

PART B
SOLAR - GEOPHYSICAL DATA

ISSUED
JUNE 1959

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

SOLAR - GEOPHYSICAL DATA

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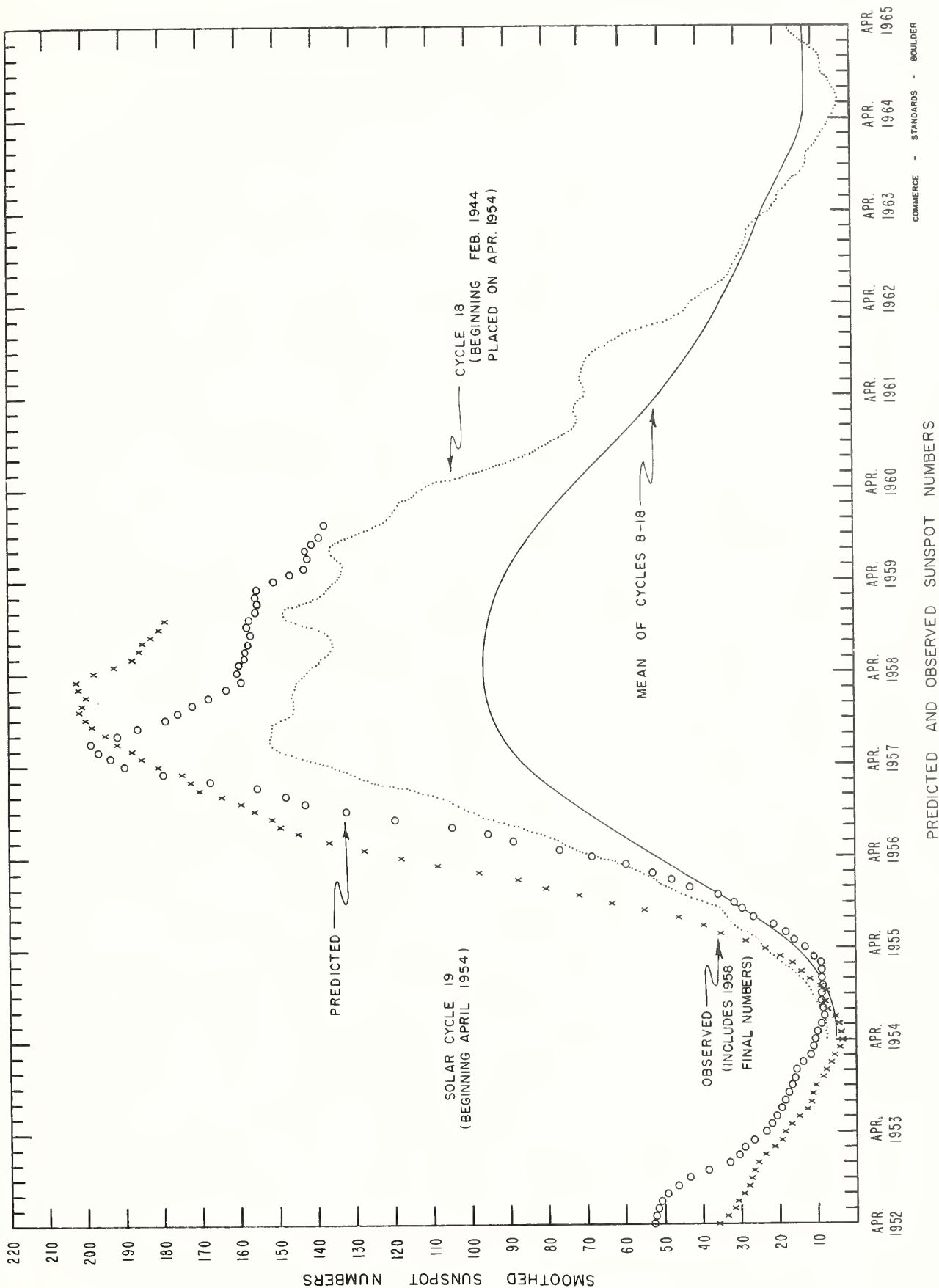
- (a) IGC 1959 Alerts and SWI

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-F177 Part B issued May 1959.

Apr. 1959	American Relative Sunspot Numbers R_A'
1	200
2	177
3	143
4	110
5	107
6	104
7	107
8	139
9	163
10	191
11	195
12	189
13	176
14	168
15	163
16	134
17	128
18	118
19	118
20	135
21	128
22	151
23	153
24	138
25	160
26	183
27	178
28	185
29	131
30	139
Mean:	150.4

May 1959	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	108	204
2	112	194
3	113	195
4	105	184
5	96	186
6	138	202
7	156	208
8	188	244
9	252	249
10	268	259
11	295	264
12	285	266
13	265	264
14	240	244
15	204	228
16	182	222
17	187	224
18	198	213
19	185	199
20	187	201
21	151	201
22	145	201
23	149	198
24	143	199
25	178	203
26	188	205
27	177	208
28	132	195
29	99	176
30	106	177
31	130	179
Mean:	173.0	212.6



MAY 1959

CMP May 1959	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values Area Int.		History, Age		CMP Values Area Count		History
00.9	S14	5136	New	(200)	(1.5)	b / l	1			
01.4	S07	5124	New	2000	3.5	l — l	1	520	12	l — l
01.5	N16	5122	5076	5000	3	l \ l	2	250	11	l \ d
02.9	N16	5126	5080	1600	2.5	l / l	2			
02.9	S11	5137	New	(500)	(2.5)	b / l	1	(100)	(3)	b / l
04.8	S08	5129	5081	1800	3.5	l — l	2	(20)	(2)	l \ d
05.4	N10	5149	5087	(200)	(1.5)	b / l	3			
07.5	S19	5130	5088	600	2.5	l — l	2			
08.0	N19	5131	5083	3000	2.5	l \ l	7			
09.0	S01	5132	5092	700	1	l — l	2			
09.2	N27	5135	5085	900	2	l — l	3			
09.2	S07	5142	5092	200	1.5	l \ d	2			
09.3	N15	5134	5085	1000	2	l — l	3	190	1	l — l
09.5	S15	5133	New	2000	3.5	l — l	1	480	16	l — l
09.9	N07	5138	5092	500	2	l — l	2			
10.4	S20	5143	5089	700	3	l — l	9	40	2	l \ d
11.0	N13	5146	5090	3000	3	l — l	5	1280	12	l — l
11.2	S20	5144	5089	1200	3	l — l	9	870	10	l — l
11.9	S12	5145	*	1600	2.5	l — l	1			
12.0	N26	5147	5093	6200	3	l — l	3	410	9	l — l
13.4	S26	5162	New	(1500)	(3)	b / l	1	(680)	(2)	b / l
14.2	S21	5150	New	200	2	l \ d	1	(50)	(3)	l \ d
14.8	N14	5148	**	13,000	3.5	l — l	6,2	2600	32	l — l
15.7	N33	5151	5097	4300	2.5	l — l	6	20	2	b \ d
16.2	S16	5152	New	800	3	l / l	1			
17.6	N12	5154	***	2000	2.5	l — l	2	120	2	b / l
18.6	N22	5155	5098	1800	2.5	l / l	4			
19.8	S07	5156	****	2500	2.5	l — l	3	120	1	l \ d
21.2	N00	5159	****	1000	2	l \ d	3			
21.4	N21	5157	+	3300	3	l / l	6,2	790	8	l / l
23.1	S11	5176	New	(1000)	(2.5)	b / l	1	(340)	(2)	b / l
23.4	N25	5158	++	4000	3	l / l	5,2	100	6	l \ d
23.7	N12	5160	+++	2800	2.5	l / l	3,7	50	2	b / l
25.1	N17	5164	++++	3500	2	l — l	7,2	70	1	l — l
26.3	N03	5166	New	2100	3.5	l — l	1	1410	10	l — l
26.8	N18	5165	5120	2600	2.5	l — l	2	120	3	b / l
26.8	S14	5167	New	5000	3.5	l — l	1	1410	10	l — l
26.8	N30	5169	5123	1600	2	l — l	2			
28.4	S07	5168	5124	1800	2.5	l — l	2			
28.4	N18	5170	5122	2500	3	l — l	3	20	2	l — l
28.7	N36	5171	New	1200	2	l — l	1			
30.2	N14	5173	5126	2000	3	l — l	3	180	12	l — l
30.4	S10	5182	New	(200)	(1)	b / l	1			
31.0	S35	5175	New	300	2	l — l	1			
31.2	N28	5183	New	(500)	(1.5)	b / l	1	(40)	(3)	b / l
31.3	N07	5174	New	500	2	l — l	1			

*New and part of 5094

**5095, 5100

***5106, 5107

****5103, 5104

+5102 and part of 5105

++5110 and part of 5105

+++5108 and 5111

++++5116, 5117

COMMERCE - STANDARDS - BOULDER

CORONAL LINE EMISSION INDICES

MAY 1959

CvP May 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	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁
1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	68	80	13	15	104	136	48	156	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	102	148	41	75	90	124	43	75	160	339	42	66	118	136	23	48	101	128	136	23	48	101	128	136
11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	X	X	X	X	X	X	X	X	73	108	27	66	X	140	170	35	140	170	188a	35	42	140	170	188a
13	X	X	X	X	X	X	X	X	69a	88a	X	X	163a	188a	X	X	163a	188a	188a	X	X	163a	188a	188a
14	X	X	X	X	X	X	X	X	51	64	24	54	158*	172	63	114	158*	172	176	63	114	158*	172	176
15	X	X	X	X	X	X	X	X	49	68	21	39	147*	176	50	84	147*	176	176	50	84	147*	176	176
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17	103	147	22	42	33	40	12	18	32a	41a	X	X	X	120a	151a	X	X	151a	151a	X	X	120a	151a	151a
18	126	180	41	72	38	52	16	33	41	60	13	24	116	148	21	42	116	148	21	42	116	148	21	42
19	X	X	X	X	X	X	X	X	94	127	13	27	171	216	35	63	171	216	35	63	171	216	35	63
20	X	X	X	X	X	X	X	X	88	156	16	24	171*	212	36	72	171*	212	36	72	171*	212	36	72
21	X	X	X	X	X	X	X	X	65	96	8	10	155*	208	56	84	155*	208	56	84	155*	208	56	84
22	X	X	X	X	X	X	X	X	44	56	8	12	157	212	34	48	157	212	34	48	157	212	34	48
23	246a	300a	X	X	40a	56a	X	X	36a	58a	X	X	174a	214a	X	X	174a	214a	X	X	174a	214a	X	X
24	151	176	30	48	37	56	9	18	77a	131a	X	X	101a	115a	X	X	101a	115a	X	X	101a	115a	X	X
25	X	X	X	X	X	X	X	X	80	98	21	40	158	191	25	42	158	191	25	42	158	191	25	42
26	218	336	43	72	88	106	24	52	43	55	18	24	100	129	39	61	100	129	39	61	100	129	39	61
27	185a	204a	X	X	125a	172a	X	X	132	190	33a	45a	181	254	43a	60a	181	254	43a	60a	181	254	43a	60a
28	179	276	49	66	143	240	40	66	77	117	21a	30a	147	232	39a	66a	147	232	39a	66a	147	232	39a	66a
29	176	256	53	78	84	124	54	98	51a	79a	11a	18a	73a	114a	36a	89a	73a	114a	36a	89a	73a	114a	36a	89a
30	X	X	X	X	X	X	X	X	51	76	11	15	87	133	30	61	87	133	30	61	87	133	30	61
31	78a	96a	X	X	64a	93a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

X - no observations.

a - index computed from low weight data.

* - yellow line observed.

COMMENCE - STANDARDS - BOLDER

SOLAR FLARES

MAY 1959

IIIa

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	APPROX. LAT.	MER. DIST.				MC-MATH PLAGE REGION	TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ha	MAX. INT. %
{ CAPRI-G CAPRI-S CAPRI-G LOCARNO HAWAII MCMATH HAWAII	01	0736	0840 D	N16 E03	5122	64 D	26	2	0750	8.00	9.00		Slow S-SWF		
	01	0739	0847 D	N17 E05	5122	68 D	2	2	0758		8.30				
	01	1405 E	1412 D	S06 W02	5124	7 D	1	1	1407		3.00				
	01	1510 E	1530 D	N14 W40	5117	20 D	3	3	1510	5.80	1.00				
	01	2124	2140	N29 W76	5110	16	26	2	2128						
	01	2125	2142	N29 W80	5110	17	1	1	2131						
	01	2218	2240	N12 W08	5122	22	1	2	2232	2.70	2.80				
	02	0855 E	0950 D	S08 W10	5124	55 D	1	3	0930		4.00				
	02	1040	1044 D	S08 W07	5124	4 U	1	1	1043	3.00	3.00				
	02	1145 E	1212	S08 W11	5124	27 D	1	2	1150		3.00				
{ CAPRI-G CAPRI-S HAWAII	02	1555 E	1647 D	N14 W40	5120	52 D	2	2	1607		8.00		Slow S-SWF		
	02	1600	1650 D	N12 W41	5120	50 D	1	3	1620	3.00	4.50				
	02	2257	2316	S07 W17	5124	19	1	2	2257	2.50	2.60		Slow S-SWF		
	02	2355	0042	N15 W47	5117	47	1	1	2330	2.30					
{ MITAKA HAWAII	02	2357	2429	N15 W49	5117	32	26	1	2416	5.13	8.72	4.94	240		
	03	0008	0020 D	N18 W48	5120	12 D	1	3	0016	3.70	6.20		98		
	03	0052	0108 D	N16 W49	5120	16 D	1	1	0052	1.03	1.75	3.03			
	03	0323	0439	N15 W50	5120	76	2								
{ TASHKENT MITAKA	03	0336 E	0348	N15 W51	5120	12 D	16	1	0337	1.03	1.75	1.74	134	S-SWF	
	03	0354 E	0422 D	N15 W51	5120	28 D	16	1	0415	7.20	12.20	3.10	149		
	03	0454 E	0506	N17 W50	5120	12 D	16	1	0454	3.08	5.24	2.27	134		
	03	0650 E	0740	S07 W24	5124	50 D	2	3	0700		10.00				
{ LOCARNO LOCARNO	03	0756	0745	N16 W53	5120	55 D	16	3	0700		5.00				
	03	0756	0842	S07 W25	5124	46	2	3	0810		11.00				
	03	0810	0855	N26 E90	5135	45	16	3	0905		5.00				
	03	0905 E	0940	N17 W20	5122	35 D	2-	3	1047		3.00				
{ CAPRI-G CAPRI-S	03	1045 E	1110 D	N15 W55	5120	25 D	1	3	1124		3.00				
	03	1122 E	1156 D	S08 W22	5124	34 D	1	3	1144		3.00				
	03	1142 E	1247 D	N15 W54	5120	65 D	1	3	1149	2.00	3.60				
	03	1145 E	1215 D	N13 W56	5120	30 D	1	2	1457		2.00			Slow S-SWF	
{ LOCARNO LOCARNO SAC PEAK	03	1450	1525	N12 W52	5120	35	1	2	1457		2.00				
	03	1605 E	1625	N15 W28	5122	20 D	1	2	1605		2.00				
	03	2246	2304	N17 W61	5120	18	1	1		2.50			18	Slow S-SWF	
	04	0136	0204 D	N16 W10	5126	28 D	1	3	0142	2.10	2.30				
{ HAWAII HAWAII NIZAMIAH WENDEL	04	0150	0204 D	N19 W64	5120	14 D	1	3	0152	2.20	5.00				
	04	0350 E	0358 D	N16 W72	5120	8 D	2	2	0350	2.43	5.93	1.90			
	04	0601	0615	S08 W33	5124	14	16				7.00				
	04	0950 E	1017 D	S17 W66	5121	27 D	1	2	1249		4.00				
{ ZURICH CAPRI-S	04	1249	1302	N08 W76	5120	13	1	3	1253	1.00	5.00				
	04	1250 E	1300 D	N05 W80	5120	10 D	1	3	1255		4.00				
	04	1254 E	1302 D	S09 W77	5120	8 D	1	3		.80	8.00	2.50			
	04	1258 E	1321 D	S09 W76	5121	23 D	16	2	1407		2.40				
{ HUANCAYO HAWAII	04	1354	1418	N13 W70	5120	24	1	2	1407		2.40				
	04	1409 E	1417 D	N14 W35	5122	8 D	1	3	1412		3.00				
	04	1411	1417	N18 W40	5122	6	1	2	1411		3.00				
	04	1413 E	1429 D	N19 W40	5122	16 D	16	2	1419		7.00				
{ HUANCAYO ZURICH WENDEL	04	1415	1437	N18 W67	5120	22	1	2	1416	1.40	3.60	3.70			
	04	1416	1422	N19 W64	5120	6	1	2	1416		2.00				
	04	1417	1429 D	N18 W65	5120	12 D	2	2			9.00				
	04	1427 E	1434	N13 W60	5120	7 D	1	3	1428		3.00				

CONNECTION - STANDARDS - BOLDEN

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE	OBSERVED		LOCATION			IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	LAT.	MATH- PLACE REGION			TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z	MAX. INT. %		
						MER. DIST.									REGION
ZURICH CAPRI-G SAC PEAK MCMATH HUANCAYO MCMATH HUANCAYO HAWAII	MAY 1959														
	04	1429	1431		N19 W64	5120	1	2	1429		2.00				
	04	1618	1640 D		S10 W34	5124	2 D		1620	3.10	3.00		17		
	04	1628	1707	1632	N22 E90	5147	16	1							
	04	1633	E		N22 E90	5147	1	1							
	04	1852	1948		S16 E67	5133	56 D	2	1854	1.60	3.90	4.80			
	04	2054	2117	2056	N21 W90	5120	23	1							
	04	2055	2107 E		N39 W65	5123	12 D	1	2055	1.00	3.00	2.40		S-SWF	
	04	2304	2336		N21 E90	5147	32	1	2310	2.10				S-SWF	
	04	2334	2350	2336	N23 W90	5120	16	2	2336	3.40				S-SWF	
HAWAII HAWAII MITAKA MITAKA MITAKA MITAKA WENDEL WENDEL WENDEL CAPRI-G CAPRI-S CAPRI-G	05	0100	0136	0112	N20 E90	5147	36	2	0112	2.30					
	05	0138	0148	0142	N21 W81	5120	10	2	0142	3.70					
	05	0237	E		N18 W79	5120	12 D	1	0237	.68	3.05	2.56	96		
	05	0409	0429	0422	N25 E78	5147	20 D	1	0409	1.03	4.61	2.03	149		
	05	0454	E		N18 W81	5120	12 D	1	0454	2.06	3.28				
	05	0501	E		N13 W30	5126	5 D	1	0501	2.06	3.28		107		
	05	0605	E		N15 W82	5120	45 D	3			9.00			S-SWF	
	05	0606	E		S16 E63	5133	22 D	2						S-SWF	
	05	0606			S15 E59	5133	26	2							
	05	0609		0624	N16 W80	5120	42	2			14.00				
CAPRI-G CAPRI-S CAPRI-G WENDEL BOULDER WENDEL WENDEL WENDEL CAPRI-G LOCARNO ZURICH ZURICH WENDEL WENDEL WENDEL CAPRI-G LOCARNO BOULDER LOCARNO	05	0620	E		N12 W77	5120	62 D	2	0623	5.00					
	05	0623	E		N16 W85	5120	25 D	1	0625		3.00				
	05	0637	E		S13 E57	5133	28 D	1	0640		6.00				
	05	0709	E		N18 W77	5120	14 D	16			6.00				
	05	0848	E		N13 W85	5120	47 D	16	0910		6.00				
	05	0900		0910	N17 W90	5120	30	1			3.00				
	05	0903		0907	N17 W79	5120	19	1	0907		6.00				
	05	0903	E		N16 W80	5120	25 D	16			6.00				
	05	0904			N15 W82	5120	21	1	0904		1.00				
	05	0905		0908	N14 E45	5134	13	1	0908		1.00				
ZURICH WENDEL WENDEL WENDEL CAPRI-G LOCARNO ZURICH BOULDER LOCARNO ZURICH LOCARNO WENDEL WENDEL WENDEL CAPRI-S CAPRI-G LOCARNO CAPRI-G WENDEL WENDEL CAPRI-G MCMATH HUANCAYO CAPRI-G DUNSINK CAPRI-G	05	0906			N14 E45	5134	4	1	0906		2.00				
	05	0911	E		N22 E86	5147	19 D	16			5.00				
	05	0947	E		N23 E87	5147	25 D	16			6.00				
	05	1008	E		N17 W81	5120	20 D	1			4.00				
	05	1014	E		N16 W80	5120	8 D	1	1017		4.00				
	05	1014	1022 D	1016	N17 W81	5120	13	1	1016		3.00				
	05	1016	1028		N15 W82	5120	12	1	1016		1.00				
	05	1018	E	1023	N17 W90	5120	32 D	2							
	05	1025			N27 E90	5147	17	16							
	05	1030	1050		N15 W82	5120	20	1	1030		1.00				
LOCARNO WENDEL WENDEL WENDEL CAPRI-S CAPRI-G LOCARNO CAPRI-G CAPRI-G WENDEL WENDEL WENDEL CAPRI-G MCMATH HUANCAYO CAPRI-G DUNSINK CAPRI-G	05	1032			N17 W82	5120	11	1							
	05	1042	1150		S08 W54	5124	8	16			5.00				
	05	1047			S08 W52	5124	57 D	1	1110	2.00	5.00				
	05	1105	E		S09 W51	5124	25 D	1	1111		3.40				
	05	1235			N27 E90	5147	55	16			4.00				
	05	1238	E		N16 W82	5120	4	1	1240		5.00				
	05	1238	E		N25 E90	5147	82 D	2	1242		8.00				
	05	1242	E		N22 E80	5147	66 D	16			5.00				
	05	1309	E	1350	N19 W90	5120	105 D	1							
	05	1343		1349	N16 W87	5120	32	16	1349	.80		5.30			
CAPRI-G	05	1348	E	1412 D	N16 W82	5120	24 D	1	1350	1.90	4.00	4.30			
	05	1429	E	1437	N28 E80	5147	8 D	1	1429		4.32				
CAPRI-G	05	1454	E	1530 D	N16 W80	5120	36 D	1	1455						

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OBSERVATORY	DATE	OBSERVED		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.				TIME — UT	MEAS. AREA Sq. Deg.	COBB. AREA Sq. Deg.	
WENDEL CAPRI-G { WENDEL CAPRI-G MCMATH SAC PEAK HAWAII { SAC PEAK MCMATH HAWAII	05	1511	1526	N20 E84	5147	15	16	2	1600		5.00	Slow S-SWF
	05	1558	1630	S14 E59	5133	32	1	2			3.00	
	05	1646	1712	S16 E56	5133	26	1	2	1702		3.00	
	05	1700	1710	S14 E59	5133	10	1	1			3.00	S-SWF
	05	1737	1750	N23 E90	5147	73	1	3				
	05	1908	1950	N26 E90	5147	22	1	3		3.70		Slow S-SWF
	05	1912	1920	N15 E90	5146	8	2	1	1920	4.20		
	05	1918	1942	N23 E90	5147	84	2	1				S-SWF
	05	2106	2118	N25 E90	5147	12	1	3		2.10		
	05	2108	2122	N23 E90	5147	14	16	1				
NIZAMIAH NIZAMIAH { WENDEL CAPRI-G { WENDEL CAPRI-S MOSCOW WENDEL STOCKHOLM KANZELHOHE NERA { STOCKHOLM CAPRI-S CAPRI-G { SAC PEAK NERA CAPRI-S CAPRI-G { SAC PEAK MCMATH ZURICH ZURICH { SAC PEAK MCMATH ZURICH	06	0310	0317	N17 W90	5120	7	16	3	0310	.61	4.95	S-SWF
	06	0332	0540	N26 E72	5147	8	16	3	0532	1.22	4.50	
	06	0718	0754	N24 E79	5147	36	16	2			7.00	
	06	0740	0800	N23 E90	5147	60	16	2				S-SWF
	06	0810	0915	N24 E70	5147	65	1	3	0813		3.00	
	06	0827	0851	N23 E75	5147	24	1	3			4.00	S-SWF
	06	0908	0927	N25 E75	5147	19	1	3	0913	1.50	5.40	
	06	0908	1018	N26 E76	5147	70	2	2				
	06	0910	0926	N25 E70	5147	16	16	2			8.00	S-SWF
	06	0935	1010	S16 E46	5133	35	1	2	0935	1.50	2.20	
	06	1005	1025	N24 E74	5147	20	2	2				
STOCKHOLM CAPRI-S CAPRI-G { STOCKHOLM CAPRI-S CAPRI-G { SAC PEAK MCMATH ZURICH ZURICH { SAC PEAK MCMATH ZURICH	06	1011	1016	N23 E69	5147	5	2	2				S-SWF
	06	1026	1038	N20 E80	5147	12	1	2	1030	.70	3.40	
	06	1027	1042	N23 E70	5147	15	1	3	1029	1.00	4.50	
	06	1027	1055	N28 E72	5147	28	1	3	1028		3.00	S-SWF
	06	1325	1338	N25 E69	5147	13	1	2		2.10		
	06	1327	1335	N23 E66	5147	8	2	2				
	06	1329	1342	N25 E73	5147	13	1	3	1331	1.50	4.80	S-SWF
	06	1400	1407	S14 E80	5145	7	1	3	1402	2.70	3.00	
	06	1542	1614	N27 E80	5147	32	1	2			4.00	
	06	1543	1611	N25 E70	5147	28	1	2	1544	3.00		S-SWF
	06	1555	1615	N25 E85	5147	20	1	3	1604			
LOCARNO CAPRI-G CAPRI-G ZURICH ZURICH ZURICH { ZURICH CAPRI-G { LOCARNO CAPRI-G LOCARNO CAPRI-G	06	1558	1619	N28 E85	5147	21	16	3				S-SWF
	06	1559	1610	N30 E75	5147	11	1	2	1559	5.00		
	06	1659	1713	S17 E41	5133	14	1	2	1659	2.00		
	06	1714	1730	N24 E67	5147	16	1	2		1.70		S-SWF
	06	1715	1727	N25 E70	5147	72	1	1	1719	2.10	2.00	
	06	1720	1722	N24 E64	5147	2	1	2	1720			
	07	0615	0635	N10 E46	5138	20	1	2	0620		1.00	S-SWF
	07	0625	0638	N23 E64	5147	13	1	2	0630		1.00	
	07	0817	0845	S13 E32	5133	28	1	3	0820		3.00	
	07	0825	0828	N25 E62	5147	3	1	3	0825		1.00	S-SWF
	07	0828	0833	N12 E45	5138	5	1	3	0828		1.00	
	07	1005	1016	S19 E54	5144	11	1	3	1005		1.00	
CAPRI-G { CAPRI-G { LOCARNO CAPRI-G LOCARNO CAPRI-G	07	1009	1019	N27 E57	5147	10	1	3	1009		4.00	S-SWF
	07	1025	1032	N27 E59	5147	7	1	2	1027		2.00	
	07	1040	1055	S17 E31	5139	15	1	2	1045		1.00	
	07	1040	1057	S13 E32	5133	17	1	2	1042		4.00	S-SWF
	07	1210	1225	S17 E30	5138	15	1	2	1210		1.00	
	07	1307	1312	S13 E32	5133	5	1	1	1308		2.00	

