TAAA Desert Skies Bulletin

Observing Our Desert Skies Since 1954

October 2025

www.tucsonastronomy.org

Membership Meeting

Friday, October 3, 2025 6:30PM

TAAA's next general member meeting will be held on **Friday, October 3, 2025**. The Main Presentation will start at 6:30 PM. This will be a hybrid meeting (both in person and on social media). TAAA members will receive a Zoom link should they wish to attend remotely. The public may attend in person at the **Steward Observatory Lecture Hall (Rm N210), 933 N Cherry Ave, Tucson,** or stream from the TAAA YouTube page.

Inside this issue:

Main Presentation at 6:30PM AZT

Title: The Search for Life on Exoplanets

Presentation: Telescopic facilities capable of searching for signs of life on exoplanets orbiting other stars are coming online just as experiments simulating the emergence of life on Earth are making revolutionary discoveries. Dr. Sukrit Ranjan will discuss recent progress towards both goals, with emphasis on new opportunities unveiled by the James Webb Space Telescope and the future planned Habitable Worlds Observatory, NASA's proposed infrared/optic/ultraviolet space telescope to primarily search for exoplanets in the habitable zones of stars.

Biography: Sukrit is a planetary scientist focused on questions related to the origin of life on Earth and the search for life on other worlds. These questions are coupled: efforts to understand the origin of life on Earth helps guide our search for it elsewhere in the cosmos, while observations of other planets help us test our theories of the prebiotic environment and of abiogenesis. To understand abiogenesis, he works to constrain the palette of environmental conditions from which life arose on Earth, to guide experimental studies of the origin of life. To search for life elsewhere, he works to determine observational tests by which life on other worlds may be remotely discriminated. Sukrit completed his PhD in Astronomy & Astrophysics at Harvard University, followed by a SCOL postdoctoral fellowship at MIT EAPS and a CIERA postdoctoral fellowship at Northwestern. He completed his undergraduate work at MIT in physics. More information about Sukrit is available at his faculty profile here.

Notes From The President

October 2025

by Ed Foley

As the Southern Arizona season for clear observing weather is approaching, it is good to reflect on how blessed our organization is with observing sites. Not only do we have TIMPA, a dark site just west of the Tucson Mountains close to town, but also access to a truly world class observing site east of Tucson, the Chiricahua Astronomy Complex (CAC). Both sites have a lot to offer TAAA members. With TIMPA's close proximity to town, it offers easy access to fine instruments for observing and many classes and workshops for members to take advantage of.

CAC is special in other ways. The location east of the Dragoon Mountains and in the foothills of the Chiricahua National Monument places it in a light protected part of the state making it very dark. To observe under this dark sky, you can set up your own equipment on pads there for your use, or use a portfolio of instruments which includes seven telescopes permanently housed at the site ranging from a 9" refractor to a 40-inch Dobsonian. These and other instruments at the site are available for members' use after training. This eastern site has extensive infrastructure that makes extended overnight observing convenient including observing pads with power, restrooms with showers, 10 sleeping rooms, fiber-optic high-speed internet, kitchenettes, and plenty of parking. There is over $1 million in infrastructure investment in the CAC site. It was made possible by the generosity of TAAA members and local foundations that support our outreach mission. Further, a substantial unrecorded benefit to the site has been the sweat equity of the dozens of volunteers who manage the site, shovel gravel to build the roads, paint the buildings, and in some cases, build the observatories that house our instruments.

A case of that TAAA volunteerism is unfolding in October. A group of nine volunteers is heading to CAC to assemble our .8 meter (32 inch), research grade, DFM Cassegrain telescope. This gift, made by a company familiar with our outreach programs, was retrieved from Colorado in 2023 and has been transported piece by piece to its now finished roll-off observatory home at CAC. The team of volunteers will clean parts and help with rigging and blocking to place the nearly two tons of mount and telescope in its new home. We will have a CAC open house in November for the grand opening of this 8th instrument housed at the site. All these telescopes are a result of the generosity of members, the community, and our volunteers.

As you make your observing plans for this fall, put our dark sites in the picture. They are a wonderful benefit of our organization where you can enjoy the sky and commune with like-minded members.

Ed

President Ed Foley:
president@tucsonastronomy.org

Vice-President: David Rossetter
vice-president@tucsonastronomy.org

Secretary: Bob Reynolds
secretary@tucsonastronomy.org

Treasurer: Michael McDowell
treasurer@tucsonastronomy.org

BOD Members-At-Large:

Stephen Ferris mal1@tucsonastronomy.org
David Eicher mal2@tucsonastronomy.org
John Kalas mal3@tucsonastronomy.org

Immediate Past President: Mae Smith
past-president@tucsonastronomy.org

TAAA Board: taaabod@tucsonastronomy.org

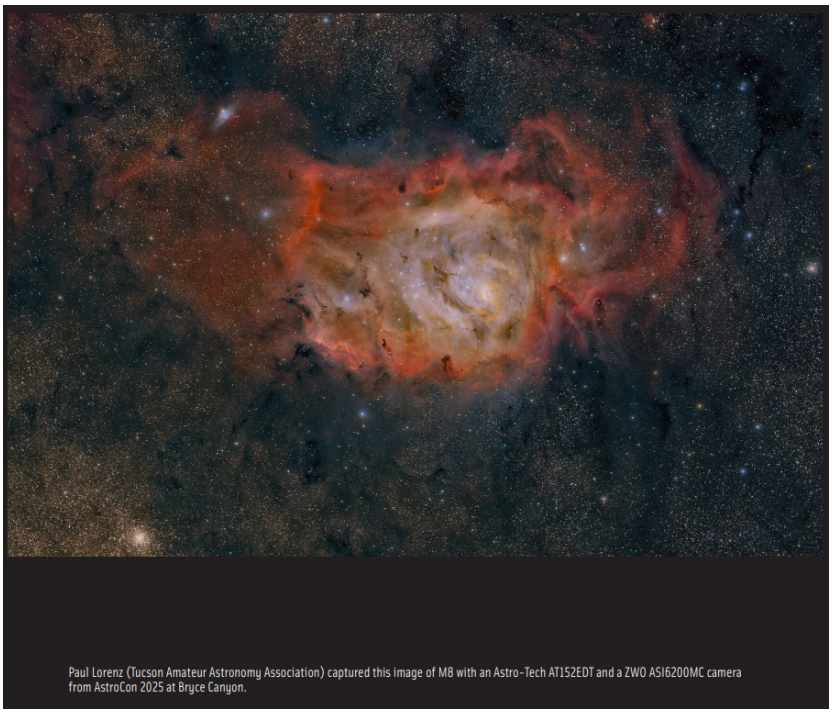
The TAAA Board of Directors meets the second Wednesday of every month at 6:30pm. Members are welcome to attend Board meetings. If you would like to attend, you may email Ed Foley to receive a Zoom link for that meeting. Please send your email to Ed by the Monday prior to the meeting (by 5:00pm) and you will receive an email with the link on either Tuesday evening or Wednesday. ALL MEMBERS ARE WELCOME.

Desert Skies Bulletin
Contributions to Editor: David Rossetter by the 24th.
Astro-Images to our Image Editor: Gregg Ruppel
Proofreaders: Terri Lappin, Jeff Rothstein, Jim Knoll

TAAA News & Activities

Orionid Meteor Shower Observing
CAC October 20-21, 2025

Join me at the Chiricahua Astronomy Complex for a dark sky/no Moon observing session of the Orionid Meteor Shower. This is a perfect time to glimpse a good meteor shower from a dark sky. Although the shower is active from October to November, it peaks October 20 into the morning of October 21. Typically, 20 to 30 meteors per hour are visible from a dark site. CAC will be open for your observing pleasure October 20th. Come on out for the overnight observing. The shower is best viewed the early morning hours of the 21st. The meteors are from remnants of Comet 1P/Halley with the radiant near the constellation Orion. Orion will rise around 10 pm and be well positioned by 3 am. All you need are your eyeballs, a comfortable chair for looking up, and some warm layers as it cools down. Bring some munchies and non-alcoholic drinks if you like and a telescope or binoculars if you want to observe in-between shower observing. We'll also have hot chocolate, coffee, tea, and some munchies on hand. If you want to get any sleep during the session, or before heading back home, feel free to make an appropriate room or RV reservation. Any questions, email me. Jim Knoll



Paul Lorenz Image Featured in the September Issue of the Astronomical League's Reflector Magazine

Correction to the caption:

Paul took the image from CAC.

