

ASTRONOMY CLUB

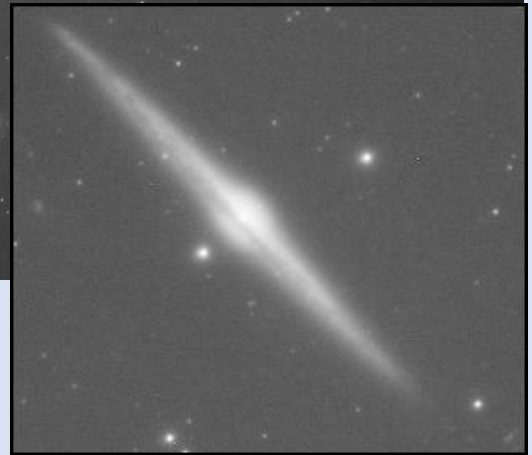
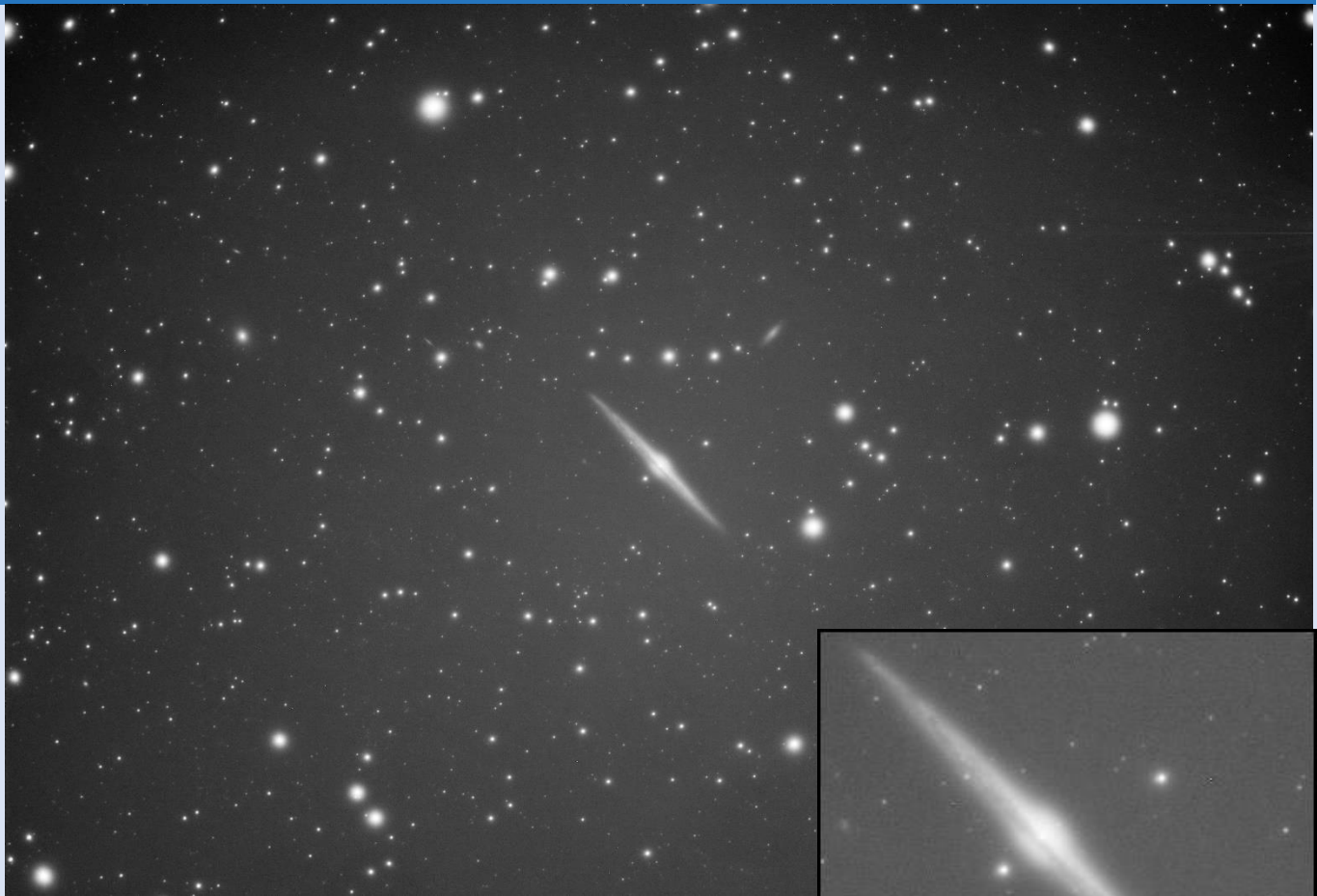


