Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS
SOLAR SECTION

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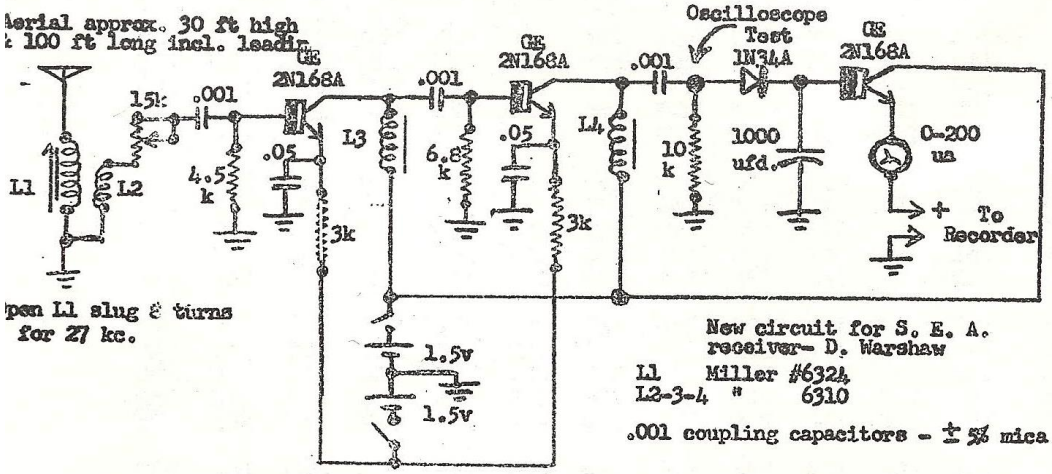
SOLAR BULLETIN - 5 - November-December 1957

Additional notes on the WARSHAW SEA-receiver.

In the original circuit* the second class A stage was direct-coupled to the class B stage which used a second battery. This lowered the sensitivity because it put a slight reverse bias on the diode. It also was dependent on the transistor's variable beta and temperature with a collector current flow of only 150 microamperes.

In the new circuit shown here, the last stage is AC coupled to put a slight forward bias on the detector diode which increases the sensitivity of the circuit and still uses only two batteries,- one for emitter current bias and the other for collector supply voltage. Emitter current bias is used to stabilize the operating point. This bias was adjusted for about half a milliampere collector current flow, so that the receiver now operates with a higher beta and is only dependent on the transistor's alpha which is essentially constant with temperature variations.



This new circuit stabilizes the transistor collector current against temperature variations. The collector current without stabilization increases with temperature and in turn increases the power dissipated in the transistor to increase its own temperature. This is accomodated with record traces showing oscillatory increases in the trace which is objectionable. The circuit is dependent on negative feedback, similar to electron tube cathode bias, emitter current being stabilized by the degeneration produced by the emitter resistor at direct current. At the amplified frequency the capacitor bypasses the emitter resistor. The circuit is more sensitive than the original unstabilized circuit and therefore greater output and efficiency is obtained. The current drain is adjusted for less than half a milliampere each, which is about shelf-life for the batteries. L3 and L4 may be toroidal inductors of 50 millihenries if even greater output and less stray magnetic field is desired, however toroids are expensive. The 2N35 transistors (used in the original circuit) were found to increase in leakage with age so these have been replaced with GE 2N168A which stand up much better and are priced about the same.

*) SOLAR DIVISION BULLETIN Sept.-Oct.1956

(Ed. note: The above is a special insert- more in future issues)

David Warshaw
544 State Street
Brooklyn 17, N. Y.

Here is a page from the November-December, 1957 Solar Bulletin, Editor Harry Bondy.