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OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	LAT.	APPROX. MER. DIST.				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _g	MAX. INT. %
CAPRI-G	07 1959	1307 E	1355 D	N19 E80	5148	48 D	2	1	1310	7.00			
CAPRI-G	07 1959	1430 E	1512 D	N12 E43	5146	42 D	1	2	1431	2.00			
CAPRI-G	07 1959	1645 E	1705 D	N12 E43	5147	5 D	1	2	1648	3.00			
CAPRI-G	07 1959	1645 E	1705 D	N12 E43	5146	20 D	1	2	1650	3.00			
{ HAWAII	07 1959	2028 E	2032 D	N16 E90	5148	4 D	16	3	2030	1.40			
{ SAC PEAK	07 1959	2046 E	2110 D	N23 E90	5148	24 D	2	2	2056	5.40			
{ HAWAII	07 1959	2050 E	2100 D	N20 E90	5148	10 D	2	3	2056	4.10			
HAWAII	07 1959	2222 E	2250 D	N20 E90	5148	28 D	16	3	2236	2.30			
HAWAII	07 1959	2354 E	0120 D	N16 E90	5148	86 D	26	3	0038	9.10			
NIZAMIAH	08 1959	0356 E	0359 D	N14 E38	5146	3 D	16	2	0356	2.43		1.90	
ZURICH	08 1959	0815 E	0817 D	S13 E15	5133	2	1	3	0815	1.00			
WENDEL	08 1959	0939 E	1053 D	N04 E89	5148	74 D	16	2		7.00			
CAPRI-G	08 1959	0950 E	1002 D	S17 E37	5144	12 D	1	3	0952				
{ CAPRI-S	08 1959	1141 E	1204 D	S15 E21	5133	23 D	1	3	1153	3.00			
WENDEL	08 1959	1144 E	1201 D	S15 E14	5133	17 D	1			4.00			
{ WENDEL	08 1959	1145 E	1201 D	S16 E14	5133	16 D	16			5.00			
{ CAPRI-G	08 1959	1148 E	1210 D	S13 E18	5133	22 D	1	3	1150	5.00			
CAPRI-G	08 1959	1258 E	1325 D	N14 E82	5148	27 D	1	1	1301	3.00			
WENDEL	08 1959	1414 E	1458 D	N22 E74	5148	44 D	2			10.00			
{ BOULDER	08 1959	1418 E	1530 D	N16 E80	5148	72 D	1	2	1427	2.60			
{ LOCARNO	08 1959	1420 E	1550 D	N17 E81	5148	90 D	2	2	1420	9.00			
{ NERA	08 1959	1423 E	1435 D	N18 E86	5148	12 D	2			3.10			
{ ZURICH	08 1959	1428 E	1445 D	N15 E76	5148	17 D	1	3	1428	4.00			
{ SAC PEAK	08 1959	1506 E	1522 D	N19 E80	5148	16 D	1						
{ WENDEL	08 1959	1511 E	1530 D	N17 E80	5148	19 D	1	3	1639	4.00			
ZURICH	08 1959	1639 E	1644 D	N12 E74	5148	5 D	1	3		2.00			
{ MCMATH	08 1959	1759 E	1830 D	N17 E87	5148	31 D	1	1					
{ SAC PEAK	08 1959	1820 E	1858 D	N25 E78	5148	38 D	1	3	1854	3.90			
{ HAWAII	08 1959	1854 E	1858 D	N12 E80	5148	4 D	16	2		2.90			
SAC PEAK	08 1959	1938 E	2004 D	N12 E34	5146	26 D	1	3	1854	2.70			
HAWAII	08 1959	2008 E	2048 D	N09 E25	5146	40 D	1	2	2016	2.20			
SAC PEAK	08 1959	2252 E	2322 D	N23 E87	5148	30 D	2	3		5.60			
ZURICH	09 1959	0811 E	0822 D	N22 E78	5148	11 D	1	3	0811	2.00			
{ WENDEL	09 1959	0832 E	0850 D	S20 E25	5148	18 D	1			3.00			
{ ZURICH	09 1959	0834 E	0844 D	S20 E23	5144	10 D	1	3	0834	1.00			
WENDEL	09 1959	1125 E	1129 D	N13 E72	5148	4 D	16			5.00			
MCMATH	09 1959	1813 E	1827 D	N19 E70	5148	74 D	16	1	1823	3.50			
MCMATH	09 1959	1919 E	1959 D	N18 E57	5148	40 D	16		1948	3.50			
LOCKHEED	09 1959	2216 E	2224 D	N21 E69	5148	8 D	1	1		2.10			
MITAKA	10 1959	0225 E	0243 D	N22 E63	5148	18 D	16	1	0226	2.57		3.86	
NIZAMIAH	10 1959	0345 E	0355 D	N25 E63	5148	10 D	1	3	0347	2.98		1.20	
NIZAMIAH	10 1959	0525 E	0535 D	N25 E63	5148	10 D	1	3	0528	1.82		1.20	
{ CAPRI-S	10 1959	0821 E	0853 D	N10 E61	5148	32 D	1	1	0827	4.10			
{ WENDEL	10 1959	0821 E	0905 D	N12 E63	5148	44 D	16			6.00			
{ WENDEL	10 1959	0938 E	0958 D	S11 W11	5133	20 D	16	3		5.00			
ZURICH	10 1959	0939 E	0948 D	S11 W10	5133	9 D	1	3	0939	2.00			
ZURICH	10 1959	1047 E	1056 D	N21 E67	5148	9 D	1	3	1047	3.00			
{ WENDEL	10 1959	1050 E	1107 D	S17 E10	5144	17 D	16			5.00			
{ ZURICH	10 1959	1050 E	1108 D	S17 E09	5144	18 D	1	3	1050	5.00			
SAC PEAK	10 1959	1409 E	1434 D	N18 E51	5148	25 D	1	2		3.40			15

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OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IN- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL* IONOSPHERIC EFFECT
		START	END	LAT.	APPROX. MER. DIST.				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH He	MAX. INT. %
{ WENDEL SAC PEAK WENDEL WENDEL HAWAII	10 1959												
	10 1411	1441 D		N31 E28	5147	30 D	16				7.00		15
	10 1412	1450	1424	N27 E25	5147	38	1			3.90			
	10 1604	1613		S16 E08	5144	9	1				4.00		
	10 1657 E	1742 D		S12 W24	5133	45 D	16				7.00		
	10 1910	2000	1920	S17 E04	5144	50	1			3.70			
	10 2012	2044		N19 E50	5148	32	2		1920	5.70			18
	10 2018	2042	2028	N17 E52	5148	24	2		2028	7.00	11.70		
	10 2021	2044		N21 E52	5148	23	1			2.40			
	10 2055	2204 D	2140	N23 E47	5148	69 D	36			45.00			
{ SAC PEAK LOCKHEED SAC PEAK HAWAII CLIMAX HAWAII	10 2102	2342 D	2118	N19 E46	5148	160 D	36			80.00			
	10 2104	2600 D	2148	N17 E50	5148	296 D	36		2148	65.10	108.70		30 530
	10 2105			N11 E50	5148	36							
	10 2115	2125	2119	N29 E15	5147	10	1			2.10	2.60		
	10 2310 E	2415 D		N14 E45	5148	65 D	3						
	10 2315 E	2429 D		N18 E52	5148	74 D	3		2404	14.40	27.20	2.10	122
	10 2315 E	2610 D		N14 E45	5148	115 D	3		2403	16.50	24.80	1.87	162
	10 2356	2514 D	2410	N32 E18	5147	78 D	1		2410	2.50	3.30		
	11 0010 E			N28 E18	5147				0010	3.08	3.94	1.87	100
	11 0045 E			N28 E18	5147				0045	2.06	2.64		89
{ MITAKA MITAKA WENDEL ZURICH ZURICH ZURICH ZURICH CAPRI-G CAPRI-G ZURICH ZURICH LOCARNO ZURICH CAPRI-G CAPRI-G HAWAII	11 0110 E	0115		N11 W15	5146	5 D	1		0112	1.02	1.09	1.63	115
	11 0705 E	0724		S16 W18	5133	19 D	1				4.00		
	11 0706 E	0717		S15 W21	5133	11 D	16		0706	5.00	5.00		
	11 0725	0732		N20 E45	5148	7	1		0725	1.00	1.00		
	11 0727	0731		N11 W18	5146	4	1		0727	1.00	1.00		
	11 0746	0755		S20 W03	5144	9	1		0746	2.00	2.00		
	11 0748 E	0756 D		S20 W04	5144	8 D	1		0750	3.00	3.00		
	11 0850 E	0920 D		N25 E12	5147	30 D	1		0852	4.00	4.00		
	11 0822	0823		N11 W01	5146	1	1		0922	2.00	2.00		
	11 0955	1005 D		S16 W02	5144	10 D	1		0955	1.00	1.00		
{ CAPRI-G CAPRI-G HAWAII SAC PEAK LOCKHEED HAWAII	11 1055	1105		S13 W33	5133	10 D	1		1100	1.00	1.00		
	11 1223	1231		N10 E44	5148	8	1		1223	4.00	4.00		
	11 1425 E	1437 D		S12 W21	5133	12 D	1		1427	2.00	2.00		
	11 1647 E	1702 D		N10 E48	5148	15 D	1		1648	3.00	3.00		
	11 1938	1950 D		S14 W28	5133	12 D	1		1944	2.90	2.90		
	11 2006	2145 U	2034 U	N08 E39	5148	99 U	26			2.50			28
	11 2007	2140	2028	N11 E41	5148	93	26		11.60	10.00			
	11 2010	2150 D		N08 E42	5148	100 D	36		2035	26.00	36.40		400
	12 0430 E	0435		N23 E35	5148	5 D	1		0430	1.82	2.46	1.10	
	12 0655 E	0705 D		N20 E27	5148	10 D	1		0656	2.00	2.00		
{ CAPRI-G CAPRI-S CAPRI-S ONDREJOV LOCARNO BOULDER SCHAUINS ZURICH ZURICH CAPRI-G CAPRI-S CAPRI-G CAPRI-G	12 0655 E	0801	0710	N10 W23	5146	6 D	2		0710	9.00	9.00		
	12 0659 E	0751 D		N11 W21	5146	52 D	26		0710	5.00	5.40		
	12 0703	0801		N11 W20	5146	58	2						
	12 0705 E	0800	0706	N09 W21	5146	55 D	26		0706	9.00	9.00		
	12 0720 E	0745	0720 U	N10 W24	5146	25 D	1		0725	3.40	3.70	1.95	68
	12 0809 E	0836		N10 W23	5146	27 D	2						
	12 0821	0826		N13 W20	5146	5	1		0821	1.00	1.00		
	12 0825	0840 D		N20 E37	5148	15 D	1		0825	2.00	2.00		
	12 0826 E	0858 D		N20 E27	5148	32 D	1		0827	2.00	2.00		
	12 0847 E	0910 D		S14 W29	5133	23 D	1		0902	2.00	2.30		
{ CAPRI-G CAPRI-G	12 0852 E	0915		S14 W35	5133	23 D	1		0853	3.00	3.00		
	12 0852 E	0937 D		N10 E37	5148	5 D	1		0853	3.00	3.00		

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OBSERVATORY	DATE	OBSERVED		LOCATION				DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		UNIVERSAL TIME		LAT.	APPROX.		TIME — UT				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH He	MAX. INT. %			
		START	END		MC-MATH REGION	MER. DIST.											
{ZURICH CAPRI-G LOCARNO CAPRI-S STOCKHOLM CAPRI-G LOCARNO CAPRI-S BOULDER POTS DAM STOCKHOLM ONDREJUV ZURICH CAPRI-G CAPRI-G LOCARNO ZURICH CAPRI-G CAPRI-G ZURICH LOCARNO SAC PEAK ZURICH CAPRI-G ZURICH SAC PEAK ZURICH MC MATH ZURICH ZURICH ZURICH SAC PEAK HAWAII SAC PEAK HAWAII MITAKA HAWAII HAWAII	12	0854	E	0856	D	N20	E28	5148	2 D	1	1	0854		1.00	S-SWF		
	12	0910	E	0912	D	N11	W26	5146	2 D	1	1	0910		1.00			
	12	0910	E	0915		N10	W25	5146	5 D	1	1	0912		3.00			
	12	0930	E	0943		N10	W25	5146	13 D	1	3	0931		2.00			
	12	0940		1000		N08	E35	5148	20	1	3			4.00			
	12	0942	E	1002	D	N09	E36	5148	20 D	1	3	0944		2.60			
	12	0944	E	1001	D	N07	E39	5148	17 D	1	3	0947	2.00	2.00			
	12	0945	E	1000		N05	E32	5148	15 D	1	3	0948	1.50	8.00			
	12	1010	E	1058		S17	W16	5144	48 D	26	3	3	1018			2.20	
	12	1010		1100		S17	W17	5144	50	2	3	3				4.00	
{CAPRI-S BOULDER POTS DAM STOCKHOLM ONDREJUV ZURICH CAPRI-G CAPRI-G LOCARNO ZURICH CAPRI-G CAPRI-G ZURICH LOCARNO SAC PEAK ZURICH CAPRI-G ZURICH SAC PEAK ZURICH MC MATH ZURICH ZURICH ZURICH SAC PEAK HAWAII SAC PEAK HAWAII MITAKA HAWAII HAWAII	12	1011	E	1046	D	S15	W16	5144	35 D	2	3	1014	4.00	4.20	S-SWF		
	12	1013	E	1030		S18	W18	5144	17 D	1	3	1017	1.90	2.10		2.37	98
	12	1013	E	1100	D	S18	W17	5144	47 D	2	3			4.00			
	12	1015		1055		S16	W16	5144	40	2	3	1019					
	12	1013	E	1047		N10	W23	5146	34 D	2							
	12	1049	E	1053	D	S15	W21	5144	4 D	1	1	1049		1.00			
	12	1104	E	1120		N10	W25	5146	16 D	1	3	1107		3.00			
	12	1104	E	1127	D	N17	E35	5148	23 D	1	3	1107		3.00			
	12	1105		1118		N09	W25	5146	13	16	3						
	12	1109	E	1120		N11	W26	5146	11 D	2	1	1109		6.00			
{CAPRI-G CAPRI-G LOCARNO ZURICH CAPRI-G CAPRI-G ZURICH LOCARNO SAC PEAK ZURICH CAPRI-G ZURICH SAC PEAK ZURICH MC MATH ZURICH ZURICH ZURICH SAC PEAK HAWAII SAC PEAK HAWAII MITAKA HAWAII HAWAII	12	1109	E	1120		N16	E30	5148	11 D	16	1	1109		3.00	G-SWF		
	12	1219	E	1223	D	N11	E35	5148	4 D	1	3	1221		2.00			
	12	1257	E	1307	D	N10	E35	5148	10 D	1	3	1300		3.00			
	12	1414	E	1435	D	N08	E37	5148	21 D	1	2	1418	1.80	2.30			
	12	1415	E	1440	D	N06	E31	5148	25 D	16	3	1415		2.00			
	12	1416	E	1435	D	N09	E34	5148	19 D	1	3	1418		4.00			
	12	1418	E	1435	D	S17	W30	5133	17 D	1	3	1430		4.00			
	12	1420	E	1432	D	N08	E34	5148	12 D	16	2	1420		3.00			
	12	1420	E	1447		S14	W37	5133	27 D	1	2	1420		2.00			
	12	1423		1440	D	S18	W35	5133	17 D	1	2	1430		1.00			
{SAC PEAK ZURICH CAPRI-G ZURICH SAC PEAK ZURICH MC MATH ZURICH ZURICH ZURICH SAC PEAK HAWAII SAC PEAK HAWAII MITAKA HAWAII HAWAII	12	1448		1524		N11	W28	5146	36	1	2		2.60		G-SWF		
	12	1452		1508		N11	W28	5146	16	16	2	1452		5.00			
	12	1457	E	1512	D	N10	W23	5146	15 D	16	2	1500		5.00			
	12	1630		1633		N21	E23	5148	3	1	3	1630		1.00			
	12	1652		1746		N12	W29	5146	54	1	2		4.30				
	12	1656		1750		N11	W29	5146	54	2	3	1705		9.00			
	12	1657		1814		N10	W30	5146	17	1	3	1714		2.25			
	12	1710		1725		S15	W35	5133	15	1	3	1710		2.00			
	12	1750		1806		N09	E28	5148	16	1	3	1750		4.00			
	12	1806	E	1816	D	N10	W31	5146	10 D	1	3	1806		3.00			
{SAC PEAK HAWAII SAC PEAK HAWAII MITAKA HAWAII HAWAII	12	2118		2154		N18	E26	5148	36	1	2		2.80		S-SWF		
	12	2120		2140		N16	E28	5148	20	16	3	2124	4.10	4.90			
	12	2146		2224		N09	E27	5148	38	16	2		5.00				
	12	2148		2252		N05	E29	5148	4	2	3	2201	5.80	6.70			
	12	2251	E	2252		S15	W41	5133	1 D	1	3	2251	3.08	4.13			
	12	2304		2346		N14	E23	5148	42	16	3	2314	4.20	4.90			
	12	2324		2352	D	N07	E28	5148	28 D	1	2	2344	2.20	2.50			
	13	0120		0136		N21	E25	5148	16	1	1	0134	3.08	3.88		2.49	115
	13	0144		0148		N08	W37	5138	4	1	1	0144	2.06	2.62			83
	13	0151	E	0154		N11	W34	5138	50	1	1	0205	2.06	2.60			113
{MITAKA MITAKA	13	0303	E	0317		S15	W42	5133	3 D	1	1	0314	1.03	1.38	1.81	172	
	13	0303	E	0317		S14	W44	5133	14 D	1	1	0314	1.03	1.38	1.81	172	
														.68	93		

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT										
		START	END	MAX. PHASE	APPROX.						MCNATH PLACE REGION	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH H _o	MAX. INT. %								
					LAT.	MER. DIST.																		
MITAKA { NIZAMIAH MITAKA { TASHKENT MITAKA NIZAMIAH { ONDREJOV MITAKA { KODAIKNL MITAKA { MITAKA ONDREJOV MITAKA { MITAKA LOCARNO ZURICH MEUDON { LOCARNO MEUDON { WENDEL ZURICH LOCARNO ZURICH CAPRI-G LOCARNO ZURICH LOCARNO MCNATH LOCARNO WENDEL SAC PEAK LOCARNO MCNATH WENDEL SAC PEAK LOCARNO ZURICH MITAKA HAWAII	13	0318 E	0321	S17 W29	5144	5144	3 D	1	1	0318	3.08	3.51	1.60	107	S-SWF									
	13	0445 E	0456	S15 W40	5133	5133	11 D	1	3	0445	1.82	2.42	1.40	172										
	13	0450 E	0503	S14 W45	5133	5133	13	1	0454	4.11	5.51	3.14	172											
	13	0458 E	0546	N21 E25	5148	5148	48	26	1	0500	2.06	2.41	2.49	143										
	13	0500 E	0510	N19 E19	5148	5148	10 D	1	1	0500	2.06	2.41	2.49	143										
	13	0506 E	0545	N24 E27	5148	5148	39	26	3	0515	7.29	9.19	2.60	143										
	13	0509 E	0542	N22 E22	5148	5148	33	26	1	0514	10.30	13.20	4.25	208										
	13	0510 E	0550	N22 E26	5148	5148	40	26	1	0514	10.30	13.20	4.25	208										
	13	0515 E	0647 D	N20 E27	5148	5148	9 D	1	1	0638	1.06	1.16	2.67	165										
	13	0638 E	0726 D	S19 W24	5144	5144	45 D	2	1	0708	7.20	8.28	2.26	204										
	13	0641 E	0703	N04 E26	5148	5148	21	2	1	0657	3.08	3.57	2.33	183										
	13	0654 E	0703	N15 E19	5148	5148	9	16	1	0659	2.06	2.27	1.81	143										
LOCARNO ZURICH MEUDON { LOCARNO MEUDON { WENDEL ZURICH LOCARNO ZURICH CAPRI-G LOCARNO ZURICH LOCARNO MCNATH LOCARNO WENDEL SAC PEAK LOCARNO MCNATH WENDEL SAC PEAK LOCARNO ZURICH MITAKA HAWAII	13	0705 E	0739	N10 E16	5148	5148	8	1	1	0657	3.08	3.57	2.33	183	Slow S-SWF									
	13	0705 E	0742	N08 E23	5148	5148	34 D	16	2	0659	2.06	2.27	1.81	143										
	13	0705 E	0742	N08 E20	5148	5148	37 D	16	3	0705	3.00	3.00												
	13	0750 E	0805	N20 E20	5148	5148	15 D	2	2															
	13	0820 E	0845	N20 E20	5148	5148	20	2																
	13	0820 E	1000	S12 E90	5156	5156	100	16	2															
	13	0855 E	1042	S10 E90	5156	5156	107 D	2			5.00	3.00												
	13	1332	1347	N08 E19	5148	5148	15	16	3	1339	3.00	3.00												
	13	1339	1347	N08 E18	5148	5148	8	1	3	1339	4.00	4.00												
	13	1415 E	1432	N10 E15	5148	5148	17 D	1	3	1415	3.00	3.00												
	13	1415 E	1435	S08 E81	5156	5156	20 D	2	3	1417	3.00	3.00												
	13	1417 E	1426	S08 E85	5156	5156	9	1	3	1417	9.00	9.00												
CAPRI-G LOCARNO ZURICH LOCARNO MCNATH LOCARNO WENDEL SAC PEAK LOCARNO MCNATH WENDEL SAC PEAK LOCARNO MCNATH WENDEL SAC PEAK LOCARNO ZURICH MITAKA HAWAII	13	1417 E	1433	N12 E13	5148	5148	16	1	3	1417	4.20	6.00		G-SWF										
	13	1420 E	1422 D	S08 E80	5156	5156	2 D	2	3	1420	7.00	7.00			16									
	13	1422 E	1436	S13 W53	5133	5133	14	1	3	1425	5.00	5.00				16								
	13	1426 E	1433	S12 W51	5133	5133	7	1	3	1426	4.00	4.00					16							
	13	1510 E	1540	S08 E81	5156	5156	30	16	3	1530	1.00	1.00						16						
	13	1512 E	1541	S11 E90	5156	5156	89	1	2	1600	3.40	11.00							16					
	13	1530 E	1620	S13 W50	5133	5133	50 D	1	3											16				
	13	1530	1915 D	S15 W53	5133	5133	45 D	1	2												16			
	13	1536 E	1655 D	S19 W44	5143	5143	79 D	2	2													16		
	13	1540 E	1652	S17 W48	5143	5143	72	1	2														16	
	13	1540	1655	S18 W48	5143	5143	75	2	2															16
	13	1554 E	1650	N15 E18	5148	5148	56	2	3	1555	6.00	6.00												
13	1558 E	1650	N12 E19	5148	5148	52	16	3	1610	7.00	7.00		16											
13	1559 E	1655 D	S12 W53	5133	5133	56 D	1	2	1608	5.00	5.00			16										
13	1600 E	1635	N14 E20	5148	5148	35 D	2	2							16									
13	1600	1650	SAC PEAK													16								
13	1601 E	1634	N17 E18	5148	5148	33 D	2	2									16							
13	1601 E	1634	S08 E80	5156	5156	15	1	3										16						
13	1615 E	1630	S13 W58	5133	5133	30 D	16	3	1645	2.00	2.00								16					
13	1635 E	1705 D	S13 W58	5133	5133	30 D	16	3	1645	2.00	2.00									16				
13	1640 E	1650	S12 W52	5133	5133	10 D	1	3	1640	3.00	3.00										16			
13	2340 E	2356	S08 E87	5156	5156	16 D	16	1	2344	1.54	6.16											S-SWF		
13	2340 E	2418	S10 E90	5156	5156	38	2	3	2342	2.50	2.50												S-SWF	
14	0401	0428 D	S12 W62	5133	5133	27 D	1	1	0420	1.02	1.02													S-SWF
14	0432	0445	S13 W61	5133	5133	13	1	1	0435	1.03	2.06		S-SWF											
14	1100 E	1118 D	N07 E07	5148	5148	18 D	1	1	1104	2.00	2.10			S-SWF										
14	1311 E	1316 D	S12 W65	5133	5133	5 D	1	1	1311	2.00	2.00				S-SWF									
14	1311 E	1317 D	N11 W47	5146	5146	6 D	1	2	1312	4.00	4.00					S-SWF								

