



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

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## SUNSPOT RESULTS FOR OCTOBER 2001

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 .

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

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

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

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

DATE	UT	g	f	WN	p	s	SN	BX	CV	Q	S	T	Ref.
01													
02													
03	1945	13	41	171	17	16	186	704	175	1.5	1.5	2.0	3995
04													
05													
06													
07													
08													
09	2105	7	29	99	10	12	112	457	100	2.0	3.0	3.0	3996
10	2145	10	39	139	17	11	181	665	176	2.0	3.0	3.0	3997
11	1950	11	43	153	16	16	176	697	190	2.0	2.5	2.0	3998
12	2025	9	38	128	13	14	144	602	153	2.0	2.0	2.0	3999
13													
14													
15													
16	1925	11	70	180	16	32	192	1502	201	2.5	3.0	3.0	4000
17													
18													
19													
20	1945	12	74	194	24	24	264	1664	304	2.0	2.0	2.5	4001
21													
22	1940	10	63	163	15	23	173	1579	172	2.0	2.5	3.0	4002
23													
24	1940	11	80	190	21	22	232	2008	227	2.0	2.0	2.0	4003
25													
26													
27													
28	1935	11	75	185	13	28	158	1806	248	2.0	2.0	2.5	4004
29	2030	9	73	163	14	24	164	1607	244	2.5	2.5	2.5	4005
30													
31	1940	5	67	117	9	18	108	1459	148	2.0	2.5	2.5	4006
$\Sigma$	—	119	692	1882	185	240	2090	14750	2338	24.5	28.5	30.0	—
NOBS	—	12	12	12	12	12	12	12	12	12	12	12	—
MNS	—	9.92	57.67	156.83	15.42	20.00	174.17	1229.17	194.83	2.04	2.38	2.50	—

MEAN CONDITION = 2.3056    TRUNCATED WOLF NUMBER = 142.50    QUALITY COUNT = 30.42    SQUARED QUALITY COUNT = 105.25



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## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR OCTOBER 2001

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

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

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

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

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

IS = Inter-Sol Index .

gr = number of multi-spot groups .

grfp = number of umbrae within penumbrae 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 .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03	1945	49	8	23	13	2	3	1.5	1.5	2.0	3995
04											
05											
06											
07											
08											
09	2105	34	5	16	11	1	1	2.0	3.0	3.0	3996
10	2145	47	8	27	10	1	1	2.0	3.0	3.0	3997
11	1950	50	7	24	15	3	1	2.0	2.5	2.0	3998
12	2025	45	7	22	14	2	0	2.0	2.0	2.0	3999
13											
14											
15											
16	1925	76	6	35	30	3	2	2.5	3.0	3.0	4000
17											
18											
19											
20	1945	85	11	49	24	1	0	2.0	2.0	2.5	4001
21											
22	1940	72	9	39	23	1	0	2.0	2.5	3.0	4002
23											
24	1940	89	9	56	22	2	0	2.0	2.0	2.0	4003
25											
26											
27											
28	1935	81	6	44	26	3	2	2.0	2.0	2.5	4004
29	2030	80	7	47	24	2	0	2.5	2.5	2.5	4005
30											
31	1940	71	4	49	17	0	1	2.0	2.5	2.5	4006
Σ	—	779	87	431	229	21	11	24.5	28.5	30.0	—
NOBS	—	12	12	12	12	12	12	12	12	12	—
MNS	—	64.92	7.25	35.92	19.08	1.75	0.92	2.04	2.38	2.50	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR OCTOBER 2001

