TAAS General Meeting
Saturday, February 23rd
Speaker: Dee Friesen, “Biology of a Star”
7:00pm - Science and Math Learning Center, UNM Campus
Free and open to the public

This talk will follow the life cycle of our own star, the sun. The various phases of this particular star, Sol, will be examined, using the Hertzsprung-Russell (H-R) Diagram, as it moves through its life cycle.

Dee will also discuss the origin of the elements. Hydrogen and helium resulted from the original Big Bang, but the birth, life, and death of a star is described in terms of nuclear reactions, and the chemical elements that make up the matter we observe throughout the universe.

continued on page 2...
TAAS has a very successful Education program that continues to improve and expand under the leadership of Mark Goodman. In addition to supporting our local schools with a monthly school star party Mark and the many TAAS Members who support the Education Program also support other events.

The theme of the summer reading series for the Public Libraries in New Mexico this coming Summer is “A Universe of Stories.” Mark is coordinating with the Albuquerque and Gallup libraries to provide them assistance.

The most important tool we have in the Education Program is the planetarium. Jim Greenhouse, a TAAS member who is also Space Science Director at the New Mexico Museum of Natural History & Science, operates this hugely popular, inflatable device.

But a planetarium, especially a portable one like ours, is expensive, and it will suffer wear-and-tear of being moved so often. In order to ensure we have the funds needed to purchase our next planetarium when it reaches the end of its useful life in 12 years or so, the Board of Directors has approved a Planetarium Fund. The fund will be started with $10,000 from the Education Fund we already have, and we will grow it by devoting $5 out of every $30 membership fee to the fund. We will add to the Planetarium Fund by asking the schools and other organizations where we use the planetarium to make a donation.

Another Education Program initiative is to introduce the Astronomical League’s observing programs for students at schools where we hold star parties: Sky Puppy and Beyond Polaris. The Sky Puppy program is intended to familiarize young observers (under age 11) with the night sky and whet their appetite to eventually complete more advanced observer programs. Beyond Polaris is an Astronomy 101-like introduction to amateur astronomy for students older than 11.

Becoming involved with the Education Program is a great way to help introduce the night sky to the young members of our community. Get involved by contacting Mark (education_coord@TAAS.org) and volunteering to bring your telescope to a school star party, learn how to operate the planetarium, or run a classroom activity. You will enjoy it.

When you see Mark thank him for the tremendous job he is doing as the Education Coordinator.

I have mentioned that TAAS will host the 2020 Astronomical League Conference (ALCON) on July 15–18, 2020. I am looking for someone to serve as the Co-Registrar starting this Spring and for someone to lead the Publicity effort. If you are interested in either of these positions or want to serve in some other capacity, please contact me. This is a great opportunity for TAAS to shine and to show astronomers from all over the country how great it is to live in New Mexico and be able to observe under our dark night skies.
TAAA President Jim Fordice was the Master of Ceremonies, welcoming all, before the queue formed for the buffet dinner.

Once everyone had settled down with their meals, Dee introduced the trivia contest. It included 25 questions in 3 categories, which had been selected by John Laning. No one answered all the questions correctly, but John Briggs (pictured with J. Laning) came close, winning a plaque to adorn his wall.

Next came the door prizes, chosen and obtained by Bruce, who presented them to the winners in a raffle. Andy House (pictured with Bruce and Jim) took home the Grand Prize, a framed Gamma Cygni Nebula astrophoto by Shane Ramotowski and a $100 Orion gift certificate. First Prize went to Bill Wallace – a photo of the Helix Nebula by Dwight Talley and a $75 gift certificate. Elaine Fordice won Second Prize, a photo of the Heart Nebula by Vance Ley and a $50 gift certificate. And the Third Prize winner was Georgia Hufnagel, who received a photo of the Triangulum Galaxy, also by Dwight Talley, and a $25 gift certificate. In addition, all winners received a Sky & Telescope 2019 Observing Calendar.

The evening’s special guest speaker, Mike Rice of New Mexico Skies, discussed a fascinating astronomy project, a multi-lens telescopic array called Dragonfly (http://www.astro.yale.edu/dragonfly), created in concert with Yale and the University of Toronto. It’s designed to bring faint, distant galaxies to light and has already achieved remarkable success: at first light in 2015, it revealed no fewer than 47 never-before-seen galaxies, and it has found many more since, as the array is expanded.

