Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS
SOLAR SECTION

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ISSN 0271-8480

Volume 70 Number 12 December, 2014

MONTH: DECEMBER YEAR: 2007 Observer: Gonzalo Vargas B.

DATE	QLTY	TIME	GN	SN	WN
1	R	1915	0	0	0
6	R	1900	0	0	0
10	G	2025	2	23	43
12	R	1930	2	24	44
13	R	1915	2	36	56
14	G	1910	2	17	37
16	G	1915	2	18	38
18	G	1925	1	3	13
22	R	1825	0	0	0
25	G	1855	0	0	0
26	G	1858	0	0	0
27	R	1910	0	0	0
29	G	1855	0	0	0
30	R	1315	0	0	0
31	R	1935	0	0	0

Dear Solar Observers,

We are also missing several years of reports from 2006 through late 2009.

We are requesting that all AAVSO solar observers transmit their original reports to AAVSO headquarters if at all possible so that they can be properly preserved and put to use by the research community. We are asking the following:

* For observers with reports in *electronic* format, please send them to me at this email address (matthewt@aavso.org), or contact me with any questions about file formats or how to transmit large numbers of files. Please contact me before you send files, in case they are mistakenly trapped by spam prevention software or are otherwise miss-delivered.

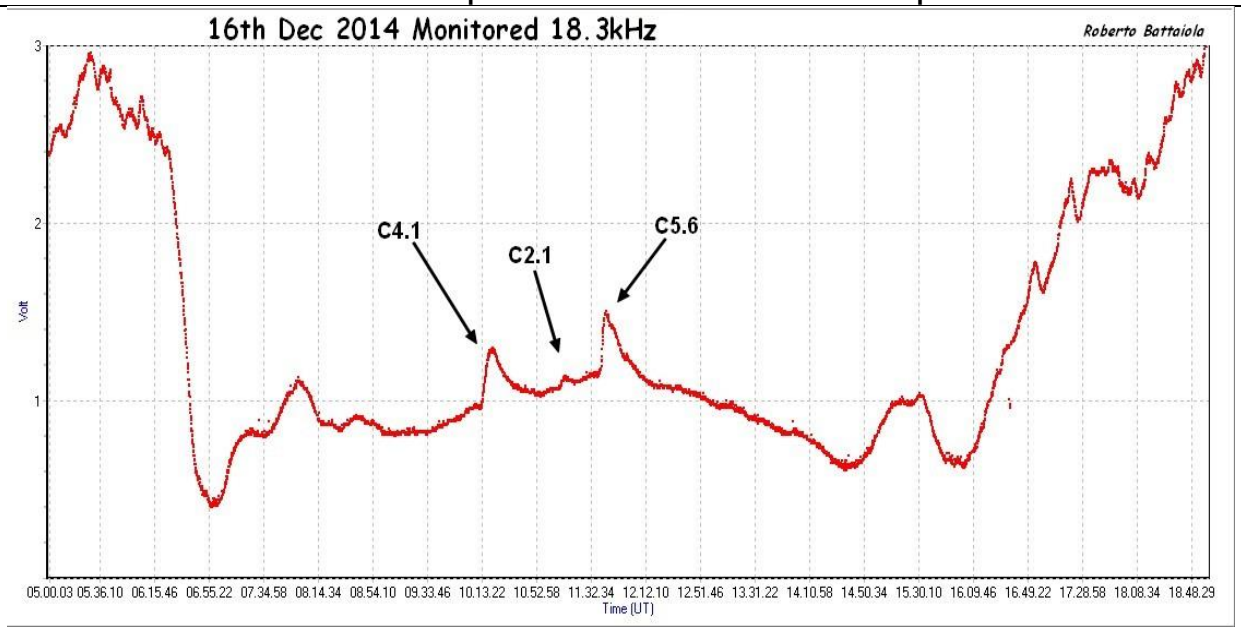
* For observers with observations in paper format, please send us electronic scans (jpeg or pdf) or make paper copies of your records. For notebooks or large collections, please contact me (matthewt@aavso.org) so that we can make arrangements or give suggestions for scanning.

