gazer's gazette

OKLAHOMA CITY ASTRONOMY CLUB • AUGUST 2019

THIS MONTH:

MOON LANDING 50TH ANNIVERSARY
JULY 20 CELEBRATION
STAR PARTY RECAP

OKIE-TEX 2019
SPEAKER SCHEDULE & REGISTRATION INFORMATION

Oklahoma City Astronomy Club

PRESIDENT'S MESSAGE

Welcome to the August meeting of the Oklahoma City Astronomy Club. This month, Professor Peter Shull joins us to tell us about his astornomy work in the Department of Physics at the Oklahoma State University.

Thank you to everyone that came out to the Apollo 11 50th Anniversary Star Party event on July 20 at the Boathouse. By all accounts, it was a big success, and over 300 people stopped by to observe the moon and to celebrate with us. Thank you to all the club members (too many to list, but you know who you are) that came out and helped make this event a huge hit.

Finally, we still have some vacant board positions open. If you are at all interested, please find me at a club meeting, or email me at **president@okcastroclub.com**.

Thank you for your continued interest in astronomy and our club. Clear skies!

HELP WANTED. Program Director. Job description: (1) Arrange speakers and/or programs for the regular monthly Club meetings. (2) Assist the Vice President in arranging speakers for the annual Okie-Tex Star Party. Duties also include internet searching for potential speakers, sending emails and follow-up messages to potential speakers, introducing speakers at Club meetings. Qualifications: email proficiency and organizational skills. Time commitment: 1-2 hours each week.

HELP WANTED. Observing and Outreach Coordinator. Job Description: (1) coordinate all observing events including monthly and public star parties. (2) Responsible for the verification of member observing logs or documentation submitted for Astronomical League certificates or programs. Duties also include answering emails for star party requests within the OKC metro area and central Oklahoma. Posting these requests on the message board and event calendars. Announcing Club star parties to the OKCAC membership and providing last minute updates if the events change due to weather. Making short announcements at Club meetings. Time commitment: 1-2 hours each week.

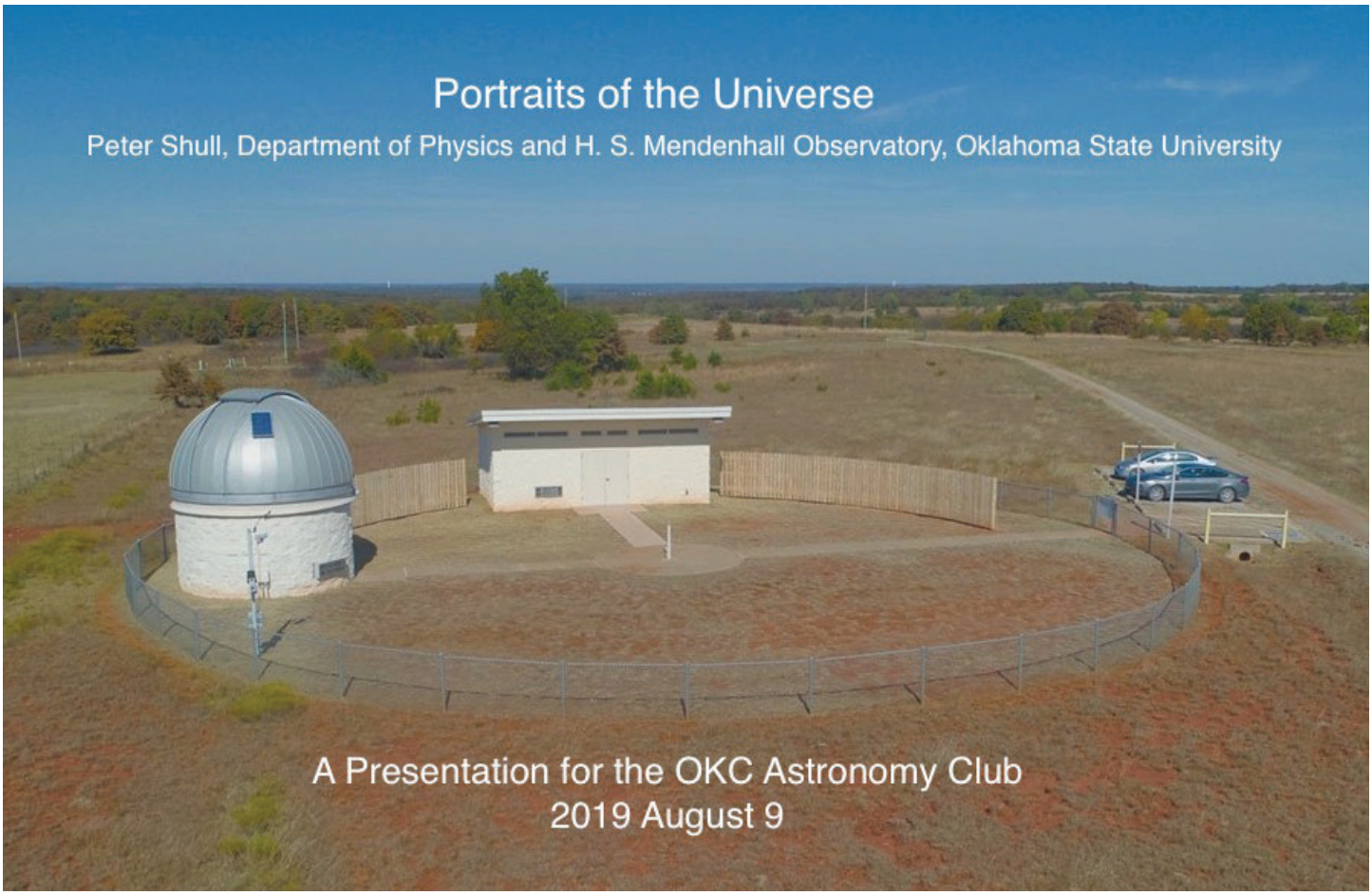
Cover photo:
July 20, 2019 - OKCAC Apollo 11 50th Anniversary Party; Jeremy Macy

