PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
AUGUST 1961

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

CRPL-F 204
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
31 Aug. 1961

SOLAR - GEOPHYSICAL DATA

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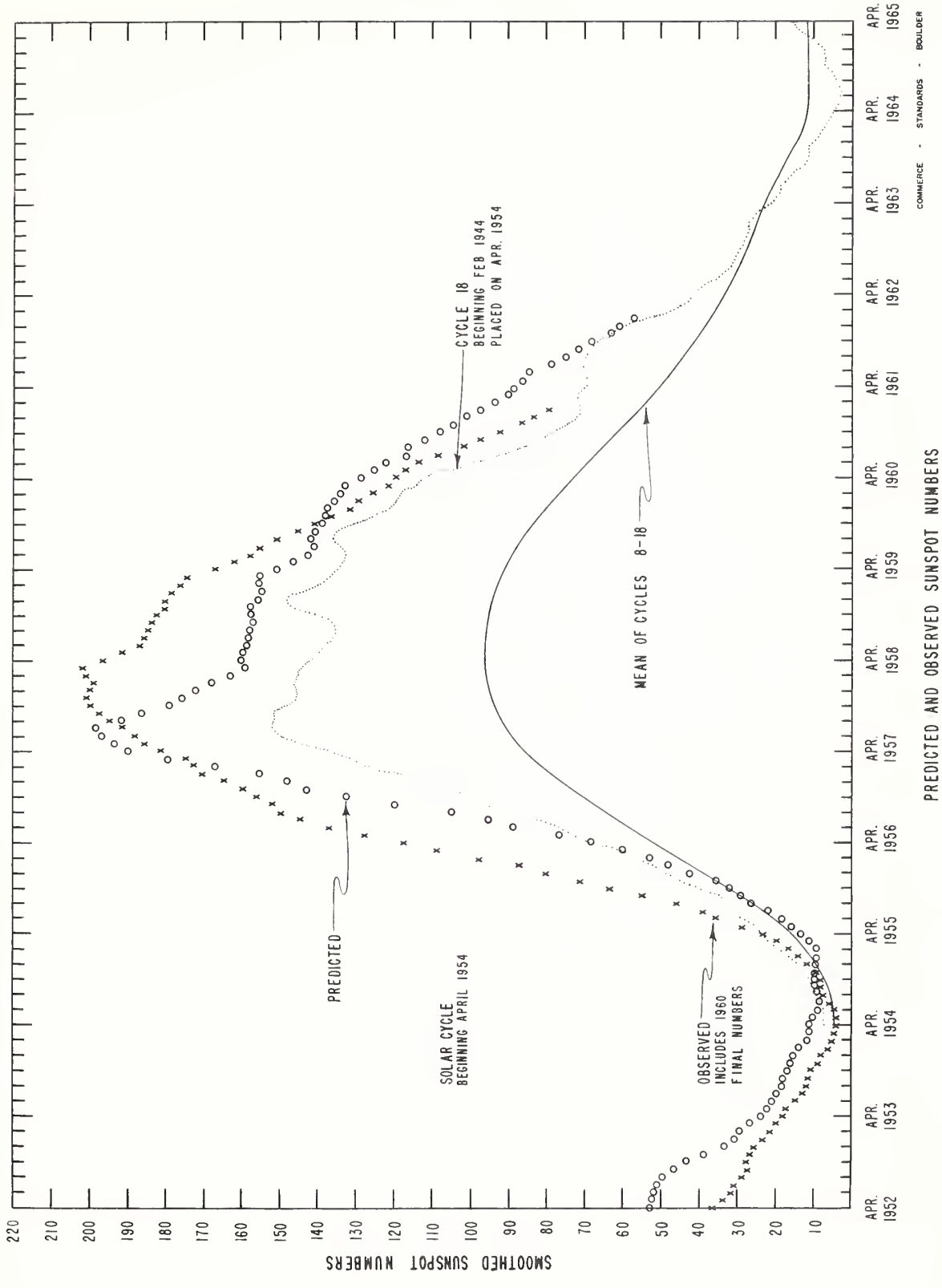
The descriptive text was published separately, November 1960.

DAILY SOLAR INDICES

June 1961	American Relative Sunspot Numbers R_A'
1	30
2	25
3	38
4	37
5	46
6	43
7	41
8	40
9	49
10	57
11	56
12	58
13	60
14	72
15	84
16	102
17	108
18	101
19	115
20	126
21	114
22	108
23	79
24	68
25	61
26	42
27	48
28	46
29	52
30	53
Mean:	65.3

July 1961	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	60	104
2	65	99
3	68	104
4	63	103
5	44	106
6	50	102
7	51	105
8	60	107
9	65	112
10	73	124
11	85	138
12	96	137
13	86	141
14	107	136
15	100	136
16	94	132
17	92	137
18	82	131
19	86	126
20	85	123
21	85	118
22	75	119
23	81	118
24	78	118
25	63	117
26	62	115
27	53	111
28	42	105
29	32	103
30	30	92
31	34	91
Mean:	69.3	116.5

COMMERCE - STANDARDS - BOULDER



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

JULY 1961

CMP July 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	S10	6157	6136	1700	3.5	ℓ ↘ ℓ	2	50	1	ℓ ↘ d
01.9	N15	6156	6133	2100	2	ℓ ↘ ℓ	5			
02.2	N18	6167	New	(700)	(3.5)	b ↗ ℓ	1	(200)	(3)	b ↗ ℓ
03.3	S09	6158	6134	2000	2	ℓ — ℓ	2			
05.0	N11	6163	New	3800	3.5	ℓ — ℓ	1	130	7	b ↗ ℓ
05.1	N01	6162	6135	(1800)	(2)	ℓ ↘ d	3			
07.6	N15	6164	6145	5100	3	ℓ — ℓ	2	440	5	ℓ — ℓ
09.4	S01	6165	6142	1800	2	ℓ — ℓ	6			
12.2	N03	6166	*	1600	3	ℓ — ℓ	-	150	2	ℓ — ℓ
12.7	S11	6169	6143	1000	2.5	ℓ — ℓ	6			
12.8	N06	6168	6140	(2000)	(3)	ℓ ↘ d	5			
14.1	N15	6170	New	1100	3	ℓ ↘ ℓ	1	50	1	ℓ ↘ d
14.4	S10	6171	6144	5100	3.5	ℓ — ℓ	2	1420	14	ℓ — ℓ
17.2	N13	6172	6151	4000	3	ℓ — ℓ	2	220	1	ℓ — ℓ
18.5	S08	6173	6146	1500	2	ℓ — ℓ	2			
20.3	S10	6174	New	2600	3.5	ℓ ↘ ℓ	1	110	3	ℓ ↘ ℓ
20.9	N13	6175	6149	1900	3	ℓ ↗ ℓ	4	(190)	(3)	b ↗ ℓ
23.0	N17	6183	New	(200)	(2.5)	b ↗ ℓ	1			
23.1	N03	6176	New	1400	3.5	ℓ — ℓ	1	120	2	ℓ ↘ d
23.5	S13	6177	New	1800	3	ℓ — ℓ	1			
25.1	N08	6178	6155	3900	3.5	ℓ — ℓ	2	550	5	ℓ — ℓ
26.4	N20	6179	6160	1700	2.5	ℓ — ℓ	2			
30.0	N18	6180	6167	1000	2	ℓ — ℓ	2	(60)	(3)	b ↗ ℓ
30.1	S03	6181	6158	2200	2.5	ℓ — ℓ	3	(50)	(1)	ℓ ↘ d

COMMERCE - STANDARDS - BOULDER

* Small, ephemeral

FINAL CORONAL LINE EMISSION INDICES

JANUARY 1961

CMP Jan 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	72	117	35	76	68	112	35	72	50	69	13	22	67	79	27	42
2	55	70	12	15	34	62	9	20	42	54	10	14	66*	104	22	28
3	92	120	11	20	80	116	7	13	61	76	10	16	68	90	17	32
4	69	98	36	96	53	88	11	38	53	64	27	44	85	105	53	84
5	68	112	30	54	57	76	12	13	34	51	21	30	56	84	32	63
6	102	198	x	x	46	64	x	x	36	46	13	20	60	71	32	54
7	73	110	11	23	38	52	7	9	50	58	6	11	89	110	17	33
8	72	91	9	20	38	60	7	10	26	40	8	13	42	52	10	15
9	48	52	5	8	44	53	10	18	80	109	x	x	91	99	x	x
10	73	84	35	60	59	130	35	56	x	x	x	x	x	x	x	x
11	68	78	34	64	67	119	37	52	x	x	x	x	x	x	x	x
12	52	70	9	15	56	94	18	23	66	157	45	88	40	48	25	40
13	39	48	14	24	46	98	24	42	51	106	39	82	34	38	19	30
14	43	50	18	25	39	64	31	60	36	62	29	54	33	50	18	40
15	35	48	15	20	13	19	20	35	19	24	15	21	30	36	13	16
16	28	37	21	33	21	27	17	30	21	25	-	-	34	39	4	12
17	33	44	20	28	28	34	12	16	x	x	x	x	x	x	x	x
18	19	22	41	52	24	32	21	24	x	x	x	x	x	x	x	x
19	19	23	17	20	20	26	9	10	x	x	x	x	x	x	x	x
20	29	54	24	44	20	25	14	18	16	24	x	x	x	x	x	x
21	39	47	10	14	41	53	8	16	27	48	19	28	40	54	15	20
22	42	70	48	14	23	60	11	25	26	52	-	-	38	58	13	28
23	76	91	x	x	64	95	x	x	30	39	2	10	44	54	3	15
24	x	x	x	x	x	x	x	x	51	108	4	13	53	63	6	14
25	90	113	x	x	80	144	x	x	52	67	2	9	62	79	11	20
26	70	91	40	56	43	88	28	42	45	69	3	6	64	82	8	18
27	77*	110	40	60	41	62	13	24	36	59	1	5	78	114	11	23
28	78	123	61	98	44	66	25	40	x	x	x	x	x	x	x	x
29	83	118	x	x	34	50	12	16	25	36	16a	18a	49*	78	27a	43a
30	84	105	12	23	48	57	-	-	32	40	17a	19a	67	100	46a	60a
31	x	x	x	x	x	x	x	x	22	26	x	x	54	68	x	x

a = index computed from low weight data. * = yellow line observed. x = no observations. - = below threshold of visibility

COMMERCE - STANDARDS - BOULDER

FINAL CORONAL LINE EMISSION INDICES

FEBRUARY 1961

CMP Feb 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	58	105	32	48	65	92	46	99
2	x	x	x	x	x	x	x	x	5	7	4	5	19	31	5	7
3	77a	113a	x	x	38a	42a	x	x	61	66	x	x	113	133	x	x
4	60	89	35	52	19	38	28	50	67	95	x	x	89	112	x	x
5	58	82	43	69	36	50	34	62	74	99	x	x	69	85	x	x
6	57	64	6	14	57	78	9	23	48	70	x	x	45	51	x	x
7	80	91	3	12	85	167	6	19	53	81	19	31	46	53	14	18
8	85	105	5	13	69	125	15	39	34	52	12	17	27	38	8	18
9	67	98	9	20	52	104	20	32	71	149	24	35	74	110	5	7
10	84	119	14	36	74	157	23	33	x	x	x	x	x	x	x	x
11	x	x	x	x	x	x	x	x	21	40	8	12	16	18	5	11
12	27	30	23a	29a	12	16	18a	26a	17	22	5	7	25	31	14	33
13	30	38	25a	38a	27	37	22a	28a	34	43	x	x	39	45	x	x
14	23	34	x	x	31	66	x	x	18	30	11	17	21	28	13	17
15	32	46	20	30	70	258	29	66	17	40	8	14	17	23	7	10
16	7	9	7	9	6	8	5	6	22	28	7	9	29	32	5	8
17	56	66	x	x	45	60	x	x	8	10	9	12	17	20	6	8
18	61	68	x	x	50	54	x	x	8	14	7	12	20	26	6	10
19	64	76	x	x	37	47	x	x	x	x	x	x	x	x	x	x
20	48	60	x	x	38	58	x	x	26a	36a	x	x	41a	53a	x	x
21	58	81	x	x	63	96	16a	20a	75	106	1	4	76	116	5	14
22	64	106	9	12	40	68	8	14	33	54	12	21	38	64	6	7
23	122	165	13	22	81	140	20	33	59	124	11	18	49	62	11	20
24	x	x	x	x	x	x	x	x	91	162	5	7	87	116	3	4
25	60	88	8	17	35	60	4	6	83	109	x	x	91	125	x	x
26	84	109	8	16	35	78	9	19	44	67	x	x	69	93	x	x
27	120	152	x	x	63	108	x	x	45	69	11	16	67	99	6	12
28	58	92	20	47	33	62	26	38	26	41	5	6	48	56	3	4

COMMERCE - STANDARDS - BOULDER

a = index computed from low weight data. * = yellow line observed. x = no observations. - = below threshold of visibility

FINAL CORONAL LINE EMISSION INDICES

MARCH 1961

CMP Mar 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_0	G_1	R_0	R_1	G_0	G_1	R_0	R_1	G_0	G_1	R_0	R_1	G_0	G_1	R_0	R_1
1	54	72	7	12	24	28	5	6	28	38	14	16	41	53	14	19
2	57	78	13	28	26	32	3	6	21	24	9	10	38	50	15	33
3	44	58	13	32	23	32	4	6	36	62	x	x	48	58	x	x
4	44	58	21	38	37	50	4	5	33	41	x	x	35	50	x	x
5	x	x	x	x	x	x	x	x	22	38	10	19	23	29	6	14
6	43a	47a	x	x	31a	45a	x	x	42	62	26	43	52	84	26	72
7	31	52	9	25	16	29	5	20	38	88	11	23	49	101	14	41
8	30	43	6	7	36	63	17	27	66	108	24	60	80	126	10	30
9	47	73	13	23	45	105	27	38	72	111	17	28	69	97	6	13
10	89	96	12	27	51	145	15	20	47	67	16	24	47	53	6	8
11	59	63	x	x	31	50	x	x	x	x	x	x	x	x	x	x
12	57	75	x	x	16	26	x	x	x	x	x	x	x	x	x	x
13	42	49	9	14	36	52	18	24	x	x	x	x	x	x	x	x
14	49	63	9	14	61	113	19	34	84	138	17	33	45	60	10	17
15	22	28	19	28	32	73	24	36	17	26	9	10	15	18	9	11
16	25	33	13	20	11	13	26	33	10	12	6	7	13	18	7	9
17	32	42	x	x	36	43	x	x	33	36	10	14	37	50	12	20
18	44	62	x	x	27	42	x	x	38	45	4	5	65	99	12	16
19	63	110	19	49	37	55	8	10	50	69	5	6	99	161	9	13
20	64	95	31	72	36	60	11	15	42	55	2	11	82	123	5	24
21	64	94	14	26	45	101	8	15	42	57	10	18	35	60	8	35
22	132	191	17	39	105	183	9	16	77	98	11	26	93	104	11	14
23	149	176	9	11	118	141	12	27	58	87	x	x	49	78	x	x
24	102	152	12	26	85	124	24	47	60	102	-	-	73	104	-	-
25	x	x	x	x	x	x	x	x	46	57	11	23	59	81	12	33
26	x	x	x	x	x	x	x	x	25	40	13	23	46	65	14	28
27	x	x	x	x	x	x	x	x	23	31	8	14	38	59	12	18
28	125	144	10	27	54	73	16	26	14	19	6	10	21	24	9	12
29	38	42	7	9	15	23	10	14	25	36	24	44	25	31	14	26
30	36	48	8	10	38	68	15	37	49	63	13	38	44	50	-	-
31	75	92	7	10	111	158	36	74	65	104	15	25	39	47	-	-

a = index computed from low weight data. * = yellow line observed. x = no observations. - = below threshold of visibility

