Richland Astronomical Society
The Warren Rupp Observatory

M111

November 2026

The newsletter of the Richland Astronomical Society and Warren Rupp Observatory

A Call for Nominations

- By Mitch Luman

RAS elections are just around the corner, and that means nominations for officers and board members are being solicited. As a Member, you get to decide who you want leading your organization. Positions up for election include: President, Vice President, Treasurer, Secretary and two Board of Trustee positions. Job descriptions for each position can be found under the "About Us" tab on the wro.org website. Look for the document, "RAS Code of Regulations". Nominees must have been Members in good standing for a minimum of two years. Elections will take place at the December meeting at the Gorman Nature Center. If you like what your current elected officials are doing that's great, however, new leaders must step up in order to facilitate a healthy organization. You may nominate yourself.

Discounted Subscriptions to Sky and Telescope and Astronomy Magazines



Discounted subscriptions (both print and digital) to Sky & Telescope and Astronomy magazines are available to RAS Members using this link: https://nightsky.jpl.nasa.gov/news/17/



Scutum Star Cloud Buffet Observing Challenge

By Alex McCarthy

(First Published in the Columbus Astronomical Society's *Prime Focus*)

This time of year, the core of the Milky Way galaxy is prominent above the southern horizon if you find dark enough skies. Of course, the Milky Way is more than a faint haze of light in the sky, it contains lanes of dark nebulae and brighter patches known as star clouds. If you work your way up along the Milky Way about a third of the way between the horizon and zenith, you can spot one of these start clouds known as the Scutum Star Cloud in the constellation Scutum. If you spend a bit of time with a telescope looking around this region, there are a lot of amazing objects to observe.

Some of my favorite objects in the night sky are dark nebulae, and star clouds like this really help them pop out. Now, if you are in the Columbus metropolitan area, these are going to be difficult, if not impossible, to visually observe. If you are willing to make the drive to one of our club's dark sky sites, such as Grieser Field or John Glenn Astronomy Park, they can be quite easy to observe. My preference is to try and image them. A grouping of dark nebulae located at the northern edge of the Scutum Star Cloud make up a target that is well worth spending a few hours imaging. Some objects in this region include Barnard 104, Barnard 110, and Barnard 111, among others. These make a "C" shape and is located near the Wild Duck Cluster (M11) and two sets of double stars.



Figure 1: *Region of the Scutum Star Cloud consisting of various dark nebulae and the M11 star cluster. This scene was captured through an AT60ED reduced down to 288mm using a ZWO ASI 2600 MC Pro Camera. The total integration time is 2 hours and 6 minutes, made up of 120s exposures.*

If you are visually observing this target, you will likely see much less detail but with enough aperture, you may be able to see some of these as areas in your field of view that are a bit dimmer than the surrounding areas. Patience is necessary though, and you may find that M11 really steals the show in your field of view. One more comment worth saying about M11 is that it makes a pretty easy target to show the general public at a public viewing night. It honestly looked pretty good through my small AT70ED refractor at a recent public viewing night at Perkins Observatory with a nearly full moon above the horizon.

If you aim at M11 and then work your way down through the star cloud, you will quickly come across another open cluster messier object known as M26.



Figure 2: *This image of M26 was taken with one of the CAS SeeStar S50's. The total integration time is 6 minutes and 20 seconds, with 10s individual frames.*

