

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE

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

Day	N	Raw Mean	Ra
1	25	106	79
2	21	121	81
3	29	95	70
4	29	79	60
5	34	82	61
6	40	97	71
7	37	93	68
8	26	88	62
9	31	76	55
10	27	49	35
11	24	49	36
12	26	57	43
13	33	61	47
14	35	71	53
15	24	59	45
16	28	63	45
17	26	61	43
18	27	49	36
19	22	46	33
20	24	49	35
21	28	36	28
22	21	40	31
23	26	41	30
24	28	51	39
25	24	51	38
26	28	53	40
27	26	55	40
28	22	46	32
29	29	41	32
30	26	46	35
31	---	---	---

Means: 27.5 63.7 46.7

Total No. of Observers: 57

Total No. of Observations: 826

Table II. November 2004 Observers

10 AAP	P.Abbott
27 ARAG	G.Araujo
4 ARE	R.Allessi
8 BARH	H.Barnes
6 BATR	R.Battaiola
8 BEB	R.Berg
9 BERJ	J.Berdejo
12 BMF	M.Boschat
8 BOSB	B.Bose
26 BRAB	B.Branchett
25 BRAR	R.Branch
24 BROB	R.Brown
3 CAMP	P.Cambell
30 CHAG	G.Morales
13 CKB	B.Cudnik
12 CLZ	L.Corp
9 COMT	T.Compton
29 CR	T.Cragg
24 DEJV	J.van Delft
5 DGP	G.Dyck
2 DPP	P.dePonthiere
20 DRAJ	J.Dragesco
11 DUBF	F.Dubois
10 FEEC	C.Feehrer
12 FERJ	J.Fernandez
14 FLET	T.Fleming
25 FUJK	K.Fujimori
9 HAYK	K.Hay
5 HRUT	T.Hrutkay
18 JAMD	D.James
17 KAPJ	J.Kaplan
26 KNJS	J&S Knight
12 KROL	L.Krozel
13 LARJ	J.Larriba
21 LEVM	M.Leventhal
5 MARE	E.Mariani
22 MARJ	J.Maranon
24 MCE	E.Mochizuki
12 MEU	E.Mason
17 MMI	M.Moeller

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 November 2004

1	5.4	9.5	9	3.1	14.8	17	3.8	5.8	25	3.7	4.0
2	5.8	11.1	10	2.3	11.2	18	3.7	3.4	26	3.4	5.4
3	4.4	11.7	11	3.4	4.5	19	3.7	2.2	27	3.8	4.7
4	3.8	10.9	12	3.8	4.7	20	3.9	2.6	28	3.2	4.2
5	3.5	13.7	13	3.5	7.5	21	2.8	3.1	29	3.1	3.3
6	4.6	11.2	14	3.9	8.0	22	3.0	3.1	30	3.1	4.8
7	3.9	13.8	15	3.2	8.5	23	2.9	4.1	31		
8	3.2	17.1	16	3.7	7.2	24	4.1	2.6	Mn.	3.7	7.3

