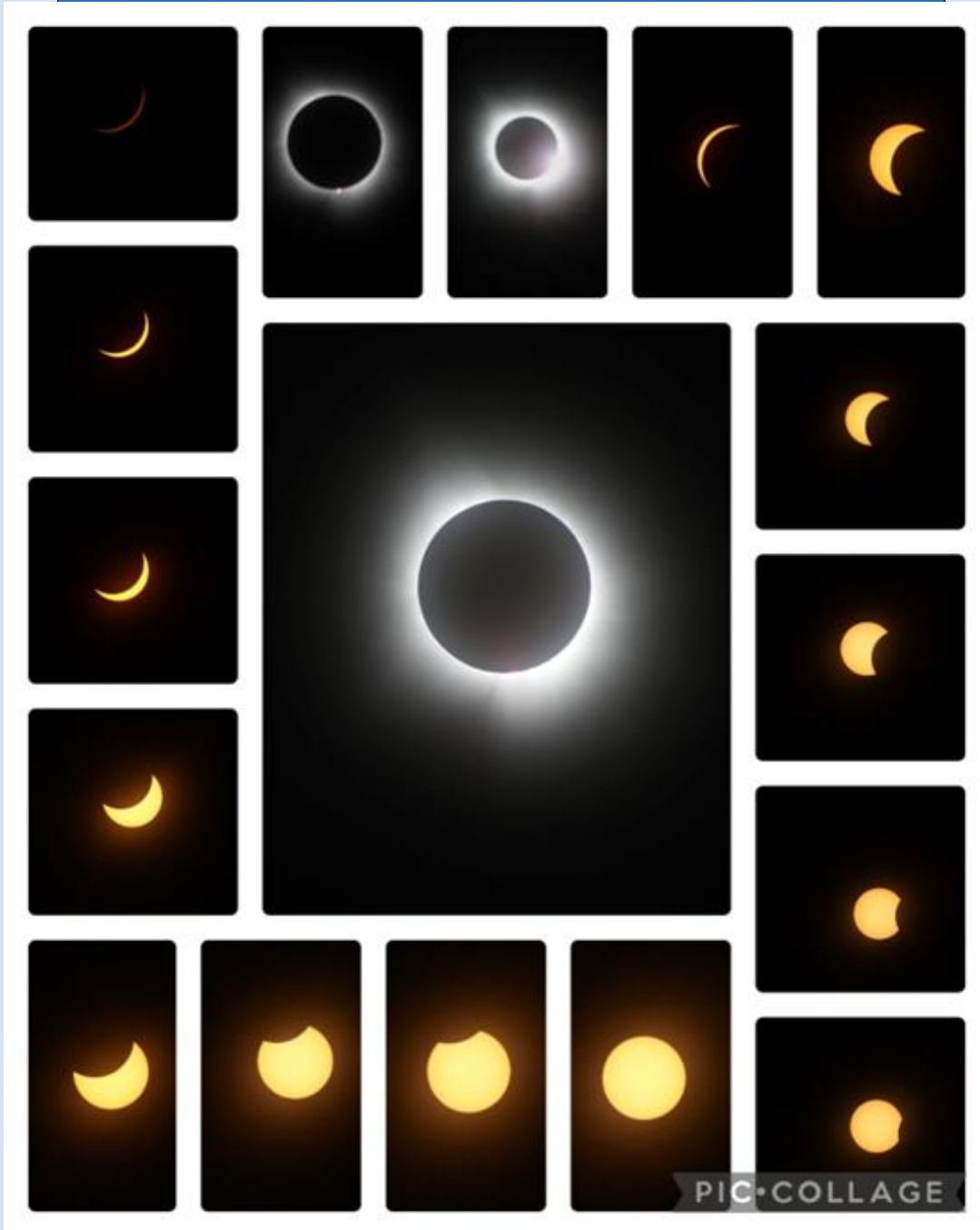




OBSERVER

MAY 2024

*Bringing Stars to the eyes of Tulsa
since 1937* Editor - John Land



Member Dan Horwitz shares this collage of eclipse images he took at Russellville, Arkansas. The sequence starts in lower right corner and proceeds counterclockwise around the image. See many more images from our members in this newsletter.

