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. 31, No. 9 October 2019

This Month's Meeting . . .

Thursday, October 10th, 2019 at 8:00 PM
Phillips Auditorium
Harvard-Smithsonian Center for Astrophysics
Parking at the CfA is allowed for the duration of the meeting

Current State of the Planetary Defense

Artist's concept of a near-Earth object. Image credit: NASA/JPL-Caltech

Our guest speaker for the October meeting will be Dr. Peter Vereš. The title of his talk will be "Current State of the Planetary Defense". He will discuss the past, present and future of asteroid and comet discovery, Earth impacts, and what we can do about the potential impacters.

Dr. Peter Vereš obtained his PhD at the Comenius University in Bratislava, Slovakia. After a year on the research faculty at Comenius University, three years as a postdoctoral researcher at the University of Hawaii, and two years as a Caltech Postdoctoral Scholar at Jet Propulsion Laboratory, he joined the Harvard-Smithsonian's Minor Planet Center as a staff scientist in 2017. Dr. Vereš joined the Pan-STARRS telescope team in Hawaii, and co-discovered hundreds of asteroids and dozens of comets. His research is related to meteors, discovery of asteroids and comets, improved asteroid astrometry and photometry with trail fitting algorithms for Near-Earth asteroids and potential Earth impactors, and physical characterization of asteroids. He works on operations and development of the Minor Planet Center software pipelines.

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 . . .

It was with some interest I attended my first Astronomy on Tap Boston event last month. If you are not familiar with the concept, each FREE event features accessible, engaging science presentations on topics ranging from planets to black holes to galaxies to the beginning of the Universe. My plan in attending was to get a feeling for the local interest in astronomy and determine if it might be a good venue for recruiting new, younger members for ATMoB.

I arrived a bit early at the Trident Booksellers and Café on Newbury Street, purported to be the oldest independent bookseller remaining in Boston. Shelves of books and meeting spaces made up the first floor. There were at least two events ongoing as I arrived, a book reading and signing, as well as a speed dating event, which made for a very busy place. The deli bar was open with basic food but a good selection of beer and wine. Before long, the upstairs meeting room opened for seating. I was delayed and took a seat near the back of the room. I do suggest arriving early for a good seat. Wait staff plied the room taking orders for food and drink while the Astronomy on Tap folks prepared. With over 75 guests in attendance, it was a cozy setting for the topic of the night.

With a title like "Astronomy on Tap Meets NASA and the International Space Station", I expected to see more middle-aged folks in attendance. I was surprised to see the mean age to be around 27 years old with a male: female ratio of about 60:40. David Brady, Associated Program Scientist from the NASA ISS Program Science Office, and Mika Sode, Commercial Innovation Program Manager from the ISS U.S. National Laboratory, were on hand to discuss NASA and ISS history. Short talks were presented, sprinkled with trivia and open-ended question and answer periods. The crowd was engaged and attentive.

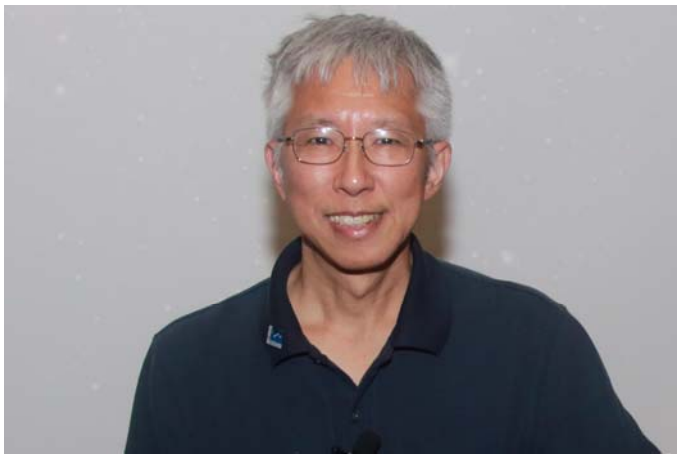
I was surprised by the demographics of the attendees and the quality and quantity of questions asked of the presenters. Many of the guests appeared to be Astronomy and Engineering graduate students from Boston and Cambridge top colleges and universities. I believe these types of folks may have a strong interest in what ATMoB might have to offer. I intend to continue attending these meetings and hope to engage potential members in a form of outreach. If you have an interest in attending also, I'll post the upcoming meetings. Perhaps we can send a contingent along to represent the Amateur Telescope Makers of Boston. We may also want to engage the Astronomy on Tap organizers to offer up speakers for more exposure. Please let me know your thinking on the topic. The link for Astronomy on Tap is http://astronomyontap.org/

~ Tom McDonagh – President ~

Meeting Refreshment Assignment . . .

