

# Big Sky Wave



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## The Prez Says.....

**J**ust when we thought there was a light at the end of the winter tunnel, Mother Nature hits us with another snowball. The recent cold snap reminds us that winter is not over and we must not drop our guard against severe weather. Watch out for poor road conditions and dress warmly to ward off the wind chill. We still have several more winter storms left to go before the warm weather returns for good. As we used to say at the remote radar site I was stationed at in the extreme northeast corner of North Dakota, "This area has eight months of winter followed by four months of relatively poor snowmobiling."

Here is a bit of advice for those new hams contemplating the purchase of their first FM rig. Should you purchase a 2-meter only rig, or get one that also has 70-cm operation built in?

If there are 440 MHz / 70-cm repeaters in your area, you might want a dual band radio. Out in the northwestern US the 440 MHz repeaters are rather sparse. But if you have one in the local area, they are perfect for long chats, since they are often fairly under utilized. This also makes them handy for a "working channel" while the main ARES activities take place on the VHF / 2-meter repeater. Stations needing to pass lengthy traffic or work out a shift schedule conflict can temporarily switch over to the UHF / 440 MHz repeater, leaving the 2-meter repeater open for other traffic. This can also be done using simplex frequencies, but if HT's are being used they often lack the range needed to talk all the way across town.

If you go with a dual band radio (2-meter / 70 cm is the most common combination) be sure you get a true dual band radio! There are some radios out there that are technically "dual band", but can only display and operate on one band at a time. They are really best described as "two band" instead of "dual band". I really prefer a radio that can simultaneously receive both 2-meters (VHF) and 70-cm (UHF). These radios are the most flexible, allowing you to monitor a 2-meter repeater and a 440 MHz / 70-cm repeater at the same time (VHF/UHF configuration). Most will also allow you the option of monitoring two 2-meter frequencies (VHF/VHF) or two 70-cm frequencies (UHF/UHF) side by side instead of the VHF/UHF configuration. This can be handy during an ARES operations where you need to monitor a repeater frequency and a simplex frequency at the same time (of course, you can only transmit on one of them at a time. But you can at least monitor both simultaneously). Or you can monitor a 2-meter repeater while also monitoring a public service frequency (fire, police, ambulance, etc).

True dual band radios can also do "cross band repeat", which is handy if you need to be out and about on your HT while hunting in hilly terrain or "on scene" during an ARES response - but lack the power to reach the repeater with just the HT alone. I helped out with a sand bag levy patrol along the upper Red River in North Dakota during the flooding in 1997. Unfortunately, one of the towns that needed the foot patrols along the sand bag levy was down in a hole next to the river. I could not reach the distant 2-meter repeater at the county seat with my dual band HT. But I could reach my truck on 440 MHz, and with the dual band mobile radio's 50-watts output on 2-meters, I was able to communicate just fine with the ARES station at the County Emergency Operations Center (EOC).

If the cross-band repeat function interests you, remember that the radio must be a "dual-band" model. A quick way to tell the difference between various "dual band" radios is to look at the picture in the advertisement. The "one band at a time" radio will only display a VHF or a UHF frequency, but not both. The true dual band radios will display both VHF and UHF frequencies side by side. Another critical point in operation is that you need a 70-cm simplex frequency that you can use to talk between the mobile radio and your HT radio. Be sure to tune the UHF side of the radio to this 70-cm simplex frequency before activating the cross-band repeat function! If you leave the VHF side of the radio tuned to the local 2-meter repeater, and the UHF side remains tuned to the local 70-cm repeater frequency, the first time one of the repeaters ID's - your rig will cross-band repeat it to the other repeater. This will cause the second repeater to ID, which will again be cross-band repeated by your mobile radio back to the first repeater. At this point your mobile radio will tie up both repeaters, alternately "ker-chunking" each one with the signal from the other. This will endlessly tie up both repeaters, much to the displeasure of all the local hams. Making this kind of blunder

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makes you eligible for the much coveted "Burnt Circuit Award".

Take time to review and research your choices before purchasing your first radio. Ask different club members what type of radio they have and why they chose it over others. Better yet, post a question on the GFAARC forum web page and take advantage of the years of experience various hams have. To borrow a quote from an Indiana Jones movie, "Choose wisely!" After that, have fun!

Taking a moment to pause and look back at the March club meeting, I would like to thank George (AA7GS) for bringing the last of Sam Kelly's (W7MUM) ham gear in. And thanks to everyone who chipped in some cash to purchase an item or two to help out his widow. I know it was appreciated very much by her.

