

TUCSON AMATEUR ASTRONOMY ASSOCIATION

Observing Our
MONTHLY EVENTS BULLETIN
Since



Desert Skies

1954

WWW.TUCSONASTRONOMY.ORG

May 2023

www.tucsonastronomy.org

Membership Meeting

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

TAAA's next general member meeting will be held on **Friday, May 5, 2023**. The Main Presentation will start at 6:30 PM (AZT). **Note that this month's meeting will be online only.** TAAA members will receive a Zoom link to attend. The public may stream via the TAAA [YouTube](#) channel.

Inside this issue:

Notes from the President - [Page 2](#)

Committee Reports - [Page 3](#)

TAAA News - [Page 4](#)

Special Interest Groups - [Page 13](#)

Astro Images - [Page 14](#)

Observing Sites and Updates - [Page 18](#)

School/Public Star Parties - [Page 20](#)

Astronomical League Observing Programs - [Page 22](#)

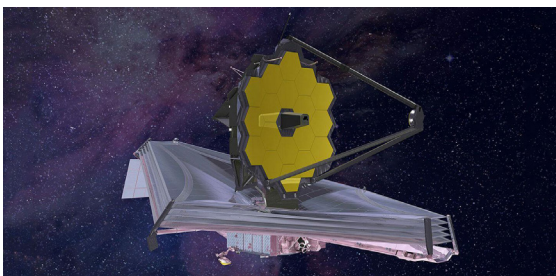
Public Astronomy Events - [Page 23](#)

Skyward - By David Levy - [Page 23](#)

Main Presentation at 6:30PM AZT

Title: JWST: Our First Year Capturing Light from the Dawn of Time

Presentation: In this talk, University of Arizona astronomer Kevin Hainline will discuss the exciting first year of NASA's flagship space observatory: the James Webb Space Telescope (JWST). He'll share stories from his time working on the observatory and discuss highlights from the wealth of data that JWST has brought us: awe-inspiring planets, nearby nebulae, baby stars, and the farthest galaxies humans have ever seen.



Biography: Dr. Kevin Hainline is an astronomy professor and researcher on the James Webb Space Telescope (JWST) NIRCam science team at The University of Arizona's Steward Observatory. His research focuses on hunting for hidden

supermassive black holes, and he's currently using JWST to find and understand the most extreme, distant galaxies in the early universe. He received his PhD from UCLA in 2012 and spent three years as a researcher and professor at Dartmouth College in New Hampshire before moving to Tucson to work on JWST. Kevin has a passion for science outreach education, and has spoken about astronomy and our relation to the stars at events around the world.

TAAA Desert Skies Bulletin

[David Rossetter](#) – Editor; Ken Bertschy - Graphics

Terri Lappin & Jim Knoll - Proofreading; Greg Ruppel -Image Editor

April 2023

It is a beautiful Spring day and I am sitting inside at the computer contemplating whether I should have lunch or write my TAAA President's Report for the bulletin. The result of the previous contemplation was to sit outside in the shade of a tree and review some past experiences with the TAAA Astronomy Day Festival that happens every April (coming up this year on Saturday April 29th). The winning memory from last year's Astronomy Day event was the child, I think around age 6 or 7, who won the telescope raffle and had a very supportive dad and brother who had already been accompanying her to some TAAA events. While receiving her beginning demonstration lesson and first opportunity to use her own new telescope she was absolutely glowing!! Even better, she was glowing more and really enthusiastic about the results of her efforts! Such moments represent the heart and the essence of TAAA.

On to a more realistic mind set: The April TAAA Board Meeting was filled with agenda items that would help us move forward with a variety of important goals. The Board did its final review of the 990, which is our nonprofit income tax form and approved the final dollars for completion of the Gateway to the Galaxy Campaign's two buildings and new telescope area. We, additionally, approved new Power of Attorney documents for our diligent Construction Managers involved in projects to move us further along in our goals at both of the dark-sky sites. Some new strategies were approved to earn interest on TAAA dollars that were previously in non-interest bearing accounts.

As we look forward to beginning a new TAAA year in June, please remember to vote in the upcoming Board and Nominations and

by Mae Smith

Volunteer Committee Position elections. We ask that leaders in the next week or so make sure to get in budget requests for the new TAAA new year and post their yearly participation and activity data for the past year on the leader list. If you want to renew some of those wonderful shared moments with fellow astronomers and experience sharing the sky in an intense way with many, many, people please come spend another year of endearing and wonderful, beautiful moments with us at the Grand Canyon Star Party, June 10-17.

Thank you all for being fellow astronomy travelers venturing through life with us and, whenever you can, being there for those special moments that feel like spring renewals.

Additional Special Note: I would like to thank Ralph Means for his dedicated service as TIMPA Director. He, for years and throughout COVID, served TAAA in the position of Director of TIMPA under very challenging conditions. The basic structure for operations for TIMPA has not been updated for many years and was written for a much, much smaller TAAA membership than we have now. Ralph has been called upon to run the site with a "one man does all" structure in place that included extensive requirements for the TIMPA Director position. This has been very stressful, and Ralph has recently resigned. The TIMPA Planning Group is operational and very active, so it will be running TIMPA for the present. The development of a much-improved updated structure for TIMPA management, operations, and positions has been underway for a few months. That developmental process will be continued over the summer. Again, thank you, Ralph, for having served as our TIMPA "Super Person".

President [Mae Smith](#)

Board of Directors Meetings

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

Committee Reports



By Pete Hermes

TAAA Election 2023

The TAAA Leadership Election closes on **May 5, 2022, at 7:00** during the monthly Membership Meeting.

