TABLE 2.—*Average daily totals of solar radiation (direct + diffuse) received on a horizontal surface*

[Gram-calories per square centimeter]

| Week beginning— | Washington | Madison | Lincoln | Chicago | New York | Fresno | Albuquerque | Fairbanks | La Jolla | Miami | New Orleans | Riverside | Blue Hill | Newport | Friday Harbor | Ithaca | Cambridge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* | *cal.* |
| June 3 | 582 | 565 | 551 | 566 | 601 | 721 | 776 | 492 | 366 | 436 | 387 | 503 | 523 | 589 | 622 | 564 | 550 |
| June 10 | 501 | 548 | 497 | 450 | 469 | 709 | 693 | 489 | 328 | 482 | 304 | 562 | 386 | 468 | 554 | 500 | 454 |
| June 17 | 461 | 546 | 551 | 525 | 569 | 746 | 654 | 497 | 552 | 534 | 490 | 643 | 589 | 635 | 603 | 524 | 654 |
| June 24 | 655 | 638 | 711 | 530 | 446 | 652 | 651 | 412 | 408 | 371 | 436 | 600 | 405 | 453 | 605 | 334 | 455 |
| DEPARTURES FROM WEEKLY NORMALS | | | | | | | | | | | | | | | | | |
| June 3 | +71 | +48 | −2 | +105 | +152 | +43 | -------- | +15 | −170 | −64 | −74 | −46 | −4 | +26 | 0 | +87 | -------- |
| June 10 | −3 | +37 | −51 | −3 | +18 | +3 | -------- | −13 | −207 | +2 | −164 | −35 | −116 | −67 | +146 | +19 | -------- |
| June 17 | −31 | +15 | −32 | +49 | +125 | +18 | -------- | −16 | −10 | +126 | +18 | +36 | +33 | +87 | +147 | +45 | -------- |
| June 24 | +128 | +101 | +106 | +80 | +4 | −62 | -------- | −51 | −125 | −98 | +40 | +4 | −84 | −118 | +156 | −99 | -------- |
| ACCUMULATED DEPARTURES ON JUNE 30 | | | | | | | | | | | | | | | | | |
| | +413 | +1,792 | −1,379 | +1,351 | +4,683 | −1,456 | -------- | +2,660 | −5,005 | +2,296 | +3,964 | −2,492 | −3,178 | −2,475 | +5,992 | -------- | -------- |

## POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. J. F. Hellweg, U. S. Navy (Ret.), Superintendent, U. S. Naval Observatory.] Data from measurements at the U. S. Naval Observatory from plates obtained at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day, below longitude, latitude, area of spot or groups, and spot count, are given, respectively, the assumed longitude of the center of the disk, assumed latitude of the center of the disk, total area of spots and groups, and total spot count.

