

TAAA Desert Skies Bulletin

Observing Our

Since



Desert Skies

1954

January 2024

www.tucsonastronomy.org

Membership Meeting

January 5 @ 6:30 pm - 9:00 pm

TAAA's next general member meeting will be held on **Friday, January 5, 2024**. 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 BIG EVENT: Total Solar Eclipse, April 8, 2024

Presentation: Get ready for 4½ minutes of darkness — in the middle of the day! On April 8, the path of a total solar eclipse will track from Texas through Maine. And it's not that far from Tucson. But where should we go? What should we look for? And, most importantly, what do the climate statistics say about our plans? Michael Bakich's talk will cover the details about an event that won't happen again in the 48 states until 2044.

Biography: Michael E. Bakich was Senior Editor of Astronomy magazine for 17 years before retiring in 2019. He and his wife, Holley, then realized their lifelong dream and moved to Tucson. Michael continues work for the magazine as Contributing Editor. He has authored 14 books on astronomy, including Atlas of Solar Eclipses: 2020-2045.

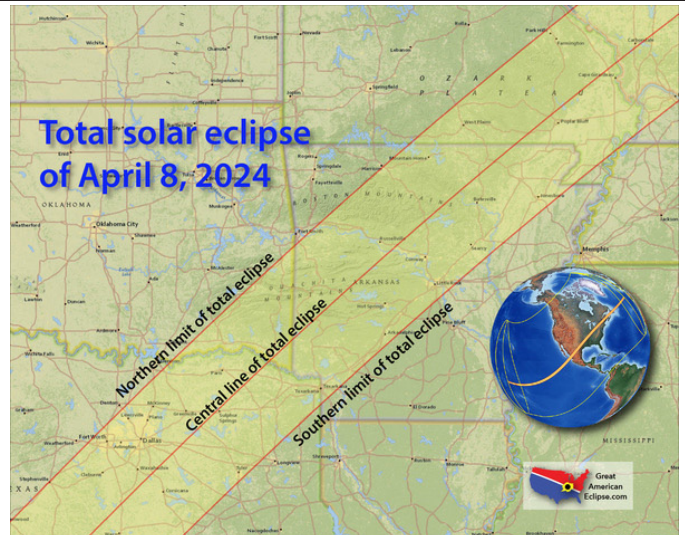


Image Credit: www.space.com

The **second hour** of the January 5, 2024 TAAA Member Meeting will feature TAAA Minor Policy Training Level 1. Persons working with youth in connection with TAAA should be current with Level 1 Minor Policy training by having completed this course within the last two years.

Attendance at this portion of the TAAA meeting will be monitored to validate attendance (your full name and live video on Zoom) throughout, in order for persons to qualify as having successfully completed the training.

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

December 2023

We hope that everyone has a safe, happy holiday season in which you are able to ferret out some time for yourself when you can take a relaxed deep breath and/or a healthy walk or a comfortable drive into a soothing, nurturing environment. Hopefully you will take some time to reflect upon the many good fortunes of your life. Often the good fortune and real value of things is found not just through the events themselves, but within the perspectives that we use to interpret those events. This provides us with a lot of personal power in that we can always reframe the meaning of an event and develop new positive insights even in looking at something that felt quite painful or detrimental at the time it occurred.

TAAA has been in process of doing some evolving: in the last year we have had eight or more construction projects in at CAC; we have also had a variety of perspectives presented regarding the TIMPA site this year; we've started a new TAAA strategic planning process; in some ways we have started to branch out more with post-pandemic efforts; basic structures are gradually being examined for updating such as membership records, survey procedures, and other technologies; some of our approaches to serving the public are increasing or evolving. In light of such evolutions, it is certainly time for members to give suggestions, let us know your ideas, and tell leaders and Board Members what you would like and how we can better serve you. So, make sure to share your thoughts with leaders you work with or with Board members you encounter or wish to email. Every good thing we do starts with an idea from someone who is willing to communicate.

TAAA Members should note that Fundamentals of Minor Protection Training will be conducted in the second hour of the January Member Meeting (January 5th). Persons receiving credit for completion of the Fundamentals course must attend in person and sign up or must appear on Zoom with their full name and live picture displayed throughout the training as verification of full attendance to receive credit for taking the course. For persons who need it for their specific volunteer activities, the Advanced Minor Protection Training will be conducted the second week of January for those who have applied and been approved. Note that persons participating in Advanced Minor Protection Training normally would

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

by Mae Smith

also participate in voluntary background checks. The Advanced training must be specifically applied for. Members with questions about Advanced Minor Protection training may consult John Mead or myself

I have started to compile information for a yearly report. I have asked all leaders to send in their information on their 2023 activities as the report should be as comprehensive as possible, covering the great variety of activities/events that are included under the TAAA umbrella.

The TAAA Board met in December. Board members attending included M. Smith, Foley, Whitehead, J. Kalas, and S. Bailey. Some of the December Board actions included: the recent 990 was reviewed with the Board; Ed Foley was appointed to manage financial negotiations and contracts for the 32nd; Ed Foley and Bob Rose were given authority to do business for TAAA re the 32nd; approval was granted for negotiation of a potential lease/user agreement with TIMPA; approval was granted for an upcoming strategic planning event involving 14 TAAA representatives. Minor Policy training (beginning, advanced and background check activities) is planned for January. A school group is expected to spend one night at CAC the first weekend in February and Minor Policy requirements will be in place.

