# Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE

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**Volume 59 Number 8** **August 2003**

**Table I. American Relative Sunspot Numbers (Ra) for August 2003 [boldface = maximum, minimum]**

| Day | N | Raw Mean | Ra | Std. Error |
|---|---|---|---|---|
| **1** | 45 | 66 | **49** | 1.6 |
| **2** | 46 | 82 | 61 | 1.9 |
| **3** | 46 | 109 | 80 | 1.8 |
| **4** | 50 | 113 | 81 | 1.9 |
| **5** | 47 | 125 | 90 | 2.5 |
| **6** | 51 | 107 | 81 | 2.5 |
| **7** | 51 | 105 | 79 | 1.8 |
| **8** | 54 | 97 | 73 | 1.9 |
| **9** | 44 | 100 | 76 | 1.7 |
| **10** | 48 | 107 | 79 | 2.0 |
| **11** | 45 | 107 | 77 | 2.3 |
| **12** | 43 | 92 | 70 | 2.0 |
| **13** | 48 | 93 | 68 | 2.1 |
| **14** | 54 | 90 | 69 | 2.3 |
| **15** | 47 | 95 | 70 | 2.0 |
| **16** | 38 | 100 | 79 | 2.7 |
| **17** | 44 | 104 | 77 | 2.2 |
| **18** | 57 | 95 | 70 | 1.8 |
| **19** | 51 | 80 | 60 | 1.8 |
| **20** | 51 | 76 | **56** | 2.6 |
| **21** | 49 | 85 | 63 | 1.7 |
| **22** | 51 | 102 | 75 | 1.9 |
| **23** | 51 | 119 | 88 | 2.2 |
| **24** | 52 | 121 | 89 | 2.2 |
| **25** | 52 | 117 | 86 | 2.1 |
| **26** | 44 | 125 | 91 | 3.2 |
| **27** | 47 | 126 | **93** | 3.6 |
| **28** | 47 | 128 | 93 | 2.3 |
| **29** | 39 | 120 | 86 | 2.2 |
| **30** | 43 | 101 | 72 | 2.0 |
| **31** | 39 | 82 | 60 | 2.3 |
| **Means:** | **47.5** | **102.2** | **75.5** | |

**Total No. of Observers: 71**

**Total No. of Observations: 1474**

**Table II. August Observers**

| | | |
|---|---|---|
| 24 | AAP | P.Abbott |
| 31 | ARAG | G.Araujo |
| 24 | ATON | A.Attanasio |
| 13 | BARH | H.Barnes |
| 22 | BATR | R.Battaiola |
| 10 | BERJ | J.Berdejo |
| 13 | BLAJ | J.Blackwell |
| 25 | BOJP | P.Bojda |
| 18 | BOSB | B.Bose |
| 29 | BRAB | B.Branchett |
| 31 | BRAR | R.Branch |
| 29 | BROB | R.Brown |
| 26 | BWJ | J.Bohdanowicz |
| 12 | CAMP | P.Campbell |
| 16 | CARJ | J.Carlson |
| 31 | CHAG | G.Morales |
| 19 | CKB | B.Cudnik |
| 28 | CLZ | C.Laurent |
| 20 | COMT | T.Compton |
| 31 | CORA | A.Coroas |
| 26 | CR | T.Cragg |
| 16 | CVJ | J.Carvajal |
| 28 | DEJV | J.van Delft |
| 11 | DEMF | F.Dempsey |
| 26 | DGP | G.Dyck |
| 29 | DRAJ | J.Dragesco |
| 28 | DUBF | F.DuBois |
| 27 | ELR | E.Reed |
| 17 | FEEC | C.Feehrer |
| 16 | FERJ | J.Fernandes |
| 28 | FLET | T.Fleming |
| 19 | FUJK | K.Fujimori |
| 29 | GIOR | R.Giovanoni |
| 15 | GOEM | M.Goetz |
| 10 | HAYK | K.Hay |
| 30 | JAMD | D.James |
| 7 | JEFT | T.Jeffrey |
| 7 | JENS | S.Jenner |
| 25 | KAPJ | J.Kaplan |
| 9 | KHAR | R.Khan |
| 26 | KNJS | J&S Knight |
| 1 | KROL | L.Krozel |
| 16 | LERM | M.Lerman |
| 22 | LEVM | M.Leventhal |
| 9 | LUBT | T.Lubbers |
| 24 | MALK | K.Malde |
| 31 | MARJ | J.Maranon |
| 21 | MCE | E.Mochizuki |
| 30 | MMI | M.Moeller |
| 17 | OBSO | IPS Observatory |
| 17 | RICE | E.Richardson |
| 23 | RITA | A.Ritchie |
| 29 | SCGL | G.Schott |
| 6 | SCHG | G.Scholl |
| 2 | SDP | D.Sharples |
| 14 | SIMC | C.Simpson |
| 21 | STEF | G.Stefanopoulis |
| 29 | STEM | G.Stemmler |
| 29 | STQ | N.Stoikidis |
| 24 | SUZM | M.Suzuki |
| 20 | SYP | Paul Soron |
| 29 | SZAK | K.Szatkowski |
| 28 | SZUM | M.Szulc |
| 27 | TESD | D.Teske |
| 18 | THR | R.Thompson |
| 24 | TJV | J.Temprano |
| 24 | URBP | P.Urbanski |
| 10 | VARG | A.Vargas |
| 9 | VELM | M.Velea |
| 21 | WILW | W.Wilson |
| 18 | YESH | H.Yesilyaprak |

