



Happy Thanksgiving!

The Aero Aerial

The Newsletter of the Aero Amateur Radio Club
Middle River, MD
Volume 16, Issue 11
November 2020

Editor Georgeann Vleck KB3PGN

Officers

President	Joe Miko WB3FMT	Repeater	Phil Hock W3VRD Jerry Cimildora N3VBJ Ken Erisman NE3A Dave Brunner AC3EO
Vice-President	Rob Ballou KC3ROB	VE Testing	Pat Stone AC3F
Recording Secretary	Larry Hill KB3QWC	Public Service	Bob Landis WA3SWA
Corresponding Secretary	Pat Stone AC3F	Webmaster, Facebook	Jerry Cimildora N3VBJ
Treasurer	Warren Hartman W3JDF	Trustee:	Dave Fredrick KB3KRV (W3PGA) Jim Marshalek KC3FBL (AE3RO)
Resource Coordinator	Ron Distler W3JEH	Club Nets	Joe Miko WB3FMT
		Contests	Bob Venanzi ND3D

Website: <http://w3pga.org>

Facebook: <https://www.facebook.com/pages/Aero-Amateur-Radio-Club/719248141439348>

About the Aero Amateur Radio Club

Meetings

The Aero Amateur Radio Club meets at 7:30 pm 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, PL 123.0
W3PGA **70 Cm:** INPUT : 444.575 MHz, OUTPUT : 449.575 MHz, PL123.0
W3JEH **1.25 M:** INPUT : 222.24 MHz, OUTPUT : 223.84 MHz

Club Nets

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

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

Fifth Wednesday Net – 10 Meters (28.445 MHz) @ 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; arrive no later than 30 minutes after start time. \$15 charge.

2020 Examination Schedule DUE TO COVID19 May and June DATES May be **Canceled!**

Time:	1:00 pm		
Dates:	Sat., Nov. 14		
Where:	American Legion Post 180, Rosedale		

White Marsh Library, 8133 Sandpiper Circle, White Marsh, MD

Contact: Patricia Stone AC3F, email: 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	Balto. Traffic Net (b/u 146.670 PL 107.2)
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	449.575	Aero ARC Net
4 th Wed	8 pm	147.240	Aero ARC Net
5 th Wed	8 pm	28.445	Aero ARC Net
Fridays	7:30 pm	145.330	Back in the Day Net
When activated by NOAA		147.030	SkyWarn (primary)

CALL TO ACTION: **ARRL Urges Members to Join in Strongly Opposing FCC's Application Fees Proposal**

ARRL will file comments in firm opposition to an FCC proposal to impose a \$50 fee on amateur radio license and application fees. With the November 16 comment deadline fast approaching, ARRL urges members to add their voices to ARRL's by filing opposition comments of their own. The *FCC Notice of Proposed Rulemaking (NPRM)* MD Docket 20-270 appeared in the October 15 edition of *The Federal Register* and sets deadlines of November 16 to comment and November 30 to post reply comments, which are comments on comments already filed. ARRL has prepared a [Guide to Filing Comments with the FCC](#) which includes tips for preparing comments and step-by-step filing instructions. File comments on MD Docket 20-270 using the FCC's Electronic Comment Filing System ([ECFS](#)). Under the proposal, amateur radio licensees would pay a \$50 fee for each amateur radio application for new licenses, license renewals, upgrades to existing licenses, and vanity call sign requests. The FCC also has proposed a \$50 fee to obtain a printed copy of a license. Excluded are applications for administrative updates, such as changes of address, and annual regulatory fees. Amateur Service licensees have been exempt from application fees for several years.

The FCC proposal is contained in a *Notice of Proposed Rulemaking (NPRM)* in MD Docket 20-270, which was adopted to implement portions of the "Repack Airwaves Yielding Better Access for Users of Modern Services Act" of 2018 — the so-called "[Ray Baum's Act](#)." The Act requires that the FCC switch from a Congressionally-mandated fee structure to a cost-based system of assessment. In its *NPRM*, the FCC proposed application fees for a broad range of services that use the FCC's Universal Licensing System (ULS), including the Amateur Radio Service. The 2018 statute excludes the Amateur Service from annual regulatory fees, but not from application fees. The FCC proposal affects all FCC services and does not single out amateur radio.

