ASTROFILES

Auburn Astronomical Society Newsletter

June 2019 *Newsletter Editor — John Wingard — jwin1048@gmail.com*

Moon Phases

June 10 — First Quarter

June 17 — Full Moon

June 25 — Last Quarter

July 2 — New Moon

July 9 — First Quarter

July 16 — Full Moon

July 25 — Last Quarter

August 1 — New Moon

Stay in touch with us

http://www.auburnastro.org

https://www.facebook.com/groups/79864233515/

Next AAS Meeting

Currently our next scheduled meeting in Auburn is set for Friday, August 9, 2019. This will be in our usual location—Room 215 of Davis Hall (Aerospace Engineering) on the AU campus. The meeting will start at 7:45 PM CDT. We are working on a follow up program on astrophotography with AAS member Jay Hall. His last presentation covered a lot of ground in a short period of time, so we're going to slow it down a bit and focus on a few key areas with the idea that this may be just one of a series of programs on the topic. Due to Jay's work schedule, we moved the meeting up a week from our usual first Friday date.

As most of you already know, since we hold our meetings on the AU campus we always have to be aware of the Auburn football home game schedule and that begins in September. Any Friday meetings that we have in the fall will have to avoid those home game weekends because of the associated traffic and parking issues.

Upcoming Star Gazes

The next scheduled club star gaze will be coming up on Saturday, June 29, 2019 at the Pamperin farm south of Auburn. Please refer to previous *Astrofiles* newsletters for a complete description of how to get to the observing site. These can be found on our club webpage.

We also have a scheduled star gaze scheduled at Wind Creek State Park near Alexander City, AL on Saturday, July 27, 2019. Our first star gaze of the summer season on June 8, 2019 was cancelled due to rain. More details can be found in the "upcoming events" section of our web page.

Astronomy demo at Alexander City, AL library

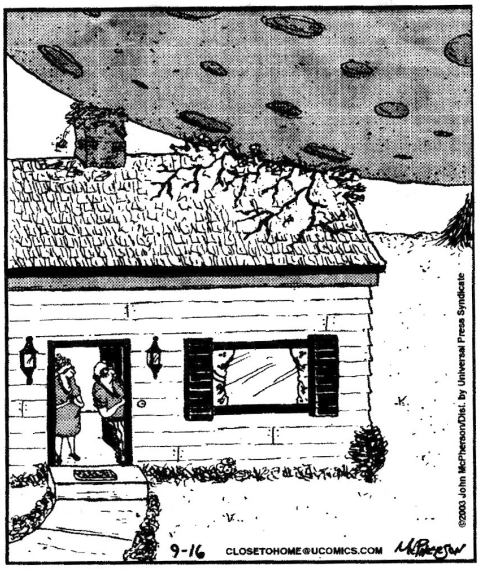
On Tuesday, June 11, 2019, AAS member Mike Lewis and his son David did an astronomy presentation at the Alexander City Children's Library. This consisted of an inside program showcasing two of their telescopes and later an outdoor viewing session of the Sun using a small Orion Star Blast 4.5" dobsonian with solar filter.

Here's Mike's report on the event…

Mamie's Place - the Alexander City Children's Library - recently contacted AAS club member Mike Lewis, who lives in Alexander City, to present an astronomy program to its young members. Lewis, and his son, David, offered a 50-minute talk about the use of telescopes for backyard stargazing. Among the topics covered were viewing and photographing solar and lunar eclipses as well as the lunar viewing for the upcoming anniversary of the Apollo 11 landing on the Moon. They wrapped up the program by taking attendees outside to safely view the sun through an Orion 4.5" Star Blast dobsonian reflector with solar filter. Lewis also shared information about the Auburn Astronomical Society and our summer programs at nearby Wind Creek State Park with the attendees and library staff.

