



The Aero Aerial

The Newsletter of the Aero Amateur Radio Club
Middle River, MD
Volume 11, Issue 12
December 2014

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Editor Pro Tem Georgeann Vleck KB3PGN

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		Contests	Bob Venanzi ND3D	

Committees

Website: <http://home.comcast.net/~frank-stone/Aero%20ARC/aero.htm>
Facebook: <https://www.facebook.com/pages/Aero-Amateur-Radio-Club/719248141439348>

About the Aero Amateur Radio Club

Meetings

The Aero Amateur Radio Club meets on the first and third Wednesdays of the month. Meetings begin at 7:30 p.m. local time at the Essex Skypark, Diffendahl Road, Essex, MD.

Repeaters

W3PGA **2 M :** INPUT : 147.84 MHz, OUTPUT : 147.24 MHz
W3PGA **70 Cm:** INPUT : 444.575 MHz, OUTPUT : 449.575 MHz
W3JEH **1.25 M:** INPUT : 222.24 MHz, OUTPUT : 223.84 MHz

Club Nets

Second Wednesday Net - 10 Meters (28.445 MHz) @ 8 p.m. Local Time

Fourth Wednesday Net - 2 Meters (147.24 MHz Repeater) @ 8 p.m. Local Time

Fifth Wednesday Net - 70 Centimeters (449.575 MHz Repeater) @ 8 p.m. Local Time

Radio License Exams

The Aero Amateur Radio Club sponsors Amateur Radio License Exams with the ARRL VEC. Examination sessions are throughout the year. Walk-ins are welcome.

2015 Test Schedule

Where: White Marsh Library, 8133 Sandpiper Circle, White Marsh Md. 21236

Time: 1 P.M.

Dates: January 24, March 14, May 23, August 22, October 24

Contact: Patricia Stone, AC3F, phone: 410-687-7209, email: ac3f@juno.com

LOCAL AREA NETS

Day	Time	Freq. (MHz)	Net Name
Daily	9 - 10 am	145.330	Oriole Net
Daily	6 pm	3.820	Maryland Emergency Phone Net
Daily	6:30 - 7 pm	146.670	Baltimore Traffic Net
Daily	7 pm & 10 pm	3.643	MD/DC/DE Traffic Net
2 nd Tue	7:30 pm	146.670	Baltimore County RACES Net
2 nd Wed	8 pm	28.445	Aero ARC Net
4 th Wed	8 pm	147.240	Aero ARC Net
5 th Wed	8 pm	449.575	Aero ARC Net
When activated by NOAA		147.030	SkyWarn (primary)

New Club Activity Suggested – “Elmer Time”

At a recent meeting, Club member John Kircher W3JMI suggested that we introduce a new feature into our meetings. As a new (or newish) ham, he has questions – as do a good number of us with limited experience in amateur radio. He proposed that we have regular presentations by knowledgeable members on topics requested by the members.

Since we now have a suitable meeting space, with the freedom to “spread ourselves out” in a manner we could not at Coffman’s, we have begun this effort. Members have volunteered to bring such necessary equipment as a projector and screen, or computer with “projection” capability, in order to have visuals.

Georgeann KB3PGN was assigned the task of collecting topic suggestions and compiling the list. President Joe will be presenting it at meetings to discuss who would be the best willing Elmer for the job. It is envisioned that there would be no more than one presentation per month.

The current list of suggestions, which was introduced at the 11/19 meeting is:

TWO REQUESTS for digital modes
RTTY, PSK, etc. - Equipment, software, procedures

LOGGING SOFTWARE
Including a Logbook of the World (LOTW) demonstration

THE HAM SHACK
Basic HF antennas
Basic useful test equipment
Proper grounding

SATELLITE COMMUNICATIONS

WHAT IS A REPEATER?
What does it consist of? How is it all connected up?
How to set up a portable repeater

Anyone with a topic to suggest, please email Georgeann at kb3pgn@reagan.com or kb3pgn@arrl.net To volunteer to speak on a topic, contact Joe Miko.

*Editorial comment:
IMHO this excellent suggestion could not have been found workable if we were still meeting at Coffman's. The atmosphere was too restrictive.*

Corrections to the November 2014 Aerial:

WB3FMT was inadvertently off the list of VE's who helped at the September test session.
On the eviction net report, Mike's correct call is W3IRE.

NET REPORTS

10-29-14: 440 Net, 449.575 MHz, 20:00 to 20:15 local
W3PGA Dave (NCS) KA3SNY, Rich KB3VAE, Georgeann KB3PGN

Some discussion of rocket crash & burn at Wallops Island.

