

TAAA DESERT SKIES BULLETIN

Observing Our

Since



Desert Skies

1954

November 2021

www.tucsonastronomy.org

Membership Meeting

November 5 @ 6:30 pm - 9:00

TAAA's next general member meeting will be held online on Friday, November 5, 2021. The Main Presentation starts at 6:30 PM and is open to the public. It will be followed by a Members Only Meeting. Non-members may attend the Main Presentation via Facebook at <https://www.facebook.com/TucsonAstronomy/>. Members should attend the meeting via Zoom. The Zoom link will be sent to members via email before the meeting.

Main Presentation at 6:30 AZT

"David Levy's Two Astronomy Careers: Rewards and Challenges"

Over the course of the last 60 years, David Levy has followed two different paths to the night sky. In his own words, "One is the observing, the search for comets, which includes the discoveries of 23 comets including Shoemaker-Levy 9. The other relates the night sky to English Literature. This lecture will cover the joys and the challenges of this double-pronged approach to the night sky, in which the first grabs my heart, and the second touches my soul."

Presenter: David Levy is arguably one of the most enthusiastic and famous amateur astronomers of our time. Although he has



never taken a class in astronomy, he has written over three dozen books, written for three astronomy magazines and appeared on television programs featured on the Discovery and the Science Channels. Among David's accomplishments are 23 comet discoveries, the most famous being Shoemaker-Levy 9 that collided with Jupiter in 1994, a few hundred shared asteroid discoveries, an Emmy for the documentary Three Minutes to Impact, five honorary doctorates in Science and a PhD which combines astronomy and English Literature. Currently, he is the editor of the web magazine Sky's Up!, and has a monthly column, Skyward, in the Vail Voice community newspaper. David is a long time member and former president of the TAAA. He continues to hunt for comets and asteroids, and lectures worldwide.

October 2021

October has been another busy month with star party activities continuing to increase, a continued increase in membership, and substantial work in the club both by leaders and by the Board. We still had some weather issues but more good viewing days than in summer. We welcome the return of some of our winter residents. The Board also had a training presentation from a CPA highlighting recent IRS regulations on the reporting of non-cash contributions. Additionally, reporting of and management of donations from donors who wish to remain anonymous was reviewed in light of the IRS 990 donor disclosure requirements.

Some of the actions at the October Board meeting included:

1. Approval of the hiring of a nonprofit attorney to issue a written opinion letter regarding the IRS status of the proposed Member Observatory Project and to review and provide written feedback on the recently re-written Member Observatory Plan draft lease agreement.
2. The purchase of a software plug-in which would facilitate development of an online reservation system for the sleeping rooms at CAC.
3. Full enclosure of both the learning center buildings being built at CAC.
4. No change in TAAA COVID Policies.
5. Retention of the December 11th date for the TAAA Holiday Party and discussion of possible telescope sales at the party.
6. Approval of the lease for the Member Observatories that was distributed at the September TAAA Board meeting.
7. A presentation was made by the CAC Fund Raising Support Committee, indicating that \$333,000 of the original proposed \$450,000 needed for the Learning Center Project was previously collected and that fund-raising efforts are now

by Mae Smith

underway to raise the additional dollars needed to complete the project. While there were cost increases during the project, cost cutting measures were also taken in an effort to contain the increases.

In addition to the CPA training and actions taken by the Board, the President's Report at the October Board meeting included an update on some other items of interest including:

1. There were several excellent candidates for the TAAA Juror Position designed by the National Park Service to assist in the selection of Astronomers in Residence at the Grand Canyon. Jim O'Connor was appointed.
2. Confirmation has been received from NPS that for the Grand Canyon Star Party, TAAA's usual free campsites in the Aspen Loop Section of Mather Campground have been reserved for the 2022 GCSP. The request for an additional Friday night prior to the event was approved. (As usual, reservations must be made through TAAA at the appropriate time. A call for reservations will be sent in 2022 with specified dates in which applications must be filed.)
3. Currently, a review and potential update is being conducted of the original CC&Rs for the CAC property.
4. NVRC has been reviewing TAAA's elections processes and structure, and organizing suggestions.
5. A TIMPA Provisional Planning Group was formed to support management and growth of TIMPA.
6. TAAA Fund-Raising efforts are in process of increasing. Volunteers and avenues to pursue are being explored both supportive of and in addition to efforts related to the current CAC Construction Project and to TAAA programming efforts.
7. The Friday Meeting Organizing Group is setting up a date for further testing and development of digital assets for the Friday Member Meetings.

The Trivia Activity for this month is to match the names of the TAAA Presidents with the appropriate dates of service. Names of Presidents alphabetically are presented here.

(Should you have questions or wish to discuss anything in the Trivia, contact [Mae Smith.](#))

Alphabetical list of TAAA Presidents	Years of Service as TAAA President
Ben Bailey	1954-1956
Earl Burch	1956-1957
Tom Caudell	1957 -1976
Andy Cooper	1976-1978
Ron Ferdie	1978-1980
Bob Gilroy	1980-1983
Tim Hunter	1983-1985
John Kalas	1985-1988
Dean Ketelsen	1988-1991
Terri Lappin	1991-1995
David Levy	1995-1998
Bill Lofquist	1998-2001
Dennis Nendza	2001-2003
Duane Niehaus	2003-2006
Tom Peck	2006-2008
Keith Schlottman	2008-2010
Ken Shaver	2010-2013
Mae Smith	2013-2015
Don Strittmatter	2015-2018
Earl Sydow	2018-current

School/Public Star Party Requests

November 2021

by Jim Knoll

Thank you for volunteering your time and talents for our extremely important outreach mission. Below is the Star Party list for November, 2021. 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 Astronomy Events are listed on the TAAA (tucsonastronomy.org) and Night Sky Network (NSN) (nightsky.jpl.nasa.gov) calendars. You do not need to log in to see any PUBLIC events. You need to LOG IN to see the school/non-profit non-public star party listings. 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.

