



# OBSERVER

May 2018

Bringing Stars to the eyes of Tulsa since 1937



## Star Chart by Polish astronomer Johannes Hevelius 1611-1687

*"Why did not somebody teach me the constellations, and make me at home in the starry heavens, which are always overhead, and which I don't half-know to this day?" Thomas Carlyle*

**Our Guest Speaker will be Dr. Kerry Magruder, curator of OU's History of Science Collections, takes us on a journey back in time when the mysteries of the universe lay hidden overhead in the uncharted expanses of the starry sky. Dr. Magruder has been a popular speaker at the Okie-Tex Star Party.**

## In this Issue

2 Club Events

3 **President's message** – Tamara Green

4 Guest Speaker – **Dr. Kerry Magruder**

*“Historic Star Atlases and Their Stories.”*

5 **Marinn White** shares her passion for Physics and Astronomy

6-8 **John Newton** – Secretary Report on club projects and visions.

8 **Planets in May** – A great summer coming.

9 NASA Space Place – **What's inside Mars?**

10 Jenks Planetarium Spring Shows

11-12 **MidStates Astronomy Convention** June 22<sup>nd</sup> to 24<sup>th</sup>

13 Treasurer Report – by Tim Davis

14 Astronomy Club Meeting and Observing venues

15 2018 Club Officers and contacts

& Melissa Morrow's "Spaced Out Jokes"

16-18 April 7 Board Minute Minutes

## Astronomy Club Events

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

<b>MAY</b>			
<b>PUBLIC NIGHT</b>	<b>SAT MAY 5</b>	<b>7:45 PM</b>	<b>ACT OBSERVATORY</b>
<b>MEMBERS' NIGHT</b>	<b>FRI MAY 11</b>	<b>8:15 PM</b>	<b>ACT OBSERVATORY</b>
<b>MEMBERS' BACKUP NIGHT</b>	<b>SAT MAY 12</b>	<b>8:15 PM</b>	<b>ACT OBSERVATORY</b>
<b>MOTHERS' DAY</b>	<b>SUN MAY 13</b>		
<b>GENERAL MEETING</b>	<b>FRI MAY 18</b>	<b>7:00 PM</b>	<b>JENKS PLANETARIUM</b>
<b>SIDEWALK ASTRONOMY</b>	<b>SAT MAY 19</b>	<b>7:30 PM</b>	<b>BASS PRO</b>
<b>MEMORIAL DAY</b>	<b>MON MAY 28</b>		
<b>JUNE</b>			
<b>PUBLIC NIGHT</b>	<b>SAT JUN 9</b>	<b>8:00 PM</b>	<b>ACT OBSERVATORY</b>
<b>MEMBERS' NIGHT</b>	<b>FRI JUN 15</b>	<b>8:45 PM</b>	<b>ACT OBSERVATORY</b>
<b>SUMMER SOLSTICE</b>	<b>THU JUN 21</b>		
<b>MEMBERS' BACKUP NIGHT</b>	<b>SAT JUN 16</b>	<b>8:45 PM</b>	<b>ACT OBSERVATORY</b>
<b>FATHERS' DAY</b>	<b>SUN JUN 17</b>		
<b>SIDEWALK ASTRONOMY</b>	<b>SAT JUN 23</b>	<b>7:45 PM</b>	<b>BASS PRO</b>

# PRESIDENT'S MESSAGE

BY TAMARA GREEN



Hey Y'all!

We've had some really freaky weather this month! It doesn't know whether it wants to be Summer or Winter! 80° high one day and 50° high the next! Plus lots of nasty clouds.

I apologize for the Messier Marathon backup also being cancelled. I spoke to Ron Wood from TUVA, and he and I will be discussing and hopefully planning at least a Summer star party for club members down there sometime this summer, if not that and a FALL Messier Marathon. Some astronomy clubs do these in the Fall as well as in the Spring! I doubt it's possible to get all 110 objects in the Fall, but it's worth a try!

I did attempt to send a notification to the membership about the cancellation of the Messier Marathon, but apparently, everyone's email address either bounced, or something is wrong with my email program. I will need to look into that and see if I can fix it.

We will have a guest speaker this month. David Prosper, Communication Specialist for the Astronomical Society of the Pacific, will be giving a presentation via Skype at our April meeting! I would like to see as many of you as possible come to see this presentation.

For May, we have a professor from OU coming to speak to us in person! Dr. Kerry Magruder, Curator, John H. and Drusa B. Cable Chair of the History of Science Collections, Associate Professor of Bibliography, and Associate Professor of the History of Science at the University of Oklahoma will be giving us a talk! So I would like to see as many of you as possible come to our May meeting for this presentation!

