

TUCSON AMATEUR ASTRONOMY ASSOCIATION

Observing Our
MONTHLY EVENTS BULLETIN
Since



Desert Skies

1954

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November 2023

www.tucsonastronomy.org

Membership Meeting

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

TAAA's next general member meeting will be held on **Friday, November 3, 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: The Chinese/Japanese Supernova of 1181 AD Is Weird!

Presentation: In 1181 A.D., Chinese and Japanese observers reported a bright Guest Star in the constellation Cassiopeia that was unmoving and visible for 185 days. What was it? If confirmed as a supernova, it would be the fifth historical supernova to be known. In 2013, amateur astronomer Dana Patchick discovered a unique nebula surrounding a unique star, named Pa30, that was possibly the supernova remnant (SNR) of the Supernova (SN) 1181. Dr. Bradley Schaefer will talk about his research, using historical evidence, and current astronomical tools to connect SN1181 and PA30.

Biography: Dr. Bradley Schaefer received his Ph.D. in 1983 from Massachusetts Institute of Technology and is Professor Emeritus in the Department of Physics & Astronomy at Louisiana State University. His wide range of interests include many areas of astrophysics, as well as many aspects of astronomical events in history (e.g. the Crucifixion and the Star of Bethlehem)

and in literature. Dr. Schaefer was a member of the Supernova Cosmology Project which led to the discovery of Dark Energy. The paper for the project won the 2011 Nobel Prize in Physics for its leader, Saul Perlmutter. And, as one of the prize-winning paper's co-authors, Dr. Schaefer received a share of the 2007 Gruber Cosmology Prize, and the 2015 Breakthrough Prize in Fundamental Physics.

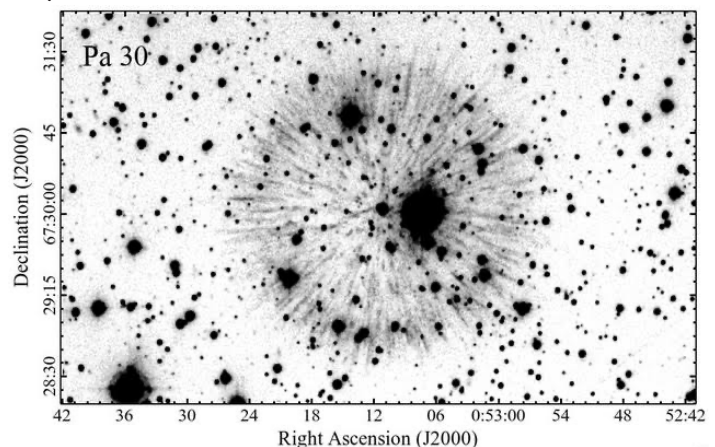


Photo: Is nebula PA30 a remnant of SN 1181?

Credit: Astronomer Ron Fessen (observing at MDM on Kitt Peak)

[David Rossetter](#) – Editor

Ken Bertschy - Graphics

Terri Lappin & Jim Knoll - Proofreading

Gregg Ruppel -Image Editor

October 2023

We were all pleased that the Commemorative Service for Dean Ketelsen went so well, and that Dean's ashes will continue to share the CAC site with TAAA. Our energies have turned lately to focusing on the CAC Open House event on Veteran's Day (November 11th). Details are listed other places in this bulletin, and we are looking forward to a large attendance for that event.

Part of the discussion at the **October TAAA Board Meeting** focused on **current aspects of change and transition in TAAA**. Change and transitions are a normal part of all active, growing, developing organizations. Times of an increased rate of change help prevent stagnation of an organization and keep it viable, strong, and focused, especially when the organization has an active, knowledgeable, dedicated Board to help direct these processes.

As many of you may know, TAAA is near completion of most of the aspects of the development of CAC that we identified years ago in the **Strategic Plan for CAC**. In early days of CAC, **Wendy Magras** used her expert organizational skills to lead a very successful strategic planning effort focusing on development of the new site. Soon, there will be only two remaining aspects of that plan that have not been realized: one was the possible addition of radio astronomy and the second was the possibility at some point in the future of adding a resident ranger. Both of those elements have been rediscussed in recent years and could be rediscussed at some point in the future but are not currently in process of happening. There have been times when some TAAA leaders have attempted to organize a radio astronomy effort, but those efforts resulted in only one or two members expressing interest in such a project. And, while there are advantages of having resident rangers, members of TAAA who have dealt with resident rangers in other organizations are well-aware of a list of disadvantages that can accompany such resident ranger programs. Whether radio astronomy or a resident ranger ever become part of the CAC future, certainly there will be other directions beyond the original master plan, including the 32".

by Mae Smith

A second area of possible significant transition that has been under discussion in recent months is consideration of changes in the future in the **TIMPA site**. There is a list of options that have been offered and can be reviewed and considered, including the option of leaving things as is and the option of discontinuing the site or the option of finding a new site. Possible decisions and transitions regarding TIMPA will be managed and evaluated in a careful, thoughtful manner. Input and suggestions from members have been and are currently being collected. So, if you have input, please send it to me and/or the TAAA Board. You will note that this bulletin contains an add seeking a new TIMPA Director. We expect that it may take a while to finalize decisions regarding TIMPA in the future and to enact them. We certainly would like in this interim period to have a Director of TIMPA who could focus on maximizing current use of the site.

A third area of development for TAAA involves **membership** and TAAA's attention to membership. As was mentioned a couple of months ago, in the last three or four years the membership of TAAA escalated to currently being over 870 members. We are presently working on our member database; focusing on learning more about our current membership including who they are, what they are most interested in and how we can better meet their needs. We are also looking at some of our technology programs including the Member Planet program to determine how we can make such programs work better for our members and how we can use data more effectively to understand our membership and serve our members.

A fourth area of transition for TAAA will be to collect and clearly specify more information about TAAA priorities for the future through a **strategic planning effort**. We have applied for and received a grant from an organization (that assists non-profit organizations), and that organization has agreed to fund a professional strategic planner to work with us on developing a new TAAA strategic plan. At some point we will depend upon members to provide us basic information about their interests and what they see as priorities for TAAA in the future, as part of developing the new Strategic Plan.

Notes From the President - Continued

A fifth possible area of exploration for TAAA is to further **identify and determine its roles in the community**. As a non-profit organization TAAA is structured to and committed to **serve the public**. We may at some point wish to determine how we are and are not meeting our responsibilities to the public and what public responsibilities we want to develop or enhance in the future. Over time the ways in which a nonprofit organization meets the needs of the public may change and evolve, both as a result of its own evolution and ability to provide more, but also as a result of responding to public needs. TAAA is likely to continue to evolve in this manner as well as others.

