

TAAA Desert Skies Bulletin

Observing Our

Since



Desert Skies

1954

July 2026

www.tucsonastronomy.org

Membership Meeting

Friday, July 3, 2026 6:30PM

TAAA's next general member meeting will be held on **Friday, July 3, 2026**. The Main Presentation will start at 6:30PM. 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.

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Main Presentation at 6:30PM AZT

Title JWST: Four Years of Cosmic Discovery

Presentation: Since launching in late 2021, the James Webb Space Telescope (JWST) has completely rewritten our understanding of the Universe and our place in it. In this presentation, Dr. Kevin Hainline will discuss his research exploring ultra-distant galaxies from the beginning of time, mysterious little red dots and what they tell us about the growth of the first black holes, and even ultra-cold "brown dwarfs" floating at the edges of our galaxy. He will describe how these sources were initially found within the JWST Advanced Deep Extragalactic Survey (JADES) and discuss how the deep infrared view offered by JWST is crucial for seeing the unseen.

Biography: **Dr. Kevin Hainline** is an astronomer at the University of Arizona who studies how the first galaxies formed in the early Universe. He received his bachelor's degree in physics from Harvey Mudd College in 2006 and his PhD in astronomy from UCLA in 2012, before joining Dartmouth College as a postdoctoral researcher. He later moved to the

University of Arizona, where he is currently an Associate Research Professor. As a member of the James Webb Space Telescope's Advanced Deep Extragalactic Survey (JADES), he has made headlines with discoveries of some of the earliest galaxies ever seen. He is also an active science communicator who enjoys bringing the story of the Universe to broad audiences.



Kevin Hainline, PhD

July 2026

June is always a special month for TAAA volunteers. It marks the end of the season of our school star parties and has our grand outreach finale - our big effort for the Grand Canyon Star Party. We have now successfully concluded our 36th year.

This year is the end of another season - that of the school star party group with Bernie Stinger as the coordinating head of those activities. For the past five school years Bernie has led the group that serves the schools of southern Arizona. The team holds events inspiring school children up through high school. This group has routinely hosted more than a hundred star parties a year, for more than 1000 participants each year. In addition, the group also hosts star parties for nonprofits and parks including local, state and national parks.

During his tenure, Bernie worked to expand our programs. He coordinated with the national, state, and county parks systems to add additional venues in Southern Arizona. These include Tubac Presidio State Historical Park, Tonto National Monument, Roper Lake State Park, and the very popular Picacho Peak State Park. He also found new venues for some of the existing parks; improving the volunteer experience and the public's enjoyment.

Bernie worked with Jim Knoll to roll out the "Outreach Awards" program. This program recognizes the outstanding efforts of our volunteers by giving star party and Starry Messenger volunteers rewards for their volunteer hours.

During Bernie's work with the group, TAAA placed third in the nation wide "Stars in the Network" list on the NASA-based Night Sky Network.

Based on his experience and those of other volunteers, he was able to improve our

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](mailto:Ed.Foley@tucsonastronomy.org) 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.

by Ed Foley

volunteer effectiveness. He built up a graphic database of access and setup locations for most of the public and private schools in the Tucson area.

Working with our Starry Messenger group, he helped increase the number of Starry Messenger events in the past year by offering them as an alternative to telescope events at Tucson schools that had asked for a pre-sunset time slot for their event.

Bernie will continue to be involved, participating in, and coordinating the parks' nonprofit star parties, but long-time member and volunteer Jimmy Long will take the mantle of the school star parties beginning this month. Please join me in thanking Bernie for his tireless efforts on behalf of TAAA to bring astronomy to the schools in our area, and welcome Jimmy to this most important task at TAAA.

Ed

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Desert Skies Bulletin

Contributions to Editor: [David Rossetter](mailto:David.Rossetter@tucsonastronomy.org) by the 24th.
Astro-Images to our Image Editor: [Gregg Ruppel](mailto:Gregg.Ruppel@tucsonastronomy.org)
Proofreaders: Terri Lappin, Jeff Rothstein, Jim Knoll

\$100,000 Legacy Gift to TAAA's Endowment Fund

The positive impact of our organization on members and the community shows up in many ways. The enthusiasm our members have for the science, their desire to share their knowledge with other members and the community, is often on display during the year. Sometimes those good acts come back to TAAA in the form of the generosity of members and the community. This month that generosity was in the form of a \$100,000 bequest to TAAA's Endowment Fund from recently passed member Stephen Minney. Stephen had been a member of TAAA since 2021. The club was an outlet for his interest in astro-imaging.