Volume 52, Issue 8 August 2019

The Oklahoma City Astronomy Club is a 501(c)(3) scientific and educational organization. The OKCAC Board meets on the last Tuesday of February, May, August and November.

Newsletter also available at:
www.okcastroclub.com/gazette.php
Email the editor at editor@okcastroclub.com

PORTRAITS OF THE UNIVERSE



Prof. Peter Shull will present a selection of pictures for us to view and discuss together, spanning everything from the Moon to black holes to the Universe at large. He will present an overview of work in astronomy at Oklahoma State University and discuss the OSU astronomical observatory, home of the state's main research telescope; the observatory's observational methods, plans and goals; and efficient outdoor lighting practices. Peter Shull is an associate professor of physics and director of OSU's H.S. Mendenhall Observatory. He holds degrees in astrophysics from Rice (Ph.D) and Princeton. On campus, he teaches large introductory courses on the solar system, and on stars and galaxies, as well as advising research students working at the observatory. His research interests include exploding stars and planets orbiting other stars.

CELEBRATING THE APOLLO 11 MOON LANDING

BY IDA HUNTZ

July 20, 2019 — Fifty years ago on July 20th mankind literally put its mark, in the form of footsteps, on the moon. In celebrating the 50th anniversary of Apollo 11's success with a Star Party on the lawn of Riversport OKC, it was awe-inspiring to see so many visitors excited about the event. Many young visitors and their parents weren't born when Apollo 11 made that famous landing. Yet, as the visitors watched and listened to the Eagle Landing, then Earthrise footage, compliments of NASA Goddard, their excitement at living the experience of Apollo's history was clear.

Downtown OKC; Apollo 11 Event; Jeremy Macy

The warm temperatures of the day were made bearable due to Riversport Adventures' location along the Oklahoma River. A steady south breeze across the river to the grassy lawn where the event was setup only became better as the sunset. Oklahoma City Astronomy Club members prepared no less than 21 telescopes of various types and sizes on the lawn and provided views through the eyepiece and projection of Saturn, Jupiter, Star Clusters, Double Stars, and the Moon once it cleared the horizon.

As visitors waited for telescopes, the club provided audio and visual aids at 3 booths that covered topics about Apollo missions and the moon, the upcoming International Observe the Moon Night, and OKCAC history.

Nearly 300 visitors funneled through the event, enjoying videos, handouts, and giveaways.

