



OBSERVER

JANUARY 2019

Bringing Stars to the eyes of Tulsa since 1937

Editor – John Land

HAPPY NEW YEAR
2019

Messier 107 – Globular Cluster in Ophiuchus
Credit Hubble Telescope ESA / NASA

In this Issue

- 2 Upcoming Events & New Horizons Flyby of Ultima Thule**
- 3 Total Lunar Eclipse – Jan 20**
- 4 Telescope 101 Workshop – Jan 5th**
- 5 President Report - Tamara Green**
- 6 Secretary Report - Jess Cagnolatti -
2019 Astronomy Calendars for Sale**
- 7 Book Review – Exploring Amateur Astronomy – by Mike Hotka**
- 8 Treasurer Report – John Newton**
- 9-10 Morning Planets & Lunar Eclipse – Night Sky Network**
- 11-14 Doing Science with Remote Imaging Telescopes in Australia
By Brad Young**
- 15 Directions to Club Events Locations**
- 16. Jenks Planetarium Schedule
2019 Officers and Board**

Astronomy Club Events

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

	EVENT DATE	START TIME	LOCATION
JANUARY			
NEW YEARS' DAY	TUES, JAN 1		
MEMBERS' NIGHT	FRI, JAN 4	5:30 PM	OBSERVATORY
TELESCOPES 101 AT TASM	SAT, JAN 5	11am-2:PM	TASM
GENERAL MEETING	FRI, JAN 11	7:00 PM	JENKS PLANETARIUM
SIDEWALK ASTRONOMY	SAT, JAN 12	4:30 PM	BASS PRO
TOTAL LUNAR ECLIPSE	SUN JAN 20	9:33 pm to 12:50 am	
MARTIN LUTHER KING, JR. DAY	MON, JAN 21		
PUBLIC NIGHT	SAT, JAN 26	5:15 PM	OBSERVATORY
FEBRUARY			
MEMBERS' NIGHT	FRI, FEB 1	6:00 PM	OBSERVATORY
VALENTINE'S DAY	THU, FEB 14		
SIDEWALK ASTRONOMY	SAT, FEB 16	5:00 PM	BASS PRO
PRESIDENTS' DAY	MON, FEB 18		
GENERAL MEETING	FRI, FEB 22	7:00 PM	JENKS PLANETARIUM
PUBLIC NIGHT	SAT, FEB 23	5:45 PM	OBSERVATORY



By the time you read this newsletter the New Horizons spacecraft will have set another record as it images a tiny Kuiper belt object **ULTIMA THULE – Jan. 1, 2019 - FOUR BILLION miles from the Sun**. Zipping by a mere 2,220 miles from its target, the instruments hope to get valuable information of this ancient member of the solar system. That name, pronounced “**Ultima Tooly,**” is Latin for “beyond the farthest frontiers” and was chosen in a public naming contest because its meaning represents what we are doing: exploring the farthest (and likely the most primitive) object ever visited in space.” Closest approach will be 11:33 PM Dec 31 Tulsa time but don’t expect instant images. It takes 6 hours one way for radio signals to reach Earth. The spacecraft will be busy acquiring images and storing them in its memory banks. Once it has completed its program it will begin the long process of sending the data back to earth. To get the latest on the mission go to the [New Horizons](#) Website and [NASA TV](#)

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TOTAL LUNAR ECLIPSE SUNDAY JANUARY 20th



On Sunday evening Jan 20th Tulsans will have an opportunity to observe a Total Lunar Eclipse. You don't need any special filters to observe a lunar eclipse as you will be looking at the full moon. It can easily be seen with the unaided eye but binoculars or a small telescope will enhance the view.

During a lunar eclipse the moon passes through the Earth's shadow. The PENUMBRA is the outer shadow of the Earth where only part of the Sun's light is blocked. This early phase is not obvious until it is near totality. You'll notice the left side of the full moon looks more gray or dusky than the right. The UMBRA is the inner shadow of the Earth where the Sun's light is completely blocked. As the moon enters the Umbra it will look like a bite has been taken out of the left side of the moon. Over the next hour more and more of the moon will be covered. As Totality darks near the color of the moon will appear brownish to a dull orange. The color of the eclipse depends on how much dust is in earth's upper atmosphere to scatter the sunlight. This may be a fairly dark eclipse due to active volcanic eruptions in Sicily and Indonesia spewing dust and particles into the upper atmosphere.

