



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. 35, No. 1 January 2023

This Month's Meeting . . .

Thursday, January 12th, 2023 at 8:00 PM

Phillips Auditorium

Center for Astrophysics (Harvard & Smithsonian)

Please use the right side entrance to enter the building
Parking at the CfA is allowed for the duration of the meeting

ATMoB will simulcast the January meeting. Please [select this Zoom link to attend the 959th Meeting of the Amateur Telescope Makers of Boston.](#)

Member's Night

This month we will be tapping into our member's astronomy travel experiences, educational outreach and projects that they are working on.

A Quest for Southern Skies My Trip to Chile During a Pandemic



Large and Small Magellani Clouds. *

After retiring in 2020 Joseph Rothchild wanted to travel to see southern skies. After some research and a 2 year delay due to Covid-19, he traveled to Chile in late February 2022. He will

discuss the process of planning the trip as well as his experiences in Chile.

Joseph is a retired primary care physician. He got his first telescope at age 13. Joseph joined the Bond Astronomical club in the 1960s, joined ATMoB in 1986 at the time of Halley's Comet, and is a past president. He is primarily a visual observer, particularly of deep sky, planetary, solar, and variable stars.

The Clay Center Observatory

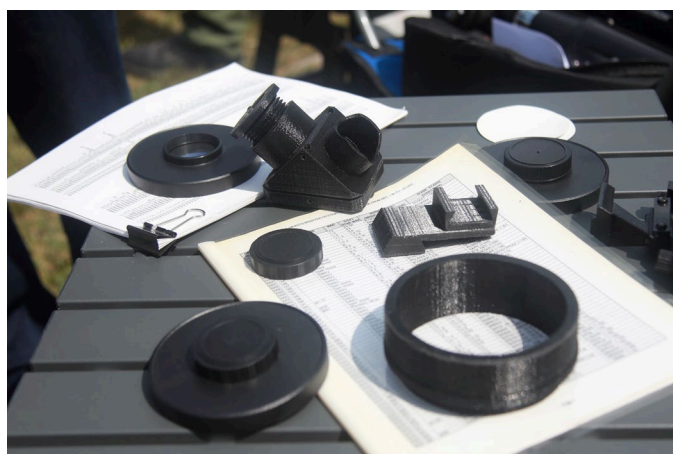


Clay Center Observatory, Dexter Southfield School. *

Kai Cai will review the history of the Clay Center Observatory at the Dexter Southfield School in Brookline, MA. He will also talk about the 25-inch DFM telescope in the observatory and the ongoing observatory docent program. The highlight of the presentation will be the mirror-cleaning project they just completed right before Christmas.

Kai has a PhD in astrophysics. He joined ATMoB three years ago and is serving as a Member-at-Large. He recently joined Dexter Southfield as an Upper School Astronomy Teacher.

Example 3D printed ATM projects



3D printed telescope parts. Peter Wraight collection (Stellafane). *

Corey Mooney will discuss a couple of 3D printed projects from this past year. From electronics enclosures to mirror edge masks, a 3D printer is a very versatile tool for the ATM. Corey

hopes to encourage members to try out the club's new 3D printer at the clubhouse.

Corey is a mechanical engineer and the current club President. He joined in 2017 and is an avid telescope tinkerer. Although he hasn't ground a mirror yet, he enjoys the electro-mechanical side of the hobby, whether it's motorizing a mount, or cobbling together a remote control live stacking EAA system.

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.

~ *Corey Mooney – President* ~

President's Message . . .

Happy New Year everyone! I hope you all enjoyed some time with friends and family over the holidays. This past year has been pretty exciting for astronomy, with James Webb Space Telescope successfully deploying, Artemis I going around the Moon, an asteroid getting "DART'ed", our own galaxy's black hole getting imaged, and much more! It's also been an exciting time for our club too, with the Mittelman-ATMoB Observatory (MAO) running more and more missions, a new look and feel for our Website, the start of our 2024 eclipse trip planning, a return to outreach and library telescopes, and a return to the Center for astrophysics (CfA) for in-person meetings. Here's hoping this new year holds just as many delights as the last.