ROSETTE NEBULA OFFICIALLY RECOGNIZED AS STATE ASTRONOMICAL OBJECT

Members of the Oklahoma City Astronomy Club attended the ceremonial signing of HB1292 on July 29, 2019. The bill designated the Rosette Nebula as the official state astronomical object.

Attending the ceremony were Bill and Pat Murrell, President Chuck Rice, Newsletter Editor Danny MacDonald, Brad Ferguson, Public Information Officer Mike Brake, Treasurer Mike Madden, and Christian Bruggeman. Governor Kevin Stitt signed the bill in a ceremonial ceremony, along with state representative and bill author Nicole Miller.

SIDEWALK ASTRONOMY AT PASEO EVENT MOVING TO SCISSORTALE PARK IN OCTOBER

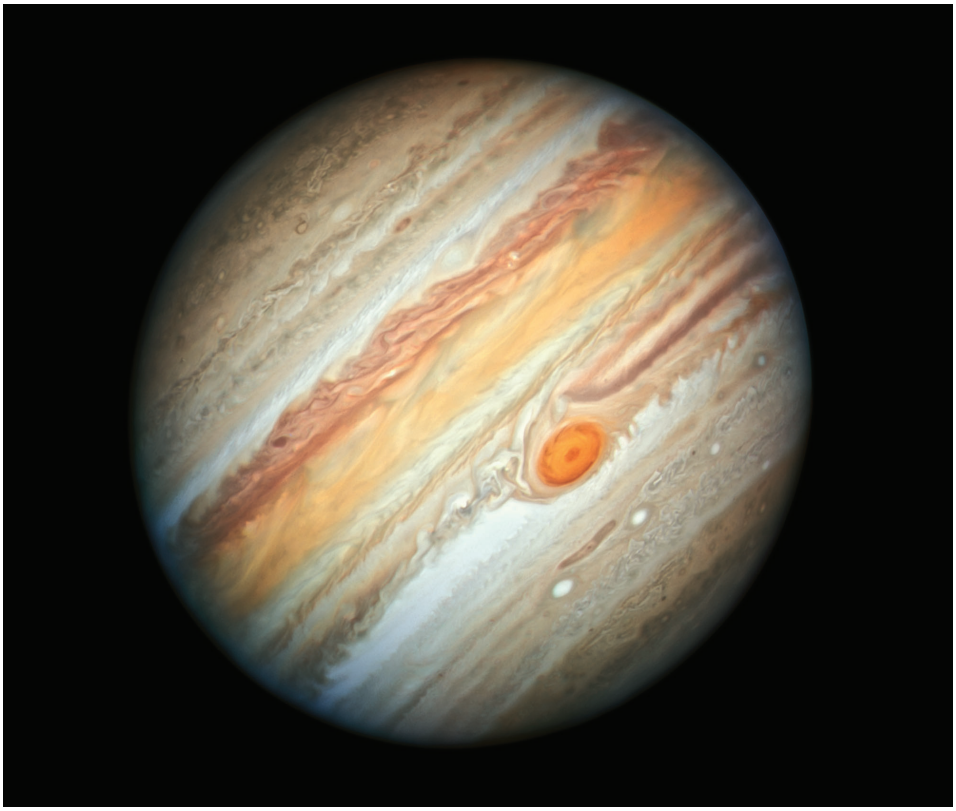
The monthly Oklahoma City Astronomy Club outreach event, Sidewalk Astronomy, will be moving from their spot in the Paseo District to the new Scissortale Park south of Downtown Oklahoma City., starting in October.

Scissortale Park opens in September. The new park is just south of the Myriad Botanical Gardens. The Park is 70 acres, with a stage for concerts, numerous walking trails, a children's play center, dog park, and a promenade.

The club will be moving our monthly Sidewalk Astronomy Event from the first Friday of every month, to the third Friday of every month. Further information, such as where exactly within that 70 acres the club will be set up, will be detailed next month.

No word yet on whether the name "Sidewalk Astronomy" will still adequately describe the monthly outreach event.

