# TAAA Desert Skies Bulletin

Observing Our Desert Skies Since 1954

March 2024

www.tucsonastronomy.org

## Membership Meeting

March 1 @ 6:30 pm - 9:00 pm

TAAA's next general member meeting will be held on **Friday, March 1, 2024**. This will be a **hybrid meeting** (both in person and on social media). TAAA members will receive a Zoom link should they wish to attend remotely. The public may attend in person at the **Steward Observatory Lecture Hall (Rm N210), 933 N Cherry Ave, Tucson** or stream at the TAAA Facebook page.

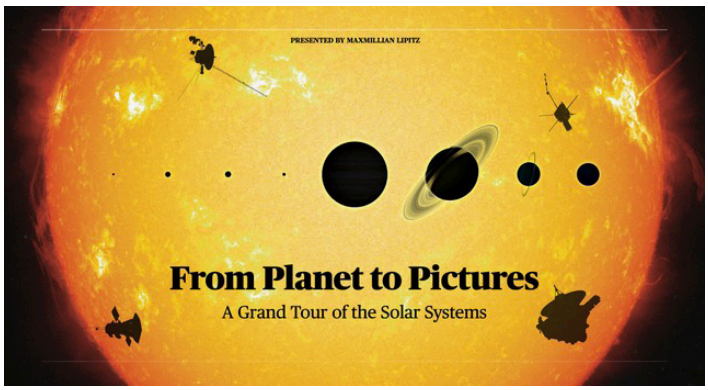
**Inside this issue:**



**Main Presentation at 6:30PM AZT**

*Title:* **From Planet to Pictures**

*Presentation:* We all have seen images of each planet in our solar system until they're ingrained in our culture's collective psyche, but how did we get those images? In "From Planet to Pictures," Max Lipitz will take the audience on a grand tour of the solar system and do far more than just repeat the usual statistics about the planets, moons, asteroids, and whatever Pluto is now. Max's presentation will be about the robotic emissaries we sent to learn about these celestial objects, the journey they undertook, and the discoveries they made.




*Biography:*Maxmillian (Max) Lipitz could best be described as a strange amalgamation of NASA obsession, photographic prowess, and insatiable curiosity. He's a graduate of the Rochester Institute of Technology's Imaging Science Program; a highly interdisciplinary field that combines physics, math, computer science, and engineering. And whether he's developing image processing algorithms to turn people into Simpsons characters or restoring a 31-year-old digital camera just because, Max puts his whole heart into everything he does. In the past he's worked with Dr. Robert Kremens to develop next-generation probes ("Kremboxes") to monitor wildfires in the thermal and visible spectrum, providing valuable data that could save thousands of lives. Currently Max works as a scientist at Tucson-based GEOST.


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

## Notes From The President

# February 2024

## by Mae Smith

**It may be a challenge in the next few months to KEEP UPCOMING EVENT DATES AND ACTIVITIES Straight.**

I want to start with reminders that due to member/leader travel related to the eclipse, changes will occur to our regular TAAA meeting schedule. (These changes were announced last month, as well.)

1. **The April First Friday (April 5th) General TAAA Member Meeting is canceled.**
2. **The April (10th) TAAA Board Meeting is canceled.**
3. **April (4th) Executive Committee is canceled**
4. **For other typically recurring TAAA committee/group/SIG meetings in April, check with the appropriate TAAA Leader regarding the April schedule.**

**Flandrau Planetarium is holding eclipse event activities.** Check the TAAA website regarding other information on Tucson eclipse activities.

Please note other **event changes that are NOT related to the eclipse** (these changes were NOT mentioned last month.)

1. Due to the University of Arizona May 2024 exam schedule, the **TAAA May Member meeting (May 3) will be on Zoom ONLY**. This will necessitate that the **election is held via electronic ballot only.**
2. Due to the Grand Canyon Star Party event dates, the **June Member meeting will be held only on ZOOM on June 14th.**

**In addition**, I would like to remind you all that the UA Department of Astronomy and Steward Observatory Public Evening Lecture Series for Spring 2024 includes a very special offering: **Dr. J. Roger Angel, Regents Professor from Steward Observatory on March 4th will present "My 50 Years at Steward Observatory".** This is a very special event that I am very much looking forward to. Attend in person at 7:30pm, Steward Observatory Room N210 or you can watch the lecture live on ZOOM through the Steward website or at this link.

**Strategic Planning Activities**

For the last month, fourteen TAAA leaders have been working on various activities that are included in the 2024 TAAA Strategic Planning Process. A Member Survey was constructed that obtained feedback from members. Thanks to every member for responding and contributing to TAAA's future directions. That data has been compiled and reviewed while several other activities have been in process. The Strategic Planning group will have another 12 hours of meetings with a professional strategic planner in the near future. We appreciate the efforts of our Volunteer Organizer, Suzanne Bailey, and "Team 14" in conducting this very important work and being so committed and diligent in get it done.

**Review of Membership Management Services**

For months, information has been collected regarding membership management services. Various specifics have been discussed at prior Board Meetings. At the February meeting the TAAA Board considered available information comparing three membership programs. Many factors are under consideration. We are all very appreciative of the extensive and thorough work that David Rossetter is doing in the time-consuming effort to help the Board determine what may be the "best fit", especially where there are so many considerations involved, and all the answers are not clear. We will be continuing this effort and greatly appreciate David's generosity with his time and patience as well as his thoroughness in working on this.

