



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. 4 May 2020

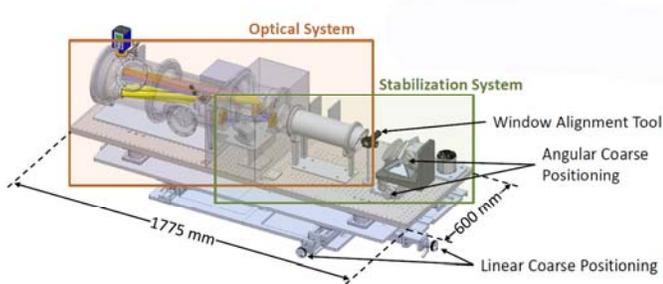
This Month's Meeting . . .

Thursday, May 14th, 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 **through the month of September** 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.

High-Altitude Instrumentation for Infrared Observations of the Solar Corona



AIR-Spec. Courtesy Smithsonian Astrophysical Observatory, Samra et al.

The solar corona is notable for its million-degree temperatures and its violent eruptions, but we don't understand exactly how coronal heating takes place, and we can't predict precisely when solar activity will occur. Both are controlled by the corona's magnetic field, which is extremely difficult to measure. High-altitude infrared remote sensing is a promising method for coronal magnetometry that is just now beginning to be explored. Dr. Jenna Samra will present results from Smithsonian's new

Airborne Infrared Spectrometer (AIR-Spec) and will outline concepts for future airborne and balloon-based spectrometers and spectro-polarimeters.

AIR-Spec was commissioned during the August 21, 2017 total solar eclipse, when it observed five infrared coronal emission lines from the National Science Foundation (NSF) Gulfstream V research jet. These magnetically sensitive emission lines of highly ionized magnesium, silicon, sulfur, and iron are promising candidates for future observations of the coronal magnetic field, and their characterization is an important first step toward developing the next generation of instrumentation for coronal magnetometry. The second AIR-Spec research flight took place during the July 2, 2019 total solar eclipse across the South Pacific. Higher sensitivity and reduced jitter enabled more precise measurements of emission line properties and plasma density, temperature, and line-of-sight velocity up to one solar radius from the solar limb. Atmospheric absorption was significant, even at altitude, and atmospheric modeling was required to extract accurate line intensities.

AIR-Spec is an imaging spectrometer that measures light over a 1.55 solar radius field of view in three spectral passbands between 1.4 and 3 microns. The package includes an image stabilization system, feed telescope, cryogen-cooled grating spectrometer, and white light imager. The successful eclipse missions overcame a number of engineering challenges, centered around maintaining adequate resolution and signal-to-noise ratio in a compact and inexpensive package on a moving platform. AIR-Spec is a pathfinder for future infrared spectrometers and spectro-polarimeters, including a balloon-based coronagraph that will measure the global coronal magnetic field and an airborne spectrometer that will survey the infrared emission corona during a future eclipse.

As a scientist at the Smithsonian Astrophysical Observatory (SAO) Dr. Jenna Samra develops optical instrumentation for scientific investigations of the solar corona and earth's atmosphere. Her recent PhD thesis focused on the creation of AIR-Spec, an airborne spectrometer that observes the infrared corona during total solar eclipses. Dr. Samra is the instrument scientist on another airborne infrared spectrometer, MethaneAIR, which measures atmospheric methane. She has designed solar instruments for sub-orbital rockets, high-altitude balloons, and the International Space Station, and she is currently developing a stabilized platform to enable solar and atmospheric remote sensing experiments from the Gulfstream V. Before joining SAO as a graduate student in 2014, she worked at MIT Lincoln Laboratory on the development of environmental monitoring sensors. Dr. Samra obtained a BS and MS degrees in Electrical Engineering from Penn State in 2006 and 2008, respectively and received her PhD in Applied Physics from Harvard University in 2018. In 2019 Dr. Samra was awarded the International Astronomical Union's (IAU) Ph.D. Prize (from Division E: Sun and Heliosphere) for her thesis entitled, "An Airborne Infrared Spectrometer for Coronal Observations: Development, Characterization, and First Science Results from the 2017 Solar Eclipse."

President's Message . . .

