

# TAAA DESERT SKIES BULLETIN

Observing Our

Since



Desert Skies

1954

February 2022

[www.tucsonastronomy.org](http://www.tucsonastronomy.org)

## Membership Meeting

February 4 @ 6:30 pm - 9:00 pm

TAAA's next general member meeting will be held online on Friday, February 4, 2022. The Main Presentation starts at 6:30 PM, followed a Members Only meeting, with information on TAAA's Policy on Working with Minors Training (see below), a bylaws change presentation, along with other subjects. The Main Presentation is open to the public via Facebook at <https://www.facebook.com/TucsonAstronomy/>. Members should attend the meeting via Zoom. The Zoom link will be sent to members before the meeting.

### Main Presentation at 6:30 AZT

### Hitchhiker's Guide to Hot Jupiters

**Presentation:** Dr. Megan Mansfield will present on Hot Jupiters; gas giant exoplanets (planets outside the Solar System) that are similar in size to Jupiter. However, the scorching hot temperatures of Hot Jupiters go as high as several thousand degrees. That makes their chemistry very unlike that of the Solar System's Jupiter. For example, a typical Hot Jupiter might be warm enough for it to rain liquid iron instead of water. In her talk, Dr. Mansfield will describe some of the unique properties of Hot Jupiters. She'll also share Hubble Space Telescope observations of Hot Jupiters which give information on the properties of their atmospheres. And she will describe how these observations were used to construct a "field guide" to Hot Jupiters, to help researchers learn more about these unique planets, including how they formed.

**Bio:** Megan Mansfield is originally from Des Moines, Iowa. She went to college at MIT and graduate school at the University of Chicago before moving to Tucson to become a NASA Sagan Fellow at the University of Arizona's Steward Observatory. She works with Daniel Apai, using both ground-based and space-based telescopes to study the

atmospheres of exoplanets. Outside of work, she enjoys running, making music, and hanging out with her cats, Orion and Luna.

**Members Only Meeting:** *TAAA's Policy on Working with Minors Training; TAAA President Mae Smith and Star Party Manager Jim Knoll will present the Triennial requirement for TAAA's Policy on Working with Minors.* This training is required for members participating in the School/Nonprofit Star Party program, the Tucson Stargazing Adventures paid star party program, and any members that might be involved in educational or telescope programs in remote locations such as the Chiricahua Astronomy Complex (CAC) or at TIMPA. This training is recommended for all other TAAA members and is a good opportunity to broaden knowledge of TAAA programs and policies. The presentation will provide policy background and review circumstances that may be experienced when conducting these educational outreach programs. It will also review the five activity levels and provide an opportunity to seek clarification or ask questions. Estimated training time is 45 minutes. (Note that this is Fundamentals Training, which covers most common TAAA activities with minors. An Advanced Training will be announced when offered.)

### January 2022

The TAAA Board met January 12th, The President's Report included the following announcements:

1. Due to his current schedule, John Mead has resigned from responsibilities for the TIMPA Planning Group. Ben Bailey has accepted that position. John and Ben will coordinate serving on the City TIMPA Board.
  2. Jim Knoll will be gradually shifting the management of the Nonpaid Star Party Program to Bernie Stinger. This transition will occur gradually over time with Bernie assuming full responsibility at the beginning of the Fall school term in 2022.
  3. The dates for the 2022 GCSP are June 18-25. Marker Marshall has volunteered to serve as Registrar for 2022 GCSP and will assume that role at the end of January. Radar Lane, our GCSP ranger, indicates that the star party is currently firmly planned to occur in-person. However, it is likely that there will need to be some COVID mitigation strategies employed. Rader is currently coordinating with the National Park Service regarding possible mitigation strategies. At this point no communication about GCSP activities is being sent out as we do not know what modifications may be used as mitigation measures. If you have suggestions, share them with Mae as she is making a list of some possibilities for Rader.
- Some of the topics addressed by the TAAA Board at the January meeting included:
1. TAAA COVID strategies will remain the same. Members are reminded to complete the registration process and policies for TIMPA and for CAC when they wish to visit the sites.
  2. The Member Observatory Project (MOP) for CAC is continuing to progress and a meeting of participants is planned for the near future.
  3. The Board approved a new position and the official description for the CAC Member Facilities Coordinator position. Some of the tasks of that position are already being performed related to the member pads and storage. However, the addition of some tasks related to member observatories was necessary. The person in this position will serve as a member of the CAC team. John Kalas will continue to serve in this position.
  4. The Board and NVRC Chair arrived at the final bylaw language that will be used to request bylaws changes related to the election process. The proposal would alter the term of office for Board members and increase it to two years with approximately half of the officers being elected each year. The proposal for this change will be presented to TAAA Members at the February Member Meeting.
  5. Starry Messengers presented some possible upcoming educational activities to the Board. The Board was glad to learn more about the quality activities that Starry Messengers conducts with children and youth. The Board supports and is appreciative of Starry Messengers' quality contributions to astronomy education and supports Starry Messengers' attention to COVID mitigation measures.