OF TULSA

OBSERVER

May 2023

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



Edge on Galaxy NGC 4565 – Needle Galaxy in the constellation of Coma Berenices

NGC 4565 is sometimes used as an example of what our Milky Way galaxy would look like edge on.

Don Bradford took this nice image with his ASI 294MM Pro imaging camera. He often uses it on the observatory dome scope to show deep sky objects to show people on guest observing nights.

NGC 4565 is a 9th magnitude galaxy about 39 million light years away. If you look closely at the main image, you can see 14 mag NGC 4562 to its upper right. The enlargement of his image clearly shows the dust lane along its equator.

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Astronomy Club Events Check our website AstroTulsa.com events section for updates

Astronomy Club Meeting - Friday May 5 - 7:00 PM - IN PERSON club meetings.
 At Jenks High School planetarium 105 E B Jenks OK - Guests Welcome
 Guest Speaker - **Lauren Herrington** presenting – **A Spectroscopic Tour of the H-R Diagram**
 See more program description on page 4

Observatory Stargazing Nights

Two types of Observatory nights. During the Summer Months they are scheduled on a Friday. If weather is poor on Friday, we will try again on Saturday if the weather improves.

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 immediate family
 Details, Times and Direction Maps are posted on our Website

<https://www.astrotulsa.com/events>

NOTE: Events on June 9, 10 & 11 are for pre-registered conference guests only.

May	Meeting	Guest Night	Member	Mother's Day
	Fri 5	Fri 12	Fri 19	is May 14
Observatory	19:00	19:45	20:00	
	Full Moon	3rd Quarter	New	First Quarter
	Fri 5	Fri 12	Fri 19	Sat 27
Hosting MidStates Regional Convention				
June	Friday June 9 - Registrtration 3 to 5 PM			
Jenks HS		Star BBQ 6:30	--- Guests at Observatory 8:00 PM	
Jenks HS	Saturday 10	8:00 to 4:00 Presentations & Vendors		
Jenks HS		6:30 Banquet & Keynote Speaker		
Jenks HS	Sunday 11	8:30 - 11:30 Presentations and Close out		
	Member	Guest Night		
Observatory	Fri 16	Fri 23	< This would be a	
	20:15	20:15	bright Waxing Crescent	
	Full Moon	3rd Quarter	New	First Quarter
	Sat 3	Sat 10	Sat 17	Mon 26

Registration is now open – Get yours in early !

2023 MidStates Regional Astronomical Conference

June 9 – 10 – 11

<http://www.msral2023.org>



2023 MidStates Regional Astronomical Conference

June 9 – 10 – 11

www.msral2023.org



The Astronomy Club of Tulsa invites you to join us as we host the 2023 MidStates Conference. The conference will be held in the Jenks, OK high school science building. The conference area features a well-equipped 120 seat planetarium, a spacious glass walled lobby and large banquet room. For our out-of-town guests we have arranged discounted rates at two nearby hotels. Use the active "Book Now" links to get the discount rate. Registration information, maps links and schedule information can be found at www.MSRAL2023.org.

