



OBSERVER

November 2017

Bringing Stars to the eyes of Tulsa since 1937



Tulsa Astronomy Club row at Okie-Tex Star Party

by Jerry Cassity

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Astronomy Club Events

Details at <http://astrotulsa.com/Events.aspx>

Sunday Nov 5 - Central Standard Time Begins **“Stars Come Out an Hour Earlier ! ! “**
 PUBLIC STAR PARTY SAT Nov 11 4:45 PM ACT OBSERVATORY
 MEMBERS’ NIGHT** FRI Nov 17 5:15 PM ACT OBSERVATORY
 Annual Members Dinner Sat Nov 18 6:30 PM JENKS Planetarium Details page 3
 SIDEWALK ASTRONOMY SAT Nov 25 5:00 PM BASS PRO
 ASTRO CLUB MEETING FRI Dec 8 7:00 PM JENKS High School Planetarium
 PUBLIC STAR PARTY SAT Dec 9 4:45 PM ACT OBSERVATORY
 MEMBERS’ NIGHT** FRI Dec 15 5:15 PM ACT OBSERVATORY
 SIDEWALK ASTRONOMY SAT Dec 23 5:00 PM BASS PRO

**MEMBERS AND FAMILY ONLY PLEASE.

2017	SUN	MON	TUE	WED	THU	FRI	SAT
NOVEMBER	29	30	31	1	2	3	4
				Sunset 6:26 PM Libra			FULL MOON
	5	6	7	8	9	10	11
	Central Standard time begins			Sunset 5:20 PM Libra		First Quarter Moon	Public Observing night 5:45
	12	13	14	15	16	17	18
		Venus - Jupiter conjunction 0.3 degrees apart AM	Mars south of moon AM	Sunset 5:14 PM Libra	Jupiter south of moon AM	Members Observing night 5:15	Annual Club Dinner 6:30 PM Jenks - New Moon
19	20	21	22	23	24	25	
	Saturn & Mercury S. of Moon at dusk low in SW		Sunset 5:11 PM Scorpio	Thanksgiving Day		SideWalk Astronomy @ Bass Pro 5:00 PM	
26	27	28	29	30	1	2	
Third Quarter Moon	Mercury & Saturn conjunction SW at dusk		Sunset 5:08 PM Scorpio				

2017	SUN	MON	TUE	WED	THU	FRI	SAT
DECEMBER	26	27	28	29	30	1	2
	FULL MOON				PEARL HARBOR REMEMBRANCE DAY	GENERAL MEETING 7 PM @ JENKS	PUBLIC NIGHT 4:45 PM @ OBSERVATORY
	10	11	12	13	14	15	16
	THIRD QUARTER MOON		GEMININID METEOR SHOWER	GEMININID METEOR SHOWER	GEMININID METEOR SHOWER Peaks 1:30 AM	MEMBER NIGHT 5:15 PM @ OBSERVATORY	
	17	18	19	20	21	22	23
	NEW MOON			WINTER SOLSTICE		SIDEWALK ASTRONOMY 5 PM 2 BASS PRO	
24	25	26	27	28	29	30	
	CHRISTMAS	FIRST QUARTER MOON					



Annual Members Dinner

Saturday Nov 18 6:30 PM at Jenks Planetarium building.

Meal will include choice of Sliced Brisket, Pulled Pork, Baked Beans and Cole Slaw. Teresa Davis has volunteered to bring baked potatoes. The club will provide drinks. **Members may bring a dessert to share if they like.**

Event is open to members and families.

Cost is \$ 10 per person.

PLEASE RSVP by Nov 8th with the number in your party

Email or contact Tim Davis astrotulsa.tres@gmail.com

SILENT AUCTION –a popular feature of at the annual dinner is a silent auction. You may bring items to donate for the auction. They don't necessarily have to be astronomy related. – books – posters – photos – craft items – are all welcome. Come early to look over the items and get your bids in. Payment will be at the end of the dinner. Proceeds will go to benefit the club and its activities.

RECYCLE YOUR SOLAR GLASSES

Bring glasses that are in good condition to club events this fall.

