



## 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. 32, No. 6 July 2020

### This Month's Meeting . . .

Thursday, July 9<sup>th</sup>, 2020 at 8:00 PM

[Zoom On-line Meeting](#)

All ATMoB meetings scheduled for the Harvard-Smithsonian Center for Astrophysics in Cambridge, MA have been **canceled indefinitely** due to concerns over the [coronavirus](#) outbreak.

We are holding virtual on-line meetings using the Zoom application. Please refer to the [ATMoB website](#) for future meetings. Members should check their email on the ATMOB-ANNOUNCE list for additional information. Please [select this Zoom link to attend the 932nd Meeting of the Amateur Telescope Makers of Boston.](#)

### Member Night

Our annual tradition has been upheld, the July meeting will feature short talks by ATMoB members.

- **Rich Nugent - Daytime Astronomical Observing**

Daytime observing can be fun and rewarding but sometimes frustrating. From the Sun to the stars, Rich will share some of his tips and tricks to make your daytime observing a success.

- **Mario Motta - Galaxies of Spring**

The fabric universe is laced with hundreds of billions of galaxies which is why they dominate the deep sky objects visible from Earth. Our springtime skies are rich with these objects largely because of the Coma-Virgo cluster. In his talk, Mario will showcase some of his favorites!

- **Kelly Beatty - An Aurora Adventure in Iceland**

If ever there was a vacation destination for observers of the Aurorae, it would have be Iceland! Despite the short, summer nights and sometimes inclement weather, Iceland offers visitors a chance to see this, amazing-elusive from New England-natural phenomenon! Experiencing the geology of Iceland is an added bonus!

- **James Chamberlain - Australian Observatories Tour**

In the Southern Hemisphere, the Moon appears upright through a telescope and the northern constellations appear upside-down but the southern skies offer treasures not visible from New England! Astronomers have taken advantage of the southern skies by building large observatories in South America and Australia. James will speak about a *Sky & Telescope* sponsored tour of some of the premier facilities in Australia.

### President's Message . . .

I would like to begin by assuring you that I am truly honored to be the new President of the Amateur Telescope Makers of Boston and by thanking the 2020 Nominating Committee of Glenn Chaple, Corey Mooney, and Laura Sailor for the wonderful job they did in putting together the slate of candidates for this year's election. I also want to thank all the members who voted. This was the first time that the voting for the Nominating Committee and the Executive Board members was conducted electronically. The process seemed to go smoothly but let's hope we can again vote in person next year!

With this election, Tom McDonagh stepped down as club President and I think he should get a standing ovation and a rousing round of applause and for the fine job he did. Most recently, Tom has been instrumental in facilitating the donation of a world-class imaging instrument and observatory from the family of David Mittelman to the club. Tom remains on the Board as a past President. Thanks are also deserved by John Harrington, who stepped down as club Secretary and Al Takeda who has left the Board after serving as a Member-at-Large for many years. John did an amazing job of recording the meetings for the sake of posterity! Al will continue to edit and publish the club's newsletter.

Please join me in welcoming Pierre Fleurant and Alva Couch to the Board. Pierre is the club's new Vice President and Alva is the new club Secretary.

The new Board's first order of business was to hold a meeting to review and approve a budget for the coming year. As many of you know, the club has agreed to accept the observatory and imaging equipment owned by the late David Mittelman ([Editor: Click on this link to see the "In Memoriam" article in the September 2017 newsletter.](#)) The centerpiece is a 17-inch PlaneWave telescope that is designed to be a remotely-operated imaging system. The Board approved a bootstrap budget to get the project started and work has already begun. The telescope and observatory are currently at the home of Alan Sliski but will be relocated to the observing field when we regain access to the site. The Mittelman-ATMoB Observatory team will provide updated information on the project's status and the exciting opportunities the facility will offer as the project proceeds. They will also be looking for volunteers to help with the installation and operation of the new facility.

The Board also discussed ways to increase the club's visibility to the general public and to ensure that they are aware that, while some of us do make telescopes, we are an astronomy club that

welcomes everyone. We discussed ways of increasing membership diversity and ways to attract younger members. We agreed that this will be an ongoing process. Look for changes in the club's website, and outreach and Library Telescope Loaner programs in the near future.