On Friday evening we will gather for a delicious Star-B-Que and brief welcome. Then we will proceed to our observatory located on a rural hilltop about 35 minutes SW of town. The observatory includes a classroom, a 20-foot dome with a Meade 14" RCX 400 telescope as well as an outside area of telescope viewing.

Daytime Saturday will feature presentations on a variety of astronomical topics. Time to visit with fellow astronomy enthusiasts from other clubs and peruse the visiting vendor displays. Also, you will have the opportunity to see the newly completed Mobile Observatory project for advancing STEM education. There will be door prize drawings during the presentation times and a grand prize drawing at the Keynote Speaker banquet.

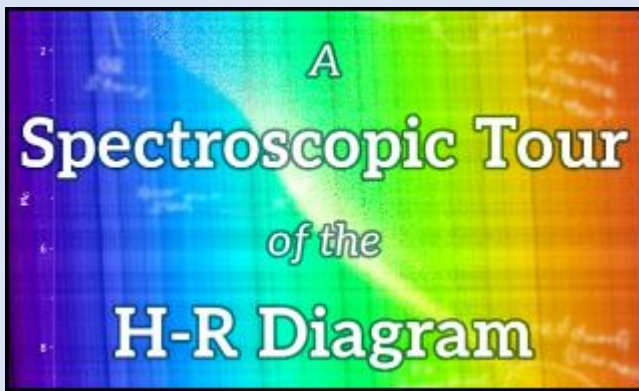
Saturday evening is our Keynote Speaker Banquet featuring Dr Daniel Kennefick speaking on *Multi-Messenger Astronomy: A History of this still-dawning field* about the emerging window of discoveries revealed by Gravitational Waves.

On Sunday morning, we will finish up the conference with a few more presentations and an excellent planetarium show created by students from the Jenks system.



Jenks has several family friendly attractions- the Oklahoma Aquarium, an attractive pedestrian bridge over the Arkansas river and numerous shops. It is just a few minutes' drive to the many attractions in Tulsa.





Our May 5 program - In Person Guest Speaker – **Lauren Herrington** will be presenting – **A Spectroscopic Tour of the H-R Diagram**

You'll not want to miss her energetic enthusiastic passion for learning all about the Stellar Spectra. Lauren describes her presentation this way.

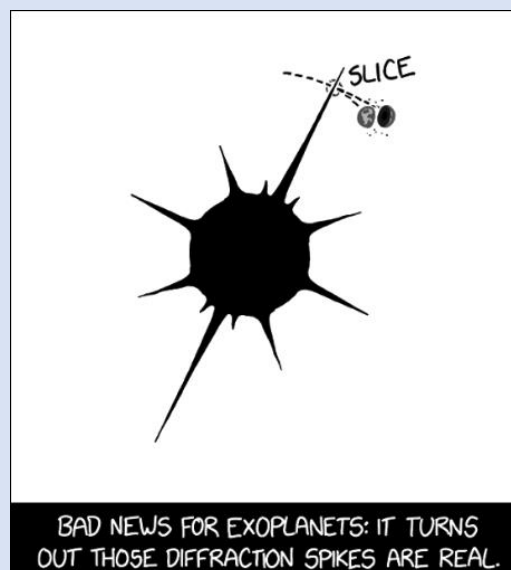
“What do you get when you take a few hundred stars and compare their brightness and temperatures? A Hertzsprung-Russell diagram! The H-R diagram is the most famous graph in all of astronomy, and for good reason. Understanding

where a star belongs on the H-R diagram can tell you about its age, size, color, behavior, and even its ultimate destiny. In this talk, I'll lead a tour around the H-R diagram, showcasing some of the coolest stars in the galaxy. We'll talk about the major groups of stars which you can find on the H-R diagram, what they look like, and why they form groups in the first place. To illustrate this story, I've prepared lots of stellar spectra, so that you can gain a deeper insight into the diagram from the perspective of a stellar spectroscopist.”