**Upcoming**

Even though it is still feeling chilly, spring is on its way, and with it comes many, many volunteer options. We look forward to fun opportunities increasing soon!!!! It will be busy for a while with star parties, educational activities/events including the Tucson Festival of Books, the SARSEF Science Fair activities, our TAAA special Tucson Astronomy Festival event, the eclipse, and the Grand Canyon Star Party. Thanks for all your astronomy volunteer efforts!! We look forward to sharing many of these activities with you.

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

# Are You Receiving TAAA Communications?

Some email services do not accept emails with links (such as our Bulletin notification). Please check your settings. If TAAA emails end up in your spam folder, be sure to mark them as "not spam". Make sure that emails from memberplanet.com and memberplanet.net are in the "accept list". Finally, be sure those settings are done within your email service as well as your email software. Please let David Rossetter know of further problems.

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

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# Fundamentals of Astronomy Class

Current class enrollment is closed. The class will be offered again, soon.
Keep watching for further announcements.

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# Practical Astronomy Workshop 4

## Using Setting Circles

Open for enrollment

Place: TIMPA; Date: TBD; Time: 6:30 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 properly equipped equipment becomes available the limit may be increased.

**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 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.

# 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 or Terri Lappin

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## *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, March 21, 6:30pm

Guadalajara Original Grill

1220 E Prince Rd
(S side of Prince between E Santa Rita & E Mountain Aves)

Preview the menu at: https://guadalajaraoriginalgrill.com/

RSVP Susan - 520-780-0136

# Vote for the Cooper Center!

*From our friends at the Cooper Center, one of our most regular users of nonprofit star parties for years.*

I'm sending this to you in the hopes that you'll share it throughout your networks and take a moment to vote! **Cooper Center is a finalist for Summit Hut's Banff Grant** and the competition is fierce! If we win, the award will lower field trip costs for the Title I schools that we serve.


Thank you!

**Colin Waite** (he/him/his)
**Director**
http://coopercenter.arizona.edu

The Cooper Center for Environmental Learning, an outreach program of the University of Arizona, sits on the traditional homelands of the Tohono O'odham and Pascua Yaqui, who have stewarded this land from time immemorial. Aligning with Cooper Center's and the University's core value of a diverse and inclusive community, it is an institutional responsibility for us to recognize, represent, and acknowledge the ancestors, people, culture, and history our community resides on.

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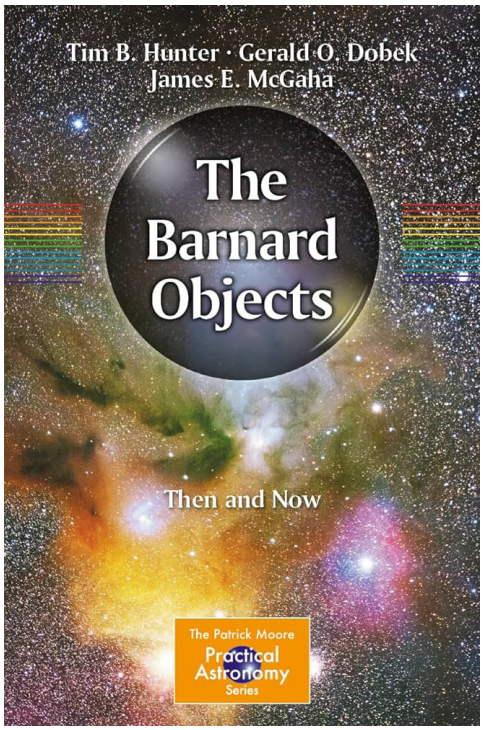
# Book Of The Month Review

by Douglas Smith (TAAA Librarian)

Book: ***The Barnard Objects***
Authors: Tim B. Hunter (TAAA member), Gerald O. Dobek, James E. McGaha (former TAAA member)




This is an interesting book written by three well-known observers. Broken down into three sections: a general history of various catalogs, a history of Barnard, and a guide to the Barnard objects. The history sections are very interesting to read and provide some unique insights into the history of the catalogs and the astronomers of the time. I found the history of astrophotography of particular interest. The guide for the Barnard objects contains much useful data including some spectacular images and good charts. This is a valuable reference book and would be very useful for the astronomer hunting down the Barnard objects. This book is in print and retails for around $25.

# TAAA Astronomy Camp

Ed Foley

The unusually wet winter weather had us wondering if we would have clear skies for our first Astronomy Camp since the pandemic. We were pleasantly surprised to find the forecast promised us wonderful skies just in time for the Feb 3 event. We have hosted high school groups for overnight observing at CAC, TAAA's eastern dark site, for many years, but this was the first since we finished the CAC Learning Center. The Learning Center is comprised of two buildings with sleeping rooms, a classroom, and kitchenette, along with an observing pad with telescopes. Previously the student 'campers' really had to camp. The event went smoothly as we welcomed seventeen students and four teachers and parents to the site.

