PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
JULY 1959

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

CRPL-F 179
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
31 July 1959

SOLAR - GEOPHYSICAL DATA

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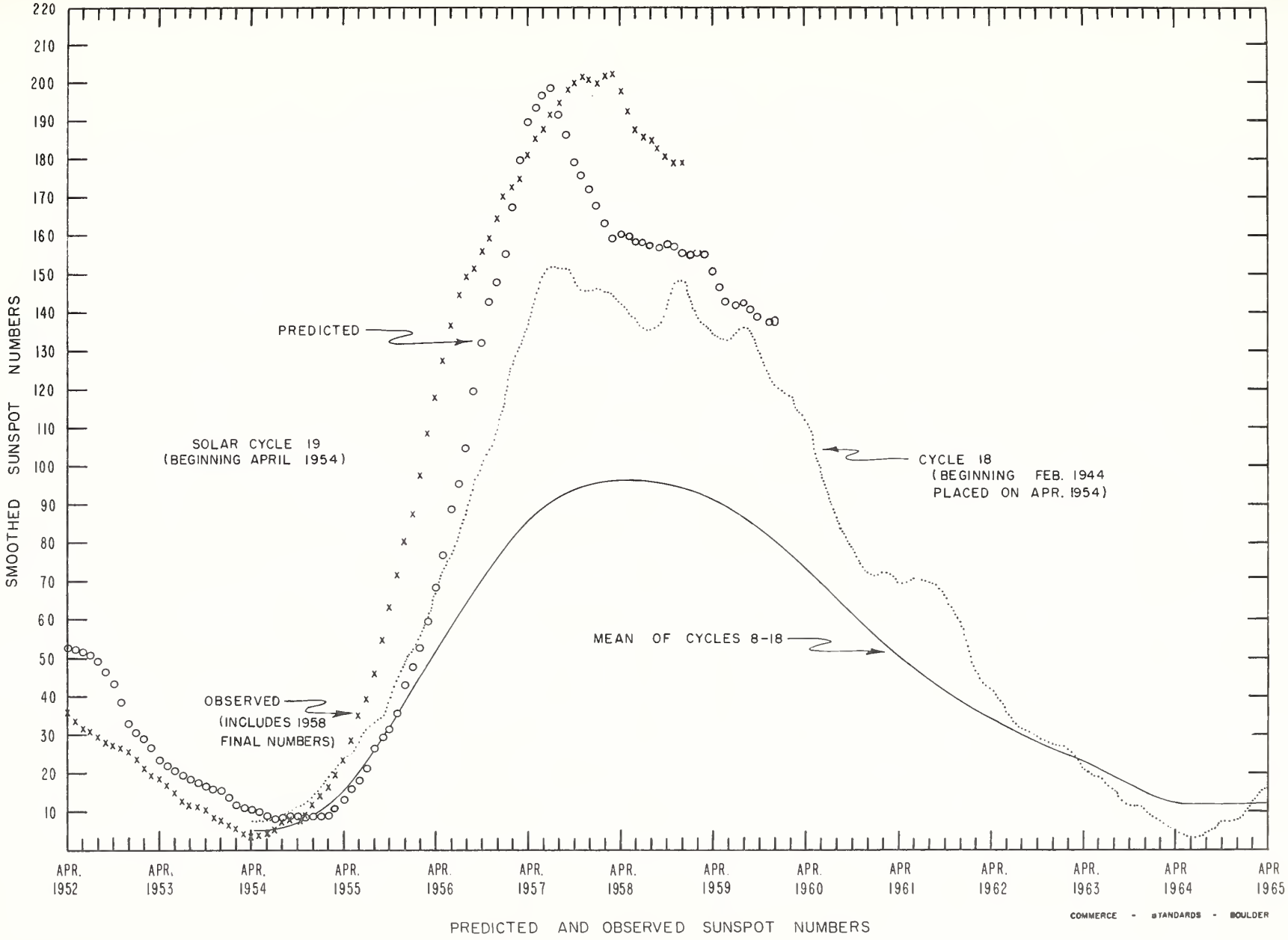
INTRODUCTION

The descriptive text is published quarterly or whenever context of the report is changed. The last issue in which text appeared was CRPL-F177 Part B issued May 1959.

DAILY SOLAR INDICES

May 1959	American Relative Sunspot Numbers R_A'
1	117
2	119
3	103
4	97
5	90
6	128
7	131
8	129
9	173
10	220
11	199
12	240
13	234
14	197
15	182
16	142
17	157
18	159
19	125
20	137
21	114
22	118
23	121
24	134
25	138
26	129
27	137
28	93
29	80
30	80
31	104
Mean:	139.6

June 1959	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	152	193
2	133	198
3	148	198
4	166	190
5	162	197
6	180	210
7	181	198
8	177	213
9	172	223
10	160	228
11	172	226
12	176	220
13	165	212
14	170	208
15	158	225
16	172	220
17	161	225
18	174	228
19	182	237
20	173	226
21	162	228
22	170	219
23	188	220
24	157	232
25	184	233
26	184	238
27	184	240
28	160	224
29	158	219
30	147	196
Mean:	167.6	217.5



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

JUNE 1959

CMP June 1959	Lat	McMath Plage Number	Return of Region	Calcium Plage Data			Sunspot Data		
				CMP Values Area	Int.	History, Age	CMP Values Area	Count	History
01.2	S14	5172	5129	400	2	ℓ — ℓ 3			
01.4	N06	5181	New	300	2	b ⌜ ℓ 1			
04.1	N20	5178	*	1000	1.5	ℓ — ℓ 8,4			
04.4	N02	5192	5132	300	1.5	ℓ ⌝ d 3			
05.1	S12	5179	5133	10,000	3.5	ℓ — ℓ 2,1	1470	31	ℓ — ℓ
05.3	N14	5184	5134	1000	2	ℓ \ ℓ 4	10	1	ℓ ⌝ d
06.0	N08	5180	5146	2300	3	ℓ — ℓ 6	560	5	ℓ — ℓ
06.6	N30	5189	New	900	1.5	ℓ ⌝ d 1			
07.6	S14	5186	**	1300	2	ℓ \ d 10,2			
08.0	N12	5185	5146	4800	3	ℓ / ℓ 6	30	5	ℓ \ ℓ
08.5	N27	5190	5147	3000	2	ℓ — ℓ 4			
08.7	S16	5191	**	600	1.5	ℓ \ d 10,2			
10.0	N14	5195	5148	5000	2.5	ℓ — ℓ 7,3			
10.1	S25	5194	5162	4000	3.5	ℓ — ℓ 2	900	10	ℓ — ℓ
11.8	S06	5207	New	300	1.5	b / ℓ 1			
12.4	N35	5200	5151	1000	1.5	ℓ — ℓ 7			
12.7	N14	5197	5154	3000	3	ℓ / ℓ 3	690	10	ℓ \ ℓ
13.0	N24	5198	5155	2000	2.5	ℓ — ℓ 5	240	7	ℓ — ℓ
13.1	N06	5201	New	800	2.5	b / ℓ 1	160	5	b ⌜ ℓ
13.4	N30	5205	New	500	2.5	b / ℓ 1			
13.5	N20	5196	5148	4000	2.5	ℓ \ ℓ 7,3			
14.0	N10	5210	New	400	2.5	b ⌜ ℓ 1	20	1	b ∧ d
14.2	N20	5203	New	1200	2	ℓ — ℓ 1			
15.5	N16	5218	New	200	2	b / ℓ 1			
16.0	S11	5202	5156	4000	2.5	ℓ — ℓ 4	190	4	ℓ \ d
17.1	N19	5204	5157	9000	3.5	ℓ — ℓ 7,3	1130	15	ℓ \ ℓ
18.6	S05	5208	New	1000	2.5	ℓ — ℓ 1	40	4	b ∧ d
19.0	S17	5209	5176	2200	3	ℓ — ℓ 2	10	1	b ∧ d
19.2	N23	5212	5158	3000	2	ℓ — ℓ 6,3			
19.3	N11	5211	5160	2000	3	ℓ — ℓ 4,8	150	9	ℓ — ℓ
19.8	S25	5242	New	(1000)	(2.5)	b ⌜ ℓ 1			
20.0	S08	5232	New	(300)	(2)	b ⌜ ℓ 1			
20.4	S02	5215	New	800	2.5	ℓ — ℓ 1			
20.9	N13	5216	5160	1000	2	ℓ — ℓ 4,8			
21.0	S12	5222	New	500	2.5	ℓ — ℓ 1			
21.6	S08	5243	New	(400)	(2.5)	b ⌜ ℓ 1	(20)	(1)	b ⌜ ℓ
21.9	N21	5217	5164	1200	3	ℓ — ℓ 8,2	(50)	(1)	ℓ ⌝ d
22.0	N02	5221	***	1700	2.5	ℓ — ℓ 3,2	70	3	ℓ \ ℓ
22.4	S16	5220	5167	2500	2.5	ℓ — ℓ 2	50	1	b ∧ d
23.0	N13	5219	***	10,000	3	ℓ — ℓ 3,2	1770	11	ℓ \ ℓ
23.2	S05	5224	New	400	2.5	ℓ — ℓ 1			
23.6	S17	5223	5167	2200	3	ℓ — ℓ 2	80	3	b ∧ d
24.7	N18	5237	New	700	2	b ⌜ ℓ 1			
25.7	N08	5225	New	1500	3.5	ℓ / ℓ 1	610	4	ℓ — ℓ
25.7	S16	5238	New	200	2	b ⌜ ℓ 1	40	4	b ∧ d
26.2	S06	5226	New	600	2.5	ℓ \ ℓ 1	10	1	ℓ ⌝ d
26.7	N15	5227	New	2600	3	ℓ — ℓ 1			
27.4	N28	5233	5183	1800	2.5	ℓ / ℓ 2	120	4	b / ℓ
27.9	N06	5229	5181	500	1.5	ℓ ⌝ d 2			
28.1	N20	5228	New	4200	3	ℓ — ℓ 1	510	34	ℓ — ℓ
28.6	S16	5230	New	1400	3	ℓ / ℓ 1	170	4	ℓ — ℓ
29.5	N35	5231	New	1800	2.5	ℓ / ℓ 1	40	3	b ⌜ ℓ

* 5131, 5135.
** 5144, 5145.
*** 5165, 5166, 5169.

CORONAL LINE EMISSION INDICES

JUNE 1959

CMP Jun 1959	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	52	64	15	21	61	76	14	24	X	X	X	X	X	X	X	X
2	87	116	9	15	73	84	11	15	70	115	20	41	87	140	19	36
3	76	122	12	18	73	110	13	21	112a	167a	X	X	70a	85a	X	X
4	83	148	22	60	92	132	19	36	77	122	25	30	47	52	19	24
5	80	92	26	45	97	144	30	54	X	X	X	X	X	X	X	X
6	92a	125a	X	X	114a	193a	X	X	X	X	X	X	X	X	X	X
7	69a	112a	X	X	58a	83a	X	X	X	X	X	X	X	X	X	X
8	119	173	48	104	123	128	32	52	X	X	X	X	X	X	X	X
9	156	291	X	X	80	109	32	60	80	106	21a	32a	134	250	32a	48a
10	161	188	49a	72a	86	116	32a	80a	X	X	X	X	X	X	X	X
11	98a	116a	40a	66a	57a	84a	36a	54a	X	X	X	X	X	X	X	X
12	129a	155a	36a	61a	42a	66a	41a	52a	X	X	X	X	X	X	X	X
13	82	101	16	24	31	40	21	32	X	X	X	X	X	X	X	X
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	84	110	24	50	75	120	30	72	X	X	X	X	X	X	X	X
17	81a	93a	X	X	93a	160a	X	X	75	113	16	40	160	184	25	39
18	114a	180a	33	42	70a	104a	59	200	74	109	15	27	122	160	17	30
19	X	X	X	X	X	X	X	X	141	200	29	72	166	251	19	36
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23	93	120	14	25	120	180	28	85	X	X	X	X	X	X	X	X
24	X	X	X	X	X	X	X	X	75a	121a	18a	25a	110a	150a	46a	75a
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26	X	X	X	X	X	X	X	X	60	90	X	X	X	X	X	X
27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
29	X	X	X	X	X	X	X	X	69a	104a	X	X	108a	130a	X	X
30	X	X	X	X	X	X	X	X	125	252	X	X	84	120	X	X

X - no observations a - index computed from low weight data * - yellow line observed

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

JUNE 1959

OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
HAWAII	01	0042	0048	0044	S13	E43	5179	6	1	3	0044	2.50	3.50			
HAWAII	01	0100	0120	0106	S14	E46	5179	20	1	3	0106	2.20	3.30			
HAWAII	01	0146	0200 D	0152	S13	E42	5179	14 D	1	3	0152	2.70	3.80			
ARCETRI	01	1429 E	1449 D		N05	E63	5180	20 D	1	3	1445	.70	2.50			
HUANCAYO	01	1659 E	1710	1659	S12	E38	5179	11 D	1	2	1659	3.60	4.70	1.60		
LOCARNO	02	0910 E	0920		N07	E56	5180	10 D	1	3	0910		1.00			
MCMATH	02	1248 E	1420 D	1315	S12	E28	5179	92 D	2	1	1315		6.00			
SAC PEAK	02	1308 E	1330 U	1314	S11	E26	5179	22 D	1	1		2.80			18	
SCHAUINS	02	1311 E	1314 D		S09	E24	5179	3 D	2							S-SWF
CAPRI-S	02	1311 E	1330 D		S11	E28	5179	19 D	1	1	1317	2.00	2.30			
CLIMAX	02	1319 E	1331		S07	E27	5179	12 D	1		1319	3.20				
LOCARNO	02	1340 E	1500 D		S14	E35	5179	80 D	1	3						
MCMATH	02	1436	1500 D	1448	S12	E28	5179	24 D	2	1	1448		6.00			
SAC PEAK	02	1438	1504	1448	S16	E32	5179	26	1	1		2.95			16	
CLIMAX	02	1441	1501	1448	S16	E33	5179	20	1		1448	4.20				
LOCKHEED	02	1808	1908	1822	S13	E27	5179	60	1&	2		4.20				
SAC PEAK	02	1810	1858 U	1825	S16	E27	5179	48 D	2	1		7.93			18	
MCMATH	02	1810 E	1900 D	1825	S16	E28	5179	50 D	3	1	1825		14.00			S-SWF
CLIMAX	02	1814	1820 D		S16	E28	5179	6 D	1		1819	4.80				
HAWAII	02	1816	1904	1824	S16	E27	5179	48	2&	3	1824	11.10	12.90			
MCMATH	02	2000	2018 D	2005	S17	E44	5179	18 D	2	1	2005		5.20			S-SWF
HAWAII	02	2000 E	2030	2007	S17	E42	5179	30 D	2	3	2007	4.70	6.60			
MITAKA	03	0527	0533 D		S11	E25	5179	6 D	1	1	0527	.72	.85	1.43	83	
MEUDON	03	0755	1005		S13	E15	5179	130	1&				12.00			
ARCETRI	03	0800 E	0845 D		S13	E22	5179	45 D	2	3	0824	5.00	5.50			
LOCARNO	03	0800 E	0850		S14	E18	5179	50 D	1&	2	0800		3.00			
ZURICH	03	0842	0853		S15	E21	5179	11	1	3	0842		1.00			
CAPRI-S	03	0842 E	0933 D		S12	E22	5179	51 D	1	3	0906	3.00	3.30			
WENDEL	03	1405 E	1421 D		S12	E18	5179	16 D	1				3.00			
HUANCAYO	03	1701 E	1709	1701	S11	E14	5179	8 D	1	2	1703	2.00	2.10	1.70		
MITAKA	04	0542 E	0615		N11	E43	5185	33 D	1&	1	0543	1.54	2.28	2.65	183	
WENDEL	04	0543	0635 D		N11	E43	5185	52 D	1&				5.00			
CAPRI-S	04	0600 E	0615		S13	E04	5179	15 D	1	3	0610	2.30	2.30			
WENDEL	04	0554 E	0621 D		S12	E07	5179	27 D	1				3.00			
WENDEL	04	0554 E	0625 D		S12	E03	5179	31 D	1&				5.00			
CAPRI-S	04	0600 E	0622		N11	E40	5185	22 D	1	3	0610	2.00	2.60			
LOCARNO	04	1140	1234	1155	S12	E03	5179	54	1&	3	1155		3.00			
MCMATH	04	2040	2130 D	2048	N34	W52	5183	50 D	1	1	2048		2.20			
HAWAII	04	2302	2320	2304	S14	W05	5179	18	1	3	2304	2.90	3.00			
WENDEL	05	1732 E	1804 D		S08	W18	5179	32 D	1				3.00			
WENDEL	05	1736 E	1804 D		S11	W07	5179	28 D	1&				8.00			
SAC PEAK	05	1740	1922	1758	S10	W18	5179	102	1&	2		4.45			17	
HAWAII	06	0048 E	0106		S21	E44	5194	18 D	1	3	0054	2.50	3.70			
WENDEL	06	0611	0701		S07	W22	5179	50	1&				6.00			
WENDEL	06	0859	0913		N31	W72	5183	14	1				4.00			
ZURICH	06	0905	0913		N31	W72	5183	8	1	3	0905		3.00			
WENDEL	06	0907	0918 D		S14	W18	5179	11 D	1				3.00			
ZURICH	06	0910	0916		S17	W20	5179	6	1	3	0910		2.00			

SOLAR FLARES

JUNE 1959

OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Ha	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
WENDEL	06	0927	0941		N09	W05	5180	14	1				4.00			
ZURICH	06	0928	0937	0933	N09	W09	5180	9	1	3	0928		3.00			
ZURICH	06	0938	0955		N31	W72	5183	17	1	3	0938		3.00			
CAPRI-S	06	0940 E	0955		N33	W80	5183	15 D	1	1	0942	1.00	4.00			
WENDEL	06	0940	1000 D		N31	W73	5183	20 D	1&				7.00			
KANZELHOHE	06	0945 E	1000		N32	W72	5183	15 D	3							
LOCARNO	06	1200 E	1515	1440	N33	W70	5183	195 D	1&	2						
LOCARNO	06	1317	1415	1320	S07	W27	5179	58 D	2	2	1200		5.00			
CAPRI-S	06	1318 E	1410 D		S08	W24	5179	52 D	1	3	1332	2.00	2.20			
SCHAUINS	06	1330 E	1630		S08	W36	5179	180 D	2							
SAC PEAK	06	1332 E	1600	1352	S08	W27	5179	148 D	1	3		3.45			17	
MCMATH	06	1407 E	1435 D		S08	W29	5179	28 D	1	1	1410		3.00			
LOCARNO	06	1453	1528	1459	S07	W28	5179	35 D	2	2	1500		4.00			G-SWF
MCMATH	06	1455 E	1545 D		S08	W29	5179	50 D	1&	1	1504		5.00			
WENDEL	06	1606 E	1638 D		S09	W27	5179	32 D	1				4.00			
TASHKENT	07	0400 E	0453	0441	S08	W36	5179	53 D	2&							
WENDEL	07	0724 E	0745 D		S06	W37	5179	21 D	1				3.00			
WENDEL	07	0805	0854		S09	W38	5179	49	2				10.00			
NEDERHORST	07	0810	0815		S09	W40	5179	5	2	2						S-SWF
NERA	07	0810 E	0825 D		S09	W40	5179	15 D	2							
ONDREJOV	07	0812	0829		S08	W41	5179	17	2							
KANZELHOHE	07	1045 E	1115		S11	W42	5179	30 D	2							
WENDEL	07	1156 E	1234 D		S10	W44	5179	38 D	1&				7.00			S-SWF
LOCARNO	07	1340	1420	1400	S08	W41	5179	40 D	2	2	1400		9.00			
SAC PEAK	07	1348	1430	1358	S08	W44	5179	42	1	2		3.00			22	
KANZELHOHE	07	1349	1425		S11	W42	5179	26	2							S-SWF
WENDEL	07	1349	1437	1355	S08	W42	5179	48	1&				8.00			
MCMATH	07	1400 E	1450 D		S07	W46	5179	50 D	1&	1						
MCMATH	07	1540 E	1543 D		S07	W46	5179	3 D	1	1						
ARCETRI	08	0838 E	▢		S08	W55	5179	▢	1	2						
MCMATH	08	1240 E	1250 D		N25	E60	5198	10 D	1	1	1243		3.00			
SAC PEAK	08	1434	1515 U	1446	N09	W13	5185	41 D	1	2		3.75			16	
MCMATH	08	1440 E	1520 D	1448	N12	W13	5185	40 D	1&	1	1450		4.00			
MCMATH	09	1520 E	1540 D	1531	N12	W33	5185	20 D	1	1	1531		2.00			
HAWAII	09	1800 E	1910		N17	E90	5204	70 D	2	3						S-SWF
HAWAII	09	1902	1940	1906	N12	W27	5185	38	1	2	1906	2.30	2.60			
MCMATH	10	1245 E	1310 D		N14	W46	5185	25 D	1	1	1253		2.00			
ZURICH	10	1422	1426		S16	W83	5179	4	1	1	1422		1.00			Slow S-SWF
HUANCAYO	10	1426 E	1441	1426	S02	W74	5179	15 D	1	2	1426	1.20	3.70	2.50		
ZURICH	10	1422	1430		N15	E33	5197	8	1	1	1422		2.00			
ARCETRI	10	1518 E	1529 D		S15	W81	5179	11 D	1	2						
LOCARNO	10	1558	1613	1602	N04	E12	5201	15	1	3	1602		1.00			
SAC PEAK	10	1750	1812 D	1752	N11	E25	5197	22 D	1	2		3.85			16	S-SWF
HAWAII	10	1800 E	1810		N12	E28	5197	10 D	1	2	1800	3.70	4.30			
HAWAII	11	0050 E	0106 D		N14	E27	5197	16 D	1	1	0050	2.90	3.20			
NIZAMIAH	11	0355 E	0402 D		N18	E22	5198	7 D	1	1	0355	2.12	2.39	1.40		
CAPRI-S	11	0610 E	0652 D		N14	E79	5204	42 D	1	2	0616	.80	4.20			
LOCARNO	11	0610 E	0700		N18	E85	5204	50 D	2	3						S-SWF

