



# **GEORGI DOBROVOLSKI SOLAR OBSERVATORY**

## **MONTHLY SUNSPOT REPORTS**

# **1997**

### **CONTENTS:**

<b>JANUARY</b>	<b>2-4</b>
<b>FEBRUARY</b>	<b>5-7</b>
<b>MARCH</b>	<b>8-10</b>
<b>APRIL</b>	<b>11-13</b>
<b>MAY</b>	<b>14-16</b>
<b>JUNE</b>	<b>17-19</b>
<b>PREDICTED MAXIMUM</b>	<b>20</b>
<b>JULY</b>	<b>21-23</b>
<b>AUGUST</b>	<b>24-26</b>
<b>SEPTEMBER</b>	<b>27-29</b>
<b>OCTOBER</b>	<b>30-32</b>
<b>NOVEMBER</b>	<b>33-35</b>
<b>DECEMBER</b>	<b>36-38</b>
<b>1997 MEANS</b>	<b>39</b>



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gds0@earthling.net](mailto:gds0@earthling.net)

## SUNSPOT RESULTS FOR JANUARY 1997

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	2150	0	0	0	0	0	0	0	0	1.5	2.5	2.0	3181
04	2020	1	5	15	0	5	5	20	3	1.5	2.0	2.0	3182
05	2110	1	3	13	0	3	3	12	3	2.0	2.0	2.5	3183
06													
07													
08													
09													
10													
11	2145	0	0	0	0	0	0	0	0	2.0	2.5	2.5	3184
12	2015	0	0	0	0	0	0	0	0	2.0	2.0	2.0	3185
13	2010	0	0	0	0	0	0	0	0	2.0	2.0	2.0	3186
14	2055	0	0	0	0	0	0	0	0	1.0	2.0	2.0	3187
15	2030	1	3	13	1	1	11	24	8	2.0	2.5	2.5	3188
16	2025	1	2	12	0	2	2	8	2	2.0	2.5	2.5	3189
17	2030	0	0	0	0	0	0	0	0	1.5	2.0	2.0	3190
18													
19	2030	0	0	0	0	0	0	0	0	1.5	1.5	2.0	3191
20													
21	2025	0	0	0	0	0	0	0	0	1.5	2.0	2.0	3192
22													
23	2135	0	0	0	0	0	0	0	0	2.5	3.0	3.0	3193
24													
25	2150	0	0	0	0	0	0	0	0	2.0	2.0	2.0	3194
26	2020	1	2	12	0	2	2	8	2	1.5	1.5	2.0	3195
27	2120	0	0	0	0	0	0	0	0	2.0	2.0	2.0	3196
28													
29	2155	1	3	13	1	2	12	24	6	1.5	1.5	2.0	3197
30	2020	1	4	14	2	2	22	72	22	2.0	2.5	3.0	3198
31	2010	1	3	13	0	3	3	12	3	1.5	2.0	2.5	3199
<b>Σ</b>	—	8	25	105	4	20	60	180	49	33,5	40	42,5	—
NOBS	—	19	19	19	19	19	19	19	19	19	19	19	—
MNS	—	0.42	1.32	5.53	0.21	1.05	3.16	9.47	2.58	1.76	2.11	2.24	—

MEAN WEIGHT = 0.5019

MEAN CONDITION = 2.0351

QUALITY COUNT = 1.05



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR JANUARY 1997

All observations carried out by HOWARD BARNES .

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 umbræ within penumbrae within the groups (gr) .

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

efp = number of single penumbral spots :

ef = number of single non-penumbra spots .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03	2150	0	0	0	0	0	0	1.5	2.5	2.0	3181
04	2020	6	1	0	5	0	0	1.5	2.0	2.0	3182
05	2110	4	1	0	3	0	0	2.0	2.0	2.5	3183
06											
07											
08											
09											
10											
11	2145	0	0	0	0	0	0	2.0	2.5	2.5	3184
12	2015	0	0	0	0	0	0	2.0	2.0	2.0	3185
13	2010	0	0	0	0	0	0	2.0	2.0	2.0	3186
14	2055	0	0	0	0	0	0	1.0	2.0	2.0	3187
15	2030	4	1	2	1	0	0	2.0	2.5	2.5	3188
16	2025	3	1	0	2	0	0	2.0	2.5	2.5	3189
17	2030	0	0	0	0	0	0	1.5	2.0	2.0	3190
18											
19	2030	0	0	0	0	0	0	1.5	1.5	2.0	3191
20											
21	2025	0	0	0	0	0	0	1.5	2.0	2.0	3192
22											
23	2135	0	0	0	0	0	0	2.5	3.0	3.0	3193
24											
25	2150	0	0	0	0	0	0	2.0	2.0	2.0	3194
26	2020	3	1	0	2	0	0	1.5	1.5	2.0	3195
27	2120	0	0	0	0	0	0	2.0	2.0	2.0	3196
28											
29	2155	4	1	1	2	0	0	1.5	1.5	2.0	3197
30	2020	5	1	2	2	0	0	2.0	2.5	3.0	3198
31	2010	4	1	0	3	0	0	1.5	2.0	2.5	3199
Σ	—	33	8	5	20	0	0	33.5	40.0	42.5	—
NOBS	—	19	19	19	19	19	19	19	19	19	—
MNS	—	1.74	0.42	0.26	1.05	0.00	0.00	1.76	2.11	2.24	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR JANUARY 1997

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 g:f	B g:f	C g:f	D g:f	E g:f	F g:f	G g:f	H g:f	J g:f
01										
02										
03	2150	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
04	2020	0:0	1:5	0:0	0:0	0:0	0:0	0:0	0:0	0:0
05	2110	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0	0:0
06										
07										
08										
09										
10										
11	2145	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
12	2015	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
13	2010	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
14	2055	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
15	2030	0:0	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0
16	2025	0:0	1:2	0:0	0:0	0:0	0:0	0:0	0:0	0:0
17	2030	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
18										
19	2030	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
20										
21	2025	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
22										
23	2135	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
24										
25	2150	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
26	2020	0:0	1:2	0:0	0:0	0:0	0:0	0:0	0:0	0:0
27	2120	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
28										
29	2155	0:0	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0
30	2020	0:0	0:0	0:0	1:4	0:0	0:0	0:0	0:0	0:0
31	2010	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0	0:0
TOTALS	—	0:0	5:15	2:6	1:4	0:0	0:0	0:0	0:0	0:0

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
0.0	62.5	25.0	12.5	0.0	0.0	0.0	0.0	0.0	8

NOBS = 19

$\overline{p/g}$  mean = 0.5000

$\overline{f/g}$  mean = 3.1250

$\overline{p}$  mean = 0.5000

$\overline{f}$  mean = 3.1250

GROUP COMPLEXITY INDEX (GCI) = 3.6250



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gdso@earthling.net](mailto:gdso@earthling.net)

## SUNSPOT RESULTS FOR FEBRUARY 1997

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													
04	2015	2	18	38	4	11	51	224	43	1.0	1.5	2.0	3200
05	2100	2	7	27	3	4	34	106	39	1.5	2.0	2.5	3201
06													
07	2005	1	1	11	0	1	1	4	1	1.5	2.5	2.5	3202
08													
09													
10													
11													
12	2005	0	0	0	0	0	0	0	0	2.0	2.0	2.0	3203
13													
14	1955	0	0	0	0	0	0	0	0	1.5	1.5	2.5	3204
15													
16													
17													
18													
19													
20													
21	2205	0	0	0	0	0	0	0	0	2.0	2.0	2.0	3205
22	2055	0	0	0	0	0	0	0	0	1.5	2.0	2.5	3206
23													
24													
25	2115	0	0	0	0	0	0	0	0	2.0	2.0	2.5	3207
26	2020	0	0	0	0	0	0	0	0	1.5	2.0	2.0	3208
27	2105	0	0	0	0	0	0	0	0	2.0	3.0	3.0	3209
28													
29													
30													
31													
<b>Σ</b>	—	5	26	76	7	16	86	334	83	16.5	20.5	23.5	—
NOBS	—	10	10	10	10	10	10	10	10	10	10	10	—
MNS	—	0.50	2.60	7.60	0.70	1.60	8.60	33.40	8.30	1.65	2.05	2.35	—

MEAN WEIGHT = 0.5056

MEAN CONDITION = 2.0167

QUALITY COUNT = 1.50



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR

# FEBRUARY 1997

All observations carried out by HOWARD BARNES .

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 umbræ within penumbrae within the groups (gr) .

