



Georgi Dobrovolski Solar Observatory

NEW ZEALAND

E-MAIL: gdso@earthling.net

WEBSITE: www.cv-helios.net/gdso

SUNSPOT RESULTS FOR JULY 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															
02	2320	2	9	29	4	4	44	122	43	7	25	2.0	2.5	2.5	4417-8
03															
04	0150	2	7	27	1	4	14	52	10	4	10	2.0	2.0	2.5	4418-8
05															
06															
07	2225	1	2	12	0	2	2	8	2	2	4	2.0	2.0	2.0	4419-8
08															
09	2240	3	12	42	4	7	47	205	44	9	29	2.0	2.5	2.5	4420-8
10	2250	4	18	58	7	9	79	303	63	12	38	2.5	2.5	2.0	4421-8
11	2300	4	21	61	7	11	81	333	54	10	30	2.5	2.5	2.0	4422-8
12	2250	7	45	115	10	21	121	692	112	20	68	1.5	2.0	2.0	4423-8
13	2305	7	54	124	14	19	159	1038	154	22	84	1.5	2.0	2.0	4424-8
14															
15															
16															
17	2210	6	52	112	11	17	127	1217	130	23	99	2.0	2.0	2.0	4425-8
18	2225	7	74	144	13	26	156	2075	134	21	87	2.0	2.0	2.5	4426-8
19															
20															
21	2225	4	68	108	12	18	138	2125	120	16	72	2.0	2.5	2.5	4427-8
22															
23	2215	3	69	99	8	18	98	2317	76	11	49	2.0	2.0	2.0	4428-9
24	2210	2	60	80	8	16	96	2104	68	9	45	1.5	2.0	2.0	4429-9
25	2220	3	60	90	10	17	117	2089	95	12	56	1.5	2.0	2.0	4430-9
26															
27															
28															
29															
30	2215	2	12	32	3	6	36	235	32	6	20	1.5	2.0	2.5	4431-9
31	2225	2	8	28	3	4	34	124	33	7	25	2.0	3.0	2.0	4432-9
TOTALS	—	59	571	1161	115	199	1349	15039	1170	191	741	30.5	35.5	35.0	—
NOBS	—	16	16	16	16	16	16	16	16	16	16	16	16	16	—
MNS	—	3.69	35.69	72.56	7.19	12.44	84.31	939.94	73.13	11.94	46.31	1.91	2.22	2.19	—

MEAN WEIGHT = 0.4798

MEAN CONDITION = 2.1042

TRUNCATED WOLF NUMBER = 64.81

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

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SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR JULY 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											
02	2320	11	2	5	4	0	0	2.0	2.5	2.5	4417-8
03											
04	0150	8	1	3	3	0	1	2.0	2.0	2.5	4418-8
05											
06											
07	2225	3	1	0	2	0	0	2.0	2.0	2.0	4419-8
08											
09	2240	14	2	4	7	1	0	2.0	2.5	2.5	4420-8
10	2250	21	3	8	9	1	0	2.5	2.5	2.0	4421-8
11	2300	23	2	9	10	1	1	2.5	2.5	2.0	4422-8
12	2250	50	5	24	19	0	2	1.5	2.0	2.0	4423-8
13	2305	59	5	35	17	0	2	1.5	2.0	2.0	4424-8
14											
15											
16											
17	2210	58	6	35	17	0	0	2.0	2.0	2.0	4425-8
18	2225	78	4	47	24	1	2	2.0	2.0	2.5	4426-8
19											
20											
21	2225	71	3	49	18	1	0	2.0	2.5	2.5	4427-8
22											
23	2215	71	2	50	18	1	0	2.0	2.0	2.0	4428-9
24	2210	62	2	44	16	0	0	1.5	2.0	2.0	4429-9
25	2220	62	2	42	17	1	0	1.5	2.0	2.0	4430-9
26											
27											
28											
29											
30	2215	13	1	5	6	1	0	1.5	2.0	2.5	4431-9
31	2225	10	2	4	4	0	0	2.0	3.0	2.0	4432-9
TOTALS	—	614	43	364	191	8	8	30.5	35.5	35.0	—
NOBS	—	16	16	16	16	16	16	16	16	16	—
MNS	—	38.38	2.69	22.75	11.94	0.50	0.50	1.91	2.22	2.19	—

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SUNSPOT CENSUS BY CLASSIFICATION FOR

