

Sunspot Activity

Relative-numbers for the year 1928

Whole Sun Disc

| Day  | Jan.                | Feb.                | Mar.                 | Apr.              | May                  | June                 | July                | Aug.              | Sept.               | Oct.               | Nov.               | Dec.              | Day |
|------|---------------------|---------------------|----------------------|-------------------|----------------------|----------------------|---------------------|-------------------|---------------------|--------------------|--------------------|-------------------|-----|
| 1    | 91 <sup>a</sup>     | 89                  | 86                   | 96 <sup>d</sup>   | 128 <sup>d</sup>     | 124 <sup>a</sup>     | 124 <sup>d</sup>    | 102               | 61                  | 68 <sup>a</sup>    | 53                 | 46                | 1   |
| 2    | 100                 | 50 <sup>d</sup>     | 65                   | 95 <sup>a</sup>   | 143                  | 130 <sup>a</sup>     | 130                 | 116 <sup>d</sup>  | 49                  | 68 <sup>a</sup>    | 47                 | 55                | 2   |
| 3    | 75 <sup>a</sup>     | 65                  | E 49 <sup>ac</sup>   | 80 <sup>a</sup>   | 125 <sup>a</sup>     | 113 <sup>a</sup>     | 128                 | 116 <sup>aa</sup> | 85                  | 62 <sup>d</sup>    | 49 <sup>d</sup>    | 64                | 3   |
| 4    | 81                  | 41                  | 49                   | 108 <sup>d</sup>  | 111 <sup>a</sup>     | 111                  | 85                  | 107               | 69 <sup>a</sup>     | 47                 | 43 <sup>d</sup>    | E 95 <sup>c</sup> | 4   |
| 5    | M 90 <sup>c</sup>   | 46                  | E 61 <sup>c</sup>    | 118               | 118                  | M 94 <sup>ac</sup>   | 56                  | E 80 <sup>c</sup> | 64                  | 45                 | 60 <sup>a</sup>    | 112 <sup>b</sup>  | 5   |
| 6    | 105                 | 34                  | W 73 <sup>c</sup>    | 145 <sup>d</sup>  | 118 <sup>a</sup>     | 98                   | 50 <sup>d</sup>     | 64                | 49 <sup>d</sup>     | 26 <sup>d</sup>    | 70                 | 95 <sup>a</sup>   | 6   |
| 7    | 85                  | 35                  | E 93 <sup>ac</sup>   | 118               | 136 <sup>b</sup>     | 104                  | 60 <sup>a</sup>     | 71                | 57                  | 64 <sup>d</sup>    | 66                 | 94 <sup>a</sup>   | 7   |
| 8    | ME 95 <sup>cc</sup> | 33                  | 94                   | 143 <sup>ab</sup> | 135 <sup>b</sup>     | 76                   | 93                  | 59 <sup>a</sup>   | E 103 <sup>c</sup>  | 58                 | 53                 | 85                | 8   |
| 9    | E 95 <sup>ac</sup>  | 24                  | 124 <sup>d</sup>     | 130 <sup>ad</sup> | 134                  | 43                   | 87                  | 75                | 101                 | 53 <sup>a</sup>    | 81 <sup>b</sup>    | 68                | 9   |
| 10   | 81                  | E 31 <sup>c</sup>   | 83                   | 112 <sup>d</sup>  | 117                  | 30                   | 82                  | 80 <sup>a</sup>   | 89                  | M 71 <sup>c</sup>  | M 89 <sup>ac</sup> | 83                | 10  |
| 11   | 75 <sup>a</sup>     | 29                  | 105 <sup>a</sup>     | 118               | 85                   | 26                   | 66                  | 73                | 81 <sup>ad</sup>    | 92                 | 75 <sup>u</sup>    | 76                | 11  |
| 12   | 79 <sup>a</sup>     | W 39 <sup>c</sup>   | 102 <sup>d</sup>     | 106               | 75                   | 16                   | E 122 <sup>bc</sup> | 74                | 89 <sup>b</sup>     | M 74 <sup>ac</sup> | 84                 | 101               | 12  |
| 13   | 50                  | 31                  | 90 <sup>d</sup>      | 97 <sup>a</sup>   | 53                   | E 31 <sup>c</sup>    | 127 <sup>d</sup>    | E 92 <sup>c</sup> | 75                  | 86 <sup>a</sup>    | E 90 <sup>c</sup>  | 90                | 13  |
| 14   | 61                  | 29 <sup>a</sup>     | 92                   | 96 <sup>a</sup>   | 26                   | 34                   | 121 <sup>a</sup>    | 92                | 56                  | 83                 | 73                 | 95                | 14  |
| 15   | E 63 <sup>c</sup>   | M 74 <sup>cd</sup>  | E 108 <sup>c</sup>   | 90                | 17                   | 34                   | 137                 | 70                | 59                  | 83 <sup>d</sup>    | 77 <sup>a</sup>    | 101               | 15  |