Dear Fellow ATMoB Members,

It is my hope that you are all safe, hunkered down during these unprecedented times. The Covid-19 pandemic certainly has been disruptive and catastrophic for members of our local communities. As you are all aware, the club has been forced to shutter the Clubhouse and suspend our monthly meetings in Cambridge at the Center for Astrophysics. I am convinced more than ever that physical distancing goes a long way in decreasing the infection rate which will allow for us to resume normal ATMoB activities sooner rather than later. Please stay tuned to the [ATMoB website](#) and ATMoB Announce email alerts as to when the Clubhouse opens and when we can resume normal activities.

While there does not appear to be an end in sight, I believe we have pivoted to enable the club to remain relevant and vibrant under the cloud of Covid-19. We successfully held our first live Zoom meeting on April 9th. With expert help from Julie Kaufman, Rich Nugent, Maria Batista, Glenn Chaple and Chris Elledge, our 929th club meeting went off largely without a hitch. Of special note is the fact that we were able to hold our first online voting event for the Nominating Committee. A slate of 6 individuals filled the ballot including Bruce Berger, Kai Cai, Glenn Chaple, Corey Mooney, Laura Sailor and Bill Toomey. When all was said and done, Glenn, Corey and Laura were elected as representatives of the committee responsible for identifying new board members for the June ballot. I wish to thank all the members that volunteered to participate in the election. Chris Elledge and Maria Baptista oversaw the electronic election which was a likely test run for our general board member election to be held in June. A special thank you goes out to Glenn Chaple for regaling us with the wonders of variable stars.

If you have not experienced the meeting, please point your browser to <https://youtu.be/iCs4BQmfWWI>

We plan to hold our regularly scheduled monthly meeting May 14th at 8:00 pm using Zoom. Please be on the lookout for the meeting invitation on the [ATMoB Website](#) and via ATMoB Announce. I have secured Dr. Jenna Samra of the Harvard Smithsonian Center for Astrophysics to present her efforts in solar eclipse research including instrument design for the study of the Sun.

Thanks to Steve Clougherty, John Reed and John Blomquist for continuing to ensure the Clubhouse and grounds are well taken care of during the shutdown period.

With respect to upcoming elections to be held in June, I want to encourage any member that wishes to contribute to the continued evolution of the club to contact Glenn, Corey or Laura about available positions on the board. I cannot emphasize how much I have enjoyed working for the club in the capacity of Membership Secretary, Vice-President and now President. It certainly has been a privilege and great learning experience where I gained more than I gave. If you have questions regarding open positions

and what duties might entail, please feel free to reach out to me or any member of the board for insight.

In the meantime, stay safe and healthy by remaining physically but not socially distant.

~ Tom McDonagh – President ~

April Meeting Minutes . . .



Glenn Chaple *

Editor: The March meeting was not held because Harvard University canceled all external meetings due to the coronavirus pandemic.

Minutes of the 929th ATMoB meeting held on April 9, 2020.

Due to the ongoing coronavirus pandemic, the meeting was held online via Zoom. Club President Tom McDonagh presided and called the meeting to order at 8:10 pm. He welcomed all members participating online and expressed concern that several club members were currently feeling poorly.

President McDonagh then discussed the need to elect a Nominating Committee and noted that nominees for the Committee included Bruce Berger, Kai Cai, Glenn Chaple, Corey Mooney, Laura Sailor and Bill Toomey. He urged all club members who had not already voted for Committee members to do so online by the extended deadline of Saturday, April 11th.

- Glenn Chaple read the minutes of the club's February meeting, Secretary John Harrington having been absent for it.
- In Eileen Myers' absence, there was no Treasurer's Report.
- Membership Secretary Chris Elledge presented the Membership Report, showing 333 total memberships covering 427 club members.
- Glenn Chaple gave the Observer's Report and encouraged all club members to get out and enjoy the night sky, since we're all stuck at home due to the coronavirus pandemic. He noted that the Lyrids meteor shower will peak early on the morning of April 22nd. The Observer's Challenge object for the month

is NGC 3877, an 11th magnitude spiral galaxy in Ursa Major. Rich Nugent recounted obtaining a great view of NGC 3877 with the club's 25-inch Dobsonian. He also noted that club members would have the chance on the morning of April 11th to observe the Earth flyby of the BepiColombo space probe that is heading for Mercury.