In either case, we encourage you to share as much as possible, but if making this material available will be difficult, please contact me for suggestions. We may be able to assist with some special cases (e.g. files on floppy disk or out-of-service hard drives).

Clear skies, & best wishes,

Matthew

Sudden Ionospheric Disturbance Report



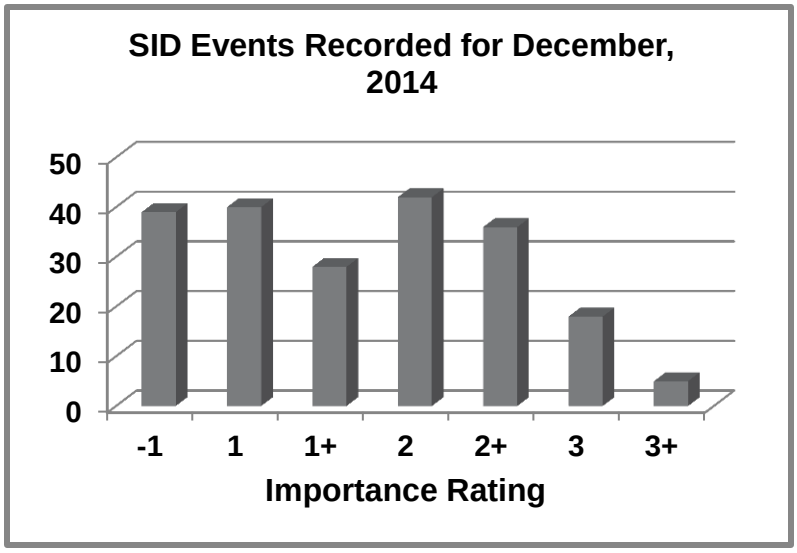
C class flares on December 16, 2014. This graph from Roberto Battaiola, recording of HWU

Sudden Ionospheric Disturbances (SID) Records During December, 2014

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
141201	636	1+	141204	916	3	141209	240	1
141201	730	1	141204	1348	-1	141209	355	1
141201	1724	2	141204	1348	-1	141209	527	1
141202	805	1	141204	1820	2	141209	829	1
141202	927	2	141205	538	1	141209	1009	-1
141202	1346	1	141205	715	1	141209	1024	1+
141202	1353	2	141205	1216	1+	141209	1234	1
141202	1552	2+	141205	1222	2+	141209	1328	2+
141202	1730	2	141205	2159	3	141209	1348	-1
141202	2302	3	141205	2303	3+	141209	1444	2+
141203	608	2	141206	156	2+	141209	1526	-1
141203	811	1	141206	623	3	141209	1547	3
141203	916	2	141206	1630	1+	141209	1642	1+
141203	930	2+	141206	2123	1	141209	2206	-1
141203	936	2	141206	2155	1+	141209	2300	3
141203	1311	-1	141206	2307	2+	141210	118	-1
141203	1327	-1	141207	141	3	141210	622	1
141203	2137	2+	141207	1410	-1	141210	650	2+
141203	2203	2+	141207	1512	1	141210	1405	3
141204	803	2	141207	2316	1	141210	1555	2+
141204	812	1	141208	645	2	141210	1706	2
141204	838	2	141208	1000	2	141210	2121	2
141204	853	2	141208	2122	2	141211	604	-1