Lots of people set goals for their new year. Do you have any goals or plans for your amateur astronomy? Part of what makes this hobby so enjoyable for so many different people is that it's incredibly vast and varied. There are so many different facets and niches that there's always a new rabbit hole to go down. You could ask yourself, "Have you made it through Messier's catalog?" Then try Caldwell, or the Herschel 400. "Tired of walking the beaten path?" Find some specialized catalogs for obscure globulars or planetaries. "Fed up looking for faint fuzzies under light polluted skies?" Try observing bright double stars or variables. "Looking for more detail than points of light can offer?" Take up planetary and lunar observing and study the geologic features of other worlds. "Curious to try imaging?" Go for it! "Bored of imaging?" Try citizen science with photometry and the AAVSO. "Have you already seen it all?" Try sharing it with others through our outreach program. "Does any of it feel like too much hassle with not enough time?" Take a step back and just relax with a pair of binoculars or just a blanket and your naked eyes.

There are so many possibilities! Luckily our club is a fantastic resource for exploring any of them. Chances are you can find other members who are very experienced and knowledgeable about a field which is new and interesting to you, and they are often glad to share tips and tricks. Our Clubhouse is also very well equipped so you can delve into any new facet of astronomy right away, without having to buy new equipment. So be bold and try something new this year.

~ *Corey Mooney – President* ~

December Meeting Minutes . . .

ATMoB Meeting #958

December 8, 2022



Dr. Gábor Fűrész. *

Corey Mooney presented the President's welcome.

- Alva Couch presented the Secretary's report, including a summary of the wonderful November talk by Kelly Beatty on recent discoveries about Stonehenge.
- Eileen Myers presented the Treasurer's Report, and reported small outflows for expenses and a generous donation, leading to a healthy net inflow for November.
- Chris Elledge presented the Membership Report and welcomed new members Prem Chandan Akkaram, Anderson & Ariella Dietrich & Rayssa Pontes, Caroline Odden, and Mousa Shaya.
- Al Takeda presented the Clubhouse report for Steve Clougherty. 19 members attended the November work party. A team waxed the Clamshell Observatory shell and James Chamberlain repaired the All-Sky camera. Marsha Bowman replaced spent fluorescent bulbs, which we plan to replace with LED lights eventually. Alan Sliski repaired the equatorial platform for the 25-inch Dobsonian.
- The board voted to replace the Clubhouse's oil furnace with a new heat pump system, which will tentatively be installed in January. Meanwhile the club complied with MIT's request to install an oil spill kit to mitigate the risk of an oil leak from our ancient oil tank.
- Glenn Chaple and Rich Nugent presented the Observer's report. As Rich Nugent exclaims, "Astronomy waits for no one." Mars is at opposition. Images of the red planet captured by Sal LaRicca and Nasmus Nasir and a timelapse by Doug Paul were presented. On Sunday, Dec. 18 at 8:48 pm, asteroid Gerlinde (Mag 15.3) will occult a Mag 12.3 star, while on Dec 27 at 12:54 am, asteroid Pirola (Mag 15.7) occults a Mag 11.5 star.

- The November Observer's Challenge was Iota Cassiopeiae. The membership was presented with an image by Doug Paul and a sketch by Glenn Chaple. The December Observer's Challenge is NGC 1245, an open cluster in Perseus. An image by Doug Paul was shown.
- Maria Batista presented the Website Committee report. The new site went live on 11/16/2022. Next steps for the website will include style fixes, documentation of monthly meetings, content updates, and enhancements/new features.
- Rich Nugent presented the Outreach Committee report. There have been 11 star parties since August. Star parties were held at the Boston Public Library's Mattapan branch, Hale Middle School in Stow, MA, and at NARA Park in Acton, MA. A future event is being planned for the Harvard Museum of Natural History's Science Festival (February 11, 2023) and many organizers of this year's (2022) star parties are planning repeat events in 2023. Please consider becoming one of our star party volunteers!
- Old business:
<https://smile.amazon.com> is a great way to donate to ATMoB while shopping on Amazon.

- New business:
 The January meeting will include members' presentations. Please consider volunteering to talk about your latest projects, images, etc.

