

PART B
SOLAR - GEOPHYSICAL DATA

ISSUED
JANUARY 1960

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

SOLAR - GEOPHYSICAL DATA

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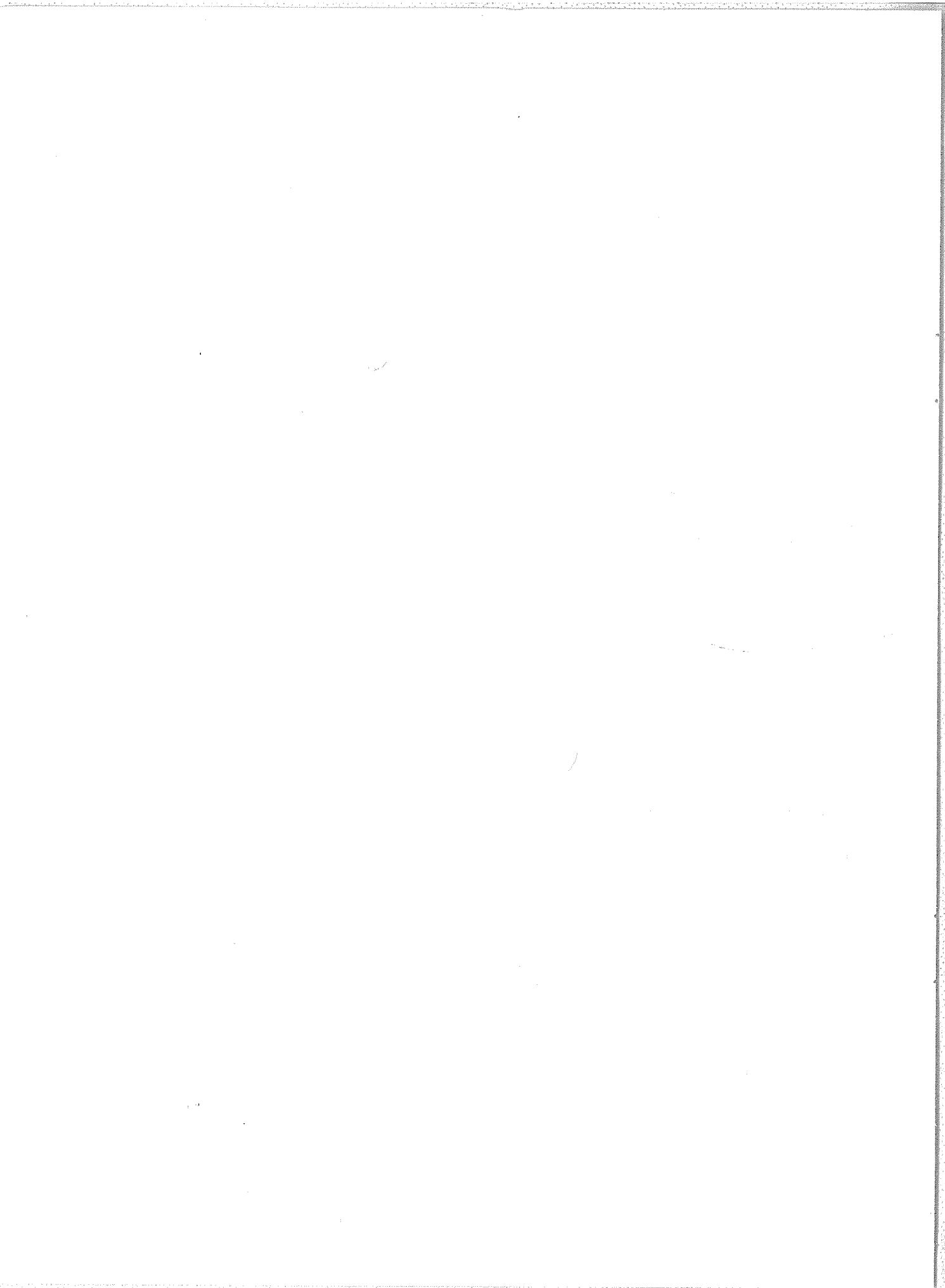
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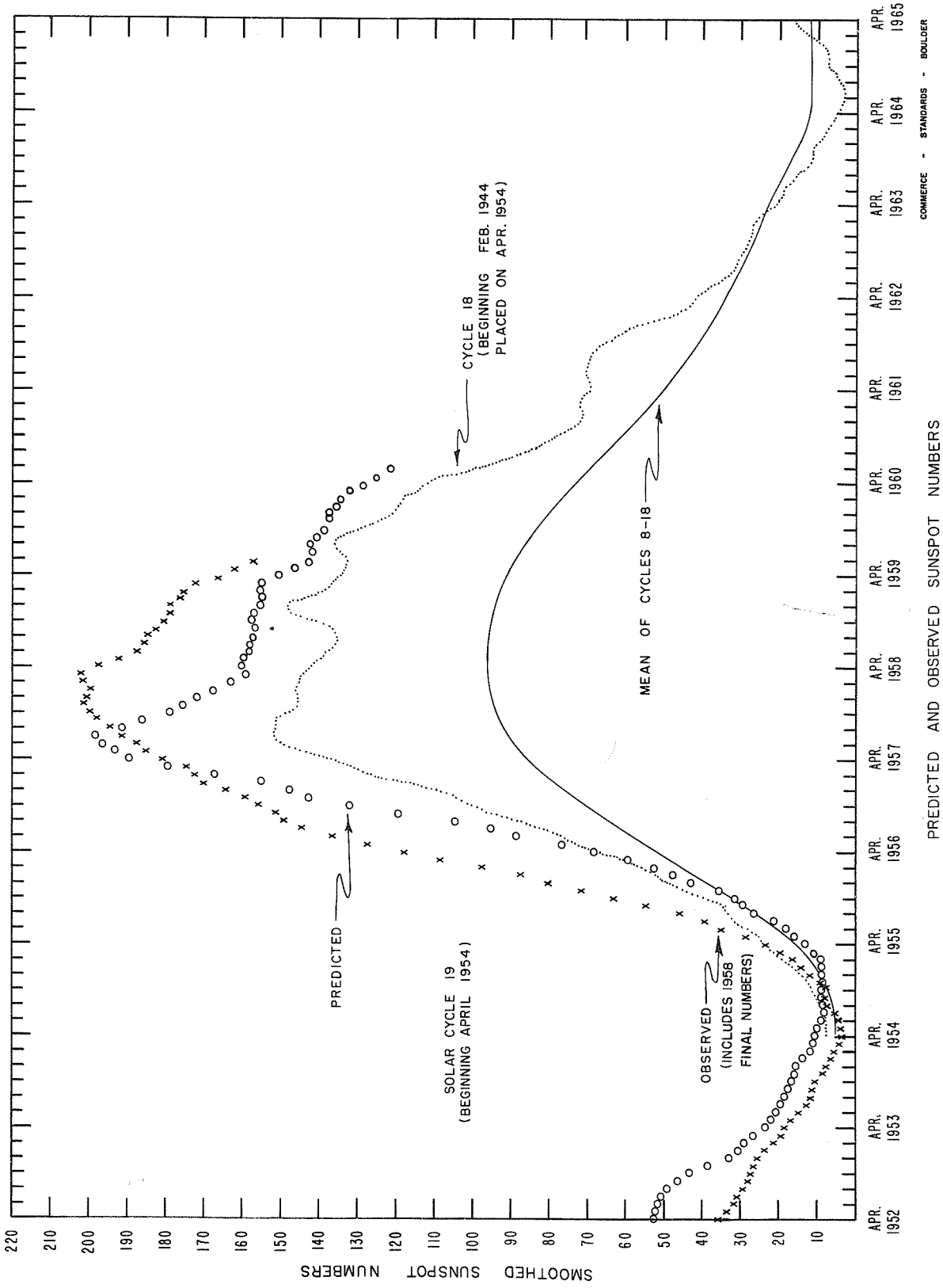
INTRODUCTION

The descriptive text is published quarterly or whenever context of the report is changed. The last issue in which the text appeared was CRPL-F183 Part B issued November 1959.

DAILY SOLAR INDICES

Nov. 1959	American Relative Sunspot Numbers R_A'
1	112
2	89
3	103
4	92
5	84
6	111
7	121
8	144
9	139
10	141
11	144
12	146
13	156
14	164
15	150
16	129
17	80
18	67
19	52
20	71
21	63
22	88
23	107
24	155
25	156
26	147
27	159
28	172
29	167
30	161
Mean:	122.3

Dec. 1959	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	142	222
2	150	217
3	171	202
4	190	199
5	126	204
6	147	202
7	136	191
8	129	193
9	94	173
10	70	174
11	82	171
12	71	169
13	59	162
14	88	165
15	123	171
16	113	164
17	107	167
18	111	169
19	114	180
20	110	178
21	103	185
22	121	171
23	106	166
24	108	163
25	110	...
26	95	161
27	132	167
28	114	172
29	135	171
30	127	179
31	153	167
Mean:	117.3	179.2



CALCIUM PLAGE AND SUNSPOT REGIONS

DECEMBER 1959

CMP Dec. 1959	Lat	McMath Plage Number	Return of Region	Calcium Plage Data			Sunspot Data		
				CMP Values Area Int.		History, Age	CMP Values Area Count		History
01.0	S21	5485	Ephem	(700)	(2.5)	b \wedge d	(20)	(1)	b \wedge d
01.5	N07	5476	5443	8500	4	l - l 8	2500	24	l - l
03.2	N25	5477	5446	4600	3	l - l 2	360	5	l ∇ d
05.3	S08	5479	New	500	1.5	l - l 1			
05.6	N14	5478	New	6000	3	l / l 1	1670	15	l - l
06.3	N33	5480	5447	2100	2.5	l \ l 3			
08.2	N39	5488	New	1400	2	b \wedge d 1			
08.5	S18	5482	5452	10,000	3	l \ l 4	50	1	l \ d
08.5	N16	5483	New	2600	3	l - l 1	190	6	l \ d
09.2	N09	5484	5453	1700	2.5	l - l 4	300	4	l - l
10.9	S19	5486	5454	8100	2.5	l \ l 3			
10.9	N21	5487	5457	2600	2.5	l - l 5	50	2	b - l
11.6	S26	5489	5454	(500)	(1.5)	l - l 3			
11.7	N06	5495	New	(200)	(2)	b / l 1	(170)	(3)	b / l
14.3	S05	5490	5459	1000	2	l / l 3,5	110	3	b / l
15.2	N16	5491	New	5100	3.5	l / l 1	1240	2	l \ l
16.1	S18	5492	5459	2100	3	l - l 3,5	160	3	b \wedge d
17.4	N11	5493	5464	2200	2.5	l - l 5	220	3	l \ l
17.5	S06	5494	New	2300	3	l - l 1	410	1	l \ l
17.7	N28	5496	*	700	1.5	l - l 6			
19.4	N12	5497	5464	2900	2.5	l - l 5	290	3	l ∇ d
20.2	S02	5499	5465	400	1	l - l 2			
21.9	N10	5501	5468	3000	3	l - l 3	750	10	l - l
22.1	S16	5500	5467	3100	3	l - l 3	340	2	l - l
23.5	N15	5502	5468	4600	2.5	l / l 3	450	6	l \ l
26.1	N21	5504	5471	(2900)	(3)	l - l 2	70	2	l - l
26.2	N09	5505	5471	(400)	(2)	l / l 2	590	7	b / l
26.2	S18	5508	New	2000	2	b / l 1	50	2	b / l
27.8	N21	5506	5471	(2500)	(2.5)	l - l 2	170	3	b / l
28.6	N08	5507	5476	(4500)	(2.5)	l - l 9	(10)	(1)	l \ d
30.2	N24	5509	5477	1900	3	l - d 3			
31.0	S09	5510	New	1500	2.5	b - l 1	360	7	b / l
31.2	S29	5518	New	700	1.5	b \wedge d 1			
31.7	N10	5511	5478	2300	2	l - l	240	1	l - l

Plage histories uncertain December 22-30 because of no observations.

* 5460, 5462.

COMMERCE - STANDARDS - BOULDER

CORONAL LINE EMISSION INDICES

DECEMBER 1959

CMP Dec. 1959	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	174	206	37	57	112	180	11	18	x	x	x	x	x	x	x	x
2	143	171	17	25	60	94	9	20	x	x	x	x	x	x	x	x
3	153	169	13	30	48	81	6	7	x	x	x	x	101	138	33	60
4	x	x	x	x	x	x	x	x	42	88	37	42	123	172	23	42
5	98	141	19	24	68	112	25	48	68	102	25	28	x	x	x	x
6	118	168	15	24	74	122	23	39	63	80	x	x	91	119	x	x
7	73	94	8	10	78	99	15	24	177	266	43	102	137	206	22	42
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	65	82	43	96	153	229	66	118	x	x	40a	87a	x	x	21a	30a
10	50	84	x	x	117	290	x	x	x	x	19	36	x	x	6	9
11	x	x	x	x	x	x	x	x	64	74	20	33	95	102	12	15
12	67	95	x	x	49	59	x	x	x	x	x	x	x	x	x	x
13	80	100	16	20	84	117	17	21	103	192	24	48	121	144	26	42
14	109	132	27	48	79	110	22	26	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
17	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	96	122	41	108	87	126	43	60	x	x	x	x	x	x	x	x
19	107	152	22	33	77	108	18	24	x	x	x	x	x	x	x	x
20	93	134	23	39	75	119	14	24	x	x	x	x	x	x	x	x
21	124	268	23	35	115	212	23	30	75	104	24	51	101	143	34	84
22	x	x	x	x	x	x	x	x	80	186	19	36	187	278	51	102
23	94a	140a	22	39	53a	62a	27	50	x	x	15	21	x	x	44	84
24	159a	231a	20	30	72a	83a	6	8	x	x	x	x	x	x	x	x
25	85	153	33	80	28	36	11	20	x	x	x	x	x	x	x	x
26	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
27	164	207	46	90	108	166	14	18	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	50	56	x	x	159	285	x	x
29	x	x	x	x	x	x	x	x	56	84	20	33	165	200	37	48
30	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
31	x	x	x	x	x	x	x	x	64	112	x	x	114*	138	x	x

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

COMMERCE - STANDARDS - BOULDER

CORONAL LINE EMISSION INDICES

(corrections to October and November 1959 values published in F183 and F184)

CMP 1959	North East Quadrant		South East Quadrant		South West Quadrant		North. West Quadrant	
	G6	G1	G6	G1	G6	G1	G6	G1
18 Oct					55	107	66	92
27					114	153	84	126
28					82	138	90	117
29					71	86	95	135
30					58	78	64	68
1 Nov					86	120	115	208
3				111	57	88	122	161
4				164	59	100	182	198
10	105	200	78					
11	90	140	124					
12	130	175	112	156				
13	156	241	104	159				
14					73	94	101	118
15	99	121	68	88				
17	68	78	103	146				
18	129	155	113	174	118	172	146	166
19					79	98	169	234
22					120	161	153	234
23					127	194	127	221
28	114	182	34	52				