The Pusch Ridge Christian Academy science teacher Lisa Wood described their experience:

"The beautiful classroom/dining room were perfect for our group of 21, and the little kitchen and grills worked out perfectly for the hamburgers. The screen and projectors were crystal clear, and Sam's talk on "The Life and Death of Stars" was a wonderful, colorful, clear introduction to what they were going to see at night through the telescopes. I also loved Tom's talk about the James Webb Telescope; how it was designed, built, and collects information with different types of infrared cameras to create the dramatic photographs of our universe. The solar viewing was dramatic and the explanations of the sunspots, prominences, and colors were great! Even the clouds moving across the sun gave an effect of realism that would not have otherwise been present. The night class observing program was absolutely outstanding! It was amazing how many celestial objects we were able to see! I loved watching the kids be awed and admire the things they were seeing. The Milky Way and Orion were bright and visible in all their glory. We got to see binary stars, galaxies, nebula, star clusters, Jupiter's moons, and Saturn's rings. The view in the 40" was epic, to say the least! I honestly never dreamed that I would get to see these kinds of things in my lifetime. On top of that, the night photos of the kids under the stars were so much fun!"

A special thanks to TAAA volunteers Suzanne Bailey, Ken Graun, Joe Jakoby, Jim and Susan Knoll, Sam Miller, Tom Sarko, Conrad Stolarski, Garry Wells for making the inspiring event possible.

## School/Public Star Party Requests

*by Bernie Stinger*

Thank you for volunteering your time and talents for our extremely important outreach mission. **Below is the list for March, 2024.** March is shaping up to be the busiest month so far with 20 events scheduled, with a mix of school events and public events at State, County & National Parks in the area. This month will have both the Tucson Festival of Books & The Tucson Astronomy Festival.
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 February 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

## March Events still in need of Volunteers

**Friday – March 1 -- Mountain Vail (East of Rita Ranch)**
**Esmond Station Middle School**
9400 S Atterbury Wash Way
Age/Grade Level: 6 – 8th Grade (Astronomy Club)
# Participants: 40
**0 Additional Scopes - Recently Filled**
**Setup Time:** 6:30 pm. Start Time: 7:00 pm. End Time: 8:30 pm.

**Saturday – March 2 --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 Additional Scopes - Recently Filled**
**SetupTime:** 6:30pm Start Time:7:00pm
End Time: 9:00 pm

**Saturday – March 9 — ORACLE AZ**
**Oracle State Park**
3820 E Wildlife Dr, Oracle AZ
Age/Grade Level: All Ages
# Participants: 150
**3 Additional Scopes needed**
**Setup Time**: 6:30pm Start Time: 7:00pm
End Time: 9:00 pm.

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**Friday –March 15 --NW TUCSON CATALINA**
**Catalina State Park**
11570 N Oracle Road
Age/Grade Level: All Ages.
# Participants: 100+
**3 Additional Scopes Needed**
**Setup Time:** 6:30 pm.
Start Time: 7:00 pm. End Time: 9:00 pm.

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**Thursday – March 21 -- WEST TUCSON**
**Cooper Center for Environmental Learning**
5403 W Trails End Rd
Age/Grade Level: 4th Grade
# Participants: 30
**1Additional Scope Needed**
**Setup Time:** 7:00 pm.
Start Time: 7:30 pm. End Time: 9:00 pm.

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**Friday – March 29 -- FAR SOUTH -- GREEN VALLEY**
**Pima County Natural Resources Parks & Recreation (NRPR) – Canoa Ranch**
5375 S I-19 Frontage Road
Age/Grade Level: All Ages
# Participants: 75-100
**4 Scopes Needed**
**Setup Time:** 7:00 pm.
Start Time: 7:30 pm. End Time: 9:30 pm.

**Saturday/Sunday –March 9&10 –(UofA TUCSON)**
**Tucson Festival of Books (TFOB)**
On the Mall at the UofA
Age Group: All Ages
Estimated # Participants: 100's to 1000/day
**Two Solar telescopes still needed Saturday afternoon (9th) (white light or H-alpha)**
**One Solar telescope still needed Sunday afternoon (10th) (white light or H-alpha)**
**Setup Time:** Afternoon: 12:30 pm Start Time: 1:00 pm End Time: 5:00 pm

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**Thursday – March 21 -- EAST TUCSON**
**Leman Academy of Excellence – East Campus**
10100 E Golf Links Rd.
Age/Grade Level: K – 8th Grade
# Participants: 50 – 75
**2 Scopes Needed**
**Setup Time:** 6:30 pm.
Start Time: 7:00 pm. End Time: 8:30 pm.

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**Saturday – March 30 -- CENTRAL TUCSON**
**Astronomy Festival @ Brandi Fenton Park**
LOTS OF VOLUNTEERS REQUESTED!!
3482 E River Road (River & Alvernon)
Age/Grade Level: All Ages
**Scopes Needed: As many as possible for Solar & Night Observing** – let me know!
**Extra volunteers**: to help anyone bringing a personal telescope to learn how to use it.
**Solar Observing**: Setup Time:2pm
Observing: 3:00pm – 6:30pm
**Evening Observing**: Setup Time: 6:30 pm.
Observing: 7:30 – 9 pm
Helping with personal telescopes 3 – 9 pm.
Advise what time slot & activity you can support.

