



# OBSERVER

APRIL 2019

*Bringing Stars to the eyes of Tulsa since 1937*

*Editor – John Land*



## 2019 Messier Marathon Observers

Dan Johnson, Owen Green, Don Bradford, Ron Wood, Maria DeLong,  
Dennis Berney, Kevin ?, Bryan Kyle, Steve Chapman, Don Casady  
Seated Maura Wood & Tamara Green as photographer



Skies cleared the evening of March 9 for the Messier Marathon hosted by Ron & Maura Wood. First timer, Don Bradford bagged 15 objects using his newly purchased Explore Scientific 12" Dob. Don reports that he had a great time; food was good, skies were great ! ( until clouds came in )

You can earn your Astronomical League Observing certificate and pin. There is no time limit to the certificates and it's a great way to learn your way around the sky and see some great sights. Details at <https://www.astroleague.org/al/obsclubs/messier/mess.html> < Telescopes or binoculars > <https://www.astroleague.org/al/obsclubs/binomess/binomess.html>

## Two Great general meetings coming up

**Friday March 29** Our guest speaker will be **Peggy Walker** will be bringing John Dobson's favorite Sidewalk Astronomy telescope *Tumbleweed* and bringing telling us about its restoration and adventures touring the nation. Peggy and her husband Rick also got to go to the Winter Star Party in Florida in February will tell us about the event. **Read More about Peggy in the article on pages 6 & 7**

**Friday April 12** Our guest speaker will be **Abigail Bollenbach**. Abby is a member of the Bartlesville Astronomy club's youth division. In 2018 she was awarded the Astronomical League's Jack Horkheimer/Smith Youth Service award for outstanding participation in her club and astronomy outreach. She will be telling us about her adventures promoting astronomy and giving a PowerPoint presentation on the accomplishments of the Cassini Mission to Saturn. Encourage any young astronomy enthusiast to come and meet Abby. **Read more about Abby on page 8**

### In this Issue

- 1 Cover 2019 Messier Marathon
- 2 Upcoming Events & Guest Speakers
- 3 Astronomy Conventions ALCon 2019 – MSRAL 2019 – Jenks Planetarium Spring Schedule
- 4 President Report - Tamara Green
- 5 Secretary – Jess Cagnolatti – Treasurer John Newton
- 6 -7 Speaker Peggy Walker and John Dobson Telescope
- 7 Telescopes for Sale
- 8 April 12 - Speaker Abby Bollenbach
- 9-12 Why the Spring Sky changes Fast – Brad Young
- 13 NSN – Mars the Wanderer
- 14 Treasurer Report – John Newton
15. Directions to Club Events Locations
16. 2019 Officers and Board – Call for Member Article submissions



**Calendar Fires Sale \$ 2 Each**

Contact Treasurer John Newton at [AstroTulsa.tres@gmail.com](mailto:AstroTulsa.tres@gmail.com)

### Astronomy Club Events

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

GENERAL MEETING	<b>FRI, MARCH 29</b>	7:00 PM	JENKS PLANETARIUM
<b>APRIL</b>			
MEMBERS' NIGHT	FRI, APR 5	8:00 PM	OBSERVATORY
GENERAL MEETING	FRI, APR 12	7:00 PM	JENKS PLANETARIUM
SIDEWALK ASTRONOMY	SAT, APR 13	7:00 PM	BASS PRO
<b>GOOD FRIDAY</b>	<b>FRI, APR 19</b>		
<b>EASTER</b>	<b>SUN, APR 21</b>		
PUBLIC NIGHT	SAT, APR 27	7:30 PM	OBSERVATORY
<b>MAY</b>			
MEMBERS' NIGHT	FRI, MAY 3	8:00 PM	OBSERVATORY
MEMBERS' BACKUP NIGHT	SAT, MAY 4	8:00 PM	OBSERVATORY
GENERAL MEETING	FRI, MAY 10	7:00 PM	JENKS PLANETARIUM
SIDEWALK ASTRONOMY	SAT, MAY 11	7:00 PM	BASS PRO
<b>MOTHERS' DAY</b>	<b>SUN, MAY 12</b>		
PUBLIC NIGHT	SAT, MAY 25	8:00 PM	OBSERVATORY
<b>MEMORIAL DAY</b>	<b>MON, MAY 27</b>		
MEMBERS' NIGHT	FRI, MAY 31	8:30 PM	OBSERVATORY



**ALCon 2019**  
**50th Anniversary of the First Moon Landing**  
 July 25 - 29, 2019  
 Kennedy Space Center and Southern Skies Cruise to the Bahamas

The Astronomical League will celebrate the 50<sup>th</sup> anniversary of the Apollo Moon landing at its annual ALCon convention July 25 to 29, 2019

Featuring tours of the Kennedy Space Center and a Southern Skies Cruise to the Bahamas. Weather permitting sections of the deck lights will be turned off to enjoy dark Atlantic skies. Special reserved rates for the cruise are going fast **so make your reservations ASAP**

**Reservation Details at <https://alcon2019.astroleague.org/>**

Note: A valid passport is required for the cruise – ask your local post office for passport requirements and allow plenty of time for processing.



