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**The Greensboro Amateur Radio Association**

# Feed Line

*Providing Amateur Radio news for the Triad*



**Volume 18, No. 6**

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Web Site: [www.w4gso.org](http://www.w4gso.org)

**June, 2009**

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## **New Antenna For the Greensboro Natural Science Center Amateur Radio Shack**

by **Will Ravenel, AI4VE**

Toward the end of May reports were received that the radios at the Greensboro Natural Science Center Ham Station (N4GSC) were not receiving well. The station was created as an Eagle Scout project by Ryan Bradley, KD4TMD, at least 10 years ago according to his father, Allen, KD4IUN. There were two original antennas erected, a G5RV oriented N/S and a 40m dipole oriented E/W.

The condition of these antennas was unknown so on Memorial Day Jesse Lindley, N4BFD; John Strandberg, AJ4BT and Will Ravenel, AI4VE, paid a visit to radio room with a MFJ-259B antenna analyzer and found both antennas had high SWR and a resistance reading below 20 ohms. One of the Science Center staff said there had been recent work on the roof and gave us access to check the antennas out. The G5RV was found lying in a pile in a puddle - no wonder it tested so poorly. The dipole was still up, but the feed line was deteriorated

and the feed point had no waterproofing. This antenna was taken down, a list was made of available parts to build two new antennas (an overly ambitious plan for one day), and everyone split up to fill the list.

An hour later the team returned to the Science Center and began the work of building and erecting a new antenna. The original G5RV was strung about five feet above the roof so it was decided a higher elevation was needed. Two suitable trees were identified and the HyperDog soon had lines up at about 50 feet over both. A 100' doublet fed with 450 ohm ladder line was constructed and raised. A 1:1 ferrite bead current balun was used to transition the ladder line to RG8X coax that was pulled through the access pipe to the shack below. Measurements in the shack revealed a short in the UHF connector on the roof and it had been a long, hot day so, reluctantly, completion of the first antenna was postponed.

The following Saturday Jesse and Will returned to replace the bad connector and to install an MFJ 949E antenna tuner. It was hoped that the 100 ft doublet would tune from 80m

through 10m but a match could only be obtained on 40, 20, and 10. Plans are being made to try a longer section of coax in the shack or to substitute a 4:1 balun at the ladder line/coax junction to improve the tuning range. And then there's that second antenna



Photos by Will Ravenel, AI4VE

**Broken feed line**

still to erect. But in the meantime the station is back on the air. Any licensed Ham is given access to the radio room by the Science Center staff. They just ask that the window and door be opened and that any visitor's questions be answered. GARA is printing a new batch of club brochures, some of which will be placed at the Science Center radio room for distribution to potential future Hams.



**Jesse, N4BFD, on top of the building.**

### **NEXT MEETING June 22**

The next meeting of the Greensboro Amateur Radio Assoc. will be June 22, at the Golden Corral Steak House, 4404 Landview Dr, Greensboro, NC 27407, off Wendover Ave. near Sam's Club. The scheduled program will be on the Elecraft K2 transceiver kit.

# GARA Meeting Minutes



## Regular Meeting Minutes May 25, 2009

The Greensboro Amateur Radio Association held its monthly meeting on May 25, 2009 at the Golden Corral Restaurant beside Sam's club near I-40 and Wendover Avenue.

Chris Thompson, N4HC, brought the meeting to order at 7:15 PM. Chris then asked for everyone to identify themselves. There were a total of 28 members and four visitors present.

### New Business:

Ernie Wall, NC4EW, said that Arch, KT4AT has responded to his request for an invoice for the repeater repairs. Arch stated that the bill would be less than \$800.00 and he would get the invoice out soon. Ernie said that there is an insurance payment due this month and all other bills have been paid and the treasury is in good shape.

Al Allred, K4ZKQ, said the income is ahead of forecast and expenses are behind forecast at this time.

Roy Smith, N4BYU, talked briefly about the net logging software that Lee Wimbs, W1MBS, has written.

Will Ravenel, AI4VE, said that the Ham station at the natural science center is not

operable due to antenna and feed line problems, which should be corrected soon. Allen Bradley, KD4IUN, stated that Ryan Bradley, KE4TMD, put the antennas and the station up about 12 years ago for an Eagle Scout project.

