



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. 30, No. 8 September 2018

This Month's Meeting . . .

**Thursday, September 13th, 2018 at 8:00 PM
Phillips Auditorium**

Harvard-Smithsonian Center for Astrophysics

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

The 2017 Great America Eclipse Revisited

The ATMoB Outreach Program

We begin the 2018-2019 season with a pair of talks presented by ATMoB members.

It's hard to believe that over a year has passed since the Great America Eclipse of 2017. Julie Kaufmann will relate her experience with this epic event.

Following Julie's talk, Rich Nugent and members of the Outreach Committee will discuss the ATMoB Outreach Program. We'll look at the various types of outreach events, why they are important to our club and to amateur astronomy in general, and what you can do to help our outreach program achieve the level of activity (20-25 star parties per year) it once had. A short star party "How To" will be part of the presentation.

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 . . .

One of my first official duties as president of ATMoB is to prepare a monthly message to the membership regarding the state of the club and some general musings and observations.

The summer flew by for me with family travel to Portugal. We spent the bulk of our time just west of Lisbon near Cascais, and along the Atlantic coast to Porto. The countryside was stunning,

and the Portuguese people were friendly and accommodating. We did experience a long daytrip to the ancient city of Evora and its creepy chapel made from human bones and Roman temple ruins.

We ventured further east to Vendas Novas, Redondo to experience the cork harvest at Herade da Marotiera (<http://maroteira.com/en/>). This was fascinating and highly entertaining for all.

At the one point during our tour, the guide made a stop at the highest point of the property, where preparations for an astronomical observatory, to be used by guests and locals, are in progress. The vistas were amazing, and I imagine this will be a fantastic venue for star gazing as it is remote and dark. We also toured an ancient megalithic monument and we happily took advantage of the wine offerings.

Another venue I wished we had visited would be the Center of Astronomical Observation (<https://www.coaa.co.uk/>) based in the Algarve region. Renowned dark skies and world class facilities make this a must visit for my next trip to Portugal. Has any reader visited this and other astronomical oriented site in mainland Portugal? I highly recommend a visit to this wonderful country for the vistas, food and engaging Portuguese people.

As many of you are aware, I am focused on sailing during the months of May to October. This year's family reunion cut into my sailing time. I would love to engage other sailors and potentially recruit a speaker to cover a sailing/observing oriented topic. Please let me know if you have any suggestions.

Since the June meeting, a number of members have been hard at work reviving our culture of outreach to the community. On August 23rd, the Outreach committee hosted a Star Party Training event, followed by clear but dewy observing. It was a great opportunity to meet with folks excited about sharing astronomy with the public. At this month's meeting on the 13th, members of the Outreach Committee will share plans for increasing ATMoB's impact through star parties.

Julie Kaufmann will also speak about her eclipse travels! I have high expectations for the evening.

I am also looking forward to annual ATMoB Club Picnic, to be held on Saturday, September 15th. It is a great opportunity to meet up with fellow club members. I always find it fun to connect voices heard on the observing field in the dark of night with faces in the light of day. Please know that we plan to recognize and celebrate longtime member Sai Vallabha's life at this time. Please feel free to visit the Clubhouse starting at 3 PM. All members and their families are invited.

With the improving weather for observing, I hope to meet you on the observing field and in our workshops!

~ Tom McDonagh – President ~

July Meeting Minutes . . .

Minutes of the 911th ATMoB meeting held on July 12, 2018 at the Harvard-Smithsonian Center for Astrophysics in the Pratt Room. Vice President Rich Nugent presided in President Tom McDonough's absence and called the meeting to order at 8:15 pm.

- Outgoing President Glenn Chaple gave his farewell remarks and spoke about how much he had enjoyed serving as the Club's president.
- Rich Nugent noted the recent passing of longtime ATMoB member Sai Vallabha and asked for a moment of silence in Sai's honor.
- Outgoing Secretary Phillip Levine read the minutes of the Club's June meeting.
- Treasurer Eileen Myers presented the Treasurer's Report. Eileen announced that the 25-inch Dobsonian has been fully paid for and now belongs to ATMoB.
- Chris Elledge presented the Membership Report, showing 333 total memberships covering over 400 Club members.
- Outgoing President Glenn Chaple noted that this month's objects for the LVAS Observer's Challenge are globular cluster M4 and planetary nebula IC 1295.
- John Reed gave the Clubhouse Report, noting that some 24 club members participated in the June 30th work party despite temperatures reaching 95 degrees. During the work party, the 17-inch Dob was upgraded and its mirror cleaned. Various machining projects were completed. Rich Nugent noted that he would be taking over Sai Vallabha's valued educational work in teaching how to star-hop.
- Rich Nugent gave the Mirror-Making report
- Rich Nugent also gave the Outreach Committee report. He described Club members' participation in the recent Innovation School star party and noted that Star Party Committee member Laura Sailor and he were planning to conduct a class on how to host a star party.
- Announcements:

