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## KODAIKANAL OBSERVATORY

**Bulletin No. CLXVIII**

*Published on 6th March, 1968 (Phalguna 16th, 1889)*

ERRATA FOR MODAIWANAL OBSERVATORY BULLETIN NO. CLXVIII

Part I.

Page No.	Table No.	Column	For	Read
9	II 12th March	9	B	0
9	II 16th March	9	G	L

Part II.

Magnetic Data.

Page No.	Table No.	Date/Line	hour/Column	read	For
13	5	9	12	37.9	37.3
13	5	9	12	37.3	37.9
13	5	10	12	34.5	37.3
13	5	11	12	36.7	34.5
13	5	12	12	37.5	36.7
13	5	14	12	38.4	37.3
13	5	17	12	33.7	38.2
13	5	20	12	38.3	38.8
13	5	21	12	37.6	38.3
19	8	20	05	39.5	34.5
24	10	27	20	35.8	36.2
31	14	mean	11	552	522
	15	14	6	611	11
33	15	28	05	645	545
37	18	2	14	212	217
37	18	3	14	213	212
38	18	4	14	188	133
39	18	5	14	219	213
39	18	6	07	210	214
39	18	13	06	225	215
39	18	14	14	220	214
39	18	28	14	229	217

Part III  
Ionospheric Data

Page No	Table No.	Date	Column/ Hour	Read	For.
74	29 (Contd)	7	0730	1.4	1.
76	30	10	09	430	340
82	31 (Contd)	11	0330	280	280UF
82	"	12	0330	250UF	250
95	34 (Contd)	27	2330	335	335UF
95	"	28	2330	320UF	320
96	35	24	07	7.3	7.3S
108	38	14	08	7.6UG	7.6US
140	46	5	04	4.0	4.0US
141	46	9	13	7.8	7.5
157	50	Count	12	29	39
159	50 (Contd)	26	1630	2.8	2.1
163	51 (Contd)	Count	1230	29	2.9
169	53	Mean	22	255	265
176	55	Characteristic	-	h'Es	h'E
176	55	11	01	120	120
176	55	13	01	-	120
177	55	9	14	120	100
177	55	29	18	120	100
178	55 (Contd)	31	0930	110	100
180	56	30	01	3.25	3.35

Page No.	Table No.	Date	Column/Hours	Read	For
131	56	12	21	2.75	3.75
131	56	12	23	3.20	2.20
135	57	16	17	11.2	11.4
137	57(contd)	15	1930	10.5	10.5
137	"	26	1830	11.0	10.0
138	58	29	11	4.0	4.0
192	59	Count	07	6	2.5
196	60	8	00	2.1	-
199	60(contd)	7	2330	2.4	-
199	"	22	2130	2.3	-
199	"	22	2230	-	2.3
207	62(contd)	3	1530	2.6	2.1
207	"	2	1930	1.9	2.9
207	"	7	2330	1.7	2.7
207	"	8	2230	2.4	1.4
209	63	7	13	330	320
212	64	10	09	200	220
213	64	18	19	240	340
213	64	20	21	235	245
214	64(contd)	23	0530	2355	2455
227	67(contd)	Count	1330	29	20
244	72	29	03	-	1.8
244	72	30	03	1.8	-
251	73(contd)	17	2330	1.5	15
268	73	5	02	2.90	3.90
253	73	5	03	3.30	2.30
271	73(contd)	Median	1330	3.00	300
274	82	13	11	12.0	22.2
284	82	14	11	12.2	22.1
235	82(contd)	1	0330	10.0	1.0
235	"	27	0730	7.8	9.8
290	83(contd)	2	0630	2.5	2.8
291	"	20	1930	1.6	1.8
293	84	12	17	2.3	1.6
294	84(contd)	4	1130	2.4	1.4
299	85(contd)	2	1730	230	230
302	85(contd)	23	0430	2	1
303	"	2	2330	340	240
309	88	Count	12	29	2
309	88	"	15	24	4
309	83	30	12	100	--
314	89(contd)	13	1130	2.40	2.60

