



The Aero Aerial

The Newsletter of the Aero Amateur Radio Club
Middle River, MD
Volume 13, Issue 1
January 2016

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://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 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. See below for SNOW POLICY.

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.

2016 Examination Schedule

Where: White Marsh Branch
 Baltimore County Public Library
 8133 Sandpiper Circle, White Marsh, Md. 21236
Time: 1 p.m.
Dates: January 30
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	Baltimore 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	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)

From the President's Cave

2015 Highlights

To all of the Aero Amateur Radio Club members – Thank You

On behalf of the Staff of the Aero Amateur Radio Club, I would like thank each and every member of the club for what you made happen in 2015.

We had a great time at the **Field Day** Water Fest with 4 plus inches of rain on Saturday afternoon and a 20 meter beam that didn't. All we could do was to bail water, and Phil fixed the beam. Over a dozen members helped with set-up and over 80% of the members participated in some way during Field Day, again thanks for the help. In the MDC Region as a 5A station the Aero Club came in 28 out of 66 stations with a score of 537 contacts and 3,136 points.

To our great regret we lost **Frank Stone** AC3P, a club member and friend to all of the club members and a member of the VE Team. He will be missed but not forgotten.

VE Testing, run by Pat Stone AC3F, gained four new volunteer examiners in 2015. The new team had its first test session at Field Day. In addition to the Field Day testing the Aero Club does five test sessions at the White Marsh library (Jan, March, May, September and November).

Monthly presentations started in 2015, held during the 2nd Wednesday's meeting. Presentations are done by club members with special interest in radio. Last year's topics ranged from modifying file server power supplies to the International Space Station contacts and between.

Membership in the club has grown to 36 members during 2015, with the addition of 7 new members, not counting the 4 out-of-state members.

The Club's **2 meter repeater** underwent numerous repairs and minor upgrades to keep it working. It's a Timex and keeps on ticking. The 2 meter transmitting antenna was repositioned and put on a new mast. And, Oh By the Way, the club got a new **70 cm Yaesu "Fusion" C4FM repeater** running in both digital and FM modes. The 440 repeater was installed around Thanksgiving. Special thanks to the repeater relocation crew and a big thanks to installation and maintenance crew, Jerry Cimildora N3VBJ, Phil Hock W3VRD, and Ken Eisman NE3A.

And who could forget the **First Annual (I hope) Christmas Party** held at the Skypark? I think it was a first for the club. I counted at least 28 cookies, um I mean, members and guest. Thanks to everyone who brought goodies. We had three tables of goodies and refreshments.

The club began a **partnership with the Essex Skypark Association**. We have been meeting at the FBO building and using the Community Hanger for just over a year. During

the year, club members were present and supported the Skypark's Fly-in Breakfast, Wings and Wheels, and Pumpkin Dunking.

Club members were active in the community, helping activities such as the National Weather Service **Storm Spotters**, in which Jerry N3VBJ is the Northeast Coordinator. Some of the members attended the Basic/Refresher Storm Spotter class in April and the Winter Storm Class held in December. Storm Spotters act as the eyes of the Weather Service at the ground level, far below the radar [*literally – The Editor*], and report back to the Weather Service in Sterling, VA. Another activity that members were involved in was the **Neighbors Helping Neighbors** training class given by the Baltimore County Fire Department. This course provided information about Natural Disasters, Community Resources, Crime Prevention, Fire Safety and Basic First Aid. Members also participated in support of **special events** such as the MS Walk held on the Eastern Shore, and other events on the western side of the bay.

Again, thanks to all of the Aero Club members for keeping ham radio alive and well by your love of the hobby.

Best wishes to all for the upcoming year.

Joe Miko, WB3FMT

Club SNOW PLAN

If Baltimore County Schools are closed for the day or have an early dismissal, the Aero club meeting for that night will be canceled. Late school openings don't count. If a meeting is canceled due to weather, we will run a 2 meter net at 8pm that evening.

Following other weather events, following snows or ice, I will go to the SkyPark between noon and 4 pm on meeting day and report on conditions to the club members by 5pm. The airport does not always plow the parking lot, it's not safe to walk on hard snow or ice!

