

# TUCSON AMATEUR ASTRONOMY ASSOCIATION

Observing Our  
MONTHLY EVENTS BULLETIN  
Since



Desert Skies

1954

WWW.TUCSONASTRONOMY.ORG

December 2023

[www.tucsonastronomy.org](http://www.tucsonastronomy.org)

## Membership Meeting

December 1 @ 6:30 pm - 9:00 pm

TAAA's next general member meeting will be held on **Friday, December 1, 2023**. 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 online at the TAAA [Facebook](#) page.

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### Main Presentation at 6:30PM AZT

**Title: Researching Dark Matter and Dark Energy with the Euclid Space Telescope**

**Presentation:** On July 1st, the Euclid space mission launched from Cape Canaveral on a Falcon 9 rocket. Euclid is the first space telescope designed to study the still-mysterious accelerated expansion of the Universe. A broad community of scientists from around the world eagerly anticipates the insights Euclid will ultimately yield on the nature of that acceleration, and the dark energy that presumably powers it. In his talk, Dr. Eric Huff will discuss the recent public release of the first science images, and explain how the Euclid mission will go about making measurements of dark energy and dark matter over the next few years.

**Biography:** Dr. Eric Huff was raised in Bullhead City, Arizona, and followed an early passion for physics to college in Tucson and a PhD at Berkeley. He's done original work on a variety of topics, ranging from observational cosmology to tidal modeling of surface features

on Jovian moons. Dr Huff is currently a Staff Scientist at the Jet Propulsion Lab and will be giving his presentation remotely.



One of Euclid's first images: the Perseus cluster of galaxies

[David Rossetter](#) – Editor  
Ken Bertschy - Graphics  
Terri Lappin & Jim Knoll - Proofreading  
Gregg Ruppel -Image Editor

### November 2023

November was a fun and productive month. Of course, we had the first Open House at the Chiricahua Astronomy Complex since the dedication of the Reynolds Mitchell Observatory that was completed in 2017. The November 11, 2023, dedication of the Gateway to the Galaxy (GTTG) classroom and sleeping room buildings was very well attended and a great success. More information about the event follows later in this newsletter. (As was noted by many attendees, a number of projects in addition to the GTTG buildings had also been completed including such items as part of Kalas Loop Road, additional parking, electrical vehicle charging stations, updating of the campground surfacing, member observatories, enlarging of the RV area, the Stinger telescope area, expansion of Internet and additional signage.)

The completion of the GTTG project and all others was, of course, due both to generous financial donors and to generous donations of hours and hours of effort and time by too many TAAA members to count. As a result of those forces' combined efforts, we have an even more beautiful and functional complex with which to pursue astronomy and astronomy education. Thank you for your phenomenal generosity!!! We hope that the developed portion of CAC that we presently have continues to be adapted to serve the public and assist members in astronomy experiences and learning for the next 100 years!!!

On a different topic, the TAAA Board held two meetings in November. Some highlights of the regular November 8, 2023, Board meeting included:

- A CAC update indicating lessees are moving into their Member Observatories; fund-raising is continuing for the 32" scope; the process toward sale of the Ash Dome has begun; temporary insurance for 32" is being pursued.
- Jim O'Connor has been appointed to Chair the Volunteer Recognition Committee and several members have agreed to serve.
- Ben Bailey, John Mead, and Suzanne Bailey have been appointed to draft a possible new agreement with TIMPA.
- Outside candidates to be considered for appointment to lead the TAAA strategic planning effort have been vetted and one has been appointed.

**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 [Mae Smith](mailto:Mae.Smith@tucsonastronomy.org) to receive a Zoom link for that meeting. Please send your email to Mae 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 Mae Smith*

- Evaluation of MemberPlanet is continuing and David Rossetter has been asked to explore a possible relationship with Club Express to replace MemberPlanet and pursue further learning about the Club Express Program. TAAA will request a tour of the Club Express product and, as appropriate, develop a transition plan.
- Should TAAA decide to transition to another member management program, all TAAA data will be saved, including questionnaires currently in Member Planet
- A TAAA Holiday Party date of December 9th at the Foley residence was established.

Additionally, the TAAA Board met in a special session with Ben Bailey and John Mead. Prior to the meeting all prior documents related to relationships with TIMPA were collected and as much information as we could glean was pulled together regarding TAAA TIMPA history, including long-term and recent communications with the City and County. The TIMPA16 Project was approved to continue. Three people in attendance at the meeting were appointed to work together to draft a possible proposal for a TAAA-TIMPA agreement to be reviewed in the future by the TAAA Board.

**President: Mae Smith**  
[president@tucsonastronomy.org](mailto:president@tucsonastronomy.org)

#### Other Elected Leader Contact Information:

Vice-President: Ed Foley  
[vice-president@tucsonastronomy.org](mailto:vice-president@tucsonastronomy.org)

Secretary: Bob Reynolds  
[secretary@tucsonastronomy.org](mailto:secretary@tucsonastronomy.org)

Treasurer: Barbara Whitehead  
[treasurer@tucsonastronomy.org](mailto:treasurer@tucsonastronomy.org)

BOD Members-At-Large:  
Suzanne Bailey, [mal1@tucsonastronomy.org](mailto:mal1@tucsonastronomy.org)  
David Rossetter, [mal2@tucsonastronomy.org](mailto:mal2@tucsonastronomy.org)  
John Kalas, [mal3@tucsonastronomy.org](mailto:mal3@tucsonastronomy.org)

TAAA Board: [taaabod@tucsonastronomy.org](mailto:taaabod@tucsonastronomy.org)



## NEW SERVICE AVAILABLE AT TIMPA!!



### TIMPA AMBASSADOR

We are pleased to announce that, starting in December 2023, we will now have a 'TIMPA AMBASSADOR' on site at TIMPA during the first regularly scheduled TIMPA night of each month (for December that is December 8). This person will be present for the sole purpose of answering any questions related to astronomy and to assist with any equipment issues for any member who needs help with their equipment. Any member who wishes to take advantage of this service should contact us using the information below to let us know when you will be arriving at TIMPA. If you will be bringing equipment and wish to reserve a pad please use the standard TIMPA reservation system.

Douglas Smith; Phone: 520-396-3233; [e-mail](#)



The Nomination and Volunteer Resource Committee (NVRC) **will be conducting a hybrid special election at the December member meeting to elect a candidate to the NVRC** (a vacancy that went unfilled at our most recent leadership election last May). The election will fill a vacancy on the committee, which will run through May of 2025.

The NVRC is also **seeking potential candidates for TIMPA Director** for presentation to the TAAA President for selection. The following is a summary of the position description for this vital volunteer within TAAA:

*The TIMPA Director is responsible for supervision and management of the facility and for initiating, managing, and working with other TAAA persons in site program activities. The Director coordinates events at the site, ensures appropriate opening and closing of the site and site/facility management, supervises TAAA property/equipment on the site (except barn storage), and approves all dates of site usage for any TAAA-related events/activities.*

The Director supervises the Facilities Caretaker in day to day management and care of the facilities as well as appropriate access to facilities and in key card usage. The Director reports directly to the TAAA TIMPA Board Representative/Planning Committee Organizer. The TIMPA Director is responsible for following the guidance and direction of the TAAA TIMPA Board Representative in any interface with the Tucson International Modelplex Park Association and in significant questions/issues regarding site or volunteer management.

Please contact the NVRC Chair, Pete Hermes, at [nvrcchair@tucsonastronomy.org](mailto:nvrcchair@tucsonastronomy.org) for the full description and additional information if interested or you have questions pertaining to this position.

