

# Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS  
SOLAR COMMITTEE



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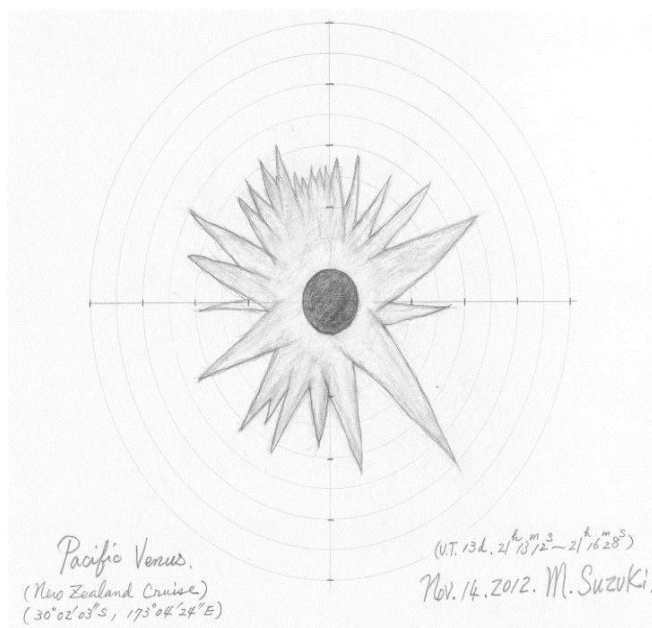
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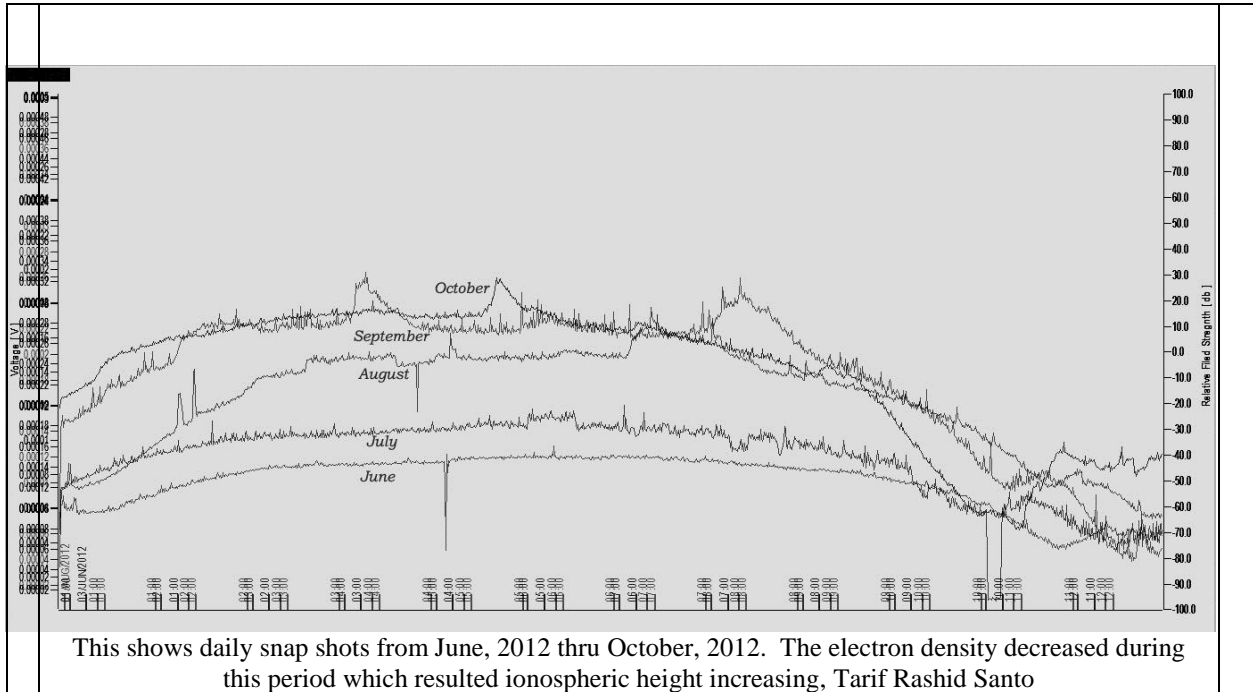
November, 2012



