

# FEEDLINE

MAY 2008

FOX HUNT  
RABBIT HUNT  
GOPHER HUNT  
AARDVARK HUNT

WHATEVER YOU CALL IT  
IT'S A LOT OF FUN  
FINDING THAT HIDDEN TRANSMITTER  
USING DIRECTION FINDING EQUIPMENT  
DF'ING

EVERY SUNDAY EVENING  
FOLLOWING COFFEE  
AT WENDY'S  
SOUTH WASHINGTON  
GRAND FORKS

The **FEEDLINE** is the official journal of the *Forx Amateur Radio Club, Inc.*, PO Box 14773, Grand Forks, ND 58208-4773. The Forx ARC is incorporated in the State of North Dakota and is a non-profit organization as defined in section 501(c)(3) of the Internal Revenue Code.

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Articles are solicited for publication. Content must be geared towards amateur radio or advancement of the communications art. Articles that will not be published are those of a personal nature or that constitute an attack against an individual. The editor reserves the right to revise all material for space consideration

# MEETING MINUTES

## April 29, 2008

Meeting was called to order at 7:30 PM – Larry KI0W presiding

There were 16 members and 1 guests present

**Secretary's Report** - John KA0SVY handed out copies of the minutes of the last meeting (March 25, 2008). The minutes were approved.

**Treasurer's Report** - By Karen N0TKP; Report accepted.

**ARES/EC** - John WA0LPV reported that Skywarn training went well and there were lots of people there. We need someone to replace him as EC for the east side. Gerry N0NGW is looking for people to help during severe weather events. He would like to have a training session. Notification will be by e-mail.

**Activity's Report** - Donna KC0SKD reported that the diabetes walk was canceled at the last minute so no Hams were needed. They did indicate that they would like us to help next year. Gerry N0NGW stated that he will be liaison for the Dog Sled Race people. He will also check on Mayor Brown's volunteer program about club recognition.

**VE Report** by Rod KE0A - No tests scheduled. The Extra



Question Pool will change this summer.

**Repeater Report** by Paul KA0CAF – Nothing to report. They are working well

**Sioux Club Report** – Not much activity - no report

### Old Business

A. Civil Air Patrol - John KA0SVY reported no contact.

B. N0GF QSL Cards - Rod KE0A reported that the card has been designed. John WA0LPV will put it on the web site. Motion by Rod KE0A, 2nd by Karen N0TKP to purchase 1000 cards. Passed

C. Hamfest - Karen N0TKP requested \$250 budget for the Hamfest. Motion by Dick KC0LUR, 2nd by Rod KE0A for \$250 for the Hamfest. Passed

D. Nominating Committee - Jeff KDOBTT reported that he had talked to John KA0SVY and Donna KC0SKD and they said they would continue in their current positions. Gerry N0NGW then presented the following slate of officers for nomination.

President –  
Larry KI0W

Vice President –  
Jerry KC0GWK

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## DATES OF INTEREST

May 2008	
16-18	Dayton Hamvention
24	CQ WW WPX Contest
27	Club Meeting
June 2008	
7	St Paul MN Hamfest
14	ARRL VHF Contest
24	Club Meeting
28	Field Day
July 2008	
11-13	Peace Garden Hamfest
29	Club Meeting
August 2008	
26	Club Meeting
September 2008	
13	Potato Bowl Parade
30	Club Meeting
October 2008	
4	Grand Forks Hamfest
28	Club Meeting

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## FORX AMATEUR RADIO CLUB MEETINGS

**Last Tuesday  
Every Month  
7:30 PM**

**Basement of  
Altru Hospital  
Meeting Room E  
(next to cafeteria)**

**[Please note that operation of  
radios and cellular phones  
anywhere within Altru Hospital  
is prohibited]**

## **NEW NASA TOOL ALLOWS EXPLORATION OF IONOSPHERE FROM INSIDE**

Last week at the Space Weather Workshop in Boulder, Colorado, NASA released a 4D live model of the Earth's ionosphere <[http://science.nasa.gov/headlines/y2008/30apr\\_4dionosphere.htm?list12589](http://science.nasa.gov/headlines/y2008/30apr_4dionosphere.htm?list12589)>. Without leaving home, anyone can fly through the layer of ionized gas that encircles Earth at the edge of space itself. All that is required is an Internet connection and a free copy of Google Earth <<http://earth.google.com/>>. NASA calls the ionosphere the "last wisp of Earth's atmosphere that astronauts leave behind when they enter space. The realm of the ionosphere stretches from 50 to 500 miles above Earth's surface where the atmosphere thins to near-vacuum and exposes itself to the fury of the sun. Solar ultraviolet radiation breaks apart molecules and atoms creating a globe-straddling haze of electrons and ions."