Finally, the NVRC encourages **all members to update their Member Planet profile** particularly with respect to volunteer positions or activities they may be interested or seek to participate in.

## **Practical Astronomy Workshop 2**

### **Constellation Locating and Identification**

Open for enrollment

Place: TIMPA; Date: Tuesday, December 05, 2023; Time: 6:30 PM until completed

Synopsis: This is the second workshop in the practical astronomy workshop series. It will teach how to locate and identify constellations. 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. Students will learn how to use a planisphere and star atlas to locate constellations. This program provides the methodology for the observing requirements of the Astronomical League's Constellation Observing Program (Northern and Southern).

If interested, you can contact the instructor, Douglas Smith: Phone: 520-396-3233, [Email](#)

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

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## **Practical Astronomy Workshop 3**

### **Sketching and Logging**

Open for enrollment

Place: TIMPA; Date: Thursday, February 1, 2023; Time: 6:30 PM until completed

Synopsis: This is the third workshop in the practical astronomy workshop series. It will teach students how to sketch objects and how to properly record observations (logging). 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 student will view several different types of objects and perform logging techniques and sketch different objects.

If interested, you can contact the instructor, Douglas Smith: 520-396-3233, [Email](#)

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

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## **Fundamentals of Astronomy Class**

Open for enrollment

Place: Armory Park Center, 220 S. 5th Ave, Tucson

Date: Three consecutive Saturdays: February 24, March 2, March 9, 2024; Time: 9 AM to 4 PM each day

Synopsis: This class covers all the basic topics 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 telescope for the first time. 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 there is sufficient interest the class may be offered again in the fall/winter 2024 time frame.

Contact Instructor – Douglas Smith; Phone: 520-396-3233, [E-mail](#), or sign up using the sign-up sheet available at all General Members meetings starting October 2023 through February, 2023



# Solar Filter Workshop Announcement

With the upcoming Total Solar Eclipse in April 2024, AFSIG will be hosting a workshop to build your own solar filter. The filters are purpose built to your camera lens, telescope, or binoculars, and you can choose from one of two films for the filter: Seymour (which produces an orange sun) or Baader film (which produces a whitish sun).

The workshop is tentatively planned for Saturday, January 13th in Tucson so you can have the filters ready for the April Total Solar Eclipse. We are increasing the maximum size of allowed equipment to 6 inches/ 152mm since we have plenty of left over material. If you are interested in attending this workshop please email: [fundamentals@tucsonastronomy.org](mailto:fundamentals@tucsonastronomy.org) with the following information by December 15th, 2023:

- Your Name
- The aperture size of the camera lens, binocular, or telescope you would like to build a filter for.

## Common Questions

Will I have to be a club member to participate?

Yes, you will need to be a member. The workshop will not be open to non-members.

How much will the filters cost?

\$15 per filter, maximum 4 per person

When will I have to pay?

The fee will be due at the time of the workshop. Payment method TBD.

Will I need to buy 2 filters if I am making them for binoculars?

For safety reasons this is strongly encouraged, but you can choose to build only one filter but will have to leave a lens cap on the non-filtered lens to prevent eye injury.

Can I get one each of Baader and Seymour film?

Yes

Is there a limit on the size of the filter?

Please limit the aperture size of your optics to 6 inches / 150mm to ensure we have enough material for both workshops.

Also, please ensure binoculars are 40mm or larger. Any smaller than this and the filter may be too large to fit.

My telescope/binocular/lens is XX mm in size, will I be able to see sunspots with it?

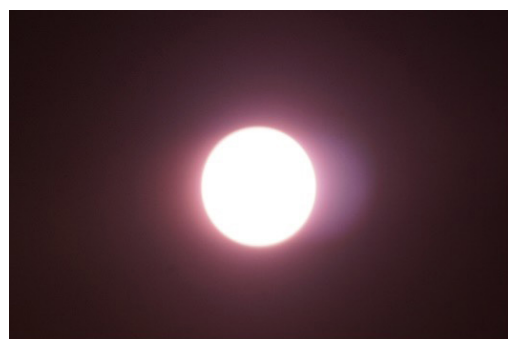
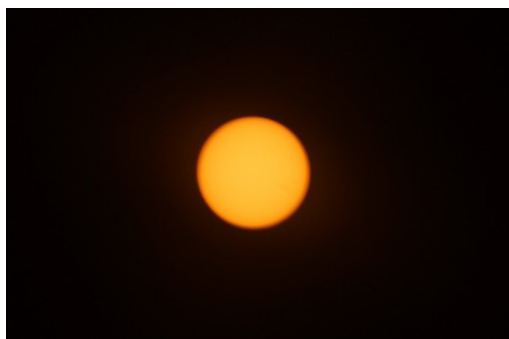
A member attending the workshop we held in August was able to see sunspots with a 40x9 pair of binoculars

What does Seymour film make the Sun look like?

What does Baader film make the Sun look like?



Baader Film on the lower right and Seymour film on a 63mm lens on the left.

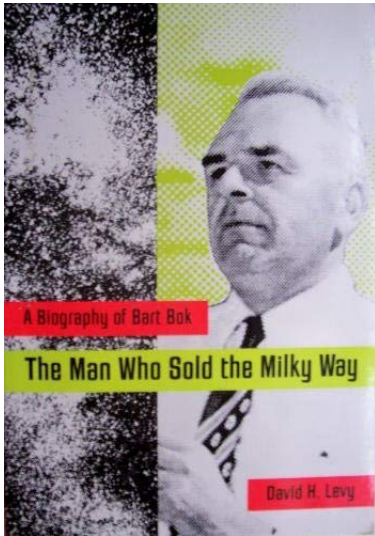


## Book Of The Month Review

Douglas Smith (TAAA Librarian)

Book: *The Man Who Sold the Milky Way (A Biography of Bart Bok)*

Author: David Levy



This a wonderful book to read. David Levy draws on his personal knowledge and over 50 interviews with Bok over a two year period just before Bok's death to put together this biography of an extremely important astronomer in the study of the Milky Way galaxy. David does a superb job in describing Bart's dedication to the field, his unending efforts to educate people about the Milky Way, and his devotion to his wife Priscilla. David includes a wonderful chapter about how Bart dealt with his wife's final illness. David also delves into the troubles with McCarthy in the 50's and Bart's departure from Harvard.

For anyone interested in the person the TAAA's Bok award is named after, this is a great book to read.

This book is currently out of print but can be found on line for between \$20 and \$30.

## TAAA 2024 Calendar



The 2024 TAAA Calendar will be available for sale at the general meetings starting in October. The cost is \$15 per calendar. Please contact Susan OConnor to make alternate arrangements. [Email](#); 520-780-0136

## School/Public Star Party Requests

by **Bernie Stinger**

Thank you for volunteering your time and talents for our extremely important outreach mission. **Below is the list for December, 2023.** December is busy with a number of school star parties as well as several public events at State, County & National Parks, & Monuments in the area.

Please let me know via [email](#) if you are interested in volunteering for any of the events listed below. First come – first served. 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](http://tucsonastronomy.org)) and Night Sky Network (NSN) ([nightsky.jpl.nasa.gov](http://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 those events and get a notification when I update the event. Again, this is only for PUBLIC star parties listed on Facebook.

The requests have been updated as of November 26th. **\*Stared events and bolded telescope references** still have need for volunteers.