Mae Smith, TAAA President
president@tucsonastronomy.org

Other Elected Leader Contact Information:

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

Secretary: Bob Reynolds
secretary@tucsonastronomy.org

Treasurer: Barbara Whitehead
treasurer@tucsonastronomy.org

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

TAAA Board: taaabod@tucsonastronomy.org

NEW SERVICE AVAILABLE AT TIMPA!!



TIMPA AMBASSADOR

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

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

Practical Astronomy Workshop 3

Learn how to Record Observations and Sketch Objects

Open for enrollment

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

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

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

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

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.

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

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?

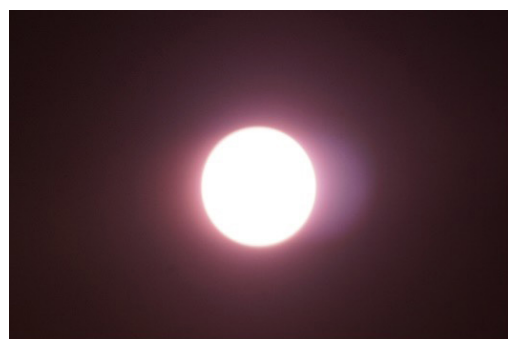
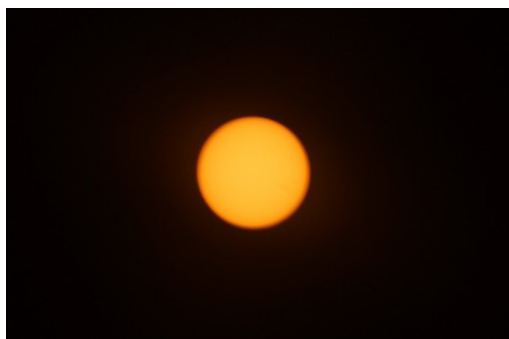
A member attending the workshop we held in August was able to see sunspots with a 40x9 pair of binoculars

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.





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

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

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

Please contact the NVRC Chair at nvrcchair@tucsonastronomy.org for the full description and additional information if interested or you have questions pertaining to this position.

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



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!

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, January 18, 6:30pm

Tumerico
2526 E. 6th Street
(S side of 6th St, E of N Tucson Blvd)

Menu changes daily

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



2023 TAAA Holiday Party

On December 9th 40 TAAA members gathered at the home of Ed and Janet Foley for food, comradery and fun. This was the 7th year the Holiday Party was held there.

While a raffle or silent auction of astronomy related items have often been held during the event, this year both were held. The raffles are always a lot of fun, allowing nearly everyone to go home with a treat at the end of the night. A special thanks to Michael and Holley Bakich for the numerous items they donated, and to Charles Coffey for the extra laser pointer!

Longtime member Ron Probst passed away this year. His will stipulated his astronomy equipment to be donated either for use by TAAA or to be sold for the benefit of TAAA. The items auctioned during the party included 7 telescopes. The proceeds of these sales went to TAAA the Endowment Fund. TAAA is able to use the income from this fund to support programs such as the Astronomy Camp.

TAAA 2024 Calendar



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

School/Public Star Party Requests

by Bernie Stinger

TAAA Members,

Thank you for volunteering your time and talents for our extremely important outreach mission. **Below is the list for January, 2024.** January is a busy month with almost 20 events scheduled, mostly school events but a few public events at State, County & National Parks in the area.

Please let me know in return email if you are interested in volunteering for any of the events listed below. First come – first served. Some events go fast!.

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

The PUBLIC Astronomy Events are also listed on the TAAA (tucsonastronomy.org) 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 October 24th. **The first section is a list of events where we still need volunteers.** If you can help out please contact me at: astronomy-events@tucsonastronomy.org

Thank you,

Bernie Stinger

TAAA Public/School/Non-Profit Star Party Manager

January Events still in need of Volunteers

Saturday – January 6 -- PICACHO AZ

Picacho Peak State Park

15520 Picacho Peak Rd, Picacho, AZ

Age Group: All Ages

Estimated # Participants: 75

1 Additional Scope needed

Setup Time: 6:00 pm

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

Saturday –January 13–NORTHEAST TUCSON

St. Francis in the Foothills Church

4625 E. River Road

Age/Grade Level: All Ages

Participants: 10+

1 Additional Scope Needed

Setup Time: 5:45pm.

Start Time: 6:15 pm. End Time: 8:15 pm.

School/Public Star Party Requests - Continued

Friday –January 19 –SOUTHWEST TUCSON

Vesey Elementary School

5005 S. Butts Road

Age/Grade Level: K – 5

Participants: 150

2 Scopes Needed

Setup Time: 5:30 pm.

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

Saturday – January 20 -- GREEN VALLEY

Pima County Natural Resources Parks &

Recreation (NRPR) – Canoa Ranch

5375 S I-19 Frontage Road

Age/Grade Level: All Ages

Participants: 75–100

1 Additional Scope Needed

Setup Time: 6:00 pm.