Tuesday November 2 -- NORTHEAST TUCSON

Westin La Paloma Resort, 3660 E Sunrise Dr.
University of Arizona Registrar's Gala
Age/Grade Level: Adults, # Participants: 100
3 Scopes Needed, Setup: 6:15 pm. Start: 7. End: 9.
Directions: Sunrise Dr and Swan Rd. West on Sunrise Dr to Via Palomita. South on Via Palomita to Resort entrance. Viewing Location: TBD

Thursday November 4 — EAST TUCSON

Myers/Ganoung Elementary, 5000 E Andrew St.
Age/Grade Level: Adults, # Participants: 100
FILLED: 0 Scopes Needed (Toolkit Only) (Tom Sarko/Pete Hermes scheduled)
Setup: 4:15 pm. Start: 5 pm. End: 6:30 pm.
Directions: 22nd & Craycroft. West on 22nd to Rosemont Ave. South on Rosemont to E Andrew St. West on Andrew to school. Viewing Location: TBD.

Saturday November 6 and Sunday November 7 SE TUCSON [SONOITA] SOLAR (all day)

Empire Ranch Cowboy Festival
Age/Grade Level: All Ages, # Participants: 300
Additional SOLAR Scopes needed either morning or afternoon (Bernie Stinger scheduled)
Morning session: Setup: 9 am. Start: 10 am End: 1 pm
Afternoon: Setup: 12 (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 6 -- FAR WEST TUCSON

Pima County (NRPR) - Tucson Mountain Park
Ironwood Picnic Area, 7300 W Hal Gras Road,
Age/Grade Level: All Ages, # Participants: 50
1 Additional Scope Needed (Rick Paul & Bryan Betcher scheduled)
Setup: 5:30 pm. Start: 6:30 pm. End: 8:30 pm.
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 (3/4 of way into picnic area or approximately .6 miles).

Tuesday November 9 -- WEST TUCSON (NEW)

Cooper Center for Environmental Learning
5403 W Trails End Rd, 85745
Grade 4 & Adults, # Participants: 65
3 Scopes Needed
Setup: 5:45 pm. Start: 6:30 pm. End: 8:30 pm.
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).

(November 2021 School/Public Star Party Request Continued)

Wednesday November 10 -- NE TUCSON

Tanque Verde Elem. School, 2600 N Fennimore Ave.

Age/Grade Level: Grade 1

Participants: 75, 2 telescope needed

Setup Time: 5:30 pm. Start: 6 pm. End: 7:30 pm.

Directions: East on Tanque Verde past Houghton Road. Continue past 49er Country Club to Fennimore (Hawk crossing light). Turn north to the school. Viewing Location: Behind school.

Wednesday November 10 -- CENTRAL TUCSON

Northminster Christian, 2450 E Fort Lowell Rd 85719

Age/Grade Level: Grades 1 - 5, # Participants: 25

1 Telescope Needed

Setup Time: 5:30 pm. Start: 6:15 pm. End: 7:30 pm.

Directions: Fort Lowell & Tucson Blvd. West on Fort Lowell 1/2 block to school on south side of street.

Viewing Location: Children's Courtyard.

Saturday November 13 — Elfrida (Cochise County near CAC)

Elfrida/Sunsites Library, 10552 US-191, Elfrida

Age/Grade Level: All Ages, # Participants: 75

FILLED 0 telescope needed (Jim Knoll and Tom Sarko scheduled)

Setup Time: 6:15 pm. Start: 7 pm. End: 8:30 pm.

Directions: Dragoon Rd east to US-191. South on US-191 to Elfrida; Viewing Location: TBD.

Saturday November 13 — WEST TUCSON

Raytheon American Indian Network (RAIN); King Canyon Trailhead near the Arizona-Sonora Desert Museum; 2021 N Kinney Rd

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

1 additional telescope needed (Jim O'Connor scheduled)

Setup Time: 5:30 pm. Start: 6 pm. End: 7:30 pm.

Directions: Speedway west over Gates Pass Road. North on Kinney road to the Desert Museum. The King Canyon Trailhead is across Kinney from the Desert Museum entrance.

Viewing Location: King Canyon Trailhead.

Saturday November 20 -- WEST TUCSON

Cooper Center for Environmental Learning

5403 W Trails End Rd, 85745

Age/Grade Level: Adults, # Participants: 100

Donor Recognition/Teacher Appreciation

3 Scopes Needed

Setup Time: 5:45 pm. Start: 6:30 pm. End: 8 pm.

Directions: West on Grant Rd, becomes Silverbell, becomes Ironwood Hills Drive which dead-ends at Camino De Oeste. Turn south. ALTERNATE: West on Speedway west of I-10. North on Camino De Oeste. Both paths: Turn west on Trails End Road and follow signs to "Cooper Center".

Viewing Location: Open area near restroom facilities. Access the site from the dirt road at the east end of the main parking lot (near the dumpsters).

Saturday November 27 -- NORTHEAST TUCSON

Agua Caliente Park, 12325 E Roger Road, 85749

Age/Grade Level: All Ages, # Participants: 50

4 Scopes Needed

Setup Time: 5:45 pm. Start: 6:30 pm. End: 8:30 pm.

Directions: Tanque Verde Road east past Houghton to Soldier Trail. Go about two miles north to Roger Rd. Turn east for about 1/2 mile to the Park on the left (north); Viewing Location: Parking Lot Bus Lanes (north end of parking lot).