If you can help out please contact me at: [astronomy-events@tucsonastronomy.org](mailto:astronomy-events@tucsonastronomy.org)

### Friday – December 1 – FAR EAST TUCSON

#### Dunham Elementary School

9850 E. 29th Street

Age/Grade Level: K – 5; # Participants: 100

0 scopes needed – filled

**Setup Time:** 5:30 pm. Start: 6:00 End: 7:00

Nearest Moon Phase: 3<sup>rd</sup> Quarter

**Directions:** Old Spanish Trail east to 29<sup>th</sup> St. Go west on 29<sup>th</sup> one block. School is on the left (South).

**Viewing Location:** Behind the school on the southeast side.

### Saturday – December 2 – NORTH TUCSON – Solar viewing

#### Hendricks Elementary School

3400 W Orange Grove Rd

Age/Grade Level: K – 6; # Participants: 200

0 scopes needed (*filled*)

**Setup Time:** 9:30am Start: 10:00am End: 12 Noon

Nearest Moon Phase: NA

**Directions:** Intersection of Orange Grove Rd and N Camino De La Tierra, just east of River.

**Viewing Location:** Back of playground.

**Additional Activity:** Toolkit has also been requested.

### Tuesday – December 5 – NORTH TUCSON

#### Lulu Walker Elementary

1750 W Rollercoaster Road

Age/Grade Level: K – 5; # Participants: 100

0 scopes needed – filled

**Setup Time:** 5:30pm Start: 6:00pm End: 8:00 pm

Nearest Moon Phase: 3<sup>rd</sup> Quarter

**Directions:** ¼ mile west on Roller Coaster Rd from intersection of Roller Coaster Rd and La Canada.

**Viewing Location:** In the courtyard of the school campus or on the grassy field

**Additional Activity:** Toolkit has also been requested.

### Thursday – December 7 -- NORTH TUCSON

#### Amphitheater Middle School

315 E Prince Road

Age/Grade Level: 6 – 8 Grade; # Participants: 100

0 scopes needed (*filled*)

**Setup Time:** 5:30pm Start: 6:00pm End: 7:00 pm.

Nearest Moon Phase: 3<sup>rd</sup> Quarter

**Directions:** From Stone & Prince go east on Prince ¼ mile. The school is on the left (North) side.

**Viewing Location:** Basketball courts



## School/Public Star Party Requests - Continued

### Thursday – December 7 – NORTH TUCSON

#### Tohono Chul Park

7366 N Paseo Del Norte

Age/Grade Level: Adults; # Participants: 200+  
0 scopes needed – filled

**Setup Time:** 5:30pm Start: 6:00pm End: 7:30 pm.

Nearest Moon Phase: 3<sup>rd</sup> Quarter

**Directions:** Driving West on Ina, cross Oracle and continue to Paseo del Norte. Turn right (North) onto Paseo del Norte. The entrance gate to Tohono Chul is on the right.

**Viewing Location:** Garden called The Overlook.

### Friday – December 8 -- EAST TUCSON

#### Saguaro National Park EAST

Saguaro EAST is located at 3693 S Old Spanish Tr

Age Group: All Ages; Est. # Participants: 75 – 100  
0 scopes needed – filled

**Setup Time:** 5:30 pm Start: 6:00pm End: 8:00 pm

Nearest Moon Phase: 3<sup>rd</sup> Quarter

**Directions:** I-10 Exit 275. North on Houghton for ~8 miles to Escalante. East on Escalante for 2 miles to Old Spanish Trail. N on Old Spanish for .3 miles to Park entrance. ALTERNATE: Houghton/22nd St. south on Houghton to Old Spanish Trail. East (left) on Old Spanish Trail 2.8 miles to entrance.

**Viewing Location:** Admin/HR parking area. After entering park, make first right and proceed to end at the HR/Admin area parking lot. Do not take the loop road thru the park!

### Saturday – December 9 FAR WEST TUCSON

#### Tucson Mountain Park – Ironwood Picnic Area

7300 W Hal Gras Road

Age/Grade Level: All Ages; # Participants: 70  
0 scopes needed – filled

**Setup Time:** 5:30pm Start: 6:00pm End: 8:00 pm

Nearest Moon Phase: New Moon

**Directions:** On Kinney Road, 1.5 miles south of Gates Pass Road or 3.8 miles north of Ajo Way.

**Viewing Location:** Right side of road (parking pullout) near the 2nd restroom facilities (right side of road) at the Ironwood Picnic area (~3/4 of way into picnic area or approximately .6 miles

### \*Saturday – December 9 — ORACLE, AZ

#### Oracle State Park

3820 E Wildlife Dr, Oracle AZ

Age/Grade Level: All Ages; # Participants: 150–200

**1 Scope needed**

**Setup Time:** 5:30pm Start: 6:00pm End: 8:00pm

Nearest Moon Phase: New Moon

**Directions:** Highway 77 (Oracle Road) north from Tucson. Follow signs to Oracle State Park. Tell gate attendant you are an astronomer for the event.

**Viewing Location:** Sidewalk to the Kannally Ranch House from the parking lot, near the bathrooms. Some manual movement of equipment may be required to access. Bring cart if have one.

**Theme:** Ugly Sweater Star Party

### Saturday – December 9-- FAR WEST TUCSON

#### Redhills Visitor Center @ Saguaro National Park -- WEST.

2700 N Kinney Rd.

Age/Grade Level: All Ages; # Participants: 100?

**0 scopes needed – Event cancelled**

**Setup Time:** 5:30pm Start: 6:00pm End: 8:00pm

Nearest Moon Phase: New Moon

**Directions:** Connect to Kinney Road either by way of Ajo Way or over Gates Pass. Go north on Kinney Road, continuing north from Gates Pass Road. Continue past the Arizona–Sonora Desert Museum. Kinney road forks with the left fork becoming Mile Wide and the right fork making a sharp turn into Saguaro National Park. Continue into Park until reach the Red Hills Visitor's Center.

**Viewing Location:** Sidewalk along the visitor center/parking lot.

## School/Public Star Party Requests - Continued

### Saturday – December 9 – Roosevelt AZ

#### Tonto National Monument

26260 N AZ Hwy 188

Age/Grade Level: All Ages; # Participants: 130

0 Scopes Needed (*Filled: Stinger/Knoll*)

**Setup Time:** 5:00pm Start: 5:30–6:00pm End: 9:00

Nearest Moon Phase: New Moon

**Directions:** Hwy 77 north to Globe AZ, then Hwy 188 north towards Roosevelt. Tonto NM is about 2 miles before Roosevelt on left (west) of Hwy 188.

**Viewing Location:** Amphitheater off main parking lot

### Wednesday – December 13 -- WEST TUCSON

#### Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: Grade 5; # Participants: 46

0 scopes needed (*filled*)

**Setup Time:** 6:30pm Start: 7:00pm End: 8:30 pm.

Nearest Moon Phase: New Moon

**Directions:** West on Grant Rd, becomes Silverbell, becomes Ironwood Hills Drive which dead-ends at Camino De Oeste. Turn south. ALTERNATE: West on Speedway west of I-10. North on Camino De Oeste. Both paths: Turn west on Trails End Road and follow signs to "Cooper Center".

**Viewing Location:** Open area near restroom facilities. Access the site from the dirt road at the east end of the main parking lot (near the dumpsters).

### Thursday – December 14 – NORTH TUCSON

#### Rio Vista Elementary School

1351 E. Limberlost Dr.

Age/Grade Level: K – 5; # Participants: 100

0 scopes needed (*filled*)

**Setup Time:** 5:30 pm Start: 6:00pm End: 7:30pm

Nearest Moon Phase: New Moon

**Directions:** From N 1<sup>st</sup> Ave. and Limberlost head east on Limberlost, we are at the four way stop at Limberlost and Mountain.