2019 - 2020
Oct. – Maria Batista

September Meeting Minutes . . .



Al Takeda *

Minutes of the 923rd ATMoB meeting held September 12, 2019 at the Harvard-Smithsonian Center for Astrophysics in the Phillips Auditorium. Club President Tom McDonagh called the meeting to order at 8:00 pm and announced that the evening's presentation would be by renowned astroimager Al Takeda and would focus on DSLR imaging. President McDonagh thanked all Club members who assisted with the Club's annual picnic, which was a great success.

- President McDonagh read the minutes of the Club's July meeting.

- Treasurer Eileen Myers gave the combined Treasurer's report for July and August.

- Membership Secretary Chris Elledge presented the Membership Report, showing 146 total memberships covering 331 Club members, but there are still 119 members who have not yet renewed. The annual renewal period ended in September, so all Club members are encouraged to renew their memberships promptly.

- Vice President Nugent presented the Observer's Report and noted the upcoming autumnal equinox as well as lunar and planetary conjunctions. The Observer's Challenge object is M71, a globular cluster in Aquila. Mario Motta and Doug Paul have both contributed images of the object and Glenn Chaple contributed a sketch.

- John Reed gave the Clubhouse Report and noted that 18 Club members participated in the July work party and 19 members in the August work party, which focused on mowing the lawn. At the August work party the spider in the Club's 25-inch Dob was replaced. The upcoming work party will focus on repairing the roll-off observatory roof, repainting the porch, hauling gravel for the driveway and getting the mice out of the 17-inch Dob (again).

- Vice President Rich Nugent presented the Outreach Report and reported that the Perseid meteor-watching party at the Farrington Nature Center on August 9th was small but reasonably successful. Club member Bob Toop attended a star party at Waitts Mountain Park on September 7th and managed to show attendees several objects through occasional sucker holes. Vice President Nugent stated that there are currently few requests for star parties, no doubt due to the current risk of mosquito-borne eastern equine encephalitis. The Fivesparks, an arts community collaborative, has requested a star party for October 4th, to be held in Harvard, Massachusetts. Also, New England Sci-Tech in Natick has invited ATMoB members to participate in their Astronomy Day program on October 5th. The Skyscrapers of Rhode Island club will also hold their annual AstroAssembly convention in North Scituate that same day, which is also the International Observe the Moon night.

- President McDonagh spoke briefly about the Library Telescope Initiative at Kelly Beatty's request. The Cornerstone of Science group in Maine has begun assembling and selling Starblast telescope kits for use in the library program. ATMoB has set aside funds to purchase library loaner telescopes and will focus on the libraries within the Route 128 loop.

- Old Business: None.

- New Business:

  John Reed announced that he was contacted by the Skyscrapers club, who has about 16 sets of the *Amateur Telescope Makers* books available for sale.

  Treasurer Eileen Myers briefly described the recent Stellafane convention, which enjoyed great weather. She mentioned that several participants brought night vision scopes this year, and Alan Ward from Canada brought his mirror-coating machine. A total of seven ATMoB members gave presentations at Stellafane this year, including Corey Mooney, Mario Motta, George Roberts, Phil Roundsville, Alan Sliski, Al Takeda and Gary Walker. Next year's Stellafane will emphasize how to get involved in pro-am collaborations.

  Treasurer Eileen Myers also briefly discussed the Conjunction convention, at which Julie Kaufmann and Rich Nugent both presented.

  Mario Motta spoke about his recent visit to the famed Mt. Wilson observatory, at which he was fortunate to participate in an observing session with the 100-inch Hooker telescope under extremely stable seeing conditions. He observed a variety of objects, including the elusive spokes in Saturn's rings.

  President McDonagh spoke about Tal Mentall's very generous gift of astronomical equipment to the Club, including a 5-inch apo refractor.

