ASTROFILES

Auburn Astronomical Society Newsletter

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

Moon Phases

April 19 — Full Moon

April 26 — Last Quarter

May 4 — New Moon

May 12 — 1st Quarter

May 18 — Full Moon

May 26 — Last Quarter

June 3 — New Moon

June 10 — 1st Quarter

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National Astronomy Day—Saturday, May 11, 2019

As in the past few years the Auburn Astronomical Society will be assisting the staff at the W. A. Gayle Planetarium in Montgomery during the annual Astronomy Day activities. All AAS members are encouraged to come and bring their telescopes. We will set up outside on the grounds around the planetarium for public viewing after dark. A first quarter moon will be up which will give observers a chance for some up-close views of lunar craters. Some solar observing may be possible in the late afternoon. The planetarium is located in Oak Park, just off of Exit 2 of I-85 and adjacent to Jackson Hospital. A number of activities are scheduled earlier for the visiting public. Here are some of the events planned but could possibly change:

1. A planetarium show "Seeing" by Neil DeGrasse Tyson. Seeing is a 22-minute full-immersion planetarium program, which will use hemispheric 2D and 3D animations and video to teach how human vision works. Imagery from all over the world including humanity, landscapes, skyscapes, wildlife and of space are the backdrop for photo-realistic animations, which are used to create a story of a photons' journey through the eye and its conversion to an electro-chemical impulse that then travels the neuro pathways of the brain to the various centers that create the image the brain sees. *(continued on page 2)*

2. "Sight--The Story of Vision": Another planetarium show on a photon's journey across space, time, and the mind. Planetarium show based on a 1-hr PBS documentary of the same name weaving a tale of the journey of humanity that discovered the science, technology and medicine that allows us to understand how sight works, cure diseases of the eye and correct vision

3. A information table staffed by Montgomery Eye Physicians.

4. A presentation on Black Holes, by one of the planetarium's associates.

5. A speaker from Marshall Space Flight Center on the latest developments there.

6. Updates from the Shepherd Observatory at the University of Montevallo.

7. 8:00 PM - Telescopic observations by the Auburn Astronomical Society.

Sunset about 7:30 PM—Moon will be in 1st quarter phase

Welcome to new AAS members

The AAS wishes to welcome our newest members that joined at the April 5, 2019 meeting: Anna and Benjamin Pamperin and Steve Bragg. Also, current members that have not yet renewed for 2019 are encouraged to do so. Annual dues are $20.00 and can be sent to the club secretary/treasurer using the form at the end of the newsletter.

Upcoming Events and Activities

Our next formal AAS meeting is tentatively scheduled for the July time frame. A firm date will be posted in the next newsletter. Also, as we have done in the past few years, we will be conducting a series of star gazes for visitors this summer at Wind Creek State Park near Alexander City, AL. No specific dates have been scheduled at this time but they will be posted here as soon as we have the dates confirmed with park personnel.