Lauren Herrington is an astronomer from near Grand Lake O' The Cherokees, Oklahoma. She works part-time for the American Association of Variable Star Observers, coordinating an educational lecture series and helping take care of the AAVSO's spectroscopic database, AVSpec. She also works as a remote assistant for Professor Sara Seager at MIT, helping to write code and make graphs so that Prof. Seager can focus on the difficult problems of exoplanet science. This summer of 2023, Lauren has a very exciting opportunity to work at the Pisgah Astronomical Research Institute in North Carolina.

A diehard visual observer since age 13, Lauren spent 6 years glued to an eyepiece before spectroscopy drew her attention away from faint fuzzies and towards bright streaks (a.k.a. stellar spectra). Since she didn't have an equatorial mount, she devised a new method of observing called “drift scanning” in order to record her own spectra of the stars with her 12” Dobsonian. Recently, she started working towards a college degree so that she can continue to pursue her passion for astronomical spectroscopy.

Thanks to Don Sailing for sending us this “News Flash”
Trouble for Exoplanets with James Webb Telescope !



President's Message John Land



This newsletter is a bit sparse due to all the efforts going on to prepare for our club hosting the MidStates Astronomy Conference June 9-10 & 11. You don't have to be a member to register for the conference. Anyone who wants to come may do so.

We will need lots of members to volunteer to help with a variety of tasks. We are asking Tulsa members and guests to register early to help us have a better estimate of how many participants to prepare for.

Details and Registration at <http://www.msral2023.org>

We have a great line up of presentation speakers.

Fred Gassert from Witchita - Out of the Darkness – Retoring a public observatory

**John Blaesí – Bartlesville - Dark Sky Parks and Obtaining a
Certified International Dark-Sky Association Designation**

**Byron Labadie - Astronomy in Chile Educator Ambassador Program
Plus a planetarium show on the Big Observatories in Chile**

Val Germann – Columbia MO - Astronomy on the Santa Fe and Oregon Trails

Brad Young - Tulsa - Alternate Constellations – other cultures

John Barentine – Arizona - Obsolete Constellations – no longer used

**Keynote Banquet Speaker - Dr Daniel Kenefick – University of Arkansas
Multi-Messenger Astronomy: A History of this still-dawning field
Telling us about the new discoveries with Gravity Waves**

John Moore – Tulsa - Chasing Shadows - The Exciting World of Occultation Sciences

Dan Zielinski - Jenks High School student Planetarium Show creation – Eclipses Crossing America

Peggy Walker - MSRAL Back in the Day

**Plus Tulsa's New Mobile Observatory will be there at lunch on Saturday
Field trips to our Tulsa Club Observatory – Friday & Saturday evenings.**

Tulsa will experience two deep solar eclipses in the coming months. On Saturday Oct 14, 2023 the sun will be 78% covered. This will be a great opportunity for public events to safely view the eclipse. On Monday April 8, 2024 a Total Solar Eclipse passes over SE Oklahoma and central Arkansas. Many of our members will be making plans to go see it. Here in Tulsa the sun will be 95% eclipsed.

Let us continue our 85+ years of
“Bringing Stars to the Eyes of Tulsa since 1937”

John Land - President



Click on these images to links on the Internet



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/>

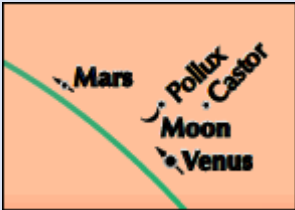
Astronomy for Beginners | Night Sky Facts, FAQs & Resources
<https://skyandtelescope.org/astronomy-information/>

What to Know Before Buying a Telescope
[kyandtelescope.org/astronomy-news/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 -- Full May 5 -- 3rd Q May 12 -- New May 19 -- 1st Q May 27

