



ASTROFILES

Auburn Astronomical Society Newsletter

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

Moon Phases

May 19 — First Quarter
May 26 — Full Moon
June 2 — Last Quarter
June 10 — New Moon
June 17 — First Quarter
June 24 — Full Moon
July 1 — Last Quarter
July 9 — New Moon

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<http://www.auburnastro.org>



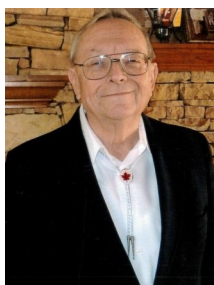
<https://www.facebook.com/groups/79864233515/>

News and events

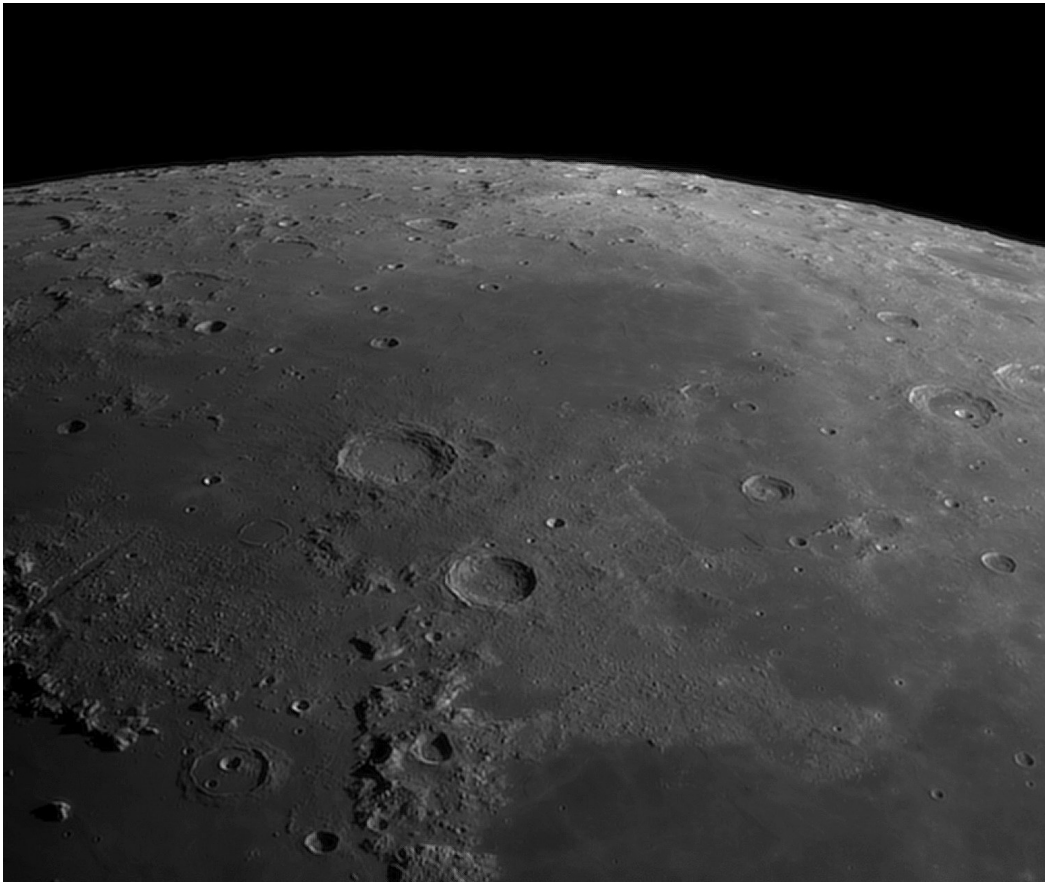
The month of May has brought the Auburn Astronomical Society some additional sad news. Long-time member Dr. Rhonald Jenkins passed away on May 13, 2021 from cancer. Dr. Jenkins was an early member of the club after its formation. This comes about four months after losing Russell Whigham, another long-time early member. Rhon also served as President of the AAS for many years up until fairly recently. He retired as an Associate Professor in Aerospace Engineering at Auburn University. We will all miss his knowledge and experience about astronomy and his always enlightening presentations and discussions at our club meetings. Rhon was also responsible for securing permission from the University to use one of their classrooms for our regular club meetings. The status of that arrangement is not known at this time but we may need to seek another meeting location for future club meetings. Our thoughts and prayers go out to Rhon's wife Joyce and his family. Below is a portion of the obituary for Dr. Jenkins as it appeared in the Opelika-Auburn News.