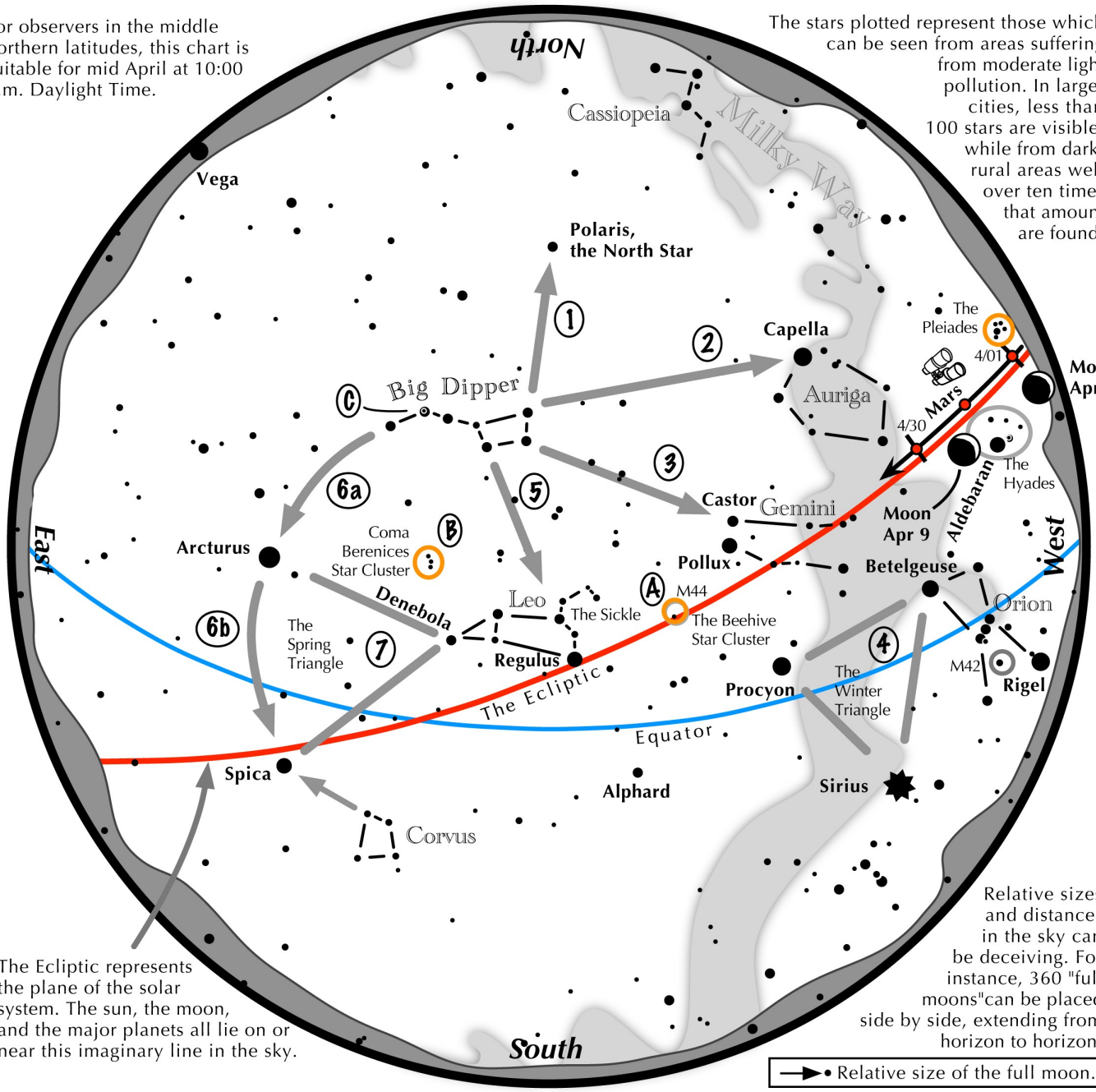
AAS Meeting Report—Friday, May 5, 2019

The April 5, 2019 meeting of the Auburn Astronomical Society featured a very interesting presentation by AAS member Jay Hall on his experiences with deep-sky astrophotography. Jay basically brought his entire imaging setup including the telescope, laptop and the software that he uses to take some of the outstanding photos that we have seen recently posted on our group Facebook page. Jay went through the basic process that he uses to set up and use his equipment during an imaging session. As expected, there were many questions, particularly for those that might be considering getting into astrophotography. Naturally there was a lot of material to cover within the time constraints of a single meeting, so it's possible that we can cover some of the topics in greater detail in future meetings. We thank Jay for putting the presentation together and for actually bringing his equipment along so that we could get a first-hand look at how it is all connected together. *(photos on next page)*

Navigating the April Night Sky, Northern Hemisphere

For observers in the middle northern latitudes, this chart is suitable for mid April at 10:00 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 April night sky: Simply start with what you know or with what you can easily find.

1. Extend an imaginary line north from the two stars at the tip of the Big Dipper's bowl. It passes Polaris, the North Star.
2. Draw another imaginary line west across the top two stars of the Dipper's bowl. It strikes Capella low in the northwest.
3. Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
4. Look in the west-southwest for the bright Winter Triangle stars of Sirius, Procyon, and Betelgeuse.
5. Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
6. Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica.
7. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.

Binocular Highlights

A: M44, a star cluster barely visible to the naked eye, lies to the southeast of.Pollux.
B: Look nearly overhead for the loose star cluster of Coma Berenices.
C: In the Big Dipper's handle shines Mizar next to a dimmer star, Alcor.

Astronomical League
www.astroleague.org/outreach

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Mars the Wanderer

By David Prosper

April's skies find Mars traveling between star clusters after sunset, and a great gathering of planets just before sunrise.

