TAAA DESERT SKIES BULLETIN

Observing Our Desert Skies Since 1954

November 2022

www.tucsonastronomy.org

Membership Meeting

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

TAAA's next general member meeting will be held on **Friday, November 4, 2022**. The Main Presentation will start at 6:30 PM (AZT).

This will be a **hybrid meeting** (both in person and online). 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 online through our **Facebook page** at https://www.facebook.com/TucsonAstronomy/.

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Main Presentation at 6:30PM AZT

Title: **Looking For Life: From Icy Comet Belts to the Habitable Zone**

Presentation: One of the main goals of astronomical sciences is to unravel whether we are alone in the Universe. In the next decade, exoplanetary science will focus on developing the technology for direct observation of exoplanets orbiting in the so-called Habitable Zone (HZ) of their host stars. However, it takes more than orbiting the HZ for a given planet to be a relevant target for the search for exolife. Dr. Virginie Faramaz will talk about the best candidate systems, and how the 'debris disks' beyond the HZ zone—in reservoirs analogous to the Solar System's Kuiper Belt and Asteroid Belt—carry the seeds of life to the system's innermost parts. Dr. Faramaz will explain how planets, comets, and dust grains are interconnected, as well as the techniques and equipment used to get information on their components.

Biography: **Dr. Virginie Faramaz** is a global specialist on planets and debris disk interactions. In her own words, she was "born and raised in Savoy in the French Alps, where we are crazy over fondue, raclette, tartiflette, and basically any dish that contains cheese, ham and potatoes." Her PhD centered on theoretical aspects of planet-debris disks interactions. She worked at ALMA in Chile's Atacama Desert, and at the Pontifical Catholic University of Chile in Santiago, Chile. In 2017, she became an Exoplanet Science Initiative Fellow at the Jet Propulsion Laboratory, and also worked with the Next Generation Telescopes Science Institute (NEXSI) at the University of California. As an Assistant Research Professor at UA's Steward Observatory, she uses the Large Binocular Telescope Interferometer to further her projects. Dr. Faramaz enjoys teaching science to a variety of audiences, especially children.

For the second half of the meeting, we will again attempt for the public to visit the Steward Observatory Telescope. Last month's visit failed due to weather, so we are making a second attempt.

Notes From The President

by Mae Smith

October 2022

Expectations are that as the weather cools from summer, the clouds will go away. Not true this year. We have been getting in observing but clouds also continue to be plentiful. Collection of funding for the Member Observatory Project has now been completed. The Perseus and Pierce Ranch Roads at CAC are now in process of being graded and of taking corrective action for the significant potholes that have developed. The neighbor who was previously assisting with the entrance road is no longer doing so, so TAAA has taken that over. TAAA actually has legal responsibility to provide maintenance on those entrance roads to CAC and we are developing a regular system to provide that care. It is very important also to have the roads in good maintenance when people are bringing chartered buses to CAC. Currently the bus companies are listing CAC as accessible by bus and we do not want that to change.

For the first time, TAAA exceeded its monthly free email limit on Member Planet. Of course, when we started using Member Planet, one TAAA email typically went to 100 or less email addresses. Currently, one TAAA email goes to over 500 email addresses. So, we will be paying close attention in future to our use of general emails and, whenever effective communication is possible through the Bulletin and there is not a significant time factor, we will rely more heavily on the TAAA Bulletin. Please make sure to read the Bulletin each month.

A joint leader meeting is scheduled for Oct 22nd at CAC between CAC leaders, the TAAA President and the Astronomy Camp leader and representatives to discuss the extent to which TAAA might interface with Astronomy Camp activities in June 2023. In addition, the UA Spacecamp students were scheduled to come to CAC another weekend in October (now delayed to November 19) and the last weekend of October is Evening Under the Stars night. So, CAC will be busy this month.

Some additional tech volunteers for the Member Meetings have been obtained; however, a few more people who could periodically assist is desired. The Refreshment after Member Meeting position is being vacated and a new person is needed. We have been successful in recruiting for the TAAA Apparel Sales position and Suzanne Bailey has agreed to take over that job. Also, our Aztec Manager who provides our apparel now assures us that the online catalog will be kept current.

Doug Smith has been conducting our first Astronomy Fundamentals course since COVID.

The TAAA Holiday Party this year will be held at the home of Janet and Ed Foley on December 10th at 5:30pm.

At the October 12th TAAA Board meeting, the Treasurer reviewed different aspects of Directors and Officers Insurance including protections it affords officers and managers of TAAA and why it is important. We may need to consider increasing the amount of protection we currently have. The Treasurer reported that for the first time, this month TAAA's assets totaled over one million dollars. Currently, with some new donations, TAAA has $386,000 in the bank. However, considerable amounts of that money are earmarked for the new Member Observatory Project and completion of the Gateway to the Galaxy (GTTG) campaign and other construction projects in process.

No changes in COVID policies were made at this meeting.

The CAC Signage Committee recommended to the Board that TAAA name the Ramada at CAC the "Bill (or William, depending upon Bill's preference) Lofquist Outdoor Learning Center." The motion was unanimously approved. The Board approved a TAAA letterhead format proposed by Jim Knoll with a TAAA logo appearing at the top of the page on both left and right sides and 3 layers of titles between the

two logos, as specified in the proposal drafted by Jim Knoll. This approved proposal should be distributed to TAAA leaders and added to all TAAA official documents. TAAA leaders please use the approved format.

The TAAA Board approved the revisions of the TAAA Donation Manager Position Description.

We are looking toward a busy and great remaining fall and winter seasons. Please let a TAAA leader or any Board member, including myself, know of any assistance you need and of any suggestions that you have for us. We think that TAAA is a phenomenal organization in many ways. However, we are always working on improvements and finding ways to help it improve and keep up with its phenomenal growth. The real worth of an organization is in its members, and the best developments and improvements come from member ideas and member efforts. Thanks to each of you for sharing the TAAA life experience with all of us.

President Mae Smith

TAAA Desert Skies Bulletin
David Rossetter – Editor
Terri Lappin & Jim Knoll - Proofreading
Greg Ruppel -Images;
Ken Bertschy - Graphics

Special Interests Groups

TAAA Ladies' Night Out

by Susan O'Conner

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.

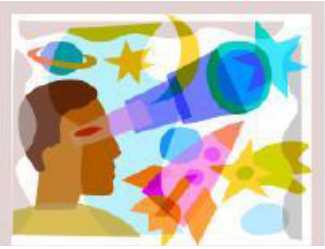
Thursday, November 17
6:30pm

Dolce Vita Italian Bistro

1800 E Ft Lowell Rd #168
(SW corner of Ft Lowell and Campbell - facing Campbell)

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

RSVP Susan



Starry Messengers Special Interest Group

Opening Minds to the Universe

The Starry Messengers SIG will meet by Zoom this month on **Monday, November 14th, 7:00 – 8:30pm.** The Zoom link will be sent to regular SMSIG attendees. Email or call Terri Lappin to be added to her SMSIG list.

At our October meeting, it was decided that we'd highlight the James Webb Space Telescope at the Tucson Festival of Books. Since it's an infrared instrument, we plan to have interesting activities involving infrared. We plan to purchase an infrared imaging sensor for one activity. Our exhibit will also explain the JWST mission goals (studying exoplanets and determining when the earliest galaxies formed). At this point, we're open to any cool activities that will assist the public in understanding the purpose of the JWST.

We were off to a good start in October with three outreach events where astronomy toolkit activities were requested. I'm happy to report that volunteers made time in their schedules to support all three events. There's an event on November 18th that still needs support. The Glass & Mirrors toolkit was requested, but we could likely bring any of our activities to this event. Also an event on November 29th needing volunteers. Let Terri Lappin know if you can support these events.

- 11/18/22 (Friday) 5:30pm – 7pm Acacia Elementary School (I-10 & Colossal Cave Rd), Glass & Mirrors Toolkit
- 11/29/22 (Tuesday) 5pm – 6:30pm Erickson Elementary School (Stella & Kolb), Black Hole Survival Toolkit

We had an unfortunate incident at one of our October activities. Two of our meteor-wrong rock samples disappeared. We'll need to get replacement samples of white marble or iron pyrite (aka fool's gold). If you have samples approximately 1" across that we could have, let Terri Lappin know. We want natural samples, not polished or otherwise worked samples.