# Kodaikanal Observatory

Bulletin No. CLXVIII

## PART I

### Summary of Prominence and Calcium Flocculus observations for the First half of 1962

The results of observations of prominences and calcium flocculi made at Kodaikanal Observatory during the first half of 1962 supplemented by data computed from photographs supplied by the Meudon Observatory for those days on which Kodaikanal had imperfect or no observations due to cloudy sky conditions are summarised in this bulletin

*Calcium prominences on the limb*—During the half-year under review, photographs of calcium prominences at the limb were obtained at Kodaikanal on 151 days, which were counted as 142½ effective days, after giving due weightage to the photographs according to their quality Spectroheliograms for 14 days were received from the Meudon Observatory. In all, complete observations were available for 150½ effective days

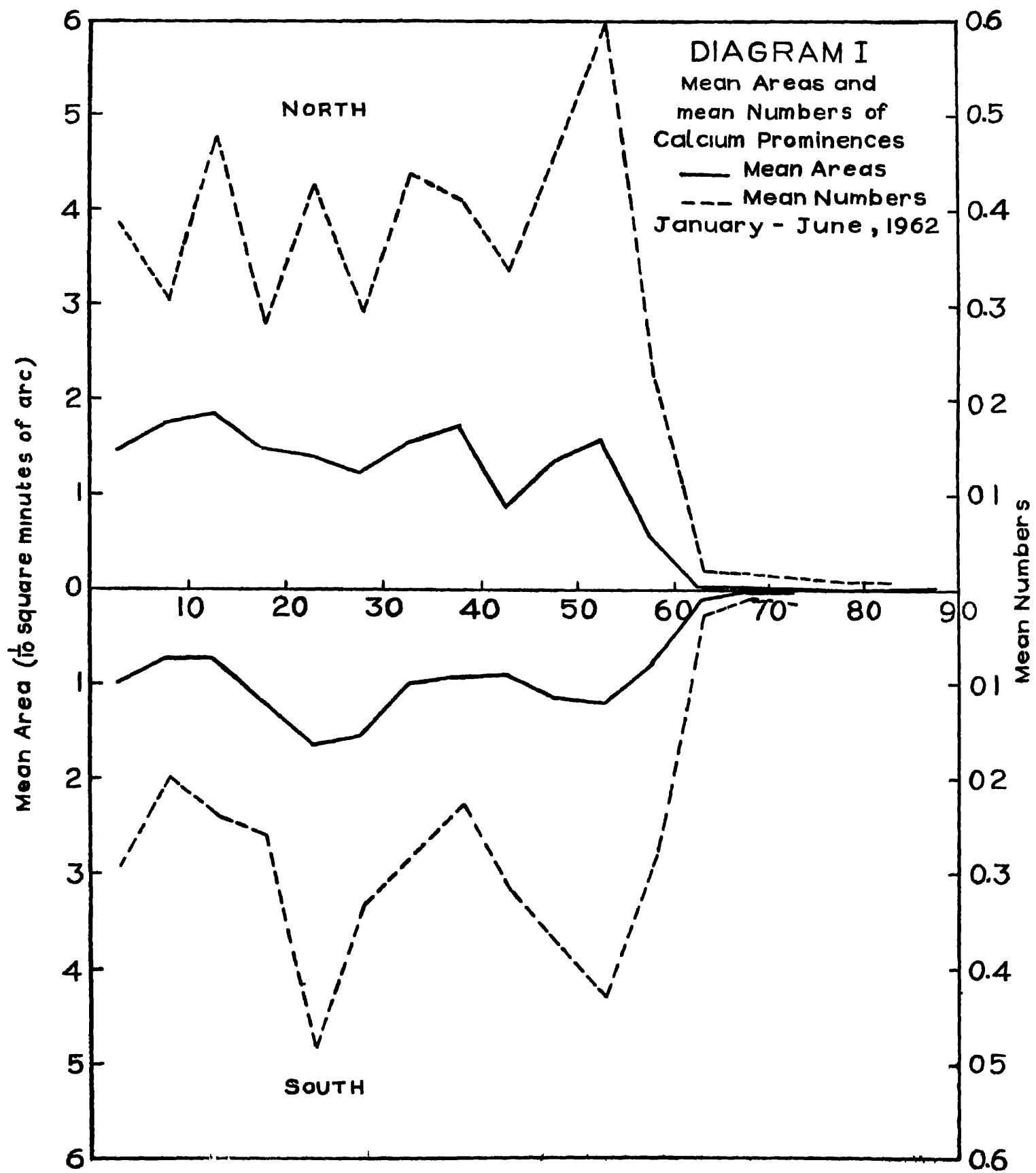
The mean daily areas (Square minutes of arc) and the mean daily numbers of prominences derived from all the above records are given below

