

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE

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November 2005

Table I. American Relative Sunspot Numbers (Ra) for November 2005 [boldface = maximum, minimum]

| Day | N | Raw Mean | Ra |
|-----|-----|----------|-----------|
| 1 | 26 | 30 | 21 |
| 2 | 24 | 28 | 19 |
| 3 | 18 | 13 | 9 |
| 4 | 22 | 8 | 5 |
| 5 | 26 | 22 | 15 |
| 6 | 22 | 25 | 19 |
| 7 | 28 | 32 | 24 |
| 8 | 27 | 14 | 10 |
| 9 | 22 | 5 | 3 |
| 10 | 22 | 0 | 0 |
| 11 | 21 | 1 | 0 |
| 12 | 26 | 9 | 6 |
| 13 | 22 | 20 | 14 |
| 14 | 19 | 31 | 23 |
| 15 | 23 | 33 | 23 |
| 16 | 23 | 41 | 29 |
| 17 | 29 | 40 | 28 |
| 18 | 28 | 37 | 26 |
| 19 | 31 | 44 | 33 |
| 20 | 29 | 46 | 35 |
| 21 | 31 | 39 | 31 |
| 22 | 21 | 40 | 28 |
| 23 | 24 | 37 | 27 |
| 24 | 25 | 35 | 25 |
| 25 | 23 | 28 | 20 |
| 26 | 21 | 18 | 13 |
| 27 | 20 | 19 | 13 |
| 28 | 22 | 22 | 15 |
| 29 | 19 | 21 | 15 |
| 30 | 18 | 48 | 33 |
| 31 | --- | --- | --- |

Table II. November 2005 Observers

| | |
|---------------------|-------------------------|
| 7 AAP P.Abbott | 9 KAPJ J.Kaplan |
| 10 ANGR R.Ang | 17 KNJS J.Knight |
| 23 ARAG G.Araujo | 4 KROL L.Krozel |
| 12 BARH H.Barnes | 12 LARJ J.Larriba |
| 2 BATR R.Battaiola | 1 LERM M.Lerman |
| 2 BEB Ray Berg | 1 MEU E.Mason |
| 6 BERJ J.Berdejo | 21 MMI M.Moeller |
| 7 BMF M.Boschat | 27 OATS S.Oatney |
| 6 BOSB B.Bose | 20 OBSO IPS Observatory |
| 29 BRAB B.Branchett | 13 PEKT R.Pektas |
| 30 BRAR R.Branch | 14 RICE E.Richardson |
| 25 BROB R.Brown | 19 RITA A.Ritchie |
| 7 BVK K.Bankston | 1 SDP D.Sharples |
| 3 CAMP P.Campbell | 3 SIMC C.Simpson |
| 27 CHAG G.Morales | 6 STEF G.Stefanopoulos |
| 24 CKB B.Cudnik | 11 STEM G.Stemmler |
| 13 CLZ L.Corp | 16 STQ N.Stoikidis |
| 7 COMT T.Compton | 26 SUZM M.Suzuki |
| 21 CR T.Cragg | 8 SZUM M.Szulc |
| 15 DEJV J.van Delft | 24 TESD D.Teske |
| 22 DGP G.Dyck | 11 TJV J.Temprano |
| 12 FERJ J.Fernandez | 14 URBP P.Urbanski |
| 24 FLET T.Fleming | 16 VARG A.Vargas |
| 25 FUJK K.Fujimori | 27 WILW W.Wilson |
| 5 GOEM M.Goetz | 7 WRP R.Wheeler |
| 8 HAYK K.Hay | |
| 11 JAMD D.James | |
| 4 JEFT T.Jeffrey | |