Steve grew up in Tucson. He had a great appreciation for education and nature. During the Vietnam War he enlisted in the Air Force and ended up being stationed in Hawaii (amazing luck). He fell in love with Hawaii and its cultures; he remained a fan of Hawaii throughout his life. On returning to Tucson he became an engineer/tech at a blood banking equipment company. He helped design several successful products and set up the company's computer network, while taking a lot of classes at the U of A in computer science and astronomy.

He had a bit of an addiction to collecting computers and information. He collected more than 50 servers. Desktops and laptops were in his home dating back to Radio Shack Model 1s, Amiga, and IBM. He had collected literally tons of books and software over the years. Other interests included Corvettes, car racing, music, astronomy and astro-photography. His favorite scope was his Celestron 8 Edge. He had a Starizona Hyperstar, cameras, filters, filter wheels, and a ZWO strain wave mount. He spent many late nights in his back yard collecting data. He worked at imaging for several years and became quite good at it.

Stephen will be missed but his generosity remains as a legacy that will support the organization that supported one of his passions long into the future.

New Way to Boost Your Support of TAAA

TAAA is now registered with the employer fund-matching platform, **Benevity.com**. If your workplace offers matching charitable donations for non-profits and uses Benevity to distribute funds, you can now designate the Tucson Amateur Astronomy Assn and have your donation matched.

Among the companies in Tucson who will match funds donated to TAAA through Benevity.com are RTX (Raytheon), Amazon, Northrop Grumman, Banner Health, Bank of America and Wells Fargo.

Thank you for supporting the mission of TAAA.



The NVRC is seeking candidates to fill some of our non-elected leadership positions including a **Chair for our Recognitions Committee**, and a volunteer to serve as **Club Publicist**, all subject to final selection by the TAAA President.

Please direct any questions or concerns regarding elected or volunteer positions to the NVRC at nvrcchair@tucsonastronomy.org. Pete Hermes (Chair), Dave Pass, Connor Justice, and Terri Lappin.

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, July 16

Reforma

4340 N Campbell Ave #101
(SE corner of Campbell and River Rd

Preview the menu at: <http://www.reformatucson.com>

RSVP [Susan](#) 520-780-0136

Astronomy Classes (Free!)

by Doug Smith

Using Setting Circles workshop WILL be offered early next year.

I now have TWO telescopes that I can use for this workshop. No date set.

If interested please let me know! Douglas Smith alcor@tucsonastronomy.org 520-396-3233

Astronomical League Workshop Open for Enrollment

Place: Quincie Douglas Library Branch. 1585 E. 36th Street. NW corner of 36th and Campbell.
Date: Saturday, September 19, 2026 **Time:** 10 AM to 1 PM

Synopsis: This workshop is designed for anyone who may be interested in pursuing one of the Astronomical League observing programs for the first time or anyone interested in learning about these observing programs. The workshop will cover how the various observing programs work, program requirements, selection of an appropriate program, recommended equipment, resources, logging requirements, and much more. We will also cover other benefits and services provided by the Astronomical League.

If interested, you can contact the TAAA Astronomical League Correspondent (ALCOR) Douglas Smith at alcor@tucsonastronomy.org 520-396-3233 or sign up using the signup page on the website. There will also be a signup sheet available at the July and August member meetings.

Star Hopping Workshop

Open for enrollment

Place: TIMPA **Date:** Thursday, September 10, 2026 **Time:** 6:00 PM until completed

Synopsis: This is another workshop in the *practical astronomy workshop* series. It will teach Star Hopping. The students will be taught the proper star hopping technique and equipment usage. Each student will use the supplied equipment to locate at least two targets (maybe more if time permits). By the end of the workshop the student will know what equipment to use and how to use it in order to locate targets using star hopping.

If interested contact the instructor, Douglas Smith: alcor@tucsonastronomy.org 520-396-3233

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

Constellation Locating and Identification Workshop

Open for Enrollment

Place: TIMPA **Date:** Thursday, October 8, 2026 **Time:** 6:00 PM until completed

Synopsis: This is another workshop in the *practical astronomy workshop* series. The 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. They will learn how to use a planisphere and star atlas to locate constellations without memorizing the sky.

This program provides the methodology for the observing requirements of the Astronomical League's Constellation Observing Program (Northern and Southern).