This incident demonstrates our need for additional member support of our astronomy outreach program. We try to have two volunteers at each event. At the event where our rock samples went missing, we had only one volunteer. It's very difficult working alone with a mixed group of kids and adults. If you've had any interest in doing outreach, we can use you! It's always fun helping young and old make discoveries about the world we live in. Training is very informal – either on your own, or with the guidance of another member, or even on-the-job if you learn best by watching others.

To learn about the kinds of activities we do, visit the Night Sky Network website, and check out the Outreach Resources. We've developed a few activities of our own, but the Night Sky Network website covers most of the over 100 activities that we have available to bring to outreach events.

The Starry Messengers are TAAA members interested in doing outreach activities with the public. We meet every second Monday of the month, taking a break over the summer. We support the TAAA's outreach program through hands-on activities that generally don't require a telescope. This allows members who don't have a portable telescope to take part in the TAAA's outreach program. Our meetings are a mix of Zoom and in-person meetings, depending on what we need to get accomplished. If you have questions about the Starry Messengers SIG, contact Terri Lappin or 520-977-1290.

SMSIG on the Web

Astronomy Fundamentals SIG

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

The next meeting is on **Thursday, November 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 in the TAAA's YouTube Channel.

Astro-Imaging SIG

by Gregg Ruppel

The next AISIG meeting is **Monday, November 21 @ 7:00 pm** via ZOOM.

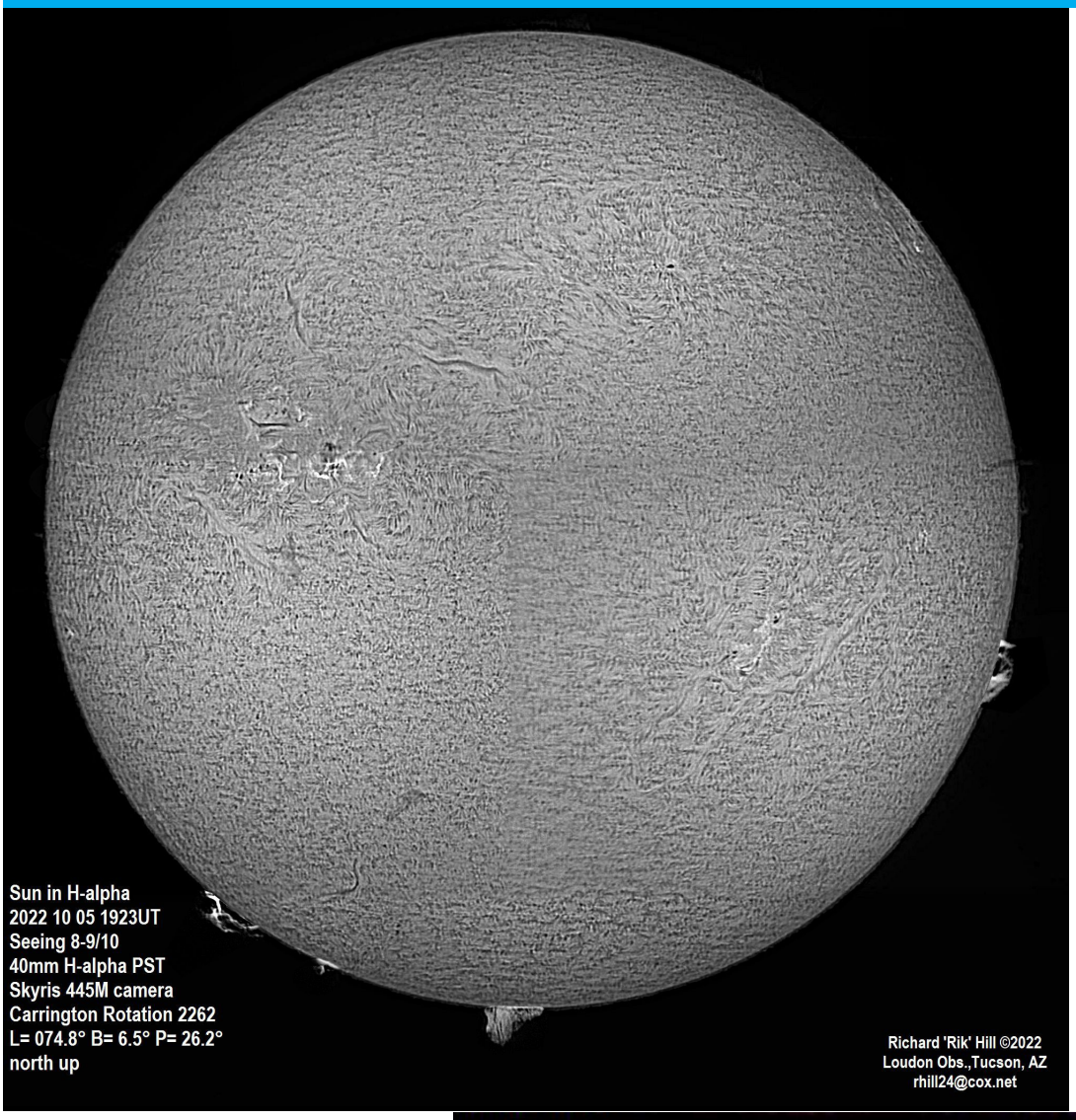
Email Gregg Ruppel for the ZOOM link or find it in the TAAA Forum.

Topics: **Image Processing Flow Using Pixinsight and Photoshop** - Bernard Miller

This month's meeting will be slightly different. We will be joining the Astronomical Society of Eastern Missouri (ASEM) for the presentation by Bernard Miller Bernard is a skilled imaging processor and has numerous published images including several APODs. The ASEM meeting will be in progress when we join at 7:00 pm MST (Arizona). While this will not be a process as he does it workshop, we will be providing the fantastic Telescope.Live data he will be working on for all to process. Bernard's presentation will be recorded and made available shortly after the Zoom meeting.

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 Imaging Editor or come up with alternative arrangements. We would like you to restrict the size of your images to around 10MB (a little over is okay if needed). Members would appreciate a brief description of the object if it is not a common target along with your imaging details. If you desire, please include a link to the full-size version. I want to limit space to one page of the bulletin per contributor. If you submit five photos, they will be small or we may ask you to pick your favorites. If you do submit images, 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 – Bulletin Editor) or Gregg if you have any questions.

Highlights from the Astro-Imaging SIG

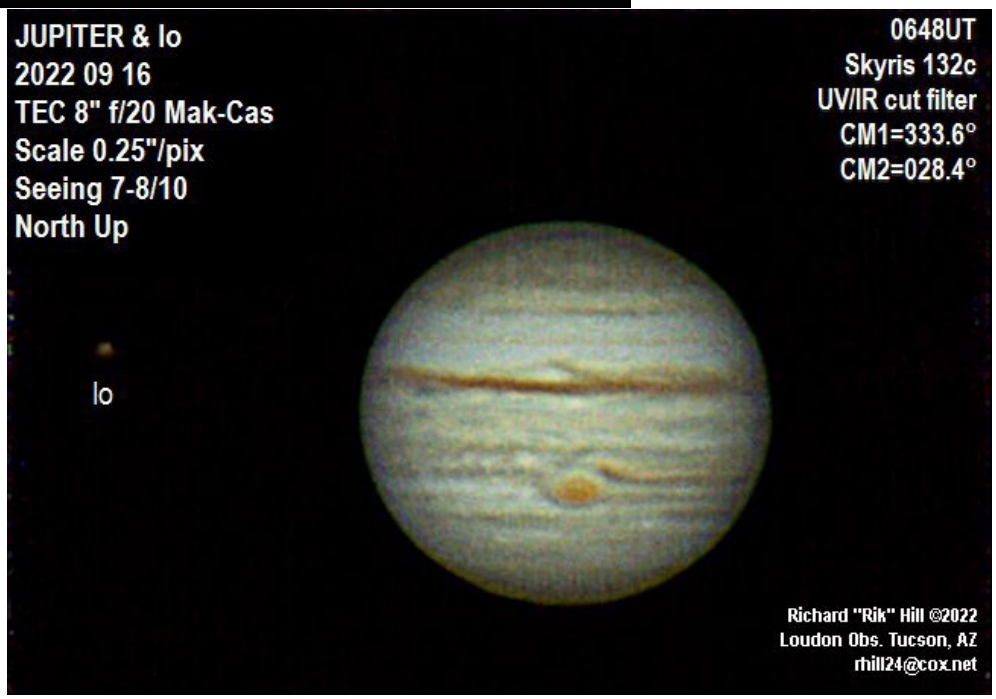


Rik Hill

Sun 10/5

Some nice prominences this day along with two complexes. Made for a nice H-alpha composite.

