



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

MONTHLY SUNSPOT REPORTS

2001

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GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net

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SUNSPOT RESULTS FOR JANUARY 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	1955	8	43	123	13	17	147	918	153	1.5	2.5	2.0	3857
03	2005	8	42	122	9	18	108	815	131	1.5	2.0	2.0	3858
04	2000	10	46	146	13	17	147	994	145	1.5	2.0	2.0	3859
05	2010	11	52	162	14	20	160	1053	198	1.5	2.0	2.0	3860
06	1955	12	66	186	18	21	201	1183	247	2.0	2.5	2.5	3861
07	2025	12	47	167	17	20	190	937	235	1.5	2.5	3.0	3862
08	2015	10	46	146	13	22	152	757	167	2.0	3.0	2.5	3863
09													
10													
11													
12	2035	7	63	133	18	20	200	1845	123	2.0	3.0	3.0	3864
13													
14													
15	2045	8	75	155	13	32	162	2091	125	1.5	2.5	2.5	3865
16	2115	5	40	90	10	17	117	1163	96	1.5	2.0	2.5	3866
17													
18	1955	6	20	80	9	7	97	403	84	2.0	2.5	2.5	3867
19													
20													
21													
22	2035	7	54	124	16	25	185	1152	149	2.5	2.5	2.5	3868
23	2010	10	62	162	16	36	196	1065	148	1.5	2.5	2.5	3869
24													
25													
26													
27	1955	9	63	153	14	24	164	1174	174	1.5	2.0	2.5	3870
28	2005	8	51	131	12	21	141	1082	132	1.5	2.5	2.5	3871
29	2010	5	44	94	11	21	131	876	86	1.5	3.0	3.0	3872
30													
31	2020	8	36	116	11	16	126	739	123	2.0	2.0	2.0	3873
Σ	—	144	850	2290	227	354	2624	18247	2516	29.0	41.0	41.5	—
NOBS	—	17	17	17	17	17	17	17	17	17	17	17	—
MNS	—	8.47	50.00	134.71	13.35	20.82	154.35	1073.35	148.00	1.71	2.41	2.44	—

MEAN CONDITION = 2.1863 TRUNCATED WOLF NUMBER = 120.18 QUALITY COUNT = 26.06 SQUARED QUALITY COUNT = 93.24



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR JANUARY 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 .

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-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	1955	48	5	23	17	3	0	1.5	2.5	2.0	3857
03	2005	47	5	23	16	1	2	1.5	2.0	2.0	3858
04	2000	53	7	27	16	2	1	1.5	2.0	2.0	3859
05	2010	58	6	29	18	3	2	1.5	2.0	2.0	3860
06	1955	76	10	43	21	2	0	2.0	2.5	2.5	3861
07	2025	57	10	26	19	1	1	1.5	2.5	3.0	3862
08	2015	54	8	23	21	1	1	2.0	3.0	2.5	3863
09											
10											
11											
12	2035	69	6	42	20	1	0	2.0	3.0	3.0	3864
13											
14											
15	2045	80	5	42	30	1	2	1.5	2.5	2.5	3865
16	2115	43	3	22	16	1	1	1.5	2.0	2.5	3866
17											
18	1955	22	2	10	6	3	1	2.0	2.5	2.5	3867
19											
20											
21											
22	2035	60	6	29	24	0	1	2.5	2.5	2.5	3868
23	2010	69	7	25	34	1	2	1.5	2.5	2.5	3869
24											
25											
26											
27	1955	71	8	39	23	0	1	1.5	2.0	2.5	3870
28	2005	57	6	30	19	0	2	1.5	2.5	2.5	3871
29	2010	49	5	23	21	0	0	1.5	3.0	3.0	3872
30											
31	2020	42	6	19	15	1	1	2.0	2.0	2.0	3873
Σ	—	955	105	475	336	21	18	29.0	41.0	41.5	—
NOBS	—	17	17	17	17	17	17	17	17	17	—
MNS	—	56.18	6.18	27.94	19.76	1.24	1.06	1.71	2.41	2.44	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR JANUARY 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	1955	0	0	0	0	2	2/4	2	6/7	1	21	0	0	0	0	0	0	3	1/1/1
03	2005	2	1/1	0	0	3	2/4/4	1	5	1	24	0	0	0	0	0	0	1	1
04	2000	1	1	0	0	3	2/3/5	1	7	1	21	0	0	0	0	0	0	4	1/1/2/3
05	2010	2	1/1	0	0	2	2/7	2	5/13	1	18	0	0	0	0	1	2	3	1/1/1
06	1955	0	0	1	2	3	2/3/7	5	3/5/6/9/12	1	15	0	0	0	0	0	0	2	1/1
07	2025	1	1	0	0	3	4/4/4	5	2/3/6/7/8	0	0	0	0	1	4	1	3	1	1
08	2015	1	1	0	0	4	2/4/4/8	3	4/6/12	0	0	0	0	0	0	1	4	1	1
09																			
10																			
11																			
12	2035	0	0	0	0	2	2/3	1	11	1	8	1	36	0	0	0	0	2	1/2
13																			
14																			
15	2045	2	1/1	1	2	2	2/3	1	19	0	0	1	46	0	0	0	0	1	1
16	2115	1	1	0	0	1	3	1	9	0	0	1	26	0	0	0	0	1	1
17																			
18	1955	1	1	0	0	0	0	2	5/11	0	0	0	0	0	0	0	0	3	1/1/1
19																			
20																			
21																			
22	2035	1	1	0	0	1	3	3	3/7/8	2	10/22	0	0	0	0	0	0	0	0
23	2010	2	1/1	0	0	3	2/5/7	3	3/11/17	1	14	0	0	0	0	0	0	1	1
24																			
25																			
26																			
27	1955	1	1	1	2	2	3/7	4	3/4/6/11	1	26	0	0	0	0	0	0	0	0
28	2005	2	1/1	0	0	3	2/2/3	1	8	1	32	0	0	0	0	0	0	1	2
29	2010	0	0	1	3	2	3/4	1	6	1	28	0	0	0	0	0	0	0	0
30																			
31	2020	1	1	0	0	2	2/2	2	5/7	2	7/11	0	0	0	0	0	0	1	1
TOTALS	—	18	18	4	9	38	135	38	280	14	257	3	108	1	4	3	9	25	30

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
12.5	2.8	26.4	26.4	9.7	2.1	0.7	2.1	17.4	144

NOBS = 17 \bar{p}/\bar{g} mean = 1.6325 \bar{f}/\bar{g} mean = 6.1333
 \bar{p}/\bar{g} mean = 1.5764 \bar{f}/\bar{g} mean = 5.9028

GROUP COMPLEXITY INDEX (GCI) = 7.4792



**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	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
1999 AUGUST	6.64	109.48	121.94	975.9	123.68	20.42	47.65
SEPTEMBER	6.99	115.90	129.49	1041.7	132.31	21.70	50.86
OCTOBER	7.42	124.67	139.44	1154.3	143.68	23.32	55.65
NOVEMBER	7.72	131.11	146.09	1251.5	149.83	24.33	59.32
DECEMBER	7.81	133.42	148.92	1300.7	151.72	24.69	60.78
2000 JANUARY	7.96	137.71	155.60	1401.8	155.56	25.37	63.72
FEBRUARY	8.30	143.82	163.09	1471.6	160.19	26.42	66.58
MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

'BARNES 13' METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
1999 AUGUST	6.76	112.23	126.03	1024.5	126.96	20.90	49.25
SEPTEMBER	6.89	115.04	129.59	1073.2	130.63	21.43	50.90
OCTOBER	7.10	119.71	135.18	1147.0	136.87	22.28	53.66
NOVEMBER	7.30	124.39	140.23	1219.1	142.31	23.08	56.46
DECEMBER	7.51	128.40	144.02	1265.1	146.76	23.80	58.61
2000 JANUARY	7.84	134.68	150.78	1334.7	153.59	24.94	61.82
FEBRUARY	8.32	143.47	160.74	1430.8	162.77	26.51	66.17
MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



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SUNSPOT RESULTS FOR FEBRUARY 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													
04	2015	10	45	145	15	15	165	1171	147	1.5	2.0	2.0	3874
05													
06	2050	7	76	146	15	45	195	2355	157	2.0	2.5	2.5	3875
07													
08	2030	10	49	149	16	25	185	1254	161	2.0	2.0	2.0	3876
09	2120	11	46	156	18	21	201	1039	178	1.5	2.0	2.0	3877
10													
11													
12													
13	2215	7	24	94	10	10	110	420	111	1.0	2.0	2.0	3878
14													
15													
16													
17	2005	7	20	90	8	8	88	349	75	2.0	2.0	2.5	3879
18													
19													
20	2130	8	50	130	14	16	156	854	129	2.0	2.5	3.0	3880
21	2035	10	41	141	9	20	110	606	93	1.5	1.5	2.0	3881
22													
23	2020	5	25	75	8	9	89	425	76	2.0	2.5	2.5	3882
24	2035	4	23	63	6	13	73	354	67	1.5	2.0	2.0	3883
25													
26	2055	4	36	76	8	15	95	544	56	2.0	2.0	2.0	3884
27	2025	4	28	68	4	15	55	479	45	1.5	2.0	2.5	3885
28	2045	4	30	70	5	19	69	475	57	1.5	2.0	2.5	3886
29													
30													
31													
Σ	—	91	493	1403	136	231	1591	10325	1352	22.0	27.0	29.5	—
NOBS	—	13	13	13	13	13	13	13	13	13	13	13	—
MNS	—	7.00	37.92	107.92	10.46	17.77	122.38	794.23	104.00	1.69	2.08	2.27	—