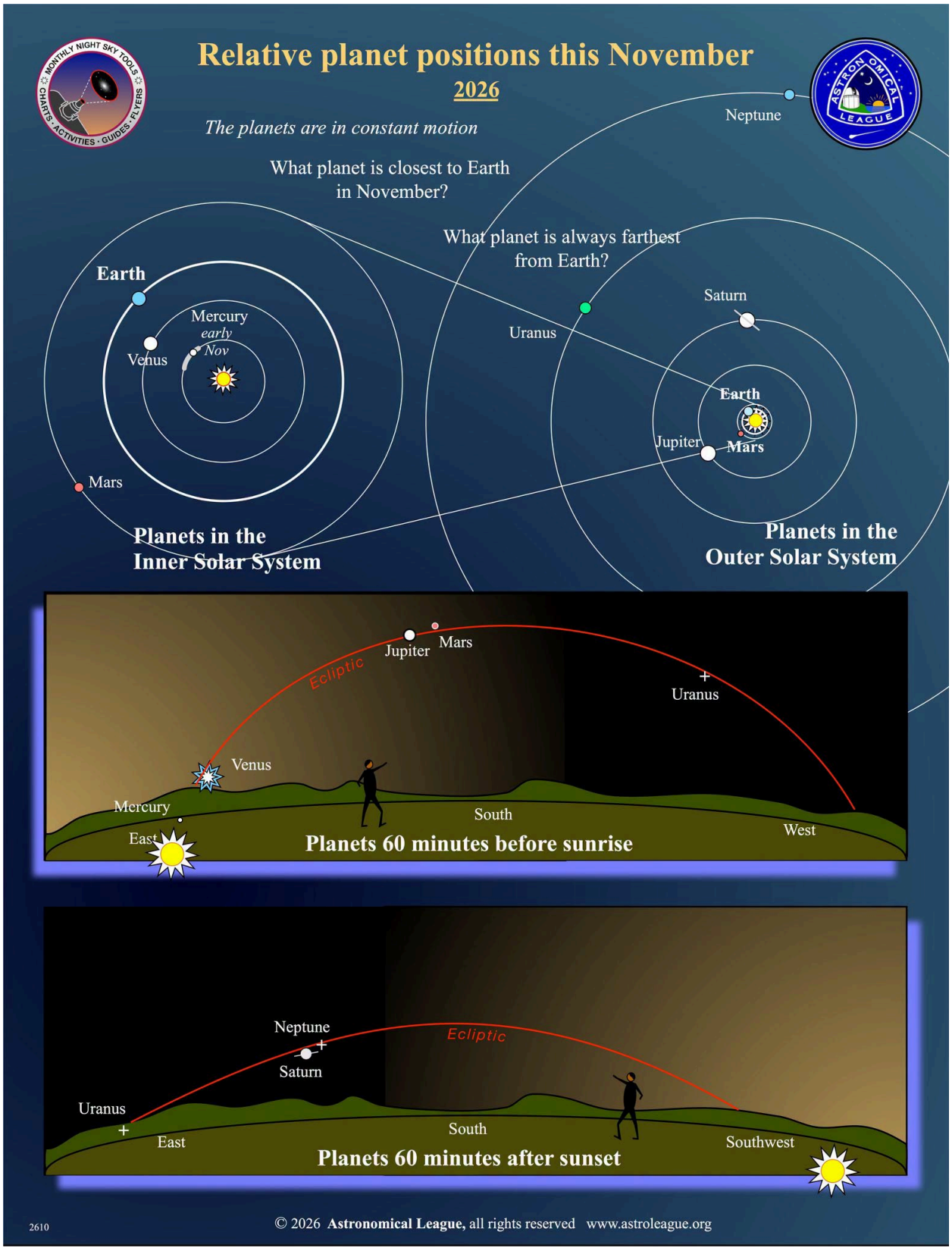
This is relatively easy to spot through a small telescope, though in my opinion it is not quite as impressive as M11. Nearby, you can find a nice planetary nebula known as IC 1295. I tried a few different telescopes at the John Glenn Astronomy Park to spot this, but I didn't have much luck. Using one of the Club's SeeStar S50s, I was able to quickly pick it up, however. If you enjoy hunting for planetary nebulae, you may also be able to find NGC 6751, but this was a difficult target for a SeeStar to grab, and I had no luck finding it through a telescope.



Figure 3: *This image of IC 1295 was taken with one of the CAS SeeStar S50's, and the planetary nebula shows as a ghostly ball in the center of the shot. The total integration time is 65 minutes and 50 seconds, with 10s individual frames.*

In addition to deep sky objects, there are a few double stars and variable stars worth observing. I found there in particular pretty easy to split with my modest refractor; 15 Aquilae, HIP 92296, and HIP 92391, which falls right next to M11. If you like variable stars, keep an eye on the star V Aquilae. This is also a carbon star with a deep ruby-red color that cuts through the Columbus light pollution.