Jupiter 9/16



Tom Eby

Mystery nebula?
(M27)

Only a 72 minute integration due to clouds rolling in, not sure if I'm going to shoot it again with this scope for quite awhile so I went ahead and processed the 24x3min subs. Sometimes have to work with what the clouds allow.. Full field (APS-C), and cropped images. RC8@f/8, asi2600, CEM70ec mount unguided, no filters. PI/CS5 processed. Taken 9/18/2022.

M 33: RC8@f/8, asi2600 camera, no filters, CEM70ec mount unguided (encoder). Scale = 0.48 arcsec/px.
37 x 3min (111 min total exposure). Taken 9/18 and 9/25 (dodging pesky clouds on 9/25). PI/CS5 processed.

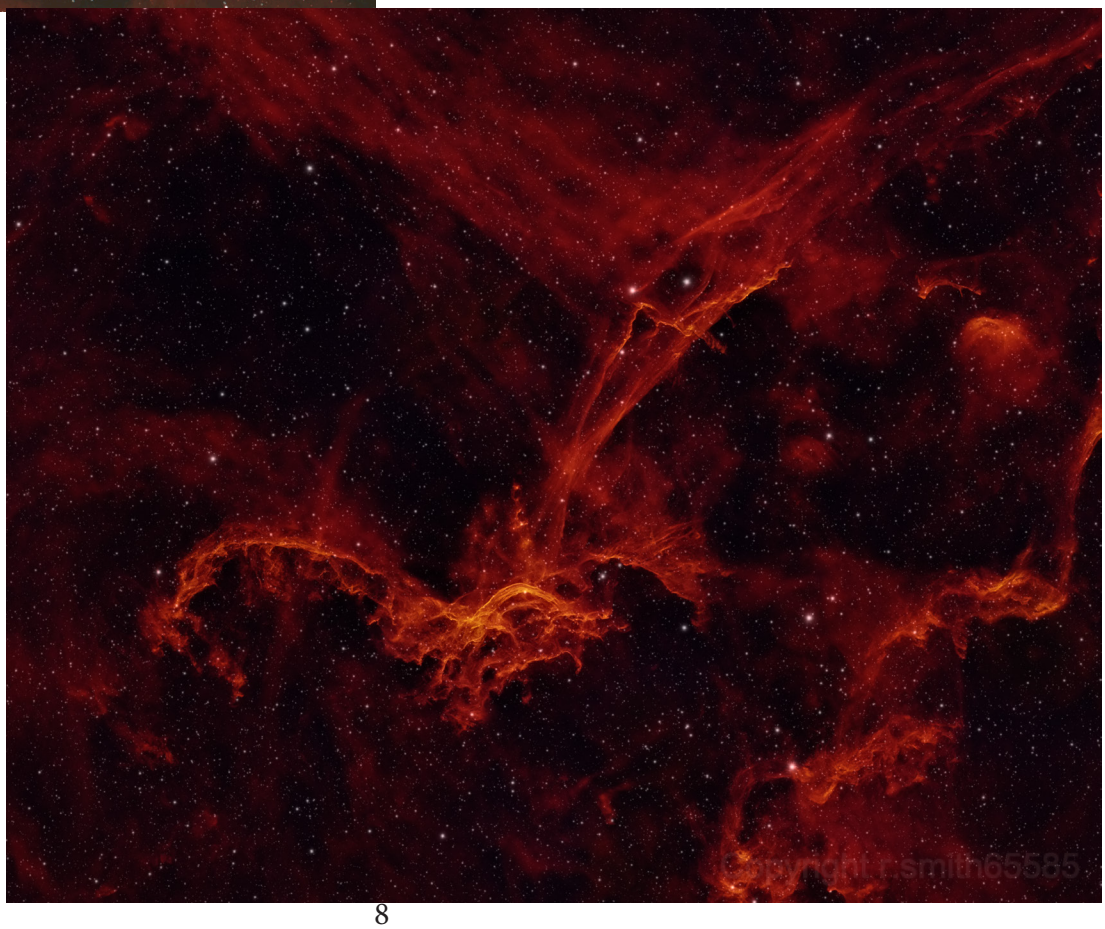
The **Pelican Nebula** from **Allen Force**

RASA8 with ASI294MC Pro and NBZ filter, on the AM5 mount. This is a post process of a live stack in ASIAIR +. The stack was 80 lights with 20 darks, no flats, of 60 seconds at 120 gain and -10C.

Sh2-114 Flying Dragon nebula
From **Randy Smith**

C11 HyperStar 2600 MM pro 106x120 Ha, 45x120 Sii form backyard in Saddlebrooke

Astrobin



M31 from Alex Woronow

Here is a rendition of M31, our nearby friend, the Andromeda Galaxy. This was shot by Deep Sky West with a 305mm aperture telescope in N. NM, in 2017. I have processed the image until now, figuring that it would be just another rather bland version. If I had done it in 2017, that undoubtedly would have been the case. But I've learned a lot over the last 5 yrs, and I hope the rendition arouses the art-lover and galaxy lover in you. Please see a larger version (1/2 scale of the original).

Observing Sites

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: **November 18 and 19.**

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

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

Reservation Form Any questions, please contact the TIMPA Director: Ralph Means

Chiricahua Astronomy Complex

by Jim Knoll

CAC Weekend Dates coming up (Friday/Saturday): **November 25 – 26 (New Moon November 23)**

Chiricahua 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 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.

CAC Director: Jim Knoll CAC on the Web

Observing Sites Star Party Dates 2022

TIMPA
November 18 and 19
December 16 and 17

CAC
November 25 – 26 (New Moon November 23)
December 22 – 23 (New Moon December 23)

Chiricahua Astronomy Complex
Learning Center Construction Update
October 2022

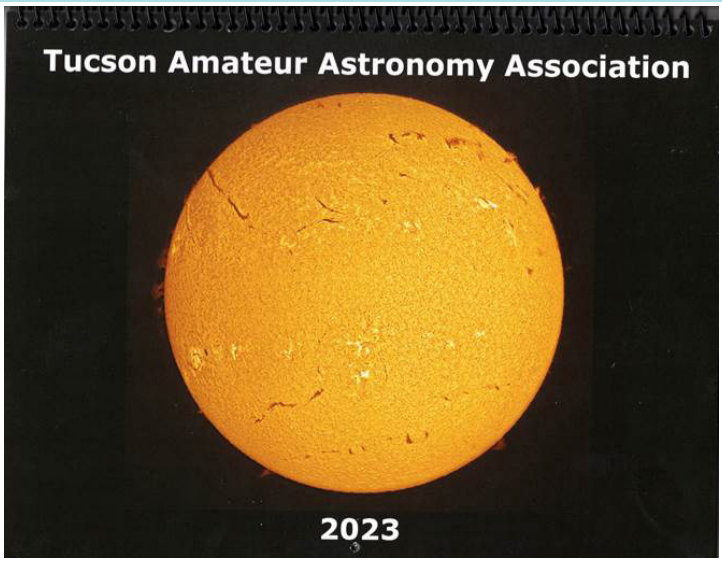
By Ed Foley

The contractor has laid the flooring in both attic spaces and installed drop down ladders in each building for access to the spaces.

A plan for the CAC site internet upgrades has been put together to include the needs for the new buildings. Both electric and internet cables were laid from the Stinger Telescope Pad to the classroom building in anticipation of an exterior wireless point being installed at the telescope pad to service the east side of the CAC site.

The water line to the buildings has been laid and both the electrical cable and water line trench has been filled with a sand cover. The septic line installation will follow in an adjacent trench.