HUBBLE'S NEW PORTRAIT OF JUPITER



This new Hubble Space Telescope view of Jupiter, taken on June 27, 2019, reveals the giant planet's trademark Great Red Spot, and a more intense color palette in the clouds swirling in Jupiter's turbulent atmosphere than seen in previous years. The colors, and their changes, provide important clues to ongoing processes in Jupiter's atmosphere.

The bands are created by differences in the thickness and height of the ammonia ice clouds. The colorful bands, which flow in opposite directions at various latitudes, result from different atmospheric pressures. Lighter bands rise higher and have thicker clouds than the darker bands.

Among the most striking features in the image are the rich colors of the clouds moving toward the Great Red Spot, a storm rolling counterclockwise between two bands of clouds. These two cloud bands, above and below the Great Red Spot, are moving in opposite directions. The red band above and to the right (northeast) of the Great Red Spot contains clouds moving westward and around the north of the giant tempest. The white clouds to the left (southwest) of the storm are moving eastward to the south of the spot.

All of Jupiter's colorful cloud bands in this image are confined to the north and south by jet streams that remain constant, even when the bands change color. The bands are all separated by winds that can reach speeds of up to 400 miles (644 kilometers) per hour.

On the opposite side of the planet,the band of deep red color northeast of the Great Red Spot and the bright white band to the southeast of it become much fainter. The swirling filaments seen around the outer edge of the red super storm are high-altitude clouds that are being pulled in and around it.

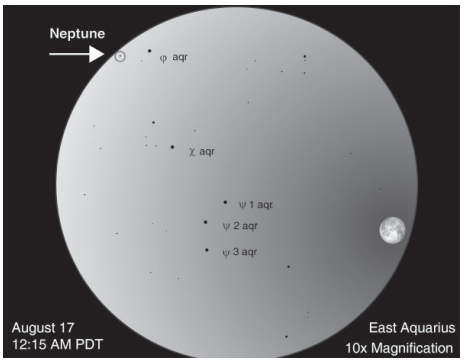
The Great Red Spot is a towering structure shaped like a wedding cake, whose upper haze layer extends more than 3 miles (5 kilometers) higher than clouds in other areas. The gigantic structure, with a diameter slightly larger than Earth's, is a high-pressure wind system called an anticyclone that has been slowly downsizing since the 1800s. The reason for this change in size is still unknown.

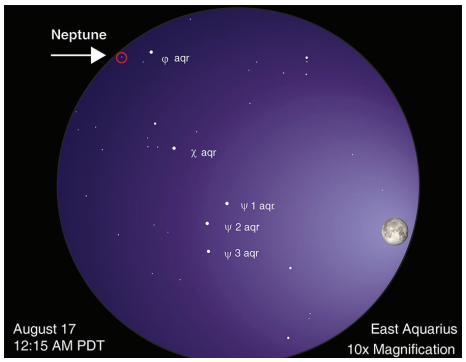
A worm-shaped feature located below the Great Red Spot is a cyclone, a vortex around a low-pressure area with winds spinning in the opposite direction from the Red Spot. Researchers have observed cyclones with a wide variety of different appearances across the planet. The two white oval-shaped features are anticyclones, like small versions of the Great Red Spot.

The new image was taken in visible light as part of the Outer Planets Atmospheres Legacy program, or OPAL. The program provides yearly Hubble global views of the outer planets to look for changes in their storms, winds, and clouds.

CHILL OUT: SPOT AN ICE GIANT IN AUGUST

BY DAVID PROSPER



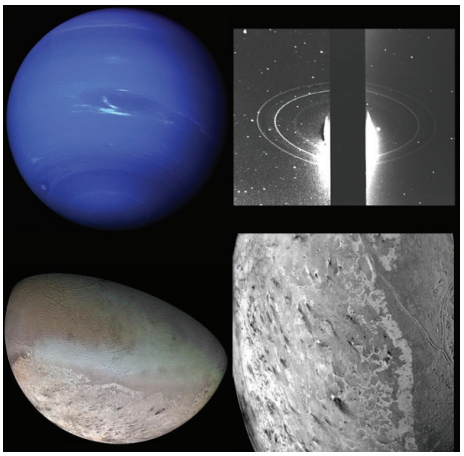


Is the summer heat getting to you? Cool off overnight while spotting one of the solar system's ice giants: Neptune! It's the perfect way to commemorate the 30th anniversary of Voyager 2's flyby.