The drawing on the left is from Miyoshi Suzuki (JAPAN). The shape of corona was typical of the maximum phase of solar activity. However, the height of the corona was about half of the height of the corona at 1999(Turkey) and 2001(Zimbabwe) when solar activity was extremely intense. The image on the right is the total solar eclipse of 13th November 2012. The photo was taken from Maitland Downs in the outback of Queensland, Australia by AAVSO member/observer John O'Neill (ONJ). Totality lasted 2 minutes 3 seconds, there was slight cirrus present. The image was taken with a 60mm Takahashi FS-60C refractor operating at a focal length of 372mm, driven on an equatorial drive, ISO 200.

**The Sun**, Giorgio Abetti, 1957, pg.199: *At the eclipse of 1878, visible in the United States, the corona was observed to be much less brilliant than in 1870 and 1871, as well as having a noticeably different shape: the polar rays resembled the lines of force round a magnetized sphere and the equatorial coronal rays were of enormous extent. Observing from a mountain in Colorado, Langley was able to trace these rays for a distance of 6 solar diameters from one limb and from the other limb for as far as 12 diameters.....The eclipse of 1882 May 17, visible with a very short period of totality from Egypt, has become famous for the bright comet that was seen and photographed close to the Sun during the total phase, but was unobservable both before and after the eclipse. The Sun was on this occasion at a maximum of activity and the form of the corona, as in 1871, was again almost rectangular, and altogether lacked the long equatorial rays and the intense, short, curved polar rays.*