President McDonagh then introduced Al Takeda, who spoke on the subject of Deep Sky Imaging using a DSLR. Al started by

noting that he likes to use Canon-brand DSLRs, which are well-suited to astroimaging because they have features such as mirror lockup, live view, and USB and shutter control connectors. The great thing about DSLRs is that they work with a wide variety of lenses and can be used both for daytime photography and for astroimaging.

Al then gave a brief overview of how DSLRs work, noting that they use Bayer color filters and also an infrared-blocking filter. To sample your image effectively, it is important to match the pixel size of your DSLR to the focal length of your telescope. Al noted that DSLRs are increasingly using CMOS chips, which can be manufactured in a standard chip fabrication facility, are cheaper than CCD chips, and can be built in large formats.

Al emphasized the importance of a stable, accurately-tracking mount to good astroimaging. For many years he used a Losmandy G-11 mount but recently upgraded to an Astro-Physics 900 for better tracking. Nonetheless, he still uses a CCD autoguider to offset the minor periodic error in the mount's tracking.

For software, Al primarily likes to use Images Plus (about $80) for camera control, but he also uses O' Telescope Corporation's Backyard EOS program ($50) for solar imaging. For autoguider control, Al uses the venerable CCD Soft program. For focusing and exposure histogram control, Al uses Canon Digital Photo Professional.

Al then described his standard workflow for imaging. After assembling the system, he always balances the system "East side HEAVY" to minimize gear backlash. He uses the QHY PoleMaster device for high-precision polar alignment of his mount. He then starts the Images Plus software and takes a series of calibration frames, including flat fields, light frames, dark frames and bias frames. Flat fields eliminate vignetting and dust motes, while dark frames eliminate dark noise (hot pixels) generated by heat produced by the camera's amplifiers. He then focuses by minimizing the width of the diffraction spikes produced by his telescope's spider.

Al next takes the astronomical images, being sure that the exposure histogram peaks between 30% and 40% to maximize detail while minimizing noise. Exposures are governed by the imaging optics and the sky brightness that night. He takes as many images as possible of the object so that he will maximize signal and reduce noise when the images are later combined. For image processing, Al continues to use Images Plus ($240 for the processing and camera control modules together), which processes his darks, lights, flats and bias frames. He then aligns and stacks all of his astronomical images, before combining them. The next step is to stretch the image by adjusting the histogram in order to bring out detail. Al finishes with image processing in Photoshop ($240/year subscription). His favorite book about astroimaging is Ron Wodaski's *The New CCD Astronomy*. *Editor: This book is out of print but can be found on the used market.*

For simpler imaging of wide fields and solar imaging, Al uses small star trackers, the iOptron Sky Tracker and the tiny Takahashi Sky Patrol on a camera tripod. Al completed his presentation by showing some of his beautiful DSLR images of popular objects including the Flame, Horsehead, Orion and Veil nebulae, the M13 globular cluster, the Andromeda and M33 galaxies, and comets Hartley 2 and Lovejoy.

President McDonagh thanked Al for his presentation and then adjourned the meeting at 9:42 pm.

~ John Harrington, Club Secretary ~

Membership Report . . .

I am pleased to welcome our newest members: Max ben-Aaron, Drew Desjarlais, Kevin Heckler, Alan Kaplan, Ludovic Monchal, Mark Taylor, and Stefan Vasile.

As of September 25th, 2019 we have 258 memberships covering 345 members. This is broken down as follows:

- 114 Regular Members
- 87 Senior Members
- 4 Student Members
- 49 Family Memberships covering 136 Members
- 2 Guest Members
- 2 Honorary Members

111 Memberships are past due for renewal. Memberships that have not been renewed by December 1st will expire.

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 ~

Meeting Recordings . . .

The recording of ATMoB meeting #923 is available on YouTube: https://youtu.be/CoMNxgiqLoY

I would like to thank Al Takeda for giving his presentation and for 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 . . .

Chris Elledge painting the porch railing *

September 2019 Clubhouse Report

Our monthly work session was held on Saturday September, 14 under cloudy skies. John Blomquist brought his tractor to the Clubhouse and mowed the entire observing field and grounds around the Clubhouse. Several other volunteers used the power mowers to complete the areas that were inaccessible to the tractor.

Painting and staining continued on the South facing side of the porch. The banister and rails were scraped and stained. We may have one more opportunity to continue with our Clubhouse staining project during October before the weather becomes too cold.