[David Rossetter](#) – Editor

Terri Lappin & Jim Knoll - Proofreading

Greg Ruppel - Images;

Ken Bertschy – Graphics

# Committee Reports

*Nominations and Volunteer Resource Committee*

*by David Rossetter*

## TAAA Election 2022 Candidate Volunteers Needed!

The TAAA Leader Election is on May 6, 2022, at the monthly Membership Meeting. Before this can happen, the Nominations and Volunteer Resource Committee (NVRC) must put together a list of nominees for each position. The first step is to find interested TAAA members who want to help lead the club. We hope you will be interested in serving the club in an elected position on the Board of Directors or the Nominations and Volunteer Resource Committee.

The NVRC has prepared candidate “packets” for the different positions. These packets are compressed .pdf files containing Job Descriptions, informative documents that govern the club and provide policy guidance such as the Constitution and Bylaws (with important sections for each position highlighted), and good information such as our Articles of Incorporation. In addition, we have a candidate biography form to be filled out and returned to the NVRC. Packet access is through the Members Only section of the TAAA Web Site. This requires login to MemberPlanet. After logging in, you will find the link in the list on the right of the TAAA Landing Page. Or just email the [NVRC](#) and we will send you the link. We would appreciate hearing from you soon with a real commitment by the end of February.

### Timeline

- January/February – Find and Evaluate Candidates
- March – Final Candidate Interviews and Selection
- April – Announce Candidates before and at Membership Meeting
- After April Meeting to One Week Prior to May Meeting – Write-In Candidates
- May Membership Meeting – Vote!
- Details on process and voting procedures to come

## Proposed Constitution & Bylaws Changes

At the suggestion of the NVRC, the Board of Directors of the Tucson Amateur Astronomy Association approved two new changes to the Constitution and Bylaws at the January BOD meeting.

The first set of proposed changes were created to lengthen the terms for the Board of Directors from one year to two years. It was felt by the Board and the NVRC that there were several advantages to having longer terms, the main one being consistent leadership. Additionally, the Board recommends that the board members are elected in a staggered cycle, four members elected during even numbered years and three members being elected during odd numbered years. This reduces the number of candidates required for each election cycle simplifying the election process. The proposed changes reflect these ideas.

The second set of changes involves not allowing family members to run for election or hold positions on the Board of Directors at the same time.

Please refer to the all-member email sent on January 24 for the bylaws changes details. There will also be a presentation at the February 4 General Meeting. The vote on the changes is scheduled for the March 4 meeting.

## School/Public Star Party Requests

February 2022

by Jim Knoll

Thank you for volunteering your time and talents for our extremely important outreach mission. Below is the Star Party list for February, 2022. Please let me know if you can support any events listed 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](http://tucsonastronomy.org)) and Night Sky Network (NSN) ([nightsky.jpl.nasa.gov](http://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.

Wednesday February 2 — (South on I-19)  
Tumacácori National Park  
1891 E Frontage Rd, Tumacácori, AZ 85640  
All Ages; # Participants: 75; FILLED  
Setu: 5:15 pm. Start: 6 pm. End: 8:30 pm.  
Nearest Moon Phase: New  
Directions: I-19 south to exit 29 (45 miles south of Tucson).; Viewing Location: Courtyard. Some manual movement is required.

Thursday February 3 -- WEST TUCSON  
Cholla High School  
2001 W Starr Pass Blvd., 85713  
Age/Grade Level: Grades 9 - 12; # Participants: 100  
3-4 Scopes Needed  
Setup 5:30 pm. Start: 6 pm. End: 8 pm.  
Nearest Moon Phase: Between New and 1st Quarter  
Directions: 22 St/I-10. West on 22nd, becomes Starr Pass Blvd. Continue west to the school on the south side of Starr Pass at intersection of La Cholla Blvd. Turn into student parking lot with the guard booth (first one you come to) before you get to La Cholla Blvd on the NE corner of the complex.  
Viewing Location: School Amphitheater.

Thursday February 3 -- NW TUCSON (may shift to later in the month-Date TBD)  
St. Elizabeth Ann Seton School  
8650 N Shannon Rd, 85742  
Age/Grade Level: Grades K - 8; # Participants: 75  
3-4 Scopes Needed; Setup: 5:30 pm. Start: 6 End: 8  
Nearest Moon Phase: Between New and 1st Quarter  
Directions: Ina & Thornydale. North on Thornydale to Magee. Right (east) on Magee. Continue north on N Shannon Rd. School is next to Tucson National.  
Viewing Location: School Field.

Saturday February 5 -- NORTHWEST TUCSON --  
ORACLE; Catalina State Park  
(Quarterly TAAA sponsored public star party)  
11570 N Oracle Road  
Age/Grade Level: All Ages; 8 Additional Scopes Needed (Bernie Stinger, Rick Paul scheduled)  
Setup: 6:15 pm. Start: 7 pm. End: 9:00 pm.  
Nearest Moon Phase: Between New & First Quarter.  
Directions: North on Oracle Road to Catalina State Park.  
Viewing Location: Trailhead picnic area at the end of the road inside the Park. Setup will be in the spaces inside the cones on the southwest corner of the parking lot.