The Moon will be about halfway up in the east as the partial eclipse begins. As Totality begins the moon will be 60 degrees up in the SE and 70 degrees up in the SSE as Totality ends. The moon will be at perigee – closest to earth – 222,042 miles – at 2:00 PM on Monday 21st. Making this Full Moon a so called "Super Moon" The first of three months in a row for 2019.

More details about the eclipse in the NSN article page 9

Event	UTC Time	Time in Tulsa*
Penumbral Eclipse begins	Jan 21 at 02:36:29	Jan 20 at 8:36:29 pm
Partial Eclipse begins	Jan 21 at 03:33:54	Jan 20 at 9:33:54 pm
Full Eclipse begins	Jan 21 at 04:41:17	Jan 20 at 10:41:17 pm
Maximum Eclipse	Jan 21 at 05:12:14	Jan 20 at 11:12:14 pm
Full Eclipse ends	Jan 21 at 05:43:15	Jan 20 at 11:43:15 pm
Partial Eclipse ends	Jan 21 at 06:50:39	Jan 21 at 12:50:39 am
Penumbral Eclipse ends	Jan 21 at 07:48:02	Jan 21 at 1:48:02 am

See [Eclipse Animation](#)

More Eclipse details at <http://eclipsewise.com/oh/ec2019.html#LE2019Jan31T>

NOTE: Times are given in UT time - Subtract 6 hours for CST



Telescope 101 Workshop



**Got a New Telescope ?
(Or an old one gathering dust)
Want some help learning to use it?
Bring your telescope and let us help you.**

**The Astronomy Club of Tulsa and
Tulsa Air and Space Museum are
hosting a Telescope Workshop.**

**Saturday Jan 5, 2019 from 11 AM to 2 PM
At the Tulsa Air & Space Museum Planetarium**

**RSVP Registration Required -
Sign Up Today to reserve your time
Registration ONLINE at
TulsaMuseum.org**

***Please bring telescope, user manual
and accessories if you have them**

Note: Registration is by telescope group not individuals in that group.

**Registrants will have an opportunity to view
a planetarium show after their session.**

Thinking about Buying a Telescope? [See Choosing or Gifting a Telescope](#)

Volunteers Still needed for the Telescope 101 Workshop at TASM

We need at least 10 to 12 volunteers to help our guests. Our guests will be bringing in their telescope. Our members will be helping answer questions about their telescopes. Showing them how to set up a telescope. Explain the eyepieces and general telescope basics. We'll need 2 or 3 people to greet guests and hand out club brochures and info. You don't have to be an expert just willing to share your knowledge.

To Volunteer send in your NAME – Phone # and Email with Subject Line **TASM Volunteer** to John Land – Tulsaastrobiz@gmail.com or Tamara Green – Astrotulsa.pres@gmail.com

For a glimpse of the January 2018 Telescope workshop go to the [Feb 2018 Newsletter](#)

PRESIDENT'S MESSAGE

BY TAMARA GREEN



Hey Y'all !

I hope all of you are having a very happy Holiday Season! We have not yet finalized the events calendar for next year, but hopefully that will be done very soon.

We do have one special event coming up that we still need volunteers for. We have a Telescopes 101 at TASM event on Saturday, January 5, 2019, from 11 AM to 2 PM. We will be arriving at about 10 AM to get set up for it. We will be assisting guests with their telescopes in 30-minute sessions, and need volunteers with knowledge of all types of telescopes (reflectors, refractors, catadioptrics) for each session. Of course, if you wish to, you may stay for the whole event! The sessions will be:

11:00 to 11:30, 11:30 to Noon, Noon to 12:30, 12:30 to 1:00, 1:00 to 1:30, and 1:30 to 2:00.

If you are interested in volunteering for this special event, please contact me at astrotulsa.pres@gmail.com or John Land at tulsaastrobiz@gmail.com.

