

TAAA DESERT SKIES BULLETIN

Observing Our

Since



Desert Skies

1954

February 2023

www.tucsonastronomy.org

Membership Meeting

February 3 @ 6:30 pm - 9:00 pm

TAAA's next general member meeting will be held on **Friday, February 3, 2023**. The Main Presentation will start at 6:30 PM (AZT). 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 online through our [Facebook page](#). (A recording will be available on [YouTube](#) a few days after the meeting)

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Main Presentation at 6:30PM AZT

Title: Comets; History, Science, and Magic—A Personal Journey

Presentation: David Levy, one of the most enthusiastic and famous amateur astronomers of our time, will talk about some of the great comets in Earth's history. These frozen leftovers from the formation of the solar system, composed of dust, rock, and ice, hold rich scientific information, making each encounter a much-studied event. Share an expert comet-hunter's knowledge in this presentation featuring such comets as Halley, those of 1811, 1965, 1970, 1976, and the most famous of David's many comet discoveries, the **Shoemaker-Levy 9 comet** that collided with Jupiter in 1994.

Biography: David Levy is world-renowned for his comet-hunting expertise. A past president of TAAA, he's authored over three dozen books, written for three astronomy magazines, and appeared on television programs featured on the Discovery and the Science Channels. Among his accomplishments are 23 comet discoveries, a few hundred shared asteroid discoveries, an Emmy for the documentary *Three Minutes to Impact*, five honorary doctorates in Science and a PhD which combines astronomy and English Literature. Currently, he has a monthly column, Skyward, jointly published in the Vail Voice community newspaper and the TAAA Desert Skies Bulletin. David continues to lecture worldwide, and hunt for comets and asteroids.

Notes From The President

January 2023

Starting a new year is exciting, especially with all the TAAA possibilities for 2023. TAAA has the new TIMPA-16 Project which is adding a telescope to TIMPA. In general, activity at TIMPA has been increasing. Starry Messengers (SMSIG) is working diligently on our regular spring and summer educational activities. A team is working industriously on the functionality of TAAA technology and updating the TAAA Web page. Star parties are blossoming. Various training options are continuing and new ones arising for members. Very positive feedback is being consistently received regarding the TAAA Bulletin. Imaging interests and use of the TAAA Forum by Astro Imaging (AISIG) continues to thrive. TAAA calendars were on target. Ladies Night Out is alight with activity. We continue to work on services for members and member communication. In addition, organization of the 2023 Grand Canyon Star Party (GCSP) is on target and progressing well. Member meetings on zoom, Facebook and in person are again flowing smoothly. The three day Astronomy Fundamentals class is back this year. The Astronomical League is flourishing. TAAA financial status continues to be strong. Most leadership positions are filled. Compliance with non-profit organization requirements continues to be a priority and dedicated diligence of the Board continues.

Every day we seem to be narrowing down what is left to do on the Gateway to the Galaxy Project (GTTG), while the exciting activities of other CAC projects are also underway. Other Construction projects at CAC currently include: the Member Observatory Project, expansion of RV parking, work on the Kalas Road including efforts to channel water flow at the GTTG area, and constructing two new parking areas. Organization of Electrical Vehicle Charging Stations is underway. Steps toward completion of the Star Plaza area and an effort on telescope housings for the Stinger Pad were started. After years of persistence, final steps on the classroom and sleeping buildings are being taken. The interiors of the buildings have actually been painted! And, finalization of various levels of new signage for CAC is underway.

In the midst of all that is happening, of primary importance is TAAA's ability to communicate

by Mae Smith

with members and meet member needs. We must guard against the possibility of getting caught up in flurries of activity and forgetting to listen, to communicate, and to share with each other. After all, sharing our experiences, the beauty and mysteries of the sky, our personal growth, and the differences that astronomy and science information can make in everyone's life are at the heart of what TAAA is about. As TAAA members, you have the responsibility of helping guide leaders in these efforts, and it is your input that helps steer us all along the paths that we should follow.

I hope that you all have an opportunity to view the recent Arizona Illustrated video showing just a part of TAAA's on-going commitment to sharing the sky and science education (the link appears elsewhere in this bulletin).

At the January Board meeting: COVID/flu considerations remained the same with suggestions for use of face coverings; an update and review of the TIMPA 16 project was given; updates on CAC projects occurred with the expressed need for further Board communication/update during the month; partially subsidized CPR/First Aide training was approved for up to 24 TAAA volunteers; and an update on all outstanding/currently underway Board activities was conducted.

TAAA was founded in 1954. Organizations like TAAA with a long history and a substantial number of very active members create memories. Connections are made with members interacting with each other, working together on the tasks at hand, and sharing the joys of learning, growing together and productive activities. Histories are created. The presence of a long-term active member becomes part of the reflections and the essence of the environment. For the rest of our years of connections with CAC, many of us will never go to the CAC site without a sense of renewed connection with Ron Probst, who was such a presence at CAC (and who contributed the most comfortable chair which we will continue to appreciate, hopefully, also for many years to come). Thank you, Ron, for all the great memories that we will continue to share in the future!

- President [Mae Smith](#)

Committee Reports



Announcement

TAAA functions effectively and efficiently for the benefit of all members principally built upon the many members who volunteer for and serve in a number of leadership positions. In addition to elected positions, there are over fifty (50) other appointed leaders throughout the club performing or leading a host of functions and tasks.

One such position is that of **Member Meeting Refreshment Coordinator**, which we are currently looking for fill. For those interested, please refer to the current position description, which follows:

Position Summary:

The Refreshments Coordinator is responsible for ensuring that refreshments are available at the monthly meetings by recruiting volunteers to provide refreshments, educating volunteers about expectations and procedures, scheduling the monthly volunteers will provide refreshments and ensuring that the required serving supplies are provided.