Photos courtesy of Mike Lewis—additional photo on next page

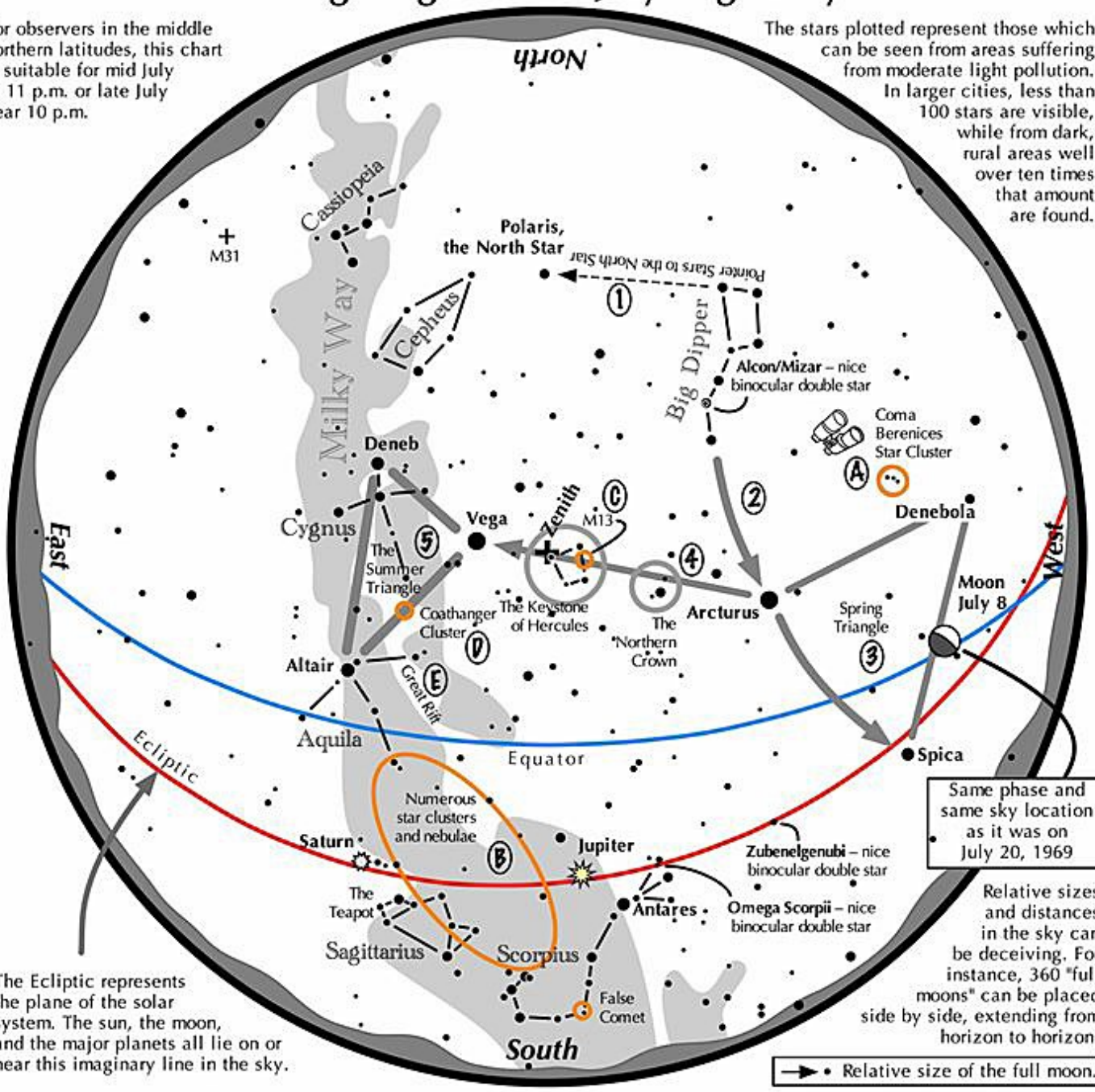
We would like to thank Mike and David for taking the time to share their love of astronomy with the kids. Hopefully this will spark their interest in learning more and possibly even getting their own telescopes.



"They say this is the closest Mars has been to Earth in 60,000 years."

The Auburn Astronomical Society would like to welcome our newest member, Julie Cooper from Montgomery, AL. Julie works at the W.A. Gayle Planetarium in Montgomery and you may have met her during the Astronomy Day event at the Planetarium on May 11th. Welcome to the group Julie!

Navigating the mid July Night Sky



Navigating the mid July night sky: Simply start with what you know or with what you can easily find.

1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the July evening sky, then continues to Spica.
3. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
4. To the northeast of Arcturus shines another star of similar brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
5. High in the East lies the Summer Triangle stars of Vega, Altair, and Deneb.

Binocular Highlights

A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
C: On the western side of the Keystone glows the Great Hercules Cluster, containing nearly 1 million stars.
D: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
E: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.

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!

Observe the Moon and Beyond: Apollo 11 at 50

By David Prosper

Saturn is at opposition this month, beckoning to future explorers with its beautiful rings and varied, mysterious moons. The **Moon** prominently passes Saturn mid-month, just in time for the 50th anniversary of **Apollo 11**!