**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 August 2003**

| Day | RG | S:G | Day | RG | S:G | Day | RG | S:G | Day | RG | S:G |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 4.2 | 5.7 | **9** | 5.0 | 10.0 | **17** | 5.4 | 9.3 | **25** | 6.4 | 8.3 |
| **2** | 5.2 | 5.8 | **10** | 5.0 | 11.4 | **18** | 5.1 | 8.6 | **26** | 6.9 | 8.1 |
| **3** | 6.1 | 7.8 | **11** | 4.9 | 11.8 | **19** | 4.7 | 7.0 | **27** | 7.3 | 7.3 |
| **4** | 6.6 | 7.1 | **12** | 4.7 | 9.6 | **20** | 4.9 | 5.5 | **28** | 7.9 | 6.2 |
| **5** | 6.7 | 8.7 | **13** | 4.5 | 10.7 | **21** | 4.6 | 8.5 | **29** | 8.1 | 4.8 |
| **6** | 6.0 | 7.8 | **14** | 4.3 | 10.9 | **22** | 5.1 | 10.0 | **30** | 6.7 | 5.1 |
| **7** | 5.9 | 7.8 | **15** | 4.0 | 13.8 | **23** | 5.6 | 11.3 | **31** | 5.5 | 4.9 |
| **8** | 5.2 | 8.7 | **16** | 4.8 | 10.8 | **24** | 5.3 | 12.8 | **Mn.** | **5.6** | **8.6** |

