



STAR FIELDS

Newsletter of the
Amateur Telescope Makers of Boston
Including the Bond Astronomical Club
Established in 1934
In the Interest of Telescope Making & Using

Vol. 29, No. 4 April 2017

This Month's Meeting . . .

Thursday, April 13th, 2017 at 8:00 PM

Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

Parking at the CfA is allowed for the duration of the meeting



Kevin Collins with his 13-inch Obsession-style Truss Tube *

13" Coultter Odyssey I Turned Ultra Compact Project

In 2006 Kevin Collins, a member of the Amherst Area Amateur Astronomers Association, undertook a reconstruction of his 13.1" Coultter Odyssey I into an Obsession-style truss tube scope to make it more portable. While that overall goal was achieved, the height of its altitude bearings still meant it would not fit under the cover in the bed of his pickup truck. As a result, it often had to ride shotgun if wet weather was forecast going to and from observing events. In 2014 Kevin again reconstructed his 13.1" scope – this time into an Ultra Compact instrument of his own design that would fit in the bed of his truck. Join us as Kevin, using pictures and THE TELESCOPE ITSELF, explains the design and construction process. He will talk about everything from laminating maple veneers for his focuser board to the

intricacies of using torque worksheets to get that elusive balance and buttery smooth motion we all strive for!

Kevin is a software developer for ATC Associates in Agawam, MA, the Assistant Winemaker for Mineral Hills Winery in Florence, MA, President of the Pioneer Valley Winemakers Society, and former President of the Amherst Area Amateur Astronomers Association. He is also a member of The Arunah Hill Natural Science Center, and the Springfield STARS Club. Fifteen years ago he purchased a Coultter 10" Odyssey I for \$50, beginning his adventures in amateur astronomy and telescope making. Over the years Kevin has built a 4.5" f/8 classic Dob, restored a 4" f/15 Steinheil refractor found in a dump, reconstructed a 13" Coultter Odyssey I into a truss tube scope, and built a 20" f/5 truss tube scope. The latter created an incredible opportunity for Kevin, his father, and brother to work together on a project. Beyond telescope making he enjoys deep sky and visible light solar observing with family and friends. Kevin is also an avid cyclist, hiker, photographer, and amateur winemaker. He lives with his partner in Northampton Massachusetts.

Please join us for a pre-meeting dinner discussion at [Changsho, 1712 Mass Ave, Cambridge, MA](#) at 6:00pm before the meeting.

President's Message . . .

For the past year I've been promoting the Las Vegas Astronomical Society's monthly Observer's Challenge at each monthly meeting. Established in 2009, the LVAS Challenge was created as a way to get club members actively engaged in visual observing. Each month a deep-sky object would be featured. LVAS members would be encouraged to observe, sketch or image, and make pertinent notes of the Challenge object, and then forward a summary to the LVAS for publication on their website. The Challenge has since expanded to include backyard astronomers across the U.S. and overseas.

February's LVAS Challenge was the little-known double star h3945 (the "Winter Albireo") in Canis Major. Eight ATMoB members (nine, if you include LVAS Observer's Challenge co-founder Roger Ivester, who joined ATMoB last year) observed this stunning topaz and sapphire-hued pair and forwarded observing reports to the LVAS. We might go so far as to say that h3945 became the February ATMoB Observer's Challenge! Kudos to those of you who participated!

I'll continue to "plug" the LVAS Observer's Challenge at each monthly meeting – April's Challenge is the interacting galactic pair NGC 3395 and NGC 3396 in Leo Minor. Mario Motta has already imaged the pair, and Steve Clougherty and Rich Nugent tackled them with Steve's 18-inch Dob. You'll need some heavy artillery (translation: a large aperture scope) to visually capture this relatively faint pair, but I encourage you to step up to the Challenge.

And now a personal note: As many of you know, I received the disturbing news last February that I had what my primary care physician (PCP) described as a "serious" heart condition. The

news came as a shock, as I've always led an active life – the past 35 as a recreational runner.