The AAVSO SID Events data are now back on-line at NOAA/NGDC after a few years hiatus;

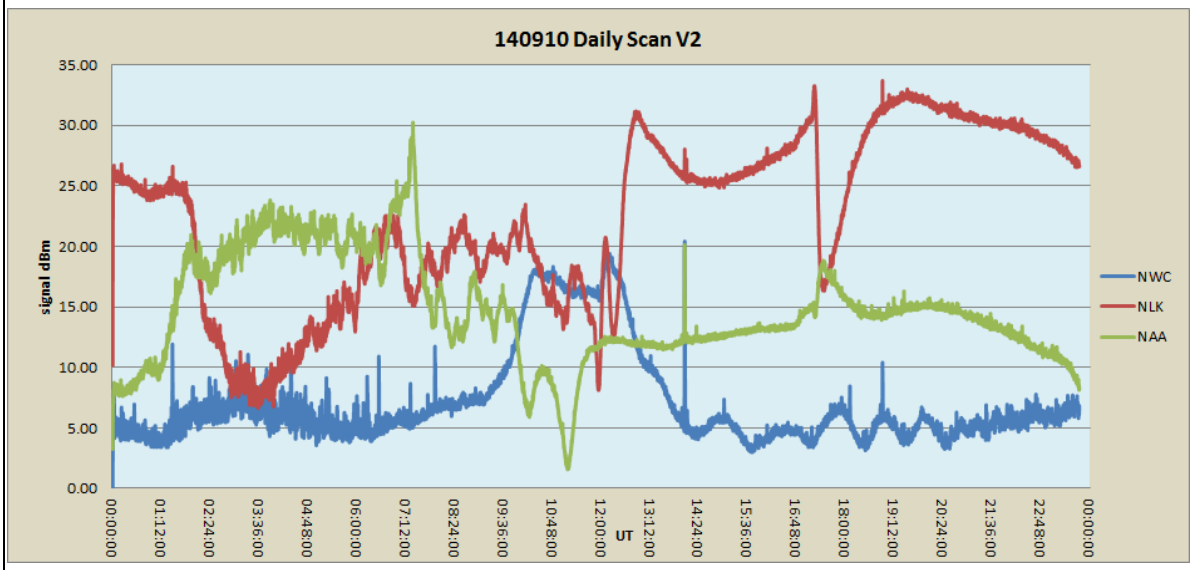
Ionospheric data services pages:
http://www.ngdc.noaa.gov/stp/spaceweather.html

1 - Extending the SID tables
http://www.ngdc.noaa.gov/stp/space-weather/ionospheric-data/sids/tables/>
back in time by extracting the relevant pages from the SGD reports
http://www.ngdc.noaa.gov/stp/solar/sgd.html as far back as possible. Include improved readme file,
http://www.ngdc.noaa.gov/stp/space-weather/ionospheric-data/sids/tables/documentation/readme_sudden-ionospheric-disturbances_tables.pdf
and recommended citation:
http://www.ngdc.noaa.gov/stp/space-weather/ionospheric-data/sids/tables/documentation/citation_sudden-ionospheric-disturbances_tables.pdf

2 – NGDC is now providing secondary access to the AAVSO listings
http://www.ngdc.noaa.gov/stp/space-weather/ionospheric-data/sids/aavso/ of SIDs with readme file:
http://www.ngdc.noaa.gov/stp/space-weather/ionospheric-data/sids/aavso/documentation/readme_sudden-ionospheric-disturbances_aavso-database.pdf
and recommended citation:
http://www.ngdc.noaa.gov/stp/space-weather/ionospheric-data/sids/aavso/documentation/citation_sudden-ionospheric-disturbances_aavso-database.pdf

There is a new thread in the AAVSO Solar Observing and SID Monitoring Forum called "SID Events". It might be used to replace the now defunct AAVSO-SID list. To subscribe to this special new SID-oriented thread, please visit: http://www.aavso.org/sid-events by clicking on the "subscribe" link at the bottom of the page and selecting "Subscribe to this page" (you must be logged in) you will receive an email when new items are posted to this thread only.