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ATHENS	11	0613 E	0647		N17	E78	5204	34 D	3							
MEUDON	11	0755	0840		S13	W90	5179	45	2							Slow S-SWF
ARCETRI	11	0827	0837		N16	E85	5204	10	1	2						
LOCARNO	11	1020	1025		N12	E20	5197	5	1	3	1020		1.00			
LOCARNO	11	1043	1058	1045	N12	E15	5197	15	1	3	1045		2.00			
MEUDON	11	1150	1225		S13	W90	5179	35	1							
LOCARNO	11	1432	1443	1435	N13	E76	5204	11	1	3	1435		2.00			
SAC PEAK	11	1454	1604	1516	N07	W06	5201	70	1	3		3.95			15	
MCMATH	11	1500 E	1640 D		N06	W05	5201	100 D	1	1	1515		2.50			
LOCARNO	11	1501	1526 D		N06	W04	5201	25 D	2-	3	1526		5.00			
HUANCAYO	11	1532 E	1622	1535	N08	W03	5201	50 D	2	2	1535	6.00	6.00	2.50		
SAC PEAK	11	1802	1840	1808	N16	E85	5204	38	1	3		2.30			22	
SAC PEAK	11	1802	2112	1818	N20	E76	5204	190	1&	3		4.35			18	Slow S-SWF
LOCKHEED	11	1806 E	1818		N16	E80	5204	12 D	1	3	1807	2.20				
HAWAII	11	1806	1832	1806	N15	E80	5204	26	1&	3	1806	3.10	7.00			
HUANCAYO	11	1902 E	2130		N20	E72	5204	148 D	3	2	2037	4.90	15.10	2.50		
MITAKA	12	0530 E	0536 D		N16	E07	5197	6 D	1	1	0533	.51	.54	1.69	91	
LOCARNO	12	0735	0740 D		N16	E15	5197	5 D	1	4	0740		2.00			
CAPRI-S	12	0740 E	0950		N23	E64	5204	130 D	2	3	0909	4.00	9.60			
LOCARNO	12	0750	0950	0830	N18	E67	5204	120	2&	3	1030		17.00			G-SWF
MEUDON	12	0810 E	1020	0910	N20	E70	5204	130	2&				20.00			
ARCETRI	12	0821 E	0957 D		N20	E65	5204	96 D	3	3	0909	5.50	13.50			
ARCETRI	12	0905	0915		N15	E70	5204	10	1	3	0909	1.30	3.90			
NEDERHORST	12	0908	0930 D		N18	E67	5204	22 D	2	3						
STOCKHOLM	12	0915 E	0955		N18	E60	5204	40 D	2	3	0922	2.00	5.20			
ARCETRI	12	0956 E	1009 D		S07	E38	5202	13 D	2	3	1009	1.60				
NEDERHORST	12	1311	1315 D		N18	E66	5204	4 D	1	3						
SAC PEAK	12	1332	1410	1340	N10	E00	5197	38	1	2		2.50			14	
MCMATH	12	1332	1430	1341	N09	W02	5197	58	1	2	1350		2.50			
MEUDON	12	1601	1627		N15	E75	5204	26	1				5.00			
MCMATH	12	1605	1630	1612	N16	E66	5204	25	1	1	1612		4.00			
HUANCAYO	12	1606	1632	1608	N19	E68	5204	26	2	2	1608	2.70	7.00	2.50		
MCMATH	12	1955 E	2050	2013	N15	E05	5197	55 D	1	1	2013		2.20			Slow S-SWF
HUANCAYO	12	2030 E	2059	2030	N15	E05	5197	29 D	1	2	2030	2.40	2.40	1.90		
MITAKA	13	0123 E	0135 D	0126	N23	E52	5204	12 D	1	1	0127	2.57	4.68	2.52	149	
NIZAMIAH	13	0340 E	0346 D		N16	E03	5197	6 D	1	2	0340	2.43	2.52	1.40		S-SWF
MITAKA	13	0341	0351	0346	N17	W03	5197	10	1	1	0345	.82	.85	2.08	113	
TASHKENT	13	0357	0410	0358	N27	E57	5204	13	2							
NIZAMIAH	13	0359 E	0405 D		N17	E55	5204	6 D	1&	2	0359	1.22	2.17	2.80		
MITAKA	13	0400 E	0408	0405	N16	E58	5204	8 D	1	1	0400	2.57	5.14	4.56	96	
NEDERHORST	13	0851 E	0854 D		S13	E56	5202	3 D	1	3						
SAC PEAK	13	2218	2338 D	2230	N16	E46	5204	80 D	1	2		3.20			15	
MCMATH	13	2221 E	2315 D	2229	N17	E47	5204	54 D	1&	1	2229		5.00			
CAPRI-S	14	0632	0710		N19	E43	5204	38	1	3	0638	1.80	2.50			S-SWF
LOCARNO	14	0924	0935		N10	E73	5211	11	1	3	0930		1.00			
LOCARNO	14	0942	0959	0949	N14	E41	5204	17	1&	3	0949		4.00			
ZURICH	14	0948 E	0952 D		N15	E41	5204	4 D	1	1	0948		3.00			
MCMATH	14	1807	1910	1819	N16	W25	5197	63	1&	2	1819		4.00			
HAWAII	14	1810	1832 D	1818	N16	W24	5197	22 D	1	3	1818	3.30	3.70			
MCMATH	14	1810	1820	1812	S15	W68	5194	10	1	2	1812		2.50			

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OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
HAWAII	15	0110	0200 D	0136	N09	E32	5204	50 D	1	2	0136	3.10	3.70			G-SWF
SYDNEY	15	0230	0520	0300	N20	E30	5204	170	2							
NIZAMIAH	15	0236 E	0242		N15	E35	5204	6 D	1	1	0236	1.82	2.28	1.40		
NIZAMIAH	15	0246 E	0311 D		N21	E32	5204	25 D	2&	1	0252	6.08	7.62	2.90		G-SWF
TASHKENT	15	0255 E	0415		N17	E29	5204	80 D	2&							
MITAKA	15	0540 E	0628 D	0543	N20	E25	5204	48 D	1	1	0543	.82	.95	2.09	143	
CAPRI-S	15	0721 E	0807 D		N19	E22	5204	46 D	1	1	0737	2.50	2.80			
LOCARNO	15	0730 E	0825		N18	E24	5204	55 D	2&	2	0730		12.00			
LOCARNO	15	0857	0935 D		N15	E29	5204	38 D	1	2	0920		2.00			
AROSA	15	0959	1008		N15	E90	5219	9	1							
MCMATH	15	1045 E	1105 D		N14	E27	5204	20 D	2	2	1055		8.00			
LOCARNO	15	1050	1135 D	1125	N15	E24	5204	45 D	2	2	1125		10.00			
ZURICH	15	1050	1144		N16	E27	5204	54	1	3	1050		3.00			
CAPRI-S	15	1050 E	1153		N16	E26	5204	63 D	2	3	1120	5.00	6.30			G-SWF
MEUDON	15	1050	1210	1115	N15	E25	5204	80	2				10.00			
ONDREJOV	15	1053 E	1144		N12	E29	5204	51 D	2							
BOULDER	15	1054	1124 D	1109	N25	E18	5204	30 D	1	2	1109	1.90	2.20			
SCHAUINS	15	1058	1145		N15	E25	5204	47	2							
AROSA	15	1218 E	1226		N13	E26	5204	8 D	1							
LOCARNO	15	1325	1350		N17	E22	5204	25	1	2	1335		1.00			
WENDEL	15	1408 E	1444 D		N18	E24	5204	36 D	1				4.00			
HUANCAYO	15	1429	1442	1431	N15	E25	5204	13	1	2	1431	1.90	2.20	2.80		
LOCARNO	15	1430	1450		N15	E24	5204	20	1	2	1440		2.00			
HUANCAYO	15	1459	1601	1520	N18	E24	5204	62	1	2	1520	4.40	5.00	2.00		
WENDEL	15	1502 E	1556 D		N18	E23	5204	54 D	1				3.00			
LOCARNO	15	1538	1553		N15	E25	5204	15	1	2	1540		1.00			
MEUDON	15	1622	1646 D		N15	E25	5204	24	1&				6.00			
MCMATH	15	1622	1715	1630	N13	E25	5204	53	2	2	1630		6.00			
HUANCAYO	15	1623	1702		N13	E29	5204	39	1	2	1625	3.80	4.30	2.60		
ZURICH	15	1625	1703		N17	E24	5204	38	1	3	1643		6.00			S-SWF
ONDREJOV	15	1626 E	1639 D		N14	E24	5204	13 D	2							
SAC PEAK	15	1630 E	1650 U	1630 U	N15	E23	5204	20 D	1	1		3.15			18	
WENDEL	15	1633 E	1712		N15	E24	5204	39 D	2				8.00			
MITAKA	16	0412	0419	0414	N15	E18	5204	7	1	1	0414	2.06	2.25	1.97	96	
CAPRI-S	16	0618	0800		N15	E15	5204	102	3	3	0644	11.00	12.10			
MITAKA	16	0619	0740	0628	N13	E16	5204	81	3	1	0628	15.40	17.30	5.33	251	
AROSA	16	0619	0800		N15	E16	5204	101	3							
LOCARNO	16	0620 E	0805	0638	N16	E16	5204	105 D	3-	2	0638		18.00			S-SWF
ATHENS	16	0625 E	0735 D		N17	E15	5204	70 D	2&							
SIMEIZ	16	0646 E	0904		N18	E15	5204	138 D	2							
BOULDER	16	0712 E	0810	0712 U	N21	E09	5204	58 D	1	2	0736	3.90	4.20	1.90	55	
AROSA	16	1010	1015 D		N13	E78	5219	5 D	1							S-SWF
ZURICH	16	1012	1019		N12	E82	5219	7	1	3	1012		6.00			
MCMATH	16	1943 E	2001 D	1949	N15	E10	5204	18 D	1	1	1949		2.00			
HAWAII	16	1948	1956 D	1950	N15	E10	5204	8 D	1	3	1950	2.50	2.60			
ATHENS	17	0736	0744		N07	E76	5219	8	2							
WENDEL	17	0956 E	1016		N16	E05	5204	20 D	1				3.00			
ZURICH	17	0957	1011		N15	E02	5204	14	1	3	0957		2.00			
MCMATH	17	1132 E	1155 D	1137	N14	W64	5197	23 D	1	1	1137		2.00			
BOULDER	17	1421	1540	1445 U	N20	W05	5204	79	1&	2	1442	2.80	2.90			
CAPRI-S	17	1425	1522		N15	E00	5204	57	2	3	1459	5.00	5.20			

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MCMATH	17	1426	1530 E	1440	N17	W01	5204	64 D	2&	1	1440		9.00			
CLIMAX	17	1427	1515	1446	N17	W03	5204	48	1		1446	4.10				
ONDREJOV	17	1427 E	1515		N07	W03	5204	48 D	2							
SCHAUINS	17	1430 E	1523		N15	E00	5204	53 D	2							
HUANCAYO	17	1431 E	1602		N15	W02	5204	91 D	2	2	1451	8.50	8.80	2.40		Slow S-SWF
MEUDON	17	1432	1530		N25	W02	5204	58	1&				15.00			
WENDEL	17	1432 E	1543 D		N12	W01	5204	71 D	2&				14.00			
SAC PEAK	17	1436 E	1544	1437 U	N17	W05	5204	68 D	1&	2		3.95			20	
LOCARNO	17	1445 E	1540		N15	E00	5204	55 D	2&	2	1500		10.00			
NEDERHORST	17	1450	1525 D		N16	E00	5204	35 D	3	3						
ZURICH	17	1455 E	1527		N15	W01	5204	32 D	2	3	1455		10.00			
HUANCAYO	17	1607 E	1618	1608	N09	W63	5197	11 D	1	2	1608	1.00	2.20	2.30		
HUANCAYO	17	1916	2002	1926	N15	W04	5204	46	2	2	1926	5.90	6.10	3.20		
HAWAII	17	1926	2004	1948	N20	W04	5204	38	1	3	1948	2.50	2.60			G-SWF
MCMATH	17	1929 E	2020 D		N16	W04	5204	51 D	1&	1	1959		5.00			
MCMATH	17	1957 E	2004 D		N12	W73	5197	7 D	1	1	2001		3.00			
CLIMAX	17	2052	2123	2108	N19	W07	5204	31	1		2108	2.60				
HAWAII	17	2102	2122	2108	N20	W06	5204	20	1&	3	2108	4.50	4.80			
HAWAII	17	2306 E	2328	2306	N13	E67	5219	22 D	1&	3	2306	4.10	9.50			
MITAKA	18	0103 E	0121		N17	W10	5204	18 D	1	1	0104	2.67	2.86	2.09	120	
MITAKA	18	0243 E	0245		N18	W09	5204	2 D	1	1	0243	1.34	1.42	1.87	96	
ZURICH	18	0648	0651		N17	W13	5204	3	1	2	0648		3.00			
ONDREJOV	18	1104 E	1138		N07	E60	5219	34 D	2							
CAPRI-S	18	1105 E	1140 D		N10	E59	5219	35 D	1	3	1106	1.50	3.00			
MEUDON	18	1110	1135		N08	E65	5219	25	1				4.00			
SCHAUINS	18	1110 E	1205		N09	E62	5219	55 D	2							S-SWF
WENDEL	18	1115 E	1159 D		N07	E64	5219	44 D	2				10.00			
MCMATH	18	1127 E	1223 D		N06	E60	5219	56 D	2	2	1130		5.00			
LOCARNO	18	1130 E	1210 D		N08	E58	5219	40 D	2	2	1130		8.00			
MCMATH	18	1130	1310	1145	N17	W13	5204	100	3&	2	1145		26.00			
LOCARNO	18	1134	1210 D	1150	N16	W13	5204	36 D	3	2	1150		22.00			
KANZELHOHE	18	1135	1150 D		N12	W13	5204	15 D	3							
WENDEL	18	1135	1159 D	1145	N17	W13	5204	24 D	3&				29.00			
CAPRI-S	18	1139 E	1235		N15	W11	5204	56 D	3	3	1149	22.00	23.00			
MEUDON	18	1140	1300	1149	N17	W11	5204	80	3				40.00			
ONDREJOV	18	1145 E	1227		N17	W14	5204	42 D	2&							
SCHAUINS	18	1147 E	1227 D		N15	W10	5204	40 D	3							
MCMATH	18	1224	1320 D	1240	N06	E60	5219	56 D	1	2	1240		2.50			
ZURICH	18	1229	1232 D		N07	E56	5219	3 D	1	1	1229		3.00			
CAPRI-S	18	1229 E	1304		N07	E57	5219	35 D	1	3	1233	1.20	2.20			Slow S-SWF
ONDREJOV	18	1229 E	1305		N06	E55	5219	36 D	2							
LOCARNO	18	1240 E	1250 D		N08	E58	5219	10	2	2						
MCMATH	18	1815 E	1821 D		N06	E55	5219	6 D	1	1	1818		3.00			
HAWAII	18	1922	1946	1924	N15	W16	5204	24	1	3	1924	2.70	2.90			
HUANCAYO	18	1924 E	2022	1924	N14	W16	5204	58 D	1&	2	1924	4.50	4.70	2.20		
LOCKHEED	18	1926 E	2007		N15	W16	5204	41 D	1	3	1928	2.70				
MCMATH	18	1952 E	2004 D		N15	W15	5204	12 D	1	1	1958		1.00			
HUANCAYO	18	2010 E	2032	2010	N10	E52	5219	22 D	1	2	2010	1.60	2.60	2.20		
MCMATH	18	2040 E	2200 D		N06	E55	5219	80 D	1&	1	2045		5.00			
HUANCAYO	18	2056 E	2140	2102	N07	E50	5219	44 D	1&	2	2102	3.90	6.20	2.20		
LOCARNO	19	0600 E	0620		N18	W25	5204	20 D	1	2	0600		1.00			

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LOCARNO	19	0656	0810 D		N14	W23	5204	74 D	1&	2	0730		2.00			
MEUDON	19	0814	0935		N15	E25	5217	81	1				3.00			
ARCETRI	19	0821 E	0911 D		N10	E25	5217	50 D	1	3	0832	4.10	4.60			
MCMATH	19	1115 E	1205		N22	E26	5217	50 D	1	2	1125		2.00			
MCMATH	19	1125	1210		N18	W26	5204	45	1	2	1145		2.50			
WENDEL	19	1217 E	1235 D		N08	E46	5219	18 D	1				3.00			
MCMATH	19	1237	1345	1251	N14	W04	5211	68	1	2	1251		3.00			
MEUDON	19	1239	1330	1250	N15	W01	5211	51	1				5.00			
WENDEL	19	1240	1311 D		N13	W03	5211	31 D	1&				8.00			
ZURICH	19	1240	1328		N15	W05	5211	48	1&	1	1240		5.00			
BOULDER	19	1241 E	1330	1250 U	N12	W02	5211	49 D	1	2	1250	1.90	2.00	2.20	76	
CAPRI-S	19	1244 E	1334		N14	W01	5211	50 D	1	1	1249	2.50	2.60			
SAC PEAK	19	1253 E	1344	1253 U	N13	W04	5211	51 D	1	2		2.15			20	
NEDERHORST	19	1358 E	1402 D		N11	E48	5219	4 D	1	2						
LOCARNO	19	1400 E	1420		N10	E45	5219	20 D	1	2						
HUANCAYO	19	1503	1542	1528	N18	W27	5204	39	1&	2	1528	5.00	5.60	3.10		
WENDEL	19	1520	1540 D		N17	W30	5204	20 D	1&				5.00			
LOCARNO	19	1520 E	1540 D		N14	W28	5204	20 D	1&	2						
WENDEL	19	1604 E	1625 D		N16	W31	5204	21 D	1				3.00			
SAC PEAK	19	1606	1728	1644	N17	W30	5204	82	1&	2		5.00			24	
LOCKHEED	19	1607	1725	1640	N17	W29	5204	78	1		1640	3.40				
HUANCAYO	19	1611 E	1701 D	1639	N15	W28	5204	50 D	1&	2	1639	4.50	5.30	2.50		
MCMATH	19	1612 E	1720 D	1644	N16	W28	5204	68 D	1&	1	1644		4.00			S-SWF
MEUDON	19	1614	1655 D		N16	W28	5204	41	1&				6.00			
WENDEL	19	1624 E	1745 D		N15	W29	5204	81 D	2				12.00			
LOCARNO	19	1630 E	1710 D		N14	W28	5204	40 D	2	2						
KANZELHOHE	19	1643 E	1655 D		N27	W26	5204	12 D	2							
SCHAUINS	19	1646 E	1730		N18	W26	5204	44 D	2							
MCMATH	19	2137 E	2145 D		N18	W32	5204	8 D	1	1	2141		2.50			
HAWAII	19	2214	2238	2220	N16	W32	5204	24	1	3	2220	3.10	3.90			
MCMATH	19	2218 E	2235 D		N18	W32	5204	17 D	1	1	2220		3.50			
HAWAII	19	2230	2242	2232	N08	E40	5219	12	1	3	2232	3.10	4.10			
HAWAII	19	2316	2400	2318	N19	W34	5204	44	1	3	2318	2.90	3.60			
ZURICH	20	0611 E	0619		N14	W36	5204	7 D	1	1	0611		2.00			
HUANCAYO	20	1650	1659	1653	N14	E23	5219	9	1	2	1653	2.50	2.90	2.10		
MCMATH	20	2009	2100 D	2016	N06	E27	5219	51 D	1	1	2016		2.50			
WENDEL	21	0701 E	0726 D		N18	W53	5204	25 D	1&				4.00			
WENDEL	21	1158 E	1205 D		N17	W56	5204	7 D	1				3.00			
MCMATH	21	1919	1938 D	1927	N19	W60	5204	19 D	1	1	1927		2.00			S-SWF
HAWAII	21	1926 E	1946		N20	W59	5204	20 D	1	3	1927	2.50	4.70			
HAWAII	21	2154	2202 D	2154	N08	E12	5219	8 D	1	3	2154	2.50	2.50			
HAWAII	21	2224	2246	2226	N17	E86	5228	22	1&	3	2226	2.10				
MCMATH	21	2227 E	2245 D	2227	N18	E85	5228	18 D	1	1	2227		2.00			
MEUDON	22	0940	1013	0948	N18	W45	5204	33	1				6.00			
LOCARNO	22	1010	1110 D	1035	N17	W65	5204	60 D	2	2	1035		10.00			
MEUDON	22	1014	1135	1033	N17	W70	5204	81	1&				10.00			
ONDREJOV	22	1027 E	1127 D	1030	N21	W70	5204	60 D	2							S-SWF
CAPRI-S	22	1028 E	1112 D		N20	W69	5204	44 D	2	2	1035	2.50	6.50			
BOULDER	22	1029 E	1115	1036 U	N18	W67	5204	46 D	2	2	1032	1.90	5.20	2.30	78	
NEDERHORST	22	1037	1105 D		N19	W67	5204	28 D	2	2						

SOLAR FLARES

JUNE 1959

OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ARCETRI	22	1452 E	□		N15	W02	5219	□	1	3						
SAC PEAK	22	1854	1910	1858	N09	W01	5219	16	1	2		2.35			17	
HUANCAYO	22	1857 E	1914	1857	N09	W01	5219	17 D	1	2	1857	4.10	4.20	2.80		G-SWF
HAWAII	22	1858 E	1912	1858	N10	E00	5219	14 D	1&	3	1858	4.50	4.60			
HAWAII	22	1950 E	2000	1952	N17	E70	5228	10 D	1	3	1952	2.10	6.50			
HUANCAYO	22	1952 E	2006	1954	N20	E70	5228	14 D	2&	2	1954	5.70	15.00	2.20		
SAC PEAK	22	1954 E	2002	1954 U	N18	E72	5228	8 D	1	2		2.10			14	
TASHKENT	23	0348	0425		N16	W67	5204	37	2							
LOCARNO	23	1030 E	1046		N08	E30	5225	16 D	1	2	1030		1.00			
LOCARNO	23	1420 E	1440		N10	E41	5227	20 D	1&	2	1420		1.00			
ZURICH	23	1532	1546 D		N13	W08	5219	14 D	1	2	1532		3.00			
SAC PEAK	23	1648	1712	1652	N24	E00	5219	24	1	3		2.55			20	
MCMATH	23	1650 E	1656 D		N09	E26	5225	6 D	1	1	1654		2.50			
CLIMAX	23	1648	1713		N09	E26	5225	25	1		1702	3.40				S-SWF
SAC PEAK	23	1648	1748	1654	N08	E27	5225	60	1	3		3.10			16	
MCMATH	23	1650 E	1656 D		N24	W03	5219	6 D	1	1	1654		2.00			
HUANCAYO	23	2130 E	2141 D	2136	N25	W01	5219	11 D	1	1	2136	2.30	2.50	2.50		
MCMATH	23	2130 E	2210		N24	W06	5219	40 D	1	1	2135		3.00			
LOCARNO	24	1414	1448		N11	E15	5225	34	1	2	1425		2.00			
ZURICH	24	1421	1425 D		N10	E17	5225	4 D	1	2	1421		3.00			
MCMATH	24	1507 E	1537	1509	N31	E90	5231	30 D	1	1	1509					
LOCARNO	24	1515	1520 D		N08	E15	5225	5 D	1	2						
WENDEL	24	1519 E	1534 D		N08	E14	5225	15 D	1				3.00			
WENDEL	24	1559 E	1647		N11	E14	5225	48 D	1&				7.00			
SAC PEAK	24	1604	1646	1618	N10	E13	5225	42	1	2		2.50			17	
ZURICH	24	1613 E	1645		N09	E11	5225	32 D	1	2	1613		3.00			
NIZAMIAH	25	0523 E	0530 D	0525	N19	E37	5228	7 D	1	3	0525	1.82	2.38	1.50		
WENDEL	25	0649	0724	0658	N11	E05	5225	35	1&				7.00			
CAPRI-S	25	0659	0720		N10	E07	5225	21	1	3	0705	2.30	2.40			
LOCARNO	25	1600	1615 D		S15	E36	5230	15 D	1	2	1608		1.00			
MCMATH	25	1759 E	1810 D		S16	E36	5230	11 D	1	1	1807		2.00			
HAWAII	25	2120	2154	2124	N09	W05	5225	34	1	3	2124	2.20	2.20			
HUANCAYO	26	2144 E	2156 D	2144	N17	E07	5227	12 D	1	1	2145	2.10	2.20	3.50		
ZURICH	27	0949 E	1004 D		S15	E09	5230	15 D	1	2	0949		2.00			
MCMATH	27	1140 E	1245		N28	E56	5241	65 D	1	1	1142		2.50			
LOCARNO	27	1523	1545		N17	W01	5227	22	1&	3						
SAC PEAK	27	1524	1546	1526	N18	W04	5227	22	1	2		3.00			18	G-SWF
CLIMAX	27	1525	1540	1533	N15	W03	5227	15	1		1533	3.10				
MCMATH	27	1525	1545 D	1529	N17	W03	5227	20 D	1	1	1529		2.50			
MCMATH	27	1600 E	1635		N25	E54	5241	35 D	1	1	1601		2.00			S-SWF
SAC PEAK	27	1644	1734	1648	N08	W28	5225	50	1&	2		4.35			20	
MCMATH	27	1644 E	1735 D		N09	W28	5225	51 D	1&	1	1651		5.00			S-SWF
LOCARNO	27	1645	1650 D	1647	N07	W27	5225	5 D	1&	3	1647		3.00			
HAWAII	27	2202	2224	2208	N19	W05	5227	22	1	3	2208	2.20	2.30			
MITAKA	28	0510	0522	0514	N17	W07	5228	12	1	1	0510	4.11	4.27	1.72	96	
ARCETRI	28	0820	0913		N14	W07	5228	53	1&	3						
CAPRI-S	28	0823 E	0935 D		N18	W07	5228	72 D	1	3	0925	2.00	2.10			