During the past year, I experienced a handful of instances when I would feel a mild tightness in my chest and extreme fatigue during strenuous activity. I mentioned this to my PCP during my semi-annual physical in February. He ran an EKG, and that's when the heart problem was discovered. During the ensuing week, I underwent an echocardiogram and nuclear stress test. The good news is that the condition isn't as serious as was originally thought, and I'll have a consultation with a local cardiologist later this month. I dread to think of the consequences had I written off everything as part of getting old and not mentioned anything to my doctor.

To all of you in ATMoB (especially you old-timers, and there are a lot of us!), I urge you to consult your PCP should you experience anything unusual in your physical condition. We want you around for years to come!

Clear Skies,

~ Glenn Chaple – President ~

March Meeting Minutes . . .



Dr. Douglas Arion *

Minutes of the monthly ATMoB meeting held on March 9, 2017, in the Phillips Auditorium at the Harvard-Smithsonian Center for Astrophysics. Vice-President Tom McDonagh called the meeting to order at 8:00pm.

Tom relayed information from Club President Glenn Chaple, who was unable to attend due to health concerns. The club membership wished Glenn a speedy recovery.

Phil Levine read the Secretary's Report.

Eileen Myers presented the Treasurer's Report.

Chris Elledge presented the Membership Report.

Tom McDonagh acknowledged Chris Elledge and Maria Batista for all their hard work implementing the new club website. The membership concurred with a round of applause.

Bruce Berger and Steve Clougherty presented the Observing Report. Bruce also informed the membership about new astronomy related stamps available at the post office.

April 1 Mercury will be at greatest eastern elongation.

Jupiter will be at opposition April 7.

The Sue French Object of the Month is NGC 3344, a spiral galaxy in Leo Minor.

The Las Vegas Astronomical Society Object for the Month is M67, an open cluster in Cancer.

Steve informed the membership about a Messier Marathon/Double Star Marathon to be held, weather permitting, at the Clubhouse March 25.

Useful links for the Observing Report:

<http://freestarcharts.com/mercury-reaches-greatest-elongation-east-on-april-1-2017>

https://in-the-sky.org/news.php?id=20170407_13_100

<http://www.astronomersdoitinthedark.com/index.php?c=121&p=488>

<http://freestarcharts.com/messier-67>

<http://www.robhawley.net/mm/SHG-MM-charts-v6.pdf>

<http://www.astronomy.com/magazine/glenn-chaple/2017/01/double-star-marathon-redux>

Joseph Rothschild ATMoB Member Picks for March:

M35 and NGC 2158 two open clusters in Gemini

M47 an open cluster in Puppis

NGC2438 a planetary nebula in Puppis, as well as sigma Ori, a multiple star system just below the belt of Orion.

Helpful links:

http://observing.skyhound.com/archives/jan/M_35.html

<https://apod.nasa.gov/apod/ap120403.html>

<http://oneminuteastronomer.com/812/quintuple-star-orion/>

The Clubhouse Report was given by Steve Clougherty.

Steve reminded the membership that mirror making is no longer held on Thursday night, but is now held on Saturday night.

Tom McDonagh informed the membership of the astronomy videos being shown by John Maher at the Westford Clubhouse on Friday nights.

Club members were encouraged to utilize ATMoB announce email for observing at the Clubhouse on nights other than Saturday, as weather conditions favorable for observing often occur on other nights.

Bruce Berger indicated the ARIO Observatory is available for projects – contact Bruce if interested.

Announcements:

John Sheff gave an informative presentation regarding the upcoming Cambridge Science Festival (CSF), being held the week starting Friday, April 14 through Sunday, April 23. The CSF will be a city wide exposition, involving many local colleges, universities, and museums. The topics will be wide ranging, covering astronomy, biology, chemistry, engineering, math, and the arts.

Friday April 14, 7:30 - 9:30 pm there will be a presentation at the Harvard Sanders Theatre: *Are We Alone? Exploring the Possibility of Other Intelligent Life in the Universe*. Frank Drake (Drake Equation) will be the guest of honor, Sara Seager of MIT will be one of the guest speakers.