Saturn is in opposition on July 9, rising in the east as the Sun sets in the west. It is visible all night, hovering right above the teapot of Sagittarius. Saturn is not nearly as bright as Jupiter, next door in Scorpius, but both giant planets are easily the brightest objects in their constellations, making them easy to identify. A full **Moon** scrapes by the ringed planet late in the evening of the 15th through the early morning of the 16th. Some observers in South America will even see the Moon occult, or pass in front of, Saturn. Observe how fast the Moon moves in relation to Saturn throughout the night by recording their positions every half hour or so via sketches or photos.

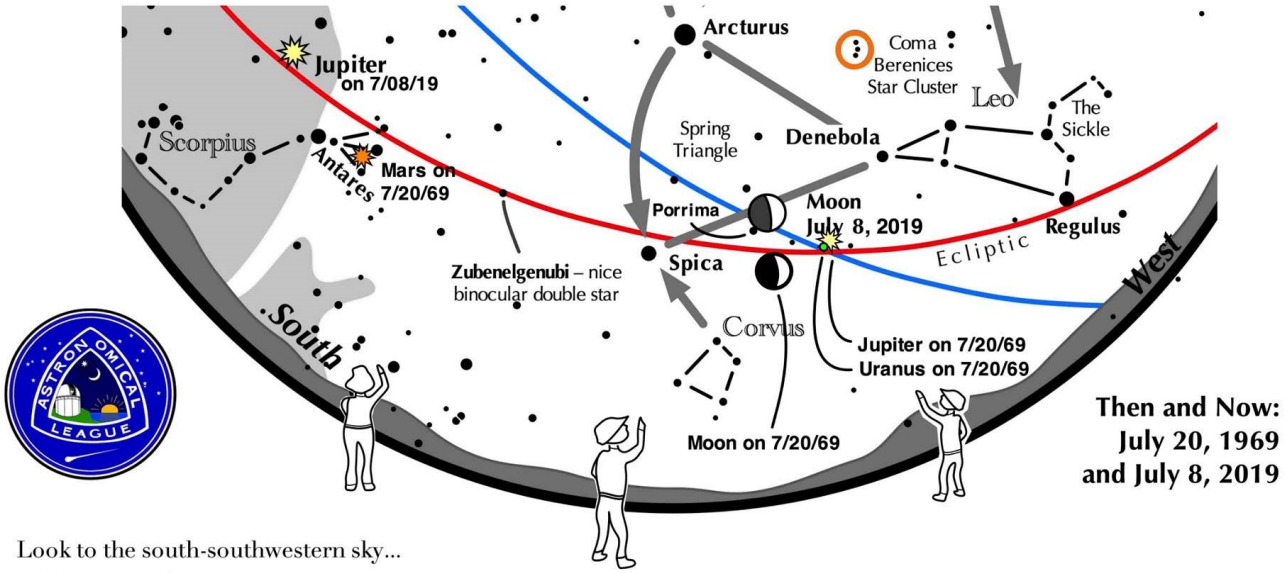
While observing the Saturn-Moon celestial dance the early morning of the 16th, you can also contemplate the 50th anniversary of the launch of the **Apollo 11** mission! On June 16, 1969, Apollo 11 blasted off from Cape Canaveral in Florida on a journey of almost a quarter million miles to our nearest celestial neighbor, a mission made possible by the tremendous power of the Saturn V rocket – still the most powerful rocket ever launched. Just a few days later, on July 20, 1969 at 10:56 pm EDT, Neil Armstrong and Buzz Aldrin set foot on the lunar surface and became the first people in history to walk on another world. The astronauts set up equipment including a solar wind sampler, laser ranging retroreflector, and seismometer, and gathered up almost 22 kilograms (48 pounds) of precious lunar rocks and soil samples. After spending less than a day on the Moon's surface, the duo blasted off and returned to the orbiting Columbia Command Module, piloted by Michael Collins. Just a few days later, on July 24, all three astronauts splashed down safely in the Pacific Ocean. You can follow the timeline of the Apollo 11 mission in greater detail at bit.ly/TimelineApollo11 and dig deep into mission history and science on **NASA's Apollo History Site**: bit.ly/ApolloNASA.