**Viewing Location:** Field behind (North) of the school.

### \* Thursday – December 14 – SOUTH TUCSON

#### Borton Magnet Elementary School

700 E 22nd Street

Age/Grade Level: K – 5th Grade; # Participants: 150

**2 Additional Scopes Needed**

**Setup Time:** 5:30pm Start: 6:00 pm End: 7:30 pm.

Nearest Moon Phase: New Moon

**Directions:** 1 block west from the S Park Ave and E 22nd Street intersection on South side of 22<sup>nd</sup> St.

**Viewing Location:** Outdoor playground, located on the south side of the school.

### \* Thursday – December 14 – Three Points, AZ

#### Altar Valley Middle School

#### Robles Elementary School

~~16350 W. Ajo Way~~ 9875 S Sasabe Rd

Age/Grade Level: K–8th Grade; # Participants: 100+

**1 Additional Scope Needed**

**Setup Time:** 5:30pm Start: 6:00pm End: 7:00 pm.

Nearest Moon Phase: New Moon

**Directions:** ~~Opposite the intersection of Ajo Way (SR 86) & Sasabe Rd. (SR 286), on north side of Ajo Hwy.~~ TBD

**Viewing Location:** Just west of our campus gymnasium

**Additional Activity:** Toolkit has also been requested.

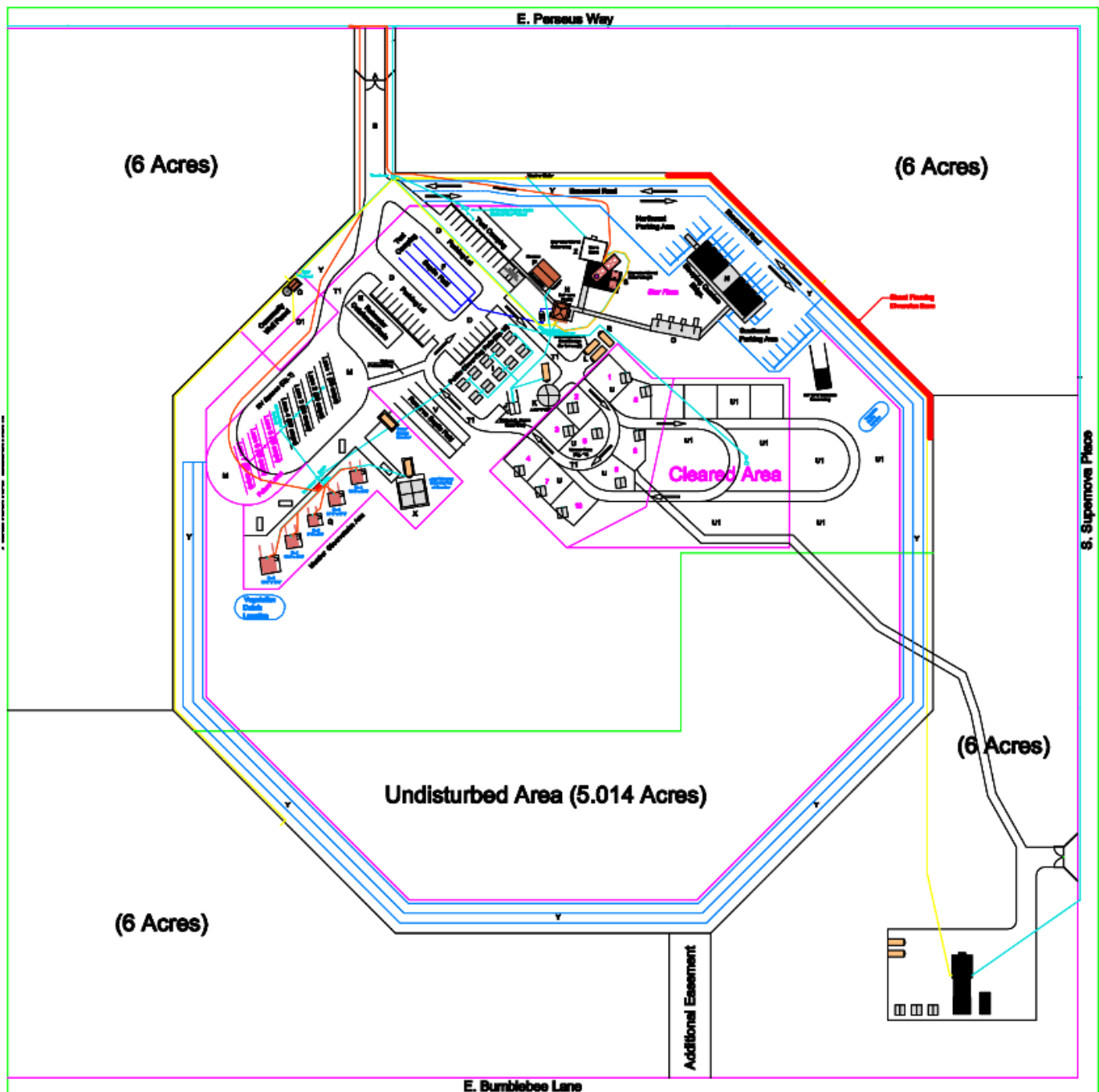


## Tucson Stargazing Adventures (TSA)

Interested in doing Astronomy Outreach and help raise funding for TAAA and CAC? We can use additional members to help with the TSA program. Provided you are familiar with your equipment and the night sky, and have experience doing astronomy outreach, we could use your help. Please contact [Jim Knoll](#) for help getting started. Thanks!

# CAC....Past, Present & Future

At the recent CAC open house celebrating the completion of the newest facilities, a presentation highlighted the past, present and future strategic plan for CAC. This talk started with a review of over \$1 million of CAC facility and infrastructure developments since 2015 and outlined the additional, ongoing projects that are anticipated to be complete by mid-year 2024. These later projects include the expansion of the RV parking from 4 to 7 spots and the installation of the new DFM 32" telescope. These will follow the recent completion of the dormitories, classroom, Stinger Pad telescopes, EV charging stations and Member Observatories.





It was noted that the next strategic focus will be on site use programs (such as high school Astronomy Camps, NASA Grant Students, Evenings Under the Stars, etc.) and recruiting new project leaders and volunteers. However, following closely will be discussions of how the remaining half of the CAC acreage could be developed. Some of the most likely new projects could include: completion of the Kalas Loop Road around the facility, expansion of the member pads, and initial planning for a caretaker cottage. It was also noted that much of the development to date and these additional projects were envisioned in the early CAC site master plans. This was truly an example of excellent planning!

Longer term ideas for CAC were also covered. They include projects such as: development of the Star Plaza, expansion of utilities (esp. electric and septic), and partnerships with local community colleges, U of Arizona, or other institutions. There was also a brief description of what a model solar system might look like if it was centered on CAC. For example, if the model sun was 30 inches in diameter, the earth would about 1/8<sup>th</sup> of inch in diameter, and Pluto would be about 2 miles away at the DreamCatcher B&B! The nearest star would be 190,000 miles away!

With all the progress to date coupled with all the ideas for the future, it was clear that TAAA needs member involvement. To that end, we noted that TAAA needs enthusiasm, energy, and vision to fulfill its community and member commitments. Please consider sharing your expertise and time with TAAA! In addition, TAAA has project funding opportunities and an endowment that welcome your donations! Also, if you're thinking of land in southeast Arizona, please consider opportunities in the area around CAC. TAAA and CAC would be excited to have Astro neighbors!!