The group “**Astronomers Without Borders**” are asking for donations of Solar Viewing Glasses to be donated to student groups in South America and Asia. There are two Solar Eclipses in 2019. July 2 in South America and Dec 26 in Asia. There are eclipse events in the same general regions in June and Dec 2020. Our next event are an Annual eclipse in Oct 2023 and Total Eclipse in April 2024.

<https://astronomerswithoutborders.org/awb-programs/resource-sharing-programs/eclipse-glasses-donation-program.html>



Planets in November

As we return to CST - Central “*Starlight*” Time the sunsets before 17:30 giving us an extra hour of for Star Gazing. But you'll have to rise early to view the predawn planets.

Mars, Venus and Jupiter are all visible in the ESE in Virgo. **Mars** rises around 4 AM CST but is only 1.8 magnitude. The two brightest planets **Venus and Jupiter** have a grand conjunction of the morning of Nov 13 lying on 0.3 degs apart. A low power eyepiece should show both planets in the same view. You'll need a clear view to eastern horizon as the pair don't rise until about 6 AM less than an hour before sunrise at 7 AM. Venus will continue to sink closer to the sun each day while Jupiter and Mars will rise higher each morning.

In the evening sky **Saturn** is still visible low in the SW setting around 19:30 CST. **Mercury** will join Saturn for a conjunction on Nov 28 but they will be very low in the sky. Neptune in Aquarius and Uranus in Pisces are still binocular challenges.

The **Leonid Meteor shower** peaks the morning of Nov. 17 but has a weak display of 10 – 15 meteors per hour.

PRESIDENT'S MESSAGE

BY TAMARA GREEN



Hey Y'All!

I want to begin my message this month with an announcement regarding the Group Director.

As of right now, Owen Green is TEMPORARILY stepping aside as Group Director for the time being. For those of you who did not hear about what happened, his mother suffered a stroke last month and was hospitalized for a while. Now that she has been discharged and is on home health care, PT/OT and what-not, Owen has decided to spend as much time with her as possible, to make sure that she gets good quality of care. Richard Brady will be handling the group events until Owen is ready to return to his position. He will let me know when that will be.

Our Annual Dinner Meeting will be on Saturday, November 18 at the Jenks Planetarium. Dinner will be catered by 2 Pops. Dinner is from 6:30 PM to 8:30 PM. We will also have a planetarium show and group photos. Dinner is \$10 per person. We hope to see you there!

Our **Guest Speaker** for our **December General Meeting** will be **Pete Kron** from **Astronomics!** Astronomics is a major online vendor of quality astronomical equipment with headquarters in Norman, OK. <https://www.astronomics.com/> Pete plans to bring out some new products they have coming in to show us and talk about, so this should be exciting! So make your plans to come see what's new for 2018. Our General Meeting that month will be on **Friday, December 8 at 7:00 PM at the Jenks Planetarium.**

I really hope that we can have a great year next year! I have some things in the works for us that I hope you all will enjoy, and that I am personally looking forward to, if all goes right.