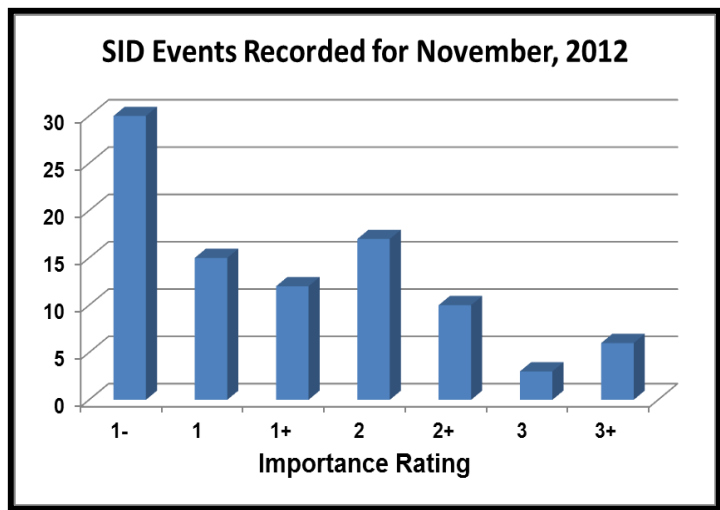
# Sudden Ionospheric Disturbance Report



## Sudden Ionospheric Disturbances (SID) Records During November, 2012

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
121107	2204	1-	121114	0224	2	121123	1659	3+
121108	0223	1-	121114	0405	2	121123	1710	1-
121108	2159	3+	121114	1344	1+	121123	1931	1-
121108	2218	1-	121114	1454	1	121124	1340	1+
121109	0547	2+	121114	2030	1+	121126	1146	1-
121110	1058	1-	121114	2149	3+	121126	1211	1-
121110	1643	1-	121115	0436	2	121126	1238	1
121110	1933	1-	121115	0801	1-	121127	0211	2
121110	2212	2+	121115	0808	1	121127	0455	1-
121111	0233	3	121115	1251	1+	121127	1132	1
121111	0528	2	121115	1431	1-	121127	1331	1
121111	1223	3+	121116	1538	1+	121127	1558	1-
121112	1022	1-	121118	0410	2+	121128	0246	1+
121112	1212	2	121118	1307	1-	121128	1138	1
121112	1853	1	121120	0203	2+	121128	1224	2
121112	1957	2+	121120	0634	1+	121128	2123	2
121112	2054	1+	121120	1242	2	121129	0228	1+
121113	0123	1+	121120	1351	1-	121129	0658	2
121113	0204	2+	121120	1526	2	121129	0849	1-
121113	0551	2+	121121	0412	2+	121129	1118	1-
121113	0659	1	121121	0657	2	121129	1150	1
121113	0807	1-	121121	0941	2	121129	1202	2
121113	1012	1-	121121	1454	3	121129	1906	1-
121113	2055	1	121121	1528	2+	121130	1703	2
121113	2337	1+	121123	1212	1-	121130	1721	2

# Solar Events

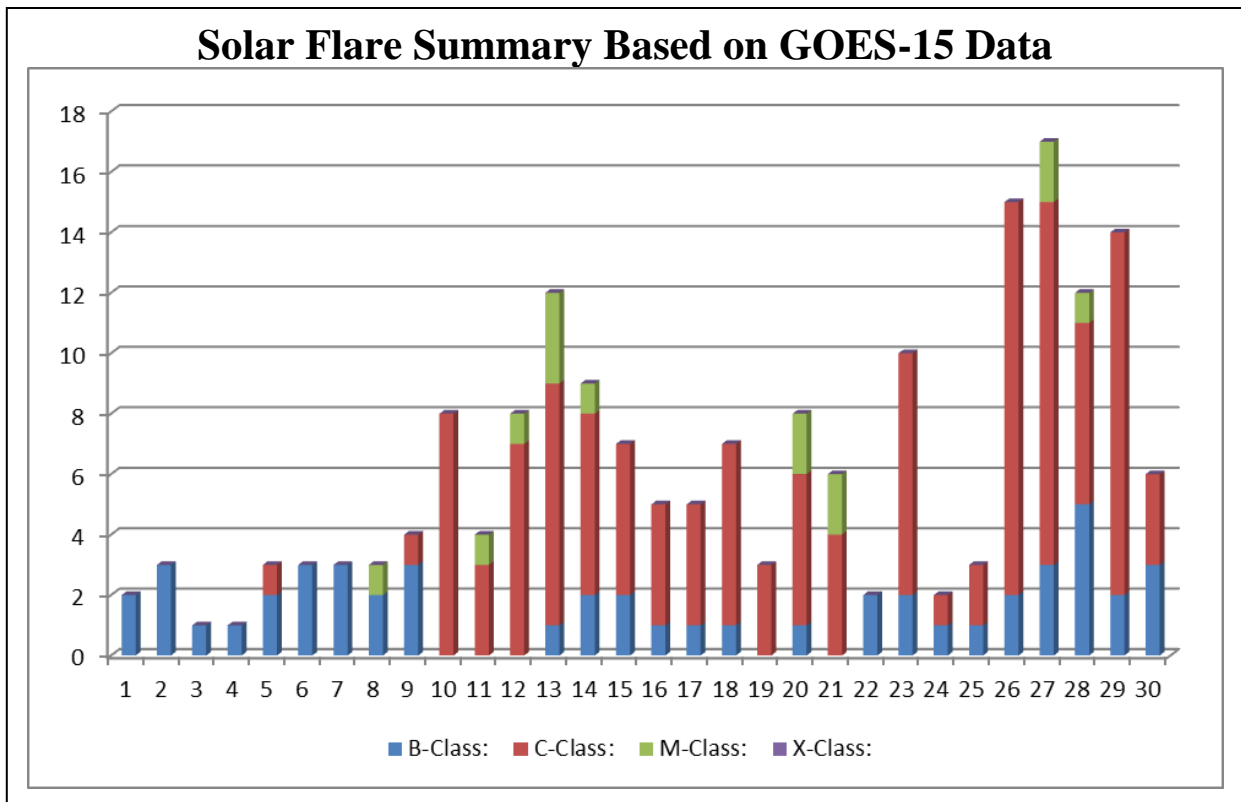


Importance rating: Duration (min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: >125
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## Sudden Ionospheric Disturbances (SID) Observers During November, 2012

