



*Field Day 2015*

## ***The Aero Aerial***

The Newsletter of the Aero Amateur Radio Club  
Middle River, MD  
Volume 12, Issue 8  
August 2015

Editor Georgeann Vleck KB3PGN

### ***Officers***

President	Joe Miko WB3FMT	Repeater	Phil Hock W3VRD Jerry Cimildora N3VBJ
Vice-President	Bob Venanzi ND3D	VE Testing	Pat Stone AC3F
Recording Secretary	Lou Kordek AB3QK	Public Service	Bob Landis WA3SWA
Corresponding Secretary	Chuck Whittaker KB3EK	Webmaster	Al Alexander K3ROJ
Treasurer	Warren Hartman W3JDF	Trustee	Dave Fredrick KB3KRV
Resource Coordinator	Ron Distler W3JEH	Club Nets	Joe Miko WB3FMT
		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 at Essex SkyPark, 1401 Diffendall Road, Essex. Meetings begin at 7:30 p.m. local time. Meetings are canceled if Baltimore County Public Schools are closed or dismiss early.

## 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 Examination Schedule

Where:      White Marsh Branch  
                  Baltimore County Public Library  
                  8133 Sandpiper Circle, White Marsh, Md. 21236  
Time:        1 p.m.  
Dates:       September 26, November 14  
Contact:     Patricia Stone AC3F, email: [ac3f@juno.com](mailto:ac3f@juno.com), landline: 410-687-7209

## 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	145.330 no PL	Baltimore Traffic Net (b/u 146.670 PL 107.2)
Daily	7 pm & 10 pm	3.643	MD/DC/DE Traffic Net
2 <sup>nd</sup> Tue	7:30 pm	146.670	Baltimore County RACES Net
2 <sup>nd</sup> Wed	8 pm	28.445	Aero ARC Net
4 <sup>th</sup> Wed	8 pm	147.240	Aero ARC Net
5 <sup>th</sup> Wed	8 pm	449.575	Aero ARC Net
When activated by NOAA		147.030	SkyWarn (primary)

## ***From the President's Cave: Field Day 2015***

*July 9, 2015*

I wish to thank all of the Aero Amateur Radio Club members for supporting and participating in Field Day 2015. The event was, as always, a success. Major factors for the Club's success were its operating location and the high participation rate of Aero members. This is the 4<sup>th</sup> year at the Essex Skypark (3<sup>rd</sup> inside a hangar), located off of Back River Neck Road in Essex, Maryland. At set-up on Friday, we had **12** members and **1** guest show up to help. With a roster of 28 Aero members, **23** were able to participate either operating or in some other support activities. Not bad, not bad at all! **82.14%** of the members participated, that's a fine turnout.

During the 24 hours we had **12** operators from Aero (**42.85%** of membership) and **1** guest operator. Set-up went smoothly because members arrived early Friday afternoon. Charles and Kelly KC3ANJ and KC3APF provided Chuck Wagon support from Friday's set-up thru Sunday. By 18:00 Friday all 5 HF radios and associated laptops were set up and ready, as well as the 20 m beam, 2 G5RVs, the 10-40 m vertical, the GP15, and a Windom. With all the teamwork and hard effort, everything was operational by 11:00 Saturday.

The weather on Field Day started pleasant with temperatures in the mid-70's, but by mid-afternoon the monsoons started. The Essex area received 3 ½ to 4+ inches of rain between 15:00 to 18:00. The hangar and runway were flooded. Operations were halted at 17:20 due to high water (4 ½ inches at the rear wall of the hanger), and members present took shelter in the FBO building to wait out the storm. By 18:30 the rains had stopped and bailing out began. Dave KB3KRV and Bob WA3SWA used push brooms to move water out of the hangar, and Charles KC3ANJ opened a clogged drain. The hanger became radio-active again at 20:10.

The only casualties were a 20 m filter and the 20 m beam. The filter had a high SWR, bad capacitor; the 20 m beam could hear but not talk. Phil W3VRD repaired the 20 m filter and by 11:00 Sunday had fixed the Gamma match on the beam. He replaced the variable capacitor with a fixed 63pf capacitor, and the beam came to life.

We had visits from Delegate Robin Grammer, Jr., of the Maryland General Assembly, Legislative District 6, and Marty Pittinger KB3MXM, the new MDC Section Manager.