For the April meeting we can look forward to Jerry (KD7UIF) presenting a short discussion on circuit boards. Dave Wilson will also be stopping by at the start of the meeting to briefly talk about the annual "Cruise or Lose" poker run. This year it will take place on Friday the 1st of May. This is one of our best fund-raising events for the club and is always a lot of fun. Be sure to volunteer to help out and get a chance to see a lot of interesting street rods! See you there!

73 de

Bruce Clark, KA2ODP

GFAARC President



## CAPACITOR GUIDE

*The Result of Capacitor Code is Given in pF*

1 <sup>st</sup> Digit Of Value	2 <sup>nd</sup> Digit Of Value	Multiplier	Tolerance (±%)
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474 =  
47 x 10,000 pF  
= .47 μF

F = 1%
G = 2%
J = 5%
K = 10%
M = 20%
Z = +80%/-20%

On some capacitors the value is shown as a straight number (4.7pF). On others the decimal point is replaced with the first letter of the prefix (4p7 = 4.7pF).

Prefix	Abbr.	Multiplier
pico	p	10 <sup>-12</sup>
nano	n	10 <sup>-9</sup>
micro	μ	10 <sup>-6</sup>

1000 pico = 1 nano  
 1 nano = .001 micro  
 1000 nano = 1 micro

### EXAMPLES:

223J = 22 x 10<sup>3</sup>pF = 22nF = 0.022μF    5%

151K = 15 x 10<sup>1</sup>pF = 150pF    10%

# The Great Falls Area Amateur Radio Club General Meeting Minutes

March 3, 2009

The meeting was called to order at 7:06 pm by Bruce Clark (KA2ODP).

Introduction of members and guests was undertaken.

The minutes of the February General meeting were read and the motion to approve them was made by Jim Cummins (N7YO) with the second from Tom Nixon (WA7MT). The motion passed.

The Treasurer's report was given by Doug Shearer (W7MEX). The motion to accept the report was made by Wanda Cummins (W7POO) and the second was made by Dee Rasmussen (W7DDL). The motion passed. Please contact Doug (W7MEX) for information concerning the treasury.

The Repeater Committee report was presented by Jim Cummins (N7YO). Jim reported that on the possibility of a new repeater on Divide Mountain that would be in a Blackfoot Tribe building. The tribe has offered space for a repeater and the Cut Bank club is also considering moving their existing repeater and we could get a link into club's Zortman site. This site is approximately 1500 feet higher than the present location of the Cut Bank repeater. Jim thinks a simplex link would work. George Forsyth (AA7GS) made the comment that if there was a repeater at Divide Mountain and a link could be established that would give us coverage across almost the entire high line from Kalispell to Glasgow. Tom Nixon (WA7MT) mentioned that any antennas that would be used would need to withstand ice buildup.

George Forsyth (AA7GS) stated the Highwood site might be getting a consortium tower that the club could move to from the existing tower and the new site at Great Falls was also a consortium tower. If that were to happen, standoff arms would be needed for the clubs antennas. The arms are available from Tesco for about \$200.00 each and if bought soon could be gotten before a price increase. Jim Sims (KE7BIN) asked if these are standard and could be used on any site. George replied that this was a standard part and would be useable. Jim Sims made a motion to purchase 2 arms for the club's use and the second was made the Dee Rasumussen (W7DDL). The motion passed. George also mentioned that Tesco has other radio equipment and that if anyone is interested in purchasing anything and saving on the freight when the order is place to get in touch with him.

Board of Directors report was presented by Cameron Smith (N7NBB). Cameron reported that it had gotten the Treasurer's Report. The club forum and its operation had been discussed and some fundraising ideas, such as the Power Pole sales, were also brought up. The current Board members and officers duties were also discussed and the current members were to write a description of their duties for a continuity book for future officers. The annual club inventory was discussed with the idea that it would take place at the same time as the April Board meeting at the storage facility. Since the club supports the ARES function a budget for that was also discussed and George Forsyth (AA7GS) was asked to see if he could put together an estimated budget for that function. The annual Cruise or Lose Poker Run was also discussed with Cameron stating that Dave Wilson would be addressing the club with the information at the next meeting. Cameron also reported that Dave has OK'd the 50/50 drawing that we have conducted for the past several years. The equipment that was purchased with the grant monies has now met the requirements for retention. The equipment consists of Garmin E-Trex GPS units and Tiger Trax units. These items have seen very little use. Also the club's HF radio and it's status was discussed.