Thursday February 10 -- WEST TUCSON  
Borton Elementary @ Cooper Center for Environmental Learning  
5403 W Trails End Rd, 85745  
Age/Grade Level: Grade 4; # Participants: 25  
FILLED; Setup: 6:15 pm Start : 7 pm End: 8:30 pm  
Nearest Moon Phase: Between First Quarter & Full  
Directions: West on Grant Rd, becomes Silverbell, becomes Ironwood Hills Drive which dead-ends at Camino De Oeste. Turn south. ALTERNATE: West on Speedway west of I-10. North on Camino De Oeste. Both paths: Turn west on Trails End Road and follow signs to "Cooper Center".  
Viewing Location: Open area near restroom facilities. Access the site from the dirt road at the east end of the main parking lot (near the dumpsters).



## School/Public Star Parties Continued

Saturday February 12 -- SOUTHEAST TUCSON  
 Astronomy Magazine Star Party @ Pima Community  
 College EAST; 8181 E Irvington Rd  
 Age/Grade Level: All Ages; # Participants: 150  
 4 Additional Scopes Needed( Jim Knoll, Bernie  
 Stinger, Tom Sarko scheduled)  
 Set up Time: 5:30 pm. Start: 6:30 pm. End: 9 pm  
 Nearest Moon Phase: Between First Quarter & Full  
 Directions: Houghton south (or off I-10 & Houghton,  
 north) to Irvington then west on Irvington to PCC  
 Campus. OR From Kolb & Golf Links, south on  
 Kolb to Irvington, east on Irvington to PCC Campus.  
 Viewing Location: Observatories near parking lot on  
 southwest side of campus. Take first left (Poinciana  
 Dr) after entering Fred Enke Dr and drive west  
 between football field and parking lot to west side  
 of campus. Access the PCC Observatories from the  
 parking lot on SW side of campus.

Thursday February 17 -- WEST TUCSON  
 Richardson Elementary @ Cooper Center for  
 Environmental Learning  
 5403 W Trails End Rd, 85745  
 Age/Grade Level: Grade 4; # Participants: 25  
 2 Scopes Needed; Setup: 6:15pm Start: 7. End: 8:30  
 Nearest Moon Phase: Full  
 Directions: West on Grant Rd, becomes Silverbell,  
 becomes Ironwood Hills Drive which dead-ends at  
 Camino De Oeste. Turn south. ALTERNATE: West  
 on Speedway west of I-10. North on Camino De  
 Oeste. Both paths: Turn west on Trails End Road  
 Friday

February 18 -- FAR SOUTH (GREEN VALLEY)  
 Canoa Ranch; 5375 S I-19 Frontage Road  
 Age/Grade Level: All Ages; # Participants: 50  
 2 Additional Scopes Needed (Jim Knoll scheduled)  
 Setup: 5:30 pm. Start: 6:30 pm. End: 8:30 pm.  
 Nearest Moon Phase: Full + 2 days  
 Directions: I-19 South to Exit 56. Cross under the  
 interstate and take the frontage road north to the  
 parkentrance.  
 Viewing Location: Open area center of complex.

Saturday February 19 -- ONLINE  
 Virtual Star Party  
 Online streamed to either Facebook or YouTube  
 Age/Grade Level: All Ages; # Participants: 150  
 (FILLED) 0 Scopes Needed (Jim Knoll, Jim

O'Connor, Bernie Stinger, Rick Paul scheduled)  
 Setup: 6:30 pm. Start: 7 pm. End: 9pm.  
 Nearest Moon Phase: Full + 3 Days.  
 Directions: Online to Facebook or YouTube.

Thursday February 24 -- FAR NORTH in ORACLE  
 Biosphere 2  
 32540 S. Biosphere Road, Oracle  
 Age/Grade Level: Grades 9 - 12; # Participants: 40  
 FILLED; Setup: 6:15 pm. Start: 7 pm. End: 9 pm.  
 Nearest Moon Phase: Third Quarter  
 Directions: Oracle Road north to Highway 77.  
 Continue north to Biosphere Road  
 Viewing Location: Lawn area behind the cafe patio.

Saturday February 26 — ORACLE  
 Oracle State Park  
 3820 E Wildlife Dr, Oracle, 85623  
 Age/Grade Level: All Ages; # Participants: 100  
 FILLED (Bernie Stinger, Tom Sarko scheduled)  
 Setup: 6 pm. Start: 7 pm. End: 9:00 pm.  
 Nearest Moon Phase: Third Quarter.  
 Directions: Highway 77 (Oracle Road) north from  
 Tucson. Follow signs to Oracle State Park  
 Viewing Location: Sidewalk along the Kannally  
 Ranch House parking lot and on the Ranch House  
 upper patio. Some manual movement of equipment  
 may be required due to exact observing location.

