# Solar Bulletin



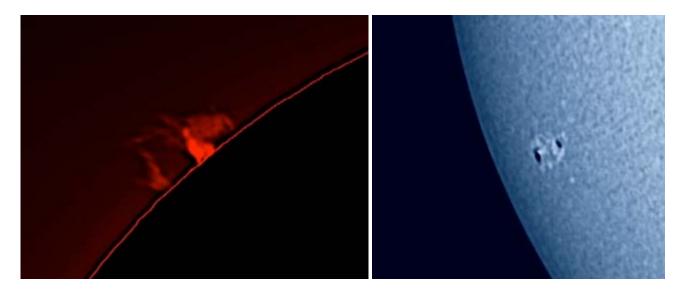
#### THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE

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There were a few sunspots this month, but as you can see from the sunspot data we are still bottomed out. Gema Araujo of Spain obtained these wonderful recent solar images. The left image of solar prominences taken on December 10, 2008 at 11:00UT, and the right Calcium-K image of AR1009 taken on December 11, 10:52UT

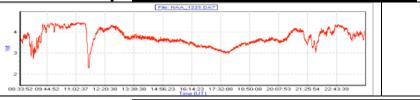
Thanks again to all the dedicated observers who continue to patrol the sun and submit reports. Your data still counts and reflects the current status of this cycle. Don't forget to submit your images, drawings and SID plots to include in the bulletin.

### Looking for web software volunteers

We're looking to update our sunspot data submission process, and provide more real-time feedback to all our solar observers via the AAVSO website. We'd also like to help improve our visibility to the astronomy community for IYA 2009. If you have the experience and expertise and have some time to help the solar group, please contact me via email above.

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 2008

(Analysis performed by Michael Hill, SID Analyst)

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
081211	0930	1-						
			<b>†</b>					
			<b>.</b>					

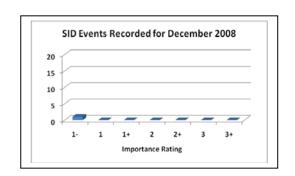
I	Importance rating: Duration (min)			1-: <19	1: 19-25	1+: 26-32	2: 33-4	5 2	2+: 46-85	3: 86-125	3+:>125
	Observer	Code	Station(s) monitored		Observer	<u>r</u> !	Code	Sta	tion(s) monito	ored	
А	Clerkin	A29				JP Godet	P	1119			

P King	A80	FTA		
M Hill	A87			
L Anderson	A91			
R Battaiola	A96			
J Wallace	A97			
M King	A99			
L. Obs	A107			
P Mortfield	A108			
I Loudet	A118			

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

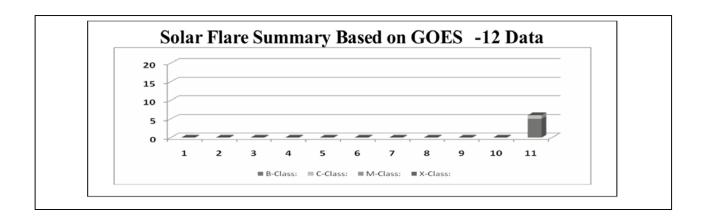
- 1) Event reported by two or more observers within  $\pm 5$  minutes
- 2) Event matched to GOES-8 XRA event to within  $\pm 15$  minutes and event time  $< 1000\ UT$
- 3) reported by observer with a quality rating > 8 (scale 1-10)

# Solar Events



For the second month in a row now we have a slight indication of solar activity with 1 correlated SID event. This was reported by Peter King monitoring FTA. Thanks Peter. There really was not much activity this month and this observation was made on the one day that the GOES-12 satellite detected any activity at all. There were 6 X-Ray flares recorded by the GOES-12 spacecraft. One of them was a C-Class event and the rest were B-Class.

I wish all of our observers a Happy New Year and look forward to many more observations in the coming months. The sun seems to be awakening to cycle 24 now and undoubtedly the SID count will increase as time goes by. Keep on looking and thanks for your contributions.