Al Takeda encouraged members to write articles for the Club newsletter. Articles about members' astronomy projects are always welcome.

Eileen Myers noted that the upcoming Stellafane convention would also include a meeting of the Antique Telescope Society at the Hartness House.

• Old Business: None

• New Business: None

The evening's presentations included all of the following:



Rich Nugent *

Rich Nugent spoke on the subject of virtual counterweights for telescopes, illustrating his talk with photos of the spring counterweight on his 20-inch Dobsonian.



James Synge *

James Synge described his construction of a robotic binocular telescope as part of the PANOPTES project. The telescope is intended to hunt for exoplanets using the transit method. He is now assisting others constructing PANOPTES telescopes, including three U.S. high schools and one Italian high school.

Corey Mooney spoke on the subjects of 3-D printing, casting, and low-cost Electronically Assisted Astronomy (EAA). Corey noted that he did 3-D printing using fused deposition modeling and had formed a variety of parts for telescopes and his alt/az mount. He then described his casting of metal parts using a forced air charcoal furnace and sand casting. He concluded with a description of his EAA work, which uses stacked images to create images designed to assist with binocular outreach.



Corey Mooney *

Refreshments were provided by Mike Hill.

Rich Nugent adjourned the meeting at 9:57 pm.

~ John Harrington - Secretary ~

Meeting Recordings . . .

The recording of ATMoB meeting #911 is available on YouTube: <https://youtu.be/T2cmUL81FT0>

I would like to thank Rich Nugent, James Synge, and Corey Mooney for giving their presentations and allowing us to record it.

~ Chris Elledge – Membership Secretary ~

Membership Report . . .

I am pleased to welcome our newest members Alexander Alexiou; Philip Erlanger; Gregory Fontaine; Edward Henry; Robert Leonard; John Levreault; Corinne Mulvey; Prasanna kuma Muthukumar; Nolan Palmer; Padmini, Darshan, and Bhagawan Balaji; Ryan Iutzi and Torrey Ah-Tye; Mark Kaufman and Christine Rankovic; Kelly, Jennifer, Christopher, Emily, Mike, and Sarah Klein; Patrick and Claire McFarland and Ellen Cahir-McFarland.

As of August 29th, 2018 we have 347 memberships covering 444 members. This is broken down as follows:

- 167 Regular Members
- 113 Senior Members
- 12 Student Members
- 51 Family Memberships covering 148 Members
- 3 Guest Members

Membership renewals are due now. If you have not yet renewed, please do so soon. Expired memberships will be dropped on December 1st.

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. 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 . . .



Phil Rounseville's reflection in the 25-inch Dob. *

July and August 2018 Clubhouse Report

The July 28th Work Session opened under clear skies and a temperature of 85 degrees. 34 members provided a successful session. Thanks go to: Hugo Alvarez, Diego Alvarez, Fernanda Alvarez, Barbara Bosworth, Bruce Berger, John Blomquist, Maria Batista, Paul Cicchetti, Tom Consi, Steve Clougherty, Nina Craven, Pierre Fleurant, Jim Gettys, Mark Helton, Joe Henry, John Hinz, Eric Johansson, Kelly Klein, Jennifer Klein, Ed Los, Eileen Myers, Vladislav Mlch, John Maher, Nolan Palmer, Steve Palmer, Dave Prowten, John Reed, Phil Rounseville, Art Swedlow, John Stodieck, Dave Siegrist, Al Takeda, Bill Toomey, and Tom Wolf.