- 1 April Eclipse Collage by Dan Horwitz
- 2 Astronomy Club Events
- 3 Women in Astronomy Day – 2024 MSRAL Conference – New Supernova in Hydra
- 4 *President's Message* - by Don Bradford
- 5 What's up in April Skies *by John Land*
- 6 Comets and "Where's Waldo?" sky mystery
- 7-9 *Adventures Chasing Moon Shadows* - Members share eclipse images
- 10 Treasurer and New member report – by Cathy Grounds
- 11-13 *Gazing for Beginners* - The Bortle Scale - NSN – Kat Troche
- 14 Map Links to *Where We Meet* * Choice of TWO Routes to the Observatory
- 15 Club Contacts information --- Jenks Planetarium Public shows

Observatory Stargazing 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>

Observatory Visitation Star Nights

Friday April 26 - 7:00 PM Jenks High Planetarium [105 E B St, Jenks, OK](#)

We invite both members and guests to join us for our In Person meeting.
Our members will be sharing their stories, images, videos of the April 8 eclipse along with some to the techniques they used to make them

Saturday April 27 - 7:45 PM Member's Night at the Observatory.

Friday May 3 - 7:45 PM Member's Night at the Observatory.

Friday May 10 - 7:00 PM Jenks High Planetarium [105 E B St, Jenks, OK](#)

We invite both members and guests to join us for our In Person meeting.
At this meeting Brad Young will be sharing his sixth journey to the Ozsky Star Safari this past March in Coonabarabran, Australia.

SATURDAY May 11 - 7:45 PM **Guest and** Members Night at Observatory
Guest requested to RSVP -



The first *Women in Astronomy* group meeting took place on April 13th. with six ladies joining for lunch at Monterrey's Little Mexico restaurant. We discussed some stumbling blocks and found that the most common issue with getting started in astronomy was setting up the equipment. Our plans are to locate a place in Tulsa to practice setting up, and to locate a viewing area that is easier to access.

If you are interested in participating contact -
Cathy Grounds at astrotulsa.tres@gmail.com

Seated clockwise from left. Bev Strader, Cathy Grounds, Suzy Oliver, Sara Grossman, Gigi Goz and Lisette Carlson.



2024 Mid-States Astronomy Conference

June 7, 8, 9 <https://msral2024.org/>

Conference is hosted by the [Omaha Astronomical Society](#) The event will be at [Eugene T Mahoney State Park](#) near Ashland, Nebraska off Interstate 80 exit 426.

Our Tulsa Club hosted the 2023 conference. It was a great opportunity to hear great presentations and meet astronomy enthusiast from other clubs throughout our 5-state region.

Registration for MSRAL 2024 is now open.

Sky and Telescope reports the discovery of a new super nova star explosion in the galaxy NGC 3621 in Hydra. The galaxy transits only 21 degrees up in the south about 10:30 PM Brad Young took this image with using a remote telescope in Perth Australian. Brad writes a "*Line points to it on the negative view. Included natural palette with no arrow for "pretty" shot. This is in V band, and dithered for photometry so out of focus, but you get the idea. About mag 12, not much brighter in R, dim in B. A little south for us, so I used the Perth scope to image it instead of trying to observe visually.*"



President's Message

Don Bradford



You may have noticed that I have mentioned Significant Interest Groups (SIGs) from the beginning of my tenure as President. That's because I consider active participation to be perhaps the most important aspect of club membership. Not because of any formal organized groups, but because active participation breeds knowledge and enthusiasm. Asking questions, discussing issues, and offering answers are the lifeblood of our organization.

As mentioned before, we have formed several SIGs, but formation of a hypothetical group does not automatically create interaction and involvement. While those SIGs are gathering momentum, Dana Swift and others have been meeting weekly and discussing various topics such as observatory upgrades, science experiments, eclipse imaging, etc. He will report on some of those results at our April 26 meeting. And Cathy Grounds, our treasurer, has formed a Women in Astronomy group. She will report on their first meeting and future plans at our meeting on April 26.

Simply put, SIGs are actually created when any question is asked, and someone engages in discussion of that question. We likely all agree that you can't be interested in astronomy and not have questions. This is true for the newest beginner and the most experienced and all in between. So, when someone mentions an SIG, consider it an offer to entertain questions and/or answers. A question asked and a volunteered discussion is the creation of an SIG.

