

# Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS  
SOLAR SECTION



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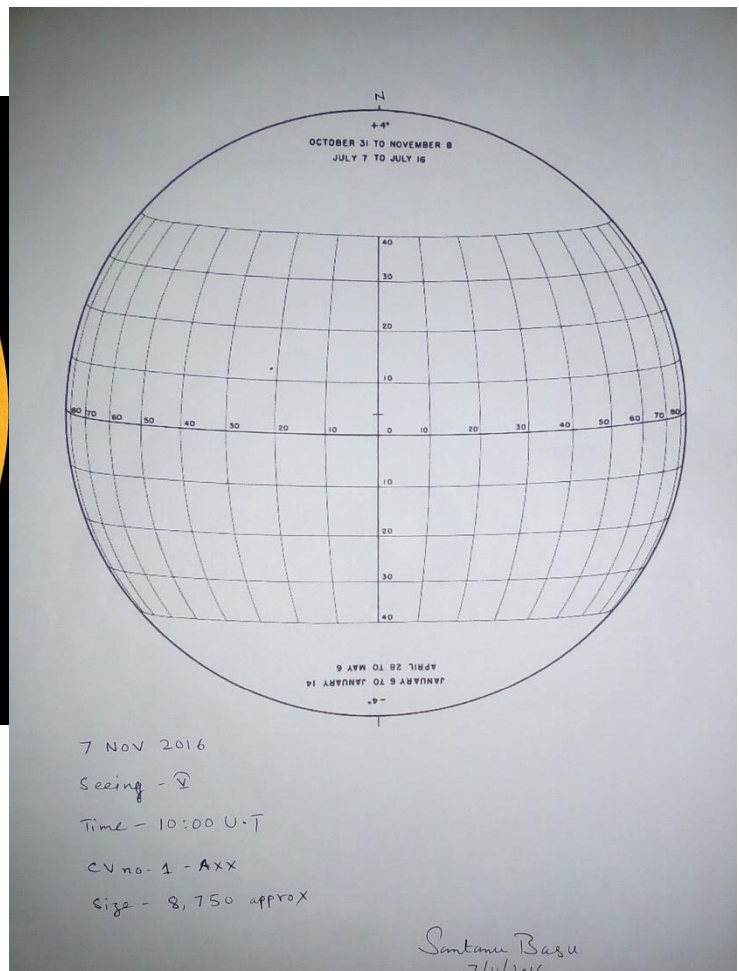
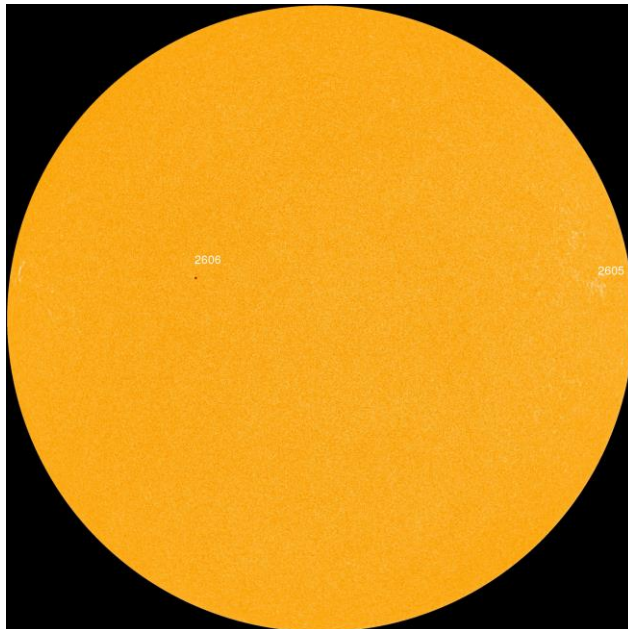