# March Events Filled—No Volunteers Needed

**Saturday / Sunday – March 2/3 – Organ Pipe, AZ**
**Organ Pipe Cactus National Monument**
Age/Grade Level: All ages
# Participants: 75 – 100
**0 Scopes Needed** *(Filled: Stinger/Knoll, Reinert)*
**Setup Time:** 7:00 pm.
Start Time: 7:30 pm. End Time: 9:00 pm.

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**Tuesday – March 5 -- WEST TUCSON**
**Cooper Center for Environmental Learning**
5403 W Trails End Rd
Age/Grade Level: Grade 5
# Participants: 55
**0 Scopes Needed**
**Setup Time:** 6:30 pm.
Start Time: 7:00 pm. End Time: 8:30 pm.

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**Thursday – March 7 -- FAR EAST TUCSON**
**Henry Elementary School**
650 N. Igo Way
Age/Grade Level: K – 5th Grade
# Participants: 80 – 100
**0 Scopes Needed**
**Setup Time:** 6:30 pm.
Start Time: 7:00 pm. End Time: 8:30 pm.

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**Sunday – March 10 -- FAR WEST TUCSON**
**UA Astronomy Program – ASTR 203**
**Redhills Visitor Center @ Saguaro National Park -- WEST.**
2700 N Kinney Rd.
Age/Grade Level: College
# Participants: 30
**0 Scopes Needed**
**Setup Time:** 6:30 pm.
Start Time: 7:00 pm. End Time: 9:00 pm.

**Monday – March 4 -- SOUTHWEST TUCSON**
**Cholla High School**
2001 W Starr Pass Blvd
Age/Grade Level: High School Students
# Participants: 100
**0 Scopes Needed**
**Setup Time:** 6:30 pm Start Time: 7pm End Time: 8pm

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**Tuesday – March 5 – Sonoita AZ**
**Sierra Club**
Empire Ranch Rd
Age/Grade Level: Adults
# Participants: 10
**0 Scopes Needed** *(Stinger scheduled)*
**Setup Time:** 6:30 pm Start Time: 7pm End Time: 9pm

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**Thursday – March 7 -- NORTH TUCSON**
**Leman Academy of Excellence – North Campus**
7720 N Silverbell Rd.
Age/Grade Level: K – 8th Grade
# Participants: 100+
**0 Scopes Needed**
**Setup Time:** 6:30 pm Start Time: 7pm End Time: 8pm

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**Saturday – March 16 -- PICACHO AZ**
**Picacho Peak State Park**
15520 Picacho Peak Rd, Picacho, AZ
Age Group: All Ages
Estimated # Participants: 75
**0 Scopes needed**
**Setup Time:** 6:30 pm Start Time: 7pm End Time: 9pm

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**Tuesday – March 26 -- NORTH TUCSON**
**Cross Middle School**
1000 W Chapala Dr
Age/Grade Level: 6 Grade
# Participants: 100
**0 Scopes Needed**
**Setup Time:** 6:40 pm.
Start Time: 7:10 pm. End Time: 8:40 pm.

# Committee Reports


The NVRC is s**eeking potential candidates for elected leader positions this upcoming May. Positions to be voted on include Secretary, Treasurer, two Board Members-At-Large and two members of the NVRC; all are 2-year terms that will commence June 1, 2024.** The NVRC is aware that our current Treasurer will not be seeking re-election, and would appreciate hearing from potential candidates at the earliest so that we can brief the critical duties and responsibilities of that position and arrange for meetings with our Treasurer, so that candidates fully understand the nature and vital work of this office.

The NVRC is also **seeking potential candidates for TIMPA Director** for presentation to the TAAA President for selection.

Members may review the position descriptions for both elected and appointed leader positions through their Member Planet accounts – from the main Tucson Amateur Astronomy Association web page, select "Members Only" from the tabs located near the top just below the main search bar; then login with your email/username and password; then scroll down to the 6th item "TAAA Docs and Videos"; select/click, from the "MEMBER ONLY INDEX" page, scroll down and select/click on the 6th item HANDBOOKS and REFERENCE MATERIALS; then finally, click or select on a specific "Job Position Descriptions – TAAA Board..." or immediately below, "TAAA Position Descriptions – Leader Descriptions", which are the non-elected volunteer opportunities.

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

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

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## Information Technology

**by Terri Lapin**

The TAAA Information Technology Committee met on February 13th to discuss the current IT needs of the TAAA. Our current emphasis will be in centralizing the TAAA's policies and documents. Much of it is on the TAAA website, but there are other documents which are not online. We'll be reviewing the TAAA's Document Retention Policy for suitability for an organization of our size. Many other identified IT needs are tied to membership records management. Our membership management needs are being reviewed and an investigation made into what services might best match those needs. We'll participate in that work as required. The IT Committee will meet again in April or May.

# Special Interest Groups

## Starry Messengers Special Interest Group

*Opening Minds to the Universe*

There's a lot going on in the TAAA's outreach program! Read on...

