

TAAA Desert Skies Bulletin

Observing Our

Desert Skies

Since

1954



April 2024

www.tucsonastronomy.org

Membership Meeting

April 2024 Meeting Canceled

The **April General Meeting**, normally held on the first Friday of the month, has been **canceled** due to the Eclipse of the Sun on April 8th, since many of the club members will be traveling out of state for the event.

TAAA's next general member meeting will be held on **Friday, May 03, 2024**. This will be **Zoom only** due to meeting room availability.

Inside this issue:

Notes from the President - Below

TAAA News & Activities - [Page 3](#)

Public/School Star Parties - [Page 9](#)

Special Interest Groups - [Page 12](#)

Astro Images - [Page 14](#)

Observing Sites and Updates - [Page 21](#)

Astronomical League Programs - [Page 22](#)

Public Astronomy Events - [Page 23](#)

Skyward - By David Levy - [Page 24](#)

TAAA Equipment for Sale & Loan - [Page 26](#)

Notes From The President

March 2024

Thanks to all TAAA Members who have been so active in volunteering and sharing the sky and your astronomy knowledge/talents with others. And thanks to all TAAA Members who have been attending and participating in such events and extending your experience of the beauty and the knowledge of astronomy and related sciences. The first six months of the year traditionally seem to be very busy and active for TAAA, and that is certainly proving to be the case for 2024.

I know that you have heard this from me before, but please remember that a lot of our regular TAAA activities will not be occurring in April due to the April 8th eclipse. **If you are in Tucson on April 8th** there will be activities and some TAAA volunteers with telescopes at the Flandrau Planetarium even though many TAAA members will be out of town.

As many of you know, all seven TAAA Board members and seven other TAAA volunteers were recently involved in a **Strategic Planning Process**. We met with a facilitator for two days

by Mae Smith

in February to get the process organized and started. Currently we are working on what will be long-term follow up of that very productive work. I want to thank everyone who has been involved in the process so far. We obtained a grant from the Community Foundation of Southern Arizona (CFSA) to provide a consultant to direct the effort. Now that those two days have been completed, it is up to us to continue to follow through. Our two days of meetings were very productive. We generated a list of areas for continuing attention and long-term follow-up and have some basic outlines to assist us in implementing follow-through efforts. Suzanne Bailey has agreed to shepherd us through that longer-term process. If you are interested in these efforts, please contact Suzanne. Her contact information is listed in the Board member contacts at the bottom of this article.

Just as January, February and March have been very busy and zoomed (literally) by, **I expect April, May and June to seem to move equally quickly in light of all the activities TAAA**

leaders and members are involved in. Please make sure to organize your schedule to include things that you don't want to miss. One after another, we have the TAAA-sponsored Tucson Astronomy Festival soon, Evening Under the Stars event for the public at CAC, a whole list of star parties, the Eclipse, another educational group at CAC learning about astronomy with overnight stays at the site, and the eight-night 2024 Grand Canyon Star Party. As these activities are occurring, work on the TIMPA-16 project and the 32" Project is continuing to evolve productively and our imaging group is giving some attention to developing a new beginner imaging program for members. So, even though some activities will be slowed down in April due to the eclipse, overall we have a lot happening in the second quarter of 2024!!! I hope that, whatever your interests are, you are able to have fun and find meaningful activity in TAAA sharing your particular astronomy interests with your fellow TAAA members.

Please remember that **TAAA elections are coming up soon.** Consider volunteering to run for office if you have treasurer experience or if you could be available to otherwise serve in a Board position that is up for re-election. Member-at-Large positions are great positions for beginners on the Board who want to learn more about how TAAA operates and to figure how you might begin to contribute to

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@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.

Don't Forget: General Membership Meeting Changes!

Due to Eclipse, UA Schedule, Grand Canyon Star Party.

April Meeting, Friday, April 5th: **Canceled.**

May Meeting, Friday, May 3rd: **Zoom only:** Member's Presentations!

June Meeting, Friday, June 14: **Date change, Zoom only.**

management of the organization. They also offer opportunity for some very experienced leaders and past officers to continue to serve and share their wisdom from past learning experiences without the more intense monthly demands of the four Board officer positions. Elections are coming up in May. If you are interested in running for office or learning about the positions available, please contact [Pete Hermes](mailto:pete@tucsonastronomy.org), Chair of the Nominations and Volunteer Resource Committee.

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

Desert Skies Bulletin Editor - David Rossetter Ken Bertschy - Graphics Terri Lappin & Jim Knoll - Proofreading Gregg Ruppel - Image Editor

May 3rd TAAA Membership Meeting (Zoom Only)

Members have asked, so the entire May meeting will be devoted to **Member's Presentations**.

Presentations should be under 15 minutes long. Show us your latest images of deep sky, planets, or maybe even a solar eclipse image! Did you get a new piece of observing equipment – tell us about it. Are you working on an Astronomical League observing award? How's that going? You may inspire another TAAA member to do the same.

We ask presenters to send their images or presentation slides to [Terri Lappin](mailto:Terri.Lappin@tucsonastronomy.org) or the location where they can be downloaded. All presentations will be collected on a single computer to better facilitate sharing media over Zoom. The submission deadline for your images or presentation is April 29th.



2024 Leadership Election

The TAAA Leadership Election will be conducted online this year, from early evening on **April 26th to 7:00 pm May 3rd**. As we are not meeting in April, the NVRC is providing a presentation of candidates in the Members Only section of our club website in the TAAA Links to Docs and Videos section and [here](#).

Note: **We still have no candidates at press time for Treasurer.** Please contact the NVRC at nvrcchair@tucsonastronomy.org if you are interested running for this important position in our club.