MEAN CONDITION = 2.0128 TRUNCATED WOLF NUMBER = 90.08 QUALITY COUNT = 21.00 SQUARED QUALITY COUNT = 76.54



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SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR FEBRUARY 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											
04	2015	51	6	28	13	2	2	1.5	2.0	2.0	3874
05											
06	2050	82	6	31	44	0	1	2.0	2.5	2.5	3875
07											
08	2030	57	8	23	24	1	1	2.0	2.0	2.0	3876
09	2120	53	7	23	19	2	2	1.5	2.0	2.0	3877
10											
11											
12											
13	2215	29	5	12	10	2	0	1.0	2.0	2.0	3878
14											
15											
16											
17	2005	22	2	9	6	3	2	2.0	2.0	2.5	3879
18											
19											
20	2130	55	5	32	15	2	1	2.0	2.5	3.0	3880
21	2035	46	5	19	17	2	3	1.5	1.5	2.0	3881
22											
23	2020	28	3	15	8	1	1	2.0	2.5	2.5	3882
24	2035	27	4	10	13	0	0	1.5	2.0	2.0	3883
25											
26	2055	39	3	21	14	0	1	2.0	2.0	2.0	3884
27	2025	30	2	12	14	1	1	1.5	2.0	2.5	3885
28	2045	33	3	10	19	1	0	1.5	2.0	2.5	3886
29											
30											
31											
Σ	—	552	59	245	216	17	15	22.0	27.0	29.5	—
NOBS	—	13	13	13	13	13	13	13	13	13	—
MNS	—	42.46	4.54	18.85	16.62	1.31	1.15	1.69	2.08	2.27	—



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 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																			
04	2015	2	1/1	1	2	0	0	2	4/6	2	5/8	1	16	0	0	0	0	2	1/1
05																			
06	2050	1	1	0	0	1	4	1	4	1	15	3	11/14/27	0	0	0	0	0	0
07																			
08	2030	1	1	1	2	3	2/2/2	0	0	2	11/14	1	12	1	2	0	0	1	1
09	2120	2	1/1	0	0	2	2/2	3	3/6/16	1	7	0	0	1	6	0	0	2	1/1
10																			
11																			
12																			
13	2215	0	0	0	0	2	2/3	3	4/5/8	0	0	0	0	0	0	0	0	2	1/1
14																			
15																			
16																			
17	2005	2	1/1	0	0	1	4	1	11	0	0	0	0	0	0	0	0	3	1/1/1
18																			
19																			
20	2130	1	1	0	0	2	3/4	3	5/8/27	0	0	0	0	0	0	0	0	2	1/1
21	2035	3	1/1/1	2	2/5	1	3	2	7/19	0	0	0	0	0	0	0	0	2	1/1
22																			
23	2020	1	1	0	0	1	3	2	9/11	0	0	0	0	0	0	0	0	1	1
24	2035	0	0	0	0	2	2/4	2	7/10	0	0	0	0	0	0	0	0	0	0
25																			
26	2055	1	1	0	0	2	4/5	1	26	0	0	0	0	0	0	0	0	0	0
27	2025	1	1	0	0	1	3	1	23	0	0	0	0	0	0	0	0	1	1
28	2045	0	0	1	6	0	0	2	8/15	0	0	0	0	0	0	0	0	1	1
29																			
30																			
31																			
TOTALS	—	15	15	5	17	18	54	23	242	6	60	5	80	2	8	0	0	17	17

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
16.5	5.5	19.8	25.3	6.6	5.5	2.2	0.0	18.7	91

NOBS = 13

$\bar{p/g}$ mean = 1.4962

$\bar{f/g}$ mean = 5.7942

$\bar{p/g}$ mean = 1.4945

$\bar{f/g}$ mean = 5.4176

GROUP COMPLEXITY INDEX (GCI) = 6.9121



**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	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
1999 SEPTEMBER	6.99	115.90	129.49	1041.7	132.31	21.70	50.86
OCTOBER	7.42	124.67	139.44	1154.3	143.68	23.32	55.65
NOVEMBER	7.72	131.11	146.09	1251.5	149.83	24.33	59.32
DECEMBER	7.81	133.42	148.92	1300.7	151.72	24.69	60.78
2000 JANUARY	7.96	137.71	155.60	1401.8	155.56	25.37	63.72
FEBRUARY	8.30	143.82	163.09	1471.6	160.19	26.42	66.58
MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

'BARNES 13' METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
1999 SEPTEMBER	6.89	115.04	129.59	1073.2	130.63	21.43	50.90
OCTOBER	7.10	119.71	135.18	1147.0	136.87	22.28	53.66
NOVEMBER	7.30	124.39	140.23	1219.1	142.31	23.08	56.46
DECEMBER	7.51	128.40	144.02	1265.1	146.76	23.80	58.61
2000 JANUARY	7.84	134.68	150.78	1334.7	153.59	24.94	61.82
FEBRUARY	8.32	143.47	160.74	1430.8	162.77	26.51	66.17
MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net

WEBSITE: www.cv-helios.net/gdso

SUNSPOT RESULTS FOR MARCH 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	2010	5	14	64	6	7	67	171	70	1.5	2.0	2.0	3887
02	2045	6	27	87	10	12	112	451	86	1.5	1.5	2.0	3888
03													
04													
05													
06													
07	2000	6	50	110	11	17	127	1426	148	1.5	1.5	2.0	3889
08													
09	2010	5	51	101	13	14	144	1658	130	2.0	2.0	2.5	3890
10	2125	7	51	121	11	18	128	951	137	1.0	1.5	2.5	3891
11	2115	8	51	131	12	21	141	1084	143	1.0	2.5	2.5	3892
12	2155	5	41	91	12	14	134	1402	86	2.0	2.5	2.5	3893
13													
14	2055	4	54	94	12	23	143	1674	65	2.0	2.0	2.5	3894
15													
16													
17	2025	4	28	68	10	12	112	779	77	2.0	2.0	2.0	3895
18	2045	5	31	81	9	13	103	908	58	2.0	2.5	2.0	3896
19	2100	4	30	70	8	13	93	848	49	1.5	2.0	2.0	3897
20													
21	2100	8	45	125	17	15	185	1105	163	1.5	2.0	2.5	3898
22	2140	8	48	128	15	17	167	1268	162	1.5	2.0	2.0	3899
23	2055	8	56	136	15	18	168	1551	178	1.5	2.0	2.5	3900
24	2055	10	88	188	22	38	258	2452	247	1.0	2.0	2.5	3901
25	2120	12	104	224	30	39	339	2999	279	1.0	1.5	2.0	3902
26	2125	13	136	266	32	46	366	4202	302	1.5	2.0	2.0	3903
27													
28													
29	2050	13	152	282	27	49	319	3790	248	2.0	2.5	3.0	3904
30	2030	14	126	266	26	52	312	3247	230	2.5	3.0	3.5	3905
31	2110	12	102	222	27	34	304	2660	270	2.5	3.5	3.5	3906
Σ	—	157	1285	2855	325	472	3722	34626	3128	33.0	42.5	48.0	—
NOBS	—	20	20	20	20	20	20	20	20	20	20	20	—
MNS	—	7.85	64.25	142.75	16.25	23.60	186.10	1731.30	156.40	1.65	2.12	2.40	—

MEAN CONDITION = 0.5028 TRUNCATED WOLF NUMBER = 129.55 QUALITY COUNT = 26.80 SQUARED QUALITY COUNT = 109.50



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR MARCH 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 .