Sudden Ionospheric Disturbance Report



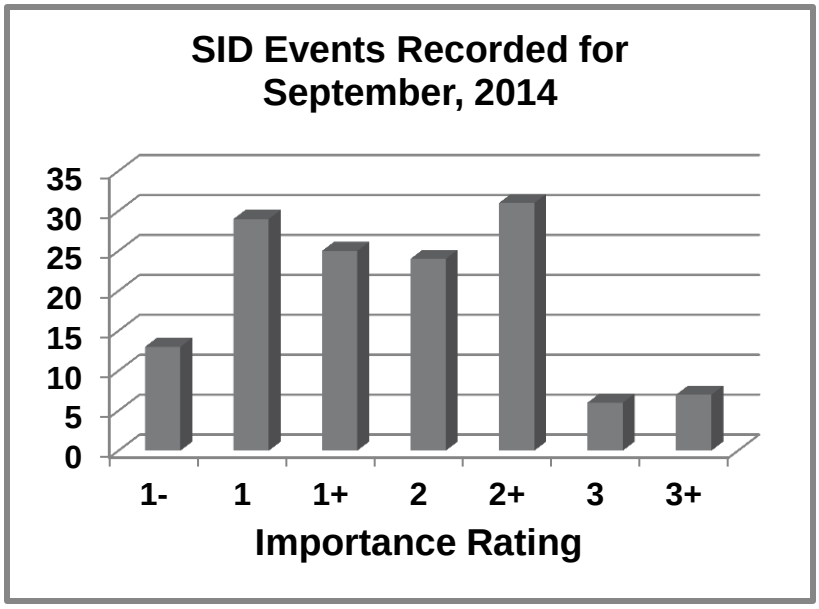
An X class flares (X.1.6) on September 10, 2014. Graph from SuperSID radio, Fort Collins, Colorado, recording of NWC, NLK, NAA, shows the NLK SID as inverted.

Sudden Ionospheric Disturbances (SID) Records During September, 2014

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
140901	732	2+	140905	935	1+	140909	1227	1+
140901	1027	1	140906	621	2+	140910	844	-1
140901	1754	1+	140906	810	2+	140910	1056	2
140902	1210	1	140906	820	2+	140910	1107	2+
140902	1317	1+	140906	917	1	140910	1734	2+
140903	253	2+	140906	1658	2	140910	1748	3
140903	1327	3+	140906	1707	1+	140910	1845	3
140903	1345	2+	140907	204	3	140911	349	2+
140903	1351	2	140907	1010	1+	140911	1200	1
140903	1744	1	140907	1208	2	140911	1438	1
140903	1745	1+	140907	1216	2	140911	1527	2
140903	2122	1	140907	1253	3+	140911	1532	2
140904	228	1	140907	1441	1	140912	224	3
140904	1009	2	140907	1448	2	140912	942	2+
140904	1330	1+	140907	1557	1	140912	953	2+
140904	1608	2+	140907	1944	1+	140912	1254	2+
140904	1632	2	140908	841	1	140913	9	1
140904	1905	2	140908	1309	-1	140913	1257	1
140905	150	2+	140908	2024	1	140913	1319	-1
140905	608	3	140908	2304	1	140913	1507	3+
140905	711	3	140909	29	3+	140913	1527	1

Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
140913	1824	1	140916	2203	2	140926	544	3+
140913	2024	2+	140917	334	1+	140926	1255	1
140913	2135	1	140918	708	1+	140926	1356	1
140913	2157	1+	140918	842	2	140926	1619	1+
140914	216	3+	140918	849	-1	140926	2310	1
140914	1315	3+	140918	1730	1+	140927	637	1
140914	1345	1+	140921	157	-1	140927	838	1+
140914	1735	2+	140921	714	1+	140927	901	1+
140914	1849	-1	140921	1145	2+	140927	1931	2
			140921	1202	2	140928	118	2
			140921	1314	1+	140928	246	-1
			140923	1512	-1	140928	258	2+
			140923	2316	2+	140928	707	1+
			140924	1751	1+	140928	713	2+
			140925	1354	1+	140928	908	2
						140928	1101	1
						140928	1734	2+
						140929	441	2
						140929	553	2
						140929	838	1+
						140929	1104	2
						140929	1217	2+
						140930	1420	1+
						140930	1459	1
						140930	1530	2+