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

efp = number of single penumbra spots :

ef = number of single non-penumbra spots .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03											
04	2015	20	2	7	11	0	0	1.0	1.5	2.0	3200
05	2100	9	2	3	4	0	0	1.5	2.0	2.5	3201
06											
07	2005	1	0	0	0	0	1	1.5	2.5	2.5	3202
08											
09											
10											
11											
12	2005	0	0	0	0	0	0	2.0	2.0	2.0	3203
13											
14	1955	0	0	0	0	0	0	1.5	1.5	2.5	3204
15											
16											
17											
18											
19											
20											
21	2205	0	0	0	0	0	0	2.0	2.0	2.0	3205
22	2055	0	0	0	0	0	0	1.5	2.0	2.5	3206
23											
24											
25	2115	0	0	0	0	0	0	2.0	2.0	2.5	3207
26	2020	0	0	0	0	0	0	1.5	2.0	2.0	3208
27	2105	0	0	0	0	0	0	2.0	3.0	3.0	3209
28											
29											
30											
31											
Σ	—	30	4	10	15	0	1	16.5	20.5	23.5	—
NOBS	—	10	10	10	10	10	10	10	10	10	—
MNS	—	3.00	0.40	1.00	1.50	0.00	0.10	1.65	2.05	2.35	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR FEBRUARY 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03										
04	2015	0 : 0	0 : 0	1 : 10	1 : 8	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
05	2100	0 : 0	0 : 0	1 : 2	1 : 5	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
06										
07	2005	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
08										
09										
10										
11										
12	2005	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
13										
14	1955	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
15										
16										
17										
18										
19										
20										
21	2205	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
22	2055	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
23										
24										
25	2115	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
26	2020	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
27	2105	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
28										
29										
30										
31										
TOTALS	—	1 : 1	0 : 0	2 : 12	2 : 13	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
REGIONAL PERCENTAGES										
A	B	C	D	E	F	G	H	J	Σg	
20.0	0.0	40.0	40.0	0.0	0.0	0.0	0.0	0.0	5	
NOBS = 10		$\overline{p/g}$ mean = 1.1667				$\overline{f/g}$ mean = 4.5000				
		$\overline{p/g}$ mean = 1.4000				$\overline{f/g}$ mean = 5.2000				
GROUP COMPLEXITY INDEX (GCI) = 6.6000										



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gdso@earthling.net](mailto:gdso@earthling.net)

## SUNSPOT RESULTS FOR MARCH 1997

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													
04													
05													
06	2010	1	1	11	1	0	10	37	10	1.5	1.5	2.0	3210
07	2050	1	2	12	1	1	11	16	11	2.0	1.5	2.0	3211
08													
09	2130	2	3	23	1	2	12	20	12	1.5	2.0	2.0	3212
10													
11													
12	2000	1	6	16	0	6	6	24	3	2.0	2.0	2.5	3213
13	2045	1	4	14	0	4	4	16	3	2.0	2.0	2.5	3214
14													
15	2045	1	2	12	0	2	2	8	2	1.5	2.0	2.5	3215
16													
17	2010	1	1	11	0	1	1	4	1	1.5	1.5	2.0	3216
18	2020	0	0	0	0	0	0	0	0	1.5	2.0	2.5	3217
19													
20													
21													
22													
23	2005	0	0	0	0	0	0	0	0	1.0	2.0	2.0	3218
24													
25													
26	2015	0	0	0	0	0	0	0	0	1.5	2.5	2.5	3219
27	2020	1	2	12	0	2	2	8	2	1.5	1.5	2.0	3220
28	2010	1	8	18	1	6	16	64	9	2.0	2.0	2.0	3221
29													
30	2030	1	11	21	3	5	35	198	22	1.0	2.0	2.0	3222
31	2020	1	9	19	1	6	16	72	9	1.5	2.0	2.0	3223
Σ	—	12	49	169	8	35	115	467	84	22.0	26.5	30.5	—
NOBS	—	14	14	14	14	14	14	14	14	14	14	14	—
MNS	—	0.86	3.50	12.07	0.57	2.50	8.21	33.36	6.00	1.57	1.89	2.18	—

MEAN WEIGHT = 0.5372

MEAN CONDITION = 1.8810

QUALITY COUNT = 2.00





# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR MARCH 1997

All observations carried out by HOWARD BARNES .

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 umbræ within penumbrae within the groups (gr) .

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

efp = number of single penumbral spots :

ef = number of single non-penumbra spots .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03											
04											
05											
06	2010	1	0	0	0	1	0	1.5	1.5	2.0	3210
07	2050	3	1	1	1	0	0	2.0	1.5	2.0	3211
08											
09	2130	4	1	1	1	0	1	1.5	2.0	2.0	3212
10											
11											
12	2000	7	1	0	6	0	0	2.0	2.0	2.5	3213
13	2045	5	1	0	4	0	0	2.0	2.0	2.5	3214
14											
15	2045	3	1	0	2	0	0	1.5	2.0	2.5	3215
16											
17	2010	1	0	0	0	0	1	1.5	1.5	2.0	3216
18	2020	0	0	0	0	0	0	1.5	2.0	2.5	3217
19											
20											
21											
22											
23	2005	0	0	0	0	0	0	1.0	2.0	2.0	3218
24											
25											
26	2015	0	0	0	0	0	0	1.5	2.5	2.5	3219
27	2020	3	1	0	2	0	0	1.5	1.5	2.0	3220
28	2010	9	1	2	6	0	0	2.0	2.0	2.0	3221
29											
30	2030	12	1	6	5	0	0	1.0	2.0	2.0	3222
31	2020	10	1	3	6	0	0	1.5	2.0	2.0	3223
$\Sigma$	—	58	9	13	33	1	2	22.0	26.5	30.5	—
NOBS	—	14	14	14	14	14	14	14	14	14	—
MNS	—	4.14	0.64	0.93	2.36	0.07	0.14	1.57	1.89	2.18	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR MARCH 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03										
04										
05										
06	2010	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
07	2050	0 : 0	0 : 0	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
08										
09	2130	1 : 1	0 : 0	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
10										
11										
12	2000	0 : 0	1 : 6	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
13	2045	0 : 0	1 : 4	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
14										
15	2045	0 : 0	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
16										
17	2010	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
18	2020	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
19										
20										
21										
22										
23	2005	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
24										
25										
26	2015	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
27	2020	0 : 0	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
28	2010	0 : 0	0 : 0	1 : 8	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
29										
30	2030	0 : 0	0 : 0	0 : 0	1 : 11	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
31	2020	0 : 0	0 : 0	1 : 9	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
TOTALS	—	2 : 2	4 : 14	4 : 21	1 : 11	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
16.7	33.3	33.3	8.3	0.0	0.0	0.0	0.0	8.3	12

NOBS = 14

$\overline{p/g}$  mean = 0.6818

$\overline{f/g}$  mean = 4.3182

$\overline{p/g}$  mean = 0.6667

$\overline{f/g}$  mean = 4.0833

GROUP COMPLEXITY INDEX (GCI) = 4.7500



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gdso@earthling.net](mailto:gdso@earthling.net)

## SUNSPOT RESULTS FOR APRIL 1997

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	2225	1	10	20	1	8	18	80	8	2.0	2.5	2.5	3224
02	2145	2	23	43	4	12	52	587	42	1.5	2.0	2.5	3225
03	2035	2	14	34	4	5	45	232	42	1.5	1.5	2.0	3226
04	2050	2	11	31	3	4	34	158	31	1.5	1.5	2.0	3227
05	2100	2	5	25	1	4	14	36	13	1.5	2.0	2.0	3228
06													
07													
08	2205	1	2	12	0	2	2	8	2	2.0	2.5	2.0	3229
09	2025	3	13	43	2	9	29	178	26	1.5	1.5	2.0	3230
10	2055	2	13	33	2	5	25	220	23	1.0	2.0	2.0	3231
11	2045	1	6	16	2	2	22	108	22	2.0	2.5	2.5	3232
12	2040	2	9	29	2	6	26	72	21	1.0	1.5	2.0	3233
13													
14	2055	2	8	28	2	4	24	116	24	1.5	2.0	2.0	3234
15	2110	3	15	45	4	9	49	256	39	1.5	2.0	2.5	3235
16	2035	2	7	27	2	5	25	85	22	1.5	2.0	2.5	3236
17	2115	1	3	13	0	3	3	12	3	2.0	2.5	2.5	3237
18													
19	2050	0	0	0	0	0	0	0	0	1.5	2.0	2.5	3238
20	2100	0	0	0	0	0	0	0	0	1.5	2.0	2.0	3239
21	2120	0	0	0	0	0	0	0	0	2.0	2.0	2.5	3240
22													
23													
24	2220	0	0	0	0	0	0	0	0	2.0	2.5	2.5	3241
25													
26	2115	2	4	24	1	3	13	28	13	1.5	2.0	2.5	3242
27													
28													
29													
30													
31													
<b>Σ</b>	—	28	143	423	30	81	381	2176	331	30.5	38.5	43.0	—
NOBS	—	19	19	19	19	19	19	19	19	19	19	19	—
MNS	—	1.47	7.53	22.26	1.58	4.26	20.05	114.53	17.42	1.61	2.03	2.26	—

MEAN WEIGHT = 0.5179

MEAN CONDITION = 1.9649

QUALITY COUNT = 4.11



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR APRIL 1997

All observations carried out by HOWARD BARNES .