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	2010	18	4	6	7	1	0	1.5	2.0	2.0	3887
02	2045	31	4	14	11	1	1	1.5	1.5	2.0	3888
03											
04											
05											
06											
07	2000	56	6	33	17	0	0	1.5	1.5	2.0	3889
08											
09	2010	55	4	37	13	0	1	2.0	2.0	2.5	3890
10	2125	56	5	32	17	1	1	1.0	1.5	2.5	3891
11	2115	57	6	29	20	1	1	1.0	2.5	2.5	3892
12	2155	43	2	24	14	3	0	2.0	2.5	2.5	3893
13											
14	2055	57	3	31	22	0	1	2.0	2.0	2.5	3894
15											
16											
17	2025	31	3	15	12	1	0	2.0	2.0	2.0	3895
18	2045	35	4	18	12	0	1	2.0	2.5	2.0	3896
19	2100	34	4	17	13	0	0	1.5	2.0	2.0	3897
20											
21	2100	51	6	29	14	1	1	1.5	2.0	2.5	3898
22	2140	53	5	29	16	2	1	1.5	2.0	2.0	3899
23	2055	61	5	37	16	1	2	1.5	2.0	2.5	3900
24	2055	96	8	48	38	2	0	1.0	2.0	2.5	3901
25	2120	112	8	62	38	3	1	1.0	1.5	2.0	3902
26	2125	144	8	86	45	4	1	1.5	2.0	2.0	3903
27											
28											
29	2050	163	11	101	49	2	0	2.0	2.5	3.0	3904
30	2030	137	11	73	50	1	2	2.5	3.0	3.5	3905
31	2110	112	10	66	34	2	0	2.5	3.5	3.5	3906
Σ	—	1402	117	787	458	26	14	33.0	42.5	48.0	—
NOBS	—	20	20	20	20	20	20	20	20	20	—
MNS	—	70.10	5.85	39.35	22.90	1.30	0.70	1.65	2.12	2.40	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR MARCH 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	2010	0	0	0	0	3	2/3/5	1	3	0	0	0	0	0	0	0	0	1	1
02	2045	1	1	0	0	2	2/2	2	10/11	0	0	0	0	0	0	0	0	1	1
03																			
04																			
05																			
06																			
07	2000	0	0	2	2/3	0	0	1	12	0	0	2	8/23	0	0	0	0	1	2
08																			
09	2010	1	1	0	0	1	2	1	5	0	0	2	21/22	0	0	0	0	0	0
10	2125	1	1	1	2	1	7	2	6/16	1	18	0	0	0	0	0	0	1	1
11	2115	1	1	1	3	2	3/4	0	0	3	4/14/21	0	0	0	0	0	0	1	1
12	2155	0	0	0	0	0	0	0	0	1	7	1	31	0	0	0	0	3	1/1/1
13																			
14	2055	1	1	0	0	1	4	1	7	0	0	1	42	0	0	0	0	0	0
15																			
16																			
17	2025	0	0	0	0	1	5	1	5	0	0	1	17	0	0	0	0	1	1
18	2045	1	1	1	2	2	2/2	0	0	0	0	1	24	0	0	0	0	0	0
19	2100	0	0	1	2	2	2/4	0	0	0	0	1	22	0	0	0	0	0	0
20																			
21	2100	1	1	1	2	0	0	2	7/9	2	5/7	1	13	0	0	0	0	1	1
22	2140	1	1	1	2	0	0	2	4/10	1	11	1	18	0	0	1	1	1	1
23	2055	2	1/1	0	0	0	0	2	6/9	1	12	2	11/15	0	0	0	0	1	1
24	2055	0	0	0	0	3	4/5/7	2	7/8	0	0	3	15/18/22	0	0	0	0	2	1/1
25	2120	1	1	0	0	2	2/4	2	6/12	2	7/14	2	19/36	0	0	1	1	2	1/1
26	2125	1	1	0	0	1	2	3	6/14/16	1	8	2	23/53	1	9	0	0	4	1/1/1/1
27																			
28																			
29	2050	0	0	0	0	5	2/3/3/6/7	4	9/15/16/21	0	0	1	66	0	0	0	0	3	1/1/2
30	2030	2	1/1	1	2	4	2/2/3/5	3	6/10/19	1	18	1	54	0	0	0	0	2	1/2
31	2110	0	0	0	0	3	2/3/3	5	5/6/10/11/12	0	0	1	46	0	0	0	0	3	1/1/2
TOTALS	—	14	14	9	20	33	114	34	329	13	146	23	619	1	9	2	2	28	32

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
8.9	5.7	21.0	21.7	8.3	14.6	0.6	1.3	17.8	157

NOBS = 20 \bar{p}/\bar{g} mean = 2.0646 \bar{f}/\bar{g} mean = 7.8820
 \bar{p}/\bar{g} mean = 2.0701 \bar{f}/\bar{g} mean = 8.1847

GROUP COMPLEXITY INDEX (GCI) = 10.2548



**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	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
1999 OCTOBER	7.42	124.67	139.44	1154.3	143.68	23.32	55.65
NOVEMBER	7.72	131.11	146.09	1251.5	149.83	24.33	59.32
DECEMBER	7.81	133.42	148.92	1300.7	151.72	24.69	60.78
2000 JANUARY	7.96	137.71	155.60	1401.8	155.56	25.37	63.72
FEBRUARY	8.30	143.82	163.09	1471.6	160.19	26.42	66.58
MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

BARNES-13 METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
1999 OCTOBER	7.10	119.71	135.18	1147.0	136.87	22.28	53.66
NOVEMBER	7.30	124.39	140.23	1219.1	142.31	23.08	56.46
DECEMBER	7.51	128.40	144.02	1265.1	146.76	23.80	58.61
2000 JANUARY	7.84	134.68	150.78	1334.7	153.59	24.94	61.82
FEBRUARY	8.32	143.47	160.74	1430.8	162.77	26.51	66.17
MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

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SUNSPOT RESULTS FOR APRIL 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	2025	12	72	192	18	25	205	1790	246	1.5	2.0	2.5	3907
04													
05	2050	11	43	153	13	18	148	774	194	1.5	1.5	2.5	3908
06	2155	8	52	132	11	21	131	1073	164	2.0	2.0	2.5	3909
07	2055	8	43	123	15	14	164	956	199	1.5	1.5	2.5	3910
08	2105	10	58	158	15	22	172	1218	157	1.0	2.0	2.0	3911
09													
10													
11													
12													
13	2100	8	46	126	14	18	158	762	183	2.5	3.0	3.0	3912
14	2050	8	27	107	11	6	116	604	159	2.5	2.5	2.5	3913
15													
16	2050	4	7	47	2	4	24	73	21	1.5	1.5	2.0	3914
17													
18													
19	2040	6	31	91	10	13	113	775	118	1.5	1.5	2.5	3915
20													
21	2150	8	70	150	19	18	208	1920	170	2.0	2.0	2.0	3916
22													
23	2055	6	70	130	13	21	151	2232	159	2.5	2.5	2.5	3917
24													
25	2055	9	69	159	17	17	187	2066	134	1.5	2.0	2.0	3918
26													
27													
28													
29													
30													
31													
Σ	—	98	588	1568	158	197	1777	14243	1904	21.5	24.0	28.5	—
NOBS	—	12	12	12	12	12	12	12	12	12	12	12	—
MNS	—	8.17	49.00	130.67	13.17	16.42	148.08	1186.92	158.67	1.79	2.00	2.38	—

MEAN CONDITION = 2.0556 TRUNCATED WOLF NUMBER = 115.42 QUALITY COUNT = 24.75 SQUARED QUALITY COUNT = 88.92



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR APRIL 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 .

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-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	2025	81	9	45	24	2	1	1.5	2.0	2.5	3907
04											
05	2050	50	7	23	16	2	2	1.5	1.5	2.5	3908
06	2155	57	5	29	20	2	1	2.0	2.0	2.5	3909
07	2055	47	4	25	14	4	0	1.5	1.5	2.5	3910
08	2105	63	5	32	21	4	1	1.0	2.0	2.0	3911
09											
10											
11											
12											
13	2100	53	7	27	18	1	0	2.5	3.0	3.0	3912
14	2050	32	5	19	5	2	1	2.5	2.5	2.5	3913
15											
16	2050	9	2	2	3	1	1	1.5	1.5	2.0	3914
17											
18											
19	2040	35	4	17	12	1	1	1.5	1.5	2.5	3915
20											
21	2150	76	6	50	18	2	0	2.0	2.0	2.0	3916
22											
23	2055	74	4	47	21	2	0	2.5	2.5	2.5	3917
24											
25	2055	75	6	50	16	2	1	1.5	2.0	2.0	3918
26											
27											
28											
29											
30											
31											
Σ	—	652	64	366	188	25	9	21.5	24.0	28.5	—
NOBS	—	12	12	12	12	12	12	12	12	12	—
MNS	—	54.33	5.33	30.50	15.67	2.08	0.75	1.79	2.00	2.38	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR APRIL 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	2025	1	1	0	0	4	2/2/5/8	1	11	1	18	1	14	1	7	0	0	3	1/1/2
04																			
05	2050	2	1/1	1	2	3	2/3/3	2	6/10	1	13	0	0	0	0	1	1	1	1
06	2155	1	1	1	2	1	2	2	7/15	1	23	0	0	0	0	0	0	2	1/1
07	2055	0	0	0	0	1	2	2	8/12	1	17	0	0	0	0	1	1	3	1/1/1
08	2105	1	1	2	2/2	0	0	2	11/14	1	24	0	0	0	0	0	0	4	1/1/1/1
09																			
10																			
11																			
12																			
13	2100	0	0	0	0	2	2/6	4	3/4/7/13	1	10	0	0	0	0	0	0	1	1
14	2050	1	1	0	0	0	0	3	3/5/6	1	8	0	0	0	0	0	0	3	1/1/2
15																			
16	2050	1	1	1	2	1	3	0	0	0	0	0	0	0	0	0	0	1	1
17																			
18																			
19	2040	1	1	0	0	1	4	2	4/7	0	0	1	14	0	0	0	0	1	1
20																			
21	2150	0	0	1	2	0	0	3	8/9/13	0	0	1	34	0	0	0	0	3	1/1/2
22																			
23	2055	0	0	0	0	1	2	2	5/8	0	0	1	53	0	0	0	0	2	1/1
24																			
25	2055	1	1	1	2	3	2/3/4	1	4	0	0	1	51	0	0	0	0	2	1/1
26																			
27																			
28																			
29																			
30																			
31																			
TOTALS	—	9	9	7	14	17	55	24	193	7	113	5	166	1	7	2	2	26	29