JULY 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																			
02	2320	0	0	0	0	1	4	1	5	0	0	0	0	0	0	0	0	0	0
03																			
04	0150	1	1	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0
05																			
06																			
07	2225	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08																			
09	2240	0	0	0	0	1	3	1	8	0	0	0	0	0	0	0	0	1	1
10	2250	0	0	0	0	2	2/2	1	13	0	0	0	0	0	0	0	0	1	1
11	2300	1	1	0	0	1	5	1	14	0	0	0	0	0	0	0	0	1	1
12	2250	2	1/1	0	0	2	4/5	3	6/12/16	0	0	0	0	0	0	0	0	0	0
13	2305	2	1/1	0	0	1	6	3	7/8/9	1	22	0	0	0	0	0	0	0	0
14																			
15																			
16																			
17	2210	0	0	1	2	2	2/7	1	6	1	21	1	14	0	0	0	0	0	0
18	2225	2	1/1	1	2	0	0	1	11	1	24	1	34	0	0	0	0	1	1
19																			
20																			
21	2225	0	0	0	0	0	0	2	7/11	0	0	1	49	0	0	0	0	1	1
22																			
23	2215	0	0	0	0	1	6	0	0	0	0	1	62	0	0	0	0	1	1
24	2210	0	0	0	0	1	2	0	0	0	0	1	58	0	0	0	0	0	0
25	2220	0	0	0	0	0	0	1	4	0	0	1	55	0	0	0	0	1	1
26																			
27																			
28																			
29																			
30	2215	0	0	0	0	0	0	1	11	0	0	0	0	0	0	0	0	1	1
31	2225	0	0	0	0	1	2	1	6	0	0	0	0	0	0	0	0	0	0
TOTALS	—	8	8	3	6	14	56	17	154	3	67	6	272	0	0	0	0	8	8
REGIONAL PERCENTAGES																			
A	B	C	D	E	F	G	H	J	SIGMAg										
13.6	5.1	23.7	28.8	5.1	10.2	0.0	0.0	13.6	59										
NOBS = 16				$\overline{p/g}$ mean = 1.9033						$\overline{f/g}$ mean = 9.8207									
				$\overline{p/g}$ mean = 1.9492						$\overline{f/g}$ mean = 9.6780									
GROUP COMPLEXITY INDEX (GCI) = 11.6271																			

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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	$g(S^W)$	$WN(S^W)$	$SN(S^W)$	$BX(S^W)$	$CV(S^W)$	$QC(S^W)$	$IS(S^W)$
2003 FEBRUARY	6.53	106.90	133.21	945.1	126.49	20.28	46.09
MARCH	6.16	99.23	122.66	846.7	117.92	19.05	41.83
APRIL	5.74	92.23	112.48	790.1	110.09	17.81	38.75
MAY	5.42	87.47	105.66	754.5	103.35	16.84	37.04
JUNE	5.20	83.92	100.90	711.4	98.47	16.12	35.52
JULY	4.95	80.94	98.45	709.6	96.91	15.55	34.95
AUGUST	4.68	77.77	95.55	703.2	94.97	14.95	34.28
SEPTEMBER	4.55	76.06	93.48	700.0	92.65	14.61	33.78
OCTOBER	4.41	73.76	90.28	690.5	88.82	14.13	32.79
NOVEMBER	4.29	71.92	88.12	673.5	85.40	13.74	32.00
DECEMBER	4.19	69.26	84.25	630.5	82.43	13.37	30.28
2004 JANUARY	4.00	65.23	78.05	575.9	77.59	12.71	28.00

BARNES-13 METHOD

MONTH	$g(S^{B13})$	$WN(S^{B13})$	$SN(S^{B13})$	$BX(S^{B13})$	$CV(S^{B13})$	$QC(S^{B13})$	$IS(S^{B13})$
2003 FEBRUARY	6.23	98.09	119.76	784.5	115.98	18.98	40.04
MARCH	5.92	93.26	113.82	746.3	111.30	18.09	38.13
APRIL	5.66	90.19	110.04	745.1	108.03	17.43	37.52
MAY	5.46	88.68	108.35	769.9	105.78	16.96	37.93
JUNE	5.29	87.55	107.34	794.9	104.33	16.62	38.39
JULY	5.09	85.57	105.39	806.7	102.60	16.21	38.27
AUGUST	4.84	82.11	101.07	786.7	98.76	15.58	37.12
SEPTEMBER	4.60	78.06	95.50	750.9	93.61	14.85	35.37
OCTOBER	4.35	73.60	89.51	704.8	88.15	14.07	33.20
NOVEMBER	4.14	69.20	83.99	644.3	82.96	13.34	30.79
DECEMBER	3.96	65.01	78.56	577.5	78.19	12.69	28.24
2004 JANUARY	3.80	61.44	73.72	524.8	73.91	12.09	26.12