PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
JUNE 1961

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

CRPL-F 202
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
30 June 1961

SOLAR - GEOPHYSICAL DATA

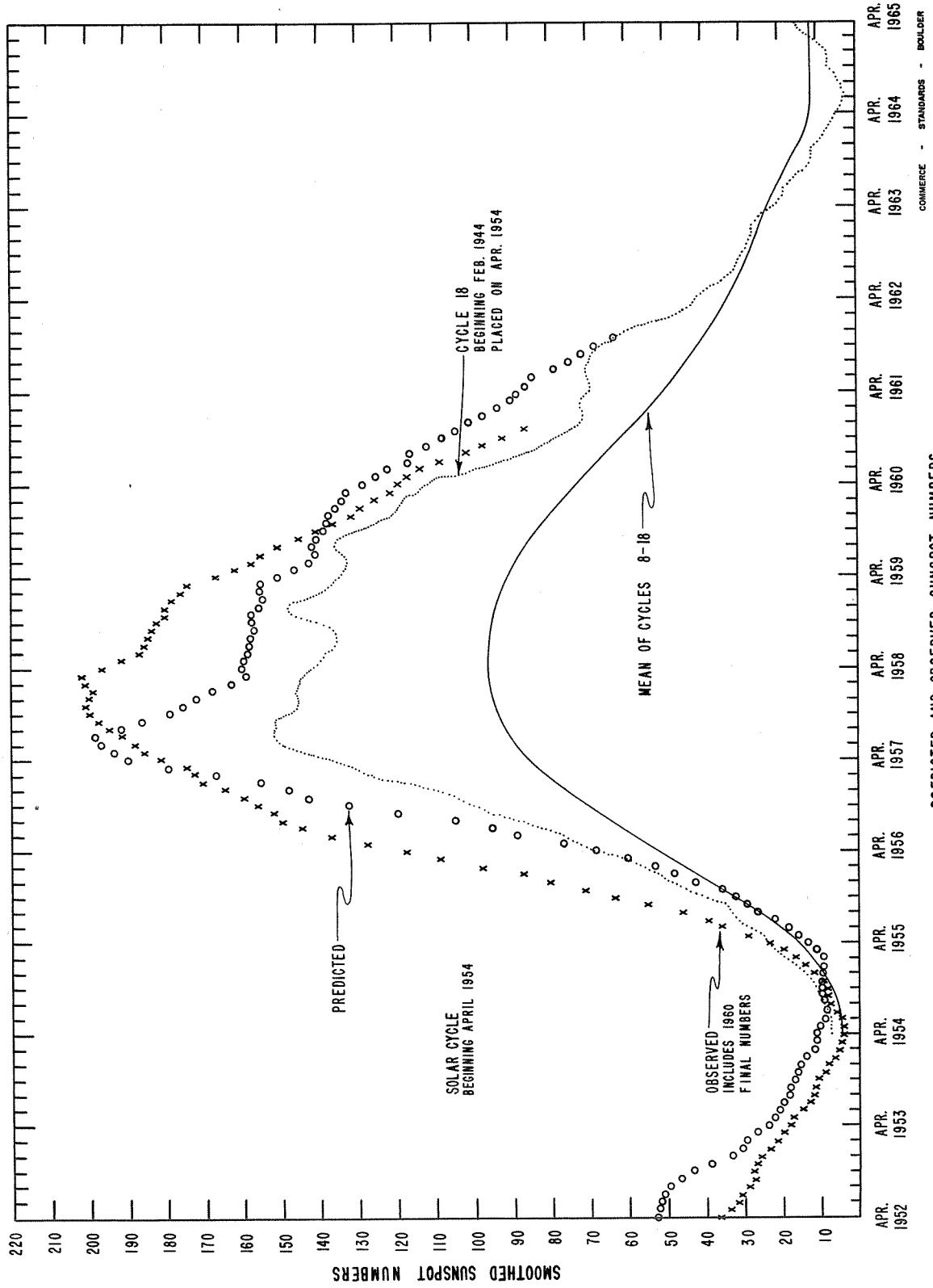
CONTENTS

The descriptive text was published separately, November 1960.

DAILY SOLAR INDICES

Apr. 1961	American Relative Sunspot Numbers $R_{A'}$
1	77
2	58
3	71
4	75
5	82
6	81
7	61
8	51
9	44
10	34
11	40
12	41
13	36
14	49
15	39
16	58
17	68
18	70
19	70
20	60
21	43
22	38
23	27
24	43
25	43
26	54
27	70
28	85
29	77
30	86
Mean:	57.7

May 1961	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	102	125
2	84	119
3	72	111
4	55	104
5	42	103
6	36	97
7	31	97
8	28	94
9	44	96
10	46	92
11	45	98
12	56	101
13	52	97
14	46	93
15	38	91
16	31	38
17	23	88
18	44	95
19	47	100
20	59	105
21	58	110
22	66	109
23	74	110
24	78	108
25	72	106
26	47	88
27	41	95
28	38	91
29	36	91
30	41	88
31	24	88
Mean:	50.2	99.3



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

MAY 1961

CMP May 1961	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values Area	Int.	History, Age		CMP Values Area	Count	History
01.7	S02	6100	New	300	2	b ⌒ ℓ	1			
02.4	N07	6103	New	200	1.5	b ∧ d	1			
03.6	N13	6099	6077	1800	2.5	ℓ — ℓ	2	20	1	ℓ — ℓ
06.3	S09	6102	6079	400	2	ℓ ⌒ d	5			
08.5	S07	6107	New	500	1	b ⌒ ℓ	1			
09.0	N08	6110	New	(400)	(1.5)	b ⌒ ℓ	1			
10.6	N10	6104	6082	2400	3	ℓ — ℓ	3			
12.6	N14	6105	New	1500	3	ℓ — ℓ	1	40	4	ℓ ⌒ d
12.8	N04	6106	New	3100	3	ℓ — ℓ	1	310	17	ℓ — ℓ
14.1	N19	6109	6086	700	2.5	ℓ ∖ ℓ	2			
14.6	N03	6108	6087	1000	2	ℓ — ℓ	2			
14.9	S17	6113	6089	700	1.5	b ⌒ ℓ	4			
15.0	N21	6111	New	500	2.5	b ⌒ ℓ	1			
16.7	S10	6112	6089	1000	1.5	ℓ — ℓ	4			
18.0	N04	6120	New	(1300)	(3)	b ⌒ ℓ	1			
19.1	N30	6117	6090	600	1.5	ℓ — ℓ	6			
19.4	S14	6116	6091	2100	3	ℓ — ℓ	4	20	2	b ∧ d
19.7	N10	6114	6092	1900	2.5	ℓ — ℓ	3	160	1	ℓ — ℓ
21.0	S09	6118	6091	(800)	(1)	ℓ ⌒ d	4			
23.6	N15	6119	New	900	3	ℓ — ℓ	1	20	2	b ∧ d
24.0	S14	6121	6093	1400	1.5	ℓ — ℓ	3			
25.6	N17	6122	New	2800	3.5	ℓ — ℓ	1	270	8	ℓ ⌒ d
25.6	N05	6123	6097	800	2.5	ℓ ⌒ d	2			
27.2	S13	6124	*	5300	3	ℓ — ℓ	2,4			
27.4	N07	6125	6097	3400	3	ℓ — ℓ	2	240	8	ℓ — ℓ
30.2	N13	6126	6099	1200	2	ℓ — ℓ	3			

*6096,6098

PROVISIONAL CORONAL LINE EMISSION INDICES

MAY 1961

CMP May 1961	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_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	x	x	x	x	x	x	x	x
2	41	52	13	14	39	88	13	18	34	42	x	x	35	67	x	x
3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	40	47	x	x	17	22	x	x	x	x	x	x	x	x	x	x
5	17	19	x	x	13	17	x	x	x	x	x	x	x	x	x	x
6	32a	48a	10a	13a	29a	38a	12a	16a	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	14	22	6	10	17	20	8	12
8	29	45	x	x	17	25	x	x	7	12	5	10	15	17	12	18
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	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	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x	x	8a	15a	x	x	7a	15a
15	x	x	x	x	x	x	x	x	23	31	x	x	27	39	x	x
16	41	45	x	x	32	48	x	x	57a	75a	x	x	54a	64a	x	x
17	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19	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	34	42	6	10	30	55	7	8	x	x	x	x	x	x	x	x
22	32	40	3	5	20	24	9	14	20	35	14	25	35	55	11	12
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	x	x	x	x	x	x	x	x	34	57	2a	10a	54	84	5a	8a
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	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	33	39	12a	23a	56	67	18a	30a	x	x	x	x	x	x	x	x
29	35	64	x	x	24	31	x	x	x	x	x	x	x	x	x	x
30	45	70	x	x	18	22	x	x	x	x	x	x	x	x	x	x
31	x	x	x	x	x	x	x	x	18	22	11	16	29	50	13	16

COMMERCE - STANDARDS - BOULDER

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

SOLAR FLARES

MAY 1961

OBSERVATORY	DATE MAY 1961	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
CAPRI S	01	1205 E	1233 D		S09	W08	6098	28 D	1	2	1205	2.00	2.00			
ZURICH	01	1510 E	1532		N04	W20	6097	22 D	1	2	1510		5.00			
ZURICH	01	1538	1606 D		N04	W20	6097	28 D	1	2	1538		5.00			
MEUDON	01	1619	1640 D	1623	N03	W15	6097	21 D	1							
SAC PEAK	01	1619	1724	1629	N04	W19	6097	65	1	3		2.60	2.60		32	S-SWF
MCMATH	01	1621	1717	1625	N04	W20	6097	56	1	1	1625		2.20			
STOCKHOLM	02	1016	1310 D		N04	W28	6097	174 D	1	2	1105	2.00	2.20			
CAPRI S	02	1022 E	1107 D		N03	W25	6097	45 D	1	2	1022	2.00	2.20			
HUANCAYO	02	1300 E	1411	1310	N03	W27	6097	71 D	1+	2	1305	7.30	8.40	2.30		
LOCKHEED	02	1725	1900	1735	N05	W34	6097	95	1	2	1815	2.00	2.20		30	Slow S-SWF
LOCKHEED	02	1725	1900	1815	N05	W34	6097	95	1	2	1815	2.00	2.20		30	
ONDREJOV	03	0548 E	0607		N03	W38	6097	19 D	1	1	0558			2.20		
LOCARNO	04	1305	1322		N03	W55	6097	17	1	2	1310		1.00			
WENDEL	04	1306	1343 D		N06	W56	6097	37 D	1+				6.00			
HUANCAYO	04	1309	1323	1313	N04	W56	6097	14	1	2	1313	2.20	4.10	2.20		
LOCARNO	04	1407	1431		N12	W23	6099	24	1	2						
WENDEL	04	1408	1433		N22	W23	6099	25	1				3.00			
SAC PEAK	04	1615	1637	1617	N04	W59	6097	22	1	3		2.45	3.67		19	S-SWF
SAC PEAK	04	2145	2333 D	2212	S10	W55	6098	108 D	3	3		12.27	16.67		30	
HAWAII	04	2150 E	2324 D	2210	S10	W56	6098	94 D	2	2	2210	5.60	7.90			
LOCKHEED	04	2155	2340	2216	S12	W56	6098	105	2	1	2216	6.20	8.60		30	Slow S-SWF
MCMATH	04	2202	2300 D	2213	S10	W57	6098	58 D	3	1	2213		12.50			
LOCKHEED	05	0021	0026 D	0026 U	S14	W60	6098	5 D	1	1	0026	2.00	3.10		30	
LOCARNO	05	0804	0828		N12	W33	6099	24	1+	2	0815		2.00			
WENDEL	05	0809	0838	0814	N12	W32	6099	29	1+				7.00			
MEUDON	05	0810	0832		N15	W30	6099	22	1							
ZURICH	05	0811	0830		N12	W34	6099	19	1	2	0811		3.00			
CAPRI S	05	1200 E	1210 D		S13	W70	6098	10 D	2	3	1200	3.00	9.00			
CAPRI S	05	1235 E	1241 D		N02	W70	6097	6 D	1	3	1237	.60	2.40			
SAC PEAK	05	1512	1523	1514	S03	W80	6096	11	1	2		.87	2.19		14	
WENDEL	05	1609	1627 D		N03	W78	6097	18 D	1				3.00			
SAC PEAK	05	1724	1731	1726	S03	W80	6096	7	1	2		.83	2.08		16	
LOCKHEED	05	1928	1949	1933	N05	W80	6097	21	1	1	1933	.70	2.10		10	
LOCKHEED	05	1928	1949	1945	N05	W80	6097	21	1	1	1933	.70	2.10		10	
SAC PEAK	05	1928	2000	1933	S03	W80	6096	32	1	2		.83	2.08		18	
MCMATH	05	1929	1948	1931	N04	W90	6097	19	1	2	1942		2.50			
ARCETRI	06	0917 E			N06	E90	6106	□	1	3	0917	1.00	4.80			
LOCKHEED	06	2203	2240	2216	S02	W90	6097	37	2	1	2216	1.50	7.40		10	
LOCKHEED	06	2347	0003	2353	S02	W90	6097	16	1	1	2353	1.00	5.00		10	
MEUDON	09	1438	1750	1620	N08	E12	6104	192	2-							
SAC PEAK	09	1540	1942	1552	N09	E11	6104	242	3	3		12.99	12.99		30	
CAPRI S	09	1544 E	1615 D		N09	E14	6104	31 D	1	3	1552	4.00	4.30			
LOCKHEED	09	1545 E	1805	1550	N09	E11	6104	140 D	2	2	1550	6.50	6.40		30	
SAC PEAK	09	2248	2327 D	2306	N03	E40	6106	39 D	1	3		4.33	4.83		26	
HAWAII	10	0018	0112	0038	N08	E30	6106	54	1	2	0038	2.80	2.90			Slow S-SWF