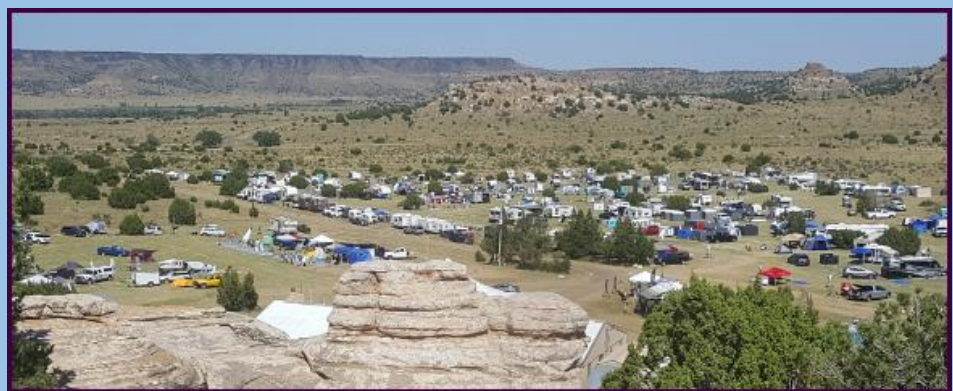
Clear Skies! Tamara



< **Top of the Black Mesa** – Highest point in Oklahoma

Photos by Jerry Cassity

OKIE-TEX Star Party camp grounds



SECRETARY'S MESSAGE

BY JOHN NEWTON



ELECTION ANNOUNCEMENT

The general meeting Oct 27 was scheduled for the club election night. However due to light attendance of only 17 members, we were unable to qualify votes for elected officers and board as you must be present to cast a vote. Therefore, the current elected officials remain intact, at least for another month.

A. As stated in the ACT Bylaws, Article IV – “The Annual Business Meeting shall be held in the month of October, on the date set by the board.

Notification shall be made in the month previous to the meeting date.”

“At this Annual Business Meeting the members shall elect by plurality vote.” And,

“A quorum shall be twenty (20) eligible voting members present in person at any meeting of the membership for the transaction of business.

B. Elections will be rescheduled for next month on November 18 which will coincide with the ACT Annual Dinner event at the Jenks Planetarium.

The delay of the election date gives members yet another opportunity to add their name to the list if they wish to run for office or board of directors.

The ACT Bylaws states in Article V - Qualifications for the elected position of Director must meet two conditions –

1. The nominee must be an eligible member in good standing for at least one (1) year.
2. The nominee must be the minimum legal age for the purpose of signing legal contracts and documents.

If you meet the above qualifications and are interested in serving the club in a leadership position, please send your request to be placed on the ballot to:

John Newton – ACT Secretary by email at astrotulsa.secy@gmail.com

Next month on November 18th is the ACT Annual Dinner. The dinner will be held at Jenks High School in the same building and floor where the planetarium is located but just on the opposite side of the hallway.

- a. We request that you RSVP by contacting Tim Davis – astrotulsa.tres@gmail.com.
- b. \$10 per person – Members and their guests are welcome.
- c. Catered by 2 POPs BBQ will be served with sides.
- d. Teresa will bake potatoes for this occasion and bring sour cream and chives.
- e. Need volunteers to bring deserts of their choosing – for instance, cookies, sliced cake or pie.

Profiles of the declared officer and board candidates are in the Oct Club Newsletter

http://astrotulsa.com/CMS_Files/10-2017.pdf

Any NEW CANDIDATES MUST CONTACT THE CLUB SECRETARY BEFORE THE DINNER.

President – Tamara Green Vice President – Jerry Cassity

Secretary – John Newton Treasurer -- Tim Davis

Board – Richard Brady – Teresa Davis – John Land – James Liley

Jacob Shepherd – James Taggart – Skip Whitehurst

So You want to buy a Telescope for Christmas!

Every year as Christmas draws near the club gets emails asking about how to select a telescope as a gift. Don't be fooled by Amazon or other claims about "Most Popular Choices" Take time to research your options. Look for vendors who specialize in astronomical products. There are lots of factors to be considered. The first thing to consider is who will be receiving the telescope. The age of the intended recipient - their experience – whether the telescope will be used in town or traveling to darker skies. Even the physical ability of the person who will be using the telescope. Today telescopes are marketed with lots of technology accessories assist in locating and pointing the telescope. These options are attractive but they don't change what you actually see in the telescope. Sometimes the learning curve to use the technology can frustrate a first time user.

THE BEST TELESCOPE IS THE ONE THAT WILL BE USED THE MOST !

For this article I am going to focus factors that affect what will I be able to **SEE** in the telescope?

LEARN THE BASIC PARTS AND OPERATION OF YOUR TELESCOPE.

A telescope is an instrument to collect and focus light. The **OBJECTIVE is the part of a telescope that gathers and focuses light**. The objective may be a set of lenses, mirrors or a combination of both. The **SIZE** of a telescope is defined by the diameter of its objective. **Astronomers often use the word APERTURE to describe its diameter**. If someone tells you they own a 6 inch telescope, they mean that its lens or mirrors are 6 inches across. Nowadays most objective sizes are listed in millimeters. Somehow 150 mm sounds way bigger than 6 inches (it's the same size)

THREE PERFORMANCE CRITERIA OF A TELESCOPE.