**Saturday February 26 -- FAR EAST (COCHISE  
 COUNTY); Chiricahua Astronomy Complex (CAC)**  
 Lat: 31 deg 52.4 min x Long 109 deg 30.54 min  
 Age/Grade Level: College (Space Grant Students)  
 # Participants: 25  
 ?? Additional Scopes Needed (Jim Knoll, Carter  
 Smith, Conrad Stolarski). Need another 40" Operator.  
 Setup: 6 pm. Start: 7 pm. End: 10 pm.  
 Nearest Moon Phase: Last Quarter  
 Directions: I-10 east from Tucson past Benson. Exit  
 318 (Dragoon Rd). Right on Dragoon. Travel 13.5  
 miles to intersection with Rt 191. Right (south)  
 on 191 17.9 miles (past Sunsites & Border Patrol  
 checkpoint) to R 181. Turn left (east) for 10.9 miles  
 to intersection of S. Price Ranch Rd. Right (south)  
 on Price Ranch (dirt rd) to just before mile post 49  
 (cluster of mailboxes). Continue 1/2 mile south on  
 Price Ranch until E Perseus Way. Left (east) on E  
 Perseus Way about 1/4 mile to CAC entrance.  
 Viewing Location: CAC Observatories

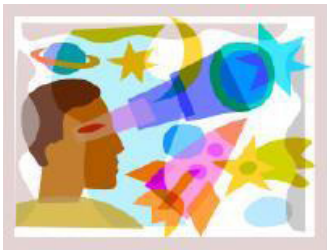
## Gregg Ruppel's Comet Leonard and M3 ("A WELCOME VISITOR") image is featured in the March Sky & Telescope magazine!

P. 75 of the print version or [https://www.nxtbook.com/nxtbooks/aas/st\\_202203/index.php#/p/74](https://www.nxtbook.com/nxtbooks/aas/st_202203/index.php#/p/74) if you have a digital subscription.

What a great addition to his December 3, 2021 APOD of [Comet Leonard and the Whale Galaxy!](#)

**Congratulations, Gregg!**

## Special Interests Groups



### **Starry Messengers Special Interest Group** *Opening Minds to the Universe*

It's almost time for the Tucson Festival of Books and the UA ScienceCity event! It takes place on the weekend of March 12 & 13 at the University of Arizona campus.

The TAAA will have an exhibit and solar viewing at the event. Our exhibit theme is the *Search for Life in the Sands of Mars*. Kids will experience how to detect life (or non-life) in dirt samples, and they can operate a remote-controlled rover to pick up small steel balls (representing the Martian hematite "blueberries" discovered by the Opportunity rover). We'll also have a crafts activity for young kids to create their own extraterrestrial.

**The Starry Messenger SIG will meet on Sunday, February 6th at 1PM at Steward Observatory** to put the final touches on our exhibit. We'll meet in the lobby at 1PM and go up as a group to the third-floor conference room. The front doors will remain locked, so if you arrive late, call Terri's cell number (below). We have the room until 4PM. Masks will be required.

I (Terri Lappin) will be asking all TAAA members to volunteer for our exhibit activities. Jim Knoll is organizing the solar scopes. There will be an in-person training session for TAAA volunteers to learn these activities. This training session is tentatively scheduled for Sunday, March 6th at 1PM.

All volunteers will need to follow the University of Arizona COVID protocols. These are updated with changing conditions, but you should assume you'll be wearing a mask. This is an outdoors event, but we won't be able to maintain proper distancing, hence the masking requirement.

If you have questions, contact [Terri Lappin](#) (or 520-977-1290).

[SMSIG on the Web](#)

## **TAAA Ladies Night Out**

**by Susan O'Conner**

TAAA Ladies Night Out

Thursday, February 17, 6:30pm

Saffron Indian Bistro  
7607 N Oracle Rd  
(S end of Orange Grove Village –W side of Oracle S of Magee )

Preview the menu at <https://saffronindianbistro.net>

RSVP [Susan](#)

## **Astronomy Fundamentals SIG**

**by Connor Justice**

The next meeting is February 10th at 6:30 pm - 8:00 pm. Topics to be determined.  
Contact [Conner Justice](#) for Zoom link and more information.

[AFSIG on the Web](#)

Access videos of previous meetings through the Members Only section of the TAAA web site.

## **Astro-Imaging SIG**

**by Gregg Ruppel**

The next AISIG meeting is Monday, February 21 @ 7:00 pm via ZOOM. AISIG meetings going forward will be on the 3rd Monday of each month. Email [Gregg Ruppel](#) for the ZOOM link or find it in the [TAAA Forum](#).