In Memory of Dean Ketelsen

At the September 2025 Member Meeting, John Kalas presented an excellent overview of Dean Ketelsen's contributions to the TAAA and the Grand Canyon Star Party. Dean's dedication to the club and specifically outreach was phenomenal. Dean's family has donated his 14-Inch Celestron SCT on an Astro Physics mount to the TAAA, and it will be installed at CAC. We want to build an appropriate roll-off roof observatory to house this magnificent instrument.

We will need to raise approximately $50,000 to complete the project. Please consider supporting this worthwhile tribute to Dean's memory. You can donate specifically to the Dean Ketelsen project using the donate link below or on the website and selecting the Dean Ketelsen Observatory. We appreciate your help and support!!"

Contact John Kalas for more information.

Astronomical League 2025 National Awards

TAAA Desert Skies Bulletin Earns Astronomical League Award

The Astronomical League has awarded Third Place for the *Mabel Sterns Newsletter Editor* to our Bulletin Editor, **David Rossetter** (me) for "The Desert Skies Bulletin".

I am honored to receive this award but need to point out how many members are part of the success of the Bulletin. Gregg Ruppel is our Imaging Editor. He is the one who coordinates all the amazing astro-images in the publication. In addition, since my eyes (and brain) are not what they used to be, I lean heavily on our proofreaders, Jim Knoll, Terri Lappin, and Jeff Rothstein. Of course, the Bulletin would not be possible without all our amazing contributors! I was chatting with some other newsletter editors at a star party this summer and they were complaining that they couldn't get anyone to submit articles for their publications. That is not a problem for us! I always have plenty of great material to share with our members. Well done!

Finally, thank you to Mae Smith for submitting the Desert Skies Bulletin to the Astronomical League for consideration of this award.

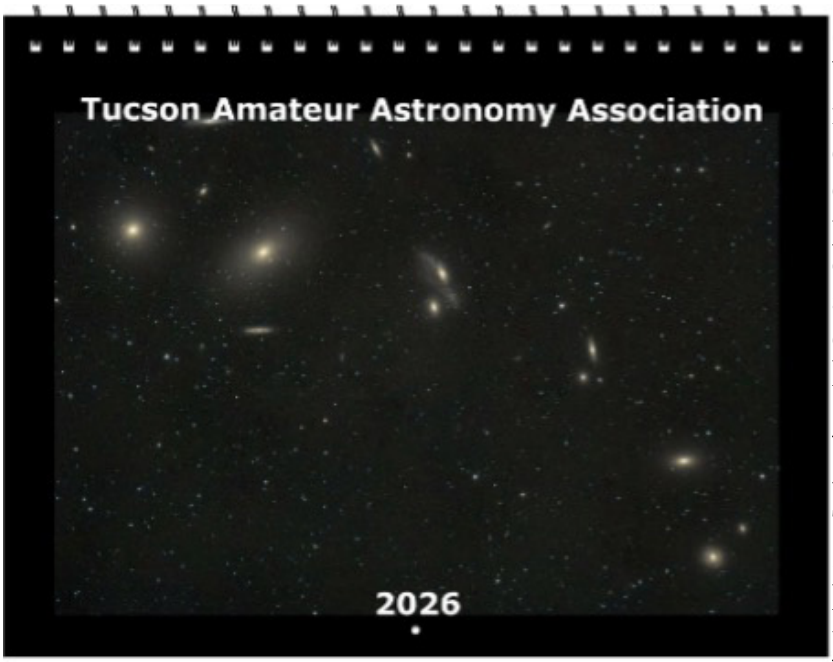
TAAA Web Site Earns Webmaster Award

The Astronomical League has awarded Third Place for the Webmaster Award to **Ed Foley**.

All of us have been to the TAAA Website (tucsonastronomy.org). We know how much useful information resides on those pages. And we can appreciate how beautiful it is as well! Ed puts an awful lot of work into our site in addition to his presidential duties. As always, he relies on many leaders who keep their own pages on the site current and informative. As in all aspects of our club, contributors and volunteers are what make our organization great!

Congratulations, Ed!

TAAA Calendar Available Starting in October



They are finally here! The 2026 TAAA Calendar will be available to members beginning in October. It will be packed full of information about TAAA, our events, and significant astronomy events throughout the year. The picture portion of the calendar will be formatted differently to emphasize TAAA events as well as astro-images and to more easily find significant astronomy events happening during the month.

You can order on the website or get them at the Friday General Meetings. The calendars are only $15 each (plus $5 if you want them mailed to you). So, help support our association and get a useful calendar to use throughout 2026. Your support and donation is deeply appreciated.

The Calendar Team

TAAA Ladies' Night Out

by Susan O'Connor

Ladies' Night Out is a social interest group for women members of the club. The group meets once a month at a local restaurant for fellowship and conversation.

Thursday, October 16, 6:30 pm

Dao's Tai Pan's

446 N. Wilmot Road
(E side of Wilmot, S of 5th St)

Preview the menu

RSVP Susan 520-780-0136

Member Meetings - We Need Your Help!

If you typically attend the monthly Friday General Meeting in person, we could use your technical help. We currently monitor and comment for our YouTube guests, operate camera(s) for in-person attendees, moderate Zoom, and do a live stream to YouTube. Right now, there are only a few of us to manage the technical requirements for the meetings. It would be helpful to have a team so we don't feel obligated to make every meeting and can spread the requirements and share the tasks. We will provide training in whichever area you want to specialize. If you want to help, contact Jim Knoll or Terri Lappin. Thank you for your consideration!

Book Of The Month Review -

by Douglas Smith (TAAA Librarian)

Book: "Radio and Radar Astronomy Projects for Beginners"
Author: Steven Arnold

This book could be very useful for anyone starting out in radio astronomy. It covers several simple projects that can be accomplished with modest equipment within the reach of amateurs. Of particular interest, the book covers most of the projects suggested for the Astronomical League Radio Astronomy observing program. It contains a lot of basic information including how to build simple antennas, basic receivers, software-defined radios (SDR), etc. This edition was published in 2021 so it is more or less up to date. I expect that with the advancement of technology it will become dated quickly. It is hoped newer editions will be published periodically to keep up with new technology.

"Radio and Radar Astronomy Projects for Beginners" is available from a variety of sources including eBay for between $15 and $30.

Astronomy Classes (Free!)

by Doug Smith

Constellation Locating and Identification Workshop

Open for enrollment

Place: TIMPA; **Date:** Thursday, October 16, 2025; **Time:** 6:00 PM until completed

Synopsis: This is another workshop in the practical astronomy workshop series. Students will be taught how to locate and identify the constellations without having to memorize the night sky. Each student will use the supplied equipment to locate several constellations. Students will learn how to use a planisphere and star atlas. This program provides the methodology for the observing requirements of the Astronomical League's Constellation Observing Program (Northern and Southern).

PLEASE NOTE: due to equipment limitations there is a strict limit of 20 students for this workshop.

If interested, you can email or call the instructor: Doug Smith 520-396-3233

Learn how to Record Observations and Sketch Objects Workshop

Open For Enrollment

Place: TIMPA; **Date:** Thursday, October 2, 2025; **Time:** 6:00 PM until completed

Synopsis: This is another workshop in the practical astronomy workshop series. Students will learn how to record observations and how to sketch objects. The students will be taught proper recording techniques, what information to record, what sort of forms to use, etc. In addition, students will be taught techniques for sketching objects. The students will view, using a telescope, several different types of objects and perform recording activities and sketch different objects.

If interested, you can email or call the instructor: Doug Smith 520-396-3233

TWO BRAND NEW WORKSHOPS!!!

Analemma/Jupiter Workshop

Open for enrollment

Place: Woods Memorial Library, 3455 N. First Ave. Tucson
Date: Saturday October 11, 2025 **Time:** 10 AM until 1 PM

Synopsis: This workshop will teach the student how to prepare for either the Astronomical League's (AL) Analemma Observing Program (OP) its AL Jupiter Observing Program. The student will receive suggestions and tips on how to construct the device for the Analemma OP. The student will also receive detailed instructions on how to meet the requirements for both OPs.

PLEASE NOTE: due to space limitations there is a limit of 15 students for this workshop.

If interested, you can email or call the instructor: Doug Smith 520-396-3233

So, I Bought a SeeStar!
Basic Skills for the ZWO SeeStar S30 and S50

Open for Enrollment

Place: TIMPA **Date:** Thursday, October 23, 2025 **Time:** 6:30 until completed

Synopsis: ZWO SeeStars are a hot item for amateur astronomers both new and experienced. They combine good optics, a lot of automation, and a user-friendly interface with entry level prices. This workshop will cover the basic use of both the SeeStar S50 and the SeeStar S30. It is open to both current SeeStar owners and those who are considering buying a SeeStar. If you have a SeeStar of either design, please bring it with you, fully charged. The instructor will walk you through basic procedures for using your equipment. Don't forget to bring your phone or the tablet that you use to control it!