Solar Events

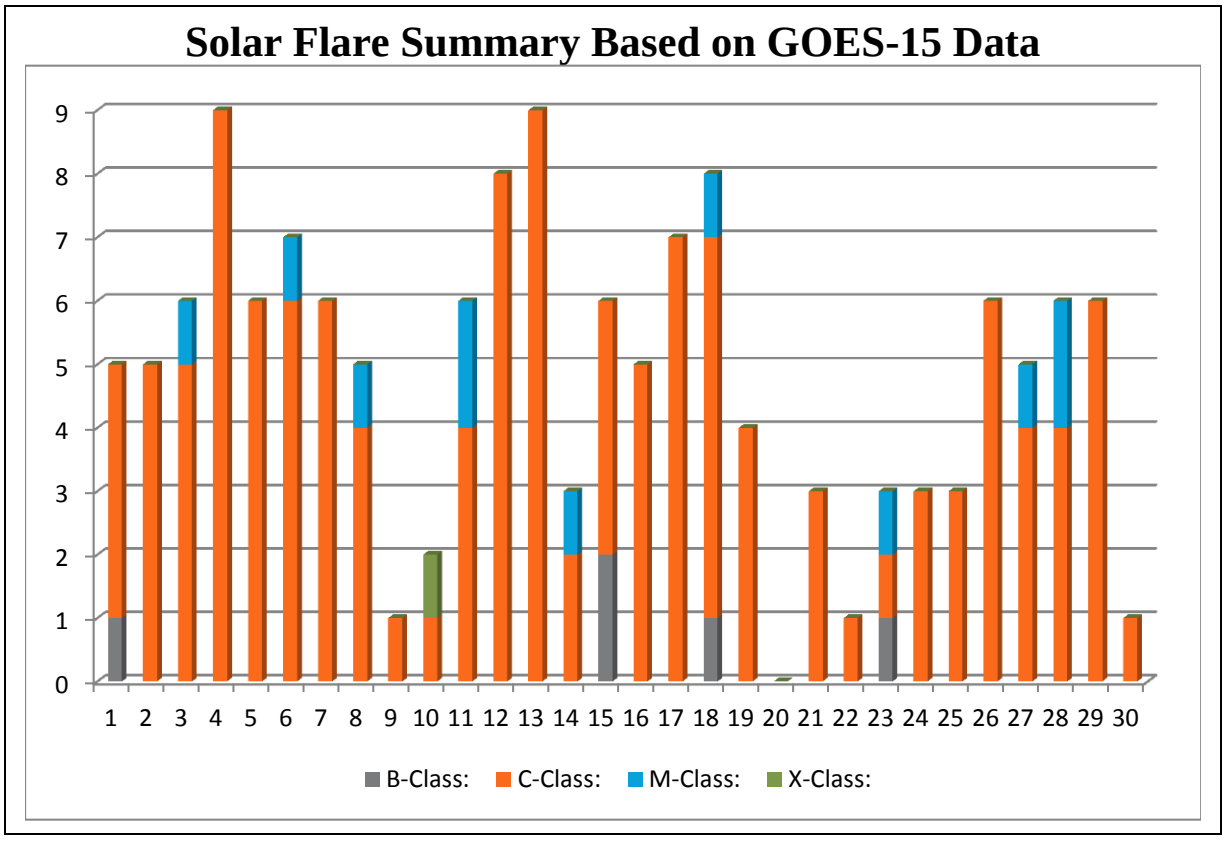


Importance rating: Duration (min)	1-: <19	1: 19-25	1+: 26-32	2: 33-45	2+: 46-85	3: 86-125	3+: >125