SOLAR FLARES

DECEMBER 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA-TION MINUTES	IM-PORTANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	MGR. MER. DIST.	MGR. BLAZE REGION				TIME U T	AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg		MAX. INT. %
{ MITAKA WENDEL SAC PEAK MCMATH SAC PEAK LOCKHEED MCMATH HAWAII	01	0121	0200	N08 E04	5476	5476	39	1	1	0123	0.98	0.99	4.10	107	Slow S-SWF
	01	1208 E	1251 D	N09 W02	5476	5476	43 D	16	3	1528	8.14	8.00		28	
	01	1456 E	1622 D	N08 W05	5476	5476	86 D	2	3			3.00		38	
	01	1527 E	1530 D	N09 W07	5476	5476	3 D	1	3					40	
	01	1638 E	1708 D	N08 W05	5476	5476	188	26	2	1709	8.72	9.00			
	01	1639 E	2000 D	N08 W06	5476	5476	201 D	2	2	1719	8.20	1.05			
	01	1648 E	1725 D	N11 W03	5476	5476	37 D	26	2						
	01	2306 E	2418 D	N12 W10	5476	5476	72 D	1	2						
	02	0721 E	0823 D	N08 W16	5476	5476	62 D	16	2	0739			3.10		
	02	1051	1103 D	N07 W14	5476	5476	12 D	16	2	1055			3.10		
{ WENDEL WENDEL MCMATH HAWAII	02	1219 E	1412 D	N07 W16	5476	5476	113 D	26	2			14.00		S-SWF	
	02	1219 E	1412 D	N09 W07	5476	5476	113 D	26	2			13.00			
	02	1459 E	1515 D	N11 W14	5476	5476	16 D	1	2	1501		2.00			
	02	1756 E	1824 D	N12 W17	5476	5476	28 D	1	3	1808	1.15	1.20			
	02	1840 E	2000 D	N13 W14	5476	5476	80 D	1	2	1902	1.10	1.15			
	03	0807 E	0826 D	N09 W30	5476	5476	19 D	1	2			10.00			
	03	1010	1107 D	N09 W31	5476	5476	57	2	2			7.00			
	03	1115	1152 D	N12 E27	5478	5478	37	16	2			3.00			
	03	1126	1154 D	N09 W32	5476	5476	28	1	2			5.00			
	03	1408 E	1428 D	N10 W33	5476	5476	20 D	16	1						
{ LOCKHEED HAWAII	03	1756 E	2000 D	N07 W35	5476	5476	124	2	1	1804	5.70	2.50		40	
	03	1802 E	1946 D	N12 W31	5476	5476	104 D	16	3	1815	2.10	2.50			
	04	0032	0117 D	N07 W37	5476	5476	45	2	1	0050	4.42	5.52		183	
	04	0038 E	0103 D	N08 W42	5476	5476	25 D	1	2	0044	1.65	2.05			
	04	0120	0128 D	N08 W41	5476	5476	8	1	1	0125	3.93	5.10		125	
	04	0208	0250 D	N08 E15	5478	5478	42	16	1	0215	4.92	5.25		134	
	04	0353 E	0412 D	N07 W39	5476	5476	19 D	16	1	0356	5.90	7.38		143	
	04	0439 E	0442 D	N08 W41	5476	5476	3	1	1	0440	0.69	0.88		100	
	04	0526 E	0532 D	S16 E54	5482	5482	6 D	1	1	0526	2.95	5.75		30	
	04	1814	2100 D	N06 W45	5476	5476	166	2	1	1823	6.80			30	
{ MITAKA HAWAII MITAKA MITAKA CAPRI S LOCARNO LOCARNO LOCARNO LOCKHEED SAC PEAK LOCKHEED LOCKHEED	04	1824 E	2100 U	N07 W44	5476	5476	156 D	26	3		12.88			32	
	05	0035	0048 D	N10 W01	5478	5478	13	1	2	0035	3.93	4.01		120	
	05	0222 E	0232 D	N16 W31	5477	5477	10 D	16	1	0223	4.41	5.25		120	
	05	0226 E	0234 D	N10 W02	5478	5478	8 D	16	1	0230	5.90	6.02		149	
	05	1004 E	1016 D	N11 W02	5478	5478	12 D	1	2	1006	2.20	2.20			
	05	1230 E	1235 D	N12 W06	5478	5478	5 D	2-	3						
	05	1408	1430 D	N10 E02	5478	5478	22	16	3						
	05	1928	2012 D	N09 W10	5478	5478	8	1	3					20	
	05	1938	2012 D	N11 W03	5478	5478	34	1	1	1952	2.00	2.00		20	
	05	2158	2218 D	N05 W10	5478	5478	20 D	1	2	1952	2.99	2.99		22	
{ SAC PEAK LOCKHEED LOCKHEED LOCKHEED	05	2159	2221 D	N08 W12	5478	5478	22	1	1	2202	3.40	3.40		20	
	05	2220	2238 D	N03 W65	5476	5476	18	1	1	2226	2.30	2.30		10	
	05	2341	2350 D	N10 W15	5478	5478	9 D	1	1	2346	2.00	2.00		30	
	06	0008	0112 D	N13 W04	5478	5478	64 D	1	2	0014	1.40	1.45			
	06	0936	0955 D	N11 W19	5478	5478	19	16	2	0939	3.00	3.00			
	06	0936	0955 D	N07 W61	5476	5476	19	1	2	0939	2.00	2.00			
	06	1235	1245 D	N09 W08	5478	5478	10	1	2	1236	1.00	1.00			

SOLAR FLARES

DECEMBER 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA-TION MINUTES	IM-FOR-TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.				McMURTHY PLACE REGION	TIME U T	MEAS. AREA Sq. Deg.	
LOCARNO	DEC 06	1340	1348		N11 W14	5478	8	1	2	2.00			
	06	1430	1443	1437	N08 W18	5478	13	1	2	2.18			15
	06	1714	1726	1716	N09 W19	5478	12	1	2	3.05			16
	06	1902	1930	1908	N12 W15	5478	28	1	2				
{ MITAKA	07	0434	0452	0439	N11 W20	5478	18	1	1	2.95	3.25	5.79	107
	07	0437	0513	D	N08 W27	5478	36	D	1	1.97	2.09	2.94	93
	07	0936	1028	D	N11 W23	5478	52	D	1		9.00		
	07	1228	1300	E	N12 W32	5478	32	D	16		6.00		
	07	1318	1350		N13 W31	5478	32	1			3.00		
	07	1630	1702	1644	N12 W36	5478	32	1	2	3.32			20
	07	1852	1940	U	N13 W37	5478	48	U	2	3.41			18
	07	2134	2216	D	N07 W38	5478	42	D	1	3.84			20
	07	2136	2240	D	N13 W33	5478	64	D	2	2.90	3.60		
	08	0120	0145	E	N12 W38	5478	25	D	1	3.93	5.11	3.89	149
LOCARNO	09	1310	1330		N12 W54	5478	20	1	3		1.00		
	09	1358	1403		N09 W06	5484	5	1	3	1.358			
HAWAII	10	2030	2056	2038	N17 E54	5491	26	1	1	2.40			10
	11	0028	0036	0028	N18 W90	5477	8	D	2	.25			
	11	1256	1330	D	N07 W77	5478	34	D	1		3.00		
	11	2118	2134	2124	S02 E67	5494	16	1	2	2.10			17
{ WENDEL	12	0812	0831		N17 E35	5491	19	1	2		3.00		
	12	0815	0823	D	N16 E33	5491	8	D	1				
	12	1140	1158	D	N10 E61	5493	18	D	1		3.00		
	12	1305	1358	D	S19 W60	5482	53	D	16		8.00		
MCMATH	13	1529	1615	1540	S22 W67	5482	46	1	1	2.91	2.00		17
	13	1932	2056	1948	S18 W72	5482	84	1	2				
HUANCAYO	14	1532	1555	1540	S18 E90	5500	23	D	2			2.80	
	15	0841	0901		N10 E59	5497	20	1			4.00		
LOCARNO	15	0919	1046	D	N08 W82	5484	87	D	1		4.00		
	15	1030	1100	E	N10 E23	5493	30	D	2				
	15	1031	1100	D	S11 E24	5494	29	D	1		4.00		
	15	1120	1146	D	N16 W01	5491	26	D	1		3.00		
{ LOCARNO	15	1130	1145		N18 W01	5491	15	1	2				
	15	1238	1250		N27 E01	5491	12	1	2	1.00			
	15	1244	1303	D	N22 W01	5491	19	D	1		3.00		
	15	1540	1555		S14 W01	5492	15	D	2	4.10	4.20	1.80	
LOCARNO	16	0845	0920		N07 W64	5495	35	D	1				
	16	0913	0937		N05 W63	5495	24	1	2		3.00		
	16	1017	1042	D	N11 E41	5497	25	D	1		3.00		

SOLAR FLARES

DECEMBER 1959

OBSERVATORY	DATE	OBSERVED TIME		APPROX. LAT.	APPROX. MER. DIST.	MAGN. PLACE REGION	DURATION - MINUTES	IM. POR. TANCE	OBS. COND.	TIME	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END								MAX. PHASE	MEAS. AREA Sq. Deg.	COBR. AREA Sq. Deg.	
LOCARNO	16	1030 E	1055	N09	E42	5497	25 D	1	2					
LOCARNO	17	0914	0935	N12	E30	5497	21	1	3	0935	1.00			
LOCKHEED	17	2155 E	2221	S09	W49	5490	26 D	1	1	2157	3.40			20
LOCARNO	19	1055 E	1115	S02	W30	5494	20 D	16	3					
HAWAII	19	2142	2216	N22	E47	5502	34	1	3	2200	1.95	3.25		
CAPRI S	20	0835	0919 D	N19	E43	5502	44 D	1	3	0909	1.60	2.40		
ARCETRI	20	0931 E	0950 D	S17	E11	5500	19 D	1	2					
CAPRI S	20	1206 E	1234 D	S03	W43	5494	28 D	1	3	1214	1.80	2.30		
ZURICH	20	1422 E	1428	S09	W81	5490	6 D	1	2	1422	1.00	1.00		
MITAKA	21	0045 E	0104	S03	W53	5494	19 D	16	1	0053	7.86	12.50		Slow S-SWF
HAWAII	21	0129 E	0154 D	S03	W55	5494	25 D	16	1	0145	2.05	3.45		
MITAKA	21	0148 E	0157 D	N28	E32	5502	9 D	1	2	0150	1.28	1.61		
CAPRI S	21	1231	1242 D	N10	W16	5497	11 D	1	1	1238	2.00	2.00		134
LOCARNO	22	1410	1420	N08	W08	5501	10	1	3					
HAWAII	23	0002	0024 D	N09	W11	5501	22 D	1	2	0010	1.70	1.80		
WENDEL	23	0918 E	0937	N24	E13	5504	19 D	1	2					
HUANCAYO	23	1640	1715	N23	W04	5502	35	1	2	1647	3.00	3.30		2.90
MITAKA	25	0221 E	0245 D	N23	W23	5502	24 D	1	1	0230	3.93	4.72		134
WENDEL	25	1304 E	1313 D	S16	W55	5500	9 D	1	2	1315	1.40	2.20		
CAPRI S	25	1304 E	1321 D	S19	W51	5500	17 D	1	2					
LOCKHEED	26	1833	1906	N26	W47	5502	33	1	2	1837	2.30	2.30		20
LOCARNO	27	1148 E	1159	S18	W76	5500	11 D	2-	2					
CAPRI S	28	1101 E	1116 D	N09	E45	5511	15 D	1	2	1104	1.80	2.40		
LOCARNO	28	1212	1225	N22	E62	5513	13	1	3					
LOCARNO	28	1240	1255	N12	E15	5507	15	1	3					
LOCARNO	29	1312	1322	N21	W55	5504	10	1	3					
LOCKHEED	29	1744	1840	N11	W49	5505	56	1	2	1750	2.40	2.40		Slow S-SWF
HAWAII	29	2226	2236	S11	E11	5510	10	1	3	2230	1.15	1.15		30
LOCARNO	30	0900 E	1020	N04	W87	5505	80 D	1	3					
ARCETRI	30	1016 E	1028 D	N11	W58	5505	12 D	1	3	1016	1.30	2.50		
LOCARNO	31	1022	1032	S09	W08	5510	10	16	2	1026	2.00	2.00		
AROSA	31	1027	1031	S10	W09	5510	4	1	2					

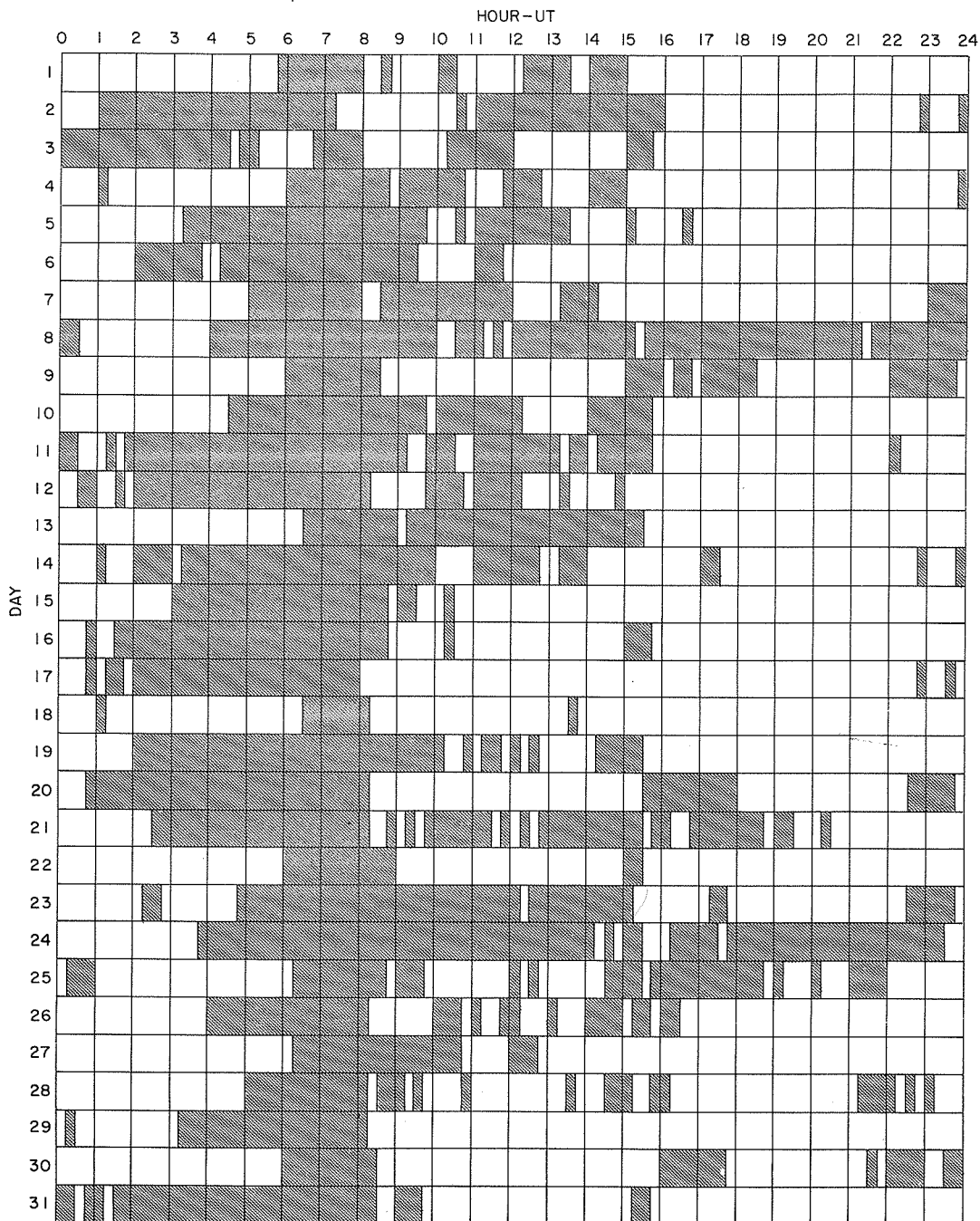
MOSCOW - GAISH
 MOSCOW-G
 R O EDIN ROYAL OBSERVATORY, EDINBURGH
 R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
 SAC PEAK SACRAMENTO PEAK
 SCHAUTINSLAND
 UNITED STATES NAVAL RESEARCH LABORATORY
 USNRL

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.
 E - LESS THAN & - PLUS
 D - GREATER THAN - - MINUS
 U - APPROXIMATE □ - NOT REPORTED

The flare areas reported by Hawaii from July 1957 to December 1959 were derived from original measurements based on millioths of the solar disk instead of the hemisphere. In applying the conversion factor to square degrees this discrepancy was not recognized and hence for these months the areas reported in square degrees, both measured and corrected, are too large by a factor of two. The data for December 1959 for Hawaii in this issue have been converted properly to square degrees. Hawaii bases its flare "importance" on the measured areas as do the High Altitude Observatory, Sacramento Peak Observatory and Lockheed.

LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS SPECTRUM.
 COME - STANDARDS - BOLLNER

INTERVALS OF NO FLARE PATROL OBSERVATIONS
DECEMBER 1959



Stations Include:

- | | |
|--------------------|-----------------------------|
| Anacapri (Swedish) | Meudon |
| Arcetri | Mitaka |
| Arosa | Ondrejov |
| Dunsink | Royal Greenwich Observatory |
| Hawaii | Herstmonceux |
| Huancayo | Sacramento Peak |
| Locarno | Zurich |
| Lockheed | |

COMMERCE - STANDARDS - BOULDER FORM-103-B

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

NOVEMBER 1959

Table listing subflares with columns for station name, time, date, and coordinates. Includes stations like LOCARNO, MCMATH, HAWAII, and various time/date entries.

