

amateur ASTRONOMER



sharing the wonder and science of astronomy



Thanks to one of our newest DVAA member, Sam Kopansky, for this photo homage to our favorite hobby! Sam's 70mm refractor is pointed at Saturn, with both Jupiter (left) and Saturn (right) visible in the photograph. Sam snapped the photo with his iPhone 12 in night mode on August 12th when Sam, Mitch Berger, and other friends were watching for Perseids from the Polo Field in Bryn Mawr. Mitch Berger assisted with the post-processing.

PLAN ON IT!

Sept. 3-6 Dark Sky Observing at various sites. See the [DVAA groups.io](https://dvaa.org/groups.io) for more info. New Moon Sept. 7.

September 8-12 York County Star Party #1 (see p.13).

September 10 (7:30 pm) Outreach Star Party at Norristown Farm Park. Cloud/rain date Sept. 12.

September 10-11 Kopernik AstroFest 2021 (see p. 13).

September 14 (7 pm) Community Star Party at Anderson Farm Park, Upper Providence.

September 17 (7:30 pm) DVAA General meeting (see p. 5).

September 18 (6:30 pm) Public Star Party at Valley Forge National Historical Park. Weather hotline: (484) 367-5278.

FOR ALL EVENTS, SEE THE [DVAA WEBSITE](https://dvaa.org) FOR ADDITIONAL INFORMATION AND UPDATES.

CONTENTS:

Club News & Events
PAGE 2

My Favorite Target
Harold Goldner
PAGE 3-4

Next Monthly Meeting
AL Commemorative Pins
PAGE 5

Stellafane Report
Tom Nolasco
PAGE 6-7

August Observing Clinic
Jan Rush
PAGE 8

Methacton Planetarium Community Shows: Fall Schedule
PAGE 9

Al's Observing Tips: All Globular Clusters Look the Same!
Al Lamperti
PAGE 10

NSN: Andromeda Rising
David Prosper
PAGE 11

Dark Sky Observing this Month
PAGE 12

Member Photos
PAGES 12-13

Telescope Rentals
PAGE 14

A link to Dave Mitsky's Celestial Calendar can be found at dvaa.org on the Home Page.

Welcome New DVAA Members!

Arnold Barr, Philadelphia
Amalia Curt, Wynnewood
Maxwell Curt, Wynnewood
Carl Flahaven, Phoenixville
George Hughes, Broomall
Kirsten Johnson, Wynnewood
Sam Kopansky, Philadelphia
Harry Lauer, Boothwyn
Javier Solis, Abington
Joe Tyson, Abington

We welcome all new members to enjoy the most our club has to offer by participating in DVAA activities. You are encouraged to ask questions and pursue your interests in astronomy through the club.

We suggest that new members attend our observing events and special interest group meetings, or volunteer to help with an outreach event or committee. Participation can advance your skills and enjoyment of the hobby and help you get to know your fellow members. New members are entitled to all benefits of membership.

Brian Lee

Welcoming Committee Chair

welcoming@dvaa.org



DVAA Board & Committee Chairs

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Women of DVAA	Jan Rush	women@dvaa.org

Mark Your Calendars!

Upcoming Monthly Meetings

Due to an overwhelming member preference for virtual monthly meetings in September, we will continue with the Zoom/YouTube format. Our speaker will be Dr. Paul Halpern, University of the Sciences (see p. 5).

Upcoming 2021 Meeting Dates: (all Friday evenings): Sept. 17, Oct. 15, Nov. 19, and Dec. 17.

2021 Public Star Party Dates

DVAA public star parties at Valley Forge National Historical Park will be returning to our normal format as COVID-related precautions are being relaxed. They will be held at Valley Forge National Historical Park on the Model Airplane Field. ([Google Maps](#)). **Weather Hotline: 484-367-5278.**

Please wear a mask.

Public Star Party dates for 2021 (all Saturday evenings):
Sept. 18 (6:30), Oct. 16 (5:50), Nov. 13 (4:15).