Using a Google Earth interface, users can fly above, around and through these regions getting a true 4D view of the situation. "The fourth dimension is time. This is a real-time system updated every 10 minutes," said W. Kent Tobiska, president of Space Environment Technologies and chief scientist of its Space Weather Division. The proper name of the system is

CAPS, short for Communication Alert and Prediction System. Earth-orbiting satellites feed the system up-to-the-minute information on solar activity; the measurements are then converted to electron densities by physics-based computer codes. It is important to note, Tobiska said on the NASA Web site, that CAPS reveals the ionosphere not only as it is now, but also as it is going to be the near future.

According to propagation specialist Carl Luetzelschwab, K9LA, this model "can provide Amateur Radio operators a broad view of what the ionosphere is doing 'now.' This broad view is due to the fact that the resolution in the color coding schemes only gives coarse estimates of the six parameters available." Luetzelschwab, former editor of "National Contest Journal" (NCJ) <<http://www.arrl.org/ncj/>>, writes a propagation column in NCJ and other publications.

"This is an exciting development," said NASA solar physicist Lika Guhathakurta on the NASA Web site. "The ionosphere is important to pilots, ham radio operators, earth scientists and even soldiers. Using this new 4D tool, they can monitor and study the ionosphere as if they're actually inside it." Guhathakurta made his comments on the NASA Web site.

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NASA understands that "[h]am radio operators know the ionosphere well. They can communicate over the horizon by bouncing their signals off of the ionosphere -- or communicate not at all when a solar flare blasts the ionosphere with X-rays and triggers a radio blackout." As radio amateurs, we use -- and depend on -- the ionosphere to make contacts.

Tobiska agrees: "For ham radio operators, this is a great application because it enables them to figure out what frequencies that are going to be available for communicating with any part of the world they want to communicate with at that moment in time. So ham radio operators who are in South Carolina want to talk to someone in Europe or Africa, they can know exactly what frequencies to turn to on their dial."

Luetzelschwab said he personally believes that "The importance of this new product is the fact that this is likely the first physical model of the ionosphere available to the widespread Amateur Radio community. This is in contrast to the model in our current propagation predictions -- such as VOACAP, W6ELProp and the like -- that is based on years of measured ionospheric data correlated to a proxy for the true solar ionizing radiation (the proxies being sunspots and 10.7 cm solar flux)."

NASA explained that it appears that this new physical model takes satellite measurements of solar radiation at extreme ultraviolet (EUV) wavelengths (the true ionizing radiation) and inputs this data, along with a geomagnetic field activity index, into a model of the atmosphere to determine electron densities. Luetzelschwab said "Yes, it only offers a broad view now -- but I think it is a sign of things to come."

More information on this tool for radio amateurs can be found on the ARRL Web site <<http://www.arrl.org/news/stories/2008/05/06/10081/>>.

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### **FOR SALE**

**Kenwood TS140S  
HF Transceiver  
\$300**

**MFJ Versa Tuner  
\$150**

**Bencher Low Pass Filter  
\$30**

Harold N0SAA  
yllek@mncable.net  
218-686-8617  
1602 Greenwood St. E # 120  
Thief River Falls, MN 56701

# HAM TERMS CROSSWORD

	1		2	3			4			5		6		
7			8											
										9				
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20						21		22		23				
24										25				
						26								

(Author Unknown)

# HAM CROSSWORD CLUES

## Across:

2. "Hollow-state" devices
5. Heart of the ham shack
7. Punishment for poor operators
9. \_\_\_\_\_ girls at Dayton!
10. 468 / f
12. Help for a "glass arm"
14. \_\_\_\_\_ plug (connects accessories)
16. FSK or AFSK
18. Reflection coefficient (Greek letter)
20. \_\_\_\_\_ regenerative
21. "Bug feeler"
24. \_\_\_\_\_ modem
25. -. -. --- -. .
26. Absorbs power

## Down:

1. Easily overloaded
3. 300 to 3,000
4. Hams wait for these spots
5. Two meter talkies
6. \_\_\_\_\_ spectrum
8. df'ing
11. Don't blow it!
12. The Candy Store
13. \_\_\_\_\_ wave
15. Station near or in the F layer
17. Earns you the bottom 25 khz
19. Common "sky wire"
20. Sun spot measurement
21. Home of W1AW
22. df antenna (abbr)
23. Wiring rules

The solution will be published  
in a  
future edition of the *FEEDLINE*

## TEN NEW SATELLITES IN ORBIT

Ten satellites reached orbit April 28 aboard an Indian PSLV-C9 rocket launched from the Satish Dhawan Space Center. The primary payloads were India's CARTOSAT-2A and IMS-1 satellites. In addition to the NLS-5 and RUBIN-8 satellites, the rocket carried six CubeSat <<http://www.cubesat.org/>> research satellites, all of which communicate using Amateur Radio frequencies. All spacecraft deployed normally and appear to be functional at this time.