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

January Events Filled—No Volunteers Needed

Sunday – January 7 –EAST TUCSON – SOLAR

Saguaro National Park – EAST

3693 S Old Spanish Trail

Age Group: All Ages

Estimated # Participants: 50

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

Setup Time: 12:30 pm

Start Time: 1:00 pm End Time: 3:00 pm

Wednesday – January 10 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: Grade 4

Participants: 50

0 Scopes Needed—Event filled

Setup Time: 6:30 pm.

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

Saturday – January 13 –NORTHEAST TUCSON

Pima County Natural Resources Parks & Recreation (NRPR) @ Agua Caliente Park

12325 E Roger Rd

Age Group: All Ages

Estimated # Participants: 75 – 100

0 Scopes needed—Event filled

Setup Time: 6:00 pm

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

Wednesday – January 17 – SOUTHWEST TUCSON

Cholla High School

2001 W Starr Pass Blvd

Age/Grade Level: High School Students

Participants: 100

0 Scopes Needed—Event filled

Setup Time: 5:45–6:00 pm.

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

Wednesday – January 17 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: Grade 4

Participants: 30

0 Scopes needed—Event filled

Setup Time: 6:30pm.

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

Thursday–January 18–SOUTHWEST TUCSON

Anna Lawrence School

4850 W Jeffrey Rd

Age/Grade Level: 7 – 13 year olds

Participants: 50

0 Scopes Needed—Event filled

Setup Time: 5:45 pm.

Start Time: 6:15 pm. End Time: 8:15 pm.

School/Public Star Party Requests - Continued

Saturday – January 20 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: **Adults**

Participants: 30

0 Scopes Needed—Event filled

Setup Time: 6:30 pm.

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

Tuesday – January 23 -- FAR EAST TUCSON

Henry Elementary School

650 N. Igo Way

Age/Grade Level: K – 5th Grade

Participants: 80 – 100

0 Scopes Needed—Event filled

Setup Time: 6:00 pm.

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

Friday – January 26 -- Mountain Vail (East of Rita Ranch)

Esmond Station Elementary/Middle School

9400 S Atterbury Wash Way

Age/Grade Level: K – 8th Grade

Participants: 300

0 Scopes Needed—Event filled

Setup Time: 6:00 pm.

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

Tuesday –January 30 –FAR NORTH TUCSON

DeGrazia Elementary School

5051 W. Overton Road

Age/Grade Level: K – 6th Grade

Participants: 100

0 Scopes Needed—Event filled

Setup Time: 6:00 pm.

Start Time: 6:30 pm. End Time: 7:30 pm.

Tuesday – January 23 -- ORO VALLEY

Wilson Elementary/Middle School

2330 W. Glover Road

Age/Grade Level: K – 8

Participants: 500?

0 Scopes Needed—Event filled

Setup Time: 5:30 pm.

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

Thursday – January 25 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: 5th Grade

Participants: 40

0 Scopes Needed—Event filled

Setup Time: 6:30 pm.

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

Tuesday – January 30 -- FAR EAST TUCSON

Soleng Tom Elementary School

10520 E. Camino Quince

Age/Grade Level: K – 5th Grade

Participants: 300

0 Scopes Needed—Event filled

Setup Time: 6:00 pm.

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

Wednesday – January 31 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: 4th Grade

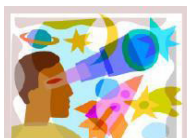
Participants: 45

0 Scopes Needed—Event filled

Setup Time: 6:30 pm.

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

Special Interests Groups



Starry Messengers Special Interest Group

Opening Minds to the Universe

The Starry Messengers will hold a Zoom meeting on Monday, January 8th at 7PM. All members are invited to join this meeting to hear about plans we have for our spring outreach events. The link for this Zoom meeting will be sent by email.

Our in-person meeting in December was attended by seven TAAA members. We looked over our solar eclipse and solar physics activities and made some tough decisions on which to use for our spring events and which we won't. Over the next couple months, we'll make sure we have all we need for successful events at the Tucson Festival of Books (March 9 & 10) and the Tucson Astronomy Festival (March 30). We've already ordered 500 solar eclipse glasses to give away to the public.

This past month, Pete Hermes used the Space Rocks activity at two elementary schools (Hendricks and Lulu Walker). Tom Sarko used the Eyes on the Universe activities at Robles Elementary. In total, there were about 200 engagements with students and their families.

Our Night Sky Network (NSN) outreach activities have been requested at three events in January. A very small number of volunteers are currently supporting this program. If this is your kind of thing, we could really use your support. To learn how rewarding this can be, speak with Pete Hermes about some of the activities he's done. You can be paired with another volunteer who can train you, you can work on your own using the online NSN training videos, or other training arrangements can be made. We prefer to have two volunteers for each event listed below.

- January 23 (Tues) 5 – 7:30pm; Wilson K-8; Exploring the Solar System; La Cholla & Naranja
- January 26 (Fri) 7 – 8:30pm; Esmond Station Elem, Exploring the Solar System; Houghton & I-10 (Volunteer to work with Tom Sarko at this event.)
- January 30 (Tues) 6:30 – 8pm; Soleng Tom Elem; any toolkit; Houghton & Broadway

SMSIG on the [Web](#)

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

Astronomy Fundamentals SIG

by Connor Justice

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

The AFSIG meeting is on **Thursday, January 11 from 6:30pm to 8:30pm.**
Topics to be determined.