Tuesday November 30 -- WEST TUCSON

Tucson International Academy, 2700 W Broadway

Age/Grade Level: Grades K - 12, # Participants: 400

4 Scopes Needed

Setup Time: 5:30 pm. Start: 6 pm. End: 8 pm.

Directions: From I-10, west on St. Mary's -- becomes Anklam. Anklam to Greasewood. South for .1 mile to Broadway. West on Broadway for 1/4 mile. School will be on the right (north).

Viewing Location: Front parking lot.

Tuesday November 30 — EAST TUCSON

Irene Erickson Elementary, 6750 E Stella Rd

Age/Grade Level: K-5, # Participants: 75

FILLED: 0 Scopes Needed (Toolkit Only) (Tom Sarko/Chris Welborn scheduled)

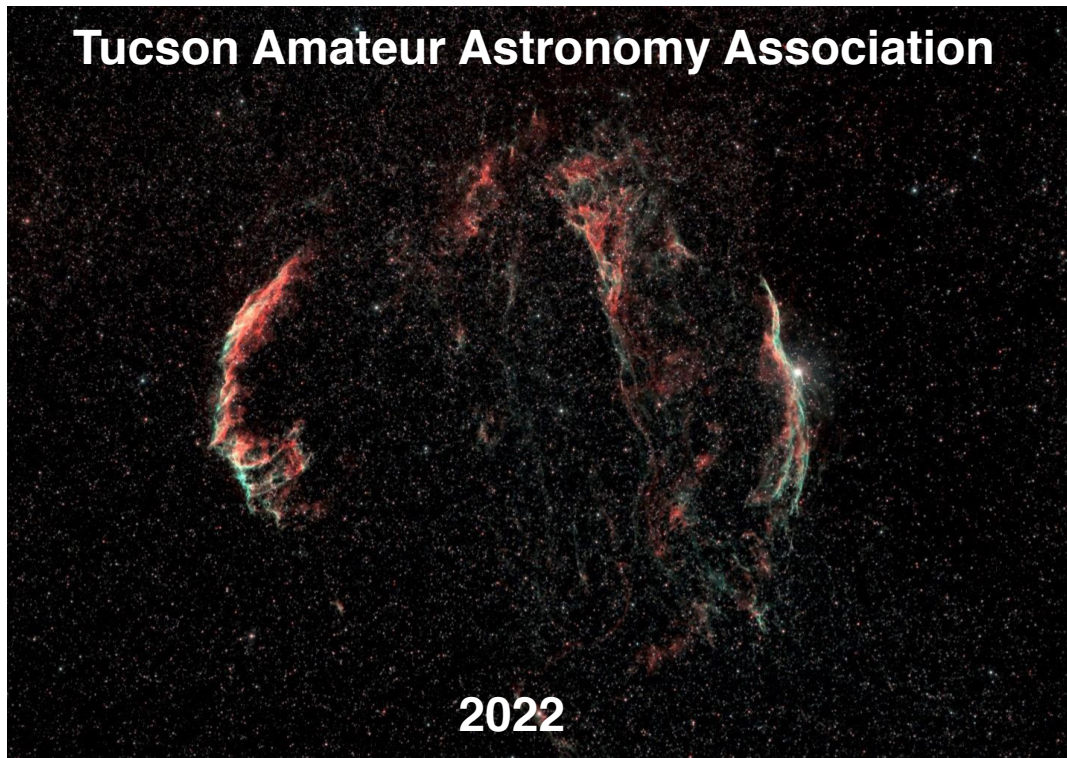
Setup Time: 4:15 pm. Start: 5 pm. End: 6:30 pm.

Directions: Golf Links and Kolb. South on Kolb to E Stella rd. West on Stella to school on the left/south.

Activity Location: Cafeteria.

TAAA 2022 Calendar

Tucson Amateur Astronomy Association



The 2022 TAAA calendars are available. Only 28 left so hurry! The cost will be \$15 each.
To order your calendar, please contact: [Susan OConnor](#)

Special Interests Groups

Astronomy Fundamentals SIG

by Connor Justice

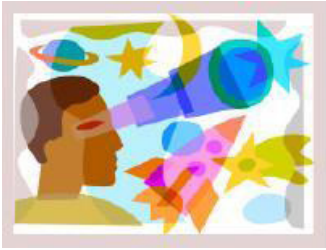
The next meeting is **November 11 at 6:30 pm - 8:00 pm**. Topics to be determined.
Contact [Conner Justice](#) for Zoom link and more information. [AFSIG on the Web](#)
Access videos of previous meetings through the Members Only section of the TAAA web site.

TAAA Ladies Night Out

by Susan O'Conner

TAAA Ladies Night Out
Thursday, November 18, 6:30pm

Polish Cottage
4520 E Broadway
(S side of Broadway between Columbus and Swan)
Preview the menu at polishcottageaz.com
RSVP [Susan](#)



Starry Messengers Special Interest Group

Opening Minds to the Universe

The next Starry Messengers SIG meeting will be held via Zoom on Monday, November 8th at 7 - 8:30pm
[Zoom link](#)

The demand for toolkit activities is starting to increase. Two events in November will be supported by Tom Sarko, Pete Hermes, and Chris Welborn who will use the Exploring the Solar System and the Space Rocks toolkits. The Light Pollution Education kit will be made available to a teacher for use in her classroom in January.

Anyone interested in learning toolkit activities should contact [Terri Lappin](#) (520-977-1290). Toolkit topics can be reviewed on the [TAAA website page](#).