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
141211	855	-1	141217	108	1+	141222	2225	2
141211	1610	2+	141217	150	1+	141223	508	1+
141213	17	-1	141217	444	2+	141223	1104	3
141213	31	-1	141217	451	2+	141223	2305	2
141213	319	2	141217	1502	-1	141224	1424	2+
141213	518	2+	141217	1905	1+	141224	1436	2
141213	604	1+	141217	2247	1+	141225	524	2
141213	846	-1	141218	238	2+	141225	733	3
141213	1011	1	141218	751	1+	141225	852	1
141213	1053	-1	141218	911	-1	141225	1210	1+
141213	1101	1	141218	940	1+	141225	1530	2+
141213	1222	1	141218	1030	1	141225	2113	2
141213	1308	1	141218	1213	1	141226	1127	-1
141213	1510	-1	141218	1251	2	141226	1448	2+
141213	1525	-1	141218	1258	1	141227	214	1+
141213	1834	1	141218	1826	2	141227	624	1+
141213	1909	1	141218	1945	1	141228	1005	1+
141214	133	1+	141218	2016	1	141228	1110	3+
141214	432	2	141218	2120	1+	141228	1338	-1
141214	600	1	141219	214	2	141228	1429	1
141214	718	3	141219	343	2	141229	1243	3+
141214	718	3+	141219	943	2+	141229	1304	1+
141214	809	-1	141219	950	2	141229	1423	-1
141214	831	1	141219	1634	2	141230	651	2+
141214	1941	2	141219	2049	2+	141231	655	1+
141215	1455	-1	141220	29	2			
141215	1945	-1	141220	310	3+			
141215	2123	1	141220	1715	2+			
141215	2144	-1	141220	2118	2			
141216	238	2	141221	33	1+			
141216	450	2	141221	242	2+			
141216	824	1+	141221	457	2			
141216	1018	1	141221	734	2			
141216	1110	-1	141221	1112	-1			
141216	1141	2	141221	1141	3			
141216	1152	-1	141221	1210	2+			
141216	1224	3	141222	814	2+			
141216	1643	-1	141222	1106	2			
141216	2143	1	141222	1114	1+			