Have you ever wanted to see the flag on the Moon left behind by the Apollo astronauts? While no telescope on Earth is powerful enough to see any items left behind the landing sites, you can discover how much you **can** observe with **the Flag on the Moon** handout: bit.ly/MoonFlag

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

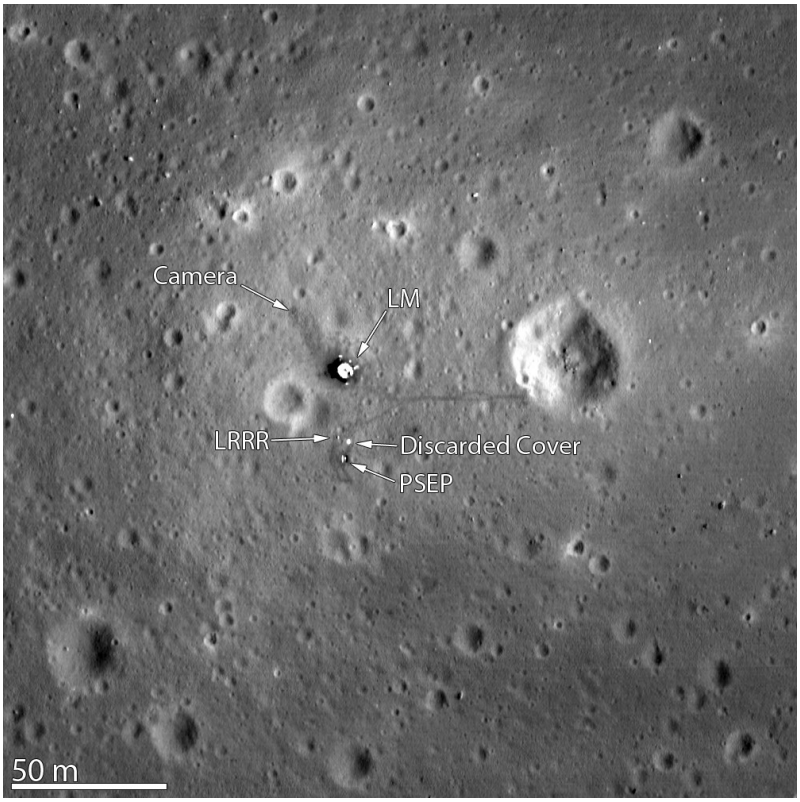
If you can observe only one celestial event this month, consider this one:

See how the moon appeared on the night of the Apollo 11 landing



Look to the south-southwestern sky...

- 75 minutes after sunset.
- On July 8, 2019, the moon is positioned in nearly the same spot in the sky as it was on July 20, 1969.
- On July 20, 1969, the moon's phase was 6.5 days, or 1 day shy of first quarter. On July 8, 2019, the phase is 6.3 days.
- On July 20, 1969, Jupiter shone just to the moon's right.
- On July 20, 1969, Uranus was in conjunction with Jupiter, lying 30 minutes south of the giant planet. Both planets would have been in the same telescope field of view. It would have surely been an attraction to star gazers, if the moon landing wasn't about to take place.
- On July 20, 1969, Mars was low in the south in Scorpius, shining brighter than Arcturus, but dimmer than Jupiter.
- During the moon walk, the moon had already set for East Coasters, while it was visible in the southwest for West Coasters.
- July 20, 1969 was a Sunday.



At the left is a photo from NASA's Lunar Reconnaissance Orbiter of the actual Apollo 11 landing site. The "LM" is the base of the lunar lander which remained on the lunar surface after the astronauts left. Several items that they left or deployed on the surface are visible in the photo. If you look closely you can see several of the darker tracks that Armstrong and Aldrin made as they walked around. Of particular note is the longer straight tracks made by Neil Armstrong when he walked over to inspect the Little West crater. Since they were very concerned for the safety of the crew on this first landing, this was about as far away from the lander as they were permitted to go.

Auburn Astronomical Society

Membership Application Form

Name:

_____

Address:

_____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **Date of Application*** _____/_____/_____

E-mail:

_____

Telescope(s):

_____

_____

Area(s) of special interest:

_____

_____

Enclose: $20.00 for regular membership, payable in January. *Full-Time* student membership is half the Regular rate.

If you are a NEW member joining after the first of the year, refer to the prorated table below

Jan $20.00	Feb $18.33	Mar $16.66	Apr $14.99	May $13.33	Jun $11.66
Jul $10.00	Aug $8.33	Sep $6.66	Oct $4.99	Nov $2.33	Dec $1.66

Make checks payable to: Auburn Astronomical Society and return this application to:

Auburn Astronomical Society
c/o John Wingard, Secretary/Treasurer
#5 Wexton Court
Columbus, GA 31907

For questions about your dues or membership status, contact: jwin1048@gmail.com

Thank you for supporting the Auburn Astronomical Society!