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

JULY 1961

OBSERVATORY	DATE JULY 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
WENDEL	01	0508	0542		N07	W38	6155	34	1+				6.00			
ONDREJOV	01	0546	0557		N05	W35	6155	11	1	3	0549			2.00		
WENDEL	01	0813 E	0847 D	0826 U	N08	W39	6155	34 D	1+				5.00			
ZURICH	01	0815	0855		N07	W41	6155	40	1	3	0815		3.00			
ARCETRI	01	0915	0955		N07	W41	6155	40	1	3	0952	2.50	3.30			
LOCARNO	01	0944 E	0955		S13	E11	6157	11 D	1	2						
UCCLE	01	1008	1015	1010	N13	W40	6155	7	1	3	1010	3.00	4.00			
ARCETRI	01	1017	1031		N07	W41	6155	14	1	3	1017	2.20	2.80			
WENDEL	01	1516	1551 D		N08	W42	6155	35 D	1+				6.00			
WENDEL	01	1615	1719 D		N07	W44	6155	64 D	1+				5.00			
WENDEL	01	1739	1811 D		N07	W44	6155	32 D	1+				5.00			
WENDEL	02	0615 E	0636		N07	W52	6155	21 D	1				3.00			
WENDEL	02	1125	1137 D		N05	W53	6155	12 D	1				4.00			
CAPRI S	02	1125 E	1203 D		N05	W47	6155	38 D	1	3	1144	1.20	2.00			
WENDEL	02	1302	1345		N06	W54	6155	43	1+				6.00			
CAPRI S	02	1308 E	1338 D		N07	W50	6155	30 D	1	3	1311	1.10	2.00			
WENDEL	02	1335 E	1357		N19	W48	6160	22 D	1				3.00			
WENDEL	02	1458 E	1529		N05	W53	6155	31 D	1+				5.00			
SAC PEAK	02	1506	1528	1512 U	N05	W56	6155	22	1	2		2.89	3.53		19	
SAC PEAK	02	1610	1640	1620	N05	W56	6155	30	1	2		3.47	4.00		22	
WENDEL	02	1610	1641 D		N07	W57	6155	31 D	1+				6.00			
WENDEL	02	1703	1733		N08	W57	6155	30	1				3.00			
WENDEL	03	0939	0959		N07	W68	6155	20	1				3.00			
WENDEL	03	1256 E	1316 D		N06	W70	6155	20 D	1				3.00			
WENDEL	04	0745 E	0752 D		N12	W76	6155	7 D	1				4.00			
HAWAII	07	0036	0048	0040	N01	E75	6168	12	1	3	0040	1.00	2.60			
ZURICH	07	0926	0955		S04	E17	6165	29	1	2	0926		4.00			
CAPRI S	07	0928	1031 D		S07	E19	6165	63 D	1	3	0940	2.30	2.50			
BUCHAREST	07	0938 E	1050	0938	S01	E20	6165	72 D	1	2			3.10			
SAC PEAK	07	1332	1358	1340	N11	W11	6164	26	1	3		2.89	2.83		22	
MCMATH	07	1332	1359	1334	N11	W11	6164	20	1	2	1334		2.10			
ZURICH	07	1333	1345		N12	W12	6164	12	1	2	1333		4.00			
UCCLE	07	1333	1349 D	1335	N11	W10	6164	16 D	1	2	1335	2.20	2.20			
SAC PEAK	07	1356	1404	1358	N16	E90	6170	8	1	3		.43	2.17		15	
SAC PEAK	07	1644	1710	1648	N17	E90	6170	26	1	3		.58	2.89		20	
LOCARNO	08	1054	1110 D		N18	E75	6170	16 D	1	2						
WENDEL	08	1100 E	1123 D		N16	E76	6170	23 D	1+				5.00			
WENDEL	08	1313	1333 D		N15	W28	6164	20 D	1				3.00			
LOCARNO	08	1315	1343		N10	W28	6164	28	1	2						
LOCARNO	09	1024	1103		N03	E42	6166	39	1+	2						
CAPRI S	09	1030 E	1055		N04	E42	6166	25 D	1	3	1038	2.50	3.40			
CAPRI S	10	0605 E	0646 D		S08	E52	6171	41 D	1	3	0612	1.20	2.40			
ARCETRI	10	0810	1035		S07	E52	6171	145	1	3	0843	1.70	2.60			
ZURICH	10	0830	0913 D		S07	E50	6171	43 D	1	2	0830		5.00			

SOLAR FLARES

JULY 1961

OBSERVATORY	DATE JULY 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
ARCETRI	10	0915	0925		S07	E50	6171	10	1	3	0915	2.50	3.90			
ZURICH	10	1312	1450		S07	E48	6171	98	1	2	1410		5.00			
CAPRI S	10	1314 E	1345		S08	E49	6171	31 D	1	3	1315	2.00	3.10			S-SWF
MCMATH	10	1317 E	1430		S08	E49	6171	73 D	1	3	1321		2.20			
HUANCAYO	10	1420 E	1453	1420	S07	W46	6171	33 D	1	2	1420	3.20	4.50	2.10		
LOCKHEED	10	1741	1800	1753	N18	E85	6172	19	1	2	1753	1.10	3.20		10	
WENDEL	11	0530 E	0543 D		S07	E40	6171	13 D	1				3.00			
WENDEL	11	0625	0632 D		S07	E36	6171	7 D	1				3.00			
WENDEL	11	0632	0642		S07	E39	6171	10	1				4.00			
WENDEL	11	0648 E	0722 D		S07	E39	6171	34 D	1+				5.00			
WENDEL	11	0652	0728 D		S06	E34	6171	36 D	1				4.00			
BUCHAREST	11	0700 E		0700	S08	E38	6171	□	2	3			6.00			
WENDEL	11	0749	0822		S06	E35	6171	33	1				3.00			
ZURICH	11	0835	0845		S07	E38	6171	10	1	2	0835		2.00			
WENDEL	11	0912	0930 D		S06	E36	6171	18 D	1+				5.00			
WENDEL	11	1100	1139 D		S08	E34	6171	39 D	1+				6.00			
WENDEL	11	1133 E	1139 D		N15	W65	6164	6 D	1+				5.00			
ONDREJOV	11	1332	1348	1336	S08	E36	6171	16	1	3	1336			2.70		
MCMATH	11	1333	1409	1338	S08	E35	6171	36	1+	3	1338		4.30			S-SWF
CAPRI S	11	1333 E	1412 D		S05	E33	6171	39 D	1	3	1336	1.60	2.20			
WENDEL	11	1339 E	1408 D		S07	E34	6171	29 D	2+				14.00			
LOCKHEED	11	1615	2000	1710	S06	E31	6171	225	2+	2	1710	8.80	9.30		30	
MCMATH	11	1620	1930 D	1659	S07	E30	6171	190 D	3	2	1657		16.00			
HUANCAYO	11	1640	2040	1704	S08	E33	6171	240	2	2	1704	7.50	10.00	4.30		S-SWF
SAC PEAK	11	1654	1916	1658	S06	E32	6171	142	3	3		11.72	12.38		32	
SAC PEAK	11	1654	1916	1716	S06	E32	6171									
SAC PEAK	11	1654	1916	1746	S06	E32	6171									
ONDREJOV	12	0504	0521		S05	E26	6171	17	1+	3	0506			2.20		
LOCARNO	12	0740	0805		S05	E23	6171	25	1	2						
ONDREJOV	12	0742	0759		S05	E24	6171	17	1+	3	0743			3.80		
ZURICH	12	0746	0753		S06	E22	6171	7	1	2	0746		2.00			
CAPRI S	12	0746 E	0848 D		S06	E24	6171	62 D	1	3	0830	2.00	2.40			
LOCARNO	12	0815	0840		S08	E26	6171	25	1	2						
ZURICH	12	0816	0834		S09	E26	6171	18	1	2	0816		1.00			
ONDREJOV	12	0817	0842 D	0823	S09	E28	6171	25 D	1	3	0823			2.70		
ARCETRI	12	0822	0845		S07	E20	6171	23	1	3						
UCCLE	12	0823 E	0839		S09	E26	6171	16 D	?	3						
WENDEL	12	0845 U			S07	E22	6171		2				8.00			
ONDREJOV	12	0845	0850	0845	S07	E25	6171	5	1	3	0845			3.10		
KODAIKNL	12	0909	0926	0926	S09	E29	6171	17	1	1		3.90	4.30			
ZURICH	12	0917	0927		S07	E23	6171	10	1	2	0917		3.00			
ONDREJOV	12	0917 E	0933	0925	S07	E26	6171	16 D	1+	3	0925			2.90		
ARCETRI	12	0918	0928		S07	E18	6171	10	1	3	0918	2.60	2.80			
ARCETRI	12	0923	0932		S07	E20	6171	9	1	3						
LOCARNO	12	1000	1048 D	1025	S06	E23	6171	48 D	3	2	1043		17.00			
CAPRI S	12	1000	1230		S08	E22	6171	150	3	3	1032	9.00	10.40			
WENDEL	12	1001	1303 D		S07	E24	6171	182 D	3+				32.00			
ONDREJOV	12	1003 E	1206	1031	S07	E25	6171	123 D	3+	3	1031			9.40		
STOCKHOLM	12	1004 E	1127 D		S08	E20	6171	83 D	3	1	1032	14.20	15.60			S-SWF

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OBSERVATORY	DATE JULY 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
UCCLE	12	1018	1020 D	1020	S07	E23	6171	2 D	1+	3	1020	4.00	4.80			
ZURICH	12	1020	1225		S07	E22	6171	125	3+	2	1020		17.00			
NEDERHORST	12	1024 E	1025 D		S07	E23	6171	1 D	3	2						
ARCETRI	12	1043	1235		S08	E20	6171	112	3	3						
NEDERHORST	12	1049 E	1059 D		S07	E23	6171	10 D	3	2						
MCMATH	12	1106 E	1300 D		S07	E22	6171	114 D	3	3	1106		16.00			
WENDEL	12	1555 E	1617 D		S08	E23	6171	22 D	1				3.00			
SAC PEAK	12	2248	2318	2254	S07	E15	6171	30	1	1		2.89	2.99		17	
BUCHAREST	13	0850	0952	0905	S08	E10	6171	62	1	2			3.60			
CAPRI S	13	0900	0943		S04	E05	6171	43	1	2	0913	2.20	2.20			
WENDEL	13	1204	1236		S07	E09	6171	32	1+				6.00			
LOCKHEED	13	2240	2335	2245	S05	E00	6171	55	1	2	2245	2.10	2.10		20	
LOCKHEED	13	2240	2335	2254	S05	E00	6171									
KODAIKNL	14	0255	0309	0307	S07	W03	6171	14	1	1	0305	1.30	3.20	1.44	122	
WENDEL	14	0459 E	0517		S07	W02	6171	18 D	1							
WENDEL	14	0520	0544	0530	S07	W01	6171	24	1+				6.00			
WENDEL	14	0554 E	0602		S09	E80	6174	8 D	1+				5.00			
WENDEL	14	0616	0637		S07	E01	6171	21	1				3.00			
WENDEL	14	0827	0902		S06	E00	6171	35	1				4.00			
ONDREJOV	15	0630 E	0639 D		S07	W14	6171	9 D	1	3	0630			2.20		
ONDREJOV	15	0650 E	0705	0700	S06	W16	6171	15 D	1	3	0700			2.60		
BUCHAREST	15	0700 E	0710	0700	S07	W16	6171	10 D	1	2			2.50			
CAPRI S	15	1117	1134		S05	W18	6171	17	1	3	1125	2.20	2.40			
ONDREJOV	15	1118 E	1138 D		S06	W19	6171	20 D	2	3	1125			3.70		
MCMATH	15	1433		1439	N11	E12	6172	296	3	3	1559		18.00			
MCMATH	15	1529	1929	1559	N11	E12	6172									
SAC PEAK	15	1434	1857 U	1508	N14	E14	6172	263 U	3+	2		28.01	27.62		34	S-SWF
SAC PEAK	15	1434	1857 U	1556	N14	E14	6172									
CAPRI S	15	1435	1730 D		N14	E15	6172	175 D	3	3	1601	16.00	17.60			
HUANCAYO	15	1508	1530	1512	S07	W19	6171	22	1	2	1512	1.40	1.50	8.00		
SAC PEAK	15	1508	1542	1512	S07	W21	6171	34	2	2		7.51	7.51		32	
MCMATH	15	1508	1549	1512	S07	W22	6171	41	2	3	1512		6.00			S-SWF
CAPRI S	15	1510	1536 D		S05	W20	6171	26 D	2+	3	1525	7.00	7.40			
LOCARNO	15	1515 E	1530		S08	W20	6171	15 D	1+	2						
LOCARNO	15	1520	1707 D		N15	E17	6172	107 D	3	2	1625		25.00			
HUANCAYO	15	1543 E	1802	1545	N11	E14	6172	139 D	2	2	1545	7.80	8.10	3.40		
LOCKHEED	15	1600 E	1915	1605 U	N14	E16	6172	195 D	2	1	1605	8.80	8.70		30	
SAC PEAK	15	1613	1644	1621	S07	E55	6174	31	1	2		1.92	2.21		18	
ZURICH	16	0609 E	0614		S05	W31	6171	5 D	1	2	0609		2.00			
BUCHAREST	16	0730	0816	0807	S07	W31	6171	46	1	2			5.40			
CAPRI S	16	1254	1309		S03	W32	6171	15	1	3	1300	2.20	2.60			
WENDEL	16	1507 E	1525 D		S09	W30	6171	18 D	1				4.00			
LOCKHEED	16	1909	1935	1922	S10	W36	6171	26	1	1	1923	2.00	2.20		20	
LOCKHEED	16	1938	2055	1943	S08	W38	6171	77	1+	1	2005	4.00	4.50		30	
LOCKHEED	16	1938	2055	2005	S08	W38	6171									
LOCKHEED	16	1938	2055	2040	S08	W38	6171									
MCMATH	16	1939	2005 D	1953	S08	W38	6171	26 D	1+	2	1953		3.50			

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SAC PEAK	16	1950 E	2106	2040	S07	W39	6171	76 D	2	2		5.05	5.67		18	
CAPRI S	17	0720	0920		S09	W42	6171	120	3	1	0834	11.00	15.40			
BUCHAREST	17	0721	0736 D	0736	S07	W43	6171	15 D	2	1			7.20			
LOCARNO	17	0725 E	0840		S07	W45	6171	75 D	2	3						
ONDREJOV	17	0750 E	0808 D		S07	W44	6171	18 D	2	2	0754			2.30		
MCMATH	17	1300	1344	1313	S08	W44	6171	44	1	2	1313		3.00			S-SWF
CAPRI S	17	1307	1345		S10	W40	6171	38	1	2	1324	3.00	4.20			
MCMATH	17	1345	1449		S08	W44	6171	64	1	1			2.50			
ZURICH	17	1610	1635 D		N05	E39	6175	25 D	1	2	1610		2.00			
MCMATH	17	1610 E	1804 D		N10	E40	6175	114 D	1+	1	1707		4.50			
LOCKHEED	17	1645	1711	1657	S06	W49	6171	26	1	1	1657	2.10	2.70		20	
LOCKHEED	17	1907	1935	1916	S06	W50	6171	28	1	1	1916	3.00	3.90		30	
SAC PEAK	17	1914	1922	1916 U	S07	W52	6171	8	1	1		1.88	2.41		23	
HUANCAYO	17	1915	1935	1917	S08	W50	6171	20	1	2	1917	2.00	3.20	3.00		
LOCKHEED	17	2125	2255	2138	S08	W49	6171	90	1+	1	2138	3.80	4.90		30	
LOCKHEED	17	2125	2255	2147	S08	W49	6171									
SAC PEAK	17	2132	2234	2146 U	S10	W48	6171	62	1	1		3.47	4.37		20	S-SWF
MCMATH	17	2153 E	2235 D		S08	W50	6171	42 D	2	1	2156		6.00			
LOCKHEED	17	2259	2345	2302	S07	W55	6171	46	1	1	2316	1.80	2.40		20	
LOCKHEED	17	2259	2345	2316	S07	W55	6171									
LOCKHEED	17	2345	0015	2347	S07	W55	6171	30	1	1	2347	1.60	2.20		20	
LOCKHEED	17	2345	0015	2351	S07	W55	6171									
SAC PEAK	17	2346 E	2350	2348	S09	W52	6171	4 D	1	1		1.88	2.45		17	
ONDREJOV	18	0754	0823 D		S08	W56	6171	29 D	2+	1	0811			4.10		
ARCETRI	18	0806	0826		S08	W62	6171	20	1	3						
KODAIKNL	18	0813 E	0831		S07	W55	6171	18 D	1+	1		2.60	4.90			
R O HERST	18	0813 E	0835	0815 U	S08	W59	6171	22 D	2	3	0815	3.10	6.40	2.16	80	
NEDERHORST	18	0814 E	0835 D		S08	W55	6171	21 D	2	2						
CAPRI S	18	0921	1155		S06	W59	6171	154	3+	3	1016	14.00	28.00			
STOCKHOLM	18	0945	1150		S07	W55	6171	125	3	1	1022	10.00	19.00			
LOCARNO	18	0945 E	1330	1030	S05	W60	6171	225 D	3	3	1030		80.00			
ONDREJOV	18	0946 E	1026 D	0959	S06	W58	6171	40 D	3	3	0959			6.70		
DUNSINK	18	0948 E	1218 D		S05	W56	6171	150 D	3+		1019	14.00	26.40	4.40		
R O HERST	18	0950 E	1052 D	1003	S06	W59	6171	62 D	3	3	1003	9.60	20.00	4.56	135	S-SWF
ARCETRI	18	1020	1122		S08	W63	6171	62	3	3						
UCCLE	18	1030 E			S06	W59	6171	□	3	4		8.50	17.00			
KODAIKNL	18	1043 E	1053 D		S07	W55	6171	10 D	2	1		3.90	7.40			
NEDERHORST	18	1052 E	1116 D		S08	W55	6171	24 D	3+	2						
MCMATH	18	1107 E	1210		S07	W60	6171	63 D	3+	2	1107		25.00			
CAPRI S	18	1218 E	1225 D		S06	W57	6171	7 D	1	3	1220	1.20	2.40			
HUANCAYO	18	1617	1635	1619	S05	W63	6171	18	1	2	1619	.80	1.70	6.30		
KODAIKNL	19	0210	0230	0225	S06	W70	6171	20	1	1	0222	1.30	3.40	1.60	122	
WENDEL	19	0736 E	0748 D		N07	E82	6178	12 D	1				3.00			
WENDEL	19	0740	0800 D		S02	W72	6171	20 D	1+				5.00			
WENDEL	19	0752 E	0818 D		N07	E82	6178	26 D	1				3.00			
CAPRI S	19	1443 E	1519		S07	W70	6171	36 D	1	2	1455	1.00	3.20			
HUANCAYO	19	1446	1508	1454	S11	W75	6171	22	1	2	1454	.90	2.30	3.00		
CAPRI S	19	1501 E	1510 D		N06	E85	6178	9 D	1	2	1504	.80	3.60			