Also, there are some exciting and badly-needed changes being made to our observatory building. The Board has approved various projects designed to not only clean the place up and make it look more presentable and inviting, especially to guests at Public Night, but also to maximize the space we have in the building in order to better accommodate members, guests, and equipment. It is my hope that you all will like these changes and find them refreshing. I myself can't wait to see it when it's all finished!! hope that as the weather warms up we will actually be able to get together more to do some observing! There are some neat events in the works so stay tuned!

*Clear Skies,*

*Tamara*





**Our Guest Dr. Kerry Magruder** from OU is *Curator and John H. and Drusa B. Cable Chair of the History of Science Collections*

With our access to modern digital charts of the starry skies we easily forget the dedicated astronomers who spent countless days, months and years carefully measuring and charting each star one by one. Even within the lifetime of many of our club members we can recall a time when Star Charts existed exclusively on printed pages frozen in time.

Dr. Magruder's richly illustrated presentation, ***“Historic Star Atlases and Their Stories.”*** will feature stories of the early star atlases and constellations.

From the Renaissance to the dawn of the modern age, art and science fused together in the representation of the stars and constellations. Historic star atlases combined state-of-the-art scientific observation of the cosmos with appreciation for the aesthetic dimension of the sky. Galileo inscribed OU's copy of his *Starry Messenger* (1610) to a poet. Art, music, literature and astronomy merge in humanity's creative and ongoing exploration of the stars and constellations. We will examine images of the constellations from the star atlases of Bayer, Hevelius, Flamsteed, Bode and various other historical sources to discover how the wonder of the sky at night is common to science, literature and art. We will also show how to access these images for your own creative, educational, or research-related projects.

Images appearing in this presentation are taken from the original rare books of the OU History of Science Collections. Many of these books were featured during 2015-2016 as part of Galileo's World joint-exhibitions at the Schusterman Library on the OU-Tulsa campus, as well as the Fred Jones Jr. Museum of Art and the National Weather Center on the Norman campus

*Bio blurb by Robin Roads, from OKC Astronomy Club:* As a young kid, Kerry marveled at the sight of the Milky Way, which could be seen almost every night in the dark northeastern Missouri skies. He remembers just looking up at the myriad of stars, and sometimes feeling lost in the wonder of it all. He never really thought of himself as an astronomer; the night sky was always a natural part of him, just as natural history was a part of his daytime hours. Years later, when Kerry taught high school science, he started a student Astronomy Club where they emphasized learning the night sky as part of the common heritage of humanity. When Kerry began his pursuit of a professional career in the history of science, it provided him an opportunity to explore the marvelous tales of astronomy in ancient and modern cultures. While completing a doctorate in the history of science, he served as Planetarium Director at Oklahoma Baptist University in Shawnee. He said that when they assembled the mechanical-optical star projector, he realized that the engineers who designed it were like modern day ancient astronomers, as the gears had the circular devices etched on them of the Tyconic system of mathematical astronomy. Look at any star projector and it is a monument to ancient astronomy.

As current Curator of the OU History of Science Collections, Kerry works with old astronomy books, meeting Copernicus, Galileo and Newton almost daily in the vault of the collections, and enjoys giving presentations to universities and astronomy clubs and Okie-Tex. In his spare time, he enjoys stargazing, through the use of amateur telescopes and naked eye observations.

The future of science and exploration of the universe lays in the minds and hearts of our youth. A major goal of our club is to light that fire of wonder and imagination of the universe for future generations.



## Member **Marinn White** – shares her passion for Physics and Astronomy

My interest in Astronomy began when I was a little girl, living in Stilwell, Oklahoma, searching for planets in the sky with my papa’s telescope. I remember being so overwhelmed with the beauty of Jupiter and Mars; that’s what sparked my desire to learn more about the universe around us. I remember my Dad waking me up at 3 a.m. to lay out on the front lawn and see my first meteor shower. While I was continually fascinated by Astronomy throughout middle school and high school, my introduction to physics didn’t begin until my freshman year at the University of Tulsa. I started off as a Chemical Engineering major, and was absolutely terrified to take Physics 1. Much to my surprise, I loved it. When I went on to Physics 2, I realized I was genuinely passionate about Physics, and this field could help me to search for the answers of the universe. I took astronomy, and loved every second of it, as it was a constant reminder of how beautiful and magnificent the cosmos is. Unfortunately, TU doesn’t allow me to major or minor in astronomy, I plan on going to grad school for either Astronomy or Astrophysics in 2020. I love how science is a constantly evolving creature; how every new scientist builds on the research of the previous scientists, and our knowledge of the world around us is constantly changing as we attain new methods of observation. The advancement of technology has allowed us to become aware of things we never thought we’d be able to, like gravitational waves and subatomic particles. I’m currently applying for NASA internships for the Summer, I’d love to take part in some of the amazing research they’re doing, like searching for alien life or mapping the surface of Mars. Every time I look at the stars, I feel like a little girl again, constantly amazed by the vastness of our universe. I want to add to the ever-evolving scientific understanding of the world around us.