SUBFLARES

Noted as follows: Date-Universal Time - Coordinates

NOVEMBER 1959

LOCKHEED	24	2154	S19 E03	LOCKHEED	27	1609	N12 E43	LOCKHEED	29	1640	N09 E90
LOCKHEED	24	2201	N10 E90	SAC PEAK	27	1612	N12 E62	LOCKHEED	29	1719	N10 E22
LOCKHEED	24	2244	N22 E09	LOCKHEED	27	1615	N12 E62	LOCKHEED	29	1752	N11 E17
LOCKHEED	24	2244	N10 E90	LOCKHEED	27	1645	S14 W40	SAC PEAK	29	1802	N23 W07
LOCKHEED	24	2253	N11 W08	LOCKHEED	27	1738	N10 E52	LOCKHEED	29	1806	N21 W06
LOCKHEED	24	2334	N11 W08	LOCKHEED	27	1749	N14 E57	LOCKHEED	29	1837	N19 W49
LOCKHEED	25	1128	S18 W15	SAC PEAK	27	1750	N05 E58	LOCKHEED	29	1850	N24 W03
WENDEL	25	1152	E S18 W01	LOCKHEED	27	1915	N11 E59	SAC PEAK	29	1851	N27 W01
WENDEL	25	1220	E S17 W02	SAC PEAK	27	1934	N12 E59	SAC PEAK	29	1928	S17 W65
WENDEL	25	1234	E S18 W02	LOCKHEED	27	1935	N13 E58	LOCKHEED	29	1929	S11 W65
WENDEL	25	1342	E N25 E07	HAWAII	27	1940	N04 E60	* LOCKHEED	29	2005	N08 E18
MCMATH	25	1343	E S17 W07	LOCKHEED	27	2016	S10 E42	HAWAII	29	2026	N08 E19
WENDEL	25	1344	E N26 E57	SAC PEAK	27	2046	S14 W44	LOCKHEED	29	2034	N11 E30
WENDEL	25	1351	E S18 W09	HAWAII	27	2046	S09 W46	LOCKHEED	29	2042	N11 E23
SAC PEAK	25	1504	S17 W09	*SAC PEAK	27	2106	N17 W22	LOCKHEED	29	2047	N11 E23
SAC PEAK	25	1522	S17 W19	LOCKHEED	27	2106	N15 W23	LOCKHEED	29	2053	N19 E21
SAC PEAK	25	1750	N21 E58	LOCKHEED	27	2115	N11 E53	LOCKHEED	29	2103	N11 E17
LOCKHEED	25	1751	N20 E56	SAC PEAK	27	2200	N06 E56	HAWAII	29	2106	N08 E19
LOCKHEED	25	1856	N21 E03	LOCKHEED	27	2203	E N06 E54	LOCKHEED	29	2110	N13 E24
LOCKHEED	25	1905	N16 E03	LOCKHEED	27	2209	S15 W42	LOCKHEED	29	2136	N10 E25
SAC PEAK	25	1908	N14 E05	LOCKHEED	27	2309	N13 E48	HAWAII	29	2138	N04 E28
LOCKHEED	25	1949	N05 E83	LOCKHEED	28	0007	S11 W45	HAWAII	29	2158	N08 E19
SAC PEAK	25	1952	N04 E80	WENDEL	28	0954	E S16 W49	LOCKHEED	29	2209	N11 E25
LOCKHEED	25	2004	S17 W15	* CAPRI S	28	1058	E S18 W49	LOCKHEED	29	2232	N11 E18
SAC PEAK	25	2007	S17 W15	WENDEL	28	1114	E N12 E36	LOCKHEED	29	2302	N08 E13
LOCKHEED	25	2007	N18 E08	* WENDEL	28	1114	E N12 E36	LOCKHEED	29	2317	N09 E13
LOCKHEED	25	2015	N18 E01	WENDEL	28	1202	E N12 E36	LOCKHEED	29	2323	N10 E15
LOCKHEED	25	2018	S17 W11	SAC PEAK	28	1506	N05 E47	* LOCKHEED	29	2344	N07 E15
LOCKHEED	25	2039	S17 W12	SAC PEAK	28	1602	N13 E35	LOCKHEED	29	2353	N13 E22
LOCKHEED	25	2044	S15 W11	SAC PEAK	28	1632	N23 E08	LOCKHEED	29	2354	N12 E20
LOCKHEED	25	2047	S18 W11	LOCKHEED	28	1712	N22 E08	LOCKHEED	29	2354	N16 E20
LOCKHEED	25	2057	N14 E70	SAC PEAK	28	1712	N23 E08	HAWAII	30	0048	N17 E17
SAC PEAK	25	2058	N11 E70	LOCKHEED	28	1719	N12 E34	HAWAII	30	0128	E N17 E17
LOCKHEED	25	2313	N06 E80	LOCKHEED	28	1755	N11 E36	* HAWAII	30	0154	E N09 E15
LOCKHEED	25	2315	S20 W12	LOCKHEED	28	1845	N12 E33	WENDEL	30	0918	E N03 W59
NIZAMIAH	26	0345	N10 E72	LOCKHEED	28	1902	N05 E45	SAC PEAK	30	1446	E N16 W12
WENDEL	26	0758	E S15 W18	LOCKHEED	28	1935	N05 E45	SAC PEAK	30	1450	N12 E12
WENDEL	26	1021	E N24 W01	LOCKHEED	28	2046	N24 E05	SAC PEAK	30	1458	N09 E07
WENDEL	26	1050	E N23 E39	SAC PEAK	28	2054	N24 E04	SAC PEAK	30	1530	N11 E15
WENDEL	26	1210	E N10 E62	LOCKHEED	28	2104	N27 E16	LOCKHEED	30	1530	E N11 E15
WENDEL	26	1221	E N22 E49	HAWAII	28	2110	E N23 E07	LOCKHEED	30	1552	N08 E07
WENDEL	26	1221	E N10 E69	LOCKHEED	28	2118	N22 E59	LOCKHEED	30	1603	S04 E26
SAC PEAK	26	1512	N12 E60	SAC PEAK	28	2156	N15 E30	SAC PEAK	30	1618	N10 E05
LOCKHEED	26	1613	N11 E69	LOCKHEED	28	2157	N21 E05	LOCKHEED	30	1635	N16 W63
LOCKHEED	26	1614	S17 W20	LOCKHEED	28	2158	N14 E31	LOCKHEED	30	1703	N09 E07
LOCKHEED	26	1631	S14 W25	LOCKHEED	28	2234	N12 E31	LOCKHEED	30	1825	N22 W67
LOCKHEED	26	1631	N10 E69	LOCKHEED	28	2310	N10 E29	LOCKHEED	30	1918	N08 E05
LOCKHEED	26	1647	N08 W07	LOCKHEED	28	2325	N10 E30	LOCKHEED	30	1933	N09 E04
SAC PEAK	26	1650	N10 E68	* LOCKHEED	28	2346	N12 E30	SAC PEAK	30	1936	N10 E10
SAC PEAK	26	1652	N19 W07	HAWAII	29	0016	E N21 E05	LOCKHEED	30	1936	N11 E11
LOCKHEED	26	1653	N24 E35	WENDEL	29	1020	E N09 E24	LOCKHEED	30	1956	N11 E11
LOCKHEED	26	1721	N15 E61	WENDEL	29	1030	E S17 W59	LOCKHEED	30	2005	N12 E15
SAC PEAK	26	1728	N15 E60	* SAC PEAK	29	1450	E N09 E19	LOCKHEED	30	2010	N09 E05
HAWAII	26	1914	E N09 W08	MCMATH	29	1454	S13 E08	LOCKHEED	30	2036	N14 E10
SAC PEAK	26	1918	N08 W09	SAC PEAK	29	1454	S13 E08	LOCKHEED	30	2041	N09 E05
SAC PEAK	26	2048	N24 E33	SAC PEAK	29	1454	S13 E06	SAC PEAK	30	2056	N12 E16
CAPRI S	27	0820	E N13 E62	SAC PEAK	29	1534	N25 W13	HAWAII	30	2058	N10 E18
CAPRI S	27	0928	N13 E62	SAC PEAK	29	1616	N21 E47	LOCKHEED	30	2110	N06 E15
CAPRI S	27	1334	E N20 W16	LOCKHEED	29	1617	N20 E47	SAC PEAK	30	2132	N05 E15
SAC PEAK	27	1608	N12 E46	LOCKHEED	29	1628	N21 W47	SAC PEAK	30	2144	N07 E05
				LOCKHEED	29	1640	N09 E21	LOCKHEED	30	2144	N10 E03
								LOCKHEED	30	2226	N15 E07
								LOCKHEED	30	2229	N10 E03

* Rated as flare of importance ≥ 1 by other observatories (See CRFI-F 184 Part B).

Errata to subflares for September 1959 published in CRFI-F 183 Part B:

Lockheed 03 1720 should be Lockheed 04 1720.
 Lockheed 03 2102 should be Lockheed 04 2102.
 McMath 26 15458 should be McMath 27 15458.

CONCORD - STANDARDS - BOLLER

SOLAR FLARES

JANUARY - AUGUST 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	MER. DIST.	MAGN. PLACE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hr		MAX. INT. %
KYOTO	1959 JAN 06	0142	0145	N12	W65	4936	3	16		0142	6.23		1.32	100	
KYOTO	11	0120	0135 D	N18	W42	4951	15 D	1		0120	5.82		1.32	100	
KYOTO	12	0024 E	0032 D	N12	W16	4953	8 D	1		0026	2.49		1.83	110	
KYOTO	19 FEB. 05	0035	0105 D	N20	E33	4974	30 D	2		0037	7.06		2.25	120	Slow S-SWF
KYOTO	11	0631	0723 D	N20	W08	4992	4 D	16		0557	7.27		1.32	70	
KYOTO	MAR. 04	0020 E	0032 D	N06	E64	5009	52 D	16		0631	4.15		2.00	130	
KYOTO	04	0220	0225 D	S11	E44	5039	12 D	1		0023	3.32		2.68	110	
KYOTO	04	0551 E	0609 D	N23	W78	5026	5 D	1		0220	2.91		2.83	120	
KYOTO	20	0437	0522	S18	E16	5036	18 D	1		0553	2.91		2.83	120	
KYOTO	27	0145 E	0215 D	N14	E60	5060	45	16		0441	4.36		2.34	120	
KYOTO	27	0703 E	0720 D	N24	E55	5071	30 D	2		0155	7.27		1.66	140	Slow S-SWF
KYOTO	28	0105 E	0110 D	N08	E39	5066	17 D	1		0703	2.08		1.66	100	
KYOTO	28	0119 E	0215 D	S09	W08	5063	23 D	1		0038	4.36		1.16	100	
KYOTO	28	0148 E	0152 D	N13	E53	5071	5 D	1		0105	2.08		1.13	130	
KYOTO	28	0553 E	0724 D	N23	E42	5071	56 D	2		0120	9.14		1.68	120	
KYOTO	01 APRIL	0507	0515 D	N12	E52	5071	4 D	1		0148	2.08		1.68	120	
KYOTO	06	0422	0428 D	N12	E52	5071	91 D	1		0634	1.45		1.50	120	
KYOTO	06	0454	0501 D	N25	W16	5071	8 D	2		0507	1.68		1.68	140	Slow S-SWF
KYOTO	06	0654 E	0701 D	N13	E07	5080	6 D	1		0422	2.91		1.66	120	
KYOTO	06	0750 E	0805	N17	W66	5071	7 D	1		0454	2.28		1.52	100	
KYOTO	24	0518 E	0555 D	N21	E64	5085	15 D	1		0750	2.49		2.00	120	
KYOTO	25	0425	0445 D	N12	E66	5083	15 D	1		0518	3.19		3.19	130	
KYOTO	02 MAY	0245	0250 D	N11	E90	5122	37 D	1		0425	4.15		1.49	100	
KYOTO	03	0021	0042 D	N33	E66	5119	20 D	1		0245	4.15		1.49	100	
KYOTO	03	0106 E	0114 D	S08	W05	5124	5 D	1		0245	4.15		1.49	100	
KYOTO	04	0150 E	0206 D	N14	W48	5120	21 D	16		0021	5.19		1.83	120	Slow S-SWF
KYOTO	04	0357	0413 D	N14	W48	5120	8 D	16		0106	4.57		3.02	130	Slow S-SWF
KYOTO	04	0400 E	0423 D	N16	W60	5120	16 D	1		0201	5.40		2.17	110	S-SWF
KYOTO	04	0508	0524 D	N15	W55	5120	16 D	16		0357	7.27		2.17	120	S-SWF
KYOTO	13	0501	0510 D	S08	W20	5137	23 D	2		0402	8.31		5.82	130	S-SWF
KYOTO	13	0701	0710 D	N15	W60	5120	16 D	16		0508	8.31		2.17	80	S-SWF
KYOTO	13	0701	0734 D	N20	E24	5148	9 D	1		0501	1.45		3.36	130	S-SWF
KYOTO	13	0701	0710 D	N21	E29	5148	41 D	2		0516	5.82		5.47	200	S-SWF
KYOTO	13	0701	0734 D	N08	E24	5148	9 D	1		0701	1.25		2.34	100	S-SWF
KYOTO	14	0505 E	0523	N10	E21	5148	33 D	16		0701	4.15		3.02	120	S-SWF
KYOTO	14	0505 E	0523	S13	W61	5133	18 D	1		0512	2.28		1.33	100	

SOLAR FLARES

JANUARY - AUGUST 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURATION - MINUTES	IM-POR-TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	MER. DIST.				MARCH REGION	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	
KYOTO	14 1959	0530 E	0558 D	N13 E08	5148	28 D	16		4.36		1.83	120
	14	0530 E	0603 D	N09 E10	5148	33 D	1		3.12			120
	14	0536 E	0610	N17 E11	5148	34 D	2		5.19		2.34	120
	14	0620	0756 D	S13 W63	5133	96 D	2		5.82			90
KYOTO	19	2332 E	0024	N23 E41	5158	52 D	1		1.66		1.66	100
	20	0004 E	0020 D	N21 E40	5158	16 D	1		1.66		1.16	100
KYOTO	20	0017 E	0024 D	N21 W62	5148	7 D	1		2.08			80
	20	0112 E	0128 D	N22 E11	5157	16 D	1		2.91		1.66	120
KYOTO	20	0638	0705 D	N21 E40	5158	27 D	1		2.28		2.00	100
	20	0638	0714 D	N23 E41	5158	36 D	1		2.49		1.66	100
KYOTO	25	0444	0455 D	N01 E19	5166	11 D	1		1.66		1.56	100
	28	0121	0123 D	□	W10	2 D	2		2.91		1.66	100
KYOTO	28	0415 E	0440 D	N01 W28	5166	25 D	1		1.66			80
	28	0725 E	0805 D	S16 W13	5167	40 D	16		3.32		2.02	120
KYOTO	28	2237 E	2344 D	S13 W69	5176	67 D	1		2.08		2.17	100
	28	2246 E	2312 D	N01 W45	5166	26 D	1		1.45		1.66	100
KYOTO	29	0248 E	0259 D	S16 W35	5167	11 D	16		4.36		3.70	120
	01	0046 E	0115	S12 E44	5179	29 D	1		4.78		1.66	120
KYOTO	01	0235	0250	S13 E43	5179	15	1		0.235			100
	02	2252 E	2259	N09 W45	5173	7 D	1		2.08		1.49	100
KYOTO	02	2318 E	2327	N09 W45	5173	9 D	1		1.25		2.85	120
	07	0440 E	0452	S08 W38	5179	12 D	16		4.99		2.68	120
KYOTO	08	0749	0805	S08 W53	5179	16	2		4.15		3.02	150
	09	0046 E	0050	N12 W24	5185	4 D	1		3.12			80
KYOTO	09	0644	0742	S25 E12	5194	58	16		5.82		1.83	90
	12	0829 E	0900 D	N21 E63	5204	31 D	16		6.02		3.19	120
KYOTO	12	2345 E	2350 D	N16 E57	5204	5 D	1		2.345			100
	13	0118	0130 D	N20 E53	5204	12 D	1		4.36		2.00	100
KYOTO	14	0637 E	0716	N17 E42	5204	39 D	2		5.61		2.68	150
	15	0544	0625 D	N19 E28	5204	41 D	2		8.31		2.00	120
KYOTO	16	0715 E	0740	N14 E21	5204	25 D	2		22.85		1.66	100
	17	2310	2343	N11 E65	5219	33	16		11.63		1.00	100
KYOTO	19	0032 E	0055	N15 W18	5204	23 D	16		5.82		1.32	120
	26	0423 E	0444	N09 W06	5225	21 D	26		12.46		2.34	150
KYOTO	26	2300	2318	N19 E07	5227	18	1		3.74		2.34	90