If interested contact the instructor, Douglas Smith: alcor@tucsonastronomy.org 520-396-3233

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

Learn how to Record Observations and Sketch Objects Workshop

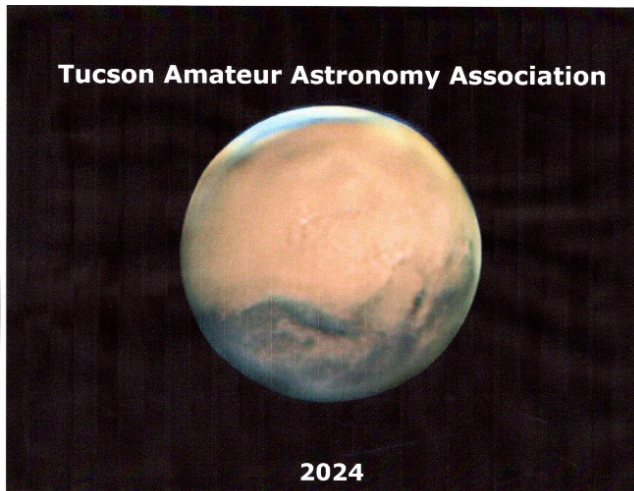
Open For Enrollment

Place: TIMPA **Date:** Thursday, November 12, 2026 **Time:** 6:00 PM until completed

Synopsis: This is another workshop in the *practical hands-on 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 contact the instructor, Douglas Smith: alcor@tucsonastronomy.org 520-396-3233

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



2027 TAAA Wall Calendar

We are looking for your images!

Have you taken some wonderful astro-images or photos of club events that would be great in the TAAA 2027 calendar? Please share them!

We are looking for high-quality file formats. And please include a description. You will be given credit.

Please send your calendar images to [Susan O'Connor](#).

Chiricahua Astronomy Complex (CAC) New Member Observatories



We are planning to build additional remote-capable observatories at CAC similar to those already there and pictured at left and below. We have a core of 12 members that are interested in pursuing this capability and want to determine if additional members are interested. These 12 members plan to join forces for three large 16' x 16' observatories with four piers to split the building cost. A similar concept could be arranged with other members. We can also build smaller observatories with

fewer members joining together. The observatories would be paid for by the member lessees but owned by TAAA. In exchange the members would be given a 10-year lease with TAAA for use of the observatory. In 2023 the cost of the observatories ranged from \$25,000 for the 10x10 to \$45,000 for the 16x16 version. With inflation, it is expected the actual costs in 2026 will be higher.

This project may move quickly. If you are interested, send an email to CAC Director [Jim Knoll](#) and President [Ed Foley](#) as soon as possible. We can then set up a Zoom meeting to discuss the specifics.

Jim Knoll
CAC Director



36th Annual Grand Canyon Star Party – June 2026

By Bernie Sanden (GCSP Coordinator)



Photo by Bernie Sanden

The 36th Annual Grand Canyon Star Party (GCSP) is now astronomical history. As with any astronomy outreach event, the impact to attendees is undoubtedly very positive. Of course, the sheer magnitude of the annual GCSP amplifies this impact over the thousands of interactions during our eight-day/night event. For this reason, it is considered one of the premier (and likely THE premier) public outreach star parties in the country. What started as a small group of friends in 1991 led by Dean Ketelsen has blossomed into the largest annual public star party in the National Park System. This is a legacy to Dean as well as TAAA.

The GCSP was conducted June 6 - 13, 2026 (Saturday to Saturday for 8 nights). Jointly sponsored by the National Park Service and TAAA, Grand Canyon Interpretive Ranger Rader Lane is our coordinating NPS partner. The TAAA Organizing Staff included Bernie Sanden (Coordinator), Gary Wells (Registrar), Mae Smith (Campground Coordinator), Marilyn Unruh (Social Director), and Chuck Schroll (Constellation Tour Coordinator). A huge thanks to Mike Magras for taking over the campground coordination duties Monday thru final Saturday in Mae's absence. Susan Knoll was our Visitor Guide Coordinator with Claire Stover's valuable assistance. Steve Rottas of the Saguaro Astronomy Club and coordinator of the North Rim Grand Canyon Star Party also attended our planning team meetings this year. The North Rim GCSP was canceled due to the devastating Dragon Bravo fire last July resulting in the North Rim contingent being included in our South Rim GCSP. The team met at least monthly via Zoom beginning in January 2026 to plan the event. Registration was opened early March and closed the last day of May. All indications early on were that we were going to have record number of registrants as well as scopes on the observing field. A fully-electronic registration process was in place for the second year running, this time mandatory. Gary made additional improvements such as QR codes for check-in, field status, and hours/contacts reporting. Bernie, Marilyn, and Gary took a trip up to the observing site in early April to map out additional space for the expected increase in scopes.