11-12-14: 28.445 MHz, 20:00 to 20:26 local

W3PGA (NCS) Joe Essex, W3JEH Ron Perry Hall, W3VRD Phil Essex, AC3P Frank Middle River, AC3F Pat Middle River, KB3VAE Rich Middle River

Notes: Joe had copying Rich so Frank and Phil did relays. Ron stated that he sent a couple of topic ideas to Georgeann, Warren has ordered the new controller card.

Next meeting on 11-19-14 to be held at the SkyPark.

11-26-14: 147.240 MHz, 20:00 to 20:35 local

W3PGA (NCS) Joe Essex, KB3PGN Georgeann Essex, KB3VAE Richard Middle River, KA3SNY Dave Essex, AC3P Frank Middle River, AC3F Pat Middle River, W3JEH Ron Perry Hall

Note: The repeater appears to be dropping power.

STATION ACTIVITIES

W3VRD is putting the fleet in drydock. **N3VBJ** has returned from the bunker in Virginia. **KA3SNY** is net-control extraordinaire. **KB3PGN** is the new entertainment coordinator. We didn't know that the train ran in the autumn months. **AC3F** and **AC3P** were /4 for a few days. **ND3D** is legging his way to next year's club contest.

Official 2014 Field Day Results

By Frank Stone, AC3P

The Aero ARC did well for Field Day 2014. The official results were posted on the ARRL Website and W3PGA did as follows.

For Section we placed 3rd out of six Class 4A entries. For Atlantic Division we were 8th out of 22 for our class. Overall we placed 58th out of 150 Class 4A participants..

Our total score (QSO Points plus Bonus) was 3,420, a good showing.

Congratulations to all who helped in our annual club effort.

Now to plan for Field Day 2015.



VE CORNER

by Pat Stone, AC3F

It was an unprecedeted test session. For the first time ever, no one appeared to take an exam. The VE team waited for almost an hour and there were no examinees to be found. The team discussed going out to the library and offering a prize if someone would come in and test, but since no prizes were available they decided to call it a day.

Thanks to WB3FMT, KB3KRV, KC3EK and AC3P for patiently waiting to see if someone wanted to take a test.

Aero ARC VE 2015 Test Schedule

Where: White Marsh Library, 8133 Sandpiper Circle, White Marsh Md. 21236

Time: 1 P.M.

Dates: January 24, March 14, May 23, August 22, October 24

Contact: Patricia Stone, AC3F, phone: 410-687-7209, email: ac3f@juno.com



AERO AMATEUR RADIO CLUB -- 25 DAYS AND 25 NIGHTS OF FUN

When: 0000 UTC Thursday 01 January 2015 (1900 EST Wednesday 12/31/15)
to 0359 UTC Monday, 26 January 2015 (2259 EST Sunday 01/25/15)

Eligibility: All current AERO members.

Station: You may operate from any amateur radio station...from your home, a guest's home, terrestrial mobile, maritime mobile, aeronautical mobile, here or abroad.
A station may even be operated remotely!

Bands & Modes: Work any legal mode and band allowed by your license class.
Echo Link and IRLP contacts are not permitted.
Repeater contacts are OK.

Scoring:

- One tenth (0.1) point per CW contact.
- Two (2) points per AM contact
- Three (3) points per SSB or FM contact
- Four (4) points per RTTY contact
- Five (5) points per DIGITAL contact
- Six (6) points per SSTV contact
- Ten (10) points per ATV contact

Bonus Points:

Any contact with another AERO Club Member	25 points per contact
Any straight key CW contact on January 1	50 points per contact
Any contact above the 10 meter band	100 points per contact
Any contact via remote operation	250 points per contact
Any satellite contact	500 points per contact
Any EME (earth-moon-earth) contact	1000 points per contact per team member
Any HAR (high altitude ballooning mission)	100K points per mission per team member

Other Info: The same station may be worked any number of times.
Winner(s) of this contest will run the contest next year.

Results: E-mail log sheets to nd3d@arrl.net by Sunday February 1, 2015
There are lots of opportunities to make contacts during the AERO Contest period...

- ARRL Straight Key Night January 1
- ARRL RTTY Roundup January 3 & 4
- NCJ NAQP CW January 10 & 11
- DARC 10M January 11
- NCJ NAQP SSB January 17 & 18
- CQ 160M CW January 24 & 25
- ARRL VHF January 24 to 26

HAVE FUN - - MAKE SOME Q's !

PUBLIC SERVICE OPPORTUNITIES

None known at this time.