There are three ways to determine how well a telescope performs.

1. LIGHT GRASP 2. RESOLUTION 3. MAGNIFICATION

The **DIAMETER** of the **OBJECTIVE** (Aperture) is the most important factor in judging how well a telescope will perform in each criteria. **THE LARGER THE OBJECTIVE THE BETTER ITS PERFORMANCE.**

LIGHT GRASP is the amount of light that is collected and focused by the telescope. Astronomers often use the slang term "Light Bucket" to refer to their telescopes. You can imagine starlight as a gentle "rain" of photons sprinkling down from the heavens above. Just as a larger bucket will collect more rain water -

The LARGER THE OBJECTIVE THE GREATER IT'S LIGHT GRASP.

MAGNITUDE of a star is a numerical measurement of a star's brightness.

LIMITING MAGNITUDE is the dimmest object visible with that telescope.

Naked Eye 6th mag

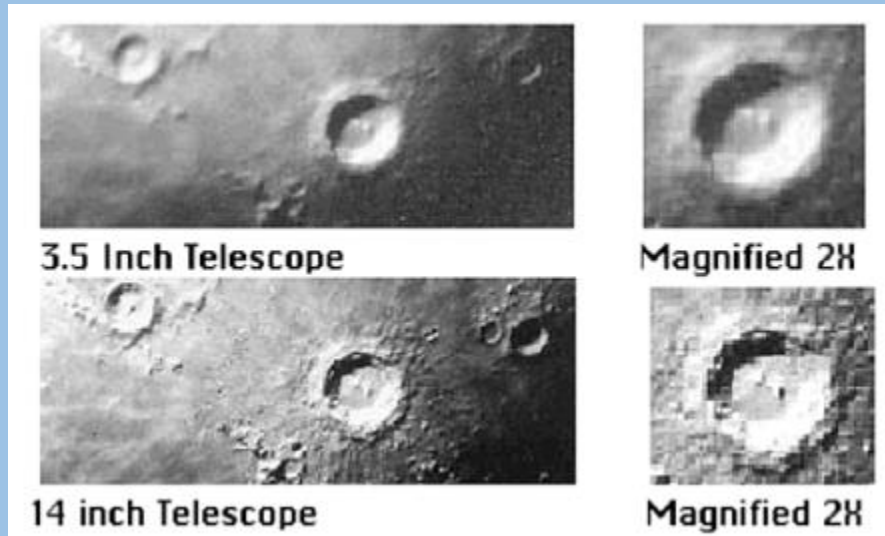


60 mm telescope –
10.6 mag. – 70 x more light



RESOLUTION is the ability to see fine details or to separate images of closely spaced stars. Resolution is measured by the smallest angle between two objects so that they still appear as separate objects. In astronomy we use the ARCSEC to measure these angles. One ARCSEC (Arc Second) is 1/3600 of a degree. The moon is about 1800 arcsecs in width. Your eye can see objects as close as 60 arcsecs. A 60 mm telescope will resolve 3.2 arcsecs or 20 times more detail. Again the **LARGER THE OBJECTIVE THE BETTER ITS RESOLUTION.**

Note: High quality objectives of the same size can improve resolution but still have same light grasp.



MAGNIFICATION is the number of times larger or nearer an object appears. The **MAXIMUM USEFUL MAGNIFICATION** of a telescope is limited to about **50 power per inch** of diameter or **2 power per millimeter**. Thus a 60 mm telescope can magnify **ONLY** up to 120 POWER. Attempting to push a telescope beyond this limit will result in a fuzzy disappointing image. **BEWARE** of Misleading Advertising. Many department store telescopes advertise powers of 300 – 400X- far beyond what they can deliver. This doesn't mean that they are bad telescopes as long as they are used within their performance limits.

