PART B

SOLAR - GEOPHYSICAL DATA

ISSUED

JANUARY 1962

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

CRPL-F 209
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
31 Jan. 1962

SOLAR - GEOPHYSICAL DATA

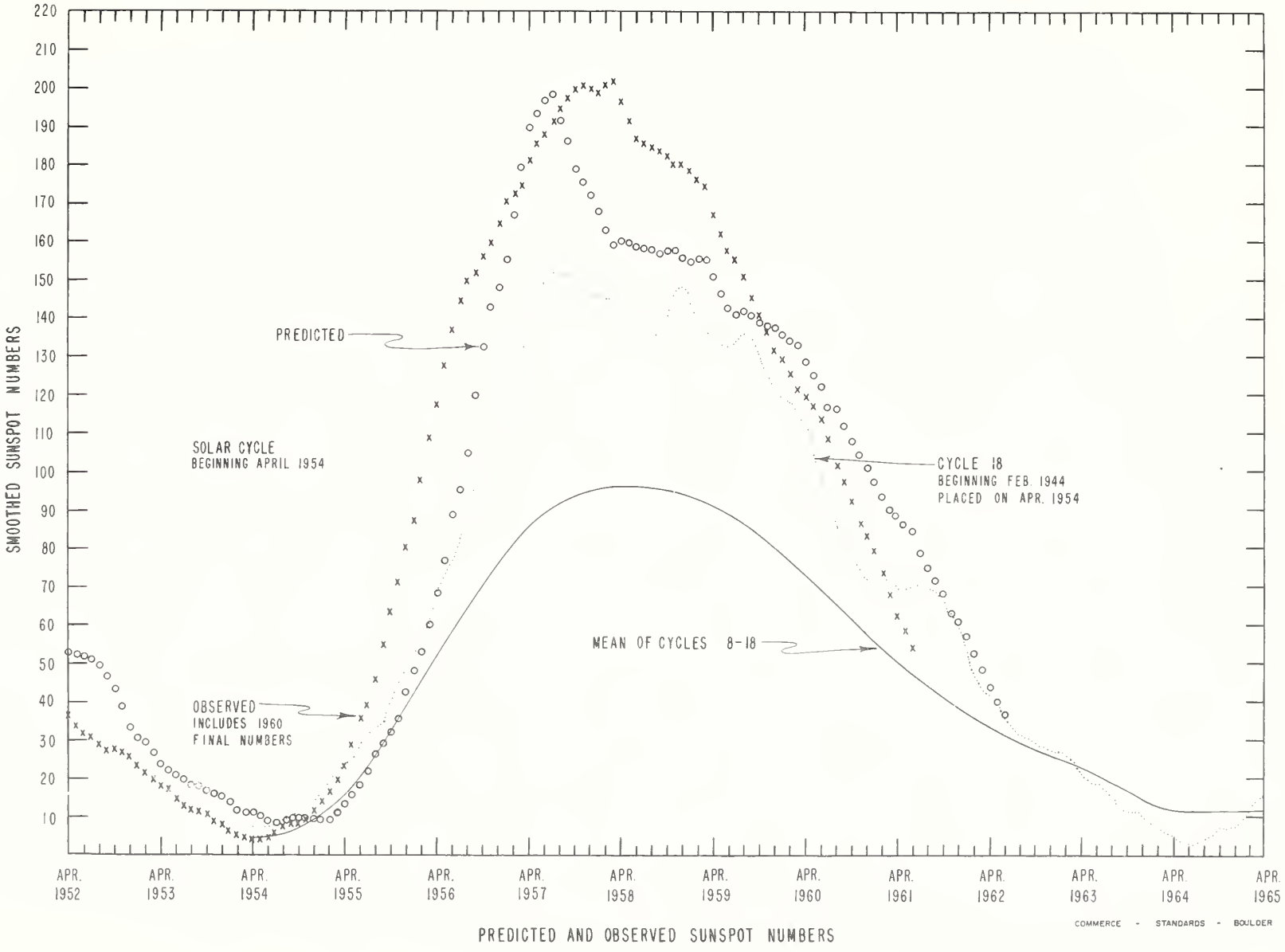
CONTENTS

The descriptive text was republished November 1961.

Nov. 1961	American Relative Sunspot Numbers $R_{A'}$
1	0
2	0
3	0
4	11
5	17
6	26
7	49
8	58
9	68
10	49
11	50
12	47
13	52
14	40
15	32
16	15
17	13
18	13
19	12
20	9
21	16
22	20
23	8
24	23
25	21
26	18
27	30
28	29
29	43
30	48
Mean:	27.2

Dec. 1961	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	76	105
2	75	108
3	74	111
4	60	105
5	54	101
6	22	101
7	29	94
8	30	96
9	27	92
10	13	87
11	0	82
12	0	78
13	0	82
14	10	81
15	8	81
16	7	81
17	7	79
18	7	81
19	7	82
20	21	88
21	21	90
22	47	99
23	56	101
24	77	104
25	94	-
26	80	102
27	70	103
28	74	98
29	55	98
30	38	94
31	30	93
Mean:	37.7	93.2

COMMERCE - STANDARDS - BOULDER


SMOOTHED SUNSPOT NUMBERS
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
PREDICTED
SOLAR CYCLE
BEGINNING APRIL 1954
CYCLE 18
BEGINNING FEB. 1944
PLACED ON APR. 1954
MEAN OF CYCLES 8-18
OBSERVED
INCLUDES 1960
FINAL NUMBERS
APR. 1952
APR. 1953
APR. 1954
APR. 1955
APR. 1956
APR. 1957
APR. 1958
APR. 1959
APR. 1960
APR. 1961
APR. 1962
APR. 1963
APR. 1964
APR. 1965
COMMERCE - STANDARDS - BOULDER
PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

DECEMBER 1961

CMP Dec. 1961	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values		History, Age		CMP Values		History
				Area	Int.			Area	Count	
01.7	N06	6281	6265	2800	3	ℓ — ℓ	3			
02.9	S11	6282	New	1400	3.5	ℓ — ℓ	1			
03.3	N12	6284	New	1000	3	ℓ — ℓ	1			
05.1	N15	6285	New	2800	3	ℓ — ℓ	1	410	23	ℓ — ℓ
05.1	S12	6286	6266	900	2	ℓ — ℓ	4			
07.7	N21	6287	6270	1300	2	ℓ — ℓ	2			
09.9	N21	6288	6268	900	2	ℓ — ℓ	3			
11.3	N20	6289	6268	800	2.5	ℓ — ℓ	3			
11.6	N08	6290	6271	1000	2	ℓ ⟋ ℓ	3			
13.3	S04	6294	New	300	2.5	b ⟋ ℓ	1			
14.0	N07	6291	6273	1100	3	ℓ — ℓ	4			
17.2	N16	6297	6274	1000	2	ℓ — ℓ	3			
18.3	S09	6295	New	(900)	(3)	ℓ ⟍ d	1			
21.2	N15	6298	New	1000	3	ℓ — ℓ	1			
21.4	N02	6296	New	1300	3	ℓ — ℓ	1			
23.4	N15	6299	6278	1600	3	ℓ — ℓ	4	110	2	ℓ ⟋ ℓ
26.6	S03	6300	New	1000	2.5	ℓ — ℓ	1	510	4	ℓ — ℓ
27.4	S04	6301	New	2100	3.5	ℓ — ℓ	1			
28.3	N09	6302	6281	2800	3	ℓ — ℓ	4			
28.4	N21	6303	New	1700	3.5	ℓ — ℓ	1	390	6	ℓ — ℓ
30.4	S10	6304	6282	1400	2.5	ℓ ⟋ ℓ	2			
30.8	N10	6305	6284	700	2	ℓ — ℓ	2			

COMMERCE - STANDARDS - BOULDER

PROVISIONAL CORONAL LINE EMISSION INDICES

DECEMBER 1961

CMP Dec 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	110a	168a	14a	25a	48a	112a	5a	5a	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	43a	67a	20a	30a	41a	76a	26a	40a	x	x	x	x	x	x	x	x
5	34	48	10a	14a	21	31	7a	10a	37	56	19	40	55	95	23	36
6	x	x	x	x	x	x	x	x	14	20	20	28	35	59	21	28
7	x	x	x	x	x	x	x	x	11	17	12	18	40	76	9	12
8	31a	56a	15a	25a	7a	8a	10a	15a	4	6	x	x	38	56	x	x
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	8	12	21	35	26	40	18	37
11	72	118	8a	12a	16	28	8a	10a	x	x	x	x	x	x	x	x
12	38a	56a	21a	50a	4a	8a	16a	25a	x	x	x	x	x	x	x	x
13	56	123	34a	88a	13	20	15a	20a	11	22	33	47	32	78	49	115
14	40	59	29	60	10	11	16	20	17	26	17	22	29	60	11	15
15	x	x	x	x	x	x	x	x	15	17	10a	14a	29	34	15a	32a
16	x	x	x	x	x	x	x	x	19	22	12a	26a	23	28	3a	4a
17	x	x	x	x	x	x	x	x	21	42	18a	28a	21	31	4a	10a
18	x	x	x	x	x	x	x	x	14	20	24a	28a	24	28	5a	10a
19	42	53	16	26	16	33	33	56	14	26	x	x	15	20	x	x
20	37	39	59	120	11	25	22	26	47	140	x	x	22	39	x	x
21	41	53	25	44	16	45	15	20	18	40	15	30	23	49	16	30
22	28	42	x	x	16	28	x	x	13	24	15	22	30	56	17	45
23	x	x	x	x	x	x	x	x	13	20	11	12	27	52	11	20
24	25	40	33	55	8	14	24	30	30	45	8	12	30	45	5	6
25	x	x	x	x	x	x	x	x	x	x	25a	40a	x	x	7a	14a
26	x	x	x	x	x	x	x	x	x	x	18a	28a	x	x	18a	25a
27	122	200	42	65	99	165	43	60	x	x	24	32	x	x	42	78
28	x	x	x	x	x	x	x	x	14	28	4	5	22	38	7	15
29	62	81	16	28	52	81	14	32	x	x	x	x	x	x	x	x
30	71	115	27a	44a	45	84	13a	36a	x	x	x	x	x	x	x	x
31	70	112	20a	40a	34	59	15a	22a	x	x	x	x	x	x	x	x

