

ASTROFILES

Auburn Astronomical Society Newsletter

March 2022 *Newsletter Editor — John Wingard — jwin1048@gmail.com*

Moon Phases

March 25 — Last Quarter
April 1 — New Moon
April 9 — First Quarter
April 16 — Full Moon
April 23 — Last Quarter
April 30 — New Moon
May 8 — First Quarter
May 16 — Full Moon

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News and events

After a long period of inactivity we are finally beginning to plan and perform some public outreach events to promote astronomy. On the evening of Friday, March 4, 2022 the AAS conducted a stargaze at Kiesel Park in Auburn. This event was at the request of the Kreher Preserve and Nature Center at Auburn University. We were hopeful that the weather would cooperate and it finally did. There was a very good turnout of interested visitors. We didn't get a total headcount but it was at least several dozen, with a lot of families with young children. Thanks also to the AAS members that came and brought their scopes. Although there were no major planets to view at that particular time, we had quite a few interesting targets to view. Those that were there early enough were able to catch a few views of the crescent Moon before it slipped behind the trees. As soon as it got dark enough we began to see several constellations come into view. Of course, one of the most prominent was Orion. This area of the sky is rich with things to see, especially the Orion nebula (M42). We also looked at the Pleiades star cluster (M45), sometimes referred to as "The Seven Sisters." As the weather forecast had predicted, a few clouds began to develop later in the evening, but by that time most everyone had been able to see everything and begun to head back home. As is often the case with our stargazes, many of the visitors experienced their very first views through a telescope and it is always rewarding to see their excitement and amazement, especially the children. As amateur astronomers, we can all remember the first time that we looked through a telescope, so we can relate to that excitement. Hopefully, this brief experience will spark some of the young people to further their interest in space and astronomy, possibly developing into a serious hobby, or even more. Who knows, our outreach efforts may provide the seed to make that happen.

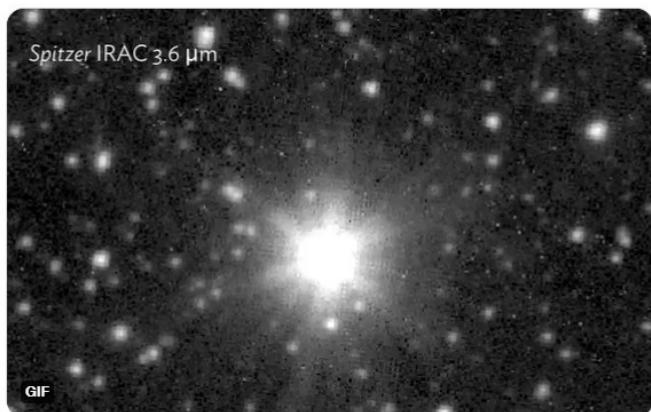
Upcoming events and other news

The AAS has been asked to conduct a stargaze on the evening of Friday, April 8, 2022 at the Alabama Nature Center. We had a similar event at this location several years ago. The Nature Center is located in Millbrook, AL, just east of Montgomery. The address is 3050 Lanark Road, Millbrook, AL. The easiest way to get to it is to take exit 179 off of I-65 and go east towards Millbrook. This exit is the one with the big Bass Pro Shops store. The Nature Center is fairly close to the Interstate. As usual, the event will be subject to the local weather conditions at that time. We would like as many AAS members as possible to come and bring scopes. We have been told that they are expecting approximately 30-50 guests. Also, it is always better to arrive before dark so that you can get your scopes setup in advance.

The club is also actively searching for a location at which to hold quarterly in-person meetings. We would like to keep it in or around the Auburn area as this would be roughly centered in the distribution of our club member locations. A meeting location survey was recently sent out to members and we are collecting the suggestions and ideas from those that respond so that we can pick a day and time for the meetings that would be convenient to the majority of members.

Progress on the James Webb Space Telescope (JWST)

Many of you are probably aware that a new generation of space telescope was recently launched into space to expand our capabilities to reach farther into the distant universe. After a flawless launch from the ESA launch facility in French Guiana in South America, it began a long journey away from Earth towards its eventual station at the L2 Lagrange point over 1 million miles from here. During the trip there, scientists began the slow and very deliberate task of unfolding the giant telescope from its compact launch configuration. As with the launch itself, this process has gone exceedingly well and the telescope has arrived at its destination. The scientists and engineers are continuing to align the telescope's 18 mirror segments so that they will ultimately perform as a single mirror. This process is expected to continue for several more months before the telescope will be considered to be ready to begin actual scientific observations. However, if initial tests are any indication, the JWST will provide spectacular results far beyond any we have seen to date. An early example is shown below. The test star is HD 84406 in the constellation of Canes Venatici. The image on the left is an infrared image from the Spitzer Space Telescope. The image on the right is one of the alignment images from the JWST of the same star. The increase in detail and resolution is astounding!