Note: Consistent with recommendations from Governor Wolf and the Centers for Disease Control, some DVAA events are held online, outdoors, or follow adapted formats. Monthly meetings are being held via Zoom and livestreamed via YouTube. Check the [website](#) for updates.

Follow the DVAA on Facebook!



DVAA [Facebook](#) group
 DVAA [Photo Enthusiasts](#)

Newsletter Editorial Committee: Jeremy Carlo, George Keighton, Tom Nolasco, Dana Priesing, Jan Rush and Barclay Thorn.

If you would be interested in joining us on the Newsletter Committee, just drop us a line at newsletter@dvaa.org — we'd love to have you on board, regardless of your experience level!

Thanks to Jeremy Carlo for editing the July and August newsletters. Jan Rush is lead editor for this issue.

My Favorite Target

Harold Goldner [email](#)



If you ask any mother whether they have a favorite child, they'll likely look at you in horror unless they had only one child, in which case they might still look at you funny. If you ask a person, as Alan Alda does on his science communication podcast *Clear+Vivid*, "What book changed your life?" most people would have to ponder the question for a while --- and no points towards "The Good Place" for saying the Bible. If you ask someone for their favorite color, expect a mundane response, and if you ask someone for their favorite Beatle, well, I suppose I have let this analogy run its tolerable course.

If you ask me whether I have a favorite object in the sky, that is an easy question for me to answer. It is without a doubt the Hercules Cluster, M13.



Image: Wikimedia Commons; Taken with an 8" SCT from San Diego, CA, 3 hours 2 minutes, 12/9/16.

This globular star cluster was not "discovered" until 1714 by Edmond Halley. Given that it can be seen with the naked eye, albeit just barely, with a 5.8 magnitude, one ponders what people thought that fuzzy thing was before Halley's "discovery." Fifty years later Charles Messier dubbed it M13, convinced that the nebulous object could not possibly contain stars. It was not until 1779 that optics advanced to the point that individual stars in the cluster could even begin to be seen.

Stars in M13 are from 12 to 13 billion years old, taking us back nearly to the beginning of the universe. The cluster is approximately 145 light years in diameter, and its photons come to us from 20,000 to 25,000 light years away.

My Favorite Target (cont.)

Continued from previous page

In a 4 inch telescope, the outer stars are more easily seen; in my 8" Nexstar it is a beauty to behold. I imagine life on some planet inside that cluster, with a night-time sky perhaps as bright as our daytime skies, with hundreds of thousands of points of light at amazing magnitudes. How could any light pollution drown out those stars? I have on my reading list books by Asimov and Anderson which are set on such a planet inside M13.

In 1974 a signal was transmitted from the late Arecibo Radio Telescope directly towards M13 seeking to announce our civilization and inviting someone, anyone, from that cluster to visit us. Perhaps there is an exoplanet to one of those more than 300,000 stars in the cluster and perhaps on that exoplanet there is intelligent life, and perhaps some intelligent being will receive our signal.

When I look at M13, whether in my scope or in other members' scopes, I see a ball of stars of various colors. The stars are so closely packed that they sometimes collide and generate new "blue straggler" stars, although the cluster contains more than a few red giants as well. I try to imagine traveling closer and closer to the cluster and perceiving the distance between the stars grow. In some views, for instance, one member's binary viewer seen from French Creek a few years back, the cluster looked almost as if it would in a Viewmaster "3-D" viewer. The experience took my breath away.

I am getting better and better at finding it quickly with binoculars, and using it to get my bearings in the summer sky. I like that it is up so much of the year (and when it isn't, my second favorite object, the Orion Nebula, inevitably is). It is a friendly "sky-mark" which helps me to navigate the sky, just as Cygnus swims southwards along the band of the Milky Way.

M13 shines down on me, intriguing me, almost teasing me, but inviting me to stare at it every time I go observing, like a petulant child calling "look at me!" I am only too happy to look, marvel, and enjoy.