- Steve Clougherty gave the Clubhouse Report and stressed that the Clubhouse is unfortunately closed until further notice due to the pandemic.
- Bill Toomey gave an update on ARIO (ATMoB Research and Imaging Observatory), noting that he and Eileen Myers had mentored one student for their school project and that two other students were due to start other projects in late March but were now unable to. Eileen also attended a school science fair and gave out two awards on behalf of the club.
- Old Business: none.
- New Business:
President McDonagh announced that an online course on astrobiology is now available from the University of Arizona.

Sal LaRiccica announced that the club history project has now been posted to the ATMoB website. He thanked all club members who contributed.

President McDonagh announced that the planned memorial event for Tal Mentall will have to be rescheduled due to the pandemic.

President McDonagh then announced that our invited speaker was unable to attend the meeting, and thanked Glenn Chaple for stepping up on short notice to serve as a replacement. Glenn spoke on the twin topics of the monthly Observer's Challenge and the Astronomical League's (AL) Variable Star observing program.

Glenn opened his presentation by noting that we need goal-oriented observing programs! Any of the messier list, Mullaney & McCall Deep Sky list, any of the AL observing programs, the American Association of Variable Star Observers (AAVSO) variable star list, or of course the monthly Observer's Challenge will do. Glenn himself is working his way through the AL's variable star list and recommended R Leonis as a good variable to start with. He then discussed the variety of variable star types, including novae, supernovae, and cataclysmic variables.

For the AL variable star program, we need 170 observations of at least 15 long-period variables, including sustained observation of one long-period variable through its full cycle. Good candidates include: Delta Cephei, the original Cepheid variable; Beta Lyrae, an extrinsic variable with a partially-eclipsing companion; and Algol (the "Demon Star"), the famous bright variable in Pegasus with a 3-day period.

Other less-famous but still significant variables for observations include: Chi Cygni, which varies hugely from 5th to 15th magnitude; Betelgeuse in Orion, which recently dropped 1.6

magnitudes but did not go supernova; R. Coronae Borealis, which is a highly unpredictable variable; and T. Coronae Borealis, which is a 10th magnitude recurrent nova with outbursts to the 3rd magnitude.

Glenn concluded by discussing the AL's observing programs and recommended that club members seriously consider joining one. Dues are modest at only \$40/year for adults and \$20/year for youths. Glenn is happy to mentor any club member with an interest in variable stars.

President McDonagh thanked Glenn for his presentation, thanked all members for attending this unusual meeting and thanked Maria Batista, Chris Elledge and Julie Kaufman for their assistance with the Zoom software. He adjourned the meeting at 9:42 pm.

~ *John Harrington Secretary* ~

Membership Report . . .

I am pleased to welcome our newest members: Robert Hesse, Sarah Sobalvarro, Sean Marien, Eric and Sakara Cummings.

As of April 26th, 2020 we have 333 memberships covering 430 members. This is broken down as follows:

- 142 Regular Members
- 118 Senior Members
- 9 Student Members
- 56 Family Memberships covering 147 Members
- 6 Guest Members
- 2 Honorary Members

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

~ *Chris Elledge - Membership Secretary* ~

Magazine Subscriptions . . .

Due to changes in how both *Astronomy* and *Sky & Telescope* magazines are handling club discounts for astronomy club members, ATMoB will be asking subscribers to renew their subscriptions directly with each magazine rather than through our club membership renewals. This change should make it much simpler for members to maintain their own subscriptions, remove a large source of renewal delays and lost payments, and lighten the burden on our Treasurer (120+ subscriptions yearly).

To renew or subscribe to either magazine at the club rate, contact customer support at the magazine by phone, email, or website to ask them to renew you at the club rate as a member of the Amateur Telescope Makers of Boston. Further details are available on our website at <https://www.atmob.org/magazines> after logging in. Links to subscribing at the club rate online are available there. Any questions or issues with this process can be directed to me.

Please note that *Sky & Telescope* has increased their subscription rates. The club rate is now \$43.95.

[Astronomy](https://www.astronomy.com) – 1-877-246-4835

[Sky & Telescope](https://www.skyandtelescope.com) – 1-800-253-0245

~ *Chris Elledge - Membership Secretary* ~

ATMoB Research and Imaging Observatory Science Report . . .

The beginning of March was a busy time for the ARIO science team. Our three student mentees are ready to start their projects as soon as ARIO reopens. We met with two students to help write their school science project in scientific differential photometry. Their projects using ARIO were to start the end of March and run through to the end of May. They also expressed strong interest in continuing their projects past this date. One of these students would like to continue with the exoplanet work which she started last summer at an astronomy camp in Arizona.