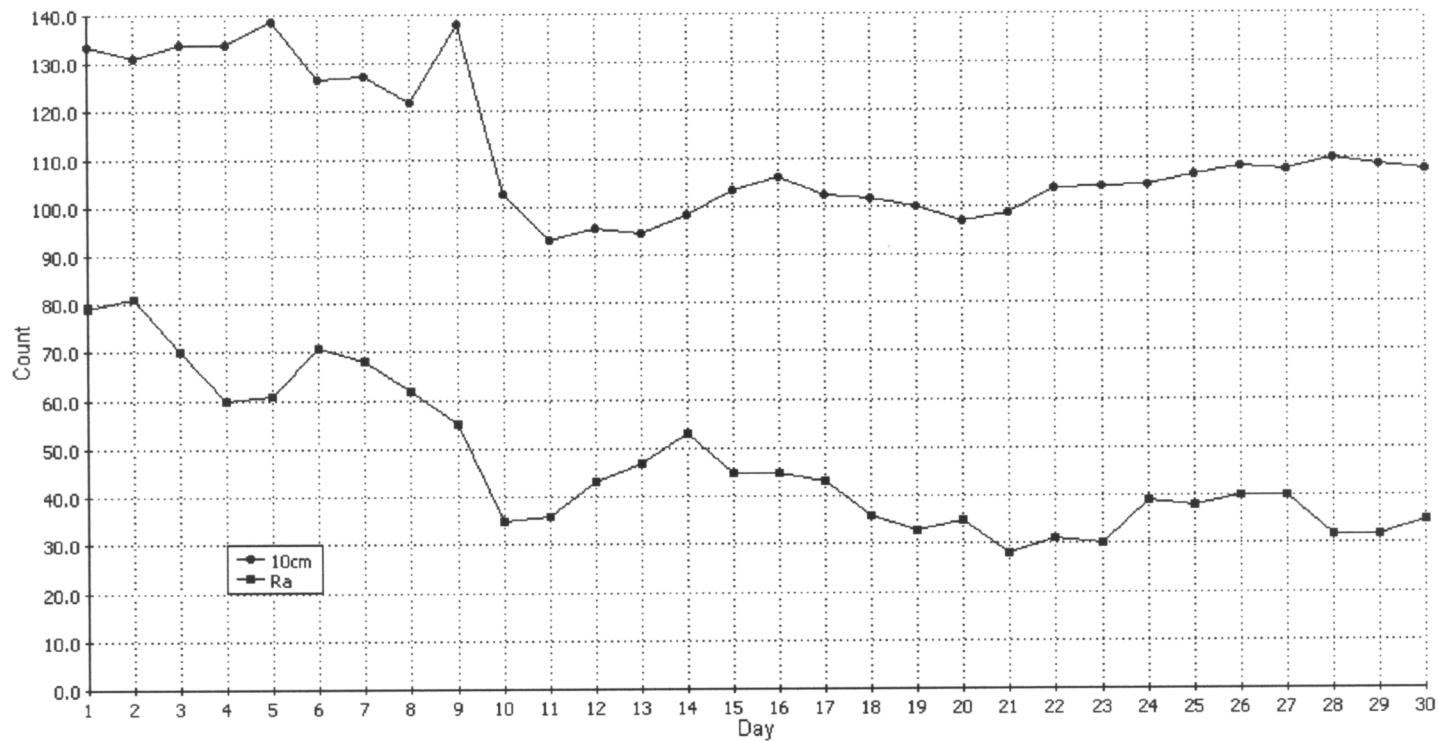


Fig. 1. 10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for November 2004.

10 cm source: <http://www.drao.nrc.ca/icarus>

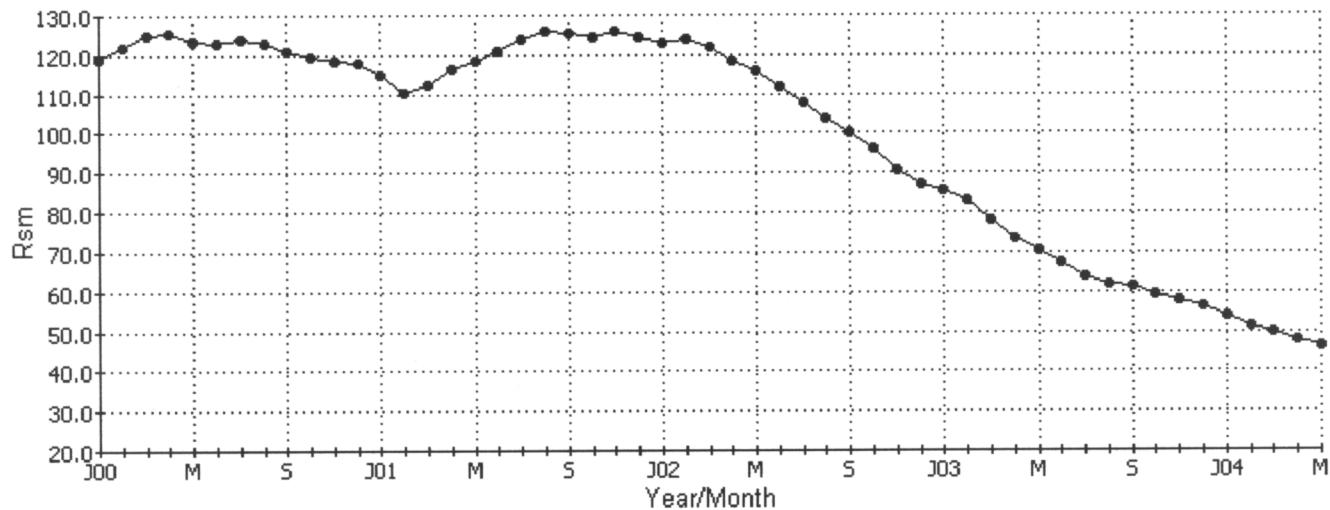
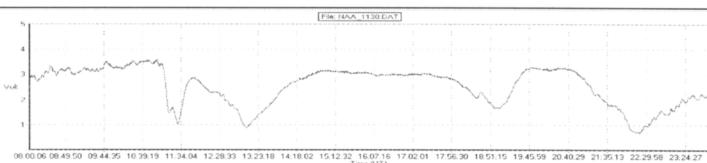


Fig. 2. Smoothed Mean Sunspot Numbers (Rsm) from January 2000 to May 2004 (Waldmeier Method).

