



ASTROFILES

Auburn Astronomical Society Newsletter

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

Moon Phases

April 20 — First Quarter
April 26 — Full Moon
May 3 — Last Quarter
May 11 — New Moon
May 19 — First Quarter
May 26 — Full Moon
June 2 — Last Quarter
June 10 — New Moon

News and events

We hope that everyone is doing well and gradually returning to some sort of “normal” existence now that the pandemic seems to be subsiding and as more individuals get vaccinated. I apologize for the lack of local news this month as I guess most have been busy with other things. Personally, I’ve been busy with some family-related medical/health issues so I have not been able to do any observing or photography recently. For those that may be wondering about possible activities for Astronomy Day on May 15th at the planetarium in Montgomery, director Rick Evans has decided to hold off on this event and possibly look at the other Astronomy Day event that is scheduled in October. Hopefully by then things will be such that they can safely have the event, so stay tuned for updates in future issues. We also are tentatively planning to conduct a star gaze some time in June at the college in Alex City, AL. We don’t have any firm details yet, but hopefully we will know more by the next issue.

Stay in touch with us



<http://www.auburnastro.org>



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

May is the month for Mercury

As the closest planet to the Sun, tiny Mercury can be difficult to spot as it never gets very far from the Sun and it usually requires at least an unobstructed view to the Western horizon after sunset. Mercury reaches its greatest elongation on the 17th so this will be a good opportunity to catch the elusive planet. A nice conjunction with Venus will occur on May 28th with the two separated by less than 1/2 degree, although blazing Venus will be some 300 times brighter. A couple of Mercury-Moon pairings also occur in May. Please refer to the two Astronomical League viewing guides later in this newsletter for more details about observing Mercury .



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 night-sky.jpl.nasa.gov to find local clubs, events, and more!

Virgo's Galactic Harvest

David Prosper

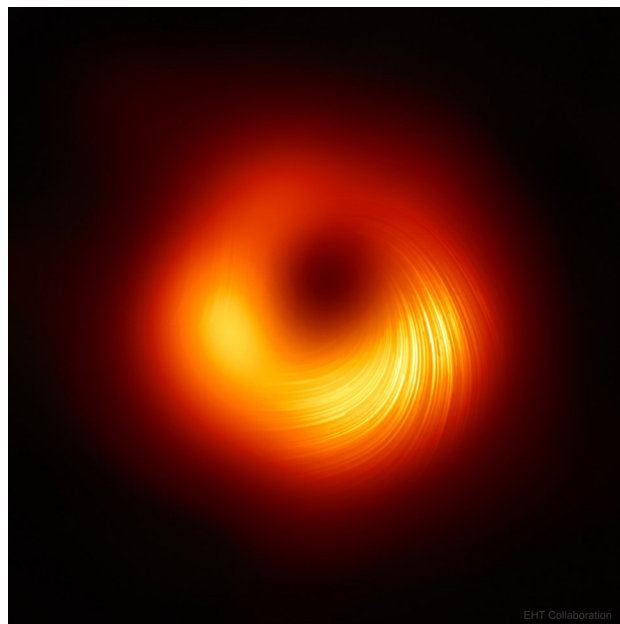
May is a good month for fans of galaxies, since the constellation Virgo is up after sunset and for most of the night, following Leo across the night sky. Featured in some ancient societies as a goddess of agriculture and fertility, Virgo offers a bounty of galaxies as its celestial harvest for curious stargazers and professional astronomers alike.

Virgo is the second-largest constellation and largest in the Zodiac, and easily spotted once you know how to spot Spica, its brightest star. How can you find it? Look to the North and start with the Big Dipper! Follow the general curve of the Dipper's handle away from its "ladle" and towards the bright orange-red star Arcturus, in Boötes – and from there continue straight until you meet the next bright star, Spica! This particular star-hopping trick is summed up by the famous phrase, "arc to Arcturus, and spike to Spica."