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 umbræ within penumbrae within the groups (gr) .

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

efp = number of single penumbral spots :

ef = number of single non-penumbra spots .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01	2225	11	1	2	8	0	0	2.0	2.5	2.5	3224
02	2145	24	1	10	12	1	0	1.5	2.0	2.5	3225
03	2035	16	2	9	5	0	0	1.5	1.5	2.0	3226
04	2050	13	2	7	4	0	0	1.5	1.5	2.0	3227
05	2100	6	1	1	3	0	1	1.5	2.0	2.0	3228
06											
07											
08	2205	3	1	0	2	0	0	2.0	2.5	2.0	3229
09	2025	15	2	4	8	0	1	1.5	1.5	2.0	3230
10	2055	14	1	8	4	0	1	1.0	2.0	2.0	3231
11	2045	7	1	4	2	0	0	2.0	2.5	2.5	3232
12	2040	11	2	3	6	0	0	1.0	1.5	2.0	3233
13											
14	2055	10	2	4	4	0	0	1.5	2.0	2.0	3234
15	2110	17	2	6	8	0	1	1.5	2.0	2.5	3235
16	2035	8	1	1	5	1	0	1.5	2.0	2.5	3236
17	2115	4	1	0	3	0	0	2.0	2.5	2.5	3237
18											
19	2050	0	0	0	0	0	0	1.5	2.0	2.5	3238
20	2100	0	0	0	0	0	0	1.5	2.0	2.0	3239
21	2120	0	0	0	0	0	0	2.0	2.0	2.5	3240
22											
23											
24	2220	0	0	0	0	0	0	2.0	2.5	2.5	3241
25											
26	2115	5	1	1	2	0	1	1.5	2.0	2.5	3242
27											
28											
29											
30											
31											
<b>Σ</b>	—	164	21	60	76	2	5	30.5	38.5	43.0	—
NOBS	—	19	19	19	19	19	19	19	19	19	—
MNS	—	8.63	1.11	3.16	4.00	0.11	0.26	1.61	2.03	2.26	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR APRIL 1997

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 g:f	B g:f	C g:f	D g:f	E g:f	F g:f	G g:f	H g:f	J g:f
01	2225	0:0	0:0	1:10	0:0	0:0	0:0	0:0	0:0	0:0
02	2145	0:0	0:0	0:0	0:0	1:22	0:0	0:0	0:0	1:1
03	2035	0:0	0:0	1:2	1:12	0:0	0:0	0:0	0:0	0:0
04	2050	0:0	0:0	1:4	1:7	0:0	0:0	0:0	0:0	0:0
05	2100	1:1	0:0	1:4	0:0	0:0	0:0	0:0	0:0	0:0
06										
07										
08	2205	0:0	1:2	0:0	0:0	0:0	0:0	0:0	0:0	0:0
09	2025	1:1	1:3	0:0	1:9	0:0	0:0	0:0	0:0	0:0
10	2055	1:1	0:0	0:0	1:12	0:0	0:0	0:0	0:0	0:0
11	2045	0:0	0:0	0:0	1:6	0:0	0:0	0:0	0:0	0:0
12	2040	0:0	0:0	2:4/5	0:0	0:0	0:0	0:0	0:0	0:0
13										
14	2055	0:0	1:2	0:0	1:6	0:0	0:0	0:0	0:0	0:0
15	2110	1:1	0:0	0:0	2:3/11	0:0	0:0	0:0	0:0	0:0
16	2035	0:0	0:0	1:6	0:0	0:0	0:0	0:0	0:0	1:1
17	2115	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0	0:0
18										
19	2050	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
20	2100	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
21	2120	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
22										
23										
24	2220	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
25										
26	2115	1:1	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0
27										
28										
29										
30										
31										
TOTALS	—	5:5	4:10	8:38	8:66	1:22	0:0	0:0	0:0	2:2

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
17.9	14.3	28.6	28.6	3.6	0.0	0.0	0.0	7.1	28

NOBS = 19

$\overline{p/g}$  mean = 1.0333

$\overline{f/g}$  mean = 5.1556

$\overline{p/g}$  mean = 1.0714

$\overline{f/g}$  mean = 5.1071

GROUP COMPLEXITY INDEX (GCI) = 6.1786



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gds0@earthling.net](mailto:gds0@earthling.net)

## SUNSPOT RESULTS FOR MAY 1997

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	2100	0	0	0	0	0	0	0	0	1.0	1.5	2.0	3243
02	2115	1	1	11	0	1	1	4	1	1.5	2.0	2.0	3244
03													
04	2120	0	0	0	0	0	0	0	0	2.0	2.5	2.0	3245
05	2100	1	1	11	1	0	10	37	10	1.5	1.5	2.0	3246
06	2120	1	1	11	1	0	10	37	10	1.5	1.5	2.0	3247
07	2205	1	1	11	1	0	10	37	10	2.0	2.0	2.5	3248
08													
09													
10													
11													
12	2210	1	1	11	1	0	10	37	10	2.5	3.0	3.0	3249
13	2100	1	4	14	1	3	13	32	12	2.5	2.5	2.5	3250
14	2055	1	3	13	1	2	12	24	12	2.0	2.5	2.5	3251
15	2235	1	1	11	1	0	10	37	10	1.5	2.5	2.5	3252
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26	2335	1	1	11	0	1	1	4	1	2.5	3.5	3.5	3253
27													
28	2215	2	3	23	0	3	3	12	3	1.5	2.0	2.0	3254
29	2240	1	5	15	0	5	5	20	3	2.5	2.5	3.0	3255
30													
31													
<b>Σ</b>	—	12	22	142	7	15	85	281	82	24.5	29.5	31.5	—
NOBS	—	13	13	13	13	13	13	13	13	13	13	13	—
MNS	—	0.92	1.69	10.92	0.54	1.15	6.54	21.62	6.31	1.88	2.27	2.42	—

MEAN WEIGHT = 0.4780

MEAN CONDITION = 2.1923

QUALITY COUNT = 1.77



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR MAY 1997

All observations carried out by HOWARD BARNES .

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 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 .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01	2100	0	0	0	0	0	0	1.0	1.5	2.0	3243
02	2115	1	0	0	0	0	1	1.5	2.0	2.0	3244
03											
04	2120	0	0	0	0	0	0	2.0	2.5	2.0	3245
05	2100	1	0	0	0	1	0	1.5	1.5	2.0	3246
06	2120	1	0	0	0	1	0	1.5	1.5	2.0	3247
07	2205	1	0	0	0	1	0	2.0	2.0	2.5	3248
08											
09											
10											
11											
12	2210	1	0	0	0	1	0	2.5	3.0	3.0	3249
13	2100	5	1	1	3	0	0	2.5	2.5	2.5	3250
14	2055	4	1	1	2	0	0	2.0	2.5	2.5	3251
15	2235	1	0	0	0	1	0	1.5	2.5	2.5	3252
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26	2335	1	0	0	0	0	1	2.5	3.5	3.5	3253
27											
28	2215	4	1	0	2	0	1	1.5	2.0	2.0	3254
29	2240	6	1	0	5	0	0	2.5	2.5	3.0	3255
30											
31											
$\Sigma$	—	26	4	2	12	5	3	24.5	29.5	31.5	—
NOBS	—	13	13	13	13	13	13	13	13	13	—
MNS	—	2.00	0.31	0.15	0.92	0.38	0.23	1.88	2.27	2.42	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR

# MAY 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01	2100	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
02	2115	1:1	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
03										
04	2120	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
05	2100	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	1:1
06	2120	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	1:1
07	2205	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	1:1
08										
09										
10										
11										
12	2210	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	1:1
13	2100	0:0	0:0	1:4	0:0	0:0	0:0	0:0	0:0	0:0
14	2055	0:0	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0
15	2235	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	1:1
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26	2335	1:1	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0
27										
28	2215	1:1	1:2	0:0	0:0	0:0	0:0	0:0	0:0	0:0
29	2240	0:0	1:5	0:0	0:0	0:0	0:0	0:0	0:0	0:0
30										
31										
TOTALS	—	3:3	2:7	2:7	0:0	0:0	0:0	0:0	0:0	5:5
REGIONAL PERCENTAGES										
A	B	C	D	E	F	G	H	J	Σg	
25.0	16.7	16.7	0.0	0.0	0.0	0.0	0.0	41.7	12	
		NOBS = 13	$\overline{p/g}$ mean = 0.6364			$\overline{f/g}$ mean = 1.8636				
			$\overline{p/g}$ mean = 0.5833			$\overline{f/g}$ mean = 1.8333				
GROUP COMPLEXITY INDEX (GCI) = 2.4167										





# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gds0@earthling.net](mailto:gds0@earthling.net)

## SUNSPOT RESULTS FOR JUNE 1997

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	2105	1	7	17	2	4	24	126	22	2.0	2.5	2.5	3256
04	2150	1	5	15	2	2	22	90	22	2.0	2.5	2.5	3257
05	2235	1	7	17	2	2	22	126	22	1.5	2.0	2.5	3258
06	2110	1	5	15	2	1	21	90	19	2.5	2.5	2.5	3259
07													
08	2055	2	2	22	0	2	2	8	2	2.0	2.5	2.0	3260
09													
10													
11	2215	1	2	12	0	2	2	8	2	1.5	2.0	2.5	3261
12	2100	2	3	23	0	3	3	12	3	2.0	2.5	2.5	3262
13	2055	2	6	26	0	6	6	24	5	2.0	2.0	2.0	3263
14	2200	2	7	27	1	6	16	48	14	2.0	2.5	3.0	3264
15	2110	2	9	29	1	8	18	68	13	2.0	2.5	2.5	3265
16													
17													
18													
19	2140	2	4	24	0	4	4	16	4	1.5	2.0	2.5	3266
20	2140	1	1	11	0	1	1	4	1	2.0	2.0	2.5	3267
21	2130	1	1	11	0	1	1	4	1	1.5	2.0	2.5	3268
22	2145	0	0	0	0	0	0	0	0	2.0	2.5	3.0	3269
23	2110	1	3	13	0	3	3	12	2	2.5	2.5	2.5	3270
24	2115	2	4	24	0	4	4	16	4	2.5	2.5	2.5	3271
25													
26	2140	1	8	18	0	8	8	32	3	2.0	2.0	2.5	3272
27	2135	1	3	13	0	3	3	12	3	2.0	2.5	2.5	3273
28													
29													
30													
31													
<b>Σ</b>	—	24	77	317	10	60	160	696	142	35.5	41.5	45.0	—
NOBS	—	18	18	18	18	18	18	18	18	18	18	18	—
MNS	—	1.33	4.28	17.61	0.56	3.33	8.89	38.67	7.89	1.97	2.31	2.50	—

MEAN WEIGHT = 0.4460

MEAN CONDITION = 2.2593

QUALITY COUNT = 2.78



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR

# JUNE 1997

All observations carried out by HOWARD BARNES .

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 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 .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03	2105	8	1	3	4	0	0	2.0	2.5	2.5	3256
04	2150	6	1	3	2	0	0	2.0	2.5	2.5	3257
05	2235	8	1	5	2	0	0	1.5	2.0	2.5	3258
06	2110	6	1	4	1	0	0	2.5	2.5	2.5	3259
07											
08	2055	2	0	0	0	0	2	2.0	2.5	2.0	3260
09											
10											
11	2215	3	1	0	2	0	0	1.5	2.0	2.5	3261
12	2100	4	1	0	3	0	0	2.0	2.5	2.5	3262
13	2055	8	2	0	6	0	0	2.0	2.0	2.0	3263
14	2200	9	2	1	6	0	0	2.0	2.5	3.0	3264
15	2110	10	1	1	7	0	1	2.0	2.5	2.5	3265
16											
17											
18											
19	2140	5	1	0	3	0	1	1.5	2.0	2.5	3266
20	2140	1	0	0	0	0	1	2.0	2.0	2.5	3267
21	2130	1	0	0	0	0	1	1.5	2.0	2.5	3268
22	2145	0	0	0	0	0	0	2.0	2.5	3.0	3269
23	2110	4	1	0	3	0	0	2.5	2.5	2.5	3270
24	2115	5	1	0	3	0	1	2.5	2.5	2.5	3271
25											
26	2140	9	1	0	8	0	0	2.0	2.0	2.5	3272
27	2135	4	1	0	3	0	0	2.0	2.5	2.5	3273
28											
29											
30											
31											
Σ	—	93	16	17	53	0	7	35.5	41.5	45.0	—
NOBS	—	18	18	18	18	18	18	18	18	18	—
MNS	—	5.17	0.89	0.94	2.94	0.00	0.39	1.97	2.31	2.50	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR

# JUNE 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03	2105	0 : 0	0 : 0	0 : 0	1 : 7	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
04	2150	0 : 0	0 : 0	0 : 0	1 : 5	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
05	2235	0 : 0	0 : 0	0 : 0	1 : 7	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
06	2110	0 : 0	0 : 0	0 : 0	1 : 5	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
07										
08	2055	2 : 1/1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
09										
10										
11	2215	0 : 0	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
12	2100	1 : 1	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
13	2055	0 : 0	2 : 2/4	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
14	2200	0 : 0	1 : 2	1 : 5	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
15	2110	1 : 1	0 : 0	1 : 8	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
16										
17										
18										
19	2140	1 : 1	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
20	2140	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
21	2130	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
22	2145	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
23	2110	0 : 0	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
24	2115	1 : 1	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
25										
26	2140	0 : 0	1 : 8	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
27	2135	0 : 0	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
28										
29										
30										
31										
TOTALS	—	8 : 8	10 : 32	2 : 13	4 : 24	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
33.3	41.7	8.3	16.7	0.0	0.0	0.0	0.0	0.0	24

NOBS = 18

$\overline{p/g}$  mean = 0.5294

$\overline{f/g}$  mean = 3.5000

$\overline{p/g}$  mean = 0.4167

$\overline{f/g}$  mean = 3.2083

GROUP COMPLEXITY INDEX (GCI) = 3.6250



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

1997/06/30.

## PREDICTED LOW MAXIMUM

Using provisional GDSO sunspot data, it has been decided that sunspot minimum occurred in May 1996. Smoothed provisional GDSO data obtained by using both the Waldmeier and 'Barnes 13' equations are as follows;

YEAR	MONTH	$R_{GD}$	$R_{GD}(S^W)$	$R_{GD}(S^{B13})$
1996	JAN	10.42	9.54	9.45
	FEB	5.37	9.52	8.88
	MAR	8.28	9.47	8.45
	APR	3.58	8.35	7.80
	MAY	5.69	*7.76	*7.49
	JUN	8.19	*8.08	*7.68
	JUL	9.90	*7.85	*7.86
	AUG	15.32	*7.70	*7.95
	SEP	1.31	*7.95	*8.03
	OCT	0.00	*8.75	*8.45
	NOV	*17.82	*9.63	*9.11
	DEC	*11.26		
1997	JAN	* 4.58		
	FEB	* 7.68		
	MAR	*11.98		
	APR	*18.67		
	MAY	*11.90		

\* = provisional data.

From the above data, and comparing them with GDSO data from late 1986, we see a low and sluggish start to Sunspot Cycle 23. For the first 6 months of Cycle 22, the smoothed  $R_{GD}(S^W)$  value rose from 10.81 to 19.81 (an increase of 9.00 [83%]), while for Cycle 23, it has only risen from 7.76 to 9.63 (an increase of 1.87 [24%]). From this, if this is can be called typical, we can deduce that Cycle 23 will have a low smoothed maximum of  $R_{GD}(S^W) = 120 \pm 25$ . This is likely to occur about 3½ years into the cycle (about November 1999).

Time will tell.

HOWARD BARNES.



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gds@earthling.net](mailto:gds@earthling.net)

## SUNSPOT RESULTS FOR JULY 1997

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	2145	1	1	11	0	1	1	4	1	2.0	2.5	2.5	3274
04	2130	1	1	11	0	1	1	4	1	2.0	2.0	2.5	3275
05	2135	0	0	0	0	0	0	0	0	2.0	2.5	2.5	3276
06	2130	1	1	11	0	1	1	4	1	2.0	2.0	2.5	3277
07													
08	2135	2	4	24	0	4	4	16	4	2.0	2.0	2.5	3278
09													
10	2200	0	0	0	0	0	0	0	0	1.5	2.0	2.5	3279
11	2140	0	0	0	0	0	0	0	0	2.0	2.0	2.5	3280
12	2135	0	0	0	0	0	0	0	0	1.5	2.0	2.5	3281
13	2205	0	0	0	0	0	0	0	0	1.5	2.0	2.0	3282
14	2125	0	0	0	0	0	0	0	0	2.0	1.5	2.0	3283
15	2130	0	0	0	0	0	0	0	0	2.0	2.0	2.0	3284
16													
17													
18													
19													
20	2130	1	1	11	0	1	1	4	1	1.0	2.0	2.5	3285
21	2150	0	0	0	0	0	0	0	0	1.0	2.5	2.5	3286
22	2135	1	1	11	0	1	1	4	1	2.0	2.5	3.0	3287
23	2210	2	7	27	0	7	7	28	6	1.5	1.5	2.0	3288
24	2125	3	16	46	3	10	40	206	37	1.0	2.0	2.5	3289
25	2155	4	16	56	4	9	49	216	46	1.5	1.5	2.0	3290
26													
27	2205	1	1	11	0	1	1	4	1	2.5	3.0	3.0	3291
28	2230	0	0	0	0	0	0	0	0	1.5	2.0	2.0	3292
29													
30	2125	0	0	0	0	0	0	0	0	2.0	2.0	2.5	3293
31													
<b>Σ</b>	—	17	49	219	7	36	106	490	99	34.5	41.5	48.0	—
NOBS	—	20	20	20	20	20	20	20	20	20	20	20	—
MNS	—	0.85	2.45	10.95	0.35	1.80	5.30	24.50	4.95	1.72	2.08	2.40	—

MEAN WEIGHT = 0.4923

MEAN CONDITION = 2.0667

QUALITY COUNT = 1.60



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR

# JULY 1997

All observations carried out by HOWARD BARNES .