Two volunteers hauled gravel by wheelbarrow and spread it around the potholes and low spots throughout the driveway.

Dave Prowten took the lead on the seventeen inch Dob and removed the mirror cell and installed heavy screening to prevent mice from entering. With help from two volunteers, the mirror was cleaned and reinstalled and a final collimation was performed. This telescope is now ready for use by any member who is willing to be trained on its operation.

We would like to thank John Stodieck for cleaning the clamshell dome earlier in the month.

After installing the new AstroSystems heavy duty spider, we are happy to report that our 25-inch Dob has performed exceptionally well after two trial runs!

Barry Jensen continued testing our new Mirror-o-Matic grinding machine and he and Tom McDonagh are currently grinding an 8-inch blank. We expect the machine to be ready for members use very soon.

Al Takeda photographed and started to log the optical stage, tripods and misc. optics donated by Peter von Thuna.

Thanks go out to Eileen Myers and Maria Batista for preparing lunch for the volunteers.

Thanks to the following members and friends of the ATMoB who volunteered during the month of September: Maria Batista, John Blomquist, Paul Cicchetti, Chris Elledge, Alva Gouch, Gregory Fontaine, Phillip Conner Goodrich, Barry Jensen, Eric Johansson, Dick Koolish, Sal LaRiccia, John Maher, Corey and Keira Mooney, Eileen Myers, Rich Nugent, Dave Prowten, John Reed, John Stodieck, Art Swedlow, Al Takeda, Mark Taylor, Peter von Thuna and Stefan Vasile.

Clubhouse Saturday Schedule		
Oct 5	John Panaswich	George Paquin
Oct 12	Glenn Chaple	**Volunteer Needed**
Oct 19	**WORK PARTY # 10 **** Bruce Berger and Mike Hill	
Oct 26	Glenn Meurer	Dave Prowten
Nov 2	Chris Elledge	Joe Henry
Nov 9	**WORK PARTY # 11 **** Bill Toomey	

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

Clubhouse Evening Schedule	
Friday Night Educational Videos	**ATMoB-Announce**
Saturday Night Observing	7:00 pm - ##
# 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 ~

AmazonSmile Supports ATMoB . . .

You can now shop at smile.amazon.com and Amazon will donate to the Amateur Telescope Makers of Boston.

There is no extra cost, extra steps, or delays for you to place your Amazon orders this way, and with each purchase a small donation is made to the Amateur Telescope Makers of Boston.

You can use the same account on Amazon.com and on AmazonSmile. When you sign up for AmazonSmile you will be asked to select one from over a million charities to support.

Or, ATMoB's unique charity link is
https://smile.amazon.com/ch/04-6360709

When you click on ATMoB's unique link, it will skip this charity selection process. Instead, you will be taken to smile.amazon.com and will be asked if you want to support The Amateur Telescope Makers of Boston, Inc.

~ Eileen Myers, Treasurer ~

Observer's Challenge . . .

October 2019

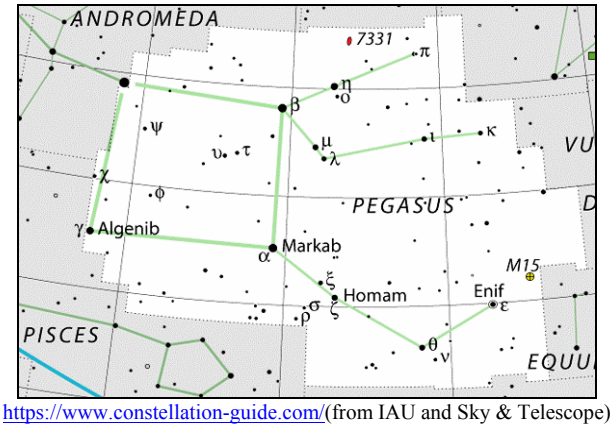
NGC 7448 – Spiral Galaxy in Pegasus
Mag: 11.4, Size: 2.7' X 1.2'

NGC 7448. Image by Mario Motta

As promised last month, we leave the relatively easy Messier stuff behind and return to the realm of the faint fuzzies – in this case the spiral galaxy NGC 7448 in Pegasus. When William Herschel discovered it on October 16, 1784, he assigned it the Herschel Catalog designation H2512 – his 251st Class II entry. The Class II category was reserved by Herschel for what he considered to be "Faint Nebulae". As such, it is a visual challenge for owners of modest-sized telescopes.