If you miss the deadline at the end of March, you can still nominate yourself (or nominate someone else with their permission) as a “write-in” candidate up to one week before the election for any office. The nominee’s name will be put on the ballot. If additional candidates come forward, the aforementioned candidate profile presentation will be updated accordingly on the club web site.

We will be using an online service, OpaVote, to conduct the election as we have done for the past three elections. Voting will be all electronic over the Internet. The voting procedure details will be provided in the May Desert Skies Bulletin.

NVRC - Pete Hermes (Chair), John Christensen, Dave Pass, and Stephen Ferris

The **Pinal County Board of Supervisors proclaimed April 2 - 8, 2024, as International Dark Sky week in Pinal County**. This video explores the meaning of dark sky and light pollution, centered around Oracle State Park, an International Dark Sky Park. Residents will observe a Dark Sky Lights Out event on April 8th, from 8:30pm to 9.



They feature TAAA’s Mike Weasner! **Click on the pic to watch.**



TAAA Tucson Solar Eclipse: April 8th

For Tucson residents who are not going to be on the road for the eclipse, Tucson will experience a partial solar eclipse. The partial eclipse begins at 10:06 AM (local Tucson time) and ends at 12:36 PM local Tucson time. Maximum eclipse occurs at 11:20 AM local time. At maximum eclipse, about 70% of the Sun’s disk will be obscured by the Moon. The TAAA will have Telescopes set up to safely view the sun during the event at Flandrau Planetarium (UofA Mall). For more details:

[TAAA Eclipse Web Page](#).

Fundamentals of Astronomy Class - Winter 2024 Session

The Winter 2024 session of the Fundamentals of Astronomy class was just completed. The class was held from February 24 through March 9 on three consecutive Saturdays. The class was highly successful. New materials were used and the class was well attended. The class is expected to be offered again later in the year, probably the late fall time frame. -Douglas Smith



Some of the class attendees on the last day, holding their certificates of completion.

Practical Astronomy Workshop 4

Using Setting Circles

Open for enrollment

Place: TIMPA; **Date:** Thursday, May 30; **Time:** 7:00 PM until completed

Synopsis: This is the fourth workshop in the practical astronomy workshop series. It will teach students how to use manual setting circles for locating objects in the night sky. Many SCTs and older scopes have manual setting circles. This workshop is highly recommended for students who have telescopes that are not goto or pushto and have manual setting circles.

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

PLEASE NOTE: due to extreme equipment limitations there is a strict limit of 10 students for this workshop. If additional appropriate equipment becomes available the limit may be increased.

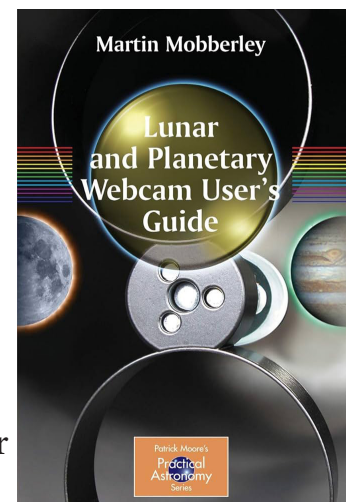
Book Of The Month Review

by Douglas Smith (TAAA Librarian)

Book: *Lunar and Planetary Webcam User's Guide*

Author: Martin Mobberley

This is a very good book. It provides a wealth of information on how to use relatively inexpensive webcams to produce extraordinary images of the moon and the planets. It provides details for selecting, mounting, and using cameras, post processing, and much more. Some of the images taken using moderately sized telescopes (8" to 11") and normal webcams were stunning. This is a must-buy for anyone interested in lunar and planetary imaging with their telescope. The book is in print and retails for between \$35 and \$40.





The Astronomical League Annual Dues are Increasing

Annual AL dues are going up from \$7.50 per person to \$9.00 per person as of July 1, 2024. If you want to save some money, please renew before July 1, even if you are not due for renewal. Our Astronomical League Coordinator (ALCOR), [Doug Smith](#) will maintain the dates so you will not lose any membership credit. Instructions to renew are [HERE](#).

Tucson Astronomy Festival March 30, 2024

Annual TAAA-Sponsored Festival
Brandi Fenton Memorial Park 3-9 pm

PLEASE HELP with a telescope (Solar 3-6:30 or Evening 7 - 9 pm)
We also need volunteers without a telescope
to help the public with operating **their** telescopes.

TAAA Telescope: [Bernie Stinger](#),

Volunteer help with privately-owned telescopes or interactive
exhibits: [Jim Knoll](#)



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, April 18, 6:30pm

Jun Dynasty

2933 E Grant Rd
(NW corner of Grant and Country Club)

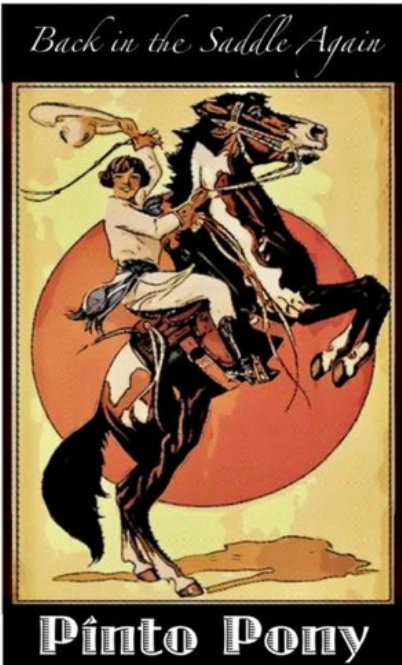
Preview the menu at: <https://www.jundynasty.com/>