# American Relative Sunspot Numbers (Ra) for December 2008 [**boldface** = **maximum**, **minimum**]

Day	N	Raw Mean	Ra
1	22	0	0
2	22	0	0
3	28	0	0
4	22	1	0
5	26	0	0
6	33	0	0
7	27	0	0
8	24	0	0
9	20	0	0
10	24	9	6
11	17	10	7
12	18	5	4
13	22	0	0
14	23	0	0
15	17	0	0
16	19	0	0
17	14	0	0
18	20	0	0
19	25	0	0
20	24	0	0
21	32	0	0
22	22	0	0
23	19	0	0
24	22	0	0
25	19	0	0
26	25	0	0
27	30	0	0
28	30	0	0
29	36	0	0
30	35	0	0
31	32	0	0

Means 24.2 0.8 0.5

No. of Observers: 57

Total No. of Observations: 749

### **Reporting Addresses:**

Sunspot Reports – Email: solar@aavso.org Postal Mail: AAVSO, 49 Bay State Rd. Cambridge, MA, 02138 Fax: 617-354-0665

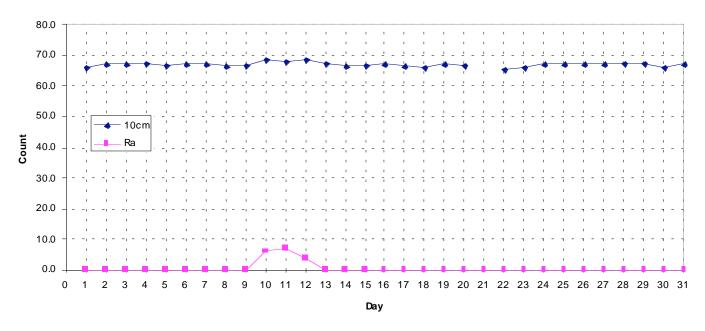
SID Flare Reports – email: noatak@aol.com Postal Mail: Mike Hill, 114 Prospect St., Marlboro, MA, 01752

AAP	A. Abbott	3
AJV	J. Alonso	13
ARAG	G. Araujo	25
BARH	H. Barnes	11

DATO	D. Dottolala	2
BATR	R. Battaiola	2
BEB	R. Berg	10
BERJ	J. Berdejo	6
BMF	M. Boschat	15
BRAB	B. Branchett	28
BROB	R. Brown	21
BVC	A. Buck	31
CHAG	G. Morales	26
CKB	B. Cudnik	18
CLZ	L. Corp	9
CNT	D. Chantiles	7
CA1	J. Carvajal	12
DEKP	P. Dekelver	8
DGP	G. Dyck	2
DUBF	F. Dubois	21
FERJ	J. Fernandez	12
FLET	T. Fleming	15
FUJK	K. Fujimori	24
HAYK	K. Hay	12
HILA	A. Hillier	1
HMQ	M. Harris	30
HRUT	T. Hrutkay	8
JASK	K. Jaskulska	4
KAPJ	J. Kaplan	16
KNJS	J. & S. Knight	19
KROL	L. Krozel	19
LARJ	J. Larriba	10
MARE	E. Mariani	4
		-
MARF	F. Mariuzza	16
MARJ	J. Maranon	30
MCE	E. Mochizuki	29
MEU	E. Mason	2
MILJ	J. Miller	6
MMI	M. Moeller	17
OATS	S. Oatney	10
OBSO	IPS Observatory	13
RICE	E. Richardson	10
RITA	A. Ritchie	8
SCGL	G. Schott	17
SIMC	C. Simpson	1
STEM	G. Stemmler	11
STQ	N. Stoikidis	15
SUZM	M. Suzuki	28
SZUM	M. Szulc	11
TESD	D. Teske	13
TJV	J. Temprano	8
URBP	P. Urbanski	12
VARG	A. Vargas	19
VIDD	D. Vidican	5
WILW	W. Wilson	15
WIRP	P. Wirkus	1
WRP	R. Wheeler	4
YESH	H. Yesilyaprak	24
511	sonyapi uk	∠-7

### 10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for December 2008

10 cm source:ftp://lynx.drao.nrc.ca/pub/solar/FLUX\_DATA/fluxtablerolling.text



Note: No 10 cm data for December 21.

# Smoothed Mean Sunspot Numbers (Rsm) from January 2000 to June 2008 (Waldmeier Method)