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OBSERVATORY	DATE JULY 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
LOCKHEED	19	1903	1945	1912	S10	W75	6171	42	1	1	1912	1.00	2.30		20	
LOCKHEED	19	2051	2120	2102	S10	W75	6171	29	1	1	2102	1.50	3.40		30	
MCMATH	19	2106 E	2122 D		S10	W80	6171	16 D	1	1	2110		2.50			
CAPRI S	20	0853 E	0912 D		S07	W90	6171	19 D	1	3	0855	1.00				
WENDEL	20	1150	1211 D		S07	W10	6174	21 D	1				3.00			
SAC PEAK	20	1334	1354	1348	S03	W90	6171	20	1	2		.58	2.89		34	
LOCARNO	20	1525 E	1726 D		S07	W90	6171	121 D	1	2						
MCMATH	20	1553			S05	W90	6171	202 D	3	1						
MCMATH	20	1840	1915 D	1847	S05	W90	6171									
SAC PEAK	20	1600 E	1603 D	1600 D	S05	W90	6171	3 D	2	1		1.73	8.66		26	
ARCETRI	20	1600	1610		S08	W90	6171	10	1	2						
SAC PEAK	20	1633 E	1726	1656	S06	W90	6171	53 D	3+	2		6.64	33.21		35	S-SWF
LOCKHEED	20	1650 E	1735	1650 E	S05	W90	6171	45 D	2	2	1650	2.00	9.70		10	
LOCKHEED	20	1828	1910	1840	S07	W90	6171	42	3	1	1840	2.60	12.90		30	
HAWAII	20	1830	1942	1848	S07	W90	6171	72	2-	2	1848	1.00	5.00			
SAC PEAK	20	1832 E	1924 U	1849	S09	W90	6171	52 D	3+	2		6.64	33.21		40	
SAC PEAK	20	1832 E	1924 U	1859	S09	W90	6171									
HUANCAYO	20	1838	1907	1850	S06	W90	6171	29	2+	2	1850	4.90		6.70		
WENDEL	21	0511	0552 D		N01	E28	6176	41 D	1				4.00			Slow S-SWF
WENDEL	21	0556	0625		S00	E26	6176	29	1				4.00			
SAC PEAK	21	1714	1734	1718	S04	W90	6171	20	2	3		3.61			30	S-SWF
SAC PEAK	21	1714	1734	1732												
MCMATH	21	1717	1800	1718	S04	W90	6171	43	2	2						
LOCKHEED	21	1736 E	1755 U	1736 E	S01	W90	6171	19 D	3	1	1736	3.00	14.90		20	
SAC PEAK	22	1440	1510	1444	N14	W76	6172	30	1	3		1.11	2.35		18	G-SWF
LOCKHEED	23	2343	0030	2348	S06	W49	6174	47	1	1	2348	2.00	2.50		30	
WENDEL	24	0500 E	0640 D		N15	E18	6178	100 D	3+				29.00			
AROSA	24	0550 E	0605 D		N11	E17	6178	15 D	2							
ARCETRI	24	0900	1003		N10	E13	6178	63	1	3						
WENDEL	24	0900 E	1020 D		N08	E14	6178	80 D	2+				14.00			
ZURICH	24	0903	0913		N11	E10	6178	10	1	3	0903		2.00			
CAPRI S	24	0903 E	1045 D		N09	E14	6178	102 D	1	3	0925	3.50	3.70			
ZURICH	24	0936	1008		N09	E12	6178	32	1	3	0936		2.00			
SAC PEAK	24	1410 U	1639 D	1440 U	N01	W20	6176	149 D	1+			3.09			25	
WENDEL	24	1434 E	1512		N01	W18	6176	38 D	1+				6.00			
CAPRI S	24	1435 E	1503 D		N03	W17	6176	28 D	1	3	1437	2.00	2.10			
WENDEL	24	1636 E	1706 D		N01	W19	6176	30 D	1				4.00			
SAC PEAK	24	1722	2214 D	1827 U	N07	E10	6178	292 D	3	1		17.94	17.94		28	
MCMATH	24	1732	2033 D	1815	N08	E07	6178	181 D	2+	2	1815		10.00			
WENDEL	24	1735 E	1840 D		N07	E10	6178	65 D	2+				14.00			Slow S-SWF
HAWAII	24	1746 E	2048	1827	N07	E09	6178	182 D	1+	2	1827	4.30	4.30			
LOCKHEED	24	1755 E	2220	1820	N09	E07	6178	265 D	2	1	1820	6.40	6.30		30	
HUANCAYO	24	1757	1852		N08	E11	6178	55	1+	2	1801	8.20	8.40	2.00		
ZURICH	25	0801	0803		N06	W01	6178	2	1	3	0801		2.00			
UCCLE	25	1102	1111		N00	E68	6181	9	1+	3		3.50	7.70			

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OBSERVATORY	DATE JULY 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
ONDREJOV	25	1357 E	1403		N07	W06	6178	6 D	1	3	1358			2.10		
AROSA	25	1442	1449		N07	W04	6178	7	1							
SAC PEAK	25	1849	1934	1855	N08	W10	6178	45	1	3		3.03	3.03		22	
SAC PEAK	25	1849	1934	1904	N08	W10	6178									
SAC PEAK	25	1849	1934	1911	N08	W10	6178									
SAC PEAK	25	2242 E	2316	2244	N08	W12	6178	34 D	1	3		4.04	4.04		22	
AROSA	27	0627	0648		N06	W27	6178	21	1							
WENDEL	27	0628 E	0709 D	0634 U	N07	W26	6178	41 D	1+				7.00			
BUCHAREST	27	0632 E	0651	0632	N08	W27	6178	19 D	1				3.30			
ZURICH	27	0633 E	0645		N06	W27	6178	12 D	1	3	0633		4.00			
LOCARNO	27	0740 E	0825		N10	W84	6175	45 D	1+	2						
ARCETRI	27	0943	0954		N08	W82	6175	11	1+	3						
WENDEL	27	1151 E	1220 D		N10	W85	6175	29 D	1+				5.00			
LOCKHEED	27	1932	2040	1938	N09	W88	6175	68	1	1	1938	.80	2.40		10	
LOCKHEED	27	1932	2040	2000	N09	W88	6175									
LOCKHEED	27	1932	2040	2030	N09	W88	6175									
SAC PEAK	27	2308	2324	2312	N12	E80	6184	16	1	2		.93	2.35		18	
LOCKHEED	27	2350	0030 D	2358	N10	W90	6175	40 D	1	1	2358	.70	3.50		10	
SAC PEAK	28	1512	1938 U	1745 U	N08	W44	6178	266 U	3	1		12.42	14.50		24	
LOCKHEED	28	1643	1845	1715	N09	W45	6178	122	1	1	1715	3.50	4.10		10	
HAWAII	28	1754 E	1930		S27	W33	□	96 D	1+	2	1800	4.10	4.80			
LOCKHEED	29	1635	1715	1648	N07	W58	6178	40	1	1	1648	2.00	2.90		20	
SAC PEAK	29	1646 E	1649 D	1646 U	N05	W61	6178	3 D	2	1		7.80	11.69		20	
LOCKHEED	29	1952	2020 U	1958	N08	W61	6178	28 U	1	1	1958	2.10	3.10		20	
LOCKHEED	29	2327	2355	2333	N12	W65	6178	28	1	1	2333	1.50	2.40		20	
AROSA	30	1625 E	1635 D		N09	W71	6178	10 D	1							
SAC PEAK	30	1626	1639 D	1639 U	N07	W71	6178	13 D	1	1		1.59	3.09		16	
WENDEL	31	0709 E	0730 D		N10	W81	6178	21 D	1				3.00			
WENDEL	31	0740	0815		N24	W21	6180	35	1				3.00			
WENDEL	31	1219	1235		N23	W24	6180	16	1				3.00			

COMMERCE - STANDARDS - BOULDER

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

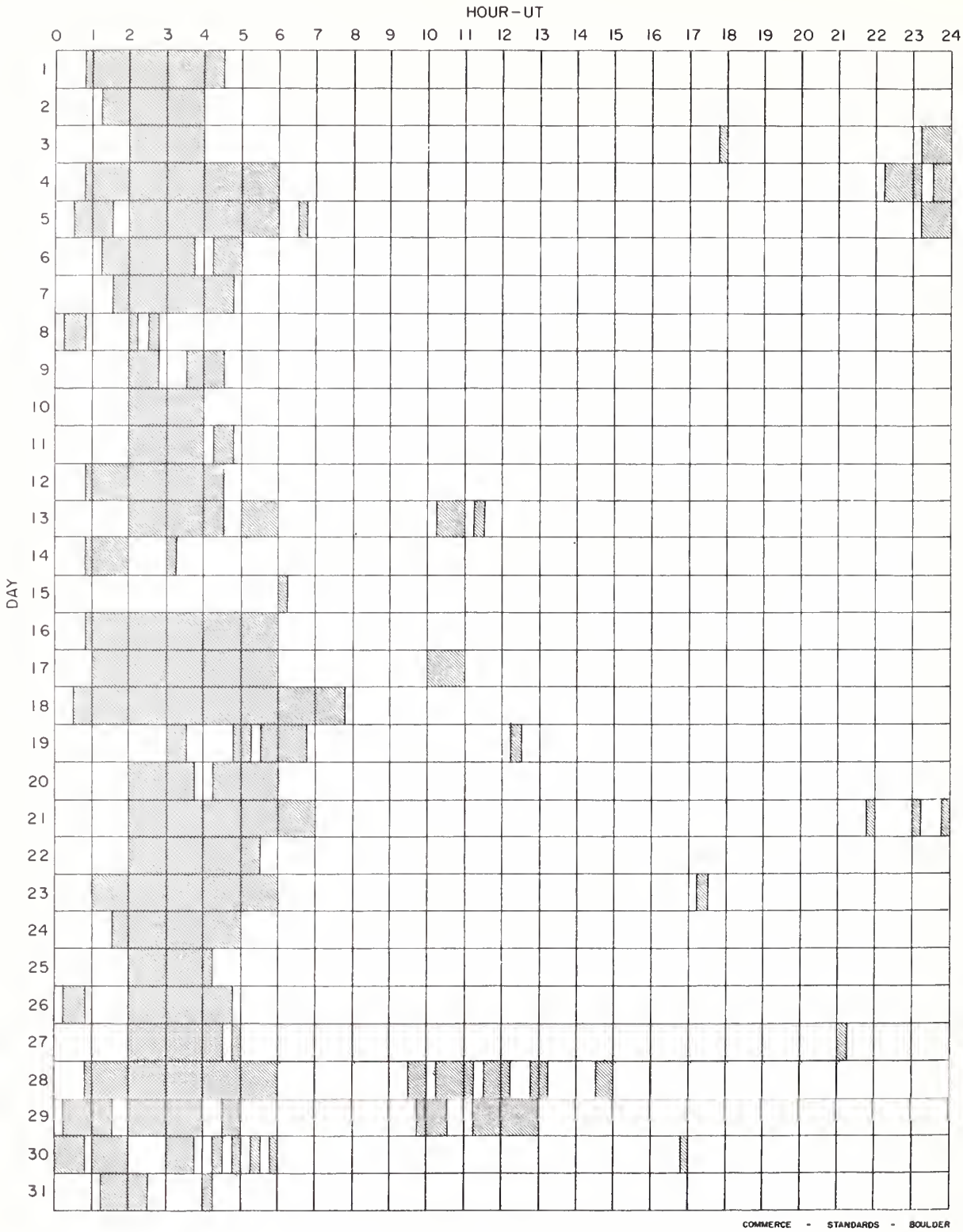
CAPRI C	ANACAPRI - CERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANCELES
MCMATH	MCMATH-HULBERT
MOSCOW-C	MOSCOW - CAISH
R O HERST	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO 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 SACRAMENTO PEAK.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JULY 1961



Stations Include:

Anacapri (Swedish)
Arcetri
Bucharest
Hawaii
Huancayo
Lockheed
McMath-Hulbert
Ondrejov
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Tashkent
Wendelstein