We'll have an astronomy exhibit and solar scopes at the Tucson Festival of Books (TFOB) on March 9 & 10, 9am to 5:30pm both days, on the UofA campus. If you haven't experienced the TFOB, you've got to see it! It's the country's largest book festival that includes a science literacy component. The TAAA's exhibit features the solar eclipse (partial in Tucson) and solar astronomy. We need TAAA volunteers to talk with the public at our exhibit. The greatest need for exhibit volunteers is for Saturday midday and all day Sunday. We could use another solar scope – see Bernie Stinger's Star Party listings about that. We also need a dedicated photographer for at least part of a day. Use these links to sign up as an exhibit volunteer:

To volunteer for Saturday, March 9th: https://volunteersignup.org/B7RK3
To volunteer for Sunday, March 10th: https://volunteersignup.org/3CBCT

The first week in March, three members of the SMSIG (Karen Liptak, Suzanne Bailey, and Todd Hansen) will serve as judges for Southern Arizona Regional Science and Engineering Fair. They will select astronomy related projects worthy of receiving our Astronomy Achievement Award which includes cash and a year of TAAA membership.

On March 30th, the TAAA hosts the Tucson Astronomy Festival (TAF) at Brandi Fenton Memorial Park. This is TAAA's event where we invite all of Tucson to experience the joy of astronomy. We need a good showing of TAAA members for this event. Details can be found elsewhere in the newsletter.

In addition to all these special events, we have the usual requests for hands-on 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. You can receive training on how to do these activities. Email Terri Lappin for details.

<*continued*>

Here's a list of our other upcoming outreach events. We prefer to have two volunteers for each event. Times listed do not include the set-up time. Along with the dates and locations, you'll see the name of the toolkit requested. You can learn more about these toolkits at the Night Sky Network website.

- March 7 (Thurs) 7 – 8:30pm; Henry Elementary School; Space Rocks Toolkit; Speedway & Harrison (Pete Hermes, need one more volunteer)
- March 2-7 Southern Arizona Regional Science Fair, three TAAA members (Karen Liptak, Suzanne Bailey, Todd Hansen) will judge astronomy projects
- March 9 & 10 (Sat & Sun) Tucson Festival of Books, see above information
- March 21 (Thurs) 8am - ?; Baboquivari Secondary School STEM Career Day, in Sells, AZ (Need at least one volunteer to talk about a career in astronomy)
- March 30 (Sat) Tucson Astronomy Festival, described elsewhere in newsletter, need lots of TAAA members
- 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 (need two volunteers)
- Other events: April 20th (Healthy Kids event @ NW YMCA, 10am – 1pm), April 20th (Ora Mae Harn Park, 7:30pm – 9:30pm), April 23rd (Rio Vista Elem, 6pm – 7:30pm), and April 25th (Donaldson Elem, 5:30- 7:00pm) – need two volunteers per event.

NEXT MEETING OF SMSIG: The Starry Messengers will meet on March 11th by Zoom. We'll review how our TFOB exhibit was received by the public and we'll go over any last-minute TAF details that need to be worked out. This meeting will end by 8:30pm.

SMSIG on the Web  Questions? Contact Terri Lappin or call 520-977-1290.

## *Astronomy Fundamentals SIG*

*by Connor Justice*

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

The AFSIG meeting is on **Thursday, March 14, 6:30pm to 8:30pm.** Topics to be determined. The **April AFSIG meeting has been canceled** due to the eclipse.

Contact Connor Justice for more Zoom link and information.
Access videos of previous meetings in the TAAA's YouTube Channel  AFSIG on the Web

## *Astro-Imaging SIG*

*by Gregg Ruppel*

The next AISIG meeting is **Monday, March 18 at 7:00 pm** via ZOOM.

*Topics:* **Beginner's Corner** - Ask a Question; **Open Discussion** - Any and All Topics
**Image Sharing**

Email Gregg Ruppel for the ZOOM link or any other information. Gregg and the AISIG folks are very active on the TAAA groups.io forum. Check out all the helpful advice and amazing images there. For more information or instructions on how to join the forum, check out the TAAA

# Highlights from the Astro-Imaging SIG

**PuWe 1** PN G158.9+17.8 is an exceedingly faint ancient planetary nebula about 20' across. Its light is equivalent to an 8.6 mag star spread out over the area of the Full Moon. It was discovered in 1980 on Palomar Deep Sky plates, by Purgathofer and Weinberger. Is about 4 LY across and 1200 LY distant, fairly close. Field is rich with IFN, much of which is brighter than the nebula itself. Image scale = 0.97"/px (2x drizzle). Added more exposure upping it to 6.1 hr total for this giant but crazy faint planetary that is almost not there to begin with. RASA 8" f/2.0 / zwo 2600mc pro - gain 100 offset 40 / AP Mach2 GTO unguided / no filters / 2/4, 2/11 2024.

**Tom Eby**

**NGC 973** These galaxies are about 200 million LY away, somewhat veiled by dust/IFN of the Milky Way. NGC 973 is near perfectly edgewise with sharp dust lane, similar to NGC 891 in Andromeda. Many small background galaxies in the 400-600 million LY distance range. RASA 8" f/2.0 / zwo 2600mc pro / AP Mach2GTO, unguided / 93m exposure / no filters / 1-3-2024.