Joe Miko WB3FMT

Club Dues are Due

Dues are due the first meeting in January, 1/6/2016. Yearly dues per individual member are \$24.00. Family memberships are \$24.00 for the first member plus \$2.00 per each additional family member. If you have not paid for 2015 you owe that amount plus the \$24 for 2016.

See Treasurer Warren Hartman W3JDF or President Joe Miko WB3FMT at a club meeting.

REMINDER: ARRL ANNUAL DUES INCREASE ON JAN 1st

As of January 1, 2016, there will be a \$10 increase in ARRL's annual dues rate. **It would be to your benefit for you to either join the ARRL or renew your membership before January 1st.**

The current rate is \$39 for one year, \$76 for two years, or \$111 for three years. The current life time membership fee is \$975.00.

Effective January 1, 2016, the membership rate will go up to \$49 for one year, \$95 for two years, \$140 for three years, and a lifetime membership will cost \$1,225.00.

The ARRL basic dues have been held at \$39 a year since 2001.

Source: MDC Section News, Vol. 10 No. 10, October 13, 2015

NET REPORTS

12-09-15: 28.445MHz, 20:00 to 21:05 local.

W3PGA Joe (NCS) Essex, KB3JVP Ken Middle River, W3JEH Ron Perry Hall, KA3SNY Dave Essex

12-23-15: 147.240 MHz, from 20:00 to 21:08 local.

There were 11 people on the net, 10 club members.

W3PGA Joe (NCS) Essex, KB3JVP Ken Middle River, W3JEH Ron Perry Hall, N3VBJ Jerry Dundalk, KB3QWC Larry Nottingham, AC3F Pat Middle River, KC3FBL James Parkville, KC3FZZ Margaret Middle River, K3TEL Arnold Towson, KC3ANJ Charles Dundalk, KC3APF Kelly Dundalk

12-30-15: 449.575 MHz, 20:00 to 21:08 local.

12 check ins, including Net Control.

W3PGA Joe (NCS) Essex, KB3JVP Ken Middle River, W3JEH Ron Perry Hall, N3VBJ Jerry Dundalk, KB3QWC Larry Nottingham, AC3F Pat Middle River, KB3PGN Georgeann Essex, KC3FBL James Parkville, KA3SNY Dave Essex, W3VRD Phil Essex, N3EKO Ron Parkville, KC3FRH Charles Parkville

Phil reported 6 m wide open in the early afternoon. Ron got to play with his new Alinco 440 transciever.



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>
Jan. 20	Radio Comm at Witty Tom: An AZ Ham Adventure	Georgeann KB3PGN
TBD	Contest Logging with N1MM	Bob ND3D

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

“Radio Comm at Witty Tom” describes something of how the Yavapai Amateur Radio Club, Prescott, Arizona, organizes a major annual public service event, the Prescott Road Rally, which is run over the backroads of Arizona in a fairly remote location. We zero in on a portion of the race which one ham, Fred Zimmermann N7PJN, has covered for the past 9 years.

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



What is all this white stuff?



VE CORNER

by Pat Stone, AC3F

Our next test session is scheduled for January 30th, 2016 at White Marsh Public Library.

CLASSES, ETC.

Skywarn Basic 1, Jan 21, 2016, 7 – 10 pm

Anne Arundel County Office of Emergency Management

7480 Baltimore Annapolis Blvd, Glen Burnie, MD 21061

This class is for New Spotters. To register, go to:

<http://annearundelcountyskywarnbasic.eventbrite.com/>

Source: Jerry N3VBJ, Northeastern Coordinator for SKYWARN

DO YOU WANT TO LEARN MORSE CODE?

Here's the way the US Navy taught the International Morse Code. Click on: <www.arrl-mdc.net/LearnCode/CW.html> for a step-by-step self-study guide in which you can learn each of the alpha-numeric characters and commonly used punctuation in International Morse Code at your own pace.

If you follow the lesson plan precisely, you should be able to learn the International Morse Code and have your code speed up to 13 words per minute in four to six weeks, or less.