| Date | Eastern standard time | Mount Wilson group No. | Heliographic: Difference in longitude | Heliographic: Longitude | Heliographic: Latitude | Heliographic: Distance from center of disk | Area of spot or group | Spot count | Plate quality | Observatory |
|---|---|---|---|---|---|---|---|---|---|---|
| *1940* | *h m* | | ° | ° | ° | ° | | | | |
| June 1 | 8 45 | 6852 | −75 | 252 | −8 | 76 | 6 | 1 | VG | Mount Wilson. |
| | | 6851 | −28 | 299 | −7 | 30 | 6 | 1 | | |
| | | 6848 | −20 | 307 | −6 | 22 | 12 | 8 | | |
| | | 6850 | −13 | 314 | −12 | 18 | 12 | 5 | | |
| | | 6847 | +39 | 6 | −11 | 40 | 267 | 1 | | |
| | | 6845 | +73 | 40 | −12 | 74 | 388 | 13 | | |
| | | 6844 | +73 | 40 | +22 | 75 | 12 | 3 | | |
| | | | | (327) | (−1) | | 703 | 32 | | |
| June 2 | 11 38 | 6856 | −84 | 228 | −15 | 84 | 145 | 3 | F | U. S. Naval. |
| | | 6852 | −62 | 250 | −7 | 63 | 6 | 1 | | |
| | | 6854 | −17 | 295 | +5 | 18 | 24 | 7 | | |
| | | 6848 | −6 | 306 | −6 | 9 | 97 | 10 | | |
| | | 6850 | +3 | 315 | −12 | 12 | 73 | 3 | | |
| | | 6853 | +51 | 3 | +12 | 53 | 24 | 3 | | |
| | | 6847 | +53 | 5 | −11 | 54 | 339 | 1 | | |
| | | 6845 | +81 | 33 | −13 | 81 | 97 | 1 | | |
| | | | | (312) | (0) | | 805 | 29 | | |
| June 3 | 11 14 | 6856 | −70 | 229 | −15 | 71 | 242 | 2 | VG | Do. |
| | | 6855 | −22 | 277 | −20 | 29 | 170 | 11 | | |
| | | 6854 | −4 | 295 | +4 | 7 | 48 | 4 | | |
| | | 6848 | +8 | 307 | −6 | 10 | 145 | 13 | | |
| | | 6850 | +16 | 315 | −12 | 20 | 170 | 16 | | |
| | | 6853 | +62 | 1 | +12 | 64 | 97 | 7 | | |
| | | 6847 | +67 | 6 | −11 | 68 | 339 | 1 | | |
| | | | | (299) | (0) | | 1,211 | 54 | | |
| June 4 | 11 36 | 6856 | −57 | 229 | −15 | 59 | 194 | 1 | VG | Do. |
| | | 6857 | −15 | 271 | −19 | 24 | 48 | 7 | | |
| | | 6855 | −9 | 277 | −20 | 22 | 291 | 15 | | |
| | | 6851 | +11 | 297 | −8 | 13 | 12 | 6 | | |
| | | 6848 | +21 | 307 | −7 | 22 | 145 | 18 | | |
| | | 6850 | +30 | 316 | −12 | 32 | 170 | 13 | | |
| | | 6853 | +75 | 1 | +12 | 76 | 12 | 2 | | |
| | | 6847 | +80 | 6 | −11 | 80 | 339 | 1 | | |
| | | | | (286) | (0) | | 1,211 | 63 | | |
| June 5 | 13 30 | 6856 | −42 | 229 | −16 | 45 | 97 | 1 | VG | Do. |
| | | 6858 | −38 | 233 | −10 | 40 | 24 | 2 | | |
| | | 6857 | −1 | 270 | −19 | 19 | 73 | 16 | | |
| | | 6855 | +4 | 275 | −20 | 20 | 364 | 22 | | |
| | | 6848 | +36 | 307 | −7 | 37 | 48 | 5 | | |
| | | 6850 | +44 | 315 | −12 | 45 | 194 | 10 | | |
| | | | | (271) | (0) | | 800 | 56 | | |
| June 6 | 11 4 | 6861 | −82 | 178 | +12 | 82 | 727 | 1 | VG | Do. |
| | | 6860 | −80 | 180 | −7 | 80 | 194 | 2 | | |
| | | 6856 | −30 | 230 | −16 | 34 | 97 | 11 | | |
| | | (*) | −12 | 248 | −7 | 14 | 12 | 3 | | |
| | | (*) | −7 | 253 | −4 | 8 | 6 | 1 | | |
| | | 6859 | −4 | 256 | −8 | 10 | 12 | 4 | | |
| | | 6857 | +12 | 272 | −19 | 22 | 194 | 14 | | |
| | | 6855 | +17 | 277 | −20 | 26 | 388 | 26 | | |
| | | 6848 | +50 | 310 | −7 | 51 | 24 | 4 | | |
| | | 6850 | +55 | 315 | −12 | 56 | 194 | 11 | | |
| | | | | (260) | (0) | | 1,848 | 77 | | |

