

ASTROFILES

Auburn Astronomical Society Newsletter

February 2022 Newsletter Editor — John Wingard — jwin1048@gmail.com

Moon Phases

February 23 — Last Quarter
March 2 — New Moon
March 10 — First Quarter
March 18 — Full Moon
March 25 — Last Quarter
April 1 — New Moon
April 9 — First Quarter
April 16 — Full Moon

News and events

As we begin to slowly transition from winter into spring, and with the apparent decrease in Covid-related issues, we are hopeful that our activities will begin to increase in the coming weeks and months. As many of you know, the club has been graciously granted limited access to a nice viewing site called “Heaven Hill” located near Alexander City, AL. It is on private property managed by Russell Lands/ Russell Forest Trails Association. We recently submitted a list of potential monthly observing dates that roughly coincide with new moon phases to allow for the darkest skies. The list below is the official dates that we can visit the site:

- Saturday, February 26, 2022
- Saturday, March 12, 2022
- Saturday, April 30
- Saturday, May 28
- Saturday, June 25, 2022
- Saturday, July 30, 2022
- Saturday, August 27, 2022
- Saturday, September 24, 2022
- Saturday, October 29, 2022
- Saturday, November 19, 2022
- Saturday, December 17, 2022

Stay in touch with us



<http://www.auburnastro.org>



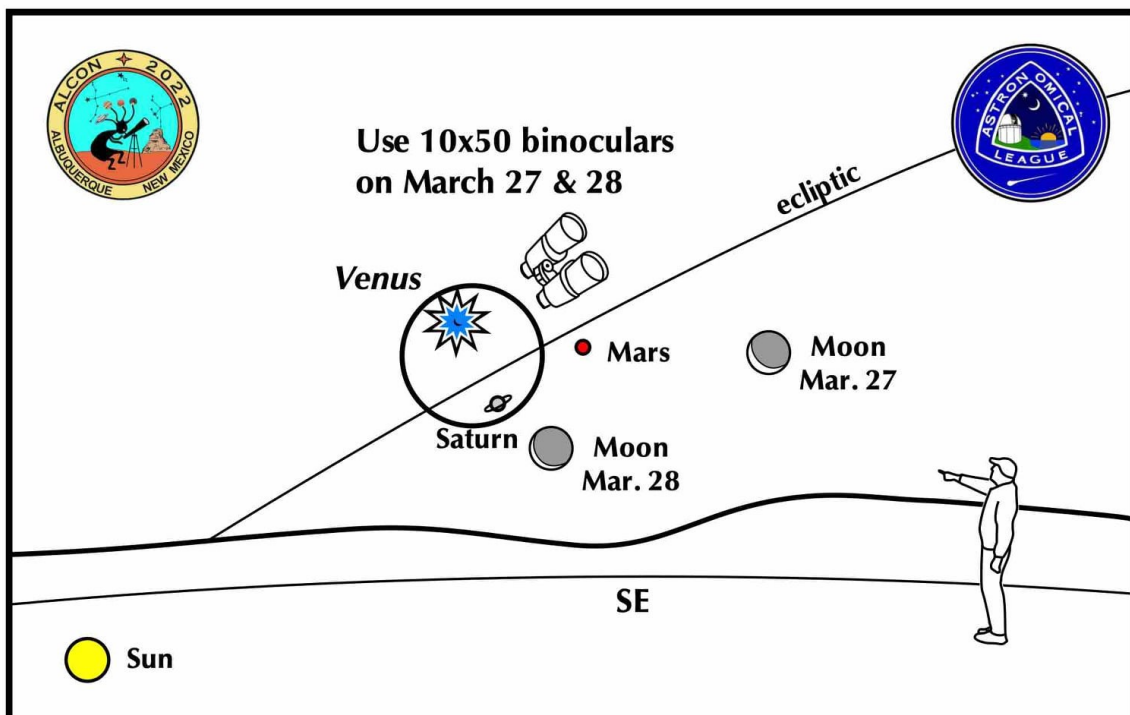
<https://www.facebook.com/groups/79864233515/>