The Education Committee report was presented by Cameron Smith (N7NBB). Cameron reported that LAPC Tribal Committee has expressed an interest in having a class and the local commander of the Coast Guard Squadron has expressed an interest also. With both groups and some interest from e-mail contacts Cameron has scheduled a class for the first 3 weekends in April. Cameron asked if the VE team could then hold a special test session for the class members. It was suggested that when the books for the Technician Class are ordered that some extra books be bought for the school and local libraries. Evelyn Forsyth (N7VJW) recommended that the libraries be checked with first.

VE Testing Report was also given by Cameron Smith (N7NBB). Cameron reported that VE testing is scheduled for Tuesday evening at the Westgate Mall.

The Award Committee report was presented by Eric Martin (K7ABV). Eric reported that the only award that he had was the "Burnt Circuit". Bruce Clark (KA2ODP) was nominated for leaving his dual band radio set to cross band repeat and causing the repeater to go into an identification loop until someone was able to get hold of him to shut his radio off. Bruce won the award by acclamation.

The ARES Report was presented by George Forsyth (AA7GS). George reported that the net was receiving regular check-in's. George also showed some magnetic signs that are available through the ARRL that have room for additional logo and the individual's call sign can be printed on the sign. George will take orders and combine them to save on shipping charges.

Old Business: The members were reminded that the club is going to try to have short programs during the meeting that have to do with various phases of amateur radio. George will be presenting this month's program. It is a video of many phases of radio and is narrated by Walter Cronkite (KB2GSD).

New Business: Jim Cummins (N7YO) said the he had secured the domain name for the club forum and it was up and running

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but is still a work in progress. It will mainly concentrate on happenings in the state. Other state clubs could be allowed a section for their own use. Jim commented that here in Montana we are separated by miles so this was a way to have news spread across the state. Jim mentioned that you can register up to 3 domain names for one fee and the current web page could be migrated to the new site when the current listing expires. Jim currently has the .net and .forum registered and it was suggested that the .com be added. The forum has been added to the repeater announcements to make people aware of its existence. Wanda Cummins (W7POO) made the comment that it has been designed for easy use and everyone should give it a try. Cameron Smith (N7NBB) is working on the web site to provide a link to the new forum. The motion for the club to officially sponsor the forum was made with a second by George Forsyth (AA7GS), the motion passed.

The formation of a committee to oversee club fund raising was discussed. Wanda Cummins (W7POO), Dee Rasmussen (W7DDL) and Collette Wolfslau (KE7DFY) were appointed to the committee and will report back with any ideas.

A committee to develop ideas for recruiting new operator was brought up. Eric Martin (K7ABV) and Jim Frye (NW7O) were appointed.

The upcoming Field Day in June was brought up for discussion. Again holding the event at the Walmart parking lot was suggested if permission can be obtained for the event. Jim Cummins (N7YO) reported at the present time he is waiting to determine if this can be done. George Forsyth said he thought it might also be possible to have it listed on the reader board at the coffee stand next to Wal-Mart.

The equipment that was purchased with the Homeland Security grant was next brought up. George Forsyth (AA7GS) reported that the time had passed that the grant required the club to keep the equipment. The items are 13 GPS units and 3 Tiger Trax units. Since this equipment has seen very little use and is not likely to see use in the future it should be sold and more modern and easier to use equipment should be acquired. The current equipment is not likely to be used since it is somewhat bulky and people responding already have enough to carry. The radios also require licenses to use. The GS units currently sell new for about \$110.00 on Amazon. Also brought for discussion to sell was the club's current HF radio, TS-450. The radio is somewhat complex to use if the operator is not used to operating it. During the times that it is used quite frequently the operator will accidentally push and wrong button and send the radio to never-never land. George said the radio should be sold and a newer simpler radio should be gotten to replace it. Jim Cummins (N7YO) made the motion to sell the units with club members getting first chance and anything that don't sell by put on e-bay. The second was by Jim Sims (KE7BIN). The motion passed. Cameron Smith (N7NBB) thought that power poles should be bought in large quantity and advertised for sale.

George Forsyth (AA7GS) had items from the estate of Sam Kelly (N7NUM) for donations which would go to Dolly Kelly.

Eric Martin (7ABV) mentioned an article the March QST talking about the Glacier Waterton Hamfest.

There being no further business the meeting was adjourned at 8:50 pm.