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

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

[AFSIG on the Web](#)

Astro-Imaging SIG

by Gregg Ruppel

The next AISIG meeting is **Monday, January 15 at 7:00 pm** via ZOOM.

Topics: A Mount Journey by Jeff Rothstein.
Image Sharing, Discussion, Q/A

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

Highlights from the Astro-Imaging SIG



Helix Nebula

Here is an image of an old favorite, NGC 7293 (The Helix Nebula) done in a new way. That new method involves a mathematical combination of a detail-rich image (the OIII emission line, in this case) with a color image (true-color HO...not HOO!) in a way that mutes the tendency for colors to overwhelm our ability to see grayscale detail.

[Astrobin](#)

Alex Woronow

NGC 1433

[Astrobin](#)



Randy Smith

IC 443

This image has minimal time of only 25x180 per panel for Ha and Oiii and is mainly a test of this mosaic tool with minimal panel overlap.

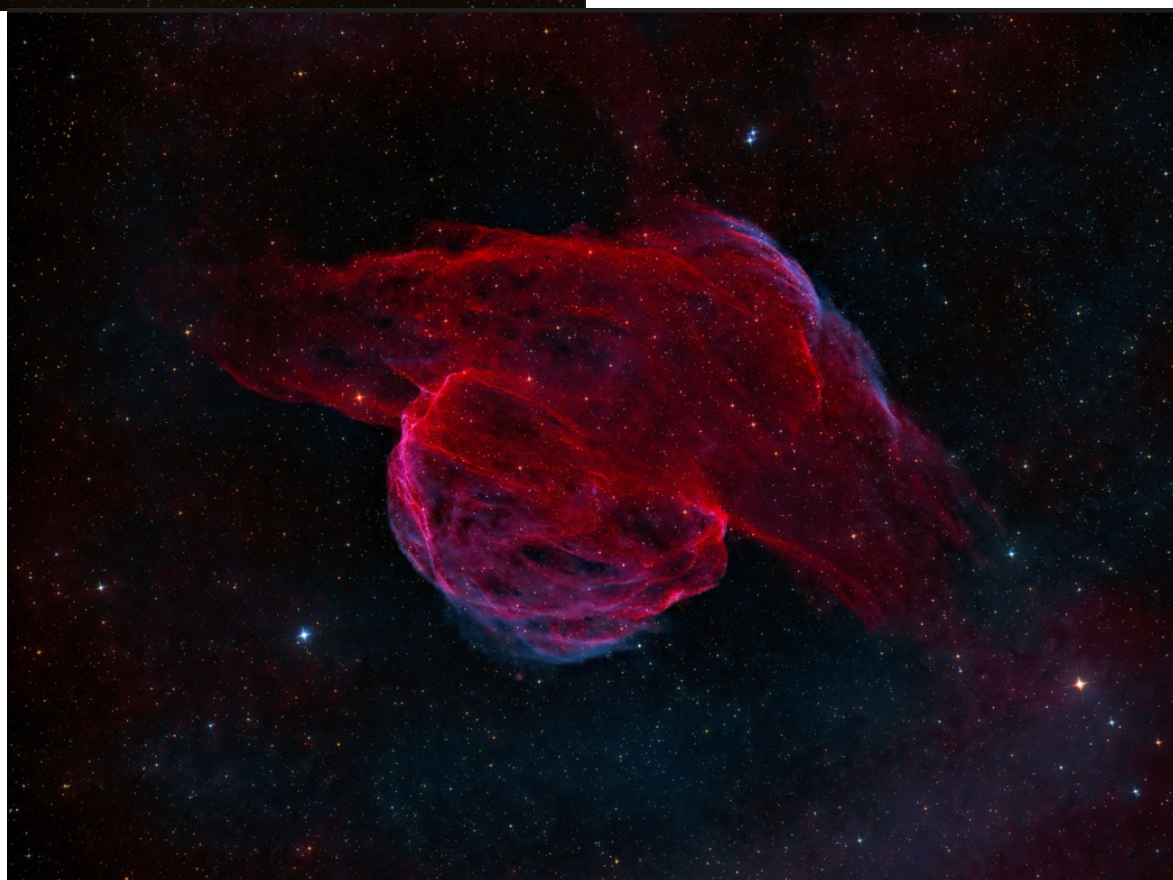
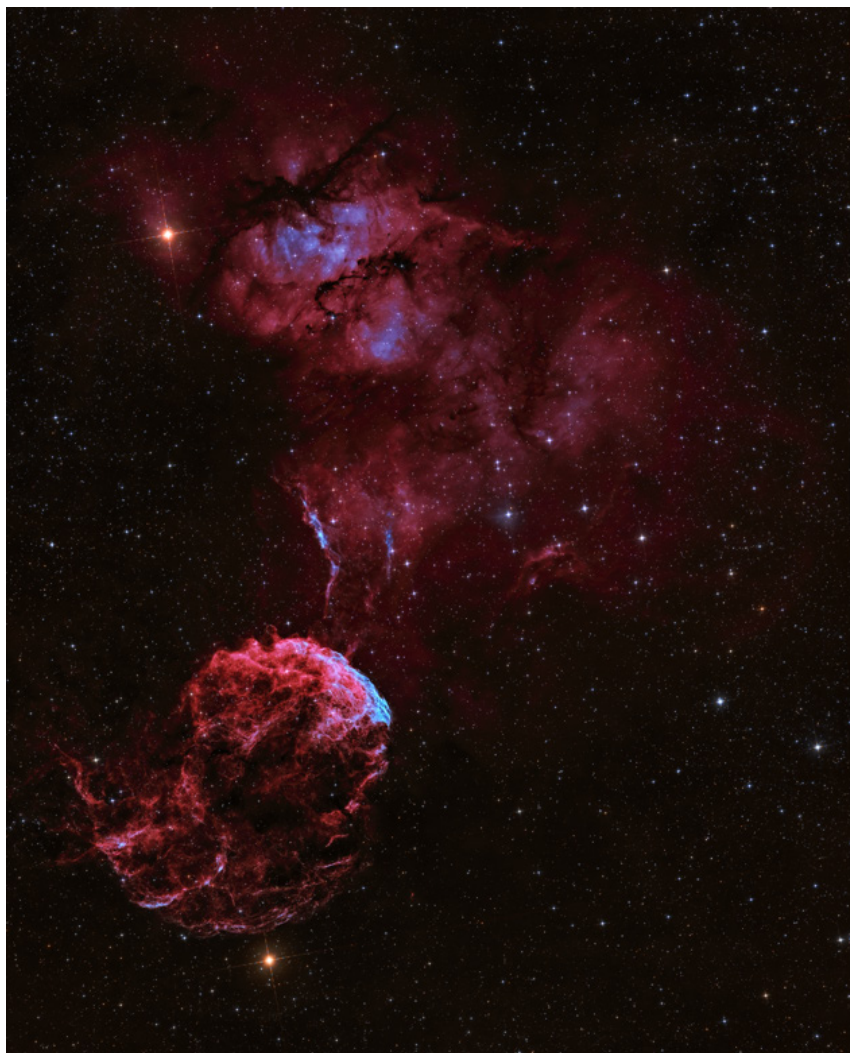
Skywatcher 200P Starizona Nexus Reducer/Corrector (600 mm focal length) 2600 MM Pro Antlia 3 nm Ha and Oiii filters 25x180 each filter each panel.