SOLAR FLARES

MAY 1961

OBSERVATORY	DATE MAY 1961	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	10	2030	2142	2052	N07	E24	6106	72	1	3		3.34	3.34		19	
SAC PEAK	10	2212	2256	2218	N01	E24	6106	44	2	3		5.98	5.98		24	
MEUDON	11	0830	0855	0833	N03	E23	6106	25	1							
MEUDON	12	0551	0615 D	0555	N05	E05	6106	24 D	1+							
CAPRI S	12	0612 E	0648 D		N03	E07	6106	36 D	1	3	0624	4.00	4.00			
LOCARNO	12	0710 E	0715		N04	W00	6106	5 D	1	3						
LOCARNO	12	0945 E	1000		N04	W01	6106	15 D	1	3						
LOCARNO	12	1028	1040		N04	W02	6106	12	1	3						
MEUDON	12	1242	1335 D		N07	W03	6106	53 D	1							
SAC PEAK	12	1248	1354	1308	N08	W05	6106	66	2	3		6.79	6.79		20	
MCMATH	12	1256	1343	1316	N08	W04	6106	47	1	3	1316		2.50			
HUANCAYO	12	1307 E	1333	1311	N06	W04	6106	26 D	1	2	1311	3.40	3.40	2.30		
LOCARNO	12	1320 E	1345		N09	W07	6106	25 D	1	3						
LOCKHEED	12	1825	1838	1828	S15	E90	6116	13	1	2	1829	.70	3.50		20	
CAPRI S	13	0559 E	0616 D		N03	W10	6106	17 D	1	3	0602	3.50	3.60			
WENDEL	18	0525 E	0605 D		S12	E16	6116	40 D	1				4.00			
WENDEL	18	0702 E	0718 D		S12	E15	6116	16 D	1				4.00			
MEUDON	21	1650	1710	1700	N03	E67	6125	20	1							
SAC PEAK	21	1654	1716	1702	N05	E75	6125	22	2	3		2.89	6.19		16	
LOCKHEED	21	1655	1719	1702	N06	E74	6125	24	1	2	1402	1.10	2.30		20	
ZURICH	22	1718 E	1722		N18	E40	6122	4 D	1	2	1718		2.00			
WENDEL	23	0734 E	0816		N18	E34	6122	42 D	1+				7.00			
ONDREJOV	23	0910 E	0923 D		N03	W73	6120	13 D	1	2	0914			2.50		
CAPRI S	23	0912 E	0925 D		N03	W77	6120	13 D	1	3	0913	.70	3.50			
WENDEL	23	0936	1006 D		N18	E33	6122	30 D	1+				5.00			
MCMATH	23	1205 E	1405		N15	E28	6122	120 D	1	2	1207		2.10			
MEUDON	24	0451 E	0520		N17	E20	6122	29 D	1+							
ZURICH	24	1225	1235		N17	E14	6122	10	1	2	1225		3.00			
CAPRI S	24	1228 E	1245 D		N16	E19	6122	17 D	1	3	1238	3.00	3.30			
LOCARNO	25	0751	0812		N16	E06	6122	21	1	2						
WENDEL	25	0754 E	0821		N15	E03	6122	27 D	1				4.00			
ONDREJOV	25	1518	1537 D		N07	E21	6125	19 D	1+	3	1520			2.10		
WENDEL	25	1555 E	1606 D		N03	E10	6123	11 D	1				3.00			

COMMERCE - STANDARDS - BOULDER

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

CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANGELES
MCMATH	MCMATH-HULBERT
MOSCOW-G	MOSCOW - GAISH
R O HERST	ROYAL GREENWICH OBSERVATORY HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
WENDEL	WENDELSTEIN

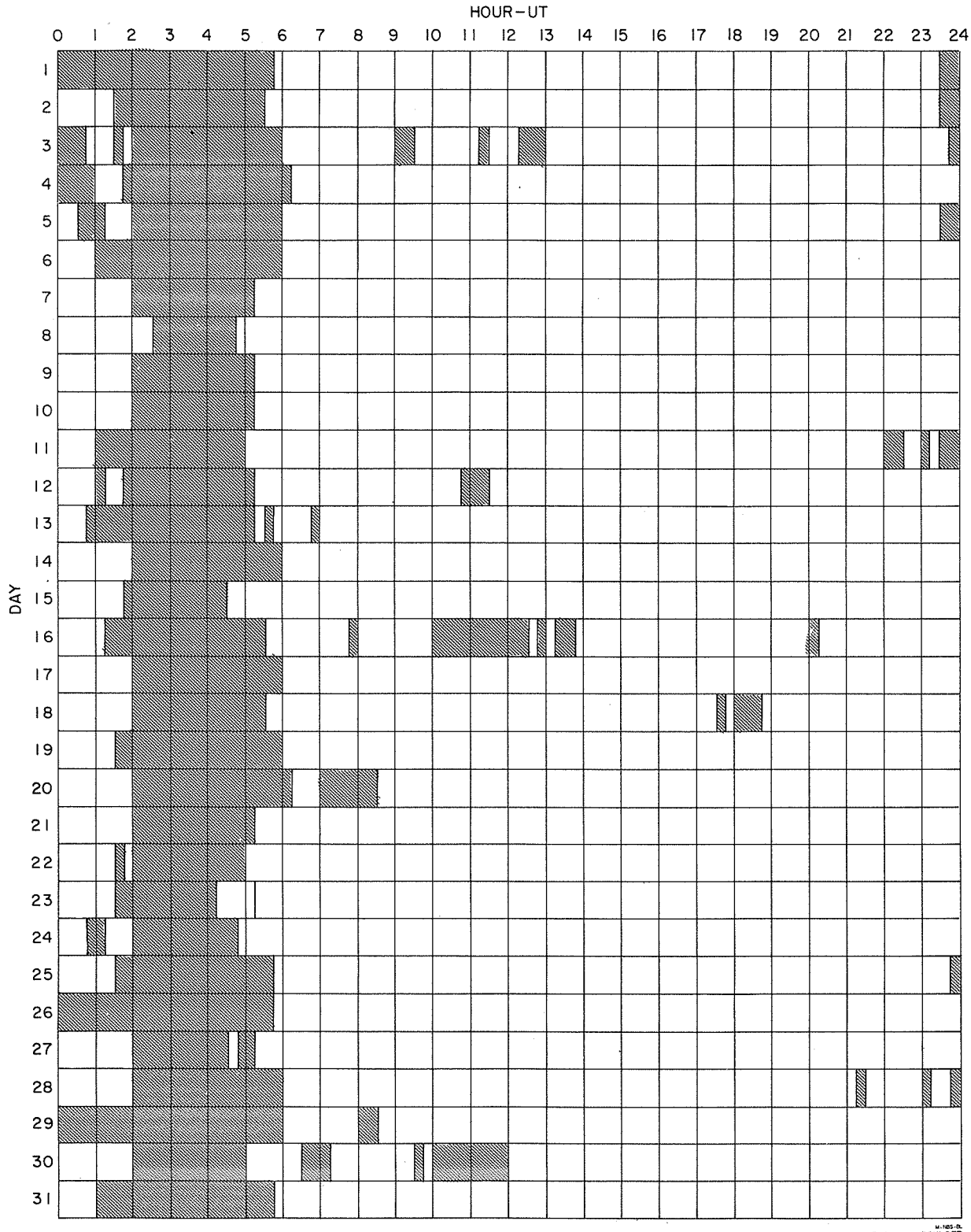
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

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

IIIc

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1961



Stations Include:

Anacapri (Swedish)
Arcetri
Hawaii
Huancayo
Lockheed
McMath-Hulbert
Meudon
Ondrejov
Royal Greenwish Observatory
Herstmonceux
Sacramento Peak
Wendelstein