Later in the evening came the special awards granted annually to members who contribute extensively to TAAS’s growth and success during the year. Jeff Boggs won the Isengard Award; Fernando Torres, the Dobson Award. Service awards went to Jim and Kelsey Roucis, a “Double Star” award for their contribution to education; to Bill Wallace, for his service as interim webmaster, and to Bob Hufnagel for his service in our collaboration with Explora!

Prior to the banquet, Amy Estelle was presented with the very first Polaris Award (pictured), for her many dedicated years of service to TAAS. (Sadly, Amy, who had been in ill health for a long time, died on Jan. 13.)

Following these awards came the election of officers for the Board of Directors, conducted by Phil Fleming. Three incumbents – President Jim Fordice, Treasurer Doug LeGrand and Secretary Bob Shipley – were re-elected. Steve Snider was elected Vice President.

Jim Fordice then closed out the evening with thanks to all who helped make it such a success.
TAAS Fabulous Plus (+)  
Feb. 26 at Valle de Oro National Wildlife Refuge  

This program is the next step that persons new to astronomy can participate in, after attending a regular FAB 50 program. It will be an informal session for several hours during which participants can use their Skymap from the previous FAB 50 session along with cell phones and tablets to view the night sky. Emphasis will be on the objects from the past FAB 50 event.

Each session will be scheduled about one month after the regular FAB 50 event.

Events will occur at the Valle de Oro National Wildlife Refuge located at 7851 2nd St. SW, Albuquerque, and on the Web at [https://www.fws.gov/refuge/valle_de_oro/](https://www.fws.gov/refuge/valle_de_oro/).

The first session will be on Feb. 26, beginning at 6:15 pm. All TAAS members are encouraged to attend and be part of the teaching and sharing team. Together we will: OBSERVE EDUCATE HAVE FUN!

Questions? Email taasdee@comcast.net or call (505) 681-6094.

—Dee Friesen

This will be our first public star party held at this excellent venue, close to Albuquerque and with outstanding dark skies — and lots of parking! Please arrive before 6:00 pm to park and become oriented to this area and to set up and prepare for observing. Follow the signs to “Bosque/Outdoor Classroom,” park at designated spots, then follow signs to “Outdoor Classroom.” A full schedule — including a welcome, designation talk, constellation tour and observing will follow on the TAAS webpage in the article posted there, as well as maps to the Refuge and within it.

The 570-acre Valle de Oro National Wildlife Refuge is a protected area in New Mexico, established in 2012 and managed by the United States Fish and Wildlife Service as part of the National Wildlife Refuge System. It is located at 7851 2nd St. SW, Albuquerque 87105. It is toward an Urban Dark-Sky designation; public star parties and other astronomical offerings to the community will help achieve this goal.

So join us on March 8th to explore the early spring skies and become familiar with this exceptional asset to our community, and the Rangers who manage it. TAAS President Jim Fordice (president@TAAS.org) and Vice President Steve Snider (events_coord@TAAS.org) will be the TAAS Owners and Hosts.

Special instructions for those bringing telescopes: When you arrive at the main gate to Valle de Oro off of 2nd Street follow the Red Dotted path on the map to the Outdoor Classroom. There will be signs along the road to the Outdoor Classroom. There will be a parking area for attendees to the south of a berm. The telescope setup area will be north of the berm in the Outdoor Classroom. There will be two ways to bring in a telescope. One will be right at the Outdoor Classroom. A better approach will be from the road that runs to the north that is just east of the Outdoor Classroom. You will need to drive through a fairly flat field along that route, but it will give you better options for positioning your vehicle and telescope.

NOTE: On April 10, Valle de Oro NWR will be the venue for another public star party, sponsored by the New Mexico Museum of Natural History & Science and supported by TAAS telescopes.

See [www.TAAS.org](http://www.TAAS.org) for details and maps

—Lynne Olson
I ventured to John Brigg’s FOAH Observatory north of Magdalena on Jan. 20 to photograph the lunar eclipse. There were high cirrus clouds over most of the sky which thickened near sunset, but I persevered. I had two goals: to get a high resolution image of the eclipsed moon in a deep star field and to get a wide field of view of the eclipsed moon including the Milky Way and Orion.