The August 25th Work Party took place under partly cloudy skies with a temperature of 73 degrees. The cooler weather allowed for a tremendous effort that day. Work was accomplished by John Blomquist, Bruce Berger, Paul Cicchetti, Chris Elledge, Pierre Fleurant, Gregory Fontaine, Jim Gettys, Philip Goodrich, Mike Hill, Barry Jensen, James Jensen, Ed Los, John Maher, Eileen Myers, Rich Nugent, Dave Prowten, John Reed, John Stodieck, Art Swedlow, Al Takeda, Bill Toomey,

Swaroop Vattam, Hadi Vattam, and Angshuman Vattam. We owe a big Thank You to these 24 members. Now for the results.

John B. mows the entire property based on weather condition and grass growth. He mowed before both work parties, so the cuttings were raked and wheel-barrowed to the compost pile. John H. led this effort in July, Mike H. in August. Push mowing and trimming will be needed again before our picnic on September 15th.

Overgrown brush was removed from the edge of the driveway entrance by a team led by Bill T. and Pierre F. during the July and August work parties.

The Ed Knight Observatory was vacuumed and the telescopes are fully operational. The 25-inch primary mirror was cleaned by Phil R. This project was led by Steve C. in July.

In July Dave P. replaced rotted wood on the Chase hutch that houses the 17-inch Dob. The observatory was sanded and painted by Dave P. and Maria B. Painting was completed by Barry J and James J. in August.

The ATMoB Research and Imaging Observatory (ARIO) door was stained white during both sessions.

The biggest effort was scrapping the entire east side of the barn while the sun was beating down. Staining was completed in the afternoon by Chris E, Gregory F., Philip G, Barry J, and James J. Cleanup was performed by Barry J. Structural repairs will be tackled this Fall.



(L-R) John Stodieck and Maria Batista painting the Chase Hutch. *

Thanks to the lunch crew who twice served up a lunch of hot dogs, kielbasa, burgers, salad, beans, and fried chicken. Thanks to all who cleaned up after dessert. Team work really helps us. Thanks for the help removing trash. Thanks go to Eileen M., Art S., Paul C., Rich N., John S. & John R. and all helpers.

Clamshell Observatory tours and training sessions were run at both work parties by John Maher. A class for several beginning astronomers was held by Eileen M. late into the evening during the August work party. Chris E. used the club's 8-inch Dob to show the visible planets and the moon to our newest members.

The 16-inch Meade is opened by John M. every clear Saturday night.

The grinding and polishing rooms were open for mirror making during both work parties.

Important Notice: Mirror making sessions will now take place on **Saturday afternoon's beginning at 3:00 pm. Other times may be scheduled. Check your email on the ATMoB-ANNOUNCE list.**

~ *Clubhouse Committee Chairs* ~
~ *Steve Clougherty, John Reed and Dave Prowten* ~

Clubhouse Saturday Schedule		
September 15	John Panaswich	George Paquin
September 22	WORK PARTY # 10 ** Volunteer needed	
September 29	Dave Siegrist	John Stodieck
October 6	Glenn Chaple	Bill Toomey
October 13	John Maher	Eileen Myers
October 20	Glenn Meurer	Dave Prowten
October 27	WORK PARTY # 11 ** John Maher	
November 3	Joe Henry	Paul Courtemanche
November 10	Mike Hill	Brian Maerz

** Closing time for the Clubhouse is determined by the work crew

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 email messages posted to ATMOB-ANNOUNCE.	

For Sale . . .

- 1) 12½" Dobsonian telescope for sale: Meade Starfinder - \$550. w/ 2" r&p focuser / 80mm finder / Telrad / casters.
- 2) 11" Dobsonian telescope for sale: Celestron Star Hopper - \$475. w/ 2" Crayford focuser / 80mm finder/ Telrad / casters.
- 3) Free books and astronomy posters at the Club Picnic. Suggested donation to the club - \$5 each.

Contact: Steve Mock
steve_mock@hotmail.com
617-599-7907

September Outreach Report . . .

Summer is usually a quiet time for outreach. Nonetheless, we did have several events during August.

The folks at the Farrington Nature Linc. in Lincoln, MA asked us to bring some telescopes to their Perseid Meteor Night on August 10th. Our part of the evening was nearly cancelled due to a less than favorable weather forecast, but we were fortunate because the sky cooperated during the early evening. Club members Julie Kaufmann, Terry Manning, Bob Toop, and I provided views of Venus, Jupiter, Saturn, Mars, several fine double stars, and deep sky objects. I don't think any meteors were observed, but many of the folks in attendance planned to camp overnight to try.