For the uninitiated, M13 is Right Ascension: 16h 41.7m; Declination: 36 degrees 28' north. The squarish pattern within the constellation Hercules is known as the Keystone, and M13 is located along the border of the Keystone. It is visible much of the year, and high in the sky in the summer time. Pay M13 a visit and see for yourself!



Source: www.nasa.gov



Next Monthly Meeting: September 17, 2021

Flashes of Creation

Paul Halpern, PhD
University of the Sciences, Philadelphia

A discussion with Paul Halpern, author of *Flashes of Creation: George Gamow, Fred Hoyle, and the Great Big Bang Debate*.

Today, the Big Bang is so entrenched in our understanding of the cosmos that to doubt it would seem crazy. But as Paul Halpern shows in *Flashes of Creation*, just decades ago its mere mention caused sparks to fly. At the center of the debate were Russian American physicist George Gamow and British astrophysicist Fred Hoyle. Gamow insisted that a fiery explosion explained how the elements of the universe were created. Attacking the idea as half-baked, Hoyle countered that the universe was engaged in a never-ending process of creation. The battle was fierce. In the end, Gamow turned out to be right — mostly — and Hoyle, despite his many achievements, is remembered for giving the theory the silliest possible name: "The Big Bang." Halpern captures the brilliance of both thinkers and reminds us that even those proved wrong have much to teach us about boldness, imagination, and the universe itself.

Paul Halpern is Professor of Physics at the University of the Sciences in Philadelphia, and the author of seventeen popular science books. Halpern received a Ph.D in theoretical physics from SUNY at Stony Brook, and is the recipient of a Guggenheim Fellowship, Fulbright Scholarship, and an Athenaeum Society Literary Award.

- ♦ Virtual Meeting begins at 7:30 PM (sign-on begins at 7:00pm).
- ♦ DVAA Members via Zoom (check your email or www.dvaa.org for the meeting link)
- ♦ Members of the public can watch the livestream on [YouTube](https://www.youtube.com)
- ♦ There will be no in-person component to the September meeting, but we will reassess the situation in October. Check www.dvaa.org for updates.

ASTRONOMICAL LEAGUE



AL 75th Anniversary Commemorative Pin

A special, **LIMITED EDITION** lapel pin commemorating the Astronomical League's 75th Anniversary in 2021!

**Help proudly celebrate
the Astronomical League's
"Diamond Anniversary" –
established November 15, 1946!**

This special pin is 1.25 inches in diameter, a bit larger than most of our Observing Award pins. Be sure to complete your pin collection, or get it started with this unique limited availability pin.

Get one while they last, we will not reorder once these are sold out.

\$6 each through League Sales!

Order a few for your club or group, save a bit!
Discounted price for orders of 5 or more: \$5 each.

Stellafane 2021

Tom Nolasco [email](#)

Stellafane is the premier telescope-making conference and competition. It's held during late summer each year in Springfield, Vermont. Due to the pandemic, this year's event had special guidelines such as no in-person registration at the gate and mask wearing on entry into any indoor space such as the 3 observatories, pink clubhouse and Flanders Pavilion. Despite allowing only pre-registration, this year's event was fairly well attended. There were approximately 850 attendees, definitely down a few hundred from the pre-pandemic years. The US closure of the Canadian border was definitely a factor.



I arrived Thursday afternoon and set up camp, as I have since the late 90's, with a group of friends from the Kopernik Observatory and science center. The official events start up on Friday morning, but arriving on Thursday allows for an extra night of observing. The skies at Stellafane are quite good, but not as dark as Cherry Springs. Thursday night turned out to be best night of the three for observing deep sky objects, with clear transparent skies until clouds rolled in about 1:30 AM. Friday night was also clear until about 2AM, but the sky transparency was not nearly as good as Thursday. However, the air was noticeably steadier, and provided excellent planetary viewing and very steady air for the optical judging that was taking place. Saturday night was dry but totally overcast.