Respectfully Submitted,

Bill Reid, KA6QXX

Secretary



<http://www.w7eca.net/forum>

**Have you signed up yet?**

**What are you waiting for?**



**JOIN US FOR BREAKFAST**  
or JUST COFFEE AT THE  
**“GOLDEN GRIDDLE”**  
ALMOST EVERY SATURDAY MORNING AT 9:00AM



We would like you to join us for Saturday Morning Coffee and/or breakfast at the **GOLDEN GRIDDLE** on **SATURDAYS** at **9:00am**. The Golden Griddle is located in the Senior Citizen's Center at 1004 Central Avenue. **TALK-IN** will be on **147.300(+)**

## A.R.E.S. NEWS

March 1, 2009

**W**ow, Where did February go?

I visited the Glacier County/Blackfeet Tribe LEPC meeting and we discussed the possibility of having a repeater on Tribal property near St. Mary. Hudson Bay Divide is the location and the Cut Bank Club has their 146.82 machine in an older building up there. The possibility of moving that repeater into the new building 1500 feet higher was discussed and also maybe linking it to our Zortman machine. Think about Highwood baldy, Zortman and Hudson Bay Divide all linked together, WOW practically the entire highline coming on at one time! There's still some things to work out, more later.

ARES NEEDS all of you with ANY type of communications available, to be an ARES member. There are no dues or fees. Becoming an ARES member simply means that you have agreed to help, and that I have your information in case we need to contact you. See ya next month!

De AA7GS

George Forsyth

Cascade County Emergency Coordinator

Montana DES Dist 2 Emergency Coordinator

Amateur Radio Emergency Service

### North Central Montana Amateur Radio Emergency Services

P.O. Box 1763

Great Falls, Montana 59403

(406)-791-8325

*This phone number is available 24 hours - a day, seven days a week.*

George Forsyth AA7GS "District Emergency Coordinator"



### ASSISTANT EMERGENCY COORDINATORS

#### Technical (equipment):

Jim Cummins - N7YO  
Tom Nixon - WA7MT

#### Interagency Coordination (CERT, Etc.):

Jim Adkins - W7HOG  
Jim Sims - KE7BIN

#### Skywarn:

Ken Hanks - W7GMC  
Mark Chandler - K9MWD

#### Volunteer Scheduling / Reports:

Dawn Peterson-Smith - AD7MT  
Cameron Smith - N7NBB

#### General Operations:

Fred Davison - N6ZV  
Bruce Clark - KA2ODP





### R.A.C.E.S.

Net meets first and third Sunday of the month on 3947 Khz. +/- QRM. There is an opportunity to join at the end of the net, or by contacting Bill, K7LMT.

R.A.C.E.S. meets on the 1st and 3rd Sunday of the month at 9:00 AM local time. If your not yet a member, you may check in at the end of the roll and there is an opportunity to join at the end as well. Hope to hear you on the net!



### The Montana Traffic net

MTN is in need of net control stations and alternate net control stations. Please consider joining the team, there is lots of support and it is lots of fun. Contact: Mike w7mpk@arrl.net Come and join in. That's

only once a week. Handling routine traffic is not only easy and fun but good practice for emergency operations as well.

The Montana Traffic net meets EVERYDAY at 00:30 UTC on 3910 Khz. More information at <http://www.montanatraficnet.com>



### Give A Hand Up Mentor A New Ham!

To get on the list please send an e-mail to:

[camijon@bresnan.net](mailto:camijon@bresnan.net)

That E-mail should include your:

**NAME, CALLSIGN and CONTACT INFORMATION.**

Also include what you feel your strengths are....

Antennas, electronics, station setup....the list is as long as your imagination.....

### Message From the Editor.....

General submissions are due on or before the monthly meeting date. Submissions from club officers are due one week after, with publication the following day. This should allow the printing of new hams and their calls.