### **Some Firsts:**

- ❖ Ran as 5A instead of 4A
- ❖ Super set-up time on Friday, done by 18:00
- ❖ Operational as of 11:00 on Saturday
- ❖ Safety briefing at 13:00 on Saturday
- ❖ Club member Margaret Holy made her first 2 HF contacts assisted by Joe WB3FMT
- ❖ Breakdown by 15:00 on Sunday
- ❖ VE testing. Three successful candidates

Special thanks to the 12 members and 1 guest that assisted on setup on Friday:

Jerry Cimildora N3VBJ  
Joe Miko WB3FMT  
Lisa Edwards KC3AIJ  
Bob Landis WA3SWA  
Lou Kordek AB3QK

Dave Vleck KA3SNY  
Dave Fredrick KB3KRV  
Marty Braun KC3AID  
Bob Venanzi ND3D  
James Dilley (No Call)

Larry Hill KB3QWC  
Kelly Ester KC3APF  
Charles Ester III KC3ANJ

Jerry Cimildora – Friday setup and Skywarn display  
Warren Hartman – Towers, Lights, cables, etc.  
Susan Landis – Cookies  
Bob Landis – Setup, Coffee

Dave Fredrick – Helping with setup, Solar Panels, Electrical tie in, mopping  
Phil Hock – Repairs to the Gamma match for the 20 m beam and 20 m filter  
Charles & Kelly – Chuck Wagon and food

**We made 1,586 QSO points and 1,550 Bonus points, for a Total of 3,136. We made QSO's with 45 States (including Delaware) and 7 DX.**

All in all it was a great weekend and operating fun was had by all.  
Thanks to all who helped make this a safe and successful Field Day event.

*Joe Miko, WB3FMT*

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## **NET REPORTS**

### **7-8-15: 28.445 MHz, 20:00 to 20:53.**

W3PGA Joe (NCS) Essex, W3JEH Ron Perry Hall, KB3VAE Richard Middle River, KA3SNY Dave Essex, KB3PGN Georgeann Essex, KC3FBL Jim Parkville, W3VRD Phil Essex, KB3JVP Ken Middle River, NE3A Ken Middle River, N3VBJ/4 Jerry Sparta, KY

### **7-22-15: 449.575 MHz, 20:00 to 20:55.**

*The usual 2m net was moved to the 440r because of the adverse effect on 90° + temps on the 2m machine.*

W3PGA Joe (NCS) Essex, KC3ANJ Charles Dundalk, W3JEH Ron Perry Hall, AC3F Pat Middle River, KB3JVP Ken Middle River, KC3APF Kelly Dundalk, KA3SNY Dave Essex, W3VRD Phil Essex, KB3BVB Michael Middle River (Pat's and Frank's son)

Charles is working on utilizing power supplies from network servers; Kelly is becoming proficient in soldering, and the club still can't find field day tower number 4. Saw Warren at Lowe's today he does not have the missing tower.

### **7-29-15: 147.240 MHz, 20:00 to 20:53 local.**

W3PGA Joe (NCS) Essex, KB3JVP Ken Middle River, N3VBJ Jerry Dundalk, KB3VAE Richard Middle River, AC3F Pat Middle River, KC3APF Kelly Dundalk, KC3QWC Larry Perry Hall, KC3ANJ Charles Dundalk, KA3SNY Dave Essex, KB3PGN Georgeann Essex, KB3QK Lou Bel Air (Rt 43), W3JEH Ron Perry Hall, N3EKO Ron Baynesville, NE3A Ken Middle River

There were 14 check-ins, including Net Control. (Is this a record?)

To compensate for having the 2m net on the 440 machine, tonight's 440 net was held on the 2m machine. No, really, Jerry and Phil had installed new/repaired equipment that afternoon and wanted to test the repeater. A few items need to be addressed, The next service activity is tentatively scheduled for Monday August the 3<sup>rd</sup>.

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# REPEATER NEWS

## 2m Machine Back on the Air

Our 147.240 repeater has been repaired. Thanks and good job to Phil, Ken, and Jerry. The new machine was installed on Wednesday, July 29, and was used for that evening's net as a stress test run. (See Net Reports section.)

Some changes to the repeater are: a new ID "W3PGA Aero ARC", a new courtesy beep and a 3 minute timer. Just remember to follow the 2 second rule – wait after you hear the beep. The repeater is running about 50 W.

