



ASTROFILES

Auburn Astronomical Society Newsletter

February 2021 Newsletter Editor — John Wingard — jwin1048@gmail.com

Moon Phases

February 19 — First Quarter
February 27 — Full Moon
March 5 — Last Quarter
March 13 — New Moon
March 21 — First Quarter
March 28 — Full Moon
April 4 — Last Quarter
April 11 — New Moon

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<http://www.auburnastro.org>



[https://www.facebook.com/
groups/79864233515/](https://www.facebook.com/groups/79864233515/)

News and events

It may just be me but it seems like this year is already flying by. Here it is almost at the end of February, with spring just around the corner, and with it is the hope that this awful pandemic is finally winding down. There are some encouraging signs that it may indeed be slowing down to the point where we can slowly begin to resume some sense of normalcy in our daily routines. I hope that some of you have been able to enjoy taking in some of the beautiful winter constellations, nebulas and galaxies in between an over abundance of cloudy weather and rain. Personally, I'm looking forward to the spring skies along with some more moderate nighttime temperatures for viewing or astrophotography.

We still do not know what the status of our in-person club meetings will be going forward. It will all depend on the availability of our usual meeting place on the AU campus. If anyone knows of a good alternate meeting location in the Auburn area, please let us know. It would be great to actually get back together in person to catch up on our astronomy activities.

Heaven Hill Viewing Site Update

Thanks to AAS member Mike Lewis, we submitted a list of dates for access to the Heaven Hill viewing site near Alex City, AL. Our list of dates was recently approved by the Russell Lands group that manages the property. These dates are all Saturdays and were selected as close to the new moon phases as possible to provide the darkest skies. Keep in mind that Heaven Hill is on *private property* and our use is contingent upon all AAS members first registering with the Russell Lands management office, filling out a couple of forms and obtaining an annual vehicle sticker and identification card.

(continued on next page)

In addition, any AAS member that wishes to visit the site **only on the approved nights** is asked to call the security office at Russell Lands and let them know that you are at the site. Below are the approved dates:

Saturday, March 13, 2021	Saturday, August 7, 2021
Saturday, April 10, 2021	Saturday, September 4, 2021
Saturday, May 15, 2021	Saturday, October 9, 2021
Saturday, June 12, 2021	Saturday, November 6, 2021
Saturday, July 10, 2021	Saturday, December 4, 2021

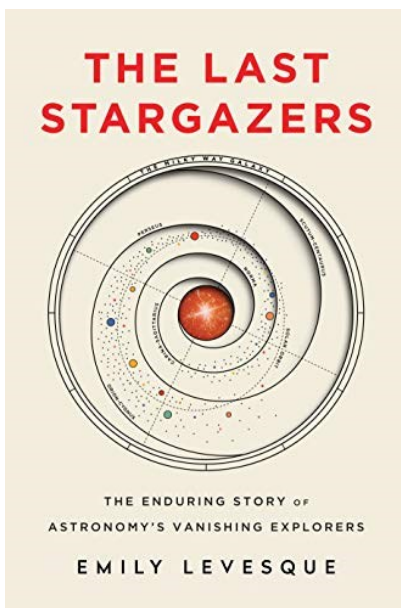
A number of AAS members have already registered and received their 2021 vehicle stickers and ID cards. If you have not done so please go to our AAS web page at www.auburnastro.org and click on the “Astronomy” tab at the top of the page. Then click on “Stargazing spots” and the Heaven Hill information page will then come up. Here you will find the necessary links to obtain the registration forms and also a map and directions to the site. Sometimes it could be several weeks before you receive your vehicle sticker and ID card back from them. These expire on December 31 of each year and must be renewed annually to remain valid.



The Auburn Astronomical Society would like to welcome new member Terry Watkins from Pike Road, AL. We are glad to have you as a member of our group!

On a related note, we would like to thank those AAS members that have already renewed their 2021 dues to the club. If you have not yet renewed for this year, the dues are \$20.00 for existing members and for *new* members the dues are prorated depending on the month of joining. Please refer to the membership application at the end of this newsletter for more information and thank you for supporting the club!