So why not take advantage of your membership and get actively involved by simply asking a question to broaden your knowledge and enhance your enjoyment of your hobby. It is really that simple, and you can ask your questions in at least three ways: (1) engage a member at a club meeting, observing night or any other club event, (2) email me at astrotulsa.pres@gmail.com, or (3) use the "Contact" link on the club website. Such interaction is truly the lifeblood of this organization! Believe it or not, most members enjoy interacting with new members (and old ones as well) and discussing questions.

In the meantime, watch the website for announcements and schedules of club events. I look forward to seeing you at one of our many events and projects.

"Bringing Stars to the Eyes of Tulsa since 1937"

Don Bradford - President



Click on these images to links on the Internet



<https://www.astroleague.org/observing-program-selector-grid/>

*** The NEW **CLEAR OUTSIDE** icon above is a link to an extensive site showing cloud cover %, Seeing, Transparency, Moon Phase, Temp in ° C and many other useful tools

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/>

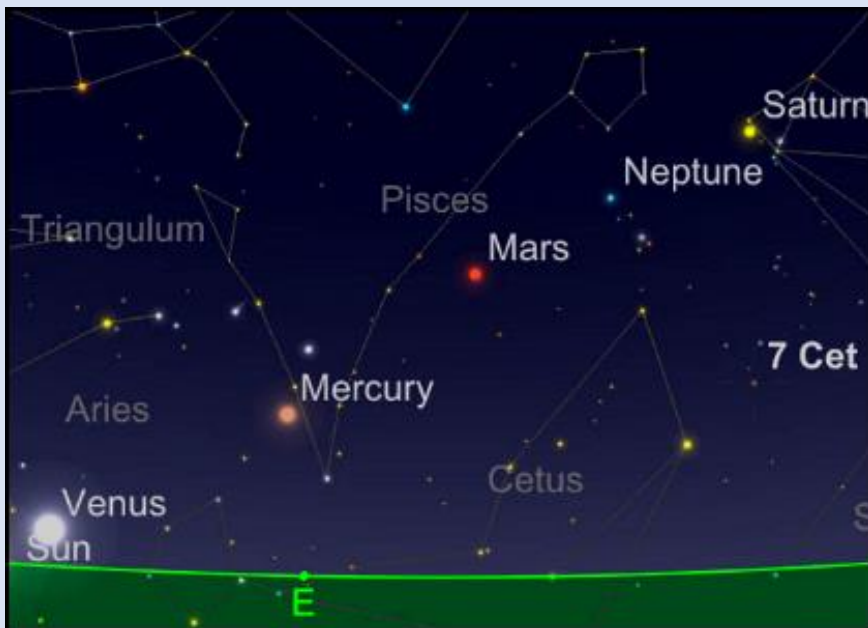
May - Moon Phases - -

New Tues May 7 - - **1st Q** Weds May 15 - - **Full** Thurs May 23 - - **3rd Q** Mon Thurs May 30



Sunset Times May 1 – 20:11 May 10 – 20:18 May 20 – 20:26 May 30 – 20:34

MAY EVENING PLANETS –. The planets have temporarily left the evening sky. If you observe early in the month, you may still be able to catch Jupiter hugging the WNW horizon the first week of May. It passes behind the Sun on May 18th. What astronomers call “Superior Conjunction”.



MORNING PLANETS – Parade of Planets in the Predawn Sky. If you love observing planets, get to bed early and start observing the southeastern sky by 5:00 AM. You’ll be able to enjoy **Saturn’s** rings as it rises at 4 AM. Next comes 1.1 mag **Mars** at 4:45 AM. Then **Mercury** at 5:30. Lastly, you’ll have to wait until 6:10 for **Venus** to rise just before the Sun. Binoculars can help locating Mercury and Venus. If you have a small telescope, you can add Neptune to your bounty of planets. The moon will be you guide from May 3rd to the 7th

Lunar conjunctions - The moon plays tag with the planets in the predawn sky. **Saturn** May 3, its lies halfway between **Saturn** and **Mars** on May 4, **Mercury** May 6 and finally **Venus** on May 7

Comet 12/p Pons-Brooks reached perihelion on April 21st. This 10-mile-wide mountain of ices has been putting on a great show since January reaching a bright at 3.7 magnitude. The Internet and apps were full of images plus some overly hyped reports of the “*Devil Comet*”. A name that it got because of gas jets looking like a pair of horns. One person even took an [amazing photo](#) of it and another comet during Total Eclipse. The comet is leaving our northern sky but fellow astronomers in Australia will be enjoying views for several more weeks.