May planets. - **VENUS** dominates the western evening sky. Due to its brilliance Venus is best observed during bright twilight. Try to observe it 2 – 3 times per month at higher magnification and you will discover as Galileo did that it has phases like the moon. It starts off the month of May with a gibbous phase 17” in size. By the end of May it has swelled to a quarter phase appearance 22” across. Venus reaches its greatest eastern elongation from the Sun (45°) on June 4th. In leaves the horns of Taurus on in early May and by month’s end has reached the eastern side of Gemini. Venus can be seen naked eye during the daytime near its elongations if the sky is clear. (Occasionally has been reported as a UFO hovering above.) I have done it several times in late afternoon by standing in the shadow of a building and searching the area of the sky in binoculars. Once located I look for a horizon reference point and usually can spot it naked eye. Looks to me like a tiny silver balloon some kid lost at a birthday party. May 22 or 23 would be good days to try as the crescent moon will be nearby.



MARS begins the month in eastern Gemini and drifts eastward into Cancer during May. Look for it to pass through M 44 the Beehive Cluster June 1-3. Don’t expect a bright red planet. Mars has dimmed to only 1.5 magnitude as the faster moving Earth leaves it behind in its orbit. Look for a nice line up of Venus, the Moon and Mars in Gemini on May 23. Then for the Moon near Mars on May 24th

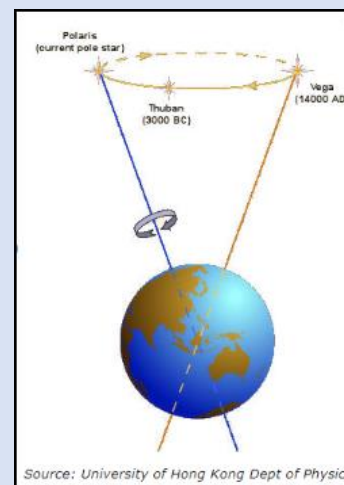
SATURN has emerged in the morning sky. Look for it rising in the SE before dawn around 3:00 AM. The moon will be nearby May 13th. Bright **JUPITER** rises an hour before dawn hugging the horizon a bit left of due East. **MERCURY** makes a poor appearance in the morning sky in late May 5 degrees to the lower left of Jupiter.

The Earth runs into the debris stream left behind by Comet Halley My 6th and 7th producing the **Eta Aquarid meteor shower**. This is a poor year for the shower since the Full Moon is on May 5th.

Speaking of Constellations. “Hey Babe – What’s your Sign?” The astrologers who cast your daily horoscope would have you to believe that people born from April 20–May 20 are the sign of Taurus and those born May 21 to June 21 are Gemini. Your astrological sign is “supposed to be” where the Sun was on your birthday. However, the Sun doesn’t even enter the constellation of Taurus until May 14th and doesn’t reach Gemini until June 21st leaving there on July 20.

“Hey! What’s the deal !” No wonder my day is all messed up.
I’ve been reading the wrong sign in the horoscope! 😞

There are a number of reasons the dates don’t match. **First of all**, the astrologic signs are based on the Sun’s positions in 150 AD – Mapped out by Claudius Ptolemy – the same guy that thought the Earth was at the center of everything. **Second** it assumes all the constellations are the SAME SIZE about 30 degrees, which any middle school kid can see that they aren’t.



(They even ignore the fact that the Sun only spends a week in Scorpio and another 18 days in Ophiuchus that is not even a sign.) **Third** the main reason the dates have changed so much is the **Precession of the Equinoxes**. ([Look it up on Google](#)) As our Earth spins in space it wobbles like a spinning top. The direction the North pole points in space drifts around the sky in a giant circle. Back in Egyptian times the North Star was Thuban in Draco, Now the pole points at Polaris in Ursa Minor. In about 12,000 years the bright star Vega which is high overhead in the summer now will be near the north polar position.



Occultation of Jupiter – Weds Morning May 17 -

The thin crescent moon will pass in front of Jupiter this morning. From the Tulsa area the occultation will begin about 6:22 AM – taking 3 minutes to completely cover Jupiter. Sunrise is at 6:15 AM so you will need at least binoculars to witness the event. **CAUTION : DO NOT POINT BINOCULARS OR TELESCOPES NEAR THE SUN.** Look to the East about 12 degrees (one fist width) above the horizon. For a closer view get your telescope set up by 6:00 AM to locate them in the bright twilight. An orange or yellow filter may add more contrast to your view against the blue sky.