Noted as follows: Date-Universal Time-Coordinates

JUNE 1961

	WENDEL	02	0601 E	S07 E67	
*	ARCETRI	02	0840 E	S06 E58	
	MCMATH	02	1313 E	N11 W89	
	KODAIKNL	03	0245 E	N07 W48	
	LOCKHEED	03	1731	N17 W46	
	LOCKHEED	03	1741	N09 W56	
	LOCKHEED	03	1848	N00 E59	
	LOCKHEED	03	2030	N00 E59	
	LOCKHEED	03	2138	N17 W47	
	LOCKHEED	03	2245	N02 E55	
	LOCKHEED	03	2340	N02 E55	
	LOCKHEED	04	0031	S07 E34	
	KODAIKNL	04	0225 E	S07 E35	
	MEUDON	04	1012	N02 E48	
	LOCKHEED	04	2144	S07 E23	
	LOCKHEED	04	2145	N00 E42	
	LOCKHEED	04	2203	N00 E24	
	LOCKHEED	04	2242	N00 E24	
	LOCKHEED	04	2247	S07 E25	
	HAWAII	04	2250 E	S06 E24	
	LOCKHEED	04	2314	N00 E42	
	LOCKHEED	05	0033	N00 E42	
*	STOCKHOLM	05	1010	N09 E03	
*	MCMATH	05	1522	N02 E33	
*	R O HERST	05	1532 E	N01 E34	
	SAC PEAK	05	1546	N11 E05	
	SAC PEAK	05	1550	S05 E13	
	SAC PEAK	05	1652	S05 E14	
	MCMATH	05	1655	S04 E14	
	MCMATH	05	1948	N01 E30	
*	HAWAII	05	2142 E	N01 E23	
	SAC PEAK	05	2302	N12 E00	
*	CAPRI S	06	1235 E	S01 E25	
*	MCMATH	06	1235	N01 E21	
	HAWAII	06	2008	N03 E15	
	LOCKHEED	06	2124 U	N00 E16	
	HAWAII	06	2224	N01 E15	
	LOCKHEED	06	2236	N02 E15	
	LOCKHEED	06	2309	N01 E17	
	LOCKHEED	06	2328	S04 W08	
	MEUDON	07	0621	N02 E07	
	LOCKHEED	07	1928	S04 W18	
	HUANCAYO	08	2143	N05 W90	
*	CAPRI S	09	1252	N02 W18	
	WENDEL	09	1542 E	N02 E77	
	WENDEL	09	1707 E	S04 W45	
	HAWAII	09	1838	N01 E85	
*	LOCKHEED	09	1919	N01 E76	
*	HAWAII	09	1940	N01 E85	
*	LOCKHEED	09	2103	N01 E76	
*	MCMATH	09	2108 E	N02 E77	
	LOCKHEED	09	2129	S03 W51	
	LOCKHEED	09	2141	S13 W73	
	LOCKHEED	09	2205	S02 W52	
	LOCKHEED	09	2212	N16 W66	
*	LOCKHEED	09	2246	N02 E78	
*	HAWAII	09	2250 E	N01 E85	
	LOCKHEED	09	2252	S13 W72	
	LOCKHEED	10	0038	N02 E78	
	MEUDON	10	1041	N02 W31	
	SAC PEAK	10	1318	S14 W88	
*	SAC PEAK	10	1506	N00 W37	
	SAC PEAK	10	1846	N02 E67	
	LOCKHEED	10	1856 U	S12 W90	
	LOCKHEED	10	1858	N00 W39	
	LOCKHEED	10	1944	N02 W38	
	LOCKHEED	10	2019	S01 W65	
	LOCKHEED	10	2153	S01 W65	
	LOCKHEED	10	2252	N03 W42	
	MEUDON	11	0821	N02 W50	
*	MEUDON	11	0930	N02 W52	
*	MEUDON	11	0955	N02 E55	
*	R O HERST	11	1002 E	N02 W47	
	CAPRI S	11	1453	S14 E63	
	LOCKHEED	11	1825	S04 W71	
	LOCKHEED	11	1844	N03 E53	
	MCMATH	11	1908	N02 E54	
	LOCKHEED	11	2315	N02 W52	
	LOCKHEED	11	2323	N02 E50	
	LOCKHEED	12	0111	N04 W58	
	HAWAII	12	0112	N03 W53	
*	MEUDON	12	1055	N04 E50	
	WENDEL	12	1135 E	N03 E45	
	ONDREJOV	12	1141 E	N02 E44	
*	MCMATH	12	1146 E	N02 W60	
*	MCMATH	12	1147	N26 E20	
	SAC PEAK	12	1308	S12 E80	
	MCMATH	12	1308	S13 E85	
	SAC PEAK	12	1504 U	N03 E38	
	SAC PEAK	12	1628	N02 E41	
	SAC PEAK	12	1724	N03 E40	
	LOCKHEED	12	1833	N02 E33	
	LOCKHEED	12	1909	N02 E33	
	LOCKHEED	12	1954	N02 E33	
	LOCKHEED	12	2050	N04 E32	
	MCMATH	12	2053	N03 E31	
	LOCKHEED	12	2309	N05 E40	
	MEUDON	13	0636	N02 E23	
	MEUDON	13	0732	N02 E25	
	SAC PEAK	13	1404	N02 E21	
	SAC PEAK	13	1425	S02 E26	
	LOCKHEED	13	1911	N03 E25	
	LOCKHEED	13	2020	S10 E59	
	LOCKHEED	13	2035	N02 E19	
	LOCKHEED	13	2109	N03 E18	
	LOCKHEED	13	2123	N03 E24	
	LOCKHEED	13	2126	N01 E19	
	LOCKHEED	13	2236	S01 E21	
	LOCKHEED	13	2321	N05 E16	
	WENDEL	14	1407 E	S10 E30	
*	MEUDON	14	1605	N03 E10	
	LOCKHEED	14	1814	S08 E48	
	LOCKHEED	14	1935	S08 E40	
	LOCKHEED	14	2013	S07 E45	
	LOCKHEED	14	2044	N01 E04	
	MCMATH	14	2047	N02 E04	
	LOCKHEED	14	2122	S09 E48	
	LOCKHEED	14	2210	S09 E48	
	LOCKHEED	14	2230	N01 E04	
	LOCKHEED	14	2300	S09 E48	
	LOCKHEED	14	2332	N01 E04	
	LOCKHEED	14	2334	S07 E43	
	LOCKHEED	14	2357	N00 E04	
	WENDEL	15	0541 E	S03 W37	
	WENDEL	15	0625 E	N07 W68	
	MEUDON	15	0930	S07 E37	
*	CAPRI S	15	0945	S07 E37	
*	MEUDON	15	0948	S07 E37	
	LOCKHEED	15	1614	S07 E32	
	LOCKHEED	15	1627	N12 W74	
	LOCKHEED	15	1646	S07 E32	
*	MCMATH	15	1702	S09 E30	
*	LOCKHEED	15	1704	S09 E29	
*	LOCKHEED	15	1717	N02 W07	
*	MCMATH	15	1718	N02 W06	
	LOCKHEED	15	1733	N12 W74	
	MCMATH	15	1737	N12 W78	
*	WENDEL	15	1741 E	N03 W06	
*	LOCKHEED	15	1752	N02 W18	
	LOCKHEED	15	1833	N25 E78	
	LOCKHEED	15	1833	N02 W18	
	LOCKHEED	15	1840	N12 W74	
	LOCKHEED	15	1841	S06 E29	
	MCMATH	15	1923	N01 W07	
	LOCKHEED	15	1923	N02 W08	
	LOCKHEED	15	1955	N00 W05	
	LOCKHEED	15	2012	S06 E28	
	LOCKHEED	15	2044	N01 E00	
	SAC PEAK	15	2054	S14 E38	
	LOCKHEED	15	2110	N13 W77	
	LOCKHEED	15	2117	N22 E90	
	LOCKHEED	15	2200	N13 W77	
	HAWAII	15	2202	N02 W09	
	LOCKHEED	15	2202	N02 W09	
	MCMATH	15	2203	N02 W09	
	LOCKHEED	15	2210	N22 E90	
	LOCKHEED	15	2315	N13 W77	
	LOCKHEED	15	2352	N13 W77	
*	HAWAII	15	2358 E	N21 E90	
	LOCKHEED	16	0040	N22 E90	
	LOCKHEED	16	0111	N00 W11	
	WENDEL	16	0538 E	N02 W13	
	MEUDON	16	0717	N02 W14	
	MEUDON	16	0801	S07 E22	
*	MEUDON	16	0832	S07 E22	
	ARCETRI	16	0833 E	S06 E94	
+	CAPRI S	16	0846 E	S04 E22	
+	ONDREJOV	16	0958	S14 W13	
+	ARCETRI	16	1000 E	S10 W10	
	CAPRI S	16	1037 E	S12 W09	
<	MCMATH	16	1334	S10 E22	
	MCMATH	16	1454	S12 W13	
	LOCKHEED	16	1633	N14 W30	
	LOCKHEED	16	1755	N03 W23	
	LOCKHEED	16	1845	S07 E16	
	LOCKHEED	16	1935	S14 W13	
	LOCKHEED	16	2009	S14 W14	
	LOCKHEED	16	2042	S13 W18	
	LOCKHEED	16	2106	N06 W18	
	LOCKHEED	17	0017	S10 E10	
	LOCKHEED	17	0025	S11 E17	
	LOCKHEED	17	0102	S11 E17	
	LOCKHEED	17	0104	N03 W24	
	HAWAII	17	0108	S09 W23	
	KODAIKNL	17	0200 E	N03 W23	
	ONDREJOV	17	1217	S03 W62	
	MCMATH	17	1218	S04 W70	
	MEUDON	17	1333	N06 W25	
	MCMATH	17	1336	N05 W24	
	WENDEL	17	1457 E	S11 E07	
	LOCKHEED	17	1634	N03 W31	
	LOCKHEED	17	1924	S12 E07	
	LOCKHEED	17	1941	S09 E04	
	LOCKHEED	17	2116	N00 W34	
	LOCKHEED	17	2202	S01 W33	
	MCMATH	17	2206	N01 W34	
	LOCKHEED	17	2207	N11 E76	
	LOCKHEED	17	2246	S01 W35	
	LOCKHEED	18	0025	N24 E63	
	WENDEL	18	0656 E	S08 E00	
	WENDEL	18	0657 E	S11 W35	
	WENDEL	18	0703 E	S06 W80	
	WENDEL	18	0728 E	S06 W85	
	WENDEL	18	0738 E	S11 W35	
	WENDEL	18	1108 E	S12 W36	
*	MCMATH	18	1318	S10 E40	
	MCMATH	18	1348	S11 W37	
	ONDREJOV	18	1515 E	N03 W43	
	LOCKHEED	18	1728	S12 W39	
	LOCKHEED	18	1751	S07 W90	
	LOCKHEED	18	1851	S03 W45	
	LOCKHEED	18	1920	N12 E65	
	LOCKHEED	18	1941	N12 E65	
	HAWAII	18	2354	N08 E37	
	ONDREJOV	19	0620 E	S11 W13	
	WENDEL	19	0623 E	S12 W09	
	WENDEL	19	0624 E	S08 W15	
	WENDEL	19	0806 E	S12 W50	
	WENDEL	19	0855 E	N01 W55	
	WENDEL	19	0956 E	N10 W43	
	WENDEL	19	1039 E	N10 W43	
	WENDEL	19	1057 E	N10 W46	
	WENDEL	19	1103 E	S08 W23	
	WENDEL	19	1137 E	N01 W56	
	WENDEL	19	1219 E	S12 W50	
	WENDEL	19	1251 E	S12 W51	
	SAC PEAK	19	1424	S12 W21	
	MCMATH	19	1427	S11 W21	
	LOCKHEED	19	1605 E	S12 W52	
	LOCKHEED	19	1615	S07 W23	
	LOCKHEED	19	1650	N13 E54	
	SAC PEAK	19	1652	N14 E55	
	LOCKHEED	19	2044	S13 W55	
	LOCKHEED	19	2117	N12 E01	
	LOCKHEED	19	2141	S09 W27	
	LOCKHEED	20	0053	N13 W03	
*	MEUDON	20	0725	N12 E56	
	ARCETRI	20	0927 E	N12 W07	
	WENDEL	20	1254 E	S11 E37	
	SAC PEAK	20	1552	S12 W36	
	LOCKHEED	20	1729	S09 W15	
	WENDEL	20	1750 E	N03 W76	
	LOCKHEED	20	1915	S09 W15	
	LOCKHEED	20	2210	N11 E37	
	LOCKHEED	20	2357	N08 E34	
	ONDREJOV	21	0457 E	N12 W20	
	ONDREJOV	21	0941	N12 W20	
	MCMATH	21	1154	N10 E27	
	SAC PEAK	21	1318	N14 W24	
	SAC PEAK	21	1348	N12 E29	
	MCMATH	21	1350	N12 E27	
	MCMATH	21	1446	N10 E25	
	SAC PEAK	21	1722 E	N10 E27	
	MCMATH	21	2035	N11 E22	
	LOCKHEED	21	2100 E	N14 E24	
	SAC PEAK	21	2107 E	N14 E24	
	LOCKHEED	21	2119	N14 W28	
	LOCKHEED	21	2133	N12 W24	
	LOCKHEED	21	2136	N08 E21	
	SAC PEAK	21	2136	N09 E23	
	LOCKHEED	21	2233	N11 E22	
	LOCKHEED	21	2257	N11 W26	
	LOCKHEED	21	2305	N14 W30	
	LOCKHEED	21	2353	N14 W31	
	LOCKHEED	22	0024	N12 W30	
	LOCKHEED	22	0107	N13 E24	
	WENDEL	22	0620 E	N11 W38	
	ONDREJOV	22	0907	N12 W38	
	ONDREJOV	22	0942	N12 W38	
*	WENDEL	22	1000 E	N10 W35	
*	MCMATH	22	1107	N11 W39	
*	CAPRI S	22	1108 E	N15 W39	
	CAPRI S	22	1111 E	S18 E28	
*	MCMATH	22	1146	N21 E05	
*	CAPRI S	22	1150 E	N21 E09	
	ARCETRI	22	1537 E	N13 W39	
	LOCKHEED	22	1859	N12 W42	
	LOCKHEED	22	2004	N12 W43	
	SAC PEAK	22	2006	N14 W43	
	LOCKHEED	22	2245	N10 W47	
	LOCKHEED	22	2250	N11 W46	
	LOCKHEED	22	2328	N11 W50	
	WENDEL	23	0739 E	N11 W47	
	WENDEL	23	0752 E	N13 W50	
*	WENDEL	23	1014 E	N12 W48	
*	ARCETRI	23	1045 E	N11 W54	
*	WENDEL	23	1045 E	N11 W54	
*	CAPRI S	23	1402 E	N12 W54	
	ONDREJOV	23	1537	N14 W55	
	LOCKHEED	23	1652	N12 W58	
*	LOCKHEED	23	1752	N11 W49	
	LOCKHEED	23	1823	N13 W45	
	HAWAII	23	1824	N13 W47	
	LOCKHEED	23	1838	N11 W49	
	LOCKHEED	23	1850	N13 W58	
	LOCKHEED	23	1930	N12 W55	
	HAWAII	23	1934	N23 W56	
	LOCKHEED	23	1945	N12 W50	
	LOCKHEED	23	2236	N14 W65	
	HAWAII	23	2238	N16 W66	
	LOCKHEED	23	2245	N12 W55	
	LOCKHEED	23	2255	N14 W61	
	HAWAII	23	2318	N16 E01	
	LOCKHEED	23	2319	N16 W02	
	LOCKHEED	23	2323	N13 W60	
	LOCKHEED	23	2346	N12 W55	
	LOCKHEED	24	0025	N13 W61	
	LOCKHEED	24	0050	N13 W61	
	WENDEL	24	0517 E	N16 W06	
*	WENDEL	24	0812 E	N10 W64	
	MEUDON	24	1020	N13 W17	
	WENDEL	24	1030 E	S08 W47	
*	MEUDON	24	1030	N12 W60	
	WENDEL	24	1113 E	N12 W62	
	MCMATH	24	1152	N14 W10	
	LOCKHEED	24	1633	N13 W70	
	SAC PEAK	24	1848	N11 W61	
	HAWAII	24	1850 E	N07 W58	
	MCMATH	24	1854 E	N13 W60	
	LOCKHEED	24	2220 E	N13 W70	
	LOCKHEED	24	2228	N15 W16	
	ONDREJOV	25	0535	N14 W65	
	ONDREJOV	25	1106	N14 W80	
<	SAC PEAK	25	1306 E	N22 W36	
	SAC PEAK	25	1440	S07 W48	
	CAPRI S	25	1455 E	N13 W85	
	LOCKHEED	25	1600 E	N13 W25	
	LOCKHEED	25	1651	N15 W23	
	LOCKHEED	25	1703	N17 W85	
	LOCKHEED	25	1719	N15 W85	
	SAC PEAK	25	1720	N16 W81	
	LOCKHEED	25	1741	N15 W85	
	SAC PEAK	25	1828	N12 W89	
	LOCKHEED	25	1830	N15 W85	
	HAWAII	25	1850	N14 W90	
	LOCKHEED	25	1940	N17 W80	
	MCMATH	25	2110	N14 W87	
	HAWAII	25	2114	N15 W90	
	LOCKHEED	25	2134	N10 W80	
	LOCKHEED	25	2237	N16 W90	
	MCMATH	25	2237	S16 E90	
*	STOCKHOLM	26	0952	N16 W31	
	LOCKHEED	26	1600	S07 W67	
	LOCKHEED	26	1633	S07 W65	
	LOCKHEED	26	1739	N15 W39	
	MCMATH	26	1740	N15 W40	
	LOCKHEED	26	1843	S08 W78	
	LOCKHEED	26	2001	N14 W41	
	HAWAII	26	2004	N18 W40	
	MCMATH	26	2004	N15 W41	
	LOCKHEED	26	2047	S10 W39	
	LOCKHEED	26	2300	S06 W70	
	SAC PEAK	26	2300	N15 W43	
	MCMATH	26	2301	N15 W42	
	LOCKHEED	26	2301	N15 W43	
	HAWAII	26	2302 E	N16 W43	
	MCMATH	27	1633 E	N15 W52	
	LOCKHEED	27	1635 E	N14 W52	
	SAC PEAK	27	1716	N14 W54	
	MCMATH	27	1719 E	N15 W52	
	LOCKHEED	27	1722 E	N14 W52	
	LOCKHEED	27	1806 U	S07 W80	
	LOCKHEED	27	2009	N05 E10	
	LOCKHEED	27	2021	N13 W54	
	LOCKHEED	27	2220	N05 E09	
	LOCKHEED	27	2303	S08 W85	
	MCMATH	28	1149	N05 W01	
	ONDREJOV	28	1243	N11 W63	
	MCMATH	28	1430	N12 E90	
	SAC PEAK	28	1432	N12 W62	
	MCMATH	28	1523	N12 E90	
	SAC PEAK	28	1524	N12 E90	
	SAC PEAK	28	1608	N12 W64	
	LOCKHEED	28	1617 E	N13 W90	
	LOCKHEED	28	1818	N06 W04	
	LOCKHEED	28	1944	N11 W65	
	LOCKHEED	28	2030	N04 W06	
	HAWAII	28	2034	N06 W05	
	LOCKHEED	28	2051	N12 W66	
	HUANCAYO	28	2051	N12 W60	
	HAWAII	28	2052	N14 W65	
	LOCKHEED	29	0040	N04 W04	
	MEUDON	29	0750	N06 W12	
*	MEUDON	29	1310	N13 W70	
*	MCMATH	29	1317	N14 W77	
*	ONDREJOV	29	1330 E	N14 W75	
	LOCKHEED	29	1750	N05 W20	
	MCMATH	29	1750	N07 W19	
	LOCKHEED	29	1820	N13 W74	
	LOCKHEED	29	1845	N05 W20	
	MCMATH	29	1901	N08 W20	
	LOCKHEED	29	1917	N12 W78	
	LOCKHEED	29	1922	N13 E64	
	SAC PEAK	29	1945 U	N06 W21	
	LOCKHEED	29	1947	N06 W21	
	LOCKHEED	29	2057	N05 W20	
*	CAPRI S	30	0618	N07 W24	
	WENDEL	30	0730 E	N08 W26	
*	ONDREJOV	30	0743	N07 W28	
	ARCETRI	30	0826 E	N06 W27	
	WENDEL	30	0829 E	N07 W27	
	WENDEL	30	0913 E	N07 W27	
	WENDEL	30	1052 E	N07 W28	
	ARCETRI	30	1114 E	N06 W29	
	WENDEL	30	1117 E	N08 W28	
	MCMATH	30	1122	N08 W30	
	WENDEL	30	1140 E	N08 W29	
	MCMATH	30	1156	N08 W29	
	WENDEL	30	1212 E	N08 W30	
	WENDEL	30	1335 E	S13 E20	
	WENDEL	30	1422 E	N07 W31	
	WENDEL	30	1425 E	N08 W31	
	WENDEL	30	1442 E	N08 W31	
	WENDEL	30	1442 E	S13 E19	
	WENDEL	30	1604 E	N08 W31	
	WENDEL	30	1754 E	N07 W32	

