

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE

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ISSN 0271-8480

Volume 60 Number 7

July 2004

Table I. American Relative Sunspot Numbers (Ra) for July 2004 [boldface = maximum, minimum]

Day	N	Raw Mean	Ra
1	40	25	19
2	41	30	22
3	43	31	23
4	36	26	18
5	33	20	14
6	40	24	16
7	39	15	11
8	34	23	16
9	44	39	28
10	46	63	46
11	38	75	53
12	33	100	74
13	39	132	96
14	35	131	95
15	40	117	81
16	40	104	73
17	41	120	88
18	42	135	99
19	39	149	106
20	45	143	103
21	37	132	93
22	43	126	91
23	38	121	85
24	36	113	80
25	39	96	68
26	31	93	66
27	36	80	56
28	44	47	33
29	39	33	24
30	40	35	26
31	40	36	26

Means: **39.1** **77.8** **55.9**

Total No. of Observers: 65

Total No. of Observations: 1211

Table II. July 2004 Observers

10 AAP P.Abbott	5 LARJ J.Larriba
31 ARAG G.Araujo	7 LERM M.Lerman
16 BARH H.Barnes	20 LEVM M.Leventhal
10 BATR R.Battaiola	21 MARE E.Mariani
22 BEB R.Berg	31 MARJ J.Maranon
15 BERJ J.Berdejo	16 MAV D.Matsnev
2 BLAJ J.Blackwell	31 MCE E.Mochizuki
14 BMF M.Boschat	28 MMI M.Moeller
17 BOSB B.Bose	11 OBSO IPS Observatory
31 BRAB B.Branchett	14 RICE E.Richardson
19 BRAD D.Branchett	10 RITA A.Ritchie
27 BRAR R.Branch	12 SIMC C.Simpson
27 BROB R.Brown	12 STEF G.Stefanopoulos
4 CAMP P.Cambell	24 STEM G.Stemmler
13 CARJ J.Carlson	28 STQ N.Stoikidis
30 CHAG G.Morales	29 SUZM M.Suzuki
30 CKB B.Cudnik	28 SZAK K.Szatkowski
13 CLZ C.Laurent	23 SZUM M.Szulc
23 COMT T.Compton	31 TESD D.Teske
21 DEJV J.van Delft	4 THR R.Thompson
14 DELS S.Delaney	17 TJV J.Temprano
15 DGP G.Dyck	20 URBP P.Urbanski
15 DPP P.dePonhiere	5 VALD D.Del Valle
27 DRAJ J.Dragesco	13 VARG A.Vargas
28 DUBF F.Dubois	12 VIDM D.Vidican
14 FEEC C.Feehrer	22 WILW W.Wilson
21 FERJ J.Fernandes	31 YESH H.Yesilyaprak
25 FLET T.Fleming	
25 FUJK K.Fujimori	
11 GOEM M.Goetz	
10 HALB B.Halls	
8 HAYK K.Hay	
19 HRUT T.Hrutkay	
21 JAMD D.James	
19 KAPJ J.Kaplan	
27 KNJS J&S Knight	
1 KROL L.Krozel	
4 KUZM M.Kuzmin	

Reporting Addresses

Sunspot Reports -- email: solar@aavso.org
postal mail: AAVSO, 25 Birch St. Cambridge, MA 02138
FAX (AAVSO): (617) 354-0665

SID Solar Flare Reports -- email: noatak@aol.com
postal mail: Mike Hill
114 Prospect St. Marlboro, MA 01752

Table III. Means of Raw Group Counts (RG) and Ratios of Spots to Groups (S:G) in July 2004

Day	RG	S:G	Day	RG	S:G	Day	RG	S:G	Day	RG	S:G
1	2.0	2.8	9	2.5	6.0	17	6.0	10.1	25	2.9	22.8
2	2.1	4.6	10	3.8	6.6	18	6.2	12.0	26	3.1	19.9
3	2.1	4.8	11	4.4	7.0	19	6.0	14.9	27	3.0	16.8
4	1.8	4.6	12	5.6	7.8	20	5.0	18.5	28	2.4	9.4
5	1.6	2.7	13	6.6	10.0	21	4.4	20.1	29	2.1	5.6
6	1.9	2.3	14	6.4	10.5	22	3.7	23.7	30	2.1	6.7
7	1.2	2.5	15	5.9	9.8	23	3.2	28.2	31	2.2	6.3
8	1.5	5.0	16	5.3	9.7	24	3.0	27.6	Mn.	3.5	10.9