Specific Responsibilities:

Ensure the supplies (plastic-ware, tablecloth, napkins, cups, serving platters and bowls, etc...) required to serve the refreshments are provided at the meeting.

Contact the refreshments volunteers before their scheduled date to ensure they can make the meeting and answer any questions and/or provide any assistance they may require.

Inform the volunteers of the expectation for the refreshments. These expectations include at least one food item that a member with common food limitations would be able to eat (low calorie or carbohydrate count, low fat, low salt, does not contain nut or chocolate, gluten free, no caffeine, milk-free) – these do not need to all be contained in the same item).

Maintain the stock of supplies (plastic-ware, tablecloth, napkins, cups, serving platters and bowls, etc...) required to serve the refreshments. Presently there are two bins for storing these supplies in the meeting room.

Additional Information

A \$25.00 reimbursement is provided by the club to the volunteers for the refreshments. This is reimbursed by the TAAA Treasurer. The TAAA Refreshments Coordinator can apply to the TAAA Board of Directors for an annual budget to maintain the stock of serving supplies.

Any member interested in this position is encouraged to send their interest or questions to nvrchair@tucsonastronomy.org. The Nomination and Volunteer Resource Committee (NVRC) would also like to encourage each member to update their profile in Member Planet at earliest opportunity to express future interest(s) in serving the club.

TAAA Election 2023

Candidate Volunteers Needed!

The TAAA Leader Election is on May 5, 2023, at the monthly Membership Meeting. Before this can happen, the Nominations and Volunteer Resource Committee (NVRC) must put together a list of nominees for each position. The first step is to find interested TAAA members who want to help lead the club. We hope you will be interested in serving the club in an elected position on the Board of Directors or the Nominations and Volunteer Resource Committee.

The NVRC has prepared candidate “packets” for the different positions. These packets are compressed .pdf files containing Job Descriptions, informative documents that govern the club and provide policy guidance such as the Constitution and Bylaws (with important sections for each position highlighted), and good information such as our Articles of Incorporation. In addition, we have a candidate biography form to be filled out and returned to the NVRC. Packet access is through the Members Only section of the TAAA Web Site. This requires login to MemberPlanet. After logging in, you will find the link in the list on the right of the TAAA Landing Page. Or just email the [NVRC](#) and we will send you the link. We would appreciate hearing from you soon with a real commitment by the end of February.

Timeline

- January/February – Find and Evaluate Candidates
- March – Final Candidate Interviews and Selection
- April – Announce Candidates before and at Membership Meeting
- After April Meeting to One Week Prior to May Meeting – Write-In Candidates
- May Membership Meeting – Vote!
- Details on process and voting procedures to come

TAAA Desert Skies Bulletin

[David Rossetter](#) – Editor

Terri Lappin & Jim Knoll - Proofreading

Greg Ruppel -Images;

Ken Bertschy - Graphics

Information Technology

Wanted: Assistant Web Master

The Information Technology (IT) Committee is slowly organizing and tracking all the different technology assets and procedures the TAAA uses. One of the biggest IT chores is running the Web Site (www.tucsonastronomy.org). Ed Foley is our extremely capable Web Master. However, we are hoping to bring in some more talent to help manage all the details that come with his job. Therefore, we want to find an Assistant Web Master. The job hasn't been defined yet, but a candidate may participate in that process.

In addition, the IT Committee is looking for additional, tech savvy, members.

If you have IT and/or web skills and want to contribute to your organization, please contact our IT Committee Chair, [David Rossetter](#).

Other TAAA News

Practical Astronomy Workshop 1 – Star Hopping Open for Enrollment

Place: TIMPA

Date/Time: Thursday, February 23, 2023, 5:30 PM until completed

Synopsis: This first workshop in practical astronomy 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 2 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 you can contact the instructor at the information listed below or sign up using the sign up sheet that will be available at the January and February General Members meeting.

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

Instructor – email: [Douglas Smith](#); Phone: 520-396-3233

Board of Directors Meetings

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

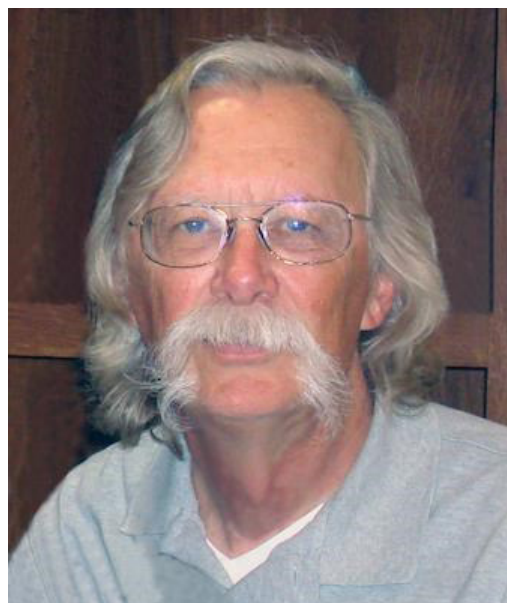
In Tribute

Ad Astra

Members,

I am sad to announce that one of our members, Ron Probst, passed away after a long battle with cancer. Ron has been an active member of TAAA for many years and loved observing at the Chiricahua Astronomy Complex. He was a joy to be around with plenty of great stories to entertain you. Ron's Memorial Service of his life will be held on January 29th from 2 - 4 pm at the Tucson Botanical Gardens in the patio of Porter Hall.

[Online Obituary](#)



Mae Smith

Special Interests Groups

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. This month's meeting is:

Thursday, February 16, 6:30

Zayna Mediterranean

1138 N Bellvedere
(E side of Bellvedere between Bellvue and Speedway
Two blocks E of Columbus, Two blocks W of Swan)

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

RSVP [Susan](#)



Starry Messengers Special Interest Group

Opening Minds to the Universe

We are entering a very busy time for outreach events. We need volunteers for all events.