SOLAR FLARES

MAY 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.				McMATH PLACE REGION	TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH H _e	MAX. INT. %
{ ZURICH CAPRI-G HUANCAYO SAC PEAK HAWAII HAWAII HAWAII MITAKA MITAKA MITAKA	MAY 1959	14	1326 E	1330 D	S15 W68	5133	4 D	1	1	1326			5.00		S-SWF
	14	1327 E	1330 D	S15 W67	5133	3 D	1	2	1330			3.00			
	14	1632 E	1652 D	S16 W66	5133	20 D	1	2	1632	1.50		3.60	3.10	14	
	14	2100	2156 U	N28 W30	5147	56 U	1	2		3.70					
	14	2106	2142	N29 W29	5147	36	16	2	2116	4.90		6.90			
	14	2142	2202 D	N32 W33	5147	20 D	1	2	2146	2.60		3.90			
	14	2200 E	2202 D	N29 W30	5147	2 D	1	2	2200	2.20		3.00			
	14	2301 E	2318	N21 W54	5138	17 D	1	2	2301	3.08		4.71	1.60	96	
	14	2315	2408	S16 W77	5133	53	16	1	2315	4.12		11.10	2.16	125	
	14	2351	2354	N17 E00	5148	3	1	1	2351	2.01		2.13	1.78	91	
	15	0045	0113	N21 E01	5148	28	1	1	0101	1.01		1.10	2.23	143	
	15	0122 E	0134	N11 W52	5146	12 D	1	1	0138	1.00		1.50	1.76	115	
	15	0153 E	0221 D	S18 W54	5144	28 D	16	1	0157	5.44		8.32	2.45	125	
	15	0200 E	0220 D	S18 W48	5144	20 D	1	1	0214	3.02		4.29		100	
{ CAPRI-G CAPRI-G CAPRI-G CAPRI-G SAC PEAK HAWAII LOCARNO LOCARNO LOCARNO ZURICH ZURICH ZURICH STOCKHOLM LOCARNO ZURICH SAC PEAK SAC PEAK MCMATH SAC PEAK MCMATH SAC PEAK HAWAII SAC PEAK HAWAII	15	1058 E	1118 D	S19 W56	5144	20 D	1	2	1100			3.00		S-SWF	
	15	1125 E	1134 D	N16 E31	5154	9 D	1	3	1128			2.00			
	15	1150 E	1230 D	S16 W80	5133	40 D	1	2	1152			2.00			
	15	1356 E	1420	N12 E90	5158	24 D	2-	1		4.90					18
	15	2106	2134	S10 W90	5133	28	1	3	2110	.90					
	16	0710 E	0737	N23 W03	5148	27 D	2-	2	0710			5.00			
	16	0710 E	0815	N27 W49	5147	65 D	2	2	0718			14.00			
	16	0730 E	0800 D	S15 W90	5133	30 D	1	2							
	16	0734	0749	S05 E52	5156	15	1	2	0736			1.00			
	16	0900 E	0938 D	S15 W90	5133	38 D	1	2							
	16	0900 E	1012	N23 W04	5148	72 D	16	2	0900			5.00			
	16	0910 E	0919	N19 W04	5148	9 D	1	2	0910			4.00			
	16	0912	0917	N16 W17	5148	5	1	2	0912			1.00			
	16	0918	0942	S09 E49	5156	24	16	2	0922			6.00			
{ SAC PEAK SAC PEAK MCMATH SAC PEAK HAWAII SAC PEAK HAWAII HAWAII HAWAII HAWAII HAWAII HAWAII HAWAII HAWAII	16	0920	0938	S11 E49	5156	18	1	3	0926	1.50		2.30			Slow S-SWF
	16	0928 E	0953	S09 E49	5156	25 D	16	3	0928			3.00			
	16	1021 E	1030	S12 E53	5156	9 D	1	2							
	16	1502	1530	N24 W09	5148	28	1	3	1021			1.00		18	
	16	1534	1626	N17 E90	5160	32	16	3						18	
	16	1608		N12 E90	5160	1	1	3							
	16	1653	1728	N13 W36	5148	35	1	3							
	16	1658 E	1723	N15 W35	5148	25 D	1	1	1658			2.10		20	
	16	1734	1816	N21 W11	5148	43	1	3							
	16	1934	2026	N30 W57	5147	52	1	3	1944			7.50		18	
	16	2044 U	2150	N21 W13	5148	66 U	16	2							
	16	2100	2200	N35 W15	5151	60	1	3	2104			3.70		18	
	17	0004	0022	N16 W38	5148	18	1	3							
	17	0013 E	0029 D	N12 W39	5148	16 D	1	3	0008			5.00	6.60		
{ MITAKA HAWAII HAWAII TASHKENT ONDREJOV ONDREJOV WENDEL LOCARNO WENDEL	17	0104	0118 D	N18 W26	5148	14 D	1	2	0013			2.06	2.15	146	S-SWF
	17	0150 E	0204 D	N21 W26	5148	14 D	1	2	0108			2.70			
	17	0523	0558	N21 W25	5148	35	3	2	0157			3.50			
	17	0540 E	0554 D	N21 W28	5148	14 D	2	2							
	17	0706 E	0722 D	N22 W29	5148	16 D	2	2							
	17	0706 E	0728 D	N20 W31	5148	22 D	16	2							
	17	0907	0914 D	N19 W20	5148	7 D	1	2	0907			6.00			
	17	0908	0927	N19 W19	5148	21	1	2				1.00			
	17											3.00			
	17														
	17														
	17														
	17														
	17														

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE MAY 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- Y PLACE REGION	TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ho
{ WENDEL WENDEL CAPRI-S HUANCAYO WENDEL WENDEL CAPRI-G	17	0950	1010 D	N11 E08	5154	20 D	1				3.00			
	17	0951	1014 D	N14 E10	5154	23 D	1				3.00			
	17	1150 E	1219 D	N19 W19	5148	29 D	1	1	1203	4.00		2.40		
	17	1442	1456	N28 W67	5147	14	1	3	1444	.80				
	17	1553 E	1627 D	S25 W60	5144	34 D 16	1				7.00			
{ HAWAII LOCARNO CAPRI-G ZURICH CAPRI-G CAPRI-S CAPRI-G ZURICH CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	17	1558	1629 D	S18 W85	5144	31 D 16	1				8.00			
	17	1616 E	1642 D	N17 E44	5158	26 D 1	3		1618		4.00			
	18	0034 E	0043 D	S17 W90	5144	9 D 16	1		0034	1.00				
	18	0845 E	0910 D	N22 W42	5148	25 D 1	2		0849		1.00			
	18	0852 E	0857 D	N22 W42	5148	5 D 1	3		0854		3.00			
{ WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	18	0854 E	0904	N23 W43	5148	10 D 1	3		0854		1.00			
	18	0917 E	0934	N18 E35	5157	17	3		0920		3.00			
	18	0918 E	0922 D	N21 W32	5148	4 D 1	3		0918		2.00			
	18	0918 E	0937 D	N17 E37	5157	19 D 1	2		0920	1.60				
	18	0918 E	0942 D	N18 E36	5157	24 D 1	3		0919		4.00			
{ WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	18	0919 E	0924	N22 W35	5148	5	3		0919		1.00			
	18	0935 E	0942 D	N20 E63	5158	7 D 1	3		0937		4.00			
	18	0940 E		N17 E59	5158	15 D 1	2		0940		1.00			
	18	1205 E	1230 D	N20 W30	5148	25 D 1	3		1210		3.00			
	18	1527 E	1541 D	N15 W61	5148	14 D 1	3		1532		1.00			
{ WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	18	1530 E	1541 D	N15 W50	5148	11 D 1	2		1532		1.00			
	18	1546	1616 D	N21 W56	5148	30 D 2	2		1558	2.20	3.20	3.30	15	Slow S-SWF
	18	1546	1620	N21 W56	5148	34	1		1550	1.90	2.10			
	18	1547	1612	N21 W52	5148	25	1		1547		8.00			
	18	1549	1616 D	N20 W52	5148	17	1		1650		2.00			
{ WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	18	1552 E	1618 D	N13 W67	5148	26 D 2	2		1605		11.00			
	18	1600 E	1617 D	N21 W45	5148	17 D 2	3		1605		8.00			
	18	1608	1617 D	N20 W30	5148	9 D 1	3		1610		2.00			
	19	0622 E	0709 D	N23 W58	5148	47 D	1		0632	1.10	2.00			
	19	0741	0804	N11 W29	5154	23	1		0744		6.00			
{ WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	19	0742 E	0830 D	N16 E20	5157	48 D	3		0744		3.00			
	19	1010 E	1012 D	N16 E20	5157	2	1		1012		2.00			
	19	1332	1400	N23 W58	5148	28	1		1340	5.00	6.30			
	19	1337 E	1401	N22 W53	5148	24 D 2	3		1340	3.00				
	19	1340 E	1400	N17 W43	5148	20 D 26	3		1352		7.00			
{ KANZELHOHE CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	19	1347 E	1402 D	N22 W56	5148	15 D 2	3		1609		5.00			
	19	1607 E	1612 D	S28 W77	5162	5 D 1	3		1644		4.00			
	19	1640 E	1655 D	N16 E20	5157	15 D 1	3							
	20	0002	0044	N24 E43	5158	42	1		0004	2.60	3.90			
	20	0625 E	0705	N26 E37	5158	40 D 16	3		0635		2.00			
{ WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	20	0630	0707 D	N28 E32	5158	37 D 1	3		0632		5.00			
	20	0631	0720 D	N25 E36	5158	49 D 2	3				11.00			
	20	0637 E	0657 D	N28 E38	5158	20 D 1	3		0650		3.50			
	20	0702	0720 D	N16 W68	5148	18 D 16	3			2.50	5.00			
	20	0910 E	0928 D	N22 W59	5155	18 D 1	3		0916	3.00	3.70			
{ WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G WENDEL LOCARNO SAC PEAK HUANCAYO MCARTH WENDEL CAPRI-G CAPRI-G	20	0912 E	0935	N19 W31	5155	23 D 2	3		0915		7.00			
	20	1207 E	1235 D	N10 W30	5154	28 D 1	3		1209		3.00			
	20	1316 E	1337 D	N07 W73	5148	21 D 1	3		1317		4.00			
	20	1434 E	1517 D	N17 E09	5157	43 D 1	3		1435		3.00			
	20													G-SWF

COMMENCE - STANDARDS - BOULDER

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.	M-MATH PLACE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. Sq. Deg.	MAX. WIDTH H _g	MAX. INT. %
LOCARNO	20	1510 E	1522	N17 E54		5164	12 D	1	2	1510		3.00		
CAPRI-G	20	1512 E	1517 D	N16 W56		5148	5 D	1	3	1514		3.00		
WENDEL	20	1727 E	1759 D	N14 E83		5165	32 D	16			2.90	8.00		
HAWAII	20	1910	1920	N14 E82		5165	10	1	3	1910				
WENDEL	21	0831 E	0922 D	N26 E22		5158	51 D	2				9.00		
SAC PEAK	21	1538	1722 D	S09 W20		5156	104 D	16	2		5.10			16
NIZAMIAH	22	0522	0532	S16 E63		5167	10	1	3	0525	1.22	2.76	1.80	
WENDEL	22	0836	0852	S15 E62		5167	16	16				6.00		
CAPRI-G	22	1326 E	1340 D	S14 E59		5167	14 D	1	2	1328		3.00		
{ CAPRI-G	23	1436 E	1505 D	N15 E38		5165	29 D	1	3	1453		3.00		
{ CAPRI-S	23	1457 E	1508 D	N14 E39		5165	11 D	1	3	1502	2.00	2.60		
CAPRI-G	24	0719 E	0728 D	N01 E18		5166	9 D	1	3	0720		2.00		
WENDEL	24	0939	0955	N01 E26		5166	16	16				6.00		
{ CAPRI-G	24	0944 E	0948 D	N01 E28		5166	4 D	1	3	0945		2.00		
WENDEL	24	0954	1003 D	S14 W34		5156	9 D	16				5.00		
{ CAPRI-G	24	1152 E	1206 D	N22 W23		5158	14 D	1				4.00		
CAPRI-G	24	1154 E	1208 D	N24 W18		5158	14 D	1	3	1155		3.00		
CAPRI-G	24	1230 E	1305 D	N21 W48		5157	35 D	1	2	1232		2.00		
CAPRI-G	24	1238 E	1305 D	N14 E21		5165	27 D	1	2	1240		2.00		
CAPRI-G	24	1510 E	1537 D	N21 W48		5157	27 D	1	3	1511		3.00		
CAPRI-G	24	1609 E	1702 D	N18 W48		5157	53 D	16	2	1617		6.00		
WENDEL	25	0751 E	0818 D	N13 W53		5157	27 D	1				4.00		
{ CAPRI-G	25	0844 E	0857 D	N13 W55		5157	13 D	1	3	0845		3.00		
ZURICH	25	0846	0854	N13 W57		5157	8	1	3	0846		2.00		
{ CAPRI-G	25	1102 E	1125 D	S12 E23		5167	23 D	1	3	1104		4.00		
ZURICH	25	1105	1123	S13 E21		5167	18	1	3	1105		2.00		
WENDEL	25	1110 E	1124 D	S15 E21		5167	14 D	1				3.00		
{ CAPRI-G	25	1214 E	1239 D	N21 W35		5158	25 D	16				5.00		
WENDEL	25	1220 E	1245 D	N20 W32		5158	25 D	1	2	1222		3.00		
{ CAPRI-G	25	1432 E	1446 D	S12 E23		5167	14 D	1	2	1440		3.00		
WENDEL	25	1435	1502	S11 E19		5167	27	16				5.00		
ZURICH	25	1502	1517	N22 W59		5157	15	1	3	1502		1.00		
ZURICH	25	1507	1510	N24 E42		5170	3	1	3	1507		1.00		
ZURICH	25	1515	1530	S33 E62		5175	15	1	3	1515		1.00		
{ SAC PEAK	25	1534	1618	N00 E10		5166	44	1	1		3.30			17
MCWATH	25	1534	1711 D	N02 E07		5166	37 D	16	1	1555		3.10		
WENDEL	25	1535	1614	N02 E13		5166	39	2				9.00		
CAPRI-G	25	1535 E	1650 D	N03 E13		5166	75 D	2	1	1540		8.00		
HUANCAYO	25	1535 E	1633	N03 E11		5166	78 D	16	2	1538		6.00	2.30	
SCHAUTINS	25	1538 E	1630	N02 E17		5166	52 D	2			5.90			
ZURICH	25	1540	1618	N04 E09		5166	38	16	3	1540		5.00		
CAPRI-S	25	1542 E	1606 D	N02 E11		5166	24 D	1	1	1545		2.50		
CAPRI-G	25	1547 E	1550 D	N16 W02		5164	3 D	1	1	1548		2.00		
CAPRI-G	25	1604 E	1650 D	S06 E71		5172	46 D	1	1	1606		2.00		
CAPRI-G	25	1608 E	1650 D	N17 W61		5157	42 D	1	1	1610		3.00		
LOCARNO	25	1625 E	1637	N23 W35		5158	12 D	1	2	1625		1.00		
WENDEL	26	0557	0608 D	N01 W03		5166	11 D	1				4.00		

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE MAY 1959	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX. PHASE	APPROX.					McMATH PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ho	MAX. INT. %
					LAT.	DIST.										
{ ZURICH LOCARNO SAC PEAK LOCARNO ZURICH ZURICH WENDEL SAC PEAK HUANCAYO HUANCAYO { SAC PEAK HAWAII	26	0823	0830	S16	E06	5167	16	3	0823		4.00					
	26	1322	1340	N00	W00	5166	1	3	1330		1.00			16		
	26	1458	1510	S18	E02	5167	1	3		3.10						
	26	1459	1522	S18	E03	5167	2	3	1505		5.00					
	26	1503	1524	S19	E02	5167	1	3	1503		5.00					
	26	1524	1525	N19	W78	5157	1	3	1524		1.00					
	26	1657	1719 D	N02	W03	5166	2	1			3.00					
	26	1906	1946	S15	E03	5167	4	1	2115		3.40	2.70		18		
	26	2114	2125	S17	E02	5167	1	2	2115		3.50	2.40				
	26	2122 E	2128	N14	W70	5157	6	1	2124		.80	6.30				
{ SAC PEAK HAWAII NIZAMIAH NIZAMIAH { ZURICH CAPRI-G { WENDEL ZURICH CAPRI-G CAPRI-G { SAC PEAK CAPRI-S LOCARNO ZURICH CAPRI-G ZURICH HUANCAYO CAPRI-G HUANCAYO	26	2346	2350 D	N02	W15	5166	4	1		3.50						
	26	2351 E	2353 D	N03	W14	5166	2	2	2351		7.50			28	S-SWF	
	27	0245 E	0252 D	S16	W05	5167	7	1	0245		1.82	1.40				
	27	0330 E	0339 D	N13	W79	5157	9	1	0330		3.43	1.80				
	27	1040	1110	N21	W21	5164	30	1	1040		2.00					
	27	1048 E	1117 D	N21	W17	5164	29	1	1050		3.00					
	27	1056 E	1131 D	N16	W87	5157	35	1			5.00					
	27	1110	1124	N16	W83	5157	14	1	1110		4.00					
	27	1225 E	1236	S18	W02	5167	11	1	1232		2.00			18		
	27	1328	1356	S14	W09	5167	28	1		3.50						
{ CAPRI-S LOCARNO ZURICH CAPRI-G ZURICH HUANCAYO CAPRI-G CAPRI-G CAPRI-G HUANCAYO MITAKA MITAKA WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G MITAKA MITAKA	27	1332 E	1403 D	S13	W08	5167	31	1	1350		3.00					
	27	1345 E	1405 D	S14	W09	5167	20	2								
	27	1358	1403	N00	W22	5166	5	1	1358		1.00					
	27	1423 E	1444	N15	W80	5157	21	1	1425		5.00					
	27	1538	1552	S14	W06	5167	14	1	1538		3.00					
	27	1540	1551	S15	W04	5167	11	1	1541		2.10	3.70				
	27	1545 E	1558	S14	W03	5167	13	1	1547		5.00					
	27	1628	1638 D	S34	E46	5175	10	1	1630		3.00					
	27	2139	2143 D	N02	W21	5166	4	1	2143			3.50				
	28	0726 E	0736 D	S15	W16	5167	10	1	0728		2.57	2.68		128	G-SWF	
{ ZURICH CAPRI-G CAPRI-S CAPRI-G CAPRI-G CAPRI-G CAPRI-G CAPRI-G CAPRI-G MITAKA MITAKA	28	0742 E	0815	S14	W18	5167	33	1	0747		4.00					
	28	1309 E	1352	N07	W33	5166	43	1	1312		2.00					
	28	1350 E	1402 D	N26	W31	5164	12	1	1352		2.60					
	28	1351 E	1410 D	N20	W35	5164	19	1	1354		3.00					
	28	1501 E	1552 D	S19	W20	5167	51	1	1503		6.00					
	28	1547 E	1607 D	N20	W35	5164	20	1	1555		3.00					
	28	1657 E	1659 D	N01	W28	5166	2	1	1658		3.00					
	28	2241 E	2246 D	S13	W73	5176	5	1	2241		2.57	2.78		122		
	28	2251	2306	N02	W44	5166	15	1	2258		1.03	2.04		115		
	28	2328	2332 D	S13	W73	5176	4	1	2328		3.08	2.10		107		
{ MITAKA MITAKA WENDEL CAPRI-G CAPRI-G CAPRI-G CAPRI-G CAPRI-G SAC PEAK HAWAII LOCARNO	29	0247	0257	S17	W39	5167	10	1	0247		3.70	1.91		176		
	29	0324	0328	S10	E84	5179	4	1	0325		1.03	4.45				
	29	0914 E	0937 D	S13	W81	5176	23	1			6.00					
	29	1212 E	1247 D	S12	E78	5179	35	1	1214		5.00					
	29	1214	1230 D	N20	W52	5164	16	1	1215		2.00					
	29	1546	1600	S09	E80	5179	14	1	1546		6.60	2.60				
	29	1944	2012	S15	E90	5179	28	1	1952		1.90			18		
	29	1950 E	2014	S16	E90	5179	24	1	1952		3.40					
	30	0710 E	0721	S13	E76	5179	11	1	0710		2.00					

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.				MATH- PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ha	MAX. INT. %
CAPRI-G	30	1311 E	1317 D		S13 W53	5167	6 D	1	3	1313		2.00				
CAPRI-G	30	1430 E	1437 D		S13 W44	5167	7 D	1	3	1431		2.00				
ZURICH	31	1017 E	1018 D		S13 E59	5179	1 D	2	1							
{CAPRI-G	31	1331 E	1425		S12 E57	5179	54 D	1	3	1335		3.00				
{LOCARNO	31	1350 E	1400		S11 E58	5179	10 D	1	2	1350		1.00				
{CAPRI-G	31	1352 E	1400 D		N17 W61	5165	8 D	1	3	1354		3.00				
{LOCARNO	31	1352	1405 D	1356	N16 W61	5165	13 D	1	2	1356		1.00				
CAPRI-G	31	1556 E	1610		S12 E62	5179	14 D	16	1	1558		6.00				
{SAC PEAK	31	2118	2242	2132	S12 E52	5179	84	1	2		2.90					
{HAWAII	31	2120 E	2228 D	2140	S15 E51	5179	68 D	2	3	2140	5.80	9.60		16	S-SWF	

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

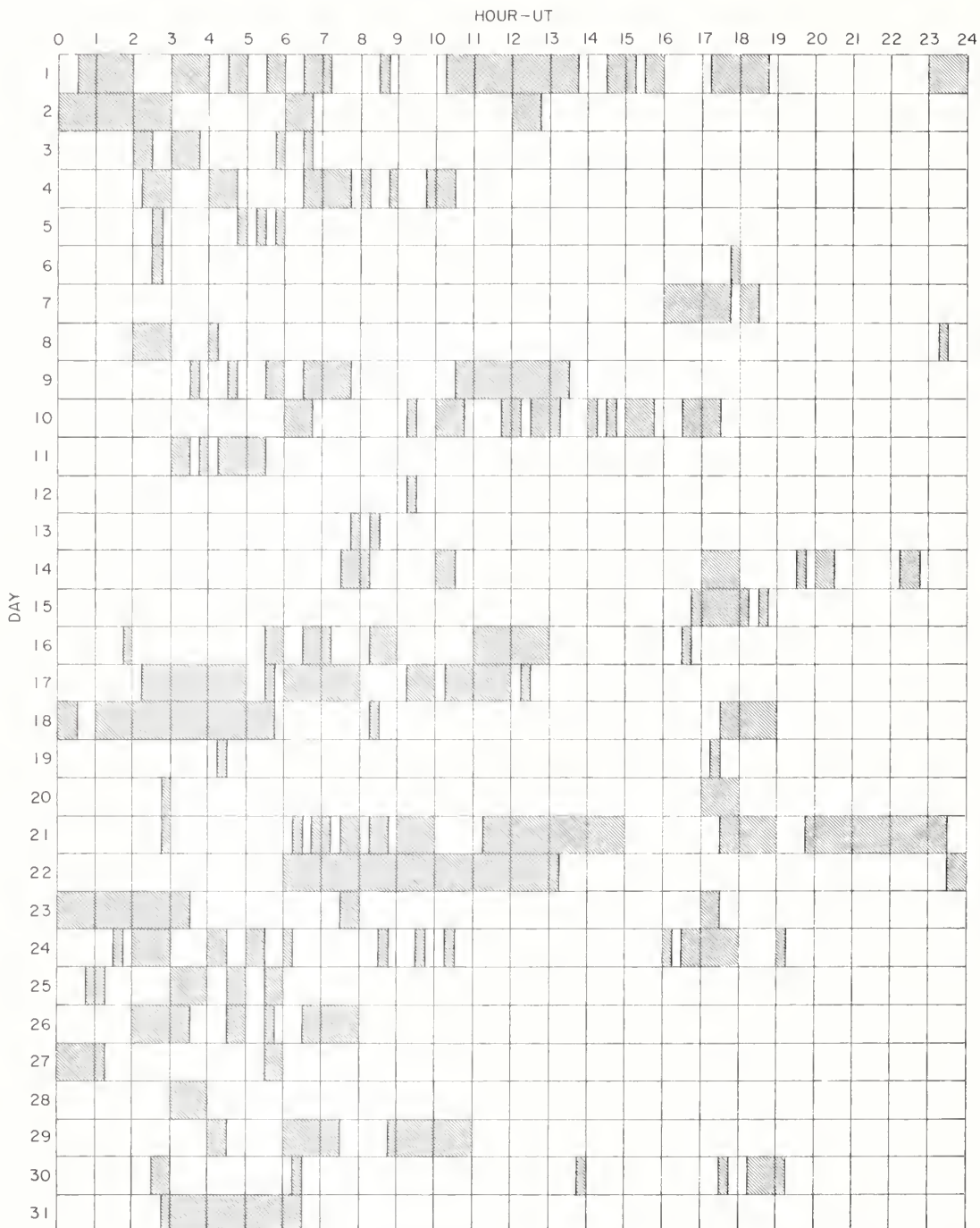
SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE
 ARBITRARY UNITS (0-40), NOT PERCENT
 OF CONTINUOUS SPECTRUM.

