Solar Bulletin

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS - SOLAR COMMITTEE

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Table I. American Relative Sunspot Numbers (Ra) for January 2004 [boldface = maximum, minimum]

Day	N	Raw Mean	Ra
1	23	49	36
2	24	64	46
3	28	75	51
4	22	69	48
5	20	66	46
6	25	61	43
7	25	73	55
8	26	61	46
9	23	69	48
10	28	61	41
11	26	51	34
12	18	48	32
13	24	58	39
14	18	51	36
15	28	61	45
16	20	75	52
17	19	63	47
18	28	65	48
19	36	85	**62**
20	28	87	60
21	26	88	62
22	28	78	54
23	27	65	46
24	25	49	40
25	27	23	17
26	21	8	6
27	24	1	**0**
28	32	6	4
29	32	23	16
30	29	35	25
31	25	57	41
Means:	**25.3**	**55.6**	**39.4**

Total No. of Observers: 59

Total No. of Observations: 785

Table II. January 2004 Observers

8	AAP	P.Abbott	
17	ARAG	G.Araujo	
11	BARH	H.Barnes	
2	BATR	R.Battaiola	
1	BEB	R.Berg	
7	BERJ	J.Berdejo	
17	BMF	M.Boschat	
25	BOSB	B.Bose	
27	BRAB	B.Branchett	
26	BRAR	R.Branch	
23	BROB	R.Brown	
2	BURS	S.Burgess	
3	CAMP	P.Campbell	
4	CARJ	J.Carlson	
26	CHAG	G.Morales	
16	CKB	B.Cudnik	
11	CLZ	C.Laurent	
12	DGP	G.Dyck	
19	DRAJ	J.Dragesco	
16	DUBF	F.Dubois	
13	FEEC	C.Feehrer	
8	FERJ	J.Fernandes	
18	FLET	T.Fleming	
27	FUJK	K.Fujimori	
4	GOEM	M.Goetz	
4	GOLA	A.Golovin	
27	GUNM	M.Gundlach	
6	HAYK	K.Hay	
6	HRUT	T.Hrutkay	
20	JAMD	D.James	
6	JEFT	T.Jeffrey	
14	KAPJ	J.Kaplan	
4	KHAR	R.Khan	
20	KNJS	J&S Knight	
1	KROL	L.Krozel	
9	LARJ	J.Larriba	
21	LEVM	M.Leventhal	
9	MARE	E.Mariani	
24	MARJ	J.Maranon	
29	MCE	E.Mochizuki	
11	MMI	M.Moeller	
9	OBSO	IPS Observatory	
17	RITA	A.Ritchie	
11	SCGL	G.Schott	
17	SCHG	G.Scholl	
3	STEF	G.Stefanopoulis	
11	STEM	G.Stemmler	
17	STQ	N.Stoikidis	
28	SUZM	M.Suzuki	
12	SZAK	K.Szatkowski	
10	SZUM	M.Szulc	
22	TESD	D.Teske	
14	THR	R.Thompson	
9	TJV	J.Temprano	
10	URBP	P.Urbanski	
14	VARG	A.Vargas	
6	VELM	M.Velea	
13	WILW	W.Wilson	
8	YESH	H.Yesilyaprak	