PLEASE NOTE: Limited to 10 people.

If you are interested, you can email or call the instructor: Stephen Ferris 520-661-5355

If you are interested in a workshop for another type of smartscope, please contact Stephen.

Fundamentals of Astronomy Class

Open for enrollment

Place: Armory Park Center, 220 S. 5th Ave, Tucson
Date: 3 consecutive Saturdays: January 10, January 17, January 24, 2026 **Time:** 9 AM until 4 PM

Synopsis: This course is designed for anyone interested in learning the basic concepts in amateur astronomy. Topics covered (but not limited to) include the solar system, deep sky objects, stars, telescopes, eyepieces, mounts, star hopping, observation techniques, plus much more. This course is highly recommended for novice amateur astronomers and for anyone who may have just purchased a first telescope. Taking this class will also aid the student in understanding the more advanced lectures often given during general membership meetings.

Enrollment is strictly limited to 20 students and is on a first-come basis.

If interested, you can email or call the instructor: Doug Smith 520-396-3233. Or sign up using the signup sheet at General Member Meetings starting September 2025 through January 2026.

Member Activities & Reports

The story of Joseph von Fraunhofer and the First German Equatorial Mount

By Matthew B. K. Ota, Phoenician amateur astronomer

Little do we generally appreciate the heritage of the modern telescope technology we use today. But over the centuries the designs have made a steady advance from Hans Lipperhey's "instrument for seeing far" to Galileo's crude "telescopium" all the way to the latest computer driven models that we use today.

But do you know who made the most fundamental and important advance in telescope mountings in history? It was Joseph von Fraunhofer, born in Bavaria in 1787. Despite suffering a terrible accident in childhood and living a short life, Fraunhofer made an impact that reverberates in amateur astronomy to this very day.

Fortunately, his accident opened his future. While working as an apprentice ornamental glasscutter and mirror maker in conditions of near slavery, the house of his master collapsed. The accident killed the master's wife, but the young man was pulled from the wreckage. A well-heeled Munich entrepreneur and lawyer named Joseph von Utzschneider witnessed the rescue and took him under his wing, providing him with books on physics and mathematics. Although Fraunhofer still had to work as an apprentice for the glasscutter, he educated himself in optical theory and soon became quite skilled. After King Maximilian I of Bavaria gave him a present of eighteen ducats, he was able to purchase his way out of his apprenticeship. Then he was hired by Utzschneider's Institute to take advantage of his talents at the young age of 19.
Utzschneider ordered his employee Pierre Guinard to instruct Fraunhofer. Lessons were taught in glass manufacturing, lens grinding and even mechanical engineering. But soon the young upstart recognized flaws in his teacher's production methods which eventually caused friction between them. Guinard finally left the plant for France in 1814, and by that time Fraunhofer was fully trained in the art of optical glass making.

He then continued his optical studies, working on innovative designs for eyepiece lenses and objectives. He also delved into the study of the nature of light itself. His objective lens sizes steadily grew and took advantage of the advances in glass materials of the time.


Dorpat Observatory

His big project came when the Dorpat Observatory in Russia (now Tartouo, Estonia) ordered a 9.5-inch objective lens and telescope in 1819.

At the time, the new refractor was the world's largest. Its 14-foot-long tube of wood was attached to a revolutionary mount that made observation a much easier task. We know it today as the German Equatorial Mount (GEM) Fraunhofer developed. Before then, telescopes were mounted on simple altazimuth mounts or unusual box frame mounts or simply propped up against walls.

The brass right ascension drive that Fraunhofer built made the telescope the first in the world to automatically track objects in the sky. Driven by clock weights that were set prior to the observing run, the drive was adjusted and set to keep the objects centered in the eyepiece for uninterrupted study. However, the RA drive lacked rigidity because the drive gear itself was too small - making the mount wobble. This is an engineering and cost tradeoff that is made in lower end GEM designs to this day.

The declination axis was locked for slow motion adjustments by a long and inconvenient handle, so in most cases it was left unclamped - making it hard to set.

Even with these limitations, Dorpat staff astronomer F. G. Wilhelm Struve used this instrument to make the most important astronomical discovery of that period, the successful measurement of the parallax of the star Vega. The measurement of this star gave us a reliable understanding of cosmic distances. He also measured over 3,000 double stars with precision of less than one arc second. He was impressed with the telescope:

I was amazed in front of the marvelous masterpiece, and I was not able to decide what had to be mostly admired, the beauty of the forms of the whole and its completion in the smallest details, or the effectiveness of the installation and the useful device for the movement, or the unsurpassed optical quality and precision of the images. [...] After the proper correction of the counterweights, the assembled instrument is perfectly balanced in every position. With a finger it is possible to move it along the axis parallel to the Equator and with even a smaller force along the axis of the Earth [...]. So, the huge tube can be moved on the horizon very rapidly and securely in every desired position.

Also, the optics of the instrument fully satisfied Struve who wrote:

So, I absolutely consider our achromatic lens the most perfect masterpiece of optics, which had ever existed.

The contrast between praise and design flaws likely stems from this being the first GEM ever constructed.

Fraunhofer went on to build other telescopes, but unfortunately succumbed to tuberculosis at the age of 39 on June 7, 1826. He pioneered a generation of fine German telescope engineering, and in addition was the discoverer of the absorption lines in the solar spectrum. These are now known today as Fraunhofer lines in his honor. In addition, he perfected the achromatic doublet (crown and flint glass combination) which reduced chromatic aberration.

Fortunately, the original telescope and mount still exist. It can be seen today at the Tartouo Observatory. Carefully restored in 1993 under the directorship of Enno Ruusalepp, it sits on its original sturdy wood mounting and is quite elegant in appearance.

Telescope specifications:

Diameter of achromatic objective: 24.4 cm
Focal length: 4.34 m
Relative aperture: f/18
Mounting: equatorial (later known as 'German mounting')
Polar circle: diam. 35 cm, divided in arc minutes (1/60 of degree). Reading with nonius: 1''
Declination circle: diam. 54 cm, divided in 10' arc minutes (1/6 of degree). Reading with nonius: 5"
Horary movement: mechanism with centrifugal-friction regulator
Signature: 'UTZSCHNEIDER UND FRAUNHOFER IN MÜNCHEN'.

So, the next time you set up your German Equatorial Mount, think of this brilliant eighteenth-century German engineer and the pioneering work that he did. Thank you, Mr. Fraunhofer.

Observing Sites

TIMPA

by TIMPA Planning Group

TIMPA (Tucson International Modelplex Park Association) is TAAA's dark sky site west of the Tucson Mountains.

Location: The TIMPA observing site is located a few miles beyond the Desert Museum (3250 N. Reservation Road, Tucson, AZ 85743).

TIMPA Star Party Dates this month (Friday - Saturday)

October 17-18
October 24-25

The TIMPA Planning Group will be offering assistance with telescope usage and observing during the monthly TIMPA Star Parties. You are invited to bring your equipment and questions to TIMPA on Star Party dates for assistance. Be sure to register using the link below.

The TIMPA site is only partially improved. There are no inside buildings provided other than restrooms. TAAA provides very limited seating (members are welcome to bring folding chairs). Please note that members visiting the TIMPA site may encounter things commonly found in partially improved desert areas such as desert creatures and/or their remnants (such as rodent holes or ant hills), uneven terrain, weeds, and desert pollens. Members using the site are encouraged to bring red lights and to move cautiously taking appropriate safety measures. The site does not have potable water, so bring your own non-alcoholic drinks.

Reservations for the TIMPA Site are made on the TAAA website at TIMPA DARK SITE RESERVATIONS. Please fill out the form completely and be sure to indicate the date you desire to visit TIMPA.

Questions? Contact the TIMPA Director: Stephen Ferris

Chiricahua Astronomy Complex

by Jim Knoll

Upcoming CAC Weekend Dates (Friday - Saturday)

October 17-18 (New Moon October 21)
Orionid Meteor Shower Observing October 20-21

Chiricahua Astronomy Complex (CAC) is the club's eastern dark sky (Bortle 2) observing site, located in Cochise County approximately 100 miles southeast of the center of Tucson. We have many large telescopes ranging from 40-inch, 25-inch and 18-inch Dobsonians, a 9-inch folded refractor, a soon-to-be completed 32-inch Cassegrain, and quite a few Schmidt-Cassegrain Telescopes (SCTs) of various sizes. The telescopes are configured for either visual observing or imaging.