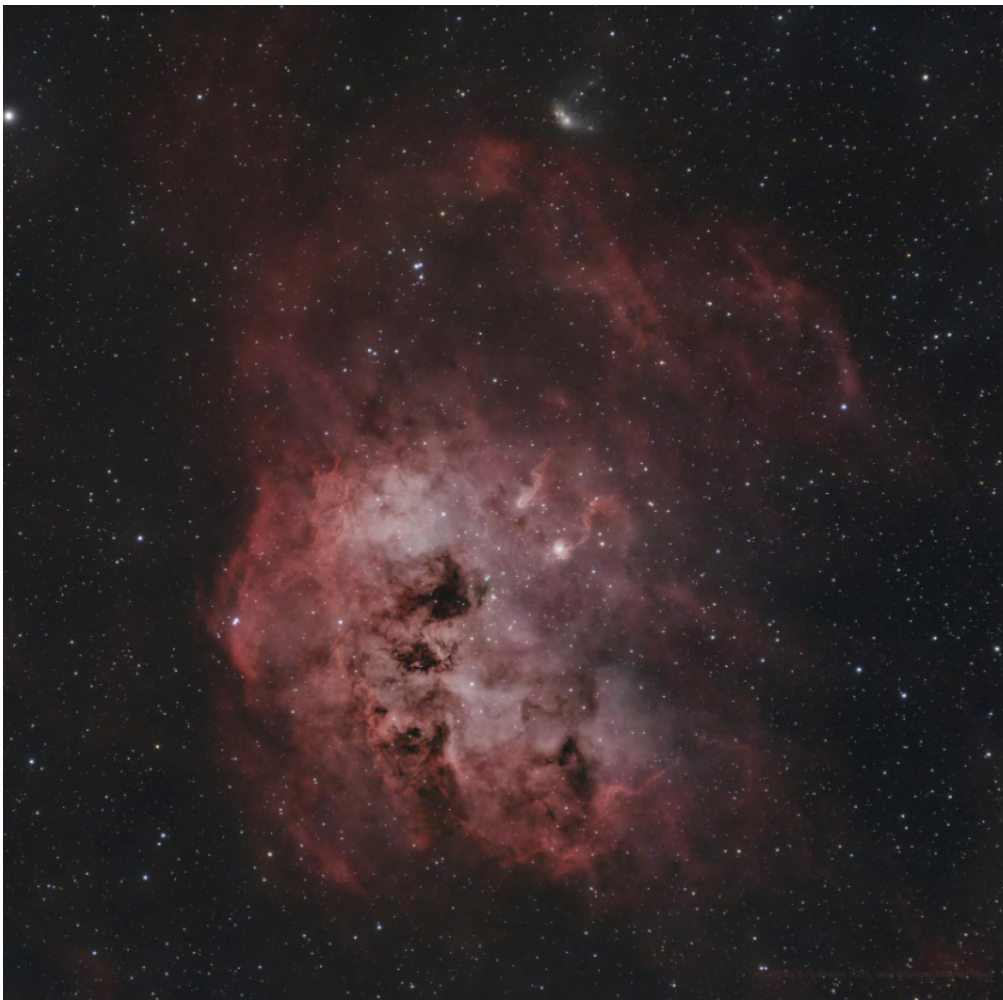
[Astrobin](#)

Sh2-224

Skywatcher 200P with Starizona Nexus Reducer/Corrector F3, 2600 MM Pro Antlia 3 nm Ha and Oiii filters, 83 x 180 Ha, 105 x 180 Oiii.