## Craig Harding

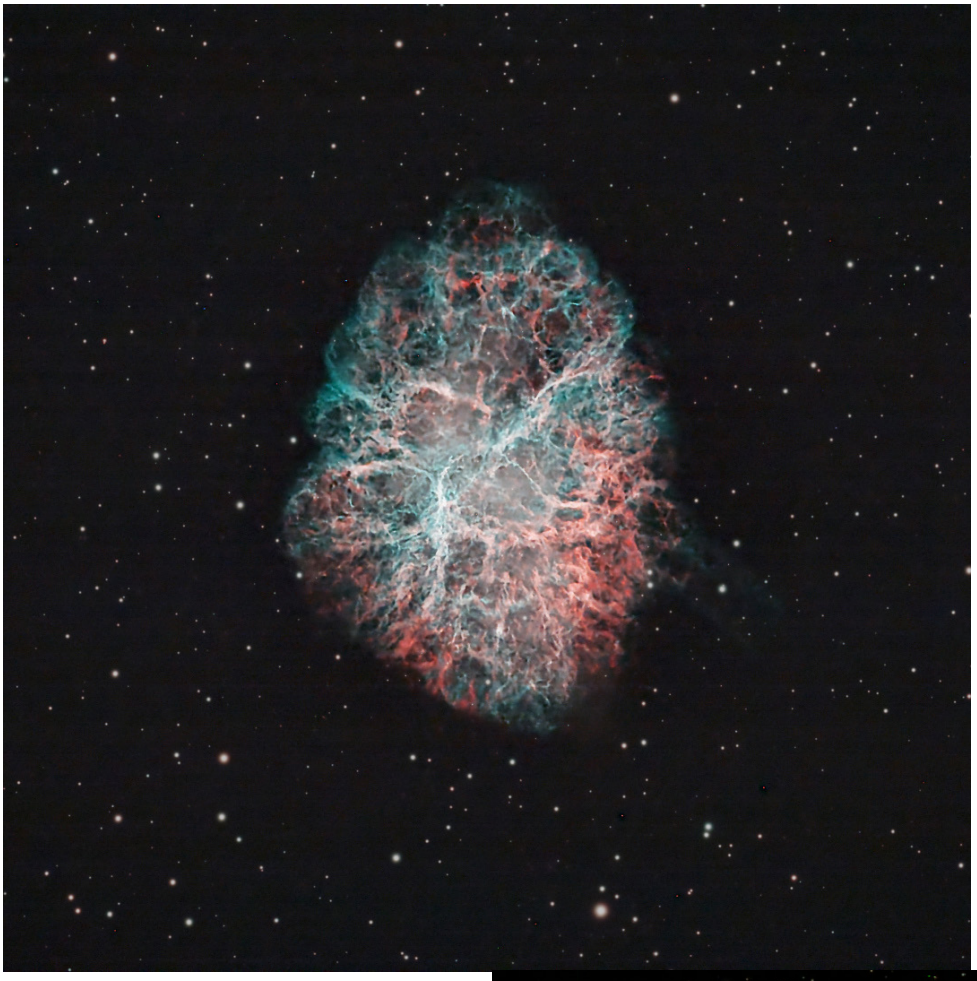
### Orion Mosaic

I have been wanting to do a much larger mosaic of Orion, but I am running out of time to do it this year. So, I did a two-panel mosaic using an Askar 230fma scope. I only had 4 hours total to capture both panels so it is not as 'robust' as I would like it to be. There is a lot of background nebulosity and I might try a version that reduces it. I decided to get the Belt, Horsehead Nebula and Orion Nebula in one mosaic. I did the mosaic in Astro Pixel Processor because it is much easier than Pix for that process. I then used Pix to process the data. Lots of masks on M42 to limit the stretches on it.