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

Imagers, to help ensure that the TAAA Desert Skies Bulletin has explicit permission to publish your fine work, we need you to submit your images directly to [Gregg Ruppel](#), our Image Editor and Astro-Imaging SIG guru. Or come up with alternative arrangements with Gregg. To keep the bulletin at a reasonable size, we would like you to restrict the size of your images to around 10MB (a little over is okay if needed). That way, I do not have to mess with your files. If you desire, please include a link to the full-size version so our members can see your work in all its glory. Finally, if you do submit an image (or more), I will include you in a pre-publication version of the bulletin for your approval of the quality and layout. Feel free to ask me ([David Rossetter](#) – Desert Skies Bulletin Editor) or [Gregg](#) if you have any questions.



## December Highlights from the Astro-Imaging SIG

From Tom Eby



**Helix Nebula;** 85 x 2min, unguided, R8/asi2600/CE-M70ec mount. PI processed. The high rejection image shows the satellite trails collected (and removed) over the 170m acquisition period.



Elliptical galaxy NGC1023 is about 35 MLY distant with an active core. It has a companion elliptical or irregular galaxy seemingly attached to its eastern end, designated PGC10139 or NGC 1023a. RASA8 f/2, 40 x 2min unguided CEM70ec mount, asi2600 camera. PI/CS5 processed



M33; Ran this on 11-03-2021 as another test after the R8 corrector reposition, 3 hours total. Processed to try and show the spiral arms a little better than usual. Asi2600, CEM70ec unguided, 90x2min, PI/CS5.

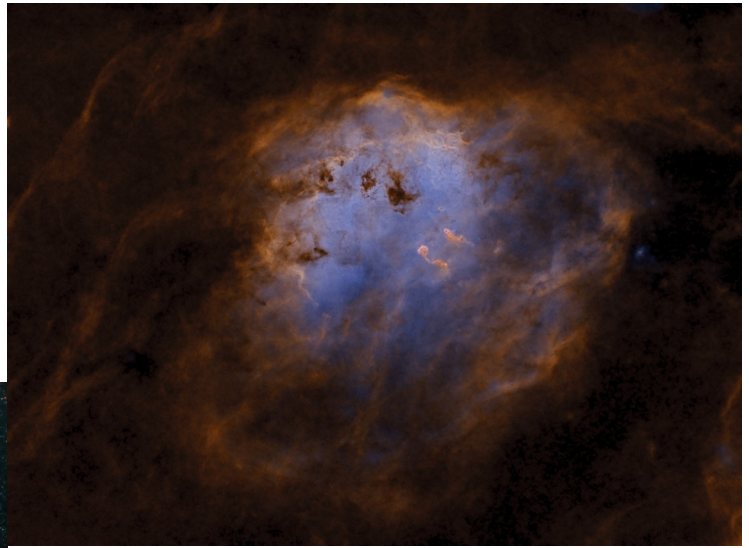


# From Randy Smith

Lion's Head Nebula

C11 2600 MC Pro L-Extreme filter 92x180

<https://astrob.in/lb2hk0/0/>



IC 410 Tadpoles Starless version

IC 410 11/26/21 C11 HyperStar 2600 MC Pro  
100x180

Astrobin <https://astrob.in/7fml99/0/>

Pacman Nebula NGC 281

I processed it traditionally and also as Hubble  
pallet. I have never got much of interest out of  
the traditional processing but its much more  
interesting in Hubble where the blue oxygen  
strands out. NGC 281 11/13/21 C11 2600  
L-Extreme filter 40x180



# Observing Sites

CAC & TIMPA are open at full capacity (all pads are open).

The COVID Rules are posted on the TAAA Website (<http://tucsonastronomy.org>) under the respective observing Site (TAAA Resources, Observing Sites) and contain additional information.

Remember, reservations are required! (see below)

## TIMPA

*by Ralph Means*

TIMPA (Tucson International Modelplex Park Association), Dark Sky site west of the Tucson Mountains.

[TIMPA on the Web](#)

TIMPA Star Party Dates this month: *February 11 and 26*

Location: The TIMPA observing site is located a few miles beyond the Desert Museum.

The TIMPA site is only partially improved. There are no inside buildings provided other than restrooms. TAAA does not provide 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.

Please contact the TIMPA Director to make a reservation: [Ralph Means](#)

## Chirichaua Astronomy Complex

*by Jim Knoll*

CAC Weekend Dates coming up (Friday/Saturday):

*January 28 & 29, 2022 (New Moon January 31st)*

*March 4 – 5 (New Moon March 2, CAC Messier Marathon March 5)*

*April 1-2 (New Moon March 31)*

Chirichaua Astronomy Complex (CAC) is the club's dark 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 Webpage 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. All facilities are currently open, but the Board will review COVID status each month.