[Astrobin](#)





IC 410

[Astrobin](#)

Jeff Rothstein

M31

A two-panel mosaic of M31, the great Andromeda galaxy. A-P Traveler with 92FF field flattener, 663mm f/6.3, on A-P Mach2 mount. About 10 hours of 4' exposures on each panel, total 21' 40" of integration time. L-Pro filter for modest light pollution reduction. Taken from my backyard in Oro Valley and processed entirely in PixInsight.

[Astrobin](#)





**Allen
Force**

NGC 7822
[Astrobin](#)



**Alan
Rockowitz**

Arp 1
This is a total of about 9.75 hours of LRGB data collected in my backyard this week. There are a few other galaxies in the field which I may work on a bit

more - I really focused my attention on Arp1. As a self described "galaxy guy", I think this is a beautiful field. Arp 1 is only 1.9' x 1.5' which is smaller than I usually attempt with my gear, but I wanted to try it. All pre and post processing was done in PI. Shot with my iStar 5.5" f 6.5 refractor on my 10u 1000 mount. ZWO ASI 6200 camera.



M42 and Running Man Nebula

[Astrobin](#)

David Stearn

NGC 7120

This is a very faint reflection nebula in the constellation Monoceros. I was able to capture 122 120s subs last night.

[Astrobin](#)





NGC 536

Three small (at this distance) galaxies not far from M33, the SB type NGC 536 along with NGCs 529, 531 and 542 form the Hickson Compact Group 10. About 200 million LY away, NGC 536 is the largest at 3 x1', giving it a diameter of about 180,000 LY. RC8" f/8 /zwo 2600mc pro/AP Mach2GTO

Tom Eby

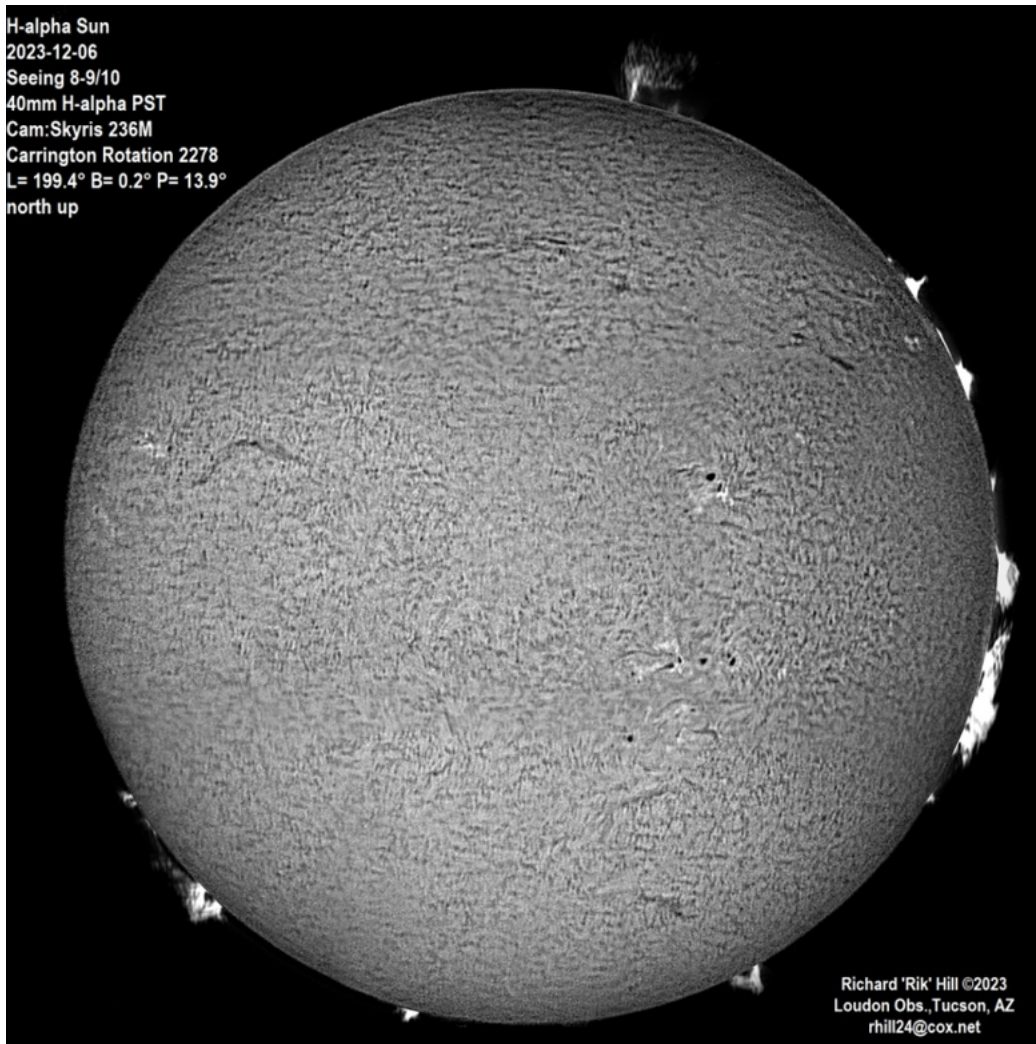
unguided w/ 44 pt Dec arc model/3h exposure/ no filters



NGC 1066

Numerous galaxies of various type are strewn through this region fairly heavy in IFN. NGCs 1060 and 1066 are about 250 million LY distant. Many of the smaller ones range in distance from 350-600 million LY. RC8" f/8 / zwo 2600mc pro /AP Mach2 GTO unguided, w/44 pt dec arc model / 4.7 hr exposure.