A Good Read

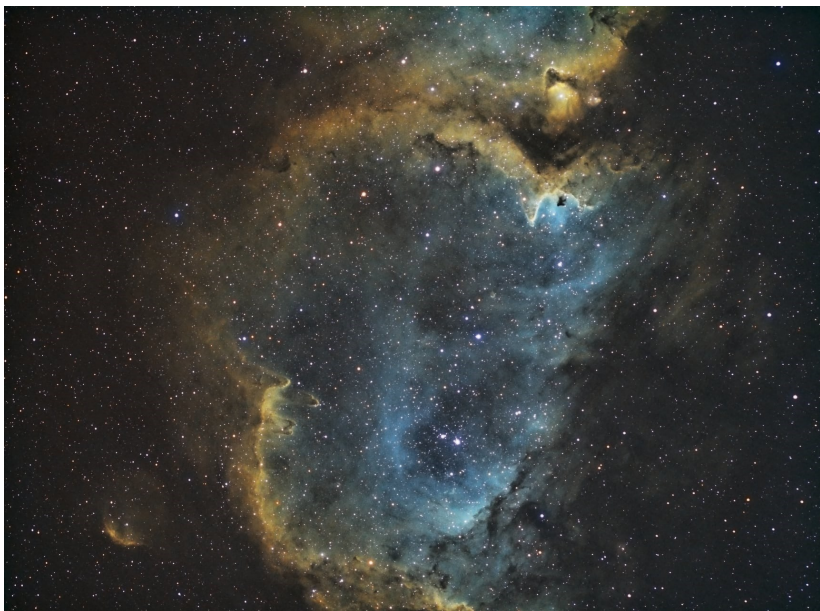


One day recently when I was scrolling through an astronomy-related forum I happened to come across a review of the book featured at the left. Based on the review, I was intrigued enough to look for it on Amazon to see if it was available and it was. In the past few years I have tried to find books that are available in digital form to read on my Kindle since physical books have a tendency to pile up at my house and take up a lot of space. I purchased the Kindle version of this book and am glad that I did. It is a fascinating look at the daily routines of many professional astronomers and illustrates that while it is a very important and rewarding profession, it is not always as glamorous as some might think. At times it can be boring, frustrating and sometimes it can be quite dangerous. I haven't finished the book yet but try to read a few chapters whenever I have the time.

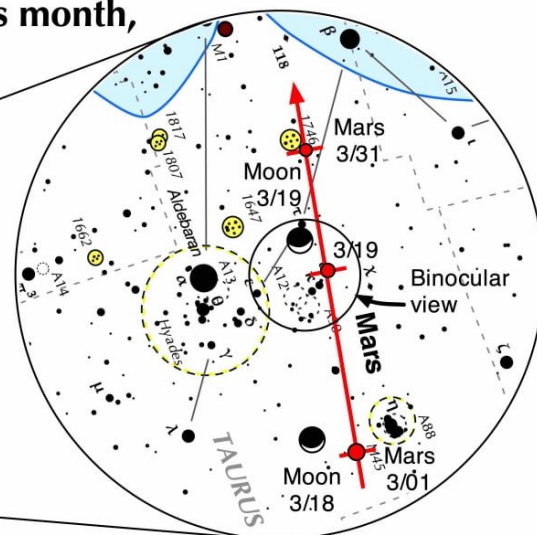
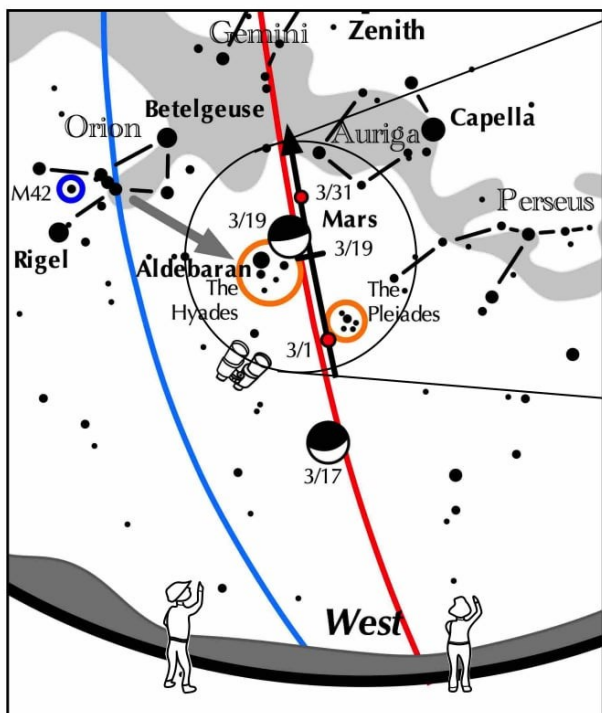
AAS assists scouts at camp out

