Georgi Dobrovolski Solar Observatory

NEW ZEALAND

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SUNSPOT RESULTS FOR OCTOBER 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	QC²	Q	S	T	Ref.
01	1955	6	36	96	13	16	146	877	136	22	94	1.5	2.0	2.0	4317
02															
03															
04	2125	3	30	60	7	14	84	678	45	9	35	1.5	3.0	3.0	4318
05	2010	3	27	57	6	14	74	941	44	9	41	1.5	2.0	2.5	4319
06	2055	4	28	68	8	15	95	623	55	11	39	2.0	2.0	2.0	4320
07															
08															
09															
10	2125	4	18	58	6	8	68	465	50	10	34	1.5	2.5	3.0	4321
11															
12	1955	2	3	23	1	1	11	78	8	3	5	2.0	3.0	3.5	4322
13	2005	1	2	12	1	0	10	74	7	2	4	2.5	2.5	2.0	4323
14	2020	1	2	12	0	2	2	8	2	2	4	1.5	2.0	2.0	4324
15	1955	2	7	27	4	1	41	126	41	8	32	1.5	1.5	2.0	4325
16															
17															
18	2005	3	21	51	5	2	52	347	68	9	29	2.0	3.0	3.5	4326
19	2015	3	25	55	3	6	36	416	58	8	26	1.5	2.0	2.0	4327
20	2055	4	43	83	4	11	51	914	69	13	47	1.5	2.0	2.0	4328
21	1930	4	39	79	5	11	61	865	85	13	51	1.5	1.5	1.5	4329
22															
23															
24															
25	1935	4	76	116	11	12	122	2244	154	19	93	2.5	2.5	2.5	4330
26	2005	6	83	143	15	24	174	2181	145	20	82	1.5	1.5	1.5	4331
27															
28	1950	8	146	226	22	31	251	4354	292	35	165	1.5	2.5	2.5	4332
29															
30	2130	8	138	218	21	34	244	4216	243	33	153	2.0	3.0	3.5	4333
31	1955	8	124	204	20	35	235	3626	226	34	156	1.5	2.0	2.0	4334
TOTALS	——	74	848	1588	152	237	1757	23033	1728	260	1090	31.0	40.5	43.0	——
NOBS	——	18	18	18	18	18	18	18	18	18	18	18	18	18	——
MNS	——	4.11	47.11	88.22	8.44	13.17	97.61	1279.61	96.00	14.44	60.56	1.72	2.25	2.39	——

MEAN WEIGHT = 0.4910 MEAN CONDITION = 2.1204 TRUNCATED WOLF NUMBER = 80.89

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

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SUNSPOT DISTRIBUTION & INTER-SOL INDICES FOR

OCTOBER 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	1955	40	4	18	16	2	0	1.5	2.0	2.0	4317
02											
03											
04	2125	32	2	16	13	0	1	1.5	3.0	3.0	4318
05	2010	28	1	12	13	1	1	1.5	2.0	2.5	4319
06	2055	30	2	12	14	1	1	2.0	2.0	2.0	4320
07											
08											
09											
10	2125	20	2	9	7	1	1	1.5	2.5	3.0	4321
11											
12	1955	4	1	2	0	0	1	2.0	3.0	3.5	4322
13	2005	3	1	2	0	0	0	2.5	2.5	2.0	4323
14	2020	3	1	0	2	0	0	1.5	2.0	2.0	4324
15	1955	9	2	6	1	0	0	1.5	1.5	2.0	4325
16											
17											
18	2005	23	2	18	2	1	0	2.0	3.0	3.5	4326
19	2015	27	2	19	5	0	1	1.5	2.0	2.0	4327
20	2055	47	4	32	11	0	0	1.5	2.0	2.0	4328
21	1930	42	3	28	10	0	1	1.5	1.5	1.5	4329
22											
23											
24											
25	1935	80	4	64	12	0	0	2.5	2.5	2.5	4330
26	2005	87	4	58	23	1	1	1.5	1.5	1.5	4331
27											
28	1950	153	7	114	31	1	0	1.5	2.5	2.5	4332
29											
30	2130	145	7	104	33	0	1	2.0	3.0	3.5	4333
31	1955	132	8	89	35	0	0	1.5	2.0	2.0	4334
TOTALS	——	905	57	603	228	8	9	31.0	40.5	43.0	——
NOBS	——	18	18	18	18	18	18	18	18	18	——
MNS	——	50.28	3.17	33.50	12.67	0.44	0.50	1.72	2.25	2.39	——

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SUNSPOT CENSUS BY CLASSIFICATION FOR

OCTOBER 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	1955	0	0	0	0	1	4	1	8	1	15	1	7	0	0	0	0	2	1/1
02																			
03																			
04	2125	1	1	0	0	1	3	0	0	1	26	0	0	0	0	0	0	0	0
05	2010	1	1	0	0	0	0	0	0	0	0	1	25	0	0	0	0	1	1
06	2055	1	1	0	0	1	4	0	0	1	22	0	0	0	0	0	0	1	1
07																			
08																			
09																			
10	2125	1	1	0	0	0	0	0	0	1	14	0	0	0	0	0	0	2	1/2
11																			
12	1955	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
13	2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
14	2020	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	1955	0	0	0	0	0	0	2	3/4	0	0	0	0	0	0	0	0	0	0
16																			
17																			
18	2005	0	0	0	0	1	5	1	15	0	0	0	0	0	0	0	0	1	1
19	2015	1	1	0	0	1	2	1	22	0	0	0	0	0	0	0	0	0	0
20	2055	0	0	1	2	2	3/4	0	0	1	34	0	0	0	0	0	0	0	0
21	1930	1	1	0	0	1	4	1	3	1	31	0	0	0	0	0	0	0	0
22																			
23																			
24																			
25	1935	0	0	0	0	0	0	2	3/6	1	30	1	37	0	0	0	0	0	0
26	2005	1	1	0	0	1	11	2	4/22	0	0	1	44	0	0	0	0	1	1
27																			
28	1950	0	0	0	0	0	0	4	7/9/11/14	1	15	2	37/52	0	0	0	0	1	1
29																			
30	2130	1	1	0	0	0	0	5	5/7/8/8/12	0	0	2	42/55	0	0	0	0	0	0
31	1955	0	0	1	2	0	0	5	4/5/8/12/14	0	0	2	32/47	0	0	0	0	0	0
TOTALS	——	9	9	3	6	9	40	24	214	8	187	10	378	0	0	0	0	11	14

REGIONAL PERCENTAGES

A	B	C	D	E	F	G	H	J	SIGMAg
12.2	4.1	12.2	32.4	10.8	13.5	0.0	0.0	14.9	74

NOBS = 18 $\overline{p / g}$ mean = 1.7523 $\overline{f / g}$ mean = 9.1759

$\overline{p} / \overline{g}$ mean = 2.0541 $\overline{f} / \overline{g}$ mean = 11.4595

GROUP COMPLEXITY INDEX (GCI) = 13.5135

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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 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
APRIL	5.74	92.23	112.48	790.1	110.05	17.81	38.75

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 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
APRIL	5.66	90.19	110.04	745.1	107.96	17.43	37.52