## ***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 restaurant for fellowship and conversation.

The Ladies' Night Out is taking the month of December off.  
See you in January!

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

# 32 Inch Eye on the Galaxy Project

The effort of building the roll off roof observatory for the research grade DFM 32 Inch Cassegrain telescope we received earlier in the year, now includes a local structural engineering firm. The firm, located in Cochise county, will be preparing the stamped drawings we will use to solicit contractors to build the building, and which can be submitted to Cochise County for our permit to build in January. Our TAAA 32 inch construction committee will be working closely with them over the next few weeks to complete the final design drawings.

On the fundraising front, we are doing well toward our \$75,000 goal. This amount will be required to clear the ground, provide the utilities, pay for the permit, hire the building contractor and other misc. amounts to complete the project. To date, we have pledges through November totaling \$42,480.

For December we have received a very special \$10,000 matching pledge. For any donations received from Dec 1 to December 31, our donors will match those gifts up to \$10,000 – doubling the value of gifts received before the end of the year. These gifts could bring us up over \$62,000 toward our goal!



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## 2024 TAAA Astronomy Camps

A TAAA Astronomy Camp committee has been working actively to reignite our overnight observing program for high school students. Prior to the pandemic, TAAA regularly hosted students at our CAC dark site for programs of observing and study developed jointly with the teacher organizing their visit. Working with our veteran Camp volunteers for guidance, the Camp committee has renewed the programs to now include the classroom, sleeping facilities, and the three Stinger Pad telescopes at CAC to enhance the program.

The committee has been in contact with high schools which we have done star parties for this year to explore their interest in the Astronomy Camps. Four schools have expressed interest in the Camp program, and we are working with two high schools to find dates that will work with the CAC calendar of events.

If a member knows of a teacher who may be interested, they can contact Ed Foley, Astronomy Camp Director at [AstronomyCampDirector@tucsonastronomy.org](mailto:AstronomyCampDirector@tucsonastronomy.org).



# CHIRICAHUA ASTRONOMY COMPLEX (CAC) *by Jim Knoll*



Our very own Chiricahua Astronomy Complex is evolving into a World Class site. We have developed quite a bit of the site with observatories, observing pads, a learning center with classroom, accommodations, and lots more! If you have not been to CAC lately, you should come for some observing through your own telescope or through one of the club's fantastic telescopes. Normally, the large telescopes are operating during a member New Moon Saturday.

Thank you to our generous members contributing so far!! But, we could still use your help. With all this development comes increased maintenance. In the past, we have contracted to have this done, costing the club money that is not recouped. We have reached the point that a tractor is needed to get the job done more efficiently with a container similar to what we currently have at CAC to safely store it out of the weather. A great way to donate is through an IRA direct rollover, potentially saving you a tax liability. We can also use direct donations. For any amount over \$250, we will list your contribution on a plaque on the container, probably using four categories (over \$5,000, \$2,500-\$4,999, \$1,000-\$2,499, and \$250-\$999). If you can help, please donate either by direct rollover, check, or through the website online process. **Make sure you annotate it is for the CAC Tractor.**



Here is a rundown of estimated costs:

Tractor: \$27,000

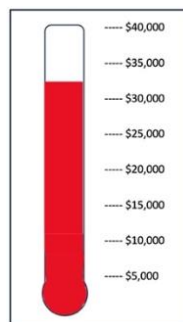
Box Blade: \$2,000

Sprayer: \$2,000

Container: \$9,000

Total: \$40,000

**Raised so far: \$32,000**



We appreciate your consideration to help us fulfill this extremely important project!! For any questions, email Jim Knoll at [cac-director@tucsonastronomy.org](mailto:cac-director@tucsonastronomy.org).

-- For a Direct Rollover, email the Treasurer for any procedures at [treasurer@tucsonastronomy.org](mailto:treasurer@tucsonastronomy.org).

-- To donate by check. Mail to Tucson Amateur Astronomy Association, PO Box 41254, Tucson, AZ 85717.

-- To donate online: Go to the TAAA website at <https://tucsonastronomy.org> and select the donate button.



# Chiricahua Astronomy Complex Open House

We celebrated the completion of several projects with an Open House at the Chiricahua Astronomy Complex (CAC) on Saturday November 11, 2023. What a great event and the weather was perfect. The gate was opened at 3pm and attendees started arriving shortly thereafter. We had a steady stream throughout the event. Over 150 signed up and 124 ended up on site,



the largest group/event yet for CAC. TAAA chartered a bus for those who did not want to drive with 26 on the bus and 98 that drove. The event kicked off with a group drone picture by pilot Ed Foley. Following the group picture, we dove into some presentations about CAC and the generous members that helped make this all happen. President Mae Smith summarized the

strategic vision of CAC and announced a “Thank a CAC Volunteer Day”. Bob Reynolds highlighted CAC history, where we are today, and the vision for the future. Ed Foley summarized our newest project, the DFM 32 Inch telescope and how you can help with it. Finally, Mae Smith and Jim Knoll highlighted the many donors and volunteer hours that have made CAC a reality. These presentations are available to watch at this link:



<https://www.youtube.com/watch?v=kuWu7lrGKUk>.



Attendees then had the opportunity to walk the site to see the various facilities and projects. We had some great food and drink available for everyone to enjoy and wrapped things up with a terrific star party with several telescopes well into the evening. This celebration included the completion of the Foley INNstitute (seven sleeping rooms), the Mooney Learning Center with the Stinger



Training Room and three sleeping rooms, the Stinger Pad with four telescopes, the six Member Observatories, extension of the RV area from 4 to 7 spots, six Electric Vehicle charging stations, and more. The bus returned to Tucson around 8 pm but many attendees stayed to keep observing. Since this was also a regular CAC Member Weekend, we had all the public pads filled and about ½ of the member pads in use. Seemed like everyone had a great time.



If you have not been to CAC lately, I encourage you to come out and enjoy an evening of observing. Weather permitting, we'll have the 40-inch Big Boy and 9-inch Folded Refractor operating during the Saturday of the CAC weekend, so you do not have to bring your own telescope. There is typically plenty of room to observe if you want to bring equipment. Check out the CAC web page for upcoming events and CAC Weekend dates: <https://tucsonastronomy.org/taaa-member-resources/observing-sites/chiricahua-astronomy-complex/>.

If you have any questions, feel free to contact the CAC staff at [cac-director@tucsonastronomy.org](mailto:cac-director@tucsonastronomy.org).

Jim Knoll  
CAC Director





# TAAA Sharing the Skies at Oracle State Park

Earlier this month TAAA and Oracle State Park held a combined “Learn to Scope Star Party” that was very well attended. This fall/winter, this park is hosting several “Themed” Star Party nights and the theme this month was: *The basics of astronomy, telescope buying and maintaining dark skies.*

The evening started with a one-hour workshop, given by one of the Park Rangers and one of the Park Volunteers, utilizing several different scopes. This was followed



by two hours of telescope viewing where TAAA was represented by six volunteers with their scopes, who provided views of Saturn, Jupiter, star clusters and Comet Lemmon (C2023 H2) which was fortunately in our skies that evening. TAAA, through our outreach Star Party program, has events out at Oracle SP on a bi-monthly basis on average. These events always have large crowds of 100+ eager viewers and there are rumors that some viewers come from as far as Phoenix to view thru these pristine skies.