On the evening of Friday, February 19, 2021 AAS President Allen Screws helped to bring the joys of astronomy and stargazing to a group of scouts that were camping out at Wind Creek State Park near Alex City, AL. The group consisted of about 10 boys from the Trail Life group. Using Allen's scope, the youths were able to look at the Moon, M42, some star clusters and Alcor and Mizar in the Big Dipper's handle. He also pointed out other constellations with a green laser pointer. A group of girl scouts had also initially planned to be there but decided it was too cold at that time and will have their stargaze at a later date. Thanks to Allen for taking the time to do this for the scouts!

AAS member Chris Young recently captured this beautiful image of the Soul Nebula, also known as IC1848, located in Cassiopeia. It is approximately 7,500 light-years distant. Processing of the image data is by AAS member Jay Hall. Good job guys!



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



The Scene: Crescent Moon and Mars slide between the Hyades and Pleiades

In the early evening just as darkness settles from March 1 through March 20, look low in the west-northwest for a fascinating celestial interplay.

- Mars, far dimmer than it was last October, still shines noticeably in the west. For much of March, it slides between the Pleiades and Hyades star clusters.
- On March 8, Mars lies between the two clusters.
- On March 18, the crescent Moon full with earthshine hangs magically next to the Pleiades.
- On March 19, the crescent Moon joins the Red Planet by moving near the bright star Aldebaran.



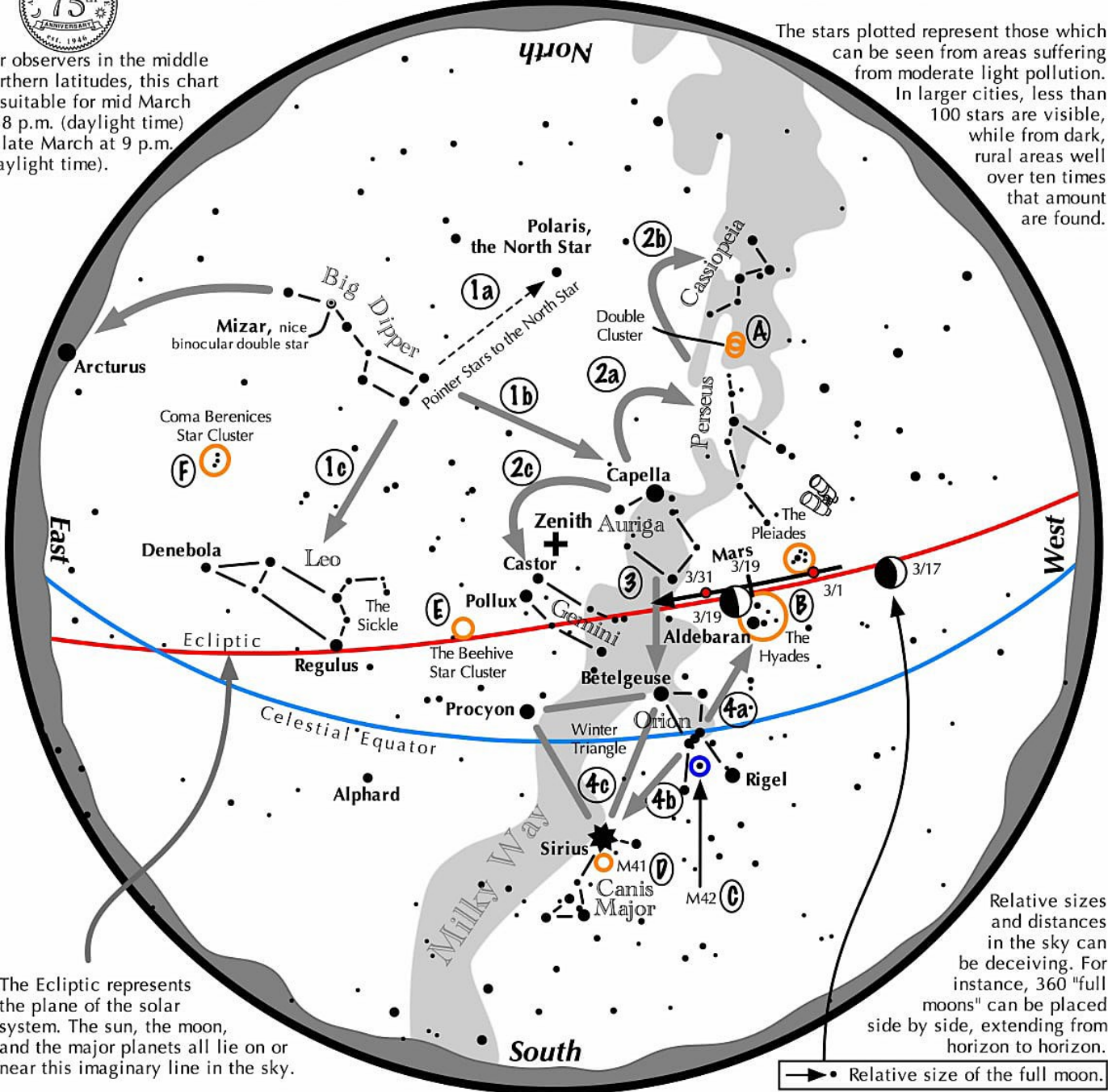
**West-northwest
90 minutes after sunset on
March 1 – 20**



