

# Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS  
SOLAR SECTION



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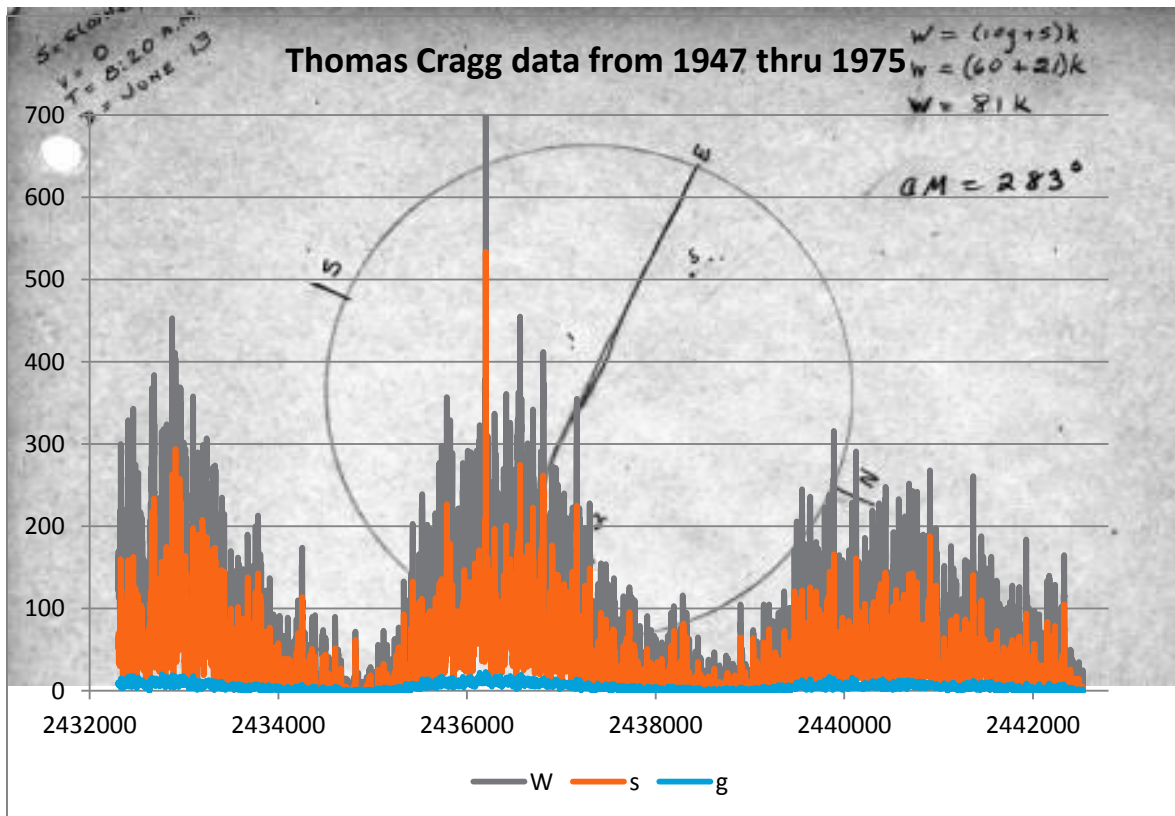
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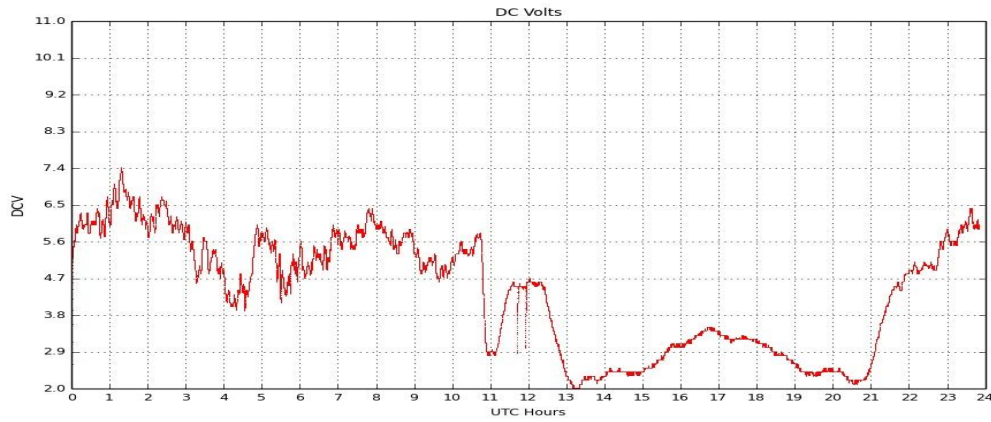
February, 2015



So far Mike Saladgya has digitized Thomas Cragg's drawings from 1947 thru 1975 -- beyond the halfway mark. Still another 35 years to go! But, we're getting there. Tom Cragg joined the AAVSO in 1945 at age 17, when he was working as an assistant at the Mt. Wilson observatory in California. He made an impressive total of over 157,000 variable star observations, but he was equally dedicated to his daily solar observing which spanned the years 1944 through 2010. Each sunspot count included a drawing of the group and spot configurations. Cragg lived in Los Angeles until he was about 48 when he moved to Australia and worked at the Siding-Spring Observatory.

