ASTRONOMY CLUB 89 Yrs OF TULSA

OBSERVER

FEBRUARY 2026

Bringing Stars to the eyes of Tulsa since 1937

Editor – John Land

IC 434 & Horsehead Nebula in Orion. By Tim Gilliland

The Horsehead nebula (Barnard 33) is a dusty interstellar molecular cloud silhouetted in front of the hydrogen emission nebula IC 434 in the **vast Orion Cloud complex**. The dark nebula is about five light-years tall and lies about 1,500 light-years distant. To see it visually requires dark sky and an 8" or larger scope. However, it shows up well on images. The blue reflection nebula dubbed the **Lump Star** **NGC 2023** is powered by the star HD 37903

Above image is a cropped section of a larger image Tim took with a 10" Celestron Newtonian scope and an SBIG ST8300M camera Jan 1, 2014. Exposures H alpha filter 4 hrs 30 min and RGB 2 hrs 6 min

Telescope 101 Workshop

Saturday Feb 7, 2026, from 10:30 AM to 1:00 PM

Do you have a New Telescope ? (Or an old one gathering dust)
Want some help learning to use it? Bring your telescope and let us help you.
Participants can register for a 30 min individualized hands-on help session.
See details at https://www.astrotulsa.com/event/2026-02-07-TASM-Workshop

Friday Feb 6 – 7:00 PM our Monthly Club meeting at Jenks High School – Guests Welcome

Our President Jonathan will do a program comparing the Apollo Moon missions to the much-anticipated return to the moon with the Artemis missions. If all goes as planned the Artemis 2 mission is scheduled to be launched ON FEB 6TH !! See his president message for more.

Stargazing Nights and Observatory Nights

Our GUESTS & Members nights are open to anyone. We do ask guests to try to RSVP.
Large groups need to make separate arrangements.
Members Only Nights are Open to members and their family
Details, Times and Direction Maps are posted on our Website https://www.astrotulsa.com/events

Guest and member Observatory nights

Come enjoy an evening of star gazing at our observatory
See details and directions on our Website Events Page
Guests are requested to RSVP
Saturday Feb 7 - 5:30 PM Guest & Members Observatory Night
Saturday Mar 14 - 7:00 PM Guest & Members Observatory Night

Astronomy Club Members Nights

Our members are invited to come work on their observing goals, do some Astro imaging and share ideas.
Friday Feb 13 - 5:30 PM Members Observatory Night
Friday Mar 20 - 7:00 PM Members Observatory Night
If a Friday event must be cancelled due to weather, we will try on Saturday at the same time
- Always check the website for event updates

Messier Marathon Observing Challenge Night - Saturday March 21
7:00 PM to Dawn – Challenge to try to Observe and Log as many as possible of the 110 M Objects in a single night

To get an early start Preview the March 2025 Newsletter page 10

Salutations all,

I hope you all survived **"*Snowmageddon 2026*"** and are ready to ease into February with some exciting events ahead. We have a great lineup this month, and I truly hope to see many of you out and involved. We'll kick things off with our February 6th in-person meeting at the Jenks Planetarium. In honor of NASA opening the Artemis launch window between February 5th and February 12th, I thought it would be fitting to take a step back and revisit the Apollo missions—the program that first sparked a curiosity about space for so many of us. It will be a night of history, reflection, and inspiration as we connect Apollo's legacy to Artemis and humanity's next steps beyond the Moon.

The momentum continues the very next day with a packed Saturday on February 7th. That afternoon, we'll host our Telescope Workshop at the Tulsa Air and Space Museum, designed to help participants feel confident using their own equipment and navigating the night sky. That same evening, we'll follow it up with our February Guest Night at the observatory, giving everyone a chance to put those skills into practice under the stars alongside our members.

I'd also like to introduce a new, short segment I'm calling ***"The Road to 90,"*** where I'll share updates on how we're preparing for the club's 90th anniversary—no small milestone by any measure.