H-alpha Sun
2023-12-06
Seeing 8-9/10
40mm H-alpha PST
Cam:Skyris 236M
Carrington Rotation 2278
L= 199.4° B= 0.2° P= 13.9°
north up



Rik Hill

Richard 'Rik' Hill ©2023
Loudon Obs., Tucson, AZ
rhill24@cox.net

John Tsantes

M1

I processed M1 in about 5 different ways (LRG, HSO, HOO, etc.) and created several images, all of which I can live with. I had to crop it severely with my C8/HyperStar to get this one. This version is a straight color cal image and curves. 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.



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: **January 12-13.**

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



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

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

Chiricahua Astronomy Complex

by Jim Knoll

CAC Weekend Dates coming up (Friday/Saturday): **January 12-13 (New Moon 11).**

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. Those qualified to open & close the site can use it anytime but still need to reserve through the CAC Reservations process.

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



Observing Sites Star Party Dates 2024

TIMPA

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

CAC

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

April 5-6 (New Moon 8).

Total Solar Eclipse April 8.

May NOT be any Hosts onsite

Evening Under the Stars

April 13

May 3-4 (New Moon 7)

June 7-8 (New Moon 6)

What's Up list for January 2024 – February 2024

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

Constellation Hunter Program – Northern Sky

The following constellations are well placed for observing for January and February: Auriga, Camelopardalis, Canis Minor, Gemini, Lynx, Monoceros, Orion, Perseus, Taurus

Messier Observing Program

Prime time for the winter Milky Way. The following Messier Objects are well placed for observation during January and February (listed in ascending RA): M45, M79, M38, M1, M42, M43, M36, M78, M37

Lunar and Binocular Observing Program

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

New Moon: January 11, February 9
40 Hours waxing: January 13, February 11
72 hours waxing: January 14, February 12
4 days old: January 15, February 13
7 days old: January 18, February 16
10 days old: January 20, February 19
Full (14 days old): January 25, February 24
Gibbous: January 4, February 2
72 hours waning: January 8, February 6
40 hours waning: January 9, February 7

Solar System Observing Program

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

Mercury is an early morning object in January and February. It reaches greatest elongation on January 12.

Venus is an early morning object during January and February. It rises earlier and gets dimmer each day. On Jan 1 it rises almost 3 hours before sunrise. By the end of February it only rises about 1 hour before sunrise.

Mars has emerged from behind the Sun but is difficult to see in the morning twilight. It rises only about one hour before sunrise during January and February.

Jupiter is still well placed for evening observation. It is setting earlier each night, but still does not set until around 11 PM at the end of February.

Saturn is still visible in the early evening sky, setting around 9 PM on Jan 1. During the last two weeks of February it is probably lost in the evening twilight and by Feb 26 it sets before sun set, becoming a morning object in late March.

Uranus is well placed for evening viewing, setting about one hour after Jupiter sets.

Neptune is still visible in the early evening sky. On January 1 it sets about 11 PM. At the end of February it sets around 7:30 PM

Urban Observing Program

The following deep sky objects are well placed for observing during January and February: Tr 3, Stock 23, Mel 20, NGC 1342, M45, Hyades, NGC 1647, NGC 1807, NGC 1817, M38, M36, M42, NGC 1981, M37

The following **Double Stars** are well placed for observation during January and February: Trapezium.

The following **Variable Star** is well placed for observation during January and February: Algol.

Public Astronomy Events



DEPARTMENT OF ASTRONOMY AND STEWARD OBSERVATORY

Public Evening Lecture Series Fall 2023

We are thrilled to celebrate over 100 years of presenting lectures on astronomy & telescope viewing to the public. Public Evening Lectures will **begin at 7:30 p.m. in Steward Observatory Room N210.**

All of the lectures and the use of the telescope are free of charge and open to the general public.

For more information, contact Dr. Thomas Fleming at 621-5049 or taf@arizona.edu or check out the [Web Page](#).

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

Save-the-Date Spring 2024 Lectures:

Monday, January 22 Monday, March 18

Monday, February 5 Monday, April 1

Monday, February 19 Monday, April 15

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



College of Science Lecture Series

Surprise Twists That Transformed Science | 2024 Lecture Series

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

February 7, 2024 | Sam Gralla

Surprised By Gravity: Black Holes and Their Shocking Implications

February 14, 2024 | Charlotte Pearson

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

February 21, 2024 | Sarah Moran

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

February 28, 2024 | Jeff Pyun

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

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

Skyward

By Dr. David H. Levy
January 2024



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

This month let us explore one of the seminal galaxies in the night sky, NGC 253, Caroline Herschel’s galaxy. It shines deep in the southern portion of the sky, south of the bright star Beta Ceti and southeast of the even brighter star Fomalhaut. This is one of my favorite galaxies, largely because of the beautiful story that is associated with its discovery.