These objects, and more, were listed out in a recent Astronomy League observing challenge that encourages folks to go out and observe various objects within the Scutum Star Cloud. I personally find these challenges to be a good way to learn about different types of objects that could be found in the night sky. It also allows a user to hone in on different observing techniques. If you are unfamiliar with the Astronomy League, or its observing challenges, please take some time and check out this link: https://www.astroleague.org/observing-program-division/


Relative planet positions this November
2026
The planets are in constant motion
What planet is closest to Earth in November?
What planet is always farthest from Earth?
Neptune
Saturn
Uranus
Earth
Mercury
early
Nov
Venus
Mars
Jupiter
Planets in the Inner Solar System
Planets in the Outer Solar System
Ecliptic
Jupiter
Mars
Uranus
Venus
Mercury
East
South
West
Planets 60 minutes before sunrise
Neptune
Saturn
Ecliptic
Uranus
East
South
Southwest
Planets 60 minutes after sunset
2610
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Have you seen the classical Achernar and the modern Achernar?

Achernar

Europe's Age of Exploration yields
an unknown star of zero magnitude.
Unknown to the Europeans, that is.

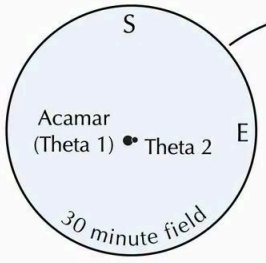
The constellation **Eridanus the River** has been recognized for well over 2000 years. Its final star, a third magnitude luminary lying far in the south as viewed from ancient Greece, was called "**Achernar, the End of the River**." When European explorers ventured nearer to the equator in the sixteenth century, they reported sighting a much brighter star south of Achernar, one always below the horizon as viewed from southern Europe.

In keeping with the spirit of Eridani's river of stars flowing south, late sixteenth-early seventeenth century celestial cartographer Johann Bayer moved the name Achernar to the much brighter and previously unknown star shining farther south. The star that for centuries was called Achernar he designated as "**Acamar**." Both names mean "End of the River."

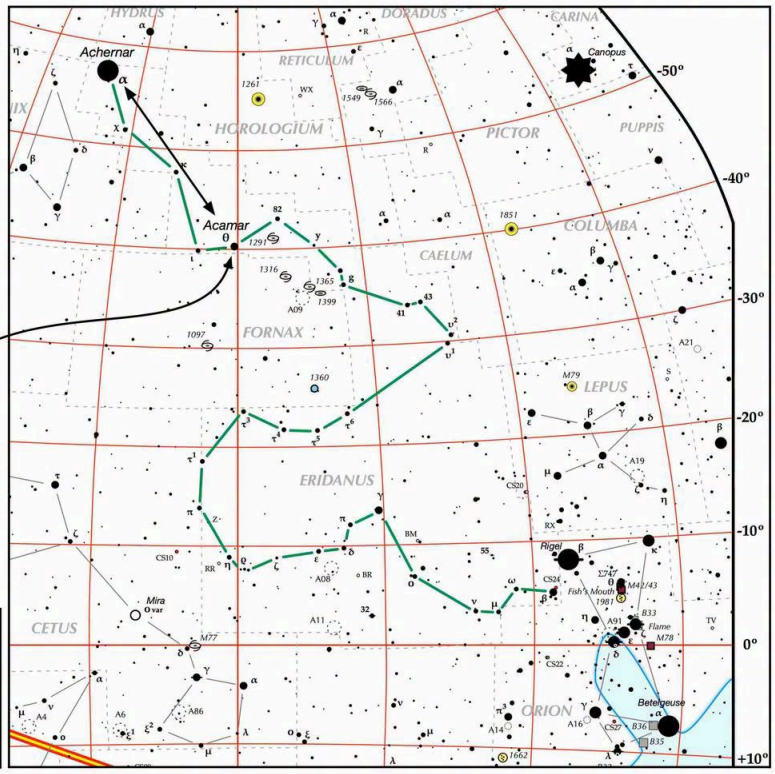
Finally, corresponding with his new star naming scheme, Bayer assigned Theta Eridani for Acamar and Alpha Eridani for the new Achernar.