The SEEDS satellite was designed and built by students at Japan's Nihon University. When fully operational, SEEDS will download telemetry in Morse code and 1200-baud FM AFSK packet radio at 437.485 MHz. The satellite also has Slow-Scan TV (SSTV) capability. Several stations have reported receiving SEEDS CW telemetry and the team would appreciate receiving more reports from amateurs at their ground station. Web page <[http://sat.aero.cst.nihon-u.ac.jp/gs/english/cardform\\_e.html](http://sat.aero.cst.nihon-u.ac.jp/gs/english/cardform_e.html)>.

AAUSAT-II <<http://aausatii.space.aau.dk/eng/>> is the creation of a student team at Aalborg University in Denmark. It will downlink scientific telemetry at 437.425 MHz using 1200 or 9600-baud packet.

Can-X2 <<http://www.utias-sfl.net/nanosatellites/CanX2/>> is a product of students at the University of Toronto Institute for Aerospace Studies, Space Flight Laboratory (UTIAS/SFL). Can-X2 will downlink telemetry at 437.478 MHz using 4 kbps GFSK, but the downlink will be active only when the satellite is within range of the Toronto ground station.

Compass-One <<http://www.cubesat.de/>> was designed and built by students at Aachen University of Applied Sciences in Germany. The satellite features a Morse code telemetry beacon at 437.275 MHz. Compass-1 will also provide a packet radio data downlink, which will include image data, at 437.405 MHz.

Cute 1.7 + APDII <[http://lss.mes.titech.ac.jp/ssp/cute1.7/index\\_e.html](http://lss.mes.titech.ac.jp/ssp/cute1.7/index_e.html)> is a satellite created by students at the Tokyo Institute of Technology. This satellite will not only provide telemetry, it will also offer a 9600-baud packet store-and-forward message relay with an uplink at 1267.6 MHz and a downlink at 437.475 MHz.

Delfi-C3 <<http://www.delfic3.nl/>> was designed and built by students at Delft University of Technology in the Netherlands. It includes an SSB/CW linear transponder. The satellite will be in telemetry-only

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mode for the first three months of the mission, after which it will be switched to transponder mode. Delfi-C3 downlinks 1200-baud packet telemetry at 145.870 MHz. The linear transponder, when activated, will have an uplink passband from 435.530 to 435.570 MHz and a corresponding downlink passband from 145.880 to 145.920 MHz.

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May 2, 2008

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### NOTES FROM THE DXCC DESK

ARRL DXCC Manager Bill Moore, NC1L, reports that the 2006 and 2007 YA/LY1Y operations in Afghanistan have been approved for DXCC credit. "If you had cards rejected for this operation, please send an e-mail <dxcc@arrl.org> to the ARRL DXCC Desk to have your DXCC record updated," Moore said.

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May 2, 2008

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Treasurer –  
Karen N0TKP

Secretary –  
John KA0SVY

Activities Director –  
Donna KC0SKD

Member-at-Large –  
Rod KE0A

E. Field Day - Rod KE0A reported that we have a site at Telpro. Donna KC0SKD will check to see if the fire department will bring the red trailer to the site. She will report at the Field Day meeting after breakfast Saturday morning May 3, 2008

#### New Business

A. Dick KC0LUR discussed running a special event station at the Dog Sled Race this year. We will take this up later.

B. John WA0LPV reported that the ARRL Dakota Division meeting will be in Rochester, MN this fall

The next club meeting will be 1930, May 27, 2008

Meeting adjourned at 8:08 PM

**CROOKSTON  
THURSDAY  
NIGHT  
NET  
9:00 PM  
147.120(+)**

**GRAND FORKS  
MONDAY  
NIGHT  
NET  
9:00 PM  
146.940(-)**

**BE READY!!  
Be Prepared!!**

**FOXTROT  
DELTA  
IS COMING  
SOON**

**ON THE  
180<sup>TH</sup> AND 181<sup>ST</sup>  
DAY OF 2008**

**NORTH  
47  
DEGREES  
50.960  
MINUTES**

**WEST  
097  
DEGREES  
5.251 MINUTES**

## URL's of INTEREST

### **Forx Amateur Radio Club**

[www.wa0jxt.org](http://www.wa0jxt.org)

### **ND Section**

<http://home.earthlink.net/~qtipf16/>



## **TRIVIA**

**FOR THIS MONTH'S TRIVIA  
SEE PAGES 4 AND 5  
OF THIS ISSUE**

April's trivia question was:

WHAT IS THE DIELECTRIC CONSTANT OF MYCALEX AT 1MHZ?

And the answer is:

7.4

This may be found on page 23 of  
THE RADIO AMATEUR'S HANDBOOK, 1978, 55<sup>TH</sup> Edition