You can be trained to operate most of these telescopes. To request training, please complete the request form here. We also have ten sleeping rooms with heat and air conditioning, a Learning Center/Classroom, seven RV sites with electricity, and a large tent camping area.

If you would like to observe, you must make a reservation on the CAC Web page at CAC Reservations.

Chiricahua Astronomy Complex (CAC) Open House planned for November 22, 2025

We are in the early stages of planning an Open House at CAC November 22, 2025. Come join us for a close-up view and ribbon cutting of the new 32-Inch DFM Cassegrain telescope. Ribbon cutting and site tours are planned from 4-6 pm with observing from 6-8 pm. A bus is planned from Tucson to CAC for a nominal fee. The bus will depart from SE Tucson at 2 pm and return to Tucson at 10 pm.

Additional Member-Leased Observing Pads planned for CAC.

We are planning to build 4 new member-leased pads at CAC this Fall. If you are interested in having a leased pad available for your use with your equipment, please email me. Although we use leased pads for overflow during our normal CAC weekends, you would have priority on your pad. You would fund the pad initial lease (cost to build the pad with electricity) and have priority use during your lease.

CAC Director: Jim Knoll CAC on the Web

Observing Sites' 2025 Star Parties Dates

TIMPA	New Moon	CAC
October 17-18	October 21	October 17-18 Orionids Observing October 20-21
October 24-25		
November 14-15		
November 21-22	November 19	November 21-22
December 12-13		
December 19-20	December 19	December 19-20

Special Interest Groups

Astronomy Fundamentals SIG

by Connor Justice

Come join us for a presentation on the fundamentals of amateur astronomy. Learn your way around the night sky to add to your observing enjoyment. Meetings are on the second Thursday of each month.

The next AFSIG meeting is **Thursday, October 9, 6:30pm to 8:30pm.**
Topics to be determined.

Contact Connor Justice for Zoom link and more information.
Access videos of previous meetings in the TAAA YouTube Channel AFSIG on the Web

Radio Astronomy SIG (RASIG)

by Sandy Nichols

The next RASIG meeting will be Wednesday, October 15th at 7:00 pm via ZOOM.

Topics: To Be Determined

Email Sandy Nichols for the ZOOM link or any other information about the new SIG.

Starry Messengers Special Interest Group

Opening Minds to the Universe

The Starry Messengers group contributes to the TAAA outreach program by providing age-appropriate hands-on activities at school star parties and community events, We differ from the TAAA Star Party outreach program in that most of our activities can be performed indoors and do not require telescopes or clear skies.

Our next meeting will be held on Monday, October 13th by Zoom. A link will be emailed to all TAAA members. If you enjoy broadening the public's understanding of astronomy, we look forward to seeing you at this meeting.

We will be firming up our plans for our Tucson Festival of Books (March 14/15) exhibit. The deadline for submitting application is Nov 19th. At our last meeting, we considered using the materials from the Life in the Universe toolkit for our TFOB exhibit. This toolkit includes activities about extremophiles found on the Earth, the Drake Equation, as well as several other related activities. To learn more about the Life in the Universe toolkit, visit here.

These are the upcoming requests for hands-on activities. The **Oct 23rd event will soon be cancelled if we don't have a volunteer.** Use this link to sign up for these events. To become involved in this community service, it's recommended that you sign up for an event that

already has a volunteer so you can see how to present the activity. Volunteering for an event does not obligate you to attend our monthly meetings, though you may enjoy hearing from others doing this type of outreach.

- 10/15/2025 (Wed) 3 PM - 4 PM Santa Rosa Library (I-10/22nd St) other activity. Volunteers: Susan O'Connor
- 10/22/2025 (Wed) 6 PM - 7:30 PM Highland Free School (Broadway/Campbell) Space Rocks, 40 expected. Volunteers: Tom Sarko
- 10/23/2025 (Thurs) 6:30 PM - 8 PM Wakefield Middle School (44th St/6th Ave) Light Pollution Kit, 300 expected. **Volunteers: OPEN**
- 10/25/2025 (Sat) 5 PM - 8:30 PM Pima Air & Space Museum Fright Night (Valencia/Wilmot) any toolkit, 1500 expected. Volunteers: Tom Sarko
- 10/28/2025 (Tues) 6 PM - 8 PM Wright Elementary (Pima/Columbus) PlanetQuest, 170 expected. Volunteers: Nelsey Toner
- 11/5/2025 (Wed) 5:30 PM - 7:00 PM DeGrazia Elementary (Camino de Oeste/Cortaro Farms), Black Hole Survival toolkit, 150 expected. **Volunteers: OPEN**
- 11/7/2025 (Fri) 6 PM - 8 PM Esmond Station K-8 (Mary Anne Cleveland/Atterbury Wash) Telescopes - Eyes on the Universe, 300 expected. Volunteers: Susan O'Connor
- 11/12/2025 (Wed) 5:30 PM - 7:30 PM Senita Valley Elementary (Houghton/Irvington) any toolkit. Volunteers: **Volunteers: OPEN**
- 11/13/2025 (Thurs) 6 PM - 8 PM Henry Elem (Speedway/Camino Seco) Our Magnetic Sun, 100 expected. **Volunteers: OPEN**
- 11/18/2025 (Tues) 5 PM - 6:30 PM Erickson Elementary (Golf Links/Wilmot) Space Rocks, 110 expected. Volunteers: Tom Sarko
- 11/19/2025 (Wed) 3 PM - 4 PM Santa Rosa Library (I-10/22nd St) other activity. Volunteers: Susan O'Connor
- 12/6/2025 (Sat) 10 AM - Noon Hendricks Elem (Thornydale/Orange Grove) Shadows & Silhouettes, 200 expected. **Volunteers: OPEN**
- 1/22/2026 (Thurs) 5 PM - 7 PM Hermosa Montessori (Ft Lowell/Soldier Trail) any toolkit, 200 expected. **Volunteers: OPEN**

Questions about the Starry Messengers SIG and our hands-on outreach toolkits can be directed to Terri Lappin (email or 520-977-1290).

Astro-Imaging SIG

by Gregg Ruppel

The next AISIG meeting will be **Monday, October 20 at 7:00 pm** via ZOOM.

Topics: Beginners' Corner - Ask A Question
My Favorite Non-Standard Post-Processing Technique - Alan Rockowitz
Image Sharing, Q/A

Email Gregg Ruppel for the ZOOM link or any other information. Gregg and the AISIG folks are very active on the TAAA groups.io forum. Check out all the helpful advice and amazing images there. For more information or instructions on how to join the forum, click here.

View previous AISIG meetings on the TAAA YouTube Channel.
We offer a mentoring program for beginning astro-imagers. For details, see the AISIG Web Pages.

by Bernie Stinger

October 2025 Star Party Volunteer List

Thank you for volunteering your time and talents for our extremely important outreach mission. **Below is the current status of the Public/School Star Party list for October, 2025.**

Please let me know by email if you are interested in volunteering for any of the events listed below. First come – first served. I will let you know in return if you are on it or that it was already filled. Some events go fast!.

If you are new to Star Party outreach, let me know and we'll be sure to help you get started. It is important you sign up for star parties if you plan to attend, whether you bring a scope or help in other ways, so I can manage who from TAAA will be on-site and for you to be included in any reminder or weather emails.

The PUBLIC Astronomy Events are also listed on the TAAA (tucsonastronomy.org) and Night Sky Network (NSN) (nightsky.jpl.nasa.gov) calendars. Also, all PUBLIC star parties will be listed on the TAAA Facebook events page and will be updated based on weather, etc. in real-time. You can follow any of these events and get a notification when I update each event but this is only for PUBLIC star parties listed on Facebook.

The requests have been updated as of Sept. 25th. **The first section, in RED, is a list of events where we still need volunteers.** If you can help out please contact me at: astronomy-events@tucsonastronomy.org

Thank you,
Bernie Stinger
TAAA Public/School/Non-Profit Star Party Manager

October Events still in need of Volunteers

Friday – October 10 --NW TUCSON-CATALINA
Catalina State Park
11570 N Oracle Road
Age/Grade Level: All Ages.
Participants: 100+
2 Additional Scopes Needed
Setup Time: 6 – 6:30 pm.
Start Time: 7:00 pm. End Time: 9:00 pm.

Saturday – October 18 -- NE TUCSON
St. Francis in the Foothills Church
4625 E. River Road
Age/Grade Level: All Ages
Participants: 30+
1 Additional Scope Needed
Setup Time: 6:00 pm.
Start Time: 6:30 pm. End Time: 8:30 pm.