Today for observers in the tropics and in the southern hemisphere, Theta Eridani (or Acamar), a worthy double star, can be found twinkling nearly overhead two hours after sunset in November and December. It lies 20° north-northeast of bright Achernar.

Achernar, Alpha Eri
140 light-years
0.41 magnitude



Acamar, Theta Eri:
160 light-years
Theta 1: 3.1 magnitude
Theta 2: 4.4 magnitude
Separation: 8 sec; PA: 90°



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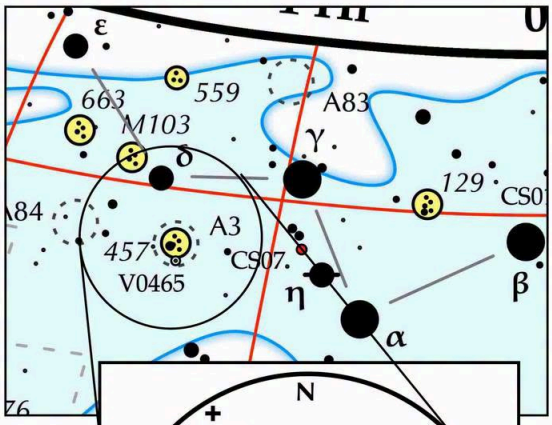
NGC 457, Caldwell 13, Owl, ET Cluster

A good open star cluster for people new to observing.

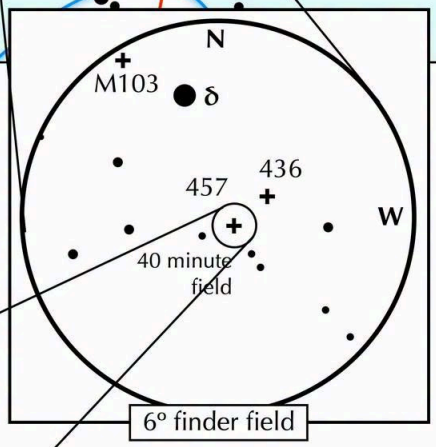
A bright open cluster that Messier missed.

Navigate to NGC 457 (Caldwell 13):

1. Locate the two easternmost primary stars of Cassiopeia, Delta and Epsilon.
2. Continue the line formed by Epsilon and Delta to the southwest for half that length.
3. Aim the finderscope to that location.



M103 lies in the northeast edge of the finder field. Other open clusters are nearby.



6° finder field

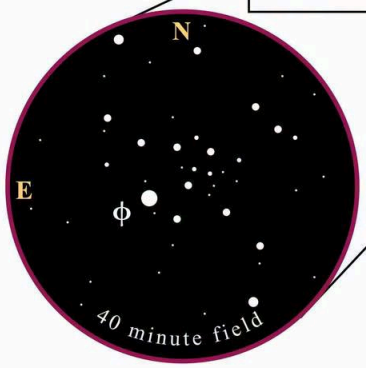
Easily visible in steadily held 10 x 50 binoculars!

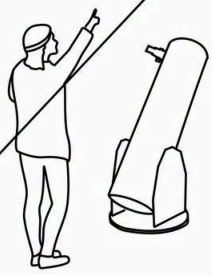


Published Characteristics for Caldwell 13:

Integrated magnitude: 6.4
(excluding 4.9 magnitude Phi Cas)
Size: 13 minutes
Surface brightness: little meaning due to Phi Cas
Distance: 7900 light-years

Try your hand at sketching!