Viewed with my 10-inch f/5 reflector under magnitude 5 skies, NGC 7448 was a ghostly presence – a rather faint averted vision sight. I sensed an oval shape with a NW/SE orientation – an impression verified by descriptive notes in Volume 1 of *Kepple and Sanner's Night Sky Observer's Guide* and images sent by Doug Paul and Mario Motta. Mario's image shows bright detached segments surrounding the inner disk. Because of these, Halton Arp included NGC 7448 in his Atlas of Peculiar Galaxies with the designation Arp 13.

The 2000.0 coordinates for NGC 7448 are 23h00m, +15°59'. Star-hoppers can work with the finder charts below, which show its location 1 ½ degrees WNW of Markab (alpha [α] Pegasi). NGC 7448 is approximately 80 million light years from Earth and is about 60,000 light years in diameter.



https://www.constellation-guide.com/(from IAU and Sky & Telescope)

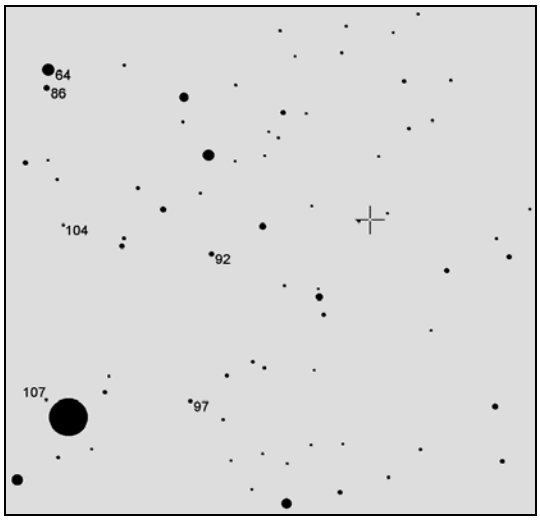


Chart created using AAVSO's Variable Star Plotter (VSP). North is up on a 2-degree field; limiting magnitude 11. Numbers indicate magnitudes of field stars (decimals omitted). Bright star at lower left is Markab (alpha [α] Pegasi). The location of NGC 7448 is shown with a "+".

The purpose of the Observer's Challenge is to encourage the pursuit of visual observing and is open to everyone who is interested. Contributed notes, drawings, or photographs will be published in a monthly summary. Submit them to Roger Ivester (rogerivester@me.com). To access past reports, log on to https://rogerivester.com/category/observers-challenge-reports-complete/

~ Glenn Chaple ~

Outreach Report . . .

Summer 2019

Star party requests this fall have been few and far between and I suspect the reason is because of concern about mosquito-borne illnesses such as EEE and West Nile Virus. The risk varies by community but, until the first hard frost, abundant caution is needed when conducting outdoor activities between dusk and dawn. I suspect we will receive more requests for November and the springtime. None the less, there are some events scheduled.

- On Friday, October 4th Fivesparks, an arts community collaborative, will be hosting an evening of astronomy in Harvard, MA.

- On Saturday, October 5th, Astronomy Day will be celebrated by the folks at New England Sci-Tech in Natick, MA. This event will be held from 4 p.m. until 10:00 p.m.

- We've been asked to provide telescopes for a Cub Scout group at the Westford Sportsman's Club on Saturday, November 2nd. The crowd is expected to be too large for the ATMoB clubhouse so the Sportsman's Club is being booked. A cloud/rain date will be Saturday, November 30th.

- On Monday, November 4th the Acton-Boxborough school district will be holding an event to celebrate STEM in conjunction with 2019's STEM Discovery Year. This is not going to be a typical star party as they will be showcasing science, technology, engineering, and mathematics courses and careers inside and have asked us to support the event with

inside and outside components. This event is well-attended so a large number of volunteers are required. I'll mention this at the October meeting and as more information becomes available I'll send out emails to the club.

We've been asked to support each event and so volunteers with telescopes are asked to sign up. Inside demos on Astronomy Day would also be greatly appreciated. For more details and to register, please see the ATMoB Event Calendar page on our website.

~ Rich Nugent - Vice President and Outreach Chair ~

Eulogy for Stelita . . .