*Please see the last page for our policy concerning non-member or commercial submissions*

### ECHO LINK COMMANDS

Node Sponsor Jim, N7YO

Node # 37656

Located on Highwood Baldy, 146.730 (-)

**100hz Tone Is Activated!**

**\* plus node number Connect to Node**

- # Disconnect
- ## Disconnect all
- #00 Disable Echolink
- \*00 Enable Echolink
- A5 Connect random link
- A6 Connect random node
- A7 Connect random user
- A8 Reconnect last connection
- A9 Echolink Status

**Station Shortcuts:**

- \*1 Connect to W7ECA-R (Porphyry Peak)
- \*2 Connect to K7KTR-R
- \*3 Connect to KK4FE
- \*4 Connect to WA2FFY
- \*5 Connect to WB4BLI-R
- \*6 Connect to WR7HLN-R

**Echo time Text to Speech commands:**

- 0\* Info file
- 1\* Help file
- 2\* Current time
- 3\* Node Status
- 4\* Current WX
- 5\* WX Forecast
- 6\* WX Warnings
- 01\* Record Link
- 02\* Stop Record
- 03\* Playback
- 10\* Toggle voice announcements on/off



### Don't Miss A Single Issue!!

**Membership dues are due NOW!** They are again 25.00 for a membership, and 10.00 for the additional family member membership. To continue receiving the news letter, please send your dues in A.S.A.P. —Thank-You



### Are you prepared?

**FREE TRAINING FROM FEMA**

ICS courses, IC-100, IC-200, IC-700, IC-702, IC-703 - Online!  
Get Started Today!

<http://training.fema.gov/IS/crslst.asp>





## VE Testing

The Great Falls Area Amateur Radio Volunteer Examiners offer testing for ALL levels of Amateur Radio Licenses at their monthly testing sessions. Normally, these VE testing sessions are held on the first Tuesday AFTER the first Monday of each month at 7:00pm in the Westgate Mall (Great Falls). Doors to the testing room are locked promptly at 7:00pm., so please arrive a few minutes early. The next test session will be on the 7th of April 2009. Testing fees are \$15.00 as of January 2009. ALL applicants must bring **TWO forms of ID**. One must be a **Photo ID** such as a driver's license, school or work Id, passport, etc. Correct Change for the testing fee is Recommended. You will also need to know your Social Security Number, but **DO NOT** need to have the card with you. If you are currently licensed, you will need your Federal Registration Number (FRN), (and a photocopy of your current license or CSCE to give to the VE Team this photocopy will NOT be returned to you. If you have questions concerning Amateur Radio testing, telephone 406-791-8322, and the answering service can put you in touch the volunteer examiner coordinator



## Treasurer's Report

Please contact Doug Shearer: [w7mex@qwest.net](mailto:w7mex@qwest.net) for any other concerns, questions or comments.

## EchoIRLP COMMANDS

Node Sponsor: Ken, W7GMC  
IRLP Node # 5670 / Echolink Node # 192554  
Located north edge of Great Falls 145.700 100Hz tone

### Connect to a node:

IRLP - dial node number  
Echolink - \* (Star) and node number

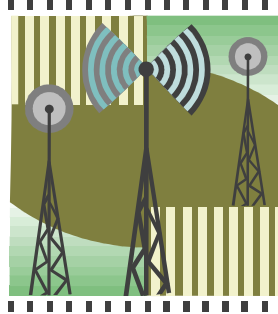
### Other Commands

EchoIRLP status -	0 (Zero)
Disconnect from EchoIRLP -	73
IRLP - Dial random node -	B
Speak time -	C
Last node connected -	*69

### Speed dial to IRLP Nodes:

#3571 / Parump, NV - \* (Star) 1  
#1850 / Lethbridge, AB - \* (Star) 2  
#7430 / Lakeside, MT - \* (Star) 3

Email me with your requests for IRLP speed dial nodes:  
[w7gmc@bresnan.net](mailto:w7gmc@bresnan.net)



## Highwood — Zortman Linking Codes

Just in case you should need them in your travels about our area of the state here are the linking control codes for the "Highwood—Zortman" repeater system.

### Link Information:

Highwood Up = A43	Zortman Up = B43
Highwood Down = A40	Zortman Down = B40

### The courtesy tones are:

Arpeggiated tone = Normal (no link active)  
Morse L (di dah di dit) = link active  
Morse Z (dah dah di dit) = Zortman (signal from Zortman side)

## ARRL Montana Section Who's Who

For more information including contact information and section reports please visit:

<http://www.arrl.org/sections/?sect=MT>

### Section manager

K7YD, Doug Dunn Section manager

### Assistant Section Manager

AA7MT, Loren Nichols

### Assistant Section Manager

K7LMT, Bill Kornec

### Section Emergency Coordinator

AE7V, Todd Gansel

### Affiliated Club Coordinator

K7ABV, Eric Martin

### Government Liaison

W7WWW, Terry Whiteside

### Section Traffic Manger

KA7YYR, Herb Allard



# Montana Section

## Revised Rules For Radio Amateur Civil Emergency Services (RACES)

[Code of Federal Regulations]

[Title 47, Volume 5]

[Revised as of October 1, 2008]

From the U.S. Government Printing Office via GPO Access

[CITE: 47CFR97.407]

Sorry for the fine print but it was necessary in order to fit it to the page.