| 16   | 83 <sup>d</sup>     | 73                  | 117 <sup>a</sup>     | 87 <sup>aa</sup>  | 16                   | 52                   | 127                 | 77 <sup>a</sup>   | 46                  | 84                 | M 61 <sup>c</sup>  | 89                | 16  |
| 17   | 76                  | 75                  | 118 <sup>a</sup>     | 63                | 15                   | 67 <sup>aa</sup>     | 141 <sup>b</sup>    | 58                | 51 <sup>d</sup>     | 77                 | 49                 | 56 <sup>a</sup>   | 17  |
| 18   | 63                  | M 69 <sup>acc</sup> | M 125 <sup>abc</sup> | 27                | 14                   | 71 <sup>d</sup>      | 117                 | 47                | 71 <sup>d</sup>     | 82                 | 52 <sup>a</sup>    | 46                | 18  |
| 19   | 72                  | 104 <sup>ad</sup>   | 141 <sup>a</sup>     | 42 <sup>d</sup>   | 15                   | 95                   | 126 <sup>a</sup>    | 53 <sup>d</sup>   | 83                  | 70                 | 58                 | 20                | 19  |
| 20   | E 53 <sup>c</sup>   | M 131 <sup>c</sup>  | 101                  | 35                | 4                    | 86                   | 137 <sup>a</sup>    | 59                | 102                 | 67                 | 38                 | 28                | 20  |
| 21   | 67                  | 113 <sup>b</sup>    | 83                   | 31                | 15                   | 94 <sup>d</sup>      | 127 <sup>d</sup>    | 71 <sup>a</sup>   | 111 <sup>d</sup>    | 75                 | 37                 | 25                | 21  |
| 22   | 45 <sup>b</sup>     | 128                 | 92 <sup>d</sup>      | 22                | 23                   | 95 <sup>d</sup>      | 105                 | 83 <sup>d</sup>   | 106                 | 53 <sup>aa</sup>   | 28                 | 18                | 22  |
| 23   | E 64 <sup>c</sup>   | 127                 | 66                   | 26                | 40                   | E 129 <sup>acd</sup> | 71                  | 102 <sup>d</sup>  | 108 <sup>a</sup>    | 73 <sup>d</sup>    | 33                 | 20                | 23  |
| 24   | W 104 <sup>ad</sup> | 112                 | 76 <sup>d</sup>      | 28 <sup>d</sup>   | 36                   | 149 <sup>d</sup>     | 60                  | 92 <sup>a</sup>   | 133                 | 79                 | 16                 | 14                | 24  |
| 25   | 116 <sup>a</sup>    | 109 <sup>a</sup>    | 72                   | 43 <sup>a</sup>   | 49                   | 163                  | 58 <sup>d</sup>     | 104               | 141 <sup>ab</sup>   | 53                 | 7                  | 8                 | 25  |
| 26   | 136 <sup>a</sup>    | 119 <sup>d</sup>    | 50                   | 53                | 40                   | 131 <sup>a</sup>     | 65                  | 114               | 170                 | 45                 | 29                 | E 12 <sup>c</sup> | 26  |
| 27   | 135                 | 123 <sup>aa</sup>   | 70                   | 51 <sup>d</sup>   | 53 <sup>a</sup>      | 137 <sup>a</sup>     | E 63 <sup>ac</sup>  | 113 <sup>a</sup>  | E 145 <sup>bc</sup> | 29                 | 23                 | 27                | 27  |
| 28   | M 96 <sup>c</sup>   | 104                 | 61 <sup>d</sup>      | 77                | M 102 <sup>acd</sup> | 158 <sup>ab</sup>    | 67                  | 105 <sup>a</sup>  | 115                 | 27 <sup>a</sup>    | 28                 | 32                | 28  |
| 29   | 91                  | 95                  | 75 <sup>a</sup>      | 76                | 131 <sup>d</sup>     | 131 <sup>a</sup>     | 95 <sup>b</sup>     | 84                | 110                 | 23                 | 8                  | M 50 <sup>c</sup> | 29  |
| 30   | 70 <sup>a</sup>     |                     | 62 <sup>a</sup>      | 104 <sup>ad</sup> | E 158 <sup>c</sup>   | 121                  | 102                 | 84 <sup>a</sup>   | M 113 <sup>c</sup>  | 37                 | E 28 <sup>c</sup>  | 57                | 30  |
| 31   | 92 <sup>a</sup>     |                     | 66                   |                   | 154                  |                      | 110 <sup>b</sup>    | 82                |                     | 50                 |                    | 68 <sup>a</sup>   | 31  |
| Mean | 83.5                | 73.5                | 85.4                 | 80.6              | 76.9                 | 91.4                 | 98.0                | 83.8              | 89.7                | 61.4               | 50.3               | 59.0              |     |