SOLAR FLARES

JANUARY - AUGUST 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DIRA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.				MAGN. PLAGE REGION	TIME — UT	MEAS. AREA Sq. Deg.	COBR. AREA Sq. Deg.		MAX. WIDTH H _g	MAX. INT. %
KYOTO	1959															
KYOTO	27	0010	0014				4	1				0010	2.08		1.33	100
KYOTO	27	0016	0021				5	1				0016	3.74		1.66	100
KYOTO	27	2324	2335	2326			11	1				2326	2.70		1.32	120
KYOTO	JULY															
KYOTO	05	0003	0054	D			51	2				0010	9.35		1.16	150
KYOTO	06	0639	0710				31	1				0639	2.08		1.00	120
KYOTO	06	0718	0727				9	1				0718	3.12		1.32	90
KYOTO	20	0415	0435	D			20	1				0415	2.91		1.00	90
KYOTO	20	0415	0435				20	1				0417	4.15		1.00	90
KYOTO	25	2325	2332	2327			7	1				2327	1.25		3.02	150
KYOTO	26	0043	0051				8	1				0043	4.15		1.32	90
KYOTO	28	0726	0738				12	1				0728	2.08		2.34	130
KYOTO	29	0042	0058				16	1				0042	1.87		1.00	100
KYOTO	30	0000	0020				20	1				0008	2.49		1.49	150
KYOTO	30	0000	0056				56	3				0019	14.54		2.68	150
KYOTO	30	0000	0056				56	2				0020	7.27		2.34	150
KYOTO	30	0128	0133				5	1				0128			2.17	100
KYOTO	30	0303	0314	D		0308	11	1				0308	2.49		2.98	130
KYOTO	30	0340	0358	D			18	2				0341	9.35		2.64	150
KYOTO	30	0513	0520				7	16				0513	4.15		2.00	110
KYOTO	30	0652	0708				16	1				0656	4.15		1.00	100
KYOTO	30	0720	0727				7	1				0720	1.66		1.66	120
KYOTO	31	0048	0058	D			10	1				0052	4.36		1.66	100
KYOTO	31	0634	0639				5	1				0634	3.95		1.66	100
KYOTO	31	2252	2308				16	2				2252	11.42		1.66	100
KYOTO	AUG.															
KYOTO	01	0134	0147				13	1				0134	7.89		1.83	100
KYOTO	02	0546	0608	D			22	16				0546	5.61		1.66	110
KYOTO	03	0540	0556	0546			16	1				0546	2.08		2.34	130
KYOTO	04	0200	0215				15	1				0200			1.66	100
KYOTO	11	0237	0245	0240			8	1				0240				100
KYOTO	17	0108	0128				20	1				0114			2.00	100
KYOTO	17	0335	0348				13	1				0335			1.66	100
KYOTO	21	0213	0221	D			8	16				0213	3.12		1.66	120
KYOTO	24	0108	0120				12	1				0110			1.66	100
KYOTO	24	0130	0135	D			5	1				0130			1.66	100
KYOTO	26	0650	0735	D			45	16				0650			1.66	100

SOLAR FLARES

JANUARY - AUGUST 1959

OBSERVATORY	DATE 1959	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION - MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	MER. DIST.	MAGNETH. PLACE REGION				TIME - UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z		MAX. INT. %
KYOTO	27	2332	0027 D	N25	E09	5339	55 D	2		2337	12.46		2.00	130	
-KYOTO	28	0055	0125	S11	E23	5340	30	16		0055				120	SLOW S-SWF
KYOTO	28	0135	0203	S10	E27	5342	28	16		0145	6.44			100	S-SWF
KYOTO	28	0550	0610	N14	E18	5341	20	2		0550	5.82			120	
KYOTO	29	0205	0221	N09	E50	5347	16	16		0208			1.66	120	
KYOTO	29	0430	0452	S11	W01	5340	22	2		0435			1.59	120	
KYOTO	29	0458	0610	S10	W01	5340	72	1		0520			1.00	100	
-KYOTO	29	0659	0707	S11	E02	5340	8	1		0659			1.32	100	

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE

& - PLUS
- - MINUS
□ - NOT REPORTED

COMMERCE - STANDARDS - BOULDER

REVISED HOURS OF NO FLARE PATROL OBSERVATIONS
for
JANUARY THROUGH AUGUST 1959

IIIk

Month	Day	Hours of no observations	Month	Day	Hours of no observations
January	12	0700-0800	May	4	0245-0300
January	20	1445-1515	May	20	1700-1800
February	4	2315-2330	June	1	0445-0500
February	5	None			0545-0600
February	12	2130-2315	June	2	0315-0330
March	11	0300-0400	June	3	2245-2300
		0430-0500	June	9	0615-0645
		0545-0600	July	5	None
March	28	None	July	17	None
April	6	1730-1800	August	3	None
May	1	0545-0600	August	11	None
		1530-1600	August	17	0400-0430
		1715-1745			
May	2	0600-0645			
		1200-1245			

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT. — MER. DIST.	MAGNETH PLAGE REGION				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ha
{ SYDNEY VOROSHILOV SYDNEY SYDNEY SYDNEY TASHKENT { GOOD HOPE PIRCULI GOOD HOPE GOOD HOPE GOOD HOPE GOOD HOPE GOOD HOPE HUANCAYO SYDNEY	01	0046	0053 D	S10 E57	5353	7 D	1	1	0049	2.00	4.00	73	
	01	0048 E	0058	S12 E60	5353	10 D	1	1	0050	5.59			
	01	0204	0235	S10 W45	5340	31	1	1	0215	4.00	6.00		
	01	0217	0221 D	S11 E55	5353	4 D	1	1	0219	2.00	5.00		
	01	0440	0510 D	N14 E19	5348	30 D	1	1	0450	3.00	3.00		
	01	0533	0549	N09 W07	5344	16	1	1	0537	1.10		55	
	01	0748	0940	N13 E13	5344	112	1	1	0807	4.10	4.20		
	01	0750	0910	N14 E13	5344	80	1	2	0830	8.26		51	
	01	0823	0845	N12 E90	5356	22	1	1	0829	.40			
	01	0915	0931	N17 W90	5336	16	1	1	0917	.80			S-SWF
01	1106	1120	S11 E55	5353	14	1	1	1107	1.40	2.70		S-SWF	
01	1359	1437 D	S12 W53	5340	38 D	2	2	1410	3.20	5.90		S-SWF	
01	1419	1437 D	N09 W12	5344	18 D	1	1	1423	2.70	2.70		S-SWF	
01	1423	1437 D	N13 W71	5339	14 D	2	2	1433	3.50			S-SWF	
01	1657 E	1752	S13 W49	5340	55 D	2	2	1709	7.00	11.20		S-SWF	
01	2327	2359	N25 W66	5339	32	1	2	2337	1.00	2.00		S-SWF	
{ SYDNEY KYOTO { SYDNEY KYOTO ALMA-ATA ALMA-ATA { SYDNEY TASHKENT { GOOD HOPE ATHENS PIRCULI KRASNAYA GOOD HOPE GOOD HOPE GOOD HOPE UCCLE HUANCAYO KYOTO	02	0018	0053	N10 W16	5344	35	1	3	0028	2.00	2.00		
	02	0113	0130	N10 W14	5344	17	1	1	0113				
	02	0135	0214	N13 W01	5344	39	1	2	0148	2.00	2.00		
	02	0147	0158 D	N12 W05	5344	11 D	1	2	0150	3.74		120	
	02	0148	0220	N32 W68	5339	32	2	2	0208	1.50	4.00		
	02	0310 E	0512	S12 W63	5340	122 D	2	1	0428	5.92			
	02	0310 E	0612 D	N17 E21	5348	182 D	1	1	0434	11.84		130	
	02	0403	0504 D	S02 E35	5351	61 D	1	3	0413	1.50	2.00	140	
	02	0410	0508	N00 E37	5351	58	1	3	0415	4.96		65	
	02	0529	0600	N09 W18	5344	31	1	3	0540	4.22			
02	0720	0954	N10 W10	5344	154	2	3	0751	7.30	7.40			
02	0724	0900 D	N06 W09	5344	96	3	3	0736	12.70	12.70		Slow S-SWF	
02	0724	0905 D	N11 W09	5344	101 D	3	2	0830	16.53		100		
02	0729 E	0830 D	N09 W09	5344	61 D	2	1	0736	12.67		175		
02	0857	0949	S13 W64	5340	52	1	1	0922	1.70	4.00			
02	1149	1228	N25 W75	5339	39	1	1	1200	.70				
02	1300	1318	S14 W66	5340	18	1	1	1304	1.10	2.90			
02	1603	1617	N24 W80	5339	14	2	2	1604	7.00	16.00		Slow S-SWF	
02	1617 E	1637	N27 W74	5339	20 D	2	2	1619	3.50	10.40		S-SWF	
02	2353 E	0036 D	N08 W09	5344	43 D	1	2	2353	2.08	5.50		S-SWF	
{ ALMA-ATA ALMA-ATA { SYDNEY TASHKENT GOOD HOPE { ONDREJOV GOOD HOPE GOOD HOPE UCCLE ONDREJOV ONDREJOV KYOTO GOOD HOPE	03	0304 E	0607 D	N18 E09	5348	183 D	1	1	0425	7.89		130	
	03	0421	0436	N25 W85	5339	15	2	2	0423	7.89		205	
	03	0421	0438	N27 W86	5339	17	2	2	0423	5.00			S-SWF
	03	0421	0439	N23 W86	5339	18	2	2	0423	6.42		175	
	03	0646	0711	S13 W80	5340	25	1	3	0655	1.20			
	03	0859 E	0909	S04 W35	5343	10 D	1	1	0904		2.70		
	03	0900	0916	S05 W36	5343	16	1	1	0901	1.90	2.30		
	03	0941	1046	N14 W13	5344	65	1	1	0951	2.20	2.30		
	03	0943 E	1010	N15 W15	5344	27 D	1	3	0947		2.60		
	03	1437	1445	N10 E66	5356	8	1	3			3.00		100
04	1041 E	1054	N10 W50	5344	13 D	1	3	1043		2.70			
05	0145	0155	S10 W90	5340	10	1	1	0145		1.66			
05	0938	0942 D	N10 W59	5344	4 D	1	1	0941	1.40				

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL LONGOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.				MEMORIAL PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH H _g
{ SYDNEY VOROSHILOV	05	1557	1612	1559	N13 W53	5344	15	16	3	3.00	3.00	8.00	3.60	68	Slow S-SMF
	05	2338 E	0000	2343	N05 E80	5360	22 D	2	3	2343	5.07				
	05	2339 E	2347		N06 E70	5360	8 D	16	1	2342					
	06	0420	0430	0421	N16 W51	5344	10	1	3	0421	1.00	2.00		150	
	06	0543 E	0546 D	0544	N20 W25	5348	3 D	1	1	0544	5.92				
	06	0909 E	0950 U	0934 U	S20 E68	5361	41 D	1	1	0917	1.20	3.50			
SYDNEY	07	0104	0210 D	0132	N17 E49	5359	66 D	1	3	0132	1.50	2.00			
SYDNEY	08	0029 E	0039		S15 E89	5365	10 D	H	1	0030	.75	3.00			
SYDNEY	08	0040	0106 D		S18 W71	5363	26 D	1	1	0044	1.50		4.80		
{ TASHKENT	08	0537 E	0555 D	0545	S19 E44	5361	18 D	16	3	0546	2.33		4.80	100	
{ KHARKOV	08	0544 E	0550 D		S19 E44	5361	6 D	16	2	0546	2.33		2.10		
{ KNDREJOV	08	0847 E	0905		N21 W62	5348	18 D	16	3	0848	9.14		2.60		
{ KHARKOV	08	0849 E	0858		N19 W63	5348	9 D	1	2	0853	5.61		1.50		
	08	0857 E	0915	0859	N18 W42	5354	18 D	1	2	0859	5.61				
KYOTO	09	0124 E	0127		N06 E38	5360	3 D	1		0124	2.49		1.49	100	
KYOTO	09	0128	0152		N05 E33	5360	24	1		0128	1.45		1.48	120	
{ ONDREJOV	09	0654 E	0754		N06 E31	5360	60 D	16	2	0658	4.70	5.20	2.20		
{ ATHENS	09	0655	0758		N04 E28	5360	63	2	4		6.60	7.30	2.10		
HUANCAYO	09	1556 E	1655	1556	N05 E25	5360	59 D	16	2	1556	6.60				
KYOTO	10	0147	0158		N06 E21	5360	11	1		0147	2.49		1.16	130	
{ GOOD HOPE	10	0745	0806	0751	N20 W90	5348	21	1		0751	2.00				
{ KRASNAYA	10	0745	0858	0749 U	N18 W90	5348	73	16	1	0749	2.70			100	
{ GOOD HOPE	10	1005	1020	1008	N09 E13	5360	15	1		1008	2.80	2.90	2.30		
ONDREJOV	10	1444 E	1457		N05 E12	5360	13 D	1	3	1445					
UCCLE	10	1541 E			N15 E33	5362		H	5						
SYDNEY	11	0316	0333	0321	N21 W68	5355	17	1	3	0321	1.00	3.00		80	
KRASNAYA	11	0851	0909	0853	S17 W18	5367	18	1	2	0853	2.18			68	
VOROSHILOV	11	2157	2211	2159	N14 E01	5362	14	1	2	2159	4.34				
VOROSHILOV	13	0018	0137	0039	N06 W20	5360	79	16	2	0039	6.88		42.00	85	
TASHKENT	13	0300 E	0600 D	0308	N17 E85	5373	180 D	1	2	0309	2.01		2.50	85	
TASHKENT	13	0531	0551	0539	N04 E47	5366	20	1	2	0540	2.93		3.00		
ONDREJOV	13	0534 E	0624		N17 E80	5373	50 D	16	3	0605	1.87			90	
KRASNAYA	13	0657 E	0741 D	0703 U	N14 E90	5373	44 D	1	2	0703	4.57			80	
KRASNAYA	13	0704 E	0722 D	0706 U	S22 W24	5361	18 D	1	2	0706	4.57				
UCCLE	13	1010 E	1030 D		N09 E85	5373	20 D	16	3	1417	1.20				
GOOD HOPE	13	1415	1418 D		N14 E85	5373	3 D	1							
TASHKENT	14	0548	0610 D	0552	N05 W36	5360	22 D	1	2	0552	6.98	6.00	1.70	65	
ATHENS	14	0747	0825		N14 E75	5373	38	2	4	2.00					
UCCLE	14	0933 E	0944		N30 W74	5374	11 D	1	4						
UCCLE	14	0933 E	0955		N08 E73	5373	22 D	16	4						
UCCLE	14	1000	1010		S13 W62	5367	10	1	2						
ONDREJOV	14	1603	1609	1604	S18 W68	5367	6	1	3	1604			3.10		
ONDREJOV	14	1628	1632		N15 E65	5373	4	1	3	1630			3.20		
VOROSHILOV	14	2135	2145	2140	S16 W72	5367	10	16	2	2140	2.16			110	
VOROSHILOV	14	2315 E	2332	2325	N16 E67	5373	17 D	1	2	2325	3.43			76	