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

APRIL 1961

*	WENDEL	01	1115 E	S10 W18
	WENDEL	01	1155 E	N06 W68
	WENDEL	01	1218 E	N06 W68
	SAC PEAK	01	1607	S11 W16
	LOCKHEED	01	1607	S11 W16
	LOCKHEED	01	1709	N07 W77
	SAC PEAK	01	1738	N10 W89
	LOCKHEED	01	2008	S12 W85
	LOCKHEED	02	2011	S17 W16
	LOCKHEED	02	2205	S14 E13
*	SAC PEAK	03	1710	S11 W43
*	LOCKHEED	03	1710	S12 W43
	ARCETRI	04	0855 E	S10 W10
	HUANCAYO	04	1316	N13 W24
	WENDEL	04	1316 E	N11 W28
	MCMATH	04	1317	N13 W25
*	MCMATH	04	1346	N12 E22
*	HUANCAYO	04	1354	S13 W50
*	MCMATH	04	1358	S10 W54
	SAC PEAK	04	1409	N12 E22
	HUANCAYO	04	1411	S09 W21
	SAC PEAK	04	1411	S10 W23
	HUANCAYO	04	1413 E	N13 W22
	SAC PEAK	04	1431	S09 W23
	SAC PEAK	04	1442	N13 E22
	SAC PEAK	04	1501	N13 E20
	WENDEL	04	1516 E	N13 W23
	LOCKHEED	04	1655	S10 W25
	LOCKHEED	04	1700	S21 W37
	SAC PEAK	04	1701	S20 W37
	SAC PEAK	04	1906	S09 W26
	LOCKHEED	04	1909	S09 W26
	LOCKHEED	04	1921	N14 E18
	LOCKHEED	04	2005	S09 W26
	LOCKHEED	04	2044	N13 E17
	LOCKHEED	04	2110	N13 E17
	SAC PEAK	04	2135	S18 W16
	LOCKHEED	04	2139	S17 W17
	MCMATH	04	2140	S16 W17
	SAC PEAK	04	2232	N12 E18
	LOCKHEED	04	2330	N13 E17
	LOCKHEED	04	2340	S08 W29
*	CAPRI S	05	0826 E	N12 E15
*	ARCETRI	05	0833 E	N14 E13
	ARCETRI	05	0925 E	N14 E13
	WENDEL	05	0928 E	N13 E08
	WENDEL	05	1000 E	N13 E08
	UCCLE	05	1009	N14 E07
*	UCCLE	05	1224 E	N14 E07
	WENDEL	05	1315 E	N13 E11
*	CAPRI S	05	1350 E	N14 E14
*	MCMATH	05	1352	N13 E10
*	WENDEL	05	1439 E	N13 E10
	MCMATH	05	1440	N12 E10
	UCCLE	05	1444 E	N14 E10
	UCCLE	05	1531	N14 E10
	MCMATH	05	1532	N12 E10
	UCCLE	05	1548	N14 E07
	SAC PEAK	05	1545	N13 E04
*	SAC PEAK	05	1554	N13 E08
	HAWAII	05	1754 E	N13 E09
	SAC PEAK	05	1800	N12 E09
	SAC PEAK	05	1933	N13 E03
	HAWAII	05	2210	S18 W41
	SAC PEAK	05	2213	S19 W40
	HAWAII	06	0010	N13 E01
	WENDEL	06	0607 E	N14 W04
	WENDEL	06	0614 E	N13 W01
*	ONDREJOV	06	0916 E	N13 W02
*	ARCETRI	06	0920 E	N14 E00
*	ONDREJOV	06	0923	N13 E01
*	UCCLE	06	1115	N15 W05
	WENDEL	06	1356 E	S16 W33
	WENDEL	06	1550 E	S18 W52
	HUANCAYO	06	1740	N13 W07
*	HAWAII	06	2140 E	N15 W09
	ONDREJOV	07	1053 E	N14 W15
	WENDEL	07	1055 E	N13 W14
	MEUDON	08	0700	N15 E70
	LOCKHEED	08	1717	S09 W80
	LOCKHEED	08	1844	N13 W40
	LOCKHEED	08	2153	N13 W40
	LOCKHEED	09	0101	N12 W43
	LOCKHEED	09	0135	N13 W43
	LOCKHEED	09	1810	S11 W78
	LOCKHEED	09	2035	N13 W49
	LOCKHEED	09	2240	N13 W52
	UCCLE	10	1132	N16 W52
	SAC PEAK	10	1549	N03 E40
	SAC PEAK	10	1827	N03 E40
	SAC PEAK	10	1924	N03 E40
	LOCKHEED	11	1736	N10 W76
	MCMATH	11	1737	N12 W74
	MCMATH	11	1808	N12 W74
	LOCKHEED	11	1808	N10 W76
	SAC PEAK	11	1813 E	N10 W73
	LOCKHEED	11	1852	N17 E66
	LOCKHEED	11	2005	N10 W76
	LOCKHEED	11	2151	N11 W79
	LOCKHEED	12	0042	N11 W79
	UCCLE	12	0943	S04 W16
	UCCLE	12	1622	N04 E65
	ONDREJOV	14	0857	N15 E32
	LOCKHEED	14	2012	N17 E24
	LOCKHEED	14	2013	S27 E06
	LOCKHEED	14	2013	S27 E06
	LOCKHEED	14	2013	S27 E06
	SAC PEAK	14	2014	N14 E25
	SAC PEAK	14	2052	S28 E04
	LOCKHEED	14	2126	S27 E06
	LOCKHEED	14	2126	S27 E06
	SAC PEAK	14	2223	N12 E22
	HAWAII	14	2224	N13 E25
	LOCKHEED	14	2225	N17 E24
	LOCKHEED	14	2225	S27 E06
	LOCKHEED	14	2357	N17 E24
	LOCKHEED	15	0010	S27 E07
	HAWAII	15	0020 E	N14 E09
	MCMATH	15	1401	N05 E90
	SAC PEAK	15	1413	S11 E48
	MCMATH	15	1422	S11 E48
	SAC PEAK	15	1525	N14 E14
	SAC PEAK	15	1602	N14 E15
	LOCKHEED	15	1604	N17 E15
	SAC PEAK	15	1640	N14 E12
	LOCKHEED	15	1755	N17 E11
	SAC PEAK	15	1830	N13 E10
	LOCKHEED	15	1833	N16 E10
	LOCKHEED	15	2112	N17 E11
	LOCKHEED	16	1711	N13 W14
	LOCKHEED	16	2014	N15 W20
	SAC PEAK	16	2106	N05 E08
	SAC PEAK	16	2316	N06 E78
	LOCKHEED	17	2220	N15 W24
	LOCKHEED	17	2300	S01 W49
	KYOTO	18	0142 E	N03 W50
	ARCETRI	18	0932 E	N15 W28
	ONDREJOV	18	0943	N06 E51
	HAWAII	18	2356	N04 E49
	KYOTO	19	0630 E	S12 E56
	UCCLE	19	0910	S14 E42
	HAWAII	19	1846	N06 W36
	SAC PEAK	19	1846	N06 W34
	SAC PEAK	19	1900	N16 W46
	LOCKHEED	19	2308	S12 E30
	SAC PEAK	19	2311	S13 E30
	HAWAII	19	2312	S13 E29
*	KYOTO	20	0040 E	S13 E35
	WENDEL	20	0700 E	S13 E29
	SAC PEAK	20	1732	N15 W59
	SAC PEAK	21	1553	N15 W70
	LOCKHEED	21	1927	S13 E06
	SAC PEAK	21	1928 U	S14 E04
	CLIMAX	21	1931	S14 E03
	HAWAII	21	1932	S14 W04
	HUANCAYO	21	1935	S17 E05
	MCMATH	21	1939 E	S14 E05
	LOCKHEED	21	2353	S08 E03
	ONDREJOV	22	1210	N14 W90
	SAC PEAK	24	1537	S04 E72
	LOCKHEED	24	1640	N05 E80
	LOCKHEED	24	1640	N05 E80
	LOCKHEED	24	1722	S07 E73
	LOCKHEED	24	2122	N08 W34
	LOCKHEED	25	0018	S06 E76
	ONDREJOV	25	1010 E	S09 E72
	UCCLE	25	1139	S10 E71
*	UCCLE	25	1205	S19 E71
	SAC PEAK	25	1410	N04 E70
	UCCLE	25	1412	N04 E70
	LOCKHEED	25	1635	S06 E67
	LOCKHEED	25	1739	S04 E61
	LOCKHEED	25	1840	S08 E74
	LOCKHEED	25	1924	S04 E61
	LOCKHEED	25	1938	S05 E64
*	LOCKHEED	25	2029	S07 E64
	LOCKHEED	25	2042	S04 E58
	LOCKHEED	25	2145	S04 E58
	SAC PEAK	25	2157	S06 E58
	LOCKHEED	25	2250	S04 E58
	STOCKHOLM	26	0915 E	S10 E57
*	SAC PEAK	26	1251	S12 E57
*	LOCKHEED	26	1631	S11 E54
	LOCKHEED	26	1956	S10 E53
	LOCKHEED	26	2142	S10 E51
*	LOCKHEED	26	2207	S08 E50
	LOCKHEED	26	2304	S08 E50
	LOCKHEED	26	2341	S12 E49
	LOCKHEED	26	2353	S12 E50
	LOCKHEED	27	0020	S08 E50
	LOCKHEED	27	0030	N10 W61
	ARCETRI	27	1037 E	S08 E44
	ARCETRI	27	1100 E	S08 E44
*	CAPRI S	27	1224 E	S11 E45
	LOCKHEED	27	1607 E	S06 E39
	LOCKHEED	27	1612	S08 E42
	LOCKHEED	27	1612	S08 E42
	LOCKHEED	27	1708	S10 E42
	SAC PEAK	27	1709	S10 E43
	LOCKHEED	27	1738	S07 E41
	HAWAII	27	1754 E	S12 E40
	LOCKHEED	27	1836	S12 E39
	LOCKHEED	27	1933	S13 E38
	HAWAII	27	1938 E	S23 E35
	LOCKHEED	27	2054	S10 E41
	LOCKHEED	27	2058	N03 E38
	LOCKHEED	27	2058	N03 E38
	LOCKHEED	27	2202	S12 E37
	SAC PEAK	27	2205	S13 E37
	LOCKHEED	27	2310	S07 E38
	KYOTO	28	0430 E	S07 E35
	WENDEL	28	0848 E	S10 E34
	UCCLE	28	0853	S11 E34
	SAC PEAK	28	1439	S13 W81
	SAC PEAK	28	1445	S10 W60
	HUANCAYO	28	1447 E	S12 W63
	SAC PEAK	28	1523	N02 E27
	SAC PEAK	28	1622	S10 W61
	LOCKHEED	28	1623	S11 W60
	LOCKHEED	28	1715	N03 E26
	LOCKHEED	28	1806	S11 W60
	SAC PEAK	28	1807	S10 W62
	LOCKHEED	28	1840	S08 E25
	LOCKHEED	28	1905	N03 E25
	LOCKHEED	28	1945	S11 W60
	LOCKHEED	28	2011	N03 E24
	LOCKHEED	28	2024	S03 E23
	LOCKHEED	28	2040	S13 W85
	HUANCAYO	28	2044	S15 W83
	SAC PEAK	28	2047	S03 E22
	LOCKHEED	28	2050	S03 E23
	LOCKHEED	28	2050	N15 E57
	LOCKHEED	28	2108	S10 E29
	LOCKHEED	28	2145	S09 W61
	LOCKHEED	28	2151	N03 E23
	LOCKHEED	28	2151	N03 E23
	LOCKHEED	28	2224	N03 E22
	SAC PEAK	28	2226	N02 E22
*	HAWAII	28	2248	S06 E20
*	LOCKHEED	28	2250	S07 E22
	LOCKHEED	28	2305	N03 E22
	LOCKHEED	28	2315	S08 W64
	LOCKHEED	28	2335	N03 E22
	LOCKHEED	29	0015	N05 E23
	LOCKHEED	29	0037	S09 W64
	LOCKHEED	29	0056	S08 E22
	SAC PEAK	29	1406	S12 E18
	HUANCAYO	29	1408 E	S12 E19
	SAC PEAK	29	1423	S09 W74
	SAC PEAK	29	1435	S08 E15
	HUANCAYO	29	1437	S07 E16
	CLIMAX	29	1437 E	S07 E14
	CLIMAX	29	1451	S12 E18
	SAC PEAK	29	1453	S13 E18
	LOCKHEED	29	1540 E	N04 E14
	LOCKHEED	29	1655	N02 E11
	LOCKHEED	29	1707	S08 E12
	LOCKHEED	29	1714	N04 E09
	LOCKHEED	29	1727	S08 E11
	LOCKHEED	29	1736	N03 E08
	LOCKHEED	29	1813	N02 E11
	SAC PEAK	29	1815 U	N02 E10
	LOCKHEED	29	1836	S12 E15
	LOCKHEED	29	1843	N02 E08
	LOCKHEED	29	1859	S08 E09
	LOCKHEED	29	2005	S06 E07
	LOCKHEED	29	2005	S06 E07
	LOCKHEED	29	2057	S07 E11
	SAC PEAK	29	2223	S10 E08
	LOCKHEED	29	2224	S08 E08
	LOCKHEED	29	2224	S08 E08
	LOCKHEED	30	0011	N03 E07
	CAPRI S	30	1446 E	S09 E07
	LOCKHEED	30	1730 E	N03 W05
	LOCKHEED	30	1812	S12 W03
	SAC PEAK	30	1849	N02 W05
	LOCKHEED	30	1850	N04 W01
	LOCKHEED	30	1916	N04 W06
	LOCKHEED	30	1936	N04 W06
	LOCKHEED	30	2120	N04 W07
	LOCKHEED	30	2135	N03 W10
	LOCKHEED	30	2205	N03 W10
	LOCKHEED	30	2212	S10 W04
	LOCKHEED	30	2333	N03 W10

COMMERCE - STANDARDS - BOULDER

*Rated as flare of importance ≥ 1 by other observatories (See CRPL-F 201 Part B, for May 1961).