ARIO science team member Eileen Myers judged a school science fair in March where she gave out two awards for astronomy projects. This led to one of the student winners becoming a member of ATMoB and planning a science project using ARIO.

In March four members of the ARIO science team took the AAVSO CHOICE (Carolyn Hurless Online Institute for Continuing Education) Course “Variable Star Classification and Light Curves”. The group held study group sessions at the Clubhouse before it closed and then move them online. Five members of the ARIO science team are currently taking the online AAVSO CHOICE Course “Exoplanet Observing”.

In March, Bruce Berger and Bill Toomey performed a fresh install of the operating system and all application software used to run the observatory. This eliminated several anomalies that were previously seen during operation. The mount, telescopes, and cameras have been fine-tuned and we are ready to resume full operation as soon as it is safe to do so.

~ *Submitted by Bill Toomey* ~

Meeting Recordings . . .

The recording of ATMoB meeting #929 is available on YouTube: <https://youtu.be/iCs4BQmfWWI>

I would like to thank Glenn Chaple 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 . . .



(L-R) Slav Mlch, Dean Shadduck, Steve Clougherty and Chris Elledge unload Barry Jensen's Mirror-O-Matic grinding machine donation *

March 2020 Clubhouse Report

Under partly cloudy skies and a temperature of 38 degrees Fahrenheit, the March 7th Work Party was opened by Paul Cicchetti brewing the first pot of coffee at 9:30 am. A very busy day was made possible by these 25 volunteer members: John Blomquist, Paul Cicchetti, Steve Clougherty, Tom Consi, Alva Couch, Nina Craven, Joe Dechene, Chris Elledge, Jim Gettys, Dick Koolish, Ed Los, Jon Lyna, John Maher, Vladislav Mlch, Steve Mock, Corey Mooney, Keira Mooney, Eileen Myers, John Reed, Phil Rounseville, Steve Scampini, Dean Shadduck, John Stodieck, Al Takeda and Bill Toomey.

Before the coffee finished brewing, two vehicles left for New Hampshire to pick up Barry Jensen's donated mirror-o-matic machine. After a scheduled rendezvous in Milford, NH with Barry J., his mirror-o-matic machine was loaded into Slav Mlch's van with the assistance of Chris E., John S. Dean S. and Steve C. The team returned to the Clubhouse and the machine was unloaded into the newly finished Fine Polishing Room.

Meanwhile a team led by Alva C. and Al T. laid down crushed stone into the low spots in the circular driveway. Others removed gravel from the grassy areas deposited by prior snow removal. Inside the weather stripping around the double polishing room doors was replaced by rigid lengths of new weather stripping purchased after being "measuring twice".

Lunch was provided by a team led by Eileen M. Thank you to those that volunteered to help clean up afterwards.

The rejuvenated crew led by Phil R. then tackled mirror cleaning of two 12 plus-inch reflectors that are available to members for purchase (see Steve Mock or Steve Clougherty).

Weather stripping work was completed in the polishing room and plans formulated to complete the water heater installation for the polishing room sink.

Bill T. spent the evening teaching two students, together with their fathers, on the operation of the ATMoB Research and

Imaging Observatory telescope system. Sophia Irizarry and Seth Mancur photographed selected stars for their high school projects.

Late into the night, Clubhouse activities continued and some observing was undertaken.

Later the following week Harvard closed all of their buildings due to the pandemic which canceled our March 12th meeting. Unfortunately a week later MIT notified our President, Tom McDonagh, that access to the MIT property was temporarily revoked due to the Corona Virus Pandemic. Arrangements were made with MIT to allow 9 members to access the Clubhouse and its grounds on April 4th to secure and shutdown the facility for an extended closure. ATMob Clubhouse Directors Dave Prowten, John Reed and Steve Clougherty, were joined by Joe Henry, Brian Maerz, Phil Rounseville, Brian Leacu, and John Bishop on Saturday, April 4th at 10 am. The outside areas were secured by Steve C. and crew. The snow fence was removed and stowed. All observatories were inspected and locked. Personal telescopes were removed to allow their owners to continue to observe elsewhere. Inside cleanup and closure was finished by Dave P. and John R.