There is a petition to save the historically important Holmdel Horn antenna. This antenna was used by Nobel laureates, Arno Penzias and Robert Wilson, to discover the Cosmic Background Radiation:
<https://actionnetwork.org/petitions/save-big-bang-antenna>

Our December speaker was Dr. Gábor Fűrész of MIT's Kavli Institute who described the Large Lenslet Area Magellan Spectrograph (LLAMAS). LLAMAS is a telescope camera that takes a "3-dimensional" picture of a stellar feature in which two dimensions are stellar coordinates, while the third dimension is a spectrogram of the visible light arriving at each pixel of the camera. This camera is useful in a variety of astronomical tasks, including exoplanet research and measuring the speed of rotation of distant galaxies. The camera consists of a hexagonal grid of 2400 pixels, each of which collects light via a microlens and feeds that light via fiber optics into three spectrometers featuring f/1.05 cameras, whose combined range covers the visible light spectrum from red to green to blue. In total there are eight three-camera triples, for a total of 24 cameras. Dr. Fűrész described the whole design process of LLAMAS, including prior spectrographs and their limitations, design goals, the work of a team of experts in diverse fields including optics, engineering, and astronomy, and the complex process of evolving a useful idea into a groundbreaking astronomy camera.

~ *Alva Couch – Secretary* ~

Meeting Recordings . . .

The recording of ATMoB meeting #958 is available on YouTube: https://youtu.be/tZiKoKvOQ_M

I would like to thank Dr. Gábor Fűrész for giving his talk.

This link is to the publicly available cut of the meeting recording. To view the member only recording of the meeting please see the Announce Forum on the ATMoB Website <https://www.atmob.org/forums> or ask me for a link (membership@atmob.org)

~ *Chris Elledge - Membership Secretary* ~

Membership Report . . .

I am pleased to welcome our newest members: Prem Chandan Akkaram, Steven Bugler, Steven Kinney, Caroline Odden, and James Wood.

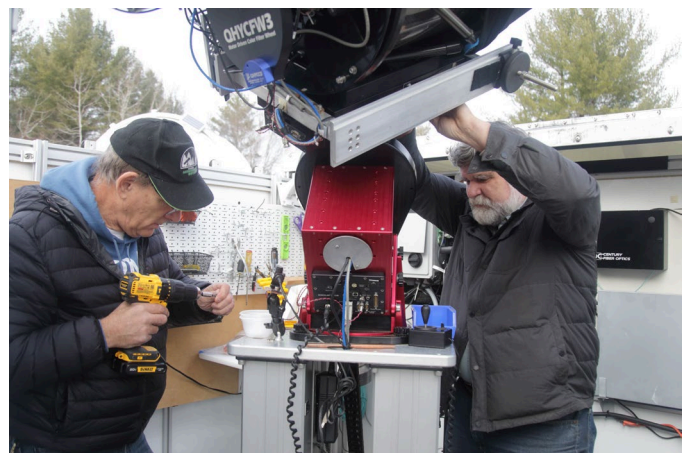
As of January 2nd, 2023 we have 347 memberships covering 448 members. This is broken down as follows:

- 137 Regular Members
- 143 Senior Members
- 9 Student Members
- 56 Family Memberships covering 157 Members
- 2 Honorary Members

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

~ *Chris Elledge – Membership Secretary* ~

Clubhouse Report . . .



(L-R) Bruce Berger and Alan Sliski working on the MAO mount. *

During the month of December we held one work session at the Clubhouse on Saturday, December 10th. Thank you to the 21 members that participated.

Kiera Mooney and Christine Zacharer continued to organize and clean to our upstairs Library.

All of the AC Ground Fault Circuit Interrupters (GFCI) electrical circuit outlets were checked in the Ed Knight Observatory.

In the Electronics/Mittelman-ATMoB Control Room we had an Uninterruptable Power Supply (UPS) failure. The UPS batteries were replaced by Bruce Berger.

Bruce Berger, Chris Elledge, Alan Sliski and Al Takeda worked on the Mittelman-ATMoB Observatory (MAO) mount to identify an image drifting problem.

The meteor camera and associated computer hardware was checked out by Tom McDonagh.

Alva Couch and Eric Johansson worked on the William Toomey Observatory to determine telescope mounting options.