## POSITIONS AND AREAS OF SUN SPOTS—Continued

| Date | Eastern standard time | Mount Wilson group No. | Heliographic: Difference in longitude | Heliographic: Longitude | Heliographic: Latitude | Heliographic: Distance from center of disk | Area of spot or group | Spot count | Plate quality | Observatory |
|---|---|---|---|---|---|---|---|---|---|---|
| *1940* | *h m* | | ° | ° | ° | ° | | | | |
| June 7 | 10 40 | 6860 | −76 | 171 | −8 | 76 | 194 | 11 | VG | U. S. Naval. |
| | | 6861 | −70 | 177 | +12 | 71 | 679 | 1 | | |
| | | 6860 | −68 | 179 | −8 | 69 | 194 | 1 | | |
| | | 6856 | −17 | 230 | −16 | 23 | 73 | 4 | | |
| | | 6858 | −12 | 235 | −12 | 16 | 12 | 1 | | |
| | | 6859 | +7 | 254 | −8 | 11 | 12 | 4 | | |
| | | 6857 | +25 | 272 | −19 | 31 | 194 | 15 | | |
| | | 6862 | +27 | 274 | −12 | 29 | 48 | 5 | | |
| | | 6855 | +30 | 277 | −20 | 36 | 485 | 20 | | |
| | | 6848 | +65 | 312 | −8 | 66 | 12 | 2 | | |
| | | 6850 | +69 | 316 | −12 | 70 | 339 | 13 | | |
| | | | | (247) | (0) | | 2,242 | 77 | | |
| June 8 | 10 51 | 6860 | −61 | 172 | −8 | 61 | 242 | 23 | VG | Do. |
| | | 6861 | −55 | 178 | +13 | 57 | 485 | 7 | | |
| | | 6860 | −53 | 180 | −8 | 54 | 194 | 1 | | |
| | | 6856 | −3 | 230 | −16 | 16 | 48 | 1 | | |
| | | 6858 | +1 | 234 | −13 | 13 | 12 | 6 | | |
| | | 6859 | +17 | 250 | −8 | 20 | 48 | 7 | | |
| | | 6862 | +40 | 273 | −11 | 42 | 24 | 7 | | |
| | | 6857 | +40 | 273 | −19 | 44 | 242 | 27 | | |
| | | 6855 | +45 | 278 | −20 | 49 | 533 | 18 | | |
| | | 6850 | +80 | 313 | −12 | 80 | 48 | 2 | | |
| | | | | (233) | (0) | | 1,876 | 99 | | |
| June 9 | 11 3 | 6863 | −53 | 167 | +15 | 55 | 24 | 7 | VG | Do. |
| | | 6860 | −45 | 175 | −8 | 46 | 242 | 29 | | |
| | | 6861 | −41 | 179 | +12 | 42 | 485 | 1 | | |
| | | 6860 | −39 | 181 | −8 | 40 | 194 | 1 | | |
| | | 6865 | +10 | 230 | −10 | 14 | 6 | 2 | | |
| | | 6856 | +11 | 231 | −15 | 18 | 24 | 2 | | |
| | | 6864 | +15 | 235 | −5 | 16 | 24 | 2 | | |
| | | 6858 | +16 | 236 | −13 | 20 | 24 | 5 | | |
| | | 6862 | +53 | 273 | −10 | 54 | 48 | 5 | | |
| | | 6857 | +54 | 274 | −19 | 57 | 242 | 23 | | |
| | | 6855 | +59 | 279 | −20 | 61 | 533 | 12 | | |
| | | | | (220) | (0) | | 1,846 | 89 | | |
| June 10 | 11 19 | 6863 | −40 | 167 | +16 | 42 | 12 | 7 | VG | Do. |
| | | 6860 | −31 | 176 | −8 | 32 | 291 | 44 | | |
| | | 6866 | −28 | 179 | +8 | 30 | 12 | 2 | | |
| | | 6861 | −28 | 179 | +12 | 31 | 436 | 7 | | |
| | | 6860 | −26 | 181 | −8 | 27 | 194 | 1 | | |
| | | 6865 | +23 | 230 | −10 | 25 | 48 | 8 | | |
| | | 6856 | +24 | 231 | −15 | 29 | 16 | 2 | | |
| | | 6864 | +28 | 235 | −5 | 29 | 16 | 2 | | |
| | | 6858 | +30 | 237 | −14 | 33 | 16 | 5 | | |
| | | 6862 | +65 | 272 | −10 | 66 | 24 | 3 | | |
| | | 6857 | +67 | 274 | −19 | 68 | 194 | 16 | | |
| | | 6855 | +72 | 279 | −20 | 73 | 388 | 10 | | |
| | | | | (207) | (+1) | | 1,647 | 107 | | |
| June 11 | 10 39 | 6863 | −27 | 167 | +16 | 30 | 24 | 4 | VG | Mount Wilson. |
| | | 6867 | −26 | 168 | +24 | 34 | 24 | 1 | | |
| | | 6860 | −17 | 177 | −8 | 20 | 339 | 41 | | |
| | | 6866 | −14 | 180 | +8 | 15 | 12 | 2 | | |
| | | 6861 | −13 | 181 | +12 | 17 | 339 | 4 | | |
| | | 6860 | −11 | 183 | −8 | 14 | 194 | 1 | | |
| | | 6865 | +37 | 231 | −10 | 38 | 48 | 12 | | |
| | | 6856 | +38 | 232 | −14 | 41 | 12 | 2 | | |
| | | 6864 | +42 | 236 | −5 | 42 | 6 | 2 | | |
| | | 6858 | +43 | 237 | −14 | 45 | 6 | 3 | | |
| | | 6857 | +82 | 276 | −19 | 82 | 97 | 6 | | |
| | | 6855 | +82 | 276 | −20 | 82 | 194 | 2 | | |
| | | | | (194) | (+1) | | 1,295 | 80 | | |