Rhonald Milburn Jenkins

July 12, 1942 ~ May 13, 2021



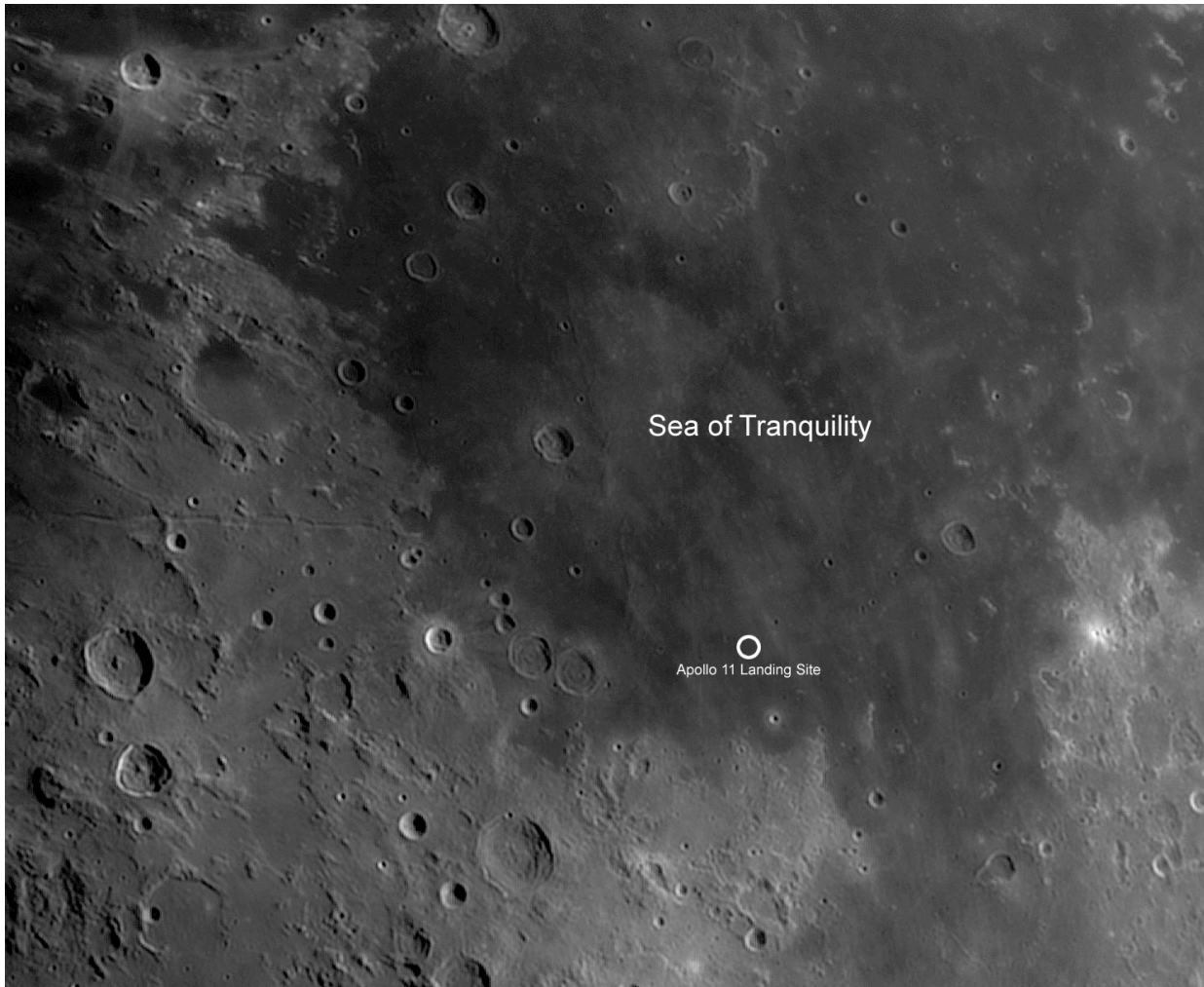
Rhonald Jenkins was born in Montgomery AL, at Maxwell AFB. He completed his PhD degree in Aeronautics, Astronautics and Engineering Sciences and worked in related industries for ten years. He moved to the Auburn area in 1972. He joined the College of Engineering faculty in 1984 and retired in 2004 as an Associate Professor of Aerospace Engineering, specializing in propulsion and rocket design. He was recognized repeatedly by his colleagues and students for his excellence in teaching.