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

Means: 23.7 26.2 18.7

Total No. of Observers: 53

Total No. of Observations: 715

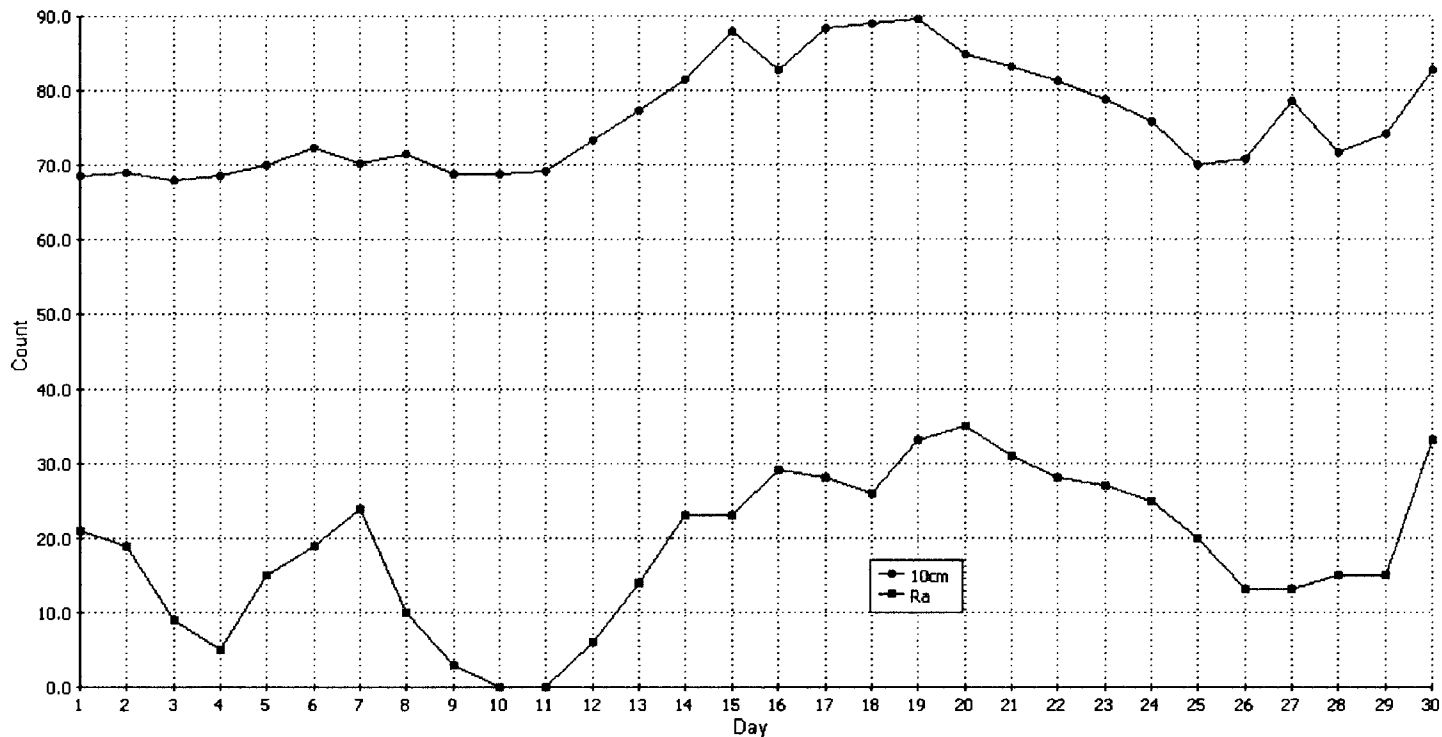


Fig. 1. 10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for November 2005.
 10 cm source: <http://www.drao.nrc.ca/icarus>