SOLAR FLARES

JUNE 1959

OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Hα	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
LOCARNO	28	0840 E	0925		N16	W09	5228	45 D	1&	2	0900		3.00			
LOCARNO	28	0840 E	0853		N30	E41	5241	13 D	1	2	0840		1.00			
LOCARNO	28	0840 E	0904		N10	E81	5244	24 D	1	2						
ARCETRI	28	0849	0855		N12	E79	5244	6	1	3						
ARCETRI	28	0845	0853		N30	E42	5241	8	1	3						
MCMATH	28	1308	1348	1327	N11	W90	5219	40	1	1	1327		2.00			
LOCARNO	28	1350 E	1410 D		S09	E40	5234	20 D	1	2	1350		2.00			
SAC PEAK	28	1418	1438	1426	N16	W12	5227	20	1	2		3.05			17	
SAC PEAK	28	1904	1936	1906	S12	E43	5234	32	1	2		2.10			17	
MCMATH	28	1904	1940	1908	S15	E42	5234	36	1	1	1908		2.00			
CAPRI-S	29	0855	0954		S23	E28	5239	59	2	2	0918	5.00	6.00			
MOSCOW-G	29	0907	1020		S23	E28	5239	73	2							
CLIMAX	29	1305	1355	1311	S16	E30	5234	50	2		1311	7.20				
CAPRI-S	29	1310	1342 D		S16	E29	5234	32 D	1	2	1321	3.50	4.10			
ZURICH	29	1322 E	1345		S15	E25	5234	23 D	2	2	1322		7.00			
MEUDON	29	1341 E	□		S12	E28	5234	□	1							

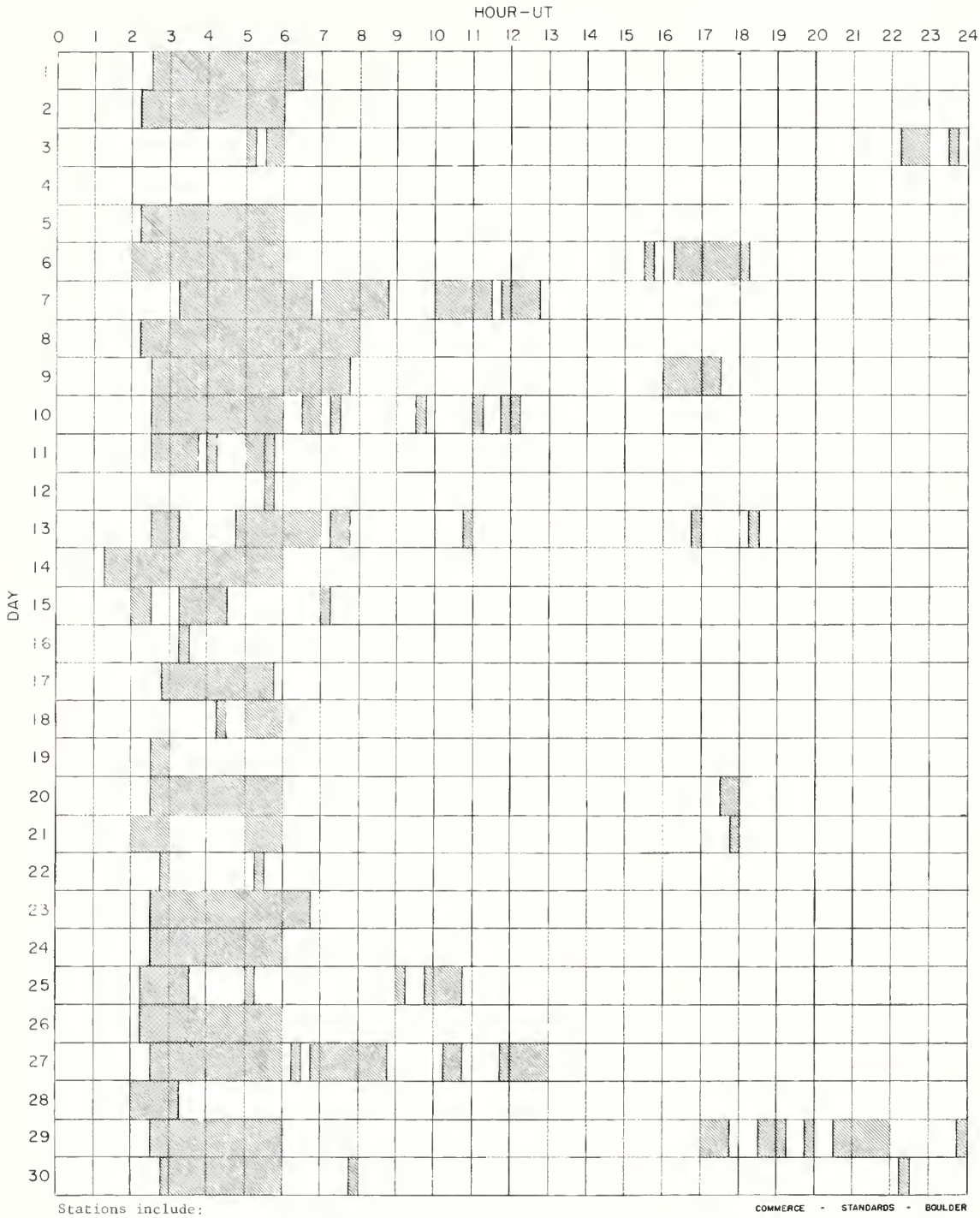
CAPRI G ANACAPRI - GERMAN
CAPRI S ANACAPRI - SWEDISH
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKNAL KODAIKANAL
KRASNYÁ KRASNAYA PAKHRA
LOCKHEED LOS ANGELES
MOSCOW-G MOSCOW - GAISH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX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

INTERVALS OF NO FLARE PATROL OBSERVATIONS
JUNE 1959



Stations include:

Anacapri (Swedish)
Arcetri
Arosa
Climax
Hawaii
Huancayo
Locarno
Lockheed
Meudon
Mitaka
Nederhorst
Nizamiah
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Utrecht
Zurich

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

MAY 1959

*	BOULDER	01	0813		N16 [illegible]		MCMATH	06	1202	N25 E76		WENDEL	10	1621	E	N10 W03			
	MCMATH	01	1250		N16 W24		MCMATH	06	1210	S15 E45	*	SAC PEAK	10	1657	E	S13 W25			
	MCMATH	01	1326		N10 W85		MCMATH	06	1224	N25 E75		SAC PEAK	10	1727		N21 E59			
	MCMATH	01	1340		S08 E31		MCMATH	06	1250	S15 E45		SAC PEAK	10	1816		S17 W15			
	MCMATH	01	1420		S08 W03		MCMATH	06	1259	N25 E75	*	SAC PEAK	10	1914		S17 E05			
*	MCMATH	01	1505		N15 W41		SAC PEAK	06	1358	N25 E69	*	SAC PEAK	10	2110		N29 E15			
	MCMATH	01	1754	E	S08 W03		MCMATH	06	1401	N26 E85		SAC PEAK	10	2256		S07 E12			
	MCMATH	01	1837		S08 W63		MCMATH	06	1406	S06 W71		SAC PEAK	10	2320		N28 E20			
	MCMATH	01	1843		N11 W41		SAC PEAK	06	1412	N25 E72									
	MCMATH	01	2154		N29 W88		MCMATH	06	1413	N26 E85		CAPRI-S	11	0611	E	N18 E43			
	MCMATH	01	2154		N10 W30		MCMATH	06	1433	N25 E73	*	CAPRI-S	11	0707	E	S15 W18			
*	MCMATH	01	2221		N12 W08		MCMATH	06	1507	E S07 W20	*	WENOEL	11	0722	E	N20 E45			
							MCMATH	06	1520	S05 W74		WENOEL	11	0805	E	N10 E52			
	LOCARNO	02	0821		S09 W11		SAC PEAK	06	1522	S06 W70		WENOEL	11	0821	E	N21 E46			
*	LOCARNO	02	0925	E	S08 W12		SAC PEAK	06	1544	N13 E65		WENOEL	11	0939	E	S15 W12			
	SAC PEAK	02	1326		S 7 W16	*	MCMATH	06	1544	N24 E75		LOCARNO	11	1245		N14 E35			
	MCMATH	02	1411	E	N18 W43		MCMATH	06	1613	N11 E56		SAC PEAK	11	1350		S17 W04			
	SAC PEAK	02	1426		S07 W14		SAC PEAK	06	1630	S17 E40		WENOEL	11	1352	E	S18 W04			
	MCMATH	02	1428		S 8 W13		MCMATH	06	1632	S17 E42		SAC PEAK	11	1518		N16 E37			
	SAC PEAK	02	1431		N16 W43		SAC PEAK	06	1722	N09 E51		WENDEL	11	1522	E	N27 E10			
	MCMATH	02	1452		N18 W44		MCMATH	06	1725	N10 E57		SAC PEAK	11	1532		S12 W34			
	LOCARNO	02	1520		N15 W44		HAWAII	06	1820	N22 E68		SAC PEAK	11	1548		N21 E43			
*	MCMATH	02	1556		N18 W44		MCMATH	06	1827	N25 E71	*	SAC PEAK	11	1642		N09 E41			
	MCMATH	02	1616		S09 E35		SAC PEAK	06	1846	N26 E75		SAC PEAK	11	1656		S17 W25			
	MCMATH	02	1641		N17 W46		SAC PEAK	06	2012	N09 E50		SAC PEAK	11	1858		N17 E46			
	MCMATH	02	1651		N14 E90		SAC PEAK	06	2020	N24 E65		SAC PEAK	11	1920		S17 W27			
	MCMATH	02	1701		N11 W46		SAC PEAK	06	2040	N09 E50	*	SAC PEAK	11	1936		S16 W27			
	MCMATH	02	1805		N18 W47		SAC PEAK	06	2250	N09 E50		SAC PEAK	11	2104		S17 W27			
	SAC PEAK	02	1806		N17 W47							HAWAII	11	2112		N19 E46			
	MCMATH	02	1856		N19 W11		LOCARNO	07	0732	S16 E34		SAC PEAK	11	2112		N20 E38			
	MCMATH	02	1902		N16 W47		WENOEL	07	0818	E S15 W33		HAWAII	11	2120	E	N16 E34			
	MCMATH	02	1926		S08 W18	*	LOCARNO	07	1003	S18 E54		SAC PEAK	11	2130		S11 W32			
	HAWAII	02	1930		S09 W19	*	BOULDER	07	1309	E S17 E30		SAC PEAK	11	2204		S17 W28			
	SAC PEAK	02	1932	E	S10 W18	*	MCMATH	07	1638	N24 E55		SAC PEAK	11	2220		N10 W20			
	SAC PEAK	02	1932		N14 W45		SAC PEAK	07	1729	E N23 E90									
	HAWAII	02	1938		N16 W46		MCMATH	07	1757	S15 E19		LOCARNO	12	0743		N30 W53			
	MCMATH	02	2013		N14 E90		MCMATH	07	1915	S18 E31		LOCARNO	12	0752		S13 E38			
	MCMATH	02	2039		N17 W47		MCMATH	07	2000	N11 E41		LOCARNO	12	1017		S13 W42			
	MCMATH	02	2100		N17 W48		MCMATH	07	2003	N10 E33	*	CAPRI-S	12	1104	E	N11 W23			
	HAWAII	02	2102		N16 W46	*	MCMATH	07	2027	N18 E90	*	MCMATH	12	1220		N09 E35			
	HAWAII	02	2206		N16 W46		SAC PEAK	07	2054	N28 E65	*	SAC PEAK	12	1254		N10 E34			
							MCMATH	07	2058	E N29 E70	*	CAPRI-S	12	1256		N10 E34			
	CAPRI-G	03	1005	E	N15 W56		HAWAII	07	2058	N26 E68		SAC PEAK	12	1316		S18 W15			
	MCMATH	03	1201	E	N18 W58		HAWAII	07	2240	N09 E30		MCMATH	12	1318		S18 W14			
	MCMATH	03	1218		N19 W59							SAC PEAK	12	1352		N11 W28			
	MCMATH	03	1238		S07 W25		LOCARNO	08	0643	N23 E25		MCMATH	12	1358		N11 W28			
	MCMATH	03	1241		N19 W57		LOCARNO	08	0648	N06 E50	*	SAC PEAK	12	1410		N08 E32			
	MCMATH	03	1301		S07 W25		LOCARNO	08	1005	E N07 E22	*	MCMATH	12	1411		N06 E32			
	MCMATH	03	1325		N19 W60		WENDEL	08	1058	E N17 E87	*	SAC PEAK	12	1416		S17 W35			
	MCMATH	03	1330		N15 W60	*	STOCKHOLM	08	1144	S16 E19	*	MCMATH	12	1419		S16 W35			
	MCMATH	03	1400		N15 W61	*	MCMATH	08	1145	S15 E17		SAC PEAK	12	1422		S19 W15			
*	MCMATH	03	1451		N16 W58		MCMATH	08	1227	E S18 E33	*	MCMATH	12	1450		N11 W27			
	LOCARNO	03	1456		S10 W25		MCMATH	08	1233	S17 E18		SAC PEAK	12	1454		N11 E00			
	SAC PEAK	03	1458		N14 W57		MCMATH	08	1233	E N25 E48	*	CAPRI-S	12	1454	E	N11 W25			
	LOCARNO	03	1514		S 9 W26	*	MCMATH	08	1253	N13 E90		SAC PEAK	12	1508		S17 W23			
*	MCMATH	03	1612		N18 W27		MCMATH	08	1303	S12 E07		MCMATH	12	1527	E	N21 E32			
	SAC PEAK	03	1704		N17 W26		MCMATH	08	1332	N18 E44		MCMATH	12	1535		S14 W37			
	SAC PEAK	03	1846		N15 W58		MCMATH	08	1349	N11 E24		SAC PEAK	12	1536		S15 W38			
	HAWAII	03	1848		N18 W58	*	MCMATH	08	1418	N18 E78	*	MCMATH	12	1705		S14 W37			
	HAWAII	03	1852		N17 W75	*	SAC PEAK	08	1428	E N20 E80	*	SAC PEAK	12	1710		S14 W39			
	SAC PEAK	03	205		N18 W58		MCMATH	08	1450	N18 E47	*	MCMATH	12	1744		N06 E29			
						*	MCMATH	08	1510	N15 E83	*	SAC PEAK	12	1746		N17 E29			
	WENDEL	04	1100	E	S13 W78	*	MCMATH	08	1512	N18 E78		SAC PEAK	12	1850		S14 W40			
	WENDEL	04	1216	E	N18 W39		SAC PEAK	08	1514	S18 E35		MCMATH	12	1853		S12 W40			
	WENDEL	04	1329	E	S09 W37	*	SAC PEAK	08	1528	N18 E80		MCMATH	12	1915		N15 E24			
+	SAC PEAK	04	1402		N13 W72		MCMATH	08	1630	N24 E48		HAWAII	12	1920		N15 E24			
*	SAC PEAK	04	1408		N19 W40	*	SAC PEAK	08	1641	E N17 E77		SAC PEAK	12	2012		S17 W24			
*	HUANCAYO	04	1410		N19 W38		MCMATH	08	1657	N10 E27		SAC PEAK	12	2018		N20 E30			
*	SAC PEAK	04	1414		N19 W66		MCMATH	08	1718	N10 E27		HAWAII	12	2020		N19 E32			
	MCMATH	04	1651	E	S15 E67	*	SAC PEAK	08	1758	N19 E85		SAC PEAK	12	2026		N15 E24			
	MCMATH	04	1651	E	S07 W42	*	MCMATH	08	1836	E N22 E78		MCMATH	12	2027		N15 E23			
	SAC PEAK	04	1722		S06 E90	*	MCMATH	08	1937	N11 E34		HAWAII	12	2028		N15 E24			
	MCMATH	04	1743	E	N16 W74		MCMATH	08	1951	S12 E03		MCMATH	12	2111		N10 W33			
	SAC PEAK	04	1824		S09 W41		SAC PEAK	08	1956	N22 E86	*	HAWAII	12	2146		N14 E23			
	MCMATH	04	1826		S07 W42		HAWAII	08	1958	N18 E90	*	MCMATH	12	2149	E	N17 E25			
	MCMATH	04	1842		S16 E72	*	SAC PEAK	08	2012	N10 E25	*	MCMATH	12	2149	E	N07 E27			
*	SAC PEAK	04	1852		S16 E68	*	MCMATH	08	2015	N10 E25	*	SAC PEAK	12	2242		N08 E29			
*	HAWAII	04	1858	E	S19 E67		SAC PEAK	08	2020	N15 E86	*	SAC PEAK	12	2244		S14 W42			
	HAWAII	04	1858	E	S19 W42						*	SAC PEAK	12	2304		N18 E22			
	HUANCAYO	04	1937	E	S08 W43	*	WENOEL	09	0810	E N20 E75									
	HAWAII	04	1938		S05 W45		MCMATH	09	1139	N11 E15	*	CAPRI-S	13	0639	E	N10 E25			
	HAWAII	04	1950		N18 W40		MCMATH	09	1148	N19 E74		LOCARNO	13	0705	E	S16 W25			
	HAWAII	04	2050		N22 W75		MCMATH	09	1212	N27 E39		LOCARNO	13	0734		S13 W59			
	HAWAII	04	2112		S20 E67		MCMATH	09	1226	N12 E75	*	WENOEL	13	0808	E	N21 E21			
	MCMATH	04	2136		S07 W45		MCMATH	09	1239	N23 E29		LOCARNO	13	1217		N08 E20			
	MCMATH	04	2158		N21 W80		MCMATH	09	1246	S18 E20	+	SAC PEAK	13	1336		N07 E18			
	HAWAII	04	2158		N21 W70		MCMATH	09	1313	N11 E60	*	SAC PEAK	13	1416		S07 E90			
							MCMATH	09	1329	N24 E28	*	SAC PEAK	13	1416		N10 E15			
	HAWAII	05	0026		N19 W43		SAC PEAK	09	1426	E N13 E58	*	SAC PEAK	13	1422		S14 W53			
	HAWAII	05	0142		S06 W46		SAC PEAK	09	1432	N24 E27	*	SAC PEAK	13	1512		S10 E90			
	WENOEL	05	0832	E	N16 W76		MCMATH	09	1438	N24 E28	*	SAC PEAK	13	1530		S14 W53			
*	STOCKHOLM	05	0910		N15 E49		MCMATH	09	1447	N27 E37	*	SAC PEAK	13	1618		S10 E90			
*	WENOEL	05	0914	E	N14 E45		MCMATH	09	1557	S17 W00	*	MCMATH	13	1618		S12 E90			
	CAPRI-G	05	0915	E	N15 E44		MCMATH	09	1645	S18 E18		SAC PEAK	13	1740		N25 E29			
	MCMATH	05	1129	E	S05 W58		MCMATH	09	1708	S12 W00		HAWAII	13	1858		a			
	MCMATH	05	1139		N19 W90		MCMATH	09	1711	N12 E65		HAWAII	13	2312		N20 W47			
	MCMATH	05	1147		S16 E59		MCMATH	09	1714	N19 E72		HAWAII	13	2352		S11 W58			
	MCMATH	05	1151		N19 W90		MCMATH	09	1719	S18 E18									
	MCMATH	05	1155		N23 E90		MCMATH	09	1722	N15 E70		CAPRI-S	14	1038	E	N10 W54			
+	MCMATH	05	1258	E	N23 E90		MCMATH	09	1724	N19 E63		SAC PEAK	14	1858		S13 W70			
+	SAC PEAK	05	1328		N16 W90		MCMATH	09	1724	N23 E27		SAC PEAK	14	1944	E	S13 W72			
+	WENOEL	05	1330	E	N17 W82		MCMATH	09	1737	S21 E07		SAC PEAK	14	2028	E	N11 W07			
+	SAC PEAK	05	1352		N26 E90		MCMATH	09	1746	N19 E70		SAC PEAK	14	2040		S13 W72			
+	MCMATH	05	1408		N19 W90		SAC PEAK	09	1808	N21 E68		SAC PEAK	14	2116		S13 W70			
	MCMATH	05	1408		S15 E59		MCMATH	09	1829	S19 E17		HAWAII	14	2126		S12 W72			
*	SAC PEAK	05	1450		N17 W90		MCMATH	09	1829	N09 E10									
*	SAC PEAK	05	1504		N25 E90		MCMATH	09	1839	N08 W74	*	HAWAII	15	0106	E	N22 E03			
*	MCMATH	05	1558		S16 E59		MCMATH	09	1855	N12 E69		STOCKHOLM	15	0928		N08 E34			
	MCMATH	05	1644		S07 W56		MCMATH	09	1903	N23 E26	*	CAPRI-S	15	1102	E	S20 W57			
	WENOEL	05	1644	E	S08 W57		MCMATH	09	1906	N21 E57		SAC PEAK	15	1429	E	S17 W60			
	WENDEL	05	1646	E	N22 E80		MCMATH	09	1914	S09 E29		SAC PEAK	15	1530		N10 E30			
	MCMATH	05	1656		S07 W56		MCMATH	09	1916	N12 E69		SAC PEAK	15	1556		N22 W08			
*	MCMATH	05	1659		S16 E58		MCMATH	09	1930	N23 E25		MCMATH	15	1935		S08 E59			
	MCMATH	05	1707		N19 W90		MCMATH	09	1942	S21 E06		HAWAII	15	1940		S09 E60			
	MCMATH	05	1709		S07 W57		MCMATH	09	1953	S18 E18	*	MCMATH	15	2105	E	S10 W90			
*	SAC PEAK	05	1734		N24 E90		MCMATH	09	2041	N11 E10		SAC PEAK	15	2215		N30 W45			
	MCMATH	05	1801		N19 W90		MCMATH	09	2051	N24 E25		HAWAII	15	2216	E	N35 W37			
	MCMATH	05	1806		N23 E90		HAWAII	09	2054	E N23 E27		MCMATH	15	2221	E	N31 W43			
	SAC PEAK	05	1846		N18 W57		MCMATH	09	2108	N12 E67									
	HAWAII	05	1848		N27 W55		MCMATH	09	2115	N29 E38	*	STOCKHOLM	16	0855	E	N22 W05			
	MCMATH	05	1924		N19 W90		MCMATH	09	2141	N19 E69		LOCARNO	16	0928	E	N14 W04			
*	MCMATH	05	2012		N23 E90							SAC PEAK	16	1336		N16 W21			
	MCMATH	05	2016		N19 W90		NIZAMIAH	10	0544	N25 E63		SAC PEAK	16	1352		N18 W16			
	MCMATH	05	2037		S06 W59		WENDEL	10	0711	E N19 W65		SAC PEAK	16	1404		N17 W15			
	SAC PEAK	05	2144		N32 W76		WENDEL	10	1025	E S17 E02	*	MCMATH	16	1502		N22 W08			
	SAC PEAK	05	2300		N29 E90	*	WENDEL	10	1048	E N21 E63		SAC PEAK	16	1730		N18 W16			
							WENDEL	10	1407	E N24 E16	*	MCMATH	16	1732		N21 W12			
	WENOEL	06	0709	E	S08 W64	*	WENDEL	10	1418	E N15 E61		SAC PEAK	16	1746		N22 W22			
	LOCARNO	06	0840		S08 W62		SAC PEAK	10	1432	N13 E46		MCMATH	16	1831		N20 W08			
	STOCKHOLM	06	1013		N17 E62		WENOEL	10	1432	E N11 E45	*	SAC PEAK	16	1932		N28 W57			
	MCMATH	06	1134		N13 E72		WENOEL	10	1441	E N13 W02		SAC PEAK	16	1946		N15 W24			
	MCMATH	06	1146		S06 W70		WENDEL	10	1514	E N13 W05		MCMATH	16	1957		N20 W55			