# SECRETARY'S MESSAGE

BY JOHN NEWTON



## A Letter from the Astronomy Club Secretary

The elected officers and directors of the Astronomy Club of Tulsa (ACT) held a regularly scheduled Board Meeting on Saturday, April 7<sup>th</sup>, 2018 with all officers and nearly all board members in attendance. The framework for this meeting includes discussions on new upcoming events, updates on created committees, and general topics on ACT business-at-hand. Also, the formed committees are designed to help improve the club member experience. We encourage and welcome club member participation within each committee. If you are interested in assisting on behalf of improving the club you will find the committee chairperson listed as well.

## Upcoming Events and Awareness:

After years of construction, the park on Riverside Drive and 31<sup>st</sup> Street South is about to open their doors to the public. Known as A Gathering Place for Tulsa, the first phase almost complete, transformed over 66 acres of Tulsa's waterfront along the Arkansas River into a dynamic and active space. A Gathering Place for Tulsa will combine nature with an urban setting providing Tulsans and visitors more space to play, relax and gather together along the river.

This new park is being funded by a mix of corporate and philanthropic Tulsa organizations with direction from The George Keiser Family Foundation. It will include features such as a lodge, boathouse, nature walks, two land bridges connecting the two sides of river parks, sporting areas and a pond.



For ACT, we see this as an opportunity to expand public awareness of our club with programs such as Sidewalk Astronomy in the park. Owen Green plans on contacting the River Parks Authority – Tulsa County Parks and Recreation Department about requirements and scheduling a pilot event. If successful, we may add The Gathering Place as a secondary or alternate location to the already successful Bass Pro event on a regular schedule. More information to come on this exciting event will be posted in our newsletters.

As I had wrote about Woolaroc in Bartlesville in my last letter, Tamara Green has been able to confirm a date for August 18<sup>th</sup>. If you recall, Woolaroc is a museum and wildlife preserve located in the Osage Hills of Northeastern Oklahoma along Oklahoma State Highway 123 about 12 mi southwest of Bartlesville,

Oklahoma and 45 mi north of Tulsa, Oklahoma. Woolaroc was established in 1925 as the ranch retreat of oilman Frank Phillips of Phillips 66.

Woolaroc Director, Jan Tucker, reached out to our President, Tamara Green, about planning an evening sky and naked eye planet watch party for Woolaroc. With several interesting celestial events coming this summer, it seems like a wonderful opportunity to again expand public awareness about ACT.

**August Perseids meteor shower.** Adding to the list in August are the Perseids meteor shower. This annual event will peak this year on the night of August 12 (Saturday), and early morning hours of August 13 (Sunday). Considering a new Moon (August 11th), we should have unobstructed dark skies presenting us excellent conditions to see shooting stars. This year during peak people should see about 60-70 meteors per hour, but in outburst years (such as in 2016) the rate can be between 150-200 meteors an hour. Plans for viewing are to be determined, possible locations under consideration are Haikey Creek Park, or The Gathering Place.

**Club Members Picnic** - This summer, ACT plans on hosting a picnic for our club members. A target date has been established for Saturday, July 14<sup>th</sup>. Grilling hot dogs and burgers will begin before sunset around 6 PM. With the new moon on July 12<sup>th</sup>, you should be able to couple this event with good night sky viewing. Picnic rain dates will be reset to July 21<sup>st</sup> or July 28<sup>th</sup>. Additional information will be posted on the ACT website about this event as it draws near.

#### **ACT Business-at-Hand:**

A list of Spring projects is scheduled for the ACT Observatory. Funding has been approved to make these improvements of our facility.

Initial set of projects are being directed by James Taggart (ACT Facility Manager) with assistance of a few volunteers. The Observatory building will be getting a face lift beginning on April 21<sup>st</sup>. These projects include stripping and painting the stairs, dome deck flooring, and repainting the bathroom floor. Finishing touches to the dome skirt which began last year will be finished as well.

In addition, Sheldon Padawer will work on adding new shelving to the west wall of the first-floor in the Observatory building. The expectation is to optimize the use of this space for classroom activities as it was intended for. Between the fresh coat of paint and rearranging the classroom layout, we hope to have most, if not all, projects completed before the following General Observing Night that's scheduled for May 5<sup>th</sup>.

Lastly, plans are underway to trim and groom the surrounding trees and bushes to help improve sky visibility.