SOLAR FLARES

FEBRUARY 1961

OBSERVATORY	DATE FEB 1961	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
PIRCULI	01	0705	0740	0712	N11	W15	6013	35	1	3	0712	4.56	5.01		62	
GOOD HOPE	01	0947	1124	1034	N25	E26	6016	97	1+		1034	2.70	3.50			
PIRCULI	01	0953	1123 D	1028 U	N24	E25	6016	90 D	1+	3	1028	6.84	8.98		66	
MITAKA	03	0606	0618		N11	W43	6013	12	1	1	0606	.88	1.05	1.54	96	
ABASTUMANI	04	0816	0826	0820	N04	E76	6022	10		1		1.08	3.50			
PIRCULI	04	0819	0830	0823 U	N04	E79	6022	11	1+	3	0823	2.28	9.50		62	
OTTAWA	06	1412	1432	1415	N23	W46	6016	20	1		1415	1.80	2.30			
MITAKA	07	2356	0016		S08	E20	6023	20	1	1	2359	2.46	2.63	2.28	107	
MITAKA	08	0235 E	0247		S12	E14	6023	12 D	1	1	0236	.98	1.03	1.95	128	
PIRCULI	09	0708	0727	0711 U	S12	E01	6023	19	1	2	0711	1.83	1.86		56	
GOOD HOPE	14	0649	0710	0652	N06	W64	6022	21	1		0652	1.50	3.50			
ABASTUMANI	14	0656	0823	0706	N06	W64	6022	87	1	2		1.80	4.70		68	
GOOD HOPE	14	1038	1049	1042	N06	W64	6022	11	1		1042	1.00	2.40			
CAPRI G	14	1244 E	1250 D		N04	W66	6022	6 D	1	2		4.00				
GOOD HOPE	14	1356	1406	1358	N06	W66	6022	10	1		1358	1.30	3.40			
ALMA-ATA	15	0530	0605	0532	S08	W79	6023	35	2	2	0532	2.68			61	
GOOD HOPE	15	0641 E	0701		S09	W88	6023	20 D	1		0641	.30				
GOOD HOPE	15	1059	1129	1102	S09	W88	6023	30	1		1102	.30				
CAPRI G	16	0849 E	0854		N06	W90	6022	5 D								
CAPRI G	20	1238	1258		S11	E43	6036	20	1+	2		5.00				
VOROSHILOV	21	2307 E	2330		S14	E80	6040	23 D	1+	3	2311	.72			88	
PIRCULI	22	0758	0815	0806 U	S15	E72	6040	17	1	3		1.83			56	
PIRCULI	22	0854 E	0859 D	0856 U	S15	E72	6040	5 D	1	3		1.19			52	
CAPRI G	22	1335 E	1344		S11	E21	6036	9 D	1	2		4.00				
CAPRI G	23	1032 E	1038		S11	E35	6040	6 D	1	2		4.00				
CAPRI G	23	1207 E	1220		S12	E37	6040	13 D	1	2		4.00				
CAPRI G	25	1354	1407		S12	E11	6040	13	1	2		4.00				

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the February 1961 flares published in CRPL-F 199 Part B, March 1961

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

CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANGELES
MCMATH	MCMATH-HULBERT
MOSCOW-G	MOSCOW - GAISH
R O HERST	ROYAL GREENWICH OBSERVATORY HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
WENDEL	WENDELSTEIN

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

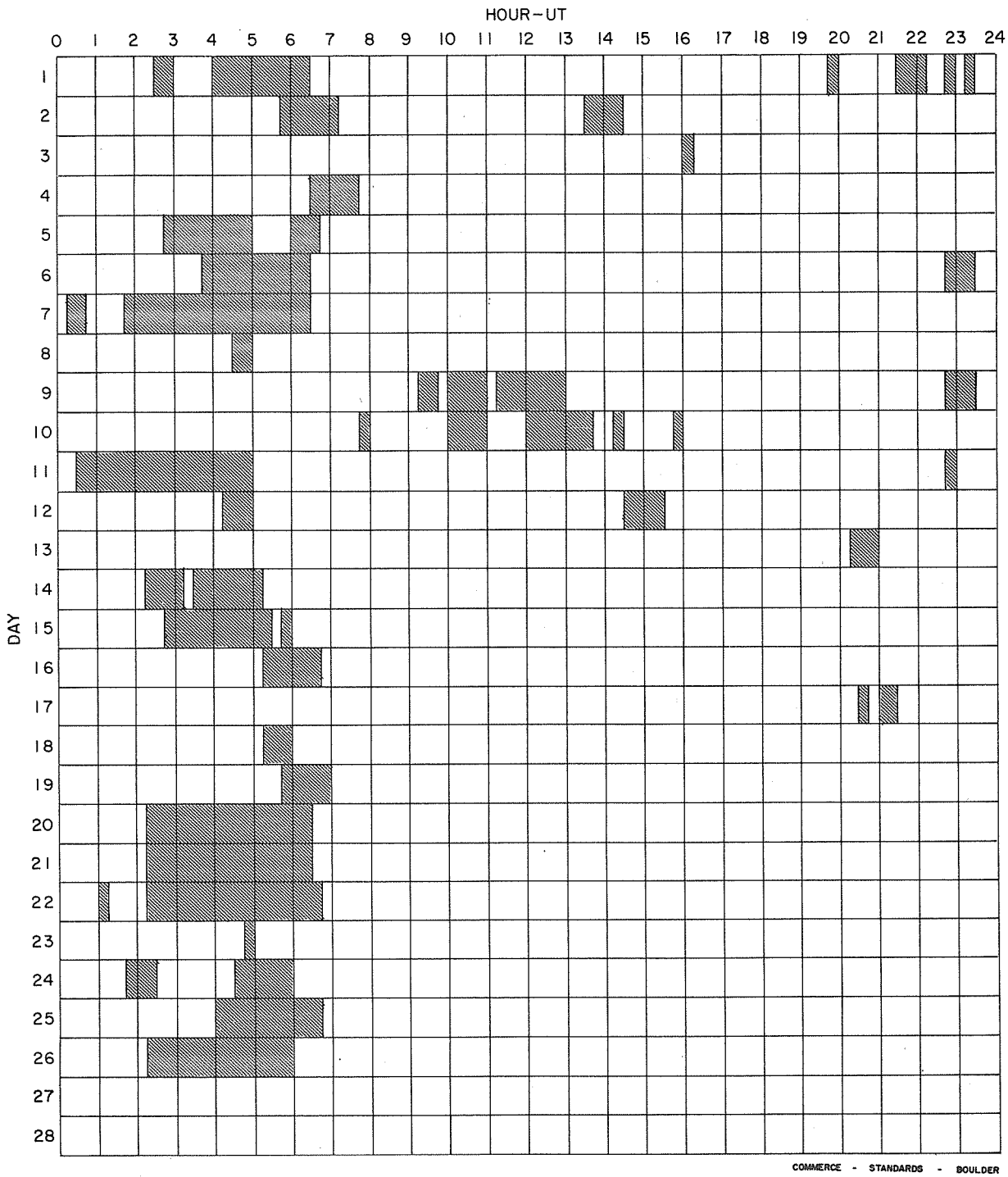
SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SAC PEAK.

Errata in CRPL-F 201 Part B, May 1961 page IIIb:

For the flare observed at Ondrejov, April 26, 1961 the following corrections should be made: The times of beginning, ending and measurement should be 1504E, 1536D and 1517 not 1604E, 1636D and 1617, respectively. Correct the McMath Plage Region number of flare reported by Huancayo, April 26, 1961 at 1755E, U.T. from 6091 to 6098.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

FEBRUARY 1961



Stations Include:

Abastumani	Hawaii	Lockheed	Ottawa	Simeiz
Alma Ata	Huancayo	McMath-Hulbert	Pirculi	Tashkent
Anacapri (Swedish)	Kharkov	Meudon	Royal Greenwich Observatory	Uccle
Arcetri	Kiev GAO	Mitaka	Herstmonceux	Voroshilov
Climax	Krasnaya Pakhra	Ondrejov	Sacramento Peak	Wendelstein
Good Hope	Kyoto			

HOURS OF FLARE PATROL OBSERVATIONS
Kyoto (Ikomasan) Observatory

Corrections to be made to Intervals of No Flare Patrol Observations May 1960 - December 1960

The following hours should be whited out on the charts presented in CRPL-F Part B 190 to 200. The Kyoto, Japan solar flare patrol covered these times.

May		Aug.		Oct.	
26	0345-0400	1	2345-2400	19	0215-0245
31	0445-0500	2	0230-0300	20	0100-0130,
		5	0115-0130		0145-0245
June		12	0245-0300	22	0030-0115
1	0115-0300	16	0215-0300	23	0045-0200
6	0230-0245	20	0215-0300	25	0215-0230
7	0045-0200	22	0200-0230	26	0400-0600
20	0515-0600	25	0200-0215		
		27	0200-0300	Nov.	
July				8	0200-0230,
17	0245-0300	Sep.			0345-0515
20	2330-2400	2	0200-0215	10	0430-0530
21	0015-0030	6	0200-0215	20	0630-0645
22	0030-0045,	21	0600-0615	24	0000-0015,
	0145-0245				0030-0115,
24	0000-0015	Oct.			0600-0645
28	0200-0245	3	0145-0200		
29	0230-0245	5	0200-0215,	Dec.	
			0445-0500	9	0345-0515
		12	0200-0230	11	0430-0500
		13	0045-0245,	20	0530-0600
			0515-0530		

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

APRIL 1961

1961 Apr.	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 201
5	1623	1645	S-SWF	5	1+	BE, FM, HU, MC, PR	1555
6	1745	1820	Slow S-SWF	5	1	BE, BO, HU, MC, PR	*
11	1805	1840	Slow S-SWF	4	1-	BE, HU, MC	
26	1430	1555	Slow S-SWF	5	2+	BE, DA, FM, HU, MC, PR	1424
26	1650	1843	Slow S-SWF	5	3	BE, FM, HU, LA, MC, PR	1646
27	0244	0336	Slow S-SWF	5	1+	AD, AN, OK	0245E
27	0407	0454	Slow S-SWF	1	1+	OK	*

DA = Darmstadt, G.F.R.
LA = Los Angeles, Calif.

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption
Sudden Enhancements Of Atmospherics
Solar Noise Bursts At 18 Mc.)