**2019 MidState Regional Astronomical Convention**  
**Friday, June 14 - Sunday, June 16**  
**Rockhurst University, Kansas City Missouri**  
**Hosted by: Astronomical Society of Kansas City**  
**Register Early for a door prize drawing**  
<http://msral.org/>

A tour of the rare book area of Linda Hall Library for Science, Engineering and Technology is planned for Friday. The collection includes rare astronomy and other technical books, as well as the observing logs of famed comet discoverer, Dr. David Levy. Tour and observe at the Powell Observatory featuring a 30 inch Reflector and additional smaller scopes. A Friday “Star B-Que” Guest speakers and presentations and Saturday evening banquet. Discounted lodging rates are available.

**JENKS PLANETARIUM**  
**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



**2019 [Go to Show Schedule](#)**

**Click the Date Column to sort them by show date**

WINTER/SPRING SHOWS			
<b>TUESDAYS</b>			
Feb 5	<b>Oasis in Space</b>	7pm	Ages 8 & Up
Feb 12	<b>Earth, Moon and Sun</b>	7pm	Ages 4 & Up
Feb 19	<b>Fractal Exploration</b>	7pm	Ages 8 & Up
Feb 26	<b>Apollo 11: Man's First Step Onto The Moon</b>	7pm	Ages 6 & Up
Mar 5	<b>The Sky We Don't See</b>	7pm	Ages 6 & Up
Mar 12	<b>The Sistine Chapel</b>	7pm	Ages 8 & Up
Mar 26	<b>Back to the Moon for Good</b>	7pm	Ages 6 & Up
Apr 2	<b>Solar System Protection Agency</b>	7pm	Ages 4 & Up
Apr 9	<b>The Sistine Chapel</b>	7pm	Ages 8 & Up
Apr 16	<b>My House Has Stars</b>	7pm	Ages 4 & Up
Apr 23	<b>Passport to the Universe</b>	7pm	Ages 6 & Up
Apr 30	<b>Apollo 11: Man's First Step Onto The Moon</b>	7pm	Ages 6 & Up
<b>SATURDAYS</b>			
Feb 9	<b>The Winter Sky</b>	8pm	Ages 6 & Up
Mar 16	<b>How to Use My Telescope</b>	8pm	Ages 6 & Up
Apr 13	<b>The Spring Sky</b>	8pm	Ages 6 & Up
<b>WEEK OF SPRING BREAK 2019</b>			
Mar 18	<b>Spacepark 360</b>	7pm	Ages 4 & Up
Mar 19	<b>Solar System Protection Agency</b>	11am	Ages 4 & Up
Mar 19	<b>The Sistine Chapel</b>	3pm	Ages 8 & Up
Mar 19	<b>Apollo 11: Man's First Step Onto The Moon</b>	7pm	Ages 6 & Up

# PRESIDENT'S MESSAGE

BY TAMARA GREEN



Hey Y'all!

Spring has arrived, and with it warmer (and hopefully not rainy) weather!

Our Messier Marathon on the 9<sup>th</sup> was good. We had a decent turnout and we had a good time, but it began to cloud over at around 1 AM. Half a marathon is better than none, right?

I do plan on arranging a star party sometime in the summer down at TUVA, if Ron and Maura would like to have us down there. If they can't host us for some reason, I will come up with another plan.

Volunteers will be needed for some events coming up: Our Public Night on Saturday, March 30, Sidewalk Astronomy on Saturday, April 13, and Public Night on Saturday, April 27. I will be sending out sign-up sheets to all of you prior to these dates.

How these will work is when you get yours, if you wish to volunteer for a slot (greeter, announcements, welcome table, etc.), you can email me at [astrotulsa.pres@gmail.com](mailto:astrotulsa.pres@gmail.com) and let me know which event and thing you want to do. I will put you on a list, and we will send out the list prior to the event so everyone will know who is doing what and at what time.

Plus, we will be having some pretty big group events happening this summer, and I will be sending out sign-up sheets for those as well.

We have implemented these in order to make things go smoother for our public events, and so everyone can know what everyone is doing so we're not "doubling up". I hope that this method will make our public events go much smoother and run more efficiently.

On a sadder note, I have been trying for MONTHS to arrange a "Sidewalk Astronomy" event at the Gathering Place. The gentleman who I was in contact with is no longer with the Gathering Place, and when I reached out to them again to try to get us an event out there, I never heard back from them. And I have been trying. And trying. So, sadly, I have shelved this idea. Maybe we can try again someday.

However, there are other neat "happening" places in town we can go. We can see what we can come up with!

*Clear Skies, Tamara Green*

# SECRETARY'S MESSAGE

BY JESS CAGNOLLATI



Hello Everyone!