Vegetation around the buildings has been removed. Pre-emergent granules to control weeds will be spread in the area to keep the new easement road and parking areas clear in the future.



TAAA 2023 Wall Calendars

are now available at the general meetings.
The cost is $15 cash or check made out to TAAA.
If you are unable to attend the general meetings, please contact Susan OConnor to arrange for delivery.

Monthly Member Meetings Communications

The TAAA Monthly First Friday Member Meeting occurs the First Friday of each month at 6:30pm in person, on zoom, through social media. Please review the Bulletin for information about the speaker/topic and some activities scheduled for that meeting.

Due to our limit on Member Planet emails, we will try limiting the Member Planet emails about the monthly meeting to **one email with the link that will be sent through Member Planet either later Tuesday night or Wednesday.** If you cannot find that link, email Mae Smith on Friday morning before noon to receive the link via email.

Board of Directors Meetings

The TAAA Board meets the second Wednesday of every month at 6:30pm. Members are welcome to attend Board meetings. If you would like to attend a Board meeting, you may email Mae Smith to receive a Zoom link for that meeting. Please send your email to Mae the Monday or Tuesday (By 5:00pm) and you will receive an email with the link on either Tuesday evening or Wednesday. ALL MEMBERS ARE WELCOME, we are simply changing from sending this reminder through Member Planet to conservatively use our Member Planet email system. I am sorry if this is an inconvenience. If this does not work, let me know - we can make changes.
-Mae

Announcement

TAAA functions effectively and efficiently for the benefit of all members principally built upon the many members who volunteer for and serve in a number of leadership positions. In addition to elected positions, there are over fifty (50) other appointed leaders throughout the club performing or leading a host of functions and tasks.

One such position is that of **Member Meeting Refreshment Coordinator**, which we are currently looking for fill. For those interested, please refer to the current position description, which follows:

Position Summary:
The Refreshments Coordinator is responsible for ensuring that refreshments are available at the monthly meetings by recruiting volunteers to provide refreshments, educating volunteers about expectations and procedures, scheduling the month volunteers will provide refreshments and ensuring that the required serving supplies are provided.

Specific Responsibilities:
Ensure the supplies (plastic-ware, tablecloth, napkins, cups, serving platters and bowls, etc...) required to serve the refreshments are provided at the meeting.
Contact the refreshments volunteers before their scheduled date to ensure they can make the meeting and answer any questions and/or provide any assistance they may require.
Inform the volunteers of the expectation for the refreshments. These expectations include at least one food item that a member with common food limitations would be able to eat (low calorie or carbohydrate count, low fat, low salt, does not contain nut or chocolate, gluten free, no caffeine, milk-free) – these do not need to all be contained in the same item).
Maintain the stock of supplies (plastic-ware, tablecloth, napkins, cups, serving platters and bowls, etc...) required to serve the refreshments. Presently there are two bins for storing these supplies in the meeting room.

Additional Information
A $25.00 reimbursement is provided by the club to the volunteers for the refreshments. This is reimbursed by the TAAA Treasurer. The TAAA Refreshments Coordinator can apply to the TAAA Board of Directors for an annual budget to maintain the stock of serving supplies.

Any member interested in this position is encouraged to send their interest or questions to nvrcchair@tucsonastronomy.org. The Nomination and Volunteer Resource Committee (NVRC) would also like to encourage each member to update their profile in Member Planet at earliest opportunity to express future interest(s) in serving the club.

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 November, 2022. Events are in full swing and we are getting busy. Appreciate any help you can provide. 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. Email for questions or more information.

The requests have been updated as of Oct 28th. ***Stared** events and **bolded telescope references** still have need for volunteers. Especially in the area of Solar scopes. H-alpha is nice but white light is ok too.

Tuesday November 1 -- WEST TUCSON
Cooper Center for Environmental Learning
5403 W Trails End Rd, 85745
Grade 5; 45 Participants; Filled
Setup Time: 6:15 pm. Start: 7:00 pm. End: 8:30 pm.
Nearest Moon Phase: First Quarter
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).

Thursday November 3 - NC TUCSON
Tucson Arizona Boys Chorus @ Harlow Gardens
5620 E Pima St; Benefit (music, food, activities)
All Ages; Participants 100; Filled
Setup Time: 5:30 pm. Start: 6 pm. End: 8 pm.
Nearest Moon Phase: Between First Quarter & Full
Directions: Pima & Craycroft. East on Pima to Harlow Gardens on the south side of the street.
Viewing Location: Harlow Gardens Nursery.

Thursday November 3 -- WEST TUCSON
Cooper Center for Environmental Learning
5403 W Trails End Rd, 85745
Grade 5; 45 Participants; Filled
Setup Time: 6:15 pm. Start: 7:00 pm. End: 8:30 pm.
Nearest Moon Phase: Between First Quarter & Full
Directions: See above.

November 3 & 14 & 28 -- NW TUCSON (ORO VALLEY); Pusch Ridge Christian Academy
9500 N Oracle Rd, 85704
Grades 9-12; 35 Participants; Filled
Setup Time: 7 pm. Start: 7:30 pm. End: 9:30 pm.
Nearest Moon Phase: Between New & First Quarter
Directions: Oracle & Calle Concordia. East on Calle Concordia then immediate left (north) on Egleston Memorial Dr to school on the right.
Viewing Location: Football Field.

***Saturday November 5 and Sunday November 6 - SE TUCSON [SONOITA] (SOLAR (all day)**
Empire Ranch Cowboy Festival
Highyway 83 SE of Tucson approximately 20 miles
All Ages; 300 Participants
1-2 SOLAR Scopes needed either morning or afternoon or all day
Morning session: Setup Time: 9 am. Start: 10 am. End Time: 1 pm.
Afternoon session: Setup Time: 12 pm (Noon). Start: 1 pm. End: 4 pm.
Directions: East on I-10 to Highway 83. South on Highway 83 approximately 18 miles to paved road on left between miles post 40 & 39 (watch for brown Historic Empire Ranch sign). East on road and follow for 3 miles to Empire Ranch House.
Viewing Location: TBD.

Saturday November 5 -- FAR SOUTH (GREEN VALLEY); Canoa Ranch
5375 S I-19 Frontage Road
All Ages; 50 Participants; Filled
Setup Time: 6:15 pm. Start: 7 pm. End: 9 pm.
Nearest Moon Phase: Between First Quarter & Full
Directions: I-19 South to Exit 56. Cross under interstate, take frontage road north to park entrance.
Viewing Location: Open area center of complex.

***Wednesday November 9 -- WEST TUCSON**
Davis Bilingual Magnet Elementary
500 W St. Mary's Rd
Grades K - 5; 50 Participants
2 Scopes Needed
Setup Time: 5 pm. Start: 5:30 pm. End: 7 pm.
Nearest Moon Phase: Full
Directions: 6th St & Stone Ave. West on 6th St. 6th becomes St Marys Rd.

Wednesday November 9 -- WEST TUCSON
Cooper Center for Environmental Learning
5403 W Trails End Rd, 85745
Grade 4; Participants 50; Filled
Setup Time: 6:15 pm. Start: 7:00 pm. End: 8:30 pm.
Nearest Moon Phase: Full
Directions: See above.

***Saturday November 12 — WILLCOX**
Arizona Science Center
6777 S Zarpara Ln
All Ages; 40 participants
1 Additional Scope Needed (1 of 2 so far)
Setup Time: 5 pm. Start: 5:30 pm. End: 8 pm.
Nearest Moon Phase: Between Full & Third Quarter
Directions: From Willcox Historic Theater (Railroad Park). E Haley Rd 5.9 miles to Kansas Settlement Rd. Right at the Y. Take K.S.. Rd for 5.9 miles to Arzberger Rd. Left onto Arzberger. 2.5 miles to S. Luck Land. Left .2 miles. Left at Y. .8 miles to Zarpara Winery.
Other activities: Mission to Mars tabletop activities and displays from Willcox Senior High-Space Settlement Competition.