COMMERCE - STANDARDS - BOULDER

SUBFLARES

Noted as follows: Date - Universal Time - Coordinates

MAY 1959

	MCMATH	16	1959	N17 W31
	SAC PEAK	16	2234	S18 W75
	SAC PEAK	16	2252 E	N16 E57
	SAC PEAK	17	1302	N20 W21
	SAC PEAK	17	1312	N16 W38
	SAC PEAK	17	1410	N10 E84
	SAC PEAK	17	1428	N19 W25
+	SAC PEAK	17	1440	N27 W68
	SAC PEAK	17	1520	N15 W36
	CAPRI-S	17	1522 E	N13 W35
	SAC PEAK	17	1536	N08 E04
	SAC PEAK	17	1606	N22 W33
	SAC PEAK	17	1612	N22 W20
*	SAC PEAK	17	1612	N15 E46
	SAC PEAK	17	1652	N20 W25
	SAC PEAK	17	1754	N24 W34
	HAWAII	17	2242 E	N14 E45
	HAWAII	17	2242 E	N18 W41
	WENDEL	18	0619 E	N20 E65
	WENDEL	18	0627 E	N23 W43
	WENDEL	18	0725 E	N22 W31
*	CAPRI-S	18	0937 E	N19 E60
	MCMATH	18	1130 E	S24 W86
	MCMATH	18	1131 E	N22 W35
	MCMATH	18	1137	N21 W43
*	MCMATH	18	1203	N20 W33
	MCMATH	18	1221	N15 W48
	MCMATH	18	1310	N20 W33
	LOCARNO	18	1334	S15 W32
	MCMATH	18	1414	N09 W49
	MCMATH	18	1505	N21 W33
+	SAC PEAK	18	1528	N15 W49
*	MCMATH	18	1529	N16 W49
+	HUANCAYO	18	1529	N16 W47
	MCMATH	18	1542	N15 E31
	CAPRI-S	18	1554 E	N13 W53
	MCMATH	18	1613	N18 E57
	SAC PEAK	18	1614	N17 E56
	HUANCAYO	18	1623 E	N18 E59
	SAC PEAK	18	1638	N20 W35
	MCMATH	18	1640	N21 W33
	MCMATH	18	1643	N15 W48
	MCMATH	18	1751	N21 W36
	MCMATH	18	2029	N11 E31
	MCMATH	18	2037	N10 W14
	SAC PEAK	18	2340	N09 W14
	MCMATH	18	2 50	N16 E30
	SAC PEAK	18	2112	N15 E30
	CAPRI-S	19	0600 E	N17 E49
	CAPRI-S	19	0741 E	N09 W17
	CAPRI-S	19	0802 E	N20 W60
	CAPRI-G	19	0808 E	N20 W64
	CAPRI-S	19	0940 E	N25 W55
	CAPRI-G	19	1247 E	N21 W56
	SAC PEAK	19	1253 E	N24 W58
	SAC PEAK	19	1258	N17 W48
	MCMATH	19	1444 E	N15 E20
	SAC PEAK	19	1506	N15 E18
	CAPRI-S	19	1522 E	N17 E21
	SAC PEAK	19	1552	N16 E16
+	SAC PEAK	19	1610	S25 W85
+	SAC PEAK	19	1638	N16 E17
	CAPRI-G	19	1647 E	N22 W51
	SAC PEAK	19	1648	N23 W59
	SAC PEAK	19	1735 E	N18 W68
	SAC PEAK	19	1826	N09 W26
	HUANCAYO	19	1903	N18 E39
	HAWAII	19	1958	N29 W55
	MITAKA	20	0028	N16 W20
	HAWAII	20	0110	N22 E10
	NIZAMIAH	20	0510	N26 E45
	LOCARNO	20	0629	N21 W70
+	STOCKHOLM	20	1914 E	N24 W30
	CAPRI-S	20	1225 E	S13 E90
+	SAC PEAK	20	1312	N14 W80
	SAC PEAK	20	1318	S16 E90
	MCMATH	20	1358	N17 E90
*	SAC PEAK	20	1508	N17 W64
+	MCMATH	20	1509	N19 W63
	SAC PEAK	20	1526	N17 E03
*	WENDEL	20	1733 E	N14 E74
	HAWAII	20	1808	N12 W30
	SAC PEAK	20	2222	N15 W90
	SAC PEAK	20	2302	N00 E77
+	CAPRI-S	21	0844 E	N27 E22
	SAC PEAK	21	1504	N18 W04
	SAC PEAK	21	1516	N12 E53
	SAC PEAK	21	1544	N22 E20
	SAC PEAK	21	1620	N08 W55
	MCMATH	21	1930 E	N21 E20
	MCMATH	21	2333	N21 W90
	WENDEL	22	0603 E	S08 W28
	WENDEL	22	0811 E	S13 W61
	MCMATH	22	1057	N21 E10
	MCMATH	22	1134	S16 E61
	MCMATH	22	1234	N23 E40
	MCMATH	22	1238	S16 E60
+	SAC PEAK	22	1326	S17 E60
*	MCMATH	22	1328	S16 E60
	SAC PEAK	22	1356	N21 E07
	SAC PEAK	22	1428	S15 E54
	CAPRI-G	22	1436 E	N03 E47
	SAC PEAK	22	1456	S19 E59
	SAC PEAK	22	1516	N15 W23
	SAC PEAK	22	1714	N20 W00
	SAC PEAK	22	1836	N14 W24
	MCMATH	22	2300 E	S16 E58
	SAC PEAK	22	2006	S15 E50
	SAC PEAK	22	2028	N16 W19
	SAC PEAK	22	2044	N14 E45
	SAC PEAK	22	2120	N14 W25
	SAC PEAK	22	2214	N23 W55
	SAC PEAK	22	2218	S19 E51
	SAC PEAK	22	2238	N00 E40
	SAC PEAK	22	2256	N20 E80
	NIZAMIAH	23	0456	S11 E46
	CAPRI-G	23	0858 E	N04 E33
	CAPRI-G	23	1253 E	N15 E38
*	SAC PEAK	23	1454	N15 E37
	SAC PEAK	23	1630	N21 W69
	SAC PEAK	23	1742	N18 W12
	SAC PEAK	23	1806	N27 W85
	SAC PEAK	23	1826	N20 W16
	SAC PEAK	23	1834	S00 E29
	HAWAII	24	0018	S17 E25
	WENDEL	24	0738	S01 W22
*	MCMATH	24	1152 E	N23 W17
*	CAPRI-S	24	1153 E	N24 W19
	CAPRI-G	24	1155	N01 E20
	MCMATH	24	1212 E	N23 W49
*	MCMATH	24	1236	N13 E26
	SAC PEAK	24	1412	N14 E25
+	MCMATH	24	1504	N23 W51
*	SAC PEAK	24	1510	N22 W53
	MCMATH	24	1558	N18 W48
	MCMATH	24	1559	N23 W50
*	SAC PEAK	24	1614 E	N18 W51
	MCMATH	24	1617	N04 E18
	MCMATH	24	1722	N03 E15
	MCMATH	24	1944	N01 E20
	MCMATH	24	2017	N08 W11
	MCMATH	24	2208	N01 E19
	SAC PEAK	24	2222 E	N02 E21
	MCMATH	24	2259	N03 E15
	SAC PEAK	24	2306 E	N04 E15
	SAC PEAK	24	2312	S17 E25
*	DUNSINK	25	1106 E	S15 E22
	MCMATH	25	1201	N21 W28
	SAC PEAK	25	1350	N00 E07
	MCMATH	25	1352	N00 E09
*	SAC PEAK	25	1432	S15 E18
*	MCMATH	25	1433	S15 E19
	WENDEL	25	1441 E	N17 W57
	SAC PEAK	25	1442	N20 W64
	MCMATH	25	1446	N00 E08
	MCMATH	25	1452	N01 E03
*	SAC PEAK	25	1500	N21 W57
	WENDEL	25	1506 E	N20 E38
	WENDEL	25	1507 E	N14 E59
*	SAC PEAK	25	1540	N13 W08
*	WENDEL	25	1541 E	N12 W05
*	MCMATH	25	1541 E	N12 W08
*	SAC PEAK	25	1626	N24 W39
	SAC PEAK	25	1700	N20 W67
	SAC PEAK	25	1716	S21 E15
	SAC PEAK	25	1730	N00 E07
	SAC PEAK	25	1818	N10 E02
	HAWAII	25	1818	N02 E01
	SAC PEAK	25	1838	S16 E16
	SAC PEAK	25	1852	S15 E16
	SAC PEAK	25	2020	N19 W67
	HAWAII	25	2026 E	N22 W27
	MCMATH	25	2100 E	N18 W67
	SAC PEAK	25	2100 E	N18 W67
	SAC PEAK	25	2126	S16 E15
	SAC PEAK	25	2210	N16 W67
	HAWAII	26	0006	N23 W59
	WENDEL	26	0953 E	N25 W43
*	SAC PEAK	26	1324	N00 W01
*	WENDEL	26	1330 E	N02 W01
	WENDEL	26	1357 E	N08 E03
	SAC PEAK	26	1416	S15 E02
*	SAC PEAK	26	1520	N13 W77
	SAC PEAK	26	1546	S15 E01
	SAC PEAK	26	1626	S15 E01
*	SAC PEAK	26	1700	N00 W04
	SAC PEAK	26	1700	N25 W36
	SAC PEAK	26	1726	S15 E01
	SAC PEAK	26	1844	S15 E00
	SAC PEAK	26	1954	N12 W01
	HAWAII	26	2000 E	N12 E01
	SAC PEAK	26	2014	N14 W78
	SAC PEAK	26	2016	N00 W05
	SAC PEAK	26	2022	N12 W11
	SAC PEAK	26	2106	S16 W02
	SAC PEAK	26	2118	N12 W02
*	SAC PEAK	26	2118	N14 W78
*	HAWAII	26	2126 E	N16 W77
	SAC PEAK	26	2214	N12 W02
	SAC PEAK	26	2216	N14 W78
	SAC PEAK	26	2228	S15 W03
	SAC PEAK	26	2244	N11 W03
	SAC PEAK	26	2248	N24 W90
	CAPRI-G	27	0812 E	S18 W02
	CAPRI-G	27	1045 E	S18 W02
*	CAPRI-S	27	1113 E	N15 W85
	SAC PEAK	27	1304 E	N23 W90
	SAC PEAK	27	1332	N11 W13
	SAC PEAK	27	1337	N02 W23
*	SAC PEAK	27	1358	N02 W23
	SAC PEAK	27	1410	N21 W90
	SAC PEAK	27	1500	N21 W90
	SAC PEAK	27	1524	N23 W90
*	SAC PEAK	27	1534	S16 W07
	SAC PEAK	27	1614	N23 W90
	HUANCAYO	27	1626	N13 W33
*	SAC PEAK	27	1628	S36 E43
	SAC PEAK	27	1710	N05 W25
	SAC PEAK	27	1724	N15 W90
	SAC PEAK	27	1736	N22 W90
	SAC PEAK	27	1746	N14 W90
	SAC PEAK	27	1814	S19 W14
	SAC PEAK	27	1818	N03 W20
	SAC PEAK	27	1824	N24 W90
	SAC PEAK	27	1830	N14 W90
	SAC PEAK	27	1854	N14 W90
	SAC PEAK	27	1916	N23 W90
	SAC PEAK	27	1943	N12 W12
	SAC PEAK	27	2002	N14 E34
	SAC PEAK	27	2010	S15 W10
	MCMATH	27	2020	N15 W90
	SAC PEAK	27	2028	N25 W24
	SAC PEAK	27	2028	N13 W90
	SAC PEAK	27	2048	N22 W90
	SAC PEAK	27	2108	N14 W90
*	SAC PEAK	27	2136	N04 W22
	SAC PEAK	27	2142	S18 W08
	SAC PEAK	27	2224	N14 W90
	SAC PEAK	27	2254	N02 W27
	SAC PEAK	27	2306	S27 W22
	SAC PEAK	27	2316	S15 W11
*	CAPRI-S	28	0725	S15 W15
*	BOULDER	28	0731 E	S15 W17
	MCMATH	28	1209	S13 E90
	MCMATH	28	1231	S09 W67
	MCMATH	28	1302	S09 W67
*	MCMATH	28	1309	N09 W33
*	SAC PEAK	28	1330	N09 W33
*	MCMATH	28	1332	N09 W32
*	SAC PEAK	28	1346	N24 W38
	SAC PEAK	28	1410	S14 W25
	MCMATH	28	1426	S09 W68
	SAC PEAK	28	1426	N18 W61
	CAPRI-G	28	1427 E	N21 W56
	MCMATH	28	1430	N20 W60
	SAC PEAK	28	1444	S17 W23
	MCMATH	28	1449	S18 W19
	MCMATH	28	1456	S17 W29
*	MCMATH	28	1500	S16 W23
*	SAC PEAK	28	1544	N24 W38
*	MCMATH	28	1547	N24 W38
+	SAC PEAK	28	1654	N03 W34
	MCMATH	28	1656	N03 W33
	SAC PEAK	28	1716	S14 W21
	SAC PEAK	28	2120	S10 W73
	SAC PEAK	28	2214	S13 E90
	SAC PEAK	28	2244	N03 W45
	SAC PEAK	28	2304	S10 W73
*	WENDEL	29	0926 E	S12 W73
	SAC PEAK	29	1348	S10 W89
	MCMATH	29	1352	S08 W90
	SAC PEAK	29	1510	S13 E89
	SAC PEAK	29	1530	N17 W76
	MCMATH	29	1531	N19 W78
	SAC PEAK	29	1534	S13 E85
	SAC PEAK	29	1608	S17 W42
	SAC PEAK	29	1644	S13 E82
	MCMATH	29	1714	N03 W52
	SAC PEAK	29	1910 E	S14 W47
	SAC PEAK	29	2020	S17 W48
	HAWAII	29	2022 E	S16 W48
	SAC PEAK	29	2116	N26 W56
	SAC PEAK	29	2144	S16 W51
	SAC PEAK	29	2322	S15 W38
	STOCKHOLM	30	1042	S17 W46
	CAPRI-S	30	1045 E	S19 W45
*	SAC PEAK	30	1310	S15 W55
*	LOCARNO	30	1430 E	S14 W47
	LOCARNO	30	1430 E	S12 E86
	CAPRI-G	30	1432 E	S11 E69
	SAC PEAK	30	1443 E	N08 E90
	SAC PEAK	30	1443 E	N13 W09
	MCMATH	30	1520 E	N05 E90
	SAC PEAK	30	1600 E	N06 E90
	MCMATH	30	1639	S15 E66
	MCMATH	30	1648	N04 E90
	SAC PEAK	30	1704	S13 E70
	MCMATH	30	1704	S15 E68
	SAC PEAK	30	1746 E	N06 E90
	MCMATH	30	1813 E	N15 W88
	MCMATH	30	2201 E	N03 E90
	MCMATH	30	2201 E	N16 W55
	HAWAII	31	0140 E	NC3 E90
	CAPRI-G	31	1224	S11 E56
	SAC PEAK	31	1344	S14 W62
*	SAC PEAK	31	1350	N16 W66
*	SAC PEAK	31	1552	S13 E61
	SAC PEAK	31	1658	N15 W67
	SAC PEAK	31	1658	S12 E51
	SAC PEAK	31	1736	S14 E49
	MCMATH	31	1754 E	S15 E49
	SAC PEAK	31	1808	S13 E49
	SAC PEAK	31	1922	N05 E76
	HAWAII	31	1922 E	N04 E74
	SAC PEAK	31	1924	N37 W90
	SAC PEAK	31	1940	N15 W35
	HAWAII	31	1946 E	N17 W35
	SAC PEAK	31	2114	N10 E80
	HAWAII	31	2114 E	N08 E80
	SAC PEAK	31	2308	S13 E49

*Rated as flare of importance ≥ 1 by other observatories (see CRPL 178 Part B).

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GOOD HOPE	01	0752	0805	0754	N15	E51	5035	13	1		0754	1.70	2.90			
ABASTUMANI	01	0753 E	0802 D	0756 U	N14	E53	5035	9 D	1	1	0756		5.50			
SCHAUINS	01	0756 E	0805 D		N11	E50	5035	9 D	1	2			3.00	1.90		
GOOD HOPE	01	0833	0851	0836	N27	W37	5026	18	1		0836	1.80	2.70			
ONDREJOV	01	0834	0839		N24	W37	5026	5	1	3	0836			3.70		
AROSA	01	1015 E	1027		N23	W38	5026	12 D	1							
LOCKHEED	01	2255	2320	2301	N12	E37	5035	25	1&	1		2.00				
SYDNEY	01	2258	2314	2301	N14	E39	5035	16	1	2	2301	2.00	4.00			
*SYDNEY	02	0028	0045 D	0031	N27	E56	5035	17 D	1	2	0031	1.00	3.00			
SCHAUINS	02	0743 E	0844		N21	W51	5026	61 D	1	2			4.00	2.10		
AROSA	02	0755 E	0805		N21	W50	5026	10 D	1							
AROSA	02	0755 E	0808		S07	W06	5031	13 D	1							
ONDREJOV	02	0804 E	0811		S06	W07	5031	7 D	1	2	0805			1.90		
ONDREJOV	02	1025 E	1033 D		S17	E37	5036	8 D	1	3	1027			2.20		
SCHAUINS	02	1400 E	1440		S12	E63	5039	40 D	1	2			4.00	1.50		
OTTAWA	02	1641 E	1725		S19	E33	5036	44 D	1	4	1651	2.15	2.62			Slow S-SWF
VOROSHILOV	02	2249	2255	2252	N20	W59	5026	6	1	3	2252		2.26		70	
VOROSHILOV	02	2317	2350	2319	N24	W55	5026	33	1&	3	2319		2.82		140	S-SWF
LOCKHEED	02	2318 E	2350	2320	N27	W57	5026	32 D	1&	2		2.50				
KRASNYA	03	0903	0917	0904	N26	W61	5026	14	1		0904		1.92		82	S-SWF
KIEV	03	0904	0920	0908	N28	W62	5026	16	1	3	0907		2.15	.65		
KRASNYA	03	1033	1050	1036	N14	E17	5035	17	1		0936		2.52		74	
GOOD HOPE	03	1035	1051	1036	N15	E17	5035	16	1		1036	2.00	2.20			
SIMEIZ	04	0657	0719 D	0659 U	S19	E13	5036	22 D	1	2	0702		3.00	2.00	92	
SIMEIZ	04	0712 E	0735	0718 U	S11	E42	5039	23 D	1	2	0718		2.90		104	
SIMEIZ	04	0745	0800 D	0747 U	S19	E13	5036	15 D	1	2	0747		3.00	2.20	112	
KRASNYA	04	0947	1002	0951	S17	E10	5036	15	1		0951		1.65		80	
KRASNYA	04	1215 E	1223		N23	W90	5026	8	1&		1217		10.70		90	
LOCKHEED	05	1526 E	1545	1530	N24	W90	5026	19 D	1&	3		2.20				S-SWF
ONDREJOV	09	0856 E	0908 D		N17	W53	5035	12 D	1&	2	0900			2.30		
GOOD HOPE	09	1209	1234	1215	N14	W57	5035	25	1		1215	1.10	2.20			
MEUDON	09	1210	1230		N12	W55	5035	20	1				3.00			
SCHAUINS	09	1220 E	1235 D		N17	W47	5035	15 D	1	1			5.00	2.10		
OTTAWA	09	1719	1747 D	1726	N12	W67	5035	28 D	1&	3	1726	2.55	7.44			Slow S-SWF
SYDNEY	10	0355 E	0502 D	0404	N15	W58	5035	67 D	1	2	0404	2.00	4.00			
GOOD HOPE	10	0704	0755	0730	N28	W72	5035	51	2		0730	2.90	11.20			Slow S-SWF
GOOD HOPE	10	0715	0745	0720	N18	W59	5035	30	1		0720	1.90	4.10			
ONDREJOV	10	0716 E	0753 D		N24	W68	5035	37 D	1&	3	0742			2.10		
GOOD HOPE	10	0811	0843	0817	N18	W59	5035	32	1		0817	2.00	4.30			
GOOD HOPE	10	1050	1117	1101	N26	W85	5035	27	2		1101	2.70				
MEUDON	10	1050	1120	1100	N20	W75	5035	30	1							
MEUDON	10	1519 E	1526 D		N22	E00	5043	7 D	1				3.00			
VOROSHILOV	11	0212	0243 D	0218	N13	E58	5048	31 D	1	2	0218		4.89		69	
GOOD HOPE	11	0633 E	0707	0651 U	N11	E88	5052	34 D	1		0651	.90				
GOOD HOPE	11	0903	0920	0908	N08	E48	5048	17	1		0908	1.70	2.60			
GOOD HOPE	11	1046	1120	1057	N13	W85	5035	34	1		1057	.80				