LIGHT GRASP and RESOLUTION cannot be changed without buying a different telescope. Magnification, however, can be selected for the type of object you wish to view. Most telescopes come with 2 or 3 different eyepieces to change the magnification.

Two Factors Determine Magnification

1. Focal Length of the Objective
2. Focal Length of the Eyepiece

Focal Length is the distance from the objective to the plane of focus.

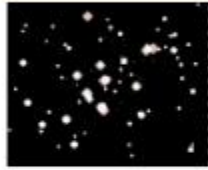
Magnification =

$$\frac{\text{Telescope Focal Length}}{720 \text{ mm fl}} \div \frac{\text{Eyepiece Focal Length}}{10 \text{ mm eyepiece}} = 72 \text{ x magnification}$$

The motion of the Earth's atmosphere often limits magnification on most nights to about 200 X

Note: Low end Department store / online telescopes often have low quality eyepieces. Avoid undersized 0.965 inch eyepieces. An Eyepiece diameter of 1.25 inch is the general standard and will allow you to purchase addition eyepieces in the future

To change Magnification one must select different EYEPIECES



LOW POWER 30X to 50X
for STARFIELDS



MEDIUM POWER 80X to 100X
Planets and Moons



HIGH POWER 150X or more
Surface Details

More extensive version of this article is at <http://www.astrotulsa.com/page.aspx?pageid=8>

Sky and Telescope magazine's - Guides & Recommendations for Telescopes

Hunting for a good deal on a first telescope for yourself or someone who you care about?
Or are you looking for a fancier upgrade?

<http://www.skyandtelescope.com/astronomy-equipment/choosing-astronomy-equipment/telescopes/>

Extensive selection of **How to Pick - - - articles** from Astronomic located in Norman, OK

https://www.astronomics.com/info-library_t.aspx

Some reputable online telescope sites are

www.astronomics.com in Norman OK <http://www.optcorp.com>

Orion scopes at www.telescope.com and www.telescopes.com

Meade scopes <https://www.meade.com/> Celestron scopes <https://www.celestron.com/>

Vixen <https://www.vixenoptics.com/>

Skywatcher <http://www.skywatcherusa.com/>

Article by John Land – Astronomy Club of Tulsa

TREASURER'S AND MEMBERSHIP REPORT

BY TIM DAVIS



Astronomy Club of Tulsa: 158 members, including 45 new members in 2017.

Welcome to our new members this month:

Kelle Flear, Sherri Watson, Bob Schwarz, James Fayard and Barry Selke

Club Accounts as of October 31, 2017:

Checking: \$ 5,784.67

Savings: \$ 6,777.58

Investment accounts: \$ 22,333.52 (*Value Fluctuates with Market*)

The club now has PayPal available for you to start or renew memberships and subscriptions using your credit or debit cards. Fill out the registration form at <http://astrotulsa.com/page.aspx?pageid=16> **Click Submit** and you will be given the choice of either **mailing in your dues** with a check **or using PayPal** which accepts most major credit cards. A modest processing fee is added to PayPal transactions.

You may also renew your membership or join at one of our club events using your credit card by seeing one of our officers. We can take payments with the Square card reader. A small fee is also added on to these transactions.

ALSO NOTE: For our current members who are renewing their memberships, you can now go to a new link on the website to start your renewal process. On the home page, hover over the "Member" tab on the ribbon menu near the top of the page. Then select the "Membership Renewal" link and this will take to a page to fill out your information. Fill this out, submit it, then pay your dues by whatever method you choose.

NEWS NOTE: Both Sky & Telescope and Astronomy have free Digital subscriptions available with print subscriptions, or Digital subscriptions may be purchased separately. Contact their websites for details.

Membership rates for 2017 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.

<http://www.astrotulsa.com/page.aspx?pageid=16>

Magazine Subscriptions: If your magazines are coming up for renewal, try to save the mailing label or renewal form you get in the mail. Forms are available on the club website.

Astronomy is \$ 34 for 1 year, or \$ 60 for 2 years. www.astronomy.com

To get the club discount you must go through the club group rate.

Sky & Telescope is \$ 33 per year www.skyandtelescope.com

Sky & Telescope also offers a 10% discount on their products.