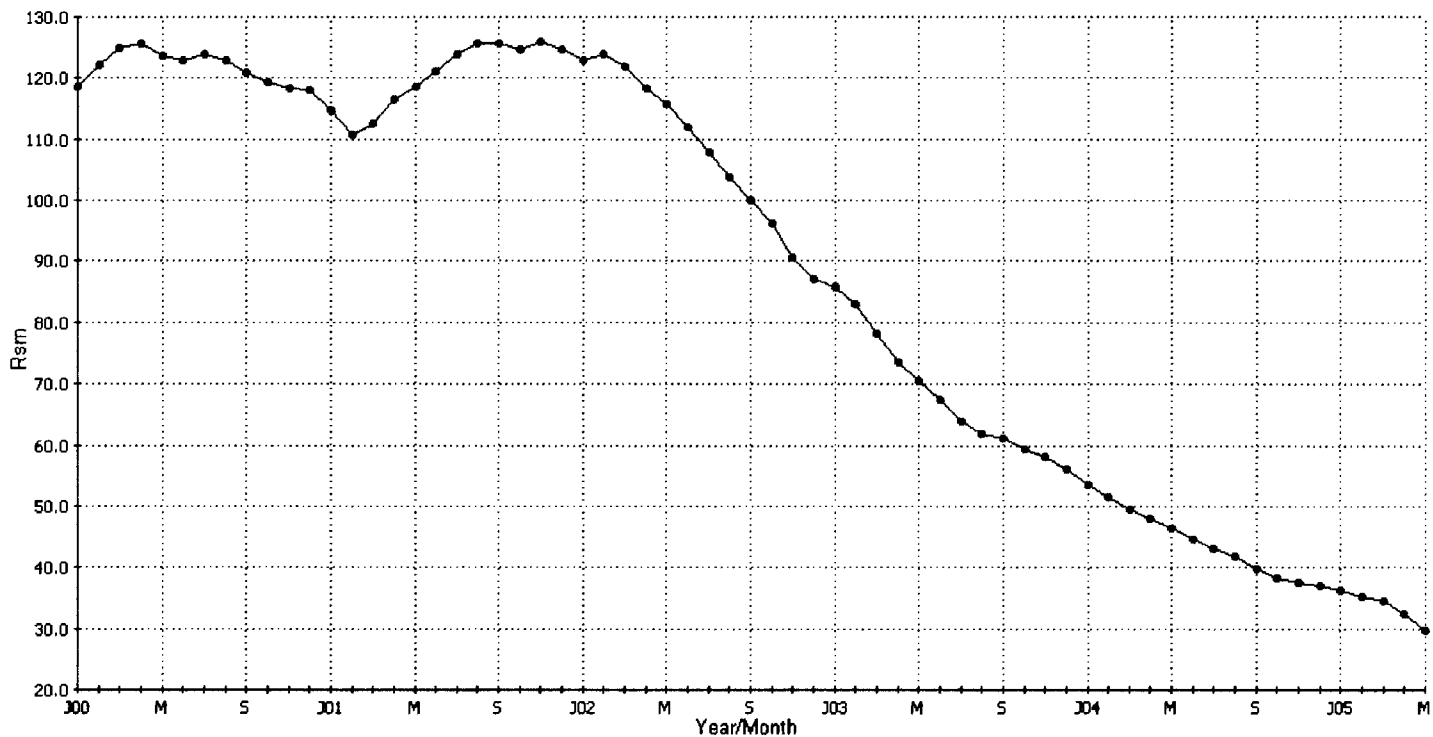
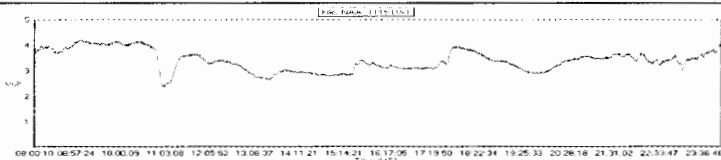


Fig. 2. Smoothed Mean Sunspot Numbers (Rsm) from January 2000 to May 2005 (Waldmeier Method).