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

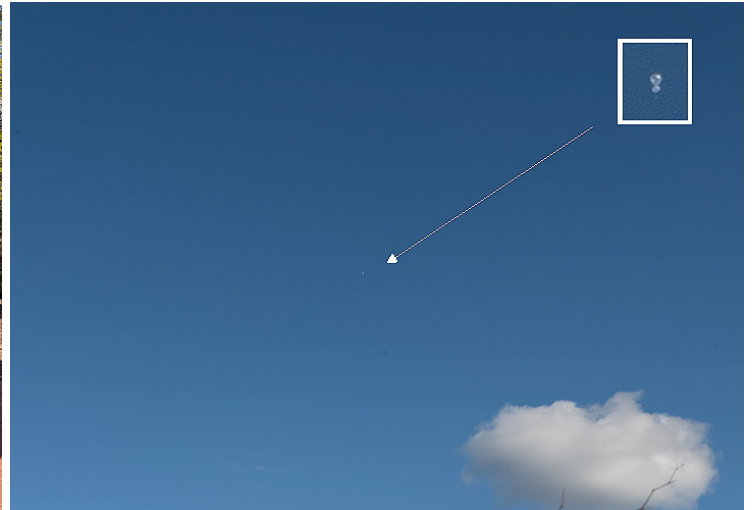
Oracle State Park International Dark Sky Park Celebration by Mike Weasner

Saturday, 9 March 2024, the 9th Anniversary "International Dark Sky Park" Celebration was held at Oracle State Park. Late in the afternoon the sky was pretty with lots of clouds.

Before the star party, live music for the Celebration was provided by the local ensemble Pinto Pony, with musicians Sherry Crownheart, Mark Garris, Scott McMullen, Ferne Rogers, and Cyn-d Turner, to the enjoyment of the visitors.



The Friends of Oracle State Park and the DarkSky Southern Arizona Chapter were on hand to educate.



Very high in the clearing sky was a research balloon (probably from World View Enterprises located in Tucson).



An hour before sunset the sky began clearing and provided an awesome view of the Galiuro Mountains to the east of the park.



By sunset, the sky was mostly clear and the band played on!

After the band finished, Deb Gaines, President of the Friends of Oracle State Park, gave a short talk about the mission of the Friends. Then, to celebrate the 9th anniversary of the park being designated as an "International Dark Sky Park" in 2014, Mike Weasner talked briefly about the support of the community of Oracle and the park in protecting the night sky.



Mike Weasner, local Dark Sky Advocate, and Sam Miller of the DarkSky Southern Arizona Chapter were interviewed by Pinal County for an upcoming International Dark Sky Week (2-8 April 2024) video. This is Sam being interviewed.

After sunset, park visitors enjoyed views of the planet Jupiter, Comet 12P/Pons-Brooks, stars, nebulae, and galaxies through several telescopes provided by members of the Tucson Amateur Astronomy Association (TAAA). They also enjoyed just being under a dark sky with the Winter Milky Way overhead. Some people even saw the Zodiacal Light in the western sky.



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 Star Party list for April, 2024.** April is continuing to be a busy month with 16 star parties scheduled despite the lull during the Total Solar Eclipse early month.

Please let me know in return email if you are interested in volunteering for any of the events listed in red below.

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 March 24th. **The first section, in RED, 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

April Events still in need of Volunteers

Friday – April 5 -- FAR WEST TUCSON
Pima County Natural Resources Parks & Recreation (NRPR) –
Juan Santa Cruz Picnic Area

2000 N Kinney Road

Age/Grade Level: All Ages

Participants: 75–100

1 Additional Scope Needed

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

Saturday – April 6 – EAST TUCSON – SOLAR
Radio Society of Tucson @ Calvary Tucson
Church parking lot

8711 East Speedway

Age Level: Adults

Participants: 50

1 Solar Scope Needed – White light or H-alpha

Setup Time: 7:30 am **Start time:** 8:00 am
End Time: 11:00 am.

School/Public Star Party Requests - Continued

Monday – April 8 – UofA TUCSON – SOLAR – Partial Solar Eclipse

Flandrau Planetarium – on the UofA Mall

The Flandrau Planetarium is located at 1601 E University Blvd.

Age Level: All ages

Participants: 100's

2 Additional Solar Scopes Needed – White light or H-alpha

Setup Time: 9:30 am Start Time:10:00 am
End Time: 2:00 pm

Friday – April 12 – 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: 7:00 pm Start Time: 7:30 pm
End Time: 9:30 pm

Saturday – April 20 -- MARANA AZ

Ora Mae Park – Town of Marana Parks & Rec.

13250 N Lon Adams Rd, Marana, AZ

Age Group: All Ages

Estimated # Participants: 50 – 100

1 Additional Scope needed

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

Monday – April 8 – SOUTHEAST TUCSON – SOLAR – Partial Solar Eclipse

Eckstrom–Columbus Library

4350 E 22nd St

Age Level: All ages

Participants: 100

2 Solar Scopes Needed – White light or H-alpha

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

Friday – April 12 -- EAST TUCSON

Desert Christian Elementary School

9415 E Wrightstown Rd

Age/Grade Level: 2nd Grade

Participants: 50

1 Additional Scope Needed

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

Saturday – April 13 --Chiricahua Astronomy Complex (CAC) – Pearce, AZ

Evening Under the Stars

9315 E Perseus Way, Pearce, AZ

Age/Grade Level: Mostly adults

Participants: 100

1 Additional Scope Needed on public pads

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

School/Public Star Party Requests - Continued

April Events Filled—No Volunteers Needed

Thursday – April 4 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: 8th Grade

Participants: 30

0 Scopes Needed

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

Saturday – April 13 — ORACLE AZ

Oracle State Park

3820 E Wildlife Dr, Oracle AZ

Age/Grade Level: All Ages

Participants: 150

0 Scopes needed

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

Thursday – April 18 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: 5th Grade

Participants: 60

0 Scopes Needed

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

Sunday – April 21-- EAST TUCSON – SOLAR

Saguaro National Park – EAST

Saguaro EAST is located at 3693 S Old Spanish Trail.