Navigating the mid to late March Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid March at 8 p.m. (daylight time) or late March at 9 p.m. (daylight time).

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 March night sky: Simply start with what you know or with what you can easily find.

- 1 Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
- 2 From Capella jump northwestward along the Milky Way to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
- 3 Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
- 4 Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius. It is a member of the Winter Triangle.

Binocular Highlights

A: Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.





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.gov to find local clubs, events, and more!

Taking the Dog Stars for a Springtime Walk: Sirius and Procyon!

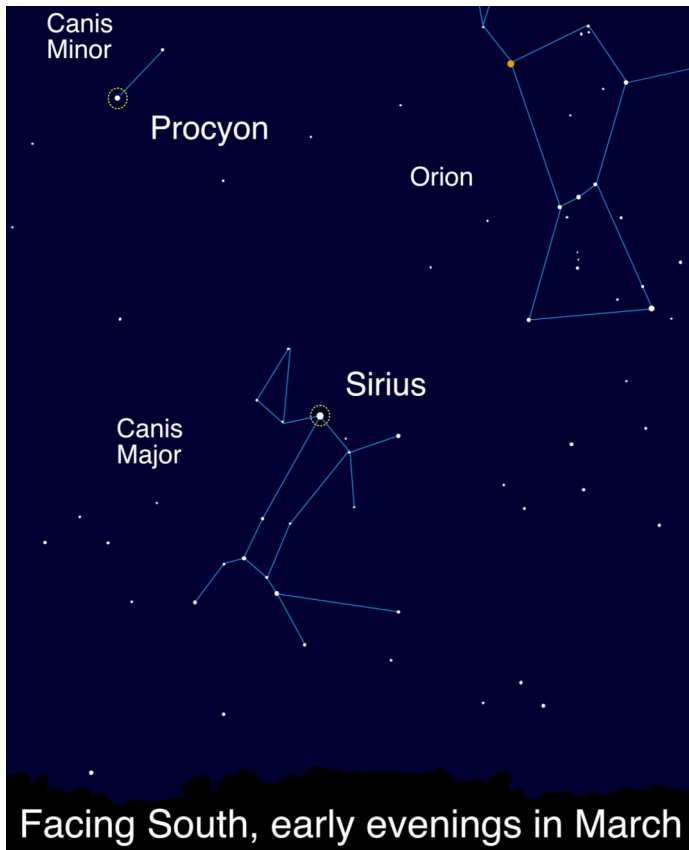
David Prosper

March skies feature many dazzling stars and constellations, glimmering high in the night, but two of the brightest stars are the focus of our attention this month: Sirius and Procyon, the dog stars!