Sudden Ionospheric Disturbance Report

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Sudden Ionospheric Disturbances (SID) Recorded During November 2005

(Analysis performed by Michael Hill, SID Analyst)

| Date | Max | Imp | Date | Max | Imp | Date | Max | Imp |
|--------|------|-----|------|-----|-----|------|-----|-----|
| 051112 | 1447 | 2 | | | | | | |
| 051112 | 1458 | 2 | | | | | | |
| 051112 | 1931 | 2 | | | | | | |
| 051113 | 0035 | 1- | | | | | | |
| 051113 | 0526 | 2+ | | | | | | |
| 051113 | 0608 | 2+ | | | | | | |
| 051113 | 1247 | 1 | | | | | | |
| 051113 | 1451 | 2 | | | | | | |
| 051114 | 0836 | 1 | | | | | | |
| 051114 | 1424 | 1 | | | | | | |
| 051115 | 0307 | 2 | | | | | | |
| 051115 | 0819 | 2 | | | | | | |
| 051115 | 1537 | 1- | | | | | | |
| 051115 | 1750 | 2 | | | | | | |
| 051116 | 1211 | 2 | | | | | | |
| 051118 | 0808 | 2 | | | | | | |
| 051119 | 0416 | 1 | | | | | | |
| 051119 | 0939 | 2+ | | | | | | |
| 051120 | 0737 | 1 | | | | | | |
| 051129 | 1702 | 2 | | | | | | |
| 051130 | 0620 | 2 | | | | | | |
| 051130 | 1752 | 1+ | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

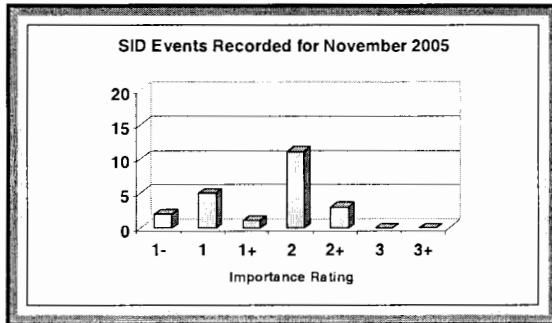
| | | | | | | | | |
|--------------------|----------------|---------|----------|-----------|----------|-----------|-----------|----------|
| Importance rating: | Duration (min) | 1-: <19 | 1: 19-25 | 1+: 26-32 | 2: 33-45 | 2+: 46-85 | 3: 86-125 | 3+: >125 |
|--------------------|----------------|---------|----------|-----------|----------|-----------|-----------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

| Observer | Code | Station(s) monitored |
|--------------|------|----------------------|
| A Clerkin | A29 | NAA |
| J Winkler | A50 | NAA NML NPM |
| D Toldo | A52 | NWC |
| P King | A80 | FTA |
| M Hill | A87 | NAA |
| L Anderson | A91 | NWC |
| G Di Filippo | A93 | HWU |
| T Poulos | A95 | NAA |
| R Battaiola | A96 | HWU |
| J Wallace | A97 | NAA |

| Observer | Code | Station(s) monitored |
|-------------|------|----------------------|
| M King | A99 | HWU |
| L Anderson | A91 | NWC |
| P Campbell | A100 | NLK |
| G Bressan | A101 | HWU |
| F Steyn | A102 | NAA NWC |
| P Mortfield | A108 | NAA |
| K Hubal | A117 | NAA |

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)



Solar Events

November was a relatively slow month for SID activity. There were only 22 correlated SID events reported by observers. None of these were of long duration and all of them were in the second half of the month after the 12th. This correlates well with the graph below that shows the GOES-12 X-Ray flare events picking up markedly on the 12th with a very sharp peak on the 15th followed by a gradual decline. There were 165 X-Ray flares recorded by the GOES satellite. Seven of them were M-Class events and on the 15th there was a total of 27 events, a very active day due to sunspot region 822 which grew into a very large region as it crossed the disk.

I would like welcome new observer A117. His name is Ken Hubal from Seville Ohio and he submitted his first report this month. Ken has been working hard to get his system up and running and is getting a very clean signal from his SID Monitoring equipment. I send thanks to all of you for submitting your data and I hope you all have a very Merry Christmas and a Happy New Year !!

Solar Flare Summary Based on GOES-12 Data