Eyepiece Impressions:

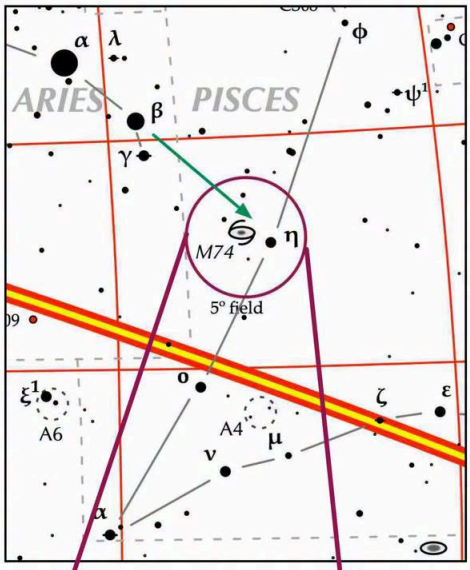
- 10x50 binoculars: "Glimmering glow off the west side of Phi. Half dozen dim stars spotted." JG
- 4 inch Refractor, f/10, 53x: "Irreg shape cluster; "stick figure" or "owl with wings outstretched"; 2 bright stars as eye; about 35 stars counted." AB
- 12 inch Reflector, 50x: "Nice cluster with about 10 stars including 2 brighter stars, one of the two is orange." PH

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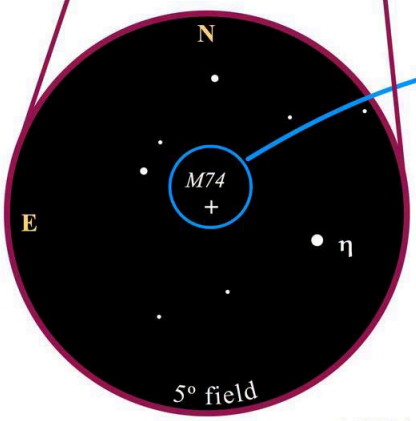
M74, a face-on spiral galaxy

of low surface brightness

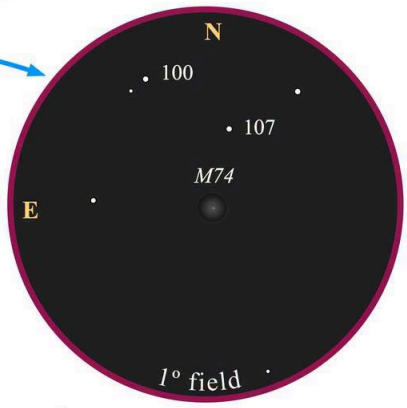
M74 is large and bright, as galaxies go. So, one would think it would be easy to spot in a small telescope. It is not. Its low surface brightness is the culprit. Even Messier had difficulty!



View through
10 x 50 binoculars



Use a telescope at least 8 inches in aperature:
- Magnitude 9.4
- Size: 10x9 minutes
- Distance: 30 million Ly



How to find M74:

1. Locate Alpha and Beta Arietis.
2. Draw a line from Alpha through Beta and continue twice that length to Eta Piscium.
3. Place Eta on the west side of the finderscope's field.
4. M74 lies near the center of a low power eyepiece field.

M74 through a 4 inch telescope:

Pierre Méchain, September 1780, "This nebula contains no star; it is fairly large, very obscure and extremely difficult to observe. One can make it out with more certainty in fine frosty conditions."

Messier's Notebook from October 1780: "A nebula without stars, near the star Eta Piscium; observed by M. Méchain in late September 1780. This nebula contains no stars; it is quite large, very faint, and extremely difficult to observe; its position could be determined more precisely during periods of clear, frosty weather. M. Messier searched for and found it, just as M. Méchain described; it was compared directly with the star Eta Piscium."

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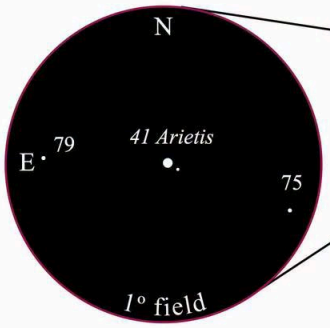
A changing constellation that is no longer.