A few items need to be addressed. The IDer volume needs to be lowered, the time out appears to be less than 3 minutes, the frequency of the IDer, number of ID per number of minutes and a drop in output power was noticed by distance stations. These are just minor bugs that will be corrected in the next service event. The next service activity is tentatively scheduled for Monday August the 3<sup>rd</sup>.

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## Sherlock Holmes Investigates: The Case of the Missing Tower

Mr. Holmes has activated the Baker Street Irregulars to scour London – oops, I mean Baltimore – searching for The Aero Club's missing antenna tower.

Based on photographic evidence of June 2014, the Club owns four – 3 olive drab and one sand colored. Two were loaned out to Bob WA3SWA and Al K3ROJ, one each. A third is accounted for.

Club members are requested to be on the lookout for the errant equipment. If found, please contact Warren.

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## Upcoming Second Wednesday Presentations

These presentations will be given at the Essex SkyPark FBO building after the business meeting.

<i>Date</i>	<i>Topic</i>	<i>Presenter</i>
7/15	Other Things the MFJ SWR Analyzer Can Do!	Dave F
8/19	FM Digital Part 2: D Star	Jerry
TBD	Contest Logging with N1MM	Bob V
TBD	ISS Sighting and Contacting	

*Any questions call Joe Miko at 443-956-0197.*

Presenters who wish to submit a description of their talk may email it to Georgeann at  
[KB3PGN@reagan.com](mailto:KB3PGN@reagan.com) for inclusion in the Aerial.

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## VE CORNER

by *Pat Stone, AC3F*

The AERO VE Team held its first ever FD test session at the Essex Sky Park. Congratulations to our new Techs – Chris KC3FFL, Bill KC3FFN, and Liz KC3FFM.

Also, a very special thanks to WB3FMT, KB3KRV, & AB3QK for assisting me with this session.

Thanks to all who have volunteered to join our VE Team. Email me at [ac3fac3p@yahoo.com](mailto:ac3fac3p@yahoo.com) to be added to our VE list.

As of July 1<sup>st</sup>, 2015 the question pool for the General class exam will be updated. New test materials will reflect these changes.

Our next test session is scheduled for September 26, 2015 at White Marsh.

### **Aero ARC VE 2015 Test Schedule**

Where: White Marsh Library, 8133 Sandpiper Circle, White Marsh Md. 21236  
Time: 1 P.M.  
Dates: September 26, November 14

Contact: Patricia Stone, AC3F, phone: 410-687-7209, email: [ac3f@juno.com](mailto:ac3f@juno.com)

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## **UPCOMING HAMFESTS and EVENTS**

### **Sunday, August 2, 2015: 65th Annual Berryville Hamfest**

Clarke County Ruritan Fairgrounds, 890 West Main St., Berryville, VA 22611  
Website: <[www.shenvalarc.org/hamfest](http://www.shenvalarc.org/hamfest)> Sponsor: Shenandoah Valley Amateur Radio Club. Talk-In: 146.820 -  
Contact: Thomas Brownlee, AF2D, 744 Gafia Lodge Rd., Middletown, VA 22645  
Phone: 540-869-7065, E-mail: <[af2d@arrl.net](mailto:af2d@arrl.net)>

### **Sunday, August 16, 2015: Carroll County Tailgate Fest**

Sportsman's Hall Skating Rink, 15500 Hanover Pike, Upperco, MD 21155  
Website: <http://www.qis.net/~k3pzn>  
Sponsor: Carroll County Amateur Radio Club  
Talk-In: 145.410 (PL 114.8)  
Contact: Steve Beckman, N3SB, 2145 Bethel Road Finksburg, MD 21048  
Phone: 443-435-1089, Email: [n3sb@qis.net](mailto:n3sb@qis.net)

## **Saturday, October 3, 2015: Delaware State Convention (Delmarva AR & Electronics EXPO)**

Sussex Technical High School, 17099 County Seat Hwy., Georgetown, DE 19947. Website: [www.radioelectronicsexpo.com](http://www.radioelectronicsexpo.com)

Sponsor: Sussex Amateur Radio Association. Talk-In: 147.090 (PL 156.7)

Contact: Herb Quick, KF3BT, PO Box 1431, Seaford, DE 19973

Phone: 302-629-4949, E-mail: [herb@hamltongraphics.com](mailto:herb@hamltongraphics.com)

## **Sunday, October 4, 2015: CARAFest 2015**

Howard County Fairgrounds, 2210 Fairgrounds Rd, West Friendship, MD 21794

Website: <http://www.carafest.org>

Sponsor: Columbia Amateur Radio Association

Talk-In: 147.390 (PL 156.7)

Admission: \$6, Hours: 8 am - ?

