



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

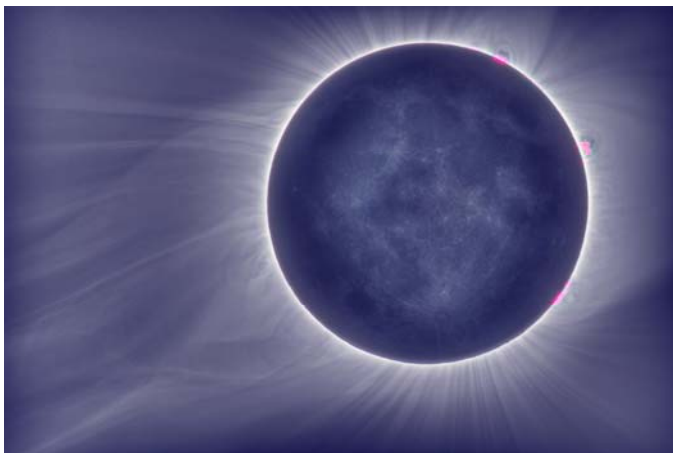
Vol. 29, No. 8 September 2017

This Month's Meeting . . .

Thursday, September 14th, 2017 at 8:00 PM
Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

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



2017 Solar Eclipse. Image by George East

The Great American Total Solar Eclipse

Where were you on August 21, 2017? If you were an ATMoB member, you might have been anywhere along a 70-mile-wide path from Oregon to South Carolina taking in the totality of the "Great American Solar Eclipse". If you weren't able to travel to the "sweet spot," you might have taken in the partial eclipse from your back yard or from the gathering at the ATMoB Clubhouse. At our September meeting we'll celebrate the event with first-hand member accounts. Already scheduled are talks by Bernie Volz (the ATMoB Missouri total eclipse trip), Phil Levine (the Clubhouse partial eclipse party), and 8th-grade Project CATE participant Arianna Roberts (whose role in this Citizen Science solar eclipse project was funded to a great extent by ATMoB). Arrangements to add brief reports by other ATMoB eclipse chasers are still pending, so stay tuned!

Please join us for a pre-meeting dinner discussion at House of Chang, 282 Concord Ave, Cambridge, MA at 6:00 pm before the meeting.

President's Message . . .

OK, ATMoB Universe – I have a confession to make. I almost let the "Great American Solar Eclipse" be about me and not the club. It's bad enough that I chose to pass up the ATMoB trip to Columbia, MO, in favor of an event being held in St. Joseph, MO. It got worse when health conditions forced me to cancel everything and stay home. Poor me! I was darned if I was going to get depressed by viewing the partial solar eclipse from my back yard. Nosiree – I was hell-bent on skipping the whole thing and spending the day alone, fishing at a nearby lake.

It was an atmob-announce email that brought me to my senses. "Was ATMoB planning any kind of eclipse viewing event at the clubhouse?" it asked. My conscience reminded me that I was ATMoB President first, and bass angler second. So I cut short the pity party, put away the rod and reel, and responded that I would open the Clubhouse a little after noon on "Eclipse Day".

When I arrived, the Clubhouse was already open, and at least a dozen ATMoB members, family, and friends were set up on the observing field. More showed up, and by the time of first contact 30 to 40 attendees were enjoying the show. Some brought food and snacks; hot dogs and hamburgers were cooked up on the grill. The whole thing evolved into a full-blown eclipse party! I'd observed partial solar eclipses before, but never in the company of such an enthusiastic crowd.

They say that when the world hands you a lemon, you should make lemonade. On August 21, 2017, thanks to ATMoB, I enjoyed the sweetest lemonade ever!

Clear Skies,

~ Glenn Chaple – President ~

July Meeting Minutes . . .

Minutes of the monthly meeting held July 13, 2017, in the Phillips Auditorium at the Harvard Smithsonian Center for Astrophysics. Club President Glenn Chaple called the meeting to order at 8:00 pm.