I look forward to serving you again as your President for 2019, and thank you all for my re-election. I hope that I can do a better job this year! I hope to be able to get good programs set up for our General Meetings, and, of course, we will have some fun events for y'all!

Be sure to go out and look at Comet 46P Wirtanen! Details about this comet, which passed very near the Earth Dec 16th, can be found on Heavens-Above, <https://www.heavens-above.com/comet.aspx?cid=46P&>

By January the comet will be receding from earth and fading to 6th or 9th magnitude but still accessible in telescopes. The first week of January it is near the bowl of the Big Dipper.

[Customizable Finder Charts from in-the-sky.org](#)

So, for those of you who celebrate Christmas, Merry Christmas! And Happy New Year to all of you!

I look forward to serving you again in 2019 as your President. I hope we can all have a fun year together.

Clear Skies! Tamara

SECRETARY'S MESSAGE

BY JESS CAGNOLLATI



Hello Everyone and Happy New Year!

The board had a meeting on Dec 8th to discuss the upcoming year including events, updates to the observatory and goal planning for the future of the club. The Telescopes 101 workshop at TASM will be Saturday, January 5th. If you can volunteer, contact John Land. There is an ongoing discussion in regards to having Sidewalk Astronomy at alternate locations quarterly including at TASM and The Gathering Place. Tamara is contacting both locations to find out details, so stay tuned. A veteran's discount was also discussed for club membership. A vote to establish a committee to amend bylaws for the discount will be needed.

One of the exciting plans for 2019 is to provide Astronomy 101 classes and other educational programs at the observatory during public nights and providing activities for children at Sidewalk astronomy. This can help newer members understand astronomy better and help foster excitement for the club.

In 2019, there will also be a goal planning meeting for the club in general. This will help provide a mission and goals for the next five to ten years. The meeting is tentatively scheduled for March, but more details will be coming, so stay tuned. Skip will be the equipment manager at the observatory and will work with James in the upkeep of the observatory, including making and maintaining an inventory of the equipment and tools we have there. James is working on improving the dome's rotation mechanisms. There was a general meeting on December 14th which included a planetarium show on the Apollo missions.

Hope everyone has a great January!

Jess Cagnollati



[Link here to Order Page](#)

Cost is \$13 plus shipping

Images and sketches from AL Members

Monthly moon phases

Planetary oppositions

Meteor showers

Eclipses

Transits

Major US Star Parties

Astro/space trivia

ALCon 2019 Conference information

AL Executive Committee and Regional information

AL Observing Program Progression Guide



Our Tulsa Astronomy Club has a supply on hand of the **2019 Astronomy Magazine Calendars for \$10 each**

Contact our treasurer John Newton at

AstroTulsa.tres@gmail.com to reserve your copy.

Calendars are available on first come, first served basis and must be picked up in person at a club event.

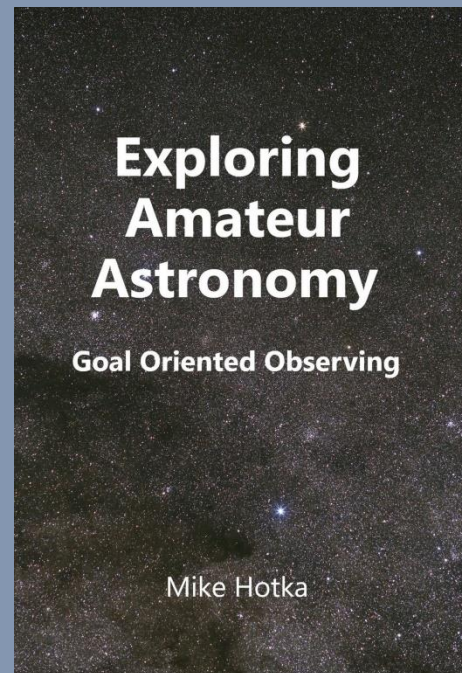
Start you New Year off by Completing one of the Astronomical League's many observing certificate programs. Programs are available for all levels from Novice to Advanced. Naked Eye, Binoculars or Telescopes. A great way to learn the sky. Our Tulsa Club has had FOUR Masters Level Observers who have completed 10 or more programs and member Brad Young is one of only THREE Platinum Master Level observers.