# Sudden Ionospheric Disturbance Report

File: VLFlog201502250001.txt      UTC: Wed Feb 25 23:50:00 2015      sun AZ = 272.2      sun EL = -15.6

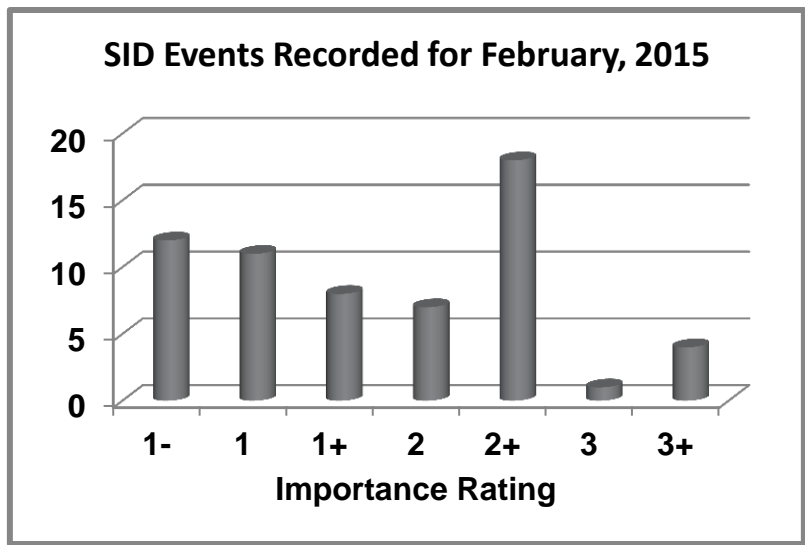


There were no flares on February 25, 2015. This graph from John DuBois, recording of NAA

## Sudden Ionospheric Disturbances (SID) Records During February, 2015

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
150201	231	1	150210	422	1+	150221	1926	2+
150201	436	2+	150210	838	-1	150225	2038	3+
150201	641	-1	150210	844	-1	150226	1501	3+
150201	647	2+	150210	1131	2+	150227	1500	2
150201	1132	-1	150210	2225	2+	150228	532	2
150201	1156	1+	150212	208	2	150228	940	2+
150201	2014	2+	150212	215	2+	150228	1340	-1
150201	2152	1	150212	1258	1	150229	1000	1
150202	1051	1	150214	946	2+	150229	1044	1
150203	948	-1	150214	1301	2+	150229	1146	2+
150203	1052	-1	150214	2220	3+	150229	1228	-1
150205	952	1	150215	1446	3	150230	1219	2+
150206	838	2+	150215	2018	-1			
150206	1152	2	150218	2208	1+			
150206	1658	1+	150219	1459	2+			
150206	2153	3+	150219	1600	2+			
150207	1154	1+	150220	929	-1			
150208	2035	2	150220	1509	-1			
150209	2334	2+	150221	334	1+			
150210	113	1	150221	504	1+			
150210	202	2	150221	1048	2			
150210	331	1	150221	1144	2+			

