



Georgi Dobrovolski Solar Observatory

NEW ZEALAND

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SUNSPOT RESULTS FOR MARCH 2004

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 .

WN = Wolf Number ; SN = Pettisindex ; BX = Beckindex ; CV = Classification Value ;

QC = Quality Count ; QC² = Squared Quality Count .

Q = Quietness [ie. steadiness] refer to Kiepenheuer scale .

S = Sharpness [ie. clarity] refer to Kiepenheuer scale .

T = Transparency where 1 = excellent , 5 = worthless .

DATE	UT*	g	f	WN	p	s	SN	BX	CV	QC	QC ²	Q	S	T	Ref.
01	2015	3	20	50	4	12	52	366	73	10	34	1.5	2.5	2.5	4373-3
02	2040	2	20	40	5	11	61	512	42	7	29	2.0	2.0	1.5	4374-3
03	2035	1	22	32	3	12	42	550	32	5	25	2.0	2.5	2.0	4375-3
04	2035	2	18	38	6	7	67	422	54	9	41	2.5	3.5	3.0	4376-3
05															
06	2040	3	19	49	7	5	75	487	105	13	57	1.5	2.0	2.0	4377-3
07	2045	3	13	43	5	5	55	328	83	12	54	2.0	2.5	2.5	4378-3
08															
09	2025	3	19	49	4	9	49	596	69	10	46	1.0	1.5	2.0	4379-4
10	2050	3	21	51	3	3	33	991	56	7	21	1.5	2.5	2.5	4380-4
11															
12															
13															
14															
15	2025	3	7	37	4	1	41	97	40	9	29	1.0	2.0	2.0	4381-4
16															
17	2030	6	23	83	10	7	107	438	105	17	57	1.5	2.0	2.0	4382-4
18															
19															
20	2100	3	27	57	8	17	97	687	77	12	54	1.5	2.0	2.5	4383-4
21															
22															
23	2155	3	49	79	11	24	134	1483	93	15	77	1.5	2.5	2.5	4384-4
24															
25	2120	7	45	115	14	13	153	1204	171	29	127	1.5	3.0	2.5	4385-4
26															
27															
28	2120	6	25	85	7	15	85	539	94	14	48	2.0	3.0	2.0	4386-4
29	2140	4	25	65	8	14	94	574	81	13	49	2.0	2.5	2.5	4387-4
30															
31															
TOTALS	—	52	353	873	99	155	1145	9274	1175	182	748	25.0	36.0	34.0	—
NOBS	—	15	15	15	15	15	15	15	15	15	15	15	15	15	—
MNS	—	3.47	23.53	58.20	6.60	10.33	76.33	618.27	78.33	12.13	49.87	1.67	2.40	2.27	—

MEAN WEIGHT = 0.4865

MEAN CONDITION = 2.1111

TRUNCATED WOLF NUMBER = 53.00

* Stated times approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

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SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR MARCH 2004

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor (f . l . 910 mm) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

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 .

Q = Quietness [ie. steadiness] refer to Kiepenheuer scale .

S = Sharpness [ie. clarity] refer to Kiepenheuer scale .

T = Transparency where 1 = excellent , 5 = worthless .

DATE	UT	IS	gr	grfp	grf	efp	ef	Q	S	T	Ref.
01	2015	22	2	7	12	1	0	1.5	2.5	2.5	4373-3
02	2040	21	1	8	11	1	0	2.0	2.0	1.5	4374-3
03	2035	23	1	10	12	0	0	2.0	2.5	2.0	4375-3
04	2035	20	2	11	7	0	0	2.5	3.5	3.0	4376-3
05											
06	2040	22	3	14	5	0	0	1.5	2.0	2.0	4377-3
07	2045	16	3	8	5	0	0	2.0	2.5	2.5	4378-3
08											
09	2025	21	2	10	8	0	1	1.0	1.5	2.0	4379-4
10	2050	22	1	17	2	1	1	1.5	2.5	2.5	4380-4
11											
12											
13											
14											
15	2025	10	3	6	1	0	0	1.0	2.0	2.0	4381-4
16											
17	2030	26	3	14	6	2	1	1.5	2.0	2.0	4382-4
18											
19											
20	2100	29	2	9	17	1	0	1.5	2.0	2.5	4383-4
21											
22											
23	2155	52	3	25	24	0	0	1.5	2.5	2.5	4384-4
24											
25	2120	52	7	32	13	0	0	1.5	3.0	2.5	4385-4
26											
27											
28	2120	27	2	9	12	1	3	2.0	3.0	2.0	4386-4
29	2140	28	3	10	14	1	0	2.0	2.5	2.5	4387-4
30											
31											
TOTALS	—	391	38	190	149	8	6	25.0	36.0	34.0	—
NOBS	—	15	15	15	15	15	15	15	15	15	—
MNS	—	26.07	2.53	12.67	9.93	0.53	0.40	1.67	2.40	2.27	—