The first night started off with Grand Canyon Superintendent Ed Keable addressing the volunteers assembled at our 7PM announcement gathering (popsicle party or PP). "Super Ed" shared the Grand Canyon National Park's commitment to dark skies and hosting our annual GCSP. He also shared the excitement our Star Party brings to visitors and Grand Canyon staff while inspiring us to continue sharing our astronomy passions during this valuable annual outreach event. After further announcements from Rader and the organizing team, the volunteers were entertained by (or was it subjected to?) a closing riddle/pun from San Diego Astronomy Association's Dennis Ammann, closing of the PP, and back to the observing field to prepare for

the guests. As with all nights, an astronomy-themed talk was held at 8PM in the Visitor Center Plaza and a telescope donated by Sky Watcher USA was raffled to a youth between 8 and 15 years old following the talk. Sharing the sky with the public occurred from dusk until 11:15PM on the observing field lots. After public viewing, any volunteers wishing to stay and continue observing among themselves were welcome to do so.

Regarding nighttime weather, first the bottom line: The volunteers were able to share night sky wonders on all eight nights. We had no inclement weather that would have forced evacuation of the observing field. However, the first four nights started out very windy but settled soon after, although pesky horizon clouds blocked the rising Milky Way at first. Wednesday night was our best night with clear skies, calm winds, and moderate temperatures. Thursday night was mostly clear although the winds once again picked up. Friday and Saturday had share-able skies although clouds were persistent and required the volunteers to move from object to object as intermittent clearings allowed.

There were two new (and very successful) additions to this years' GCSP:

1. The North Rim contingent added a "Cellphone Night Sky Photography Tutorial" service for guests to receive short lessons on using their cellphones for night sky photography and then practice with furnished tripods.
2. The Grand Canyon Conservancy set up a "Milky Way Photo" area for visitors to have their pictures taken next to the Grand Canyon sign with the rising Milky Way in the background.

Among this year's volunteers were 35 from the TAAA, over 35 from California clubs, four from Washington, Florida, and New Mexico. Also represented were folks from Utah, North Dakota, Oklahoma, Michigan, Ohio, Alaska, Connecticut, Kentucky, Nevada, and one couple all the way from Wales.

This year's t-shirt displayed a design by Vanessa Gressieux and was very well received. Social events throughout the week for the volunteers included a welcoming Pizza Party in the campground the first Sunday with the pizza purchased by TAAA, Pizza/Pasta lunch and a trip to IMAX in Tusayan on Tuesday with a special viewing of a JWST film 'Deep Sky' included as a double-feature, Huevos Rancheros Potluck for breakfast on Thursday (thanks to George Barber), and a final gathering on Saturday at the campground with lunch catered by the Grand Canyon Conservancy.

Here are some numbers as of this writing:

Total registrants checked in and sharing views: 133
Volunteers Reporting their sessions and contacts to date: 109 (82% reporting to date)
Cumulative Hours sharing views to date: 3071
Total Daytime Contacts reported to date: 11,060
Total Nighttime Contacts reported to date: 59,191
Overall Total Contacts reported to date: 70,251

Average Number of Telescopes/Optics on observing field per night: 74 (highest night on Thursday with 90 scopes)

Average visitation from three nights of manual counting: 1233 guests per night. Therefore, extrapolation yields approximately 10,000 total guests over the eight nights.

Just as the interaction with the public is always memorable and a huge side benefit to sharing our astronomy passion, the camaraderie and shared purpose among the volunteers was also a joy to experience. Most everyone met new folks within the volunteer ranks and the cooperation both on and off the observing field was pervasive. Despite as many as 90 telescopes vying for space on the field each night, I heard of no negative incidents. And most importantly, I continued to hear so many positive comments from the guests at our scopes. The Grand Canyon has incredible wonders both below and above, and our annual eight nights under pristine, incredibly dark skies allow guests a peek into the richness of the cosmos above after experiencing the incredible Canyon views below.

Personal note:

I've had the honor and privilege to be a member of the team of TAAA organizers for a second year to help support the 36th Grand Canyon Star Party (GCSP). Although I did not start attending GCSP until 1994, I have seen most of the growth of this event during the three and a half decades of its existence, and the growth has been amazing. Attending last year as a member of the TAAA team of organizers, it was my first glimpse into all that is required behind the scenes for an event of this size to be successful. I want to acknowledge Jim Knoll for his assistance and support during these first few years as coordinator. Our measure of success is more than just the numbers, as large as they were this year. The lasting impressions that we leave on the park visitors/guests, workers, and staff as we share our passion of the night sky is what really counts and is what keeps me and so many GCSP volunteers coming back each year. I've seen and heard of multiple cases in which visitors become visibly emotional after views of planets and deep sky objects through their scopes. For most, it may be the only time they experience detailed views of celestial objects and under the darkest of conditions, spend time learning about the night sky, or enjoy quality time gazing up at the Milky Way and contemplating their place in their home galaxy. More than once, I've heard a visitor mention that our Star Party was more of a highlight to them than gazing into the magnificent Canyon during the day. We are so privileged to have an annual event at one of the darkest locations in the country. I of course thank my fellow TAAA organizers, Grand Canyon Superintendent Ed Keable, Interpretive Park Ranger and Dark Sky promoter Rader Lane, and the Grand Canyon Conservancy for all their support and efforts that allow us access to put on the GCSP within this cherished National Park. Rader Lane works many hours from the Park Service side to ensure the Star Party runs smoothly.