There will be a number of Star Parties; ATMob members are encouraged to volunteer:

Friday April 14 Sidewalk Astronomy 10:00 – 11:00pm at the [Harvard Science Center Plaza](#).

Saturday April 22 Astronomy Day Star Party 8:00 – 10:00 pm at the [Harvard Center for Astrophysics \(CfA\)](#).

Sunday April 23 Cambridge Explores the Universe. Solar Observing: 12:00 – 4:00pm at the [Harvard Center for Astrophysics \(CfA\)](#).

ATMob club members interested in volunteering for the Cambridge Star Parties should contact John Sheff or Virginia Renehan: jsheff@comcast.net starparty@atmob.org. For further details regarding the Cambridge Science Festival events check: <https://www.cambridgesciencefestival.org/current-festival/>

Upcoming Star Party:

Friday, April 7 Hanscom Air Force Base Cub Scout Star Party Pre-registration required as this is a secure military base. Contact Virginia Renehan to register: starparty@atmob.org

Star Party Thanks:

Tom gave an account of the March 6th Acton Star Party (14th year) and mentioned how successful this Star Party has been over the years. Over 600 people attended.

Another Star Party took place on March 6th at the Healey School in Somerville. John Sheff brought a scope and Virginia Renehan brought a portable indoor planetarium for an educational session.

The Belmont Star Party at the Chenery Middle School on March 7th was rained out, but telescopes were set up indoors for educational purposes. The club received a certificate of appreciation for participation.

Old Business: none

New Business: none

Tom McDonagh introduced the guest speaker for the evening, Dr. Douglas Arion, Director of Carthage Institute of Astronomy. Dr. Arion gave an engaging “big picture” presentation, linking astronomy to the human experience. He challenged us to present an inter-related “big picture” approach when reaching out to the public during Star Parties. His suggestion was to utilize astronomy outreach as an opportunity to view the universe as one system, rather than as separate, discrete branches of science.

Doug gave an overview of how fortunate we are to be on a stable planet Earth, and how many conditions had to coincide in order for life to exist. We live on a rocky planet with water, the proper distance from a temperature stable yellow Sun, with a sizable orbiting Moon to create tides, and the required chemical composition on Earth to compose organic life. Dr. Arion’s message was that life is precarious, and humankind too often engages in counter-productive conflict, and lacks an appreciation for the environment.

Dr. Arion manages a partnership between the Carthage Institute of Astronomy, the Appalachian Mountain Club (AMC), and the New Hampshire State Parks system, to present educational astronomy observing programs for AMC members, undergraduate students, and general public outreach. Every AMC facility, from New Jersey to Maine, now has a telescope.

Initial funding was provided by the National Science Foundation I USE program. Part of the program includes training sessions and workshops for staff to better hone their communication skills, with the goal of imparting to the public a better appreciation of the human condition while observing the heavens.

In response to a member question, Dr. Arion was receptive to conducting a training session for ATMob members so we can better incorporate the ideas he presented in his lecture when we are at public outreach Star Parties.

Dr. Arion (darion@carthage.edu) recommended the book titled *How to Build a Habitable Planet*, by Langmuir and Broecker, as a good resource.

<http://press.princeton.edu/titles/9691.html>
http://isites.harvard.edu/fs/docs/icb.topic935695.files/AGale_syllabus-all.pdf

Mike Hill provided refreshments for the evening.

Tom McDonagh adjourned the meeting at 9:30 pm.

~ Phil Levine - Secretary ~

Membership Report . . .

I am pleased to welcome our newest members: Santosh Gondi, Benjamin Rubel, David Zucker, Peter Warinner and family, Theodore Hill and family, and David Goldhirsch and family.

As of March 27th, 2017 we have 328 memberships covering 400 members. This is broken down as follows:

- 186 Regular Members
- 94 Senior Members
- 7 Student Members
- 35 Family Membership covering 107 Members
- 6 Guest Members

~ Chris Elledge – Membership Secretary ~

Meeting Recordings . . .

