



Georgi Dobrovolski Solar Observatory

NEW ZEALAND

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SUNSPOT RESULTS FOR APRIL 2005

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															
02	2120	3	28	58	8	11	91	647	94	11	45	2.0	3.5	3.5	4659-1
03															
04															
05															
06															
07															
08	2145	4	16	56	6	7	67	326	64	12	40	1.5	2.5	2.5	4660-1
09															
10															
11	2130	5	12	62	5	4	54	259	53	11	29	2.0	2.5	2.5	4661-2
12															
13	2155	4	7	47	4	3	43	143	42	9	21	2.0	2.5	2.5	4662-2
14	2205	3	5	35	3	2	32	69	32	8	22	1.5	2.5	2.0	4663-2
15															
16	2140	1	1	11	1	0	10	37	10	2	4	2.0	2.5	2.0	4664-2
17															
18															
19	2205	0	0	0	0	0	0	0	0	0	0	1.5	2.5	2.0	4665-2
20	2245	1	5	15	2	2	22	90	22	4	16	2.0	2.5	2.0	4666-2
21															
22															
23															
24															
25	2200	3	15	45	4	3	43	352	67	9	33	1.5	2.0	2.0	4667-2
26	2205	3	20	50	5	6	56	506	76	9	33	1.5	2.0	2.0	4668-2
27															
28															
29	2155	3	27	57	5	14	64	521	80	11	45	1.5	1.5	1.5	4669-2
30	2205	3	19	49	6	7	67	361	63	10	36	1.5	2.0	2.0	4670-2
31	—														
TOTALS	—	33	155	485	49	59	549	3311	603	96	324	20.5	28.5	26.5	—
NOBS	—	12	12	12	12	12	12	12	12	12	12	12	12	12	—
MNS	—	2.75	12.92	40.42	4.08	4.92	45.75	275.92	50.25	8.00	27.00	1.71	2.38	2.21	—

MEAN WEIGHT = 0.4898

MEAN CONDITION = 2.0972

TRUNCATED WOLF NUMBER = 36.67

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

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SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR

APRIL 2005

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											
02	2120	31	3	17	11	0	0	2.0	3.5	3.5	4659-1
03											
04											
05											
06											
07											
08	2145	18	2	7	7	2	0	1.5	2.5	2.5	4660-1
09											
10											
11	2130	13	1	5	3	3	1	2.0	2.5	2.5	4661-2
12											
13	2155	8	1	1	3	3	0	2.0	2.5	2.5	4662-2
14	2205	7	2	2	2	1	0	1.5	2.5	2.0	4663-2
15											
16	2140	1	0	0	0	1	0	2.0	2.5	2.0	4664-2
17											
18											
19	2205	0	0	0	0	0	0	1.5	2.5	2.0	4665-2
20	2245	6	1	3	2	0	0	2.0	2.5	2.0	4666-2
21											
22											
23											
24											
25	2200	17	2	12	2	0	1	1.5	2.0	2.0	4667-2
26	2205	22	2	14	5	0	1	1.5	2.0	2.0	4668-2
27											
28											
29	2155	30	3	12	15	0	0	1.5	1.5	1.5	4669-2
30	2205	21	2	11	7	1	0	1.5	2.0	2.0	4670-2
31	—										
TOTALS	—	174	19	84	57	11	3	20.5	28.5	26.5	—
NOBS	—	12	12	12	12	12	12	12	12	12	—
MNS	—	14.50	1.58	7.00	4.75	0.92	0.25	1.71	2.38	2.21	—

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SUNSPOT CENSUS BY CLASSIFICATION FOR

APRIL 2005

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	2120	0	0	0	0	0	0	1	11	1	15	0	0	0	0	0	0	1	2
03																			
04																			
05																			
06																			
07																			
08	2145	0	0	0	0	0	0	2	5/9	0	0	0	0	0	0	0	0	2	1/1
09																			
10																			
11	2130	1	1	0	0	0	0	1	8	0	0	0	0	0	0	0	0	3	1/1/1
12																			
13	2155	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	3	1/1/1
14	2205	0	0	0	0	2	2/2	0	0	0	0	0	0	0	0	0	0	1	1
15																			
16	2140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
17																			
18																			
19	2205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	2245	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0
21																			
22																			
23																			
24																			
25	2200	1	1	0	0	0	0	1	11	0	0	0	0	1	3	0	0	0	0
26	2205	1	1	0	0	0	0	1	14	0	0	0	0	1	5	0	0	0	0
27																			
28																			
29	2155	0	0	1	2	0	0	1	16	1	9	0	0	0	0	0	0	0	0
30	2205	0	0	0	0	0	0	2	6/12	0	0	0	0	0	0	0	0	1	1
31	—																		
TOTALS	—	3	3	1	2	3	8	10	97	2	24	0	0	2	8	0	0	12	13
REGIONAL PERCENTAGES																			
A	B	C	D	E	F	G	H	J	Σg										
9.1	3.0	9.1	30.3	6.1	0.0	6.1	0.0	36.4	33										
NOBS = 12		$\overline{p/g}$ mean = 1.5303				$\overline{f/g}$ mean = 4.7409													
		$\overline{p/g}$ mean = 1.4848				$\overline{f/g}$ mean = 4.6970													
GROUP COMPLEXITY INDEX (GCI) = 6.1818																			

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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 GDSO ANNUAL REPORTS.

WALDMEIER METHOD

MONTH	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
2004 NOVEMBER	2.95	48.53	59.05	446.4	62.64	9.47	21.14
DECEMBER	2.87	48.18	60.36	456.1	63.75	9.40	21.60
2005 JANUARY	2.83	47.36	60.71	432.0	64.03	9.38	21.14
FEBRUARY	2.81	46.03	59.67	391.9	62.75	9.27	20.02
MARCH	2.79	45.29	58.30	376.6	61.02	9.13	19.49
APRIL	2.58	41.97	53.70	350.4	56.63	8.44	18.03
MAY	2.32	37.30	47.99	301.4	50.99	7.54	15.82
JUNE	2.33	36.69	47.03	279.9	49.91	7.44	15.11
JULY	2.37	36.83	47.22	274.0	49.81	7.48	14.78
AUGUST	2.22	34.42	44.96	256.9	46.61	7.03	13.74
SEPTEMBER	2.11	32.64	42.97	243.8	43.20	6.65	13.02
OCTOBER	2.08	32.20	42.68	242.2	42.17	6.52	12.81

BARNES-13 METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
2004 NOVEMBER	2.95	48.95	60.06	459.0	63.78	9.58	21.54
DECEMBER	2.80	46.43	57.15	426.5	61.36	9.13	20.38
2005 JANUARY	2.72	44.53	55.15	390.9	59.85	8.85	19.33
FEBRUARY	2.67	43.30	54.11	362.6	58.93	8.70	18.55
MARCH	2.64	42.71	53.98	349.1	58.26	8.62	18.23
APRIL	2.58	41.72	53.68	337.8	57.16	8.43	17.88
MAY	2.50	40.44	53.26	323.2	55.88	8.20	17.39
JUNE	2.48	39.88	53.22	312.6	55.11	8.12	17.01
JULY	2.44	38.85	52.00	298.9	53.16	7.92	16.25
AUGUST	2.32	36.39	48.69	276.3	49.17	7.42	14.92
SEPTEMBER	2.15	33.32	44.22	249.2	44.31	6.78	13.33
OCTOBER	2.01	30.56	40.00	223.5	40.02	6.22	11.80