I think we all can hope April will not have too many showers, so we can get outside and observe! The board had a goal planning meeting on Saturday March 2<sup>nd</sup>. The purpose of this gathering was to discuss short and long-term goals for the club and membership. Topics included improvements / maintenance to the observatory, bolstering membership / public outreach, fundraising and promotion of volunteerism in the club. If you have an interest in volunteering for any events, please contact Tamara or any of the other board members for information. Hope everyone has a fantastic April !

*Jess Cagnolatti*



## **Special Note from our Treasurer – John Newton**

Hello to all club members,

We hope that this month is the last of the high energy bills as we head into the spring months, and now that we have a better understanding behind the power leach at the Observatory. We discovered that the new air conditioner / heating unit in the classroom area that was installed late last summer would kick in at a certain low temperature threshold automatically. Although this may be a safety mechanism to prevent potential freezing, this issue has been going for a few months even after taking measures to try to limit power use. However, James, our Facility Manager, has taken a different approach by killing power to the unit entirely while the observatory remains vacant anytime throughout the year. There is virtually no risk from freezing weather damage since we addressed the plumbing issue about this time last year and the restroom has its own source of reserve heating.

*John Newton*



Most of you know what a Dobsonian Telescope looks like – a big telescope tube on a simple rocker box and cradled in a rotating saddle. However few of you may know the origins of this design that revolutionized amateur astronomy in the 70's and 80's [John Dobson](#) was a multi-talented person curious about the universe and wanting to share his passion with others. He pioneered a simple Alto-Azimuth telescope with a revolutionary simple DIY design. He soon began taking his telescope to street corners in San Francisco which became the origins of the Sidewalk astronomy movement that many clubs use for outreach. At our March 29<sup>th</sup> meeting you will have the opportunity to see his favorite scope nicknamed Tumbleweed and hear about its restoration.

### Friday March 29 Guest Speaker will be Peggy Walker

Peggy has spoken at Al Con 2012, and several Mid-States Regionals, was an active member of ACT from 2006 to 2010 and spearheaded the International Year of Astronomy 2009 activities for the club. She introduced sidewalk astronomy to ACT which is still active at BassPro Shops and through her efforts that year, the club grew by 52 people and had a 98% retention rate that was shared at the year end meeting by the secretary. Peggy also wrote monthly articles for the newsletter to remind readers what was coming up and then a recap after the events.

In 2010, Peggy and her husband started [Broken Arrow Sidewalk Astronomer](#) since they were asked to go into the schools in Broken Arrow for their STEM Night, so they became heavy outreach astronomers. In fact, they both received all three levels of the Astronomical League's Outreach pins in 2009! They also joined Sidewalk Astronomers in 2009 and in 2015, Donna Smith asked Peggy to join the board. Also, in 2015 Peggy formed a non-profit OK Astronomy Education and Outreach Assn., to raise funds for the e-Planetarium Go Dome that would provide a portable dome to go into schools and the community which is able to show anything that TASM or The Jenks Planetarium offers. Peggy also generated tactile resources for blind and handicapped persons and already has several programs that she is hoping to conduct in the dome, once they get it.

At the Astronomical League convention ( Alcon 2017 ) in Casper, WY, Peggy was filling in as a Regional Representative at the Astronomical League business meeting the day before the AL conference. Peggy had asked the council what they were doing to stop the graying of the clubs and getting families involved in astronomy. She suggested that AL run an ALCon Jr. conference for family focused on STEAM, ( **S**cience **T**echnology **E**ngineering **A**rts and **M**ath ) in tandem with the adults. League President, Bill Bogardus, offered her the position of Youth Coordinator that had been empty 10 years. At AlCon 2018 in Minneapolis, Bill Bogardus secured funding for the Astronomical League Calendar with profits marked for the STEAM AlCon Jr. Conference scheduled for Albuquerque in 2020.

Peggy soon became involved with the [Sidewalk Astronomers](#) of California and through that was able to meet, John Dobson, legendary telescope maker and founder of the Sidewalk Astronomers Organization. Peggy was notified in 2014, that John Dobson had passed away just 8 months shy of his 100th birthday,. Donna Smith of SWA was looking for a way to keep John's legacy going and making sure that the next generation of amateur astronomers would know who this man was and what he did for the hobby. Donna asked Peggy to join the board so that they could work on ideas to keep John's memory alive with the many clubs in the US and abroad. In March of 2015, Donna Smith was contacted by Gerard Pardeilhan who was warehousing **John's favorite sidewalk telescope Tumbleweed**. Gerard would pick up John Dobson - take Tumbleweed out of storage and the two of them would take the scope all over the many corners in San Francisco to share views along the Sidewalks of the city.

Gerald told Donna that due to his declining health, he wanted to make sure Tumbleweed got back to the Sidewalk Astronomers. Two suggestions were made,

- 1) see if they Smithsonian would take the Tumbleweed scope or
- 2) see if Griffith Observatory would keep her since they do monthly star parties and outreach there with the Los Angeles Astronomical Society.