[Note: this photograph, showing the eclipsed Luna, along with Orion and associated stars and constellations – Aldebaran/Taurus, Sirius/Canis Major, Procyon/Canis Minor, etc. – was a sensation when Bob posted it on TAAS_Talk.—Ed.]

The clouds significantly cleared during totality but the atmosphere was never transparent. Even though the sky looked quite clear to the naked eye, a long exposure (30 sec) in the camera showed star bloating and a bright haze around the eclipsed moon. But the sight of the dark, reddened, quiet moon just hanging there in the sky among all the stars and Milky Way was such an emotional feeling I decided to try some exposures and see what I could make of them in post. So I shot nine 30 second exposures with a 24 mm lens at ISO 400 and several at 5 seconds to keep the moon from saturating even though it still had a halo.

To make this image I averaged the sky shots which included the bright, way overexposed moon. I averaged the moon exposures and blended the properly exposed moon into the sky shot at the proper location. But I also enlarged the moon to cover some of the residual halo. I also cloned some nearby background to better match the sky background in the immediate vicinity of the moon.

So this picture does not accurately represent reality in the scientific sense. The stars are bloated and the moon is enlarged. But it is a great reminder to me of the feeling I had standing there on John’s hill in the cold quiet night, looking at a very dark sky, and seeing the moon just seemingly stuck there in the cosmos. I hope you get some sense of how that felt from the picture.

—Bob Fugate
January 26 - Special Observing Session:
Alan Scott opened the site. He reported:
Our Pre-3rd Quarter event last night was wonderful. Weather cooperated quite well. Inside, the ROOST (Robert Ortega Building) was about 64 degrees and was enjoyed by all. Outside it was nippy, and slightly windy, but beautiful. Winds calmed down to 5 to 10 mph. Temps started at 50 and moved into the 30’s. Humidity remained low (enough) until the moon came up at Midnight. Skies ranged from spectacular to average and back to spectacular transparency all night.

We had a friendly (but fairly small) tribe of strong and determined observers. Tom Liles worked on taking pictures of the skies with an SLR that would have made my dad envious. Jim Kaminski worked on lint (i.e., faint galaxies), and showed me a galaxy group that was glorious. Jim Roucis worked on cranky software and computers, and then planetary nebula, galaxies and other eye candy. And Viola Sanchez spent the evening looking at eye candy and dreaming of using her new telescope (I think I remember correctly - an 18”?). She showed me a view of the Rosette nebula that was heavenly in her 10” Orion. Best view of the Rosette I have ever seen. Finally, I worked on binocular doubles. (Side note - I can sure tell why people have cataract surgery. When you are trying to split stars and debating if that second star is real or a light spike from your ancient lenses in your eyes, it’s frustrating. Drat.)

Jim Kaminski Note: That galaxy group we saw was ACO (Abell, Corwin and Olowin 1989) #262 in Andromeda. Although a few be seen easily (NGC 708 was the brightest), after some study I was able to detect/sketch 13 galaxies in that field of view (and Abell’s criteria for the catalog of several thousand groups was each must have at least 30 members, per photographic plates -- we are lucky to see so many.)

Telescope Loan Program Update
by Rick Vergas, Telescope Loan Program Coordinator

THERE WERE NO MAJOR CHANGES to the telescope and accessories inventory available this month. I am currently taking inventory of surplus equipment and taking photos in preparation for a Spring auction. Items and details will be provided later.

There are currently 5 scopes immediately available for loan, all of them Dobsonians, and any other scope maybe reserved.

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February 2 - 3rd Quarter Moon Observing:
Jeff Bogg opened, and reported: I arrived at GNTO around noon and spent the nice afternoon painting the outhouse a nice light tan color. This was the last building on the grounds that needed fresh paint on the outside. I noticed names etched into the outhouse concrete slab. East side: “Thank You Clay Johnson”, South side, “Built By Tom Sanders”, “GP 5-23-94” on the west side, and a Zia type symbol on the north side. I highlighted these with some black paint. Check these historic writings the next time you visit the facilities. There are also some symbols and writings on the floor inside the door. I did not highlight those yet, afraid the paint might not dry before others arrived.
IC 443, the Jellyfish Nebula in Gemini, captured at GNTO on Jan. 30.