<https://www.astroleague.org/observing.html>

Below is a book review by one of the Platinum Award observers with tips to help plan your observing sessions and more.

Want to complete more Observing Programs?

Have you ever wanted to start and complete more of the Astronomical League's observing programs but just didn't know how? Mike Hotka's new book, [Exploring Amateur Astronomy – Goal Oriented Observing](#), will not only help you start more observing programs, but will also share an observing methodology to help you get more out of your observing sessions. Mike is a Platinum Master Observer and has completed all but three of the currently existing observing programs. In his book, he shares tips and tricks he learned throughout the years of how to overcome some of these program's learning curves, so that you can start recording observations sooner. Mike wrote this book because of his love of astronomy and his desire to share his knowledge to observing celestial objects with others.



Mike's book explains the concept of setting SMART goals to ensure you observe on a regular basis. The book goes on to explain a methodology that Mike has developed and refined over the years of how to plan an observing session, find the resources you will need in the field and the importance of keeping a good observing log of your observations.

The remainder of the book contains a chapter for each of the observing programs that Mike has completed. These chapters describe how Mike approached each observing program and he shares the techniques that were effective in completing the observations for each program. With this knowledge, you will be able to start making observations from the very beginning for even the most difficult of observing programs.

This book emphasizes learning and refining astronomical observing techniques. It is designed to aid the beginner as well as the experienced amateur astronomer to train their eye to see faint celestial objects. This book is dedicated to those that would like to start and complete more Astronomical League observing programs.

[Exploring Amateur Astronomy – Goal Oriented Observing](#) can be purchased in a paperback or eBook version from Amazon.com.

TREASURER'S and MEMBERSHIP Report

BY JOHN NEWTON



We are closing out the year strong, as of December 26th, Our Club has 175 members, including 54 new members who have joined us in 2018. Welcome our newest members who joined ACT in December
Dustin Eimen, James Fayard, James W. Hutchinson, Adam Koloff, Steve Lofton, Adam Fenderson and Tom Overgaard.

Accounts as of December 24th, 2018 -

Checking: \$ 5,747.30

Savings: \$ 5,779.71

Investments: \$ 20,880.63 (Dec. 24 - Values 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

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



This article is distributed by NASA Night Sky Network

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more! **NSN Night Sky Planner** page has interactive tools to enhance your observing experience <https://nightsky.jpl.nasa.gov/planner.cfm>

January's Evening Eclipse and Morning Conjunctions

By David Prosper

Observers in the Americas are treated to an evening **total lunar eclipse** this month. Early risers can spot some striking morning conjunctions between **Venus**, **Jupiter**, and the **Moon** late in January.

A **total lunar eclipse** will occur on **January 20th** and be visible from start to finish for observers located in North and South America. This eclipse might be a treat for folks with early bedtimes; western observers can even watch the whole event before midnight. Lunar eclipses take several hours to complete and are at their most impressive during total eclipse, or totality, when the Moon is completely enveloped by the **umbra**, the **darkest part of Earth's shadow**. During totality the color of the Moon can change to a bright orange or red thanks to the sunlight bending through the Earth's atmosphere - the same reason we see red or orange sunsets. The **eclipse begins at 9:34 pm Central Standard Time**, with **totality beginning at 10:41 pm**. The total eclipse lasts for slightly over an hour, **ending at 11:43 pm**. The eclipse finishes when the Moon fully emerges from Earth's shadow by **12:51 am**. Convert these times to your own time zone to plan your own eclipse watching; for example, the Eclipse starts at 10:34 EST - 9:34 CST - 8:34 MST and 7:34 PST

Lunar eclipses offer observers a unique opportunity to judge how much the Moon's glare can interfere with stargazing. On eclipse night the Moon will be in **Cancer**, a constellation made up of dim stars. How many stars you can see near the full Moon before or after the eclipse? How many stars can you see during the total eclipse? The difference may surprise you. During these observations, you may spot a fuzzy cloud of stars relatively close to the Moon; this is known as the "**Beehive Cluster**," **M44**, or **Praesepe**. It's an open cluster of stars thought to be about 600 million year old and a little under 600 light years distant. Praesepe looks fantastic through binoculars.