The reality was that they all knew deep down, John would not want the scope in a closet and forgotten somewhere. So Donna suggested putting her ( *Tumbleweed* ) on a national tour.

Of course, there is a danger she could disappear, or not come home one day, but Donna said that we would have to trust the clubs to honor John Dobson and follow guidelines we would set up.



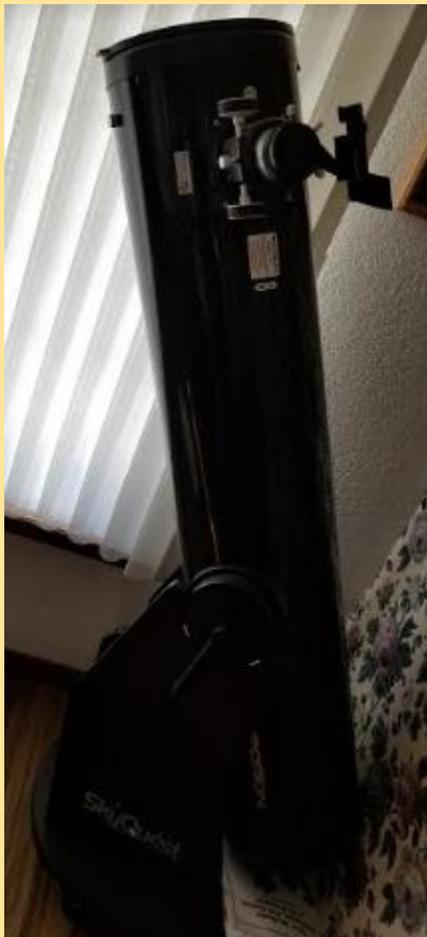
Plans were started to deliver Tumbleweed to Peggy Walker at the Alcon in Casper, Wyoming in August 2017. However, Peggy had plans to be in California in June and met up with Donna then. Donna had 7 people going with her to Casper and would need more room in the van. So, she asked if Peggy could take the scope home with her. Peggy called her husband, Rick, who flew out and they rented a vehicle to take *Tumbleweed* back to Oklahoma. By that time, it was the end of June 2017, and Peggy started to work on *Tumbleweed* right away not even sure if she would be in the mood to travel again in August so shortly after the passing of her sister. But the more Peggy worked on *Tumbleweed*, the more it helped to alleviate her grief and kept her grounded. Peggy became very fond of *Tumbleweed* and appreciated the trust of the Sidewalk Astronomers to allow her to use her artistic

skills to restore John's historic scope. Some people have PTSD dogs, Peggy had a 32 year, old, heavily used, sidewalk telescope from the most influential amateur astronomer to date – John Dobson. Donna has set up a Facebook page called “**Unofficial Tumbleweed**” There you can scroll down to see Peggy's postings of restoring work on the scope. Since its restoration *Tumbleweed* has been traveling to astronomy conventions and clubs all over the nation. You can see some of her travels and shenanigans on <https://www.facebook.com/tumbleweedtelescope/>

Please join us as Peggy will be talking about John Dobson and *Tumbleweed* and her time at the Winter Star Party at the club meeting on March 29th.

---

**Telescopes for Sale    \$ 250 each    Contact Cathy at [teacher7610@gmail.com](mailto:teacher7610@gmail.com)**



< **Orion SkyQuest XT 8" Dobsonian Telescope**

**Meade ETX 90mm UHTC coatings  
With foam carrying case.**

**Also a Variety of eyepieces and a solar filter**





**We are privileged to Abigail Bollenbach ( Abby ) as our guest presenter at the club's April 12 meeting.**

Abby was the first place winner of the 2018 Astronomical League's Horkheimer/Smith Youth Service Award for outstanding participation in her club and astronomy outreach.

Abby has advanced her astronomy interests from the early age of 10, when she studied Kahn Academy online. She has been a member of Bartlesville Astronomical Society (BAS) since 2015 when she attended her first star party. Abigail has been a presenter for BAS since 2016 providing not only monthly PowerPoint summaries of current astronomy news but has likewise presented on main topics such as famous rocket crashes, how to make an astrophotography tracking mount, and Northern sky constellations. She also created and administers a Pinterest social media page for astronomy news. In 2016, she was a founding member and assisted in organizing the BAS youth auxiliary group; the Bartian Youth Astronomers (BYA) where as a Youth Leader she presents on main topics, assists with meetings, greets attendees and

helps set up new members and visitors. In addition, she enjoys assisting with and presenting for multiple outreach programs for local schools, festivals, and libraries. She especially enjoyed helping to organize the 2017 BYA "total solar eclipse trip" to Booneville, Missouri, and tour of the Morrison Observatory in Fayette, Missouri.