	Combined data	
	Mean daily areas (Square minutes)	Mean daily numbers
North	1.68	4.68
South	1.29	3.91
<b>TOTAL</b>	<b>2.97</b>	<b>8.59</b>

Compared with the previous half-year there is a decrease in the prominence activity, the decrease being 21.84% in areas and 6.43% in numbers. The distribution of areas and numbers in five degree ranges of latitude as obtained from the combined data is represented in diagram I

The monthly, quarterly and half yearly areas, numbers, heights and extents of Prominences derived from all the photographs are given below

1962 Month	No of effective days	Area in sq minutes	Numbers	Daily Means		Mean height	Mean Extent
				Area Sq minutes	Numbers		
January	26½	51.0	229	1.92	8.6	33.5	2.1
February	23½	81.8	209	3.44	8.8	36.9	2.9
March	28½	99.7	273	3.50	9.6	39.8	3.1
April	26½	80.0	230	3.05	8.8	39.5	3.2
May	21½	54.3	166	2.56	7.8	40.9	2.8
June	24½	80.8	188	3.30	7.7	43.2	3.4
<b>1st Quarter</b>	<b>78½</b>	<b>232.5</b>	<b>711</b>	<b>2.95</b>	<b>9.0</b>	<b>36.9</b>	<b>2.7</b>
<b>2nd Quarter</b>	<b>72</b>	<b>215.1</b>	<b>584</b>	<b>2.99</b>	<b>8.1</b>	<b>41.1</b>	<b>3.1</b>
<b>1st half year</b>	<b>150½</b>	<b>447.6</b>	<b>1295</b>	<b>2.97</b>	<b>8.6</b>	<b>38.8</b>	<b>2.9</b>



(Millionths of the Sun's visible hemisphere)