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.				MCARTH PLACE REGION	TIME — UT	MEAS. AREA Sq. Deg.	
VOROSHILOV	15	0008	0033	0024		25	16	2	0024	1.45		110
		0016	0040	0034		24	16	2	0034	3.97		87
		0025	0112	0042		37	16	2	0042	1.45		93
		0124	0127	0126		3	16	2	0126	1.62		115
		0303 E	0602 D	0558		179 D	26	2	0558	9.87		140
		0759	0804			5	1	3	0802		2.60	
		0817 E	0902			45 D	2		0817	2.30		
		1037	1055			18	1	3	1043	1.80	3.20	
		1045 E	1053			8 D	1		1045		3.70	2.40
		1227	1236	1229		9	1		1229	2.00		
		1314	1338 D	1318		24 D	1		1318	1.20	2.20	
		1315	1332			17	1	3	1318		3.20	
		0351	0415	0358		24	1	1	0358	1.50	2.00	
		0742	0759	0746		17	1	1	0746	.60		
	HUANCAYO	16	1532	1625	1558		53	2	2	1558	2.40	6.40
16		1613 E	1643			30 D	1	2	1620	1.90	2.30	
17		1120	1133	1120		13	1	3	1120		2.50	
UCCLE	17	1149	1210			21	1	3				
	18	0010	0017 D			7 D	1	3	0014	1.00	4.00	
{ SYDNEY	18	0716	0732	0720		16	1	3	0720	.90		
	18	0718	0734			16	16	3		1.20	3.60	
{ ATHENS	18	1036 E	1051			15 D	1	3	1038			2.40
	20	0553 E	0617			24 D	16	3	0600			2.90
ONDREJOV	20	1425 E	1454			29 D	16	3	1428			2.70
	20	2252	2311 D			19 D	16	3	2256	4.34		112
{ VOROSHILOV	20	2316 E	2324 D			8 D	1	3	2316	1.66		110
	21	0100	0125 D			25 D	1	3	0105	1.45		100
KYOTO	21	1103 E	1117	1108		14 D	1	3	1108			2.90
	21	1220	1257	1234		37	16	3	1220			2.70
{ KIEV	21	1220 E	1308 D	1227		48 D	1	2	1227	6.22		55
	21	1245 E	1305			20 D	1	2	1245	3.60	4.60	
{ GOOD HOPE	21	1339	1354	1342		15	16	3	1342	5.33		54
	21	1340 E	1358 D	1344		18 D	1	2	1344	1.60	2.70	
{ KIEV	21	1341 E	1342 D			1 D	1	2	1341			100
	23	0138 E	0149			11 D	1	2	0138	3.12	1.83	120
KYOTO	23	0346 E	0414 D	0359		28 D	1	2	0359	2.00	2.00	
	23	0419	0504	0427		45	2	2	0427	7.00	8.00	
{ SYDNEY	23	0427 E	0451 D			24 D	2	2	0427	12.46		130
	23	0428	0457	0432		29	1	2	0432	3.00	4.00	
{ KYOTO	23	0433 E	0451 D			18 D	1	2	0443	2.70		100
	23	0614 E	0624			10 D	1	2	0614	1.66		110
{ GOOD HOPE	23	0712	0747	0715		35	1	2	0715	1.30	1.40	
	23	2331 E	0038 D			67 D	1	2	2345	3.00	3.00	
SYDNEY	24	0002	0033	0011		31	1	2	0011	1.50	2.00	64
	24	0744 E	0811	0749		27 D	26	2		13.61		71
{ ALMA-ATA	24	0744 E	0814 D	0747 U		30 D	1	3	0750	4.53	2.50	

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.					MEMATH PLACE REGION	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH H _c
{ TASHKENT	24	0746	0807 D	0749	S07 E00	S381	21 D	1	3	0750	3.68		1.90	65	
	{ KRASNAYA	25	1058 E	1111 D	S06 W18	S381	13 D	1	1	1058	2.18			75	
		25	1110 E	1130		S07 W18	5381	20 D	3	3	1523	3.00	3.30	1.80	
25	1519 E	1523			S07 W17	5381	38 D	2	2						
{ GOOD HOPE	26	0235	0340		N20 W47	5378	5	1	2	0303	3.00	4.00		68	
	26	0858	0910 D	0900	N27 W19	5379	12 D	1	2	0900	3.26				
	26	1254	1337	1302	S05 W31	5381	43	1	3	1302	3.50	4.10			
	26	1307 E	1342		S07 W29	5381	35 D	16	3	1309			2.60		
	26	1353	1412 D	1355	S12 W22	5381	19	1	3	1356	3.00	3.50	2.80		
{ GOOD HOPE	26	1354 E	1412 D	1355	S13 W26	5381	18 D	1	2	1355	1.00				
	26	2258 E	2349 D	2320	N26 W82	5377	51 D	H	2	2320					
SYDNEY	27	0337	0406	0354	N04 W65	5383	29	1	3	0354	.75	2.00			
{ SYDNEY	28	0420 E	0424 D	0423	S03 W45	5381	4 D	1	2	0423	1.50	2.00			
	28	0517	0545 D		S12 W44	5381	28 D	1	2	0543	2.00	3.00			
	28	0523	0627	0526	S15 W46	5381	64	1	3	0528	2.76		2.00	55	
	28	0639	0658	0644	S13 W47	5381	19	2	3	0644	5.44			105	
	28	0640	0655	0645	S10 W40	5381	15	1	3	0645	2.91		2.80	100	
	28	0640	0700	0642	S14 W46	5381	20	16	3	0649					
	28	0642	0742	0644	S12 W46	5381	60	1	3	0646	3.68		1.80	75	
	30	0308	0337	0313	S08 W69	5381	29	2	2	0313	2.00	6.00			
{ SYDNEY	30	0310	0416	0331	S11 W62	5381	66	1	2	0331	1.00	2.00			
	30	0345	0414	0352	S02 W72	5381	29	1	2	0352	.50	2.00			
	30	0454	0507	0458	N27 W68	5379	13	1	2	0458	.75	3.00			
	30	1309	1349	1311	S19 E80	5401	40	1	2	1311					
	30	1315	1327	1319	S15 W85	5381	12	1	2	1319	1.10				
	30														
	30														
	30														

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN & - PLUS
D - GREATER THAN - - MINUS
U - APPROXIMATE □ - NOT REPORTED

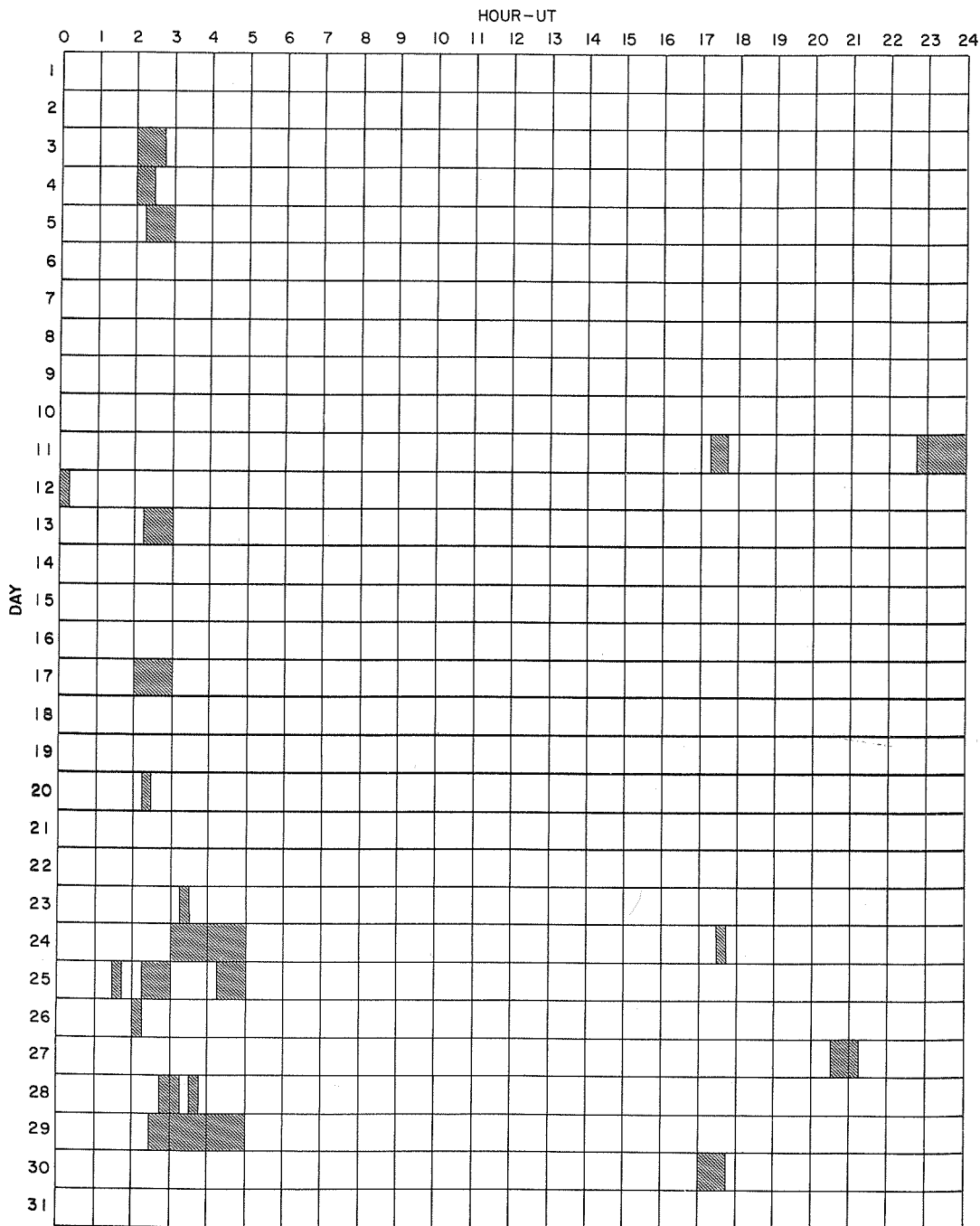
LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 1 TO 4 - NOT PERCENT OF THE CONTINUOUS SPECTRUM.

COMMERCE - STANDARDS - BOULDER

CAPRI G ANACAPRI - GERMAN
CAPRI S ANACAPRI - SWEDISH
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKANAL KODAIKANAL
KRASNAYA KRASNAYA PAKHRA
LOCKHEED LOS ANGELES
MOSCOW-G MOSCOW - GAISH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTIMONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUTS SCHAUTS
USNRL UNITED STATES NAVAL RESEARCH LABORATORY

INTERVALS OF NO FLARE PATROL OBSERVATIONS

SEPTEMBER 1959



Stations Include:

COMMERCE - STANDARDS - BOULDER RECORDING

- | | | |
|--------------------|-----------------|-----------------------------|
| Abastumani | Kodaikanal | Pirculi |
| Alma Ata | Krasnaya Pakhra | Royal Greenwich Observatory |
| Anacapri (Swedish) | Kyoto | Herstmonceux |
| Arcetri | Locarno | Sacramento Peak |
| Arosa | Lockheed | Simeiz |
| Athens | McMath | Sydney |
| Climax | Meudon | Tashkent |
| Dunsink | Mitaka | Uccle |
| Good Hope | Moscow G | Utrecht |
| Hawaii | Nederhorst | Voroshilov |
| Huancayo | Nizamia | Zurich |
| Kharkov | Ondrejov | |

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIq

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

AUGUST 1959

AUGUST 1959	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
1		<input type="checkbox"/>		1	1336	1341	1405		DU
1			1	4	1506		1512		BO, MC, SP
1			1	4	1625		1626		BO, MC
1			1	4	1710		1713		BO, MC, SP
1			2	5	1745		1750		BO, HA, MC, RE, SP
1			1	4	1808		1811		BO, MC, SP
1			1	5	2030		2035		HA, MC
2			1	5	2037		2038		BO, HA, MC, SP
2			1	5	2044		2046		BO, HA, SP
2			1	5	2108		2112		BO, HA, MC, SP
2			1	5	2114		2115		BO, HA, MC, SP
3		2		5	1507	1519	1626		A1, A3, A5, DU
3			1	5	1847		1849		BO, HA, MC, SP
3			1	5	1909		1910		BO, HA, MC
{ 3	2			5	2050	2055	2147	55	BO, HA, MC, RE
3				5	2053	2105	2200		A1, A2, A3, A5, BO, HA
4		<input type="checkbox"/>		1	1030	1035	1106		DU
{ 4	1			1	1446	1455	1505		MC
4		1		5	1446	1504	1539		A1, A5, BO, DU
4			1	4	1735		1737		BO, MC, SP
4			1	4	1901		1902		BO, MC
4	1			4	1916	1920	1935	15	BO, MC
5			1	1	0136		0144		HA
5	1			4	1629	1631	1637	10	BO, MC
5			1	5	2040		2042		BO, HA, SP
5	1			5	2125	2128	2133	10	BO, HA
5			1	5	2309		2310		HA, SP
6	1			1	0107	0109	0120	15	HA
{ 6	1			5	1501	1504	1514	15	BO, RE, SP
6		1+		5	1501		1531		A1, A3, A5, BO, KU, PA, SP
{ 6			1	4	1749		1840		BO, MC, SP
6		2		3	1752	1808	1850U		A3, A5
6			1	5	1929		1934		BO, HA, MC, SP
{ 6	1	1+		5	2001	2014	2028		A2, A3, A5, HA
6				5	2003	2005	2017	15	BO, HA, MC, SP
6			1	5	2024		2026		BO, HA, MC, SP
6			2	5	2137		2150		BO, HA, MC, SP
6			2	1	2330		2350		HA
7			1	1	0251		0255		HA
7			1	5	1534		1536		BO, HA, MC, RE, SP
7	1			5	1600	1606	1630	20	BO, MC, RE, SP
7			1	4	1657		1701		BO, MC, SP
7			2	5	1734		1742		BO, HA, MC, RE, SP
7			1	5	2022		2026		BO, HA, MC
7			2	5	2108		2113		BO, HA, MC, SP
8			1	4	1719		1721		BO, MC
8		2		3	2120	2135	2215		A2, A3
9			1	5	1438		1440		BO, MC, RE, SP
9			2	5	1829		1841		BO, MC, RE, SP
10			1	4	1810		1813		BO, MC, SP
10			1	5	2159		2202		BO, HA, SP
11			1	5	1934		1936		BO, HA, MC, SP
11			1	5	1940		1941		BO, HA, MC, SP
11		1+		3	2008	2015	2020 U		A1, A3, A5
11			1	5	2324		2325		HA, SP
12			1	4	1724		1725		BO, MC
12			2	5	1950		1953		BO, HA, MC, SP
{ 14			2	5	1905		0154		BO, HA, (Noise Storm)
14			3	5	2011		2013		BO, HA
15			2	4	1458		1502		BO, MC, SP
15			1	5	1800		0215		BO, HA, (Intermittent small
16			2	5	2046		2050		BO, HA, MC, SP bursts)

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

AUGUST 1959

AUGUST 1959	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
{ 17	1-	1	1	1	1220	1223	1224	20	RE
			5	1220	1227	1253	DU, PA		
			1	1224	1226	1240	RE		
			3	1440	1448	1515	DU, NE		
			4	1723		1724	BO, MC, SP		
17			1	4	1741		1742	BO, MC, SP	
{ 17	2	2	5	5	2047	2100	2130	55	A3, BO, HA, MC
			5	5	2047		2050		BO, HA, MC, RE, SP
			5	5	2050	2054	2115		BO, HA, MC, RE, SP
			5	5	2342		2345		BO, HA, SP
			1	1	5	5	2342		
18			1	1	0132		0136	HA	
18		1	1	1	0544		0612	HO	
18		3	5	5	1026	1047 U		DU, PA	
18	1		1	1	1407	1412	1430	10	MC
{ 18	1		1	4	1619		1621	15	BO, MC, SP
				4	1621	1633	1650		BO, MC, SP
18			1	4	1750		1751	BO, MC, SP	
18			1	4	1759		1800	BO, MC, SP	
18			1	4	1808		1809	BO, MC, SP	
18			1	4	1845		1846	BO, MC, SP	
18			1	4	1858		1900	BO, MC, SP	
18			1	5	1920		1924	BO, HA, MC, SP	
18			2	5	1933		1938	BO, HA, MC, RE, SP	
18			1	5	1940		1942	BO, HA, MC, SP	
18			1	5	2122		2123	BO, HA	
18			1	5	2140		2145	BO, HA, MC, SP	
18			1	5	2155		2201	BO, HA, MC, SP	
18			2	5	2224		2229	BO, HA, MC, SP	
18			1	5	2246		2249	HA, MC	
{ 19	1	1+	5	5	1743	1745	1756	20	BO, MC, RE, SP
			1	1	1750		1810		A2
			4	4	1755		1757		BO, MC, SP
{ 19		1+	1	1	1835	1845	1910 U	20	A2
			4	4	1846		1858		BO, MC, SP (Group of bursts)
			5	5	1931		1933		BO, HA, MC, SP
			5	5	2244		2248		BO, HA, MC, SP
			1	1	0926	0932	1014		DU
20			1	4	1846		1849	BO, MC, SP	
20			1	4	1910		1912	BO, MC, SP	
20			3	5	1932		1939	BO, HA, MC, SP	
20			1	5	2314		2317	BO, HA	
21			1	1	1300		1313	MC	
21			1	1	1446		1450	MC	
21			1	3	1554		1603	MC, RE	
{ 21		2	5	5	1730		0047	45	BO, HA, MC, SP (Noise storm) peaks 1857, 2008, 2122, 2215)
			5	5	1834	1855	1915		BO, HA, MC, RE, SP
{ 22	2	2	1	1	0056	0059	0130	45	HA
			1	1	0057	0105			HA
			4	4	1314	1327	1415		DU, NE, PU
{ 22	1	1	3	3	1512		1515	15	MC, RE
			5	5	1519	1530			BO, MC, PA
			4	4	1520	1521	1540		BO, MC, RE, SP
			5	5	1745		0130		BO, HA, MC, SP (Noise storm)
			5	5	1540		0043		BO, HA, MC, RE, SP (Noise storm)
24			3	5	1435		0212	BO, HA, MC, RE, SP (Noise storm)	
{ 24	2	2	5	5	2239	2255	2330	30	BO, HA
			1	1	2240	2245	2300		BO
{ 24	1	2+	1	1	2325	2330	0000	25	BO
			3	3	2330	2340	0040		A3, A5

