



# ASTROFILES

## Auburn Astronomical Society Newsletter

**October 2019**

*Newsletter Editor — John Wingard — [jwin1048@gmail.com](mailto:jwin1048@gmail.com)*

### **Moon Phases**

- October 21 — Last Quarter
- October 28 — New Moon
- November 4 — First Quarter
- November 12 — Full Moon
- November 19 — Last Quarter
- November 26 — New Moon
- December 4 — First Quarter
- December 12 — Full Moon

Apologies for not publishing the September issue of Astrofiles. I had back surgery in September and during the initial phases of my recovery I was not able to put together a newsletter. Since then I am slowly getting back to normal but I still just barely finished this issue before the end of the month. Hopefully I can get back on track next month!

### **AAS Website Changes**

We are currently in the process of updating our web page and are also moving the web page hosting to another provider. As a result, access to our web page is currently unavailable. Club member Christopher Ward has graciously agreed to take on this project and we look forward to a more up-to-date web page when it is all completed. Just bear with us!

### **Stay in touch with us**



<http://www.auburnastro.org>



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

### **Upcoming Events**

The final star gaze for this season at Wind Creek State Park is planned for Saturday, October 26, 2019, weather permitting.

The next formal meeting of the Auburn Astronomical Society is set for Friday, November 8, 2019 in our usual meeting location on the AU campus. Meeting time is 7:45 PM CT in Room 215 of Davis Hall (Aerospace Engineering) on the AU campus. This was the only open weekend in the month of November due to home AU football games the rest of the month.

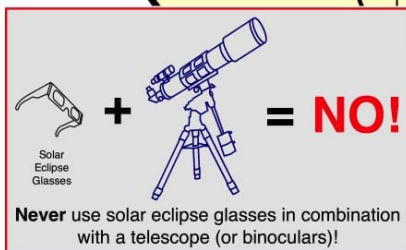
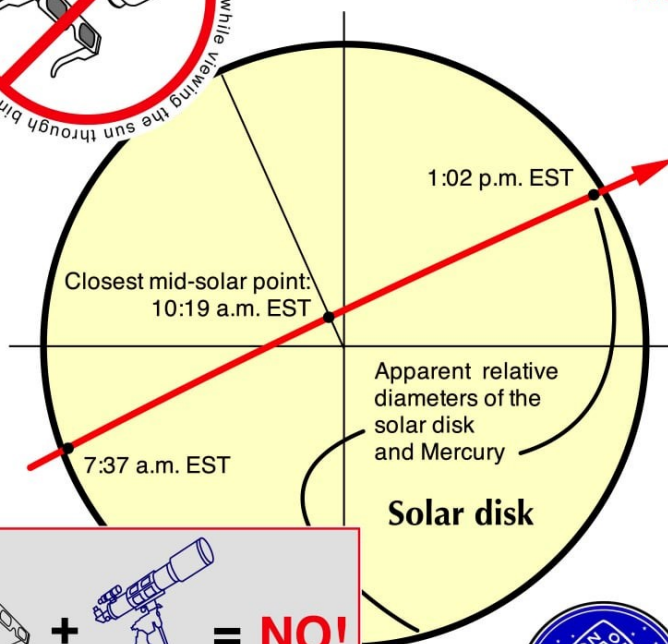
## Potential New Observing Site