#### **Committees - updates:**

1. Committee for finding Alternate Dark Sky Sites is still being investigated. This committee has expanded with new members to the team to help with this effort. Stay tuned as we hope to report positive news on this key item soon.
2. Committee for finding wet weather leaks in the Observatory dome and building. It continues to be a very dry winter/spring, so it has been very difficult to spot the source of our leaks. However, once the leaks are pinpointed, the committee has a multi-phased approach to resolve these issues.



As the many listed committees undergo their assigned research, the board will continue to monitor progress and post their findings in future newsletters.

James Taggart had reported that the club has the approval to install signs on Alt. Highway 75. However, the state is restricting us from posting road signs on main Highway 75. Nonetheless, the Duck Creek Casino remains an excellent landmark for directions. Those of you traveling Alt. Hwy 75 can look to see our logo on new signage along the roadway.

With improving the security of the Observatory building and its contents, new electronic locks and surveillance systems have been approved. This has been an ongoing project as the electronic door lock was backlogged with the vendor. However, James Taggart has been successful with installing four cameras in and outside the building and is working on creating access key codes for existing keyholders for the front door.

A Compliance Form has been developed for all current keyholders to read and sign. The form describes best practices, safety considerations, and general respect for using the facility. Members who are interested in using the facility and want to become a keyholder can apply by contacting any one board member.

Also, with recent plumbing issue resolved, new instructions for bathroom heater settings (winter months) and procedures for turning on/off water to the building will be updated and posted on the front door. Please feel free to contact me with any questions or comments at [astrotulsa.secy@gmail.com](mailto:astrotulsa.secy@gmail.com).

The Official Board minutes from April 7th are at the end of this newsletter.

Sincerely,

*John Newton - ACT Secretary*



**Planets in May** – The days are longer now with Sunset at 8:10 in early May and 8:33 May 31<sup>st</sup> Meaning you'll have to wait until 9 PM or later to start observing. For best

viewing plan to take your telescope out early to let it equalize with the outdoor temperatures.

**Jupiter** – reaches opposition May 8th and will be visible all night. Look of it rising in the SE shortly after sunset. Use this [Great Red Spot Calculator](#) for best observing times.

Calculate [Positions of Jupiter Moons](#).

**Brilliant Venus** is easily visible soon after sunset in the west and remains visible well after sunset

**Saturn** rises in SE at 12:30 AM May 1<sup>st</sup> and 10:30 by May 31st

You'll need to wait another hour or more after it rises to see its rings well.

**Mars** rises at 1:36 AM May 1<sup>st</sup> and 12:25 by May 31st It increases in brilliance from -0.4 to -1.2 mag

Get the **FREE Astronomy app SkyPortal by Celestron** for your smart phone.

Listen to a Podcast of the Planets and Stars of May by Kelly Beatty

<http://www.skyandtelescope.com/observing/astronomy-podcast-may-2018/>

This summer promises to be one of the best naked eye planetary viewing opportunity as Mars will be very bright in the sky this year during opposition to the Earth. The closest point for Mars to Earth is on July 27<sup>th</sup>. This is its closest opposition in 15 years.

Saturn with its rings is always interesting to see through a telescope. Saturn should be visible in the night sky starting all night in July, or best in the evenings from August through the second half of the year.

Jupiter with its bands, diminishing red spot, and moons is always worth a look. Jupiter will be best viewed in the evening sky until midnight from June thru the summer months.

Adding to the list in August are the Perseids meteor shower.



**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 [spaceplace.nasa.gov](https://spaceplace.nasa.gov) to explore space and Earth science!



## **What's It Like Inside Mars?**

By Jessica Stoller-Conrad

Mars is Earth's neighbor in the solar system. NASA's robotic explorers have visited our neighbor quite a few times. By orbiting, landing and roving on the Red Planet, we've learned so much about Martian canyons, volcanoes, rocks and soil. However, we still don't know exactly what Mars is like on the *inside*. This information could give scientists some really important clues about how Mars and the rest of our solar system formed.

This spring, NASA is launching a new mission to study the inside of Mars. It's called Mars InSight. InSight—short for Interior Exploration using Seismic Investigations, Geodesy and Heat Transport—is a lander. When InSight lands on Mars later this year, it won't drive around on the surface of Mars like a rover does. Instead, InSight will land, place instruments on the ground nearby and begin collecting information.

Just like a doctor uses instruments to understand what's going on inside your body, InSight will use three science instruments to figure out what's going on inside Mars.

One of these instruments is called a seismometer. On Earth, scientists use seismometers to study the vibrations that happen during earthquakes. InSight's seismometer will measure the vibrations of earthquakes on Mars—known as marsquakes. We know that on Earth, different materials vibrate in different ways. By studying the vibrations from marsquakes, scientists hope to figure out what materials are found inside Mars.