Age Group: All Ages

Estimated # Participants: 50

0 Solar telescopes needed

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

Wednesday –April 24 –EAST TUCSON SOLAR

Dodge Magnet Middle School

5831 E Pima St.

Age/Grade Level: 6 – 8 Grade

Participants: 100

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

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

Friday – April 26 -- CENTRAL TUCSON

Safford Community School

200 E 13th St

Age/Grade Level: K – 8 Grade

Participants: 100+

0 Scopes needed

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

Saturday – April 27 -- 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 – 100

0 Scopes needed

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

Tuesday – April 30 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd

Age/Grade Level: 7/8th Grade

Participants: 60

0 Scopes Needed

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

Special Interest Groups



Starry Messengers Special Interest Group

Opening Minds to the Universe

We had an excellent time at the Tucson Festival of Books/UA Science City two-day event in early March. Here is a list of the volunteers who helped with the exhibits and demos:

Ed Foley	Pete Hermes	Ardis Herrold	Terri Lappin
Kay Lehman	Karen Liptak	Brian O'Connell	Susan O'Connor
Chuck Schroll	Mae Smith	Vance Tanner	Vanessa Thomas

Solar scopes were brought by:

Curt Kamada	J. D. Metzger	Jim O'Connor	Tom Rolfsmeyer
Tom Sarko	Bernie Stinger	Gary Wells	Barbara Whitehead

This event required 130 hours of service from our volunteers. Five of us covered 71 hours or over 50% of the needed time: Pete Hermes (16 hours), Terri Lappin (21 hours), Jim O'Connor (10 hours), Susan O'Connor (15 hours), and Vance Tanner (9 hours). Since we were understaffed at times, these five volunteers went above and beyond what was asked of them. In the future, we'll need more volunteers for this event. As our volunteers are aging, it's getting more difficult for us to put in these long shifts.

Even with all the work, it was gratifying to have so many great conversations with the public about the upcoming eclipse and about the TAAA. A total of 3279 encounters took place over the weekend. That works out to just about 200 encounters each hour during the event!

Earlier in March, we sent three TAAA members to the Southern Arizona Regional Science Fair to award astronomy related projects. Our judges were: Suzanne Bailey, Todd Hansen, and Karen Liptak. The award recipients are listed below. In addition to the cash award, each is granted a free year membership in the TAAA.

- Elementary Level: Arya White, 4th grader, "You Are My Sunshine", awarded \$100
- Middle School: Nia Meredith, 8th grader, "Looking at Astronomical Objects (By actually looking at them)", awarded \$150
- High School: Diana Valverde, High School student, "The Solar System in a Cosmic Context", awarded \$200

This article is being written before the Tucson Astronomy Festival takes place. The event is in the capable hands of Jim Knoll and Suzanne Bailey. Weather conditions don't look too promising right now, but it's still a week away. Hopefully it goes well.

In addition to our special events, Starry Messengers supported several community events in the last month with our toolkit activities.

- Henry Elementary School: Pete Hermes & Susan O'Connor, Space Rocks Toolkit, 30 students and parents
- Academy of Tucson Middle School: Pete Hermes; Black Hole Survival Kit; 25 students and parents
- Santa Rosa Library: Susan O'Connor; Eclipse activities; 15 students
- Baboquivari Secondary School STEM Career Day (Sells, AZ): Jeff Larson, 100 high school and middle school students who learned about careers in astronomy

<continued>

We continue to receive requests for toolkit activities at schools and other venues. This very rewarding experience introduces young people to astronomical concepts using simple activities that they can do. We have guided conversations to help them learn the concepts on their own. There are a variety of ways to learn how to do these activities. [Email](#) Terri Lappin for details. Learn more about these toolkits at the Night Sky Network [website](#). Below are the upcoming events, times do not include set up time. To volunteer for any of these events, use this online [signup sheet](#).

- April 5 (Fri) 4pm – 7pm; Vail Academy and High School, any activity; Kolb Rd & I-10, need two volunteers
- April 12 (Fri) 5:30pm – 7:30pm; Drachman Montessori; Black Hole Survival Kit; 22nd St & 10th Ave (CANCELLED DUE TO LACK OF VOLUNTEERS)
- April 20th (Sat) 10am – 1pm; NW YMCA (Healthy Kids Event); any toolkit activity; Shannon & Magee, need two volunteers to join Susan O'Connor
- April 20th (Sat) 7:30pm – 9:30pm; Ora Mae Harn Park; any toolkit activity; I-10 & Marana Road; need two volunteers
- April 23rd (Tues) 6pm – 7:30pm; Rio Vista Elementary; Black Hole Survival Kit; Limberlost & Mountain; need two volunteers
- April 25th (Thurs) 5:30- 7:00pm; Donaldson Elementary; any toolkit activity; Ina & La Cholla; need one volunteer to join Susan O'Connor
- May 7 (Tues) 5:30pm – 8:30pm; Gridley Middle School; any toolkit activity; Broadway & Harrison; need two volunteers

NEXT MEETING OF THE STARRY MESSENGERS SIG: The Starry Messengers will not meet in April due to the eclipse. **Our next meeting will be on May 13th.**

SMSIG on the [Web](#)

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

Highlights from TAA's table at the Tucson Festival of Books



Pete Hermes with eclipse model

Vance Tanner talking with visitors

Susan OConnor giving away eclipse glasses



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 **April AFSIG meeting has been canceled** due to the eclipse.