- March 4 and 5 – ScienceCity @ Tucson Festival of Books held at the UofA, 7am to 6pm, need 10 or more volunteers, request at least 3 hours per volunteer
- March 9 Science Fair judging (online activity), have two judges, need one more judge
- April 29 Tucson Astronomy Festival @ Brandi Fenton Memorial Park, 1pm – 10pm, need 7 or more volunteers
- School events on Feb 15th (two requests) and on Feb 28th, listed in the “School/Public Star Party Request” section of this newsletter, 1 or 2 volunteers at each event.

The Starry Messengers SIG will meet in person on Sunday, February 12th at 1PM, location to be decided (likely at Steward Observatory). We will (hopefully) have everything needed for our ScienceCity exhibit and can work out final details of our activities. We’ll also talk briefly about the April 29th Tucson Astronomy Festival to be held at Brandi Fenton Memorial Park.

There will be a training session for our ScienceCity volunteers to learn the activities which are all related to the James Webb Space Telescope. This training will take place on February 26th, probably at Steward Observatory.

If you have questions about the Starry Messengers SIG, email [Terri Lappin](mailto:Terri.Lappin@steward.observatory.edu) or call 520-977-1290.



Be sure to see the
PBS Arizona Illustrated
segment on
CAC and Evening Under the Stars

[You Tube Link](#)

Astronomy Fundamentals SIG

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 next meeting is on **Thursday, February 9th at 6:30 pm - 8:00 pm**. Topics to be determined.

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

[AFSIG on the Web](#)

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

Astro-Imaging SIG

by Gregg Ruppel

The next AISIG meeting is **Monday, February 20th @ 7:00 pm** via ZOOM.

Email [Gregg Ruppel](#) for the ZOOM link or find it in the [TAAA Forum](#).

Topics: TBA

Contact [Gregg Ruppel](#) for the latest information and Zoom links. Look for previous meetings on the [TAAA YouTube Channel](#). 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](#).

Imagers, to help ensure that the TAAA Desert Skies Bulletin has explicit permission to publish your fine work, we need you to submit your images directly to [Gregg Ruppel](#), our Imaging Editor or come up with alternative arrangements. We would like you to restrict the size of your images to around 10MB (a little over is okay if needed). Members would appreciate a brief description of the object if it is not a common target along with your imaging details. If you desire, please include a link to the full-size version. I want to limit space to one page of the bulletin per contributor. If you submit five photos, they will be small or we may ask you to pick your favorites. If you do submit images, I will include you in a pre-publication version of the bulletin for your approval of the quality and layout. Feel free to ask me ([David Rossetter](#) – Bulletin Editor) or [Gregg](#) if you have any questions.

Highlights from the Astro-Imaging SIG

Randy Smith

NGC 2359
Thor's Helmet



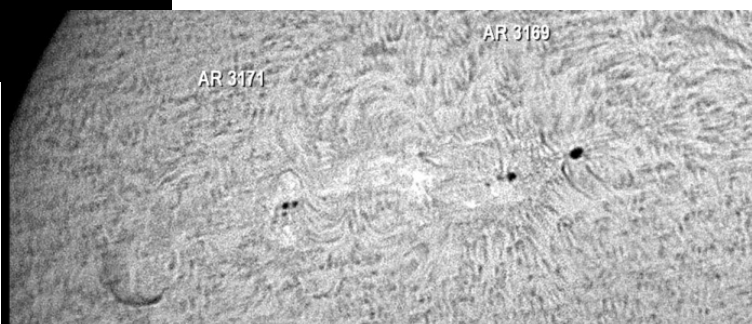
IC 434
Flame and Horse Head



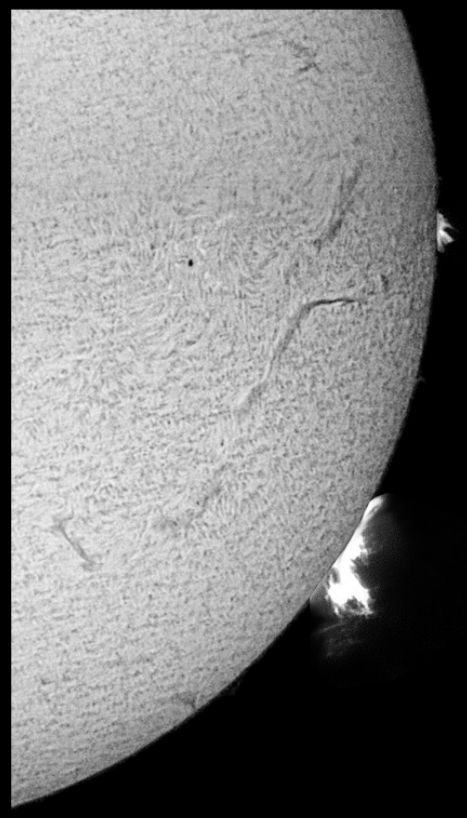
Rik Hill

Sun in H-Alpha

H-alpha
2022 12 19
Seeing 8/10
40mm H-alpha PST
Skyris 445M camera
Carrington Rotation 2265
L = 166.2° B = -1.5° P = 8.1°
north up



H-alpha
2022 12 22
Seeing 9/10
40mm H-alpha PST
Skyris 445M camera
Carrington Rotation 2265
L = 125.5° B = -1.9° P = 6.6°
north up