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 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 .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03	2145	1	0	0	0	0	1	2.0	2.5	2.5	3274
04	2130	1	0	0	0	0	1	2.0	2.0	2.5	3275
05	2135	0	0	0	0	0	0	2.0	2.5	2.5	3276
06	2130	1	0	0	0	0	1	2.0	2.0	2.5	3277
07											
08	2135	5	1	0	3	0	1	2.0	2.0	2.5	3278
09											
10	2200	0	0	0	0	0	0	1.5	2.0	2.5	3279
11	2140	0	0	0	0	0	0	2.0	2.0	2.5	3280
12	2135	0	0	0	0	0	0	1.5	2.0	2.5	3281
13	2205	0	0	0	0	0	0	1.5	2.0	2.0	3282
14	2125	0	0	0	0	0	0	2.0	1.5	2.0	3283
15	2130	0	0	0	0	0	0	2.0	2.0	2.0	3284
16											
17											
18											
19											
20	2130	1	0	0	0	0	1	1.0	2.0	2.5	3285
21	2150	0	0	0	0	0	0	1.0	2.5	2.5	3286
22	2135	1	0	0	0	0	1	2.0	2.5	3.0	3287
23	2210	9	2	0	7	0	0	1.5	1.5	2.0	3288
24	2125	19	3	6	10	0	0	1.0	2.0	2.5	3289
25	2155	19	3	7	8	0	1	1.5	1.5	2.0	3290
26											
27	2205	1	0	0	0	0	1	2.5	3.0	3.0	3291
28	2230	0	0	0	0	0	0	1.5	2.0	2.0	3292
29											
30	2125	0	0	0	0	0	0	2.0	2.0	2.5	3293
31											
Σ	—	58	9	13	28	0	8	34.5	41.5	48.0	—
NOBS	—	20	20	20	20	20	20	20	20	20	—
MNS	—	2.90	0.45	0.65	1.40	0.00	0.40	1.72	2.08	2.40	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR JULY 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03	2145	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
04	2130	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
05	2135	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
06	2130	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
07										
08	2135	1 : 1	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
09										
10	2200	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
11	2140	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
12	2135	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
13	2205	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
14	2125	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
15	2130	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
16										
17										
18										
19										
20	2130	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
21	2150	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
22	2135	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
23	2210	0 : 0	2 : 3/4	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
24	2125	0 : 0	1 : 3	1 : 4	1 : 9	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
25	2155	1 : 1	1 : 2	1 : 3	1 : 10	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
26										
27	2205	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
28	2230	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
29										
30	2125	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
31										
TOTALS	—	8 : 8	5 : 15	2 : 7	2 : 19	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
REGIONAL PERCENTAGES										
A	B	C	D	E	F	G	H	J	Σg	
47.1	29.4	11.8	11.8	0.0	0.0	0.0	0.0	0.0	17	
		NOBS = 20	$\overline{p/g}$ mean = 0.2000			$\overline{f/g}$ mean = 2.0833				
			$\overline{p/g}$ mean = 0.4118			$\overline{f/g}$ mean = 2.8824				
GROUP COMPLEXITY INDEX (GCI) = 3.2941										



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gds@earthling.net](mailto:gds@earthling.net)

## SUNSPOT RESULTS FOR **AUGUST 1997**

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	2120	1	4	14	1	2	12	32	9	2.0	2.0	2.0	3294
04	2130	1	2	12	1	1	11	16	11	2.5	3.0	2.5	3295
05													
06													
07	2120	3	14	44	4	8	48	238	51	2.5	2.5	2.5	3296
08	2155	3	16	46	2	13	33	218	27	2.0	2.5	2.5	3297
09	2135	1	6	16	1	4	14	48	9	2.0	2.5	3.0	3298
10													
11	2220	4	9	49	3	5	35	118	32	2.0	2.0	2.0	3299
12													
13	2245	4	9	49	4	3	43	130	37	2.0	2.5	2.5	3300
14	2125	4	6	46	2	4	24	90	23	1.5	2.0	2.5	3301
15	2210	2	2	22	2	0	20	74	20	2.0	2.5	2.5	3302
16	2145	2	2	22	1	1	11	41	11	1.5	2.0	2.5	3303
17	2120	2	4	24	1	3	13	49	13	1.5	2.0	2.5	3304
18													
19	2105	1	1	11	1	0	10	37	10	2.0	2.5	2.5	3305
20													
21	2055	2	2	22	1	1	11	41	11	1.5	2.0	2.5	3306
22													
23	2100	0	0	0	0	0	0	0	0	2.0	2.5	2.5	3307
24	2240	0	0	0	0	0	0	0	0	1.0	2.0	2.5	3308
25													
26	2050	1	9	19	1	7	17	72	9	1.5	2.0	2.5	3309
27	2115	2	14	34	2	12	32	238	15	1.5	2.5	2.5	3310
28	2245	2	23	43	3	17	47	400	32	2.0	2.5	2.5	3311
29	2135	3	34	64	3	23	53	570	34	1.5	2.0	2.0	3312
30	2115	2	29	49	3	17	47	641	35	1.5	2.0	2.5	3313
31	2045	3	26	56	4	18	58	608	34	1.0	2.0	2.5	3314
<b>Σ</b>	—	43	212	642	40	139	539	3661	431	37.0	47.5	51.5	—
NOBS	—	21	21	21	21	21	21	21	21	21	21	21	—
MNS	—	2.05	10.10	30.57	1.90	6.62	25.67	174.33	20.52	1.76	2.26	2.45	—

MEAN WEIGHT = 0.4688

MEAN CONDITION = 2.1587

QUALITY COUNT = 4.86





# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR

# AUGUST 1997

All observations carried out by HOWARD BARNES .

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 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 .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03	2120	5	1	2	2	0	0	2.0	2.0	2.0	3294
04	2130	3	1	1	1	0	0	2.5	3.0	2.5	3295
05											
06											
07	2120	16	2	6	7	0	1	2.5	2.5	2.5	3296
08	2155	19	3	3	13	0	0	2.0	2.5	2.5	3297
09	2135	7	1	2	4	0	0	2.0	2.5	3.0	3298
10											
11	2220	11	2	2	5	2	0	2.0	2.0	2.0	3299
12											
13	2245	11	2	4	3	2	0	2.0	2.5	2.5	3300
14	2125	7	1	0	3	2	1	1.5	2.0	2.5	3301
15	2210	2	0	0	0	2	0	2.0	2.5	2.5	3302
16	2145	2	0	0	0	1	1	1.5	2.0	2.5	3303
17	2120	5	1	0	3	1	0	1.5	2.0	2.5	3304
18											
19	2105	1	0	0	0	1	0	2.0	2.5	2.5	3305
20											
21	2055	2	0	0	0	1	1	1.5	2.0	2.5	3306
22											
23	2100	0	0	0	0	0	0	2.0	2.5	2.5	3307
24	2240	0	0	0	0	0	0	1.0	2.0	2.5	3308
25											
26	2050	10	1	2	7	0	0	1.5	2.0	2.5	3309
27	2115	15	1	2	11	0	1	1.5	2.5	2.5	3310
28	2245	24	1	6	16	0	1	2.0	2.5	2.5	3311
29	2135	36	2	11	22	0	1	1.5	2.0	2.0	3312
30	2115	31	2	12	17	0	0	1.5	2.0	2.5	3313
31	2045	27	1	8	16	0	2	1.0	2.0	2.5	3314
Σ	—	234	22	61	130	12	9	37.0	47.5	51.5	—
NOBS	—	21	21	21	21	21	21	21	21	21	—
MNS	—	11.14	1.05	2.90	6.19	0.57	0.43	1.76	2.26	2.45	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR

# AUGUST 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03	2120	0 : 0	0 : 0	1 : 4	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
04	2130	0 : 0	0 : 0	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
05										
06										
07	2120	1 : 1	0 : 0	0 : 0	2 : 5/8	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
08	2155	0 : 0	2 : 2/3	0 : 0	1 : 11	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
09	2135	0 : 0	0 : 0	1 : 6	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
10										
11	2220	0 : 0	1 : 3	1 : 4	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	2 : 1/1
12										
13	2245	0 : 0	0 : 0	2 : 3/4	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	2 : 1/1
14	2125	1 : 1	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	2 : 1/1
15	2210	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	2 : 1/1
16	2145	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
17	2120	0 : 0	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
18										
19	2105	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
20										
21	2055	1 : 1	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
22										
23	2100	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
24	2240	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
25										
26	2050	0 : 0	0 : 0	1 : 9	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
27	2115	1 : 1	0 : 0	0 : 0	1 : 13	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
28	2245	1 : 1	0 : 0	0 : 0	1 : 22	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
29	2135	1 : 1	1 : 2	0 : 0	1 : 31	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
30	2115	0 : 0	1 : 4	0 : 0	0 : 0	1 : 25	0 : 0	0 : 0	0 : 0	0 : 0
31	2045	2 : 1/1	0 : 0	0 : 0	0 : 0	1 : 24	0 : 0	0 : 0	0 : 0	0 : 0
TOTALS	—	9 : 9	7 : 20	7 : 32	6 : 90	2 : 49	0 : 0	0 : 0	0 : 0	12 : 12

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
20.9	16.3	16.3	14.0	4.7	0.0	0.0	0.0	27.9	43

NOBS = 21

$\overline{p/g}$  mean = 0.9518

$\overline{f/g}$  mean = 5.0526

$\overline{p/g}$  mean = 0.9302

$\overline{f/g}$  mean = 4.9302

GROUP COMPLEXITY INDEX (GCI) = 5.8605



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gdsso@earthling.net](mailto:gdsso@earthling.net)

## SUNSPOT RESULTS FOR **SEPTEMBER 1997**

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	2220	4	17	57	4	10	50	306	48	2.0	2.0	2.5	3315
04													
05	2145	4	19	59	3	12	42	230	37	2.0	3.0	3.0	3316
06													
07													
08													
09													
10	2055	3	62	92	7	38	108	1284	127	1.0	1.5	2.5	3317
11	2055	3	53	83	9	35	125	1108	172	1.5	2.5	2.5	3318
12	2050	3	41	71	9	20	110	843	148	1.5	2.0	2.5	3319
13	2035	4	38	78	8	19	99	756	148	1.5	2.0	2.5	3320
14													
15	2030	3	28	58	7	13	83	454	103	1.5	2.0	2.5	3321
16	2055	3	22	52	6	11	71	366	115	2.0	2.5	3.0	3322
17	2105	2	18	38	2	14	34	144	47	2.0	2.0	2.5	3323
18	2040	1	8	18	1	6	16	64	9	1.5	2.5	2.5	3324
19	2120	1	5	15	1	3	13	40	9	2.0	2.5	2.5	3325
20	2050	1	3	13	1	2	12	24	12	2.0	2.0	2.0	3326
21													
22													
23													
24													
25													
26													
27	2000	1	6	16	2	3	23	108	22	1.5	2.0	2.0	3327
28	2135	1	4	14	2	1	21	72	19	2.0	3.0	3.5	3328
29	2120	1	3	13	1	1	11	24	8	1.5	2.5	2.5	3329
30	2115	2	4	24	2	1	21	61	18	1.5	2.0	2.5	3330
31													
<b>Σ</b>	—	37	331	710	65	189	839	5884	1042	27.0	36.0	41.0	—
NOBS	—	16	16	16	16	16	16	16	16	16	16	16	—
MNS	—	2.31	20.69	43.81	4.06	11.81	52.44	367.75	65.12	1.69	2.25	2.56	—

MEAN WEIGHT = 0.4694

MEAN CONDITION = 2.1667

QUALITY COUNT = 8.12



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR

# SEPTEMBER 1997

All observations carried out by HOWARD BARNES .

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 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 .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03	2220	20	3	7	9	0	1	2.0	2.0	2.5	3315
04											
05	2145	22	3	7	11	0	1	2.0	3.0	3.0	3316
06											
07											
08											
09											
10	2055	65	3	24	38	0	0	1.0	1.5	2.5	3317
11	2055	56	3	18	35	0	0	1.5	2.5	2.5	3318
12	2050	44	3	21	20	0	0	1.5	2.0	2.5	3319
13	2035	42	4	19	19	0	0	1.5	2.0	2.5	3320
14											
15	2030	31	3	15	13	0	0	1.5	2.0	2.5	3321
16	2055	25	3	11	11	0	0	2.0	2.5	3.0	3322
17	2105	20	2	4	14	0	0	2.0	2.0	2.5	3323
18	2040	9	1	2	6	0	0	1.5	2.5	2.5	3324
19	2120	6	1	2	3	0	0	2.0	2.5	2.5	3325
20	2050	4	1	1	2	0	0	2.0	2.0	2.0	3326
21											
22											
23											
24											
25											
26											
27	2000	7	1	3	3	0	0	1.5	2.0	2.0	3327
28	2135	5	1	3	1	0	0	2.0	3.0	3.5	3328
29	2120	4	1	2	1	0	0	1.5	2.5	2.5	3329
30	2115	5	1	2	1	1	0	1.5	2.0	2.5	3330
31											
Σ	—	365	34	141	187	1	2	27.0	36.0	41.0	—
NOBS	—	16	16	16	16	16	16	16	16	16	—
MNS	—	22.81	2.12	8.81	11.69	0.06	0.12	1.69	2.25	2.56	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR

# SEPTEMBER 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03	2220	1 : 1	1 : 3	0 : 0	1 : 5	1 : 8	0 : 0	0 : 0	0 : 0	0 : 0
04										
05	2145	1 : 1	1 : 2	1 : 7	1 : 9	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
06										
07										
08										
09										
10	2055	0 : 0	0 : 0	0 : 0	2 : 16/22	1 : 24	0 : 0	0 : 0	0 : 0	0 : 0
11	2055	0 : 0	0 : 0	0 : 0	2 : 12/19	1 : 22	0 : 0	0 : 0	0 : 0	0 : 0
12	2050	0 : 0	0 : 0	0 : 0	2 : 6/20	1 : 15	0 : 0	0 : 0	0 : 0	0 : 0
13	2035	0 : 0	0 : 0	1 : 4	2 : 4/14	1 : 16	0 : 0	0 : 0	0 : 0	0 : 0
14										
15	2030	0 : 0	0 : 0	1 : 5	2 : 9/14	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
16	2055	0 : 0	0 : 0	1 : 3	2 : 6/13	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
17	2105	0 : 0	0 : 0	2 : 3/15	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
18	2040	0 : 0	0 : 0	1 : 8	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
19	2120	0 : 0	0 : 0	1 : 5	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
20	2050	0 : 0	0 : 0	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
21										
22										
23										
24										
25										
26										
27	2000	0 : 0	0 : 0	0 : 0	1 : 6	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
28	2135	0 : 0	0 : 0	0 : 0	1 : 4	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
29	2120	0 : 0	0 : 0	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
30	2115	0 : 0	0 : 0	1 : 3	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
31										
TOTALS	—	2 : 2	2 : 5	11 : 59	16 : 179	5 : 85	0 : 0	0 : 0	0 : 0	1 : 1

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
5.4	5.4	29.7	43.2	13.5	0.0	0.0	0.0	2.7	37

NOBS = 16

$\overline{p/g}$  mean = 1.6510

$\overline{f/g}$  mean = 7.9479

$\overline{p/g}$  mean = 1.7568

$\overline{f/g}$  mean = 8.9459

GROUP COMPLEXITY INDEX (GCI) = 10.7027



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gds0@earthling.net](mailto:gds0@earthling.net)

## SUNSPOT RESULTS FOR OCTOBER 1997

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	2010	2	4	24	1	3	13	49	13	1.5	2.0	2.5	3331
02													
03													
04													
05	2050	2	3	23	1	2	12	45	12	2.0	3.0	3.5	3332
06	2015	2	3	23	0	3	3	12	3	2.0	2.0	2.5	3333
07	2040	2	3	23	0	3	3	12	3	1.5	2.0	2.5	3334
08													
09													
10													
11													
12	2045	2	13	33	3	6	36	206	33	2.0	2.5	3.0	3335
13	2040	2	9	29	2	5	25	148	23	2.0	3.0	3.5	3336
14	2220	2	5	25	1	3	13	36	10	2.0	2.5	2.5	3337
15	2100	3	10	40	2	7	27	76	22	2.0	2.0	2.0	3338
16	1945	3	13	43	4	9	49	164	49	1.5	2.0	2.5	3339
17													
18													
19	2010	2	6	26	2	3	23	48	21	1.5	2.5	2.5	3340
20	2030	2	6	26	1	4	14	36	11	1.5	2.0	2.5	3341
21	2025	2	5	25	1	4	14	36	13	2.0	2.5	2.5	3342
22													
23													
24													
25													
26	2005	2	2	22	1	1	11	41	11	1.5	2.5	2.5	3343
27	2015	3	9	39	1	8	18	52	17	2.0	3.0	3.5	3344
28													
29	1930	2	14	34	3	6	36	232	33	1.5	2.0	2.0	3345
30	2055	2	19	39	3	10	40	292	34	2.0	3.0	2.5	3346
31	2150	2	11	31	3	3	33	178	33	2.0	3.0	3.0	3347
<b>Σ</b>	—	37	135	505	29	80	370	1663	341	30.5	41.5	45.5	—
NOBS	—	17	17	17	17	17	17	17	17	17	17	17	—
MNS	—	2.18	7.94	29.71	1.71	4.71	21.76	97.82	20.06	1.79	2.44	2.68	—

MEAN WEIGHT = 0.4424

MEAN CONDITION = 2.3039

QUALITY COUNT = 5.41



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR OCTOBER 1997

All observations carried out by HOWARD BARNES .

