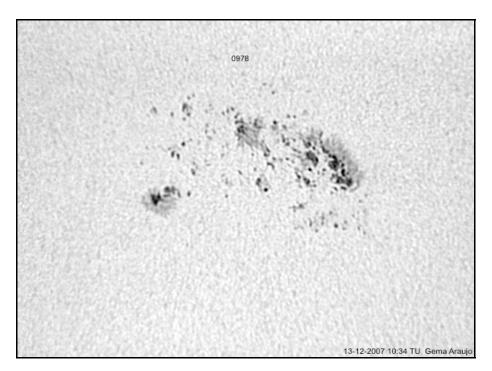
# Solar Bulletin

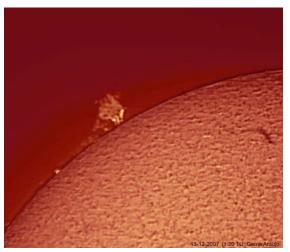


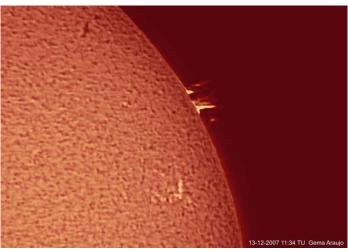
#### THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE

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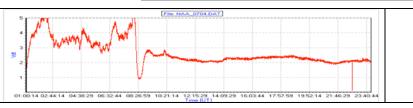




Finally some spots! Gema Araujo caught these wonderful solar images on December 13, 2007. The white light image shows active region 10978 at 10:34UT. The H-alpha images were taken at 11:20 and 11:34 UT respectively. The same day, the SID observers caught 3 events. More of Gema's images can be seen at <a href="http://www.astrosurf.com/obsolar/">http://www.astrosurf.com/obsolar/</a>

# Sudden Ionospheric Disturbance Report





## Sudden Ionospheric Disturbances (SID) Recorded During December 2007

### (Analysis performed by Michael Hill, SID Analyst)

Date	Max	lmp	Date	Max	Imp	Date	Max	Imp
71213	952	-1						
71213	1003	1						
71218	1320	2						

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

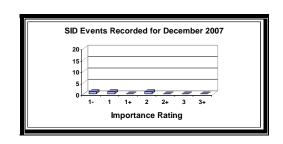
Observer	Code	Station(s) monitored
P King	A80	FTA
M Hill	A87	NAA
J Wallace	A97	NAA
F Steyn	A102	NAA
L Loudet	A118	DHO

Observer Code Station(s) monitored

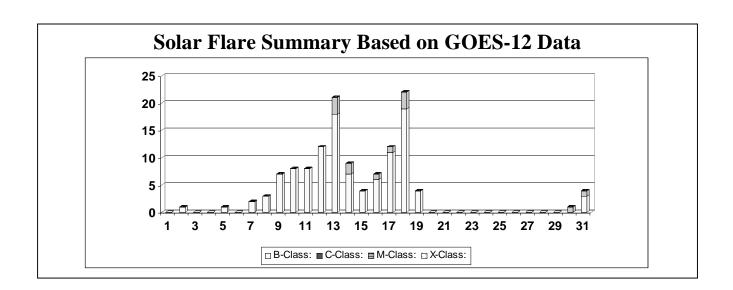
The events listed above meet at least one of the following criteria

- 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



Greetings and Happy 2008. The end of 2007 brought us our first burst of activity in a long while and the beginning of 2008 a new solar cycle – cycle 24. This is good news for SID observers after a long time with little activity to get exited about. Not that there was a lot of activity but it's a start. There were 3 correlated SID events reported - all of them on two days, the 13<sup>th</sup> and the 18<sup>th</sup>. This of course corresponds to the burst of activity as seen on the GOES-12 satellite data as can be seen below. The GOES satellite did record quite a bit more activity than it has seen in the past as well. There were 124 X-Ray events and although most of them were B-Class events there were 12 C-Class events recorded.