APRIL 1961

1961 Apr.	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	TIME (UNIVERSAL TIME) MAX.	TIME (UNIVERSAL TIME) END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
5	1			5	1623	1626	1641	25	BO, MC, RE
5		□		1	1624	1629	1717		DU
5			1	4	1702		1704		BO, MC
5			1	5	1902		1906		BO, MC, RE
5			1	4	1917		1919		BO, MC
6			2	1	0015		0020		HA
11			1	4	1720		1724		BO, MC
26		□		1	0902	0905	0945		DU
26	1			4	1428	1440		15	BO, MC
26	2			5	1652	1707	1825	30	BO, MC, RE
27		1		1	0251	0300			TY
28		1		1	0208	0213	0245		TY

TY = Research Institute of Atmospherics, Toyokawa, Japan.

COMMERCE - STANDARDS - BOULDER

IVa

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

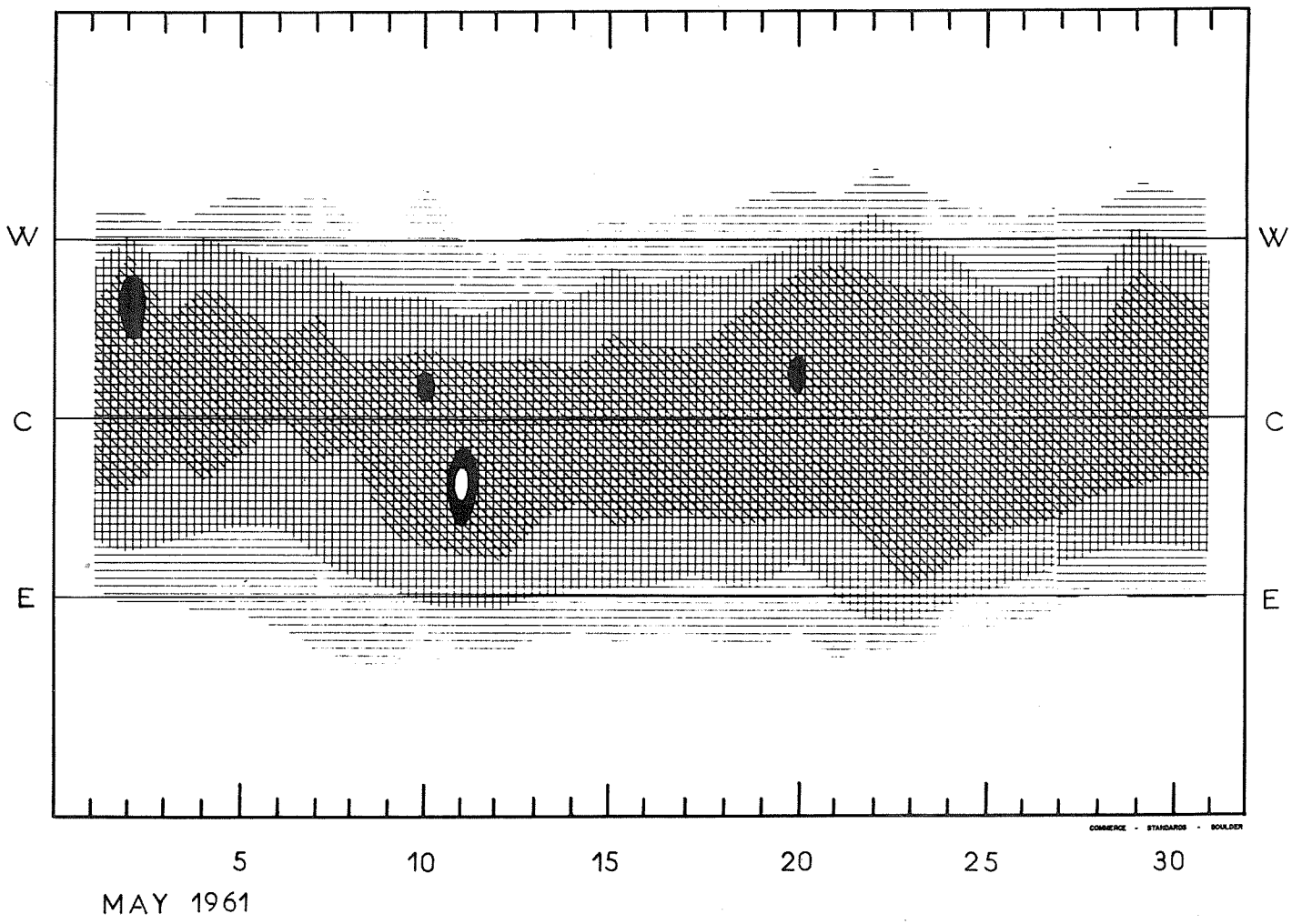
MAY 1961

OTTAWA 2800 MC

May 1961	Type	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Maximum Mean Flux	Remarks
1	2 Simple 2	1207.5	4.5	1208.7	10	3	
1	2 Simple 2 f	1621.7	6 2	1624.1	8	2.6	
1	3 Simple 3 f	1648	1 42	Indet.	4	2.3	
2	3 Simple 3	1437	2 33	Indet.	6	3.2	
2	3 Simple 3	1725	1 42	Indet.	4	2.5	
4	1 Simple 1	1309.5	3	1310.3	4	1.8	
4	3 Simple 3 A	2145	36	Indet.	10	6	
	2 Simple 2 f	2205	9	2208.8	95	31	
5	1 Simple 1 f	1322	1.2	1322.5	4	2.2	
5	1 Simple 1	1559	1	1559.5	4	1.7	
9	3 Simple 3 A	1540	2 50	Indet.	6	3.7	
	2 Simple 2 f	1543	3.3	1544.8	9	4.6	
10	3 Simple 3	2030	> 2 55	Indet.	5	---	In Sunset.
11	3 Simple 3	1122	43	1129	3	1.6	
11	3 Simple 3	1755	57	1808	3	1.7	
11	3 Simple 3	2157	18	2203	4	1.8	
12	1 Simple 1	1243.2	1.8	1244.3	3	1.2	
12	3 Simple 3 A	1250	2 25	Indet.	5	2.2	
	2 Simple 2	1355.2	1.7	1355.8	12	3	
12	1 Simple 1	1637	8	1638.5	2	1.4	

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

Nançay MAY 1961 169 Mc



IVb

IVc

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

MAY 1961

BOULDER

108 Mc.

May 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	2	1229.0	1230.3	1.3	2
1	3	1304.3	1304.8	0.7	2
1	3	1558.6	1559.5	1.2	2
1	3	1809.9	1810.1	0.3	2
2	2	1219.8	1221.4	1.5	2
2	3	1259.3	1300.0	0.9	3
2	3	1306.5	1307.0	0.5	2
2	3	1513.5	1514.9	2.0	2
2	3	1616.2	1617.4	1.0	2
2	3	1835.0	1836.0	1.5	3
2	3	2225.0	2225.6	0.6	3
2	3	2350.5	2351.0	0.5	2
3	3	0023.7	0024.2	0.5	3
3	3	1511.3	1511.9	0.6	2
3	3	1541.0	1541.8	0.8	2
3	3	1642.4	1643.9	1.8	2
3	3	1738.3	1738.8	0.5	3
3	3	1800.0	1800.1	0.3	2
3	3	1858.2	1858.5	0.5	2
4	3	2207.5	2208.6	3.0	2
5	3	1230.6	1231.1	1.0	3
5	2	1255.3	1257.0	4.0	3
5	3	1332.5	1333.9	1.8	3
5	3	1604.2	1606.0	1.8	3
5	3	1929.0	1930.0	1.0	3
5	3	2230.0	2232.0	2.0	3
5	3	2242.8	2243.2	0.5	2
6	2	1435.0	1436.1	1.2	2
6	3	1537.5	1538.0	0.7	2
6	3	1558.8	1559.4	0.6	2
6	3	1839.2	1839.7	0.5	2
7	3	1457.5	1457.9	0.8	2
8	3	1711.3	1712.1	1.1	3
8	3	1733.5	1734.1	0.6	2
8	3	1803.2	1804.5	1.4	3
9	3	1604.5	1605.8	1.5	2
9	3	1747.0	1747.4	0.5	2
9	3	1958.0	1958.5	0.5	2
9	3	2028.2	2028.6	0.4	2
9	3	2344.2	2345.0	0.7	2
10	3	0041.5	0042.0	0.8	2
10	3	1339.3	1340.0	0.6	3
10	3	1418.5	1419.5	1.5	3
10	3	1506.4	1507.2	0.6	3
10	3	1628.0	1628.7	0.7	2
10	3	1816.0	1816.7	0.7	2
10	3	1830.1	1830.5	0.4	2
10	2	1858.3	1859.6	1.8	2
10	3	2027.7	2028.0	0.4	2
10	3	2133.3	2133.9	0.7	2
10	3	2233.8	2234.4	0.8	2
11	3	1534.2	1534.8	0.7	2
11	3	1757.0	1758.8	2.0	2
11	3	1803.0	1803.4	1.0	2
11	3	1805.5	1807.8	2.5	3
11	3	2103.0	2103.7	0.7	2
11	3	2245.0	2245.5	0.5	2
11	3	2308.2	2309.0	1.0	3
12	3	1244.0	1245.0	1.0	3
12	3	1355.2	1356.8	1.7	3
12	3	1803.2	1803.8	0.6	3
12	3	1859.9	1900.4	0.5	3
12	3	2001.5	2001.9	0.4	2
14	3	1222.8	1223.3	0.5	2
16	3	1730.4	1730.8	0.4	2
17	3	1553.5	1553.9	0.5	2
17	3	1955.0	1955.5	0.5	2
17	3	2215.4	2216.5	1.5	3
18	3	1349.9	1350.0	0.5	2
18	3	1417.0	1417.5	0.5	2
18	3	1633.0	1633.6	0.6	2
18	3	1921.0	1922.5	2.2	2
19	3	1541.2	1541.9	0.8	3
19	3	1615.0	1615.6	0.7	2
19	3	1724.9	1725.5	0.6	2
19	3	1744.1	1744.1	0.5	2
20	3	1255.5	1255.9	0.5	2
20	3	1440.6	1440.8	0.3	2
21	3	1822.0	1822.8	1.0	2
22	3	1340.3	1340.9	0.7	3
22	3	1451.0	1451.6	0.6	2
22	3	1551.8	1552.4	0.7	3
22	3	1657.0	1657.4	0.5	3
22	3	1704.0	1704.5	0.3	3
22	3	2255.4	2255.8	0.7	2
23	3	0113.2	0113.7	0.7	2
23	3	1612.6	1612.9	0.7	2
23	3	1726.0	1726.5	0.6	2
24	3	1211.2	1212.0	0.5	3
24	3	1329.9	1330.1	0.5	2
26	3	1144.9	1145.8	0.9	3
26	3	1325.2	1326.1	0.9	2
26	2	1747.0	1747.7	1.2	2
27	2	1248.9	1252.4	8	3
27	3	1522.5	1523.0	0.6	2
27	3	1721.1	1721.9	0.8	3
27	3	1906.9	1907.1	1.0	2
28	3	1513.5	1514.0	0.5	2
28	3	1613.3	1613.9	0.6	3
28	3	1726.8	1727.4	0.7	2
28	3	1745.0	1745.2	0.4	2
29	3	1439.0	1439.6	0.6	2
30	3	1533.0	1533.6	0.6	3
30	3	1600.0	1600.2	0.3	2
30	3	1642.0	1643.2	0.8	3
30	3	1915.1	1915.6	0.5	2