[Candidate Biographies](#)

Timeline

- The on-line vote opens on April 29, one week prior to May General Membership Meeting
- The vote closes at 7:00pm during the May 5th Membership Meeting – **Vote!**
- We will announce vote results during members-only portion of May meeting

Voting Procedures This Year

- We will be using a Voting Service named OpaVote for this election, as we did last year
- Voting will be all electronic over the Internet
- An email will be sent to all eligible members with a link to vote on 4-29-2023 (Check Spam Folder)
- Read instructions then click on “Vote” – it takes you to the OpaVote web site.
- Click in the box of the desired candidate(s) for each “contest”.
- When finished, click “Vote”.
- You get a window to review selections, then click “confirm”.
- Voting will be open from 4-29-2023 until 7:00 PM at the May 5, 2023 online General Membership Meeting

As always, please contact the [NVRC](#) if you have any questions.
Pete Hermes - Chair, John Christensen, Allen Force, Dave Pass

Astronomical League Workshop Open for Enrollment

Early Announcement to gauge interest

Place: TBD
Date: TBD (probably June)
Time: TBD
Duration: 2 hours



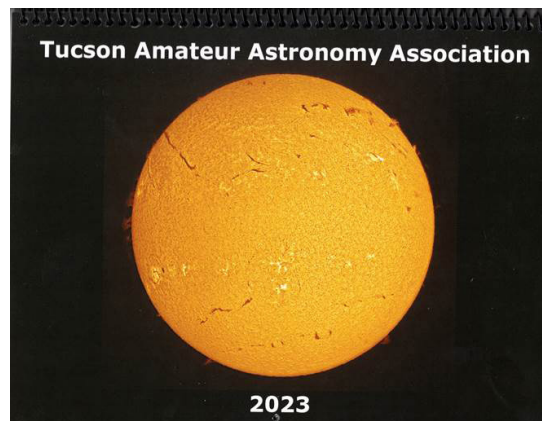
Synopsis: This workshop is designed for anyone who may be interested in pursuing one of the Astronomical League observing programs for the first time or anyone interested in learning about these observing programs. The workshop will cover how the various observing programs work, program requirements,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

If interested you can contact the TAAA Astronomical League Correspondent (ALCOR) at the information listed below.

TAAA ALCOR – Douglas Smith

Phone: 520-396-3233

E-mail: alcor@tucsonastronomy.org



TAAA 2024 Calendar

Please consider submitting images for the TAAA 2024 Wall Calendar. We always hope to include as many different contributors and as many different types of objects as possible.

Images of deep sky and solar system objects need not be recent. Post processing is optional. We can also use "landscape" photos – pictures of astronomical objects against local terrain.

We always welcome pictures of club events.

Due to the requirements of the publisher's software, images must be in JPG format.

Please contact [Susan OConnor](#) if you are interested in having your images in the calendar.



Grand Canyon Star Party (GCSP) 2023 registration is now open. You can get the specifics and register to be an astronomer or apply for one of the complimentary campsites at the [GCSP Webpage](#).

The event will go from **June 10 - 17, 2023**

[Jim Knoll](#)

Grand Canyon South Rim Director



Telescope Field 2022



Crowd at evening talk 2022

Solar Observing 2022



Photos by Jim Knoll

May 2023

Wow. We have been busy with outreach events for both the **School/Public programs** and for the **Private/Resort programs**. In addition to the culmination of school events we also had International Dark Sky Week (IDSW) from April 15 – 22, 2023 (<https://idsw.darksky.org>). Throughout April, we had 19 School/Public events and 10 Private/Resort events. IDSW alone had 13 school/public events and 4 private events. Outreach will start to wind down as we approach the end of the school year and get close to the monsoon season.



Allen Klus showing the Sun at Sahuarita

We had quite a few events for our local County, State, and National Parks/Monuments in addition to the numerous schools. We reached about 1,827 participants (public and private) through these extremely important events supporting our education mission and will culminate this month with our annual **Tucson Astronomy Festival (TAF)** at Brandi Fenton Memorial Park April 29th from 3 – 9 pm (see SMSIG). TAF will include interactive astronomy events in the afternoon as well as safe solar observing, door prizes in the early evening, a talk on the night sky, and nighttime observing with quite a few telescopes. We will also offer the public to bring their telescopes if they need help operating them. We can use VOLUNTEERS to help with the public telescopes brought to the event, observing

through our telescopes, and helping with the interactive exhibits. Please let Terri Lappin, Bernie Stinger, or Jim Knoll know if you can help with this TAAA-Sponsored event. Also, Jim Knoll will talk about the Festival during **Good Morning Tucson on KGUN Channel 9 from 5 – 7 AM Friday April 28th**.



Jim Knoll telescope at Sahuarita



Waiting for Sunset at the

Tucson Stargazing Adventures had a mix of resort and private events during April. These included monthly events at several resorts and a private event using the 40-Inch Big Boy at our Chiricahua Astronomy Complex (CAC). We also hosted our semi-annual Evening Under the Stars at CAC, with about 75 participants from the surrounding area as well as Tucson. The weather was great and we had the 40-Inch Big Boy, 9-Inch Folded Refractor, 14-Inch Wally Rogers, and several personal telescopes going. This not only showcases our very own astronomy complex but hopefully inspires youth and adults to pursue and appreciate the science of astronomy.



Evening Under the Stars Chiricahua Astronomy Complex

Thanks to all our volunteers who support both these programs. We cannot do these activities without your help!!

Bernie Stinger. School and Public Star Party Manager. Email: astronomy-events@tucsonastronomy.org.

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

Solar Filter Workshop Announcement

With the upcoming Annular Solar Eclipse this October and the Total Solar Eclipse in April 2024, AFSIG will be hosting two workshops 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).



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

The **first** workshop is tentatively planned for the first or second weekend of August 2023 in Tucson so you can have the filters ready for the October Annular Solar Eclipse. The second workshop date is TBD but expect it to be December 2023 or January 2024. If you are interested in the August workshop, please email fundamentals@tucsonastronomy.org with the following information **by June 15th, 2023**

- Your Name
- The aperture size of the camera lens, binocular, or telescope you would like to build a filter for
- If you prefer the first or second weekend of August

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 on 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 4 inches / 100mm to ensure we have enough material for both workshops.