There are a couple of things that members need to do prior to visiting the site. You must first register with the Russell Trails Association and obtain a vehicle sticker and ID card. Go to the club webpage auburnastro.org and under the “Astronomy” heading, select “Observation Site” and then “Heaven Hill Site.” At the bottom of that page you will need to download two forms, a Russell Lands membership application and a Release and Indemnity Form. Fill out both of these forms and mail them to: **Russell Forest Trails Association, 288 Stables Loop, Alexander City, AL 35010**. Our members should register as “hikers” and there is no charge for this category. There are also directions on the web page to get to the site. Please note that you should be patient for a reply as they are sometimes slow to get the sticker and card back to you. It should also be noted that these are annual agreements and need to be renewed at the beginning of the new year. We would prefer that our members only visit the site on the above dates as this location is also used for other events and we don’t want to interfere with other scheduled activities. Of course, the above observing dates could also be preempted at the discretion of Russell Lands if they should need the site for other activities. We want to thank Russell Lands for permitting us to use this location as an observing site.

Kiesel Park Stargaze

Weather permitting, the AAS is scheduled to conduct a stargaze at Kiesel Park in Auburn, AL on Friday, March 4, 2022. This event was rescheduled from an earlier date in January due to unusually cold weather. AAS members should try to arrive prior to sunset so that you will have adequate time to set up your scopes before dark. Depending on the temperatures that evening you should dress appropriately for the occasion. Kiesel Park is located on the western edge of Auburn at **520 Chadwick Lane**. It can be accessed from either Highway 14 on the north end or from Wire Road on the south end.

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



Crescent Moon passes Venus, Mars & Saturn

- Look in the east–southeast beginning 75 minutes before sunrise on March 27 & 28.
- Venus shines brightly low above the east–southeastern horizon.
- On Mar. 27, Mars lies about 1 binocular field to the right of Venus and Saturn lies in the same field as Venus, but to its lower right. The very thin crescent moon, full with earthshine, glows to the planetary trio's right.
- On the following morning, an even thinner moon floats below Saturn and Mars. Saturn should be slightly brighter than reddish Mars.

Why do we feel the need to stargaze in times like these?



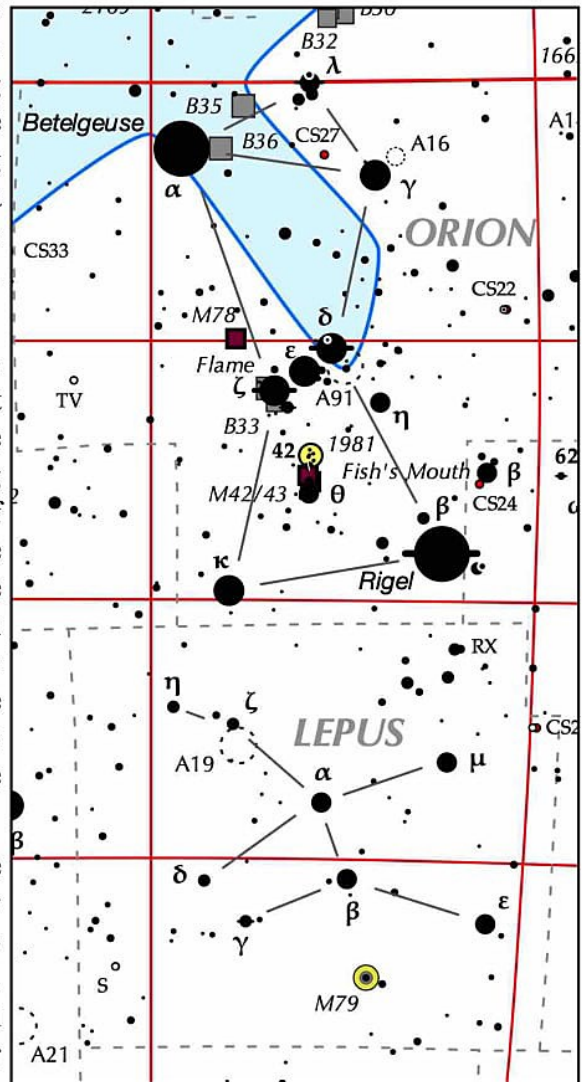
People have gazed into the starry realm since time immemorial. What drives them to head outside when they could readily be doing something else?