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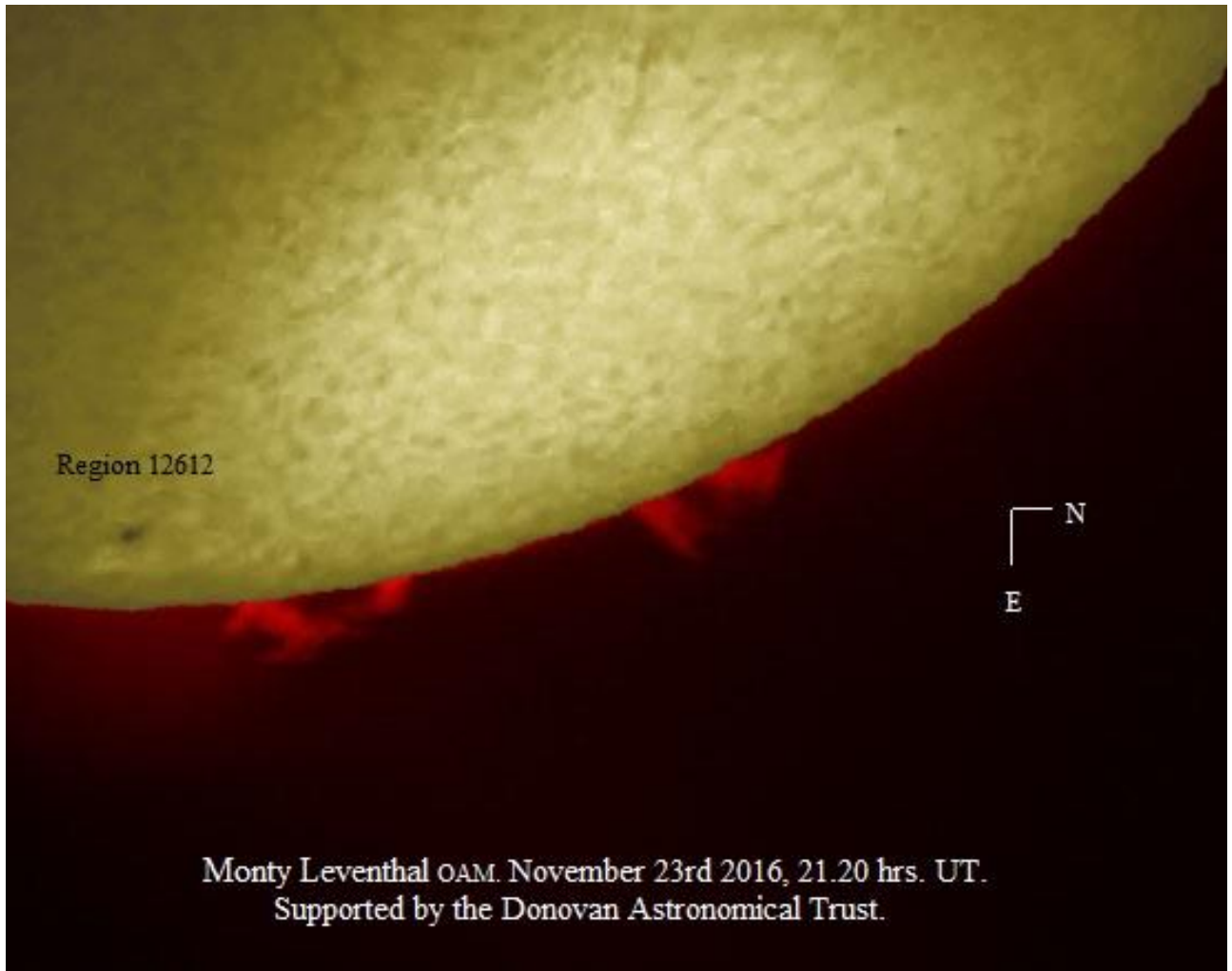
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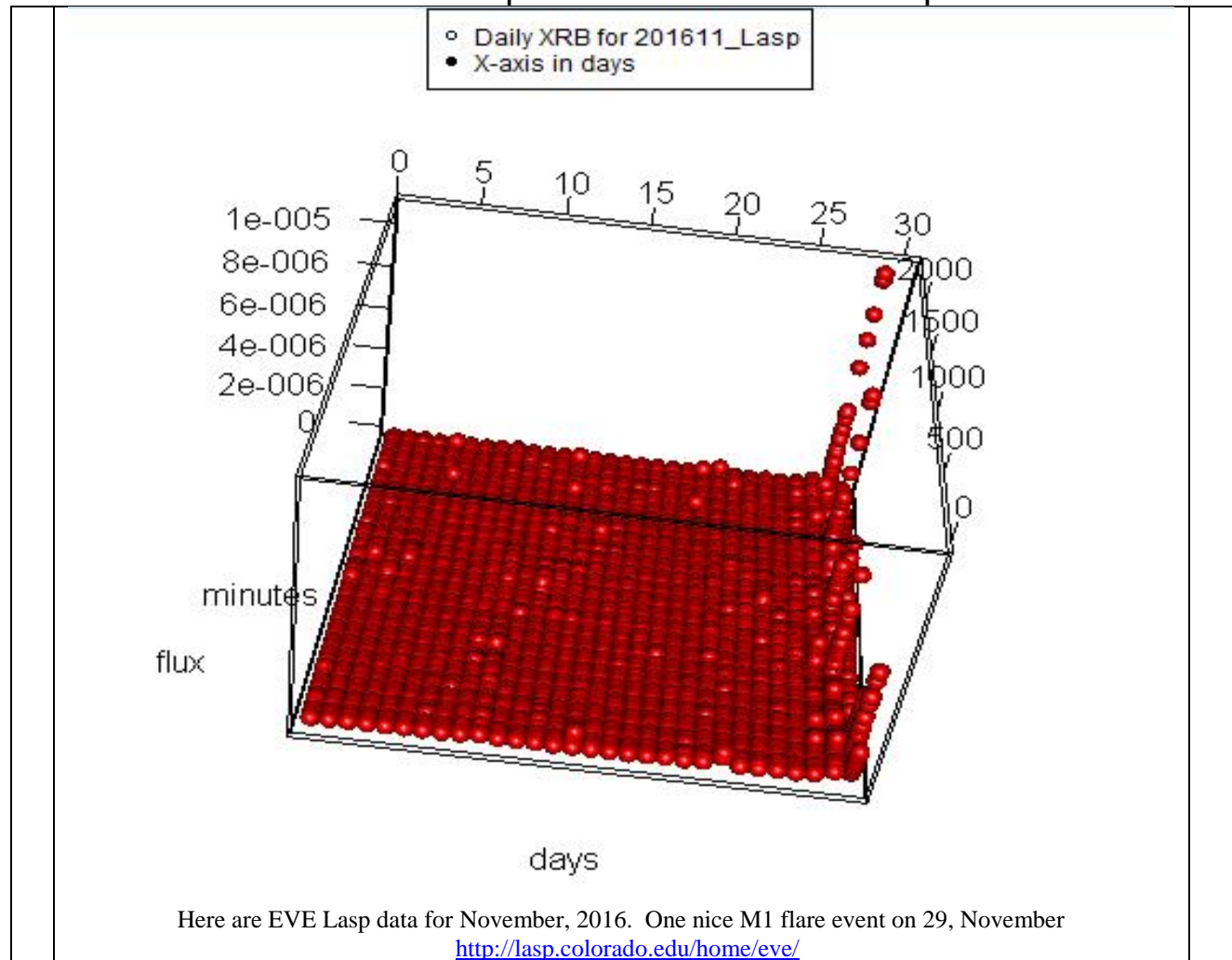