On the observatory front, we've officially achieved first light with our new camera, and testing is underway. With that milestone behind us, we're moving systematically to the next phase: cleaning and reorganizing the classroom, which—if you've been by recently—is in serious need of a deep clean and refresh. To put this into motion, we're in the early stages of creating a complete manifest of our telescopes, classroom materials, eyepieces, and tripods. Some equipment we plan to keep, some may be liquidated, and some will be evaluated for future use. If you're an active member and currently use classroom space for storage, that's absolutely fine—our primary focus is on telescopes that haven't been touched in years, and in some cases, decades.

More details will be coming soon, with many of these topics being discussed at our next Astronomy Club Board Meeting on February 5th, where we'll be addressing upgrades, anniversary planning, and our schedule of events for the year ahead.

Exciting things are happening, and I'm grateful to be walking this road toward 90 with all of you

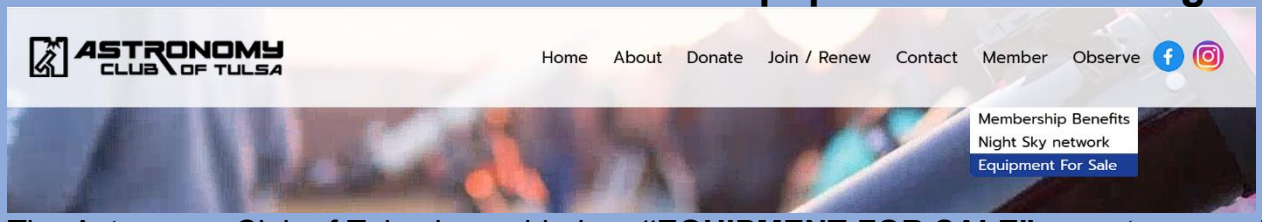
As always, be sure to follow us on **Instagram @tulsa.astronomyclub** and Facebook for event updates, photos, and announcements as they happen. It's never too late to get involved—whether you're a longtime member, brand new to astronomy, or somewhere in between. We'd love to see you out at any of our upcoming events, meetings, or observing nights. Come join the group, look through a telescope, ask questions, and be part of what makes this club special.

Jonathan Fussell, President

Astronomy Club of Tulsa

"Bringing Stars to the Eyes of Tulsa since 1937"

Our NEW AstroTulsa.com Website Equipment For Sale Page



The Astronomy Club of Tulsa has added an **"EQUIPMENT FOR SALE"** page to our website so members have a place to list their equipment they no longer need. This page is new and will undergo changes as time goes on, but it is useable and live on the website. https://www.astrotulsa.com/sales or from the homepage go over to **"MEMBERS**" tab, then scroll down to **"EQUIPMENT FOR SALE".** If the page becomes popular we may have to change it around somewhat and relocate it to its own upper-level menu.

There are a few rules to help keep it clean and uncluttered. When submitting a listing please consider the following:

- A picture is worth a thousand words! Please include up to 5 images (MAX) showing the important things about your listing, like the entire scope and mount, any data plates/stickers showing what it is, the front of the telescope glass and bezel, all the accessories, diagonals/eyepieces/filters/cables/manuals, etc…, and any defects that might be of interest to a potential buyer.

- Give a good description of the equipment. List any defects that you are aware of, list all items included with the equipment, and asking price. Please include your contact information, usually an email address or a phone number (optional).

- Don't forget to email us to remove it after it has sold. If it hasn't sold in 60 days it might get removed, depending on how much other stuff is listed. You may relist it if you like.

Send your listings via email to **kg5vw.ok@gmail.com** directly (the contacts page won't allow you to send properly so send direct), with the files attached and a good description and contact information. I will email you back when the listing has been created.

Scott Bratt
ACT Website Manager

Some Cosmic Humor –

Click on these images to links on the Internet

ASTRONOMY TOOLS

Tulsa National Weather Service

GOT A NEW TELESCOPE? **Here are some sites to help you get started with you telescope.**

Getting Started with Your New Telescope
https://skyandtelescope.org/astronomy-news/getting-started-with-your-new-telescope-2/

Astronomy for Beginners | Night Sky Facts, FAQs & Resources
https://skyandtelescope.org/astronomy-information/

What to Know Before Buying a Telescope
https://skyandtelescope.org/astronomy-news/what-to-know-before-buying-a-telescope/