Sudden Ionospheric Disturbance Report

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Sudden Ionospheric Disturbances (SID) Recorded During November 2004

(Analysis performed by Michael Hill, SID Analyst)

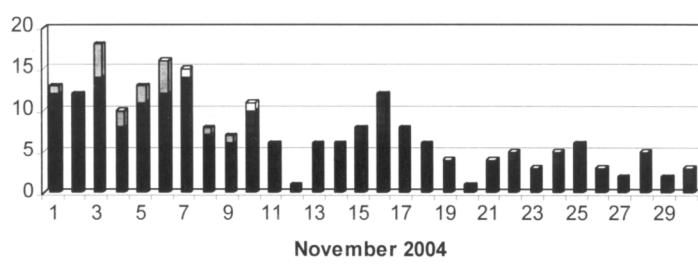
Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
041101	0704	2	041105	1921	2+	041109	0629	2
041102	0145	1	041106	0029	1	041109	0741	1-
041102	0943	1+	041106	0150	2	041109	0747	2
041102	0949	1+	041106	0657	1	041109	0923	1-
041102	1400	1	041106	1432	1	041109	1053	1-
041103	0132	1+	041106	1548	1-	041109	1435	2+
041103	0336	2+	041106	1600	1+	041109	1715	2
041103	0902	1-	041106	1608	1+	041109	1802	1
041103	0909	1	041106	1656	1-	041110	0211	2
041103	1348	1-	041106	1714	1+	041110	0734	1
041103	1547	2	041106	1953	2	041110	0814	2
041103	1642	1	041106	2101	1	041112	0955	2
041103	1654	1-	041107	0146	1+	041118	1457	1-
041103	1818	2+	041107	0419	2	041119	0051	1-
041103	1827	3	041107	0452	1+	041119	0514	2+
041104	0904	2	041107	0801	1	041123	0852	1+
041104	2059	2	041107	1003	1+	041123	1507	1
041104	2209	2+	041107	1406	1+	041124	0759	1+
041105	0555	1+	041107	1513	1	041124	0834	2
041105	1016	1	041107	1554	2	041124	1721	1-
041105	1129	1+	041107	1605	1+	041124	1844	1-
041105	1635	1-	041107	1633	3	041129	0144	1
041105	1721	2	041108	0838	1-	041130	0655	2+
041105	1825	1+	041108	1435	1-			
041105	1902	1-	041108	1547	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

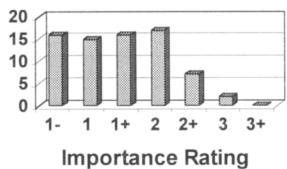
- 1) Event reported by two or more observers within ± 5 minutes
- 2) Event matched to GOES-8 XRA event to within ± 15 minutes and event time < 1000 UT
- 3) reported by observer with a quality rating > 8 (scale 1-10)

Solar Flare Summary Based on GOES-12 Data



■ B-Class: ■ C-Class: ■ M-Class: □ X-Class:

SID Events Recorded for November 2004



Observer	Code	Station(s) monitored
A Clerkin	A29	NAA
J Winkler	A50	NAA NML
D Toldo	A52	NAA NWC VTX
S Hansen	A59	NAA
J Ellerbe	A63	ICV
P King	A80	FTA
W Moos	A84	FTA
M Hill	A87	NAA
J Mandaville	A90	NPM
G DiFillipo	A93	DHO HWU
T Poulos	A95	NAA
R Battaiola	A96	HWU
J Wallace	A97	NAA
M King	A99	HWU
P Campbell	A100	NLK
G Bressan	A101	HWU
F Steyn	A102	NAA NWC
L Observatory	A107	DHO
P Mortfield	A108	NAA