Comet 13/p Olbers is passing through the constellation of Auriga during May. It begins the month at 9.3 Mag and reaches 8th mag by May 30. Should be in range of moderate sized telescopes. If all goes well it will continue to brighten to mag 7.5 by the middle of July.

In the meantime, **Comet C/2021 S3 PANSTARRS** is rising about 10 PM in the NE. Look for this 8.9 mag comet in Cygnus. FYI the /p in a comet’s name indicates it is a periodic comet with a known orbit. C/2021 S3 indicates the date of a comet’s discovery Year 2021 and S3 indicates it was the 3rd comet discovered in the first half of the month of October.

Stay tuned for **C/2023 A3 (Tsuchinshan-ATLAS)** that may become a naked eye comet at mag – 0.9 in mid-October ! Just in time for Okie-Tex ! Sept 27 to Oct 5, 2024

For more Comet Data at <http://astro.vanbuitenen.nl/comets> or <https://theskylive.com/>



Where’s Waldo ? For those of us of a “mature” age you may remember the Sunday comics had a cartoon with a character named “Waldo” hidden in an image with lots of other things. Those raised on Sesame Street, you may recall the song “**One of these Things Is Not Like the Other**”

Above are two images of a popular M object star cluster. The image on the left also contains an 8.4 mag asteroid. Can you ferret it out? Both were taken by my new SeeStar S50 telescopic camera. One in the rural sky in Arkansas and the other in my yard in east Broken Arrow. Can you identify the name of this star cluster? For the solution you will have to read further in the newsletter.

ADVENTURES CHASING MOON SHADOWS

Many of our members enjoyed chasing the moon's shadow along the path of the April 8 Total Solar Eclipse. Our April 26 meeting at Jenks will feature some of their stories and images.

Here are a few who shared their adventures for our newsletter.

Tulsa experienced a 95% partial eclipse. Many commented on it being cooler and darker.

Our Club VP Vice **Jonathan Fussell** and wife **Emily** set up a booth at Guthrie Greens. He shared *"Although I was unable to make the pilgrimage to the path of totality and bask in the light of the Bailey's Beads, I was able to act as the liaison of the Astronomy Club of Tulsa to the wider Tulsa community. With our booth set up and telescopes collimated, we bathed in 95% totality as thunderous applause swept the crowd gathered at the Guthrie Green. "Look!", "WOW!", "My God, look at that!" were phrases I commonly heard as the moon made first contact and the eclipse began. It was a truly thrilling experience to be a part of."* He used a Coronado H-Alpha scope and the club's Celestron C5 with a solar filter

Member **Tom McCune** also joined the large crowd at Guthrie Greens.

"I saw the eclipse at the Guthrie Green. It was a little strange how small the Sun was when viewing it with those lenses. It fascinates me that moon is the right size to almost entirely block out the Sun. When the eclipse was at its coverage peak, I noticed how much cooler the temperature was. Looking around it seemed like I was viewed things through a tinted window."



Robert Brown shares a couple of images from east Tulsa that he took with his newly acquired SeeStar S50 telescope camera system.

John Francis took these great images at Barling, AR. He writes *"This was taken with a cheap setup: national geographic 70mm refractor with removable solar filter mounted to an old Meade tracking mount that was found at a swap meet with the original 112mm reflector ruined from poor storage. The camera was an old 3-megapixel Logitech webcam that I took apart and designed and 3d printed a new case that adapted it to a wide field eyepiece, so no focal reducer needed. I just designed and 3d printed adapters of one form or another to make all this work. I used sharp cap to get the images"*.





Dan Horwitz travelled to Russellville, Arkansas

"I was debating the efficacy of going to a place in Arkansas that would be in the path of totality. Hotel rooms were ridiculously high, cloud cover risky, and my thinking was that maybe 95% of totality in Tulsa wouldn't be all that bad. Then I read a comment on a Facebook Astronomy site where someone asked the group if they thought it was worth it to go from an area of 99.8% to 100%. The answer was a resounding yes.