This large constellation is home to the Virgo Cluster, a massive group of galaxies. While the individual stars in Virgo are a part of our own galaxy, known as the Milky Way, the Virgo Cluster's members exist far beyond our own galaxy's borders. Teeming with around 2,000 known members, this massive group of galaxies are all gravitationally bound to each other, and are themselves members of the even larger Virgo Supercluster of galaxies, a sort of "super-group" made up of groups of galaxies. Our own Milky Way is a member of the "Local Group" of galaxies, which in turn is *also* a member of the Virgo Supercluster! In a sense, when we gaze upon the galaxies of the Virgo Cluster, we are looking at some of our most distant cosmic neighbors. At an average distance of over 65 million light years away, the light from these galaxies first started towards our planet when the dinosaurs were enjoying their last moments as Earth's dominant land animals! Dark clear skies and a telescope with a mirror of six inches or more will reveal many of the cluster's brightest and largest members, and it lends itself well to stunning astrophotos.

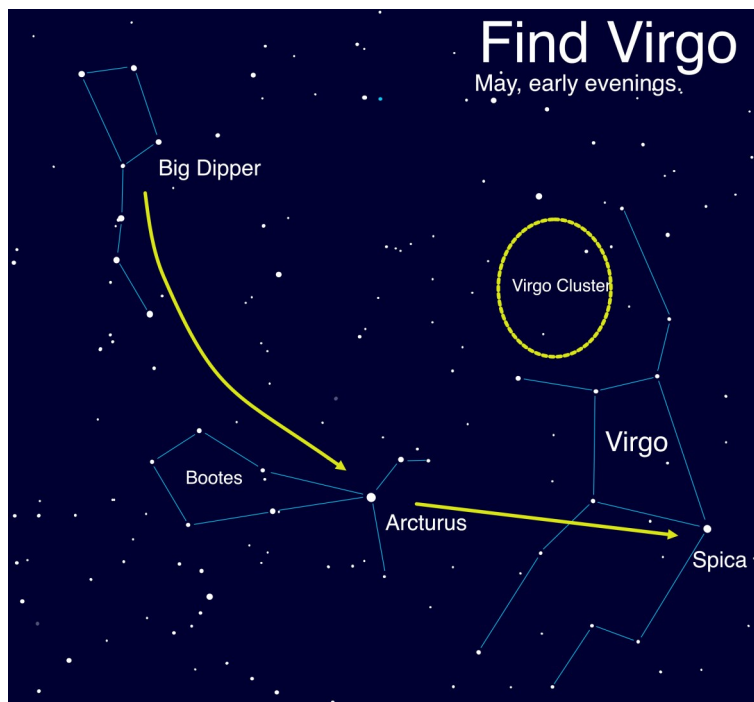
Virgo is naturally host to numerous studies of galaxies and cosmological research, which have revealed much about the structure of our universe and the evolution of stars and galaxies. The "Universe of Galaxies" activity can help you visualize the scale of the universe, starting with our home in the Milky Way Galaxy before heading out to the Local Group, Virgo Cluster and well beyond! You can find it at bit.ly/universeofgalaxies. You can

further explore the science of galaxies across the Universe, along with the latest discoveries and mission news, at nasa.gov.



The first image of a black hole's event horizon was taken in the center of one of the most prominent galaxies in Virgo, M87! This follow up image, created by further study of the EHT data, reveals polarization in the radiation around the black hole. Mapping the polarization unveils new insights into how matter flows around and into the black hole - and even hints at how some matter escapes! More details: apod.nasa.gov/apod/ap210331.html