October Events still in need of Volunteers

Wednesday – October 22 -- SOUTH TUCSON
Highland Free School
510 S Highland Ave
Age/Grade Level: K – 6 Grade
Participants: 50
1 Additional Scope Needed
Setup Time: 6:00 pm.
Start Time: 6:30 pm. End Time: 7:30 pm.

Thursday – October 23 -- SOUTH TUCSON
Wakefield Middle School
101 W. 44th St.
Age/Grade Level: 6 – 8 Grade
Participants: 100+
2 Scopes Needed
Setup Time: 6:00 pm.
Start Time: 6:30 pm. End Time: 8:00 pm.

Friday – October 24 -- TUBAC AZ
Tubac Presideo Historical Park
1 Burruel St., Tubac, AZ
Participants: 50 – 75
Age/Grade Level: Adults
1 Additional Scope Needed
Setup Time: 6:00 pm.
Start Time: 6:30 pm. End Time: 8:30 pm.

Friday – October 31 -- GREEN VALLEY
Pima County Conservation Lands and Resources (CLR) – Canoa Ranch
5375 S I-19 Frontage Road
Age/Grade Level: All Ages
Participants: 75-100
2 – 3 Additional Scopes Needed
Setup Time: 6:00 pm.
Start Time: 6:30 pm. End Time: 8:30 pm.

October Events Filled—No Volunteers Needed

Sunday – October 5 -- EAST TUCSON – SOLAR
Saguaro National Park – EAST
Saguaro EAST is located at 3693 S Old Spanish Trail.
Age Group: All Ages
Estimated # Participants: 50
0 Solar telescopes needed
Setup Time: 12:30 pm
Start Time: 1:00 pm End Time: 3:00 pm

Saturday – October 11 -- FAR WEST TUCSON
Pima County Conservation Lands and Resources (CLR) – Juan Santa Cruz Picnic Area
2000 N Kinney Road
Age/Grade Level: All Ages
Participants: 75-100
0 Scopes Needed
Setup Time: 6:30 pm.
Start Time: 7:00 pm. End Time: 9:00 pm.

Friday – October 17 -- SAFFORD AZ
Roper Lake State Park
101 E Roper Lake Rd, Safford AZ
Age Group: All Ages
Estimated # Participants: 75
0 Scopes needed
Setup Time: 6:00 pm
Start Time: 6:30 pm End Time: 8:30 pm

Saturday – October 18 -- PICACHO AZ
Picacho Peak State Park
15520 Picacho Peak Rd, Picacho, AZ
Age Group: All Ages
Estimated # Participants: 100+
0 Scopes needed
Setup Time: 6:00 pm
Start Time: 6:30 pm End Time: 8:30 pm

October Events Filled—No Volunteers Needed

Friday – October 24-- CENTRAL TUCSON
Safford Community School
200 E 13th St
Age/Grade Level: K – 8 Grade
Participants: 100+
0 Scopes needed
Setup Time: 6:00 pm.
Start Time: 6:30pm End Time: 8:30 pm.

———————————————————————

Tuesday – October 28 – - NE TUCSON
John B. Wright Elementary School
4311 East Linden St
Age/Grade Level: 3 to 5
Participants: 100+
0 Scopes Needed
Setup Time: 6:00 pm.
Start Time: 6:30 pm. End Time: 8:30 pm.

Monday – October 27 -- BIOSPHERE AZ
Gastronauts Global Symposium @ Biosphere
32540 S Biosphere Rd
Participants: 75 – 100 (Professional scientists)
Age/Grade Level: Adults
0 Scopes Needed
Setup Time: 6:00 pm.
Start Time: 6:30 pm. End Time: 8:00 pm

Public Astronomy Events

COLLEGE OF SCIENCE
LUNAR & PLANETARY LABORATORY

LPL Evening Lecture Series 2025

All Lectures are in Kuiper 308 on the U of A Campus or Zoom

Wednesday, October 22, 7-8PM
Studying Earth's Glaciers to Unlock Martian Mysteries
Dr. Jack Holt
Professor, Lunar and Planetary Laboratory
Register for Zoom

November 19, 7-8PM
From Lava to Life: Microbial Colonization in Volcanic Environments
Dr. Solange Duhamel
Associate Professor, Molecular and Cellular Biology, University of Arizona
Register for Zoom

DEPARTMENT OF ASTRONOMY
AND STEWARD OBSERVATORY

Public Evening Lecture Series
Fall 2025

Monday, September 29
JWST's Discoveries at the Break of Cosmic Dawn
Dr. Kevin Hainline, Steward Observatory

Monday, October 13
The Remarkable Death of a Massive Star
Dr. Carl Fields, Steward Observatory

Monday, October 27
The Martians
Mr. David Baron, Independent Journalist
BOOKSIGNING EVENT AFTER THE LECTURE

Monday, November 10
The Modern Search for Potential Habitats of Extraterrestrial Life in the Solar System and Beyond
Dr. Daniel Apai, Steward Observatory

Monday, November 24
Dead Planets Around Dead Stars
Dr. Laura Rogers, National Optical/IR Lab

Monday, December 8
Latest News from the Vera Rubin Observatory
Dr. Charles Claver, Vera Rubin Observatory

Lectures are in-person or Watch via ZOOM.
Location: Steward Observatory N210
Open at 7:00PM, Lectures begin at 7:30PM

Parking 2nd Street or Cherry Ave Garage
Telescope viewing 8:30PM Weather Permitting

More Information

by Doug Smith

Observing Programs - What's Up List for October and November 2025

Many of the Astronomical League observing programs can be done from our backyards The following objects are visible in October and November for the more common observing programs.

Constellation Hunter Program – The following constellations are well placed for observing during October and November: Andromeda, Aquarius, Aries, Cassiopeia, Cepheus, Cygnus, Delphinus, Equuleus, Lacerta, Pegasus, Pisces, Triangulum.

Messier Observing Program - This is the sparse time of year for Messier object. The night sky now is the area where the Sun is in March, which allows us to do a Messier marathon, because it's so empty. The following Messier objects are well placed for observation during October and November (listed in ascending RA): M15, M2, M39, M30, M52.

Lunar and Binocular Observing Program

Here is a list of dates for lunar phases in October and November:

New Moon: October 21, November 20
40 Hours waxing: October 23, November 22
72 hours waxing: October 24, November 23
4 days old: October 26, November 24
7 days old: October 29, November 28
10 days old: October 2, November 1
Full (14 days old): October 7, November 5
Gibbous: October 13, November 12
72 hours waning: October 18, November 17
40 hours waning: October 19, November 18

Solar System Observing Program

The following is a list of planets that can be observed during October and November:

Mercury is an early evening object during October and the first half of November. It is at greatest eastern elongation in October. During the last half of November it is an early morning object.

Venus is an early morning object during all of October and November. At the start of October rises about two hours before the Sun. During October and November it is moving towards the Sun. By the end of November it only rises 30 minutes before the Sun.

Mars is an early evening object during October and November. However it is basically unobservable during this period as it is in the evening twilight.

Jupiter is now well placed for evening observation. On October 1 it rises around 11:30 PM. On November 30 it rises around 8 PM.

Saturn is well placed for early evening observation. During October and November Saturn is already well up at sunset. On October 1 it transits around 11 PM and on November 30 it transits around 7 PM.

Uranus is well placed for evening observation. It reaches opposition on November 20. On October 1 it transits around 3:30 AM. On November 30 it transits around 11 PM.

Neptune is well placed for evening observation. It follows closely behind Saturn. On October 1 it transits around 11:30 PM. On November 30 it transits around 7:15 PM.

Urban Observing Program

The following deep sky objects are well placed for observing during October and November: NGC 7009, M15, M2, M39, NGC 7160, NGC 7209, NGC 7243, NGC 7662, NGC 7789.