Sudden Ionospheric Disturbances (SID) Observers During September, 2014

Observer	Code	Station(s) monitored	Observer	Code	Station(s) monitored
A McWilliams	A94	NLK	K Cotar	A129	DHO GBZ
F Wallace	A97	NAA	J Karlovsky	A131	DHO NSY
R Battaiola	A96	GBZ	R Mrllak	A136	GQD NSY
L Loudet	A118	DHO GQD NAA	S Aguirre	A138	NAA NLK
B Terrill	A120	NWC	Fabrizio Francione & C Re	A139	HWU NAA NSY
F Adamson	A122	NWC	R Rogge	A143	DHO GQD ICV
S Oatney	A125	NAA NLK			

There were 145 solar flares measured by GOES-15 for September, 2014: One X class flare, 11 M class, 128 C class and 5 B class flares. Fewer flares this month compared to last. There were 13 AAVSO SID observers who submitted reports this month.



American Relative Sunspot Numbers (Ra) for September, 2014 [**boldface = maximum, minimum**]

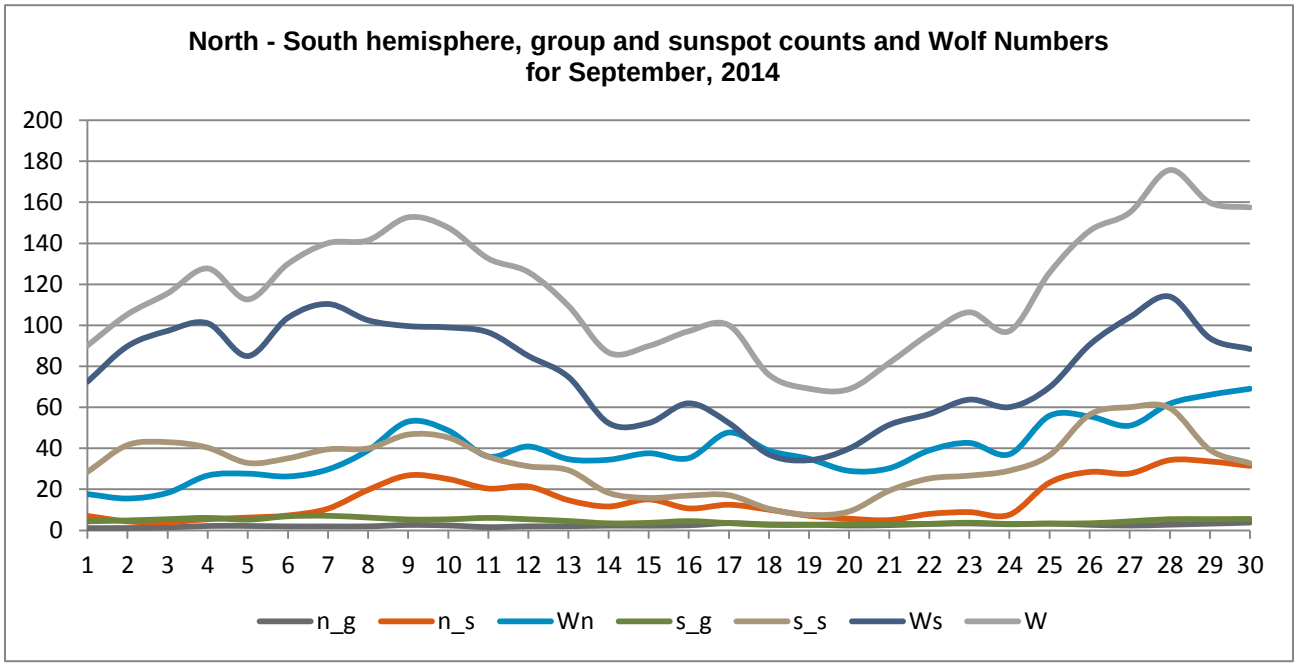
DAY	NumObs	RAW	Ra
1	33	91	69
2	39	94	71
3	38	91	70
4	36	109	81
5	29	108	82
6	39	120	93
7	45	128	101
8	44	134	103
9	37	150	112
10	28	141	103
11	26	127	94
12	37	114	87
13	37	103	77
14	42	84	63
15	35	87	65
16	34	88	65
17	41	89	67
18	35	66	52
19	32	63	49
20	31	62	**48**
21	35	80	61
22	33	91	71
23	42	97	73
24	35	93	72
25	32	121	90
26	34	142	109
27	36	145	114
28	35	159	**129**
29	31	156	115
30	33	153	111
Average	**35.5**	**109.4**	**83.2**