There were fewer daytime talks this year as the library in the McGregor observatory was closed (much too tight an indoor space at this time). Still, there was a lot going on during the daylight hours, with presentations in the Flanders Pavilion on a variety of topics, mirror mak-

ing demonstrations and solar observing. Friday's clear sunny skies allowed for some excellent views of solar prominences through the spectroheliograph in the Simoni solar observatory. The Springfield Telescope Makers keep making enhancements each year to that observatory.

Early Saturday morning began with a gentle patter of rain on my tent, which fortunately only lasted about 10 minutes before the clouds broke and the Sun appeared. The Saturday morning Swap Meet was loaded with goodies including eyepieces, telescopes, mounts, spiders, focusers, books, you name it. There wasn't, however, as many mirror blanks as in recent years. I picked up a TeleVue 7mm smooth barrel 82 degree field Nagler eyepiece for \$50.

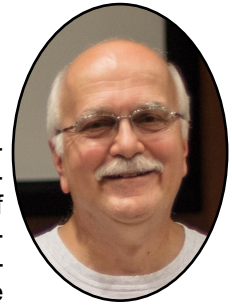
Mid-morning on Saturday marked the beginning of one of the most enjoyable events at Stellafane, the Telescope Mechanical Competition. Despite the pandemic limitations, there were the typical number of entries in the competition. One notable trend in recent years is the ever-increasing use of 3D-printed telescope parts such as focusers, mirror cells, diagonals, even whole mounts and OTAs. This is truly an ever-evolving hobby.

Saturday evening was cloudy but dry, allowing the closing activities to be held in the outdoor amphitheater. The evening began with the famous Stellafane raffle which culminates with four TeleVue eyepiece bags (total value for the four bags is over \$6,200). Next were the award presentations for the winners of the telescope optical & mechanical competitions. This was followed by two excellent talks. First, a brief presentation by Dr. Kristine Larsen, CCSU, STM, entitled "Astronomy in the 'After-Times'", followed by the keynote address by Dr. Stella Kafka, Executive Director of the AAVSO (American Association of Variable Star Observers). Her presentation was titled "What is the deal with Betelgeuse?". At the end of her presentation Dr. Kafka urged those in attendance to join the AAVSO and emphasized the importance of observations by amateur astronomers in assisting professional astronomers in their research.

Of course, you always meet up with old friends and make new ones. This year I ran into DVAA members Bart Fried and Gary Fick, as well as one of the four DVAA founding members Steve Mairito who now lives in Florida.

The next page is a small collection of some of the scenes at this year's convention.

Continued on next page



Stellafane 2021 (cont.)



Telescope Clinic

Jan Rush [email](#)



Since the onset of the pandemic, telescope sales have gone through the roof! Suddenly, lots of people are searching for new ways to spend their backyard time. Rather ordinary astronomy equipment and accessories are surprisingly backordered. The folks from Highpoint Scientific recently put it this way:

The demand for telescopes and telescope-related items has never been greater than it is today. In our 20 years of doing this, we have never seen anything like it. Interestingly, this scenario isn't exclusive to the telescope industry, it spans across the majority of outdoor and backyard product categories as well!

Coincident with enhanced interest in backyard astronomy has been a welcome growth in astronomy club membership across the country, including the DVAA. Since observing with others is an enjoyable and efficient way to enhance the experience of a novice astronomer, this past month we decided to revive a DVAA tradition and hold an outdoor telescope clinic for beginning and intermediate observers.

On Sunday evening August 29, six DVAA experienced observers gave hands-on assistance to nine clinic attendees who brought a variety of telescopes. We were clouded out on our original date, and although the backup date of Aug. 29 was looking pretty iffy, we decided to trust the weather models that showed 2 hours of somewhat clear skies beginning a bit before 9pm. We met up well before sunset and began with setups assisted by DVAA staff, including at least one collimation. After introductions, and as we waited for the clouds to disperse, we shared some general observing tips — knowing the characteristics of the object you are looking for, image orientation, magnification and types of finderscopes. When the sky came out we were treated to wonderful views of Saturn and Jupiter (including a shadow transit of Io and a fleeting Great Red Spot), and decent views of M13, the Ring Nebula, Alberio, and the Owl/ET Cluster. Al Lamperti took attendees on a laser tour of the visible constellations, pointing out the evening's best targets and how to find them.