Santanu Basu (BSAB) from Kolkata, India sends his drawings of the very small group of sunspots from November 7, 2016, and compares his drawings to the HMI (Solar Dynamics Observatory Satellite) for Active Region 2606. November had very few groups and small sunspot counts for the month.



Here Monty Leventhal (LEVM) sends an H-alpha image of Active Region 2612. It's somewhat difficult to tell how many sunspots should be counted with an H-alpha image, but for the 23<sup>rd</sup> of November the AAVSO average group, sunspot and Wolf numbers were: one group, two sunspots and a Wolf number of 12. It was not until the last few days of November that there were three Zurich C class Active Regions which showed up and AR 2615 began to send off C and M class flares (see LASP data below).

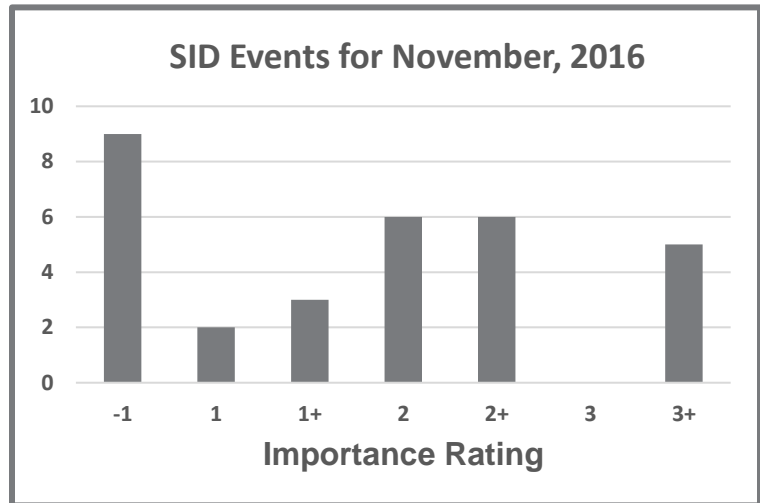
# Sudden Ionospheric Disturbance Report



## Sudden Ionospheric Disturbances (SID) Recordings During November, 2016

Date	Max	Imp	Date	Max	Imp
161101	2002	3+	161129	545	1+
161111	908	2+	161129	709	2
161115	35	1+	161129	1141	3+
161119	714	2+	161129	1214	1+
161122	11	2+	161129	1725	-1
161122	2306	2+	161129	1725	1
161126	409	-1	161129	1744	3+
161128	809	2+	161129	2338	-1
161129	340	-1	161130	115	2
161129	534	2	161130	221	2