We are excited to announce that we now have access to another observing site in the area that we can use for star gazes. This site is located near Alexander City, AL, actually not too far from the Wind Creek State Park location where some of our most recent sessions have been held. This new site is called "Heaven Hill" and is located on property that is maintained and managed by Russell Lands. It is part of a much larger network of trails that are available for use by the public. It has good views in all directions and is easily accessible with plenty of room to set up scopes. Thanks to the efforts of AAS member Tom McGowan, we have been granted permission to use the site for some of our observing sessions. However, there are a few stipulations and requirements that are required from everyone that wishes to use the site. First, each person that wishes to use the site must first register with the Russell Lands administrative office. There is no charge involved but a form must be filled out with the necessary information and returned to them. Upon approval, they will mail you a registration card and a sticker that can then be placed on your vehicle. It is our understanding that this is an annual process, so it will need to be repeated at the beginning of 2020. An e-mail was sent to the majority of our current members recently so that they could go ahead and complete the registration requirements. A few of the club members had planned to check out the site on Saturday, September 28th but the skies clouded over before dark. It is important to note that the Heaven Hill site is also sometimes reserved and used for other functions so we don't simply have free access to it without first checking with Russell Lands to make sure that it is available. In fact, we are required to notify them by phone anytime that we plan to be there. It would probably be best, at least for now, that we use the site only for coordinated club star gazes.

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

**Mercury's transit across the sun on November 11**

**You must properly use an approved solar filter!  
Never look at the sun without one,  
even for a split-second!**



**View the Mercury Transit on Nov. 11:**

1. Do not use the filters from solar eclipse glasses as a filter for binoculars or a telescope – either in front of the objective or behind the eyepiece. These filters are not designed for this. They are not safe to use in this manner!
2. Binoculars will not give enough magnification for a satisfying view.
3. Use a telescope fitted with an approved solar filter mounted in front of the objective lens, as would be done when viewing sunspots.
4. A magnification of 50x or more is suitable.
5. Mercury will appear as a jet-black round dot taking over five hours to traverse the sun's disk.
6. East coast viewers can see the entire event – weather permitting. West coast viewers can only see the second half.



Transits of Mercury aren't rare, but they aren't common, either, with about 13 per century. The next one occurs on November 13, 2032. Sorry, people in North America will not be able to view it because it begins at 1:30 a.m. EST and ends before sunrise.

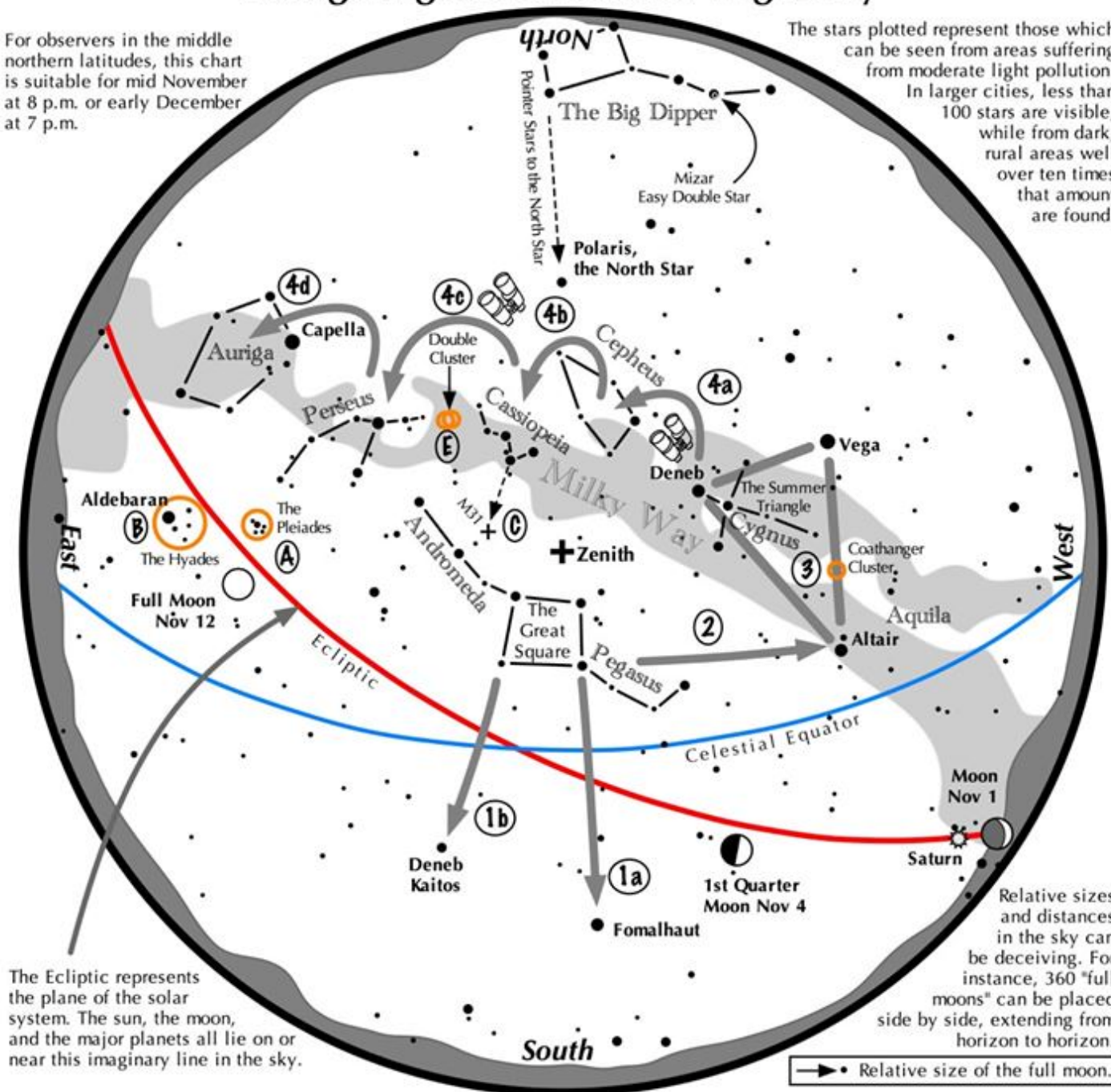
**Stay tuned for a different, but equally fascinating event that occurs on Nov. 24!**