Messier Marathon. *We will be doing one at CAC Saturday evening March 5th into Sunday morning March 6th. We will have a few volunteers to help you along if needed. This is a great opportunity to socialize while searching out marathon objects. We will also have the grills available for an impromptu Star-B-Que before observing Saturday, so bring something to grill or eat. Make a reservation per the above link.*

CAC Director: [Jim Knoll](#)

[CAC on the Web](#)



## Observing Sites Star Party Dates 2022

### TIMPA

February 11 and 26  
March 25 and 26  
April 2 and 23 and 29  
May 20 and 21. 27 and 28  
June 24 and 25  
July monsoon season no dates set.  
August monsoon season no dates set  
September 23 and 24  
October 21 and 22  
November 18 and 19  
December 16 and 17.

### CAC

January 28 – 29 (New Moon January 31)  
March 4 – 5 (New Moon March 2, CAC Messier Marathon March 5)  
April 1 – 2 (New Moon March 31)  
April 29 – 30 (New Moon April 30; Member Star-B-Que April 30)  
May 27 – 28 (New Moon May 30)  
June 24 – 25 (New Moon June 28)  
July 29 – 30 (New Moon July 28)  
August 26 – 27 (New Moon August 27)  
September 23 – 24 (New Moon September 25)  
October 21 – 22 (New Moon October 25)  
November 25 – 26 (New Moon November 23)  
December 22 – 23 (New Moon December 23)

## Happy 12th Anniversary, CAC!

by John Kalas

On February 10th 2010, the TAAA opened the Chiricahua Astronomy Complex for the first time. With just the basic infrastructure of road improvements, electric power, a well, a parking lot, and a septic system with bathroom facilities, the TAAA started on a journey to develop a world-class astronomy complex. The master site plan, years in the making, was finally guiding our efforts.

Members embraced the project and supported it with generous donations large and small. After the basic infrastructure of Phase 1, the club pushed forward with astronomy-related features in Phase 2a (2011) like the Wallace Rogers roll-off roof observatory, ten concrete telescope pads with power, the large round Amphitheater concrete telescope pad with storage container and the first of two member equipment storage containers. Phase 2b (2012) yielded an RV area with four lanes. The picnic ramada with four picnic tables was installed in Phase 3 (2015) along with the second member equipment storage container. Phase 4 construction (2016) added ten more concrete telescope pads referred to as the Member Pads area.

Phase 5 (2017) saw the addition of a truly remarkable facility at CAC; the Reynolds-Mitchell Observatory (RMO). Included is a large warm room/meeting room and a wonderful 40" dobsonian telescope with a surrounding observing deck. This facility and instrument helps to confirm the "world-class" description of the CAC site. At the end of 2018, Phase 6 was completed. The RMO observing deck was expanded to include another fabulous telescope; a 228mm (9") folded refractor.

Currently, Phase 7 is underway with two sleeping quarters buildings and a 4-telescope observing pad under construction. This project is unique to CAC. It is the first construction phase to benefit from significant philanthropic donations from several southern Arizona foundations. A fourth storage container for club equipment storage was recently installed at the site.

Also currently in progress is Phase 8 which includes about a dozen member observatories and three large dobsonian telescope pads each with its own storage container. Five acres of the 16-acre CAC site have not yet been earmarked for development.

The TAAA should be proud of what has been accomplished at CAC. If you haven't visited the site yet, you are missing out on the spectacularly dark skies and the impressive accommodations. Won't you join us?



## Connecting Astronomy with the Public

January 2022

by Jim Knoll



Ventana Canyon Resort  
(Rick Paul)

**January** was another busy month for our community outreach with 9 School/Public & 13 Tucson Stargazing Adventures (TSA) paid events scheduled. Of those we accomplished 4 School/Public (4 cancelled for Covid & 1 for weather) and 9 TSA (4 cancelled for Covid) events. Our volunteers once again stepped forward with their time, talent, and equipment. For both programs, we deployed 24 telescopes for 43.5 hours with 26 volunteers providing 91 volunteer hours

providing astronomy education to just over 480 excited participants. This assumes we get in all the events toward the end of the month.

The two public events we supported were both Pima County Natural Resources Parks and Recreation events. Our first event at Canoa Ranch, south of Tucson on I-19. This will become a monthly event throughout the year. The other was at Tucson Mountain Park Ironwood Picnic. We also supported two schools. On the TSA side, we had three private family events and six resort or corporate events. Many of the schools are struggling to have these kinds of events due to the surge in Covid.

Unfortunately, we are starting to lose our two showpiece planets (Saturn & Jupiter) for another season but are gaining a great Stellar Nursery (Orion Nebula) and some great star clusters, galaxies, and other nebulae.



Carrillo Magnet School  
(Vanessa Thomas, Jim Knoll, Pete Hermes)



Carrillo Magnet School

**February** is building to be another busy month with 19 events scheduled. Hopefully we won't lose too many to Covid or the weather (although we can certainly use the rain). We have a couple signature events to include our quarterly large event at Catalina State Park and our joint event with Astronomy Magazine at the Pima Community College East campus. We will also be hosting some Space

Grant College Students at the Chiricahua Astronomy Complex toward the end of February.

