

Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS
SOLAR COMMITTEE

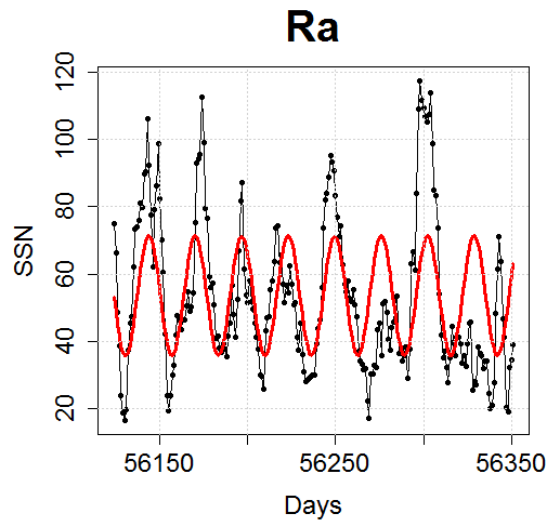
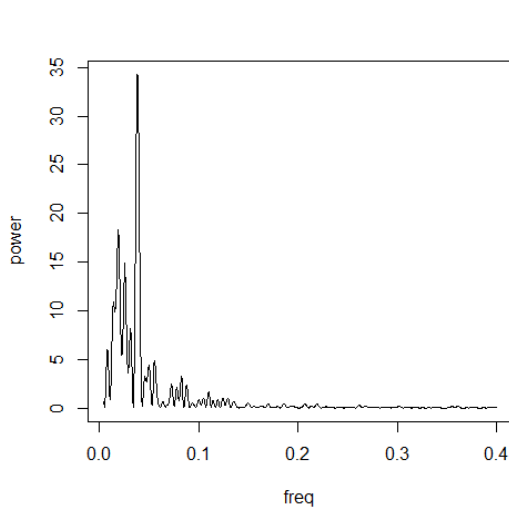
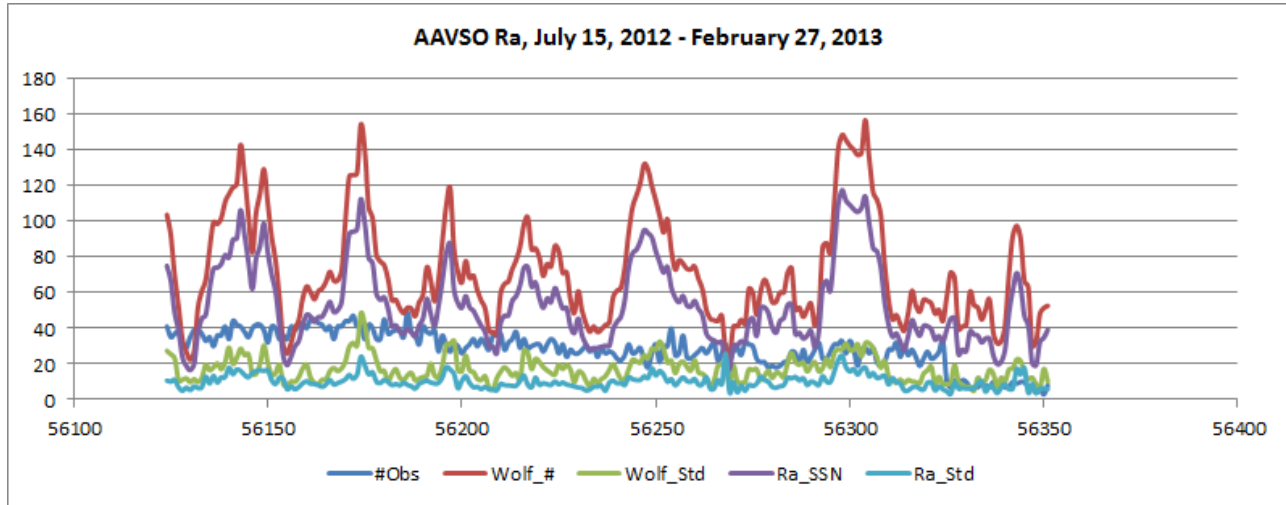