See Website Observation Station for a collection of Interactive Sky Watching Tools
Moon phases - Sun rise & Set - Make your own custom interactive sky chart and more
Great website for printable Finder Charts of Solar System objects https://in-the-sky.org/

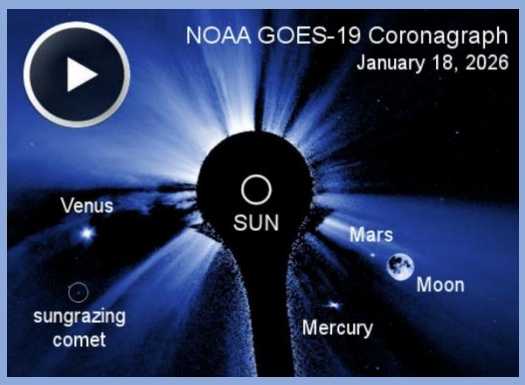
Moon Phases - Full Sun Feb 1 - 3rd Q Mon Feb 9 - New Tues Feb 17 - 1st Q Tues Feb 24

Lunar conjunctions – Weds Feb 18 dusk – Thin crescent moon near Mercury with Venus below. - Weds Feb 19 near Saturn & Neptune - Thurs Feb 26 near Jupiter

Celebrate the SNOW Moon Feb 1 **Feb 19: Mercury at Greatest Elongation East**

TOTAL LUNAR ECLISPE Tues March 3 – Eclipse begins 3:50 AM Totality 5:04 to 6:02 Moon Sets 6:54 AM

Planets – VENUS & MERCURY enter the evening sky and are well place for viewing mid-month. Mercury reaches its greatest separation from the Sun on Feb 19 Venus will be our brilliant evening star until late September. Observing it regularly will reveal its cycle of phases from a smaller round orb this spring to a large slender crescent by autumn. The two will lie 5 degs apart on Feb 28th Saturn and Neptune are still close together and visible in the SW but are sinking lower each evening. Uranus pale greenish hue is a worthy challenge in Taurus. Use 100x to see its small disc. Jupiter was closest to Earth Jan 10th and shines brightly overhead in Gemini. MARS will not emerge into the morning sky until March.



Watch video of a Quintet conjunction with the Sun Jan 18

See Newsletter articles - WINTER OBSERVING TIPS in past newsletters - January 2025 or Fighting the Winter Blues February 2025 Try Jupiter Moon Calculator or handy JupiterMoons App

Two Observable Comets Full details https://astro.vanbuitenen.nl/comets

Comet designation	Current Mag	Perielion	Closest to Earth	Magnitude
C/2024 E1 (Wierzchos)	7.4	20-Jan-26	17-Feb-26	8.2
24P/Schaumasse	10.2	8-Jan-26	4-Jan-26	9.6

Comet C/2024 E1 Wierzchos should peek between 6 & 8 mag low in the SW by mid-month.
It is moving through the constellations of Sculptor and Cetus.

Observing Chairman
Brad Young

Every Picture Costs a Fortune, Don't It?

For most of the last thirty years I have been talking trash to imagers, describing how they are residents of the Dark Side, but still go to bed at sundown, letting the camera do all the work. I reminded them how closely the words imaging and imagining are spoken and spelled and many other vituperous statements that should have gotten me slapped. But now, I've decided to stick a toe into the dangerous waters of astrophotography. This is my attempt to pass along what I've seen so far in the first month, so whether a reader is thinking of doing the same thing or she developed her film pictures in her home darkroom and wants to revisit the perilous journey they can do so at my expense (and there is plenty of expense…)

My experience in imaging consists of using telescope services and observatories with varying levels of user involvement and control. But to progress, I needed to start getting more hands-on. The popular reasons to avoid this were true for me – too expensive, steep learning curve, Hubble will always beat me at whatever images I try, etc.

At Christmas I bought a Seestar S50 to do this experiment and exploration. I've been very impressed with it so far and think it's a great entry level scope for imaging. I'm not going to do a full review; there are plenty of those anyway all over the internet. Equipment aside, what I've noticed is the change in operating approach that has occurred by changing observing technique
With each mode, there are positives and negatives. Let's start with my negative feedback.