Richard 'Rik' Hill ©2022
Loudon Obs., Tucson, AZ
rhill24@cox.net

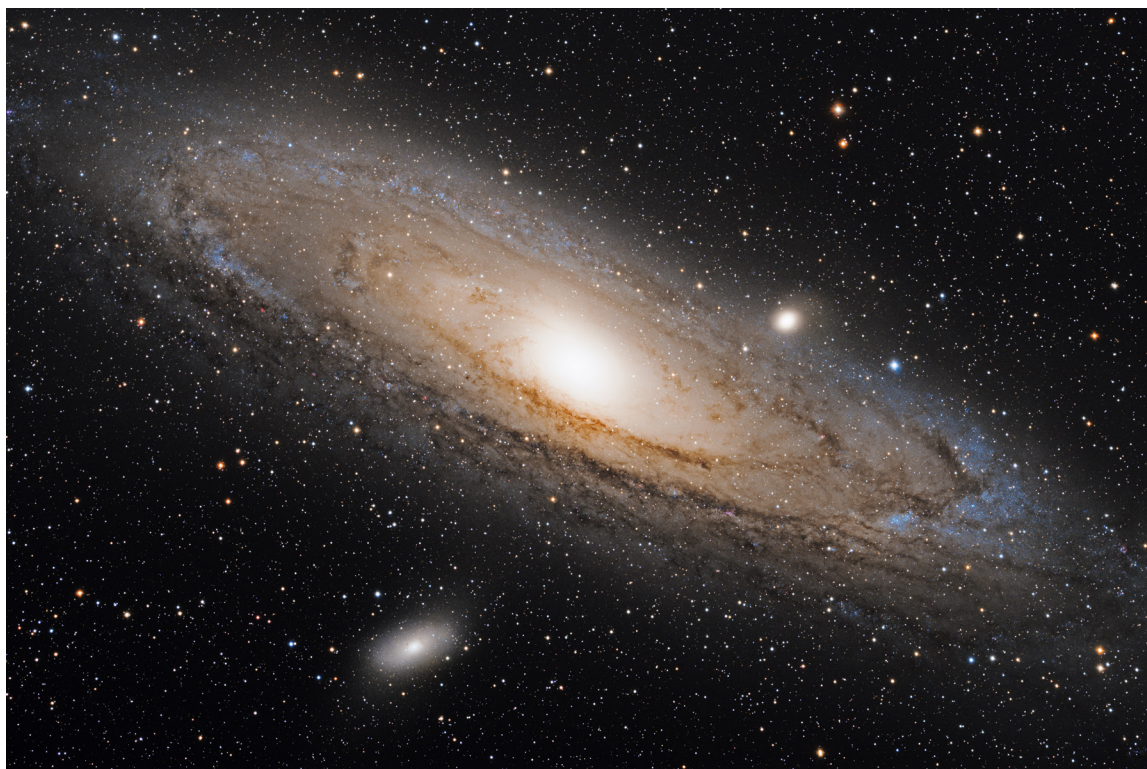


Cocoon nebula



**Alan
Rockowitz**

Tadpoles



M31
 108 min exposure,
 RASA 11 f/2.2, no
 filters. Blur XT does
 visually increase
 or sharpen the
 background noise,
 so whatever AI
 algorithm it uses
 seems to be at least
 as good as using a
 correct lightness mask
 in Decon, probably
 better and saves time.

Tom Eby



NGC 750 is about 200 million LY distant, two interacting ellipticals with tidal/tailing structure. Nearby NGC 736 has a faint shell and some very faint tailing. A SDSS reference image from Seligman catalog is included for comparison.

The minuscule tailed galaxy to left of NGC 750 is at 953 million LY distance. 101 x 1 min exposures, unguided, 12/21/2022. Cool nighttime temps helps reduce the camera noise; also darks should be taken at same temp as lights as I noticed the dark signal is pretty sensitive to ambient.



Allen Force

NGC 7000

This is a practice mosaic that I took with the C11/Hyperstar?ASI294MC Pro/.63x reducer/NBZ filter.

Jeff Rothstein

Rosette Nebula

294MC PRO to a 2600MC PRO. Here is my first image with it, 5 hours on the Rosette. It reminds me of using a fine-grain film after Tri-X, though the differences may be partly because this was also my first new image using BXT. I'm interested in the analysis and debate about whether BXT produces honest images, but to my eye there's no denying it makes them look better.



(c) Jeffrey S. Rothstein 2023

Observing Sites

TIMPA

by Ralph Means

TIMPA (Tucson International Modelplex Park Association), dark sky site west of the Tucson Mountains.

[TIMPA on the Web](#)

TIMPA Star Party Dates this month: **February 17 - 18**

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

The TIMPA site is only partially improved. There are no inside buildings provided other than restrooms. TAAA does not provide 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.

[Reservation Form](#)

Any questions, please contact the TIMPA Director: [Ralph Means](#)

Chiricahua Astronomy Complex

by Jim Knoll

CAC Weekend Dates coming up (Friday/Saturday): **February 17 - 18 (New Moon , February 20)**

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](#).

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.

Please consider helping with maintenance or other activities at CAC. As we further develop the site, it is important we continue to grow a list of volunteers. Let me know and I will add you for future notifications (no commitment, just a willingness to help).

CAC Director: [Jim Knoll](#)

[CAC on the Web](#)

Observing Sites Star Party Dates 2023

TIMPA

January 20-21
February 17-18
March 17-18
April 21-22
May 19-20
June 16-17

CAC

January 20-21 (New Moon 21)
February 17-18 (New Moon 20)
March 17-18 (New Moon 21)
April 21-22 (New Moon 19)
May 19-20 (New Moon 19)
June 16-17 (New Moon 17)

CAC Learning Center Construction Update - by Ed Foley

February 2023

With the drywall completed, the buildings' interiors are beginning to take shape. We now have a classroom, bedrooms and rest rooms. We can get a real sense of these spaces. Further, we were able to enlist TAAA volunteers Bob Rose, Jim and Susan Knoll, Ross Carnes, Janet Foley, Phil Yehle, Joe Jakoby, Ryan Foley, Ed Foley and Sam Maiorano to paint the interior of the buildings. Remember, this is 2400 square feet of walls and ceilings they tackled. The rooms took on a finished look after this work. Thanks to our volunteers for the great effort.