The recording of ATMoB meeting #897 is available on YouTube: <https://youtu.be/2zZGdqEKgNo>

I would like to thank Douglas Arion for allowing us to record his presentation "Are We Special? – Engaging the Public with Astronomy and Nature Education."

~ Chris Elledge – Membership Secretary ~

Clubhouse Report . . .



Brian Rusch painting the Grinding room *

March 2017 Clubhouse Report

A work party was held on Saturday, March 11 with a total of 22 members volunteering that day. Fortunately there had been little or no snow the previous week and our efforts centered on work within the Clubhouse and observatories.

Several volunteers assisted with the grinding room project. The first phase of the project entailed moving heavy grinding equipment to the center of the room where it was cleaned and subsequently covered during painting. Next, the walls, wood trim, windows and doorways were cleaned in preparation for painting and patching. During the afternoon several members helped apply two coats of white paint and by late afternoon equipment was moved back into place. The room certainly looks an order of magnitude better than it has looked in years! This painting project is the last major undertaking for the Clubhouse makeover. To date, we have completed cleaning, organizing, patching and painting the upstairs and downstairs hallways, both stairwells, former evaporator room, first floor telescope room, polishing and grinding room. Previously we had cleaned and

organized the Clubhouse attic, far barn and barn loft. I think all will agree that substantial progress and improvements have been made to our Clubhouse in recent years!

Bruce Berger reports that ATMoB Research and Imaging Observatory (ARIO) repairs have been completed and the telescope and dome are back in full operation. If any trained members wish to use ARIO, please contact Bruce Berger. Bruce and Jim Gettys are currently working to improve long exposure imaging while making adjustments to tracking correction.

Al Takeda and Tom McDonagh took a quick inventory update of our club telescopes and will recommend a list of surplus equipment to sell in the near future.

John Reed, Sai Vallabha, John Stodieck, Brian Rusch and Al Takeda provided lunch and clean up and we thank them for their continued efforts.

The next work session is scheduled for Saturday, April 15.

We would like to thank the following members and friends of the ATMoB for their efforts during the month of March:

Maria Batista, Bruce Berger, John Blomquist, Paul Cicchetti, Steve Clougherty, Paul Courtemache, Chris Elledge, Skip Gaede, Jim Gettys, Dick Koolish, Charles Leiserson, John Maher, Mike Mattei, Tom McDonagh, Vladislav Mlch, John Reed, Alan Rogers, Brian Rusch, Sergio Simunovic, John Stodieck, Al Takeda, and Sai Vallabha.

Important Notice: Due to changing work schedules and commuting times for our optical experts, the Clubhouse **WILL NOT** be open on Thursday evenings. Mirror making sessions will now take place on **Saturday evenings beginning at 7:00 pm. Other times may be scheduled. Check your email on the ATMoB-ANNOUNCE list.** We hope that you will have patience with us as we transition to this new time period.

~ Clubhouse Committee Chairs ~

~ Steve Clougherty, John Reed and Dave Prowten ~



Mirror Grinding at the Clubhouse. (L-R) Julie Sage, Ken Steeves, Paul Courtemanche and Mike Mattei *

Clubhouse Saturday Schedule		
April 1	Glenn Chaple	Sai Vallabha
April 8	NEAF John Maher & Tom McDonagh	
April 15	WORK PARTY # 4 Dave Prowten & Dave Siegrist	
April 22	John Small	John Stodieck
April 29	MESSIER MARATHON #3 Eric Johansson & Bill Toomey	
May 6	Nina Craven	Al Takeda
May 13	WORK PARTY # 5 Paul Cicchetti & Karl Dean	
May 20	Steve Clougherty	Jim Gettys
May 27	Paul Courtemanche	Eric Johansson

Clubhouse Evening Schedule	
Friday Night Educational Videos	7:00 pm - 10:30 pm #
Saturday Night Mirror Making	7:00 pm - ##
Saturday Night Observing	7:00 pm - ##
# Closing time is determined by the organizers	
## Closing time is determined by the "A" members on duty	
Note: The Clubhouse is closed on the 2nd Thursday of the month for our monthly meeting in Cambridge.	
Due to inclement weather conditions on Saturday evenings, the "A" members on duty may elect to close the Clubhouse. Please call the Clubhouse at (978) 692-8708 or check for messages posted to ATMOb-ANNOUNCE.	