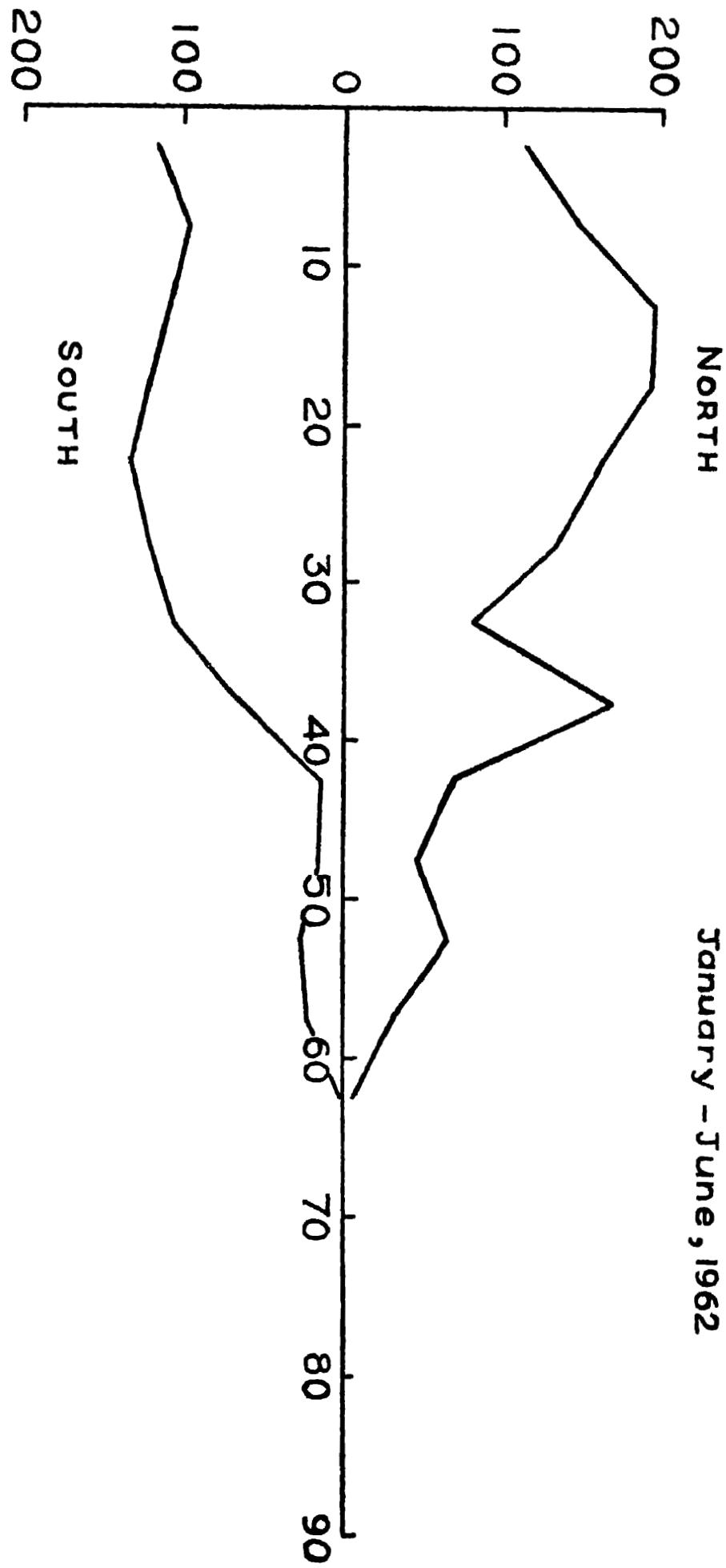


DIAGRAM II  
Mean Area of H-alpha Absorption Markings  
January - June, 1962

The distribution of prominences about the Sun's axis of rotation is as follows

	East	West	Percentage East
1962 January—June			
Areas (Square minutes)	227.3	220.3	50.8
Numbers	647	648	49.9

*Prominences projected on the disc as absorption markings*

During the period under review, photographs of the Sun's disc in H-alpha were obtained at Kodaikanal on 119 days. Spectroheliograms for 34 days were obtained from the Meudon Observatory. On the whole records were available for 120½ effective days.

The mean daily area in millionths of the Sun's visible hemisphere (uncorrected for foreshortening) and the mean daily number of the H-alpha dark-markings as derived from the combined data are given below.

	Combined data	
	Mean daily area (Millionths of the Sun's visible hemi- sphere)	Mean daily numbers
North	1391	11.66
South	963	7.64
TOTAL	2354	19.30

The distribution of the areas of the absorption markings 5-degree ranges of latitude as obtained from the combined data is shown in diagram II. Compared with the previous half-year, there is a decrease of activity, the decrease being 30.16% in areas and 22.96% in numbers.

The distribution of total areas and numbers of the dark markings east and west of the Sun's axis of rotation is as follows.

	Combined data		
	East	West	Percentage East
Total area (in millionths of the Sun's visible hemisphere uncorrected for foreshortening)	1,41,656	1,42,625	49.8
Total Numbers	1,111	1,219	47.7

