

Georgi Dobrovolski Solar Observatory

NEW ZEALAND

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SUNSPOT RESULTS FOR SEPTEMBER 2003

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															
03															
04															
05															
06	2045	4	7	47	5	2	52	134	57	11	33	1.5	2.0	2.0	4309
07															
08															
09	2055	1	12	22	2	5	25	216	22	4	16	1.5	1.5	1.5	4310
10	2040	3	24	54	4	9	49	423	43	8	24	1.5	1.5	2.0	4311
11	2045	2	19	39	4	9	49	322	42	7	25	1.5	2.0	2.0	4312
12															
13															
14	2105	4	10	50	3	5	35	118	36	10	30	1.5	2.0	2.5	4313
15															
16															
17															
18															
19															
20	2205	4	15	55	7	7	77	297	102	14	54	1.5	2.5	2.5	4314
21	2055	5	15	65	6	3	63	399	89	16	66	1.5	2.5	2.5	4315
22	2105	5	18	68	5	11	61	497	81	14	54	2.0	2.5	2.5	4316
23															
24															
25															
26															
27															
28															
29															
30															
31	—														
TOTALS	—	28	120	400	36	51	411	2406	472	84	302	12.5	16.5	17.5	—
NOBS	—	8	8	8	8	8	8	8	8	8	8	8	8	8	—
MNS	—	3.50	15.00	50.00	4.50	6.38	51.38	300.75	59.00	10.50	37.75	1.56	2.06	2.19	—

MEAN WEIGHT = 0.5262

MEAN CONDITION = 1.9375

TRUNCATED WOLF NUMBER = 41.38

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

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SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR SEPTEMBER 2003

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											
03											
04											
05											
06	2045	9	2	3	2	2	0	1.5	2.0	2.0	4309
07											
08											
09	2055	13	1	7	5	0	0	1.5	1.5	1.5	4310
10	2040	26	2	14	9	1	0	1.5	1.5	2.0	4311
11	2045	21	2	10	9	0	0	1.5	2.0	2.0	4312
12											
13											
14	2105	13	3	5	4	0	1	1.5	2.0	2.5	4313
15											
16											
17											
18											
19											
20	2205	18	3	7	7	1	0	1.5	2.5	2.5	4314
21	2055	18	3	11	2	1	1	1.5	2.5	2.5	4315
22	2105	21	3	6	10	1	1	2.0	2.5	2.5	4316
23											
24											
25											
26											
27											
28											
29											
30											
31	—										
TOTALS	—	139	19	63	48	6	3	12.5	16.5	17.5	—
NOBS	—	8	8	8	8	8	8	8	8	8	—
MNS	—	17.38	2.38	7.88	6.00	0.75	0.38	1.56	2.06	2.19	—

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SUNSPOT CENSUS BY CLASSIFICATION FOR SEPTEMBER 2003

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																			
03																			
04																			
05																			
06	2045	0	0	0	0	1	3	1	2	0	0	0	0	0	0	0	0	2	1/1
07																			
08																			
09	2055	0	0	0	0	0	0	1	12	0	0	0	0	0	0	0	0	0	0
10	2040	0	0	1	2	0	0	1	21	0	0	0	0	0	0	0	0	1	1
11	2045	0	0	0	0	1	2	1	17	0	0	0	0	0	0	0	0	0	0
12																			
13																			
14	2105	1	1	1	2	1	2	1	5	0	0	0	0	0	0	0	0	0	0
15																			
16																			
17																			
18																			
19																			
20	2205	0	0	0	0	1	2	1	8	1	4	0	0	0	0	0	0	1	1
21	2055	1	1	0	0	1	2	1	3	0	0	1	8	0	0	0	0	1	1
22	2105	1	1	1	2	1	2	0	0	0	0	1	12	0	0	0	0	1	1
23																			
24																			
25																			
26																			
27																			
28																			
29																			
30																			
31	—																		
TOTALS	—	3	3	3	6	6	13	7	68	1	4	2	20	0	0	0	0	6	6
REGIONAL PERCENTAGES																			
A	B	C	D	E	F	G	H	J	SIGMAg										
10.7	10.7	21.4	25.0	3.6	7.1	0.0	0.0	21.4	28										
NOBS = 8				$\overline{p/g}$ mean = 1.4104						$\overline{f/g}$ mean = 5.5125									
				$\overline{p/g}$ mean = 1.2857						$\overline{f/g}$ mean = 4.2857									
GROUP COMPLEXITY INDEX (GCI) = 5.5714																			

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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 APRIL	9.15	153.37	196.02	1476.5	181.17	29.24	68.37
MAY	9.03	151.55	195.32	1467.9	179.03	28.89	67.66
JUNE	8.78	146.77	189.58	1420.1	173.86	28.11	65.19
JULY	8.49	141.03	180.68	1341.4	165.59	27.02	62.07
AUGUST	8.26	135.98	172.48	1261.2	158.58	25.99	59.16
SEPTEMBER	7.97	130.68	165.10	1197.0	153.84	24.94	56.49
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

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 APRIL	9.19	152.11	195.10	1438.7	179.61	29.42	66.73
MAY	9.10	151.78	195.65	1462.1	179.48	29.12	67.22
JUNE	8.90	149.77	193.63	1473.0	177.57	28.48	67.06
JULY	8.65	146.84	189.67	1462.8	173.66	27.66	66.36
AUGUST	8.43	143.01	183.85	1415.2	168.42	26.78	64.62
SEPTEMBER	8.13	137.03	175.09	1329.4	161.27	25.65	61.34
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