# Navigating the November Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid November at 8 p.m. or early December at 7 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→• Relative size of the full moon.

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

- 1 Face south. Almost overhead lies the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend a line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the south. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second brightest star in the south.
- 2 Draw a line westward following the southern edge of the Square until it strikes Altair, part of the "Summer Triangle."
- 3 Locate Vega and Deneb, the other two stars of the Summer Triangle. Vega is its brightest member, while Deneb sits in the middle of the Milky Way.
- 4 Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, then to Perseus, and finally to Auriga with its bright star Capella.

### Binocular Highlights

**A and B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas. **E:** The Double Cluster.



Astronomical League [www.astroleague.org/outreach](http://www.astroleague.org/outreach); duplication is allowed and encouraged for all free distribution.

## Star Gaze at Wind Creek — 9-21-19

A star gaze was held at Wind Creek State Park on Saturday, September 21, 2019. Fortunately, the weather cooperated this time and several AAS members were there with their scopes. A nice crowd of visitors were also present. AAS member Mike Lewis provided this report:

This is a quick report from Saturday night's public observing session at Wind Creek State Park on Lake Martin. Four telescopes (10" dob, 6" Schmidt Cassegrain, and 3.5 and 4.5" refractors) were on hand to show an estimated crowd of 50 people the celestial sights including Jupiter and Saturn. Park guests and others who traveled from Opelika and Tuskegee were pleased from all accounts. We will do it again in October.







**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](http://nightsky.jpl.nasa.org) to find local clubs, events, and more!