Sky Object of the Month . . .

April 2017

Courtesy LVAS Observer's Challenge***

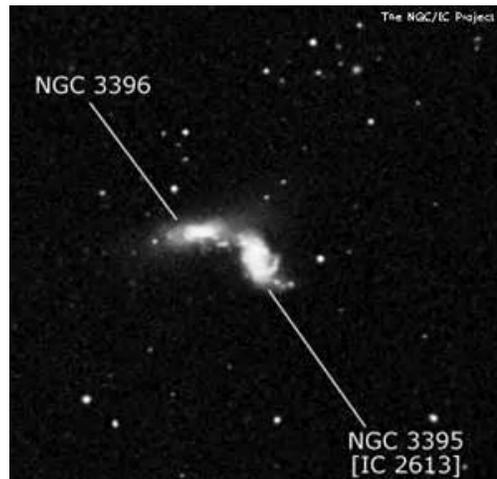
NGC 3395-96 – Interacting Galaxies in Leo Minor

Mags. 12.1/12.2

Sizes 1.9' X 1.2' / 2.8' X 1.2'



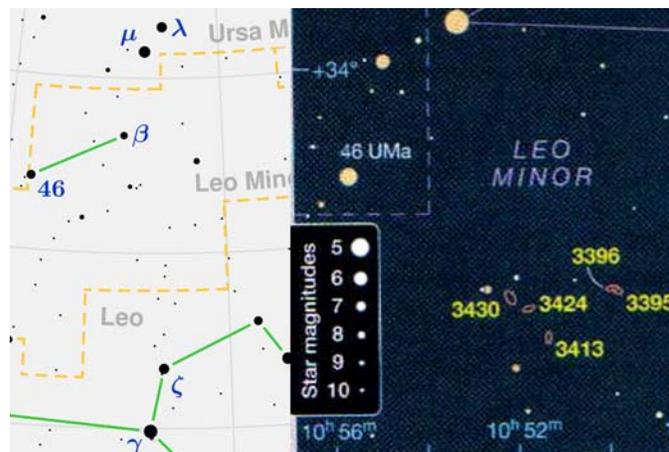
Galaxy group in Leo Minor. greggsastronomy.com



NGC3396 and NGC3395. greggsastronomy.com

This month's LVAS Observer's Challenge is a true challenge. NGC 3395 and NGC 3596 are interacting galaxies (catalogued as Arp 270 in Halton Arp's *Atlas of Peculiar Galaxies*) located near the eastern edge of Leo Minor, 1½ degrees SW of the 4th magnitude star 46 Leo Minoris. The first challenge is in seeing them at all. Each galaxy is a 12th magnitude object and will require exceptionally dark skies if you choose to tackle them with a telescope of 6-inch aperture or less. For owners of medium-sized instruments (8 to 12 inches), the challenge is in picking out detail in each. In his "Deep Sky Wonders" column in *Sky & Telescope*, Walter Scott Houston wondered if the bridge between these galaxies might be picked up in a 30-inch scope. Can it be detected in a scope half that size? The challenge is yours!

NGC 3395 and NGC 3396 were discovered by William Herschel on December 7, 1785. Studies indicate a distance of anywhere from 72 to 85 million light years.



wikipedia.org

Copyright Sky and Telescope

***The purpose of the LVAS Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone who is interested, and if you are able to contribute notes, drawings, or photographs, the LVAS will be happy to include them in their monthly summary. If you would like to contribute material, submit your observing notes, sketches, and/or images to either [Roger Ivester \(rogerivester@me.com\)](mailto:Roger Ivester) or [Fred Rayworth \(fred@fredrayworth.com\)](mailto:Fred Rayworth). To find out more, click on the following links: [LVAS Observer's Challenge past reports](#) and/or visit the [Las Vegas Astronomical Society website](#).