Additionally, In the **October Board Meeting**, the Treasurer's Report was reviewed for the month, but some information was still missing so a motion for approval was held until the next meeting. A discussion of the upcoming November 11th Open House at CAC was held. Plans for increasing food for the event were added, and locations where the presentations to visitors will be viewable have been increased so that both the classroom and RMO areas will be available. Snacks will be supplied in both areas. The bus and event schedules were reviewed. Planning for completion of yard work and clean-up prior to the event as well as for temporary signs, as needed, were discussed.

The Board reviewed Proposed Naming related to service for Tim Hunter, Robert Crawford, and Warren Hensey. Those namings were approved and the financial donor list to be displayed was reviewed. We believe that all decisions regarding current signage are in process of being implemented. In event that a particular final sign cannot be completed in time for the open house, a temporary sign will be printed and displayed at the event.

David Rossetter is further interacting with Daniel Chin regarding new membership information

and considerations in continuing to use the Member Planet program. Some other membership programs are being reviewed and discussed. This is an ongoing project.

Additionally, in the October meeting the **TAAA Board approved a Strategic Planning effort** proposed by Suzanne Bailey. TAAA has received a grant and will be working with a consultant from the Tucson Center for Healthy Nonprofits (that previously provided TAAA with a consultant in 2020/2021) to review, learn more about and evaluate TAAA's effective functioning as a nonprofit organization. The organization, a branch of the Community Foundation of Southern Arizona, in 2021 provided a grant to TAAA to assist TAAA with some significant questions regarding nonprofit functioning. The 2020/2021 efforts were very helpful and are discussed further below.

President: Mae Smith
president@tucsonastronomy.org

Other Elected Leader Contact Information:

Vice-President: Ed Foley
vice-president@tucsonastronomy.org

Secretary: Bob Reynolds
secretary@tucsonastronomy.org

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

TAAA Board: taaabod@tucsonastronomy.org

The TAAA Board of Directors meets the second Wednesday of every month at 6:30pm. Members are welcome to attend Board meetings. If you would like to attend, you may email [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.

A Review of TAAA Board Efforts in 2020 and 2021 to Further Understand and Meet Responsibilities of TAAA's Nonprofit Status

I realize that various assumptions have been recently voiced regarding the behavior of the TAAA Board in its attitude and behavior in addressing its responsibilities to maintain TAAA's nonprofit status. Statements that I have heard recently have failed to address the actual realities of the extensive, credible, and responsible efforts on the part of the TAAA Board. It is terribly concerning that such unwarranted criticisms have been very superficially raised without addressing the actual known and verifiable facts. I will try here to select the efforts of the Board that are most relevant to the time-period of the concerns expressed.

I do wish to verify that, "yes, TAAA is a nonprofit organization". As background perspective, I will verify that TAAA has long held nonprofit status. The brief history is that in the 1980's, Tim Hunter served as TAAA President. During that time, one of Tim's goals was to assist TAAA in obtaining non-profit status. This goal matched and exemplified the on-going commitment of TAAA to serve the public. Additionally, the financial benefits of non-profit status would assist TAAA in raising the money to purchase land and obtain its own dark sky site. Tim applied to the Arizona Corporation Commission in 1985 for TAAA to be recognized as an Arizona Corporation (a first step to qualifying for non-profit status). That application was approved. So, then Tim filed the required application for TAAA to qualify as a 501c3 Nonprofit organization, and that application was approved in March 1987. TAAA received official approval of its recognition as a Nonprofit Organization and has continued to meet the requirements of a 501c3 organization every year since then.

If you are unfamiliar with standards for nonprofit organizations, It may be helpful to you to review the [State laws for charitable organizations Arizona](#). Arizona nonprofit corporation statutes are governed by Chapter 24-40 of Ariz. Rev. Stat. Ann,

Title 101. The statutes are available on the [Arizona Legislature's website](#). Additionally, there are several Federal laws that must be followed in order for an organization to retain its nonprofit status. Of course, there are severe penalties for failure to comply with nonprofit standards. Organizations that lose their nonprofit status lose all property (and all value of that property). Upon the loss of nonprofit status, all property of the organization is seized and disposed of by government entities.

Since before I became President and throughout my time as TAAA President I have maintained ongoing relationships with and participated in trainings with local Tucson and Arizona state entities that exist to serve and educate nonprofits. In 2020, I and two TAAA leaders participated in the most basic foundational trainings recommended for a nonprofit leader: courses in nonprofit finances, legal aspects in nonprofits and fund-raising training aspects of working in a nonprofits as well as some other courses. In 2020/2021, six of our seven TAAA Board members (including, Bob Reynolds, Ed Foley, Ralph Means, Doug Smith, Gus Gomez, and myself) as well as two TAAA leaders (David Rossetter and Jim Knoll) participated in the latest versions of those three foundational trainings. Funding for those trainings was obtained through six scholarships and donor dollars for two additional scholarships to all three trainings.

Additionally, the TAAA Board felt that we needed not just general information and training but beyond that we needed specific information relevant to TAAA that would assist us in further developing as a nonprofit entity. We applied for and obtained 20 hours of organizational consultation from a Tucson retired attorney through a grant program offered by the Community Foundation of Southern Arizona, and we additionally received a \$3,000 donation from a TAAA member for consultation with a highly qualified non-profit Board trainer and non-profit

TAAA's Nonprofit Status - Continued

accountant. With these resources, we reviewed and rewrote our TAAA Conflict of Interest policy and procedures; we improved procedures for filing and managing our 990 (nonprofit income tax) report; we reviewed and much improved our management of selecting and electing candidates running for office and reviewing qualifications of candidates. We developed some needed policies; we looked more in depth at financial management; we prepared to subsequently move back into employing nonprofit accounting structure; we reviewed the problems associated with member-inurement in nonprofits (members receiving benefits that are beyond what is legal for a nonprofit) and structures that supported staying within legal limits for benefits of members of nonprofits (crossing the line into exceeding legal benefits is a common reason for nonprofits permanently losing nonprofit status). And we did special exploration of how things needed to occur in developing CAC to always stay within nonprofit laws in the process of developing CAC and of determining member benefits available at CAC as well as developing Member Observatories.