## POSITIONS AND AREAS OF SUN SPOTS—Continued

| Date | Eastern standard time | Mount Wilson group No. | Heliographic: Difference in longitude | Heliographic: Longitude | Heliographic: Latitude | Heliographic: Distance from center of disk | Area of spot or group | Spot count | Plate quality | Observatory |
|---|---|---|---|---|---|---|---|---|---|---|
| *1940* | *h m* | | ° | ° | ° | ° | | | | |
| June 12 | 10 58 | 6863 | −15 | 165 | +17 | 23 | 24 | 2 | G | Mount Wilson. |
| | | 6867 | −12 | 168 | +23 | 25 | 24 | 1 | | |
| | | 6860 | −4 | 176 | −8 | 11 | 436 | 35 | | |
| | | 6861 | −2 | 178 | +12 | 11 | 339 | 5 | | |
| | | 6860 | +2 | 182 | −8 | 9 | 194 | 1 | | |
| | | 6869 | +9 | 189 | +10 | 12 | 6 | 2 | | |
| | | 6868 | +16 | 196 | −25 | 30 | 97 | 7 | | |
| | | 6856 | +51 | 231 | −16 | 54 | 12 | 3 | | |
| | | 6865 | +52 | 232 | −11 | 53 | 24 | 2 | | |
| | | | | (180) | (+1) | | 1,156 | 58 | | |
| June 13 | 11 18 | 6870 | −80 | 87 | +4 | 80 | 24 | 4 | VG | Do. |
| | | 6867 | +1 | 168 | +24 | 23 | 24 | 8 | | |
| | | 6863 | +1 | 168 | +16 | 15 | 48 | 11 | | |
| | | (*) | +3 | 170 | −3 | 4 | 12 | 3 | | |
| | | 6860 | +10 | 177 | −8 | 14 | 461 | 54 | | |
| | | 6861 | +11 | 178 | +12 | 15 | 315 | 16 | | |
| | | 6860 | +15 | 182 | −8 | 18 | 194 | 1 | | |
| | | 6868 | +30 | 197 | −25 | 39 | 291 | 20 | | |
| | | 6856 | +66 | 233 | −16 | 68 | 6 | 2 | | |
| | | 6865 | +67 | 234 | −10 | 68 | 6 | 1 | | |
| | | | | (167) | (+1) | | 1,381 | 120 | | |
| June 14 | 10 47 | 6870 | −66 | 88 | +4 | 66 | 6 | 1 | VG | Do. |
| | | 6871 | −33 | 121 | −11 | 35 | 12 | 4 | | |
| | | 6867 | +13 | 167 | +24 | 26 | 12 | 6 | | |
| | | 6863 | +15 | 169 | +16 | 21 | 145 | 8 | | |
| | | 6861 | +24 | 178 | +12 | 26 | 145 | 9 | | |
| | | 6860 | +24 | 178 | −8 | 25 | 242 | 31 | | |
| | | 6860 | +29 | 183 | −8 | 30 | 194 | 1 | | |
| | | 6868 | +39 | 193 | −25 | 46 | 121 | 15 | | |
| | | 6868 | +47 | 201 | −24 | 51 | 194 | 1 | | |
| | | 6865 | +80 | 234 | −9 | 80 | 6 | 1 | | |
| | | | | (154) | (+1) | | 1,077 | 77 | | |
| June 15 | 10 50 | 6871 | −20 | 121 | −11 | 23 | 121 | 13 | VG | Do. |
| | | 6873 | −5 | 136 | +16 | 7 | 6 | 3 | | |
| | | 6872 | +7 | 148 | +22 | 22 | 6 | 1 | | |
| | | 6863 | +25 | 166 | +16 | 29 | 73 | 11 | | |