~ Glenn Chaple for the LVASS ~

Astronomy Day . . .



Image courtesy of the Harvard-Smithsonian Center for Astrophysics (CfA)



Friday, April 14, 2017
Saturday, April 22, 2017
Sunday, April 23, 2017

Friday, April 14, 2017

10:00 - 11:00pm : Sidewalk Astronomy at the [Harvard Science Center Plaza](#). **ATMob Scopes Needed.**

Saturday, April 22, 2017

8 - 10 pm: [Star Party](#). [CfA rooftop and parking lot](#) viewing through telescopes. Moon, Jupiter, & more! **ATMob Scopes Needed.**

Sunday, April 23, 2017

12 - 4 pm: [Cambridge Explores the Universe](#) at the [CfA](#). Become an astronomer for a day! Enjoy exploration stations that include hands-on activities, telescope tours, ask an astronomer booths, and solar observing. Ideal for kids and fun for all ages.

Solar Viewing. **ATMob Scopes Needed.**

CfA, 60 Garden Street, Cambridge, MA
Observing is weather dependent.
Call 617-495-7461 to check for cancellation.
<https://www.cfa.harvard.edu/publicevents>

~ Submitted by Dick Koolish and John Sheff ~

Annual Acton Star Party . . .



(L-R) Bob Toop and Tom McDonagh setting up *

Despite a thick cloud cover, the Annual Acton Star Party on March 6th was a success. Outside, ATMob members were able to show the 5th grade students of the Parker Damon School, their siblings and their parents, the planet Venus and the Moon through many different telescopes. Venus was seen as a thin crescent which mimicked the Moon that evening.

Inside, there were multimedia shows, demonstrations, talks and astronomical resources.



Standing (L-R): Al Takeda, Bob Phinney, Mike Francis, Bob Toop, Alan MacRoberts, Tom McDonagh, Gary Green, Bruce Tinkler, Phil Rounseville, Eileen Myers and Steve Feinstein. Sitting (L-R): John Stodieck, George Roberts, Rich Nugent, John Reed. *

We would like to thank the following members and volunteers for helping out.

Steve Feinstein, Mike Francis (Galileo), Gary Green (star photos and music), Brewster LaMacchia, Alan MacRoberts (*Sky & Telescope*), John Maher, Tom McDonagh, Eileen Myers, Rich Nugent, Bob Phinney, John Reed, George Roberts, Jack Richardson, Phil Rounseville, John Stodieck, Al Takeda, Bruce Tinkler, and Bob Toop.

Belmont Star Party . . .

Rain canceled the outdoor observing session on March 7th, however, John Maher, John Reed and Bob Toop set up their telescopes inside to demonstrate their operation. Jim Zebrowski, an Ambassador in NASA's Solar System Program and ATMob member, gave one of the talks that evening. There were 200 attendees at this star party.

Thank you to those members that volunteered. John Maher, John Reed, Bob Toop and Jim Zebrowski.

Healey School Star Party . . .

Thanks to Virginia Renehan and John Sheff for volunteering for the Healy School Star Party in Somerville on March 6th.

Virginia demonstrated the StarLab Portable Planetarium, and telescopic observing was handled by John Sheff.