We spent many months addressing the question of whether nonprofit laws and limits on member benefits could be followed in structuring a program of member observatories. We raised questions within ourselves and our investigations and with our consultant experts about whether a member observatory program could be developed and conducted in a manner that would absolutely avoid violating any non-profit laws and, if so, what had to be considered in doing it. We learned all we could about this from our two experts and got them to supply us with information on literally hundreds of nonprofits that had lost their nonprofit status (and subsequently all their property) for violating nonprofit laws about benefits received by members. These experts helped us, immensely, to identify areas of concern and to formulate questions that we needed

answered. They addressed all the questions they could and were very helpful. Then, to bring us to a final point of actual decision making, we all agreed that we needed official advice from an attorney who specialized in answering the few questions we had left so we could be sure that we obtained the most knowledgeable, informed, and accurate in-depth answers possible. With our experts we identified the characteristics of the person needed to obtain in-depth answers. We finally came up with a name, and two of our Board members met with him. That attorney was immensely valuable to us. He immediately understood our situation and the questions that needed answering and gave very specific, clear answers about how to structure the Member Observatory Project so that TAAA's nonprofit status would not be questioned at all. We have precisely followed the instructions.

If you ever have questions about the behavior, decisions, or attitudes of the TAAA Board, please ask us. We are doing the best we can. There are seven of us. Perhaps if you are uncomfortable in talking with a certain one of us, there would be someone else you would be more comfortable with. We appreciate your suggestions and input. Most of our great ideas come from members. And, before we were Board members, each of us was a member. We are glad to share with you and to learn from you. However, if you have criticisms, we would appreciate your sharing them directly with us and allowing us an opportunity to address them with you in a constructive manner.

If you have any questions for me about this or something else, please contact me.

[Mae Smith](#), TAAA President

CAC OPEN HOUSE AND RIBBON CUTTING

Saturday November 11, 2023



Mark your calendars. There will be a *Chiricahua Astronomy Complex (CAC) Open House and Grand Opening* celebration for the completion of the *Foley INNstitute and Mooney Foundation Night Sky Learning Center*, the completion of new Member Observatories, the Open Sky Campground, the *Bill Lofquist Outdoor Learning Center*, The *Stinger Telescope Pad*, and lots more. The Open House will be **Saturday November 11, 2023** (Veterans Day) starting at 5 pm. Members can drive themselves or use the TAAA reserved Charter Bus for a nominal fee of \$15 (collected at the bus). The bus will depart from the TTT Truck Stop along I-10 to CAC at 2 pm, arriving about 4:30. Departing CAC about 7:30 pm and arriving back in Tucson at 10 pm. To attend the open house or make a reservation for the bus, please use the this [reservation link](#). For any questions, please email the [CAC Director](#).



Foley INNstitute
and Mooney Night
Sky Learning
Center

Stinger
Telescope Pad



Sleeping Room



Open Sky
Campground



Learning
Center
Classroom



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 will present a brief bio for the one candidate who expressed interest in the position at the November member meeting. Nomination of any other candidates will be considered up until the election to be held during the December meeting. The vote will be conducted via secret ballot for those eligible members at the December meeting in combination with an online poll for those attending via Zoom. Any questions or additional nominations should be directed to nvrcchair@tucsonastronomy.org

Practical Astronomy Workshop 2

Constellation Locating and Identification

Open for Enrollment

Place: TIMPA; Date/Time: Thursday, November 16, 2023, 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. 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 without memorizing the sky. This program provides the methodology for the observing requirements of the Astronomical League's Constellation Observing Program (Northern and Southern).

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

Contact TAAA ALCOR – Douglas Smith; Phone: 520-396-3233; E-mail: alcor@tucsonastronomy.org

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: alcor@tucsonastronomy.org or sign up using the sign-up sheet available at all General Members meeting starting October 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 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?

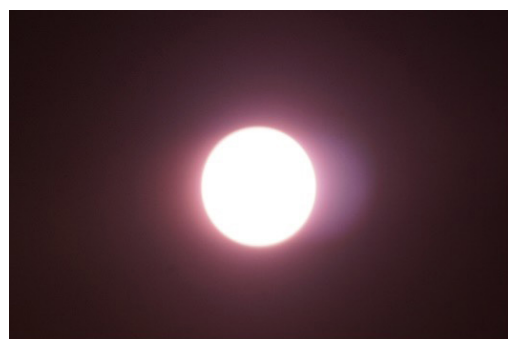
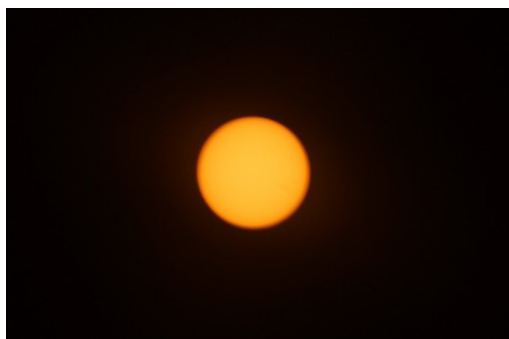
A member attending the workshop we held in August was able to see sunspots with a 40x9 pair of binoculars

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.



32 Inch Eye on the Galaxy Telescope Project

November Update

This summer TAAA received a generous gift of a 32 inch DFM Cassegrain telescope. This is a research grade instrument, the type owned by universities and institutions around the world. A group of TAAA volunteers traveled to Colorado to disassemble and retrieve the telescope. It is now stored in a member's barn near our eastern dark site in Cochise County.

The telescope will be installed for use by TAAA members and to use in our outreach programs at CAC. It is truly a special instrument for our organization.

A TAAA committee, which includes professional astronomers and engineers, has been working to complete the design of the observatory to house this wonderful gift. The observatory will be a roll off roof observatory design, similar to the five we have constructed already at the Chiricahua Astronomy Complex, except scaled up to accommodate this large telescope.

We estimate the total cost to clear the area at CAC, pour the foundation, construct the building etc. will be \$75,000. Since we kicked off our fundraising campaign in September, we have raised over \$34,000 toward this goal. We are almost at halfway our goal, but we need your support to complete the project.

If you can contribute to this effort, please contact the TAAA [Treasurer](#) or [Ed Foley](#), Chair of the Fundraising committee.

TAAA 2024 Calendar

Tucson Amateur Astronomy Association



2024

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



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!

Star Hopping Workshop Report

October 19, 2023 - by Doug Smith

This version of the Star Hopping workshop was extremely successful. The workshop was held at TIMPA. There were 14 participants. The participants were split into teams of 2 or 3 and each team made use of a dobsonian telescope to locate a variety of targets using only a planisphere and star atlas to locate the targets by star hopping. All the teams did well and everyone learned a lot from the experience. All the participants expressed positive feedback. This workshop will be scheduled again in 2024.



Annular Eclipse 2023 and TAAA Members' Outreach



Sabino Canyon - David Iadevaia

NASA Funded DEB Initiative and the NASA Eclipse Ambassador Program. Over 400 people participated.



Roswell NM

Susan & Jim Knoll, Bernie Stinger, Evan Pomerantz, and Tom Sarko.