In June of 2018, Abby attracted attention by presenting for the Mid States Regional Astronomical Convention in Springdale, Arkansas on the Cassini-Huygens mission to Saturn that was exceptionally well received by some 80-90 veteran astronomers. She is additionally scheduled to present on various topics for other astronomical societies in 2 more states in 2019. The 16,000 member Astronomical League selected her in July of 2018 for the prestigious "Horkheimer-Smith 1st place, Youth Service Award". As such, she was sent on an expense paid trip to the ALCon 2018 Convention in Minneapolis, MN to receive her award. In 2018, her op-editorial "From Dolls to Dinosaurs" about women and girls being successful in pursuit of careers in STEAM was published in the Tulsa World. In January of 2019, she organized members of her adult and youth astronomy club to sort through 50,000 donated solar glasses, of which 10,000 were salvaged and shipped to Los Angeles to Astronomers Without Borders. These glasses along with approximately another 1 million sorted by the NWA Space, Explore Scientific Telescopes and Sugar Creek Astronomical Society of Springdale, Arkansas will be sent free of charge to schools and institutions in countries where they aren't available to safely view the South American Total Solar Eclipse in July 2019.

Now 17 and a home-schooled junior, she is concurrently enrolled in college classes at Rogers State University. She is planning to continue her education after high school, focusing on astronomy and astrophysics. Abigail retired from a 13-year dance career in December 2017, as company member ballerina from the Bartlesville Civic Ballet and started working part-time in a chemistry lab as a Nanoparticulate Specialist and Experimental Research Design Assistant. Recently, she has filed a patent for gamma-ray shielding to make space travel less harmful to biological entities titled "Quantum Locked Fluxon Shielding." Abby is involved in many other activities in addition to her astronomy studies including yoga, writing poetry, singing, photography, and astrophotography. She is an accomplished pianist as the "State, 1st place Piano Winner for the 2015 Oklahoma Music Teacher's Association competition as well as a seven-consecutive-year top-winner of the National Piano Guild with the American College of Musicians.

"My fields of interest include science, astronomy, and astrophysics. I aspire to continue my passion for studying astronomy and astrophysics by going to college to work very diligently toward higher education degrees. It is my dream to work for the opportunity after my schooling to be employed as a scientist for NASA, SpaceX, ESA, or any other cutting-edge space-related organization to increase our understanding of the universe. My options for a career in these fields are almost limitless because there are so many space-related companies pushing the envelope today."

# Why the Spring Sky Seems to Change So Fast

By Brad Young

Have you ever noticed that the spring night sky seems to change faster than summer or fall and that you just never seem to get to all the things you want to see in time? There are some pretty interesting factors involved here and understanding them might help you to plan your astronomy nights better, or at least have better excuses ready when you don't finish your list.

## The Weather

Certainly, in Oklahoma, the weather in Spring has a huge impact on astronomy. How many times has a beautiful spring day turned into a sappy wet murky sky caused by the debris of thunderstorms out west clouding up our skies? Or, the infamous wind comes whipping down the plains so fast that you must tie your telescope to a rock. The local weathermen have two or three weeks of "airgasms" when every night is a tornado warning until dawn. This can be very frustrating; and it's not yet warm enough to try to observe early in the morning when things may have calm down and cleared out. It is also a well-known fact that the best way to end a dry spell is to schedule a Messier Marathon.



## Daylight Saving Time

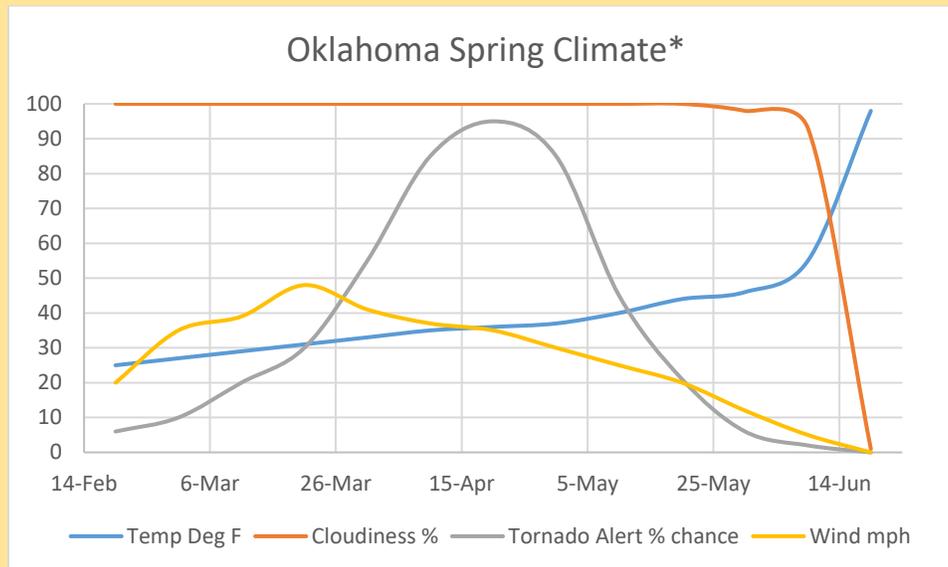
As if people with normal lives needed any more barriers to enjoying their nighttime hobby, we now go on daylight saving time in early March. This means that we are on daylight saving time more than standard time in a year. It's very irritating to watch as the sun goes down at 8 PM on a snowy, frigid, clear night. So, it's too cold for your kids to play outside late, and it's too late for you to go outside after the kids have gone to bed. As for the justification "we will save energy" – don't get me started.