Will also said that Jesse Lindley, N4BFD, donated a projector to be used at club meetings.

Roy Smith, N4BYU, said that he and Tom Forrest, N4GVK, have been working on an updated flyer to be given out to anyone interested in GARA or Amateur Radio. Roy said the cost should be about \$100.00. Roy made a motion to have the club reimburse Tom for the printing cost of the flyer. The motion was seconded and passed.

Tom Forrest, N4GVK, said he has 30 amp PowerPole™ connectors for sale. Contact Tom for information.

Allen Bradley, KD4IUN, gave a report on the Wrangler soccer tournament that was held on the prior weekend and thanked

all of the volunteers.

Roy said there will be a bike ride supported by Guilford County ARES on June 13, 2009. The ride starts at Dudley products on Hwy. 421 in Kernersville. About eight volunteers are needed for approximately 5-6 hours. Contact Roy Smith for details and to volunteer.

The minutes of the last meeting Will made a motion to accept and Chan, KJ4ADX, seconded. Passed with no opposition.

Bob Davet, W8JFQ, said that the Eccolink node is down due to a computer failure.

Dub Bridges, N4DUB, gave a presentation about field day which is coming up on the 27th & 28th of June.

The meeting ended at 8:30 PM.

Respectfully submitted by Greg Spencer, KG4UQV, GARA Secretary

## D-Star Gateway Class In Charlotte Informative to GARA Representatives

by Greg Cohoon, KJ4AED

As part of its ongoing D-Star trial GARA is investigating what it will take to create a gateway connection for the W4GSO UHF D-Star Repeater (442.8625 MHz). Once the repeater is connected to the gateway, users will be able to link to other D-Star repeaters and reflectors worldwide.

As part of the preparation for installing the gateway software on the GARA Repeater, Arch (KT4AT), Will Ravenel (AI4VE), and Greg Cohoon (KJ4AED) attended a D-Star Gateway Administrators training class in Rock Hill, SC on Saturday, June 6.

The class was conducted by Ken Johnson (KC4YOZ), the system administrator for the KI4WXS D-Star machine in Charlotte. Ken covered all aspects of installing and configuring the software needed to connect a D-Star

machine to the gateway. This software runs on CentOS, a flavor of the popular Linux operating system. Ken described how to install CentOS, how to install the ICOM gateway software, various aspects of configuration related to the gateway software, and how to register the new gateway with the K5TIT trusted server that maintains the database of other D-Star repeaters around the world.

The class was very informative and Ken was eager to help everyone who attended get a good understanding of what it takes to be successful with D-Star Gateway Administration.

Arch is making progress with the software development needed to enable a gateway connection to his D-Controller and GARA is looking forward to making these new capabilities available on the 442.8625 repeater. Stay tuned for further developments.

### The Greensboro Amateur Radio Association

President Chris Thompson, K4HC  
 Vice-President Will Ravenel, AI4VE  
 Treasurer Ernie Wall, NC4EW  
 Secretary Greg Spencer, KG4UQV  
 Financial Al Allred, K4ZKQ  
 Engineering Chairman Jesse Lindley, N4BFD  
 Operations Roy Smith, N4BYU  
 Member at Large Clark Doggett, KG4HOM  
 Member at Large Dave Touvell, KN4ZO  
 Appointed Positions:  
 News letter editor and Webmaster:  
 Tom Forrest, N4GVK

"The Feed Line" is ©2009 by the Greensboro Amateur Radio Association and published monthly. Our address is P.O. Box 7054, Greensboro, NC 27417. The purpose of the newsletter is to provide the club and prospective members information about the club and amateur radio in general. Material and information should reach the editor by the first Friday of the month for the next edition of the newsletter. Opinions expressed in "The Feed Line" do not necessarily represent the views of the officers, directors, editor or members of the Greensboro Amateur Radio Association. Material may be reproduced, provided proper credit is given to GARA.



## Radio Operators Need For Bike Ride

Tom Hatley, KF4JZD, needs volunteers to man radio positions for the Tour To Tanglewood, September 26-27. If you can assist, please contact Tom at [kf4jzd@bellsouth.net](mailto:kf4jzd@bellsouth.net) or you can call him at 336-508-2232.