Photos by John Wingard

Left: An oblique view of a portion of the moon's northern hemisphere looking toward the pole. The two larger craters are Aristoteles (87 km) and Eudoxus (67 km)

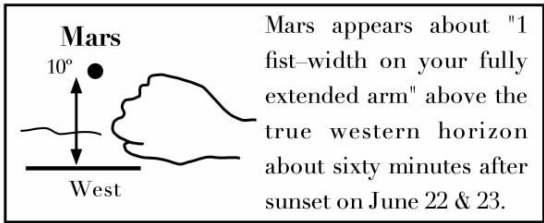
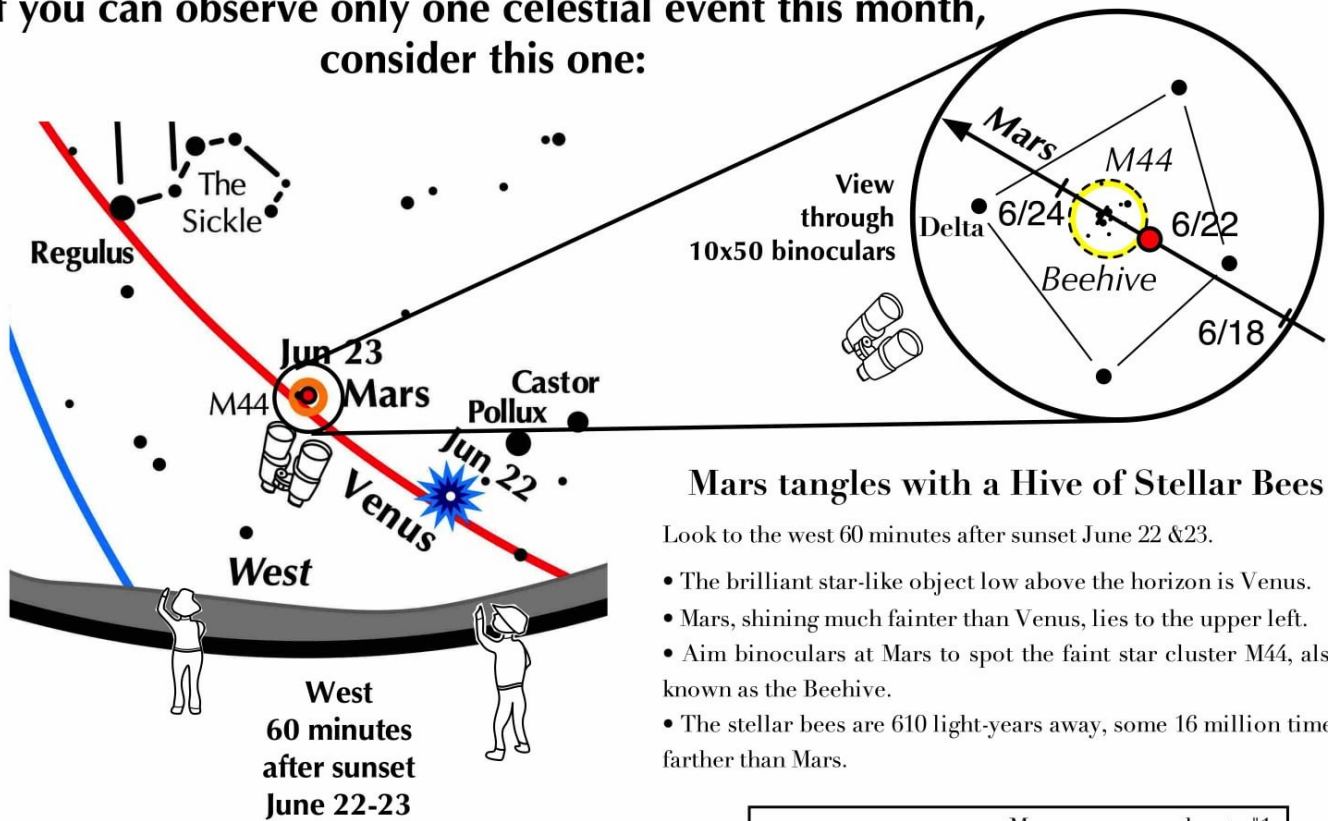
Below: This is a view of a portion of the Sea of Tranquility. If that sounds vaguely familiar, it's because that was the location of the first manned U.S. lunar landing in July of 1969. Astronauts Neil Armstrong and Buzz Aldrin walked on the moon while Michael Collins remained in orbit around the moon awaiting their return. The small white circle marks the actual landing spot. There are also three small craters in that area that are named for the three astronauts.