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SUNSPOT CENSUS BY CLASSIFICATION FOR

MARCH 2004

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	2015	0	0	0	0	1	2	1	17	0	0	0	0	0	0	1	1	0	0
02	2040	0	0	0	0	0	0	0	0	1	19	0	0	0	0	0	0	1	1
03	2035	0	0	0	0	0	0	0	0	1	22	0	0	0	0	0	0	0	0
04	2035	0	0	0	0	0	0	1	4	1	14	0	0	0	0	0	0	0	0
05																			
06	2040	0	0	0	0	0	0	1	9	1	7	0	0	1	3	0	0	0	0
07	2045	0	0	0	0	2	2/3	0	0	0	0	1	8	0	0	0	0	0	0
08																			
09	2025	1	1	0	0	1	2	0	0	0	0	1	16	0	0	0	0	0	0
10	2050	1	1	0	0	0	0	0	0	0	0	0	0	1	19	0	0	1	1
11																			
12																			
13																			
14																			
15	2025	0	0	0	0	1	3	1	2	0	0	0	0	0	0	0	0	1	2
16																			
17	2030	1	1	0	0	0	0	3	2/3/15	0	0	0	0	0	0	0	0	2	1/1
18																			
19																			
20	2100	0	0	0	0	0	0	0	0	2	9/17	0	0	0	0	0	0	1	1
21																			
22																			
23	2155	0	0	0	0	0	0	1	4	1	19	1	26	0	0	0	0	0	0
24																			
25	2120	0	0	0	0	2	2/2	3	3/4/5	1	8	1	21	0	0	0	0	0	0
26																			
27																			
28	2120	3	1/1/1	0	0	0	0	1	5	1	16	0	0	0	0	0	0	1	1
29	2140	0	0	1	2	0	0	1	3	1	19	0	0	0	0	0	0	1	1
30																			
31																			
TOTALS	—	6	6	1	2	7	16	13	76	10	150	4	71	2	22	1	1	8	9
REGIONAL PERCENTAGES																			
A	B	C	D	E	F	G	H	J	SIGMAg										
11.5	1.9	13.5	25.0	19.2	7.7	3.8	1.9	15.4	52										
NOBS = 15				$\overline{p/g}$ mean = 2.0444						$\overline{f/g}$ mean = 8.0008									
				$\overline{p/g}$ mean = 1.9038						$\overline{f/g}$ mean = 6.7885									
GROUP COMPLEXITY INDEX (GCI) = 8.6923																			

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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	$g(S^w)$	$WN(S^w)$	$SN(S^w)$	$BX(S^w)$	$CV(S^w)$	$QC(S^w)$	$IS(S^w)$
2002 OCTOBER	7.67	125.50	158.44	1141.3	149.33	23.91	54.09
NOVEMBER	7.24	118.58	149.12	1070.6	141.32	22.49	51.12
DECEMBER	6.87	113.99	143.55	1054.5	134.37	21.39	50.07
2003 JANUARY	6.70	111.33	139.67	1025.9	130.98	20.89	49.03
FEBRUARY	6.53	106.90	133.21	945.1	126.45	20.28	46.09
MARCH	6.16	99.23	122.66	846.7	117.87	19.05	41.83
APRIL	5.74	92.23	112.48	790.1	110.05	17.81	38.75
MAY	5.42	87.47	105.66	754.5	103.31	16.84	37.04
JUNE	5.20	83.92	100.90	711.4	98.43	16.12	35.52
JULY	4.95	80.94	98.45	709.6	96.87	15.55	34.95
AUGUST	4.68	77.77	95.55	703.2	94.93	14.95	34.28
SEPTEMBER	4.55	76.06	93.48	699.9	92.61	14.61	33.78

BARNES-13 METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
2002 OCTOBER	7.75	128.96	163.61	1214.9	152.05	24.25	56.83
NOVEMBER	7.29	119.51	150.09	1080.1	140.95	22.64	51.58
DECEMBER	6.88	110.96	137.75	957.8	130.18	21.17	46.90
2003 JANUARY	6.54	103.97	127.63	856.1	121.91	19.99	43.03
FEBRUARY	6.23	98.09	119.76	784.5	115.93	18.98	40.04
MARCH	5.92	93.26	113.82	746.3	111.23	18.09	38.13
APRIL	5.66	90.19	110.04	745.1	107.96	17.43	37.52
MAY	5.46	88.68	108.35	769.9	105.72	16.96	37.93
JUNE	5.29	87.55	107.34	794.9	104.28	16.62	38.39
JULY	5.09	85.57	105.39	806.7	102.56	16.21	38.27
AUGUST	4.84	82.11	101.07	786.7	98.72	15.58	37.12
SEPTEMBER	4.60	78.06	95.50	750.9	93.59	14.85	35.37