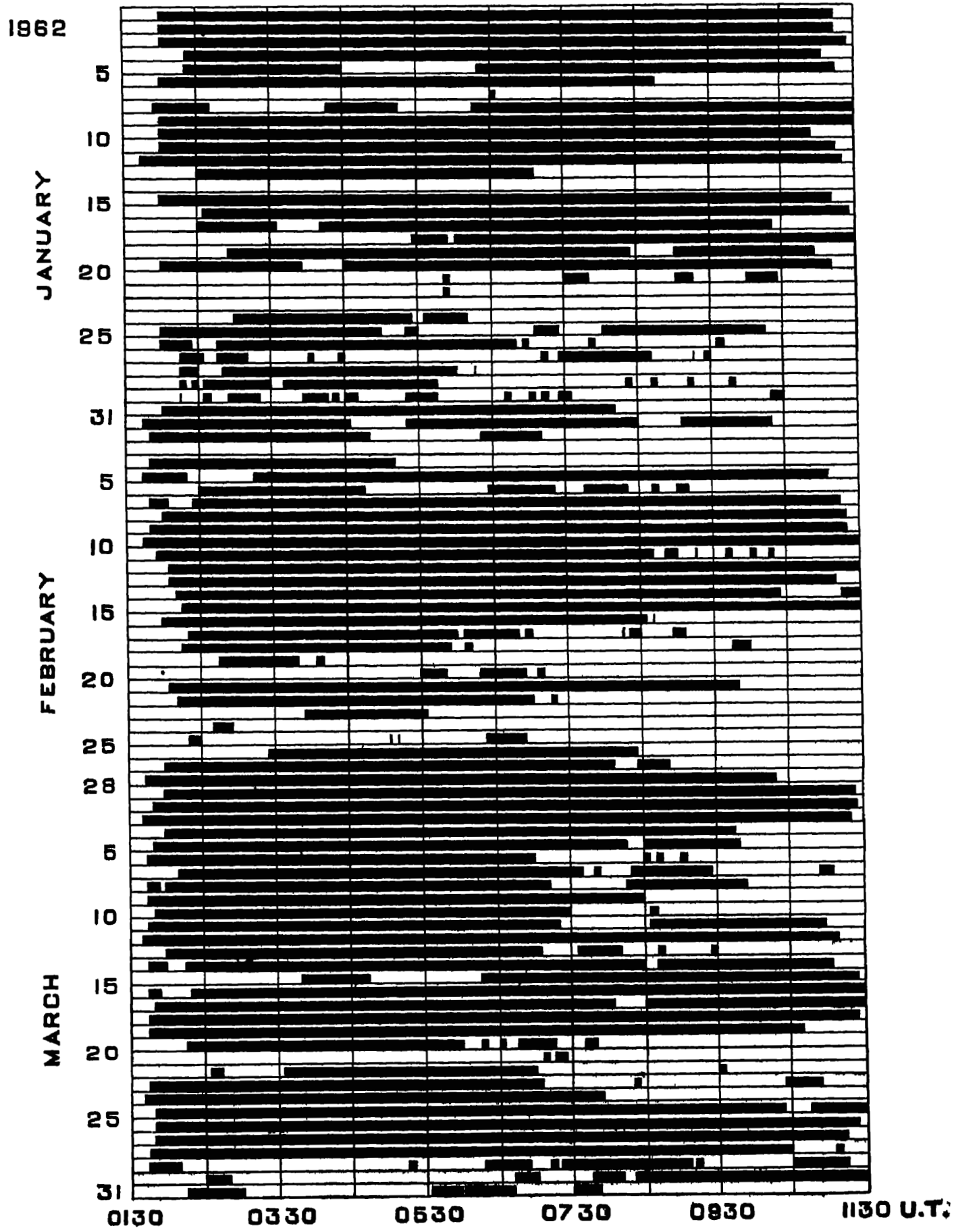
*Calcium flocculi*—During the period under review, Calcium flocculus spectroheliograms were taken on 161 days, while Calcium spectroheliograms for 12 days were obtained from the Meudon Observatory. In all, observations were available for 161½ effective days.

The mean daily areas (in millionths of the Sun's visible hemisphere uncorrected for foreshortening) computed from the combined data are given below.

	Combined data	
	Mean daily area (Millionths of the Sun's visible hemi- sphere)	
North	4777	
South	2170	
TOTAL	6947	