Our plans are moving forward on the premise that the UofA ScienceCity event will take place the weekend of March 12th & 13th. We plan to use the materials we had prepped for ScienceCity 2020. However, we likely need to make changes to meet COVID protocols. The theme is the search for life on Mars. The topic remains current given the excitement of the Perseverance Rover exploration of Mars with the added abilities demonstrated by the Ingenuity helicopter. The difference is that we know both aspects of the mission have been successful!

We should have the UA ScienceCity COVID protocols by our November 8th meeting, so we'll discuss changes we need to make to the planned activities.

In 2022, the Starry Messengers will start meeting monthly! This is exciting as it means we have enough activity to warrant monthly meetings. Anyone interested in astronomy outreach can attend SMSIG meetings, or if meetings aren't your thing, just volunteer to do outreach with us!

[Terri Lappin](#) [SMSIG on the Web](#)

Astro-Imaging SIG

by Gregg Ruppel

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

AISIG meetings going forward will be on the 3rd Monday of each month.

Check out [AISIG On the Web](#) or contact [Greg 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 page.

October Highlights from the Astro-Imaging SIG



Elephant Trunk Nebula from Tom Eby

81x2 min, R8 f/2. asi2600 camera. Unguided on CEM70ec mount. PI / CS5 processed.

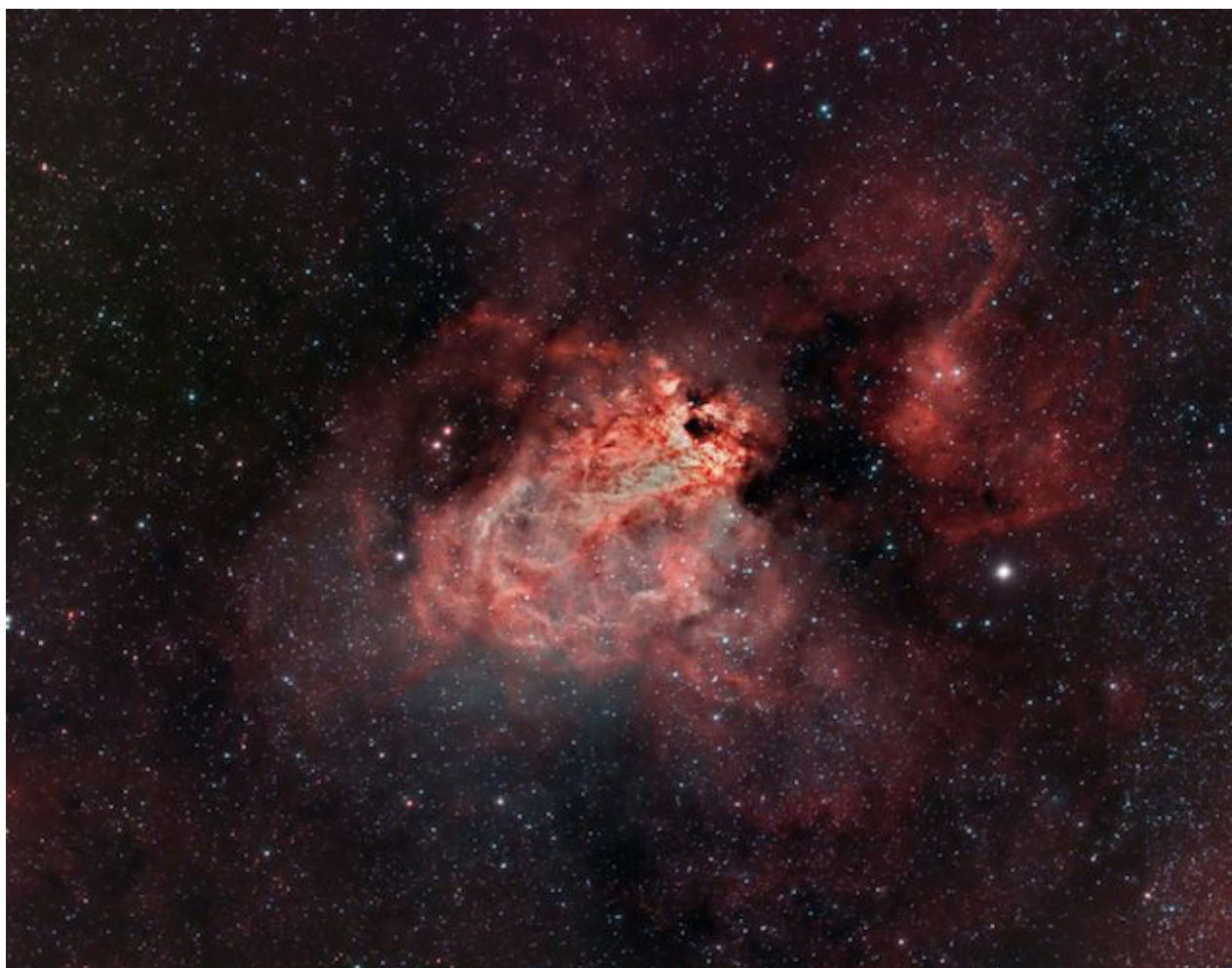


Wizard Nebula
by Jeff Rothstein

A-P Traveler
105mm, Losmandy
GM-8, ASI
294MC PRO,
Pegasus UPBv2
and Motor Focus
Kit; Optolong
L-Enhance and
Starizona filter
sleeve; 50mm
guidescope and
ASI 120MM
camera



NGC 7331 from Doug Summers; Celestron RASA 11 ; ZWO ASI183MC Pro ; Celestron CGX-L; PixInsight, CCD Inspector, Kstars/Ekos; <https://www.astrobin.com/full/muggli/B/>



M17 Swan
Nebula
by Randy
Smith

32x120 C11 W/HyperStar, ZWO 2600, L-Enhance Filter, PixInsight <https://astrob.in/q4qv9d/0/>

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!