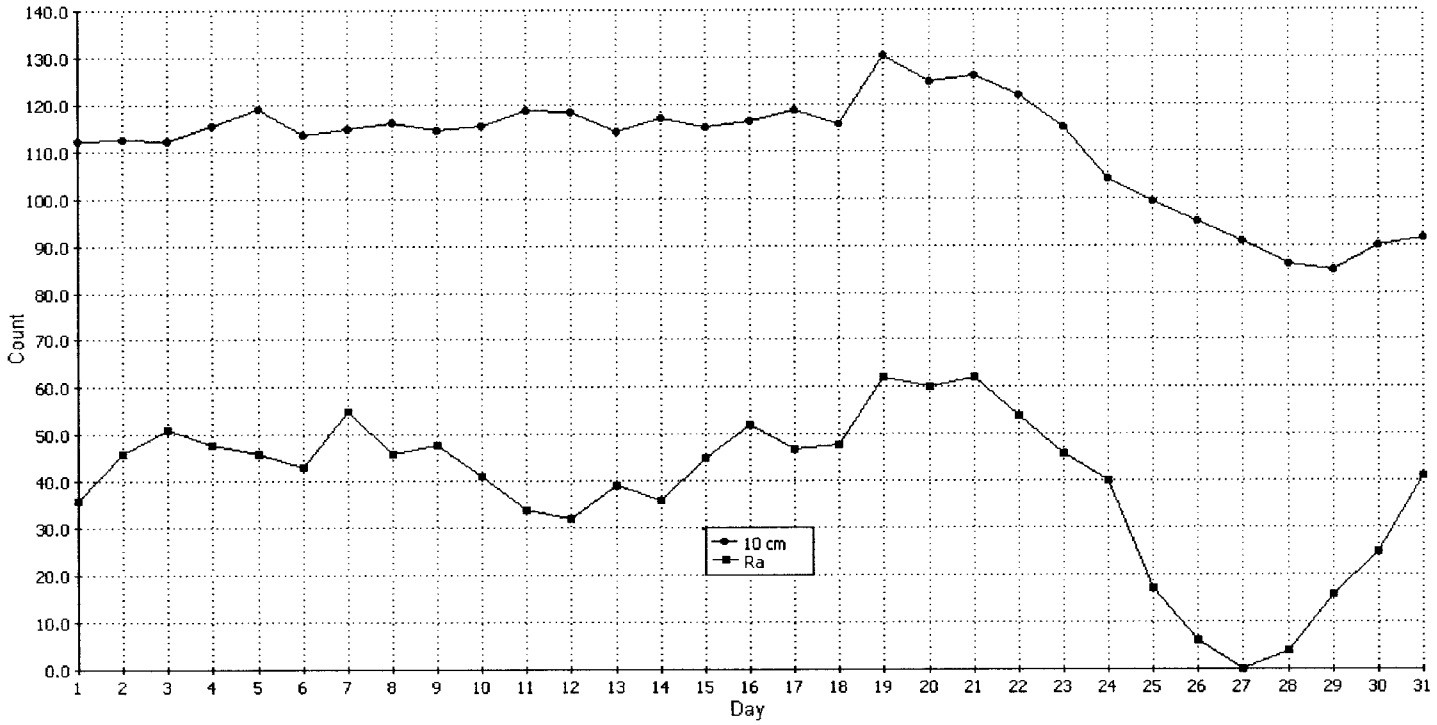
Reporting Addresses

Sunspot Reports -- **email:** solar@aavso.org
postal mail: AAVSO, 25 Birch St. Cambridge, MA 02138
FAX *(AAVSO):* (617) 354-0665

SID Solar Flare Reports -- **email:** noatak@aol.com
postal mail: Mike Hill
114 Prospect St. Marlboro, MA 01752

Table III. Means of Raw Group Counts (RG) and Ratios of Spots to Groups (S:G) in January 2004

Day	RG	S:G	Day	RG	S:G	Day	RG	S:G	Day	RG	S:G
1	2.9	6.9	**9**	2.3	20.2	**17**	3.7	6.8	**25**	2.0	1.9
2	3.1	10.9	**10**	2.2	17.5	**18**	3.7	7.6	**26**	0.7	2.0
3	3.3	13.2	**11**	2.1	14.3	**19**	4.3	9.9	**27**	0.1	3.0
4	3.2	11.8	**12**	2.6	8.2	**20**	4.1	10.9	**28**	0.5	1.7
5	2.7	14.9	**13**	3.5	6.7	**21**	4.0	11.7	**29**	1.8	2.8
6	2.5	14.8	**14**	3.1	6.6	**22**	4.2	8.6	**30**	2.6	3.8
7	3.2	13.1	**15**	3.5	7.2	**23**	4.4	4.8	**31**	3.8	5.0
8	2.4	15.1	**16**	4.3	7.6	**24**	3.9	2.5	**Mn.**	**2.9**	**8.8**



13.Fig. 1. 10 cm Solar Flux and American Relative Sunspot Numbers (Ra) for January 2004
10 cm source: http://www.drao.nrc.ca/icarus