## Tom Boone, W4COC, SK

It is with deep sorrow that we report the passing of Thomas N. "Tom" Boone, Jr., W4COC, who died Wednesday, June 3rd., 2009, at Friends Home West, at the age of 90.

Tom was the son of the late Thomas and Addie Ray Boone. He was a native of Burlington, NC. He attended Elon College and UNC. Then, he served as

Captain in the Army Air Corps during World War II. After the war, He opened Tom Boone Tailors and Formal Wear on West Sycamore St. in downtown Greensboro.

Tom was among Greensboro's best CW amateur radio operators as W4COC. Hams were always welcome to stop by his tailor store for a ragchew.



Photo by Tom Forrest, N4GVK

Tom Boone, W4COC, SK, in his shack, photographed February 4, 2004

## ITU Phonetic Alphabet Reviewed

NATO/ITU Phonetic Alphabet

A - Alfa	K - Kilo
B - Bravo	L - Lima
C - Charlie	M - Mike
D - Delta	N - November
E - Echo	O - Oscar
F - Foxtrot	P - Papa
G - Golf	Q - Quebec
H - Hotel	R - Romeo
I - India	S - Sierra
J - Juliet	T - Tango
K - Kilo	U - Uniform
L - Lima	V - Victor
M - Mike	W - Whiskey
	X - X-Ray
	Y - Yankee
	Z - Zulu

**PowerPole™ Connectors  
Are Available  
For Power Cables.  
Adopted by ARES as a  
standard power source  
connector.**

**Contact Tom, N4GVK at  
[n4gvk@bellsouth.net](mailto:n4gvk@bellsouth.net)**

# Repeater Owners Could Lose Mt. Mitchell Site

**By Tom Forrest, N4GVK  
Feed Line Editor**

Repeaters that provided wide-area coverage from Clingman's Peak (Mt. Mitchell) for 27 years, have learned they may have to vacate the property by July 31. This could be a disaster for the ham radio community in Western NC.

In an e-mail letter from Dean Blair, K2JB, president of the Western Carolina Amateur Radio Society, sent to NC amateurs, the repeaters affected are 53.63, 145.190, 224.54, 442.225, and 443.600.

All are apparently housed in the building owned by WMIT radio.

In a posting June 16th on the QRZ blog Blair added, "Discussions are proceeding with the parties to resolve this issues regarding the Mt. Mitchell repeaters.

"We appreciate all the help and encouragement from those who have lent their assistance.

"If everyone will be patient and 'QRT' on further communciations to Blue Ridge Broadcasting, Samaritan's Purse or other

3rd parties, it will be appreciated.

"They have heard your concerns and asked our patience in working out a resolution.

We will have an update at the appropriate time. Dean Blair ~ K2JB, WCARS."

WMIT 106.9 FM is owned by Blue Ridge Broadcasting and the Billy Graham Evangelistic Association.



## National Hurricane Center Predicts "Near-Normal" Hurricane Season

From ARRL

Forecasters with the National Hurricane Center (NHC) are calling for a "near-normal" Atlantic hurricane season this year. In its initial outlook for the 2009 Atlantic hurricane season -- which runs from June 1-November 30 -- the National Weather Service's Climate Prediction Center (CPC) is calling for a 50 percent probability of a near-normal season, a 25 percent probability of an above-normal season and a 25 percent probability of a below-normal season. According to the CPC, global weather patterns are imposing a greater uncertainty in the 2009 hurricane season outlook than in recent years.



Forecasters say there is a 70 percent chance of having nine to 14 named storms, of which four to seven could become hurricanes, including one to three major hurricanes (Category 3, 4 or 5). Tropical systems acquire a name -- the first for 2009 will be Ana -- upon reaching tropical storm strength with sustained winds of at least 39 MPH. Tropical storms become hurricanes when winds reach 74 MPH and become major hurricanes when winds increase to 111 MPH. An average season has 11 named storms, including six hurricanes with two becoming major hurricanes.