Note: You may renew your Sky & Telescope subscription directly by calling the number on the renewal form, **be sure to ask for the club rate.**

NEW SUBSCRIPTIONS must still be sent to the club

The 2018 Astronomy Magazine Wall Calendars are here and are now available. If you would like to reserve one, send me an email at astrotulsa.tres@gmail.com or call me at 918-665-8134 and let me know how many you would like.

Otherwise, they will be available on a first come, first served basis at our upcoming events. Calendars are available for \$10.00 each, cash, check or credit cards accepted.

Calendars must be picked up in person at a club event, we cannot ship these to you. If you reserve one, just let me know at which event you will pick it up.



Wanted Astrophotos



Jenks Planetarium is seeking local Astro-Photographers to contribute to decorating the hallways entering the planetarium. We'd like images that are clear enough for general audiences to enjoy and, with a small write-up posted with it to learn from.

I'd like as many different objects as possible...

Nebulae, Galaxies, Planets, Moons even sky effects like Sunsets, Auroras, Eclipses etc.

I'd love to be an outlet to show off your work to our audiences. Credits will be given with each image within the write up that will accompany them.

Images and brief write-ups can be submitted to Dan Zielinski at

Dan.zielinski@jenksps.org Make sure the write includes:

- Name of the person credited with taking the picture
- Date, time and location of picture
- Equipment used
- Details on what the image is.

Thanks for being part of improving Jenks Planetarium!



Images by Frank Newby & John Land

This article is provided by NASA Space Place.

With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology.

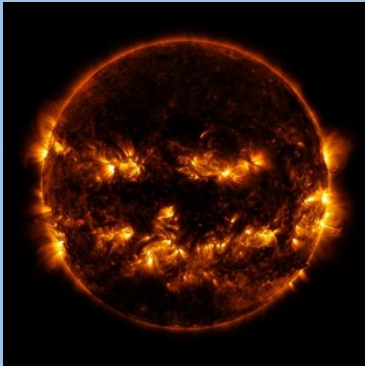
Visit <https://spaceplace.nasa.gov/> to explore space and Earth science!



Spooky in Space: NASA Images for Halloween

By Linda Hermans-Killiam

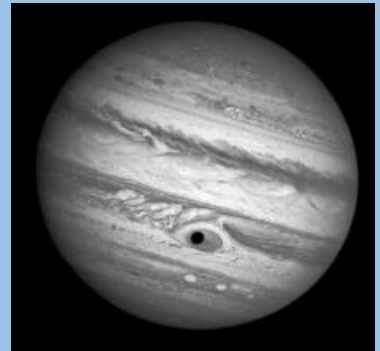
Have you ever seen a cloud that looks sort of like a rabbit? Or maybe a rock formation that looks a bit like an elephant? Although you know that a cloud isn't really a giant rabbit in the sky, it's still fun to look for patterns in images from nature. Can you spot some familiar spooky sites in the space images below?



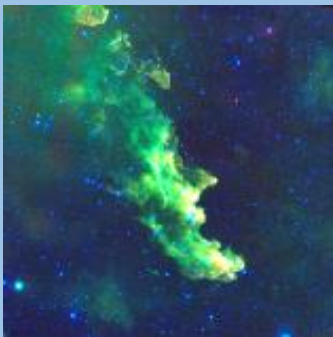
This might look like the grinning face of a jack-o'-lantern, but it's actually a picture of our Sun! In this image, taken by NASA's Solar Dynamics Observatory, the glowing eyes, nose and mouth are some of the Sun's active regions. These regions give off lots of light and energy. This causes them to appear brighter against the rest of the Sun. Active regions are constantly changing locations on the Sun. On the day this image was captured, they just happened to look like a face!

Credit: NASA/GSFC/SDO

This is a Hubble Space Telescope image of Jupiter. Do you notice something that looks like a big eye peeking back at you? That's actually the shadow of Jupiter's moon Ganymede as it passed in front of the planet's Great Red Spot. Jupiter's Great Red Spot is a gigantic, oval shaped storm that is larger than Earth and is shrinking. It has been on Jupiter for several hundred years, and its winds can swirl up to 400 miles per hour!