Tailgating and vendors. Free VE exams. DX card checking.

Contact: David Parkison, KB3VDY, 1257 Stevens Avenue Arbutus, MD 21227

Phone: 410-977-1249, Email: [vendorsales@carafest.org](mailto:vendorsales@carafest.org)

## **Saturday, September 19, 2015, 9:00 am – 4:00 pm, Essex SkyPark, Annual Wings & Wheels Fly-in**

You may view upcoming hamfests which are nearby in Pennsylvania, Delaware, Maryland-DC, West Virginia and the Virginia area by clicking on the ARRL MDC Section web page at: [www.arrl-mdc.net/hamfest.htm](http://www.arrl-mdc.net/hamfest.htm)

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## **PUBLIC SERVICE OPPORTUNITIES**

CARA club is looking for additional help for 2 upcoming events

### **Saturday, August 8, Maryland High Endurance Adventure Test (MD HEAT)**

MD HEAT is an all-trail running and hiking challenge over 25K (16 mile) and 50k (32 miles) courses. It takes place in the Patapsco Park (Avalon, Glen Artney, Hilton and Orange Grove areas). The event typically attracts a several hundred participants, including advanced runners and those who are out simply for challenge. Proceeds support SENS (aging research) and Maryland Parks trail maintenance teams.

The event runs from 0700-1900. CARA operations are anticipated to begin around 0630 and will wrap up when the last participant crosses the finish line. We anticipate the end time will be 1600, based upon the 2014 event.

In addition to Net Control at the Start/Finish in the Avalon Area, CARA will support two trail locations that require some hiking and Aid Stations at the Hilton, the Swinging Bridge and near Landing Road (some walking/hiking necessary).

To volunteer, please go to: Maryland HEAT Race Volunteer Form - <http://columbiaara.us3.list-manage1.com/track/click?u=d807b99cf84fb4c7cd7f5def6&id=fc3629d01a&e=6c47f00dc6>

If you have questions about CARA's participation in the event, please contact Andy Protigal, N3AWP, at [awprotigal@gmail.com](mailto:awprotigal@gmail.com).

For more information on the event, go to: <http://mdheatrace.com/>

## **Sunday, August 9, Patapsco Epic Bicycle Ride**

CARA has been requested to provide 24 hams, and is very much short of that number!

The Mid-Atlantic Off Road Enthusiasts (MORE) maintains more than 400 miles of natural surface trails in public parks in our region. Members of MORE contribute over 7,000 hours annually toward this trail maintenance. The Patapsco Epic is a fundraiser mountain bike ride that benefits MORE's trail maintenance activities.

This is a brand new course this year and will have 15, 25, 35, and 50 mile courses. The expected duration is about ten hours.

Our crew will provide communications for the volunteer stations, SAG wagon, and rest areas. Many of the stations can be operated from a vehicle or a very short walk from a vehicle. Those of you who enjoy hiking may be afforded the opportunity to enjoy a short hike to your location.

Most stations can be worked with a handheld. A mast and external antenna is a huge benefit in some of this terrain. All are encouraged to come out as this is a very fun event. There is usually quite the party afterward with New Belgium Brewery in attendance as well as a variety of food trucks.

To volunteer, go to: Patapsco Epic Volunteer Form <http://columbiaara.us3.list-manage.com/track/click?u=d807b99cf84fb4c7cd7f5def6&id=6dba61494c&e=6c47f00dc6>

If you have questions about CARA's participation in the event, please contact Adam Walworth, W3ACW, at [adamwalworth@gmail.com](mailto:adamwalworth@gmail.com)

Further information about the event may be found at <https://www.bikereg.com/27013>. NOTE: this is the entrant's application site, but it does contain a great deal of information about the event.

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## **Remembering a Lifelong Friend, Frank... AC3P / SK**

*By Joe Miko WB3FMT*

Frank and I were brought together in 1958 because of an astronomy book called Stars by Herbert Zim. It was the beginning of a lifelong friendship. I was 11 and Frank was 12, we were about 9 months apart.