***Saturday November 12 -- FAR WEST TUCSON**
Tucson Mountain Park - Ironwood Picnic Area
7300 W Hal Gras Road
All Ages; 50 Participants
1 Additional Scope Needed (1 of 3total, 2 so far)
Setup Time: 5:45 pm. Start: 6:30 pm. End: 8:30 pm.
Nearest Moon Phase: 3rd Quarter
Directions: On Kinney Road, 1.5 miles south of Gates Pass Road or 3.8 miles north of Ajo Way.
Viewing Location: Right side of road (parking pullout) near the 2nd restroom facilities (right side of road) at the Ironwood Picnic area (about 3/4 of way into picnic area or approximately .6 miles).

***Tuesday November 15 - NC TUCSON**
Manzanita Elementary School
3000 E Manzanita Ave, 85718
Grades K - 5; 150 Participants
1-3 Additional Scopes Needed including maybe a couple Dobs that students can try. (1 volunteer so far)
Setup Time: 5:30 pm. Start: 6 pm. End: 7-7:30 pm.
Nearest Moon Phase: Third Quarter
Directions: Skyline/Campbell. Campbell north about .5 mile. Manzanita Ave will be on the left (west). Turn west onto Manzanita Ave and proceed one block to school parking lot.
Viewing Location: Basketball Court.

Wednesday November 16 -- WEST TUCSON
Cooper Center for Environmental Learning
5403 W Trails End Rd, 85745
Grade 4; 18 Participants; Filled
Setup Time: 6:15 pm. Start: 7:00 pm. End: 8:30 pm.
Nearest Moon Phase: Third Quarter
Directions: See Above

Wednesday November 16 -- SW TUCSON NEAR THREE POINTS (Hwy 86 & 286)
Alter Valley School District
9875 S Sasabe Rd
Grades 4 - 8; Participants 150; Filled
Setup Time: 5 pm. Start: 5:30 pm. End: 7 PM.
Nearest Moon Phase: Third Quarter
Directions: Hwy 86 (Ajo Highway) to Three Points. South one mile on Sasabe Rd to the Robles Elementary School; Viewing Location: Field.

***Friday November 18 -- NORTH WEST TUCSON**
PCC NW Campus, AZ STEM Adventure
7600 N Shannon Rd
Grades 4 - 8; 150 Participants
1-3 Additional Scopes SOLAR & DAYTIME MOON (1 solar volunteer so far)
Setup Time: 7:45-8:30 AM Start: 9 AM End: 1:30 PM
Viewing Location: TBD.

***Friday November 18 -- SOUTHEAST TUCSON (Vail); Acacia Elementary**
12955 E. Colossal Cave Rd.
Grades K - 5; 100+ Participants
1 Additional Scope Needed + Night Sky Network Toolkit (1 scope volunteer so far)
Setup Time: 5 pm. Start: 5:30 pm. End: 7 pm.
Nearest Moon Phase: Third Quarter
Directions: Colossal Cave & I-10. Take Colossal Cave/Wentworth exit # 279 going east. The school is about two miles down on Colossal Cave Rd. (left side)
Viewing Location: TBD. Courtyard or School Field

Friday November 18 -- ONLINE
Virtual Star Party
Online streamed to YouTube
All Ages; Participants 150; Filled
Setup Time: 6:30 pm. Start: 7 pm. End: 9pm
Nearest Moon Phase: Third Quarter

***Saturday November 19 -- SOUTHEAST TUCSON**
Saguaro National Park East (SOLAR)
3693 S. Old Spanish Trail, 85730
All Ages; 75 Participants
1 Additional SOLAR Scope Needed (1 so far)
Setup Time: 12:15 pm. Start: 1 pm. End: 3 pm.
Nearest Moon Phase: Third Quarter
Directions: I-10 Exit 275. North on Houghton for 8 miles to Escalante. East on Escalante for 2 miles to Old Spanish Trail. N on Old Spanish for .3 miles to Park entrance. ALTERNATE: Houghton/22nd St. south on Houghton to Old Spanish Trail. East (left) on Old Spanish Trail 2.8 miles to Park entrance.
Viewing Location: Visitor Center

Saturday November 19 -- SOUTHEAST TUCSON
Cienega Creek Natural Preserve
16248 E Marsh Station Rd (Vail)
All Ages; 50 Participants: Filled.
Setup Time: 5:45 pm. Start: 6:30 pm. End: 8:30 pm.
Nearest Moon Phase: Third Quarter
Directions: Exit 281. Get on Marsh Station Rd and head east/north, paralleling the interstate for a short distance. Approximately 3 miles from exit 281 to Cienega Creek Natural Preserve.
Viewing Location: Parking area at trailhead.

***Monday November 21 -- WEST TUCSON**
Cooper Center for Environmental Learning
5403 W Trails End Rd, 85745
Grade 3; 50 Participants
1 Scope Needed (1 of 2 so far)
Setup Time: 6:15 pm. Start: 7:00 pm. End: 8:30 pm.
Nearest Moon Phase: New
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).

Wednesday November 30 -- Oro Valley
Oro Valley Public Library
1305 W Naranja, 85737
All Ages; 30 Participants; Filled + Library Telescope.
Setup Time: 5:30 pm. Start: 6 pm. End: 7:30 pm.
Nearest Moon Phase: First Quarter
Directions: Ina & La Canada. North on La Canada to Naranja Dr. Right (east) on Naranja to Library on the south side of street.
Viewing Location: Tree of Life Knowledge area by front entrance.

Connecting Astronomy with the Public

November 2022 *by Jim Knoll*

Zane Landers & Jim Knoll @ Home School solar & daytime moon event.

Wow! Lots of outreach taking place within TAAA and I appreciate everyone helping make that happen. Outreach can be very rewarding and I hope you give it a try at least once for yourself. You just never know what life you will change. In October, we accomplished 14 of 18 school/public events (4 weather cancelled) and 7 of 10 paid events (3 weather cancelled). Some nights had several events taking place. We can't do this level of activity without the great volunteers supporting these events. For both programs we had over 25 volunteers in October. Some of the events include Chiricahua National Monument, Evening Under the Stars at the TAAA Chiricahua Astronomy Complex (CAC), Elfrida and Ash Creek Library, Several schools to include Sabino High School, Wakefield Middle School, Tanque Verde HS, Classical Conversations Home School and many more. We also supported Tucson Stargazing Adventures paid events for several private family or group gatherings and several resorts. These fundraising events help support CAC operations and maintenance.

Private event using CAC 40-Inch telescope (Bob Rose & Jim Knoll)

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Jim Knoll @ Stardance Event Center

We are definitely in prime time for outreach. In November, we have 29 school/public and Tucson Stargazing Adventures events.

Jim Knoll, Jim O'Connor, Rick Paul, and Gary Wells @ Stardance

Bernie Stinger has assumed the Public/School Star Party Program Manager. Please give him all the support to continue this great outreach activity. I will continue doing the Tucson Stargazing Adventures program management.

Eclipse 2024 Cruise Trip Option

By Doug Smith

DISCLAIMER:
THE FOLLOWING INFORMATION IS PROVIDED BY THE AUTHOR AND DOES NOT REPRESENT THE VIEWS OF THE TUCSON AMATEUR ASTRONOMY ASSOCIATION (TAAA). THIS INFORMATION DOES NOT REPRESENT ANY ENDORSEMENT OF PRINCESS CRUISE LINES BY TAAA. TAAA HAS NO RELATIONSHIP OF ANY KIND WITH PRINCESS CRUISE LINES. THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDE FOR INFORMATION PURPOSES ONLY