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.



Criterion pedestal equatorial mount with clock drive. This is a classic pedestal German Equatorial Mount. Very sturdy. Can handle up to 8 inch Newtonian scope. Clock drive tested and is in excellent condition. Mount is fully functional.

TAAA Member Price: \$50



6 Inch Newtonian Optical Tube Assembly;
6 inch f8.0 primary mirror.
Comes with an 8x50 finder.
TAAA Member Price: \$100



Beyers Drive Gear Set

Large unused Beyers drive gear with matching worm gear and stepper motor. The main drive gear is 14.5 inches in diameter and has a 4 7/8 diameter central hole. Motor has been tested and works fine. Note worm gear and motor not shown.

TAAA Member Price: \$900

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](mailto:Douglas.Smith@taaa.org); 520-396-3233



Celestron tripod

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

TAAA Member Price: \$185

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 SkyWatcher 12" Collapsible
Dobsonian with 8x50 finder



Orion SkyWatcher 10" Dobsonian
with Telrad



Orion SkyQuest 10" Dobsonian with Telrad
and 8x50 finder.



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



TAAA Equipment Loaner Program (Continued)



Orion 10" Dobsonian black tube
8x50 finder

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](#)



Celestron 6" SCT, single fork mount, GOTO
with tripod.



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



Celestron 8" SCT, Single Fork
mount, GOTO



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



Celestron Nexstar 6" SCT, diagonal, and eyepiece



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" diagnol.



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

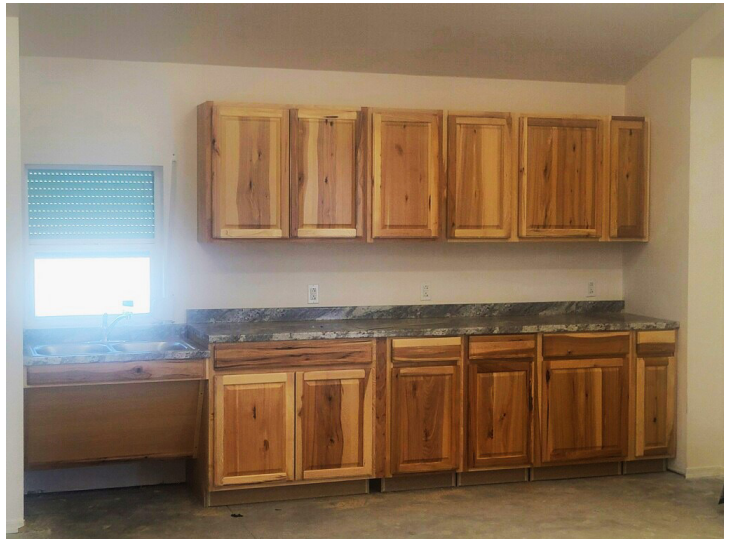
CAC Learning Center Construction Update - by Ed Foley

May 2023

The final stages of construction of the buildings has been reached. The security shutters were installed by the shutter contractor on all of the windows. There shutters are similar to those already in use on the other building at the site. They provide security, but also a tight light shade to use to keep the rest of the site protected from stray light at night.

The kitchenette cabinets were being installed this week.

The internal doors and door hardware were installed this month. This installation included the all-important digital door locks. These locks on the doors are programmable and can each be accessed via internet by the CAC reservations administrator. Once the rooms are completed, the rooms will be able to be listed on the TAAA website for reservations. A member will be able to reserve a room. With their confirmation email, they will receive a code with which they can access the assigned room. Their code expires are the end of their reservation. This will enable members to come and go, but leave the facility well secured when not in use.



Learning Center Kitchen

Volunteers have been grooming the area around and leading to the Learning Center buildings as part of the project under TAAA members' direct control. A gravel border on the south side of the sidewalk has been laid, and a gravel path from the existing CAC restrooms to the new buildings has been cleared of rocks, raked and gravel laid to provide a safer walking path from the center of the site to the buildings. Thanks again to the many volunteers who have worked the rakes, shovels and wheelbarrows to make this happen.



Learning Center Pathway

Special Interests Groups



Starry Messengers Special Interest Group

Opening Minds to the Universe

The Starry Messengers are TAAA members doing public outreach. We support the TAAA's outreach program through hands-on activities that generally don't require a telescope. We emphasize enthusiasm about astronomy over knowledge of the subject. The public may soon forget facts and figures you tell them, but we hope they catch your enthusiasm for our hobby.

We need more volunteers to present these hands-on activities at schools and community events. This past school year, we had to turn down several requests because we didn't have the volunteers to support them. Most activities are short, taking less than 5 minutes to complete. Being short, it's relatively easy to learn how to present them. Training can be done in person or by watching online videos. Let Terri Lappin know that you're interested in learning these activities and becoming one of our volunteers.

The Starry Messengers SIG has two levels of involvement. Some of us only volunteer to do the hands-on activities at events. Others are involved in the planning of the larger TAAA outreach events – such as the Tucson Festival of Books and the Tucson Astronomy Festival. Volunteering to do the hands-on activities doesn't mean we expect you to attend the SMSIG meetings.

Our next Starry Messengers SIG meeting will be by Zoom on Monday, May 8th at 7pm. A link will be sent to TAAA members. We'll primarily be discussing next year's exhibit for the Tucson Festival of Books.

After our May 8th meeting, we will not meet again until September 11th.

If you have questions about the Starry Messengers SIG, contact [Terri Lappin](#) or call 520-977-1290.

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, May 18, 6:30pm

Eclectic Cafe

7053 E Tanque Verde
(NE corner of Tanque Verde and Sabina Canyon)

Preview the menu at eclecticcafetucson.com

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

Astronomy Fundamentals SIG

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

The next meeting is on **Thursday, May 11th at 6:30 pm - 8:00 pm**. Topics to be determined.