Next year the 37th Annual Grand Canyon Star Party will run from May 29 - June 5, 2027 and all are welcome, either as volunteers or guests.



Observing Lot Setup - by Bernie Sanden



Dave Eicher and Bob Rose (among others) at the GCC potluck.
Photo by Vanessa Gressieux

6/7/2026 20:15 MST



Photo by Bernie Sanden



Milky Way over observing field - Photo by Steve Ratts



Girl looking through Mike Magras' telescope
Photo by Diane Hope
Instagram @inthesoundfield



First night "Popsicle Party" with Rader Lane speaking and Superintendent Ed Keable just behind him.
Photo by Edward Cooper

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

July 10-11

July 17-18

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](#)



Observing Sites' Upcoming Star Party Dates

TIMPA

July 10-11; 17-18

August 7-8; 14-15

September 4-5; 11-12

October 2-3; 9-10

Oct 31-Nov 1; Nov 6-7

December 4-5; 11-12

New Moon

July 14

August 12

September 10

October 10

November 8

December 8

CAC

July 10-11

August 14-15

September 11-12

October 9-10

Oct 3 *Evening Under the Stars*

November 6-7

December 4-5

Chiricahua Astronomy Complex

by Jim Knoll

Upcoming CAC Weekend Dates (Friday - Saturday)

July 10-11 (New Moon July 14)
August 14-15 (New Moon August 12)



During Monsoon (July & August), we will not have guaranteed hosts at the site over the New Moon weekend. But, if the weather cooperates, members that are trained to open and close the site may be present. If you want to attend CAC and are not trained, make a reservation. Conrad Stolarski (Reservations Manager) will let you know if there will be someone there to open/close the site.

As a reminder, you can be trained to operate most of the CAC 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. There are also nearby accommodations.

If you would like to observe, you must make a reservation on the CAC Web page at: [CAC Reservations](#).

Please email CAC Director [Jim Knoll](#) if you have any questions or suggestions for improvement or comments of what is working well.

[CAC on the Web](#)

by Bernie Stinger

July 2026 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 July 2026.**

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 **June 24th. 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

July Event still in need of Volunteers

Sunday – July 19 – Mt. LEMMON

Girl Scouts of Southern Arizona

Location TBD, on Mt. Lemmon

Age/Grade Level: 14 yrs and up.

Participants: 15 - 20

1 Additional Scope Needed

Setup Time: 7:30 pm.

Start Time: 8:00 pm End Time: 9:30 pm

Binocular Group Activities

Here is a cool summer project from Bernie Stinger.



An easy naked-eye eclipsing variable star

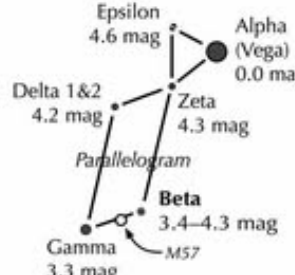
Beta Lyrae

Observing Activity



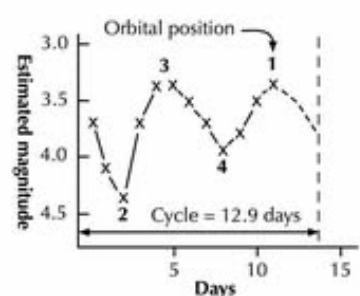
Where is Beta Lyrae in the sky?

- On summer evenings, the bright star Vega shines nearly overhead. (In the fall, Vega lies high in the northwest.) It is the primary star of the small constellation Lyra. (It is also 0.75° wnw of M57, the Ring Nebula.)
- Stretching from Vega's southeast are four dim stars in the shape of a parallelogram.
- Beta Lyrae is the star at the parallelogram's southwest vertex.