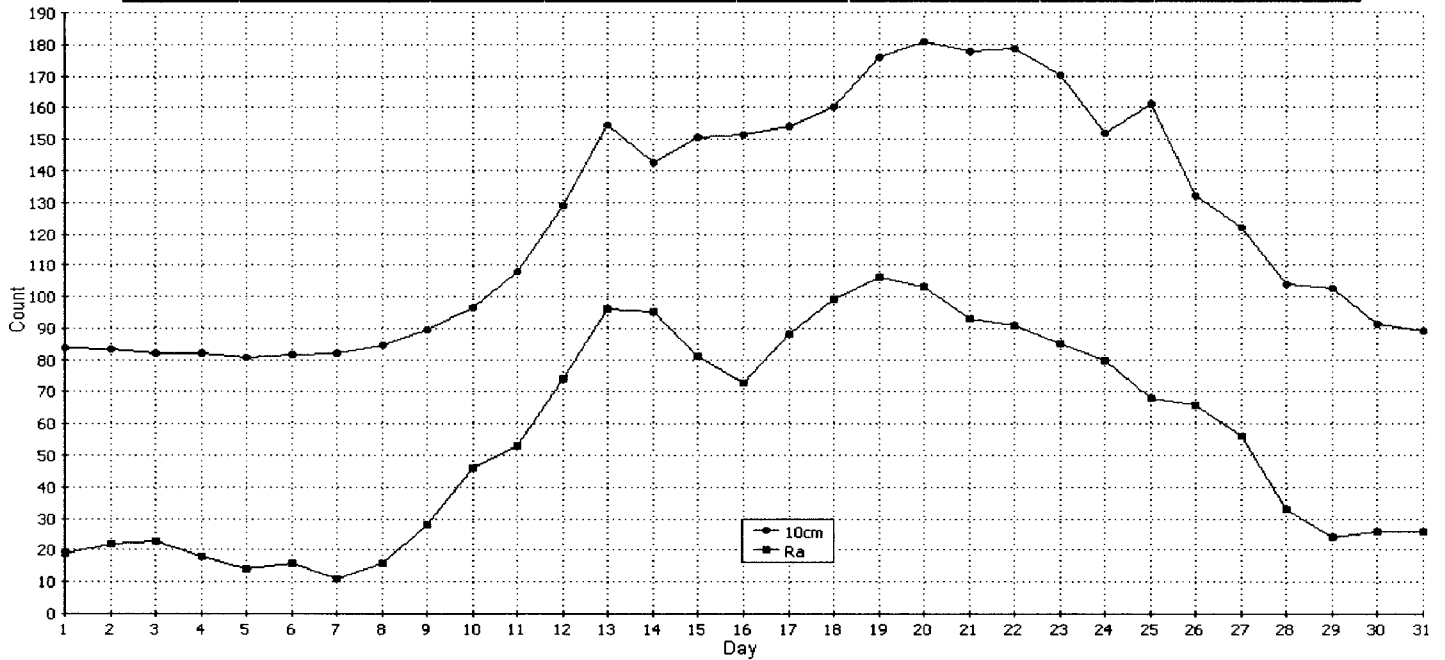


Fig. 1. 10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for July 2004
 10 cm source: <http://www.drao.nrc.ca/icarus>