## Alan Rockowitz

### NGC 3550 Abell 1185

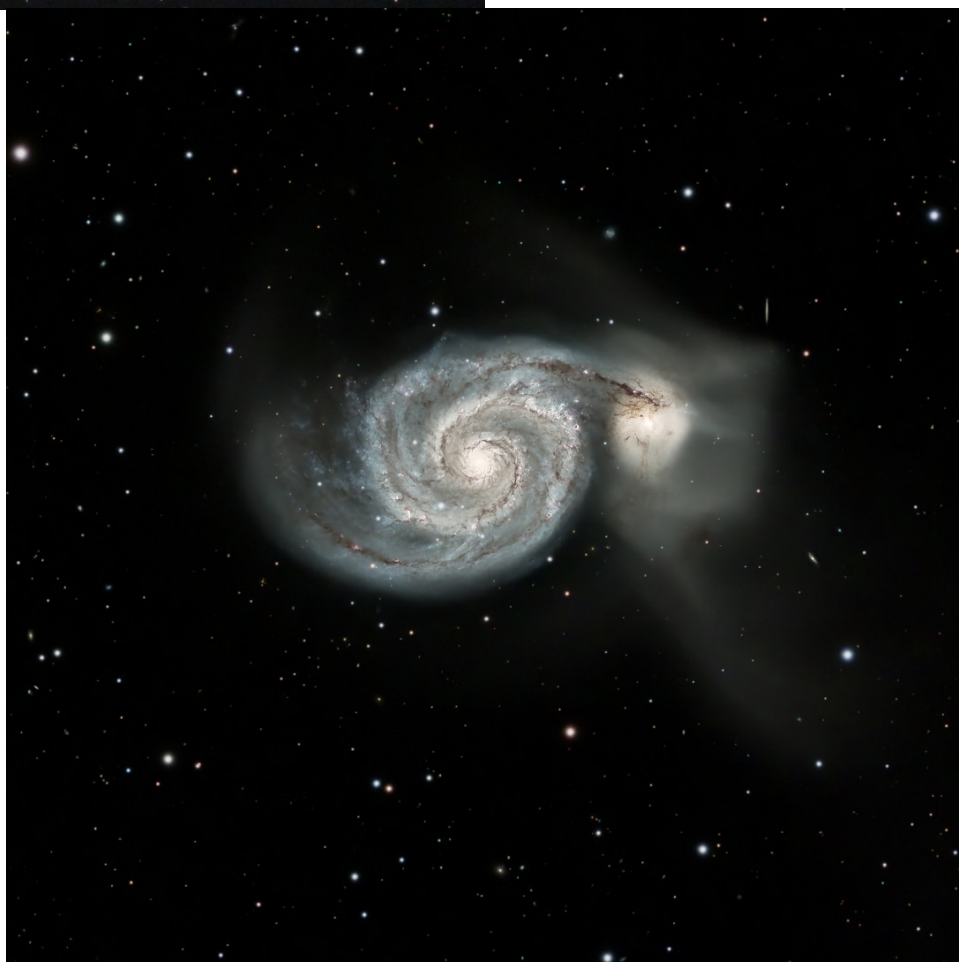
For this image I gathered data down at CAC, in my backyard in Tucson, and at Catalina State Park.
It consists of the following subs: 585 x 45s L 195 x 60s R 193 x 60s G 195 x 63s B. Processed in PI. 140mm f/6.5 iStar refractor on 10 Micron 1000 mount and ZWO ASI6200 camera. Image capture software is NINA.



**M1 (Crab)**

Taken at CAC with the C14 in WRO. ASI294MCPro + IDAS NBZ filter; 3.5 hrs of exposure

**Mark Savan**



**M51 (Whirlpool)**

Taken at CAC with Stellarvue SVX130T and ASI533MMPro; LRBG; 8 hrs of exposure.

**M42**

Astrobin

**Alex Woronow**

**NGC2207 and IC2163**

Astrobin

**M 64 Blackeye Galaxy**

Skywatcher 200P Nexus reducer/corrector 183 MC L-Pro filter 210x90.

Astrobin

**Randy Smith**

**Sh2-274**
**Medusa Nebula**

Skywatcher 200P Nexus reducer/corrector 2600 MM Antlia 3 nm SHO filters 231x180.

Astrobin

**M42 and NGC 1977**

Astrobin

## Jeff Rothstein

**Comet c2021 S3 PanSTARRS and M9**

This image is comprised of 27 60s subs. FWHM varied from about 4.8 for the first frames down to 3.4 as the target rose in the sky (I suppose). Processed in PixInsight by splitting the linear image and using CometAlignment on the target. That process worked very well. After that I processed the target and stars separately as I normally would a nebula, and reassembled them when done.

# Observing Sites

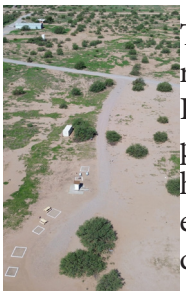
## TIMPA

### 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: **March 8-9.**

**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): **March 8-9 (New Moon 10).**

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**
March 8-9
April 5-6
May 3-4
June 7-8

**CAC**
March 8-9 (New Moon 10)
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)

by Doug Smith

# What's Up list for March 2024 - April 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 March and April for the more common observing programs.

**Constellation Hunter Program** – Northern Sky
The following Northern Constellations are well placed for viewing during March and April:
Orion, Gemini, Taurus, Auriga, Leo, Lynx, Perseus, Canis Minor, Camelopardalis, Monoceros

**Messier Observing Program**
The following Messier objects are well placed for viewing during March and April:
M42, M43, M1, M35, M36, M37, M38, M41, M46, M47, M48, M79, M45

**Lunar and Binocular Observing Program**
The following is a list of dates for the lunar phase when observations should be made in March and April:

New Moon: March 10, **April 8 (Total Solar Eclipse)**
40 Hours waxing: March 12, April 10
72 hours waxing: March 13, April 11
4 days old: March 14, April 12
7 days old: March 17, April 15
10 days old: March 20, April 18
Full (14 days old): March 25, April 23
Gibbous: March 3, April 2
72 hours waning: March 7, April 5
40 hours waning: March 8, April 6

**Solar System Observing Program**
The following is a list of planets that can be observed during March and April.

**Mercury** is an early evening object for all of March and the first two weeks of April. Greatest elongation on March 24. Brightest on March 15. Becomes morning object during later half of April.
**Venus** is an early morning object during March and April. Rising later each day. By end of April rising only 20 minutes before Sun rise.
**Mars** is early morning object. Rising around 5:30 AM on March 1, and around 3:30 by the end of April.
**Jupiter** sets earlier each night during March and April. Still visible in early evening. But by the end of April it is setting just one hour after Sun set. NOTE: On April 20th Jupiter will be within ½ degree of Uranus.
**Saturn** is an early morning object during March and April, rising earlier each day. By end of April it rises about 2.0 hours before sunrise.
**Uranus** is an early evening object during March and April, setting earlier each day. Relatively close to Jupiter. On March 1 it sets around 11:30 PM, On April 30, it sets around 7:30 PM. NOTE: On April 20th Uranus will be within ½ degree of Jupiter.
**Neptune** is an early morning object during March and April, rising earlier each day. By the end of April it is rising almost 2 hours before sunrise.