ARRL is encouraging members to file comments that stress amateur radio's contributions to the country and communities. ARRL's [Guide to Filing Comments](#) includes "talking points" that may be helpful in preparing comments. These stress amateur radio's role in volunteering communication support during disasters and emergencies, and inspiring students to pursue education and careers in engineering, radio technology, and communications. As the FCC explained in its *NPRM*, Congress, through the Ray Baum's Act, is compelling regulatory agencies such as the FCC to recover from applicants the costs involved in filing and handling applications.

In its *NPRM* the FCC encouraged licensees to update their own information online without charge. Many, if not most, Amateur Service applications may be handled via the largely automated Universal License Service (ULS). The Ray Baum's Act does not exempt filing fees in the Amateur Radio Service, and the FCC stopped assessing fees for vanity call signs several years ago.

See also "[FCC Proposes to Reinstate Amateur Radio Service Fees](#)," reported by ARRL in August, and a summary page of the proceeding at www.arrl.org/FCC-Fees-Proposal.

From the President's Desk

To All Aero Club Members

I am looking for at least 6 people that can assist in:

- De-installing the old two meter repeater,
- Installing the new 2-meter repeater and amplifier
- De-installing the old 2-meter receiver antenna on the Gym and
- Removing its associated cables

Following the de-install I would like the removed equipment put on 2 pallets and removed from Kenwood. Depending on access to another roof exit, or lowering the pallets to the ground, this could be done on another day.

The estimated work time is 6 hours. I want to plan for 2 days so that we aren't rushed. The days ideally should be two days apart.

Our work window is set by the school's maintenance personnel, currently they are at the school between 6 am and 6 pm, Monday thru Friday (no weekend coverage).

Please give me the two days in a week that you would be able to help the club. I am planning for two days, one being a rain or overflow date. Please look at your calendars for November 9th thru the 20th. Example: Mary has an eye doctor appt 11/16 at 1:30pm and I have a stress on 11/19 at 11:00, the other dates are free.

Bearing Floods and Meteor strikes I would like to get enough help to pull this off before we have a Turkey.

Any questions please call me at 443-956-0197, hope to see you at the Skypark this Wednesday (November 4).

Joe M

CLUB NEWS

Aero ARC ZOOM Meeting - 9/2/2020 rev

Start Time: 07:34pm End time: 08:17

Members Present: Rob AE3B, Joe WB3FMT, Shane KC3PPM, Steve KD3TP, Dave KB3KRV, Larry KB3QWC, Harry AC3EK, Grigg KC3POJ, Don K3DON, Don N3FQC, Chris AB3WG, Rich KB3VAE, Pat

AC3F, Bob WA3SWA, Jon N7JKR, Montel KA3RFI, Lou KC3NMT, Gus AA3GG, George KB3TBH, Georgeann KB3PGN, Dave KA3SNY -- 21 members present

Treasury Report: Bank \$2,334.29 On Hand: \$ 14.00

Repeater Report: 2 mtrs: No Problems 70 cm: No Problems

Correspondence: None

Public Service: We still need for members to continue checking in with and helping neighbors and your fellow hams if possible.

EmCOM: Nothing scheduled before the end of hurricane season.

SKYWARN Classes: Classes will resume after Hurricane season ends.

VE Testing: Essex Skypark to use the community hanger on Saturday, September 12, 1:00 to 3:30 pm. As done on the FD the same COVID-19 protocols will be followed. 1. Meet the 6-foot social spacing and require a face mask. 2. Testing will be done inside the community hanger, with the main hanger door open, using the Skypark long tables. Mask must be worn if required by the County.

Old Business: 1. Aviation Scouting event at the Essex Skypark has been rescheduled for November 6,7,8. The first weekend in November. We will be doing the same as we did last year. We need the following topics support for this event:

Morse Code	Semaphore	Radio Operations Voice and
American Sign Language	Nautical Flags	CW
Braille	Aircraft Signals	

The club will setup and operate a station during the event.

2. Wings and Wheels event has been canceled for this year. Per an email from Mandy.

New Business:

I talked to Phil about Yaesu letter dated July 1st- Dec 31, 2020, they are offering the DX2 for \$700 and DX1 repeaters at a reduced cost of \$400. I talked to Jerry N3VBJ and he said the DX1 would work for the club.

An email from Yaesu was received on July 31, 2020 stating that our application for a DX1 series repeater has been approved. I will get an email once the payment is processed, and the repeater is shipped to me.

Duplexer for 2 meters – We received a six-can 2-meter duplexer donated by Charles Davis KA4ADL via Rick Hinkle N3HIA, Rick tuned it to our club's frequency and met with Phil W3VRD on July 29th.