1. Quietly gazing skywards is a personal activity, often giving one comfort in the seemingly immutable nature of the heavens. The stars of this year are the same stars of last year – and of many year's past. Knowing that they still shine in the proper places in the sky strongly validates that all is right with the universe, even if all is in complete disarray on Earth. So, just by looking up, a sense of steadiness is brought into our lives.

2. Looking skyward also gives us a way of seeing into our past, evoking pleasant memories from our youth: Enjoying a late night session counting Perseids, gasping at the sight of the Orion Nebula swinging into the eyepiece on a chilly evening, and, of course, exclaiming the inevitable "Wow!" when first seeing Saturn through a telescope. Those are personal astronomical experiences that skywatchers remember as long as they live. Unforgettable.

3. People like making seasonal friends in the sky, ones that return year after year, with some being ones that aren't readily recognized by many casual stargazers: The four quadrangle stars plus a dangling luminary marking Corvus in spring; the five or six leaping lights of Delphinus just trailing the Milky Way in summer; the two single and the one tight trio of stars outlining the heavenly tubular bell of Triangulum (Borealis) in autumn, and the eight muted points of light of Lepus nestled below the domineering Orion in winter. Once these patterns and sky locations are committed to memory, they will gladly greet any stargazer on the same dates, year after year. They will be true friends. Always.

4. Other people want to feel more in tune with the cosmos. After they learn about a particular heavenly wonder, they seek to discover it first hand, desiring to gain a deeper appreciation of their place in the universe. They not only want an understanding of the astrophysical nature of a celestial entity, such as the globular cluster M79 in Lepus, or the mysterious and elusive dark nebular B289, or the ghostly wisp of galaxy NGC 4565, they want to see it for themselves. They want to "take it in."