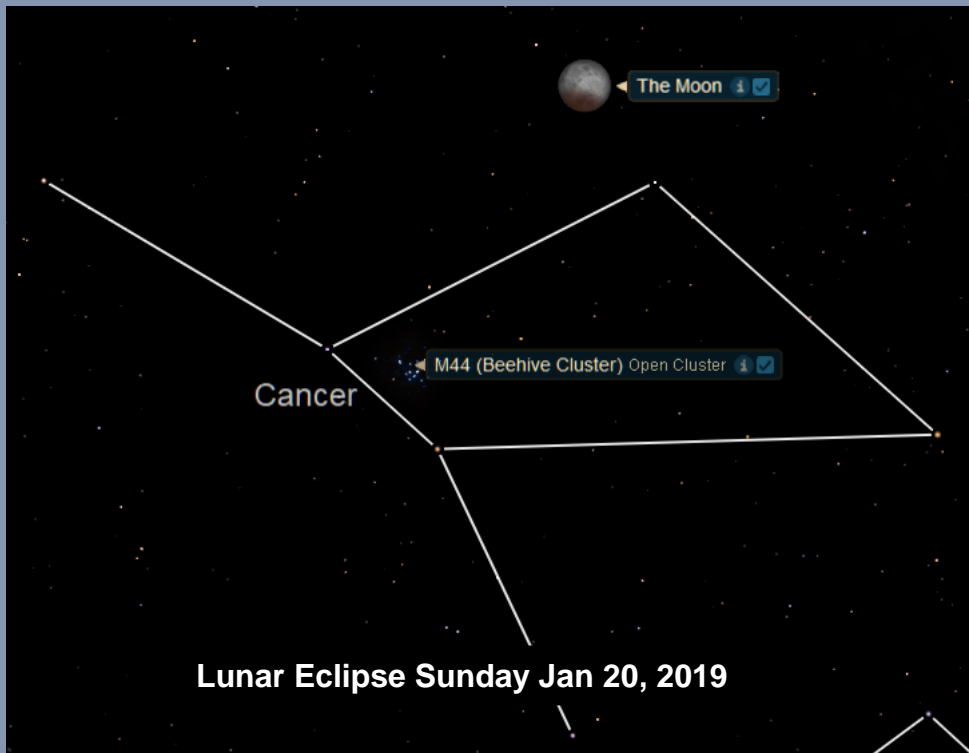
Mars is visible in the evening and sets before midnight. It is still bright but has faded considerably since its closest approach to Earth last summer. Watch the red planet travel through the constellation Pisces throughout January.

Venus makes notable early morning appearances beside both **Jupiter** and the **Moon** later this month; make sure to get up about an hour before sunrise for the best views of these events. First, Venus and Jupiter approach each other during the third full week of January. Watch their **conjunction on Jan. 22nd**, when the planets appear to pass just under 2 ½ degrees of each other. The next week, observe Venus in a close conjunction with a crescent Moon the morning of the 31st. For many observers their closest pass - just over half a degree apart, or less than a thumb's width held at arm's length - will occur after sunrise. Since Venus and the Moon are so bright you may still be able to spot them, even after sunrise. Have you ever seen Venus in the daytime? This might be a great morning to use your binoculars to spot Venus near the moon, then see if you can locate it naked eye.

CAUTION NOTE: Position yourself in a shaded area free of the sun's glare you'll be safe from accidentally looking at the Sun and have a better chance of spotting Venus.

If you have missed **Saturn** this winter, watch for the ringed planet's return by the end of the January, when it rises low in the SE right before sunrise in Sagittarius. See if you can spot it after observing Venus' conjunctions!

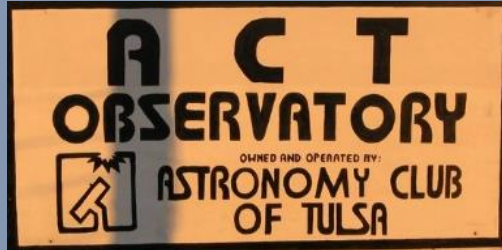
You can catch up on all of NASA's current and future missions at nasa.gov



Have you ever wondered how eclipses occurs? You can model the Earth-Moon system using just a couple of small balls and a measuring stick. To find out how the “Yardstick Eclipse” model above. The “Earth” ball (front, right) casts its shadow on the smaller “Moon” ball (rear, left). You can also simulate a solar eclipse just by flipping this model around. You can even use the Sun as your light source Find more details on this simple model at bit.ly/yardstickeclipse

TUPAC

Tulsa – Perth Astronomical Cooperation



Article by Brad Young describing his experiences using remote imaging facilities in Australia.