| | | 6863 | +31 | 172 | +15 | 34 | 73 | 6 | | |
| | | 6860 | +38 | 179 | −8 | 39 | 145 | 27 | | |
| | | 6861 | +39 | 180 | +12 | 40 | 170 | 11 | | |
| | | 6860 | +41 | 182 | −9 | 42 | 218 | 6 | | |
| | | 6868 | +52 | 193 | −25 | 56 | 121 | 18 | | |
| | | 6868 | +60 | 201 | −24 | 64 | 291 | 6 | | |
| | | | | (141) | (+1) | | 1,224 | 102 | | |
| June 16 | 12 11 | 6874 | −82 | 45 | −11 | 82 | 485 | 1 | G | Do. |
| | | 6871 | −7 | 120 | −11 | 13 | 97 | 15 | | |
| | | 6873 | +10 | 138 | +13 | 16 | 12 | 6 | | |
| | | 6863 | +39 | 166 | +16 | 41 | 48 | 7 | | |
| | | 6867 | +40 | 167 | +25 | 46 | 6 | 2 | | |
| | | (*) | +40 | 167 | +10 | 41 | 12 | 3 | | |
| | | 6863 | +46 | 173 | +15 | 47 | 48 | 4 | | |
| | | 6860 | +52 | 179 | −8 | 53 | 97 | 10 | | |
| | | 6861 | +53 | 180 | +13 | 55 | 121 | 6 | | |
| | | 6860 | +56 | 183 | −9 | 57 | 170 | 1 | | |
| | | 6860 | +60 | 187 | −11 | 61 | 48 | 1 | | |
| | | 6868 | +64 | 191 | −25 | 68 | 12 | 2 | | |
| | | 6868 | +75 | 202 | −24 | 77 | 291 | 4 | | |
| | | | | (127) | (+1) | | 1,447 | 62 | | |
| June 17 | 9 40 | 6874 | −69 | 46 | −10 | 69 | 582 | 4 | VG | Do. |
| | | 6871 | +6 | 121 | −10 | 12 | 24 | 7 | | |
| | | 6875 | +53 | 168 | +21 | 56 | 61 | 14 | | |
| | | 6867 | +54 | 169 | +23 | 57 | 6 | 2 | | |
| | | 6863 | +60 | 175 | +15 | 60 | 48 | 2 | | |
| | | 6860 | +67 | 182 | −9 | 67 | 218 | 10 | | |
| | | 6861 | +67 | 182 | +13 | 67 | 97 | 7 | | |
| | | 6868 | +88 | 203 | −24 | 88 | 145 | 2 | | |
| | | | | (115) | (+1) | | 1,181 | 48 | | |
| June 18 | 8 37 | 6874 | −56 | 46 | −10 | 57 | 606 | 15 | VG | Do. |
| | | 6871 | +20 | 122 | −11 | 23 | 6 | 4 | | |
| | | 6876 | +37 | 139 | −22 | 42 | 6 | 2 | | |
| | | 6875 | +66 | 168 | +22 | 67 | 73 | 15 | | |
| | | 6867 | +67 | 169 | +23 | 68 | 48 | 7 | | |
| | | 6863 | +73 | 175 | +14 | 73 | 48 | 4 | | |
| | | 6861 | +77 | 179 | +13 | 77 | 48 | 2 | | |
| | | 6860 | +85 | 187 | −9 | 85 | 194 | 3 | | |
| | | | | (102) | (+1) | | 1,029 | 52 | | |
| June 19 | 13 12 | 6878 | −81 | 5 | −10 | 81 | 48 | 1 | F | U. S. Naval. |
| | | 6877 | −77 | 9 | −18 | 78 | 194 | 4 | | |
| | | 6874 | −41 | 45 | −10 | 42 | 679 | 9 | | |
| | | 6875 | +78 | 164 | +23 | 79 | 170 | 3 | | |
| | | 6867 | +78 | 164 | +24 | 79 | 73 | 2 | | |
| | | | | (86) | (+2) | | 1,164 | 19 | | |

