

## Sunspot Activity.

	Number of observations	Reduction-factor on Wolf's unit		Number of comparisons
		whole disc	central zone	
Batavia	65	1.30	1.39	45
Catania	63	0.93	0.86	42
Greenwich/Cape	72	0.87	0.87	45
Kiew	32	0.79	0.88	23
Kelburn/Wellington	28	0.81	0.79	23
Lyons	50	0.83	0.75	42
Roma/Campidoglio	31	0.74	0.83	23
South Hadley	50	0.99	0.89	32
Stonyhurst	61	0.75	0.68	38
Tokyo	60	0.72	0.81	39
Zürich/Arosa	75	0.60	0.60	—

Relative-numbers for the whole sun disc 1931

	Jan.	Feb.	March
1	0	0	E 34 c
2	7	8	31
3	0	28 d	25 a
4	9 d	27	33
5	18	23	37
6	11	29	33
7	11	18	29 a
8	12	27 a	37
9	14	29	33 d
10	11 a	28	33
11	10	20	38
12	9	E 20 c	38
13	M 16 c	23	43 d
14	41	19 cd	47
15	43	41	46 b
16	27	44	41
17	E 20 c	47	W 51 c
18	22	45	49 a
19	19	50	38
20	24 a	64 ab	40
21	24	89 b	27
22	22	79	25
23	21	100	17
24	16	92	16 a
25	20	68 a	8
26	7	76 d	8
27	8	67	8
28	5	47	14
29	7		16
30	0		9
31	0		WE 27 cc
Mean	14.6	43.1	30.0

Relative-numbers for the central circle zone 1931

	Jan.	Feb.	March
1	0	0	13
2	0	0	20
3	0	0	12
4	0	3	15
5	0	7	25
6	0	19	19
7	0	15	17
8	11	27	19
9	13	12	13
10	11	11	0
11	10	0	0
12	7	0	0
13	9	0	23
14	10	11	37
15	0	24	36
16	0	23	32
17	0	1	35
18	9	10	18
19	13	45	22
20	16	61	28
21	17	89	15
22	16	52	8
23	0	0	0
24	1	17	0
25	7	19	0
26	1	17	0
27	8	16	0
28	0	7	14
29	0		16
30	0		9
31	0		9
Mean	5.1	17.4	14.7

## Intensity of the ultra-violet Radiation.

(Mount Wilson)

The figures give the ratio ultra-violet ( $\lambda = 0.32 \mu$ ) to green ( $\lambda = 0.50 \mu$ ) (Ratio for June 1924 = 1)

1931

	Jan.	Feb.	March
1	1.20		
2			
3			
4	1.14		
5	1.25		
6			
7			
8			
9		1.14	
10			
11	1.23		1.14
12	1.26		
13			1.14
14			1.06
15	1.19		1.14
16	1.14		
17	1.20	1.12	0.94
18	1.04	1.13	
19	1.09	1.19	
20	1.22	1.17	
21	1.26	1.16	1.00
22	1.35	1.17	
23			
24	1.22		
25			1.12
26	1.09		
27	1.08		1.17
28	1.14		
29	1.11		
30			1.20
31			1.11
Mean	1.18	1.15	1.10

Instrument being overhauled and re-adjusted during this period.

- a) Passage of an average sized group through the central meridian.  
 b) Passage of a large group or spot through the central meridian.  
 c) New formation of a centre of activity. E: on the eastern part of the Sun's disc, W: on the western part, M: in the central circle zone.  
 d) Entrance of a large or average sized centre of activity on the east limb.

Erratum in Bulletin Nr. 12, p. 50. Reduction-factor central zone read: 1.21, 0.85, 0.96, 0.72, 0.87, 0.75, 0.88, 0.68, 0.69 & 0.60.

### Sunspot Activity.

	Number of observations	Reduction-factor on Wolf's unit		Number of comparisons
		whole disc	central zone	
Batavia	68	1.39	1.39	59
Catania	82	0.82	0.76	75
Greenwich/Cape	73	0.87	0.83	66
Kiew	74	0.78	0.80	64
Kelburn/Wellington				
Lyons	81	0.88	0.82	73
Roma/Campidoglio	57	0.80	0.73	50
South Hadley	39	0.91	1.01	32
Stonyhurst	71	0.69	0.65	64
Tokyo	66	0.51	0.56	57
Zürich/Arosa	87	0.60	0.60	—

Relative-numbers for the whole sun disc 1931

	Apr.	May	June
1	34 d	17	13
2	32	8	E 28 c
3	29	7	34
4	37	8	36
5	E 25 c	8	30 a
6	31	17	36
7	41 a	17 d	32
8	45	26	M 44 c
9	46	M 20 c	35
10	29 a	33	47
11	37 d	33	20
12	36	26	14
13	44 a	32 a	0
14	38	17	W 10 c
15	37	E 36 c	0
16	31 a	37	0
17	41	29	0
18	22	32	7
19	20 a	34	0
20	20	22 b	0
21	W 38 c	E 30 c	0
22	41	26	7
23	27	35	0
24	M 29 c	32	0
25	37	31	0
26	21	W 35 c	0
27	19	35	E 8 c
28	14	20	10
29	W 17 c	19	25 d
30	18	20 d	23
31		20	
Mean	31.2	24.6	15.3