### **The Messenger Crosses the Sun: Mercury Transit 2019**

By David Prosper

Did you know that there are two other objects in our skies that have phases like the Moon? They're the inner planets, found between Earth and the Sun: Mercury and Venus. You can see their phases if you observe them through a telescope. Like our Moon, you can't see the planets in their "new" phase, unless they are lined up perfectly between us Earthlings and the Sun. In the case of the Moon, this alignment results in a **solar eclipse**; in the case of Mercury and Venus, this results in a **transit**, where the small disc of the planet travels across the face of the Sun. Skywatchers are in for a treat this month, as Mercury transits the Sun the morning of **November 11!**

You may have seen the transit of Venus in 2012; you may have even watched it through eclipse glasses! However, this time you'll need a solar telescope to see anything, since eclipse glasses will only reveal the Sun's blank face. Why is that? Mercury is the smallest planet in our solar system, and closer to the Sun (and further away from Earth) during its transit than Venus was in its 2012 transit. This makes Mercury's disc too small to see without the extra power of a telescope. Make absolutely certain that you view the transit via a telescope equipped with a safe solar filter or projection setup. Do NOT combine binoculars with your eclipse glasses; this will instantly burn a hole through the glasses – and your eyes! While most people don't have solar telescopes handy, many astronomy clubs do! Look for clubs hosting Mercury transit observing events near you at [bit.ly/findnsn](http://bit.ly/findnsn) (USA) or at [bit.ly/awbtransit](http://bit.ly/awbtransit) (worldwide).

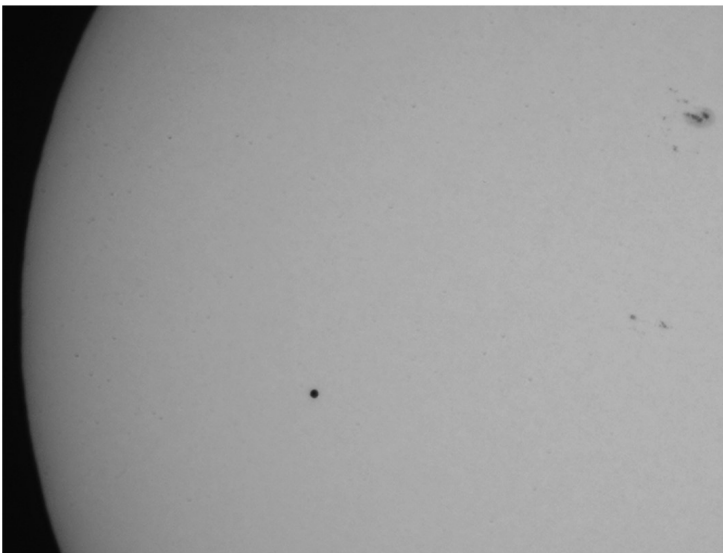
What a fun opportunity to see another planet during the day! This transit is expected to last over five hours. Folks on the East Coast will be able to watch the entire transit, weather permitting, from approximately 7:35 am EST until around approximately 1:04 pm EST. Folks located in the middle of North America to the west coast will see the transit already in progress at sunrise. The transit takes hours, so if your weather is cloudy, don't despair; there will be plenty of time for skies to clear! You can find timing details and charts via eclipse guru Fred Espenak's website: [bit.ly/mercurytransit2019](http://bit.ly/mercurytransit2019)

Mercury's orbit is small and swift, and so its position in our skies quickly changes; that's why it was named after the fleet-footed messenger god of Roman mythology. In fact, if you have a clear view of the eastern horizon, you'll be able to catch Mercury again this month! Look for it before dawn during the last week of November, just above the eastern horizon and below red Mars. Wake up early the morning of November 24<sup>th</sup> to see Mars, the Moon, and Mercury form a loose triangle right before sunrise.

Discover more about Mercury and the rest of our solar system at [nasa.gov](http://nasa.gov)



Photo of the May 9, 2016 transit of Mercury. Mercury is the small dot on the center right. Note how tiny it is, even compared to the small sunspot on the center left. Credit: Dave Huntz



This photo from the same 2016 transit event shows Mercury a bit larger, as it should; it was taken at a higher magnification through a large 16 inch telescope! Credit: J. A. Blackwell



## 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](mailto:jwin1048@gmail.com)

**Thank you for supporting the Auburn Astronomical Society!**