That changed my mind on everything. It would be an out and back drive to Russellville, AR which would be in the path of totality for 4 min 12 sec. Having never experienced a total solar eclipse before, it was a challenge to fully capture it by camera. When the moment of totality came it was other-worldly. The small crowd that gathered at Pleasant View Park gasped, cheered, and applauded. I was awe-struck. I didn't even bother to change the camera lens as intended, and just wanted to take it in. The photos

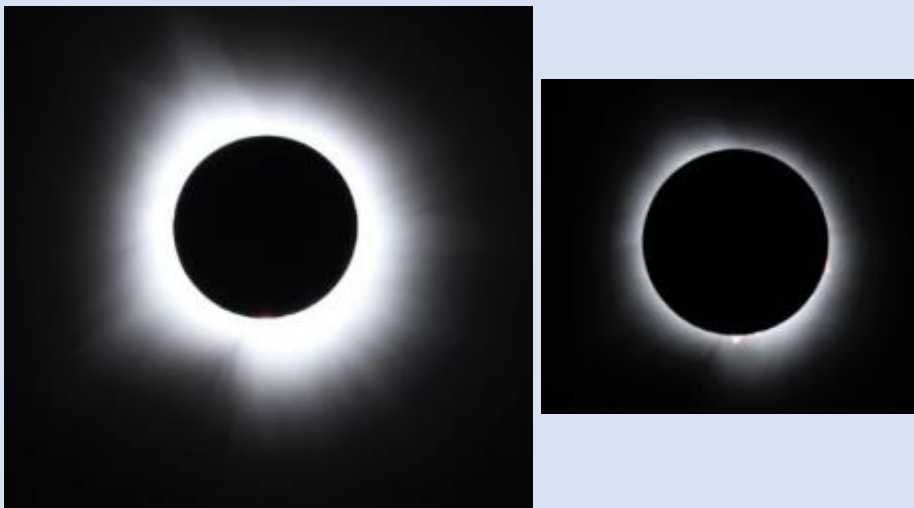
were good enough. The experience was overwhelming."

Bob and Judy Lieser also went to the Russellville area for the eclipse.

Jack Reeder writes *"On Sunday, Sondra & I traveled toward Missouri, following cloud forecasts which never agreed and changed often. Our original reservations were in Texas hill country, which showed to be overcast. We ended up arcing across central Missouri headed for Illinois, and then southward, stopping in Poplar Bluff. It's forecast showed some high clouds, which proved to be accurate. We did see the entire eclipse in an almost clear sky while we camped in a city park with several dozen other groups. Totality was AWESOME, a completely different experience from partiality. The 3 attached photos are within seconds of each other at different exposures to emphasize the corona and the prominences.*

Met people from South Dakota, Virginia, Utah, Tennessee, and Colorado, among others. We heard traffic getting into town was completely stopped, forcing turnarounds.

We broke camp late, and then had a leisurely BBQ dinner before we left town and didn't really run into heavy traffic until Springfield. Our Missouri site took 10-1/2 hours to reach and was only 5-1/2 hours from Tulsa!



Note the large spherical Solar Corona – Typical of an eclipse near Solar Maximum



Several of our club members ended up in Clarksville, Arkansas seeking a site with a good cloud report.

Cathy Grounds and Suzy Oliver has planned to view the eclipse near Temple, TX but we changed our plans at the last minute based on some good advice from Mr. Dana Swift, who kindly redirected us towards Arkansas where much less cloud cover was expected. We drove up the night before and car-camped in a Love's truck stop parking lot in Clarksville, AR along with about a million other eclipse-viewing hopefuls. The next morning was clear, so we set up our equipment, and then at the appointed hour the sky grew dark and with many oohs and aahs around us, we saw Bailey's Beads and the Diamond Ring and managed to get a few pictures. We saw people of all ages who came to see the eclipse, including one woman who was in tears from watching this profound event. We meet up with Dana and Bev there.