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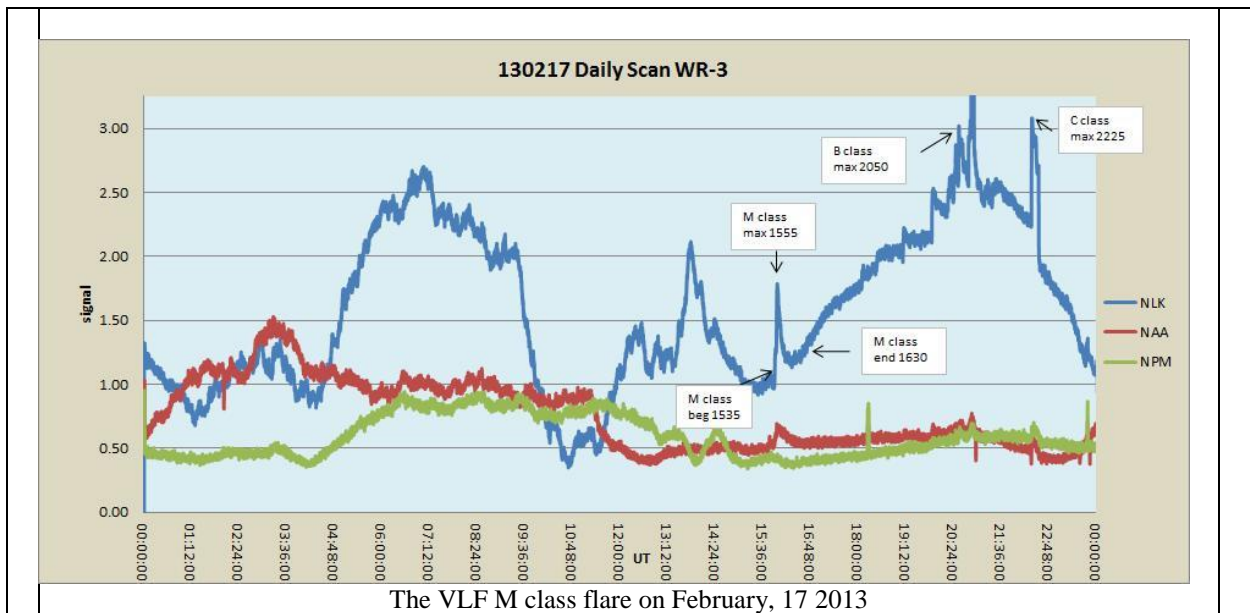
February, 2013



In the above graphs you see 200 days of AAVSO observer's data; Ra calculated with the updated k factors: <http://www.aavso.org/aavso-solar-section-update-2013> the periodogram on the lower left shows a spike with a power of 34 and a period of 26 days on the right graph. This might be the Carrington rotation period for these last 8 solar rotations (2010, Foster)*.

Ra period				
freq	power	amp	period	quantile3
0.03837719	34.17837	17.76035	26.05714	7.315265