*Rated as flare of importance ≥ 1 by other observatories (See CRPL-F 203 Part B for July 1961)

SOLAR FLARES

APRIL 1961

OBSERVATORY	DATE APR 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
GOOD HOPE	01	0643 E	0655		S09	W80	6067	12 D	1		0643	.80				
BUCHAREST	01	0852 E	0910 D	0900	S19	E07	6071	18 D	1	2			2.10			
KIEV	01	1126 U	1140	1126	S12	W12	6069	14 U	1+	1	1126	1.75			88	
GOOD HOPE	01	1318	1334	1323	N08	W74	6065	16	1		1323	1.30				
PIRCULI	03	0738	0755	0744	S14	W37	6069	17	1	3	0744	3.10	3.98		61	
BUCHAREST	03	0740 E	0820 D	0743	S13	W37	6069	40 D	1	2			2.80			
BUCHAREST	05	0828 E	0857 D	0837	N13	E12	6077	29 D	1	1			2.90			
SIMEIZ	05	0829 E	0857 D	0840	N14	E13	6077	28 D	1	1	0840	1.34			100	
PIRCULI	05	0832 E	0900 D	0842 U	N14	E13	6077	28 D	1	3	0842	1.55	1.73		58	
KIEV	06	1126 E			N13	W06	6077	□	2	1	1126	4.64			88	
PIRCULI	07	0934 E	0956 D	0946 U	N15	W17	6077	22 D	1	2	0946	2.09	2.39		55	
KIEV	07	1055 E	1140 D	1055	N13	W16	6077	45 D	2	1	1056	3.61			110	
KIEV	08	1036 U	1120	1036	N14	W29	6077	44 U	1	1	1036	1.03			84	
NIZAMIAH	13	0556 E	0620		N26	W90	6077	24 D	3	1	0556	.61	24.70	2.00		
MITAKA	16	0356 E	0400		N03	E16	6087	4 D	1	1	0356			2.12	93	
ABASTUMANI	16	0600	0626 D	0604	N15	E05	6086	26 D	1	3		1.89	2.00		59	
PIRCULI	18	0732 E	0818 D	0802	N15	W22	6086	46 D	1	3	0802	2.28	2.64		50	
NIZAMIAH	20	0245	0253	0248	N15	W48	6086	8	1	2	0248	1.81	2.92	1.60		
PIRCULI	20	0744 E	0841 D	0806	S12	E22	6091	57 D	1	3	0806	1.64	1.80		50	
PIRCULI	20	0744 E	0841 D	0806 U	S14	E28	6091	57 D	1	3	0806	3.47	4.02		50	
PIRCULI	26	0751	0816	0807	S13	E61	6098	25	1	1	0807	1.45	2.99		55	
PIRCULI	26	0910	0950	0925	S12	E62	6098	40	1	1	0925	1.64	3.51		51	
GOOD HOPE	26	1040	1116	1048	S13	E59	6098	36	1		1048	1.50	3.00			
NIZAMIAH	27	0650	0659	0654	S09	E48	6098	9	1	2	0654	1.81	2.71	1.50		
NIZAMIAH	27	0711	0720	0714	S09	E48	6098	9	1	2	0714	1.81	2.71	1.60		
OTTAWA	27	1220	1244	1225	S10	E41	6098	24	1			.70	.77			
MITAKA	28	0219	0233	0223	S07	E31	6098	14	1	2	0221	3.22	3.90	2.62	120	
TASHKENT	28	0224 E	0238	0226	S06	E34	6098	14 D	1	3	0226	1.09	1.30		135	
BUCHAREST	29	0750 E	0802 D	0753	S10	W68	6091	12 D	1	2			3.90			
SIMEIZ	29	0755 U	0805	0755	S10	W72	6091	10 D	1	1	0755	.90			71	
KHARKOV	30	1038 E	1106		S12	E06	6098	28 D	1	2	1040	2.29	2.30	1.60		

These flare reports are addenda to the April 1961 flares published in CRPL-F 201 Part B, May 1961.

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

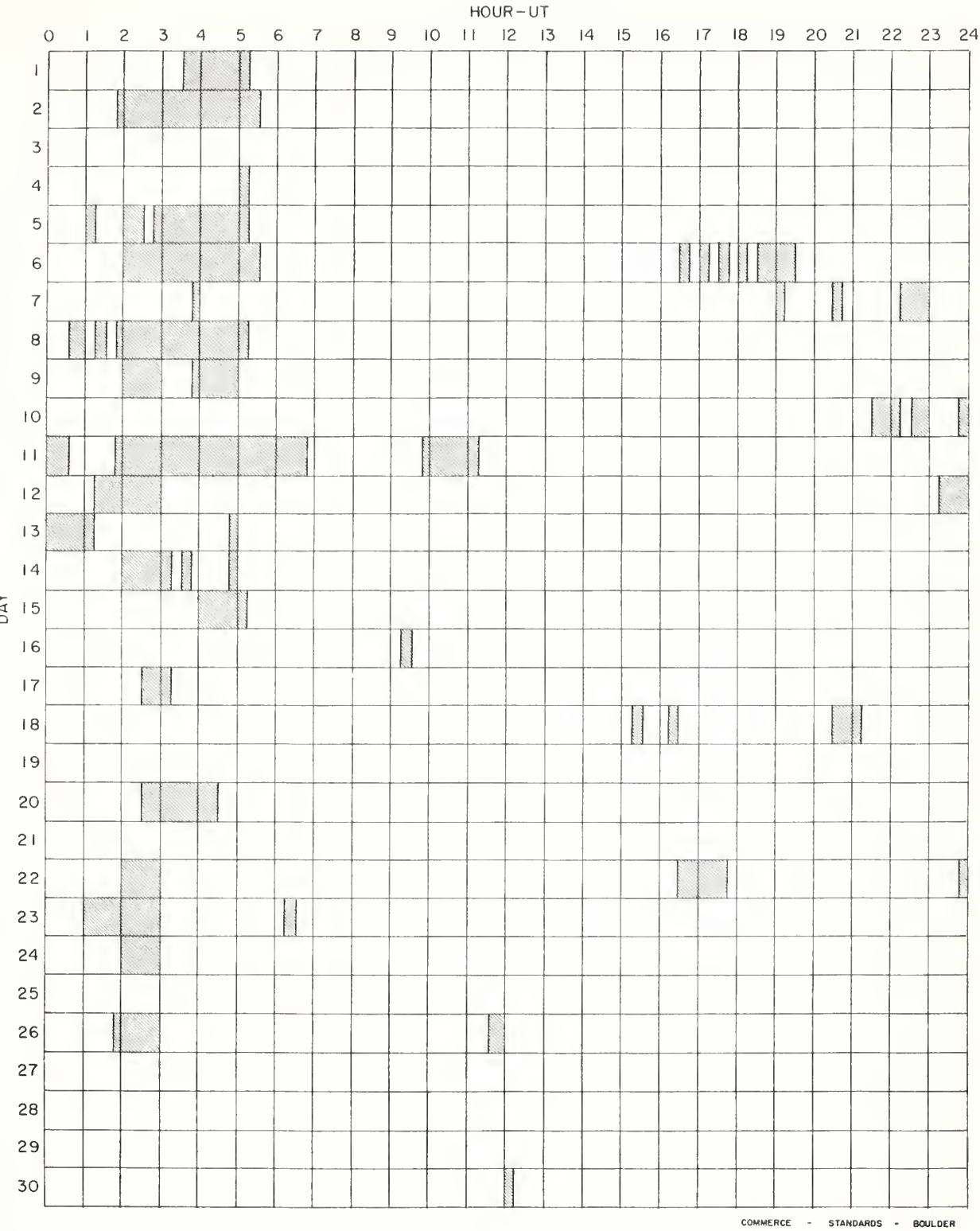
CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANGELES
MCMATH	MCMATH - HULBERT
MOSCOW - G	MOSCOW - GAISH
R O HERST	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO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

INTERVALS OF NO FLARE PATROL OBSERVATIONS

APRIL 1961



Stations Include:

Abastumani
Alma Ata
Arcetri
Bucharest
Good Hope
Climax
Hawaii
Huancayo
Kyoto
Kharkov
Kiev GAO
Lockheed
McMath-Hulbert
Meudon
Mitaka
Moscow - Gaish
Ondrejov
Ottawa
Pirculi
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Schauinsland
Simeiz
Tashkent
Uccle
Voroshilov
Wendelstein

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

JUNE 1961

JUNE 1961	UNIVERSAL TIME START	END	MAX	SWF TYPE	IMP	IMPORTANCE ABS	SCNA	SEA	SPA	BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
03	1700		1840						x		1	BO	
03	1700	1915	1850						x				
05	1235	1238								1	4	BO MC	
05	1525	1600		S	1+						5	MC AN BE BO FM HU PR	1520
*05	1525	1610	1535						x		1	BO	
05	1548	1550								1	4	BO MC	
05	2142	2156								1	1	HA	2140E
*05	2151	2237	2159			17	1				1	HA	
05	2154	2256	2204					1			1	HA	
05	2301	2314								1	1	HA	
07	0832	0905		S	2						3	PU JU	0830E
08	1505	1630	1510						x		1	BO	
08	1917	1919								1-	1	HA	
08	2055	2125U	2110						x		1	BO	
08	2125	2210	2130						x		1	BO	
*09	1257	1320		S	1						5	PR MC PU	1254E
09	1438	1452		S	1						5	MC BE PR PU	1436
09	2138	2143	2142							2	5	BO HA MC	
11	1458	1610	1510						x		1	BO	1502
11	1503	1600		S	2+						5	FM BE BO HU MC NE PR	
11	1505	1511								2+	4	BO MC	
*11	1505	1520	1513			22	1+				4	BO MC	
11	1505	1600	1519					1+			5	OU A1 MC NE A5	
11	1515	1519								2	4	BO MC	
11	2055	2130	2100						x		1	BO	
12	1814	1815								1	4	BO MC	
13	1631	1633								1+	1	MC	
13	2035	2037								1+	5	MC HA	
13	2142	2144								1-	5	MC HA	
14	0934	0954		S	1						3	JU NE	0924
14	0935	1019	0938					2			3	OU NE	
14	1625	1650		SL	1+						5	PR BE HU MC	1610
14	2046	2048								1+	5	MC HA	
14	2332	2336								2	1	HA	
14	2358	0001								1+	1	HA	2354
15	1454	1457								1+	4	BO MC	
15	1600		1650						x		1	BO	1622
15	1600	2000	1730										
15	1635	1638								1+	4	BO MC	
*15	1638	1643								2	4	BO MC	
15	1640	1705	1650			20	1				4	BO MC	
15	1640	1710	1655					1			5	BO A1 A3 A6 MC PA	
15	1640	1715		S	1+						5	MC BE BO OA FM HU PR	
15	1644	1653								1+	4	BO MC	
15	1700	1710	1707							2+	4	BO MC	1710
15	1717	1722								2	5	BO HA MC	
*15	1720	1735		S	1-						5	MC BO FM PR	
15	1739	1741								1	4	BO MC	
15	1820	2055								1	4	BO MC	
15	2103	2110	2107							2	4	BO MC (Series of bursts)	
15	2203	2206								2	5	BO HA MC	
15	2339	2341								1-	1	HA	
15	2346	2349								1+	1	HA	
16	0034	0037								1	1	HA	
16	0043	0045								1	1	HA	
16	1604	1940	1650						x		1	BO	
17	0108	0111								1+	1	HA	
17	0200	0202								1	1	HA	
17	1811	1812								1-	4	BO MC	
18	0618	0658	0626					2			1	All	
18	1709	1711								1	4	BO MC	
18	1725	1726								1-	4	BO MC	
18	1746	1747								1-	4	BO MC	
19	1307	1311	1310							1	1	MC	
19	1437	1441								1	4	BO MC	
19	1913	1915								1	4	BO MC	
19	2035	2036								1-	4	BO MC	
19	2147	2150								1	5	BO HA MC	
22	1320	1935								1-	4	BO MC (Minor noise storm)	
23	1403	1435		S	1						5	MC BO FM PR PU	1402
23	1403	1540	1411					1			5	OU A3 NE PA A5	
23	1600	1650	1620						x		1	BO	1635
23	2019	2022								1-	4	BO MC	
25	0545	0625U	0600					1			4	All TA	
25	1700	2010	1815						x		1	BO	
25	2009	2010								1-	4	BO MC	
*29	1317	1322	1320							2	4	BO MC	1315
29	1915	1917								1	4	BO MC	
29	1921	1923								1	4	BO MC	
29	1955	2030								1+	4	BO MC (Series of bursts)	
29	2050	2150	2110			25	1+				1	BO	
29	2050	2200	2117					1+			5	BO A1 A3 MC	
29	2100	2150	2108						x		1	BO	
29	2102	2125		SL	1-						5	MC A0 BE	

COMMERCE - STANDARDS - BOULDER

Notes

1. The times of observation of the events are those of the first station listed in the "STATIONS" column.
2. Under SWF type: S = S-SWF; SL = Slow S-SWF.
3. Column headed "ABS" is the percent absorption of the SCNA.
4. Column headed "BUR" is for solar noise bursts at 18 Mc.
5. Column headed "SPA" is sudden phase anomalies as observed at Boulder, Colorado on GBR-England except that on July 29 event is as observed on NBA-Panama Canal Zone.
6. DA = Darmstadt, G.F.R.; JU = Juhlesruh, G.D.R.; TA = Tasmania.
7. Asterisk * indicates Sudden Enhancement of Signal from 18 kc (NBA Panama Canal Zone) observed by A5.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