# Solar Events

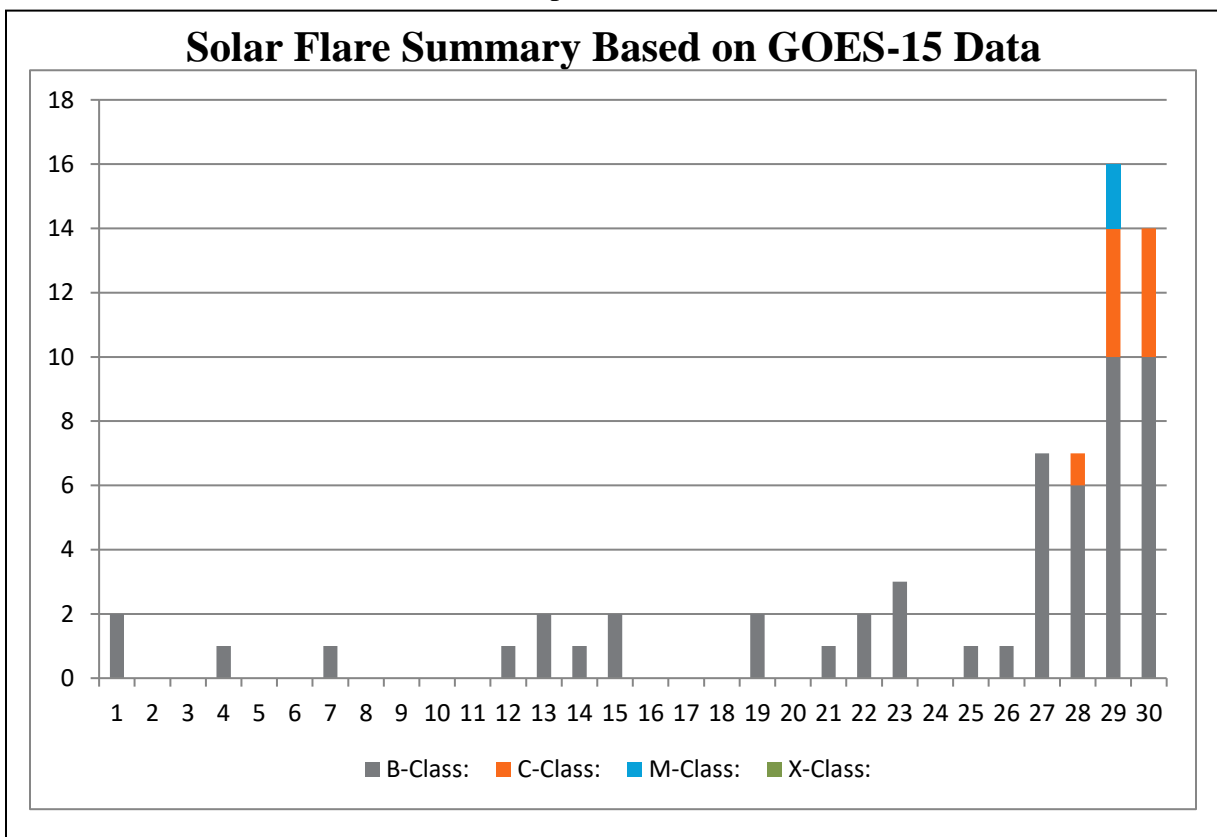


Importance rating: Duration (min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: 125
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## Sudden Ionospheric Disturbances (SID) Observers During November, 2016

Observer	Code	Station(s) monitored	Observer	Code	Station(s) monitored
A McWilliams	A94	NML	J Karlovsky	A131	ICV
R Battaiola	A96	HWU	R Green	A134	NWC
J Wallace	A97	NAA	S Aguirre	A138	NPM
L Loudet	A118	GQD	G Silvis	A141	NAA NLK NPM
J Godet	A119	GBZ GQD ICV	I Ryumshin	A142	DHO GQD
B Terrill	A120	NWC	R Rogge	A143	DHO
F Adamson	A122	NWC	K Menzies	A146	NAA
S Oatney	A125	NLK	D Russel	A147	NLK