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

COMMERCE - STANDARDS - BOLDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1959



Stations Include:

COMMERCE - STANDARDS - BOULDER

Anacapri (Swedish)	Mitaka
Dunsink	Nizamiah
Hawaii	Royal Greenwich Observatory
Huancayo	Herstmonceux
Kodaikanal	Sacramento Peak
Locarno	Zürich.
Lockheed	

SUBFLARES

IIIh

Noted as follows: Date-Universal Time - Coordinates

APRIL 1959

HAWAII	01 0000 E	N28 W15	HAWAII	12 2028	N14 W36	MCNATH	22 1946	N03 E43
HAWAII	01 0012	N22 W16	HAWAII	12 2042	S16 E21	SAC PEAK	22 1947	N05 E43
HAWAII	01 0016	N15 E40	SAC PEAK	12 2245	N01 W01	SAC PEAK	22 2157	N18 E26
*NIZAMIAH	01 0330	S13 W45	SAC PEAK	12 2245	S12 E12	SAC PEAK	22 2333	N17 W64
*SAC PEAK	01 1637	N17 E05	SAC PEAK	12 2320	N25 E22			
WENDEL	01 1637	N26 W14	WENDEL	13 0807	N15 W41	WENDEL	23 0558	S11 W04
SAC PEAK	01 1640	N25 W13	WENDEL	13 0836	S14 E00	WENDEL	23 0606	N00 W52
SAC PEAK	01 1725	S13 W45	WENDEL	13 0936	S16 E08	WENDEL	23 0751	S11 W05
SAC PEAK	01 1805	N26 W25	*STOCKHOLM	13 1046	S16 E08	ARCTERI	23 0827 E	N19 W70
SAC PEAK	01 2000	N38 E03	WENDEL	13 1301	N13 W76	MCNATH	23 1151	N18 W32
			STOCKHOLM	13 1303	N12 W55	MCNATH	23 1153	N20 W70
			SAC PEAK	13 1347 E	N13 W38	MCNATH	23 1154	N19 W42
			WENDEL	13 1407	N17 W49	MCNATH	23 1246	S08 E02
*NIZAMIAH	02 0601 F	N14 W14	SAC PEAK	13 1640 E	S16 E05	MCNATH	23 1248	N18 W32
WENDEL	02 0647	N08 F54	SAC PEAK	13 1746	N30 E41	MCNATH	23 1249	N19 W72
WENDEL	02 0649	N02 W24	HAWAII	13 2310	N28 F11	MCNATH	23 1336	N19 W72
*WENDEL	02 0806	N25 W25	*SAC PEAK	13 2310	N27 E12	MCNATH	23 1339	N18 E73
*WENDEL	02 0849	N27 W21				SAC PEAK	23 1427	N17 W71
WENDEL	02 1425	N13 W43	STOCKHOLM	14 0936 E	S20 W53	MCNATH	23 1432 E	S08 E01
WENDEL	02 1517	S13 W43	*SAC PEAK	14 1430	S15 W07	MCNATH	23 1432 E	N19 W72
MCNATH	02 1602	S13 W40	SAC PEAK	14 1435	N27 F03	*SAC PEAK	23 1502	N13 W11
MCNATH	02 1928	N14 W33	SAC PEAK	14 1537	S15 W06	*MCNATH	23 1503	S12 W10
SAC PEAK	02 2114	N16 W24	*CAPRI-G	14 1538 E	S16 F00	*MCNATH	23 1520	N21 E47
SAC PEAK	02 2215	N22 W41	*SAC PEAK	14 1617	N14 F33	MCNATH	23 1526 E	S08 E03
SAC PEAK	02 2230	N27 W41	MCNATH	14 2046 E	N12 W14	MCNATH	23 1526	N21 E18
SAC PEAK	02 2242	N14 W47	MCNATH	14 2100 F	S18 W11	MCNATH	23 1528	S09 E02
			*HAWAII	14 2350	N28 W02	SAC PEAK	23 1557	N23 W00
						SAC PEAK	23 1612	N23 W73
*WENDEL	03 0837	N14 W37	WENDEL	15 0830	N10 W32	SAC PEAK	23 1612	N17 E11
ARCTERI	03 0924 F	N15 E40	*WENDEL	15 0902	S22 W27	MCNATH	23 1614	N23 W22
SAC PEAK	03 1530	N28 W15	*WENDEL	15 0922	N00 W39	*SAC PEAK	23 1615	N18 W71
SAC PEAK	03 1710	N14 W46	*WENDEL	15 1130	N00 W41	MCNATH	23 1617	N18 E70
SAC PEAK	03 1715	N27 W44	MCNATH	15 1139 E	N22 W07	*MCNATH	23 1622 E	N20 W70
SAC PEAK	03 1957	N14 W45	MCNATH	15 1150	S18 W20	WENDEL	23 1623	N11 W49
SAC PEAK	03 2325	N27 W47	*MCNATH	15 1151	N02 W41	SAC PEAK	23 1643	N08 W00
SAC PEAK	03 2325 E	N14 W45	MCNATH	15 1200	S16 W20	SAC PEAK	23 1725	N18 W33
HAWAII	04 0148	N15 W47	MCNATH	15 1230	S18 W20	MCNATH	23 1727	N19 W32
WENDEL	04 0751	N17 W28	MCNATH	15 1240 E	S20 W73	MCNATH	23 1728	S08 E01
CAPRI-G	04 0752	N16 W24	MCNATH	15 1241	S13 E21	MCNATH	23 1742	N17 W70
*WENDEL	04 0716	N16 W47	MCNATH	15 1253	N02 W40	MCNATH	23 1742	N22 E65
WENDEL	04 0911	N13 W52	MCNATH	15 1255	S18 W20	MCNATH	23 1750	N17 W45
WENDEL	04 0942	S03 W50	MCNATH	15 1324	S17 W21	MCNATH	23 1751	N17 W45
CAPRI-G	04 1115 F	N24 W62	MCNATH	15 1330	S15 W21	MCNATH	23 1820	N18 E08
*WENDEL	04 1200	N14 E01	SAC PEAK	15 1350	S17 W27	MCNATH	23 1820	N20 E16
*MCNATH	04 1532	N11 E24	MCNATH	15 1352	S18 W21	MCNATH	23 1836	N19 W75
HAWAII	04 1918 E	N16 W62	MCNATH	15 1356	S13 W76	MCNATH	23 1908 E	N19 W75
SAC PEAK	04 1935	N22 W67	SAC PEAK	15 1407	S22 W73	MCNATH	23 1920 E	N19 W32
MCNATH	04 2015 E	N12 E90	ONDREJOV	15 1425 F	S21 W80	SAC PEAK	23 2010	N22 W12
SAC PEAK	04 2143 E	N12 E80	MCNATH	15 1508 E	S15 W27	SAC PEAK	23 2012	N22 E45
HAWAII	04 2305	N14 W00	MCNATH	15 1508	S09 W04	SAC PEAK	23 2022	N20 W72
SAC PEAK	04 2310 E	N13 E17	MCNATH	15 1602	S16 W23	MCNATH	23 2025	N21 W72
*SAC PEAK	04 2310 F	N14 W40	MCNATH	15 1603	S16 W23	MCNATH	23 2045	N19 W46
			MCNATH	15 1640	N01 W41	SAC PEAK	23 2227	N19 W49
			MCNATH	15 1708	S16 W23			
*WENDEL	05 0841	N12 W56	MCNATH	15 1712	N02 W41	UCCLE	24 1640	N31 E45
CAPRI-G	05 0903 F	N13 E14	MCNATH	15 1720	S16 W23	CAPRI-G	24 1640	S01 E48
MCNATH	05 1004	N12 W61	MCNATH	15 1751	S12 W16	CAPRI-G	24 1640	N14 E55
MCNATH	05 1429 E	N18 W63	MCNATH	15 1861 F	N01 W46	SAC PEAK	24 1646	N32 E73
MCNATH	05 1434 F	N15 W67	MCNATH	15 1912	S15 W25	CAPRI-G	24 1646 E	N31 E48
*SAC PEAK	05 1542	N17 W67	SAC PEAK	15 1947	S17 W26	SAC PEAK	24 1646	N31 E48
*MCNATH	05 1542 E	N17 W63	MCNATH	15 1957	N11 W45	SAC PEAK	24 1646	N31 E48
*WENDEL	05 1555	N17 W63	MCNATH	15 2030	N29 W11	*SAC PEAK	24 1646	N31 E48
*WENDEL	05 1555	N19 W47	SAC PEAK	15 2106 E	S16 W26	SAC PEAK	24 1646	N31 E48
MCNATH	05 1626	N18 W68	MCNATH	16 1138 E	N11 W43	SAC PEAK	24 1646	N31 E48
HAWAII	05 1918	N14 W72	MCNATH	16 1342	N13 E09	SAC PEAK	24 1646	N31 E48
			STOCKHOLM	16 1420 E	S18 E80	SAC PEAK	24 1646	N31 E48
*HAWAII	06 0042	N22 W67	MCNATH	16 1448 F	S15 F71	SAC PEAK	24 1646	N31 E48
WENDEL	06 0044	N16 W76	MCNATH	16 1645 E	S15 W33	CAPRI-G	25 0737 F	N07 E07
WENDEL	06 0048	N19 W73	MCNATH	16 1720	N13 E07	WENDEL	25 0806	S07 W22
WENDEL	06 1047	S22 F43	MCNATH	16 1751 E	S12 W16	STOCKHOLM	25 1126	N07 E06
MCNATH	06 1140	N01 E65	MCNATH	16 1810	S13 W14	MCNATH	25 1246 E	N14 E55
WENDEL	06 1147	N11 E60	MCNATH	16 2121	S14 W16	CAPRI-G	25 1253 F	N12 E24
*MCNATH	06 1241 E	S24 E47				CAPRI-G	25 1253 F	N12 E24
STOCKHOLM	06 1245 E	N10 E57				CAPRI-G	25 1253 F	N12 E24
*MCNATH	06 1407	S22 F40	*SAC PEAK	17 1337	N18 E70	MCNATH	25 1306 E	N13 E78
MCNATH	06 1427	N22 E40	SAC PEAK	17 1350	N18 E75	MCNATH	25 1317	N13 E78
MCNATH	06 1454	N13 W03	*MCNATH	17 1553 E	N18 E72	SAC PEAK	25 1342	N07 E04
*MCNATH	06 1536	N13 W06	MCNATH	17 1603	N17 E14	MCNATH	25 1349 F	N21 W46
MCNATH	06 1646	N12 E58	MCNATH	17 1613	N11 W45	MCNATH	25 1355 F	N06 F05
HAWAII	06 1856	N14 W06	*SAC PEAK	17 1617	N00 W52	MCNATH	25 1356	S10 W38
HAWAII	06 2122	N32 F42	MCNATH	17 1708	S13 W49	SAC PEAK	25 1357	N13 E90
			MCNATH	17 1734	N27 W46	MCNATH	25 1426	S07 W54
			MCNATH	17 1837	N18 E49	*SAC PEAK	25 1440	N15 E74
*SAC PEAK	07 1811 E	S17 E85	MCNATH	17 1850	N19 W39	MCNATH	25 1444	N13 E78
HAWAII	07 1920	N12 E34	MCNATH	17 1858	N15 W06	SAC PEAK	25 1555	N06 F03
HAWAII	07 1940 E	N12 W22	MCNATH	17 1816	N30 W40	MCNATH	25 1703	N07 E05
HAWAII	07 2046	S21 W37	HAWAII	17 1932	N30 W40	SAC PEAK	25 1852	N10 E43
			HAWAII	17 2152 E	N32 W40	HAWAII	25 1855 F	N11 E45
						HAWAII	25 1890	N22 E70
						*SAC PEAK	25 2002	N22 E03
WENDEL	08 0643	S21 E20	HAWAII	18 0044 E	N33 W46			
WENDEL	08 0712	S20 E19	MCNATH	18 1147 E	N18 E03	*WENDEL	24 1013	N12 E45
*WENDEL	08 0712	N13 E27	MCNATH	18 1152	N02 W79	SAC PEAK	24 1013	N12 E45
CAPRI-G	08 0936 E	S19 E20	MCNATH	18 1152 E	S16 W60	MCNATH	26 1607 F	N21 W72
WENDEL	08 1043	S20 E19	MCNATH	18 1612 E	N18 W00	SAC PEAK	26 1655	N18 E69
WENDEL	08 1241	S17 E73	MCNATH	18 1613 E	N07 E22	SAC PEAK	26 1705	N18 E69
WENDEL	08 1243	N11 E57	MCNATH	18 1703	N02 W00	MCNATH	26 1738 E	N10 E70
WENDEL	08 1354	S22 E18	MCNATH	18 1750	S15 W12	HAWAII	26 1835	N14 E40
SAC PEAK	08 1425	N12 E26	MCNATH	18 1755	N20 E88			
*SAC PEAK	08 1442	N20 E72	MCNATH	18 1806	N20 E88			
SAC PEAK	08 1547	N24 E36	MCNATH	18 1903	N20 E88			
WENDEL	08 1601	N12 W49	MCNATH	18 1953	N20 E88			
SAC PEAK	08 2000 E	N13 E24	SAC PEAK	18 1953 E	N22 E88	*O HERST	27 0920 E	N10 E19
SAC PEAK	08 2015	S22 E07	SAC PEAK	18 1953 E	N18 W02	MCNATH	27 1641 E	S05 W56
SAC PEAK	08 2040	N24 E74	MCNATH	18 2002	N20 E88	MCNATH	27 1641 E	N08 W23
SAC PEAK	08 2220	N00 E43	MCNATH	18 2041	N16 W12	HAWAII	27 2158	N08 W48
SAC PEAK	08 2315	S24 E55	MCNATH	18 2141	N20 E88	SAC PEAK	27 2235 F	N19 E48
						SAC PEAK	27 2248	S08 E48
SAC PEAK	09 1412	N05 E66				SAC PEAK	27 2254	S05 W65
SAC PEAK	09 1430	N09 W16	SAC PEAK	19 1412	N17 W14	HAWAII	28 0050 F	S05 W61
SAC PEAK	09 1440	N12 W47	SAC PEAK	19 1522	N17 W14	WENDEL	28 0847	S07 E43
SAC PEAK	09 1512	N25 E66	SAC PEAK	19 1745	N28 W46	*WENDEL	28 0924	S07 E43
SAC PEAK	09 1617	N17 E17	SAC PEAK	19 1812	N22 E49	WENDEL	28 0924	S07 E43
SAC PEAK	09 1715	N17 W68	SAC PEAK	19 1840	N21 E48	CAPRI-G	28 1317 E	N33 E21
SAC PEAK	09 1742	N18 W48	SAC PEAK	19 2230	N00 E56	*SAC PEAK	28 1346	N14 W02
SAC PEAK	09 1807	N12 E05				SAC PEAK	28 1438	N32 E21
SAC PEAK	09 1907	N18 W48	MCNATH	20 1430	S12 W67	SAC PEAK	28 1506	N13 W11
HAWAII	09 1910 E	N16 W68	HUANCAYO	20 1436	S13 W63	SAC PEAK	28 1708	N22 W80
SAC PEAK	09 1915	S16 E63	SAC PEAK	20 1457	N25 W50	*SAC PEAK	28 1716	N12 E02
SAC PEAK	09 1917	N12 E02	SAC PEAK	20 1702	S07 W77	MCNATH	28 1820	N06 W48
SAC PEAK	09 1922	N11 E05	SAC PEAK	20 1935	N18 W35	SAC PEAK	28 1900	N05 W39
SAC PEAK	09 1952	N16 W68	HAWAII	20 1936	N19 W35	*SAC PEAK	28 1940	N14 W13
HAWAII	09 1954	N16 W68	HUANCAYO	20 1937	N33 W34	SAC PEAK	28 1952	S03 E38
SAC PEAK	09 2135	N12 E03	MCNATH	21 1228	N08 W17	HAWAII	28 1954	S09 E37
SAC PEAK	09 2210	N16 W68	SAC PEAK	21 1542	N10 E59	SAC PEAK	28 2242	S03 E90
			*MCNATH	21 1910	N15 E52	SAC PEAK	28 2320	N14 E32
WENDEL	10 0701	S15 E52	MCNATH	21 1916	N12 W49	SAC PEAK	28 2330	N15 E32
WENDEL	10 0751	N25 E56	MCNATH	21 1951	N19 W44	SAC PEAK	28 2348	N15 E31
SAC PEAK	10 1540	N17 W81	MCNATH	21 2017	N28 W36	HAWAII	28 2350	N13 E32
SAC PEAK	10 1605	N28 E55						
SAC PEAK	10 1640	N16 W46						
SAC PEAK	10 1645	N25 E51						
SAC PEAK	10 1702	N26 E51						
CAPRI-G	11 0800 E	N22 W33	UCCLE					

SOLAR FLARES

JANUARY 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.				MC-MATH PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH H _g	MAX. INT. %
AROSA	01	0910 E	0915 D		S13	W57	4934	5 D	2							S-SWF
	02	0913 E	0941		S09	W68	4934	28 D	1	2	0920		6.00			S-SWF
{ AROSA	02	0935 E	0950		S11	W68	4934	15 D	1							
{ AROSA LOCARNO AROSA	05	1040 E	1210		N25	E26	4951	90 D	2							
	05	1055	1130 D		N26	E26	4951	35 D	2	3	1110		1.50			
	05	1200 E	1208		S19	W26	4944	8 D	1							
TASHKENT	07	0637	0717 D	0650	N06	W84	4954	40 D	1	3	0550				100	
LOCARNO	09	1132	1200	1138	S03	E07	4955	28	1	3			1.00			
LOCARNO	11	1035	1050	1038	S06	W22	4955	15	1-	2			1.00			
LOCARNO	12	0910	0925	0915	N12	W26	4953	15	1-	2			1.00			
LOCARNO	12	0940	1025		N20	E76	4965	45	1	2	1000		2.00			
LOCARNO	12	1010	1045 D	1020	N23	E43	4962	35 D	16	2			3.00			
LOCARNO	12	1453	1510 D		N11	W28	4953	17 D	16	3	1500		5.00			
LOCARNO	13	1025	1140		N23	E30	4962	75	16	2			3.00			
{ LOCARNO	13	1025	1200		N11	W31	4953	95	1-	2			1.00			
{ LOCARNO	13	1110	1205		N13	W32	4953	55	1	2	1130		1.00			
LOCARNO	13	1210 E	1305	1220	N22	E30	4962	55 D	2	2			6.00			
LOCARNO	13	1227	1236		N26	W00	4959	9	1-	2	1230		1.00			
LOCARNO	14	1100 E	1130		N10	W26	4953	30 D	1	3	1100		1.00			
LOCARNO	14	1120	1135		S18	W18	4961	15	1	3	1130		1.00			
LOCARNO	15	1155	1215		N21	E06	4962	20	1	2	1200		1.00			
LOCARNO	15	1235	1305	1243	N17	E74	4969	30	16	2			3.00			
LOCARNO	16	1305	1350		N08	E90	4973	45	16	3						
LOCARNO	17	1445	1455		N18	E52	4969	10	1-	3	1450					
LOCARNO	19	0956	1004		N08	E82	4976	8	1-	3	1000					
TASHKENT	20	0541	0554	0542 U	N18	E22	4969	13	1-	3	0543		2.00	2.30	65	
TASHKENT	20	0617	0647	0620 U	N18	E71	4979	30	1	3	0622		10.00	2.20	60	
SCHAUINS	20	1112 E			N20	E14	4969		□				4.00			
ZURICH	22	0900 E	0913		N15	E37	4976	13 D	1	2	0900		6.00			
ZURICH	22	1010	1023		N10	W01	4973	13	1	2	1010		1.00			
OTTAWA	22	1521	1540 D	1526	N09	W19	4969	19 D	1	3	1526	3.94	4.33			
LOCARNO	25	0910 E	0950		N17	W47	4969	40 D	2	3	0910		6.00			
LOCARNO	25	1020 E	1100 D		N17	W48	4969	40 D	16	3	1030		5.00			
LOCARNO	25	1102	1120 D		N12	W31	4973	18 D	16	3	1120		5.00			
LOCARNO	25	1246	1420		N08	W32	4973	94	2	2	1300		8.00			
LOCARNO	25	1248	1313	1255	N22	E31	4979	25	1	2			2.00			
LOCARNO	25	1407	1450	1415	N17	W50	4969	43	2	2			6.00			
LOCARNO	25	1425	1448	1430	N11	W34	4973	23	2	3			10.00			Slow S-SWF

SOLAR FLARES

JANUARY 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX.					MC-MATH PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha		MAX. INT. %
					LAT.	MER. DIST.										
↑ ZÜRICH ZÜRICH	25	1430 E	1439		N12	W37	4973	9 D	2	1430	10.00			S-SWF		
	25	1430 E	1443		N16	W53	4969	13 D	1	1430	6.00					
	26	0845 E	0955		N15	W60	4969	70 D	2-	0845	8.00					
	26	0850 E	0950		N16	W60	4969	60 D	16		5.00	2.40				
	26	0930	1010	0940	N10	W08	4976	40 D	16		5.00					
	26	0937 E	0958		N09	W08	4976	21 D	1		4.00	2.40				
	26	0948	1003		N09	W44	4973	15	1		3.00					
	26	0950	1005	0953	N10	W43	4973	15	1		2.00					
	26	1045 E	1120 D		N13	W58	4969	35 D	2	1100	10.00					
	26	1400 E	1420		N12	W48	4973	20 D	1	1400	2.00					
{ SCHAUTINS	26	1413	1427		N09	W47	4973	14	1		3.00		2.90	S-SWF		
	26	1435	1444 D	1438	N07	W58	4973	9 D	1-	1438	.64	1.26				
	26	1451	1458	1455	N07	W58	4973	7	1-	1455	.70	1.38				
	26	1525	1537	1527	N08	W58	4973	12	1-	1527	1.04	2.09				
	26	1542	1557	1545	N08	W58	4973	15	1	1545	1.22	2.49				
	26	1714	1724 D		N15	W47	4973	10 D	1-	1720	.64	1.03				
	27	0915 E	0917		N03	E35	4982	2 D	1-		1.00	3.30				
	27	0930	1018		N10	W20	4976	48 D	2-	0930	6.00					
	27	0934 E	1000		N18	W21	4976	26 D	16		5.00	3.50				
	27	0957	1015	1006	N02	E42	4982	18	1		2.00					
{ SCHAUTINS	27	1057	1114	1103	N03	E34	4982	17	1		1.00					
	27	1133 E	1138 D		N06	W57	4973	5 D	1		3.00	2.10				
	27	1221 E	1237 D		N16	E47	4983	16 D	1		3.00	1.80				
	27	1316	1336	1320	N13	W22	4976	20	1		2.00					
	27	1317 E	1331		N14	W33	4976	14 D	1-		2.00	2.30				
	27	1324	1403	1336	N03	E41	4982	39	16		5.00					
	27	1329 E	1400		N03	E42	4982	31 D	16		5.00	3.00				
	27	1358	1510	1410	N06	W60	4973	72	26		14.00					
	27	1404	1500	1430	N08	W57	4973	56 D	26		9.00	7.00				
	27	1408	1420	1411	N03	E33	4982	12	1		2.00					
{ SCHAUTINS	27	1413 E	1419		N00	E37	4982	6 D	1-		1.00	2.30				
	28	1045	1058		N04	E24	4982	13	1-	1050						
	28	1100	1105		S09	W07	4987	5	1-	1100						
	28	1111	1125		N03	E23	4982	14	1	1115						
	28	1500	1515		N22	E37	4983	15	1-	1505	1.00					
	28	1521	1532 D	1526	N13	W36	4976	11 D	16		3.00					
	28	1526	1532 D		S10	W09	4987	6 D	1	1530	1.00					
	29	0930 E	0950		N23	E90	4992	20 D								
	29	0945	1000	0950	N09	W85	4973	15			1.00					
	29	1441 E	1500		N02	E10	4982	19 D	16		5.00	3.20				
{ SCHAUTINS	30	1323	1355	1329	N24	E55	4992	32	16		4.00					
	30	1327 E	1350		N22	E56	4992	23 D	16		5.00	2.90				
	31	0820 E	0840		S10	W45	4987	20		0820						
{ SCHAUTINS	31	0840	0910		N17	W80	4976	30	1	0900						
	31	0915 E	0928 D		N10	W85	4976	13 D	1-			1.60				
	31	1010	1020		N20	W78	4976	10	1	1015						
LOCARNO	31	1010	1040		N11	E53	4992	30	1	1020						

SOLAR FLARES

JANUARY 1959

OBSERVATORY	DATE	OBSERVED		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX.	MAX. PHASE				TIME — UT	MEAS. AREA Sq. Deg.	COBB. AREA Sq. Deg.	MAX. WIDTH He	MAX. INT. %
{ OTTAWA LOCARNO SCHAUTINS { LOCARNO { OTTAWA SCHAUTINS	JAN 1959	31 1340	1412	N20 E52	4992	32	1	3	1343	1.97	3.77		
		31 1340	1415	N20 E57	4992	35	1	2	1350				
		31 1348 E	1525 D	N19 E56	4992	97 D	1	2			4.00	1.80	
		31 1440	1520	N18 W06	4983	40	2	2	1500				
		31 1442	1521 D	N21 W04	4983	39 D	1	3	1447	2.61	2.95		
		31 1453 E	1509 D	N18 W06	4983	16 D	1	2			5.00	1.60	

These flares are addenda to the January 1959 flares published in CRPL-F 174B, February 1959 and CRPL-F 176B April 1959.