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!

Springtime Catspotting: Lynx and Leo Minor

David Prosper

Many constellations are bright, big, and fairly easy to spot. Others can be surprisingly small and faint, but with practice even these challenging star patterns become easier to discern. A couple of fun fainter constellations can be found in between the brighter stars of Ursa Major, Leo, and Gemini: **Lynx** and **Leo Minor**, two wild cats hunting among the menagerie of animal-themed northern star patterns!

Lynx, named for the species of wild cat, is seen as a faint zigzag pattern found between Ursa Major, Gemini, and Auriga. Grab a telescope and try to spot the remote starry orb of globular cluster NGC 2419. As it is so distant compared to other globular clusters - 300,000 light years from both our solar system and the center of the Milky Way - it was thought that this cluster may be the remnants of a dwarf galaxy consumed by our own. Additional studies have muddied the waters concerning its possible origins, revealing two distinct populations of stars residing in NGC 2419, which is unusual for normally-homogenous globular clusters and marks it as a fascinating object for further research.

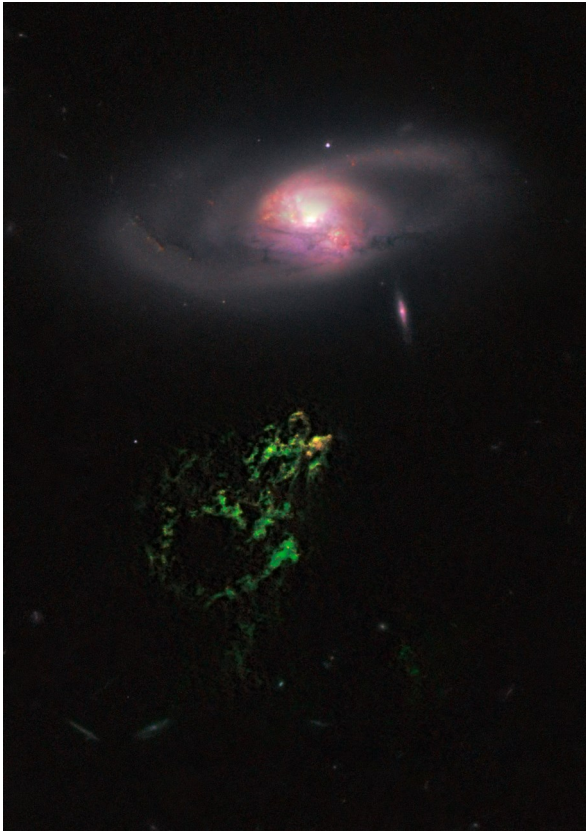
Leo Minor is a faint and diminutive set of stars. Its “triangle” is most noticeable, tucked in between Leo and Ursa Major. Leo Minor is the cub of Leo the Lion, similar to Ursa Minor being the cub to the Great Bear of Ursa Major. While home to some interesting galaxies that can be observed from large amateur scopes under dark skies, perhaps the most intriguing object found within Leo Minor’s borders is Hanny’s Voorwerp. This unusual deep-space object is thought to be a possible “light echo” of a quasar in neighboring galaxy IC 2497 that has recently “switched off.” It was found by Hanny van Arkel, a Dutch schoolteacher, via her participation in the Galaxy Zoo citizen science project. Since then a few more intriguing objects similar to Hanny’s discovery have been found, called “Voorwerpjes.”

Lynx and Leo Minor are relatively “new” constellations, as they were both created by the legendarily sharp-eyed European astronomer Johannes Hevelius in the late 1600s. A few other constellations originated by Hevelius are still in official use: Canes Venatici, Lacerta, Scutum, Sextans, and Vulpecula. What if your eyes aren’t quite as sharp as Johannes Hevelius – or if your weather and light pollution make searching for fainter stars more difficult than enjoyable? See if you can spot the next Voorwerp by participating in one of the many citizen science programs offered by NASA at science.nasa.gov/citizenscience! And of course, you can find the latest updates and observations of even more dim and distant objects at nasa.gov.



Map of the sky around Lynx and Leo Minor. Notice the prevalence of animal-themed constellations in this area, making it a sort of celestial menagerie. If you are having difficulty locating the fainter stars of Leo Minor and Lynx, don't fret; they are indeed a challenge. Hevelius even named the constellation as reference to the quality of eyesight one needs in order to discern these faint stars, since supposedly one would need eyes as sharp as a Lynx to see it! Darker skies will indeed make your search easier; light pollution, even a relatively bright Moon, will overwhelm the faint stars for both of these celestial wildcats. While you will be able to see NGC 2419 with a backyard telescope, Hanny's Voorwerp is far too faint, but its location is still marked. A few fainter constellation labels and diagrams in this region have been omitted for clarity.