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
9.2	7.1	17.3	24.5	7.1	5.1	1.0	2.0	26.5	98

NOBS = 12 \bar{p}/\bar{g} mean = 1.5962 \bar{f}/\bar{g} mean = 5.9758
 \bar{p}/\bar{g} mean = 1.6122 \bar{f}/\bar{g} mean = 6.0000

GROUP COMPLEXITY INDEX (GCI) = 7.6122



**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	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
1999 NOVEMBER	7.72	131.11	146.09	1251.5	149.83	24.33	59.32
DECEMBER	7.81	133.42	148.92	1300.7	151.72	24.69	60.78
2000 JANUARY	7.96	137.71	155.60	1401.8	155.56	25.37	63.72
FEBRUARY	8.30	143.82	163.09	1471.6	160.19	26.42	66.58
MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

BARNES-13 METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
1999 NOVEMBER	7.30	124.39	140.23	1219.1	142.31	23.08	56.46
DECEMBER	7.51	128.40	144.02	1265.1	146.76	23.80	58.61
2000 JANUARY	7.84	134.68	150.78	1334.7	153.59	24.94	61.82
FEBRUARY	8.32	143.47	160.74	1430.8	162.77	26.51	66.17
MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net

WEBSITE: www.cv-helios.net/gdso

SUNSPOT RESULTS FOR MAY 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													
04													
05	2150	8	56	136	16	23	183	1587	110	1.5	1.5	2.0	3919
06	2100	6	29	89	10	14	114	994	124	1.5	1.5	2.0	3920
07	2105	5	19	69	5	12	62	358	57	1.5	2.0	2.0	3921
08	2110	5	16	66	5	7	57	292	53	2.0	2.5	2.5	3922
09													
10													
11													
12													
13													
14													
15	2105	6	47	107	15	16	166	1312	132	2.0	2.5	2.5	3923
16													
17													
18	2100	7	43	113	13	18	148	887	116	1.5	1.5	2.0	3924
19	2055	7	29	99	10	10	110	512	95	2.0	2.0	2.0	3925
20	2125	6	29	89	14	10	150	658	154	1.5	2.0	2.5	3926
21													
22	2120	12	49	169	19	16	206	1329	174	2.0	2.5	2.5	3927
23													
24													
25	2240	8	46	126	14	22	162	867	143	2.0	3.0	3.0	3928
26													
27													
28													
29													
30													
31	2115	6	18	78	9	7	97	302	96	1.0	2.0	1.5	3929
Σ	—	76	381	1141	130	155	1455	9098	1254	18.5	23.0	24.5	—
NOBS	—	11	11	11	11	11	11	11	11	11	11	11	—
MNS	—	6.91	34.64	103.73	11.82	14.09	132.27	827.09	114.00	1.68	2.09	2.23	—

MEAN CONDITION = 2.0000 TRUNCATED WOLF NUMBER = 92.55 QUALITY COUNT = 20.45 SQUARED QUALITY COUNT = 72.64



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR MAY 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 .

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-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	2150	61	5	30	23	3	0	1.5	1.5	2.0	3919
06	2100	34	5	14	14	1	0	1.5	1.5	2.0	3920
07	2105	23	4	7	11	0	1	1.5	2.0	2.0	3921
08	2110	20	4	9	6	0	1	2.0	2.5	2.5	3922
09											
10											
11											
12											
13											
14											
15	2105	51	4	30	15	1	1	2.0	2.5	2.5	3923
16											
17											
18	2100	47	4	24	16	1	2	1.5	1.5	2.0	3924
19	2055	32	3	17	8	2	2	2.0	2.0	2.0	3925
20	2125	33	4	17	10	2	0	1.5	2.0	2.5	3926
21											
22	2120	56	7	29	15	4	1	2.0	2.5	2.5	3927
23											
24											
25	2240	51	5	22	21	2	1	2.0	3.0	3.0	3928
26											
27											
28											
29											
30											
31	2115	22	4	9	7	2	0	1.0	2.0	1.5	3929
Σ	—	430	49	208	146	18	9	18.5	23.0	24.5	—
NOBS	—	11	11	11	11	11	11	11	11	11	—
MNS	—	39.09	4.45	18.91	13.27	1.64	0.82	1.68	2.09	2.23	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR MAY 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																			
04																			
05	2150	0	0	0	0	2	5/5	0	0	1	14	1	27	0	0	0	0	4	1/1/1/2
06	2100	0	0	0	0	1	3	0	0	0	0	1	18	1	2	1	3	2	1/2
07	2105	1	1	0	0	3	2/5/6	0	0	0	0	0	0	1	5	0	0	0	0
08	2110	1	1	0	0	3	2/4/5	0	0	0	0	0	0	1	4	0	0	0	0
09																			
10																			
11																			
12																			
13																			
14																			
15	2105	1	1	0	0	0	0	2	4/5	1	17	1	19	0	0	0	0	1	1
16																			
17																			
18	2100	2	1/1	0	0	0	0	2	8/18	1	12	0	0	0	0	0	0	2	1/2
19	2055	2	1/1	0	0	1	2	2	11/12	0	0	0	0	0	0	0	0	2	1/1
20	2125	0	0	0	0	0	0	3	2/5/6	1	14	0	0	0	0	0	0	2	1/1
21																			
22	2120	1	1	2	2/2	1	3	2	4/7	0	0	1	23	0	0	0	0	5	4x1 / 3
23																			
24																			
25	2240	1	1	0	0	3	2/3/4	1	19	1	15	0	0	0	0	0	0	2	1/1
26																			
27																			
28																			
29																			
30																			
31	2115	0	0	0	0	2	2/4	2	4/6	0	0	0	0	0	0	0	0	2	1/1
TOTALS	—	9	9	2	4	16	57	14	111	5	72	4	87	3	11	1	3	22	27

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
11.8	2.6	21.1	18.4	6.6	5.3	3.9	1.3	28.9	76

NOBS = 11 $\bar{p/g}$ mean = 1.6926 $\bar{f/g}$ mean = 4.9654
 $\bar{p/g}$ mean = 1.7105 $\bar{f/g}$ mean = 5.0132

GROUP COMPLEXITY INDEX (GCI) = 6.7237



**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	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
1999 DECEMBER	7.81	133.42	148.92	1300.7	151.72	24.69	60.78
2000 JANUARY	7.96	137.71	155.60	1401.8	155.56	25.37	63.72
FEBRUARY	8.30	143.82	163.09	1471.6	160.19	26.42	66.58
MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

BARNES-13 METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
1999 DECEMBER	7.51	128.40	144.02	1265.1	146.76	23.80	58.61
2000 JANUARY	7.84	134.68	150.78	1334.7	153.59	24.94	61.82
FEBRUARY	8.32	143.47	160.74	1430.8	162.77	26.51	66.17
MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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

ERRATUM: MEAN CONDITION FOR MARCH 2001 SHOULD READ 2.0583 .



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

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SUNSPOT RESULTS FOR JUNE 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	2100	10	43	143	15	21	171	782	162	1.0	2.0	1.5	3930
03	2120	8	45	125	15	13	163	914	184	1.0	2.0	2.0	3931
04	2125	6	45	105	12	12	132	852	131	2.0	2.5	3.0	3932
05													
06													
07													
08	2150	13	105	235	28	45	325	1944	244	1.5	2.0	2.0	3933
09													
10	2110	13	65	195	20	22	222	1338	217	3.0	3.0	3.0	3934
11	2100	15	62	212	24	23	263	1208	248	2.5	2.5	2.5	3935
12	2125	17	42	212	21	17	227	624	237	2.5	2.5	2.5	3936
13													
14													
15													
16	2115	15	99	249	29	30	320	2244	278	2.0	2.5	2.5	3937
17	2140	12	83	203	23	28	258	2255	257	2.0	2.5	2.5	3938
18	2120	10	77	177	21	34	244	1931	188	2.5	2.5	2.5	3939
19													
20													
21	2120	12	88	208	23	34	264	1976	246	1.5	1.5	1.5	3940
22													
23													
24	2105	13	64	194	22	17	237	1252	250	2.0	2.5	2.5	3941
25	2125	9	54	144	15	19	169	1011	188	1.5	2.5	2.5	3942
26	2105	8	58	138	17	27	197	1112	184	1.5	2.5	2.5	3943
27	2110	9	32	122	10	20	120	375	115	1.5	2.5	2.5	3944
28													
29													
30	2100	8	16	96	6	9	69	207	64	3.0	3.0	3.0	3945
31													
Σ	—	178	978	2758	301	371	3381	20025	3193	31.0	38.5	38.5	—
NOBS	—	16	16	16	16	16	16	16	16	16	16	16	—
MNS	—	11.12	61.12	172.38	18.81	23.19	211.31	1251.56	199.56	1.94	2.41	2.41	—

MEAN CONDITION = 2.2500 TRUNCATED WOLF NUMBER = 153.69 QUALITY COUNT = 34.69 SQUARED QUALITY COUNT = 123.56



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR JUNE 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 .