**Editor Note:** Sky and Telescope has a great and humorous article on Daylight Savings Time. Be sure to read some of the laughable comments. [Daylight-Savings Time? Bah Humbug!](#)

## The Seasons

Another “Oklahoma Effect” is that we usually have a spring lasting not 13 weeks or a couple of months, but more like a couple of days plus 13 hours. The last ice storm of winter is usually followed by two or three tornado warnings and then our first hundred-degree day. By the time you find your short sleeve shirt at the back of the drawer, you better also get the bug spray out. And, since everybody has been shuttered up in their houses all winter, they want to get out and enjoy the daytime. Even for young people, it is very difficult to burn the candle at both ends and then torch the middle. You can’t really stay up all the time even if you slept all winter. Probably better if you go ahead and enjoy the flowers blooming and just try to get a couple hours in when you can.



\*not necessarily same data as NOAA

## The Ecliptic

If you’ve ever looked at a strip chart of the year, such as Sky and Telescope Skygazer’s Almanac, or if you are familiar with the analemma, there are some interesting differences between spring and fall. Since most of us observe in the evenings, the constellations of spring set earlier, while the evening constellations of autumn are delayed in their setting. The effect is caused by the tilt of the ecliptic (the path of the sun) which causes the sun to set 2-3 minutes later each night in the spring, so that galaxy you want to get is already a degree lower by the time it gets dark enough to try for it. The effect is reversed in fall, with the sun setting earlier each night, so that the sky darkens and reveals the stars nearly in the same place as last night. This effect is much greater with higher latitude areas such as Alaska or Canada. Of course, its not the sun that’s tilted, but the earth; the tilt of earth’s rotational axis to the plane of its orbit around the sun is called the obliquity of the earth’s orbit. But that term itself is pretty oblique, so people usually revert back to an earth-centered universe and refer to the tilt of the ecliptic.

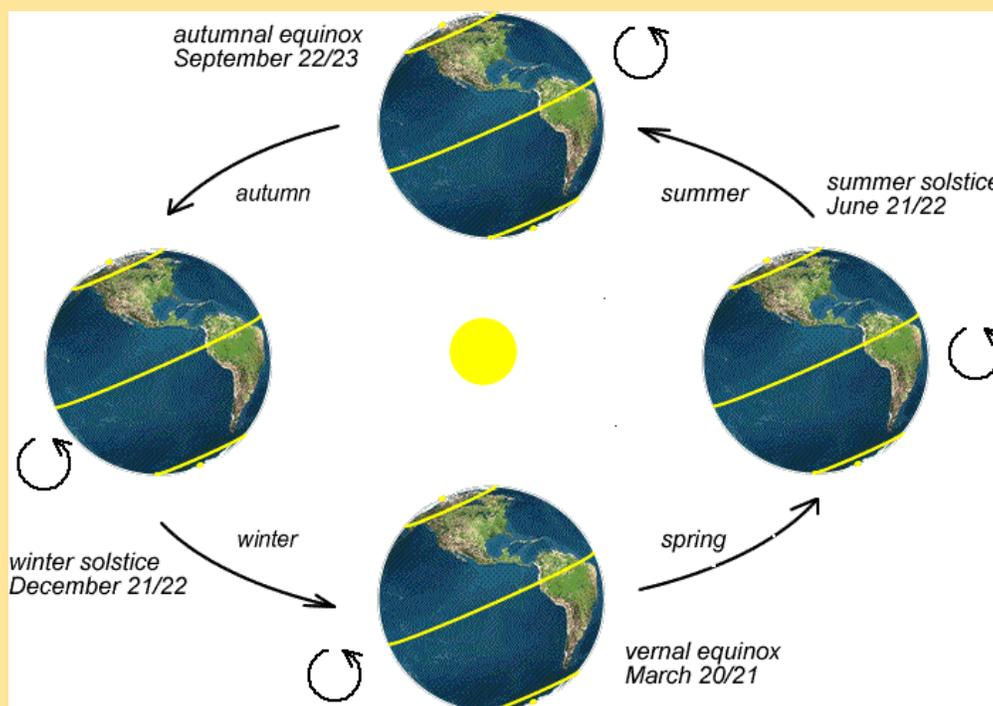
### *Practical Example:*

So, let’s say you are trying to catch Messier 77, a bright spiral galaxy in Cetus, in late winter / early fall. This happens to be one of the first targets in a March Messier Marathon, so it is appropriate. It is located right on the celestial equator, equally visible from any place on Earth.

On February 20, M77 stands a convenient 39 degrees up at 7:40 pm, the moon just set, and astronomical twilight begins, so it is completely dark. But after the first rainout of the Marathon (see above), you don’t look for it again until March 20. Now at full dark [9:05 pm], M77 is only 13 degrees up, and the crescent moon is higher than it in the west. Don’t forget the Zodiacal Light is dimly glowing!