COMMERCE - STANDARDS - BOULDER

x = no observations

a = index computed from low weight data

* = yellow line observed

SOLAR FLARES

DECEMBER 1961

OBSERVATORY	DATE DEC 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 Ha	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
CLIMAX	02	1920	1942 D	1925	N12	W32	6280	22 D	1			2.40	2.70			
SAC PEAK	02	1920	1950	1928	N12	W30	6280	30	1	2		3.18	3.30		30	
SAC PEAK	02	2136	2214 D	2150 U	N06	W20	6281	38 D	1	2		3.47	3.42		20	
CAPRI S	03	0916 E	0947 D		N13	W37	6280	31 D	1	3	0927	1.80	2.30			
ONDREJOV	03	0917	0950	0923	N12	W37	6280	33	1	3	0923			2.50		
SAC PEAK	03	1447 E	1514 U	1447 D	N11	W42	6280	27 D	1	2		2.17	2.76		23	
CLIMAX	03	2014	2051	2020	N15	E15	6285	37	1			4.50	4.50			
LOCKHEED	03	2040 E	2153 E	2045 U	N14	E14	6285	73 D	1	1	2045	2.50	2.50		20	
CLIMAX	04	1735	1820	1742	N15	E02	6285	45	1			2.10	2.10			
MCMATH	05	1949 E	2000 D		S09	W40	6282	11 D	1	1	1955		2.00			
SAC PEAK	10	1434	1450	1444	N09	W90	6284	16	1+	3		1.73			28	
SAC PEAK	10	1855 U	1916	1859	N07	E62	6291	21 U	1	3		1.96	2.93		18	
LOCKHEED	16	1714	1730	1719	N14	E90	6299	16	1	2	1719	.50	2.50		20	
LOCKHEED	16	1739	1752	1744	N14	E90	6299	13	1	1	1744	.40	2.00		10	
LOCKHEED	16	1945	2016	1955	N14	E90	6299	31	1	2	1955	.90	4.50		20	
LOCKHEED	20	1927	1955	1934	S07	E90	6301	28	1	2	1934	.70	3.50		10	
WENDEL	22	0821	0858		S05	E59	6300	37	1				3.00			
WENDEL	22	1012 E	1102 D		S03	E65	6301	50 D	1+				5.00			
KODAIKNL	22	1015	1019 D	1016	S03	E65	6301	4 D	1	1		1.30	3.20			
WENDEL	22	1017 E	1043 D		S05	E57	6300	26 D	1				4.00			
MCMATH	22	1501	1536 D	1523	S05	E60	6300	35 D	1	2	1523		2.30			
SAC PEAK	22	1514 E	1612 U	1524 U	S06	E60	6300	58 D	1	2		2.17	3.26		22	
LOCKHEED	23	1856	2350	1920	S06	E42	6300	294	1	3	2005	3.20	3.70		20	
LOCKHEED	23	1856	2350	2005	S06	E42										
SAC PEAK	23	1858	2204 D	1958	S08	E44	6300	186 D	3	3		10.93	12.66		32	
LOCKHEED	23	2100	2140	2120	S07	E90	6304	40	1	2	2120	.90	4.50		10	
SAC PEAK	23	2138 U	2202 D	2156	N12	W13	6299	24 D	1	3		2.17	2.15		24	
LOCKHEED	23	2209	2225	2214	S12	E90	6304	16	1	2	2214	.80	4.00		10	
LOCKHEED	23	2320	2340	2330	S13	E90	6304	20	1	2	2330	1.00	5.00		10	
LOCKHEED	23	2353	0010	2358	S13	E90	6304	17	1	1	2358	.50	2.50		10	
WENDEL	24	1218 E	1253 D		S02	E31	6300	35 D	1+				6.00			
ONDREJOV	24	1226 E	1234 D		N01	E42	6301	8 D	1+	3	1227			3.30		
KODAIKNL	25	0413	0420	0417	N21	E42	6303	7	1	2	0417	2.10	3.10	1.68	114	
ONDREJOV	25	1246	1312	1252	N22	E35	6303	26	1	3	1252			2.40		
LOCKHEED	25	2007	2150	2055	S06	E17	6300	103	2	2	2055	5.40	5.30		20	
SAC PEAK	25	2028	2140	2054	S07	E14	6300	72	2	3		7.07	6.95		28	
SAC PEAK	25	2146	2204 D	2200	N13	W40	6299	18 D	1	3		2.89	3.32		30	
LOCKHEED	25	2148	2300	2158	N13	W39	6299	72	1	2	2158	3.20	3.70		20	
KODAIKNL	26	0343	0352	0343	N14	W45	6299	9	1	2	0343	2.80	4.10	1.68	114	
SAC PEAK	27	1656	1838	1703	S07	W12	6300	102	2	3		6.56	6.44		25	

SOLAR FLARES

DECEMBER 1961

OBSERVATORY	DATE DEC 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	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Ha	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
↳ LOCKHEED	27	1658	1750	1705	S07	W13	6300	52	1	1	1705	4.10	4.00		30	
⌐ LOCKHEED	27	2127	2228	2155	N12	E52	6306	61	1	2	2208	1.50	2.00		20	
⌙ LOCKHEED	27	2127	2228	2208	N12	E52										
WENDEL	28	0847	0905		N20	E30	6305	18	1				3.00			
WENDEL	28	0952	1010 D		S04	W28	6300	18 D	1				3.00			
SAC PEAK	28	1710	1724	1716	N13	E02	6302	14	1	3		2.17	2.12		22	
SAC PEAK	28	1822	1842	1830	N22	W00	6303	20	1	3		3.36	3.36		20	
WENDEL	29	1207 E	1215 D		S05	W43	6300	8 D	1				3.00			

COMMERCE - STANDARDS - BOULDER

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

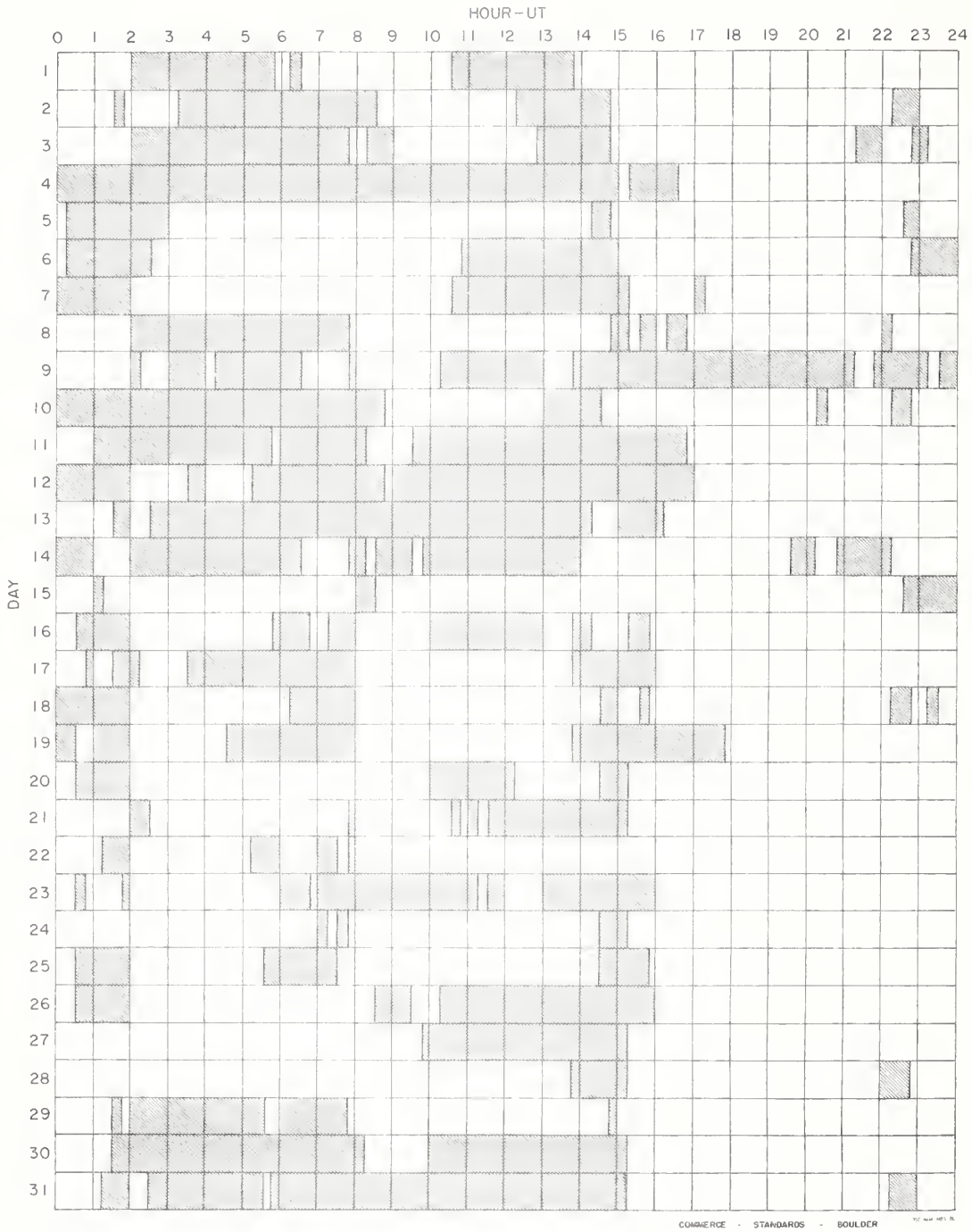
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