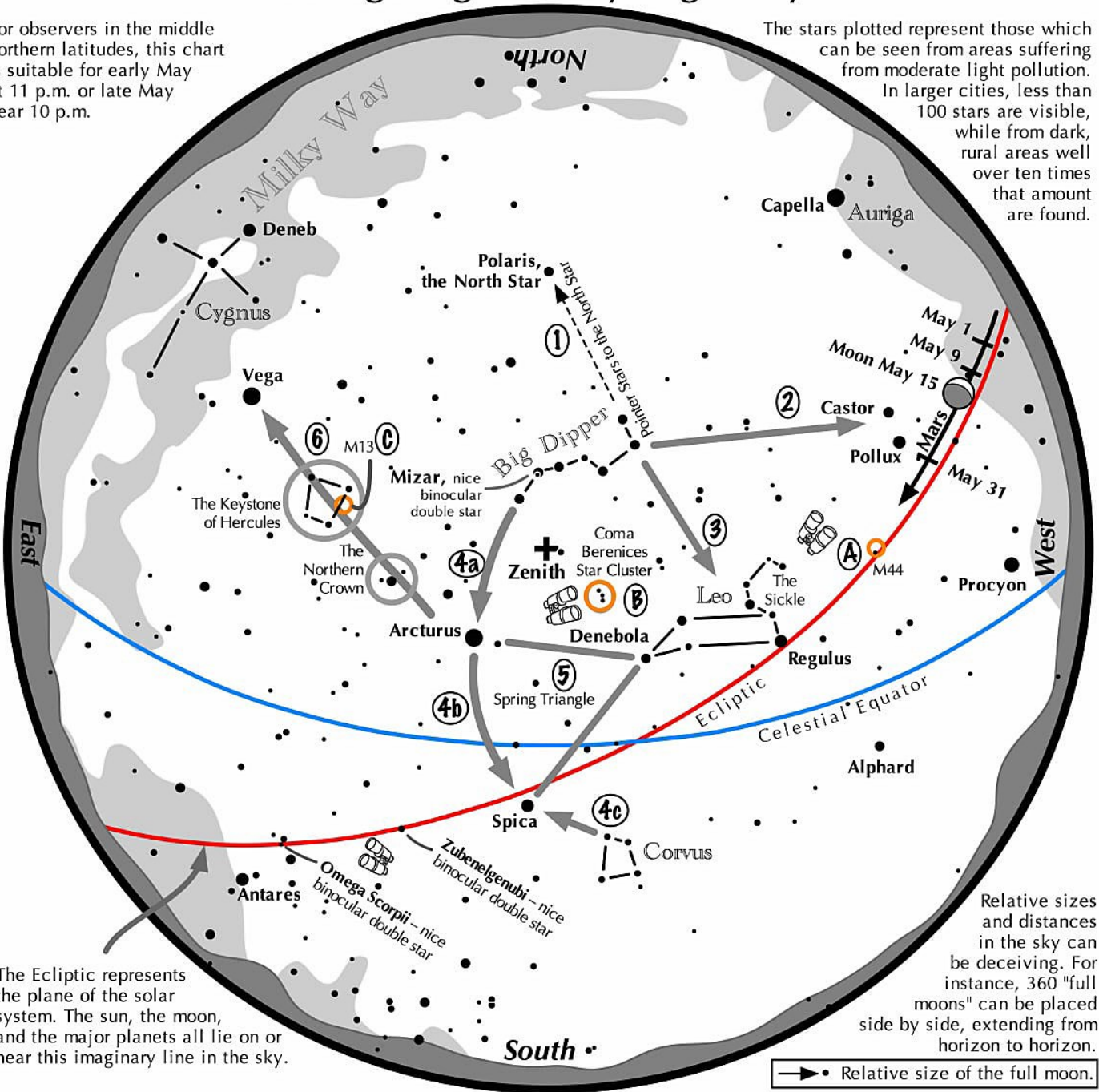
Credit: Event Horizon Telescope Collaboration



Navigating the May Night Sky

For observers in the middle northern latitudes, this chart is suitable for early May at 11 p.m. or late May near 10 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.



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

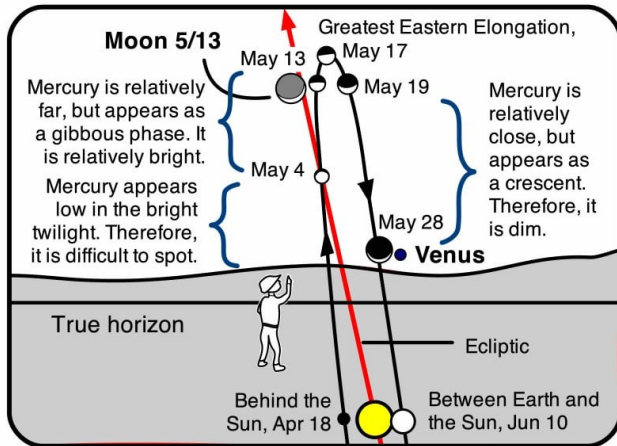
- 1 Extend a line northward from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
- 3 Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
- 4 Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica. Confirm Spica by noting that two moderately bright stars just to its southwest form a straight line with it.
- 5 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
- 6 Draw a line from Arcturus to Vega. One-third of the way sits "The Northern Crown." Two-thirds of the way hides the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.