### **“Working with Minors” Training**

We will be conducting some training after the main speaker at the February 4<sup>th</sup> TAAA meeting. This training is on the TAAA *Policy on Working with Minors* and is required for everyone supporting the School/Public and TSA Star Party program. Please try to attend the meeting.

### **Join the Fun of Outreach!**

Let me know if you want to support any of our outreach events. Please register with me so I know who will be supporting and whether you plan to bring a scope or just observe/attend. If you are new to outreach, we can partner you with someone experienced to get you started. This is a great way to learn the night sky by studying up on 4-5 objects, show them at an event, then learn about 4-5 new ones for the next event. Before you know it, you will have a nice repertoire of night sky objects. We also have Night Sky Network (NSN) Toolkits that are requested by schools that you can learn how to use and demonstrate at an event.

### **Library Telescopes**



Joel D Valdez Main Library

Two additional Orion 4.5” StarBlast **Library Telescopes** were donated to the Main Library downtown and the Cochise County Library in Benson. We now have seven telescopes available for residents to check out. Thanks to the generous donations from Todd Hansen (TAAA member) each year in memory of his late wife Lonny Baker and to the Astronomical League Horkheimer Foundation, we have been able to donate roughly two per year



Benson Library  
(Todd Hansen on right)

since we started the program in 2017. We have telescopes located at: Joel D Valdez Main Library, Oro Valley, Miller-Golf Links, Valencia, Sam Lena South Tucson, Kirk-Bear Canyon, and the Benson Library. They have been constantly in circulation which is good with very few problems.

## **What's Up list for February 2022 – March 2022**

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 February and March for the more common observing programs.

### **Constellation Hunter Program – Northern Sky**

The following constellations are well placed for observing for February and March:

Auriga, Camelopardis, Cancer, Canis Minor, Gemini, Lynx, Monoceros, Orion, Taurus

### **Messier Observing Program**

The following Messier Objects are well placed for observation during February and March (listed in ascending RA): M45, M79, M38, M1, M42, M43, M36, M78, M37

### **Lunar and Binocular Lunar Observing Program**

The following are the dates for the lunar phase when observations should be made in February and March:

New Moon: February 1, March 2

40 Hours waxing: February 3, March 4

72 hours waxing: February 4, March 6

4 days old: February 5, March 6

7 days old: February 8, March 10

10 days old: February 11, March 13

Full (14 days old): February 16, March 18

Gibbous: February 23, March 24

72 hours waning: February 27, March 29

40 hours waning: February 28, March 30

### **Solar System Observing Program**

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

Mercury is an early morning object in February and March, reaching greatest elongation around February 14, going behind the Sun around March 30.

Venus is an early morning object thruout February and March.

Mars is an early morning object during February and March, rising about 2 hours before the Sun.

Jupiter sets early evening, becoming an early morning object around March 8. By the end of March its rising about one hour before sunrise.

Saturn is an early Morning object during February and March, rising earlier each night, by late March rising 2 hours before sunrise.

Uranus is well placed for evening observation, setting around midnite in February, 10 PM by late March.

Neptune goes behind Sun in mid March. Reemerges as an early morning object in mid March.

SPECIAL EVENT: March 29 – March 30: Mars, Venus and Saturn should be very close together in the early morning sky. All 3 planets are rising about 2 hours before sunrise.

### **Urban Observing Program**

The following deep sky objects are well placed for observing during February and March:

NGC 1807, NGC 1817, M38, M36, M42, NGC 1981, M37, M35, NGC 2169, NGC 2232, NGC 2244, NGC 2264, NGC 2281, M41, NGC 2301, M50, NGC 2392

The following Double Stars are well placed for observation during February and March:

Trapezium, Beta Monoceros





Since September 1922, Steward Observatory has been hosting public evening lectures in astronomy. The lectures begin at 7:30 p.m. MST and will be held in Steward Observatory Room N210 on the University of Arizona campus. The Raymond E. White, Jr. Telescope in the historic Steward Observatory Dome will be open for public viewing after the conclusion of the lecture, weather permitting!



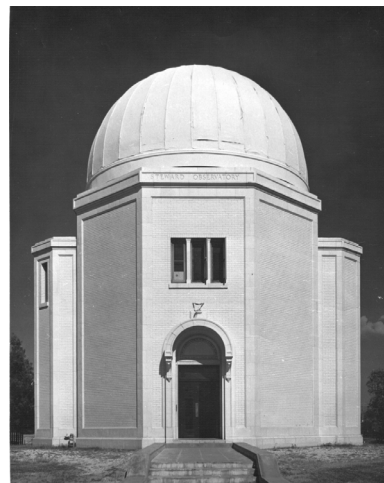
All of the lectures and the use of the telescope are free of charge and open to the general public.

For more information, contact [Dr. Thomas Fleming](mailto:Dr.Thomas.Fleming) at 621-5049 or [taf@arizona.edu](mailto:taf@arizona.edu).