Oracle State Park is a Certified “International Dark Sky Park” and the views can be spectacular on a clear and warm night. Being at a slightly higher altitude than Tucson the temp’s can be cooler and warmer clothing may be required, but it is worth it. Night viewing at the park, when not during a star party, is available at the American Avenue

Trailhead entrance. More information can be found about that entrance at:

<https://azstateparks.com/oracle/dark-skies/viewing-info>

TAAA works with many of the National Parks/Monuments, and State Parks throughout Southern Arizona, as well as Pima County NRPR, presenting Star Parties during the



year. If you would like to be involved showing the wonders of the night sky at some of these venues and have a scope, please contact:

**Bernie Stinger**

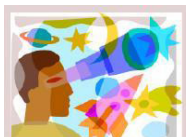
School/Non-profit/Public Star Party Manager

[astronomy-events@tucsonastronomy.org](mailto:astronomy-events@tucsonastronomy.org)

*All Photography by Mike Weasner*



## Special Interests Groups



### Starry Messengers Special Interest Group

#### *Opening Minds to the Universe*

The Starry Messengers will meet in person on Dec 11th at 7PM at the UofA Applied Research Building. Details will be emailed to regular attendees. Email [Terri Lappin](#) to be added to the SMSIG regular attendees list. We will select projects for our spring events.

This past month, Pete Hermes had about 150 engagements with students and their families at Myers Ganoung and Acacia Elementary Schools. Pete has covered more than his share of events lately, so I'm pleading with the rest of the TAAA membership to become involved with the Night Sky Network Toolkit activities. We have about 100 activities to choose from across many areas (sun, solar system, meteorites, stellar evolution, black holes, astrobiology, to name a few). Activities target 4th to 6th grade using simple concepts. Send an email to Terri Lappin to learn how to become involved in these very worthwhile events. They usually take place in the evening and indoors. I try to schedule two volunteers to work together, so you can be paired with someone who knows how to use the activities.

- Dec 2 (Sat) 10am-noon; Hendricks Elem; any toolkit Orange Grove & I-10
- Dec 5 (Tues) 6-8pm; Lulu Walker Elementary; Shadows & Silhouettes; River & La Canada
- Dec 14 (Thurs) 5:30-7pm; Robles Elem; Eyes on the Universe; Ajo Way & Sasabe Rd (Tom Sarko covering.)
- Additional events on January 23 (Wilson K-8), January 26 (Esmond Station Elem), and January 30 (Soleng Tom Elem)

SMSIG on the [Web](#)

Questions? Contact [Terri Lappin](#) or call 520-977-1290.

## Astronomy Fundamentals SIG

**by Connor Justice**

Come join us for a presentation from 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 AFSIG meeting is on **Thursday, December 14 from 6:30pm to 8:30pm.**  
Topics to be determined.

Contact [Connor Justice](#) for more Zoom link and information.

Access videos of previous meetings in the TAAA's [YouTube Channel](#).

[AFSIG on the Web](#)

## Astro-Imaging SIG

**by Gregg Ruppel**

The next AISIG meeting is **Monday, December 18 at 7:00 pm** via ZOOM.

**Topics: 32" Eye on the Galaxy** - presented by Dr. Ed Foley and Doug Summers  
**Image Sharing, Discussion, 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, check out the [TAAA Forum](#). Look for previous AISIG meetings on the [TAAA YouTube Channel](#).

## Highlights from the Astro-Imaging SIG



**Alex Woronow - WR 102**

A massive Wolf-Rayet star that ejected all this material on its short path to death.

[Astrobin](#)

**John Tsantes**

**Cygnus Wall**

This was my standard flow, used NN and curves to bring out the “almost true” colors.

150, 60sec frames, NBAS filter with my 2600 MCPro, EQ6 mount and C8 along with the usual ZWO accessories (Air, EAF).





Randy  
Smith



Sh2-132

Skywatcher 200P Nexus  
reducer/corrector 2600  
MM Pro; Antlia SHO  
3 nm filters 109x180  
(20/39/40)  
[Astrobin](#)



IC 59 & 63

Skywatcher 200P Nexus  
reducer/corrector 2600  
MM Pro; Optolong  
RGB filters (75 R, 60 G,  
59 B)  
[Astrobin](#)





**Jeff Rothstein**  
**Heart Nebula**

This is a two-panel mosaic of the Heart Nebula in Cassiopeia, taken with an Astro-Physics Traveler with field flattener (663mm, f/6.3) on an A-P Mach2GTO mount. Each of the two panels comprises about 13.6 hours of 4-minute guided exposures using the IDAS NBZ filter. I captured all subframes in my Oro Valley backyard during the week leading up to the new moon, and I processed the image entirely in PixInsight.

[Astrobin](#)



**Alan Rockowitz - WR 134;** This is a total of 59 hours of HOORGB data. [Astrobin](#)





**David Stearn**

**NGC 281 Pacman Nebula**

[Astrobin](#)

**Mike Mulcahy**

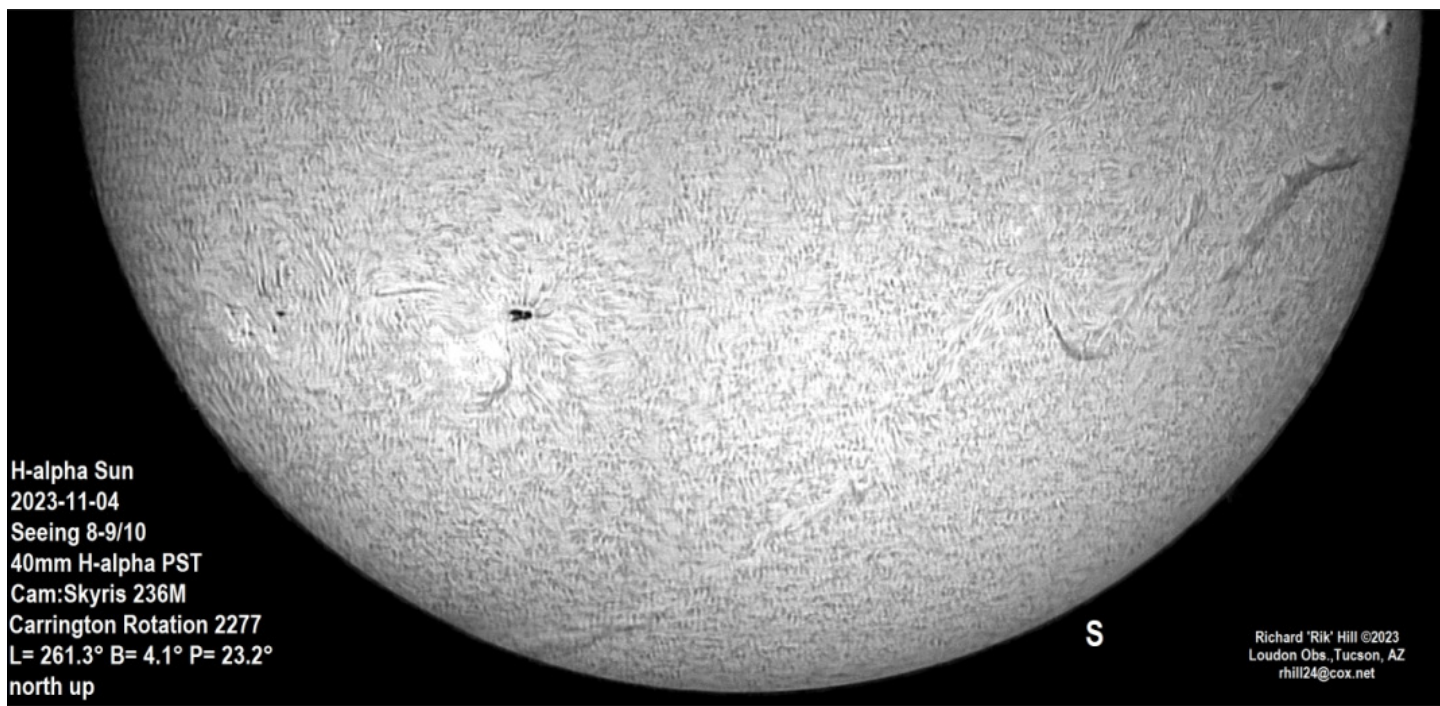
**Milky Way  
from Madera Canyon**

[Astrobin](#)



**Copyright Mike Mulcahy**





**Rik Hill**

### **Craig Harding - NGC 1023 Iris Nebula**

This was taken on October 15th at CAC. It is about 3 hr 30 minutes of total integration time using 180sec subs on my Astro-Tech 115EDT reduced to 648mm. The camera was an ASI294MC Pro using a uv/ir cut filter.