Chasing away the clouds were attendees David and Harriet Kauffman, Korinne Jacob, Adam Finnefrock, Daniel Stern and his daughter Abbe Stern, Andrea Saksek, Javier Solis and Joe Tyson. Many thanks to the DVAA staff which included George Keighton, Joe Lamb, Al Lamperti, Tom Nolasco, and Gary Trapuzzano.



Counterclockwise from top right: Joe Lamb gives observational tips as darkness falls. David Kauffman and Joe Lamb talk setup of David's Celestron Edge HD8; newest members Joe Tyson and Javier Solis set up their Celestron CGEM 1100. Al Lamperti helps Andrea Saksek with her Meade reflector. Keeping the faith with a patch of blue. Jupiter and Saturn make a welcome appearance. *Photo credits: Top left Al Lamperti, other photos George Keighton.*

Methacton SCHOOL DISTRICT

PRESENTS:

Mallon Planetarium Community Shows



Follow Mallon Planetarium
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Space Facts, News, & Events

Friday, September 17th

6:30 - Celestial Highlights & Planet Tour

8:00 - Celestial Highlights & Moons: Worlds of Mystery 

Friday, October 15th

6:30 - Celestial Highlights & Moon Witch

8:00 - Celestial Highlights & Space Exploration Update

Friday, October 29th

6:30 - Funny Thing About The Sky

8:00 - Funny Thing About The Sky (Encore)

Friday, November 19th

6:30 - Celestial Highlights & We Are Stars

8:00 - Celestial Highlights & Eclipses

Friday, December 3rd

6:30 - Celestial Highlights & Seasons of Light Holiday Special

8:00 - Celestial Highlights & Seasons of Light Holiday Special (Encore)

December 10th - 18th

6:30 - Laser Light Shows Return to the Mallon Planetarium!!!!!!

www.methacton.org/Planetarium

for Details, Tickets, & News

Adults: \$8

Children/Students/Seniors: \$6

Arcola Intermediate School
4001 Eagleville Road
Eagleville, PA 19403

All Globular Clusters Look the Same!

Al Lamperti [email](#)



At first glance many globular clusters do look like an out-of-focus cotton ball. At those times it is hard to believe that each is a relatively compact collection of thousands of stars. Increasing magnification and, whenever possible, aperture, will aid in resolving stars in some of the clusters. Your chances of seeing a larger number and variety of these objects increases dramatically as you observe them near the center of the Milky Way galaxy, i.e., Sagittarius and Scorpius. From our Northern latitude, some of the smaller globular clusters that reside at lower declinations are more difficult to resolve and are dimmer. Some of this is due to atmospheric extinction, a phenomenon caused by the fact that we are viewing them through much more of the earth's atmosphere when these or any objects are viewed near the horizon.

As with all types of deep sky objects, there is a classification system (Shapley-Sawyer) for globular clusters. The densest collection of stars is rated class I and the loosest class XII. When chasing your favorite Messier objects, try to appreciate some of the differences between them. For example, can you see how loose M-71 is and how dense M-75 is? The infamous M-13 in Hercules is a class V globular cluster that can be seen as a faint round glow in binoculars. As you increase your telescopic magnification, you will start to resolve stars, first at the edges and then closer to the core.

You might think that with such a high concentration of stars, they would be hitting into each other like bumper cars. Information about M-13 indicates that the blur you saw in binoculars is about 140 light years in diameter and contains several hundred thousand stars. The core of the

resolved cluster has a concentration of stars on the order of several stars per cubic light year (Kemple & Sanner's "The Night Sky Observer's Guide").

One more parameter to consider is the distance from us to the globular itself. Globular distances range from 6,500 light years to over 100,000 light years (22,000 light years for M13).