CAPRI C ANACAPRI - GERMAN MOSCOW - CAISH
CAPRI S ANACAPRI - SWEDISH MOSCOW-C
COOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE R O EDIN
KIEV* KIEV UNIVERSITY R O HERST
KODAIKANAL KODAIKANAL SAC PEAK GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
KRASNAYA KRAVNAYA PAKHRA SCHAUTINS SCHAUTINSLAND
NIZMIR NIZMIR USNRL UNITED STATES NAVAL RESEARCH LABORATORY

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

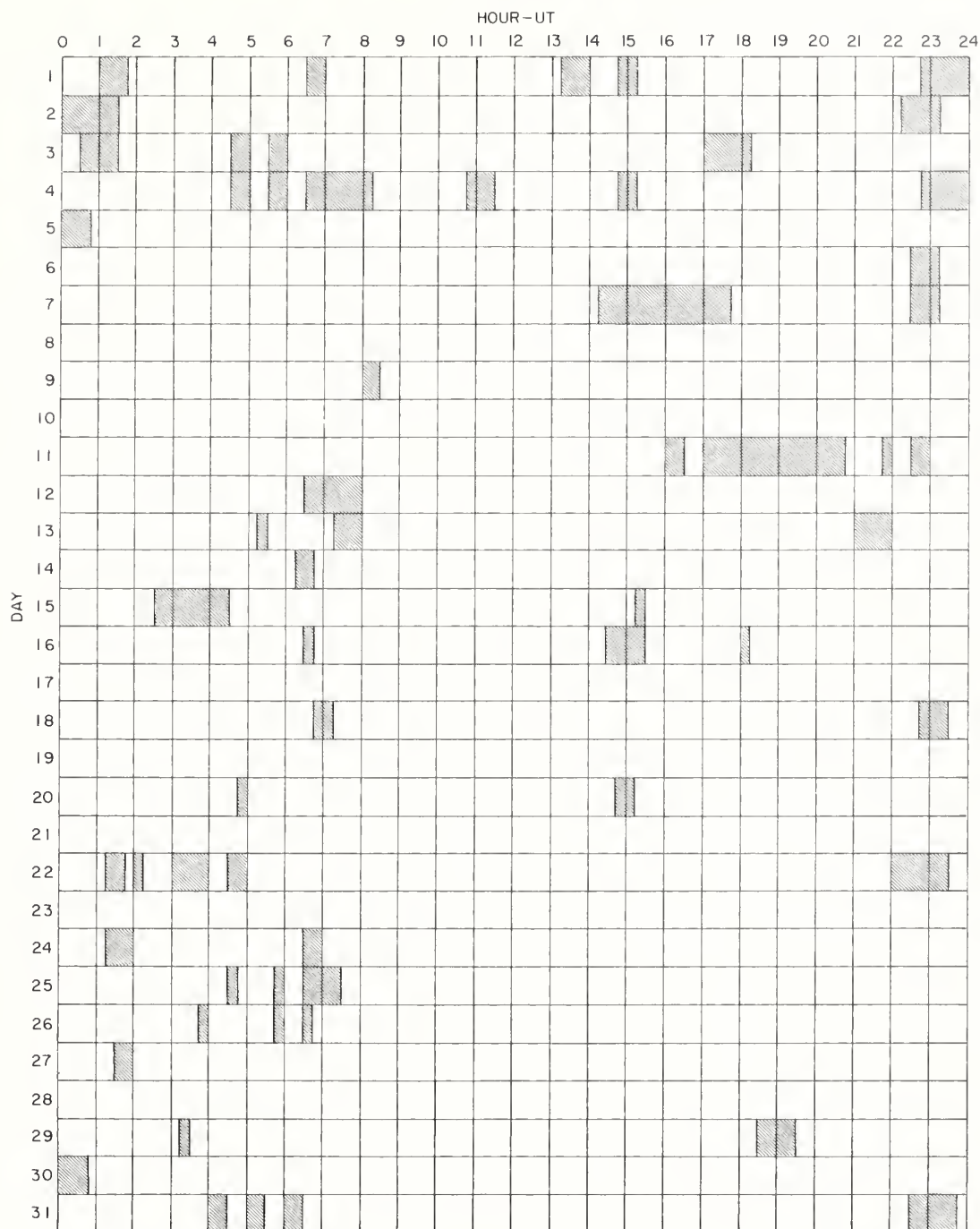
COMMERCE - STANDARDS - BOULDER

Errata: In CRPL-176B, April 1959, page IIIm, the McMath plage region should be 4962 for the flare reported by Uccle January 11 at 1100 UT.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

IIIr

JANUARY 1959



Stations Include:

COMMERCE - STANDARD - BOULDER

Abastumani
Alma Ata
Anacapri (Swedish)
Arcetri
Arosa
Capetown
Climax
Dunsink
Hawaii

Huancayo
Kharkov
Kiev GAO
Kiev University
Kodaikanal
Krasnaya Pakhra
Locarno
Lockheed
Meudon

Mitaka
Moscow University
Nederhorst
Nizamiah
Ondrejov
Ottawa
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak

Simeiz
Sydney
Tashkent
Uccle
U.S. Naval Research
Laboratory
Utrecht
Voroshilov
Zürich.

SOLAR FLARES

FEBRUARY 1959

OBSERVATORY	DATE	OBSERVED		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	APPROX. LONG. DIST.				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _o	MAX. INT. %
SYDNEY	01	0352	0458	N12 E83	4997	66	3	2	0423	7.00			
GOOD HOPE	01	1056	1105	N10 E75	4997	9	1		1058	.80	3.30		
GOOD HOPE	01	1155 E	1233	N23 W17	4983	38 D	2		1202	5.10	5.90		
LOCKHEED	01	1955	2105	N28 W75	4979	70	1	1		5.00			
LOCKHEED	01	2024	2132	N12 E76	4997	68	1	1		2.50			
SYDNEY	01	2320	2329	N13 E72	4997	9	2	2	2324	1.50	5.00		
SYDNEY	02	0034	0130	S10 W61	4987	56	1	2	0045	2.00	4.00		
SYDNEY	02	0232	0315 D	N20 W22	4983	43 D	2	2	0252	6.00	7.00		
SYDNEY	02	0543	0549	N13 E69	4997	6	1	2	0545	.75	2.00		
{ GOOD HOPE	02	1020	1225	N22 W28	4983	125	26	2	1038	7.20	9.30		
{ SCHAUNS	02	1155 E		N18 W30	4983		2	1			8.00		
{ GOOD HOPE	02	1257	1321 D	N16 E68	4997	24 D	2		1308	2.40	7.00		
{ USNRL	02	1300 E	1324	N18 E67	4997	24 D	1		1308	1.02	2.76	1.58	48
{ LOCKHEED	02	1815	2019 D	N12 E60	4997	124 D	26	2	1821	3.85	8.06	4.66	141
{ USNRL	02	1902 E	2010 D	N10 E58	4997	68 D	1	2	1910	4.20			
{ LOCKHEED	02	1907	2019 D	N08 E63	4997	70 D	16	2	1912	1.65	2.92	4.05	123
{ LOCKHEED	02	1911	2005	N15 E09	4992	54	1	2		2.70			
SYDNEY	03	0040	0107	N12 E08	4992	27	2	2	0044	7.00	8.00		
SYDNEY	03	0231	0259	N13 E59	4997	28	1	2	0242	2.00	4.00		
ABASTUMANI	03	0721 E	0727 D	S30 E30	4995	6 D	1	1	0724		2.80		
{ CAPRI-G	03	0820 E	0827	N20 E14	4992	7 D	1	1	0821		3.00		
{ CAPRI-G	03	0850 E	0910 D	N18 W00	4992	20 D	1	1	0851		5.00		
{ SCHAUNS	03	0850 E	0920 D	N15 W00	4992	30 D	1	2			5.00	1.90	
{ SCHAUNS	03	1023 E	1053 D	N15 W01	4992	30 D	1	2			4.00	1.70	
{ CAPRI-G	03	1137 E	1202 D	N14 E48	4997	25 D	2	1	1148	4.30	8.00		
{ GOOD HOPE	03	1137	1215	N15 E51	4997	38	2	2	1140		7.60		
{ SCHAUNS	03	1156 E	1210 D	N11 E50	4997	14 D	1	2			4.00	1.70	
GOOD HOPE	03	1225	1245	N25 W39	4983	20	1	1	1233	1.50	2.20		
USNRL	03	1942 E	2005 D	N17 W06	4992	23 D	1	1	1949	1.70	1.86	1.98	60
CAPRI-G	04	1228 E	1232 D	N25 W20	4992	4 D	1	1	1230		3.00		
CAPRI-G	04	1453 E	1545 D	N20 W53	4983	52 D	2	1	1458		7.00		
SYDNEY	05	0228	0256	N10 E21	4997	28	1	2	0237	2.00	2.00		
SYDNEY	05	0316	0322	S15 W46	4993	6	1	2	0318	.75	1.00		
GOOD HOPE	05	0834	0855	N24 E85	5003	21	1		0845	1.00			
GOOD HOPE	05	0855	0920	N20 W26	4992	25	1		0902	2.00	2.50		
{ SYDNEY	06	0015	0031	N28 E65	5003	16	2	2	0021	2.00	6.00		
{ SYDNEY	06	0026	0106	N18 E67	5003	40	1	1	0041	1.00	3.00		
SYDNEY	06	0323	0413	N13 W34	4992	50	1	2	0335	2.00	3.00		
SYDNEY	06	0343	0352	N16 W84	4986	9	1	2	0347	.50	3.00		
CAPRI-G	06	0854 E	0907 D	N14 E11	4997	13 D	1	2	0900		3.00		
{ USNRL	06	1444 E	1620	N18 E10	4997	106 D	16	1	1453	4.18	4.67	2.61	79
{ CAPRI-G	06	1458 E	1532 D	N17 E11	4997	34 D	2	1	1507		7.00		
USNRL	06	1741	1756	N26 E90	5006	15	2	3	1742	.17		.89	27
SYDNEY	07	0241	0325	N04 W50	4994	44	1	2	0249	3.00	4.00		
{ CAPRI-G	07	1014 E	1027 D	N17 E39	5003	13 D	1	3	1016		3.00		
{ LOCARNO	07	1015 E	1030	N18 E41	5003	15 D	1	2	1015		1.00		
CAPRI-G	07	1138 E	1152 D	N18 E41	5003	14 D	1	3	1140		3.00		

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OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT		
		START	END	MAX. PHASE	APPROX.					MATH- PLACE REGION	TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Ha	MAX. INT. %
					LAT.	MER. DIST.										
{ SCHAUTINS CAPRI-G CAPRI-G	07 FEB 1959	1212	1229		N20 W49	4992	17	1	2			4.00	1.80			
	07	1224 E	1242 D		N22 W43	4992	18 D	1	3	1225		3.00				
	07	1228	1242 D		N13 W53	4992	14 D	1	3	1229		2.00				
SYDNEY GOOD HOPE LOCARNO	08	0309	0340 D	0332	N14 W13	4997	31 D	2	2	0332	7.00	8.00			S-SWF	
	08	1343	1350 D		N10 E90	5009	7 D	1	2	1348	.60					
	08	1420 E	1440		N25 E66	5008	20 D	16.	2	1420		5.00				
VOROSHILOV VOROSHILOV	09	0058 E	0246	0157	N13 E90	5009	108 D	2	2	0157				104	S-SWF	
	09	0233	0257	0239	N31 E20	5003	24 1	1	2	0239		2.36		70		
	09	0810 E	1013 D	0953 U	N08 E90	5009	123 D	3	1	0953				160		
{ GOOD HOPE KRASNYA LOCARNO	09	0813	0850	0831	N08 E90	5009	37 1	1	1	0831	1.20					
	09	0930 E	1017	0951	N05 E90	5009	47 D	26	2	0951		17.00		140	S-SWF	
	09	0930 E	1100 D		N09 E90	5009	90 D	26	2	1000						
SCHAUTINS GOOD HOPE	09	0940 E	1015	0955	N07 E85	5009	35 D	3	2	0955	2.60					
	09	0943	1019		N08 E90	5009	36 2	2	3							
	09	1000 E	1135 D		N07 E88	5009	95 D	2	3							
{ GOOD HOPE LOCARNO	09	1230	1312 D		N08 E90	5009	42 D	1	3	1310	1.60					
	09	1230 E	1420 D		N09 E90	5009	110 D	26	2	1230						
	09	1337 E	1441 D		N07 E86	5009	64 D	2	3			2.00			G-SWF	
ZURICH ZURICH	09	1421 E	1440 D	1430	N20 E09	5003	19 D	1	3	1430	4.00				S-SWF	
	09	1641 E	1720		N06 E80	5009	39 D	1	2	1659	2.20					
	09	2325	0055	2329	N21 E05	5003	90 1	1	2					100	S-SWF	
VOROSHILOV KODAIKNI	10	0001	0023	0004	N12 E82	5009	22 2	2	2	0004		10.61	2.00		S-SWF	
	10	0354 E	0358 D		N09 E75	5009	4 D	1	2	0354						
	10	0649	0702	0654	N11 E80	5009	13 1	1	2	0654	1.00	5.80				
{ LOCARNO GOOD HOPE	10	0800 E	0855		N08 E74	5009	55 D	26	2	0800		14.00				
	10	0815	0825 D		N11 E80	5009	10 D	1	2	0825	1.30	7.50				
	10	1017	1055		N07 E68	5009	38 16	16	2	1020		6.00				
CAPRI-G ZURICH	10	1140 E	1147 D		N08 E71	5009	7 D	1	1	1141		3.00				
	10	1240 E	1335 D		N05 E66	5009	55 D	2	3	1210		10.00				
	10	1435	1520	1450	N11 E69	5009	45 D	2	2			8.00				
VOROSHILOV TASHKENT	10	2319 E	2328		N06 E59	5009	19 D	1	2	2322		2.49		66		
	11	0605	0710 D	0623	N06 E59	5009	65 D	16	2	0623		7.00	3.20	100		
	11	0625 E	0650 D	0627	N07 E58	5009	25 D	2	2	0625	2.90	7.80	2.50	167		
{ GOOD HOPE TIME12	11	0640 E	0650		N07 E60	5009	10 D	16	2	0641	2.50	5.00				
	11	0719 E	0805 D		N07 E60	5009	46 D	1	2	0821		4.00	3.30	100		
	11	0915	0935	0922	N04 E57	5009	20 1	1	2			1.00				
{ CAPRI-G MOSCOW-G	11	1032 E	1050		N07 E57	5009	18 D	16	3	1038		5.00				
	11	1035 E	1047 D		N06 E60	5009	12 D	1	2	1041		4.36	2.43	150		
	11	1035 E	1050		N04 E56	5009	15 D	1	3	1040		1.00				
SCHAUTINS CAPRI-G	11	1037 E	1045		N06 E57	5009	8 D	1	2			3.00	3.60			
	11	1045 E	1102 D		N21 W09	5003	17 D	1	3	1055		3.00				
	11	1120 E	1127 D		N14 E90	5016	7 D	1	3	1122						
CAPRI-G CAPRI-G	11	1232 E	1242 D		N24 W18	5003	10 D	1	3	1240		4.00				
	11	1407	1414		N10 E54	5009	7 1	1	2	1410		1.00				
	11	1416 E	1422 D		N21 W14	5003	6 D	1	3	1419	.56	2.00				
CAPRI-G USNRL	11	1602	1624	1609	N10 E55	5009	22 1	1	2	1609		1.05	2.14	64		
	11	2051	2107 D	2056	N11 E62	5009	16 D	1	1	2056	1.02	2.34	1.72	52		
	12	0302	0311 D	0305	N09 E55	5009	9 D	1	2	0305	2.00	4.00				
SYDNEY																

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		START	END	LAT.	APPROX. MER. DIST.				MEAS. AREA Sq. Deg.	CORR. Sq. Deg.	MAX. WIDTH H _g	MAX. INT. %
{ LOCARNO SIMEIZ LOCARNO MOSCOW-G CAPRI-G CAPRI-G CAPRI-G LOCARNO CAPRI-G CAPRI-G CAPRI-G CAPRI-G	12	0730 E	0816	N06 E52	5009	46 D	16	2	0730	4.00	3.20	76
	12	0732 E	0815	N13 E56	5009	43 D	16	2	0746	8.00		
	12	1105	1120	N16 E70	5011	15	16	2	1110	2.00		
	12	1108	1115	N20 E80	5011	7	1	2	1138	3.82	2.34	200
	12	1109	1116	N09 E50	5009	7	1	3	1113	3.00		
	12	1109	1137 D	N08 E78	5013	38 D	1	3	1113	4.00		
	12	1115	1137 D	N30 W15	5003	22 D	1	3	1117	2.00		
	12	1121	1145	N08 E48	5009	24	1	2	1130	1.50		
	12	1232 E	1315 D	N23 W29	5003	43 D	1	3	1236	5.00		
	12	1442	1510	N19 E26	5008	28	1	2	1445	1.00		
	12	1444 E	1502 D	N27 E32	5008	18 D	1	3	1445	2.00		
	12	1509	1522 D	N20 W30	5003	13	1	2	1516	1.00	1.40	42
{ LOCARNO SYDNEY USNRL SYDNEY SYDNEY VOROSHILOV	12	1514 E	1522 D	N22 W29	5003	8 D	1	2	1516	1.24		
	12	1656	1732	N10 W65	4997	36	1	1	1701	1.00		
	12	2209 E	2226 D	N02 E85	5009	17 D	36	2	2209	22.00		
	12	2301 E	0112	N12 E48	5009	131 D	26	2	2325	35.00		
	12	2359 E	0115	N13 E48	5009	76 D	26	2	0000	23.59		
	13	0329	0340	N10 E80	5016	11	1	1	0332	.25		
	13	0612 E	0739 D	N06 E38	5009	87 D	2	1	0627	12.40	2.30	
	13	0646 E	0800 D	N09 E38	5009	74 D	1	1	0710	4.50	2.60	80
	13	0700 E	0855 D	N08 E40	5009	115 D	2	2	0700	5.00		
	13	1035 E	1110 D	N08 E37	5009	35 D	1	2		3.00	1.70	
	13	1128 E	1139 D	N22 W41	5003	11 D	1	3	1130	4.00		
	13	1402	1417	N13 E72	5013	15	16	2		2.00		
{ LOCARNO CAPRI-G SCHAUINS SYDNEY VOROSHILOV	13	1405 E	1413 D	N16 E72	5013	8 D	1	3	1407	4.00		
	13	1408 E	1420	N13 E67	5013	12 D	1	1		2.00	1.80	
	13	2342	0002	N24 E52	5011	20	2	2	2347	3.00		72
	13	2344	2356	N21 E55	5011	12	1	2	2346	3.29		
	14	1132 E	1207 D	N08 E26	5009	35 D	1	3	1148	3.00		
	14	1140	1310	N11 E27	5009	90	16	4	1140			
	14	1228 E	1257 D	N18 E90	5018	29 D	1	3	1231			
	14	1248 E	1320 D	N13 E25	5009	32 D	1	3	1250	4.00		
	14	1452	1500	N24 W66	5003	8	1	3	1452	1.00		
	14	1452	1507 D	N11 E26	5009	15 D	1	3	1454	2.00		
	14	1452	1516	N10 E19	5009	24	1	3	1455	1.00		
	15	1317 E	1342 D	N16 E82	5018	25 D	1	3	1318	3.00		
{ CAPRI-G CAPRI-G CAPRI-G CAPRI-G CAPRI-G CAPRI-G SYDNEY SYDNEY GOOD HOPE CAPRI-G CAPRI-G CAPRI-G	15	1334 E	1342 D	N20 E74	5018	8 D	1	3	1335	2.00		
	15	1334 E	1342 D	N13 E52	5013	8 D	16	3	1335	6.00		
	15	1437 E	1457 D	N13 E53	5016	10 D	1	3	1438	3.00		
	15	1437 E	1530 D	N16 E90	5018	53 D	1	3	1438			
	15	1544 E	1612 D	N19 E75	5018	28 D	1	1	1550	4.00		
	15	2230 E	2251	N16 E68	5018	21 D	1	2	2230	3.00		
	15	2332	2345	N14 E68	5018	13	1	2	2341	1.00		
	15	2332	2345	N14 E68	5018	13	1	2	2341	.75		
	16	0010	0015	N17 E67	5018	5	1	1	0011	1.50		
	16	0839	1015	N10 E39	5013	96	1	3	0853	2.10		
	16	0839 E	1040 D	N09 E37	5013	121 D	2	3	0905	2.80		
	16	1131 E	1222 D	N08 W03	5009	51 D	1	2	1134	7.00		
	16	1205	1220	N07 W07	5009	15	1	2	1208	3.00		
	16	1305 E	1309 D	N07 W05	5009	4 D	1	1	1306	2.20		

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		START	END	APPROX. LAT.	APPROX. MER. DIST.				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _g	MAX. INT. %
{ GOOD HOPE CAPRI-G	16 1243	1337 D		N19 E26	5013	54 D	1		1315	2.30	2.70		
	16 1305 E	1315 D		N10 E25	5013	10 D	1	1	1307		5.00		
{ GOOD HOPE TASHKENT	17 0639	0704	0644	N21 E51	5018	25	1		0644	2.70	4.70	3.60	80
	17 0641	0655	0644	N20 E50	5018	14	1	2	0645		6.00		
{ GOOD HOPE GOOD HOPE	17 0715	0725	0717	N19 E51	5018	10	1		0717	1.30	2.30		
	17 0852	0905	0854	N12 E68	5018	13	2		0854	2.70	7.90		62
{ KRASNYA SCHAUINS	17 0856 E	0859		N12 E65	5018	6 D	1	2	0856		4.90		
	17 0920 E	0936		N13 E45	5018	16 D	1	2			3.00	1.50	
{ CAPRI-G ZURICH	17 1001	1011		N15 E44	5018	10	1	2	1002		2.00		
	17 1002	1014		N13 E45	5018	12	1	3	1002		2.00		
{ GOOD HOPE SCHAUINS	17 1023	1055	1043	N16 E48	5018	32	1		1043	1.70	2.70		
	17 1025	1055		N13 E45	5018	30	16	2			3.00	2.10	
{ SCHAUINS SCHAUINS	17 1500 E	1525 D		S17 E53	5017	25 D	1	2			2.00	1.80	
	17 1456 E	1522 D		N17 E45	5018	26 D	16	2			2.00	2.80	
{ ZURICH CAPRI-G	17 1505 E	1511		N19 E44	5018	6 D	1	3	1505		3.00		
	17 1547 E	1557 D		N20 E44	5018	10 D	1	1	1550		3.00		
{ GOOD HOPE KIEV*	18 0945	1023	0953	N21 E35	5018	38	1		0953	2.10	2.80		
	18 0957 E	1010 D		N20 E36	5018	13 D	16	2			6.80		
{ SCHAUINS CAPRI-G	18 0959 E	1017		N19 E32	5018	18 D	1	2			2.00	2.70	
	18 1005 E	1034		N21 E33	5018	29 D	1	2	1007		3.00		
{ GOOD HOPE CAPRI-G	18 1037	1125	1053	N18 E31	5018	48	2		1053	4.10	5.20		
	18 1044	1110	1051	N16 E30	5018	26	2	2	1051		7.00		83
{ KIEV KIEV*	18 1049	1105	1052	N15 E33	5018	16	16	2	1051		3.35		
	18 1051	1104	1055	N16 E31	5018	13	16	2			10.90		
{ SCHAUINS CAPRI-G	18 1056 E	1108		N15 E31	5018	12 D	2	2			6.00	2.60	
	18 1111	1121		N19 E36	5018	10	1	2	1111		3.00		
{ CAPRI-G CAPRI-G	18 1120 E	1152 D		N07 W30	5009	32 D	1	2	1121		3.00		
	19 1005	1016		N14 E02	5016	11	1	3	1007		3.00		
{ ZURICH CAPRI-G	19 1009 E	1014		N15 E02	5016	5 D	1	3	1009		1.00		
	19 0813 E	0855 D		N18 E32	5018	42 D	1	3	0814		5.00		
{ CAPRI-G ZURICH	19 0928 E	1002 D		N21 E21	5018	34 D	16	3	0932		6.00		
	19 1009 E	1017		N22 E24	5018	8 D	1	3	1009		2.00		
{ CAPRI-G LOCARNO	19 1146 E	1203 D		N18 E24	5018	17 D	1	2	1158		2.00		
	19 1150 E	1209		N20 E23	5018	19 D	1	3	1150		2.00		
{ ZURICH CAPRI-G	19 1236 E	1245 D		N22 E25	5018	9 D	1	2	1236		1.00		
	19 1416 E	1440 D		N19 E24	5018	24 D	1	3	1419		3.00		
{ ZURICH CAPRI-G	19 1423 E	1440 D		N19 E21	5018	17 D	1	3	1423		2.00		
	19 1501 E	1532 D		N18 E24	5018	31 D	1	2	1503		3.00		
{ CAPRI-G USNRL	19 1948	2001	1956	N21 E12	5015			2	1956				
	19 2028	2138 D		N10 W09	5013	70 D	26	1	2039	7.57	7.90	3.30	100
{ USNRL STONEY	19 2231 E	2244	2237	N06 W13	5013	13 D	2	2	2237	6.00	7.00		Slow S-SWF
	20 1218 E	1233 D		N13 W23	5016	15 D	1	3	1218		3.00		
{ CAPRI-G ZURICH	20 1320 E	1325		N06 W14	5016	5 D	1	3	1320		2.00		
	20 1334	1339		N10 W25	5016	5	1	3	1334		1.00		
{ CAPRI-G LOCARNO	20 1404 E	1602 D	1525	N25 W24	5011	118 D	1	1	1525		4.00		
	20 1432	1450		N16 E50	5023	18	16	3	1440		2.00		
{ ZURICH CAPRI-G	20 1435	1446		N19 E50	5023	11	1	3	1435		2.00		
	20 1441 E	1602 D		N19 E50	5023	81 D	1	2	1447		5.00		
{ CAPRI-G VOROSHILOV	20 2348	2357	2351	S36 W56	5020	9	1	3	2351		2.52		70

