



Georgi Dobrovolski Solar Observatory

NEW ZEALAND

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SUNSPOT RESULTS FOR JANUARY 2006

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor (f.l. 910 mm) k considered as 1 .

Observed by PROJECTION .

Full disc diameter = 145 mm approx .

WN = Wolf Number ; SN = Pettisindex ; BX = Beckindex ; CV = Classification Value ;

QC = Quality Count ; QC² = Squared Quality Count .

Q = Quietness [ie. steadiness] refer to Kiepenheuer scale .

S = Sharpness [ie. clarity] refer to Kiepenheuer scale .

T = Transparency where 1 = excellent , 5 = worthless .

| DATE | UT* | g | f | WN | p | s | SN | BX | CV | QC | QC ² | Q | S | T | Ref. |
|--------|------|------|------|-------|------|------|-------|--------|-------|------|-----------------|------|------|------|--------|
| 01 | 2020 | 3 | 7 | 37 | 4 | 1 | 41 | 183 | 39 | 8 | 24 | 2.0 | 3.5 | 3.5 | 4619-8 |
| 02 | | | | | | | | | | | | | | | |
| 03 | | | | | | | | | | | | | | | |
| 04 | | | | | | | | | | | | | | | |
| 05 | 1950 | 1 | 1 | 11 | 0 | 1 | 1 | 4 | 1 | 1 | 1 | 2.0 | 3.0 | 4.0 | 4620-8 |
| 06 | | | | | | | | | | | | | | | |
| 07 | 1925 | 1 | 1 | 11 | 1 | 0 | 10 | 37 | 10 | 2 | 4 | 1.5 | 2.5 | 2.5 | 4621-8 |
| 08 | 1940 | 1 | 1 | 11 | 1 | 0 | 10 | 37 | 10 | 2 | 4 | 1.5 | 2.5 | 2.0 | 4622-8 |
| 09 | 1935 | 1 | 1 | 11 | 1 | 0 | 10 | 37 | 10 | 2 | 4 | 2.0 | 2.5 | 2.5 | 4623-8 |
| 10 | 1950 | 1 | 1 | 11 | 1 | 0 | 10 | 37 | 10 | 2 | 4 | 1.5 | 2.5 | 2.5 | 4624-8 |
| 11 | | | | | | | | | | | | | | | |
| 12 | 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.0 | 2.0 | 2.0 | 4625-8 |
| 13 | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | |
| 15 | 2000 | 2 | 11 | 31 | 6 | 3 | 63 | 198 | 62 | 8 | 32 | 2.0 | 3.0 | 2.5 | 4626-8 |
| 16 | 2015 | 2 | 16 | 36 | 6 | 3 | 63 | 288 | 62 | 8 | 32 | 1.5 | 2.5 | 2.5 | 4627-8 |
| 17 | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | |
| 19 | 1945 | 1 | 11 | 21 | 2 | 5 | 25 | 198 | 22 | 4 | 16 | 2.0 | 2.5 | 2.5 | 4628-9 |
| 20 | 2010 | 1 | 12 | 22 | 3 | 4 | 34 | 216 | 31 | 4 | 16 | 1.0 | 2.5 | 2.0 | 4629-9 |
| 21 | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | |
| 26 | 1955 | 1 | 5 | 15 | 3 | 2 | 32 | 125 | 35 | 5 | 25 | 2.5 | 2.5 | 2.5 | 4630-9 |
| 27 | 2140 | 1 | 2 | 12 | 2 | 0 | 20 | 36 | 25 | 4 | 16 | 1.5 | 2.0 | 1.5 | 4631-9 |
| 28 | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | |
| TOTALS | — | 16 | 69 | 229 | 30 | 19 | 319 | 1396 | 317 | 50 | 178 | 23.0 | 33.5 | 32.5 | — |
| NOBS | — | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | — |
| MNS | — | 1.23 | 5.31 | 17.62 | 2.31 | 1.46 | 24.54 | 107.38 | 24.38 | 3.85 | 13.69 | 1.77 | 2.58 | 2.50 | — |

MEAN WEIGHT = 0.4503

MEAN CONDITION = 2.2821

TRUNCATED WOLF NUMBER = 16.77

* Stated times approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

Georgi Dobrovolski Solar Observatory

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR JANUARY 2006

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor (f . l . 910 mm) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

IS = Inter-Sol Index .

gr = number of multi-spot groups .

grfp = number of umbræ within penumbræ within the groups (gr) .

grf = number of non-penumbral spots within the groups (gr) .

efp = number of single penumbral spots .

ef = number of single non-penumbral spots .