The next AFSIG meeting is on **Thursday, May 9, 6:30pm to 8:30pm**. 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

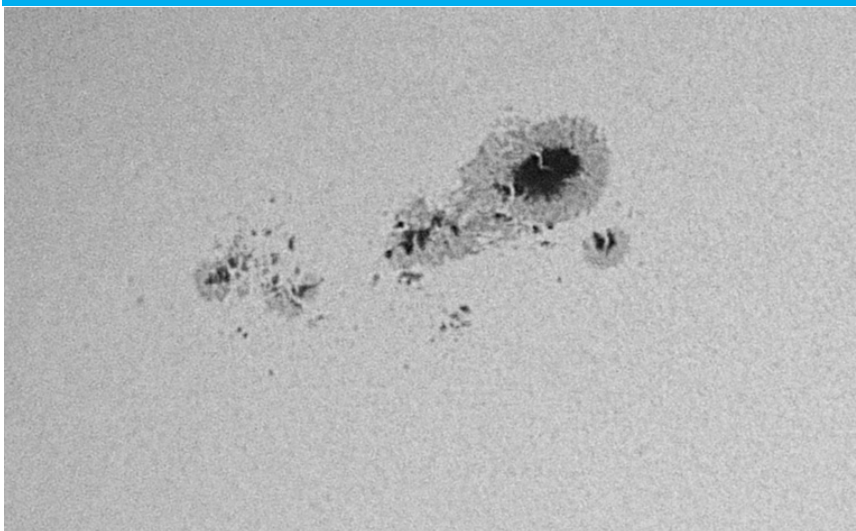
The next AISIG meeting is **Monday, April 15 at 7:00 pm** via ZOOM.

Topics: Beginner's Corner - Ask a Question; Eclipse Images and Stories

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 here](#).

Look for previous AISIG meetings on the [TAAA YouTube Channel](#).

Highlights from the Astro-Imaging SIG



Rik Hill

Sunspot AR 3590

AR 3590

2024-02-23-1856UT

Seeing 7/10 through clouds

Dynamax6 + 3.8 filter

Cam:Skyris 236M

Carrington Rotation 2281

L= 239.1° B= -7.1° P= -20.0°

north up

AR Locat Area Z Mag
3590 N18E13 1150 Fkc β - γ - δ

Richard 'Rik' Hill ©2024
Loudon Obs., Tucson, AZ
rhill24@cox.net



Posidonius

Rik Hill

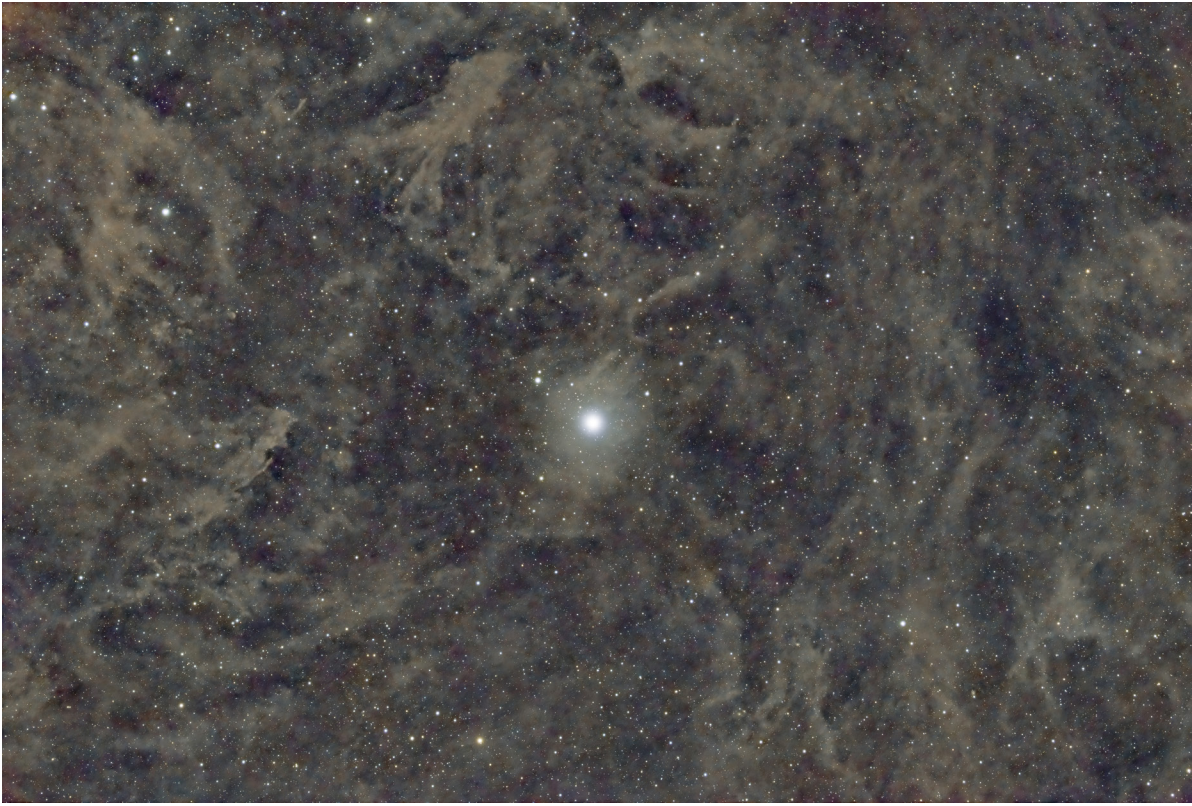
On the northeastern shore of Mare Serenitatis is found the spectacular crater Posidonius (99 km). This is what's called a fractured floor crater (FFC) meaning that it was flooded, the lava receded and the floor cracked resulting in the fissures we call Rimae Posidonius. Posidonius is thought to contain the remnants of an older crater wall seen on the east (right) side. There are two long, parallel north-south rimae immediately apparent on the floor of Posidonius. They are not at all the alike. The one in the middle of the crater is a graben-like rima that ends on the north end where it meets the interior crater wall. The rima to the west is not a linear crack but in orbiter images is seen as tightly sinuous formed by a fluid, probably lava, during some post-impact modification and flooding from Serenitatis as it takes a right angled turn to the west wall. On the other end it runs up to the northern wall and follows along the inside of that wall all the way to the crater Posidonius (14 km) B on the northeast wall. You'll need a large aperture to follow along its full extent.