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	2100	50	7	21	19	1	2	1.0	2.0	1.5	3930
03	2120	51	6	32	11	0	2	1.0	2.0	2.0	3931
04	2125	51	6	33	12	0	0	2.0	2.5	3.0	3932
05											
06											
07											
08	2150	114	9	58	43	2	2	1.5	2.0	2.0	3933
09											
10	2110	73	8	38	22	5	0	3.0	3.0	3.0	3934
11	2100	76	14	38	23	1	0	2.5	2.5	2.5	3935
12	2125	55	13	21	17	4	0	2.5	2.5	2.5	3936
13											
14											
15											
16	2115	110	11	68	27	1	3	2.0	2.5	2.5	3937
17	2140	93	10	53	28	2	0	2.0	2.5	2.5	3938
18	2120	86	9	43	33	0	1	2.5	2.5	2.5	3939
19											
20											
21	2120	97	9	52	33	2	1	1.5	1.5	1.5	3940
22											
23											
24	2105	73	9	46	14	1	3	2.0	2.5	2.5	3941
25	2125	60	6	32	19	3	0	1.5	2.5	2.5	3942
26	2105	64	6	29	27	2	0	1.5	2.5	2.5	3943
27	2110	39	7	11	19	1	1	1.5	2.5	2.5	3944
28											
29											
30	2100	19	3	4	7	3	2	3.0	3.0	3.0	3945
31											
Σ	—	1111	133	579	354	28	17	31.0	38.5	38.5	—
NOBS	—	16	16	16	16	16	16	16	16	16	—
MNS	—	69.44	8.31	36.19	22.12	1.75	1.06	1.94	2.41	2.41	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR JUNE 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	2100	2	1/1	2	2/2	1	3	3	7/9/14	0	0	0	0	1	3	1	1	0	0
03	2120	2	1/1	1	2	0	0	4	5/8/10/13	0	0	0	0	1	5	0	0	0	0
04	2125	0	0	1	2	1	6	3	9/11/12	0	0	0	0	0	0	1	5	0	0
05																			
06																			
07																			
08	2150	2	1/1	0	0	1	5	6	8/9/10/14/22/23	1	8	0	0	0	0	0	0	3	1/1/2
09																			
10	2110	0	0	0	0	3	2/2/9	3	5/6/7	2	13/16	0	0	0	0	0	0	5	5 x 1
11	2100	0	0	0	0	6	2/2/2/3/3/4	4	4/5/6/7	2	8/9	0	0	0	0	0	0	3	1/2/4
12	2125	0	0	3	2/2/3	4	2/2/3/4	6	2/3/3/3/4/5	0	0	0	0	0	0	0	0	4	1/1/1/1
13																			
14																			
15																			
16	2115	3	1/1/1	0	0	1	4	6	3/3/6/8/13/13	1	29	1	10	0	0	1	4	2	1/2
17	2140	0	0	0	0	1	6	5	2/3/5/7/8	1	13	1	32	0	0	1	3	3	1/1/2
18	2120	1	1	1	3	3	3/4/5	3	3/4/6	1	13	1	35	0	0	0	0	0	0
19																			
20																			
21	2120	1	1	0	0	4	2/5/5/7	4	5/9/10/11	0	0	1	31	0	0	0	0	2	1/1
22																			
23																			
24	2105	3	1/1/1	0	0	1	4	4	7/9/14/17	1	3	0	0	0	0	2	2/2	2	1/2
25	2125	0	0	0	0	2	5/8	3	4/8/11	1	15	0	0	0	0	1	1	2	1/1
26	2105	0	0	0	0	2	5/6	3	7/8/11	1	19	0	0	0	0	1	1	1	1
27	2110	1	1	1	4	4	3/3/4/5	2	5/6	0	0	0	0	0	0	0	0	1	1
28																			
29																			
30	2100	2	1/1	0	0	3	2/4/5	0	0	0	0	0	0	0	0	0	0	3	1/1/1
31																			
TOTALS	—	17	17	9	22	37	149	59	470	11	146	4	108	2	8	8	19	31	39

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
9.6	5.1	20.8	33.1	6.2	2.2	1.1	4.5	17.4	178

NOBS = 16 $\overline{p/g}$ mean = 1.6946 $\overline{f/g}$ mean = 5.5865
 $\overline{p/g}$ mean = 1.6910 $\overline{f/g}$ mean = 5.4944

GROUP COMPLEXITY INDEX (GCI) = 7.1854



**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 JANUARY	7.96	137.71	155.60	1401.8	155.56	25.37	63.72
FEBRUARY	8.30	143.82	163.09	1471.6	160.19	26.42	66.58
MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

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 JANUARY	7.84	134.68	150.78	1334.7	153.59	24.94	61.82
FEBRUARY	8.32	143.47	160.74	1430.8	162.77	26.51	66.17
MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net

WEBSITE: www.cv-helios.net/gdso

SUNSPOT RESULTS FOR JULY 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	2055	8	16	96	9	5	95	310	100	3.0	3.0	3.0	3946
02	2115	7	19	89	7	8	78	207	70	2.5	2.5	2.5	3947
03	2115	7	15	85	7	4	74	307	69	3.0	3.0	3.0	3948
04													
05													
06													
07													
08	2055	5	30	80	9	12	102	518	92	2.5	2.5	2.5	3949
09	2105	6	27	87	11	11	121	496	96	2.0	2.5	2.5	3950
10	2215	6	24	84	8	12	92	403	101	2.0	2.5	2.0	3951
11	2115	7	30	100	11	15	125	518	128	1.5	2.0	2.0	3952
12	2135	10	35	135	12	21	141	606	134	1.0	2.0	2.0	3953
13	2120	10	37	137	12	20	140	613	137	2.0	2.0	2.0	3954
14													
15													
16													
17													
18													
19													
20	2145	7	37	107	10	11	111	791	125	2.0	3.0	3.5	3955
21													
22													
23	2125	7	43	113	12	18	138	864	87	2.0	2.0	2.0	3956
24	2120	7	36	106	13	12	142	985	107	2.0	2.5	2.5	3957
25	2150	6	35	95	8	13	93	878	78	1.5	2.0	2.5	3958
26	2215	4	19	59	8	5	85	470	84	1.5	2.0	2.5	3959
27	2130	6	22	82	8	11	91	400	85	1.5	3.0	4.0	3960
28													
29	2140	4	13	53	6	5	65	298	64	2.0	2.5	2.5	3961
30													
31	2105	4	27	67	7	14	84	605	69	2.0	2.0	2.5	3962
Σ	—	111	465	1575	158	197	1777	9269	1626	34.0	41.0	43.5	—
NOBS	—	17	17	17	17	17	17	17	17	17	17	17	—
MNS	—	6.53	27.35	92.65	9.29	11.59	104.53	545.24	95.65	2.00	2.41	2.56	—

MEAN CONDITION = 2.3235 TRUNCATED WOLF NUMBER = 80.35 QUALITY COUNT = 18.65 SQUARED QUALITY COUNT = 62.76



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR JULY 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 .

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	2055	21	5	9	4	2	1	3.0	3.0	3.0	3946
02	2115	24	5	10	7	1	1	2.5	2.5	2.5	3947
03	2115	19	4	8	4	3	0	3.0	3.0	3.0	3948
04											
05											
06											
07											
08	2055	35	5	18	12	0	0	2.5	2.5	2.5	3949
09	2105	31	4	16	9	0	2	2.0	2.5	2.5	3950
10	2215	29	5	11	12	1	0	2.0	2.5	2.0	3951
11	2115	35	5	13	15	2	0	1.5	2.0	2.0	3952
12	2135	40	5	10	20	4	1	1.0	2.0	2.0	3953
13	2120	43	6	14	19	3	1	2.0	2.0	2.0	3954
14											
15											
16											
17											
18											
19											
20	2145	41	4	23	11	3	0	2.0	3.0	3.5	3955
21											
22											
23	2125	47	4	24	16	1	2	2.0	2.0	2.0	3956
24	2120	39	3	21	11	3	1	2.0	2.5	2.5	3957
25	2150	38	3	20	12	2	1	1.5	2.0	2.5	3958
26	2215	21	2	12	5	2	0	1.5	2.0	2.5	3959
27	2130	25	3	9	10	2	1	1.5	3.0	4.0	3960
28											
29	2140	15	2	6	5	2	0	2.0	2.5	2.5	3961
30											
31	2105	30	3	13	13	0	1	2.0	2.0	2.5	3962
Σ	—	533	68	237	185	31	12	34.0	41.0	43.5	—
NOBS	—	17	17	17	17	17	17	17	17	17	—
MNS	—	31.35	4.00	13.94	10.88	1.82	0.71	2.00	2.41	2.56	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR JULY 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	2055	1	1	0	0	2	2/2	2	3/4	0	0	0	0	0	0	0	0	3	1/1/2
02	2115	1	1	0	0	4	2/3/4/5	1	3	0	0	0	0	0	0	0	0	1	1
03	2115	0	0	1	2	1	3	1	5	0	0	0	0	0	0	0	0	4	1/1/1/2
04																			
05																			
06																			
07																			
08	2055	0	0	0	0	2	3/3	2	7/15	0	0	0	0	0	0	0	0	1	2
09	2105	2	1/1	0	0	0	0	3	4/5/14	0	0	0	0	0	0	0	0	1	2
10	2215	0	0	1	2	1	2	3	3/5/11	0	0	0	0	0	0	0	0	1	1
11	2115	0	0	0	0	2	3/3	3	5/8/9	0	0	0	0	0	0	0	0	2	1/1
12	2135	1	1	1	4	1	3	3	3/8/12	0	0	0	0	0	0	0	0	4	1/1/1/1
13	2120	1	1	1	4	2	2/2	3	5/7/13	0	0	0	0	0	0	0	0	3	1/1/1
14																			
15																			
16																			
17																			
18																			
19																			
20	2145	0	0	1	3	1	3	1	9	1	19	0	0	0	0	1	1	2	1/1
21																			
22																			
23	2125	2	1/1	0	0	2	4/5	1	4	1	27	0	0	0	0	0	0	1	1
24	2120	1	1	0	0	1	3	1	11	0	0	1	18	0	0	0	0	3	1/1/1
25	2150	1	1	1	2	0	0	1	16	0	0	1	14	0	0	0	0	2	1/1
26	2215	0	0	0	0	0	0	1	12	0	0	1	5	0	0	0	0	2	1/1
27	2130	1	1	0	0	1	2	2	6/11	0	0	0	0	0	0	0	0	2	1/1
28																			
29	2140	0	0	0	0	1	3	0	0	1	8	0	0	0	0	0	0	2	1/1
30																			
31	2105	1	1	0	0	0	0	1	7	2	7/12	0	0	0	0	0	0	0	0
TOTALS	—	12	12	6	17	21	62	29	225	5	73	3	37	0	0	1	1	34	38