Please note on your calendar that the next Board meeting will be held on Thursday, September 24, 2020. A Zoom invitation will be sent out earlier that week.

Concerns over Covid-19 have caused several changes within the club. Our monthly meetings at the Harvard CfA (Center for Astrophysics) have been curtailed as has our access to the Clubhouse in Westford. I'm sure better days are ahead but the uncertainty of it all is making me wonder if our annual picnic and New Year's Eve party will have to be done virtually this year. I will let everyone know when we know more. In the meantime, we will continue to hold our club meetings virtually. Zoom seems to be an easily managed tool for this. We had 60 participants at our June meeting but I would like to see more. Zoom can be downloaded to any PC or smart device. If you are having trouble with it there are plenty of members who could walk you through the features. Also, Chris Elledge has set up a Discord server for members to use to communicate with each other in real-time. Check it out at <https://atmob.org/discord>

In closing let me remind everyone that, despite the ongoing pandemic, we are still free to enjoy the beauty of the night sky. I will continue to offer my lists of 19 objects with the hope that this will inspire more of our membership to get out and observe! If deep sky objects do not interest you then perhaps the Moon and planets do. During this summer and fall Jupiter and Saturn will be well placed in the early evening sky. I will let you know when the Great Red Spot and any interesting events involving the shadows of Jupiter's 4 large moons will be visible! The rings of Saturn are currently tipped nearly 22 degrees to our line of site and will be wonderful to view. And, let's not forget about Mars! This fall the Red Planet will be only 39 million miles from Earth and will have an apparent diameter of some 22 arcseconds! There are always objects to observe.

Again, thank you for your vote of confidence. I know I am following in the footsteps of my wonderful predecessors and hope I can lead the club towards a long and bright future!

Clear skies!

~ Rich Nugent - President ~

## 2020 - 2021 Executive Board . . .

President	Rich Nugent
Vice President	Pierre Fleurant
Secretary	Alva Couch
Membership Secretary	Chris Elledge
Treasurer	Eileen Myers
Past Presidents	Glenn Chaple, Tom McDonagh
Members-at-Large	Maria Batista, Alan Sliski, Bill Toomey

## June Meeting Minutes . . .



Alan Sliski. \*

Minutes of the 931st ATMob meeting held on June 11, 2020 via Zoom due to the ongoing pandemic. Club President Tom McDonagh presided and called the meeting to order at 8:07 pm. He welcomed all members participating online.

- Membership Secretary Chris Elledge presented the Membership Report, showing 340 total memberships covering 437 Club members. This is believed to be an all-time high for membership! Renewal season has arrived and 80 renewals have been received since June 1st.
- Eileen Myers presented the Treasurer's Report and noted recent payment of the Club's annual liability insurance premium.
- John Harrington read the minutes of the Club's May meeting.
- Glenn Chaple gave the Observer's Report and noted the upcoming summer solstice on June 20th. The Observer's Challenge object for the month is NGC 5689, a spiral galaxy in Bootes with a visual magnitude of 11.9.
- Rich Nugent gave the Outreach Report and lamented that no in-person events were scheduled in the foreseeable future due to the pandemic. However, a virtual star party was held with Farrington Nature Linc in Lincoln, MA on May 23rd.
- President McDonagh spoke briefly on the library telescopes project and noted that the club's first telescope had recently been delivered to the Belmont Public Library.
- President McDonagh also gave the Clubhouse Report and thanked John Blomquist for mowing the Clubhouse yard. The Clubhouse and observatories are all in good shape, despite the recent microburst nearby. The Clubhouse remains closed, but MIT's Haystack Observatory is nearing Phase 2 of its reopening.
- Bill Toomey gave an update on ARIO (the ATMob Research and Imaging Observatory). The club's science group continues

taking various AAVSO courses, including those on variable stars, use of VStar software, and data reduction with VStar.

- Old Business: none.
- New Business: none.

President McDonagh then discussed the election for the club's Executive Board and again announced the slate put forward:

President: Rich Nugent  
Vice President: Pierre Fleurant  
Treasurer: Eileen Myers  
Secretary: Alva Couch  
Membership Secretary: Chris Elledge  
Past Presidents: Tom McDonagh and Glenn Chaple  
Members-at-Large: Maria Batista, Alan Sliski, Bill Toomey

The election is being held online and all voting will be through the club's website. Members can vote for or against the entire slate and voting will end on Saturday, June 13th. Tom thanked the Nominating Committee for its work.