The bluebird houses received their annual cleaning by Brian L. The 911 exterior phone remains connected for any emergency and outside electrical circuits remain active. Debris was removed from the front of the barn. The refrigerator was cleaned of all perishables and remains operational; all electrical heaters are off; empty cans and debris were removed; all paper products and packaged or canned foods were stowed off site. The pump room walls received their annual cleaning for mold prevention before the water was shut off to the house; the water pump remains on. Exterior lights were left as setup, while all interior lights were extinguished. The furnace was turned off; all doors secured, with front door locked upon leaving at 11:59 am. We now wait for the pandemic to pass and for MIT to allow us to return to the Clubhouse.

Clubhouse Saturday Schedule	
Indefinite Period	CLOSED DUE TO CORONAVIRUS PANDEMIC

Clubhouse Evening Schedule	
Friday Night Educational Videos	CANCELED
Saturday Night Observing	CANCELED
# 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 . . .

April, 2020

NGC 3877 - Spiral Galaxy in Ursa Major

Mag: 11.0

Size: 5.5' X 1.3'



32-inch telescope. 5 min subs, total 60 minutes integration time. Camera: ZWO ASI6200. 3/27/2020 Processed in PixInsight. Image by Mario Motta, MD

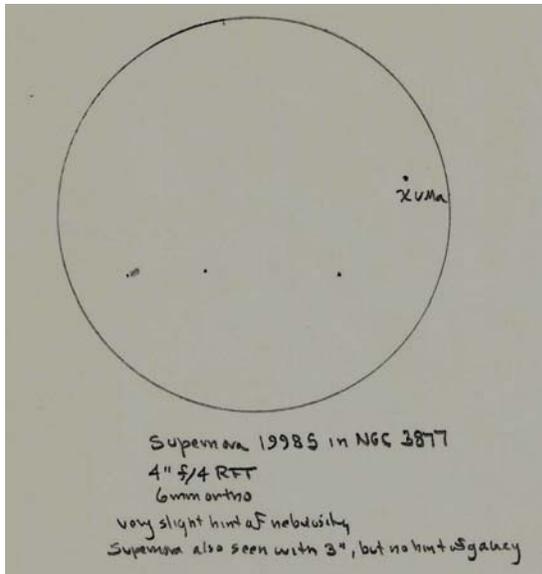
The best star-hops are those that require no hopping at all. Such is the case with this month's Observer's Challenge, the near edge-on spiral galaxy NGC 3877. Center the magnitude 3.7 star Chi (χ) Ursae Majoris in the field of your scope's finder and then peer into the eyepiece. If your eye is properly dark-adapted, you should see an oval haze just ¼ degree to the south.



400mm f/2.8 lens, Canon 80D, ISO 800. 80 subs x 30 sec, 40 minutes total exposure. Image by Doug Paul

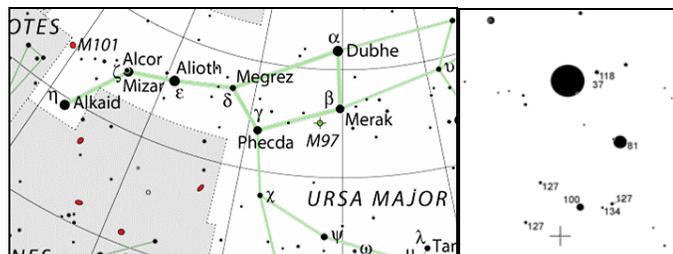
In March of 1998, a supernova appeared in NGC 3877, quickly reaching 12th magnitude. It was visible in my 4-inch f/4 rich-field reflector (Edmund Scientific's Astroscan), as was the galaxy itself. To see NGC 3877 with such a small aperture demands dark-sky conditions. In *Vol. 2 of The Night Sky Observer's Guide*, authors George Kepple and Glen Sanner note that an 8 to 10-inch scope will reveal the galaxy's central

condensation, while scopes with twice the aperture should bring out the mottled appearance of its outer regions.



NGC 3877 and supernova 1998S. Magnification 74X FOV 20'. North is to the right. March 25, 1998. Sketch by Glenn Chaple

NGC 3877 was discovered by William Herschel on the night of February 5, 1788. Along with M109, it belongs to the Ursa Major Galaxy Cluster. Its distance is variously recorded as 42 to 50 million light years. If at the latter distance, NGC 3877 would span some 80,000 light years.