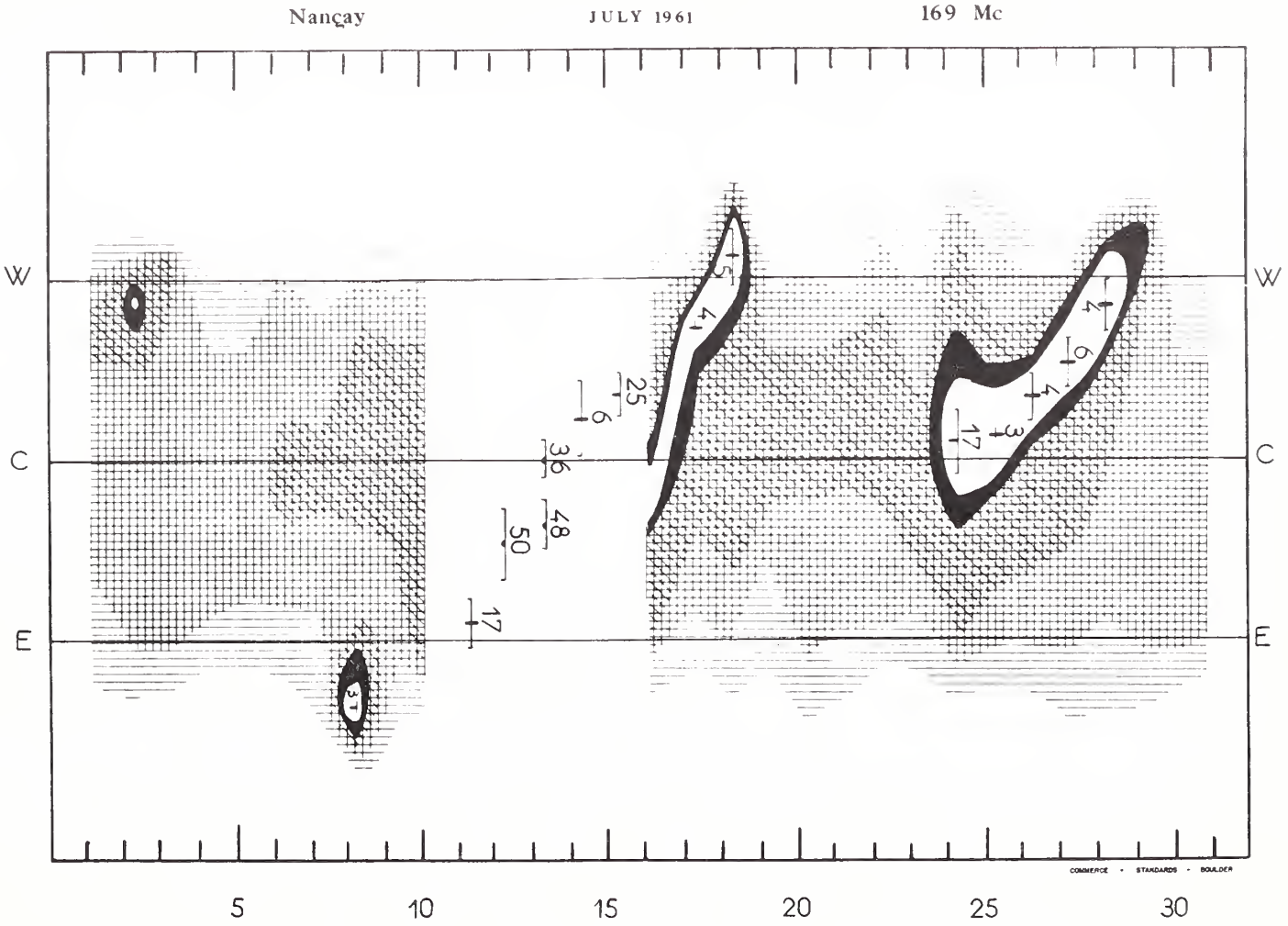
JULY 1961

OTTAWA

2800 MC

JULY 1961	TYPE	START UT	DURATION HRS MINS	MAXIMUM TIME UT	MAXIMUM PEAK FLUX	MAXIMUM MEAN FLUX	REMARKS
11	3 Simple 3 A	1332	>43	1348	5	3.5	
	2 Simple 2	1332.5	2.3	1333.5	11	5	
	2 Simple 2 f	1337	0.9	1337.3	22	11	
11	9 Precursor f	1604	46		8	4	
	6 Complex f	1650	1 55	1745	1500	360	
	4 Post Increase A		4 45		65	30	
	2 Simple 2 f	1952	36	2002.3	230	90	
12	2 Simple 2 f	b1100	>45	1114	1210	436	In sunrise
	4 Post Increase		3 45		45	13	
13	6 Complex	1931	2.7	1931.8	9	4	
13	3 Simple 3 f A	2135	2 10	2256	10	4	
	2 Simple 2	2213	2.3	2214	11	4	
13	2 Simple 2 f	2241.5	2	2242.3	23	8	
	6 Complex f	2245	1	2245.5	24	12	
15	3 Simple 3 A	1432	7 38	1623	54	23	
	6 Complex f	1432	14	1436.3	54	16	
	6 Complex f	1510.5	6.5	1512	76	14	
	6 Complex f	1536	47	1610	111	25	
16	2 Simple 2	1557.3	9.5	1557.8	15	4.6	
16	3 Simple 3	1620	30	1628	4	3	
16	3 Simple 3 A	1933	1 52	1955	16	7	
	2 Simple 2	1950	5.3	1952	14	8	
17	3 Simple 3 A	1307	1 33	1355	7	4	
	2 Simple 2 f	1307	3	1307.8	30	10	
	2 Simple 2 f	1315	24.5	1320	21	9	
	1 Simple 1	1403.8	2	1404.5	3	2	
17	3 Simple 3 f A	1640	40	1650	4	3	
	6 Complex	1657	2	1657.5	7	2.3	
17	3 Simple 3	1830	45	1850	4	2	
17	6 Complex f	2140	22	2141.8	54	28	
	4 Post Increase		1 17		15	6	
18	- Record Incomplete	b1215	>2 05	indet.	26	--	
18	3 Simple 3	2106	34	2112	4	3	
19	3 Simple 3 A	1452	58	1454	2	1.7	
	1 Simple 1	1527	5.5	1528	3	1.5	
19	1 Simple 1	1604.5	4	1605	2.4	1.0	
19	3 Simple 3 A	2100	14	indet.	2	1.7	
	6 Complex	2103.3	6	2105	13	4.5	
19	2 Simple 2	2151.3	3.5	2152.6	22	8	
	4 Post Increase		6		2	1	
20	3 Simple 3	1347	1 00	1411.5	9	4	
20	6 Complex f	1552	42	1553.5	1200	500	
				1621.3	1800		
	4 Post Increase A		>7 30		80	--	
	7 Period Irregular Activity	1634	3 42	1725.5	250	55	
	2 Simple 2	2148	11	2152	17	7	
21	- Record incomplete	b1220	>3 20	1350	10	--	
21	3 Simple 3 A	1655	>6 35	1827	10	--	
	6 Complex f	1701	20	1703.5	59	20	
22	6 Complex	1440	7	1442.8	3	1.2	
22	3 Simple 3	1635	1 15	indet.	5	3	
24	3 Simple 3 f	1730	>6 00	1802	16	--	
25	6 Complex	1224	4	1224.8	7	3	
25	3 Simple 3 f	1355	12	1357.5	5	2.5	
25	2 Simple 2 f	2239.5	4	2241.5	13	8	
	4 Post Increase		>20		5	--	Interference
26	2 Simple 2	1947	5	1947.8	45	10	
27	3 Simple 3	2308	14	2314	3.5	1.5	
28	3 Simple 3 A f	1158	8 35	1228	5.5	3	
	3 Simple 3 A	1642	2 30	1752	10	6	
	2 Simple 2	1649	5	1650	8	3	
28	1 Simple 1	2223	1	2223.5	5	2	
29	3 Simple 3 A f	1430	4 15	1647	7	3	
	2 Simple 2 f	1642.2	3	1643.7	35	12	
29	3 Simple 3 A	1953	1 00	indet.	--	--	Interference present
29	2 Simple 2 f	1955	2.5	1956	14	6	
30	3 Simple 3 A	1617	50	1630.7	3.6	1.8	
	6 Complex	1624	6.7	1625	7	3	
30	1 Simple 1	2207	1	2207.2	5.5	2	

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS



SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
JULY 1961

BOULDER 108 Mc.

July 1961	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	3	1601.0	1601.9	1.2	2
1	3	2120.7	2121.3	2.3	2
2	3	1648.2	1649.0	1.3	3
2	3	1706.0	1706.9	1.1	3
2	3	1711.0	1712.5	1.7	3
2	3	1824.0	1824.2	1.0	3
3	3	1521.0	1521.9	1.3	3
3	2	1542.2	1543.3	3.2	2
3	3	1630.0	1630.8	1.0	2
3	3	1658.0	1658.5	0.7	3
3	3	1704.3	1705.0	1.0	3
3	3	1916.2	1916.7	1.0	3
4	6	1141		145 D	2
4	3	1832.3	1833.0	1.3	2
5	3	0137.0	0138.0	1.3	3
5	6	1142		90 D	1
6	6	1142		115 D	1
6	3	1459.4	1500.1	0.7	3
6	3	1514.4	1515.0	0.7	3
6	3	1529.5	1530.5	0.7	3
6	3	1709.0	1709.2	1.0	2
7	3	1309.2	1310.0	0.8	3
8	3	1234.0	1235.0	2.6	2
8	3	1259.5	1300.0	1.0	2
8	3	1357.0	1357.6	1.0	3
11	2	1544.0	1548.0	9.0	1
11	9	1654.0	1750	554	3
12	6	1146		861 D	3
13	6	1147		860 D	3
14	6	1148		145 D	1
15	7	0030		90	2
15	8	1436.0	1437.8	4.0	2
15	9	1505	1615	220	3
16	3	1233.5	1235.0	1.5	2
17	6	1150		160 D	1
18	3	1213.5	1213.8	1.3	3
18	3	1616.0	1616.9	2.9	2
20	9A	1557.0	1559.0	7.2	3
20	9B	1605.2	1608.0	12.5	3
20	3	1749.0	1750.2	2.0	3
20	8	1757.0	1758.0	4.0	3
20	3	2006.5	2007.4	1.3	2

COMMERCE - STANDARDS - BOULDER

NOMINAL TIMES OF OBSERVATION
JULY 1961

BOULDER 108 MC

July 1961	U.T.		July 1961	U.T.	
1	1140-0210	I 1955-2050; 2224-0210	10	1145-0208	I 1645-0208
			11	1145-0208	
2	1140-0210		12	1146-0207	
3	1141-0209		13	1147-0207	
4	1141-0209	I 1850-0045	14	1148-0207	I 1700-0000
5	1142-0209	I 1650-2340	15	1148-0207	I 1715-0207
6	1142-0209	I 2220-2315; 0030-0125; 0200-0209	16	1149-0206	I 1840-0030
			17	1150-1510; 2030-0206	I 2030-0000
7	1143-0208	I 1805-0208	18	1151-0205	I 2030-2230
8	1144-0208	I 1830-0208	19	1152-0204	I 2000-0020
9	1144-0208	I 1900-2225	20	1152-0204	I 2030-0145

COMMERCE - STANDARDS - BOULDER

Note: No record July 21 through 31 because of equipment difficulties.
I = interference.

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

Fort Davis APRIL–JUNE 1961 25-580, 2100-3900 Mc

1961	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC.	REMARKS
		TYPE	TIMES U.T	INT		
April						
1	0000-0050 1322-2400					
2	0000-0050 1320-2400					
3	0000-0050 1320-2400					
4	0000-0050 1321-2400	IV IV Uncl	1421-1424 2234.5-2320 2239.8-2245	2 2 2	580-260 580-90 130-50	2239.8 Uncl. has harmonic but no drift.
5	0000-0050 1322-2400	IV III G IV Uncl.	1625-1628 1904-1905 2056.7-2105 2059.7-2108	2 2 1-3 2	580-280 580-25 3000-125 150-25	2059.7 Uncl. has harmonic.
6	0000-0100 1300-2400	IV II III G	0013-0019 0015.0-0021 1536-1540	2-3 3 2	580-150 200-40 260-25	
7	1300-2400					
8	0000-0100 1300-2308					Weak I throughout day.
9	1300-2400					
10	0000-0105 1300-2400					
11	1300-2400					
12	1300-2400					
13	1300-2400					
14	1300-2400	III G	2113-2116	2	580-25	
15	1300-2400					
16	1300-2400					
17	1300-2400	III G	2341-2342	2	180-50	
18	1300-2400					Weak I throughout day
19	1300-2400	III G	1746-1750	1-3	200-25	Weak I throughout day.
20	1300-2400					Weak I throughout day.
21	1300-2400					
22	1300-2400					
23	1300-2400					
24	1300-2400					
25	1300-1523 1541-2400					
26	1300-2400					
27	1300-2400					
28	1300-2400					
29	1300-2231					
30	1240-1415 1523-2400					
May						
1	0000-0010 1242-2400					
2	1241-2400					
3	1242-2400					
4	1242-2400	IV	2207.5-2210	2	3900-2100	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

APRIL – JUNE 1961

Fort Davis 25-580, 2100-3900 Mc

1961	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
May						
5	1242-2400	III G	1929-1930	3	250-25	
		III G	2230-2232	1-3	300-25	Weak I throughout day.
6	1240-2400	Uncl.	2219-2221	1-	100-60	
7	1240-2400					
8	1241-2400					
9	1240-2400					
10	1240-2400					
11	1240-2400	III G	1750-1753	2	580-400	
		III G	1757-1808	1-3	580-25	
12	1240-2400	III G	1850-1852	2	180-25	
		III G	2247-2249	1-2	580-125	
		III G	2305-2306	3	220-25	
		III G	2309-2310	2	300-25	
		III G	2348-2350	2	500-50	
		III G	2359	3	320-25	
13	0000-0002	III G	0001	3	320-25	
	1240-2400					
14	1240-2400					
15	1241-2400					
16	1241-2305					
17	1240-2400					
18	1241-2400					
19	1240-2400					
20	1240-2400	III G	1949-1951	3	250-25	Weak I throughout day.
21	1225-2400					
22	1225-2400					
23	1225-2400					
24	1225-2400					
25	1225-2400	III G	2144-2146	2	500-180	
26	1225-2400					
27	1225-2400					
28	1225-2400					
29	1225-2400					
30	1225-2400					
31	1226-2400					
June						
1	1225-2400					
2	1225-2400					
3	1225-2400					Weak I throughout day.
4	1225-2400					
5	1225-2400	Uncl.	1523-1531	1-	580-125	
6	1225-2400					
7	1226-2400					Weak I throughout day.
8	1225-2400					
9	1225-2400	Uncl.	2136-2144	2	240-25	2135: Uncl. resembles Type II.

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

APRIL–JUNE 1961

Fort Davis — 25-580, 2100-3900 Mc

1961	OBSERVING HOURS	IMPORTANT BURSTS			FREQUENCY RANGE MC	REMARKS
		TYPE	TIMES U.T	INT		
June 10	1225-2400					
11	1225-2400	III G	1503-1507	1-3+	580-25	
		IV	1505-1526	1-3	3000-100	
		II	1507.5-1515	2	150-50	
12	1225-2400					
13	0000-0148	III G	0125-0128	1-3	300-100	
	1225-2400	III G	2035-2037	2	280-25	
14	0000-0148	III G	1235-1237	2	350-75	
	1225-2400	III G	1613-1615	2	420-25	
		III G	1627-1631	2-3	420-25	
		II	1634.2-1638	1	140-45	
		III G	1730-1731	3	580-25	
		III G	2332-2334	2	500-50	
		III G	2355-2359	2	580-100	
15	0000-0148	III G	1322-1323	1-2	200-25	
	1210-2400	III G	1324-1325	2-3	300-50	
		III G	1401-1403	1-2	280-25	
		III G	1455-1456	1-3+	580-25	
		III G	1552-1554	2	220-25	
		III G	1635-1646	1-3+	3900-25	
		II	1646.3-1701	2	150-25	
		III G	1702-1712	1-3+	490-25	
		III G	1718-1720	3+	580-25	
		III G	1721-1722	1	580-125	Weak I throughout day
		II	1722.7-1727	2	200-50	
		III G	1842-1843	2	250-25	
		III G	2103-2109	1-3+	500-25	
		III G	2112-2113	2	280-25	
		III G	2202-2204	2-3	3000-25	
		III G	2205-2208	1-3	350-25	
16	0000-0148	III G	0042-0043	2-3	240-25	Weak I throughout day.
	1210-2400					
17	0000-0148	III G	0108-0112	2	350-25	Weak I throughout day.
	1210-2400					
18	0000-0150	III G	1356-1359	2	580-160	Weak I throughout day.
	1210-2400					
19	0000-0147	III G	1439-1441	2	350-25	Weak I throughout day.
	1210-2400	III G	1919-1920	2	280-25	
20	0000-0150	I	1210-2400	1	320-100	
	1210-2400					
21	0000-0150	I	0000-0150	1	320-100	Weak I throughout day.
	1210-2400					
22	0000-0150	I	1210-2400	1	320-100	
	1210-2400					
23	0000-0150	I	0000-0150	1-2	320-100	Weak I throughout day.
	1215-2400					
24	0000-0150					Weak I throughout day.
	1210-2400					
25	0000-0150					Weak I throughout day.
	1210-2400					
26	0000-0150					
	1210-2400					
27	1210-2400					
28	1210-2400	III G	1443-1445	2	400-240	
		III G	1945-1946	2	580-180	
		III G	2052-2055	1-2	580-170	
29	1210-2400	III G	1317-1319	2	300-25	
		Uncl.	2005-2007	2	50-30	
30	0000-0155					
	1210-2400					