President McDonagh then welcomed Board member Alan Sliski, who spoke on the design and construction of an automated observatory. Alan designs equipment for medical radiology and holds a number of patents for his inventions.

Alan was asked to design a rooftop automated observatory about eight years ago by fellow club member David Mittelman, with the observatory to be mounted on the roof of David's home in Dover, Massachusetts. The available space is only 7 x 7 feet, requiring an automated system. Despite the small volume, a PlaneWave 17-inch telescope was installed atop a Paramount ME equatorial mount.

The advantages of automation include the ability to stay inside, get some sleep, and locate your warm room anywhere in the world! Image streams can also be easily shared with observers and organizations anywhere. Challenges abounded and included getting all of the equipment components to communicate with each other, plus devising appropriate measures to deal with possible lightning strikes. A cloud sensor was added to the roof, which was also equipped with an ice shield to permit operation during the winter.

The observatory was pre-fabricated in Bedford and trucked to Dover, before being placed on the home's roof with a crane. During construction, Alan had to create and install an aluminum floor on steel I-beams at the Mittelmans' house to support the observatory's equipment. The observatory was then firmly anchored to the roof to resist wind loads. The telescope and mount reside on an elevating pier, which has a fail-safe so that it will only elevate if the observatory roof is open. Wiring is minimized by using a wifi router for the imaging train. The most exciting part of construction came when the PlaneWave telescope's mounting rail slid off of its dovetail! Fortuitously it was caught by Alan's son.

Sadly, David Mittelman passed away, and his family has

decided to make an extremely generous donation of the observatory to the ATMoB. The observatory will be installed behind our Clubhouse at Haystack Observatory and will run autonomously, using target lists provided by club members and others. ACP software will check for weather before opening the observatory, and will then go through the target list, prioritizing the most efficient path through the night sky. The observatory can even be cued by the gamma-ray burst (GRB) coordinates network (GCN) as GRBs occur. A long-term goal is to involve local (and not so local) schools in utilizing the observatory.

President McDonagh thanked Alan for his presentation and adjourned the meeting at 9:28 pm.

*~ Submitted by John Harrington 2019 - 2020 Secretary ~*

## Membership Report . . .

I am pleased to welcome our newest members: Giancarlo Gonzalez, Nicholas and Rory Barry.

As of June 24th, 2020 we have 342 memberships covering 438 members. This is broken down as follows:

- 141 Regular Members
- 127 Senior Members
- 9 Student Members
- 57 Family Memberships covering 153 Members
- 6 Guest Members
- 2 Honorary Members

Membership renewals for fiscal year 2020-2021 are due by September 1st. Members that joined after January 2020 are not due for renewal until next year.

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

You can also download the membership application from the website at <https://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 ~*

## Meeting Recordings . . .

The recording of ATMob meeting #931 is available on YouTube: <https://youtu.be/LuTt847jSdY>

I would like to thank Alan Sliski for giving his presentation and allowing us to record it.

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 <https://www.atmob.org>

~ Chris Elledge – Membership Secretary ~

## Clubhouse Report . . .



The lonely Observing Field. Image by John Stodieck

### July 2020 Clubhouse Report

We are still under a complete lockdown of all activities at our Clubhouse due to the coronavirus pandemic. Past President McDonagh has secured permission for our cutting the lawn to prevent ticks, rodents and mosquitoes from becoming a hazard. The month of June has been rather dry, and the grass has turned brown with the continued drought. Our team of local members reports the same conditions. John Stodieck, John Blomquist, Paul Cicchetti, and Steve Clougherty are standing by to renew mowing when the rain returns some day.

A recent drive by provided the following picture showing the area deserted but standing. The outdoor end of the dehumidifier drain hose shows that the shop unit is working and keeping the machinery protected. All buildings seem in order and secure. We are ready to follow MIT's procedures several more times to keep our observing field ready for re-opening when MIT gives us permission to do so.

### Clubhouse Saturday Schedule

Indefinite Period	<b>CLOSED DUE TO THE CORONAVIRUS PANDEMIC</b>
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### Clubhouse Evening Schedule

Friday Night Educational Videos	<b>CANCELED</b>
Saturday Night Observing	<b>CANCELED</b>
# Closing time is determined by the organizers	
## Closing time is determined by the "A" members on duty.	