Imaging includes a loss of that tactile "I'm here looking at this now" feeling that you get looking through the eyepiece. Of course this is not binary choice, you can still use your visual equipment, but that requires setting up another telescope or hanging appurtenances from your mount. There's always scanning the skies with your eyes or binoculars, nothing wrong with that. And I still think it's important to learn the constellations and how the sky works and you can't do that just sitting troubleshooting your equipment. Loss of immediacy and immersion, gratification some people find to be the best part of amateur astronomy, does occur when imaging.

Another one in the "con" column is that problem solving and troubleshooting. After years of watching people curse at unalive metal tubes and fiddle with wires in the darkest hours of night, I knew something always seems to go wrong with imaging equipment. Either built into the software / hardware, or if just part of the ether of the universe, there is always a problem, every night every session. This fact is immutable as a fundamental constant like π; even the Seestar has its glitches. And it just seems to get

worse as you get into more complicated equipment. The Seestar is not well built for planetary imaging; it sports a large field of view and low magnification. So, I brought out my Meade ETX 125, a five-inch Maksutov with folded optics and long focal length - great for planetary imaging. So far, the software has recognized the camera once and not again.

Processing aka Artificial Imagineering

"What man does; man can fix." Gilly [a South African under apartheid], Holidays in Hell by P.J. O'Rourke

Then there's the part of imaging that visual observing has no comparable or equivalent example of workflow: processing. As a process engineer for thirty years, you would think I would look forward to it, but this work is very different. As many readers know, image processing is all about improving the quality of images produced by using techniques such as stacking, removing noise and balancing the color levels and other variables to produce quality output. The imager uses processing software to achieve realistic representation of the subject in balanced tones, aesthetically improved light levels, shadows, and other picture elements.

The Seestar (and others lihas an AI algorithm and some other tweaks and bells and whistles installed and takes care of all the calibration images. Exporting stacks of subs as FITS files has yielded spotty improvement so far. Not sure if that means the Seestar native processing software is quite good, or that I don't know what I'm doing, but we know which is the right answer. This early in my experience, it seems you either must commit to pushing for realism or you can choose to allow limited artistic interpretation. And balancing the two is walking a very difficult knife's edge indeed. My preferences will tend towards realism. Most people do like to have some kind of positive feedback for hard work, so they process their images and post them to social media to see what develops [pun intended].

The Four Horsemen of Imaging:

DARKS

FLATS

SUBS

BIAS

It's easy to end this article on a positive note, because there are many objects suited to smart scopes in the evening sky in this, the first month I've had one. I had frankly grown tired of looking at tiny dim galaxies as I finished off the NGCs. And I'm so glad to go instead to bright items that are large and have detail to them that I can see. Most of my visual observing of late consisted of small objects or clusters of objects that were bright enough to see in my 22" Obsession UC. But there is no way to integrate or stack my vision.

I've always regretted not being able to see nebula very well or to see much color in anything, except maybe the Orion Nebula, a few others, and single stars or components of multiples. Now, I can set up my EAA scope on my front porch in downtown Tulsa, use its light pollution filter and after only a few minutes get a great image of The Orion Nebula or the Horsehead or the Rosette or any of many winter DSOs waiting to be observed in a short time. This is a fantastic addition to my arsenal that I've been waiting to use.

As mentioned above, like any machine it has its issues, starting with user error. Also, the honeymoon can't last forever; everyone works through the easy, bright objects quickly, just as with starting in visual observing. But the Seestar has opened a whole new volume to me (Hands-On Astroimaging) and that's exciting. I needed an infusion of new goals after straining to use my averted vision and other advanced techniques to finish the NGCs.

A big advantage is being able to set your camera outside and go inside to run your plans from your living room off your smartphone. I don't miss the wind and the cold (later the bugs and the humidity). At the Observatory, it's fun to finally be able to have a minute to talk to folks on Visitor's Night and show them on screen what the camera sees while letting the camera run. With the installed Sky Atlas linked, it's easy to select a target and go there in one step, or write a plan for several targets.