Sudden Ionospheric Disturbance Report

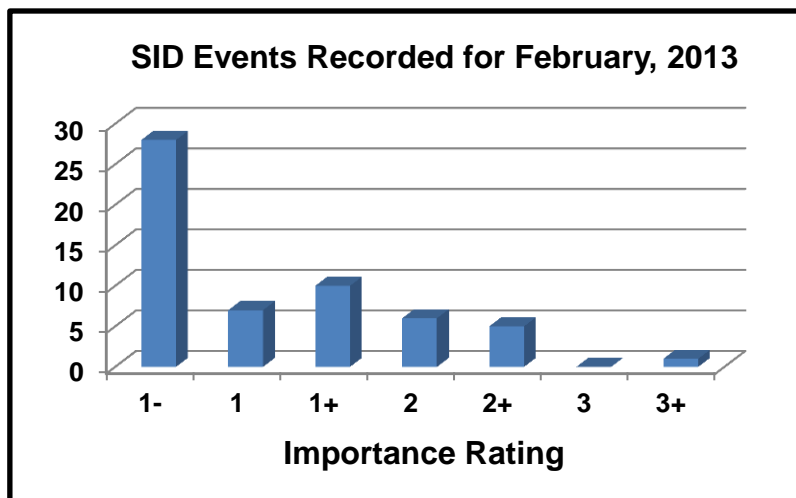


The VLF M class flare on February, 17 2013

Sudden Ionospheric Disturbances (SID) Records During February, 2013

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
130203	0224	1-	130217	1541	1-	130221	0943	1-
130203	0610	2+	130217	1551	1	130221	1633	1-
130204	1500	1-	130219	1039	2	130222	1222	1-
130205	0528	1+	130220	1112	1	130222	1824	1+
130205	0610	1-	130220	1402	1-	130223	1129	1-
130205	0643	1+	130220	1456	1-	130223	1606	1
130205	0819	1-	130220	2116	1	130223	1708	1+
130205	1030	1-	130220	2150	1-	130223	1859	2
130207	0819	1-	130221	0254	1+	130224	1148	1-
130207	1025	1-	130221	0303	2+	130224	1312	3+
130209	1228	1+	130221	0353	2	130224	1426	2
130209	1605	1-	130221	0402	2+	130224	1431	1+
130209	1700	1-	130221	0450	2+	130226	0945	1-
130210	0806	1+	130221	0457	2	130226	1137	1-
130213	0852	1-	130221	0505	2	130227	0332	1
130217	1514	1-	130221	0845	1-			