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

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

[AFSIG on the Web](#)

Astro-Imaging SIG

by Gregg Ruppel

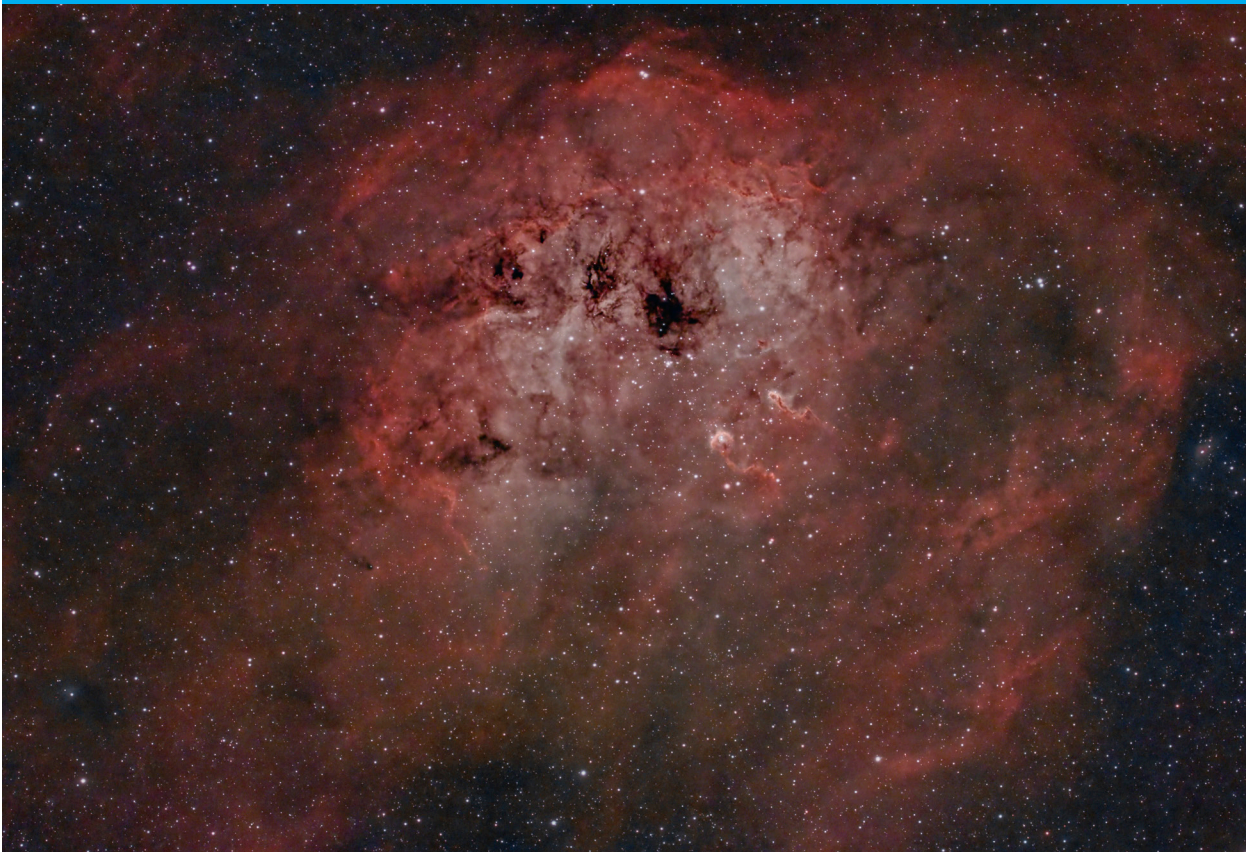
The next AISIG meeting is **Monday, May 15th @ 7:00 pm** via ZOOM.