Painting Crew: Bob Rose, Jim Knoll, Susan Knoll, Ross Carnes, Janet Foley, Ed Foley, Phil Yehle, Joe Jakoby



Volunteer Painters: Ryan Foley, Sam Maiorano

Also accomplished this month - electrical outlets, switches, ceiling fans, lights etc. were installed. This allowed Bob Rose and Jim Knoll to extend the CAC internet network into these buildings. This is key to our installation of a host of internet connected remote controlled items such as door locks and the security system in the coming weeks.

We also had our final utility line connected - our septic line. With water, septic and power installed, the contractor is now working to complete the four bathrooms. Our list of items to complete is dwindling.

Introducing TIMPA-16. Expanding the optical reach at TIMPA!

Imagine being able to observe through a 16" Meade LX 200 at the TAAA TIMPA Dark Site. With your help, we can make that happen! The TIMPA Planning Group is excited to announce the TIMPA-16 Project! In November 2022, the Minnesota Astronomical Society offered to donate a 16" Meade LX200 to the Tucson Amateur Astronomy Association (TAAA). TAAA eagerly reviewed the offer and decided to accept it and to add the scope to the viewing choices at TIMPA. We have been busy arranging for delivery of the scope from the Minnesota club to the TIMPA site, where it will be kept in the storage container until ready for installation. After obtaining permission for the project from the TIMPA Board of Directors and estimating a cost of \$10,000, we are ready to begin planning in earnest.

TIMPA-16 Continued

A motivated Project Team was quickly assembled:

John Mead – Project Manager
Ben Bailey - TIMPA/TAAA Representative
Ralph Means - TIMPA Director
Dennis Means - Team member
Gus Gomez - Team member
Mae Smith - BOD liaison

The current high-level plan is to construct an enclosure like the existing TIMPA Gila Monster 14" scope. The team has selected an initial location as shown below, which will provide optimal access for exploring the night sky at TIMPA.



Our next steps will be putting together detailed plans for the construction of the concrete pad, telescope mount, and enclosure. Then, with the support of our TAAA membership, we can begin working towards First Light!

We are asking for your help to make this exciting opportunity a reality. The TIMPA-16 Team invites any interested TAAA Members to consider donating to this worthy project. Ben Bailey is managing the donations for this project. If you are interested in helping make TIMPA-16 a reality, please send an email to timpa16donations@tucsonastronomy.org and Ben will contact you with detailed instructions. Ben may be contacted directly by cell phone at 520-403-1842 or by [email](#). Your tax-deductible donation to TAAA, a 501(c)3 nonprofit organization, will enable us to bring this worthwhile project to fruition.

February 2023

by Jim Knoll & Bernie Stinger



change their life in a profound way. There is nothing more rewarding than seeing a young person excited



Another year of astronomy outreach is off and running. January was a busy month with lots of events. We had 11 *public and school events*, with the majority being at schools, reaching over 1,000 community residents. This is a great way to connect science and astronomy to young kids that might just



about viewing an awesome object in the night sky. Our big planets are starting to go by the wayside for the season. Fortunately we will still have Mars and Venus for awhile. Might even be able to show a new comet at some evening events. February outreach will be extremely busy with 17 events scheduled and a nice mix of schools, public, and small groups.

January was also busy for *Tucson Stargazing Adventures*. We had 9 events reaching about 230 participants. Most events were at resorts, but we did have several private small group events as well. February will be busy with about 7 events scheduled. Hopefully we will be getting into the clear sky time of year as we did have several events in January cancel due to weather.



Thank you to all our volunteers that help with our Outreach mission and make it possible. We love to include pictures of events, so please try to take some when you can. Just remember, for any youth, try to take pictures without showing their faces.

Let us know if you want to get involved with any of our outreach programs. You can respond to Bernie's monthly volunteer request for school & public programs and let him know or send either of us an email. Feeling the joy of sharing our wonderful hobby with the public is extremely rewarding, and you will learn more about the objects you are showing as well!

Bernie Stinger: astronomy-events@tucsonastronomy.org, Star Party Manager

Jim Knoll: stargazing@tucsonastronomy.org, Tucson Stargazing Adventures

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 updated list for February, 2023.** February is starting to pick up with activity so appreciate any help you can provide as there are still events to fill.

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 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 January 23rd. ***Starred events** and **bolded telescope references** still have need for 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

Thursday – February 2 -- CENTRAL TUCSON

Cholla High School

2001 W Starr Pass Blvd.

High School; # Participants: 100

0 Scopes Needed (filled)

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

Nearest Moon Phase: 3 days before Full

Directions: West on 22nd, becomes Starr Pass Blvd. Continue west to the school on the south side of Starr Pass at the intersection of La Cholla Blvd. Turn into the school parking lot before you get to La Cholla.

Viewing Location: School Amphitheater. Park in the first parking lot (student lot). There is drive up access and a smooth flat concrete area.

Wednesday – February 8 – U of A TUCSON

University of Arizona BIO5 Institute

1657 E. Helen St.

All Ages; # Participants: 600

0 NSN Toolkits needed (filled)

Setup Time: 3:30 pm. Start: 4:00 End 7:00

Nearest Moon Phase: NA

Directions: West on Speedway, Turn north on Cherry, Turn east on Helen, Park in curbside reserved parking spot.

Setup Location: TBD (BIO5 Courtyard?)