EFFECTIVE HOURS OF SOLAR PATROL WITH  
SPECTROHELIOSCOPE AND LYOT FILTER



EFFECTIVE HOURS OF SOLAR PATROL WITH SPECTROHELIOSCOPE AND LYOT FILTER

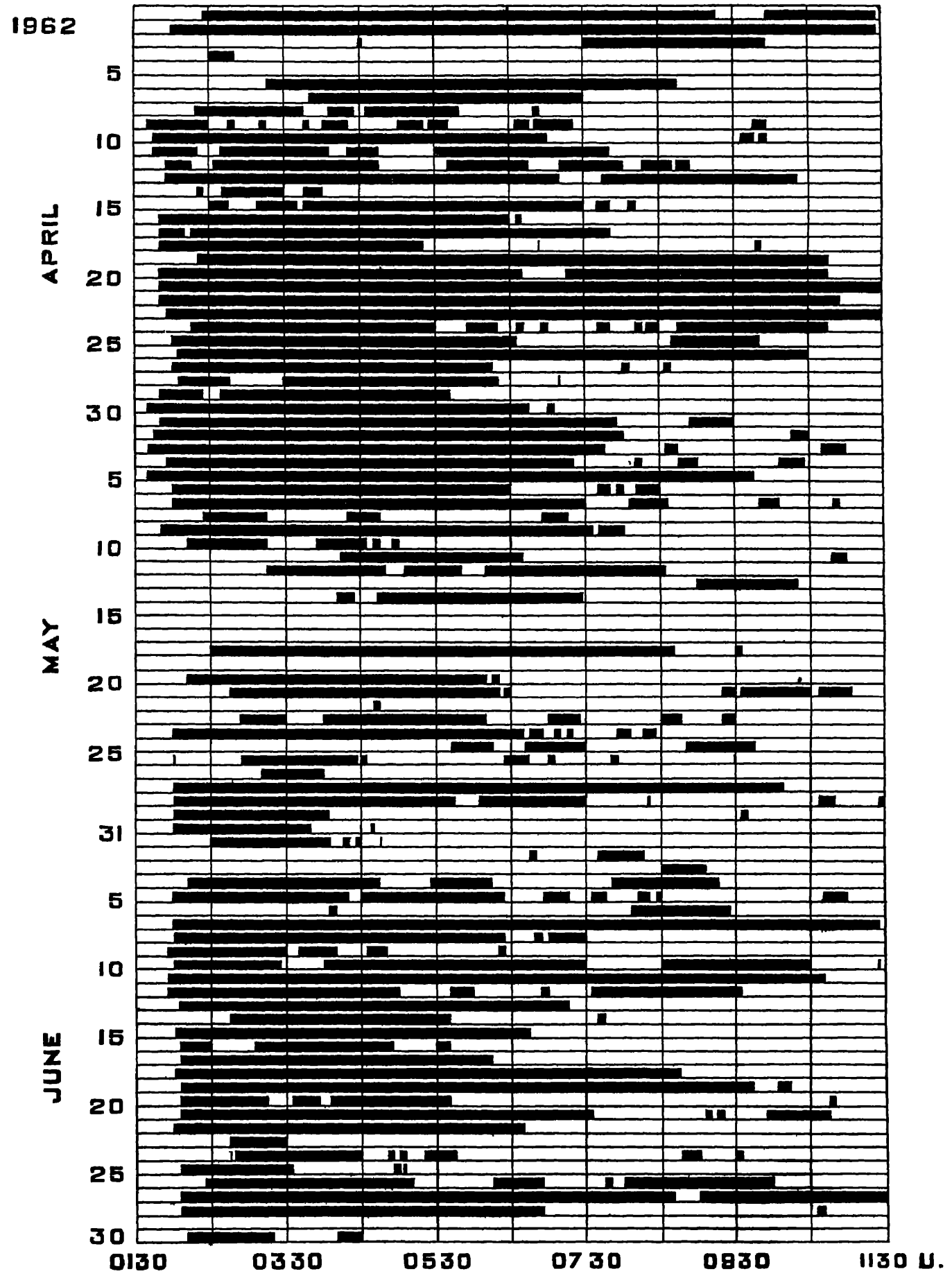










TABLE III—Contd

1	2	3	4	5	6	7	8
31st January	03 33	03 33	03 35	07°N	27°W	1—	1 20
1st February	03 34	03 37	03 51	10°N	29°W	1	1 60
1st February	05 50	05 52	06 00	10°N	33°W	1	2 08
1st February	06 47	06 48	06 52	10°N	33°W	1	1 20
1st February	08 30			10°N	33°W	1—	
1st February	09 12			10°N	33°W	1—	
4th February	01 58	02 22	02 35	11°N	80°W	2+	4 00
4th February	03 15	03 15	03 17	11°N	80°W	1	1 36
21st February	08 21	08 22	08 33	10°S	60°W	1	
21st February	09 17	09 18	09 22	10°S	80°E	1—	1 76
22nd February	02 10	02 16	02 22	09°S	47°E	1—	1 36
22nd February	02 30	02 31	02 40	10°S	48°E	1	1 60
22nd February	04 13	04 23	04 29	10°S	48°E	1—	
22nd February	06 12	06 12	06 31	10°S	50°E	1	
28th February	06 50	06 55	07 13	14°S	33°W	2	2 24
1st March	03 10	03 24	03 47	13°S	47°W	1	1 76
1st March	10 19	10 36	11 00	13°S	44°W	1	
3rd March	03 09	03 14	03 21	07°N	22°E	1—	
13th March	02 38	02 40	02 42	10°N	70°E	1—	
16th March	03 55	03 58	04 50	13°N	33°E	1+	2 24
17th March	10 34	10 39	10 45	13°N	13°E	1—	
20th March	03 05	03 05	03 30	10°S	55°E	1	2 28
22nd March	02 33*	02 33	02 36	12°N	12°E	1—	1 68
25th March	10 50	10 53	10 58	07°N	08°E	1—	