IONOSPHERIC EFFECTS OF SOLAR FLARES

III_s

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

AUGUST 1959

AUGUST '1959	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
25			3	5	1230		0130		<u>BO</u> , HA, MC, RE, SP (Noise storm)
25		□		1	1650	1701	1808		<u>DU</u>
26			3	5	1330		0100		<u>BO</u> , HA, MC, SP (Noise storm)
27			2	5	1400		0210		<u>BO</u> , HA, MC, RE, SP (Noise storm peaks 1605, 1620, 2055)
27		2		3	1845	1855	1910		<u>A2</u> , A5
28	2			1	0037	0045	0100		<u>HA</u>
28			3	1	0113		0130		<u>HA</u>
28			2	5	1400		0130		<u>BO</u> , HA, MC (Noise storm)
{ 29	2	1		1	0205	0208	0216	50	<u>HA</u>
				1	0206		0226		<u>HO</u>
29			2	5	1345		0145		<u>BO</u> , HA, MC, (Noise storm)
29	1-			1	1449	1455	1510	20	<u>RE</u>
29		1		3	1510	1520	1530		<u>A2</u> , A3
{ 29	1	2		5	1727	1730	1740	25	<u>BO</u> , HA, MC, RE
				1	1728				<u>FA</u>
{ 30	1			4	1445	1450	1505	10	<u>BO</u> , MC
{ 30		1		1	1447		1515		<u>FA</u>
30			2	5	1515		0050		<u>BO</u> , HA, MC (Noise storm)
31			2	5	1330		0120		<u>BO</u> , HA, MC
{ 31		1+		1	1900	1910	1940		<u>A2</u>
{ 31	1			5	1900	1912	1945	25	<u>BO</u> , HA, MC, RE, SP
31	2			5	2244	2253	2320		<u>BO</u> , HA, MC, SP

Note: In July 1959 the records from Sacramento Peak, High Altitude and Hawaii Observatory were scaled side-by-side rather than separately and individually. Beginning with August 1959 the McMath-Hulbert Observatory records were scaled with the other three. By such intercomparison it is possible to discriminate between interference phenomena and small amplitude solar effects. It is also possible to report small events which on a single record might be overlooked.

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

NOVEMBER 1959

Nov. 1959	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 184
4	2040	2120	S-SWF	4	1+	AD, AN, MC, OK	2048E
5	0554	0627	Slow S-SWF	1	1+	OK	
6	0138	0158	G-SWF	1	1	OK	0128
6	0214	0238	S-SWF	1	1-	OK	*
6	0458	0515	S-SWF	1	1	OK	*
9	0057	0112	S-SWF	1	1	OK	0053
10	0442	0505	S-SWF	1	1-	OK	
10	1105	1125	S-SWF	1	1	FU	*
10	1640	1708	S-SWF	5	2	BE, FM, HU, MC, PR, WS	1634
10	1858	1945	Slow S-SWF	5	2	AD, BE, HU, MC, PR, WS	1836
11	0345	0435	S-SWF	1	2	OK	
14	0210	0235	S-SWF	1	1+	OK	0216
14	0450	0522	S-SWF	5	1+	KO, OK	0502E
14	1713	1742	Slow S-SWF	5	1+	BE, FM, LA, MC, PR, WS	
15	0405	0433	Slow S-SWF	1	1+	OK	0352
18	2330	2358	Slow S-SWF	5	2	AD, CA, OK	2326
21	0510	0600	S-SWF	1	2	OK	
26	0750	0814	Slow S-SWF	1	2	KO	0746
26	0930	1016	S-SWF	3	1+	NE, PU	0926
28	1220	1320	Slow S-SWF	4	1+	NE, PR	1207
28	2010	2045	Slow S-SWF	5	2	AD, AN, BE, FM, HU, LA, MC, PR, WS	2010
29	1347	1427	Slow S-SWF	3	2	HU, PR	1345E
29	1843	1942	S-SWF	5	2+	AD, AN, BE, FM, HU, LA, MC, PR, WS	1816
30	0249	0320	S-SWF	5	3-	AD, NE, OK, TO, CW++	0247
30	1735	1822	Slow S-SWF	5	3-	BE, FM, LA, MC, NE, PA, PR, WS, CW***	1720

CA = Canberra, Australia

KO = Kodaikanal, India

LA = Los Angeles, Calif.

NE = Nederhorst den Berg, Netherlands

PA = Paramaribo, Dutch Guiana

PU = Prague, Czechoslovakia

TO = Hiraiso Radio Wave Observatory, Japan

CW* = Cable and Wireless, Barbados

CW** = Cable and Wireless, Somerton, England

CW*** = Cable and Wireless, Brentwood, England

CW+ = Cable and Wireless, Hong Kong

CW++ = Cable and Wireless, Singapore

COMMERCE - STANDARDS - BOULDER

**SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES**

IVa

Ottawa

DECEMBER 1959

2800 Mc

Dec. 1959	Type*	Start UT	Duration Hrs:mins	Maximum		Remarks
				Time UT	Peak Flux	
1	3 Simple 3	1522	>5 30	indet.	50	In sunrise oscillations
2	2 Simple 2 f	1245	12	1247.5	875	
4	Post Increase A		2 50		35	
	2 Simple 2	1321	6	1322.5	15	
2	2 Simple 2 f	1815.5	1.5	1816.1	15	
3	3 Simple 3 A	1757	>2 50	indet.	35	
	2 Simple 2	1800	5	1801.7	100	
4	3 Simple 3 A	1517	35	indet.	8	
	8 Group (2)	1517.5	7			
	2 Simple 2	1517.5	4	1519	18	
	2 Simple 2	1522.5	2	1523	20	
4	3 Simple 3 A	1815	2 15	indet.	35	In interference
	2 Simple 2	1815	15	1822	120	
5	3 Simple 3 A	1616.5	1 05	indet.	7	In interference
	2 Simple 2 f	1616.5	5	1617.5	55	
	2 Simple 2	1634.5	4	1635.4	35	
6	2 Simple 2	1634.5	4	1635.4	35	
13	3 Simple 3	1941	55	indet.	7	
15	3 Simple 3 A	1928	55	indet.	5	
	2 Simple 2	1929.3	4	1930	12	
22	1 Simple 1	1611	5	1613	5	
23	6 Complex	1644	6	1648	10	
	4 Post Increase		18		5	
27	1 Simple 1	1530	5	1532.3	7	
27	6 Complex	1953.5	3	1954.7	160	Doubtful (in interference)

COMMERCIAL - STANDARDS - BOULDER

HOURS OF OBSERVATION: OCTOBER, NOVEMBER, DECEMBER 1959

OBSERVING PERIOD:

October 1200 UT - 2150 UT (approx.)
November 1255 UT - 2100 UT (approx.)
December 1320 UT - 2045 UT (approx.)

with the following exceptions:

- (1) No observations: October 23 - 1535-1855
October 27 - all day
October 28 - all day
October 29 - all day
October 30 - all day
- (2) Observations for calibration purposes only:
October 24, 25, 26
- (3) Observations commenced:
October 4 - 1530
October 12 - 1525
October 22 - 1535
- (4) Observations ended: October 22 - 2035
October 23 - 2040
- (5) Continuous observations on all days have been interrupted for receiver calibration and by sporadic interference.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
DECEMBER 1959

BOULDER

167 MC

Dec. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	8	1513.5	1516.5	5	2
1	3	1534.1	1534.1	0.4	2
1	3	1543.0	1543.0	0.2	2
1	3	1558.0	1558.0	0.1	1
1	3	1639.0	1639.0	0.1	1
1	7	1750 E		332 D	2
2	6	1445 E		517 D	2
3	6	1404 E		557 D	1
3	3	1501.0	1501.8	1.0	2
4	3	1556.8	1556.8	0.3	2
4	3	1615.1	1615.1	0.6	2
4	3	1702.2	1703.1	1.3	2
4	3	1756.0	1756.0	1.0	2
4	3	1821.7	1822.0	0.6	2
4	3	1911.7	1911.7	0.1	2
4	3	1939.4	1939.4	0.3	2
4	3	2009.0	2009.0	0.4	2
4	3	2206.7	2206.7	0.2	2
4	2	2304.2	2304.2	4.6	2**
4	3	2317.0	2317.0	0.2	2**
5	6	1409 E		177 D	2
5	2	1457.0	1458.2	1.8	3
5	3	1516.5	1516.8	1.3	3
5	2	1701.5	1703.9	5.0	3
5	8	1817.2	1820	6	3
5	2	1907.6	1908.6	8	3
5	3	1924.5	1924.5	1.0	2
5	8	1931.0	1933.7	6	3
5	2	2035	2037.8	12	2
5	3	2057.5	2057.5	0.3	2
5	2	2201.3	2202.1	6	2
5	3	2233.6	2233.7	0.4	2
5	3	2241.2	2242.1	1.4	3
6	2	1511.5	1512.8	2.6	2
6	3	1739.9	1739.9	0.2	2
6	3	1806.8	1807.0	0.6	2
6	2	1839.7	1840.1	1.6	2
6	6	1903		259 D	2
7	3	1618.2	1618.2	0.2	1
7	2	1622.5	1622.6	2.6	2
7	3	1630.0	1630.9	2.0	3
7	3	1645.5	1645.5	0.3	1
7	3	1751.2	1757.8	1.0	2
7	3	1853.0	1853.9	1.5	3
7	3	1924.9	1924.9	0.2	2
7	2	1931	1931.8	5	3
7	3	2018.9	2018.9	0.2	2
7	2	2037.8	2037.8	2.0	2
7	3	2309.2	2309.5	1.3	2**
7	3	2311.0	2311.5	1.1	2**
8	3	1420.8	1420.8	0.1	1*
8	2	1422.5	1423.4	1.6	2*
8	3	1942.0	1942.0	0.8	3
9	3	1752.0	1752.0	0.2	2
10	3	2200.5	2200.5	0.1	1

Dec. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
10	3	2210.5	2210.5	0.2	1
10	3	2221.6	2221.6	0.1	1
10	2	2234.3	2236.2	1.6	1
10	3	2243.8	2244.9	2.5	2
10	2	2312.6	2313.8	3.0	1**
10	3	2318.7	2318.7	0.1	2**
11	3	1918.3	1918.3	0.1	1
14	7	1735		145	1
14	3	2209.0	2209.5	1.0	1
15	3	1703.0	1703.0	0.2	2
15	3	2215.8	2215.8	0.1	1
15	2	2233.8	2234.2	1.6	1
16	2	1508.4	1508.5	2.6	2
16	3	1937.5	1938.2	1.1	1
17	3	1825.0	1825.3	1.0	2
17	3	2311.5	2311.5	0.1	1**
18	3	1753.0	1753.1	0.2	2
18	3	1821.6	1921.6	0.1	1
18	3	1848.5	1848.5	0.1	1
19	3	1537.0	1537.0	0.1	1
19	3	1704.0	1704.0	0.1	1
19	7	1736		348 D	1
19	2	1739.3	1741.0	4.7	2
19	3	2156.5	2157.0	2.5	2
20	3	1831.8	1831.8	0.1	1
20	3	1839.8	1839.8	0.2	2
20	3	1853.9	1853.9	0.1	1
20	2	2019.5	2019.9	3.5	1
20	3	2105.2	2105.2	0.1	1
20	3	2122.9	2122.9	0.2	1
20	2	2143.0	2144.0	2.0	2
21	6	1419 E		123 D	2
22	6	1419 E	1820	405 D	2
22	3	2206.8	2206.8	0.2	1
22	3	2231.2	2231.2	0.1	1
22	2	2232.8	2233.2	1.2	1
23	2	1647	1701	36	2
23	3	1716.5	1717.5	0.3	1
23	3	1735.2	1735.2	0.1	2
23	3	1750.8	1750.8	0.2	1
23	3	2130.8	2131.2	0.4	2
23	2	2142.4	2142.9	1.6	2
24	2	1845.5	1846.1	1.0	1
24	2	2029.1	2030.0	1.9	2
24	3	2102.3	2102.3	0.3	1
24	2	2222.8	2224.0	3.2	1
24	3	2231.9	2231.9	0.1	1
24	2	2246	2250	6.0	2**
25	2	1740.6	1742.0	1.5	1
25	3	1804.0	1804.0	0.1	1
25	3	1900.5	1900.5	0.1	1
25	3	1911.8	1911.8	0.2	1
27	6	1421 E		548 D	2
28	6	1421 E		549 D	2
29	6	1420 E	1540	202	2

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1959

BOULDER

167 MC

Dec. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
29	3	1806.5	1806.5	0.1	1
29	3	1824.0	1824.0	0.1	1
29	3	1909.0	1909.0	0.2	1
29	3	2207.1	2207.1	0.1	2
29	2	2251.0	2251.2	3.8	2
29	2	2312	2314	12	2**
30	3	2324.0	2324.0	0.2	2**
30	3	2327.5	2327.5	0.1	2**
31	3	1433.0	1433.0	0.2	2*
31	3	1556.5	1556.5	0.1	2

Dec. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
31	3	1612.0	1612.0	0.2	1
31	7	1640		194	2
31	3	2107.6	2107.6	0.3	2
31	2	2121.0	2121.0	1.2	2
31	3	2145.0	2145.8	1.0	2
31	3	2324.6	2324.6	0.1	2**

* On sunrise pattern.
** On sunset pattern.