A delicious lunch was prepared by Eileen Myers. The menu included turkey meatballs with angel hair pasta and a broccoli salad with strawberries and goat cheese. Challah and Banana bread was provided by Kenneth Scharf. Maria Batista also baked an Orange cake for our crew.



(L-R) John Harrington and Maria Batista (working on her scope). *

Progress toward the conversion of our Clubhouse heating system is progressing well. Rich Nugent and Steve Clougherty will meet with the Nashoba Air and Boiler foreman on Tuesday, January 10th to go over the final details. The conversion is expected to begin on the Monday, January 16th and will take only two days. We hope to have a few member volunteers available on that date to open the Clubhouse and be on hand throughout the day. More info will follow during the week of January 9th.

We have decided to not hold a work session during the month of January since we will not have adequate heat for the day. Currently we keep the thermostat very low in order to prevent freezing. Our tank of oil is nearly empty, and we will not be filling it before the furnace conversion.

We ask that members be available during the month for snow clearing if and when needed.

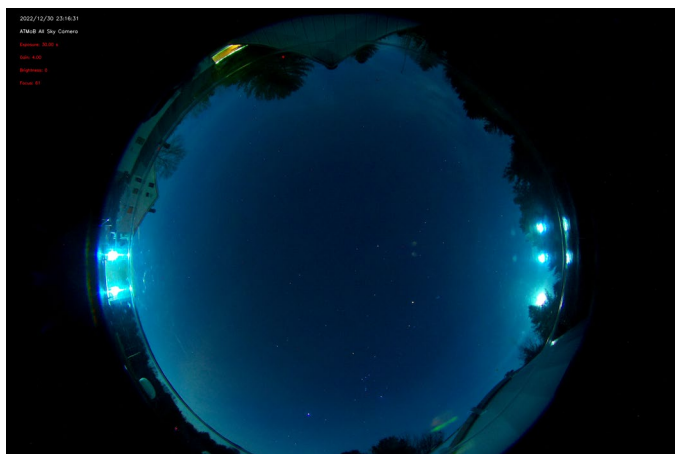
We plan to be back on track to open the Clubhouse for member's use in mid to late January. Members are still able to access the observing field, and work groups may use the facilities on an as needed basis.

Thanks to our members that helped out in December: Prem Akkaram, Maria Batista, Bruce Berger, Alva Couch, Chris Elledge, Maureen Galevi, John Harrington, Eric Johansson, Dick Koolish, Ed Los, John Maher, Tom McDonagh, Keira Mooney, Corey Mooney, Eileen Myers, Rich Nugent, Kenneth Scharf, Alan Sliski, John Stodieck, Al Takeda and Christine Zacharer.



Bruce Berger replacing the UPS batteries. *

Our next work session will be held on Saturday, February 4th.



[ATMoB All Sky Camera](#). North Up, East Left. 30 Dec. 2022, 23:16 EST.

Clubhouse Friday and Saturday Night Duty Schedule	
Friday, Jan. 13	Tom McDonagh
Saturday, Jan. 14	Eric Johansson
Friday, Jan. 20	Slav Mlch
Saturday, Jan. 21	Nina Craven
Saturday, Feb. 4	WORK PARTY # 1
Friday, Feb. 10	Paul Cicchetti
Saturday, Feb. 11	John Maher
Friday, Feb. 17	Corey Mooney
Saturday, Feb. 18	Steve Clougherty

~ Clubhouse Committee Chairs ~

~ Steve Clougherty, John Reed and Dave Prowten ~

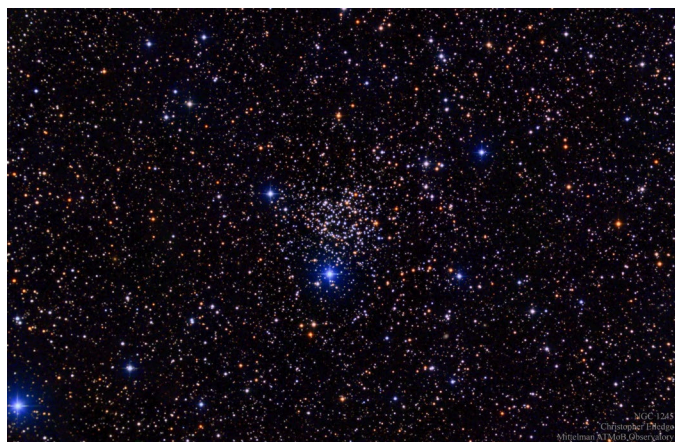
Observer's Challenge** ...