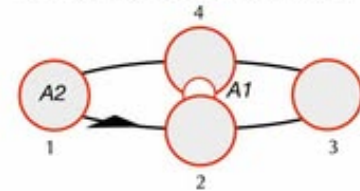
Your Observing Project

- Viewing through binoculars helps greatly.
- Closely examine the brightness of Beta Lyrae each night for up to two weeks. Try not to miss a night. (Yes, weather is always a problem!)
- Determine its estimated magnitude by interpolating the stated magnitudes for Delta, Gamma, and Zeta.
- Construct a graph showing the brightness of Beta over the two week period.



Brightness cycle of Beta Lyrae

Orbit of Beta Lyrae A2 around A1



Day	Orbital position
0.0	1: System at maximum brightness
3.2	2: Dimmer A2 partially transits brighter A1 Deep minimum system brightness
6.4	3: System at maximum brightness again
9.7	4: Brighter A1 eclipses dimmer A2 Secondary minimum
12.9	1: Cycle repeats

Examine the Beta Lyrae reports at the American Association of Variable Star Observers:
app.aavso.org/webobs/results/?star=000-BCD-386&num_results=200

What you are seeing

- Beta Lyrae A consists of two stars, A1 & A2, of unequal brightness and size. They are so tightly separated that a telescope can not split them.
- When the dimmer but larger star, A2, is off to either side of the brighter, A1, the system appears at its maximum brightness of 3.4 magnitude. (Positions 1, 3)
- As the dimmer star orbits in front of the brighter, their total magnitude drops to the deep minimum, because the dimmer star is partially blocking the brighter one. (2)
- Again, when the dimmer star is off to the other side, the system is at maximum brightness. (3)
- When the dimmer star passes behind the brighter one, it is partially blocked causing the system's brightness to reach its secondary (shallow) minimum at 4.3 magnitude. (Position 4)

2405

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Jim Long brought his binoculars to Costa Rica to watch the Venus/Jupiter/moon conjunction. "I was not only in the wrong part of the world, and Venus just scooted right by the crescent, but it's also monsoon season in Costa Rica from June to October, so the sky was completely overcast. I only got to watch in Stellarium." This daytime beach shot ended up as the only binocular photo

Special Interest Groups



Starry Messengers Special Interest Group

Opening Minds to the Universe

The SMSIG is taking a summer hiatus and will next meet on Monday, September 14th. We don't currently have any outreach events scheduled for the rest of the summer, but I'll email the regular SMSIG volunteers should that change.

Astronomy Night last month at the Arizona-Sonora Desert Museum was very successful. In addition to having several telescopes, the SMSIG set up a well-received light pollution demonstration that generated interesting conversations among the visitors.

If you'd like to become involved in astronomy outreach that doesn't require a telescope, check out the Starry Messenger page on the TAAA Members Only website to learn about what we do. After logging into MemberPlanet, click on the "Starry Messenger" link at the bottom of the right-hand menu.

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

Radio Astronomy SIG (RASIG)

by Sandy Nichols

The next RASIG meeting will be **Wednesday, July 15th** at 7:00 pm AZT via Zoom. All TAAA members are welcome to attend. The Zoom link will be posted to the TAAA Forum, or you can obtain it directly by [emailing](#) Sandy Nichols.

Topics: Member projects and observing solar flares.

[Email](#) Sandy Nichols for the Zoom if you do not already have it.

[RASIG on the Web](#)

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, July 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](#)

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

Topics: **Beginners' Corner** - Ask a Question
An Advanced Look at NINA's Advanced Sequencer, Part II - Jeff Rothstein
Image Sharing, Q/A

We will post Zoom details on [the Forum](#) before the meeting.

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](#).

Member Astro-Images



Craig Harding - IC4592 Blue Horsehead; Samyang 135mm, ASI2600MC [Astrobin](#)



Paul Lorenz - NGC 7000, IC 5067 & 5070;
Apertura 75Q quintuplet refractor, ZWO 6200MC Pro,
74 x 4min, 4h 56m.

Allen Force - The Trapezium; [Astrobin](#)





Deb Mohan - C 2118 Witch Head Nebula; [Telescopius](#)

**David
Stearn**

M101
SQA106 and 2600MC PRO [Astrobin](#)



Jeff Rothstein - Markarian's Chain with Ha Bridge

HaLRGB
[Astrobin](#)





**Venus and Jupiter Conjunction
with Mercury**



Richard Spitzer

Moonrise 5/29/2026



M101

28 hours, LRGB and Ha, 14-in Planewave
CDK

[Astrobin](#)

Ed Beshore

M51

39 hours, LRGB and Ha, 14-in Planewave
CDK

[Astrobin](#)





Ed Jacoby

M27

Askar 120 APO, ZWO
2600MC Pro, Antlia Triband
Filter, 100 x180" exposures.