Finder charts for NGC 3877. Bright star in right-hand chart (from AAVSO Variable Star Plotter) is chi (χ) Uma. Numbers refer to magnitudes of field stars. North is up in this 25' by 30' field.

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/>.

Observer's Challenge . . .

May, 2020

M85 (NGC 4382) – Lenticular Galaxy in Coma Berenices

Mag: 9.1

Size: 7.1' X 5.5'

NGC 4394 Barred Spiral Galaxy in Coma Berenices

Mag. 10.9

Size: 3.6' X 3.2'



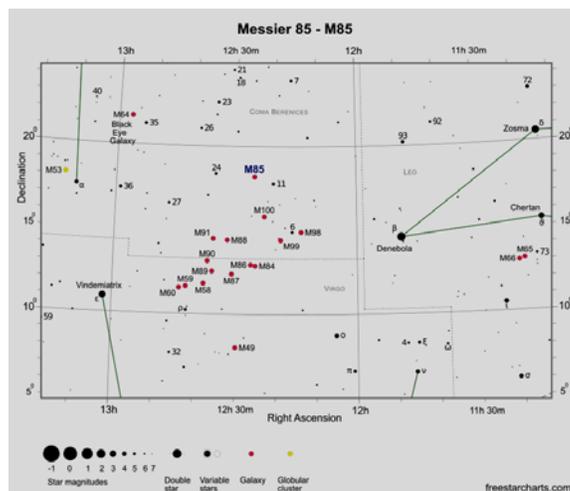
Messier 85 (right) and NGC 4394 (left). 32-inch scope with ZWO ASI6200 camera, 2 hrs integration time, processed in PixInsight. Image by Mario Motta

The last two Observer's Challenges, the 11th magnitude galaxies NGC 2859 (March) and NGC 3877 (April), were, well – challenges! If you'd like an easier target this month, we have something for you. If you'd like another challenge, we have something for you as well. The "easy challenge" is the 9th magnitude lenticular galaxy M85; the "challenging challenge" is its 11th magnitude neighbor, the barred spiral galaxy NGC 4394.

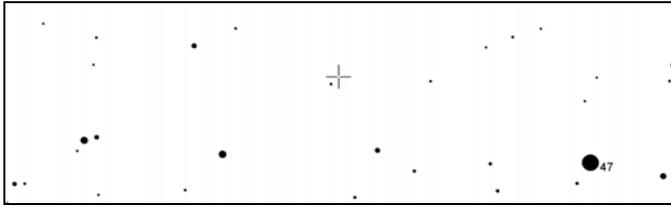
M85 is the northernmost Messier galaxy in the Virgo Galaxy Cluster and can be found about a degree ENE of the Magnitude 4.7 star 11 Comae Berenices. I described M85 as "easy," because it's relatively bright. I've seen it with a 3-inch reflector and a magnifying power of 30X. Here's a challenge. Can you capture it with binoculars?

If you look 8.5 arcminutes east of M85, you'll see the faint glimmer of the barred spiral NGC 4394. Under dark sky conditions, a 10-inch scope will reveal the bar, which has a NW-SE orientation. If you're viewing NGC 4394 with a large-aperture scope, look for the outer halo, visible in the accompanying image by Mario Motta.

M85 was discovered by Pierre Méchain in early 1781. William Herschel picked up NGC 4394 three years later. Both galaxies are about 60 million light years away.



freestarcharts.com



AAVSO Variable Star Plotter. Stars plotted to magnitude 11. North is up in this 1° by 3° field. Magnitude 4.7 star is 11 Comae Berenices.

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 ~

Skyward . . .

By David Levi
May 2020



Lyrid Fireball. April 21, 2020. Image by David Levi

The Magic Lyrids

Plenty of telescopes grace my observatory, but I still enjoy watching shooting stars, or meteors, more than anything else. This year, after a break of several months, the Earth passed through the Lyrid meteor stream on the night of April 21. The meteor shower takes place when the Earth encounters dust from Comet Thatcher, a comet that last appeared in 1861. I captured five meteors with my camera, of which one accompanies this

article. As I relaxed outdoors during this time, the memories began to flood back.

My first experience with the Lyrids was on April 22, 1963. I was at the time a patient at the Jewish National Home for Asthmatic Children in Denver. I wrote it up this way in my diary: "I had a regular day today, until tonight. I went out and saw a fireball (a very bright meteor). Then a big, fat, hunk of cloud came over. I saw no more meteors." The next night was also cloudy, and I saw no further meteors despite being outside for several hours. "I officially considered this year's meteor shower the most disappointing failure I have ever had." Not for long, however; I have been blessed with many far more spectacular failures since then.