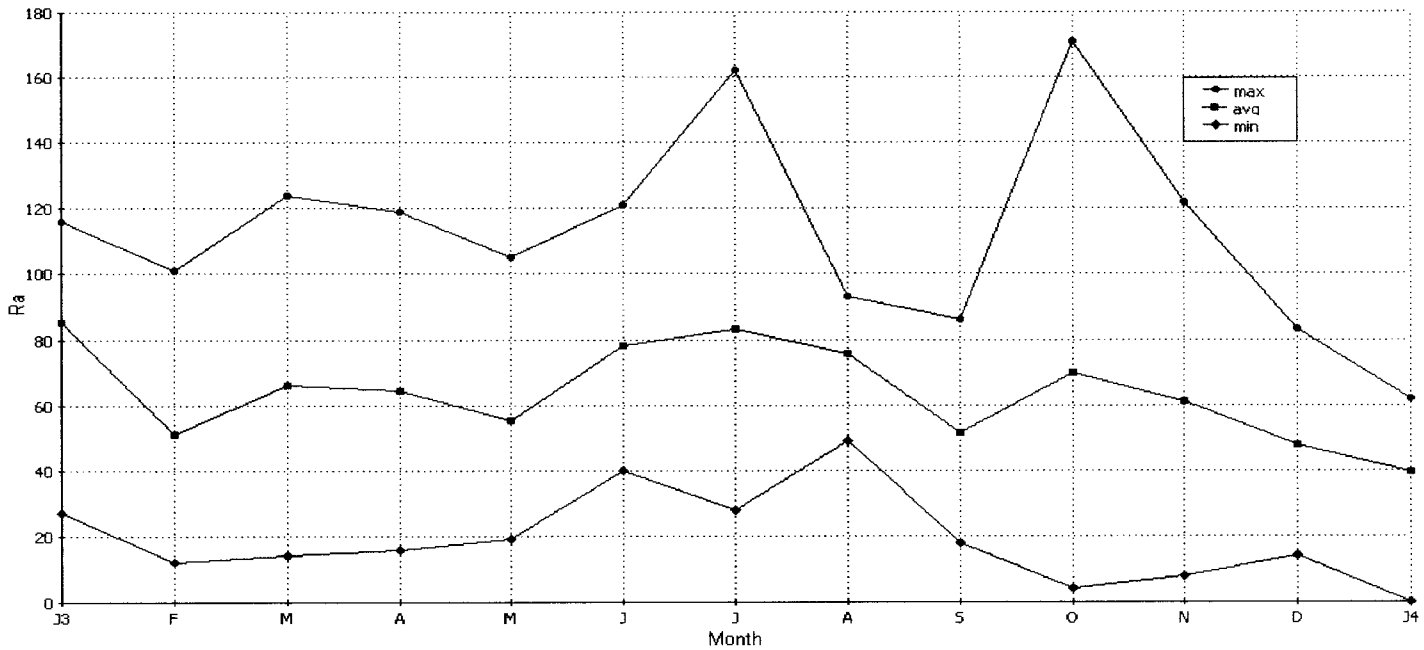


Fig. 2. Maximum, Mean, and Minimum Values of Ra for Each Month from January 2003 to Present.

Sudden Ionospheric Disturbance Report

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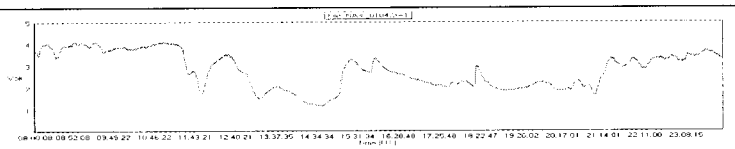


Sudden Ionospheric Disturbances (SID) Recorded During January 2004

(Analysis performed by Michael Hill, SID Analyst)

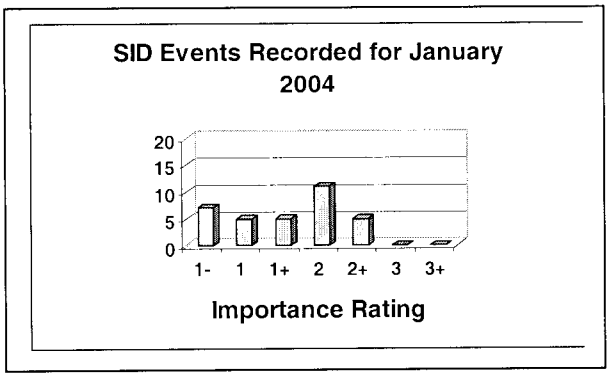
Date	Max	Imp	Date	Max	Imp	Date	Max	Imp
040101	0323	1	040117	1754	2			
040101	0543	1+	040118	0017	1			
040101	0655	1-	040119	0532	2			
040102	0947	1	040119	1237	1-			
040104	0953	2+	040119	2004	2			
040104	1819	1-	040120	0742	2			
040105	0013	1	040126	0611	1-			
040106	0627	2+	040131	0621	2			
040106	0720	1+						
040107	0403	2+						
040107	0848	1+						
040107	1026	1+						
040108	0506	2+						
040109	0124	1-						
040109	0142	2+						
040110	0334	2						
040110	0426	2						
040110	0515	2						
040111	0722	2						
040112	0840	1						
040115	0631	2						
040117	0400	2						
040117	0803	1+						
040117	0918	1-						
040117	0946	1-						