2017 NEAF Convention . . .



NEAF 2009 *

Northeast Astronomy Forum (NEAF) Presented by the Rockland Astronomy Club

Saturday, April 8, 2017 through Sunday, April 9, 2017

SUNY Rockland Community College
145 College Road
Suffern, New York 10901

Highlights: Vendors of telescopes and accessories from all over the world, exhibits, solar observing with all kinds of equipment, lectures, raffle prizes

Also **Northeast Astro-Imaging Conference**
Thursday, April 6 & Friday, April 7, 2016
<http://www.rocklandastronomy.com/neaf.html>



2017 Astronomy Conventions . . .

Below is a list of the 2017 dates for “local” astronomy conventions attended by many ATMob members:

Northeast Astronomy Forum (NEAF)
Presented by the Rockland Astronomy Club
Saturday, April 8, 2017 through Sunday, April 9, 2017
SUNY Rockland Community College
145 College Road

Suffern, New York 10901

Highlights: Vendors of telescopes and accessories from all over the world, exhibits, solar observing with all kinds of equipment, lectures, raffle prizes

Also **Northeast Astro-Imaging Conference**

Thursday, April 6 & Friday, April 7, 2015

<http://www.rocklandastronomy.com/neaf.html>

Stellafane Convention

Presented by the Springfield Telescope Makers
Thursday, July 20, 2017 through Sunday, July 23, 2017
Springfield, Vermont

Highlights: Dark sky observing, solar observing, lectures, mirror grinding and telescope making demos, swap tables, raffle prizes
Workshop at the Hartness House to be announced

Thursday, July 20, 2017

Springfield, MA

www.stellafane.org

StarConn

**Presented by the Astronomical Society of Greater Hartford
with the kind and generous cooperation of the Astronomy
Department of Wesleyan University**

Date TBD

Wesleyan University in Middletown, Connecticut

Highlights: Lectures, swap tables, vendors, raffle prizes

<http://asgh.org/>

Connecticut River Valley Astronomers Conjunction

Friday, September 15, 2015 through Sunday, September 17, 2017
Some ATMob members stay over Friday night to observe; some go only for the day on Saturday

Northfield Mountain Recreation and Environmental Center
99 Millers Falls Road (Route 63), Northfield, MA 01360

Highlights: Solar observing, dark sky observing, lectures, swap tables, raffle prizes

<http://www.philharrington.net/astroconjunction/>

~ Eileen Myers – Treasurer ~

Editor: * Photos by Al Takeda unless otherwise noted.

May Star Fields DEADLINE

Sunday, April 23rd

Email articles to Al Takeda at

newsletter@atmob.org

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed April 5, 2017

Amateur Telescope Makers of Boston, Inc.
c/o Chris Elledge, Membership Secretary
99 College Ave
Arlington, MA 02474
FIRST CLASS

EXECUTIVE BOARD 2016-2017

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NEWSLETTER	Al Takeda	newsletter@atmob.org

PUBLIC OUTREACH

STAR PARTY COORDINATOR:
Virginia Renehan starparty@atmob.org

How to Find Us...

Web Page www.atmob.org

MEETINGS: Held the second Thursday of each month (September to July) at 8:00PM in the Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics, 60 Garden St., Cambridge MA. For INCLEMENT WEATHER CANCELLATION see www.atmob.org and check your email on the ATMOB-ANNOUNCE list.

CLUBHOUSE: Latitude 42° 36.5' N Longitude 71° 29.8' W

The Tom Britton Clubhouse is open every Saturday from 7 p.m. to late evening. It is the white farmhouse on the grounds of MIT's Haystack Observatory in Westford, MA. Take Rt. 3 North from Rt. 128 or Rt. 495 to Exit 33 and proceed West on Rt. 40 for five miles. Turn right at the MIT Lincoln Lab, Haystack Observatory at the Groton town line. Proceed to the farmhouse on left side of the road. Clubhouse attendance varies with the weather. It is wise to call in advance: (978) 692-8708.

Heads Up For The Month . . .

To calculate Eastern Daylight Time (EST) from Universal Time (UT) subtract 4 from UT.

Apr 1 Mercury at greatest eastern elongation, 19-deg. (evening)
Apr 3 First Quarter Moon (Moonset at midnight)
Apr 7 Jupiter at opposition
Apr 11 Full Moon
Apr 19 Last Quarter Moon (Moonrise at midnight)
Apr 22 Lyrid Meteors peak
Apr 26 New Moon
May 2 First Quarter Moon (Moonset at midnight)
May 5 Eta Aquariid Meteors peak