Any discussion of globular clusters almost always includes M-13, the gem cluster of Northern latitudes. It would be a serious omission if one does not mention Omega Centauri, the premier globular cluster of the Southern hemisphere. It has an absolute magnitude of -10 , i.e., if it were 10 parsecs away (1 parsec = 3.26 light years), it would have an apparent visual magnitude of -10 . Several years ago, I had an opportunity to be in a much more southerly latitude and took the suggestion of former member Scott Hartman, who lived in Hawaii at the time, and compared both M-13 and Omega Centauri in binoculars. M-13 was a wimp in comparison!

Whether you are cruising the skies with binoculars or dissecting 4 square arc-minutes of the sky with your light bucket, globular clusters offer much to the amateur observer.

Editor's note: A description of each Shapley-Sawyer category, and examples of each, can be found at this [link](#). Categorization of all of the Messier globulars is [here](#). Two examples shown below, courtesy of Frank Colosimo. Additional photographs of star clusters can be found on Frank's [website](#).



Messier 12 (Shapley-Sawyer Class IX
"Loose toward the center")



Messier 2 (Shapley-Sawyer Class II
"Dense Central Concentration")

Earn a Constellation Hunter Pin from the Astronomical League

Don Knabb, MERAL Chairperson



Many of our clubs have grown substantially during the last year or two, and that probably means all the clubs have quite a few new members. Many of the new members might have limited experience with observing the night sky. A great way to get started observing the night sky is to pursue the Northern Constellation Hunter Program.

This program is a wonderful way for new members to learn the night sky, which is a necessary foundation for advancing one's knowledge of astronomy. This program is the ideal first Astronomical League Observing Program to pursue. It does not require any expensive equipment, although any pair of binoculars would be helpful. All you need is a map of the constellations, a pencil and a blank pad or a printed form for recording your observations.

Here is a link to a nice video by the Astronomical League describing the program: [https://](https://www.youtube.com/watch?v=s-4On1QTQwM)

www.youtube.com/watch?v=s-4On1QTQwM

And here is a link to the Astronomical League website page with a full description of the program: <https://www.astroleague.org/al/obsclubs/consthunt/const.html>

The program website page includes a checklist of the constellations and a blank observing form. That form fits two constellations on a page and includes spaces for the other information one must record for an observation.

The program takes about a year to complete because the constellations change from season to season. Once you complete the program and submit a copy of your records to your club award coordinator or to the national coordinator, you get a certificate of completion and a nice pin, which I'll include a picture of as an attachment. And, your name is listed in *The Reflector* magazine!

Enabling Text Messaging

Recently some members have stated a preference for text messages in addition to email for communicating last minute weather-related event cancellations. If this would be convenient for you, please enable text messaging when you receive a link via email to do so. If you are not interested in receiving text messages just ignore the request. We will use text messaging ONLY for last minute event information, not for routine club communications.

Catch Andromeda Rising

David Prosper

This article is distributed by NASA
Night Sky Network

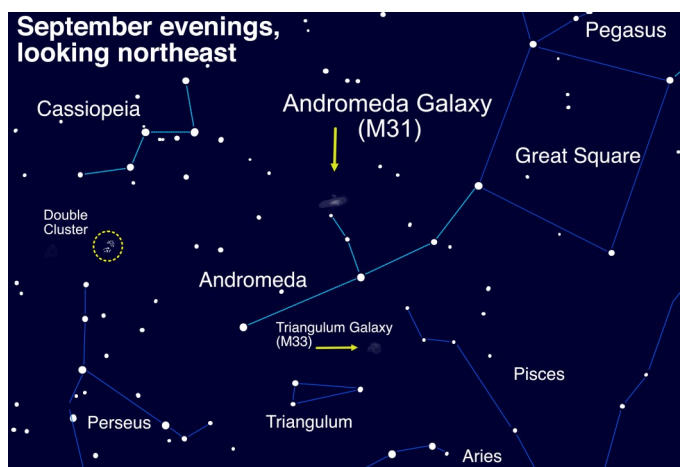


If you're thinking of a galaxy, the image in your head is probably the Andromeda Galaxy! Studies of this massive neighboring galaxy, also called M31, have played an incredibly important role in shaping modern astronomy. As a bonus for stargazers, the Andromeda Galaxy is also a beautiful sight.