My love of the night sky goes back many years, to around 1960, but as I grew older I also developed a strong interest in literature, and that passion stems directly from my Dad. I honestly feel that if I had not inherited his love of Shakespearean in particular, he might have taken me out of his will. And I believe he was pleased when I took up English Literature at Acadia University in the 1970s. But I recall back then, reading about Shakespeare's references to eclipses in King Lear, and hardly giving them a second thought.

The next Lyrid shower I was part of took place on April 23, 1976. That Friday evening was clear and I was part of a team organized by the Montreal Centre of the Royal Astronomical Society of Canada. The sky was clear and we saw several meteors. As I enjoyed the night, my mind roamed a little. I wondered about how many other amateur astronomers might have enjoyed this particular meteor shower in earlier times. I also thought of writers who might have written about the sky. I was aware that Shakespeare wrote about eclipses (specifically in King Lear) and about meteors and comets as well. At that very moment I decided that for my master's thesis I would write about poets who have loved the night sky. The poet I concentrated on, at Queen's University, was Gerard Manley Hopkins.

Decades later, I finally received my PhD. from the Hebrew University, for the dissertation on Shakespeare's many references and allusions to the night sky. Among the hundreds of allusions I found, here is one from Richard II that looks on meteors and a lunar eclipse:

*"Tis thought the king is dead; we will not stay.
The bay-trees in our country are all wither'd
And meteors fright the fixed stars of heaven;
The pale-faced moon looks bloody on the earth. . ."*
(2.4.1337-1340)

The Lyrid meteor shower brings me back to the hazy dawn of my life, and my passion for astronomy. May a shooting star brighten your nights as well.



Eta Aquarid meteor while observing Lyrids. Image by David Levy

~ Submitted by Mario Motta at the request of David Levy ~

2020 Stellafane Convention CANCELED . . .

The executive board of the Springfield Telescope Makers thought long and hard about canceling this year's [Stellafane Convention](#). There were many issues related to Covid-19, not the least of which is the possibility of resurgence in coronavirus infections once society opens up, forcing a last minute ban on large gatherings. For those who are counting the consecutive Stellafane Conventions they attend, remember that if there is no Convention held this year then you did not "miss" one.

The Stellafane.org website has the following messages:
"The 85th Convention of Amateur Telescope Makers on Breezy Hill in Springfield, Vermont, the 2020 Stellafane Convention, HAS BEEN CANCELED.

It is with great sadness that we must announce the cancellation of the 2020 Stellafane convention. After long consideration the board has concluded that we simply cannot open safely nor do justice to what our Stellafaners have come to expect.

We hope all of our extended community remains safe and look forward to seeing all of our friends next year. (Posted Monday, 2020-May-04)

~ Eileen Myers, ATMoB Treasurer and member of the Springfield Telescope Makers ~

Supernova in M61 . . .

On 2020 May 6, a new [Type II supernova 2020jfo](#) has been discovered in M61, in the constellation of Virgo. The supernova was discovered by the [Zwicky Transient Facility \(ZTF\)](#) (USA).



Virgo constellation area, ~ 40 degree field of view. From [Stellarium](#)



M61 closeup, ~ 2 degree field of view. From [Stellarium](#)

Editor: * Photos by Al Takeda unless otherwise noted.

June Star Fields DEADLINE

Sunday, May 24th

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

Articles from members are always welcome.

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 2019-2020

PRESIDENT:	Tom McDonagh	(617) 966-5221
VICE PRES:	Rich Nugent	(508) 935-8158
SECRETARY:	John Harrington	
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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:		
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.

May 14 Last Quarter Moon (Moonrise at midnight)
May 22 New Moon
May 22 Mercury 0.9 degrees south of Venus
May 24 Mercury 3 degrees north of Moon
May 29 First Quarter Moon (Moonset at midnight)
Jun 4 Mercury at greatest eastern (evening) elongation (24 degrees)
Jun 5 Full Moon
Jun 13 Last Quarter Moon (Moonrise at midnight)
Jun 19 Venus 0.7 deg. S. of Moon, occultation 08:07.4 UT (04:07.4 EDT)