This galaxy, which I call Caroline Herschel’s Galaxy, is a starburst galaxy. It is so named because it is undergoing a burst of formation of new stars. This process was set off relatively recently, at least in cosmic timekeeping. About two hundred million years ago, a smaller dwarf galaxy probably collided with this larger one, and it set off this cacophony of new stars being formed. That other galaxy was probably rich in gas, which provided the raw material for the births of the new stars. There is one thing that this galaxy does not share with other starburst galaxies, however; usually these galaxies exhibit frequent exploding stars or supernovae. This one, however, has only one recorded supernova, in 1940.

This galaxy is aligned at almost right angles to our Milky Way. When you look at it, it appears as a thick pencil-like structure.

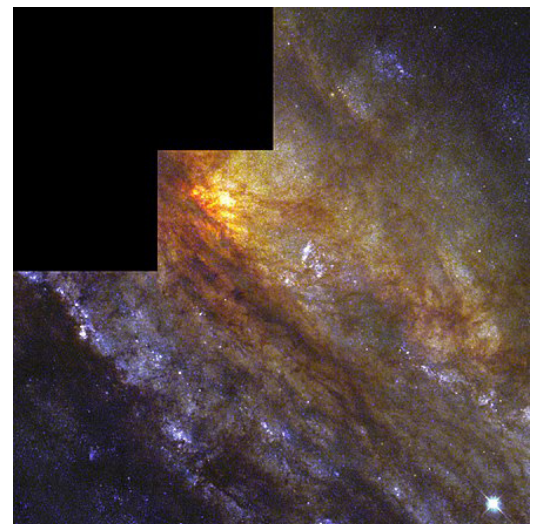
While searching for comets during the year 1783, Caroline stumbled across this long, slender galaxy hanging above the southern horizon. Duly recorded in her log “the Bills and Rec.ds of my comets,” she also began and maintained a list or catalogue of the many objects she and her brother William had discovered, including beautiful drawings of most of them. As a young girl Caroline was close to her father, who brought her outdoors on a cold evening to see some winter constellations like Orion. It is possible that this was one of the special moments during which she began her love of the night sky.

As much as Caroline enjoyed working with her brother William, there were some issues. On one night Caroline fell upon one of the large iron hooks that helped support the telescope on its mount. The accident left a large gash in her thigh. Her brother, not seeing his telescope moving, yelled out “Make haste!” to which Caroline cried out, “I am hooked!”. William immediately rushed over to help his sister, and she eventually recovered, with lots of rest and ointment.

When William married Mary Pitt in 1788, there was an obvious increase in tension among the Herschels. She continued working with her brother, although the increased “family dynamics” did cause a problem. William very much wanted his sister to continue helping with his observing, and he was successful in arranging a royal stipend for her.

In 1802 the Royal Society published the catalogue that Caroline had kept over many years. However, the publication in Philosophical Transactions of the Royal Society was credited to William, even though it was her catalogue. Over a long period of time, thanks to the work of later astronomers like John Louis Emil Dreyer, almost 8000 objects now comprise the New General Catalogue.

The woman who discovered the wonderful galaxy in Sculptor certainly enjoyed a remarkable life and career, living until she was almost 98 years old. In the 1980s Caroline’s eight comet discoveries were surpassed by Carolyn Shoemaker, in what was seen at the time as the highlight of Carolyn’s career. However exciting that achievement might have been, it was completely eclipsed by her discovery of Comet Shoemaker-Levy 9 in March of 1993. That comet gave humanity its first lesson in what happens when a comet strikes a planet, and by inference, how comet collisions can lead to the origin of life on a world. As I gaze upon Caroline Herschel’s galaxy on these winter nights, I imagine life forms there looking back, trying as we do, to share our cosmic heritage.



Hubble’s Version of NGC 25327

TAAA Astronomy Equipment For Sale

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



Celestron tripod

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

TAAA Member Price: \$185



6 Inch Newtonian Optical Tube Assembly

6 inch f 8.0 primary mirror.

Comes with an 8x50 finder.

TAAA Member Price: \$100



Orion Sky Quest XT6 Dobsonian scope

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

TAAA Member price: \$150



Cave Astrola Pedestal German Equatorial Mount

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

TAAA Member Price: \$375

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

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

TAAA Equipment Loaner Program

The following inventory represents the current list of instruments contained in the Tucson Amateur Astronomy Association Equipment Loan Program as of September 04, 2022. A photograph of each item is included with the description. This equipment is for TAAA members to checkout and use. Email Ralph Means 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" Ce-
lestron E-Lux 40mm, Meade 2"
QX 26mm, 1.25" VLW 13mm,
VLW 17mm, Orion 9mm Plossl,
Orion 6mm Kellner, Unknown
32mm, Unknown 25mm, Ortho,
20mm Kellner 20mm, Unknown
crosshair, 1.25", Kellner .965",
Other: 2" Extension Tube, 1.25"
extension tube, 2" Nebula filter,



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



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