# American Relative Sunspot Numbers (Ra) for December 2007 [**boldface** = **maximum**, **minimum**]

Day	N	Raw Mean	Ra
1	24	9	6
2	26	5	4
3	22	7	5
4	25	12	9
5	21	12	9
6	24	19	15
7	23	24	17
8	31	36	26
9	27	44	31
10	21	36	26
11	22	43	30
12	27	39	29
13	24	42	32
14	27	42	32
15	26	34	23
16	28	27	20
17	21	15	11
18	18	3	2
19	18	0	0
20	19	0	0
21	25	0	0
22	23	0	0
23	30	0	0
24	30	0	0
25	23	1	1
26	29	0	0
27	22	0	0
28	22	0	0
29	31	0	0
30	28	0	0
31	31	0	0

Means 25 14.5 10.6

No. of Observers: 55

Total No. of Observations: 768

## **Reporting Addresses:**

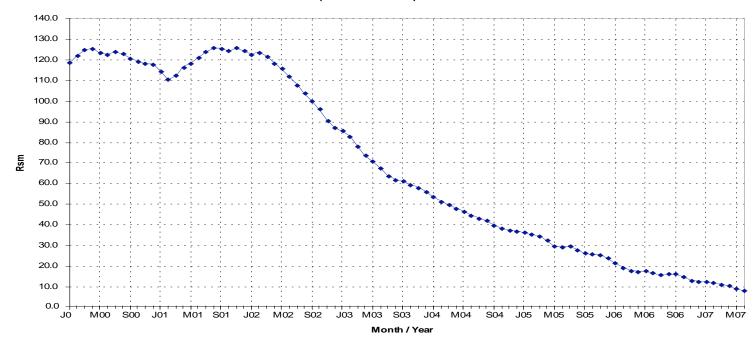
Sunspot Reports – Email: solar@aavso.org Postal Mail: AAVSO, 49 Bay State Rd. Cambridge, MA, 02138 Fax: 617-354-0665

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

## **December 2007 Sunspot Observers**

AAP	A. Abbott	6
AJV	J. Alonso	8
ARAG	G. Araujo	27
BARH	H. Barnes	9
BATR	R. Battaiola	4
BEB	R. Berg	9
BERJ	J. Berdejo	14
BLAJ	J. Blackwell	1
BMF	M. Boschat	11
BRAB	B. Branchett	31
BRAD	D. Branchett	19
BRAR BROB BVC CHAG CKB	R. Branch R. Brown A. Buck G. Morales B. Cudnik	27 25 31 24 27
CLZ CNT CVJ DEJV	L. Corp D. Chantiles J. Carvajal J. van Delft	16 7 26 17
DGP	G. Dyck	8
DUBF	F. Dubois	19
FERJ	J. Fernandez	9
FLET	T. Fleming	22
FUJK	K. Fujimori	22
GFT	F. Gobet	6
HALB	B. Halls	6
HAYK	K. Hay	5
HMQ	M. Harris	19
KAPJ	J. Kaplan	7
KNJS	J. & S. Knight	13
KROL	L. Krozel	1
LARJ	J. Larriba	9
MARJ	J. Maranon	19
MCE	E. Mochizuki	20
MCHL	L. McHenry	1
MEU MILJ MMI OATS	E. Mason J. Miller M. Moeller S. Oatney	10 6 10 11
RICE	E. C. Richardson	9
RITA	A. Ritchie	5
SCGL	G. Schott	19
SIMC	C. Simpson	3
STEF	G. Stefanopoulis	6
STEM	G. Stemmler	13
STQ	N. Stoikidis	11
SUZM	M. Suzuki	25
SZUM	M. Szulc	9
TESD	D. Teske	22
TJV	J. Temprano	14
URBP	P. Urbanski	11
VARG VIDD WILW WRP	A. Vargas D. Vidican W. Wilson R. Wheeler	15 5 14 4
YESH	H. Yesilyaprak	21

## Smoothed Mean Sunspot Numbers (Rsm) from January 2000 to June 2007 (Waldmeier Method)



## 10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for December 2007 10 cm source: http://www.drao.nrc.ca