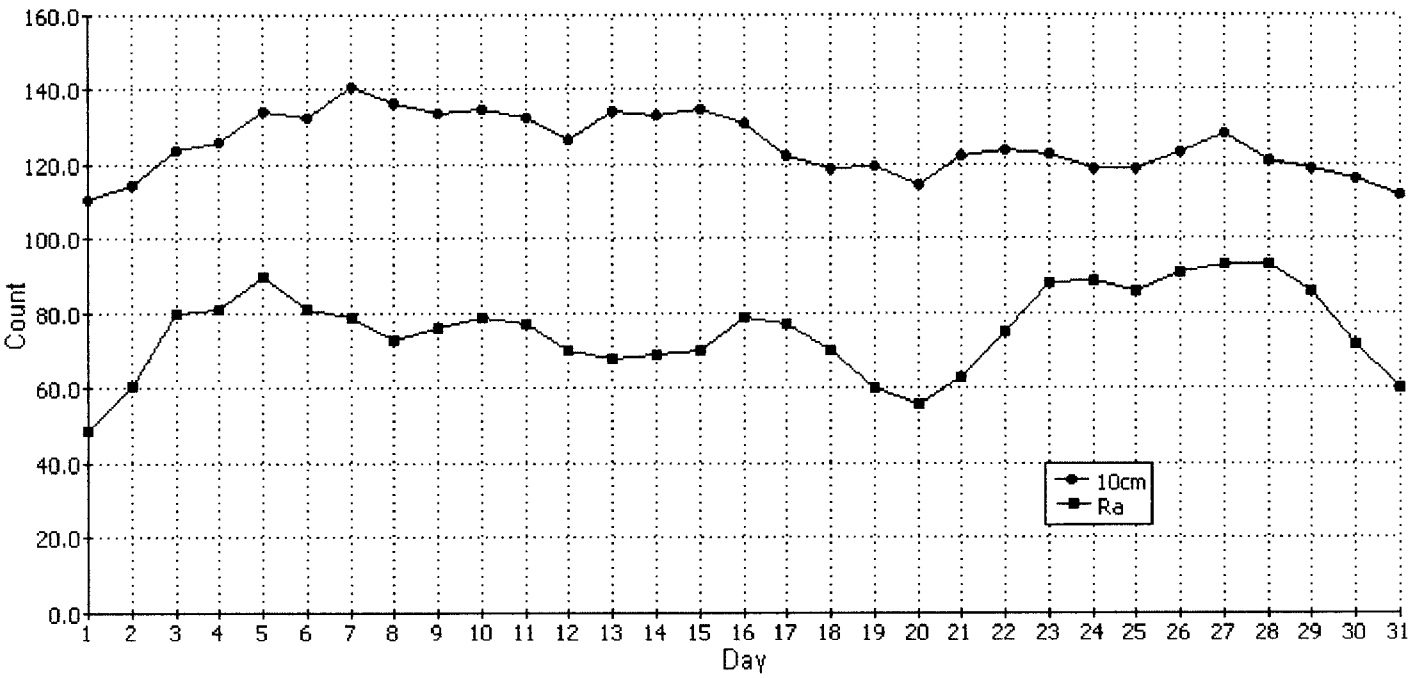


**Fig. 1. 10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for August 2003**
10 cm source: http://www.drao.nrc.ca/icarus

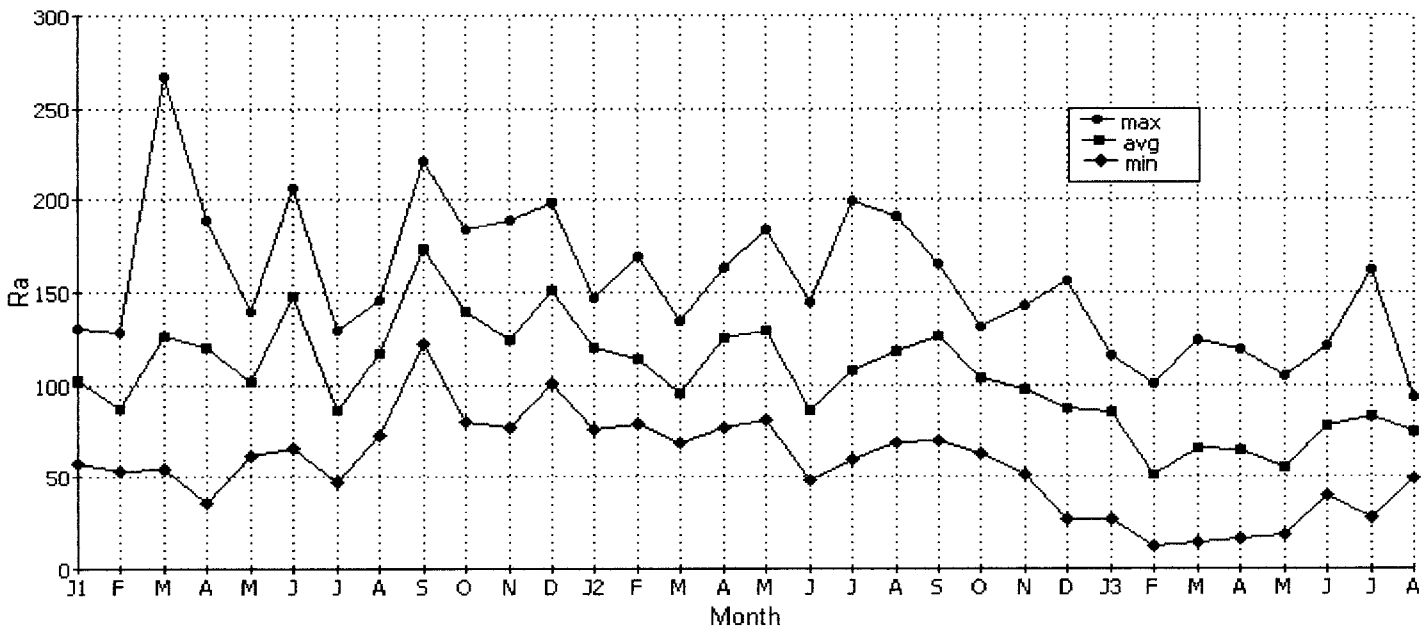


**Fig. 2. Maximum, Mean, and Minimum Values of Ra for Each Month from January 2001 to Present.**

# Sudden Ionospheric Disturbance Report

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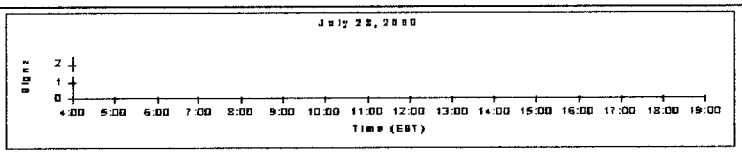