## POSITIONS AND AREAS OF SUN SPOTS—Continued

| Date | Eastern standard time | Mount Wilson group No. | Heliographic: Difference in longitude | Heliographic: Longitude | Heliographic: Latitude | Heliographic: Distance from center of disk | Area of spot or group | Spot count | Plate quality | Observatory |
|---|---|---|---|---|---|---|---|---|---|---|
| *1940* | *h m* | | ° | ° | ° | ° | | | | |
| June 20 | 13 26 | 6877 | −69 | 4 | −19 | 70 | 73 | 4 | F | U. S. Naval. |
| | | 6878 | −67 | 6 | −11 | 68 | 97 | 1 | | |
| | | 6877 | −60 | 13 | −19 | 62 | 194 | 3 | | |
| | | 6874 | −27 | 46 | −11 | 30 | 630 | 11 | | |
| | | 6879 | +34 | 107 | −5 | 35 | 12 | 4 | | |
| | | | | (73) | (+2) | | 1,006 | 23 | | |
| June 21 | 11 12 | 6877 | −56 | 5 | −19 | 60 | 145 | 7 | VG | Do. |
| | | 6878 | −55 | 6 | −11 | 56 | 73 | 1 | | |
| | | 6877 | −47 | 14 | −18 | 51 | 291 | 8 | | |
| | | 6886 | −37 | 24 | +11 | 39 | 24 | 2 | | |
| | | 6881 | −34 | 27 | −16 | 38 | 48 | 8 | | |
| | | 6874 | −14 | 47 | −12 | 20 | 630 | 17 | | |
| | | | | (61) | (+2) | | 1,211 | 43 | | |
| June 22 | 10 58 | 6877 | −42 | 6 | −19 | 47 | 121 | 8 | F | Do. |
| | | 6878 | −41 | 7 | −11 | 43 | 97 | 1 | | |
| | | 6877 | −34 | 14 | −18 | 40 | 339 | 7 | | |
| | | 6881 | −20 | 28 | −15 | 26 | 97 | 3 | | |
| | | 6874 | −2 | 46 | −11 | 13 | 533 | 7 | | |
| | | 6882 | +8 | 56 | +17 | 18 | 12 | 2 | | |
| | | (*) | +13 | 61 | −10 | 17 | 6 | 2 | | |
| | | | | (48) | (+2) | | 1,205 | 30 | | |
| June 23 | 12 13 | 6883 | −73 | 321 | −12 | 74 | 6 | 1 | VG | Do. |
| | | (*) | −50 | 344 | −16 | 53 | 6 | 3 | | |
| | | 6877 | −30 | 4 | −19 | 36 | 73 | 10 | | |
| | | 6878 | −28 | 6 | −11 | 31 | 48 | 1 | | |
| | | 6877 | −23 | 11 | −18 | 30 | 436 | 37 | | |
| | | 6881 | −6 | 28 | −15 | 19 | 73 | 11 | | |
| | | 6874 | +13 | 47 | −11 | 19 | 533 | 12 | | |
| | | 6882 | +23 | 57 | +15 | 26 | 73 | 6 | | |
| | | | | (34) | (+2) | | 1,248 | 81 | | |
| June 24 | 12 20 | 6887 | −74 | 307 | +2 | 74 | 194 | 5 | VG | Do. |
| | | 6888 | −72 | 309 | −16 | 75 | 97 | 6 | | |
| | | 6883 | −59 | 322 | −11 | 60 | 6 | 1 | | |
| | | 6886 | −36 | 345 | −13 | 38 | 48 | 4 | | |
| | | 6885 | −20 | 1 | +12 | 23 | 24 | 4 | | |
| | | 6878 | −16 | 5 | −11 | 21 | 73 | 2 | | |
| | | 6877 | −10 | 11 | −17 | 21 | 679 | 55 | | |
| | | (*) | −5 | 16 | −5 | 8 | 6 | 2 | | |
| | | 6881 | +8 | 29 | −15 | 19 | 54 | 8 | | |