Princess Stelita Cronin at the 2016 ATMoB New Year's Eve party *

Stelita Cronin was a nurse at Newton Wellesley hospital in Newton. She was born in San Paolo, Brazil on May 19, 1942 where she grew up in a multi-cultural neighborhood. She emigrated from Brazil in 1963 and met and married Jack Cronin. They had two children: Christine and Kenny. Shortly after, she found ATMoB and joined about the same time as Vladimir and Tanya Vudler emigrated from Slovenia and joined the club. They became friends, and Stelita nursed Vudler's mother for 5 years when she contracted Emphysema.

Stelita spoke 6 languages fluently: English, Portuguese, French, Spanish, Italian, and Japanese. She was self-taught, eager to learn languages as a hobby. She worked as a translator for Berlitz in Boston from the 1970's to 1990's. One memory stands out at an ATMoB meeting, when Stelita from the rear of the Phillips Auditorium called out to Fumiko Tomoichi in the front of the room in fluent Japanese as they greeted in an embrace. When Anna Knight was no longer able to provide refreshments for ATMoB meetings at Harvard College Observatory (HCO), Stelita picked up the ball. She added goodies to those "cake in a box" packages and fed our sweet tooth at every meeting. After she changed to the night shift at the hospital, she continued to bake before she went to work. We stopped by and took the coffee pot and baked goodies, returning them empty to her the next day, until the Executive Board started the rotation refreshments system that we have now. Her baked goodies have never been equaled.

Skydiving intrigued some ATMoB members. Paul Valleli relates his first jump was May 1967, and his last jump, #305, was May1973. Summer and winter, over land and water, high altitude (15,000ft) and low, competition and evening landings at the Inn at Orange. "Oh, what fun and excitement." These stories must have inspired Stelita to try this new hobby. Her first jump was in Pepperell in the 1980's. Fifty jumps later was an unusual story, for her main chute got tangled and Stelita started to fall rotating about her vertical axis. It was a solo jump, so she dumped her bad chute and deployed her round reserve chute. It was a windy day, and she was being blown over the Connecticut River. She landed on a small grassy piece of sand bar in the middle of the river. She was rescued by a fisherman's boat nearby. Her last jump!

When John Dobson visited New England, he stayed at Stelita's mother's home in Burlington while he visited our club. (Dobson also stayed at the Clubhouse after observing). During that visit, while visiting Stelita's home, Dobson readjusted her Coulter Dob, collimating and star testing it. It remained in a place of honor in her home, thereafter.

Shortly after her retirement, she undertook the challenge of the Appalachian Trail. From March through October she made hundreds of new friends both on and at stops along the trail. Some of those friends have initiated an annual memorial walk along a section of the trail in her honor. Upon her finish atop Mt. Kathadin in Maine, she returned to find her mother dying of cancer. She cherished their limited time together and we helped her mourn her mother's passing. She came close to finishing a second AT hike a few years ago, but the weather, bugs, mud, and torrents stopped her in Maine's wilderness section. Another hiker, who became a friend for life, grabbed her backpack midstream and saved her. That trail section was then closed. Our club's history includes folks who loved and climbed our NE mountains. Stelita had joined them.

Then cancer struck Stelita. Sequentially and in many forms and places, cancer followed her everywhere but couldn't stop her, for she continued to love life, food, people in general, and friends in a special way. When taste buds failed she could still enjoy her lemon meringue pie, especially at Rein's New York Deli Diner in Vernon, Connecticut. Vlad Vudler is to be thanked for accepting his role as "provider on call" for the last several years. Her needs were simple yet critical. Stelita gave it her all as usual, with a smile and sparkle in her eye when she awoke in the hospital bed and saw her family or friends. She knew pain but she loved life, the same as when Dobson fixed her scope, when we thanked her for her baked cakes, and as she stood atop Mount Katahdin

It was still a shock when we heard she had passed on. TWINKLE, TWINKLE, LITTLE STAR! HOW I WONDER WHERE YOU ARE? We will miss her when star gazing here at the Clubhouse. We will miss her at New Years' Eve parties, for years to come. But Paul Valleli and Vlad have researched that the 1st magnitude star Regulus is 77 light years away from Earth. So while you are waiting for that Leonid meteor shower this winter, realize that the light you see left Regulus 77 years ago and it traveled every day through her entire lifetime, so you could see it now. Stelita, it was our privilege. Thank you and Bon Voyage.