Mars shows stargazers exactly what the term "planet" originally meant with its rapid movement across the evening sky this month. The ancient Greeks used the term *planete,* meaning *wanderer*, to label the bright star-like objects that travelled between the constellations of the zodiac year after year.

You can watch Mars as it wanders through the sky throughout April, visible in the west for several hours after sunset. Mars travels past two of the most famous star clusters in our night sky: the **Pleiades** and **Hyades**. Look for the red planet next to the tiny but bright Pleiades on April 1st. By the second week in April, it has moved eastward in Taurus towards the larger V-shaped Hyades. Red Mars appears to the right of the slightly brighter red-orange star **Aldebaran** on April 11th. We see only the brightest stars in these clusters with our unaided eyes; how many additional stars can you observe through binoculars?

Open clusters are made up of young stars born from the same "star nursery" of gas and dust. These two open clusters are roughly similar in size. The Pleiades appears much smaller as they are 444 light years away, roughly 3 times the distance of the Hyades, at 151 light years distant. Aldebaran is in the same line of sight as the Hyades, but is actually not a member of the cluster; it actually shines just 65 light years away! By comparison, Mars is practically next door to us, this month just a mere 18 light minutes from Earth - that's about almost 200 million miles. Think of the difference between how long it takes the light to travel from these bodies: 18 minutes vs. 65 years!

The rest of the bright planets rise before dawn, in a loose lineup starting from just above the eastern horizon to high above the south: **Mercury**, **Venus**, **Saturn**, and **Jupiter**. Watch this month as the apparent gap widens considerably between the gas giants and terrestrial planets. Mercury hugs the horizon all month, with Venus racing down morning after morning to join its dimmer inner solar system companion right before sunrise. In contrast, the giants Jupiter and Saturn move away from the horizon and rise earlier all month long, with Jupiter rising before midnight by the end of April.

The **Lyrids** meteor shower peaks on April 22nd, but sadly all but the brightest meteors will be washed out by the light of a bright gibbous Moon.

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

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Watching the Late Spring Skies

By David Prosper

Late spring brings warmer nights, making it more comfortable to observe a good showing of the **Eta Aquarids** meteor shower. Sky watchers can also look for the delicate **Coma Star Cluster**, and spot the **Moon** on the anniversary of **Apollo 10**'s "test run" prior to the Moon landing in 1969.

The **Eta Aquarids** meteor shower should make a good showing this year, peaking the morning of May 6. This meteor shower has an unusual "soft peak," meaning that many meteors can be spotted several days before and after the 6th; many may find it convenient to schedule meteor watching for the weekend, a night or two before the peak. You may be able to spot a couple dozen meteors an hour from areas with clear dark skies. Meteors can appear in any part of the sky and you don't need any special equipment to view them; just find an area away from lights, lie down on a comfy lawn chair or blanket, relax, and patiently look up. These brief bright streaks are caused by Earth moving through the stream of fine dust particles left by the passage of Comet Halley. While we have to wait another 43 years for the famous comet grace our skies once more, we are treated to this beautiful cosmic postcard every year.

While you're up meteor watching, try to find a delightful naked eye star cluster: the **Coma Star Cluster** (aka Melotte 111) in the small constellation of Coma Berenices. It can be spotted after sunset in the east and for almost the entire night during the month of May. Look for it inside the area of the sky roughly framed between the constellations of Leo, Boötes, and Ursa Major. The cluster's sparkly members are also known as "Berenice's Hair" in honor of Egyptian Queen Berenices II's sacrifice of her lovely tresses. Binoculars will bring out even more stars in this large young cluster.

May marks the 50th anniversary of the Lunar Module's test run by the A**pollo 10** mission! On May 22, 1969, NASA astronauts Thomas Safford and Eugene Cernan piloted the Lunar Module - nicknamed "Snoopy" - on a test descent towards the lunar surface. Undocking from "Charlie Brown" - the Command Module, piloted by John Young – they descended to 47,400 feet above the surface of the Moon before returning safely to the orbiting Command Module. Their success paved the way for the first humans to land on the Moon later that year with Apollo 11. Look for the Moon on the morning of May 22, before or after dawn, and contemplate what it must have felt like to hover mere miles above the lunar surface. You'll also see the bright giant planets Saturn and Jupiter on either side of the Moon before sunrise. When will humans travel to those distant worlds?

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

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!