Musca Borealis

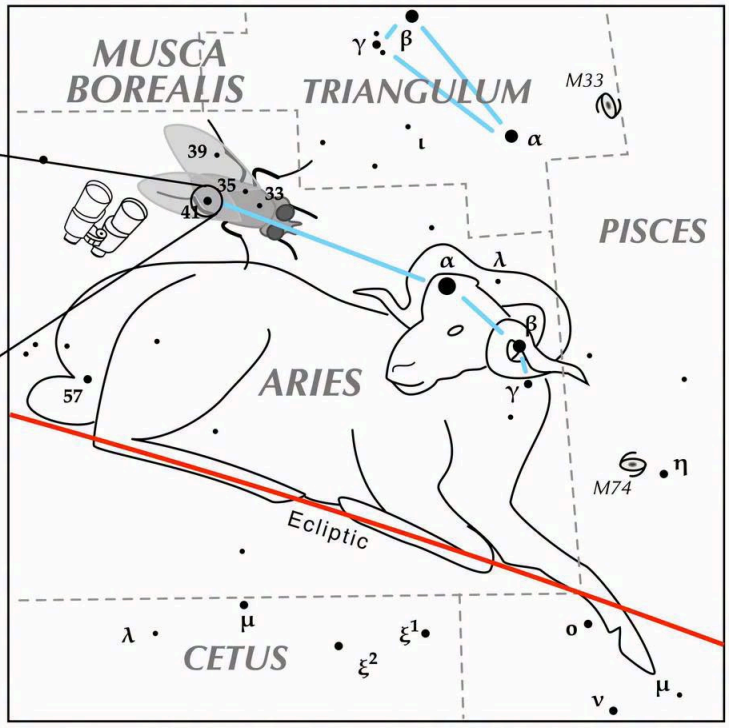
- Musca Borealis dates back to 1612 when Petrus Plancius grabbed the 4th and 5th magnitude stars later known as 33, 35, 39, and 41 Arietis, and created a bee. He called it Apis.
- Jakob Bartsch reworked these stars in 1624 as a more sinister sounding wasp, Vespa.
- In 1687 Johannes Hevelius depicted it as a fly, Musca. It appeared in his 1690 star catalogue. The fly is found resting on the haunches of Aries.
- By 1822, "Borealis" was tacked on to avoid confusion with the southern sky's Musca, a small constellation bordering Crux.
- Modern renditions have eliminated Musca Borealis entirely, leaving 41 Arietis placed at the haunches of Aries, the ram. Its foreleg stretches into eastern Pisces, drooping comfortably over the ecliptic.

41 Arietis is the eastern member of Aries' four primary stars. Ever wonder why it does not have a Bayer Greek letter designation, when most constellation stars of 3.6 magnitude do? When Johannes Bayer was assigning Greek letters to stars, this star was Alpha Musca Borealis. So, when Musca Borealis was disbanded and became part of Aries, it held on to its Flamsteed designation of 41, but lost its Bayer Alpha.

Musca Borealis is listed in the Astronomical League's Asterism Observing Program as number 87.