COMMERCE - STANDARDS - BOULDER

NOMINAL TIMES OF OBSERVATION

MAY 1961

BOULDER 108 MC

May 1961	U.T.		May 1961	U.T.	
1	1205-0136		17	1148-0149	I 1148-1330
2	1204-0137		18	1147-0150	I 1147-1315
3	1203-0138		19	1147-0152	I 1147-1330
4	1202-0139	I 1202-1400	20	1146-0152	I 1605-0152
5	1201-0139	I 1201-2100	21	1145-0153	I 2246-0030
6	1159-0140	I 1242-1800	22	1144-0154	
7	1158-0141	I 1720-2210	23	1143-0154	I 1810-2040
8	1157-0142	I 1157-1305	24	1143-2218; 2330-0154	I 1605-2218
9	1156-0142	I 1156-1400			
10	1155-0144	I 1155-1400	25	1142-0156	I 1142-0156
11	1154-0144	I 1154-1430	26	1141-0156	I 1445-1515; 1840-0022
12	1153-0145	I 1153-1330; 2225-0145	27	1141-0158	
13	1152-0146	I 1152-1930	28	1140-0158	I 1820-2305
14	1151-0147		29	1140-0158	I 2031-0158
15	1150-1732; 1752-0148	I 1825-2243	30	1139-0159	
16	1149-0148	I 1149-1335; 1917-0148	31	1139-0200	I 1139-0200

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

MARCH – MAY 1961

OWENS VALLEY, CALIFORNIA

540-975 Mc

Date 1961	Observing Hours	Important Bursts			Frequency Range Mcs	Remarks
		Type	Times U.T.	Int.		
Mar.15	1726-2141					No activity
	2201-2417					No activity
Mar.16	1623-2225					No activity
Mar.27	1620-1922					No activity
	1924-2403					No activity
Mar.28	1627-2056					No activity
Mar.29	1617-2310	Cont.	2306	1-	850-950	4 seconds duration
Mar.30	1615-2420					No activity
Mar.31	1620-2039					No activity
Apr. 3	1644-2414					No activity
Apr. 4	1615-1703.5					No activity
Apr. 4	1711-2051.5					No activity
Apr. 4	2226-2401	Cont.	2234.5	1	540-975	30 seconds
		Cont.	2235	1-	540-975	15 seconds
		Cont.	2237	1	540-650	45 seconds
		Cont.	2237.5	1	540-975	30 seconds
		Cont.	2238	1	540-975	30 seconds, drifted to low frequency by 2238.5
		Cont.	2238.5	1	540-650	120 seconds
		Cont.	2240.5	1-	540-975	60 seconds
		Cont.	2241.5	1-	540-975	90 seconds, drifted to low frequency by 2243
Apr. 5	1608-1827	IIIg	1624	1-	975-600	Very fast drift
		Cont.	1625	1-	540-950	Most energy at low frequency
Apr. 5	1850-2412	Cont.	2056-2104	3	540-950	Peak 2059, 550-800 Mc/s
		IIIgg	2104	2	950-650	Very short shift in frequency, 0.25 seconds duration
Apr. 6	1647-2219					No activity
Apr. 7	1613-1753					No activity
Apr. 7	1809-2235					No activity
Apr. 8	1645-2402					No activity
Apr. 9	1622.5-2402					No activity
Apr.24	1830-2400					No activity, record obscured between 625-800 Mcs due to camera light leak
Apr.25	1612-2400					No activity, record obscured see Apr.24
Apr.26	1605-2402					No activity
Apr.27	1603-2400					No activity, obscured 1603-2100
Apr.28	1617-2101					No activity, record obscured
	2117-2101					No activity, record obscured
Apr.29	1638-1952					No activity, record obscured
	2028-2041					No activity, record obscured
	2132-2144					No activity, record obscured
	2205-2302					No activity, record obscured
Apr.30	1758-2402					No activity, record obscured
May 1	1616-2255					No activity, record obscured
May 2	1605-2327					No activity, record obscured
May 4	1755-2357					No activity, record obscured
May 5	1719-1740					No activity, record obscured
	1909-2310	IIIb	2020	1-	800-600	1 second duration
		IIIb	2023	1-	720-620	1 second duration
		IIIb	2126	1-	600-550	1 second duration, strong at 550 Mc/s

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

MAY 1961

OWENS VALLEY, CALIFORNIA

540-975 Mc

Date 1961	Observing Hours	Important Bursts			Frequency Range Mcs	Remarks
		Type	Times U.T.	Int.		
May 6	1630-2402					No activity
May 7	1640-2406					No activity
May 8	1615-1710					No activity, obscured 1635-1710
May 8	1818-2128					No activity, record obscured
	2133-2401					No activity, obscured 2157-2401
May 9	1614-2020					No activity, record obscured
	2033-2401					No activity, record obscured
May 10	1614-2402					No activity, record obscured
May 11	1614-1900	Cont.	1804-1807	1-	550-650	Spotty, maximum 1806
May 11	1948.5-2355					No activity, obscured 2040-2355
May 12	1613-2401					No activity, obscured 1637-2401
May 13	1626-2046					No activity
May 17	2236-2257					No activity, record obscured
	2259-2351					No activity, record obscured
May 18	1626-1928					No activity
	1936-2359.5					No activity
May 19	1756-2400					No activity
May 20	1641-2400					No activity
May 22	1608-1803	IIIg	1717.5	1-2	750-550	0.50 seconds duration
		IIIb	1753	2	950-550	0.50 seconds, very fast
	1809-2402					No activity
May 23	1608-2403	IIIb	2125	1-	600-570	0.25 seconds, very fast
May 24	1605-2220					No activity
May 24	2224-2403.5	IIIg	2322.25	1-	700-875	2 reverse, 1 forward
May 25	1604-2138	IIIg	1921	1-	750-540	0.25 seconds duration
	2148-2401	IIIb	2148.25	1-	625-540	Fast, 0.25 seconds duration
May 26	1606.5-1626					No activity
May 28	1607.5-2403					No activity
May 30	1629-1914					No activity
May 30	2043.5-2355					No activity
May 31	1606-2402					No activity

COMMERCE - STANDARDS - BOULDER

COSMIC RAY INDICES

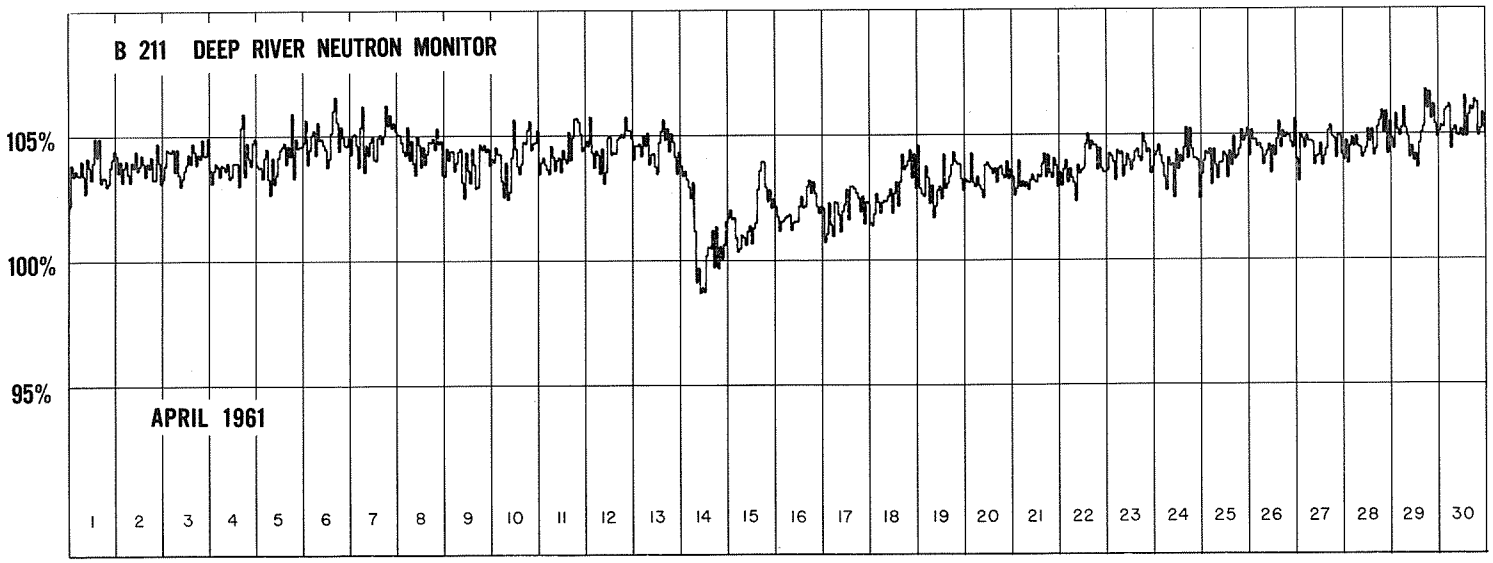
(Climax Neutron Monitor)

APRIL 1961

Apr. 1961	Daily average counts/hr	Apr. 1961	Daily average counts/hr
1	2946.3	16	2915.2
2	2950.8	17	2904.0
3	2969.7	18	2883.7
4	2965.7	19	2945.0
5	2974.9	20	2948.1
6	2994.5	21	2967.2
7	2986.6	22	2988.6
8	2989.9	23	2976.0
9	2972.7	24	2984.2
10	2976.0	25	2998.2
11	2989.8	26	3000.6
12	2995.2	27	2992.0
13	2998.1	28	2994.8
14	2898.9	29	3014.8
15	2936.6	30	3013.5

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)