**Special Event: April 20 – Jupiter and Uranus will be within ½ degree of each other.**

**Urban Observing Program**
The following **deep sky objects** are well placed for observing during February March and April: M45, Hyades, NGC 1647, NGC 1807, NGC 1817, M38, M36, M42, NGC 1981, M37, M35, NGC 2169

The following **non-deep sky objects** are favorably placed for viewing during March and April:
Trapezium, Gamma Leo, Beta Monoceros

# 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.

| | | |
|---|---|---|
| **March 4** | Dr. J. Roger Angel<br>Regents Professor, Steward Observatory | *My 50 Years at Steward Observatory* |
| **March 11** | Dr. Jeffrey Bennett<br>Univ. of Colorado | *Pathway to a Post-Global Warming Future*<br>Co-Sponsored by The Arizona Environment Program<br>Book-signing after the lecture |
| **March 25** | Dr. Andras Gaspar<br>Steward Observatory | *Forty years of debris disks: From IRAS to JWST* |
| **April 1** | Dr. Kathryne Daniel<br>Steward Observatory | *Galactic Symphony: The Harmonic Evolution of Our Milky Way Galaxy* |
| **April 15** | Dr. Christopher Cokinos<br>Dept. Of English,<br>University of Arizona | *Still as Bright: An Illuminating History of the Moon from Antiquity to Tomorrow*<br>Book-signing after the lecture |


**February 7, 2024** | Sam Gralla
*Surprised By Gravity: Black Holes and Their Shocking Implications*
Recording

**February 14, 2024** | Charlotte Pearson
*Put A Ring On It: Dating Trees, Volcanoes, and the Sun*
Recording

**February 21, 2024** | Sarah Moran
*Strange New Worlds: Steamy Planets, Crystal Clouds, and the Seeds of Life*
Recording

**February 28, 2024** | Jeff Pyun
*From Acid Rain to Next Generation Plastics: The Curious Case of Elemental Sulfer*
Livestream

# Skyward

By Dr. David H. Levy

March 2024

# Mystical Thoughts about the Night Sky

In the autumn of 1976, my first, "practice wife" and I visited Safed in northern Israel. In addition to being shown a 400-year-old Torah, we were introduced to the idea that Jewish mysticism, known as "Kabbalah", got its start and flourished there. A lot of that mysticism had to do with connecting Jewish (and later Christian) ideologies with the night sky.

Kabbalah comes from a Hebrew root word, which means to receive; the ideas were originally passed on from parent to child, from master to disciple. In this article I explain what Kabbalah means to me. Several writers have attempted, with varying degrees of success, to compare Kabbalah with the origins of modern cosmology and with the formation of the universe. I agree that there may be a valid argument here, but for me, Kabbalah has taken on a deeply personal connotation.

I am not a scientist. At McGill University in Montreal, I flunked twice in two successive years in my attempts to master physics. During a third try at Acadia University in maritime Canada, I very nearly failed again, this time in Geology. It wasn't until I transferred out of science altogether into the world of English literature that I finally started to do well. I still have never taken a course in astronomy. Everything I know about the Cosmos, about planetary science, about double stars, and about clusters of galaxies comes from my own reading, and my own observations of the night sky. I am in it because my heart and soul are forever linked to the magic and wonders of the night sky. I am much more at home with Kabbalah than I am with any scientific thoughts about the cosmos. I believe that the heart and soul of Kabbalah derives from personal experience, failure, and a sense of wonder.

David's telescope "Miranda", which he used to discover many comets, at the Donner Telescope Museum of the Royal Astronomical Society of Canada.

In Psalm 36.10, We are told "By your light will I be enlightened." As each of us tries, in her or his own way, to comprehend our world and the universe in which our world resides, we are struck by how complex, yet how simple, it can be. Einstein himself said that "The most incomprehensible thing about the world is that it is at all comprehensible." It can work. We can understand. All it takes is a little patience, some intelligence, and the passion involved in looking up at a darkening sky.

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; 520-396-3233

# TAAA Equipment Loaner Program

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

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

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

**Orion SkyWatcher 12"**
Collapsible
Dobsonian with 8x50 finder

**Orion SkyWatcher 10"**
Dobsonian with Telrad

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

NOTE from the Equipment Loan Coordinator:

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

Thank you, Ralph Means

# TAAA Equipment Loaner Program (Continued)

**Orion 10” Dobsonian**
black tube8x50 finder25

**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 No. 2**
Black Orion Case contains a 2" Hyperion-Aspheric 72-degree 36mm and 1.25" Hyperion eyepieces:8mm, 13mm, 17mm, 21mm, and 24mm.

**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.

**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 case8 Meade Super Plossl 1.25" eyepieces. Focal Length: 40mm, 32mm, 26mm, 20mm, 15mm, 12mm, 9.7mm, 6.4mm, 12mm Illuminated reticle, 1.25" eyepiece1.25" diagnol.

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