We traveled to Roswell NM to witness the eclipse and joined together at the RV Park that Jim & Susan were staying at to do a solar viewing "star party" event for the local residents of the RV Park.

Weather forecast that morning looked like it was going to be partly cloudy with high haze. Fortunately the clouds held off (alien influence?) until just after the event ended.



University of Arizona Mall

Jim O'Conner



Desert Museum

David Rossetter, in his capacity as a Desert Museum Docent, helped host over 500 guests with his H-alpha scope along with another docent with the museum scope (with white light filter), and a group of UArizona graduate students with their H-alpha scope. We got extra help from TAAA President, Mae Smith. Photo by Pam Rossetter



TAAA Bart & Priscilla Bok Award

Jim Knoll 10/6/2023

Jim and his wife, Susan, joined the club on 11/01/2004. From the start, Jim participated in many TAAA activities, particularly outreach events. He eventually assumed coordination of both school star parties and paid star parties. His dedication to outreach showed as he increased the number of school star parties up to 15 to 20 per month. Jim transferred school star party coordination to Bernie Stinger in the Fall of 2022 but continued running the paid star party program which became known as Tucson Stargazing Adventures (TSA). His outstanding coordination of the TSA activity has brought in tens of thousands of dollars to the club much of which supports the operation and development of the Chiricahua Astronomy Complex.

As if generating the funds to support the CAC Site wasn't enough, Jim also assumed the CAC Director responsibilities about 3 years ago. Under Jim's guidance, the CAC Site has expanded dramatically into a world-class facility. Improvements that occurred under his administration were the sleeping quarters buildings with an associated 4-telescope observing pad, the addition of six electric vehicle charging stations, the construction of the new Member Observatories area, the expansion of the RV area from four to seven lanes and the current preparation effort to install a 32" research-grade telescope at the site.



Jim has also supported the annual Grand Canyon Star Party by accepting numerous responsibilities over the years including the current overall coordination of the event.

Other areas of Jim's TAAA involvement include:

- Writing grant proposals to solicit philanthropic donations to help fund the CAC sleeping quarters project.
- He's a co-coordinator of monthly meeting technologies with Terri Lappin.
- He developed virtual star parties which were driven by the Covid pandemic.
- Jim helped develop and he coordinates the Library Telescope program where small, portable telescopes are given to libraries in southern Arizona and made available to the public.
- Jim supports the Starry Messenger special interest group by volunteering for service at the annual U of A Book Festival and by helping to coordinate the club's annual Astronomy Festival.

This extensive body of work exemplifies Jim's commitment to sharing his enthusiasm for astronomy with the public. Recognition of his efforts is long overdue and this award indicates the club's sincerest appreciation. We would also like to thank his wife, Susan Knoll, for supporting her husband's involvement allowing him to achieve this high level of success. Thank you, Jim

Written by John Kalas
Previous Bok Award Recipient

Bart and Priscilla Bok Biography



Bart Bok was a Dutch-American astronomer, teacher, and lecturer. He is best known for his work on the structure and evolution of the Milky Way galaxy. He lived from April 1906 to August 1983. Bok married fellow astronomer Priscilla Fairfield in 1929, and for the remainder of their lives, the two collaborated very closely on their astronomical work. The Royal Astronomical Society said "it is difficult and pointless to separate his achievements from hers". They worked together on research and co-authored academic papers, and their general interest book *The Milky Way* was widely acclaimed as one of the most successful astronomical books ever published.

In 1966, Bart took up the roles of Head of the Department of Astronomy at the University of Arizona and Director of Steward Observatory, posts which he held until 1970. He was largely responsible for the construction of the 90 inch (2.3 m) telescope at the Kitt Peak National Observatory, and oversaw a doubling of the university's staff and growth in the graduate student program until, by 1970, it was ranked fifth in the US, and Steward Observatory was regarded as one of the world's premier astronomical research institutions.

Bart and Priscilla Bok Award History

Many years ago, the TAAA developed the Bart and Priscilla Bok award to recognize outstanding contribution to the organization by individual members. It is currently the highest award achievable within the club. There have been thirteen previous recipients of the honor. Now we will honor the fourteenth. Jim Knoll.

Book Of The Month Review

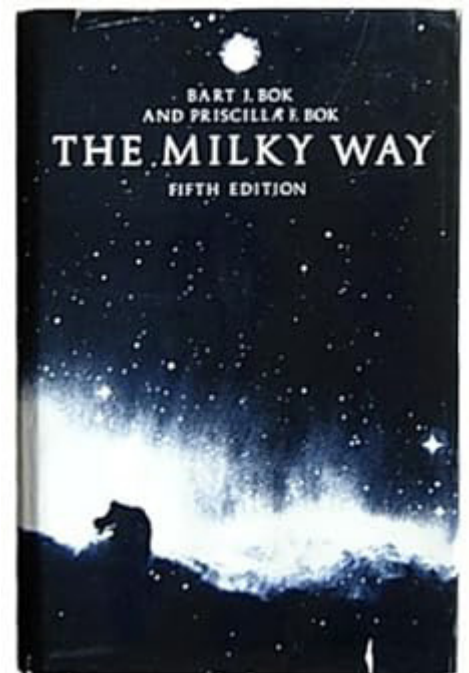
by Douglas Smith (TAAA Librarian)

Book: *The Milky Way* (fifth edition)

Authors: Bart Bok and Priscilla Bok

This is the definitive book on our home galaxy, the Milky Way. Written by Bart and Priscilla Bok (whom the Bok award is named after). The book is well written and, even though first written in 1941, (this edition was written in 1981) is still relevant to the study of our galaxy. The book assumes no prior knowledge of the subject and covers the subject in great detail with a minimum of mathematics. For anyone who is interested in the study of the Milky Way this is a must read book.

The Milky Way is out of print but can be found online for between \$10 and \$20.



TAAA Astronomy Camp

TAAA has a long history of astronomy education and many successful programs over the years. One of those successful programs has been hosting high school students for overnight observing, astronomy education, and research at our Chiricahua Astronomy Complex dark site. These sessions were suspended during the pandemic, but this year an Astronomy Camp committee was formed to revive the program at CAC with dates being offered for groups in the first half of 2024.

The Astronomy Camp committee is now actively courting science teachers who can sponsor these trips for their students. The program offers educational groups access to the extensive CAC facilities for overnight stays and classes. Our site includes a classroom, sleeping rooms, rest rooms, kitchenettes, a variety of telescopes and our talented volunteer instructors. TAAA, in collaboration with the teachers, can provide a menu of possible activities supported by the TAAA facilities and volunteers. Guided use of TAAA telescopes for visual observing or astro-imaging is available to these groups.