There were 63 solar flares measured by GOES-15 for November, 2016: Two M class flares, 9 C class and 53 B class flares. A little more flaring this month compared to last month. There were 16 AAVSO SID observers who submitted reports this month.



American Relative Sunspot Numbers (Ra) for  
November, 2016 [**boldface = maximum, minimum**]

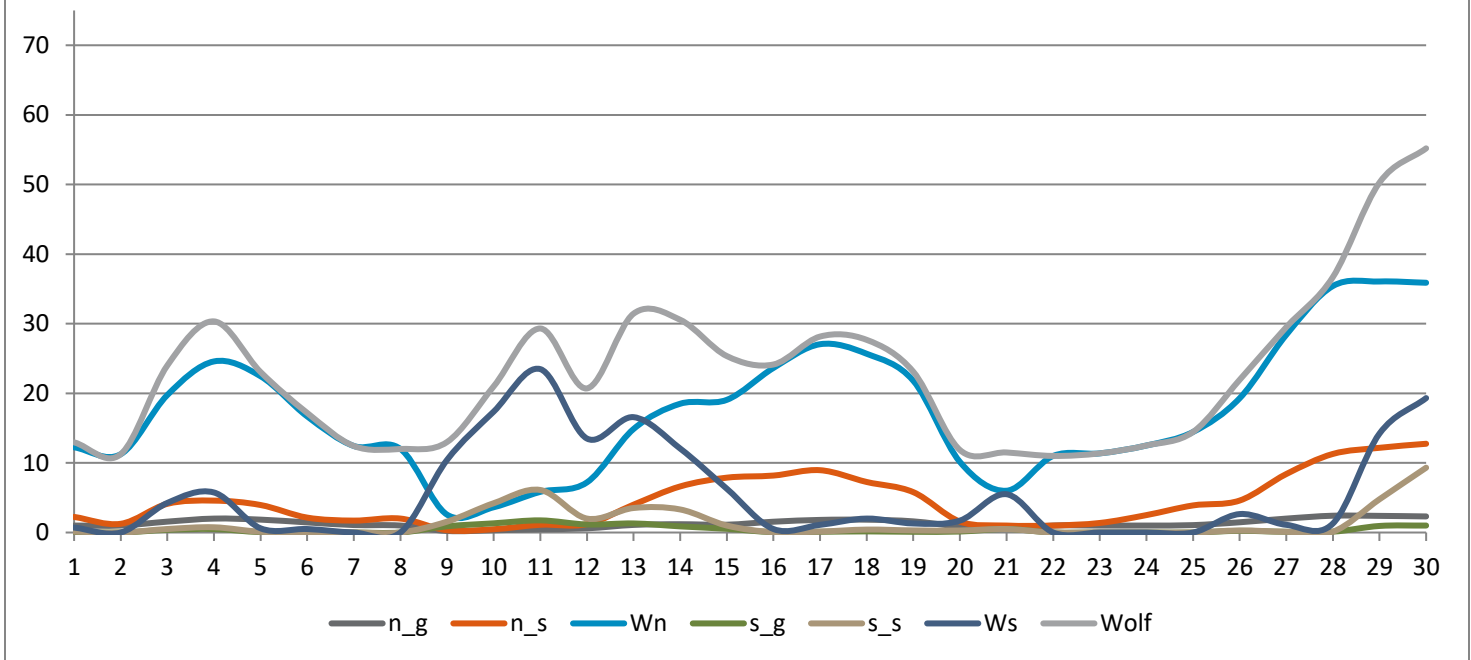
DAY	NumObs	RAW	Ra
1	30	11	9
2	31	2	1
3	30	18	13
4	23	19	13
5	34	20	15
6	31	15	11
7	28	8	6
8	23	1	<b>0</b>
9	24	8	6
10	27	18	13
11	28	23	17
12	33	17	13
13	32	28	22
14	21	29	23
15	29	22	18
16	35	23	18
17	32	29	22
18	26	27	21
19	28	7	5
20	24	3	2
21	26	1	1
22	22	1	1
23	24	12	9
24	27	13	11
25	25	14	11
26	23	20	14
27	27	28	22
28	23	34	27
29	26	47	36
30	25	52	<b>40</b>
<b>Average</b>	<b>27.2</b>	<b>18.2</b>	<b>14</b>