26th March	08 08	08 08	08 12	07°N	02°W	1—	
29th March	02 05	02 06	02 10	12°N	43°W	1—	1 52
31st March	02 45*	02 45	02 49	08°N	70°W	1	1 64
14th April	03 04	03 07	03 07	06°N	65°E	1—	1 44
14th April	03 17			10°N	03°E	1—	
15th April	05 33	05 33	05 48	05°N	50°E	1	1 76
16th April	02 35		02 40	08°N	24°W	1	1 48
16th April	03 18	03 18	03 20	08°N	24°W	1—	1 56
17th April	05 16	05 16	05 22	09°N	41°W	1—	1 72
19th April	09 45	09 45	09 52	07°N	25°E	1—	
20th April	02 33	02 34	02 40	09°N	14°W	1—	1 44
20th April	03 16	03 16	03 28	08°N	12°W	1—	
20th April	10 35	10 35	10 41	05°N	10°W	1—	
21st April	02 03	02 03	02 26	07°N	26°W	1+	3 80
21st April	05 06		05 13	07°N	32°W	1—	
21st April	07 10	07 12	07 18	07°N	27°W	1—	1 60
22nd April	02 29	02 29	02 33	07°N	45°W	1—	1 52
26th April	07 18	07 18	07 21	07°N	75°E	1—	1 52
1st May	01 50*		02 08	20°N	73°E	1	2 08
1st May	03 05	03 05	03 08	20°N	73°E	1—	1 44
1st May	04 20*	04 45	07 50†	20°N	71°E	2	2 16
3rd May	02 09	02 12	02 20	10°N	25°W	1+	2 08
3rd May	06 44	06 53	07 18	10°N	25°W	2	2 00
13th May	08 59*		09 30	09°N	16°E	1—	
21st May	10 57		10 59	12°N	62°E	1—	
1st June	04 09*		04 10†	11°S	61°W	1—	1 32
9th June	02 23	02 23	02 26	16°S	72°E	1—	1 52
19th June	04 46	04 47	04 49	18°N	51°E	1—	1 52
21st June	06 27		06 51	15°N	24°E	1	1 48
26th June	02 40	02 42	02 54	01°N	55°E	1—	1 60
27th June	07 56	07 56	08 10	02°N	40°E	1—	