One more positive thing and I'll end this month's article. I'm not giving up my 22" Obsession visual telescope - I still plan on using it when the weather is warmer and it's easier to set up and stay outside to get the eyepiece experience that I'm already beginning to miss. And I do like staying dark adapted and being able to see the sky without needing to go outside to do it And pause the TV. But I have to say that not having to deal with the 75-pound mirror and setting up everything all the time including lifting it into the car when I'm taking the telescopes somewhere and having to carry the telescope when I don't really need one for any other purpose is an advantage of the small smart scope. Technology should continue to improve, resulting in smaller, cheaper, and smarter imaging systems that will negate some of the weight and space limitations current with air travel etc. The market will drive improvements to ease the frustrations and system inconsistencies, as impactful technology like EAA Scopes is going to improve amateur astronomy, and that's a good thing.

I know many of you have already been through all this and probably find it a bit amusing to hear such a newbie ramble on. But I'm glad to say that after forty-six years of thoroughly enjoying visual astronomy, I now feel like adding simple imaging projects to my routine has given me more chances to observe, more objects to observe, and new things to learn to keep my hobby fresh and exciting. And after all, isn't being excited about your hobby something that helps you stay with it? Or, if you are new to the hobby, can expand what you learn to do to move from the newbie phase straight to affordable, accessible targets and methods to try.

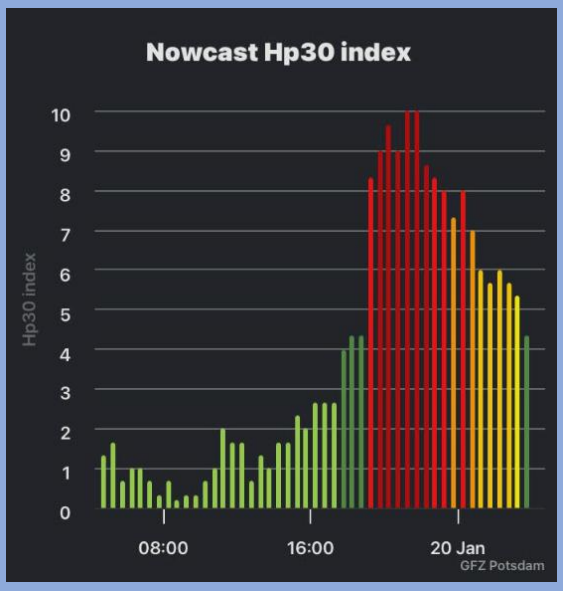
Some Cosmic Humor –

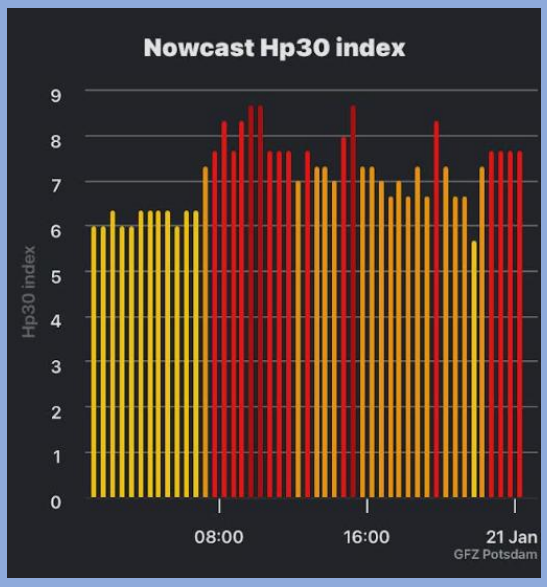
Northern Lights visit Oklahoma skies -
By John Land

Solar cycle 25 has brought the Northern Lights Aurora to our southern sky at least four times, starting with the long-lasting Mother's Day outbreak on May 10, 2024

Scott Bratt shares this image of a pale aurora on the evening of January 19 from his location near Keystone Lake.

Sunspot 4341 erupted on Sunday Jan. 18 @ 12:09 PM CST, with an **X1.9-class solar flare**. The explosion lasted for hours producing a full halo CME aimed toward Earth. The CME traveled at (~1660 km/s) 190,140 mph reaching Earth about 1:00 PM on Monday **placing it among the fastest CME's** . They normally take 3-4 days to reach us. The severe (G4) geomagnetic storm began just after nightfall in Europe. **Beautiful Aurora images** came in from all over Europe.