South of Posidonius is the ruined crater Chacornac (53 km), as much as a billion years older than Posidonius, from the beginnings of the Moons formation. It has been overlain by ejecta from numerous nearby maria and crater impacts. Notice how the central rima in Posidonius appears to continue south across Chacornac and beyond.

Further south from Chacornac is an embayment off the mare. This is Le Monnier (63 km). The south side of this crater was the landing site for Luna (Lunik) 21. From this landing site the onboard rover, Lunokhod 2, traveled 37 km across the surface to the flanks of the southeastern wall, the longest distanced traveled by any lunar roving vehicle ever. This rover had seven cameras on board. I invite the readers to look up the pictures and exploits of this mission.

There's a nice wrinkle ridge winding its way south from the southern point Le Monnier. This is Dorsa Aldovandri that winds further south for 124 km well out of the limits of this image. To the southeast of Le Monnier is nice crater Romer (41 km) with terraced walls. The interior of this crater is worth the time on a good steady night with highest magnifications! To the left of this crater is a graben-like rima, Rima Romer. Another such rima is to the right of Posidonius just left of the smaller crater G.Bond (19 km). This rima is, as you might expect, Rima G.Bond.

This image was made from portions of two 1800 frame AVIs stacked with AviStack2, knitted together with MS Ice and finally processed with Gimp and IrfanView.



Craig Harding

Polaris IFN

This was taken on my Askar FMA235 f/4.5 scope with an ASI2600MC camera. The first night gave me 46 usable frames of 180 seconds each. The second night had 60 captured frames, but only yielded about half of them usable because thin clouds rolled in. I tried both the new Gradient Correction tool in Pix and GraXpert. The Gradient Correction did not work well in comparison to GraXpert on this image.



John Tsantes - Sh2-284; This one was processed with an unlinked stretch, and NN using HOO-Ha, mode2, and then curves to bring out more color.

Jones-Emberson 1

A twin lobed planetary known as PK 163 + 31.1 and faint at 14th magnitude. Is an ancient gas shell, with a 16.8 mag blue white dwarf at center. The nebula will supposedly fade away in only a few thousand years. RASA 8" f/2.0 / zwo 2600mc pro / AP Mach2 GTO unguided w/ DecArc tracking / no filters / 4.2h exposure / 2-11, 2-13 2024.

Tom Eby

Abell 28

Another in the list of Abell's very low surface brightness planetaries, this ghostly apparition floats behind a veil of substantial galactic cirrus (IFN) which in this case seems to actually resemble earthy cirrus. PN is mag 13.5 and 5.5 arcmin diameter. RASA 8" f/2.0 / zwo2600mc pro / AP Mach2GTO unguided, 34 pt dec arc tracking / no filters / 9.1 hr exposure (544 subs).



M1 Crab Nebula

Messier 1 taken
with Skywatcher
200P with Nexus
Reducer/corrector
at 600 mm focal
length F3 ASI 183
MC camera IDAS
Nebula Booster
filter 110x120



Randy Smith

Messier 101

The Pinwheel Galaxy
Skywatcher 200P with
Coma Corrector at 800
mm ff4 focal length ASI
2600 MC camera Optolong
L-Pro filter 126x120



NGC 6188

Fighting Dragons
of ARA

[Astrobin](#)

David Stearn

Tadpole and Flaming Star Nebula

[Astrobin](#)



The Moon

I captured about 20 200-frame avi files, combined them in PIPP, then ran AutoStakkert and stacked the top 10%, about 270. Then played around in WaveSharp until it looked sharper but not too sharp, then adjusted levels, brightness etc in Affinity.

Jeff Rothstein

Thor's Helmet (NGC 2359)

Roughly 20 hrs of integration time using an NBZ. Still, there's a lot of interesting stuff going on here besides the helmet and its two horns--the red and blue gas clouds reach out over a span of about 45' in each of RA and DEC.



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: **April 5-6.**

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): **April 5-6 (New Moon 8).**

May NOT be any Hosts onsite due to the Eclipse.

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

April 5-6
May 3-4
June 7-8

CAC

April 5-6 (New Moon 8).
Total Solar Eclipse April 8.
May NOT be any Hosts onsite

April 13 Evening Under the Stars
May 3-4 (New Moon 7)
June 7-8 (New Moon 6)

What's Up list for April 2024 – May 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 in April and May for the more common observing programs.