In our early childhood, bikes were the mode of transportation in and around Hawthorne. I lived on Hawthorne Rd, he lived on Southorn Rd. When we met Southorn was the last street before the woods. At the end of Hawthorne there was a small old-time general store, where Frank could get cigarettes and a Pepsi for his mom, no notes or age restriction required. As a pre- and teenager I would get into whatever, and while being read the riot act by my Mom, if Frank came to the house, Mom without a break would say "AND YOU TOO". Most of the time, Frank got caught in the cross-fire and wondered why?

Frank was a self-taught musician. He could play, read, and write music. He played the piano, organ, and keyboard, and played with several bands over the years. His band played a number of local clubs in Baltimore City, County and in Anne Arundel County. As with all

beginning bands, some of the venues were school dances, bars, weddings, and some were dives. The most memorable musical event for Frank was playing in a “Battle of the Bands” at the old Baltimore Civic Center in 1968, where he met and actually performed a music set with the late great B.B. King – a night to remember.

Our adventure in astronomy started as a hobby, and in later years, 2004 for me and 2008 for Frank, became a job at the Maryland Science Center, Crosby Ramsey Memorial Observatory, in Baltimore. Not many people can say they get paid for doing their hobby. In addition to showing people stuff in space, we answered questions, dispelled myths, and help kids and college students with astronomy homework assignments.

We started by observing lunar eclipses; of the 44 total eclipses visible locally, we properly saw 20 of them. The others were weathered out!

In March 1970, Frank, Pat, Mary, and I went to my Uncle CW’s farm in Aulander, N.C. It was our first total solar eclipse, the next one close to our location is on 8/21/2017, and, Frank, I know you will have the best seat in the house....

In all, we managed to see and photograph 8 of the 9 planets, (Pluto got demoted in 2006), Halley’s and other comets, transits of Venus and Mercury, conjunctions, and more. Rain or shine, as the case in the summer of ‘69, during the lunar EVA of Apollo 11, during the telecast, we had a thunder storm and lost power in my part of Hawthorne .... Phone call to Frank... He had power... so my family, Mom, Dad, and Mary, all went to Frank’s parents’ house to sit in his living room for the “One Step for a Man, .....

Frank and I were the guys that were up at night....most astronomy stuff doesn’t happen 9 - 5.

Frank got his Novice license in 1963 while attending St. Charles College, under the call KN3VZG. From that date forward he was a learner and an “Elmer” or teacher, always willing to help and provide a public service. I remember listening to Frank talk to other Hams using a Heathkit Lunch Box. It really was about the size of the old school metal lunchboxes. This was in the basement of his sister Shirley’s house, his mom and dad’s house right across the street from where he lived. In 1978 Frank and Pat upgraded to Extra Class (in 1978 the extra class ham licenses were equivalent to a 2<sup>nd</sup> class telegrapher). Upgrading at the same time, somehow someone kinda flipped the new call signs, Pat getting AC3F and Frank AC3P.

What does a ham do? They advance the service and science of amateur radio. Early hams were the first people to send signals across the Atlantic Ocean in early 1900’s. Hams use a variety of means to get the message across: Morse Code, called CW, Side Band, AM, FM, and digital modes. Hams were the first to bounce signals off the Moon in 1953. Many hams design and build their own equipment, sometimes to meet a specific event or activity.

In Frank’s 52 years in Amateur Radio he worked with RACES, ARES, SKYWARN, the Baltimore Traffic Net, and the Aero ARC nets. He was a past member of BRATS, and 20-year member of the Aero club. From the Chase train wreck in 1987, the Johnstown Flood in 1977, through 2015 he worked at least 50 public service events, ranging from Bikeathons, Walkathons, Marathons, to supporting emergency evac shelters in Baltimore County. He also worked on public events with the Martin State Airport and Social Security special event stations. He also participated in Field Day events for over 20 years.

For almost 20 years he was a member of the Aero Amateur Radio Club in Essex. At various times Frank served the Aero club as president, vice president, recording secretary, and corresponding secretary. He was also the editor-in-chief of the newsletter for the Club, having started the newsletter in 2004. In addition to his other activities, he was also a Volunteer Examiner, giving tests to people who want to become hams. His wife Pat AC3F is also a VE. Frank was a true Elmer willing to help anyone with the radio hobby.