Observer	Code	Station(s) monitored	Observer	Code	Station(s) monitored
A McWilliams	A94	NML	B Terrill	A120	NWC
R Battaiola	A96	HWU	F Adamson	A122	NWC
J Wallace	A97	NAA	S Oatney	A125	NML
F Steyn	A102	NWC	J Karlovsky	A131	DHO
L Loudet	A118	DHO GQD NAA	E Soubrouillar	A132	HWU
J Godet	A119	GBZ GQD ICV	T Santo	A133	NWC
			R Green	A134	NWC

There were 186 solar flares measured by GOES-15 for November, 2012. Fourteen M class flares, 122 C class and 50 B class flares. The sun was very active with C class flares this month. There were 13 AAVSO SID Observers who submitted reports on a month with many C class and M class flares.



American Relative Sunspot Numbers (Ra) for November, 2012 [**boldface = maximum, minimum**]

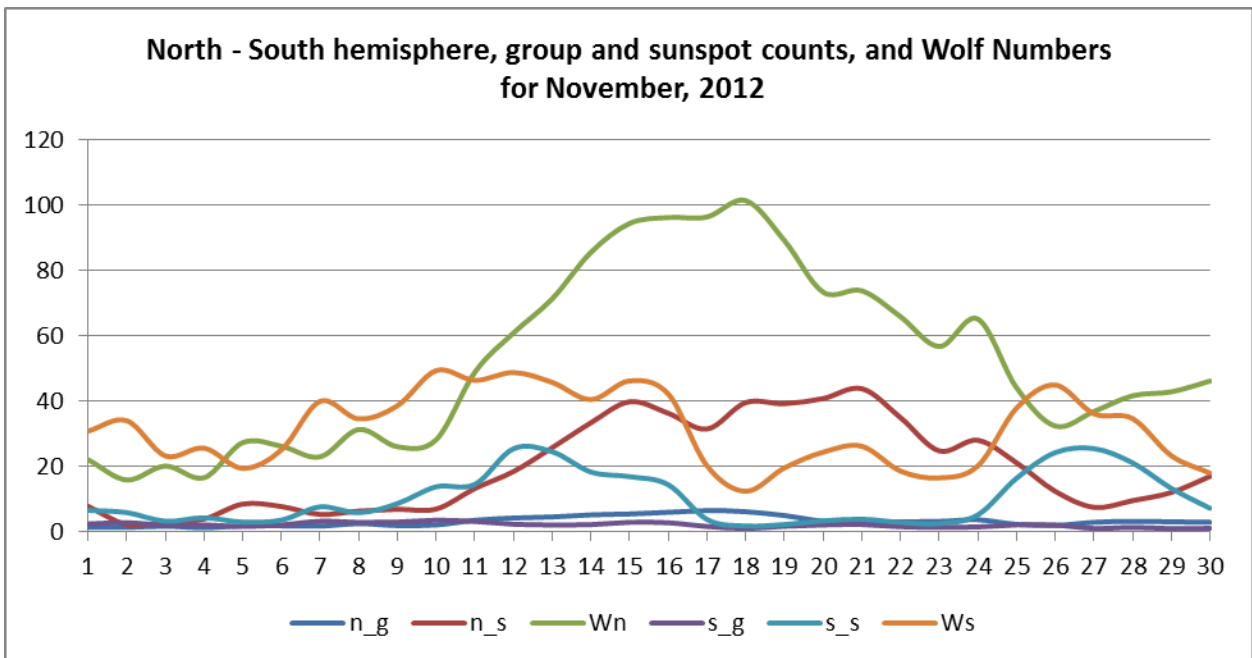
DAY	NumObs	RAW	Ra
1	27	38	<b>26</b>
2	30	40	27
3	25	37	26
4	29	40	28
5	27	41	30
6	27	43	30
7	26	57	39
8	23	61	42
9	22	63	43
10	26	73	52
11	32	92	71
12	26	108	79
13	27	114	79
14	29	121	86
15	22	132	<b>92</b>
16	18	129	88
17	27	118	89
18	32	110	82
19	21	103	74
20	30	94	66
21	30	101	72
22	40	84	63
23	26	73	54
24	26	78	55
25	36	76	53
26	24	73	51
27	23	73	51
28	26	74	55
29	27	68	53
30	29	62	46
<b>Average</b>	<b>27.1</b>	<b>79.2</b>	<b>56.7</b>