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

The events listed above meet at least one of the following criteria

1) Event reported by two or more observers within ±5 minutes
2) Event matched to GOES-8 XRA event to within ±15 minutes and event time < 1000 UT
3) reported by observer with a quality rating > 8 (scale 1-10)

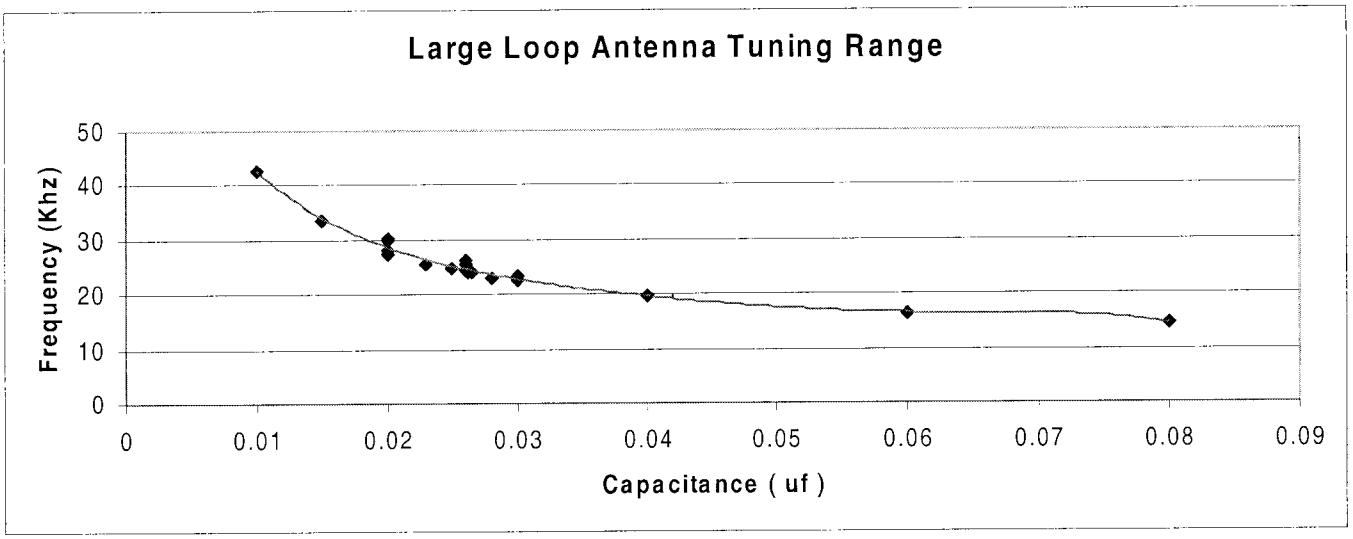
Observer	Code	Station(s) monitored
A Clerkin	A29	NAU
J Winkler	A50	NAA NXX
D Toldo	A52	NAA NPM NWC
W Moos	A84	ICV
M Hill	A87	NAA
G DiFillipo	A93	DHO HWU
T Poulos	A95	NAA
J Wallace	A97	NAA
P Campbell	A100	NLK
F Steyn	A102	NWC
B Bose	A103	VTX3
P Mortfield	A108	NLK
T State	A110	NML
A Son	A112	DHO



Solar Events

January has ushered in a new year with a slow month. There were only 33 correlated SID events reported by observers. More than one observer reported "NO SID Events." Even the NOAA-SEC event reports had a first for me with a report on the 28th that simply stated "NO EVENT Reports." There were two periods of increased activity , one around the 9th of the month and another around the 18th. After the 20th the activity reduced to almost zero for a number of days. The GOES-12 Satellite reported 191 X-Ray flare events. Of these, most were B and C Class events. There were 11 M-Class events registered between the period of the 5-9th and the 17-20th. No X-Class events were recorded.

I have finally gotten around to building the Hexagonal Loop antenna and Simple SID Receiver designed by Cap Hossfield back in October 2002.This was one of his last projects before he died. I am happy to report that the loop works great, not to mention its' commanding presence in my living room. I measured it as having a bandwidth of about 500hz compared to 1500hz for the smaller loop. Below is a Capacitance Tuning chart that I derived experimentally. I did make a couple of changes to the receiver design. For the output resistor, instead of 5K, I used a 100K resitor with a 22 uF cap across it to eliminate noise. I also replaced R4 with a variable resistor, 0 – 50K, to allow setting the total gain anywhere from 60 up to 900. (A great design by Cap – Thanks go to him.)



Solar Flare Summary Based on GOES-12 Data