DEEP RIVER NEUTRON MONITOR

SOLAR INJECTION OF JULY 18, 1961

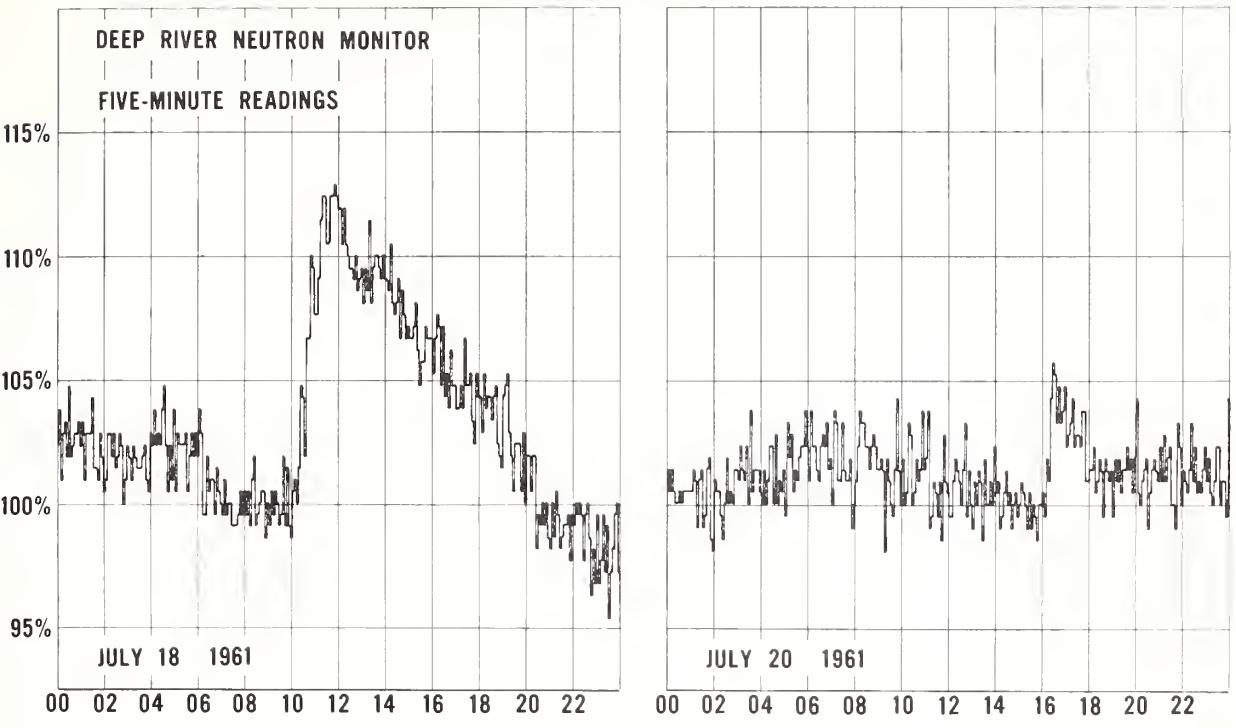
Hrs. U.T.	Minutes at start of interval											
	00	05	10	15	20	25	30	35	40	45	50	55
00	216	219	213	217	218	215	221	215	216	217	217	218
01	216	218	213	217	217	217	220	214	214	213	217	215
02	212	213	217	217	215	217	214	215	217	216	211	213
03	216	215	213	216	215	214	214	215	216	213	212	217
04	216	219	216	217	216	219	221	216	212	216	213	219
05	212	217	216	216	216	217	212	215	217	215	217	215
06	219	217	210	210	215	212	213	213	210	214	212	211
07	210	213	210	211	211	209	209	209	210	212	210	212
08	210	212	209	213	215	209	210	211	212	212	208	211
09	209	212	210	212	211	209	210	215	209	214	209	208
10	212	213	211	214	221	220	215	225	225	232	231	227
11	227	230	235	237	237	233	233	237	237	238	237	236
12	236	233	236	233	232	231	231	230	232	229	230	231
13	228	231	229	235	228	231	232	232	231	230	232	230
14	230	229	233	228	227	228	230	225	229	227	225	226
15	225	225	226	228	224	221	223	223	226	225	225	225
16	222	225	227	226	221	226	220	222	219	224	221	221
17	219	219	221	219	225	221	221	222	218	216	222	220
18	220	217	222	219	220	220	218	220	221	216	215	214
19	220	221	222	217	215	212	216	216	216	212	217	211
20	215	215	212	215	215	207	210	209	211	209	211	208
21	207	211	208	212	210	207	208	209	209	210	206	210
22	209	211	210	211	210	206	210	211	208	203	207	204
23	210	204	206	210	205	209	201	205	207	210	211	205

SOLAR INJECTION OF JULY 20, 1961

Hrs. U.T.	Minutes at start of interval											
	00	05	10	15	20	25	30	35	40	45	50	55
10	212	208	209	215	214	208	209	212	210	211	216	211
11	212	216	206	207	210	209	207	210	205	214	210	209
12	207	207	210	212	211	210	208	211	215	207	211	208
13	206	210	208	211	210	205	212	208	208	210	208	213
14	209	210	206	207	209	211	208	209	206	208	209	207
15	208	210	209	208	206	209	206	208	207	205	208	208
16	209	207	212	210	217	220	219	215	218	215	216	218
17	213	214	215	217	213	214	214	213	216	216	210	210
18	211	211	213	209	210	212	211	207	212	211	210	211
19	207	212	210	212	209	211	211	213	211	212	209	212
20	217	209	208	210	211	212	206	209	211	212	211	210
21	213	210	214	210	212	213	208	208	206	215	213	208
22	211	210	209	211	215	210	213	209	210	209	211	213
23	210	212	209	208	210	213	213	208	210	210	207	217

Five minute readings, corrected for pressure
Scaling factor 100

COMMERCE - STANDARDS - BOULDER



COMMERCE - STANDARDS - BOULDER

COSMIC RAY INDICES
(Climax Neutron Monitor)

JUNE 1961

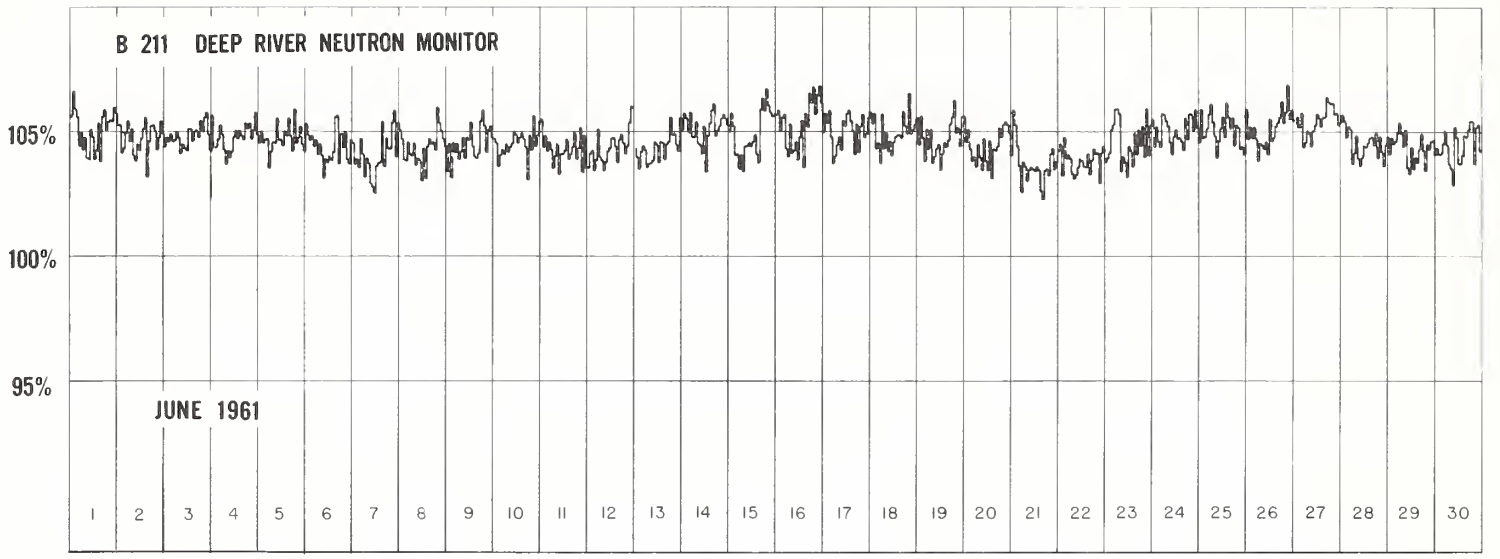
June 1961	Daily average counts/hr.		June 1961	Daily average counts/hr.	
1	3012.2		16	2994.0	
2	2999.7		17	2990.1	
3	2999.5		18	2984.9	
4	3004.8		19	2996.2	
5	3023.0	(10)*	20	2979.8	
6	2999.6		21	2983.2	(38)
7	2976.6	(33)	22	2994.0	(30)
8	2990.1		23	2999.6	(29)
9	2991.2		24	3010.3	
10	2989.0		25	3014.1	
11	2984.5		26	3015.6	
12	2985.7		27	3041.8	
13	2994.1		28	3018.9	
14	3007.7		29	3007.8	
15	2989.2		30	3007.2	

COMMERCE - STANDARDS - BOULDER

*Number of hours in average.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)



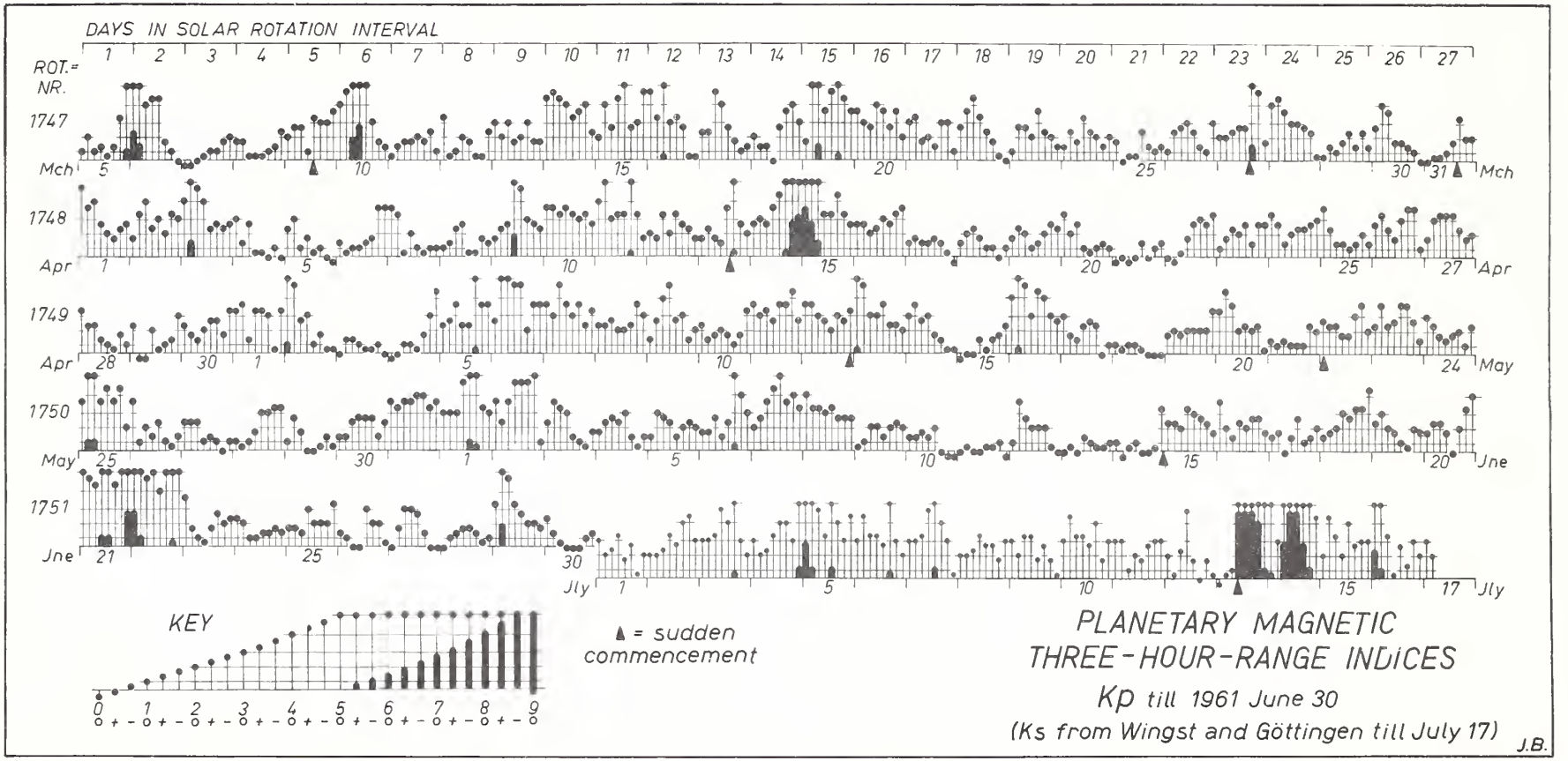
COMMERCE - STANDARDS - BOULDER

GEOMAGNETIC ACTIVITY INDICES

JUNE 1961

June 1961	C	Values Kp — Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	1.3	3o 3o 3o 5-	6- 5+ 3+ 3o	31o	30	Five
2	1.3	4- 2+ 4- 5-	5- 5- 5o 1o	30-	28	Quiet
3	0.6	2+ 4- 3+ 3o	1+ 1o 1- 2-	17o	10	
4	0.4	2- 2+ 3- 2+	3o 1+ 1- 1+	15+	8	10
5	0.4	1+ 3o 3- 2+	1+ 2o 2+ 2o	17o	9	11
						13
6	1.0	2- 2- 3- 1+	2+ 5+ 4o 3o	22o	17	28
7	1.1	2o 3- 4- 4+	5o 4- 4o 3+	29-	24	30
8	1.0	4o 3+ 3+ 3o	3+ 3- 3- 3-	25o	16	
9	0.3	1- 1o 2o 2o	1+ 2o 2+ 2o	13+	6	
10	0.1	1+ 1+ 2- 1+	2o 0+ 0o 0o	8o	4	
11	0.0	0+ 1- 0+ 0+	1- 1- 1o 0o	4o	2	Five
12	0.6	1o 4- 3- 2o	2o 2o 1- 0+	14+	8	Disturbed
13	0.1	0+ 1- 0+ 1+	1o 1- 1- 1o	6o	3	
14	0.2	1o 0o 1- 1o	0+ 0+ 1- 3+	7+	4	1
15	0.7	2+ 2+ 2o 3+	3o 3- 2+ 2-	20-	11	2
						21
16	0.6	4- 2o 1+ 2+	2o 3- 3- 2-	18+	10	22
17	0.3	1+ 2- 0+ 1+	3- 1o 1+ 2o	12-	6	29
18	0.8	1+ 2- 2o 3o	3- 3+ 3+ 4+	22-	14	
19	0.3	2+ 3o 2o 2-	1o 1- 2o 2-	14+	7	
20	0.7	2- 2+ 2+ 2-	0+ 2o 3+ 4o	18-	10	
21	1.7	5o 5- 4+ 6-	6- 4+ 5o 7o	42-	58	Ten
22	1.6	7- 6- 5- 5o	4o 5o 5+ 5o	42-	58	Quiet
23	0.4	4- 2- 1o 1-	2- 3- 2o 2+	16-	9	
24	0.3	2+ 2o 1o 1o	1+ 1+ 2- 1+	12o	6	9
25	0.5	2- 2- 1+ 3o	2o 2o 2o 3+	17o	9	10
						11
26	0.4	1+ 1o 0+ 0+	3o 2o 2o 1-	11-	6	13
27	0.4	0+ 2- 3o 3o	3- 1+ 0+ 0+	13-	7	14
28	0.1	0+ 1o 1+ 2-	2- 1+ 1- 1o	9o	4	17
29	1.4	3+ 6+ 5- 3+	3- 2o 2o 2-	26o	25	24
30	0.1	2+ 1+ 1- 0+	0+ 0+ 1o 1+	8-	4	26
						28
						30
Mean:	0.62			Mean:	14	

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.
1747
Mch 5 10 15 20 25 30 31 Mch
1748
Apr 1 5 10 15 20 25 27 Apr
1749
Apr 28 30 1 5 10 15 20 24 May
1750
May 25 30 1 5 10 15 20 Jne
1751
Jne 21 25 30
Jly 1 5 10 15 17 Jly
KEY
0 1 2 3 4 5 6 7 8 9
o + - o + - o + - o + - o + - o + - o + - o + - o
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp till 1961 June 30
(Ks from Wingst and Göttingen till July 17)
J.B.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JUNE 1961

NORTH ATLANTIC

DATE JUNE 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 SDW J	1-3 DAYS J	GEOMAGNETIC K_{FR} HALF DAY (1)	(2)
01	6-	4+	5+	6-	5	4	5	5	5o	4	4		(4)	(4)
02	6-	4+	5+	6-	5	4	5	5	5o	4	4		(4)	(4)
03	6o	5-	6o	6o	5	4	5	6	6-	5	5		(4)	2
04	7-	6o	6+	6+	6	5	6	6	6+	6	6		3	2
05	7o	6o	6+	7-	7	6	6	7	6+	6	6		3	2
06	7-	6o	6o	6-	7	6	6	6	6o	6	6		2	(4)
07	6o	5o	6-	6-	6	6	6	6	6-	6	6		3	(4)
08	6-	4+	5+	6o	5	5	6	5	5o	5	5		(4)	3
09	6o	5+	6o	6+	6	5	6	6	6o	5	5		2	2
10	7-	6-	6+	7-	6	5	6	7	6+	6	6		2	1
11	7-	6o	6-	7-	7	6	6	6	6+	6	6		0	1
12	7-	5+	6+	6+	7	6	6	7	6+	6	6		3	2
13	7-	7-	7-	7-	7	5	7	6	7-	6	6		1	1
14	7o	6+	6+	7-	7	6	7	7	7-	6	6		1	2
15	7-	6+	7-	7-	7	6	7	7	7-	7	7		2	3
16	7-	6o	6+	6+	7	7	6	7	6+	7	7		3	2
17	7o	7-	6+	7-	7	6	7	7	7-	7	7		2	2
18	7o	6+	7-	7-	7	7	6	7	7-	6	6		2	3
19	6+	6+	6+	6+	6	5	6	7	6+	6	6		3	1
20	7o	7-	7o	7o	7	6	7	7	7o	6	6		2	2
21	5+	5+	6o	5+	7	4	5	6	6-	6	6		(5)	(5)
22	3+	2+	4+	5-	4	2	4	4	(4-)	5	5		(6)	(4)
23	6o	4+	6-	6+	4	5	6	6	5+	6	6		2	2
24	7-	6-	6o	7-	6	5	6	7	6+	7	7		2	2
25	7+	6+	6o	7-	7	6	6	6	7-	7	7		2	2
26	7o	6o	6o	6+	7	6	6	6	6+	6	6		1	2
27	7o	6-	5+	6+	6	6	6	6	6o	5	5		2	1
28	7o	6+	7-	7-	6	6	6	7	7-	5	5		1	1
29	6-	4+	6-	6o	7	5	6	6	5+	6	6		(4)	2
30	6+	6-	6o	7-	6	6	6	6	6+	6	6		1	1
Score: Quiet Periods				P	17	11	21	18		15	15			
				S	10	12	8	12		13	13			
				U	1	1	0	0		1	1			
				F	1	0	0	0		0	0			
Disturbed Periods				P	0	3	1	0		0	0			
				S	1	3	0	0		1	1			
				U	0	0	0	0		0	0			
				F	0	0	0	0		0	0			