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
10.8	5.4	18.9	26.1	4.5	2.7	0.0	0.9	30.6	111

NOBS = 17 \bar{p}/\bar{g} mean = 1.4694 \bar{f}/\bar{g} mean = 4.3332
 \bar{p}/\bar{g} mean = 1.4234 \bar{f}/\bar{g} mean = 4.1892

GROUP COMPLEXITY INDEX (GCI) = 5.6126



**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 FEBRUARY	8.30	143.82	163.09	1471.6	160.19	26.42	66.58
MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

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 FEBRUARY	8.32	143.47	160.74	1430.8	162.77	26.51	66.17
MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

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SUNSPOT RESULTS FOR AUGUST 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	2135	8	56	136	17	20	190	890	148	1.0	2.0	2.0	3963
04	2155	10	84	184	17	27	197	1531	201	1.5	2.0	2.0	3964
05													
06													
07	2245	10	61	161	17	16	186	1336	173	1.5	2.0	2.0	3965
08	2120	10	57	157	17	23	193	1105	145	2.0	2.0	2.0	3966
09	2220	7	45	115	16	10	170	1192	168	2.0	3.0	3.0	3967
10	2200	7	65	135	22	19	239	1405	177	2.0	2.0	2.5	3968
11	2040	11	59	169	19	21	211	1068	197	2.0	2.5	2.0	3969
12	2105	10	44	144	15	17	167	717	195	1.5	2.5	2.5	3970
13													
14													
15	2105	13	26	156	14	7	147	524	146	2.5	2.5	2.5	3971
16													
17													
18	2110	11	45	155	16	16	176	729	179	1.5	2.5	2.5	3972
19	2200	9	42	132	16	8	168	857	169	2.0	2.5	2.5	3973
20													
21													
22													
23	2125	11	47	157	14	17	157	1108	188	2.0	2.0	2.0	3974
24													
25	2140	7	55	125	11	29	139	1494	137	2.0	2.0	2.5	3975
26	2115	7	61	131	13	21	151	1830	133	1.5	2.0	2.0	3976
27	2105	11	59	169	18	15	195	1676	210	1.5	2.5	2.5	3977
28													
29													
30													
31													
Σ	—	142	806	2226	242	266	2686	17462	2566	26.5	34.0	34.5	—
NOBS	—	15	15	15	15	15	15	15	15	15	15	15	—
MNS	—	9.47	53.73	148.40	16.13	17.73	179.07	1164.13	171.07	1.77	2.27	2.30	—

MEAN CONDITION = 2.1111 TRUNCATED WOLF NUMBER = 132.80 QUALITY COUNT = 28.73 SQUARED QUALITY COUNT = 101.93



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR AUGUST 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 .

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-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	2135	64	8	36	20	0	0	1.0	2.0	2.0	3963
04	2155	92	8	56	26	1	1	1.5	2.0	2.0	3964
05											
06											
07	2245	68	7	43	15	2	1	1.5	2.0	2.0	3965
08	2120	64	7	32	22	2	1	2.0	2.0	2.0	3966
09	2220	50	5	33	10	2	0	2.0	3.0	3.0	3967
10	2200	71	6	45	19	1	0	2.0	2.0	2.5	3968
11	2040	68	9	36	21	2	0	2.0	2.5	2.0	3969
12	2105	50	6	24	16	3	1	1.5	2.5	2.5	3970
13											
14											
15	2105	34	8	16	5	3	2	2.5	2.5	2.5	3971
16											
17											
18	2110	51	6	26	14	3	2	1.5	2.5	2.5	3972
19	2200	47	5	30	8	4	0	2.0	2.5	2.5	3973
20											
21											
22											
23	2125	54	7	28	15	2	2	2.0	2.0	2.0	3974
24											
25	2140	60	5	24	29	2	0	2.0	2.0	2.5	3975
26	2115	65	4	38	20	2	1	1.5	2.0	2.0	3976
27	2105	67	8	42	14	2	1	1.5	2.5	2.5	3977
28											
29											
30											
31											
Σ	—	905	99	509	254	31	12	26.5	34.0	34.5	—
NOBS	—	15	15	15	15	15	15	15	15	15	—
MNS	—	60.33	6.60	33.93	16.93	2.07	0.80	1.77	2.27	2.30	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR AUGUST 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	2135	0	0	2	2/6	1	3	5	3/4/9/13/16	0	0	0	0	0	0	0	0	0	0
04	2155	1	1	0	0	3	2/2/3	4	5/9/22/27	1	12	0	0	0	0	0	0	1	1
05																			
06																			
07	2245	1	1	1	2	1	2	2	10/10	2	7/25	0	0	0	0	0	0	3	1/1/2
08	2120	1	1	0	0	3	3/3/4	2	8/12	1	22	0	0	0	0	0	0	3	1/1/2
09	2220	0	0	0	0	0	0	3	7/8/9	0	0	1	17	0	0	0	0	3	1/1/2
10	2200	0	0	0	0	0	0	5	4/4/12/15/17	0	0	1	12	0	0	0	0	1	1
11	2040	0	0	2	2/3	0	0	6	2/2/5/8/14/19	0	0	0	0	0	0	0	0	3	1/1/2
12	2105	1	1	1	2	2	4/5	3	2/12/15	0	0	0	0	0	0	0	0	3	1/1/1
13																			
14																			
15	2105	2	1/1	0	0	3	2/2/3	2	3/4	1	3	0	0	0	0	0	0	5	1/1/1/2/2
16																			
17																			
18	2110	2	1/1	0	0	3	3/4/4	3	3/9/17	0	0	0	0	0	0	0	0	3	1/1/1
19	2200	0	0	0	0	1	2	3	3/13/18	0	0	0	0	0	0	1	1	4	1/1/1/2
20																			
21																			
22																			
23	2125	2	1/1	1	2	2	2/4	2	2/15	0	0	1	16	0	0	1	2	2	1/1
24																			
25	2140	0	0	0	0	1	4	2	10/11	0	0	1	26	0	0	0	0	3	1/1/2
26	2115	1	1	0	0	1	3	2	5/9	0	0	1	41	0	0	0	0	2	1/1
27	2105	1	1	1	3	0	0	5	2/2/4/4/6	0	0	1	33	0	0	0	0	3	1/1/2
28																			
29																			
30																			
31																			
TOTALS	—	12	12	8	22	21	64	49	443	5	69	6	145	0	0	2	3	39	48

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
8.5	5.6	14.8	34.5	3.5	4.2	0.0	1.4	27.5	142

NOBS = 15

\bar{p}/\bar{g} mean = 1.7685

\bar{f}/\bar{g} mean = 5.9762

\bar{p}/\bar{g} mean = 1.7042

\bar{f}/\bar{g} mean = 5.6761

GROUP COMPLEXITY INDEX (GCI) = 7.3803



**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 MARCH	8.54	147.85	167.88	1509.9	163.94	27.14	68.45
APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

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 MARCH	8.74	151.55	170.20	1528.6	170.71	27.91	70.35
APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net