TIMPA

by Ralph Means

TIMPA (Tucson International Modelplex Park Association), Dark Sky site west of the Tucson Mountains.
[TIMPA on the Web](#)

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.

TIMPA Star Party Dates this month: November 6 (Saturday) and November 27 (Saturday). Please contact the TIMPA Director to make a reservation: [Ralph Means](#)

Chirichaua Astronomy Complex

by Jim Knoll

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** (see below).

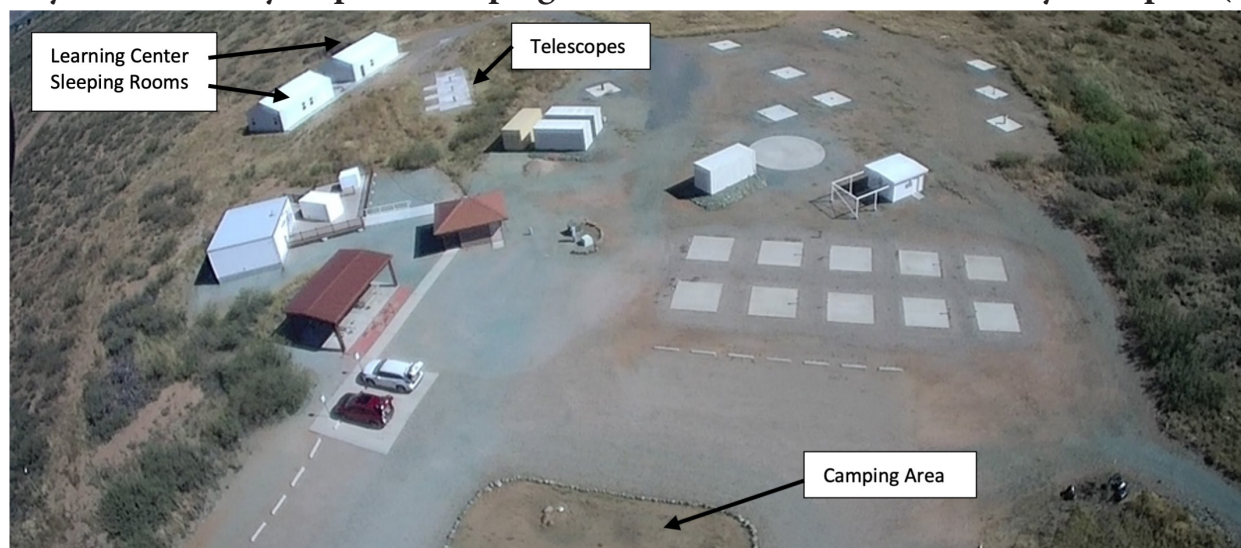
Unless you are qualified to open and close the site, dates will be limited to those around the New Moon and are listed on the CAC web page. **November weekend dates are the November 5 and 6 (New Moon 4th). December weekend dates are December 4 & 5 (New Moon 4th).** Hosted personnel are generally on site a few days before and after these dates. All facilities are currently open, but the Board will review COVID status each month.

Reservations: There is a [reservation form](#) on the website for all CAC reservations. Click [here](#) or click on the TAAA Web Site (<https://tucsonastronomy.org>), then the TAAA Resources tab, CHIRICAHUA ASTRONOMY COMPLEX (CAC) tab, CAC DARK SITE RESERVATIONS tab, and complete the form to make a reservation. Please start using it to make your reservation. After the initial reservation then we can coordinate any changes via email.

CAC Director: [Jim Knoll](#)

[CAC on the Web](#)

Gateway to the Galaxy Capital Campaign for the Chiricahua Astronomy Complex (CAC)



Wow! After pandemic related shutdowns, cost increases, and labor/material shortages, we are now ready to complete the final stages of the Sleeping Room building, the Margaret E. Mooney Foundation Learning Center building, and the Stinger Telescope Pad. Our original goal several years ago was to raise \$450,000 for these facilities and despite the pandemic related challenges we are optimistic that this is still a good funding target. So far, we have raised



\$333,000. A special thank you for all those who have contributed. Your support is greatly appreciated, and we couldn't have made it this far without you. However, the contractor is now getting ready to build out the inside walls and fixtures so that we will be ready to install furnishings and other amenities. And this is where we need your help.



We need to raise the remaining \$117,000 of our original \$450,000 target to complete the project. This latest funding forecast includes cost efficiencies, special changes and enhancements the contractor needs to make, as well as the funding for furnishings, telescope housings, security shutters and cameras, signage, internet, classroom technology, and other amenities.



You have an incredible opportunity to have your name added to a structure or to a donor wall plaque acknowledging your contribution. Here are the areas you could contribute with associated naming rights:

Solar System: Camping area inside of main parking lot. \$25,000.

Asteroid: Names a sleeping room inside one of the buildings. \$5,000 (10 opportunities).

Comet: Names one of the four telescope housings on the Stinger Learning Pad or restroom/showers inside the buildings.

\$3,000 – 9 ¼” Celestron telescope housing

\$3,500 – 11” Celestron telescope housing

\$4,000 – 12” Meade telescope housing

\$4,500 – 18” Obsession telescope housing

\$3,000 – One of the four restroom/showers inside the buildings.

Meteor: Name on a Donor Plaque located prominently at the site. \$1,000-\$2,500 (infinite opportunities).



What a great way to honor someone special in your life or support the astronomy outreach mission of TAAA. Please join us in making a final push to complete this extremely important project. You can review the campaign and contribute online at: <http://tucsonastronomy.org/gateway-to-the-galaxy-campaign/>. For any

contributions over \$1,000 we would appreciate a check to avoid paying PayPal or MemberPlanet fees. Please send any contributions to: Tucson Amateur Astronomy Association, PO Box 41254, Tucson, AZ 85717-1254. Specify the area for your contribution.