[Page 613-614]

-Editor-

### TITLE 47--TELECOMMUNICATION

#### CHAPTER I--FEDERAL COMMUNICATIONS COMMISSION (CONTINUED)

#### PART 97\_AMATEUR RADIO SERVICE--Table of Contents

##### Subpart E\_Providing Emergency Communications

#### Sec. 97.407 Radio amateur civil emergency service.

(a) No station may transmit in RACES unless it is an FCC-licensed primary, club, or military recreation station and it is certified by a civil defense organization as registered with that organization, or it is an FCC-licensed RACES station. No person may be the control operator

of a RACES station, or may be the control operator of an amateur station transmitting in RACES unless that person holds a FCC-issued amateur operator license and is certified by a civil defense organization as enrolled in that organization.

(b) The frequency bands and segments and emissions authorized to the control operator are available to stations transmitting communications in RACES on a shared basis with the amateur service. In the event of an emergency which necessitates invoking the President's War Emergency Powers under the provisions of section 706 of the Communications Act of

1934, as amended, 47 U.S.C. 606, RACES stations and amateur stations participating in RACES may only transmit on the frequency segments authorized pursuant to part 214 of this chapter.

(c) A RACES station may only communicate with:

- (1) Another RACES station;
- (2) An amateur station registered with a civil defense organization;
- (3) A United States Government station authorized by the responsible agency to communicate with RACES stations;
- (4) A station in a service regulated by the FCC whenever such communication is authorized by the FCC.

(d) An amateur station registered with a civil defense organization may only communicate with:

- (1) A RACES station licensed to the civil defense organization with which the amateur station is registered;
- (2) The following stations upon authorization of the responsible civil defense official for the organization with which the amateur station is registered:
  - (i) A RACES station licensed to another civil defense organization;
  - (ii) An amateur station registered with the same or another civil defense organization;
  - (iii) A United States Government station authorized by the responsible agency to communicate with RACES stations; and
  - (iv) A station in a service regulated by the FCC whenever such communication is authorized by the FCC.

(e) All communications transmitted in RACES must be specifically authorized by the civil defense organization for the area served. Only civil defense communications of the following types may be transmitted:

(1) Messages concerning impending or actual conditions jeopardizing the public safety, or affecting the national defense or security during periods of local, regional, or national civil emergencies;

(2) Messages directly concerning the immediate safety of life of individuals, the immediate protection of property, maintenance of law and order, alleviation of human suffering and need, and the combating of armed attack or sabotage;

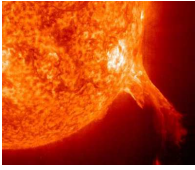
(3) Messages directly concerning the accumulation and dissemination of public information or instructions to the civilian population essential to the activities of the civil defense organization or other authorized governmental or relief agencies; and

(4) Communications for RACES training drills and tests necessary to ensure the establishment and maintenance of orderly and efficient operation of the RACES as ordered by the responsible civil defense organization served. Such drills and tests may not exceed a total time of 1 hour per week. With the approval of the chief officer for emergency planning in the applicable State, Commonwealth, District or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year.

[54 FR 25857, June 20, 1989, as amended at 65 FR 6550, Feb. 10, 2000; 71

FR 66465, Nov. 15, 2006]



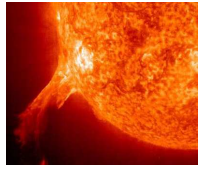


# Propagation de K7RA

## Propagation Forecast Bulletin 1

Tad Cook, K7RA

Seattle, WA. March 6, 2009



.No new sunspots since the recent brief three-day appearance of quickly fading sunspot 1013 on February 24-26. It was another Cycle 24 sunspot, but not too encouraging, considering how brief and weak it appeared. There are no predictions for new sunspots, but these events tend to occur suddenly.

In this bulletin we have been tracking our own flavor of smoothed sunspot number, one based on a shorter period of data (three months instead of one year that the official smoothed sunspot graphs are based upon), perhaps revealing trends earlier. But the trend goes down again. Now that February has passed, we can take sunspot data from December 1 through February 28 to calculate a three month average, centered on January. The total daily sunspot numbers for that period was 208, divide that by 90 days, and the result is 2.3.