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 umbræ within penumbrae within the groups (gr) .

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

efp = number of single penumbral spots :

ef = number of single non-penumbra spots .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01	2010	5	1	0	3	1	0	1.5	2.0	2.5	3331
02											
03											
04											
05	2050	4	1	0	2	1	0	2.0	3.0	3.5	3332
06	2015	4	1	0	2	0	1	2.0	2.0	2.5	3333
07	2040	4	1	0	2	0	1	1.5	2.0	2.5	3334
08											
09											
10											
11											
12	2045	15	2	7	6	0	0	2.0	2.5	3.0	3335
13	2040	10	1	4	4	0	1	2.0	3.0	3.5	3336
14	2220	6	1	2	2	0	1	2.0	2.5	2.5	3337
15	2100	12	2	3	6	0	1	2.0	2.0	2.0	3338
16	1945	16	3	4	9	0	0	1.5	2.0	2.5	3339
17											
18											
19	2010	8	2	3	3	0	0	1.5	2.5	2.5	3340
20	2030	8	2	2	4	0	0	1.5	2.0	2.5	3341
21	2025	6	1	1	3	0	1	2.0	2.5	2.5	3342
22											
23											
24											
25											
26	2005	2	0	0	0	1	1	1.5	2.5	2.5	3343
27	2015	12	3	1	8	0	0	2.0	3.0	3.5	3344
28											
29	1930	16	2	8	6	0	0	1.5	2.0	2.0	3345
30	2055	21	2	9	10	0	0	2.0	3.0	2.5	3346
31	2150	13	2	8	3	0	0	2.0	3.0	3.0	3347
Σ	—	162	27	52	73	3	7	30.5	41.5	45.5	—
NOBS	—	17	17	17	17	17	17	17	17	17	—
MNS	—	9.53	1.59	3.06	4.29	0.18	0.41	1.79	2.44	2.68	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR

# OCTOBER 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01	2010	0:0	1:3	0:0	0:0	0:0	0:0	0:0	0:0	1:1
02										
03										
04										
05	2050	0:0	1:2	0:0	0:0	0:0	0:0	0:0	0:0	1:1
06	2015	1:1	1:2	0:0	0:0	0:0	0:0	0:0	0:0	0:0
07	2040	1:1	1:2	0:0	0:0	0:0	0:0	0:0	0:0	0:0
08										
09										
10										
11										
12	2045	0:0	1:2	0:0	1:11	0:0	0:0	0:0	0:0	0:0
13	2040	1:1	0:0	0:0	1:8	0:0	0:0	0:0	0:0	0:0
14	2220	1:1	0:0	1:4	0:0	0:0	0:0	0:0	0:0	0:0
15	2100	1:1	0:0	2:4/5	0:0	0:0	0:0	0:0	0:0	0:0
16	1945	0:0	0:0	2:3/4	1:6	0:0	0:0	0:0	0:0	0:0
17										
18										
19	2010	0:0	0:0	2:3/3	0:0	0:0	0:0	0:0	0:0	0:0
20	2030	0:0	1:3	1:3	0:0	0:0	0:0	0:0	0:0	0:0
21	2025	1:1	0:0	1:4	0:0	0:0	0:0	0:0	0:0	0:0
22										
23										
24										
25										
26	2005	1:1	0:0	0:0	0:0	0:0	0:0	0:0	0:0	1:1
27	2015	0:0	2:2/3	1:4	0:0	0:0	0:0	0:0	0:0	0:0
28										
29	1930	0:0	0:0	1:2	1:12	0:0	0:0	0:0	0:0	0:0
30	2055	0:0	0:0	1:5	1:14	0:0	0:0	0:0	0:0	0:0
31	2150	0:0	0:0	1:2	1:9	0:0	0:0	0:0	0:0	0:0
TOTALS	—	7:7	8:19	13:46	6:60	0:0	0:0	0:0	0:0	3:3

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
18.9	21.6	35.1	16.2	0.0	0.0	0.0	0.0	8.1	37

NOBS = 17

$\overline{p/g}$  mean = 0.7843

$\overline{f/g}$  mean = 3.6569

$\overline{p/g}$  mean = 0.7838

$\overline{f/g}$  mean = 3.6486

GROUP COMPLEXITY INDEX (GCI) = 4.4324





# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gdsso@earthling.net](mailto:gdsso@earthling.net)

## SUNSPOT RESULTS FOR NOVEMBER 1997

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	1920	2	32	52	5	12	62	562	56	2.0	2.0	2.5	3348
04													
05													
06													
07													
08	1945	2	3	23	0	3	3	12	2	2.0	2.0	2.5	3349
09	2025	2	8	28	1	6	16	60	10	2.0	3.0	3.5	3350
10	1935	2	13	33	2	7	27	206	24	2.0	2.5	2.5	3351
11													
12													
13													
14	2020	3	14	44	3	11	41	188	41	2.0	2.0	2.5	3352
15													
16													
17	1920	2	22	42	4	12	52	499	44	2.0	3.0	3.0	3353
18	2220	2	30	50	5	18	68	648	44	1.5	2.5	3.0	3354
19	1945	2	22	42	4	13	53	482	44	2.0	2.5	2.5	3355
20	2000	2	27	47	2	19	39	216	50	2.0	2.0	2.5	3356
21													
22													
23	2205	3	15	45	5	7	57	273	55	2.5	4.0	3.5	3357
24	1855	3	11	41	5	5	55	177	53	2.0	2.5	3.0	3358
25	1955	2	3	23	1	2	12	20	12	2.0	2.0	2.5	3359
26	2000	2	10	30	4	2	42	229	33	2.0	2.5	2.5	3360
27	1945	2	21	41	4	6	46	504	33	2.0	2.0	2.5	3361
28													
29													
30													
<b>Σ</b>	—	31	231	541	45	123	573	4076	501	28.0	34.5	38.5	—
NOBS	—	14	14	14	14	14	14	14	14	14	14	14	—
MNS	—	2.21	16.50	38.64	3.21	8.79	40.93	291.14	35.79	2.00	2.46	2.75	—

MEAN WEIGHT = 0.4222

MEAN CONDITION = 2.4048

QUALITY COUNT = 6.50



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR NOVEMBER 1997

All observations carried out by HOWARD BARNES .

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 umbræ within penumbrae within the groups (gr) .