Left: A collaborative effort by AAS members Chris Young and Jay Hall of the Lagoon Nebula, M8, in the constellation of Sagittarius. It is an emission nebula. It was captured using narrow-band filters for Hydrogen alpha (Ha), Sulfur (SII) and Oxygen (OIII).

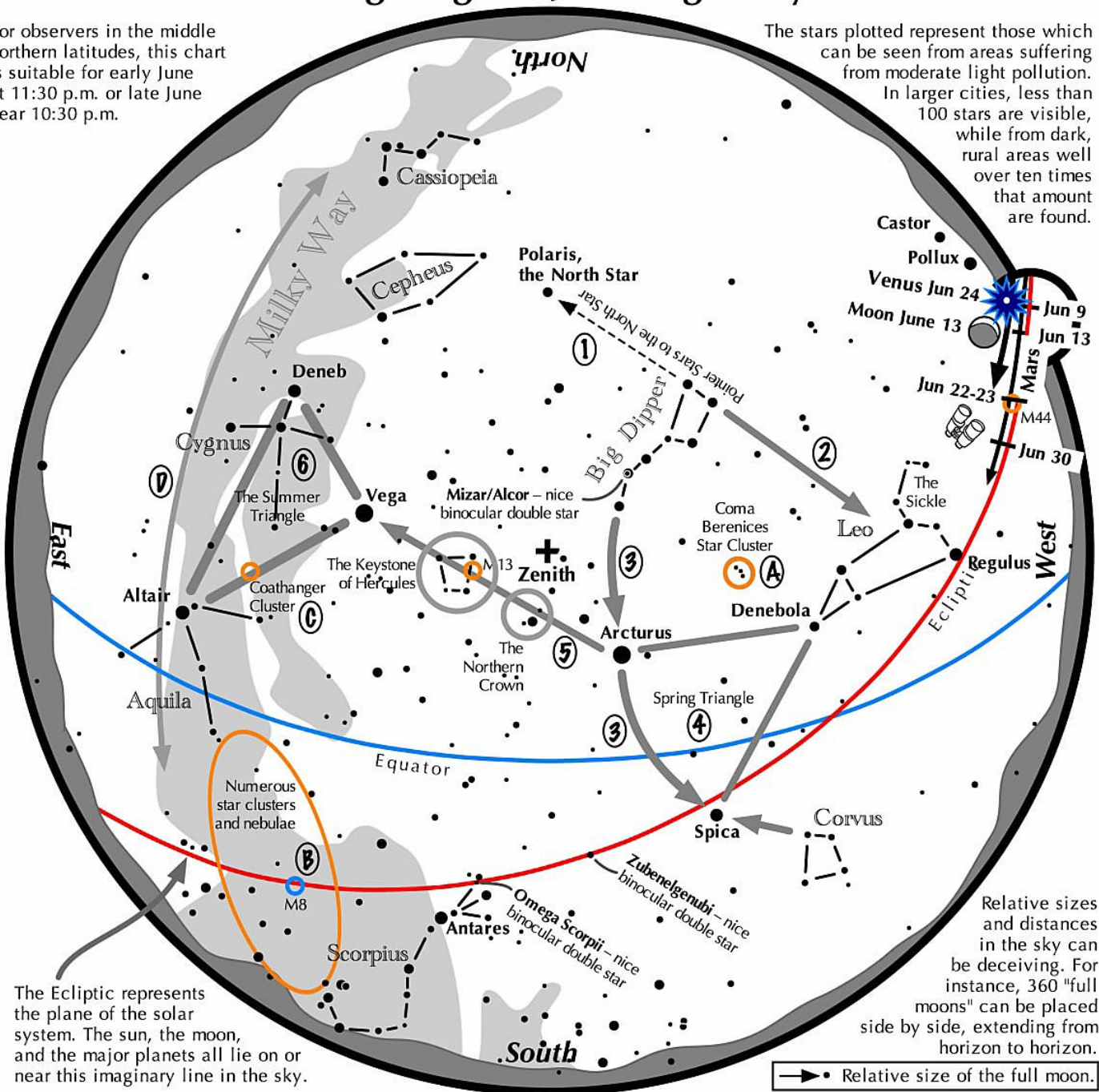
If you can observe only one celestial event this month, consider this one:



Navigating the June Night Sky

For observers in the middle northern latitudes, this chart is suitable for early June at 11:30 p.m. or late June near 10:30 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.