~ Clubhouse Committee Chairs ~

~ Steve Clougherty, John Reed and Dave Prowten ~

## Observer's Challenge . . .

July, 2020

Messier 8 – Nebula/Cluster in Sagittarius

Mag: 3.0

Size: 90' X 40'



M8 - Wide-field view, taken with 8-inch Ritchey-Chrétien telescope. Luminance, R,G,B filters, also some H-alpha added to Lum and Red. Total imaging time about 3.5 hours. Image by Mario Motta

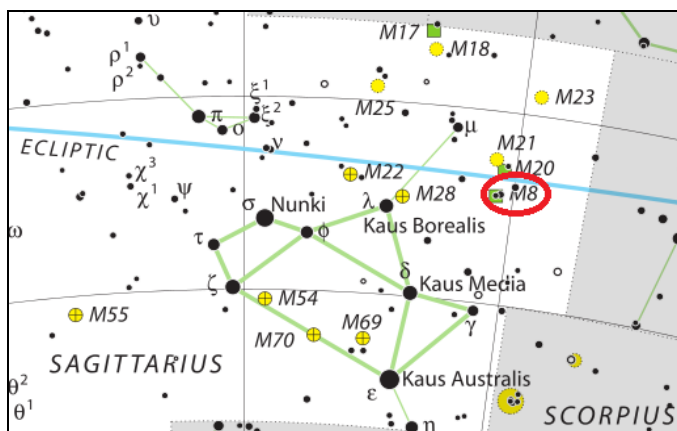
Our July and August Observers' Challenges might be themed the "Summer of Sagittarius," as both inhabit the celestial Archer. This month, we set our sights on Messier 8 (the "Lagoon Nebula"); in August, we'll turn our attention to Messier 20 (the Trifid Nebula).



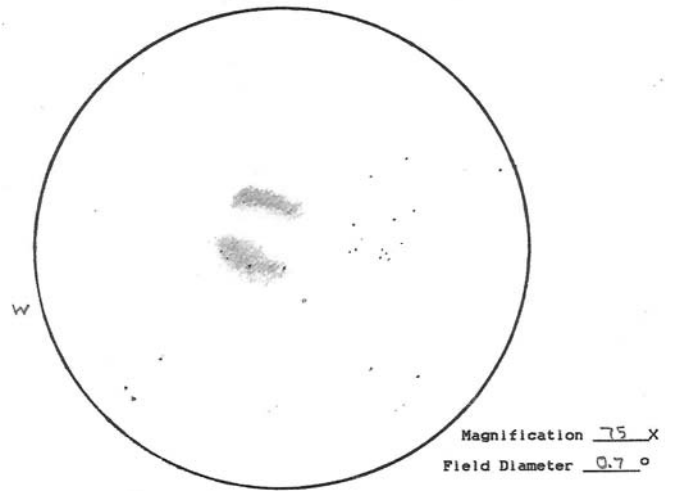
M8 – Wide-field view taken with 6-inch f/4.0 refractor and stock Canon 80D camera, ISO 800, 25min total exposure. Image by Doug Paul.

Along with the Orion Nebula (M42), the Lagoon is the only diffuse nebula readily visible to the unaided eye from mid-northern latitudes. Like M42, it's an emission nebula and an H II region of active star formation. Credit for the discovery of the Lagoon Nebula goes to the Italian astronomer Giovanni Hodierna who spotted it with a crude 20X refractor on or before 1654. Because the nebula is visible to the unaided eye, we can rightly assume that a number of astute observers spotted it long before Hodierna. Messier added it to his catalog in 1764. It bears the New General Catalogue designation NGC 6523.

I first saw M8 on the evening of July 20, 1974 – coincidentally, the 5th anniversary of the Apollo 11 Moon landing. This was definitely a NASA-themed night, as the session began with a fly-over of the Skylab space station. M8 was visible to the unaided eye a half-dozen degrees north of gamma ( $\gamma$ ) Sagittarii, the star that marks the spout of the "Teapot." It was easily seen in my 3-inch f/10 reflector at 30X as two separated nebulous patches oriented in a north/south direction. I made another small-scope observation of the Lagoon in the summer of 2012 – this time with a 4.5-inch f/8 reflector and a magnification of 75X. I described it as "two elongated clumps of nebulosity separated by a dark rift. Beautiful cluster (NGC 6530) to the east." Since NGC 6530 is embedded in the nebulosity, it's obvious that a larger instrument will be necessary to fully appreciate the grandeur of the Lagoon.