Topics: TBA

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

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

Highlights from the Astro-Imaging SIG



Allen Force

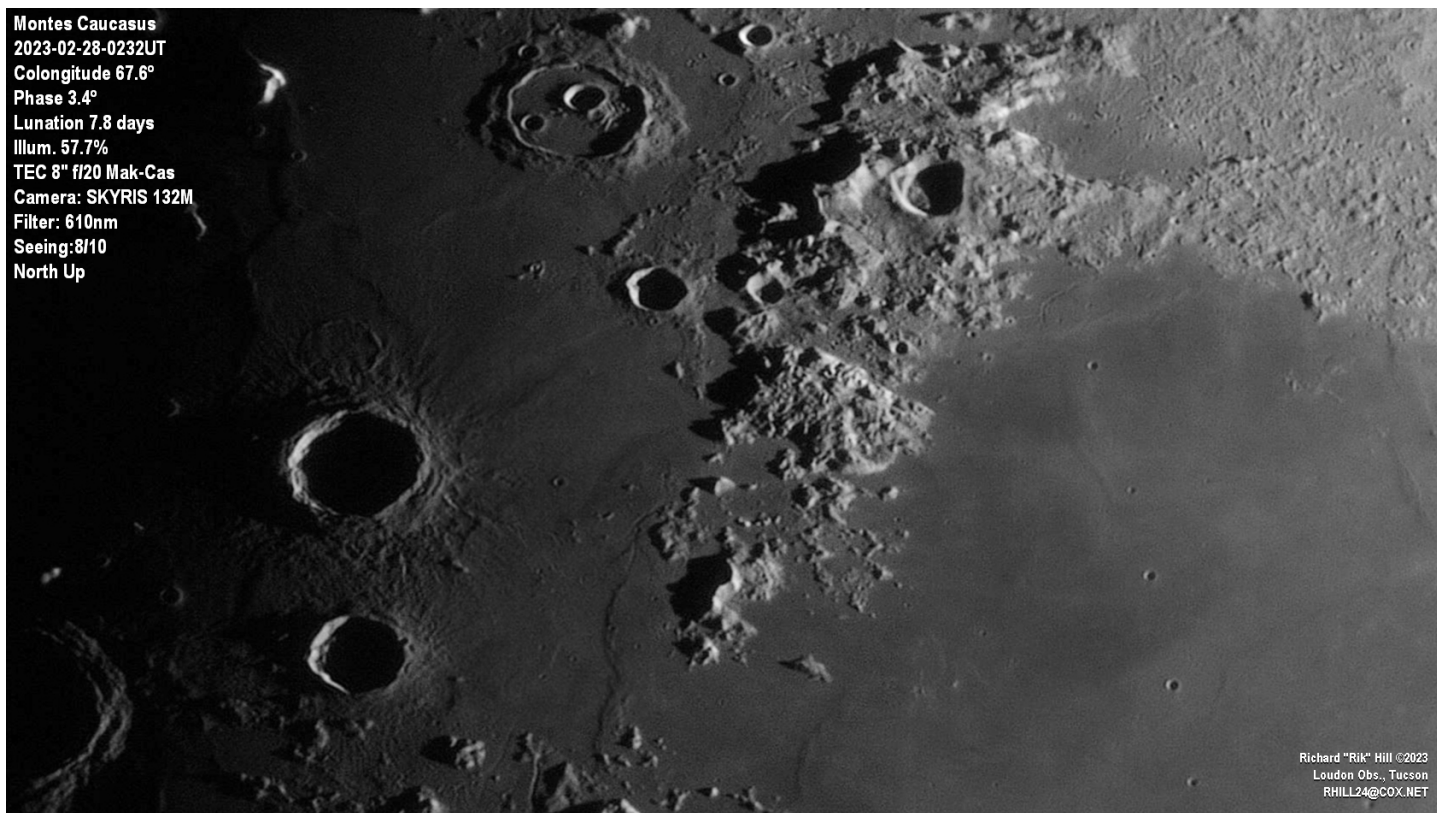
NGC 1893

[Astrobin](#)



Alan Rockowitz - Arp 271

Also known as NGC5425. This consists of a total of just over 7 hours of RGB, about 25% captured in Tucson and the other 75% down at CAC. These interacting galaxies lie about 130 million light years from here.



Rik Hill - Montes Caucasus; This image was made from two 1800 frame AVIs stacked with AVIStack2 (IDL) and finish processed with GIMP and IrfanView.

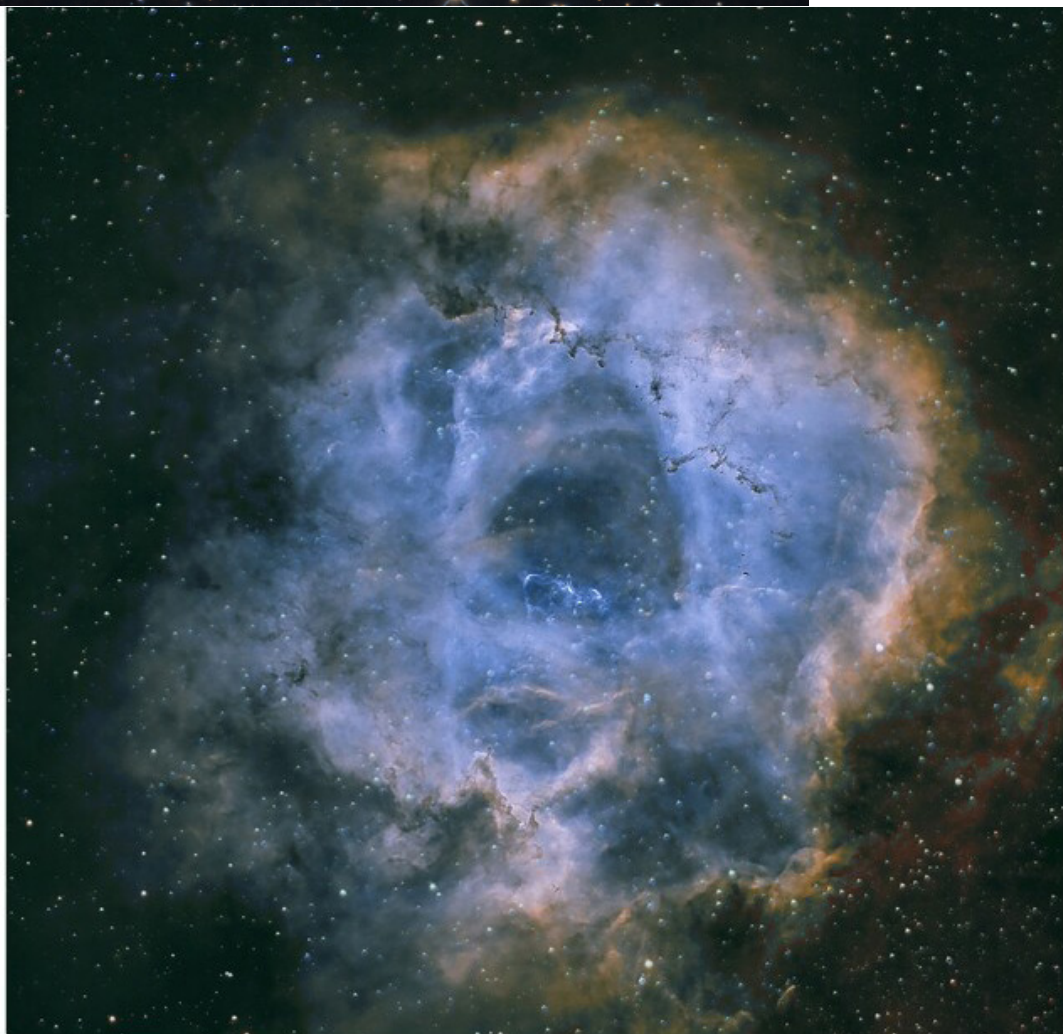


Tom Eby
NGC 2274

13.5 magnitude elliptical and spiral galaxies at similar distance (230 million LY) appear to have some interaction, the spiral N2275 seeming to be distorted and somewhat connected to elliptical N2274. The background galaxies are mostly around 250 MLY distance except for the edgewise spiral at left, at 350 MLY.