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																			
02																			
03	1945	3	1/1/1	1	2	1	4	5	2/2/3/10/11	0	0	0	0	0	0	0	0	3	1/1/2
04																			
05																			
06																			
07																			
08																			
09	2105	1	1	0	0	2	3/4	3	3/8/9	0	0	0	0	0	0	0	0	1	1
10	2145	1	1	0	0	3	2/2/4	4	3/4/6/14	0	0	0	0	0	0	0	0	2	1/2
11	1950	1	1	0	0	3	4/4/4	4	5/7/7/8	0	0	0	0	0	0	0	0	3	1/1/1
12	2025	0	0	0	0	4	3/3/3/3	3	6/6/12	0	0	0	0	0	0	0	0	2	1/1
13																			
14																			
15																			
16	1925	2	1/1	0	0	1	6	3	2/5/13	2	7/32	0	0	0	0	0	0	3	1/1/1
17																			
18																			
19																			
20	1945	0	0	0	0	5	2/2/2/2/3	5	6/7/8/11/17	0	0	0	0	1	13	1	1	0	0
21																			
22	1940	0	0	0	0	5	2/2/3/3/5	3	6/8/15	0	0	0	0	1	18	0	0	1	1
23																			
24	1940	0	0	1	2	2	3/4	4	4/8/16/21	0	0	0	0	1	18	1	2	2	1/1
25																			
26																			
27																			
28	1935	2	1/1	1	3	2	4/8	1	7	1	25	1	23	0	0	0	0	3	1/1/1
29	2030	0	0	1	4	2	2/5	1	10	2	13/35	0	0	0	0	1	1	2	1/2
30																			
31	1940	1	1	0	0	1	2	2	11/12	1	41	0	0	0	0	0	0	0	0
TOTALS	—	11	11	4	11	31	103	38	313	6	153	1	23	3	49	3	4	22	25

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
9.2	3.4	26.1	31.9	5.0	0.8	2.5	2.5	18.5	119

NOBS = 12       $\bar{p}/\bar{g}$  mean = 1.5614       $\bar{f}/\bar{g}$  mean = 6.1467  
 $\bar{p}/\bar{g}$  mean = 1.5546       $\bar{f}/\bar{g}$  mean = 5.8151

GROUP COMPLEXITY INDEX (GCI) = 7.3697



**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 THE GDSO ANNUAL REPORTS.

**WALDMEIER METHOD**

MONTH	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
2000 MAY	8.56	147.98	168.20	1480.2	163.14	27.22	68.48
JUNE	8.61	147.41	167.16	1426.8	162.43	27.23	67.47
JULY	8.72	149.15	170.05	1428.6	164.50	27.62	68.21
AUGUST	8.70	149.18	171.29	1439.2	164.10	27.62	68.46
SEPTEMBER	8.54	146.69	169.59	1429.2	158.97	27.13	67.36
OCTOBER	8.39	142.73	165.93	1381.5	153.81	26.46	64.80
NOVEMBER	8.24	138.20	162.24	1314.1	149.88	25.83	61.64
DECEMBER	8.21	136.50	162.20	1276.9	148.25	25.71	60.22
2001 JANUARY	8.05	131.46	155.91	1154.6	143.18	25.02	56.64
FEBRUARY	7.78	125.52	148.96	1055.4	138.47	24.10	53.21
MARCH	7.95	128.81	155.32	1100.1	144.66	24.81	54.96
APRIL	8.28	134.01	162.38	1149.5	152.74	25.88	57.06

**BARNES-13 METHOD**

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
2000 MAY	9.10	158.32	179.10	1610.4	174.12	28.98	73.78
JUNE	9.13	158.60	180.80	1607.8	172.97	29.04	73.73
JULY	9.06	157.01	180.52	1583.1	170.08	28.77	72.84
AUGUST	8.81	151.85	175.57	1506.4	163.56	27.89	70.06
SEPTEMBER	8.46	144.68	168.12	1401.5	155.14	26.70	66.17
OCTOBER	8.16	138.10	161.29	1299.4	148.64	25.68	62.37
NOVEMBER	7.94	132.78	155.82	1213.8	144.21	24.92	59.09
DECEMBER	7.82	129.35	152.48	1154.3	141.35	24.48	56.77
2001 JANUARY	7.75	126.55	149.53	1095.9	139.05	24.16	54.60
FEBRUARY	7.73	125.05	148.49	1068.2	138.43	24.05	53.23
MARCH	7.90	127.24	152.53	1092.6	142.11	24.56	53.83
APRIL	8.15	130.80	157.98	1125.0	147.42	25.31	54.99