Solar Events

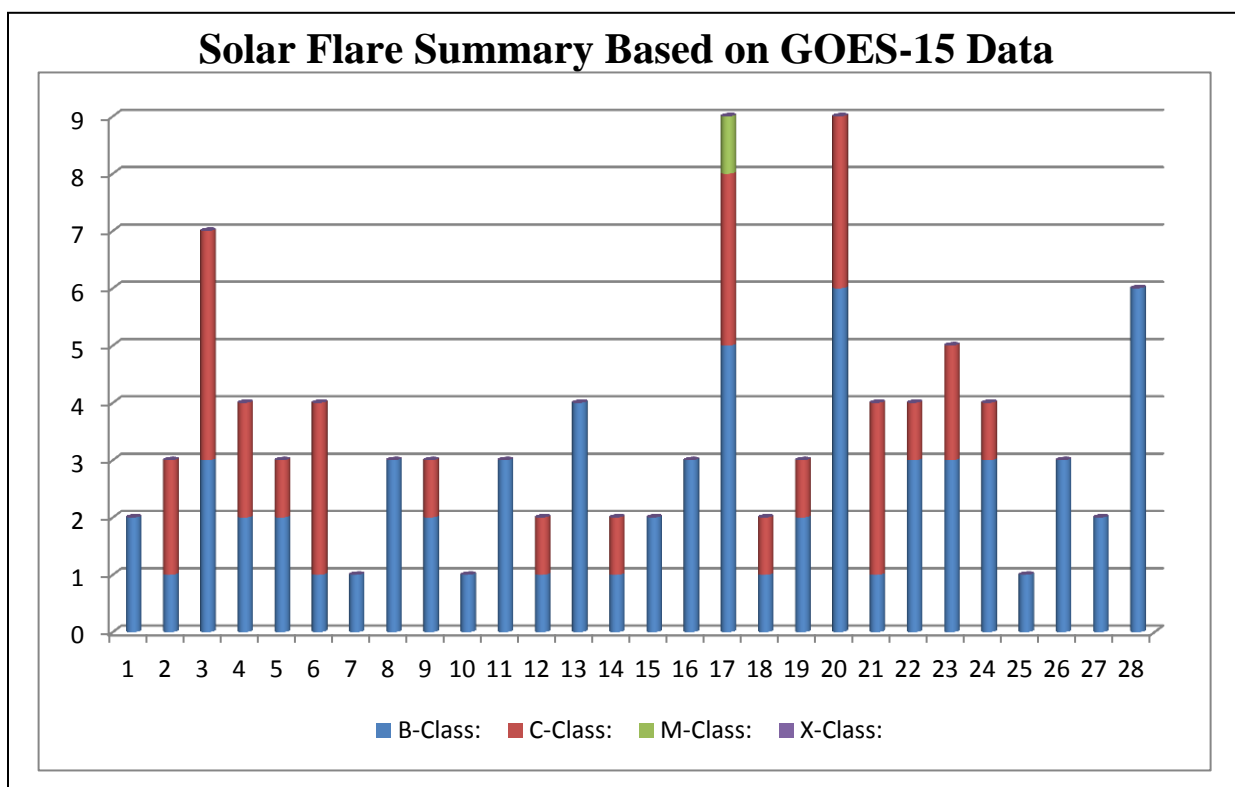


Importance rating: Duration (min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: >125
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Sudden Ionospheric Disturbances (SID) Observers During February, 2013

Observer	Code	Station(s) monitored	Observer	Code	Station(s) monitored
A McWilliams	A94	NML	K Cotar	A129	DHO GQD
R Battaiola	A96	ICV	J Karlovsky	A131	DHO
J Wallace	A97	NAA	E Soubrouillard	A132	FTA GQD ICV
L Loudet	A118	GBZ GQD	R Green	A134	NWC
J Godet	A119	GBZ GQD ICV	R Mrlak	A136	DHO GQD NAA
B Terrill	A120	NWC	D Koawl	A137	JJI
F Adamson	A122	NWC	S Aguirre	A138	NAA
S Oatney	A125	NLK NML			

There were 99 solar flares measured by GOES-15 for February, 2013, one M class, 30 C class and 68 B class flares. The sun was much less active with M and C class flares this month. There were 15 AAVSO SID Observers who submitted reports this month.



American Relative Sunspot Numbers (Ra) for February, 2013 [**boldface = maximum, minimum**]

DAY	NumObs	RAW	Ra
1	34	54	39
2	26	61	45
3	28	67	47
4	23	39	28
5	33	38	27
6	33	40	30
7	26	55	39
8	26	52	37
9	26	47	33
10	28	45	31
11	22	50	36
12	22	49	34
13	30	33	25
14	29	28	19
15	29	29	22
16	32	37	26
17	28	69	53
18	31	84	62
19	27	92	72
20	36	84	63
21	28	67	50
22	24	61	44
23	25	32	22
24	22	31	23
25	26	43	32
26	20	49	35
27	27	53	39
28	25	62	45
Average	27.4	51.8	37.7