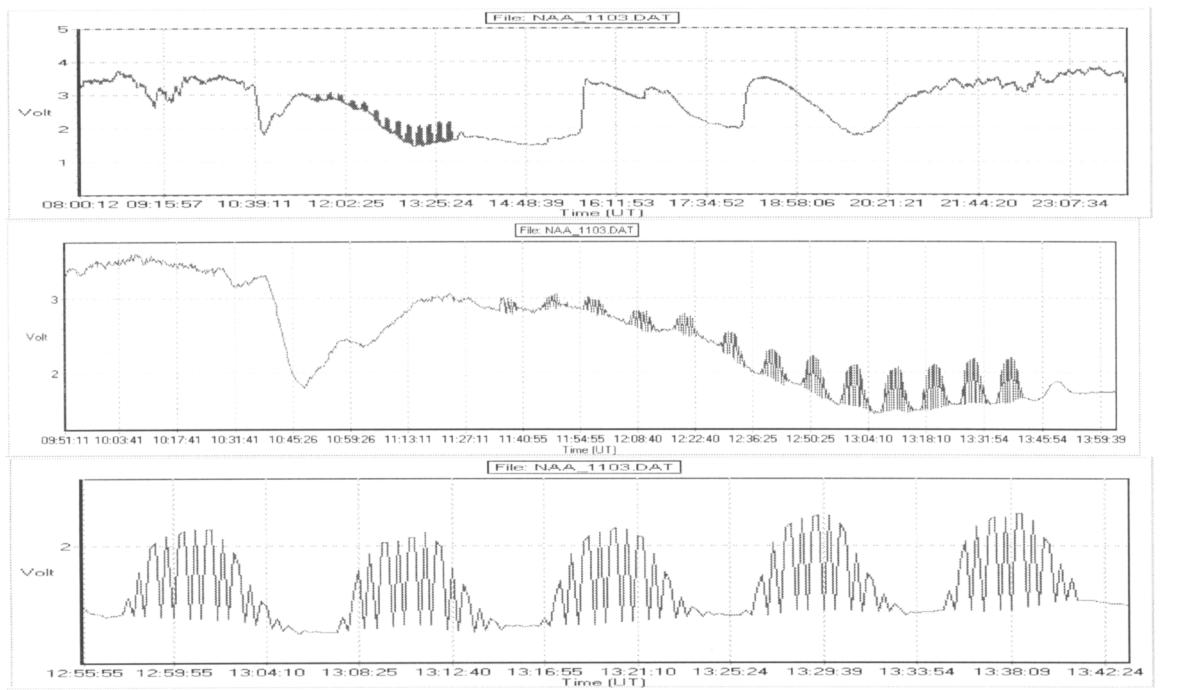
Solar Events

November proved to be another active month, especially at the beginning. There was a total of 73 correlated SID events. Many of these had a lower importance rating but still represented a lot of activity for a sun near solar minimum. The GOES-12 spacecraft recorded a total of 225 X-Ray Events. Of these, two were X-Class and 15 were M-Class events, all in the first 10 days of the month. The 5th, 6th and 7th were the most active days.

If you look at the SID Section of the AAVSO website you will notice a new look. I have spent the last month working upgrading the form and content to be more organized and comprehensive. This is to benefit new observers interested in getting into SID monitoring but may also be of help to seasoned observers as I have added a few more sections. I would like to add to this over time to include links to any of your personal SID related websites if you have them, and I also would be happy to add articles describing your equipment if it is specialized and you think it would be of interest to others. If you are interested in contributing, please contact me.

I had an interesting experience with noise pickup here at my home the past few months. All of a sudden I started getting very strong noise superimposed on my data charts. It was also very odd looking when looked at closely, exhibiting a very strange periodic behaviour. The noise would be there all day sometimes and some days never. It turned out it was usually on the weekends, and with a little deductive reasoning and some experimenting, I realized it was a new air ionizer that my wife had gotten and was running, usually on the weekends upstairs. Using a program called SpectraLab that runs with my computer sound card I could examine the spectrum and saw that the emissions from the ionizer were at a number of discrete frequencies below 24Khz and one just about at 24Khz, the source of my problem since I monitor NAA at that frequency. On the next page is a set of graphs showing the nasty noise these devices produce as well as a spectrum shot showing the noise spectra.

Noise produced from air ionizer while monitoring NAA at 24 KHz



Here is the spectrum measured using **SpectraLab** and my computer sound card. The time scale is across the bottom with a vertical frequency range from 0-24Khz. Note the periodic ionizer turn-on which comes in bursts of two and at each burst, one of which is captured by the plot on the right, there is a noise spike at 23.5, 12.1, 11.5, and 6.2 KHz. The two lines near the top are at 21.7 and 20.6 KHz. Clearly Air Ionizers should not be used near a VLF SID Monitoring antenna !!

