

# Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS  
SOLAR SECTION



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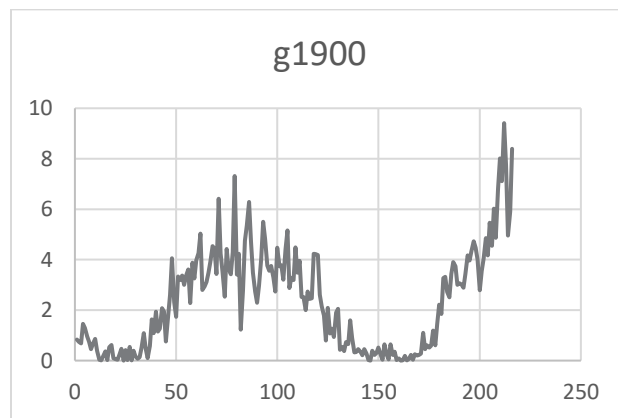
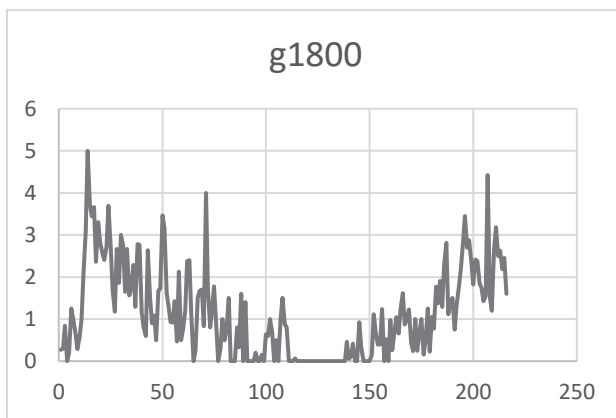
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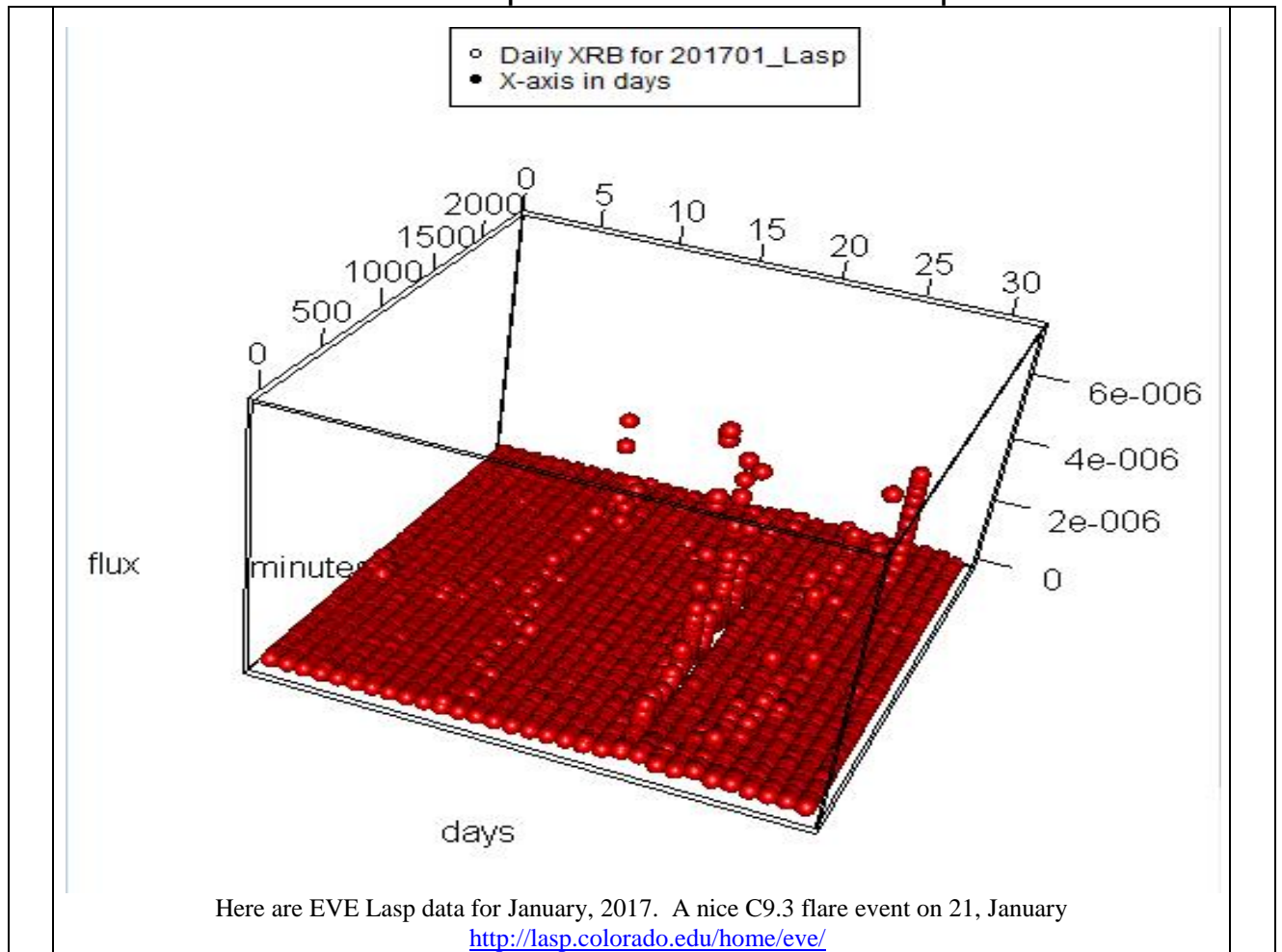