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GOOD HOPE	11	1125	1153	1136	S13	W77	5036	28	2		1136	1.50	7.20			S-SWF
OTTAWA	11	1803	1847	1817	N15	E78	5052	44	2	3	1817	3.31				S-SWF
MOSCOW-G	12	0907 E	0939	0919	S11	W72	5039	32 D	2	2	0919		13.10	2.10	100	
KRASNYA	12	0908	0941	0925	S16	W67	5039	33	1		0925		4.83		65	
GOOD HOPE	12	0910	0952	0923	S09	W67	5039	42	2		0923	2.80	7.40			G-SWF
ONDREJOV	12	0913	0954		S13	W68	5039	41	1&	3	0915			2.30		
KHARKOV	12	0915 E	0947		S12	W62	5039	32 D	1&	2	0928		5.70	1.60		
GOOD HOPE	13	0724	0743	0729	N12	E58	5052	19	1		0729	1.80	3.80			
MEUDON	13	0732 E	0740		N15	E55	5052	8 D	1				2.00			
GOOD HOPE	13	0753	0815	0755	S11	W88	5039	22	1		0755	1.00				
GOOD HOPE	13	1134	1158	1138	N13	E61	5052	24	1		1138	1.40	3.20			
VOROSHILOV	14	0013	0044	0021	N10	E47	5052	31	1&	2	0021		3.91		80	
VOROSHILOV	14	0023	0051	0033	N21	E55	5054	28	2	2	0033		7.52		125	Slow S-SWF
VOROSHILOV	14	0025	0124	0032	N10	E58	5052	59	1	2	0032		3.60		66	
KRASNYA	14	0834	0845	0837	N13	E90	5058	11	1&		0837		10.60		80	
VOROSHILOV	15	0100	0122	0105	N10	W47	5045	22	□		0105		3.97		108	
GOOD HOPE +	15	0650 E	0721		N27	E48	5054	31 D	1		0658	1.30	2.30			
GOOD HOPE +	15	1134	1203	1141	N29	E47	5054	29	1		1141	2.10	3.90			
KHARKOV	15	1135	1207	1141	N28	E43	5054	32	1	3	1143		3.90	2.40		
KIEV*	15	1138	1148 D	1141 U	N28	E41	5054	10 D	1	2	1141		8.00			
GOOD HOPE +	15	1214	1258	1216	N30	E48	5054	44	2		1216	4.20	8.10			Slow S-SWF
SCHAUINS	15	1245 E	1248		N30	E48	5054	3 D	1	1			5.00	1.20		
VOROSHILOV	15	2211	2218	2212	N10	E21	5052	7	1	3	2212		2.22		68	
VOROSHILOV	16	0050	0216 D	0051	N28	E36	5054	86 D	1&	1	0051		3.11		144	S-SWF
MEUDON	16	0702 E	0732		N22	E23	5054	30 D	1				2.00			S-SWF
MEUDON	16	0758	0803 D		N10	E15	5052	5 D	1				2.00			
KHARKOV	16	0811	0830		N29	E23	5054	19	1	3	0813		3.10	1.50		
KRASNYA	16	0815 E	0831	0815 U	N29	E22	5054	16 D	1	2	0815		1.30		108	
KRASNYA	16	0842	0854	0845	N11	E15	5052	12	1	2	0845		4.20		66	
KHARKOV	16	0846	0908	0849	N12	E18	5052	22	1	3	0849		1.30	1.70		
MEUDON	16	0857	0904 D		N10	E15	5052	7 D	1				2.00			
MOSCOW-G	16	0907	1006	0921	N11	E16	5052	59	2	2	0920		9.20	5.90	500	
KHARKOV	16	0913	0955	0920	N12	E16	5052	42	2	3	0916		13.60	2.70		
KIEV*	16	0915 E	0935 D	0918 U	N10	E16	5052	20 D	2	2	0918		9.50			S-SWF
KRASNYA	16	0915	0952	0918	N11	E15	5052	37	1&	2	0918		3.30		135	
KIEV	16	0915	0953	0920	N11	E17	5052	38	1&	3	0920		1.95		91	
MOSCOW-G	16	1121 E	1128 D		N29	E21	5054	7 D	1	2	1122		2.10	2.40	130	
ONDREJOV	16	1218	1227	1222	N12	E51	5058	9	1	3	1222			2.20		
VOROSHILOV	16	2235	2246	2237	N21	E10	5052	11	1&	3	2237		2.30		86	
VOROSHILOV	17	0132	0148	0133	N27	E12	5054	16	1&	1	0133		2.22		108	S-SWF
KRASNYA	17	0853	0908	0856	N27	E16	5054	15	1	2	0856		1.50		80	
KRASNYA	17	0910	0913	0912 U	N19	E18	5052	3	1	2	0912		.60		80	
AROSA	17	0950 E	0953		N22	E11	5054	3 D	1							
AROSA	17	1004	1010		N25	E15	5054	6	1							
GOOD HOPE	17	1212	1238		N28	E07	5054	26	1		1218	3.40	4.10			
AROSA	17	1420 E	1424		N10	W05	5052	4 D	1							
TASHKENT	18	0626	0728	0638	N27	E07	5054	62	1	2	0635		4.00	2.30	70	S-SWF

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ONDREJOV	18	0629 E	0707	0632	N27	E07	5054	38 D	2	3	0632			3.70		
KIEV	18	0944	0959	0949	N15	E90	5060	15	1	3	0948				66	
MEUDON	18	0945 E	1000 D	0950	N15	E90	5060	15 D	1							
MOSCOW-G	18	1250 E	1257		N10	E36	5058	7 D		1						
SCHAUINS	18	1339 E	1404		N28	E02	5054	25 D	1	1			4.00			S-SWF
AROSA	18	1350 E	1420		N31	E06	5054	30 D	2							
AROSA	18	1508 E	1520 D		N09	W14	5052	12 D	1							
LOCKHEED	18	1807	1830	1811	N14	E36	5058	23	1	2		2.80				
MOSCOW-G	19	0659 E	0712		N28	W15	5054	13 D	1	2	0701		2.70	2.20	80	
GOOD HOPE	19	0659	0820		N33	E44	5060	81	1		0721	2.20	3.70			
SIMEIZ	19	0709 E	0840 D	0716 U	N32	E41	5060	91 D	1	2	0716		4.30		56	
SIMEIZ	19	0834 E	0920 D	0852	N15	E13	5058	46 D	1	2	0852		3.10	2.70	80	
KRASNYA	19	0837	0903	0846	N15	E14	5058	26	1&	3	0846		4.20		81	
KIEV	19	0855 E	0911	0857	N16	E15	5058	16 D	1	3	0857		1.05		68	
KRASNYA	19	0850	0856	0852	N28	W18	5054	6	1	3	0852		1.80		90	
KRASNYA	19	0859	0933	0906	N27	W07	5054	34	2	3	0906		6.20		98	
SIMEIZ	19	0901	0935	0909 U	N27	W08	5054	34	1	2	0911		2.40	2.20	76	
KIEV	19	0901	0939	0907	N25	W15	5054	38	1	3	0907		1.09		66	
SCHAUINS	19	0920 E	0925 D		N29	W04	5054	5 D	1	2			3.00			
KIEV	19	0913	0947	0922	N13	W18	5052	34	1	3	0922		1.00		57	
KRASNYA	19	0914	0928	0920	N12	W18	5052	14	1	3	0920		1.00		84	
SCHAUINS	19	0920 E	0925 D		N12	W18	5052	5 D	1	2			3.00			
GOOD HOPE	19	1005	1014	1007	N30	W16	5054	9	1		1007	2.00	2.60			
KRASNYA	19	1016	1028	1016 U	N28	W17	5054	12	1&	3	1016		1.90		88	
KHARKOV	19	1036	1115	1058	N31	W18	5054	39	2	2	1058		21.20	3.30		
GOOD HOPE	19	1037	1118	1043	N31	W18	5054	41	2&		1059	8.00	10.30			
ONDREJOV	19	1038	1115	1043	N27	W18	5054	37	3	3	1043			6.40		
KRASNYA	19	1039	1112	1042	N28	W18	5054	33	1&	3	1042		1.80		100	S-SWF
KRASNYA	19	1039	1112	1059 U	N28	W18	5054	33	2&	3			8.70		180	
KIEV	19	1039	1115	1059	N28	W18	5054	36	2	3	1059		8.20		113	
NERA	19	1040 E	1110 D		N29	W17	5054	30 D	2&	3						
KIEV*	19	1045 E	1112 D	1059	N31	W18	5054	27 D	1&	3	1059		6.50			
MOSCOW-G	19	1045 E	1117	1059	N28	W18	5054	32 D	1&	1	1059		8.20	3.70	160	
KIEV	19	1058	1127	1109	N33	W07	5054	29	1	3	1008		1.51		67	S-SWF
KRASNYA	19	1106	1124	1107	N32	W03	5054	18	1&	3	1107		2.20		80	
KRASNYA	19	1204	1212	1205	N27	W17	5054	8	1	3	1205		1.90		90	
ONDREJOV	19	1427	1437	1430	N29	W21	5054	10	1&	3	1430			3.40		S-SWF
VOROSHILOV	19	2218 E	2252		N17	E54	5060	34 D	1&	2	2223		2.30		87	
ONDREJOV	20	0725 E	0735		N28	W15	5054	10 D	1	3	0726			2.30		
SIMEIZ	20	0726	0754 D	0731	N27	W21	5054	28 D	1	2	0730		1.50	2.40	60	
GOOD HOPE	20	0727	0748	0732	N29	W20	5054	21	1		0732	2.50	3.20			
ABASTUMANI	20	0733 E	0739 D	0734 U	N26	W20	5054	6 D	1&	3			11.30		80	
AROSA	20	1032	1035 D		N27	W35	5054	3 D	1							
AROSA	20	1535 E	1620		N17	E44	5060	45 D	2							
VOROSHILOV	20	2229	2242	2231	N27	W37	5054	13	1&	2	2231		2.86		109	S-SWF
SIMEIZ	21	0609 E	0750	0609 U	N15	E02	5058	101 D	1	2	0612		4.00	2.20	76	
SYDNEY	21	0200 E	0259	0219	N12	W38	5052	59 D	2	2	0219	8.00	11.00			S-SWF
SYDNEY	21	0214	0244	0231	N05	W47	5052	30	1	2	0231	1.50	2.00			
ABASTUMANI	21	0515	0643 D	0540 U	N27	W36	5054	58 D	1	3			5.10		80	
ABASTUMANI	21	0552	0659 D	0609	N16	E01	5058	67 D	1&	3	0625		5.30	2.60	80	

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TASHKENT	21	0558	0604 D	0602	N14	E00	5058	6 D	1	2	0559		3.00	2.80	65	
ONDREJOV	21	0617 E	0718 D		N16	E01	5058	61 D	2	3	0618			3.20		
AROSA	21	0818 E	0825		N26	W47	5054	7 D	1							
ONDREJOV	21	0819	0826		N27	W45	5054	7	1	3	0822			3.00		
SIMEIZ	21	0819	0829	0822	N26	W46	5054	10	1	2	0822		2.10	1.60	64	
KHARKOV	21	0903	0959	0914	N19	W40	5052	56	2	2	0914		17.10	2.90		
KHARKOV	21	0903	1015	0914	N16	W47	5052	72	2	2	0914		19.40	2.20		
GOOD HOPE	21	0906 E	0930 D	0918	N17	W44	5052	24 D	2		0918	6.00	9.00			
MOSCOW-G	21	0907	0953	0917	N13	W50	5052	46	1&	2	0914		8.40	3.70	200	
ONDREJOV	21	0907	1005	0913	N14	W37	5052	58	2	3	0913			4.90		S-SWF
MOSCOW-G	21	0907 E	1035 D	0917	N18	W42	5052	88 D	1	2	0914		3.20	2.40	200	
SCHAUINS	21	0910 E	1023 D		N13	W40	5052	73 D	2	2			11.00	4.20		
KRASNYA	21	0912 E	0938	0912 U	N14	W48	5052	26 D	1	2	0912		4.80		50	
KRASNYA	21	0912 E	1027	0923 U	N17	W39	5052	75 D	1&	2	0923		2.30		94	
AROSA	21	0918 E	1015		N14	W43	5052	57 D	2							
MOSCOW-G	21	0955 E	0957		N27	W39	5054	2 D								
KRASNYA	21	0955	0958	0956	N29	W37	5054	3	1	2	0956		.90		104	
ONDREJOV	21	0955	0959		N28	W36	5054	4	1	3	0956			3.90		
SCHAUINS	21	1050 E	1202 D		N14	W35	5052	72 D	1	2			5.00	2.10		
KIEV	21	1131 E	1232	1135 U	N17	W41	5052	61 D	1	3	1135		2.52		62	
AROSA	21	1228 E	1234		N30	W44	5054	6 D	1							
SCHAUINS	21	1256 E	1335 D		N28	W32	5054	39 D	1	2			5.00	2.10		
AROSA	21	1312 E	1342		N28	W47	5054	30 D	2							
ONDREJOV	21	1312	1344	1331	N26	W45	5054	32	2	3	1331			5.90		Slow S-SWF
KIEV	21	1313	1344	1332	N27	W48	5054	31	1&	3	1331		3.15		100	
SCHAUINS	21	1323 E	1335 D		N27	W44	5054	12 D	1&	2			5.00	5.50		
AROSA	21	1323	1328 D		N12	W52	5052	5 D	1							
SYDNEY	22	0104	0141	0116	N22	W19	5058	37	1	2	0116	4.00	4.00			
SYDNEY	22	0105	0120	0107	N10	W58	5052	15	1	2	0107	1.00	2.00			
SYDNEY	22	0207	0217 D	0214	N15	W23	5058	10 D	1	2	0214	2.00	2.00			
SYDNEY	22	0308	0323	0312	N13	W50	5052	15	1	2	0312	1.00	2.00			
SIMEIZ	22	0630	0645 D	0632 U	N18	E27	5060	15 D	1	1	0634		1.20	2.60	56	
SIMEIZ	22	0721 E	0740 D	0723 U	S08	E71	5063	19 D	1	1	0723		3.20		60	
ONDREJOV	22	0726 E	0738		S10	E68	5063	12 D	1	3	0728			2.20		
SIMEIZ	22	0736 E	0845 D	0804 U	N18	E21	5060	9 D	1	1	0805		2.60	2.20	52	
ONDREJOV	22	0744 E	0815 D	0755	N18	E20	5060	31 D	1	3	0755			2.60		
ONDREJOV	22	0823 E	0827		N26	W48	5054	4 D	1	3	0823			2.10		
SIMEIZ	22	0836 E	0845	0838 U	N28	W60	5054	9 D	1	1	0840		3.90	1.80	56	
KHARKOV	22	0902	0920	0907	N16	W10	5058	18	1&	2	0907		6.80	1.80		
KIEV*	22	0904	0914 D	0909	N17	E17	5060	10 D	1	2	0909		4.70			
ONDREJOV	22	0908 E	0928		N15	E19	5060	20 D	1&	3	0909			2.40		
AROSA	22	1338	1500 D		N30	W49	5054	82 D	2							S-SWF
ONDREJOV	22	1340 E	1414 D		N27	W57	5054	34 D	1&	2	1346			4.10		
AROSA	22	1450	1459		N18	E21	5060	9	1							
VOROSHILOV	22	2227 E	2237	2230	N09	W67	5052	10 D	2	1	2230		5.67		85	
VOROSHILOV	22	2259	2309	2304	N27	W68	5054	10	1&	3	2304		3.13		90	
SYDNEY	23	0015	0023	0018	N26	W60	5054	8	1	2	0018	.75	2.00			
SYDNEY	23	0030	0045	0032	N18	W30	5058	15	1	2	0032	2.00	2.00			
SYDNEY	23	0050	0108	0056	N10	W70	5052	18	1	2	0056	.75	2.00			
SYDNEY	23	0058	0116	0103	N12	W28	5058	18	1	2	0103	2.00	2.00			
VOROSHILOV	23	0131	0137	0131	N09	W68	5052	6	1	1	0131		3.63		73	

SOLAR FLARES

MARCH 1959

OBSERVATORY	DATE MAR 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SYDNEY	23	0141	0158 D	0152	N09	W69	5052	17 D	2	2	0152	2.00	6.00			
VOROSHILOV	23	0142	0159	0146	N10	W70	5052	17	1	1	0146		4.44		68	
SYDNEY	23	0153	0159 D		N24	W63	5054	6 D	1	2	0158	.75	2.00			
SYDNEY	23	0311	0326	0314	N24	W64	5054	15	1	2	0314	1.00	4.00			
SYDNEY	23	0320	0331	0326	N08	W69	5052	11	1	2	0326	.75	2.00			
SIMEIZ	23	0638 E	0655 D	0641 U	N08	W75	5052	17 D	1	1	0641		4.00		60	
MEUDON	23	0845	0920		N15	W30	5058	35	1				2.00			
GOOD HOPE	23	0847	0917	0854	N16	W29	5058	30	1		0854	2.00	2.50			
KRASNYA	23	0854 E	0905	0855 U	N15	W28	5058	11 D	1&	1	0855		.30		62	
GOOD HOPE	23	0851	0930	0854	N18	E06	5060	39	1		0854	2.00	2.20			
MOSCOW-G	23	1040 E	1100 D	1044	N24	W34	5059	20 D	1&	2	1048		7.40	2.10	140	
GOOD HOPE	23	1040	1103	1042	N25	W36	5059	23	1		1042	1.50	2.10			
KHARKOV	23	1041	1102 D	1045	N26	W36	5059	21 D	1&	2	1045		8.00	1.70		
MEUDON	23	1157	1305	1202	N25	E25	5060	68	1&				8.00			
GOOD HOPE	23	1158	1202 D		N23	E27	5060	4 D	1		1202	3.50	4.40			
AROSA	23	1200	1220		N22	E26	5060	20	1							
KIEV*	23	1201	1208		N25	E19	5060	7	1&	3	1204		4.70			
KIEV*	23	1226 E	1233 D		N25	E19	5060	7 D	1	2	1230		1.50			
MOSCOW-G	23	1309 E	1413	1339	N28	W72	5054	64 D	1	1	1340		4.20	3.90	110	Slow S-SWF
KIEV*	23	1310 E	1312 D		N26	W68	5054	2 D	1	2	1311		2.90			
KIEV	23	1329	1420 D	1345	N28	W70	5054	51 D	1	3	1345		4.60		69	
KIEV*	23	1337	1401 D	1340 U	N26	W68	5054	24 D	1	2	1340		5.60			
MEUDON	23	1521	1700		N15	W30	5058	99	1							
AROSA	23	1625 E	1640 D		N10	W37	5058	15 D	1							S-SWF
OTTAWA	23	1642 E	1719 D		N10	W39	5058	37 D	1	3	1642	2.20	3.02			
VOROSHILOV	23	2218	2221	2219	N27	W70	5054	3	1	2	2219		2.55		68	
VOROSHILOV	23	2227	2234 D	2230	N11	W85	5052	7 D	1	2	2230		3.71		72	
VOROSHILOV	24	0018	0030	0021	N24	W43	5058	12	1	2	0021		2.71		60	
VOROSHILOV	24	0155	0200	0157	N28	W80	5054	5	1&	2	0157		4.42		101	
SIMEIZ	24	0635 E			N25	E30	5061	▢	1	2	0554		4.60		76	
SIMEIZ	24	0652 E	0710 D	0654 U	N22	E90	5068	18 D	1	2	0654				84	
SCHAUINS	24	0655 E	0849 D		S08	E38	5063	114 D	1	2			3.00	2.60		
SIMEIZ	24	0700 E	0900 D	0740 U	N20	W05	5060	120 D	1&	2	0745		8.60	2.60	92	
SCHAUINS	24	0708	0844		N16	W06	5060	96	2	2			10.00	2.70		Slow S-SWF
AROSA	24	0713 E	0730 D		N19	W05	5060	17 D	2							
SIMEIZ	24	0743 E	0800 D	0753 U	S09	E41	5063	17 D	1	2	0753		2.70		64	
SIMEIZ	24	0845 E	0900 D	0851 U	S09	E41	5063	15 D	1	2	0845		2.70	2.60	68	
KRASNYA	24	0847	0856	0849	S09	E41	5063	9	1	2	0849		1.20		60	
KHARKOV	24	0909	0950	0912	N22	E29	5061	41	1	2	0913		2.90	1.80		
SCHAUINS	24	0913 E	0916 D		N26	E31	5061	3 D	1	2			2.00	2.10		
GOOD HOPE	24	1002	1150 D	1015	N33	W80	5054	108 D	3		1015	2.70				
KHARKOV	24	1003	1155	1016	N28	W75	5054	102	3	2	1016		44.80	5.50		S-SWF
UTRECHT	24	1015 E	1025 D	1015	¤		5054	10 D	2							
ABASTUMANI	24	1030 E	1159 D	1030 U	N29	W73	5054	89 D	3	3	1121		97.90	2.80	73	
KIEV	24	1100 E	1325	1121	N30	W90	5054	145 D	2	2	1121		17.60		53	
AROSA	24	1105 E	1125 D		N30	W68	5054	20 D	2							
AROSA	24	1230 E	1250 D		N25	E29	5061	20 D	1							
ABASTUMANI	25	0504 E	0640 D	0541 U	N23	E74	5068	96 D	2	3	0607		54.70	2.80	76	
ABASTUMANI	25	0554	0631 D	0612	S08	E24	5063	37 D	1&	3			5.40		84	S-SWF
ONDREJOV	25	0849	0857		N08	E85	5068	8	1	3	0854			2.30		
KRASNYA	25	0925 E	1004 D	0926 U	N24	E87	5068	76 D	1&	1	0926		7.80		110	