Source: MDC Section News, Vol. 10 No. 10, October 13, 2015

UPCOMING HAMFESTS and EVENTS

Saturday, January 30, 2016: Post Holiday Hamfest, 8:30 am - noon

NEW LOCATION Odenton Baptist Church, 8410 Piney Orchard Pkwy, Odenton, MD 21113

Sponsor: Maryland Mobileers Amateur Radio Club

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

Talk-In: 146.805/146.205 (PL 107.2)

Contact: Frank Winner, N3SEO, 283 Oak Court, Severna Park, MD 21146

Phone: 410-647-3335, Email: n3seo@aol.com
Map and directions can be found on the website above.

Feb. 27, 2016, 7th Annual Techno-Swap-Fest, 9 am – 2 pm

National Electronics Museum, 1745 W. Nursery Rd., Linthicum, MD 21090, 410-765-0230

Info: <http://sites.google.com/site/technoswapfest2>

Admission: Adults \$5, Children under 16 Free

Saturday, April 9, 2016: Culpeper Amateur Radio Swapfest

Culpeper Agricultural Enterprise, 10220 James Monroe Hwy., Culpeper, VA 22701

Website: <http://w4cul.org>

Sponsor: Culpeper Amateur Radio Association

Talk-In: 147.120 (PL 146.2)

Contact: Bob Stohlman, K4RCG, 223 West Park Avenue, Culpeper, VA 22701, Phone: 540-825-2770, Email: bobstohlman@gmail.com

Saturday, April 16, 2016: Delaware State Convention (Delmarva AR & Electronics EXPO) – Rescheduled

Sussex Technical High School, 17099 County Seat Hwy., Georgetown, DE 19947. Website: 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

Friday, April 15 thru Sunday April 17, 2016: VHF Super Conference

Holiday Inn Washington-Dulles International Airport, 45425 Holiday Dr, Sterling, VA 20163

Website: <http://vhfsuperconference.com/>

Sponsor: Southeastern VHF Society, North East Weak Signal Group & Mt. Airy VHF Radio Club. Hosted by the Grid Pirates Contest Group and Directive Systems and Engineering

Talk-In: None

Contact: Terry Price, W8ZN, 2702 Rodgers Terrace, Haymarket, VA 20169, Phone: 703-754-3876, Email: w8zn54@verizon.net

Sunday, May 29, 2016: Memorial Day Hamfest

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

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

Sponsor: Maryland FM Association

Talk-In: 146.76, 224.76, 444.0 (PL 107.2)

Contact: John Elgin, WA3MNN, 518 Copley Lane, Silver Spring, MD 20904, Phone: 301-641-5313 Email: marylandfm@verizon.net

Sunday, June 19, 2016: BARC Father's Day Hamfest

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

Website: <http://www.w3ft.com>

Sponsor: Baltimore Amateur Radio Club

Talk-In: 146.67 (PL 107.2)

Contact: Dave Shadwell, AB3TE, PO Box 922, Reisterstown, MD 21136, Phone: 410-842-5019, Email: w3ft67@yahoo.com

ARRL Press Release: "ARRL National Parks on the Air" Event to Mark National Park Service Centennial

In 2016, the National Park Service ([NPS](#)) will celebrate its 100th anniversary, and radio amateurs will be able to help mark the occasion with the ARRL National Parks on the Air ([NPOTA](#)) event. The fun begins at 0000 UTC on January 1, 2016, and will run throughout 2016, with activity promoted and encouraged from each of the more than 430 official NPS administrative units and affiliated areas across the US. This includes all 59 National Parks as well as National Battlefields, Historic Sites, Memorials, Preserves, Reserves, Rivers, Seashores, National Scenic Trails, and other units.

The program will have two participation tracks — Chasers and Activators. Chasers will simply attempt to make contact with operators in as many of the NPS units as possible. Activators will attempt to activate as many of the units as possible. NPOTA participants may serve in both roles. Chaser and Activator totals will be tracked via an online [Leader Board](#) based on LoTW data, just as was done during the Centennial QSO Party. (Access the NPOTA Leader Board directly at <http://npota.arrl.org>.)

Modeled after the Mixed DXCC award, only one contact with any given NPS unit will be required, and no tally will be kept of NPS units based on bands or modes. NPOTA will be administered entirely through Logbook of The World (LoTW). No paper logs or QSLs will be accepted for NPOTA credit. Each NPS unit will be added to LoTW as a “location.”