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

Central Circle Zone

Intensity of the ultra-violet Radiation

Relative-numbers for the year 1928

(Mount Wilson) The figures give the ratio ultra-violet ( $\lambda = 0.32 \mu$  to green ( $\lambda = 0.50 \mu$ ) (Ratio for June 1924 = 1) 1928

| Day  | Jan. | Feb. | Mar. | Apr. | May  | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Day  | Jan. | Feb. | Mar. | Apr. | May  | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |      |
|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|
| 1    | 26   | 39   | 19   | 54   | 76   | 85   | 56   | 69   | 8     | 32   | 24   | 17   | 1    | 1.20 | 1.08 |      |      | 1.29 | 1.19 | 1.28 | 1.37 | 1.13  |      |      |      |      |
| 2    | 65   | 8    | 23   | 62   | 84   | 92   | 46   | 91   | 8     | 32   | 23   | 17   | 2    |      |      | 1.36 |      | 1.17 | 1.17 | 1.75 | 1.19 | 1.28  |      |      |      |      |
| 3    | 42   | 16   | 20   | 50   | 67   | 98   | 19   | 58   | 28    | 21   | 15   | 40   | 3    | 1.14 |      |      |      | 1.17 | 1.10 | 1.64 | 1.25 | 1.09  |      |      |      |      |
| 4    | 38   | 7    | 22   | 37   | 70   | 74   | 15   | 40   | 20    | 8    | 13   | 79   | 4    | 1.12 |      |      | 1.49 | 1.34 | 1.06 | 1.54 | 1.35 | 1.03  | 1.16 | 1.20 |      |      |
| 5    | 50   | 8    | 31   | 41   | 63   | 61   | 25   | 31   | 22    | 15   | 22   | 80   | 5    | 1.14 |      |      |      | 1.33 | 1.16 | 1.25 | 1.43 | 1.20  | 1.17 | 1.25 |      |      |
| 6    | 46   | 12   | 33   | 44   | 83   | 44   | 39   | 25   | 15    | 0    | 20   | 82   | 6    | 1.25 | 1.30 |      |      | 1.28 | 1.17 | 1.19 | 1.25 | 1.14  | 1.25 | 1.36 | 1.43 |      |
| 7    | 34   | 20   | 34   | 78   | 87   | 46   | 24   | 15   | 29    | 27   | 41   | 75   | 7    | 1.03 | 1.22 | 1.29 | 1.28 |      | 1.16 | 1.60 | 1.22 |       | 1.12 | 1.39 | 1.25 |      |
| 8    | 49   | 17   | 47   | 96   | 76   | 10   | 41   | 43   | 29    | 23   | 37   | 36   | 8    | 1.14 | 1.22 | 1.34 | 1.26 |      | 1.20 | 1.40 | 1.17 | 1.10  | 1.06 | 1.22 |      |      |
| 9    | 50   | 24   | 67   | 85   | 82   | 0    | 32   | 55   | 40    | 29   | 69   | 27   | 9    | 1.06 | 1.34 |      | 1.25 |      | 1.31 | 1.31 | 1.08 | 1.14  | 1.17 | 1.20 |      |      |