"This outlook is a guide to the overall expected seasonal activity. However, the outlook is not just about the numbers, it's also about taking action," said Dr Gerry Bell, lead seasonal hurricane forecaster at the CPC. "Prepare for each and every season regardless of the seasonal outlook. Even a near- or below-normal season can produce landfalling hurricanes, and it only takes one landfalling storm to make it a bad season."

### Amateur Radio and Hurricanes

Rick Palm, K1CE, editor of the ARRL's ARES E-Letter, warns that now is the time for ARES® members to assess their portfolio of communications equipment and disaster response knowledge. Palm gives several tips for amateurs involved with hurricane operations:

- Monitor major HF hurricane networks during events this season. The Hurricane Watch Net (HWN) on 14.325 MHz is one of several key players. It serves either the Atlantic or Pacific during a watch or warning period and coordinates with the National Hurricane Center (NHC) in Miami. Frequent, detailed information is

issued on nets when storms pose a threat to the US mainland. In addition to hurricane spotting, local communicators may announce that residents have evacuated from low-lying flood areas. Other amateurs across the country can help by relaying information, keeping the net frequency clear and by listening. See the HWN's Web site for more information. The net works closely with the hams at the NHC's Amateur Radio station WX4NHC

- The SATERN Net (Salvation Army Team Emergency Radio Network) provides emergency communication support to the Salvation Army and populations at large. They also handle health-and-welfare traffic. SATERN holds high profile nets on 20 meters (14.265 MHz) during major hurricanes and has a long history of excellence, discipline and service. Refer to the SATERN Web site for more information.

- The Maritime Mobile Service Net (MMSN) meets on 14.300 MHz and is composed of hams who serve and assist those in need of communications on the high seas. According to its Web site, the primary purpose of the net is for handling traffic from maritime mobile stations. The network is recognized by the United States Coast Guard and has an excellent working relationship with that agency. The MMSN has handled hundreds of incidents involving vessels in distress and medical emergencies in remote locations, as well as passing health and welfare traffic in and out of affected areas. They also work closely with the NWS and NHC by relaying weather reports from maritime stations.

- The VoIP SKYWARN and Hurricane Net operates by combining both the EchoLink and IRLP linked repeater networks, while handling critical wide area communications during major severe weather and tropical events. These operations have gained national stature in recent years and is a critical partner with WX4NHC. Whenever tropical weather is imposing a threat to the US mainland and certain other areas of interest, the VoIP WX net will be fully operational. See the VoIP SKYWARN and Hurricane Net Web site for more information.

Palm said that during hurricane events, there are usually two or three regional nets (usually on 40 or 20 meters) that spring to prominence as major key assets to the disaster response on an ad hoc basis. "Watch for these nets, as well as the nationally recognized networks described above, this season. Don't transmit on their frequencies unless you are absolutely sure you have something substantive to add, and then only under the direction of the net control station," Palm advised.

ARRL Emergency Preparedness and Response Manager Dennis Dura, K2DCD, added that when ARES activates in response to any tropical event, it is crucial that information flows up through the Section and is reported to Headquarters. "These reports allow us to develop the situational awareness and disaster intelligence that is required for us as an organization to support the Sections that are impacted" he explained. "In this way, we are able to respond to relevant requests from the media and finally to coordinate with the governmental and non-governmental organizations. This information also allows us to make the decision at Headquarters on whether to stand up our Incident Management Team to support and coordinate the operations."

If you are interested in Emergency Communications, please be sure to check out the monthly ARES E-Letter. You can elect to receive this newsletter free of charge via e-mail by going to the Member Data Page on the ARRL Web site.

## NASA Releases New Predictions for Solar Cycle 24

From ARRL

An international panel of experts -- led by the National Oceanic and Atmospheric Administration (NOAA) and sponsored by NASA -- has released a new prediction for the next solar cycle: Solar Cycle 24 will peak in May 2013 with a below-average number of sunspots. "If our prediction is correct, Solar Cycle 24 will have a peak sunspot number of 90, the lowest of any cycle since 1928 when Solar Cycle 16 peaked at 78," said panel chairman Doug Biesecker of NOAA's Space Weather Prediction Center (SWPC). This report clarifies a NOAA report from earlier this month that stated that Solar Cycle 24 would bring "90 sunspots per day on average."