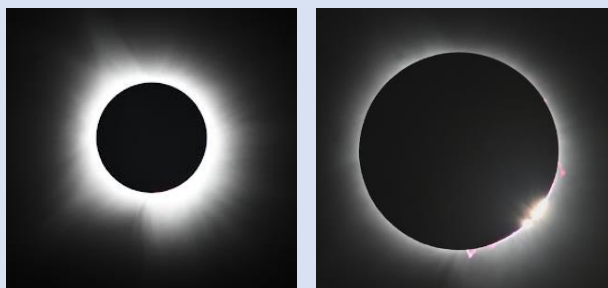
Don and Susan Sailing were at the Walmart in Clarksville Arkansas. *"The only thing of note was that the eclipse started 16 seconds late as determined by the website: It lists the start time of totality at the Walmart in Clarksville as 18:50:07.7 UTC (13:50:07.7 CDT). I have an image with a timestamp of 13:50:24 CDT that still shows a bit of the Sun (though an image a second later doesn't). The image with a timestamp of 13:50:08 CDT clearly shows the sun as do several others for some seconds after. I guess a 16 second error isn't too bad."*



John Land - *My family and I traveled to Laster Farm a few miles NW of Clarksville to enjoy 3 mins and 4 secs of Totality. My daughter and friend flew in from California. Son and family drove over from Bixby. We were joined by several of my sister's family that live in the area for an early lunch spread of home cooked delights.*

Then went out to watch the eclipse. It was a beautiful sight through thin cirrus clouds. The prominences were beautifully bright in my 9X60 binoculars. I took these images with my SeeStar S50 telescope which comes with a solar filter.

A group of club members went to Walmart parking lot in Idabel, OK. Fortunately, the clouds broke in time for Totality. The group included **Don Bradford, Mike Blaylock, Tim Gilliland, Davin Jones & Family, Ellen LaGrone, and John Parker.**



Howard Hulén traveled to Doniphan, MO. Where he and about 15 family members viewed the eclipse in clear skies. I was trying to get photos of the Solar Prominences and different-exposure-time photos of the corona. Howard will be doing a presentation on his technique at our April 26 meeting in Jenks.

Treasurer Report Cathy Grounds



As of April, 2024, we have **196** members, **13 new members** with several new members so far this year. Let's welcome our newest members **Khadija "Gigi" Goz, Sara and Glen Grossman**, and returning member **Suzy Oliver** ! Our membership numbers dropped a bit recently due to expiring memberships but are climbing once again.

We would like to thank an anonymous donor who contributed \$50.00 via the **TisBest** charitable organization this month. We would also like to honor Mr. Gary Earle for his recent donation of an 8" Meade LX10 EMC telescope with accessories, we are very grateful for his generosity.

I have had some reports of various issues when trying to pay dues online, and this is being looked into. If you have problems, please consider mailing in a check to Astronomy Club of Tulsa, PO Box 470611, Tulsa, Ok 74147, paying cash at any club event or swiping a credit card at our Jenks meetings, for which there is a roughly 3% service charge. Please note that if you are renewing your membership late, you will still be credited a full 12 months going forward from the date you renew.

As always if you have any questions or concerns or if your contact information (email, phone, postal address) has changed please email me:

AstroTulsa.Tres@gmail.com

Accounts as of April 15, 2024

Checking: \$ 3,913.76

Savings: \$ 2,796.27

Investments: \$ 34,609.72 (Value fluctuates with markets).

You can JOIN or RENEW memberships ONLINE using ANY MAJOR CREDIT CARD or MAILING in your dues with a check. The transactions are processed through PayPal, but you DO NOT need a PayPal account. A modest processing fee is added to online transactions.

Fill out the registration form at <https://www.astrotulsa.com/join>

Membership rates for **2024** are as follows:

Adults: \$ 45 per year, includes Astronomical League Membership.

Sr. Adult: \$ 35 per year for those 65 or older, includes Astro League Membership.

Students: \$ 30 with League membership; Students: \$ 25 without League membership.

Additional Family membership: \$ 20 with voting rights and League membership.

\$ 15 with voting rights but without League Membership.

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 SUBSCRIPTION RATES 2024 updates

A monthly astronomy magazine subscription is a great way to learn more about many aspects of our hobby. -

Scientific articles, sky events, equipment reviews, imaging techniques and more

Use the 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



This article is distributed by NASA's Night Sky Network (NSN).