Saturday – February 11 -- SOUTHEAST TUCSON

Tucson Star Party @ Pima Community College (PCC) East

8181 E Irvington Rd

All Ages; # Participants: 100+

0 Scopes Needed: 3 Solar Scopes (daytime) (filled) / 5 Scopes (evening) (filled)

Setup Time:

Daytime: 1:30pm Start: 2:00 End: 5:00

Evening: 6:00pm Start: 6:30 End: 9:00

Directions: South on Kolb to Irvington. East on Irvington Rd for 1 mile to PCC entrance than immediate left onto E. Poinciana Dr. Follow the Drive around until you see the domes and parking lot on the right.

Viewing areas:

Solar: Next to classroom EC-M102

Evening: Open area between south domes and parking lot.

School/Public Star Parties Continued

Sunday – February 12 -- (EAST TUCSON)

Saguaro National Park EAST

Saguaro EAST is located at 3693 S Old Spanish Trail.

All Ages; Estimated # Participants: 50

0 Solar telescopes needed (white light or H-alpha) (filled)

Setup Time: 12:30 pm Start: 1:00 End 3:00

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 Park entrance.

Viewing Location: Patio area in front of Visitors Center

Monday – February 13 -- NORTHEAST TUCSON

Sabino Springs Nature Club @ Arizona National Golf Club

9777 E Sabino Greens Dr

All Ages; # Participants: 25

0 Scopes Needed (filled)

Setup Time: 6:30 pm Start: 7:00 End: 9:00

Nearest Moon Phase: 3rd Quarter

Directions: Harrison Rd. to Snyder Rd. East on Snyder Rd. to N. Sabino Springs Dr., Then left on N. Sabino Springs Dr. to E. Sabino Greens Dr., then left to the entrance to the Clubhouse on the right.

Viewing Location: Parking lot of the clubhouse.

Wednesday – February 16 -- WEST TUCSON – (Tentative, may cancel)

Cooper Center for Environmental Learning

5403 W Trails End Rd

Grade 5; # Participants: 55

0 Scopes Needed (filled)

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

Nearest Moon Phase: 3rd Quarter

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).

*Wednesday – February 15 --THREE POINTS Robles Elementary @ Altar Valley

9875 S. Sasabe Rd.

Age/Grade Level: K-8; # Participants: 100

1 NSN Toolkit needed

Setup Time: NSN Toolkit: 5:00 pm

Start: 5:30 End: 7:00 pm.

Nearest Moon Phase: 3rd Quarter

Directions: From Tucson travel west on Ajo Highway (86) to Three Points, turn left onto Sasabe Hwy (286) after the Chevron. Drive about .8 mile. Robles Elementary is the first right hand turn.

Setup Location: Toolkit TBD

*Wednesday – February 15 -- NORTH TUCSON

Harelson Elementary

826 W. Chapala Drive

Age/Grade Level: K-8; # Participants: 200

1 NSN Toolkit only

Setup Time: 5:00 pm Start: 6:00 8:00

Nearest Moon Phase: NA

Directions: Turn left on Paseo del Norte from Ina past Tohono Chul. At the stop sign take a left and Harelson will be on the left.

Setup Location: Inside TBD

Wednesday – February 16 -- SOUTHWEST TUCSON

Lynn/Urquides Elementary

1573 W Ajo Way

Age/Grade Level: K-5; # Participants: 250

0 Scopes Needed (filled)

Setup Time: 6:00 pm Start: 6:45 End 8:15

Nearest Moon Phase: 3rd Quarter

Directions: I-19 to Ajo Way (86), go West on Ajo Way and make a left when you come in to the school in about ¼ mile. (After the QT).

Viewing Location: Front courtyard.

Saturday – February 18 -- NORTHWEST TUCSON -- CATALINA

Catalina State Park (Quarterly TAAA sponsored public star party)

11570 N Oracle Road

Age/Grade Level: All Ages.

0 Scopes Needed (filled)

Setup Time: 6:15 pm. Start: 7:00 End: 9:00

Nearest Moon Phase: New Moon

Directions: North on Oracle Road to Catalina State Park.

Viewing Location: Trailhead picnic area at the end of the road inside the Park. Setup will be in the spaces inside the cones on the southwest corner of the parking lot.

School/Public Star Parties Continued

Sunday – February 19 -- FAR WEST TUCSON

UA Astronomy Program – ASTR 203

Redhills Visitor Center @ Saguaro National Park -- WEST.

2700 N Kinney Rd.

Age/Grade Level: College; #Participants: 65

0 Scopes Needed (filled)

Setup Time: 7:00 pm Start: 7:30 End 9:30

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 the Park until you reach the Red Hills Visitor's Center.

Viewing Location: Redhills Visitor Center lower parking lot.

***Tuesday – February 21 -- SOUTH TUCSON**

Robison Elementary

2745 E 18th St.

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

1 additional Scope Needed

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

Nearest Moon Phase: New Moon

Directions: From 22nd St turn North onto Country Club, then turn left on 18th St. The school will be one block down on the right.

Viewing Location: Courtyard

***Tuesday – February 21 -- SOUTH TUCSON**

Southside Community School

2701 South Campbell Ave

Age/Grade Level: K–8; # Participants: 200

1 additional Solar Scope Needed (White light or H-alpha)

Setup Time: 3:00 pm. Start: 3:30 End 5:30

Nearest Moon Phase: New Moon

Directions: SE corner of 36th St. and Campbell Ave.

Viewing Location: Field

Friday – February 24 -- SOUTH TUCSON

Sunnyside Neighborhood Association

5901 S Fiesta

Age/Grade Level: All; # Participants: 60

0 Scopes Needed (filled)

Setup Time: 6:00 pm. Start: 6:30 End: 9:00

Nearest Moon Phase: 1st Quarter

Directions: South on Liberty Ave. from Drexel Rd. to Calle Alvord.