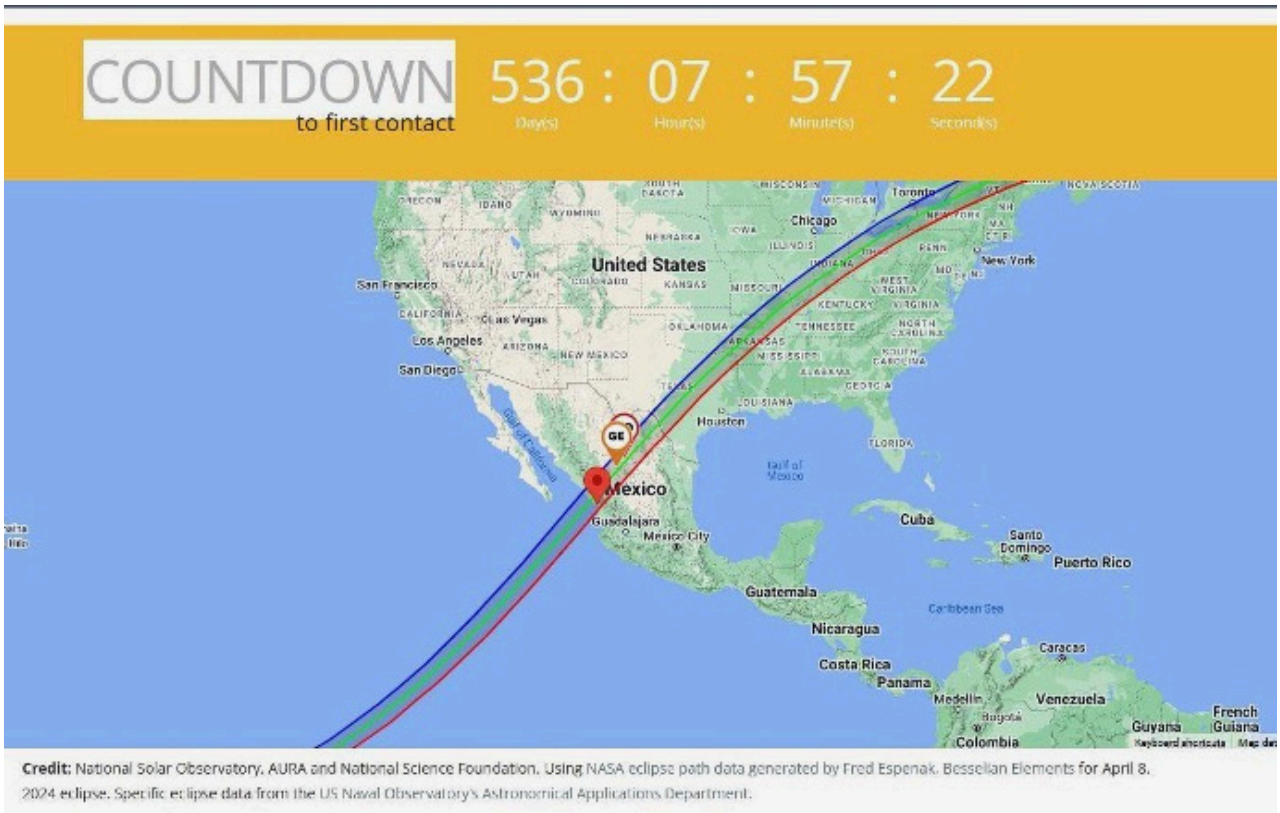
For anyone interested in seeing the April 2024 total eclipse of the Sun.
This is an alternative to the 'special' eclipse tours that are being arranged. These tours can be very expensive, 3k and up per person. Also, last time I checked some of them were already booked up solid. The prices will continue to rise as the eclipse date gets closer. The majority of those tours are land tours heading to Texas.

My wife and I are avid cruisers (32 cruises and counting) and there are several major cruises lines that operate out of LA that regularly cruise to Mazatlan on their regular itinerary. Dock space is very limited in the Mazatlan harbor (only 2 cruises ships can be in port at the same time) so they get there on different days. So I started checking (more than a year ago) to see if one of the cruise lines would be in Mazatlan on April 8, 2024. As it turned out Princess cruises lines will be there on April 8, 2024. So we booked the cruise.

This cruise is quite a bit cheaper than the special eclipse tours. And you will be in the best place to view the eclipse (see following slides).

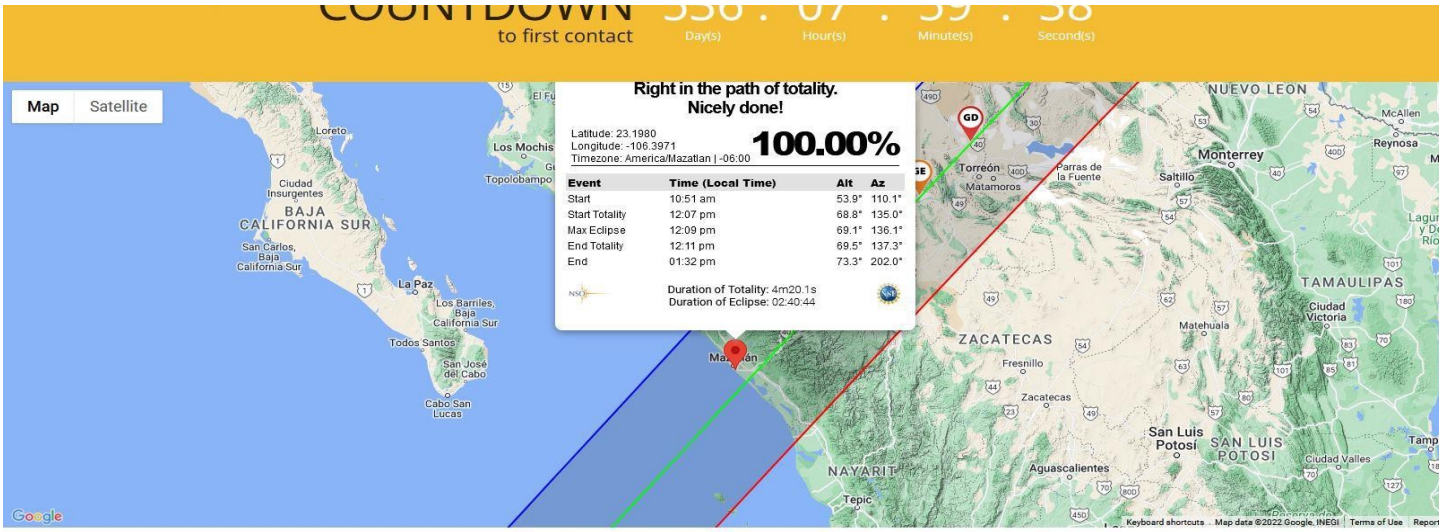
So far, only Princess and Holland America cruise lines have announced a cruise that will be in Mazatlan on April 8. The Holland America cruise is also booking up fast and costs more than the Princess cruise (it's a 15-day cruise).

The following image shows the entire eclipse path of totality across North America



The Red Mark is located at Mazatlan, Mexico

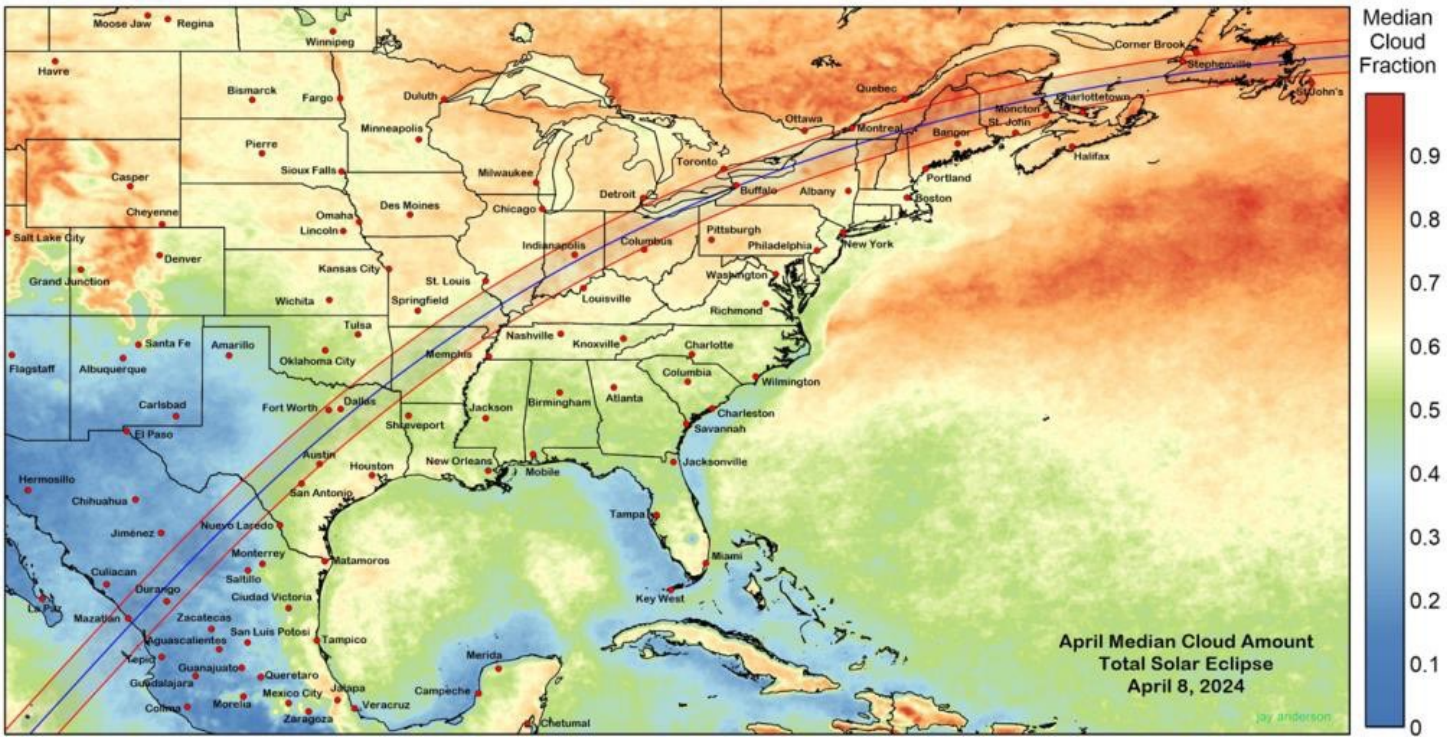
Here I zoomed in on where the totality path makes landfill on the Mexican coast.