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

DECEMBER 1961



Stations Include:

Arcetri	Honolulu	Lockheed	Ondrejov	Sacramento Peak
Climax	Kodaikanal	McMath-Hulbert	Herstmonceux	Wendelstein

SUBFLARES

Noted as follows: Date - Universal Time - Coordinates

NOVEMBER 1961

	LOCKHEED	03	2129	S07	E0D
	SAC PEAK	04	160D	N11	W12
	MCMATH	04	1601	N09	W12
	MCMATH	04	1759	N09	W15
	HONOLULU	04	1800 E	S06	E38
	MCMATH	04	1922	N09	W16
	HONOLULU	04	1930 E	N01	W14
	MEUDON	05	1308	N10	W23
	MCMATH	05	1325 E	N09	W26
	MCMATH	05	1505	N09	W27
	MCMATH	05	1610	N09	W29
	MCMATH	05	1655	N09	W29
	MCMATH	05	2000 E	N09	W29
	MCMATH	07	1845	N05	W40
	LOCKHEED	07	2040 D	N12	W56
	LOCKHEED	07	2150	N12	W56
	LOCKHEED	07	2327	N12	W56
	HONOLULU	08	2138	N24	W30
	LOCKHEED	08	2224 U	N13	W18
	LOCKHEED	08	2357	N23	W33
	HONOLULU	09	0000 E	N23	W32
	HONOLULU	09	0126	N22	W33
	CAPRI S	09	1213 E	N19	E11
	MCMATH	09	1311	N10	W82
	MCMATH	09	1321	N18	E09
*	MCMATH	09	1334	N10	W85
	LOCKHEED	09	1702	N12	W85
	MCMATH	09	1703	N11	W88
*	SAC PEAK	10	1454	N10	W90
	MCMATH	10	1525	N18	W05
	SAC PEAK	10	1526	N19	W06
	SAC PEAK	10	1758	N17	W08
	LOCKHEED	10	1758	N09	W90
*	LOCKHEED	10	1850	N09	E62
	HONOLULU	10	1926	N19	W09
	SAC PEAK	10	22D2	N18	W10
	KODAIKNL	11	0235	N17	W13
	WENDEL	11	0754 E	N18	W14
	WENDEL	11	0837 E	N18	W14
	WENDEL	11	1157 E	N18	W15
*	CAPRI S	11	1230 E	N04	E49
	WENDEL	11	1307 E	N17	W13
	MCMATH	11	1346	N18	W13
	WENDEL	11	1347 E	N17	W15
	CAPRI S	11	1349 E	N14	W11
	MCMATH	21	1415	N09	W61
	UCCLE	21	1416	N11	W58
	UCCLE	21	1509	N10	W60
	MCMATH	21	1511	N09	W62
	HUANCAYO	21	1512 E	N10	W59
	LOCKHEED	21	1818	N19	W67
	LOCKHEED	21	1856	N11	E57
	ONDREJOV	22	0931 E	N11	W70
	WENDEL	22	1029 E	N13	W70
*	UCCLE	22	1031	N07	W70
*	CAPRI S	22	1140 E	N07	W73
	UCCLE	22	1306	N07	W71
	SAC PEAK	22	1642	N12	E41
	SAC PEAK	22	1952	N08	W80
	LOCKHEED	22	1952	N08	W80
	LOCKHEED	22	2158	N05	E50
	LOCKHEED	22	2217	N09	W80
	CLIMAX	23	1745	N05	E90
	LOCKHEED	23	1746	N06	E90
	LOCKHEED	23	1815	N06	E90
*	CLIMAX	23	1930	N06	E90
	LOCKHEED	23	2010	N06	E90
	LOCKHEED	23	2010	N06	E90
	LOCKHEED	23	2010	N06	E90
	LOCKHEED	23	2D42	N07	E04
	LOCKHEED	23	2046	N05	E05
	MCMATH	24	1853 E	N07	E80
	MCMATH	24	1909	N07	E23
	WENDEL	26	0945 E	N06	E03
	WENDEL	26	1002 E	N06	E03
	MCMATH	26	1536	N09	E63
	WENDEL	28	1121 E	N09	E22
	LOCKHEED	28	1905	N15	E90
	UCCLE	29	1028	N11	E53
	UCCLE	29	1100	N15	E76
	UCCLE	29	1103	S10	E50
	UCCLE	29	1107	N06	W40
	HONOLULU	29	2010 E	N10	E13
	HONOLULU	30	0038	N09	E12
	HONOLULU	30	0042	N08	E07
	CLIMAX	30	1816	N12	E02
	HUANCAYO	30	1817 E	N09	W00
	HONOLULU	30	1820 E	N09	E02
	SAC PEAK	30	1826 E	N11	E02
	HONOLULU	30	2340 E	N10	W08
	WENDEL	11	1428 E	N18	W19
	MCMATH	11	1526	N18	W18
	SAC PEAK	11	1540	N18	W14
	MCMATH	11	1542	N18	W15
	CLIMAX	13	1626	N17	W35
	MCMATH	13	1721	N18	W34
	CLIMAX	13	1721	N17	W35
	HUANCAYO	13	1723	N15	W29
	HONOLULU	13	2034 E	N19	W25
	CLIMAX	13	2252	N17	W38
	LOCKHEED	15	1921	N20	W8D
	LOCKHEED	15	1928	N18	W77
	SAC PEAK	16	1536	N20	W87
	SAC PEAK	17	1456	N08	W08
	MEUDON	17	1457	N13	W02
	WENDEL	19	1145 E	N11	W62
	LOCKHEED	19	1615 E	N10	W70
	LOCKHEED	19	2041	N10	W70
	WENDEL	20	0842 E	N08	W71
	UCCLE	20	0854	N09	W44
	UCCLE	20	0933	N09	W44
	WENDEL	20	1222 E	N09	W44
	WENDEL	20	1235 E	N07	W75
*	MCMATH	20	1318 E	N08	W80
	UCCLE	20	1354	N10	W78
	UCCLE	20	1402	N07	W78
	SAC PEAK	20	1630	N11	W80
	MCMATH	20	1803 E	N08	W50
	KODAIKNL	21	0410	N06	W55
*	WENDEL	21	0733 E	N09	W54
	UCCLE	21	0919	N10	W55
	UCCLE	21	0958	N10	W56
	UCCLE	21	1013	N10	W56
	UCCLE	21	1039	N10	W56
	UCCLE	21	1140	N08	W56
	WENDEL	21	1152 E	N09	W53
	WENDEL	21	12D1 E	N09	W53
	UCCLE	21	1209	N11	W54
	WENDEL	21	1215 E	N10	W51
	UCCLE	21	1301	N10	W57
*	UCCLE	21	1325	N11	W57
*	MCMATH	21	1325 E	N08	W61
	UCCLE	21	1349	N11	W58
	MCMATH	21	1349	N09	W60
	UCCLE	21	1358	N10	W60

COMMERCE - STANDARDS - BOULDER

*Rated as flare of importance ≥ 1 by other observatories (see CRPL-F 208 Part B for December 1961).

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

NOVEMBER 1961

NOVEMBER 1961	UNIVERSAL TIME START	END	MAX	SWF TYPE IMP	IMPORTANCE ABS	SCNA	SEA	SPA	BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
01	2031	2152		SL 2						5	BE FM HU MC PR	+
01	2035	2215	2100		50	1+				3	RE MC	
* 05	1339	1528		S 3+						5	BE FM MC PR	
06	1210	1230	1227						1	1	RE	+
06	1232	1252	1247						2	1	RE	+
06	1307	1314							1	1	RE (Group)	+
07	2018	2130	2037					50			BO+	
07	2027	2130	2041		83	2				3	RE MC	
07	2034						3			1	MC	
08	1250	1450	1317		43	2-				1	RE	
10	1432	1730	1445					60			BO	
10	1433					1+				3	RE MC	
* 10	1435		1436				2			3	A5 A3	1434
10	1436	1534		SL 2+						5	BE BO FM HU MC NE PR	
10	1445	1516							2	1	RE (Group)	
11	0327	0448		SL 3-						1	OK	+
* 16	1537	1630		SL 1+						4	HU MC PR	1602
19	0026	0028							1	1	HA	+
22	0237	0300		SL 1-						1	OK	0239
22	1850	2000	1916					40			BO+	
22	2015	2045	2018		25	1				5	HA BO MC	2012
22	2016	2115	2025				1+			5	BO A1 A3 A5 A9HA MC	

COMMERCE - STANDARDS - BOULDER

*Sudden Enhancement of Signal from 18 kc (Panama Canal Zone) observed by A5.
+No known flare patrol at time of event.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

DECEMBER 1961

OTTAWA

2800 MC

Dec. 1961	TYPE	START UT	DURATION HRS:MINS	MAXIMUM			REMARKS
				TIME UT MAX	PEAK FLUX	NEAR FLUX	
1	2 Simple 2	1817	1.5	1817.5	8	4	
	4 Post Increase		23.5		2	1.5	
2	2 Simple 2 f	1920.5	11.5	1924	26	13	
	4 Post Increase		45		6	3.5	
3	2 Simple 2 f	1443.7	4.3	1446	8	5	
	4 Post Increase		1 05		4	2.5	
3	3 Simple 3	1809	57	1825	4	2	
7	7 Period of Irreg. Activity	1838.5	9.5	1841	5	2.5	
23	- Record Incomplete	1900	> 1 15	Indet.	13*		*Peak during this period.
27	3 Simple 3	1657	1 03	1702	5	1.7	
28	3 Simple 3	1822	41	1832	3	1.7	