It's never certain who has the right count for the sunspot numbers. Grandson (4 years old counts one), Granddad (68 years old counts two) have different ideas about how many sunspots there were on January, 29<sup>th</sup>, 2017.



Here are two 'weak' solar cycle minimums 100 years apart, (data from the Archived Group Number database: <http://www.sidc.be/silso/groupnumber3> ). The graph on the left shows monthly aggregates from 1800 – 1817 (cycles 5 – 6), the graph on the right shows monthly aggregates 100 years later from 1900 – 1917 (cycles 14 – 15). The idea is to count the number of spotless days (months) from these two weak cycle minimums as a 'prediction' that this upcoming solar minimum (cycles 24 – 25) will be similar to these two past weak cycles. There are approximately 73 months (1,971 Carrington Rotation days) between cycles 5 and 6, and approximately 50 months (1,350 Carrington Rotation days) between cycles 14 – 15. That's a lot of days with few to no sunspots! (Carrington Rotation ~ 27 days). So, how many CR days will there be between cycles 24 and 25? Whether old or young please keep submitting your spotless sunspot daily counts.

# Sudden Ionospheric Disturbance Report

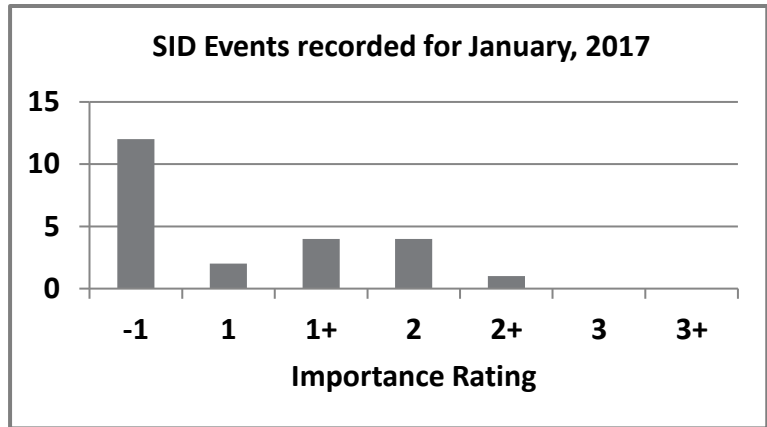


## Sudden Ionospheric Disturbances (SID) Recordings During January , 2017

Date	Max	Imp	Date	Max	Imp
170110	1301	2	170121	18	1
170115	2049	-1	170121	231	2+
170115	2054	-1	170121	726	1+
170115	2054	-1	170121	732	2
170120	945	-1	170121	1108	2
170120	952	-1	170121	1326	-1
170120	953	-1	170125	1923	-1
170120	1001	-1	170125	1923	-1
170120	1049	2	170126	1257	-1

The -1 Importance Rating may be considered 'noise' in these VLF SID Event data, although, there were B class flares on those days for those times.

# Solar Events

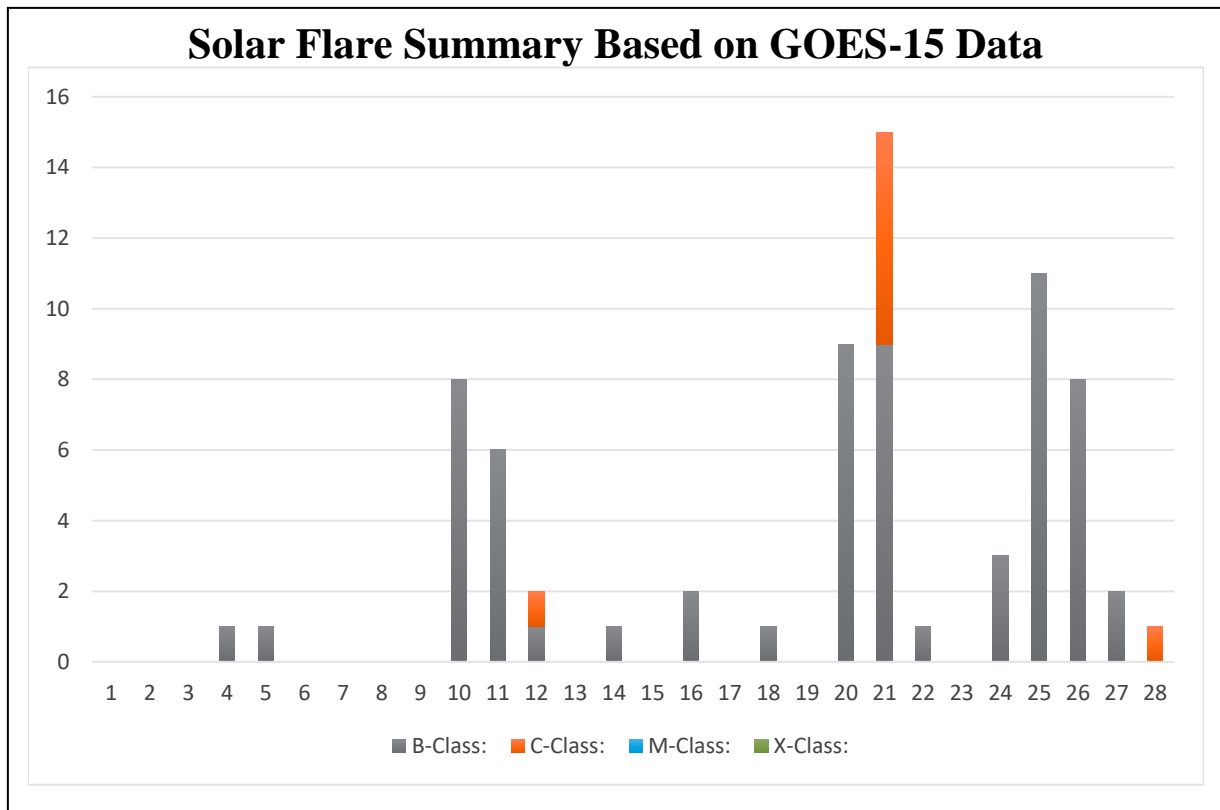


Importance rating: Duration (min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: 125
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## Sudden Ionospheric Disturbances (SID) Observers During January , 2017