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		START	END	APPROX. LAT.	APPROX. LONG. DIST.				TIME — UT	MEAS. AREA Sq. Deg.	CORR. Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %
CAPRI-G	21	0817 E	0840 D	N25 W32	5011	23 D	1	3	0818		2.00		
	21	0900 E	0940 D	S31 E60	5027	40 D	1	3	0900		3.00		
	21	0945 E	1001	N27 W34	5015	16 D	1	4	0945		2.00		
	21	1005 E	1045 D	N07 W73	5009	40 D	1	3	1014		6.00		
	21	1128 E	1209	N24 W02	5018	41 D	1	3	1135		2.00		
	21	1118	1220	N29 W37	5011	62	1	3	1208	2.50	3.20		
	21	1128 E	1227 D	N26 W33	5011	59 D	1	3	1135		4.00		
	21	1441 E	1505 D	N05 W74	5009	24 D	1	2	1442		2.00		
	21	1549	1624	N28 W39	5011	35	1	2	1559	.90	1.44	2.53	77
	22	0757	0822	N29 W49	5011	25	2		0804	2.90	5.50		
GOOD HOPE	22	1037	1051 D	N23 W17	5018	14 D	1		1051	2.60	3.10		
	22	1045	1113	N22 W18	5018	28	16	3			4.00		
	22	1050 E	1102 D	N21 W18	5018	12 D	16		1052		6.00		
	22	1241 E	1302 D	N29 W06	5018	21 D	1	3	1245		3.00		
	22	1241 E	1302 D	N20 W18	5018	21 D	1	3	1245		3.00		
	22	1402 E	1407 D	N26 W53	5011	5 D	1	3	1403		3.00		
	22	1534 E	1552 D	N19 W19	5018	18 D	1	2	1535		2.00		
	23	0858	0909	N08 E70	5029	11	1	2	0902		3.06		60
	23	0901	0921	N21 W32	5018	20	1	2	0902		1.09		80
	23	0902	0916	N22 W29	5018	14	1			2.20			
KASNYA	23	0902	0925 D	N20 W31	5018	23 D	1	2	0902		1.00		
	23	0902	0930	N20 W31	5018	28	1	1	0909		2.70	1.60	76
	23	0903 E	0925	N19 W26	5018	22 D	1	2		1.10		2.20	
	23	0939	1005	N13 W90	5009	26	1		0946		11.40		66
	23	0943	1001	N11 W90	5009	18	16	2	0945		2.00		
	23	0958 E	1004 D	N19 E06	5023	6 D	1	2	0958		3.00		
	23	1004 E	1007 D	N19 E06	5023	3 D	1	1	1005		4.70		
	23	1122	1150	N31 W70	5012	28	1	2	1127	1.30			
	23	1414 E	1429 D	S31 E31	5027	15 D	1	2	1414		1.00		
	23	1437 E	1442 D	S32 E39	5027	5 D	1	3	1440		2.00		
CAPRI-G	23	1515 E	1530	N17 E17	5023	15 D	1	2	1517		3.00		
	23	1552 E	1602 D	N17 E17	5023	10 D	1	2	1555		3.00		
	23	1524 E	1531 D	N18 E59	5029	7 D	1	2	1524		1.00		
	24	0908 E	0935 D	S31 E21	5027	27 D	1	3	0912		3.00		
	24	1047 E	1050	N19 E05	5023	3 D	1	3	1047		1.00		
	24	1057 E	1112 D	N22 W41	5018	15 D	1	3	1100		2.00		
	24	1057 E	1137 D	S32 E25	5027	40 D	1	3	1100		3.00		
	24	1246 E	1302 D	N28 W30	5018	16 D	1	3	1248		3.00		
	24	1336 E	1345 D	N28 W72	5016	9 D	1	3	1337		2.00		
	24	1437 E	1450 D	N12 W28	5018	13 D	1	3	1450		3.00		
SYDNEY	25	0240	0244 D	N11 W38	5018	4 D	1	2	0244	3.00	4.00		
	25	0243	0303	N10 W44	5018	20	1	2	0245		2.33		
	25	0824 E	0855 D	S31 E06	5027	31 D	1	3	0826		4.00		
	25	0931	1000 D	N17 W90	5016	20 D	1	3					
	25	0931	0942 D	S30 E06	5027	29 D	1	3	0935		2.00		
	25	0933	0942 D	N19 W16	5023	9 D	1	3	0935		3.00		
	25	1050	1130	N19 W16	5023	40	1	3	1050		.50		
	25	1125	1145	S31 E05	5027	20	1	3	1130		1.00		
	25	1132 E	1145	S30 E05	5027	13 D	1	3	1135		2.00		
	25	1132 E	1145	S30 E05	5027	13 D	1	3					

SOLAR FLARES

FEBRUARY 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	M- PLAGE MER. DIST.	M- PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z		MAX. INT. %
{ CAPRI-G CAPRI-G CAPRI-G ZURICH CAPRI-G USNRL SCHAUNTS CAPRI-G LOCKHEED LOCKHEED SYDNEY VOROSHILOV { SYDNEY VOROSHILOV VOROSHILOV SYDNEY SIMEIZ SCHAUNTS KIEV SIMEIZ KIEV* ZURICH CAPRI-G KIEV CAPRI-G CAPRI-G ZURICH LOCARNO CAPRI-G LOCKHEED USNRL { ALMA-ATA ALMA-ATA SIMEIZ LOCARNO SIMEIZ SCHAUNTS GOOD HOPE AROSA CAPRI-G CAPRI-G CAPRI-G LOCARNO SIMEIZ CAPRI-G SCHAUNTS AROSA CAPRI-G CAPRI-G CAPRI-G CAPRI-G CAPRI-G CAPRI-G	25	1143 E	1147 D	N28 W45	5018	4 D	1	3	1144	3.00					
	25	1144 E	1147 D	S06 E58	5031	3 D	1	3	1144	2.00					
	25	1255 E	1610 D	N28 W44	5018	15 D	1	3	1258	4.00					
	25	1332 E	1344	N16 W55	5018	12 D	1	3	1332	4.00					
	25	1332 E	1415 D	N16 W49	5018	43 D	1	3	1335	4.00					
	25	1342 E	1422	N16 W60	5018	40 D	1	3	1358	1.24	2.14	61	2.00		
	25	1402 E	1415	N16 W58	5018	13 D	1	2		2.14	5.00		2.80		
	25	1545 E	1602 D	N18 W60	5018	17 D	1	2	1553	2.80	5.00				
	25	2159	2220	N26 E13	5026	21	1	3		2.40					
	25	2317	2341	N17 W53	5018	24	1	3	2322	2.00					
	25	2319	2347	N14 W51	5018	28	1	2	2323			68			
	25	2323 E	2343	N15 W55	5018	20 D	1	3			3.79				
	26	0155	0222	S05 E53	5031	27	1	2	0213	2.00	4.00				
	26	0159 E	0225	S13 E54	5031	26 D	1	3	0215		4.39	64			
	26	0315	0330	N18 W66	5018	15	16	3	0319		4.08	87			
	26	0316	0338 D	N22 W63	5018	22 D	2	2	0319	2.00	6.00				
	26	0725 E	0750 U	S32 W08	5027	25 D	1	1	0730		3.30	92			
	26	0944	0955	S04 E45	5031	11	1	2			4.00		3.40		
	26	0945	0952	S06 E48	5031	7	1	2	0945		2.67	66			
	26	0945 E	0953 D	S06 E49	5031	8 D	1	1	0946		2.00	60			
	26	0945 E	0956 D	S10 E45	5031	11 D	1	2			4.00				
	26	0946 E	0954 D	S06 E45	5031	8 D	1	3	0946		1.00				
	26	1043 E	1132 D	S10 E50	5031	49 D	1	2	1046		3.00		59		
	26	1053	1057	N23 W71	5018	4	1	2	1054		3.40				
	26	1055 E	1122	N22 W68	5018	27 D	1	2	1100		4.00				
26	1110	1150 D	N29 W54	5018	40 D	1	2	1113		3.00					
26	1222 E	1230	S10 E45	5031	8 D	1	3	1222		2.00					
26	1235 E	1248	S31 W11	5027	13 D	1	2	1235							
26	1428 E	1535 D	S10 E48	5031	67 D	1	2	1432	2.80	2.00					
26	1814	1901	N15 W66	5018	47	1	2		1.13	1.71	84	2.76			
26	2030	2045	N25 W37	5023	15	1	3	2033							
27	0548 E	0611 D	N23 W33	5023	23 D	1	2	0553		1.20	70				
27	0549 E	0604 D	N22 W35	5023	15 D	16	2	0554		1.00	84				
27	0657 E	0714 D	N24 W08	5026	17 D	1	2	0659		1.00	74				
27	0710 E	0730	N24 W10	5026			2	0710		2.40		1.80			
27	0740 E	0835	N25 W48	5023	55	2	2			7.00					
27	0740 E	0840	N23 W49	5023	60 D	1	2	0810		5.50	80	2.20			
27	0746	0829	N22 W45	5023	43	1	2			5.00		2.50			
27	0748 E	0830	N27 W48	5023	32 D	1	2	0754	1.50	2.60					
27	0750 E	0800 D	N25 W46	5023	10 D	2									
27	0750 E	0832 D	N23 W46	5023	42 D	16	3	0752		6.00					
27	0826 E	0832 D	S06 E34	5031	6 D	1	3	0828		4.00					
27	0826 E	0902 D	N24 W11	5026	36 D	1	2	0828		3.00					
27	0833	0847	N22 W10	5026	14	1	3			1.00					
27	0835	0847	N23 W12	5026	12	1	2	0839		1.80	116	2.20			
27	1033 E	1052 D	N24 W11	5026	19 D	1	3	1035		3.00		2.10			
27	1044 E	1051	N22 W10	5026	7 D	1	2			4.00					
27	1045 E	1100 D	N23 W11	5026	15 D	1	3			5.00					
27	1109 E	1220 D	N24 W80	5018	71 D	16	3	1110		3.00					
27	1218 E	1302 D	N23 W11	5026	44 D	1	3	1222		2.00					
27	1417 E	1522 D	N23 W11	5026	65 D	1	3	1419							

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

FEBRUARY 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.	MG-MATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _o	
ZURICH CAPRI-G { USNRL LOCKHEED USNRL USNRL	27	1440 E	1504 D	N21 W15	5026	24 D	1	3	1440	1.00	1.00			
	27	1603 E	1615 D	N23 W10	5026	12 D	16	2	1605	6.00	6.00			
	27	1840	1943	N17 E62	5035	63	1	1	1842	1.58	3.62			
	27	1858 E	1945	N16 E59	5035	47 D	1	2	1910	2.80	2.80			
	27	2026	2047	N16 E79	5035	21	1	1	2028	3.40	3.40			
	27	2026	2100 D	N22 W19	5026	34 D	1	1	2028	1.58	1.96			
CAPRI-G	28	0842 E	0903 D	N15 E23	5032	21 D	1	2	0900	4.00	4.00			
CAPRI-G	28	0900 E	0903 D			3 D	1	2						
CAPRI-G	28	0957 E	1032 D	N23 W19	5026	35 D	1	3	1015	4.00	4.00			
SCHAUINS	28	1004 E	1028 D	N20 W22	5026	24 D	16	1				2.40		
ZURICH	28	1014 E	1039	N21 W24	5026	25 D	1	3	1025	3.00	3.00			
LOCARNO	28	1025	1038	N22 W24	5026	13	1	2						
{	28	1037	1147	N18 E53	5035	70	1	2	1058	1.70	1.70			
LOCARNO	28	1043	1100 D	N16 E50	5035	17 D	1	2	1045	1.00	1.00			
AROSA	28	1050 E	1115 D	N16 E50	5035	25 D	1	2						
CAPRI-G	28	1050 E	1142 D	N17 E49	5035	52 D	16	3	1052	5.00	5.00			
{	28	1110 E	1135 D	N15 E51	5035	25 D	1	2				2.10		
SCHAUINS	28	1150 E	1205 D	N33 W90	5018	15 D	1	3						
CAPRI-G	28	1210 E	1225 D	N24 W80	5018	15 D	1	3	1212	3.00	3.00			
CAPRI-G	28	1134 E	1142 D	N26 W80	5018	8 D	1	3	1135	3.00	3.00			
CAPRI-G	28	1150 E	1240 D	N22 W24	5026	50 D	1	3	1152	3.00	3.00			
CAPRI-G	28	1420 E	1422 D	N23 W23	5026	2 D	1	2	1422	3.00	3.00			
CAPRI-G	28	1610 E	1620 D	N13 E55	5035	10 D	1	1	1615	4.00	4.00			

These flare reports are addenda to the February 1959
flares published in CRPL-F 175B, March 1959.

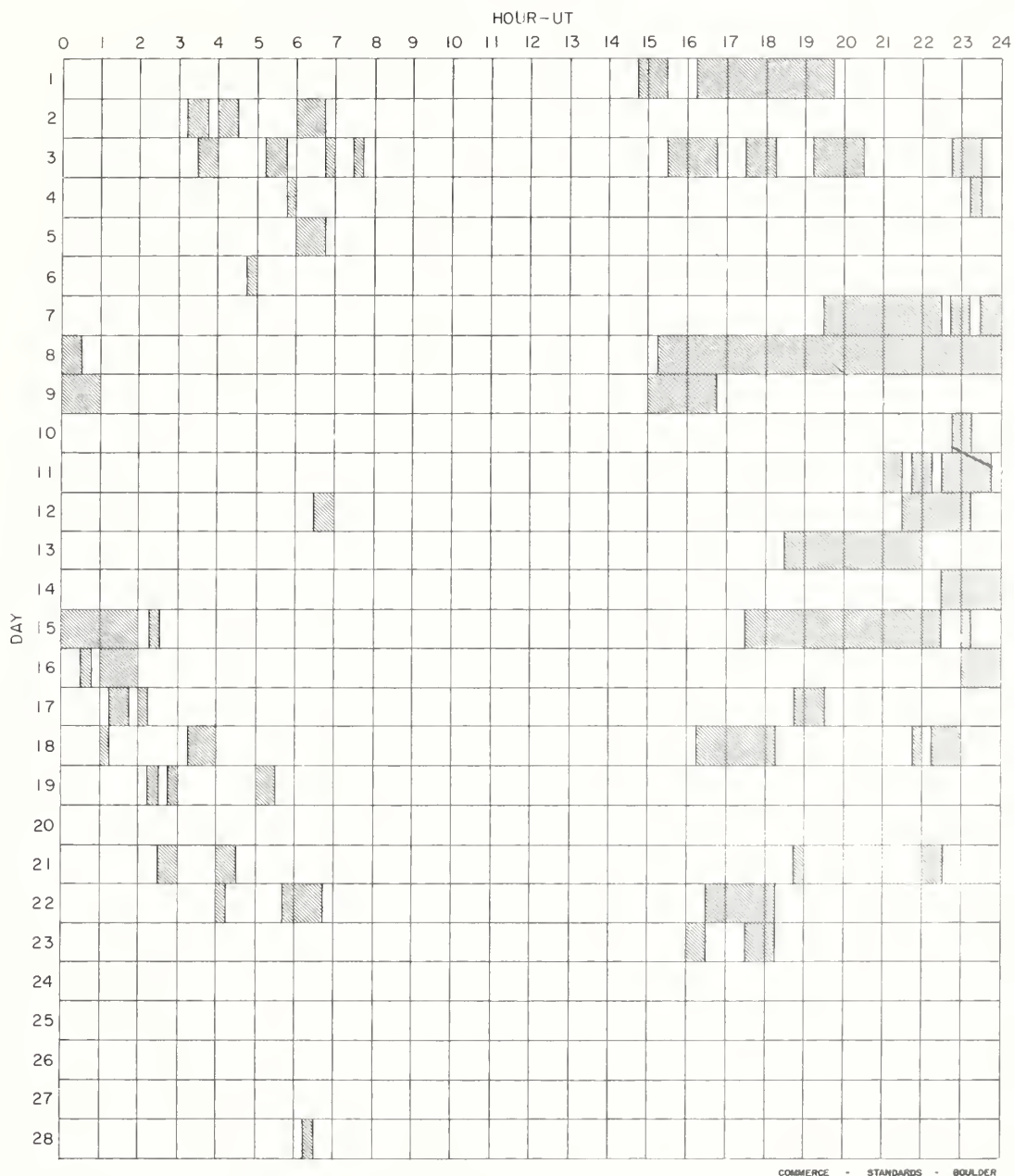
CAPRI G ANACAPRI - GERMAN
 CAPRI S ANACAPRI - SWEDISH
 GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
 KIEV* KIEV UNIVERSITY
 KODAIKANAL KODAIKANAL
 KRASNAYA KRASNAYA PAKHRA
 LOCKHEED LOS ANGELES
 MOSCOW MOSCOW
 MOSCOW-G MOSCOW
 R O EDIN ROYAL OBSERVATORY, EDINBURGH
 R O HERST GREENWICH ROYAL OBSERVATORY,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

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
 COMMERCE - STANDARDS - BOLGER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

IIIz

FEBRUARY 1959



Stations Include:

Abastumani
Alma Ata
Anacapri (Swedish)
Arcetri
Arosa
Capetown
Climax
Dunsink

Hawaii
Kiev GAO
Kiev University
Kodaikanal
Krasnaya Pakhra
Locarno
Lockheeu
Meudon

Mitaka
Moscow University
Nederhorst
Nizamiah
Ondrejov
Ottawa
Royal Greenwich Observatory
Herstmonceux

Sacramento Peak
Simeiz
Sydney
Tashkent
Uccle
U.S. Naval Research
Laboratory
Voroshilov
Zürich

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

OCTOBER 1958

DATE	CLASS			WIDESHEAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
1		1-		3	1219		1324		KU, NU
1		1-		1	1306		1318		NU
3		2		1	0615		0715		HO
{ 3	1			1	1530U	1546	1610		RE
{ 3		1		3	1535	1538	1621		ED, PU
{ 3	1			4	1815	1823	1845	10	BO, RE
{ 3		1+		5	1815	1823	1915		A5, A7, BO
{ 3	1			4	1928	1945	2000	25	BO, RE
{ 3		1		1	1933	2001	2033		BO
{ 4	1			1	1358	1402	1420U	30	RE
{ 4		2		5	1359	1410U	1453		A1, A5, ED, KU, NE, NU, PA, PU
{ 4	2			5	1756	1820	1845	44	BO, MC, RE
{ 4		2		5	1758	1808	1840		A1, A5, A7, BO, MC
5		2		5	1159	1206	1249		DU, ED, KU, NE, PA, PU
{ 6			1	4	1716		1718		BO, MC
{ 6	1			1	1717	1722	1750	15	BO
{ 6		1+		4	1717	1726	1755		A3, A7, BO
{ 6		2		4	1755	1815			A7, BO
{ 6	1+			4	1755	1808	1838	29	BO, RE
7		2		3	0920		0945		KU, NE, NU, PU
{ 7	1+			1	1652	1706	1740E	35	RE
{ 7		1-		1	1656	1704	1745		BO
9		2		3	1330		1445		KU, NE, NU
{ 10	1			3	1815	1820	1837	15	MC, RE
{ 10		1		3	1816	1825	1832		A1, A5, MC
11		1		1	0359		0425		HO
11		1		1	2240		2258		HO
12		1		1	1501		1521		NE
13		1		5	0616		0646		HO, KU, NU, PU
13		3		1	0904		0942		NU
13		2		5	1102	1107	1145		A3, DU, ED, KU, NE, NU, PU
13		1		3	1248		1313		NU, PU
13		1		5	1355		1419		A1, A5, KU, NE, NU, PU
{ 13	1+			4	1430	1439	1505	50	BO, RE
{ 13		2		5	1432		1515		A3, BO, KU, NE, NU, PU
{ 13			1	3	1634	1637	1638		BO, SP
{ 13	3			5	1640	1645	1715	70	BO, MC, RE, SP
{ 13		2		5	1641	1650	1715		A5, BO, ED, NE, SP
13			2	3	1729	1731	1734		BO, SP
{ 13	3			5	1920	1929	2020	72	BO, MC, RE, SP
{ 13		2+		5	1920	1940	2035		A3, A5, BO, NE, PA
{ 13	1+			3	2207	2219	2255	50	BO, SP
{ 13		1+		4	2208	2223	2320		BO, HO
14		2		3	0810		0848		KU, NE, PU
14		1		5	1133	1143	1225		DU, ED, KU, NE, NU, PU
15		2-		3	1026	1038	1105U		ED, KU, PU
15		2		3	1351		1412		KU, NE, NU, PU
{ 15		1		5	1450	1456	1539		A1, A5, BO, DU, ED, KU, NE, NU, PU
{ 15	1			4	1451	1456	1515	40	BO, RE
15		1		1	2114	2117	2142	17	BO
16		1-		1	0935		1000		KU
{ 16	1			4	1710	1724	1817	16	BO, RE
{ 16		1		1	1712	1730	1825		BO
17			1	4	1704		1706		BO, RE
{ 17		2		5	1710	1736			A3, A7, BO, MC
{ 17	1			5	1713	1729	1757	25	BO, MC, RE

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIb'

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

OCTOBER 1958

DATE	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME) MAX. END			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN				
19		3		4	0724	0726	0814		ED, KU, NE, NU, PU
{ 19	2			1	1306	1319	1333	50	RE
19		1+		5	1310	1315	1347		A1, A5, ED, KU, NE, NU, PA, PU
19		2		3	1758	1812	1828		A1, A3, A5
20		1		4	1107	1114	1150		ED, KU, NE, NU, PU
{ 20			1	3	1914		1915		BO, SP
20	2			5	1915	1920	1950	35	BO, RE, SP
20		2		5	1915		1940		A1, A3, A5, BO, PA
{ 21	1-			1	1418	1437	1445	5	BO
21		1		3	1419		1454		KU, NE, NU
{ 21		1+		5	1951	2002	2038		A1, A3, A5, BO, MC
21	1			5	1952	1955	2017	15	BO, MC, RE
{ 21	2			3	2327	2332	2425	30	BO, SP
21		2		5	2328	2340			BO, HO, SP
22		1		1	0653		0705		HO
22		1		5	0712		0800		HO, KU, NU, PU
{ 22	1			1	1425	1435	1440	25	RE
22		1		3	1425		1439		KU, NE, NU
{ 23			1	4	1723		1724		BO, RE
23		1		4	1727	1735	1837		A2, A5, BO
{ 23	1			5	1728	1729	1745	17	BO, MC, RE
{ 23	1-			1	1840	1843	1847	3	BO
23	1-			1	1847	1852	1905	3	BO
{ 23		1		3	1840	1845	1900U		A2, BO
24		1+		3	1035		1108		KU, NE, NU, PU
24		1-		3	1136		1144		KU, NU
24		2		1	1210		1227		PA
{ 24		2		5	1448	1503	1643		BO, DU, ED, KU, NE, NU, PU
24	1			1	1450	1503			BO
27		□		1	0925		0940		NU
27		1-		1	1350		1404		NU
28		1-		1	1334		1400		NU
{ 28	1-			1	1420	1445	1500	10	MC
28		1+		5	1430	1446	1500		MC, PA, NU
29		1		5	0706		0726		A3, KU
29		1+		3	0922		0947		KU, NU
29		□		1	1001		1025		NU
{ 29	1			1	2023	2043	2110		MC
29	2+			3	2023	2044	2208	35	MC, RE
31		1		3	0954		1029		KU, NE
31		1		5	1107		1139		KU, NE, NU, PA

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

NOVEMBER 1958

DATE	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
1		1		5	1037		1112		KU, <u>NE</u> , NU, PA
1		1-		3	1130		1138		<u>NU</u> , KU
1		1-		1	1444		1500		<u>NU</u>
{ 1	1-			3	1505	1525	1645	8	<u>BO</u> , MC
{ 1		1-		5	1507		1551		<u>BO</u> , <u>NE</u>
{ 1	2			5	1816	1824	1910	61	<u>BO</u> , HA, MC, RE
{ 1		2		5	1819	1837	1932		A3, A5, A6, <u>BO</u> , HA
2		1-		3	1330		1358		KU, <u>NE</u> , NU
3		1		3	1227		1249		KU, NU, <u>PU</u>
3		1-		3	1448		1456		DU, <u>NU</u>
{ 4	2			3	2003	2011	2055	48	<u>BO</u> , MC
{ 4		2+		5	2004	2017	2200		A1, A3, A5, A6, A7, <u>BO</u> , MC, PA
5		2+		5	1017	1022	1116		<u>ED</u> , KU, <u>NE</u> , NU, PA, <u>PU</u>
{ 5	1+			5	2215	2218	2238	50	<u>BO</u> , HA
{ 5		1		5	2215	2233	2308		A7, <u>BO</u> , HA
6			1+	3	1850	1852	1854		<u>BO</u> , <u>SP</u>
8		2		3	1824	1832	1900U		A1, A5
11		1		3	1328	1332	1415		A1, <u>A5</u>
13			2+	4	1557	1618	1631		<u>BO</u> , <u>MC</u>
14	1			1	0042		0110U		HA
17		1		3	1210	1218	1245U		A1, A3, <u>A5</u>
{ 18	1+			1	2031	2037	2120	20	<u>BO</u>
{ 18		1+		4	2034	2048	2235		A3, A5, <u>BO</u>
21			1	5	2217	2221	2225		HA, <u>SP</u>
22		1		1	1426		1448		<u>NE</u>
{ 23	1+			5	1702	1713	1800		A1, A3, A5, <u>BO</u>
{ 23	1			1	1703	1709			<u>BO</u>
{ 23	1			1	1717	1723	1753		<u>BO</u>
{ 24	2			5	1615	1638	1710U	50	<u>BO</u> , MC, <u>RE</u>
{ 24		3		4	1615	1640	1845		A3, A7, <u>BO</u>
24			1	5	1825		1826		<u>BO</u> , HA
25			1-	5	2146		2147		<u>BO</u> , HA
26		3+		3	1300	1317	1402		A1, A3
{ 27	1			1	1857	1901	1920	22	<u>BO</u>
{ 27		1+		5	1858	1906	1930		A1, A3, A5, A6, A7, <u>BO</u>
28		1-		3	0824		0849		KU, NU
28		1-		3	1206		1221		KU, <u>NE</u> , NU
28		2		5	1258	1310	1343		A3, DU, <u>ED</u> , KU, <u>NE</u> , NU
{ 28	1			5	2138	2153	2245		A3, A7, <u>BO</u>
{ 28	1-			1	2139	2145	2220	5	<u>BO</u>
29		1		3	0934		0952		KU, <u>NE</u> , NU
30		2		5	1145	1204	1245		DU, <u>ED</u> , KU, <u>NE</u> , NU, PA
30		1-		3	1306		1330		<u>NE</u> , <u>NU</u>

HA = Hawaii.