- Phil Levine read the Secretary's Report
- Eileen Myers presented the Treasurer's Report
- Chris Elledge presented the Membership Report
- Bruce Berger gave an update on the ATMoB Research and Imaging Observatory (ARIO). The optical train was disassembled and re-coated to address internal reflection issues. See Bruce if interested in being trained on the use of ARIO.
- Glenn Chaple gave the Observing Report.
The Las Vegas Observer's Challenge for July is M14. The August Challenge is M24 and NGC 6603.
ATMoB picks for the month are from member Craig Sandler. The objects are M6, M7, M8, NGC 6520.
- Steve Clougherty gave the Clubhouse Report

Steve gave the membership an overview of the work done at two Clubhouse work parties held on June 10th and July 8th.

- **Announcements:**
The membership observed a moment of silence to honor the passing of ATMoB member Dave Mittelman, patron of astronomy and a supporter of ATMoB. A moment of silence was also observed for Howie Glatter, master craftsman of collimation tools.

Glenn mentioned a number of ATMoB members will be giving presentations at the annual Stellafane Convention: Rich Nugent, Mario Motta, Phil Rounseville, James Synge, and Al Takeda.

<http://stellafane.org/convention/2017/2017-schedule.html>

- **Old Business:**
Glenn encouraged members to post a selfie photo on the ATMoB membership directory list.

James Synge is finishing work on his Panoptes exoplanet project. He has officially entered this project in the Stellafane mechanical competition.

- **New Business:** none

Maria Batista brought a set of colorful planetary drinking glasses to be auctioned off during the meeting, along with a sheet of commemorative 2017 total solar eclipse stamps, issued by the US Postal Service. J. Hinz (guest) won the \$37 winning bid. The proceeds of the auction were donated to the club.

Maria Batista brought a set of colorful planetary drinking glasses and a commemorative stamps, issued by the US Postal Service, of the 2017 total solar eclipse to be auctioned off during the meeting. J. Hinz (guest) won the \$37 winning bid. The proceeds of the auction were donated to the club.

This month's speakers featured ATMoB members Al Takeda, Mario Motta, Julie Sage, Jim Mahoney and Alan Sliski.



Al Takeda *

Al Takeda presented an abbreviated version of his upcoming Stellafane talk on "Imaging the Great American Total Solar Eclipse".



Mario Motta *

Dr. Mario Motta's talk was how to safely observe the total solar eclipse.



Julie Sage *

Julie Sage gave a presentation of "Cubes in Space", a science program for students 11-18 years old that she participated in. Each group wrote a proposal for an experiment that would fit into a small cube that was launched on-board a sounding rocket or a high altitude balloon.

Experimental packages included an innovative watch design cube, a solder cube, a fabric cube, a computer cube and a pacemaker cube. All experiments would test how conditions in space would affect materials or a device's function.

<http://www.cubesinspace.com/>



Jim Mahoney *

Jim Mahoney gave a presentation on how to configure an iPhone or iPad for red screen mode so these devices can be used at night during observing sessions and not interfere with a person's night vision.



Al Sliski *

Al Sliski's talk detailed the restoration and relocation of a 36-inch Boller and Chivens telescope built in 1965, most recently used in the Harvard optical SETI project. Alan and fellow ATMoB members and friends John Briggs, Aaron Sliski, Ken Launie, and Dennis di Cicco, have carefully orchestrated disassembly, transport, cleaning, and re-assembly of the 36-inch telescope and mount. David Mittelman was instrumental in obtaining the telescope, facilitating transfer of telescope ownership to the Mittelman Foundation, as well as purchasing land and providing funding for a newly constructed roll-off observatory in New Mexico.