This supernova remnant has been a frustrating target for me. It’s fairly dim, so when I imaged it with my AT65 I got a rather dim, and to my mind, unusable, image.

I switched to the C14 f/2 instrument in the GNTO Imaging dome. I got halfway through my program and the Dec motor on the mount decided to die. So I had to go with what I had gotten to that point.

This image is the result of 15 x 2’ exposures using that instrument. It was processed in PixInsight, Photoshop CS2 and Lightroom. It is a testimonial to the light-gathering power of the 14” f/2 optics and camera.

As soon as we’ve fixed the mount, we will be offering training sessions on this instrument.

—Vance Ley
Clouds were about 60% until about 7 p.m. and clear skies, light winds and good seeing developed. Jim Fordice had his 12.5-inch Obsession Dobsonian, Tom Liles was photographing the Rosette nebula, Eric Edwards was set up at the pier trying out a new camera, and Benjamin Jones was using his 12-inch Orion Go-To Dobsonian. A new member, Will Dickerson, arrived for his first time at GNTO; he got a tour and was very impressed with the dark skies, compared with Dayton, Ohio. He will bring his equipment next time. I used the 10-inch GNTO Dobsonian and checked out open clusters in Canis Major.

Tom and I left the field right after midnight and I closed up the facility. I watched a bank of clouds roll in from the northwest as I drove back into town. We all hoped that next Sat will be good for observing also.

Upcoming Events:

- March 2: 3rd Quarter Moon Observing
- March 9-10: Messier Marathon
- March 30: 3rd Quarter Moon Observing
- April 6: New Moon Observing

Don’t forget that the GNTO Observing Field is available for use by TAAS members anytime. Check the TAAS website for the procedure to follow. Contact me if you have any questions.

As always, check TAAS_Talk and the TAAS website for last-minute changes and updates. GNTO events are open to all TAAS members and their guests.

GNTO Director: GNTO@TAAS.org or 505-803-3640.

Eighteen were present at our Fab 50 Winter session on Jan. 19; about half were TAAS members. The group was enthusiastic and asked many questions.

The skies were bright with moonlight; nonetheless, all the objects on the checklist were visible.

Dee Friesen led the naked-eye outdoor object tour.

The next Fab 50 session will be on April 19th at All Saints Orthodox Church, 10440 4th Street NW, at 8 p.m.

—Phil Fleming
Eclipse of the Moon

On the night of Jan. 20, I used a 5-inch Schmidt-Cassegrain telescope, with the camera sensor at the telescope prime focus, to capture this image. The sky became cloudier as the evening progressed. The Moon takes on an orange-red pallor during totality. I took the photo of totality at 10:05 p.m. MST. The ISO is 4000, with an exposure duration is 8/5 sec.

—Melissa Kirk
NGC2903 is a Barred Spiral Galaxy in Leo 30 million light-years from us, with a calculated diameter of nearly 100,000 light-years. It is considered a member of the Virgo super cluster. It is located about 1.5 degrees south of Lambda Leo (4.5).

This image was captured between 8 and 10 P.M. on the night of Feb. 1, from my backyard patio 3 miles north of Oak Flat. Conditions were poor; thin clouds moving in from the west caused a soft focus, and the autoguiding was poor for green and blue filters.


—John Laning
**Donations to TAAS**

John Briggs  
Diana L. Case  
Ray Collins  
David Downs  
Ella Joan Fenoglio  
William Fleming  
Jim Fordice  
Tom Grzybowski  
Ron Hospelhorn  
Bruce Meyer  
Charles Mullen  
Alan Scott  

The Albuquerque Astronomical Society is a 501(c) (3) organization. Donations are deductible as charitable contributions on the donor's federal income tax return.

**Monthly Membership Report**

**January 2019**

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**Welcome to New or Returning TAAS Members**

Michael Beasley  
Ken Greenberg  
James Perifanos  
Laura Perifanos  
Jason Van Auken  
Mrs. Jesse Van Auken

**Explanation of Dues and Membership Renewal Date**

New memberships are registered immediately if you pay online. If you pay by check, your membership is registered when your check is received by the treasurer.