Help Us Determine The Furnishings Inside Each Sleeping Room & Learning Center

We will have a meeting to determine what furnishings we should put inside each sleeping room (approximately 10' x 12') and the design for the Learning Center (approximately 20' x 30'). If you plan to use the sleeping rooms while at CAC or if you would like to have input into the designs, WE WANT YOU. The zoom meeting is planned for November 17 @ 1 PM. Please email [Jim Knoll](mailto:Jim.Knoll@tucsonastronomy.org) for the zoom invitation. If you cannot attend, please email Jim with any inputs.

Connecting Astronomy with the Public

by Jim Knoll

October was another busy month for outreach star parties. Between the Public/School events and the Tucson Stargazing Adventures paid events, we had 19 scheduled (a few of these were cancelled due to weather or Covid). We started the month at Chiricahua National Monument for their semi-annual event with four telescopes (two visual & two imaging) and had about 100 participants. The very next week we hosted 11



Catalina State Park



telescopes at the quarterly Catalina State Park event and had about 275 attendees!! What a great crowd. We also supported the Boy Scouts at their Double V Ranch, Flandrau for International Observe the Moon on the University of Arizona Mall with solar and evening observing, and a couple schools. We will wrap up the month on the public side with a monthly event at Agua Caliente Park on the NE side of town and a Virtual Star Party on the 29th (this will be our first one jointly with the San Diego Astronomy Association, with five telescopes streaming live images to the TAAA Facebook Page).

On the Tucson Stargazing Adventures (TSA) paid side, we supported several resorts and hosted our first ever paid event at the Chiricahua Astronomy Complex. Here we had two couples and a father (TAAA member)/ daughter for a total of six, observing through the 14-inch Wally Rogers telescope.



We are planning our regularly scheduled TSA observing events for November 26th (day after Thanksgiving) and December 27th (during the Holiday season) if anyone has family members visiting and wants to treat them to a dark sky observing session. We will be scheduling more of these sessions in 2022. More information on the TAAA Website (<http://tucsonastronomy.org>) under star parties and Tucson Stargazing Adventures.

We still need volunteers for several of the November star parties if you can help out with any. See the listing under School/Public Star Party Requests

What's Up list for October 2021 – November 2021

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 October and November for the more common observing programs.

Constellation Hunter Program – Northern Sky

The following constellations are well placed for observing for October and November:

Andromeda, Aquarius, Aries, Cassiopeia, Cepheus, Cygnus, Delphinus, Equuleus,
Lacerta, Pegasus, Pisces, Triangulum

Messier Observing Program

This is the sparse time of year. This is where the Sun is in March which allows us to do a messier marathon, because it's so empty. The following Messier Objects are well placed for observation during October and November (listed in ascending RA): M15, M2, M39, M30, M52

Lunar and Binocular Lunar Observing Program

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

New Moon:	October 6, November 4
40 Hours waxing:	October 8, November 6
72 hours waxing:	October 9, November 7
4 days old:	October 10, November 8
7 days old:	October 12, November 11
10 days old:	October 15, November 15
Full (14 days old):	October 20, November 19
Gibbous:	October 28, November 27
72 hours waning:	October 3, November 1
40 hours waning:	October 4, November 2

Solar System Observing Program

The following list describes the various solar system objects and their visibility during October and November:

Mercury is an early morning object during October and November.

Venus is an evening object during October and November.

Mars is very low in the morning sky during October and November.

Jupiter and Saturn are evening objects during October and November, setting earlier each day, but still well placed for observation.

Uranus is a late evening object in October and November, rising earlier each day. It reaches opposition 1st week of November.

Neptune is well placed for observation, about 25 degrees to the East of Jupiter.

Urban Observing Program

The following deep sky objects are well placed for observing during October and November:

NGC 7009, M15, M2, M39, NGC 7160, NGC 7209, NGC 7243, NGC 7662, NGC 7789

The following Double Stars are well placed for observation during October and November:

Delta Cepheus

The appropriate matching list of President Names and Years of Service are in the Table below. Hope you got them all correct!!

Name of TAAA President	Years of Service as TAAA President
Earl Burch	1954-1956
Earl Sydow	1956-1957
Don Strittmatter	1957 -1976
Tom Caudell	1976-1978
Dennis Nendza	1978-1980
David Levy	1980-1983
Ron Ferdie	1983-1985
Duane Niehaus	1985-1988
Tim Hunter	1988-1991
Dean Ketelsen	1991-1995
Terri Lappin	1995-1998
John Kalas	1998-2001
Andrew Cooper	2001-2003
Thom Peck	2003-2006
Bill Lofquist	2006-2008
Ken Shaver	2008-2010
Keith Schlottman	2010-2013
Bob Gilroy	2013-2015
Ben Bailey	2015-2018
Mae Smith	2018-current

Notes From The Editors

This issue of the Desert Skies Bulletin is, sort of, the “David Levy Issue”. In addition to the announcement that David will be speaking at the November 5 club meeting, we have two “Skyward” articles. David and I had a communications issue last month and I failed to publish his October column. And it is a very important one. So, we have published two “Skywards” this month. I know you will enjoy them.

One of the great recent additions to the Bulletin are the star party reports. Please take some time to look at next month’s star party requests and join the fun!

[David Rossetter](#) – Co-Editor; Ken Bertschy – Graphics; Terri Lappin - Proofreading; Greg Ruppel -Images



Steward Observatory Public Evening Lecture Series

The 2021/2022 Evening Lecture Series has begun. 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. All of the lectures are free of charge and open to the general public.