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

efp = number of single penumbral spots :

ef = number of single non-penumbra spots .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03	1920	33	1	20	11	0	1	2.0	2.0	2.5	3348
04											
05											
06											
07											
08	1945	4	1	0	2	0	1	2.0	2.0	2.5	3349
09	2025	9	1	2	5	0	1	2.0	3.0	3.5	3350
10	1935	15	2	6	7	0	0	2.0	2.5	2.5	3351
11											
12											
13											
14	2020	16	2	3	10	0	1	2.0	2.0	2.5	3352
15											
16											
17	1920	24	2	10	12	0	0	2.0	3.0	3.0	3353
18	2220	32	2	12	18	0	0	1.5	2.5	3.0	3354
19	1945	24	2	9	13	0	0	2.0	2.5	2.5	3355
20	2000	29	2	8	19	0	0	2.0	2.0	2.5	3356
21											
22											
23	2205	18	3	8	7	0	0	2.5	4.0	3.5	3357
24	1855	13	2	5	5	1	0	2.0	2.5	3.0	3358
25	1955	4	1	1	1	0	1	2.0	2.0	2.5	3359
26	2000	11	1	8	1	0	1	2.0	2.5	2.5	3360
27	1945	22	1	15	5	0	1	2.0	2.0	2.5	3361
28											
29											
30											
Σ	—	254	23	107	116	1	7	28.0	34.5	38.5	—
NOBS	—	14	14	14	14	14	14	14	14	14	—
MNS	—	18.14	1.64	7.64	8.29	0.07	0.50	2.00	2.46	2.75	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR

# NOVEMBER 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03	1920	1 : 1	0 : 0	0 : 0	1 : 31	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
04										
05										
06										
07										
08	1945	2 : 1/2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
09	2025	1 : 1	0 : 0	1 : 7	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
10	1935	0 : 0	1 : 2	0 : 0	1 : 11	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
11										
12										
13										
14	2020	1 : 1	0 : 0	1 : 5	1 : 8	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
15										
16										
17	1920	0 : 0	0 : 0	1 : 3	0 : 0	1 : 19	0 : 0	0 : 0	0 : 0	0 : 0
18	2220	0 : 0	0 : 0	1 : 6	0 : 0	1 : 24	0 : 0	0 : 0	0 : 0	0 : 0
19	1945	0 : 0	0 : 0	1 : 4	0 : 0	1 : 18	0 : 0	0 : 0	0 : 0	0 : 0
20	2000	0 : 0	0 : 0	2 : 2/25	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
21										
22										
23	2205	0 : 0	0 : 0	2 : 2/4	0 : 0	1 : 9	0 : 0	0 : 0	0 : 0	0 : 0
24	1855	0 : 0	0 : 0	1 : 4	1 : 6	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
25	1955	1 : 1	0 : 0	1 : 2	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
26	2000	1 : 1	0 : 0	0 : 0	0 : 0	1 : 9	0 : 0	0 : 0	0 : 0	0 : 0
27	1945	1 : 1	0 : 0	0 : 0	0 : 0	1 : 20	0 : 0	0 : 0	0 : 0	0 : 0
28										
29										
30										
TOTALS	—	8 : 9	1 : 2	11 : 64	4 : 56	6 : 99	0 : 0	0 : 0	0 : 0	1 : 1

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
25.8	3.2	35.5	12.9	19.4	0.0	0.0	0.0	3.2	31

NOBS = 14

$\overline{p/g}$  mean = 1.4524

$\overline{f/g}$  mean = 7.7738

$\overline{p/g}$  mean = 1.4516

$\overline{f/g}$  mean = 7.4516

GROUP COMPLEXITY INDEX (GCI) = 8.9032



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: [gds0@earthling.net](mailto:gds0@earthling.net)

## SUNSPOT RESULTS FOR **DECEMBER 1997**

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													
04													
05													
06													
07													
08	1935	5	17	67	3	13	43	148	64	2.0	2.0	2.5	3362
09													
10	2130	4	19	59	4	12	52	263	45	2.5	2.5	2.5	3363
11	2105	5	29	79	7	14	84	499	75	2.0	2.5	2.5	3364
12	2040	4	20	60	6	9	69	351	65	2.0	3.0	3.0	3365
13	2020	3	10	40	3	6	36	109	31	1.5	2.5	2.5	3366
14	2020	4	11	51	4	6	46	175	47	1.5	2.0	2.5	3367
15													
16													
17	2015	2	8	28	2	4	24	130	29	2.5	2.5	3.0	3368
18	2030	1	9	19	1	7	17	72	12	2.5	2.5	2.5	3369
19													
20													
21	2010	2	8	28	4	3	43	124	45	2.5	3.0	3.0	3370
22													
23													
24													
25	2015	3	21	51	5	11	61	521	74	2.0	2.5	2.5	3371
26	2005	2	17	37	4	9	49	463	69	2.0	2.5	2.5	3372
27													
28	2020	2	20	40	5	8	58	360	74	2.0	2.0	2.5	3373
29													
30													
31	2005	3	25	55	5	9	59	360	83	1.5	2.0	2.0	3374
<b>Σ</b>	—	40	214	614	53	111	641	3575	713	26.5	31.5	33.5	—
NOBS	—	13	13	13	13	13	13	13	13	13	13	13	—
MNS	—	3.08	16.46	47.23	4.08	8.54	49.31	275.00	54.85	2.04	2.42	2.58	—

MEAN WEIGHT = 0.4322

MEAN CONDITION = 2.3462

QUALITY COUNT = 11.00



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR DECEMBER 1997

All observations carried out by HOWARD BARNES .

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 umbræ within penumbrae within the groups (gr) .

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

efp = number of single penumbral spots :

ef = number of single non-penumbra spots .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01											
02											
03											
04											
05											
06											
07											
08	1935	20	3	3	12	1	1	2.0	2.0	2.5	3362
09											
10	2130	21	2	6	11	1	1	2.5	2.5	2.5	3363
11	2105	32	3	14	13	1	1	2.0	2.5	2.5	3364
12	2040	23	3	10	9	1	0	2.0	3.0	3.0	3365
13	2020	12	2	3	6	1	0	1.5	2.5	2.5	3366
14	2020	13	2	4	5	1	1	1.5	2.0	2.5	3367
15											
16											
17	2015	9	1	4	3	0	1	2.5	2.5	3.0	3368
18	2030	10	1	2	7	0	0	2.5	2.5	2.5	3369
19											
20											
21	2010	10	2	5	3	0	0	2.5	3.0	3.0	3370
22											
23											
24											
25	2015	24	3	10	11	0	0	2.0	2.5	2.5	3371
26	2005	19	2	8	9	0	0	2.0	2.5	2.5	3372
27											
28	2020	22	2	12	8	0	0	2.0	2.0	2.5	3373
29											
30											
31	2005	28	3	16	9	0	0	1.5	2.0	2.0	3374
Σ	—	243	29	97	106	6	5	26.5	31.5	33.5	—
NOBS	—	13	13	13	13	13	13	13	13	13	—
MNS	—	18.69	2.23	7.46	8.15	0.46	0.38	2.04	2.42	2.58	—



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## SUNSPOT CENSUS BY CLASSIFICATION FOR

# DECEMBER 1997

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 g : f	B g : f	C g : f	D g : f	E g : f	F g : f	G g : f	H g : f	J g : f
01										
02										
03										
04										
05										
06										
07										
08	1935	1 : 1	1 : 5	2 : 2/8	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1	0 : 0
09										
10	2130	1 : 1	1 : 6	0 : 0	1 : 11	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
11	2105	1 : 1	1 : 2	0 : 0	2 : 12/13	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
12	2040	0 : 0	1 : 2	0 : 0	2 : 8/9	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
13	2020	0 : 0	0 : 0	2 : 3/6	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
14	2020	1 : 1	1 : 2	0 : 0	1 : 7	0 : 0	0 : 0	0 : 0	0 : 0	1 : 1
15										
16										
17	2015	1 : 1	0 : 0	0 : 0	1 : 7	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
18	2030	0 : 0	0 : 0	1 : 9	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
19										
20										
21	2010	0 : 0	0 : 0	1 : 2	1 : 6	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
22										
23										
24										
25	2015	0 : 0	1 : 2	0 : 0	0 : 0	1 : 17	0 : 0	0 : 0	1 : 2	0 : 0
26	2005	0 : 0	0 : 0	0 : 0	0 : 0	1 : 15	0 : 0	0 : 0	1 : 2	0 : 0
27										
28	2020	0 : 0	0 : 0	0 : 0	2 : 6/14	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
29										
30										
31	2005	0 : 0	0 : 0	1 : 9	2 : 6/10	0 : 0	0 : 0	0 : 0	0 : 0	0 : 0
TOTALS	—	5 : 5	6 : 19	7 : 39	12 : 109	2 : 32	0 : 0	0 : 0	3 : 5	5 : 5

### REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
12.5	15.0	17.5	30.0	5.0	0.0	0.0	7.5	12.5	40
NOBS = 13		$\overline{p/g}$ mean = 1.4103			$\overline{f/g}$ mean = 5.8359				
		$\overline{p/g}$ mean = 1.3250			$\overline{f/g}$ mean = 5.3500				
GROUP COMPLEXITY INDEX (GCI) = 6.6750									



# GEORGI DOBROVOLSKI SOLAR OBSERVATORY

## OBSERVED ANNUAL MEANS OF SUNSPOT DATA FOR 1997

All observations carried out by HOWARD BARNES .  
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 .

g	=	1.52
f	=	7.80
Wolf Number	=	22.96
Truncated Wolf Number	=	16.09
p	=	1.57
s	=	5.23
Pettisindex	=	20.95
Beckindex	=	121.05
Classification Value	=	20.09
Quality Count	=	4.14
Inter-Sol Index	=	8.87
Mean Weight	=	0.4765
Q	=	1.7835
S	=	2.2113
T	=	2.4433
Mean Condition	=	2.1460
Total Number of Observations	=	194