Credit: NASA/ESA/A. Simon (Goddard Space Flight Center)



Can you see the profile of a witch in this image? This image, from NASA's Wide-Field Infrared Survey Explorer, shows the Witch Head nebula. The nebula is made up of clouds of dust heated by starlight. These dust clouds are where new stars are born. Here, the dust clouds happen to be in the shape of an open mouth, long nose and pointy chin.

Credit: NASA/JPL-Caltech

The Black Widow Nebula looks like a giant spider in space. It is a huge cloud of gas and dust containing massive young stars. Radiation and winds from these stars push the dust and gas around, creating a spider-like shape. This image is from NASA's Spitzer Space Telescope.



Credit: NASA/JPL-Caltech/Univ. of Wisc.

Spooky in Space: NASA Images for Halloween



Did a skeleton lose one of its leg bones on Mars? Nope! It's just an image of a Martian rock. NASA's Curiosity rover captured this image. The rock was probably shaped to look this way over time by wind or water. If life ever existed on Mars, scientists expect that it would be small organisms called microbes. So, it isn't likely that we'll ever find a large fossil on Mars!

Credit: NASA/JPL-CALTECH/MSSS

To learn some fun planet facts and make a planet mask, check out NASA Space Place:
<https://spaceplace.nasa.gov/planet-masks>

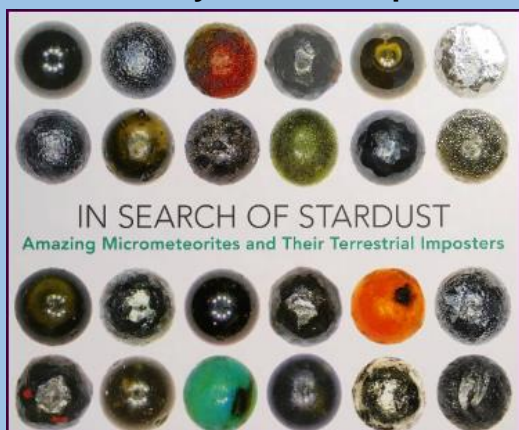


Spread the Word

Do you know someone who might like to make a comet on a stick or learn more about Pluto? Tell them to subscribe to the NASA Space Place Gazette, our monthly newsletter

<https://spaceplace.nasa.gov/subscribe/en/>

Stardust on your Roof Top -



a BOOK REVIEW - *In Search of Stardust* by Jon Larsen

Read complete Review by Dr. Michelle Franci at
<http://www.vofoundation.org/blog/dusted-by-stars/>

Hundreds of trillions of micrometeorites that come to rest on earth each year, adding as much as 100,000 metric tons to the earth's mass. Invisible, unremarked. Perhaps as many as one a day hits the roof of my house, there are surely some of these ancient bits of dust in the water I drink, still others stuck to my hands after weeding the garden.

Larsen, a Norwegian jazz musician, discovered that you could find and identify these micrometeorites by looking at the dust on urban roofs, previously it had been thought you couldn't find them in the midst of the general detritus of a city. But a careful eye is rewarded, as these cosmic intruders have a characteristic morphology. Their shape and appearance means you can sort them out under a microscope. See close up images on [Larsen's Facebook Page](#)

Larsen offers a brief and readable glimpse into the science of micrometeorites, but I enjoyed simply browsing the images, reading them as I might clouds. There is a golden glass meteorite with deep blue inclusions that looks like some alien aquatic creature's shell, while a burnished cryptocrystalline specimen on looks like a bronzed wasp's nest — until one remembers it is less than a millimeter long. One scanning electron microscopic image of an ablation spherule from the meteor that exploded over Chelyabinsk, Russia in 2013 looks like a tiny alien skull.