Any TAAA members who have contacts with high school teachers who could benefit from this program and might be interested in sponsoring a trip for their classes, are encouraged to contact the TAAA Astronomy Camp chair, [Ed Foley](#) to further discuss the possibilities.

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, November 16, 6:30pm

JoJo's

76 W Washington
(SW corner of W Washington St and N Court Ave)

Preview the menu at: <https://www.jojostucson.com/>

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

Special Interests Groups



Starry Messengers Special Interest Group

Opening Minds to the Universe

The Starry Messengers will meet in person on Nov 13th 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 look at solar astronomy projects and select the activities best suited for our spring outreach events.

About 210 engagements with students and their families at four events were made by Pete Hermes, Tom Sarko, and Susan O'Connor. Here are upcoming requests for Night Sky Network Toolkits. Send an email to [Terri Lappin](#) if you can support these events. Two volunteers for each event are needed. Training is available.

- Nov 9 (Thurs) 6-7:30pm; Henry Elem; Shadows & Silhouettes; Speedway & Harrison
- Nov 16 (Thurs) 5-6:30pm; Myers Ganoung Elem; Glass & Mirrors; near Swan & 29th
- Nov 17 (Fri) 5:30-7:30pm; Acacia Elem; Space Rocks; in Vail, AZ
- 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

SMSIG on the [Web](#)

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

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 AFSIG meeting is on **Thursday, November 9 from 6:30pm to 9:00pm**. 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, November 20 at 7:00 pm** via ZOOM.

Topics: Planetary Image Processing - Gregg Ruppel
Image Sharing, Discussion, Q/A

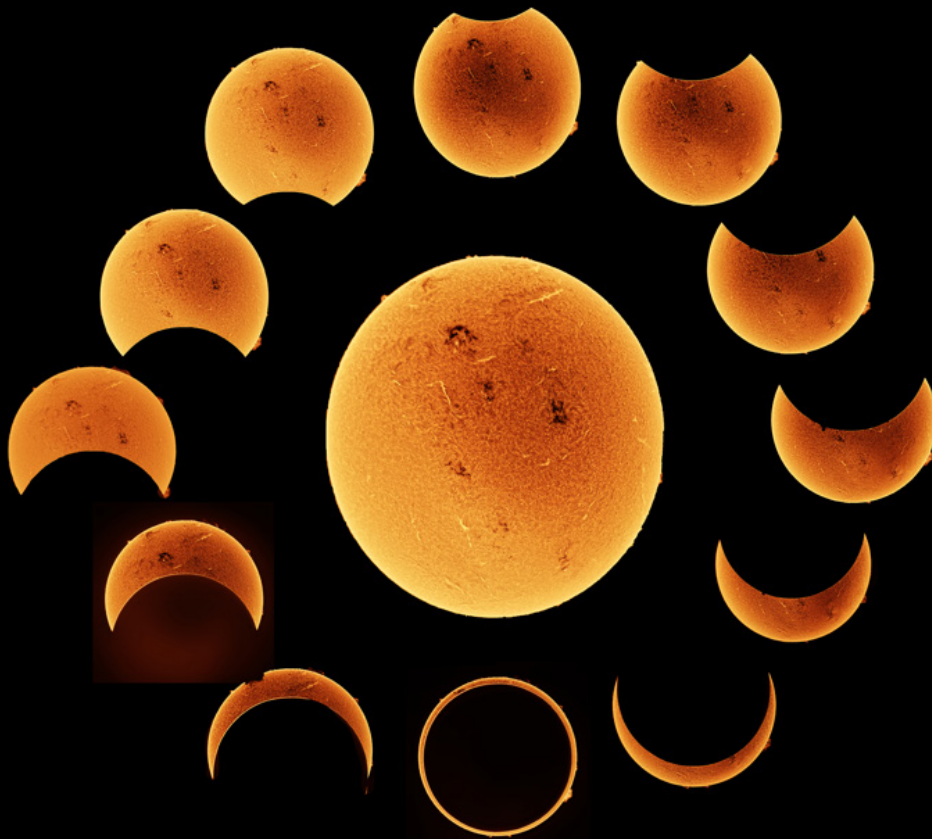
Email [Gregg Ruppel](#) for the ZOOM link or any other information. Gregg and the AISIG folks are very active on the [TAAA groups.io](#) forum. Check out all the helpful advice and amazing images there. For more information or instructions on how to join the forum, check out the [TAAA Forum](#). Look for previous AISIG meetings on the [TAAA YouTube Channel](#).

Imaging Workshop

AISIG will hold an Imaging Workshop on **Saturday, November 18, from 10 am - 4:30 pm** at the Oro Valley Public Library (1305 W. Naranja Dr.). The workshop will concentrate on image processing using PixInsight and other post-processing tools. Feel free to bring your own data along with your laptop, or you can use data that will be made available by the discussion leaders. Lunch is on your own.

Time	Topic
10 – 10:30	Welcome
10:30 – 11:15	WBPP
11:15 – 12:00	Stretching, Histogram Transformation, GHS
12:00 – 12:45	Masks in PixInsight
12:45 – 1:30	LUNCH
1:30 – 2:15	Narrow Band in PI, STX
2:15 – 3:00	Mosaics, PI and APP
3:00 – 3:45	Image processing Q/A, Discussion
3:45 – 4:30	Photoshop, and others

Highlights from the Astro-Imaging SIG



Mark Johnston
Eclipse Montage

I imaged the eclipse from ABQ. Lunt 100MT with Saturn SQR-M camera.

Annular Eclipse October 14 2023

@azastroguy



NGC 6946

A 70 minute snapshot of the region around galaxy NGC 6946 also with the cluster NGC 6939 and various amount of IFN.

RASA 11 f/2.2 / ZWO asi2400mc pro /
CEM70ec unguided / no filters / camera
Gain 0 Offset 30 / 10-10-2023

Tom Eby

Annular Eclipse

This was maximum at 9:33am from the
backyard. 80mm f/6 scope, Nikon D5500,
Baader astrofilm 1/1250 sec iso 100





**John
Tsantes**

Cocoon Nebula

This was a tough target, not because of the capture (300, 60s subs), but because I lost lots of detail with my C8 in cropping this small image. Celestron C8; Sky-Watcher EQ6-Ri; HyperStar 8; ZWO ASIAir Plus; ZWO ASI 2600mc Pro; ZWO Mini Guide Scope; ZWO ASI 120mm Mini; ZWO EAF; IDAS NBX Nebula Filter; Optolong L-Pro; PixInsight; Apple MacBook Pro M1 laptop.

