GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

E-MAIL: gdso@earthling.net
WEBSITE: www.cv-helios.net/gdso

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 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	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 $\overline{p / g}$ mean = 1.9334 $\overline{f / g}$ mean = 6.5015

$\overline{p} / \overline{g}$ mean = 1.8956 $\overline{f} / \overline{g}$ mean = 6.3565

GROUP COMPLEXITY INDEX (GCI) = 8.2522

GEORGI DOBROVOLSKI SOLAR OBSERVATORY

SMOOTHED RESULTS OF OBSERVED VALUES FOR THE LAST 12 MONTHS (OBTAINABLE)

USING THE WALDMEIER & BARNES-13 METHODS.

DATA BELOW ARE PRELIMINARY. FINAL VALUES WILL BE PUBLISHED IN 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