| | | 6874 | +26 | 47 | −11 | 29 | 485 | 4 | | |
| | | 6882 | +37 | 58 | +16 | 39 | 48 | 6 | | |
| | | 6884 | +68 | 89 | +5 | 68 | 48 | 3 | | |
| | | | | (21) | (+2) | | 1,762 | 100 | | |
| June 25 | 9 2 | 6887 | −62 | 307 | +2 | 62 | 170 | 6 | VG | Mount Wilson. |
| | | 6888 | −62 | 307 | −14 | 64 | 242 | 12 | | |
| | | 6883 | −47 | 322 | −11 | 49 | 6 | 1 | | |
| | | 6889 | −41 | 328 | +8 | 42 | 12 | 7 | | |
| | | 6880 | −22 | 347 | −13 | 26 | 24 | 8 | | |
| | | 6878 | −2 | 7 | −11 | 13 | 73 | 1 | | |
| | | 6877 | +4 | 13 | −16 | 19 | 630 | 23 | | |
| | | 6881 | +22 | 31 | −15 | 28 | 145 | 9 | | |
| | | 6874 | +39 | 48 | −11 | 41 | 436 | 5 | | |
| | | 6882 | +50 | 59 | +16 | 52 | 36 | 9 | | |
| | | 6884 | +82 | 91 | +5 | 82 | 145 | 9 | | |
| | | | | (9) | (+2 | | 1.919 | 90 | | |
| June 26 | 12 42 | 6887 | −48 | 306 | +1 | 48 | 145 | 6 | VG | U. S. Naval. |
| | | 6888 | −46 | 308 | −16 | 49 | 485 | 35 | | |
| | | (*) | −32 | 322 | −10 | 34 | 6 | 1 | | |
| | | 6889 | −28 | 326 | +7 | 29 | 97 | 14 | | |
| | | 6886 | −7 | 347 | −14 | 19 | 36 | 7 | | |
| | | 6885 | +9 | 3 | +15 | 16 | 12 | 3 | | |
| | | 6878 | +11 | 5 | −11 | 17 | 71 | 1 | | |
| | | 6877 | +18 | 12 | −17 | 26 | 824 | 25 | | |
| | | 6890 | +20 | 14 | −25 | 34 | 6 | 1 | | |
| | | 6881 | +35 | 29 | −16 | 39 | 133 | 16 | | |
| | | (*) | +41 | 35 | +7 | 41 | 6 | 3 | | |
| | | 6874 | +53 | 47 | −11 | 54 | 436 | 5 | | |
| | | | | (354) | (+2) | | 2,257 | 117 | | |
| June 27 | 14 12 | 6887 | −33 | 307 | +1 | 33 | 97 | 3 | G | Do. |
| | | 6888 | −30 | 310 | −15 | 35 | 485 | 30 | | |
| | | 6891 | −22 | 318 | −2 | 22 | 24 | 1 | | |
| | | 6889 | −13 | 327 | +8 | 14 | 121 | 12 | | |
| | | 6878 | +26 | 6 | −11 | 30 | 61 | 1 | | |
| | | 6877 | +32 | 12 | −17 | 37 | 824 | 20 | | |
| | | 6881 | +48 | 28 | −16 | 51 | 133 | 9 | | |
| | | 6874 | +67 | 47 | −11 | 68 | 436 | 3 | | |
| | | | | (340) | (+3) | | 2,181 | 79 | | |
| June 28 | 11 20 | 6892 | −48 | 280 | −18 | 52 | 6 | 1 | VG | Do. |
| | | 6887 | −21 | 307 | +1 | 21 | 85 | 4 | | |
| | | 6888 | −18 | 310 | −15 | 26 | 436 | 28 | | |
| | | 6891 | −9 | 319 | −2 | 10 | 12 | 1 | | |
| | | 6889 | −2 | 326 | +8 | 6 | 145 | 18 | | |
| | | 6878 | +37 | 5 | −11 | 40 | 61 | 1 | | |
| | | 6877 | +45 | 13 | −17 | 49 | 824 | 19 | | |
| | | 6881 | +61 | 29 | −16 | 65 | 133 | 12 | | |
| | | 6874 | +80 | 48 | −10 | 80 | 436 | 1 | | |
| | | | | (328) | (+3) | | 2,138 | 85 | | |