David Stearn
Rosette Nebula

Using the HOO script from Bill Blanshan.
C8 Hyperstar 8v4
533MC 160 subs 30 seconds
Processed in Pixinsight and Photoshop





John Tsantes
Dolphin Head nebula
(Sh2-308)
This image was captured
with 150 frames at 60sec
exposure.
[https://astrob.in/
l4alzz/0/](https://astrob.in/l4alzz/0/)

Observing Sites

TIMPA

by TIMPA Planning Group

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

TIMPA Star Party Dates this month: **May 19-20**

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

The TIMPA site is only partially improved. There are no inside buildings provided other than restrooms. TAAA 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.

Member Reservations for May should be sent to jmead@SIU.edu. Make sure to clearly include your name and contact information and date and time you plan to be on site.

Chiricahua Astronomy Complex

by Jim Knoll

CAC Weekend Dates coming up (Friday/Saturday): **May 19-20 (New Moon 19)**

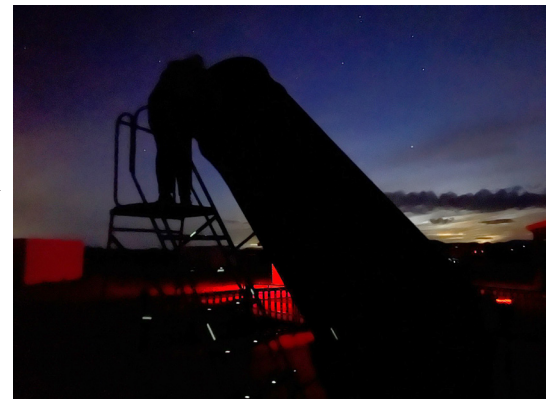
Chiricahua Astronomy Complex (CAC) is the club's dark sky observing site, located in Cochise County approximately 100 miles southeast of the center of Tucson. If you would like to attend, you must make a reservation on the CAC Web page at [CAC Reservations](#). **The reservations page has been enhanced with cancellation links. This allows members to more easily cancel a previous space or telescope reservation.**

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.

A special THANK YOU to all the members who helped with spreading gravel to complete the perimeter road and path connecting the current complex to the new buildings!! We will also be spraying for weeds and doing other maintenance tasks in May. We can use additional volunteers. Let us know if you can help with these and future maintenance projects. THANK YOU!!

TAAA has many generous members and we thank you for that generosity. We are always in need of funding assistance to further develop the site. If you have a Required Minimum Distribution from your IRA or want to do a direct roll-over from an IRA or 401K, check with your Financial Advisor for the proper form and it may be Tax Free to you. Please consider donating to support your world class astronomy complex.

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



Observing Sites Star Party Dates 2023

TIMPA

May 19-20

June 16-17

No Monsoon dates set

CAC

May 19-20 (New Moon 19)

June 16-17 (New Moon 17)

July 14-15 (New Moon 17) Monsoon

August 18-19 (New Moon 16) Monsoon

September 15-16 (New Moon 14) Monsoon

YOUR CHIRICAHUA ASTRONOMY COMPLEX

By Jim Knoll

Have you seen an incredibly dark sky recently? Want an excuse to get out of Tucson. Come out to one of our member weekends at the Club's Chiricahua Astronomy Complex (CAC). Come visit your premiere Astronomy



Complex during one of the upcoming New Moon weekends. Don't own a telescope or want to observe with something bigger than what you have? How about seeing the Milky Way arch high overhead or opening the skies to incredible views with huge precision telescopes? CAC has that and more. We have a variety of telescopes you can operate for personal use or for events we share with the public. For personal observing, we have the WRO 14-inch Celestron, an 18-inch Obsession, a 9 1/4 and 11-inch

Celestron, a 12-inch Meade, an 80 mm Lunt Solar Telescope, and several Dobsonians to practice finding objects in the night sky or finish one of your Astronomical League programs. These scopes must remain at CAC for observing on-site. For outreach events, you can also be trained to operate the RMO 40-Inch "Big Boy" or the 9-Inch Folded Refractor. Being able to show the public views through these amazing instruments and seeing their reaction is priceless!



We recently gave the 40-Inch Big Boy and the 9-Inch Folded Refractor protective sheds a makeover with a fresh coat of paint. It should protect our special telescopes for many years against the heat of summer and the wet of Monsoon. We will be applying a weed treatment Friday and Saturday May 5 and 6. We will also be putting together beds for the new sleeping rooms in the very near future. There are lots of opportunities to

help out with routine and special maintenance at CAC. If you can help, let Jim Knoll know – we would love to have your assistance!!



For more information on CAC, visit the CAC [webpage](#).

You can also email me at cac-director@tucsonastronomy.org with any questions or if you want to volunteer to help with any projects or be trained on a telescope.

School/Public Star Party Requests

by Bernie Stinger

Thank you for volunteering your time and talents for our extremely important outreach mission. **Below is the updated list for May, 2023.** May star parties are winding down for the summer level, with fewer school STEM events. Most are now public events around town.

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](#) and [Night Sky Network](#) (NSN) 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 April 24rd. ***Stared events and bolded telescope references** still have need for volunteers. If you can help out please contact me at: astronomy-events@tucsonastronomy.org

Wednesday – May 3 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: Grade 5; # Participants: 30

Filled -- 0 Scopes Needed

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

Nearest Moon Phase: Almost full

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).

Saturday – May 6 -- WEST TUCSON – Solar event

International Wildlife Museum

4800 W Gates Pass Rd

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

Filled -- 0 Solar Scopes Needed

Setup Time: 9:30am. Start: 10:00am. End: 1:00pm.

Directions: West on Gates Pass Rd just past N Camino De Oeste. Museum on the right side of road.

Viewing Location: Just inside first doorway on left.