Later in the month, star party coordinator Laura Sailor organized and held a star party training session at the Clubhouse. About 15 folks attended, many veterans of star parties past, but there were also a few newcomers. We discussed scheduling events, planning them, and things to consider the evening of an event. Afterwards we observed through scopes brought by members. We will hold similar classes in the future, with the hope of recruiting new volunteers to help with star parties and other outreach activities.

There are currently no events scheduled for September, but a few events are in the works for October:

On Saturday, October 13 there is a star party planned for Mount Waite in Medford, MA. We are looking for volunteers to help with this event as a large crowd is expected. In addition to the ATMob support, members of Popscope are planning to attend.

There is a Cub Scout group interested in holding an evening of astronomy in Dunstable, MA. but the details have not been worked out yet. Stay tuned!

Several volunteers will be heading to Hudson, NY in late October to provide telescopes in support of an event scheduled by one of our members.

On Monday, November 5 we will be helping at the Acton-Boxborough 7th Grade Star Party. Please consider volunteering for this event.

Now that schools have begun the new academic year, consider contacting your local school to volunteer with astronomy lessons, or perhaps schedule a star party. Star party request forms can be found on our website. Click on "About ATMob" and on the pull down menu click "Star Party"

The Outreach Committee is always looking for volunteers, and there are many ways you can get involved. If you'd like more information please contact us through starparty@atmob.org

~ Rich Nugent - Outreach Committee Chair ~

Sky Object of the Month . . .

September 2018

(Courtesy LVAS Observer's Challenge***

NGC 6818 ("Little Gem Nebula")

Planetary Nebula in Sagittarius

Mag. 9.3, Size 15" X 22"



astro.dur.ac.uk

Tucked away in the northeast corner of Sagittarius is the relatively little-known planetary nebula NGC 6818, aka the "Little Gem Nebula." Its anonymity is understandable when you consider that it competes with the treasure trove of deep-sky wonders that dot the western half of the constellation. Its relatively remote location doesn't help, either. Your best bet is to star-hop from rho1 Sagittarii, which is shown on both finder charts below.

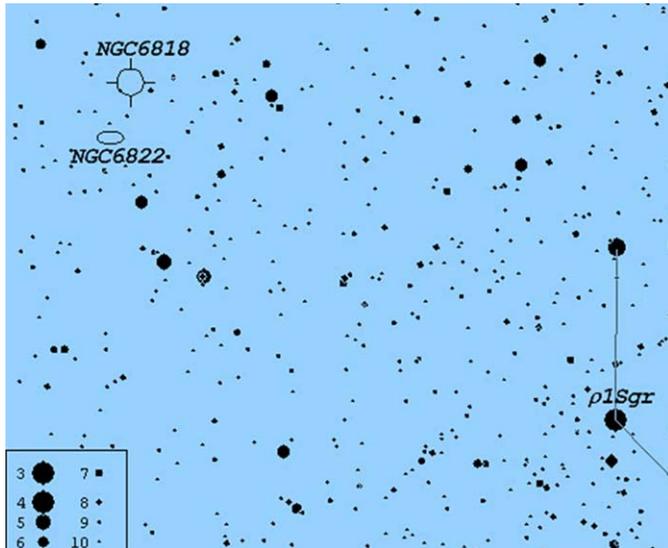


astronomy.com

Although NGC 6818 is within reach of a common 60mm refractor, you'll want to save it for a dark moonless night. Work with a magnifying power of 100X or more. Can you detect its bluish color with a small-aperture scope? What detail do you see with a large-aperture instrument?

At a distance of approximately 6000 light years, NGC 6818 is about one-half light year in diameter. It was discovered by William Herschel on August 8, 1787.

(Extra challenge) About a half degree south-southeast of NGC 6818 is the notoriously difficult Barnard's Galaxy (NGC 6822). This dwarf galaxy was the August, 2014, LVAS Observer's Challenge. A 9th magnitude galaxy whose light is spread over an area half the size of a full moon, it will require an evening of exceptional darkness. Barnard's Galaxy is actually better seen with a large binocular or rich-field telescope than with a large aperture scope.



www.astrosurf.com

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

STEM Education Center . . .