## POSITIONS AND AREAS OF SUN SPOTS—Continued

| Date | Eastern standard time | Mount Wilson group No. | Difference in longitude | Longitude | Latitude | Distance from center of disk | Area of spot or group | Spot count | Plate quality | Observatory |
|---|---|---|---|---|---|---|---|---|---|---|
| *1940* | *h m* | | ° | ° | ° | ° | | | | |
| June 29 | 11 5 | 6892 | −34 | 281 | −19 | 41 | 48 | 4 | G | U. S. Naval. |
| | | 6887 | −9 | 306 | +1 | 10 | 97 | 8 | | |
| | | 6888 | −5 | 310 | −14 | 19 | 388 | 25 | | |
| | | 6891 | +3 | 318 | −2 | 6 | 24 | 6 | | |
| | | 6889 | +11 | 326 | +8 | 13 | 194 | 20 | | |
| | | 6878 | +50 | 5 | −10 | 52 | 24 | 2 | | |
| | | 6877 | +58 | 13 | −18 | 62 | 679 | 16 | | |
| | | 6881 | +73 | 28 | −16 | 75 | 194 | 8 | | |
| | | | | (315) | (+3) | | 1,648 | 39 | | |
| June 30 | 11 31 | 6892 | −23 | 279 | −20 | 33 | 12 | 4 | F | Do. |
| | | 6887 | +6 | 308 | +1 | 6 | 73 | 1 | | |
| | | 6888 | +10 | 312 | −15 | 20 | 339 | 20 | | |
| | | 6891 | +17 | 319 | −1 | 19 | 12 | 6 | | |
| | | (*) | +20 | 322 | +17 | 24 | 12 | 3 | | |
| | | 6889 | +25 | 327 | +10 | 26 | 194 | 24 | | |
| | | 6878 | +64 | 6 | −10 | 66 | 24 | 2 | | |
| | | 6877 | +71 | 13 | −18 | 75 | 582 | 8 | | |
| | | | | (302) | (+3) | | 1,248 | 68 | | |

Mean daily area for 30 days=1,432

*=Not numbered. VG=very good; G=good; F=fair; P=poor.

## PROVISIONAL RELATIVE SUNSPOT NUMBERS

[Dependent on observations at Zurich only. Data furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich, Switzerland]

| June 1940 | Relative numbers | June 1940 | Relative numbers | June 1940 | Relative numbers |
|---|---|---|---|---|---|
| 1 | *Mc* 38 | 11 | 109 | 21 | *Ec* 58 |
| 2 | 41 | 12 | *Maac* 94 | 22 | *b* 61 |
| 3 | *Ecd* 77 | 13 | 104 | 23 | 83 |
| 4 | 80 | 14 | *Mc* 76 | 24 | *Ec* 113 |
| 5 | *a* 58 | 15 | 82 | 25 | *b* 108 |
| 6 | *d* 95 | 16 | *d* 59 | 26 | *Ec* 136 |
| 7 | 94 | 17 | ---------- | 27 | 117 |
| 8 | 106 | 18 | 51 | 28 | *a* 120 |
| 9 | 102 | 19 | *d* 46 | 29 | *a* 104 |
| 10 | 107 | 20 | 38 | 30 | 103 |

Mean, 29 days=84.8.

*a*=Passage of an average-sized group through the central meridian.
*b*=Passage of a large group through the central meridian.
*c*=New formation of a group developing into a middle-sized or large center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the central-circle zone.
*d*=Entrance of a large or average-sized center of activity on the east limb.