After discussing tech information Phil brought the duplexer to his house for safe keeping, pending installation.

I received the DX1 repeater on Wed Aug 19, took it to the Skypark for the ZOOM/FACE meeting. Jerry N3VBJ programmed the repeater for 147.24 with a PL 123.0 and to operate in Automatic mode works either analog FM or C4FM digital (whatever it hears it will respond in kind)

Ray N3RES has agreed to donate a 100 amp for the new 24 repeater, this will allow the repeater to run at 10 watts. Promotes a long life!

Action Items:

1. Once Kenwood HS opens set up a meeting the School staff and Maintenance group for a convenient time to work on the repeater approx. 6 hours is needed.
2. Contact Warren about the trailer tires / replacement, one tire is flat.
3. Check with Phil about the connectors for the duplexer.
4. Contact Scouts Shawn Sebo about info on the Scouting Event at the Skypark.

Please Note: Due to CONVID19, if any one does not feel comfortable, do not feel you must attend. If you are a care giver, reside with older people, or for any reason you are uncomfortable with? Take the safe route for you and yours.

Rev 9-14-20 AE3B Notes

Aero ARC ZOOM Meeting, 10/21/2020 rev

Start Time: 07:30 pm, End time: 08:15 pm

Members Present: Rob AE3B, Don K3DON, Joe WB3FMT, Rich KB3VAE, Bill AC3DX, Bob ND3D, Bob WA3SWA, Chris AB3WG, Dave KB3KRV, David KA3SNY, Don N3FQC, Georgeann KB3PGN, George KB3TBH, Harry AC3EK, Jerry N3VBJ, Larry KB3QWC, Lou KB3NMT, Pat Ac3f, Paul KB3KWT, Shane KC3PPM, Lou AB3QK -- 21 members

Treasury Report: Bank \$2,400.28 - \$163.98 (Tires for trailer) leaves \$2,236.30; On Hand:

Repeater Report: 2 m: No Problems, 70 cm: No Problems; Good cycle down ok for each

Correspondence: None

Public Service: We still need for our members to continue checking in with and helping neighbors and your fellow hams if possible.

EmCOM: Nothing scheduled before the end of hurricane season.

SKYWARN Classes - The following online SKYWARN classes are being presented.

Basics Monday 11/02/20 7-9pm Washington Co, MD Online Class

Basics Thursday 11/19/20 6-8pm Calvert Co. MD Online Class

Basics Tuesday 11/16/20 6-8pm Warren Co. VA Online Class
To Register for the Online Classes and for info on other classes, see the SKYWARN site.

VE Testing : The next test session will be held on Saturday, November 14 at the American Legion Hall, 1331 Seling Ave. Rosedale 21237. Time is 12:30pm to 3:30pm. Testing starts at 1:00pm. As of 10/21/20 1 person signed up.

As done on the FD the same COVID-19 protocols will be followed.

1. Meet the 6-foot social spacing and require a face mask.
2. Testing will be done the American Legion Post using their long tables. Mask must be worn if required by the County.

Old Business: BSA Event

I notified Keven and Shawn by email that club could not participate in the event due to lack of support of the club because of Covid-19. Ed Note: Received an email from Richard KB3VAE, on 10/26 he was notified that the Scouting event at the Skypark has been canceled by the BSA.

Outstanding Dues: I still have 10 members that still owe dues for this year! If you are in questioned, send me an email at joseph.miko@verizon.net or call me a 443-956-0197.

New Business: Updates

10/24/20 The repeater, cables and amplifier are at Phil's. He will assemble and test next end.

10/28/20 Two Meter is ready to be installed at Kenwood HS.

10/30/20 Joe sent out an email requesting a workgroup of at least 6 people, request to provide available days between 11/9 to 11/20.

Next Meeting: Will be at the FBO and will be ZOOMcast to those who can't make it.

JMM

If for any reason you are uncomfortable with in person, take the safe route for you and yours.

Net Reports

10-14-20: 440 net, 20:00 to 20:42 Local.

W3PGA NCS Joe Essex, KB3JVP Ken Middle River, AC3F Pat Middle River, W3JEH Ron Perry Hall, N3FQC Don Perry Hall, KB3VAE Richard Middle River

6 people on the net

10-28-20: 2-meter net, 20:00 to 20:42 Local.