Here are the numbers for the recent past, updated through last month:

Jan 07 22.7	Jan 08 8.5	Jan 09 2.3
Feb 07 18.5	Feb 08 8.4	
Mar 07 11.2	Mar 08 8.4	
Apr 07 12.2	Apr 08 8.9	
May 07 15.8	May 08 5.0	
Jun 07 18.7	Jun 08 3.7	
Jul 07 15.4	Jul 08 2.0	
Aug 07 10.2	Aug 08 1.1	
Sep 07 5.4	Sep 08 2.5	
Oct 07 3.0	Oct 08 4.5	
Nov 07 6.9	Nov 08 4.4	
Dec 07 8.1	Dec 08 3.7	

Just as Cycle 23 had a double-peak, we are perhaps observing a double bottom, centered on August 2008 and early 2009, or with the second minimum perhaps some time in the near future. We won't know it until it has passed, but it sure feels like a minimum at the moment.

The lack of sunspots has been gaining attention outside of the usual scientific, amateur astronomer and amateur radio circles, and with so many people commenting on it who have no familiarity whatsoever with solar cycles and sunspots, we are bound to see poor judgment passed on as settled fact.

For years, non-scientists (I am one too) have occasionally attempted to correlate sunspot trends with everything from social unrest, cardboard box production, and stock market averages, to climate and hem lengths, with no success. Or, at least the conclusions were not reproducible.

A year ago, some of us witnessed up close the resulting flap when a daily financial news organ grossly misquoted an astrophysicist, claiming he had predicted decades of few if any sunspots, accompanied by endless winter. Even though the scientist denied ever saying those things, the story seemed to develop a life of its own, a sort of social virus that spread widely very quickly, nearly impossible to correct.

As a long time fan of contemporary folklore, I thought it might be interesting to track this particular meme, so I used a popular search engine feature in which I registered a particular string (the word sunspot, in this case), and every day it sent me a summary of every new use of this word found on web sites, in blogs, Usenet newsgroups, and newspapers, along with links to these articles.

One of the common mistakes I found involved the difference between number of sunspots and sunspot numbers. For instance, the sunspot number is 11 if there is a single sunspot, and 23 if there are three sunspots in two groups. So someone looks at old sunspot records, sees a sunspot number of 150 for a certain day, and assumes that the appearance of 150 simultaneous sunspots in a single day is a common occurrence.

Or they might take a look at a graph of smoothed sunspot numbers, such as the one at <http://www.swpc.noaa.gov/SolarCycle/>, and complain because the graph had recently changed without notice, or that the graph at the current date was incorrect, because it showed the cycle turning up, when that has not happened.

What they don't know is that every point on the graph is based on the average of a year of sunspot data, and is placed in the middle of that year. So for any points within the past six months, up to half are based on predicted data. So if NOAA predicts sunspot numbers to rise in the future, it is normal to see the graph rising when in fact the sunspot numbers have not yet in-

(Continued from page 9)

creased. Some of the erroneous accounts have pushed some sort of conspiracy theory, claiming that "the government" doesn't want us to know how rare recent sunspots have become.

Sometimes a letter to the editor of a newspaper, or a blog remark, will state without attribution to any source, that the sunspot number for a certain month was only 3. They probably heard somewhere that there were only three sunspots making an appearance one month, when the actual average daily sunspot number for the month was several times that.

On April 20, 2007 in Propagation Forecast Bulletin ARLP017 we told you about Jeff Lackey, K8CQ of St. Simon's Island, Georgia (see <http://www.arrrl.org/w1aw/prop/2007-arlp017.html>) and his HF rain gutter stealth antenna. At the time Jeff said that after less than four months he had worked 121 countries in 33 zones with this arrangement.

The antenna used his rain gutters and downspouts, and you can see a diagram of the antenna in the March 2009 issue of CQ Magazine, on page 52. Included are a nice photo of Jeff, and another of the tuning arrangement, which uses an automatic antenna tuner at the base of the antenna.

The article says that Jeff has now worked 220 "DX entities" in 37 zones, less than two years later, and Jeff told us on Thursday that the total is now 243/38, with 87 countries on 80 meters. Jeff says the gutter antenna is a tricky tune on 160 meters, but there he has worked 34 states, 3 provinces and 7 countries.

Asram Chou, BV2WM of Taiwan is translating this weekly bulletin into Chinese and posting it on the web at, <http://tw.myblog.yahoo.com/bv2wm-tw/> and <http://bv2wmtpe.blogspot.com/>. I used Google Language Services at [http://www.google.com/language\\_tools?hl=en](http://www.google.com/language_tools?hl=en) to translate it back to English, and was interested to see that even with the automatic translation it was pretty close to the original.