## Spring 2022 Lectures

For Spring 2022, if you attend the lecture in person, we ask that you wear a face mask while you are inside Room N210. Face masks will be available in the room should you need one. Should you not wish to attend in person, you can watch the lecture LIVE on [ZOOM](#).

February 7	Dr. Thomas Beatty Steward Observatory	Looking Forward to JWST: The Nature of Exoplanets
February 21	Dr. Illaria Pascucci Lunar & Planetary Laboratory	Looking Forward to JWST: Protoplanetary Disks
March 14	Dr. Schuyler Wolff Steward Observatory	Looking Forward to JWST: Planetary Debris Disks
March 28	Mr. Ryan Endsley Steward Observatory	Looking Forward to JWST: The First Galaxies
April 11	TBA	
April 25	Dr. Megan Mansfield NASA Sagan Fellow Steward Observatory	Searching for Atmospheres on Rocky Planets with JWST





## BH PIRE Webinar Series: Spring 2022

The upcoming Black Hole PIRE series features the most advanced approaches to studying the astrophysics of the black hole in the center of the Milky Way. Four renowned astrophysicists will share their research around understanding the unique environment around Sagittarius A\*.

All are welcome to join these remote talks. Each session will last one hour including Q&A and are designed as stand-alone topics. Please plan to join for any or all sessions and share this series with your colleagues.

[Registration now open for initial webinar sessions. See links below.](#)

January 18, 2022 1600 UTC	<a href="#">Entering an Era of Black Hole Discovery</a> Daryl Haggard, McGill
February 8, 2022 1500 UTC	<a href="#">A View of Sagittarius A* Across the Radio Band</a> Sara Issaoun, Center for Astrophysics
March 29, 2022 1600 UTC	<a href="#">Our Galactic Center: A Unique Laboratory for the Physics &amp; Astrophysics of Black Holes</a> Andrea Ghez, UCLA   2020 Nobel Prize in Physics
April 2022	Horizon Scale Physics Around Sagittarius A* Feryal Ozel, UArizona

Skyward  
By David H. Levy  
February 2022



## Go Webb!

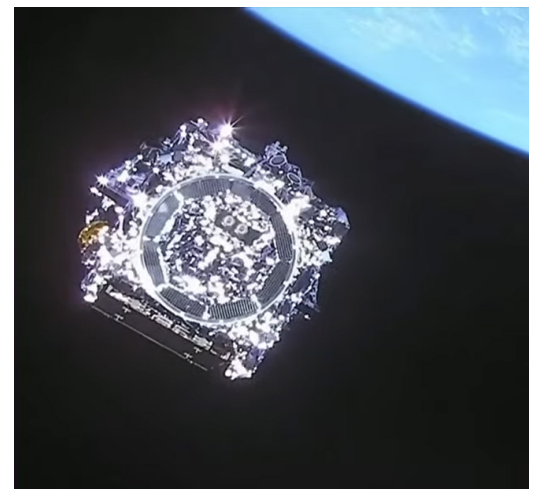
We all got a special and thoroughly delightful present early on Christmas morning. Although I did not set my alarm, Wendee did get up around 5 am. I turned on our television set, and what I saw 15 minutes later was the most thrilling space view since 1969, when Armstrong and Aldrin walked on the Moon. It was the spectacular, flawless launch of the James Webb Space telescope, THE start of a mission so perfect and smooth that if Webb could speak, it would have told us that it did not feel any motion whatsoever as it soared away. Even the countdown was unique; it was in French: “Dix, neuf, huit...” I did notice a possible hiccup. About ten minutes later, the metal covers designed to protect the telescope during launch fell away while the vehicle was still in powered flight. But a second later, I understood that this was not a hiccup; it was supposed to fall away. The telescope was already out of Earth’s atmosphere, and with no air to bother it, the protective cover was no longer needed.

As lovely as this experience was for me, the launch was not the most memorable part. That came an hour or so later, when NASA administrator Bill Nelson gave a speech in which he thanked the many people involved in the process of getting the telescope into space. At the end of his speech Nelson mentioned a young shepherd boy, sitting out under the stars, looking toward the night sky, and writing a poem about it. That shepherd boy, the Administrator went on, went on to become King of Israel.

The poem to which he referred is undoubtedly the 19th psalm, the opening 4 lines of which I quote here, plus an additional one added by nova discoverer Peter Collins, an old friend.

*The heavens declare the glory of God.  
And the firmament showeth his handiwork.  
Day unto day uttereth speech,  
And night unto night revealeth knowledge,  
So long as the sky is clear.*

The telescope has now been fully deployed and it is ready for its final adjustments. Unlike for the shepherd boy, and for all of us on Earth, the sky will always be clear and dark at the Lagrange 2 point (named after Italian mathematician Joseph-Louis Lagrange) in space where the telescope will live. The James Webb is there to teach us about the Universe of which we are a part, and I suspect that it will also inspire us to set aside the cares and the news of each day, head out into our back yards, and look up at the night sky.



*The James Webb Space Telescope, just after launch, in orbit about the Earth.  
NASA photograph.*