BERJ	10	Jose Alberto Berdejo
BMF	17	Michael Boschat
BRAB	28	Brenda Branchett
BRAF	10	Raffaello Braga
BROB	21	Robert Brown
CADA	2	Adair Cardoso
CHAG	25	German Morales Chavez
CIOA	10	Ioannis Chouinavas
CKB	26	Brian Cudnik
CNT	10	Dean Chantiles
CVJ	4	Jose Carvajal
DELS	1	Susan Delaney
DEMF	4	Frank Dempsey
DGP	22	Gerald Dyck
DJOB	7	Jorge del Rosario
DUBF	19	Franky Dubois
FAM	5	Fabio Mariuzza
FERJ	17	Javier Ruiz Fernandez
FLET	23	Tom Fleming
FLF	13	Fredirico Luiz Funari
FTAA	3	Tadeusz Figiel
FUJK	21	K. Fujimori
HAYK	11	Kim Hay
HMQ	6	Mark Harris
HOWR	18	Rodney Howe
HRUT	7	Timothy Hrutkay
JASK	3	Krystyna Wirkus
JGE	1	Gerardo Jimenez Lopez
JJK	1	Jerry Klotz
KAND	25	Kandilli Observatory
KNJS	20	James & Shirley Knight
KROL	23	Larry Krozel
LEVM	17	Monty Leventhal
LKR	7	Kristine Larsen
MCE	20	Etsuiku Mochizuki
MGAA	9	Gael Mariani
MILJ	11	Jay Miller
MJHA	21	John McCammon
MMI	17	Michael Moeller
MUDG	4	George Mudry
OATS	11	Susan Oatney
OBSO	17	IPS Observatory
RICE	16	E. C. Richardson
RLM	4	Mat Raymonde
SCGL	12	Gerd-Lutz Schott
SIMC	4	Clyde Simpson

Obs	#Obs	Name
AAP	5	A. Patrick Abbott
AAX	13	Alexandre Amorim
AJV	9	J. Alonso
AMG	2	Margarete J. Amorim
ARAG	26	Gema Araujo
ASA	18	Salvador Aguirre
BARH	6	Howard Barnes
BATR	1	Roberto Battaiola
BDDA	24	Diego Bastiani
BEB	2	Ray Berg

SMNA	4	Michael Stephanou	WRP	1	Russell Wheeler
SONA	4	Andries Son			
STAB	22	Brian Gordon-States			
SUZM	20	Miyoshi Suzuki	<b>Total</b>	<b>Observers:</b>	<b>65</b>
TESD	21	David Teske	<b>Total</b>	<b>Observations:</b>	<b>813</b>
URBP	12	Piotr Urbanski			
VARG	14	A. Gonzalo Vargas			
WILW	26	William M. Wilson			

Thirty four of our sixty five observers submit data on the sunspot and group counts for the sun's north and south hemispheres. It is interesting to note how the Wolf numbers of groups and Sunspots counts cross over on the 11<sup>th</sup> and 25<sup>th</sup> of the month.



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