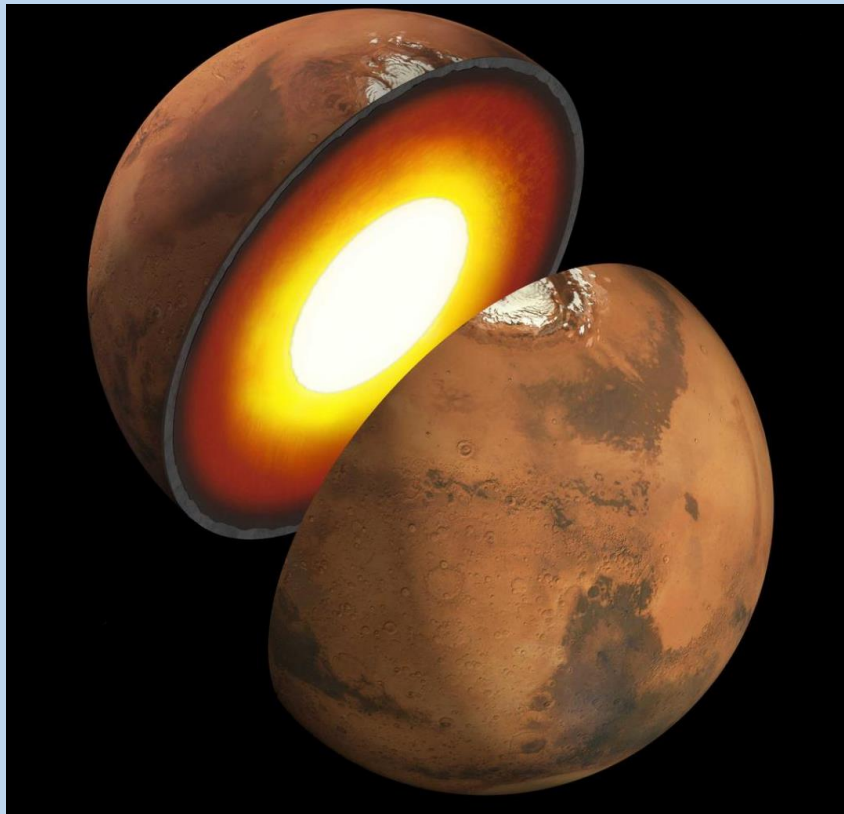
InSight will also carry a heat probe that will take the temperature on Mars. The heat probe will dig almost 16 feet below Mars' surface. After it burrows into the ground, the heat probe will measure the heat coming from the interior of Mars. These measurements can also help us understand where Mars' heat comes from in the first place. This information will help scientists figure out how Mars formed and if it's made from the same stuff as Earth and the Moon.

Scientists know that the very center of Mars, called the core, is made of iron. But what else is in there? InSight has an instrument called the Rotation and Interior Structure Experiment, or RISE, that will hopefully help us to find out.

Although the InSight lander stays in one spot on Mars, Mars wobbles around as it orbits the Sun. RISE will keep track of InSight's location so that scientists will have a way to measure these wobbles. This information will help determine what materials are in Mars' core and whether the core is liquid or solid.

InSight will collect tons of information about what Mars is like under the surface. One day, these new details from InSight will help us understand more about how planets like Mars—and our home, Earth—came to be.

For more information about earthquakes and marsquakes, visit: <https://spaceplace.nasa.gov/earthquakes>



*Caption: An artist's illustration showing a possible inner structure of Mars.  
Image credit: NASA/JPL-Caltech*



**JENKS PLANETARIUM**  
Jenks High School Campus  
205 East B Street, Jenks

**TICKETS**

\$5 online or \$7 at the door  
Purchase online at [jenkscommunityed.com](http://jenkscommunityed.com)  
or call 918-298-0340

**2018** [Go to Show Schedule](#)  
Then click the Date Column to sort them by show date



**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.

**Meade Starfinder 10 inch F 4.5 Dobsonian - Reduced Price \$ 400**

With Telerad finder and 6x by 30mm finder scope - 1.25 / 2.0 in rack and pinion focuser  
Quality Upgraded Eyepieces with a handy carrying case and two red light accessories.