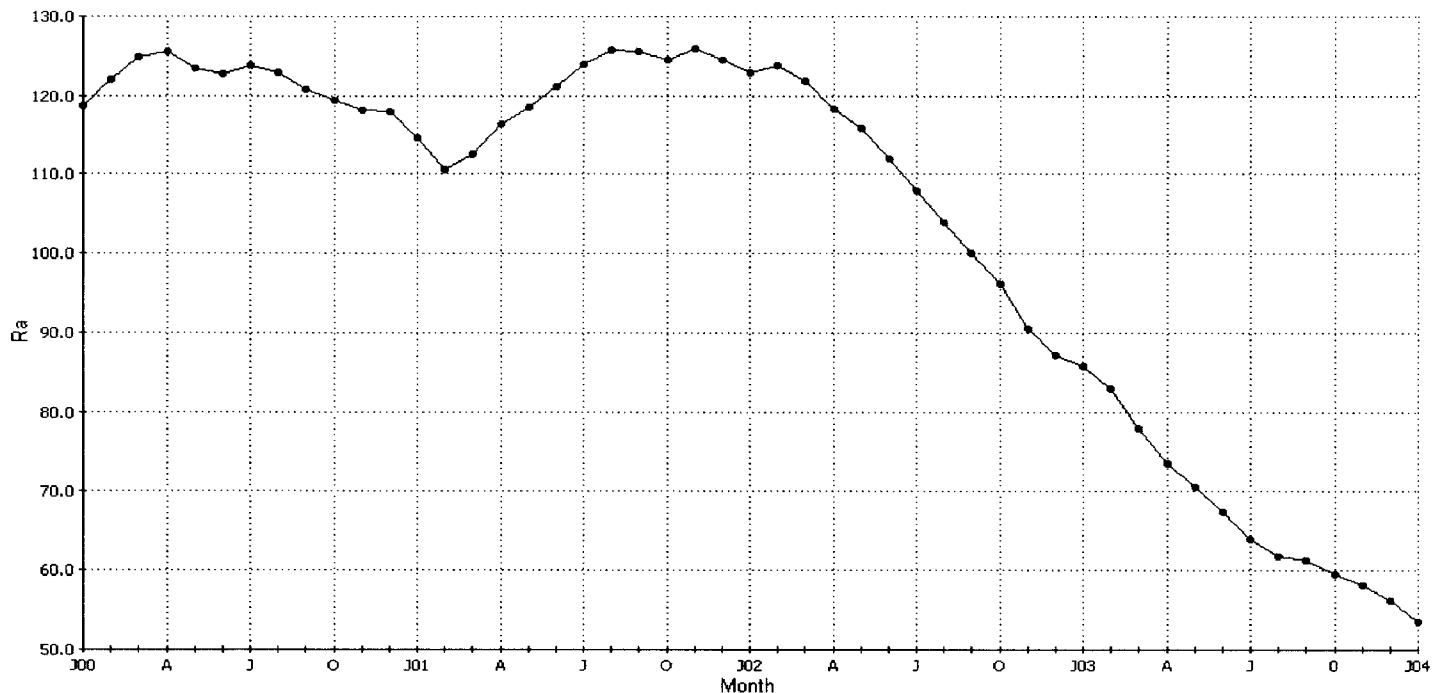


Fig. 2. Smoothed Mean Sunspot Numbers (Waldmeier method) from January 2000 to January 2004.

Summary of AAVSO Solar Committee Activity for the Period October 2003 to June 2004
[Summary read at AAVSO Spring meeting, Oakland, CA, July 2004]

Chair and Sunspot Observing Group Leader: Carl E. Fehrer
Solar Flare/SID Observing Group Leader: Mike Hill

Despite the progressive decline in the Sun's activity as the minimum is approached, loyal contributors to the work of the Committee continue to make large numbers of sunspot and SID observations. During the period, 85 different observers filed sunspot reports and 20 observers filed SID reports. We hope that the high levels of interest in solar reporting that have been demonstrated by observers will continue as solar activity levels continue to decline.

Sunspot Reports

Five hundred ninety-three sunspot reports containing a total of 8,686 observations were received and processed. The reports were received from an average of 66 observers per month. As of June 2004, the group of active observers numbered 77. The totals are somewhat larger than for the equivalent period last year, owing to a small increase in the size of the reporting group.

SID Reports

For the last 9 months, SID activity has kept observers busy even though the sun is approaching the end of cycle 23. Over the past 9 months there have been a total of 183 SID reports submitted by the group of 20 active observers. The number of observers in the SID group has also grown beyond that of the earlier period.

Special Recognition of Observers

Several observers have met reporting thresholds established in the sunspot and SID programs for certificates of achievement. These observers and others who may meet the criteria in the meantime will be cited at the Fall 2004 meeting in Cambridge, Massachusetts.

Website Activity

The numbers of images contributed to the AAVSO/Solar website has decreased in recent months, owing at least in part to the diminution of solar activity. Downloads of the *Solar Bulletin* and related data continue at a high level, and increasingly, the SolObs program available on the website is used in place of the older Sunkey program and hardcopy to report and transmit monthly sunspot data.

Software Development

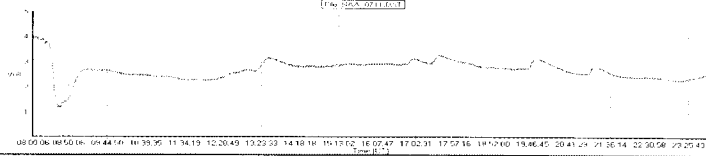
Software required for the analysis of sunspot reports in a Windows XP environment has been completed by AAVSO member Lenny Abbey. This software replaces programs written some years ago for an MS-DOS environment, and it provides new tools for identification of non-conforming data formats and other report deficiencies that complicate the monthly task of preparing observations for analysis.

Acknowledgements

As always, the successful performance of the Solar Committee is due to the dedication and hard work of our international cadre of observers, the AAVSO's staff, and Arthur Ritchie, a volunteer who assists in the preparation of the monthly sunspot data. Many thanks go to all those who submit reports and aid in the preparation of Solar Committee products.