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

- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Draw another line in the opposite direction. It strikes the constellation Leo high in the west.
- 3 Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the June evening sky, then Spica.
- 4 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
- 5 To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 6 High in the east are the three bright stars of the Summer Triangle: Vega, Altair, and Deneb.

Binocular Highlights

- A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
- B: Between the bright stars of Antares and Altair, hides an area containing many star clusters and nebulae.
- C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D. Sweep along the Milky Way for an astounding number of faint glows and dark bays.



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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!

Astrophotography With Your Smartphone

David Prosper

Have you ever wanted to take night time photos like you've seen online, with the Milky Way stretched across the sky, a blood-red Moon during a total eclipse, or a colorful nebula? Many astrophotos take hours of time, expensive equipment, and travel, which can intimidate beginners to astrophotography. However, anyone with a camera can take astrophotos; even if you have a just smartphone, you can do astrophotography. Seriously!

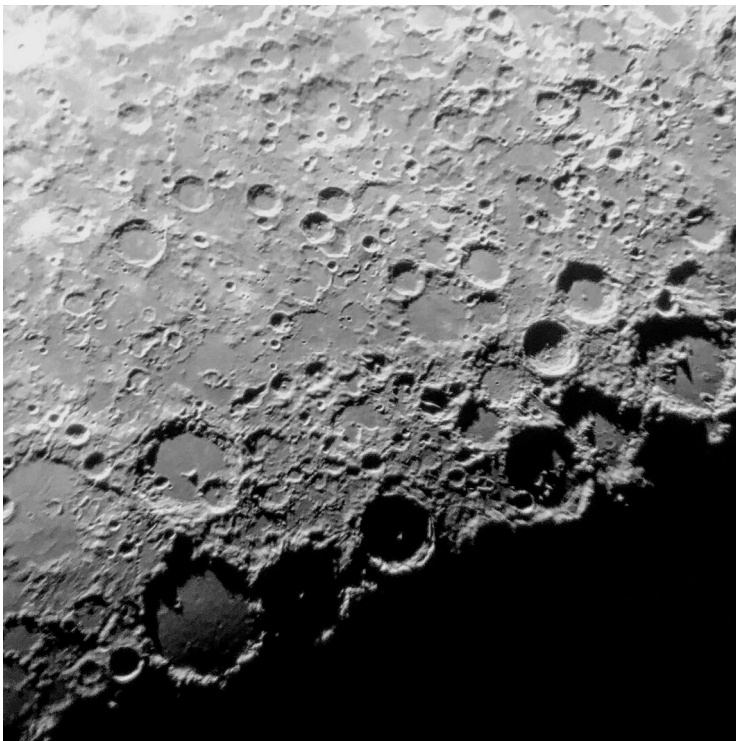
Don't expect Hubble-level images starting out! However, you can take surprisingly impressive shots by practicing several basic techniques: steadiness, locked focus, long exposure, and processing. First, steady your smartphone to keep your subjects sharp. This is especially important in low light conditions. A small tripod is ideal, but an improvised stand, like a rock or block of wood, works in a pinch. Most camera apps offer timer options to delay taking a photo by a few seconds, which reduces the vibration of your fingers when taking a shot. Next, lock your focus. Smartphones use autofocus, which is not ideal for low-light photos, especially if the camera readjusts focus mid-session. Tap the phone's screen to focus on a distant bright star or street-light, then check for options to fine-tune and lock it. Adjusting your camera's exposure time is also essential. The longer your camera is open, the more light it gathers - essential for low-light astrophotography. Start by setting your exposure time to a few seconds. With those options set, take a test photo of your target! If your phone's camera app doesn't offer these options, you can download apps that do. While some phones offer an "astrophotography" setting, this is still rare as of 2021. Finally, process your photos using an app on your phone or computer to bring out additional detail! Post-processing is the secret of all astrophotography.