| 10   | 49   | 22   | 32   | 48   | 56   | 0    | 46   | 50   | 61    | 38   | 63   | 27   | 10   | 1.03 | 1.34 | 1.25 |      | 1.28 | 1.39 | 1.53 |      | 1.16  | 1.10 |      |      |      |
| 11   | 41   | 0    | 55   | 40   | 29   | 10   | 49   | 41   | 58    | 71   | 59   | 26   | 11   | 1.19 | 1.17 |      | 1.30 | 1.28 | 1.39 | 1.33 |      | 1.17  |      | 1.17 | 1.37 |      |
| 12   | 60   | 22   | 29   | 34   | 24   | 10   | 87   | 19   | 74    | 50   | 45   |      | 12   | 1.20 | 1.25 |      | 1.34 | 1.30 | 1.12 | 1.31 | 1.13 | 1.20  |      | 1.33 | 1.40 |      |
| 13   | 29   | 14   | 26   | 49   | 7    | 13   | 80   | 14   | 55    | 83   | 22   |      | 13   | 1.35 |      |      | 1.42 | 1.28 | 1.20 | 1.28 | 1.20 | 1.08  |      |      |      |      |
| 14   | 37   | 11   | 22   | 68   | 0    | 8    | 55   | 46   | 34    | 57   | 12   | 53   | 14   |      |      |      | 1.25 | 1.36 | 1.22 | 1.19 | 1.28 |       |      |      |      |      |
| 15   | 20   | 13   | 21   | 59   | 0    | 34   | 30   | 37   | 19    | 41   | 22   | 36   | 15   |      |      |      | 1.22 | 1.28 |      | 1.29 | 1.25 |       | 1.06 | 1.46 |      |      |
| 16   | 23   | 25   | 54   | 63   | 0    | 52   | 58   | 46   | 12    | 32   | 35   | 28   | 16   | 1.00 | 1.23 |      | 1.22 | 1.40 | 1.19 | 1.22 | 1.28 | 1.02  | 1.08 | 1.16 | 1.39 | 1.43 |
| 17   | 14   | 35   | 84   | 34   | 7    | 48   | 71   | 40   | 9     | 28   | 46   | 26   | 17   |      |      |      | 1.30 | 1.32 | 1.13 | 1.20 | 1.22 | 1.05  | 1.08 | 1.03 | 1.37 | 1.39 |
| 18   | 23   | 36   | 118  | 9    | 7    | 58   | 89   | 16   | 9     | 7    | 17   | 14   | 18   | 1.06 | 1.26 | 1.14 | 1.46 | 1.17 | 1.13 | 1.22 | 1.03 | 1.11  |      |      | 1.35 | 1.40 |
| 19   | 13   | 88   | 92   | 15   | 0    | 50   | 85   | 28   | 9     | 23   | 17   | 10   | 19   | 1.22 |      |      | 1.37 | 1.45 | 1.22 | 1.17 | 1.12 | 1.08  |      |      | 1.28 | 1.45 |
| 20   | 22   | 103  | 68   | 8    | 0    | 12   | 77   | 34   | 0     | 50   | 0    | 22   | 20   |      |      |      | 1.31 | 1.14 | 1.43 | 1.22 | 1.20 | 1.12  | 0.99 | 1.07 | 1.30 | 1.43 |
