

Georgi Dobrovolski Solar Observatory

NEW ZEALAND

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SUNSPOT RESULTS FOR AUGUST 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	2115	7	33	103	11	14	124	667	145	22	84	1.0	2.5	2.0	4296
05	2150	7	43	113	10	18	118	854	140	23	89	2.0	2.5	2.0	4297
06	2210	6	39	99	9	14	104	873	124	20	80	1.0	2.0	2.0	4298
07															
08	2225	5	41	91	10	12	112	880	120	18	76	2.0	3.0	3.0	4299
09															
10															
11															
12	2150	4	33	73	10	16	116	788	96	16	70	2.0	2.5	3.0	4300
13	2120	4	42	82	11	16	126	955	88	14	54	1.5	2.0	2.0	4301
14															
15	2115	4	50	90	16	16	176	1260	77	13	49	1.5	2.0	2.5	4302
16															
17															
18															
19															
20															
21															
22	2200	5	49	99	15	16	166	1036	141	21	89	1.5	2.0	2.0	4303
23	2120	6	52	112	15	18	168	1041	112	19	75	2.0	2.5	2.5	4304
24	2120	7	50	120	15	20	170	1130	135	24	98	1.5	2.0	2.0	4305
25															
26															
27	2055	10	46	146	12	22	142	685	134	29	93	1.0	2.0	2.5	4306
28	2125	10	30	130	15	10	160	490	149	28	92	1.5	2.0	2.0	4307
29															
30	2120	7	31	101	10	16	116	495	113	22	74	1.0	2.0	2.5	4308
31															
TOTALS	—	82	539	1359	159	208	1798	11154	1574	269	1023	19.5	29.0	30.0	—
NOBS	—	13	13	13	13	13	13	13	13	13	13	13	13	13	—
MNS	—	6.31	41.46	104.54	12.23	16.00	138.31	858.00	121.08	20.69	78.69	1.50	2.23	2.31	—

MEAN WEIGHT = 0.5064

MEAN CONDITION = 2.0128

TRUNCATED WOLF NUMBER = 91.15

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

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SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR AUGUST 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 umbrae within penumbrae within the groups (gr) .

grf = number of non-penumbra spots within the groups (gr) .

efp = number of single penumbral spots .

ef = number of single non-penumbra 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	2115	38	5	18	13	1	1	1.0	2.5	2.0	4296
05	2150	49	6	25	17	0	1	2.0	2.5	2.0	4297
06	2210	43	4	24	13	1	1	1.0	2.0	2.0	4298
07											
08	2225	45	4	29	11	0	1	2.0	3.0	3.0	4299
09											
10											
11											
12	2150	36	3	16	16	1	0	2.0	2.5	3.0	4300
13	2120	45	3	25	16	1	0	1.5	2.0	2.0	4301
14											
15	2115	52	2	32	16	2	0	1.5	2.0	2.5	4302
16											
17											
18											
19											
20											
21											
22	2200	54	5	33	16	0	0	1.5	2.0	2.0	4303
23	2120	56	4	34	16	0	2	2.0	2.5	2.5	4304
24	2120	56	6	30	19	0	1	1.5	2.0	2.0	4305
25											
26											
27	2055	54	8	23	21	1	1	1.0	2.0	2.5	4306
28	2125	36	6	18	8	2	2	1.5	2.0	2.0	4307
29											
30	2120	37	6	14	16	1	0	1.0	2.0	2.5	4308
31											
TOTALS	—	601	62	321	198	10	10	19.5	29.0	30.0	—
NOBS	—	13	13	13	13	13	13	13	13	13	—
MNS	—	46.23	4.77	24.69	15.23	0.77	0.77	1.50	2.23	2.31	—

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SUNSPOT CENSUS BY CLASSIFICATION FOR AUGUST 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	2115	1	1	1	3	1	3	1	5	2	9/11	0	0	0	0	0	0	1	1
05	2150	1	1	1	3	2	2/4	1	5	2	11/17	0	0	0	0	0	0	0	0
06	2210	1	1	0	0	1	3	1	6	2	11/17	0	0	0	0	0	0	1	1
07																			
08	2225	1	1	0	0	1	4	1	8	2	6/22	0	0	0	0	0	0	0	0
09																			
10																			
11																			
12	2150	0	0	0	0	0	0	1	7	2	12/13	0	0	0	0	0	0	1	1
13	2120	0	0	0	0	1	3	1	8	1	30	0	0	0	0	0	0	1	1
14																			
15	2115	0	0	0	0	0	0	1	2	1	46	0	0	0	0	0	0	2	1/1
16																			
17																			
18																			
19																			
20																			
21																			
22	2200	0	0	0	0	0	0	4	3/4/9/11	1	22	0	0	0	0	0	0	0	0
23	2120	2	1/1	0	0	0	0	3	2/12/17	1	19	0	0	0	0	0	0	0	0
24	2120	1	1	1	3	1	2	3	5/6/16	0	0	1	17	0	0	0	0	0	0
25																			
26																			
27	2055	1	1	1	2	4	2/3/3/4	3	7/11/12	0	0	0	0	0	0	0	0	1	1
28	2125	2	1/1	0	0	2	3/3	4	3/4/6/7	0	0	0	0	0	0	0	0	2	1/1
29																			
30	2120	0	0	1	3	2	2/2	3	4/9/10	0	0	0	0	0	0	0	0	1	1
31																			
TOTALS	—	10	10	5	14	15	43	27	199	14	246	1	17	0	0	0	0	10	10
REGIONAL PERCENTAGES																			
A	B	C	D	E	F	G	H	J	SIGMAg										
12.2	6.1	18.3	32.9	17.1	1.2	0.0	0.0	12.2	82										
NOBS = 13				$\overline{p/g}$ mean = 2.1170						$\overline{f/g}$ mean = 7.2650									
				$\overline{p/g}$ mean = 1.9390						$\overline{f/g}$ mean = 6.5732									
GROUP COMPLEXITY INDEX (GCI) = 8.5122																			

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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 MARCH	9.28	155.62	198.73	1505.9	185.22	29.81	69.44
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

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 MARCH	9.26	152.50	194.87	1426.0	180.44	29.69	66.49
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