Turn left at the traffic circle to the park.

Contact Beki to open gate to drive into park to far end of the garden for easy access to unload.

Viewing Location: Far East end of the Peace Garden

***Friday – February 24 -- FAR SOUTH (GREEN VALLEY)**

Pima County Natural Resources Parks & Recreation (NRPR) – Canoa Ranch

5375 S I-19 Frontage Road

All Ages; # Participants: 50 – 75

1 additional Scope Needed

Setup Time: 6:15 pm. Start: 7; End Time: 9

Nearest Moon Phase: 1st Quarter

Directions: I-19 South to Exit 56. Cross under the interstate and take the frontage road north to the park entrance.

Viewing Location: Open area – center of complex.

***Tuesday – February 28 --SOUTHWEST TUCSON**

Maldonado Elementary

3535 W Messala Way

Age/Grade Level: K–5; # Participants: 70

1 NSN Toolkit + 1 additional Scope Needed

Setup Time: NSN Toolkit: 5:30 pm. Start Time: 6:00 pm. End Time: 8:00 pm.

Scopes: 6:00 pm Start Time: 6:45 pm. End Time: 8:00 pm.

Nearest Moon Phase: 1st Quarter

Directions: Take Los Reales Rd. to Brackenbury Dr., for one block. Turn right on Messala Way. School is directly on left side.

Viewing Location: Toolkit: TBD, **Scopes:** Big field on Tetakusium Rd. side of school

What's Up list for February - March 2023

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 February and March for the more common observing programs.

Constellation Hunter Program – Northern Skies

The following constellations are well placed for observing for February and March:

Auriga, Camelopardis, Cancer, Canis Minor, Gemini, Lynx, Monoceros, Orion, Taurus

Messier Observing Program

Prime time for the winter Milky Way. The following Messier Objects are well placed for observation during February and March (listed in ascending RA):

M79, M38, M1, M42, M43, M36, M78, M37, M35, M41, M50, M47, M46, M93.

Lunar and Binocular Observing Program

The following is a list of the dates for the lunar phase for observations during February and March:

New Moon: February 20, March 21	10 days old: March 2
40 Hours waxing: February 22, March 23	Full (14 days old): February 5, March 7
72 hours waxing: February 23, March 24	Gibbous: February 13, March 14
4 days old: February 24, March 25	72 hours waning: February 17, March 18
7 days old: February 27, March 28	40 hours waning: February 18, March 19

Solar System Observing Program

The following list describes the various solar system objects and their visibility in February and March:

Mercury is an early morning object in February and the first two weeks of March. It becomes an evening object for the remainder of March.

Venus is an evening object during February and March, getting higher in the sky each night.

Mars is well placed for evening observation. It transits the meridian at around 8 PM on Feb 1 and by the end of March it transits before sunset. During the entire period from Feb 1 to March 31 it does not set until well after midnight.

Jupiter is still an early evening object. It sets earlier and earlier each night. On Feb 1 it sets around 10 PM. On March 31 it sets around 7 PM. On March 1 Jupiter is just ½ degree from Venus.

Saturn becomes an early morning object in early February. By the end of March it is rising around 2 hours before the Sun.

Uranus is well placed for evening observation. On Feb 1 it sets around 1 AM. On March 31 it sets around 9:30 PM. On March 30 it will be within 1.3 degrees of Venus.

Neptune is an early evening object in Feb and the first two weeks of March. It goes behind the Sun and become an early morning object around March 15. On Feb 14 Neptune will be within ½ degree of Venus.

Urban Observing Program

The following deep sky objects are well placed for observing during February and March:

NGC 1807, NGC 1817, M38, M36, M42, NGC 1981, M37, M35, NGC 2169, NGC 2232, NGC 2244, NGC 2264, NGC 2281, M41, NGC 2301, M50, NGC 2392

The following **Double Stars** are well placed for observation during February and March: Trapezium, Beta Monoceros

SPECIAL EVENTS: February 14 – Neptune and Venus are ½ degree apart;
March 1 – Jupiter and Venus are ½ degree apart;
March 30 – Uranus and Venus are 1.3 degrees apart



Steward Observatory Public Evening Lecture Series

Lavinia Steward made her historic contribution of \$60,000 to the University of Arizona “...TO BUY TELESCOPE OF HUGE SIZE,” on October 18, 1916. However, the United States entry into World War I delayed the construction of the Steward Telescope and its 36-inch mirror. That original Steward Telescope was finally used for the first time on July 17, 1922. It would take another 9 months before the Steward Observatory and Telescope would be formally and officially dedicated on April 23, 1923.

The Telescope, however, was ready to be used before the official dedication date and Prof. Andrew Ellicott Douglass, the first Director of Steward Observatory, did not leave the telescope idle. He invited members of the campus and Tucson communities to view the wonders of the night sky through this new, large (for the time) telescope. The date was September 28, 1922, and the Steward Observatory Public Evenings were born.

We are thrilled to be able to celebrate 100 years of presenting lectures on astronomy and telescope viewing to the public by offering a special Public Evening Lecture on the 100th Anniversary of the very first Steward Public Evening. Please save the dates for the following Public Evening Lectures, which will **begin at 7:30 p.m. in Steward Observatory Room N210 and on ZOOM at the URL: <https://arizona.zoom.us/j/4470189357>**

All of the lectures and the use of the telescope are free of charge and open to the general public. For more information, go to the [Evening Lecture Series page](#). You can click [here](#) to stream podcasts of previous Public Evening Lectures.