Q = Quietness [ie. steadiness] refer to Kiepenheuer scale .

S = Sharpness [ie. clarity] refer to Kiepenheuer scale .

T = Transparency where 1 = excellent , 5 = worthless .

| DATE | UT | IS | gr | grfp | grf | efp | ef | Q | S | T | Ref. |
|--------|------|------|------|------|------|------|------|------|------|------|--------|
| 01 | 2020 | 9 | 2 | 5 | 1 | 1 | 0 | 2.0 | 3.5 | 3.5 | 4619-8 |
| 02 | | | | | | | | | | | |
| 03 | | | | | | | | | | | |
| 04 | | | | | | | | | | | |
| 05 | 1950 | 1 | 0 | 0 | 0 | 0 | 1 | 2.0 | 3.0 | 4.0 | 4620-8 |
| 06 | | | | | | | | | | | |
| 07 | 1925 | 1 | 0 | 0 | 0 | 1 | 0 | 1.5 | 2.5 | 2.5 | 4621-8 |
| 08 | 1940 | 1 | 0 | 0 | 0 | 1 | 0 | 1.5 | 2.5 | 2.0 | 4622-8 |
| 09 | 1935 | 1 | 0 | 0 | 0 | 1 | 0 | 2.0 | 2.5 | 2.5 | 4623-8 |
| 10 | 1950 | 1 | 0 | 0 | 0 | 1 | 0 | 1.5 | 2.5 | 2.5 | 4624-8 |
| 11 | | | | | | | | | | | |
| 12 | 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 2.0 | 2.0 | 2.0 | 4625-8 |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | 2000 | 13 | 2 | 8 | 3 | 0 | 0 | 2.0 | 3.0 | 2.5 | 4626-8 |
| 16 | 2015 | 18 | 2 | 13 | 3 | 0 | 0 | 1.5 | 2.5 | 2.5 | 4627-8 |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | 1945 | 12 | 1 | 6 | 5 | 0 | 0 | 2.0 | 2.5 | 2.5 | 4628-9 |
| 20 | 2010 | 13 | 1 | 8 | 4 | 0 | 0 | 1.0 | 2.5 | 2.0 | 4629-9 |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |
| 26 | 1955 | 6 | 1 | 3 | 2 | 0 | 0 | 2.5 | 2.5 | 2.5 | 4630-9 |
| 27 | 2140 | 3 | 1 | 2 | 0 | 0 | 0 | 1.5 | 2.0 | 1.5 | 4631-9 |
| 28 | | | | | | | | | | | |
| 29 | | | | | | | | | | | |
| 30 | | | | | | | | | | | |
| 31 | | | | | | | | | | | |
| TOTALS | — | 79 | 10 | 45 | 18 | 5 | 1 | 23.0 | 33.5 | 32.5 | — |
| NOBS | — | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | — |
| MNS | — | 6.08 | 0.77 | 3.46 | 1.38 | 0.38 | 0.08 | 1.77 | 2.58 | 2.50 | — |

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SUNSPOT CENSUS BY CLASSIFICATION FOR

JANUARY 2006

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor (f . l . 910 mm) .

Observed by PROJECTION .

Full disc diameter = 145 mm approx .

IF 2 OR MORE REGIONS ARE OF THE SAME CLASSIFICATION , THEN SUNSPOT COUNTS ARE SEPARATED BY SOLIDI (/) .

| DATE | UT | A | | B | | C | | D | | E | | F | | G | | H | | J | |
|---------------------------------------|------|-----|------|--------------------------------|-----|-----|-----|------|------|--------------------------------|---|---|---|---|---|---|---|---|-----|
| | | g | f | g | f | g | f | g | f | g | f | g | f | g | f | g | f | g | f |
| 01 | 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1/2 |
| 02 | | | | | | | | | | | | | | | | | | | |
| 03 | | | | | | | | | | | | | | | | | | | |
| 04 | | | | | | | | | | | | | | | | | | | |
| 05 | 1950 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06 | | | | | | | | | | | | | | | | | | | |
| 07 | 1925 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| 08 | 1940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| 09 | 1935 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| 10 | 1950 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| 11 | | | | | | | | | | | | | | | | | | | |
| 12 | 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 13 | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | |
| 15 | 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 16 | 2015 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 17 | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | |
| 19 | 1945 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20 | 2010 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21 | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | |
| 26 | 1955 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 27 | 2140 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 28 | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | |
| TOTALS | — | 1 | 1 | 0 | 0 | 0 | 0 | 8 | 56 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 |
| REGIONAL PERCENTAGES | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | J | Σg | | | | | | | | | | |
| 6.2 | 0.0 | 0.0 | 50.0 | 6.2 | 0.0 | 0.0 | 0.0 | 37.5 | 16 | | | | | | | | | | |
| NOBS = 13 | | | | $\overline{p/g}$ mean = 1.7778 | | | | | | $\overline{f/g}$ mean = 4.2361 | | | | | | | | | |
| | | | | $\overline{p/g}$ mean = 1.8750 | | | | | | $\overline{f/g}$ mean = 4.3125 | | | | | | | | | |
| GROUP COMPLEXITY INDEX (GCI) = 6.1875 | | | | | | | | | | | | | | | | | | | |