Have you heard that all the stars you see at night are part of our Milky Way galaxy? While that is mostly true, one star-like object located near the border between the constellations of Andromeda and Cassiopeia appears fuzzy to unaided eyes. That's because it's not a star, but the Andromeda Galaxy, its trillion stars appearing to our eyes as a 3.4 magnitude patch of haze. Why so dim? Distance! It's outside our galaxy, around 2.5 million light years distant - so far away that the light you see left M31's stars when our earliest ancestors figured out stone tools. Binoculars show more detail: M31's bright core stands out, along with a bit of its wispy, saucer-shaped disc. Telescopes bring out greater detail but often can't view the entire galaxy at once. Depending on the quality of your skies and your magnification, you may be able to make out individual globular clusters, structure, and at least two of its orbiting dwarf galaxies: M110 and M32. Light pollution and thin clouds, smoke, or haze will severely hamper observing fainter detail, as they will for any "faint fuzzy." Surprisingly, persistent stargazers can still spot M31's core from areas of moderate light pollution as long as skies are otherwise clear.

Modern astronomy was greatly shaped by studies of the Andromeda Galaxy. A hundred years ago, the idea that there were other galaxies beside our own was not widely accepted, and so M31 was called the "Andromeda Nebula." Increasingly detailed observations of M31 caused astronomers to question its place in our universe - was M31 its own "island universe," and not part of our Milky Way? Harlow Shapley and Heber Curtis engaged in the "Great Debate" of 1920 over its nature. Curtis argued forcefully from his observations of dimmer than expected nova, dust lanes, and other oddities that the "nebula" was in fact an entirely different galaxy from our own. A few years later, Edwin Hubble, building on Henrietta Leavitt's work on Cepheid variable stars as a "standard candle" for distance measurement, concluded that M31 was indeed another galaxy after he observed Cepheids in photos of Andromeda, and estimated M31's distance as far outside our galaxy's boundaries. And so, the Andromeda Nebula became known as the Andromeda Galaxy.

These discoveries inspire astronomers to this day, who continue to observe M31 and many other galaxies for hints about the nature of our universe. One of the Hubble Space Telescope's longest-running observing campaigns was a study of M31: the Panchromatic Hubble Andromeda Treasury (PHAT): bit.ly/m31phat. Dig into NASA's latest discoveries about the Andromeda Galaxy, and the cosmos at large, at nasa.gov.



Spot the Andromeda Galaxy! M31's more common name comes from its parent constellation, which becomes prominent as autumn arrives in the Northern Hemisphere. Surprising amounts of detail can be observed with unaided eyes from dark sky sites. Hints of it can even be made out from light polluted areas. *Image created with assistance from Stellarium*

While M31's disc appears larger than you might expect (about 3 Moon widths wide), its "galactic halo" is much, much larger - as



you can see here. In fact, it is suspected that its halo is so huge that it may already mingle with our Milky Way's own halo, which makes sense since our galaxies are expected to merge sometime in the next few billion years! The dots are quasars, objects located behind the halo, which are the very energetic cores of distant galaxies powered by black holes at their center. The Hubble team studied the composition of M31's halo by measuring how the quasars' light was absorbed by the halo's material. Credits: NASA, ESA, and E. Wheatley (STScI) Source: <https://bit.ly/m31halo>

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

Dark Sky Observing this Month

Sept. 4-6

If the skies are clear, club members will surely be observing at [Green Lane](#) or [Blue Mountain Vista Observatory](#). Check [dvaa.groups.io](#) for the latest information.