The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

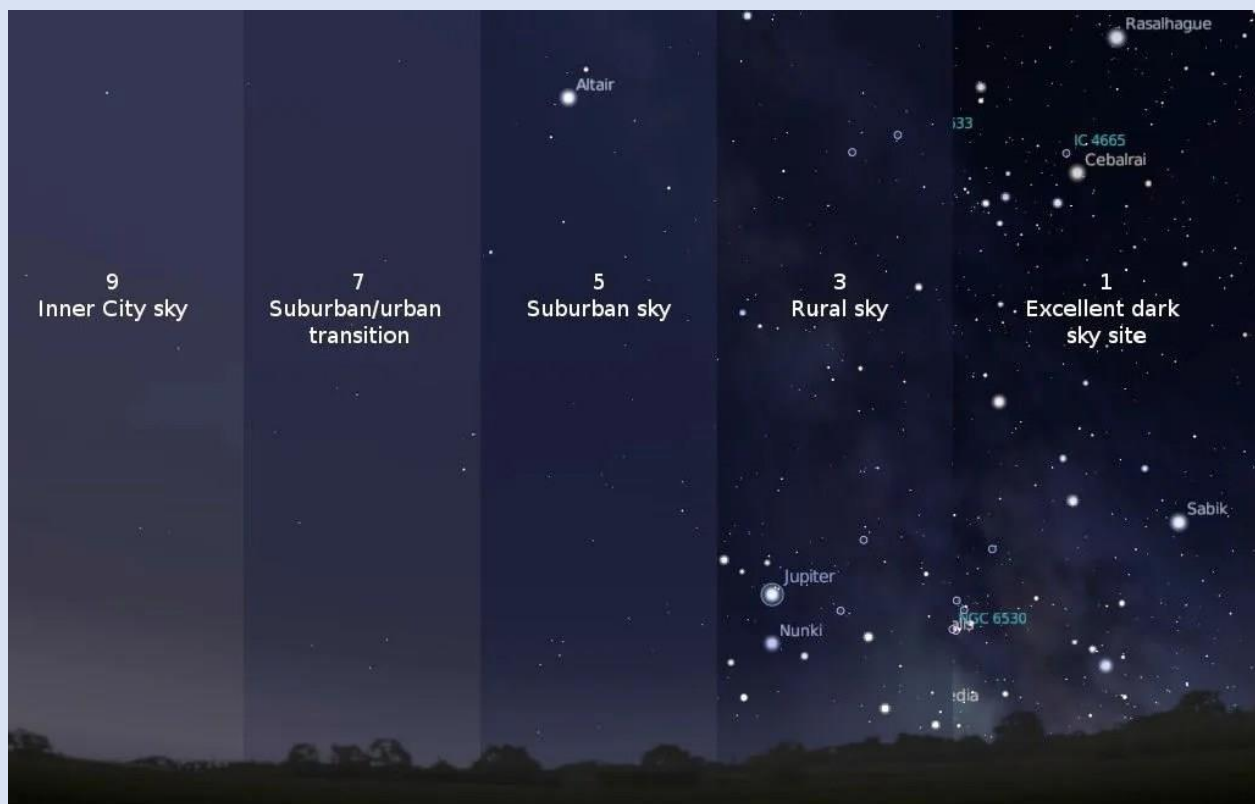
May's Night Sky Notes: Stargazing for Beginners

By Kat Troche

Millions were able to experience the solar eclipse on April 8, 2024, inspiring folks to become amateur astronomers – hooray! Now that you've been 'bitten by the bug', and you've decided to [join your local astronomy club](#), here are some stargazing tips!

The Bortle Scale

Before you can stargaze, you'll want to find a site with dark skies. It's helpful to learn what your [Bortle scale](#) is. But *what is* the Bortle scale? The Bortle scale is a numeric scale from 1-9, with 1 being darkest and 9 being extremely light polluted; that rates your night sky's darkness. For example, New York City would be a Bortle 9, whereas Cherry Springs State Park in Pennsylvania is a Bortle 2.



The Bortle scale helps amateur astronomers and stargazers to know how much light pollution is in the sky where they observe.
Credit: International Dark Sky Association

Determining the Bortle scale of your night sky will help narrow down what you can expect to see after sunset. Of course, other factors such as weather (clouds namely) will impact seeing conditions, so plan ahead. Find Bortle ratings near you here: www.lightpollutionmap.info

No Equipment? No Problem!

There's plenty to see with your eyes alone. Get familiar with the night sky by studying star maps in books, or with a planisphere. These are great to begin identifying the overall shapes of constellations, and what is visible during various months.



A full view of the northern hemisphere night sky in mid-May. Credit: Stellarium Web.