Georgi Dobrovolski Solar Observatory

SMOOTHED RESULTS OF OBSERVED VALUES FOR THE LAST 12 MONTHS (OBTAINABLE) USING THE WALDMEIER & BARNES-13 METHODS.

DATA BELOW ARE PRELIMINARY. FINAL VALUES WILL BE PUBLISHED IN GDSO ANNUAL REPORTS.

WALDMEIER METHOD

| MONTH | $g(S^W)$ | $WN(S^W)$ | $SN(S^W)$ | $BX(S^W)$ | $CV(S^W)$ | $QC(S^W)$ | $IS(S^W)$ |
|--------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2004 AUGUST | 3.28 | 53.46 | 64.65 | 482.4 | 66.12 | 10.40 | 22.91 |
| SEPTEMBER | 3.15 | 51.44 | 61.95 | 464.3 | 64.60 | 9.98 | 22.12 |
| OCTOBER | 3.05 | 49.75 | 59.58 | 444.3 | 62.91 | 9.67 | 21.33 |
| NOVEMBER | 2.95 | 48.53 | 59.05 | 446.4 | 62.64 | 9.47 | 21.14 |
| DECEMBER | 2.87 | 48.18 | 60.36 | 456.1 | 63.75 | 9.40 | 21.60 |
| 2005 JANUARY | 2.83 | 47.36 | 60.71 | 432.0 | 64.03 | 9.38 | 21.14 |
| FEBRUARY | 2.81 | 46.03 | 59.67 | 391.9 | 62.75 | 9.27 | 20.02 |
| MARCH | 2.79 | 45.29 | 58.30 | 376.6 | 61.02 | 9.13 | 19.49 |
| APRIL | 2.58 | 41.97 | 53.70 | 350.4 | 56.63 | 8.44 | 18.03 |
| MAY | 2.32 | 37.30 | 47.99 | 301.4 | 50.99 | 7.54 | 15.82 |
| JUNE | 2.33 | 36.69 | 47.03 | 279.9 | 49.91 | 7.44 | 15.11 |
| JULY | 2.37 | 36.83 | 47.22 | 274.0 | 49.81 | 7.48 | 14.78 |

BARNES-13 METHOD

| MONTH | $g(S^{B13})$ | $WN(S^{B13})$ | $SN(S^{B13})$ | $BX(S^{B13})$ | $CV(S^{B13})$ | $QC(S^{B13})$ | $IS(S^{B13})$ |
|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 2004 AUGUST | 3.33 | 55.33 | 67.92 | 526.0 | 68.88 | 10.65 | 24.38 |
| SEPTEMBER | 3.21 | 53.53 | 65.96 | 508.9 | 67.87 | 10.34 | 23.68 |
| OCTOBER | 3.10 | 51.52 | 63.32 | 486.0 | 66.22 | 10.02 | 22.72 |
| NOVEMBER | 2.95 | 48.95 | 60.06 | 459.0 | 63.78 | 9.58 | 21.54 |
| DECEMBER | 2.80 | 46.43 | 57.15 | 426.5 | 61.36 | 9.13 | 20.38 |
| 2005 JANUARY | 2.72 | 44.53 | 55.15 | 390.9 | 59.85 | 8.85 | 19.33 |
| FEBRUARY | 2.67 | 43.30 | 54.11 | 362.6 | 58.93 | 8.70 | 18.55 |
| MARCH | 2.64 | 42.71 | 53.98 | 349.1 | 58.26 | 8.62 | 18.23 |
| APRIL | 2.58 | 41.72 | 53.68 | 337.8 | 57.16 | 8.43 | 17.88 |
| MAY | 2.50 | 40.44 | 53.26 | 323.2 | 55.88 | 8.20 | 17.39 |
| JUNE | 2.48 | 39.88 | 53.22 | 312.6 | 55.11 | 8.12 | 17.01 |
| JULY | 2.44 | 38.85 | 52.00 | 298.9 | 53.16 | 7.92 | 16.25 |