Sudden Ionospheric Disturbance Report

Michael Hill, SID Analyst
 114 Prospect St
 Marlborough, MA 01752 USA
 noatak@aol.com



Sudden Ionospheric Disturbances (SID) Recorded During July 2004

(Analysis performed by Michael Hill, SID Analyst)

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
040711	0749	2+	040714	1817	1+	040717	1652	2
040711	0945	1+	040714	1956	1-	040717	1828	1
040711	1335	2	040714	2051	1-	040717	1917	1+
040711	1658	1	040715	0141	2	040717	2046	1-
040711	1734	2	040715	0951	2+	040717	2103	1+
040711	1950	2	040715	1823	1+	040717	2132	1+
040711	2113	2	040715	1831	2+	040717	2303	1+
040712	0110	1	040715	2141	1-	040718	0012	1
040712	0803	3+	040715	2232	2+	040718	0036	2+
040712	1604	2	040716	0205	2	040718	0256	1+
040712	1844	2+	040716	1009	2+	040718	1035	1+
040712	2020	2+	040716	1041	2	040718	1151	1+
040712	2127	1+	040716	1226	2	040718	1232	1+
040712	2151	2	040716	1256	1	040718	1349	1+
040713	0016	2	040716	1338	1	040718	1415	2
040713	0846	2	040716	1355	2+	040718	1648	1-
040713	1206	2	040716	1628	2	040718	1713	2
040713	1840	2	040716	2041	2+	040718	1849	1-
040713	1932	2	040717	0758	2	040719	2101	1
040713	2122	1	040717	0903	1+	040720	0106	1-
040713	2208	1-	040717	0945	1+	040720	1018	1-
040713	2227	2	040717	0957	2	040720	1112	1-
040714	0520	2	040717	1138	2	040720	1128	1+
040714	1746	1	040717	1257	2	040720	1229	2
040714	1759	1-	040717	1557	1	See On-Line database for remainder		

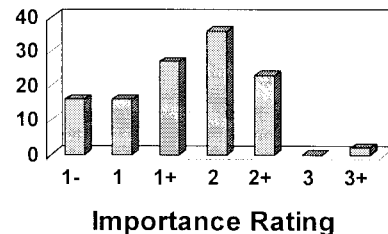
Importance rating : Duration(min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: >125
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The events listed above meet at least one of the following criteria

- 1) Event reported by two or more observers within ± 5 minutes
- 2) Event matched to GOES-12 XRA event to within ± 15 minutes and event time < 1000 UT
- 3) reported by observer with a quality rating > 8 (scale 1-10)

Observer	Code	Station(s) monitored
A Clerkin	A29	NAA
J Winkler	A50	NAA NML NPM
D Toldo	A52	NAA xxx
J Ellerbe	A63	ICV
W Moos	A84	FTA
M Hill	A87	NAA
J Mandaville	A90	NPM
G DiFillipo	A93	DHO HWU
T Poulos	A95	NAA
J Wallace	A97	NAA
M King	A99	HWU
P Campbell	A100	NLK
B Bose	A103	VTX
E Smith	A105	DHO
L Observatory	A107	DHO
A Son	A112	DHO

SID Events Recorded for July 2004



Solar Events

July was certainly the most active month we have had in a long time. Very uncharacteristic for this time in the solar cycle. There were 120 correlated SID events this month! A very large number. So large in fact that I decided not to post them all in the bulletin due to space constraints. The full listing will be available at the SID web page. The GOES Satellite recorded 226 X-Ray flares. Of these, 32 were M-Class events and 6 were X-Class events. These are the highest number of large class flares that I can remember even in times of high activity. I hope you all had fun watching these events unfold. I'm sure you visual observers had quite a time counting spots this month. As can be seen below the month started out pretty slow but really picked up around the 11th and continued on that way for most of the month.

Now for some more mundane business. I have been getting a number of observers sending data in the wrong format and I just want to remind you all that the format required by the the AAVSO SID program, myself, and the software I use to process it is not optional. There are guidelines that have been clearly specified in the past, are still listed on the AAVSO SID website and that I have reiterated to some of you a number of times. You all must follow the prescribed format otherwise I will not process your data. The data must be an ASCII text file with the correct format as far as content. You should send this to me as a file attachment not as embedded text in the email you send. In addition the file must be named according to your observer ID and the station you monitor such as A87NAA.dat or A87NAA.txt. Please don't add extra information into the filename. Lastly, do try to get the data to me sooner than the deadline. Although you have until the 10th of the month to send in your data, it would be greatly appreciated if you sent it in by the 5th. Occasional lapses in this request are acceptable as I realize you may have other things going on that prevent you from getting to your data processing right away at the end of the month. Ok, enough said there. Thanks to all of you for sending in your data. As always all contributions, whether a single event or many events, are important.

Solar Flare Summary Based on GOES-12 Data