Meade 1.25 " Super Wide Angle 24.5 & 13.8 mm Orion 21mm to 7mm Zoom Eyepiece

Meade 2X Teleneegative amplifier—and more

Details in February newsletter - [http://astrotulsa.com/CMS\\_Files/02-2018.pdf](http://astrotulsa.com/CMS_Files/02-2018.pdf) page 13

Contact John at [Tulsaastrobiz@gmail.com](mailto:Tulsaastrobiz@gmail.com)



**2018 CONVENTION**  
**June 22<sup>ND</sup> - 24<sup>TH</sup>**

Hosted by



&



*Special Guest Speaker*

**DAVID H. LEVY**



*Friday Evening*

Star Party, Youth Cosmic  
Scavenger Hunt & Dinner  
@ Hobbs State Park



*Saturday & Sunday AM*

MSRAL Meeting, Speakers &  
Convention  
@ Explore Scientific



*Saturday Evening*

Banquet & Special Speaker  
@ Northwest Arkansas  
Community College

*nearby*

"Giant Telescope" Tour &  
Sidewalk Astronomy

Explore Scientific  
1010 S. 48th Street,  
Springdale, Arkansas 72762

2018 MSRAL Information  
479-231-4173  
P.O. Box 321  
Bentonville, AR 72712  
scas2018msral@gmail.com

[www.MSRAL.org](http://www.MSRAL.org)



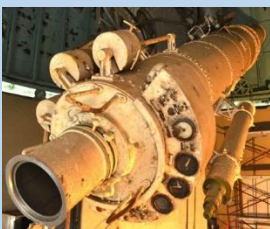
## MSRAL 2018 CONVENTION



Registration information forms, maps and lodging information available at <http://www.msral.org/> for the Mid-States Region of the Astronomical League (MSRAL) convention. This special event is open to everyone interested in astronomy. **The convention will be held at the Explore Scientific facility located at 1010 S. 48th Street, Springdale, Arkansas 72762.** Registration and Check-in will begin at Explore Scientific Friday afternoon. Registration will continue at a **Star Party and Youth Cosmic Scavenger Hunt at the Hobbs State Park.** An optional evening meal will be available for purchase at this event.

Saturday morning will begin with a complementary, continental breakfast for registrants and continue with the MSRAL meeting and a full day of speakers. There will be a lunch break at the noon hour. Attendees can optionally purchase a box lunch served on site.

**David H Levy will be the special guest speaker for the Saturday evening Banquet.** David Levy is a well-known comet, asteroid hunter, Astronomy book author and writer for astronomy magazine publishers. Perhaps he is most famous for his co-discovery of Comet Shoemaker-Levy 9 that crashed into Jupiter in July 1994. [https://en.wikipedia.org/wiki/David\\_H.\\_Levy](https://en.wikipedia.org/wiki/David_H._Levy) <http://jarnac.jarnac.org/>



The banquet will be held on the campus of the Northwest Arkansas Community College in Bentonville, AR.

After the banquet, there will be a **tour of the “Giant Telescope” and Sidewalk Astronomy.** The “Giant Telescope” is a Relocation /Restoration Project of a 1911, 24-inch aperture 36 ft long refractor telescope.

There will be a complementary, continental breakfast for registrants Sunday morning followed by additional speakers and the grand giveaway before the closing remarks at noon.

For old school, mail-in registration please find the form on the last page. On-line registration will be available very soon. Please check the Mid State Region’s website at [www.MSRAL.org](http://www.MSRAL.org)



# TREASURER'S AND MEMBERSHIP REPORT

BY TIM DAVIS



**Astronomy Club of Tulsa: 171 members, including 18 new members in 2018.**

**New members for April: Amber Tyrell, Brian Kyle, Mollie Musselmann, Baron Marcks, Michael Mustain and Cord Ivy**

## Club Accounts as of April 28, 2018:

Checking: \$ 5,899.28

Savings: \$ 6,778.48

Investment accounts: \$ 22,616.37 *(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 **2018** 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](http://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](http://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

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**  
**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 3<sup>rd</sup> 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 1<sup>st</sup> 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.

## ASTRONOMY CLUB OFFICERS:

PRESIDENT – TAMARA GREEN  
[astrotulsa.pres@gmail.com](mailto:astrotulsa.pres@gmail.com)  
VICE PRESIDENT – JERRY CASSITY  
[astrotulsa.vp@gmail.com](mailto:astrotulsa.vp@gmail.com)  
SECRETARY - JOHN NEWTON  
[astrotulsa.secy@gmail.com](mailto:astrotulsa.secy@gmail.com)  
TREASURER - TIM DAVIS  
[astrotulsa.tres@gmail.com](mailto:astrotulsa.tres@gmail.com)

## BOARD MEMBERS-AT-LARGE:

RICHARD BRADY  
TERESA DAVIS  
JOHN LAND  
JAMES LILEY  
SHELDON PADAWER  
JACOB SHEPHERD  
JAMES TAGGART  
SKIP WHITEHURST

## STAFF:

FACILITIES MANAGER –  
JAMES TAGGART  
[astrotulsa.obs@gmail.com](mailto:astrotulsa.obs@gmail.com)

EDITOR - JOHN LAND  
[astrotulsa.editor@gmail.com](mailto:astrotulsa.editor@gmail.com)  
MEMBERSHIP CHAIR - JOHN LAND  
[tulsaastrobiz@gmail.com](mailto:tulsaastrobiz@gmail.com)