If you have a tracking telescope, set it to track Jupiter and watch the moon slip over the planet. Then continue to track Jupiter. Start watching again at 7:15 AM to see the planet reappear about 7:22 AM If you like you may be surprised to learn that you can see Jupiter well after dawn. I once followed it from before dawn until well past noon. Use a medium to low power eyepiece and check it occasionally so that it doesn’t slip out the of the field of view. You’ll need to well align your scope the evening before so your tracking stays close. **Shield your scope so that the Sun doesn’t drift into its field of view !!**

The Aurora have been going crazy this Spring ! Northern light have been seen in Oklahoma TWICE. Even as far south as San Deigo !! March 23 and again April 23 ! Check the website <https://spaceweather.com/> regularly for predictions of solar activity.

Great Aurora video <https://spaceweather.com/archive.php?view=1&day=24&month=04&year=2023>

And Especially tis Rainbow Shower Aurora April 19 <https://apod.nasa.gov/apod/ap230419.html>

Check out all the images at <https://spaceweathergallery2.com/index.php?title=aurora>

Associate Treasurer Report

Mike Blaylock



As of April 22, we had 196 members 12 New members for 2023

We welcome this month's newest members – **Andrew Vodopich, Chad Lynn, Simmons, Tom McCune, Davis Wood, and Skeet Christensen.**

Hello and welcome to ACT !

Have you changed you Contact Information? Email, Phone, Postal Address ?

Please help us to maintain our records by sending an email to AstroTulsa.Tres@gmail.com

Accounts as of April 22, 2023

Checking: \$ 3,768.29

Savings: \$ 2,790.90 < \$ 3000 was moved to checking for Observatory handrail project.

Investments: \$ 31,470.00 (Value tends to fluctuate with markets).

You can JOIN or RENEW memberships or magazine subscriptions ONLINE using ANY MAJOR CREDIT CARD.

The transactions are processed through PayPal but you Do Not need a PayPal account.

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

Click Submit and you will be given the choice of either MAILING in your dues with a check or paying online with most major credit cards. A modest processing fee is added to online transactions.

Membership rates for 2023 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.

Join Online – Add or renew magazine subscriptions. <https://www.astrotulsa.com/join>

MAGAZINE SUBSCRIPTION RATES and PROCESS has CHANGED !

You can get a discount rate as a Astronomy Club member. **However, you will need to do so directly using their discount rate web links.** Both Sky & Telescope and Astronomy have options for DIGITAL as well as PRINT subscriptions.

For club member's Discount subscription rates to [Sky and Telescope magazine](#)

go to [this page](#)

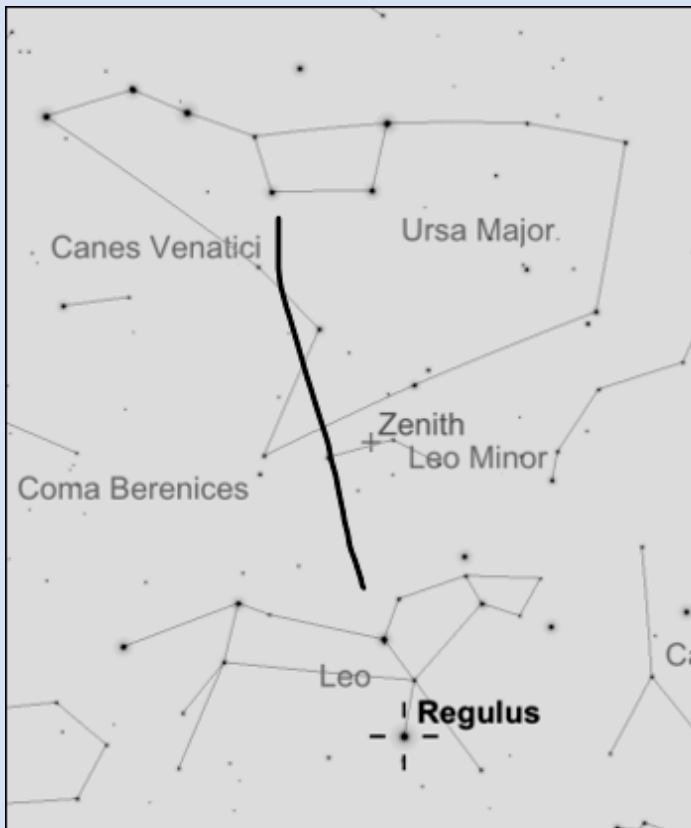
For club member's Discount subscription rates to [Astronomy magazine](#)