TIMES OF OBSERVATIONS

Dec. 1959	U.T.	Dec. 1959	
1	1402-1653	16	1415-2324
	1750-2322	17	1415-2323 I 2000-2300
2	1445-2322	18	1416-2324 I 2100-2315
3	1404-2321 I 2000-2100	19	1416-2324
4	1405-2322	20	1417-2324
5	1409-2322	21	1419-1630
6	1408-2322		2018-2325
7	1407-2321 I 2045-2300	22	1419-2326
8	1408-2321	23	1420-2322
9	1409-2321 I Throughout day	24	1419-2327
10	1411-1637	25	1421-2327
	2022-2322	26	1421-2329
11	1412-2322	27	1421-2329
12	1414-2322	28	1420-2330
13	1415-2322	29	1420-2330
14	1415-2322	30	1422-2330
15	1415-2322	31	1422-2330

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
AUGUST 1959

HAWAII

200 MC

Aug. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Remarks
8	6	1900 E	2017.3	115 D	
	3	2149.5	2150.0	1.0	
10	3	0121.3	0121.4	0.2	Small int.
	3	2159.5	2159.6	0.2	
12	3	0205.8	0205.9	1.5	
	3	0306.8	0306.9	0.3	Small int.
13	3	2036.9	2037.1	0.7	
	3	2047.3	2047.6	0.7	Small int.
	2	2124.3	2125.7	4.0	Small int.
	3	2247.6	2248.0	1.4	
14	3	0023.5	0023.6	0.5	Small int.
	0	0148.0		126 D	*
15	3	1827.5	1827.8	0.3	
17	8	0329	0331.0	8.0	Off scale
	3	2047.6	2048.8	1.2	Off scale
17	1	2052.0	2202.3	85.5	
18	3	0133.0	0133.3	0.5	Small int.
	2	2015.0	2023.8	9.5	Small int.
	2	2140.4	2145.0	5.1	Small int.
	2	2220.3	2226.7	7.8	Small int.
19	3	1848.8	1850.5	4.3	Small int.
	3	2245.7	2246.0	0.5	Off scale
20	3	1928.7	1929.0	0.6	
	2	1932.7	1933.2	2.2	Medium int.
	3	1936.5	1936.7	0.3	

Aug. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Remarks
21	3	1835.4	1835.6	0.3	
	3	1850.0	1851.2	1.8	
23	3	0228.5	0228.7	0.6	Small int.
25	2	2109.5	2110.8	9.7	
	3	2246.7	2247.1	0.5	
26	3	0128.6	0129.1	0.7	
	6	1825 E		560 D	**
27	1	1823 E		553 D	+
28	0	0116		12	
	1	1830 E		189 D	Small int.
29	1	0147.0	0209.0	110 D	++
	3	0208.3	0209.0	1.2	Off scale
	6	1825 E		559 D	#
30	1	1820 E	2348.8	568 D	##
	3	2348.7	2348.8	2.0	
31	0	1855		36	

* Series of small bursts associated with rise from 0148 to 0247.3 UT; off scale from 0234-0245 UT.
 ** Medium activity continues beyond 0345 UT Aug. 27
 + Small intensity, activity continues beyond 0336 UT Aug 28
 ++ Small intensity, activity continues beyond 0337 UT.
 # Continues beyond 0344 UT. Aug 30
 ## Small intensity, activity continues beyond 0348 UT Aug 31

TIMES OF OBSERVATIONS

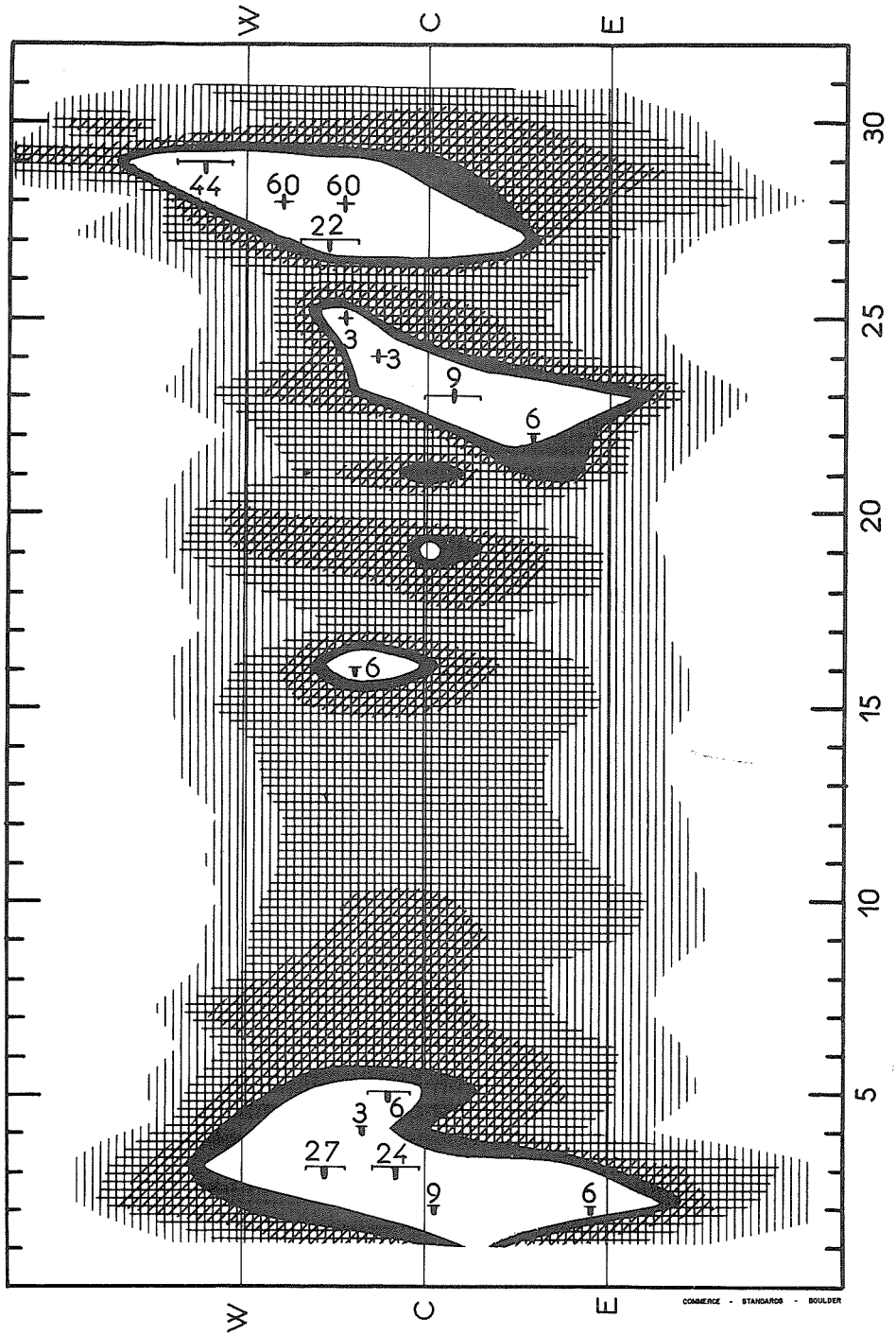
Aug. 1959	U.T.	Aug. 1959	U.T.	Aug. 1959	U.T.
7	1814-2400	15	1820-2400	24	0000-0349
8	0000-0305	16	0000-0352	25	1840-2400
	1900-2400	17	0000-0352		0000-0335
9	0000-0350		1845-2400		1935-2400
	1830-2400	18	0000-0351	26	0000-0333
10	0000-0356		1830-2400		1825-2400
	1823-2400	19	0000-0341	27	0000-0345
11	1803-2400		1835-2400		1823-2400
12	0000-0341	20	0000-0150	28	0000-0336
	1820-2400		1859-2400		1830-2400
13	0000-0353	21	0000-0342	29	0000-0337
	1820-2400		1822-2400		1825-2400
14	0000-0354	22	0000-0343	30	0000-0344
	1800-2400		1815-2400		1820-2400
15	0000-0355	23	0000-0350	31	0000-0348
			1825-2400		1800-2220

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

DECEMBER 1959

Nancay

169 Mc



COMMERCE - STANDARDS - BOULDER

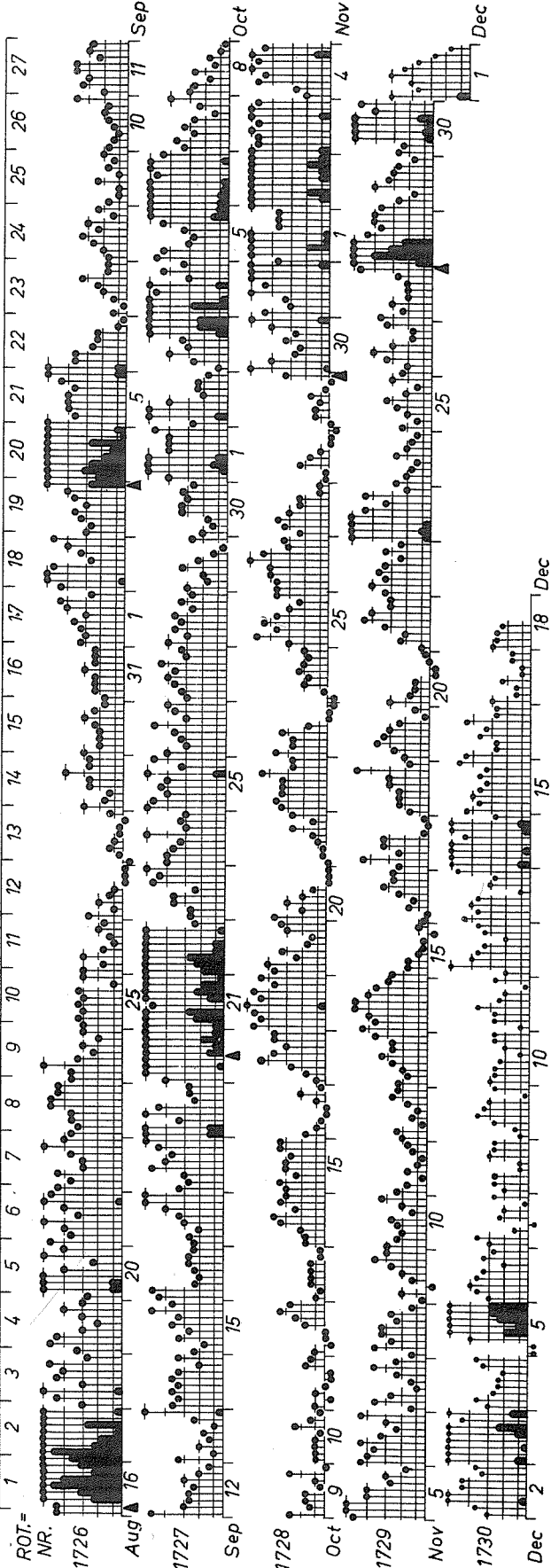
DECEMBER 1959

GEOMAGNETIC ACTIVITY INDICES

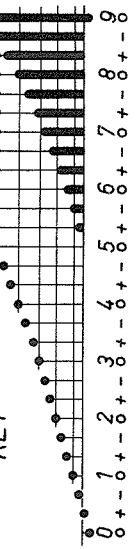
NOVEMBER 1959

Nov. 1959	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour Gr. interval										
		1	2	3	4	5	6	7	8			
1	1.3	4-	5o	6+	5+	5+	4-	4-	4-	37-	43	Five Quiet
2	1.6	5o	6-	6+	5o	6-	6-	6+	6-	45+	69	
3	1.4	6-	5-	5-	5o	5-	6-	5o	5-	40o	48	
4	1.3	2o	3-	5-	4+	5o	5-	6o	4+	34-	36	
5	1.1	5-	5o	5o	4o	4o	3-	3o	2-	31-	28	
6	1.1	4+	4o	4-	4+	3+	2+	3o	4+	29+	23	
7	0.7	1+	4-	3-	1o	1+	2+	4-	2+	18+	11	
8	0.6	1+	4-	3-	3+	3+	2+	3-	1+	21-	13	
9	0.7	1-	2o	0o	1+	2o	3-	4-	3o	15+	9	
10	0.6	3o	2+	2o	2+	3-	1+	2o	3+	19o	10	
11	0.1	2+	2-	1-	2-	1o	1-	1+	2-	11o	5	Five Disturbed
12	0.2	2o	2+	1-	1+	1o	2-	3-	2+	14o	7	
13	0.8	2+	2-	2o	3-	3+	3-	3-	4-	21o	12	
14	1.2	4+	4-	4o	5-	5-	4o	4-	3o	32o	28	
15	0.1	3-	2-	2-	1o	1-	1-	0o	1o	9+	5	
16	0.5	1-	0+	2-	1+	2+	3+	3-	3-	15o	8	
17	0.5	2+	4+	2+	3+	3+	1-	0+	1-	17+	12	
18	0.9	2-	2+	2+	2+	3o	3o	5-	2-	21o	14	
19	0.5	2o	3-	4-	3+	3o	2+	1-	1+	19o	11	
20	0.1	3o	2-	1+	1+	0o	0o	0+	1-	8+	4	
21	1.0	1o	2+	2o	3+	4+	4o	3o	3o	23o	16	Ten Quiet
22	1.0	3+	4o	3+	4-	3+	2+	3+	2+	26-	17	
23	1.4	5+	6-	5+	5o	4+	3+	4+	2o	35+	40	
24	0.2	3-	2o	2-	1+	3-	2o	2-	1+	15+	8	
25	0.6	2+	1+	2o	3-	3+	2o	1+	3o	18o	10	
26	0.7	2+	2o	3+	4o	3o	2-	2-	3+	21+	13	
27	0.8	4-	2+	3o	2o	2o	2o	3-	5-	22+	15	
28	1.7	6o	8o	7+	7-	4+	4-	4o	4o	44o	82	
29	0.8	4-	3-	2-	4o	3+	3o	3-	2-	23-	15	
30	1.4	3-	2+	5+	6-	5+	6o	4o	5-	36o	43	
Mean:	0.83									Mean:	22	

DAYS IN SOLAR ROTATION INTERVAL



KEY



▲ = sudden commencement

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 1959 Nov. 30
 (Ks from Wingst and Göttingen till 1959 Dec. 18)

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

NOVEMBER 1959

Nov. 1959	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:				Geomagnetic K _{Fr}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-7 days Final	1-7 days Js	1-7 days SDW	1-7 days J	Half Day (1)	Half Day (2)
1	5-	4+	6o	5+	5	4	5	5	5o	6		6	(4)	3	
2	3+	2+	5o	3+	5	4	6	5	(3+)	6		6	(4)	(4)	
3	4-	3+	6o	4+	3	3	6	4	(4o)	4	4	7	(5)	3	
4	5+	5-	6-	4+	4	4	6	5	5o	4	4	7	3	(4)	
5	5-	4+	6+	6-	5	4	6	5	5o	5		5	(5)	2	
6	5-	5+	7-	5+	5	5	6	6	6-	6		6	(4)	3	
7	5o	5+	7o	6o	5	5	6	6	6-	6		6	1	2	
8	5-	5+	7-	6+	5	5	7	6	6-	7		7	3	2	
9	6+	6-	7o	6+	5	6	7	7	6+	7		7	1	2	
10	7-	7-	7+	7-	6	6	7	7	7-	7		7	2	2	
11	7o	6-	7o	7-	7	7	7	7	7-	7		7	1	1	
12	7-	6+	7+	7o	7	6	7	7	7-	7		7	1	2	
13	7-	6+	7+	6+	7	6	7	7	7-	6		6	2	3	
14	6-	6o	7o	6+	6	6	7	6	6+	5		5	3	3	
15	6o	6+	7o	7-	6	6	7	7	7-	5		5	2	1	
16	6+	6+	7o	6-	7	6	7	7	6+	6		6	0	3	
17	6o	6+	7-	7o	6	6	7	6	6+	7		7	2	1	
18	7-	7-	7o	6o	6	6	7	7	7-	7		7	2	3	
19	5+	5o	7-	7-	6	6	7	6	6o	7		7	2	2	
20	7-	6+	7o	7-	6	6	7	7	7-	7		7	2	0	
21	6+	6+	7-	6+	7	6	7	6	6+	7		7	2	3	
22	6+	6+	7o	7-	5	5	7	7	7-	7		7	3	3	
23	4o	4o	6+	6-	6	4	5	5	5-	7		7	(5)	3	
24	5+	4+	7o	6+	4	4	6	6	6-	4	4	7	2	1	
25	6-	6o	7+	7-	6	6	7	7	7-	5	5	7	2	1	
26	6o	6o	8-	7o	6	6	6	6	7-	7		7	3	3	
27	7-	7o	7+	6o	6	6	7	7	7-	7		7	2	3	
28	3+	3+	7-	6o	6	3	5	5	(4+)	6		6	(6)	3	
29	6o	6+	7-	6+	5	5	6	6	6+	5		5	3	2	
30	5+	6-	6+	5+	6	5	6	5	6-	4		4	(4)	(4)	
Score: Quiet Periods		P	13	14	21	15				12		13			
		S	13	9	7	12				10		10			
		U	0	0	2	0				3		3			
		F	0	0	0	0				2		1			
Disturbed Periods		P	0	6	0	1				1		0			
		S	1	0	0	1				0		0			
		U	1	1	0	1				0		0			
		F	2	0	0	0				2		3			

() represent disturbed values.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS NORTH ATLANTIC