W3PGA NCS Joe Essex, KB3JVP Ken Middle River, KB3QWC Larry Middle River, KB3TBH George White Marsh, N3FQC Don Perry Hall, KC3PPM Shane Middle River, KB3VAE Rich Middle River, W3JEH Ron Perry Hall, AC3EO Dave Baltimore City, NE3A Kenny Middle River

10 people on the net



VE CORNER

by Pat Stone, AC3F

Our next test session will be held on Saturday, November 14th at 1:00PM at the American Legion Post 180 in Rosedale. Hope to see you then.

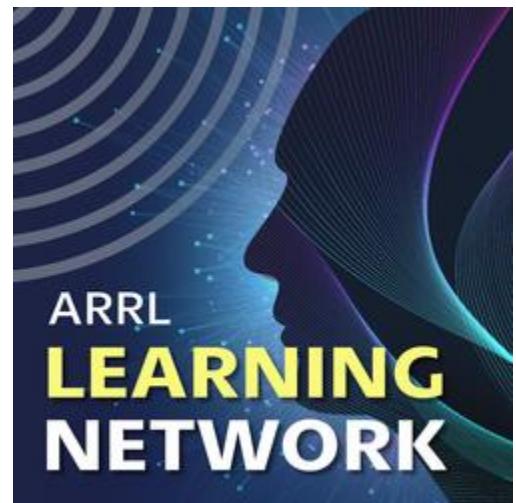
Reminder

ARRL Learning Network Webinars

Visit the ARRL Learning Network website (a members-only benefit) to [register](#) for upcoming sessions and to view previously recorded session. The schedule is subject to change.

How to Get Started in Amateur Radio Contesting: Anthony Luscre, K8ZT

Why do hams participate in on-air contests? How would I benefit from contesting? What do I need to get started in contesting? What are good contests for beginners? Where can I learn more? This session will answer all of these questions and more.
Tuesday, November 3, 2020, 10 AM PST / 1 PM EST (1800 UTC)



Amateur Radio's Role at the Boston Marathon Bombing: Steve Schwarm, W3EVE

Amateur radio has played a significant role in public service communications for the Boston Marathon for several decades. That role was put to the test in 2013, when two bombs were exploded near the finish line. This presentation will describe the role that ham radio played at the marathon and how that role changed due to the bombing.

Tuesday, December 8, 2020, 10 AM PST / 1 PM EST (1800 UTC)

Learn and Have Fun with Morse Code: Howard Bernstein, WB2UZE, and Jim Crites, W6JIM

Morse code, or "CW," is a popular ham radio operating mode. Learning CW does not have to be an arduous or lonely experience. Learn, practice, and enjoy CW with the methods used by the Long Island CW Club.

Thursday, December 17, 2020, 5 PM PST / 8 PM EST (0100 UTC on Friday, December 18)

Source: *The ARRL Letter* for October 29, 2020

HAM NEWS

Hams Help Find Kids by Monitoring FRS Channel



Late on the afternoon of September 16, the police department in Post Falls, Idaho, received a 911 call that two juveniles -- ages 9 and 11 -- were missing from a Post Falls residence for about an hour. According to the report, the pair had left home intending to play in the neighborhood with some Family Radio Service (FRS) radios. Several patrol cars were dispatched to the area to conduct a visual search, and detective Neil Uhrig, K7NJU, responded as officer in charge due to his training and experience with missing persons investigations. The initial search focused on a 2-mile radius from the missing kids' residence.

One officer received information from witnesses that the pair was probably using FRS Channel 1 (462.5625 MHz). An officer returned to police headquarters to retrieve some FRS radios for distribution to the patrol officers, in the event they might be able to hear the youngsters talking.

Uhrig, meanwhile, pulled out his VHF/UHF handheld with the thought of setting up FRS Channel 1 as an auxiliary frequency, but without the manual at hand, he wasn't able to execute the channel setup. But Uhrig did hear the Northwest Traffic Net (NWTN) that had begun at 6:30 PM on the local 2-meter repeater.

Checking into the net at about 6:45 PM, Uhrig explained the missing persons situation to net control station Shannon Riley, KJ7MUA, and asked if net participants in the Post Falls area with FRS capability could listen for the youngsters talking.

A number of stations promptly checked in to say they had FRS radios and were monitoring FRS Channel 1. It was assumed that only stations located near the missing youngsters would hear them, given the limited range of FRS radios.

Not long after 7 PM, Jim Hager, KJ7OTD, reported hearing children talking on FRS Channel 1. Uhrig went to Hager's home to confirm his observation, and the patrol units were redirected to the new search vicinity. A short time later, the missing pair was found safe and returned home.