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

III d'

(SHORT-WAVE RADIO FADEOUTS)

APRIL 1959

Apr. 1959	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 177B
1	0500	0530	Slow S-SWF	1	1+	OK	0455E
3	1247	1257	S-SWF	4	1	NE, PR	1241
4	0235	0253	S-SWF	5	2	AD, TO, CW+	*
4	0748	0830	Slow S-SWF	5	2	NE, OK, PU, CW***	0739
4	1200	1220	S-SWF	1	2	JU	1158
4	1938	1955	S-SWF	5	1	AD, HU, PR, WS	
4	2300	2338	Slow S-SWF	5	1+	AD, LA, OK, WS	2300
5	0357	0430	S-SWF	5	1+	AN, CA, OK	*
5	1640	1652	S-SWF	5	1	AD, BE, FM PR, WS	*
5	2317	0050	S-SWF	5	3+	AD, AN, CA, LA, MC, OK, TO, WS, CW+, RCA+	2316
6	1712	1720	S-SWF	4	1-	AN, PR, WS	*
6	1735	1808	Slow S-SWF	5	1+	AN, BE, FM, LA, PR, WS	*
7	0406	0421	S-SWF	1	1-	OK	0404
7	0648	0725	Slow S-SWF	1	2	JU	*
7	1400	1420	G-SWF	4	1+	BE, HU, PR	
7	1420	1507	G-SWF	5	2	BE, FM, HU, PR, WS CW*	1445E
8	0913	0945	S-SWF	5	2+	DA, NE, OK, SW, CW+, CW***	0916
8	1430	1522	Slow S-SWF	5	2+	BE, FM, HU, NE, PR, SW, WS, CW*	1422
8	2045	2100	Slow S-SWF	5	1	AD, BE, HU, LA, MC, PR, WS	
9	0335	0355	S-SWF	5	1	AD, OK CW+	0324
9	1645	1720	S-SWF	5	1+	AD, AN, FM, HU, LA, MC, NE, PR, SW, WS, CW***	1645
10	1040	1058	S-SWF	5	2+	NE, SW, CW***	1037
11	0839	0905	S-SWF	5	2	NE, OK, SW, CW***	0833
11	1450	1600	Slow S-SWF	5	2+	BE, FM, HU, LA, MC, NE, PR, SW, WS, CW***	1434
11	2330	0040	S-SWF	5	3-	AD, AN, CA, LA, OK, TO, WS, RCA+	2325
12	1110	1127	Slow S-SWF	5	1+	DA, HU, NE, PR, CW***	1114E
12	1128	1155	Slow S-SWF	5	2	DA, HU, NE, PR, SW, CW***	1114E
13	0835	0900	S-SWF	5	2	DA, NE, OK, SW, CW***	0831
13	1947	2010	Slow S-SWF	5	1+	AD, FM, HU, LA, MC, PR, WS	1944
14	1225	1235	S-SWF	5	1+	BE, MC, NE, PR	1220
14	1823	1925	Slow S-SWF	5	2-	BE, FM, HU, LA, MC, PR, WS	1823E
15	0830	0856	S-SWF	3	1+	NE, PU	0825E
18	0807	0834	S-SWF	5	2	DA, KU, NE, OK	0806
19	0826	0908	S-SWF	3	2+	JU, KU, PU	0824E
20	0947	1009	S-SWF	3	2+	JU, PU	*
20	1053	1128	Slow S-SWF	1	3	JU	*
20	1935	1952	S-SWF	5	1	AD, FM, HU, MC, PR, WS	
22	1116	1210	S-SWF	5	3	BE, DA, JU, KU, LI, MC, NE, PR, PU, CW***	1144E
23	0030	0100	G-SWF	4	1	AD, OK	*
27	0856	0940	S-SWF	5	2+	JU, KU, LI, NE, PU, CW***	0855
28	0100	0130	Slow S-SWF	4	2	AD, WS	0124E
28	0210	0238	S-SWF	5	1+	AD, CA, TO, CW+	0214
28	0500	0532	Slow S-SWF	1	1	OK	0506E
29	0212	0242	S-SWF	1	2	KO	*

* No known flare patrol

COMMERCE - STANDARDS - BOULDER

CA = Canberra, Australia

DA = Darmstadt, G.D.R.

JU = Juhlesruh, G.D.R.

KO = Kodaikanal, India

KU = Kuhlungsborn, G.D.R.

LA = Los Angeles, Calif.

LI = Lindau, G.F.R.

NE = Nederhorst den Berg, Netherlands

PU = Prague, Czechoslovakia

SW = Enkoping, Sweden

TO = Hiraio Radio Wave Observatory, Japan

CW* = Cable and Wireless, Barbadoes

CW** = Cable and Wireless, Somerton, England

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

CW+ = Cable and Wireless, Hong Kong

CW++ = Cable and Wireless, Singapore

RCA+ = RCA Communications, Inc., Pt. Reyes, Calif.

IVa

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

MAY 1959

Ottawa

2800 Mc.

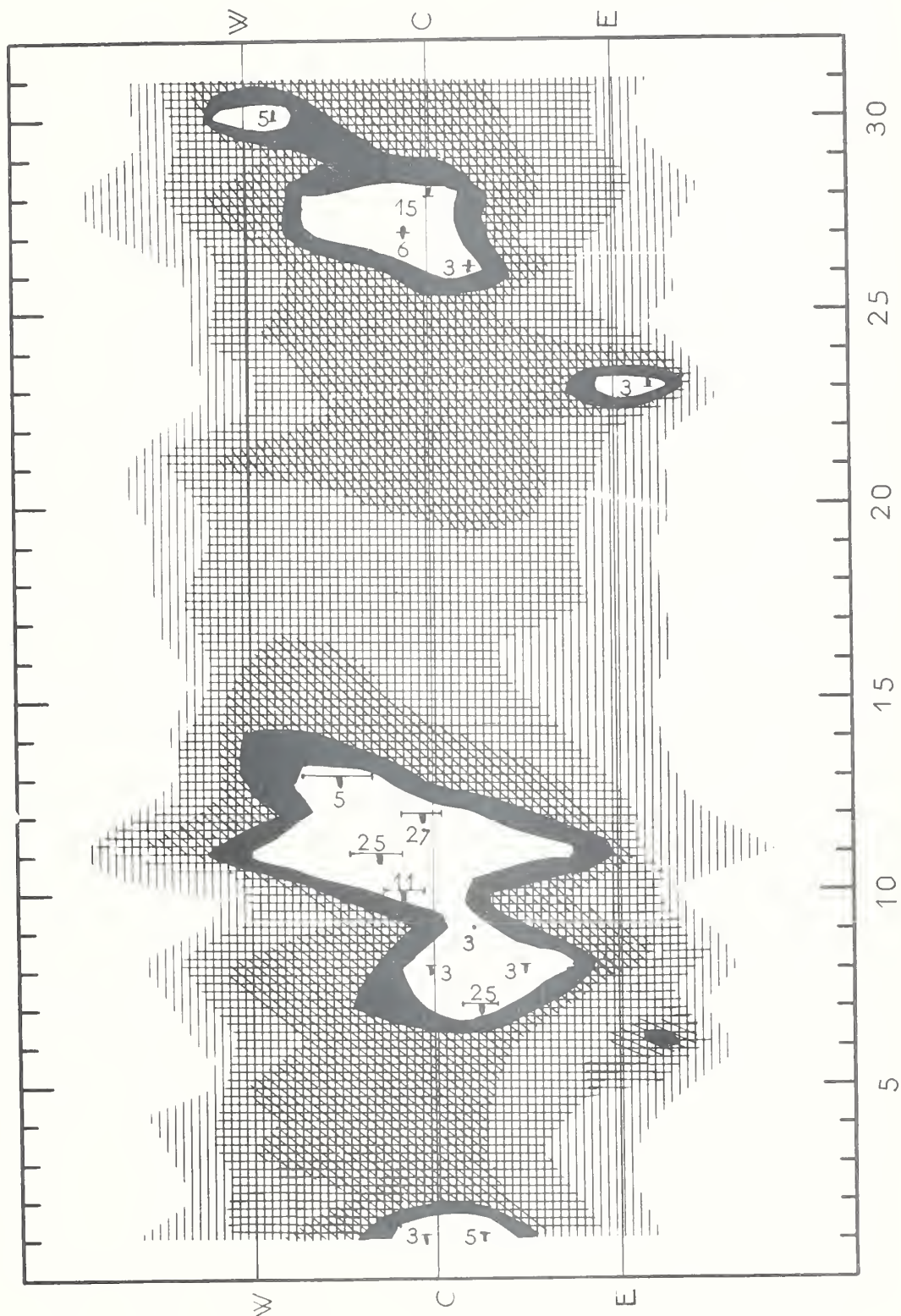
May 1959	Type	Start UT	Duration Hrs:Min	Time		marks
				Time UT	Event F1.35	
2	2 Simple 2 f	2105.8	3	2106.7	45	
2	1 Simple 1	2212	1	2212.4	6	
2	2 Simple 2	2254	3	2255.5	43	
3	2 Simple 2	1456.5	2	1457.3	22	
3	2 Simple 2	1856	2.5	1857.1	19	
3	2 Simple 2	2251	1.5	2251.8	50	
4	4 Post Increase		15		3	
4	2 Simple 2	2054	1.5	2054.5	8	
5	2 Simple 2	1154	2	1155	16	
5	8 Group (2)	1732	6			
	1 Simple 1	1732	3	1733.3	6	
	2 Simple 2	1735.5	2.5	1736.8	12	
5	1 Simple 1	1847	1	1847.5	4	
5	8 Group (2)	1910.5	7			
	2 Simple 2	1910.5	3	1912	15	
	2 Simple 2	1914.5	3	1915.8	20	
5	2 Simple 2	2106	3	2107	15	
5	2 Simple 2	2209.5	2.3	2210	11	
5	2 Simple 2	2227.5	2	2228.5	10	
6	2 Simple 2	1143.5	2.5	1144.5	20	
6	2 Simple 2	1257	4	1259	21	
6	8 Group (2)	1321.5	7.3			
	2 Simple 2	1321.5	2	1322.5	9	
	2 Simple 2	1327.8	1	1328.3	19	
6	1 Simple 1	1410	2	1410.7	7	
6	2 Simple 2	1427	35	1436	165	
6	3 Simple 3 A	1513	2 20	1620	12	
	8 Group (3)	1543	20			
	2 Simple 2	1543	5	1545	9	
	2 Simple 2	1552.5	1.5	1553	10	
	2 Simple 2	1558	5	1559.5	15	
6	1 Simple 1	1847.5	2	1848.5	7	In interference
6	2 Simple 2	1917	7	1919.5	12	In interference
7	2 Simple 2	1258.3	2	1259.5	10	
7	2 Simple 2 f	1452	5	1454	15	
8	3 Simple 3 f	1417	1 20	1422.5	35	
8	6 Complex	1647.5	4.5	1649.7	11	
8	2 Simple 2	1758	3	1759	65	
8	2 Simple 2	2248	1	2248.5	14	
8	2 Simple 2 f	2254	18	2257	2200	
	4 Post Increase		> 30		20	
9	8 Group (2)	1147	8.5			
	6 Complex f	1147	4	1148	40	
	6 Complex	1152.5	3	1153.5	30	
9	6 Complex f	1708	25	1724.5	60	
	4 Post Increase		1 30		35	
9	3 Simple 3	1925	1	1955	15	
9	2 Simple 2	2049.5	4	2050.5	15	
9	2 Simple 2	2254	1	2254.2	28	
10	3 Simple 3 A	61130	> 8 30	1415	65	
	2 Simple 2	1417	5	1418.2	33	
	2 Simple 2	1432.5	2	1433	14	
10	~ Great Burst f	2100	> 2 40	2148.5	2500	
11	6 Complex f	2010	40	2021.5	900	
	4 Post Increase		> 2 40		50	
12	3 Simple 3 f	1411	10	1415	12	
12	3 Simple 3 f	1448.5	8	1450	8	
12	3 Simple 3 f	2147	25	2153	22	
13	3 Simple 3 A	1551	55	1608	25	
	2 Simple 2	1552	5	1553.4	100	
13	3 Simple 3	1915	35	1920	13	
13	2 Simple 2	2121.5	3	2122	18	
13	2 Simple 2	2340.3	> 2.7	2341	880	
15	6 Complex	1753	7	1756	14	
15	2 Simple 2	2108.2	2.5	2108.7	20	
16	2 Simple 2 f	1654	6	1655.5	160	
	4 Post Increase		15		8	
16	1 Simple 1	1739	2.5	1739.7	5	
16	2 Simple 2 f	1748.5	15	1752	110	
16	6 Complex	1946	4	1948.8	8	
17	3 Simple 3 A	61518	> 17	indet.	6	
	2 Simple 2	1521	2	1521.9	25	
17	1 Simple 1	1715	5	1717.5	7	
17	2 Simple 2	2229	4	2230.8	45	
	4 Post Increase		15		5	
18	3 Simple 3	1543	30	indet.	12	
19	2 Simple 2	1338	5	1339.3	250	
	4 Post Increase		10		7	
25	2 Simple 2	1104.5	1.5	1105.3	18	
25	3 Simple 3 A	1534	1	1558	10	
	1 Simple 1	1535	2	1536	7	
26	1 Simple 1	1741	3	1742.5	7	Doubtful
26	3 Simple 3	1905	45	1913	9	
27	2 Simple 2	2136.8	1.5	2137.2	20	
29	1 Simple 1	1108	3	1109	5	
31	1 Simple 1	1922.5	2.5	1923.2	5	
31	3 Simple 3	2119	1	indet.	7	

SOLAR RADIO EMISSION

MAY 1959

169 Mc

Nançay



MAY 1959

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

MARCH 1959

BOULDER

167 MC

Mar. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	6	1410 E		146 D	1
1	3	1434.0	1434.2	0.5	2
1	2	1503.5	1503.6	0.4	1
1	2	1507.0	1507.0	0.1	1
1	3	1913.6	1913.8	0.8	2
2	3	1404.4	1404.5	0.4	1
2	7	1801		181	1
2	3	1954.8	1955.2	0.6	2
2	2	2031	2031.9	1.5	1
3	2	2052.6	2053.5	1.4	2
8	7	1630		173	1
9	3	2008.7	2008.7	0.3	2
10	3	1802.6	1803.0	2.8	2 S
10	3	1807.5	1809	2.3	1 S
11	8	1816	1820.3	6	2
13	3	1621.2	1621.4	0.2	1
13	2	1734.8	1735.9	1.6	2
14	3	2257.3	2257.6	0.6	2
16	3	1324.0	1325.9	2.0	1 *
17	8	1330.7	1332.0	1.4	2 *
17	3	1345.8	1346.3	2.2	1
17	2	1354.1	1355.5	1.7	1
18	7	1730 U		440 U	2 S
19	3	1820.2	1820.3	1.1	2 S
19	7	2130		200 D	2 S
20	7	1440 U		615 D	3
21	3	1325.8	1325.8	0.2	1
21	3	1640.0	1640.4	0.4	1
21	3	1738.4	1738.6	0.6	1
21	3	1900.0	1900.0	0.3	2
22	2	1417.5	1417.5	0.5	2 *

Mar. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
22	2	1450.0	1450.0	0.5	2
22	2	1530.0	1530.6	1.0	2
22	2	1540.8	1541.8	1.2	2
22	3	1919.0	1919.0	0.2	2
22	2	2021.4	2024.0	4.6	2
22	3	2056.6	2056.6	0.4	2
22	3	2309.7	2310.0	1.2	2
23	2	1308 E	1314.0	8 D	1
23	2	1340	1341.0	9	2
23	7	1745 U		430 D	2
24	6	1400 E		367 D	2 **I
24	3	2151.9	2152.1	0.2	2
24	2	2416.4	2416.9	0.9	2
25	6	1420 E		545 D	2 ***I
26	3	1711.1	1711.1	0.1	1
26	3	1953.0	1953.0	0.2	1
26	2	2002.4	2002.9	1.9	2
26	2	2009.3	2009.5	1.1	2
26	2	2054.0	2054.0	1.5	1
26	2	2102.3	2102.5	1.5	1
26	2	2119.7	2120.0	1.1	2
26	3	2205.5	2206.0	0.8	2
26	2	2301.7	2302.5	1.1	1
26	3	2317.5	2317.9	0.9	2
26	3	2416.5	2416.6	1.0	2
26	3	2427.4	2427.4	0.9	3
27	6	1346 E		674 D	3
28	6	1355 E		665 D	2
29	6	1255 E		725 D	3
30	6	1250 E		730 D	3
31	6	1250 E		730 D	2

* On sunrise pattern.

** 2007-2046.

*** 1326-1420; 1926-1941.

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

IVd

APRIL 1959

167 MC

BOULDER

Apr. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	3	1257.2	1257.5	1.0	3*
1	8	1634.2	1635.8	3.3	2
1	3	1925.2	1925.2	0.3	2
3	3	2131.5	2131.6	0.5	2
4	9A	1906.0	1906.4	1.3	2
4	9B	1907.5	1907.5	2.7	2
4	8	1937.5	1938.8	2.0	1
4	3	1942.8	1943.1	1.0	1
4	3	2021.5	2022.0	0.9	1
5	3	2105.5	2105.8	0.5	1
5	3	2511.5	2511.5	0.5	1
6	2	2047.0	2048.1	1.2	1
6	9A	2138.2	2139.4	1.6	2
6	9B	2140.0	2140.8	1.2	3
7	6	1410 E		663 D	2
8	6	1315 E		287 D	1
8	3	1442.0	1443.0	1.4	3
8	3	1547.3	1547.4	0.7	3
8	9A	1721.5	1722.2	1.0	2
8	9B	1723.0	1724.0	3.0	2
8	2	1736.0	1737.3	2.9	2
8	3	1747.1	1747.5	0.9	2
8	3	1752.6	1752.9	2.0	3
8	2	2045.0	2047.0	6.0	2
8	3	2140.8	2141.4	0.6	2
8	2	2405.0	2405.7	1.7	1
8	3	2439.4	2439.6	0.6	1**
8	2	2452.3	2453.8	1.7	3**
8	2	2500.5	2501.1	2.5	3**
9	3	1321.2	1321.8	0.8	2*
9	3	1424.0	1424.2	0.6	2
9	3	1536.9	1536.9	0.4	2
9	3	1541.9	1542.0	0.2	2
9	2	1609.8	1611.2	2.0	2
9	2	1624.0	1624.0	1.2	2
9	9A	1648.1	1649.0	3.9	3
9	9B	1653.0	1656.0	8.0	3
9	3	1716.2	1716.9	1.3	3
9	2	1758.0	1758.9	1.0	2
9	2	1801.5	1803.0	4.5	3
9	3	1900.4	1900.7	0.6	1
9	2	1923.8	1925.5	2.2	3
9	2	2111.1	2111.5	2.2	2
9	3	2134.9	2135.0	0.4	2
9	2	2137.0	2137.1	1.7	3
10	2	1647.7	1648.2	3.3	2
10	3	1802.8	1802.8	0.3	2
10	3	2353.0	2353.1	0.4	2
10	3	2428.8	2428.9	0.4	3
11	3	1236.5	1236.5	0.4	2*
11	3	1331.0	1331.0	0.4	2
11	3	1416.8	1416.8	0.4	2
11	8	1453.0	1455.5	4.0	3
11	2	1800.0	1804.7	22.0	2
11	3	1906.6	1906.6	1.1	2
11	3	2032.0	2032.0	2.0	2
11	2	2041.0	2042.8	4.0	2
11	3	2056.5	2056.5	1.0	2
11	3	2103.5	2103.5	0.5	2
11	8	2149.7	2153.5	7.3	2
11	7	2348		51.0	1
12	3	1329.2	1329.2	0.8	2*
12	2	1412.5	1412.5	2.0	2
12	3	1859.0	1859.7	1.8	3
12	3	2029.0	2029.0	0.4	2
12	3	2046.4	2046.4	0.4	2
12	3	2153.5	2153.5	0.5	2
12	2	2245.0	2245.0	2.0	2
13	3	1507.0	1507.3	1.0	1
15	3	1238.2	1238.2	0.8	2*

Apr. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
15	3	1505.5	1505.5	0.4	1
15	3	1747.5	1747.5	0.4	2
16	2	1630.2	1630.3	0.8	2
16	2	1636.2	1636.5	1.6	2
16	3	1702.3	1702.6	0.7	2
16	3	1911.5	1911.5	0.6	2
16	3	2046.4	2046.4	0.6	1
16	3	2104.0	2104.0	0.5	2
17	3	1345.3	1345.9	1.6	2
17	2	1601.0	1602.0	2.2	2
17	2	1609.6	1611.0	1.4	2
17	2	1615.5	1618.3	4.0	1
17	3	2109.5	2110.0	1.5	2
18	3	1805.8	1805.8	0.3	1
18	3	2440.2	2440.2	0.3	1S
20	3	1450.5	1450.5	0.5	1
20	9A	1456.0	1456.2	1.0	3
20	9B	1457.0	1457.8	2.0	3
20	8	1501.1	1501.4	2.7	3
20	3	2258.0	2258.2	0.6	2
20	3	2332.6	2332.9	0.4	1
20	3	2355.8	2356.0	0.9	2
20	3	2359.8	2359.8	0.9	2
20	3	2422.1	2422.1	0.4	1
21	3	1555.0	1555.0	0.5	1
21	3	1751.8	1752.2	1.2	1
21	3	1833.7	1833.7	0.9	1
21	3	1851.5	1851.5	0.5	1
21	8	1915.1	1915.2	1.9	3
21	3	1919.0	1919.1	1.0	3
21	2	1921.7	1922.5	1.3	2
21	3	2008.2	2008.3	0.7	1
21	3	2009.9	2009.9	0.3	2
21	3	2306.1	2306.9	0.9	2
21	2	2502.2	2504.5	3.8	2
21	2	2516.5	2517.2	1.4	2**
22	3	1616.0	1616.0	0.2	1
22	3	1658.2	1658.2	0.3	3
22	3	1938.0	1938.0	0.2	1
23	3	1746.1	1746.1	0.5	2
24	2	1615.0	1615.5	1.3	2
24	2	1619.8	1620.0	0.6	1
24	3	1735.9	1736.1	0.3	2
24	2	2304.4	2304.8	2.3	1
24	3	2329.1	2329.1	0.9	2
25	6	1209 E		321 D	1
25	3	2302.0	2302.0	0.5	1
25	2	2331.0	2331.0	3.7	2
26	2	1445.0	1448.0	3.2	1
26	3	2354.0	2354.0	0.8	2
26	3	2418.7	2418.8	0.4	2
27	3	1505.5	1505.5	0.5	2
27	3	1517.4	1517.6	1.0	3
27	3	1635.6	1636.0	1.4	3
27	3	1641.5	1641.6	0.5	2
27	3	1755.5	1756.2	1.3	2S
27	3	1759.0	1759.0	0.3	2S
27	3	2108.7	2108.7	0.3	1
27	3	2435.0	2435.0	0.5	2
28	6	1207 E		389 D	2
28	3	2309.0	2310.2	4.0	2S
29	3	1510.0	1510.0	0.3	1
29	3	1716.8	1717.0	0.7	3
29	3	1733.7	1734.0	0.7	2
29	2	1749.0	1749.1	2.0	1
29	3	1922.2	1923.0	1.0	2S
29	2	2223.0	2224.0	2.4	2
30	3	1207.5	1207.5	1.0	1
30	7	1612		525	2

*On Sunrise pattern.
**On sunset pattern.