SOLAR FLARES

MARCH 1959

OBSERVATORY	DATE MAR 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
KRASNYA	25	0936	0942	0937 U	N23	E16	5061	6	1	1	0942		•70		80	
SCHAUINS	25	1020 E	1030 D		N24	E72	5068	10 D	1	1			5•00	1•80		
ONDREJOV	25	1229	1241	1232	N19	E66	5068	12	1	3	1232			3•40		
AROSA	25	1306	1325 D		N24	E11	5061	19 D	1							
ONDREJOV	25	1310 E	1319		N24	E13	5061	9 D	1	3	1313			2•30		
SIMEIZ	26		0845		N26	E63	5068	O	1&	1	0737		5•40	2•30	92	
TASHKENT	26	0437	0450 D	0441	N25	E67	5068	13 D	1	1	0439		8•00	2•80	60	
ABASTUMANI	26	0539	0753 D	0738 U	N23	E64	5068	134 D	1&	2			9•50		139	
KRASNYA	26	0732 E	0753	0732 U	N23	E62	5068	21 D	1&	1	0732		2•70		80	
MEUDON	26	0732	0810	0740	N25	E60	5068	38	1&				4•00			Slow S-SWF
GOOD HOPE	26	0734	0755	0736	N26	E66	5068	21	1		0736	1•20	3•50			
SCHAUINS	26	0850 E	0903 D		S08	E12	5063	13 D	1	1			3•00	1•80		
MEUDON	26	1032	1040	1037	N23	E60	5068	8	1				2•00			
GOOD HOPE	26	1033	1045	1036	N26	E65	5068	12	1		1036	1•10	3•20			
SCHAUINS	26	1034 E			N24	E60	5068	□	1	1			4•00	2•00		
GOOD HOPE	26	1112	1150	1123	N21	W04	5061	38	1		1123	3•40	3•80			
MEUDON	26	1115	1150	1125	N20	W07	5061	35	1				2•00			S-SWF
SCHAUINS	26	1120 E	1123 D		N20	W03	5061	3 D	1&	1			6•00	1•70		
GOOD HOPE	26	1243	1308	1250	N26	E64	5068	25	1		1250	1•30	3•50			Slow S-SWF
MEUDON	26	1245	1325	1250	N23	E60	5068	40	1				2•00			
MEUDON	26	1250	1400		N26	E17	5061	70	1				2•00			
GOOD HOPE	26	1252	1311 D		N32	E17	5061	19 D	1		1305	1•90	2•50			
OTTAWA	26	1532 E	1609		N25	E57	5068	37 D	1&	3	1533	2•15	5•06			S-SWF
OTTAWA	26	1623	1646	1627	N27	E60	5068	23	1	3	1627	1•33	3•52			
AROSA	27	0835 E	0845 D		N22	W11	5061	10 D	1							
GOOD HOPE	27	0836	0852	0839	N26	W09	5061	16	1		0839	1•80	2•10			
ONDREJOV	27	0837	0852		N23	W10	5061	15	1	3	0837			3•70		
KRASNYA	27	0838 E	0843	0840 U	N25	W09	5061	5 D	1	1	0840		1•90		75	
SIMEIZ	27	0858 E			N23	W10	5061	□	1	1	0840		2•40	2•20	56	
SCHAUINS	27	0933 E	0950		N22	W10	5061	17 D	1&	2			5•00	3•80		
GOOD HOPE	27	1010	1025	1014	N28	E54	5068	15	1		1014	1•40	2•80			
MEUDON	27	1045	1055 D	1050	N28	E50	5068	10 D	1				4•00			
GOOD HOPE	27	1047	1115	1051	N28	E53	5068	28	1		1051	1•70	3•40			
ONDREJOV	27	1051 E	1058		N26	E50	5068	7 D	1	3	1051			2•70		
GOOD HOPE	27	1242	1258	1245	N28	W12	5061	16	1		1245	2•40	2•90			
ONDREJOV	27	1243	1253	1245	N27	W11	5061	10	1	3	1245			2•50		
GOOD HOPE	27	1257	1311	1259	N24	E68	5071	14	1		1259	1•00	2•90			
ONDREJOV	27	1258 E	1306		N22	E62	5071	8 D	1	3	1300			2•50		
GOOD HOPE	27	1348	1405	1349	N18	W90	5058	17	1		1349	•50				
GOOD HOPE	27	1515	1517 D		N27	W12	5061	2 D	1		1517	1•80	2•20			
ONDREJOV	27	1521 E	1526 D		N24	W12	5061	5 D	1	3	1521			2•80		
KRASNYA	28	0659 E	0717		N12	E48	5071	18 D	1	1	0703		•70		82	
SIMEIZ	28	0714 E	0727 D	0714 U	N14	E48	5071	13 D	1	1	0709		2•80	2•20	84	
SIMEIZ	28	0805 E	0825 D	0811 U	N15	E65	5071	20 D	1	1	0811		4•60	2•00	64	
MEUDON	28	0905	0925	0911	N15	E70	5071	20	1				2•00			
LOCKHEED	28	2116 E	2315	2125	N23	W32	5061	119 D	3	1		13•20				S-SWF
ABASTUMANI	29	0548	0552 D	0550 U	N25	E10	5068	4 D	1	3	0736		3•00	2•70	58	
ABASTUMANI	29	0737 E	0752 D	0745 U	S03	E12	5067	15 D	1	3	0745		2•40	2•90	70	
ABASTUMANI	29	0746 E	0850 D	0753	N15	E39	5071	64 D	2	3	0750		18•30	4•30	126	

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SOLAR FLARES

MARCH 1959

OBSERVATORY	DATE MAR 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
MEUDON	29	0747	0915	0755	N20	E40	5071	88	1&				8.00			S-SWF
ONDREJOV	29	0750 E	0844		N17	E33	5071	54 D	2	3	0753			3.80		
SIMEIZ	29	0855 E			N17	E36	5071	▢	1&	1	0758		9.00	2.90	112	
MEUDON	29	1107	1210	1140	N20	W40	5061	63	1				3.00			
GOOD HOPE	29	1122 E			N25	W41	5061	▢	1		1122	2.40	3.80			
AROSA	29	1530 E	1630		N28	E18	5068	60 D	2							S-SWF
AROSA	29	1537	1547 D		N10	E36	5071	10 D	1							
LOCKHEED	29	2139	2315	2150	N13	E27	5071	96	1	1		2.00				
SIMEIZ	30	0624 E	0720 D		N23	W48	5061	56 D	1&	1	0627		5.40	3.10		
GOOD HOPE	30	1023	1100	1034	N28	W53	5061	37	1		1034	1.70	3.40			
VOROSHILOV	30	2244	2303	2248	N31	E10	5073	19	1&	2	2248		3.32		90	
SYDNEY	31	0148 E	0210		N23	E11	5071	22 D	1	2	0148	2.00	3.00			
TASHKENT	31	0337	0342	0338	N30	E03	5073	5	1	3	0338		3.00	2.80	85	
SYDNEY	31	0337	0345	0339	N30	E04	5073	8	1	2	0339	2.00	3.00			
TASHKENT	31	0453	0510	0456	N22	W08	5068	17	1	3	0455		2.00	2.90	95	
ABASTUMANI	31	0459 E	0519 D	0505 U	N20	W06	5068	20 D	1	1			2.40			
SIMEIZ	31	0853 E	0908	0901 U	N22	W39	5070	15 D	1	1	0901		1.50		64	
ONDREJOV	31	0857	0907	0902	N20	W37	5070	10	1	3	0902			3.00		
LOCKHEED	31	2130	2225	2132	N32	W02	5068	55	2	1		10.50				
VOROSHILOV	31	2339	0004	0000	N26	W16	5068	25	1&	2	0000		3.04		86	

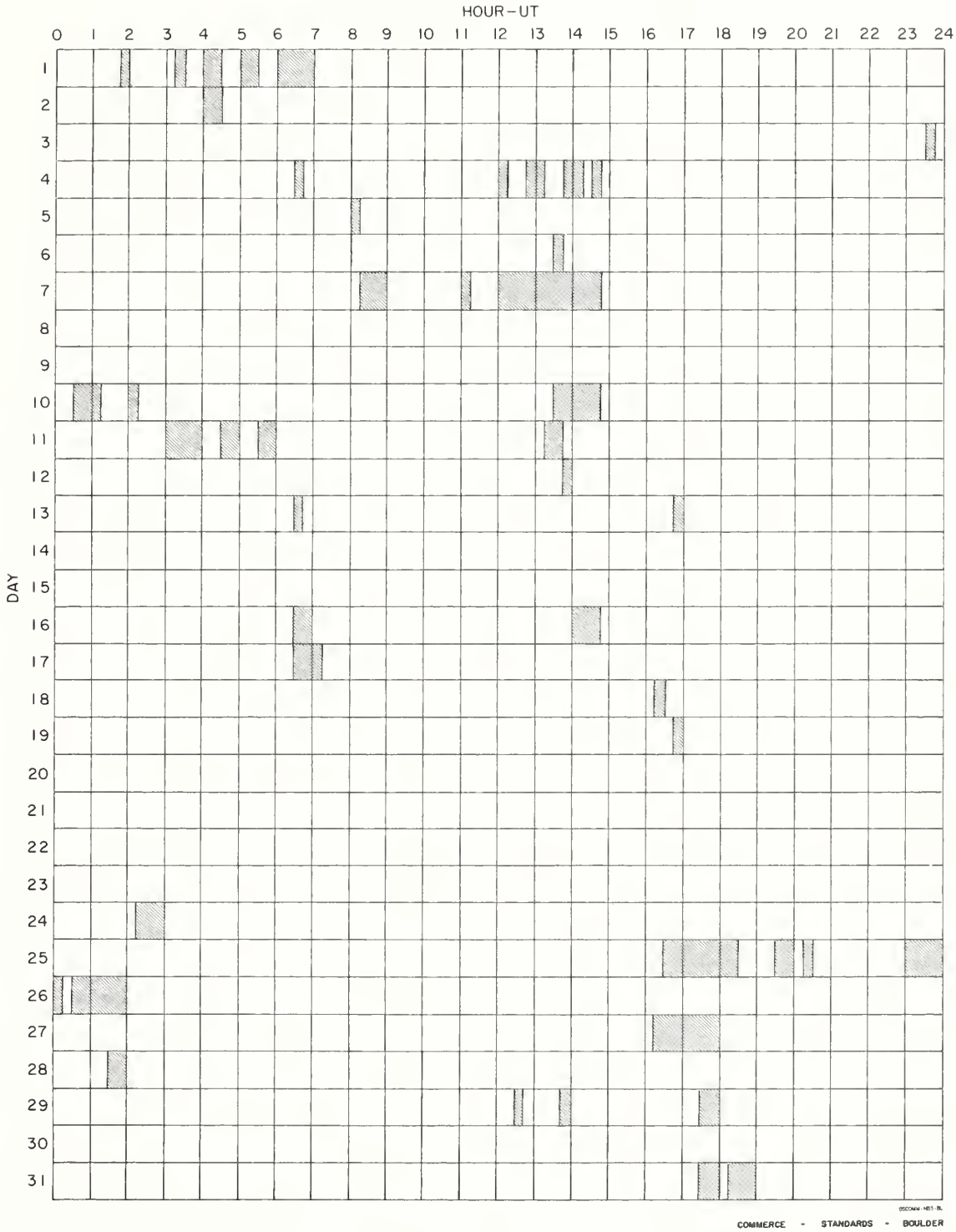
COMMERCE - STANDARDS - BOULDER

+ Good Hope, Flares of March 15 subject to error of ± 1 minute.

These flare reports are addenda to the March 1959 flares published in CRPL-F 176 Part B, April 1959.

* Sydney March 2, 0028 might be N27 W56 then would fit region 5026

INTERVALS OF NO FLARE PATROL OBSERVATIONS
MARCH 1959



Stations Include:

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
Utrecht
Voroshilov
Zurich

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

DECEMBER 1958

DEC 1958	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	TIME (UNIVERSAL TIME) MAX.	TIME (UNIVERSAL TIME) END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
2		1		1	0345		0400		HO
2		1		4	0922	0927U	1015		ED, KU, NE, NU
2		1+		5	1928		1957		A7, PU
2	1-			1	2020	2025	2050	7	BO
2		1		4	2020	2028	2100		A7, BO
3		1+		3	0704		0729		KU, NU
3		1		3	1000		1015		KU, NE, NU
3		1+		5	1259		1324		A1, A5, KU, NE, NU
3		2-		5	1346	1355	1423		A1, A5, ED, KU, NE, NU, PA
3		1+		4	1738	1745	1818		A5, A7, BO
3	2			3	2006	2011	2035	43	BO, SP
3		2+		5	2009	2019	2102		A5, A7, BO, PA
4		2		5	1054	1106	1154		ED, KU, NE, NU, PA, PU
4	1+			3	1314	1328	1353	40	MC, RE
4	3			3	1849	1858	2050	90	MC, RE
4		1-		3	2000	2014	2047		A7, BO
4	1-			1	2001	2006	2017	6	BO
5		1-		1	1300		1337		NU
6		2		3	1316	1326	1400		ED, NE
6	2			3	1331	1355	1530	40	MC, RE
6		1+		4	1715	1730	1825U		A1, A5
6	1			1	1947	1956	2006		SP
6		2		5	1947	1959	2115		A1, A7, BO, HA
7		1		1	0957		1027		NE
7		2		5	1053	1105	1148		DU, ED, KU, NE, NU, PU
8		1		3	0912		0935		KU, NE
8		1-		5	1530	1541	1600		A7, NU
9		1+		5	1300		1320		ED, KU, NE, NU, PU
9		1+		5	1654	1709	1735		A5, BO, ED, MC, NE, PA
9	1			5	1654	1704	1738	15	MC, RE, SP
10	1-			1	0039	0045	0054	10	HA
10		1		1	0043	0050	0120		HA
10		2		5	1204	1207	1230		DU, ED, KU, NE, NU, PU
10		1		5	1426	1429	1451		A1, ED, NU
11		1-		3	0948		1015		KU, NU
11		2+		5	1115	1132	1205		DU, ED, KU, NE, NU, PU
11		2		5	1520		1600		A5, MC, NU, PA
11	1			3	1522	1534	1555	30	MC, RE
11	2+			5	1807	1815	1855	73	BO, MC, RE, SP
11		2+		5	1807	1815	1855		A2, A5, A7, BO, ED, HA, PA
11	1+			5	1936	1939	1957	45	BO, HA, MC, RE
11		2+		5	1936	1947	2008		A5, A7, BO, HA, PA
11		1		5	2356	0006	0040		A7, HA
12	2+			1	0106	0108	0125	58	HA
12		2		1	0107	0119	0209		HA
12	1			1	0213	0217	0240	25	HA
12		2		5	0214	0232	0314		HA, HO
12		1		1	0329		0350		HO
12		2+		5	1037		1120		KU, NE, NU, PA, PU
12		1+		5	1235		1335		KU, NE, NU, PA
12		2		5	1257	1302	1335		A1, A5, DU, ED, KU, NE, NU
12	2			1	1258	1301	1322	60	RE
13	2			1	0021	0025	0100	40	HA
13		2		1	0022	0039	0115		HA
13		2		5	1832	1847	1922		A1, A5, A7, BO, HA, MC, NU, PA
13	1			5	1833	1838	1852	10	BO, HA, MC, SP

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

DECEMBER 1958

DEC 1958	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	TIME (UNIVERSAL TIME) MAX.	TIME (UNIVERSAL TIME) END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
14		1		3	0746		0826		KU, NU
14		1		3	0842		0902		KU, NU
14		2-		4	1137		1200		KU, NE, NU, PU
14		2+		5	1228	1237	1344		DU, ED, KU, NE, NU, PU
17	1			1	0201	0205	0223	10	HA
17		1		1	0202	0214	0238		HA
17		1-		3	1040		1055		KU, NU
17	1			5	1858	1900	1917	19	BO, HA
17		1+		5	1858	1906	1936		BO, HA, PA
18		1		1	1639		1727		PA
20		1		4	1048		1109		KU, NE, NU, PU
21	1+			1	0046	0052	0106	25	HA
21		1+		1	0047	0057	0132		HA
21		1		1	0621		0645		HO
21		2		5	1424	1436	1509		A5, DU, ED, KU, NE, NU
21		1		5	1858	1914	1957		A1, A5, BO
21	1			5	1958	2004	2028	11	BO, HA
21		1		5	1958	2009	2044		BO, HA
22		1+		3	1500		1522		NE, NU
22		□		3	1523	1530	1553		DU, ED
23		1-		3	1347		1412		KU, NU
23	1			5	2159	2206	2247	22	BO, HA
23		1		5	2204	2209	2300		BO, HA
24		2		5	0947	0951	1010		DU, ED, KU, NE, NU, PU
25	1			5	1937	1939	1953	11	BO, HA, SP
25		1+		5	1937	1955	2035U		A5, A7, BO, HA, PA
26		1		3	1218		1253		KU, NU
26		1		4	1915	1927	1954		A7, BO
28		2+		5	1337	1344	1410		A5,DU,ED,KU,NE,NU,PA,PU
29		1+		3	1036		1057		KU, NE, NU
30		2		4	1038	1046	1114		ED, KU, NE, NU, PU
31		1		5	1315	1318	1435		ED, KU, NE, NU
31	2+			5	1701	1710	1738	70	BO, MC, RE, SP
31		2		5	1701	1712	1745		A5, BO, MC, NE, PA

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

MAY 1959

May 1959	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F
1	0742	0829	Slow S-SWF	5	2	JU, OK, PU	0736
2	1045	1053	S-SWF	1	2	BR	1040
2	1610	1623	Slow S-SWF	5	1+	FM, HU, JU, LA, PR, WS	1555E
2	1825	1840	S-SWF	4	1-	HU, LA, PR	
2	2105	2120	Slow S-SWF	5	1	AD, AN, HU, MC, PR	
3	0000	0042	Slow S-SWF	5	1+	AD, OK, TO	2355
3	0325	0408	S-SWF	5	2	AD, NE, OK, TO, CW+++	0323
3	0807	0825	Slow S-SWF	3	1	JU, NE	0756
3	1453	1535	Slow S-SWF	5	1	BE, HU, JU, MC, PR, WS	1450
3	2246	2328	Slow S-SWF	5	1+	AD, LA, MC, OK, TO, WS	2246
4	0400	0420	S-SWF	5	2-	AD, OK, CW+++	0350E
4	0500	0513	S-SWF	4	1	AD, OK	
4	2055	2110	S-SWF	5	1	AD, BE, MC, WS	2054
4	2332	2355	Slow S-SWF	5	1	AD, OK, WS	2334
5	0616	0700	S-SWF	5	2+	JU, NE, OK, PU, TO, CW+++ **	0605
5	0710	0732	S-SWF	5	2	JU, NE, OK	0709E
5	0902	0929	Slow S-SWF	3	3	JU, NE	0900
5	1235	1242	S-SWF	5	1	MC, NE, PR	1235
5	1325	1355	G-SWF	4	1	HU, MC, PR, WS	1309E
5	1612	1630	Slow S-SWF	4	1+	FM, HU, PR, WS	1558E
5	1738	1809	S-SWF	5	1+	BE, FM, HU, LA, PR	1737
5	1909	1940	Slow S-SWF	5	1+	FM, HU, LA, MC, PR, WS	1908
5	2107	2130	S-SWF	5	2-	AD, AN, BE, FM, HU, LA, MC, NE, PR, WS, RCA+	2106
6	0008	0025	S-SWF	5	1+	AD, CA, OK	
6	0230	0255	S-SWF	5	2	AD, AN, CA, CW+	*
6	0445	0605	S-SWF	5	2	NE, OK, TO, CW+++	
6	0913	0921	S-SWF	5	2	NE, OK, SW, CW ** ***	0908
6	1330	1345	S-SWF	5	1+	BE, HU, MC, NE, PR	1325
6	1412	1425	S-SWF	4	1	JU, MC, PR	1400E
6	1433	1532	Slow S-SWF	5	2	BE, FM, HU, JU, MC, PR, WS, CW*	1400E
6	1605	1620	S-SWF	5	1	AN, BE, FM, PR, WS	1558
6	1715	1750	Slow S-SWF	5	2-	AN, FM, JU, PR	1714
6	1848	1908	Slow S-SWF	4	1	BE, MC, PR, WS	
7	2020	2050	Slow S-SWF	5	1+	AD, BE, FM, HU, MC, PR, WS	2028
8	1418	1503	Slow S-SWF	5	1+	BE, FM, HU, LA, PR, WS	1414E
8	1507	1523	Slow S-SWF	4	1	FM, LA, PR, WS	1506
8	2258	2320	S-SWF	5	2	AD, AN, BE, HO, HU, MC, OK, PR, TO, WS, CW+, RCA+	2252
9	1148	1203	S-SWF	5	2+	JU, KU, NE, PR	*
9	1710	1828	Slow S-SWF	5	2	BE, FM, HU, PR, WS	
10	0228	0247	G-SWF	4	1	AD, OK	0225
10	1405	1415	S-SWF	3	1	HU, PA	1409E
10	2025	2050	G-SWF	5	1	AD, BE, FM, MC, PR, TO	2012
10	2110	0630	Slow S-SWF	5	3+	AD, BE, FM, HO, HU, MC, OK, PR, TO, WS, RCA+	2055
11	2015	2122	S-SWF	5	3-	AD, BE, FM, HU, MC, PR, TO, WS, RCA+	2006
12	0705	0744	S-SWF	3	2	NE, PU	0655E
12	1010	1034	S-SWF	3	2+	BR, JU	1010E
12	1411	1433	Slow S-SWF	4	1+	JU, PR	1414E
12	1655	1731	G-SWF	5	2	PA, PR, TO, WS	1652
12	2152	2220	S-SWF	5	1+	BE, MC, OK, PR, TO	2146
13	0511	0547	S-SWF	5	2	CA, JU, NE, OK, CW+++ **	0506