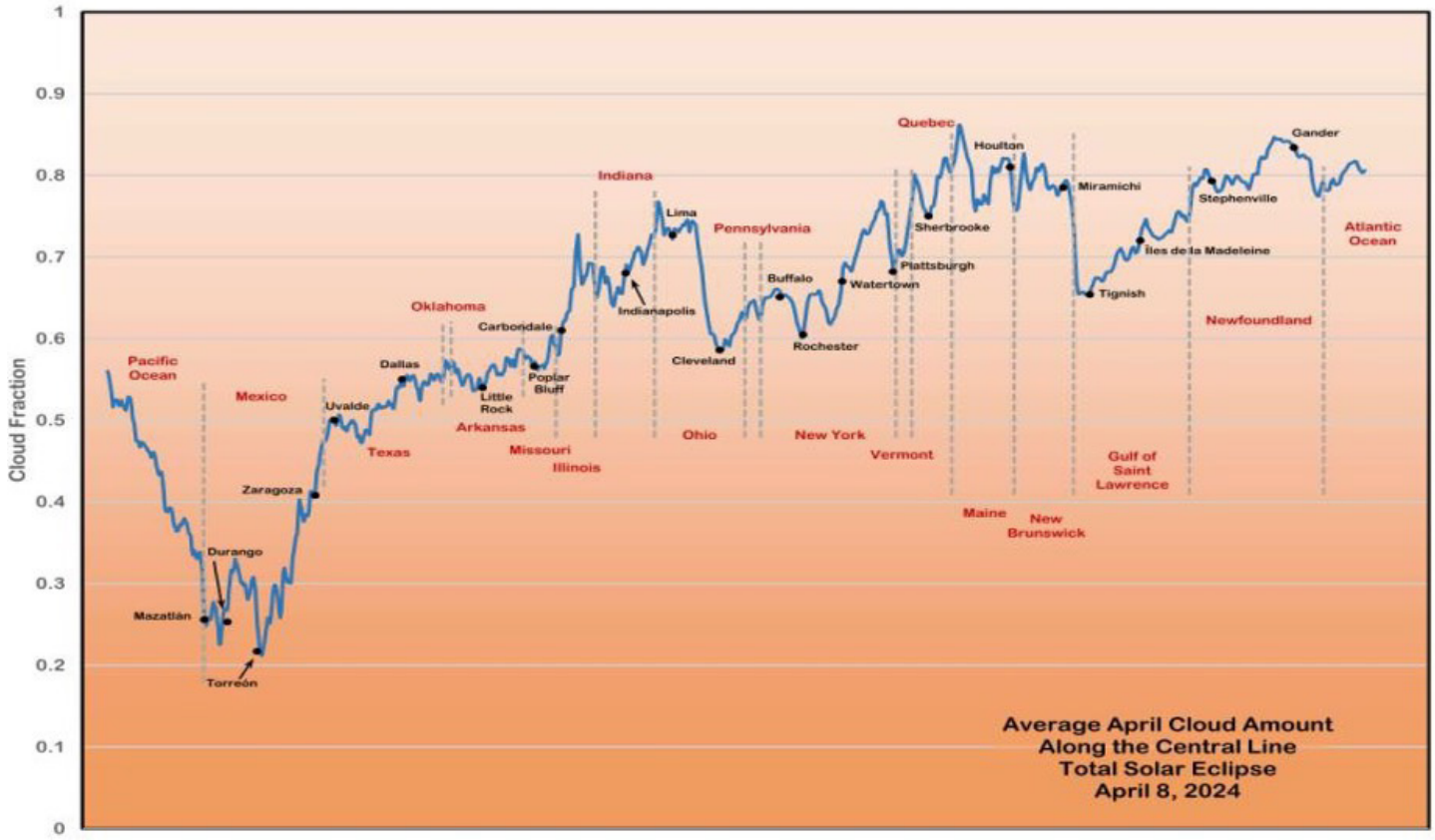
Credit: National Solar Observatory. AURA and National Science Foundation. Using NASA eclipse path data generated by Fred Espenak, Besselian Elements for April 8, 2024 eclipse. Specific eclipse data from the US Naval Observatory's Astronomical Applications Department.

Here the red mark is the harbor mouth where the ship will be docked. Note the length of the eclipse of 4 minutes 20 seconds. That's only 7 seconds less than longest possible eclipse (where the GD and GE marks are.

This image shows the expected weather on April 8, 2024. It's based on the weather over the last 25 years. My wife and I have been to Mazatlan over 30 times (on cruises) during all times of the year and we have never seen a single cloud!



This image is similar to the previous image, but shows the data in a slightly different form. Again, look at Mazatlan (lower left corner) compared to the path through the US.



Cruise Information:
The cruise is on the Princess Discovery. It departs LA on April 3, 2024, returns on April 13, 2024. This is an 11-day, 10-night cruise down the Mexican Pacific coast, with stops in Cabo San Lucas, Mazatlan, Puerto Vallarta and Manzanillo. The ship will be docked at Mazatlan on April 8 (eclipse day) from 8 AM until 5 PM. There will be some special speakers on the ship giving talks about the eclipse.

We reserved an inside stateroom for a little over $900 per person two months ago. The prices have gone up considerably since then and all the ocean view cabins and suites are sold out already.

by Doug Smith

What's Up list for November-December 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 this month for the more common observing programs.

Constellation Hunter Program – Northern Skies
The following constellations are well placed for observing for November and December:
Andromeda, Aquarius, Aries, Cassiopeia, Cepheus, Lacerta, Pegasus, Pisces, Triangulum

Messier Observing Program
The summer Milky Way is setting early. The winter Milky Way is not rising until late. Now we are looking away from Milky Way so objects are more sparse. The following Messier Objects are well placed for observation during November and December (listed in ascending RA): M52, M110, M31, M32, M103, M33, M74, M76.

Lunar and Binocular Observing Program
The following is a list of dates for the lunar phase for observations during November and December:
New Moon: November 23, December 23
40 Hours waxing: November 25, December 25
72 hours waxing: November 26, December 26
4 days old: November 27, December 27
7 days old: November 1, November 30, December 30
10 days old: November 3, December 3
Full (14 days old): November 8, December 8
Gibbous: November 16, December 16
72 hours waning: November 20, December 20
40 hours waning: November 21, December 21

Solar System Observing Program
The following list describes the various solar system objects and their visibility in November and December:
Mercury is an early evening object during most of November and all of December. Greatest elongation is on December 20.
Venus is an evening object during November and December, moving further from the Sun each day. By the end of the year it is setting about one hour after Sunset.
Mars is rises earlier each day in November and December, reaching opposition on December 7. Very well placed for evening observation.
Jupiter is well placed for viewing during November and December. Just past opposition, it's well up when the Sun sets and is visible until around 11 PM.
Saturn is still well placed for early evening observation during November. By December however, it is setting around 10 PM and continues to set earlier each day during December.
Uranus is well placed for evening observation. It reaches opposition during the first week of November.
Neptune is well placed for evening observation. Stays relatively close to Jupiter during November and December.