Now, fast forward to late summer. For our target, we choose M11, aka the Wild Duck Cluster; at declination -6 degrees, it's actually a bit south of M77 in the sky. On September 1, M11 stands a convenient 47 degrees up at 9:25 pm, the moon is setting, and astronomical twilight begins, so it is completely dark.

But the St Louis Cardinals are running away with the NL Central, so you go watch the baseball game and don't have a chance to look for M11 again until the last night of Okie-Tex on September 28. At full dark [8:40 pm] M11 is only...well, it's still 46 degrees up, and you never did see the new moon, it set so early. The only barrier to seeing it tonight is the interminable Door Prize drawing.



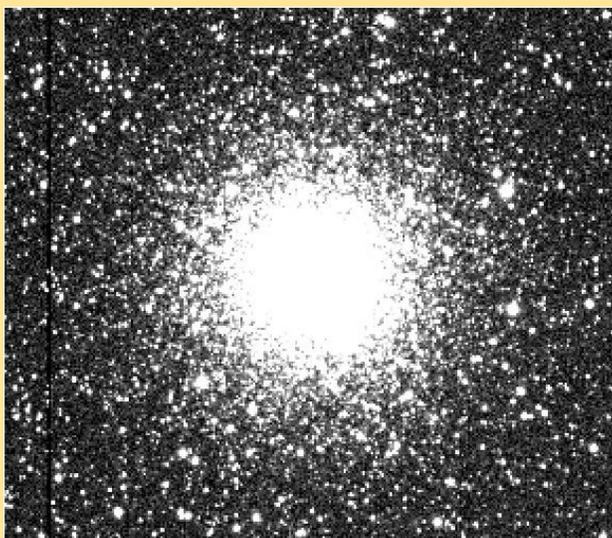
### The Targets

Understanding these factors doesn't fix the frustration because the spring sky is plain chock-full of wonderful sights to see. The realm of the galaxies in Virgo is highest this time of year, including many Messier objects. And extending northward through Leo, Coma Berenices, Canes Venatici, Ursa Major, and Lynx are bunches of galaxies, nebula, and globular clusters just waiting to be observed. And, since winter was just too cold and/or cloudy, I bet you still have targets from Orion you're trying to catch as they set in twilight.



## Skipping Ahead in the Book

Finally, there is the tendency to skip ahead towards the glories of summer. Who can blame you? The first time I see Scorpius and the Milky Way poking above the eastern horizon, of course I want to go look at summer targets. You just have to make yourself try to stay away from them knowing that warm lazy nights will come soon enough, and you'll have plenty of time to see them in their full glory.



## Conclusion

So what can you do? This might help:

Problem	Effect	Solution
Weather	Clouds, rain, pollen, wind, wild temperature swings Tornado carries you and scope to Oz	Turn back tide Tell wind to stop
Profundity of Targets	It's not trying to find an object, it's trying to pick out which one it is in a field of wonder	Do you really want <i>less</i> to see?
Seasons	Life's annual resurrection; Death is vanquished You spray Off in your eyes and on your mirror Even Death is itching from bug bites	Do you <i>not</i> want summer to come? Buy Off by gallon
Obliquity of Earth's Orbit	That object, so high in January, is gone by March	Push Earth over
Baseball	The Cards take it all!	Set DVR
Daylight Saving Time	Gets dark after the thunderstorm's rain freezes	Claim DST is discrimination!
Skipping Ahead in Book	Seeing the Lagoon Nebula for the 1000 <sup>th</sup> time Only see Sombrero at the Mexican restaurant	Skip all objects visible at Okie-Tex



This article is distributed by NASA Night Sky Network

April 2019

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.org](http://nightsky.jpl.nasa.org) to find local clubs, events, and more!

### Mars the Wanderer

David Prosper

April's skies find Mars traveling between star clusters after sunset, and a great gathering of planets just before sunrise.

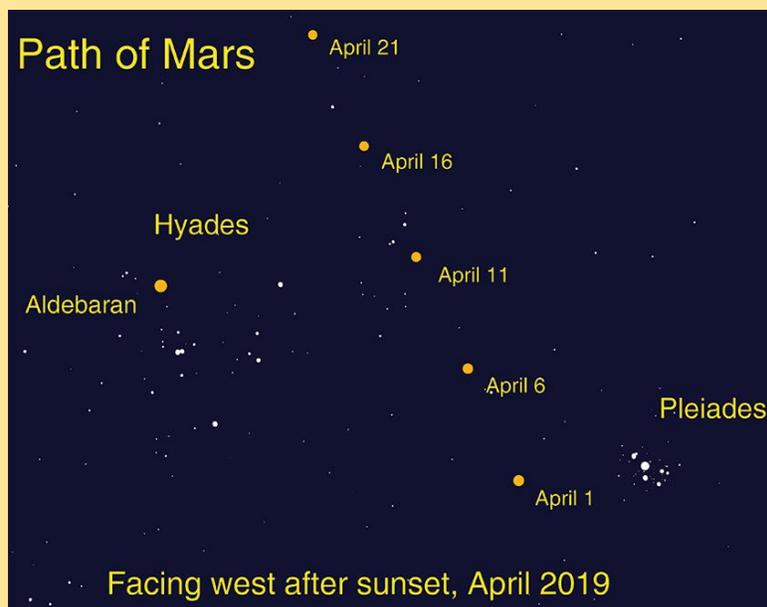
Mars shows stargazers exactly what the term "planet" originally meant with its rapid movement across the evening sky this month. The ancient Greeks used the term **planete**, meaning wanderer, to label the bright star-like objects that travelled between the constellations of the zodiac year after year.