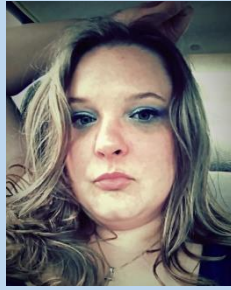
OBSERVING CHAIRS  
OWEN AND TAMARA GREEN  
[darthnewo@yahoo.com](mailto:darthnewo@yahoo.com)  
[astrotulsa.pres@gmail.com](mailto:astrotulsa.pres@gmail.com)

SIDEWALK ASTRONOMY –  
OWEN GREEN  
[darthnewo@yahoo.com](mailto:darthnewo@yahoo.com)  
PR AND OUTREACH –  
OWEN GREEN  
[darthnewo@yahoo.com](mailto:darthnewo@yahoo.com)

GROUP DIRECTOR – OWEN GREEN  
[Astrotulsa.outreach@gmail.com](mailto:Astrotulsa.outreach@gmail.com)

NIGHT SKY NETWORK –  
Open Position

WEBMASTER JENNIFER JONES



**Mellisa Morrow**

**“Spaced Out Jokes”**

**How do you know when  
the moon is going broke?  
When it's down to its  
last Quarter.**

**What holds the Sun up  
in the sky?  
SUNBEAMS**

PERMISSION TO REPRINT ANYTHING FROM THIS NEWSLETTER IS GRANTED, **PROVIDED THAT CREDIT IS GIVEN TO THE ORIGINAL AUTHOR AND THAT THE ASTRONOMY CLUB OF TULSA “OBSERVER” IS LISTED AS THE ORIGINAL SOURCE.** FOR ORIGINAL CONTENT CREDITED TO OTHERS AND SO NOTED IN THIS PUBLICATION, YOU SHOULD OBTAIN PERMISSION FROM THAT RESPECTIVE SOURCE PRIOR TO REPRINTING. THANK YOU VERY MUCH FOR YOUR COOPERATION. PLEASE ENJOY THIS EDITION OF THE OBSERVER.

# Astronomy Club of Tulsa Board Meeting Minutes April 7, 2017

## Club board members attendees:

Tamara Green (President)	John Land (Club Editor)
Jerry Cassity (Vice President)	Jacob Shepherd (Board - Absent)
Tim Davis (Treasurer)	Teresa Davis (Board)
John Newton (Secretary)	Sheldon Padawer (Board)
Bryan (Skip) Whitehurst (Board)	James Taggart (Board)
James Liley (Board - Absent)	Richard Brady (Board)

Location/time: Brookside Public Library, 1207 E. 45<sup>th</sup> Place, Tulsa, OK / 11 AM to 2:00 PM

## Agenda items:

- 1) Sidewalk Astronomy and/or public events at the Gathering Place. Plans to open this Spring/early Summer.
  - This is the newest park addition to Tulsa, located near 31<sup>st</sup> and Riverside, is being considered a target location as an alternate site for Sidewalk Astronomy. The park has been under construction for over a year causing disruptions along Riverside Parkway.
  - Plan is to walk the property to ensure sufficient dark sky for our purpose.
  - May still be a good spot to build awareness surrounding ACT.
  - Want to plan a test date as a pilot.
  - Owen Green will contact the Tulsa County Parks & Recreation department about cost or required liability insurance for setting up to host events on a regular basis.
    - o Sheldon – motion to proceed
    - o Skip – seconded the motion
    - o Vote 10 in favor / 0 opposed
- 2) Friday's as a "pre-ran-date" for Sidewalk Astronomy and Public Night. Proposed by board member Sheldon Padawer. (Please note that our agreement with Bass Pro involves insurance and PRE-SCHEDULED AND PRE-APPROVED Sidewalk Astronomy Dates that they put on their calendar and advertise to their customers. Owen Green is our Sidewalk Coordinator).
  - Sheldon to look for a new location independently.
  - Skip not in favor.
  - Item has been dropped from the register.
- 3) Updates/Planning on/for Woolaroc with proposed dates of August 18<sup>th</sup>. Tamara Green is leading this effort with Jan Tucker (Woolaroc).
  - Last communication, Jan has agreed to the date of August 18<sup>th</sup>. Tamara to confirm date again with Jan. This happens to fall on the same date as Sidewalk Astronomy.
  - Sheldon had suggested inviting interested folks from Pawhuska to the event to grow awareness of the club. May help our cause of finding new dark sky in the Pawhuska area. He plans to contact business relations with Pioneer Woman about this as well.
  - John Land to contact the Bartlesville Club to join in.