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SUNSPOT RESULTS FOR SEPTEMBER 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	2225	7	92	162	17	23	193	3015	159	1.5	2.5	2.5	3978
03													
04													
05													
06													
07	2040	11	112	222	32	41	361	2913	257	2.5	3.5	2.5	3979
08	2045	9	110	200	33	34	364	2772	266	2.0	2.5	2.0	3980
09	2050	9	116	206	26	56	316	2842	205	1.5	2.0	2.5	3981
10													
11	2055	7	84	154	20	25	225	2367	196	2.0	2.5	2.5	3982
12	2110	8	84	164	21	34	244	2169	201	1.5	2.0	2.0	3983
13													
14													
15													
16													
17	2235	10	32	132	16	11	171	589	191	2.0	3.0	3.0	3984
18													
19													
20	2050	13	93	223	21	22	232	2143	231	2.0	3.0	4.0	3985
21													
22	2135	12	97	217	31	30	340	2411	295	2.0	2.5	2.5	3986
23	2240	11	99	209	29	34	324	2535	250	2.0	3.0	3.5	3987
24	2020	12	96	216	28	28	308	2542	275	2.0	2.5	2.5	3988
25	2105	14	111	251	30	46	346	2654	317	1.0	2.0	2.0	3989
26	2010	13	92	222	24	29	269	2335	268	1.5	2.0	2.0	3990
27	2025	12	106	226	29	40	330	2675	309	1.0	2.0	1.5	3991
28	2100	12	92	212	27	30	300	2287	291	2.0	2.5	2.5	3992
29	2015	13	103	233	21	37	247	2756	235	1.5	1.5	1.5	3993
30	2015	13	81	211	23	30	260	2033	223	2.0	2.5	3.0	3994
31													
Σ	—	186	1600	3460	428	550	4830	41038	4169	30.0	41.5	42.0	—
NOBS	—	17	17	17	17	17	17	17	17	17	17	17	—
MNS	—	10.94	94.12	203.53	25.18	32.35	284.12	2414.00	245.24	1.76	2.44	2.47	—

MEAN CONDITION = 2.2255 TRUNCATED WOLF NUMBER = 190.82 QUALITY COUNT = 37.65 SQUARED QUALITY COUNT = 150.24



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR SEPTEMBER 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 .

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	2225	98	6	68	23	1	0	1.5	2.5	2.5	3978
03											
04											
05											
06											
07	2040	120	8	69	40	2	1	2.5	3.5	2.5	3979
08	2045	119	9	76	34	0	0	2.0	2.5	2.0	3980
09	2050	123	7	59	55	1	1	1.5	2.0	2.5	3981
10											
11	2055	89	5	57	25	2	0	2.0	2.5	2.5	3982
12	2110	91	7	49	34	1	0	1.5	2.0	2.0	3983
13											
14											
15											
16											
17	2235	39	7	19	10	2	1	2.0	3.0	3.0	3984
18											
19											
20	2050	103	10	70	20	1	2	2.0	3.0	4.0	3985
21											
22	2135	106	9	64	30	3	0	2.0	2.5	2.5	3986
23	2240	107	8	62	34	3	0	2.0	3.0	3.5	3987
24	2020	106	10	66	28	2	0	2.0	2.5	2.5	3988
25	2105	121	10	63	44	2	2	1.0	2.0	2.0	3989
26	2010	101	9	61	27	2	2	1.5	2.0	2.0	3990
27	2025	115	9	64	39	2	1	1.0	2.0	1.5	3991
28	2100	99	7	57	30	5	0	2.0	2.5	2.5	3992
29	2015	112	9	64	35	2	2	1.5	1.5	1.5	3993
30	2015	91	10	50	28	1	2	2.0	2.5	3.0	3994
31											
Σ	—	1740	140	1018	536	32	14	30.0	41.5	42.0	—
NOBS	—	17	17	17	17	17	17	17	17	17	—
MNS	—	102.35	8.24	59.88	31.53	1.88	0.82	1.76	2.44	2.47	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR SEPTEMBER 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	2225	0	0	0	0	2	2/3	1	4	1	8	1	72	0	0	0	0	2	1/2
03																			
04																			
05																			
06																			
07	2040	1	1	0	0	1	5	3	4/10/15	2	16/23	1	34	0	0	0	0	3	1/1/2
08	2045	0	0	0	0	2	3/4	4	4/9/10/15	2	5/23	1	37	0	0	0	0	0	0
09	2050	1	1	0	0	2	4/6	3	13/14/17	1	21	1	39	0	0	0	0	1	1
10																			
11	2055	0	0	0	0	1	4	1	9	2	6/29	1	34	0	0	0	0	2	1/1
12	2110	0	0	0	0	2	3/5	3	4/4/10	1	28	1	29	0	0	0	0	1	1
13																			
14																			
15																			
16																			
17	2235	1	1	0	0	2	3/4	3	2/6/9	1	3	0	0	0	0	0	0	3	1/1/2
18																			
19																			
20	2050	2	1/1	1	3	1	4	6	3/6/7/10/ 11/15	0	0	1	29	0	0	0	0	2	1/2
21																			
22	2135	0	0	0	0	1	4	7	2/4/6/7/ 8/10/17	0	0	1	36	0	0	0	0	3	1/1/1
23	2240	0	0	0	0	2	3/3	5	2/8/10/14/14	0	0	1	42	0	0	0	0	3	1/1/1
24	2020	0	0	0	0	0	0	8	2/3/4/5/5/ 6/11/15	0	0	1	41	0	0	0	0	3	1/1/2
25	2105	2	1/1	0	0	1	2	8	3/4/5/5/9/ 11/14/17	0	0	1	37	0	0	0	0	2	1/1
26	2010	2	1/1	1	2	1	3	5	3/4/4/5/15	1	19	1	33	0	0	0	0	2	1/1
27	2025	1	1	0	0	0	0	6	2/7/7/8/9/16	1	21	1	31	0	0	0	0	3	1/1/2
28	2100	0	0	0	0	0	0	5	5/8/8/9/15	1	20	1	22	0	0	0	0	5	1 x 5
29	2015	2	1/1	1	2	2	3/6	3	7/10/15	0	0	2	21/33	0	0	0	0	3	1/1/2
30	2015	2	1/1	2	2/3	3	2/5/5	3	2/4/12	0	0	2	14/29	0	0	0	0	1	1
31																			
TOTALS	—	14	14	5	12	23	86	74	607	13	222	18	613	0	0	0	0	39	46

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
7.5	2.7	12.4	39.8	7.0	9.7	0.0	0.0	21.0	186

NOBS = 17

$\overline{p/g}$ mean = 2.3638

$\overline{f/g}$ mean = 8.9431

$\overline{p/g}$ mean = 2.3011

$\overline{f/g}$ mean = 8.6022

GROUP COMPLEXITY INDEX (GCI) = 10.9032



**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 APRIL	8.57	149.39	170.40	1536.9	164.86	27.34	69.76
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

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 APRIL	8.98	156.55	176.40	1596.0	174.14	28.70	73.08
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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net

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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
Σ	—	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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES 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 .

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



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net

WEBSITE: www.cv-helios.net/gdso

SUNSPOT RESULTS FOR NOVEMBER 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	6	66	126	16	19	179	1628	177	2.0	2.5	2.5	4007
04	2020	7	82	152	18	27	207	2073	197	2.0	2.0	2.5	4008
05	1940	9	74	164	20	24	224	1869	246	2.5	3.5	3.0	4009
06													
07													
08													
09	2030	11	103	213	25	35	285	3206	232	1.5	2.5	2.5	4010
10													
11													
12													
13	2005	10	55	155	13	17	147	1498	211	2.0	2.0	2.0	4011
14	2015	11	57	167	14	18	158	1536	231	2.0	2.0	2.0	4012
15	2000	8	47	127	15	12	162	1278	235	2.0	2.5	2.5	4013
16													
17													
18	1925	8	41	121	14	12	152	795	200	1.5	2.0	2.5	4014
19	2105	6	44	104	10	18	118	830	156	2.0	2.5	3.0	4015
20													
21													
22													
23													
24	1930	6	33	93	8	16	96	780	78	1.5	2.0	2.0	4016
25	2005	8	37	117	8	13	93	623	84	1.5	2.0	2.0	4017
26													
27													
28													
29													
30													
31													
Σ	—	90	639	1539	161	211	1821	16116	2047	20.5	25.5	26.5	—
NOBS	—	11	11	11	11	11	11	11	11	11	11	11	—
MNS	—	8.18	58.09	139.91	14.64	19.18	165.55	1465.09	186.09	1.86	2.32	2.41	—

MEAN CONDITION = 2.1970 TRUNCATED WOLF NUMBER = 128.36 QUALITY COUNT = 26.64 SQUARED QUALITY COUNT = 102.82



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR NOVEMBER 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 .