Renewal notices will be sent out via e-mail beginning 60 days before your membership expires. If your membership is renewed before it expires or with in 90 days after it expires, your new expiration date will be advanced one year from the previous expiration date and your membership will be continuous.

If dues payment is received more than 90 days after the expiration date, you will be reinstated as a member with an expiration date set as one year from the receipt of payment.

**Location, Location, Location**

- **Chaco Canyon**
  6185’ elevation  
  Latitude 36° 01’ 50”N   Longitude 107° 54’ 36”W  
  36.03°   -107.91°  
  36° 1.83’  -107° 54.60’

- **Oak Flat**
  7680’ elevation  
  Latitude 34° 59’ 48”N   Longitude 106° 19’ 17”W  
  34.99°  -106.32°  
  34° 59.80’  -106° 19.28’

- **UNM Campus Observatory**
  5180’ elevation  
  Latitude 35° 5’ 29”N   Longitude 106° 37’ 17”W  
  35.09°  -106.62°  
  35° 5.48’  -106° 37.29’

For security reasons, GNTO location is available by request only, so please contact Jim Fordice, GNTO Director, for GNTO information, e-mail GNTO@TAAS.org.

**Membership Services**

- **for:**  
  - Membership Inquiries  
  - Events Information  
  - Volunteer Opportunities

Contact Bob Anderson at membership@TAAS.org

- **for:**  
  - Membership Dues  
  - Address/e-mail changes

Contact Doug LeGrand at treasurer@TAAS.org

The Albuquerque Astronomical Society is a 501(c) (3) organization. Donations are deductible as charitable contributions on the donor's federal income tax return.

**Editor’s Note**

The deadline for the next issue of The Sidereal Times is Wednesday, March 6. The newsletter editors' e-mail address is editor@TAAS.org.
TAAS is honored to receive an "OUT-OF-THIS-WORLD" AWARD 2011 from Astronomy Magazine for Outstanding Public Programming.

TAAS is honored to receive an "Editor's Pick 2013 Best of the City" award from Albuquerque Magazine.

BEST PLACE TO STARGAZE
CELESTIAL EDITION

MEMBERSHIP

You can join TAAS or renew your membership online. Just go to www.taas.org and select "Join Us!" or "Renew Your Membership" from the main menu on the left side. Annual dues are $30 for a regular membership, $15 for educators and active military, and $5 for students. Only regular members are eligible to vote in society matters. Our new member information packet can be viewed or downloaded from the same location on the website. You can pay your dues on line through PayPal, by Visa, MasterCard, or American Express. To pay by check, mail your check to TAAS, P.O. Box 50581, Albuquerque, NM 87181-0581 or give it to the treasurer at one of our meetings.

ARTICLES/ADVERTISEMENTS

Articles, personal astronomical classified advertisements and advertisements for businesses related to astronomy must be submitted by the deadline shown on the Society calendar (generally the Friday near the new Moon). Rates for commercial ads (per issue) are $120 per page, $60 per half page, $30 per quarter page, $7 for business card size. The newsletter editor reserves the right to include and/or edit any article or advertisement. E-mail attachments in Microsoft Word or compatible word processor format; ASCII and RTF are acceptable. One space between paragraphs is preferred. One column is approximately 350 words. Contact the Newsletter Editor at editor@TAAS.org for more information.

Note that the Sidereal Times is no longer mailed. It is posted on the TAAS website, www.TAAS.org.

Send submissions or correspondence to editor@TAAS.org.

TAAS ONLINE

TAAS website: http://www.TAAS.org

The TAAS website includes:

• Programs . . .
• TAAS 200
• TAAS Fabulous Fifty
• Educational Outreach: School Star Parties, Solar Astronomy Outreach
• Equipment Trader
• Telescope Loaner Program
• Telescope Making and Maintenance
• Online Sidereal Times
• Calendar of TAAS Events
• Members' Guide
• Links to Astronomy Resources and Members' Blogs

E-mail: TAAS@TAAS.org

Members' Google Group: TAAS_talk@googlegroups.com