The latest forecast revises an earlier prediction issued in 2007. At that time, a sharply divided panel believed solar minimum would come in March 2008

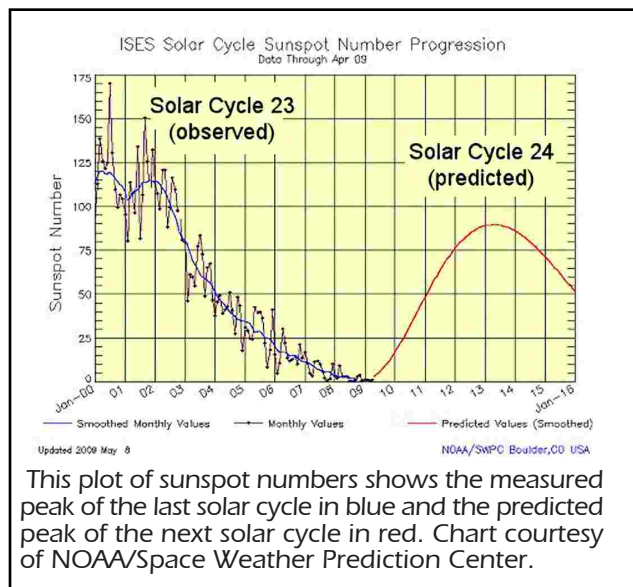
predicted that the next 11-year cycle of solar storms "would start in March 2008, plus or minus six months, and peak in late 2011 or mid-2012." In the cycle forecast issued in April 2007, half of the panel predicted a "moderately strong cycle of 140 sunspots, plus or minus 20, expected to peak in October 2011. The other half predicted a moderately weak cycle of 90 sunspots, plus or minus 10, peaking in August 2012. An average solar cycle ranges from 75 to 155 sunspots. The late decline of Cycle 23 has helped shift the panel away from its earlier leaning toward a strong Cycle 24. The group is evenly split between a strong and a weak cycle."

At a meeting of the American Geophysical Union in San Francisco in December 2007, David Hathaway of NASA's Marshall Space Flight Center, along with colleague Robert Wilson, said that Solar Cycle 24 "looks like it's going

to be one of the most intense cycles since record-keeping began almost 400 years ago." They said they believe the next solar maximum should peak around 2010 with a sunspot number of 160, plus or minus 25. "This would make it one of the strongest in recorded history." Four of the five biggest cycles on record have come in the past 50 years. "Cycle 24 should fit right into that

pattern," Hathaway said. Right now -- June 2009 -- the solar cycle is in a valley, the deepest of the past century. In 2008 and 2009, the Sun showed some of the lowest sunspot counts on record, as well as weak solar winds and a low solar irradiance, going more than two years without a significant solar flare. "In our professional careers, we've never seen anything quite like it," Pesnell said. "Solar minimum has lasted far beyond the date we predicted in 2007."

When asked if such a low number foretold the beginnings of a Maunder Minimum, Pesnell said that a Maunder



This plot of sunspot numbers shows the measured peak of the last solar cycle in blue and the predicted peak of the next solar cycle in red. Chart courtesy of NOAA/Space Weather Prediction Center.

followed by either a strong solar maximum in 2011, or a weak solar maximum in 2012. "It turns out that none of our models were totally correct," said Dean Pesnell of the Goddard Space Flight Center (GSFC) and NASA's lead representative on the panel. "The Sun is behaving in an unexpected and very interesting way."

In 2007, experts varied in their predictions on when the solar cycle would peak and how strong it would be. In April of that year, NOAA, in coordination with an international panel of solar experts,

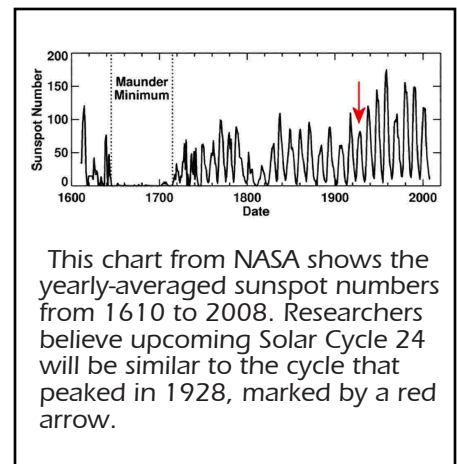
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In recent months, however, Pesnell said

Minimum takes several cycles to appear: "Sunspots [in solar cycles] leading up to the Maunder Minimum took several cycles to disappear. I really can't predict what will happen in Solar Cycle 25. What we're seeing now is something that look like a sunspot, but it looks as if someone has come along and 'stomped' on it, creating a multitude of little things. We don't have a name for this and we've never seen anything like it before."

