

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE



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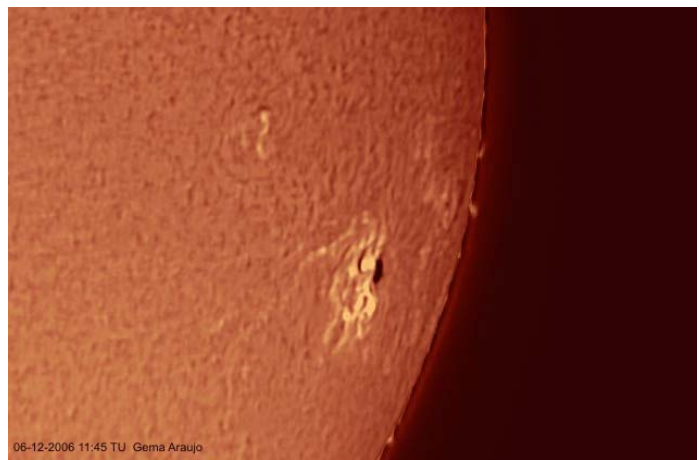
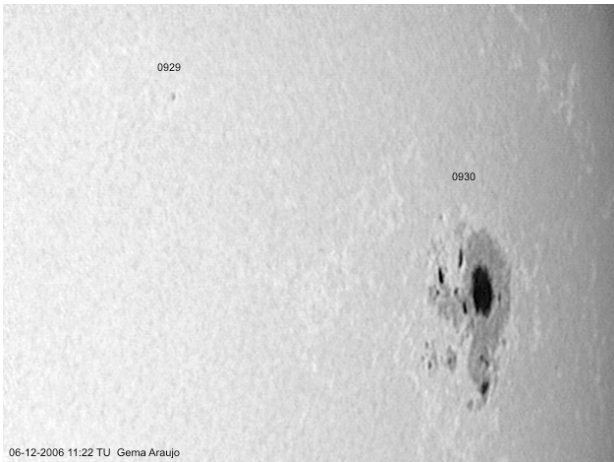
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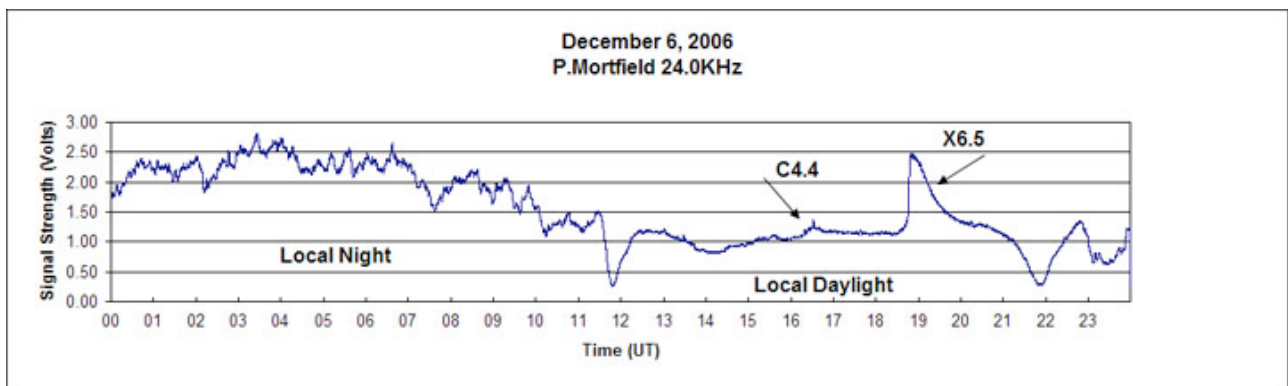
December 2006

Please note that the AAVSO moved its headquarters on December 27, and have a new official address. This address may look familiar to some, as until recently was the home of Sky & Telescope magazine.

Early December saw some amazing solar activity with several X and M flares occurring despite few sunspots.



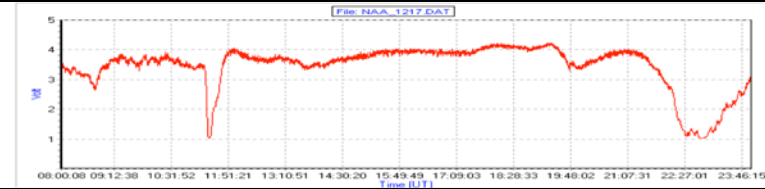
Gema Araujo took these images on December 06, 2006 in both white light and H-Alpha of active region 10930. Below you can see the trace of the large X6.5 flare captured by my SID receiver later that same day.



Help Needed: I'm looking for some volunteers to help provide ideas, and content to update our solar webpages. Please contact me via email if you would like to help.