Comet E3 ZTF

**Tom Eby**

NGC 772  
Also cataloged  
as Arp 78,  
“Spiral galaxy  
with small  
high surface  
brightness  
companion”,  
NGC 772 is  
about 130  
million LY away  
and larger than  
the Milky Way.  
Tidal forces  
are evident,  
apparently  
involving the  
companion  
NGC 770.  
RASA 11” f/2.2  
/asi2400mc  
pro/CEM70ec  
mount/no  
filters/3.5 h  
exposure/ 10-  
18, 10-19 2023



# Observing Sites

## TIMPA

by TIMPA Planning Group

TIMPA (Tucson International Modelplex Park Association), 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: **December 8 and 9.**

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 gopher 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.

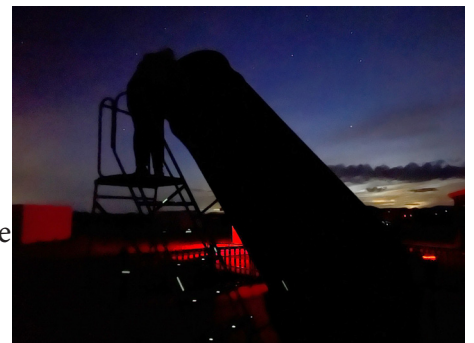
## Chiricahua Astronomy Complex

by Jim Knoll

CAC Weekend Dates coming up (Friday/Saturday): **December 8-9 (New Moon 12).**

Chiricahua Astronomy Complex (CAC) is the club's dark sky observing site, located in Cochise County approximately 100 miles southeast of the center of Tucson. If you would like to attend, you must make a reservation on the CAC Web page at [CAC Reservations](#). The reservations page has been enhanced with cancellation links to facilitate easy cancellation if necessary.

Unless you are qualified to open and close the site, dates will be limited to those around the New Moon and are listed on the CAC web page. Hosted personnel are generally on site a few days before and after these dates. Those qualified to open & close the site can use it anytime but still need to reserve through the CAC Reservations process.



CAC Director: [Jim Knoll](#) [CAC on the Web](#)

## Observing Sites Star Party Dates 2024

### TIMPA

January 12-13  
February 9-10  
March 8-9  
April 5-6  
May 3-4  
June 7-8

### CAC

January 12-13 (New Moon 11)  
February 9-10 (New Moon 9)  
March 8-9 (New Moon 10)

April 5-6 (New Moon 8).

Total Solar Eclipse April 8.

May NOT be any Hosts onsite

Evening Under the Stars

April 13

May 3-4 (New Moon 7)

June 7-8 (New Moon 6)



### What's Up list for December 2023 – January 2024

Fellow amateur astronomers. Many of the Astronomical League observing programs can be done from our backyards. The following is a list of objects visible during December and January for the more common observing programs.

#### Constellation Hunter Program – Northern Sky

The following constellations are well placed for observing for December and January: Andromeda, Aries, Auriga, Cassiopeia, Orion, Perseus, Pisces, Taurus, Triangulum

#### Messier Observing Program

The summer Milky Way is setting early. The winter Milky Way is not rising until late. Now we are looking away from the Milky Way so objects are more sparse. The following Messier Objects are well placed for observation during December and January (listed in ascending RA): M103, M33, M74, M76, M34, M77, M45

#### Lunar and Binocular Observing Program

The following is a list of dates for the lunar phase when observations should be made in December and January:

New Moon: December 12, January 11  
40 Hours waxing: December 14, January 13  
72 hours waxing: December 15, January 14  
4 days old: December 16, January 15  
7 days old: December 19, January 18  
10 days old: December 22, January 20  
Full (14 days old): December 27, January 25  
Gibbous: December 5, January 4  
72 hours waning: December 9, January 8  
40 hours waning: December 10, January 9

#### Solar System Observing Program

The following list describes the various solar system objects and their visibility during December and January:

**Mercury** is an early evening object during the first 3 weeks of December, becoming an early morning object during the last week of December and all of January.

**Venus** is an early morning object in December and January.

**Mars** finally reappears in the early morning sky in December, rising just before sunrise on December 1, about an hour before sunrise on Jan 1, and about 2 hours before sunrise at the end of January.

**Jupiter** is well up at sunset during December and January making it well placed for early evening observation.

**Saturn** sets early in the evening, earlier each day. At the start of December Saturn is setting around 11 PM. By the end of January it is setting around 7 PM.

**Uranus** is still well placed for evening observation. It transits around 1 hour after Jupiter transit, trailing Jupiter by around 15 degrees.

**Neptune** is still relatively close to Saturn. Neptune transits around 1.5 hours behind Saturn, trailing Saturn by around 20 degrees.

#### Urban Observing Program

The following deep sky objects are well placed during December and January: NGC457, NGC663, Cr 463, NGC 752, Stock 2, NGC 869, NGC 884, Tr 2, M77, Tr 3, Stock 23, Mel 20, NGC 1342, M45.

The following **Double Stars** are well placed for observation during December and January:

Gamma Aries, Gamma Andromeda

## Public Astronomy Events



### DEPARTMENT OF ASTRONOMY AND STEWARD OBSERVATORY

### Public Evening Lecture Series Fall 2023

We are thrilled to celebrate over 100 years of presenting lectures on astronomy & telescope viewing to the public. Public Evening Lectures will **begin at 7:30 p.m. in Steward Observatory Room N210**. All of the lectures and the use of the telescope are free of charge and open to the general public. For more information, contact Dr. Thomas Fleming at 621-5049 or [taf@arizona.edu](mailto:taf@arizona.edu) or check out the [Web Page](#). You can watch each lecture live on [ZOOM](#).

Dec 4      Dr. Kevin Wagner      *Exoplanet Imaging: From Protoplanets to Exo-Earths*  
Steward Observatory

To stream recordings of previous lectures, [click here](#).



### College of Science Lecture Series

#### Surprise Twists That Transformed Science | 2024 Lecture Series

We look forward to welcoming audiences back to Centennial Hall for the College of Science Lecture Series! Opening night of the **Surprise Twists That Transformed Science** series is **Wednesday, February 7, 2024, at 7pm**. We will share additional information about the series in coming weeks.