COMMERCE - STANDARDS - BOULDER

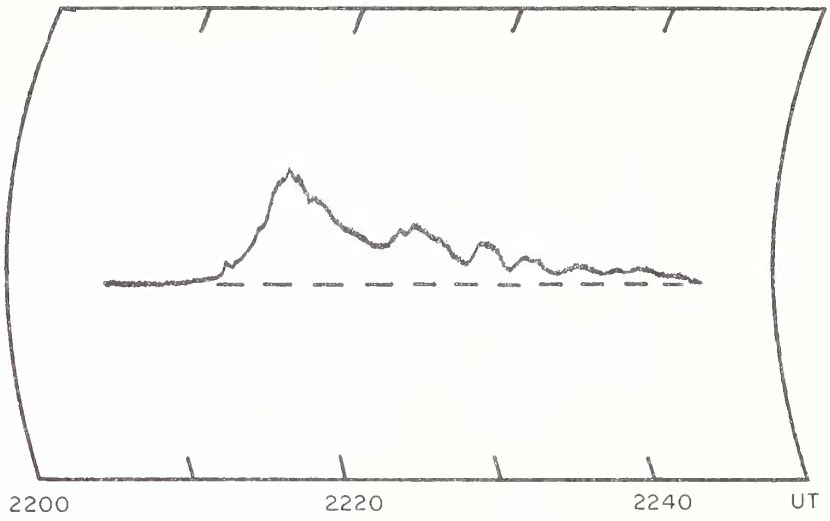
HOURS OF OBSERVATION: OCTOBER, NOVEMBER, DECEMBER 1961

OBSERVING PERIOD:

October	12:00 UT - 22:00 UT (approx)
November	12:30 UT - 21:20 UT (approx)
December	13:15 UT - 21:00 UT (approx)

Interference obscured portion of the records on 42 days during this quarter.

SEPTEMBER 28, 1961
2800 MC/S SOLAR NOISE BURST
OTTAWA, CANADA



Time of start	22^h11^m U.T.
Time of maximum	22^h18^m U.T.
Duration	30^m
Peak flux	800×10^{-22} watts/m^2 /cps

NOTE:

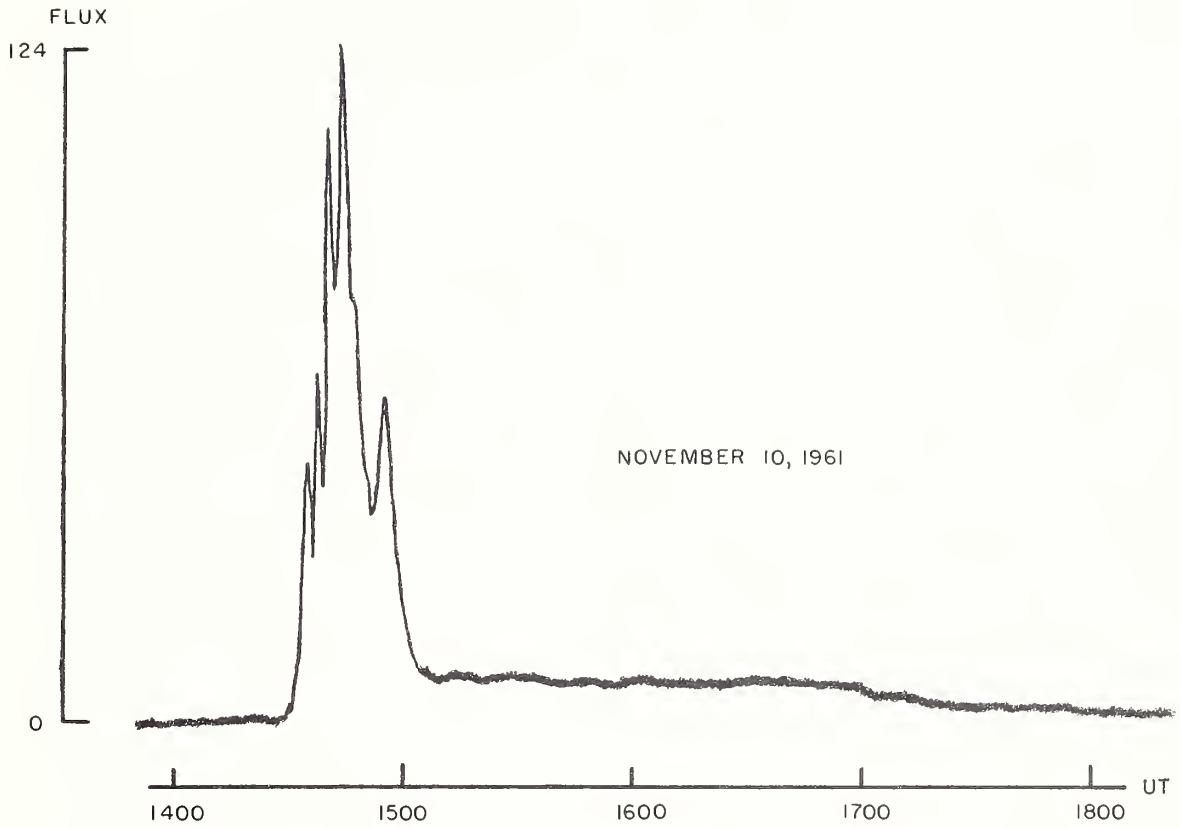
a. Time of maximum was taken from the low gain channel shown above. Time of start was taken from a slow speed, high gain channel. Error in both quoted times could be as large as one minute.

b. Peak flux was estimated from low gain channel record shown above, and could be in error by as much as 15%.

c. The portion of the above record from 2221 to 2230 U.T. has been reconstructed from the logarithmic record of the burst obtained at another station, as this portion of the original record was obscured by local interference.

COMMERCE - STANDARDS - BOULDER

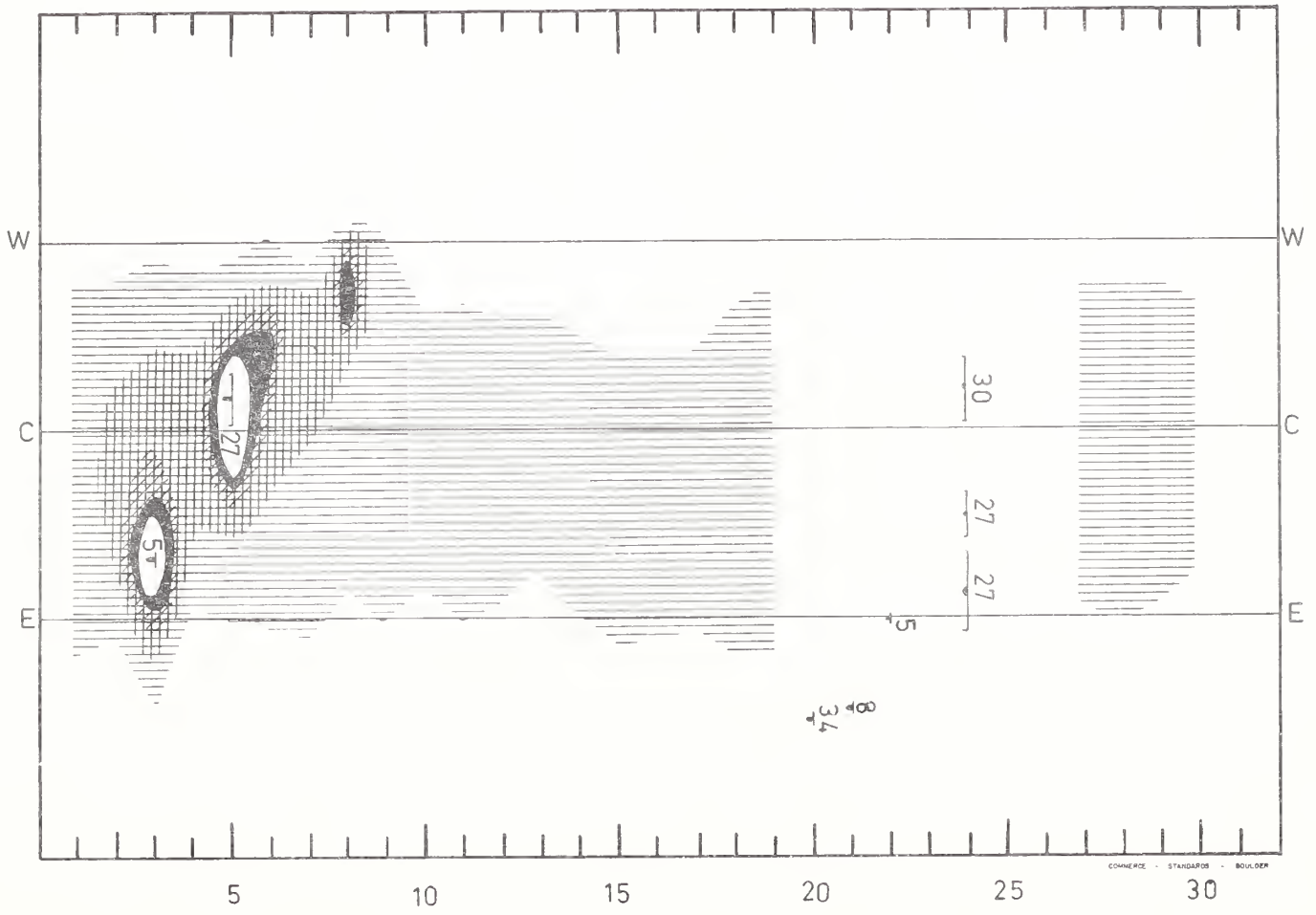
SELECTED 2800 MC/S SOLAR NOISE BURST
OTTAWA, CANADA



COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

Nançay DECEMBER 1961 169 Mc



SOLAR RADIO EMISSION

DECEMBER 1961

BOULDER 108 Mc.