Feb. 13	Dr. Vasileios Paschalidis Steward Observatory	The Physics of Popular Culture Science Fiction: from “Contact” to “Interstellar” and Beyond
Feb. 27	Dr. Melissa Brucker Lunar & Planetary Laboratory	The First 40 Years of SPACEWATCH: Asteroids, Planetary Defense, and the Steward Observatory 36-Inch Telescope
Mar. 13	Dr. Kate Alexander Steward Observatory	The Messy Eating Habits of Snacking Black Holes
Mar. 27	Dr. Emma Beasor, Bok Fellow Steward Observatory	How do Massive Stars Live and Die?
Apr. 10	Dr. Everett Schlawin Steward Observatory	JWST’s First Stares at Planets that Peek in Front and Behind their Stars
Apr. 24	Dr. Christopher Impey Distinguished Professor Steward Observatory	Worlds Without End: Exoplanets and the Search for Life Beyond Earth Book-signing for Prof. Impey’s new book Worlds Without End after the lecture



College of Science

Myth Busting Science | Lecture Series

The College of Science is excited to announce Myth Busting Science as the topic of our 2023 Lecture Series (beginning on February 1st). Join us inside Centennial Hall beginning February 1 for enlightening presentations by four renowned University of Arizona faculty as they debunk common misconceptions in society and apply state-of-the-art scientific methods to solving critical problems.

February 1, 2023	Lee Ryan	Precision Aging: Busting the one-size-fits-all myth
February 8, 2023	Eduardo Blanco	Are computers as smart as you think?
February 15, 2023	Jessica Tierney	Climate is always changing. So why is climate change a problem?
March 1, 2023	Michael Worobey	Origins of the Covid-19 Pandemic: Facts and Fallacies

Check [here](#) for speaker information, dates, and more in the coming weeks.



COLLEGE OF SCIENCE

**LUNAR & PLANETARY
LABORATORY**

LPL Colloquia

Click links for more information

[Tuesday, February 7, 2023 - 3:45pm](#)

Dr. Stéphane Mazevet Via Zoom
Director Côte d'Azur Observatory

[Tuesday, February 21, 2023 - 3:45pm](#)

Dr. Xi Zhang Via Zoom and Kuiper 308
Associate Professor, Earth and Planetary Sciences
University of California, Santa Cruz



TAPS 2023: Big Worlds, Small Worlds

To be held in the Kuiper Space Science Building, located at:
1629 E. University Blvd., Tucson, AZ 85721

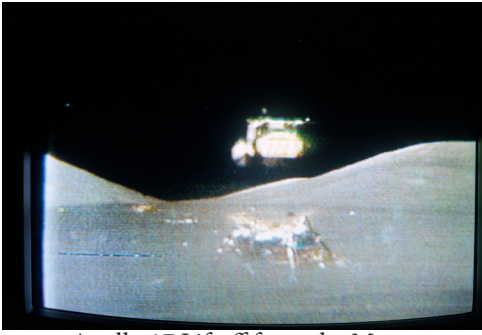
Gallery Hours:

Friday (2/17) 5:00 - 9:00 pm

Saturday (2/18) 1:00 - 5:00 pm

Sunday (2/19) 1:00 - 5:00 pm

For more information, [click here](#).



Apollo 17 Liftoff from the Moon
(NASA Image)

Skyward

By Dr. David H. Levy
January 2023



Artemis I Launch (NASA Image)

Back to the Moon

I shouldn't have been surprised by the complete success of the Artemis mission last fall. NASA's A-team of engineers really know what they are doing. The mission was fun to watch, particularly the brilliant light when the main engines lit up, and it provided some hope that we may actually return to the Moon, someday soon.

But somehow, it isn't the same. Something is missing.

For those of us who were alive and young in 1961, do you remember President Kennedy's poignant speech to Congress on May 25, 1961, when he asked the nation to commit itself to landing a person on the Moon? Only three days after my 13th birthday, this was a call I heard distinctly. I did miss the fact that this was the second of three speeches. The first call was during his inaugural address: "Let both sides seek to invoke the wonders of science, instead of its terrors. Together let us explore the stars..." And at Rice University he gave his third: "We choose to go to the Moon."

On August 25 of the summer of 1960, I observed a 99.2% partial eclipse of the Moon in which the shadow of the Earth covered almost all of the Moon. I remember, a few years later, setting up my first telescope, Echo, across the street to time the Moon passing in front of our star, and explaining to a priest who was passing by, that what I was doing might actually assist the Moon mission planning. Or not.

I have already written about where I was on July 20, 1969, during that emotional moonwalk. I listened attentively as the astronauts on Apollo 13 somehow managed to return safely home after the near-disaster. And I watched the interminable countdown hold when, on December 6, 1972, the countdown was stopped just thirty seconds before launch. About two hours later the launch was completely successful, and the program's only geologist, Jack Schmidt, conducted a field excursion 240,000 miles from Earth, in the Taurus-Littrow valley of the Moon's southern highlands. I was enormously pleased and proud of Jack," recalled his teacher Gene Shoemaker, "but I was also wistful. There but for a failed adrenal gland, went I." Because of Addison's disease, Shoemaker never made it to the Moon, at least not in life. After he died in 1997, some of his ashes landed on the Moon aboard Lunar Prospector.

In the 1960s, I used the Apollo project to intensify my own passion for observing the Moon through telescopes and binoculars. In 1961, Kennedy set the goal. Eight years later, humans walked the lunar surface in one of the high points of human civilization. That passion I carry to this day. I still enjoy watching the Moon, looking at its well-known craters and mountain ranges. The Moon is not just a thing in the sky. It is a place. Twelve people have walked across its surface, and with luck, more people will someday stroll across its surface.

I will never walk on the Moon. But through my telescope, I shall continue to view the Moon from southern Arizona. And when my eye touches the eyepiece of my telescope, I will be as close to the Moon as I ever hope to get.

Dr. David Levy is a long-time member and former President of the TAA. 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.