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	GEOMAGNETIC K_{SI} HALF DAY (1)	(2)
4	5	5	5	(4)	4	4		(4)	(4)
4	5	6	4	(4)	5	5		(4)	(4)
4	6	5	6	5	5	5		3	1
5	6	6	6	5	6	6		3	2
6	6	7	6	6	6	6		3	2
5	6	7	5	6	6	6		2	3
4	5	6	5	5	6	6		(4)	3
5	6	6	6	5	5	5		(4)	2
6	6	6	6	6	5	5		2	2
6	7	6	6	6	6	6		2	1
7	7	6	6	7	6	6		0	0
6	5	6	6	6	6	6		3	2
7	6	6	6	6	6	6		1	0
7	6	7	7	7	6	6		1	0
6	6	7	6	6	7	7		2	2
7	6	6	6	7	7	7		2	2
7	6	7	6	7	6	6		1	2
8	6	7	6	7	6	6		2	3
6	6	7	6	6	6	6		3	1
7	6	7	6	7	6	6		2	2
6	3	6	4	5	6	6		(5)	(6)
4	3	3	5	(3)	4	4		(6)	(4)
5	4	5	5	5	5	5		2	2
6	6	5	6	6	6	6		2	1
6	5	6	6	6	6	6		2	2
6	6	6	5	6	6	6		1	2
6	6	6	6	6	5	5		2	1
5	5	6	6	5	5	5		1	2
4	5	3	6	(4)	6	6		(6)	2
7	6	6	6	6	5	5		1	1
		11	17		14				
		12	10		12				
		1	0		0				
		0	0		0				
		0	0		1				
		4	2		2				
		0	1		0				
		2	0		1				

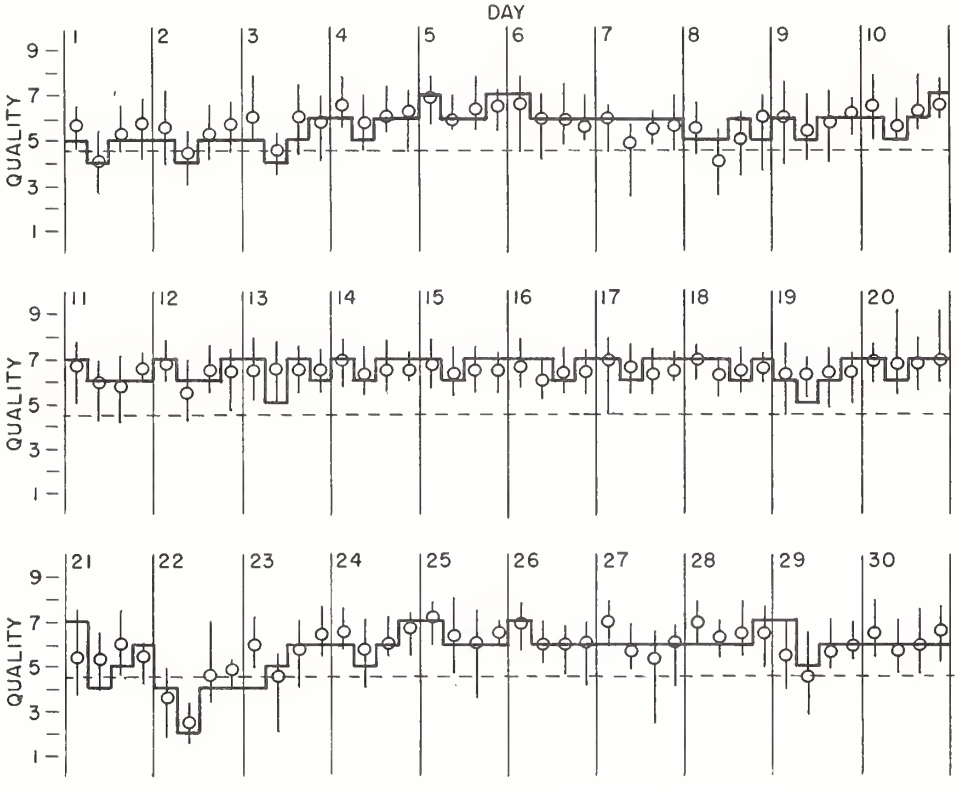
( ) Represent disturbed values.
All times are Universal Time (U.T.)

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

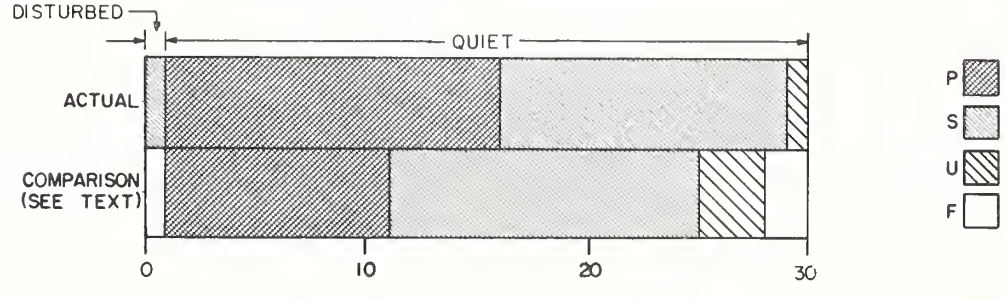
JUNE 1961

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

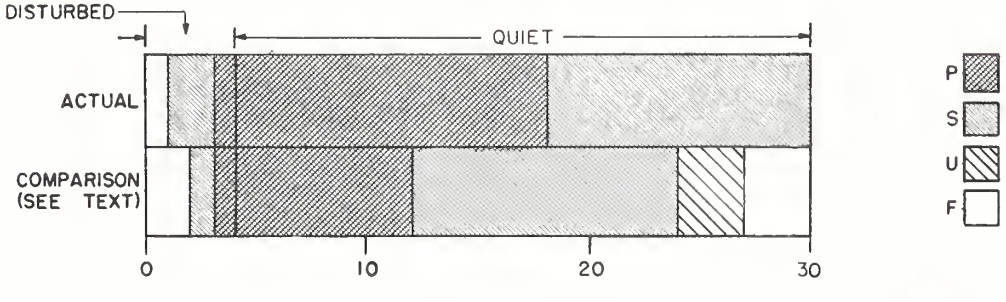


OUTCOME OF ADVANCED FORECASTS — FINAL ESTIMATE

NORTH ATLANTIC

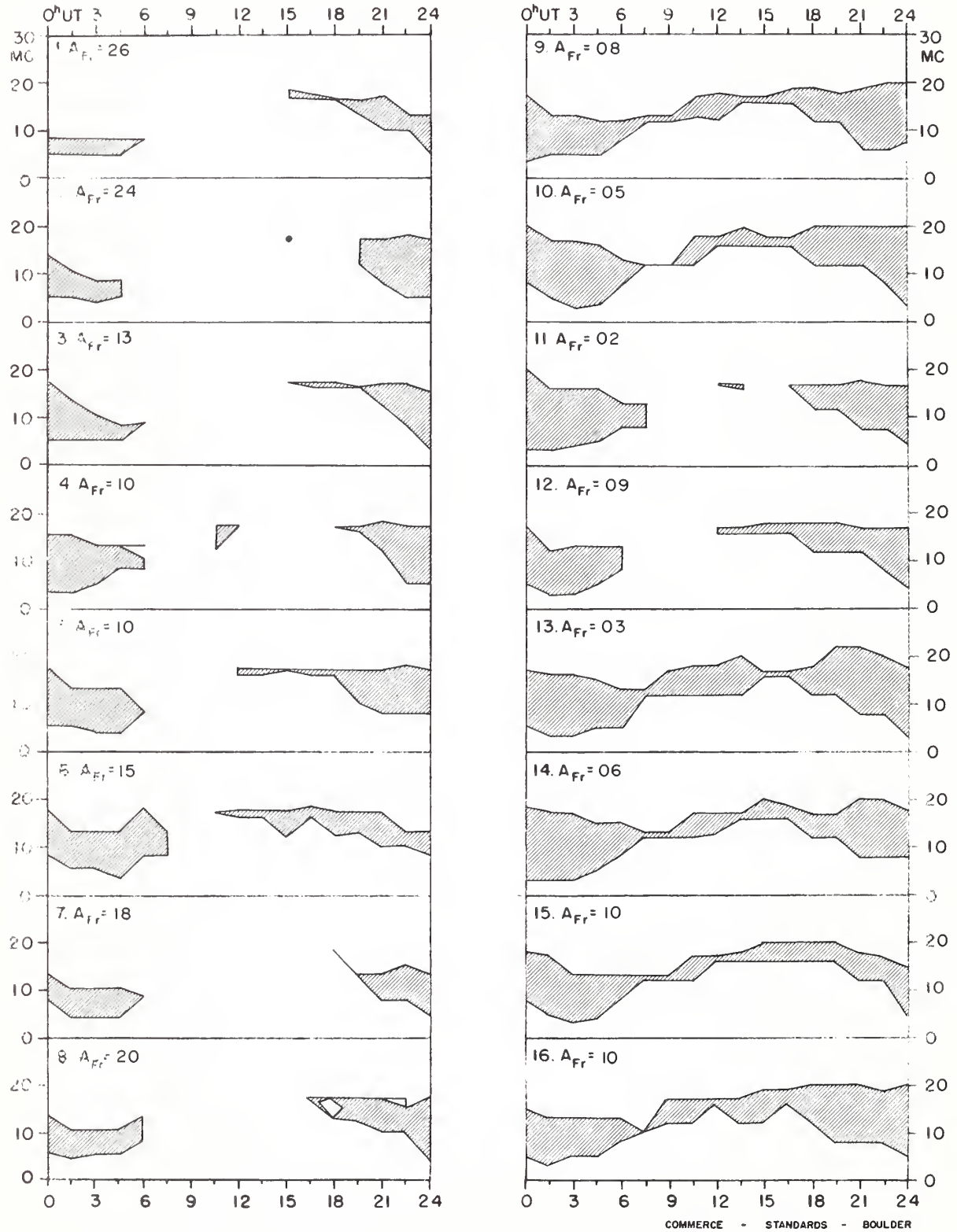


NORTH PACIFIC



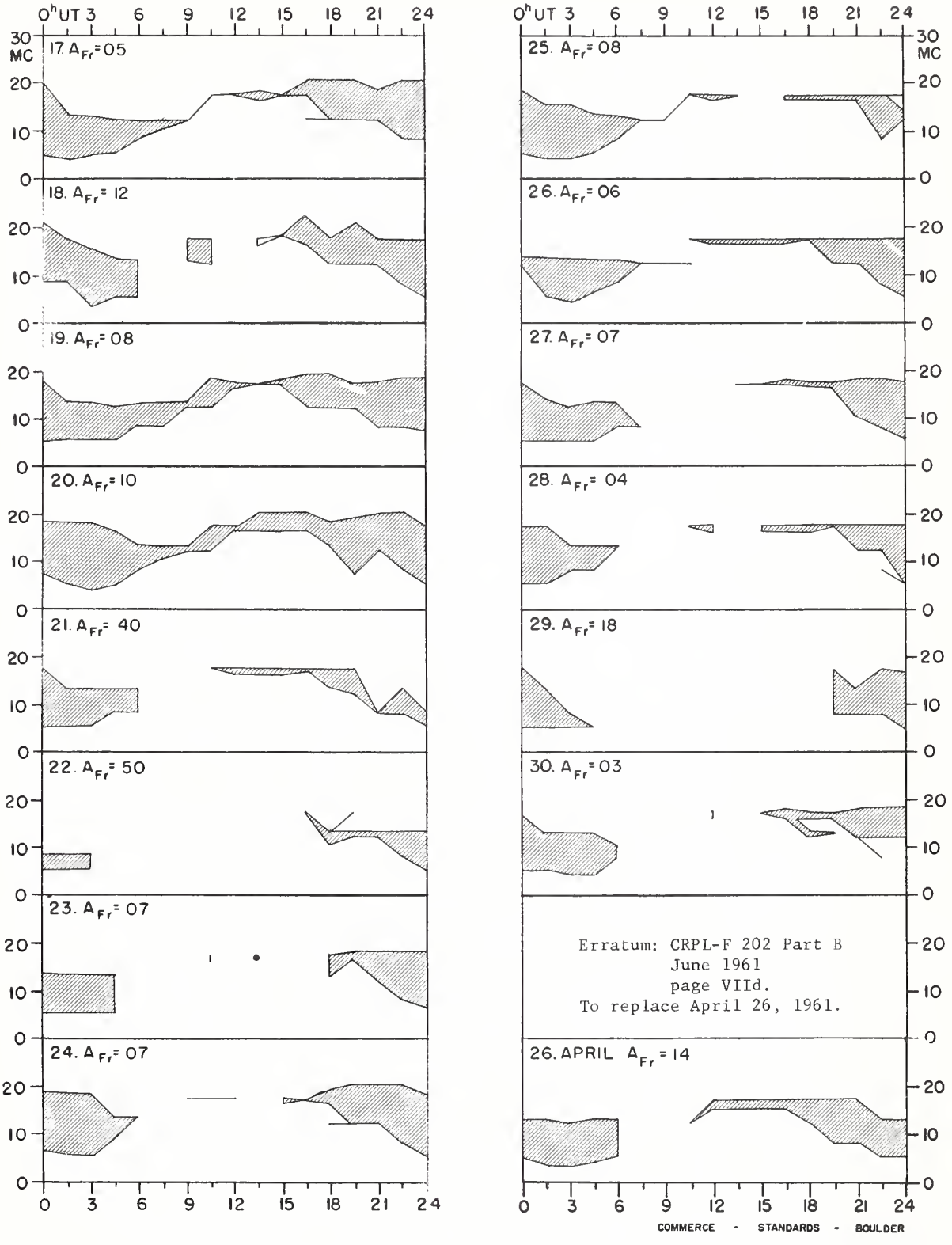
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1961



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1961



Adapted from Observations by Deutsches Bundespost

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

JULY 1961

Issued July 1961 Day/Time UT	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
05/0540	Ft. Belvoir, Magnetic Storm 04/20XXZ*			
05/1600		125	Magnetic Storm 04/13XXZ	
11/1740	McMath, Solar Flare 11/1635Z			
12/1600		126		Start (Predicted)
13/1255	Ft. Belvoir, Magnetic Storm 13/1115Z			
13/1600**		127	Magnetic Storm	
		128	Aurora Probable 13/1115Z	Continue
13/1605	Chicago, Cosmic Ray Increase 13/11XX			
14/1600		129		Continue
15/1600		130		Finish
15/1630	Sacramento Peak, Solar Flare 15/1545Z			
16/1600		131		Start (Predicted)
17/1600		132		Continue (Predicted)
17/1950	Ft. Belvoir, Magnetic Storm 17/1827Z			
18/1345	Minneapolis, Cosmic Ray Increase 18/1100Z			
18/1600		133	Magnetic Storm 17/1827Z Cosmic Ray Increase 18/1100Z	Finish
21/1335	Ft. Belvoir, Magnetic Storm 20/16XXZ***			
21/1600		134	Magnetic Storm 20/0249Z	
26/2120	Ft. Belvoir, Magnetic Storm 26/1950Z			
27/1230	Ft. Belvoir, Magnetic Storm Aurora Probable 26/1950Z			
27/1600		135	Magnetic Storm Aurora Probable 26/1950Z	Start
28/1600		136		Finish
28/1930	Sacramento Peak, Solar Flare 28/1700Z			

*Later judged to have begun 04/13XXZ.
**CEOALERT issued at 1600Z, July 13, carried two CEOALERT numbers.
***Later judged to have begun 20/0249Z.

COMMERCE - STANDARDS - BOULDER