# Solar Events

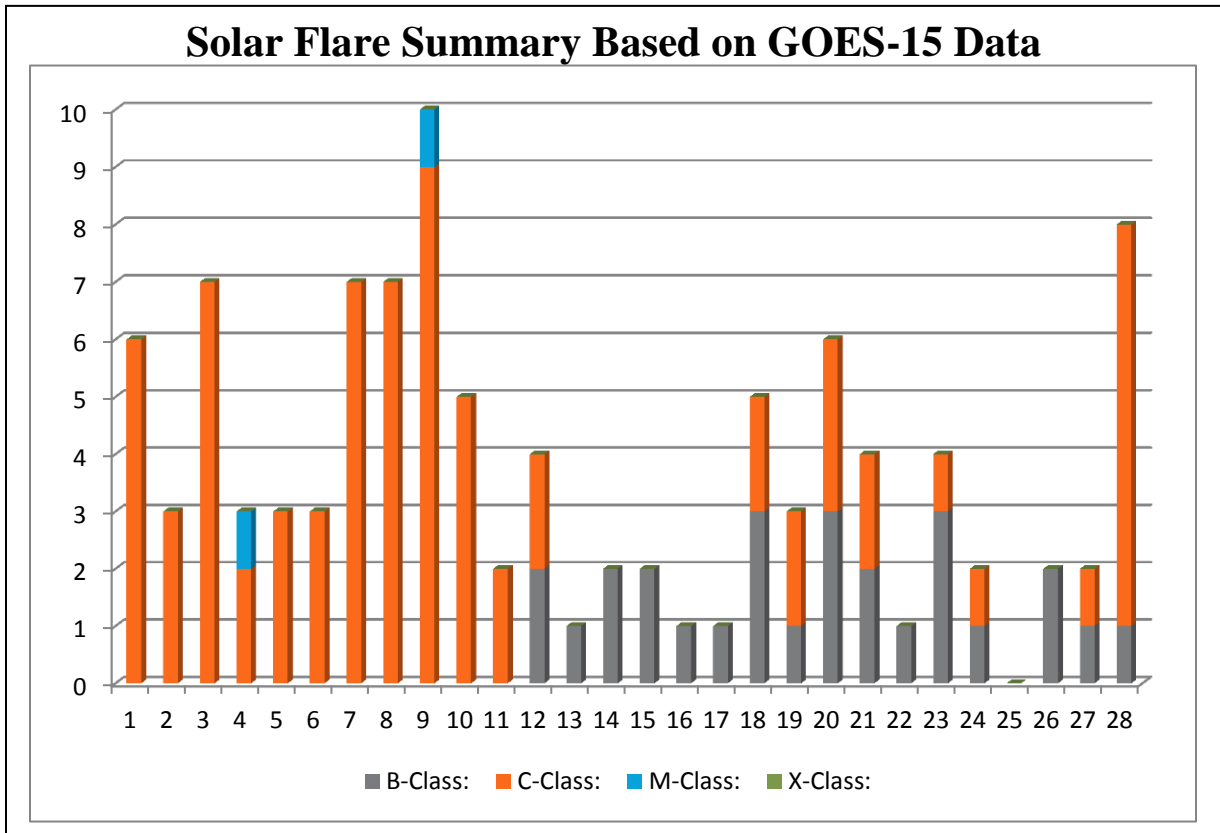


Importance rating: Duration (min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: 125
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### Sudden Ionospheric Disturbances (SID) Observers During February, 2015

Observer	Code	Station(s) monitored	Observer	Code	Station(s) monitored
A McWilliams	A94	NML	R Green	A134	NWC
L Loudet	A118	DHO	R Mrlak	A136	GQD NSY
B Terrill	A120	NWC	S Aguirre	A138	NLK NML
F Adamson	A122	NWC	R Rogge	A143	DHO GQD ICV
S Oatney	A125	NAA NLK NML	Orion Observatory	A144	NAA NLK
J Karlovsky	A131	DHO NSY	Jon Wallace	A97	No Data

There were 104 solar flares measured by GOES-15 for February, 2015: 2 M class, 75 C class and 27 B class flares. A lot less flaring this month compared to last. There were 12 AAVSO SID observers who submitted reports this month.



American Relative Sunspot Numbers (Ra) for February, 2015 [**boldface = maximum, minimum**]