go to [this page](#)

Use the DISCOUNT RATE LINKS above instead of their regular subscription pages to MAKE or RENEW your subscription.

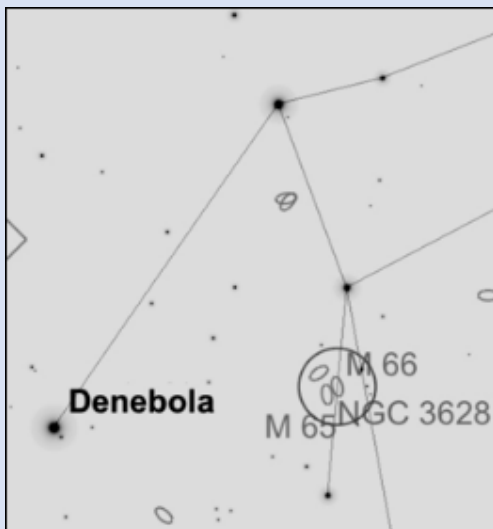
Watch the Lion: Celestial Wonders in Leo

Modified from a *Night Sky Network* article



The spring constellation of **Leo** is a prominent sight for stargazers. Its famous sickle, punctuated by the bright star Regulus, draws many a beginning stargazer's eyes, inviting deeper looks into some of Leo's celestial delights - including a great double star and a famous trio of galaxies.

Leo's distinctive forward sickle, or "reverse question mark," is easy to spot. Look for it high in the southern after sunset. If you are having a difficult time spotting the sickle. Look for the Big Dipper high in the north. Look for the two stars in its bowl closest to its handle and trace a line back toward the south. It should direct you to the bright 1.4 mag star Regulus which makes up the "period" in the reverse question mark. Regulus is a blue-white B7 star at a distance of 79 light years. Regulus resides just 1/2 degree above the ecliptic. So, it is often joined by a passing planet or the moon. A telescope will show that Regulus is a double star with an 8.2 mag companion nearby.