Sept. 8-12 York County Star Party #1 [INFO](#)

New incarnation of the former Mason-Dixon Star Party, now at beautiful Susquehannock State Park, only 1.5 hours drive from Radnor.

Sept. 10-11 Kopernik AstroFest 2021 [INFO](#)

Dark skies! Excellent speakers & workshops! Telescopes available: 20-inch Ritchey-Chrétien (RC) Telescope, 14-inch Celestron EdgeHD, 6-inch Astro-Physics Apochromatic (APO) Refractor. Camping/RV sites available.

Oct. 1-3 Black Forest Star Party [INFO](#)

Held annually at Cherry Springs State Park. Pre-registration is essential. *[As of Aug 31, the star party reached capacity and registration has closed.]*

Note: The CCAS camping trip to Cherry Springs State Park, previously scheduled Sept. 7-10, is no longer taking place. CCAS has decided to attend the York County Star Party instead.



Dick Steinberg keeps amazing us with astrophotography from his "heavily treed and light-polluted" deck in Penn Valley! Here is NGC6946 (the "Fireworks" Galaxy in Cepheus & Cygnus), a 9.6 magnitude face-on spiral, and the location of several recent supernovae (none visible right now). Imaged on August 15th with a Celestron C8 SCT equipped with an Orion Parsec 8300M monochrome imager.

Member Photos



Top left: Mitch Berger's waxing crescent moon (Aug 12, Wynnewood, Samsung S20).

Bottom left: M17, Swan Nebula. Tom Nolasco. (June 17, Upper Moreland, 8" F/4 Newtonian with UHC filter. 15 min, SharpCap for capture and live stacking.

Top right: M27, a beautiful planetary nebula in Vulpecula. Dick Steinberg [July 30, Penn Valley, Celestron C5/Orion StarShoot Pro (FL=1270)]

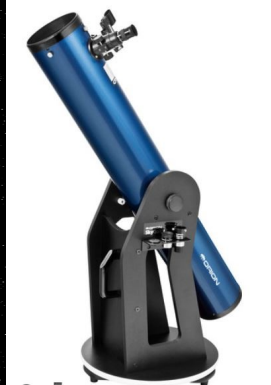
Bottom right: Milky Way over Eagles Mere Lake. Andrew Hitchner (Aug 8, Nikon D3300 with Tokina 11-16mm lens. Sky: 20 exposures, 13seconds, 11mm, f/2.8, ISO1600 stacked in Sequator. Foreground: 1 exposure, 180 seconds, 11mm, f/2.8, ISO800. Blended and edited in Photoshop).

DVAA Telescope Rentals

Celestron NexStar 5SE



6" Orion Dobsonian



DayStar 60 mm Solar Telescope



6" Orion StarBlast Dob



All scopes include tripod/base, eyepieces, manuals, power, etc. Rental is \$10/month with \$20 deposit. More info at www.dvaa.org under the OBSERVING tab. To rent one of these scopes, contact Joe Lamb at rentals@dvaa.org.

The Delaware Valley Amateur Astronomers

Since 1976, the **DVAA**, a non-profit corporation, has **shared the wonder and science of astronomy** with thousands of amateur astronomers and the public in the Philadelphia area. Each month we host dark-sky and local star parties, telescope workshops, science & astronomy lectures, educational outreach sessions, and more. To learn more or to join DVAA, please visit www.dvaa.org.

Check the schedule for our **free monthly meetings open to the public**, usually held on Friday via Zoom.

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JOIN the DVAA TODAY!

Dues are \$40 per year for an individual, \$60 for a Family Membership, or \$10 for a Junior or Student Membership. **Membership benefits** include our monthly newsletter, membership in the Astronomical League (including its publications), access to our dark-sky observing sites, and inexpensive rentals of fine telescopes. You can join or renew online at www.dvaa.org. If paying by mail, include a note stating what you are paying and membership category desired. Make checks payable to "DVAA" and send to our treasurer: Louis Berman, 477 Turner Avenue, Drexel Hill, PA 19026, or for more information contact treasurer@dvaa.org.