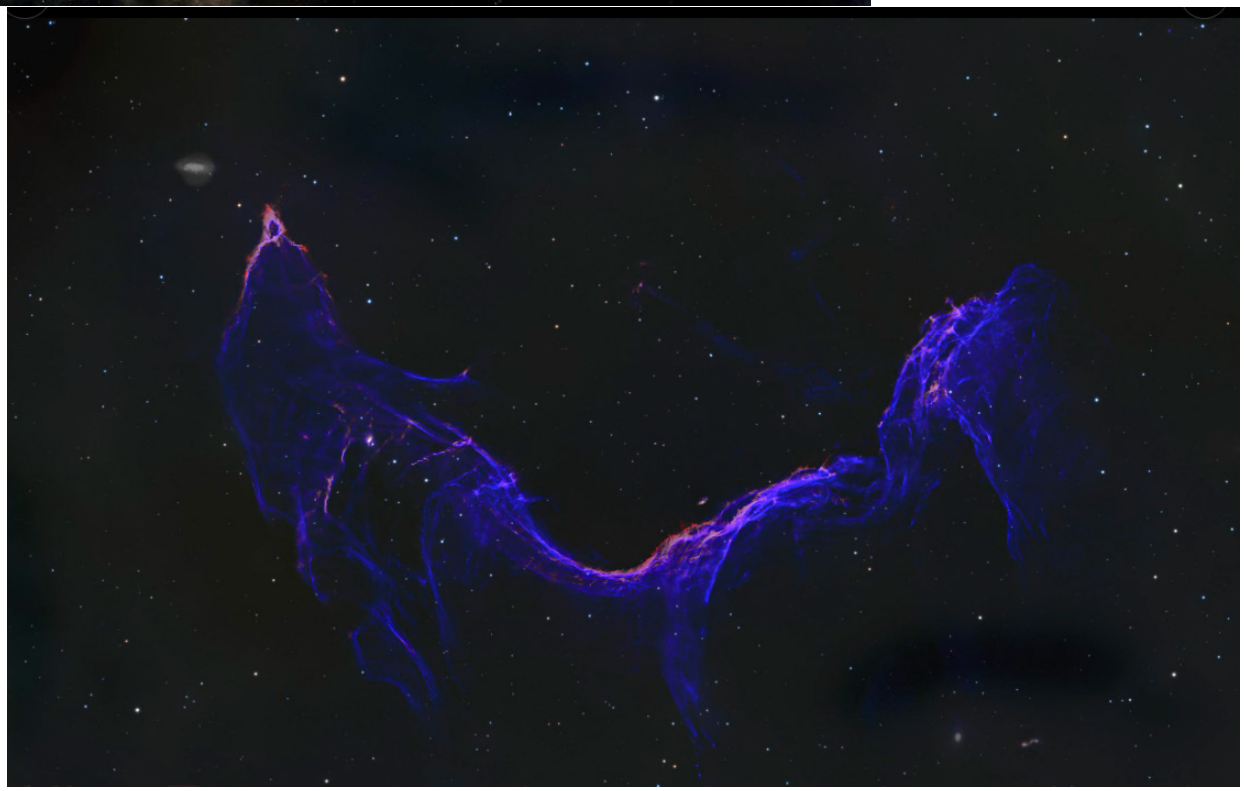
The following double star is well placed for observation during October and November: Delta Cephei.

Member Astro-Images

David Gale

M42

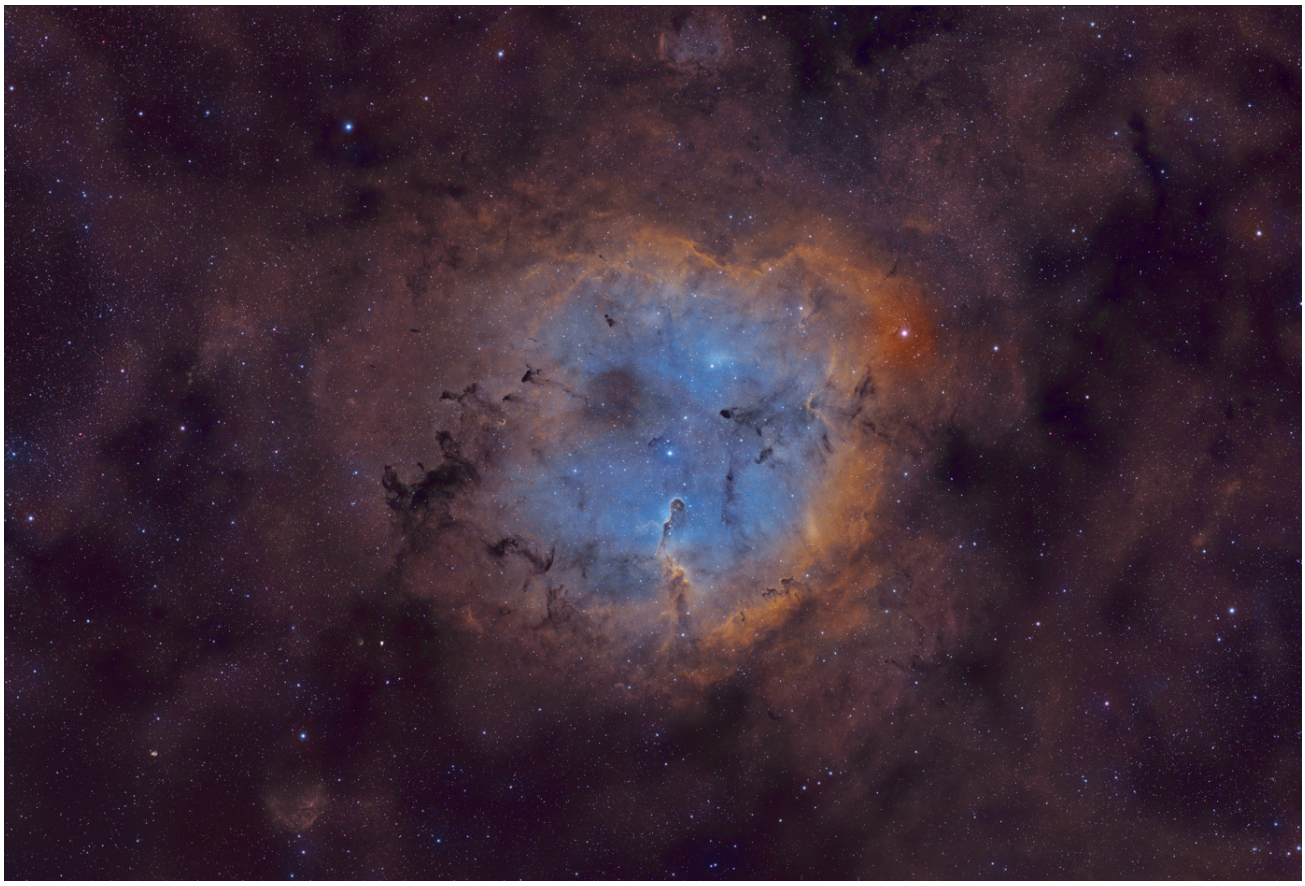
95 min of integration with a C8 Hyperstar and a 533MC pro camera



Allen Force

ESO 217-25 Mermaid Nebula

Astrobin



Randy Smith

IC 1396

Askar FMA180, ZWO ASI2600MM Pro, Sky-Watcher Wave 150i Strainwave Mount, Antlia 3nm Narrowband H-alpha 2", Antlia 3nm Narrowband Oxygen III 2", Antlia 3nm Narrowband Sulfur II 2". 11h 39m.