Dec. 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
2	8	1921.6	1922.3	5.8	3
2	3	2112.0	2113.3	1.3	2
3	6	1409		491 D	2
4	4	1824.7	1825.1	1.1	3
4	3	1922.8	1923.4	2.7	2
22	1	1538		474	2
23	7	2013	2040	185	2
24	7	1433		270	2

COMMERCE - STANDARDS - BOULDER

No record December 29-31, 1961.

NOMINAL TIMES OF OBSERVATION

DECEMBER 1961

BOULDER 108 Mc.

Dec. 1961	U.T.	Dec. 1961	U.T.
1	1407-2320	16	1420-2320
2	1408-2320	17	1421-2320
3	1409-2319	18	1422-2321
4	1410-2319	19	1422-2321
5	1411-2319	20	1423-2321
6	1412-2319	21	1423-2322
7	1413-2319	22	1423-2322
8	1414-2319	23	1424-2323
9	1415-2319	24	1425-2323
10	1416-2319	25	1425-2324
11	1417-2319	26	1425-2325
12	1417-2319	27	1426-2325
13	1418-2320	28	1426-2326
14	1419-2320		
15	1420-2320		

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

OCTOBER 1961

Fort Davis **25-580, 2100-3900 Mc.**

1961	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Oct. 1	1317-2400					
Oct. 2	1317-2400					
Oct. 3	1317-2400					
Oct. 4	1317-2400					
Oct. 5	1316-2400					
Oct. 6	1316-2400					
Oct. 7	1316-2400					
Oct. 8	1317-2400					
Oct. 9	1316-2400					
Oct.10	1331-2400					
Oct.11	1331-2400	IIIG	2304-2306	3	420-50	Weak I throughout day
Oct.12	1332-2400					Weak I throughout day
Oct.13	1332-2400					Weak I throughout day
Oct.14	1331-2400	I	~ 2240-2355	1	300-100	Weak I throughout day
Oct.15	1331-2400					Weak I throughout day
Oct.16	1331-2400					
Oct.17	1332-2400					
Oct.18	1332-2400					
Oct.19	1331-2400					Weak I throughout day
Oct.20	1332-2355					Weak I throughout day
Oct.21	1331-2355					
Oct.22	1332-2355					
Oct.23	1332-2350					
Oct.24	1331-2350					
Oct.25	1331-2350					
Oct.26	1422-2350					
Oct.27	1337-2345					
Oct.28	1337-2345	IIIG	2125-2126	2	350-25	
Oct.29	1337-2345					
Oct.30	1337-2345					
Oct.31	1337-2345					

COMMERCE - STANDARDS - BOULDER

Fort Davis

25-580 Mc. IVg

1961	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC.	REMARKS
		TYPE	TIMES U.T	INT		
Nov. 1	1337-2345					
Nov. 2	1337-2245					
Nov. 3	1337-2340					
Nov. 4	1337-2340					
Nov. 5	1352-2340					
Nov. 6	1351-2340					
Nov. 7	1352-2340					
Nov. 8	1351-2340	IIIG	1430-1431	2	260-25	
Nov. 9	1351-2335					
Nov.10	1351-2229	IIIG	1432-1437	3	220-45	
	2235-2340	II	1433-1437	3	150-<50	
			1438.5-1502	3	150-25	
Nov.11	1350-2340	IIIG	1350-1352	3	580-25	
		IIIG	1542-1545	3+	580-25	
Nov.12	1351-2340	IIIG	2309-2312	2	350-50	
Nov.13	1351-2340					
Nov.14	1351-2340					Many weak III 100-25 Mc throughout day
Nov.15	1351-2340					
Nov.16	1350-2300					
Nov.17	1351-2335					
Nov.18	1351-2335					
Nov.19	1351-2335	IIIG	1610-1613	3	200-25	
Nov.20	1351-2335	IIIG	2132-2133	1	140-50	
Nov.21	1351-2335					
Nov.22	1351-2335					
Nov.23	1351-2335					
Nov.24	1351-2335					
Nov.25	1405-2257					
	2259-2335					
Nov.26	1403-2335					
Nov.27	1405-2335					
Nov.28	1404-2235					
	2245-2335					
Nov.29	1409-2335					
Nov.30	1408-2335					
Dec. 1	1408-2335					
Dec. 2	1408-2340	IIIG	1922-1925	3+	400-25	
		IIIG	1926-1929	3	240-25	
		IIIG	2112-2113	2	580-25	
Dec. 3	1408-2340	IIIG	1442-1449	2-3	240-25	Weak I throughout day
		IIIG	2056-2101	2	180-25	
Dec. 4	1408-2340	IIIG	1923-1925	1-3	200-25	
		IIIG	2022-2025	1	200-25	
Dec. 5	1408-2340					
Dec. 6	1408-2340					
Dec. 7	1408-2340					
Dec. 8	1408-2340					
Dec. 9	1408-2340					
Dec.10	1408-2340					
Dec.11	1408-2340					
Dec.12	1408-2340					
Dec.13	1408-2340					
Dec.14	1408-2340					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

DECEMBER 1961

Fort Davis — 25-580 Mc.

1961	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
Dec.15	1421-2340					
Dec.16	1414-2340					
Dec.17	1414-2340					
Dec.18	1414-2340					
Dec.19	1414-2340					
Dec.20	1414-2345					
Dec.21	1414-2345					Weak I throughout day
Dec.22	1414-2345					Weak I throughout day
Dec.23	1414-2345	I	2016-2033	1	200-100	Weak I throughout day
		I	2033- 2200	2	580-25	
		IIIG	2033-2110	2-3	580-100	
Dec.24	1624-2345					Weak I throughout day
Dec.25	1414-2345					Weak I throughout day
Dec.26	1414-2345					Weak I throughout day
Dec.27	1414-2345	IIIG	1503-1505	1-2	580-240	
		IIIG	1613-1614	2	300-25	
		IIIG	1850-1851	2	280-180	
		IIIG	2309-2311	2	580-260	
Dec.28	1414-2350	IIIG	1532-1533	1	400-160	
		IIIG	1624-1628	1	580-175	
		IIIG	1711-1717	2	500-90	
		IIIG	2134-2137	2	580-190	
Dec.29	1414-2350					
Dec.30	1414-2350					
Dec.31	1414-2350					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

DECEMBER 1961

HAO BOULDER 7.6 - 41 MC

Date 1961	Bursts			Frequency Range (mc)	Date 1961	Bursts			Frequency Range (mc)
	Type	Time (U.T.)	Intensity			Type	Time (U.T.)	Intensity	
1[x] Dec					19 Dec	III	2009.15-2009.45	1-	23 - 38
2[xm]	III	1922-1925	1+	16 - 41		III	2148-2148.30	1-	24 - 36
	III	1925.30-1927.45	1	16 - 41	21	III	1746.15-1746.30	1-	21 - 34
	III	2112-2113.30	1+	12 - 41	22	III	1656.45-1657.15	1	24 - 41
3	II	1441.30-1457	2	24 - 41	23	III	1541.15-1541.30	1-	27 - 34
	III	1448.30-1449	1+	24 - 41		III	1728.15-1730	1-	25 - 37
	II	1507-1511	1-	33 - 41[f]		III	2003-2023	1	22 - 41[e]
	III	1612.15-1612.30	1	29 - 41		IV	2022-2225	2	20 - 41[em]
	III	1713.30-1713.45	1-	21 - 36	24[x]				
	III	2016-2016.45	1-	21 - 38	25[xo]				
	III	2017.15-2017.45	1	19 - 40	26	III	1528-1528.30	1-	22 - 41
	III	2018-2018.45	1	21 - 38		III	1528.45-1529.30	1+	19 - 41
	continuum	2055-2103.30	2	22 - 41		III	1531.15-1531.45	1	18 - 36
	III	2100-2101	2	22 - 41		III	1756.45-1757.15	1-	22 - 37
	III	2102-2102.30	1+	16 - 41		III	1900.30-1901	1+	22 - 41
	III	2104.30-2105	1+	22 - 41		III	1903.45-1904.15	1	21 - 41
4	III	1558-1558.30	1	20 - 41		III	1942.45-1943	1-	28 - 41
	III	1708.45-1709.15	1+	21 - 41		III	2025.30-2026	1	21 - 41
	III	1802.30-1803	1	20 - 41		III	2038.30-2038.45	1-	22 - 38
	III	1844.45-1845	1-	23 - 41		III	2143-2143.30	1+	23 - 41
	III	1922.30-1924.45	1+	17 - 41	27	III	1457.15-1458	1-	21 - 41
	III	1930-1931.15	1+	20 - 41		III	1613.15-1614.30	1+	22 - 41
	continuum	2015-2025.30	1	22 - 41[c]		III	1628.30-1629	1	20 - 41
	III	2017.30-2019.45	1+	18 - 41		III	1743.15-1744	1-	23 - 41
	III	2021.30-2022	1+	18 - 41		III	1946-1946.45	1	21 - 38
	III	2027-2029.30	1	27 - 41	28	III	1626.15-1627	1	20 - 41
	III	2030.45-2031	1-	24 - 40		III	1816-1816.45	1+	21 - 38
	III	2048.45-2049.30	1+	21 - 41	29	III	1520-1520.15	1	32 - 41
	III	2101-2101.15	1-	29 - 41		III	2148.30-2148.45	1	22 - 41
9	III	2210.30-2211	1-	26 - 41		III	2152.30-2152.45	1	24 - 41
15	III	1613.45-1614.15	1-	24 - 41	30	III	2107.15-2107.45	1-	21 - 41
	III	1615.45-1616	1	28 - 41	31[x]				
	III	1618.15-1619	1+	26 - 41					
18[xm]	III	1829.45-1830	1	23 - 33					