Image created with assistance from Stellarium

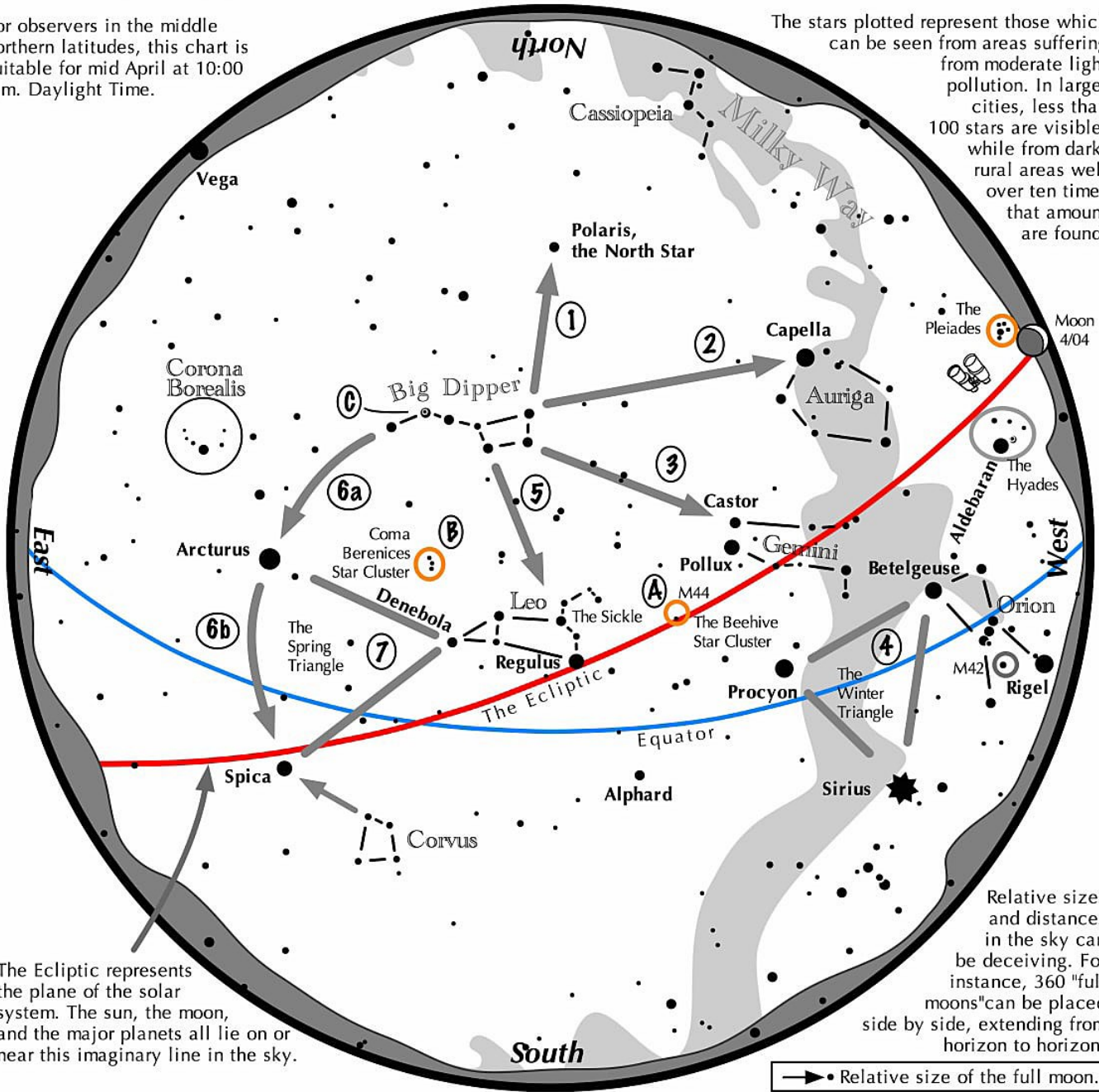


Hanny's Voorwerp and the neighboring galaxy IC 2497, as imaged by Hubble. Credits: NASA, ESA, W. Keel (University of Alabama), and the Galaxy Zoo Team Source: hubblesite.org/contents/news-releases/2011/news-2011-01.html