UPCOMING 2015 HAMFESTS

Sunday, January 25, 2015: Post Holiday Hamfest

Maryland Mobileers Amateur Radio Club

Odenton Volunteer Fire Department, 1425 Annapolis Rd., Odenton, MD 21113

<https://sites.google.com/site/marylandmobileers/hamfests-1/hamfest-2>

Talk-In: 146.805/146.205 (PL 107.2)

Contact: Bruce McPherson, AB3AC, 484 Peach Leaf Court Odenton, MD 21113, Phone: 410-456-2500, Email: bmcpherson73@verizon.net

Saturday, February 7, 2015: Virginia State Convention (Richmond Frostfest)

Richmond Amateur Telecommunications Society

Richmond Raceway Complex, 600 East Laburnum Ave., Richmond, VA 23218

www.frostfest.com

Talk-In: 146.88 -600 (PL 74.4)

Contact: DeeDee Farrell, KK4AVC, PO Box 14828, Richmond, VA 23221, Phone: 804-657-7038, Email: info@frostfest.com

Sunday, June 21, 2015: BARC Father's Day Hamfest

Baltimore Amateur Radio Club

Arcadia Volunteer Fire Company Grounds, 16020 Carnival Ave., Upperco, MD 21155

www.gbhc.org

Talk-In: 146.67 (PL 107.2)

Contact: Bill Dobson, N3WD, PO Box 120, Reisterstown, MD 21136, Phone: 410-842-5019

Email: w3ft67@yahoo.com

It is just a few miles north on Route 30 from the top of I-795. The show will be from 8 am until 12 noon and it will be a TAILGATE hamfest. The prices will be \$5 admission and \$10 per tailgate spot. More information will follow soon. Bill Dobson, N3WD

Hamfest listing may be viewed at www.arrl-mdc.net/hamfest.htm

Finding North

by Frank Stone AC3P

Many amateur radio operators are either amateur astronomers or have an interest in astronomy. Both ham operators and star-gazers use the same electromagnetic spectrum in pursuit of their interests. Hams use antennas pick up radio waves to send to their receivers while the space aficionados will use a piece of curved glass to direct light waves to their eyes or some sort of camera or sensor.

In both cases it is important to point the antenna or telescope in the correct direction for maximum signal, whether measured in meters or nanometers. In order to accomplish this task it is necessary to know where North is. Finding North is important in orienting a yagi's rotator or an telescope's clock drive. (*Orienting seems like a misnomer since that literally means aligning to East. In this case Polarizing would seem to be more accurate.*).

There are several ways to find North. The "Boy Scout Handbook" says that you can find North using moss growth on the north side of a tree. Many publications show using a magnetic compass to determine direction. Astronomy books show the reader how to use the Pointer Stars of The Big Dipper to find the North Star. But what to do if you are aligning an antenna or setting up a telescope during the day without a tree or compass or the North Star is blocked from view?



Tree Moss



Big Dipper/North Star



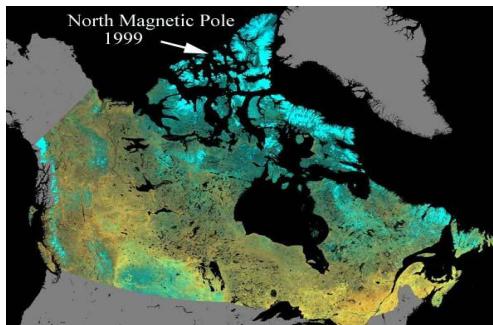
Magnetic Compass

One can find North by finding South.

Every day at local noon, the Sun crosses a point in the sky called the meridian. At this time objects casting shadows are showing where North is. By tracing a line in the shadow on a surface one can determine True North and align the equipment whether antenna or telescope accordingly.

Why not just use a compass?

A compass points to Magnetic North which is not the same as True North. The Earth's magnetic pole can vary from year to year. Most recently there have been reports of the Earth's magnetic field weakening and a possible reversal of the poles themselves.



Magnetic North Pole

To overcome this problem the sun compass was invented in 1838 and was used by surveyors well into the 20th Century.



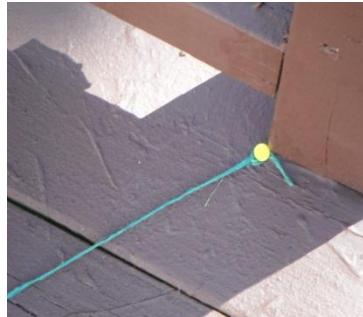
Solar Compass

Over the years at Mt. Essex Observatory there have been issues with finding North from the observation deck. Since the equipment is not permanently mounted, the staff must set the telescopes before each night's use. The North Star, essential to correct positioning, is blocked from view. With no solar compass or surveying equipment available, the Mt. Essex staff employed the following method to find North.