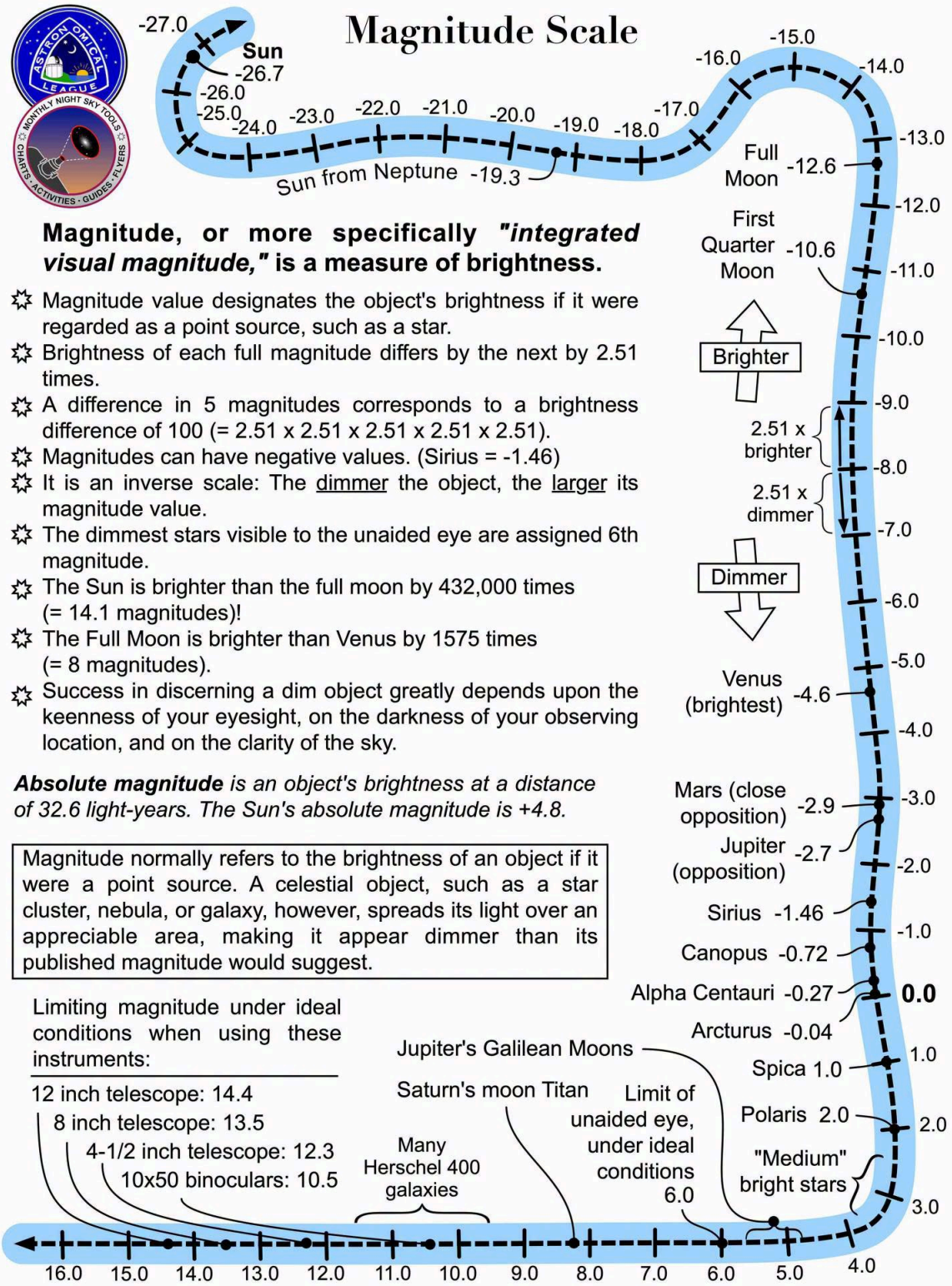
41 Arietis, a double star
A: 3.6 magnitude
B: 8.7 magnitude
Separation: 120 sec
PA: 230°



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Magnitude Scale



Magnitude, or more specifically *"integrated visual magnitude,"* is a measure of brightness.

- Magnitude value designates the object's brightness if it were regarded as a point source, such as a star.
- Brightness of each full magnitude differs by the next by 2.51 times.
- A difference in 5 magnitudes corresponds to a brightness difference of 100 (= 2.51 x 2.51 x 2.51 x 2.51 x 2.51).
- Magnitudes can have negative values. (Sirius = -1.46)
- It is an inverse scale: The dimmer the object, the larger its magnitude value.
- The dimmest stars visible to the unaided eye are assigned 6th magnitude.
- The Sun is brighter than the full moon by 432,000 times (= 14.1 magnitudes)!
- The Full Moon is brighter than Venus by 1575 times (= 8 magnitudes).
- Success in discerning a dim object greatly depends upon the keenness of your eyesight, on the darkness of your observing location, and on the clarity of the sky.

***Absolute magnitude** is an object's brightness at a distance of 32.6 light-years. The Sun's absolute magnitude is +4.8.*

Magnitude normally refers to the brightness of an object if it were a point source. A celestial object, such as a star cluster, nebula, or galaxy, however, spreads its light over an appreciable area, making it appear dimmer than its published magnitude would suggest.

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