- 4) Dark Sky Site - Exploratory Committee, updates?
  - Tamara recommends reforming the committee for finding Dark Sky Site
    - o Willing to chair with Jerry Cassity on this committee.
  - Suggested reaching out to Tony White to assist through his Rotary Club contacts.
    - o Sheldon, Tamara and/or Owen to speak to Tony about this subject.
  - Jacob Shepherd and appointees may continue to participate in the effort.
  - Reforming the committee
    - o Tamara – motion to proceed
    - o Teresa/Richard – seconded the motion
    - o Vote 10 in favor / 0 opposed
  
- 5) Key holder Compliance Forms, update?
  - Compliance form – Teresa provided a copy to the board for review, Comment and feedback were given to be added on shutdown procedures – to be posted on the back of the front door by James Taggart, along with emergency contact list (including Instructions for using the bathroom, water, entry system may need to be updated – action James Taggart to post newest procedures on door about water valve shut-off, setting heater minimum temperature, cover container items, trash handling, lights, etc.).
  - Final revision to the form will be updated by Teresa Davis and provided to Tim Davis for distribution as a kit to new club members.
  - Expecting that all current key holders, for those who meet the requirements and are interested in having access to the observatory must read and sign the compliance forms and be trained for accessing the facility and proper use of club equipment.
  - Access codes – James Taggart stated that the system can support several key codes however, we should rely on the video security system for recording access.
  
- 6) Public Viewing Event for August Perseids? Received one request via FB Messenger.
  - Perseids meteor shower for 2018 will peak on the night of August 12 (Saturday) and early morning hours of August 13 (Sunday).
  - A New Moon (August 11<sup>th</sup>) creates dark skies and excellent conditions to see the shooting stars. This year during peak people should see about 60-70 meteors per hour, but in outburst years (such as in 2016) the rate can be between 150-200 meteors an hour.
  - Possible locations for viewing is Haikey Creek Park, or the Gathering Place depending on dark sky viewing.
  - Planning for this item is tabled until next board meeting.
  
- 7) Idea from Jerry C.: “Let’s Make Our Classroom Look Like a Classroom”. Suggestion include:
  - Purchase a storage building, have it delivered and set up with a ramp. Dimensions 12’ x 16’ minimum size, larger if not cost prohibitive.
  - Make room in the main Observatory building - Move grill, most of the telescopes and other items into the storage building.
    - o Suggested donating/removing the grill from the property as it is only used maybe once a year.
  - Buy and bring nice folding chairs and tables.
  - Install a screen and projector, or flat screen TV with a wall mount, and maybe a DVD player.
  - Install nice bookshelves for books and display items like globes!
    - o Sheldon volunteers to build shelving along west wall only at about 8’ off the ground (about 2 feet clearance above) to optimize space.
      - Estimating spend up to \$500
    - o Suggested directed spot lighting on globes with controlled rheostat for dimming light intensity.

- John Land – motion to proceed/spend
  - Jerry Cassity – seconded the motion
  - Vote 8 in favor / 2 opposed
- Tying into this topic, Sheldon also has ideas for maximizing classroom space, including replacing the wheels in the pull-out corner storage units, shelving, (Sheldon demonstrated with his wooden makeshift model) furniture, etc.,
    - Tamara noted – why we would not accept furniture donations? It would be a gift-in-kind. Want to keep the classroom as a classroom, so chairs and tables only.
- 8) April workday? What kind of work do we want to do? Proposed by John Land.
- Morning of April 21<sup>st</sup>, plan on prepping the observatory stairs and deck for painting. Need belt sanders to strip the friction tape and old paint.
    - Apply new paint to the deck, stairs and bathroom
    - Estimated cost for Epoxy Paint is \$300.
  - Additional items include:
    - Need to complete last few strips to the skirt for water proofing.
    - Trim the surrounding trees and bushes.
    - Spray insecticide around the property.
    - Estimated cost \$400.
      - Skip Whitehurst – motion to proceed/spend
      - Jerry Cassity – seconded the motion
      - Vote 10 in favor / 0 opposed
    - Road signs – approved to install on Alt. Hwy 75
      - County will not accept signage on Hwy 75, however the Duck Creek Casino still makes an excellent landmark for directions.
      - Signs are estimated to be about the size of a parking sign – 12” x 18”.
- 9) Summer Club Members’ BBQ or Picnic? Saturday, July 14<sup>th</sup>? New moon is July 12<sup>th</sup>. Proposed by John Land (a Saturday would be better for the vast majority).
- Target date for this event is Saturday, July 14<sup>th</sup> for grilling/picnic starting between 5 or 6 PM.
  - Picnic rain dates are reset to July 21<sup>st</sup> or July 28<sup>th</sup>.
- 10) Other –
- Observatory building heater repair or replacement.
    - James to get quotes on this item and report back next meeting.

Stay tuned as the next board meeting will be scheduled on June 2<sup>nd</sup>, 2018