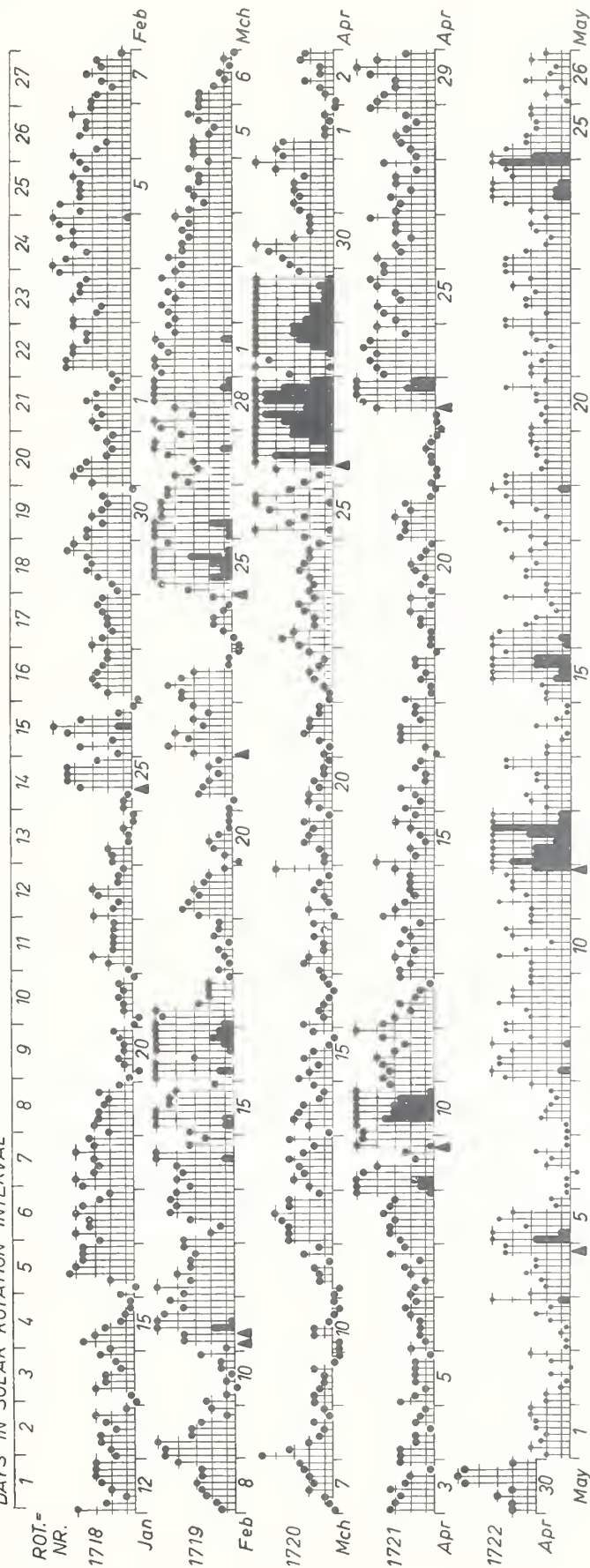
COMMERCE - STANDARDS - BOULDER

APRIL 1959

Apr. 1959	C	Values Kp								Sum	Ap	Final Selected Days	
		Three hour Gr. interval											
		1	2	3	4	5	6	7	8				
1	0.6	4-	4o	4-	1o	1o	1-	1o	0+	15+	11	Five Quiet	
2	0.3	0+	1o	1+	2+	1+	1+	3-	2+	13-	6		
3	0.6	3+	3o	3-	3+	2+	2o	1-	3-	20o	12		
4	0.2	3-	3-	2-	2-	1-	2-	1+	1o	13+	7		
5	0.1	3-	2-	1o	2-	2-	2-	2-	1-	13-	6		
6	0.2	2o	1o	1+	1+	1+	2o	2+	2-	13o	6	5	
7	0.6	2o	2-	1o	2o	2+	1+	3+	2+	16o	8	18	
8	1.1	3-	3+	3+	3o	4-	3+	3o	5+	28-	22	19	
9	1.5	6o	6+	5-	4o	2-	2+	5+	5-	35o	44	20	
10	1.9	5-	5o	8-	7+	7+	7o	5+	3+	48-	98	22	
11	1.3	4-	3+	4-	4o	3o	2+	4-	5o	29-	23	Five Disturbed	
12	0.5	4-	3o	2o	3-	2-	1+	1-	3-	18-	10		
13	0.5	3-	2o	3o	2-	3-	2o	2+	1+	18-	9		
14	0.7	4-	3o	2+	2-	2o	2o	2o	3o	20-	11		
15	0.6	4o	2-	2o	1o	1+	2o	3o	2-	17-	10		
16	0.2	2+	1+	2-	3-	1o	1o	2-	1+	13o	6	9	
17	0.4	0+	1o	3-	3-	3-	1+	2-	2-	14o	7	10	
18	0.2	2+	1-	1-	1+	1o	2-	2-	0+	10-	5	23	
19	0.2	1-	1-	1-	1+	1+	2o	1-	2o	9+	4	24	
20	0.1	1-	1+	1o	2-	2o	1+	1o	1-	10-	5	29	
21	0.4	3-	2+	2+	3o	2o	2+	1-	0+	16-	8	Ten Quiet	
22	0.0	1-	0+	0+	1-	1-	1o	1-	0+	5-	3		
23	1.5	0o	0+	0+	4o	5-	5o	7-	6+	27+	40		
24	1.4	4-	4o	4+	4o	5-	4+	2+	4o	31+	27		
25	1.1	3o	4-	4o	3-	3o	4o	4+	4-	28+	22		
26	1.1	4-	4o	3-	3o	2o	3o	3o	4+	26-	18	4	
27	0.9	3o	3-	3+	2o	3o	3o	2-	4-	22+	14	5	
28	0.9	2-	2o	3-	3o	2+	2-	2+	4+	20o	12	6	
29	1.2	4o	4-	3o	3o	4+	5o	4o	2+	29+	24	16	
30	1.1	2o	2o	3o	2o	5-	5o	5-	2o	25+	21	17	
Mean:		0.71								Mean:		17	18
													20
													22

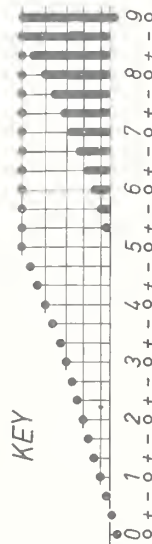
DAYS IN SOLAR ROTATION INTERVAL

ROT. =
NR.



KEY

▲ = sudden
commencement



1723

May 27 28

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 1959 April 30
(Ks from Wingst and Göttingen till 1959 May 28)

J.B.

COMMERCE - STANDARDS - BOULDER

NORTH ATLANTIC

APRIL 1959

Apr. 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:				Geomag- netic 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) (2)	
1	6o	5o	6o	7o	6	6	6	6	6o	7	7		7	3	1
2	7o	7-	7-	7-	6	6	7	7	7-	6			6	1	2
3	6+	6+	7-	7o	6	6	7	7	7-	6			6	2	1
4	7o	6+	7o	8-	6	6	7	7	7+	7			7	2	1
5	7+	7+	7+	7o	7	7	7	7	7+	7			7	2	1
6	7+	7+	7+	7o	7	7	7	7	7+	7			7	1	1
7	7+	7+	7o	7-	7	7	7	7	7o	5		5	7	2	2
8	7o	6-	6-	6-	6	6	7	6	6o	4		4	7	3	3
9	4+	4o	6+	6+	6	5	6	6	5o	5		4	5	(4)	3
10	5o	4+	6-	6o	5	5	5	6	5o	5			5	(5)	(5)
11	6o	4+	6o	6+	4	5	6	6	6-	6			6	(4)	3
12	7-	6o	7-	7o	6	6	6	7	7-	7			7	2	2
13	7+	6o	7o	7o	7	7	7	7	7-	7			7	2	2
14	7+	7-	7o	7o	7	6	7	7	7o	7			7	3	2
15	7-	6+	7o	7+	7	7	7	7	7-	7			7	2	2
16	7+	7-	7o	7o	7	7	7	7	7o	7			7	2	1
17	8-	7o	7o	7+	7	7	7	7	7+	7			7	1	2
18	7+	7o	7+	8-	8	7	7	7	7+	7			7	1	1
19	7+	7+	7+	7o	8	7	7	7	7+	7			7	1	2
20	7+	7o	7-	7o	7	7	7	7	7o	7			7	1	1
21	7-	6+	7+	7+	7	7	7	7	7o	7			7	2	1
22	7o	7o	7o	7+	7	7	7	7	7o	5			5	0	0
23	7o	7+	7-	5+	7	7	7	6	7-	7			7	1	(5)
24	5o	4-	6+	6+	4	5	5	6	5o	7			7	(4)	3
25	6+	5+	7o	7-	7	7	7	7	6+	7			7	3	(4)
26	6o	6-	7+	7o	6	6	6	7	7-	7			7	3	2
27	7-	6o	7-	7o	7	6	7	7	7-	7			7	3	2
28	7-	6o	7-	7-	7	6	7	7	6+	7			7	3	2
29	7-	5+	6+	6+	7	6	7	7	6+	7			7	(4)	3
30	7-	6-	7-	6+	7	6	7	7	6+	6			6	2	(4)
Score: Quiet Periods															
					P	19	18	24	24	20				21	
					S	9	7	6	6	6				7	
					U	0	1	0	0	3				2	
					F	1	0	0	0	1				0	
Disturbed Periods															
					P	0	0	0	0	0				0	
					S	0	4	0	0	0				0	
					U	0	0	0	0	0				0	
					F	1	0	0	0	0				0	

() represent disturbed values.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS NORTH ATLANTIC

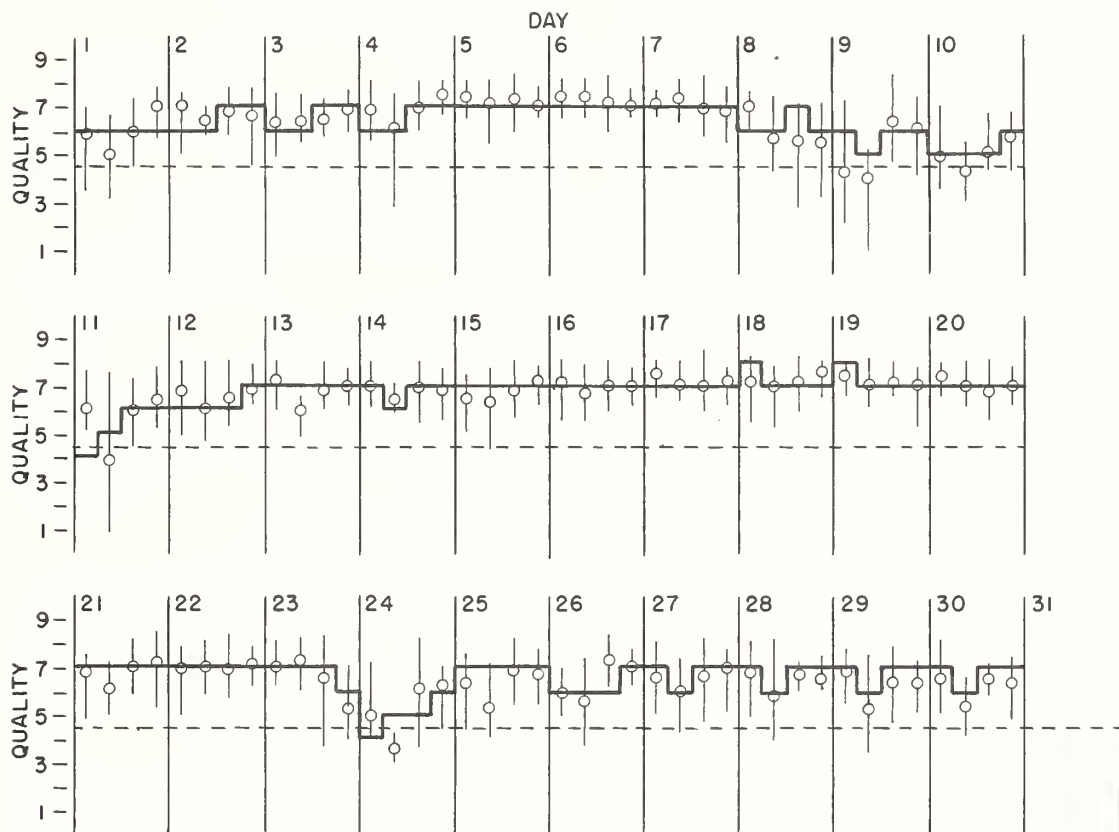
V1b

— Short-term forecast

APRIL 1959

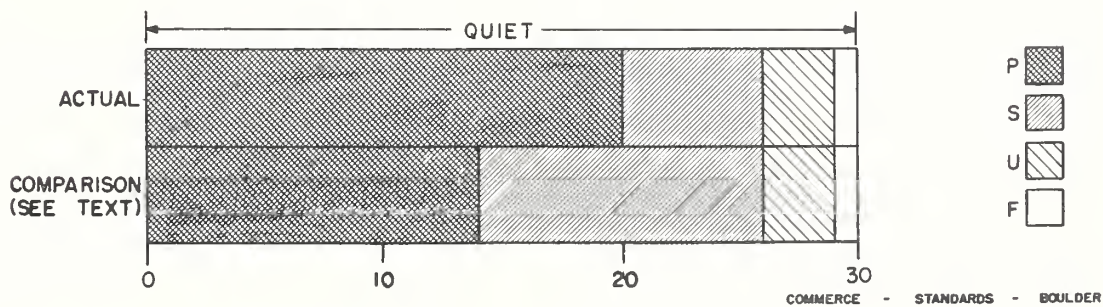
| Range of reports

o Quality figure

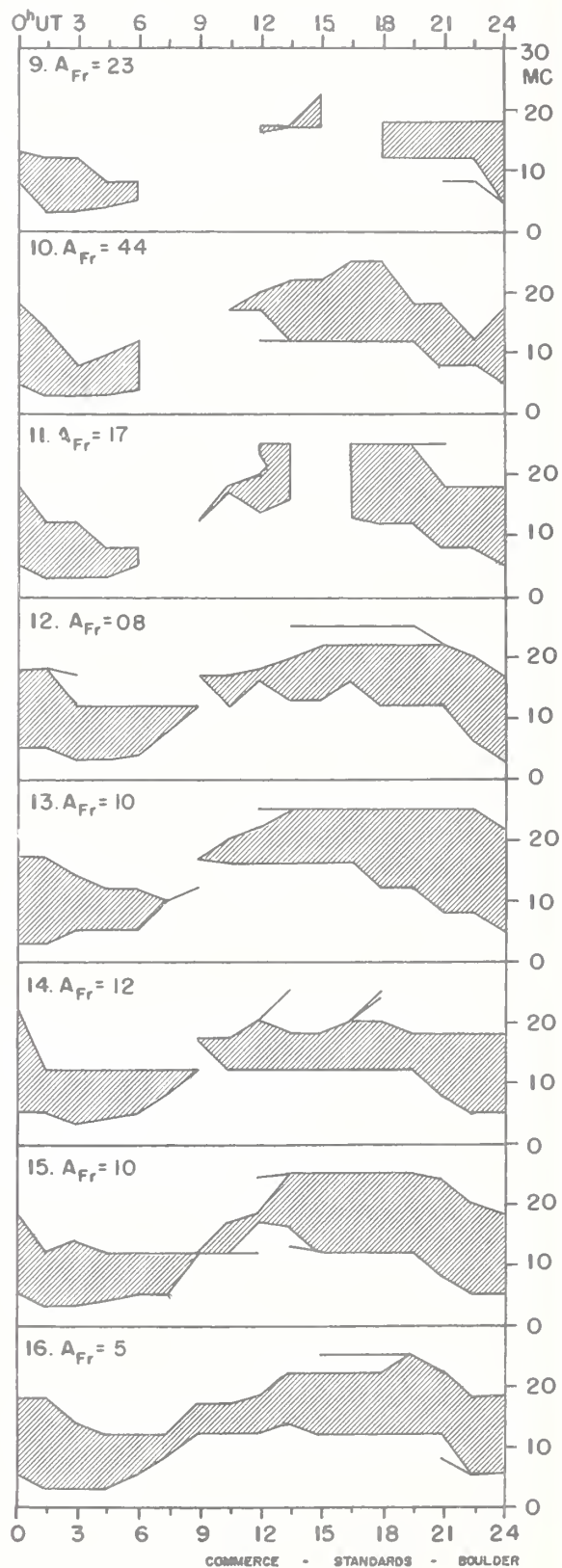
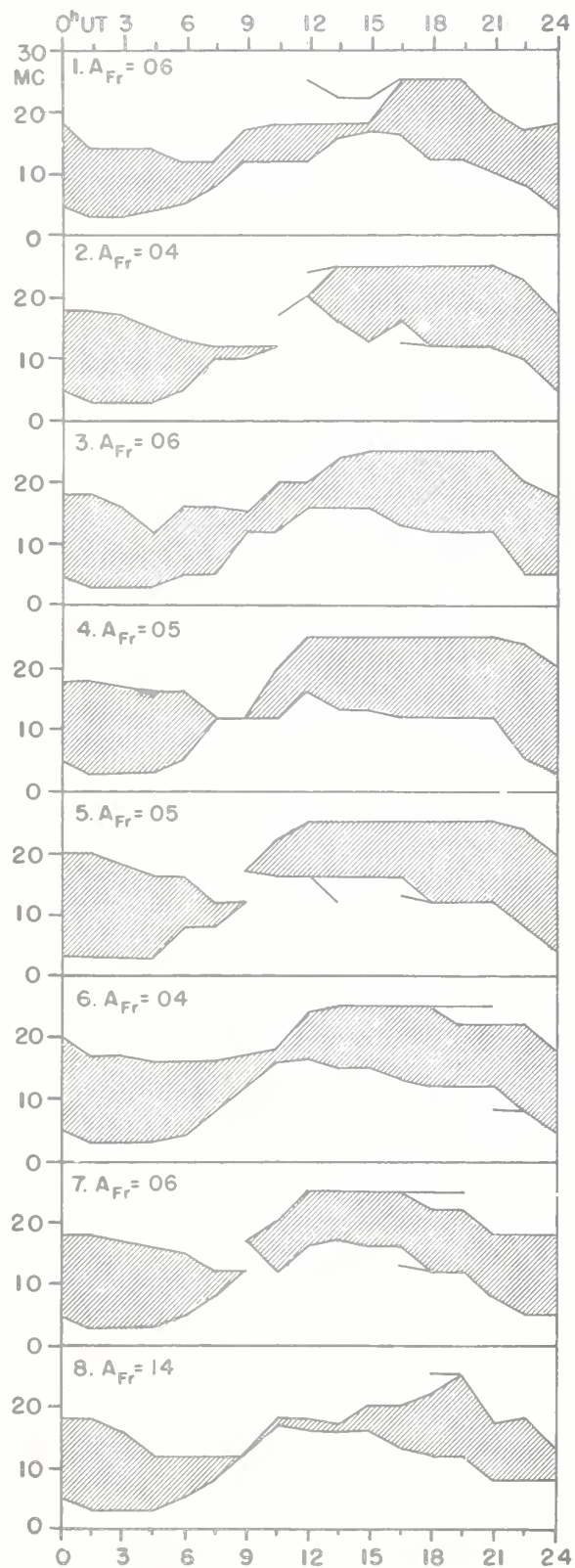


OUTCOME OF ADVANCED FORECASTS

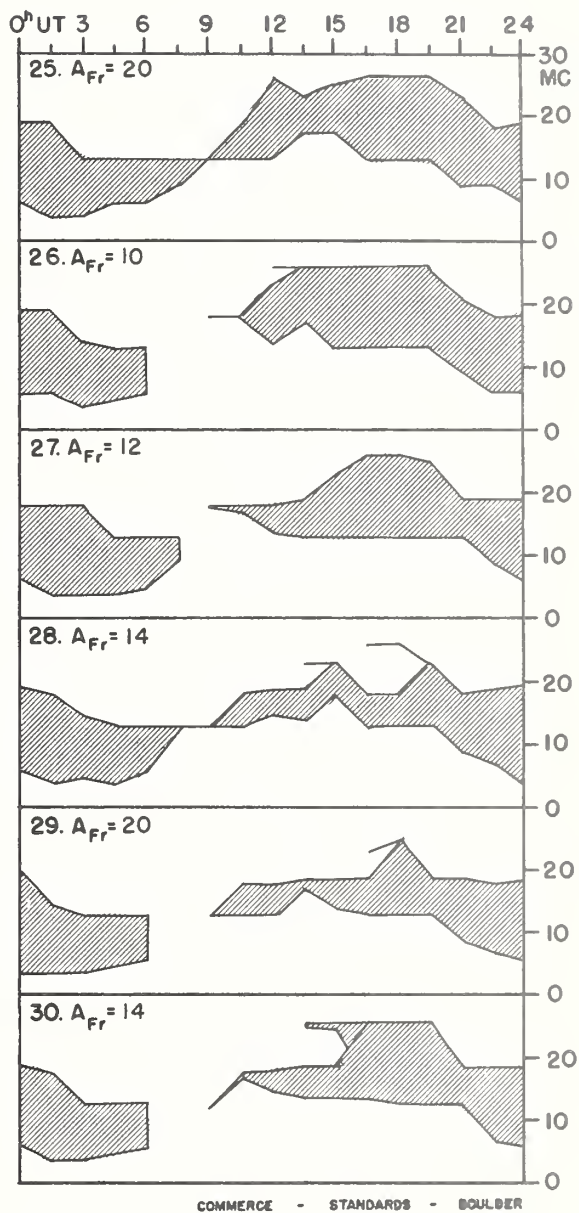
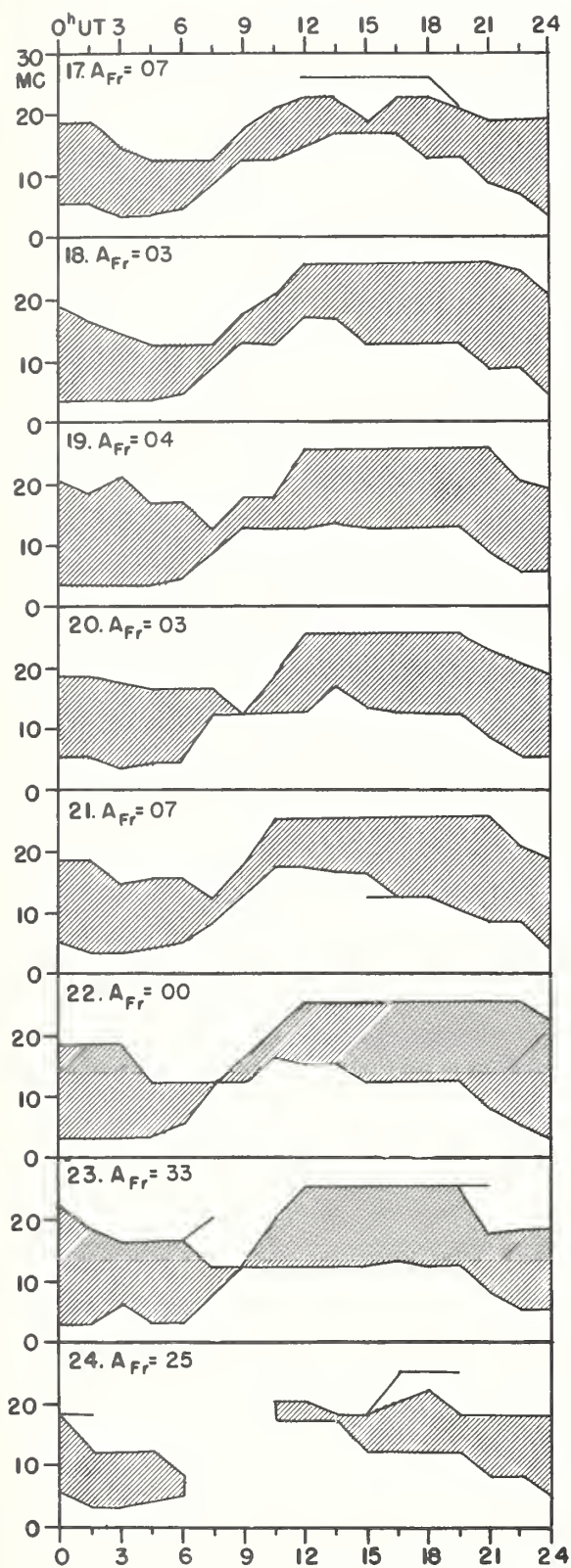
FINAL ESTIMATE



APRIL 1959



APRIL 1959



NORTH PACIFIC

APRIL 1959

Apr. 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	6	6	5	6	6	6			6	3	1
2	6	6	6	6	6	5			5	1	2
3	6	6	6	6	6	5			5	3	2
4	7	6	6	6	7	6			6	2	1
5	7	7	6	6	7	6			6	1	2
6	7	7	6	6	7	6			6	1	2
7	6	6	7	7	6	6			6	2	2
8	5	4	5	4	(4)	3	3		6	(4)	(4)
9	5	5	4	6	(4)	4	4	4	4	(6)	3
10	3	4	5	4	(3)	6	6	6	6	(6)	(6)
11	6	4	5	5	(4)	6			6	(6)	3
12	5	5	5	6	5	6			6	3	2
13	6	6	6	6	6	7			7	2	2
14	6	5	6	6	6	7			7	2	2
15	5	5	6	5	5	7			7	1	2
16	6	6	5	6	6	5			5	2	1
17	6	7	6	7	6	5			5	2	2
18	7	6	6	6	7	6			6	0	2
19	6	6	6	7	6	6			6	1	1
20	6	7	6	7	6	6			6	2	2
21	7	8	6	6	7	6			6	3	1
22	7	6	7	7	6	5			5	0	0
23	6	5	7	6	6	7			7	1	(4)
24	6	6	5	5	5	7			7	(4)	(4)
25	6	5	5	5	6	7			7	(4)	(4)
26	5	6	6	6	5	7			7	3	3
27	6	6	5	5	5	7			7	(4)	3
28	5	5	6	6	5	7			7	3	2
29	4	6	5	4	(4)	7			7	(4)	(4)
30	4	5	6	5	(4)	5			5	3	(4)
Score:		Quiet Periods		P 10	13	4					
				S 16	12	15					
				U 1	1	5					
				F 0	1	0					
		Disturbed Periods		P 0	2	1					
				S 1	1	2					
				U 1	0	0					
				F 1	0	3					

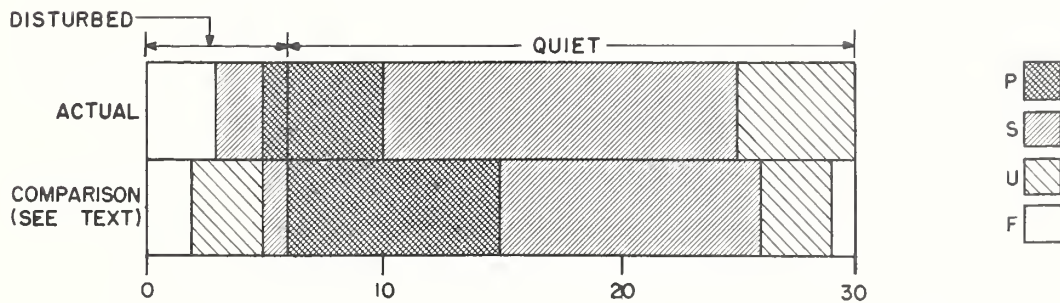
() represent disturbed values.

NORTH PACIFIC

APRIL 1959

OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL GEOPHYSICAL COOPERATION 1959

MAY 1959

Issued Day/Time UT May 1959	Advance Geophysical Alert	No.	Worldwide Geophysical Alert	Special World Interval
05/0230	Ft. Belvoir Magnetic Storm 04/2022Z			
08/0700	Ft. Belvoir Magnetic Storm 07/2130Z			
11/0135	Climax Solar Flare 10/2105Z			
11/2325	Burbank Solar Flare 11/2005Z			
12/0123	Ft. Belvoir Magnetic Storm 11/2318Z			
12/1325	Minnesota Cosmic Ray Increase 12/0600Z			
12/1600		10	Magnetic Storm 11/2318Z	Start Special World Interval
13/1600		11		Finish Special World Interval
16/0120	Ft. Belvoir Magnetic Storm 15/1100Z			
16/1600		12	Magnetic Storm 15/1100Z	
24/1024	Ft. Belvoir Magnetic Storm 24/0540Z			
24/1600		13	Magnetic Storm 24/0540Z	

COMMERCE - STANDARDS - BOULDER

