



GEORGI DOBROVOLSKI SOLAR OBSERVATORY

NEW ZEALAND

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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