*Tuesday – May 9 -- SOUTH TUCSON

Mission Manor Elementary

600 W Santa Rosa St.

Age/Grade Level: K – 6; # Participants: 80 – 100

1 NSN Toolkit only, no scopes

Setup Time: 4:30pm Start: 5:00pm End: 6:30pm

Directions: Heading West on Valencia, make a right onto 12th. Then, turn left on to Santa Rosa. School parking lot is on the corner.

Setup Location: TBD

*Thursday – May 11 – Mt. Lemmon

Ventana Vista Elementary

E Organization Ridge Rd – Whispering Pines Girl Scout Camp, Mt. Lemmon

Age/Grade Level: 5th Grade; # Participants: 125

2 Additional Scopes Needed

Setup Time: 7:30pm; Start: 8:00pm. End: 9:45pm.

Nearest Moon Phase: 3rd Quarter

Directions: Take a left before the Palisades Ranger Station just after Mile Marker 20 on the Mt. Lemmon Highway, then continue 1 mile down the dirt road of Organization Ridge Road. At the end of the road is the Whispering Pines Girl Scout Camp.

Viewing Location: Parking lot. There will be three groups of ½ hour each.

School/Public Star Parties Continued

*Friday – May 12 -- NW TUCSON -- CATALINA

Casas Christian School @ Catalina State Park

11570 N Oracle Road

Age/Grade Level: 4th Grade; # Participants: 100

1 Additional Scope Needed

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

Directions: North on Oracle Road to Catalina SP.

Viewing Location: Ringtail group picnic area.

Saturday – May 13 -- NW TUCSON -- CATALINA

Catalina State Park (Quarterly TAAA sponsored public star party)

11570 N Oracle Road

Age/Grade Level: All Ages; Filled – 0 Scopes Needed

Setup Time: 7:15pm. Start: 8:00pm. End: 10:00 pm.

Directions: North on Oracle Road to Catalina SP.

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

Sunday – May 14 -- EAST TUCSON

Saguaro National Park – EAST

Saguaro EAST is located at 3693 S Old Spanish Tr.

Age Group: All Ages; Estimated # Participants: 50

Filled -- 0 Solar telescopes needed

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

Viewing Location: Left of the Visitors Center at the Bicycle Ramada

Tuesday – May 16 -- SAHUARITA, AZ

Sahuarita Library – Sahuarita, Az

Age/Grade Level: All; # Participants: unknown
0 Scopes Needed – (Filled)

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

Directions: Sahuarita AZ

Viewing Location: TBD

*Tuesday May 16 - SOUTHEAST TUCSON

Academy of Tucson

7310 E 22nd St.

2 scopes needed

Directions: Near intersection of Kolb and 22nd.

Setup Time: 7:30pm. Start: 8pm. End: 9pm

Viewing Location: Parking lot or School field

Thursday – May 18 – EAST TUCSON

Desert Christian High School

9415 E. Wrightstown Rd.

Age/Grade Level: 11 & 12th grade; # Participants: 30

Filled -- 0 Scopes Needed

Setup Time: 7:45pm. Start: 8:00pm. End: 9:30pm.

Nearest Moon Phase: New

Directions: North on Harrison. As Harrison curves to become Wrightstown, the DCS K-8 campus will be on your right. Go in the gate and follow the road until you come to the outdoor basketball court on your right.

Viewing Location: Outdoor Basketball Court.

Saturday – May 20 – NORTHEAST TUCSON

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

Agua Caliente Park is located at 12325 E Roger Rd.

Age Group: All Ages

Estimated # Participants: 75

Filled -- 0 Scopes needed

Setup Time: 7:30 pm Start Time: 8:00 pm End Time: 10:00 pm

Nearest Moon Phase: NEW

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). Will need to spread out to facilitate social distancing.

*Monday – May 22 – NORTHEAST TUCSON

Basis Tucson North

5740 E River Rd.

Age/Grade Level: 8 to 12 Grade; # Participants: 50

1 Additional Scope Needed

Setup Time: 7:30pm. Start: 8:00pm. End: 9:30 pm.

Nearest Moon Phase: New

Directions: From River Rd and Craycroft Rd head east on River Rd. Basis North is the 3rd entry on the right (South side of River).

Viewing Location: Parking lot on South side of building.

What's Up list for May - June 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 May and June for the more common observing programs.

Constellation Hunter Program – Northern Skies

The following constellations are well placed for observing for May and June:

Bootes, Canes Venatici, Coma Berenices, Corona Borealis, Draco, Leo, Leo Minor, Sextans, Ursa Major
Ursa Minor

Messier Observing Program

The following Messier Objects are well placed for observation during May and June (listed in ascending RA):

Its galaxy time! M108, M97, M65, M66, M109, M98, M99, M106, M61, M100, M40, M84, M85, M86, M49, M87, M88, M89, M91, M90, M58, M68, M104, M59, M60, M94, M64, M53, M63, M51, M83, M3, M83

Lunar and Binocular Observing Program

The following is a list of the dates for the lunar phase when observations should be made during May and June:

New Moon: May 19, June 18
40 Hours waxing: May 21, June 20
72 hours waxing: May 22, June 21
4 days old: May 23, June 22
7 days old: May 27, June 26
10 days old: May 30, June 29
Full (14 days old): May 5, June 4
Gibbous: May 12, June 10
72 hours waning: May 16, June 15
40 hours waning: May 17, June 16

Solar System Observing Program

The following list describes the various solar system objects and their visibility during May and June:

Mercury is an early morning object during all of May and June. It reaches greatest elongation on May 29.

Venus is an early evening object during all of May and June. It reaches greatest elongation on June 3.

Mars is an evening object during May and June. It sets earlier each night but is still well placed for evening observation during May and June.

Jupiter moves from an early morning object during May to a late evening object, rising just after midnight by early June.

Saturn starts May as a late evening object and by end of June is rising around 10:30 PM.

Uranus is an early morning object in May and June.

Neptune is an early morning object in May, but becomes a late evening object so that by end of June it's rising around 11 PM.