Solar Events

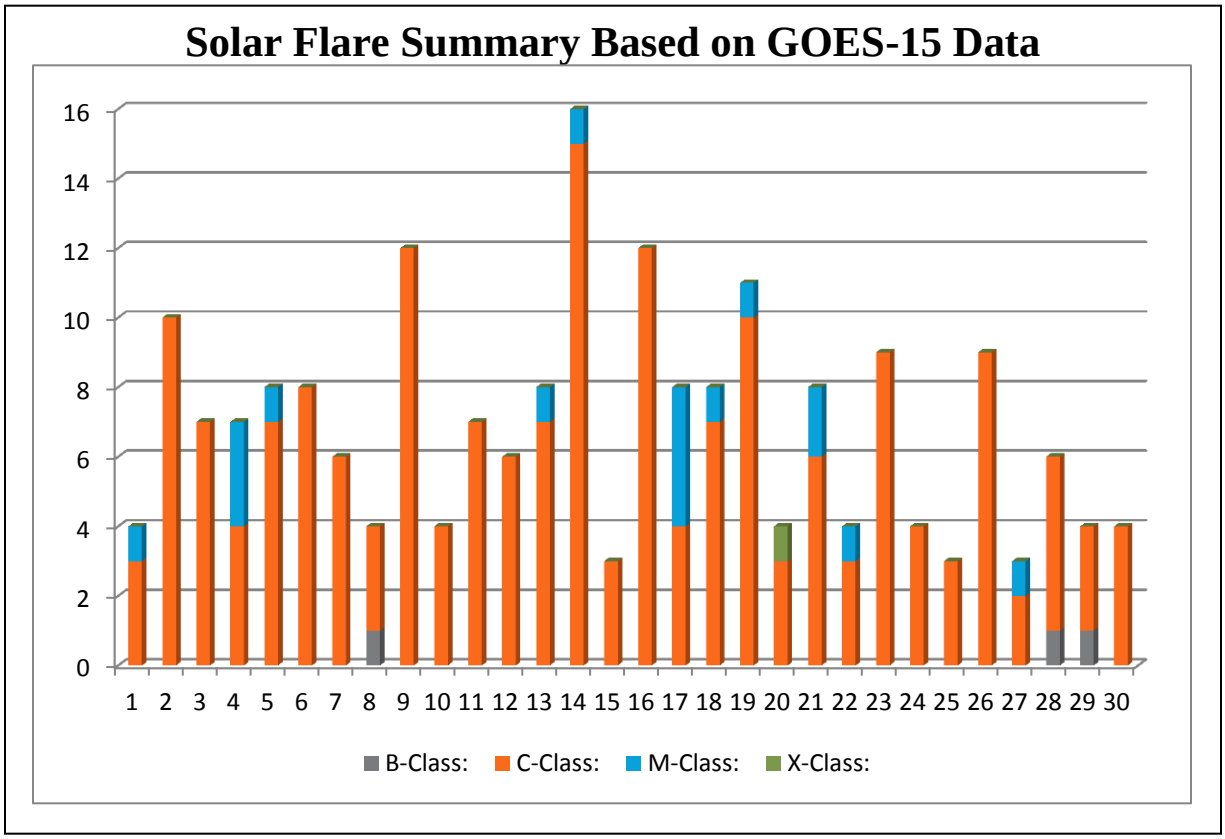


Importance rating: Duration (min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: 125

Sudden Ionospheric Disturbances (SID) Observers During December, 2014

Observer	Code	Station(s) monitored	Observer	Code	Station(s) monitored
A McWilliams	A94	NLK	J Karlovsky	A131	DHO NSY
R Battaiola	A96	HWU	R Green	A134	NWC
J Wallace	A97	NAA	R Mrllak	A136	GQD NSY
L Loudet	A118	DHO GQD NAA	F Francione & C Re	A139	NAA NSY
B Terrill	A120	NWC	R Rogge	A143	DHO GQD ICV
F Adamson	A122	NWC	Orion Observatory	A144	NAA
S Oatney	A125	NAA NLK	M Stephanou	A145	DHO

There were 207 solar flares measured by GOES-15 for December, 2014: One X class flare, 17 M class, 186 C class and 3 B class flares. About the same flaring this month compared to last. There were 14 AAVSO SID observers who submitted reports this month.



American Relative Sunspot Numbers (Ra) for December, 2014 [**boldface = maximum, minimum**]

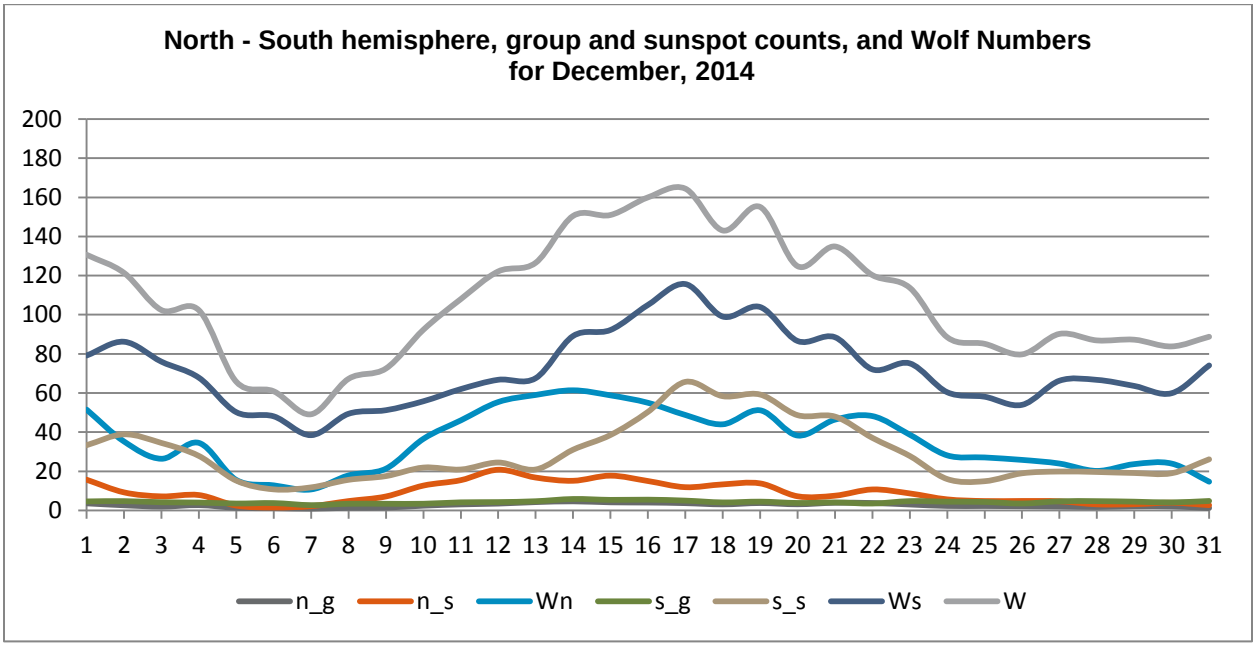
DAY	NumObs	RAW	Ra
1	23	110	90
2	20	112	80
3	17	99	79
4	19	81	60
5	22	58	44
6	20	49	**34**
7	28	45	38
8	22	59	44
9	24	70	50
10	21	90	63
11	21	108	77
12	18	114	84
13	22	122	95
14	22	146	110
15	28	144	114
16	22	156	**119**
17	17	157	118
18	18	141	102
19	22	147	108
20	23	125	100
21	25	129	93
22	20	115	78
23	20	106	73
24	22	82	63
25	27	81	62
26	27	70	53
27	25	80	62
28	32	81	63
29	36	79	62
30	32	80	60
31	31	87	68
Average	**23.4**	**100.6**	**75.8**