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

MAY 1959

May 1959	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F
13	0640	0726	Slow S-SWF	5	2	JU, OK, CW**	0641E
13	1600	1630	G-SWF	5	1+	AD, BE, FM, HU, LA, MC, PR, WS	1554
13	2340	2350	S-SWF	5	1+	AD, LA, OK, TO	2340E
16	0712	0730	Slow S-SWF	1	1	OK	0710E
16	1020	1047	Slow S-SWF	5	1	OK, PU	1021E
16	1658	1718	S-SWF	5	1	AN, BE, MC, PR	1653
16	1738	1821	G-SWF	5	1	BE, FM, HU, LA, MC, PR, WS	1734
16	1920	2000	G-SWF	5	1	FM, HU, LA, MC, PR, WS	1934
17	0107	0247	S-SWF	5	3	AD, OK, TO CW+	0104
17	0525	0600	S-SWF	5	2+	AD, AN, NE, OK, CW++	0523
17	0705	0728	S-SWF	5	2+	NE, OK, SW, TO, CW++	0706E
17	1523	1537	S-SWF	5	1	BE, FM, HU, MC, NE, PR	
17	2227	2242	Slow S-SWF	5	1	AD, LA, MC, OK, TO, WS	
18	0404	0454	S-SWF	5	2	AD, OK, TO, CW++	*
18	1550	1615	Slow S-SWF	5	1	AN, BE, MC, PR	1546
19	1000	1008	S-SWF	1	2	BR	1010E
19	1335	1400	S-SWF	5	1+	BE, BR, FM, HU, MC, NE, PR	1332
20	1320	1355	G-SWF	5	1	AN, HU, JU, MC, PR	1316E
24	2335	2355	G-SWF	3	1	AD, LA, WS	
26	2348	0050	S-SWF	5	2+	AD, AN, CA, LA, OK, TO, WS	2346
27	0951	1007	S-SWF	3	1+	NE, PU	
27	1707	1735	Slow S-SWF	5	2-	AD, FM, HU, LA, MC, PR, WS	
27	1750	1830	S-SWF	5	2-	AD, FM, HU, LA, MC, PR, WS	
28	0000	0025	Slow S-SWF	4	1-	AD, OK	
28	0152	0218	Slow S-SWF	5	1+	AD, CA, OK	
28	0730	0805	G-SWF	5	1+	OK, PU	0726E
30	1940	2005	Slow S-SWF	3	1-	MC, PR	
31	1923	1953	Slow S-SWF	5	1	FM, HU, MC, PR, WS	
31	2115	2155	Slow S-SWF	5	1	AD, BE, FM, HU, MC, PR, WS	2118

* No known flare patrol

BR = Breisach, G.F.R.
CA = Canberra, Australia
HO = Hollandia, New Guinea
JU = Juhlesruh, G.D.R.
KU = Kuhlungsborn, G.D.R.
LA = Los Angeles, Calif.
NE = Nederhorst den Berg, Netherlands
PU = Prague, Czechoslovakia
SW = Enkoping, Sweden
TO = Hiraiso 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.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

JUNE 1959

Ottawa **2800 Mc.**

June 1959	Type	Start UT	Duration Hrs:Mins	Maxima		Remarks
				Time UT	Peak Flux	
1	1 Simple 1	1810.5	7	1811.8	7	
2	1 Simple 1	1441	7	1443	3	
2	3 Simple 3 A	1817	55	1823	12	
	2 Simple 2	1817.5	3	1818.5	45	
2	1 Simple 1	2000	7	2003.5	4	
7	1 Simple 1	1351	3	1352.5	5	
9	2 Simple 2 f	1635	32	1652	2000	
	4 Post Increase A		6 20		25	
	8 Group (6)	1707.5	2 44.5			
	2 Simple 2	1707.5	5	1709.5	15	
	6 Complex	1716	12	1718.5	135	
	2 Simple 2 f	1728	1 10	1739.5	1800	
	6 Complex	1841	25	1841.5	35	
	2 Simple 2	1907	40	1926	105	
	6 Complex	1947	5	1949.5	35	
	3 Simple 3	2130	1 00	2157	40	
10	8 Group (2)	1143	17			
	6 Complex f	1143	9	1148	45	
	2 Simple 2	1152.5	7.5	1153.5	175	
10	1 Simple 1	1233	1	1233.3	5	
10	3 Simple 3 f A	1751	35	1756.5	8	
	8 Group (2)	1751	13			
	2 Simple 2	1751	3.5	1752	80	
	2 Simple 2 f	1759	5	1800.5	155	
10	2 Simple 2	1926.5	3	1927.3	20	
10	2 Simple 2	2132.5	2	2133	13	
11	6 Complex	1322.5	4	1323.4	80	
11	3 Simple 3	1450	1 50	Indet.	10	
11	3 Simple A	1753	4 30	1831	35	
	8 Group (3)	1803.5	32.5			
	2 Simple 2 f	1803.5	13	1805.5	110	
	2 Simple 2	1823	2	1823.3	25	
	2 Simple 2	1835	1	1835.4	25	
12	6 Complex	1309.5	9	1311.2	27	
13	2 Simple 2	1422.8	3.5	1423.7	10	
13	3 Simple 3	1755	20	1759	8	
13	3 Simple 3	2217	1 00	2220	12	
14	1 Simple 1	1919	2	1920	5	
14	2 Simple 2	2231.2	2	2232	10	
14	3 Simple 3	2300	1 30	2345	20	
15	3 Simple 3	1622.5	10	1627	7	
17	1 Simple 1	1238	6	1241	5	
17	3 Simple 3 A	1431	2 10	1458	15	
	8 Group (2)	1431.8	13.2			
	2 Simple 2	1431.8	2.5	1432.9	10	
	2 Simple 2 f	1439	6	1439.5	30	
17	3 Simple 3	1925	8	1927	7	
18	9 Precursor	1053.5	45		15	
	6 Complex	1138.5	15	1140	1225	
	4 Post Increase		2 45		60	
18	3 Simple 3 f	1921.5	20	1927.5	10	
18	2 Simple 2	2349	2	2349.5	40	In Interference
19	2 Simple 2	1358.5	2	1359	15	
19	1 Simple 1	1444.5	1.5	1445	7	
19	8 Group (2)	1625	56			
	2 Simple 2	1625	5	1625.3	50	
	2 Simple 2	1634	2	1634.8	17	
	4 Post Increase		45		6	
20	2 Simple 2	1755	2	1756	16	
20	2 Simple 2	2226	4	2227	18	
21	1 Simple 1	1606.5	4	1608	5	
21	2 Simple 2	2031.7	2	2032.3	15	
21	3 Simple 3	2150	15	2155	7	
22	2 Simple 2 f	1029	4	1030.5	150	In sunrise osc.
	4 Post Increase		1 00		30	
23	2 Simple 2 f	1102	5	1104	15	In sunrise osc.
23	2 Simple 2	1618	5	1618.5	185	
23	3 Simple 3	1649.5	12	1651	10	
24	2 Simple 2	0024	4	0026	45	In sunset osc.
24	3 Simple 3	1609	12	1617	8	
27	2 Simple 2 f	1525.5	2	1526	30	
	4 Post Increase		20		5	
27	2 Simple 2	1645	7	1647.5	16	
28	2 Simple 2	1734.5	1.5	1735	13	
28	2 Simple 2	1819	3	1820	8	
28	3 Simple 3 f	1902	15	1907	8	
28	3 Simple 3	2321	35	2331.5	32	
29	2 Simple 2 f	1310	8	1313	30	
30	2 Simple 2	1705	2	1705.7	33	

HOURS OF OBSERVATIONS: APRIL, MAY, JUNE 1959

COMMERCE - STANDARDS - BOULDER

OBSERVING PERIOD:
April 1200 UT - 2310 UT (approx.)
May 1130 UT - 2325 UT (approx.)
June 1125 UT - 2400 UT (approx.)

with the following exceptions:

(1) NO OBSERVATIONS:
April 23, 1810 UT - 1940 UT
April 27, 1500 UT - 1640 UT
May 12, 1630 UT - 1725 UT
June 16, 1305 UT - 1430 UT

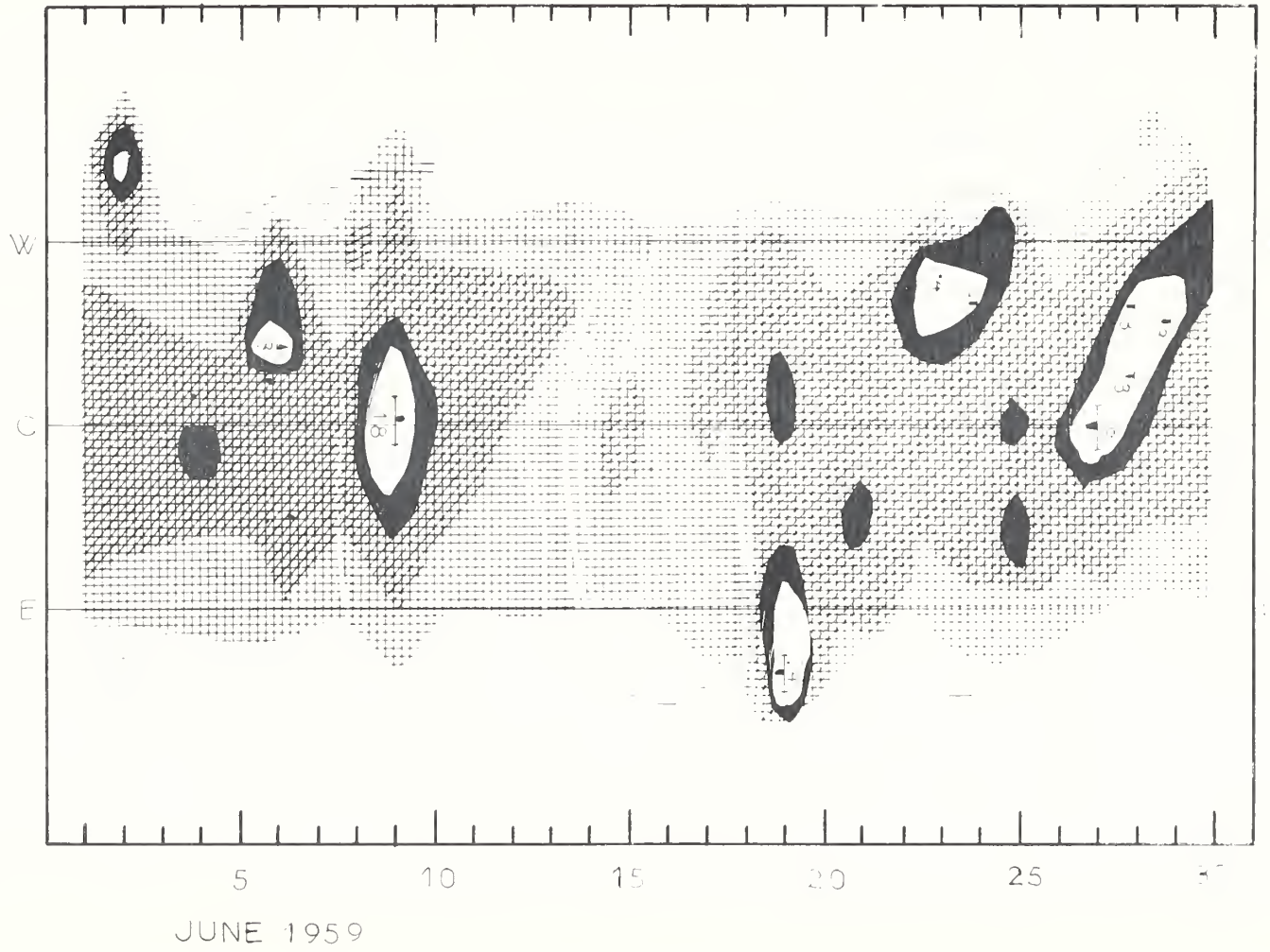
(2) Daily interruption of observations for calibration purposes of approximately 20 minutes, usually in the period 1430 UT - 1600 UT.

(3) Periods of interference obscuring the records on:
April 1, 3, 7, 9, 14, 21, 22, 24
May 5, 7, 8, 13, 20, 21, 22, 26, 27, 28, 30
June 3, 5, 8-11, 15-20, 22, 24-26, 29, 30

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

JUNE 1959

Nançay 169 Mc



JUNE 1959

IVb

COMMERCE · STANDARDS · BOULDER

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

MAY 1959

BOULDER

167 MC

May 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	6	1159 E		323 D	1
1	2	1225.0	1226	1.0	2 *
1	3	1231.0	1231	0.2	2 *
1	3	1328.1	1328.1	0.5	2
1	3	1502.5	1503.0	0.5	2
1	3	1521.2	1521.9	0.8	2
1	3	1809.5	1809.6	0.5	2
1	3	1819.0	1819.0	0.3	2
1	3	1843.0	1843.0	0.4	1
1	2	2007.4	2008.7	1.6	2
1	3	2024.9	2024.4	1.2	2
1	3	2036.0	2036.2	1.1	2
1	3	2041.3	2041.3	0.7	2
1	3	2220.1	2220.1	0.5	2
2	3	0120.8	0121.0	0.4	2 **
2	3	1417.5	1417.5	1.1	2
2	3	1932.1	1932.1	0.4	2
2	3	2106.0	2106.3	1.0	3
3	9A	0010.5	0011.6	2.0	2
3	9B	0012.5	0013.0	8.3	3 S
3	3	1224.5	1224.5	0.2	2 *
3	3	1547.5	1547.5	0.5	1
3	3	1743.6	1743.6	0.5	1
3	3	2251.5	2251.5	0.2	2 S
4	2	1647.7	1648.4	2.3	2
5	7	1406		94	1
5	3	1753.0	1753.9	1.1	2
5	3	2016.8	2017.0	1.0	1
5	3	2039.5	2039.5	0.5	1
5	9A	2106.5	2107.0	1.5	2
5	9B	2108.0	2110.0	4.5	3
5	3	2151.0	2151.0	1.0	2
5	3	2352.0	2352.5	1.0	3
6	3	0008.0	0008.0	1.4	1
6	3	1224.0	1224.0	0.3	2 *
6	3	1328.0	1328.5	2.0	3
6	3	1722.0	1722.0	0.5	2
6	2	2257.8	2258.0	1.2	2
7	6	1154 E		831 D	2
7	3	1638.0	1638.5	1.0	3
7	3	2215.0	2215.1	1.0	3
7	2	2239.5	2240.3	2.3	3
8	3	2247.5	2247.7	1.0	3
8	8	2255	2303	13	3
8	3	2345.5	2346.8	1.5	3
8	3	2349.8	2350.0	1.1	2
9	3	0000.0	0000.0	0.2	2
9	3	1147.5	1147.8	0.7	3 *
9	3	1152.0	1152.8	2.0	3 *
9	3	1204.5	1204.5	1.0	2 *
9	2	1232.7	1233.2	2.3	3
9	2	1236.5	1236.9	1.5	2
9	3	1307	1307.5	1.0	2
9	2	1312.0	1312.2	2.0	2
9	3	1319.0	1319.9	1.0	3
9	3	1321.0	1321.5	0.8	2
9	3	1328.0	1328.0	0.2	2
9	3	1335.0	1335.2	2.0	3
9	7	1429		40	2
9	3	1517.0	1518.0	1.5	3
9	3	1537.8	1537.9	0.7	2
9	3	1619.5	1619.5	0.5	3
9	3	1622.0	1622.0	0.5	3
9	3	1703.0	1703.0	0.6	3
9	3	1710.5	1710.5	1.0	3
9	3	1714.4	1714.8	1.0	3
9	3	1717.0	1718.0	1.5	3
9	3	1732.5	1732.8	0.5	3
9	3	1820.9	1820.9	0.2	2
9	2	2003.0	2003.0	1.0	2
9	3	2049.6	2050.0	0.9	2

May 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
9	7	2101		289 D	3
10	3	1318.0	1318.0	0.2	2
10	2	1432.5	1432.5	4.5	2
10	3	1617.8	1617.8	0.2	2
10	3	1742.0	1742.0	0.2	2
10	3	1908.5	1909.0	0.5	2
10	3	1914.5	1914.7	0.5	2
10	3	1918.6	1918.6	0.2	2
10	3	2107.6	2107.6	0.2	2
10	3	2111.8	2112.0	0.2	2
10	7	2115		275 D	3
10	9A	2115.1	2121.5	6.9	3
10	9B	2122.0	2141.0	8.0	3
11	6	1150 E		835 D	2
11	9A	2019.0	2023.0	4.6	3
11	9B	2023.6	2039.6	23.4	2
12	6	1148 E		838 D	2
13	2	1219.0	1219.5	3.5	2 *
13	3	1416.7	1416.7	0.8	2
13	3	1625.0	1625.0	0.2	2
13	3	1631.0	1631.6	1.0	2
13	3	1637.0	1637.0	0.2	2
13	3	2144.2	2144.2	0.8	2
13	3	2259.0	2300.1	0 2	2
14	3	1338.0	1338.0	0.2	2
15	3	1249.0	1249.0	0.2	2 *
15	3	1254.3	1254.3	0.2	2 *
15	3	1419.5	1419.5	0.2	2
15	3	1450.5	1450.5	0.2	2
15	2	2248.0	2248.5	1.0	2
15	3	2347.9	2347.9	0.2	2
16	8	1756.8	1801.6	12.5	1
16	3	2125.5	2125.5	0.2	2
17	3	2011.7	2011.7	0.2	1
17	2	2013.5	2014.7	1.5	1
17	2	2236.0	2238.0	6.5	1
18	2	0133.6	0134.9	2.8	2 **
18	3	1708.4	1708.4	0.2	2
18	3	1746.5	1748.0	2.5	2
18	3	2339.0	2339.0	0.2	2 S
19	3	2000.4	2000.5	1.0	2 S
20	3	1506.0	1506.5	0.8	2
20	2	1615.0	1617.1	2.6	2
21	3	1152.5	1152.5	0.2	2 *
21	3	1403.0	1403.2	1.0	2
21	3	1431.3	1431.3	0.2	2
22	2	0002.5	0003.0	1.5	2
22	3	0010.7	0010.7	0.2	1
22	3	0036.0	0036.0	0.2	1
22	3	1149.7	1149.7	0.2	2
22	3	1153.0	1153.0	0.2	1
23	2	0053.0	0058.2	7.0	2
23	6	1141 E		854 D	2
24	7	1207		19	1 *
24	3	1233.8	1233.8	0.2	1
24	3	1235.0	1235.0	0.2	1
24	2	1323.6	1323.8	1.9	1
24	3	1344.0	1344.0	0.2	1
24	2	1415.0	1418.5	8.0	1
25	3	0103.5	0103.5	0.4	2 S
25	3	0108.0	0108.0	0.2	1 S
25	3	0151.0	0151.0	0.2	1 S
25	7	2308		127	1
26	3	1322.2	1322.2	0.2	2
26	3	1509.8	1509.8	0.2	2
26	2	1518.8	1520.0	2.2	2
26	3	1603.4	1603.4	0.2	2
26	3	1718.6	1718.6	0.2	2
26	7	2048		132	2
27	6	1137 E		188 D	2
27	3	1506.5	1506.5	0.2	2

* On sunrise pattern.
** On sunset pattern.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

MAY 1959

BOULDER

167 MC

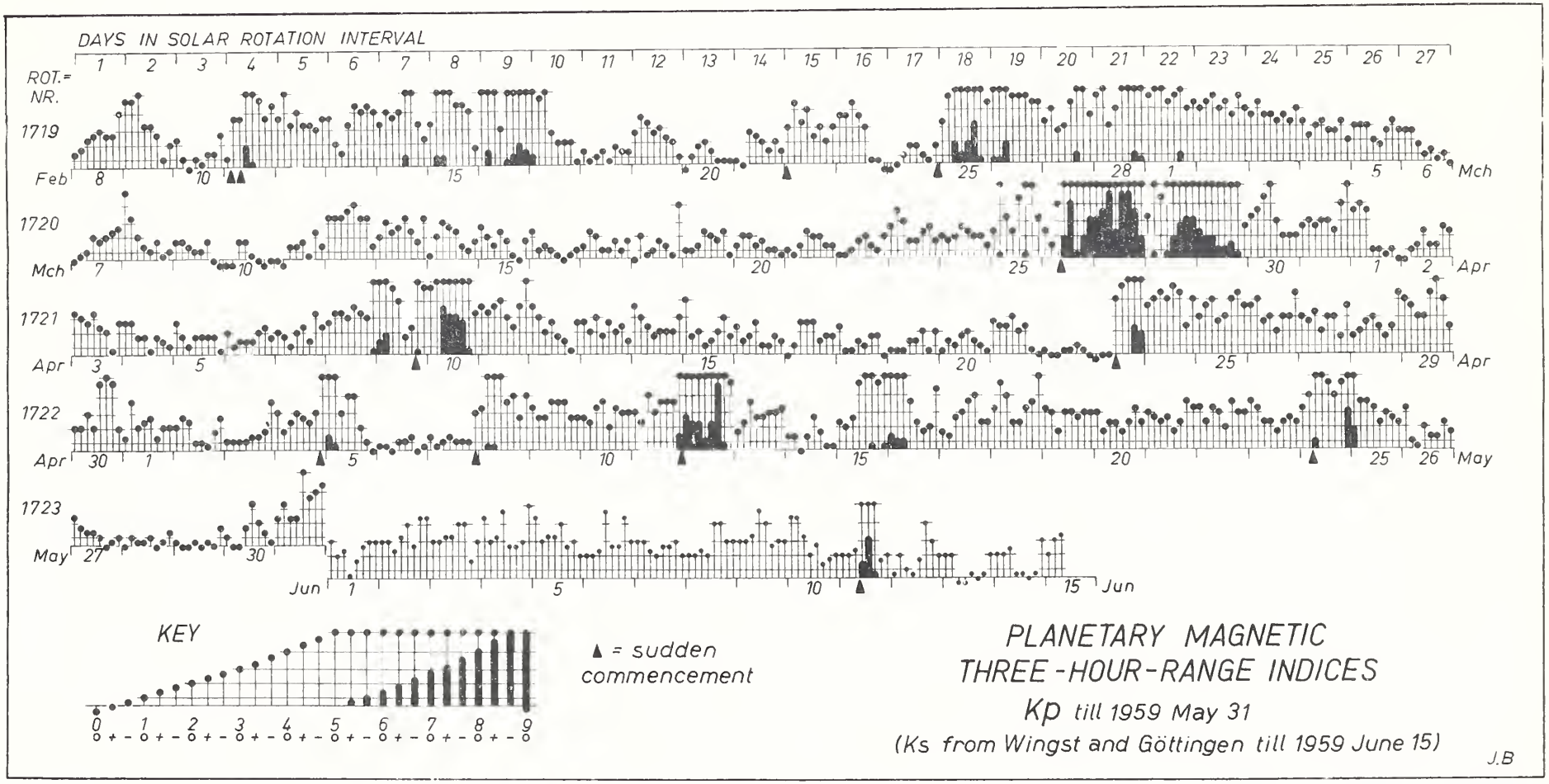
May 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
27	3	1600.0	1600.5	1.0	2
27	3	1855.0	1855.0	0.2	2
28	3	1152.0	1152.0	0.2	2 *
28	3	1730.0	1730.0	0.2	2
28	3	1736.0	1736.0	0.2	2
29	3	1354.0	1354.0	0.2	2
29	3	1359.0	1359.0	0.2	2
29	3	1456.0	1456.0	0.2	1
29	3	1629.0	1629.2	1.0	1
29	3	1647.8	1647.8	0.3	3
29	2	1909.0	1909.0	2.0	2
29	3	2004.0	2004.4	1.0	2
29	3	2016.0	2016.3	2.0	2
29	3	2335.0	2335.0	1.0	3 S
29	3	2338.8	2339.0	0.5	2 S
30	3	0016.0	0016.0	0.2	2 S
30	3	0024.0	0024.0	1.0	2 S
30	3	0038.0	0038.8	2.0	2 S
30	3	0134.0	0134.0	2.0	2 **
30	2	1201.0	1204.2	3.5	2 *
30	3	1311.4	1311.6	1.2	3
30	3	1328.5	1329.0	0.5	2
30	3	1531.6	1531.6	0.2	2
30	3	1533.9	1533.9	0.2	2
30	3	1845.6	1845.6	0.2	2
30	3	2159.0	2159.0	0.2	2 S
31	3	0027.2	0027.2	0.2	2
31	2	0100.0	0101.0	1.0	2
31	2	0145.0	0145.8	1.0	2 **
31	2	0150.0	0151.0	1.0	2 **
31	3	0153.5	0153.5	0.2	2 **
31	3	1217.0	1217.0	0.2	2 *
31	3	1330.6	1330.6	0.2	2
31	2	1336.8	1337.7	2.0	2
31	3	1458.0	1458.0	0.2	2
31	3	1631.0	1631.0	0.2	2
31	3	1902.8	1903.1	0.8	2 S
31	3	2013.8	2013.8	0.2	2 S

* On sunrise pattern.
** On sunset pattern.