~ John Reed - Clubhouse Committee Chairman ~

2019 Annual Picnic Thank You . . .

Cory Mooney befriends guest at the ATMoB Picnic. Photo by Eileen Myers

The cool, fresh air on Saturday, September 7th, the day of the 2019 Annual ATMoB Picnic, was approved by everyone sitting outside, eating, talking, visiting observatories, touring the Clubhouse, solar viewing, participating in demos and crafts, and walking up-the-hill.

The perfect daytime weather turned into a light rain later in the evening, canceling any plans for observing, but not anyone's spirits. Folks stayed around talking until late that night.

Preparations began on Labor Day, which became a full day of labor, readying the Clubhouse and grounds for the Picnic. There was lots of cleaning, raking, and set up. Thanks go to Maria Batista, Nina Craven, Julie Kaufmann, Corey and Keira Mooney, Dave Prowten, John Reed, Art Swedlow and Al Takeda.

Picnic Day Tent-Setup started on time, thanks to a passing motorcyclist who stopped to chat with Bill Toomey. The Motorcyclist, Bill, Al Takeda and Chris Elledge worked together to put up the large tent. More workers arrived and soon there was activity everywhere: Hugo and Diego Alvarez, Maria Batista, Nina Craven, Julie Kaufmann, Corey and Keira Mooney, Eileen Myers, John and Monique Reed, John Stodieck, Al Takeda and Bill Toomey worked hard setting everything up. Thank you to everyone else who lent a hand whenever help was needed during the Picnic.

Special thanks also go to Barbecue Chef Maria Batista, Photographer and Host Al Takeda, Solar Observing Guides Paul Cicchetti, Chris Elledge and Phil Levine, Clam Shell Observatory Tour Guide John Maher, all other Observatory Tour Guides, Clubhouse Tour Guides, Walk-Up-The-Hill Leader Bill Toomey, Kids Activities Leaders Julie Kaufmann and Nina Craven, Fun With Optics Leader Corey Mooney, and Mirror Grinding and Telescope Making Demo Leader Eileen Myers.

During the Picnic John Reed delivered a eulogy for long-time ATMoB member Stelita Cronin. The words spoken are included in this issue of Starfields.

Julie Kaufmann surprised Eileen with a beautiful and delicious homemade chocolate birthday cake, much admired, quickly eaten.

The Taking-Down-the-Tents and Cleanup Teams consisted of Nina Craven, Sidney Johnston, Eileen Myers, John Reed, John Stodieck, Al Takeda and Bill Toomey.

Thank you to everyone who brought all of the lovely food to share.

Everyone had a chance to strengthen bonds of friendship and make new friends. It was a beautiful day.

Clubhouse Picnic. *

~ Eileen Myers, Treasurer ~

ATMoB Club Logo Pin . . .

ATMoB now has a club logo lapel pin that can be purchased for $5 each.

They will be made available at monthly meetings and at work parties at the Clubhouse.

~ Eileen Myers, Treasurer ~

*Editor: * Photos by Al Takeda unless otherwise noted.*

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November *Star Fields* DEADLINE
Sunday, October 27th

Email articles to Al Takeda at
newsletter@atmob.org

Articles from members are always welcome.
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POSTMASTER NOTE: First Class Postage Mailed October 7, 2019

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

EXECUTIVE BOARD 2019-2020

PRESIDENT:	Tom McDonagh	(617) 966-5221
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TREASURER:	Eileen Myers	(978) 456-3937
MEMBERS AT LARGE:	Maria Batista	(617) 347-3730
	Alan Sliski	
	Al Takeda	(508) 494-7877
PAST PRESIDENTS:		
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2012 - 14	Mike Hill	(508) 485-0230

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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 Saving Time (EST) from Universal Time (UT) subtract 4 from UT.

Oct 5 First Quarter Moon (Moonset at midnight)
Oct 8 Draconid meteors peak
Oct 13 Full Moon
Oct 19 Mercury at greatest eastern (evening) elongation
Oct 21 Orionid meteors peak
Oct 22 Last Quarter Moon (Moonrise at midnight)
Oct 27 New Moon
Oct 28 Uranus at opposition
Nov 3 Daylight Saving Time Ends