Relative-numbers for the central circle zone 1931

	Apr.	May	June
1	19	7	0
2	10	0	0
3	7	0	13
4	12	0	29
5	8	8	30
6	9	17	36
7	10	7	25
8	28	8	8
9	37	8	11
10	17	0	25
11	18	15	0
12	8	17	0
13	7	16	0
14	14	17	0
15	13	13	0
16	11	0	0
17	26	0	0
18	22	15	0
19	11	26	0
20	11	22	0
21	8	22	0
22	0	13	7
23	0	10	0
24	14	19	0
25	15	20	0
26	10	13	0
27	0	15	0
28	7	0	10
29	8	0	7
30	8	0	0
31		0	
Mean	12.3	9.9	6.7

### Intensity of the ultra-violet Radiation.

(Mount Wilson)

The figures give the ratio ultra-violet ( $\lambda = 0.32 \mu$ ) to green ( $\lambda = 0.50 \mu$ ) (Ratio for June 1924 = 1)

1931

	Apr.	May	June
1		1.01	1.02
2	1.16	1.03	
3	1.10	1.04	
4	1.13	1.03	
5		1.04	
6		1.00	
7	1.16	0.96	
8	1.22	1.03	
9	1.19	1.04	
10	1.08	1.06	0.93
11			0.91
12	1.12		0.99
13	1.13	1.06	0.97
14	1.17	1.14	0.97
15	1.08		0.97
16	1.08		
17	0.98	0.99	0.96
18	0.96		0.97
19	0.97		0.97
20	0.96	0.81	1.01
21	0.96	0.96	0.93
22		1.14	0.85
23			0.93
24			0.93
25			
26		0.87	0.93
27		0.96	0.90
28		0.94	0.93
29			0.96
30		0.99	0.90
31		0.97	
Mean	1.08	1.00	0.95

a = Passage of an average sized group through the central meridian.

b = Passage of a large group or spot through the central meridian.

c = New formation of a centre of activity. E: on the eastern part of the Sun's disc, W: on the western part, M: in the central circle zone.

d = Entrance of a large or average sized centre of activity on the east limb.

## Sunspot Activity.

	Number of observations	Reduction-factor on Wolf's unit		Number of comparisons
		whole disc	central zone	
Batavia	68	1.21	1.48	51
Catania	88	0.72	0.70	69
Greenwich/Cape	80	0.80	0.82	62
Kiew	47	0.70	0.76	30
Lyons	78	0.80	0.71	64
Roma/Campidoglio	64	0.71	0.77	49
South Hadley				
Stonyhurst	67	0.68	0.61	52
Tokyo	48	0.46	0.60	39
Zürich/Arosa	88	0.60	0.60	—

Relative-numbers for the whole sun disc 1931

	July	Aug.	Sept.
1	22	23 <sup>aa</sup>	34
2	23	ME 35 <sup>cc</sup>	27 <sup>a</sup>
3	23	34	26
4	19	28	18
5	19 <sup>a</sup>	28	15
6	16	19	14
7	E 38 <sup>c</sup>	8	15
8	35	0	18
9	2 <sup>x</sup>	2	13
10	M 48 <sup>ac</sup>	0	E 24 <sup>c</sup>
11	35	8	29
12	26	0	M 23 <sup>c</sup>
13	30	8	27
14	23	0	26
15	8	0	19 <sup>d</sup>
16	7	0	27
17	8	M 11 <sup>c</sup>	28
18	7	14	26
19	0	14	11
20	0	10	13
21	E 7 <sup>c</sup>	10	10 <sup>a</sup>
22	10	0	M 22 <sup>c</sup>
23	8	0	22
24	8	0	16
25	8	0	7
26	0	M 8 <sup>c</sup>	7
27	E 7 <sup>c</sup>	M 26 <sup>cd</sup>	15
28	9	36	17 <sup>d</sup>
29	E 22 <sup>c</sup>	25	10
30	23	26	11
31	23	E 30 <sup>c</sup>	
Mean	17.4	13.0	19.0

Relative-numbers for the central circle zone 1931

	July	Aug.	Sept.
1	0	23	26
2	0	26	20
3	21	18	20
4	19	7	9
5	19	8	0
6	16	9	0
7	4	0	8
8	8	0	12
9	12	3	9
10	18	0	0
11	26	0	8
12	9	0	8
13	14	8	11
14	8	0	18
15	8	0	0
16	0	0	0
17	8	11	9
18	7	10	7
19	0	0	0
20	0	0	9
21	0	0	10
22	0	0	22
23	0	0	22
24	8	0	7
25	8	0	0
26	0	8	0
27	0	13	7
28	0	11	8
29	7	7	0
30	23	10	0
31	23	20	
Mean	8.6	6.2	8.3

## Intensity of the ultra-violet Radiation.

(Mount Wilson)

The figures give the ratio ultra-violet  
( $\lambda = 0.32 \mu$ ) to green ( $\lambda = 0.50 \mu$ )  
(Ratio for June 1924 = 1)