Obs	#Obs	Name
AAX	13	Alexandre Amorim
AJV	18	J. Alonso
ARAG	29	Gema Araujo
ASA	20	Salvador Aguirre
BARH	6	Howard Barnes
BATR	1	Roberto Battaiola
BERJ	14	Jose Alberto Berdejo
BLAJ	1	John A. Blackwell
BMF	11	Michael Boschat
BRAB	24	Brenda Branchett
BRAF	11	Raffaello Braga
BROB	18	Robert Brown
BSAB	23	Santanu Basu
CFO	3	Jean F. Coliac
CHAG	25	German Morales Chavez
CIOA	2	Ioannis Chouinavas
CKB	11	Brian Cudnik
CNT	9	Dean Chantiles
DEMF	2	Frank Dempsey
DGP	11	Gerald Dyck
DJOB	14	Jorge del Rosario
DUBF	14	Franky Dubois
FERJ	9	Javier Ruiz Fernandez
FJAE	2	Dr.John Alan Freeman
FLET	16	Tom Fleming
FLF	15	Fredirico Luiz Funari
FTAA	5	Tadeusz Figiel
FUJK	21	K. Fujimori
HALB	7	Brian Halls
HAYK	6	Kim Hay
HMQ	4	Mark Harris
HOWR	23	Rodney Howe
JDAC	8	David Jackson
JGE	8	Gerardo Jimenez Lopez
JJMA	10	Jessica M.Johnson
KAND	13	Kandilli Observatory
KAPJ	9	John Kaplan
KNJS	29	James & Shirley Knight
KROL	13	Larry Krozel
LEVM	21	Monty Leventhal
LKR	11	Kristine Larsen
MARE	5	Enrico Mariani
MGAA	2	Gael Mariani
MILJ	8	Jay Miller
MJHA	21	John McCammon
MMI	1	Michael Moeller
MUDG	1	George Mudry
OATS	8	Susan Oatney
OBSO	16	IPS Observatory
ONJ	7	John O'Neill
RLM	10	Mat Raymonde
SCGL	15	Gerd-Lutz Schott
SDOH	31	Jan Alvestad(SDO)
SIDM	8	Monika Sidor
SIMC	2	Clyde Simpson
SONA	5	Andries Son
SPIA	3	Piotr Skorupski

STAB	24	Brian Gordon-States
SUZM	22	Miyoshi Suzuki
TESD	17	David Teske
URBP	6	Piotr Urbanski
VARG	19	A. Gonzalo Vargas
VIDD	5	Dan Vidican
WAU	1	Artur Wargin
WILW	8	William M. Wilson
WRP	2	Russell Wheeler

Total Observers: 66
Total Observations: 757

There were 39 out of 66 observers who submitted North and Southern hemisphere group and sunspot counts this month. The Southern hemisphere totally predominates with no days of crossover.



Reporting Addresses:

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SID Solar Flare Reports – Rodney Howe **ahowe@frii.com**