Uhrig said the most remarkable thing about the incident was that the missing youngsters turned out to be some distance from the original search area, and in the opposite direction from where they were thought to have been headed.

Net Manager Gabbee Perry, KE7ADN, said, "I'm so proud of what a superior job NWTN NCS Shannon [KJ7MUA] and all the operators did last Wednesday. It was a very unusual situation, but everyone had excellent focus and used their resourcefulness to help quickly find the missing kids." -- *Thanks to ARRL Assistant Idaho Section Manager Ed Stuckey, AI7H*

Source: *The ARRL Letter for September 24, 2020*

FOR SALE

Yaesu FT-60R

Purchased new at the Delaware Ham Convention in Oct. 2014 from HRO New Castle. Rarely used. Original packaging available.

Basic package:

- Yaesu FT-60R Transceiver, 5W FM HT, 144/430 MHz
- PA-48B charger
- YHA-58 antenna
- FNB-83 battery
- SBH-13 charging stand
- Belt clip and operating manual

Accessories:

- Battery case (for BYOBatteries)
- Extra FNB-83 battery
- Speaker mic - Yaesu MH-34
- Nifty Guide
- RT Systems programming software, connector cable



A few FT-60R features:

- Over 1000 Memory Channels w/Alpha-numeric Labels
- NOAA Severe Weather Alert with Alert Scan
- RF Squelch (only passes signals exceeding programmed level)

- Huge LCD Display
- YAESU's exclusive ARTS™ (Auto-Range Transponder System) which "beeps" the user when you move out of communications range

Find a complete list of features at, for instance, https://www.gigaparts.com/yaesu-ft-60r.html?gclid=EAIAIQobChMI0_Tgw82q7AIVxsDlCh0CxgfmEAAYASAAEgI49fD_BwE

At present-day prices, basic package and accessories would cost about \$260.

Asking \$130

Contact Georgeann, KB3PGN, KB3PGN@reagan.com, 410-687-1234 (home, leave message)



RFPrecise MAG antenna

I paid \$425.00 for it and will let it go for \$250.00.

I have the carrying case that can be used for packing it up for portable use and 25 feet of RG68 coax.

Thanks and 73,
Lou AB3QK
louk288@msn.com

Hamfests

NO NOTICE OF CANCELLATION AS OF 9/30/20

Saturday, December 12, 2020: SantaFest

Sponsors: American Legion and Prince George's County Emergency Radio Association

Location: American Legion Youth Camp, 9201 Surratts Road, Cheltenham, MD 20623

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

Talk-In: K3ERA Repeater, 145.230- PL 110.9

Public Contact: Charles AA3WS, Phone: 301-535-1666, Email: selbynet@hotmail.com

CANCELED

Sunday, March 14, 2021: Winterfest, ARRL Virginia Section Convention 2021

Location: Richard Ernst Community Center, Northern Virginia Community College, 8333 Little River Turnpike, Annandale, VA 22003

Website: <https://viennawireless.net/wp/events/winterfest/>

Sponsor: Vienna Wireless Society

Talk-In: 146.910 (no tone)

Public Contact: Harry Mamaux , K3NF, 8425 Peace Lily Ct Apt 316 Lorton, VA 22079, Phone: 703-395-6721, Email: k3nf@cox.net

NO NOTICE OF CANCELLATION AS OF 10/31/20

Sunday, June 20, 2021: Father's Day Hamfest at Arcadia

Location: Arcadia Fairgrounds, 16920 Carnival Ave., Upperco, MD 21155

Website: <http://W3FT.com> Facebook Baltimore Amateur Radio Club

Sponsor: Baltimore Amateur Radio Club

Talk-In: 146.67 (PL 107.2)

Public Contact: David Shadwell , AB3TE, P.O. Box 120 Reisterstown, MD 21136, Phone: 410-252-2878, Email: W3FT@yahoo.com

SEC Presentations

If your Group is interested in getting started with Winlink 2000, or perhaps a refresher session, please let me know. We have our ASEC, Steven, KC3DSO, on Zoom with an outstanding WL2K presentation for your ARES meeting. I encourage you followup on this if interested in getting involved with the Section Winlink program.

Wanda, KA3AHI, and I continue to schedule visits to as many ARES and club groups as possible. We have two presentations I think would be worth your while to hear. One on Section Interoperability and the other is the Section Health Care EmComm Program. If you have interest in this, and have room on your meeting agenda for us, please contact me. I have an Introduction Winlink 2000 Lecture and a Winlink Class where we get you set up to run Winlink Telnet and obtain a Winlink account- - -all for free!