1931

	July	Aug.	Sept.
1	0.90	0.94	1.06
2	0.84	1.01	
3	0.88	0.98	
4	0.88	0.93	1.04
5	0.88	0.93	1.07
6		0.98	1.10
7	0.97	0.93	0.97
8	0.93	0.94	1.08
9	0.93	0.98	1.04
10	0.96		1.10
11	0.93		1.07
12	1.04		1.11
13	0.99		1.06
14	0.97		1.14
15	1.00	1.10	1.01
16	0.97		0.99
17	0.93		1.04
18	0.90		1.13
19	0.93		1.08
20			1.10
21		1.04	1.02
22		1.00	1.12
23		0.98	1.13
24	0.90	0.98	1.04
25	0.88	0.91	
26	0.90	0.88	0.96
27		0.93	0.96
28	0.93		0.97
29	0.97		
30	1.01		0.98
31	1.04		
Mean	0.94	0.97	1.05

a = Passage of an average sized group through the central meridian.

b = Passage of a large group or spot through the central meridian.

c = New formation of a centre of activity. E: on the eastern part of the Sun's disc, W: on the western part, M: in the central circle zone.

d = Entrance of a large or average sized centre of activity on the east limb.

## Sunspot Activity.

	Number of observations	Reduction-factor on Wolf's unit		Number of comparisons
		whole disc	central zone	
Batavia				
Catania	72	0.85	0.77	40
Greenwich/Cape	64	0.80	0.84	34
Kiew	22	0.76	0.70	9
Lyons	49	0.82	0.79	38
Roma/Campidoglio	43	0.88	0.89	25
South Hadley	38	0.91	0.89	27
Stonyhurst	52	0.78	0.84	32
Tokyo	55	0.63	0.78	28
Zürich/Arosa	82	0.60	0.60	—

Relative-numbers for the whole sun disc  
1931

	Oct.	Nov.	Dec.
1	10	8	19
2	21	14	15
3	14	E 17 <sup>c</sup>	7
4	18 <sup>a</sup>	18	0
5	15	24	0
6	15	27	E 6 <sup>c</sup>
7	7	13 <sup>a</sup>	12
8	8	12	13
9	7	16	24
10	0	0	E 29 <sup>c</sup>
11	7	0	35 <sup>a</sup>
12	0	0	37
13	M 8 <sup>c</sup>	0	38 <sup>a</sup>
14	9	0	35
15	8	0	25
16	0	0	22
17	0	8	15
18	0	14	8
19	8 <sup>d</sup>	10	8
20	8	16 <sup>d</sup>	8
21	10	37	8
22	9	41	15
23	25	33	16
24	18	40	22 <sup>a</sup>
25	12	44	31
26	11	M 42 <sup>bc</sup>	30
27	11	35 <sup>a</sup>	30
28	11	31	15
29	9	35	9
30	12	27	11 <sup>a</sup>
31	W 18 <sup>c</sup>		9
Mean	10.0	18.7	17.8

Relative-numbers for the central circle zone  
1931

	Oct.	Nov.	Dec.
1	0	0	0
2	19	14	0
3	14	0	0
4	11	0	0
5	8	13	0
6	8	17	0
7	0	13	0
8	8	12	0
9	7	10	9
10	0	0	20
11	7	0	35
12	0	0	37
13	8	0	38
14	0	0	10
15	0	0	8
16	0	0	0
17	0	8	0
18	0	0	0
19	0	0	0
20	0	0	0
21	0	15	0
22	0	17	8
23	0	9	9
24	11	22	8
25	11	35	7
26	10	34	7
27	0	34	3
28	0	31	0
29	0	24	8
30	0	9	10
31	0		9
Mean	3.9	10.6	7.3

## Intensity of the ultra-violet Radiation.

(Mount Wilson)

The figures give the ratio ultra-violet  
( $\lambda = 0.32 \mu$ ) to green ( $\lambda = 0.50 \mu$ )  
(Ratio for June 1924 = 1)

1931

	Oct.	Nov.	Dec.
1		1.07	1.17
2	0.99	1.11	0.97
3	0.98	1.07	1.12
4	1.02		1.11
5	1.00		1.16
6	1.00		1.14
7	1.12		
8			
9		1.02	
10	1.06		
11	1.02		
12	0.92	1.26	
13	1.03	1.16	1.20
14	1.00		
15			
16	1.05		1.23
17	1.02	1.25	1.20
18		1.35	
19		1.38	
20	0.96	1.33	
21		1.36	
22	0.99	1.39	
23	0.99	1.34	
24	0.99		
25		1.17	
26	1.11		1.30
27	0.97		
28	0.96		
29	0.94	1.17	
30	0.96	1.19	
31	0.96		
Mean	1.00	1.23	1.16

a = Passage of an average sized group through the central meridian.

b = Passage of a large group or spot through the central meridian.

c = New formation of a centre of activity. E: on the eastern part of the Sun's disc, W: on the western part, M: in the central circle zone.

d = Entrance of a large or average sized centre of activity on the east limb.