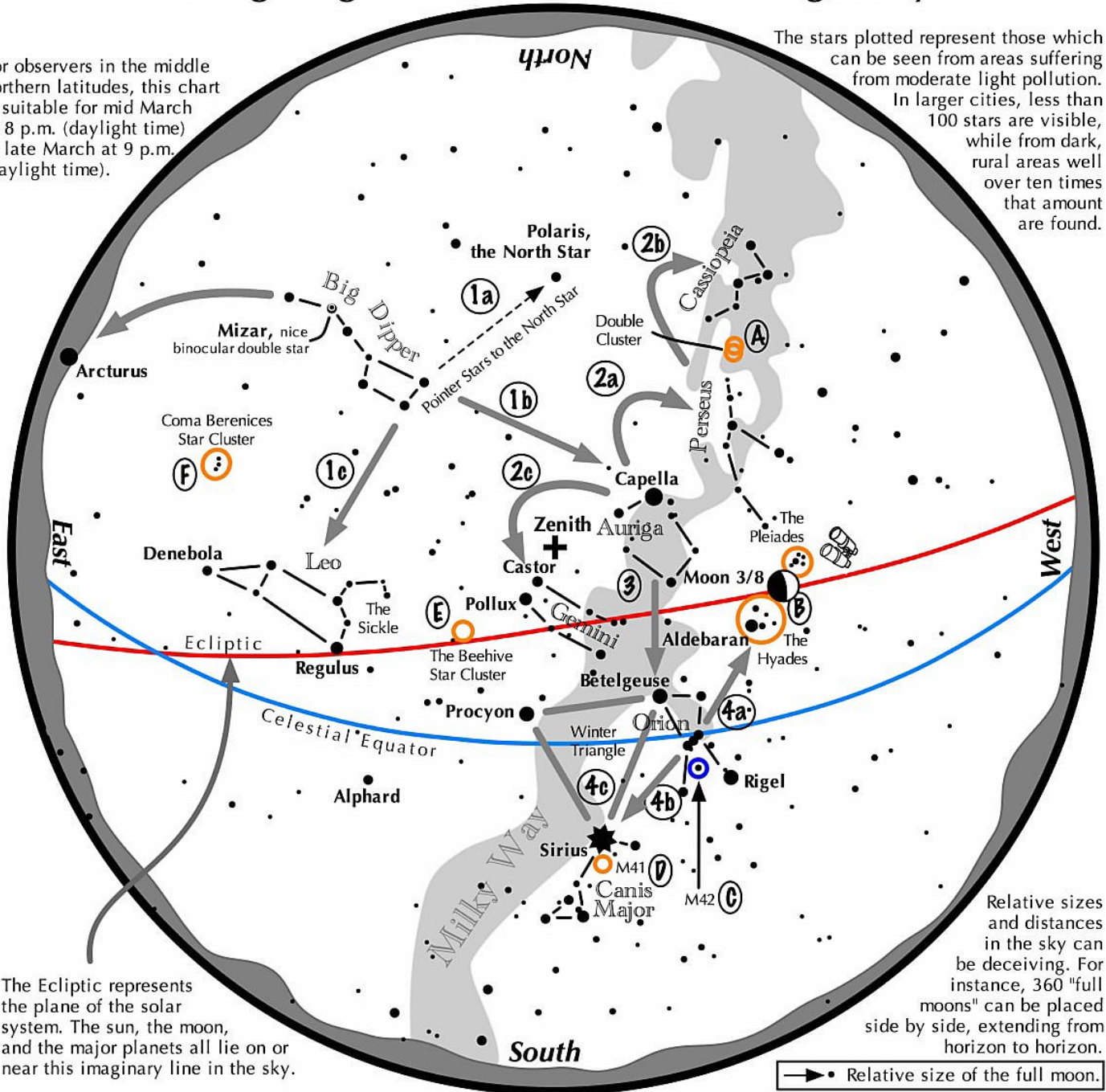
The Astronomical League gets it. Celestial sessions like these give people what they want: the Authentic Observing Experience. They want to be under the stars with telescope or binoculars at hand. They want to be intellectually challenged and comforted by what they witness with their own eyes and through the eyepiece. They want to be part of Observer, Telescope, and Sky.

... by John Jardine Goss, excerpts from the 2020 Observers' Handbook of the Royal Astronomical Society of Canada (RASC), page 82, with permission.

Navigating the mid to late March Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid March at 8 p.m. (daylight time) or late March at 9 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 March night sky: Simply start with what you know or with what you can easily find.

- 1 Above the northeast horizon rises the Big Dipper. Draw a line from its two end bowl stars upwards to the North Star. Its top bowl stars point west to Capella in Auriga, nearly overhead. Leo reclines below the Dipper's bowl.
- 2 From Capella jump northwestward along the Milky Way to Perseus, then to the "W" of Cassiopeia. Next jump southeastward from Capella to the twin stars of Castor and Pollux in Gemini.
- 3 Directly south of Capella stands the constellation of Orion with its three Belt Stars, its bright red star Betelgeuse, and its bright blue-white star Rigel.
- 4 Use Orion's three Belt stars to point northwest to the red star Aldebaran and the Hyades star cluster, then to the Pleiades star cluster. Travel southeast from the Belt stars to the brightest star in the night sky, Sirius. It is a member of the Winter Triangle.