As mentioned back in a previous issue of this newsletter¹ [Jan 2016 issue](#) , I have been granted the opportunity to use a remote telescope in Perth, Australia. Roger Groom of the Perth observatory has provided me with telescope time and significant guidance in using his system to perform Citizen Astronomy observations and reporting. Hopefully, the fine folks in the Tulsa club will find this modified version of my report to him interesting. Perhaps, they may even be inspired to do the same thing, either through Perth or another facility, using remote imaging. And, if you prefer other ways, there are as many Citizen Science projects as you could ever care to try out there. These range from beginner level [no equipment needed] to research grade work, using your own equipment if you prefer.

BACKGROUND

I was invited to use the Perth facility after my initial experiences with remote imaging using a commercial service back in 2015. I had also been doing NEO (Near Earth Object) searches using images from PAN-STARRS and the Catalina Star Survey, provided by those sponsors. However, I found it difficult to reserve time on the commercial scopes and appreciated the nearly antipodal location of Perth from Tulsa for a variety of reasons. Probably the most important to me was the fact that it's night there during the day here! (Antipodal – a location on the opposite side of the Earth.) Perth is located on the western coast of Australia.

As mentioned in the previous article, I had quite a learning curve to overcome for imaging in general, and specifically some of the targets touched on facets of observing that I really hadn't seen as a visual hobbyist. This new exposure, and the opportunity to use the Greenbank radio telescope via the Astronomical League illuminated for me new ways to enjoy my hobby and provide valuable scientific data.



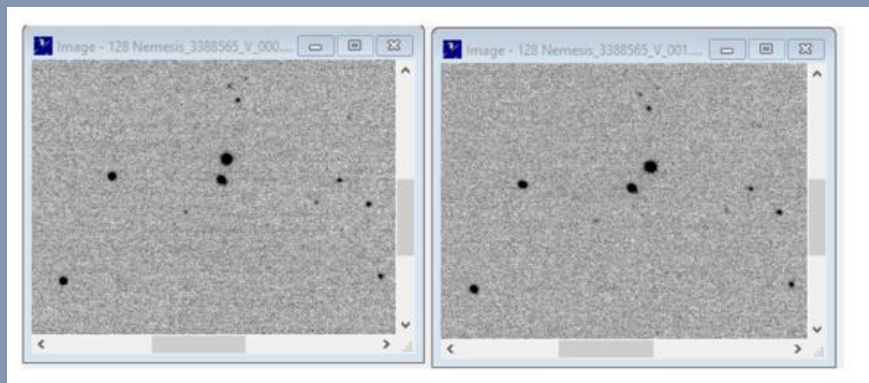
ACTIVITIES

My recent Citizen Science activities, including those using the equipment at Perth, include the following:

<i>Activity</i>	<i>Overall Status</i>	<i>Perth Specific Status</i>
NEO (NEAR EARTH OBJECT) SEARCH AND MONITOR PROGRAMS INCLUDING:		
Target Asteroids	Completed program - now mentoring	N/A
Annual ISAC NEO search campaign (PAN-STARRS)	2016 thru 2018 campaigns completed	N/A
Independent searches using imagery from Perth	Follow up on NEO targets and cold searches	20 image runs for "cold" searches
AAVSO VARIABLE STAR PHOTOMETRY FROM SOUTHERN HEMISPHERE, WITH EMPHASIS ON:		
Recurrent nova and other enigmatic sources	Some targets in North, using other scopes	20 targets
Follow up GRB alerts from SWIFT	Pending	Pending
AAVSO time sensitive alerts and projects	Some targets in North, using other scopes	6 targets
General surveys for extragalactic supernova	Note 3	
PHOTOMETRY OF ASTEROIDS TO DETERMINE ROTATIONAL PERIOD	Some targets in North, using other scopes	70 targets
SUPPORT SPACE BASED PROGRAMS: ⁽¹⁾		
Chandra Xray observatory		15 targets
Hubble		11 targets
SWIFT		Pending
NEOWISE		10 targets
Geographically advantageous imaging: ⁽²⁾		32 targets
Test images, self training		