GEOMAGNETIC ACTIVITY INDICES

MAY 1959

May 1959	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.5	1+ 4- 2o 2+	3- 1+ 2o 2o	17+	9	Five
2	0.3	2o 3- 2+ 1o	1o 1- 2- 3-	14o	7	Quiet
3	0.4	1o 1o 1o 1o	1+ 1+ 2- 4-	12o	7	
4	1.0	3o 2- 2+ 3o	3- 2+ 3o 5o	23o	16	6
5	1.2	6+ 5+ 3o 4o	4o 2o 1o 0+	26o	29	14
						27
6	0.1	1- 1- 0+ 1o	1o 1+ 0+ 1-	6o	3	28
7	0.2	1+ 1- 1o 1+	1o 1o 1o 3o	10+	6	29
8	1.3	3+ 5+ 5+ 5o	4- 4o 3- 4o	33+	33	
9	0.9	3+ 3- 3- 4-	4- 4- 3- 3-	25o	16	
10	1.0	3- 2+ 3+ 4-	2o 3+ 3o 3o	23+	14	
11	1.3	3o 2+ 4o 3o	4- 4- 4- 6o	29+	26	Five
12	1.9	7o 7- 7- 6-	7- 8+ 5+ 5-	51o	108	Disturbed
13	0.8	2- 2+ 4- 3-	3- 3o 3o 3+	22+	14	
14	0.2	1+ 1+ 0+ 1+	3- 2- 1- 1-	10o	5	8
15	1.2	2+ 2o 3- 5-	5o 5+ 5- 5+	32o	33	12
						15
16	1.3	6o 6- 6- 4-	2+ 2- 2o 4+	31+	36	16
17	0.8	2- 1+ 3- 3o	4- 4o 2+ 2+	21o	13	24
18	1.2	3+ 5- 4o 2+	2+ 3+ 4- 5o	29-	24	
19	0.8	3+ 3o 2- 3o	3o 3- 3o 3o	23-	14	
20	0.7	3o 2- 2+ 2+	2- 2+ 3+ 2+	19o	10	
21	0.8	3o 3- 2+ 3-	2- 2+ 4- 3+	22-	13	Ten
22	0.9	3+ 2+ 3+ 3o	2o 4- 3o 3o	24-	15	Quiet
23	0.7	4- 3+ 2+ 2+	2- 2+ 3- 2+	21-	12	
24	1.6	3+ 4o 6- 5o	5- 4o 5- 7+	39-	52	2
25	1.3	6+ 4- 4- 3+	2+ 3o 3- 2+	27+	25	3
						6
26	0.4	3+ 1o 1- 2o	1+ 1+ 2+ 2-	14-	7	7
27	0.2	2+ 2- 1+ 1+	1o 0+ 1- 1o	10-	5	14
28	0.1	0+ 1o 1- 1-	1o 0+ 1- 1+	6o	3	26
29	0.0	1- 0+ 0+ 1-	0+ 1- 0+ 2-	5o	3	27
30	0.3	1o 0+ 0+ 2-	3+ 2o 1+ 1-	11-	6	28
31	1.1	2+ 3+ 2+ 2+	5o 4- 4o 4+	27+	22	29
						30
Mean:	0.79			Mean:	19	



COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

MAY 1959

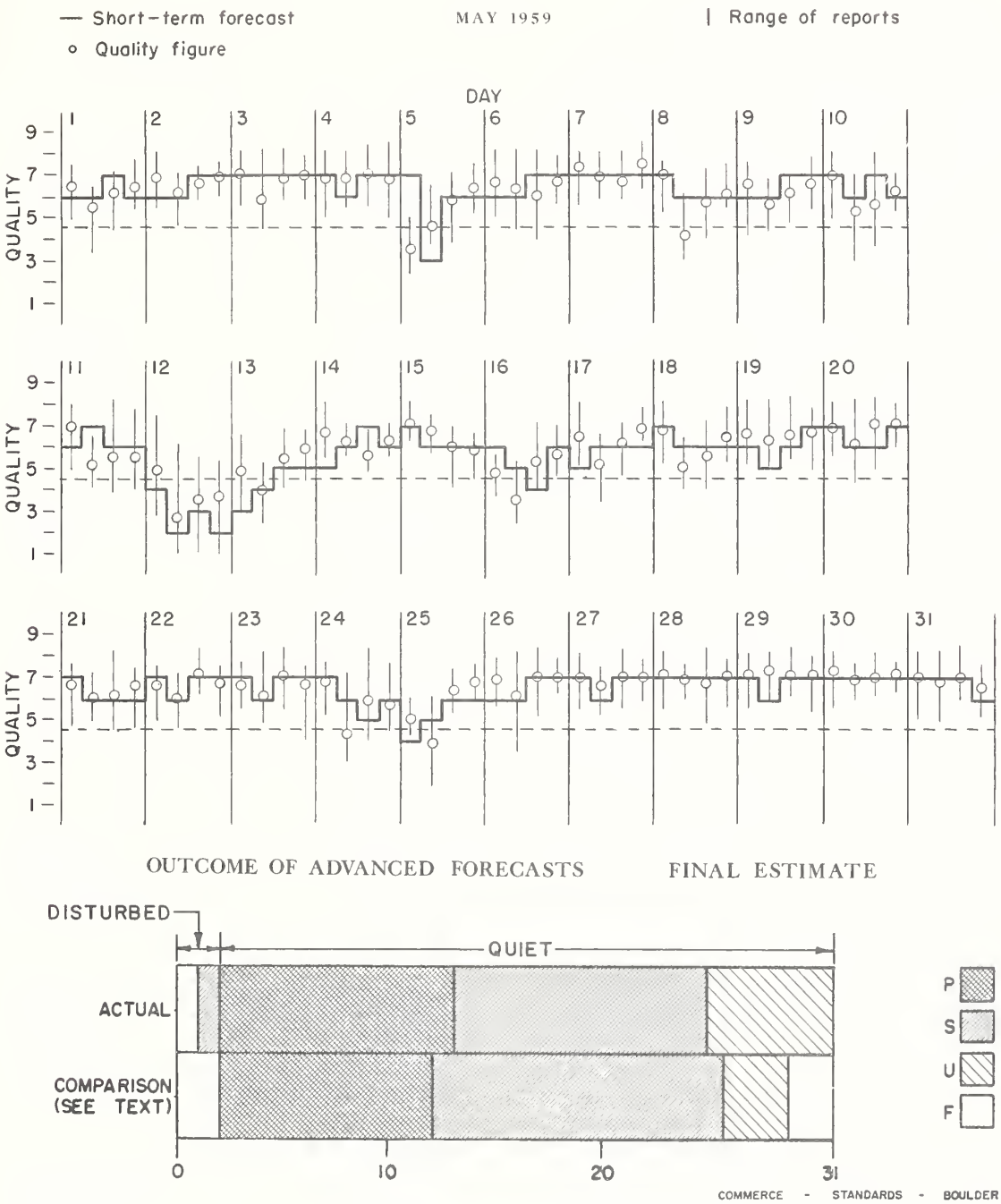
May 1959	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:				Geomagnetic K_{Fr}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-7 days Final	1-7 days Js	1-7 days SDW	1-7 days J	Half (1)	Day (2)
1	6+	6-	6+	7-	6	6	7	6	6+	7			7	2	2
2	7-	6+	7-	7-	6	6	7	7	7-	7			7	2	2
3	7o	6o	7-	7o	7	7	7	7	7-	7			7	1	2
4	7-	7o	7o	7-	7	6	7	7	7o	7			7	3	3
5	4-	5-	6-	6+	7	3	6	6	5-	7			7	(4)	2
6	7-	6+	6o	7-	6	6	7	7	6+	7			7	1	1
7	7+	7-	7-	7+	7	7	7	7	7o	6			6	1	2
8	7-	4o	6-	6o	7	6	6	6	5+	6			6	(5)	3
9	7-	6-	6+	7-	6	6	7	7	6+	6			6	2	3
10	7-	5+	6-	6+	7	6	7	6	6o	7			7	3	2
11	7-	5+	6-	6-	6	7	6	6	6-	7			7	3	(4)
12	5o	3-	4-	4-	4	2	3	2	(4-)	3		3	7	(6)	(5)
13	5-	4o	6-	6o	3	4	5	5	5-	3		3	7	3	2
14	7-	6+	6-	6+	5	6	7	6	6+	5		5	5	1	2
15	7o	7-	6o	6-	7	6	6	6	6+	5			5	3	(4)
16	5-	3+	5+	6-	6	5	4	6	(4+)	6			6	(5)	2
17	6+	5+	6+	7-	5	6	6	6	6+	7			7	2	3
18	7-	5o	6-	6+	7	6	6	6	6o	7			7	3	3
19	7-	6+	7-	7-	6	5	6	7	7-	7			7	3	3
20	7-	6+	7o	7o	7	6	6	7	7-	7			7	2	3
21	7-	6o	6+	7-	7	6	6	6	6+	6			6	3	3
22	7-	6o	7+	7-	7	6	7	7	7-	6			6	3	3
23	7-	6+	7o	7-	7	6	7	7	7-	7			7	3	3
24	7-	4+	6o	6-	7	6	5	6	5+	7			7	(4)	(5)
25	5o	4-	6+	7-	4	5	6	6	5+	7			7	(4)	2
26	7-	6+	7o	7o	6	6	7	7	7-	7			7	2	2
27	7o	7-	7o	7o	7	6	7	7	7-	7			7	2	1
28	7o	7-	7-	7o	7	7	7	7	7o	7			7	0	1
29	7o	7+	7o	7o	7	6	7	7	7o	5			5	0	1
30	7+	7-	7o	7o	7	7	7	7	7o	5			5	1	2
31	7-	7-	7o	7-	7	7	7	6	7-	6			6	3	(4)

Score:								
Quiet Periods	P	18	14	20	24	11		11
	S	10	9	10	6	12		12
	U	2	2	0	0	6		6
	F	0	0	0	0	0		0
Disturbed Periods	P	0	1	0	0	0		0
	S	0	2	1	0	1		0
	U	0	1	0	1	0		0
	F	1	2	0	0	1		2

( ) represent disturbed values.

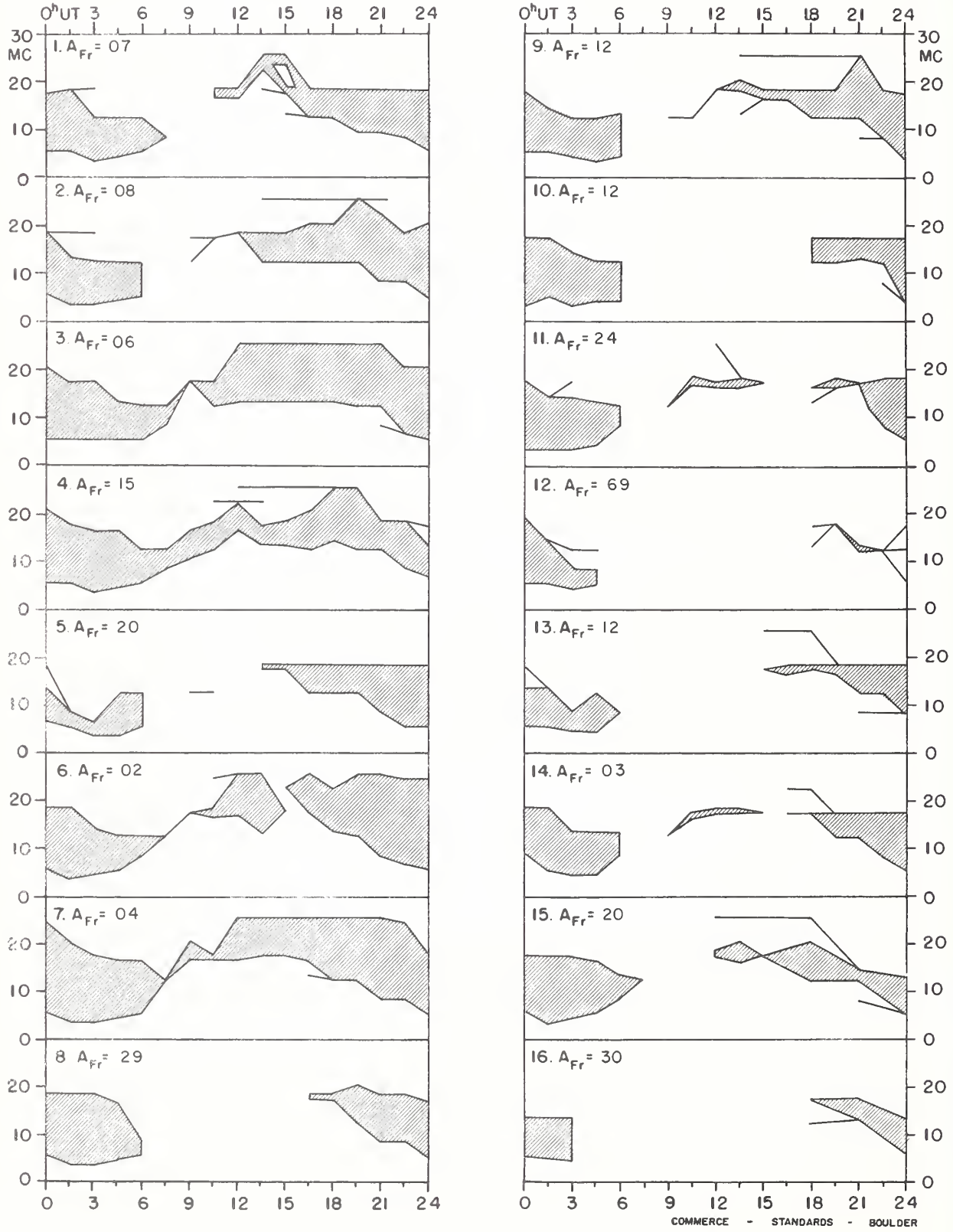
COMMERCE - STANDARDS - BOULDER

NORTH ATLANTIC

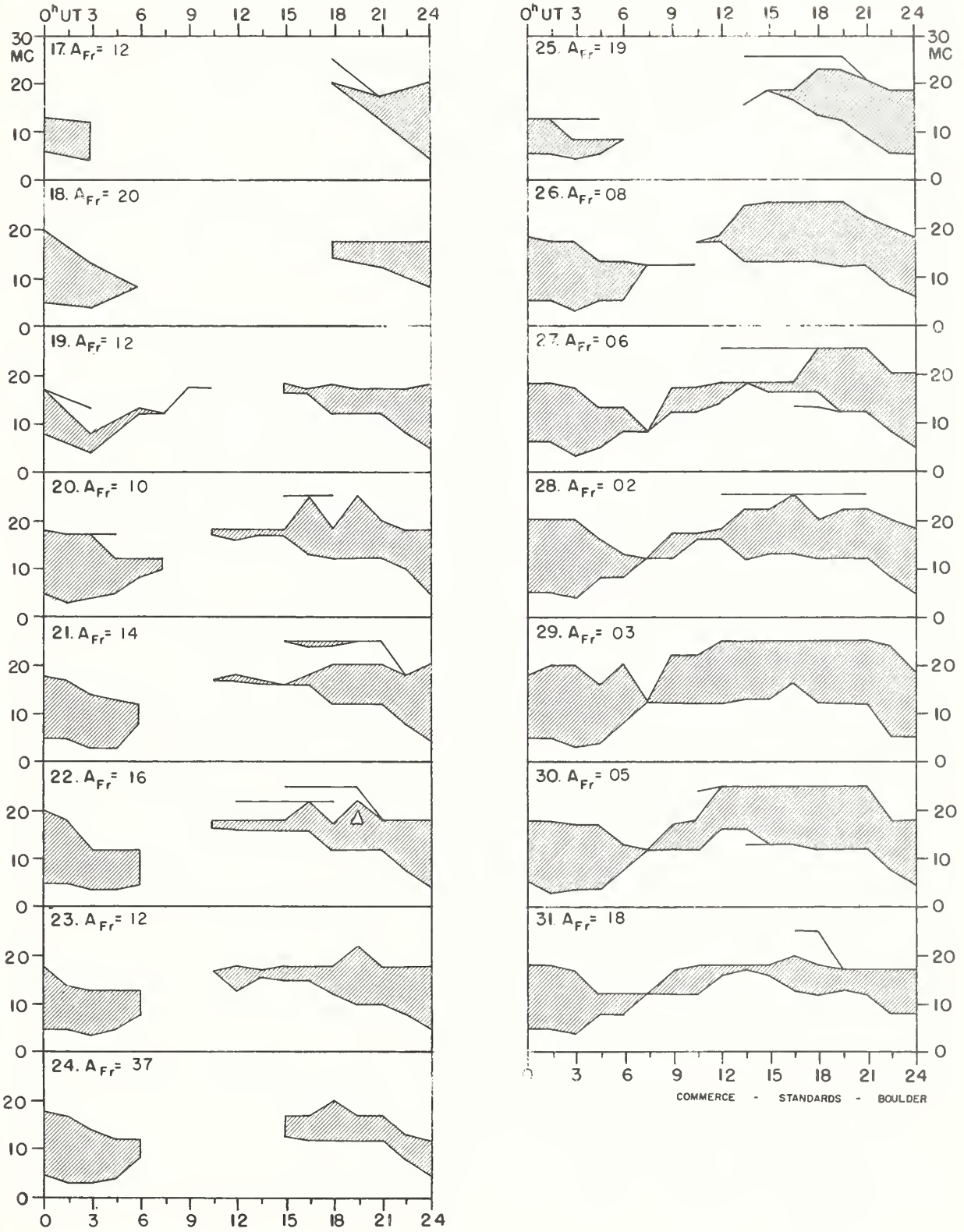


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1959



MAY 1959



Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

MAY 1959

May 1959	North Pacific 12-hourly quality figures		Short-term forecasts issued at		Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:				Geomagnetic 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)	Day (2)
1	6	5	5	6	5	6			6	3	2
2	6	6	5	6	5	6			6	2	1
3	6	6	6	6	6	6			6	1	1
4	6	5	6	6	6	6			6	2	3
5	6	6	5	6	6	6			6	(4)	2
6	7	7	6	6	6	6			6	1	1
7	7	6	6	7	6	5			5	1	2
8	5	5	4	6	5	5			5	(6)	(4)
9	6	5	5	6	6	6			6	3	3
10	6	4	6	6	6	6			6	3	3
11	4	2	5	5	(4)	6			6	3	(4)
12	2	2	2	2	(2)	3		3	6	(7)	(6)
13	5	5	4	4	5	3		3	6	(4)	3
14	6	5	5	6	6	5		5	4	1	2
15	5	5	6	6	5	5			5	3	(4)
16	5	5	3	5	5	6			6	(6)	2
17	5	5	6	5	5	6			6	3	3
18	6	5	4	6	6	6			6	(5)	3
19	6	6	6	6	5	6			6	3	3
20	6	5	6	6	6	6			6	2	2
21	6	6	6	6	6	6			6	3	2
22	6	6	5	6	6	6			6	(4)	3
23	6	5	6	6	6	6			6	2	2
24	4	5	4	6	(4)	7			7	(5)	(4)
25	5	5	4	6	5	7			7	(5)	2
26	6	6	5	7	6	7			7	2	1
27	6	6	6	6	6	7			7	2	1
28	6	6	7	7	6	6			6	1	1
29	7	6	6	6	6	6			6	1	1
30	6	6	6	6	6	6			6	1	2
31	6	5	6	6	5	6			6	2	(4)

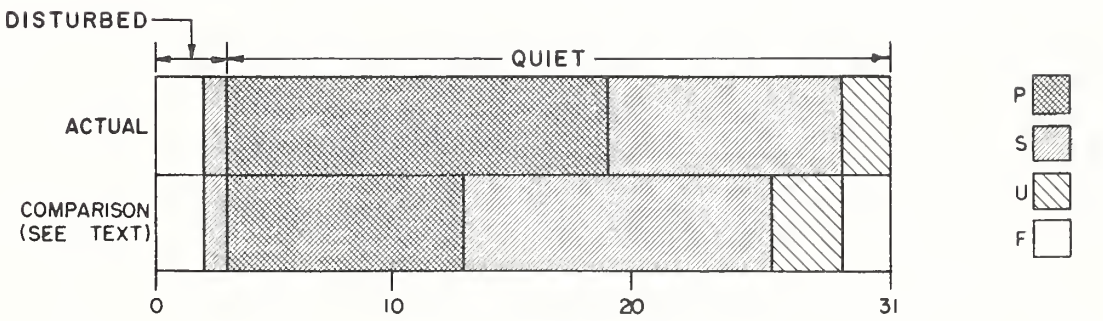
Score:				
Quiet Periods	P	10	11	16
	S	16	17	10
	U	1	0	2
	F	1	0	0
Disturbed Periods	P	2	1	0
	S	1	0	1
	U	0	0	0
	F	0	2	2

( ) represent disturbed values.

NORTH PACIFIC

MAY 1959

OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL GEOPHYSICAL COOPERATION 1959
JUNE 1959

Issued Day/Time UT June 1959	Advance Geophysical Alert	No.	Worldwide Geophysical Alert	Special World Interval
11/1530	Ft. Belvoir Magnetic Storm 11/0910Z			
11/1600		14	Magnetic Storm 11/0910Z	Start Special World Interval
12/1600		15		Finish Special World Interval
18/1730	McMath Solar Flare 18/1145Z			
24/0430	Ft. Belvoir Aurora Inferred Magnetic Storm 23/2238Z			
27/1900	Ft. Belvoir Magnetic Storm 27/1100Z			
28/1600		16	Magnetic Storm 27/1100Z	
29/1500	Ft. Belvoir Magnetic Storm 29/0728Z			
29/1600		17	Magnetic Storm 29/0728Z	

COMMERCE - STANDARDS - BOULDER

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