## Sudden Ionospheric Disturbances (SID) Recorded During August 2003

(Analysis performed by Michael Hill, SID Analyst)

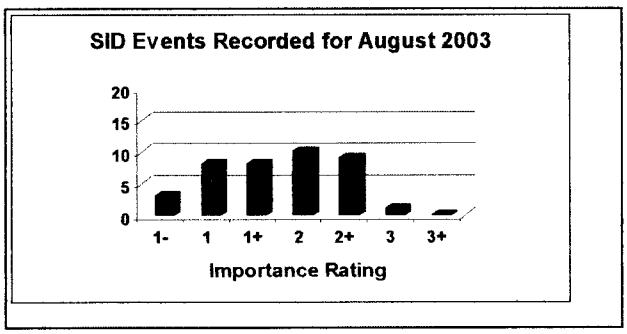
| Date | Max | Imp | Date | Max | Imp | Date | Max | Imp |
|---|---|---|---|---|---|---|---|---|
| 030801 | 0337 | 2+ | 030817 | 0844 | 1 | | | |
| 030801 | 0738 | 2 | 030818 | 0909 | 1 | | | |
| 030801 | 0938 | 2+ | 030819 | 0800 | 2 | | | |
| 030801 | 1137 | 2 | 030819 | 0856 | 1 | | | |
| 030802 | 1936 | 2 | 030819 | 0914 | 2 | | | |
| 030803 | 0939 | 1 | 030819 | 0953 | 2+ | | | |
| 030805 | 0919 | 1+ | 030819 | 1004 | 2+ | | | |
| 030805 | 1249 | 1 | 030820 | 0954 | 2 | | | |
| 030806 | 0738 | 3 | 030820 | 1845 | 2+ | | | |
| 030808 | 1435 | 2 | 030821 | 1524 | 2+ | | | |
| 030810 | 1025 | 1 | 030824 | 0420 | 1 | | | |
| 030812 | 1008 | 1+ | 030825 | 0303 | 2+ | | | |
| 030813 | 0834 | 1- | 030826 | 1601 | 1+ | | | |
| 030813 | 0949 | 1+ | | | | | | |
| 030813 | 1014 | 2+ | | | | | | |
| 030814 | 0634 | 2 | | | | | | |
| 030814 | 0949 | 2+ | | | | | | |
| 030815 | 0247 | 1+ | | | | | | |
| 030815 | 0622 | 1- | | | | | | |
| 030815 | 0635 | 1- | | | | | | |
| 030815 | 0849 | 1 | | | | | | |
| 030815 | 0855 | 1+ | | | | | | |
| 030816 | 0442 | 1+ | | | | | | |
| 030816 | 0948 | 1+ | | | | | | |
| 030817 | 0429 | 2 | | | | | | |

| Importance rating : Duration(min) | -1: <19 | 1: 19-25 | 1+: 26-32 | 2: 33-45 | 2+: 46-85 | 3: 86-125 | 3+: >125 |
|---|---|---|---|---|---|---|---|

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-8 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 |
|---|---|---|
| J Winkler | A50 | NPM XXX |
| W Moos | A84 | FTA |
| L Anderson | A91 | NWC |
| G DiFillipo | A93 | DHO HWU |
| M King | A99 | HWU |
| G Bressan | A101 | HVU |
| F Steyn | A102 | NWC |
| B Bose | A103 | VTX3 |
| L Observatory | A107 | DHO |



# Solar Events

August was another slow month for SID events with only 39 correlated SID events reported by only nine observers. Some of us have dropped out because of the NAA outage for the summer and are eagerly awaiting the return of this strong signal that we rely on. I myself have tried another station and although I get a definitive sunrise effect still don't get a very clean signal. This reality once again affirms the importance of all of your data and for those of you who continue to contribute even though the solar activity definitly appears to be diminishing, it is greatly appreciated. There were 160 X-Ray flare events reported by the GOES-12 satellite last month. This is the lowest number I have seen since I started doing this analysis work. Our SID event count of 39 falls in step with this quite well. Of these only four were M-Class events. Naturally there were no X-Class flares reported. The busiest times were the first three days of the month, followed by a period around the 15th – 19th which was also active. The rest of the month was fairly quiet.

Please note that even if your Observer ID does not show up in the contributor list above, if you sent in a report indicating that NO SIDs were detected, it will be noted in the records that y ou did submit a report. For those of us in the NAA slump, well - we have a few non-active months to our credit. Nothing we can do but wait for now. Luckily they didn't decide to do this maintenance a few years ago during the solar peak.