January, 2023

NGC 1245 Open Cluster in Perseus

Magnitude 8.4

Size 2.9°



NGC 1245, Planewave CDK17, f/4.5, QHY600M camera, 6x300s sR, V, B and 12x1second - sR, V, B for bright stars, about 42 minutes total integration. Mittelman-ATMoB Observatory. Image processing by Chris Elledge.

The 2nd magnitude star Mirfak (alpha [α] Persei) is the centerpiece of the sprawling naked eye cluster Melotte (Mel.) 20. It dominates the field of the accompanying WIKI image that serves as the finder chart for this month's Observer's Challenge. But, Mel. 20 isn't the Challenge object. It's the open cluster NGC 1245, which appears as a tiny smudge in the lower right-hand corner of the image.

NGC 1245 was discovered by William Herschel on the night of December 11, 1786. He cataloged it as a Class VI object, very compressed and rich clusters of stars, and described it as "A beautiful and rich cluster of small and large stars 7 or 8' in diameter. The large stars are arranged in lines like interwoven letters." Modern studies show that the cluster is home to some 200 stars, the brightest of which shine at 12th magnitude.

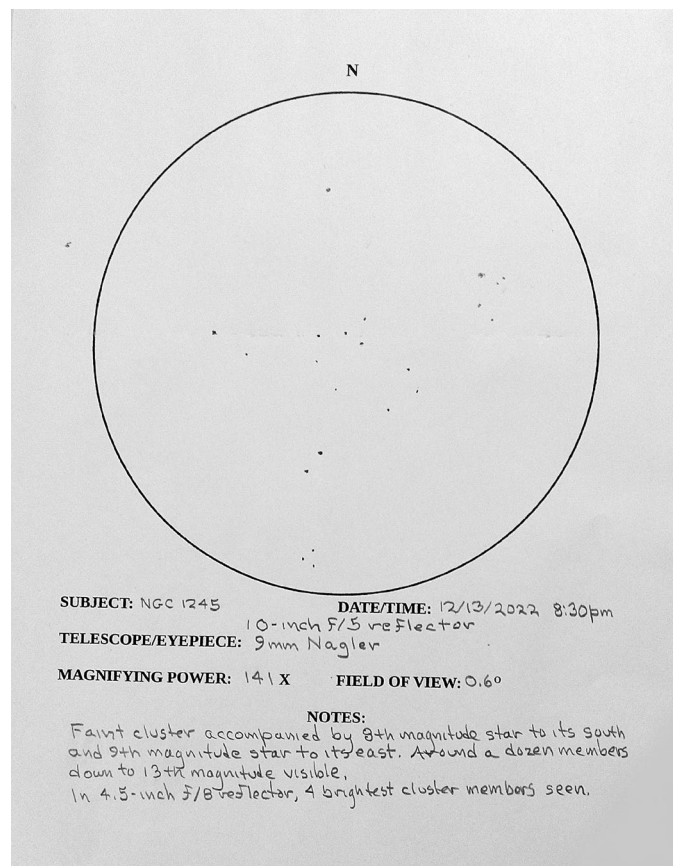
Owners of GoTo scopes can home in on NGC 1245 by punching in its 2000.0 coordinates, RA 3h14m48s and Dec +47°15'11". For the star-hopper, NGC 1245 is a 3-degree trek southwest of Mirfak. I chose the latter method when I tackled NGC 1245 with a 10-inch f/5 reflecting telescope on the evening of December 13, 2022. A slight haze and resulting

magnitude limit of 4.5 made for less-than-ideal conditions. At 141X, I was able to make out about a dozen cluster members. Averted vision hinted at a dozen or so more. There was no sign of the hazy mist that the fainter cluster members would have produced had skies been darker. The cluster was hardly identifiable in a 4.5-inch f/8 reflector, with just 4 stars visible.