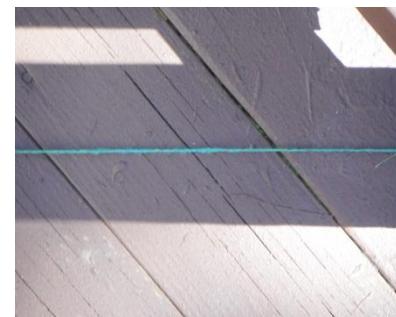
At solar noon, the deck railing was used as a reference point. Using the shadow of one of the posts, a string was laid down in the center of the shadow from the post to the building wall. A line was marked to indicate North.



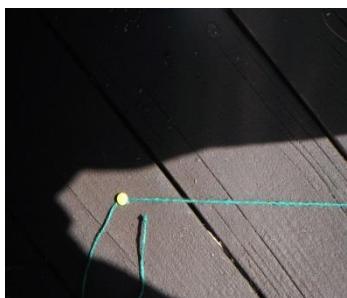
Materials: String and tacks



Marking first point at local noon



Extending line within shadow



Terminating string at far end



Compass indicating difference between magnetic and true North



Telescope aligned to North



Antenna array aligned to North

From the Skies over Mt. Essex

SKY Events for December 2014

Dec 2nd - Uranus is 1.2° south of the Moon.

Dec 6th - *Full Moon* . “Cold Moon” for the Celtic and the “Cold Moon” Traditional Full Moon.

Dec 7th – Pearl Harbor Remembrance Day, Earliest sunset

Dec 9th – Jupiter Double Transit 23:20 EST (04:20 UT)

Dec 14th - Last Quarter Moon

Dec 14th Geminid meteor shower, the Moon is LQ, expect about 100 meteors per hour associated with minor planet 3200 Phaethon. High in the East at midnight.

Dec 16th – Jupiter Double Transit 01:12 EST (06:12 UT)

Dec 21st – Shortest day of the year 9hrs 20 min at 40° N Lat., Winter Solstice at 18:03 EST.

Dec 21st - New Moon.

Dec 22nd - Ursid meteor shower in the Little Dipper, the Moon is New, expect about 10 meteors per hour. Look above the pointer stars in the bowl of the Little Dipper.

Dec 25th – Christmas Day

Dec 28th-- First Quarter Moon.

Planet Lookout at mid-Month

Sunrise 07:19 EST and Sunset 16:41 EST

Mercury in the Morning Sky- Most favorable morning apparition for 2014. Magnitude -0.8; 5.6 arc seconds.

Venus – Low in the West at dusk. Magnitude -3.9 and 9.8 arc seconds.

Mars- Western sky at dusk, sets about 20:11 EST, magnitude +0.9 and 5.4 arc seconds wide.

Jupiter- In the East at Dawn in Leo, magnitude -2.1 size 37.5 arc seconds, rises 23:09 EST.

Saturn- Not visible behind the Sun.

Uranus- In the South at Sunset. Sets about 03:30 EST., magnitude +5.7, size 3.6 arc seconds.

Neptune - In the South at Sunset. Sets about 01:30 EST, magnitude +7.9, size 2.3 arc seconds.

In the Light of Day – the long and short of it!

We all know that in the winter we have the shortest day of the year at 40° N latitude it is 9hr 20 min of light, this occurs on December 21st. The longest day of the year occurs in the summer with 15 hrs 1 min this is on June 21st. Leading to the longest or shortest days we pass periods in which daylight hours are the same. Spring and fall have the same hours. So when you are in March coming out of winter’s snows and it seems dark, remember it’s the same amount of daylight as in October.

Mid-Month	Rise	Set	Rise	Set
January & December	07:24	17:08	07:19	16:44
February & November	06:58	17:44	06:51	16:50
March and October	07:16	19:14	07:17	18:25
April and September	06:29	19:45	06:48	19:13
May and August	05:52	20:13	06:19	19:59
June and July	05:39	20:34	05:52	20:30

The 15th of each month was selected for rising, culmination and setting times. Culmination is when the Sun is due South at mid-day. For the months of January, February, November and December times are in EST, all the other months are using EDT. The amount of daylight is a result of the Earth’s 23.5° tilt on its axis. And remember when we have summer the folks in Australia are having winter. Their Santa comes on water skis in ours comes using a sled.

21:30 EDT 16:30 EST	(Large oval)	J F M A M J J A S O N D
07:30 EST 04:40 EDT		



December 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3 7:30 pm Meeting Essex Skypark	4	5	6
7	8	9	10 8 pm 10 Meter Net	11	12	13
14	15	16	17 7:30 Meeting Essex Skypark	18	19	20
21	22	23	24 8 pm 2 Meter Net	25  Merry Christmas	26	27
28 	29	30	31 8 pm 70 cm Net			