



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

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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