Alan Sliski stepped through the methodic process of disassembly and hoisting of the sizable, heavy components of the telescope and mount (19 thousand lbs.), and the eventual transfer to the newly constructed roll-off observatory. A new wedge, and new front ring for the secondary mirror (which incorporates an innovative rotating diagonal mirror), have been fabricated for the 36-inch. The original telescope was an f/8 Cassegrain, which has now been modified as an f/4 Newtonian. The wavefront error of the optics is rated at 1/20th wave.

Alan indicated that the telescope will have remote log-in access capability and will be made available to non-profit organizations. <http://bollerandchivens.com/?p=1826>
<https://www.princeton.edu/~willman/observatory/oseti/oseti.html>

Refreshments for the evening were provided by Julie Kaufman (who baked a cake to celebrate the ATMoB's 900th meeting), and Glenn Chaple.

President Glenn Chaple adjourned the meeting at 10:40 pm

~ *Phil Levine - Secretary* ~

Meeting Recordings . . .

The recording of ATMoB meeting #900 is available on YouTube: <https://youtu.be/Ow1GaKIGx6g>

I would like to thank Al Takeda, Mario Motta, Julie Sage, Jim Mahoney, and Al Sliski for allowing us to share their presentations online.

This link is to the publicly available cut of the meeting recording. To view the original version of the meetings, please see the Announce Forum on the ATMoB Website <http://www.atmob.org>.

~ *Chris Elledge - Membership Secretary* ~

Membership Report . . .

I am pleased to welcome our newest members James Barron, Michael Bloom, Joseph Dechene, Jacob Harvey, Stephen Kolaczowski, Dwight Lanpher, Bryan and Mary Nicholson, Douglas Paul, Michael Schexnaydre and Timothy Yip.

As of August 29th, 2017 we have 350 memberships covering 427 members. This is broken down as follows:

- 195 Regular Members
- 103 Senior Members
- 8 Student Members
- 38 Family Membership covering 115 Members
- 6 Guest Members

Renewal season wraps up on September 1st, so my reported membership numbers will drop after this report. 176 Memberships have already been renewed. 133 renewals are still due. Memberships that are not renewed by December 1st will expire. New members that joined since January are not due for renewal at this time; however, any that bought a magazine subscription through the club should contact me so we can arrange for a subscription renewal.

You can check if you need to renew and start your renewal process on the website at <http://www.atmob.org/renew>

You can also download the membership application from the website at <http://www.atmob.org/signup> by clicking on the "Download an application" link.

Donations are encouraged during membership renewal to help keep our club running smoothly, our Clubhouse maintained, and telescopes in good condition. Donations are tax deductible to the extent allowed by law. If you choose to pay by credit card please consider making at least a small donation since credit card companies take a few percent of your payment to the club.

Please contact me if you need any help with renewing or logging into the website.

~ *Chris Elledge - Membership Secretary* ~

Clubhouse Report . . .



(L-R) Slav Mlch and John Blomquist *

July 2017 Clubhouse Report

Our most recent Clubhouse work session took place on Saturday, July 8, with a total of 20 members participating. Since the weather was conducive to outdoor work several projects were handled. John Blomquist towed his tractor mower to the Clubhouse and mowed the entire property. John returned in August and mowed again. We are greatly appreciative of the effort John has made during the entire season.

During the work party several members trimmed the border of the property and raked. Maria Batista applied a mosquito repellent treatment to the border of the observing field.

John Maher successfully installed a new limit switch on the clamshell dome. The telescope and clamshell observatory are now fully operational.

Mike Hill organized and cleaned the upper barn room. He and Dave Prowten repaired the back Clubhouse door and fixed the far barn doors. Both are ready for staining at this time.

Many thanks go out to our lunch crew for cooking and cleanup during the work party.

Our next work party will take place on Saturday, September 9th beginning at 10 am.