Constellation Hunter Program – Northern Sky

The following Northern Constellations are well placed for viewing during April and May:

Cancer, Canes Venatici, Coma Berenices, Leo, Leo Minor, Sextans, Ursa Major

Messier Observing Program

The following Messier objects are well placed for viewing during April and May (listed in ascending RA):

M81, M82, M95, M96, M105, M108, M97, M65, M66, M109

Lunar and Binocular Observing Program

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

New Moon: April 8 (**Total Solar Eclipse**), May 8

40 Hours waxing: April 10, May 10

72 hours waxing: April 11, May 11

4 days old: April 12, May 11

7 days old: April 15, May 15

10 days old: April 18, May 18

Full (14 days old): April 23, May 23

Gibbous: April 2, May 1

72 hours waning: April 5, May 5

40 hours waning: April 6, May 5

Solar System Observing Program

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

Mercury is an early morning object for most of April and all of May. It reaches greatest elongation on May 9 and greatest brightness on May 10.

Venus is an early morning object during April and May. It rises later each day, basically lost in the twilight during May.

Mars is an early morning object during April and May. It is rising earlier each night. On April 1 it rises around 4:30 AM. By the end of May it is rising around 2:30 AM.

Jupiter is still visible in the early evening sky during April. But it is setting earlier each day. On April 1 it sets around 9 PM. By mid May it is setting before sunset.

Saturn is now visible in the early morning sky. On April 1 it rises around 90 minutes before sunrise. By the end of May it is rising around 1 AM.

Uranus is setting at roughly the same time as Jupiter sets. NOTE: On April 20 Uranus and Jupiter will be within ½ degree of each other.

Neptune is an early morning object in April and May. On April 1 it rises around 5:30 AM. By May 31 it rises around 1:30 AM.

April 10: Saturn and Mars are within ½ degree of each other.

April 20: Uranus and Jupiter will be within ½ degree of each other.

April 29: Neptune will be within 0.1 degree of Mars.

Urban Observing Program

The following **deep sky objects** are well placed for observing during April and May: M81, M82, NGC 3242

The following Double Star is well placed for observation during April and May: Gamma Leo

Public Astronomy Events



DEPARTMENT OF ASTRONOMY AND STEWARD OBSERVATORY

Public Evening Lecture Series Spring 2024

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

- | | | |
|-----------------|---|--|
| April 1 | Dr. Kathryne Daniel
Steward Observatory | <i>Galactic Symphony: The Harmonic Evolution of Our Milky Way Galaxy</i> |
| April 15 | Dr. Christopher Cokinos
Dept. Of English,
University of Arizona | <i>Still as Bright: An Illuminating History of the Moon from Antiquity to Tomorrow</i>
Book-signing after the lecture |

**INTERNATIONAL
DAY OF LIGHT**

Explore Lasers & Light!
Free Family Fun!

International
Day of Light
Join us on May 19!

PRESENTED BY:

Get ready to illuminate your world and join us for the annual **International Day of Light** celebration on **May 19** at **UA Flandrau Planetarium** in Tucson! Brought to you by Optics Valley, a committee of the Arizona Technology Council, this free STEM event is perfect for families, teachers and science enthusiasts of all ages.

Mark your calendars for an exciting day filled with interactive activities and captivating full dome shows that will spark your curiosity and ignite your imagination!

Don't miss out on this experience on May 19 - stay tuned for more details coming soon. [Web Site](#)



Fred Lawrence Whipple Observatory

Tucson Symphony Orchestra

Holst's Planets

April 12 and 14

Linda Ronstadt Music Hall



The [Fred Lawrence Whipple Observatory](#) (details on [Facebook](#)), the [MMT Observatory](#), and local NASA/JPL Solar System Ambassadors will join [Tucson Symphony Orchestra](#) for [Holst's Planets](#) (details on [Facebook](#)) April 12 and 14 to celebrate the symbiosis of music and science. Whipple Observatory staff and volunteers will be on-site before, during, and after the concert on both days to discuss not only how the universe inspired the music, but how the universe makes its own music. Guests of the night performance will also have the opportunity to view celestial objects like planets and far away stars through small telescopes, and guests of the day performance will take a look at our own Sun (that will have just finished putting on a major show of its own).

Skyward

By Dr. David H. Levy

April 2024

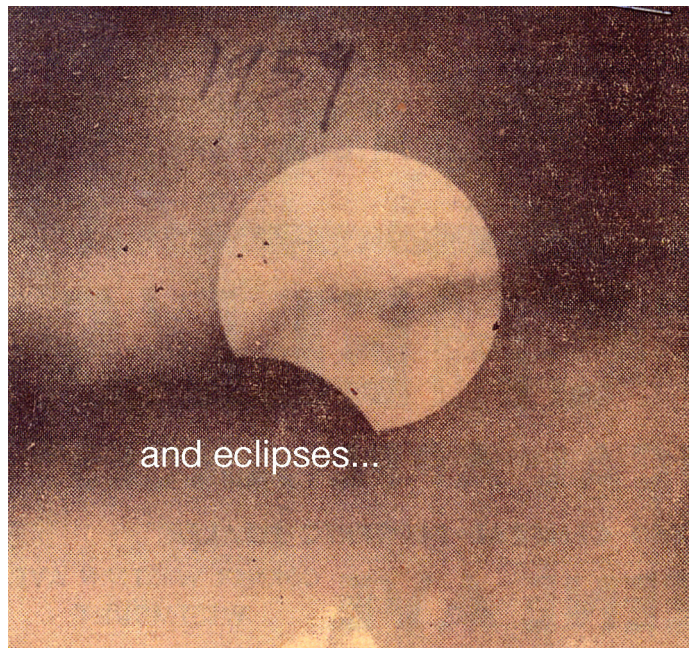
A Total Eclipse of the Sun

As I am writing this April 2024 edition of Skyward, in less than a month there will be a total eclipse of the Sun. The Moon's great shadow will trace a path across North America, including the United States, and Eastern Canada.