Binocular Highlights

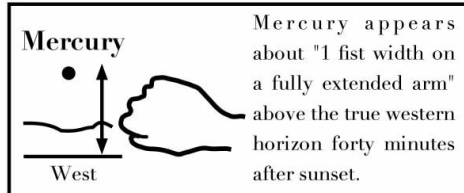
A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **B:** Look near the zenith for the loose star cluster of Coma Berenices. **C:** M13, a round glow from a cluster of over 500,000 stars.



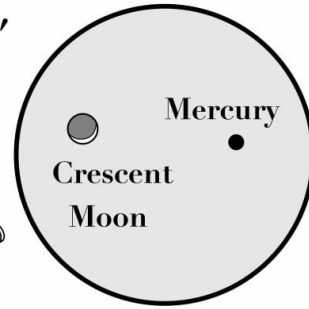
If you can observe only one celestial event this month, see this one:



**May 2021:
Mercury forty minutes after sunset
in the west-northwest**



**View through
10x50 binoculars
on May 13**



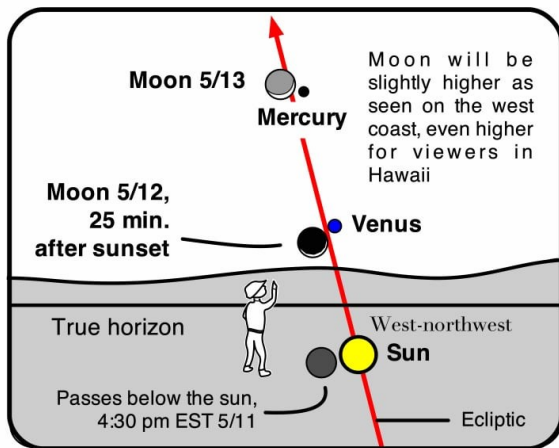
Mercury in the evening twilight

Have you ever spotted Mercury? Many stargazers have not. From early through mid May presents a good opportunity to catch the elusive little planet. Look low into the west-northwestern twilight forty minutes after sunset.

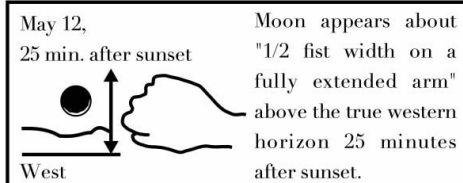
Mercury comes between the Sun and Earth on April 18, then two weeks later, it is found climbing higher above the western horizon each evening as it moves away from the Sun. Between May 4 and 19, it is bright enough and high enough in the twilight sky that it can be seen rather easily – if the sky is clear and if the horizon is unobstructed. After May 19, it dims significantly, making it again difficult to spot.

- Using binoculars, look on May 13 for the crescent Moon entering the scene to the left of Mercury. Can you see Earthshine on the Moon's dark side?
- Bright Venus shines immediately above the horizon on May 28 and lies to the right of Mercury. Binoculars might be able to reveal this pairing, but the sky may prove to be too bright.

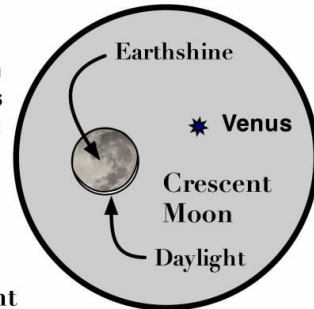
If you can observe only one celestial event this month, see this one:



**May 12 & 13, 2021:
Young Moon 25 minutes after sunset
very low in the west. Tough to see.**



**View through
10x50 binoculars
on May 12**



**Young, thin Moon
in the evening twilight**

Crescent moons, sporting Earthshine, are always pretty to view. How thin of a crescent have you seen? May 12 and 13 present a good opportunity to catch a very thin moon, but binoculars may be needed. Look low into the western twilight 25 minutes after sunset on May 12 when the moon is just 1.25 days old, i.e., 1.25 days after it passed below the sun.

Its thin sliver should be a tad easier to spot for west coast observers than east coasters. Venus will lie just to its right which may aid in discerning the moon. If you are unable to find the crescent, try again the following evening when the moon is a little higher in the sky and shows a slightly thicker slice. It is then 2.25 days old and lies next to Mercury.

- Very clear skies and an unobstructed western horizon are needed.
- Use binoculars. The bright twilight will likely prevent Earthshine from being seen on May 12. A much better chance occurs on May 13. On May 13, the moon lies higher in the sky next to Mercury. Again, bring out the binoculars.



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!