We would like to thank the following volunteers for their efforts over the Summer:

Maria Batista, Bruce Berger, John Blomquist, Barbara Bosworth, Marsha Bowman, Paul Cicchetti, Steve Clougherty, Nina Craven, Jim Gettys, Mike Hill, Dick Koolish, John Maher, Vladislav Mlch, Eileen Myers, Dave Prowten, Phil Rounseville, John Stodieck, Al Takeda, Bill Toomey, Sai Vallabha.

Important Notice: The Clubhouse **WILL NOT** be open on Thursday evenings. Mirror making sessions will now take place on **Saturday afternoons beginning at 3:00 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* ~

Clubhouse Saturday Schedule		
September 16	John Panaswich	George Paquin
September 23	ATMoB Picnic at the CLUBHOUSE John Stodieck & Volunteer Needed	
September 30	Glenn Chaple	Bill Toomey
October 7	WORK PARTY # 10 John Maher & Eileen Myers	
October 14	Glenn Meurer	Dave Prowten
October 21	Joe Henry	Paul Courtemanche
October 28	Mike Hill	Brian Maerz
November 4	WORK PARTY # 11 Dave Siegrist & John Small	
November 11	Eric Johansson	Tom McDonagh

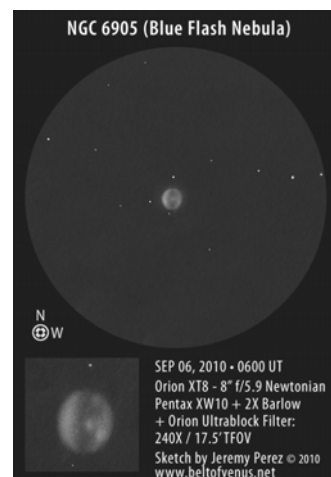
Clubhouse Evening Schedule	
Friday Night Educational Videos	7:00 pm - 10:30 pm #
Saturday Afternoon Mirror Making	3:00 pm - ##
Saturday Night Observing	7:00 pm - ##
# Closing time is determined by the organizers	
## Closing time is determined by the "A" members on duty.	
Saturday afternoon mirror making schedules will be posted to the ATMOb-ANNOUNCE email.	
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 . . .

September 2017

Courtesy LVAS Observer's Challenge***

NGC 6905 – Planetary Nebula in Delphinus
Mag. 11.1; Size 42" X 35"

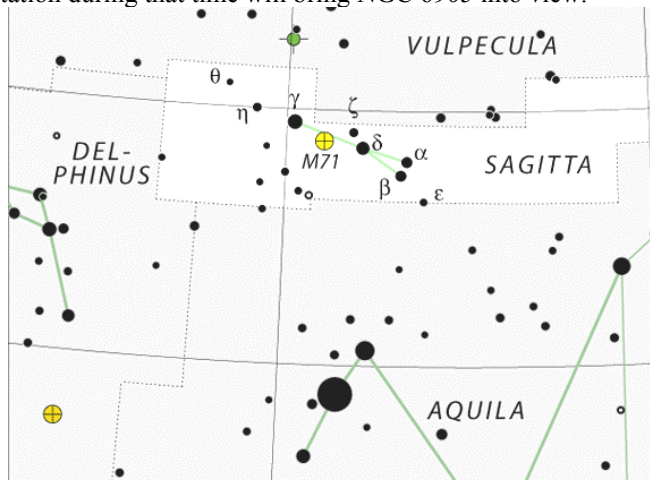


www.perezmedia.net



www.astronomia.com

This month's LVAS Observer's Challenge takes us to the northwest corner of Delphinus and the 11th magnitude planetary NGC 6905, also known as the Blue Flash Nebula. The challenge begins right away when you try to find NGC 6905. At the 2000 coordinates RA: 20h22m23.0s Dec: +20°06'16", it's positioned in a star-rich part of the Milky Way, but away from any nearby bright stars. The best route for star-hoppers might be a 4 degree trip eastward from 5th magnitude eta (η) Sagittae (see charts below). In his book, *Cosmic Challenge*, author Phil Harrington offers an interesting way to locate NGC 6905 without resorting to star-hopping or using GoTo technology. Simply center eta Sge in a low power eyepiece and wait 16 minutes. Earth's 4 degree rotation during that time will bring NGC 6905 into view.



www.constellation-guide.com

The next challenge is in determining the smallest aperture that will pick up NGC 6905. It has reportedly been seen with a 4-inch scope, but its low surface brightness mandates dark skies. Larger instruments will reveal a north-south elongation. Can you detect its bluish color (not as obvious as the nick-name might imply) and glimpse its 14th magnitude central star?