| 21   | 42   | 58   | 20   | 7    | 8    | 20   | 61   | 30   | 14    | 73   | 8    | 7    | 21   | 1.20 | 1.30 | 1.22 |      | 1.28 | 1.19 | 1.08 | 0.96 | 1.06  |      |      |      | 1.20 |
| 22   | 35   | 49   | 10   | 0    | 0    | 43   | 40   | 34   | 72    | 52   | 14   | 0    | 22   | 1.30 | 1.40 |      |      |      | 1.20 | 1.20 | 1.06 |       | 1.30 |      |      | 1.17 |
| 23   | 49   | 40   | 8    | 14   | 14   | 37   | 7    | 53   | 86    | 60   | 12   | 10   | 23   | 1.37 | 1.36 | 1.32 |      | 1.16 | 1.20 | 1.28 | 0.99 |       | 1.23 |      |      | 1.19 |
| 24   | 55   | 26   | 0    | 28   | 0    | 91   | 8    | 21   | 88    | 32   | 7    | 8    | 24   | 1.37 | 1.25 |      |      | 1.14 | 1.14 | 1.10 | 1.01 | 1.11  | 1.22 |      |      | 1.23 |
| 25   | 36   | 65   | 9    | 32   | 25   | 74   | 18   | 45   | 124   | 8    | 7    | 8    | 25   |      |      |      | 1.42 | 1.16 | 1.10 | 1.11 | 1.01 | 1.11  | 1.19 | 1.32 | 1.19 |      |
| 26   | 53   | 72   | 11   | 26   | 25   | 72   | 15   | 51   | 154   | 11   | 22   | 2    | 26   | 1.20 | 1.43 | 1.35 | 1.12 | 1.19 | 1.28 | 1.01 | 1.17 | 1.17  | 1.28 | 1.40 |      |      |
| 27   | 55   | 79   | 25   | 20   | 24   | 65   | 26   | 64   | 96    | 11   | 13   | 10   | 27   |      |      |      | 1.28 | 1.10 | 1.40 | 1.14 | 1.14 | 1.19  |      | 1.45 |      | 1.32 |
| 28   | 55   | 27   | 43   | 22   | 48   | 116  | 21   | 73   | 63    | 18   | 0    | 10   | 28   | 1.32 | 1.16 |      | 1.14 | 1.12 | 1.22 | 1.22 | 1.07 | 0.96  |      |      |      | 1.22 |
| 29   | 64   | 10   | 44   | 19   | 51   | 82   | 32   | 64   | 50    | 23   | 0    | 33   | 29   | 1.22 | 1.51 | 1.40 | 1.19 | 1.12 | 1.26 | 1.01 | 1.08 | 1.22  | 1.22 |      |      | 1.29 |
| 30   | 52   |      | 34   | 45   | 35   | 86   | 67   | 38   | 44    | 16   | 0    | 47   | 30   |      |      |      | 1.32 | 1.14 | 1.13 | 1.22 | 1.14 | 1.08  | 1.12 | 1.17 |      | 1.31 |
| 31   | 42   |      | 40   |      | 59   | 69   | 36   |      |       | 11   |      | 54   | 31   | 1.11 |      |      |      | 1.25 |      |      | 1.08 | 1.12  | 1.17 |      |      | 1.25 |
| Mean | 40.9 | 32.6 | 36.8 | 39.6 | 35.7 | 49.7 | 44.8 | 42.2 | 44.3  | 31.7 | 22.8 | 30.0 | Mean | 1.18 | 1.28 | 1.30 | 1.30 | 1.19 | 1.22 | 1.26 | 1.13 | 1.12  | 1.21 | 1.30 | 1.32 |      |