COMMERCE - STANDARDS - BOULDER

[x] = no observations

[xm] = no observations before 1858

[xn] = no observations before 1811

[xo] = no observations before 2236

[c] = many faint type III's not reported

[e] = many short duration narrow band bursts superimposed

[em] = many short duration narrow band bursts superimposed after 2102

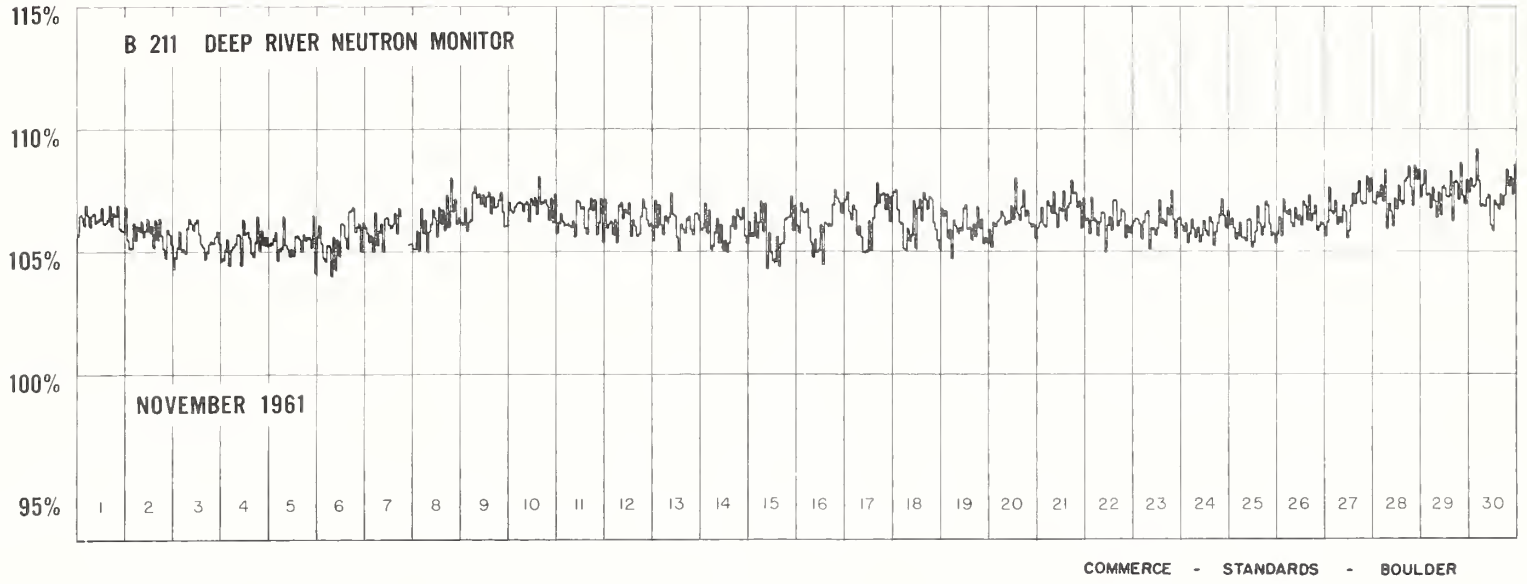
[f] = amorphous structure

COSMIC RAY INDICES
(Climax Neutron Monitor)

The November 1961 indices will be published with the December 1961 data next month.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

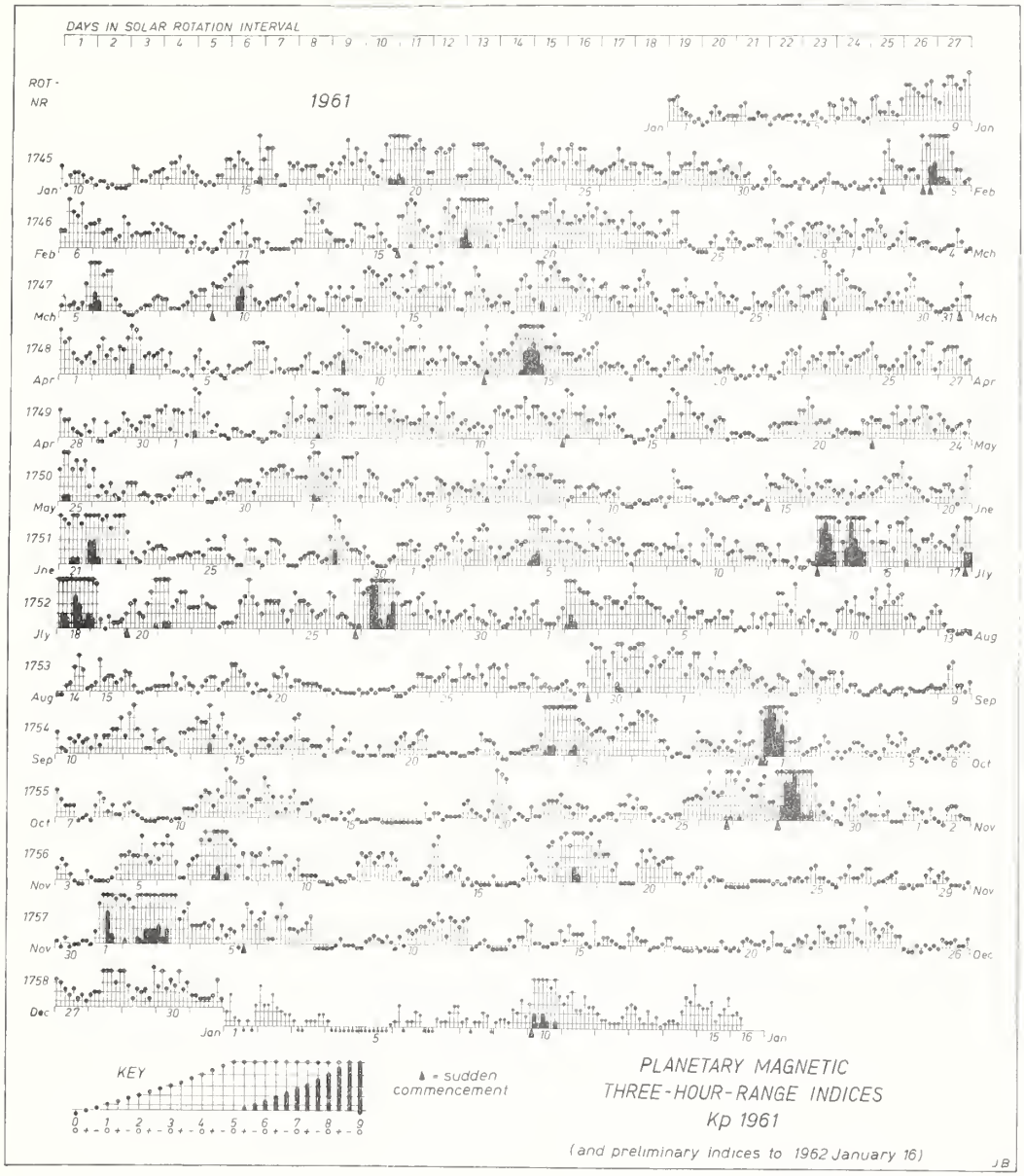


GEOMAGNETIC ACTIVITY INDICES

NOVEMBER 1961

Nov. 1961	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.3	1o 2+ 2- 2-	1+ 0+ 2- 1-	11-	5	Five
2	0.1	0+ 0o 2- 2o	2o 1o 1- 1-	8+	4	Quiet
3	0.2	2- 3- 2o 1o	0+ 0o 0o 1+	9o	4	
4	0.3	1- 0+ 0+ 0+	0+ 1- 2- 3o	7+	4	15
5	1.1	3o 3+ 3o 3o	5- 3o 2+ 4o	26+	19	22
						23
6	0.8	3- 4o 5- 4o	2+ 1- 1- 2o	21o	16	24
7	1.6	3- 3o 4+ 5o	4+ 5+ 6+ 5o	36o	42	30
8	1.1	6- 4+ 4o 2o	3+ 1- 3+ 3o	26+	23	
9	0.6	3+ 2o 4- 2+	2+ 2+ 3o 1o	20o	12	
10	0.1	2- 3- 1o 1o	1o 1o 0+ 0+	9o	5	
11	0.1	0o 0o 1- 0+	0+ 1o 1- 2+	5+	3	Five
12	0.9	3+ 3o 3+ 2+	3o 3+ 2o 3+	24-	15	Disturbed
13	0.0	3- 1+ 1- 1-	0o 0o 1- 1+	7+	4	
14	0.7	2o 4o 5- 2o	1o 1+ 2o 2-	19-	13	5
15	0.0	0o 1- 0o 0+	0o 0o 0o 1o	2o	1	7
						8
16	0.2	0o 0o 0o 0+	0+ 0o 1- 3o	4+	3	17
17	1.0	2+ 2- 1o 1-	4o 4+ 2+ 5-	21o	16	18
18	1.5	5o 4o 6+ 6-	5o 5- 5o 3+	39o	49	
19	0.5	4+ 3+ 3+ 2-	2+ 0+ 0+ 0+	16o	11	
20	0.8	0+ 2+ 4- 3-	4- 3o 2+ 3-	21-	13	
21	0.4	3o 3o 1+ 1+	0+ 1o 1+ 2o	13+	7	Ten
22	0.1	2o 0o 1- 1o	1- 1- 0o 0o	5o	2	Quiet
23	0.0	0o 0o 0o 0o	1- 1- 1- 1-	3-	2	
24	0.0	1- 0+ 1- 0+	0+ 1o 1- 1o	5o	3	11
25	0.1	1- 1o 2o 2+	1o 1o 1- 0+	9o	4	15
						16
26	0.2	0o 1o 1+ 2+	1o 1o 1+ 2o	10o	5	22
27	0.1	2o 0+ 1- 1-	1o 1+ 2- 0o	8-	4	23
28	0.1	0o 0+ 0o 0+	0+ 1+ 2o 1-	5o	3	24
29	0.0	1+ 2- 1o 0+	0+ 0+ 0o 1-	6-	3	27
30	0.0	1- 0o 1o 0o	0+ 0+ 1- 1-	4-	2	28
						29
						30
Mean:	0.43			Mean:	10	