Notes

1. Provide ground-based imaging for comparison to space-based imaging in visible and other wavelengths
2. Occasional images of comets, minor planets, and other transitory targets that may be less visible from other geographical locations
3. Did survey of southern hemisphere galaxies to search for supernova; one-time project



Using the R-COP telescope at Perth, multiple images of an asteroid moving through a star field can be captured. Data on the position and velocity help refine the orbit, while fluctuations in brightness indicate the rotational period.

Plans for 2019 to provide best return on time and resource investment:

Activity	Planned Improvements
Target Asteroids	N/A
Annual ISAC NEO search campaign (PAN-STARRS)	N/A
Independent searches using imagery from Perth	Coordinate searches with Catalina Star Survey at SSO (Siding Spring Observatory)
Recurrent nova and other enigmatic sources	Improve efficiency and reduce error
Follow up GRB alerts from SWIFT	Identify contact and begin this effort
AAVSO time sensitive alerts and projects	Improve efficiency using AAVSO VPhot. Try other photometric filters, as needed.
General surveys for extragalactic supernova	Not needed. Use Rochester site for alerts.
PHOTOMETRY OF ASTEROIDS TO DETERMINE ROTATIONAL PERIOD	Continue reports to IASC but expand to include MPC
SUPPORT SPACE BASED PROGRAMS	
Chandra Xray observatory	Continue as required
Hubble	Continue as required
SWIFT	Identify contact and begin this effort
NEOWISE	Continue as required
Geographically advantageous imaging:(2)	Continue as required
Test images, self-training	Complete

JOIN THE FUN

If you've ever considered doing serious Citizen Science work, using remote telescope imaging systems, I can highly recommend working with the Perth Observatory. Contact me (allenb_young@yahoo.com) to discuss the ongoing work in detail, or other practical astronomical observing opportunities you are interested in pursuing; perhaps these could be rolled into the current program.

Along with the Perth Observatory telescope (R-COP), there are also commercial remote services. These systems are also great tools to increase human knowledge "from the comfort of your E-Z Boy". And of course, there's no reason why you can't use your own equipment to do many of the same things. Consider adding your efforts to the Astronomy Club of Tulsa (TUPAC) team!