Three award certificates will be available: Chaser Award and Activator Award certificates will be available to any radio amateur who has at least one confirmed contact with an NPS unit or who activates at least one unit, respectively. A station’s total number of confirmed or activated units will be printed on the certificate. The National Parks Honor Roll certificate will be available for any station that confirms contact with at least 75 percent of the 59 National Parks *activated* in 2016.

An Activator can earn additional recognition as a “Five-Star Activator.” While the Centennial QSO Party was an internal event for radio amateurs, National Parks on the Air is designed to be a public promotion of Amateur Radio’s capabilities. Various public relations bonuses and activities will be available to Activators, similar to the PR bonus points available to ARRL Field Day stations.

The success of the event and of the awards program rests on radio amateurs’ willingness to operate from NPS units. Depending on the size of a given operation, participants may need to secure a special-use permit. NPOTA Activators will need to follow all NPS rules in whatever unit they activate.

In general, the more portable and compact your station is, and the more creative and adaptable your plans are, the greater your chances of success. While there is no formal partnership between NPS and ARRL for this event, the League has been in discussions with the NPS over the past year, and it is aware that increased Amateur Radio activity in their parks is likely during 2016.

The NPOTA will use the official [list](#) of NPS Administrative Units and Affiliated Areas as defined and maintained by NPS. Complete details on the National Parks on the Air event are available on the ARRL website: <http://www.arrl.org/NPOTA>

Source: <http://www.arrl.org/news/arrl-national-parks-on-the-air-event-to-mark-national-park-service-centennial>

DID YOU KNOW??

November 22, 1906: The SOS signal for ships in distress was adopted at the International Radio Telegraphic Convention in Berlin.

AMATEUR RADIO PARITY BILL UPDATE

Nov 18, 2015 - Key Senate Committee Passes Amateur Radio Bill: Measure Would Benefit Radio Operators Providing Emergency Support During Natural Disasters

WASHINGTON – U.S. Senator Roger Wicker, R-Miss., a senior member of the Senate Committee on Commerce, Science, and Transportation, today praised the Committee's approval of S.1685, the "Amateur Radio Parity Act." This bipartisan legislation, introduced in June by Wicker and Sen. Richard Blumenthal, D-Conn., would direct the Federal Communications Commission (FCC) to provide regulatory parity for amateur radio operators. The measure awaits consideration by the full Senate.

"Amateur radio operators provide valuable communications support during times of natural disasters," Wicker said. "This bill would help ensure their ability to operate emergency response systems regardless of their location and at no cost to the taxpayer. These networks are a proven resource for staying prepared, and preparedness is perhaps our best defense against unpredictable weather and other hazards that might befall our state."

The bill would call on the FCC to apply its reasonable accommodation standard evenly to all types of residential land use regulations and offer amateur radio operators the ability to negotiate with subdivisions that now have restrictions completely precluding amateur radio antennas. This process would preserve the decision-making authority of homeowners associations over the community's aesthetic interests.

In times of emergency, amateur radio operators provide communications network backup when first responder network repeaters and infrastructure are not working.

During and immediately after Hurricane Katrina, amateur radio operators restored communications lines with FEMA, the Red Cross, and other disaster relief entities when the primary emergency response network was down.

ARRL President Kay Craigie, N3KN, said, "Our work is not finished on the Senate side of Capitol Hill, although this is a huge step forward." She urges amateur radio operators to continue to write, call and e-mail their Senators about S. 1685 to thank the supporters and to build up more support in the future. President Craigie added, "We know that that ARRL members', [and all amateur radio operators'] response to the call for a communications blast in the last few weeks made all the difference for some Senators on the committee."

Source: MDC Section News, Vol. 10, No. 12, December 14, 2015

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

When: 0000 UTC Friday, 1 January 2016 (1900 EST Thursday 12/31/15)
0359 UTC Monday, 25 January 2016 (2259 EST Sunday 01/24/16)

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 KB3EK at cwhittaST4@AOL.COM by Monday, February 8, 2016

There are lots of opportunities to make contacts during the AERO Contest period:

- ARRL Straight Key Night, January 1
- ARRL RTTY Roundup, January 2 & 3
- NCJ NAQP CW, January 9 & 10
- DARC 10M, January 10
- NCJ NAQP SSB, January 16 & 17
- CQ 160M CW, January 27 – 31
- ARRL VHF, January 30 – 31

HAVE FUN MAKE SOME Q'S

From the Skies over Mt. Essex

SKY Events for January 2016

January 1st **HAPPY NEW YEAR** 3740₈

Jan 2nd – Last Quarter Moon; Earth at Perihelion (closest to the Sun) 91,403,812 miles at 03:59 EST.