Email of June 19, 2020 from ARRL Maryland-DC Section, Section Manager: Martin J. Pittenger, KB3M XM, kb3m xm@arrl.org

If any club members would like to schedule such a presentation, contact Joe Miko to set one up.

From the Skies over Mt. Essex

SKY Events for November 2020

Nov 1st – DST ends, Starts March 14, 2021

Nov 5th – Moon is 0.2° N of M35 OC in Gemini 2UT, 11/2 21 EST

Nov 8th - Last quarter Moon

Nov 10th – Mercury greatest elongation W (19°)17UT, Noon EST

Nov 12th – Venus is 3°S of Moon 21UT, 16 EST

Nov 13th – Mercury 1.7° S of Moon 21UT, 16 EST

Nov 15th - New Moon

Nov 17th Leonid Meteor Shower 12 UT, 7 EST, Look towards the Sickle in Leo Approx. 20 p/hr. Look East after 23 EST

Nov 21st - First Quarter Moon

Nov 30th - – Full Moon, Traditional Beaver Moon, Shawnee Long Full Moon also a Penumbral Eclipse, See article.

Planet Lookout at mid-Month EST

Sunrise 06:41 EST and Sunset 16:52 EST

Mercury -- **Morning** Rises 05:09 Sets 16:05 Mag - 0.6; Size 6.7 arc seconds

Venus -- **Morning** Rises 04:06, Sets 15:29 Mag -3.9 and 12.6 arc seconds.

Mars -- **Evening** Rises 14:59, Sets 03:39, Mag -1.8 and 18.2 arc seconds.

Jupiter -- **Evening** Rises 11:10 Sets 20:54; Mag-2.1 size 36.0 arc seconds.

Saturn -- **Evening**, Rises 11:23 Sets 21:12; Mag 0.6 size 16.1 arc seconds.

Uranus— **Evening** Rises 15:38, Sets 05:31; Mag 5.7 size 3.7 arc seconds.

Neptune -- **Evening** Rises 13:53 Sets 01:27; Mag 7.8 size 2.3 arc seconds.

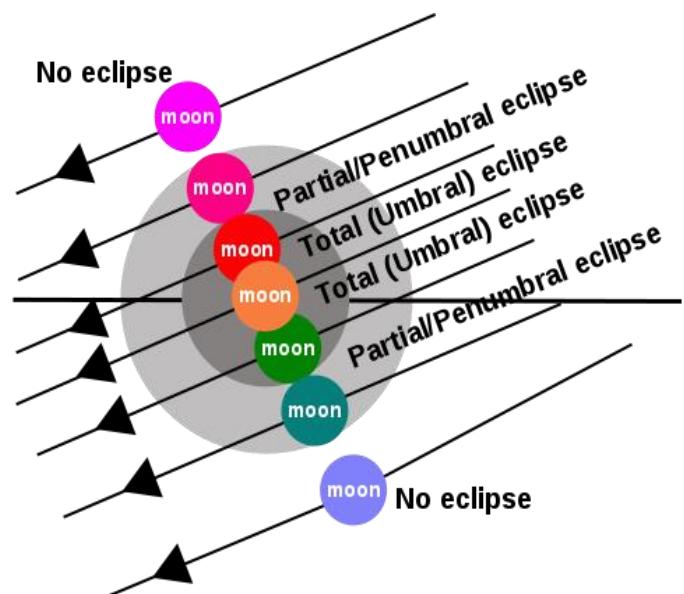
What is a Penumbral Eclipse?

By Bob Berman

To be honest, penumbral lunar eclipses are not that exciting if you're just looking at the Moon. The Full Moon really doesn't change its appearance during a penumbral eclipse as it does during a total eclipse of the Moon.

This is a very subtle kind of eclipse which may appear like a darker-than-usual Moon. Sometimes there's a very slight gray shading on one part of the Moon, but almost nobody notices it.

The diagram below shows different types of lunar eclipses. It all depends on the path taken by the Moon as it passes through Earth's shadow. If the Moon passes through the outer circle but does not reach the inner circle, it is a penumbral eclipse.



Descending node lunar eclipse paths

The Penumbral shadow moves from West to East. First contact is 02:32 EST, Mid-point 04:42 EST and Last contact is 06:53 EST. 82% of the Moon will be in the Penumbral shadow. The Moon won't turn Red or get Dark, but you will notice it not as brassy!