[Lecture information page](#)

[Podcasts of previous Public Evening Lectures](#)

Fall 2021 Lectures

For Fall 2021, 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 at:

<https://arizona.zoom.us/my/astr.n305>

November 8	Dr. Andras Gaspar, Dr. Stacey Alberts	Steward Observatory
November 22	TBA	
December 6	Dr. Jinyi Yang, Dr. Feige Wang	Steward Observatory
Peering into the Early Universe with JWST: the Most Distant Quasars and Their Environment		



GLOBAL CONFERENCE

November 12 – 13 A Virtual, Worldwide Event #UnderOneSky2021

Join the International Dark-Sky Association for [Under One Sky 2021](#) – a 24-hour virtual event that will leave you feeling inspired and empowered to combat light pollution in your community. You'll hear from experts and storytellers in the dark sky movement, connect with passionate individuals from IDA's global network, and learn about hands-on activities and tools that you can use to protect the night through engagement workshops.

[Registration is free but required.](#)

Skyward

By David H. Levy
October 2021

Fond memories of Carolyn Shoemaker

One clear evening during the summer of 2019, I was using Pegasus, one of my childhood friend Carl's telescopes, at our annual Adirondack Astronomy Retreat. When my cellphone began to ring, I picked it up with some surprise. At the other end of the line was Carolyn Shoemaker. I was thrilled to hear from her, as it had been some time since our last contact. Carolyn was doing well, except for a mild loss of hearing. She had called to say that since her daughter and son-in-law had moved to New Mexico, she would be living at the Peaks, a comfortable assisted living facility in Flagstaff. My colleague Brent Archinal gave me her cell phone number. I was able to speak with her again a few months later. I wanted to find a way to increase the frequency of our conversations. "You speak with your brother Richard every Monday," Wendee commented, and suggested, "Why not call Carolyn every Monday as well?"

For the next 18 months that's what I did. Carolyn would pick up the phone and announce, "It is David. It must be Monday!" Wendee would often join the discussion as well. But when I called on Monday, August 9, no one answered. After repeated tries, her daughter Linda called to say that Carolyn had had a minor fall and was in the hospital. On Thursday evening, August 12, she went into respiratory arrest. Carolyn died the next morning at 10:40 A.M. Arizona time.

With her husband Gene and the five-year comet and asteroid program we shared, Carolyn was responsible for a very rich period in my life. In fact, virtually every article one reads about the Shoemakers will agree that the discovery and impacts of Comet Shoemaker-Levy 9 were the most significant part of our professional lives.

Carolyn began her observing project a few years after her husband Gene was disqualified as a potential astronaut because of Addison's disease. He decided to go at the problem of impacts, not from studying craters as he walked about on the Moon, but from the opposite direction of the comets and asteroids that collide with the Moon, and with the Earth. Carolyn quickly learned to become proficient at using the stereomicroscope. She would place two films into the microscope; they were identical except that the second plate would be about 45 minutes later than the first. The films were almost always identical, except that when an asteroid was moving slowly, it would appear to float above the starry background. Carolyn discovered 377 asteroids this way, each one charted until its orbit round the Sun could be determined accurately. When one included the asteroids for which orbits have not yet been determined, that number rose significantly, according to Carolyn, to about 800.

In 1983 Carolyn discovered the first of her 32 comets. When their colleague Henry Holt joined the following year, the number of new comets rose rapidly. It was only a year or two after that when she surpassed the number of comets another famous astronomer, Caroline Herschel, discovered, and Sky & Telescope published a news note about "Carolyn passing Caroline." I joined the team in 1989. In a sense, passing Herschel's record might have been Carolyn's golden moment, but it wasn't. That came later on a cloudy and dull day on March 25, 1993. Two nights earlier I had taken two exposures that she was scanning. Suddenly looking up, she announced "I don't know what I have, but it looks like a squashed comet." That was the discovery moment of Comet Shoemaker-Levy 9. Sixteen months later, when the 21 pieces of this fragmented collided with Jupiter, we got to meet President Clinton and chat amiably with Vice President Gore and share the world's excitement over the first collision of a comet and a planet ever witnessed by humans. It was a satisfying peak to all our careers.

After Gene died in a car accident in Australia, Carolyn continued observing with Wendee and me for several years. One evening she confided that sometimes she wished she had died with Gene. But she did not and the world was able to enjoy her company for more than 24 more years. The weekly telephone calls began much later. I shall miss the deep friendship I enjoyed with Carolyn Shoemaker, the woman whose energy, intelligence, and terrific sense of humor brightened our lives and made the night sky a happier place.



Wendee and David Levy and Carolyn Shoemaker on Kitt Peak.

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Galaxies, Just for the Sake of Argument

A few weeks ago, I received a message from Cameron Gillis, an amateur astronomer who wrote that he liked galaxies. Just for fun, I decided to take the opposite approach, a philosophical reversal. If he likes galaxies, then I hate them. As we prepared for our meeting I began to explain the various reasons why I hate them. When, for example, I am observing with a telescope and the Andromeda galaxy enters my field of view, I quickly leave the telescope and ride my bicycle to the end of our driveway and back. The more I stretch the story the greater the laughter becomes. I especially get annoyed by the dark Hydrogen-II regions that stretch across its hideous girth. The cluster of galaxies in the Virgo cluster, particularly Messiers 84 and 86, are so bland that I sometimes have to leave the telescope altogether!