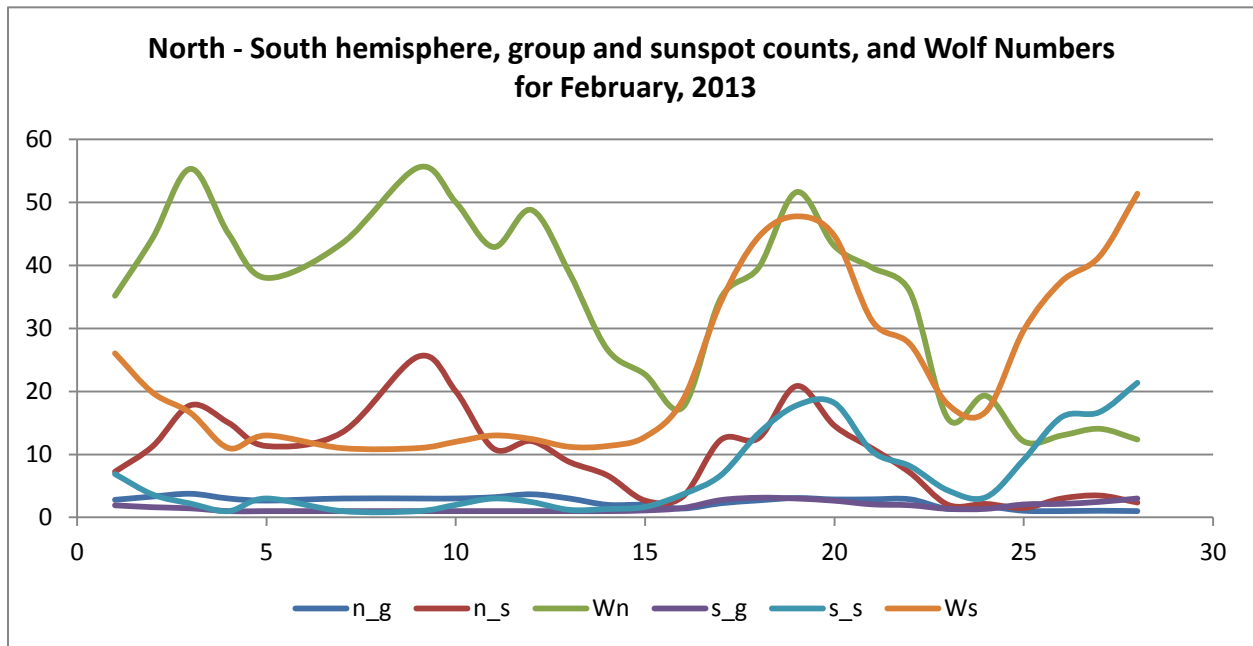
BRAB	27	Brenda Branchett
BRAF	12	Raffaello Braga
BROB	25	Robert Brown
BXD	5	Alexandru Burda
CHAG	27	German Morales Chavez
CIOA	6	Ioannis Chouinavas
CKB	22	Brian Cudnik
CLZ	5	Laurent Corp
CNT	10	Dean Chantiles
DEMF	1	Frank Dempsey
DGP	17	Gerald Dyck
DJOB	6	Jorge del Rosario
DUBF	19	Franky Dubois
FAM	5	Fabio Mariuzza
FERJ	14	Javier Ruiz Fernandez
FLET	22	Tom Fleming
FLF	14	Fredirico Luiz Funari
FTAA	6	Tadeusz Figiel
FUJK	20	K. Fujimori
HAYK	9	Kim Hay
HMQ	5	Mark Harris
HOWR	24	Rodney Howe
HRUT	4	Timothy Hrutkay
JGE	3	Gerardo Jimenez Lopez
KAND	15	Kandilli Observatory
KAPJ	16	John Kaplan
KNJS	23	James & Shirley Knight
KROL	9	Larry Krozel
LEVM	12	Monty Leventhal
LKR	5	Kristine Larsen
MCE	23	Etsuiku Mochizuki
MGAA	7	Gael Mariani
MILJ	9	Jay Miller
MJHA	19	John McCammon
MMI	17	Michael Moeller
MUDG	4	George Mudry
OATS	6	Susan Oatney
OBSO	18	IPS Observatory
RICE	1	E. C. Richardson
RLM	12	Mat Raymonde
SCGL	14	Gerd-Lutz Schott
SIMC	3	Clyde Simpson
SMNA	5	Michael Stephanou
SONA	6	Andries Son
STAB	16	Brian Gordon-States
SUZM	19	Miyoshi Suzuki
TESD	16	David Teske
URBP	5	Piotr Urbanski

Obs	#Obs	Name
AAP	2	A. Patrick Abbott
AAX	14	Alexandre Amorim
AJV	11	J. Alonso
AMG	3	Margarete J. Amorim
ARAG	27	Gema Araujo
ASA	25	Salvador Aguirre
BARH	10	Howard Barnes
BATR	1	Roberto Battaiola
BDDA	17	Diego Bastiani
BERJ	12	Jose Alberto Berdejo
BMF	15	Michael Boschat
BRAB	27	Brenda Branchett

VARG	17	A. Gonzalo Vargas
VIDD	6	Dan Vidican
WILW	15	William M. Wilson
WRP	3	Russell Wheeler

Total Observers: 63
Total Observations: 766

Thirty one of our sixty three observers submitted 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 16th and 23rd this month.



Reporting Addresses:

Sunspot Reports – Kim Hay

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SID Solar Flare Reports – Rodney Howe

ahowe@frii.com

*2010, Grant Foster, ‘Analyzing Light Curves A Practical Guide’, Lulu Press.