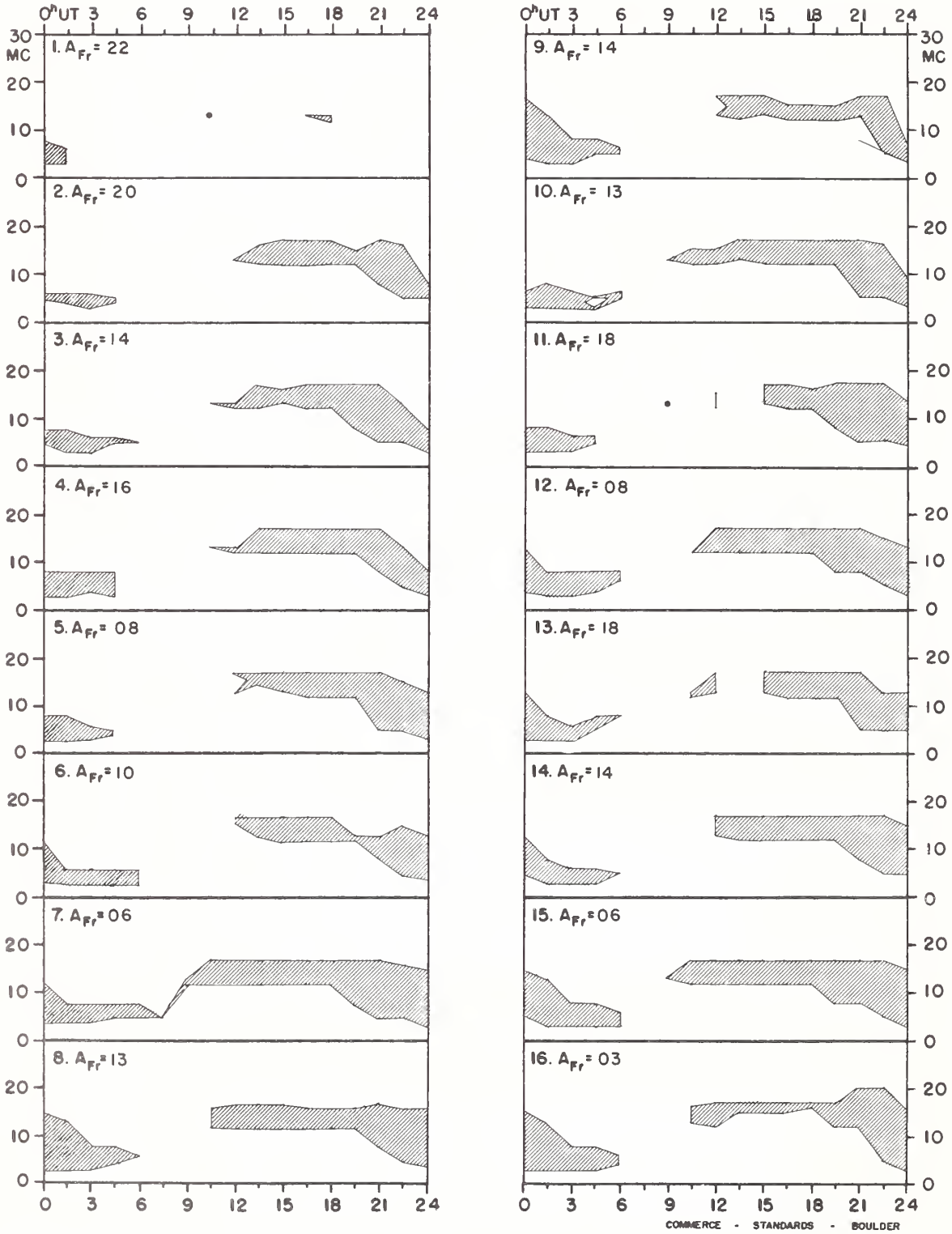


NORTH PACIFIC



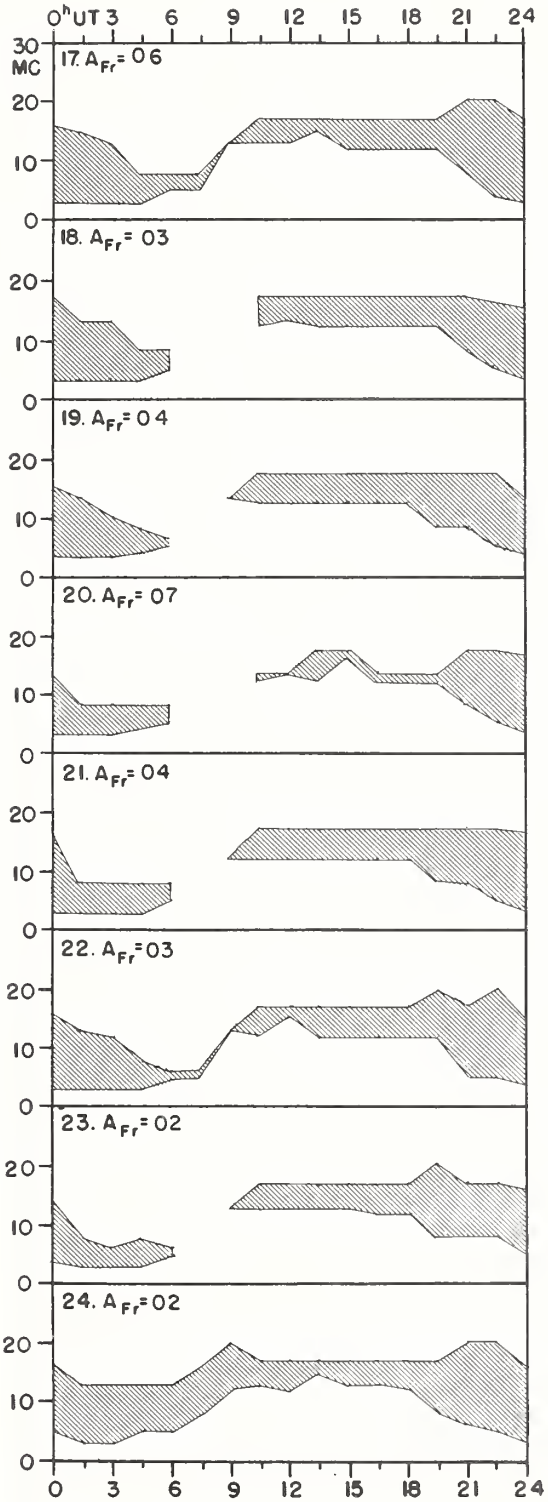
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

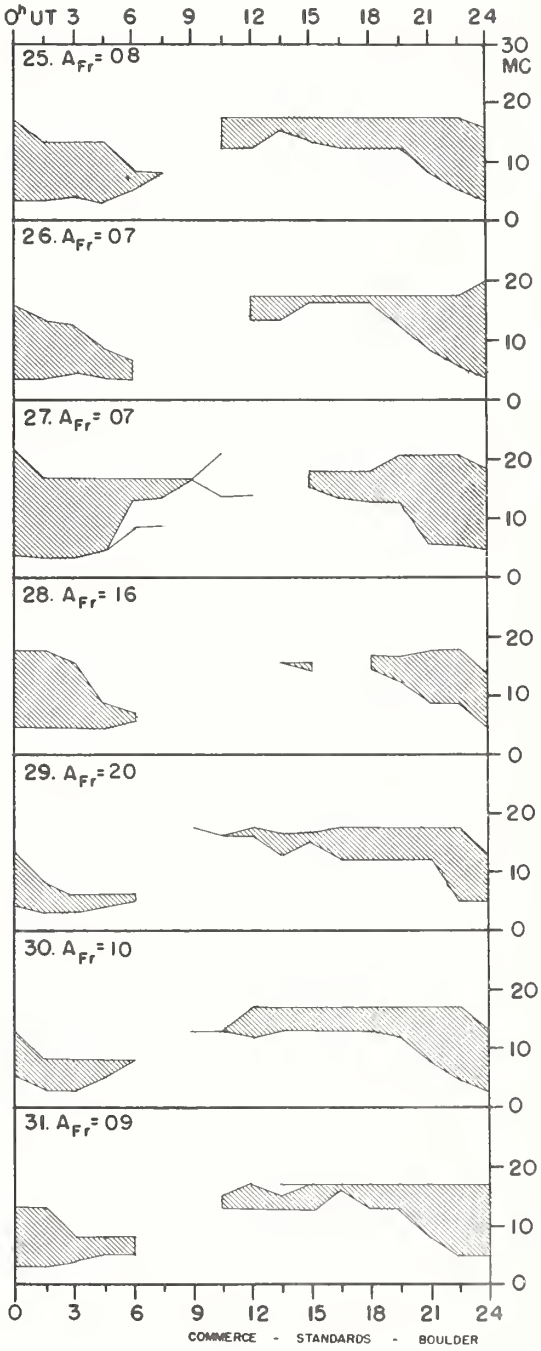
MAY 1963



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1963





Adapted from Observations by Deutsches Bundespost

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JUNE 1963

Issued June 1963 Day/Time UT	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Intervals
07/1600		201	Magnetic Storm 06/17XXZ	
26/1600		202	Magnetic Storm 26/19XXZ	

COMMERCE - STANDARDS - BOULDER