Neptune is too dim to see with your unaided eye so you'll need a telescope to find it. Neptune is at opposition in September, but its brightness and apparent size won't change dramatically as it's so distant; the planet is usually just under 8th magnitude and 4.5 billion kilometers away. You can see Neptune with binoculars but a telescope is recommended if you want to discern its disc; the distant world reveals a very small but discernible disc at high magnification. Neptune currently appears in Aquarius, a constellation lacking in bright stars, which adds difficulty to pinpointing its exact location. Fortunately, the Moon travels past Neptune the night of August 16th, passing less than six degrees apart (or about 12 Moon widths) at their closest. If the Moon's glare overwhelms Neptune's dim light, you can still use the its location that evening to mark the general area to search on a darker night. Another Neptune-spotting tip: Draw an imaginary line from bright southern star Fomalhaut up to the Great Square of Pegasus, then mark a point roughly in the middle and search there, in the eastern edge of Aquarius. If you spot a blue-ish star, swap your telescope's eyepiece to zoom in as much as possible. Is the suspect blue "star" now a tiny disc, while the surrounding stars remain points of white light? You've found Neptune!

Neptune and Uranus are ice giant planets. These worlds are larger than terrestrial worlds like Earth but smaller than gas giants like Jupiter. Neptune's atmosphere contains hydrogen and helium like a gas giant, but also methane, which gives it a striking blue color. The "ice" in "ice giant" refers to the mix of ammonia, methane, and water that makes up most of Neptune's mass, located in the planet's large, dense, hot mantle. This mantle surrounds an Earth-size rocky core. Neptune possesses a faint ring system and 13 confirmed moons. NASA's Voyager 2 mission made a very close flyby on August 25, 1989. It revealed a dynamic, stormy world streaked by the fastest winds in the solar system, their ferocity fueled by the planet's surprisingly strong internal heating. Triton, Neptune's largest moon, was discovered to be geologically active, with cryovolcanoes erupting nitrogen gas and dust dotting its surface, and a mottled "cantaloupe" terrain made up of hard water ice. Triton is similar to Pluto in size and composition, and orbits Neptune in the opposite direction of the planet's rotation, unlike every other large moon in the solar system. These clues lead scientists to conclude that this unusual moon is likely a captured Kuiper Belt object.

Discover more about Voyager 2, along with all of NASA's past, present, and future missions, at nasa.gov



OKIE-TEX 2019 SPEAKER SCHEDULE

Okie-Tex is NEXT MONTH! The speaker schedule has been finalized and the Okie-Tex crew has been hard at work putting the finishing touching on all the plans.

Registration ends on August 31, so if you haven't registered yet, make sure to do so soon. Go to **okie-tex.com/Registration/index.php** to sign up.

Saturday, September 21

8:00pm Cimarron County Public Night;
Boyd Poteet's Laser Show

Monday & Tuesday, September 23 & 24

10am - 4:30pm Jon Talbot, Ocean Springs, MS
PixInsight Advanced Imaging Seminar
(Separate Registration Required)

Wednesday, September 25

1:30pm Mike Lockwood, Philo, IL
Lockwood Down Under

2:30pm Jim Hopkins, Naperville, IL
Why Do We Come to Western OK to View the Sky?

3:30pm Craig Smith, Pittsburgh, PA
Techniques for Making Time Lapses

6:30pm Steven Gullberg, Norman, OK
Astronomy of the Incas

Thursday, September 26

1:30pm Steven Gullberg, Norman, OK
Dark Constellations of the Milky Way

2:30pm Marvin Abbott, Oklahoma City, OK
General Geology of the Kenton Area

3:30pm Travis Rector, Anchorage, AK
Imaging with Professional Scopes

6:30pm Travis Rector, Anchorage, AK
Large Synoptic Survey Telescope

Friday, September 27

1:30pm Ed Wiley, Georgetown, TX
AAVSO Photometry Programs

2:30pm Kathy Machin, Blue Springs, MO
Astronomical League Observing Award Programs

3:30pm Michael Pierce, Laramie, WY
My *Family of Very Large Terrestrial Telescopes*