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-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	70	4	46	18	1	1	2.0	2.5	2.5	4007
04	2020	88	6	54	27	1	0	2.0	2.0	2.5	4008
05	1940	80	6	48	23	2	1	2.5	3.5	3.0	4009
06											
07											
08											
09	2030	109	6	64	34	4	1	1.5	2.5	2.5	4010
10											
11											
12											
13	2005	62	7	35	17	3	0	2.0	2.0	2.0	4011
14	2015	64	7	37	16	2	2	2.0	2.0	2.0	4012
15	2000	53	6	33	12	2	0	2.0	2.5	2.5	4013
16											
17											
18	1925	46	5	26	12	3	0	1.5	2.0	2.5	4014
19	2105	48	4	24	18	2	0	2.0	2.5	3.0	4015
20											
21											
22											
23											
24	1930	39	6	17	16	0	0	1.5	2.0	2.0	4016
25	2005	42	5	23	11	1	2	1.5	2.0	2.0	4017
26											
27											
28											
29											
30											
31											
Σ	—	701	62	407	204	21	7	20.5	25.5	26.5	—
NOBS	—	11	11	11	11	11	11	11	11	11	—
MNS	—	63.73	5.64	37.00	18.55	1.91	0.64	1.86	2.32	2.41	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR NOVEMBER 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	1	1	0	0	0	0	2	7/20	1	21	1	16	0	0	0	0	1	1
04	2020	0	0	0	0	1	3	3	6/11/15	1	20	1	26	0	0	0	0	1	1
05	1940	1	1	0	0	0	0	4	7/8/9/13	1	9	1	25	0	0	0	0	2	1/1
06																			
07																			
08																			
09	2030	1	1	0	0	2	2/4	1	6	1	18	2	15/53	0	0	0	0	4	1/1/1/1
10																			
11																			
12																			
13	2005	0	0	1	2	4	2/3/4/5	1	2	0	0	1	34	0	0	1	1	2	1/1
14	2015	2	1/1	0	0	3	2/4/4	2	2/9	0	0	1	29	0	0	1	3	2	1/1
15	2000	0	0	0	0	0	0	3	4/5/16	0	0	1	14	0	0	1	4	3	1/1/2
16																			
17																			
18	1925	0	0	0	0	0	0	5	3/4/6/11/14	0	0	0	0	0	0	0	0	3	1/1/1
19	2105	0	0	0	0	0	0	4	6/10/12/14	0	0	0	0	0	0	0	0	2	1/1
20																			
21																			
22																			
23																			
24	1930	0	0	2	2/4	1	2	1	9	0	0	1	14	0	0	0	0	1	2
25	2005	2	1/1	1	2	1	10	1	12	1	8	0	0	0	0	0	0	2	1/2
26																			
27																			
28																			
29																			
30																			
31																			
TOTALS	—	7	7	4	10	12	45	27	241	5	76	9	226	0	0	3	8	23	26

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
7.8	4.4	13.3	30.0	5.6	10.0	0.0	3.3	25.6	90

NOBS = 11

\bar{p}/\bar{g} mean = 1.8119

\bar{f}/\bar{g} mean = 7.2218

\bar{p}/\bar{g} mean = 1.7889

\bar{f}/\bar{g} mean = 7.1000

GROUP COMPLEXITY INDEX (GCI) = 8.8889



**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 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
MAY	8.43	136.39	164.70	1186.5	156.86	26.32	58.00

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 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
MAY	8.38	134.26	162.98	1158.1	152.64	26.01	56.30



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

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SUNSPOT RESULTS FOR DECEMBER 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	1955	13	90	220	24	28	268	1838	294	1.5	2.0	2.5	4018
04													
05													
06													
07													
08	2010	16	67	227	22	25	245	1331	251	2.0	2.5	2.5	4019
09	1950	12	56	176	17	17	187	1119	172	2.0	3.0	3.0	4020
10													
11													
12													
13	2030	9	54	144	15	18	168	1144	127	3.0	3.0	4.0	4021
14													
15													
16													
17													
18	2155	6	45	105	11	20	130	877	106	2.0	3.0	3.0	4022
19	2010	7	38	108	15	14	164	794	148	2.0	2.5	3.0	4023
20	2030	9	64	154	16	29	189	1297	131	1.5	2.0	2.5	4024
21													
22	1935	11	79	189	21	34	244	2047	193	1.5	2.5	2.5	4025
23													
24	2115	10	97	197	33	24	354	2748	257	2.5	2.5	2.5	4026
25													
26													
27													
28													
29													
30	2030	11	75	185	23	34	264	1545	253	2.5	3.0	3.5	4027
31	2040	11	66	176	21	27	237	1301	215	2.0	2.5	2.5	4028
Σ	—	115	731	1881	218	270	2450	16041	2147	22.5	28.5	31.5	—
NOBS	—	11	11	11	11	11	11	11	11	11	11	11	—
MNS	—	10.45	66.45	171.00	19.82	24.55	222.73	1458.27	195.18	2.05	2.59	2.86	—

MEAN CONDITION = 2.5000 TRUNCATED WOLF NUMBER = 154.27 QUALITY COUNT = 32.64 SQUARED QUALITY COUNT = 118.27



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR DECEMBER 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 .

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-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	1955	101	11	60	28	2	0	1.5	2.0	2.5	4018
04											
05											
06											
07											
08	2010	77	10	38	23	4	2	2.0	2.5	2.5	4019
09	1950	64	8	36	16	3	1	2.0	3.0	3.0	4020
10											
11											
12											
13	2030	59	5	33	17	3	1	3.0	3.0	4.0	4021
14											
15											
16											
17											
18	2155	51	6	25	20	0	0	2.0	3.0	3.0	4022
19	2010	44	6	24	13	0	1	2.0	2.5	3.0	4023
20	2030	71	7	33	29	2	0	1.5	2.0	2.5	4024
21											
22	1935	85	6	42	32	3	2	1.5	2.5	2.5	4025
23											
24	2115	103	6	70	23	3	1	2.5	2.5	2.5	4026
25											
26											
27											
28											
29											
30	2030	84	9	40	33	1	1	2.5	3.0	3.5	4027
31	2040	74	8	37	26	2	1	2.0	2.5	2.5	4028
Σ	—	813	82	438	260	23	10	22.5	28.5	31.5	—
NOBS	—	11	11	11	11	11	11	11	11	11	—
MNS	—	73.91	7.45	39.82	23.64	2.09	0.91	2.05	2.59	2.86	—



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SUNSPOT CENSUS BY CLASSIFICATION FOR DECEMBER 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	1955	0	0	2	2/2	3	2/3/5	4	3/4/6/13	2	21/27	0	0	0	0	0	0	2	1/1
04																			
05																			
06																			
07																			
08	2010	2	1/1	0	0	3	3/3/3	4	5/6/6/18	1	13	0	0	0	0	0	0	6	4x1/2/2
09	1950	1	1	1	2	2	2/2	3	2/7/21	1	14	0	0	0	0	0	0	4	1/1/1/2
10																			
11																			
12																			
13	2030	1	1	0	0	3	2/5/6	0	0	2	11/26	0	0	0	0	0	0	3	1/1/1
14																			
15																			
16																			
17																			
18	2155	0	0	1	3	2	3/5	1	7	2	12/15	0	0	0	0	0	0	0	0
19	2010	1	1	0	0	1	4	3	3/4/6	1	18	0	0	0	0	0	0	1	2
20	2030	0	0	2	2/3	3	2/3/6	1	5	1	41	0	0	0	0	0	0	2	1/1
21																			
22	1935	2	1/1	0	0	2	2/5	3	6/8/16	0	0	1	37	0	0	0	0	3	1/1/1
23																			
24	2115	1	1	0	0	0	0	3	3/5/14	2	12/17	1	42	0	0	0	0	3	1/1/1
25																			
26																			
27																			
28																			
29																			
30	2030	1	1	0	0	2	2/3	5	5/6/9/11/17	1	16	0	0	1	4	0	0	1	1
31	2040	1	1	0	0	3	2/3/5	3	5/8/13	2	11/16	0	0	0	0	0	0	2	1/1
TOTALS	—	10	10	6	14	24	81	30	242	15	270	2	79	1	4	0	0	27	31

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	Σg
8.7	5.2	20.9	26.1	13.0	1.7	0.9	0.0	23.5	115

NOBS = 11 \bar{p}/\bar{g} mean = 1.9334 \bar{f}/\bar{g} mean = 6.5015
 \bar{p}/\bar{g} mean = 1.8956 \bar{f}/\bar{g} mean = 6.3565

GROUP COMPLEXITY INDEX (GCI) = 8.2522



**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 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
MAY	8.43	136.39	164.70	1186.5	156.86	26.32	58.00
JUNE	8.61	139.64	169.78	1235.4	161.27	26.92	59.59

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 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
MAY	8.38	134.26	162.98	1158.1	152.64	26.01	56.30
JUNE	8.61	138.25	168.82	1199.3	158.70	26.79	58.13



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

OBSERVED ANNUAL MEANS OF SUNSPOT DATA FOR 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 .
Q = Quietness [ie. steadiness] refer to Kiepenheuer scale .
S = Sharpness [ie. clarity] refer to Kiepenheuer scale .
T = Transparency where 1 = excellent , 5 = worthless .

g	=	8.76
f	=	55.28
Wolf Number	=	142.90
Truncated Wolf Number	=	128.42
p	=	15.52
s	=	20.43
Pettisindex	=	175.60
Beckindex	=	1286.28
Classification Value	=	164.19
Quality Count	=	27.52
Inter-Sol Index	=	61.47
Mean Weight	=	0.4722
Q	=	1.82
S	=	2.30
T	=	2.43
Mean Condition	=	2.1831
Total Number of Observations	=	172