M33

Modest processing of 200, 60sec subs. Celestron C8; Sky-Watcher EQ6-Ri; HyperStar 8; ZWO ASIAir Plus; ZWO ASI 2600mc Pro; ZWO Mini Guide Scope; ZWO ASI 120mm Mini; ZWO EAF; IDAS NBX Nebula Filter; Optolong L-Pro; PixInsight; Apple MacBook Pro M1 laptop.



**Craig
Harding**



**IC63 and
IC59**

Sharpstar 94edph with reducer for 415mm, ASI2600MC Pro at -5C and the Antlia RGB Triband filter, ASI220mm-mini and 120mm guidescope, ASIAIR, EAF, AM5 Mount on the carbon fiber tripod.

I started with 60 subs at 180sec each and ended up processing 48 of them for a total integration of 2h24m. Since it is CAC, I only used a uv/ir cut filter on the ASI294MC Pro camera attached to an Astro-tech 115edt scope with a 0.8 reducer/flattener.



M31



NGC 2146 & 2146A

Two interesting spirals located in the constellation Camelopardalis. This is about 16 hrs of RGB data captured mostly the last few nights--although about 2 hrs worth of data is from last year.

Taken in my backyard in Tucson, with my 140mm refractor. Exposures were 60 seconds each.

**Alan
Rockowitz**



WR134

Imaged from my backyard in Tucson. This is an HOO representation,

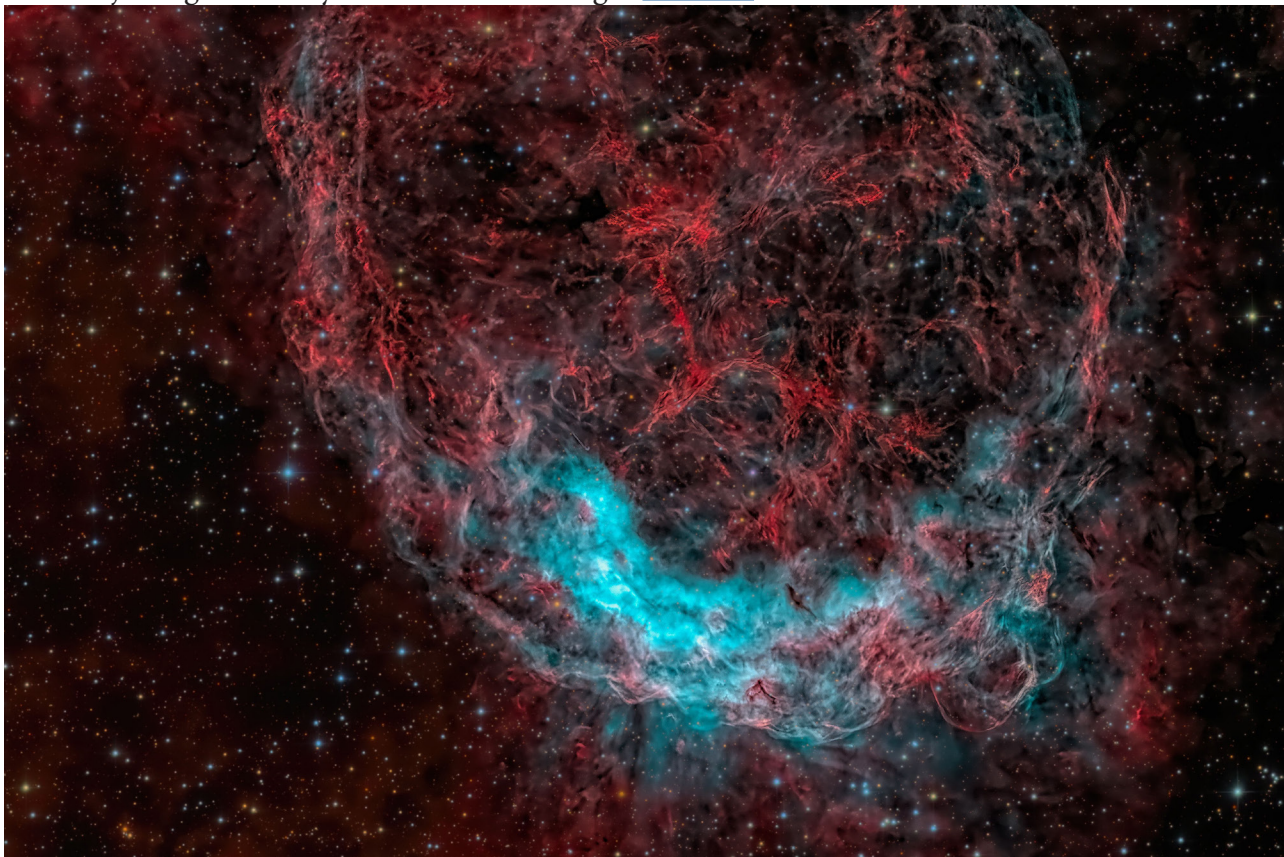
and I have about 30 hours of 10 minute subs, about half in Ha and half in OIII. 140mm iStar refractor, ZWO ASI 2600mm camers, Optolong Ha and OIII filters, 10 micron GM1000HPS mount



Alex Woronow

M83; [Astrobin](#)

NGC 3199; Was shot with a 24" telescope in Chile in narrowband. I mapped those emission lines to their corresponding colors on the visual spectrum and did little else to the colors subsequently, except what occurs when adjusting the clarity and such of the image. [Astrobin](#)



M45 Pleiades

245 60s subs

[Astrobin](#)



David Stearn



M33

200 60s subs

[Astrobin](#)

Bernie Stinger

Bernie Stinger
10/14/2023
Roswell, NM

Bernie Stinger
10/14/2023
Roswell, NM

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: **November 10-11.**

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): **November 10-11 (new moon 13)**

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.

CAC Open House and Dedication Ceremony November 11. We will be having a CAC Open House and Dedication Ceremony for the completion of many different projects and facilities. The event will go from 5 - 8 pm. The gate will be open by 3 pm. Please RSVP using this link so we can manage attendance and parking. There is also a Charter Bus available if you don't want to drive. [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. 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 2023

TIMPA

November 10-11
December 8-9

CAC

November 10-11 (New Moon 13).
December 8-9 (New Moon 12).

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 November, 2023.** November is really picking up with numerous star parties at public events at State, County & National Parks & Monuments as well as schools 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! I will let you know in return if you are on it or that it was already filled.

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 September 24th. ***Stared events and bolded telescope references** still have need for volunteers.