There could be more surprises, panelists acknowledge -- and more revisions to the forecast. "Go ahead and mark your calendar for May 2013," Pesnell said. "But use a pencil." -- Some information from NASA



This chart from NASA shows the yearly-averaged sunspot numbers from 1610 to 2008. Researchers believe upcoming Solar Cycle 24 will be similar to the cycle that peaked in 1928, marked by a red arrow.

# Area Activities

**FOURTH MONDAY** – at 6:30 PM, the Greensboro Amateur Radio Association have their regular monthly meeting at the Golden Corral, 4404 Landview Dr, Greensboro, NC 27407, off Wendover Ave, near Sam's Club. Please plan to gather at 6:30 PM for dinner. The meeting is scheduled to start at 7:15 PM

## CLUB NETS:

**SUNDAYS** – weekly at 9 PM, the **GARA News and Information Net**. This net features NewsLine and is on the 145.150, W4GSO repeater. Roy Smith, N4BYU is always looking for net controls. Contact him if you would like to help.

**THURSDAYS** – The **Guilford County ARES Net** meets on the 145.150 repeater (100 Hz. tone) at 9 PM.

**TUESDAYS** – at 8 PM, the **2 Meter SSB Net** meets on 144.225 Mhz. USB. Chris Thompson, K4HC is the net control station. (Not operational present time)

**WEDNESDAYS** – The **Guilford Amateur Society** holds their weekly net on the 145.250, W4GG repeater with an 88.5 Hz. tone. Jim Hightower, W4JLH is the net control.

**TUESDAYS** – at 8:30 PM The **Triad SkyWarn Net** meets on the 147.225, K4ITL repeater, no tone required.

## OTHER ACTIVITIES :

**FIRST MONDAY** – The **Guilford County A.R.E.S.** monthly meeting is held at 1002 Meadowood St. off W. Wendover Ave, in the EMS building, beginning at 7 PM.

**THIRD MONDAY** – at 6:15 PM The **Guilford Amateur Society** holds their monthly meeting at Tex & Shirley's Restaurant in Fiendly Shopping Center. Eat at 6:15 PM and the business meeting begins at 7 PM.

**THURSDAY** – at 11:15 AM, Greensboro Hams get together for lunch. Thursday lunch group is meeting at the K&W Cafeteria, 300 Forum VI Mall at Friendly Shopping Center. Talk-in is on the 145.150, W4GSO repeater with a 100 Hz. tone.

**EVERY FRIDAY** – at 8 PM (approximately) Greensboro Hams get together for coffee.

**Technical Forum Sundays at 7:30  
145.15 repeater**

## GARA REPEATERS

145.150 Mhz - minus offset  
100 Hz. Tone

442.8625 Mhz. + offset  
Digital D-Star

## The W4VEC Testing Schedule May to Dec. 2009

July	11, 2009
August	8, 2009
September	12, 2009
October	10, 2009
November	14, 2009
December	12, 2009

**Location: #3 Centerview Dr, Hickory  
Building, Greensboro, NC 27407**

**Time: 9:00 A.M.**

**Contact: Glenda Nicholson**

**Phone: 336-674-3810**

**E-mail: ag4nc@bellsouth.net**

## Save The Date

The annual **Doggett cook-out**  
will be **Sept. 26, 2009.**

Save the date and plan to  
attend for some **yummy BBQ**  
More information to come.



June 27 - 28, 2009

Greensboro Amateur Radio Association

P.O. Box 7054

Greensboro, NC 27417



Web:  
[www.w4gso.org](http://www.w4gso.org)

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