Obs	#Obs	Name
AAX	12	Alexandre Amorim
AJV	20	J. Alonso
ARAG	26	Gema Araujo
ASA	23	Salvador Aguirre
BARH	9	Howard Barnes
BATR	1	Roberto Battaiola
BDDA	7	Diego Bastiani
BERJ	20	Jose Alberto Berdejo
BRAB	29	Brenda Branchett
BRAF	6	Raffaello Braga
BROB	28	Robert Brown

BSAB	30	Santanu Basu
CHAG	28	German Morales Chavez
CKB	20	Brian Cudnik
CNT	9	Dean Chantiles
CVJ	14	Jose Carvajal
DEMF	3	Frank Dempsey
DJOB	4	Jorge del Roserio
FERJ	14	Javier Ruiz Fernandez
FLET	19	Tom Fleming
FLF	10	Fredirico Luiz Funari
FTAA	5	Tadeusz Figiel
FUJK	21	K. Fujimori
HAYK	7	Kim Hay
HOWR	23	Rodney Howe
JDAC	12	David Jackson
JGE	6	Gerardo Jimenez Lopez
KAND	19	Kandilli Observatory
KAPJ	14	John Kaplan
KNJS	29	James & Shirley Knight
KROL	23	Larry Krozel
LEVM	24	Monty Leventhal
LKR	3	Kristine Larsen
LRRR	26	Robert Little
MARE	4	Enrico Mariani
MCE	17	Etsuiku Mochizuki
MILJ	11	Jay Miller
MJAF	28	Juan Antonio Moreno Quesada
MJHA	28	John McCammon
MWU	12	Walter Maluf
ONJ	9	John O'Neill
RLM	12	Mat Raymonde
SDOH	30	Jan Alvestad (SDO)
SIMC	7	Clyde Simpson
SNE	10	Neil Simmons
SONA	3	Andries Son
STAB	23	Brian Gordon-States
SUZM	22	Miyoshi Suzuki
TESD	29	David Teske
URBP	11	Piotr Urbanski
VARG	24	A. Gonzalo Vargas
VIDD	7	Dan Vidican
VRUA	1	Ruben Verboven
WILW	19	William M. Wilson

**Total Observers: 54**  
**Total Observations: 851**

North - South hemisphere, group and sunspot counts, and Wolf Numbers  
for November, 2016



There were 36 out of 54 observers who counted northern and southern hemisphere groups and sunspots this month. It looks like the northern hemisphere was predominant with days of crossover on the 9<sup>th</sup> and 13<sup>th</sup>.

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