If you can help out please contact me at: astronomy-events@tucsonastronomy.org

Thursday – November 2 -- EAST TUCSON

Tucson Arizona Boys Chorus

Harlow Gardens 5620 E. Pima Street

Age/Grade Level: Mostly Adults; # Participants: 125

Filled – No Scopes Needed

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

Nearest Moon Phase: 3rd Quarter

Directions: From Pima and Craycroft travel east two blocks to Harlow Gardens on the right hand (south) side of Pima

Viewing Location: In the garden area of the event

Saturday – November 4 – NORTHEAST TUCSON

Agua Caliente Park

12325 E Roger Rd.

Age Group: All Ages; **Estimated # Participants:** 75 – 100

Filled – No Scopes Needed

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

Nearest Moon Phase: 3rd Quarter

Directions: Tanque Verde Road east past Houghton to Soldier Trail. Go about two miles north to Roger Rd. Turn east for about 1/2 mile to the park on the left (north).

Viewing Location: Parking Lot Bus Lane area (north end of parking lot). Position cars in front to block incoming headlights.

*Saturday – November 4 – Chiricahua Mountains

Chiricahua National Monument

12856 E Rhyolite Creek Rd, Willcox, AZ

Age/Grade Level: All Ages; # Participants: 75

1 Additional Scope Needed

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

Nearest Moon Phase: 3rd Quarter

Directions: Total distance is 100 miles from I-10 Houghton

Exit. Take I-10 East to Exit 336 (Willcox). East on AZ 186 (Maley St in Willcox). Travel 40 miles to Monument. Turn on AZ 181 for 4 miles to Park Entrance.

Viewing Location: Faraway ranch parking area

Wednesday – November 8 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: Grade 3; # Participants: 41

Filled – No Scopes Needed

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

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).

Thursday – November 9 – FAR EAST TUCSON

Henry Elementary School

650 N. Igo Way

Age/Grade Level: K – 5th Grade; # Participants: 80 – 100

Filled – No Scopes Needed

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

Nearest Moon Phase: New Moon

Directions: Drive west on Speedway from Harrison 0.5mi, turn left down Igo Way, drive 0.5 mi, turn left into the parking lot

Viewing Location: Back field/playground/basketball courts.

School/Public Star Party Requests - Continued

*Saturday – November 11 -- FAR WEST TUCSON

Tucson Mountain Park Ironwood Picnic Area

7300 W Hal Gras Road

Age/Grade Level: All Ages; # Participants: 70

1 Additional Scope Still Needed

Setup Time: 6:00 pm. Start: 6:30 pm. End: 8:30 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 – November 11 — ORACLE AZ

Oracle State Park

3820 E Wildlife Dr, Oracle AZ

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

2-3 Additional Scopes Still Needed

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

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 you have one.

Note: a class on beginners' telescope use and operation will be given by the ranger from 5:30 to 6:30pm

Tuesday – November 14 – WEST TUCSON

Tucson International Academy @ the International Wildlife Museum

4800 West Gates Pass Rd.

Age/Grade Level: K – 12th Grade

Participants: 250 – 400; Filled – No Scopes Needed

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

Nearest Moon Phase: New Moon

Directions: Speedway west turning into Gates Pass Rd. Wildlife Museum will be on right side of the road.

Viewing Location: Far end of the SW parking lot.

Tuesday – November 14 – Sonoita AZ

Sierra Club

Location TBD

Age/Grade Level: Adults; # Participants: 10

Filled – No Scopes Needed

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

Nearest Moon Phase: New Moon

Viewing Location: TBD

Wednesday – November 15 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: Grade 4; # Participants: 41

Filled – No Scopes Needed

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

Nearest Moon Phase: New Moon

Directions/ Viewing Location: See previous event above.

*Thursday – November 16 – SOUTHWEST TUCSON

Anna Lawrence School

4850 W Jeffrey Rd

Age/Grade Level: 3 - 8th Grade; # Participants: 30 – 50

1 Additional Scope Needed

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

Nearest Moon Phase: 3 days past New Moon

Directions: W Valencia Rd to S Mark Rd. Then 0.8 miles south on Mark Rd to Jeffrey Rd, turn left, 0.4 miles east on Jeffrey Rd. Turn Left into school.

Viewing Location: Open region south & west of main building

*Friday November 17 -- NORTH WEST TUCSON (PCC NW Campus)

AZ STEM Adventure

7600 N Shannon Rd

Age/Grade Level: 9 – 13yrs old; # Participants: 150

1 Additional Solar Scope Needed (H-alpha or White Lt filter)

Setup Time: 7:45 - 8:30 AM. Start: 9 AM. End: 1:00 PM

Nearest Moon Phase: 1st Quarter

Directions: W Ina Rd to N Shannon Rd, turn right on N Shannon Rd to N Canimo De La Tierra. Turn right and the Campus building are on the right.

Viewing Location: TBD but typically at north end of internal courtyard outdoors.

Friday – November 17 -- Vail, AZ

Acacia Elementary School

12955 E Colossal Cave Road

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

Filled – No Scopes Needed

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

Nearest Moon Phase: 1st Quarter

Directions: If getting off of I-10, exit 279, you would go left onto Colossal Cave Road and go until you see the school. The school will be the first building you see on the left. If coming from MaryAnn Cleveland, turn right onto Colossal Cave Rd, pass both train tracks, and you will see the school on the right.

Viewing Location: In the back field. You can set up as far away from the buildings as you'd like.

School/Public Star Party Requests - Continued

Friday – November 17 – EAST TUCSON

Saguaro National Park EAST

3693 S Old Spanish Trail.

Age Group: All Ages; Estimated # Participants: 75 – 100

Filled – No Scopes Needed

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

Nearest Moon Phase: 1st 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 Park 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!

Saturday – November 18 – PICACHO AZ

Picacho Peak State Park

15520 Picacho Peak Rd, Picacho, AZ

Age Group: All Ages; Estimated # Participants: 50 – 75

Filled – No Scopes Needed

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

Nearest Moon Phase: 1st Quarter

Directions: I-10 north from Tucson, take Picacho Peak Exit. Take the underpass and follow road to Park entrance. Ranger at gate will have directions and map.

Viewing Location: Most likely the daytime picnic area. More details on reminder email.

Saturday – November 18 – NORTHEAST TUCSON

Girl Scouts of Southern Arizona

3101 N Sabino Canyon Rd

Age/Grade Level: 9 – 11yrs; # Participants: 30

Filled – No Scopes Needed

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

Nearest Moon Phase: 1st Quarter

Directions: Turn North on Sabino Canyon Road from E Tanque Verde Road, Continue for 1 mile and then the location will be on the left hand (west) side of the road just before the bridge over the wash. Look for the small “GS” sign.