[www.messier-objects.com](http://www.messier-objects.com) (chart from IAU and *Sky & Telescope*)



M8, as seen with 4.5-inch f/8 reflector. Sketch by Glenn Chaple.

The immensity of the Lagoon Nebula can be fully appreciated when we realize that, although it lies 5200 light years away, its widest dimension spans an area three full moons across. Were it as close as the Orion Nebula, the Lagoon would appear four times larger and shine at first magnitude.

For a detailed look at Messier 8 from a backyard astronomer's point of view, read Howard Banich's article "Swimmin' in the Lagoon" on pages 20-25 of the August, 2020, issue of *Sky & Telescope*. Banich mentions the "Hourglass," a small, bright part of the Lagoon Nebula that was first described by John Herschel. It appears in the accompanying Mario Motta narrow-field image of the Lagoon. Here's a challenge for you big-scope users. Can you make a visual sighting?



M8 - Narrow-field view, taken with 32-inch scope showing the center of the Lagoon and the star forming region to the right of the Lagoon itself (the hourglass shape glow). Image taken with narrowband imaging H-alpha, O3, and S2, total about 3 hours. Image by Mario Motta.

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](mailto: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/>.

## Observer's Challenge . . .

August, 2020

### Messier 20 – Nebula/Cluster in Sagittarius

Mag: 6.3

Size: 30'

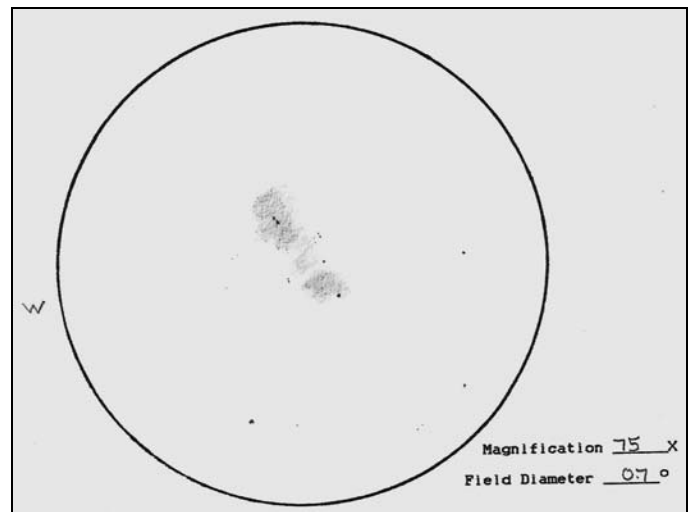


M20 in R,G,B, Lum, and a bit of H-alpha, to produce a color image with both the emission and reflectance part of the nebula. total about 5 hours. Taken with a 32-inch scope and an ASI6200 camera. North is to the left. Image by Mario Motta

This second installment of the "Summer of Sagittarius" takes us to M20, nick-named the "Trifid Nebula." Like last month's Observer's Challenge (M8, the "Lagoon Nebula"), the Trifid is a nebula/cluster complex. It is also 5200 light years away and may be associated with the Lagoon. Although not a naked eye target, the Trifid Nebula is easily located just 2 degrees north and slightly west of the Lagoon; in fact, they can be viewed together in the same low-power, wide-field telescopic view.

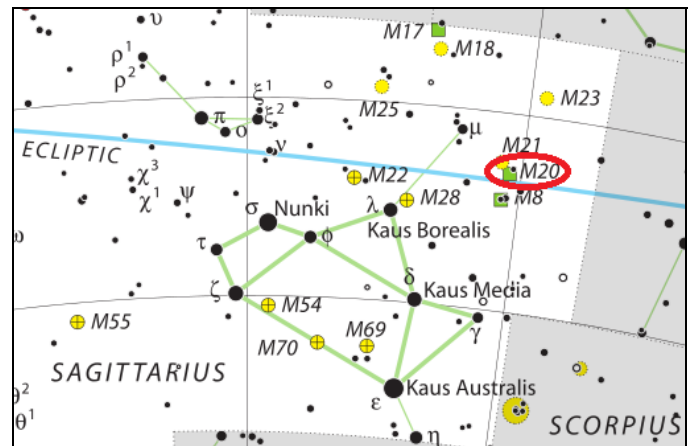
M20 was discovered by Charles Messier on June 5, 1764. William Herschel viewed it 20 years later and catalogued it as four separate objects. Oddly enough, his son John saw three segments of the nebula, and was the first to describe it as "trifid."