\*First observation of the flare and not the beginning of flare

†Last observation of flare and not the end of flare

































































































































































































































































































































































































Characteristic M (3000)F2  
 Unit Mc —  
 Month March, 1962

TABLE 56 (concl'd)  
 Ionospheric Data  
 75°E Mean Time

Latitude 10 2° N  
 Longitude 77 5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Remarks	Date
2 50	2 50	2 55	2 60	2 60	2 65 <sup>us</sup>	2 45	S	S	2 95 <sup>s</sup>	3 15 <sup>us</sup>	3 20		1
2 45	2 50	2 60	2 60	2 60 <sup>us</sup>	2 50 <sup>us</sup>	2 30	FS	FS	FS	FS	FS		2
2 50	2 50	2 65	2 70	2 75	F	2 40 <sup>us</sup>	2 30 <sup>us</sup>	2 70 <sup>us</sup>	FS	2 95 <sup>us</sup>	2 95		3
2 50	C	2 60	2 65	2 60 <sup>r</sup>	S	2 35	2 40	2 60	FS	FS	3 10		4
2 50	2 55	2 65	2 80	2 90	2 85	2 60 <sup>us</sup>	F	F	F	F	3 30		5
2 45	2 55	2 50	2 40	2 45	S	2 75	2 85	3 05	3 15	3 10	3 25		6
2 50	2 50	2 50	2 50	2 65	2 65	2 45	F	2 65	3 05	3 15	3 45		7
2 55	2 70	2 70	2 80	2 90	3 00	2 80	2 60	F	3 00	3 30	3 30		8
2 60	2 60	2 60	2 65	2 75	2 90	2 90	2 85	F	F	F	3 40		9
2 45	2 60	2 60	2 60	2 55	2 75	2 75	2 65	2 80	3 10	3 25	3 20		10
2 50	2 60	2 50	2 40	2 60	2 80	2 85	2 90	2 95	3 10	3 05	3 05		11
2 50	2 45	2 55	C	2 70	2 70	2 65	2 55	2 65	2 75	3 15	3 10		12
2 60 <sup>r</sup>	2 65	2 60	C	C	2 80	2 70	2 55	F	2 90	3 10	3 20		13
2 60	2 60	2 65	2 80	2 80	2 90	2 85	2 80	2 95	3 05	3 10	3 05		14
C	C	2 60	C	C	C	C	2 95	3 15	3 20	3 25	3 20		15
2 50	2 60	2 45	2 50	2 60	2 65	2 55	F	F	F	F	3 05		16
2 55	2 50	2 50	2 65	2 70	2 80	2 60	2 55	2 80	F	3 20	3 20		17
2 45	2 50	2 50	2 55	2 60	2 60	2 35	2 35	2 50	2 80	3 10	3 15		18
2 40	2 45	2 50	2 55	2 65	2 65	2 45	S	F	F	3 05	3 20		19
2 50	2 50	2 45	2 50	2 65	2 70	2 40	F	F	F	F	F		20
2 45	2 55	2 60	2 70	2 70	2 75	2 55	F	F	FS	F	F		21
2 55	2 55	2 65	2 65	2 75	2 80 <sup>s</sup>	2 50 <sup>s</sup>	F	F	FS	F	F		22
2 50	2 45	2 55	2 65	2 75	S	S	FS	FS	FS	FS	FS		23
2 45	2 45	2 50	2 55	2 60	2 60 <sup>s</sup>	S	S	S	FS	FS	C		24
C	C	C	C	2 45	S	FS	FS	FS	FS	FS	3 35		25
2 50	2 50	2 45	2 50	2 50	2 55	2 40	F	F	F	F	3 25		26
2 35	2 40	2 50	2 55	2 70	2 60 <sup>us</sup>	2 60	F	F	F	F	3 05		27
2 40	2 50	2 50	2 50 <sup>s</sup>	2 55	2 80	S	F	2 55	2 90	3 25	3 40 <sup>s</sup>		28
2 20	2 50	2 60	2 60	2 70	2 70 <sup>s</sup>	2 55	2 50	2 35	2 70	2 95 <sup>r</sup>	3 05		29
2 45	2 40	2 45	2 60	2 70	2 70	2 50	F	F	F	F	3 15		30
2 50	2 40	2 50	2 75	2 75	2 85	2 60	F	F	3 10 <sup>r</sup>	3 20 <sup>r</sup>	F		31
29	28	30	27	29	25 <sup>r</sup>	26	14	13	14	17	24		Count
2 50	2 50	2 55	2 60	2 65	2 70	2 55	2 60	2 70	3 00	3 15	3 20		Median
2 50	2 50	2 55	2 60	2 65	2 75	2 55	2 65	2 75	3 00	3 15	3 20		Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.







































































































































































































































































