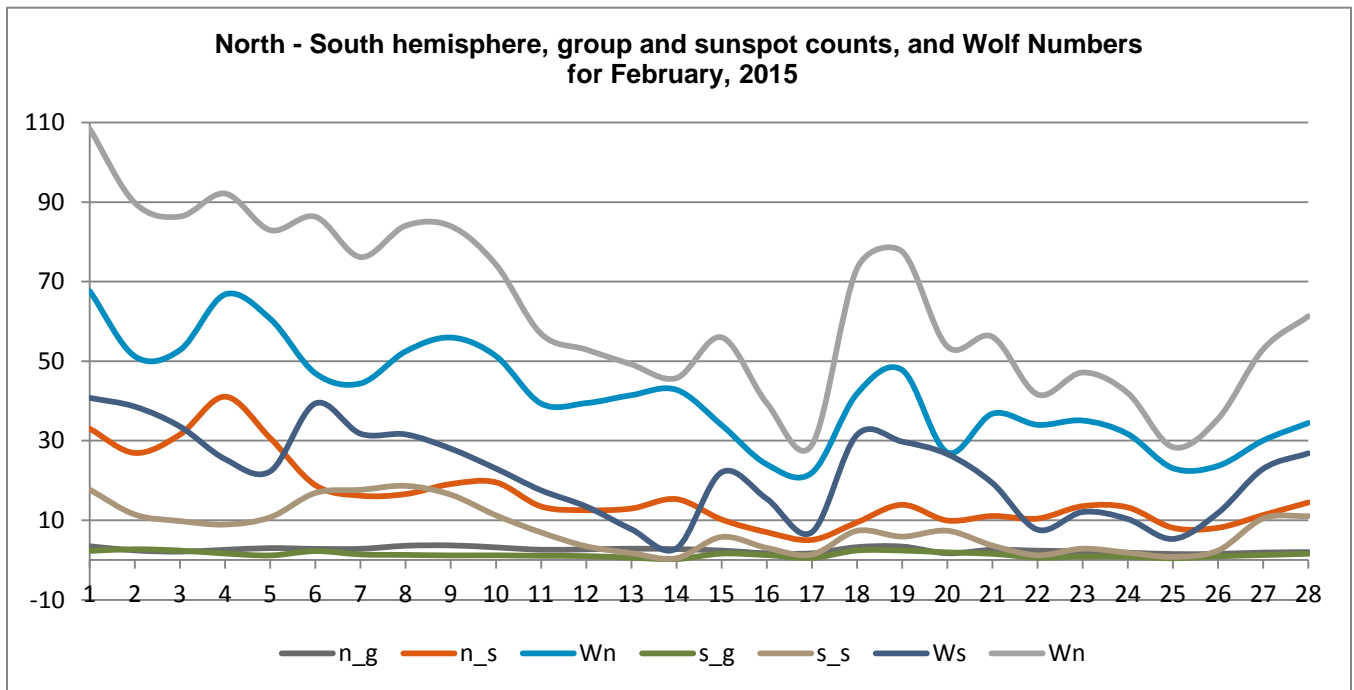
DAY	NumObs	RAW	Ra
1	28	94	72
2	26	79	58
3	29	76	59
4	24	86	63
5	27	79	61
6	27	78	59
7	29	72	56
8	29	77	60
9	28	82	60
10	25	71	54
11	29	50	40
12	22	47	36
13	35	43	33
14	29	37	28
15	27	49	37
16	30	31	24
17	25	25	19
18	26	66	48
19	30	73	53
20	24	44	35
21	24	45	31
22	24	33	25
23	21	38	29
24	25	31	24
25	33	23	18
26	25	30	23
27	32	50	39
28	36	56	44
<b>Average</b>	<b>27.5</b>	<b>55.9</b>	<b>42.5</b>

Obs	#Obs	Name
AAX	12	Alexandre Amorim
AJV	13	J. Alonso
ARAG	28	Gema Araujo
ASA	16	Salvador Aguirre
BARH	11	Howard Barnes
BATR	1	Roberto Battaiola
BDDA	9	Diego Bastiani
BERJ	15	Jose Alberto Berdejo
BLAJ	1	John A. Blackwell
BMF	9	Michael Boschat
BRAB	25	Brenda Branchett
BRAF	8	Raffaello Braga
BSAB	28	Santanu Basu

BXD	12	Alexandru Burda
CFO	3	Jean F. Coliac
CHAG	20	German Morales Chavez
CIOA	9	Ioannis Chouinavas
CKB	16	Brian Cudnik
CNT	15	Dean Chantiles
CVJ	3	Jose Carvajal
DEMF	2	Frank Dempsey
DGP	6	Gerald Dyck
DJOB	6	Jorge del Rosario
DUBF	21	Franky Dubois
FERJ	6	Javier Ruiz Fernandez
FLET	18	Tom Fleming
FLF	14	Fredirico Luiz Funari
FTAA	6	Tadeusz Figiel
FUJK	21	K. Fujimori
HALB	3	Brian Halls
HAYK	8	Kim Hay
HMQ	4	Mark Harris
HOWR	20	Rodney Howe
JDAC	17	David Jackson
JGE	3	Gerardo Jimenez Lopez
JJMA	8	Jessica M. Johnson
KAND	4	Kandilli Observatory
KAPJ	14	John Kaplan
KNJS	24	James & Shirley Knight
KROL	14	Larry Krozel
LEVM	16	Monty Leventhal
LKR	7	Kristine Larsen
LRRR	19	Robert Little
MGAA	3	Gael Mariani
MILJ	4	Jay Miller
MJHA	22	John McCammon
MMI	17	Michael Moeller
MWU	8	Walter Maluf
OATS	8	Susan Oatney
OBSO	19	IPS Observatory
ONJ	8	John O'Neill
RLM	8	Mat Raymonde
SCGL	18	Gerd-Lutz Schott
SIDM	13	Monika Sidor
SDOH	28	Jan Alvestad(SDO)
SMNA	3	Michael Stephanou
SONA	7	Andries Son
SPIA	4	Piotr Skorupski
STAB	22	Brian Gordon-States
SUZM	23	Miyoshi Suzuki

TESD	9	David Teske
URBP	14	Piotr Urbanski
VARG	15	A. Gonzalo Vargas
VIDD	10	Dan Vidican
VRUA	9	Ruben Verboven
WAU	2	Artur Wargin
WILW	8	William M. Wilson

**Total Observers: 67**  
**Total Observations: 797**



There were 34 out of 67 observers who counted northern and southern hemisphere groups and sunspots this month. The northern hemisphere was predominant.

**Reporting Addresses:**

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