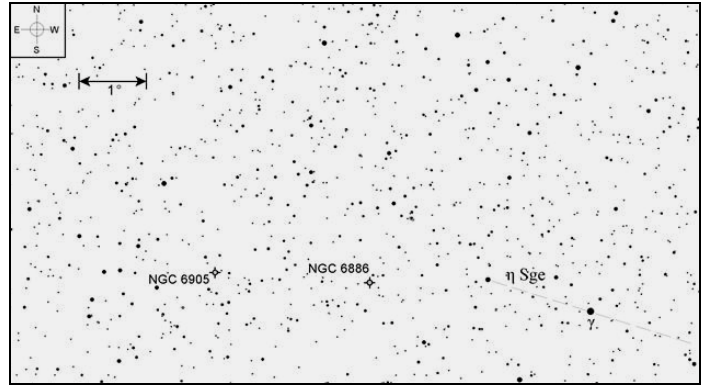


Chart adapted from *Cosmic Challenge* by Phil Harrington.

NGC 6905 was discovered by [William Herschel](#) in 1784, hence its designation H.IV 64 or 164 (signifying the 16th entry in Class 4 [Planetary Nebulae] of his deep sky catalog) on older star atlases. Its distance is uncertain, but may be in excess of 4000 light years.

***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](mailto:rogerivester@me.com) (rogerivester@me.com) or [Fred Rayworth](mailto:fred@fredrayworth.com) (fred@fredrayworth.com). 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 ~

Stellafane Winners . . .

We had two [telescope competition](#) winners and one raffle winner at the annual [Stellafane](#) convention this year.



Mike Hill *

Mike Hill won 1st Place Small Newtonian Optical Mechanical and tied for 3rd Place in the Mechanical Craftmanship competition with his 4 1/4-in f/10 Newtonian-Altitude/Azimuth telescope.



James Synge *

James Synge won a 3rd Place Special Award (Mechanical First Scope) for his 2.4-in f/1.4 Refractor-German Equatorial Mount (GEM) Transiting Exoplanet Detector (PANOPTES). For more information visit [James' blog](#).



(L-R) Steve Dodson and Diego Alvarez

Diego Alvarez (Hugo's son) participated in the "[Telescope Making For Teens](#)" program at Stellafane. With "Stargazer" Steve Dodson's assistance, the teens built an 8-inch Dobsonian Newtonian telescope. The completed telescope was raffled off during the Saturday evening program and Diego was the winner.

Howard LeVaux - In Memoriam . . .



Howard LeVaux at the 2009 China Eclipse *

It is with profound sadness that we announce the passing of Howard LeVaux on August 28, 2017 at the age of 84. A consummate outdoors person he leveraged that interest as a professional scientist, astrophysicist and energetic amateur astronomer. Many members of ATMoB have traveled with Howard on many eclipse expeditions throughout the world. He amazed many a member with his huge eclipse imaging setup that he carted to some of the most remote regions on earth. Howard was very active in the club and participated in many star parties, observing sessions, work parties and lectures.