Observer	Code	Station(s) monitored	Observer	Code	Station(s) monitored
A McWilliams	A94	NML	R Green	A134	NWC
R Battaiola	A96	HWU	R Mrlak	A136	NSY
J Wallace	A97	NAA	S Aguirre	A138	NPM
L Loudet	A118	DHO	G Silvis	A141	HWU NLK NPM
J Godet	A119	GQD ICV	I Ryumshin	A142	DHO GQD
B Terrill	A120	NWC	R Rogge	A143	DHO GQD
F Adamson	A122	NWC	K Menzies	A146	NAA
S Oatney	A125	NML	D Russel	A147	NAA
J Karlovsky	A131	DHO NSY	L Ferreira	A149	NWC

There were 73 solar flares measured by GOES-15 for January, 2017: Eight C class and 65 B class flares. Somewhat more flaring this month compared to last month. There were 13 days this month with no GOES-15 reports of flares. There were 18 AAVSO SID observers who submitted reports this month.



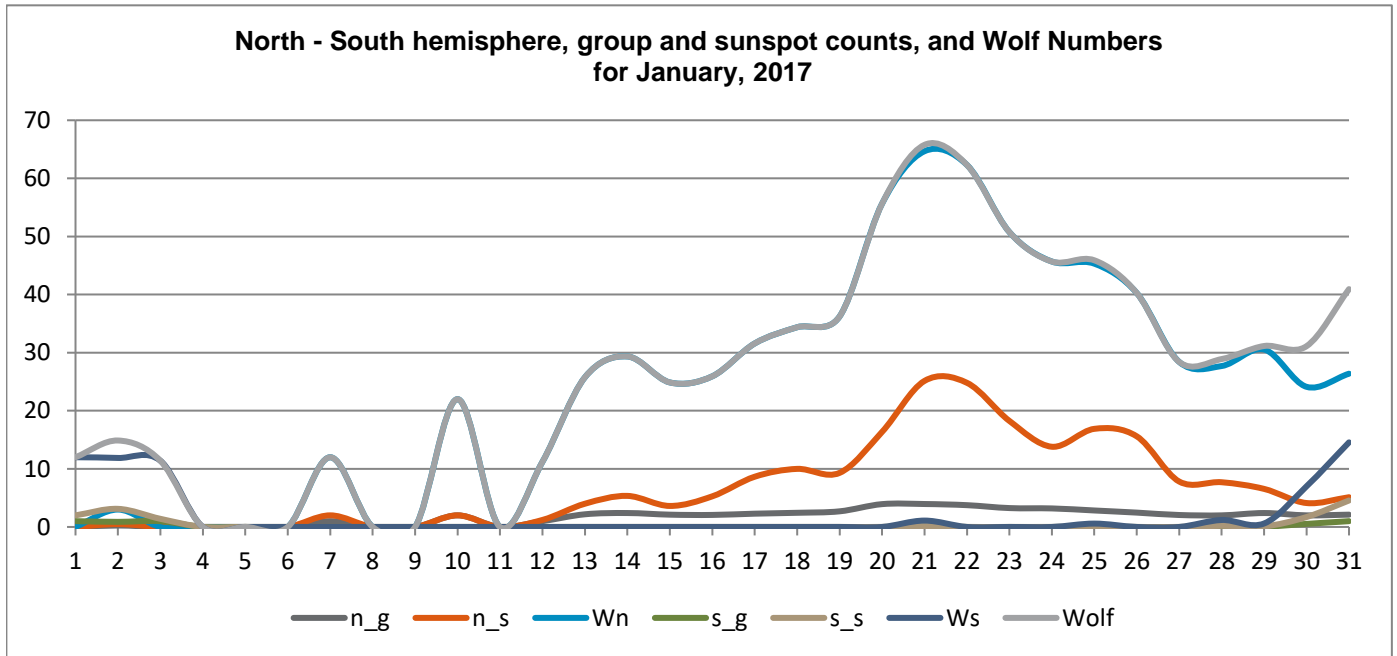
American Relative Sunspot Numbers (Ra) for  
 January , 2017 [**boldface = maximum, minimum**]