COMMERCE - STANDARDS - BOULDER


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT-
NR
1961
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
KEY
0 0+ 1- 1 1+ 2- 2 2+ 3- 3 3+ 4- 4 4+ 5- 5 5+ 6- 6 6+ 7- 7 7+ 8- 8 8+ 9-
= sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp 1961
(and preliminary indices to 1962 January 16)
JB
COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NOVEMBER 1961

NORTH ATLANTIC

DATE NOV. 1961	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-REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY 1-7 DAYS FINAL J_S	1-7 DAYS J_S	1-3 DAYS SDW J	1-7 DAYS J	GEOMAGNETIC K_{FR} HALF DAY (1)	(2)
01	4+	4o	6o	6-	4	3	6	5	5-	6	6		6	2	1
02	4+	3+	6-	6+	4	4	6	5	5-	5			5	1	1
03	6-	5-	7-	6o	5	4	6	6	6-	6			6	2	0
04	6-	5o	7-	6+	5	5	6	6	6o	6			6	0	2
05	6o	4+	6o	7-	6	5	6	6	5+	6			6	3	3
06	6-	4+	6+	6o	6	4	6	6	5+	6			6	3	2
07	5o	4o	5o	3o	6	4	6	5	(4o)	6			6	(4)	(5)
08	4-	4-	6-	3+	3	3	6	5	(4o)	6			6	(4)	2
09	4o	5-	7-	5-	4	4	6	5	5-	5			5	2	2
10	4o	4o	6o	5o	5	4	6	5	(4+)	5			5	2	1
11	5-	4+	6+	6-	4	4	6	5	5o	6			6	0	1
12	5o	5-	6+	5+	5	5	7	6	5+	6			6	3	2
13	4+	4+	6+	6-	5	4	6	5	5o	6			6	1	1
14	5o	4+	6o	5+	5	4	6	6	5o	6			6	3	2
15	4+	5o	6o	6o	5	4	6	5	5+	6			6	0	1
16	6-	6-	6+	6o	5	5	7	6	6o	5			5	0	1
17	6-	6-	7-	6o	6	5	7	6	6o	5			5	1	3
18	5o	4-	4-	4-	6	4	5	3	(4-)	6			6	(5)	(4)
19	3-	3+	6o	5+	4	2	5	4	(4-)	6			6	3	1
20	4+	3+	6-	4-	4	4	6	6	(4+)	6			6	2	2
21	4-	4-	6o	5-	4	3	6	4	(4+)	6			6	2	1
22	4o	3+	6-	5+	4	4	6	4	(4+)	6			6	1	1
23	4o	4o	6o	6-	4	3	6	4	5-	5			5	0	1
24	6-	5o	6+	5o	4	4	6	6	6-	4			4	0	1
25	6-	4o	7-	6-	4	5	6	6	5+	4			4	2	1
26	5o	4+	6+	6+	5	4	6	6	5+	4			4	1	1
27	6-	5o	6+	6o	5	5	7	6	6-	5			5	1	1
28	6-	4+	7-	6o	6	5	6	6	5+	5			5	0	1
29	5-	5o	6+	6o	5	5	7	6	6-	5			5	1	0
30	6o	6-	6+	6+	5	6	7	6	6o	6			6	1	0

Score: Quiet Periods	P	8	5	17	13	
	S	8	6	12	12	
	U	0	0	0	0	
	F	2	0	0	1	
Disturbed Periods	P	7	8	0	0	
	S	5	11	1	1	
	U	0	0	0	2	
	F	0	0	0	1	

Score: Quiet Periods	P	7	7			
	S	14	14			
	U	0	0			
	F	1	1			
Disturbed Periods	P	0	0			
	S	1	1			
	U	0	0			
	F	7	7			

NORTH PACIFIC

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)
6	6	5	6	6	6	6			2	1
6	6	5	6	6	5	5			2	1
5	5	5	5	5	5	5			2	0
5	5	5	5	5	5	5			0	1
6	6	5	5	5	6	6			2	(4)
6	7	5	5	6	6	6			(4)	1
3	3	5	3	(3)	6	6			(4)	(5)
5	4	4	6	5	6	6			(4)	2
5	5	4	5	(4)	4	4			2	2
6	4	5	5	5	5	5			2	0
6	5	5	5	5	5	5			0	0
6	6	5	5	6	5	5			3	3
6	6	5	5	6	6	6			0	0
6	5	6	6	6		6			3	1
5	5	5	5	5		6			0	0
5	5	5	5	5	5	5			0	1
6	7	5	5	6	5	5			0	3
4	4	5	5	(4)	5	5			(5)	(4)
6	5	4	5	5	5	5			(4)	1
5	5	5	5	5	5	5			2	3
5	5	5	5	5	5	5			2	0
5	6	5	6	5	5	5			0	0
5	6	5	5	5	5	5			0	0
5	6	5	5	5	5	5			0	0
6	6	5	6	6	5	5			2	0
5	6	5	5	6	5	5			1	1
5	6	5	5	6	5	5			1	1
3	7	5	6	(4)	5	5			0	0
6	7	5	6	7	5	5			1	0
6	6	5	6	6	6	6			0	0

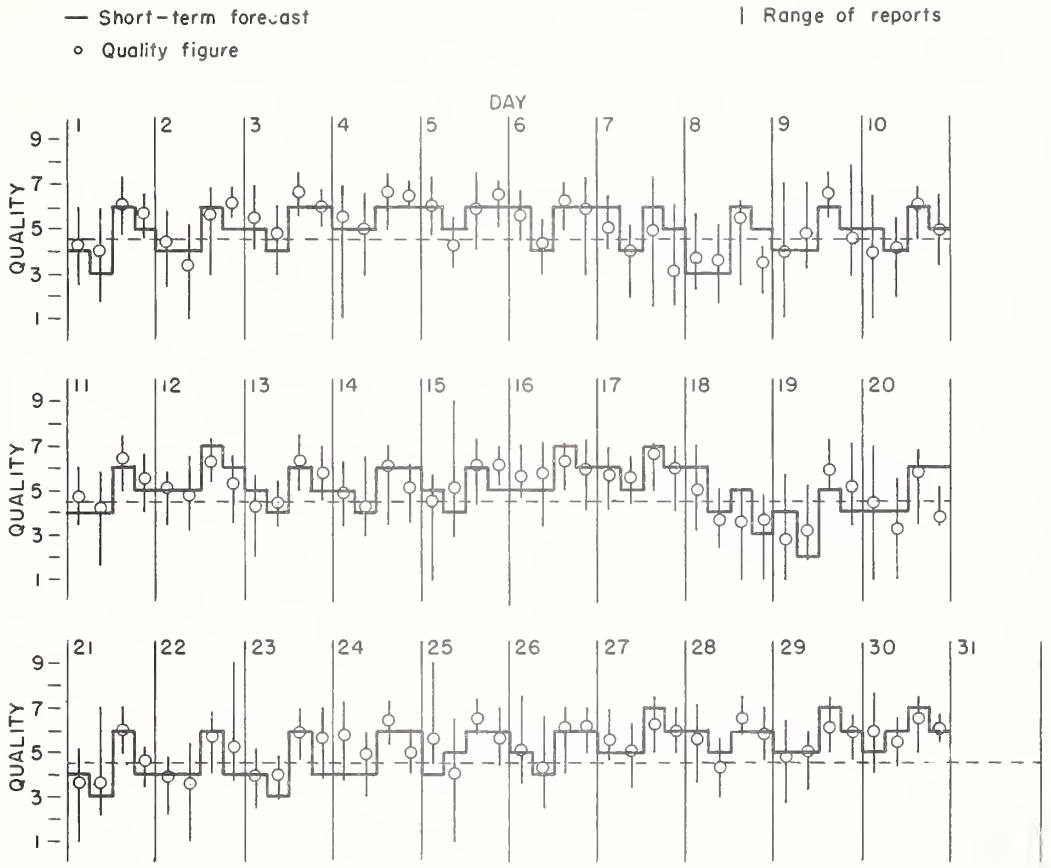
Score: Quiet Periods	P	12	14		16	
	S	14	10		9	
	U	0	2		1	
	F	1	0		0	
Disturbed Periods	P	0	1		1	
	S	1	2		2	
	U	2	0		0	
	F	0	1		1	