*To Frank's family, Pat, Amy, Tim, Kevin and Mike, his granddaughter and three grandsons, and his sister Sheryl –*

*Frank was a loving son, brother, and husband of 45 years. He loved each of you without reservation. With all his hobbies and jobs, Family was always number one, always!*

**Good-by, my Friend, God Speed, 73's and 88's**

**Joe**

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## REWARD OFFERED



A reward of 500 micro farads is offered for information leading to the arrest of this desperate criminal - Hop-A-Long Capacity. This unrectified criminal escaped from a western primary cell where he had been clamped in ions awaiting the gauss chamber. He was charged with the induction of an 18 turn coil named Millihenry who was found choked and robbed of valuable joules.

He is armed with a carbon rod and is a potential killer. If encountered, he may offer series of resistance. Capacity is also charged with driving dc motor over a Wheatstone bridge and refusing to let the band-pass. The electromotive force spent the night searching for him in a magnetic field, where he had gone to earth. They had no success and believed he had returned ohm via a short circuit. He was last seen riding a kilocycle with his friend eddy current who was playing a harmonic.

*Submitted by Jerry N3VBJ*

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# From the Skies over Mt. Essex

## SKY Events for August 2015

Aug 5<sup>th</sup> – Uranus is 1° N of the Moon 05:00 EDT

Aug 6<sup>th</sup> – In 2012 USA's Curiosity Rover landed on Mars

Aug 6<sup>th</sup> - Last Quarter Moon

Aug 7<sup>th</sup> – Mercury is 0.6° N of Jupiter 00:00 EDT

Aug 8<sup>th</sup> – Aldebaran is 0.7° S of Moon 20:00 EDT

Aug 10<sup>th</sup> – Jupiter is 0.4° N of Regulus 19:00 EDT

Aug 11<sup>th</sup> – Asaph Hall discovers Deimos (dread), moon of Mars in 1877.

Aug 13<sup>th</sup> – Perseids Meteor Shower Peaks after midnight Best of the year, no Moon light. .

Aug 14<sup>th</sup> - New Moon

Aug 17<sup>th</sup> – Asaph Hall discovers Phobos (fear), the 2<sup>nd</sup> moon of Mars in 1877.

Aug 20<sup>th</sup> – Mars is inside the Beehive Cluster (M44).

Aug 22<sup>nd</sup> - First Quarter Moon .

Aug 29<sup>th</sup> - Full Moon “**Corn Moon**” for the English Medieval and the “**Dog Day's Moon**” for the Colonial American

Aug 31<sup>st</sup> - Neptune is at opposition.

### Planet Lookout at mid-Month

**Sunrise 06:18 EDT and Sunset 20:02 EDT**

**Mercury** Dusk low in sky sets 20:55EDT , magnitude -0.3; 5.6 arc seconds

**Venus** Dawn after 8/22, magnitude -4.1 and 57.1arc seconds.

**Mars** Dawn rises 04:44 EDT, magnitude 1.7, size 3.7 arc seconds.

**Jupiter** Dusk, sets around 20:26 EDT, Magnitude -1.7 size 30.8 arc seconds.

**Saturn** Evening sets at 00:21EDT, Magnitude +0.5 size 16.9 arc seconds.

**Uranus** – Rises about 22:18 EDT, Magnitude 5.8, Size 3.5 arc seconds.

**Neptune** East at Dawn rises at 20:39 EDT. Magnitude +7.9 size 2.4 arc seconds.

### Chance of Showers for Mid-August!

A Perseids Meteor Shower, that is! The circumstances are ideal this month, weather permitting, to witness one of the best sky showers of the entire year. Two of the most favorable conditions will be present - 1<sup>st</sup> No Moon, the Moon is almost a New Moon (8/14) and 2<sup>nd</sup> A warm August night.

Equipment Required - None, the best equipment needed is a dark night, with little or no moon light and sans lights in the Northeast. All you really need is a comfortable chair, beverage and maybe a light jacket. Telescopes or binoculars are not needed.

The radiant point is RA 03h 08m, Dec +58, in the northern part of the constellation *Perseus* (Greek hero) from the Baltimore area look at compass bearing 40° NE at 42° Elevation after midnight. The estimated number of meteors per hour is 90, typically it reaches 60 to 100 per hour under dark skies.

When and where to look - Normally, the best time to see meteor shower is after midnight local time. The radiant point is the apparent spot in the sky where the meteors appear to come from.

The speed of the meteors is 134 miles/s (60 km/s)

The duration of the shower is 2 days with the peak expected on 8/13/15 at 02:00 EDT.

Cometary associations the Perseids are from 109P/Swift-Tuttle a comet with a 133 orbital period around the Sun.