As these graphs illustrate, Solar Activity remained high for over 24 hours (Times in UT)
By the time it became dark here in Oklahoma the storm had subsided a bit but was still detectable in photographs. From my experience the activity levels need to be above 8 or 9 for us to see aurora naked eye here in the Tulsa area. Amateur Astronomers and photographers sent in photos from 34 states as far south as northern New Mexico and Arizona. You can page through the over 100 shared images at the **SpaceWeather.com Image Gallery**

Learn more in our article on the **Veterans Day Aurora display** we saw here on Nov 11, 2025

Explore the **https://spaceweather.com/** pages from January 19 through 29th to see some rare phenomena associated with aurora. A **MESOSPHERIC BORE AMONG THE AURORAS** , **A Blue Aurora** and other interesting revelations.

Treasurer Report
Cathy Grounds

Astronomy Club of Tulsa

2025 ANNUAL REPORT

INCOME			**MISC & SPECIAL PURCHASES**		
DUES	$	5,660.60	D ZIELINSKI GIFT CARD	$	60.00
REGULAR DONATIONS	$	1,079.65	POSTS FOR CLUB BANNER	$	15.11
MEMORIAL/MAJOR DONATIONS	$	3,600.00	OBSERVATORY KEYS (5 SETS)	$	25.51
DINNER PAYMENTS	$	1,259.38	ADAPTERS FOR DOME CAMERA	$	68.37
SOLAR VIEWERS	$	-	HIGHPOINT CAMERA FOR DOME, FUNDED FROM 5K APPROVED BY BOARD FOR UPGRADES	$	758.53
MISC- CALENDAR SALES 288 GROSS, BUMPER STICKERS 10, TASM 70, SCOUTS 192.53	$	560.53	ROLL UP TABLE FOR DOME	$	98.63
TOTAL INCOME	**$**	**12,160.16**	BANK CHECK ORDER	$	33.62
MEMORIAL DONATIONS PLACED IN SAVINGS	$	(3,600.00)	CALENDAR ORDER	$	229.45
TOTAL REGULAR INCOME	**$**	**8,560.16**	REFRESHMENTS JENKS MTG 9-5-2025	$	30.00
			TOTAL MISC & SPECIAL PURCHASES	**$**	**1,319.22**
REGULAR OPERATING EXPENSES					
AL DUES	$	982.00	**TOTAL EXPENSES**	**$**	**7,049.28**
CLUB DINNER-COST TO CLUB	$	542.79			
CLUB PICNIC (NOT HELD)	$	-	**TOTAL REGULAR INCOME**	**$**	**8,560.16**
ELECTRIC	$	1,079.83	**TOTAL OPERATING EXPENSES**	**$**	**(5,730.06)**
INSURANCE	$	2,285.00	**NET TO CLUB**	**$**	**2,830.10**
MESSIER MARATHON	$	-	**MISC & SPECIAL PURCHASE**	**$**	**(1,319.22)**
PO BOX	$	268.00	**FINAL NET TO CLUB**	**$**	**1,510.88**
PRINTING/SIGNAGE	$	38.34			
PROPERTY TAX	$	37.95	**ACCOUNT BALANCES AS OF 12/31/2025**		
SAFE DEPOSIT BOX	$	45.00	INVESTMENT ACCOUNTS	$	43,978.72
SUPPLIES FOR BILDG	$	-	BANK SAVING	$	8,499.06
WATER	$	323.23	BANK CHECKING	$	3,985.81
ZOOM SUBSCRIPTION	$	127.92	CASH BOX	$	137.00
TOTAL OPERATING EXPENSES	**$**	**5,730.06**	**TOTAL**	**$**	**56,600.59**

Treasurer Report
Cathy Grounds

As of January 2026, we have 153 members, with no new members yet this year. Please welcome our newest members David Atkins and Chad Malone, who joined in late December after finding out about the club from our website!

Don't forget these easy methods to join or renew your membership:
https://www.astrotulsa.com/join – see the "join" tab at the upper right

FAQ: How do I know when to pay my dues? You will receive a notice by email that it is time to renew your membership. Look for it on or around the 1st of the month in which your membership expires. If you are not sure you are always welcome to check with the treasurer.