6:30pm Michael Pierce, Laramie, WY
My Life as an Astronomer

Saturday, September 28

1:30pm Eileen Grzybowski, Norman, OK
Astronomy in Chile Education Ambassadors Program (ACEAP)

2:30pm Henry Throop, Washington, DC
Chasing Stellar Occultations of Kuiper Belt Objects Around the World

3:30pm Dee Friesen, Albuquerque, NM
Biography of a Star

6:30pm Henry Throop, Washington, DC
Ultima Thule

OKIE-TEX 2019: ADVANCED PIXINSIGHT IMAGING SESSION

Last year, the Okie-Tex Star Party held a two-day PixInsight Imaging Session that gave attendees a guided tour of the powerful astrophotography processing and image editing software.

This year, Okie-Tex will hold a "part two" of that session, focusing on some of the more advanced tips and tricks with PixInsight that couldn't quite fit into last year's session.

If you're interested in learning more about the most powerful astrophotography processing software around, it's worth checking out. You don't need to have to taken last year's session to get plenty of useful information.

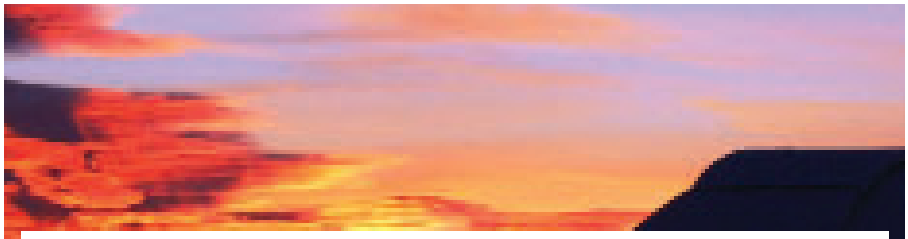
Last year's instructor, Jonathan Talbot, returns to host this year's session.

The imaging session costs $75 to attend and is held on the first Monday and Tuesday of Okie-Tex, so you won't miss out on your favorite speakers.

See **okie-tex.org/shop** for more details, and see ya in the mesa!

UPCOMING OKCAC PUBLIC EVENTS

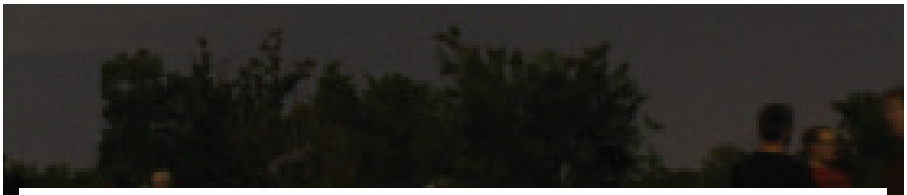
CHEDDAR RANCH MEMBER NIGHTS



SATURDAY, AUGUST 24 & 31
CHEDDAR RANCH OBSERVATORY
SUNSET - DAWN (405) 418-6444

Twice a month, scheduled around the new moon, the Club opens their observatory doors to the general club membership. These events are open to all members and their guests that wish to see a truly dark sky. The drive is about 90 minutes from the metro area, and escorts are avaiable. Sign up for and check the club forum for additional travel information.

QUARTERLY NOVICE SESSION



FRIDAY, OCTOBER 18
SCISSORTALE PARK, DOWNTOWN OKC
7:00PM - 10:00PM (405) 418-6444

Every quarter, the club hosts a semi public novice session for new and prospective club members. If you're a new member, or thinking about becoming a member, and have questions about buying a telescope or any other astronomical equipment, this is a great event to get advice, do some research on what kind of telescope to buy, or just to take a tour of the night sky. The October Novice Session will coincide with our first Sidewalk Astronomy at Scissortale Park.