You now have your own first astrophotos! Wondering what you can do next? Practice: take lots of photos using different settings, especially before deciding on any equipment upgrades. Luckily, there are many amazing resources for budding astrophotographers. NASA has a free eBook with extensive tips for smartphone astrophotography at bit.ly/smartastrophoto, and you can also join the Smartphone Astrophotography project at bit.ly/smartphoneastroproject. Members of astronomy clubs often offer tips or even lessons on astrophotography; you can find a club near you by searching the "Clubs and Events" map on the Night Sky Network's website at nightsky.jpl.nasa.gov. May you have clear skies!

A small tripod for a smartphone. They are relatively inexpensive – the author found this at a local dollar store!



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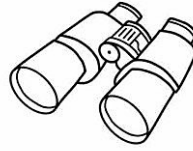
The Moon is large and bright, making it a great target for beginners. The author took both of these photos using an iPhone 6s. The crescent moon at sunset (top) was taken with a phone propped on the roof rack of a car; the closeup shot of lunar craters (bottom) was taken through the eyepiece of a friend's Celestron C8 telescope.

What telescope is best for me?

★ *The best telescope for you is the one that you will use!* ★

1 Consider trying binoculars first.

- ★ Easy to use, easy to store, ultra-portable.
- ★ Can see large sections of the sky at once.
- ★ Can use them for daytime activities.



An excellent size is 10 x 50:
10 = magnification
50 = the diameter in millimeters of the front lens.

2 Before you buy a telescope, ask yourself these questions...

- ★ How well do you know the night sky? Finding objects is not easy without practice. A quality "go-to" computerized telescope is costly and its operation must be mastered.
- ★ How hard is the scope to assemble? If it is too complicated, you won't use it.
- ★ Where will you do most of your observing? A city resident will likely need to cart it to a dark site.
- ★ Where do you think you'll be in the hobby in three years? If you really like astronomy, you'll outgrow a small scope in six months.
- ★ Will you eventually pursue astrophotography? You'll need a sturdy, motor driven mount that tracks accurately.

★ Telescope Diameter Dilemma ★

Since most sky objects are relatively dim, a telescope needs to gather large amounts of light. Therefore, larger diameter telescopes are better than smaller ones. However, they are also bulkier – and less likely to make it outside in cold weather!

3 Telescope and observing tips:

- ★ Magnification – low power is used for most objects.
- ★ Finder scope – a small one is nearly useless.
- ★ The larger the telescope's diameter, the better views it gives, but the less portable it is.
- ★ If the scope has poor optics or a wobbly mount, it will be frustrating to use. Hence, it won't be used.
- ★ Finding celestial objects requires practice and patience.
- ★ Never point the telescope at the sun without the proper filter installed ON THE FRONT of the scope.
- ★ Don't expect what you see in the eyepiece to closely resemble what you see in photographs.

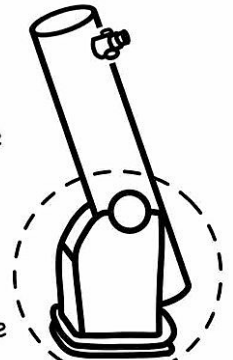
4 Visit your local amateur astronomy club!

- ★ You can see and try the various sizes and types of telescopes.
- ★ Some clubs have programs for lending telescopes.
- ★ Members will be happy to guide you through the scope selection process.

★ Common Telescope Designs ★

Reflector

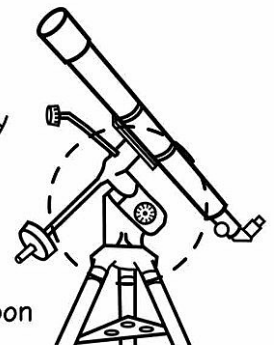
- ★ Easy to use
- ★ Least expensive scope design
- ★ Great for clusters, nebulae, and galaxies
- ★ Can be bulky
- ★ Generally not suitable for astroimaging



Shown with a Dobsonian Mount

Refractor

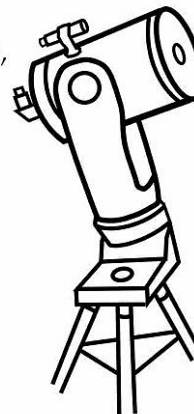
- ★ Easy to use
- ★ Tend to be costly
- ★ Not suitable for dim objects
- ★ Can be used for astroimaging
- ★ Great for the moon and planets



Shown with an Equatorial Mount

Schmidt-Cassegrain

- ★ Portable, but heavy
- ★ Tend to be costly
- ★ Good for astroimaging
- ★ All purpose scope



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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!