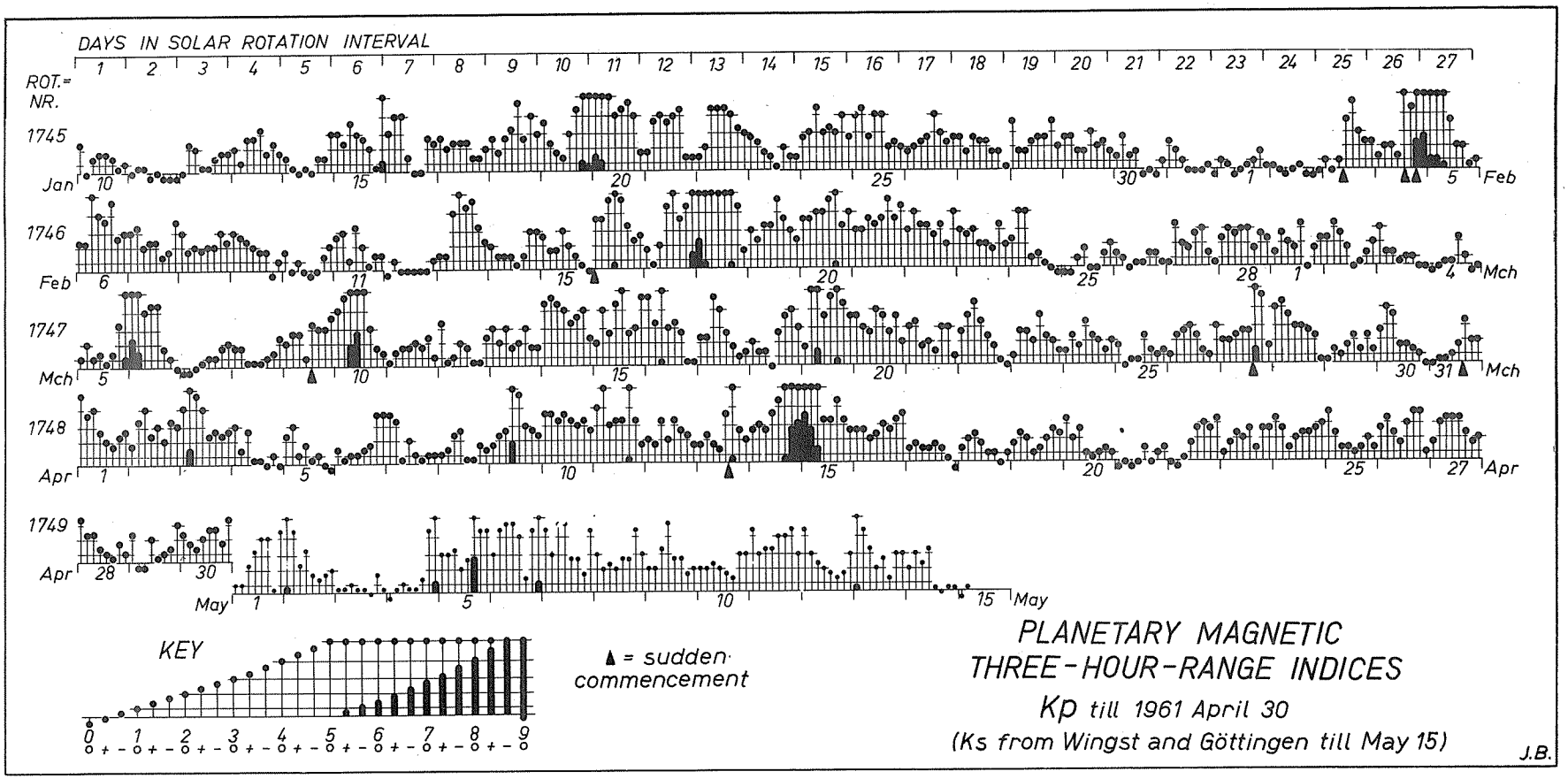
COMMERCE - STANDARDS - BOULDER

GEOMAGNETIC ACTIVITY INDICES

APRIL 1961

Apr. 1961	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	1.0	5- 4- 4o 3-	2o 2- 2+ 3-	24-	17	Five
2	0.9	2- 3+ 4o 2+	3o 2o 3+ 3o	23-	14	Quiet
3	1.2	4o 6o 5- 4o	2+ 3- 2+ 3-	29-	27	
4	0.2	3o 1+ 3- 1-	1- 0+ 1o 0+	10o	6	4
5	0.2	2+ 3o 1o 2-	1- 1o 0+ 0o	10o	5	5
						17
6	0.6	1+ 1- 1o 1o	1+ 2- 4- 4-	14+	9	18
7	0.5	4- 3+ 1- 2o	1o 1- 1o 1o	13+	8	21
8	0.2	1o 1+ 2+ 3-	1- 1- 2- 1+	12-	6	
9	1.2	2- 2+ 3- 6+	5- 3o 3- 2+	26-	24	
10	1.0	4- 4- 3+ 4-	3+ 3o 3+ 3-	27-	17	
11	1.3	4o 5o 3o 3+	3+ 5+ 3+ 2-	29o	26	Five
12	0.6	2o 2- 3+ 2o	3+ 3- 2+ 2-	19o	10	Disturbed
13	0.8	2- 2+ 2- 1+	4- 5+ 3- 2o	21-	15	
14	1.5	3- 3o 3- 4-	4+ 5+ 7o 7+	36o	54	3
15	1.5	8- 7o 6o 3+	3+ 4+ 3+ 3-	38-	61	9
						11
16	0.9	3- 3- 2o 2+	3o 3- 3+ 4-	22+	13	14
17	0.1	1+ 2- 1+ 1+	3- 1+ 1- 0o	9+	4	15
18	0.1	1+ 2o 2+ 2-	1o 1o 0+ 1o	11-	5	
19	0.5	2- 2+ 2o 1o	1+ 2o 3- 2+	15+	7	
20	0.3	3+ 2o 3- 1o	1- 1o 1+ 1o	13o	7	
21	0.0	0o 0+ 0o 0+	1+ 0+ 1o 1+	5-	2	Ten
22	0.6	0+ 0o 1- 2-	3- 3o 3- 3+	14+	8	Quiet
23	0.5	1o 2- 2+ 2o	3- 1+ 3- 3-	16+	8	
24	0.7	3+ 3- 1+ 2o	2+ 2+ 3- 3o	20-	11	4
25	0.4	4- 2+ 1+ 1+	1o 1+ 2o 1+	14+	8	5
						8
26	0.6	3- 3+ 2+ 2-	3o 4- 4- 1o	21+	14	17
27	0.8	2- 3o 3+ 3+	3+ 2+ 2- 2o	21-	12	18
28	0.4	3+ 2+ 2+ 1+	1o 1- 2- 1o	14-	7	19
29	0.3	2+ 0o 0o 2o	1- 1o 1+ 3o	10+	5	20
30	0.6	2+ 2- 1+ 2o	3- 3- 2- 3+	18+	9	21
						28
						29
Mean:	0.65			Mean:	14	

COMMERCE - STANDARDS - BOULDER



COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

APRIL 1961

NORTH ATLANTIC

DATE	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:				WHOLE DAY INDEX	ADVANCE FORECASTS (J-REPORTS) FOR WHOLE DAY; ISSUED IN ADVANCE BY:				GEOMAGNETIC K_{FR}	
APR.1961	00 TO 06	06 TO 12	12 TO 18	18 TO 24	00	06	12	18		1-7 DAYS FINAL J_S	1-7 DAYS SDW J	1-3 DAYS	1-7 DAYS	HALF DAY (1)	DAY (2)
01	6-	5o	5+	6o	6	5	6	5	6-	6	6			(4)	2
02	6-	4+	6o	6o	6	4	5	6	5+	5	5			3	2
03	4+	4-	5+	5+	6	3	6	6	(4+)	5	5			(5)	2
04	5-	3+	6o	6+	4	4	6	6	5-	5	5			2	1
05	6+	5o	6+	7-	6	4	7	7	6o	6	6			2	0
06	7-	6-	7-	6+	6	5	7	7	6+	6	6			0	2
07	6o	5-	6-	6o	5	5	6	6	6-	6	6			3	2
08	6+	4+	6+	7-	6	6	6	7	6-	6	6			2	2
09	7-	5-	6-	6o	6	5	5	5	6-	6	6			3	3
10	5+	4+	6o	6o	5	4	6	6	5+	5	5			3	3
11	5-	4o	6o	6o	5	4	6	6	5o	4	4			(4)	3
12	5+	4o	6o	6+	5	4	6	6	5+	4	4			2	2
13	6-	4+	6-	6-	6	4	6	6	5o	6	6			2	(4)
14	6o	4o	5+	3+	5	4	6	5	(4+)	6	6			3	(5)
15	2-	2-	4-	5o	3	2	4	4	(3-)	5	5			(5)	3
16	5o	4o	5o	6-	3	3	6	5	5-	5	5			3	3
17	6-	4-	6-	7-	5	4	6	6	5o	5	5			1	1
18	6+	5+	6+	6+	6	5	6	7	6o	6	6			2	1
19	6+	5-	6-	6o	6	5	6	7	6-	6	6			2	2
20	6+	5-	6o	7-	5	5	6	6	6o	6	6			2	1
21	7-	5o	6+	7-	6	5	7	7	6+	6	6			0	1
22	7o	6-	6+	7-	6	6	7	7	6+	6	6			1	3
23	7-	5+	6-	6o	7	6	6	6	6o	6	6			2	3
24	6+	5o	6+	6o	6	5	6	6	6o	6	6			2	3
25	6-	4+	6o	6+	6	4	5	5	5+	6	6			2	1
26	5+	5o	6-	6o	5	4	5	6	5+	6	6			3	3
27	6o	4+	5o	6+	6	5	5	5	5+	6	6			3	2
28	6+	5-	6o	6+	6	5	5	6	6-	6	6			2	1
29	6+	5-	6+	6+	6	5	6	6	6o	5	5			1	2
30	7-	5+	6-	6o	6	5	6	6	6o	5	5			2	2

NORTH PACIFIC

NORTH PACIFIC 12-HOURLY QUALITY FIGURES		SHORT-TERM FORECASTS ISSUED AT:		WHOLE DAY INDEX	ADVANCE FORECASTS (J_P REPORTS) FOR WHOLE DAY; ISSUED IN ADVANCE BY				GEOMAGNETIC K_{SI}	
0700 TO 1900	1900 TO 0700	0600	1800		1-7 DAYS FINAL J_{PS}	1-7 DAYS SDW J_P	1-7 DAYS	1-3 DAYS	HALF DAY (1)	DAY (2)
5	6	7	6	6	6	6			(4)	2
6	4	5	6	5	5	5			(4)	3
4	5	4	6	(4)	5	5			(5)	2
4	6	5	6	5	5	5			2	0
5	6	6	7	6	6	6			2	1
5	5	7	6	5	6	6			1	2
5	5	6	5	5	6	6			2	1
6	6	6	5	6	6	6			1	1
5	6	6	5	6	6	6			2	3
5	6	5	6	6	5	5			(4)	3
5	5	4	5	5	5	5			(4)	(4)
5	6	5	6	5	5	5			2	2
5	6	6	6	6	6	6			0	3
4	2	6	4	(4)	6	6			3	(6)
3	3	3	5	(3)	5	5			(6)	3
5	3	4	5	(4)	5	5			2	3
5	5	5	5	5	6	6			1	1
5	4	6	5	5	6	6			2	1
6	4	6	5	5	6	6			2	2
7	6	6	6	6	5	5			2	1
7	5	7	6	7	6	6			0	1
7	5	7	6	7	6	6			1	3
6	5	7	6	6	6	6			2	2
6	5	5	6	5	5	5			2	2
6	5	5	5	6	5	5			2	1
6	6	5	6	6	6	6			2	2
6	6	6	6	6	6	6			3	2
7	5	5	6	6	5	5			2	0
7	6	7	6	7	4	4			1	1
8	5	6	6	7	5	5			1	2

Score: Quiet Periods	P	17	12	17	17		19		19		9	13		13	
	S	10	4	12	12		8		8		13	11		11	
	U	1	0	0	0		0		0		4	0		1	
	F	0	0	0	0		0		0		0	0		1	
Disturbed Periods	P	0	9	1	0		0		0		2	0		0	
	S	1	4	0	0		1		1		1	2		2	
	U	0	0	0	1		1		1		0	3		1	
	F	1	1	0	0		1		1		1	1		1	

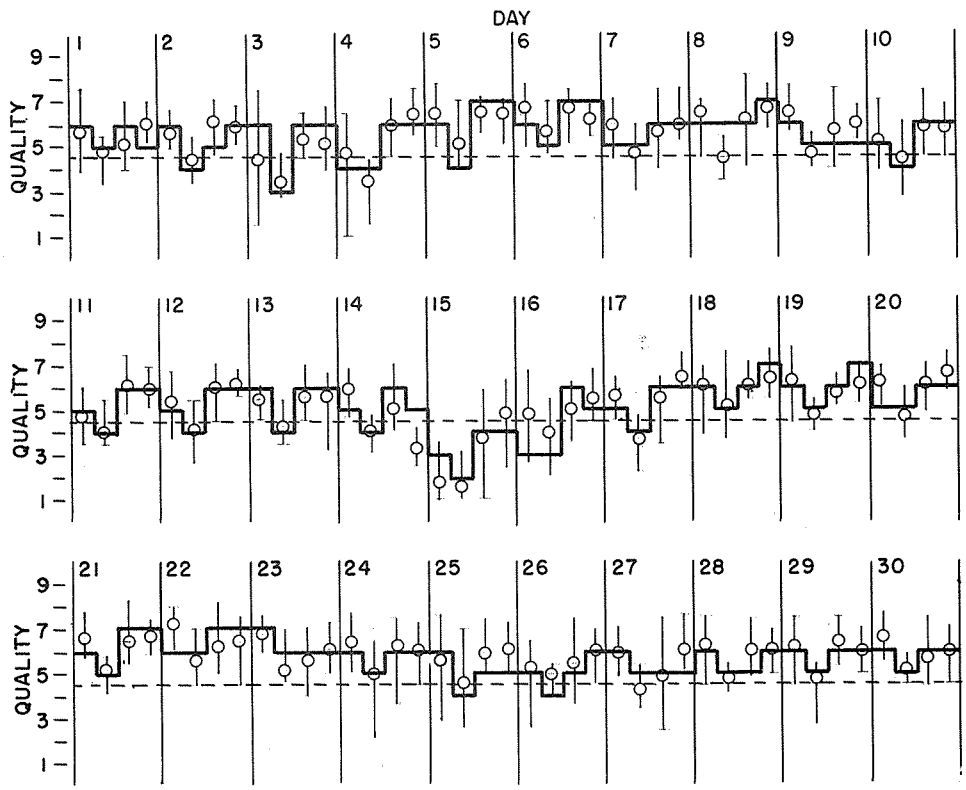
( ) Represent disturbed values.
All times are Universal Time (U.T.)