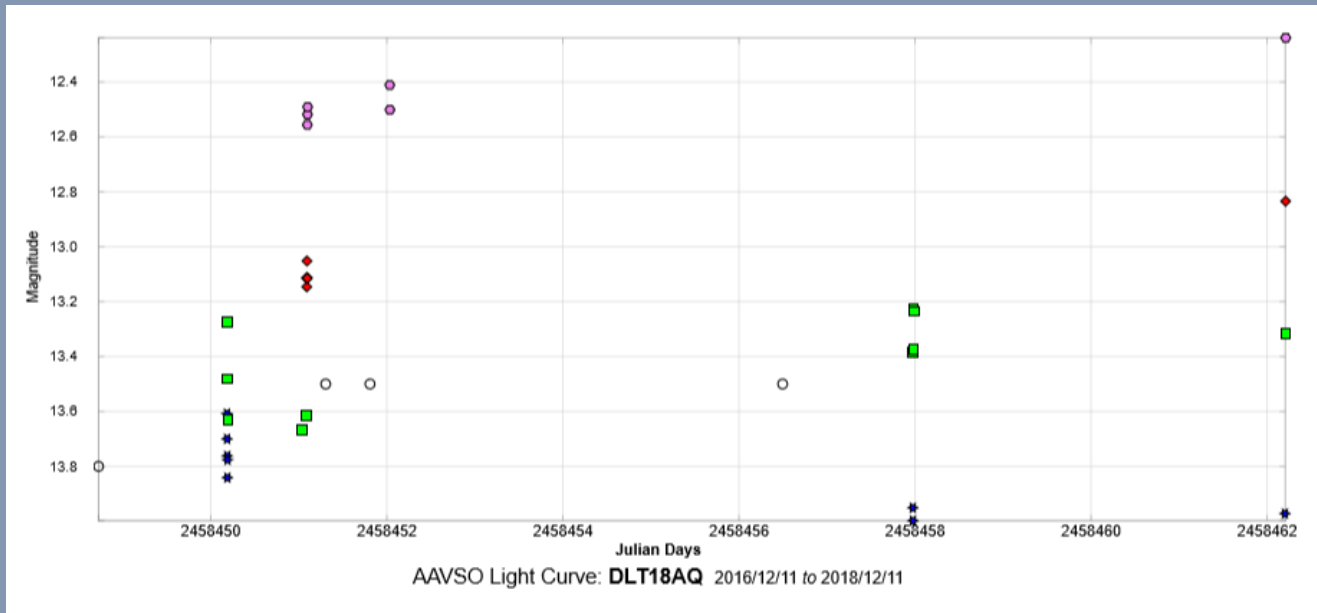
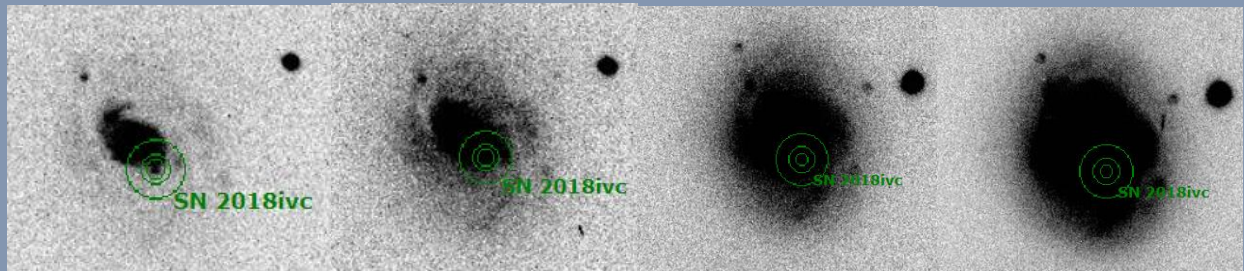
ACKNOWLEDGEMENTS

These opportunities have proven very valuable to me, in more ways than the obvious expansion of what I can accomplish within the hobby that we all enjoy. At first, I was very resistant to doing imaging (refer that article in the Observer, or a similar one in the September 2016 Observer, the magazine of the Astronomical League). I have come to realize remote telescopes have proven to be a convenient way for me to make a lot of mistakes and learn a lot of things from very helpful, patient, and knowledgeable people.

Special thanks to Roger Groom of Perth Observatory, for providing the service and answering many questions. I have also relied on imaging gurus Michael Blaylock and Rod Gallagher in our club, to remind me there is a camera on the other end of the internet and it is a machine that cannot read my mind, even with the 6 Terabit/s Southern Cross Cable.

I must also add, with sadness, my thanks to the late Bill Bogardus for his assistance with radio astronomy. And, to James Taggart and Michael Blaylock. again, for helping with Radio Jupiter, aka the ACT Observatory Clothesline.

Observations showing Images and Light Curve of Super Nova SN 2018 iva that appeared in the galaxy M 77 in the constellation Cetus on Nov 24, 2018



RESOURCES

[Perth Observatory](#)

[AAVSO \(American Association of Variable Star Observers\)](#)

[IAU Minor Planet Center](#)

[Target Asteroids](#)

[Rochester Astronomy Latest Supernova Page](#)

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 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.

ASTRONOMY CLUB OFFICERS:

PRESIDENT – TAMARA GREEN
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VICE PRESIDENT – JERRY CASSITY
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SECRETARY – JESS CAGNOLLATI
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TREASURER – JOHN NEWTON
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BOARD MEMBERS-AT-LARGE:

RICHARD BRADY
TONY CAGNOLLATI
JOHN LAND
SHELDON PADAWER
JACOB SHEPHERD
JAMES TAGGART
SKIP WHITEHURST

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TICKETS

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Shows take place on
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