READ A GOOD ASTRONOMY RELATED BOOK LATELY? Would love to have more book reviews for the club newsletter. Contact John Land at astrotulsa.editor@gmail.com

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

Check our Events Page of Dates [Link to Events Page](#)



During the school year our club holds a **Monthly General Club meetings** at **Jenks Public Schools Planetarium**
105 East B St, Jenks, OK

Meetings begin at 7:00 PM

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

[Click for Google Map Link](#)



Sidewalk Astronomy Night

East side of Bass Pro in Broken Arrow near the lake.
101 Bass Pro Drive, Broken Arrow, OK

[Click Map Link here](#)

On a Saturday evening near the 1st Quarter moon Astronomy Club volunteers set up telescopes to share views of the moon, planets and other bright objects. It's a come and go event where shoppers and restaurant goers get a chance to experience glimpses of the universe with their own eyes.



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.

PUBLIC OBSERVING NIGHT on a Saturday

This event is open to individuals and families.
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. [Link to Events Page](#)
[Click for Observatory Map](#)

CAUTION: **DO NOT use GPS** it will likely send you on some nearly impassible back roads.

**PLANETARIUM EVENTS 2017
FALL SHOWS**



Jenks High School Campus
205 East B Street, Jenks

TICKETS

\$5 online or \$7 at the door
Purchase online at jenkscommunityed.com
or call 918-298-0340

JENKS PLANETARIUM

Explore the night sky with engaging, awe-inspiring shows at the Jenks Planetarium. The 50-foot dome provides the ultimate screen for seeing planets up close, flying to distant galaxies, and even rediscovering our own earth in ways never thought possible.

THE SUMMER SKY

Summer nights are short, but the skies are the busiest of the year. From swans to eagles to scorpions to centaurs, the summer sky is filled with constellations and fascinating stories. Weather permitting, we will also stargaze on the rooftop deck. (Ages 8 & up)

ANIMALS OF THE SKY

A young girl, Delphina, finds herself in an unfortunate incident and gets unexpected help from the animals of the sky. Come experience her story and discover how the stars can create animals! (Ages 3-10)

THE SISTINE CHAPEL

The Planetarium isn't just for astronomy anymore! Join us for a tour of the Sistine Chapel in Rome. Learn the meanings behind the paintings and see the scenes come together in an amazing retelling of the Bible. A must-see for all art lovers! Notice: this show displays the real paintings as seen in the Sistine Chapel, which contain some artistic nudity. (Ages 10 & up)

MY HOUSE HAS STARS

People all over the world live in many types of houses--from houseboats to mud huts. No matter where you live though, your house has stars! Based on the book, this story introduces both houses and stars from places and cultures all over the planet. (Ages 6 & up)

COMPASS, CALENDAR, CLOCK

As our ancients learned, the sky is not just a thing of beauty, it's the ruler for the position of our planet. Understanding how our planet is aligned with distant stars allows anyone to use the sky as a compass, a calendar and a clock. (Ages 12-adult)



Rooftop viewing

FALL 2017 SHOWS

**The Summer Sky
(Ages 8 and up)**

Sept. 5.....7:30pm
Sept. 7.....7:30pm
Sept. 9.....7:30pm
Sept. 11.....7:30pm
Sept. 13.....7:30pm

**Animals of the Sky
(Ages 3-10)**

Sept. 19.....7:00pm
Sept. 21.....7:00pm
Sept. 23.....11:00am
Sept. 25.....7:00pm
Sept. 27.....7:00pm

**Sistine Chapel
(Ages 12 and up)**

Oct. 3.....7:00pm
Oct. 5.....7:00pm
Oct. 7.....11:00am
Oct. 9.....7:00pm
Oct. 11.....7:00pm

**My House Has Stars
(Ages 6 and up)**

Oct. 24.....7:00pm
Oct. 26.....7:00pm
Oct. 28.....11:00am
Oct. 30.....7:00pm
Nov. 1.....7:00pm

**Compass, Calendar, Clock
(Ages 10 and up)**

Nov. 7.....7:00pm
Nov. 9.....7:00pm
Nov. 11.....11:00am
Nov. 13.....7:00pm
Nov. 15.....7:00pm



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BIG TELESCOPES ON THE PRAIRE

By Jerry Cassidy

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