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

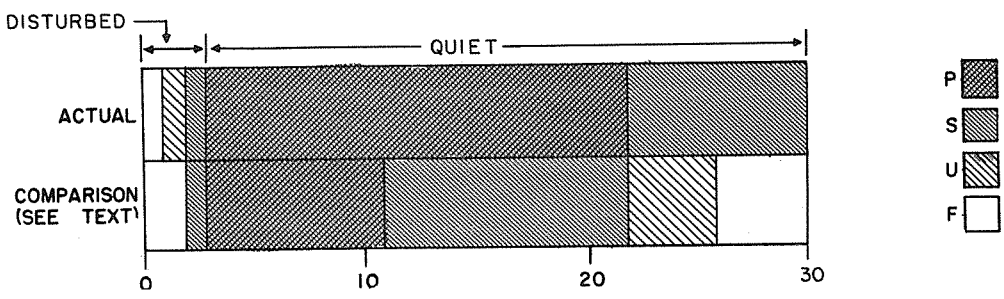
APRIL 1961

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

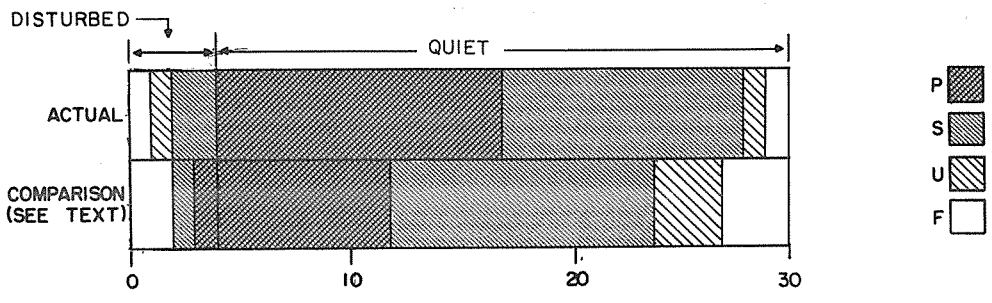


OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE

NORTH ATLANTIC

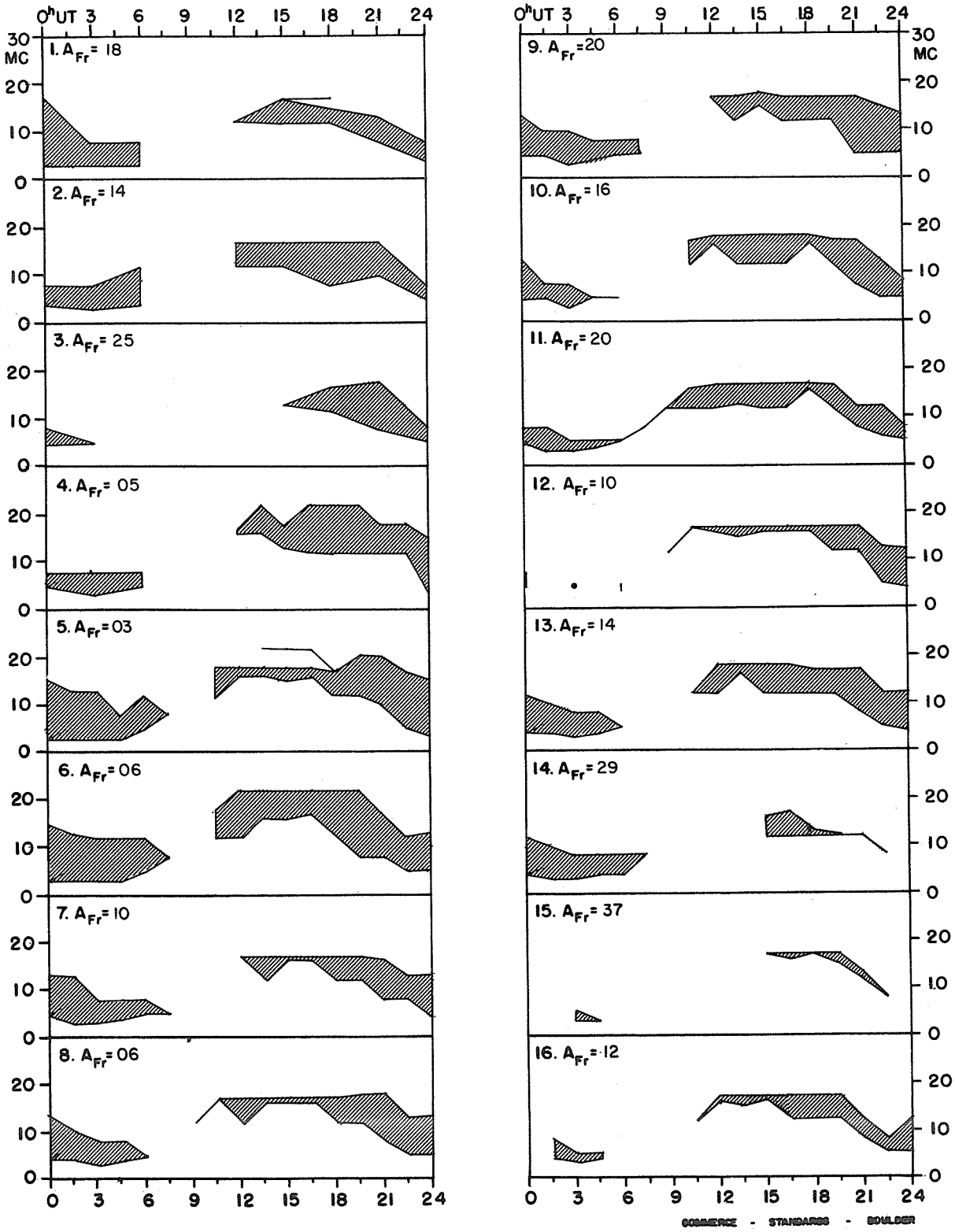


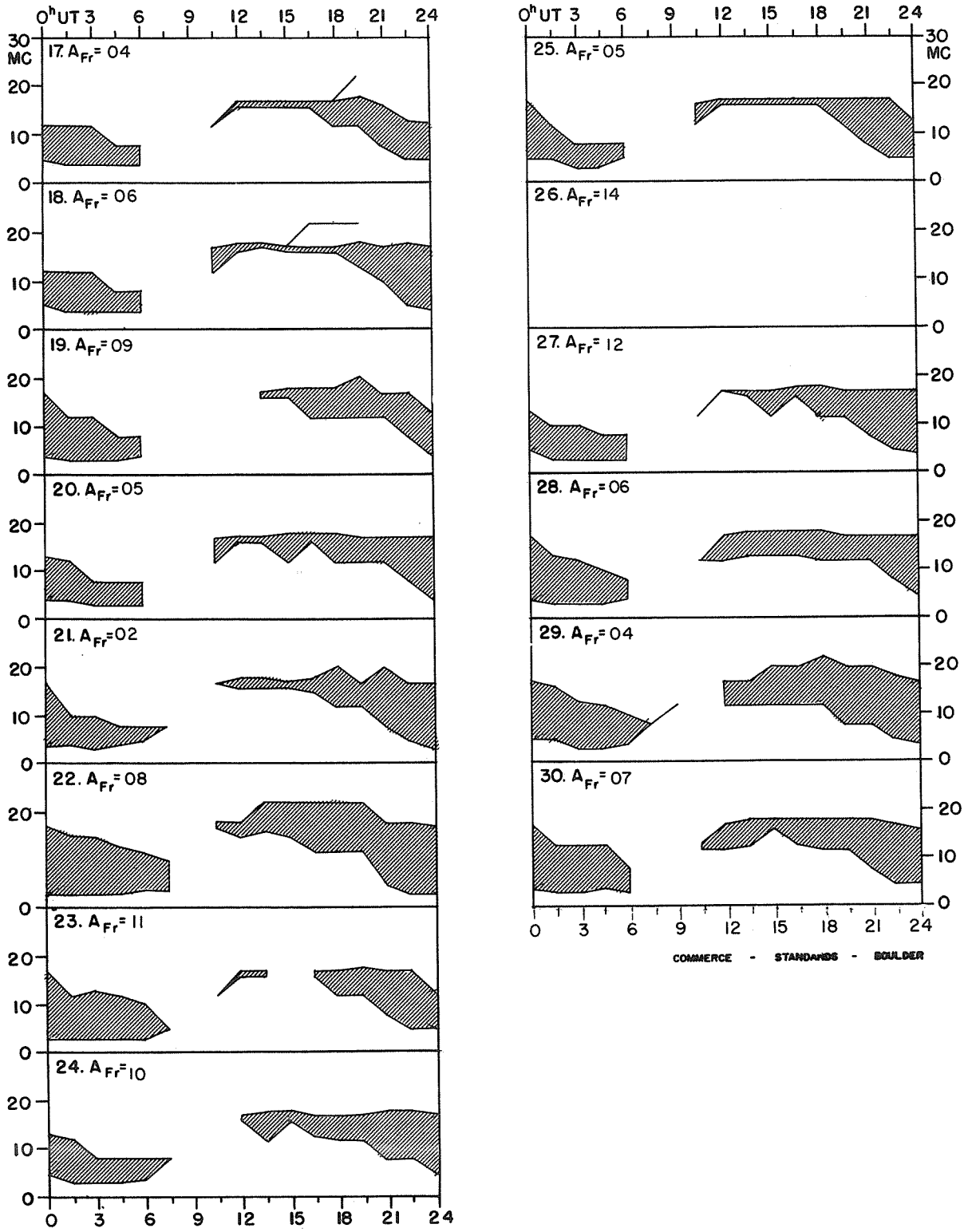
NORTH PACIFIC



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

APRIL 1961




0h UT 3 6 9 12 15 18 21 24
30 MC
17. AFr= 04
18. AFr= 06
19. AFr= 09
20. AFr=05
21. AFr=02
22. AFr= 08
23. AFr= 11
24. AFr=10
25. AFr=05
26. AFr=14
27. AFr= 12
28. AFr=06
29. AFr=04
30. AFr= 07
0 3 6 9 12 15 18 21 24
COMMERCE - STANDARDS - BOULDER

VIII a

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

MAY 1961

Issued Day/Time UT May 1961	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
02/0410	Ft. Belvoir, Magnetic Storm 01/22XXZ*			
06/1600		119		Start (Predicted).
07/1600	Sacramento Peak, Solar Flare 09/1535Z	120		Finish (Predicted).
09/1640				
25/1600		121	Magnetic Storm 24/23XXZ	

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*Magnetic activity later proved to be bay-type, not storm-type.