DAY	NumObs	RAW	Ra
1	33	3	2
2	28	5	3
3	27	3	2
4	28	0	<b>0</b>
5	28	0	0
6	30	0	0
7	29	1	0
8	28	0	0
9	27	0	0
10	23	0	0
11	23	0	0
12	25	8	6
13	27	24	19
14	30	26	22
15	27	25	21
16	23	25	21
17	25	28	23
18	24	33	27
19	23	32	27
20	25	52	41
21	32	65	<b>52</b>
22	25	57	47
23	24	49	40
24	25	41	33
25	28	43	35
26	26	38	30
27	26	28	22
28	34	27	22
29	34	29	25
30	25	29	22
31	27	36	29
<b>Average</b>	<b>27.1</b>	<b>22.9</b>	<b>18.4</b>

Obs	#Obs	Name
AAX	20	Alexandre Amorim
AJV	21	J. Alonso
ARAG	30	Gema Araujo
ASA	17	Salvador Aguirre
BARH	9	Howard Barnes
BDDA	14	Diego Bastiani
BERJ	22	Jose Alberto Berdejo
BLAJ	1	John A. Blackwell
BRAB	30	Brenda Branchett
BRAF	11	Raffaello Braga

BROB	19	Robert Brown
BSAB	30	Santanu Basu
CHAG	27	German Morales Chavez
CKB	12	Brian Cudnik
CNT	9	Dean Chantiles
CVJ	15	Jose Carvajal
DEMF	3	Frank Dempsey
DUBF	21	Franky Dubois
FERJ	16	Javier Ruiz Fernandez
FLET	24	Tom Fleming
FLF	12	Fredirico Luiz Funari
FTAA	8	Tadeusz Figiel
FUJK	27	K. Fujimori
HAYK	7	Kim Hay
HIVB	4	Ivan Hajdinjak
HMQ	4	Mark Harris
HOWR	21	Rodney Howe
JDAC	2	David Jackson
JGE	7	Gerardo Jimenez Lopez
KAND	13	Kandilli Observatory
KAPJ	7	John Kaplan
KNJS	31	James & Shirley Knight
KROL	13	Larry Krozel
LEVM	17	Monty Leventhal
LKR	4	Kristine Larsen
LRRR	27	Robert Little
MARE	9	Enrico Mariani
MCE	29	Etsuiku Mochizuki
MILJ	11	Jay Miller
MJAF	29	Juan Antonio Moreno
MJHA	25	John McCammon
MWU	9	Walter Maluf
ONJ	5	John O'Neill
RLM	17	Mat Raymonde
SDOH	31	Jan Alvested (SDO)
SIMC	1	Clyde Simpson
SNE	2	Neil Simmons
SONA	6	Andries Son
SPIA	8	Piotr Skorupski
STAB	23	Brian Gordon-States
SUZM	28	Miyoshi Suzuki
TESD	21	David Teske
URBP	12	Piotr Urbanski
VARG	24	A. Gonzalo Vargas
VIDD	13	Dan Vidican
WAU	1	Artur Wargin
WILW	8	William M. Wilson

Total Observers: 58  
Total Observations: 870



There were 34 out of 58 observers who counted northern and southern hemisphere groups and sunspots this month. It looks like the north hemisphere was predominant with days of crossover on the and 30<sup>th</sup>.

**Reporting Addresses:**

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SID Solar Flare Reports – Rodney Howe [ahowe@frii.com](mailto:ahowe@frii.com)