Obituary from the Edward V. Sullivan Funeral Home

Howard LeVaux died on August 28, 2017 at the age of 84, at home in the arms of his wife, Jean. He was a star gazer, traveler, scientist and consummate outdoorsman. As a young man, Howard spent 15 months in Antarctica, studying the Aurora Australis. LeVaux Peak in Antarctica's Executive Committee Range is named after him. He returned by sea via Australia, Hong Kong, Japan and Europe. He skied the Alps, the Canadian Rockies, and the Sierra Nevada range, and did technical ascents in the Northern Cascades and elsewhere. Later, he adventured in the rugged mountains of New England with the Sub Sig Outing Club, and skied every line of Tuckerman's Ravine. He met Jean skiing in the Laurentian Mountains near Montreal in 1965; they were married in Cambridge 3 months later. Howard went on to earn a PhD in Astrophysics at Brandeis. They spent a couple of years in Logan, Utah, where he studied the impact of supersonic jet transport on the ozone layer as a faculty researcher at Utah State. In 1978, as Howard was finishing his dissertation on deuterium abundance in planetary nebulae, Jean's real estate business was taking off. He jumped in with both feet, doing everything from selling houses to building one of the earliest office computer networks. His vision helped set a new standard in the real estate community. An amateur astronomer from an early age, Howard built his first telescope when he was 12. He pursued solar eclipses around the world, viewing totality in Mongolia, Baja, Australia, China, Aruba, Hungary and the U.S. He experienced his final eclipse on August 21, 2017, in Ashburnham, MA, near the wild area of land he had purchased years earlier and spent much of his life tending; he recently put most of it into a conservation easement. Howard continued climbing rocks and mountains, kayaking and running marathons. He bungee jumped from Victoria Bridge in Africa, circumambulated Mt. Kailash in Tibet, dove the Great Barrier Reef, hunted deer in Massachusetts, and elk in Montana. He will be missed by his many outdoor and astronomy buddies, by members of civic and scientific associations like Harvard's Committee on Microbiological Safety, the Amateur Telescope Makers of Boston, the conservation community of Ashburnham, and by virtually anyone else who ever knew him or heard his infectious laugh. He is survived by Jean, his loving wife of 52 years, and their sons Ari LeVaux, Stanley, Charles and Howard Letovsky; daughters-in-law Katie, Patricia, and Sharon, and grandchildren Louie and Remy, Emily, Miles and Penelope, and Sasha. Donations in Howard's honor are welcome to the Cambridge Housing Assistance Fund, www.chafund.org. For information about a future memorial, or to share Howard stories, visit <https://www.facebook.com/groups/HowardLeVaux/>

Dave Mittelman - In Memoriam . . .



It is with deep sadness that we announce the passing of Dave Mittelman on May 23, 2017 at the age of 62. He was very active in astronomy and was a supporter of ATMobB.

Selected passages from the Obituary at the Boston Globe

Dave Mittelman was a person you wanted to be with, the individual you always wanted on your team, and a man looked up to and respected. He had a clarity of heart that was unparalleled, building a life comprised of the moments he chose. In his role as a husband, a father, a friend, or a money manager, Dave was a humble leader and a confident, gentle decision-maker who always saw the best in everyone...

He enjoyed spending time in Colorado skiing, hiking and exploring the natural beauty of the mountains. Dave was passionate about astronomy and astrophotography, and in recent years initiated and led the MDW Hydrogen – Alpha Survey to create the first-ever high-resolution hydrogen map of the entire sky. This ongoing project will provide a freely accessible map that will be invaluable to future astronomers. Dave founded observatories in New Mexico, Colorado and Massachusetts, which he opened to non-profit educational entities including colleges and high schools. Check out Sky & Telescope Magazine for a list of Dave's published images... In 2013, he established the P. Frank Winkler Professorship in Physics at Middlebury College, with the goal of decoding and understanding the mysteries of the universe and passing on his passion and intrigue for the study of astronomy. In 2017, Middlebury honored Dave by naming their observatory in his honor...