A total eclipse of the Sun is one of the most breathtaking sights all of Nature has to offer. The Sun will vanish. In its place will be a jeweled crown. The Moon's dark central shadow will touch the Earth in the Pacific Ocean at sunrise and hit the North American coast over Mexico, north of Guadalajara. The shadow will then cross the border into the United States (where I will be, and hope that the shadow will not get stopped at the border) and head for Dallas. Millions of people in several major cities across the United States will enjoy a stunning experience of a total eclipse of the Sun, including San Antonio, Austin, Dallas, Indianapolis, and Carbondale. The shadow will cross the border into Canada, where cities like Hamilton, Niagara Falls, Kingston, most of the Thousand Islands in the St Lawrence River, and Montreal, will experience totality. Downtown Montreal will experience a twilight sky early in the afternoon - its street lights will switch on - and then the shadow will race through Sherbrooke on its way towards Newfoundland. Finally, the shadow will head over the Atlantic Ocean where sunset will mark the end of this incredible, precious event.

Virtually everyone else in the United States and most of Canada will see a partial eclipse during which a portion of the Sun will be blocked by the new Moon. For those readers planning to watch the eclipse, I have four salient pieces of advice:

1. Whenever any of the Sun is visible. It is vital to use special eclipse glasses. An unprotected view of the Sun could cause permanent blindness. However, when the total phase of the eclipse begins and the sun is completely covered by the Moon, take your glasses off and then enjoy the spectacle. I knew that even when, at age 15, I saw my first total eclipse with my parents, on July 20th, 1963. (My first eclipse, on October 2, 1959, with Mom and brother Gerry, was a partial.) In the minutes before the total phase began, I looked toward the west to watch the Moon's ominous shadow approaching. At the onset of totality, I tore off my glasses and gazed at the atmosphere of the Sun. Dad had a fit. He raised his voice and demanded that I put my glasses back on. My solution: I put the glasses back on. Then I turned slightly away from Dad, and promptly took them off again. The simple rule is, if any of the Sun itself is visible, use the eclipse glasses. But when the Sun is totally covered by the Moon, all bets, and glasses, are off.



The 1959 eclipse which I saw with Mom and my brother Gerry.

2. For readers who are very close to the Moon's deep central shadow, so that, say, more than 99% of the Sun is covered by the Moon, nothing is gained. A 99.99% eclipse is still a partial eclipse. The closer to the path of the Moon's shadow, the more important it is to make the effort to get into the shadow.
3. If the sky is clear, the atmosphere of the Sun, the magnificent corona (roughly circular since the sunspot cycle is near its maximum) will prevent total darkness. If the sky is cloudy, then it could become very dark. By far the darkest total solar eclipse for me was on March 7, 1970 in Nova Scotia; the sky was covered by a layer of stratus cloud. It was so dark that I could barely see my fingers.
4. I can't remember the fourth piece of advice.

Viewing a total solar eclipse should be on everybody's bucket list. It is a unique and unforgettable event. Surrounding the Sun, the brighter planets like Venus and Jupiter might appear, and although Comet Pons-Brooks will be in the sky northwest of Jupiter, about a quarter of the way between Jupiter and the Sun, it will probably be difficult to spot.

I have seen 99 eclipses. If the sky is clear on the night of the full Moon on March 24/25, then I will see what is called a penumbral eclipse of the Moon during which the Moon is dimmed a bit by the outer shadow of the Earth. It will be what we call an almost total penumbral eclipse of the Moon during which almost all of the Moon will be embedded in the outer shadow of the Earth but none of the umbra, or inner shadow. That will be my 100th Eclipse. And then, the total eclipse on April the 8th will be my 101st.

In his autobiography *Starlight Nights*, published in 1965, Leslie Peltier wrote about the first eclipse he saw on June 8, 1918. Revising a little bit, Samuel Taylor Coleridge's *The Rime of the Ancient Mariner*, Peltier changed the original

The hornéd Moon, with one bright star/ Within the nether tip.
 ...to the less poetic but more correct, and surely more fun,
 "A hornéd Sun, with one dark Moon/Within its nether tip."



David's View of the 2017 Eclipse



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



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

TAAA Equipment Loaner Program

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



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



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



Orion SkyWatcher 12"
Collapsible
Dobsonian with 8x50 finder



Orion SkyWatcher 10"
Dobsonian with Telrad



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



NOTE from the Equipment Loan Coordinator:

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

Thank you, [Ralph Means](mailto:Ralph.Means@taaa.org)

TAAA Equipment Loaner Program (Continued)



Orion 10" Dobsonian
black tube 8x50 finder 25



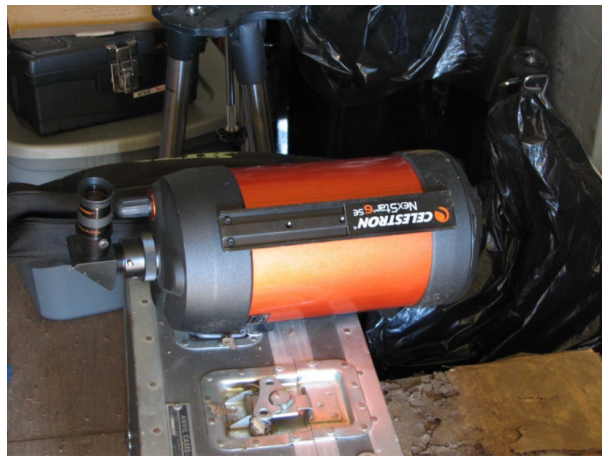
Celestron 6" SCT
single fork mount, GOTO



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,



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.