Bob King, K7OFT of Seattle, Washington sent in an interesting link to a December 2008 conference where multiple papers on the start of Cycle 24 are stored. See it at, <http://sprg.ssl.berkeley.edu/RHESSI/napa2008/pts.php>.

For anyone in Seattle this Thursday afternoon, March 12 at 3:30 PM is a presentation at University of Washington's Johnson Hall in room 102 about probing the Earth's ionosphere with lightning. See the program schedule on the web at,

<http://www.geophys.washington.edu/web/ess/program/seminars/WIN09Seminars.htm>

link. With a map from, <http://www.washington.edu/home/maps/>, you can locate Johnson Hall.

This weekend is the ARRL International SSB DX Contest. We can assume conditions will include no sunspots and very stable geomagnetic conditions. NOAA and USAF predict a planetary A index at 5 for March 6-12, and Geophysical Institute Prague predicts quiet conditions, March 6-12.

If you would like to make a comment or have a tip for our readers, email the author at, [k7ra@arrrl.net](mailto:k7ra@arrrl.net).

For more information concerning radio propagation, see the ARRL Technical Information Service web page at, <http://www.arrrl.org/tis/info/propagation.html>. For a detailed explanation of the numbers used in this bulletin, see <http://www.arrrl.org/tis/info/k9la-prop.html>. An archive of past propagation bulletins is at <http://www.arrrl.org/w1aw/prop/>.

Monthly propagation charts between four USA regions and twelve overseas locations are at <http://www.arrrl.org/qst/propcharts/>.

Instructions for starting or ending email distribution of this bulletin are at <http://www.arrrl.org/w1aw.html#email>.

Sunspot numbers for February 26 through March 4 were 12, 0, 0, 0, 0, 0, and 0 with a mean of 1.7. 10.7 cm flux was 69.9, 68.9, 70.6, 69.4, 69.2, 69.1, and 69.7 with a mean of 69.5. Estimated planetary A indices were 2, 8, 5, 3, 2, 5 and 7 with a mean of 4.6. Estimated mid-latitude A indices were 2, 7, 4, 2, 0, 5 and 5 with a mean of 3.6.



QSL submitted by Eric Martin

## COOKIE MONSTER LIST

April:	Jim Frye, NW7O
May:	Collette Wolfslau, KE7DFY
June:	Wanda Cummins, W7POO
July:	Rex Coldren, N7RAC
August:	Summer Picnic - None Needed
September:	Jim Sims, KE7BIN
October:	Bill Speck, W7WOS
November:	Eric Martin, K7ABV
December:	Joe Heyde, WB7TNH

The Cookie Monsters should bring a couple of dozen cookies, or other treats to the meeting. If for some reason, you cannot make the meeting, please arrange to have someone else takeover for you, or send an E-mail well before the meeting date to: [INFO@W7ECA.ORG](mailto:INFO@W7ECA.ORG)

## **Great Falls Area Amateur Radio Club Newsletter Advertising Policy**

All members in good standing of the Great Falls Area Amateur Radio Club may submit advertising directly to the Newsletter Editor. Providing the following conditions are met. All items must be owned by the person submitting the Ad. All items must be Amateur Radio related such as radios, antennas, coax, computers, meters, books and associated parts. Items are not limited to those described above, but must be Amateur Radio related. Members of GFAARC may submit other "non amateur radio" related advertisements for a fee of \$3 per month.

Non members may submit ads to the newsletter but these must be approved by a club officer or steering committee member. Amateur Radio related ads will be charged \$5 per month. Other "non member" submitted ads will be considered on a case by case basis.

All Business related ads submitted to the newsletter must be approved by a club officer or steering committee member. These ads will be charged at a rate \$15 per month or \$125 per year. These ads should be limited to ¼ page and may contain business logos.

The Great Falls Area Amateur Radio Club newsletter has limited space for advertising therefore ads should be written in standard classified ad format. The newsletter editor reserves the right to rewrite and/or limit number and size of ads submitted to the newsletter for publication. This does not apply to business ads.

The officers, steering committee members and newsletter editor of the Great Falls Area Amateur Radio Club reserves the right to deny any submission to the newsletter, deemed inappropriate, or not in the best interests of the Great Falls Area Amateur Radio Club and/or it's members.



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