1. PayPal (click "join/renew" on the website) and follow the prompts, there is small fee.
   (You can use any major credit card - you don't need a PayPal account)
2. Mail in a check or money order to Astronomy Club of Tulsa,
   PO Box 470611, Tulsa, OK 74147.
3. Direct your bank's bill pay service to send payment to our PO Box address above.
4. Pay cash at any club event or swipe a credit card (there is roughly a 3% service charge).

As always if you have any questions or concerns or if your email, phone, or postal address has changed please email me at: AstroTulsa.Tres@gmail.com

Membership rates for 2024 - 2025 are as follows:

All include an Astronomical League Membership, and you will receive their magazine *The Reflector* each quarter.

Adults: $ 50 per year
Sr Adult: $ 40 per year (65 or older)
Students: $ 40 per year
Additional Family membership: $ 30 **includes voting rights**

The regular membership allows all members in the family to participate in club events but only ONE Voting Membership and one Astronomical League membership.

Magazine Subscriptions- You can see subscription info on the "Join" tab at www.astrotulsa.com.
You can get a discount rate as an Astronomy Club member. You will need to do so directly using their web links below to make your subscription

To learn about Sky and Telescope magazine see their home page
Digital $ 37.05 Print & Digital $ 45.75 includes a $ 10 club discount
Use this **Sky & Telescope Subscription Link**

To learn about Astronomy magazine see their home page
Use this **Astronomy Subscription Link** **Digital $ 39.95 Print & Digital $ 49.95** no club discount

You are invited to join us to learn more about Astronomy and view the wonderful sights in the night sky.

Check the EVENTS section at https://www.astrotulsa.com/

During the school year our club holds a
Monthly General Club meetings at
Jenks Public Schools Planetarium
205 East B St, Jenks, OK
Meetings begin at 7:00 PM
Building opens about 6:30
Guests are Welcome

When you enter the building lobby, take the elevator to the 3rd floor.

ASTRONOMY CLUB OBSERVATORY
Located on a hilltop about 25 miles SW of Tulsa
Features: classroom, restroom, dome with 14-inch telescope and an acre to set up your telescopes.

Weather permitting, we host two types of observing nights.

GUEST OBSERVING NIGHT – RSVP requested
This event is open to our Guests – both individuals and families as well as our regular members. Several of our club members set up telescopes for public viewing.
* Groups need to make separate arrangements.

MEMBERS OBSERVING NIGHT usually on a Friday near new moon
Reserved for club members and their families to allow them to pursue observing projects.
The Observatory is ONLY OPEN for SCHEDULED EVENTS.

Check the EVENTS section at https://www.astrotulsa.com/
Follow our map directions DO NOT USE GPS

Two Options for travel to the observatory

MOSTLY PAVED ROADS – Hwy 75 to 201st St S – through Mounds OK

Most DIRECT ROUTE – Hwy 75 to 241st St S – some coarse gravel & dirt roads

ASTRONOMY CLUB OFFICERS:

PRESIDENT – JONATHAN FUSSELL
astrotulsa.pres@gmail.com

SECRETARY – SKIP WHITEHURST
astrotulsa.secy@gmail.com

TREASURER – CATHY GROUNDS
astrotulsa.tres@gmail.com

Use the club CONTACT PAGE
To Send a Message to any of the officers or board members or click the CONTACT tab on the top of our website

BOARD MEMBERS-AT-LARGE:

DON BRADFORD
GIBSON BRASEL
SCOTT BRATT
JERRY CASSITY
BRYAN KYLE
JOHN LAND
JACK REEDER
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COMMUNITY OUTREACH – TIM GILLILAND & DON BRADFORD

NIGHT SKY NETWORK – SCOTT BRATT

Enjoy at Planetarium Show at Jenks High School

Jenks High School Campus
205 East B Street, Jenks

TICKETS are $7

See our Current Shows Schedule and ticket purchase links at
Shows and Ticket Link

Shows take place on Tuesday evenings or Saturday mornings
Must purchase tickets online in advance
Shows and Ticket Link