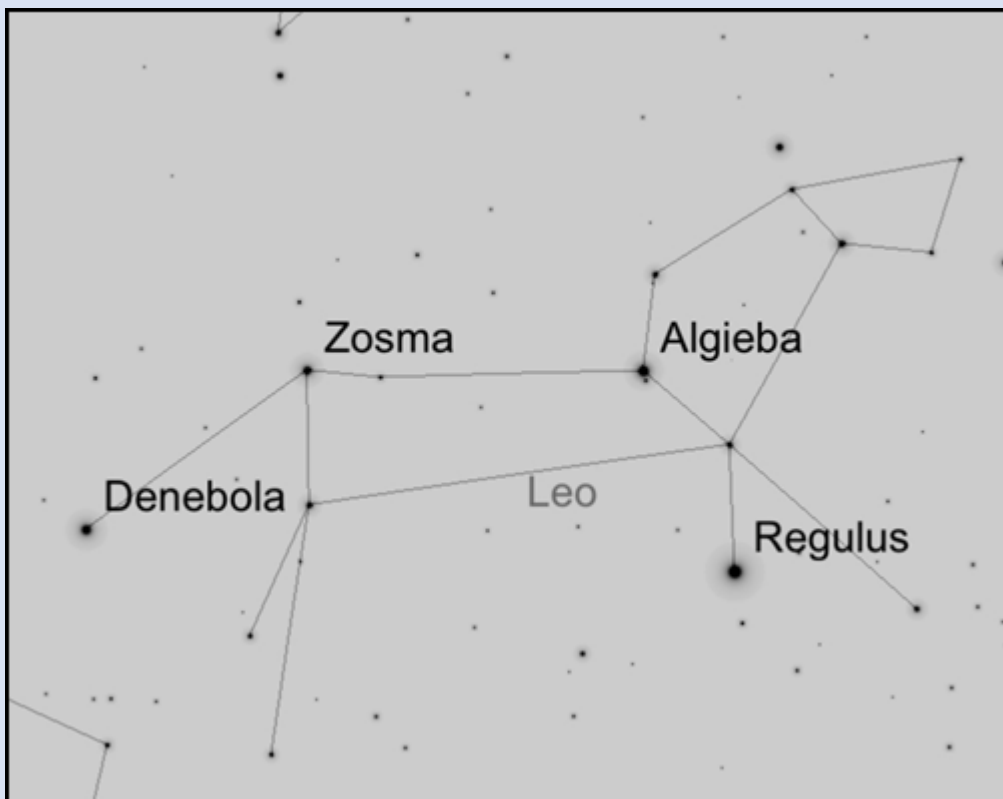


A trio of three bright stars make up the hind quarters and tail of Leo. At the tip of Leo's tail is the bright 2.1 mag star Denebola at a distance of 40 light years. In the hind leg of Leo is the famous "Leo Triplet" of galaxies. In a low to medium power eyepieces all three galaxies can fit in the same field of view. Follow the leg about halfway down. Your finder scope should show a small arc of stars nearby. Move your view just to the east. The galaxies M 65 & M 66 are fairly easy to see. You may even detect them in a finder scope or binoculars. NGC 3628 is a bit harder to detect but worth the search. The three galaxies are actually fairly close in space.



M 65 - 42 Mly, (Million Light Years)

M 66 - 37 Mly and NGC 3628 at 35 Mly away. The three are indeed gravitationally bound to one another. Compare and contrast the appearance of each galaxy – while they are all spiral galaxies, each one is tilted at different angles to our point of view! Do they all look like spiral galaxies to you?



The B&W images from editor's Sky Safari phone app

If you peer deeper into Leo with a small telescope or binoculars, you'll find a notable double star! Look in the sickle of Leo for its second-brightest star, Algieba - also called Gamma Leonis. This star splits into two bright yellow stars with even a small magnification - you can make this "split" with binoculars, but it's more apparent with a telescope. Compare the color and intensity of these two stars - do you notice any differences? There are other multiple star systems in Leo – spend a few minutes scanning with your instrument of choice and see what you discover.

You are invited to come 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
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 Guest – both individuals and families as well as our regular members.

Several of our club members set up telescope 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

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PR AND OUTREACH – **Open Position**

GROUP DIRECTOR – **Open Position**

NIGHT SKY NETWORK – **Open Position**

WEBMASTER JENNIFER JONES

Enjoy at Planetarium Show at Jenks High School

JENKS PLANETARIUM



Jenks High School Campus
205 East B Street, Jenks

TICKETS are \$7

Purchase online at

jenkscommunityed.com

or call 918-298-0340

2023 [Go to Show Schedule](#)

Click the Date Column to sort them by show date

Most Shows take place on
Tuesday evenings from 7:00 PM to 8:00 PM
a few on Saturday

Do you have ideas for our club In Person or ZOOM Meetings?

Want to share an observing experience or astrophoto.
Know someone willing to be a Guest presenter?

We would also welcome YOU to do a short 5-10
minute section of interest or new equipment you'd
like to review.

Create a Cartoon on a Space Theme

Contact our Editor [John Land](#)

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