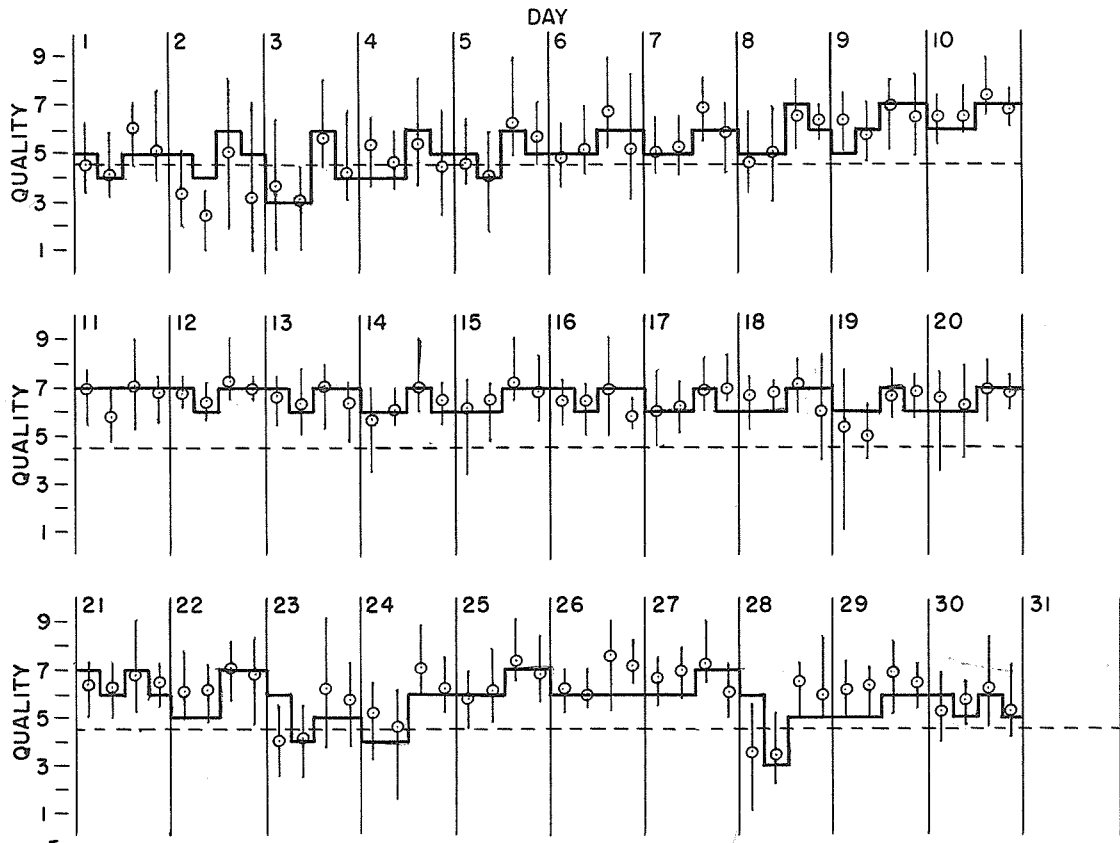
VIB

— Short-term forecast

NOVEMBER 1959

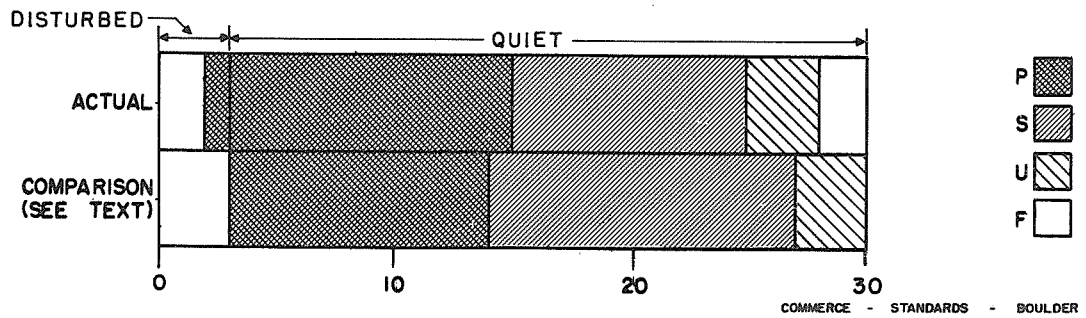
| Range of reports

o Quality figure



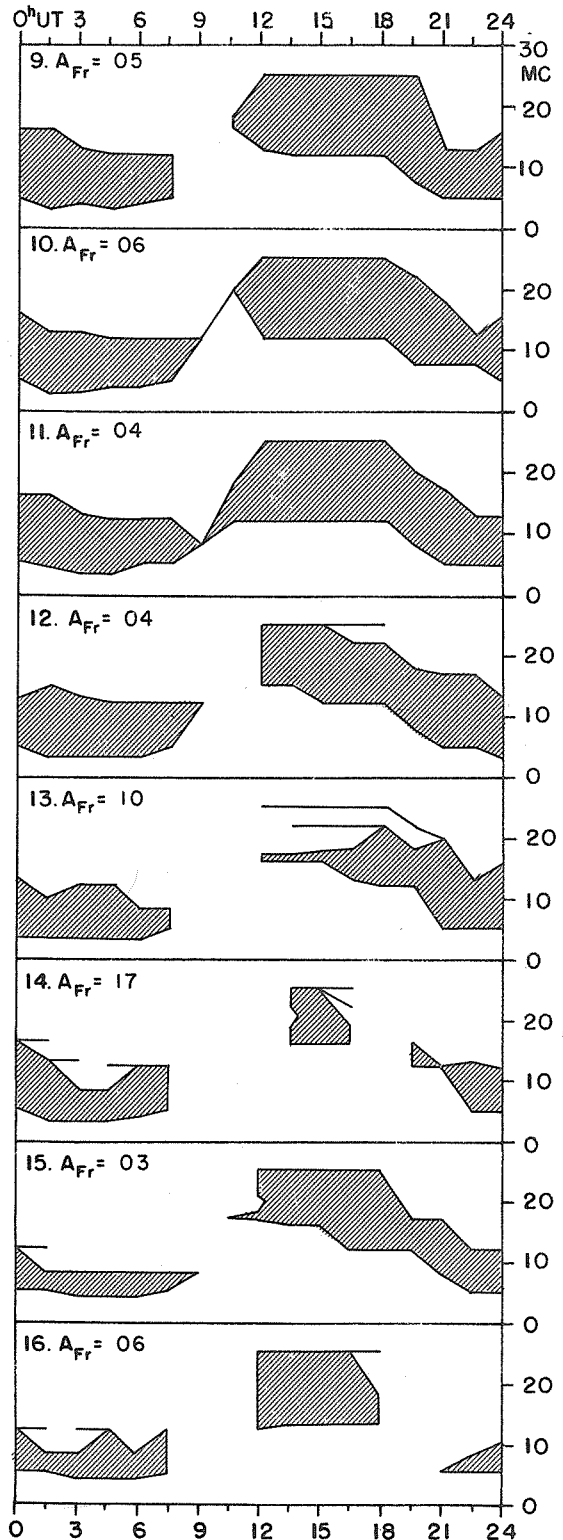
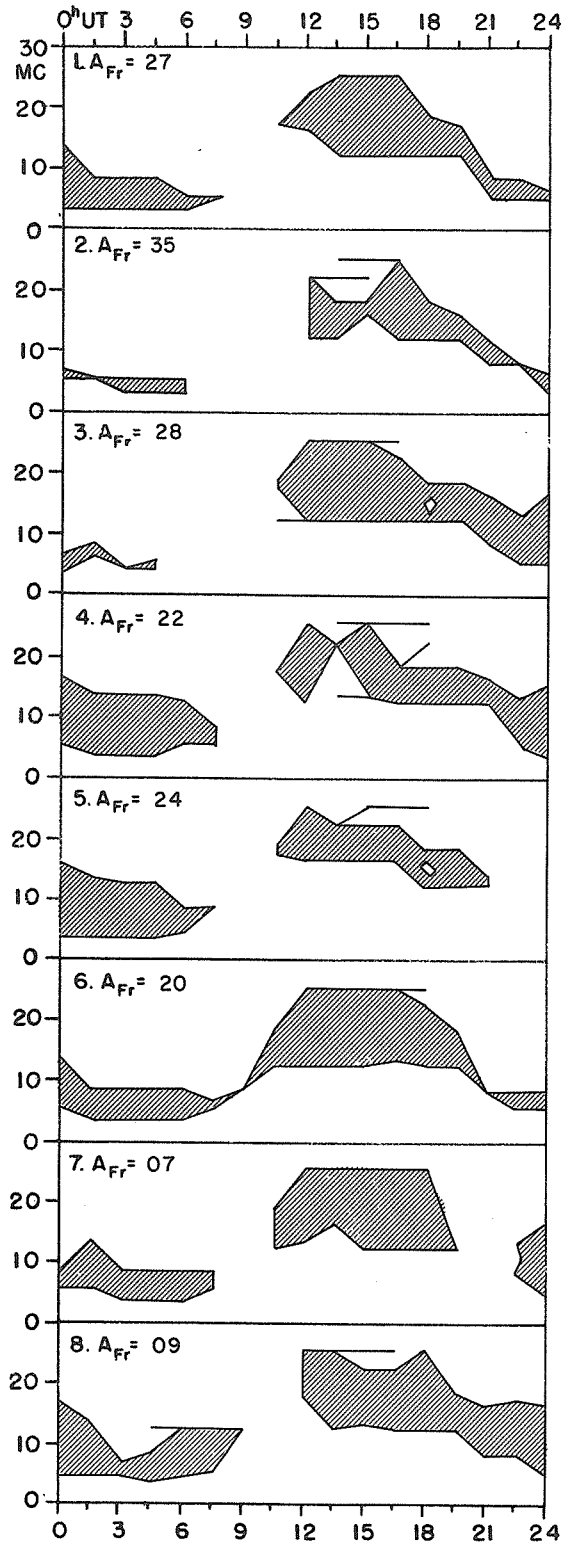
OUTCOME OF ADVANCED FORECASTS

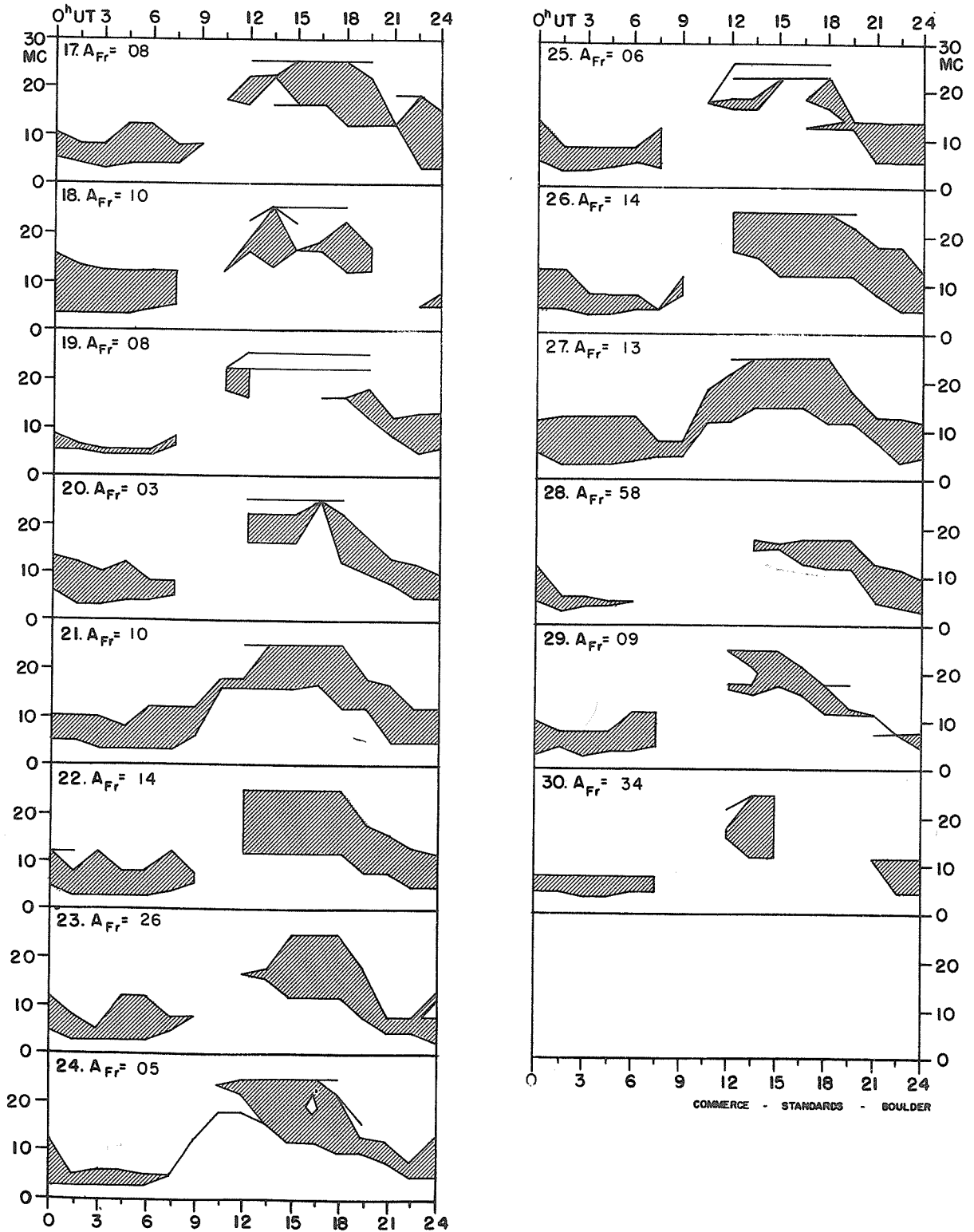
FINAL ESTIMATE



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

NOVEMBER 1959





CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

NOVEMBER 1959

Nov. 1959	North Pacific 12-hourly quality figures		Short-term fore- casts issued at		Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:				Geomag- netic K _{SI}	
	0700 to 1900	1900 to 0700	0600	1800		1-7 days Final	1-7 days Jps	1-7 days SDW	1-7 days Jp	Half Day (1) (2)	
1	3	3	4	4	(4)	6		6		(6)	(5)
2	3	3	3	4	(2)	6		6		(6)	(5)
3	3	5	4	4	(4)	6		6		(6)	(5)
4	4	5	6	5	(4)	6		6		(4)	(4)
5	5	5	4	5	5	5		5		(5)	3
6	6	5	5	6	5	5		5		(4)	3
7	5	5	6	6	5	6		6		2	2
8	6	4	5	6	6	6		6		3	3
9	5	5	5	6	5	6		6		0	2
10	6	5	6	5	5	6		6		2	2
11	6	5	5	6	6	6		6		1	1
12	6	6	6	6	6	6		6		1	1
13	6	6	6	6	6	6		6		2	2
14	5	6	6	5	6	5		5		(4)	(4)
15	5	5	5	6	6	5		5		1	0
16	5	6	5	5	5	5		5		1	3
17	5	6	5	6	6	6		6		3	2
18	6	6	6	5	6	6		6		2	3
19	6	5	6	6	6	5		5		3	2
20	6	5	6	6	6	6		6		1	0
21	7	5	6	6	6	6		6		2	(4)
22	6	5	5	6	6	6		6		3	3
23	5	5	4	5	5	6		6		(6)	(4)
24	5	5	5	6	5	6		6		1	2
25	6	5	6	6	6	6		6		2	2
26	6	6	6	6	6	6		6		3	2
27	6	5	6	6	6	6		6		2	2
28	4	6	4	5	5	5		5		(7)	(4)
29	5	6	5	6	6	4		4		2	3
30	4	5	5	5	5	4		4		(4)	(5)
Score:	Quiet Periods		P	15	10	16					
			S	9	17	9					
			U	0	0	0					
			F	0	0	1					
	Disturbed Periods		P	2	0	0					
			S	3	2	0					
			U	0	0	0					
			F	1	1	4					

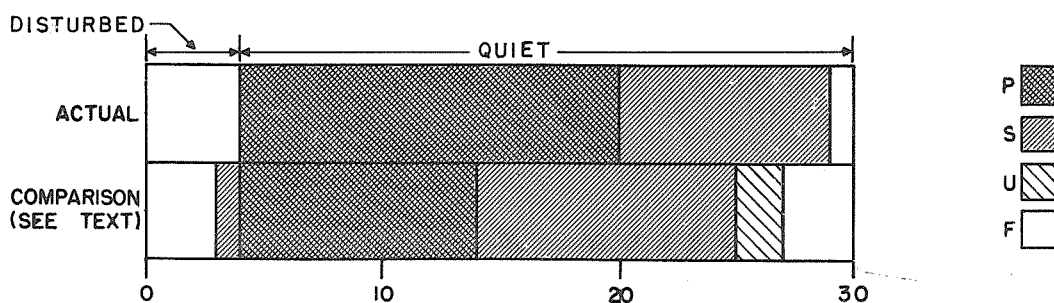
() represent disturbed values.

NORTH PACIFIC

NOVEMBER 1959

OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL GEOPHYSICAL COOPERATION 1959
DECEMBER 1959

Issued Day/Time UT Dec. 1959	Advance Geophysical Alert	No.	Worldwide Geophysical Alert	Special World Interval
01/1800	Sacramento Peak Solar Flare 01/1700Z			
01/1600		40		Continue Special World Interval
02/1600		41		Finish Special World Interval
04/1910	Sacramento Peak Solar Flare 04/1820Z			
05/1600		42	Magnetic Storm 05/0659Z	
27/1600		43	Magnetic Storm 26/11XXZ	