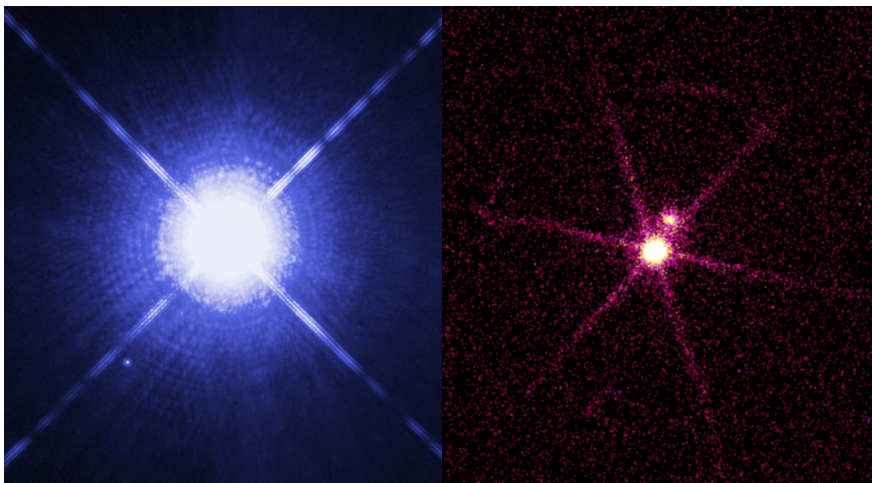
Sirius is the brightest star in the nighttime sky, in large part because it is one of the closest stars to our solar system at 8.6 light years away. Compared to our Sun, Sirius possesses twice the mass and is much younger. Sirius is estimated to be several hundred *million* years old, just a fraction of the Sun's 4.6 *billion* years. Near Sirius - around the width of a hand with fingers splayed out, held away at arm's length - you'll find Procyon, the 8th brightest star in the night sky. Procyon is another one of our Sun's closest neighbors, though a little farther away than Sirius, 11.5 light years away. While less massive than Sirius, it is much older and unusually luminous for a star of its type, leading astronomers to suspect that it may "soon" – at some point millions of years from now – swell into a giant star as it nears the end of its stellar life.

Sirius and Procyon are nicknamed the "Dog Stars," an apt name as they are the brightest stars in their respective constellations – Canis Major and Canis Minor – whose names translate to "Big Dog" and "Little Dog." Not everyone sees them as canine companions. As two of the brightest stars in the sky, they feature prominently in the sky stories of cultures around the world. Sirius also captures the imaginations of people today: when rising or setting near the horizon, its brilliance mixes with our atmosphere's turbulence, causing the star's light to shimmer with wildly flickering color. This vivid, eerie sight was an indication to ancient peoples of changes in the seasons, and even triggers UFO reports in the modern era!

Both of these bright stars have unseen companions: tiny, dense white dwarf stars, the remnants of supermassive companion stars. Interestingly, both of these dim companions were inferred from careful studies of their parent stars' movements in the 1800s, before they were ever directly observed! They are a challenging observation, even with a large telescope, since their parent stars are so very bright that their light overwhelms the much dimmer light of their tiny companions. The white dwarf stars, just like their parent stars, have differences: Sirius B is younger, brighter, and more energetic than Procyon B. Careful observations of these nearby systems over hundreds of years have helped advance the fields of: astrometry, the precise measurement of stars; stellar evolution; and astroseismology, the study of the internal structure of stars via their oscillations. Discover more about our stellar neighborhood at nasa.gov!



Sirius and Procyon, the loyal hunting dogs of nearby Orion the Hunter! What other stories can you imagine for these stars? Learn about “Legends in the Sky” and create your own with this activity: <https://bit.ly/legendsinthesky> Image created with assistance from Stellarium.



Sirius A and B imaged by two different space telescopes, revealing dramatically different views! Hubble’s image (*left*) shows Sirius A shining brightly in visible light, with diminutive Sirius B a tiny dot. However, in Chandra’s image (*right*) tiny Sirius B is dramatically brighter in X-rays! The “Universe in a Different Light” activity highlights more surprising views of some familiar objects: <http://bit.ly/different-light-nsn> NASA, ESA, H. Bond (STScI), and M. Barstow (University of Leicester) (*left*); NASA/SAO/CXC (*right*)



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!