Rik Hill

Comet 10P Tempel 2

10P Tempel 2
2026-06-19-0834 UT
Unistellar eQuinox1
6m exp.
Seeing 8/10



M20

Planewave
CDK 12.5,
ZWO
ASI6200MM,
5.0 hrs,
HaRGB.

[Astrobin](#)



Mike Mulcahy

NGC7027 Redcat 51, ZWO ASI294MM, 16.0 hrs, LRGB. [Astrobin](#)





M16 & M17

Askar SQA 60P pro 60mm f/4.6 Petzval.
2600MC Pro, 2 min subs unguided on
CEM60ec mount. 2.9 hours, no filters.



Tom Eby

Rho Ophiuchus

ZWO 2600MC Pro, CEM60ec mount,
unguided, no filters, 6.2 hours at f/2.2 using
the Rokinon 135mm lens.

Observing Programs - What's Up in July 2026 – August 2026

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

Constellation Hunter Program - The following constellations are well-placed for observing for July and August:

Aquila, Bootes, Corona Borealis, Draco, Hercules, Lyra, Sagitta, Serpens Caput, Serpens Cauda, Ursa Minor, Vulpecula

Messier Observing Program - The following Messier Objects are well-placed for observation during July and August (in ascending RA):

M5, M80, M4, M107, M13, M12, M10, M62, M19, M92, M9, M14, M6, M7, M23

Lunar and Binocular Observing Program

Here is a list of dates for lunar phases in July and August:

New Moon: July 14, August 12	10 days old: July 24, August 22
40 Hours waxing: July 16, August 14	Full (14 days old): July 29, August 28
72 hours waxing: July 17, August 15	Gibbous: July 7, August 5
4 days old: July 18, August 16	72 hours waning: July 11, August 9
7 days old: July 21, August 20	40 hours waning: July 12, August 10

Solar System Observing Program

The following describes the planets and their visibility during July and August:

Mercury is an early morning object from mid-July until late August. It reaches its greatest distance from the Sun on August 3, rising 1.5 hours before sunrise.

Venus is an early evening object during July and August. It sets around 2 hours after sunset. It is growing in size each day, getting brighter and moving towards a crescent phase, reaching its brightest in mid-September.

Mars is still not well placed until the early morning. On July 1 it rises around 2 AM and on August 30 it rises around 1 AM.

Jupiter is visible as an early evening object only during early July. It goes behind the Sun on July 30, becoming an early morning object. By the end of August it is rising about 2 hours before the Sun.

Saturn is becoming better placed for evening observation. On July 1 it rises around midnight. By the end of August it is rising around 8 PM.

Uranus is becoming better positioned for evening viewing while still a late night object. On July 1 it rises around 2:30 AM. On August 31 it rises around 10 PM.

Neptune is becoming better placed for evening observation. It rises around 30 minutes before Saturn during the entire period.

Urban Observing Program

The following **deep sky objects** are well placed for observing during July and August:

M5, M4, M13, NGC 6210, M12, M10, M62, M92, M6, IC 4665, M7.

The following **Double Stars** are well placed for observation during July and August:

Beta Scorpii.

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. We have suggested prices for all equipment and telescopes but prices are negotiable!

All the listed telescopes come with eyepieces, finders and other accessories.



**Dobsonians – We have 2 large dobs
Homemade 13” and 12” Skywatcher**



Celestron 6 w/ NexStar
This is a great starter scope!



**Meade 5” ETX Maksutov
with AutoStar**
There are two of these.



Celestron 11 with NexStar



Meade 10” LX200 w/ AutoStar



Celestron 8s with NexStar
We have two C8's.



Maksutov Optical Tubes



25x100 Binoculars in case

TAAA Astronomy Equipment For Sale (continued)



Celestron 5"
Omni XLT



We have numerous **tripods**.



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

Adjustable
Observing
Chair



We also have an assortment of other items available at this time including: finders (various sizes), finder rings, 7x50 binoculars, 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.

If interested in purchasing any of the listed telescopes, contact Douglas Smith at dsmith217@cox.net to discuss included accessories and pricing.

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 brief. A small photo or two may be submitted. 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!