Viewing Location: at our Hacienda Program Center

*Wednesday – November 29 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: Grade 3

Participants: 50

1 Additional Scope Needed

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

Nearest Moon Phase: 2 days past full

Directions/ Viewing Location: See previous event above.

From The Editor - David Rossetter

A lot of work goes into these bulletins by a lot of talented and dedicated club members. Not unlike most TAAA services! We have many leaders who contribute activity accounts and announcements of activities and projects. There are monthly columns and Special Interest Group reports. The astro-photos are, of course, amazing. Thank you to Gregg Ruppel, our Image Editor, for coordinating all the wonderful submissions. And we learn a lot about the overall direction of club directly from our President, Mae Smith, in her *Notes From The President*.

While I put in quite a bit of time putting together this publication, it would not be very good (lots of errors, bad grammar, poor formatting, and spelling) without our amazing proofreaders, Terri Lappin and Jim Knoll. Funny, you hear their names all over the place! Their knowledge of club operations as well as their editing/proofing skills make them ideal for this job. In addition, they have lives outside the club. Which makes me so very appreciative of their efforts.

Thank you to all the TAAA Desert Skies Contributors!

-David

What's Up list for November - December 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 November and December for the more common observing programs.

Constellation Hunter Program – Northern Sky

The following constellations are well placed for observing for November and December: Andromeda, Aquarius, Aries, Cassiopeia, Cepheus, Lacerta, Pegasus, Pisces, 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 Milky Way so objects are more sparse. The following Messier Objects are well placed for observation during November and December (listed in ascending RA): M52, M110, M31, M32, M103, M33, M74, M76.

Lunar and Binocular Observing Program

The following are dates for the lunar phase when observing during November and December:

New Moon: November 13, December 12
40 Hours waxing: November 15, December 14
72 hours waxing: November 16, December 15
4 days old: November 17, December 16
7 days old: November 20, December 19
10 days old: November 22, December 22
Full (14 days old): November 27, December 27
Gibbous: November 5, December 5
72 hours waning: November 10, December 9
40 hours waning: November 11, December 10

Solar System Observing Program

The following list describes the planets and their visibility during November and December:

Mercury is an early evening object during most of November and all of December. Greatest elongation is on December 3. Mercury reappears as a morning object during the last 10 days of December.

Venus is an early morning object during all of November and December.

Mars is behind the Sun during November. It reappears in the early morning sky in December, rising about an hour before sun rise in late December.

Jupiter is well placed for viewing during November and December. It transits around midnight in early November and around 8 PM by the end of December.

Saturn is still well placed for early evening observation during November. By the end of December however, it is setting around 9 PM.

Uranus is well placed for evening observation during November and December. It rises about 30 minutes after Jupiter.

Neptune is well placed for evening observation during November and December. It transits around 9 PM in early November and around Sunset in late December.

Urban Observing Program

The following deep sky objects are well placed for observing during November and December: NGC 7662, NGC 7789, NGC129, M32, M31, NGC457, NGC663, Cr 463, NGC 752

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

Eta Cassiopeia, Gamma Aries

Public Astronomy Events



COLLEGE OF SCIENCE

**LUNAR & PLANETARY
LABORATORY**

LPL Evening Lecture Series

November 15, 2023

Dr. Dani DellaGiustina

Kuiper Space Sciences, Room 308 and Zoom

Exploring Hazardous Asteroids with the OSIRIS Spacecraft



**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 or check out the [Web Page](#).

You can watch each lecture live on [ZOOM](#).

- | | | |
|---------------|---|---|
| Nov 6 | Dr. Brittany Miles
51 Pegasi b Fellow, Steward Observatory | Probing the Depths of Planetary Atmospheres! |
| Nov 13 | Dr. Tim Hunter
Maj. James McGaha, M.S.
Grasslands Observatory | <i>E. E. Barnard and Dark Nebulae: Then and Now</i>
Book-signing after the lecture |
| Dec 4 | Dr. Kevin Wagner
Steward Observatory | <i>Exoplanet Imaging: From Protoplanets to Exo-Earths</i> |

Surprise Twists That Transformed Science

2024 College of Science Lecture Series

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.

Skyward

By Dr. David H. Levy

November 2023

As a youngster growing up in Montreal, Canada in the early 1950s, I was impressed by the seeming simplicity of Montreal's weather. It appeared to me as though there were just two kinds of weather, in wintertime a grey sky, and in summertime a blue sky. I wasn't completely wrong about this. In 1961, while trying to run a small astronomy club for young people, I counted an unbroken string of cloudy Friday nights that lasted for months. And sure enough, when the weather began to moderate the following spring, we were treated to, at last, a clear night.

As I grew older, my thoughts turned to finding a different locale where the sky would be clear more often. In September 1979, I packed my bags and telescopes and headed for the American southwest. I was rewarded immediately. My first season here, the Autumn of 1979, was punctuated by a virtually unbroken string of more than 50 clear nights in a row.

There was a specific reason for my wanting more clear nights. In the fall of 1965, I was planning a search program for comets, and it began on December 17 of that year, just before midnight. I used the largest telescope I had at the time, the 8-inch reflector named Pegasus. Less than a year later, Miss Isabel K. Williamson, director of observations of the Royal Astronomical Society of Canada's Montreal Centre, wrote this in the November 1966 issue of the center's newsletter Skyward: "The increase in the number of observations over the previous year can be attributed to David Levy who has made the search for and observation of comets and novae his main astronomical project. In addition to patrolling assigned areas, he has made a total of 360 observations of the dome, the twilight horizon and the sky in the sun's vicinity, and on 33 nights spent a total of 48 hours at the eyepiece of his telescope, sweeping the sky for comets."

Miss Williamson's words from all those years ago remain among the highest compliment I have received from anyone. And I still use Pegasus for some of my comet hunting, including the evening of October 11, 1987, when I used Pegasus to find my third comet, 1987 T1. In fact, to celebrate the completion of this article, I went outdoors and used Pegasus for a short comet search this very evening.

I may have been right about my childhood weather forecast. Southern Arizona offers many more clear nights than one can appreciate from the frequently cloudy sky over Montreal, Canada. And from the Chiricahua Astronomy Complex, a two-hour drive southeast of my Vail, Arizona home, observers are treated to one of the darkest sky locations in the world. It is well worth loading Pegasus into a van and using it at that wonderful CAC dark site. Whether I am down there or right here, placing my eye at the eyepiece of this beloved telescope warms my heart and pierces my soul.



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

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 make inquiries about what is available or to express a desire to purchase one of items 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](#) 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](#)

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" Celestron 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, 3x Barlow, 1.25" Orion diagonal dielectric mirror.



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" diagonal.



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