All Events Weather Permitting

Monday, August 12

Perseid Meteor Shower Peak

Saturday, August 24 & 31

Member Night at CRO

Friday, September 6

7:00pm Sidewalk Astronomy at Paseo

Friday, September 13

7:00 OKCAC Club Meeting

Saturday, September 21 - 28

Okie-Tex Star Party

Saturday, October 5

7:00pm Internation Observe the Moon

Friday, October 18

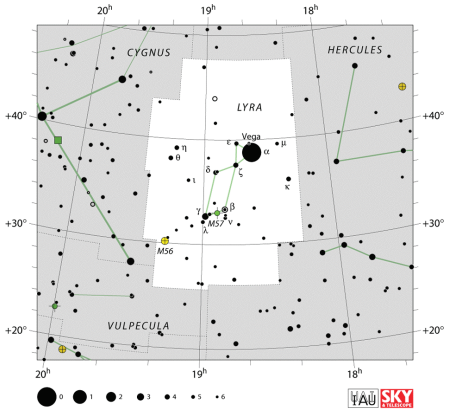
7:00pm Novice Session
at Scissortale Park

For these and more events, please check out the calendar available at okcastroclub.com or on Facebook.

THE AUGUST SKY

Looking for something to observe from your backyard in the August and September skies? The following items should be easily doable and are great for beginners. August is a great month for learning a new constellation, checking out an old favorite, or viewing some planets. For free planetarium software to help you learn the night sky, check out Stellarium (**www.stellarium.org**) or Cartes de Ciel (**https://www.ap-i.net/**)

CONSTELLATION LYRA, THE HARP

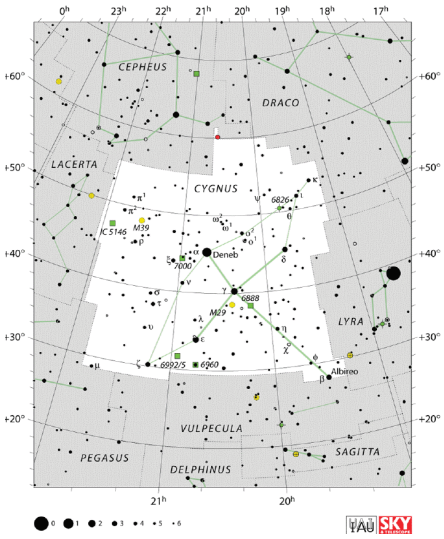


Lyra is a very small constellation. Lyra is notable for two major things - the star Vega and Messier obect 57: the Ring Nebula.

Lyra is very easy to find - just look up and find Vega! Vega is a very bright star, visible from almost anywhere. The star is the third part to the Summer Triangle, along with Altair and Deneb.

The Ring Nebula is a great telescope target, and is pretty easy. Opposite Vega, look halfway between the bottom two stars of the Harp.

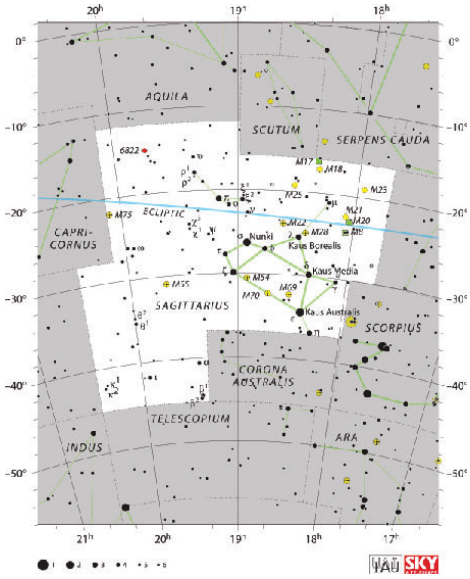
CONSTELLATION CYGNUS, THE SWAN



The constellation Cygnus is also sometimes referred to as the "Northern Cross." The bright star Deneb, in addition to being a corner of the Summer Triangle, forms the top of the cross, and the double star system Albireo occupies the bottom part of the cross, or the head of the Swan. Cygnus is high in the sky as soon as the sun sets.

If you find Deneb, you can easily find Vega in Lyra and Altair in Aquila. These three stars and constellations are easy to find in the summer sky, even from a bright urban location.

CONSTELLATION SAGITTARIUS, THE ARCHER



Sagittarius, the centaur (half horse, half man - the Greeks were weird) archer. Honestly though, it looks more like a teapot. This is one of the easiest constellations to find, as long as you can see the southern horizon. Sagittarius does not get very high in the sky at our latitude.

Sagittarius is one of the easiest constellations in the sky to find. Visit a dark sky site like CRO and watch as the densest part of the Milky Way rises with it.

FOR A FREE SKY CHART OF THE AUGUST SKY, VISIT skymaps.com