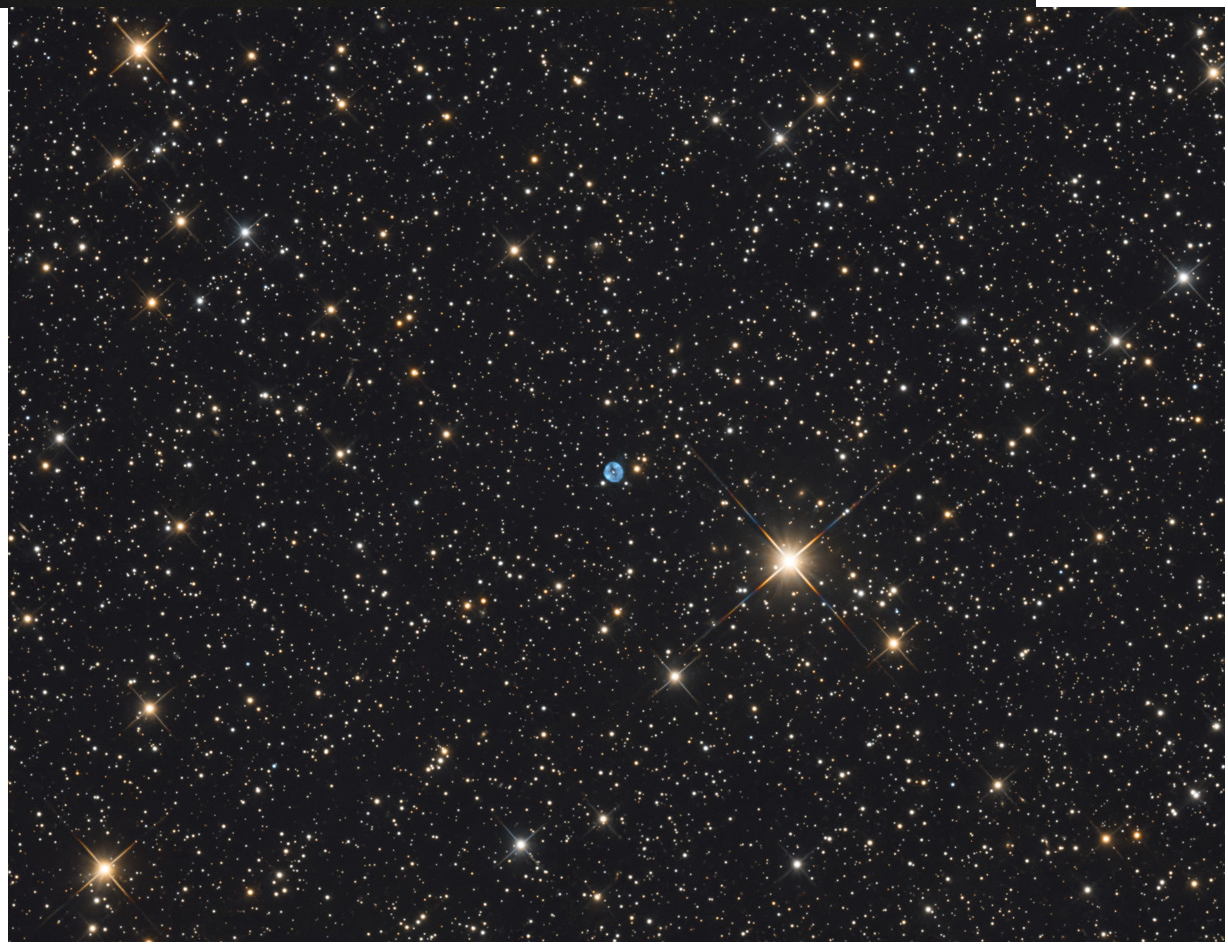
Craig Harding - Abell 39

2600MCAir, 41 x 300 seconds of integration.

NGC 7332
&
NGC 7339

Astro-Tech RC 6” f/6.7 1034mm fl/ ZWO ASI2600MC Pro camera/ CEM 70ec mount,/ Optolong UV/IR cut filter/2 hr exposure

Tom Eby



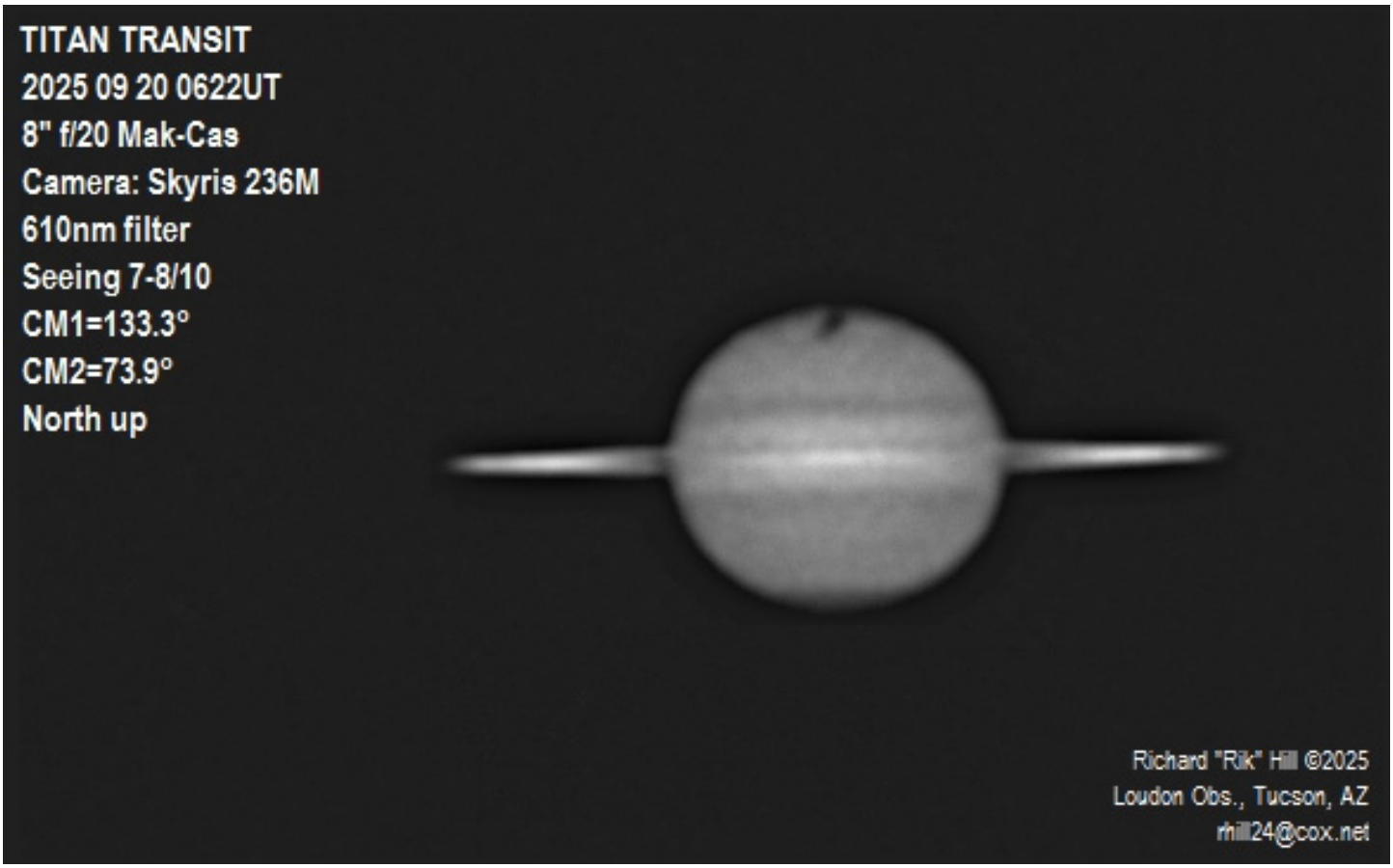
NGC 6852

Astro-Tech RC 6” @ f/6.7 (1034mm fl) / ASI2600MC Pro/CEM70ec mount/no filters/2.0 hr exposure