You can watch Mars as it wanders through the sky throughout April, visible in the west for several hours after sunset. Mars travels past two of the most famous star clusters in our night sky: the Pleiades and Hyades. Look for the red planet next to the tiny but bright Pleiades on April 1st. By the second week in April, it has moved eastward in Taurus towards the larger V-shaped Hyades. Red Mars appears to the right of the slightly brighter red-orange star Aldebaran on April 11th. We see only the brightest stars in these clusters with our unaided eyes; how many additional stars can you observe through binoculars?

Open clusters are made up of young stars born from the same "star nursery" of gas and dust. These two open clusters are roughly similar in size. The Pleiades appears much smaller as they are 444 light years away, roughly 3 times the distance of the Hyades, at 151 light years distant. Aldebaran is in the same line of sight as the Hyades, but is actually not a member of the cluster; it actually shines just 65 light years away! By comparison, Mars is practically next door to us, this month just a mere 18 light minutes from Earth - that's about almost 200 million miles. Think of the difference between how long it takes the light to travel from these bodies: 18 minutes vs. 65 years!

The rest of the bright planets rise before dawn, in a loose lineup starting from just above the eastern horizon to high above the south: Mercury, Venus, Saturn, and Jupiter. Watch this month as the apparent gap widens considerably between the gas giants and terrestrial planets. Mercury hugs the horizon all month, with Venus racing down morning after morning to join its dimmer inner solar system companion right before sunrise. In contrast, the giants Jupiter and Saturn move away from the horizon and rise earlier all month long, with Jupiter rising before midnight by the end of April.

The Lyrids meteor shower peaks on April 22nd, but sadly all but the brightest meteors will be washed out by the light of a bright gibbous Moon. You can catch up on all of NASA's current and future missions at [nasa.gov](http://nasa.gov)



*Caption: The path of Mars between the Pleiades and Hyades in April.  
Image created with assistance from Stellarium*

# TREASURER'S and MEMBERSHIP Report

BY JOHN NEWTON



As of March 21, the Astronomy Club of Tulsa has **165 members**, including new members – **Janie Luper, Howard M. McCully, Deborah Scott and Kenneth Webb**. Welcome to ACT, all! We look forward in seeing you at our meetings. Also, a special **'Thank You!'** goes out to our **long-term members for their continued support**.

## Accounts as of March 20, 2019 -

**Checking: \$ 6,503.62**

**Savings: \$ 5,671.07**

**Investments: \$ 23,700.38** (Value tend to fluctuate with market changes).

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. Details - Contact their websites

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

Dates and Times for Events are found at [www.AstroTulsa.com](http://www.AstroTulsa.com) under EVENTS tab  
Be sure to check the Website for Weather Cancellations before coming.

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 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 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 – JESS CAGNOLLATI  
[astrotulsa.secy@gmail.com](mailto:astrotulsa.secy@gmail.com)  
TREASURER – JOHN NEWTON  
[astrotulsa.tres@gmail.com](mailto:astrotulsa.tres@gmail.com)

## BOARD MEMBERS-AT-LARGE:

RICHARD BRADY  
TONY CAGNOLLATI  
JOHN LAND  
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)

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

SIDEWALK ASTRONOMY –  
TAMARA GREEN  
[astrotulsa.pres@gmail.com](mailto:astrotulsa.pres@gmail.com)

PR AND OUTREACH –  
GROUP DIRECTOR – JERRY CASSITY  
[astrotulsa.vp@gmail.com](mailto:astrotulsa.vp@gmail.com)

NIGHT SKY NETWORK –  
Open Position

WEBMASTER JENNIFER JONES

## MEMBER ARTICLES WANTED

Have YOU HAD A FUN ASTRONOMICAL ADVENTURE?

Got a new piece of equipment your dying to brag about?

Been on a vacation to an astronomical destination or done stargazing along the way.

Want to share your latest astrophotography success

Contact our Newsletter Editor about details at  
[Tulsaastrobiz@gmail.com](mailto:Tulsaastrobiz@gmail.com)

Submissions should be in MS Word and submitted by the 20<sup>th</sup> of each month.

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.