There is a new startup STEM education center - New England Sci-Tech, Inc. It plans to increase public awareness of astronomy by offering special hours for telescope viewing to Metrowest families.

The Astronomical League has selected Saturday, October 13th as Astronomy Day. Telescopes will be set up on the hilltop of 16 Tech Circle, Natick, on either or both Friday, Oct 12, 6-9 pm and Saturday, Oct 13, 5-8 pm, depending on weather conditions.

We encourage any interested ATMoB member to join us. You can set up your telescope next to your car. Parking is available for 120 vehicles.

Contact Bob Phinney for details if you are interested - bobphinney@nescitech.org, 508-720-4179.

Many thanks!

~ Submitted by Bob Phinney ~

For Sale . . .



Zygo Interferometer. Photo by Mike Hill

1978 Zygo Interferometer with monitor. Works well and is in good shape. Model number MK II-01. I am asking only \$500 for this.



Zygo Interferometer and monitor setup. Photo by Mike Hill

Contact Michael Hill via email at mhill1553@aol.com

Club Picnic . . .



John Reed at the grill. *

Next Saturday, September the 15th is the annual ATMob potluck picnic at the Clubhouse in Westford.

Start time is 3 PM. A Memorial Service for long-time club member Sai Vallabha will be at 4 PM next to the 17-inch telescope.

Please bring something tasty to share, such as an appetizer, salad, favorite entree, veggies, homemade bread or pastry, fresh fruit or other dessert.

We will provide hamburgers, hot dogs, beverages, paper and plastic utensils.

Enjoy a day with good food and lots of astronomy talk with other ATMob members.

Bring the kids and grandchildren.

Bring lawn chairs or blankets.

Bring suntan lotion and mosquito repellent.

Bring your telescope and observing clothing.

Please bring your solar scope for solar viewing.

The club's observatories will be open during the day. If you are interested in being trained on using the telescopes you will have the opportunity to tell the manager of each observatory telescope.

Take a tour of the Clubhouse.

There will be astronomy activities for kids.

There will be a mirror making demonstration.

You can join the annual narrated group walk-up-the-hill to see the radio telescopes.

We need a few volunteers to set up tents, tables, chairs Saturday morning starting at 10:30 AM.

We need 2 more volunteers to help arriving members place their food in the outdoor tent or on the tables inside, and to keep food tables tidy.

We need a few volunteers to help with the taking down of tents at dusk, and with the clean up after the picnic to get ready for the evening's observing.

Venus, Jupiter, Saturn, Mars, and the 6-day old Moon will be visible, so help out, and then look through the telescopes.

Many hands make fast work.

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

Moonset is at 10:43 pm allowing much time for dark sky observing.

Please contact Eileen Myers if you can help at starleen@charter.net 978-456-3937,

or Al Takeda artakeda2682@earthlink.net or John Reed mejreed58@gmail.com.

Clear skies,

~ Eileen Myers - Treasurer ~



Double rainbow above the Clubhouse. *

Editor: * Photos by Al Takeda unless otherwise noted.

September Star Fields DEADLINE
Sunday, September 23rd

Email articles to Al Takeda at
newsletter@atmob.org

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed September 9, 2018

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

EXECUTIVE BOARD 2018-2019

PRESIDENT: Tom McDonagh (617) 966-5221

VICE PRES: Rich Nugent

SECRETARY: John Harrington

MEMBERSHIP: Chris Elledge (781) 325-3772

TREASURER: Eileen Myers (978) 456-3937

MEMBERS AT LARGE: Maria Batista (617) 347-3730

Alan Sliski

Al Takeda (508) 494-7877

PAST PRESIDENTS:

2015 - 18 Glenn Chaple (978) 597-8465

2012 - 14 Mike Hill (508) 485-0230

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

COMMITTEE CHAIR: Rich Nugent starparty@atmob.org

STAR PARTIES: Bernie Kosicki

Laura Sailor

John Harrington

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 2 Last Quarter Moon (Moonrise at midnight)

Sept 9 New Moon

Sept 16 First Quarter Moon (Moonset at midnight)

Sept 22 Autumnal Equinox

Sept 24 Full Moon

Oct 2 Last Quarter Moon (Moonrise at midnight)

Oct 8 New Moon, Draconid meteors peak

Oct 16 First Quarter Moon (Moonset at midnight)

Oct 21 Orionid meteors peak