The worst galaxy is our own. When I look up at the evening sky, the Milky Way obstructs my view as it straddles the night from Cassiopeia all the way down to Sagittarius. The stars are so thick that I can hardly see black sky between them. Except of course, when I come across Baade's window. This area of sky rattles me because there, some darkness appears. Discovered by Walter Baade, this window allows us to see almost to the center of our galaxy. It is an awful sight. The majesty of the night is nowhere more apparent than when I am viewing the center of our galaxy, in Scorpius and in Sagittarius, through my telescope. It is wondrous. So wondrous that I still hate it. Because it wastes my time when I am mesmerized by it, the emotion of viewing the galaxy from my backyard is so strong that it strengthens my heart and pierces my soul.

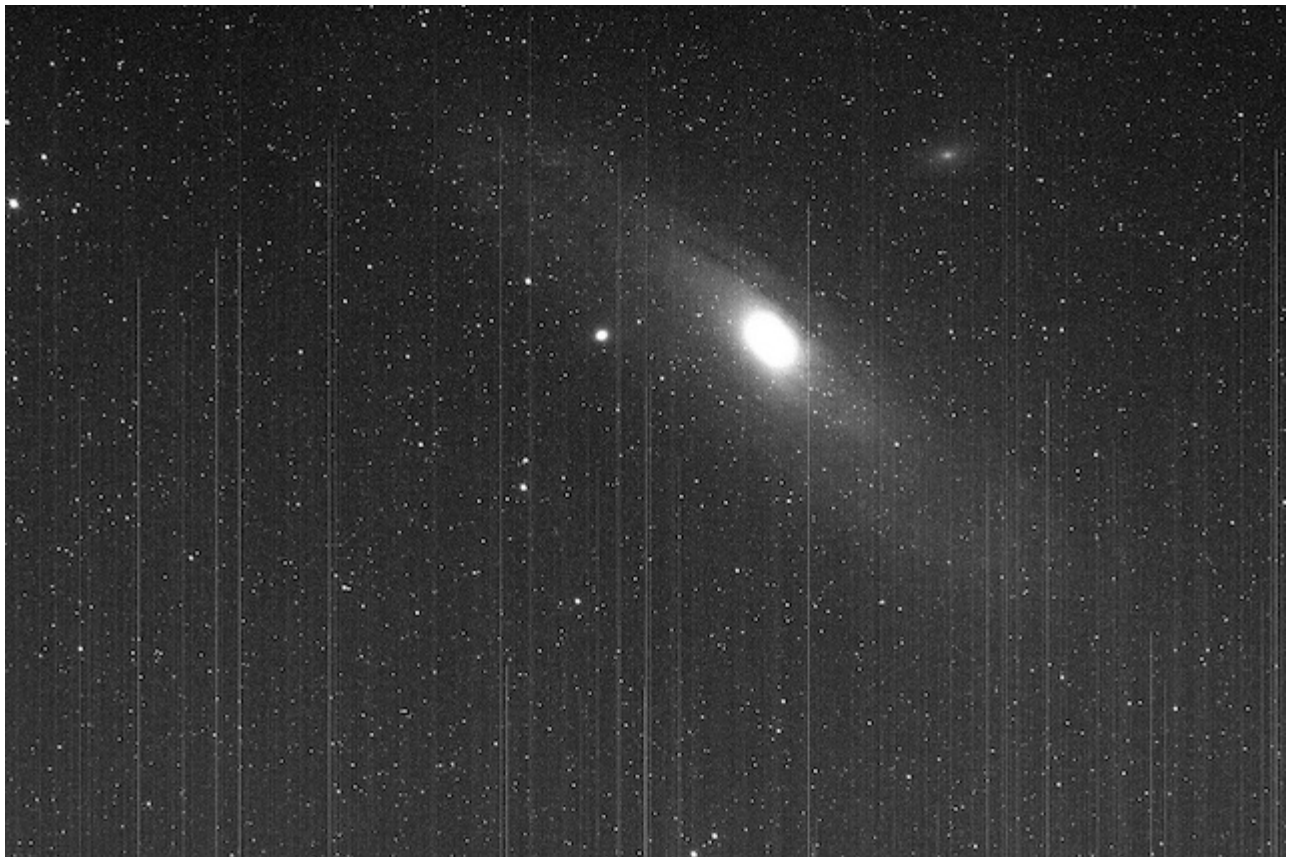
The worst part of seeing our own galaxy on a clear autumn night is that the dark lanes of hydrogen dust straddle its length. Dark areas are called giant molecular clouds. They are not lit by nearby stars; they just are there. In the far distant future, they will generate new systems of stars and planets like our Earth. They are called giant molecular clouds or Hydrogen (H II) regions.

In distant external galaxies, dark clouds like these can straddle their whole length. The Andromeda galaxy has several of these H II regions that one can observe through a small telescope if one looks carefully enough.

Deep in the southern sky, but still visible from most of North America, lies Caroline Herschel's galaxy. It is No. 253 in the NGC, the New General Catalogue. Under a bright sky it is hardly anything, but from a dark site it resembles a long resting caterpillar. It has a most prominent dark hydrogen lane running across its length.

Along with globular star clusters, those round conglomerations of hundreds of thousands of stars that orbit the outskirts of galaxies, including our own, galaxies are the oldest structures in the Universe. The oldest ones started to build within half a million years of the Big Bang, when the Universe was in its infancy.

So much for hating galaxies. When I say that I hate them, I write merely for the sake of argument and humor. Galaxies are almost like people, each one different, each one with its special characteristics. One way of looking at them is to compare their gigantic sizes with our puny selves. But there is another way. Small as we may be, each of us is unique. Galaxies are huge, but aside from their differing shapes, they are still much alike. But in all this Universe, among all these galaxies, there is just one, only one, of each of us. Our ideas, our personalities, are precious.



This picture is one I took of the Andromeda galaxy last summer using Obadiah, my Schmidt camera.