Urban Observing Program

The following deep sky objects are well placed for observing during May and June:

Mel 111, M84, M86, M87, M104, M94, M64, M3

The following **Double Stars** are well placed for observation during May and June:

Zeta Ursa Major



Steward Observatory Public Evening Lecture Series

We are thrilled to be able to celebrate 100 years of presenting lectures on astronomy and telescope viewing to the public by offering a special Public Evening Lecture on the 100th Anniversary of the very first Steward Public Evening. For more information, go to the [Evening Lecture Series page](#). You can click [here](#) to stream podcasts of previous Public Evening Lectures.



100 years ago, ‘telescope of huge size’ launched UArizona’s leading role in astronomy.

Read article [here](#).



LPL Colloquia

Click links for more information

[Tuesday, May 2, 2023 - 3:45pm](#)

Dr. Tiffany Kataria Via Zoom and Kuiper 308
Scientist, NASA Jet Propulsion Laboratory

Skyward

By Dr. David H. Levy
May 2023

March 23, 1993: Comet Shoemaker-Levy 9 Thirty Years On

A lot can happen in thirty years, especially when it involves comets and asteroids that creep across the sky, and even more particularly with comets that go bump in the night. Such is the case with Comet Shoemaker-Levy 9, which is by far the most important and seminal of the 23 comets I have discovered.

The Jupiter-Comet story began for me on September 1, 1960, when I looked through a telescope for the first time. Jupiter was my target and I still recall that view. Years later, Gene Shoemaker proposed that Comet Shoemaker-Levy 9 might have been orbiting Jupiter as early as 1929, and that it made a close approach to Jupiter during the year I first sighted the planet. Obviously, I did not see the comet that night; neither did anybody else.

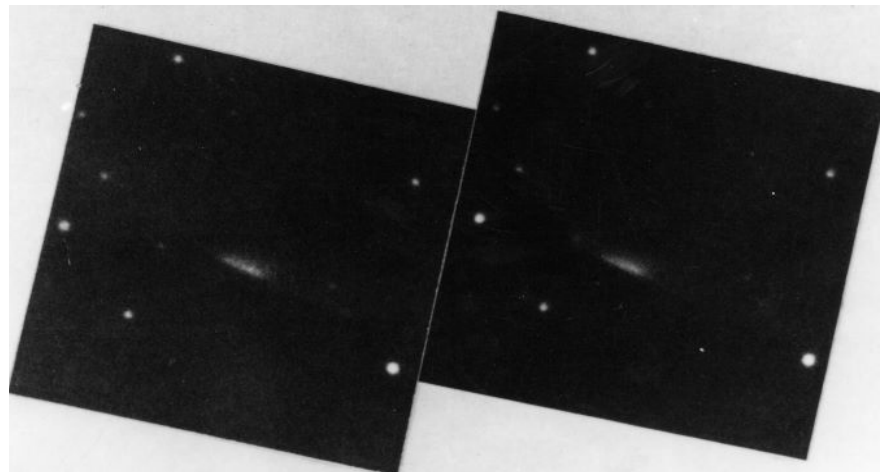
On the first night of our March, 1993, observing session at the 18-inch Schmidt telescope at Palomar Observatory, Gene Shoemaker developed the first four exposures and found them all blank. It appeared that someone had opened the film box since our February session and exposed the films to light. Examining the pile of films, I suggested that the ones near the bottom might be partially usable. Gene developed one of them and agreed. We continued most of the rest of that night with the partially damaged films until about 3 am, when we switched to a new set of prepared films.

On the next night, I guided an 8-minute exposure. It was difficult to stay centered on the guide star since the glow from nearby Jupiter was interfering. We then did three other fields of sky. Clouds arrived before we had a chance to begin the second set of exposures (so that each field would have two exposures). We stopped observing and left the building to examine the sky. I noticed a slight break in the clouds to the southwest. Gene teased me as being the "eternal optimist." We had a strange discussion about money. Gene said that it costs eight dollars each time we load a film into that telescope. When I suggested that \$8 was not too much, Gene quipped, "That's eight American dollars! Not that Canadian play money you try to get away with!" But after Carolyn agreed that there was a break coming, Gene said, "Let's do it!" We somehow managed to take four exposures before more clouds came and ended the night.

On the afternoon of March 25, the sky was completely cloudy with snow flurries. Gene was reading Time Magazine. I was working on a book about my favorite subject, comets. Carolyn was scanning the two Jupiter films. Suddenly she stopped, looked towards me, and exclaimed, "I think I have found a squashed comet." As Gene got up to look, Carolyn approached me. "You are joking, of course?" I inquired. Carolyn shook her head. Gene then looked toward us with the most unusual expression I had ever seen on his face. Then I looked. There was a long bar of cometary smudge, with at least five darker centers, each with a tail going towards the top of the films. There was also a trail of cometary light stretching off either side of the central structure.

We needed to get a confirming image. I telephoned my friend Jim Scotti, who was observing on the 36-inch diameter Spacewatch camera atop Kitt Peak in Arizona. He simply did not believe me when I explained what we had. He said he would try to find the time to take a confirming picture. Two hours later I telephoned him again. Jim simply grunted. "The sound you just heard," he explained, "was me trying to lift my jaw off the floor. "Do we have a comet?" "Wow, do you guys ever have a comet."

That is the story of how we discovered Comet Shoemaker-Levy 9 in the pinnacle moment of our professional lives. Sixteen months later we watched, along with the rest of the world, as the pieces slammed into Jupiter at the incredible velocity of 60 kilometers (37 miles) per second. (A plane traveling that fast would cross the United States in just over a minute.) We spent some time with both then-vice president Al Gore and President Clinton. Impact week was unforgettable. And it all began with a single look at Jupiter through my first telescope, a cloudy night, and some damaged film, on the never-to-be-forgotten night of the 23rd of March, 1993.



The discovery images of Comet Shoemaker-Levy 9.
Photographs by David Levy using the Palomar 18-inch Schmidt camera, two eight-minute exposures, separated by about 1 hour and 45 minutes.



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.