Aristarchus

Rik Hill

Titan transit of 9/20/2025

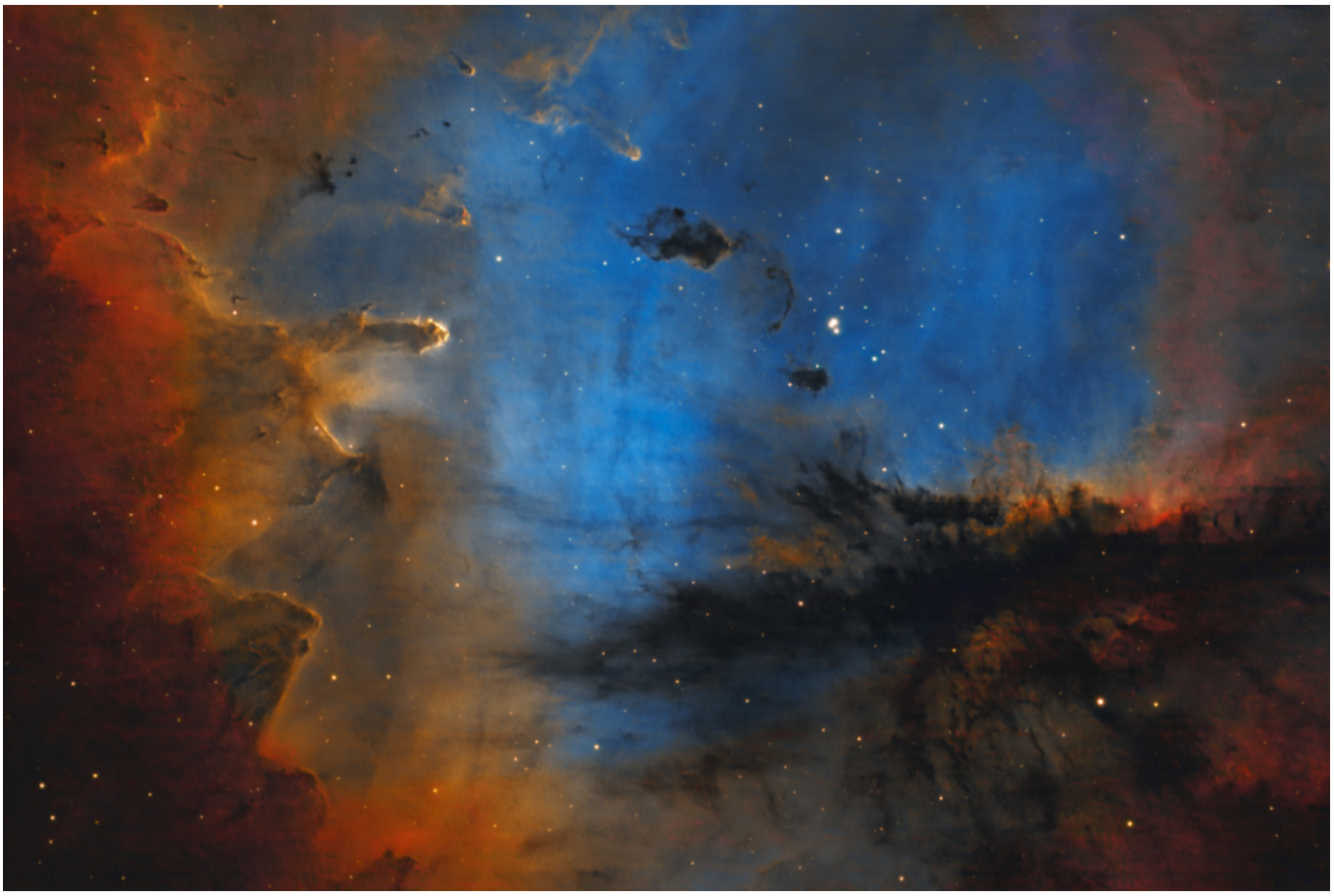


NGC 6302

Astrobin

David Stearn

NGC 281 Astrobin



NGC 253 Astrobin

Alex Woronow

Abell S0805 and the X galaxy Astrobin

TAAA Astronomy Equipment For Sale

TAAA has an assortment of astronomy related equipment for sale. This equipment is available for members only at this time.

Celestron 8" CPC
(No Photo)

Dual fork arm mount, 9x50 finder, 2 eyepieces, Telrad, finder rings, hand controller, user manual, tripod, diagonal. Basically new in original box. **$1600**

Celestron 6 NexStar
3 of these.
Some are black tube, some are orange. All come with Tripod, eyepieces, finder. All are single fork rail mount, NexStar (tested), 1.25" visual back, 1.25 diagonal, 2 1.25" eyepieces. One comes with 6x30 crosshair finder, one comes with a telrad and one comes with a red dot finder. **$600 each**

Celestron 8
Single Fork Arm rail mount, NexStar, Tripod, 1.25" visual back, 1.25" diagonal, 1.25" eyepiece (25mm), crosshair finder, carrying case for optical tube. **$1000**

Homemade 8 inch Newtonian telescope. Sturdy GEQ mount. Solid tripod. 2-inch focuser (with 1.25" adapter), 6x30 crosshair finder. **$100**

12" Dobsonian
Another great deal!
Very large, Homemade.
Crosshair finder. **$500**

12-inch Skywatcher Collapsible Dobsonian scope.
2" focuser, large 8x50 finder, and 2 eyepieces. **$900**

16 inch Meade Lightbridge Truss Tube Dobsonian. 2" focuser (with 1.25" adapter), crosshair finder, mirror cooling fan, shroud, dust cover. A steal at **$1100!**

TAAA Astronomy Equipment For Sale (continued)

Celestron 5" Omni XLT Tripod, Celestron CG4 GEQ mount, 6x30 finder, diagonal, 1 eyepiece, user's manual. **$500**

We have numerous **tripods**. Celestron, Meade and others. Heavy duty, light duty, etc. If interested please inquire. Flexible on price

Small camera tripods - $10

Several full aperture **white light solar filters**. Most are 'film type'. We have one 'glass type'. Various sizes. All checked out okay. If interested please inquire for available sizes and prices.

EYEPIECE CLEARANCE SALE!!!
50+ eyepieces and filters for sale at rock bottom prices! Mostly 1.25". Inquire for availability and pricing

---

We also have an assortment of other items available at this time including: Finders (various sizes), Finder rings, focusers, some eyepieces, some eyepiece filters, telescope rings of various sizes, mirror blanks of many sizes, a 6-inch Newtonian mirror set mounted in mirror cells, several large mirrors and much more.

To make inquiries about what is available or to express a desire to purchase one of the items please contact: Douglas Smith; 520-396-3233

Member Equipment for Sale

- All advertisements are for member-owned equipment. Members may not place ads for non-members.
- Advertisements are for one month. If you would like to run the ad for a longer period you must resubmit the ad each month.
- If you would like to show the item as sold in a following issue, you must send the sold notice to the editor.
- Each member may submit up to two ads per month.
- There are no formal ad restrictions. Please keep them relatively brief. A small photo or two may be submitted. Please include contact information (we can hide the email behind a link).
- The editor has total discretion as to the formatting of the ads.

Buyers:

The TAAA does not assume responsibility for the products sold or offered. It is the responsibility of individuals who posted the ad to reply to your message and confirm the legitimacy. There are risks which you assume when dealing with people who might be acting under false pretenses; all these risks are borne by you. The TAAA does not control the products offered by and to members. But please, let's all be honest with each other!

FOR SALE
Sky-Watcher Esprit 120ED APO
Original owner less then two years old NOT used much because of health issues **$3300**

Sky-Watcher EQ6-Pro GOTO mount Original owner less then two years old NOT used much because of health issues **$2000**

Special note: If someone wants **both it's $5000 package deal**
FREE Accessories with the package deal ONLY and pickup
- Extension Pier
- QHY Polemaster with Polemaster Adapter
- Sky-Watcher Synscan GPS Module
- 7.5 pound Counterweight

Wheeley Bar NOT included

Contact: Joe Gianninoto, Email or 520-908-3393 (this is a land line).

"Sunspotter" Solar Telescope.

This is a Keplerian Telescope used for White light images of the Sun projected on a sheet of paper, placed inside at the base of the triangle. The paper's image can be traced in place for educational purposes and is great for teaching all ages about sunspots and the movement of the Sun.

Fun to use and very easy to setup, the Sun's image is reflected via several mirrors and lens to the image plane.

Excellent condition. Cash only and delivery in Tucson. **$400.00 firm**
Bernie Stinger 612-396-8839

More information: Science First Sunspotter: The Safer Solar Telescope

Skyward

By Dr. David H. Levy

October 2025

It was late in the afternoon of 19 July, 1963. I was a 15-year-old patient at the time at the Jewish National Home for Asthmatic Children in Denver, Colorado, and had begun my association with the Denver Astronomical Society. The people running the Asthma Home had generously granted permission for me to return home for a week in order to see a total eclipse of the Sun that would occur on Saturday, July 20.

Late that afternoon the day before the eclipse, Dad awoke from a nap in a terrible mood. He turned towards Mom and said, "All David cares about are his damned stars."

My friend Ken Wiener, with his Mother. My Mom and Dad are in the front seat of the car.

Obviously, I was upset to overhear his words but I let them pass. His mood improved, and the next day we three saw a spectacular total eclipse of the Sun. Having a lifelong curiosity about history, Dad was flabbergasted when the eclipse, which had been predicted millennia earlier by the ancient Greeks, began right on time, to the second. The saros goes all the way back to the Chaldean astronomers in the centuries BCE, and was understood by Ptolemy, Pliny, and Hipparchus.

The only issue we had was at the start of totality. I took off my eclipse glasses, and my parents had fits telling me to put them back on. I had a choice. I could spend the sixty seconds of totality arguing with them that it is perfectly safe to witness the total phase without protection, or I could just put my glasses back on.

I put my glasses back on. Then I turned away, took them off, and enjoyed the total eclipse.

Years later, Dad and I were walking together. "Do you remember," he inquired, "when I awoke from my nap and said that all you care about are your damned stars?"

I admitted that I did remember. "May I take those words back?"
"Why? You were right. That was all I cared about back then."
"But if I had had the faintest idea what you were going to do with your damned stars, I would have been so much more supportive." (And he said that to me before I found my first comet.).

In the 41 years since I found that comet, I have had more joy that I can imagine. Never have I gone out to my observatory to look at the stars, and not felt better, far better, when I went back inside. My parents, and my wife, are gone, but I have a daughter, a son-in-law, two grandchildren, and a great grandson. When they ask me a question—even for a second, the charisma intensifies. And it is not just observing. My relationship with many astronomy societies, including the Denver Astronomical Society, which has continued over the years, has recently intensified. I am their poet laureate and get to share a poem at the start of their meetings.

Whether I am alone or with a group of people, for me, nights under the stars are an indescribable thrill.

My daughter, two grandchildren, and my Mom.

Dr. David H. Levy is a long-time member and former President of the TAAA. He is a well-known astronomy writer and discoverer of comets. He writes this monthly "Skyward" column for the Vail Voice and generously allows us to publish it here.