Binocular Highlights

A: Between the "W" of Cassiopeia and Perseus lies the Double Cluster. **B:** Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** M42 in Orion is a star forming nebula. **D:** Look south of Sirius for the star cluster M41. **E:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux. **F:** Look high in the east for the loose star cluster of Coma Berenices.





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!

Embracing the Equinox

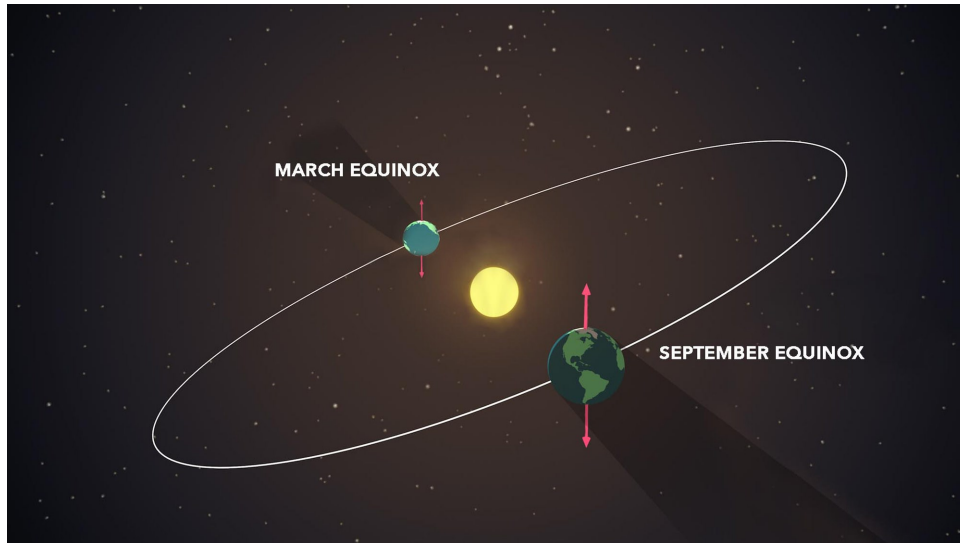
David Prosper

Depending on your locale, equinoxes can be seen as harbingers of longer nights and gloomy weather, or promising beacons of nicer temperatures and more sunlight. Observing and predicting equinoxes is one of the earliest skills in humanity's astronomical toolkit. Many ancient observatories around the world observed equinoxes along with the more pronounced solstices. These days, you don't need your own observatory to know when an equinox occurs, since you'll see it marked on your calendar twice a year! The word "equinox" originates from Latin, and translates to **equal** (equi-) **night** (-nox). But what exactly *is* an equinox?

An **equinox** occurs twice every year, in March and September. In 2022, the equinoxes will occur on March 20, at exactly 15:33 UTC (*or 11:33 am EDT*), and again on September 23, at 01:04 UTC (*or September 22 at 9:04 pm EDT*). The equinox marks the exact moment when the center of the Sun crosses the plane of our planet's equator. The day of an equinox, observers at the equator will see the Sun directly overhead at noon. After the March equinox, observers anywhere on Earth will see the Sun's path in the sky continue its movement further north every day until the June solstice, after which it begins traveling south. The Sun crosses the equatorial plane again during the September equinox, and continues traveling south until the December solstice, when it heads back north once again. This movement is why some refer to the March equinox as the **northward equinox**, and the September equinox as the **southward equinox**.