Sudden Ionospheric Disturbance Report

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



Sudden Ionospheric Disturbances (SID) Recorded During December 2006

(Analysis performed by Michael Hill, SID Analyst)

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
061202	0713	2	061206	1846	2			
061204	1137	1	061207	0336	1			
061204	1214	1-	061207	0440	2+			
061204	1239	1-	061209	1059	1+			
061204	1244	1+	061211	0818	1-			
061204	1437	1+	061212	0757	1-			
061205	0510	2+	061213	0229	2			
061205	0628	2	061213	1423	1			
061205	0805	1+	061214	1205	2			
061205	0910	1-	061214	2212	2+			
061205	1031	2+	061215	0757	1			
061205	2004	1-	061217	1507	2+			
061206	0220	2	061231	0717	1+			
061206	0542	1						
061206	0751	1-						
061206	0810	1-						
061206	0818	2+						
061206	0829	3						
061206	1259	1						
061206	1429	1						
061206	1505	1-						
061206	1512	1-						
061206	1531	1-						
061206	1558	1-						
061206	1626	1+						

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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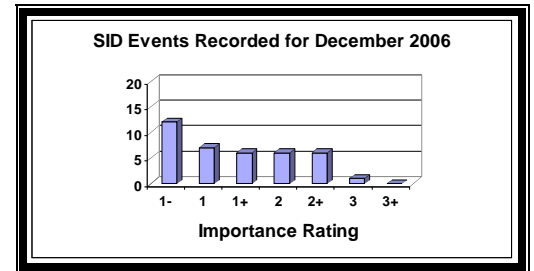
Observer	Code	Station(s) monitored
A Clerkin	A29	NAA
D Toldo	A52	NWC
P King	A80	FTA
M Hill	A87	NAA
J Mandaville	A90	NPM
L Anderson	A91	NWC
G Di Filippo	A93	DHO HWU
R Battaiola	A96	HWU
J Wallace	A97	NAA
F Steyn	A102	NAA NWC

Observer	Code	Station(s) monitored
L Observatory	A107	DHO
P Mortfield	A108	NAA
M Suhovecky	A115	NAA
L Loudet	A118	DHO
J Godet	A119	GBZ GQD ICV

The events listed above meet at least one of the following criteria

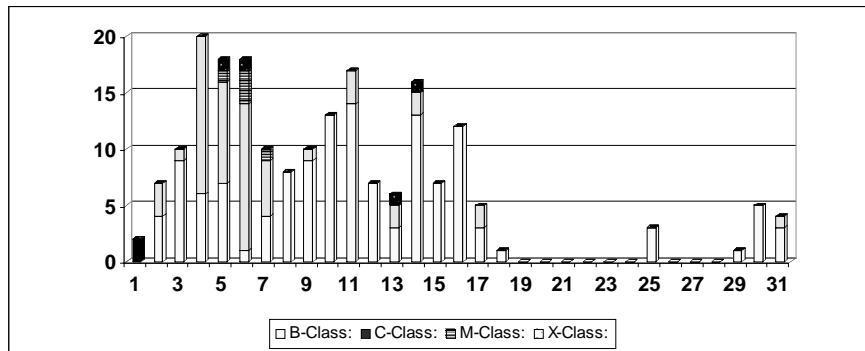
- 1) Event reported by two or more observers within ± 5 minutes
- 2) Event matched to GOES-8 XRA event to within ± 15 minutes and event time < 1000 UT
- 3) reported by observer with a quality rating > 8 (scale 1-10)

Solar Events



As far as solar activity goes December tried to go out with a bang but ended with a whimper. There was actually a great deal of activity at the start of the month including four X-Class events which is something that we have not seen in quite some time. But then the activity level virtually shut off for the second half of the month with almost no flare activity at all. There was a corresponding increase in SID activity to match. Observers reported a total of 38 correlated SID events of which most were low to medium importance rating. There were 190 X-Ray flares reported by the GOES-12 satellite and of these, five were M-Class events, and as I said earlier, four were X-Class events. The highest activity levels were around the 5th/6th and 13th/14th time frames. Thanks to all of you who reported in and I wish you all a Happy New Year and good observing ahead.

Solar Flare Summary Based on GOES-12 Data



American Relative Sunspot Numbers (Ra) for
December 2006 [**boldface** = **maximum**, **minimum**]

Day	N	Raw Mean	Ra
1	18	48	31
2	21	43	32
3	22	44	31
4	28	36	25
5	24	46	31
6	23	49	33
7	18	38	27
8	19	22	16
9	27	19	14
10	31	24	16
11	21	28	19
12	16	28	19
13	21	31	20
14	20	23	16
15	21	21	14
16	27	17	12
17	24	13	9
18	20	2	1
19	24	0	0
20	18	0	0
21	14	0	0
22	16	0	0
23	22	0	0
24	24	2	2
25	26	6	4
26	21	15	11
27	20	9	6
28	18	2	1
29	18	1	1
30	23	15	10
31	30	23	16

Means 21.8 19.5 13.5

No. of Observers: 53

Total No. of Observations: 675

Reporting Addresses:

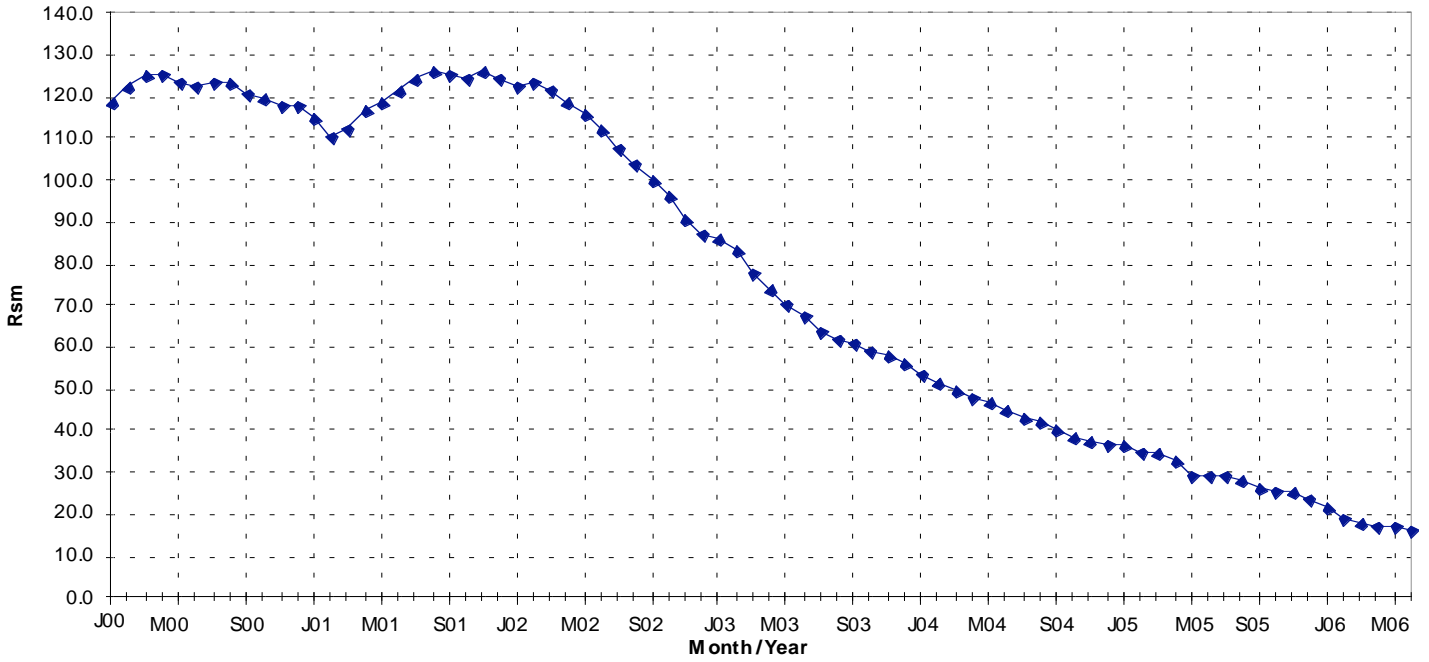
Sunspot Reports – Email: solar@aavso.org Postal Mail: AAVSO,
25 Birch St. Cambridge, MA, 02138 Fax: 617-354-0665

SID Flare Reports – email: noatak@aol.com Postal Mail: Mike Hill,
114 Prospect St., Marlboro, MA, 01752

December 2006 Sunspot Observers

AAP	A. Abbott	10
AJV	J. Alonso	5
ARAG	G. Araujo	29
BARH	H. Barnes	10
BATR	R. Battaiola	9
BERJ	J. Berdejo	9
BLAJ	J. Blackwell	7
BMF	M. Boschat	17
BRAM	M. Bradbury	5
BROB	R. Brown	22
BYG	Y. Brovarets	31
CAMP	P. Campbell	2
CHAG	G. Morales	28
CKB	B. Cudnik	20
COMT	T. Compton	4
DEJV	J. van Delft	20
DGP	G. Dyck	8
DUBF	F. Dubois	14
FERJ	J. Fernandez	14
FUJK	K. Fujimori	20
GFT	F. Gobet	7
GOEM	M. Goetz	1
HAYK	K. Hay	10
KAPJ	J. Kaplan	13
KNJS	J. & S. Knight	21
KQR	R. Kinne	7
KROL	L. Krozel	1
LARJ	J. Larriba	17
LERM	M. Lerman	2
MARE	E. Mariani	6
MARJ	J. Maranon	14
MCE	E. Mochizuki	24
MCHL	L. McHenry	6
MEU	E. Mason	5
MMI	M. Moeller	15
OATS	S. Oatney	20
OBSO	IPS Observatory	13
PEKT	R. Pektas	19
RICE	E. C. Richardson	8
RITA	A. Ritchie	20
SCGL	G. Schott	10
SDP	D. Sharples	1
SIMC	C. Simpson	4
STQ	N. Stoikidis	16
SUZM	M. Suzuki	23
SZUM	M. Sulc	13
TESD	D. Teske	23
TJV	J. Temprano	10
URBP	P. Urbanski	12
VARG	A. Vargas	22
WILD	D. Williams	1
WILW	W. Wilson	22
WRP	R. Wheeler	5

Smoothed Mean Sunspot Numbers (Rsm) from January 2000 to June 2006
(Waldmeier Method)



10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for
December 2006

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