My initial sighting of M20 occurred on the evening of August 20, 1977. Because I had just viewed M8 with my 3-inch f/10 reflector, I was able to note that M20 is much fainter. Sharing a one-degree field with M20 was the open cluster M21. Because of the low magnification used (30X), I failed to notice the Trifid's bright embedded double star, identified by the William Herschel designation H N 6AC (magnitudes 7.6 and 8.7, spectral classes O8V and B6V, separation 10.7 arc-seconds). Two summers later, I resolved this pretty pair with the same 3-inch and a magnitude of 60X. A sketch of M20 I made while attending the 2012 Stellafane Convention and observing with a 4.5-inch f/8 reflector (magnifying power 75X) shows both nebulosity (just 2 areas) and double star.



M20, as seen with 4.5-inch f/8 reflector. Sketch by Glenn Chaple

Compare my sketch with an image made by Mario Motta with a 32-inch scope. Not only are four lobes visible (what Stephen James O'Meara likens to as a "four-leaf clover"), but so is the intervening dark nebula (Barnard 85) that separates them. Also visible are the striking colors – red for the four-lobed part of M20 (an emission nebula) and blue for the area surrounding a 7th magnitude star further north (left in Motta's image). Its bluish hue indicates that it's a reflection nebula – a cloud of dust illuminated by the embedded star.



Finder Chart for M20 (The "Trifid Nebula")

[www.messier-objects.com](http://www.messier-objects.com) (chart from IAU and Sky & Telescope)

Here are some challenges you might consider while observing M20. Are you able to see the four lobes of O'Meara's "clover?" He notes that the fourth leaf is fainter than the others, and jokingly adds that "you should feel lucky if you glimpse it!" Check out H N 6 with high magnification. Can you spot a magnitude 10.4 star just 6.2 arc-seconds north-northeast of the main star (essentially on the opposite side from its magnitude 8.7 partner)? This stellar pair bears the designation H N 40. Why two catalog identities for the same star? Don't ask me. You'll have to ask William Herschel, and he's not around to provide the answer.



**POSTMASTER NOTE:** Not mailed due to the coronavirus pandemic

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

#### EXECUTIVE BOARD 2020-2021

PRESIDENT: Rich Nugent (508) 935-8158

VICE PRES: Pierre Fleurant

SECRETARY: Alva Couch

MEMBERSHIP: Chris Elledge (781) 325-3772

TREASURER: Eileen Myers (978) 456-3937

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

Alan Sliski

Bill Toomey

#### PAST PRESIDENTS:

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 Al Takeda [newsletter@atmob.org](mailto:newsletter@atmob.org)

#### PUBLIC OUTREACH

COMMITTEE CHAIR: Rich Nugent [starparty@atmob.org](mailto:starparty@atmob.org)

STAR PARTIES: Bernie Kosicki

Laura Sailor

John Harrington

## How to Find Us...

### Web Page [www.atmob.org](http://www.atmob.org)

**MEETINGS:** Zoom On-Line Meetings until further notice. Meetings held the second Thursday of each month (September to July) at 8:00 PM. For meeting details go to [www.atmob.org](http://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 CLOSED. 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.

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## Heads Up For the Month . . .

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

Jul 12 Last Quarter Moon (Moonrise at midnight)

Jul 14 Jupiter at opposition, Jul 15: Pluto at opposition

Jul 20 New Moon, Saturn at opposition

Jul 22 Mercury at greatest western (morning) elongation (20 degrees)

Jul 27 First Quarter Moon (Moonset at midnight)

Jul 21 New Moon

Jul 28 South Delta Aquariid Meteors peak (~22:00 UT (18:00 EDT))

Aug 3 Full Moon

Aug12 Perseid Meteors peak (~13:00 UT, 09:00 EDT)