Dave helped numerous other people and organizations, but preferred to do it anonymously. Dave lived a life of integrity, generosity, excellence, and humility... In lieu of flowers, gifts may be made to The David R. Mittelman Fund at Middlebury College. Gifts may be sent to: Middlebury College, Office of Gift Administration, Attn: Mittelman Fund, 700 Exchange Street, Middlebury, VT 05753 or made online with special mention of the Mittelman Fund at <http://www.middlebury.edu/giving/ways...> A Memorial Celebration is planned for Thursday, September 28th, 6:30PM at The Four Seasons Hotel Boston.

Annual ATMobB Picnic . . .

Saturday, September 23th at 3:00 PM
At the Clubhouse in Westford

Saturday, September 23th is the date of this year's Annual Club Picnic at the Clubhouse in Westford, start time 3:00 P.M. Enjoy a day with good food and lots of astronomy talk with other ATMobB members. Bring your best solar eclipse photo so we can put them up in the Clubhouse.

Members, their families and their friends are invited to attend our Fall picnic. Bring something tasty to share, such as appetizer, salad, a favorite entree, veggies, homemade bread, homemade pastry, fresh fruit or other dessert. We will provide hamburgers, hot dogs, beverages, paper goods and plastic cutlery.

There will be solar viewing and night sky observing. Bring lawn chairs or blankets. Bring suntan lotion and mosquito repellent. Bring your telescope and your observing clothing and gear. The club's observatories will be open. Bring the kids and grandchildren.

There will be a tour of the clubhouse facilities and a demonstration of mirror grinding. We will have some astronomy activities for kids. We also plan to walk "up the hill", stopping along the way to talk about the MIT Haystack Observatory facility.

Setup will start at 10:30 AM Saturday morning. We need help setting up and breaking down the various tents, tables and chairs.

Help is needed for setting up food, keeping things tidy during the event, and cleanup after.

This year in particular we need help with the kids' astronomy activities. Please email or phone Eileen your availability to make sure there are enough helping hands.

Directions to the clubhouse can be found on the last page of Star Fields. Directions can also be found at the www.atmob.org. Go to About ATMobB and click on Clubhouse.

Last minute attendees are always welcome. Come for a few hours or stay and observe until the wee hours.

Questions - Email co-hosts Eileen Myers at starleen@charter.net 978-456-3937 or Al Takeda artakeda2682@earthlink.net or John Reed mejreed58@gmail.com

Editor: * Photos by Al Takeda unless otherwise noted.

**October Star Fields DEADLINE
Sunday, September 24th**

**Email articles to Al Takeda at
newsletter@atmob.org**

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed September 12, 2017

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

EXECUTIVE BOARD 2017-2018

PRESIDENT:	Glenn Chaple	(978) 597-8465
VICE PRES:	Tom McDonagh	(617) 966-5221
SECRETARY:	Phil Levine	(781) 956-6509
MEMBERSHIP:	Chris Elledge	(781) 325-3772
TREASURER:	Eileen Myers	(978) 456-3937
MEMBERS AT LARGE:	Bruce Tinkler	(781) 862-8040
	Al Takeda	(508) 494-7877
	Maria Batista	(617) 347-3730
PAST PRESIDENTS:		
2012 - 14	Mike Hill	(508) 485-0230
2010 - 12	Bernie Kosicki	(978) 263-2812
COMMITTEES		
CLUBHOUSE :	John Reed	(781) 861-8031
	Steve Clougherty	(781) 784-3024
	David Prowten	(978) 369-1596
OBSERVING:	Bruce Berger	(978) 387-4189
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 (EDT) from Universal Time (UT) subtract 4 from UT.

Sept 6 Full Moon
Sept 12 Mercury at its greatest Western Elongation (morning) for the year
Sept 13 Last Quarter Moon (Moonrise at midnight)
Sept 17 Moon passes 0.5 degree S. of Venus (9 pm EDT)
Sept 20 New Moon
Sept 22 Autumnal Equinox
Sept 27 First Quarter Moon (Moonset at midnight)