February 7, 2024 | Sam Gralla

*Surprised By Gravity: Black Holes and Their Shocking Implications*

February 14, 2024 | Charlotte Pearson

*Put A Ring On It: Dating Trees, Volcanoes, and the Sun*

February 21, 2024 | Sarah Moran

*Strange New Worlds: Steamy Planets, Crystal Clouds, and the Seeds of Life*

February 28, 2024 | Jeff Pyun

*From Acid Rain to Next Generation Plastics: The Curious Case of Elemental Sulfur*

College of Science Lecture Series [Web Page](#)

# Skyward

By Dr. David H. Levy

December 2023

On the fourteenth of October 2023, I witnessed my 99th eclipse. This tally includes everything from barely noticeable penumbral eclipses of the Moon, where one can occasionally distinguish a slight shading of one side of the Moon as it wanders past the Earth's outer shadow, to the dramatic and life-affirming total eclipses of the Sun.

The October eclipse was actually an annular eclipse or “ring” eclipse. The annular phase occurs during which the entire Moon covers the Sun, but because the Moon is near its apogee, or farthest point from the Earth in its orbit, then the Moon is surrounded by a ring of sunlight. I was all set to join the group heading to southern Texas to see the annular eclipse, but last month I was invited to be the keynote speaker at the Homecoming festival at the State University of New York at Plattsburgh. This invitation meant so much to me that I was not about to pass it up. So, I took a big chance, and it paid off.

The night of my lecture was clear and starry. I began the lecture with my own definition of what a university can be. The world is as it is; we can try but, in the end, it is difficult if not impossible to change it. A university, however, at its best represents the world as it can be. For me, this represents the ideal of what a university can accomplish. The case of SUNY Plattsburgh is a specific example of that possibility. The not-too-large student population, understandable relationships among students and faculty, careful and interesting course offerings, and even the Plattsburgh Cardinals sporting program, all help to promote this goal.

But this University offers one thing more. About 40 miles to the south, within the ancient Adirondack mountains, lies their rural campsite called Twin Valleys. As a youngster I attended the Adirondack Science Camp there in what were three of the happiest summers of my life. And for the past 20 years there has been the Adirondack Astronomy Retreat at this magnificent place.

On the eve of the eclipse my friend Ed Gunther and I led a small group of people to observe at our Adirondack Astronomy Retreat site, during which time I did a little comet hunting. The following morning the sky was cloudy but there were plenty of breaks in the clouds so we got a magnificent view of the partial eclipse. We were excited; the crowd was excited, and we thoroughly enjoyed the partial eclipse that lasted about two hours. During this excitement, the solar system continued its inexorable motions, as the Earth, the Moon, and the planets slowly wended their way through space and time.



*Ed Gunther and Cupid at SUNY Plattsburgh*



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



# TAAA Astronomy Equipment For Sale

TAAA has an assortment of astronomy related equipment for sale at this time. This equipment is available for members only, at this time. The following list is just a sample of what is available.



**Celestron tripod**

This is a standard Celestron tripod. Looks like it's for an 8 or 11 inch scope. In the image it is just the tripod, not the two black bags.

**TAAA Member Price: \$185**



**6 Inch Newtonian Optical Tube Assembly**

6 inch f 8.0 primary mirror.

Comes with an 8x50 finder.

**TAAA Member Price: \$100**



**Orion Sky Quest XT6 Dobsonian scope**

6 inch f 8.0 Newtonian telescope, in a dobsonian mount. Includes a 6x30 crosshair finder and instruction book.

**TAAA Member price: \$150**



**Cave Astrola Pedestal German Equatorial Mount**

This is the large model of the Astrola mount. Has 3 roller legs with elevation screws to get wheels off ground. Clock drive has been refurbished, cleaned and works fine. Has large setting circles and counterweight. Cradle looks to be able to hold 12" diameter tube or larger.

**TAAA Member Price: \$375**

Note that these prices are exclusive for TAAA members and after 45 days these items will be offered to the general public at a higher price. We also have an assortment of other items available at this time including: Finder rings, focusers, telescope rings of various sizes, mirror blanks of many sizes, a 6 inch Newtonian mirror set mounted in cells, several large mirrors and more.

To inquire about what is available or to express a desire to purchase, please contact: [Douglas Smith](#); 520-396-3233



## TAAA Equipment Loaner Program

The following inventory represents the current list of instruments contained in the Tucson Amateur Astronomy Association Equipment Loan Program as of September 04, 2022. A photograph of each item is included with the description. This equipment is for TAAA members to checkout and use. Email [Ralph Means](mailto:Ralph Means) for information or to schedule time for pick up.



**Celestron 11" CPC series**  
Alt-Az fork mounted, with tripod and GOTO. We have 2 of these telescopes.



**Orion SkyQuest 10"**  
Dob with Telrad and 8x50 finder and 8x50 finder.



**Orion SkyWatcher 12"**  
Collapsible  
Dobsonian with 8x50 finder



**Orion SkyWatcher 10"**  
Dobsonian with Telrad



**Meade LX200 10" SCT**, Fork Mount, GOTO, with 8x50 finder, in case. With tripod. Training required for this telescope.



NOTE from the Equipment Loan Coordinator:

I am looking for eyepieces for the loaner program. We do not have enough for an eyepiece kit for each telescope. If you have any sitting around that you are not using. Would you consider making a donation to the Club and the loaner program.

Thank you, [Ralph Means](mailto:Ralph Means)



## TAAA Equipment Loaner Program (Continued)



**Orion 10" Dobsonian**  
black tube 8x50 finder 25



**Celestron 6" SCT**  
single fork mount, GOTO



**Meade 4" SCT**  
in case, with tripod, battery  
pack, diagonal, and 2 eyepieces



**Orion SkyQuest XT-10**  
classic 10" Dobsonian,  
f 5.0, 1.25 focuser, 8x50  
finder, push-to.



**Celestron Nexstar 6" SCT**  
diagonal, and eyepiece



**Celestron 8" SCT**  
Single Fork mount, GOTO



**Stellar Vue 85mm Refractor**



## TAAA Equipment Loaner Program (Continued)



**Eyepiece Case #1:** Black Orion Case  
5 1.25-inch Celestron Multi Coated X-Cell  
LX eyepieces: 25mm, 18mm, 12mm, 9mm,  
7mm focal lengths. 6x30 finder and diagonal.



**Eyepiece case No. 2**  
Black Orion Case  
contains a 2"  
Hyperion-Aspheric  
72-degree 36mm  
and 1.25" Hyperion  
eyepieces: 8mm, 13mm,  
17mm, 21mm, and  
24mm.



**Eye Piece Case #3**  
1.25" AstroTech Paradigm in  
8mm, 12mm, 15mm, and 25mm



**Eyepiece Case #4:**  
Black Case. 5 Celestron X-Cell  
1.35" eyepieces. Focal Lengths:  
25mm, 18mm, 12mm, 9mm, 7mm



**Eyepiece Case #5:**  
Black case, Eyepieces: 2" Ce-  
lestron E-Lux 40mm, Meade 2"  
QX 26mm, 1.25" VLW 13mm,  
VLW 17mm, Orion 9mm Plossl,  
Orion 6mm Kellner, Unknown  
32mm, Unknown 25mm, Ortho,  
20mm Kellner 20mm, Unknown  
crosshair, 1.25", Kellner .965",  
Other: 2" Extension Tube, 1.25"  
extension tube, 2" Nebula filter,



**Eyepiece Case #6.**  
Small Silver case 8 Meade Super Plossl  
1.25" eyepieces. Focal Length: 40mm,  
32mm, 26mm, 20mm, 15mm, 12mm,  
9.7mm, 6.4mm, 12mm Illuminated  
reticle, 1.25" eyepiece 1.25" diagnol.



**Case #7**  
Silver Case. Misc. A couple  
of eyepieces and numerous  
filters. Will get this sorted and  
inventoried shortly.