NGC 1245 is located some 9800 light years away and is approximately 27 light years in diameter. It has an estimated age of one billion years. Compare that to Mel. 20, which is similar in size but 16 times closer and cosmically young at an age of 50 to 70 million years.



NGC 1245, 32-inch f/6.5 telescope, R,G,B, and Lum filters, about 2 hours total imaging time, with ZWO ASI6200 camera. Processed in pixInsight using new BlurXterminator plug in. Image by Mario Motta.



NGC 1245, 10-inch, f/5 Dobsonian at 141X, 0.6 degree field, Sketch by Glenn Chaple. [Click this link for an enlarged view.](#)



Wide-field chart. The bright star is alpha (α) Persei. NGC 1245 is located at the extreme bottom right. North is up in this 4 degree square field. Wikipedia image by Martin Gembec (astrofotky.cz)

****The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone who is interested. If you'd like to contribute notes, drawings, or photographs, we'll be happy to include them in our monthly summary. Submit your observing notes, sketches, and/or images to Roger Ivester (rogerivester@me.com). To find out more about the Observer's Challenge or access past reports, log on to <https://rogerivester.com/category/observers-challenge-reports-complete/>.**

~ Submitted by Glenn Chaple ~

Outreach Committee Report . . .



Bob Phinney (center) at the New England SciTech Star Party. 11 May 2019. *

Recent Star Parties

Here is a summary of our last three outreach events for 2022. Thanks to everyone for volunteering for these events!

- November 29: Boston Public Library - Mattapan Branch. Kelly Beatty, Bruce Berger, Jim McLaren, and Corey Mooney.
- December 1: Hale Middle School, Stow, MA. Kelly Beatty, Bruce Berger, Mike Druar, Jim McLaren, Corey & Keira Mooney, Rich Nugent, Bob Toop, and Christine Zacharer.
- December 4: Acton Conservation Trust – NARA Park, Acton, MA. Corey Mooney, Rich Nugent, Bob Toop, Mike Troups, and Christine Zacharer.

~ Rich Nugent - Public Outreach Committee Chair ~

Upcoming Outreach Opportunity . . .



Phil Rounseville at the Harvard University Summer Solstice Festival. 6 June 2013. *

We have been invited to participate in the Harvard Museum of Natural History Science Festival to be held on Saturday, February 11. A few members will be required to display and

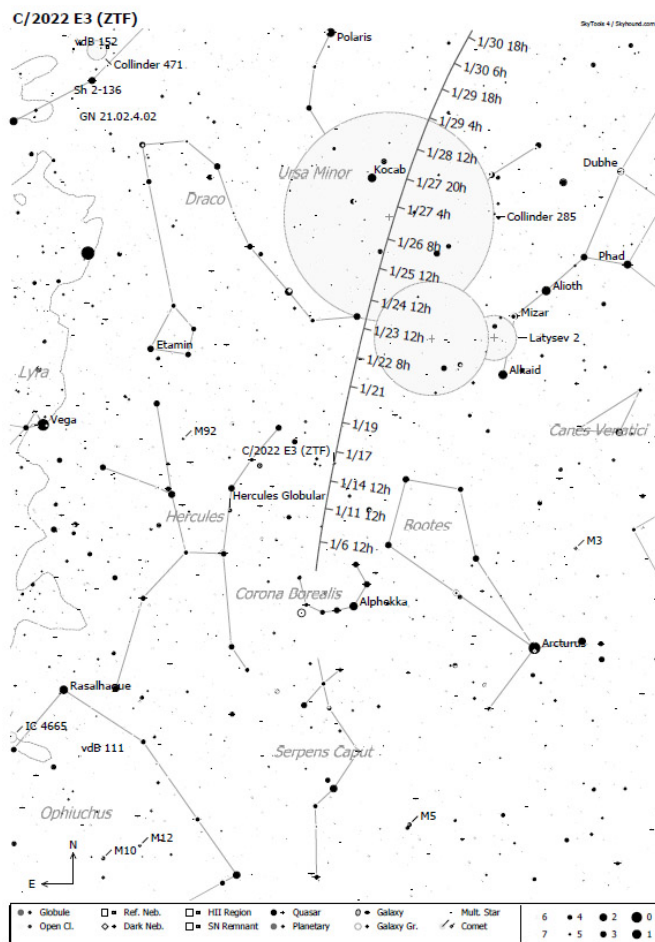
discuss telescopes and the ATMob. Perhaps some of our imagers would be willing to display their equipment and images. I'll provide more information as it becomes available.