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

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

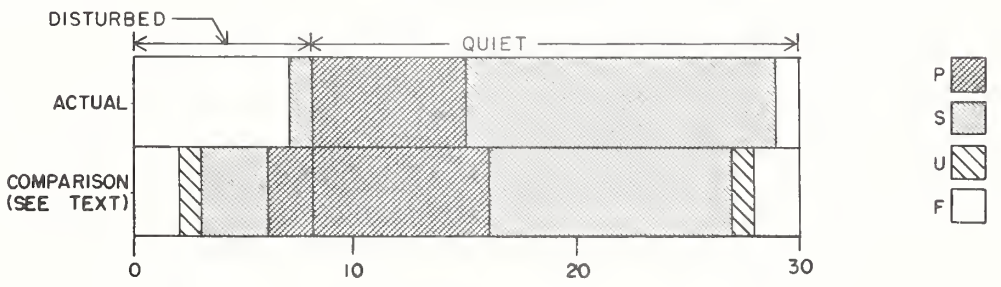
NORTH ATLANTIC

NOVEMBER 1961

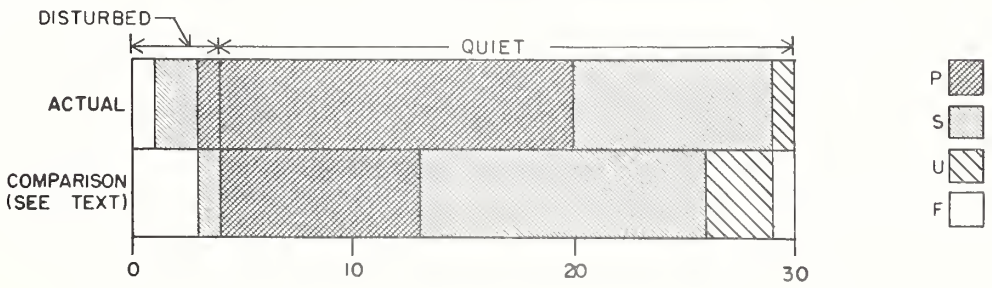


OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE

NORTH ATLANTIC

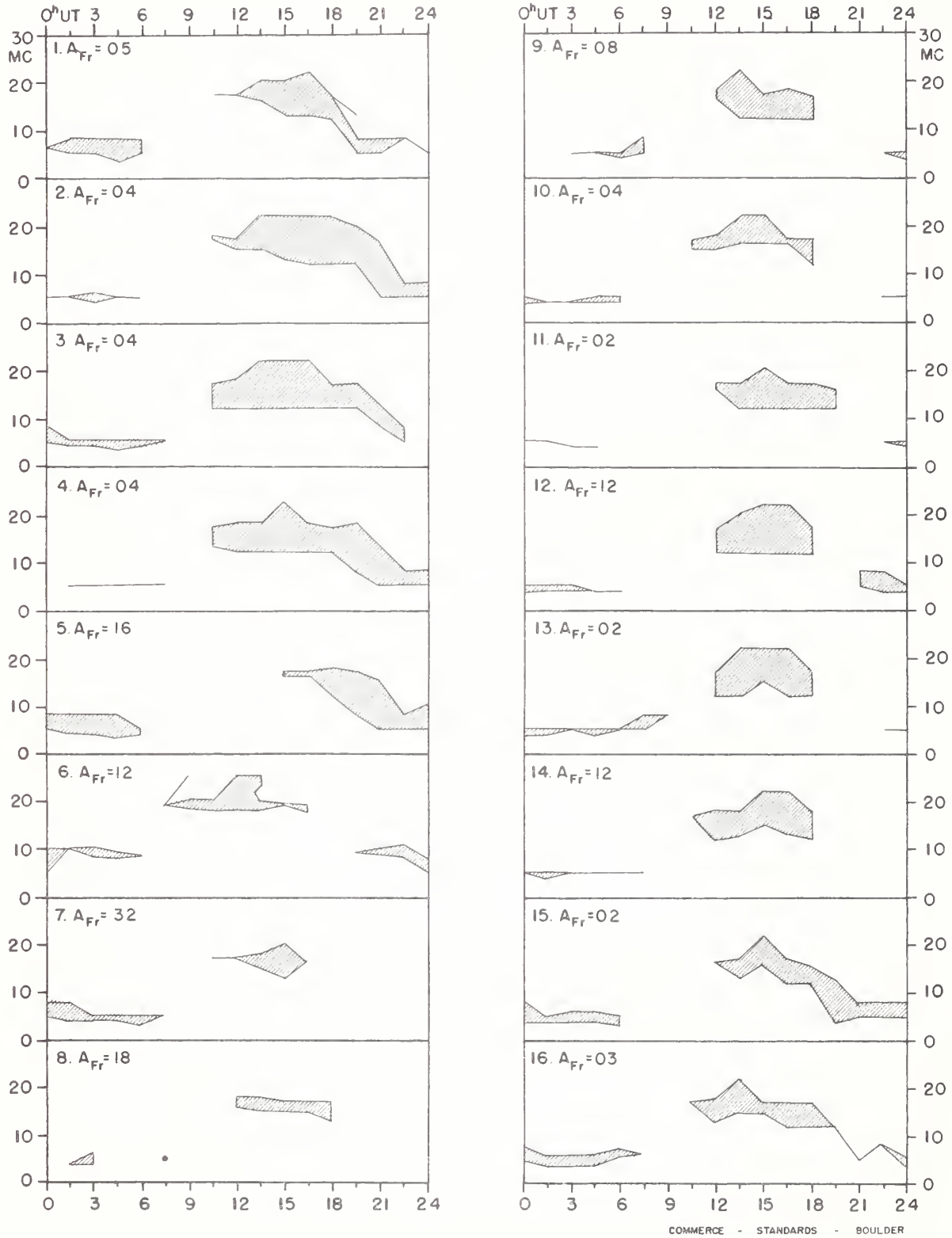


NORTH PACIFIC



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

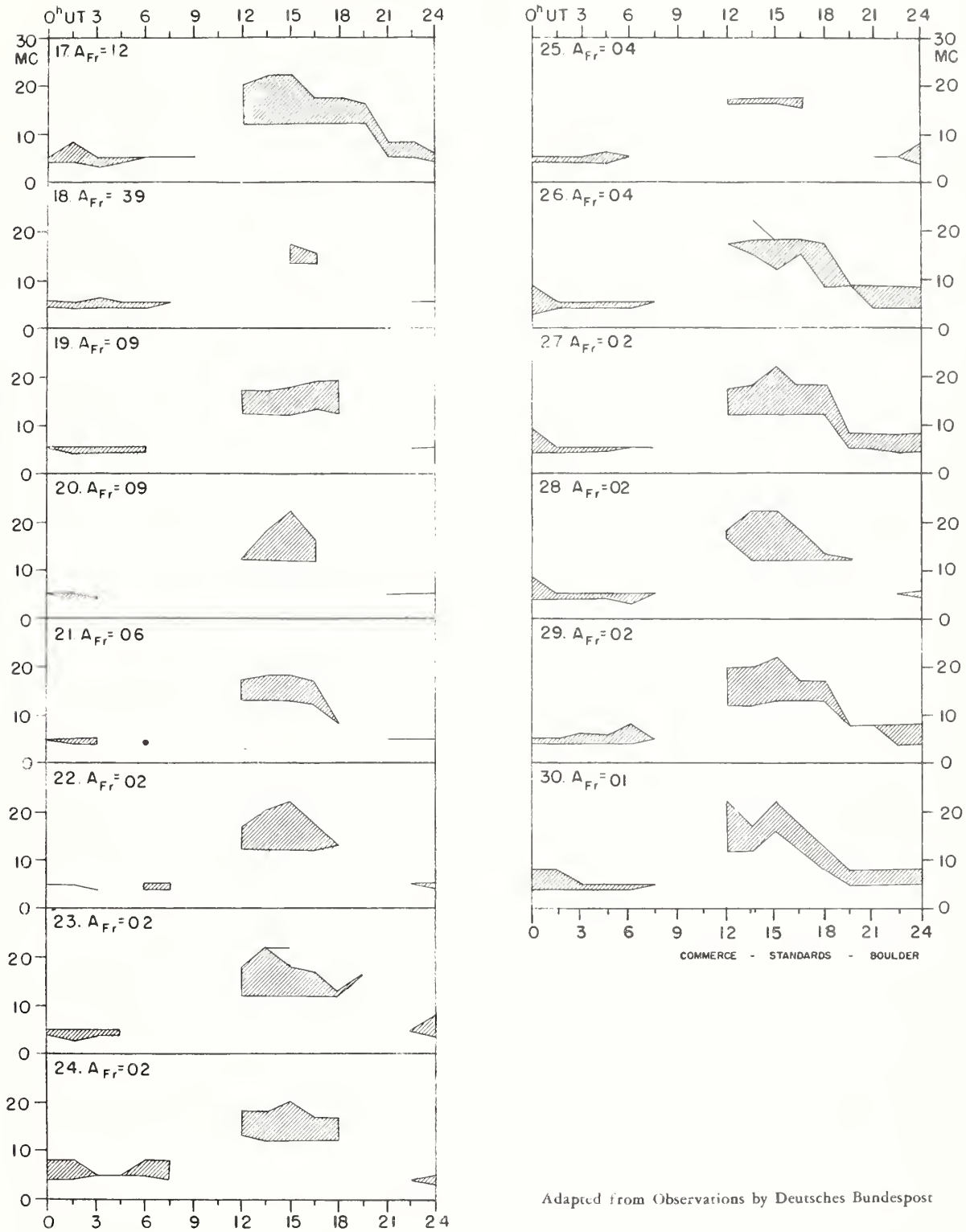
NOVEMBER 1961



COMMERCE - STANDARDS - BOULDER

USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

NOVEMBER 1961



Adapted from Observations by Deutsches Bundespost

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

DECEMBER 1961

Issued December 1961 Day/Time U.T.	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
01/1400	Ft. Belvoir, Magnetic Storm 01/0703Z			
01/1600		155	Magnetic Storm, Aurora Probable 01/07XXZ	Start
02/1600		156		Continue
03/1530	Sac Peak, Solar Flare, Two 03/1447Z			
03/1600		157		Finish
09/1733	Lockheed, Solar Flare 09/1635Z			
23/2015	Lockheed Solar Flare, Two 23/1915Z Sack Peak, Solar Flare, Two 23/1945Z			
25/2115	Sac Peak, Solar Flare, Two 25/2040Z			

COMMERCE - STANDARDS - BOULDER

USCOMM-NBS-BL