Urban Observing Program
The following deep sky objects are well placed for observing during November and December:
NGC 7662, NGC 7789, NGC129, M32, M31, NGC457, NGC663, Cr 463, NGC 752

T**he following Double Stars** are well placed during November and December: Eta Cassiopeia, Gamma Aries

Steward Observatory Public Evening Lecture Series

We are thrilled to be able to celebrate 100 years of presenting lectures on astronomy and telescope viewing to the public by offering a special Public Evening Lecture on the 100th Anniversary of the very first Steward Public Evening. Please save the dates for the following Public Evening Lectures, which will begin at 7:30 p.m. in Steward Observatory Room N210 and on ZOOM at the URL: https://arizona.zoom.us/j/4470189357

All of the lectures and the use of the telescope are free of charge and open to the general public. For more information, go to the Evening Lecture Series page. Sign up for our monthly Astronomy Newsletter at: https://signup.e2ma.net/sign up/1797802/1759894/. Click here to stream podcasts of previous Public Evening Lectures.

Fall 2022 Centennial Year Lectures

Nov. 14	Dr. Laird Close Steward Observatory	Adaptive Optics at Steward Observatory
Nov. 28	Dr. Becca Levy Steward Observatory	A JWST View of Starburst Galaxies: Sweet Data Coming Soon!

LPL Evening Lecture Series

Each fall semester, the LPL Evening Lecture Series presents LPL scientists discussing their latest scientific research and space mission projects. Lectures (including time for Q&A) are held on Wednesday evenings, 7:00 to 8:00 p.m., in The University of Arizona Kuiper Space Sciences Lecture Hall, Room 308 and livestream via Zoom. Doors open at 6:30 p.m.

Nov 16	Dr. Sukrit Ranjan Assistant Professor, LPL	TBA

Fred Lawrence Whipple Observatory (FLWO)

The largest satellite facility of the Smithsonian Astrophysical Observatory (SAO), part of the Center for Astrophysics | Harvard & Smithsonian. Located on Mt. Hopkins in southern Arizona, this remote site is home to a number of telescopes, including the 6.5 meter MMT Observatory.

They host many on-line presentations by eminent astronomers. Check out their web site and Calendar.

AAVSO Meeting in Tucson

The American Association of Variable Star Observers (AAVSO) is holding its Annual Meeting and Workshop in Tucson from November 4-7 this year (https://www.aavso.org/111).Tucson Amateur Astronomy Association members are welcome to participate

The meeting will be at The Omni Tucson National Resort in Arizona and will begin with an opening reception and keynote speaker on November 4, and be followed by two full days of research presentations by other keynotes and AAVSO citizen scientists. The presentations on Nov. 5 & 6 will be broadcast online for those attending remotely. AAVSO's day-long Workshop will be in-person only on Nov. 7: "Advanced Use of AstroImaging for Exoplanet Observing" w/ instructor Dennis Conti.

The registration deadline is October 30th.
If you have questions contact:

Lindsay Ward (she/her)
AAVSO Communications Manager
(617) 354-0484 x 100
Lward@aavso.org

Skyward

By Dr. David H. Levy

November 2022

Goodbye, Wendee.

Dear readers,

What follows is the most difficult article I have ever written. On Friday, September 23, 2022, my wife Wendee died. She had been suffering from metastatic breast cancer for over a decade, but this past summer she was truly and clearly suffering. We had an oncologist who was good clinically but who had no bedside manner, and a nurse practitioner who was very good, but a bit of a pollyanna. Therefore, when Wendee began to destabilize by the hour near the end of September, I was just not prepared for it.

Wendee and I were together for more than thirty years, and we were married for the last 25 of them. We got together as the result of a fix-up. When Wendee's mom and my mom resumed their childhood friendship in 1985, my father has just died from Alzheimer's Disease. They got together in 1985 in Montreal and immediately shared stories about their children. Wendee, it turned out, had just separated from her first husband and I was long since divorced from my "practice wife." They decided to try to bring us together. Wendee was the first to reject the idea: "I am a dog person; he is a cat person," she said, and I just ignored my mom's suggestion. Every year, or two, mom would repeat her suggestion. After seven years, Mom asked again, and when I still had not done anything, she annoyingly chastised me and said, "forget the whole thing. Forget I ever asked you." I took that as a challenge. On March 23, 1992 (one year to the day before I co-discovered Comet Shoemaker-Levy 9 that would strike Jupiter in 1994) I typed out a post card to her in Las Cruces. She replied and we finally met that summer. After lunch and a conversation with her and her two sisters, I returned to Clyde and Patsy Tombaugh's house. When Patsy answered the door she asked "Well, how did your date go?" I looked at her and replied, "Patsy, I have just spent time with the three most beautiful women I have ever met!"

Early in our relationship, we were driving near Las Cruces. It was a clear dark night and we got out of the car. Wendee looked up and asked me, "What star is that?" "That bright star," I answered her, "is Vega." Just then Wendee recalled that her first husband, long since divorced, had warned her that he would never answer her questions more than once. Wendee then inquired of me, "David, if I were to ask you every night, looking at that same star, the same question, 'What star is that?' what would you do?"

"I would explain to you, every night," I replied, "that star is Vega. "And I would never, ever, tire of it." On another evening I was driving Clyde and Patsy back from a dinner engagement." Clyde was sitting up front with me, and Wendee was in the back seat with Patsy. "Clyde, I am going to take you home first and then I will take Wendee home."

"David," why not just drop Wendee off on the way? It would be faster."

"Clyde I may want to hug her and give her a big kiss."

"That's okay. We'll wait!"

The group in the car got silent. I looked back towards Wendee, then to Clyde, and I said, "Clyde, I am taking you and Patsy home first." As Wendee and Patsy laughed in the back seat, Clyde said, "OK. Now that you explain it."

We took three trips to Israel together, the last two of which were part of my doctoral work at the Hebrew University on the night sky in Shakespeare's time. I loved that particular period in my life, and Wendee and I had a lot of fun navigating the multitude of rules and regulations that the University appeared to make up as we went along. Near the end of that process, I wrote a routine question about the dimensions of the European paper I needed to use. The next morning I found Wendee looking at her email. "I need for you to read this message now," she said. "Is it good news?" "I do think so." The letter was from the Hebrew University, announcing that the University Senate had just awarded my Ph. D. and that they hoped we would come to Israel to receive the degree in person. We spent the remainder of that happy day making flight arrangements.

Wendee served as director of our Jarnac Observatory, and I served as her assistant. I used it every clear night. During the 26 years we lived in our Vail home, I discovered only one comet, in 2006. The comet was confirmed by the Central Bureau for Astronomical Telegrams just as we returned home from the Yom Kippur services. I was so overwhelmed by the message that I printed it, and then without a word, cried as I walked back to the house and showed it to Wendee.

During our marriage I wrote most of my books. One morning I found Wendee reading a looseleaf book. "You never told me you wrote a book about your dog when you were ten years old." She found that crazy old book the most delightful she had seen, and she wanted me to revise it.

In the spring of 2022, all the treatments stopped working. Wendee insisted that I go to this last year's Adirondack Astronomy Retreat, but she was obviously suffering. We made a 911 call in mid-September, and shortly before we made a second one a week later, I presented her with the first copy of Clipper, my new book for children. She was able briefly to hold it up and examine the front and back covers. With that second 911, I was pretty certain she would never be coming home. Wendee died on Friday evening, September 23. She was 73 years old.

The night before her funeral, our son-in-law Mark, our grandson Matthew, and I were enjoying an evening in the observatory. Matthew saw a bright meteor, and I was questioning him on its direction, I saw a faint one. Mark saw a third meteor. I like to think that this minor outburst of the October Cygnid meteor shower – three meteors within a period of about 5 minutes – were Wendee's goodbye. Rest in peace, my dearest Wendee.

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.