Jan 3rd – Mars is 1.5° South of the Moon

Jan 3-4th – Quadrantids Meteor shower approx 60 -120 meteors per hour, look NE toward Bootes after midnight. 4th latest sunrise of the year.

Jan 6th – Saturn is 3.3° S of the Moon

Jan 7th – Dawn sky, Moon , Venus and Saturn are close

Jan 8th - Latest onset of morning twilight

Jan 9th – New Moon; Dawn sky Venus and Saturn conjunction <2°

Jan 16^h – First Quarter Moon

Jan 23^h - **Full Moon** “**Winter Moon**” for the Traditional American and the “**Holiday Moon**” for the Chinese Full Moons

Jan 31th - Last Quarter Moon

Planet Lookout at mid-Month

Sunrise 07:24 EST and Sunset 17:06 EST

Mercury in the West at sunset, magnitude 3.5; 10 arc seconds

Venus Dawn magnitude -4.0 and 13.3 arc seconds.

Mars Morning rises 01:23 EST, magnitude +1.1 and 6.1 arc seconds wide.

Jupiter Evening, rises 21:39 EST, magnitude -2.3 size 40.9 arc seconds.

Saturn Morning sky. Magnitude +0.5 size 15.6 arc seconds.

Uranus Rises 23:44 by 23:30 EST. Magnitude +5.8 size 3.4 arc seconds.

Neptune Sets 20:30 EST. Magnitude +7.9 size 2.4 arc seconds.

Upcoming Events for 2016

Planets – Mercury and Venus in 2016

Maximum Eastern and Western Elongations

	Date	°	Date	°
Mercury EE	4-18-16	19.9 E	2/7/16	25.6
	8/16/16	27.4	6/5/16	24.2
	12/11/16	20.8	9/28/16	17.9

Venus EE & WE None in 2016

Blue Moon – (4 Moons in a season) May 21, 2016.

Black Moon – (2 New Moons in a month) 10/1 – 10/30

Lunar Eclipses 2016 Two Penumbral - 03/23/16 P1 at 05:39 EDT, P4 09:54 EDT; and 9/16/16 Not visible in US.

Solar Eclipses 2016 One Total 03/09/2016- Not visible in the US, Indonesia, North Pacific Ocean.

One – Annular 09/01/16, Not visible in the US, Eastern Atlantic, Southern Africa, Indian Ocean

Transit of Mercury – 05/09/16, Starts 07:12 – 14:42 EDT times for Baltimore, MD

Meteor Showers for 2016- 2 Fair, 4 Good, 3 Poor

Quadrantids 1/3/16	Last Quarter	Fair	60-120 per hr
Lyrids 4/22/16	Full Moon	Poor	10 per hr
Eta Aquarids 5/5/16	New Moon	Good	45 per hr
Bootes 6/27/16	Last Quarter	Good	0-100 per hr
Delta Aquarids 7/30/16	Last Quarter	Fair	16 per hr
Perseids 8/12/16	First Quarter	Good	60-80 per hr
Orionids 10/21/16	Last Quarter	Good	18 per hr
Leonids 11/17/16	Full Moon	Poor	15 per hr
Geminids 12/14/16	Full Moon	Poor	120 per hr

Seasons in 2016

Earth Perihelion 01/02/2016 18:00 EST 23:00 UT

Earth Aphelion 07/04/2016 12:00 EDT 16:00 UT

Vernal Equinox 03/20/2016 00:30 EDT 04:30 UT

Summer Solstice 06/20/2016 18:34 EDT 22:34 UT

Autumnal Equinox 09/22/2016 10:21 EDT 14:21 UT

Winter Solstice 12/21/2016 05:44 EST 10:44 UT

Daylight Saving Time 2016

Begins 03/13/2016- Ends 11/06/2016

Easter Dates 2016 Full Moon 03/23/2016

Easter Christian (Western) 03/27/2016

Eastern Greek (Orthodox) 05/01/2016