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

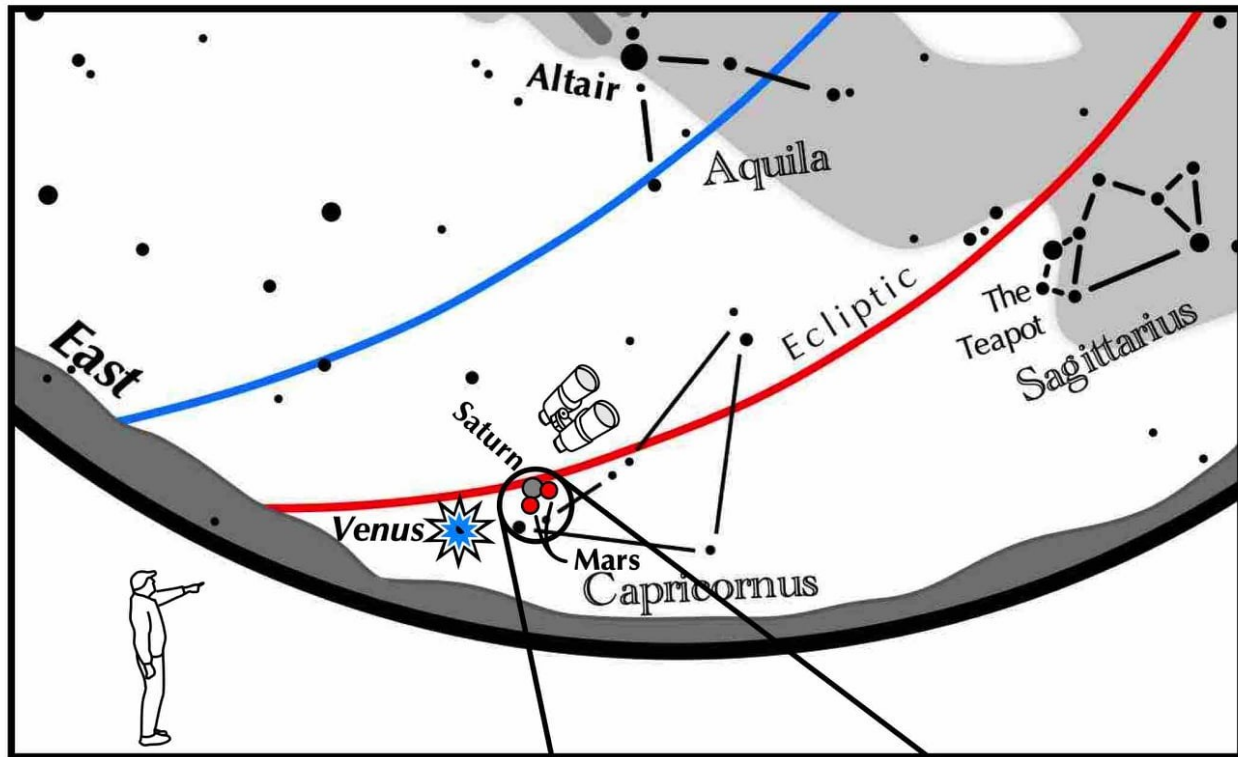
- A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.
- B: Look nearly overhead for the loose star cluster of Coma Berenices.
- C: In the Big Dipper's handle shines Mizar next to a dimmer star, Alcor.



Astronomical League
www.astroleague.org/outreach

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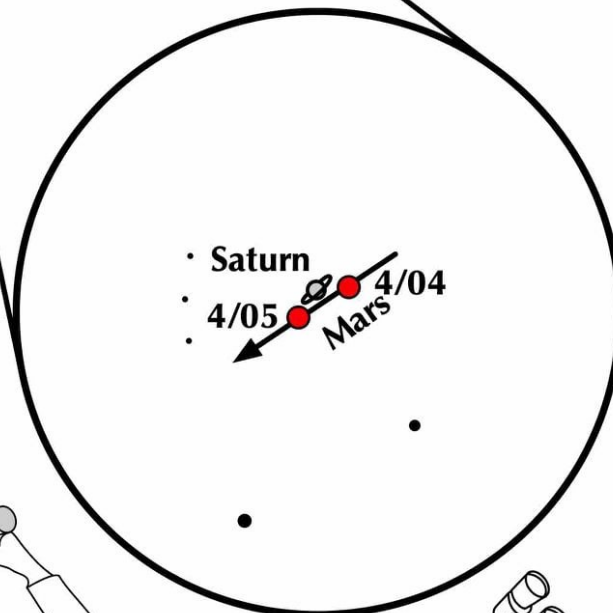
If you can see only one celestial event in the morning this April, see this one.



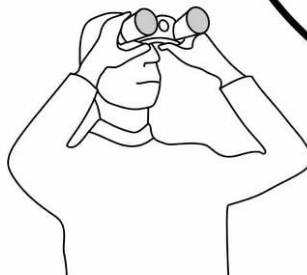
Mars Slides Below Saturn

On the first few mornings of April, look to the east–southeast 60 minutes before sunrise.

- The dazzling object is Venus.
- To its immediate west, shine two starlike objects: Saturn and the slightly dimmer, but red Mars.
- On April 4, Mars lies to the right of Saturn (west).
- On April 5, Mars has slid underneath Saturn, and now lies on its left (east).



**View through
10x50 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.

* For NEW members joining after January, refer to the prorated Dues 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
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