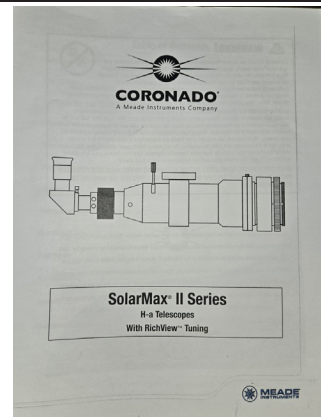
Solar Telescope For Sale

SolarMax II 90 Double Stack

Comes with:

- Precision RichView Tuning System
- <.5A Bandwidth
- 15mm Blocking Filter
- 800mm Focal Length, 90mm f/8.8 Refractor
- Includes Cemax Eyepieces, Travel Case, Sol Ranger Finder
- Clamshell mounting ring
- Original manual

Price: \$3,000 (or best reasonable offer)
Local pickup ONLY



Contact: Joe Gianninoto 520-908-3393 or [email](#)

June Crossword Puzzle - Noteworthy people in Astronomy History

Answers

K
 E
 COPERNICUS
 L
 E P
 ERA TOST HENES
 O U L O
 H A L E B O
 E B R
 M L EAVITT
 Y F

Skyward

By Dr. David H. Levy
July 2026

Mozart's Jupiter Symphony Number 41

Some 238 years ago in 1788, Wolfgang Mozart composed his last Symphony. A friend and colleague, Johann Peter Salomon (1745 – 1815), a German violinist and composer, reputedly named Mozart's Symphony No. 41 after Jupiter. It is also probable that Johann Cramer, a London music publisher, thought of Jupiter as well, perhaps linking the power of the opening chord to Jupiter's thunderbolts. Cramer was not thinking of Jupiter in the sky as much as the astrological Jupiter, portrayed by Shakespeare in *Cymbeline*.

Shakespeare was alive and well in January 1610 when Galileo discovered the four largest moons of Jupiter. Shakespeare was a contemporary of Galileo, both having been born in 1564 just two months apart. And Shakespeare was well into writing *Cymbeline*, and he completed the play in the same year that Galileo made his Jupiter discoveries:

O learned indeed were that astronomer
That knew the stars as I his characters;
He'd lay the future open. (*Cymbeline* 3.2.37-39)

Traditionally, "that astronomer" is interpreted as a judicial astrologer, but those particular lines could be read differently. Could Posthumus's daughter Imogen, who spoke these lines, be looking at someone who is simply watching the sky? The future he lays open is not an astrological prediction. Instead, Imogen imagines a watcher of the sky who, like Galileo, knew the stars. If this was Shakespeare's intention, then it may be his reaction to Galileo, whose discoveries of four moons of Jupiter earlier that same year appear as the ghosts preceding Jupiter in Posthumus's dream. Four apparitions - Posthumus's father Leonatus, his mother, and his two brothers - Guiderius and Arviragus, descend and surround him as he sleeps.

As the dream goes forward, Jupiter himself descends, accompanied by his legendary thunder, and the ghosts then fall on their knees. Paisano, a servant to Posthumus, links the four apparitions that precede Jupiter to the four moons that Galileo has discovered using his telescope, but Jupiter's actual descent is accompanied by an indefinite number of ghosts.

The four apparitions appear at the start of Posthumus's dream. Jupiter does descend accompanied by an eagle and an undetermined number of additional ghosts. Could these ghosts represent still undiscovered moons? In either case it is exciting to find Shakespeare possibly responding to Galileo in this positive way. Jupiter lays a tablet on the sleeping Posthumus, who awakes soon after to find that it is actually a book, which is likely Galileo's seminal *Siderius Nuncius*. Similarly at the end of *The Tempest* Miranda, now also the name of a Uranian moon, speaks of new ideas and new philosophies:

O wonder!
How many goodly creatures are there here!
How beauteous mankind is! Oh brave new world
That hath such people in't! (*Tempest* 5.1.183-186)

We now leap to 1994 and the impact of Comet Shoemaker-Levy 9 with Jupiter. At the time I was working with George Cruz, then with the Nature Company. My book *Skywatching* had been released that April, and George had organized a massive series of book signings at Nature Company stores across the United States. By far the biggest one was at the store in Washington, which took place during impact week. Carolyn Shoemaker accompanied me to this location. So did more than a thousand people, who formed a line that stretched through the store and around the block. I shall never forget Carolyn's quip: "Are all your book signings this crowded?"

At this store and at all the other stores, background music was playing, and it was always Mozart's Jupiter symphony. The music became a part of me.

As I have written before, Jupiter is my favorite planet because it is the first thing I ever looked at through a telescope, and it remains so because...

The fabulous music of the Jupiter Symphony is a part of my memory from that propitious time. It strikes my heart like church bells. Jupiter's thunderbolts do not sound loudly, but as the planet glows majestically in the northwestern sky these nights, it pierces the core of my being and my life, and it continues to entrance my soul.



A faint Perseid meteor falls near Jupiter in the sky on 13 August 2023.
Photograph by Doveed.

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.