Interactive sky maps, such as [Stellarium Web](https://stellarium.net/), work well with mobile and desktop browsers, and are also great for learning the constellations in your hemisphere. There are also several astronomy apps on the market today that work with the GPS of your smartphone to give an accurate map of the night sky.

[Keep track of Moon phases](#). Both the interactive sky maps and apps will also let you know when planets and our Moon are out! This is especially important because if you are trying to look for bright deep sky objects, like the Andromeda Galaxy or the Perseus Double Cluster, you want to *avoid* the Moon as much as possible. Moonlight in a dark sky area will be as bright as a streetlight, so plan accordingly! And if the Moon is out, check out this Skywatcher's Guide to the Moon: bit.ly/MoonHandout

Put On That Red Light

If you're looking at your phone, you won't be able to see as much. Our eyes take approximately 30 minutes to get dark sky adapted, and a bright light can ruin our night vision temporarily. The easiest way to stay dark sky adapted is to avoid any bright lights from car headlights or your smartphone. To avoid this, simply use red lights, such as a red flashlight or headlamp. **The reason:** white light constricts the pupils of your eyes, making it hard to see in the dark, whereas red light allows your pupils to stay dilated for longer. Most smartphones come with adaptability shortcuts that allow you to make your screen red, but if you don't have that feature, use red cellophane on your screen and flashlight.

Up next: why binoculars can sometimes be the best starter telescope, with [Night Sky Network's](#) upcoming mid-month article through NASA's website!



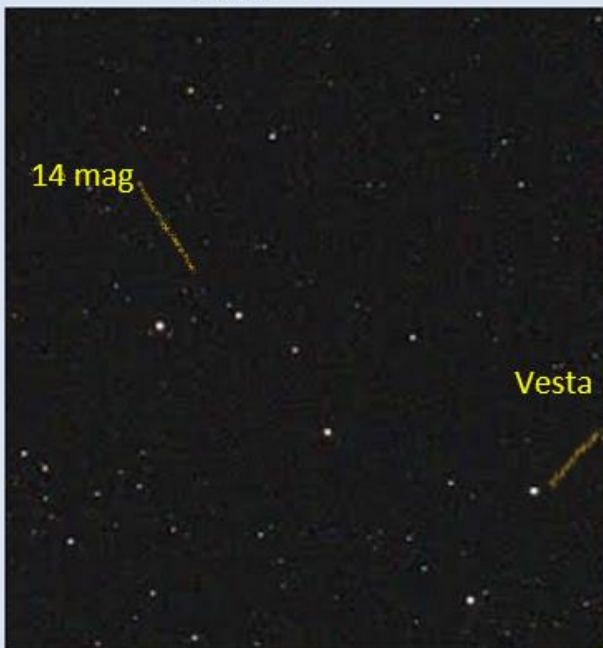
Where's Waldo? Solution. The top image of the star cluster M 35 in Gemini contains the asteroid Vesta. It is the brighter "star" on the right center of the image. I was not aware it was nearby on April 7 when I took the image but later found out. The image on the bottom was taken April 11 here in BA.



I intentionally took the two images below on April 11 and April 12. Vesta had moved about 1/4 degree in a day. These images are a set of 10 second exposures that the scope automatically stakes to improve the image. They both contain a 14th mag star & it was taken from my yard 4 miles east of BA.

Vesta was discovered on March 29, 1807. The 4th asteroid discovery. Our astronomer predecessors had no photographs of the stars. They had to meticulously hand drawn star fields and then compare those to look for changes from one date to another. The spacecraft [DAWN Mission to Vesta](#) orbited 326-mile-wide Vesta from July 16, 2011 to Sept 5, 2012

June 11



June 12



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
Located North of the intersection of 1st and B St

Meetings begin at 7:00 PM

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

[Click for Google Map Link](#)



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

Enjoy at Planetarium Show at Jenks High School

JENKS PLANETARIUM



Jenks High School Campus
205 East B Street, Jenks

TICKETS are \$7

See our 2024 Spring 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

ASTRONOMY CLUB OFFICERS:

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SECRETARY – SKIP WHITEHURST

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astrotulsa.tres@gmail.com

You may also contact club officers or
board members using the
CONTACT tab on our website

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JERRY CASSITY

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SIDEWALK ASTRONOMY – TIM GILLILAND

PR AND OUTREACH – **Open Position**

GROUP DIRECTOR – **Open Position**

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