Obs	#Obs	Name
AAX	11	Alexandre Amorim
AJV	21	J. Alonso
ARAG	30	Gema Araujo
ASA	20	Salvador Aguirre
BARH	4	Howard Barnes
BERJ	15	Jose Alberto Berdejo
BMF	23	Michael Boschat
BRAB	29	Brenda Branchett
BRAF	23	Raffaello Braga
BROB	20	Robert Brown
BSAB	18	Santanu Basu
BXD	7	Alexandru Burda
CFO	8	Jean F. Coliac
CHAG	27	German Morales Chavez
CIOA	11	Ioannis Chouinavas
CKB	24	Brian Cudnik
CNT	12	Dean Chantiles
CVJ	7	Jose Carvajal
DGP	25	Gerald Dyck
DJOB	17	Jorge del Rosario
DUBF	27	Franky Dubois
FAM	4	Fabio Mariuzza
FERJ	23	Javier Ruiz Fernandez
FJAE	4	Dr.John Alan Freeman
FLET	15	Tom Fleming
FLF	12	Fredirico Luiz Funari
FTAA	13	Tadeusz Figiel
FUJK	21	K. Fujimori
HALB	12	Brian Halls
HAYK	18	Kim Hay
HOWR	27	Rodney Howe
JGE	7	Gerardo Jimenez Lopez
JJMA	21	Jessica M.Johnson
KAND	26	Kandilli Observatory
KAPJ	22	John Kaplan
KNJS	19	James & Shirley Knight
KROL	23	Larry Krozel
LEVM	18	Monty Leventhal
LKR	20	Kristine Larsen
MARE	7	Enrico Mariani
MILJ	15	Jay Miller
MJHA	25	John McCammon
MMI	26	Michael Moeller
MUDG	6	George Mudry
OATS	8	Susan Oatney
OBSO	20	IPS Observatory
ONJ	13	John O'Neill
RLM	15	Mat Raymonde
RRO	2	Ralph Rogge
SCGL	27	Gerd-Lutz Schott
SDOH	30	SDO-Jan Alvestad
SIDM	22	Monika Sidor
SIMC	16	Clyde Simpson
SONA	18	Andries Son
STAB	28	Brian Gordon-States
SUZM	17	Miyoshi Suzuki
TESD	25	David Teske

URBP	25	Piotr Urbanski
VARG	19	A. Gonzalo Vargas
VIDD	8	Daniel Vidican
WAU	3	Artur Wargin
WGI	6	Guido Wollenhaupt
WILW	24	William M. Wilson
WKM	2	Michael Wiskirken
WRP	3	Russell Wheeler

Total Observers: 65
Total Observations: 1094

There were 41 out of 65 observers who submitted North and Southern hemisphere group and sunspot counts this month. The Southern hemisphere seems predominate although there are a few days of crossover around the minimum sunspot days.



Errata:
Dear Mr. Howe,
I found a little mistake in August/14 solar bulletin. There are incorrect counts of solar flares measured by GOES in SID report section. 7+188+68=263 but in bulletin it is 193.
Best regards,
Jan Karlovsky,A131
HaP Hlohovec
Slovakia

Reporting Addresses:

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SID Solar Flare Reports – Rodney Howe ahowe@frii.com