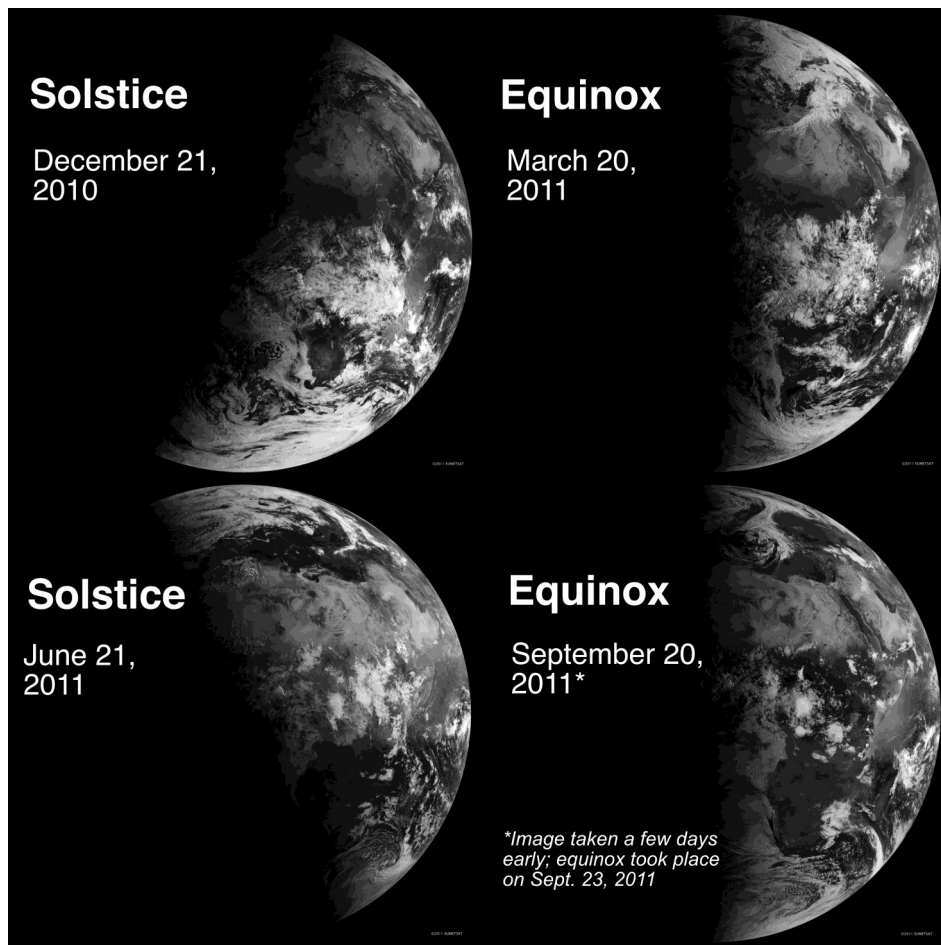
Our Sun shines equally on both the Northern and Southern Hemispheres during equinoxes, which is why they are the only times of the year when the Earth's North and South Poles are simultaneously lit by sunlight. Notably, the length of day and night on the equinox aren't precisely equal; the date for that split depends on your latitude, and may occur a few days earlier or later than the equinox itself. The complicating factors? Our Sun and atmosphere! The Sun itself is a sphere and not a point light source, so its edge is refracted by our atmosphere as it rises and sets, which adds several minutes of light to every day. The Sun doesn't neatly wink on and off at sunrise and sunset like a light bulb, and so there isn't a *perfect* split of day and night on the equinox - but it's very close.

Equinoxes are associated with the changing seasons. In March, Northern Hemisphere observers welcome the longer, warmer days heralded by their **vernal**, or spring, equinox, but Southern Hemisphere observers note the shorter days – and longer, cooler nights - signaled by their **autumnal**, or fall, equinox. Come September, the reverse is true. Discover the reasons for the seasons, and much more, with NASA at nasa.gov



This (not to scale) image shows how our planet receives equal amounts of sunlight during equinoxes.

Credit: NASA/GSFC/Genna Duberstein



Scenes of Earth from orbit from season to season, as viewed by EUMETSAT. Notice how the terminator - the line between day and night - touches both the North and South Poles in the equinox images. See how the shadow is lopsided for each solstice, too: sunlight pours over the Northern Hemisphere for the June solstice, while the sunlight dramatically favors the Southern Hemisphere for the December solstice.

Source: bit.ly/earthequinox Images: NASA/Robert Simmon



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