~ Rich Nugent - Public Outreach Committee Chair ~

Comet C/2022 E3 ...

The new year will herald a new bright comet. Comet C/2022 E3 (ZTF - Zwicky Transient Facility) will reach a perihelion distance of 1.1 AU (Astronomical Unit) on 12 January 2023. It will make a close approach to Earth on 1 February 2023 at 0.28 AU. It is predicted to reach a brightness of magnitude 4.2.

It is currently an early morning object. The comet rises at about 22:44 EST on 12 January 2023.



Comet C/2022 E3 path for January. Chart created by [SkyTools \(Skyhound\)](https://www.skytools.com/).

~ Al Takeda - Newsletter Editor ~

NEAF is Going Live ...

After 3 years of virtual conventions, the Northeast Astronomy Forum (NEAF) is taking place LIVE at the convenient SUNY Rockland Community College campus in Suffern, NY on Saturday April 15th, and Sunday April 16th, 2023.

[Northeast Astronomy Forum \(NEAF\)](https://www.northeastastronomyforum.org/)

Presented by the Rockland Astronomy Club

Saturday, April 15, 2023 through Sunday, April 16, 2023

SUNY Rockland Community College

145 College Road

Suffern, New York 10901

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

[Registration to NEAF is now open.](https://www.northeastastronomyforum.org/)

Northeast Astro-Imaging Conference NEAIC ...

[NEAIC Astrophotography Workshops and Lectures](https://www.neaic.org/)

Thursday, April 19 & Friday, April 20, 2018

Crowne Plaza Conference Center,
Suffern, New York

Ticket sales will be opening soon.

Editor: * Photos by Al Takeda unless otherwise noted.

February Star Fields DEADLINE

Sunday, January 22nd

Email articles to Al Takeda at

newsletter@atmob.org

Articles from members are always welcome.

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

EXECUTIVE BOARD 2022-2023

PRESIDENT: Corey Mooney

VICE PRES:	Christine Zacharer	(978) 804-3795
SECRETARY:	Alva Couch	(781) 350-8810
MEMBERSHIP:	Chris Elledge	(781) 325-3772
TREASURER:	Eileen Myers	(978) 456-3937

MEMBERS AT LARGE: Alan Sliski
Kai Cai

PAST PRESIDENTS:		
2020 - 21	Rich Nugent	(508) 935-8158
2018 - 20	Tom McDonagh	(617) 966-5221
2015 - 18	Glenn Chaple	(978) 597-8465

COMMITTEES

CLUBHOUSE:	John Reed	(781) 861-8031
	Steve Clougherty	(781) 784-3024
	David Prowten	(978) 369-1596

OBSERVING: Bruce Berger (978) 387-4189

NEWSLETTER

EDITOR:	Al Takeda	newsletter@atmob.org
ASSOCIATE EDITOR:	Eileen Myers	

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 8:00 PM in the Phillips Auditorium, Center for Astrophysics (Harvard & Smithsonian), 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 on Last Quarter and New Moon Fridays and Saturdays from 7 p.m. to late evening (see duty schedule). 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 phone #: (978) 692-8708.

Heads Up For the Month . . .

To calculate Eastern Standard Time EST subtract 5 from UT.

Jan 3 Quadrantid meteors peak

Jan 6 Full Moon

Jan 14 Last Quarter Moon (Moonrise at midnight)

Jan 21 New Moon

Jan 25 Moon passes 1.8 deg. S. of Jupiter [02 UT 1/26] (21 hrs. EST)

Jan 28 First Quarter Moon (Moonset at midnight)

Jan 30 Mercury at greatest Western (morning) Elongation

Jan 30 Moon passes 0.1 deg. S. of Mars [04 UT 1/31] (23 hrs. EST)